SAMSUNG

DISHWASHER

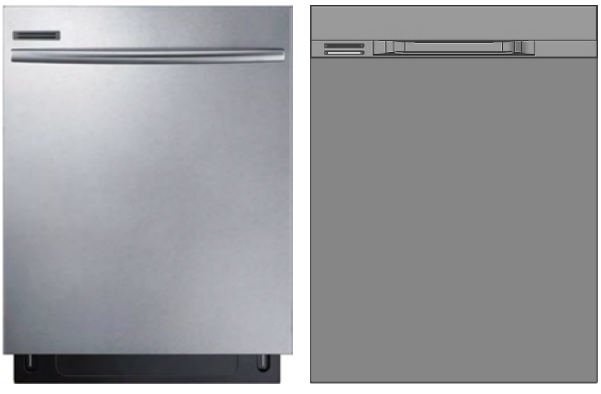
Basic model : DW80K5050US

Model Name : DW80M3021US
DW80T3040US

Model Code : DW80M3021US/AC
DW80T3040US/AC

SERVICE Manual

DISHWASHER



DW80M3021US DW80T3040US

CONTENTS

CONTENTS

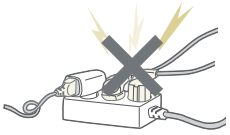
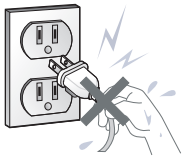
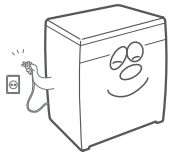
1. SAFETY INSTRUCTIONS

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 circuit breaker or power cable before servicing. - Failure 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. - Failure to do so may damage the plug and result in fire or electric shock. 
• When the dishwasher is not being used, make sure to disconnect the circuit breaker or power cable from the power outlet. - Failure 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 dishwasher. - There is a risk of explosion and fire caused from electric sparks.

While Servicing

- Check if the power cable is damaged, flattened, cut or otherwise degraded.
  - If faulty, replace it immediately. Failure 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 arcing and short circuits in advance.

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

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

After Servicing

- Check for any water leakage.
  - Perform a test using the standard(normal) cycle 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 dishwasher themselves.
  - This may result in personal injury and shorten the product life.

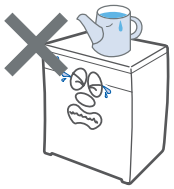
- If it seems that grounding is needed due to water or moisture, make sure to run grounding wires.
  - Failure to do so may result in electric shock due to electric leakage.

⚠ Caution

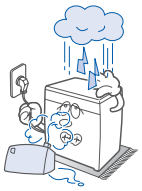
Before Servicing

- Do not sprinkle water onto the dishwasher directly when cleaning it.
  - This may result in electric shock or fire, and may shorten the product life.

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



- Do not install the dishwasher in a location exposed to snow or rain.
  - This may result in electric shock or fire, and shorten the product life.



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

During Servicing

- When connecting a wiring harness, make sure to seal it completely so no liquid can enter.
  - Make sure that the connections are secured by slightly pulling on them.

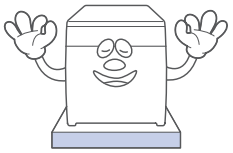
- Check if there is any evidence that liquid has entered electric components or connections.
  - If any liquid has entered into a part, replace it or completely remove any remaining moisture from it.

- If you need to place the dishwasher on its back for servicing purposes, place a support(s) on the floor and lay it down carefully so the back is on the floor.
  - Do not lay it down on its front or side. This may result in scratches to the surface or damage to the parts.

After Servicing

- Check the assembled status of the parts.
  - They must be the same as before servicing.

- Check whether the product is level with the floor and secured to the cabinet and under the counter.
  - Vibrations can shorten the life of the product.



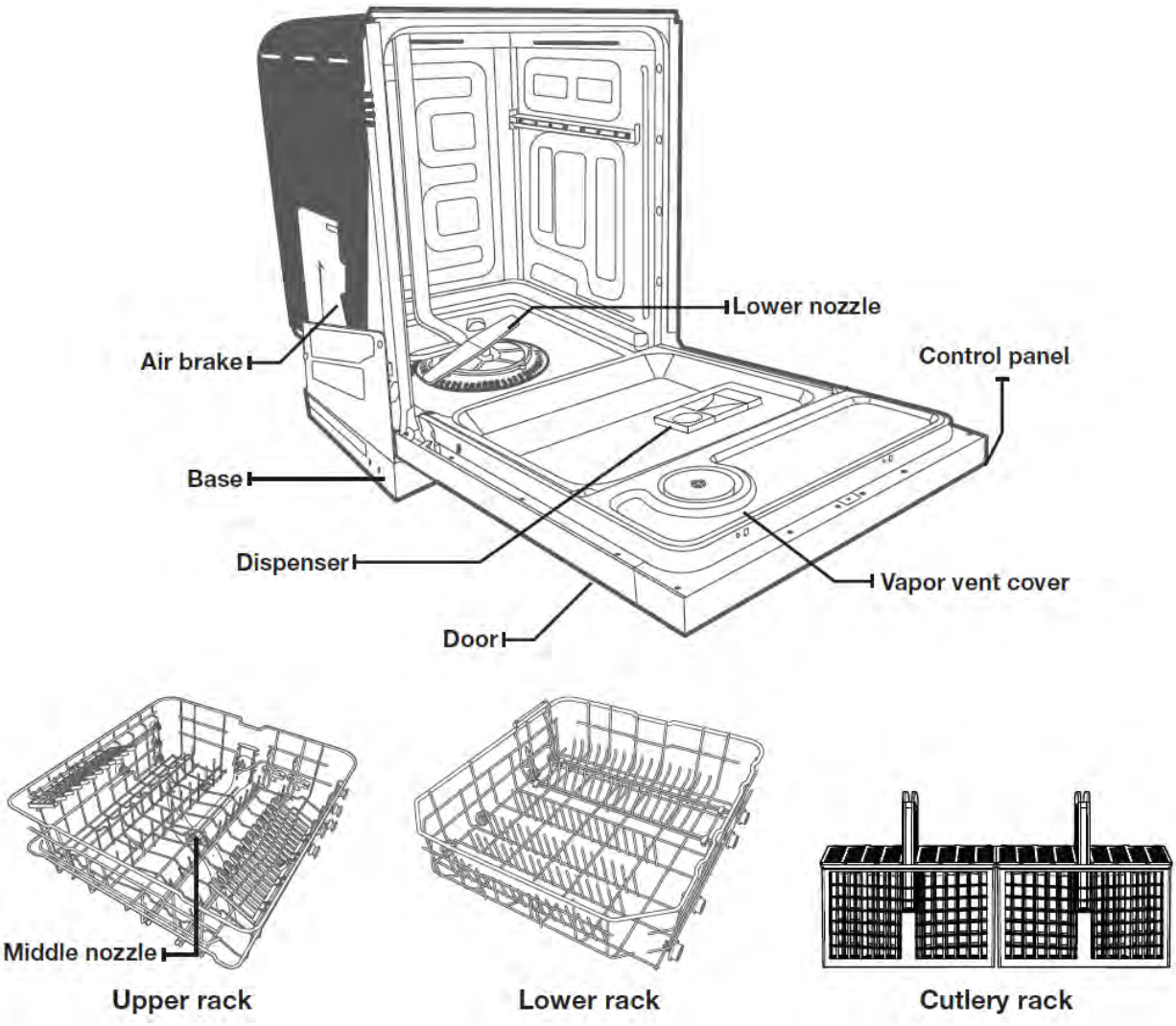
2. FEATURES AND SPECIFICATIONS

2-1. FEATURES

Features	Description	Remarks
Extra large capacity	The upper rack is slanted for larger dishes. The space has been maximized to accommodate a variety of dish sizes.	
Increased convenience	The smart auto cycle determines the level of soil on the dishes and initiates the optimal cycle for cleaning. Use this feature to save water, energy, and time.	
Extremely quiet operation	Efficient noise control technology gives you the quietest possible operation. Your new Samsung dishwasher is quieter than ever.	
Self-cleaning filter	Cleaning the filter yourself is a thing of the past! This product keeps food waste internally while operating, then drains it automatically with the water.	

2-2. SPECIFICATIONS

Model		DW80M3021US, DW80T3040US
Main Features	Wash capacity	15 place settings
	Control panel design	Front control type + Tact operation or Hidden Control Type
	Dimension (W x D x H)	23 7/8 x 24 3/4 x 33 7/8 in. (605 x 627 x 860 mm)
Sales Point	Flexible Style	Inclined Rack System, Height adjustable Upper Basket(manual)
	Upgraded Kitchen	Pleasant kitchen environment, Simple & Modern design
	Smart Control	Soil sensing Programming



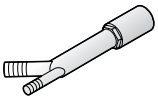
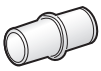
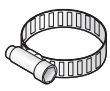
Accessory parts - User/Installation manual, Installation Kit.

2-3. COMPARING SPECIFICATIONS WITH EXISTING MODELS

Model		NEW MODEL
		DW80M3021US/AC, DW80T3040US/AC
		
Power supply		120 V, 15 A, 60 Hz AC
Water pressure		20 ~ 120 psi (140 ~ 830 kPa)
Wash method		Rotating nozzle spray type
Dry method		Air Vent dry system
Power		Heater : 1100 W Wash Motor : 60 - 100 W
Water consumption		2.8~7.2 gallon (10.7~27.2L), Normal Cycle
Design Specifications	Panel Control	Silver
	Control Type	Touch
	Frame Front	STS
	Basket Handle	X
Function Specification	Soil Detection Sensors	O
	Drying method	Air Vent dry system
	Basket Height Adjustment	2-stage
	Leakage Sensor	O
	Programs	4 (Auto, Normal, Heavy, Express 60')
	Options	3 (Sanitize, Hi Temp, Control Lock)

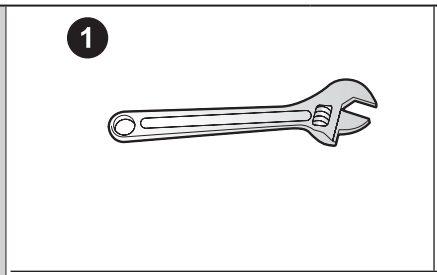
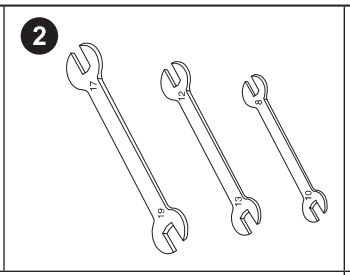
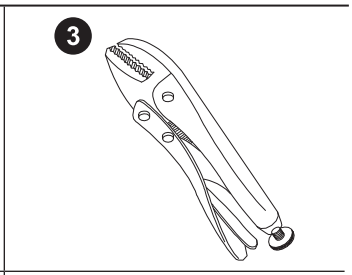
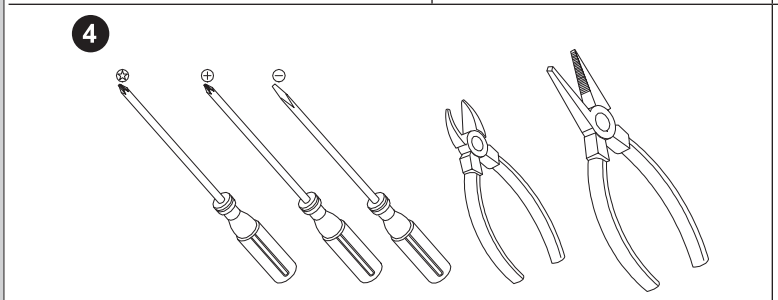
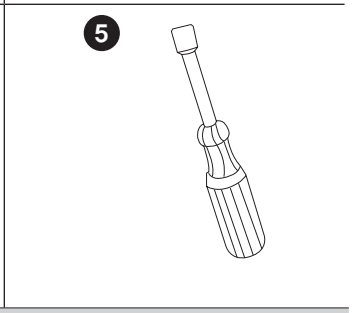
Part Name	Part Code	RPM	Resistance(Ω)
Pump Circulation	DD31-00008A	3050±50 (H) / 2750±50 (L)	40.8±5% (H) / 31.9±5% (L)
Pump Drain	DD81-01527A	3600±50	22.5 ±10%
Fan Motor	DD31-00006A	2550±150	141.7±5%

2-4. OPTIONS SPECIFICATIONS

Photo	Item	Code	QTY	Remarks
	Assy-Install Kit: 2 Bracket-install 2 screws for top mounting 2 screws for kick plate 2 screws for side wall	DD98-01019A	1	Provided with the dishwasher
	User Manual	DD81-02549A		
	Install Guide	DD81-02557A		
	90° Elbow(3/8”)	-	1	Sold separately
	Water Supply Line (Flexible STS supply line is recommend)	-	1	
	Air Gap	-	1	
	Rubber Connector	-	1	
	HOSE CLAMP	-	1	
	STRAIN RELIEF	-	1	

3. DISASSEMBLY AND REASSEMBLY

3-1. TOOLS FOR REMOVAL AND REASSEMBLY

Tool image			
			

No.	Tool	Type	Remarks
❶	Adjustable Wrench		
❷	Open-end Wrench	1-7/16”	Leg
❸	Vice pliers		
❹	Others (screwdriver, nipper, long nose pliers)		Common tools for servicing Screwdriver - Philips, flat, Torx T20, Small flat
❺	Nut Driver	10mm	Heater bracket Nut

*** Preparation for parts replacement**

1. Take out the residual water inside the product.
   (Drain the water by operating the drain pump)
2. Close the water supply valve.
3. Turn off the power & disconnect power cable.
   You must turn off the circuit breaker connected to the product.
4. Pull out the unit from the sink and lay it on the floor.
   Be careful of the drain hose when pulling out the unit.

⚠ WARNING

Always turn off the electric power supply & water supply before servicing any electrical component, making ohmmeter checks, or replacing any parts.

