VESTEL

Service Manual

for

FG Series

Table of Contents

About Content

This service bulletin is prepared for all OEM products within FG range. Therefore you may encounter information about some optional components that may not exist in your product. As this is a generic service bulletin covering all range, please ignore and skip extra/optional component information. Sections marked with asterisk (*) sign contain information about optional components.

Information already exists in user manuals is not included in this service manual. Please refer to user manual of your product for basic installation, operating, maintenance and troubleshooting issues.

Contact

For your inquiries please send an email to:

WashingMachineCustomerSupport@vestel.com.tr

You can also open a support ticket using Service Support Page:

https://www.vestelservice.com/VestelService/

Acronyms:

WM	:	Washing Machine
WMCS	:	Washing Machine Customer Support
TJ	:	Twinjet
UI	:	User Interface
SI	:	Service Interface
A	:	Available
NA	:	Not Available

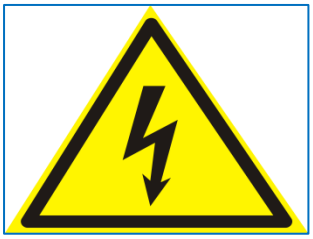
1. Safety Precautions

Important:

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Warning:

Before any disassembly/repair operation make sure appliance is unlplugged water tap is closed and heating elements are cooled down. There is electrical shock, burning and flood risk.



Warning:

Please replace whole cable group even in case there is any minor failure with cables / terminals / sockets. Never try to repair nor to solder cable group. It may cause smoke, ignition and there is major risk of electrical shock.

Important:

Always use insulator gloves to prevent injury by metal edges or to prevent electrical shock during electrical tests.

Work with uniforms having long sleeves to protect your arms from metal edges.

Always use original spare parts. You may harm appliance, end user, environment or yourself using untested and unapproved 3rd party spare parts.

Use right tools to prevent any wear or damage to components during assembly/disassembly.

2. Specifications

Here you will find descriptions of generic specifications for the range specified for this service manual. Please refer to product fiche and user manual for detailed technical specifications.

***Twinjet System:**

Twinjet system is designed to obtain a better washing performance by directly injecting water with detergent using a recirculation system and two nozzles connected to it. With twinjet system, water consumption is decreased by 30%, energy consumption is decreased by 10% and washing time is decreased by 15%

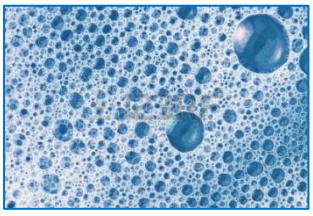
Twinjet system is valid for all programs except spin and drain mode. The system dos not function during Water inlet, heating, spinning, drain phases.

Even with a large load of 8 kg. the washing machine will have the minimum energy consumption by the help of Twinjet system.

Washing machines with Twinjet system are very environment-friendly by having maximum washing performance with minimum water consumption.

Eco-Logic System:

Half load detection system, thus using less water and power accordingly. This system is available for cotton programs only.

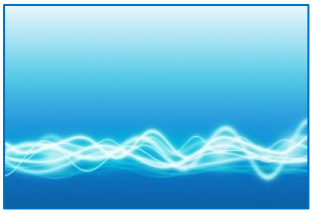


Foam Protection System:

Foam Protection System is a safety algorithm that interrupts normal program flow and reduces foam level by taking water and draining. This algorithm protects machine and environment avoiding over foaming inside tub in case any customer misuse such as detergent overdose or use of foamy cleaning agents.

Overflow Protection System:

Overflow protection is another safety algorithm in case of a flood risk. If there is more water in tub than expected by algorithm, it will start to the drain routine giving E04 failure code. For example this may happen in case of a valve failure and the machine constantly takes water. This algorithm will keep drain routine, keeps water leveled and protects environment and machine avoiding any flood risk.



Unbalanced Load Detection and Control System:

Unbalance Control System is another safety algorithm that protects the machine and environment avoiding machine movement due to vibration during spinning profile. The algorithm tries to balance load by a special balancing agitation, postponing spin profile till it is balanced. This avoids spinning while load is unbalanced and prevents any possible physical harm both to the appliance and to surroundings.

3. Control Panel and Acronyms

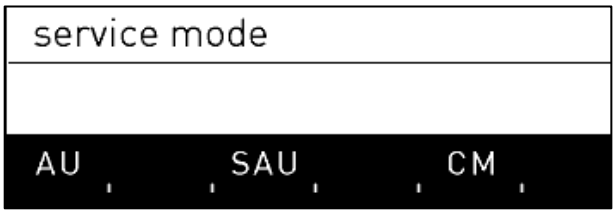
PR	Program selector 16 programs including off position
SW1	Switch 1, Start / Pause
SW2	Switch 2, Memory
SW3	Switch 3, Other Options / Delay Start
SW4	Switch 4, Settings / Eco Time Option
SW5	Switch 5, Stain Level Selection / Easy Ironing Option
SW6	Switch 6, Stain Type Selection / Extra Rinse & Anti Allergic Option
SW7	Switch 7, Spin Speed Selection / Prewash Option
SW8	Switch 8, Temperature Selection / Previous Options

Symbols							
	Selection Mode		No Spin		Brightness		No Selection
	Prewash		Other Options		Contrast		Pause
	Extra Rinse – Allergy Safe		Settings		Factory Settings		Decrease Selection
	Easy Ironing		Language		Reset		Increase Selection
ECO TIME	Eco Time		Clock		Door Closed and Locked		Previous Selection
	Delay Start		Sound		Door Closed and Unlocked		Next Selection
°C	Temperature		Sound On		Door Open		Select
	Cold Wash		Sound Off	2/3	Dosage Indicator		Cancel
	Spin Speed						

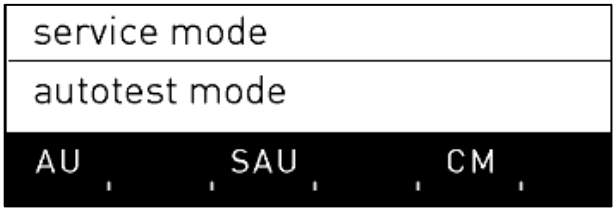
4. Test Mode

4.1. Autotest

1. Open SI by pressing SW4 for 5 seconds.



2. Press button below “AU” indication which stands for *Autotest.*



3. When autotest is finished, END screen is visualized.

4.1.1. Autotest Steps

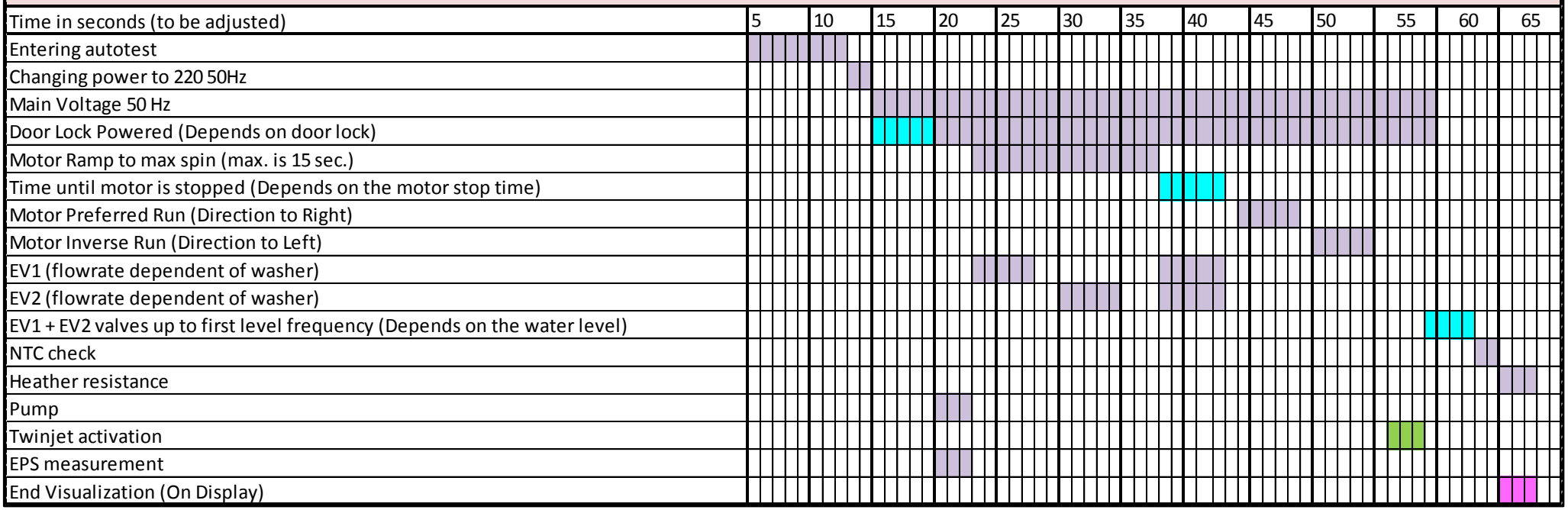
Autotest follows a predefined flowchart in order. Unlike service autotest, autotest automatically skips to next step upon completing one. The steps of the test are as follows:

Step1:
Drain pump is activated.
EPS frequency is checked.
Step2:
Motor ramps to max spin.
Prewash & Wash valves are activated in order.
Step3:
Motor ramps down to stop.
Prewash & Wash valves are activated simultaneously.
Step4:
Motor turns clockwise (low speed).
Step5:
Motor turns counterclockwise (low speed).
Step6:
Twinjet is activated.
Step7:
Prewash & Wash valves are activated simultaneously.
Step8:
Washer heater is activated. Washer NTC values are checked in this step.

