SAMSUNG

WASHING MACHINE
DRUM TYPE

Basic Model : WW90M6
(WW6800M PROJECT)
Model Name : WW22N6850Q*
(WW6850N PROJECT)
Model Code : WW22N6850QX/A2
(WW6850N PROJECT)

SERVICE Manual

WASHING MACHINE (DRUM)

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1. SAFETY INSTRUCTIONS

1-1. SAFETY INSTRUCTIONS FOR SERVICE ENGINEERS

► Make sure to observe the following instructions to operate the product correctly and safely and prevent possible accidents and hazards while servicing.

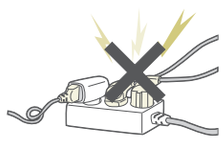
► Two types of safety symbols, Warning and Caution, are used in the safety instructions.

⚠ 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

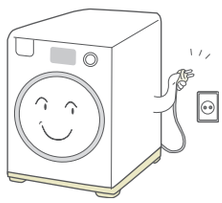
- (When servicing electrical parts or harnesses) Make sure to disconnect the power plug before servicing.
  ✔ Failing to do so may result in a risk of electric shock.

- 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 result in accidental operation of the washing machine.



- 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.

- 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 shorts in advance.

- When connecting wires, make sure to connect them using the relevant connectors and check that they are completely connected.
  - ✔ Do not use tape 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 ensuring that it is inserted into the bracket-heater.
  - ✔ If not inserted into the bracket-heater, it touches the drum and causes noise and electric leakage.

⚠ WARNING AFTER SERVICING

- Check the wiring.
  - ✔ Ensure that the wiring can not be damaged by any sharp edges or moving parts.

- Check for any water leakage.
  - ✔ Perform a test run for the washing machine using the standard course and check whether there is any water leakage through the floor section or the pipes.

- 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 lifetime.

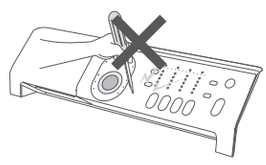
⚠ CAUTION BEFORE SERVICING

- 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 lifetime.

- 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 lifetime.

- 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 lifetime.

- 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.
  - ✔ Take care when disconnecting connectors, do not use excessive force as this may damage the connector.

- Check if there is any residue that shows that liquid entered the electric parts or harnesses.
  - ✔ If any liquid has entered into a part, replace it or completely remove any remaining moisture from it.

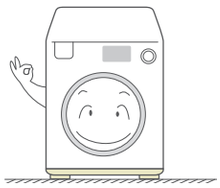
- If you need to place the washing machine on its back for servicing purposes, place a support(s) on the floor and lay it down carefully so its side is on the floor.
  - ✔ Do not lay it down on its front. This may result in the inside tub damaging parts.

⚠ CAUTION AFTER SERVICING

- Ensure that all components are reassembled correctly and are safe before connecting the appliance to the mains supplies.

- 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

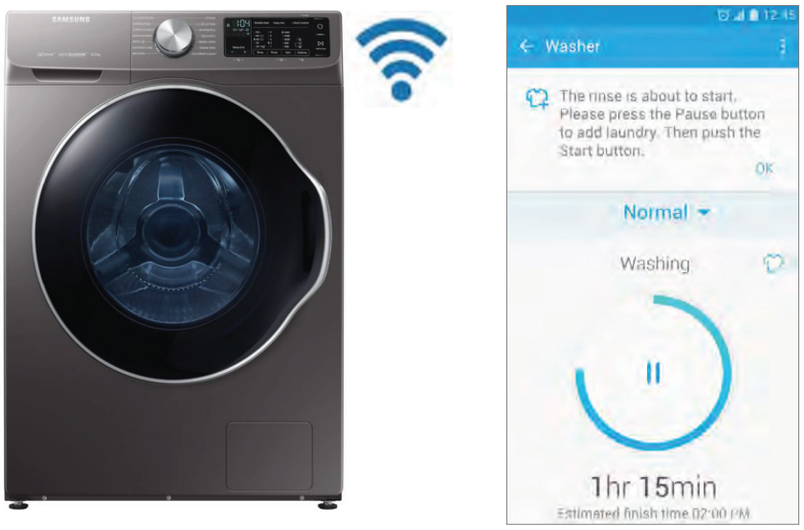
- Check whether the washing machine is level in relationship with the floor. Check whether it is installed firmly on the floor.
  - ✔ Vibrations can shorten the lifetime of the product.



2. FEATURES AND SPECIFICATIONS

2-1. CONCEPT

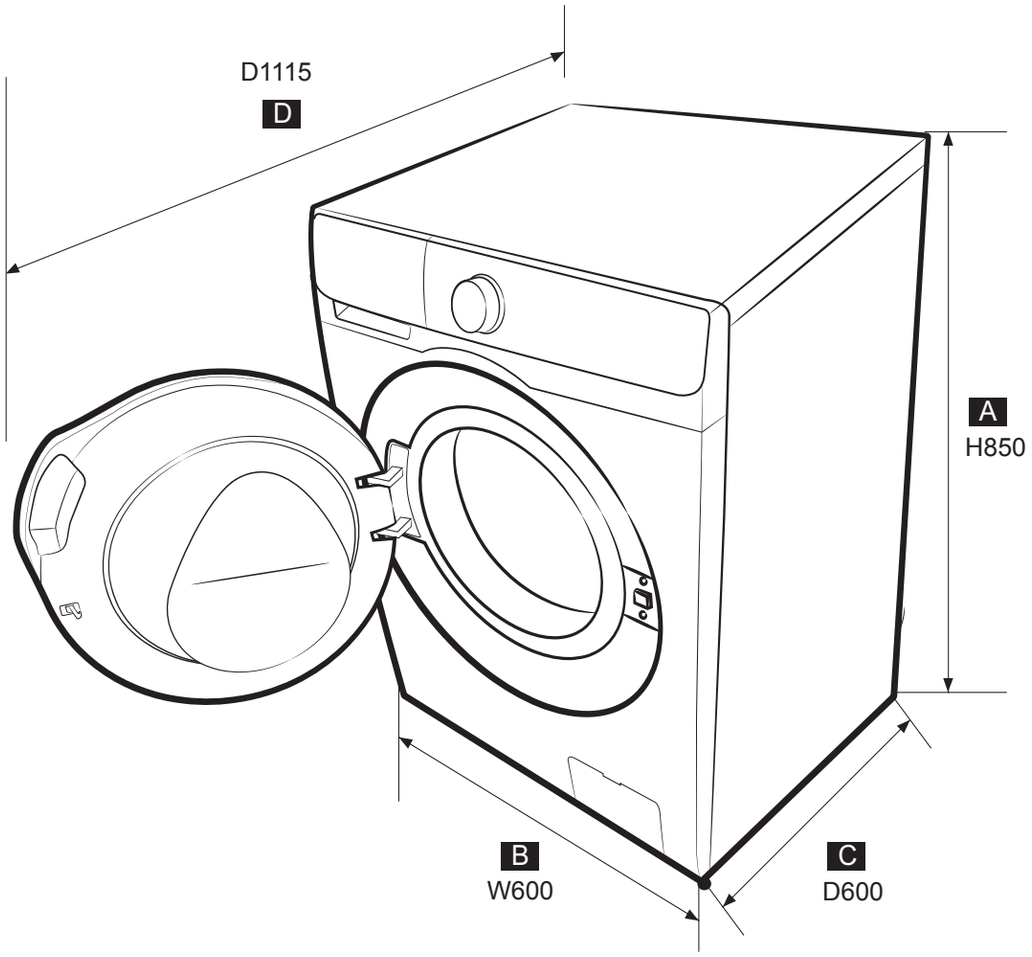
■ COMMON FEATURES

Features	Description
Q-Drive	• Innovative Q-Drive technology reduces the washing time by up to 50%* and cuts energy use by 20%*, without compromising the cleaning performance. The motion of the Drum moves clothes from top to bottom, while a pulsator creates a wide and intense shower, so it quickly, gently and thoroughly removes dirt.  ※ Test Condition : eCotton 60℃, half load * Tested by Intertek
Smart Control	• Smart Control lets you remotely control and monitor your washing using a smartphone App*. At any time and from anywhere, you can quickly start or pause it and keep an eye on program selections, time remaining and finishing alerts. And it will even diagnose errors and provide the best solution.  *Available on iPhones and Android devices. A Wi-Fi connection is required.

Features	Description
Eco Bubble™	• Before the normal cycle begins, the unique bubble generator starts working. It helps dissolve and activate the detergent using air and water to generate bubbles that penetrate faster and more evenly throughout the wash load. This brings the detergent into contact with each fiber in the load.  ※ Based on internal bench top test water temp.15℃, IEC60456 EU standard detergent, grease soil swatch (EMPA120).
Bubble Soak	• With the simple touch of a button the Samsung washing machine's Bubble Soak technology helps remove a wide variety of normally stubborn stains. It adds an extra phase to a normal washing cycle in which clothes are thoroughly soaked in active bubbles, so any dirt and stains are loosened and can be removed much more effectively. 

2-2. SPECIFICATIONS

Type			Front loading washing machine
Model name			WW22N6850Q*
Dimensions			W600 × D600 × H850 (mm)
Water pressure			50-800 kPa
Net weight			77 kg
Power consumption	Washing	120 V	200 W
	Washing and heating	120 V	1150 W
	Spin	120 V	550 W
	Drain	120 V	80 W
Spin revolutions			1400 rpm



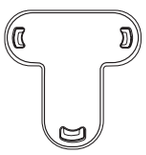
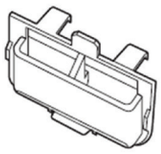
Dimension	mm
Height-Overall (A)	850
Width (B)	600
Depth (C)	600
Depth with door open 90° (D)	1115

2-3. COMPARING SPECIFICATIONS WITH EXISTING MODELS

(★) : Special models only

Project		WW6850N	WW6800M
Model Name		WW22N6850Q*	WW9*M64*
Image			
Feature		Blue Crystal, Smart Control, Q-Drive	Blue Crystal, Add Wash , Smart Control, Q-Drive
Capacity		-	9.0 kg /8.0kg
Main Spec	Drum Volume	63 L	63 L
	Max Rpm	1400	1400
	Motor	DIM, DC93-00586G, 5.7Ω±5% (25℃)	DIM, DC93-00586D, 5.7Ω±5% (25℃)
	Control Sys	General	General
	Weight Detection	3Stage	3Stage
	Water Supply	Cold and Hot / Cold Only	Cold and Hot / Cold Only
	Washing and Heating	1150W / 120V	2000W / 220V, 2400W / 240V
	Voltage/Frequency	120V / 60Hz	220-240V / 50-60Hz
	Drainage	Pump	Pump
	Power-Outage Compensation	Yes	Yes
	Zero Stanby Power	Yes(1W or Less)	Yes(1W or Less)
USP	Eco BubbleTM	Yes	Yes
	Q-Drive	Yes	Yes
	Add Wash	No	Yes
	Drum	wave	wave
	Smart Control	Yes	Yes
Design	Big Door	Yes(520 mm)	Yes(520 mm)
	Center Jog Dial	Yes	Yes
	Display	LED	LED
Dimension (W x D x H, mm)		600 x 600 x 850	600 x 600 x 850

2-4. OPTIONS SPECIFICATIONS

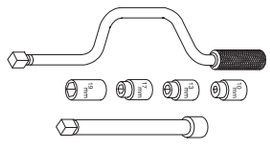
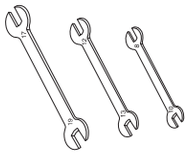
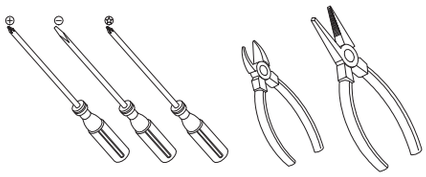
NO	Unit	Part Code	Figure	Description	Qty
1	Bolt Spanner	DC60-00104A		To remove the shipping bolts To adjust the leveling leg	1
2	Assy Hose Water	DC97-15648A (COLD) DC97-15648B (HOT)		To setup water supply.	Cold only 1, Cold+Hot 2(★)
3	ASSY HOSE WATER (Aqua-Stop)	DC62-00079A		To setup water supply.	1(★)
4	Manual Users	DC68-03645B		To explain the product operation and installation	1
5	Cap Fixer	DC67-00307A		To cover the holes	4
6	Cap Fixer	DC67-00208B		To cover the hole from which you removed the power cord at the back of the product.	1
7	Hose Hanger	DC62-10278A		To secure the drain hose.	1
8	Guide Liquid	DC61-03510A		To use liquid detergent.	1

Note

- (★) is supplied for specific models only among those without water supply hoses.
- Customer can purchase additional water supply and drain hoses from a service center.
- For built-in models, the spanner, water supply and drain hoses are not supplied. Both the water supply and drain hoses are supplied during the installation.