⚠ CAUTION

Before moving the unit, laying it down for service, or removing any parts for service be sure to drain as much of the water from the unit as possible.
Use a protective mat or towel to prevent damage to the floor or having any of the remaining water spill on the floor.

NOTE

All voltage checks should be made with a voltmeter having a full scale range of 250 volts or higher.
After service is completed, be sure all safety grounding circuits are complete, all electrical connections are secure, and all access panels are in place.

※ Before servicing, make sure to remove all items include baskets inside dishwasher**.**

3-2. PREPARATION FOR PARTS REPLACEMENT

1. Take out the residual water inside the product. (Drain the water by operating the drain pump)
2. Close the water supply valve.
3. Turn off the power. You must turn off the circuit breaker connected to the product.
4. Pull out the unit from the sink and lay it on the floor. Be careful of the drain hose when pulling out the unit.

⚠ **Warning**
Always turn off the electric power supply & water supply before servicing any electrical component, making ohmmeter checks, or replacing any parts.

⚠ **Caution**
Before moving the unit, laying it down for service, or removing any parts for service be sure to drain as much of the water from the unit as possible. Use a protective mat or towel to prevent damage to the floor or having any of the remaining water spill on the floor.

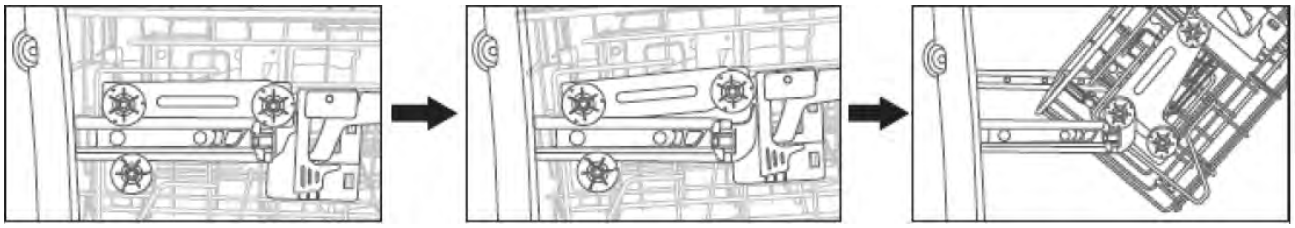
All voltage checks should be made with a voltmeter having a full scale range of 250 volts or higher. After service is completed, be sure all safety grounding circuits are complete, all electrical connections are secure, and all access panels are in place.

Before servicing, make sure to remove all items from inside of the dishwasher, including the wash racks.

3-3. REMOVING THE UPPER RACK

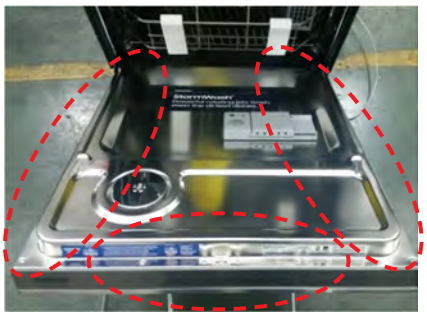
Pull the upper rack towards the front and then remove it by lifting it up slightly and pulling it towards the front.
See the illustrations below.

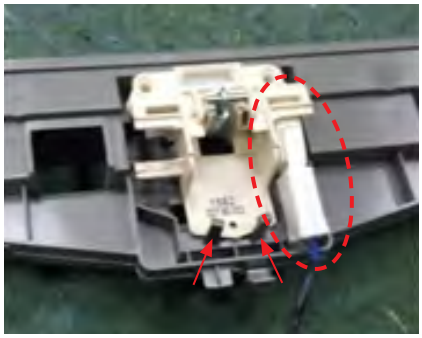
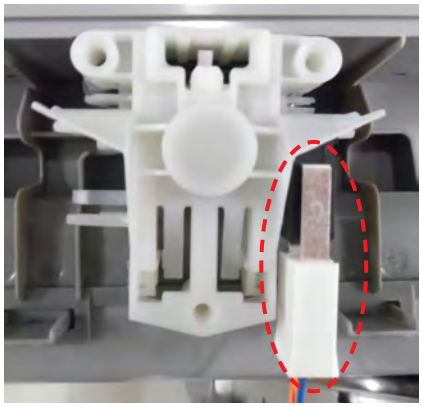
⚠ **Caution**
While the upper rack is removable, it must be installed for the dishwasher to operate properly.
If you attempt to operate the dishwasher without the rack, noise will occur and the dishwasher will perform poorly.

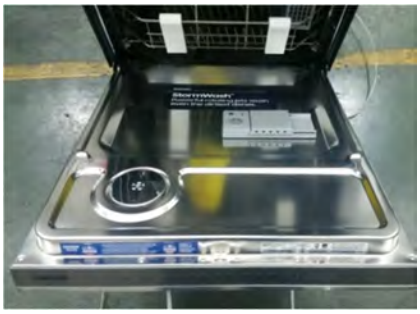


Step 1. **Step 2.** **Step 3.**

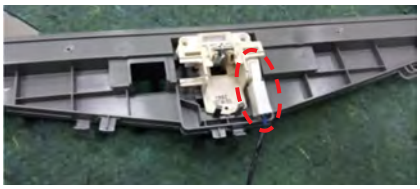
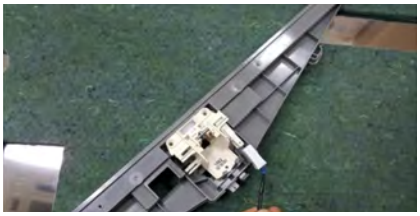
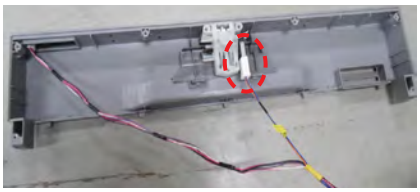
Part	Figure	Description
Main PBA		**Preparation:** • Make sure to disconnect the power. 1. You can see the Main-PBA case under the door. 2. Remove the two (2) screws of PBA case and pull out the PBA cover carefully. 3. Remove all connectors on the PBA
	 	4. Remove the three (2) screws on the PBA board . 5. Pull out the PBA board carefully.
	 	When removing the Main PBA, lift the PBA board up carefully because it is hanging on the PBA case by two hooks.

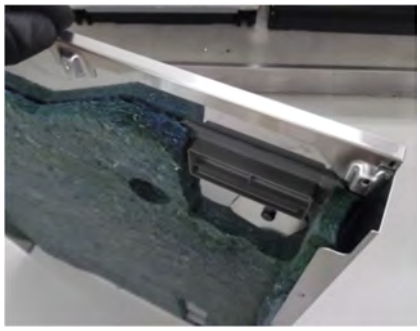
Part	Figure	Description
Door outer	 	**Preparation:** • Make sure to disconnect the power. • Remove the lower basket in the dishwasher. • Cover the Assy sump with a towel to prevent losing screws. 1. Open the door completely. Remove the 12 screws holding the tub front, door outer, and control panel in place.
	DW80M3021US  **DW80T3040US** 	Before removing the parts, place a cushioned mat on the floor to prevent the parts from being scratched. After removing screws, make sure to hold the tub front using your hand. It can prevent closing door suddenly and harming you. ⚠ **Caution** Do not place the removed screws on the door inner. They may fall into the sump assy.2. Remove the 12 screws (short one 8 pieces, long one 4 pieces) which holding the door outer and control panel in place. 2. Pull out the Door outer & the Assy control panel carefully.
	DW80M3021US  **DW80T3040US** 	3. Remove the Assy control panel from Door outer. (Pull out just a little)

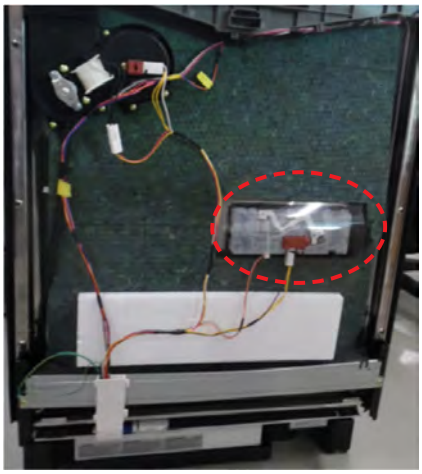
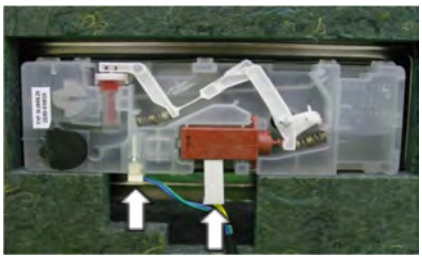
Part	Figure	Description
Door Lock Switch	DW80M3021US 	**Preparation:** • Disassemble the frame front. 1. When removing the door latch, lift it up because the latch is secured by one hooks. Use a flat screwdriver to remove it. 2. Release the micro switch.
	DW80T3040US 	**Preparation:** • Disassemble the frame front. 1. When removing DW80T3040US door latch, you don't have to lift it up because it doesn't have any hooks. 2. Release the micro switch.

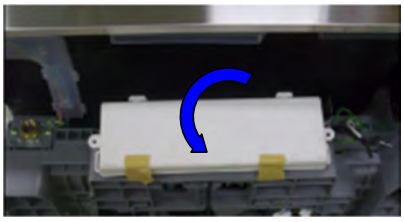
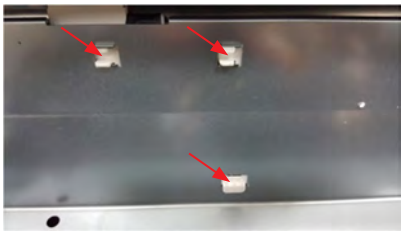
Part	Figure	Description
Condensing dry system	 **DW80M3021US**  **DW80T3040US** 	1. Open the door completely. Remove the twelve (12) screws holding the tub front, door outer, and panel control in place. ⚠ **Caution** Do not place the removed screws on the tub front. They may fall into the sump assy. 2. Pull out the Door outer & the Assy control panel carefully.
		3. Remove the fan motor & thermal actuator connectors.
		4. Remove the single (1) screw holding the bracket cover fan in place.

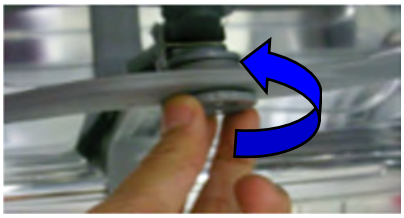
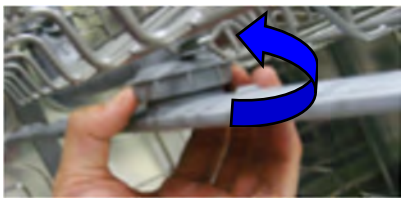
Part	Figure	Description
Condensing dry system		4. Remove the cover fan by rotating it counterclockwise. Use a jig. If you have no jig, use a tool such as a pair of long nose pliers. Remove it carefully so that the part is not damaged
		5. Remove the two (2) screws holding the cover fan in place.
	 	6. Hold and remove both the case vent assy which are located at the front of the tub front.

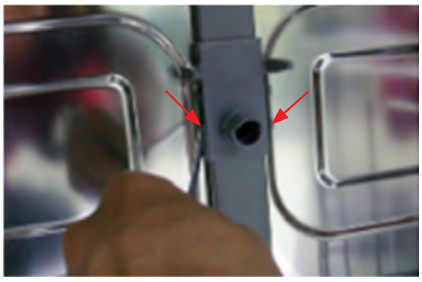
Part	Figure	Description
Control Panel	DW80M3021US   DW80T3040US  	**Preparation:** • Disassemble the door outer. 1. Remove the Door lock switch from Assy panel control.
	DW80M3021US   DW80T3040US  	2. Remove the wire connectors from Panel control.

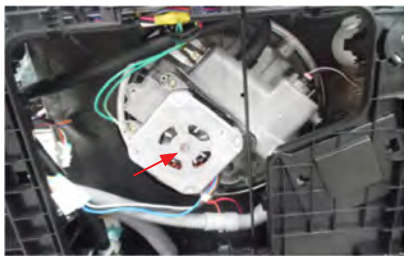
Part	Figure	Description
Cap Dry Outlet	  	**Preparation:** • Disassemble the door outer. 1. Push it to the inside carefully.

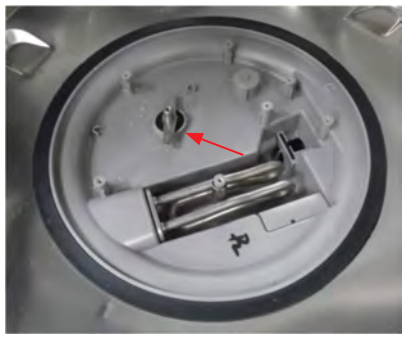
Part	Figure	Description
Dispenser		**Preparation:** • Disassemble the Door outer. - Refer the “Door-outer” disassembly section to separate the Door outer.
		1. Disconnect the two (2) wire from the Dispenser.
	 	2. The dispenser is fixed to the tub front with many hooks. Use several flat screwdrivers to remove it. 3. Push it to the inside carefully. ⚠ **Caution** Be careful as the tub front is sharp.

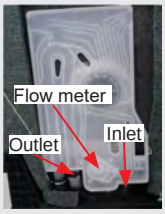
Part	Figure	Description
Bracket front lower	 	**Preparation:** • Make sure to disconnect the power, water supply, and drain hose connections. • Remove the upper & lower baskets in the dishwasher. • Pull out the dishwasher & carefully lay the dishwasher down on its back. • Remove the water supply line(& elbow). ⚠ **Caution** Make sure to turn the water supply off before removing the water supply line. 1. Remove the cover PCB and pull out the case PCB without disconnecting wire connectors. - When remove the PCB, lift up the two (2clasps under the base by using a flat tip screwdriver in a lever effect.
		2. Pull out the case PCB and secure it to the base using duct tape. Shown in the image to the left.
		3. Remove the four (4) screws on both sides of the bracket front lower.
		4. The guide wire is attached to the bracket front lower with three hooks. Use a pair of needle nose pliers or flat screwdriver.
	 	5. Using a Philips screw driver, lift up the each clasp on both sides of the bracket front lower.

