WASHING MACHINE
TOP-LOADING TYPE

Basic Name : WA5471AB*
WA5451AN*
(ORCA PJT)

Basic Code : WA5471ABP/XAA
WA5471ABW/XAA
WA5451ANW/XAA

Model Name : WA456*
WA422*
WA400*
(HUDSON PJT)

Model Code : WA456DRHDSU/AA
WA456DRHDWR/AA
WA422PRHDWR/AA
WA400PJHDWR/AA

SERVICE *Manual*

WASHING MACHINE (TOP-LOADING)


WA456DRHDSU


WA456DRHDWR


WA422PRHDWR


WA400PJHDWR

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2. Features and Specifications
3. Disassembly and Reassembly
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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.

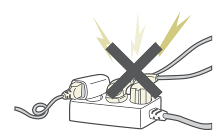
► Two types of safety symbols, Warning and Caution, are used in the safety instructions.

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.**

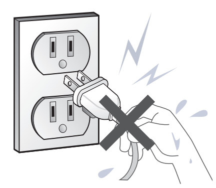
WARNING BEFORE SERVICING

- (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.

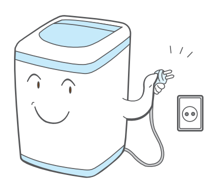
- Do not allow consumers to connect several appliances to a single power outlet at the same time.
  - ✔ There is a risk of fire due to overheating.



- 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.

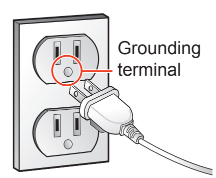
⚠ WARNING AFTER SERVICING

- 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.

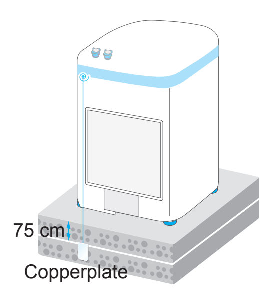
- Do not allow consumers to repair or service any part of the washing machine themselves.
  - ✔ This may result in personal injury and shorten the product lifetime.

- 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.



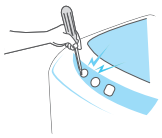
⚠ CAUTION BEFORE SERVICING

- 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.

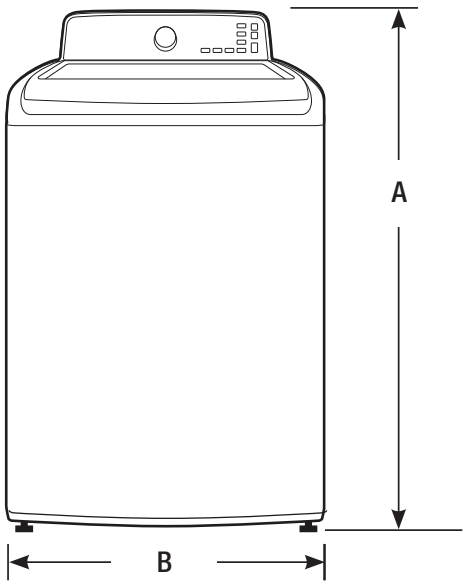
2. FEATURES AND SPECIFICATIONS

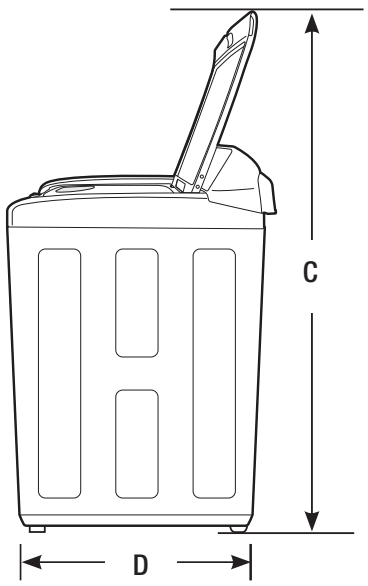
2-1. FEATURES

Features	Description
The Great Capacity	• Even bulky garments and blankets get super clean. The Great capacity leaves enough room for a more thorough, cleaner wash.
AquaJet™ (WA456*)	• AquaJet™ washes heavy loads gently and more thoroughly than conventional top loaders. • Faster drum rotation and the absence of an agitator inside the machine help circulate foam more evenly throughout all your clothes, while powerful water jets provide a thorough rinse..
Digital Inverter Motor	• The power to handle anything! Our direct-drive inverter motor delivers power right to the washer tub from a variable speed, reversible motor. Beltless direct-drive motor generates a higher spin speed for more effective, quiet operation. The washer also has fewer moving parts, meaning fewer repairs.
Mist Shower	• A separate nozzle has been adopted that sprays water equally so that the rinse cycle is effective even with a small amount of water.
VRT® (Vibration Reduction Technology)	• This Samsung washer performs smoothly at top spin speeds, minimizing noise and vibration.
Eco Plus (WA456*)	• If you select this option, the water temperature is set to slightly lower than during the normal wash course to save energy.
Pure Cycle™ (Tub Cleaning cycle)	• Clean your drum with one button! This Pure Cycle is specially designed to remove detergent residue & dirt bulid up in the tub, without the need for special chemical detergents.
EZ-Closed Lid	• The door is designed to close softly and prevent users from being injured
My Cycle	• This is a convenient function that enables you to save a frequently-used wash course. Once this is set, you can do a wash simply by pressing the Power, My Cycle and Start buttons in this sequence.
Smart Care (WA456*)	• Samsung's Smart Care, an automatic error-monitoring system, detects and diagnoses problems at an early stage and provides quick and easy solutions.

2-2. SPECIFICATIONS

TYPE		TOP LOADING WASHER	
DIMENSION (Inches / cm)	A. Height	43.9″ / 111.4cm	
	B. Width	27.0″ / 68.6cm	
	C. Height with Door open	58.1″ / 147.5cm	
	D. Depth	29.3″ / 74.4cm	
WATER PRESSURE		20~116psi (137~800kPa)	
WEIGHT		WA456* : 56kg (122.2lb) WA422* : 55kg (120.0lb) WA400* : 54kg (117.8lb)	
CAPACITY		WA456* : 4.5cu.ft WA422* : 4.2cu.ft WA400* : 4.0cu.ft	
POWER CONSUMPTION	WASHING	120V	700W
	SPIN	120V	400W
	DRAIN	120V	80W
SPIN REVOLUTION		WA456* : 1,000rpm WA422*/WA400* : 800rpm	

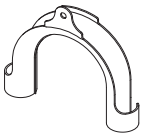
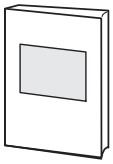
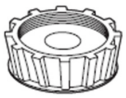
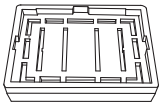




2-3. DETAIL FEATURES

Grade		WA456*		WA422*	WA400*
Image					
Main Spec.	Capacity(DOE)	4.5	4.5	4.2	4.0
	AquaJet™	Yes	Yes	-	-
	Diamond interior drum	Yes	Yes	Yes	Yes
	Pure Cycle™	Yes	Yes	Yes	Yes
	Washing Cycles	11	11	9	9
	VRT®	Yes	Yes	Yes	Yes
	Pulsator material	PP	PP	PP	PP
	Max rpm	1,000	1,000	800	800
	Motor	DIM Motor	DIM Motor	DIM Motor	DIM Motor
Design	Color	Ultra Inox	Neat White	Neat White	Neat White
	Center display	18:88	18:88	18:88	18:88
	Jog Dial	Squall Jr Same	Squall Jr Same	Squall Jr Same	Squall Jr Same
	Main display	LED	LED	LED	LED
	LED color	Red	Red	Red	Red
	Door Lid TC	Tempered Tinted glass	Tempered Tinted glass	Tempered Tinted glass	Opaque
	Easy door	Yes	Yes	Yes	Yes
	Frame	VCM(Ultra Inox)	PCM	PCM	PCM
	Top Cover	Steel(EGI) + Painting	Steel(EGI) + Painting	Steel(EGI) + Painting	Steel(EGI) + Painting
Energy	MEF (cf/kWh/cycle)	2.45	2.45	2.45	2.41
	WF (gal/cycle/cf)	3.55	3.55	3.55	3.70
	EnergyGuide (kWh/year)	169	169	169	163

