SAMSUNG

TOP–LOADING WASHER

Basic Code : WA45T3200AW/A4

Model Name : WA45T3400A*

Model Code : WA45T3400AV/A4

SERVICE Manual

WASHING MACHINE (TOP-LOADING)

CONTENTS

CONTENTS

1. SAFETY INSTRUCTIONS

1-1. SAFETY INSTRUCTIONS FOR SERVICE ENGINEERS

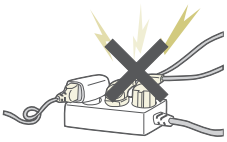
- Be sure to observe the following instructions to operate the product correctly and safely to prevent possible accidents and hazards while servicing.
- Two types of safety symbols, Warning and Caution, are used in the safety instructions.

⚠ WARNING	**Hazards or unsafe practices that may result in severe personal injury or death.**
⚠ CAUTION	**Hazards or unsafe practices that may result in minor personal injury or property damage.**

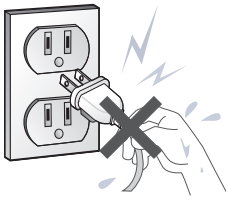
⚠ WARNING BEFORE SERVICING

- (When servicing electrical parts or harnesses) Make sure to disconnect the power plug before servicing.
  ✔ Failing to do so may result in a risk of electric shock.

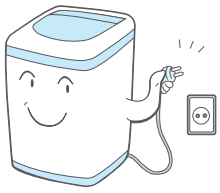
- Do not allow consumers to connect several appliances to a single power outlet at the same time.
  ✔ There is a risk of fire due to overheating.



- When removing the power cord, make sure to hold the power plug when pulling the plug from the outlet.
  ✔ Failing to do so may damage the plug and result in fire or electric shock.



- When the washing machine is not being used, make sure to disconnect the power plug from the power outlet.
  ✔ Failing to do so may result in electric shock or fire due to lightning.



- Do not place or use gasoline, thinners, alcohol, or other flammable or explosive substances near the washing machine.
  ✔ There is a risk of explosion and fire caused from electric sparks.

⚠ WARNING WHILE SERVICING

- Check if the power plug and outlet are damaged, flattened, cut or otherwise degraded.
  - ✔ If faulty, replace it immediately.
    Failing to do so may result in electric shock or fire.
  - ✔ If plug is faulty replace it, if outlet in consumers home is faulty have consumer call an electrician to replace.

- Completely remove any dust or foreign material from the housing, wiring and connection parts.
  - ✔ This will prevent a risk of fire due to tracking and electrical hazard.

- When connecting wires, make sure to connect them using the relevant connectors and check that they are connected properly.
  - ✔ If tape is used instead of the connectors, it may cause fire due to tracking.

- Make sure to discharge the PBA power terminals before starting the service.
  - ✔ Failing to do so may result in a high voltage electric shock.

- When replacing the heater, make sure to fasten the nut after verification that it is inserted into the bracket-heater.
  - ✔ If not inserted into the bracket-heater, it touches the drum and could cause noise and electric leakage.

⚠ WARNING AFTER SERVICING

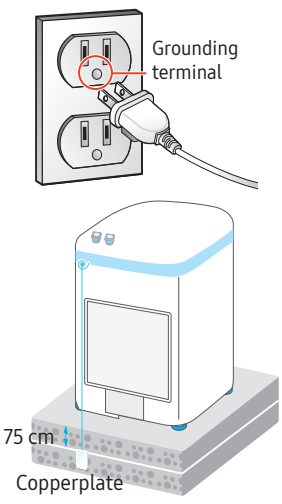
- Check the wiring.
  - ✔ Ensure that no part of the wiring harness makes contact with any rotating part or sharp edges.

- Check for any water leakage.
  - ✔ Perform a test run for the washing machine to ensure no leakage under the machine , at any hose connection, or at the drain hose.

- Do not allow consumers to repair or service any part of the washing machine themselves.
  - ✔ This may result in personal injury and shorten the product's life cycle.

- If it seems that grounding is needed due to water or moisture, make sure to run grounding wires. (Check the grounding of the power outlet, and additionally ground it to a metallic water pipe.)
  - ✔ Failing to do so may result in electric shock due to electric leakage.

  [Running a grounding wire]
  - Twist a grounding wire (copper wire) two or three times around the tap.
  - If you connect the grounding wire to a copperplate, bury it 75 cm under the earth in a place with a lot of moisture.
    - ⚠ Do not connect the grounding wire to a gas pipe, plastic water pipe or telephone wire. There is a risk of electric shock or explosion.



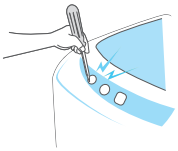
⚠ CAUTION BEFORE SERVICING

- Do not sprinkle water onto the washing machine directly when cleaning it.
  - ✔ This may result in electric shock or fire, and may shorten the product's life cycle.

- Do not place any containers with water on the washing machine.
  - ✔ If the water is spilled, it may result in electric shock or fire. This will also shorten the product's life cycle.

- Do not install the washing machine in a location exposed to snow or rain.
  - ✔ This may result in electric shock or fire, and shorten the product's life cycle.

- Do not press a control button using a sharp tool or object.
  - ✔ This may result in electric shock or damage to the product.



⚠ CAUTION WHILE SERVICING

- When wiring a harness, make sure to seal it completely so no liquid can enter.
  - ✔ Make sure that they do not break when force is applied.

- Check if there is any residue that indicates liquid entered the electric parts or harnesses.
  - ✔ If any liquid has entered into a part, replace it or ensure no remaining moisture inside the part.

- If you need to place the washing machine on its back or side for servicing purposes, place a support(s) on the floor and lay it down carefully so its back/side is on the floor.
  - ✔ Do not lay it down on its front. This may result in cosmetic damage to frame front and/or damage to the tub.

⚠ CAUTION AFTER SERVICING

- Check the assembled status of the parts.
  - ✔ Now is a good time to inspect your work. Review all connections and wiring, including mounting hardware.

- Check the insulation resistance.
  - ✔ Disconnect the power cord from the power outlet and measure the insulation resistance between the power plug and the grounding wire of the washing machine. The value must be greater than 10MΩ when measured with a 500V DC Megger.

- Ensure washing machine is level by pressing down on corners to check for any movement. If not level, adjust legs and check again until no movement is present.
  Verification that unit is level will reduce customer dissatisfaction and redo call.
  - ✔ Vibrations can shorten the lifetime of the product.

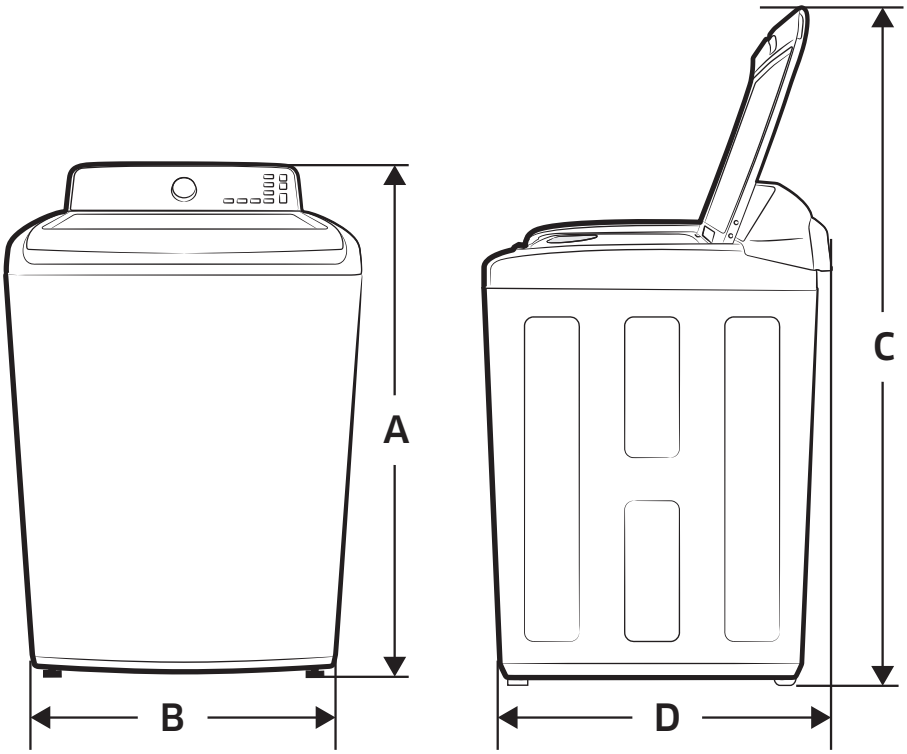
2. FEATURES AND SPECIFICATIONS

2-1. PRODUCT FEATURE

Features	Description
The Great Capacity	• Even bulky garments and blankets get super clean. The Great capacity leaves enough room for a more thorough, cleaner wash.
EZ-Closed Lid	• The door is designed to close softly and prevent users from being injured