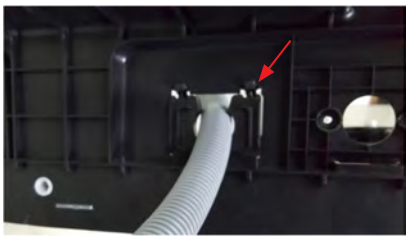
Part	Figure	Description
Bracket front lower	 	6. To remove the bracket front lower entirely, grab the top of the bracket front lower (on both sides) and pull the top out. At the same time, push the bottom of the bracket front lower (on both sides) in towards the unit.
Assy Rotor		**Preparation:** • Remove the lower basket in the dishwasher. • Make sure to remove the water in each nozzle to block the wet.(The DW80F800/ DW80F600 models nozzle is different shape but disassemble method is same as below.) 1. Upper Nozzle : Remove it by rotating the holder. (counterclockwise)
		2. Middle Nozzle : Remove it by rotating the holder from upper basket. (counterclockwise)
		3. Lower Nozzle : Pull out carefully it from the Assy sump.

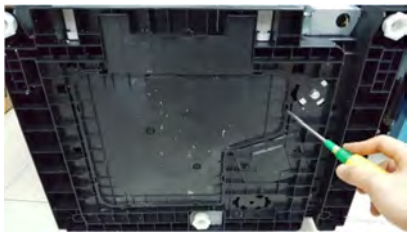
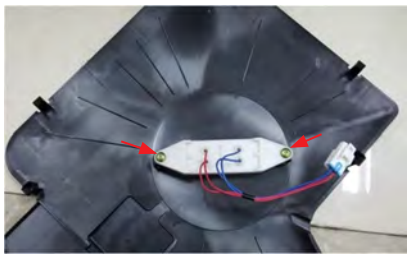
Part	Figure	Description
Duct-Main	 	1. The duct nozzle is fixed by two brackets inside tub. 2. Use a flat tip screwdriver to pry the tabs that are securing the bracket duct from the top and the middle of the tub. Be careful not to let the screwdriver slip when prying the tabs. Doing so will cause damage to the tub.
		3. Remove the duct nozzle by rotating to left side.

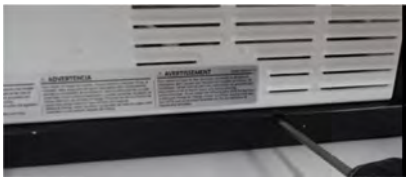
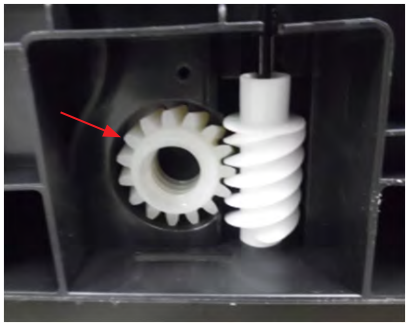
Part	Figure	Description
Assy Sump  		**Preparation:** • Disassemble the baskets, nozzles, duct nozzle & storm wash nozzle. • Disassemble the frame left & the shutter & bracket front lower. - Refer to each disassembly section. 1. Remove the parts which are connected to the Assy sump. - connectors, drain pump, screws
	  	2. Remove the three (3) screws & holders in Assy sump. Pull out the holders using a pair of needle nose pliers. At the same time, press the tab at the top of the holder using a screwdriver.
Assy Cover nozzle	 	3. Push the Assy sump using your hands toward the inside carefully. **Caution** Remove the water from the sump assembly before removing the sump assembly. Failure to do so will cause to be released onto the floor.

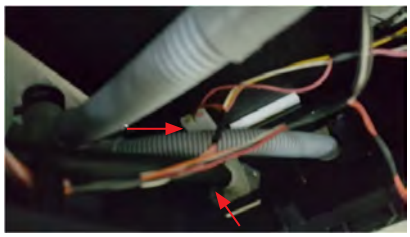
Part		Figure	Description
Assy Sump-Upper parts  Filter Mesh body  Cover Sump	**Filter Mesh body & Cover Sump & Impeller & Case scroll & Disposer**		**Preparation:** • Remove the baskets, nozzles, duct-main - Refer the each disassembly section to separate. 1. Release the 13 screws on Assy sump. (Except the two (2) screws holding the holder nozzle in the center of the sump.) Take off the filter mesh body, cover sump (& holder nozzle L).
			2. Pull out the Assy cover sump slightly and hold and rotate the duct nozzle and Assy case sump together.
		 	3. Remove the screw (1) that is fixing the impeller and circulation motor shaft. ⚠ **Caution** Use gloves for your hand to hold the impeller during removing the screw. Be careful, the impeller can injure your hands if gloves are not worn.

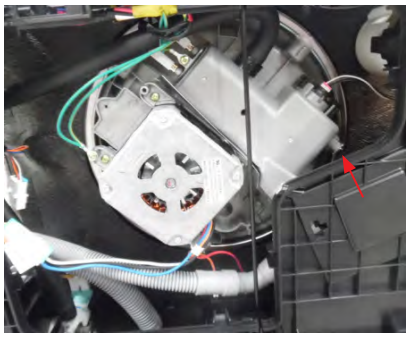
Part	Figure	Description
Assy Case Brake  		**Preparation:** • Make sure to disconnect the power, water supply, and drain hose connections. • Remove the upper & lower baskets in the dishwasher. • Pull out the dishwasher carefully. 1. Remove the two (2) screws of the frame left. 2. Remove the frame left. ⚠ **Caution** Make sure to wear gloves when removing it. Be careful as the steel plate is sharp and may cut you.
		3. . Remove cover brake by rotating.(counterclockwise) Use a jig. If you do not have a jig, you can use a needle nose pliers.(Be careful when removing the cover as it is easily damaged.)
		4. Loosen the four (4) clamps and release the four (4) hoses from the Assy case brake. ⚠ **Caution** Water remaining in the Assy case sensor and Assy case break will come out. Lay a towel on the floor to absorb any water that may come out.

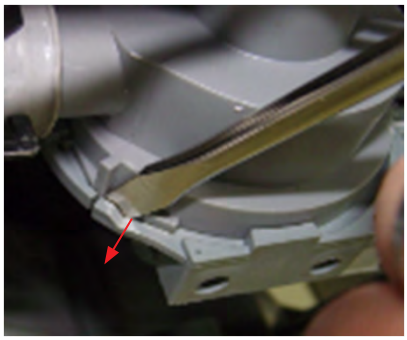
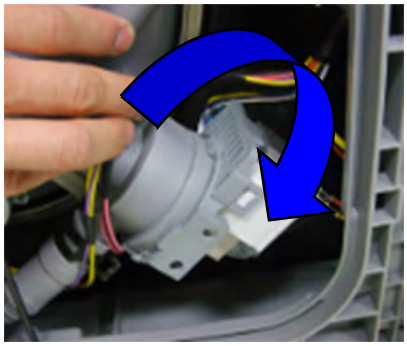
Part	Figure	Description
Drain Hose		**Preparation:** • Disassemble the Assy case brake. - Refer to the Assy case brake disassembly section to separate. 1. Loosen the clamp(left side in picture) and release the hose from the Assy case brake.
		2. You can see the hose holder in the dishwasher backside. 3. Push the two(2) hooks of the drain hose holder to nside.
		4. Pull out the hose carefully at the side position. 5. Remove the hose holder by releasing the hook. 6. Remove drain hose entirely.

Part	Figure	Description
Shutter	 	**Preparation:** • Make sure to disconnect the power, water supply, and drain hose connections. • Remove the upper & lower baskets in the dishwasher. • Pull out the dishwasher carefully. 1. Lay the dishwasher down on its back. Release the hooks ecuring the base and shutter in place. 2. Pull out the shutter and release the leakage sensor connector.
		3. Remove the leakage sensor from the shutter by unfastening the two(2) screws.

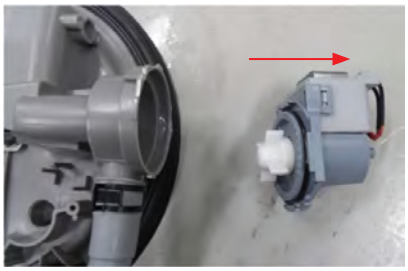
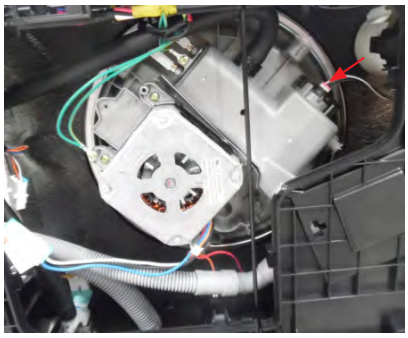
Part	Figure	Description
Rear Leg + Adjust bar	 	**Preparation :** • Make sure to disconnect the power, water supply, and drain hose connections. • Remove the upper & lower baskets in the dishwasher. • Pull out the dishwasher & lay the dishwasher down on its back. • Remove the shutter. 1. Turn the rear leg adjusting screw clockwise until the rear adjusting leg is fully extended.
		2. Remove the screw that is holding the case gear to the unit.
		3. The case gear is made up of a worm gear and helical gear. Pull out the worm gear first. 4. Grab the adjusting bar and pull it out while pushing the helical gear from the backside. The adjusting leg bar is attached to the base by a hook, which is indicated in the red circle in the the image to the left.

Part	Figure	Description
Water Valve		1. Remove the two (2) screws from the Base
		2. Lift up the inlet valve and disconnect the inlet valve wire connector. 3. Release the hose clamp and disconnect hose.
		⚠ **Caution** When removing the hose clamp, take care to hold it tightly. The clamp is under tension and if released, it can become a projectile. ⚠ **Caution** There will be a residual amount of water in the valve and valve hose. Use a towel to absorb the water when removing the valve.

Part	Figure	Description
Thermistor		**Preparation:** • Disassemble the shutter. - Refer to “shutter” disassembly section. 1. Disconnect the wire terminal connected to the thermistor.
		2. Release the two(2) screws of thermistor.
		3. Pull out it carefully. Inspect the “O” ring seal on the thermistor. If it is damaged in anyway, replace the “O” ring seal.

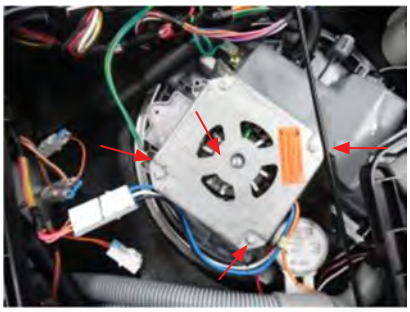
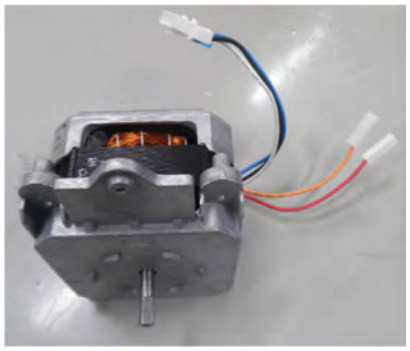
<table>
<tr><th>Part</th><th>Figure</th><th>Description</th></tr>
<tr><td rowspan="2">Drain Pump</td><td> 
  </td><td>Preparation:
• Disassemble the shutter.
- Refer to the “shutter” disassembly section.

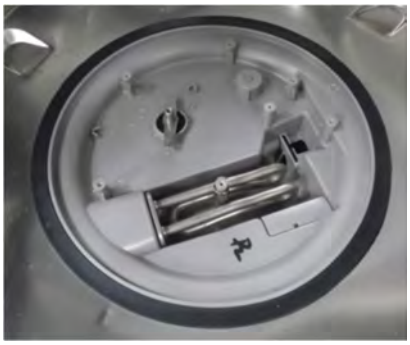
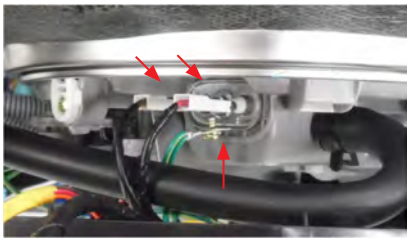
1. Remove the drain pump by gently prying up the locking tab on the pump. Then rotate the pump clockwise until it releases from the sump. Then pull the pump out.

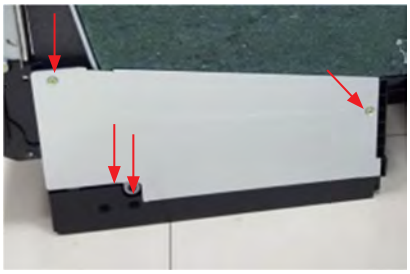
⚠ Caution
Remove all water from the sump assembly before removing the pump. Failure to do so will cause the water to be released onto the floor.
Inspect the “O” ring seal around the drain pump. If it is damaged in any way, replace the “O” ring seal.</td></tr>
<tr><td>  </td><td>2. Disconnect the two(2) drain pump connectors.</td></tr>
<tr><td rowspan="2">Turbidity Sensor</td><td>  </td><td>Preparation:
• Disassemble the shutter.
- Refer to the “shutter” disassembly section.

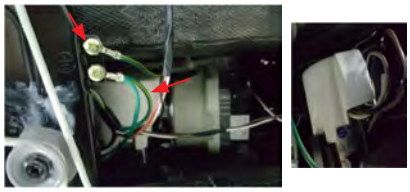
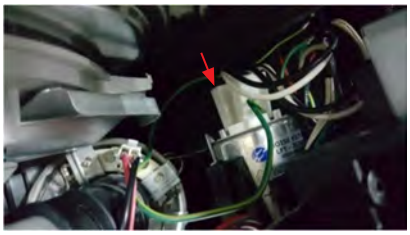
1. Remove the turbidity sensor connector.</td></tr>
<tr><td>  </td><td>2. Gently pry up the tabs on the turbidity sensor and pull it out of the sump assembly.