In case of no failure test ends after this step and “End” is displayed. In case of an error detection EXX and error definition will pop up on display. (where XX is the error number 1 to 10)

Please see following autotest chart for details.

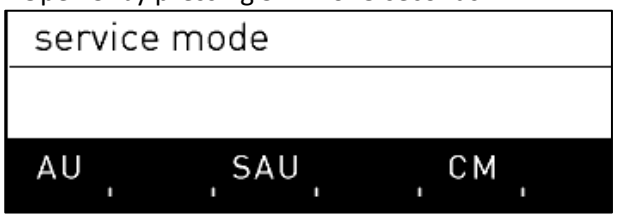
AUTOTEST


Time in seconds (to be adjusted)
5
10
15
20
25
30
35
40
45
50
55
60
65
Entering autotest
Changing power to 220 50Hz
Main Voltage 50 Hz
Door Lock Powered (Depends on door lock)
Motor Ramp to max spin (max. is 15 sec.)
Time until motor is stopped (Depends on the motor stop time)
Motor Preferred Run (Direction to Right)
Motor Inverse Run (Direction to Left)
EV1 (flowrate dependent of washer)
EV2 (flowrate dependent of washer)
EV1 + EV2 valves up to first level frequency (Depends on the water level)
NTC check
Heather resistance
Pump
Twinjet activation
EPS measurement
End Visualization (On Display)

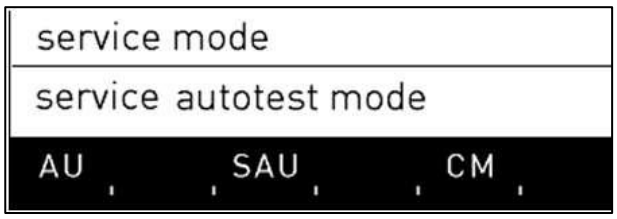
5. Service Mode

5.1. Service Autotest

1. Open SI by pressing SW4 for 5 seconds.



2. Press button below “SAU” indication which stands for *Service Autotest.*



3. When autotest is finished, END screen is visualized.

	Step1	Step 2	Step 3
	PR Position: Program 1	PR Position: Program 2	PR Position: Program 3
	HEATER ON	PUMP ON	TEST PROGRAM ON (Rapid 12’*)
Comments :	When entering in service test, door will be locked.		Test is over Door will be unlocked, machine will go to END state.

5.1.1. Service Autotest Steps

If you turn knob position to other program between 1st to 3rd it will skip current test and start the selected one. It is recommended not to skip any steps for a detailed checkup. Unlike autotest, service autotest starts next test step manually by rotating program selection knob.

Step1:
There will be a certain amount of water intake and then washer heater is activated for 8 minutes. Washer NTC values are checked in this period. In case of a washer heater/NTC failure, it pops up E05 error displaying “E05” on SW3.

In case of no failure at the end of heating step, “Please change selector” will be displayed. You can turn program knob to 2nd position to continue with step2.

*During this step if EPS detects high water level, overflow algorithm is applied and E04 is released.
*If user changes the selector position, machine will do what is defined for the new selected position.

Step2:
Drain pump is activated; in case of a pump failure it pops up E03 error.

At the end of pump activation, “Please change selector” will be displayed. You can turn program knob to 3rd position to continue with step3.

Step3:
Rapid 12’*(15’ for non-TJ models) program algorithms is run testing all washing components, the only difference is error codes are displayed on SW3 which normally are not displayed to end user.

If case of no error service autotest ends and "End" is displayed.

5.2. Failure Codes

Error Indication	Error Number	Indication in UI	Indication in SI
Door/Door Lock Failure	E01	A	A
Lack of water	E02	A	A
Pump failure	E03	A	A
Overflow	E04	A	A
NTC or Heater Failure	E05	NA	A
Motor Failure	E06	NA	A
Configuration Failure	E07	NA	A
Motor Triac Failure	E08	NA	A
Voltage Error	E09	A	A
Electronic Pressure Sensor	E10	NA	A
Communication failure 3D Sensor	E12	NA	A
LCD card Failure	E13	NA	A
Twinjet Failure	E15	NA	A
Flowmeter Failure	E17	NA	A

6. Critical Torque Values

	Assembly Location	Bolt/Nut	Torque Min. (Nm)	Torque Nom. (Nm)	Torque Max. (Nm)	Air Pressure Wrench (rpm)
*	Transport Screw Assembly	Transport Screws	6.50	6.50	7.00	1000
*	Motor Assembly	Motor Screws	6.00	6.50	7.50	800
*	Front Concrete Weight - Front Tub Assembly	Front Counterweight Screws	14.00	14.50	14.75	600
*	Upper Counter Weight Assembly	Upper Counterweight Screws	25.00	27.50	30.00	440
*	Pulley – Drive Shaft – Washing Group Assembly	Pulley – Drive Shaft Assembly Bolt	39.50	40.00	40.50	440
*	Heater Assembly	Heater Assembly Nut	3.85	4.00	4.00	970

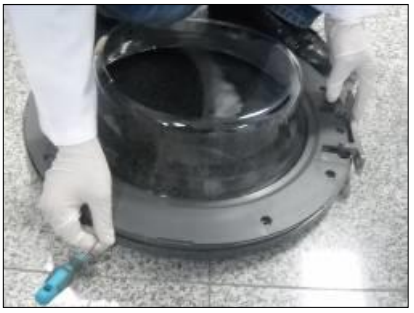
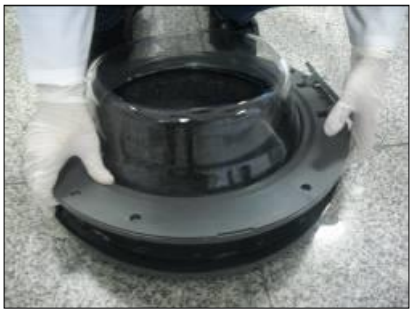
The bolts/nuts above are important for product safety purposes. Please tighten screw, bolts and nuts according to the torque values given in table above.

7. Disassembly and Assembly Instructions

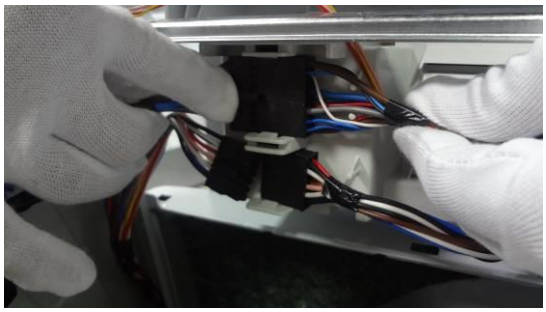
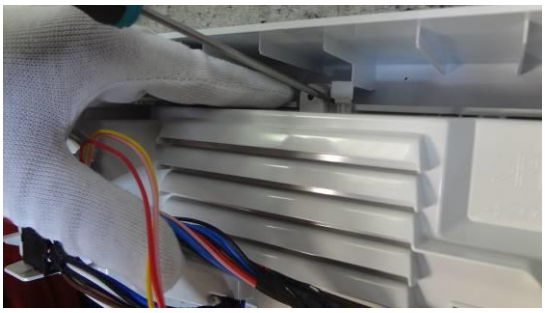
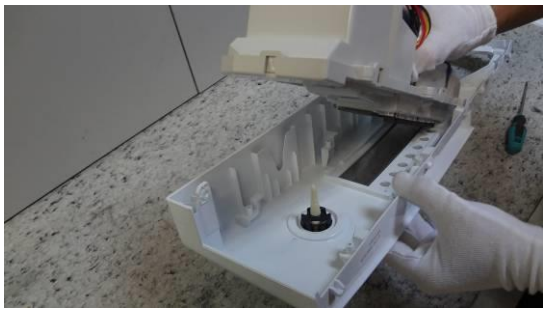
7.1. Top Plate

1		2	
	Remove two screws that fix the top-plate at the back.		Push the top-plate back and pull it up.

