SAMSUNG

DISHWASHER

Basic model : DW90F89P0USRAA

Model Name : DW90F8***AA Series**

Model Code : DW90F89P0USRAA
DW90F89T0U12AA
DW90F89T0USRAA
DW90F89T0UMTAA

SERVICE Manual

DISHWASHER

CONTENTS

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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 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.
- An Electrical safety test must be performed before and after any repair. Refer to Samsung Electric Safety test Policy.
  - ✓ 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 dishwasher is not being used, make sure to disconnect the circuit breaker or power cable from the power outlet.**
  - ✓ Failing to do so may result in electric shock or fire due to lightning.

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

⚠ Warning

While Servicing
• **Check if the power cable is 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.** ✓ If tape is used instead of the connectors, it may cause fire due to tracking.
• **Make sure to discharge the PBA power and capacitor 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 holder heater after ensuring that it is inserted into the bracket- heater.** ✓ Ensure the heater is fitted into the bracket – heater correctly.

⚠ Warning

After Servicing
• **Inspect for water leakage.** ✓ Perform a test run for the dishwasher using the standard(Eco) 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 lifetime.

⚠ 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 lifetime.
• **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 lifetime.
• **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 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

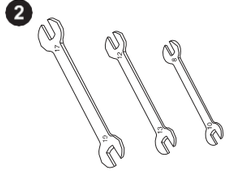
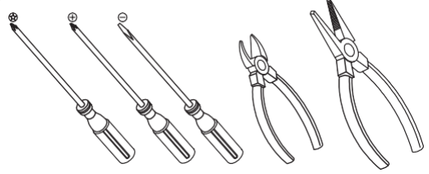
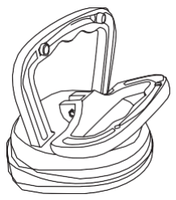
During Servicing
• **When wiring a harness, make sure to seal it completely so no liquid can enter.** ✓ Make sure that they do not break when force is exerted.
• **Check if there is any residue that shows that liquid entered the electric parts or harnesses.** ✓ If any liquid has entered into a part, replace it or completely remove any remaining moisture from it.
• **If you need to place the 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.

⚠ Caution

After Servicing
• **Check the assembled status of the parts.** ✓ They must be the same as before servicing.
• **Check the insulation resistance.** ✓ Disconnect the circuit breaker or power cable from the power outlet and measure the insulation resistance between the power wires and the grounding wire of the dishwasher. The value must be greater than 10MΩ when measured with a 500V DC Megger.
• **Check whether the product is level with the floor. Check if there are any deformations in the sink. Check that the dishwasher is firmly installed to the sink.** ✓ Vibrations can shorten the lifetime of the product.

3. Disassembly and Reassembly

3-1. TOOLS FOR REMOVAL AND REASSEMBLY

Tool image	❶ 	❷ 	❸ 
	❹ 		
	❻ 	⑦ 	

No.	Tool	Type	Remarks
①	Adjustable Wrench	–	–
②	Open-end Wrench	1-7/16"	Leg
③	Vice pliers		–
④	Others (screwdriver, nipper, long nose pliers)		Common tools for servicing Screwdriver – Phillip, Flat, Torx T20
⑤	Nut Driver	10mm	Heater bracket Nut
⑥	Ear Clamp Pliers		–
⑦	Glass Suction Cup		–

Preparation for parts replacement

1. Take out the residual water inside the product. (Drain the water by operating the drain pump)
2. Turn off the water supply valve.
3. Turn off the power & disconnect power cable. You must turn off the circuit braker 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.

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 ohm meter 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.

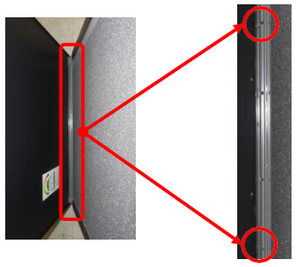
NOTE

All voltage checks should be made with a volt meter 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.

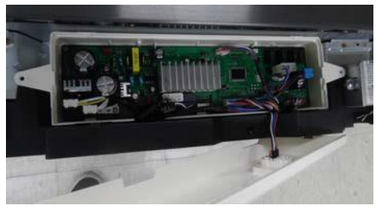
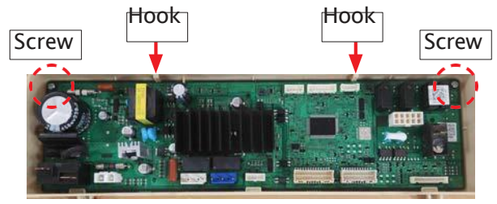
Before servicing, make sure to remove all items from inside of the dishwasher, including the wash racks.

3-3. DISASSEMBLY AND REASSEMBLY

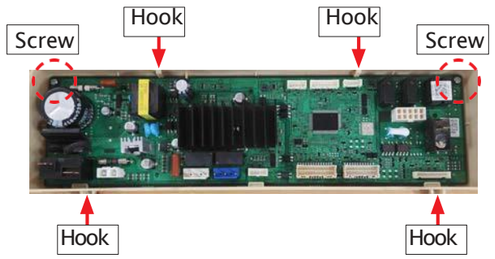
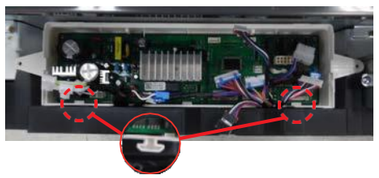
3-3-1. ASSY CUSTOM PANEL (Bespoke door models)

Photo	Description
	**Preparation:** Make sure to disconnect the power. 1. Open the product door and take the bespoke panel and fit it to the bottom front of the door. – When fitting it to the bottom of the door, make sure the second holes on the left/right side go in between the ribs as shown in the photo. 
 	3. As shown in the picture, after attaching the Glass Suction Cup to the upper left/right side, hold the Glass Suction Cup and pull it forward to disassemble the DOOR OUTER. **Caution** After disassembling the DOOR OUTER, put it in a safe place.

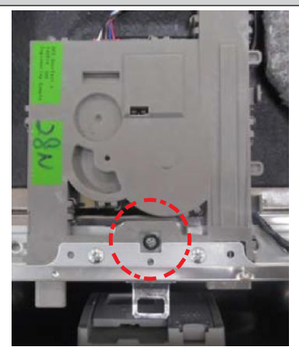
3-2-2. MAIN PBA [DISASSEMBLY]

Photo	Description
	**Preparation:** Make sure to disconnect the power. 1. Find Main PBA case below a door. 2. Remove two screws like a picture.
	3. Be sure to check the Hook in red circle and separates ASSY. COVER PBA from BASE. 4. Separates the cover of ASSY. COVER PBA.
	5. Remove the all wire connectors from MAIN PBA
	6. Remove two screws that are marked as circle. 7. Release 2 hooks, and remove MAIN PBA from GUIDE PBA **Caution** Make sure to release hooks carefully. It can be brake easily if it's opened carelessly.

3-2-2. MAIN PBA [REASSEMBLY]

Photo	Description
	**Preparation:** Make sure to disconnect the power. 1. Assemble new MAIN PBA and COVER PBA. 2. Fix two screws like a picture.
	3. Assemble COVER PBA on BASE while checking the hooks in the red circles
	4. Connect all the wires to MAIN PBA and COVER PBA.
	5. Close the cover and insert two screws that are marked in the circles.

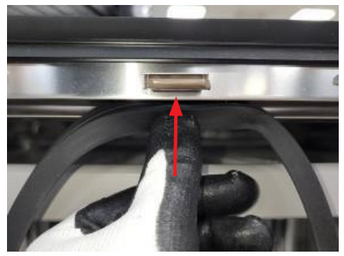
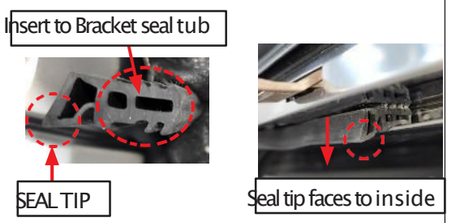
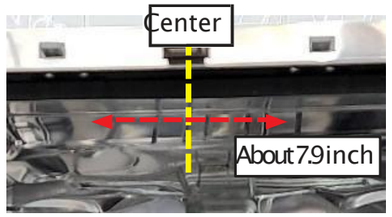
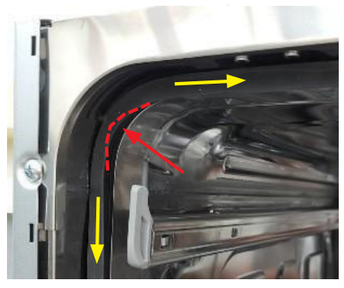
3-2-3. LEVER DOOR [DISASSEMBLY]

Photo	Description
	1. Remove screw from LEVER DOOR.
	2. Pull out LEVER DOOR. **[REASSEMBLY]** * REASSEMBLY is the reverse order of disassembly.

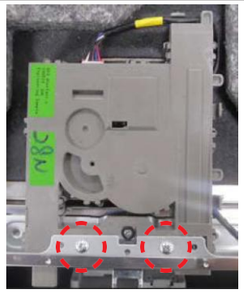
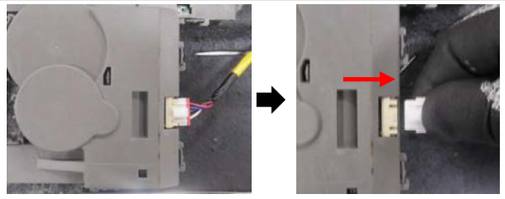
3-2-4. SEAL TUB PACKING [DISASSEMBLY]

Photo	Description
 BRACKET SEAL TUB	1. Remove the old seal from the BRACKET SEAL TUB. **Warning** Be sure to remove the power plug before servicing. **Warning** Be careful to touch the BRACKET SEAL TUB after removed the seal. It may cause injury from sharp edges.

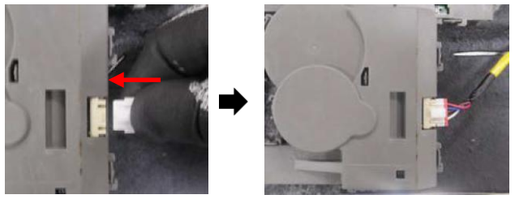
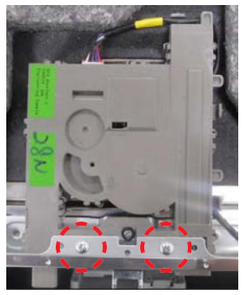
3-3-4. SEAL TUB PACKING [REASSEMBLY]

<table>
<tr><th>Photo</th><th>Description</th></tr>
<tr><td>  </td><td>1. Put some water on new SEAL TUB PACKING to assemble it easily. Fold the SEAL TUB PACKING in half with the tip of the seal facing inward.
Caution
Pay attention to the direction of seal.
If it is assembled in reverse, it may cause leakage of steam or water.
 