⚠ Caution
Carefully use a flat tip screwdriver to pry the tabs on the sensor as the tabs are fragile and can be damaged easily.
Inspect the “O” ring seal around the sensor. If it is damaged in anyway, replace the “O” ring seal.</td></tr>
</table>

Part	Figure	Description
Circulation Motor		**Preparation:** • Disassemble the cover sump & cutter disposer and shutter. - Refer to each disassembly section. 1. Remove the circulation motor and capacitor connection.
		2. Remove the four(4) screws holding the circulation motor and the sump in place, and the one(1) screw for earth connection from main wire-harness. 3. Hold and pull out the circulation motor carefully to remove it from the sump.
		⚠ **Caution** Remove the water from the sump assembly beforeremoving the motor. Failure to do so will cause to be released onto the floor. ⚠ **Caution** Be careful not to break the oil seal when removing the motor.

Part	Figure	Description
Heater 	 	**Preparation:** • Make sure to disconnect the power. • Disassemble the cover sump & cutter disposer. • Disassemble the shutter & bracket front lower. - Refer the each disassembly section.
		1. Remove the two (2) heater connectors. 2. Remove a ground screw on the heater bracket.
		3. Loosen the nut between the heater terminals. (10mm). 4. Remove the heater by pulling it out of the sump assembly. ⚠ **Caution** The heater may be very hot. Make sure to check it before touching the heater. ⚠ **Caution** Make sure to check if there is any water in the sump assembly. Remove any remaining water, to prevent water leakages while servicing.

Part	Figure	Description
Base		**Preparation:** • Disassemble the frame L/R and the shutter. - Refer to each disassembly section. 1. Remove the eight (8) screws on the base plate both-sides.
	DW80M3021US  **DW80T3040US** 	2. Carefully lay the dishwasher down on its back. 3. Remove the cover PCB and pull out the case PCB and disconnect the wire connectors. 4. Disconnect the wire connectors from Assy Sump.
		5. Pull out the base plate slightly. 6. Remove other parts as needed to remove the base. Ex. Main wire-harness. Hoses.

Part	Figure	Description
EMI Filter		1 Remove the two (2) screws on the frame-R. (in Red circle)
		2. Remove the ground wire screw form the door hinge. 3. Remove the Cover from the EMI Filter.
		4. Disconnect the two (2) wires from the EMI filter.
		5. Use a wrench to remove the M8 nut from the EMI filter.

4. TROUBLESHOOTING

4-1. PREPARATION

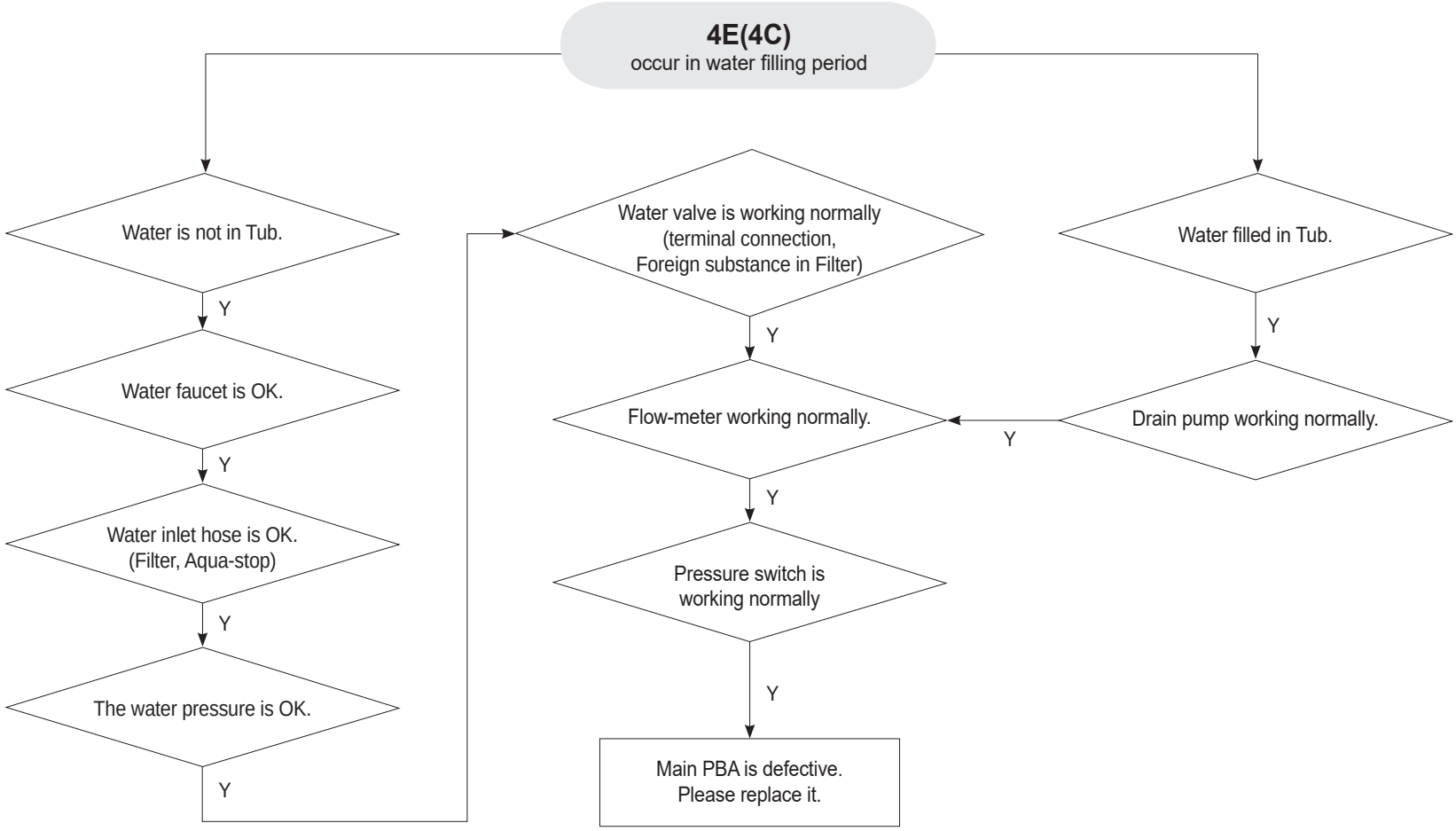
4-1-1. Check Code

Check code Display	Check code Recall	When occur	Symptom	Possible Causes
4C	4C	**Conditions for error to occur:** **Condition 1)** If the number of water supply pulses increases to fewer than 10 within 20 seconds after water is supplied. (If it increases to fewer than 10 within 10 seconds, turn the water supply valve 'OFF' for 1 second and then re-supply.) **Condition 2)** If 20 seconds after water is supplied (in other words, if Condition 1 is satisfied) and water supply Pulse is checked every minute, it does not increase by more than 30 compared to before. **Condition 3)** If the TargetPulse is not reached within 60 minutes after water is supplied.	**Condition 1)** Water supply valve OFF **Condition 2)** If draining is performed for 3 minutes while water supply valve is OFF. (20 seconds ON/ 5 seconds OFF) **Condition 3)** If draining is performed for 3 minutes while water supply valve is OFF. (20 seconds ON/ 5 seconds OFF)	- The water supply pressure is low. - The water supply valve is closed. - The aqua stop is out of order. - The case brake fails to detect the pulse.
No display	tC	- When the temperature sensor data output is equal to or greater than approximately 4.5V or is equal to or less than approximately 0.2V - When the water temperature is detected as equal to or less than - 3℃ for 30 seconds in succession during the cleaning the heater operation.	- Heater off and keep going remained cycle. - No Rinse aid during rinse cycle	- The thermistor is out of order.
No display	HC1	- The start temperature is saved 30 seconds after heating starts. Thereafter, if the temperature change is equal to or less than 4℃ for 10 minutes, the heater relay is turned off for 1 second and then restarts heating. Then, if the temperature change is equal to or less than 4℃ for 10 minutes again, an HC1 check code occurs.	- Keep going remained cycle with heater off condition.	- The heater is out of order. - The heater is improperly connected.

Check code Display	Check code Recall	When occur	Symptom	Possible Causes
HC	HC	- When the temperature is measured as equal to or greater than 80℃ for 3 seconds.	- The driving part stops and the main relay is turned off.	- The heater is out of order. - The thermistor is out of order.
No display	bC2	- When the button is pressed and held for 30 continuous seconds or longer.	- Keep going remained cycle	- The touch button is out of order. - An object is on the touch button.
	bC3	- When IC communications between the Sub PBA and the touch button fails.	- Keep going remained cycle	- The sub PBA or touch button PBA is not properly connected.
	AC	- When communications between the main PBA and the sub PBA fails for 24 seconds. (In Test Mode, communication fails for 6 seconds.)	- Keep going remained cycle	- The main PBA or sub PBA is out of order. - The communications connection for the main PBA or sub PBA is not properly connected.
LC	LC	- When the water leakage sensor data is equal to or less than 3V for 3 seconds.	- Main relay off - If sensor data over 3V is detected after draining (20 seconds on/5 seconds off) is performed for 3minutes, the drain pump is turned off. If less then 3V is detected, draining is performed for 3 minutesand then the sensed data is checked again.	- There is a water leak.
OC	OC	- When the overflow sensor data is equal to or less than 3V for 5 seconds.	- If an error has occurred when set operating, 3times ‘3min drain’ retry, and display “OC” (No operating condition, display “OC” without retry) - During retry 3times, display ‘pause’	- The case brake fails to detect the pulse. - The valve water is out of order.
No display	4C5	- When the number of detected water supply pulses are 200 at the Non-water supply mode. → Repeats water valve on(1seconds) / off(1seconds) 2 times.	- Keep going remained cycle	- The water valve out of water.

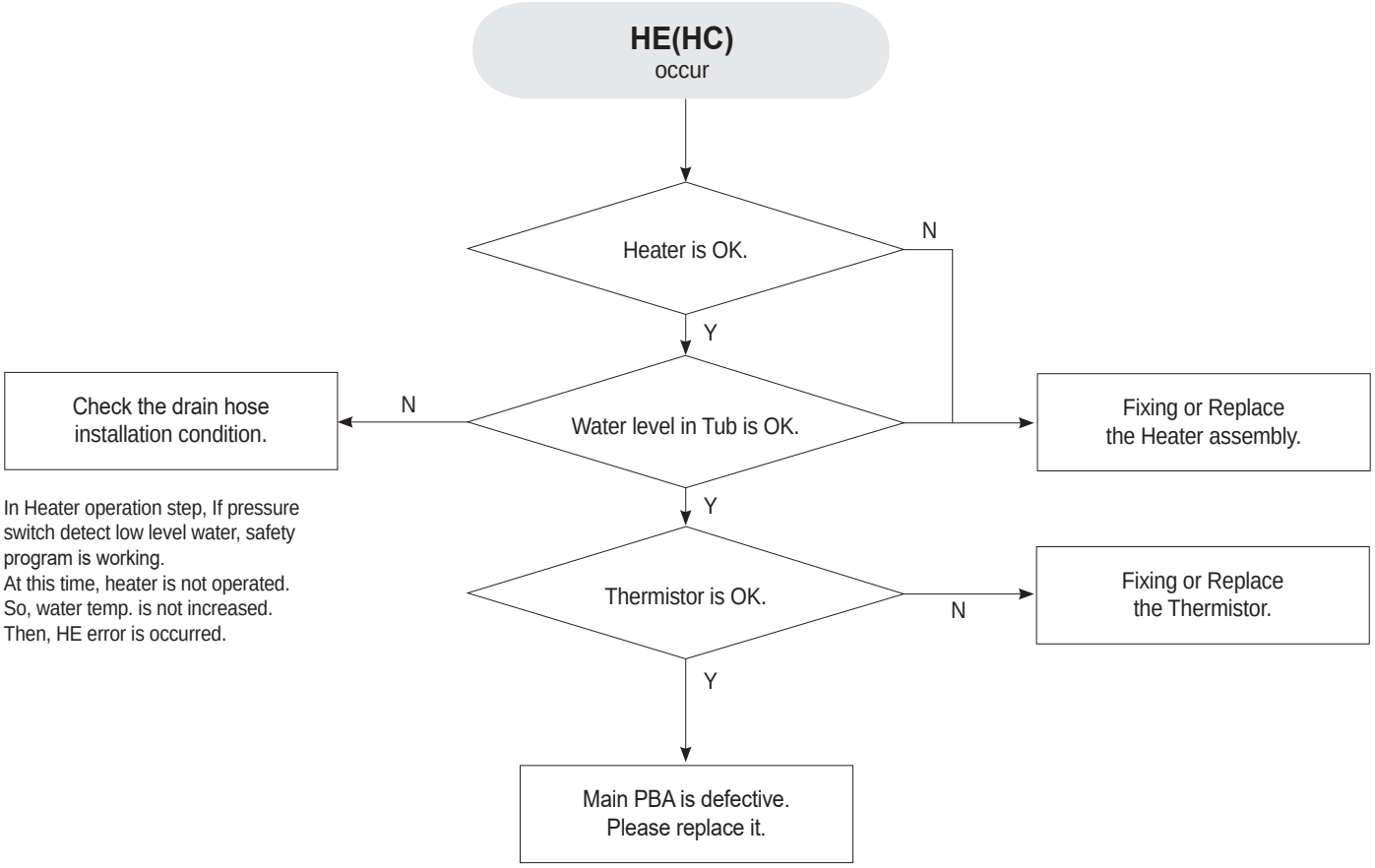
Resolution by symptom

- **4E(4C) :** When water supply is not working



Resolution by symptom

- **HE(HC) :** When heater is not working



In Heater operation step, If pressure switch detect low level water, safety program is working.
At this time, heater is not operated.
So, water temp. is not increased.
Then, HE error is occurred.