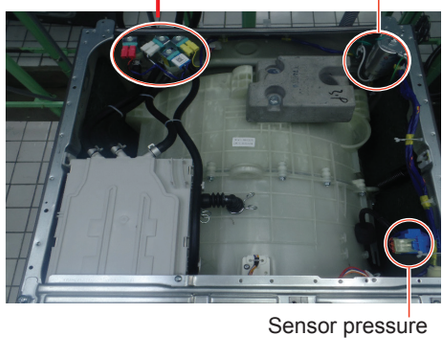
3. DISASSEMBLY AND REASSEMBLY

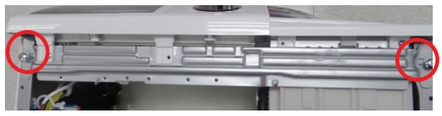
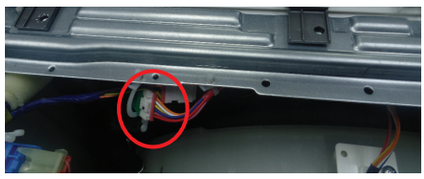
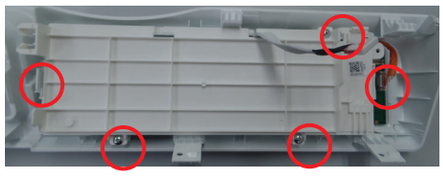
3-1. TOOLS FOR DISASSEMBLY AND REASSEMBLY

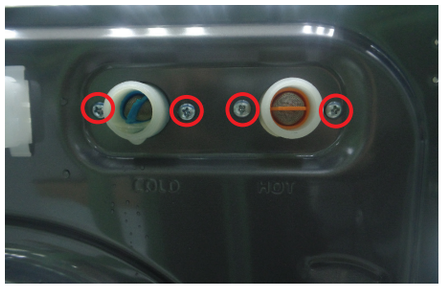
Tool		Type	Remarks
	Box driver	10mm	Heater(1),Tub(12), Fixer screw(5), Motor(2), Balance(9)
		13mm	Shock Absorber (2 holes each in left/right), Damper(2), Damper(friction 2)
		19mm	Pulley(1)
	Double-ended spanner	10mm 13mm 19mm	Replaced by box driver Leg
	Vice pliers		A Tool for protecting empty turning of bolt or abrasion from using box driver For disassembly of Spin drum
	Others (screwdriver, nipper, long nose pliers)		Common tools for servicing
	Torque wrench		The Tool for assembly of heater and Tub

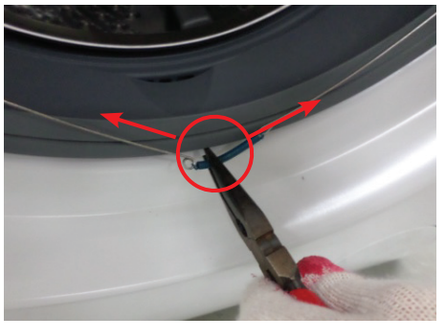
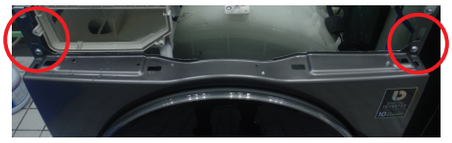
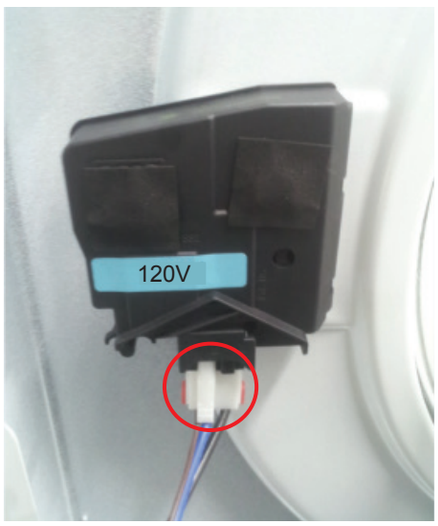
3-2. STANDARD DISASSEMBLY DRAWINGS

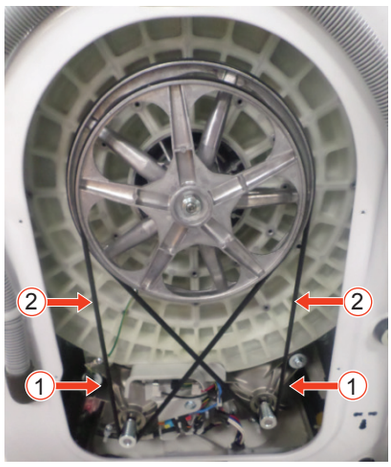
► This is a standard disassembly diagram and may differ from the actual product.
Use this material as a reference when disassembling and reassembling the product.

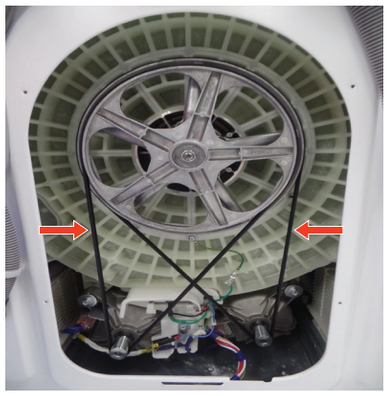
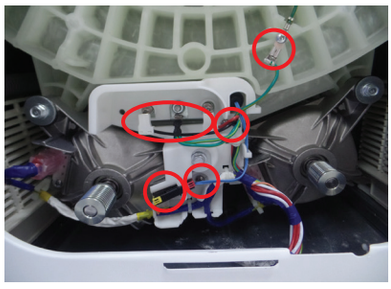
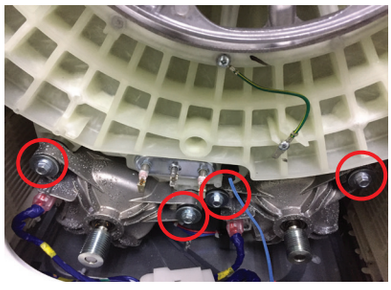
Part	Figure	Description
Assy Cover Top		1. Remove the 2 screws holding the Top Cover at the back of the unit.
		2. Remove the top-cover by lifting it up after pulling it back about 15mm.
		3. Then, the Water (Pressure) Sensor, Noise Filter and Water Valve can be replaced.

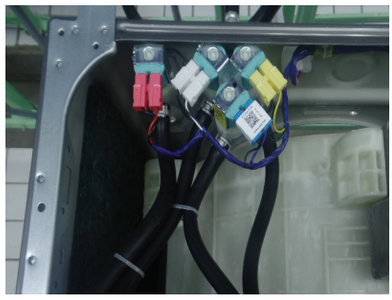
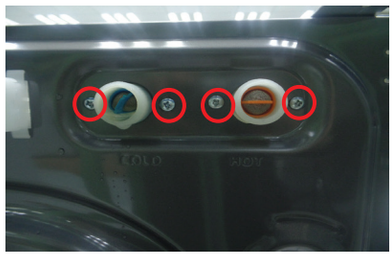
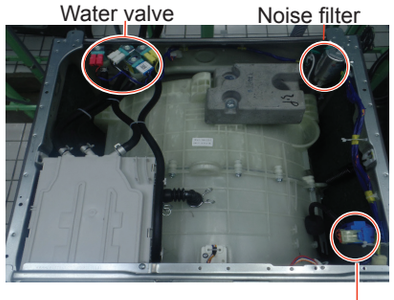
Part	Figure	Description
Sub-PCB Panel		1. Remove the 2 screws holding the front operating panel.
		2. Remove the screws at the top of the ASSY-PANEL CONTROL.
		3. Hold the ASSY-PANEL CONTROL while pulling it upwards and release the terminals to remove it.
		5. Release the hooks and screws to remove the PCB for repair / replacement.

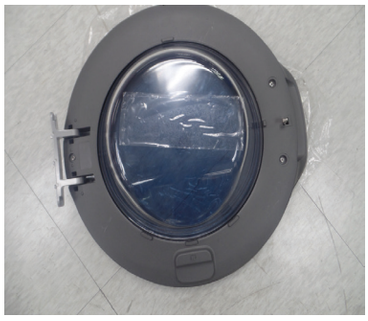
Part	Figure	Description
Assy Housing-Drawer		1. Remove 1 screw.
		2. Remove the Band-ring.
		3. Separate the water supply valve wire.
		4. Remove the screws holding the water supply valve.

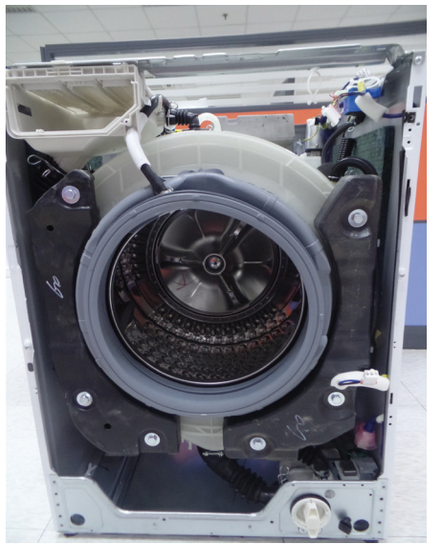
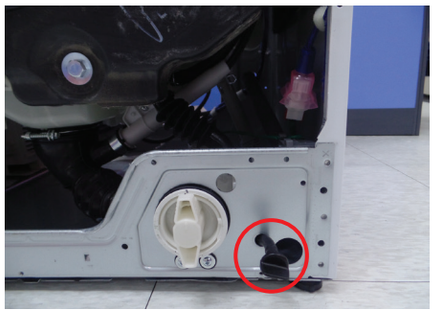
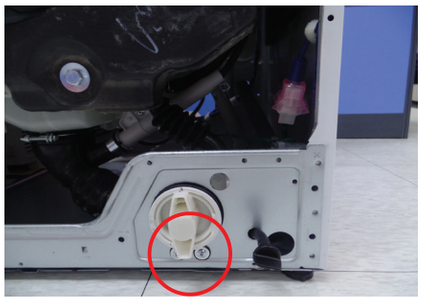
Part	Figure	Description
Frame Front		1. Using long nose pliers, pick up one of the rings on Wire-Diaphragm which connect the spring and the wire ends. then Separate the Wire-Diaphragm from the FRAME-FRONT and Disconnect the Diaphragm.
		2. Remove the 2 screws holding the FRAME-FRONT.
		3. Remove the 3 screws holding the bottom of the FRAME-FRONT.
		4. Disconnect the terminal for the DOOR-LOCK switch.