</td></tr>
<tr><td>  </td><td>2. Assemble the SEAL TUB PACKING to center of the BRACKET SEAL TUB. Press seal about 7.9 inch (red dotted line) on both sides based on the center line.</td></tr>
<tr><td>  </td><td>3. Put Seal in the left & right side of the bottom.
NOTE
The folded seal is about 1.2~1.6 inch long.</td></tr>
<tr><td>  </td><td>4. Press the seal from the top corner toward remaining side.
Caution
Pay attention to assemble not to deform the seal tip at the corner.
If the gap is opened, it may cause steam leakage.</td></tr>
</table>

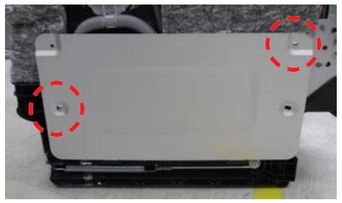
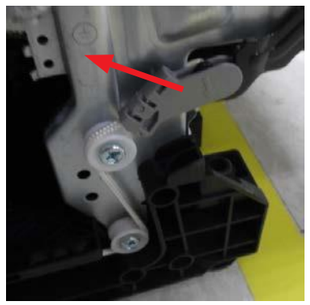
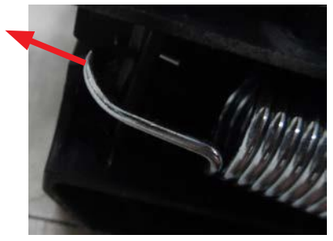
3-3-5. AOD [DISASSEMBLY]

Photo	Description
	1. Remove 2 screws of AOD.
	2. Separate AOD.
	3. Disconnect wire of AOD. (Auto door opening module)

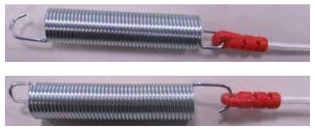
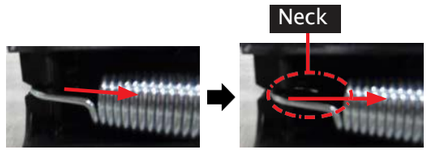
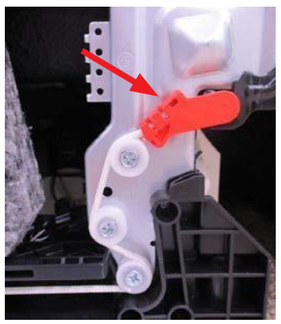
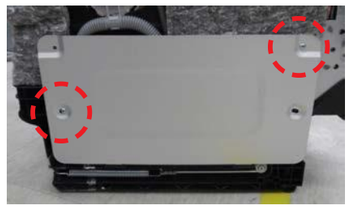
3-3-5. AOD [REASSEMBLY]

Photo	Description
	1. Connect wire at AOD.
	2. Insert AOD according to the screw position of the frame top.
	3. Fasten 2 screw at AOD.

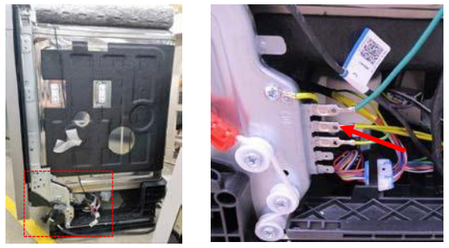
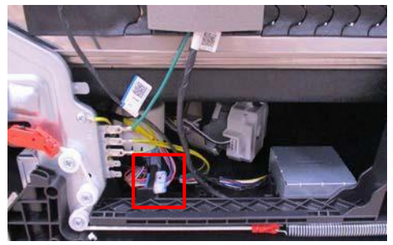
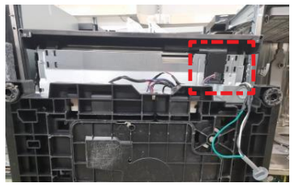
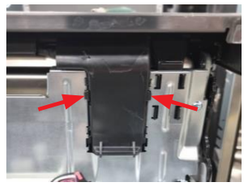
3-2-6. DOOR SPRING [DISASSEMBLY]

Photo	Description
	**Preparation:** 1. Separate the two screws from the cover (both left and right)
	2. Unlock the hook of the rope from the DOOR hinge. (both left and right)
	3. Separate from BASE. (both left and right)
	4. Separate SPRING from ROPE. (both left and right)

3-3-6. DOOR SPRING [REASSEMBLY]

Photo	Description
 O X	**Preparation:** 1. Hang the ROPE on SPRING' hook (both left and right) the more open side hook needs to attached to the base.
	2. Hang the SPRING on the BASE. (both left and right) **Caution** SPRING must be securely locked the neck of BASE.
	3. Stretch the ROPE and hang the hook of ROPE on the DOOR hinge. (both left and right)
	4. Fix the two screws on the cover as shown in the picture. (both left and right)

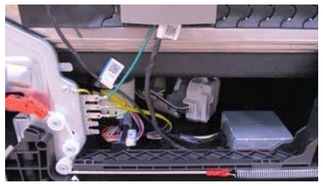
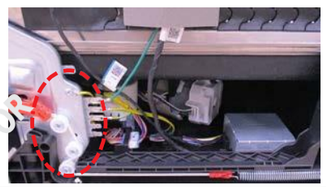
3-3-7. ASSY DOOR [DISASSEMBLY]

Photo	Description
	**Preparation:** Disassemble HOUSING from Dishwasher. 1. Remove the ground wire from the SUPPORT HINGE–RIGHT.
	2. Disassemble connector from the door.
 	3. Release the 2 hooks underneath and disassemble the COVER WIRE. **⚠WARNING** Do not do this work without safety gloves. It may cause injury from sharp edges.
 	4. Pull out wires from dishwasher.
 	**Preparation:** Disassemble HOUSING from Dishwasher. 5. Clamp GUIDE HINGE with Plier and pull out to disassemble Do the same disREASSEMBLY on the other side.

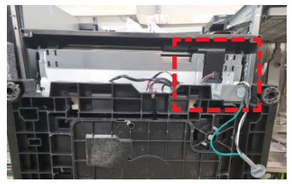
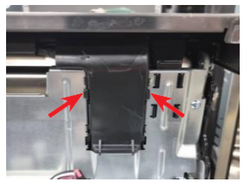
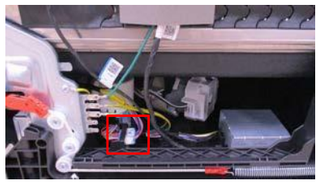
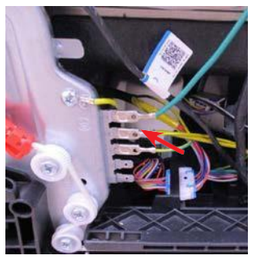
ASSY DOOR [DISASSEMBLY]

Photo	Description
	6. Pull rope, and take off HOLDER ROPE DOOR from DOOR HINGE Do the same disREASSEMBLY on the otherside. **Warning** Do not do this work without safety gloves. It may cause injury from sharp edges.
 	7. Open the ASSY. DOOR 30~45 degree. 8. Pull out ASSY. DOOR to disassemble. **Caution** Be careful not to dent the DOOR during disassembly.

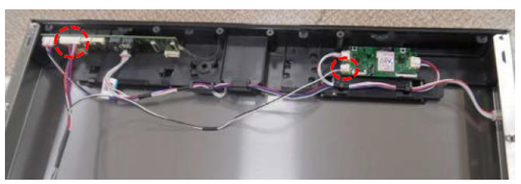
3-3-7. ASSY DOOR [REASSEMBLY]

Photo	Description
 	1. Insert ASSY. DOOR to dishwasher. **NOTE** Door hinge must fit on shaft
	2. Insert GUIDE HINGE to lock door. Do the same REASSEMBLY on the other side. 
 	3. Pull the rope, and assemble HOLDER ROPE DOOR at hinge. Do the same REASSEMBLY on the other side. **NOTE** Check rope and spring are assembled as picture. 
 	4. Insert wires and COVER WIRE to inside of dishwasher

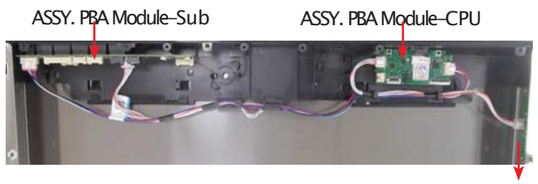
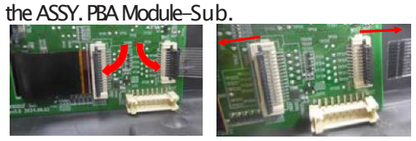
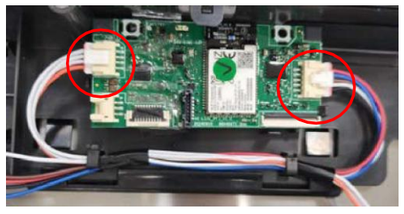
ASSY DOOR [REASSEMBLY]

Photo	Description
 	5. Assemble COVER WIRE to FRAME FRONT Secure 2 hooks.
	6. Assemble connector from the door.
 	7. Assemble the GROUND WIRE.

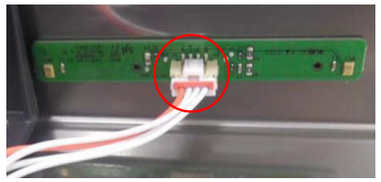
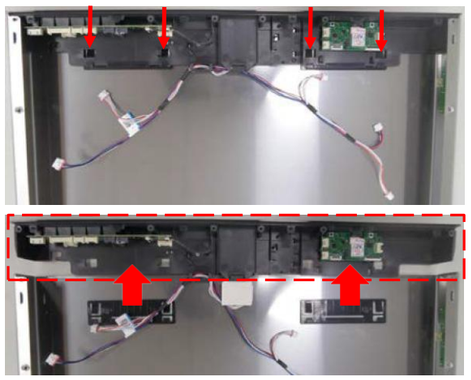
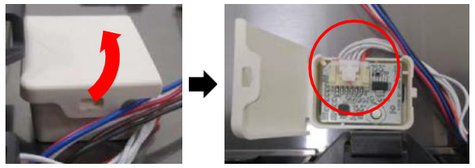
3-3-8. PANEL CONTROL / SUB PBA [DISASSEMBLY]

Photo	Description
	1. Open the door completely to prevent losing screws. Before removing the parts, place a cushioned mat on the floor to prevent the parts from being scratched. **Warning** Be sure to remove the power plug before servicing. **NOTE** It is not necessary to uninstall the dishwasher from the furniture cabinet.
	2. Remove the 12 screws which holding the door outer and control panel in place. Use Torx T20 driver to remove it
	3. Separate PANEL CONTROL and DOOR OUTER from DOOR INNER. **Caution** Be careful not to dent the DOOR during disassembly.
	4. Disconnect 2 wires from the ASSY. PBA Module-Sub and ASSY. PBA Module-CPU.  