2-2. SPECIFICATIONS

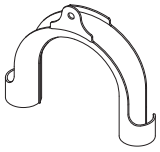
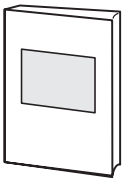
TYPE		TOP LOADING WASHER	
DIMENSION (Inches / cm)	A. Height	111.7cm	
	B. Width	68.6cm	
	C. Height with Door open	151.5cm	
	D. Depth	74.4cm	
WATER PRESSURE		20~116psi (137~800kPa)	
WEIGHT		61.0kg(134.5lb)	
CAPACITY		4.5 cu.ft	
POWER CONSUMPTION	WASHING	120V	700W
	SPIN	120V	400W
	DRAIN	120V	80W
SPIN REVOLUTION		700rpm	



2-3. DETAIL FEATURES

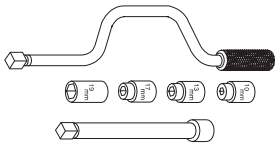
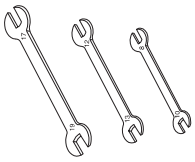
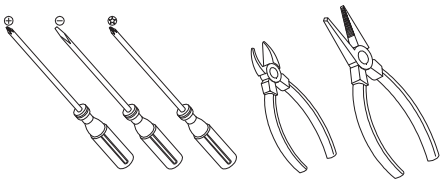
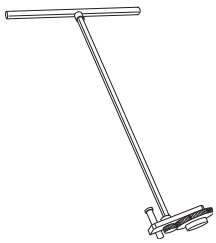
Grade		WA45T3200A*		WA45T3400A*	
Image					
Main Spec.	Capacity(DOE)	4.5		4.5	
	AquaJet™	No		No	
	Diamond interior drum	yes		Yes	
	Pure Cycle™	No		No	
	Washing Cycles	8		10	
	VRT®	No		No	
	Pulsator material	PP		PP	
	Max rpm	700		700	
	Motor	AC Motor		AC Motor	
Design	Color	Neat White		BLACK	
	Center display	Digital Time Display 4 digit		Digital Time Display 4 digit	
	Jog Dial	Yes		PP	
	Main display	LED		LED	
	LED color	Red		Red/Ice Blue	
	Door Lid TC	Glass		Glass	
	Easy door	Yes		Yes	
	Frame	PCM		DOI	
	Top Cover	ABS		ABS	
Energy		Estimated Yearly Energy Cost	18	Estimated Yearly Energy Cost	18
		Estimated Yearly Electricity Use	240	Estimated Yearly Electricity Use	240
		Energy consumption	240	Energy consumption	240

2-4. OPTIONS SPECIFICATIONS

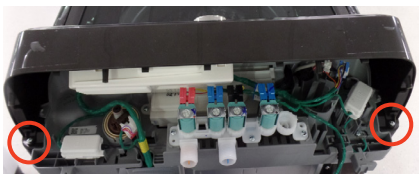
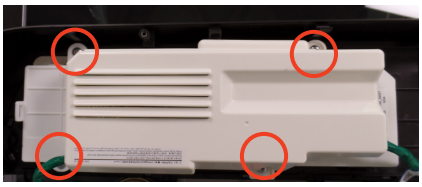
Item	Item Name	Code No.	Remark
	HOSE-HANGER	DC61-00224C	Default
	CABLE TIE	6501-000121	Default
	MANUAL-BOOK	DC68-03850E	Default
	ASSY CAP V.W	DC97-18313A	Default

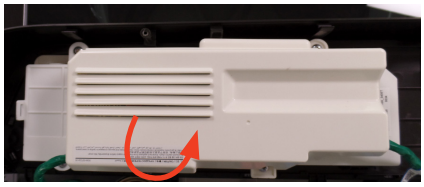
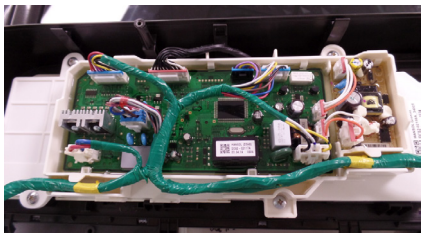
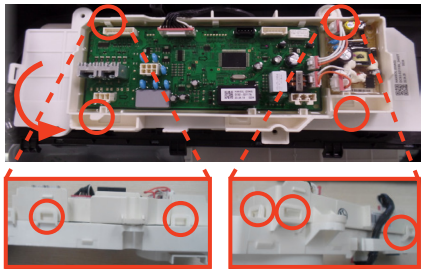
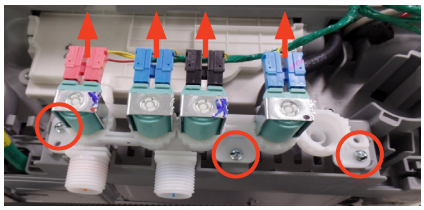
3. DISASSEMBLY AND REASSEMBLY

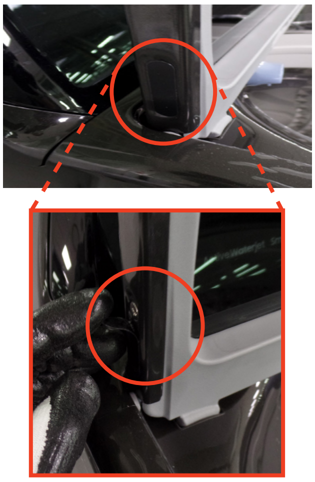
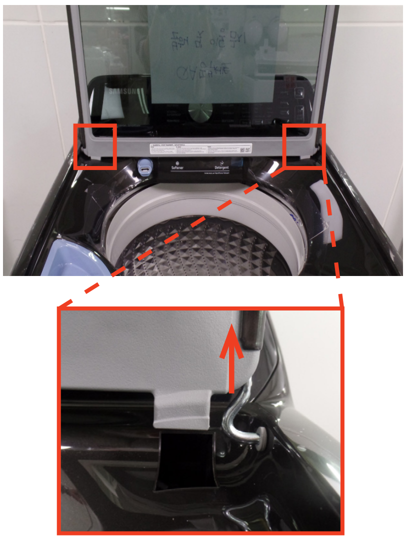
3-1. TOOLS FOR DISASSEMBLY AND REASSEMBLY

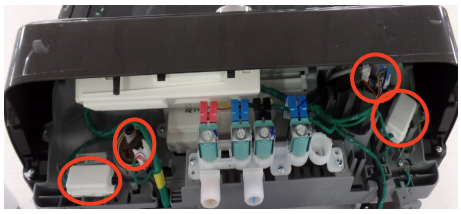
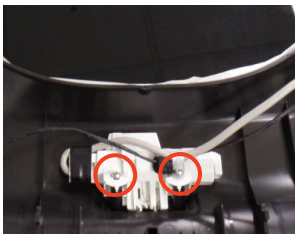
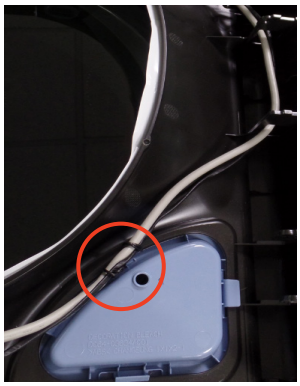
Tool		Type	Remarks
	Box driver	10mm 17mm	Tub(16), Fixer screw(5), Motor(1), Balance(5) Damper(2), Damper(friction 1)
	Double-ended spanner	10mm 17mm	Replaced by box driver Leg
	Vice pliers		A Tool for protecting empty turning of bolt or abrasion from using box driver For disassembly of Spin drum
	Others (screwdriver, nipper, long nose pliers)		Common tools for servicing
	JIG for the ASSY SPIN BASKET		