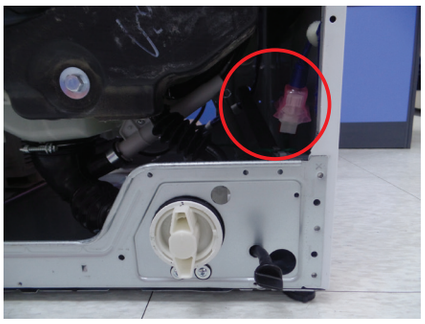
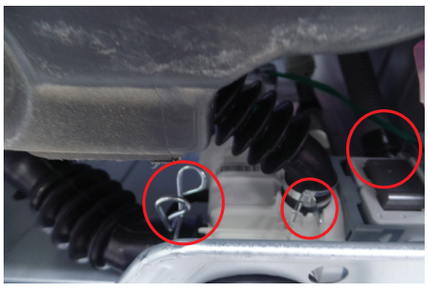
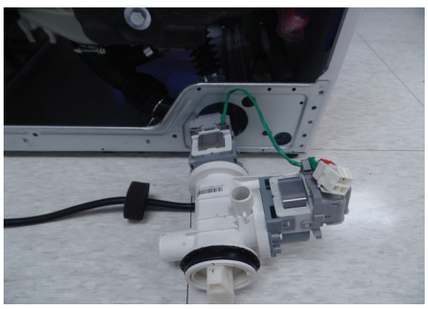
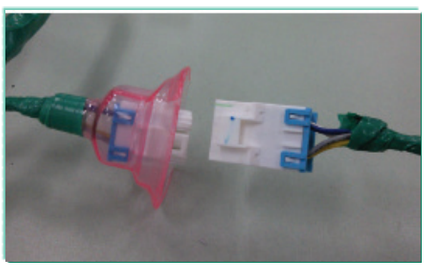
Part	Figure	Description
Cover-Back		• Unfasten the 4 screws that hold the back cover in place. Remove the back cover by sliding it down. (When assembling, slide the back cover up.)
Belt		1. Remove the Cover back . 2. Separate the belt and then assembly it. 3. Check if the belt position is at the center of the Pulley. Assembling the belt Place the belt around the Motor-Pulley (①) and then over the Pulley (②).

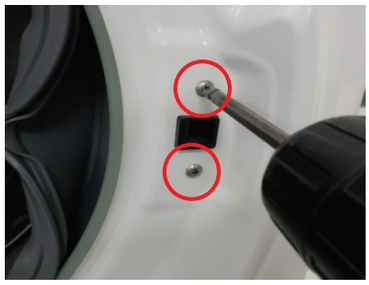
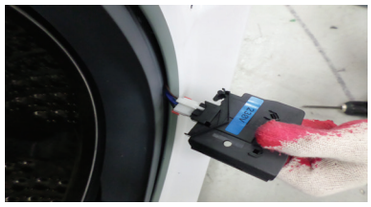
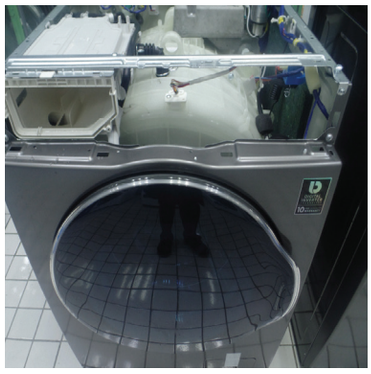
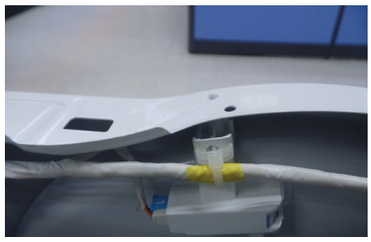
Part	Figure	Description
BLDC Motor		1. Separate the blet.
		2. Remove the 2 screws and connector. Separate the cover heater.
		3. Separate the bolts of motor. 4. Separate the motor.
		⚠ **Caution** When installing the Belt around the Motor Pulley, the bottom of the belt must be located on the second tooth of the motor pulley of the Motor Pulley.

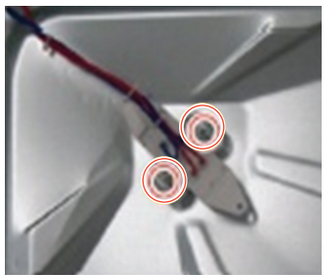
Part	Figure	Description
Water Supply Valve		1. Separate the Assy Cover-Top. 2. Separate the water supply valve wire.
		3. Remove the screws holding the water supply valve.
Water Level Sensor		1. Separate the Assy Top-Cover.
		2. Disconnect the wire between the PRESSURE HOSE and the water level sensor for repair / replacement.
		3. Push the clip of the water level sensor behind sensor to one side of the frame and pull it out to remove it.

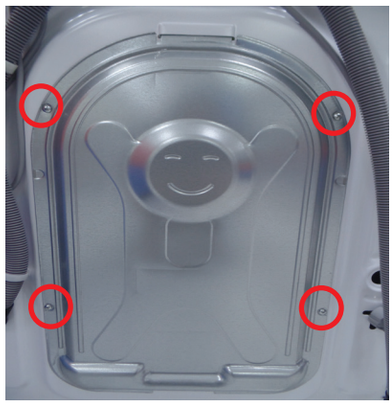
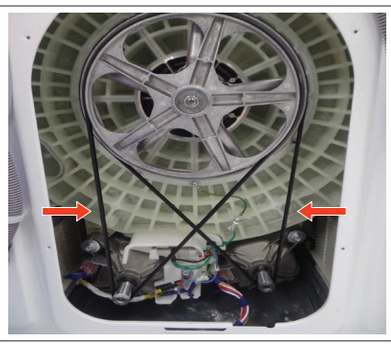
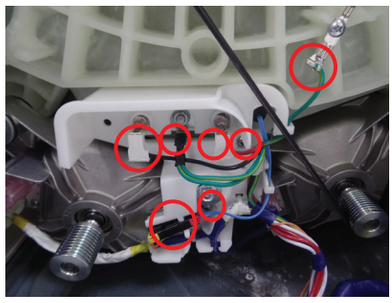
Part	Figure	Description
Assy Door	 	1. Separate top cover & panel control. 2. Open the door, removing the two screws holding the door hinge. 3. Seperate the door.

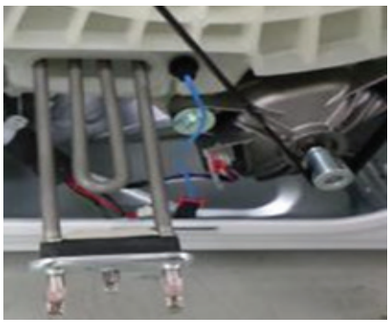
Part	Figure	Description
Drain Pump		1. Remove the Frame Front.
		2. Remove the remaining water through the drainage hose. Place a bowl under the drainage hose, hose to catch any water that may flow out.
		3. Remove the 2 screws holding the drain pump.

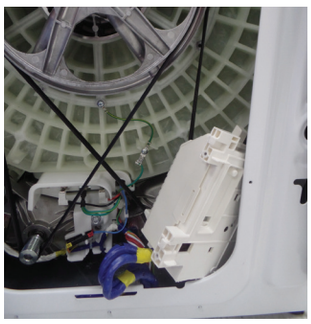
Part	Figure	Description
Drain Pump		5. Disconnect the terminal and Holder.
		6. Release the BAND RING (3EA) and remove the HOSE (3EA).
		7. Push the TUB inward slightly to remove the PUMP.
Drain Pump		Pump wire harness is connected to main wire harness.
	✔ **Check Points for Troubleshooting** 1. Separate the Drain Filter and check if any alien substances are inside the pump (e.g. coins, buttons .., etc.) → Remove these if found. 2. Check if the wire driving the pump has come loose → Take the relevant countermeasure if necessary. 3. When water leaks, check the assembly status of the Clamp Hose, and Cap Drain → Take the relevant countermeasure if necessary. Turn the filter counterclockwise to remove the remaining water.	

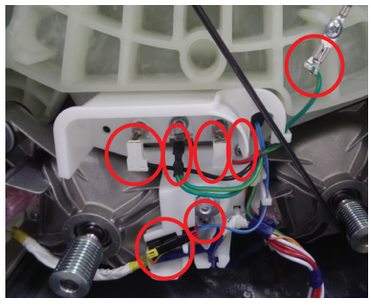
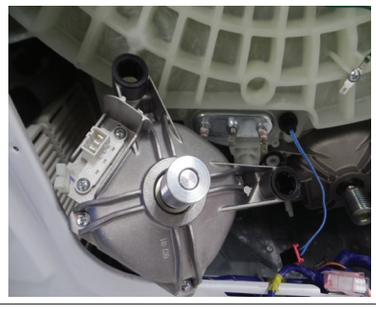
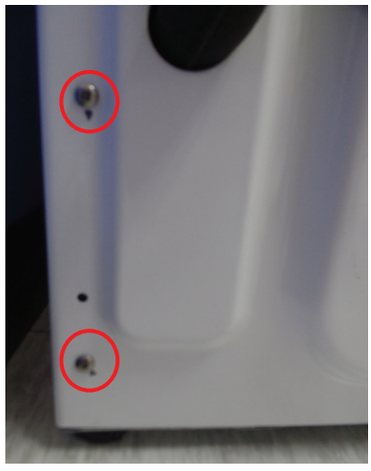
Part	Figure	Description
Door-Lock S/W		1. Open the Door. Remove the Wire Diaphragm and remove it from The Front Frame. For easier disassembly, remove the spring from the lower part of the Diaphragm with a (-) screwdriver. Since the Diaphragm can be damaged when removing it. Use a Longnose plier and remove it slowly in one direction.
		2. Remove the 2 screws.
		3. Remove the screw holding the Door-Lock S/W. Remove the Door-Lock S/W. Remove the connection wire.(Remove the connector after releasing it by pressing the catch.)
Door S/W		1. Remove the Frame Front.
		2. Remove the 1 screw.
		3. Remove the screw holding the Door S/W. Remove the Door S/W. Remove the connection wire.(Remove the connector after releasing it by pressing the catch.)

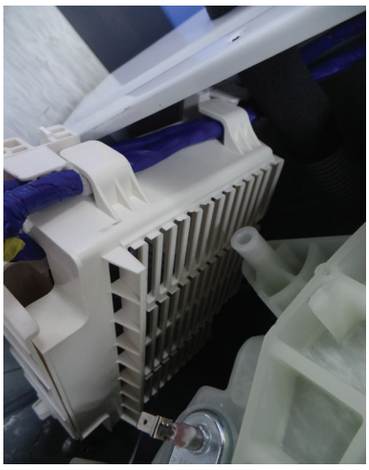
Part	Figure	Description
Leakage Sensor (OPTION)		1. Disconnect two wire connectors.
	 	2. Remove the 2 screws.

Part	Figure	Description
Heater		1. Separate the Back Cover.
		2. Separate the Belt pulsotor.
		3. Remove the 2 screws and connector. Separate the cover heater.

Part	Figure	Description
Heater		4. Remove the nut holding the heater and separate the Heater. Use box Drivers (Socket size: 10mm)
	 	5. Remove the Heater from the Tub ⚠ **Caution** Make sure to insert the Heater into the correct position of the bracket inside the Tub when reassembling it. Otherwise, there is a danger of a fire. Make sure to push it inwards until the packing part comes into the Tub completely when reassembling it so that the packing part is completely stuck to the Tub. Fasten the holding nut with a force of 5Kgf/ cm2. If the nut is not fastened properly, there is a danger of water leaking.

