



WASHING MACHINE DRUM TYPE

Basic Model : WF520AB*
(GRACE PROJECT)

Model Name : WF455ARG*
WF457ARG*
(GRACE S PROJECT)

SERVICE Manual

WASHING MACHINE (DRUM)



WF457ARGSGR

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2. Features and Specifications
3. Disassembly and Reassembly
4. Troubleshooting
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Refer to the service manual in the GSPN (see the rear cover) for the more information.

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1. SAFETY INSTRUCTIONS

1-1. SAFETY INSTRUCTIONS FOR SERVICE ENGINEERS

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



WARNING

Hazards or unsafe practices that may result in severe personal injury or death.



CAUTION

Hazards or unsafe practices that may result in minor personal injury or property damage.

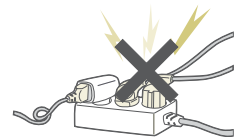


WARNING

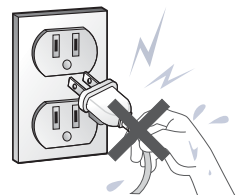
BEFORE SERVICING

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

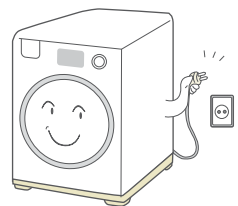
- Do not allow consumers to connect several appliances to a single power outlet at the same time.
 - ✓ There is a risk of fire due to overheating.



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



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



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



WARNING

WHILE SERVICING

- Check if the power plug and outlet are damaged, flattened, cut or otherwise degraded.
 - ✓ If faulty, replace it immediately.
 - Failing to do so may result in electric shock or fire.
- Completely remove any dust or foreign material from the housing, wiring and connection parts.
 - ✓ This will prevent a risk of fire due to tracking and electrical hazard..
- When connecting wires, make sure to connect them using the relevant connectors and check that they are completely properly.
 - ✓ If tape is used instead of the connectors, it may cause fire due to tracking.
- Make sure to discharge the PBA power terminals before starting the service.
 - ✓ Failing to do so may result in a high voltage electric shock.
- When replacing the heater, make sure to fasten the nut after ensuring that it is inserted into the bracket-heater.
 - ✓ If not inserted into the bracket-heater, it touches the drum and causes noise and electric leakage.



WARNING

AFTER SERVICING

- Check the wiring.
 - ✓ Ensure that no wire touches a rotating part or a sharpened part of the electrical harness.
- Check for any water leakage.
 - ✓ Perform a test run for the washing machine using the standard course and check whether there is any water leakage through the floor section or the pipes.
- Do not allow consumers to repair or service any part of the washing machine themselves.
 - ✓ This may result in personal injury and shorten the product lifetime.

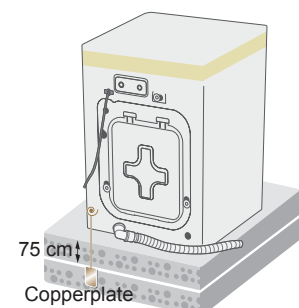
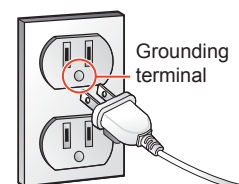


- If it seems that grounding is needed due to water or moisture, make sure to run grounding wires.
(Check the grounding of the power outlet, and additionally ground it to a metallic water pipe.)
 - ✓ Failing to do so may result in electric shock due to electric leakage.

[Running a grounding wire]

 - Twist a grounding wire (copper wire) two or three times around the tap.
 - If you connect the grounding wire to a copperplate, bury it 75 cm under the earth in a place with a lot of moisture.

⚠ Do not connect the grounding wire to a gas pipe, plastic water pipe or telephone wire. There is a risk of electric shock or explosion.



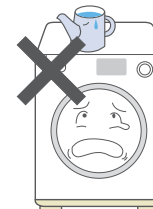
2 _ Safety Instructions

**CAUTION****BEFORE SERVICING**

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



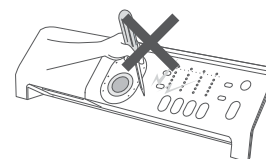
- Do not place any containers with water on the washing machine.
 - ✓ If the water is spilled, it may result in electric shock or fire. This will also shorten the product lifetime.



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



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

**CAUTION****WHILE SERVICING**

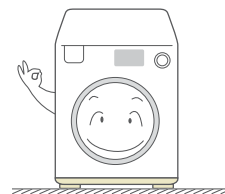
- When wiring a harness, make sure to seal it completely so no liquid can enter.
 - ✓ Make sure that they do not break when force is exerted.
 - Check if there is any residue that shows that liquid entered the electric parts or harnesses.
 - ✓ If any liquid has entered into a part, replace it or completely remove any remaining moisture from it.
 - If you need to place the washing machine on its back for servicing purposes, place a support(s) on the floor and lay it down carefully so its side is on the floor.
 - ✓ Do not lay it down on its front. This may result in the inside tub damaging parts.
-



CAUTION

AFTER SERVICING

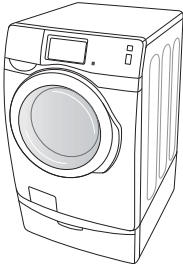
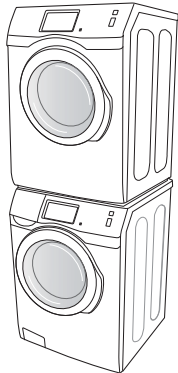
- Check the assembled status of the parts.
 - ✓ Now is a good time to inspect your work. Review all connections and wiring, including mounting hardware.
- Check the insulation resistance.
 - ✓ Disconnect the power cord from the power outlet and measure the insulation resistance between the power plug and the grounding wire of the washing machine. The value must be greater than 10MΩ when measured with a 500V DC Megger
- Check whether the washing machine is level the floor with respect to the original position of the washing machine prior to service.
By doing this now will reduce for the need of customer dissatisfaction and redo call.
 - ✓ Vibrations can shorten the lifetime of the product.



2. FEATURES AND SPECIFICATIONS

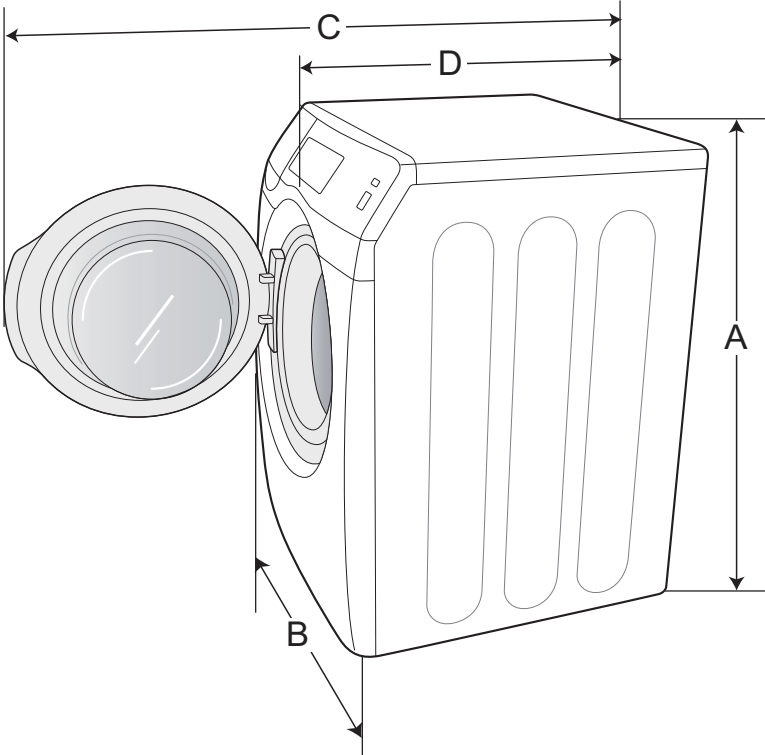
2-1. FEATURES

Features	Description
The Largest Capacity	Samsung's extra-large capacity laundry machine can wash a full set of your Bedding PLUS, a kingsize comforter, or up to 31 bath towels in a single load. Since you don't have to do as many loads, you save time, money, water and energy.
8" LCD Touch Screen Display	The brilliant 8" Color LCD Touch Screen displays cycle information, settings, options, and more. The easy-to-use interface allows you to scroll through all wash cycles with the slightest touch.
Smart Control	Samsung's innovative Smart Control technology enables you to control your washer through personal technologies such as smart phones. You don't have to be on standby until the cycle ends. Smart Control allows you to monitor the washing process and let you know when the cycle is complete.
Smart Care	Samsung's Smart Care, an automatic error-monitoring system, detects and diagnoses problems at an early stage and provides a quick and easy solution through LCD navigation. With the innovative Smart Control technology, you can also be alerted when the problem occurs via your smart phones.
PowerFoam™	- Samsung's effective PowerForm delivers improved cleanliness with advanced fabric care. - PowerFoam allows detergent to disperse evenly and penetrate fabrics faster and deeper.
SpeedSpray	Samsung's new SpeedSpray technology saves you up to 25%* more time when doing laundry by shortening wash times while still keeping all segments of the washing process and getting your clothes clean. * Based on 8 pounds loads, Normal cycle, on previous and existing 4.3 cu.ft. Samsung front loading washers released until 2011 without SpeedSpray.
VRTplus™ (Vibration Reduction Technology)	This Samsung washer minimizes noise and vibration with dual 3D vibration sensors and smart control technology, ensuring quiet operation.
Deep Steam	The Deep Steam feature boosts cleaning performance and loosens grime and dirt, thus providing superior cleaning results..
Pure Cycle™ (Tub Cleaning cycle)	Clean your drum with one button! This Pure Cycle is specially designed to remove detergent residue and dirt buildup in the tub, diaphragm, and on the door glass without the need for special chemical detergents.
Stylish Design	The stylish design of this washer blends well with your environment.
Diamond Drum™	Takes gentle care of your fabrics. With inside holes 36% smaller than those of conventional drums, the diamond drum prevents fabrics from sticking out through the holes and consequently being damaged.
DD Motor	The power to handle anything! Our direct-drive inverter motor delivers power right to the washer tub from a variable speed, reversible motor. A beltless direct-drive motor generates a higher spin speed of 1,300 rpm for more effective, quiet operation. The washer also has fewer moving parts, meaning fewer repairs.

Features	Description
Pedestal with Storage Drawers (Model No : WE357*)	An optional 15" pedestal is available to raise the washer for easier loading and unloading. It also offers a built-in storage drawer that can hold a 100 oz. bottle of detergent. 
Stacking (Model No : SK-5A/XAA)	Samsung washers and dryers can be stacked to maximize usable space. An optional stacking kit is available for purchase from your Samsung retailer. 

2-2. SPECIFICATIONS

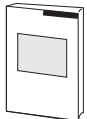
Model		WF455ARG, WF457ARG	
Wash type		FRONT LOADING WASHER	
Dimension (Inches / mm)	A: High-Overall	WF457*** : 38.9" (990mm) WF455*** : 38.7" (984mm)	
	B: Width	27"(686mm)	
	C: Depth with door open 90°	51.2"(1,300mm)	
	D: Depth	34.1"(865mm)	
Water pressure		20 ~ 116psi(137~800kpa)	
Weight		105kg(231.5lb)	
Heater Rating		900 W	
Capacity		5.2 Cu.Ft(iec)	
Power consumption	Washing	120 V	200 W
	Washing and Heating	120 V	1,150 W
	Spin	120 V	550 W
	Drain	120 V	80 W
Spin revolution	rpm	1,300 rpm	



2-3. COMPARING SPECIFICATIONS WITH EXISTING MODELS

Project		GRACE S		GRACE
Model Name		WF457ARG*	WF455ARG*	WF520AB*
Image				
Capacity (cu.ft. IEC)		5.2 cu.ft	5.2 cu.ft	5.0 cu.ft
Main Spec	Motor type	DD Motor	DD Motor	DD Motor
	MAX RPM	1300	1300	1300
	VRT	Yes (VRT+)	Yes (VRT+)	Yes (VRT+)
	Heater (900W)	Yes	Yes	Yes
	Diamond Drum	Yes	Yes	Yes
	Washing Cycle #	22	13	13
	Delay Wash	24 hrs	24 hrs	24 hrs
	Tilted Drum	5°	5°	5°
	Sound pressure	MAX 61.0 dBA↓	MAX 61.0 dBA↓	MAX 61.0 dBA↓
Target Performance	MEF	3.4↑	3.4↑	3.4↑
	WCF	2.7↓	2.7↓	2.7↓
	kWh/year	105 kWh/year↓	105 kWh/year↓	105 kWh/year↓
Design	Control Display	LCD	LED	G.LED
	Frame Color	W : White G : Charcoal	W : White G : Charcoal	W : White P : Stainless platinum
	Dimension (W*D*H)	27 X 34.1 X 39"	27 X 34.1 X 38.7"	27 X 34.1 X 38.7"

2-4. OPTIONS SPECIFICATIONS

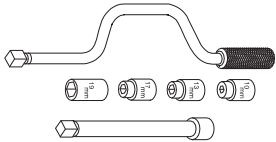
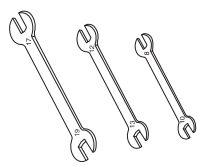
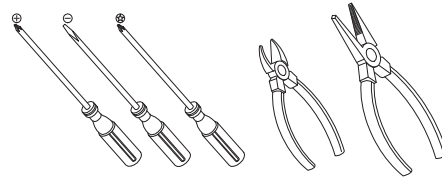
Item		Code	QTY	Remarks
	BOLT-SPANER (Wrench)	DC60-40146A	1	Default
	ASSY HOSE WATER(H)	DC97-15648B	1	Default
	ASSY HOSE WATER(C)	DC97-15648A	1	Default
	ASSY MANUAL	WF457 : DC98-01504A, DC98-01505A WF455 : DC98-01507A, DC98-01506A	2	Default
	CAP-FIXER	DC67-00307A	6	Default
	HOSE-HANGER	DC62-10278A	1	Default

Note

- Customer can purchase additional water supply and drain hoses from a service center.
- The spanner(wrench), water supply and drain hoses are not supplied. Both the water supply and drain hoses are supplied during the installation.

3. DISASSEMBLY AND REASSEMBLY

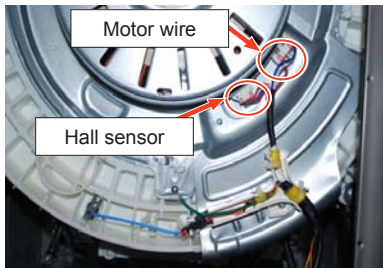
3-1. TOOLS FOR DISASSEMBLY AND REASSEMBLY

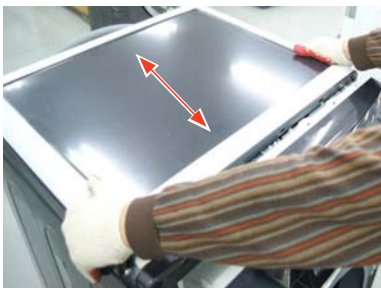
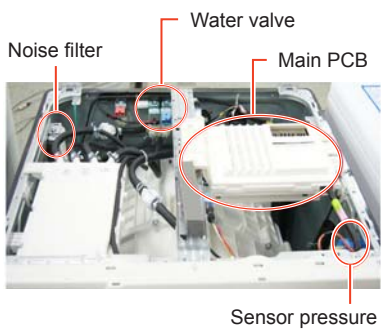
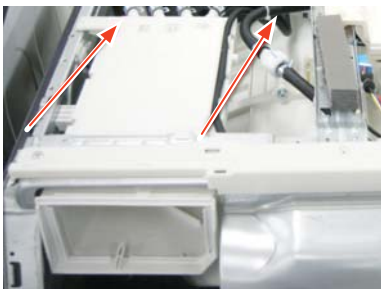
Tool	Type	Remarks
	Socket Wrench with 6" Extension 10mm 13mm 19mm	Heater (1) Motor (1), Balance (5), 2 holes of each left and right of the shock absorber 1 Pulley hole
	Open End wrench 10mm 13mm 19mm	Replaceable for the box driver. Since the bolt runs idle when the box driver is used, use the box driver 17mm.
	Vice pliers	Tool to protect the idle and abrasion of the bolt for the box driver.
	Others (Driver, Nipper, Long nose)	General tools for the after service.

10 _ Removal and Reassembly

3-2. STANDARD DISASSEMBLY DRAWINGS

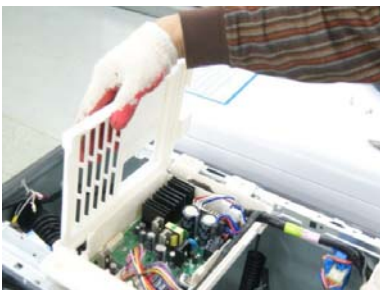
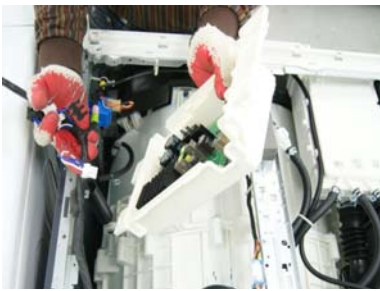
- This is a standard disassembly diagram and may differ from the actual product.
Use this material as a reference when disassembling and reassembling the product.

Part	Figure	Description
Disassembling and Repairing the Rear Motor		1. Remove the 2 screws holding the Back-Cover at the back of the washing machine and separate the Back-Cover pushing it downwards. (Assemble it by lifting it upwards)
		2. After separating the Back-Cover, remove the M19 nut holding the Motor. ⚠ To remove it, turn it counter-clockwise. As the Motor also rotates if the nut is turned slowly, torque it quickly and firmly in a single action. ✔ Do not remove the nut by inserting a screwdriver into the Motor, as this may result in a problem with the motor.
		3. Remove the M19 nut and washer and then separate the Rotor. ⚠ Since removing the rotor requires a lot of strength due to the magnetic force of the Rotor and it may come off suddenly, your hand or arm may be injured by the edge of the Stator or Frame. Therefore take precaution when separating it. ✔ You can separate the connector by pressing the navel of the Housing and pulling it outside.
		4. Separate the Motor Wire and Hall Sensor while pressing the navel of the Housing. Take precaution when you do this because the Hall Sensor part is easily shocked.
		5. Separate the 6 M10 screws. → Separate the Assy Bracket Motor → Separate the Stator. ✔ When removing the last of the 6 screws, hold the Stator as it may fall when the screws are removed.
	✓ Check Points for Troubleshooting 1. Check if there is any alien substance between the Rotor and the Stator. 2. Check if the motor power (Blue, White, Red) wire is connected. 3. Check if the Hall Sensor wire is connected. ✔ The order of the motor wires is Blue, White, and Red from the right. Check if the resistance between Blue-White, White-Red, and Red-Blue is equal to 15Ω.	