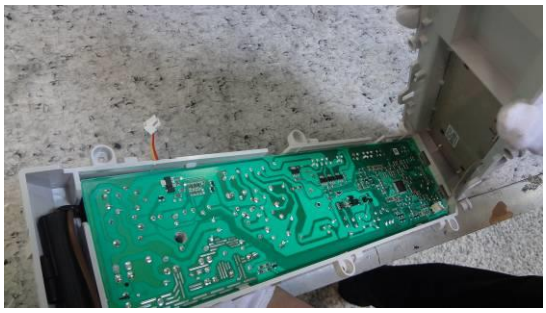
7.2. Door

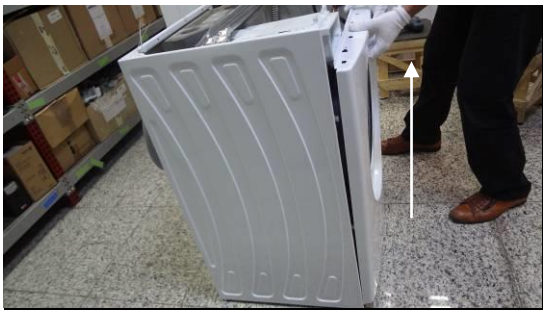
1	   T25	2	
	Remove two screws that fix the door. (by using T25 tool)		Pull the door up.
3		4	
	Remove screws that fix the door group.		Put the door outside plastic with helping screwdriver.
5		6	
	Remove the door inside plastic.		Remove six screws that fix the door hinge.

7*		**8***	
	Remove the door handle.		Remove the door handle pin.
7.3. Spring Wire			
1		**2**	
	First remove the spring wire fixing the tub bellows seal by using the small size screw driver. Pull the tub bellows seal.		Remove the tub bellows seal-body fixing spring.
7.4. Detergent Drawer			
1		**2**	
	Gently pull the detergent drawer.		While pressing siphon cover keep pulling drawer to remove it.
7.5. Control Panel			
1		**2**	
	Remove the screw which fixes the control panel to the front panel.		Remove two screws fixing control panel.

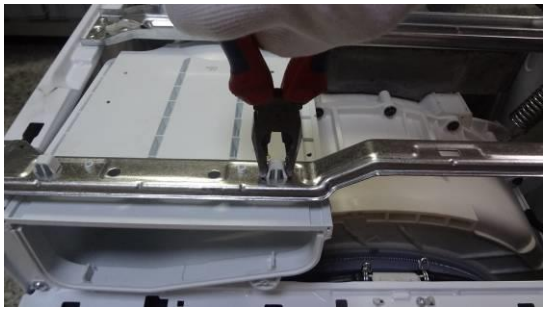
3		**4**	
	Pull the control panel out		Remove connectors
5		**6**	
	Remove electronic card cover as it is shown in the pictures by using small screw driver.		

7.6. Electronic Card & Fuse

1		**2**	
	Remove PCB box using a small screw driver		
3		4	
	Unplug display card connector		Open fuse box and remove the fuse

7.7. Front Panel			
1		2	
	Remove the screw fixing the front panel at the bottom		Remove two screws fixing the door lock
3		4	
			Remove the tub bellows seal.
5		6	
	Remove two screws fixing front panel to body		Remove the screw fixing twinjet elbow
7		8	
	Pull front panel up		Remove front panel

7.8. Support Bracket

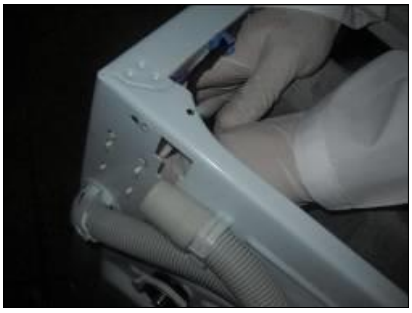
1		**2**	
	Remove two screws fixing the body group on the upper part		Remove two clips fixing detergent drawer housing to upper support bracket

7.9. Detergent Drawer Housing

1		**2**	
	Remove the tub bellow hose by releasing the holder extensions of bellow hose		Unplug connectors from feed valve
3		**4**	
	Slightly turn the feed valve counter-clockwise to remove		Remove the detergent drawer housing assembly

7.10. Power Cable Group and EMI Filter

1		**2**	
	Remove the five conectors that is connected to the EMI filter		Remove two screws fixing EMI filter.

3		**4**	
	Pull the power cable group up		Remove EMI filter
7.11. Electronic Pressure Switch (EPS)			
1		**2**	
	Unplug EPS connector		Pull EPS up
3			
	Remove clamp from EPS hose		
7.12. Door Lock*			
1			
	Unplug door lock connector		

7.13. Drain Pump

1		**2**	
	Remove clamp holding drain hose by using a plier		Remove clamp fixing tub outlet hose
3		**4**	
	Unplug drain pump connector		Remove screws holding drain pump

7.14. Front Counterweight*

1		**2**	
	Remove three screws on the front counterweight. (Wrench size 13 mm)		Gently pull counterweight out

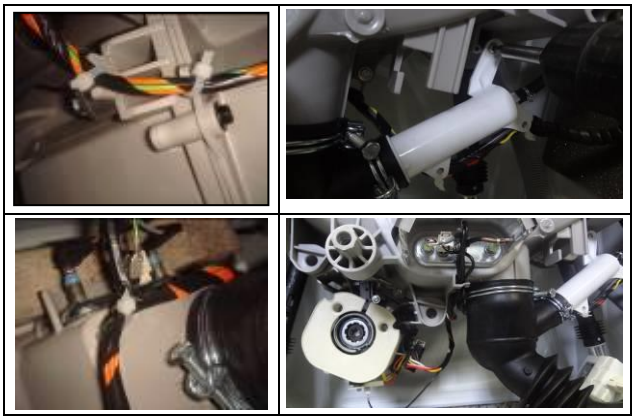
7.15. Heater

1		**2**	
	Unplug heater connectors		Remove nut (8 mm) fixing the heater

3			
	Pull heater out gently holding both sides.		
7.16. Twinjet System*			
1		**2**	
	Remove the tub gasket clip by using small screwdriver		Remove twinjet hoses from tub bellow seal pulling them up
3		**4**	
	Remove screw fixing circulation pump		Lay the appliance down and press on ratchet holding circulation pump
5		**6**	
	Remove circulation pump		Remove cable connector

7			
	Remove hose connecting circulation pump to drain pump		
7.17. Tub Bellow Seal*			
1		**2**	
	Remove the tub gasket clip by using small screwdriver		Hold the tub bellows seal and gasket-body fixing spring together, and pull them out.
7.18. Transport Screw			
1		**2**	
	Remove four transport screws		Hold the transport screw and pull it out.
7.19. Upper Counterweight*			
1		**2**	
	Remove two screws fixing the upper counterweight by using box wrench size 13 mm		Hold and carry upper-counterweight out.

7.20. Washing Group

1		2	
	Unplug motor connectors		Cut all the cable ties which fix cable group
3		4	
	Remove the screws fixing hanger bracket		Remove the washing group carrying it out through front side

7.21. Shock Absorber Pin

1	
	Remove shock absorber pins squeezing the ratchet by a pliers

7.22. Driven Pulley

1	
	Remove the belt rotating the driven pulley

7.23. Driven Pulley

1	
	Remove the bolt at the center of pulley by tucking a wooden bar avoids rotation
1	
	Remove pulley

7.24. Motor			
1		**2**	
	Remove two screws holding motor by using box wrench		Pull motor up
7.25. Tub			
1		**2**	
	Remove tub inlet bellow hose loosening the clamp squeezing it by using a pliers		Remove screw holding EPS reservoir
3		**4**	
	Remove tub outlet bellowed hose loosening screwed-clamp		Remove 19 screws around tub using box wrench size 8 mm
5		**6**	
	Remove front tub		Remove drum

8. Component Specifications

8.1. Drain Pump

Drain pump is both a mechanical and elektrical component which is used to drain water inside the washing machine. It has an synchronous motor inside. For better performance maintanance, pump filter should be cleaned regularly.

Drain pump

Technical features

Nominal voltage	220-240 V	Resistor (coil)	136 Ω (±5%)
Nominal current	0.28 A (±10 %)	Water flow	17 L/min(to 1 m height)
Nominal power	37 W		
Frequency	50 Hz	Thermal protector	YES

Testing component

Check the resistance value on the component with multimeter as shown below.
Resistance value should be between 131- 141 Ω

You can determine the ohm value by measuring from the blue cable at 2nd and blue cable at 11th position in the large socket (refer wiring diagram in section 12) as shown below figure. Resistance value should be between 131- 141 Ω

8.2. Circulation Pump*

The component is used for circulation of water inside the drum in order to increase washing performance.

