OCEAN®

WASHER/DRYER

SERVICE MANUAL

Model

OWDI 9614 WT S

Specifications are subject to possible modifications without prior notice.
Les présentes spécifications sont susceptibles d'être modifiées sans préavis.
Las especificaciones estàn sujetas a cambios sin previo aviso.

Pictures are only sketches which may be different from your equipment.
Les images sont seulement de croquis qui peuvent être différentes du design de votre équipement.
Las imágenes son sólo los bosquejos que pueden ser diferentes de su equipo.

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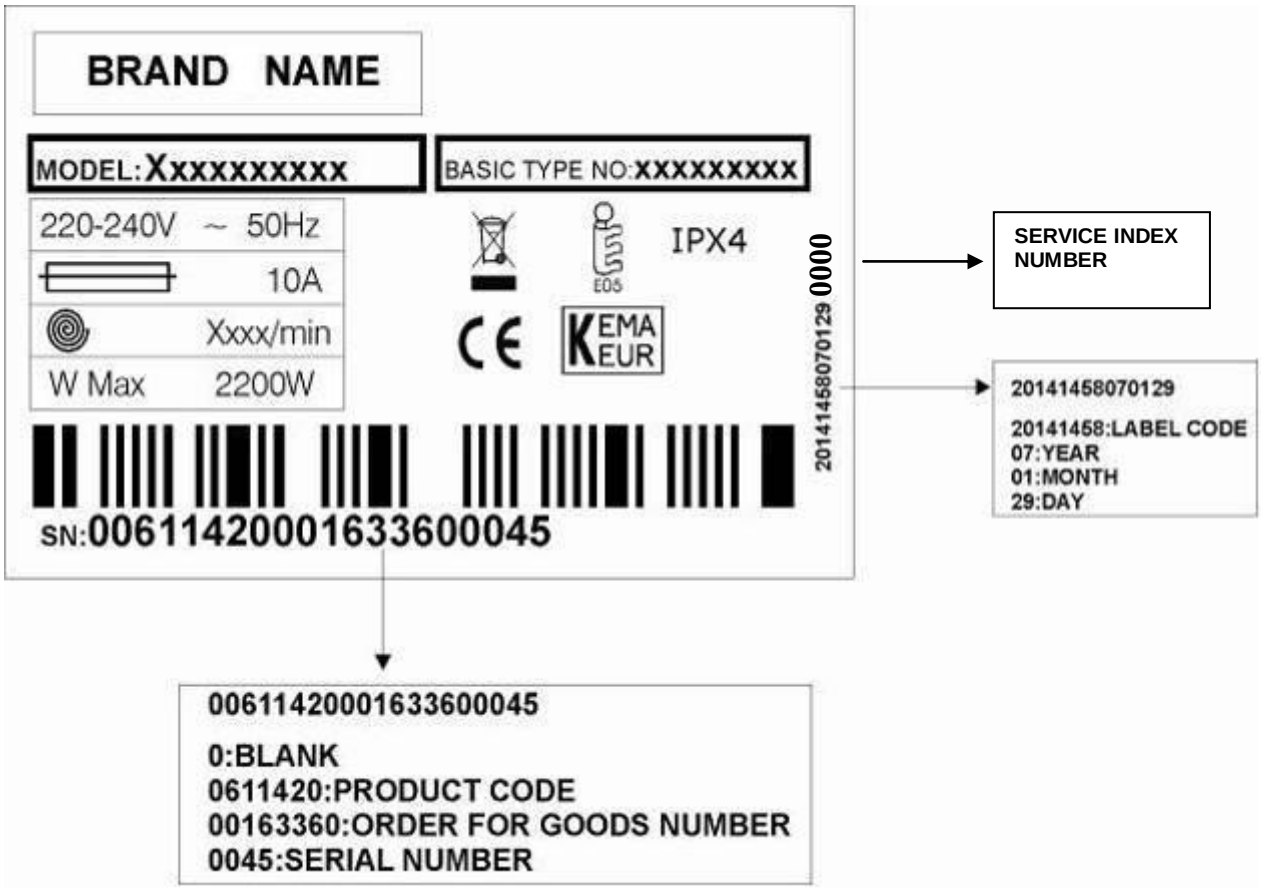
1. Specifications

1.1. Product Specifications

		60 lt	61 lt	62 lt	61 lt BLDC	62 lt BLDC
Product Type		Front Loader				
Max Was Load Capacity		8 kg	9 kg	10 kg	9 kg	10 kg
Max Dry Load Capacity		6 kg				
Max Spin Speed (r/min)		1400 rpm				
Washing Efficiency		A				
Control Panel		LED display				
Wash Programs		15 settings				
Dimensions	Height	84,5 cm				
	Width	59,7 cm				
	Depth	58,2 cm				
Other Features		Child Lock				
		Delay Time				

1.2. Name Plate

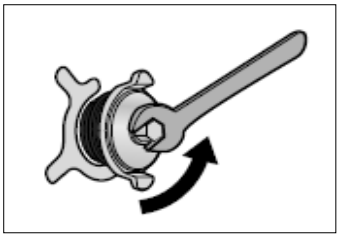


2. Installation Instructions

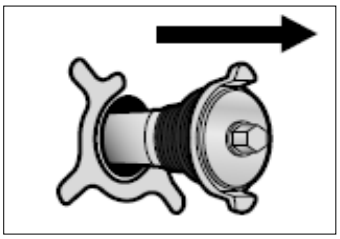
2.1. Moving and Installing

2.1.1. Removal of Transportation Screw

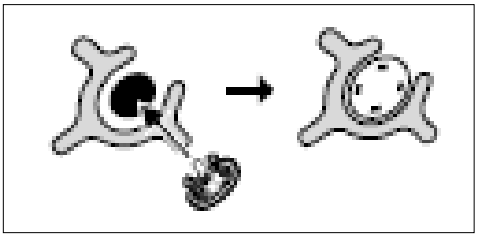
1. Transportation screws, which are located at the back side of the machine, must be removed before running the machine.
2. Loosen the screws by turning them anticlockwise with a suitable spanner.



3. Pull out the screws and rubber washers.



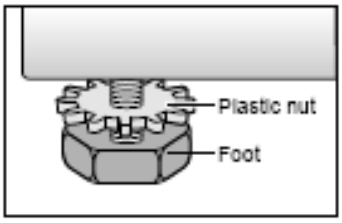
4. The holes where the transport screws have been removed should be covered with the plastic transport caps found in the accessories bag.



5. The transportation screws that have been removed from the machine must be re-used in any future transporting of the machine.

2.1.2. Foot Adjustment

1. Do not install machine on rugs or similar surfaces.
2. For machine to work silently and without any vibration, it should be installed on a flat, non-slippery firm surface. Any suspended floor must be suitably strengthened.
3. You can adjust the level of machine using its feet.
4. First, loosen the plastic adjustment nut away from the cabinet base.
5. Change the level by adjusting the feet upwards or downwards.
6. After level has been reached, tighten the plastic adjustment nut again by rotating it upwards against the base of the cabinet.
7. Never put cartons, wooden blocks or similar materials under the machine to balance irregularities of the floor.



2.1.3. Electrical Connection

1. Washing machine requires a 50Hz supply of 220-240Volts.
2. A special earthed plug has been attached to the supply cord of washing machine. This plug must be fitted to an earthed socket. The fuse value fitted to this plug should be 13 amps. If you have any doubts about electrical supply, consult a qualified electrician.

THIS APPLIANCE MUST BE EARTHED.
Insert the machine's plug to a grounded socket which you can easily reach.

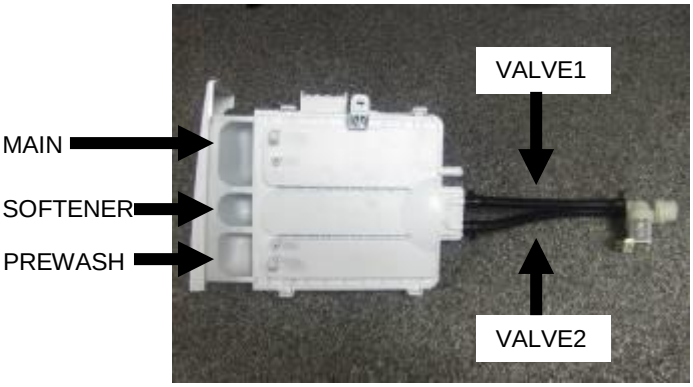
2.1.4. Water Supply Connection

1. Washing machine is supplied with a single (cold) water inlet.
2. To prevent leakage from the connection joints, a rubber washer is included in the hose packing. Fit this washer at the end of water inlet hose on the tap side.
3. Connect the hose to the water inlet valve. Tighten the plastic connector by hand. Please call a qualified plumber if you are unsure about this.
4. Water pressure of 0,1-1 MPa from tap will enable machine to work more efficiently.(0,1 MPa pressure means water flow of more than 8 litres in 1 minute from a fully opened tap)
5. After connection is complete, check for leakage by turning on tap completely.
6. Make sure that water inlet hoses can not become folded, damaged, stretched or crushed when the washing machine is in its final position.
7. Mount the water inlet hose to a ¾" threaded water tap.

2.1.5. Drain Connection

1. Make sure that water inlet hoses are not folded, twisted, crushed or stretched.
2. The drain hose should be mounted at a minimum height of 60 cm, and a maximum height of 100 cm from the floor.
3. The end of the drain hose can be connected directly to a drainage stand-pipe or alternatively to a specific connection point designed for that purpose on the waste outlet of a sink unit.
4. Do not extend the drain hose or guarantee will be invalidated.

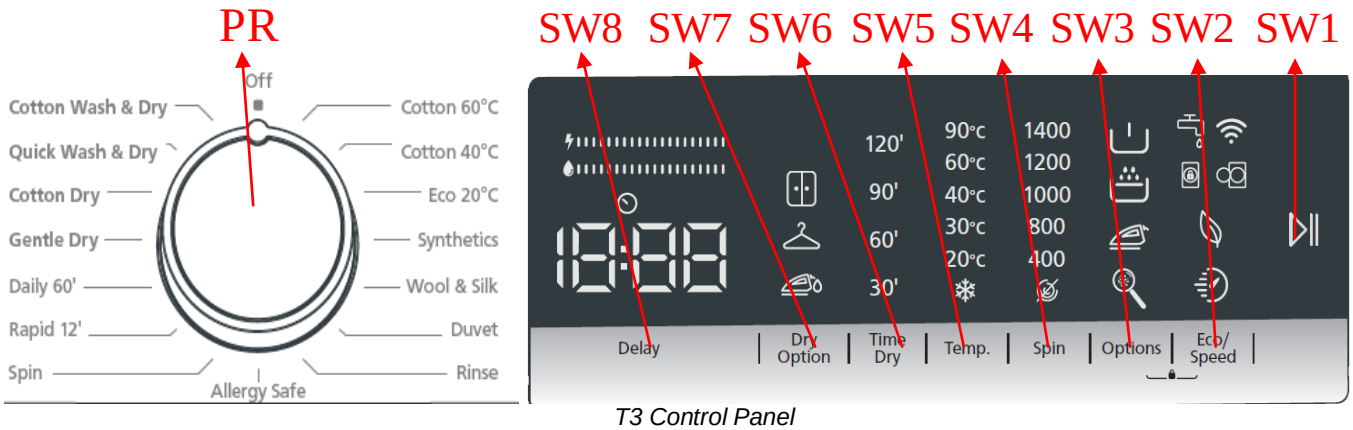
2.2. Detergent Box Group



PREWASH	= WATER ENTRY VALVE 1
MAIN	= WATER ENTRY VALVE 2
SOFTENER	= WATER ENTRY VALVE 1 + VALVE 2

3. Operating Instructions

3.1. LCD Screen, Function Buttons & Knobs



T3 Control Panel

T3 Jog Dial Control Panel

PR	Program Selector with ON/OFF
SW1	Start / Pause
SW2	Options 1
SW3	Options 2
SW4	Spin Speed Selection
SW5	Temperature Selection
SW6	Time Dry Option Selection
SW7	Dry Option Selection
SW8	Delay Function
LD1	Wifi Led (if wifi is selected) / Pump Failure Led (if wifi is not selected on variant)
LD2	Lack Of Water Led
LD3	Door Open Led
LD4	Door Closed Led
LD5	Eco Mode Led
LD6	Speed Mode Led
LD7 – LD10	Options Led
LD11 - LD16	Spin Speed Led
LD17 - LD22	Temperature Led
LD23 - LD26	Time Dry Led
LD27 - LD30	Dry Option Led
LD31 - LD34	Eco Time Energy Leds
LD35 - LD38	Eco Time Water Leds
LD39	Delay Timer Led
D3-D3	7-segment display

3.2. Program List

KNOB POSITION	PROGRAM
1	Cotton 60°C
2	Cotton 40°C
3	Eco 20°C
4	Synthetics
5	Wool & Silk
6	Duvet
7	Rinse
8	Allergy Safe
9	Spin
10	Rapid 15'/12'**
11	Daily Fast 60' 60°C
12	Gentle Dry
13	Cotton Dry
14	Quick Wash & Dry
15	Cotton Wash & Dry
16	OFF

***Rapid 15 is available for without twinjet model, Rapid 12 is available for with twinjet model.*

3.3.
Child Lock

Activation

1. Press the SW2 and SW3 buttons simultaneously for 3 sec.

Deactivation

1. Press the SW2 and SW3 buttons simulaneously for 3 sec.

Child lock during selection:

Machine does not respond to any pressing of buttons or changing position of program knob. CL at 7 segment display will make fast blink for 2 sec to
indicate child lock is activated.

Child lock during the program:

Machine does not respond to any pressing of buttons or changing position of program knob. “CL” is visualized on display for 2 sec to indicate child lock activation with tone D buzzer in models having buzzer option. After 2 sec “CL” indication if fixed off and remaining time is visualized on display.

In end condition

When cycle is finished child lock is automatically deactivated. It is not possible to activate child lock during End mode.

In Error Mode

Child lock will be automatically deactivated when error is detected

Child lock during delay mode:

Child lock can be activated / deactivated during delay mode. If child lock is active during delay mode, it will be kept locked until the end of washing (unless user deactivates by pressing SW2 and SW3 buttons simultaneously for 3 sec.)

4. Test Mode

4.1. Autotest

<u> This test is for quick checking of the product. You can not see the failure codes.</u>*

1. Set program knob at position 3
2. Push SW4 button

3. Keeping SW4 button pushed, turn program knob to position 2

4. After 3 sec, door will be locked and machine enters autotest mode.
5. Release SW4 button.

The test steps are as below;

Step1: The pump is activated for 3 seconds (if pump connettor is disconnected it should shows pump error screen (E03) on display) and there is EPS check , the frequency value should be between the 46.04 Hz and 43.40 Hz. It checks the EPS and if it is OK it continues the autotest; ifit is NOK then it should give E10 ERROR & cancels the autotest (goes to the selection mode). Also if any frequency can not be detected, then it means there is problem with connecion or EPS, so it gives E10 which is EPS error and cancels the autotest.

Step2: The motor ramps to max spin for 20 seconds. While its speed rising up to the maximum speed the EV1 (prewash valve) is activated for 5 seconds and then the EV2 (wash valve) is activated for 5 seconds.

Step3: The motor reduces speed to stop (depends on the motor stop time) for 5 seconds. While it is slowing down it activates EV1 and EV2 valve, concurrently.

