

## 5. Troubleshooting

### 5-1. Troubleshooting Code on Display Panel & Solutions

#### TROUBLESHOOTING FOR EACH ERROR CODE



ERROR CODE	CAUSE	SOLUTION
C 00	<ul style="list-style-type: none"> <li>Robotic vacuum cleaner is caught, stuck or trapped while navigating.</li> </ul>	<ul style="list-style-type: none"> <li>Turn off the Power Switch at the bottom and move the robotic vacuum cleaner to a different location.</li> </ul>
C 01	<ul style="list-style-type: none"> <li>A foreign substance (string, paper, toy etc.) is caught in the power brush.</li> </ul>	<ul style="list-style-type: none"> <li>Turn off the Power Switch at the bottom and remove the foreign substance from the power brush.</li> </ul>
C 02	<ul style="list-style-type: none"> <li>A foreign substance (string, paper, toy etc.) is caught in the left driving wheel.</li> </ul>	<ul style="list-style-type: none"> <li>Turn off the Power Switch at the bottom and remove the foreign substance from the left driving wheel.</li> </ul>
C 03	<ul style="list-style-type: none"> <li>A foreign substance (string, paper, toy etc.) is caught in the right driving wheel.</li> </ul>	<ul style="list-style-type: none"> <li>Turn off the Power Switch at the bottom and remove the foreign substance from the right driving wheel.</li> </ul>
C 05	<ul style="list-style-type: none"> <li>Check bumper sensor.</li> </ul>	<ul style="list-style-type: none"> <li>Slightly pull the stuck bumper outward.</li> </ul>
C 06	<ul style="list-style-type: none"> <li>A foreign substance (dust, stain etc.) is on the Obstacle sensor window.</li> </ul>	<ul style="list-style-type: none"> <li>Turn off the Power Switch at the bottom and wipe the foreign substance from the front and rear sensor windows using a soft cloth.</li> </ul>
C 07	<ul style="list-style-type: none"> <li>A foreign substance (Dust, stain etc.) is on the Cliff sensor window.</li> </ul>	<ul style="list-style-type: none"> <li>Turn off the Power Switch at the bottom and wipe the foreign substance on the cliff sensor window with a soft cloth.</li> </ul>
C 08	<ul style="list-style-type: none"> <li>Dust bin not inserted.</li> </ul>	<ul style="list-style-type: none"> <li>Insert the dust bin until you hear a "Click" sound.</li> </ul>
C 09	<ul style="list-style-type: none"> <li>A foreign substance (String, cloth etc.) is caught on the edge-cleaning side rotating brush.</li> </ul>	<ul style="list-style-type: none"> <li>Turn off the Power Switch at the bottom and wipe the foreign substance from the edge-cleaning side rotating brush.</li> </ul>

\* If you press the Start/Stop button or turn off the Power Switch, the error code is cleared.

\* When an error code occurs, a voice announcement will be heard.

## 5-2. Self-Diagnosis & Solutions

※ Make sure to turn off the Power Switch before repairing the unit.

Symptom	Cause	Troubleshooting
The Suction Motor does not rotate.	Battery drained	Recharge the Battery
	Motor damaged	Replace the Motor
	Wire broken	Connect the wiring
	Wire–Housing Pin loose	Tighten the Pin
	Battery defect	Replace the Battery
	Protector tripped due to battery overheat	Cool down the Battery
	PBA MAIN defect	Replace the PBA MAIN
The Driving Wheel does not rotate.	Material stuck in the Driving Wheel	Remove the material from the Driving Wheel
	Gear Box broken	Replace the Gear Box
	Battery drained	Recharge the Battery
	Motor broken	Replace the Motor
	Motor wire cut	Connect the wiring
	Wire terminal contact defect	Reconnect the terminal
	PBA MAIN defect	Replace the PBA MAIN
	Battery defect	Replace the Battery
	Protector tripped due to battery overheat	Cool down the Battery
The Power Brush does not rotate.	Material stuck in the Power Brush	Remove the material from the Power Brush
	Battery drained	Recharge the Battery
	Motor wire broken	Replace the Motor
	Motor broken	Replace the Motor
	Protector tripped due to Motor overheat	Cool down the Motor
	Motor Housing Terminal loose	Re–connect the Terminal
	Battery defect	Replace the Battery
	PBA MAIN defect	Replace the PBA MAIN
	Protector tripped due to battery overheat	Cool down the Battery
Suction is weak.	Battery run down	Replace the Battery
	Battery running low	Recharge the Battery
	Dust Bin full	Empty the Dust Bin
	Improper Assembly of the Power Brush	Re–Assemble the Power Brush
	Rotation Error due to Foreign Substances stuck in the Power Brush	Remove Foreign Substances
	Insufficient Rotation Power due to Foreign Substances stuck in the Suction Motor	Remove Foreign Substances