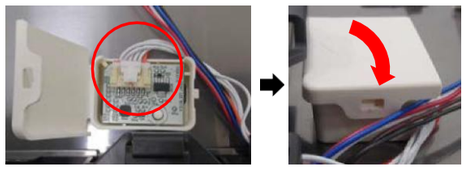
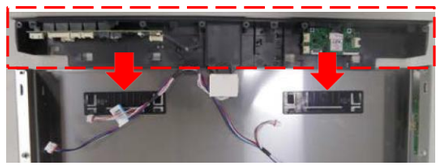
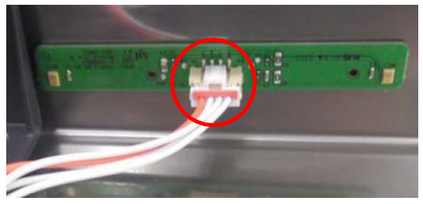
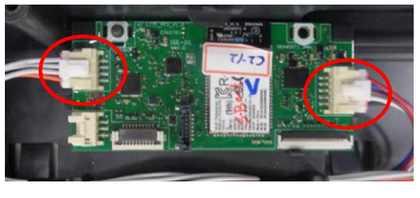
PANEL CONTROL / SUB PBA [DISASSEMBLY]

Photo	Description
	5. Disconnect the wires from parts that need to be replaced.
	6. Disconnect the wires from ASSY. PBA Module-Sub. 7. Separate the ribbon wires by raising the holder from the ASSY. PBA Module-Sub. 
	8. Remove a screw and separate ASSY. PBA Module-Sub.
	9. Disconnect the 2 wires from ASSY. PBA Module-CPU.
	10. Release a hook and separate ASSY. PBA Module-CPU.

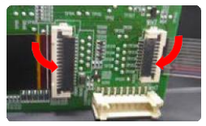
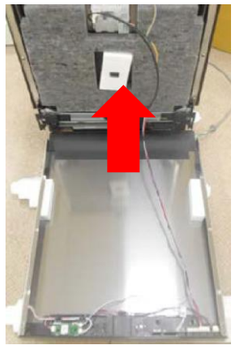
PANEL CONTROL / SUB PBA [DISASSEMBLY]

Photo	Description
	11. Disconnect the wire from ASSY. PBA Module–Voice.
	12. With 4 hooks pressed, remove PANEL CONTROL up.  
	13. Open the cover and disconnect the wire of the LED DISPLAY.
	14. Separate the PANEL CONTROL.

3-3-8. PANEL CONTROL / SUB PBA [REASSEMBLY]

Photo	Description
	1. Connect the wire to the LED DISPLAY and close the Cover.
 	2. Assemble by pushing the hooks into the 4 grooves of the PANEL CONTROL. **Caution** Be careful not to jam the wire while REASSEMBLY.
	3. Connect wire to the ASSY. PBA MODULE-VOICE.
	4. Assemble it according to the groove of the ASSY. PBA Module-CPU and press it to assemble it on the hooks.
	5. Connect wires to the ASSY. PBA Module-CPU.

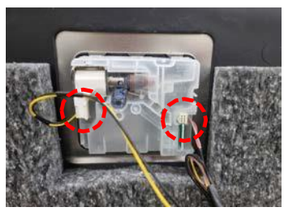
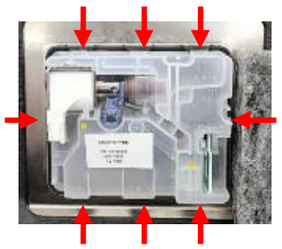
PANEL CONTROL / SUB PBA [REASSEMBLY]

Photo	Description
	6. Assemble the screw on ASSY. PBA Module-Sub.
	7. Connect wires to ASSY. PBA Module-Sub. 8. Connect the ribbon wires by lower the holder from the ASSY. PBA Module-Sub.  
	9. Connect 2 wires to ASSY. PBA Module-Sub and ASSY. PBA Module-CPU.  
	10. Assemble DOOR OUTER with DOOR INNER.

PANEL CONTROL / SUB PBA [REASSEMBLY]

Photo	Description
	11. Fasten 12 screws to DOOR OUTER and DOOR. INNER Use Torx T20 driver to fasten it.

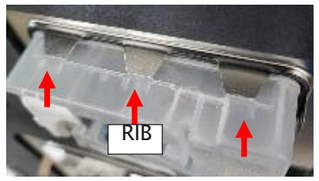
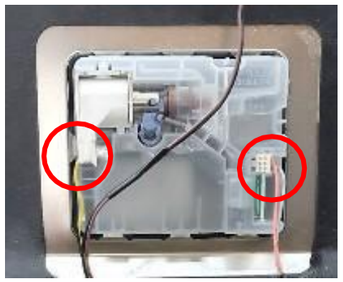
3-3-9. SWITCH DOOR / DISPENSER [DISASSEMBLY]

Photo	Description
	**Preparation**: Disassemble DOOR OUTER. 1. Disconnect wire of SWITCH DOOR.
	2. Remove 2 screws. Use Torx T20 driver to remove.
	3. Separate SWITCH DOOR from INNER DOOR.
	4. Disconnect wires of DISPENSER. Release hook to disconnect.
 	5. Tilt the 8 hooks outward to disassemble DETERGENT DISPENSER with a flat-head screwdriver. **Warning** Do not this work without safety gloves. It may cause injury from sharp edges.
	6. Separate DISPENSER FROM INNER DOOR.

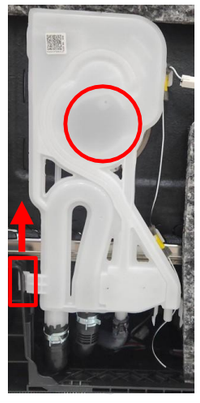
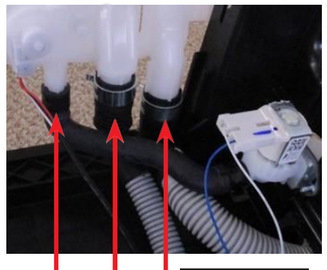
3-3-9. SWITCH DOOR / DISPENSER [REASSEMBLY]

Photo	Description
	1. Insert SWITCH DOOR into INNER DOOR.
	2. Fasten 2 screws. Use Torx T20 driver to tighten.
	3. Connect wire to SWITCH DOOR.
	4. Tilt the 8 hooks a little inward. **Warning** Do not this work without safety gloves. It may cause injury from sharp edges. **Caution** Pay attention to hook of terminals.
	5. Insert DISPENSER into INNER DOOR. It will be assembled with a click. **Caution** Pay attention to the direction of the DETERGENT DISPENSER.

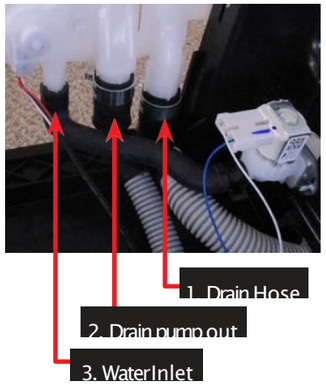
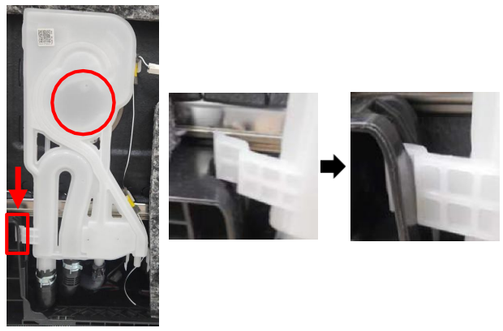
SWITCH DOOR / DISPENSER [REASSEMBLY]

Photo	Description
 	6. Check if the 8 hooks are locked correctly. The hook must be on the rib. **⚠ Caution** Check if there's any gap on the seal.
	7. Connect the 2 wire connectors.

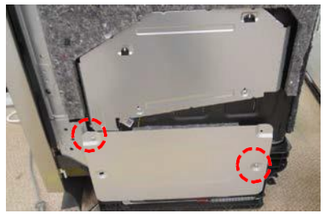
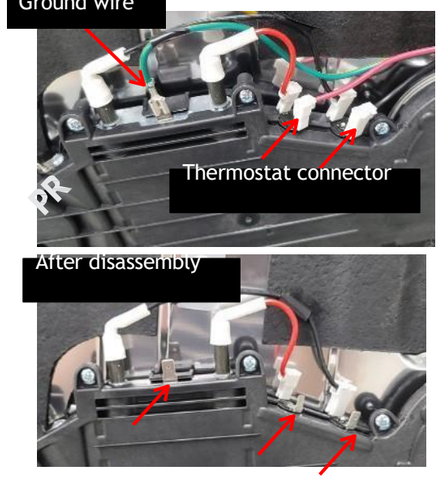
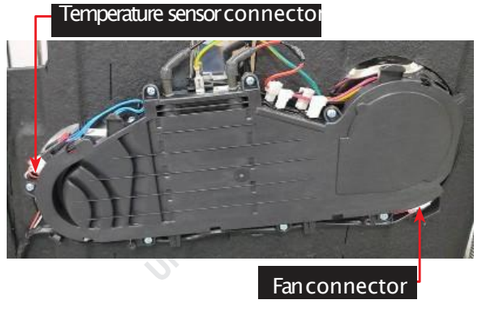
3-3-10. ASSY CASE BRAKE [DISASSEMBLY]

Photo	Description
	**Preparation**: · Make sure to disconnect the power, water supply, and drain hose connections. · Remove the upper, lower baskets and 3rd rack in the dishwasher. · Pull out the dishwasher carefully. 1. Remove the two(2) screws of the housing left. 2. Remove the housing left.
 	**Caution** Be sure to wear gloves before work. Be careful as the steel plate is sharp and may cut you. 3. Turn CAP OUTLET DRY counter–clockwise to unlock
	4. Separate connection parts in red circle from tub and pull out the Case brake by lifting up the hook in red square.
	5. Loosen the three (3) clamps and release the three (3) hoses from the ASSY. CASE BRAKE. **Caution** When the hose is separated, the remaining water in the ASSY. CASE BRAKE will come out. Lay a towel on the floor to absorb any water that may come out. When reassembling, the holder of the clamp must be pointing toward the inside of the dishwasher. Otherwise, housing does not assemble.

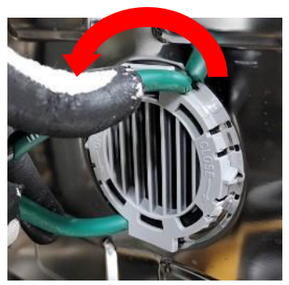
3-3-10. ASSY CASE BRAKE [REASSEMBLY]

Photo	Description
	1. Assemble three (3) hoses and three (3) damps on the ASSY. CASE BRAKE.
	2. Assemble the hook in the groove of the base.  **Caution** Make sure the gasket in not missing before assembling on the Tub. Otherwise, the waterwill leak.
	3. Insert the ASSY. CASE BRAKE into the Tub and assemble the cap outlet dry clockwise. 

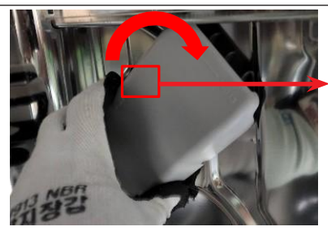
3-3-11. ASSY DUCT DRY [DISASSEMBLY]

Photo	Description
 1  2  3 	**Preparation:** Disassemble the right housing. 1. Remove the two(2) screws of the housing right. 2. Remove the housing right.
	3. Disconnect the connector to the heater ground. 4. Disconnect the connector to the thermostat. **Caution** Always wear gloves when working.
	5. Disconnect the connector to the temperature sensor. 6. Disconnect the connector to the Fan.