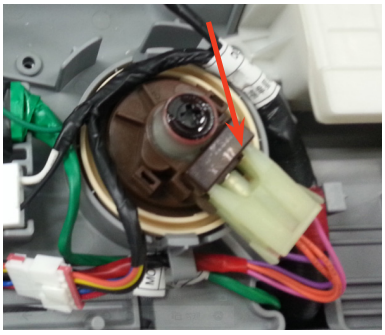
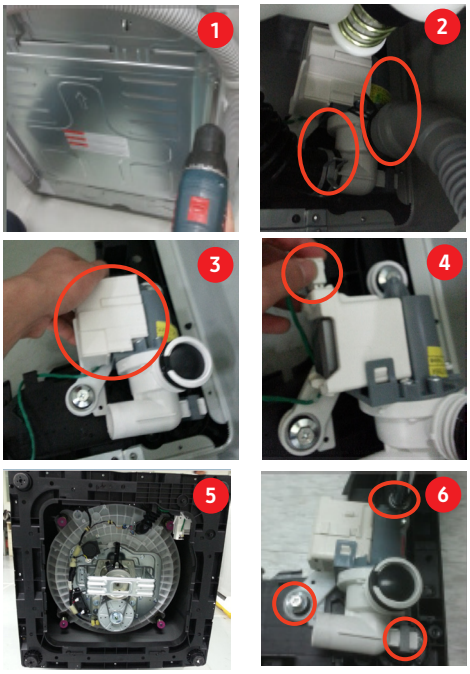
3-2. DISASSEMBLY

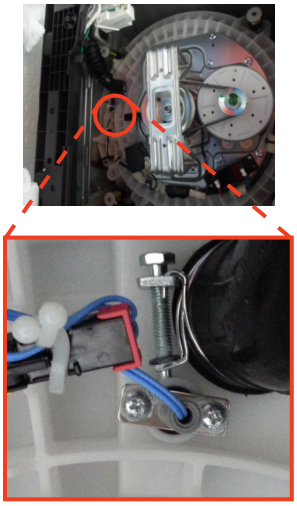
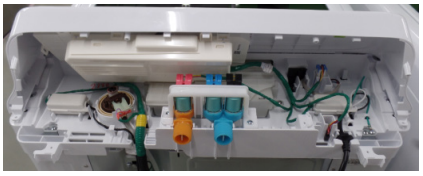
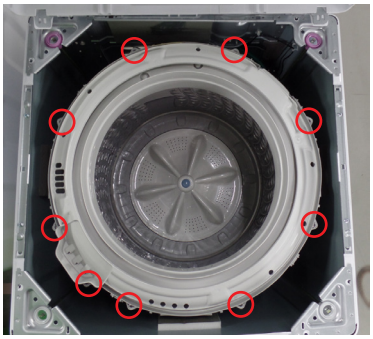
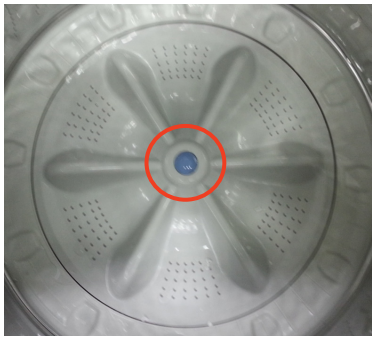
Part	Figure	Description
Sub and Main PCB (continued)	   	1. Remove the 6 screws holding the control panel assembly and separate cover panel. 2. Separate the both hooks. (Left and Right) 3. Separate the cover panel upward. * If it is difficult to disassemble, use the (-) driver to disassemble hooks. (Be careful damage of hooks.)
		4. Remove the 2 screws holding the control panel assembly and turn the panel over.
		5. Pull the Encoder-Knob to separate it and then remove the 4 fixing screws. **When reassembling the PCB, take care that you do not damage the control-panel fixing hook. After replacing the sub PCB, check the key operation.**

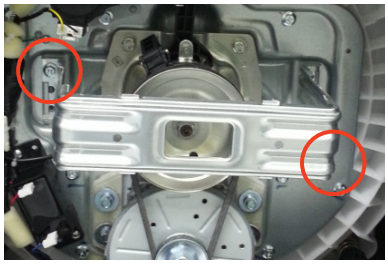
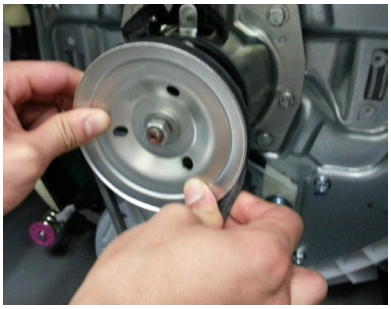
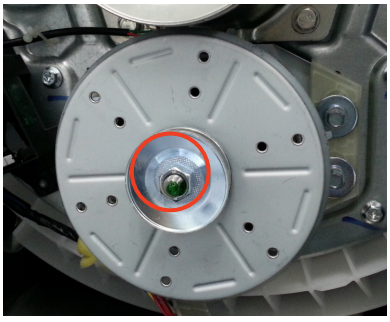
Part	Figure	Description
Sub and Main PCB		6. Pull and lift up the cover PCB(m).
		7. Separate the cover PCB(m) and the wires connected to the main PBA. **After reassembling the housing, check if the wires are properly connected. When disassembling and reassembling the housing, take care that you do not damage the part.**
		8. Pull the PCB (s). 9. Separate 5 hooks with – driver.
Water Valve		1. After separating the control panel, separate the water-valve housing. 2. Remove the 3 fixing screws.

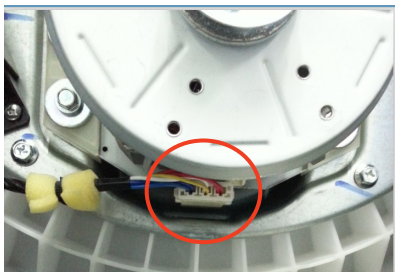
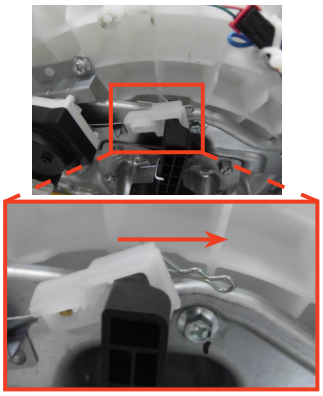
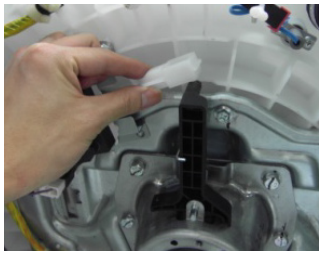
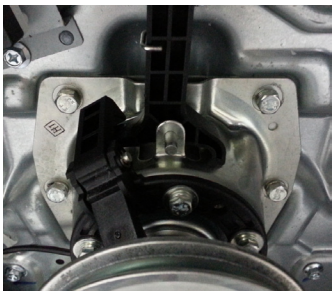
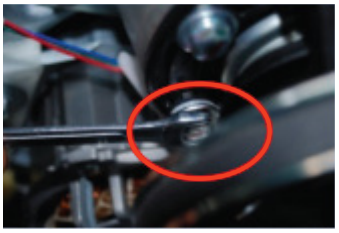
Part	Figure	Description
Door Assembly	  	1. Remove the 2 inlay tapes. 2. Remove the 4 screws holding the door lid TC and separate the door.

Part	Figure	Description
Top Cover Assembly / Door Switch		1. Remove the 4 screws from the cover top. 2. Separate the control panel assembly.
		3. Separate the water valve, the pressure switch. **Separate the housing to prevent stress and damage to the wire-harness.** 4. Separate the main wire harness, the pressure switch hose clip, Grounding screw.
	  	5. Remove 2 screws and separate the top cover assembly by lifting and pushing ahead the top part of the assembly. 6. Remove the 2 screws and separate 2 WIRE VINYL.

Part	Figure	Description
Sensor Pressure Switch		1. Disassemble the control panel assembly. 2. Separate the pressure switch housing.
		3. Before separating the hose, release the clip. ⚠ **When releasing the clip, take care that you do not tear the hose.**
Drain-Pump		1. Separate the back cover. 2. Separate 2 clamps. 3. Remove COVER PUMP. 4. Separate 2 pins. 5. Remove the 13 screws in base. 6. Remove the 3 screws. 7. Screws are separated by '+' shape hand driver.

Part	Figure	Description
Thermistor		1. Remove the 2 screws.
Clutch (continued)		1. Separate the top cover assembly by lifting and pushing ahead the top part of the assembly. 2. Remove the 2 screws holding the panel control Separate all the wires connected to the housing.
		3. Remove the 9 screws fixing the tub-cover and separate the tub-cover.
		4. Separate the pulsator-cap by inserting the tip of a (-) screwdriver between the pulsator-cap and the pulsator.