※ Make sure to turn off the power before servicing.

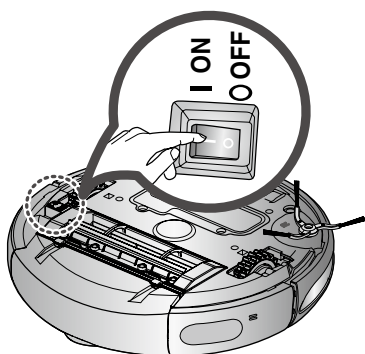
Symptom	Cause	Solution
Abnormal Noise	The Impeller is full with foreign substances	Remove the foreign substances
	The Impeller nut is loose.	Fasten the Impeller nut
	Foreign substances are stuck in the Drum Brush.	Remove the foreign substances
	Foreign substances are stuck in the Suction Motor.	Remove the foreign substances
	The Drum Motor Gear is worn down.	Replace the Drum Motor Gear Box.
No Power	The Battery Fuse is blown out.	Replace the Battery.
	Due to the battery overheating, the overheat protect device is triggered.	Cool down the Battery.
	The Battery Cell is cut.	Replace the Battery.
	Defective Power Switch Contact	Replace the Power Switch
	The Battery Wire is cut.	Reconnect the Battery Wire.
Keep backing up even though there is no obstacle in front of the unit.	The Bumper Switch is got stuck up being pressed down.	Remove the foreign substances on the Bumper or adjust the Bumper Spring
	The Cliff Sensor does not operate properly.	Remove the foreign substances on the Sensor Window. Check if the connector is properly connected or replace the Cliff Sensor.
	The Fence Sensor is defective.	Replace ASS' Y FRONT HALL
Auto Recharging does not work.	When there are obstacles within 1.5 meter around the Charger.	Move the Charger to the area with no obstacles around the Charger.
	When the Robot Cleaner does not start cleaning from the Charger	Put the Robot Cleaner on the Charger and have it start cleaning from the Charger.
	When moving the Robot Cleaner away from the Charger and having it start cleaning	Put the Robot Cleaner on the Charger and have it start cleaning from the Charger.
	When the Infra Red Ray Sensor of the Robot Cleaner is defective	Replace PBA SMPS
Auto Charging does not work.	When the voltage at the Charger Terminal is not normal	Check the Charger Connector or Replace ASS' Y SMPS
	When the Infra Red Ray Sensor of the Robot Cleaner is defective	Replace PBA ADAPTOR
	When the Signal Receiving Sensor of the Robot Cleaner is defective	Replace PBA REMOTE
The Robot Cleaner could not clean and rotates at one spot.	When the Obstacle Sensor is defective	Replace the Obstacle Sensor
	When the PBA MAIN is defective	Replace the PBA MAIN
The Robot Cleaner falls off the steps.	When the Cliff Sensor is defective	Replace the Cliff Sensor
	The Cliff Sensor does not detect the steps due to footwears or other obstacles.	Remove the obstacles
	When there is no Virtual Guard or Fence Tape	Install Virtual Guard or attach Fence Tape
The Robot Cleaner does not go straight but goes around.	When the Forward Calibration Sensor is defective	Replace the PBA MAIN
	When the Wheel Motor Encoder is defective	Replace the Wheel Motor
	When the PBA MAIN is defective	Replace the PBA MAIN
The set time does not keep time.	When the initial time setting is not done	Set its time
	Defective PBA MAIN	Replace the PBA MAIN
	Defective Timer Battery	Replace the PBA MAIN
The remote controller does not work	The Remote Controller battery got drained	Replace Battery
	The Remote Controller Module is defective	Replace PBA FRONT RECIVER Replace PBA MID RECIVER