Step4: The motor turns to right. Also, dryer valve is activated between sec46-50 for 5 sec.

Step5: The motor turns to left for 5 seconds.

Step6: Twin Jet will be activated for 3 sec (For twinjet models only)

Step7: The EV1 and EV2 are activated concurrently until it reaches pressure sensor's first level frequency (Hz) for 5 seconds.

Step8: Software will detect NTC's resistance value and will check if the temperature is between 5°C < Tdetected < 40°C . If it is inside the range, heating step will be done. If temperature value is outside the range, then it means NTC is detecting the temperature in a wrong way and heating step will be skipped. Additionally if NTC connector disconnected it should shows NTC failure code(E05) on display.

Step9: Software will detect NTC's resistance value and will check if the temperature is between 0°C < Tdetected < 50°C . If it is inside the range, autotest continues. If temperature value is outside the range, then it means NTC is detecting the temperature in a wrong way , autotest is canceled and error is released. (E18)

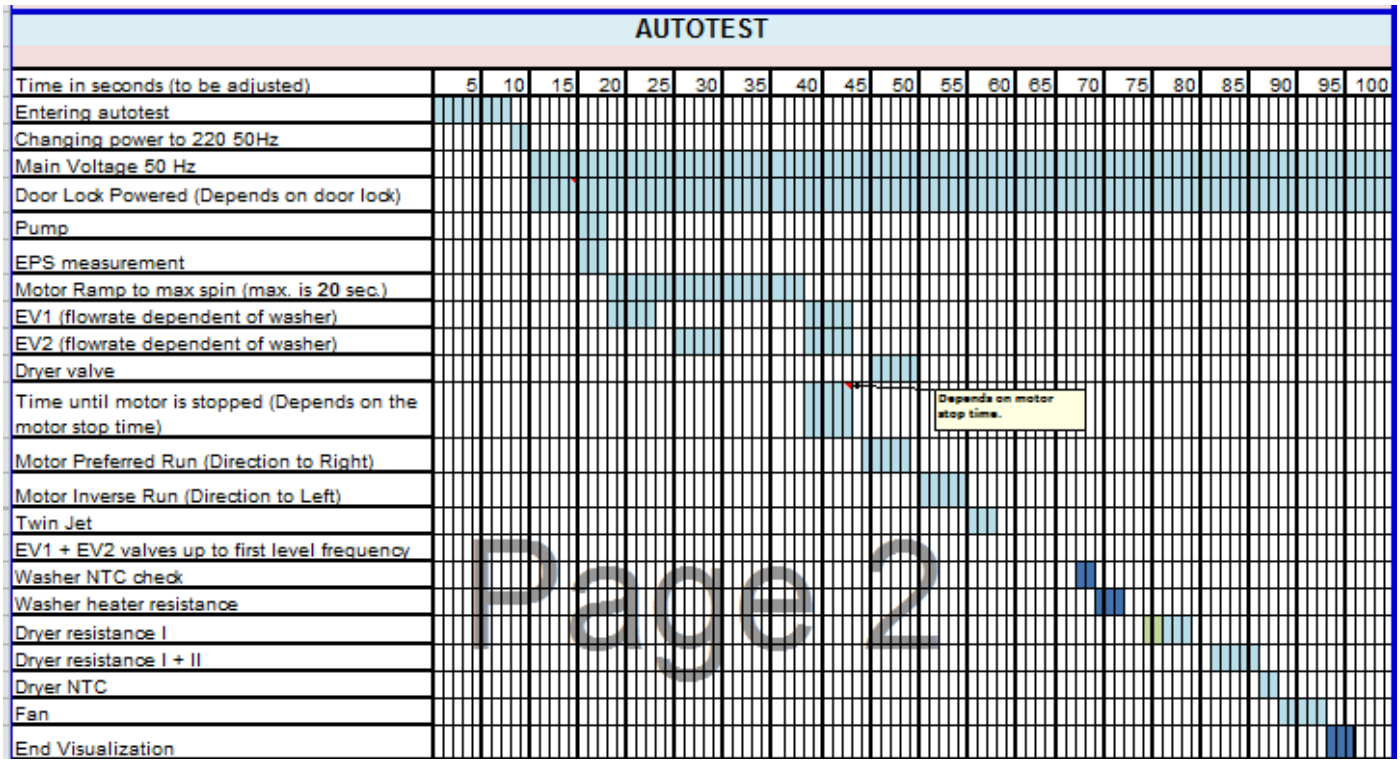
Step10: Dryer resistance I and I&II are checked for 5sec in each.

Step11: Dryer NTC is checked for 2sec.

Step12: Fan is activated for 5 sec.

Autotest ends and "End" screen is visualized.

With TJ models;



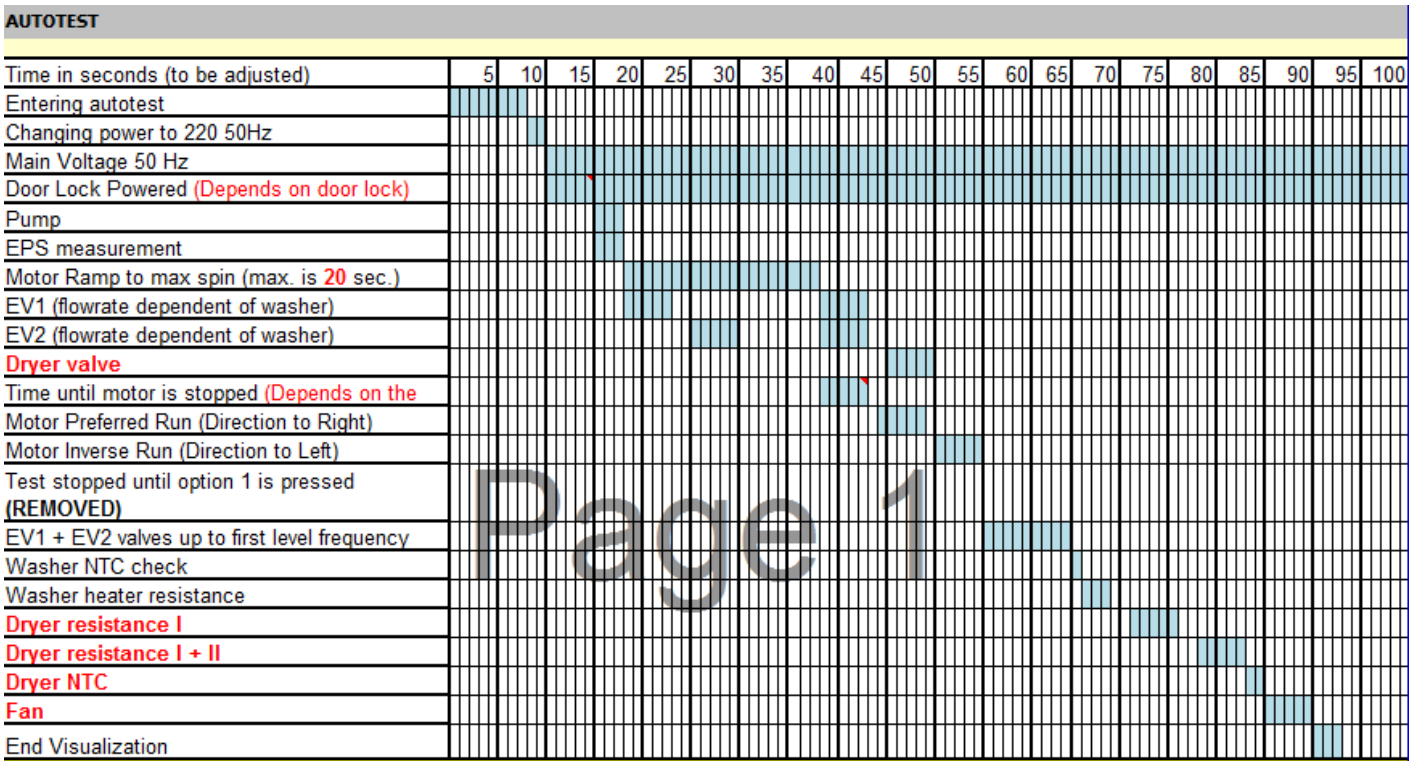
Washer Ntc detection : Software will detect NTC's resistance value and will check if the temperature is between 5°C < Tdetected < 40°C. If it is inside the range, heating step will be done.
If temperature value is outside the range, then it means NTC is detecting the temperature in a wrong way and heating step will be skipped. Additionally if NTC connector disconnected it should shows NTC failure code(E05) on display.

EPS measurement: It checks the EPS and if it OK, it continues the autotest; if it is NOK then cancel the Autotest and go to the selection mode. Also if any frequency can not be detected, then it means there is problem with connecion or EPS, so it gives E10 which is EPS error and cancels the autotest & goes to the selection mode.

Dryer Ntc detection : Software will detect NTC's resistance value and will check if the temperature is between **0°C** < Tdetected < **50°C**. If it is inside the range, heating step will be done.

If temperature value is outside the range, then it means NTC is detecting the temperature in a wrong way, **autotest is canceled and error is released. (E18)**

Without TJ models;



5. Service Mode

5.1. Service Autotest

End users can only see E1-E2-E3-E4. During service autotest, other failures can be seen.

1. To activate service autotest mode in touch models, set program knob at position 3, push SW3 button. Keeping SW3 button pushed, turn program knob to position 2.


2. After 3 sec, door will be locked, and machine enters service autotest mode. Release SW3 button.
In T0 "SA" will be visualized on LCD. In rest of the models "SAU" will be visualized on LCD.

	SELECTOR POSITION 1	SELECTOR POSITION 2	SELECTOR POSITION 3	SELECTOR POSITION 4	SELECTOR POSITION 5	SELECTOR POSITION 6
	Result	Result	Result	Result	Result	Result
	WASHER HEATER ON	PUMP ON	DRYER HEATER 1 & FAN ON	DRYER HEATER 2 & FAN ON	RAPID 15' Program	Drying program
Comments:	When entering the service test, door will be locked. If any error is detected **E01** is visualized. Then 3D will be checked. If any error is detected **E12** is visualized.					TEST IS OVER Door will be unlocked, machine will go to END state.

The test steps are as below ;

Step 1 :

Selector position 1 will be “washer heater on”
Before heating it should take water till first level frequency then start heating.
Heater will be on max. 8 minutes. After 8 minutes if the temp. Doesn't change more than 2ºC, it will release ntc failure. (E05). Or if the ntc connection is broken then it should give again E05 ntc failure. At the end of heating, "sau" visualization should make slow blink to indicate that the step is over.
*During this step if eps detects high water level, overflow algorithm is applied and e04 is released.
Note : if user changes the selector position, machine will do what is defined for the new selected position.

Step 2 :

Selector position 2 will be “pump on”

Temperature will be measured, if it is higher than 50°c, it should take 80sec. Cooling water , and then make "drain+ 5sec.) If pump error is detected e03 will be released.
At the end of pump activation, "sau" visualization should make slow blink to indicate that the step is over.

Step 3 :

Selector position 3 will be "dryer heater 1 & fan on "
At the beginning of the step, dryer ntc should detect and record the temperature.
Dryer heator 1 and fan should be activated for 3 min. At the end of 3 min dryer ntc should again detect the temperature, if $\Delta t < 10°c$, it will release e14 failure.
If $\Delta t \geq 10°c$, "sau" visualization should make slow blink to indicate that the step is over.

Step 4 :

Selector position 4 will be "dryer heater 2 & fan on "
At the beginning of the step, dryer ntc should detect and record the temperature.
Dryer heator 2 and fan should be activated for 3 min. At the end of 3 min dryer ntc should again detect the temperature, if $\Delta t < 10°c$, it will release e14 failure.
If $\Delta t \geq 10°c$, "sau" visualization should make slow blink to indicate that the step is over.

Step 5 :

Selector position 5 will be " rapid 15' "
So machine will make exactly the same algorithm of rapid 15'.
So, time for selector position 5 is 12 minutes.
During rapid 15 program if eps detects high water level, overflow algorithm is applied and e04 is released.

Step 6 :

Selector position 6 will be "drying 5" step.
Machine will make below algorithm;
So, time for selector position 6 is 5 minutes.

Phase		Function	Heator 1	Heator 2	Fan	Valve	Pump	Service Autotest
FILLING	1	Filling				Time PW		3 sec filling, NM Dryer valve: OFF Fan: OFF Pump: OFF Heator I & II: OFF
MAIN HEATING	2	Drying	A	A	A	A	A	WD1, 5 min. Heator 1: Continuous ON Heator 2: Becomes OFF when temp. increases to 130°C, and becomes ON when temp. decreases to 120°C. Fan: Continuous ON Valve: Continuous ON Pump: Continuous ON

At the end of drying 5, "end" is visualized and door is unlocked. During test pressing other buttons makes no change.
During service mode if any failure is detected error code is shown in 7 segement display.
At the end of drying the door will be unlocked and machine will go to end mode.
7-segment display 1, 2, 3 :

5.2. Failure Codes

Error Indication	Error Number	Indication For User	Indication For Service
		Yes/No	Yes/No
Door is not locked	E01	Yes	Yes
Door is unlocked during programme	E01	Yes	Yes
Lack of water	E02	Yes	Yes
Pump failure	E03	Yes	Yes
Overflow	E04	Yes	Yes
NTC or Heater Failure	E05	No	Yes
Motor Failure - 1 (Tachometer open-short circuit or motor connector is disconnected)	E06	No	Yes
Configuration Failure	E07	No	Yes
Motor Triac Failure	E08	No	Yes
Voltage Error	E09	Yes	Yes
Electronic Pressure Sensor	E10	No	Yes
Dryer Card Communication Error	E11	No	Yes
3D Communication Error	E12	No	Yes
LCD Communication Error	E13	No	No
Dryer Resistance Failure	E14	No	Yes
Twinjet Failure	E15	No	No
High Temperature Error	E16	No	Yes
Flowmeter Failure	E17	No	Yes
Dryer NTC Failure	E18	No	Yes
BLDC Failure	E19	No	Yes
Pyrojet Failure	E20	No	Yes
Detergent Dosage Pump Failure	E21	No	Yes
Softener Dosage Pump Failure	E22	No	Yes
Communication Failure Between PCB and BLDC Card	E23	No	Yes
Wrong LCD Software	E50	No	Yes
Wrong BLDC Software	E51	No	Yes

*Some of the error codes can not be seen based on changing the product types

6. Troubleshooting Guide

All repairs which must be done on the machine should be done by authorized agents only. When a repair is required for machine or you are unable to eliminate the failure with the help of the information given below:

- Unplug the machine.
- Close the water tap.