2-4. OPTIONS SPECIFICATIONS

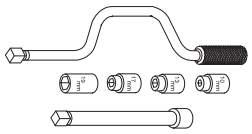
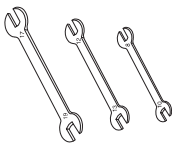
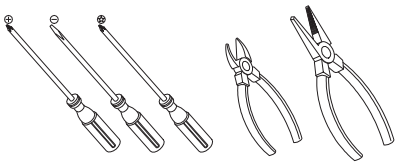
Item	Item Name	Code No.	Remark
	HOSE-HANGER	DC61-00224A	Default
	MANUAL-BOOK	DC68-03133A	Default
	CABLE TIE	6501-000121	Default
	CAP W.V	DC61-10449Q	Default
	ASSY-LEG SUPPORT	DC97-14095A	Service

Note

- Customer can purchase Water supply, drain hoses and assy leg support from a service center.

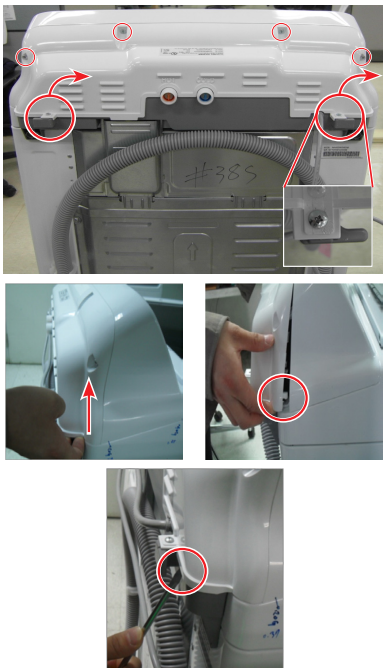
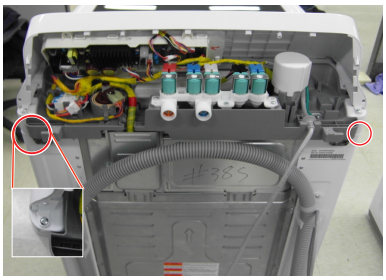
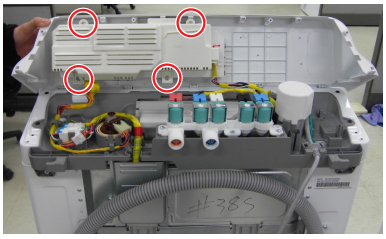
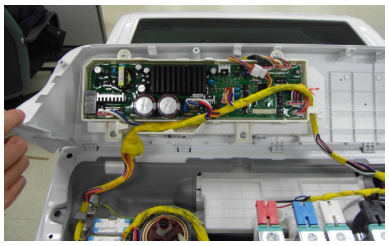
3. DISASSEMBLY AND REASSEMBLY

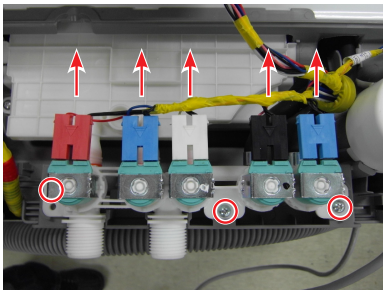
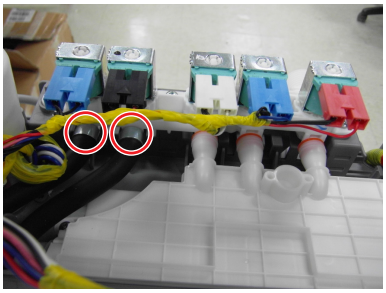
3-1. TOOLS FOR DISASSEMBLY AND REASSEMBLY

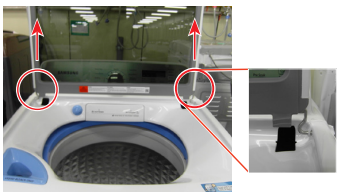
Tool		Type	Remarks
	Box driver	10mm 17mm	Tub(16), Fixer screw(5), Motor(1), Balance(5) Damper(2), Damper(friction 1)
	Double-ended spanner	10mm 17mm	Replaced by box driver Leg
	Vice pliers		A Tool for protecting empty turning of bolt or abrasion from using box driver For disassembly of Spin drum
	Others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

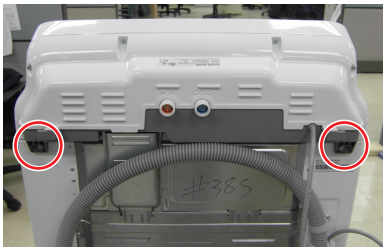
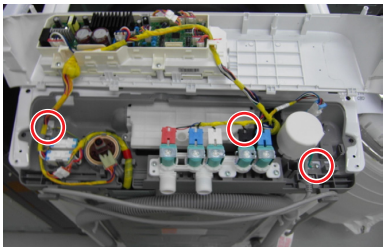
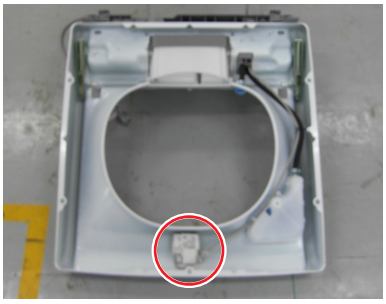
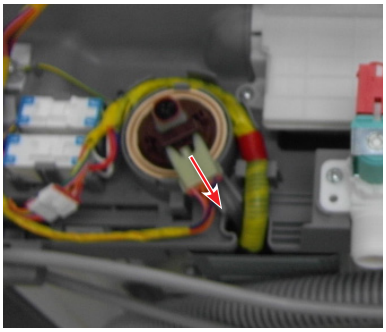
3-2. STANDARD DISASSEMBLY DRAWINGS

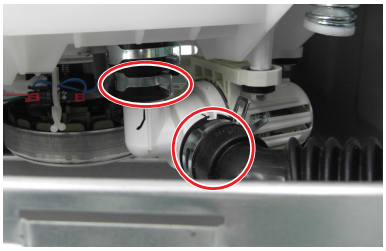
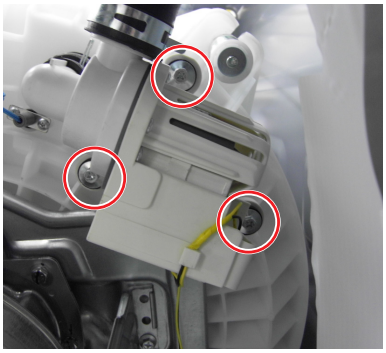
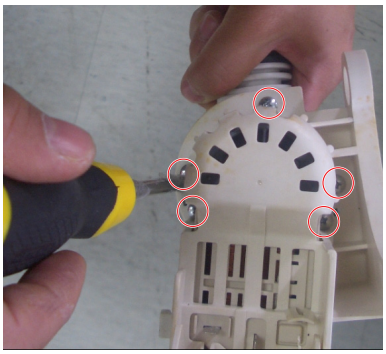
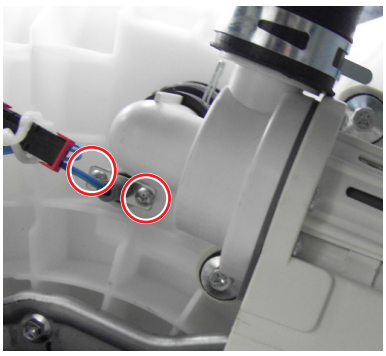
► This is a standard disassembly diagram and may differ from the actual product.
Use this material as a reference when disassembling and reassembling the product.