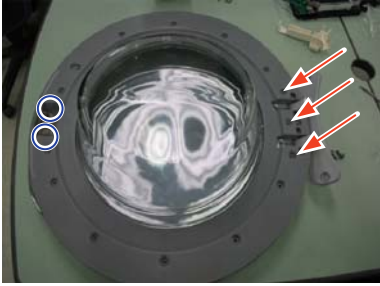
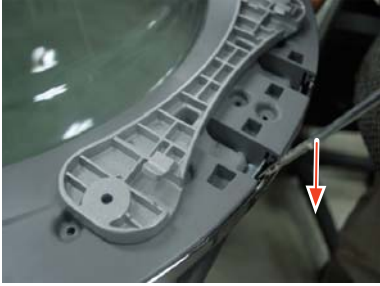
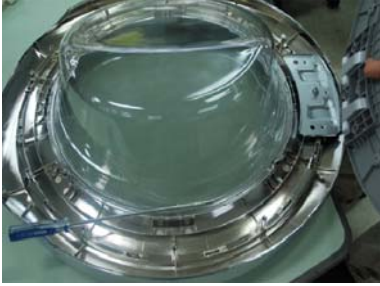
Part	Figure	Description
Separating the Cover_Top and Panel-Control (Check Main-PCB and Sub-PCB)		1. Remove the 2 hexagon screws, which are at the back, fixing the COVER-TOP.
		2. Disassemble the COVER-TOP by sliding it backwards and remove the 4 screws on the PANEL-CONTROL.
		3. With the top cover removed you will now have access to service the Water pressure sensor, EMI Noise Filter, Hot and Cold Water Valves, Steam ASSY, Hose Draw ASSY, and Main PCB ASSY.
		4. Press the Separate button to separate the ASSY DRAWER.
		5. Disassemble the HOUSING-DRAWER from the PANEL-CONTROL(Push back and then push Housing-drawer upside to separate)

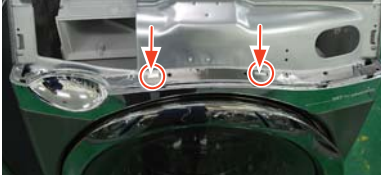
12 _ Removal and Reassembly

Part	Figure	Description
Separating the Cover_Top and Panel-Control (Check Main-PCB and Sub-PCB)		6. Pull the PANEL-CONTROL towards and then lift it upwards to separate.
		7. Carefully disconnect the three wiring connectors by hand.
	 WF457 Assy Panel Control WF455 Assy Panel Control	8. Remove the all screws holding the PCB and release the hooks on both sides to remove the PCB for repair / replacement.

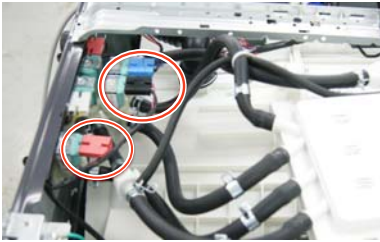
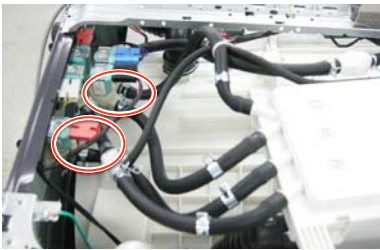
Part	Figure	Description
Separating the Main PCB		1. Remove the 2 screws holding GUIDE-PCB(M) at BRACKET-SPRING(R).
		2. Separate 2 Hooks.
		3. Open COVER-PCB(M).
		4. Disconnect All Connectors on main PBA.
		5. Lift up Main PBA, Change SVC Part. After SVC, Certainly check the all Hooks on COVER-PCB(M) ☒ Otherwise COVER-PCB(M) will be disassembled during washing machine running.

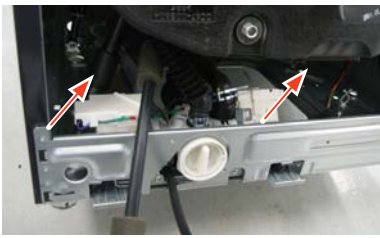
14 _ Removal and Reassembly

Part	Figure	Description
Disassembling and Reassembling the Door Part		1. Remove the 2 screws holding the HINGE-DOOR and the FRAME-FRONT. 2. Disassemble the ASSY DOOR lifting it up slightly.
		3. Remove the 18 screws fixing the HOLDER-GLASS. (including the 2 blue screws holding the LEVER-DOOR, including the 3 arrow screws holding the HINGE-DOOR.)
		4. Putting and pressing hard a flat-head screwdriver into the furrow between COVER-DOOR and SUPPORT-HINGE.
		5. Making a semicircle with screwdriver. (Disassemble the hooks)
		6. Disassemble the HOLDER-GLASS from COVER-DOOR Take the DOOR-GLASS , SUPPORT-HINGE, HINGE-DOOR.
	✓ Check Points for Troubleshooting • Check the status of the screws holding the Hinge (check if they are loose). Check if the front and rear of the door and the hinge part are not damaged.	

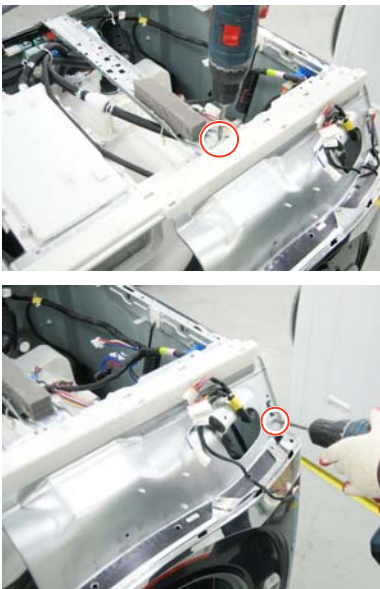
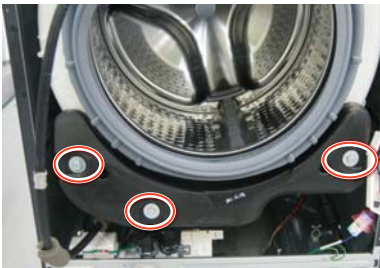
Part	Figure	Description
Disassembling the Front Cover/Frame Front (Check the Door Lock S/W)		1. Pull the DIAPHRAGM upside, and finish disassembling along the circle.
		2. Remove the 2 screws to separate the DOOR LOCK S/W.
		3. Remove the 4 screws at the top of FRAME-FRONT.
		4. Push the lever and pull it towards to open the COVER-FILTER.
		5. Separate the remaining WATER REMOVAL HOSE (BLUE) from the hook.
		6. Remove the 2 screw down under Frame Front.
		7. Press the UPPER-PLATE slightly with the screwdriver to separate the FRAME-FRONT.

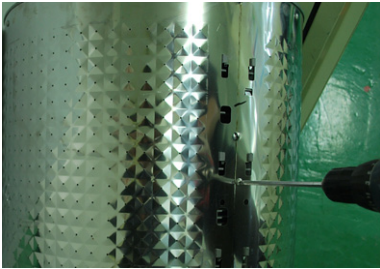
16 _ Removal and Reassembly

Part	Figure	Description
Disassembling and Repairing the Water Supply Valve		1. Remove the Top Assy-Plate. 2. Disconnect the water supply valve wire connector.
		3. Remove the 4 screws holding the water supply valve.
		4. Remove the hose connected to the valves. (Use the plier to remove the hose.)
Disassembling and Repairing the Water Level Sensor		1. Separate the wire connected the SENSOR-PRESSURE. 2. Adjust the plastic clip(of pressure sensor) between two nose of plier, then grip and pull the plastic clip with caution. (Use the long nose plier to push the hook).
		3. Remove the hose from the SENSOR-PRESSURE.
Disassembling the inside Detergent Box		• Hold the Clamp of the Detergent Box and disassemble the Hose-Drawer-Tub.

Part	Figure	Description
Disassembling the Pump Motor Part		1. Remove the 2 Cover pump.
		2. Separate the Clamp of the hose connected to the PUMP and then pull the DRAIN-HOSE. 3. Separate the Clamp of the hose connected to the PUMP and then pull the HOSE-AIR. 4. Separate the Clamp of the hose connected to the PUMP and then pull the HOSE-DRAIN.
		5. Separate the wire connected to the PUMP.
Removing the Remaining Water		If the washing machine works, drain the water in the wash tub by selecting the Spin course. If the washing machine does not work, remove the laundry from the wash tub and scoop the remaining water out of the tub using a cup.

18 _ Removal and Reassembly

Part	Figure	Description
Disassembling the Tub		1. Remove the 2 screws fixing GUIDE-WIRE, 6 screws fixing FRAME-PLATE(U).
		2. Remove the 3 bolts fixing WEIGHT BALANCER and then pull it towards with caution.
		3. Remove the 4 bolts fixing DAMPER to take ASSY TUB out. 4. Remove all wire and hose connected the ASSY-TUB.
		5. Open the cap of SPRING-HANGER to take ASSY-TUB out.
		6. Lift the ASSY-TUB with two people carefully with holding SPRING-HANGER.

Part	Figure	Description
Disassembling the Tub		7. Remove the M10 bolt from the middle of the TUB and separate the TUB-FRONT and TUB-BACK.
Disassembling the DRUM		1. Separate the ASSY DRUM from TUB, remove 6 M10 bolts from the upper ASSY DRUM, disassemble the ASSY FLANGE SHAFT.
		2. Remove 12 screws from the outer sides and then remove the two upper and lower BALL BALANCERS.
		3. Remove 3 screws from the outer sides and then remove the 3 DRUM-LIFTERS.

Part	Figure	Description
Separating the Heater at the Bottom Front		1. Disassemble the Front-Frame. 2. Separate the connection wire. - Separate the Thermostat fixed at the bottom of the Tub. (Take precaution as there may be water remaining.)  Make sure to separate the Thermostat first and then separate the Heater. If you fail to observe this order, it may result in a shock and be damaged.
		3. Release the nut holding the Heater with an M10 tool and then separate the Heater.  Do not completely release the nut. Pull the Heater forward after releasing the nut. If the Heater is damaged, it may cause a problem. Therefore unfasten the nut using spanner or wrench manually without using pincers or tweezers.  When you re-assembly the heater, make sure to install the Heater exactly onto the Bracket inside the Tub. If it is not properly installed, it may cause a fire. In addition, completely insert the packing part into the Tub when assembling it so that the packing part is completely attached onto the Tub.
		 Check Points for Troubleshooting 1. Check if the resistance of the Heater is equal to 27.1Ω (for the 1900W product), or 26.2Ω (for the 2000W product). 2. Check if the resistance of the Thermistor is equal to 12kΩ (at room temperature).
Disassembling The MEMS Sesnor		1. Remove the 2 screws From MEMS Sensor. 2. Separate the wire Connector.

☑ Reassembly is in the reverse order of the removal.

4. TROUBLESHOOTING

4-1. ERROR MODES

► This is a washer integrated error mode. For detailed information, refer to the general repair scripts.

Error Type	For USA	Causes	Remarks
Water Level Sensor	LE1	- The part of the hose where the water level sensor is located is damaged (punctured). - The hose is clogged with foreign material. - The hose is folded. - Too much lubricant has been applied to the insertion part of the air hose.	
	1E	- Hose engagement error. (disengaged) - Part fault. (Faulty internal soldering) - The water level sensor terminal is disengaged. - Main PBA fault.	
Motor Driving Error and Hall Sensor Error	3E	- The PBA connector terminal is not connected. - The motor spin net is not engaged. - The motor's internal coil is damaged. (short-circuited or cut) - The hall sensor terminal is not connected. - Foreign material (a screw) has entered the motor.	This error occurs because of restrained revolutions. This error occurs when an interference is generated due to too much laundry, etc.
	E3	- Motor overloaded due to too much laundry. (Non-sensing) - The motor hall sensor terminal is not connected. - PBA fault. - The motor driving error from the PBA is weak. : Unstable relay operation, etc. - This occurs due to erroneous operating signals from the motor hall sensor.	
	bE	- The IPM terminal of the main PBA is not connected. - The DD motor cover is out of place. - The PCB housing terminal is not connected. - PBA fault. - DD motor fault.	
Water Supply Error	nF	- Foreign material is entering the water supply valve. - The water supply valve terminal is not connected. (Wire disconnected) - The warm water and rinse connectors are wrongly connected to each other. - This occurs if the PCB terminal from the drain hose to the detergent drawer is not connected. Check whether the transparent hose is folded or torn.	
	nF1	- The cold and warm water supply hoses are wrongly engaged into each other. - The temperature of the water supplied through the dry valve during a dry cycle is sensed as higher than 70 °C. - The water temperature is sensed as higher than 50 °C in the Wool or Lingerie courses.	The water supplied for 1 minute drying the drying cycle is 0.3 ~ 0.4 L.
Drain Error	nd	- The pump motor impeller is damaged internally. - The wrong voltage is supplied to the parts. - Part fault. - This occurs due to freezing in the winter season. - The drain hose is clogged. (Injection error, foreign material) - Clogged with foreign material. - The water pump terminal is not connected: rubber band, bills, cotton, hair pins, coins have collected inside the drain pump ASSY.	

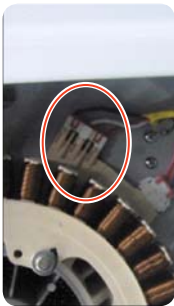
Error Type	For USA	Causes	Remarks
Power Error	2E	- Check the consumer's power conditions. : Make sure to check the operating voltage. Connect a tester to the internal power terminals during the Boil or Dry operations and observe the washing machine's operation carefully. : Check the voltages. (An error occurs when under or over voltage is supplied.) : Check whether a plug receptacle is used. When the connecting wire is 1m, a momentary low voltage may drop up to 10 V - Main PBA fault (sometimes)	
	PF	- This error is not a fault but occurs during a momentary power failure. : When this error code is displayed, the operation restarts from the cycle that was stopped due to the power failure. : If the washing machine is not operating and this error code is displayed, it is displayed to notify that a power failure has occurred.	
Communication Error	AE	- The signals between the sub and main PBAs are not sensed because of communication error. - Check the connector connections between the sub and main PBAs carefully. → Check for incorrect or loose connections, etc. - Remove the sub PBA C/Panel and check for any faulty soldering.	
	AE3	- The signals between The DR Module and main PBAs are not sensed because of communication error. - Check The connector connections between The DR Module and main PBAs carefully. → Check for incorrect or loose connections, etc. - Remove The DR Module and Check for any faulty soldering.	
	AE4	- The signals between The WIFI Module and main PBAs are not sensed because of communication error. - Check The connector connections between The WIFI Module and main PBAs carefully. → Check for incorrect or loose connections, etc. - Remove the WIFI Module and Check for any faulty soldering.	
	AE5	- The signals between The LCD Module and main PBAs are not sensed because of communication error. - Check The connector connections between The LCD Module and main PBAs carefully. → Check for incorrect or loose connections, etc. - Remove The LCD Module and Check for any faulty soldering.	
Switch Error (Main Relay Error)	E2	- The Power button is pressed continually. (for more than 12 seconds). - A switch is jammed or stuck due to be pressed unevenly due to deformation of the control panel or button. - This error may occur when the screws that hold the sub PBA in place are tightened too much. - A button other than the Power button is continually pressed. (for more than 30 seconds). - Deformation of an internal plastic injection part. - A screw for assembling the sub PBA is tightened too much.	
	Sr	- The main relay of the PBA is short-circuited. - The main relay terminal is connected incorrectly. (The terminal is bent and contact cannot be made.)	When the PBA motor relay does not operate

Error Type	For USA	Causes	Remarks
Door Error	dS (Before operation)	- A switch contact error because of a deformation of the door hook. - When the door is pulled by force.	When the door is not opened after the door open operation.
	dL (During operation)	- This occurs in the Boil wash because the door is pushed due to a pressure difference from internal temperature changes.	When the door is not locked after the door close operation.
	LO (Unlock Fail)	- The door lock switch terminal is connected incorrectly. - The door lock switch terminal is broken. - This occurs intermittently because of an electric wire leakage - Main PCB fault.	
	FL (Lock Fail)		
Heater Error	Hr (Heater Relay)	- The washing heater is short-circuited or has a wire disconnected. - The washing heater in the tub has an error. (Contact error, temperature sensor fault) - If the water level sensor operates without water because water is frozen or for any other reason and the temperature sensor engaged at the bottom to prevent overheating for the washing heater detects a temperature of 100 to 150 °C, the washing machine turns the input power off.	If the heater has no error, this occurs because of a PBA relay malfunction.
		- This error occurs when the red temperature sensor at the center of the dry heater operates. (at a temperature higher than 145 °C) : Corrective action – Press the button at the center lightly. The washing machine will operate normally. Alternatively, replace the temperature sensor if the temperature sensing is unstable because of functional degradation. - This occurs when the steam function does not operate normally. - This error does not occur in existing drum products. Check whether the product is a steam model.	
Water Leakage Error	LE	- Heater engagement fault. (out of place) - The air hose is out of place and water leakage occurs during the spin cycle. - The tub back at the safety bolts fixing part is broken. - Water leakage occurs at the front with foaming because of too much detergent. - Water leakage occurs because the connecting hose to the detergent drawer is connected incorrectly. - The drain pump filter cover is engaged incorrectly. - Water leakage occurs at the drain hose. - The duct condensing holding screws are worn. - The nozzle-diaphragm is engaged in the opposite direction or the rubber packaging is omitted. - Water leakage occurs because the screws that hold the tub back and front in place are fastened incorrectly. - The leakage sensor is faulty.	
Overflow Error	OE	- Water is supplied continually because the water level detection does not work. - Because the drain hose is clogged and there is an injection error (at a narrow section), the water level detection does not work and water is supplied continually. - Water is supplied continually because of freezing or because there is foreign material in the water supply valve. - This error may occur when the water level sensor is degraded.	This error occurs because the water level sensor terminal is out of place.

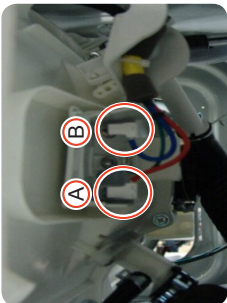
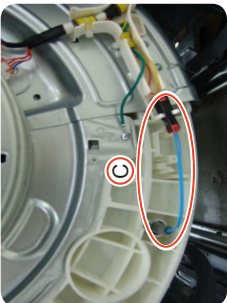
Error Type	For USA	Causes	Remarks
Temperature Sensor Error	tE	- The washing heater sensor in the tub has an error. (Contact error or temperature sensor fault) - The connector is connected incorrectly or is disconnected. - If the water level sensor operates without water because the water is frozen or for any other reason and the temperature sensor engaged at the bottom to prevent overheating for the washing heater detects a temperature of 100 to 150 °C, the washing machine turns the input power off.	Heater sensor fault : When the connector is connected incorrectly or has a wire disconnected or contact error
Unbalance Error	dc	- As laundry causes this error, check the laundry. - Find the reason for the unbalance and solve it as directed in the user manual.	
Foaming Detected	SUDS	- This occurs when too much foaming is detected. It is also displayed while foaming is removed. When the removal is finished, the normal cycle proceeds. - "Sud" or "SUDS" is displayed when too much foaming is detected and "End" is displayed when the removal of the foaming is finished. - (This is one of the normal operations. It is an error for preventing non-sensing faults.)	
Mems PBA Error Detected	8E1	- Error detected in the Mems PBA or data error detected. Check the wire connections. Replace if necessary. 1. Check the wire connections. 2. Replace the Mems PBA.	
	8E2		
	8E		
System Error	SF1	- Micro Controller Operation Fail.	Replace Assy PCB.
	SF2		
	SF3		

4-2. CORRECTIVE ACTIONS FOR EACH ERROR CODE

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

Error Type	Error Mode	Causes	Corrective Actions	Description of Photo
Water Level Sensor	LE1	- Water level sensor fault - Incorrect connections of the water level sensor terminal - The hose part for the water level sensor is folded. - Main PCB fault	- Check the water level sensor terminal connections and contacts. - An error occurs if an incorrect water level sensor is used. Make sure to check the material code. (Abnormal operation) - If the water level sensor is faulty, replace it. - If the error persists despite taking the action above, replace the PBA.	Check the water level sensor frequency. - Check it after the water level sensor and the connector are connected. - Checking Part : White Color Wire Orange Color Wire. - Frequency : Approx. 25.5 KHz with no load 
Washing Motor Error and Hall Sensor Error	3E E3 bE	- Washing motor fault - Washing motor hall sensor fault - Incorrect connections of the washing motor/hall sensor connector - Washing motor rotor and stator fault - Main PCB fault	- Check the motor connector terminal connections and contacts. 3E is displayed because overloading occurs due to too much laundry. - If the hall sensor terminal is faulty, replace the hall sensor. - Check whether the stator of the motor cover is damaged. - Check for coil disconnections due to foreign material. - If the PBA control circuit is faulty, replace the PBA.	► Check the motor Winding Coil Plug out the connector and read resistances at any two of the three terminals on Motor : Should be 6.0 Ω (at 25°C)  ► Check the motor Hall Sensor Check the resistance on the main PCB motor (Between pins 1 and 3, and 1 and 4 of the four (4) pins) - Resistance : Approx. 2 to 4 MΩ - Check the voltage when the power is on. 