## 5-3. Test Mode

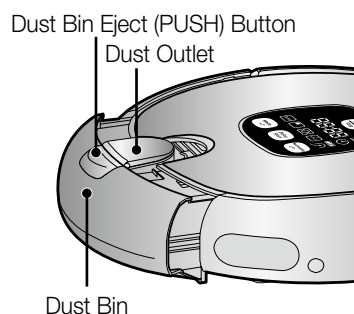
### 5-3-1. How to activate Test Mode

#### 1. How to enter the Test Mode

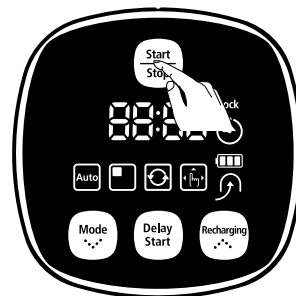
- ① Switch on the Power Switch.



- ② Remove the Dust Bin.

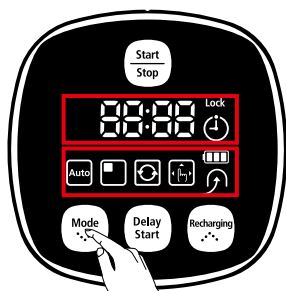


- ③ Press the Bumper and press the Start/Stop button for 3 seconds.

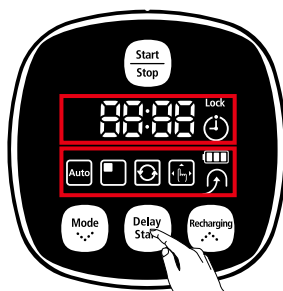


#### 2. Test starts (5-3-3. Test Method and Diagnosis - Refer to Page 5~6)

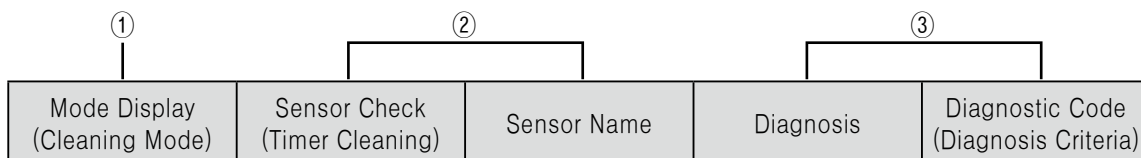
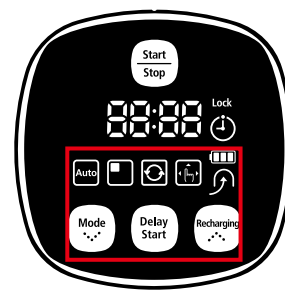
- ① Press the Mode button and select the cleaning mode you want (select the Cleaning Mode)



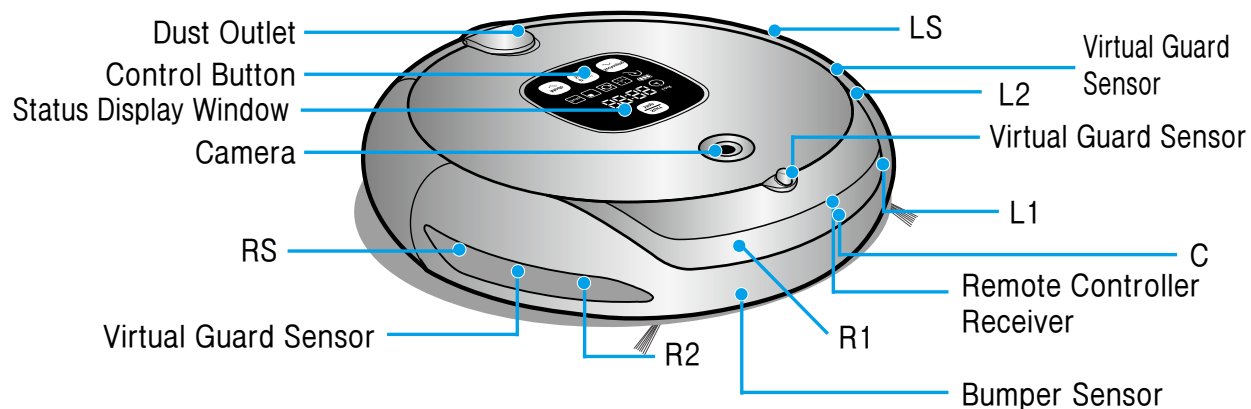
- ② Press the Timer/Daily or Timer button and select a Test Mode to check.