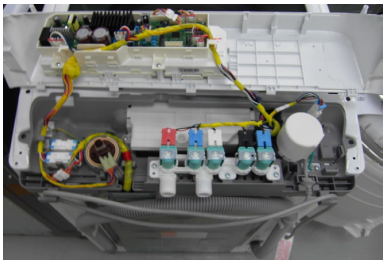
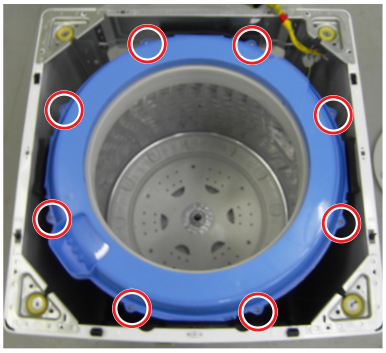
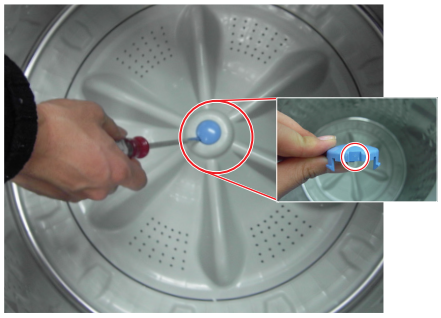
Part	Figure	Description
Sub and Main PCB Assembly		1. Remove the 6 screws holding the control panel assembly. 2. Separate the both hooks. (Left and Right) 3. Separate the cover panel upward. If it is difficult to disassemble, use the (-) driver to disassemble hooks. (Be careful damage of hooks.)
		4.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

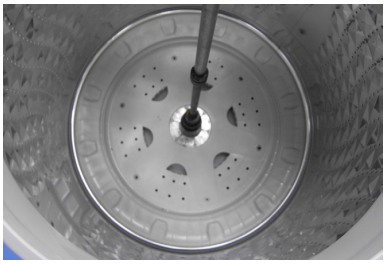
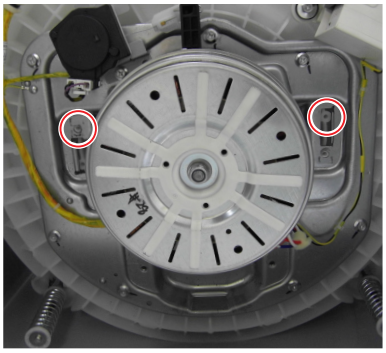
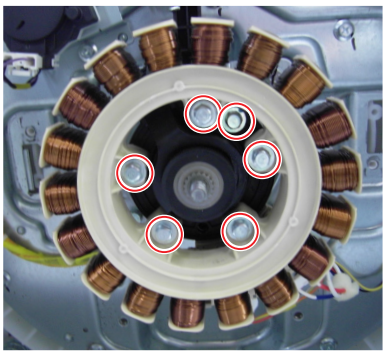
Part	Figure	Description
Water Valve		1. After separating the control panel, separate the water-valve housing. 2. Remove the 3 fixing screws.
		3. Remove the wire-harness and release the 2 clamps connecting the hoses. When releasing the clamps, take care that you do not tear the hoses.

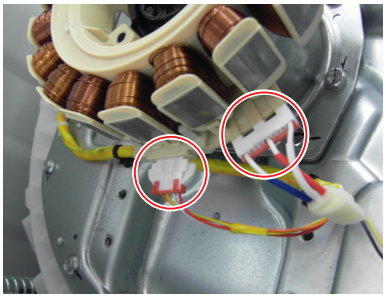
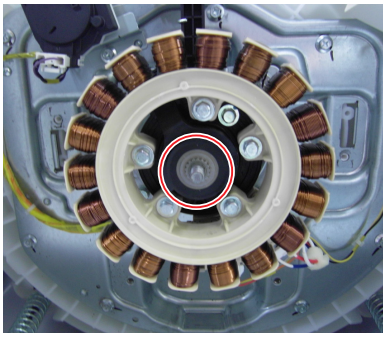
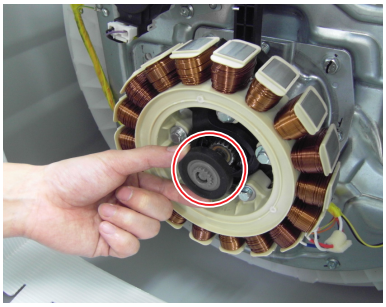
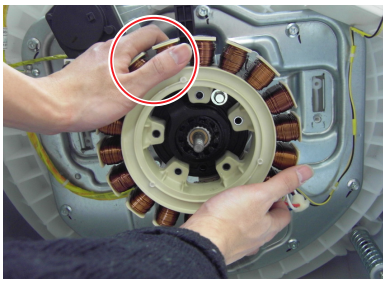
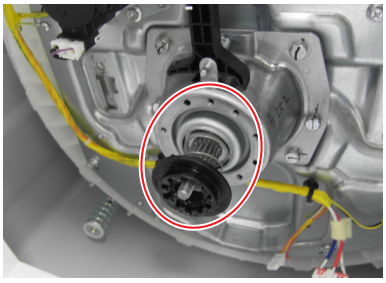
Part	Figure	Description
Door Assembly	   	1. Remove the 2 inlay tapes. 2. Remove the 4 screws holding the door lid TC and separate the door.

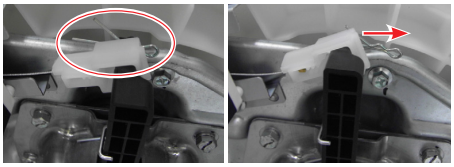
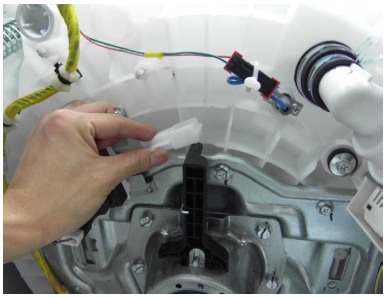
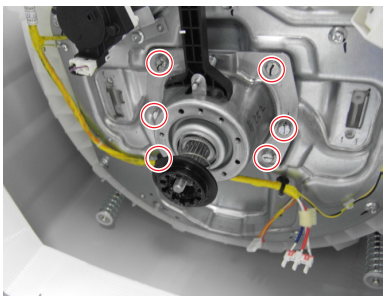
Part	Figure	Description
Top Cover Assembly / Door Switch		1. Remove the 2 screws from the cover plate. 2. Separate the control panel assembly.
		3. Separate the Assy Valve Water, the main PBA, the Assy Sensor Pressure and the filter EMI housing. Separate the housing to prevent stress and damage to the wire-harness. 4. Separate the main wire harness, the pressure switch hose clip , Grounding screw . 5. Release the bleach hose clamp.
		6. Separate the top cover assembly by lifting and pushing ahead the top part of the assembly. 7. you can check the door switch If turn the Top cover upside down.
Sensor Pressure Switch		1. Disassemble the control panel assembly. 2. Separate the pressure switch housing.
		3. Before separating the hose, release the clip. When releasing the clip, take care that you do not tear the hose.

Part	Figure	Description
Drain-Pump	  	1. Separate the back cover 2. Separate 2 clamps. 3. Remove the 3 screws. 4. 5 screws are separated by '+' shape hand driver.
Thermistor		1. Remove the 2 screws.