Error Type	Error Mode	Causes	Corrective Actions	Description of Photo
Water Supply Error	nF	- Water supply valve fault - Main PCB fault - Freezing in the winter season	- If the water supply valve has a wire disconnected, replace it. - Check whether the water supply valve is clogged with foreign material and whether water is supplied continually. - Check whether no water is supplied because of freezing in the winter season. - If the PBA relay operates abnormally, replace the PBA.	  1. Check the resistance for the water supply valve. - Resistance: 113.5Ω ~ 16.5Ω between the terminals of the water supply valve. 2. Check whether there is foreign material in the water supply valve filter. 3. If the water supply valve filter is clogged, clean filter.
Drain Error	nd	- Freezing in the winter season - Foreign materials in the drain pump - Poor physical connection - Drain pump fault - Main PCB fault	- If the drain pump revolutions are restrained due to freezing in the winter season, check the method to remove the freezing and remove as directed. - Check whether the revolutions of the drain pump motor are restrained by foreign material, and remove as directed. - Check the wire connectors on Main PCB and Drain Pump ASSY. The connector or wire may have poor physical connection. - Check the drain pump resistance.	 Check the drain pump resistance. - Drain : Resistance : 13.5Ω ~ 16.5Ω - Bubble : Resistance : 18.75Ω ~ 22.75Ω
Communication Error	AE	- The signals between the sub and main PBAs are not sensed. - Incorrect wire connections between the sub and main PBAs.	- Check the wire connections and terminal contacts between the sub and main PBAs. - Check for disconnected wires. - Check whether the sub PBA is short-circuited because of moisture. - If the main PBA's communication circuit is faulty, replace it.	-

Error Type	Error Mode	Causes	Corrective Actions	Description of Photo
Door Error	dS	- Door switch fault - Main PCB fault	- If a dS error occurs, check whether it occurs during the Boil cycle. - If it is detected that the door is open, close the door. - The 120V is directly connected to the door. Check and repair the power wire connections and insulation state. - Check the door switch. Replace if faulty. - Check the main PBA door sensing circuit. Replace if faulty.	 ▶ TYPE 1 Check the door switch Resistance. The resistance of 1 and 3 Pin Must be approximately 125Ω.
	dL			
	LO			
Heater Error	Hr	- Disconnection wire - Heater fault - Wash-thermistor fault	- Check for connection between wire and heater. - If wash heater is faulty, replace it. - Refer the TYPE 1 - If it is not problem in heater, replace wash-thermistor - Refer the TYPE 2	 [FRONT] ▶ TYPE 1 Check the resistance between A and B. It should be 16.05±0.65Ω.
				 [BACK] ▶ TYPE 2 If TYPE 1 is OK, Change a wash-thermistor at back of Tub.

Error Type	Error Mode	Causes	Corrective Actions	Description of Photo
Water Leakage Error	LE	• Check for any leakage. • Foreign material in the DV case • Fault of a hose or incorrect part engagement in the product	• Check for any leakage on the base, Hose, Valve and Tub connections and take any required action. • During natural draining, this error occurs because the drain bellows are clogged with foreign material. Remove the foreign material. • Check the drain motor operation. Replace if it does not operate normally.	 ▲ DRAIN PUMP TYPE (Automatic Drainage) Check whether there is any foreign material in the bellows. ☑ Check for any foreign material, such as underwear wires or coins.
				 ▲ PUMP TYPE Check for any leakage on the base, Hose, Valve and Tub connections.
Overflow Error	OE	• Water level sensor fault • Freezing in the winter season	• If the water level sensor has a functional error, replace it. • Check the hose. This error occurs if it is torn or has a hole. • This error occurs if water is frozen in the winter season. Use hair dryer to defrost hose. Consider relocating the unit to warmer location.	 Check the hose connected to the water level sensor. ☑ Check whether the hose is folded, cut, or damaged.

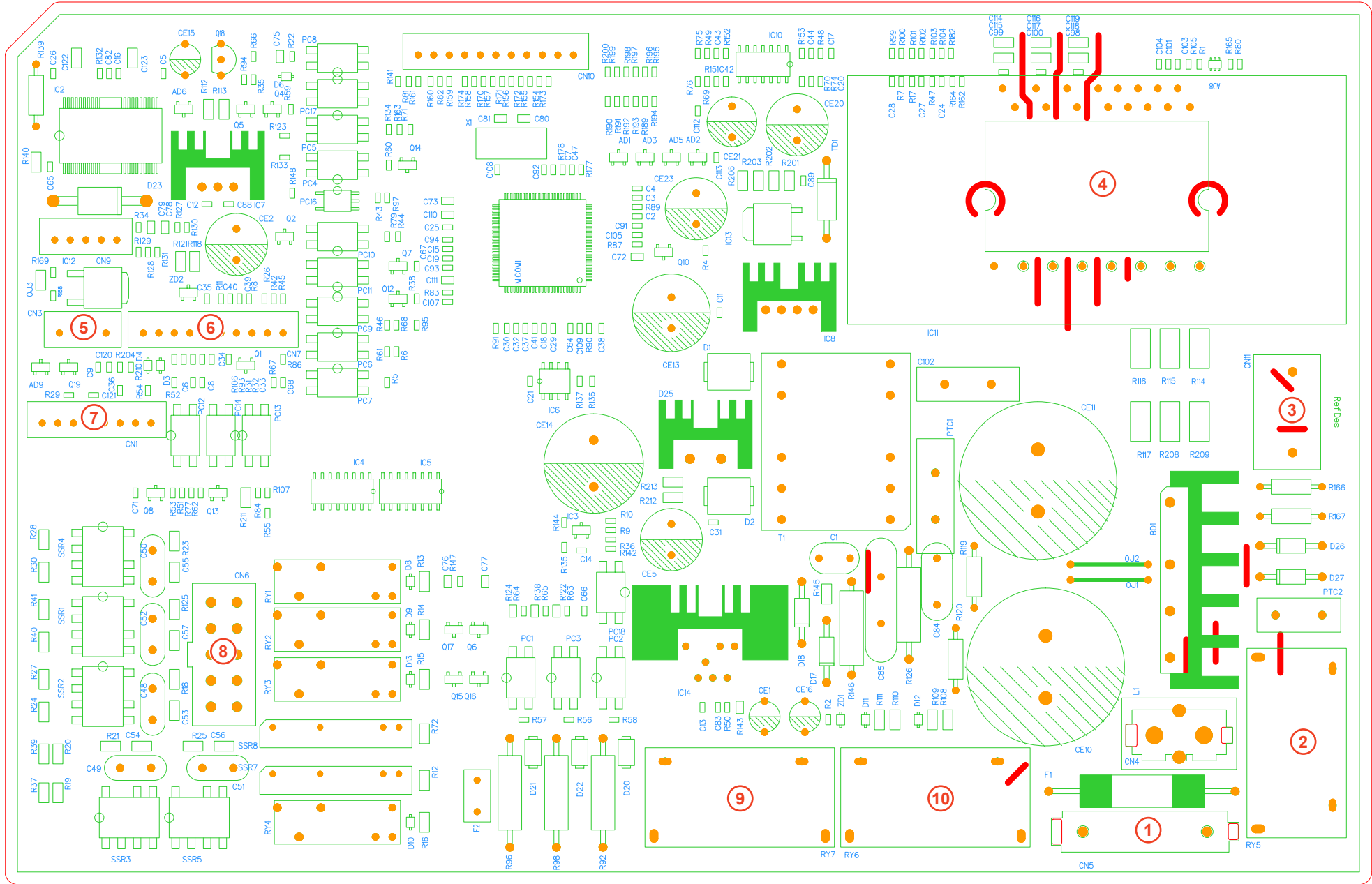
Error Type	Error Mode	Causes	Corrective Actions	Description of Photo
Temperature Sensor Error	tE	- Washing temperature sensor fault - Dry temperature sensor fault - Faulty and incorrect connections of the dry condensing sensor - Main PCB fault - Freezing in the winter season	- Check the connections for the washing heater temperature sensor connector. - If the washing heater temperature sensor has a functional error, replace it. - A tE error occurs. - Check the connections for the dry heater temperature sensor connector. - If the dry heater temperature sensor has a functional error, replace it. - Check the connections for the duct condensing temperature sensor connector. - If the duct condensing temperature sensor has a functional error, replace it.	-
Unbalance Error	dc	- Motor hall sensor fault - Caused by the laundry contents	- Check the type of laundry. Check whether they may cause an unbalanced situation. - Educate the consumer in this case is to press pause reposition the load or remove a few items. Press start to continue and complete the wash cycle.	-

30 _ Troubleshooting

5. PCB DIAGRAM

5-1. WF455ARG***- MAIN PCB

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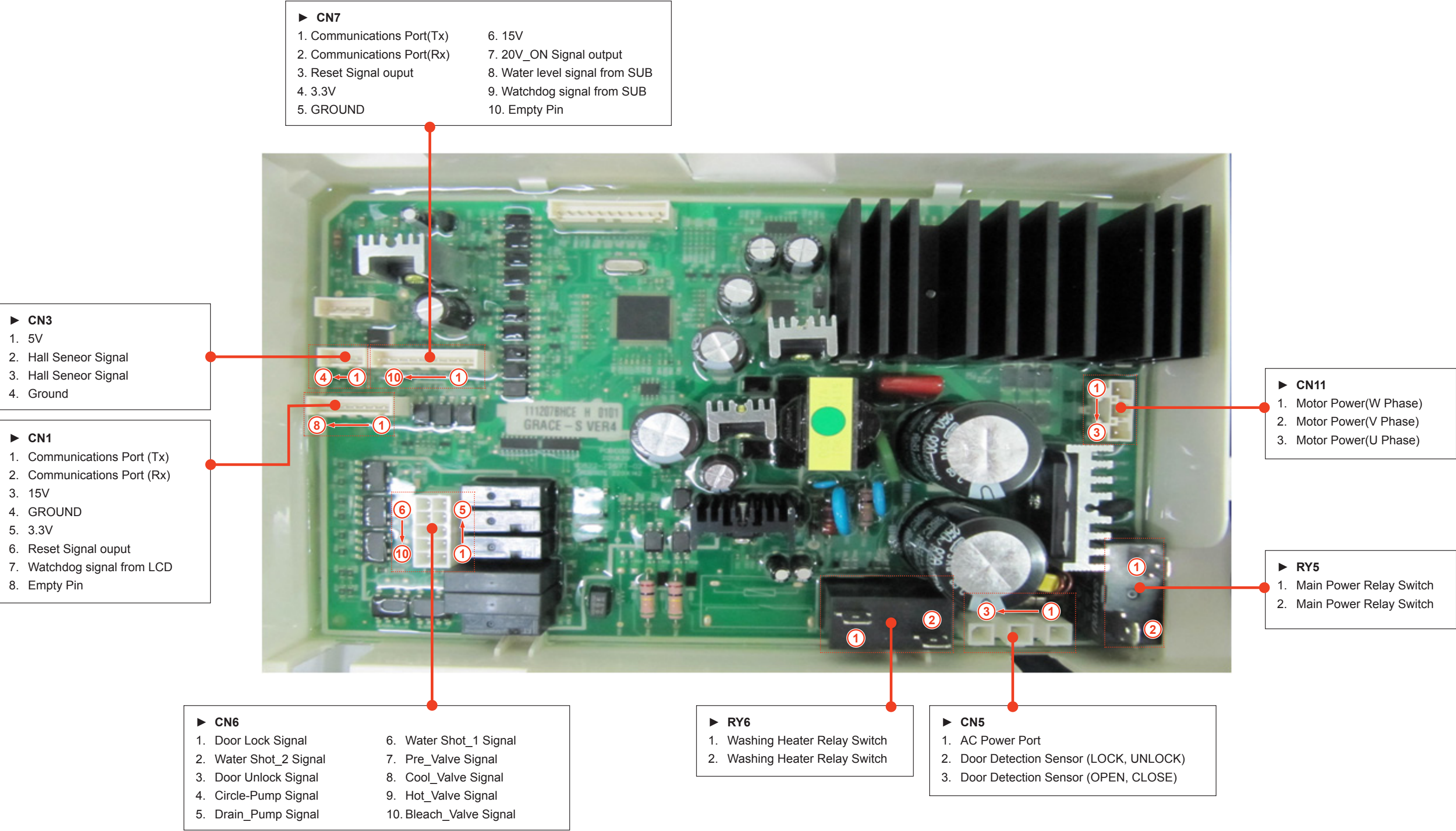


Location	Part No.	Function	Description
1	CN5	PBA Power Supply	Supply 120V of AC power.
2	RY5	Main Relay	Be Supplied PBA power when the Power button is pressed.
3	CN11	Motor Power Supply Port	Supply the 3-phase drive voltage for the Washing Motor.
4	IC11	Washing Motor Drive IC	Switches and supplies the voltages for the motor.
5	CN3	Hall Sensor Connection Port	Detect whether the Washing Motor is working normally.

Location	Part No.	Function	Description
6	CN7	SUB PBA Connection Port	Supply power to the Sub PBA and provides a communications function.
7	CN1	LCD PBA Connection Port	Supply power to the Lcd PBA and provides a communications function.
8	CN6	Each Load Connection Port	The port to supply power for each electric device.
9	RY7	Dry Heater Relay	The switch for the Dry Heater power.
10	RY6	Wash Heater Relay	The switch for the Wash Heater power.

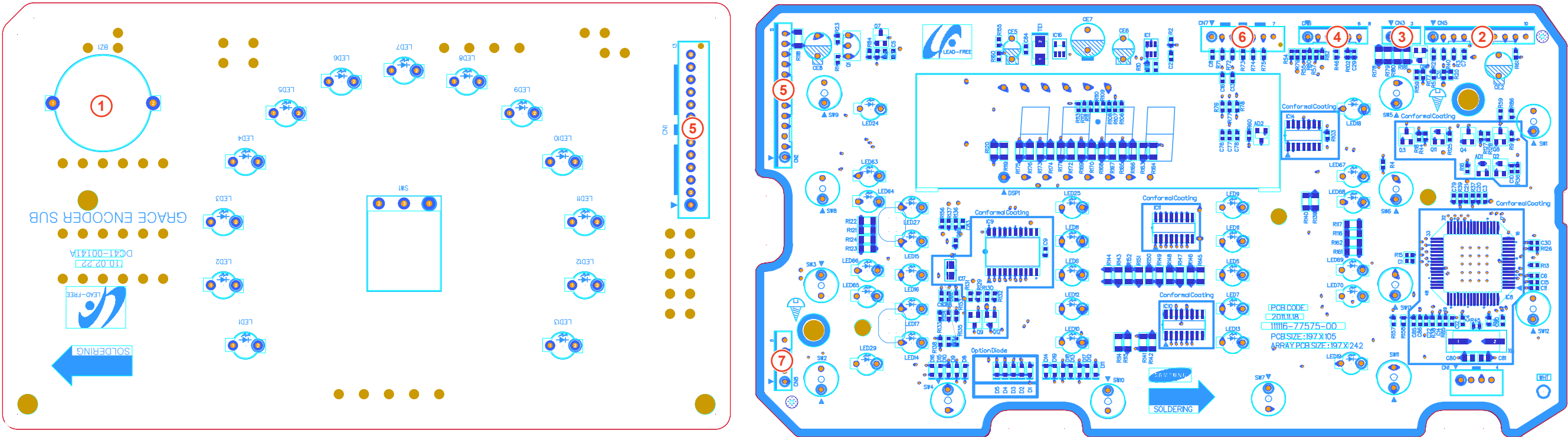
5-2. WF455ARG*** - CONNECTOR AND RELAY PORT PART DETAILED MANUAL (MAIN PCB)

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5-3. WF455ARG*** - SUB PCB

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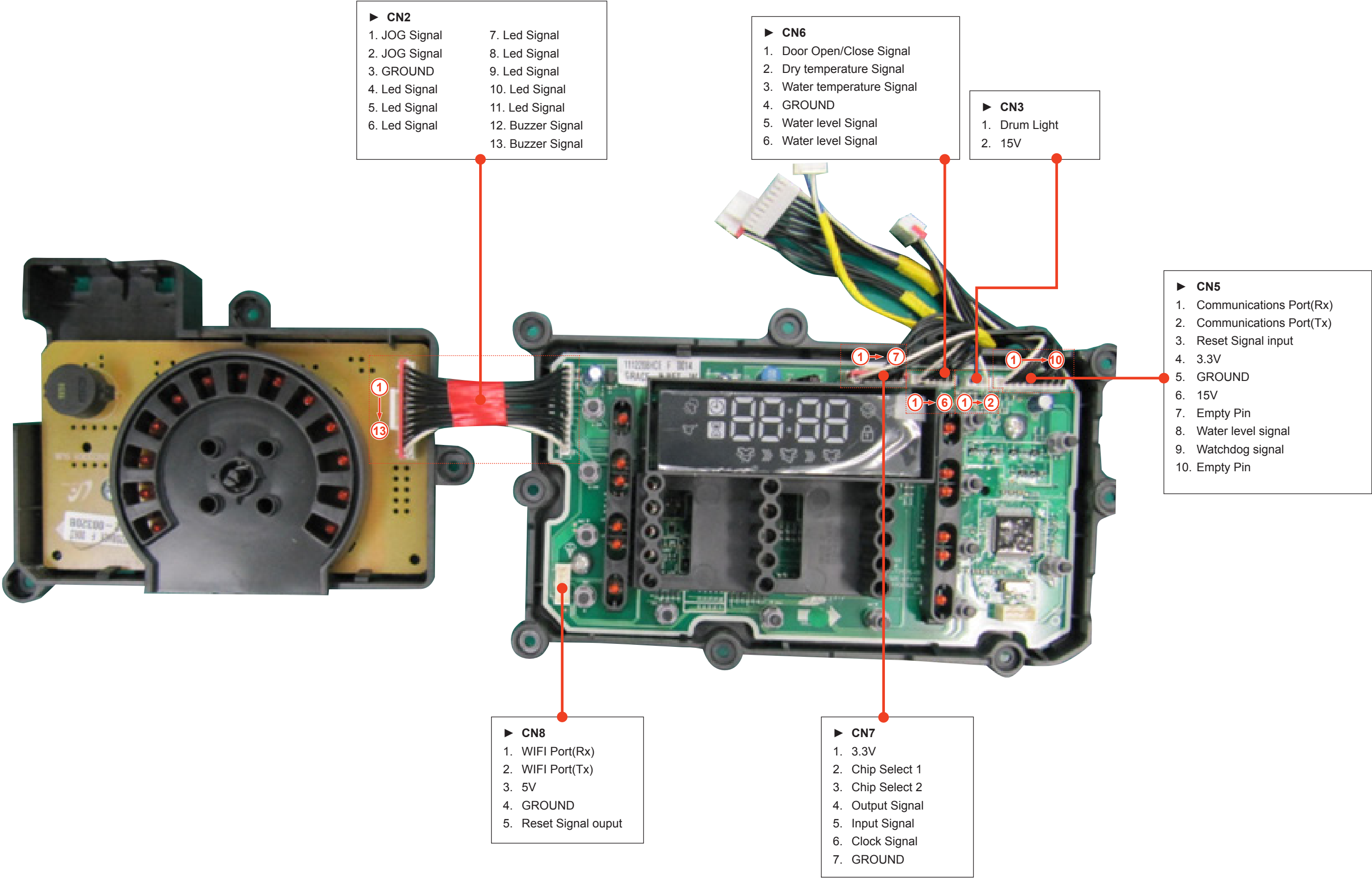


ww

Location	Part No.	Function	Description
1	BZ1	Buzzer Circuit	Be generated sound when the menu key is pressed or the encoder is operated, the menu is closed.
2	CN5	GRAPHIC PBA Connection Port	For communications with graphic PBA.
3	CN3	Drum Light	Turn on when door is opened.
4	CN6	Sensor input	Sensing the water level and water temperature.
5	CN2	GRAPHIC PBA Connection Port	For communications with graphic PBA.
6	CN7	MEMS PBA Connection Port	Supply power to the MEMS PBA and provides a communications function.
7	CN8	WiFi Connection Port	Supply power to the WIFI PBA and provides a communications function.