Part	Figure	Description
Clutch (continued)		5. Remove the bolt holding the pulsator with a 10mm wrench according to the direction of arrow
		6. Remove the shaft with the jig wrench. - Release the nut in a clockwise direction. - Fasten the nut in a counterclockwise direction.
		7. Place the main body so that the front frame faces upward and remove the 2 bolts holding the saddle with a 10mm wrench. **When you place the washer on the floor, take care that you do not damage or scratch the product.**
		8. Remove the belt. **When you replace belt, check belt tension certainly.**
		9. Remove the NUT with a 17mm wrench and remove ASSY PULLEY MOTOR.

Part	Figure	Description
Clutch		10. Separate the 1 marked housings.
	 	11. Separate the clip.
		12. Remove the 6 screws fixing the clutch assembly and then separate the clutch assembly.
TMR sensor		1. Remove the 2 screws with a 10mm spanner.

Reassembly procedures are in the reverse order of dissasembly procedures.

4. TROUBLESHOOTING

4-1. TEST MODE

No	mode	How to enter
1	Smart Install	Standby → Set the scheduled time to 17:00 → Press Start/Pause for 7 seconds → Smart Install
2	Automatic check mode	Smart Install → Press Start/Pause While displaying "AS"
3	Manual check mode	Enter Smart Install → Press Delay End While displaying "AS" delay end, Check devices in turn when pressing delay end.
4	S/W version Check	Enter Smart Install → Press the first button on the bottom While displaying "AS"
5	Diagnostic Code Check	Enter Smart Install → Press the first button on the right at the bottom While displaying "AS", "Cr". Tum jog dial along the direction of CW when displaying.

Automatic Mode of Smart Install
- Automatically start all operation modes of Smart Install.

Manual Mode of Smart Install
- Under the condition of manual mode, every time when "Delay End" is pressed, next step will be entered.
- Contents like washings, etc. are not allowed in the drum.

Operation mode	Description	Operation mode	Description
1	carry out test for machine door locking	7	carry out test for operation of drainage pump
2	carry out test for drainage pump operation	8	carry out test for operation of dehydration
3	carry out test for operation of preparatory valve	9	carry out test for operation of drying heater and drying fan
Co	carry out test for operation of cold water valve	10	carry out test for operation of machine door
Ho	carry out test for operation of hot water valve	OK(Ot)	Automatic mode of Smart Install is completed normally
6	carry out test for operation of water shot valve		
	carry out test for operation of washing heater		
	carry out test for operation of rinsing		

* Accessories not included in the product are not required to check and they can be skipped directly.

Identity of Smart Install completion
- After Smart Install is completed normally, 「OK(Ot)」 a identity will display.
- If Smart Install is completed abnormally or Smart Install fails to work, 「nG」 identity will display.

Result Enquiry of Automatic Mode of Smart Install
- Under the condition of appearance of 'AS' identity, press "Delay End + Start/Pause" button.
- If automatic mode result is in normal condition, 「OK(Ot)」 identity will display. If automatic checking mode fails to complete normally or fails to execute, 「nG」 identity will appear.

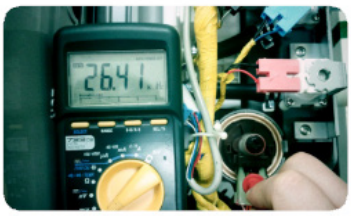
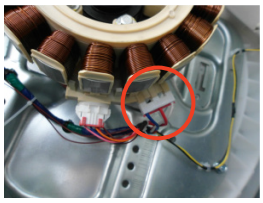
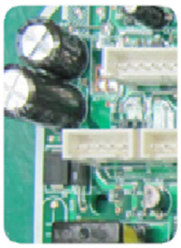
Diagnosis Information Display Mode
- Under the condition of appearance of 「AS」 identity, if the first button on the right at the bottom is pressed, 「CR」 identity will appear and diagnosis information display mode is entered.
- Under the condition of appearance of 「CR」 identity , if turn the jog dial control switch clockwise, diagnosis codes generated before will display 7 digits at most.

4-2. DIAGNOSTIC CODE & CORRECTIVE ACTION

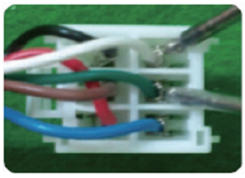
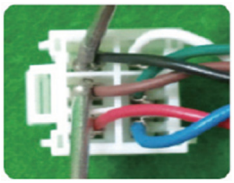
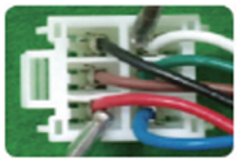
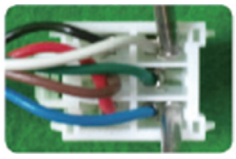
No	Code	Meaning
1	1C	The WaterLevel sensor is not working properly. • Check WaterLevel Sensor wire harness. • If the information code remains, contact a customer service centre. **NOTE** **When the washer displays "1C", the washer do draining for 3 minutes.** **During this time, the Power button is inoperative.**
2	3C	Check the motor for operation. • Try restarting the cycle. • If the problem continues, call for service.
3	4C	Water is not supplied. • Make sure the water taps are open. • Make sure the water hoses are not clogged. • Make sure the water taps are not frozen. • Make sure the washing machine is operating with sufficient water pressure. • Make sure that the cold water tap and the hot water tap are properly connected. • Clean the mesh filter as it may be clogged. **NOTE** **When the washer displays "4C", the washer do draining for 3 minutes.** **During this time, the Power button is inoperative.**
4	4C2	• Make sure the cold water supply hose is firmly connected to the cold water tap. If it is connected to the hot water tap, the laundry may be deformed with some cycles.
5	5C	Water is not draining. • Make sure the drain hose is not frozen or clogged. • Make sure the drain hose is positioned correctly, depending on the connection type. • Clean the debris filter as it may be clogged. • Make sure the drain hose is straightened all the way to the drain system. • If the information code remains, contact a customer service centre.
6	9C1	The electronic control needs to be checked (Over Voltage Error). • Check the PCB and wire harness. • Check if power is supplied properly. • If the information code remains, contact a customer service centre.
7	9C2	Low voltage detected • Check if the power cord is plugged in. • If the information code remains, contact a customer service centre.
8	AC6	Inverter Communication problem • Check the Inverter PCB and wire harness. • If the information code remains, contact a customer service centre.
9	dC	Operating the washer with the door open. • Make sure the door is properly closed. • Make sure laundry is not caught in the door.
10	HC	High temperature heating check. • If the information code remains, contact a customer service centre.
11	LC	Check the drain hose. • Make sure the end of the drain hose is placed on the floor. • Make sure the drain hose is not clogged. • If the information code remains, contact a customer service centre. **NOTE** **When the washer displays "LC", the washer do draining for 3 minutes.** **During this time, the Power button is inoperative.**

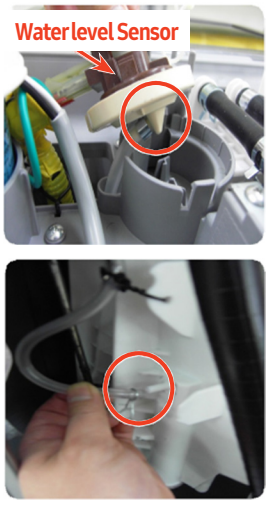
No	Code	Meaning
12	OC	Water is overflowed. • Restart after spinning. • If the information code remains on the display, contact a local Samsung service center.
13	PC	When position of the clutch can't be detected. • If the information code remains, contact a customer service center.
14	PC1	After position of the clutch is detected, if the signal of the clutch hall goes wrong. • If the information code remains, contact a customer service center.
15	Ub	Spinning does not work. • Make sure laundry is spread out evenly. • Make sure the washing machine is on a flat, stable surface. • Redistribute the load. If only one item of clothing needs washing, such as a bathrobe or pair of jeans, the final spin result might be unsatisfactory, and an “Ub” check message will be shown in the display.
16	Ur	Display for additional rinsing. • Show additional rinsing in sensing unbalance. • Method of releasing the display. - Any key input.