4-2. SERVICE INSPECTION MODE

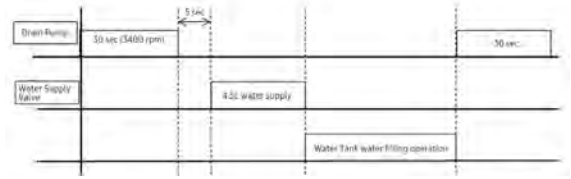
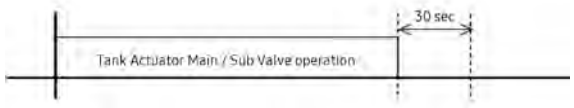
■ SVC Test mode

Item	Related Parts	Symptoms	Description
Enable Smart Install Mode			- 1) Set the timer for 17h with Power On. - 2) Press Hi-Temp Wash Key for at least 7 seconds.
Disable Smart Install Mode			When Power Key is pressed, it is disabled with Power Off.
Smart Install Mode Configuration			- There are Auto Mode and Manual Mode. When Smart Install Mode is enabled, it is set to Auto Mode by default. - Mode change KEY : Changing modes can be done by entering the Auto Key while on standby or when the operation of each mode has been completed. (AS → Manual mode STEP[1] → Manual mode STEP[2] → ... Manual mode STEP[9] → AS → ...(Circulation)) - Entering the mode change KEY when the Door Open check code occurs will cancel the check code and go to the state where mode change can be performed.
Smart Install Mode Display			- Displays “AS” before Auto Mode is enabled. - During Auto Mode, the current Step No. blinks as an indication.
Auto Mode Configuration			Closing the Door within 3.7 seconds after entering the Start Key will automatically run Step 1 through to Step 6. - If the Door remains open for more than 3.7 seconds after the Start Key is entered, the Door Open inspection code “dC (dC1)” will appear. - The machine will stop if the Door opens during operation, and the Door Open inspection code “dC (dC1)” will appear. However, for models that utilize Auto Door Open, this excludes sections that come after the Auto Door Open operation. - Pressing the Start Key while the Door Open inspection code “dC (dC1)” is showing will clear the displayed inspection code and restart from the initial AS. - For models with a Vane, the Vane must always be in the parking location when the nozzle at the bottom begins to spray water (leakage prevention). ※ dC1 will occur if Door Open information is detected only in Inverter Micom. 1. During Auto Mode, all keys except Power Key are deactivated. During Auto Mode, Sub Mode cannot be changed manually. 2. [Auto Mode STEP 1: check drainage and vane.] 3. Turn on the drain pump. (Use the following steps/ no drain error detection.) - Drain pump on for 14 seconds → drain pump off for 2 seconds → drain pump on for 14 seconds → off for 5 seconds → complete 4. Move the vane back and forth while draining step is in progress. (※ Applicable to models with a vane only.) 5. Once the draining step completes and the vane operates normally, proceed to [STEP 2].

Item	Related Parts	Symptoms	Description
Auto Mode Configuration			6. [Auto Mode STEP 2: check water supply] 1) Supply 4.5L of water. ※ Water supply error : detected in the same way as normal water supply error but if water is not fully supplied for a maximum of 5 minutes, the water supply inspection code is activated. 2) Water supply operates (including the internal pressure calibration) according to the development model specifications. 3) Once the water supply, internal pressure calibration and alternating motor operation completes, proceed to [STEP3]. 7. [Auto Mode STEP 3: check nozzle] 1) Operate the circulation pump. (BLDC: 2400RPM, AC Pump: LOW (default)/HI Setting) 2) Operates the alternating motor in the order of the locations where alternation takes place during the water supply step. Skip any unused alternation. Operate for 10 seconds each time after it reaches the target alternation location. ex) Location #1: 10 seconds, Location #2: 10 seconds , Location #3: 10 seconds, … Location #6: (10 seconds) Location #1: 10 seconds ※ For models with AC circulation pump, operate in the order of LOW (starting alternation → HI → LOW → for each alternation location. When the last alternation completes, the circulation pump operates from LOW (starting alternation) again. Although there will be no alternation changes for models that do not use an alternating motor, operate the C-Pump on LOW (10 seconds) -> C-Pump on HI (10 seconds). ※ For models with a Vane, move the Vane back and forth once when operating the bottom. For Vane operation alternations, detect the Vane reset position and then operate the relevant alternation while moving it back and forth once. 3) Operate the Dispenser Actuator for 130 seconds. 4) [STEP3] Operate the heater 10 seconds after operating. 5) If after 1 Cycle is run for each alternating position and the temperature has increased by more than 2 degrees over the initially saved temperature (the initial temperature saving point is saved 30 seconds after running [STEP3]), or if more than 73 degrees is detected when operating the heater, turn the heater OFF and judge it as normal operations of the heater. 6) Go to [STEP4] when more than 1 Cycle is run for each alternating position until the last alternation, the heater operation is judged to be normal, and then the Dispenser is operated for 130 seconds. ※ However, for models with a Vane, go to [STEP4] after moving the Vane from the Vane Reset position to the front for 1.0 second. 7) HC1 error will occur if the heater operation is not judged to be normal after 10 minutes have passed. 8. [Auto Mode STEP 4: check drain] 1) Operate the drain pump. 2) Follow the same steps as PreDrain. 3) If low water level is not detected in the first cycle after draining starts, the drain inspection code is activated. 4) For models without low water level detection, proceed to the next step after draining without the drain inspection code.

Item	Related Parts	Symptoms	Description
Auto Mode Configuration			9. [Auto Mode STEP 5: check drying] 1) Operate Auto Door Open Actuator. - If the Door does not open within 3 minutes after the Auto Door Open Actuator is run, it will Retry once (10 seconds Off, 3 minutes On). - If the Door does not open after the retry, a DC3 check code will occur. 2) If the door open is detected after Auto Door Open, operate for additional 30 seconds from the time the door opens and complete the Auto Door Open step. ※ For models that utilize Auto Door Open, operate the Auto Door Open Actuator. 3) Operate the Fan Motor and Dry Actuator for 30 seconds. (Only for models with the relevant part) 4) Once the above 1), 2) and 3) are complete, proceed to [STEP 6]. 10. [Auto Mode STEP 6: complete the Auto Mode operation] 1) "OK" displays. 2) At the time Auto Mode operation completes, Smart Install Auto Mode Completion is saved to EEPROM.
Manual Mode Configuration			- Each time Auto Key is pressed, the Manual Mode step changes indicating Step No. - After Max Step No. is selected, it is automatically changed to Auto Mode "AS". - Start Key must be pressed to start the Manual Mode steps. - The Step of the manual mode will operate only when the Door is closed within 3.7 seconds after entering the Start Key. - If the Door is left open for 3.7 seconds after the Start Key is entered, the Door Open check code “dC(dC1)” will be displayed. - During manual mode operations, if the relevant Step number blinks and the relevant Step operation has been completed, the Display will indicate the relevant Step number. - If the Door opens during operation, it will stop and the Door Open check code “dC(dC1)” will be displayed. (However, Auto Door Open Mode is an exception. The operation is resumed as it detects the door is open.) - When the Door open check code "dC(dC1)" is displayed, pressing the Start Key will turn the check code display off and t will restart. - When restarting, the mode starts from the beginning. - For models with a vane, the vane must be always positioned at parking when the bottom nozzle starts spraying (to prevent leakage). ※ dC1 will occur if Door Open information is detected only in Inverter Micom. 1. [Manual Mode STEP 1: drain / supply of water] 1) Perform Auto Mode STEP 4 (drainage) and STEP 2 (water supply). 2. [Manual Mode STEP 2: check the nozzle] [BLDC circulation pump model] - Each time the Key below is entered, setup will change in units of 100rpm and the current relevant RPM will be displayed for 2 seconds. (Can be set from 1201~3500RPM) 1) Normal (models outside of US: Eco) Key: 2400 (default RPM) -> 3400 -> 3500-> 1201 -> 1300 ->..(changes RPM increase direction) 2) Delicate Key: 2400 (default RPM) ->2100 -> 2000 -> 1900 ->..... (changes RPM decrease direction)

Item	Related Parts	Symptoms	Description
Manual Mode Configuration			[AC circulation pump model] 1) Normal Key : Low(default) -> Hi ->Low -> Hi -> .. 2) Delicate Key : Low(default) -> Hi ->Low -> Hi -> ... - Use Express60 Key if there is no Delicate Key [Alternation Location Change] - Each time Heavy Course Key is pressed, the alternation nozzle position can be set and it starts from its default position. Unused alternation cannot be set. No. 1 (default: the default position varies by model → No. 2 → No. 3 → No. 4 → No. 5 → No. 6 (max. alternation target position: varies by model) → No. 1 → Please refer to [Dish Washer-Washing Performance Specifications-Distributor Control] for the specifications of alternation position by model. (When the key is pressed, the current target alternation position displays for 2 seconds.) ※ For models that do not use an alternating motor, entering this Key will trigger an Invalid tone. ※ When performing this STEP without performing STEP 1 as it has been already performed, calibrate the pressure in the tub when restarting or operating the nozzle for the first time. ※ If STEP 1 has not been performed before, perform STEP 1 first. (STEP 1 is not recognized as having been performed if STEP 1 is re-operated, STEP 6 has been performed or Auto Mode has been enabled.) ※ For models with vane, the vane must move back and forth when the bottom alternation is in progress. 3. [Manual Mode STEP 3: inspect the heater] - Set the alternation to the default position. - Circulation pump: operate BDLC Model at 2400RPM, and AC model at LOW Power setting. - Operate the heater after operating the circulation pump for 10 seconds. - Turn the heater off when the max. temperature reaches 73 degrees or the max. operation time passes 10 minutes. - During operation, the display alternates between the temperature of the heater and the current Step No. ※ When performing this STEP without performing STEP 1 as it has been already performed, calibrate the pressure in the tub when restarting or operating the nozzle for the first time. ※ If STEP 1 has not been performed before, perform STEP 1 first. Only "3" blinks during STEP 1 operation (no display of temperature). (STEP 1 is not recognized as having been performed if STEP 1 is re-operated, STEP 6 has been performed or Auto Mode has been enabled.) 4. [Manual Mode STEP 4: operate the dispenser] - Operate the dispenser for 130 seconds. 5. [Manual Mode STEP 5: operate the fan] - Operate the Fan Motor and Dry Actuator for 30 seconds. (Only for models with the relevant part)

Item	Related Parts	Symptoms	Description
Manual Mode Configuration			6. [Manual Mode STEP 6: drain] 1) Operate the drain pump. 2) Follow the same steps as PreDrain. 3) If water level is not detected after draining, the drain inspection code is activated. 4) For models without low water level detection, proceed to the next step after draining without the drain inspection code. 7. [Manual Mode STEP 7: operate Auto Door Open Actuator] 1) Operate Auto Door Open Actuator. (Only for models with the relevant part) - If the Door does not open within 3 minutes after the Auto Door Open Actuator is run, it will Retry once(10 seconds Off, 3 minutes On). - If the Door does not open after the retry, a DC3 check code will occur.Before the DC3 check code occurs, operate the Auto Door Open Actuator for an additional 30 seconds during Door open detection. 8. [Manual mode step 8: Water Tank water filling operation] Please refer to the diagram below for the control times of the control components that run in this mode. (Applicable only to models that have the relevant running parts.)  For the Water Tank water filling operation in the diagram, please refer to the water filling operation of [Dishwasher - Additional function – Water Tank control function]. (Operates regardless of the Water Tank State.) 9. [Manual mode step 9: Water Tank water draining operation] The Tank Actuator Main, Sub Valve operates in this mode (in models that have the relevant running parts), and the control time is the same as that of the Tank Actuator Main, Sub Valve in water supply action using water in the Water Tank of [Dishwasher - Additional function – Water Tank control function]. Complete the Tank Actuator Main, Sub Valve action and then wait 30 seconds to complete the operation. (Operates regardless of the Water Tank State.) Change the Tank Actuator status to Some Fill right before the Tank Actuator Valve turns On and then save to EEPROM. After completing the Tank Actuator Valve operation, change the Tank Actuator status to Empty and then save to EEPROM. 

Item	Related Parts	Symptoms	Description
Information Display			Each time Hi-Temp Wash Key is pressed while "AS“ displays, it makes [SOUND_KEYPUSH] sound and changes in the following order: n1 -> n2 -> n3 -> n4 -> n5 -> n1 -> n2-> n3...changes in a loop - When Auto Key is pressed while the information display mode is on, it makes [SOUND_KEYPUSH] sound and returns to Auto Mode.
n1: Version Display			When holding the following keys, the version displays alternating with "n1”:
			- Normal Course Key: Sub PBA Version Display
			- Heavy Course Key: Sub PBA Touch IC SW Version Display
			- Express 60 Course Key: Model Option Display
n2: Inspection Code Display			- Each time Normal (Europe: Eco) Key is pressed, the code on display changes in a loop starting from the last saved code: C00 -> C10 -> C20 -> C30 -> C40 -> C50 -> C60 -> C00 -> ... - Up to 7 inspection codes can be saved, any additional code overwrites the oldest code. ※ Inspection codes are saved according to [Dish Washer - Inspection Mode - Inspection Recall Mode]. 1. Each time Heavy Key is pressed while inspection code is on display, the information about the condition which triggers the inspection code displays in sequence. ex: When C00 displays, it changes as follows: C00 -> C01 -> C02 -> C03 -> C04 -> C05 ->C06->... When C10 displays, it changes as follows: C10 -> C11 -> C12 -> C13 -> C14 -> C15 -> C10->... ※ CX1: X indicates the order of inspection code on display. C01: indicates the code ID which occurs most recently. 2. When the operation button is held for 7 seconds with the inspection code on display, it clears all the inspection code data.
n3: Smart Install Auto Mode Result Display			It determines based on the data saved in EEPROM. - Smart Install Auto Mode is successfully completed: it is indicated by "OK" - Smart Install Auto Mode is not successfully completed or not performed: it is indicated by "nG"
n4: Operation Cycle Display			- The max. value is 9999 and it does not go any higher. - When the finishing session is entered, Cycle Cnt increases unless Cancel & Drain has been enabled.