Part	Figure	Description
Assy PCB Main		1. Remove the Cover Back.
		2. Remove the 2 screws.
		3. Push the TUB inward slighhtly to remove the PBA.
		4. Separate the guide cover pcb and remove the wire harness.
		

Part	Figure	Description
Assy Kit		1. Remove the Cover Back.
		2. Separate the blet. 3. Remove the 2 screws and connector. RSeparate the cover heater.
		4. Separate the motor.
		5. Remove the 2 screws on the back of frame.

<table>
<tr><th>Part</th><th>Figure</th><th>Description</th></tr>
<tr><td rowspan="2">Assy Kit</td><td>  </td><td>6. Separate the Cover PCB。Remove the wire harness from the hook.</td></tr>
<tr><td>  </td><td>7. Separate Assy Kit and the connector.</td></tr>
<tr><td>Replacement of the Main PCB</td><td colspan="2">✔ Check Points for Troubleshooting
1. Check whether there is any error in applying the power.
2. Check the voltage between the DC 5V and GND terminals.
3. If an information code occurs when there is no characteristic code in the electric harnesses, check these information code:
3C : The resistance of motor(U-V/V-W/W-U) is 4.5 to 7.0 Ω
HC/HC1 : The resistance of heater(for 2000W unit) is 25.19 to 27.84 Ω
DC1 : The resistance of door switch is 500 to 1,500 Ω
DC3/DDC : The resistance of door switch is 31.57 to Ω 61.57
5C : The resistance of drain motor is 182 to 222 Ω
4C : The resistance of water valve is 3.6 to 4.4 kΩ</td></tr>
</table>

4. TROUBLESHOOTING

4-1. INFORMATION CODE

► **When an abnormal condition occurs, melody sounds and displays Info. code indications as shown in the following Info. codes are shown until the status has cleared.**

No.	Information Type	Information Code	Causes	Corrective Actions
1	Water Level	1C	- The part of the hose where the water level sensor is located is damaged (punctured). - The hose is clogged with foreign material. - The hose is folded. - Too much lubricant has been applied to the insertion part of the air hose. - Hose engagement error (disengaged) - Part fault (Faulty internal soldering) - The water level sensor terminal is disengaged. - Main PBA fault	• Water level sensor fault • The water level sensor terminal is disengaged •The part of the hose where the water level sensor folded • Main PCB fault.
2	Motor	3C	- The PBA connector terminal is not connected. - The motor spin net is not engaged. - The motor's internal coil is damaged (short-circuited or cut) - Foreign material (a screw) has entered the motor. - Constrain because of Foreign material between PULSATOR and BOWL	• Washing motor fault • Check Washing motor connector • Washing motor rotor/stator fault • Main PCB fault
		3C1	- Motor overloaded due to too much laundry (Non sensing) - PBA fault	
		3C2	- The motor driving error from the PBA is weak : Unstable relay operation, etc.	
		3C3	- The IPM terminal of the main PBA is not connected. - The DD motor cover is out of place.	
		3C4	- The PCB housing terminal is not connected. - PBA fault - DD motor fault	
		3CP	- PBA fault - Pulsator motor fault	• Pulsator motor fault • Main PCB fault
3	Water Supply	4C	- Foreign material is entering the water supply valve. - The water supply valve terminal is not connected. (Wire disconnected) - The warm water and rinse connectors are wrongly connected to each other. - This occurs if the PCB terminal from the drain hose to the detergent drawer is not connected. Check whether the transparent hose is folded or torn. - This occurs Water pressure is weak, a certain time delay. - This occurs Water Valve by freezing in winter season.	• Water supply valve fault • Main PCB fault • Freezing by winter season
		4C2	- The water temperature is sensed as higher than 50 ˚C in the Wool or Lingerie courses	-
4	Drain	5C	- The pump motor impeller is damaged internally. - The wrong voltage (220 V → 110 V) is supplied to the parts. - Part fault - This occurs due to freezing in the winter season. - The drain hose is clogged. (Injection error, foreign material) - Clogged with foreign material. - The water pump terminal is not connected : rubber band, bills, cotton, hair pins, coins.	• Drain pump fault • Freezing by winter season • Check inside foreign material of drain pump • Main PCB fault

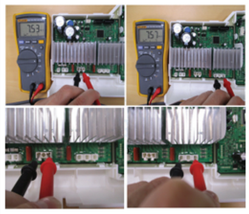
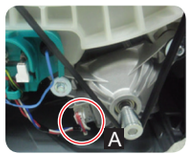
No.	Information Type	Information Code	Causes	Corrective Actions
5	Communication	AC	- The signals between the sub and main PBAs are not sensed because of a communications error. - Check the connector connections between the sub and main PBAs carefully. → Check for incorrect or loose connections, etc. - Remove the sub PBA C/Panel and check for any faulty soldering.	• Main PCB and Sub PCB Signal Detection fault • Main PCB and Sub PCB wire connection fault
6	SWITCH (Main relay)	BC2	- A button other than the Power button is continually pressed (for more than 30 seconds). - Deformation of an internal plastic injection part. - A screw for assembling the sub PBA is tightened too much.	• When pressed Power button • When pressed button except for power button • Main PCB relay fault
7	COOLING	CC	- When the temperature of the washing is greater than or equal to 55℃, Appears when do not drain. (reason : When hot water drainage Can cause burns if it touches the body) - When the water temperature is more than 55℃ in a particular course, proceeds the drain until reset water level - Temperature sensor fault, or incorrect use.	• Washing temperature sensor check • Description PL Accident prevention
8	DOOR	dC	- A switch contact error because of a deformation of the door hook. - When the door is pulled by force. - This occurs in the Boil wash because the door is pushed due to a pressure difference from internal temperature changes. - S/W contact fault because of LID TC “L” transformation.	• Door lock switch fault • Drain pump fault • Dry duct fan motor fault • Main PCB fault
		dC1	- The door lock switch terminal is connected incorrectly. - The door lock switch terminal is broken. - This occurs intermittently because of an electric wire leakage. - Main PCB fault	
		dC2	- This occurs if the Power switch is turned on/off continually and too much heat is generated (This error is difficult to be reproduced.)	
9	HEATER	HC	- The washing heater is short-circuited or has a wire disconnected. - The washing heater in the tub has an error. (Contact error, temperature sensor fault) - If the water level sensor operates without water because water is frozen or for any other reason and the temperature sensor engaged at the bottom to prevent overheating for the washing heater detects a temperature of 100 to 150 ˚C, the washing machine turns the input power off.	• Heater fault • Red temperature sensor at the center of the dry heater • Steam function fault • Freezing by winter season
		HC1		
		HC2	- This error occurs when the red temperature sensor at the center of the dry heater operates (at a temperature higher than 145 ˚C) : Corrective action – Press the button at the center lightly. The washing machine will operate normally. Alternatively, replace the temperature sensor ifthe temperature sensing is unstable because of functional degradation.	

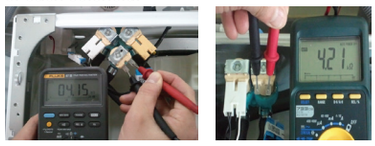
No.	Information Type	Information Code	Causes	Corrective Actions
10	Water Leakage	LC LC1	- Heater engagement fault. (out of place) - The air hose is out of place and water leakage occurs during the spin cycle. - The tub back at the safety bolts fixing part is broken. - Water leakage occurs at the front with foaming because of too much detergent. - Water leakage occurs because the connecting hose to the detergent drawer is connected incorrectly. - The drain pump filter cover is engaged incorrectly. - Water leakage occurs at the drain hose. - The duct condensing holding screws are worn. - The nozzle-diaphragm is engaged in the opposite direction or the rubber packaging is omitted. - Water leakage occurs because the screws that hold the tub back and front in place are fastened incorrectly. - The leakage sensor is faulty.	• Check Water Leakage • DV CASE foreign material occurs • Leakage of the product inside the hose and parts molded problem
11	OVER FLOW	OC OF	- Water is supplied continually because the water level detection does not work. - Because the drain hose is clogged and there is an injection error (at a narrow section), the water level detection does not work and water is supplied continually. - Water is supplied continually because of freezing or because there is foreign material in the water supply valve. - This may occur when the water level sensor is degraded.	• Water level sensor fault • Freezing by winter season
12	Temperature Sensor	TC1	- The washing heater in the tub has an error. (Contact error, temperature sensor fault) - The connector is connected incorrectly or is disconnected. - If the water level sensor operates without water because the water is frozen or for any other reason and the temperature sensor engaged at the bottom to prevent overheating for the washing heater detects a temperature of 100 to 150 ˚C, the washing machine turns the input power off.	• Washing temperature sensor check • Dry temperature sensor check • Dry condensing temperature sensor check • Problems caused by the main PCB fault • Problems caused by the freezing in winter
		TC2	- The temperature sensor for the duct assy fan housing is faulty. (A sensor fault such as an internal short-circuit or wire disconnection) - The connector is out of place or has a contact error.	
		TC3	- Occur Duct condensing temperature sensor when is OPEN - This occurs when the duct condensing temperature sensor has a wire disconnected or is short-circuited.	
13	Detergent Drawer	SDC	- Detergent Drawer contact fault	• Detergent drawer Open and close it again.
			- ASSY PUMP DRAIN fault	• Disassemble detergent drawer, clean the housing connector, and try it again. If this does not help, change assy pump drain that is Sub-Materials of assy drawer.
14	Detergent Drawer Motor	6C	- Auto detergent dispense motor constrain - Auto detergent dispense motor wiring - Auto detergent dispense motor not operate	• Check motor operation by pressing the laundry when you enter auto detergent dispenser. • If not operation change ASSY PUMP DRAIN

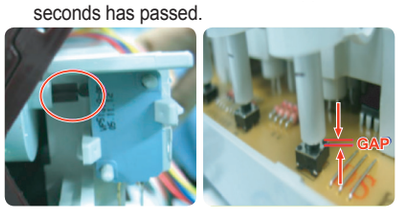
No.	Information Type	Information Code	Causes	Corrective Actions
15	UNBALANCE	UB	- As laundry causes this error, check the laundry. - Find the reason for the unbalance and solve it as directed in the user manual.	• This occurs by laundry.
16	Power	UC (9C)	- Power condition fault. - An error occurs when 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. (An error 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)
17	Mems PBA	8C	- Error detected in the Mems PBA or data error detected	• Check the wire connections. Replace if necessary. 1. Check the wire connections. 2. Replace the Mems PBA. 3. Main PBA wire connection error or PBA's silver nano part malfunction. Replace if necessary.
18	Add Door	DDC	- A switch contact error because of a deformation of the add door switch. - When the add door is pulled by force. - This occurs in the Boil wash because the add door is pushed due to a pressure difference from internal temperature changes. - S/W contact fault because of LID TC "L" transformation.	• Add door open/close switch fault. • Main PCB fault.
		DC3	- The Add Door lock switch terminal is connected incorrectly. - The Add Door lock switch terminal is broken. - This occurs intermittently because of an electric wire leakage. - Main PCB fault.	• Add door lock switch fault. • Main PCB fault.

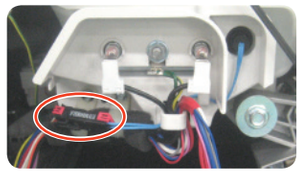
4-2. DIAGNOSTIC CODE & CORRECTIVE ACTION

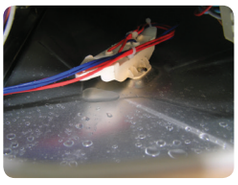
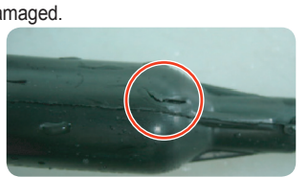
► These are common troubleshooting procedures for each drum-type washer error mode. For detailed information, refer to the general repair scripts.