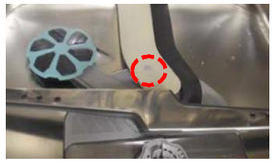
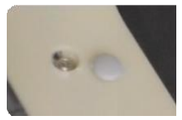
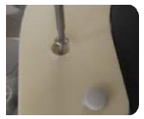
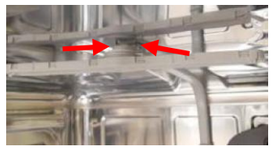
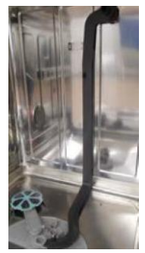
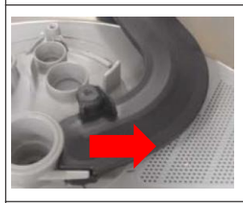
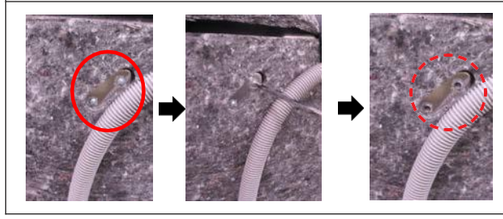
ASSY DUCT DRY [DISASSEMBLY]

Photo	Description
	7. Grasp the rear of the ASSY. GUIDE NOZZLE and pull it to the left to disassemble it. – Four ASSY. GUIDE NOZZLE are fixed to the cap.
	8. Turn the cap counterclockwise to disassemble. Use the handle on the long nose pliers. **⚠ Caution** Do not rotate the wings of the cap on a long nose pliers. This may cause damage.
	9. Turn the ASSY. COVER DRY counterclockwise to disassemble it. **⚠ Caution** When disassembling the ASSY. COVER DRY, the hot air module may fall to the floor. Always hold the right-hand module when disassembling.

3-3-11. ASSY DUCT DRY [REASSEMBLY]

Photo	Description
	1. Be careful not to chip the gasket when assembling the ASSY. DUCT DRY.
 	2. ASSY. COVER DRY Pay attention to the direction when assembling. – After REASSEMBLY, the UP mark must be on top. – After tilting 45 degrees counterclockwise, turn clockwise so that it is horizontal.
 	3. When assembling the cap, pay attention to the direction. – After REASSEMBLY, it must be assembled so that the UP mark is on top. – After tilting it 45 degrees counterclockwise, turn it clockwise to make it horizontal.

3-3-12. ASSY DUCT MAIN / ASSY DUCT 3RD [DISASSEMBLY]

Photo	Description
 	**Preparation:** Remove all BASKET from dishwasher. 1. Remove a cap. 2. Remove a screw with Torx T20 driver.  
 	3. Release hooks holding ASSY. DUCT MAIN at the top of TUB. 4. Loosen the left hook that fixes the ASSY. DUCT MAIN the middle of the TUB.
 	5. Pull the ASSY. DUCT MAIN to the left pull it out. 
	6. Remove a screw with Torx T20 driver.
 	7. Separate the ASSY. DUCT 3rd by pulling it out to the right.
	8. Remove the two screws on the top left back.

ASSY DUCTMAIN / ASSY DUCT3RD [DISASSEMBLY]

Photo	Description
	9. Remove ASSY. DUCT 3rd.

3-3-12. ASSY DUCT MAIN / ASSY DUCT 3RD [REASSEMBLY]

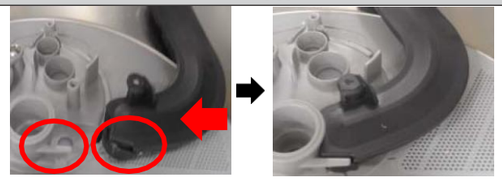
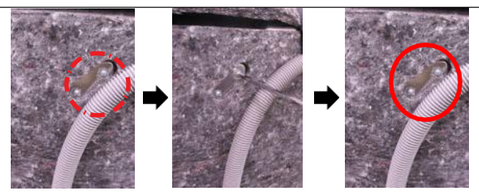
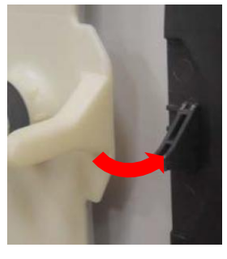
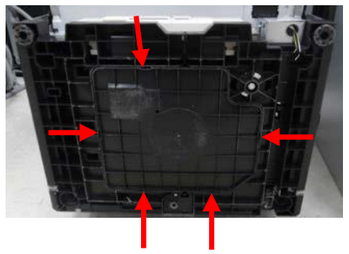
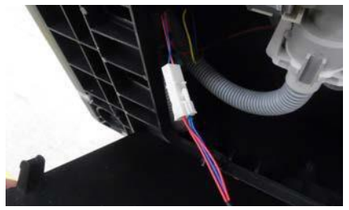
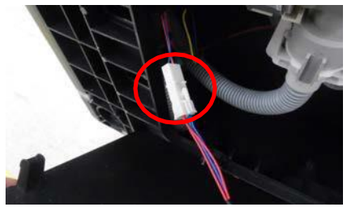
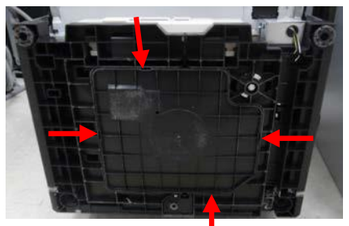
Photo	Description
	1. Assemble the ASSY. DUCT 3rd according to the hook of the distributer.
	2. Fasten the screw with Torx T20 driver.
	3. Tighten the two screws on the top left of the back panel.
	4. Lock hooks of TUB with ASSY. DUCT MAIN.
 	5. Fasten the screw with Torx T20 driver. 6. Assemble a cap on the screw.
 	7. Assemble the ASSY. DUCT MAIN according to the groove the ASSY. DUCT 3rd.

Photo	Description
 	8. Lock hooks of TUB with ASSY. DUCT MAIN.

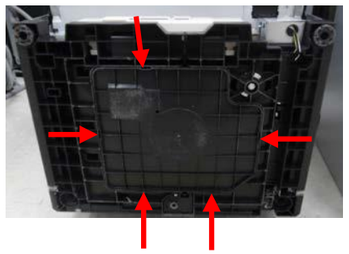
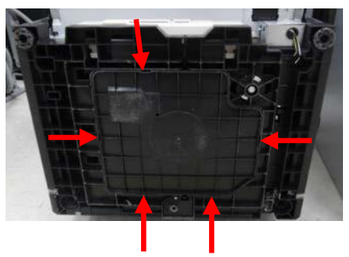
3-3-13. ASSY COVER BASE [DISASSEMBLY]

Photo	Description
	1. Lay down the dishwasher on the back or both sides. **Warning** Be sure to remove the power plug before servicing. **Caution** Make sure to lay down the dishwasher carefully. If it falls carelessly, It may cause damage.
	2. Open the COVER BASE which is closed by 4 hooks using a flat-head screwdriver. 
	3. Disconnect wire from ASSY. COVER BASE.

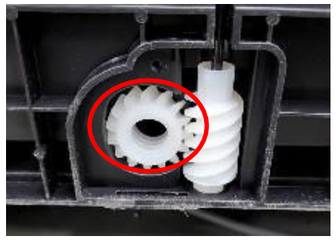
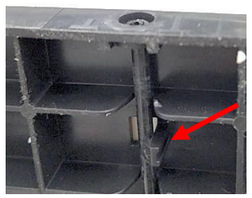
3-3-13. ASSY COVER BASE [REASSEMBLY]

Photo	Description
	1. Connect wire ASSY. COVER BASE.
	2. Assemble 4 hooks of COVER BASE with BASE.

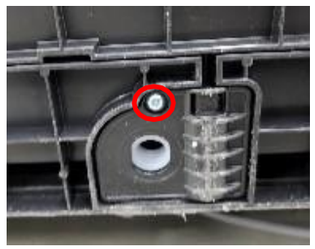
3-3-14. REAR LEG & ADJUSTER [DISASSEMBLY]

Photo	Description
	1. Lay down the dishwasher on the back. **Warning** Be sure to remove the power plug before servicing. **Caution** Make sure to lay down the dishwasher carefully. If it falls carelessly, It may cause damage.
	2. Open the COVER BASE which is closed by 4 hooks using a flat-head screwdriver. 
 	3. Turn SHAFT-ADJUSTER counter clockwise, until rear adjusting leg comes out. 
	4. Open the COVER BASE which is closed by 4 hooks using a flat-head screwdriver. 
	5. Remove a screw and take off CASE GEAR.

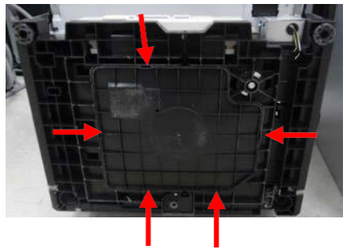
REAR LEG & ADJUSTER [DISASSEMBLY]

Photo	Description
	6. Separate GEAR HELICAL from BASE.
 	7. Pull out SHAFT-ADJUSTER. Need to release hook to pull out it.

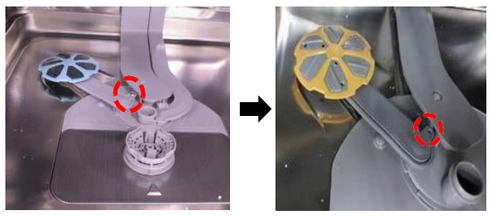
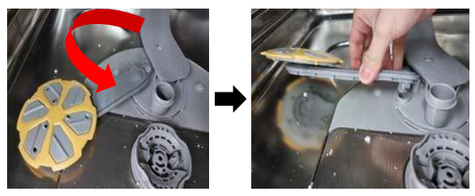
3-3-14. REAR LEG & ADJUSTER [REASSEMBLY]

Photo	Description
	1. Assemble SHAFT-ADJUSTER and GEAR WORM at BASE.
	2. Insert GEAR HELICAL into BASE.  **Caution** Pay attention to REASSEMBLY direction.
	3. Assemble CASE GEAR at BASE and fasten a screw.
	4. Insert FOOT at CASE GEAR.
 	5. Turn SHAFT ADJUSTER clockwise to load foot into BASE.

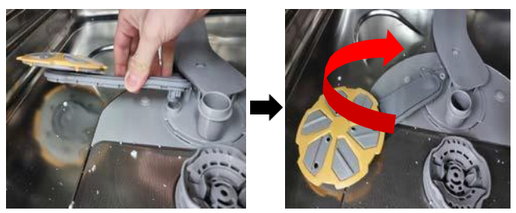
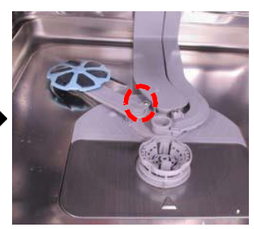
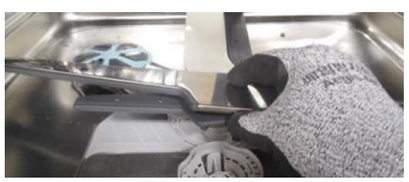
REAR LEG & ADJUSTER [REASSEMBLY]

Photo	Description
	6. Assemble 4 hooks of COVER BASE with BASE.