FAILURE	PROBABLE CAUSE	METHODS OF ELIMINATION
Machine does not operate.	It is unplugged.	Insert the plug into the socket.
	Fuse is defective.	Change fuse.
	Start / Pause button has not been pressed.	Press the start / pause button.
	The program knob is in 0 (off) status.	Bring the program knob on the desired status.
	The door is not shut properly.	Shut the door properly. You should hear the click.
	Child lock is active.	See page 9.
Machine does not receive water.	Water tap is closed.	Open water tap.
	The water inlet hose may be bent.	Check the water inlet hose.
	The water inlet hose is obstructed.	Clean the filters of water inlet hose.
	The water inlet filter is obstructed.	Clean the valve inlet filters.
	The door is not shut properly.	Shut the door properly. You should hear the click.
Machine is not draining water.	The drain hose is obstructed or bent.	Check the drain hose.
	The pump filter is obstructed.	Clean the pump filter.
	The clothes are not placed inside the machine in a well-balanced manner.	Spread the clothes inside the machine in an orderly and well-balanced manner.
Machine is vibrating.	The feet of machine are not adjusted.	Adjust the feet.
	Transportation screws are not removed.	Remove transportation screws.
	There is a small amount of clothes in the device.	It does not prevent operation of the machine.
	Excessive amount of clothes are filled in the machine or the clothes are not placed in a well-balanced manner.	Do not exceed the recommended quantity of clothes and spared clothes in the machine in a well-balanced manner.

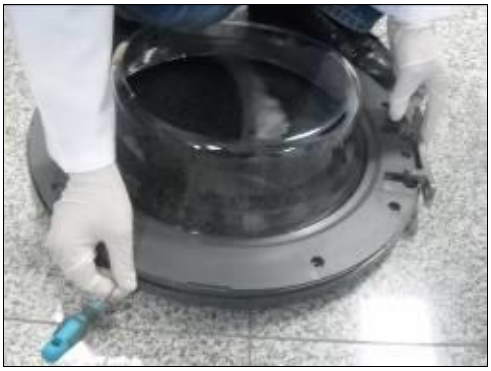
FAILURE	PROBABLE CAUSE	METHODS OF ELIMINATION
Excessive foam in the detergent drawer	Too much detergent has been used.	Press the start/pause button. In order to stop the foam, dilute one table-spoon of softener in half liter of water and pour it in the detergent drawer. Press the start/pause button after 5-10 minutes. Arrange the amount of the detergent properly in the next washing process.
	Wrong detergent has been used.	Use only the detergents produced for full automatic machines.
The washing result is bad.	Laundry too dirty for the program you have selected.	Select a suitable program.
	The amount of detergent used is not sufficient.	Use more detergent according to the detergent.
The washing result is not good.	Clothes exceeding the maximum capacity has been filled in machine.	Put the clothes in machine in a manner not to exceed its maximum capacity.
	Water may be hard.	Use the amount of detergent according to the declaration of the detergent producer.
	Distribution of the clothes in machine is not well-balanced.	Spread the clothes inside the machine in an orderly and well-balanced manner.
The water is seen in the drum during washing.	No failure. The water is at the lower part of the drum.	
There are residues of detergent on the clothes.	The pieces of some detergents which do not dissolve in water may stick to clothes as white stains.	By calibrating machine for “Rinsing” program, make an additional rinsing or eliminate the stains After drying with the help of a brush.
There are grey stains on the clothes.	These stains may be caused by oil, cream or ointment.	In the next washing operation, use the maximum detergent amount declared by the detergent producer.
The spinning process is not done or starts with delay.	No failure. The unbalanced load control works in that way.	The unbalanced load control system will try to distribute clothes in a homogenous manner. After clothes are distributed, passage to spinning process will be realized. In the next washing process, place clothes into the machine in a well-balanced manner.

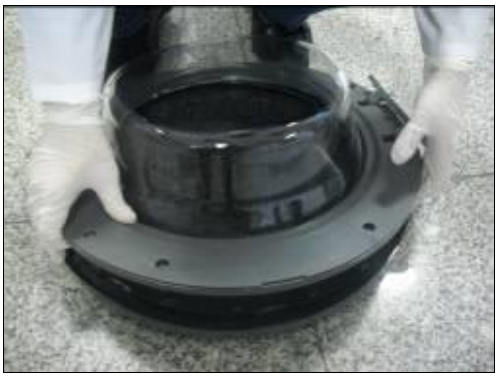
7. Disassembly and Assembly Instructions

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.

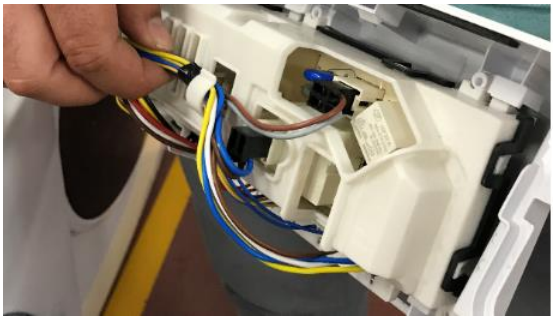
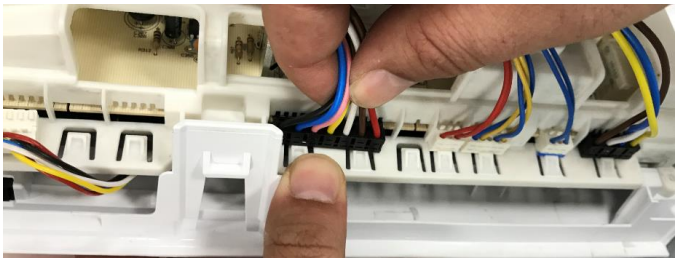
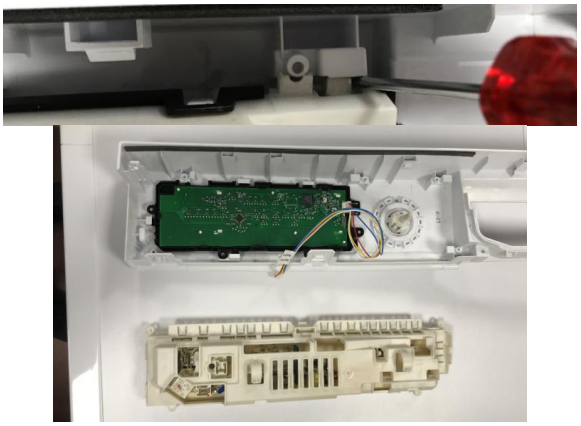
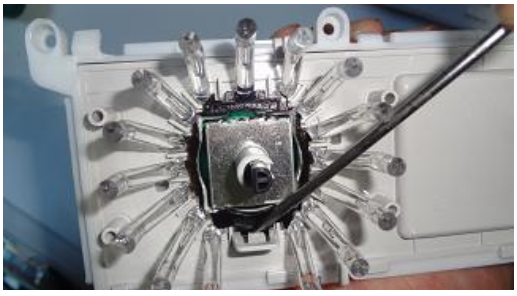
7.3 Spring Wire

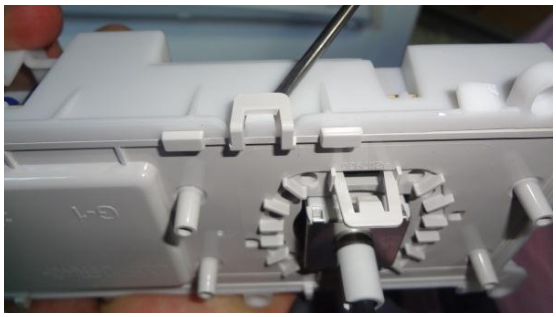
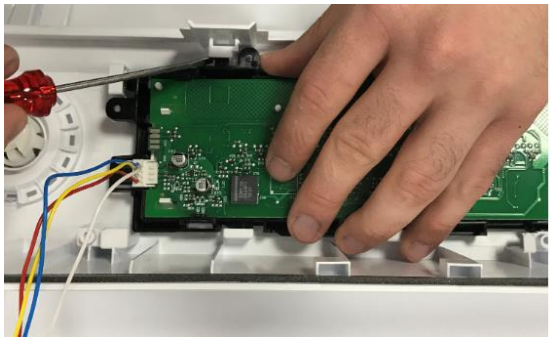
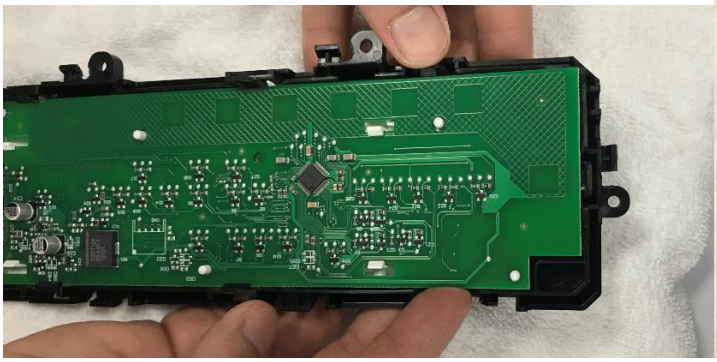
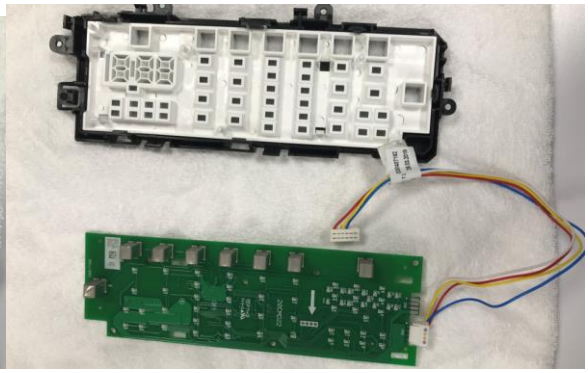
1		**2**	
	First remove the spring wire fixing the tub bellows seal by using the small size screw driver. Pull the tub bellows seal.		Remove the tub bellows seal-body fixing spring.

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 & Electronic Card

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		Release the cable group as shown in the picture.
5		6	
	Remove the cable group as it is shown in the picture.		Remove electronic card cover as it is shown in the picture by using small screw driver.
7		8	
	Remove the Lightguide cover by pressing the clip that fixes it.		Remove the lightguide by pressing the clip that fixes it.

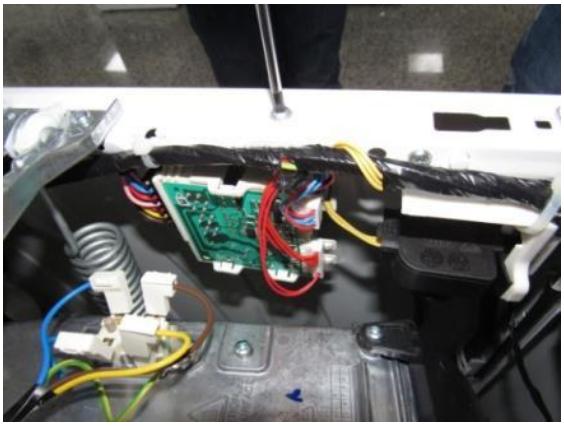
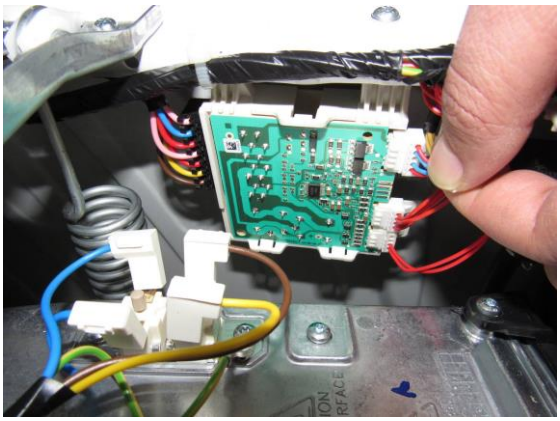
9		**10**	
	Remove PCB box using a small screw driver		Remove the clip fixing the cover.
11	 		
	Remove the display card as it is shown in the picture by using small screw driver.		
12	 		
	Remove the display card and buttons as it is shown in the picture		

7.6 Front Panel

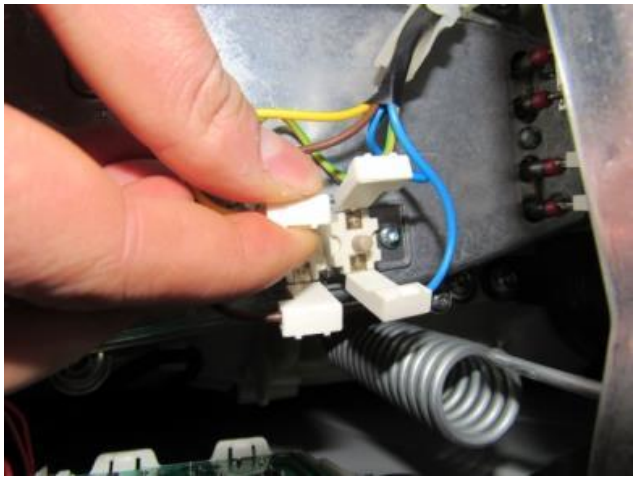
1		**2**	
	Remove the screw under the pomp cover		Remove the emergency open pull

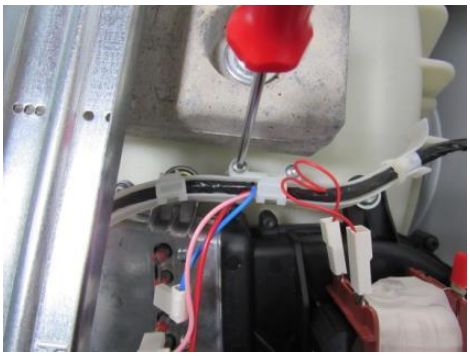
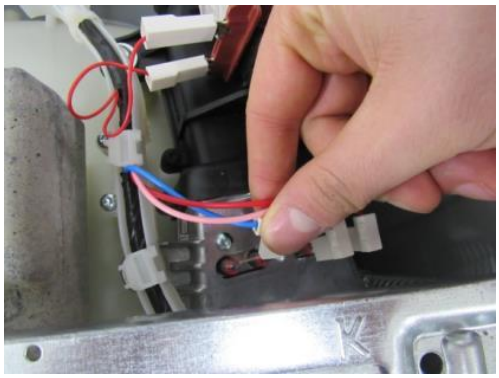
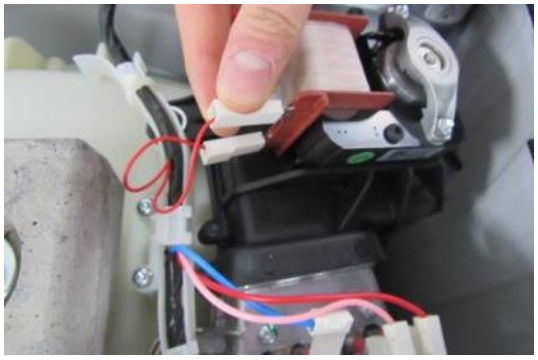
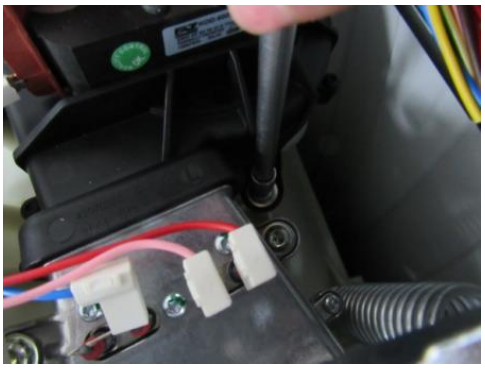
3		**4**	
	Remove the pomp inside cover by pressing the clip		Remove the screw fixing the front panel at the bottom
5		**6**	
	Remove the screws fixing the door lock remove the door lock by pressing.		Remove the tub bellows seal.
7		**8**	
	Remove two screws fixing front panel to body		Remove the screw fixing twinjet elbow
9		**10**	
	Pull front panel up		Remove front panel

7.7 Dryer Card

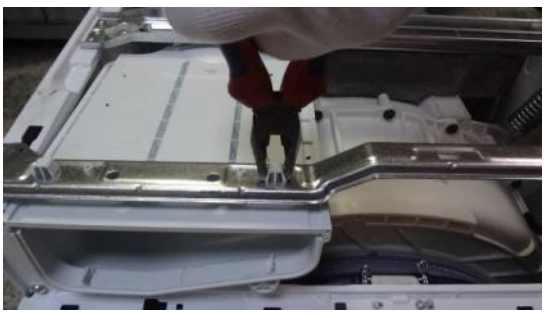
1		2	
	Remove the screws that fixes the dryer card		Remove the sockets.