Item	Related Parts	Symptoms	Description
N5: Setting Dry Increase Option by Default			1) If Dry+ (or Sanitize) option is set to On by default, it indicates as "d1". 2) If Dry+ (or Sanitize) option is not set to On by default, it indicates as "d0". 1. To set Dry+ (Sanitize) option to On by default, use the Dry+ (Sanitize) option button to switch it On/Off [n5: Setting Dry Increase Option by Default mode only]. - When Dry+ (Sanitize) button is pressed, Dry+ (Sanitize) is set to On or Off by default. ※ For models without Dry+, the Sanitize button can be used to set the Sanitize option to On by default. [note] About This Option This option is designed to increase the drying performance by default in case there are consumer complaints. - If Dry+ (Sanitize) option can be set to On by default, it powers on and sets the Dry+ (Sanitize) option to On by default. - If the course does not support Dry+ (Sanitize) option setting, it is not set to On by default. - Even if the course is completed without using Dry+ (Sanitize) option, the last used course is set to On by the course save feature on its next power-on and Dry+ (Sanitize) option is set automatically depending on the default setting as long as Dry+ (Sanitize) option is set to On by default. - Even if Dry+ (Sanitize) option is automatically set by the default setting, it can be switched On/Off by pressing Dry+ (Sanitize) Key.

4-3. CYCLE CHART

Cycle	Pre-wash1	Pre-wash2	Pre-wash3	Main wash	Rinse 1	Rinse 2	Rinse 3	Last Rinse [Sanitize]	Dry (min.)	Water[gal(ℓ)]	Time (min.)
Auto	●	●		● 131 – 145 °F (55 – 63 ℃)	●	○	○	● 136 – 154 °F (58 – 68 ℃) [163 °F (73 ℃)]	●	4.9 – 8.4 (18.4 – 31.9)	125 - 164
Normal	●	○		● 113 – 145 °F (45 – 63 ℃)	●	○		● 131 – 149 °F (55 – 65 ℃) [163 °F (73 ℃)]	●	3.1 – 7.2 (11.7 – 27.2)	115 - 190
Heavy	●	●		● 149 °F (65 ℃)	●	●	●	● 154 °F (68 ℃) [163 °F (73 ℃)]	●	8.7 - 33.1	171
Express 60'				● 122 °F (50 ℃)	●			● 140 °F (60 ℃) [163 °F (73 ℃)]	●	3.8 - 14.3	60

• The numbers in parentheses in the Last Rinse column represent the temperature when you select Sanitize.

• When you select the Auto or Normal cycle, you can eliminate the (flexible) steps depending on the soil level of the dishes.

• The water consumption and wash time varies depending on the steps or options you add, and on the pressure and temperature of the supplied water.

• When you select any options, the cycle time can be changed.

• When the Rinse Aid is empty, wash time and Last Rinse temperature can increase a little.

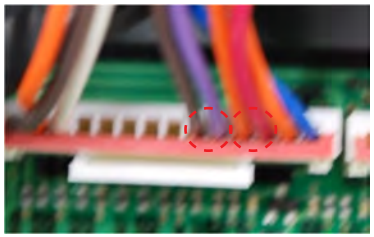
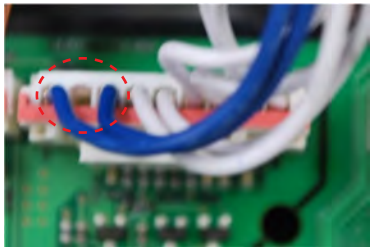
<table>
<tr><th>Check type</th><th>Check code</th><th>Checking method</th><th>Corrective actions</th></tr>
<tr><td rowspan="2">High Temperature Heating Check</td><td rowspan="2">HC</td><td>1. Check the hot water connections for the Inlet Valve.</td><td>- See the “Temperature Sensor Check”.</td></tr>
<tr><td>2. Check the operation of the Thermistor.</td><td>- See the “Heater Check”.</td></tr>
<tr><td>Leakage Check</td><td>LC</td><td>Check whether there is any trace of water leakage in the shutter.
➢ Normal: No water leakage trace</td><td>- Faulty: Check the leakage location. Replace the faulty part.
- Normal: Replace the Main PBA assy.</td></tr>
<tr><td>Temperature Sensor Check</td><td>tC</td><td>1. Check the connections for the Thermistor
(or Assy Sensor ECS) connector.</td><td>- Reconnect the Thermistor(or Assy Sensor ECS) connector.</td></tr>
<tr><td>Temperature Sensor Check</td><td>tC</td><td>2. Check whether the Thermistor(or Assy Sensor ECS)
is operating normally.
- Measure the voltage between both ends of the Thermistor(or Assy Sensor ECS).
➢ Normal: 0.2 to 4.5V
- Measure the resistance between both ends of the thermistor :Remove the connector before measuring.
(DMT800/610/400/350, DW7933, DW80J3020, DW80K3021)
- Measure the voltage between number 2 and 4 in the connector with power. (DW80F800, DW80F600)

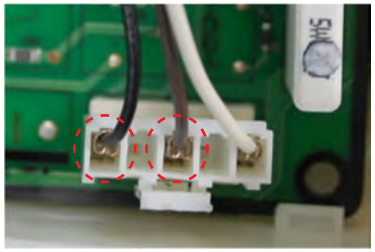
See the Table right</td><td>- Faulty: Replace the Thermistor(or Assy Sensor ECS).
-Normal: Replace the Main PBA assy. [Senser ECS]

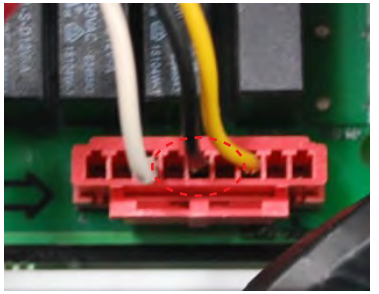
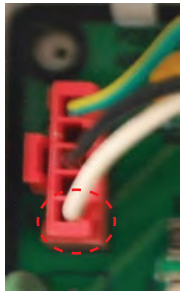
 
[Senser ECS]</td></tr>
</table>

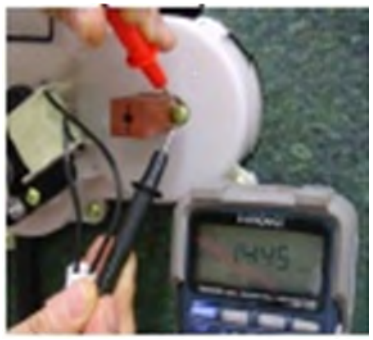
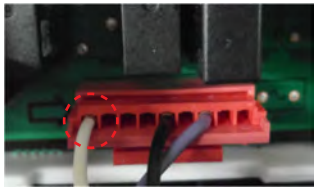
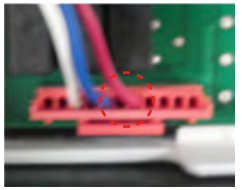
THERMISTOR TABLE

Temp. (ºC)	Temp. (ºF)	Resistance (kΩ) [DMT800/610/400/350, DW7933, DW80J3020]	Current (Vdc) [DW80F800, DW80F600]	Resistance (kΩ) [DW7050, DW5050]	Resistance (kΩ) [DW7050, DW5050]
	5	41	125.78	0.865	133.219
10	50	98.323	1.026	103.638	103.638
15	59	77.454	1.203	81.249	81.249
20	68	61.465	1.393	61.477	61.477
25	77	49.12	1.594	51.042	51.042
30	86	39.517	1.804	39.51	39.51
35	95	31.996	2.018	31.985	31.985
40	104	26.065	2.234	25.024	25.024
45	113	21.358	2.447	21.347	21.347
50	122	17.599	2.656	17.59	17.59
55	131	14.579	2.475	14.573	14.573
60	140	12.14	3.048	12.136	12.136
65	149	10.159	3.228	10.157	10.157
70	158	8.542	3.396	8.541	8.541

Check type	Check code	Checking method	Corrective actions
Power Check	None	1. Check the connections for the power cable.	- Reconnect the power cable.
		2. Check the voltage of the power outlet. ➢ Normal: AC 120V	- Connect to a 120V power source.
		3. Check the wires of the Main PBA power part.	- Faulty: Check and replace the wires of the power part.
		- Measure the voltage between the black wire and the white wire of CN101. ➢ Normal: AC 120V	- Check voltage  
		4. Check the DC voltage of the Main PBA.	- See “Main PBA DC voltage Check”.
Main-PBA DC Voltage Check	None	Check the DC voltage of the Main PBA. - Measure the voltage between pin 4 (orange) of the main PBA CN302 connector and pin 6 (brown) of the CN301 connector. ➢ Normal: 4.5V to 5.5V - Measure the voltage between pin 9 (blue) of the main PBA CN301 connector and pin 11 (blue) of the CN301connector. ➢ Normal (Power Key On): 9.5V to 12.5V ➢ Normal (Power Key Off): 5.5V to 7.0V	- Faulty: Replace the Main-PBA Assy. - Check voltage (4.5V~5.5V)  - Check voltage (9.5V~12.5V or 5.5V~7.0V) 

Check type	Check code	Checking method	Corrective actions
The nozzle does not inject water.	None	1. Check the connections for the Circulation Motor connector.	- Reconnect the Circulation Motor connector.
		2. Check the connections for the Circulation Motor.	-Reconnect the Startup Condenser connector of the Circulation Motor. 
		3. Check the resistance for the Circulation Motor coil. (Remove the connector before measuring.) ➢ Normal: Approx. 5.8 Ω	- Faulty: Replace the Circulation Motor. 
		4. Check whether there is foreign material in the water passages.	- Remove foreign material from the water passages.
The Cycle does not start.	None	1. Check the connections for the Door Sensing Switch : Check the blue wire and the switch connected to the blue wire. ➢ Normal (Power Key On): 9.5 to 12.5V (when the door is open) ➢ Normal (Power Key Off): 5.5 to 7.0V (when the door is open) ➢ Normal : <2V (when the door is closed)	- Reconnect the Door Sensing Switch connectors  
		2. Check the operation of the Door Sensing Switch. (Remove the connector before measuring.) : Check the blue wire and the switch connected to the blue wire. ➢ Normal: OPEN (when the door is open) ➢ Normal: SHORT (when the door is closed)	- Faulty: Replace the Door Sensing Switch. - Normal: Replace the Main PBA assy.

Check type	Check code	Checking method	Corrective actions
No Washing	None	1. Check whether the nozzle injects water normally.	- See “The nozzle does not inject water”.
		2. Check the operation of the Heater.	- See “Heater Check”.
Detergent is not dispensed.	None	1. Check whether detergent is inserted into the dispenser.	- Check whether there is detergent in the Dispenser.
		2. Check the connections for the Dispenser connector.	- Reconnect the Dispenser connector.
		3. Check the resistance of the Dispenser. (Remove the connector before measuring.) ➢ Normal: Approx. 2.3 kΩ	- Faulty: Replace the Dispenser. 
		4.Check the operation of the Dispenser Relay. : Check the operating voltage between the white wire of the CN101 connector and the white black of the CN202 connector. ➢ Normal: 120V (while operating)	-Faulty: Replace the Main PBA assy. - Check voltage  

Check type	Check code	Checking method	Corrective actions
Dry is not satisfied.	None	1. Check whether Rinse Refill LED light or not.	- If Rinse Refill LED light, refill rinse in Dispenser.
		2. Check the wire connections for the Dry Fan Motor.	- Reconnect the Dry Fan Motor connectors.
		3. Check the resistance of the Dry Fan Motor coil. (Remove the connector before measuring.) ➢ Normal: Approx. 150 Ω	- Faulty: Replace the Dry Fan Motor assy. 
		4. Check the resistance of the Thermal Actuator. (Remove the connector before measuring.) ➢ Normal: Approx. 1.45 kΩ	- Faulty: Replace the Thermal Actuator. 
		5.Check the operation of the Dry Fan Motor Relay : Check the operating voltage between the red wire of the C201 5pin connector and the white wire of the CN202 9pin connector. ➢ Normal: 120V (while operating)	- Faulty: Replace the Main PBA assy. - Check voltage  

Check type	Check code	Checking method	Corrective actions
Dry is not satisfied.	None	6. Check the operation of the dispenser. ➢ If rinse aids are not dispensed, a dry error may occur. ➢ Because the dishes are heated and heat dried during the last drying cycle, the dried state of plastic dishes may not be optimal.	- See “Detergent is not dispensed”
LED or Input Key Fail	None	1. Check the connections for the Sub PBA connector	- Reconnect the Sub PBA connectors..
		2. Check the LED and Input Key 1) Push ‘Hi-Temp Wash’ + ‘Sanitize’ + ‘Power Key’ ➢ Normal : All LED display 2) Push ‘Normal’~’Sanitize’ ➢ Normal : Each LED on 3) Every time you enter 'Delay Start' ➢ Normal : Wash LED → Rinse LED → Dry LED ` → Control Lock LED → Delay Start LED → Segment Dot → Rinse aid Refill LED 4) Push ‘Start’ ➢ Normal : LED Display ‘1234’ 5) Push ‘Auto’ ➢ Normal : Version Display	- Faulty : Replace the Sub PBA.
		3. Check the DC voltage of the Main PBA.	- See “Main PBA DC voltage error”.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Will not start.	The door is not closed completely.	Check that the door is latched and closed completely.
	No cycle is selected.	Select a proper cycle.
	The power cable is not connected.	Connect the power cable properly.
	The water supply does not work.	Check that the water supply valve is open.
	Control panel is locked.	Unlock the control lock, (See user manual.)
	A circuit breaker is open.	Reset the circuit breaker.
It's taking too long with an operation or cycle.	Cold water is being supplied.	Check that the water supply line is connected to a hot water supply. (Additional time is required to heat cold water.)
There are food particles remaining on dishes. (Not cleaning properly.)	You selected an inappropriate cycle.	Select a cycle according to the number and soil level of the dishes, as directed in this manual.
	The water temperature is low.	Connect the water supply line to a hot water supply. For best performance, the temperature of the supplied water should be 120 ˚F (49 ˚C).
	Low water pressure.	The water pressure should be between 20 and 120 psi (140 - 830 kPa).
There are food particles remaining on dishes. (Not cleaning properly.)	The water is too hard.	Use a commercial dishwasher cleaner. Use high-quality, fresh detergent with rinse aid.
	Dishwasher detergent was not used.	Use automatic dishwasher detergent. We recommend a powder or gel type dishwasher detergent.
	Detergent remains in the dispenser.	Make sure large items such as cookie sheets, cutting boards, or contaners, etc. are not blocking the detergent dispenser and preventing it from opening properly. Rearrange the dishes so they do not interfere with detergent dispenser operation.
	There is no rinse aid.	Check the dispenser and add the rinse aid. Use liquid type rinse aid.
	A nozzle is clogged.	Clean the nozzle.
	The dishes are improperly loaded. Too many dishes have been loaded.	Rearrange the dishes so they do not interfere with nozzle rotation and detergent dispenser operation. Load only an appropriate number of dishes. Load your dishes as recommended. (See page 16.)