- ③ Take a necessary measure according to the diagnosis and decide whether it has problems based on the Display Panel.

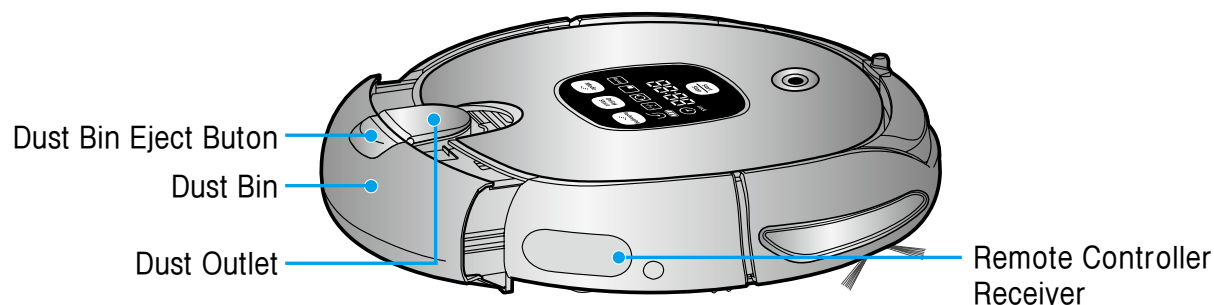


### 5-3-2. Each Sensor Location

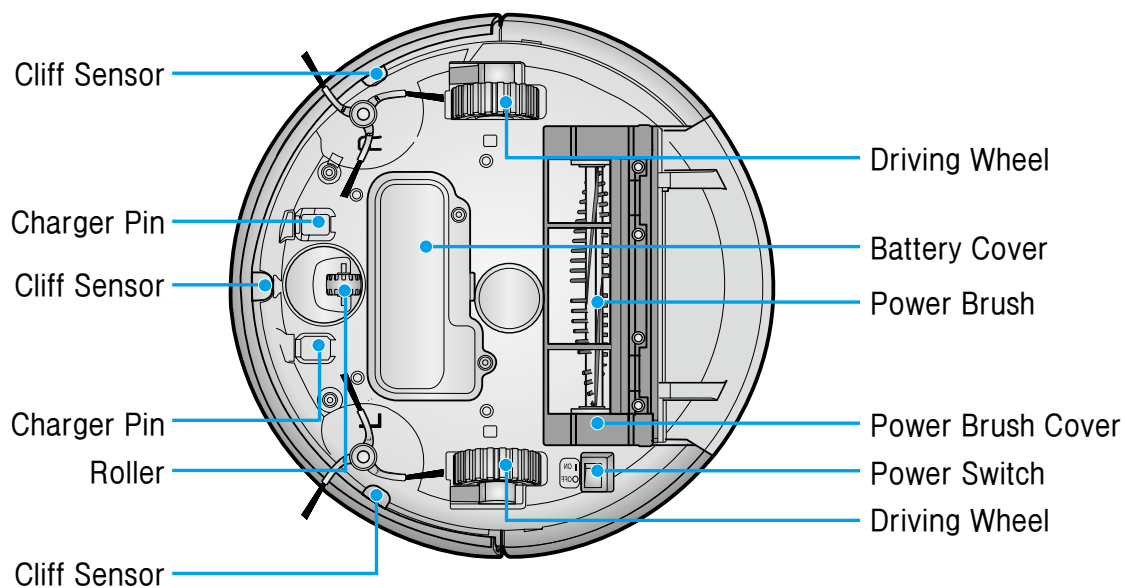


※ Obstacle Sensor : 7 ea in total  
(RS, R2, R1, C, L1, L2, LS)