7.8 Dryer Unit

1		2	
	Remove the screws that fixes the heater unit of the dryer		Remove the sockets of the heater unit
2		3	
	Remove the screws that fix the fan group.		Release the cable group by cutting the cable connection.

4		**5**	
	Remove the Cable group of the dryer unit		Remove the sockets of the heater group
6		**7**	
	Remove the sockets of the fan group.		Remove the screws that fix the fan group.
8		**9**	
	Cut the connection plastic of the dryer unit.		Cut the cable connection of the dryer NTC and remove the sockets.

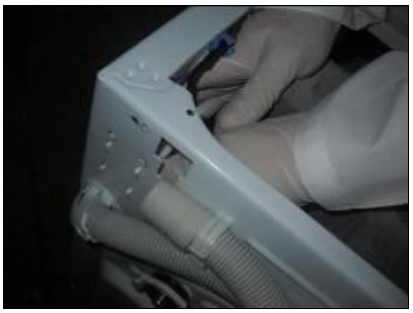
7.9 Support Bracket

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

7.10 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

7.11 Power Cable Group and EMI Filter

1		2	
	Remove the five connectors that is connected to the EMI filter		Remove two screws fixing EMI filter.
3		4	
	Pull the power cable group up		Remove EMI filter

7.12 Electronic Pressure Switch (EPS)

1		2	
	Unplug EPS connector		Pull EPS up
3			
	Remove clamp from EPS hose		

7.13 Door Lock*

1	
	Unplug door lock connector

7.14 Drain Pump

1		2	
	Remove clamp holding drain hose by using a nipper.		Unplug drain pump connector

3		**4**	
	Remove screws holding drain pump		Remove the pump entrance hose and pyrojet hose by using the nippers

7.15 Front Counterweight*

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

7.16 Heater

1		**2**	
	Unplug heater connectors		Remove nut (8 mm) fixing the heater
3			
	Pull heater out gently holding both sides.		

7.17 Twinjet System*

1		2	
	Remove twinjet hoses from tub bellow seal pulling them up		Remove the tub gasket clip by using small screwdriver
3		4	
	Remove the cover that placed under the machine by removing the screws		Remove screw fixing circulation pump
5		6	
	Lay the appliance down and press on ratchet holding circulation pump		Remove circulation pump
7		8	
	Remove cable connector		Remove the hose on the circulation pump

7.18 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.

7.19 Transport Screw

1		2	
	Remove four transport screws		Hold the transport screw and pull it out.

7.20 Upper Counterweight*

1		2	
	Remove two screws fixing the upper counterweight by using box wrench size 13 mm		Hold and carry upper-counterweight out.

7.21 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

7.22 Shock Absorber Pin

1		
	Remove shock absorber pins squeezing the ratchet by a pliers	

7.23 Driven Pulley

1		
	Remove the belt rotating the driven pulley	

7.24 Driven Pulley

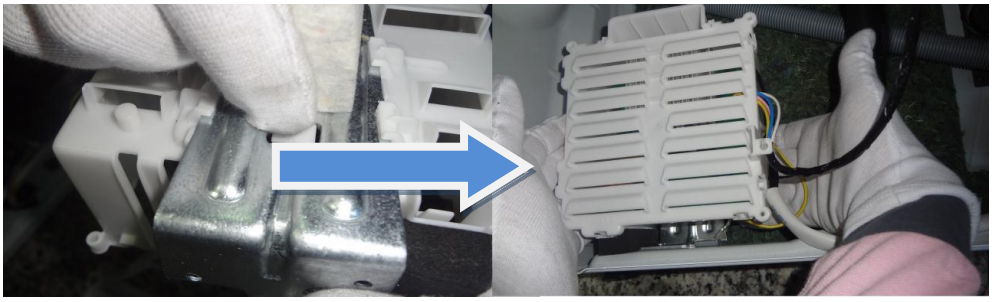
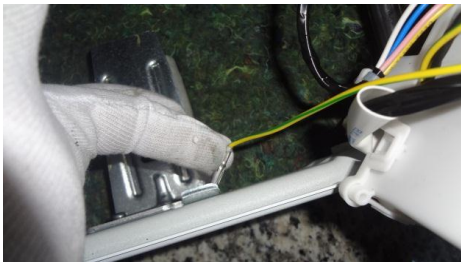
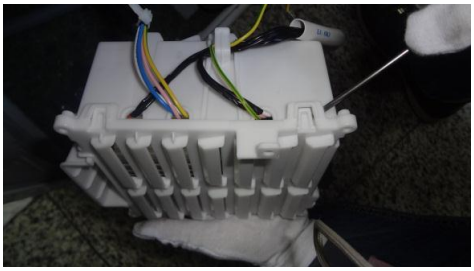
1		1	
	Remove the bolt at the center of pulley by tucking a wooden bar avoids rotation		Remove pulley

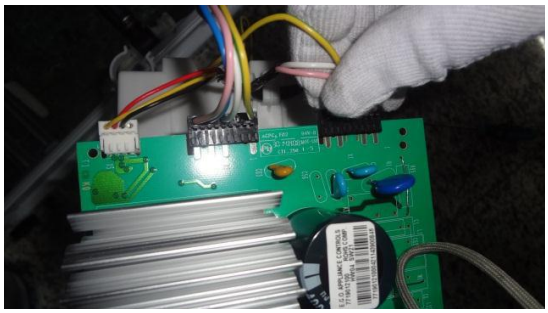
7.25 Motor

1		2	
	Remove two screws holding motor by using box wrench		Pull the motor upwards.

7.26 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
7.27 BLDC Card			
1		2	
	Remove the bottom plate by tilting the machine		This is the only way to remove the card without removing the washer group
3			
	Remove the card by pressing the clip that placed behind (it could be seen on the first image) of the card and pushing the card.		
4		5	
	Remove the connection		Remove the cable group that belongs to card
6		7	
	Remove the card box that belongs to the pyrojet unit, by pressing the clips with screw driver.		Remove the card by pressing the clips around with screw driver.

8		**9**	
	Remove the connections.		Remove the card completely
10		**11**	
	Remove the BLDC motor card fixing screws.		Remove the ground connection and make sure this connection is plugged during the assembly.

8. Component Specifications

8.1 Drain Pump

Drain pump is both a mechanical and electrical component which is used to drain water inside the washing machine. It has an synchronous motor inside. For better performance maintenance, 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 multi meter 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
Frequence	50 Hz
Resistor (cold)	169,5 Ω (±5%)

Testing component

Check the resistance value on the component with multi meter 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	Thermal fuse	2 sided

Testing component

Check the resistance value on the component with multi meter 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

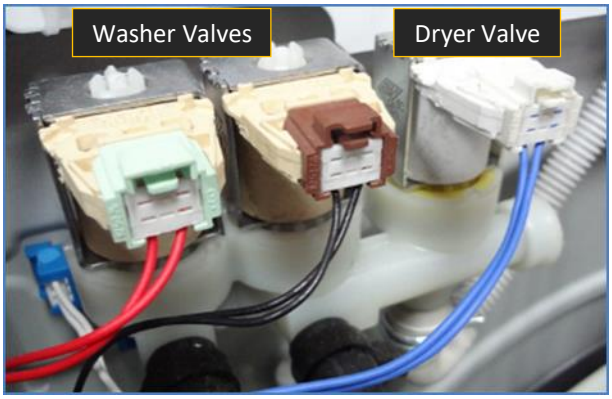
Testing component

Check the resistance value on the component with multi meter 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 network system into the washing machine. It is operated by PCB card.



Valves

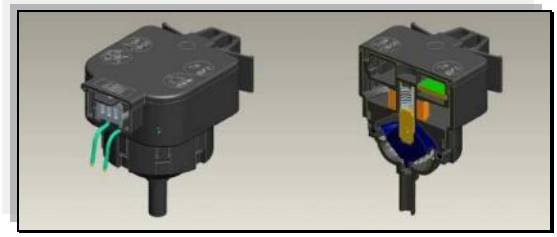
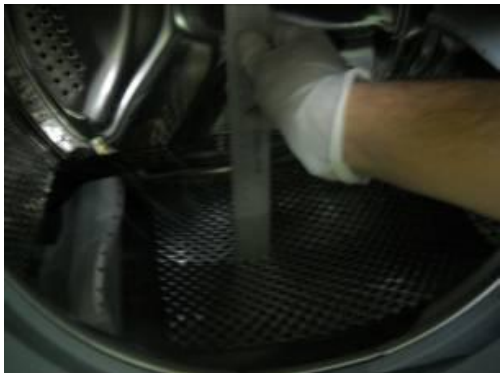
Technical features

Nominal voltage	220-240 V	Flow rate (washer valves)	7 L/min (±15 %)
Frequency	50-60 Hz	Flow rate (dryer valve)	1.2 L/min (±15 %)
		Operating water pressure	1-10 bar

Testing component

Check the resistance value on the component with multimeter as shown below. Washer valves' water flow rate should be 7 L/min ±15%. Dryer valve's water flow rate should be 1.2 L/min ±15%. Washer valves' coil resistance values should be 3750Ω ±10%. Dryer valve's coil resistance value should be 5190Ω ±10%.

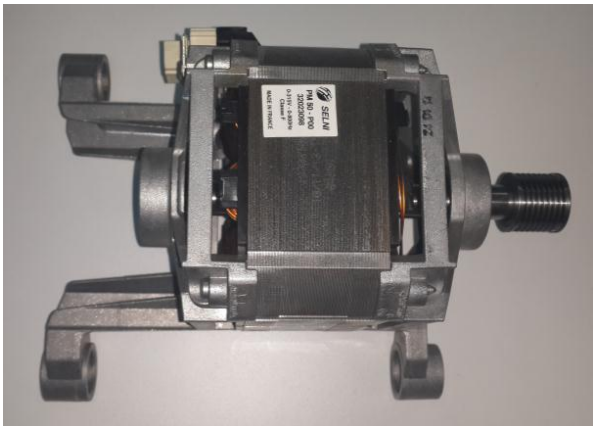
8.6 Electronic Pressure Sensor (EPS)*

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	
Press the door lock with using screw driver.	
Select a program and press the start button. Bring porgram knob to position 1 (Cotton 90°C program)	
Wait for water intake step to finish. You can recognize it by listening the water sound or slightly opening and observing detergent drawer As soon as water intake is over turn program knob to position 0 (Off position)	
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 multi meter.

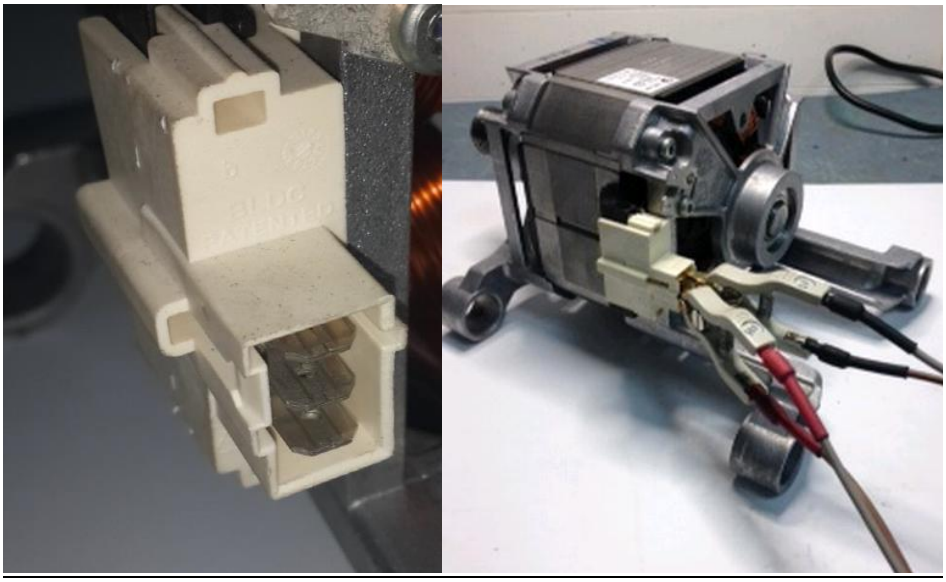
ÜNİVERSAL MOTOR BLDC MOTOR



Motor

3 phase brushless DC Motor.
Ferrite Magnet
Stator resistance (phase- Neutral) 2,38 ± 7% Ω

Motor socket terminals

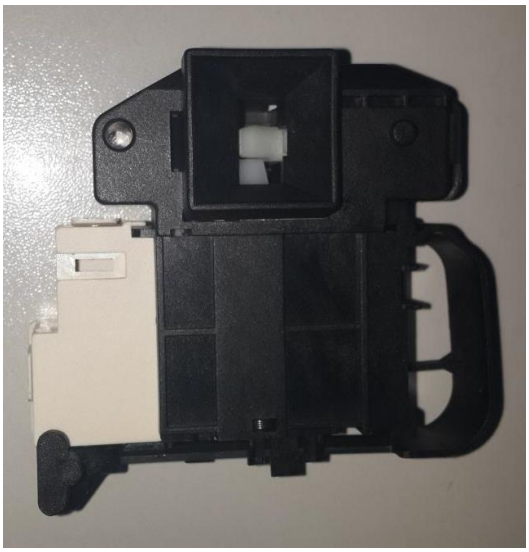


Measurement of resistance and inductance are done between the terminals.

8.8 Door Lock*

The type of door lock is the solenoid fixed hook door lock. Since the locking could be done with the fixed hook, door handle is not used on model. The door is opened at the end of the program and also as long as the condition of the water level and temperature in the drum is safe, door could be open.

In order to intervene to the door lock in emergency cases, the door could be opened by pulling the emergency handle which placed under the pump cover. But the user needs to be make sure that the water level and temperature condition in the drum is safe.



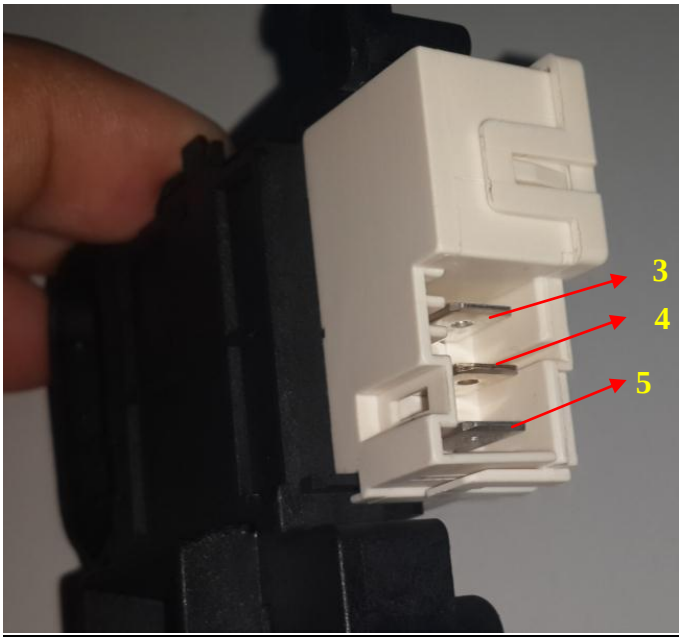
Door lock

Technical features

Nominal voltage (Rated)	170 - 250 V
Current (Rated)	16 (6) A

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.