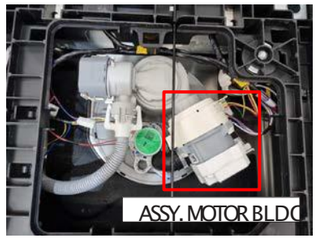
3-3-15. ASSY DUCT POWER [DISASSEMBLY]

Photo	Description
	**Preparation:** Remove all BASKET from dishwasher. 1. Remove the ASSY. ROTOR.
	2. Remove a screw with Torx T20 driver.
	3. Rotate the ASSY. DUCT POWER. 4. Pull Out ASSY. DUCT POWER from Housing Distributer.

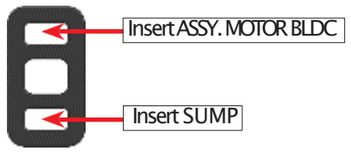
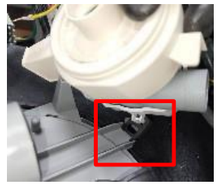
3-3-15. ASSY DUCT POWER [REASSEMBLY]

Photo	Description
	**Preparation:** Remove all BASKET from dishwasher. 1. Assemble the ASSY. DUCT POWER on the Housing Distributer. 2. Rotate the ASSY. DUCT POWER.
 	3. Fasten the screw with Torx T20 driver.
	4. Assemble the ASSY. ROTOR on Housing Distributer.

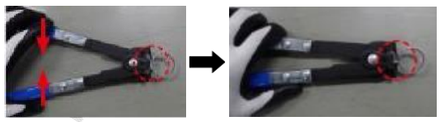
3-3-16. ASSY MOTOR BLDC(CIRCULATION PUMP) [DISASSEMBLY]

Photo	Description
	**Preparation:** Disassemble COVER BASE. **Warning**: Be sure to remove the powerplug before servicing.
 	1. Disconnect 3 connectors. 
 	2. Remove clamp which fixes ASSY. MOTOR BLDC. 3. Disassemble Hose from ASSY. MOTOR BLDC. **NOTE** When you open clamp, put flathead driver under the band and twist it to break the marked area.
	4. Disassemble ASSY. MOTOR BLDC from SUMP.
	5. Separate ASSY. MOTOR BLDC from HOLDER DAMPER. **NOTE** When you disassemble holder damper, use a flathead driver and disassemble at red arrow point.

3-3-16. ASSY MOTOR BLDC(CIRCULATION PUMP) [REASSEMBLY]

Photo	Description
	1. Assemble HOSE PUMP IN at SUMP. * It is not necessary if the hose does not come out during the disREASSEMBLY process.  ⚠ Pay attention to REASSEMBLY direction.
	2. Fit the Earclamps on Hose.  Earclamp: DD61-00583A BRACKET HOSE.
 	3. Assemble HOLDER DAMPER at SUMP. 
 	4. Assemble MOTOR BLDC at HOLDER DAMPER.
	5. Insert ASSY. MOTOR BLDC at HOSE.   ⚠ **Caution**: Afterassemble, MOTOR have to placed as left picture.

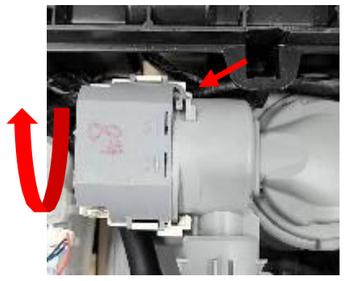
ASSY MOTOR BLDC(CIRCULATION PUMP) [REASSEMBLY]

Photo	Description
	6. Fasten Earclamp using Clamping pliers. 
	7. Connectwires at ASSY. MOTOR BLDC.

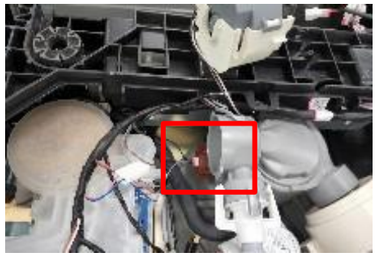
3-3-17. MOTOR BLDC PUMP(DRAIN PUMP) [DISASSEMBLY]

Photo	Description
 	**Preparation:** Disassemble COVER BASE. 1. Release hook of MOTOR BLDC PUMP. **Warning**: Be sure to remove the powerplug before servicing.
	2. Turn MOTOR BLDC PUMP clockwise and pull out.
	3. Disconnect wire from MOTOR BLDC PUMP.

3-3-17. MOTOR BLDC PUMP(DRAIN PUMP) [REASSEMBLY]

Photo	Description
	1. Connect wire to MOTOR BLDC PUMP. **Warning:** Be sure to remove the powerplug before servicing.
	2. Insert MOTOR BLDCPUMPinto SUMP Apply water for easy insertion.
	3. Turn MOTOR BLDC PUMPcounterclockwise and lock hook.

3-3-18. SENSOR-TURBIDITY [DISASSEMBLY]

Photo	Description
	**Preparation:** Disassemble COVER BASE. Disassemble ASSY. MOTOR BLDC(Drain pump)
	1. Release hook and pull out SENSOR-TURBIDITY, using flat head driver.
	2. Disconnect wire from SENSOR-TURBIDITY.

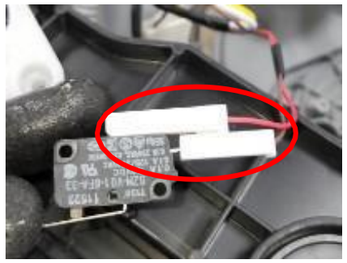
3-3-18. SENSOR-TURBIDITY [REASSEMBLY]

Photo	Description
	1. Connect wire to SENSOR-TURBIDITY.
	2. Insert SENSOR TURBIDITY into SUMP Apply water for easy insertion. **Caution**: Be careful not to miss the SEALSOILSENSOR. 

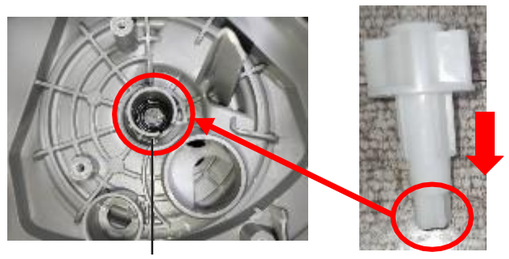
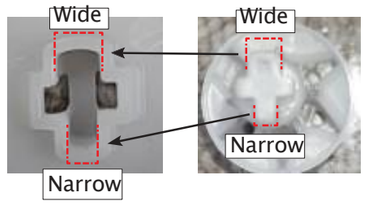
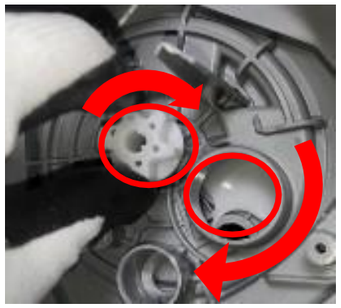
3-3-19. MOTOR AC DRIVE / DISTRIBUTER [DISASSEMBLY]

Photo	Description
	**Preparation:** Disassemble COVER BASE. Disassemble ASSY. HOSE CONNECTOR. 1. Remove 3 screws from HOLDER MOTOR.
	2. Pull out MOTOR AC DRIVE from HOLDER MOTOR. 3. Disconnect wire from MOTOR AC DRIVE.
	**Preparation:** Disassemble ASSY. MOTOR BLDC (Circulation pump) 4. Pull out HOLDER MOTOR from SUMP, using flat head driver.
 	5. Release hook and turn SWITCH MICRO clockwise.

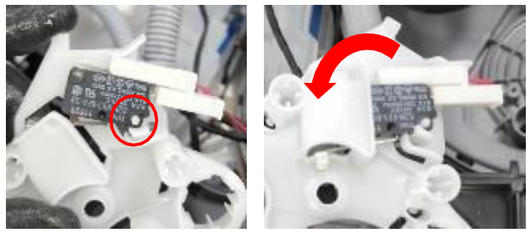
MOTOR AC DRIVE / DISTRIBUTER [DISASSEMBLY]

Photo	Description
	6. Pull out SWITCH MICRO and disconnect wire.
 	7. Remove CAM DISTRIBUTE from SUMP.

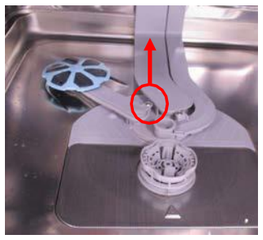
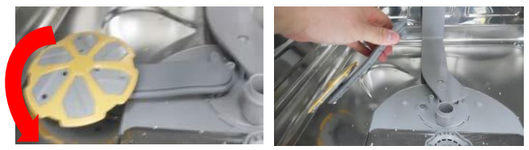
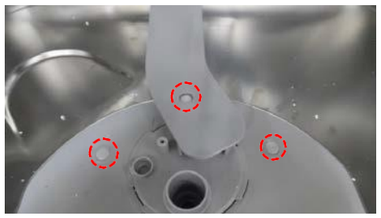
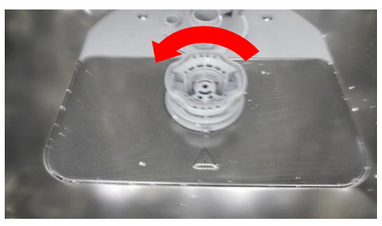
3-3-19. MOTOR AC DRIVE / DISTRIBUTER [REASSEMBLY]

Photo	Description
 SEAL DISTRIBUTER	1. Insert CAM DISTRIBUTE to VALVE DISTRIBUTE in SUMP.  **Caution:** Pay attention to REASSEMBLY direction.  **Caution:** Be careful not to miss the SEALDISTRIBUTER.
	2. Turn CAM DISTRIBUTE to make sure it's fully assembled. When the CAM is turned, VALVE must also rotate to be fully assembled.
	3. Connect wire to SWITCH MICRO.

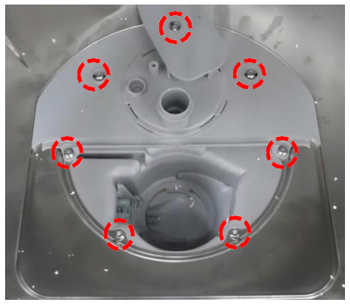
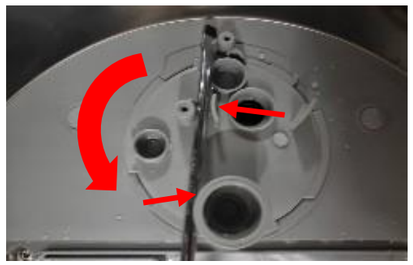
MOTOR AC DRIVE / DISTRIBUTER [REASSEMBLY]

Photo	Description
	4. Assemble SWITCH MICRO at HOLDER MOTOR. 5. Turn SWITCH MICRO counter clockwise to lock it.
	6. Assemble HOLDER MOTOR with SUMP. Apply water for easy insertion
	7. Turn CAM DISTRIBUTE to match MOTOR AC DRIVE shaft direction. Use flat head driver to turn.  
	8. Connect wire to MOTOR AC DRIVE.
	9. Assemble MOTOR AC DRIVE with HOLDER MOTOR. 10. Fasten 3 screws at HOLDER MOTOR. 