Information Type	Information Code	Causes	Corrective Actions	Description of Photo
Water Level sensor	1C	• Water level sensor fault • Incorrect connections of the water level sensor terminal • The hose part for the water level sensor is folded. • Main PCB fault	• Check the water level sensor terminal connections and contacts. • An error occurs if an incorrect water level sensor is used. Make sure to check the material code. (Abnormal operation) • If the water level sensor is faulty, replace it. • If the error persists despite taking the action above, replace the PBA.	Check the water level sensor frequency. - Check it after the water level sensor and the connector are connected. - Frequency: Approx. 25.0 KHz with no load 
Washing Motor	3C 3C1 3C2 3C3 3C4 3CP	• Washing motor fault • Incorrect connections of the washing motor/hall sensor connector • Washing motor rotor and stator fault • Main PCB faul	• Check the motor Power connector terminal connections and contacts. • Check whether there is the motor power cable and power connector or not. (“A”) • 3C1 is displayed because overloading occurs due to too much laundry. • Check whether the stator of the motor cover is damaged. • Check for coil disconnections due to foreign material. • If the PBA control circuit is faulty, replace the PBA.	 ► Assy Kit - Check the resistance on the main PCB motor. (Between pins 1and 3,and 1 and 2 of the three (3) pins) - Resistance : Approx. 2 to 10MΩ - Check the voltage when the power is on. ► Inverter BLDC Motor - Check the resistance on the Motor Power Housing connector - Motor Power Any Terminal 2pin Check 5.0~6.1 Ω - Check whether there is the motor power cable and power connector or not. (“A”)   [Motor Power]
Washing Motor	3C5 3C6 3C7 3C8	• Over current occurs during motor operation • Current sensing error during motor operation • Command rpm compared to the current rpm differences over 100rpm • IPM temperature values abnormally high	• Check the motor Power connector terminal connections and contacts. • Check whether there is the motor power cable and power connector or not. (“A”) • 3C1 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 disconnections due to foreign material. • If the PBA control circuit is faulty, replace the PBA.	

Information Type	Information Code	Causes	Corrective Actions	Description of Photo
Water Supply	4C 4C2	• Water supply value fault • Main PCB fault • Freezing in the winter season ⚠ Check the water supply valve whether only cold model or hot and cold model Incorrect connection can occur an error	• If the water supply valve has a wire disconnected, replace it. • Check whether the water supply valve is clogged with foreign material and whether water is supplied continually. • Check whether no water is supplied because of freezing in the winter season. • If the PBA relay operates abnormally, replace the PBA.	1. Check the resistance for the water supply valve. Resistance: 3.6 to 4.4 kΩ between two terminals of each solenoid.  2. Check whether there is foreign material at the inlet filter of water supply valve. 
Drain	5C	• Drain pump fault • Freezing in the winter season • Foreign materials in the drain pump • Main PCB fault	• Check whether the revolutions of the drain pump motor are restrained by foreign material. • Check the same thing for the natural drain process. • Check whether the connections are correct and if there is any wires disconnected. • If the drain pump operates abnormally intermittently when the temperature of the water in the tub is high. • If the motor revolutions are restrained due to freezing in the winter season, check the method to remove the freezing and remove as directed.	► DRAIN PUMP Resistance: Approximately 182 to 222 Ω between the Terminals for the Pump Motor 
Communication	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.	-
	AC6	• The signals between the main and Inverter PBAs are not sensed. • Incorrect wire Connections between the main and inverter PBAs.	• Check the wire connections and terminal contacts between the main and inverter PBAs. • Check for disconnected wires. • If the main or Inverter PBA's communication circuit is faulty, replace it.	-
	AC2	• The diagnosis of the I/O Board communication error.	• 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.	-

Information Type	Information Code	Causes	Corrective Actions	Description of Photo
Communication	AC3	• The diagnosis of the DR communication error.	• Check the wire connections and terminal contacts between the main and inverter PBAs. • Check for disconnected wires. • If the main or Inverter PBA's communication circuit is faulty, replace it.	
	AC4	• The diagnosis of the Wifi communication error.	• 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.	
	AC5	• The diagnosis of the LCD communication error.	• Check the wire connections and terminal contacts between the main and inverter PBAs. • Check for disconnected wires. • If the main or Inverter PBA's communication circuit is faulty, replace it.	
Power	UC (9C)	• Power condition fault. • An error 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. (An error 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)	-
Switch (Main Relay)	bC2	• The Power button is continually pressed. • A button other than the Power button is continually pressed. • Main PCB relay fault	• Check whether either the Power switch or a tact switch is continually pressed. • Check whether the service PBA holding screws are fastened too much. If they are fastened too much, loosen them a little. • If the main PBA switching IC on/off error has occurred, 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. 

Information Type	Information Code	Causes	Corrective Actions	Description of Photo
Cooling	CC	• Washing Temperature sensor fault • Description of PL hazard prevention	• This error occurs if the water Temperature is more than 50 ˚C in draining. Check the temperature. • If the water temperature is normal, this error is due to a temperature sensor fault. Replace the washing heater. When replacing the washing heater, take care to prevent water leakage.	Check the resistance on the Heater. (For faulty features) Check the voltages both terminals of the Heater while washing. Check 25.19 ~ 27.84Ω on both terminals and the voltage of the Heater. 
Door (cont.)	dC dC1 dC2	• Door switch fault • Main PCB fault	• If a dC error occurs, check whether it occurs during the Boil cycle. - If it is detected that the door is open, close the door. • The 220V is directly connected to the door. Check and repair the power wire connections and insulation state. • Check the door switch. Replace if faulty. • Check the main PBA door sensing circuit. Replace if faulty. • Check the drain Pump wire connection.	▶ Type1 The resistance of Nos. 3 and 5 of the DOOR LOCK SWITCH must be approximately 1000Ω±50%.  ▶ Type2 The resistance of No. 2 and 3 of the DOOR LOCK SWITCH must be approximately 155~200Ω (In state of pushing slider) 

Information Type	Information Code	Causes	Corrective Actions	Description of Photo	
Door	DDC/ddC DC3	• Add door switch fault • Main PCB fault • Bending connector	• DDC/ddC means add door is opened Close the add door. • Check add door switch, Barrier, Lock module's movement is operate normally. check Open detection switch and Barrier 's Lock pillars coming down while pressing in operation normally. • Main PBA door detection circuit is fault or connector combination. • Replace or repair if faulty.		Check resistance values normally displayed when you press the door switch button.
					Check door lock motor resistance. (1-2 pin 46.57±15Ω) Lock stroke check normal detection on protrusion status. (3-4/3-5 pin check resistance value displayed normally)
Heater	HC HC1 HC2	• Heater fault • A fault of The Temperature sensor at the center of the dry heater • Steam function fault • Freezing in the winter season	• A fault of the temp sensor located at between the heater terminals - An HC or HC1 error occurs. • Check if the overheating sensor of the dry heater (or air wash heater) is faulty • If it faulty, Replace it - An HC2 error occurs. Check the steam heater. Replace if faulty.		Wash heater
Water Leakage	LC LC1	• 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. • Check the drain motor operation. Replace if it does not operate normally	Check for any leakage on the base, Hose, Valve and Tub connections. 	
Overflow	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. Check the method to remove freezing and follow as directed.	Check the hose connected to the water level sensor. Check whether the hose is folded, cut, or damaged. 	
MAIN PBA DC voltage	none	• PBA malfunction	• Check the DC voltage of the Main PBA, replace if wrong voltage output. - Normal: Approx 12V - Normal: Approx 5V		

Information Type	Information Code	Causes	Corrective Actions	Description of Photo
Temperature Sensor	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 error occurs. • Check the connections for the dry heater temperature sensor connector. • If the dry heater temperature sensor has a functional error, replace it. - A tC2 error occurs.	-
Foaming Detected	Sud	• Too much foaming	• It is also displayed while foaming is removed. - When the removal is finished, the normal cycle proceeds. "Sud" or "SUdS" is displayed when too much foaming is detected and "End" is displayed when the removal of the foaming is finished. (This is one of the normal operations. It is an operation for preventing non-sensing faults.)	-
Mems PBA	8C	• Error detected in the Mems PBA or data error detected.	Check the wire connections. Replace if necessary. 1. Check the wire connections. 2. Replace the Mems PBA. 3. Main PBA wire connection error or PBA's silver nano part malfunction. Replace if necessary.	-
Unbalance	UB	• Caused by the laundry.	Check the type of laundry. The laundry load is unbalanced. Redistribute the load. Washing one item i.e. blanket, pillow or a large towel can cause weight shift during the spin cycle.	-
Add Door	DDC/ ddC	• Add Door Open/Close switch fault • Main PCB fault	Check the Add Door. The Add Door is opened. Close the Add Door and press Start button. If the Add Door in not opened, need to check assembly of wire harness and PBA.	-
	DC3	• Add Door Lock switch fault • Main PCB fault	Check the Add Door Lock. The Add Door is not locked. If Add Door Lock could not operate, change the Add Door Lock. If the Add Door Lock operates well, need to check assembly of wire harness and PBA.	-
Auto Dispense	6C1	• The input arrest of the detergent motor is sensed.	Check the wire and if necessary replace it. 1. Check Wire connection. 2. Replace Assy Pump.	
	6C2	• The non-operation of the detergent motor is sensed.		
	6C3	• The input arrest of the fabric softener motor		
	6C4	• The non operation of the fabric softener motor is sensed.		
	6C5	• The motor motion perception sensor fault		
	6C6	• The detergent level perception sensor fault		
	6C7	• The fabric softener level perception sensor fault		

4-3. PROBLEM CHECK POINT

PROBLEM	SOLUTION
The washing machine won't start.	• Make sure the washing machine is plugged in. • Make sure the door is properly closed. • Make sure the water tap is open. • Tap Start or Press Start/Pause button again.
Water supply is insufficient, or no water is supplied.	• Open the water tap fully. • Make sure the water supply hose is not frozen. • Make sure the water supply hose is not kinked or clogged. • Clean the filter on the water supply hose.
The washing machine vibrates badly, or makes noise.	• Make sure the washing machine is installed on a level floor. If the floor is not level, use the leveling feet to adjust the level. • Make sure that the shipping bolts are removed. • Make sure the washing machine is not touching any other object. • Make sure the laundry load is balanced.
The washing machine does not drain and/or spin.	• Make sure the drain hose is straightened all the way to the drain system. • Make sure the debris filter is not clogged.
The door won't open.	• Press the Start/Pause button to stop the washing machine. • The door stays locked as long as the washing machine is still hot inside after a heating operation. • It may take several seconds to disengage the door lock mechanism.
Button Check	• bC occurs. Refer the bC troubleshooting.