Circulation Pump

Technical features

Nominal voltage	220 - 240 V
Frequenc	50 Hz
Resistor (ci)	169,5 Ω (±5%)

Testing component

Check the resistance value on the component with multimeter as shown below.
Resistance value should be between 160- 180 Ω

You can determine the ohm value by measuring from the red cable at 5th and red cable at 12th position in the small socket (refer wiring diagram in section 12) as shown below figure. Resistance value should be between 160- 180 Ω

8.3. Heater

Heating element (Resistance) is a component which is desingned to regulate temperature of water inside the drum. It has three connections: Phase, notral and ground connections.

Resistance

Technical features

Heater type	Tubular heating element with NTC – sensor	Nominal power	varies
		Resistance	varies
Nominal voltage	230 V	Termal fuse	2 sided

Testing component

Check the resistance value on the component with multimeter as shown below.
Please contact WMCS for nominal measurement values of resistance used in your appliance. Do not forget to provide serial number information of appliance in your inquiry.

8.4. NTC

Component which sends signals to PCB about the water temperature inside the tub. The Resistance (Ohm) value of the NTC decreases as the temperature increases.

NTC

Technical features

Tem (°C)	R min (kΩ)	R max (kΩ)
-10	54.9	62.6
-5	43.0	48.6
0	33.9	38.1
5	27.0	30.1
10	21.6	23.9
15	17.4	19.1
20	14.1	15.4
25	11.5	12.5
30	9.4	10.2
35	7.8	8.3
40	6.4	6.9
45	5.4	5.7

Tem (°C)	R min (kΩ)	R max (kΩ)
50	4.5	4.7
55	3.8	3.9
60	3.2	3.3
6	2.7	2.8
70	2.3	2.4
75	1.9	2.0
80	1.7	1.8
85	1.4	1.5
90	1.2	1.3
95	1.1	1.1
100	0.9	1.0

NTC Resistance vs. NTC Temperature

Testing component

Check the resistance value on the component with multimeter as shown below.

You can determine the ohm value by measuring from the blackcable at 3rd and black cable at 11th position in the small socket (refer wiring diagram in section 12) as shown in below figure. NTC resistance value varies depending on temperature.

8.5. Valve

Valve is an electrical and mechanical component which is designed to take water from the network system into the washine machine. It is operated by PCB card.

Valve

Technical features

Nominal voltage	220-240 V	Rated flow	7 L/min (±15 %)
Nominal power	8 VA	Operating water pressure	0.03 - 1 Mpa
Frequency	50-60 Hz		

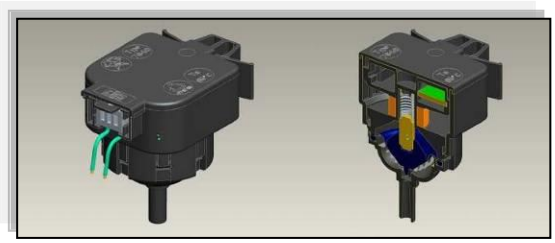
Testing component

Check the resistance value on the component with multimeter as shown below. Valve water flow rate should be between 6 - 8 L/min. Each valve coil resistance values should be between 3.3 - 4.2 kΩ.

You can determine the resistance value of the main wash valve by measuring from the blue cable at 5th and white cable at 15th position or the pre-wash valve by measuring from the black cable at 14th and white cable at 15th position in the large socket (refer wiring diagram in section 12) as shown in below figure. Each valve coil resistance values should be between 3.3 - 4.2 kohm.

8.6. Electronic Pressure Sensor (EPS)*

Electromagnetic field occurs due to movement of pressurized membrane. The spring moves vertically by nucleus due to electromagnetic field. The water level is regulated according to the frequency changes of the spring by electronic card.



EPS

Testing component

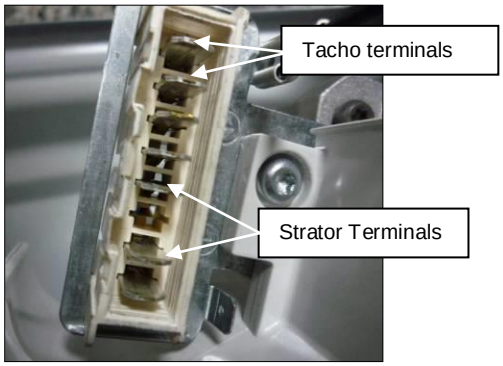
1. Make sure there are no laundry in washing machine, tap is connected and opened, power cord is plugged. Put no detergent in drawer.
2. Bring porgram knob to position 1 (Cotton 90°C program)
3. Press start button.
4. Wait for water intake step to finish. You can recognise it by listening the water sound or slightly opening and observing detergent drawer.
5. As soon as water intake is over turn program knoc to position 0 (Off position)
6. Check water level from door glass. The water level should be just below door glass as seen in the picture below: (There is a %10 tolerance with this level)

8.7. Motor

The washing machine has an asynchronous motor. It is controlled by the PCB. It is essential to check the motor for correct diagnosis and quick servicing. In the below picture, socket points on the motor is shown to measure with multimeter.

Motor

Motor socket terminals



Please contact WMCS department for tacho and stator resistance values of motor component used in your appliance. Do not forget to provide serial number information of appliance in your inquiry.

8.8. Door Lock*

Door lock is activated at the beginning of the program in order to prevent the door from opening. Locking is generated by supplying power to PTC-bimetal, after max 6sec (220V), the bimetal will be warm and ready to close the contacts. Thus the first impulse to the solenoid will allow the contact to close and consequently the slider will be locked by the pin of the sliderlock. The second impulse causes no electrical and mechanical modifications. It can be unlocked by the third impulse; the contact is opened even if the PTC-bimetal remains energized.

Emergency Opening System (PTC-Bimetal) In Case of Lack of Electric Energy

• In case of lack of electric energy during a washing cycle, the PTC-bimetal assembly will cool down and after minimum 60 sec (considering previous power supply of 30 sec min and T=20 °C) the door will be unlocked and thus can be opened.

• In case the door is closed when current comes back, the PTC-bimetal assembly will heat again, the slider lock will lock, the contact will close and the program will continue from where it stopped.