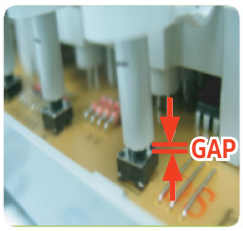
4-3. CORRECTIVE ACTIONS FOR EACH CODE

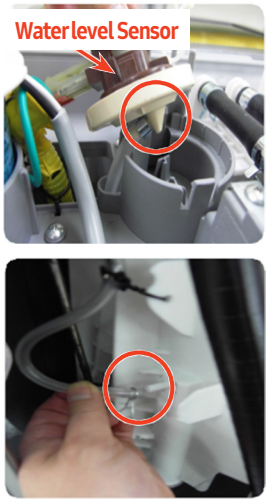
Error Type	Error Mode	Causes	Corrective Actions	Description of Photo
Water Level Sensor	1C	• Check if the water level sensor is defective. • Check if the water level sensor terminal is properly connected. • Check if the water level sensor hose is broken. • This may occur when The main PCB is defective.	• Check the water level sensor terminal connections. • Check the part code of the water level sensor, because if an incorrect part is used, an abnormal operation may occur. (Abnormal operation) • If the water level sensor is defective, replace it. • If no problems were found for all of the procedures above, replace the PBA.	▸ Check the water level sensor frequency. 1. Check it after the water level sensor and the connector are connected. Checking Part : Blue Color Wire Oragne Color Wire 2. Frequency: Approx.26.4KHz without water (Min 25.9KHz) 
Washing Motor Error and Hall Sensor Error	3C	• Washing motor fault • Washing motor hall sensor fault • Incorrect connections of the washing motor/hall sensor connector • Washing motor rotor and stator fault • Main PCB fault	• Check the motor connector terminal connections and contacts. • 3E is displayed because overloading occurs due to too much laundry. • If the hall sensor terminal is faulty, replace the hall sensor. • Check whether the stator of the motor cover is damaged. • Check for coil isconnections due to foreign material. • If the PBA control circuit is faulty, replace the PBA.	▸ Check the motor Winding Coil • Plug out the connector and read resistances at any two of the three terminals on Motor : Should be 12Ω (at 25°C)  ▸ Check the motor Hall Sensor • Check the resistance on the main PCB motor(Between pins 2 and 4, 3 and 4 of the four (4) pins) - Resistance : Approx. 2 to 4 MΩ - Check the voltage when the power is on.  **CN1** 1-5V-1 2-Hall-A 3-Hall-B 4-GND 5-Clutch Hall IC

Error Type	Error Mode	Causes	Corrective Actions	Description of Photo
Water Supply Error	4C	• This may occur when The water supply valve is defective. • This may occur when The main PCB is defective. • This may occur due to frozen water.	• If the water supply valve is broken, replace the valve. • Check if the water supply is blocked due to an alien substance in the valve or check if the water is supplied to the machine. If a problem is found, take the appropriate countermeasure. • Check if the water supply is blocked due to the water being frozen. • If the PBA Relay malfunctions, replace the PBA.	1. Measure the resistance of the water supply valve. - Resistance : 0.9KΩ to 1.1KΩ between the terminals of the Water Supply Valve. 2. Check whether there is foreign material in the Water supply valve filter.  
Drain Error	5C	• This may occur when The drain pump is defective. • This may occur due to frozen water. • Check if there is any Alien substance inside The draining pump. • This may occur when the main PCB is defective.	• Check if there is any alien substance inside the draining pump motor. • Check the natural drain in the same manner. • Check if there are any incorrect connections or broken wires. • If the machine malfunctions intermittently when the wash tub water temperature is high, replace the pump. • If the motor stops due to the water being frozen in winter, remove the frozen Water referring to the relevant repair procedures.	Check the drain pump resistance. (Resistance : 13.05 ~ 16.45Ω) 
Communication Error	AC	• The signals between the sub and main PBAs are not sensed. • Incorrect wire connections between the sub and main PBAs.	• Check the wire connections and terminal contacts between the sub and main PBAs. • Check for disconnected wires. • Check whether the sub PBA is short-circuited because of moisture. • If the main PBA's communication circuit is faulty, replace it.	-

Error Type	Error Mode	Causes	Corrective Actions	Description of Photo
Door Error	DC	This may occur when the door switch is defective. This may occur when the main PCB is defective.	• Check if a dE Check occurs during the boiling course. • As this Check occurs because the door is opened, close the door. • Since 120V power is connected, check if the power cord is disconnected or check the insulation status and repair it if necessary. • If the main PBA door detection circuit is defective, replace it.	 1. Check the resistance for Read SW (Checking Part : White-Green Wire) - Resitance : Approx 0.2Ω between the terminals of Reed SW.  1. Check the resistance for M of or (Checking Part : Black-Brown Wire) - Resitance : 33Ω to 46Ω between the terminals of Motor.
	DC1 DC2	The door lock switch unit is not inserted. The door lock switch unit is damaged. The wire is disconnected. The door lock switch unit is defective. This may occur due to a defect of the main PCB.	• Check whether the door lock switch unit is inserted. • Check whether the door lock switch unit is damaged. • Check the disconnection of the wire. • If the door lock switch unit is defective,replace it. • If the main PCB is defective, replace it.	 ‹Lock›  ‹Unlock› 3. Check the resistance for Lock / Unlock Contact (Checking Part : Lock White-Red Wire Unlock White Blue Wire) - Resistance : Resistance : Approx 0.2Ω between the terminals of Contact. **Check the Door Lock / Unlock state.**

Error Type	Error Mode	Causes	Corrective Actions	Description of Photo
Water Leakage Error	LC	• Check for any leakage. • Foreign material in the DV case • Fault of a hose or incorrect part engagement in the product.	• Check for any leakage on the base, Hose, Valve and Tub connections and take any required action. • During natural draining, this error occurs when the drain bellows are clogged with foreign material. Remove the foreign material. • Check the drain motor operation. Replace if it does not operate normally.	
Overflow Error	OC	• Water level sensor fault • Freezing in the winter season	• If the water level sensor has a functional error, replace it. • Check the hose. This error occurs if it is torn or has a hole. • This error occurs if water is frozen in the winter season. Use hair dryer to defrost hose. Consider relocating the unit to warmer location.	

Error Type	Error Mode	Causes	Corrective Actions	Description of Photo
Switch Error (Main Relay Error)	BC2	• The Power button is continually pressed. • A button other than the Power button is continually pressed.	• Check whether either the Power switch or a tact switch is continually pressed. • Check whether the service PBA holding screws are fastened too tight. If they are fastened too tight, loosen them a little. • If the main PBA switching IC on/off Check has occurred, replace the main PBA. • The “E2” Check occurs if the main relay connections are incorrect. Check the connections. If there is no Check in the connections, replace the main PBA.	Check the contact between the control panel buttons and their corresponding tact switch. - There must be a gap between a control panel button and its corresponding micro switch. **Otherwise, an error occurs after approx. 30 seconds has passed.** 
Temperature Sensor Error	TC	• Washing temperature sensor fault • Faulty and incorrect connections of sensor • Main PCB Fault • Freezing in the winter season	• Check the connections of the temperature sensor. • If the temperature sensor has a functional error, replace it.	Check the thermistor resistance (Resistance at 20~30°C: 66.187~36.941kΩ)  
Unbalance Error	UE	• Motor hall sensor fault • Caused by the laundry contents	• Check the type of laundry. Check whether it may cause an unbalanced situation. • Educate the consumer in this case is to press pause reposition the load or remove a few items. Press start to continue and complete the wash cycle.	-

Error Type	Error Mode	Causes	Corrective Actions	Description of Photo
Water Leakage Error	LC LC1	• This may occur when an alien substance is in the DV Case This may occur due to a defect of the product's internal hose or from the part assembly.	• Since this occurs when an alien substance is in the Draining Bellows, for natural draining, remove the alien substance. • If the drain motor is defective, replace the motor. • Check if the water leaks from the tub connection part.	 Check if there is any alien substance in the Draining Bellows. **Check if there is any alien substance such as underwear wire, coins, etc.**
Overflow Error	OC	• This may occur when the water level sensor is defective. • This may occur when water is supplied continuously due to freezing or foreign materials in the water supply valve.	• The water level sensor is replaced.	
UnbalanceError	UB	• This may occur due to the laundry being unevenly distributed.	• Check the laundry type and check if The laundry load is unbalanced. - Make sure to check if there is any Laundry present that absorbs a lot of water even if its volume is small and explain the problem comprehensively, if necessary.	-