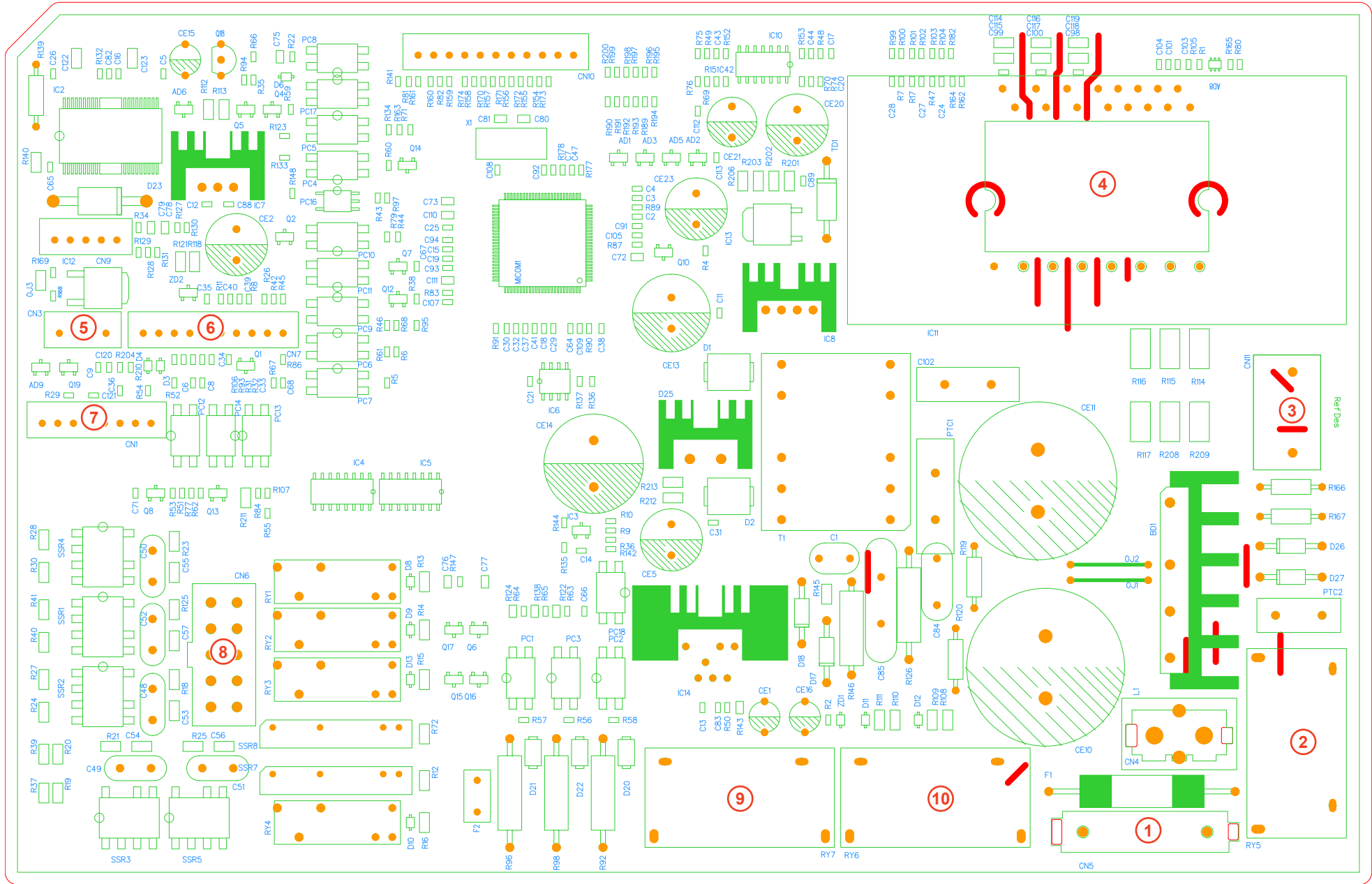
5-4. WF455ARG*** - CONNECTOR PORT PART DETAILED MANUAL (SUB PCB)

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5-5. WF457ARG*** - MAIN PCB

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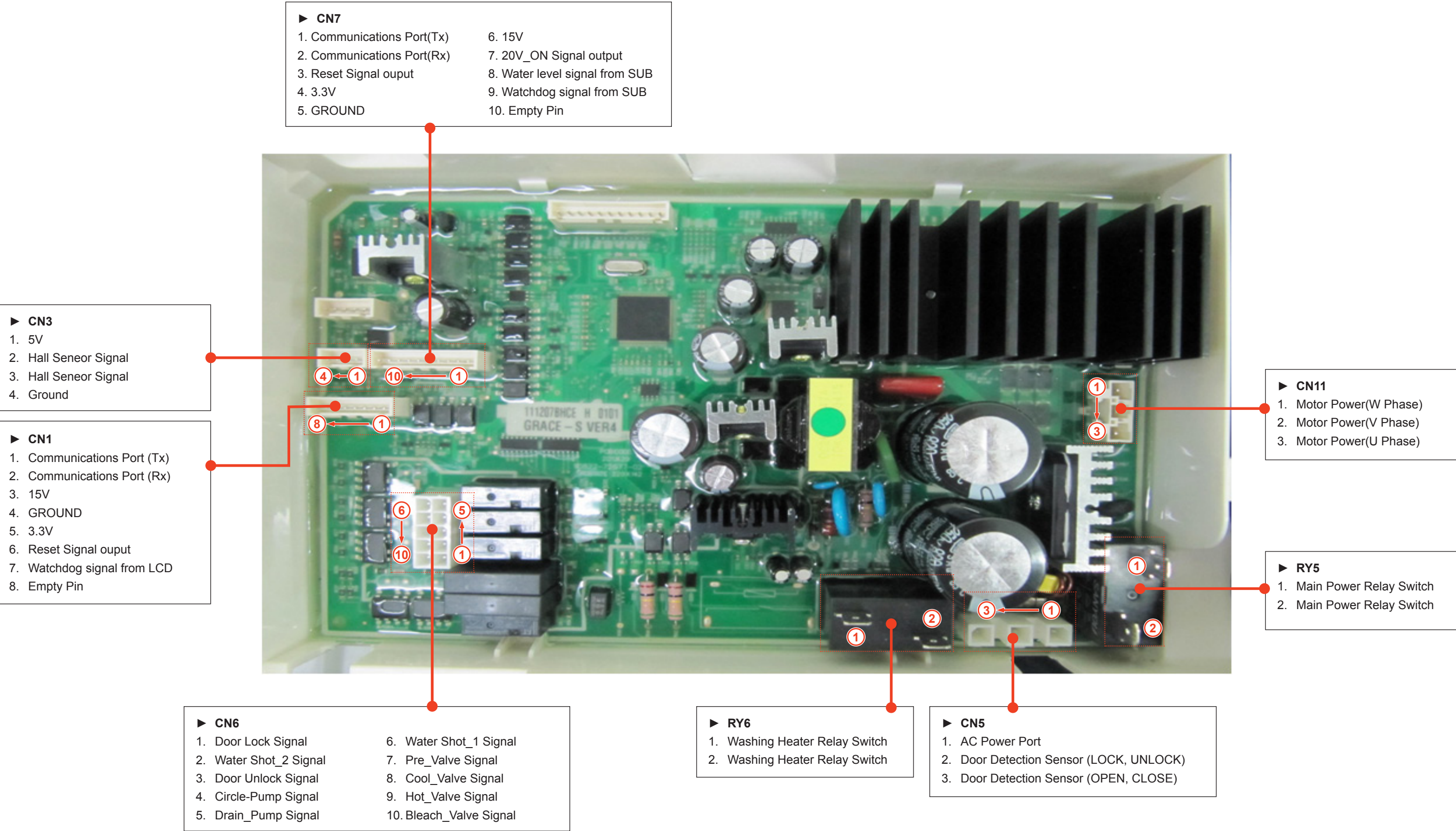


Location	Part No.	Function	Description
1	CN5	PBA Power Supply	Supply 120V of AC power.
2	RY5	Main Relay	Be Supplied PBA power when the Power button is pressed.
3	CN11	Motor Power Supply Port	Supply the 3-phase drive voltage for the Washing Motor.
4	IC11	Washing Motor Drive IC	Switches and supplies the voltages for the motor.
5	CN3	Hall Sensor Connection Port	Detect whether the Washing Motor is working normally.

Location	Part No.	Function	Description
6	CN7	SUB PBA Connection Port	Supply power to the Sub PBA and provides a communications function.
7	CN1	LCD PBA Connection Port	Supply power to the Lcd PBA and provides a communications function.
8	CN6	Each Load Connection Port	The port to supply power for each electric device.
9	RY7	Dry Heater Relay	The switch for the Dry Heater power.
10	RY6	Wash Heater Relay	The switch for the Wash Heater power.

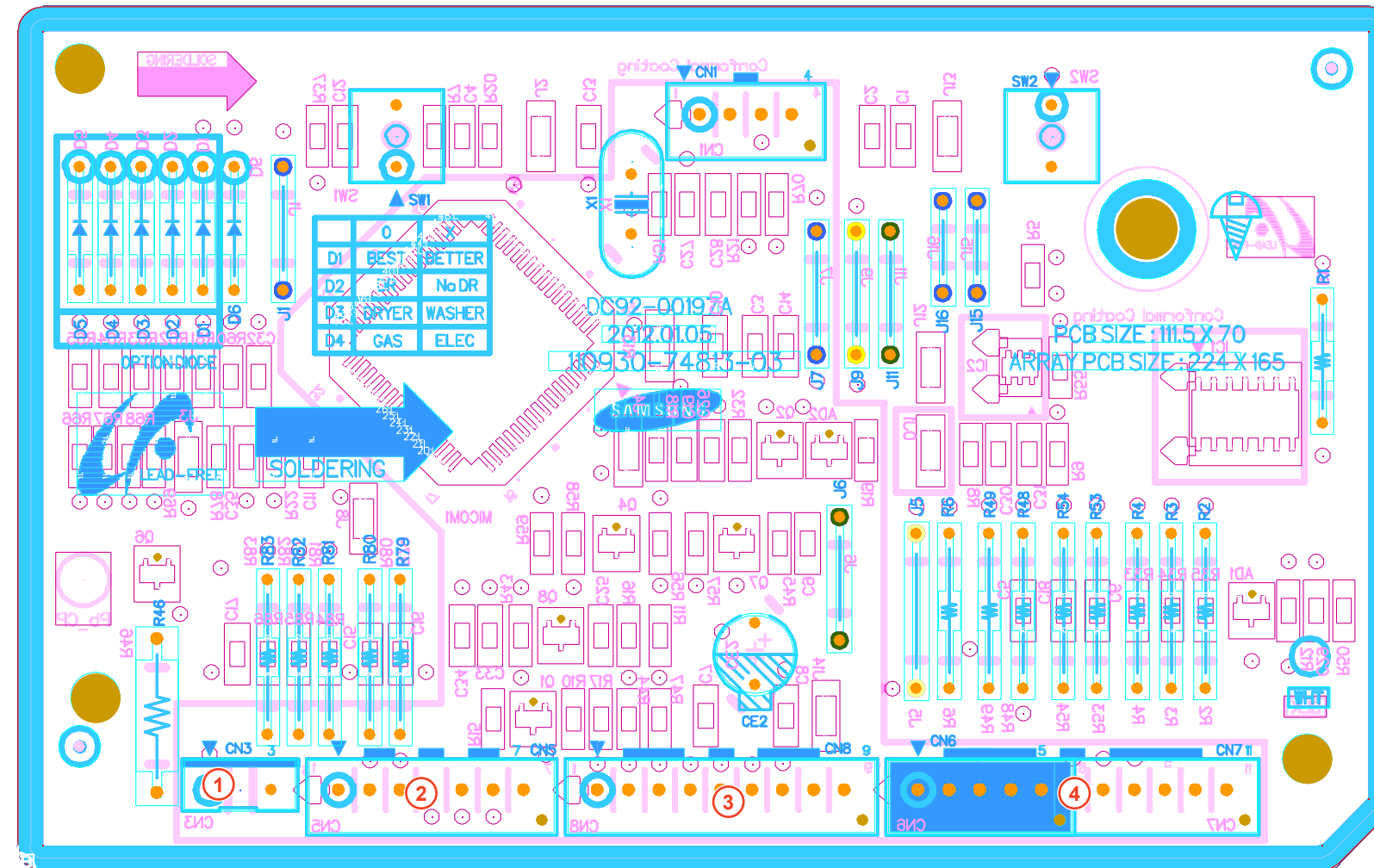
5-6. WF457ARG*** - CONNECTOR AND RELAY PORT PART DETAILED MANUAL (MAIN PCB)

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5-7. WF457ARG*** - SUB PCB

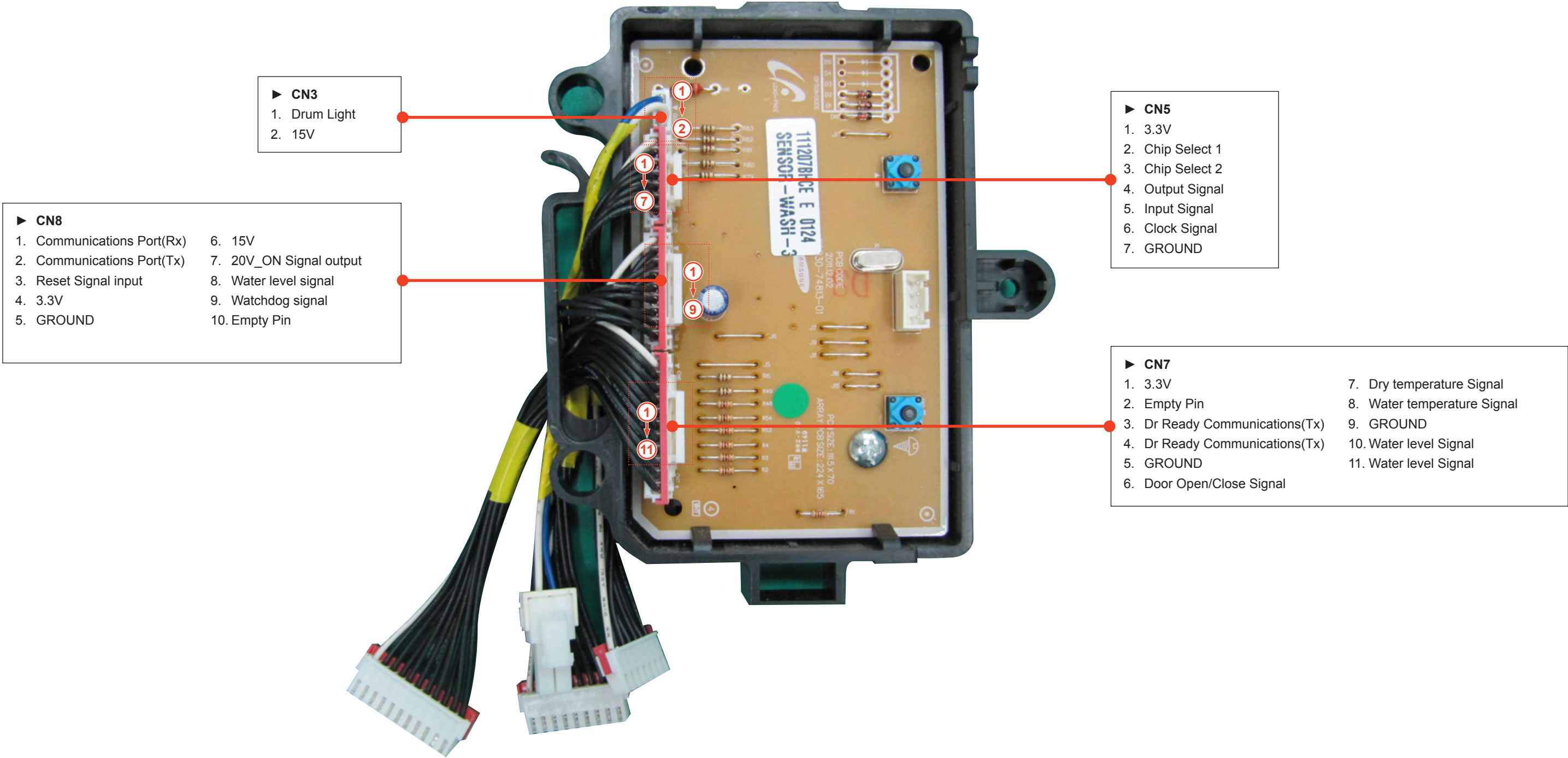
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Location	Part No.	Function	Description
1	CN3	Drum Light	Turn on when door is opened.
2	CN5	MEMS PBA Connection Port	Supply power to the MEMS PBA and provides a communications function.
3	CN8	MAIN PBA Connection Port	For communications with main PBA.
4	CN7	DR Ready and Sensor input	For communications with Dr Ready. Sensing the water level and water temperature.