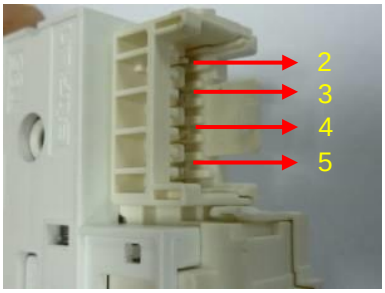
Door lock

Technical features

Nominal voltage	250 V

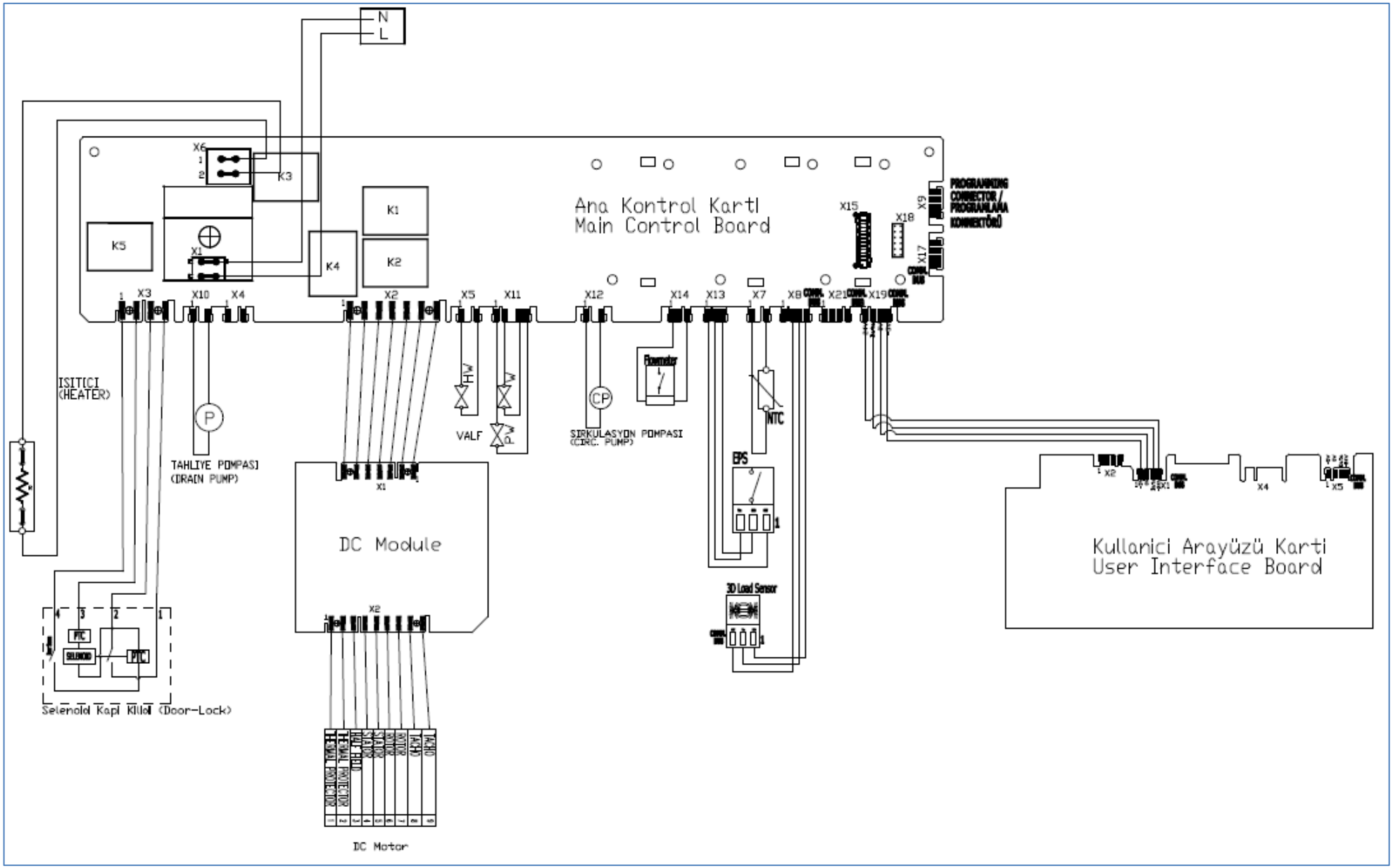
Testing component

Check the resistance value on the component with multi-meter as shown in below figures. Resistance value on the (PTC overload + solenoid) should be 240Ω ±20% at 25 °C. That resistance value can be measured from terminal 3-4 (refer to section12 Wiring Connection Diagram).



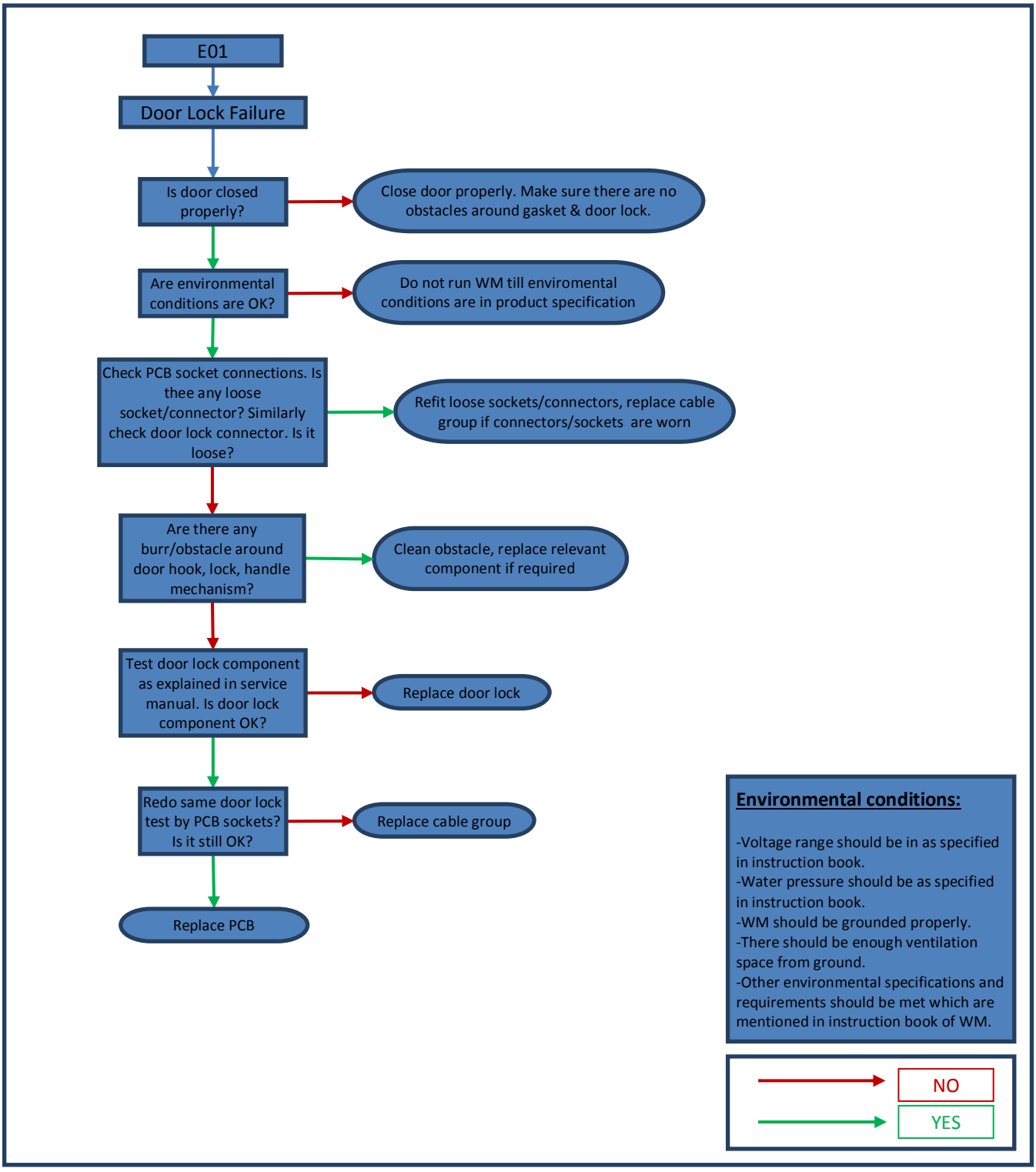
This socket shows the connection between terminal 3-4 (See wiring diagram below). The resistance read from terminal 3-4 is the resistance of PTC overload plus resistance of solenoid.