5. PCB DIAGRAM

5-1. MAIN PCB DIAGRAM

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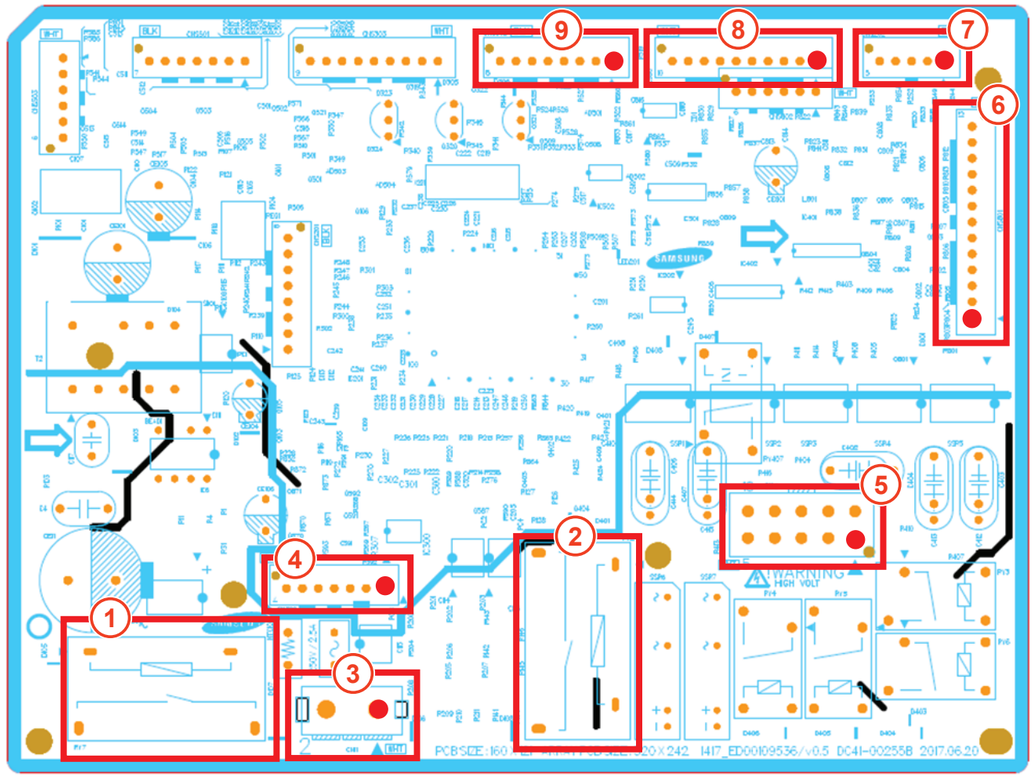

● : Pin 1

Location	Part No.	Function	Description
1	RY7	POWER SUPPLY RELAY	Supply AC Power to All Loads
2	RY2	HEATER RELAY	Supply power to Heater
3	CN11	POWER/DOOR LOCK TERMINAL	Supply AC Power and door lock sensing
4	CN300	ADD DOOR CONTROL TERMINAL	Control the Add Door
5	CN10	DRIVING SECTION TERMINAL	Signal Output for door lock, water valve, drain pump and bubble pump.
6	CNS801	COMMUNICATION TERMINAL	Communicate with SUB PBA & INVERTER PBA
7	CNS202	PROGRAM UPDATE TERMINAL	Update the Software of Main PBA
8	CN803	Drum Light TERMINAL	Signal Output for Drum Light
9	CNS502	SENSING TERMINAL	Leakage, Door, Water level and Temperature sensing

5-2. DETAILED DESCRIPTIONS OF CONTACT TERMINALS (MAIN PBA)

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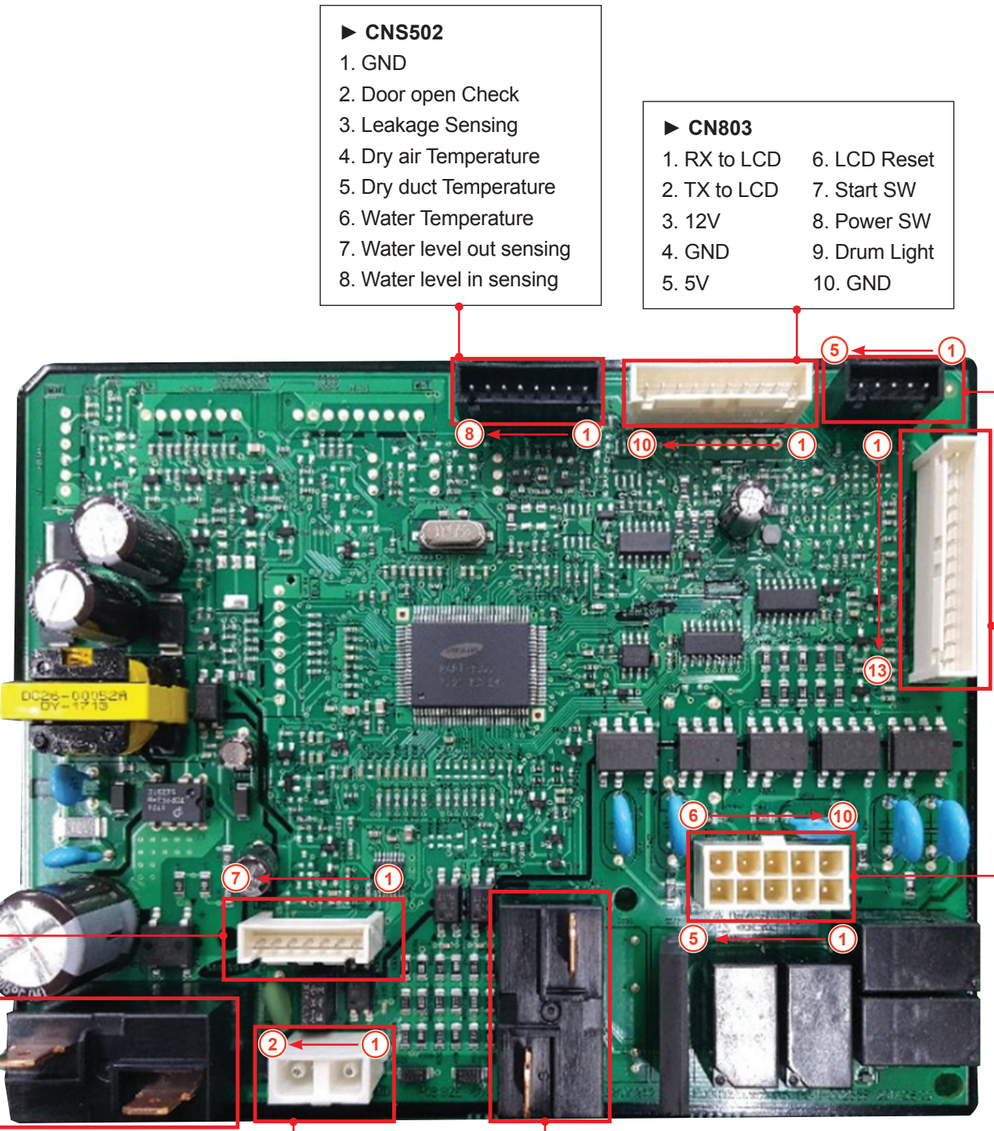

► **CNS502**
1. GND
2. Door open Check
3. Leakage Sensing
4. Dry air Temperature
5. Dry duct Temperature
6. Water Temperature
7. Water level out sensing
8. Water level in sensing

► **CN803**
1. RX to LCD
2. TX to LCD
3. 12V
4. GND
5. 5V
6. LCD Reset
7. Start SW
8. Power SW
9. Drum Light
10. GND

► **CNS202**
1. 5V
2. RX for Program
3. TX for Program
4. GND
5. BOOT

► **CNS801**
1. RX From SUB
2. TX To SUB
3. SUB RESET
4. 5V
5. GND
6. 12V
7. N.C
8. POWER SW
9. WATER LV to Sub
10. 5V
11. TX TO INV
12. RX FROM INV
13. GND

► **CN300**
1. Add Door Signal 1
2. Add Door Signal 2
3. GND
4. Add Door Sensing 1
5. Add Door Sensing 2
6. Add Door OPEN CLOSE CHECK
7. WIFI On/Off Signal

► **Relay**
RY7 Power Relay

► **CN10**
1. Drain Pump
2. Circulation Pump
3. Door Unlock
4. Door Lock
5. THERMO_ACTUATOR
6. Cold Valve
7. Hot Valve
8. Pre Valve
9. Dry Valve
10. Water Shot

► **CN11**
1. Door lock/Unlock
2. LI_IN

► **Relay**
RY401 Heater Relay

5-3. INVERTER PCB DIAGRAM

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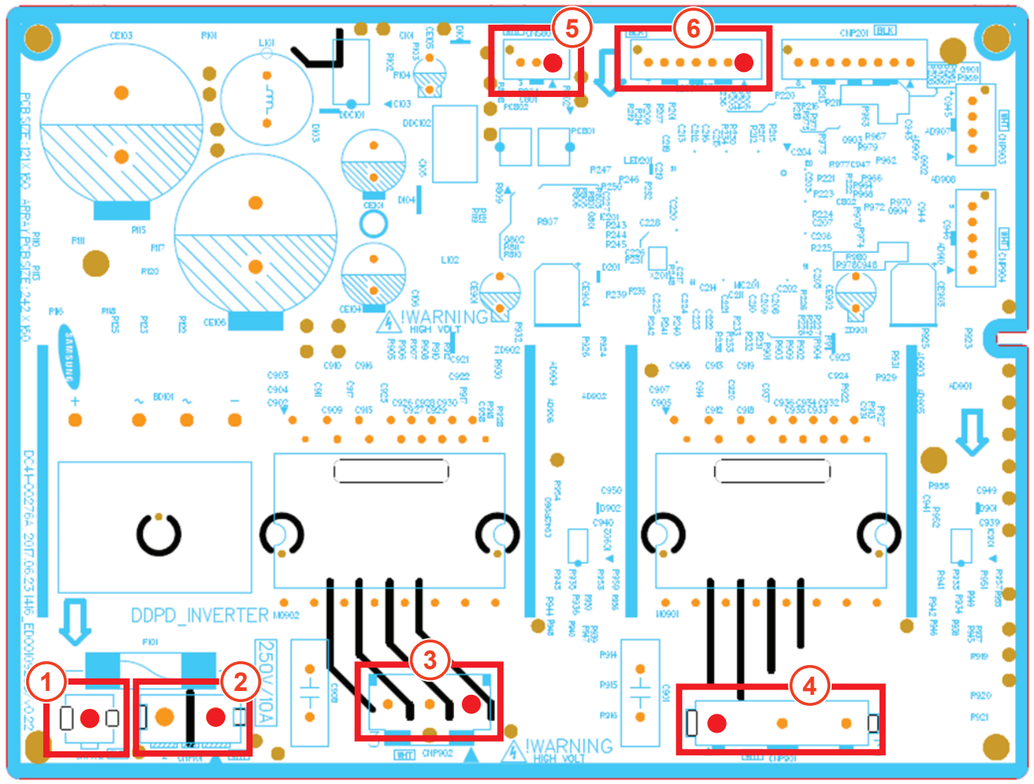

● : Pin 1

Location	Part No.	Function	Description
1	CNP102	POWER SUPPLY TERMINAL	Supply AC Power to Inverter(N)
2	CNP101	POWER SUPPLY TERMINAL	Supply AC Power to Inverter(L)
3	CNP902	MOTOR DRIVE TERMINAL(DRUM)	Motor Signal Output(DRUM)
4	CNP901	MOTOR DRIVE TERMINAL(PULSATOR))	Motor Signal Output(PULSATOR)
5	CNS801	COMMUNICATION TERMINAL	Communicate with MAIN PBA
6	CNP202	PROGRAM UPDATE TERMINAL	Update the Software of Inverter PBA

INVERTER PCB DIAGRAM (Cont.)