5-8. WF457ARG*** - CONNECTOR AND RELAY PORT DETAILED MANUAL (SUB PBA)

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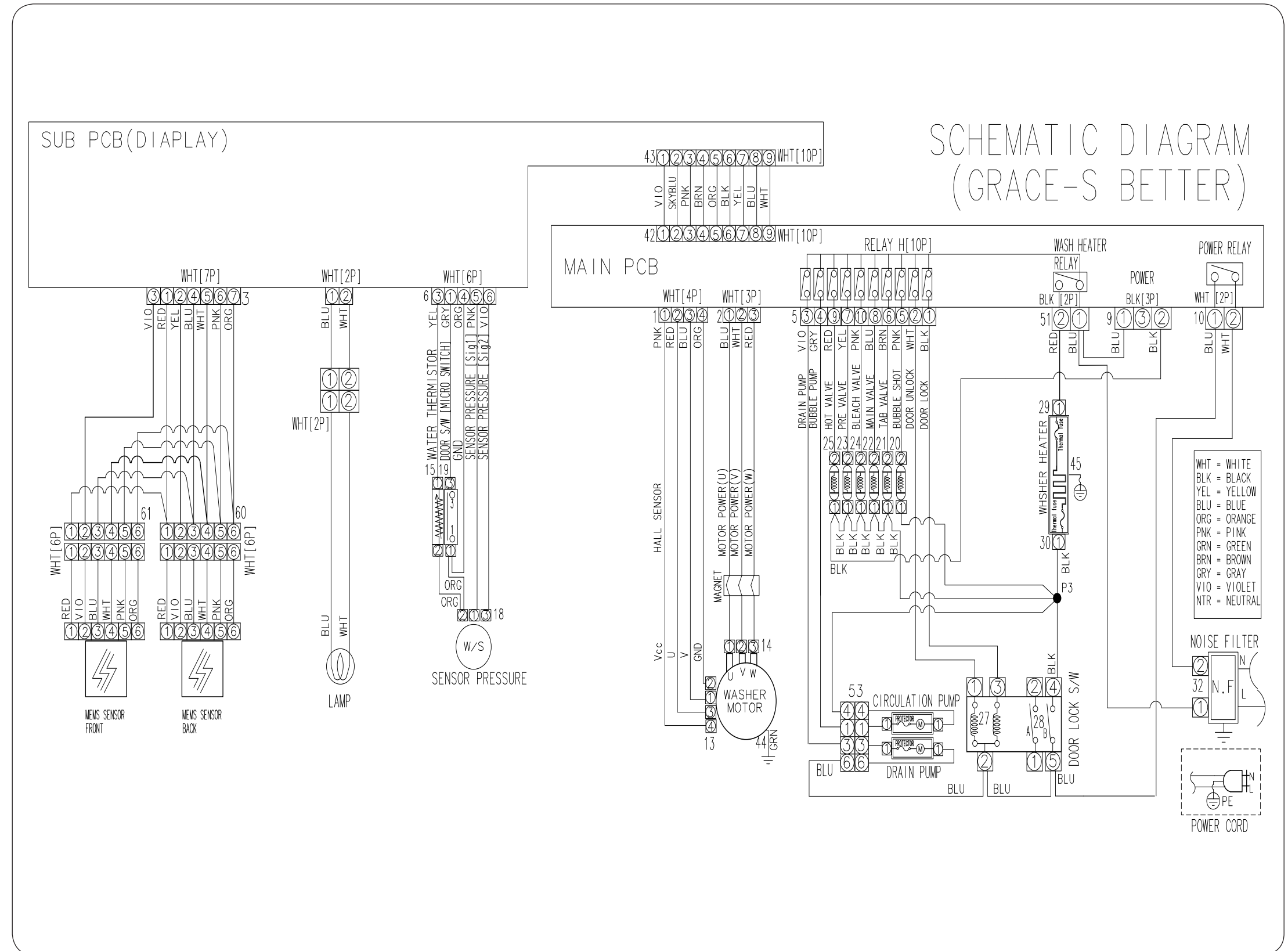
6. WIRING DIAGRAM

6-1. WIRING DIAGRAM(WF455ARG***)

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■ REFERENCE INFORMATION

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

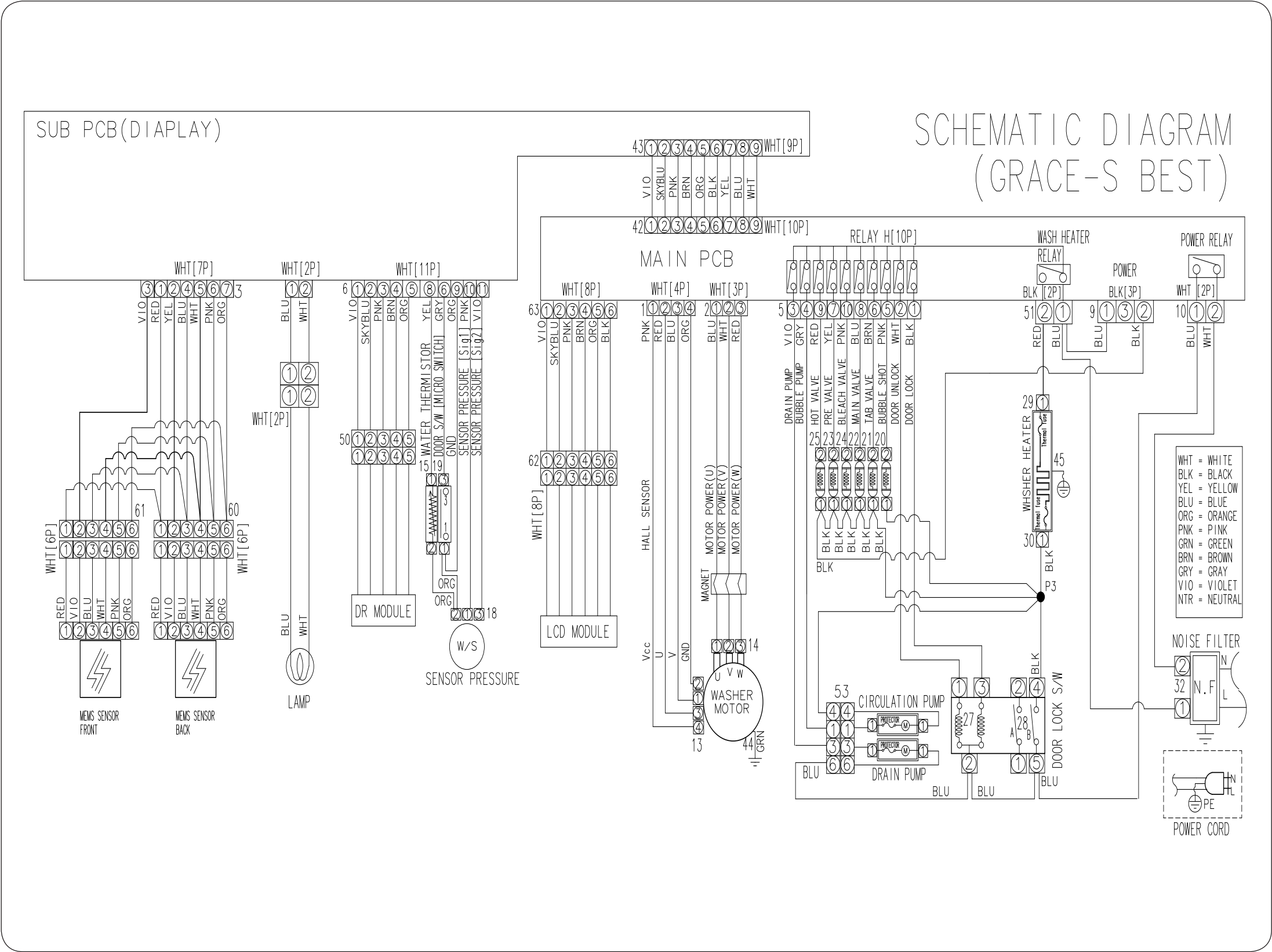


6-2. WIRING DIAGRAM(WF457ARG***)

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■ REFERENCE INFORMATION

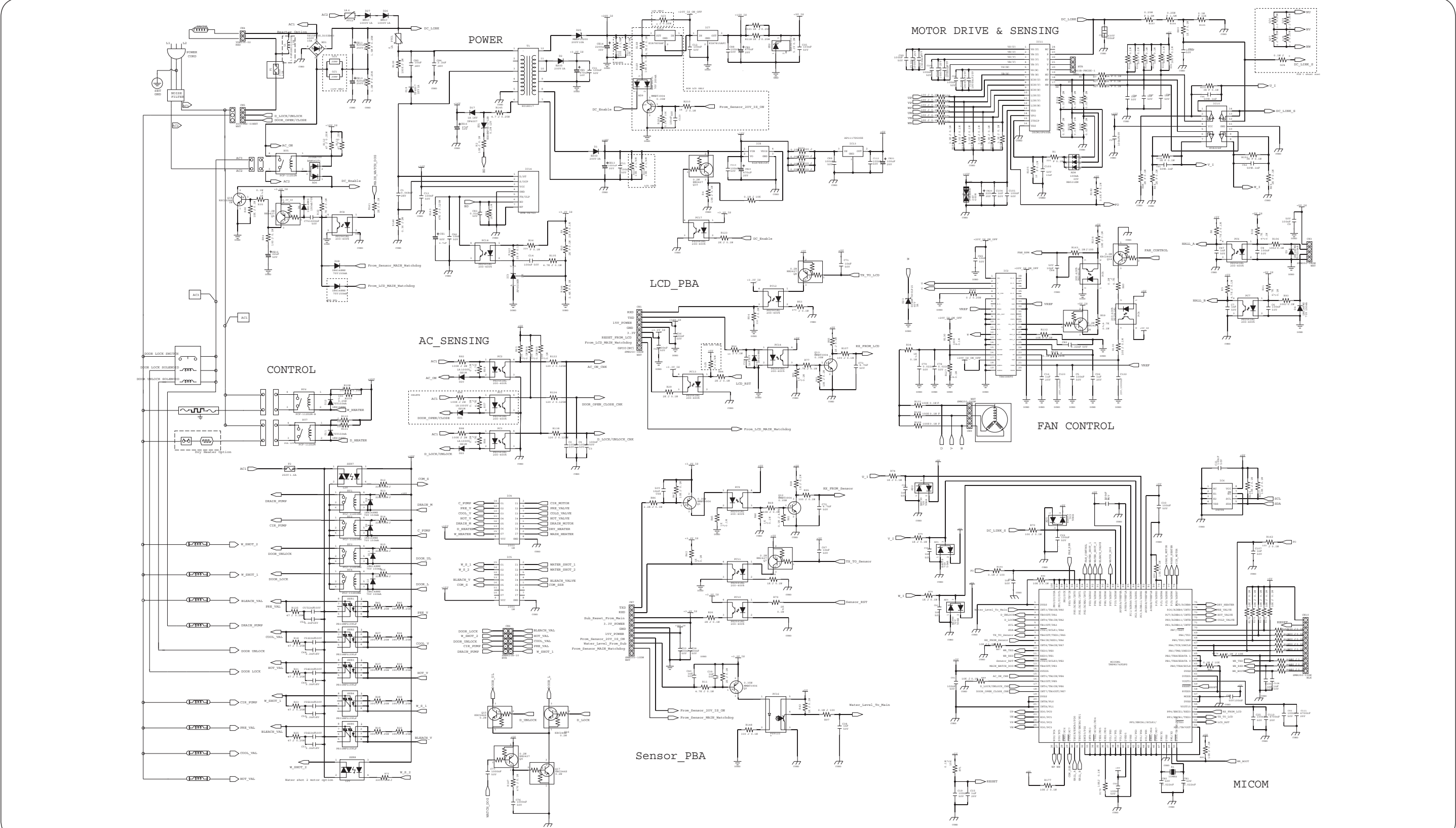
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BLU	BLUE
GRN	GREEN
GRY	GRAY
NTR	NATURAL
ORG	ORANGE
PNK	PINK
RED	RED
SKYBLU	SKYBLUE
VIO	VIOLET
WHT	WHITE
YEL	YELLOW



7. SCHEMATIC DIAGRAM

7-1. GRACE-S MAIN CONTROL

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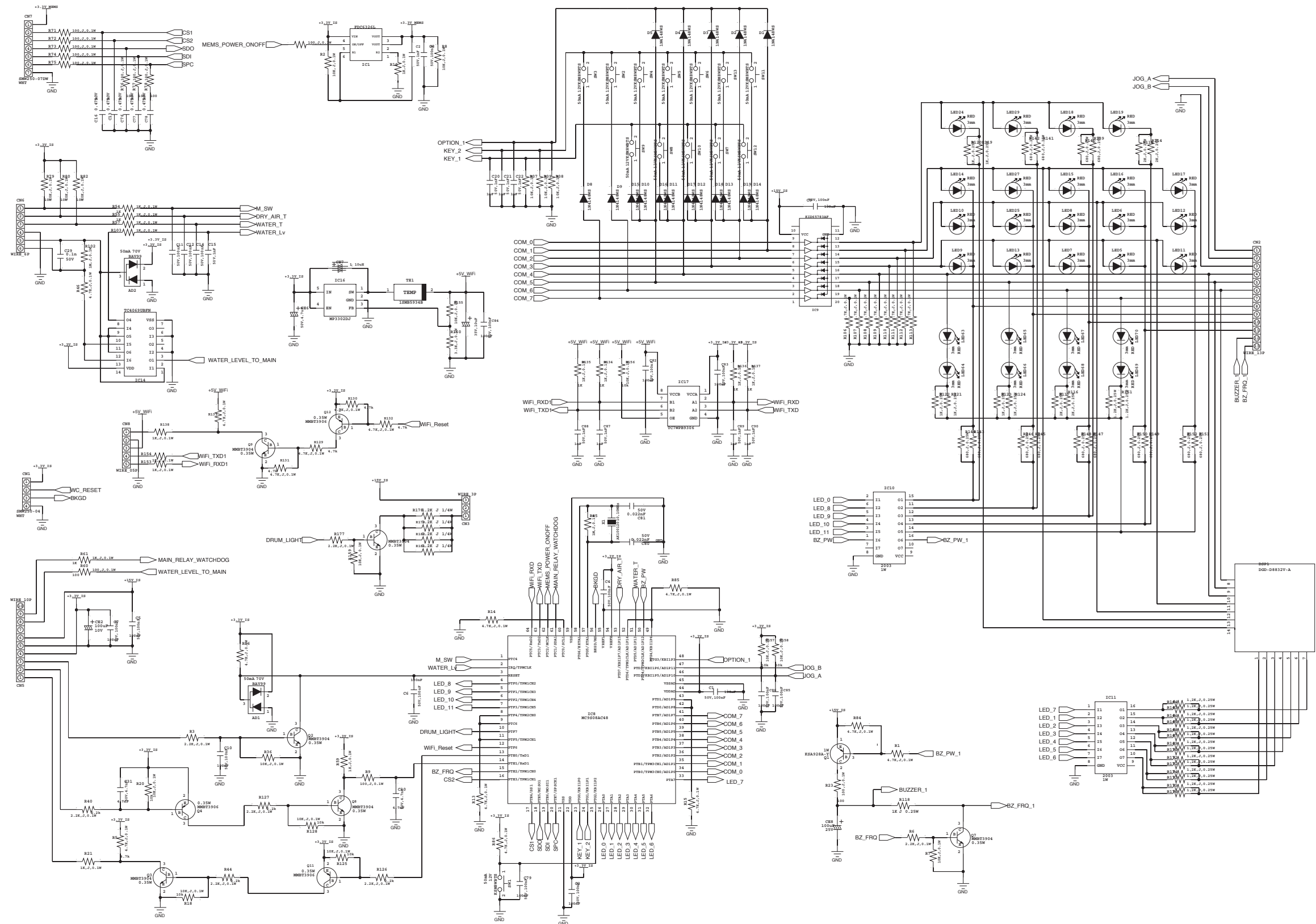


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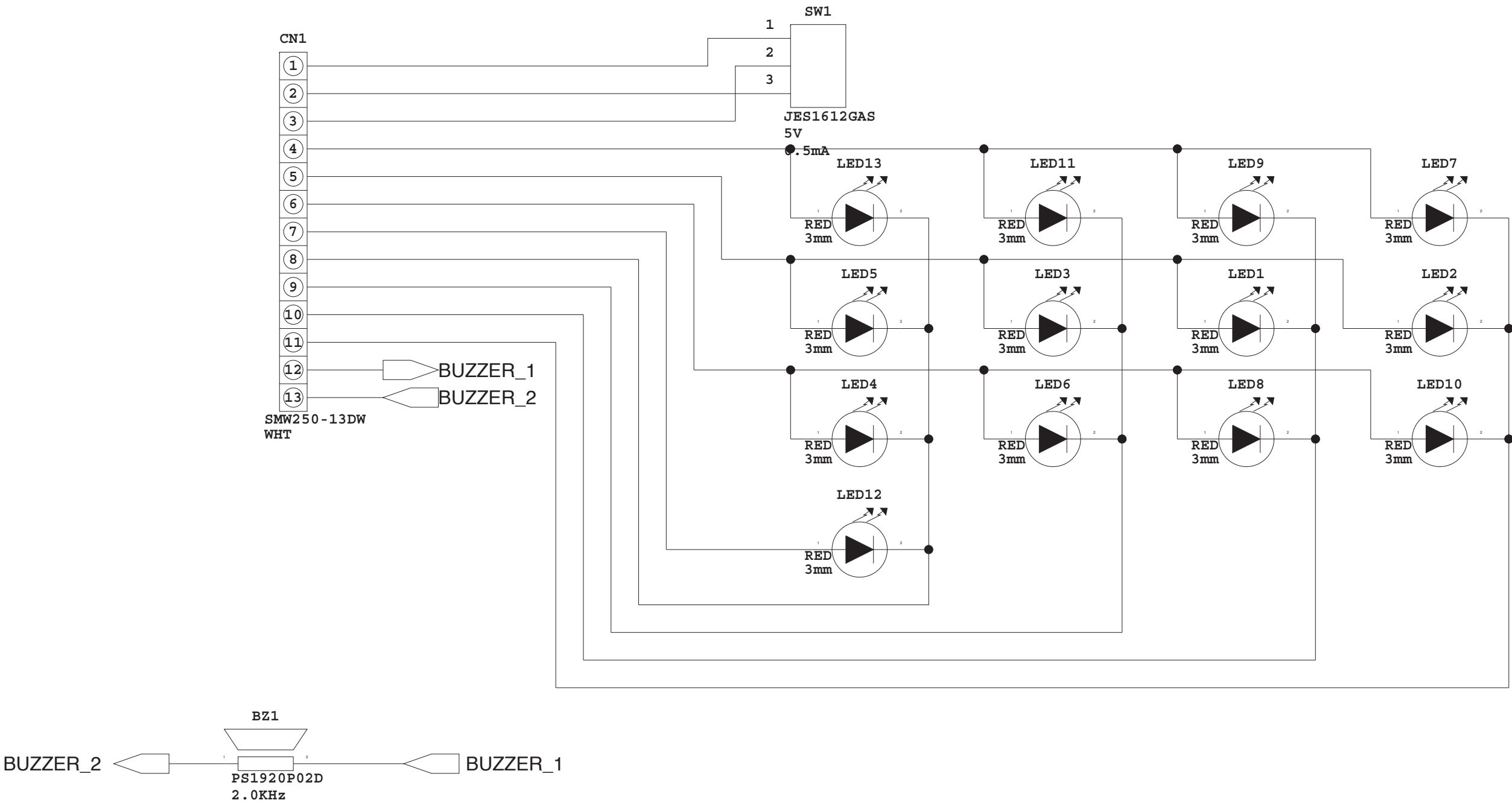
7-3. GRACE-S BETTET SUB CONTROL

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7-4. GRACE-S BETTER ENCODER SUB CONTROL

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GSPN (GLOBAL SERVICE PARTNER NETWORK)

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Asia	gspn2.samsungcsportal.com
North & Latin America	gspn3.samsungcsportal.com
China	china.samsungportal.com

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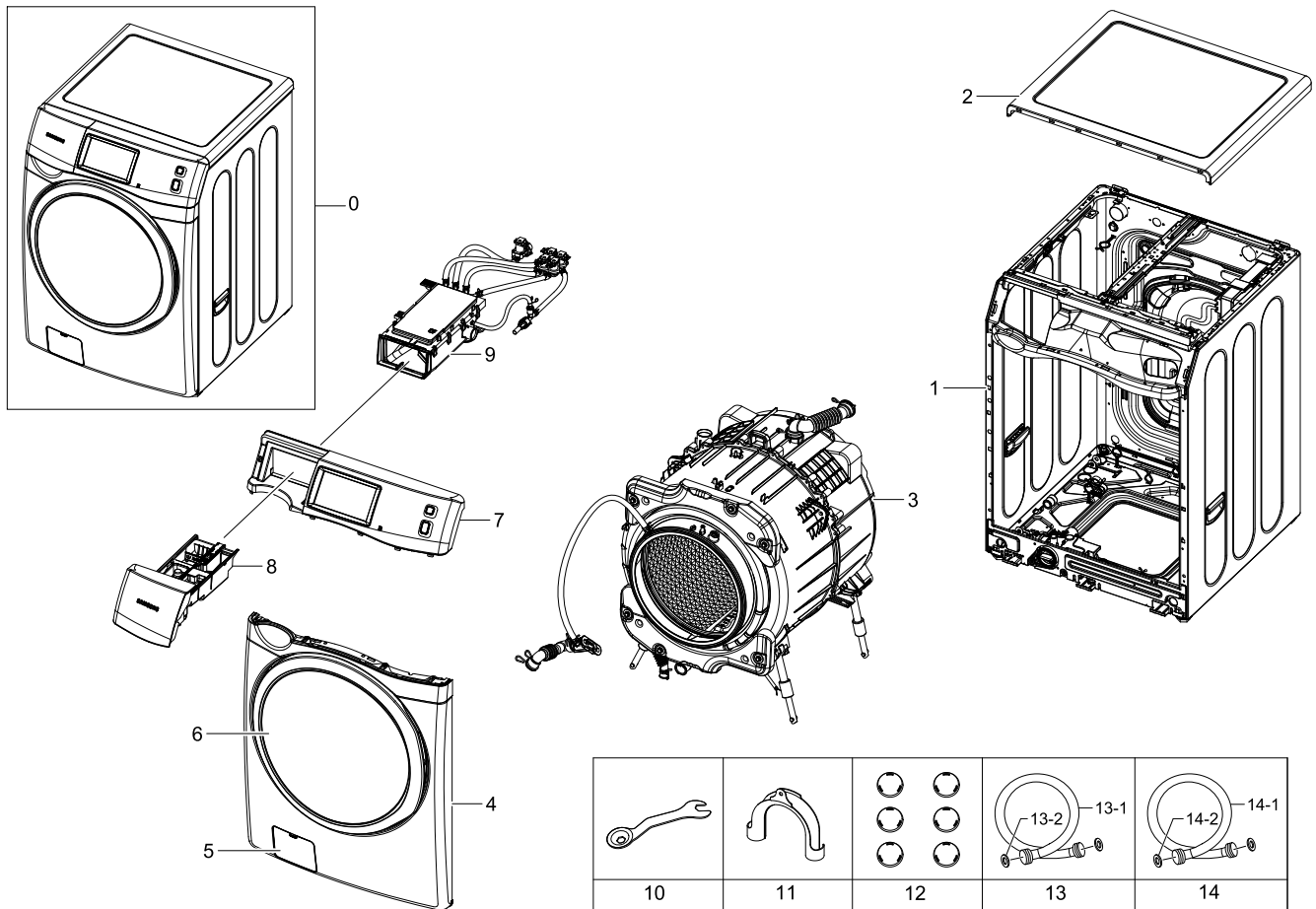
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Code No.: DD68-02873A