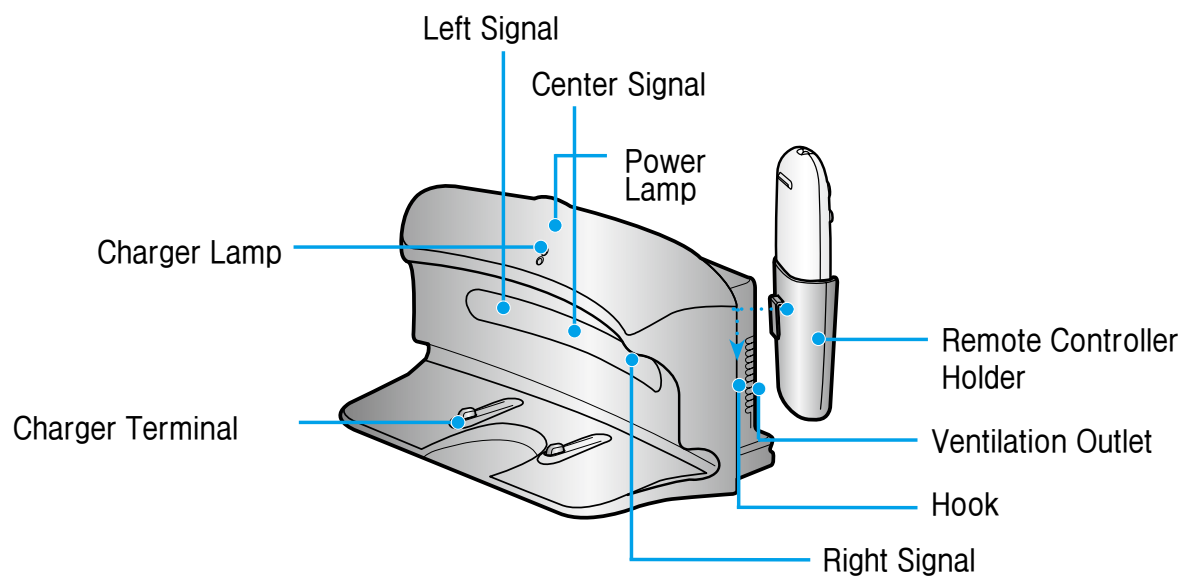
Front



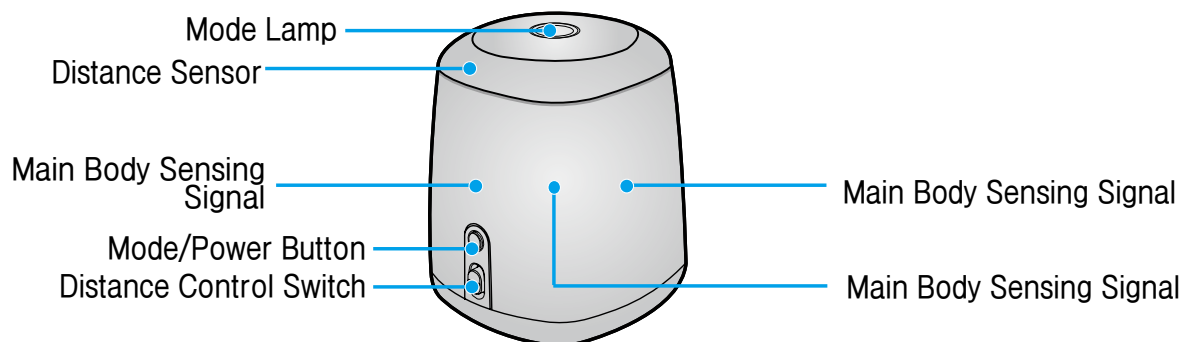
Side



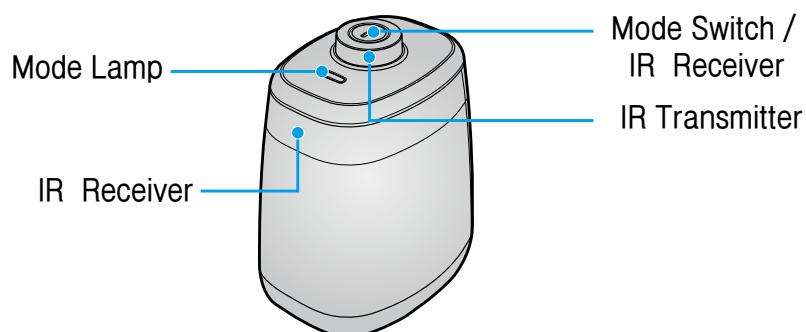
Bottom



Charger




A Type




B Type



Virtual Guard


### 5-3-3. Failure Criteria

Mode Display (Cleaning Mode)	Sensor Selection	Sensor Name	Diagnosis	Diagnostic Code (Diagnosis Criteria)
Sensor Check 1 (On/Off Type) Auto Cleaning Mode 	00	Left Bumper Sensor	When the Left Bumper is not pressed	00 88
			When the Left Bumper is pressed	00 80
	01	Right Bumper Sensor	When the Right Bumper is not pressed	01 88
			When the Right Bumper is pressed	01 80
	02	Left Lifted-up Sensor	When the Left Driving Wheel is put on the floor	02 88
			When the Left Driving Wheel is lifted up higher than 30cm	02 80
	03	Right Lifted-up Sensor	When the Right Driving Wheel is put on the floor	03 88
			When the Right Driving Wheel is lifted up higher than 30cm	03 80
	04	Dust Bin Sensor	When the Dust Bin is removed	04 88
			When the Dust Bin is assembled	04 80
	07	Remote Controller Receiver	When the Remote Controller buttons are not pressed	07 88
			When the Remote Controller buttons are pressed	07 80
	09	Gyro Sensor	The initial value "50" will be displayed and be increased by "1" degree	09 50
	10	Docking Detection	When the unit is not attached to the Charger	10 88
			When the unit is attached to the Charger	10 80
	11	Charging Detection	Not Normal (in 1 sec after being attached to the Charger)	11 88
			Normal (in 1 sec after being attached to the Charger)	11 80

※There are no 05, 06 and 08 sensor checking codes.

Mode Display (Cleaning Mode)	Sensor Selection	Sensor Name	Diagnosis	Diagnostic Code (Diagnosis Criteria)
Sensor Check 2 (Obstacle Sensor) Spot Cleaning Mode 	00	Left Side Obstacle Sensor (LS)	When there is no obstacle, the display shows “0” and the number increases as it gets closer to obstacles.	00 Distance Value (Display 0~25)