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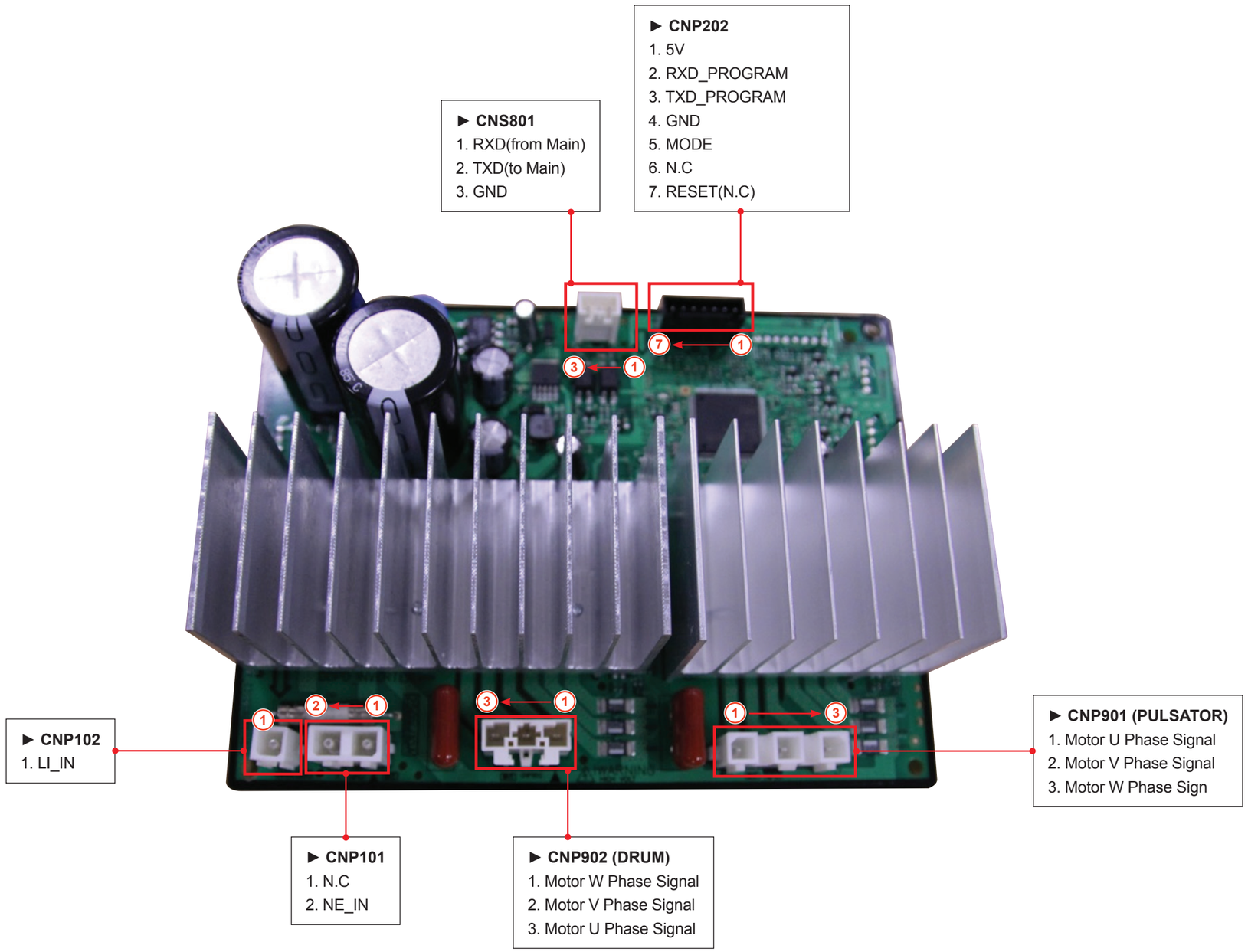

5-4. SUB PCB DIAGRAM

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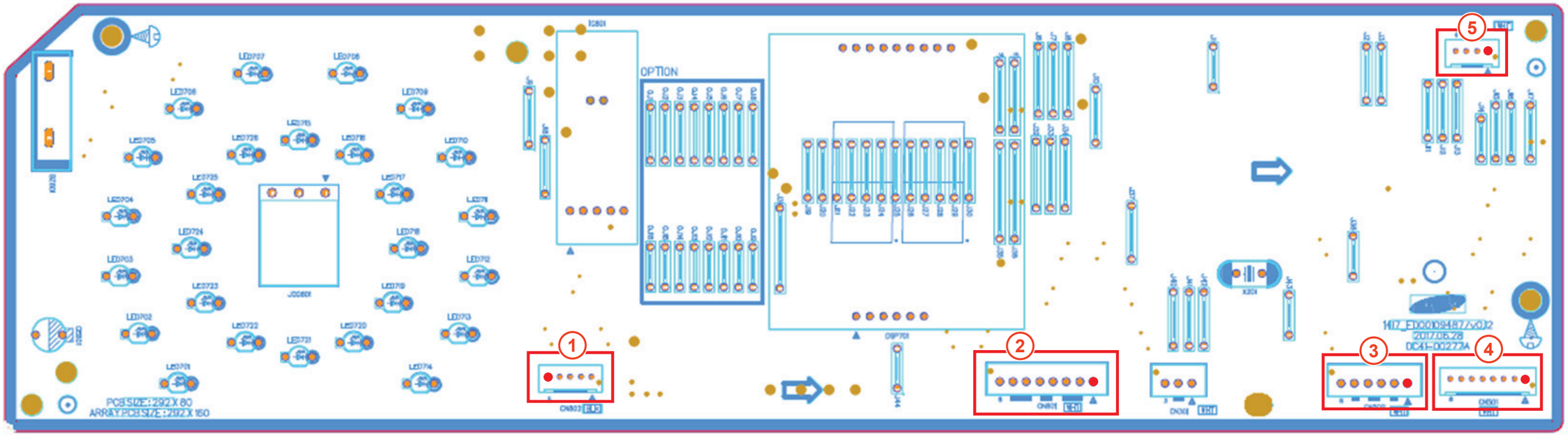

Location	Part No.	Function	Description
1	CN802	WiFi Communication	UART Communication with WiFi
2	CN801	Main Communication	UART Communication with Main
3	CN502	Mems Sensor Communication	SPI Communication with Mems Sensor
4	CN501	Touch Sensor Communication	I2C Communication with Touch Sensor
5	CN201	Flash Writing	Sub Micom on board writing connector

SUB PCB DIAGRAM (Cont.)

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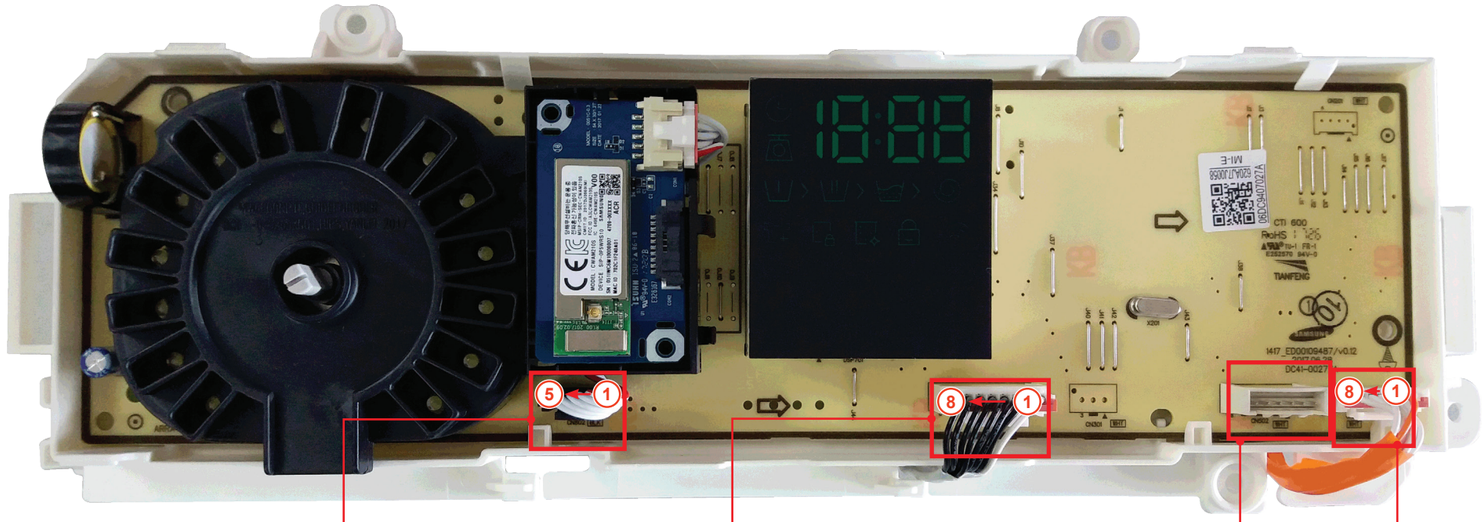

► CN802
WiFi Communication
1. RX (From WiFi)
2. TX (To WiFi)
3. WiFi Enable
4. GND
5. 12V

► CN801
Main Communication
1. RX (From Main PBA)
2. TX (To Sub PBA)
3. Reset
4. 5V
5. GND
6. 12V
7. N.C
8. Power ON Signal to Main

► CN502
CN502 MEMS Sensor Communication
1. +3.3V
2. CS1
3. MISO
4. MOSI
5. SPSCK
6. GND

► CN501
Touch Sensor Communication
1. N.C
2. 12V input for Touch
3. GND
4. Data
5. Clock
6. Power ON Signal from Touch
7. N.C
8. TOUCH RESETE

5-5. ASSY PBA SERVICE BOM

Service BOM (SA: SERVICE AVAILABLE, SNA: SERVICE NOT AVAILABEL)

SVC_ Code	Code No.	Description	Specification	QTY	Un	SA/ SNA
1	DC92-02140D	ASSY PCB MAIN	FWM_INV,MK_ PJT,160*121,Y,Washer,110V,Non-Add-Wash,Super-Speed,Bubble,STANDARD	1	PC	SA
1-1	DC92-02139B	ASSY KIT	FWM_INV,MK_PJT,Washer,110V,Standard	1	PC	SA
1-1-1	DC92-02138H	ASSY PCB DISPLAY	FWM_INV,MK_ PJT,292*80,9kg,1400rpm,6000 jog,America,STANDARD	1	PC	SA