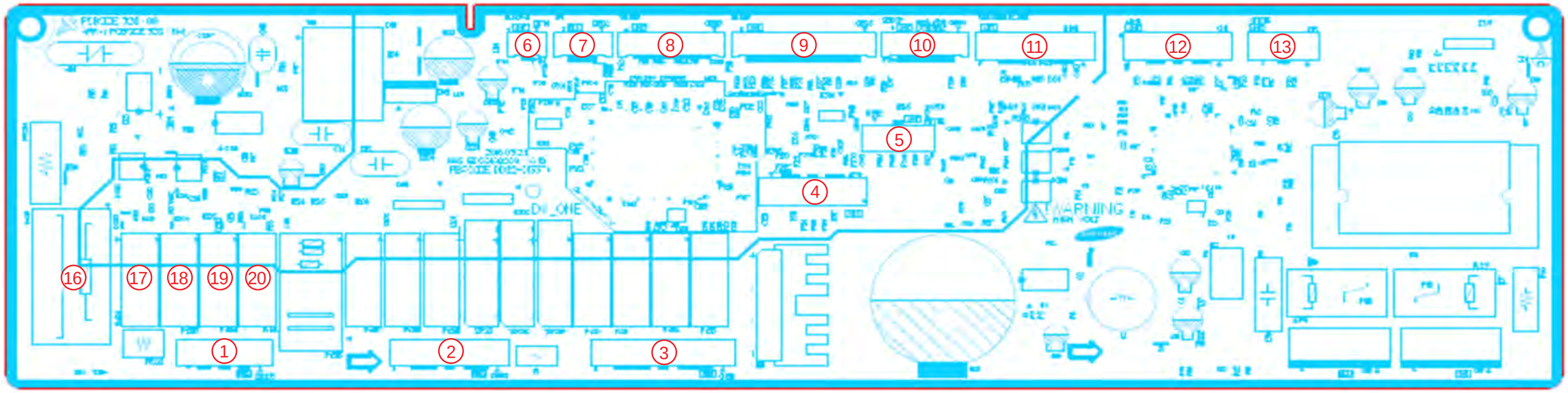
PROBLEM	POSSIBLE CAUSE	SOLUTION
Leaves glasses with a dim polish.	The water supplied is soft and too much detergent was used.	Underload the dishwasher and use a rinse aid to minimize this.
	Aluminum dishes were included in the wash load.	Remove the marks on the dishes using a low sensitivity cleaner.
Leaves a yellow or brown film on the inside of the dishwasher.	This is caused by coffee and tea soils.	Remove the soils using a spot cleaner.
Does not dry dishes well.	There is no rinse aid in the dispenser.	Check the dispenser and add the rinse aid.
		Use a liquid type rinse aid.
	The temperature of the water is low when the dishwasher is running.	Connect the water supply line to a hot water supply. Use rinse aid with the Sanitize option.
	Too many dishes have been loaded.	Proper loading of items can affect drying. Load your dishes as recommended.
	Glasses and cups with concave bottoms hold water. This water may spill onto other items when unloading.	After finishing the cycle, empty the lower rack first and then the upper rack. This will prevent water dripping from the upper rack onto the dishes in the lower rack.
Has a bad odor.	Water was left over from an incomplete cycle.	Insert detergent without loading dishes, and run the Normal cycle to clean the dishwasher.
	The Drain Hose is obstructed.	Contact a qualified service technician to remove any obstruction from the drain hose.
	The dishwasher is not used daily or soiled dishes are left in unit too long.	With the dishwasher empty and no detergent, place a glass with 8 ounces of vinegar upright into the lower rack, and then run a Normal cycle.
Is too noisy.	Sound is generated when the dispenser cover is open and the drain pump is operating in an early stage.	This is normal operation.
	The dishwasher is not level.	Ensure the dishwasher is level.
	Foreign material (a screw, a plastic piece) is in the pump chamber.	Contact a qualified service technician to remove foreign material from the pump chamber.
	There is a ‘chopping’ sound because a nozzle is bumping against the dishes.	Rearrange the dishes.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Does not have a smoothly rotating nozzle.	The nozzle hole is clogged with food particles.	Clean the nozzle hole.
	The nozzle is blocked by a dish or pot and cannot rotate.	After placing the dishes into the racks,rotate the nozzles by hand to check whether any of the dishes interfere with them.
Water won't pump out of the dishwasher.	The drain is clogged.	Contact a qualified service technician to remove any obstruction from the drain hose and check the drain pump operation.
Has a bent upper rack after loading dishes.	The dishes are not loaded properly.	Load your dishes as recommended.

5. PCB DIAGRAM

5-1. MAIN PBA

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

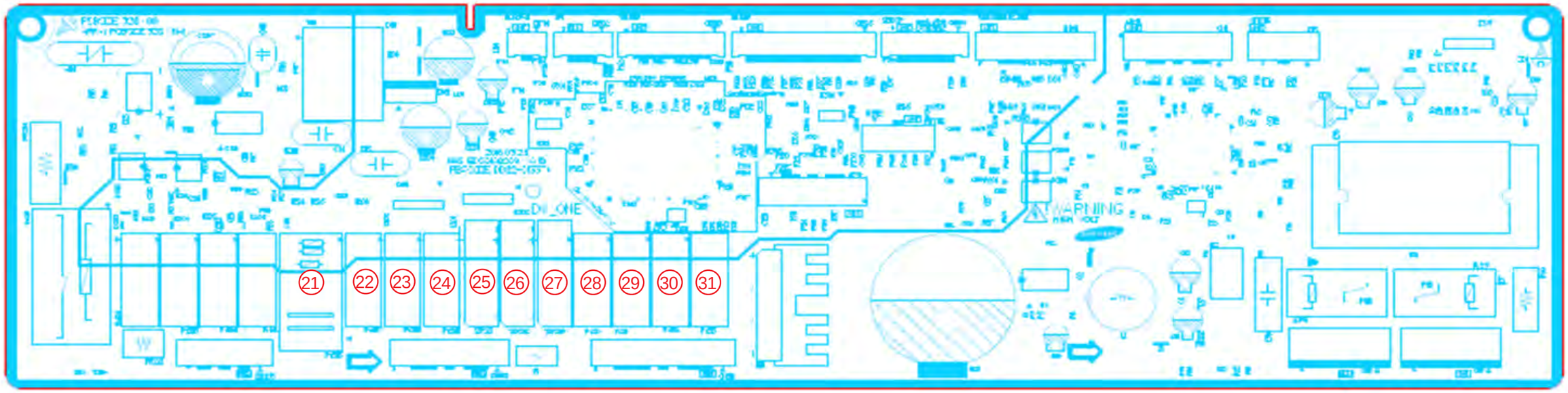


No.	Location	Description
1	CN203	Connector for AC Drain Pump, Auto Door Actuator, BLDC Pump
2	CN202	Connector for Lower Vane Forward, Water Valve, Dispenser, Distributor Motor, PUMP AC2
3	CN201	Connector for Lower Vane Forward, Dry Actuator, Water Softner Valve, Dry Fan Motor AC, Valve Water Tank
4	CN301	Connector for JTAG of Main MICOM
5	CN302	Connector for Flash Write of Main MICOM
6	CN701	Connector for BLDC Fan for Dry
7	CN502	Connector for WIFI Communication
8	CN503	Sensing Connector (refer to next page for details)
9	CN505	Sensing Connector (refer to next page for details)
10	CN504	Sensing Connector (refer to next page for details)

No.	Location	Description
11	CN401	Connector for Sub Communication
12	CN4	Connector for JTAG of Inverter MICOM
13	CN3	Connector for Flash Write of Inverter MICOM
14	CN8	Connector for BLDC Drain
15	CN6	Connector for BLDC Pump
16	RY201	Source Relay
17	RY204	BLCD Power Inrush Relay
18	RY203	BLDC Pump Relay (Pump AC1)
19	RY202	Auto Door Actuator Relay
20	RY215	AC Drain Pump Relay

MAIN PBA (CONT.)

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

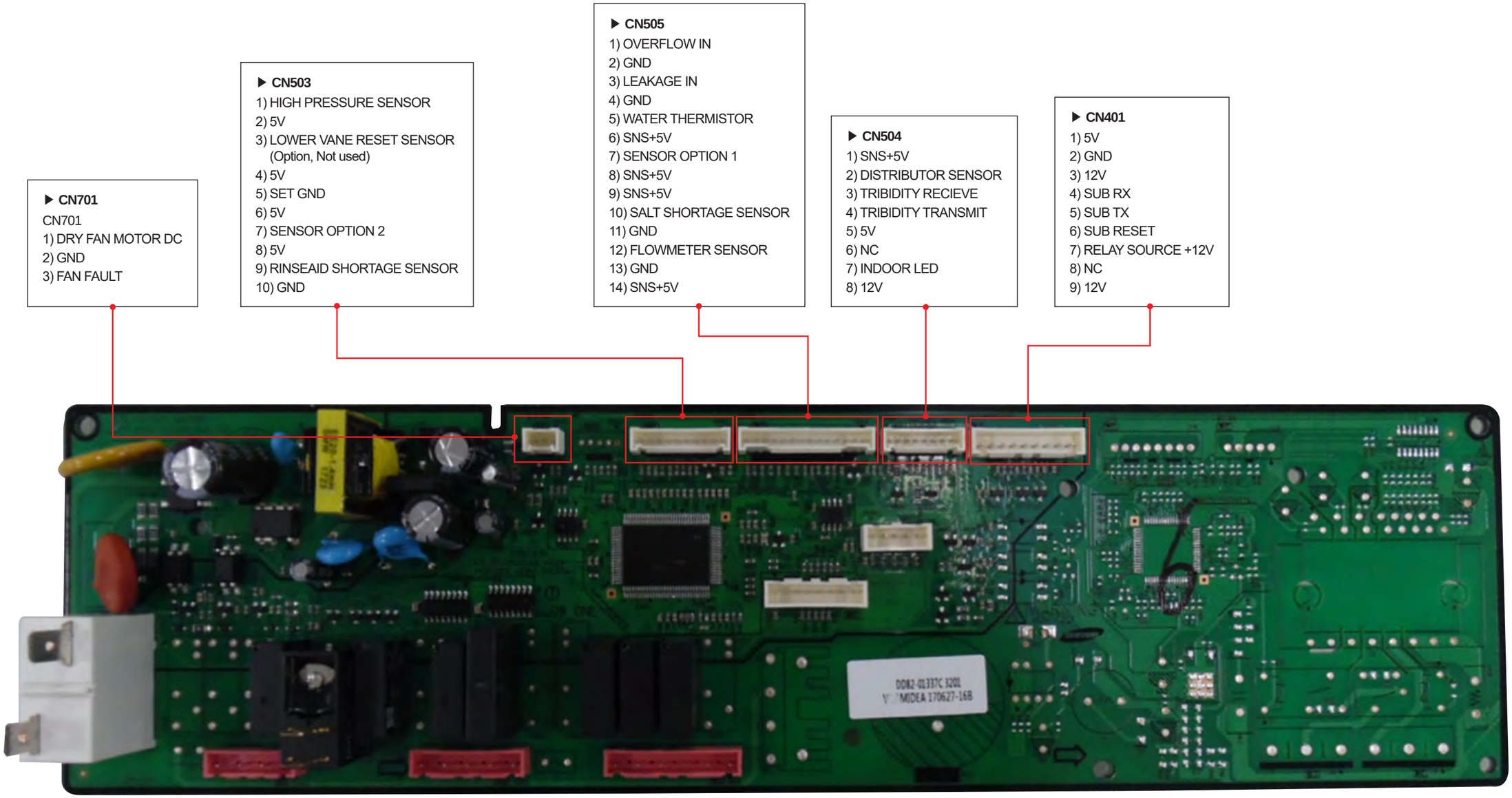


No.	Location	Description
21	RY205	Wash Heater Relay
22	RY207	Pump AC2 Relay
23	RY208	Distributor Motor Relay
24	RY209	Dispenser Relay
25	SSR201	Water Valve Relay
26	SSR202	Lower Vane Forward Relay
27	SSR203	Lower Vane Backward Relay

No.	Location	Description
28	RY210	Dry Actuator Relay
29	RY211	Water Softner Valve Relay
30	RY212	Dry Fan Motor AC Relay
31	RY213	Valve Water Tank Relay
32	RY1	BLDC Pump U Relay
33	RY2	BLDC Pump V Relay

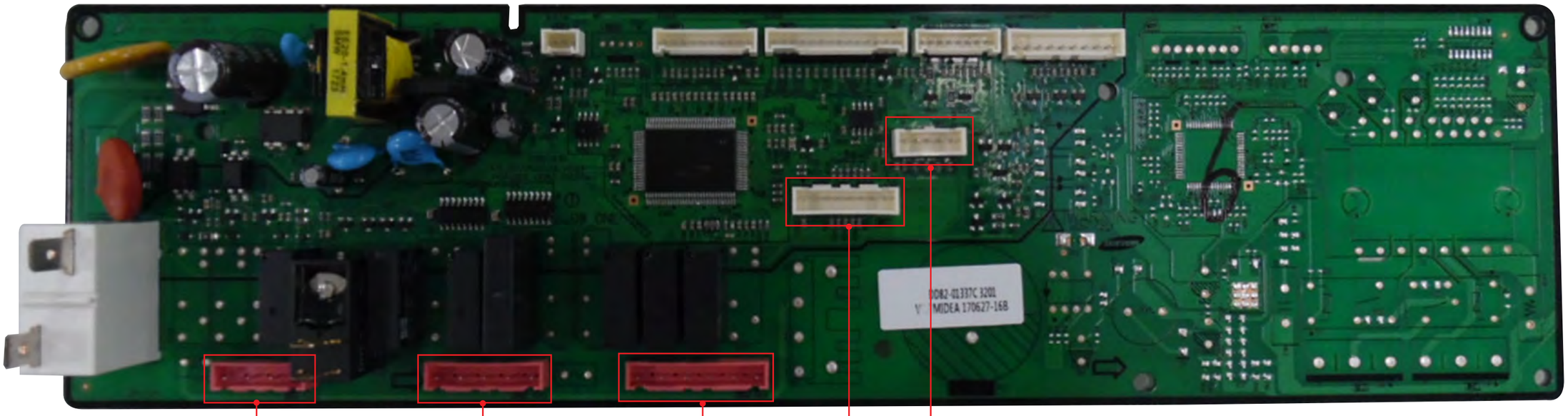
5-2. PCB DIAGRAM

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



PCB DIAGRAM (CONT.)