	01	Left Obstacle Sensor (L2)		01 Distance Value (Display 0~25)
	02	Left Obstacle Sensor (L1)		02 Distance Value (Display 0~25)
	03	Center Obstacle Sensor (C1)		03 Distance Value (Display 0~25)
	04	Right Obstacle Sensor (R1)		04 Distance Value (Display 0~25)
	05	Right Obstacle Sensor (R2)		05 Distance Value (Display 0~25)
	06	Right Side Obstacle Sensor (RS)		06 Distance Value (Display 0~25)
	07	Left Cliff Sensor	When the unit put on the floor	07 25
			When the unit is lifted up higher than 5cm	07 80
	08	Center Cliff Sensor	When the unit put on the floor	08 25
			When the unit is lifted up higher than 5cm	08 80
	09	Right Cliff Sensor	When the unit put on the floor	09 25
			When the unit is lifted up higher than 5cm	09 80

Mode Display (Cleaning Mode)	Sensor Selection	Sensor Name	Diagnosis	Diagnostic Code (Diagnosis Criteria)
※ Check while shaking the Cleaner sideways in front of it. Sensor Check 4 (Charger) Displaying Repeat Cleaning Mode. 	00	Front Left	No Signal Received	00:88
			Left Signal Detected	00:88
			Right Signal Detected	00:88
			Center Signal Detected	00:11
	01	Front Right	No Signal Received	01:88
			Left Signal Detected	01:88
			Right Signal Detected	01:88
			Center Signal Detected	01:11
	02	Rear Right	No Signal Received	02:88
			Left Signal Detected	02:88
			Right Signal Detected	02:88
			Center Signal Detected	02:11
	03	Rear Left	No Signal Received	03:88
			Left Signal Detected	03:88
			Right Signal Detected	03:88
			Center Signal Detected	03:11
※ Virtual Guard Red LED Display Status Sensor Check 5 (Virtual Guard) Displaying Repeat Cleaning Mode. 	04	Left	Signal Detected	04:00
		Right	Signal Detected	04:00
		Left / Right at the same time	Signal Detected	04:00
		Left / Right at the same time	No Signal Detected	04:88