8.9 Fan Group

Air pump component for drying cycle. Pumps dry cold air from condenser to dryer heater.

Fan group

Technical features

Nominal voltage	230 V	Resistance @ 20°C	82.7Ω ±3Ω
Frequency	50 Hz	Motor speed	1300 RPM
Rated Power	34 W	Air Flow Rate	70 m^3/h

Testing component

Check the resistance value on the component with multi-meter as shown in below figures. Resistance value should be 82.7Ω ±3Ω at 20 °C.

8.10 Dryer Heater

Air heater unit consist of two separate resistance with nickel diffusion technology.

Dryer Heater

Technical features

Nominal voltage	230 V	Resistance @ 20°C	65.5 – 72.6 Ω
Rated power (Heater I)	750 W		
Rated power (Heater II)	750 W		

Testing component

Check the resistance value on the component with multi-meter as shown in below figures. Resistance value should be in 65.5 – 72.6 Ω range.

8.11 Dryer NTC

The component which sends signals to PCB about the flowing air temperature just after dryer heater. The resistance value of the NTC decreases as the temperature increases.


Dryer NTC

Technical features

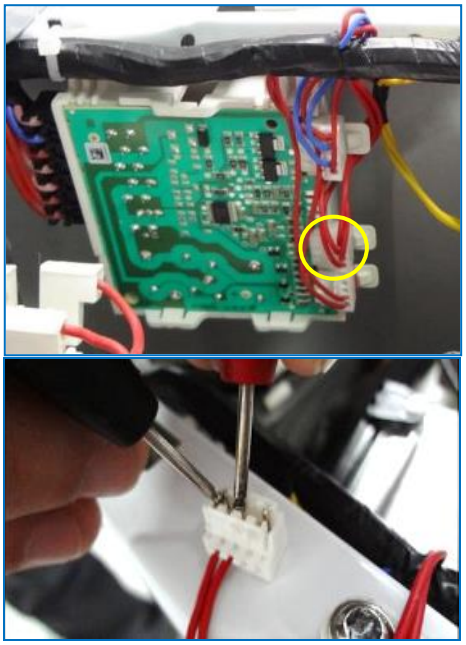
Temp. (°C)	R min (kΩ)	R max (kΩ)
25	19.40	20.60
30	15.56	16.67
40	10.19	11.10
50	6.82	7.54
60	4.65	5.23
70	3.25	3.70
80	2.32	2.68
90	1.69	1.97
100	1.24	1.47

Temp. (°C)	R min (kΩ)	R max (kΩ)
110	0.93	1.11
120	0.70	0.85
130	0.54	0.66
140	0.42	0.52
150	0.33	0.41
160	0.26	0.32
170	0.21	0.25
180	0.17	0.20

NTC Resistance vs. NTC Temperature

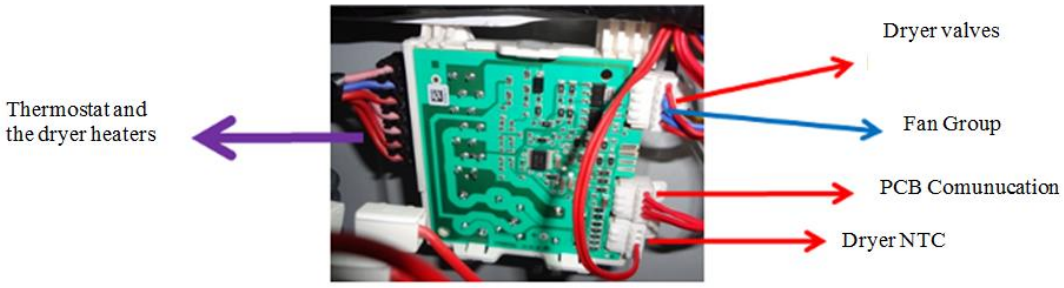
Testing component

Check the resistance value on the component with multi-meter as shown in below figures.



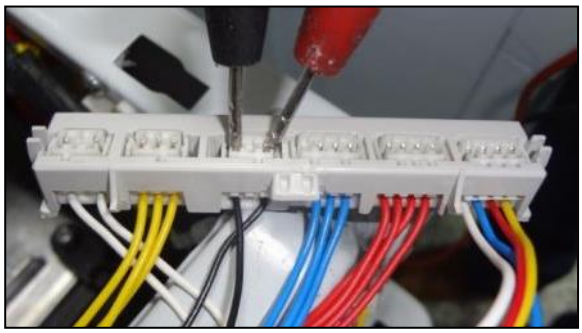
8.12 Component Control on PCB

Scokets on the Dryer Board

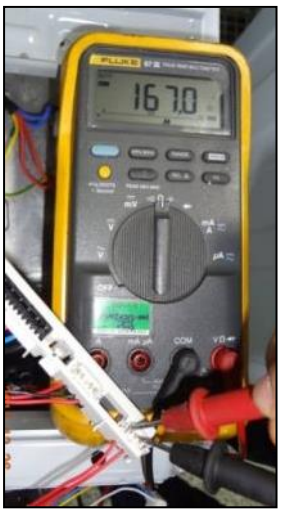


8.12.1 Washer NTC

NTC resistance values are checked (black cables) as shown.
Refer to the relevant table for the NTC resistance values..

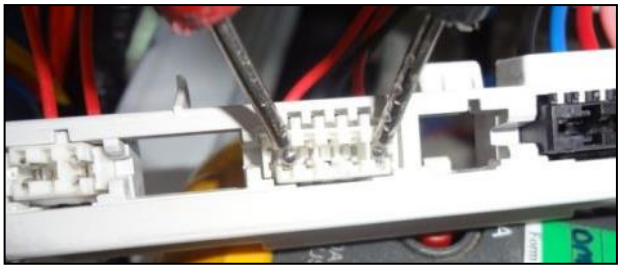
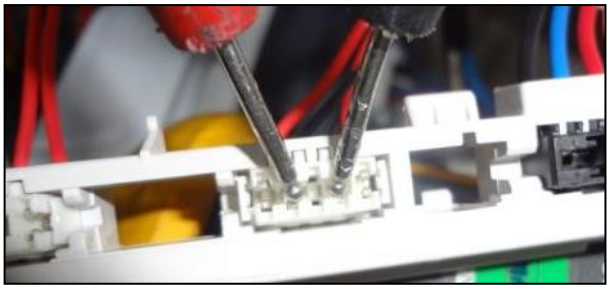


8.12.2 Circulation Pump

Resistance values are checked (red cables) as shown.	

9.12.3 Washer Valves

Valve resistance value is checked with a multimeter as shown.
Washer valves resistance values : 3750 Ω +10%

Pre-Wash Valve: Check the red cables	Main Wash Valve: Check the black cables
	
	

8.12.4 Drain Pump

Check the blue-blue cables
Drain Pump resistance value: 125 - 140 Ω

8.12.5 Door Lock

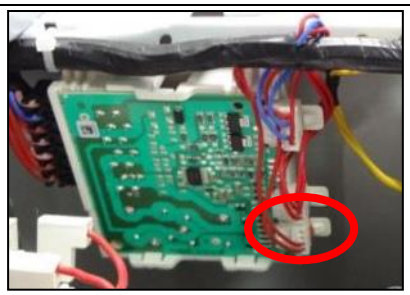
Resistance value is checked with a multimeter as shown.

Check the white and blue cables

Resistance values 240Ω ±20% (25 °C)

8.12.6 Dryer NTC

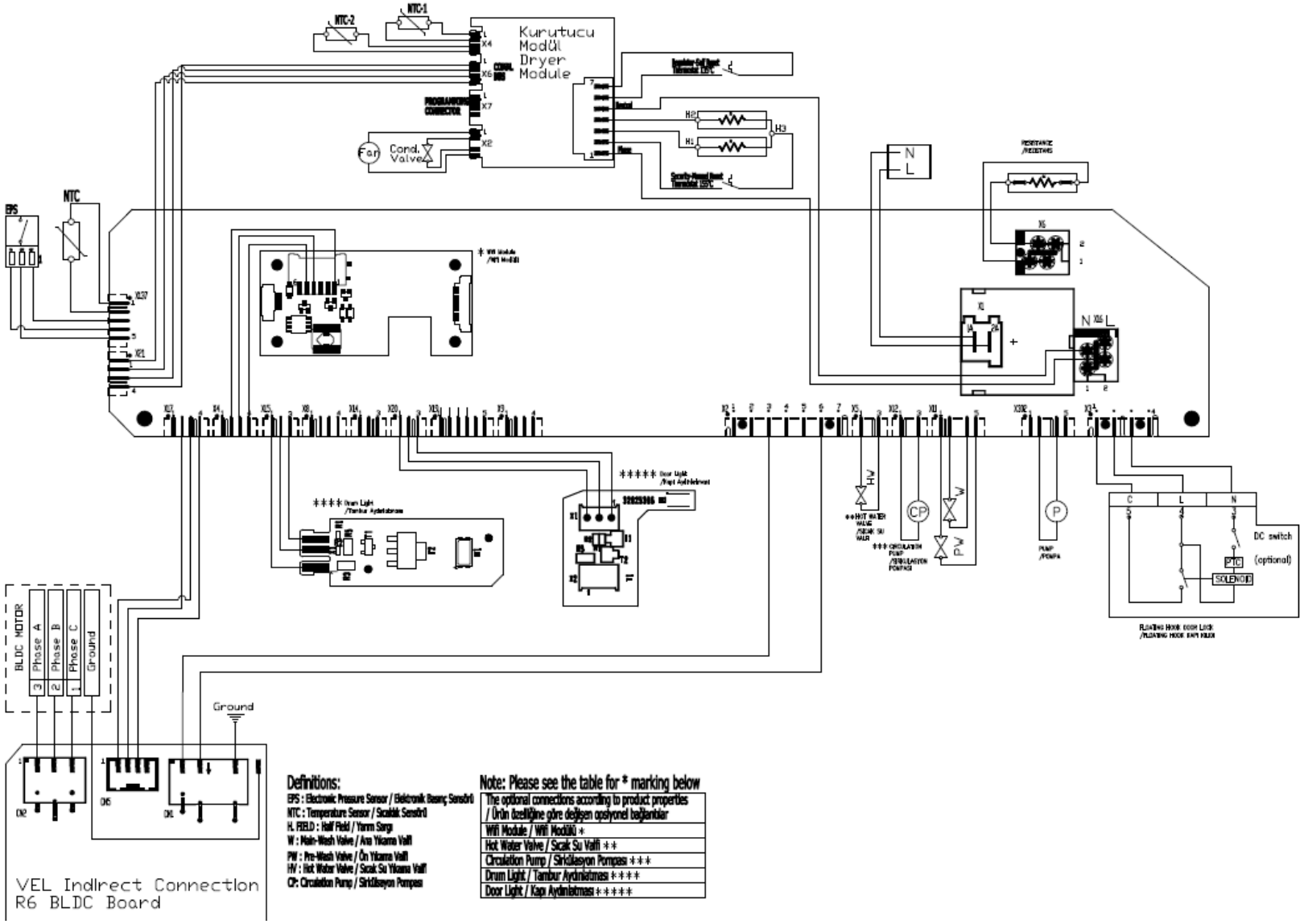
Component Control :
Check the socket at the bottom of the dryer board as shown.



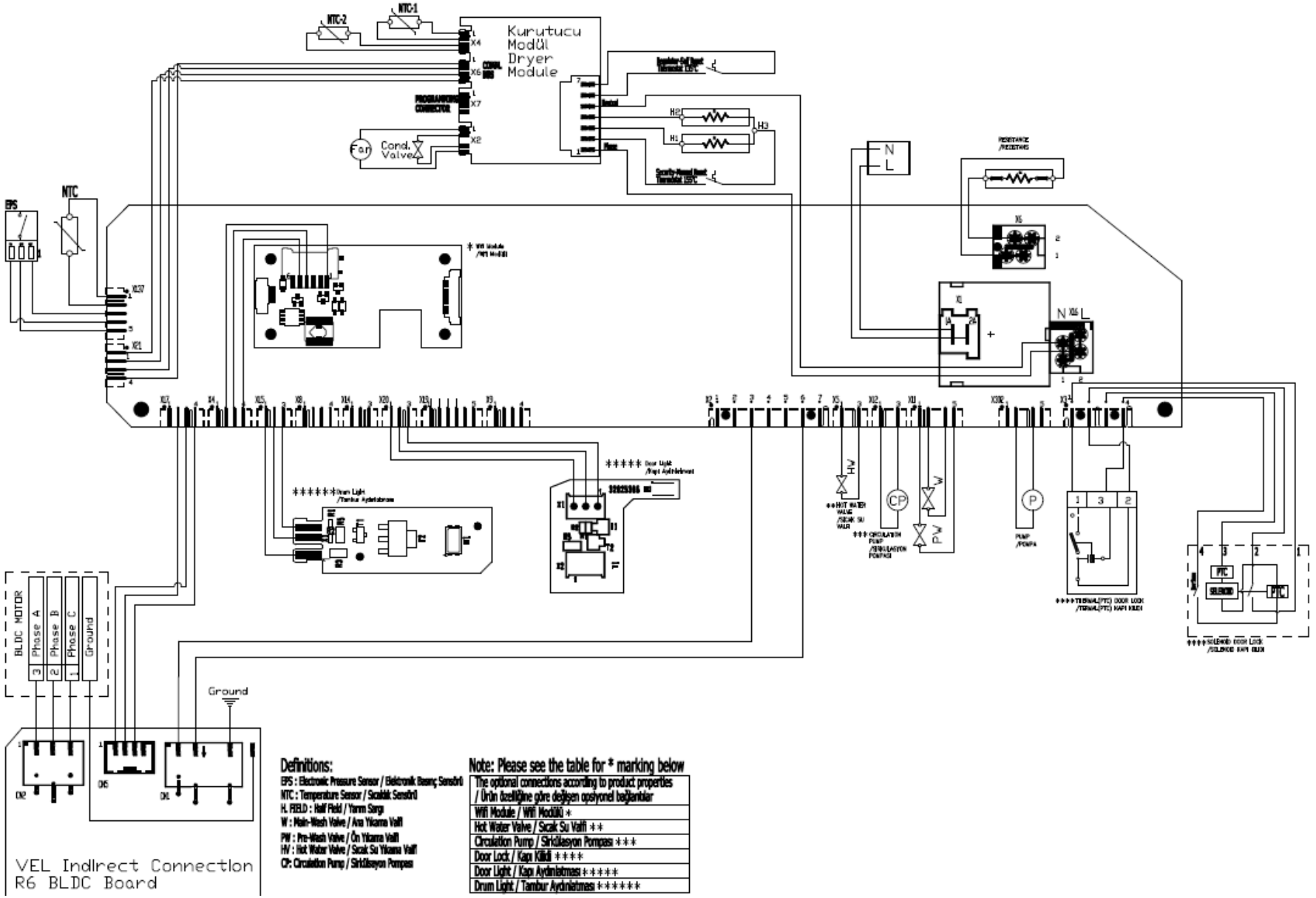
T°C	R(KΩ) MIN	R(KΩ) CEN	R(KΩ) MAX
25	19.40	20.00	20.60
30	15.56	16.11	16.67
40	10.19	10.64	11.10
50	6.819	7.176	7.544
60	4.653	4.933	5.225
70	3.246	3.466	3.697
80	2.322	2.495	2.679
90	1.688	1.825	1.972
100	1.244	1.353	1.471
110	0.9296	1.017	1.112
120	0.7042	0.7747	0.8516
130	0.5404	0.5976	0.6603
140	0.4198	0.4665	0.5180
150	0.3296	0.3681	0.4107
160	0.2614	0.2932	0.3286
170	0.2092	0.2357	0.2653
180	0.1690	0.1912	0.2161