Part	Figure	Description
Clutch Assembly (continued)		1. Separate the top cover assembly by lifting and pushing ahead the top part of the assembly 2. Remove the 2 screws holding the panel control Separate all the wires connected to the housing.
		3. Remove the 8 screws fixing the tub-cover and separate the tub-cover.
		4. Separate the pulsator-cap by inserting the tip of a (-) screwdriver between the pulsator-cap and the pulsator and then lifting the screwdriver up (↑).
	 	5. Remove the bolt holding the pulsator with a 10mm wrench.

Part	Figure	Description
Clutch Assembly (continued)		6. Remove the shaft with the jig wrench. - Release the nut in a clockwise direction. - Fasten the nut in a counterclockwise direction.
		7. Place the main body so that the front frame faces upward and remove the 2 bolts holding the saddle with a 10mm wrench. When you place the washer on the floor, take care that you do not damage or scratch the product.
		8. Remove the bolt holding the DD-motor housing with a 17mm wrench and then remove the motor housing.
		9. Remove the 6 bolts holding the DD-motor with a 10mm wrench.

Part	Figure	Description
Clutch Assembly (continued)		10. Separate the 2 marked housings and then remove the DD-motor. 11. Press the hook to separate the housing.
	   	12. Separate the slide guide and the coupling by pulling them forward. Disassemble the coupling and the spring.

Part	Figure	Description
Clutch Assembly (continued)	 	13. Separate the clip.
		14. Remove the 6 screws fixing the clutch assembly and then separate the clutch assembly.

Reassembly procedures are in the reverse order of dissasembly procedures.

4. TROUBLESHOOTING

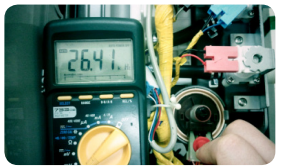
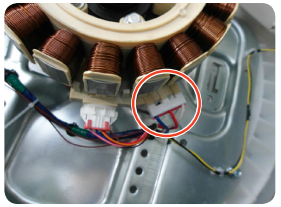
4-1. ERROR MODES

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

Error Type	Display	Causes	Remarks
Water Level Sensor	4E	- The part of the hose where the water level sensor is located is damaged. (punctured) - The hose is clogged with foreign material. - The hose is folded. - Too much lubricant has been applied to the insertion part of the air hose. - Hose engagement error (disengaged) - Part fault (Faulty internal soldering) - The water level sensor terminal is disengaged. - Main PBA fault.	
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 (e.g. a screw) has entered the motor.	This error occurs because of restrained revolutions.
Water Supply Error	2F 2F1	- 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 incorrectly switched with 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.	
		- The cold and warm water supply hoses are incorrectly switched with each other.	The water supplied for 1 minute drying cycle is 0.3 ~ 0.4 L.
		- The water temperature is sensed as higher than 50 ˚C in the Wool or Delicates/Hand wash for 8 seconds	
Drain Error	5d	- The pump motor impeller is damaged internally. - Wrong voltage (220 V → 110 V) is supplied to the parts. - Part fault. - This occurs due to freezing in the winter season - The drain hose is clogged. (Injection error, foreign material) - The water pump terminal is not connected: rubber band, bills, cotton, hair pins, coins have collected inside the drain pump ASSY.	
Commnication Error	AE	- The signals between the sub and main PBAs are not sensed because of commuication 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.	
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.	

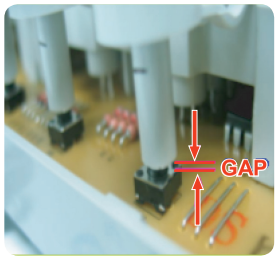
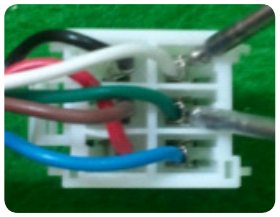
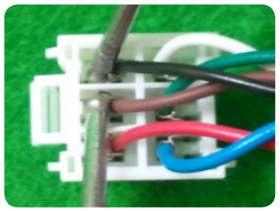
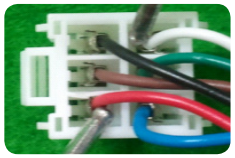
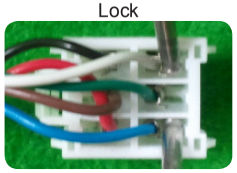
Error Type	Display	Causes	Remarks
Door Error	dS (Before operation)	- A switch contact error because of a deformation of the door hook. - When the door is pulled by force.	When the door is opened after starting operation.
	LO (Unlock Fail)	- The door lock switch terminal is connected incorrectly. - The door lock switch terminal is broken. - This occurs intermittently because of an electric wire leakage. - Main PCB fault	
	FL (Lock Fail)		
Water Leakage Error	LE	- The air hose is out of place and water leakage occurs during the spin cycle. - 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.	
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.
Temperature Sensor Error	tE	- The washing heater in the tub has an error. (Contact error, temperature sensor fault) - The connector is connected incorrectly or is disconnected.	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 imbalance and solve it as directed in the user manual.	
Foaming Detected	SUd Sd	- 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. “Sd” or “SUd” is displayed when too much foaming is detected and “End” (WA456*) / “En” (WA422*,WA400*) 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 error	8E 8E1 8E2	- If the output from the MEMS sensor is over 4.5V or under 0.5V and it continues for 5 seconds, this error occurs.	1. Check the MEMS sensor and PBA. 2. Check the wire connector terminals.

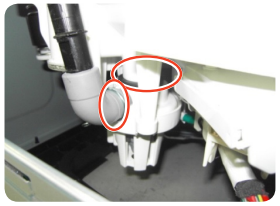
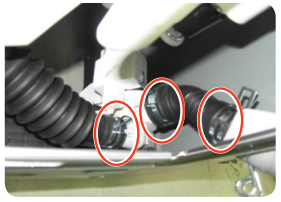
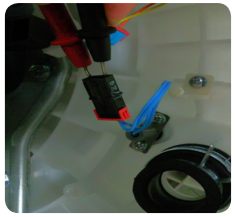
► These are common troubleshooting procedures for each drum-type washer error mode. For detailed information, refer to the general repair scripts.

Error Type	Error Mode / Display	Causes	Corrective Actions	Description of Photo
Water Level Sensor	3H	• 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. 1. Check it after the water level sensor and the connector are connected. Checking Part : Blue Color Wire Oragne Color Wire 2. Frequency: Approx. 26.4 KHz without water (Min 25.9KHz)
Washing Motor Error and Hall Sensor Error	3E	· 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 19.3Ω (at 25°C) **CN1** 1-5V-1 2-Hall-A 3-Hall-B 4-GND 5-Clutch Hall IC  ► Check the motor Hall Sensor • Check the resistance on the main PCB motor (Between pins 2 and 4, 3 and 4 of the four (4) pins) - Resistance : Approx. 2 to 4 MΩ - Check the voltage when the power is on.