Error Type	Error Mode	Causes	Corrective Actions	Description of Photo
Mems PBA Error	8C 8C1 8C2	• This may occur due to disconnection. • This may occur when the Mems PBA is defective.	• Check wire connections • Replace the Mems PBA. • Replace Mems PBA because of the Main PBA wire disconnection Check or PBA silver nano part malfunction.	-
Temperature Sensor Error	TC1 TC2 TC3 TC4	• Washing temperature sensor fault • Dry temperature sensor fault • Faulty and incorrect connections of the dry condensing sensor • Main PCB fault • Freezing in the winter season • IPM temperature is abnormally high.	• Check the connections for the washing heater temperature sensor connector. • If the washing heater temperature sensor has a functional error, replace it. - A TC1 check occurs. • Check the connections for the dry heater temperature sensor connector. • If the dry heater temperature sensor has a functional check, replace it. - A TC2 check occurs.	Check the thermistor resistance (Resistance at 20~30°C: 66.187~36.941kΩ)  
Unbalance Error	Ub	• Motor hall sensor fault • Caused by the laundry contents	• Check the type of laundry. Check whether it may cause an unbalanced situation. • Educate the consumer in this case is to press pause reposition the load or remove a few items. Press start to continue and complete the wash cycle.	-
Power Error	UC (9C1/9C2)	• Power condition fault. • An check occurs when under or over voltage is supplied. • plug receptacle is used • Main PBA fault (sometimes)	• Check the consumer's power conditions. : Make sure to check the operating voltage. • Connect a tester to the internal power terminals during the Boil or Dry operations and observe the washing machine's operation carefully. : Check the voltages. (A check occurs when under or over voltage is supplied.) : Check whether a plug receptacle is used. When the connecting wire is 1m, a momentary low voltage may drop up to 10 V • Main PBA fault (sometimes)	-

4-4. TROUBLESHOOTING

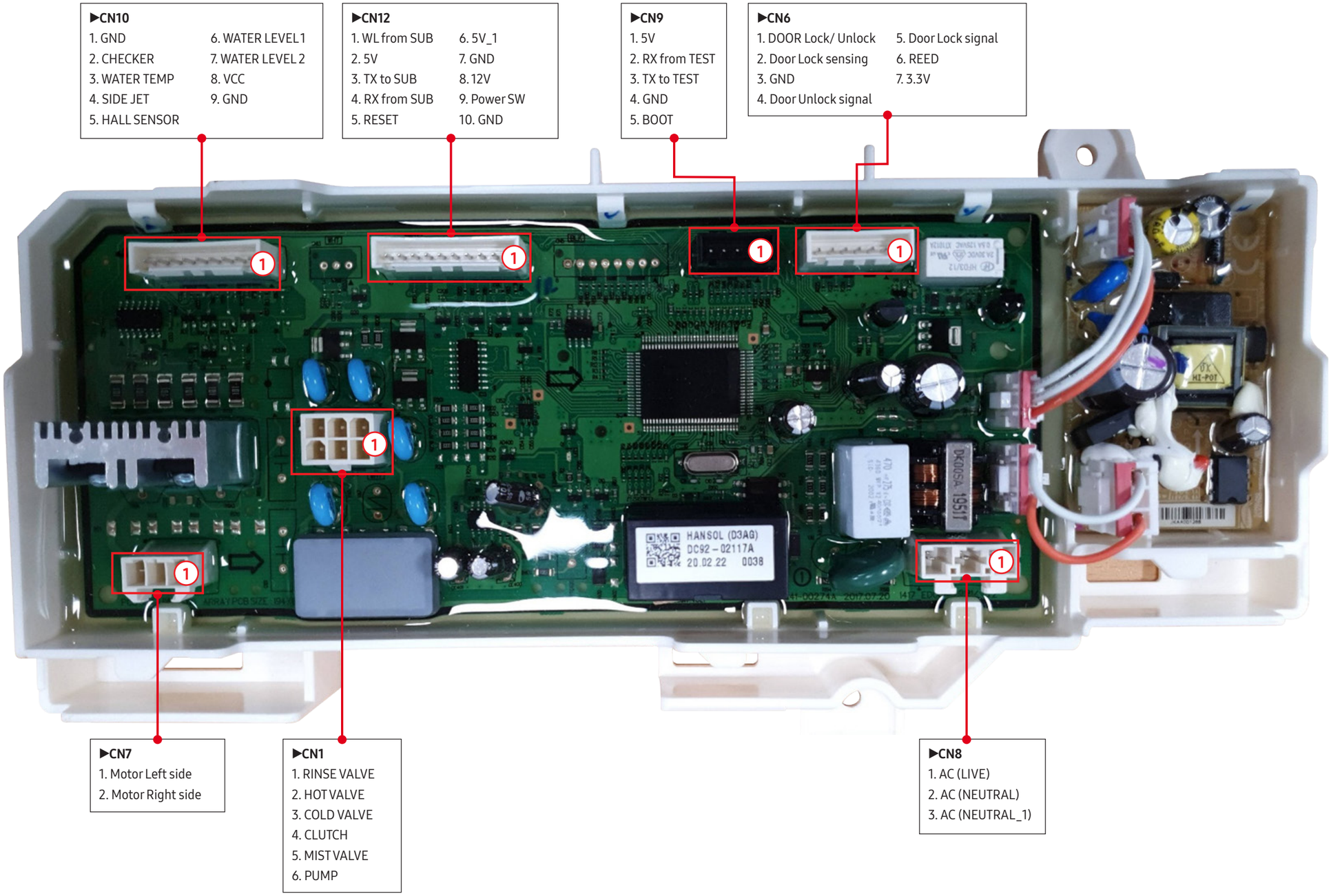
Problem	What To Do
Will Not Start	• Plug the unit into the wall outlet. Check for proper voltage. • Check fuse or reset circuit breaker. • Push any key to turn on the washer and press the Start/Pause key to run the washer. • Close door and push the Start/Pause key to run the washer. • Check if washer is in a pause, soak or suds process. Wait briefly and it may start. (If the washer is in suds period, Suds will light up instead of remaining time.) • Check for restricted drain system. (If there is electrical problem in drain system, "nd" error will occur after 30minutes.) • Check Water Supply. • Check the line or water valve screen filter. • Check if PCB connectors are assembled properly. • Check if CN2 terminals on PCB are in good condition. (Refer to PCB Connector Check.) • Replace PCB.
Leaking	• Make sure inlet hose connections are not leaking. Check for rubber gasket damage due to over tightening. • Check standpipe for leak. Wrap a dry rag around the standpipe opening. If rag becomes wet, leak is fault of home plumbing. Be sure the standpipe is capable of accepting the flow of water from the washer. • Make sure end of drain hose is correctly inserted and secured to drain standpipe. • Check internal hose connections (fill, drain systems, dispenser hoses & clamps). • Check rubber boot. Remove, reposition and reinstall, if necessary. • Check for possible kinked dispenser to outer tub hose. Hot water pressurization may force door open.
Will Not Spin	• Make sure to close the door completely. • Check for water left inside the washer. If so, go to "Will Not Drain". • Perform Quick Test Mode or Quick Spin Test. Does the washer spin? (Before the test, empty the unit inside.) • If it doesn't tumble after the above, change PCB. When the problem persists, change the motor. • Perform Quick Test Mode or Quick Spin Test. Does the washer spin? If it does, Check Possible unbalanced load scenario in normal mode. • Check for loose connections at PCB, Water Level Sensor, Motor, Hall Sensor Wire Harness. (CN9,CN1,CN8) (Refer to the Component Testing Procedure.) • Check motor windings resistance. (CN8 Pin1&3 = 11.6 ohms (at ±7% 20°C/68°F), Pin1&2 = 11.6ohms (at ±7% 20°C), Pin2&3 = 11.6 ohms (at ±7% 20°C))
No Water Fill	• Perform Quick Test Mode. Check all of Water Valves visually. (Cold Water Valve, Bleach Water Valve, Softener dispenses using Cold & Bleach Water Valve, and Hot Water Valve.) • Check if water taps are turned on fully. • Check Water Valves and Water Level Sensor (Refer to PCB Connector Check) • Check if there is any kink in inlet hoses. • Check if inlet screens are clogged up. • Check if water has enough pressure. If so, find out its contributors. • Check if there is any frozen area in the unit (Drain Hose, etc) • Measure the resistance of Water Valve Coil. (It should read 1.18K ohms. Check Pin#3 of CN6 and pin#1.2.3.4 of CN4) • Check Pressure S/W and PCB for loose connections. (Refer to PCB Connector Check.)
Tub Full of Suds	• Go to "Will Not Drain" and "Will Not Spin" and check the draining. • Check PCB and Drain Pump for any loose wire connection. • Perform Quick Test Mode or Board Output Test to drain. • Use HE (High-Efficiency) or low sudsing detergent specially formulated for front load washers. • Reduce the amount of detergent for that specific load size and soil level. Keep in mind that towel creates more suds generally. • Reduce the amount of detergent when water is soft, or laundry is small or lightly soiled. • Do one more washing cycle with cold water and a table spoon of salt without detergent.