3-3-20. ASSY BASE [DISASSEMBLY]

Photo	Description
	**Preparation:** Disassemble steel cover on the left and right. Disassemble DOOR SPRING. Disassemble ASSY. DOOR. Disassemble ASSY. COVER BASE. 1. Pull out ASSY. ROTOR from SUMP.
	2. Remove the screw from ASSY. POWER ROTOR Use Torx T20 driver.
	3. Turn ASSY. POWER ROTOR counter clockwise and separate it.
	4. Remove 3 caps from SUMP. Use flat head screw driver. 
	5. Turn FILTER counter clockwise and pull out FILTERS.  Micro filter Coarse filter Fine filter

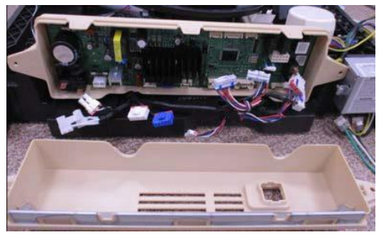
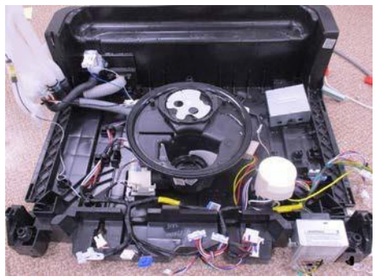
ASSY BASE [DISASSEMBLY]

Photo	Description
	6. Remove 7 screws from SUMP. Use Torx T20 driver.
	7. Remove ASSY. DUCT MAIN. Be careful to separate ASSY. DUCT MAIN from the above and middle brackets.  
	8. Turn HOUSING counter clockwise, and separate it. Use flat head driver to turn it. Position the driver in the position of the arrow.
	9. Remove COVER FILTER-BOTTOM.

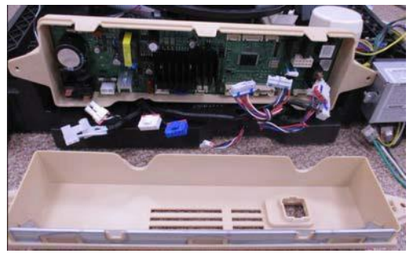
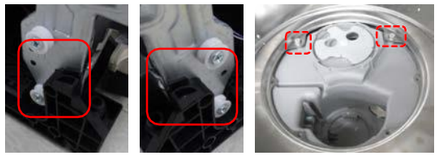
ASSY BASE [DISASSEMBLY]

Photo	Description
 	10. Turn CAP OUTLET DRY counter-clockwise to unlock.
	11. Detach CASE BRAKE-UP from TUB. **Caution**: Be careful not to miss the GASKET.
 	12. Remove 3 screws from BASE (both the left and right).
	13. Separate ASSY. BASE from TUB. 

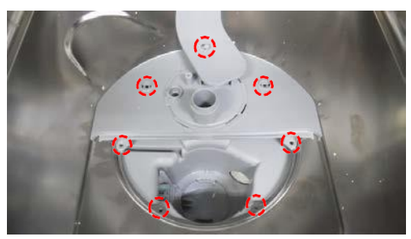
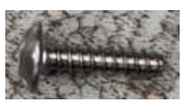
ASSY BASE [DISASSEMBLY]

Photo	Description
	14. Remove screws and open COVER PBA.
	15. Disconnect all the wires and connectors from MAIN PBA.
	16. Remove COVER PBA and MAIN PBA from BASE.

3-3-20. ASSY BASE [REASSEMBLY]

Photo	Description
	1. Assemble COVER PBA and MAIN PBA onto BASE and connect all the wires and connectors to MAIN PBA.
	2. Close the COVER PBA and fasten two screws.
	3. Assemble BASE to TUB. 
 	4. Attach CASE BRAKE-UP to the tub while matching the hole and CASE BRAKE-UP.
	5. Lock CAP OUTLET DRY by turning clockwise.

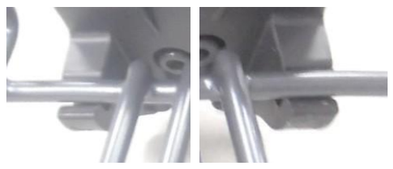
ASSY BASE [REASSEMBLY]

Photo	Description
	6. Fix 3 screws through BASE and FRAME.
	7. Put COVER FILTER-BOTTOM on TUB.
	8. Assemble HOUSING on COVER FILTER-BOTTOM by turning clockwise.
	9. Assemble DUCT MAIN to TUB.  
	10. Fasten 7 screws to fix ASSY. DUCT MAIN, COVER FILTER-BOTTOM, SUMP, and TUB. Use Torx T20 driver.  

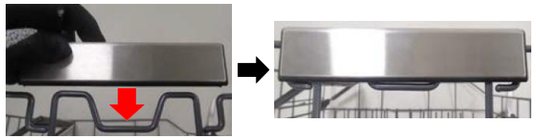
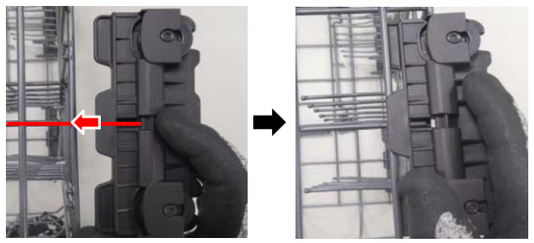
ASSY BASE [REASSEMBLY]

Photo	Description
	11. Fasten FILTERs by turning clockwise.
	12. Insert 3 CAPs on ASSY. DUCT MAIN and COVER FILTER-BOTTOM. 
	13. Put ASSY. POWER ROTOR on HOUSING and rotate clockwise.
	14. Fasten the screw through ASSY. POWER ROTOR and HOUSING. Use Torx T20 driver.
	15. Assemble ROTOR.

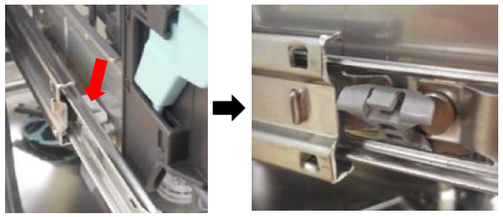
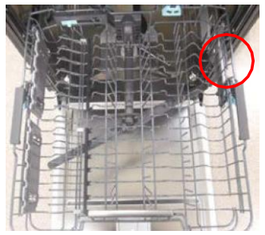
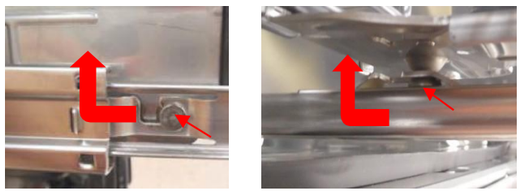
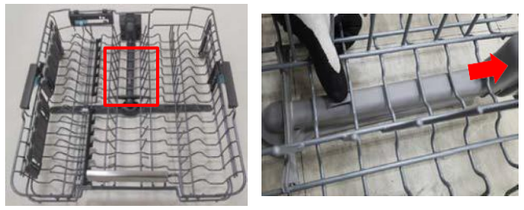
3-3-21. ASSY BASKET LOWER [DISASSEMBLY]

Photo	Description
	1. Pull out ASSY. BASKET LOWER from Dishwasher.
	2. Press down the 2 holders of ASSY. ROLLER to separate them. 
 	3. Take off ASSY. ROLLER from BASKET.  **Caution**: Be careful not to break WIRE HOLDERwhen separating ASSY. ROLLER from BASKET.
	4. Push 2 hooks with flat head driver to take off the ASSY. HANDLE.   <Front side> <Back side>

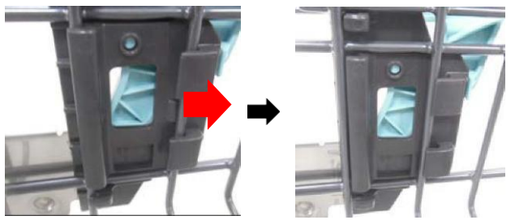
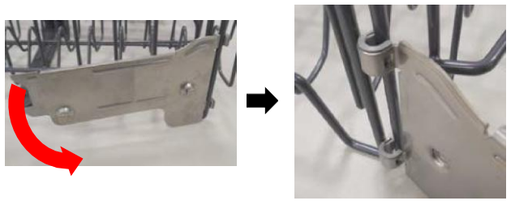
3-3-21. ASSY BASKET LOWER [REASSEMBLY]

Photo	Description
	1. Press ASSY. HANDLE to assemble.
	2. Assemble ROLLER with BASKET LOWER. * Match wire and center of ASSY. ROLLER.
	3. Assemble 2 holders of ASSY. ROLLER by pushing them from bottom to top.

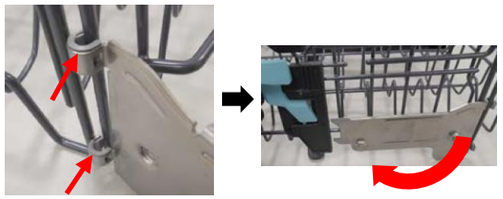
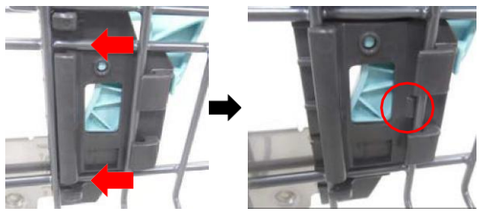
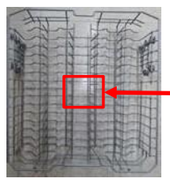
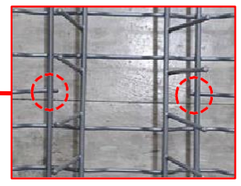
3-3-22. ASSY BASKET MIDDLE [DISASSEMBLY]

Photo	Description
	1. Press the hooks of HOLDER RAIL and pull it out. 
	2. Push the holder of BASKET ADJUSTER in the direction inside TUB and lift it. 
	3. Release hook and push ASSY. DUCT MIDDLE.
	4. Point the holder of the ASSY. DUCT MIDDLE diagonally and lift it from the ASSY. BASKET MIDDLE.

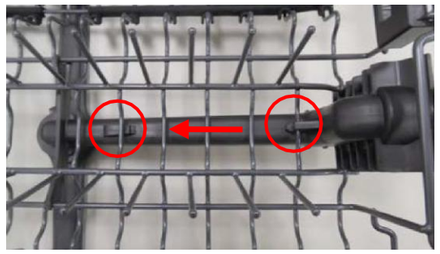
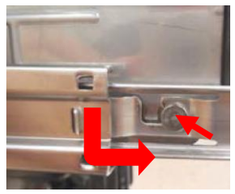
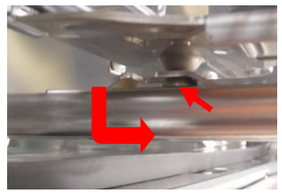
ASSY BASKET MIDDLE [DISASSEMBLY]

Photo	Description
	5. Push 2 hooks with flat head driver to take off the ASSY. HANDLE.   <Front side> <Back side>
	6. Pull the ASSY. BRACKET ADJUSTER in the handle direction and separate it. **Warning** Do not this work without safety gloves.
	7. Turn the ASSY. BASKET ADJUSTER counterclockwise and pull it out.