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

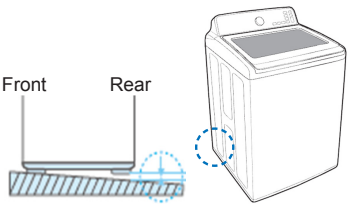
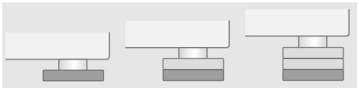
Error Type	Error Mode / Display	Causes	Corrective Actions	Description of Photo
Water Supply Error	nF	• Water supply value fault • Main PCB fault • Freezing in the winter season	• If the water supply valve has a wire disconnected, replace it. • Check whether the water supply valve is clogged with foreign 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 : 0.9KΩ to 1.1KΩ between the terminals of the Water Supply Valve. 2. Check whether there is foreign material in the Water supply valve filter.
Drain Error	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. (Resistance : 13.5 ~ 16.5 Ω)
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 / Display	Causes	Corrective Actions	Description of Photo
Switch Error (Main Relay Error)	E2	• The Power button is continually pressed. • A button other than the Power button is continually pressed.	• Check whether either the Power switch or a tact switch is continually pressed. • Check whether the service PBA holding screws are fastened too tight. If they are fastened too tight, loosen them a little. • If the main PBA switching IC on/off error has occurred, replace the main PBA. • The “E2” error occurs if the main relay connections are incorrect. Check the connections. If there is no error in the connections, replace the main PBA.	 Check the contact between the control panel buttons and their corresponding tact switch. - There must be a gap between a control panel button and its corresponding micro switch. Otherwise, an error occurs after approx. 30 seconds has passed.
Door Error	dS FL LO	• Door-Lock SW fault • Reed SW fault • Main PCB fault	• Check the Door-Lock SW terminal connections and contacts. • Bring the probe of tester into contact with two terminals of Door-Lock SW. [DS Error] In state of Door Close, Check Reed SW Resistance. [FL Error] In state of Door Unlock, Check Motor Resistance. And In state of Door Lock, Check Door Lock Contact Resistance. [LO Error] In state of Door Unlock, Check Motor Resistance and Door Unlock Contact Resistance. • If Resistance is satisfied with Spec, Replace the PBA.	 1. Check the resistance for Reed SW (Checking Part : White-Green Wire) - Resistance: Approx 0.2Ω between the terminals of Reed SW.  2. Check the resistance for Motor (Checking Part : Black-Brown Wire) - Resistance: 33Ω to 46Ω between the terminals of Motor.  Lock  Unlock 3. Check the resistance for Lock/Unlock Contact (Checking Part : Lock White-Red Wire Unlock White-Blue Wire) - Resistance: Resistance: Approx 0.2Ω between the terminals of Contact. Check the Door Lock/ Unlock state.

Error Type	Error Mode / Display	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 when the drain bellows are clogged with foreign material. Remove the foreign material. • Check the drain motor operation. Replace if it does not operate normally.	  
Overflow Error	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.	 
Temperature Sensor Error	tE	• Washing temperature sensor fault. • Faulty and incorrect connections of sensor. • Main PCB Fault. • Freezing in the winter season.	• Check the connections of the temperature sensor. • If the temperature sensor has a functional error, replace it.	  Check the thermistor resistance (Resistance at 20~30°C: 66.187~36.941KΩ)

Error Type	Error Mode	Causes	Corrective Actions	Description of Photo
	Display			
Unbalance Error	dc	• Motor hall sensor fault • Caused by the laundry contents	• Check the type of laundry. Check whether it may cause an unbalanced situation. - Educate the consumer in this case is to press pause reposition the load or remove a few items. Press start to continue and complete the wash cycle.	-

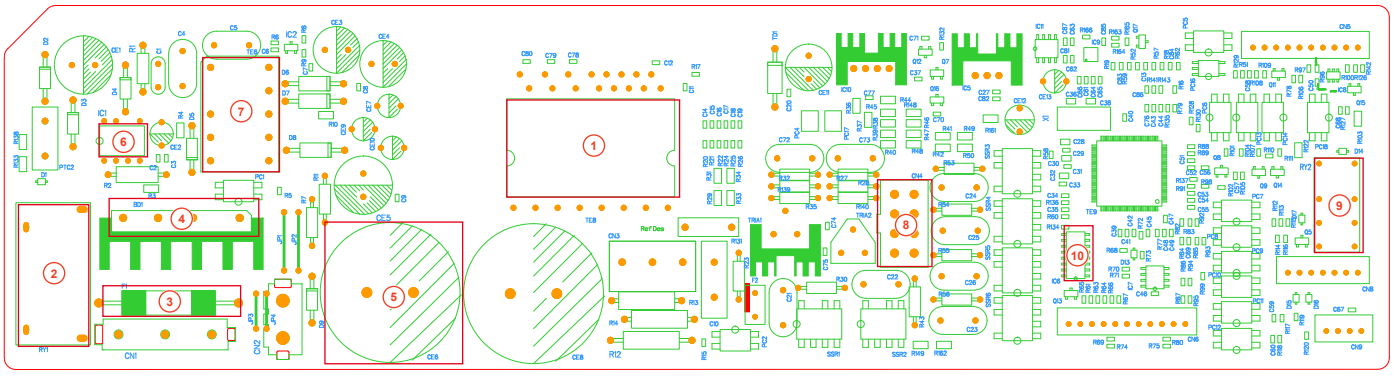
4-3. THE INSTALLATION FOR LEVELING

Problem Type	Causes	Corrective Actions
If the rear level of the floor is lower than the front level of the floor, it can't be leveled. 	• Only use the front legs to adjust the level.	• Use the leg supports to adjust the level of the rear. • If the floor is on a steeply slope, please use the additional leg supports.  • Customer can purchase the leg supports from a service center.

5. PCB DIAGRAM

5-1. MAIN PCB

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



Location	Part No.	Function	Description
1	TE8	Motor Control	Control to Motor
2	RY1	Main Relay	Main Power Relay
3	F1	FUSE	Limit the Over-Current
4	BD1	Making DC Voltage	It works to Change the AC to the DC
5	CE6	Charging Voltage	Charge the DC LINK (300V)

Location	Part No.	Function	Description
6	IC1	Switching IC	Making a stable DC
7	TE6	Trans Circuit	Chopping the DC Link
8	SSR1~6 TRIAC1~2	Load Control	Turn ON/Off the Load(Valve etc.)
9	Q5,RY2	Door Lock Switch Driving Circuit	• Drive the Door Lock Switch • Toggle CW/CCW
10	IC6	Driving Circuit	Drive the SSR or Relay • Supply the Current to the Acting Current

5-2. DETAILED MANUAL FOR CONNECTOR AND RELAY TERMINAL PART - MAIN PCB

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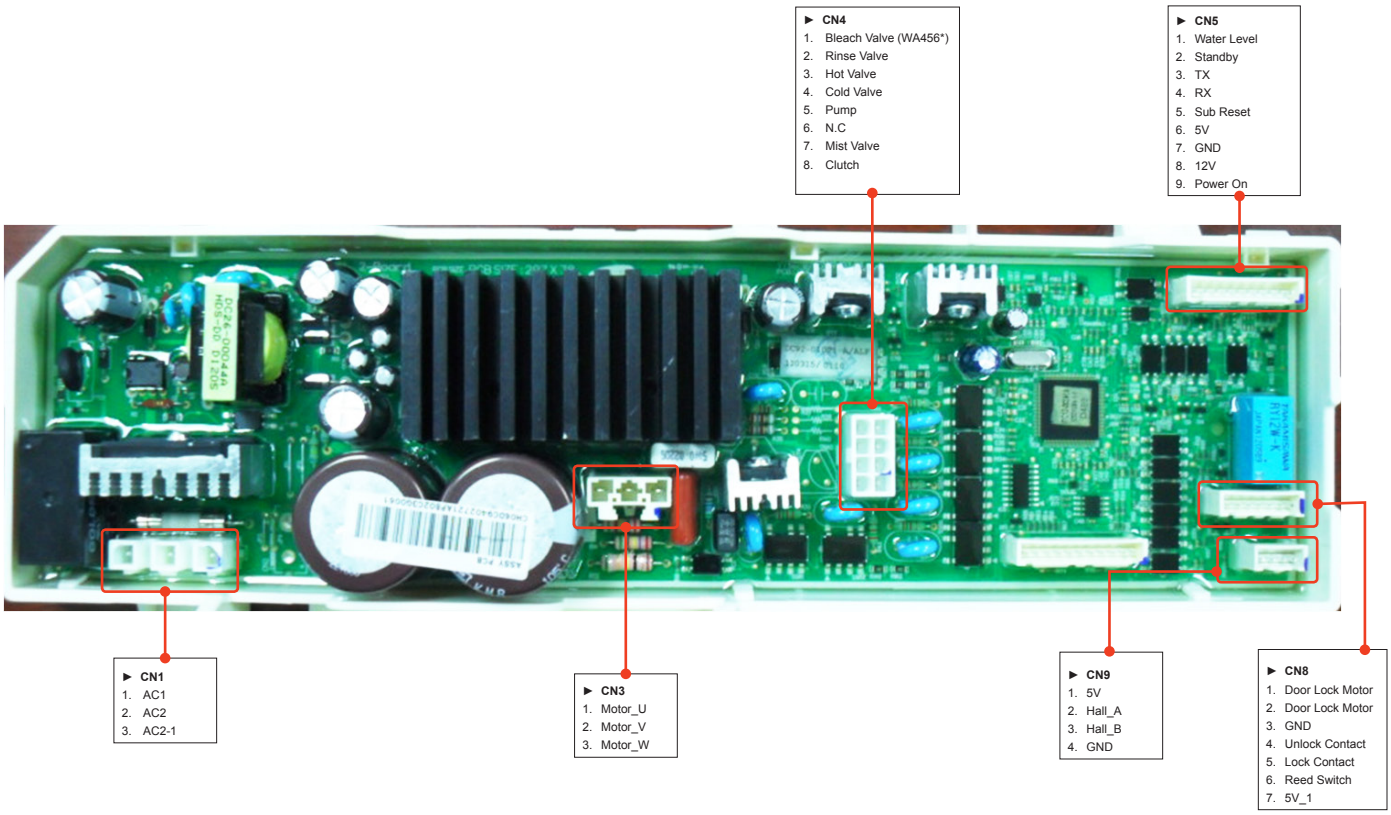