Problem	What To Do
Wet Clothes	• Unbalance due to not enough load. Put additional load. • Due to excessive suds by using general detergent. Use HE (High-Efficiency) or reduce its quantity. • Low Spin Speed or Drain Only was selected. • Go to " Will Not Spin".
Will Not Lock	• Perform Quick Test Mode. Check Door Lock. Check the resistance for door lock. if Approx 0.2 ohm between the terminal of contact (white-Red wire), and if not, change pcb(refer to pcb connector check). • Read Lock Switch and PCB (CN3). (Refer to PCB Connector Check.)
Will Not Unlock	• Display shows "LO". Turn off and on the unit. If "LO" keeps illuminating, check PCB and Door Lock Switch. • Read Lock Switch and PCB (CN3). (Refer to PCB Connector Check.) • Perform Quick Test Mode. Check Door Lock. Check the resistance for door unlock if Approx 0.2 ohm between the terminal of contact (white-blue wire), and if not, change PCB (refer to pcb connector check).
No Key Operation	• Option and Function buttons respond differently according to each cycle. • Child Lock is being activated. To exit, hold down Spin level key and soil level key simultaneously until it sends out a beeping sound. • When "End" illuminates on the display, only Power button works. Press Power button and make new cycle selections.
Will Not Drain	• Check for any kink on the drain hose. If any, straight it out. • Check for any restriction in the drain hose. • Close the door and press the Start/Pause Button. For safety reasons, the washer does not tumble or spin with the door open. • When it is freezing outside, check if it is frozen inside the drain hose. • Check if the water level signal input is correct. Go to Board Input Test Mode. • Go to Quick Test Mode and do Drain Pump Test. • Check if there is any twist in the hose (the one between Tub and Drain Pump). • Check if it reads AC 120V at the pump when a spin cycle is selected. • Read the winding resistance of the pump motor. (15±10% Ohms) • Check the pump at Pin #3 of CN6 and pin #7 of CN4 on PCB. It should read AC 110~120V. (Refer to PCB Connector Check)
Wrong Water Temperature	• Check if both of the water taps are fully open. • If the water heater is located far from the washer, screw out the hot water tap and let its water pass until you get hot water. • Too Hot/Too Cold: Reduced amount of water is supplied while PCB controls the influx to regulate the actual temperature of the water in the tub. This may appear to be significantly hotter/colder than expected. • Check if the temperature selection is correct. • Disconnect inlet hoses from the Water Valve and remove any residue in the inlet screens.
Noisy and/or Vibration/ Walking	• Check if the washer is leveled and the lock nuts are tightened up on the bottom plate. • Check if all of the shipping bolts and spacers are removed from the back panel. • Check if load is big enough and there is no unbalance. If there is not enough load, put in a few towels to balance it. • Check if the motor is fastened enough. • Remove various trouble contributors (such as dust coat on the floor).
Buttons do not Respond	• Option and Function buttons respond differently according to each cycle. • Child Lock feature has been selected. To disable feature press and hold Temp and Spin simultaneously until a beep is heard. • When display shows "End", only the Power button will function. Press Power and make new cycle selections.

5. PCB DIAGRAM

5-1. CONNECTOR DESCRIPTION (ASSY PCB MAIN)

▶ This Document can not be used without Samsung's authorization.

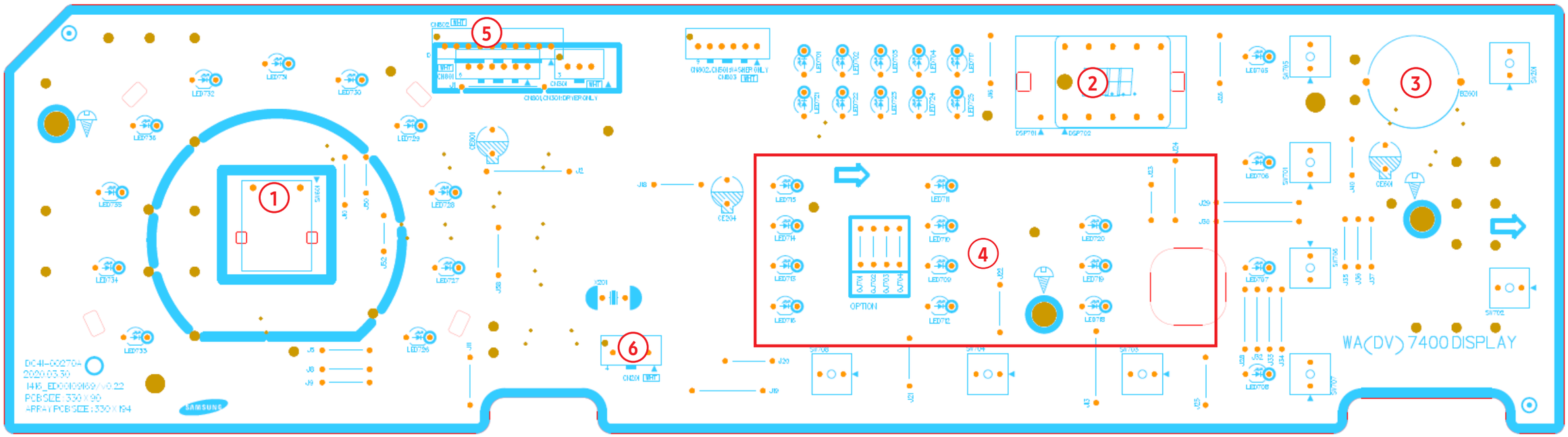


Motor Check	- Check Voltage at Pin #1 of CN7 and Pin #1 of CN8 - When motor operates CCW = AC 120V - Check Voltage at Pin #2 of CN7 and Pin #1 of CN8 - When motor operates CW = AC 120V
Pump Motor Check	- Check Voltage at Pin #6 of CN1 and Pin #3 of CN8 - When Pump Motor operates = AC 120V
Door Lock Check	- Check Voltage at Pin #1 and #3 of CN6 - When Door Lock operates = DC 12V