3-3-22. ASSY BASKET MIDDLE [REASSEMBLY]

Photo	Description
	1. Assemble the SUPT BRACKET to the BASKET MIDDLE and turn it clockwise to assemble it with the ASSY. BRACKET ADJUSTER.
	2. Push the ASSY. BRACKET ADJUSTER in the rear direction of the BASKET MIDDLE and assemble it.
	3. Assemble HANDLE BASKET. **Caution** Make sure to hold 2 hooks of HANDLE to BASKET MIDDLE securely. **Caution** Make sure to the direction of REASSEMBLY.   <Front side> <Back side>
	4. Place the ASSY. DUCT MIDDLE holder diagonally and assemble it into the ASSY. BASKET MIDDLE.  

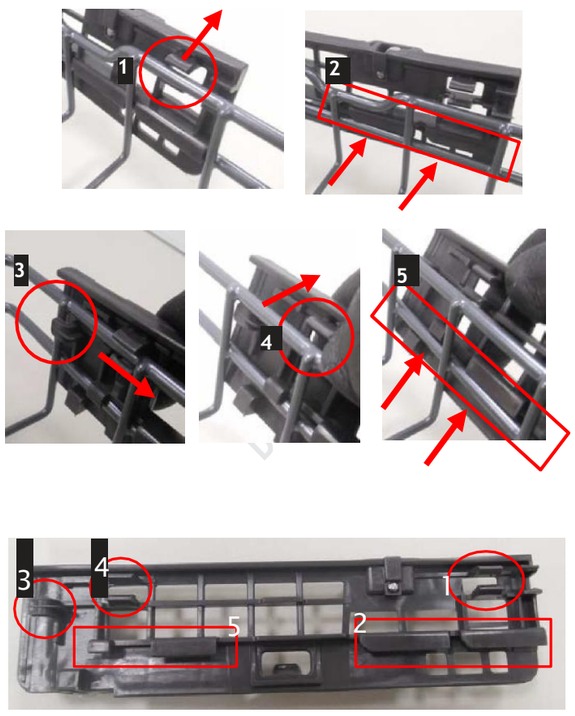
ASSY BASKET MIDDLE [REASSEMBLY]

Photo	Description
	5. Slide ASSY. ROTOR MIDDLE DUCT to direction of arrow, and check if the hook is locked securely.
 	6. Assemble the holder of the ASSY. BASKET ADJUSTER in the groove like an arrow and pull it in the direction of the door.
 	7. Insert and push HOLDER RAIL to assemble. **Caution** Make sure that the hook of HOLDER RAIL is properly assembled.

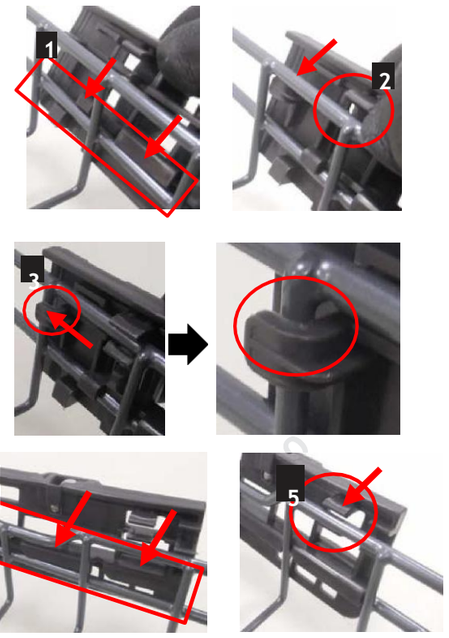
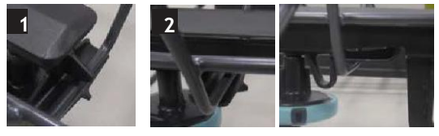
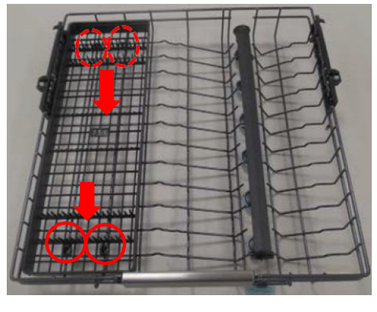
3-3-23. ASSY BASKET 3RD [DISASSEMBLY]

Photo	Description
	1. Remove 2 pieces of HOLDER RAIL 3RD from the rail, and separate ASSY. BASKET 3RD from the rail.   
	2. Push 2 hooks with flat head driver to take off the ASSY. HANDLE.
	3. Press the side of the hooks to separate it from the ASSY. BASKET 3RD. 
	4. Press the hook (1) to push it in the direction of arrow (2). 

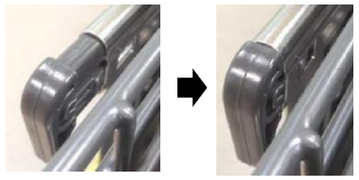
ASSY BASKET 3RD [DISASSEMBLY]

Photo	Description
	5. Separate the hook in the direction of the arrow (1). 6. Lift the holder and separate it from the BASKET 3RD (2). 7. Pull the BASKET 3RD ROLLER in the direction of the arrow (3). 8. Separate the hook in the direction of the arrow (4). 9. Lift the holder and separate it from the BASKET 3RD (5). **Warning** Be careful not to break the No. 3 hook.

3-3-23. ASSY BASKET 3RD [REASSEMBLY]

<table>
<tr><th>Photo</th><th>Description</th></tr>
<tr><td> 
</td><td>1. Assemble the holder into the BASKET 3RD (1).
2. Assemble the hook into the BASKET 3RD (2).
3. Assemble the hook by pushing it so that it is fully attached to the BASKET 3RD (3).
4. Assemble the holder at the bottom of the front to the BASKET 3RD (4).
5. Assemble the hook at the top of the front to the BASKET 3RD (5).</td></tr>
<tr><td> 
</td><td>6. Position the 2 holders and assemble the hook.
 
</td></tr>
<tr><td>  </td><td>7. Put it on the BASKET 3RD and press it to assemble the hooks.</td></tr>
</table>

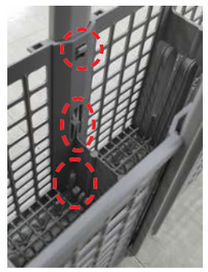
ASSY BASKET 3RD [REASSEMBLY]

Photo	Description
	8. Assemble HANDLE.
	9. Place ASSY. BASKET 3RD in rail and assemble HOLDER RAIL 3RD. 

3-3-24. ASSY BASKET CUTLERY [DISASSEMBLY]

Photo	Description
	1. Remove COVER CUTLERY from the BASKET CUTLERY MAIN by bending. **⚠ Caution** Be careful to prevent white mark around hinge.
 	2. Remove HANDLE CUTLERY from the BASKET CUTLERY MAIN with releasing hooks. **⚠ Caution** Be careful to prevent white mark. 

3-3-24. ASSY BASKET CUTLERY [REASSEMBLY]

Photo	Description
 	1. Assemble HANDLE CUTLERY with BASKET CUTLERY MAIN. **⚠ Caution** Pay attention to assemble hooks securely.
 	2. Assemble COVER CUTLERY with BASKET CUTLERY MAIN by bending. **⚠ Caution** Be careful to prevent white mark around hinge

4-2. SERVICE INSPECTION MODE

Item	Description
Enable Smart Install	1) With the power on and in standby mode, set the Delay Start to 17h. a. Tap Settings, and select Delay Start. b. Tap < and > to set the time to "17". 2) Press and hold the Start button for 7 seconds or more.
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 Increase Key ">" while on standby or when the opera-tion of each mode has been completed. (AS → Manual mode STEP[1] → Manual mode STEP[2] → … Manual mode STEP[7] → 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. – If Rinse Aid is not sufficient, Rinse Aid ICON turns on. – 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. ※ dC1 will occur if Door Open information is detected only in Inverter Micom. – If the Door opens during operation, it will stop and the Door Open check code "dC(dC1)" will be displayed. However, this does not apply once Auto Door Open is activated. – When the Door Open check code "dC(dC1)" is displayed, pressing the Start Key will turn the check code display off and it will re-run from the initial AS. **1. During Auto Mode, all keys except Power Key are deactivated. During Auto Mode, Sub Mode cannot be changed manually.** **2. [Auto Mode STEP1: 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].**
	6. [Auto Mode STEP 2: check water supply] 1) Supply 4.0L of water. 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 step, to [STEP3].
	7. [Auto Mode STEP 3: check nozzle] 1) Operate the circulation pump. (BLDC: 3400RPM, 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 alterna-tion location. When the last alternation completes, the circulation pump operates from LOW (starting alternation) again.

Item	Description
Auto Mode Configuration	3) Operate the Dispenser Actuator for 3sec (1sec ON →1sec OFF →1sec ON) 4) 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 4 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 3sec. (1sec ON →1sec OFF →1sec ON). ※ 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.
	9. [Auto Mode STEP 5: check drying] 1) Auto Door Open Actuator operation is as follows – [Model specification: Check whether hot air drying module is applied] Auto Door Open Actuator On at the start of this step. However, when the hot air drying module is applied, the Auto Door Open Actuator On after the Dry Heater operation is completed. – If Door Open is detected during Auto Door Open Actuator operation, it is turned off after 30 seconds of additional operation, and the Auto Door Open Actuator is judged to have completed normal operation. – If Door Open is not detected even after Auto Door Open Actuator On for more than 3 minutes, it turns off for 10 seconds. Once again, if Door Open is not detected even after On operation for more than 3 minutes, DC3 check code is generated. 2) Fan Motor, Dry Actuator, Dry Heater operation is as follows. – [Model specification: Check whether hot air drying module is applied] Fan Motor and Dry Actuator On at the start of this step. However, if the hot air drying module is applied, do Fan Motor On and 15 seconds later, Dry Heater On. For Dry Heater inspection specifications, refer to [Dishwasher–Inspection Mode – (HC2) Dry Heater Malfunction Check, (HC4) Dry Heater Overheat Check]. – [Model specification: Check whether hot air drying module is applied] If the hot air drying module is applied, it is On for 105 seconds after starting this step, and for other cases, it is On for 30 seconds. If there is no related check code, the operation is completed after Off. 3) [Model specification: Check whether each driving part is applied] Models without Auto Door Open Actuator, Fan Motor, Dry Actuator, Dry Heater complete each driving part as normal operation. 4) When the Auto Door Open Actuator, Fan Motor, Dry Actuator, and Dry Heater operate normally, proceed to the next step.
	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.

Item	Description
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 opens during operation, it will stop and the Door Open check code "dC(dC1)" will be displayed. – 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. ※ dC1 will occur if Door Open information is detected only in Inverter Micom. – 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. – Once this Manual Mode step is complete, the Step No. stays turned on in the display. – 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 it 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). **1. [Manual Mode STEP1: drain / supply of water]** 1) Perform Auto Mode STEP 4 (drainage) and STEP 2 (water supply). **2. [Manual Mode STEP 2: check the nozzle]** – Each time Storm wash + option Key is pressed, the setting changes by 100rpm (it can be set to 2000~4500RPM). – Sanitize option Key: 3400 (default RPM) → 3300 → 3200 → 3100 → (Change to RPM decreasing direction) AC circulation pump model: change to Low (default) → Hi → Low → Hi →… (When the key is pressed, the RPM displays for 2 seconds.) – Each time Smart dry option Key is pressed, the alternation nozzle position can be set and it starts from its default position. Unused alternation cannot be set. No. 8 (default: the default position varies by model → No. 10 → No. 1 → No. 2 → No. 4 → No. 6 (max. alternation target position: varies by model) → No. 8 → 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.)
	※ 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.) **3. [Manual Mode STEP 3: inspect the heater]** – Set the alternation to the default position. – Circulation pump: operate BDLC Model at 3400RPM, 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 75 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.)