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



▶ CN203
1) NC
2) NC
3) AC DRAIN PUMP
4) NC
5) AUTO DOOR OPEN
6) NC
7) BLDC(Option, Not used)

▶ CN202
1) LOWER VANE FORWARD (Option, Not used)
2) NC
3) WATER VALVE
4) NC
5) DISPENSER
6) NC
7) DISTRIBUTOR MOTOR
8) NC
9) PUMP AC2

▶ CN202
1) NC
2) NC
3) VALVE WATER TANK (Option, Not used)
4) NC
5) DRY FAN MOTOR AC
6) NC
7) WATER SOFTNER VALVE (Option, Not used)
8) NC
9) DRY ACTUATOR
10) NC
11) LOWER VANE BACKWARD (Option, Not used)

▶ CN301
1) 5V
2) JTAG RESET
3) nTRST
4) TDI
5) TDO
6) TCK
7) TMS
8) GND

▶ CN302
1) 5V
2) RX FROM TEST
3) TX TO TEST
4) GND
5) BOOT

6. WIRING DIAGRAM

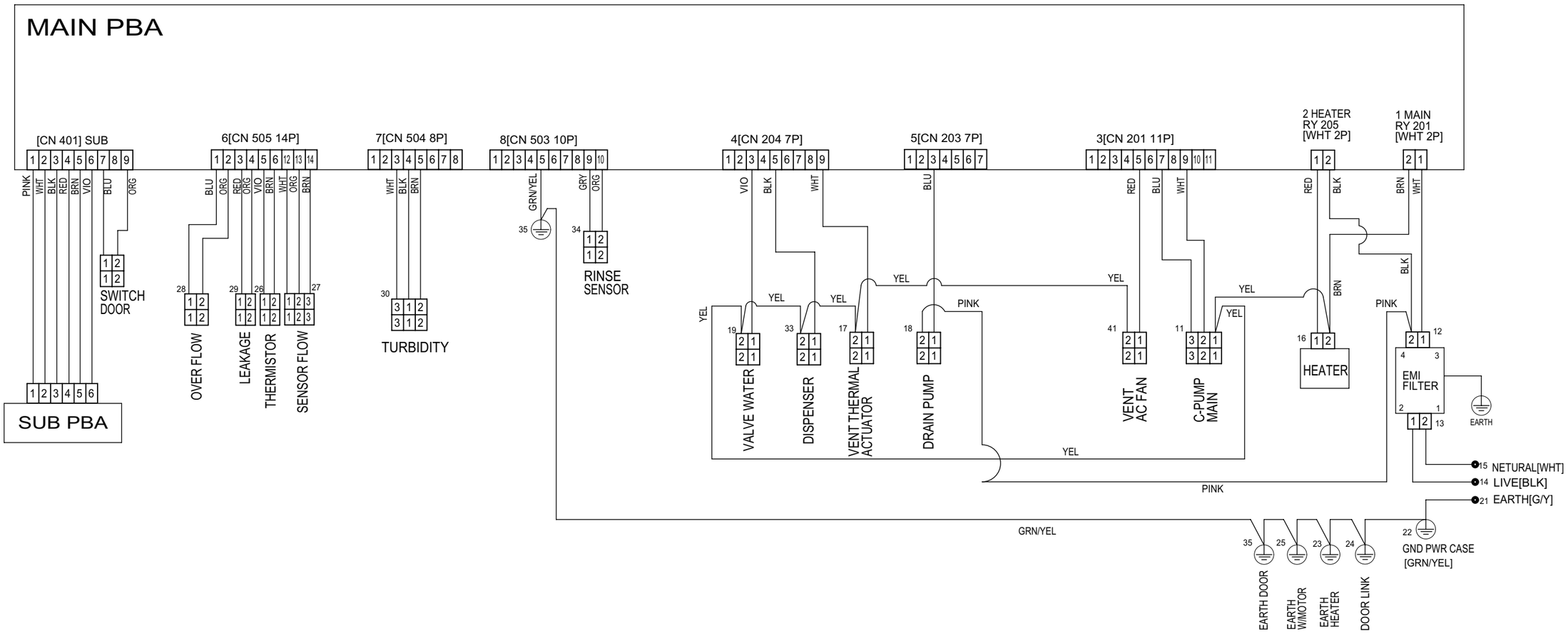
6-1. WIRING DIAGRAM

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

■ Reference Information

Abbreviated word	Meaning	Abbreviated word	Meaning
GRY	GRAY	BLK	BLACK
ORG	ORANGE	RED	RED
VIO	VIOLET	SKY	SKY BLUE
PNK	PINK	BLU	BLUE
YEL	YELLOW	Y/G	YELLOW / GREEN
BRN	BROWN	NTR	COLORLESS
WHT	WHITE		

WIRE DIAGRAM DW80M3021US/DW80T3040US



7. REFERENCE

7-1. CHECKPOINTS AFTER SERVICE REQUEST

1. **Check the safety device**
   Check the operation of the door lock switch. Make sure that it is locked while the dishwasher is running and that the dishwasher stops running when the door is unlocked.

2. **Use authentic Samsung replacement parts only**
   If any part is not authenticated, replace it with an authentic Samsung replacement part.

3. **Handling wires**
   Check if any wires are loose or too tight, if they are connected correctly,
   if they are well bound with tape, and if they are properly clamped.

4. **The state of screws and nuts**
   Check if the screws and nuts are fastened correctly.
   Check whether they are fastened with the specified torque.

5. **Remove foreign material**
   Check whether any foreign material such as soil, wire scraps and screws are in the dishwasher.
   (Check whether any foreign material is entering through the sump into the disposer.)

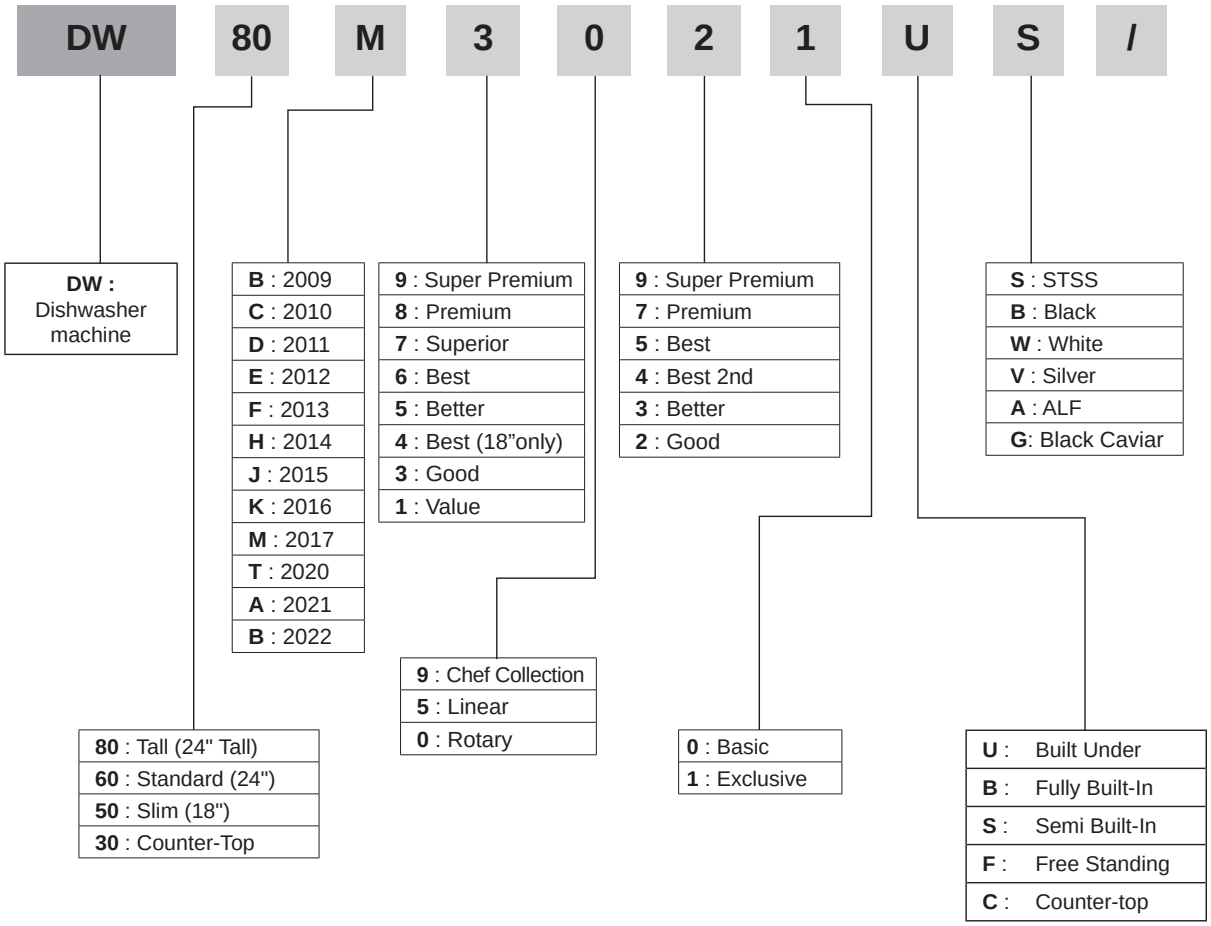
6. **Check for water leakage**
   Check whether there is water leakage from the hose connector, door, case sump (drain motor, circulation motor, heater, thermistor, turbidity sensor, distributor motor), and the water supply/drain hoses.

7. **Check the power cable**
   Check if there is any damage to the power cable or power outlet. Check that the voltages are correct.

8. **Check leveling**
   Check to make sure the dishwasher is level.

9. **Check the installation location**
   Check whether the installation location is flat and stable.

7-2. MODEL NUMBER NAMING RULES



7-3. TERMINOLOGY

1. **Circulation Motor**
   A motor that sucks the water remaining on the floor of the dishwasher and injects water using high pressure through the internal water passages to the top, middle and lower nozzles.

2. **Drain Pump**
   The pump that drains the polluted water from the dishwasher generated while the dishwasher is running.

3. **Heater**
   The heater is located on the water passages inside the dishwasher. It heats the flowing water to increase wash efficiency.

4. **Vent Fan**
   Drains high temperature moisture out of the dishwasher during the drying cycle (drying the dishes).

5. **Flow Meter**
   Measures the amount of supplied water by counting the pulses of the hall IC located at the next of the Inlet valve.

6. **Distributor**
   Located at the output end of the sump inside the dishwasher. It turns the flow of the water that goes to the bottom part of the dishwasher on or off.

7. **Dispenser**
   The location where the detergent and rinse aids are stored so they can be used by the dishwasher.
   The dispenser automatically supplies detergent and rinse aids to the inside of the dishwasher when they are needed.

8. **Tub Assy**
   An internal case made of stainless steel that makes up the basic framework of the dishwasher.

9. **Sump Assy**
   The place inside the dishwasher where water is collected. The injected water gathers here after circulation.
   The sump Assy is connected to the circulation motor, drain pump, and distributor motor.

10. **Tub Front Assy**
    An internal case made of stainless steel that makes up the internal part of the front door.

11. **Base Assy**
    A plastic part that makes up the basic bottom framework.

12. **Basket Assy**
    The upper and lower racks where dishes can be loaded.

13. **Top/Middle/Lower Nozzles**
    Washes dishes by rotating and injecting the supplied water through the water passages at high pressure.

14. **Case Brake**
    A passage that adjusts the air pressure by connecting the pressure of the inside air which is expanded at high temperature during the wash and rinse cycles and the outside air pressure.

15. **Door Lock Switch**
    Detects whether the door of the dishwasher is open or closed. If the door is open while the dishwasher is running, the cycle is temporary stopped.

16. **Child Lock/Unlock**
    This function is used to prevent a child from operating the dishwasher while it is running.

SAMSUNG

GSPN (GLOBAL SERVICE PARTNER NETWORK)

Area	Web Site
Eurpoe, CIS, Mideast & africa	gspn1.samsungcsportal.com
Asia	gspn2.samsungcsportal.com
North & Latin America	gspn3.samsungcsportal.com
China	china.samsungportal.com

Printed in Korea