9. Wiring Diagram*

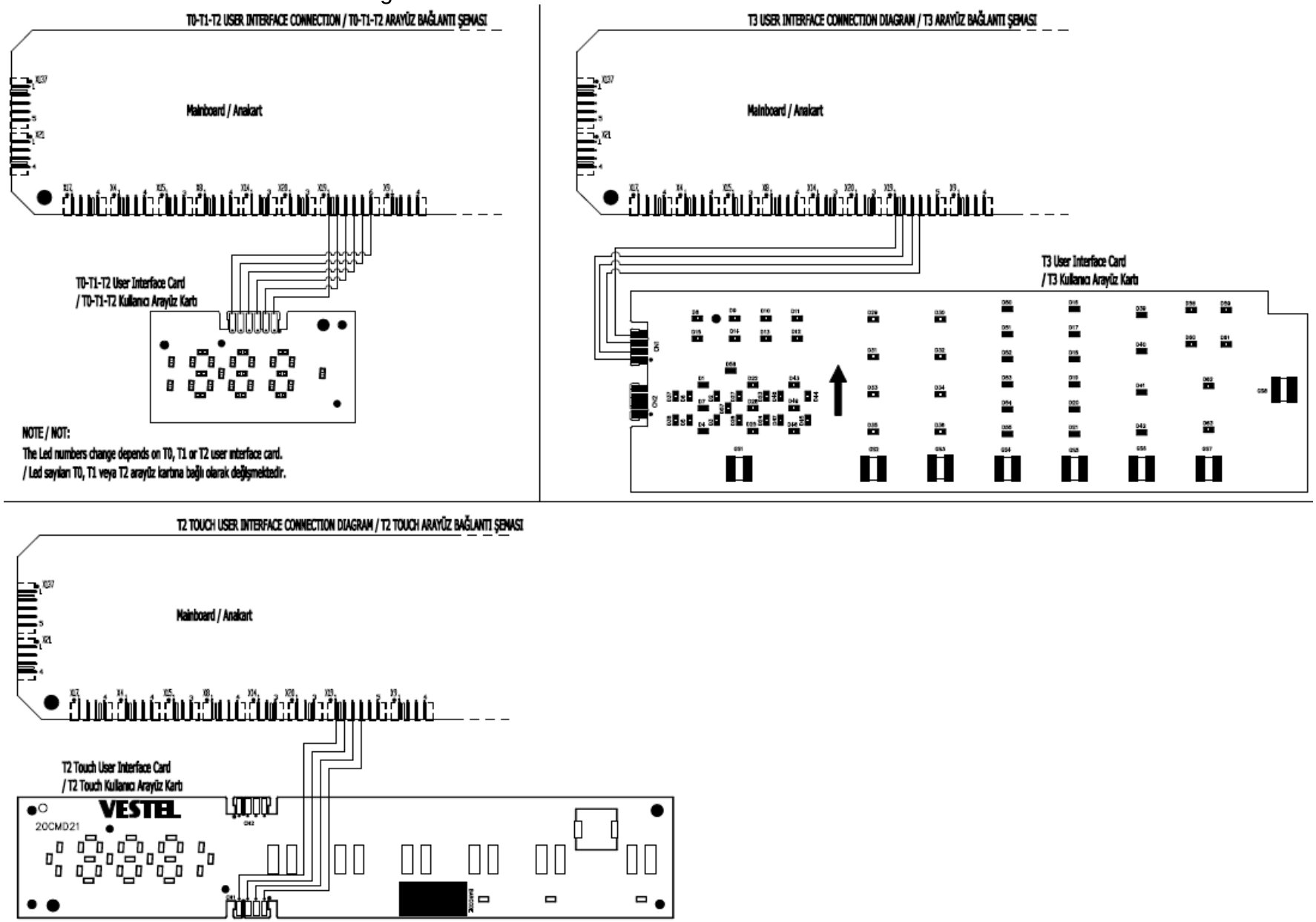
VWM-10603_JD'SIZ_BLDC_WD_Floating Hook Door



VWM-10636_JD'SIZ-_BLDC_WD_PTC_Solenoid Door

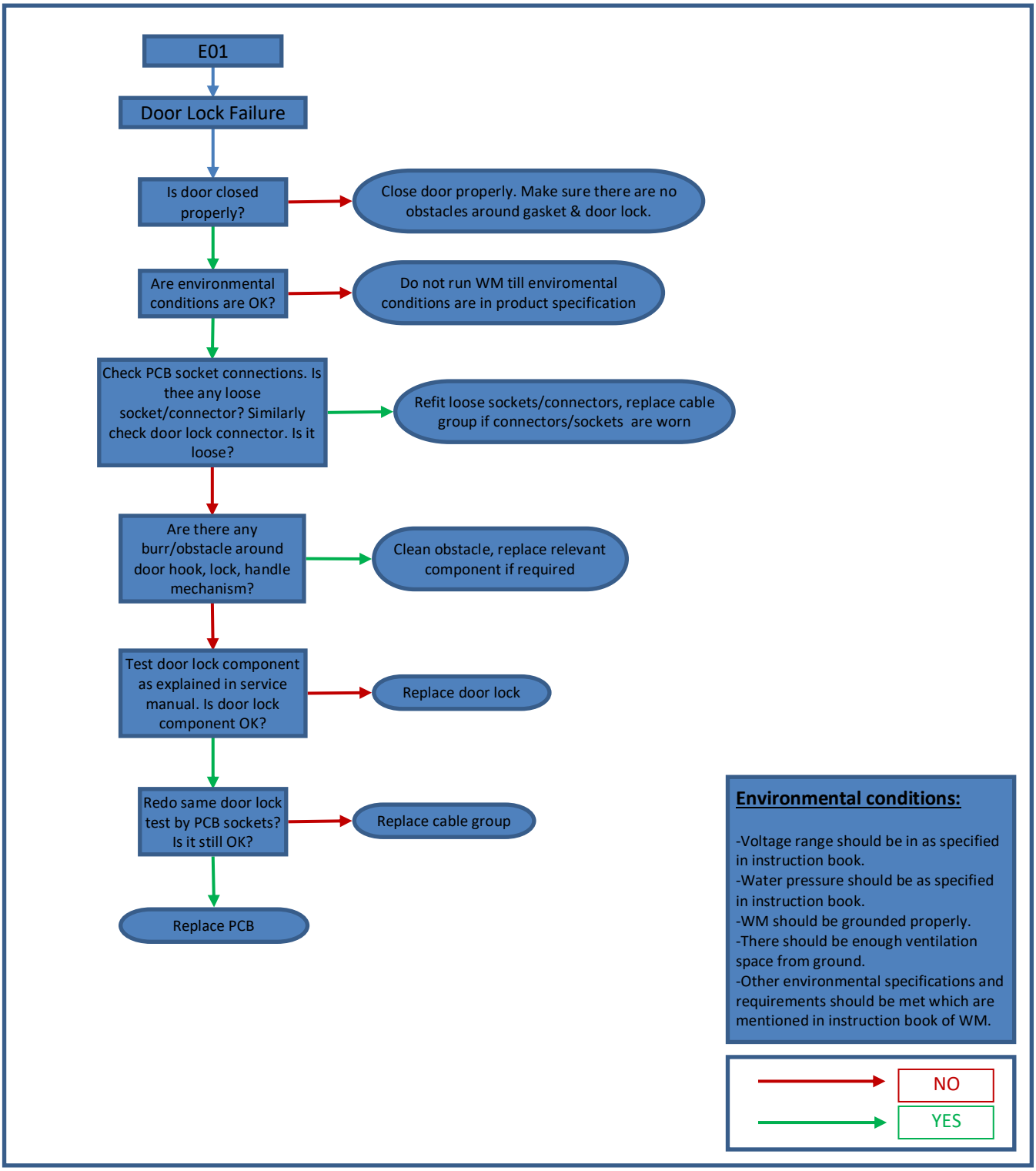


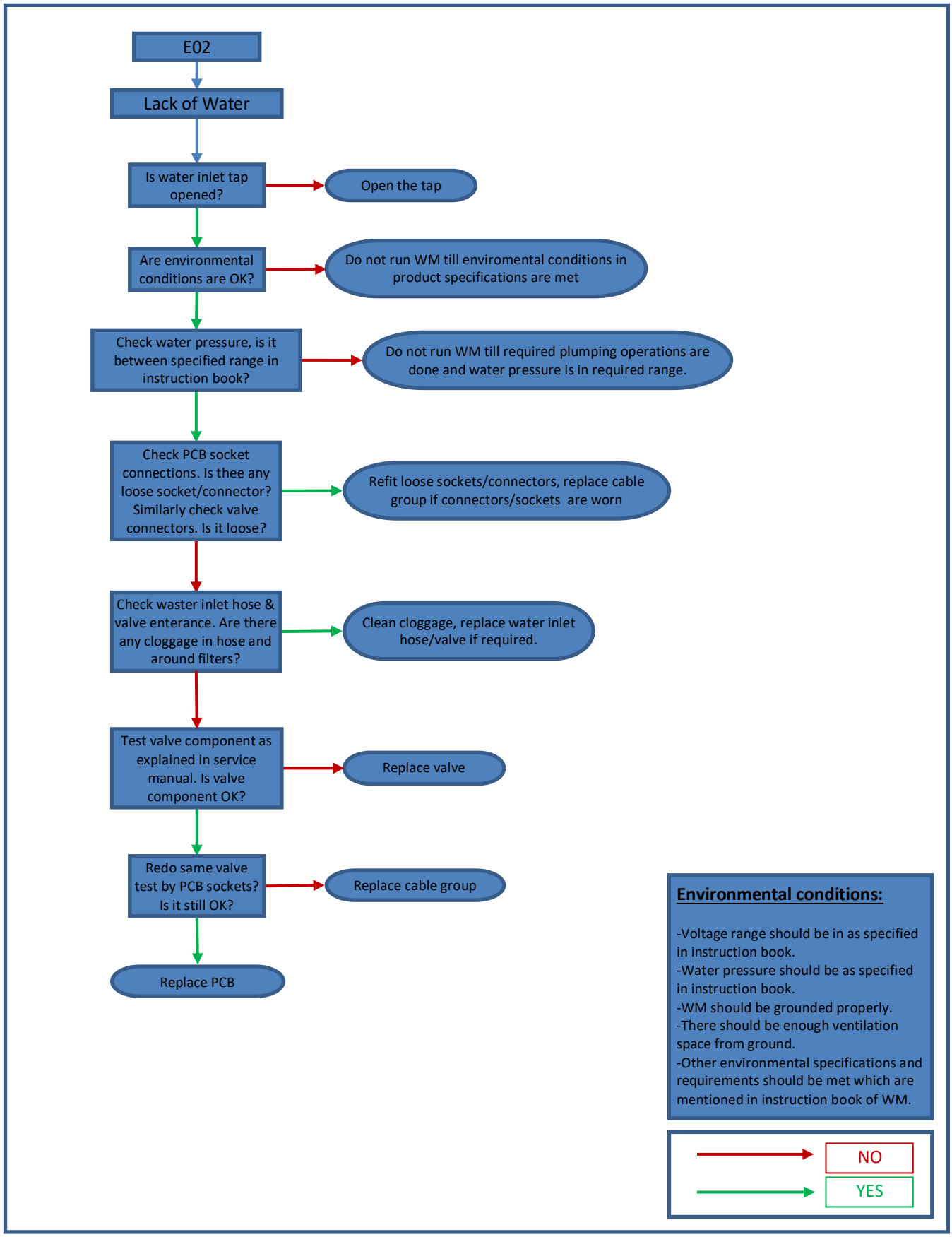
T Series User İnterface User Connection Diagram