1. Main

Exploded View



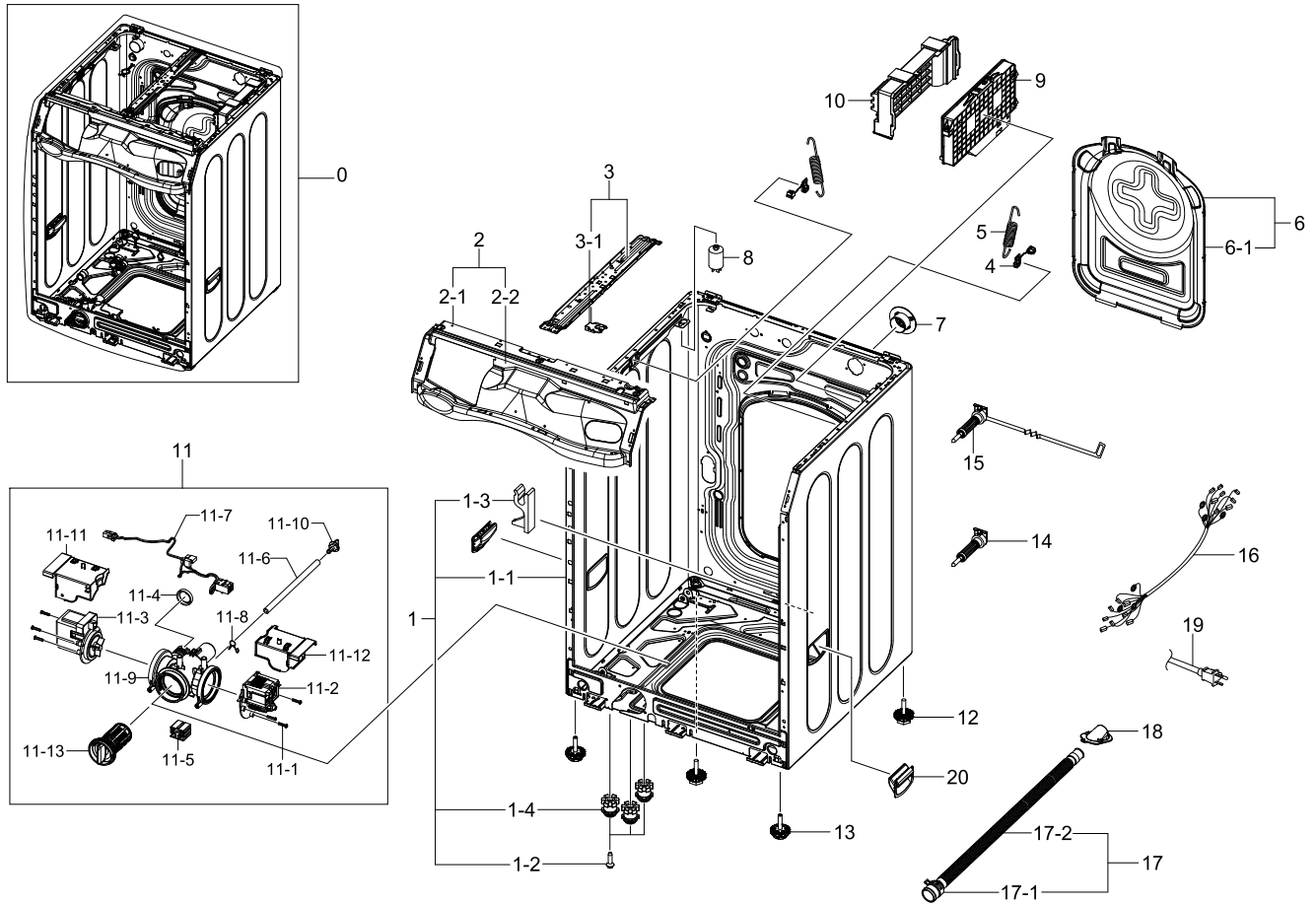
Parts List

No.	Parent	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
1	DC90-09674A	2	WF0004	DC97-16016K	ASSY FRAME; Grace-S Best,WF457ARGSWG,PCM,	SNA	1
2	DC90-09673A	2	WF0003	DC97-16941P	ASSY COVER TOP; GRACE S,WF457ARGSWR,EGI,T	SNA	1
3	WF457ARGSWR/AA1	1	WG0013	DC90-09428A	ASSY TUB & DRUM; GRACE-S,WF457ARGSGR	SNA	1
4	DC90-09673A	2	WF0005	DC97-16397E	ASSY FRAME FRONT; GRACE-S,WF457ARGSWR/AA,	SA	1
5	DC90-09673A	2	WI0012	DC97-16401A	ASSY COVER FILTER; GRACE,WF520ABW/XAA,T2.	SA	1
6	DC90-09673A	2	WD0003	DC97-16145A	ASSY DOOR; GRACE,WF520ABP/XAA,ABS,OD590,C	SA	1
7	DC90-09673A	2	WC0016	DC97-17012B	ASSY PANEL CONTROL; GRACE-S,WF457ARGSWR,W	SNA	1
8	DC90-09673A	2	WR0005	DC97-17055B	ASSY DRAWER; GRACE-S,WF457ARGSWR,WHITE	SA	1

No.	Parent	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
9	DC90-09427A	2	WR0008	DC97-16142D	ASSY HOUSING DRAWER; GRACE-S,WF457ARGSGR	SNA	1
10	DC99-00646H	3	WJ5077	DC60-40146A	BOLT-SPANER; -,CR,-,T2.5,OD36,-,-,-,-	SA	1
11	DC99-00646H	3	WH5379	DC62-10278A	HOSE-HANGER; PUMP MODEL,PP,BLK,RM60 RESIN	SA	1
12	DC99-00646H	3	WA5001	DC67-00307A	CAP-FIXER; WF438AAC/XAA,PP,T1.5,BLK,RM60	SC	6
13	DC99-00646H	3	WH5002	DC97-15691A	ASSY HOSE WATER; ACE,WF419AAW,HOT,L1240,O	SC	1
13-1	DC97-15691A	4	WH5340	DC62-00075A	HOSE-WATER(H); NBR+NYLON,ID10.2,OD16.5,L1	SNA	1
13-2	DC97-15692A	4	WT0033	DC62-40178A	SEAL-WATER; EPDM,BLK,ID12XOD25XT3	SA	2
14	DC99-00646H	3	WH5001	DC97-15692A	ASSY HOSE WATER; ACE,WF419AAW,COLD,L1240,	SC	1
14-1	DC97-15692A	4	WH5339	DC62-00075B	HOSE-WATER(C); NBR+NYLON,ID10.2,OD16.5,L1	SNA	1
14-2	DC97-15692A	4	WT0033	DC62-40178A	SEAL-WATER; EPDM,BLK,ID12XOD25XT3	SA	2

1.1. Assy Frame & Cover Parts

Exploded View



Parts List

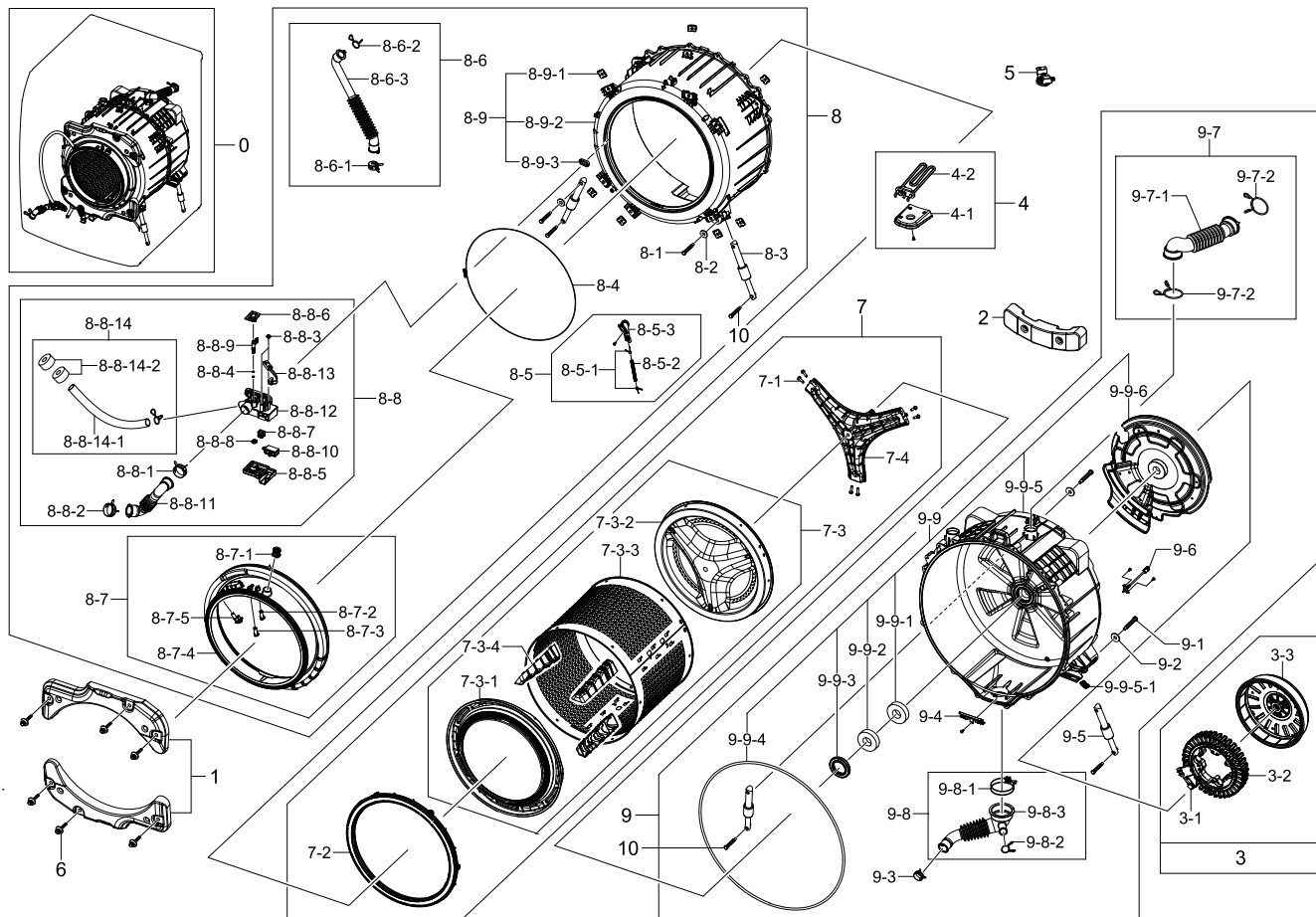
No.	Parent	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
1	DC90-09674A	2	WF0004	DC97-16016K	ASSY FRAME; Grace-S Best,WF457ARGSWG,PCM,	SNA	1
1-1	DC97-16016K	3	WF0067	DC61-02602H	FRAME; WF457ARGSWR,GI-SGCC,WHITE,T0.8,W68	SNA	1
1-2	DC97-14603N	4	WX0555	6011-001565	BOLT-HEX; M6,L35.1,ZPC(YEL),SWCH25K,TAPPI	SA	3
1-3	DC97-14603N	4	WH0010	DC61-02706A	HOLDER-HOSE; WF210ANW,PA,W14.9,L66,NATURA	SA	2
1-4	DC97-14603N	4	WO0003	DC99-00815A	ASSY CUSHION PUMP; MARS-PJT,WF206LNW,-,-,	SA	3
2	DC90-09427A	2	WF0008	DC97-16017B	ASSY FRAME PLATE(U); GRACE-S,WF455,T1.4	SNA	1
2-1	DC97-16017B	3	WF0088	DC61-02617A	FRAME-PLATE(U); WF520ANP,GI,NTR,T1.4,W675	SNA	1
2-2	DC97-16017B	3	WI0256	DC61-02008B	GUIDE-PANEL; WF438AAW,PP,T2.0,FC2305/NTR,	SA	1

No.	Parent	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
3	DC90-09427A	2	WI0039	DC97-08632N	ASSY GUIDE WIRE; GRACE,WF520,SGCC(GI),T0.	SNA	1
3-1	DC97-08632N	3		DC93-00278D	ASSY SENSOR; MEMS SENSOR,320mm,GRACE	SA	2
4	DC90-09674A	2	WI0266	DC61-02432A	GUIDE-SPRING; WF419AAW,POM,T2.0,W81.5,L36	SA	2
5	DC90-09674A	2	WF0102	DC61-01257N	SPRING ETC-HANGER; GRACE-S PJT,SWP,CD4.5,	SNA	2
6	DC90-09673A	2	WF0002	DC97-16289A	ASSY COVER BACK; GRACE-PJT,WF520ABP/XAA,C	SA	1
6-1	DC97-16289A	3	WF0042	DC63-01163A	COVER-BACK; WF520ANP,GI-SGCC,T0.35,W421.0	SA	1
7	DC90-09674A	2	WI0120	DC67-00316A	CAP-O.F; WF448AAG,PP,T2.0,-,-,OVER FLOW	SA	1
8	DC90-09427A	2		DC29-00013H	FILTER EMI; 250V,12,50/60Hz,CAN	SA	1
9	DC90-09674A	2	WZ0010	DC92-01040A	ASSY PCB MAIN; GRACE S WASHER MAIN,WF457,	SA	1
10	DC90-09674A	2	WI0017	DC92-01104A	ASSY COVER PCB(M); GRACE-S,WF457ARGSGR,N	SA	1
11	DC90-09674A	2		DC97-15974G	ASSY PUMP DRAIN; GRACE-S,WF457,BUBBLE/32W	SA	1
11-1	DC97-15974G	3	RV005	6002-000632	SCREW-TAPPING; PH,+,-,2S,M4,L16,ZPC(WHT),	SNA	6
11-2	DC97-15974G	3		DC31-00054D	PUMP-DRAIN; 120V,60Hz,80W,40mm	SA	1
11-3	DC97-15974G	3	WU5009	DC31-00030E	PUMP-DRAIN; B20-3,120V,60Hz,25MM,-	SA	1
11-4	DC97-15974G	3	WE5185	DC62-00299A	VALVE-CHECK; BIGBANG,NBR,ID28.6/OD33,HS70	SA	1
11-5	DC97-15974G	3	WO0031	DC63-01487A	CUSHION-PUMP; WF457,EPDM,Hs40,BLK,GRACE-S	SNA	1
11-6	DC97-15974G	3	WH5224	DC67-00244A	HOSE-DRAIN; HOSE-DRAIN,EPDM,ID6,OD11,T2.5	SA	1
11-7	DC97-15974G	3		DC93-00150C	ASSY M. WIRE HARNESS-PUMP; YUKON-BEST,WF4	SA	1
11-8	DC97-15974G	3		DD65-00001F	CLAMPER HOSE; HSWR,D10.5/T1.2	SNA	1
11-9	DC97-15974G	3	WU0023	DC61-02017D	CASE-PUMP; WR-PA179UR,PP,T3,W122,L140,-,B	SA	1
11-10	DC97-15974G	3	WI0107	DC61-10673A	CAP-DRAIN; SWF-P12,PP,-,-,NTR,-	SNA	1
11-11	DC97-15974G	3	WI0203	DC63-01375A	COVER-PUMP; WF461,PP,T1.5,W63,L90.1,WHT,H	SNA	1
11-12	DC97-15974G	3	WI0203	DC63-00830A	COVER-PUMP; COVER-PUMP,PP,T2.1,W60.5,L75,	SNA	1
11-13	DC97-15974G	3	WA0006	DC97-14976A	ASSY FILTER; PURPLE-PJT,ASSY-FILTER,-,-	SA	1
12	DC90-09674A	2	WB5008	DC97-00920N	ASSY LEG; K4/Bonanza,WHT / LEG-RING+NYLON	SA	2

No.	Parent	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
13	DC90-09674A	2	WB5006	DC97-14293A	ASSY LEG; SEW-HVR149ATA,HYBRAR-RUBBER,-,-	SA	2
14	DC90-09673A	2	WJ5006	DC97-14489A	ASSY FIXER TUB; PURPLE-PJT,WF438AAC/XAA,-	SA	3
15	DC90-09673A	2	WJ5005	DC97-14489B	ASSY FIXER TUB; PURPLE-PJT,WF448AAW/XAA,F	SA	1
16	DC90-09674A	2	WW0026	DC93-00317A	ASSY M.GUIDE WIRE HARNESS; GRACE-S BEST,W	SA	1
17	DC90-09674A	2		DC97-17093A	ASSY HOSE DRAIN(I); SQUALL,WF350,GRAY	SA	1
17-1	DC97-17093A	3	WJ5075	DC61-01679A	CLAMPER HOSE; SEW-HFR177AR,SK5,-,T1.6/ID3	SA	1
17-2	DC97-17093A	3	WH0013	DC67-00330D	HOSE-PUMP; PURPLE,PP,ID20.6,OD27.0,-,L241	SNA	1
18	DC90-09674A	2		DC61-02084A	GUIDE-HOSE; PURPLE,PP,CNTK-P-100,NTR	SA	1
19	DC90-09674A	2	WE0016	DC96-00757D	ASSY POWER CORD; USA,125V/13A,SJT 16,1500	SA	1
20	DC90-09674A	2	WI5007	DC97-15854A	ASSY HANDLE; ACE,DRUM WASHER,PP,WHITE	SA	2

1.2. Assy Tub&Drum

Exploded View



Parts List

No.	Parent	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
0	WF455ARGSWR/AA1		WG0013	DC90-09428A	ASSY TUB & DRUM; GRACE-S,WF457ARGSGR	SNA	1
1	DC90-09428A	2		DC67-00560A	WEIGHT-BALANCER; WF520,PP,L550,BLK,9.6kg	SA	2
2	DC90-09428A	2		DC67-00649A	WEIGHT-BALANCER(R); WF457ARGSGR,CONCRETE,	SA	1
3	DC90-09428A	2	WS0004	DC93-00236A	ASSY DD BLDC MOTOR; GRACE-K,COM2000P,F,22	SA	1
3-1	DC93-00236A	3	WE0111	DC31-00098A	MOTOR BLDC-ASSY HALL SENSOR; COM1300,1200	SA	1
3-2	DC93-00236A	3	WS0086	DC31-00124A	MOTOR BLDC-ASSY STATOR; COM2000P,1200,220	SNA	1
3-3	DC93-00236A	3	WS0085	DC31-00125A	MOTOR BLDC-ASSY ROTOR; COM2000P,1200,220-	SNA	1
4	DC90-09428A	2	WE0010	DC96-01417B	ASSY HEATER; WF337AAW,COVER+DC47-00006P,-	SA	1