5-3. SUB PCB

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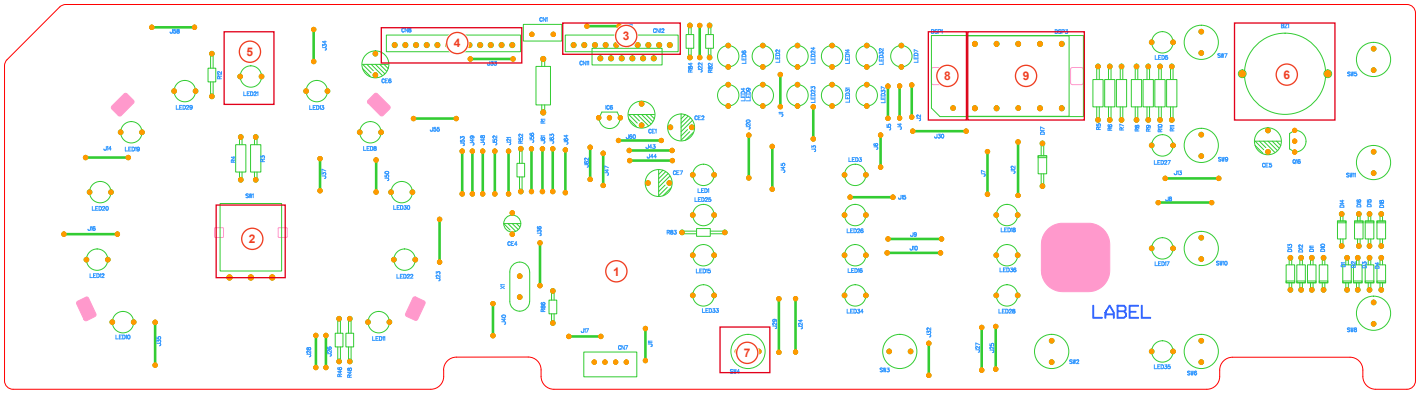

Location	Part No.	Function	Description
1	Micom1	Control Function	Control Key and LED Function Sensing Thermistor , Water Lavel and vibration
2	SW1	Jog Dial	Jog Dial
3	CN12	Communication Part	Connect Main PBA
4	CN8	Conecting Sensing Part	Connecting Thermistor , Water Lavel and Mems Sensor
5	LED1~37	LED Lamp	Display Function
6	BZ1	Buzzer	Making a sound
7	SW2~11	Switch	Operating or changing Function
8	DSP1	LED Display	Display Funciton (WA456*)
9	DSP3	LED Display	Display Funciton (WA422*/WA400*)

5-4. DETAILED MANUAL FOR CONNECTOR TERMINAL PART - SUB PCB (WA456*)

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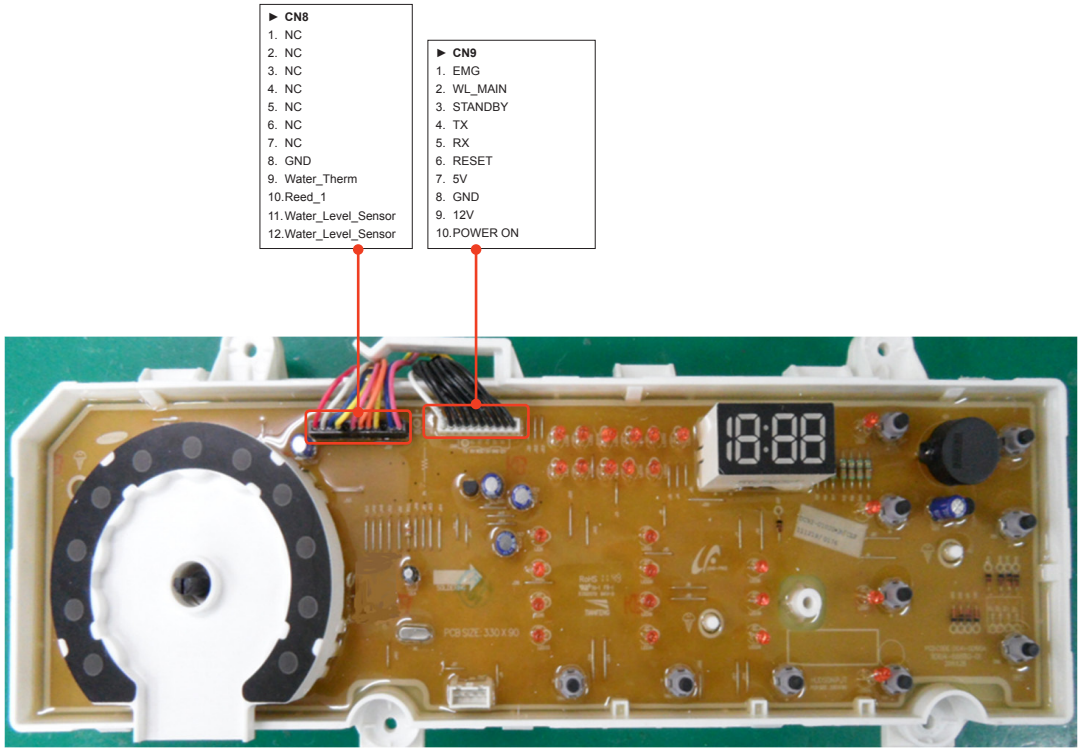
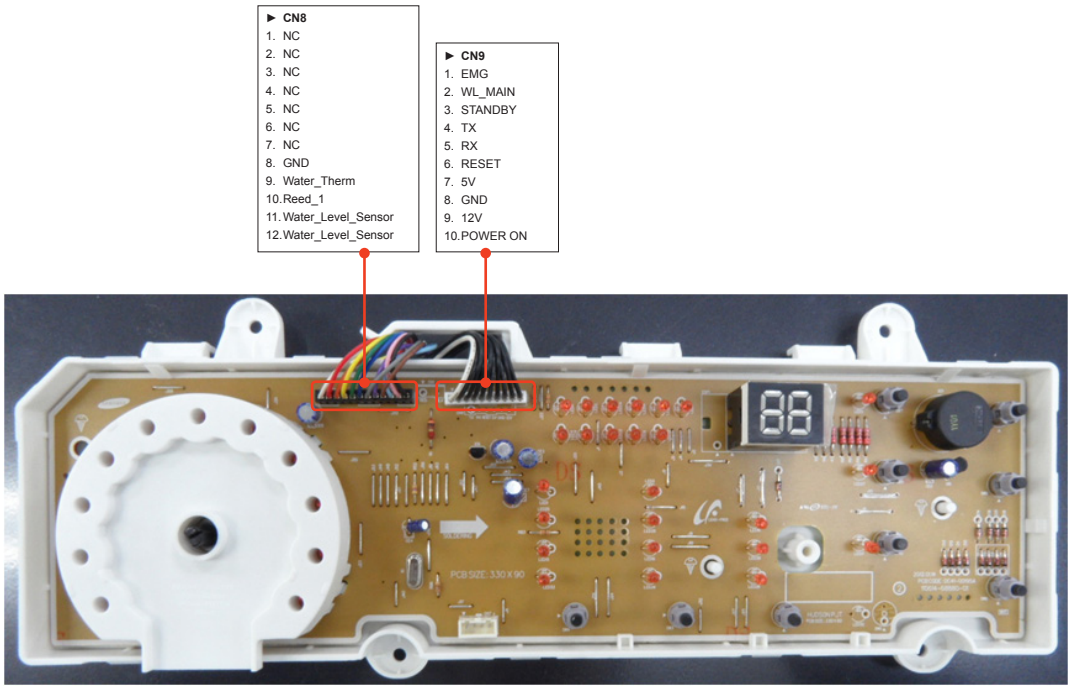