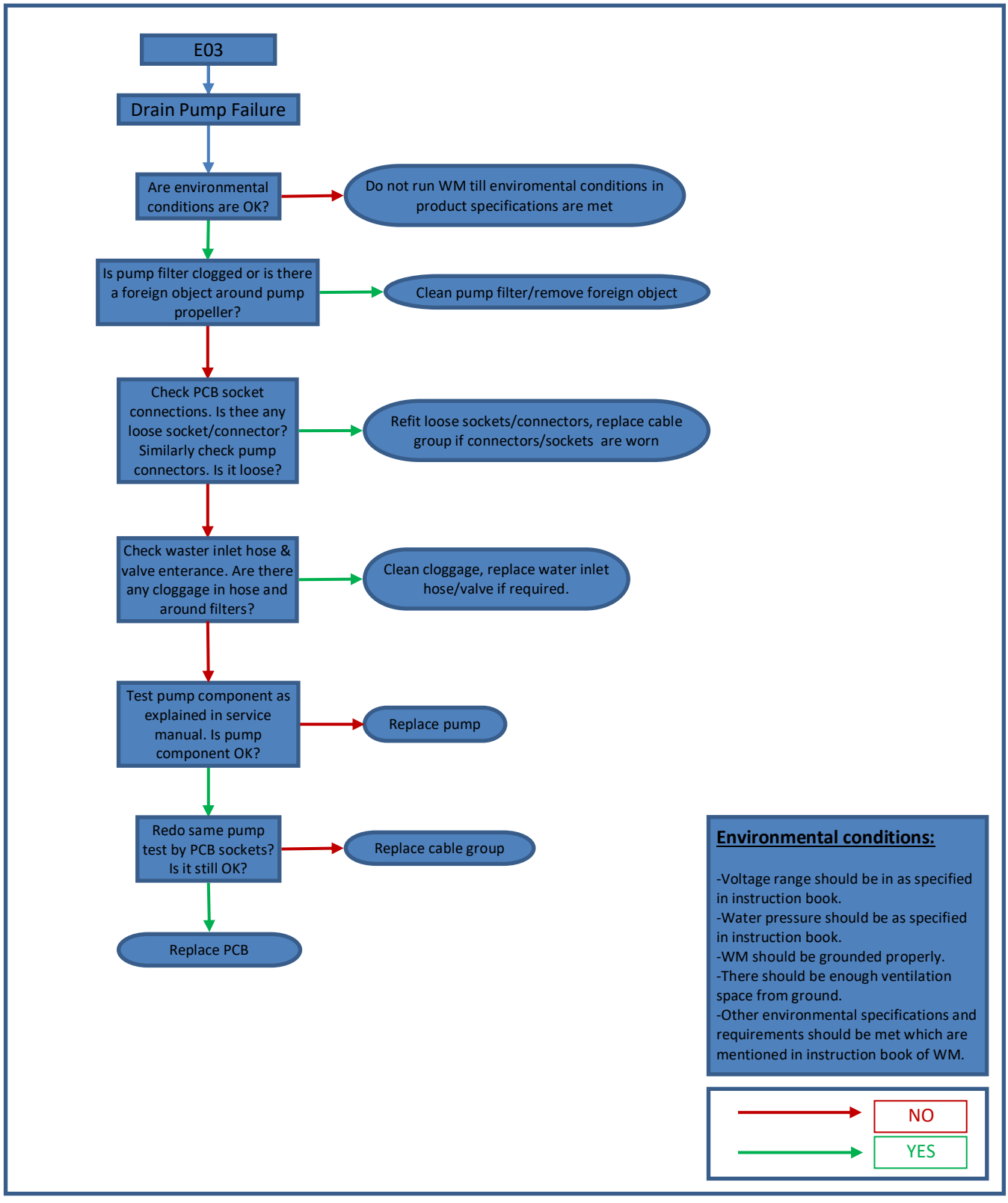


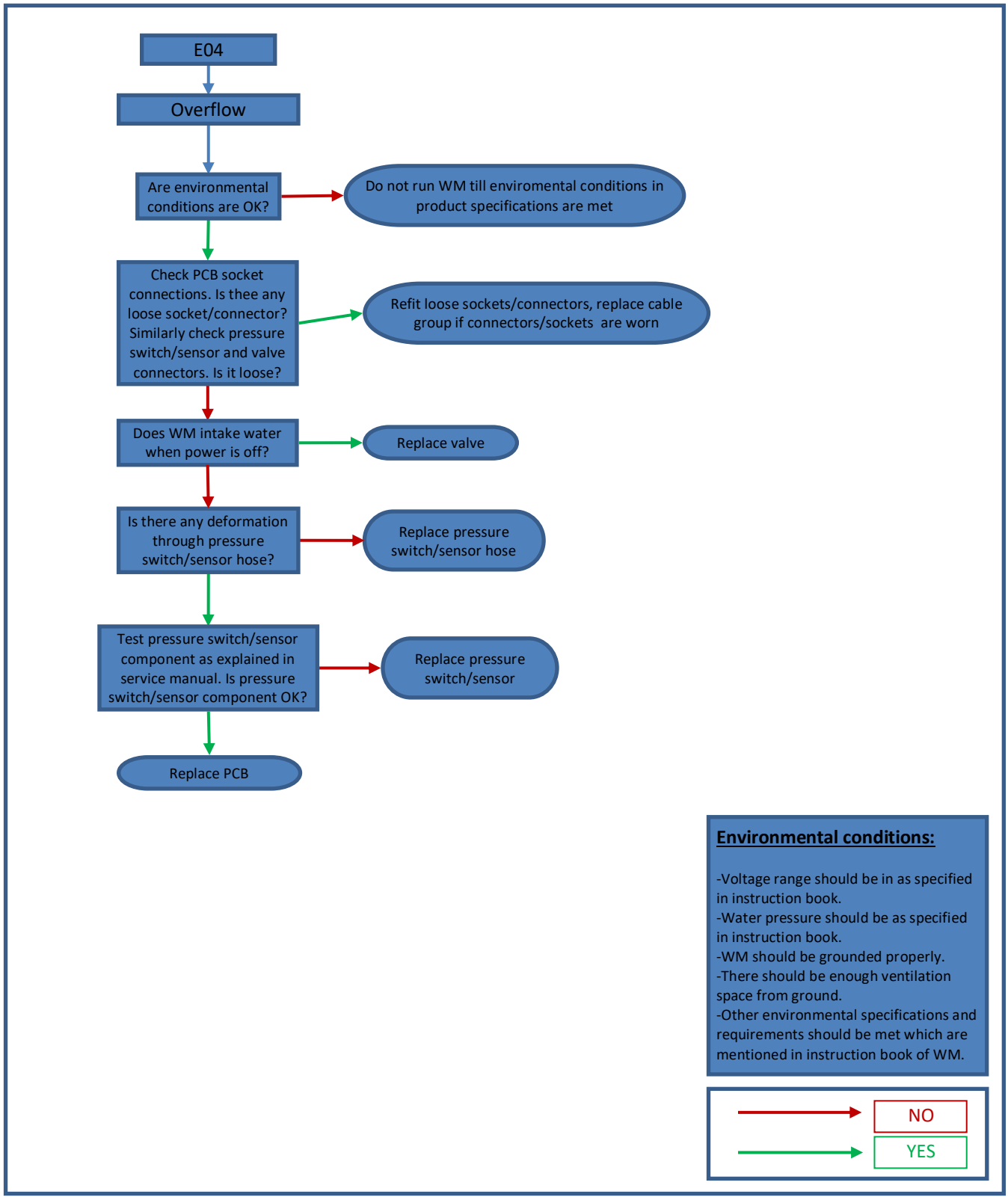
10. Troubleshooting

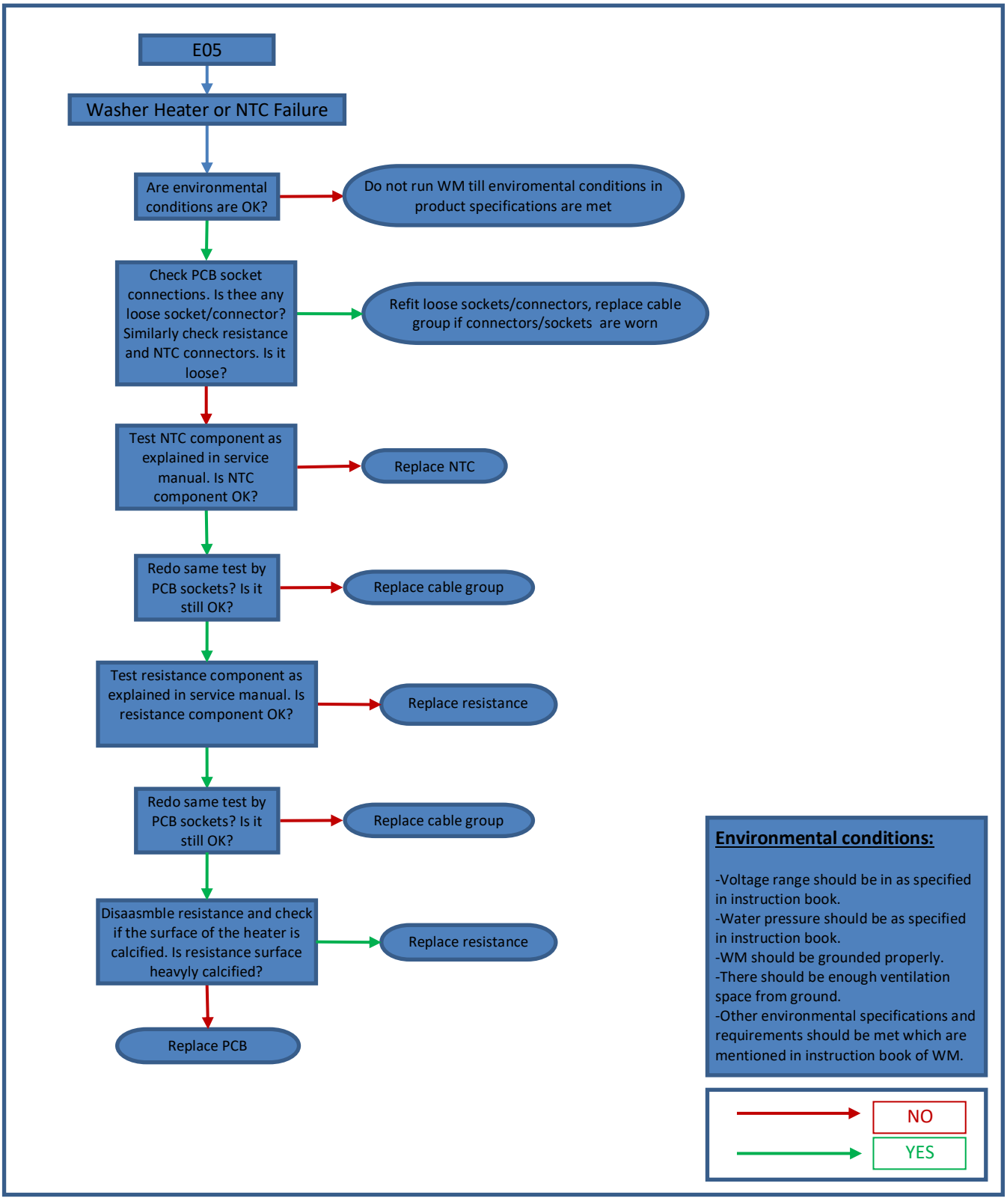
Please apply basic troubleshooting steps described in user manual. If you can not find a solution you should run service autotest and complete all steps. In case of an error encounter please follow the instructions through flowchart related with the error.

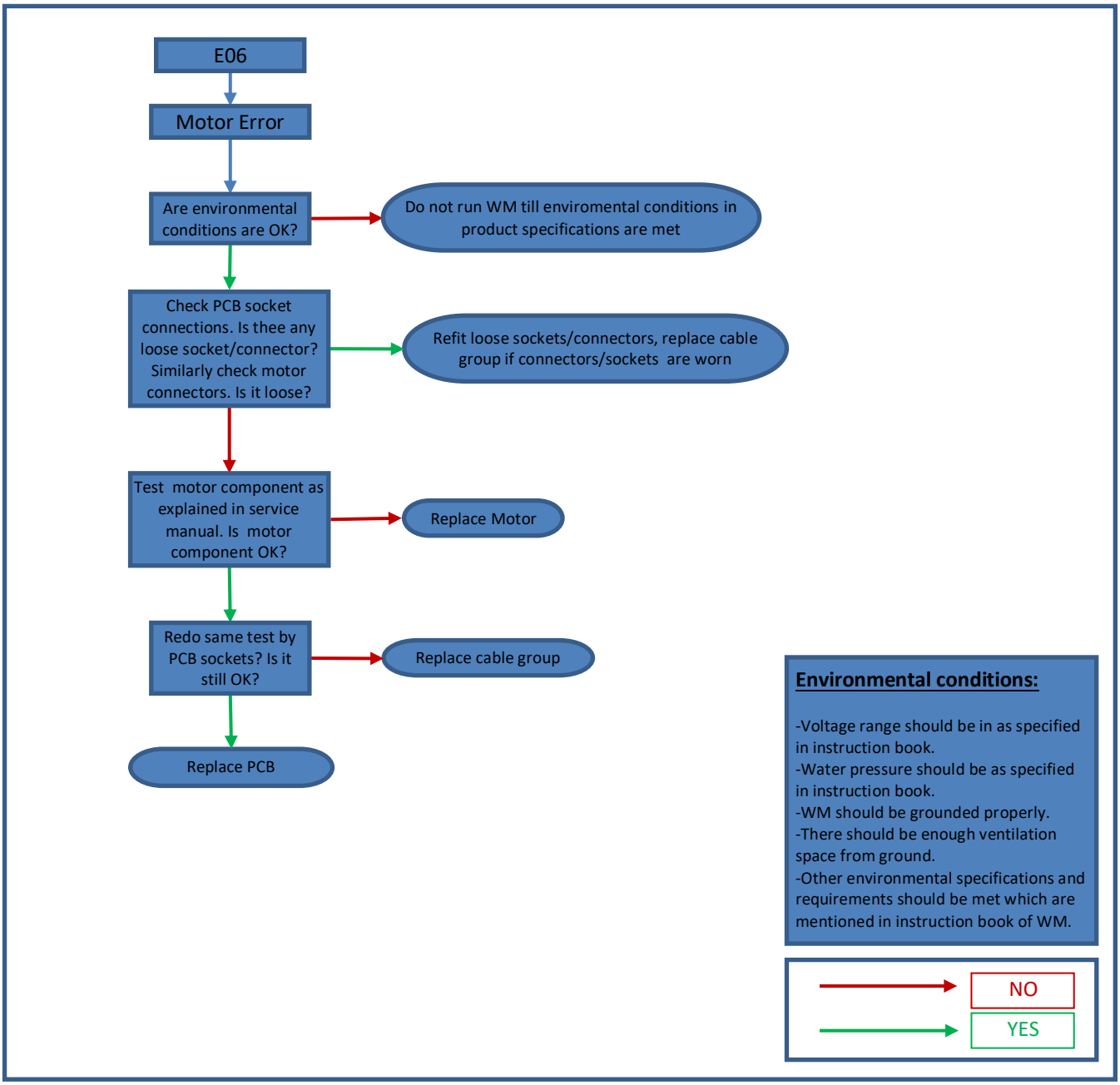


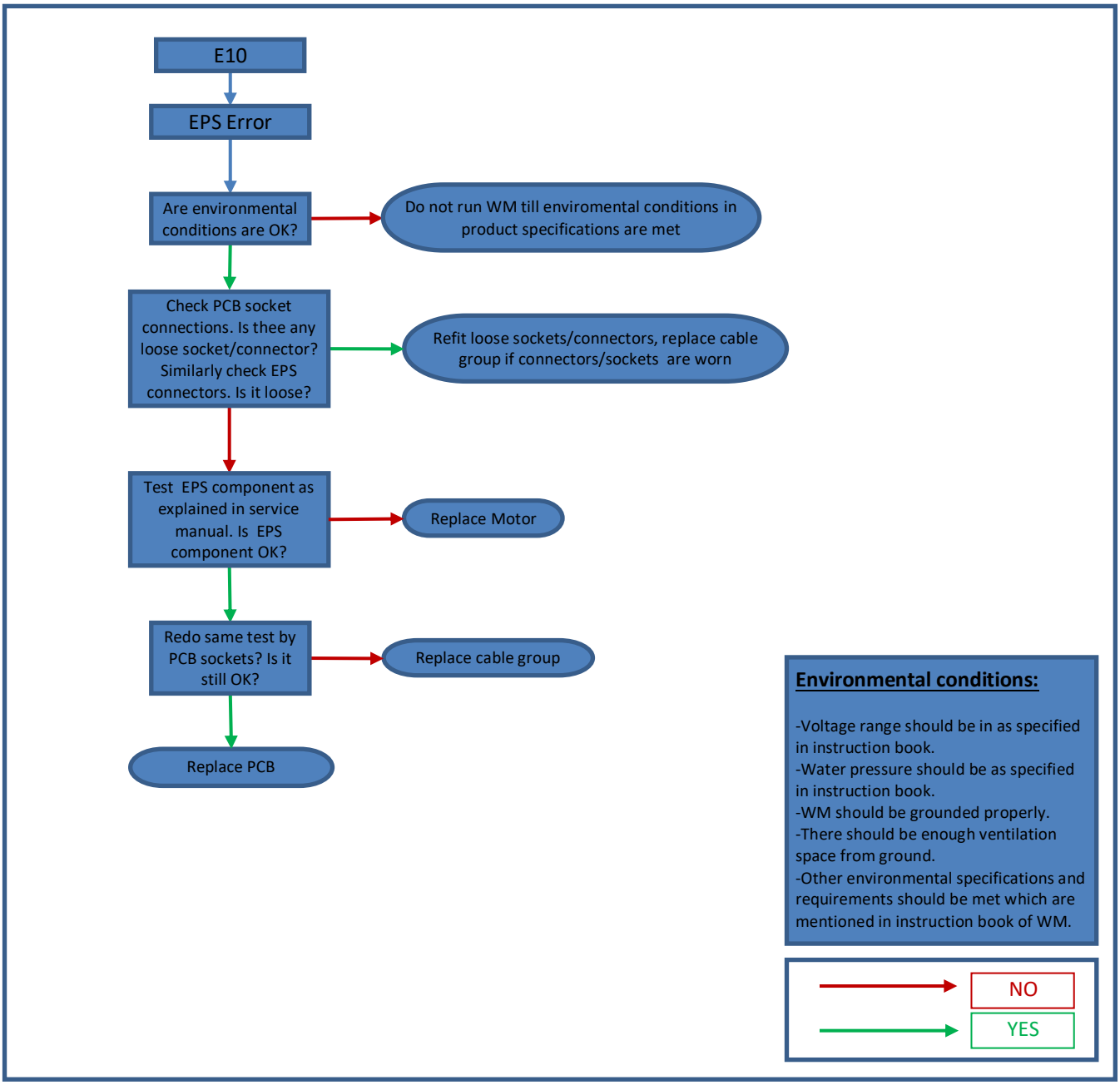

E02
Lack of Water
Is water inlet tap opened?
Open the tap
Are environmental conditions are OK?
Do not run WM till enviromental conditions in product specifications are met
Check water pressure, is it between specified range in instruction book?
Do not run WM till required plumping operations are done 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