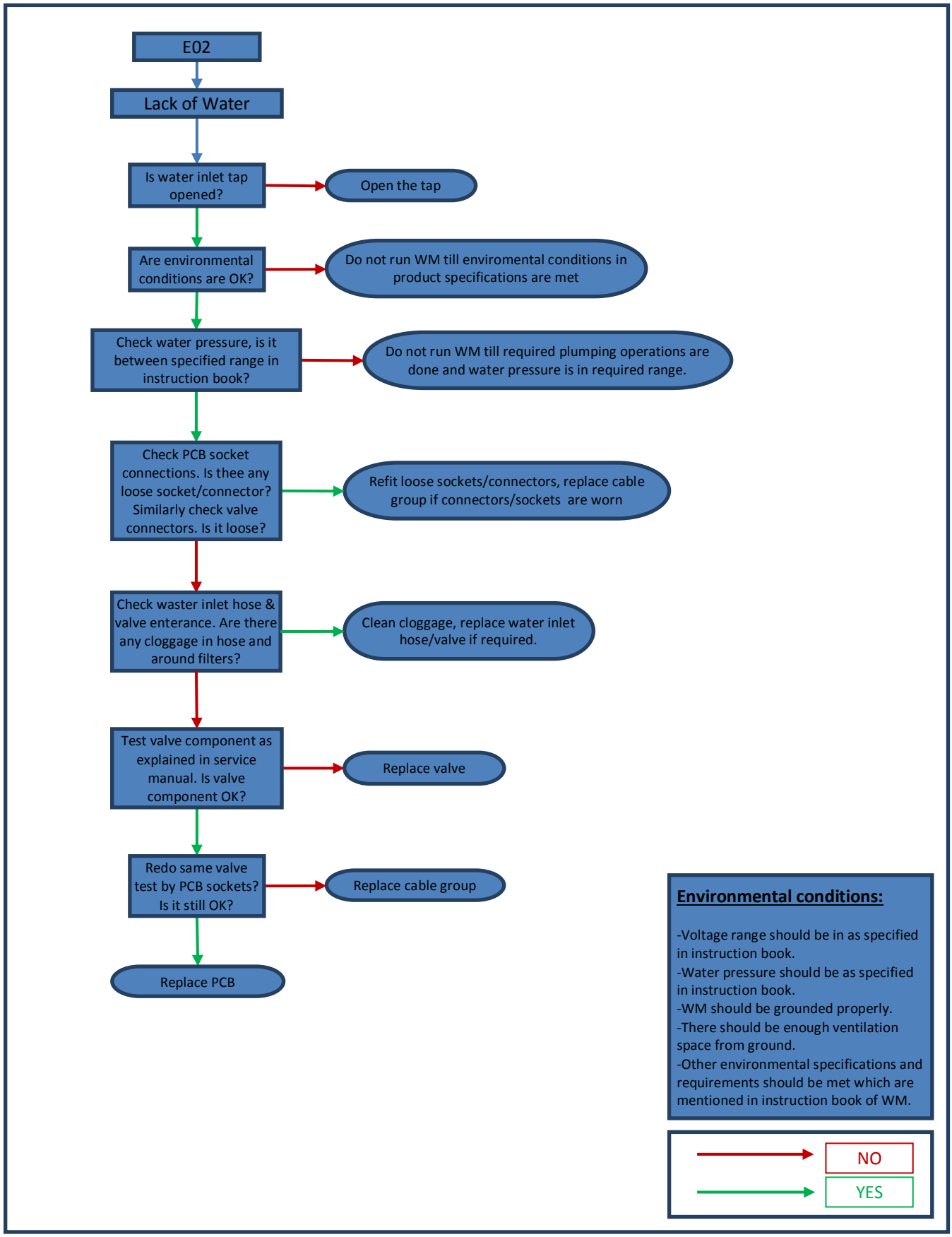
9. Wiring Diagram*

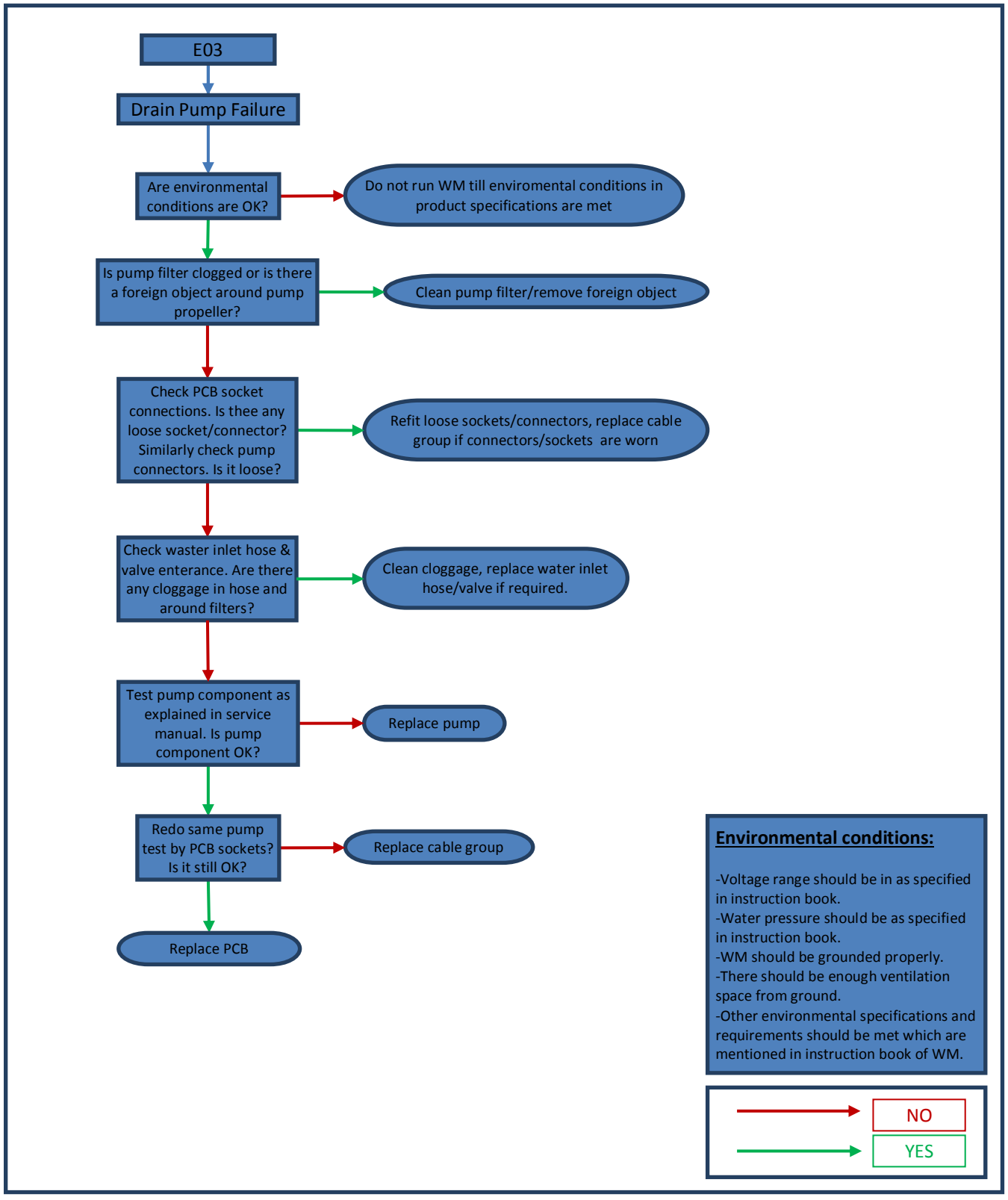


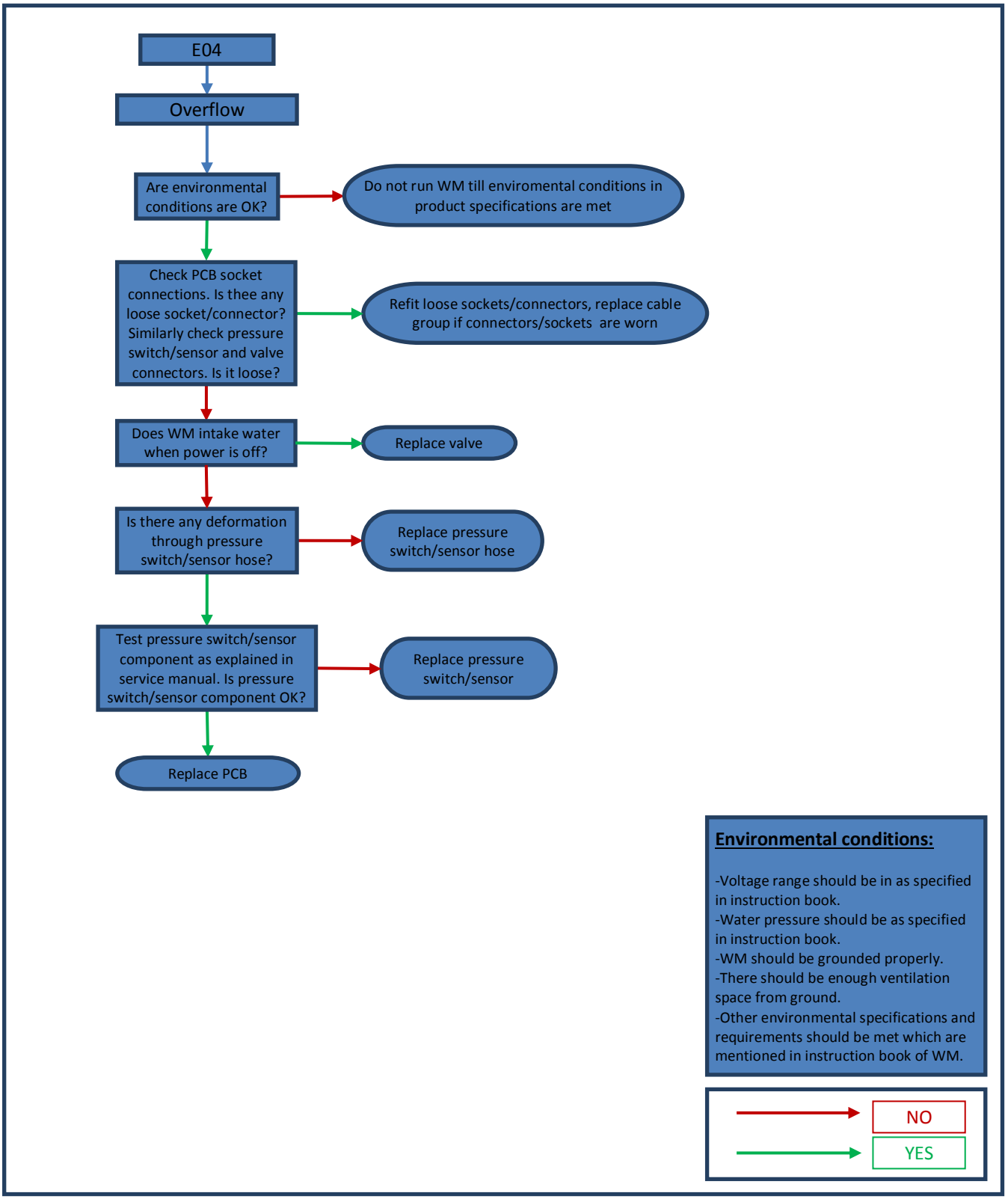
10. Troubleshooting

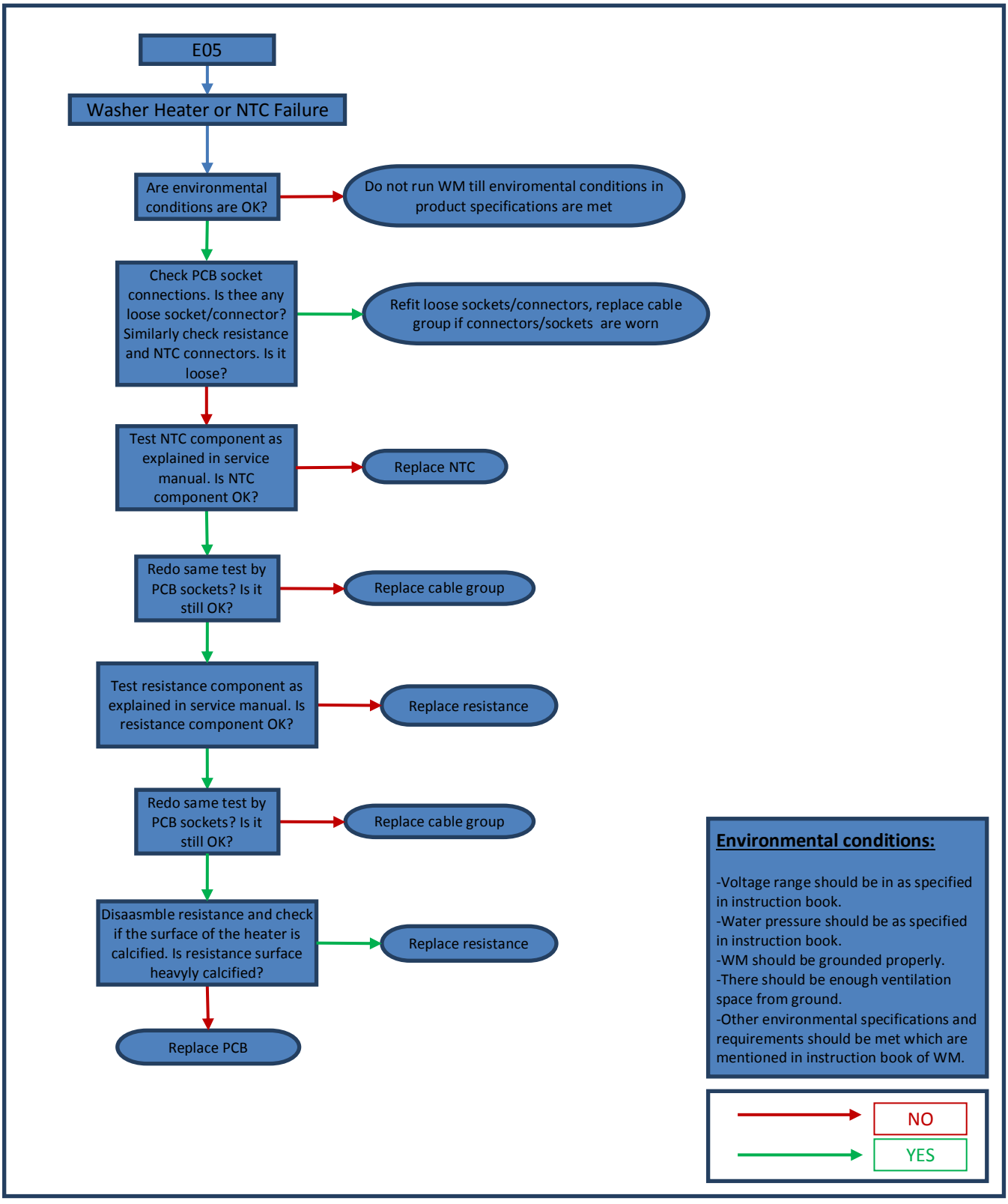
Please apply basic troubleshooting steps described in user manual. If you can not find a solution you should run service autotest and complete all steps. In case of an error encounter please follow the instructions through flowchart related with the error.