5-5. DETAILED MANUAL FOR CONNECTOR TERMINAL PART - SUB PCB (WA422*/WA400*)

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



6. WIRING DIAGRAM

6-1. WIRING DIAGRAM

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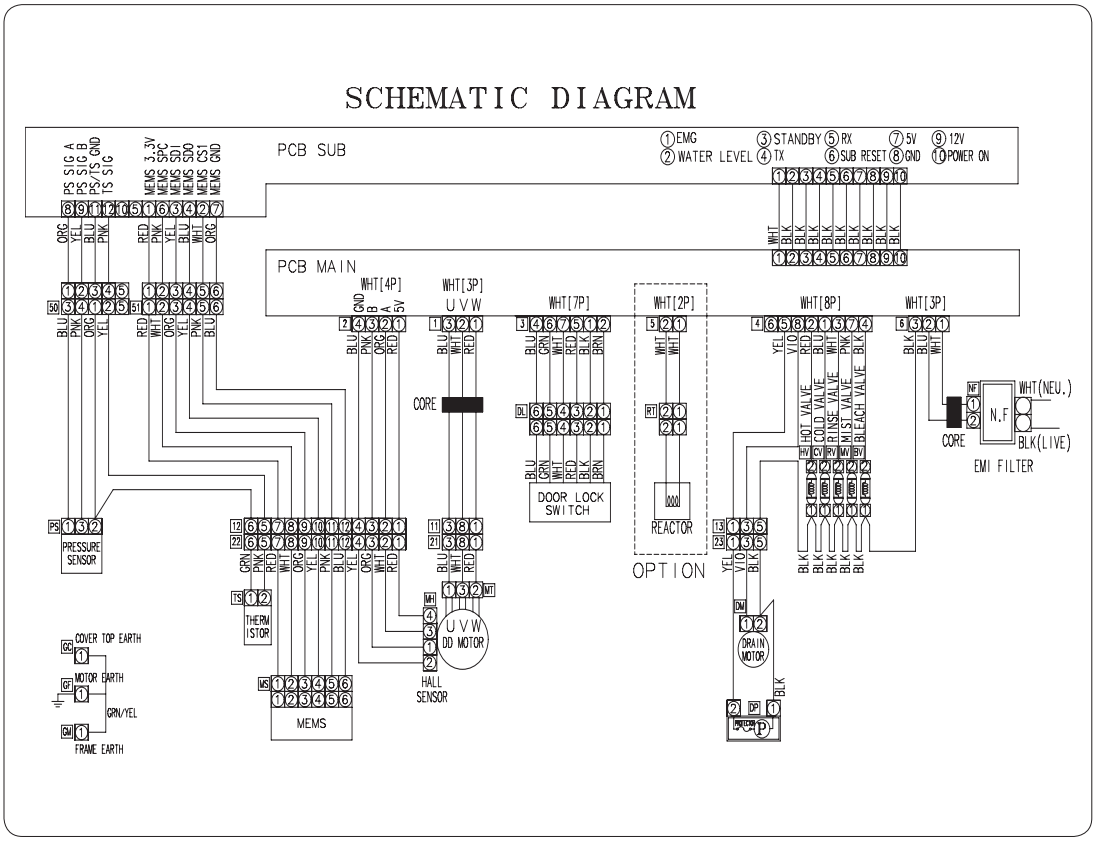
■ **REFERENCE INFORMATION**

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



7. SCHEMATIC DIAGRAM

7-1. MAIN CONTROL

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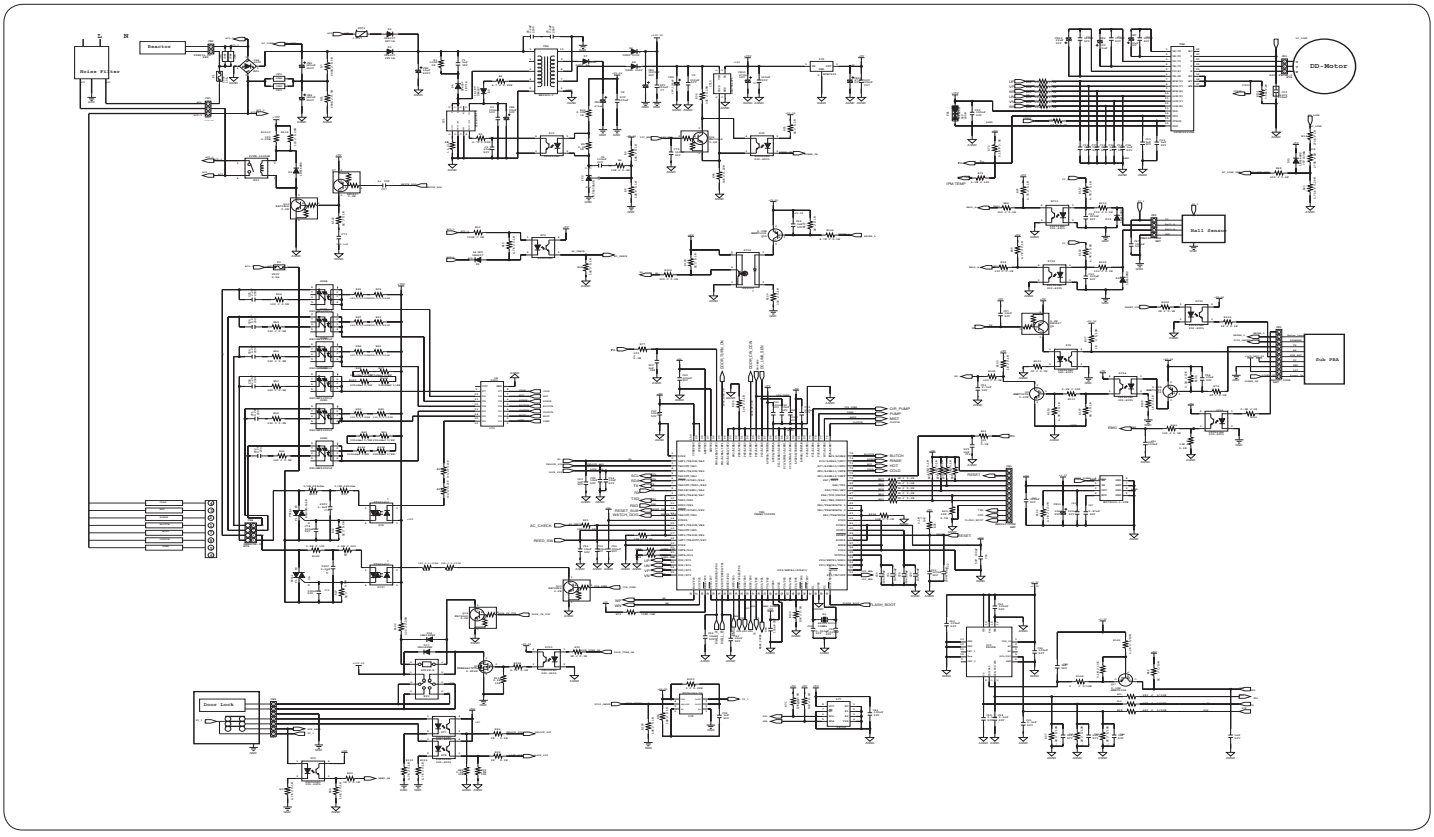