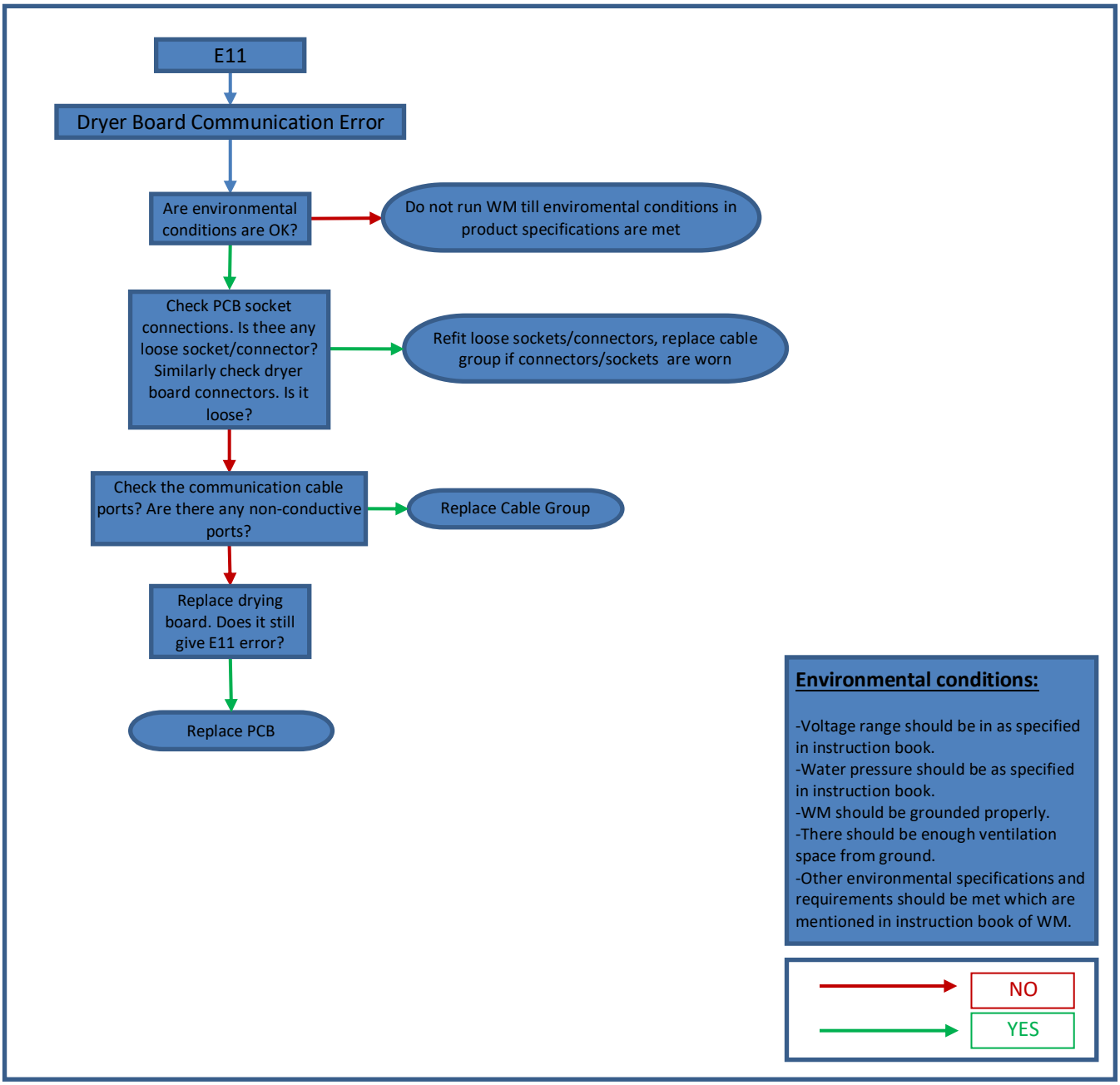

E03
Drain Pump Failure
Are environmental conditions are OK?
Do not run WM till enviromental conditions in product specifications are met
Is pump filter clogged or is there a foreign object around pump propeller?
Clean pump filter/remove foreign object
Check PCB socket connections. Is thee any loose socket/connector? 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

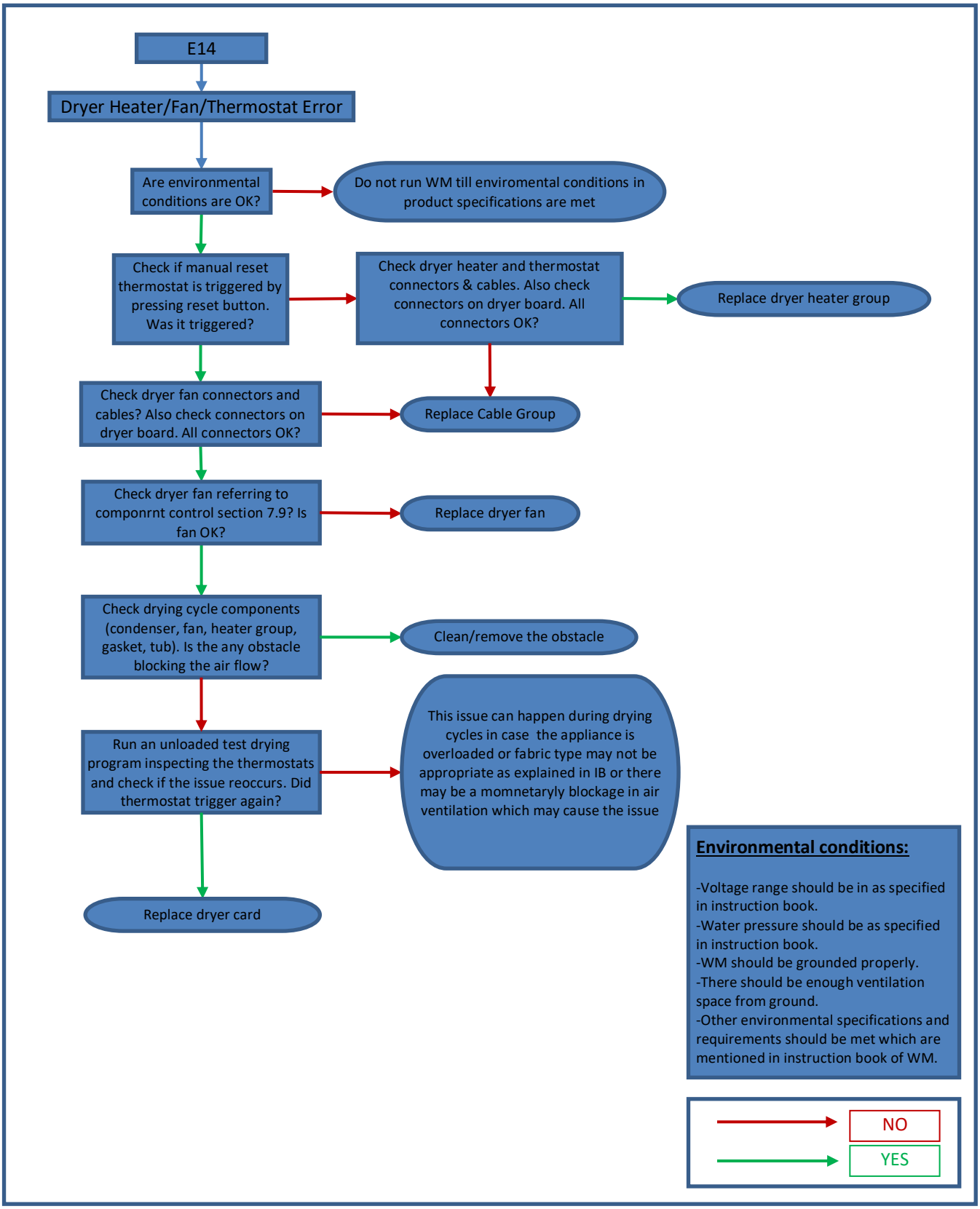

E04
Overflow
Are environmental conditions are OK?
Do not run WM till enviromental conditions in product specifications are met
Check PCB socket connections. Is thee any loose socket/connector? Similarly check pressure switch/sensor and valve connectors. Is it loose?
Refit loose sockets/connectors, replace 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

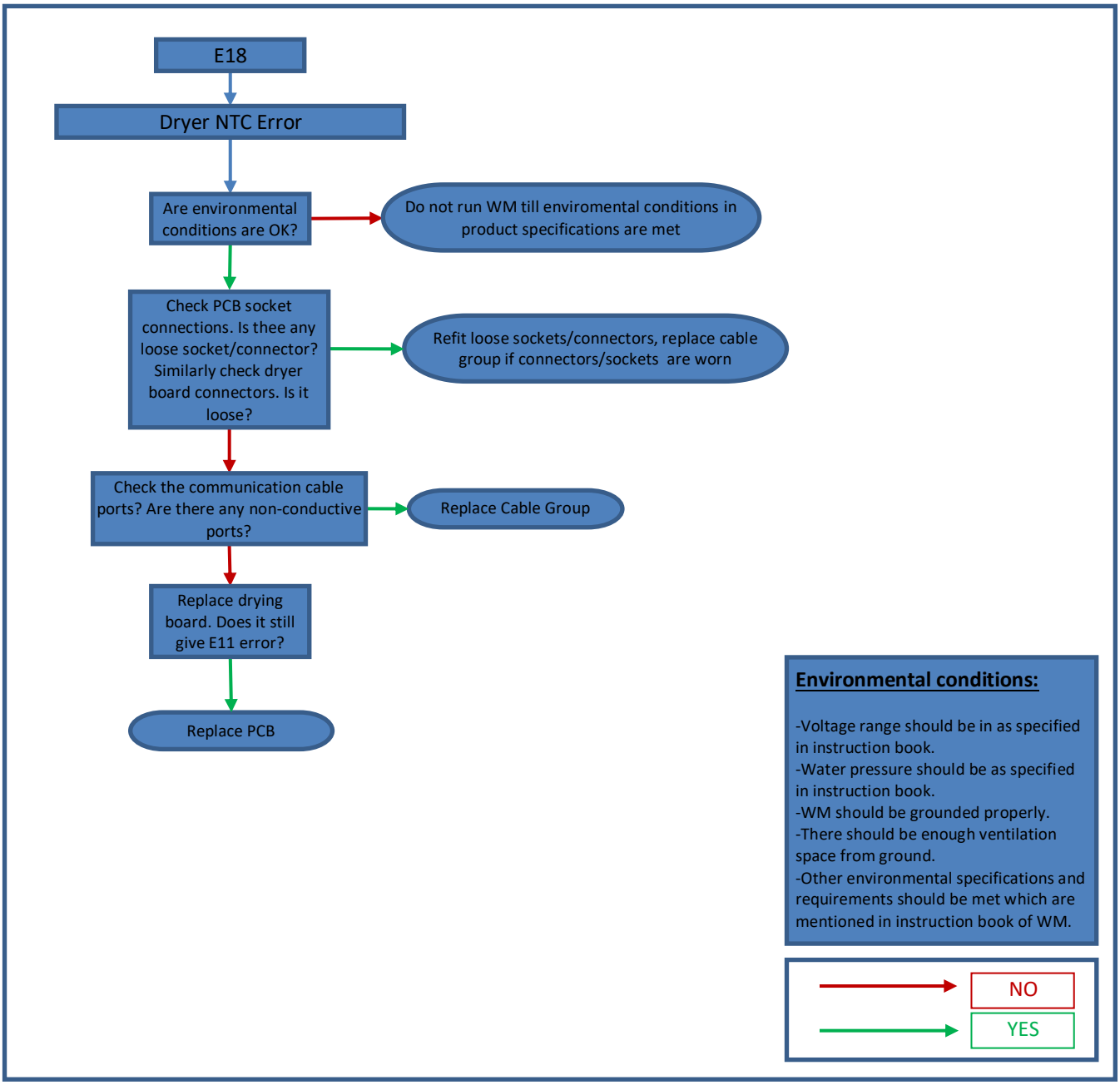

E05
Washer Heater or NTC Failure
Are environmental conditions are OK?
Do not run WM till enviromental conditions in product specifications are met
Check PCB socket connections. Is thee any loose socket/connector? Similarly check resistance and NTC connectors. Is it loose?
Refit loose sockets/connectors, 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


E11
Dryer Board Communication 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 dryer board connectors. Is it loose?
Refit loose sockets/connectors, replace cable group if connectors/sockets are worn
Check the communication cable ports? Are there any non-conductive ports?
Replace Cable Group
Replace drying board. Does it still give E11 error?
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


E14
Dryer Heater/Fan/Thermostat Error
Are environmental conditions are OK?
Do not run WM till enviromental conditions in product specifications are met
Check if manual reset thermostat is triggered by pressing reset button. Was it triggered?
Check dryer heater and thermostat connectors & cables. Also check connectors on dryer board. All connectors OK?
Replace dryer heater group
Check dryer fan connectors and cables? Also check connectors on dryer board. All connectors OK?
Replace Cable Group
Check dryer fan referring to componrnt control section 7.9? Is fan OK?
Replace dryer fan
Check drying cycle components (condenser, fan, heater group, gasket, tub). Is the any obstacle blocking the air flow?
Clean/remove the obstacle
Run an unloaded test drying program inspecting the thermostats and check if the issue reoccurs. Did thermostat trigger again?
This issue can happen during drying cycles in case the appliance is overloaded or fabric type may not be appropriate as explained in IB or there may be a momnetaryly blockage in air ventilation which may cause the issue
Replace dryer card
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


E18
Dryer NTC 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 dryer board connectors. Is it loose?
Refit loose sockets/connectors, replace cable group if connectors/sockets are worn
Check the communication cable ports? Are there any non-conductive ports?
Replace Cable Group
Replace drying board. Does it still give E11 error?
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

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