No.	Parent	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
4-1	DC96-01417B	3	WE0060	DC63-00820A	COVER-HEATER; WF337AAW,ABS+PC,T2.5,5VA,FR	SNA	1
4-2	DC96-01417B	3	WE0155	DC47-00006Y	HEATER-WASH; GE24" WASHER,Incoloy800,900W	SA	1
5	DC90-09428A	2	WE0020	DC96-01703G	ASSY SENSOR PRESSURE; GRACE-S,GRACE-S,DC	SA	1
6	DC90-09428A	2	WJ5042	DC97-02412A	ASSY BOLT; SWF-P12,MOTOR/ M8*L62,-,-,-,-	SA	8
7	DC90-09428A	2	WG0004	DC97-16086B	ASSY DRUM; GRACE-S,WF457ARGSGR	SA	1
7-1	DC97-16086B	3	WJ5081	DC60-40137A	BOLT-HEX; MARS-PJT,STS430,M8,P1.25,L30,HE	SA	6
7-2	DC97-16086B	3	WT5011	DC97-12135A	ASSY BALANCER; ZEUS-PJT,-,-,-,-	SA	1
7-3	DC97-16086B	3	WG0007	DC97-17018A	ASSY DRUM WRAPPER; GRACE-S,WF457ARGSGR	SNA	1
7-3-1	DC97-17018A	4	WG0054	DC66-00506A	DRUM-FRONT; PURPLE PJT,STS430,-,-,-,-,T0.	SNA	1
7-3-2	DC97-17018A	4	WG0053	DC66-00736A	DRUM-BACK; WF457ARGSGR,STAINLESS-STS430,6	SNA	1
7-3-3	DC97-17018A	4	WG0057	DC66-00594C	DRUM-WRAPPER; WF457ARGSAC,STAINLESS-STS43	SNA	1
7-3-4	DC97-17018A	4	WG0055	DC66-00598A	DRUM-LIFTER; GRACE-PJT,PP,GRAY	SA	3
7-4	DC97-16086B	3	WS0006	DC97-16509A	ASSY FLANGE SHAFT; Grace-PJT,WF520,1300rp	SA	1
8	DC90-09428A	2	WT0008	DC97-17010A	ASSY TUB FRONT; GRACE-S,WF457ARGSGR,4.5cu	SNA	1
8-1	DC97-17011A	3	WJ5079	DC60-40141A	BOLT-HEX; SM10C/DAMPER,HEX,M8,L66,-,ZPC2(	SA	2
8-2	DC97-17011A	3	WJ0083	DC60-60044A	WASHER-PLAIN; -,ID10.5,OD30,T3,-,STS304	SNA	2
8-3	DC97-17010A	3	WB5196	DC66-00470A	DAMPER-SHOCK; FRONTIER II,STEEL+PP+RUBBER	SA	2
8-4	DC97-17010A	3	WJ0002	DC97-04981F	ASSY CLAMP DIAPHRAGM; PURPLE,WF448AAW,-,-	SA	1
8-5	DC97-17010A	3	WH0003	DC97-14545H	ASSY HOSE PRESSURE; GRACE,WF520	SA	1
8-5-1	DC97-14545H	4	WP0165	DC61-70029C	SPRING-CLIP; SEW-HW125,HSWR,CD1.2,ID8.3,O	SA	2
8-5-2	DC97-14545H	4		DC67-00230F	HOSE-WATER; WF210,TPE,ID4.5,OD8.0,L900,BL	SNA	1
8-5-3	DC97-14545H	4		DC67-00492A	HOSE-JOINT AIR; WF520,PP,T1.8,L165.8xH80,	SNA	1
8-6	DC97-17010A	3	WH5385	DC97-16106A	ASSY HOSE AIR; GRACE,WF520,AIR HOSE,L273,	SA	1
8-6-1	DC97-16106A	4		DC61-00158A	CLAMPER HOSE; SW65ASP,SK5,ID23,T0.8/YEL	SNA	1

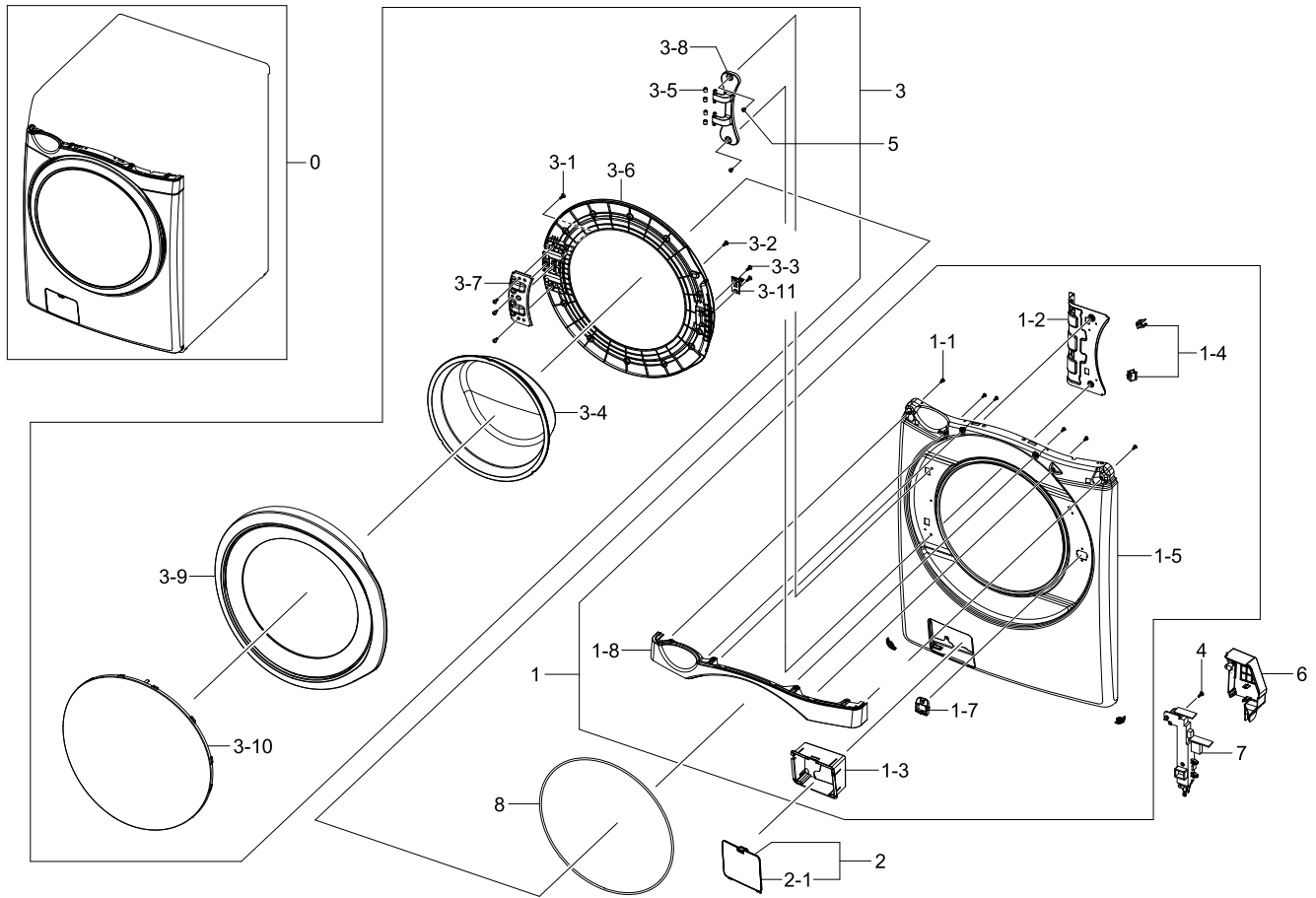
No.	Parent	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
8-6-2	DC97-16106A	4	WJ0027	DC65-60118J	CLIP-RING; HSWR,WHT,PI2.0/ID23	SNA	1
8-6-3	DC97-16106A	4		DC67-00468A	HOSE-AIR; WF520,EPDM,ID19.4,OD25.0,T2.0,B	SNA	1
8-7	DC97-17010A	3	WJ0004	DC97-16140G	ASSY DIAPHRAGM; GRACE-S,WF457ARGSGR,4.5cu	SA	1
8-7-1	DC97-16140G	4		DC47-00027E	LAMP; TUB LIGHT,GRACE JR,300mm,30mA,110mW	SA	1
8-7-2	DC97-16140G	4	WJ0047	DC62-00348A	NOZZLE-DIAPHRAGM; WF457ARGSGR,PP,W10.5,GR	SA	1
8-7-3	DC97-16140G	4	WJ0047	DC62-00349A	NOZZLE-DIAPHRAGM; WF457ARGSGR,PP,IW12.0,G	SA	1
8-7-4	DC97-16140G	4	WD0067	DC64-02174C	DOOR-DIAPHRAGM; WF457ARGSGR,EPDM,GRY	SA	1
8-7-5	DC97-16140G	4	WJ0047	DC62-00229A	NOZZLE-DIAPHRAGM; SEW-6HR122A,PP,GRAY	SA	1
8-8	DC97-17010A	3		DC97-16668E	ASSY HOSE CONNECTOR; GRACE-S,WF457ARGSGR	SA	1
8-8-1	DC97-16668E	4		DC61-00219F	CLAMPER HOSE; SEW-HAR149AUA,SK5,-,ID27/OD	SNA	1
8-8-2	DC97-16668E	4	WJ5110	DC61-00219H	CLAMPER HOSE; GRACE,SK5,ID27/OD28.6/H13/T	SA	1
8-8-3	DC97-16668E	4	S0025	6002-000494	SCREW-TAPPING; TH,+,2S,M4,L10,ZPC(WHT),SW	SNA	2
8-8-4	DC97-16668E	4	WJ0106	6044-001853	RING-O; ID5,OD8,T1.5,EPDM	SA	2
8-8-5	DC97-16668E	4	WI0159	DC63-01381A	COVER-CONNECTOR; WR-HH138UW,PP,W73.3,L45.	SA	1
8-8-6	DC97-16668E	4	WD0040	DC63-01382A	COVER-HINGE; WR-HH138UW,PP,W40.7,L26.4,NT	SA	1
8-8-7	DC97-16668E	4		DC66-00688A	GEAR-INTERNAL(P); WR-HH138UW,POM,15*5.8	SA	1
8-8-8	DC97-16668E	4		DC66-00689A	GEAR-INTERNAL(R); WR-HH138UW,POM,HELIOS-3	SA	1
8-8-9	DC97-16668E	4		DC66-00690A	LEVER-HINGE; WR-HH138UW,POM,W41,L31	SA	1
8-8-10	DC97-16668E	4		DC66-00699A	ACTUATOR-THERMO; PP,17,43,18.4,V0,V0,Brow	SA	1
8-8-11	DC97-16668E	4		DC66-00699A	ACTUATOR-THERMO; PP,17,43,18.4,V0,V0,Brow	SA	1
8-8-12	DC97-16668E	4		DC67-00599B	HOSE-CONNECTOR; WF457ARGSGR,PP,L72,NTR,CT	SA	1
8-8-13	DC97-16668E	4		DC93-00290A	ASSY WIRE HARNESS; YUKON-K,110/240V 50/60	SA	1
8-8-14	DC97-16668E	4		DC97-17088A	ASSY HOSE; GRACE-S,WF457,L1000	SNA	1
8-8-14	DC97-17088A	5	WH5267	DC67-00051B	HOSE-DRAWER; Q1636GW/XEU,EPDM,ID9.0,OD14.	SA	1

No.	Parent	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
8-8-14	DC97-17088A	5	WO0061	DC72-00011E	ABSORBER SPONGE; WF448AAW,EPDM,T1,W35,L65	SA	2
8-9	DC97-17010A	3	WT0004	DC97-16156D	ASSY SEMI TUB FRONT; GRACE,WF520ABP	SA	1
8-9-1	DC97-16156D	4	WP0122	DC61-00201A	BRACKET-NUT; P1291,SBHG-R,T3,NO-PAINT/MOT	SA	6
8-9-2	DC97-16156D	4	WT0042	DC61-02629D	TUB-FRONT; WF520ABP/XAA,FRPP,NTR,5.0CuFt	SA	1
8-9-3	DC97-16156D	4	WT0030	DC62-00268A	SEAL-CONNECTOR; SEW-HAR149AUA,EPDM,BLK,-,	SNA	1
9	DC90-09428A	2	WT0007	DC97-17011A	ASSY TUB BACK; GRACE-S,WF457ARGSGR,4.5cu.	SNA	1
9-1	DC97-17011A	3	WJ5079	DC60-40141A	BOLT-HEX; SM10C/DAMPER,HEX,M8,L66,-,ZPC2(	SA	2
9-2	DC97-17011A	3	WJ0083	DC60-60044A	WASHER-PLAIN; -,ID10.5,OD30,T3,-,STS304	SNA	2
9-3	DC97-17011A	3		DC61-00219D	CLAMPER HOSE; SW-50A1S,SK5,-,ID33/OD35,-,	SNA	1
9-4	DC97-17011A	3	WP0099	DC61-01482A	BRACKET-HEATER; GW-PJT,STS430/304,T0.5,W9	SNA	1
9-5	DC97-17011A	3	WB5195	DC66-00470B	DAMPER-SHOCK; ACE,STEEL+PP+RUBBER,80N,-,-	SA	2
9-6	DC97-17011A	3	WE5044	DC90-10128N	ASSY THERMISTOR; 5V,WATER,WATER TEMPERATU	SA	1
9-7	DC97-17011A	3	WH5388	DC97-16104A	ASSY HOSE O.F; GRACE,WF520,L160.5,ID34/OD	SA	1
9-7-1	DC97-16104A	4		DC67-00466A	HOSE-O.F; WF520,EPDM,ID43.5,OD45.0,T2.0,B	SNA	1
9-7-2	DC97-16104A	4	WJ0027	DC72-00001F	CLIP-RING; SEW-HTR122L,HSWR,T2.4,ID PI44,	SNA	2
9-8	DC97-17011A	3	WH0023	DC97-16105A	ASSY HOSE DRAIN; GRACE,WF520,L238.5,BLK	SA	1
9-8-1	DC97-16105A	4	WJ5057	DC65-00014A	CLAMPER HOSE-JOINT; GW-PJT,HSWR,ID84,ZPC2	SA	1
9-8-2	DC97-16105A	4	WJ0027	DC65-60125B	CLIP-RING; HSWR,T2.4,PI25,YEL	SNA	1
9-8-3	DC97-16105A	4		DC67-00465A	HOSE-DRAIN; WF520,EPDM,ID73.0,OD74.7,T2.0	SNA	1
9-9	DC97-17011A	3	WT0002	DC97-16151B	ASSY S.TUB BACK; GRACE-S/SVC,WF457ARGSGR,	SA	1
9-9-1	DC97-16151B	4	WS0051	6601-002516	BEARING-BALL; 6306ZZ,ID30,OD72,L19,GCr15	SNA	1
9-9-2	DC97-16151B	4	WS0051	6601-002632	BEARING-BALL; 6307ZZ,ID35,OD80,L21,GCr15	SNA	1
9-9-3	DC97-16151B	4	WS0119	DC62-00156A	SEAL-OIL; TS85-PJT,NBR(SD45.5),BLK,-,-,-,	SA	1
9-9-4	DC97-16151B	4	WO0055	DC69-00804A	SEAL-TUB; GW-PJT,EPDM,H624,BLK,L1930,W624	SNA	1

No.	Parent	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
9-9-5	DC97-16151B	4	WT0003	DC97-16155B	ASSY SEMI TUB BACK; GRACE-S,WF457ARGSGR,4	SNA	1
9-9-5	DC97-16155B	5	WP0122	DC61-00201A	BRACKET-NUT; P1291,SBHG-R,T3,NO-PAINT/MOT	SA	2
9-9-6	DC97-17011A	3	WP0040	DC97-16510A	ASSY BRACKET TUB; GRACE-PJT,WF520ABP	SNA	1
10	DC90-09427A	2	WX0558	6011-001644	BOLT-HEX; M10,L35,ZPC2(YEL),SM10C,DAMPER	SA	4

1.3. Assy Frame Front&Door

Exploded View



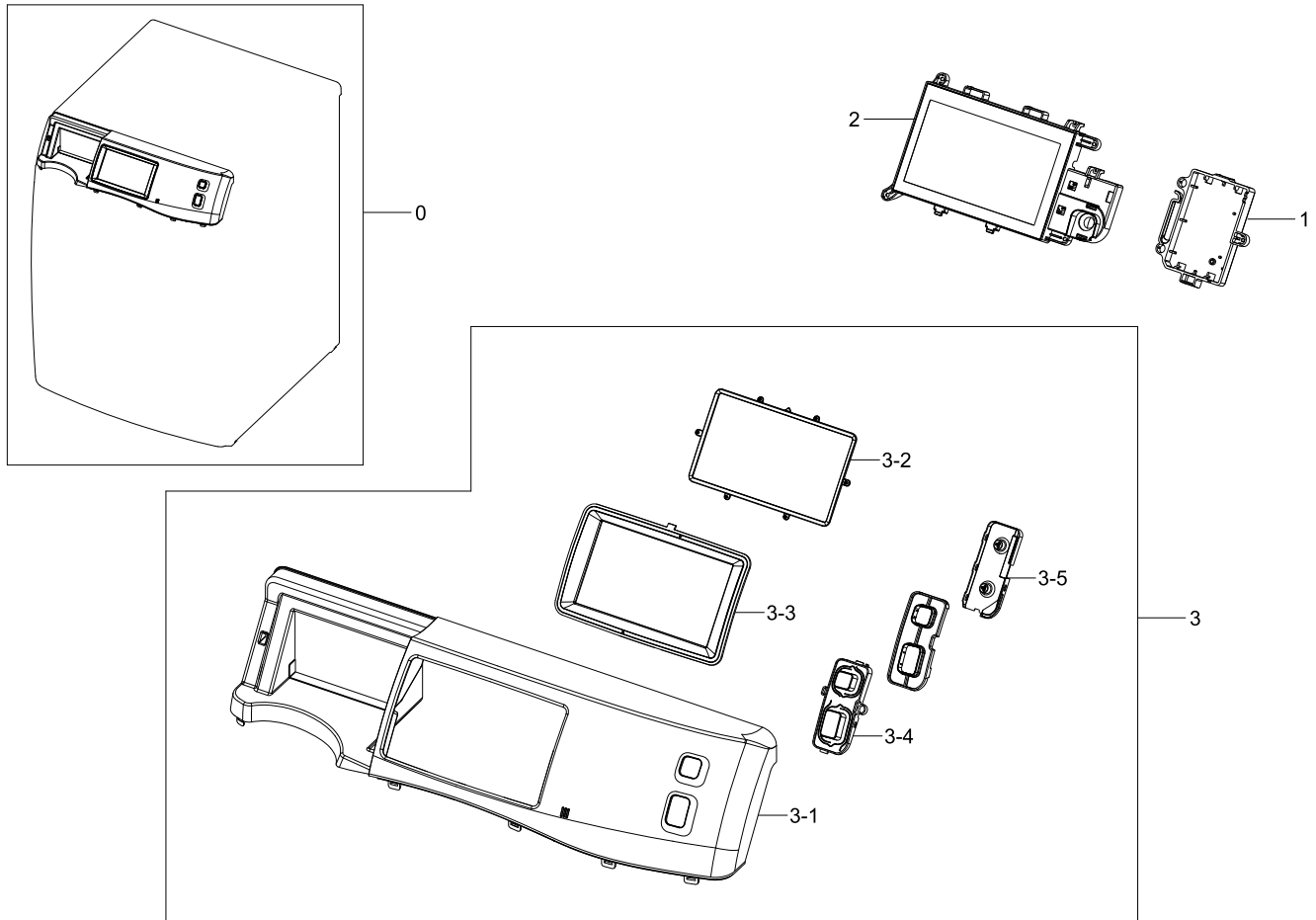
Parts List

No.	Parent	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
1	DC90-09673A	2	WF0005	DC97-16397E	ASSY FRAME FRONT; GRACE-S,WF457ARGSWR/AA,	SA	1
1-1	DC97-16397E	3	WX0419	6002-000239	SCREW-TAPPING; TH,+,NO,2S,M4,L8,ZPC(WHT),	SA	4
1-2	DC97-16397E	3	WP0101	DC61-02615A	BRACKET-HINGE; WF520ANP,GI,T1.4,W161,L264	SA	1
1-3	DC97-16397E	3	WI0241	DC61-02621A	GUIDE-COVER FILTER; WF520ANP,PP,T2.5,W146	SNA	1
1-4	DC97-16397E	3	WH0010	DC61-02792A	HOLDER-HOSE; WF520ABP/XAA,PA,T1.5,W17,L25	SA	2
1-5	DC97-16397E	3	WF0082	DC61-02867A	FRAME-FRONT; WF520ABW/XAA,EGI-SECC,NEAT-W	SNA	1
1-7	DC97-16397E	3	WE0064	DC63-00960A	COVER-SWITCH(O); WF218,POM,T3,-,-,-,NAT	SA	1
1-8	DC97-16397E	3	WF0053	DC64-02162A	DECORATION-FRONT; WF520ABP,ABS,T2.8,W684,	SA	1