7-2. SUB CONTROL

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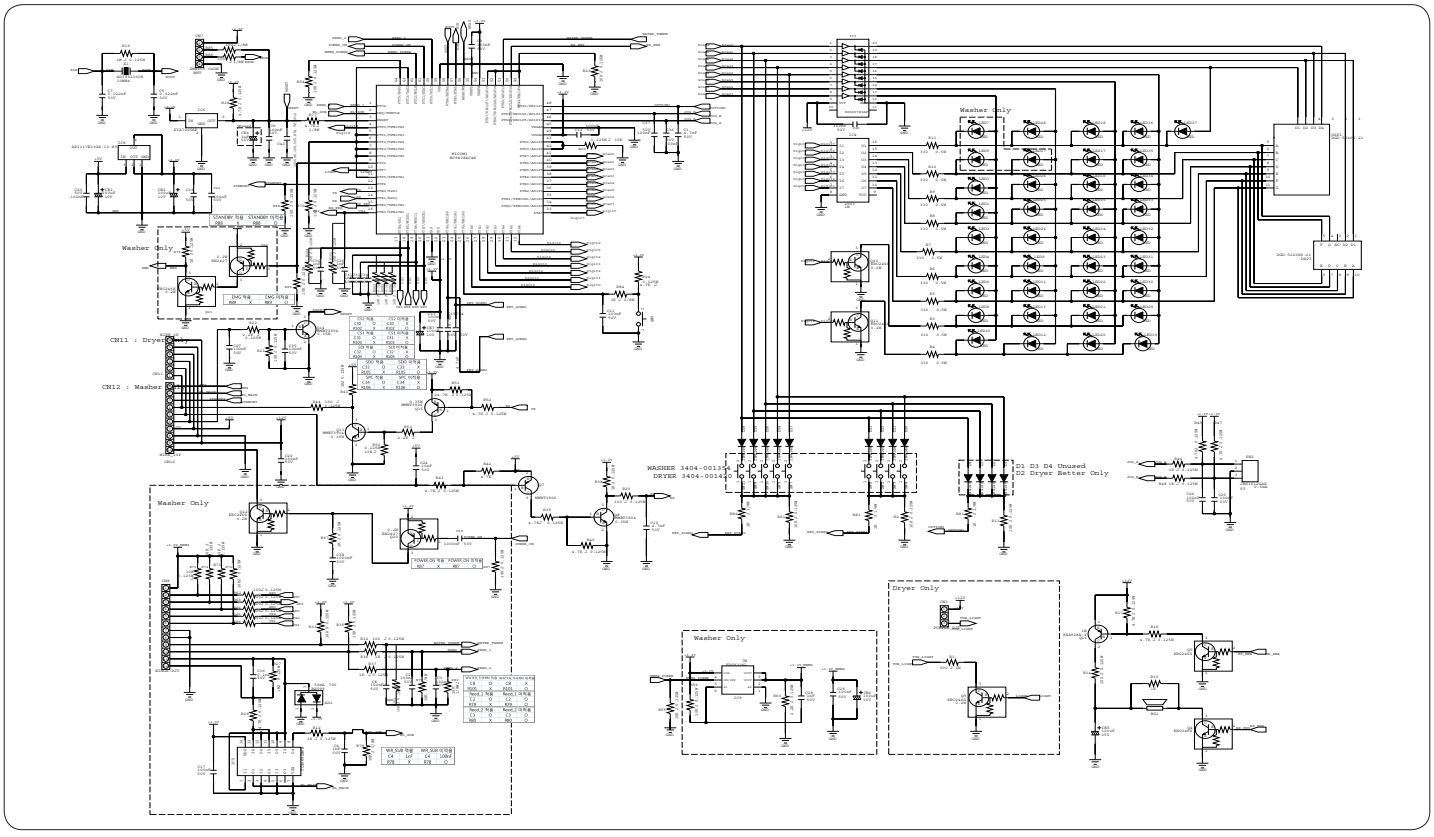

8. REFERENCE

8-1. MODEL NUMBER NAMING RULES

①		②		③			④		⑤		⑥	⑦	
Product Type		Capacity		Feature			Project		Color			Buyer	
				Feature1	Feature3	Feature2	Platformor Series	Sub-Plat or Ver.					
W	A	4	5	6	D	R	H	D	S	U	/	A	A

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

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

③ **Feature Code** : 6 – Best/Hot & Cold Water
D - Inverter Motor / Pump
R - Tempered Glass

④ **Project** : HD – HUDSON

⑤ **Color** : SU – Ultra Inox

⑥ / : CBU

⑦ **Buyer** : AA : USA

MODEL NUMBER NAMING RULES (continued)

①	②	③		④		⑤	⑥	⑦
Product Type	Capacity	Feature		Project		Color	/	Buyer
		Feature1	Feature2	Platformor Series	Sub-Platform Ver.			
W	5	6	R	H	D	W	/	A
A	4	D				R		A

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

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

③ **Feature Code** : 6 – Best/Hot & Cold Water
D – Inverter Motor / Pump
R – Tempered Glass

④ **Project** : HD – HUDSON

⑤ **Color** : WR – Neat White

⑥ / : CBU

⑦ **Buyer** : AA : USA

MODEL NUMBER NAMING RULES (continued)

①	②	③		④		⑤	⑥	⑦
Product Type	Capacity	Feature		Project		Color	/	Buyer
		Feature1	Feature2	Platformor Series	Sub-Plat or Ver.			
W	2	2	R	H	D	W	/	A
A	4	P				R		A

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

② **Market Claim Capacity** : 4.2 cu.ft

③ **Feature Code** : 2 – Good/Hot & Cold Water
P – Inverter Motor / Pump
R – Tempered Glass

④ **Project** : HD – HUDSON

⑤ **Color** : WR – Neat White

⑥ / : CBU

⑦ **Buyer** : AA : USA

MODEL NUMBER NAMING RULES (continued)

①		②		③			④		⑤		⑥	⑦	
Product Type		Capacity		Feature			Project		Color			Buyer	
				Feature1	Feature3	Feature2	Platformor Series	Sub-Plat or Ver.					
W	**A**	**4**	**0**	**0**	**P**	**J**	**H**	**D**	**W**	**R**	/	**A**	**A**

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

② **Market Claim Capacity** : 4.0 cu.ft

③ **Feature Code** : 0 – Basic/Hot & Cold Water
P – Inverter Motor / Pump
J - Jog Dial

④ **Project** : HD – HUDSON

⑤ **Color** : WR – Neat White

⑥ / : CBU

⑦ **Buyer** : AA : USA

GSPN (GLOBAL SERVICE PARTNER NETWORK)

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