6. WIRING DIAGRAM

6-1. WIRING DIAGRAM

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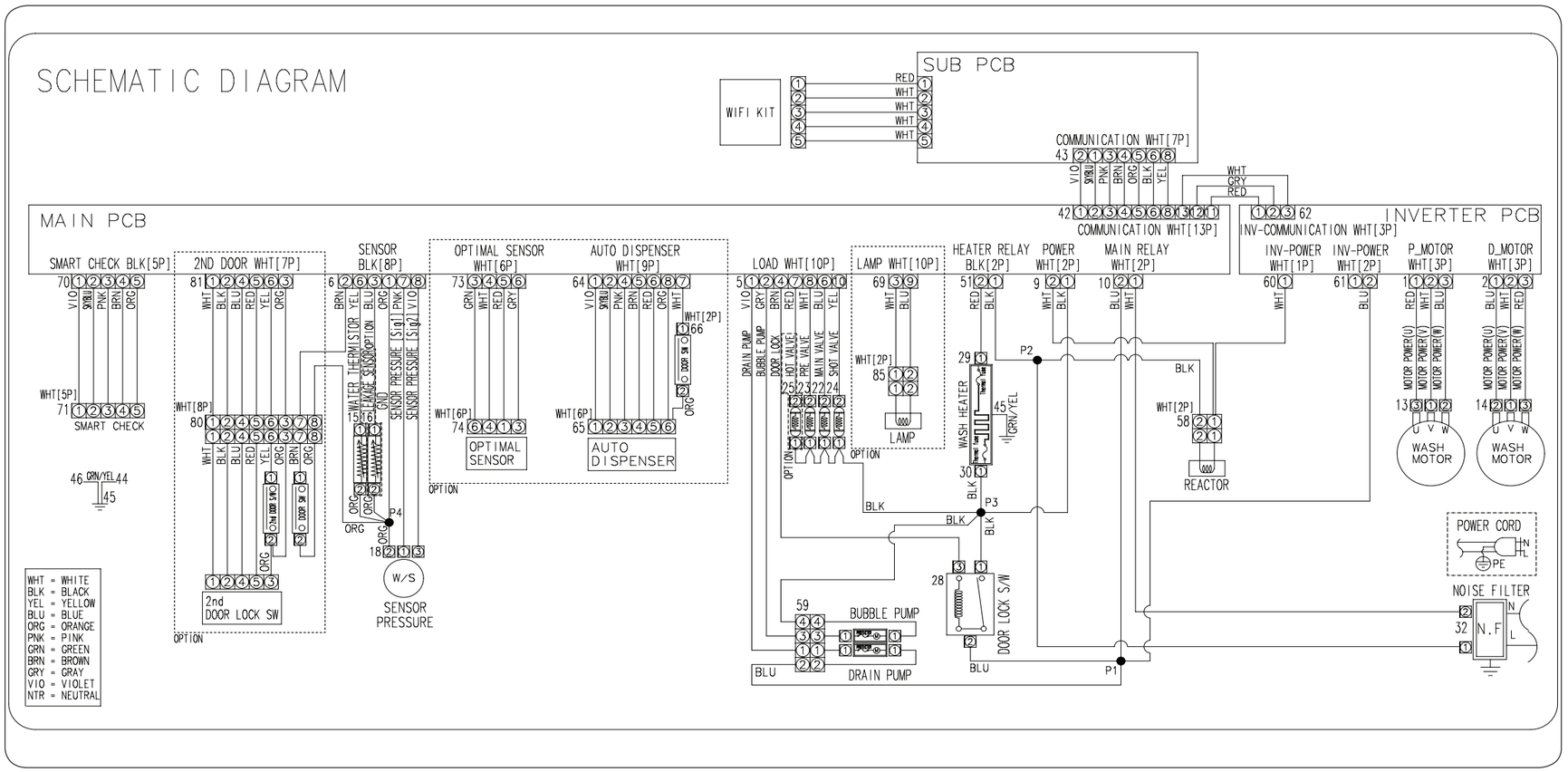
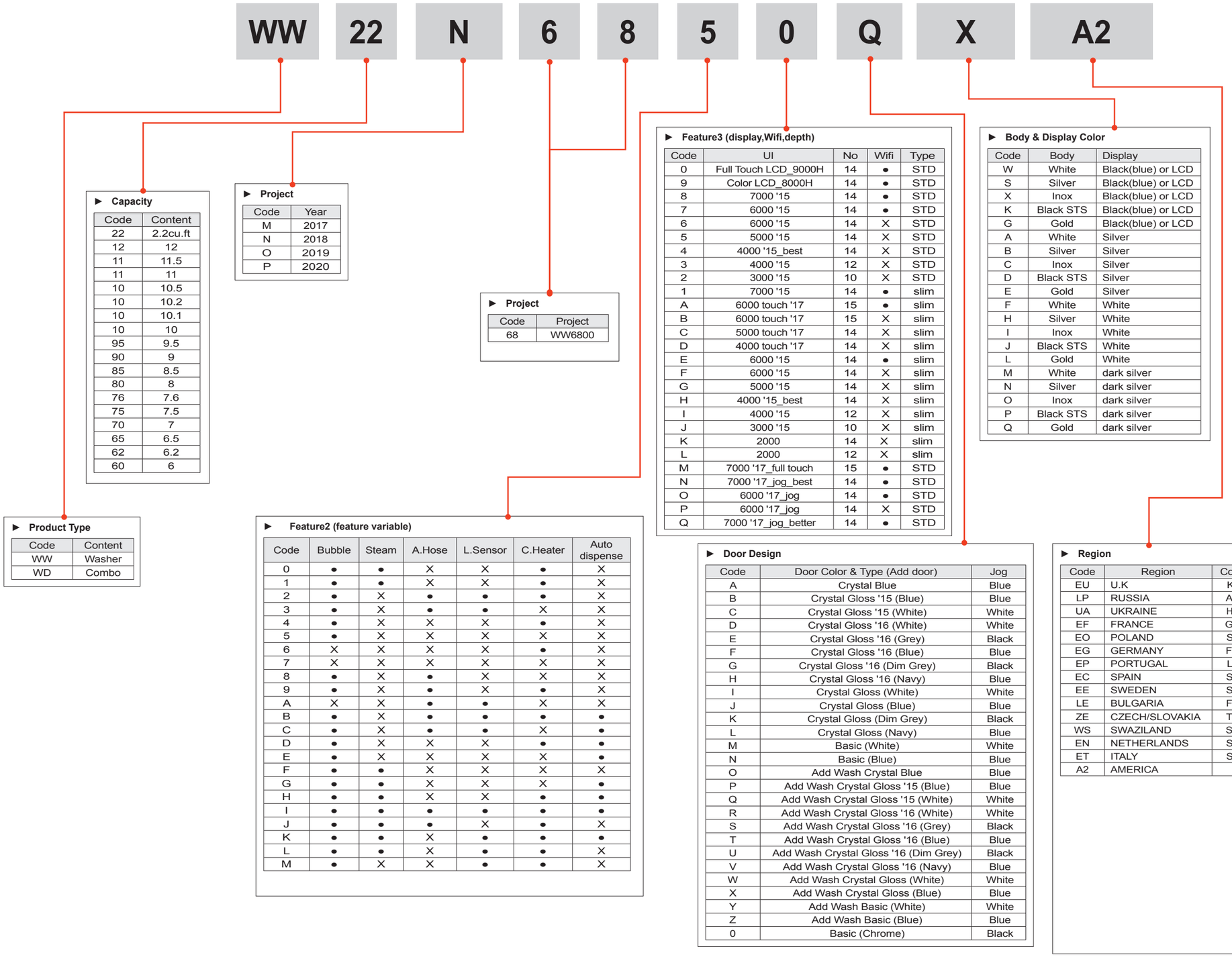
■ REFERENCE INFORMATION

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. WW6850N PROJECT NAME



► **Capacity**

Code	Content
22	2.2cu.ft
12	12
11	11.5
11	11
10	10.5
10	10.2
10	10.1
10	10
95	9.5
90	9
85	8.5
80	8
76	7.6
75	7.5
70	7
65	6.5
62	6.2
60	6

► **Project**

Code	Year
M	2017
N	2018
O	2019
P	2020

► **Project**

Code	Project
68	WW6800

► **Feature3 (display,Wifi,depth)**

Code	UI	No	Wifi	Type
0	Full Touch LCD_9000H	14	●	STD
9	Color LCD_8000H	14	●	STD
8	7000 '15	14	●	STD
7	6000 '15	14	●	STD
6	6000 '15	14	X	STD
5	5000 '15	14	X	STD
4	4000 '15_best	14	X	STD
3	4000 '15	12	X	STD
2	3000 '15	10	X	STD
1	7000 '15	14	●	slim
A	6000 touch '17	15	●	slim
B	6000 touch '17	15	X	slim
C	5000 touch '17	14	X	slim
D	4000 touch '17	14	X	slim
E	6000 '15	14	●	slim
F	6000 '15	14	X	slim
G	5000 '15	14	X	slim
H	4000 '15_best	14	X	slim
I	4000 '15	12	X	slim
J	3000 '15	10	X	slim
K	2000	14	X	slim
L	2000	12	X	slim
M	7000 '17_full touch	15	●	STD
N	7000 '17_jog_best	14	●	STD
O	6000 '17_jog	14	●	STD
P	6000 '17_jog	14	X	STD
Q	7000 '17_jog_better	14	●	STD

► **Body & Display Color**

Code	Body	Display
W	White	Black(blue) or LCD
S	Silver	Black(blue) or LCD
X	Inox	Black(blue) or LCD
K	Black STS	Black(blue) or LCD
G	Gold	Black(blue) or LCD
A	White	Silver
B	Silver	Silver
C	Inox	Silver
D	Black STS	Silver
E	Gold	Silver
F	White	White
H	Silver	White
I	Inox	White
J	Black STS	White
L	Gold	White
M	White	dark silver
N	Silver	dark silver
O	Inox	dark silver
P	Black STS	dark silver
Q	Gold	dark silver

► **Product Type**

Code	Content
WW	Washer
WD	Combo

► **Feature2 (feature variable)**

Code	Bubble	Steam	A.Hose	L.Sensor	C.Heater	Auto dispense
0	●	●	X	X	●	X
1	●	●	X	X	●	X
2	●	X	●	●	●	X
3	●	X	●	●	X	X
4	●	X	X	X	●	X
5	●	X	X	X	X	X
6	X	X	X	X	●	X
7	X	X	X	X	X	X
8	●	X	●	X	X	X
9	●	X	●	X	●	X
A	X	X	●	●	X	X
B	●	X	●	●	●	●
C	●	X	●	●	X	●
D	●	X	X	X	●	●
E	●	X	X	X	X	●
F	●	●	X	X	X	X
G	●	●	X	X	X	●
H	●	●	X	X	●	●
I	●	●	●	●	●	●
J	●	●	●	X	●	X
K	●	●	X	●	●	●
L	●	●	X	●	●	X
M	●	X	X	●	●	X

► **Door Design**

Code	Door Color & Type (Add door)	Jog
A	Crystal Blue	Blue
B	Crystal Gloss '15 (Blue)	Blue
C	Crystal Gloss '15 (White)	White
D	Crystal Gloss '16 (White)	White
E	Crystal Gloss '16 (Grey)	Black
F	Crystal Gloss '16 (Blue)	Blue
G	Crystal Gloss '16 (Dim Grey)	Black
H	Crystal Gloss '16 (Navy)	Blue
I	Crystal Gloss (White)	White
J	Crystal Gloss (Blue)	Blue
K	Crystal Gloss (Dim Grey)	Black
L	Crystal Gloss (Navy)	Blue
M	Basic (White)	White
N	Basic (Blue)	Blue
O	Add Wash Crystal Blue	Blue
P	Add Wash Crystal Gloss '15 (Blue)	Blue
Q	Add Wash Crystal Gloss '15 (White)	White
R	Add Wash Crystal Gloss '16 (White)	White
S	Add Wash Crystal Gloss '16 (Grey)	Black
T	Add Wash Crystal Gloss '16 (Blue)	Blue
U	Add Wash Crystal Gloss '16 (Dim Grey)	Black
V	Add Wash Crystal Gloss '16 (Navy)	Blue
W	Add Wash Crystal Gloss (White)	White
X	Add Wash Crystal Gloss (Blue)	Blue
Y	Add Wash Basic (White)	White
Z	Add Wash Basic (Blue)	Blue
0	Basic (Chrome)	Black

► **Region**

Code	Region	Code	Region
EU	U.K	KJ	ISRAEL
LP	RUSSIA	AH	KURKEY
UA	UKRAINE	HC	IRAN
EF	FRANCE	GU	U.A.E
EO	POLAND	ST	THAILAND
EG	GERMANY	FQ	MALAYSIA
EP	PORTUGAL	LV	GREECE
EC	SPAIN	SV	VIETNAM
EE	SWEDEN	SP	SINGAPORE
LE	BULGARIA	FH	JORDAN
ZE	CZECH/SLOVAKIA	TC	PHILIPPINES
WS	SWAZILAND	SC	CHINA
EN	NETHERLANDS	SE	INDONESIA
ET	ITALY	SA	AUSTRALIA
A2	AMERICA		

7-2. TERMINOLOGY

1. Drain Pump	The pump that drains the water from the washing machine generated while the washing machine is running
2. Heater	The heater is located on the tub inside the washing machine. It heats the water to increase wash efficiency.
3. Door Lock Switch	Detects whether the door of the washing machine is open or closed if the door is open while the washing machine is running the cycle is temporary stopped.

SAMSUNG

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