No.	Parent	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
2	DC90-09673A	2	WI0012	DC97-16401A	ASSY COVER FILTER; GRACE,WF520ABW/XAA,T2.	SA	1
2-1	DC97-16401A	3	WI0167	DC63-01264A	COVER-FILTER; WF520,ABS,T2.5,W151,L119,WH	SA	1
3	DC90-09673A	2	WD0003	DC97-16145A	ASSY DOOR; GRACE,WF520ABP/XAA,ABS,OD590,C	SA	1
3-1	DC97-16145A	3	WX0403	6001-001668	SCREW-MACHINE; TH,+,M5,L16,PASS,STS430,FP	SA	3
3-2	DC97-16145A	3	WX0621	6002-000444	SCREW-TAPPING; TH,+,2,M4,L14,PASS,STS430	SA	9
3-3	DC97-16145A	3	WX0465	6002-001279	SCREW-TAPPING; PWH,+, -,1,M4,L12,PASS,STS3	SA	2
3-4	DC97-16145A	3	WD0070	DC64-00504A	DOOR-GLASS; TS85-PJT,NON-HeatTreatment GL	SC	1
3-5	DC97-16145A	3	WD0090	DC61-00891A	GUIDE-HINGE; HAUZEN(DOM),POM,-,-,-,WHT,HI	SA	4
3-6	DC97-16145A	3	WD0105	DC61-02634A	HOLDER-GLASS; WF520,PP,W590,L604,GRAY,GRA	SA	1
3-7	DC97-16145A	3	WD0134	DC61-02635A	SUPPORT-HINGE; SBHG1-A(SGCC),T1.4,L175.0,	SA	1
3-8	DC97-16145A	3	WD0096	DC61-02640A	HINGE-DOOR; WF520,ALDC,T3.5,L246.0,GRACE-	SA	1
3-9	DC97-16145A	3	WD0037	DC63-01160A	COVER-DOOR; WF520,ABS,T2.8,W590.0,L605.5,	SA	1
3-10	DC97-16145A	3	WD0079	DC64-02144A	DOOR-SAFETY; GRACE,PET,T2.8,W510,L510,SMO	SA	1
3-11	DC97-16145A	3	WD0114	DC66-00375A	LEVER-DOOR; 10KG DRUM,ZNDC,2.5MM,-,-,-,NI	SC	1
4	DC90-09673A	2	WX0621	6002-000444	SCREW-TAPPING; TH,+,2,M4,L14,PASS,STS430	SA	3
5	DC90-09673A	2	WX0534	6009-001522	SCREW-HEX; HEX,+, -,M5,L16,PASS,STS430,FP,	SA	2
6	DC90-09427A	2	WE0059	DC63-01156A	COVER-DOOR SWITCH; WF520ANP,PP,T2.5,W86.5	SA	1
7	DC90-09427A	2	WE0067	DC64-00519B	DOOR-LOCK S/W; GW-PJT,PP-GF,-,-,-,BLK,1	SA	1

1.4. Assy Panel Control

Exploded View



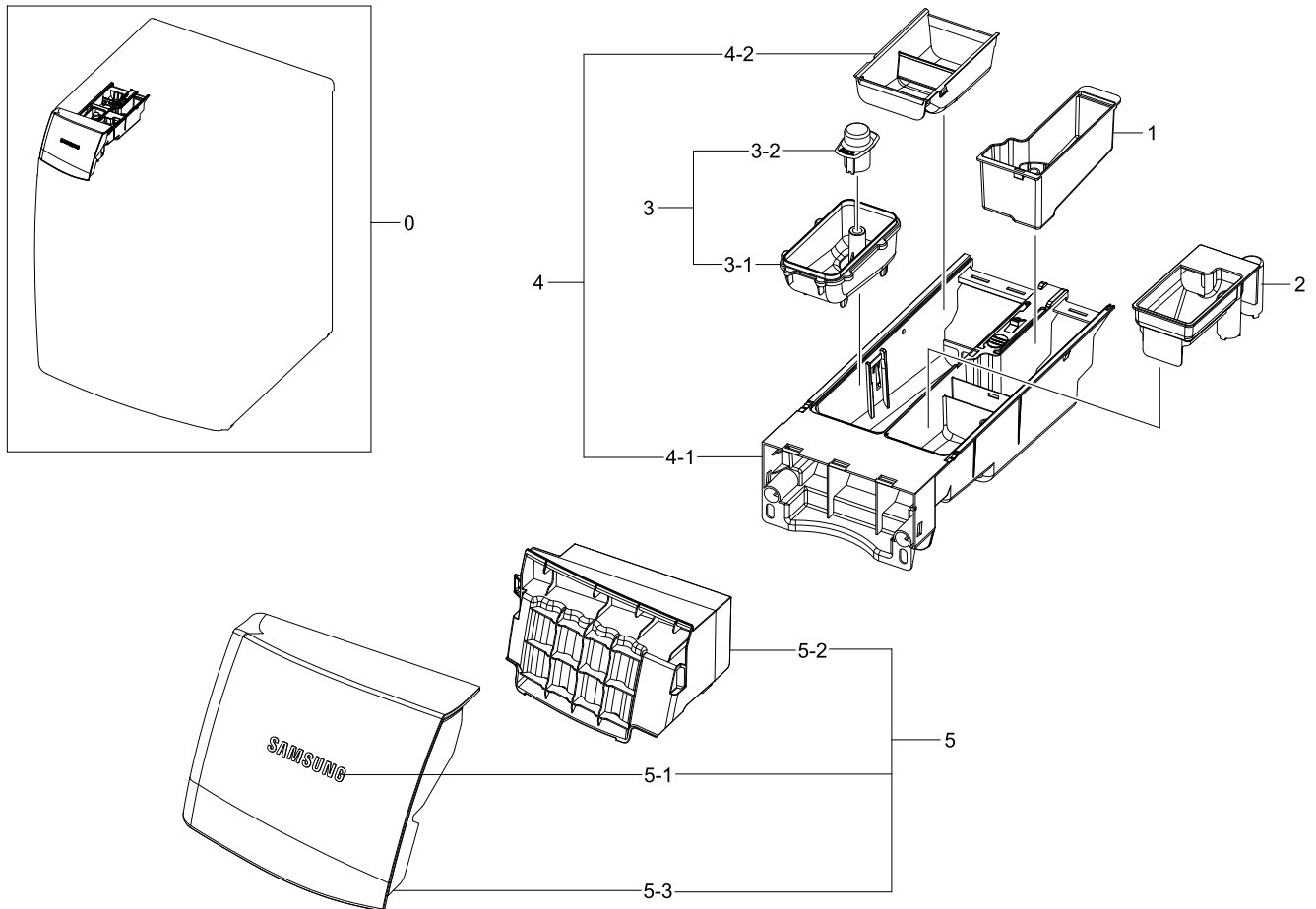
Parts List

No.	Parent	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
0	DC90-09673A	2	WC0016	DC97-17012B	ASSY PANEL CONTROL; GRACE-S,WF457ARGSWR,W	SNA	1
1	DC97-17012B	3	WZ0025	DC92-01032A	ASSY PCB SUB; GRACES BEST SENSOR,WF457,12	SA	1
2	DC92-01100A	4	WZ0025	DC92-01099A	ASSY PCB SUB; Grace-S,GRACE-BEST,N	SNA	1
3	DC97-17012B	3	WC0018	DC97-17021B	ASSY S.PANEL CONTROL; GRACE-S,WF457ARGSWR	SA	1
3-1	DC97-17021B	4	WC0122	DC64-02802B	PANEL-CONTROL; WF457ARGSWR,ABS,T3.0,W681.	SNA	1
3-2	DC97-17021B	4		DC64-02814A	WINDOW-LCD; WF457ARGSGR,ABS,T2.3,W225.5,L	SNA	1
3-3	DC97-17021B	4	WC0144	DC64-02806A	DECORATION-BUTTON; WF457ARGSGR,ABS,W44.0,	SA	1

No.	Parent	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
3-4	DC97-17021B	4	WC0049	DC64-02803B	BUTTON-PUSH; WF457ARGSWR,ABS,108.0x41.0x3	SNA	1
3-5	DC97-17021B	4	WC0059	DC64-02811A	BUTTON-RUBBER; WF457ARGSGR,SILICON,43.1x1	SA	1

1.5. Assy Drawer

Exploded View



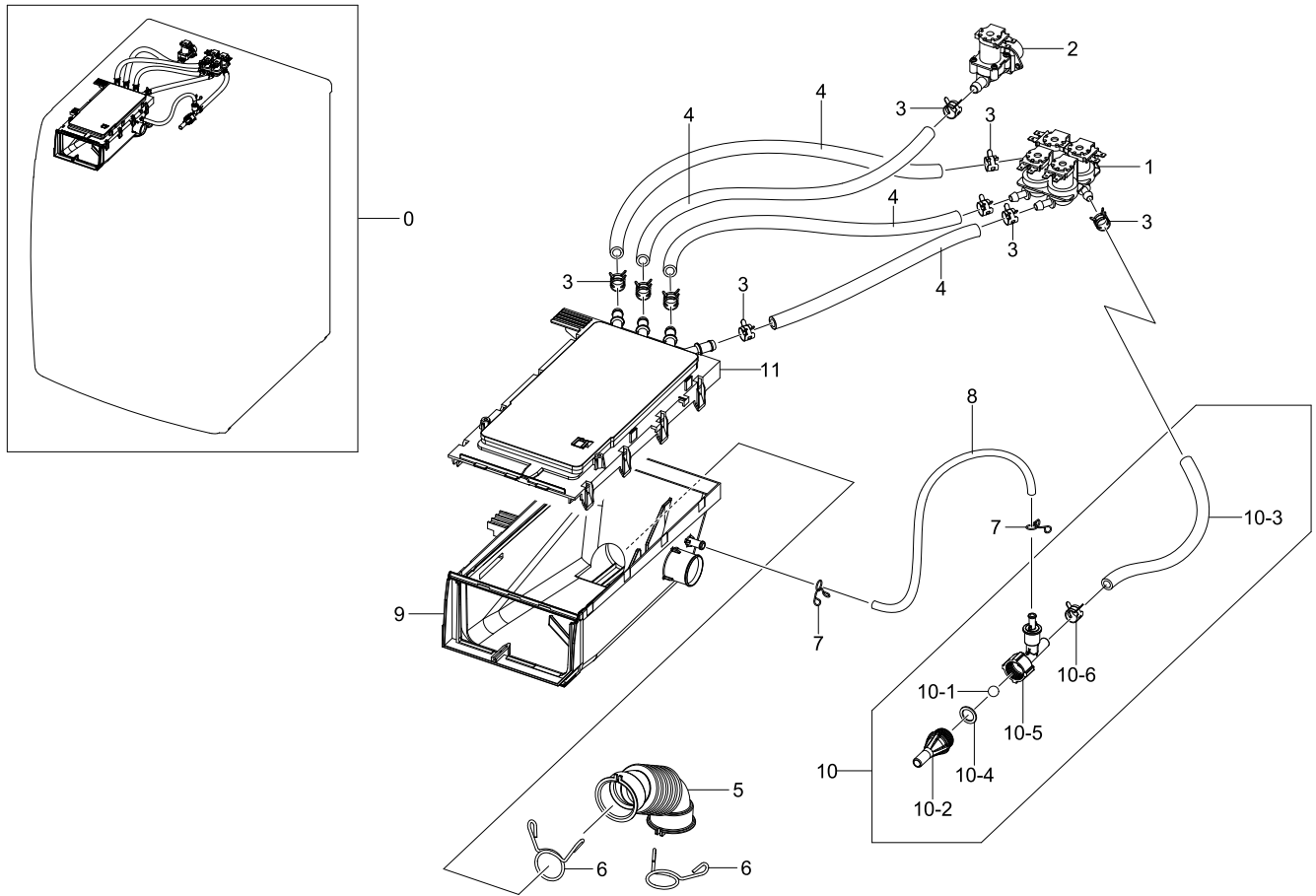
Parts List

No.	Parent	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
0	DC90-09673A	2	WR0005	DC97-17055B	ASSY DRAWER; GRACE-S,WF457ARGSWR,WHITE	SA	1
1	DC97-17055B	3		DC61-01995A	CASE-BLEACH; WF448AAW,PP,-,-,SOAF-BLUE,	SNA	1
2	DC97-17055B	3	WI0125	DC67-00499A	CAP-RINSE; WF350ANW,PP,SOAF-BLUE,SQUALL-P	SA	1
3	DC97-17055B	3	WR0004	DC97-17022B	ASSY DETERGENT; YUKON,WD1102XVM/XSA,PP,EN	SA	1
3-1	DC97-17022B	4	WI0353	DC61-02427D	GUIDE-LIQUID(M); WD1102XVM/XSA,PP,T2.0,FC	SA	1
3-2	DC97-17022B	4	WI0108	DC67-00420A	CAP-DRAWER; WF419HAW,PP,T2.0,W43,L38,WHT,	SA	1
4	DC97-17055B	3	WR0011	DC97-14481E	ASSY S.DRAWER; PURPLE,WF448,TEFRON COATIN	SA	1
4-1	DC97-14481E	4	WR0029	DC61-01992C	BODY-DRAWER; 592-495090,PP,T2.0,L327.5,W1	SNA	1

No.	Parent	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
4-2	DC97-14481E	4	WI0144	DC61-02445A	CASE-PRE WASH; ACE-PJT,PP,T1.8,WHT,TB53	SA	1
5	DC97-17055B	3	WC0017	DC97-17013B	ASSY PANEL DRAWER; GRACE-S,WF457ARGSWR,WH	SA	1
5-1	DC97-17013B	4	WC0114	DC64-02707A	MASCOT; WF431 / DV43,NICKEL,T0.05,W80,L12	SC	1
5-2	DC97-17013B	4	WC0080	DC64-02807B	DECORATION-PANEL DRAWER; WF457ARGSWR,ABS,	SNA	1
5-3	DC97-17013B	4	WC0123	DC64-02804B	PANEL-DRAWER; WF457ARGSWR,ABS,T3.0,W141.7	SNA	1

1.6. Assy Housing Drawer

Exploded View



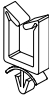
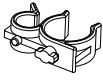
Parts List

No.	Parent	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
0	DC90-09427A	2	WR0008	DC97-16142D	ASSY HOUSING DRAWER; GRACE-S,WF457ARGSGR	SNA	1
1	DC97-16142D	3		DC62-00214M	VALVE WATER; GRACE-S,PA66,0.2~8,NTR,4WAY(	SA	1
2	DC97-16142D	3	WE5056	DC62-30314K	VALVE-WATER; V-0117,NYLON #6,83x45,1~8(10	SA	1
3	DC97-16142D	3		DC65-00008A	CLAMPER HOSE; SEW-DR605,SK5,-,-,YEL,ID14.	SNA	11
4	DC97-16142D	3	WH5267	DC67-00051B	HOSE-DRAWER; Q1636GW/XEU,EPDM,ID9.0,OD14.	SA	2
5	DC97-16142D	3	WH5389	DC67-00467A	HOSE-DRAWER TUB; WF520,EPDM,ID43.5,OD45,T	SA	1
6	DC97-16142D	3	WJ0027	DC72-00001F	CLIP-RING; SEW-HTR122L,HSWR,T2.4,ID PI44,	SNA	2
7	DC97-16142D	3	WP0165	DC61-70029C	SPRING-CLIP; SEW-HW125,HSWR,CD1.2,ID8.3,O	SA	2

No.	Parent	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
8	DC97-16142D	3	WH5252	DC67-00089S	HOSE-WATER; WR-PA179UR,TPE,ID5.0,OD9.0,T2	SA	1
9	DC97-16142D	3	WR0039	DC61-02636B	HOUSING-DRAWER(L); WF511,PP,T1.8,W174.5,L	SA	1
10	DC97-16142D	3		DC97-12578H	ASSY HOSE; GRACE-S,WF457ARGSGR	SA	1
10-1	DC97-12578H	4	WL0009	DC62-00167A	NOZZLE-BALL; Q1636GW,SILICON,-,-,-,-,TS	SNA	1
10-2	DC97-12578H	4	WL0011	DC62-00182A	NOZZLE-CONNECTOR(U); Q1636,PC,D24,-,-,-,T	SA	1
10-3	DC97-12578H	4	WH5267	DC67-00051B	HOSE-DRAWER; Q1636GW/XEU,EPDM,ID9.0,OD14.	SA	0
10-4	DC97-12578H	4	WO0045	DC69-00640A	PACKING-FILTER; DRUM W/M,SILICON,T2.5,BLK	SNA	1
10-5	DC97-12578H	4	WL0010	DC62-00310A	NOZZLE-CONNECTOR(L); WF210AN,POM,T2.5,L31	SA	1
10-6	DC97-16668E	4		DC65-00008A	CLAMPER HOSE; SEW-DR605,SK5,-,-,YEL,ID14.	SNA	2
11	DC97-16142D	3	WR0012	DC97-16141A	ASSY S.HOUSING DRAWER; GRACE,WF520ABP/XAA	SA	1

1.7. Small Parts

Exploded View

						
1	2	3	4	5	6	7

Parts List

No.	Parent	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
1	DC90-09674A	2	WI0293	DC61-01736B	HOLDER-WIRE; WF337AAW,NYLON66,OD31,H15,L1	SNA	1
2	DC97-16017B	3	WI0294	DC61-00553B	HOLDER-WIRE SADDLE; PA,NTR,DAWS-3NE	SA	3
3	DC90-09674A	2	WI0293	DC61-40081A	HOLDER-WIRE; DAWH-2NC,PA,NTR(PI19.4)	SA	3
4	DC90-09674A	2		DC61-00133A	CLAMPER HOSE-FIX; P1291,PP,ID24.5,OD29.5,	SNA	1
5	DC99-00646H	3	WJ0021	6501-000121	CABLE TIE; DA-368,T1.9,W7.5,L368,NTR,NYLO	SNA	1
6	DC97-16017B	3	WI0295	DC61-60074A	HOLDER-WIRE; PA,NTR,NYLON#66(DAWS-6NB)	SA	2
7	DC97-14603N	4		6502-000127	CABLE CLAMP; DAWH-18NB,ID15,-,NYLON66,NTR	SNA	1