Item	Description
Manual Mode Configuration	**4. [Manual Mode STEP 4: operate the dispenser]** – Operate the dispenser for 3sec (1sec ON → 1sec OFF → 1sec ON) **5. [Manual Mode STEP 5: operate the fan]** 1) Fan Motor, Dry Actuator, Dry Heater operation is as follows. – [Model specification: Check whether hot air drying module is applied] Fan Motor and Dry Actuator On at the start of this step. However, if the hot air drying module is applied, do Fan Motor On and 15 seconds later, Dry Heater On. For Dry Heater inspection specifications, refer to [Dishwasher-Inspection Mode – (HC2) Dry Heater Malfunction Check, (HC4) Dry Heater Overheat Check]. – [Model specification: Check whether hot air drying module is applied] If the hot air drying module is applied, it is On for105 seconds after starting this step, and for other cases, it is On for 30 seconds. If there is no related check code, the operation is completed after Off. – [Model specification: Check whether each driving part is applied] Models without Fan Motor, Dry Actuator, Dry Heater complete each driving part as normal operation.
	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. – 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: Check feeding at WATER TANK]** 1) Operate Drain pump 30 sec(3400RPM) → 5 sec. Rest → Feed 4.0L → Feed water in WATER TANK → Operate Drain pump 30 sec **9. [Manual Mode STEP 9: Check drain of WATER TANK]** 1) Tank Actuator Main, Sub Valve On. Rest 30 second after activation. – Model which doesn't have WATER TANK, show done for this STEP
Information Display	Each time 1st option key is pressed while "AS" displays, it makes [SOUND_KEYPUSH] sound and changes in the following order: n1 → n2 → n3 → n4 → n5 → n6 → 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": 2nd Course Key: Sub PBA Version Display 3rd Course Key: Sub PBA Touch IC SW Version Display 4th Course Key: Model Option Display 5th Course Key: Inverter PBA SW Version Display 6th Course Key: WiFi Module Version Display (Only for WiFi models

Item	Description
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 Intensive Key is pressed while inspection code is on display, the information about the condition which trig–gers 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 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 C	– 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.
n5: Setting Dry Increase Option by Default	1) If Smart Dry or Dry+ (or Sanitize) option is set to On by default, it indicates as "d1". 2) If Smart Dry or Dry+ (or Sanitize) option is not set to On by default, it indicates as "d0". 1. To set Smart Dry or Dry+ (Sanitize) option to On by default, use the Smart Dry or Dry+ (Sanitize) option button to switch it On/Off [n5: Setting Dry Increase Option by Default mode only]. – When Smart Dry or Dry+ (Sanitize) button is pressed, Smart Dry or Dry+ (Sanitize) is set to On or Off by default. ※ For models without Smart Dry or Dry+, the Sanitize button can be used to set the Sanitize option to On by default. ■ About This Option This option is designed to increase the drying performance by default in case there are consumer complaints. – If Smart Dry or Dry+ (Sanitize) option can be set to On by default, it powers on and sets the Smart Dry or Dry+ (Sani–tize) option to On by default. – If the course does not support Smart Dry or Dry+ (Sanitize) option setting, it is not set to On by default. – Even if the course is completed without using Smart Dry or Dry+ (Sanitize) option, the last used course is set to On by the course save feature on its next power-on and Smart Dry or Dry+ (Sanitize) option is set automatically depending on the default setting as long as Smart Dry or Dry+ (Sanitize) option is set to On by default. – Even if Smart Dry or Dry+ (Sanitize) option is automatically set by the default setting, it can be switched on/off by pressing Smart Dry or Dry+ (Sanitize) Key.
n6: Door LED Display Brightness	– Applies to models with door LED displays. – Adjust LED brightness Lv1, Lv2 with StartKey. This applies to the product regardless of whether the power is on or off.

Category	PROBLEM	POSSIBLE CAUSE	SOLUTION
Will not start	Power is On, but 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 water supply does not work.	Check that the water supply valve is open.
		Control panel is locked.	Unlock the child lock, (See user manual.)
Not Dry	Does not dry dishes well.	There is no rinse aid in the dispenser.	Check the dispenser and add the rinse aid. Use the liquid type rinse aid for automatic dishwasher.
		Too many dishes have been loaded.	Proper loading of items can affect drying. Load your dishes as recommended.
		Are the plastics wet?	Plastic dishes often need towel drying.
		Water is dropt to lower basket from the upside.	After the cycle finishes, empty the lower rack first and then the upper rack. This will prevent water from dripping from the upper rack onto the dishes in the lower rack.
		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 avoid water dripping from the upper rack onto the dishes in the lower rack.
Odor	Has a bad odor.	There is water left over when the last cycle is not completed.	Insert detergent without loading dishes, and run the Normal cycle to clean the dishwasher.
		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 left in unit too long.	With the dishwasher empty and no detergent, place a glass with 1 or 2 cups(8~16 ounces) of white vinegar upright into the lower rack, and then run a Normal cycle.

4-5. CHECKPOINTS

Category	PROBLEM	POSSIBLE CAUSE	SOLUTION
Not Clean	There are food particles remaining on dishes. (Not cleaning properly.)	An inappropriate cycle has been selected.	Did you choose the cycle that describes the most difficult soil in your dishwasher? If you have some items with heavier soils, use a heavier cycle. Select a cycle according to the number and soil level of the dishes, as directed in this manual.
		The dishes are improperly loaded. Too many dishes have been loaded.	Rearrange the dishes so they do not interfere with the nozzle rotation and the detergent dispenser's cover operation. Load only an appropriate number of dishes. Load your dishes as recommended. (See user manual.)
		Low water pressure.	The water pressure should be between 0.04 ~1.0 Mpa.
		The water is too hard.	Use a commercial dishwasher cleaner. Use a high-quality and fresh detergent with rinse aid.
		Dishwasher detergent was not used.	Use a automatic dishwasher detergent. Recommend the powder or gel type dishwasher detergent.
		The amount of detergent was inappropriate.	Use the appropriate amount of automatic dishwasher detergent.
		Detergent remains in the dispenser.	Check the position of dishware such as cookie sheets, cutting boards, or large containers, etc. that maybe blocking the detergent dispenser from opening properly. Rearrange the dishes so they ob not interfere with the detergent dispenser opening.
		There is no rinse aid.	Check the dispenser and add the rinse aid. Use the liquid type rinse aid.
		A nozzle is clogged.	Is the pump or spray nozzle clogged by labels from bottles and cans? Or Check the spray nozzle clogged by little food lump. Clean the nozzle as recommended by user manual.
Not Clean	Spots and filming on glasses and flatware	Did you use the correct amount of effective detergent?	Use recommended dishwasher detergents only. Refer to the "Detergent Dispenser" section. Detergent must be fresh to be effective. Store detergent in a cool, dry area. Heavy soil and/or hard water generally require extra detergent.
		NOTE To remove spots and film from dishes, try a white vinegar rinse. This procedure is intended for occasional use only. Vinegar is an acid, and using it too often could damage your dishwasher. 1. Wash and rinse dishes. Do not use sanitize option. Remove all silverware or metal items. 2. Put 2 cups [500 ml] white vinegar in a glass or dishwasher-safe measuring cup on the bottom rack. 3. Run the dishwasher through a complete washing cycle. Do not use detergent. Vinegar will mix with the wash water.	
		Extremely hard water Old or damp powder detergent Too little detergent	The harder your water, the more detergent a load needs.
			To prevent the common hard-water problem of spotting and to help dishes dry better, we recommend that you add a rinse aid.
			If you see white residue inside your dishwasher, you can occasionally try to dissolve it with distilled white vinegar (or Lime juice & White vinegar mixture). Instead of using detergent, place a container with 2 cups of vinegar (or 1 cup of Lime juice & 1 cup of white vinegar) in the bottom rack and run a Normal cycle.
			Make sure detergent is fresh.

Category	PROBLEM	POSSIBLE CAUSE	SOLUTION
Not Clean	Leaves glasses with a dim polish. (Cloudiness on glass-ware.)	The water supplied is soft and too much detergent was used.	– Underload the dishwasher and use a rinse aid to minimize this. – This is called etching and is permanent. To prevent this from happening, use less detergent if you have soft water. Wash glassware in the shortest cycle that will get them clean.
		Silica film or etching (silica film is a milky, rainbow-colored deposit	Sometimes there is a water/chemical reaction with certain types of glassware. This is usually caused by some combination of soft or soft–ened water, alkaline washing solutions, insufficient rinsing, and overloading the dishwasher. It might not be possible to prevent the problem, except by hand washing. To slow this process use a minimum amount of detergent but not less than 1 tb (15 g) per load. Use a liquid rinse aid and underload the dishwasher to allow thorough rinsing. Silica film and etching are permanent and cannot be re–moved.
		Water temperature entering the dish–washer exceeds 150°F	This could be etching. Lower the water heater temperature.
	Black or gray marks on dishes	Aluminum dishes were included in the wash load.	Disposable aluminum items can break down in the dishwasher and cause marking. Hand wash these items. Remove aluminum markings by using a mild abrasive cleaner.

Category	PROBLEM	POSSIBLE CAUSE
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 child lock.
	A circuit breaker is open.	Reset the circuit breaker
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 user 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 ~ 830kPa).
	The water is too hard.	Use a commercial dishwasher cleaner. Use a high-quality and fresh detergent with rinse aid.
	Dishwasher detergent was not used.	Use automatic dishwasher detergent. We recommend a powder or gel type dishwasher detergent.
	The amount of detergent was inappropriate.	Use the appropriate amount of automatic dishwasher detergent.
	Detergent remains in the dispenser.	Make sure large items such as cookie sheets, cutting boards, or containers, 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 the 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 the nozzle rotation and the detergent dispenser operation. Load only an appropriate number of dishes. Load your dishes as recommended.
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.)
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.

Category	PROBLEM	POSSIBLE CAUSE
Does not dry dishes well.	There is no rinse aid in the dispenser.	Check the dispenser and add the rinse aid. Use the 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 bot–toms 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 avoid water dripping from the upper rack onto the dishes in the lower rack.
Has a bad odor.	There is water left overwhen the last cycle is not completed.	Insert detergent without loading dishes, and run the Normal cycle to clean the dishwasher.
	Drain Hose is obstructed.	Contact a qualified service technician to remove any obstruc–tion from the drain hose.
	The dishwasher is not used daily or Soiled dishes 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 dispens–er 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(Screw, Plastic piece) is in 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.
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 will interfere with them.
Waterwon't pump out of the dishwasher.	Drain is clogged.	Contact a qualified service technician to remove any obstruc–tion from the drain hose and check the drain pump operation.
Has a bent upper rack afterloading dishes.	The dishes are not loaded properly.	Load your dishes as recommended.

7-2. 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. Assy guide water-sub	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 outside 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.