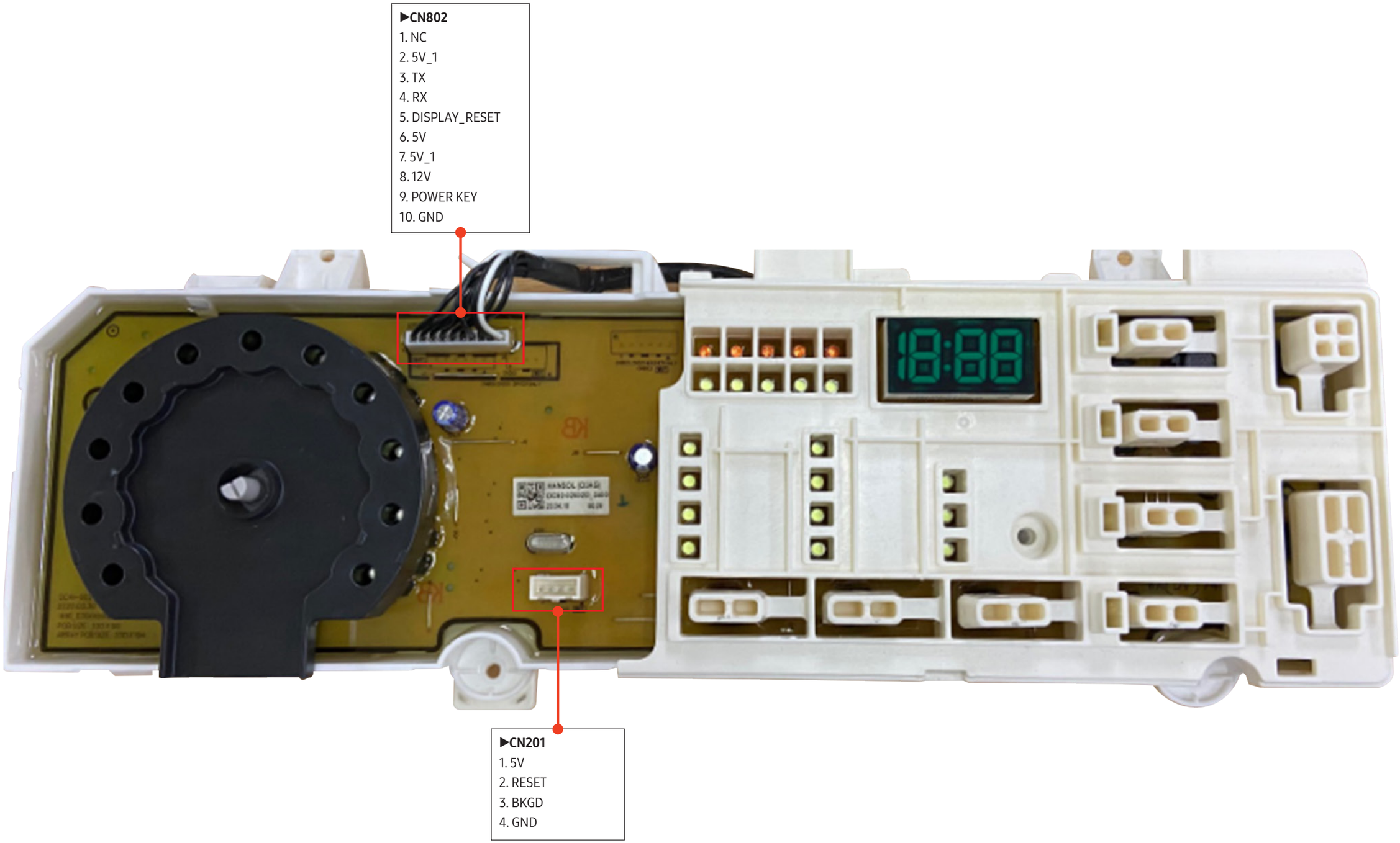
Water Level Sensor Check	- Check Frequency at Pin #6 and #9 of CN10 - Reset Frequency = 25.6kHz - Check Frequency at Pin #7 and #9 of CN10 - Reset Frequency = 25.6kHz
Water Valve Check	- Check Voltage at Pin #1,2,3,5 of CN1 and Pin #3 of CN8 - When each Valve operates = AC 120V
Clutch Motor Check	- Check Voltage at Pin #4 of CN1 and Pin #3 of CN8 - When Clutch Motor operates = AC 120V
AC Power Check	- Check Voltage at Pin #1 of CN8 and Pin #3 of CN8 - Tester Check = AC 120V

5-2. CONNECTOR DESCRIPTION (ASSY DISPLAY PCB)

▶ This Document can not be used without Samsung's authorization.



Location	Part No.	Function	Description
1	SW704	Jog Dial	Jog Dial
2	DSP701	LED Display	Display function
3	BZ601	Buzzer	Making a sound
4	LED7**	Yellow LED	Display function
5	CN802	Connector	Connect with Main PBA
6	CN201	Connector	Connector for Update of DISPLAY MICOM


▶CN802
1. NC
2. 5V_1
3. TX
4. RX
5. DISPLAY_RESET
6. 5V
7. 5V_1
8. 12V
9. POWER KEY
10. GND
▶CN201
1. 5V
2. RESET
3. BKGD
4. GND

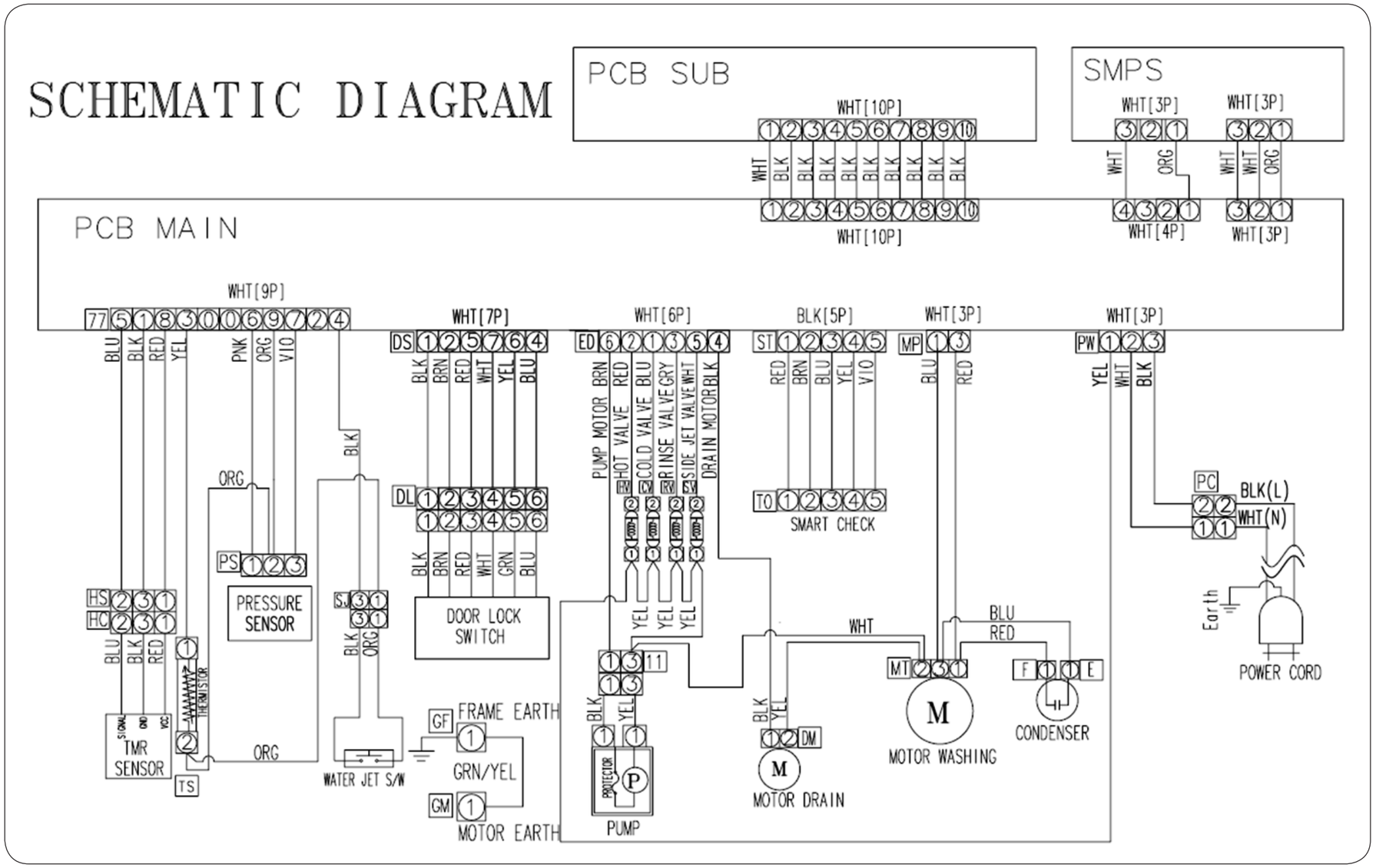
6. WIRING DIAGRAM

6-1. WIRING DIAGRAM

▶ This Document can not be used without Samsung's authorization.

REFERENCE INFORMATION

BLK	BLACK
BLU	BLUE
GRN	GREEN
GRY	GRAY
NTR	NATURAL
ORG	ORANGE
PNK	PINK
RED	RED
SKYBLU	SKYBLUE
VIO	VIOLET
WHT	WHITE
YEL	YELLOW



7. REFERENCE

7-1. NOMENCLATURE

①		②		③	④				⑤	⑥	⑦	
Product Type		Capacity		Year	Series	Feature Logic			Region	Color		Buyer
						F-Code 1	F-Code 2	F-Code 3				
W	A	4	5	T	3	4	0	0	A	V	/	A	4

① **Product type (CAN NOT CHANGE) :** Auto Washing machine (SAMSUNG's Guide Line)

② **Market Claim Capacity :** 45 = 4.5 cu.ft.

③ **Intro. Year : T - Intro.Year :** 2020

④ **Feature Table :** 3 – AC motor
4 - Best

⑤ **Color :** V-BLACK
W-WHITE
P-INOX

⑥ **/ :** CBU

⑦ **Buyer :** A4 - America

SAMSUNG

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