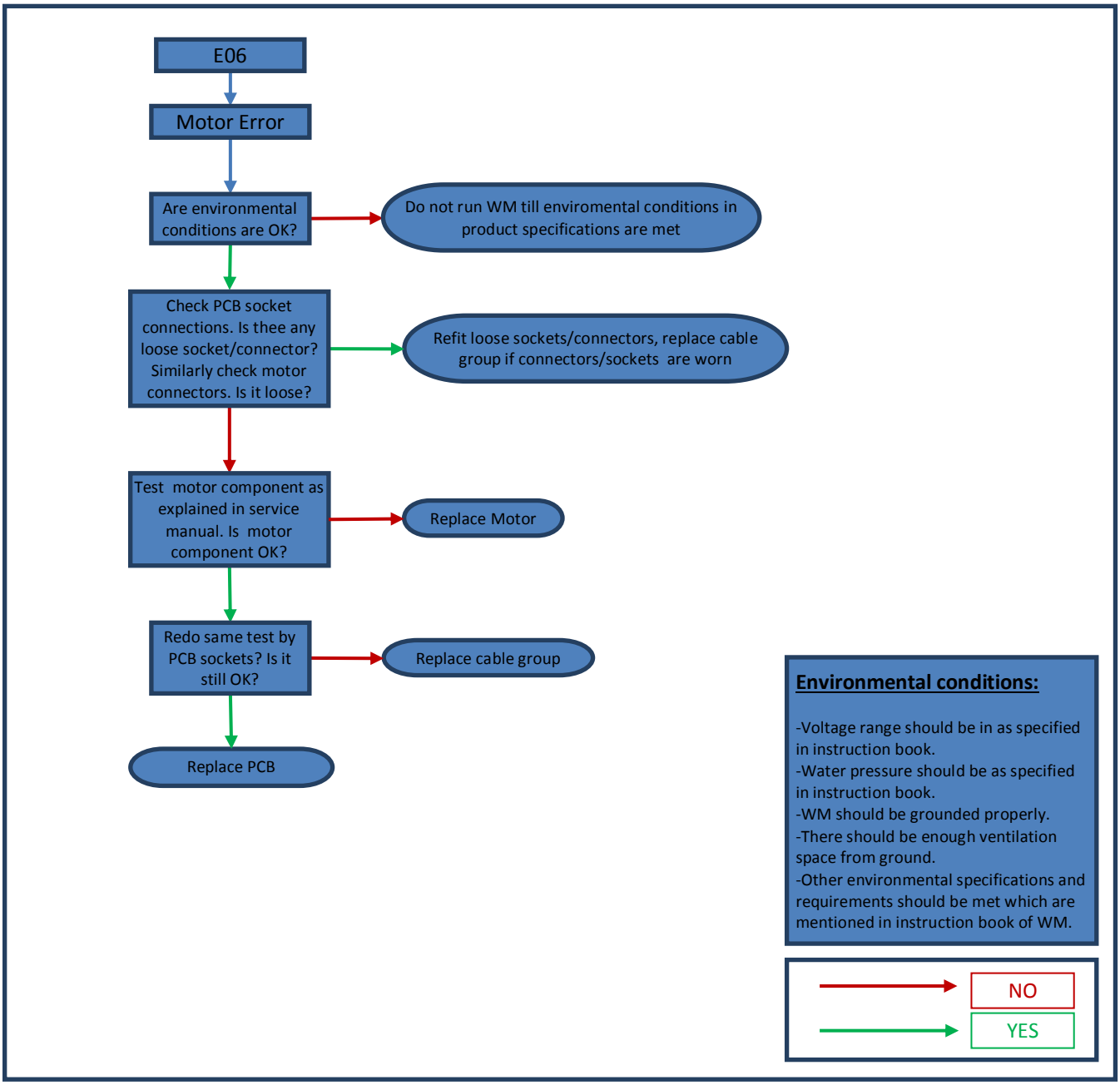


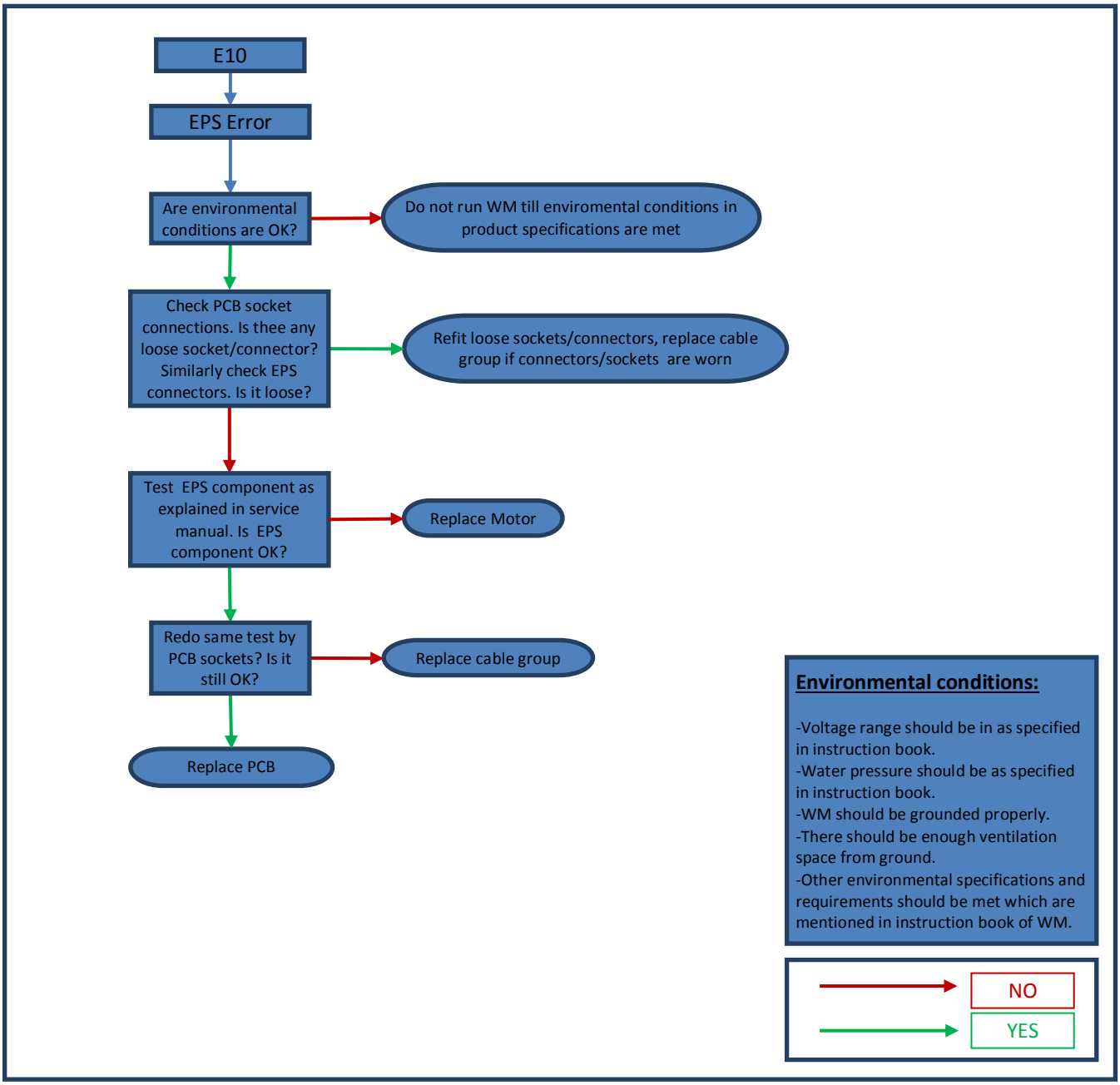

E02
Lack of Water
Is water inlet tap opened?
Open the tap
Are environmental conditions are OK?
Do not run WM till enviromental conditions in product specifications are met
Check water pressure, is it between specified range in instruction book?
Do not run WM till required plumping operations are done and water pressure is in required range.
Check PCB socket connections. Is thee any loose socket/connector? Similarly check valve connectors. Is it loose?
Refit loose sockets/connectors, replace cable group if connectors/sockets are worn
Check waster inlet hose & valve enterance. Are there any cloggage in hose and around filters?
Clean cloggage, replace water inlet hose/valve if required.
Test valve component as explained in service manual. Is valve component OK?
Replace valve
Redo same valve test by PCB sockets? Is it still OK?
Replace cable group
Replace PCB
Environmental conditions:
-Voltage range should be in as specified in instruction book.
-Water pressure should be as specified in instruction book.
-WM should be grounded properly.
-There should be enough ventilation space from ground.
-Other environmental specifications and requirements should be met which are mentioned in instruction book of WM.
NO
YES


E03
Drain Pump Failure
Are environmental conditions are OK?
Do not run WM till enviromental conditions in product specifications are met
Is pump filter clogged or is there a foreign object around pump propeller?
Clean pump filter/remove foreign object
Check PCB socket connections. Is thee any loose socket/connector? Similarly check pump connectors. Is it loose?
Refit loose sockets/connectors, replace cable group if connectors/sockets are worn
Check waster inlet hose & valve enterance. Are there any cloggage in hose and around filters?
Clean cloggage, replace water inlet hose/valve if required.
Test pump component as explained in service manual. Is pump component OK?
Replace pump
Redo same pump test by PCB sockets? Is it still OK?
Replace cable group
Replace PCB
Environmental conditions:
-Voltage range should be in as specified in instruction book.
-Water pressure should be as specified in instruction book.
-WM should be grounded properly.
-There should be enough ventilation space from ground.
-Other environmental specifications and requirements should be met which are mentioned in instruction book of WM.
NO
YES


E04
Overflow
Are environmental conditions are OK?
Do not run WM till enviromental conditions in product specifications are met
Check PCB socket connections. Is thee any loose socket/connector? Similarly check pressure switch/sensor and valve connectors. Is it loose?
Refit loose sockets/connectors, replace cable group if connectors/sockets are worn
Does WM intake water when power is off?
Replace valve
Is there any deformation through pressure switch/sensor hose?
Replace pressure switch/sensor hose
Test pressure switch/sensor component as explained in service manual. Is pressure switch/sensor component OK?
Replace pressure switch/sensor
Replace PCB
Environmental conditions:
-Voltage range should be in as specified in instruction book.
-Water pressure should be as specified in instruction book.
-WM should be grounded properly.
-There should be enough ventilation space from ground.
-Other environmental specifications and requirements should be met which are mentioned in instruction book of WM.
NO
YES


E05
Washer Heater or NTC Failure
Are environmental conditions are OK?
Do not run WM till enviromental conditions in product specifications are met
Check PCB socket connections. Is thee any loose socket/connector? Similarly check resistance and NTC connectors. Is it loose?
Refit loose sockets/connectors, replace cable group if connectors/sockets are worn
Test NTC component as explained in service manual. Is NTC component OK?
Replace NTC
Redo same test by PCB sockets? Is it still OK?
Replace cable group
Test resistance component as explained in service manual. Is resistance component OK?
Replace resistance
Redo same test by PCB sockets? Is it still OK?
Replace cable group
Disaasmble resistance and check if the surface of the heater is calcified. Is resistance surface heavyly calcified?
Replace resistance
Replace PCB
Environmental conditions:
-Voltage range should be in as specified in instruction book.
-Water pressure should be as specified in instruction book.
-WM should be grounded properly.
-There should be enough ventilation space from ground.
-Other environmental specifications and requirements should be met which are mentioned in instruction book of WM.
NO
YES


E06
Motor Error
Are environmental conditions are OK?
Do not run WM till enviromental conditions in product specifications are met
Check PCB socket connections. Is thee any loose socket/connector? Similarly check motor connectors. Is it loose?
Refit loose sockets/connectors, replace cable group if connectors/sockets are worn
Test motor component as explained in service manual. Is motor component OK?
Replace Motor
Redo same test by PCB sockets? Is it still OK?
Replace cable group
Replace PCB
Environmental conditions:
-Voltage range should be in as specified in instruction book.
-Water pressure should be as specified in instruction book.
-WM should be grounded properly.
-There should be enough ventilation space from ground.
-Other environmental specifications and requirements should be met which are mentioned in instruction book of WM.
NO
YES


E10
EPS Error
Are environmental conditions are OK?
Do not run WM till enviromental conditions in product specifications are met
Check PCB socket connections. Is thee any loose socket/connector? Similarly check EPS connectors. Is it loose?
Refit loose sockets/connectors, replace cable group if connectors/sockets are worn
Test EPS component as explained in service manual. Is EPS component OK?
Replace Motor
Redo same test by PCB sockets? Is it still OK?
Replace cable group
Replace PCB
Environmental conditions:
-Voltage range should be in as specified in instruction book.
-Water pressure should be as specified in instruction book.
-WM should be grounded properly.
-There should be enough ventilation space from ground.
-Other environmental specifications and requirements should be met which are mentioned in instruction book of WM.
NO
YES