Mode Display (Cleaning Mode)	Sensor Selection	Sensor Name	Diagnosis	Diagnostic Code (Diagnosis Criteria)
Sensor Check 6 (Motor & Encoder, Manual Cleaning Mode)   Caution : Because the motor is rotating, lift the wheels off the floor.	00	Left Wheel Motor	When the Motor rotates clockwise	00 RPM Increasing
			When the Motor rotates counter clockwise	00 RPM Decreasing
	01	Right Wheel Motor	When the Motor rotates clockwise	01 RPM Increasing
			When the Motor rotates counter clockwise	01 RPM Decreasing
	02	Power Brush Motor	When the Motor is rotating	02 RPM Increasing
			When the Motor is defective	02:80
	03	Suction Motor	Normal : There are motor rotating sounds.	03:80
			Defect : There are no motor rotating sounds.	
	04	Side Rotating Brush Motor	When both of the Motors are rotating at the same time	04:00
			When both of the Motors are not rotating	04:88
			When only the left Motor is rotating	04:80
			When only the right Motor is rotating	04:08

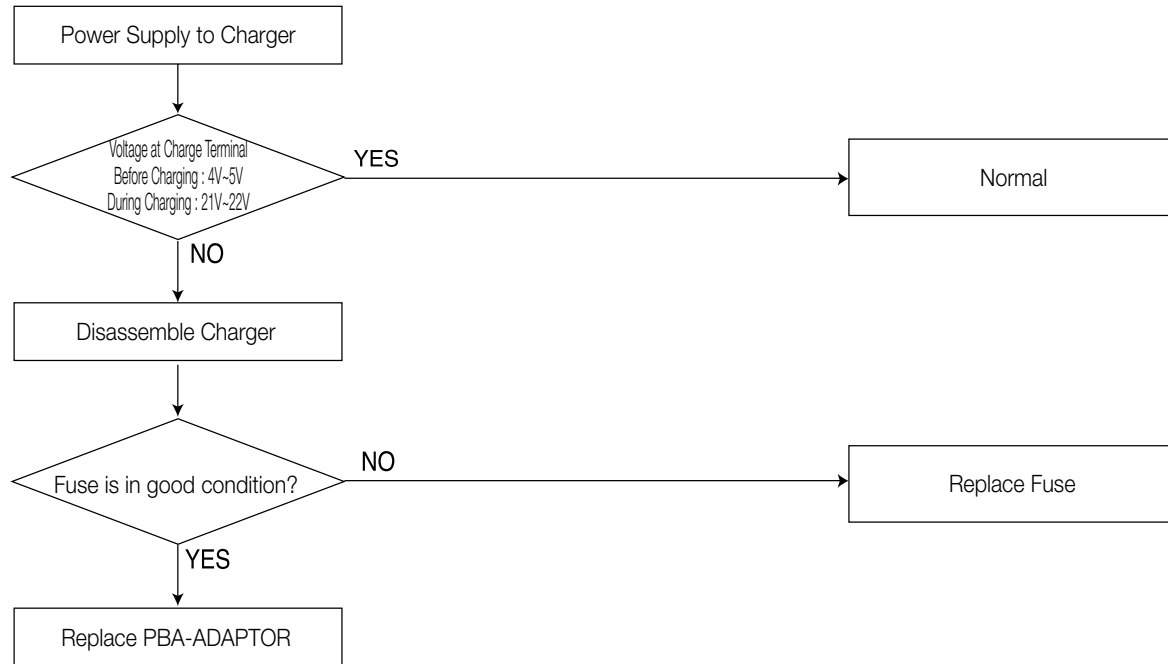
※ There is no 05 sensor checking code.

## 5-4. PCB Troubleshooting & Solutions

### 5-4-1. When Battery does not get charged

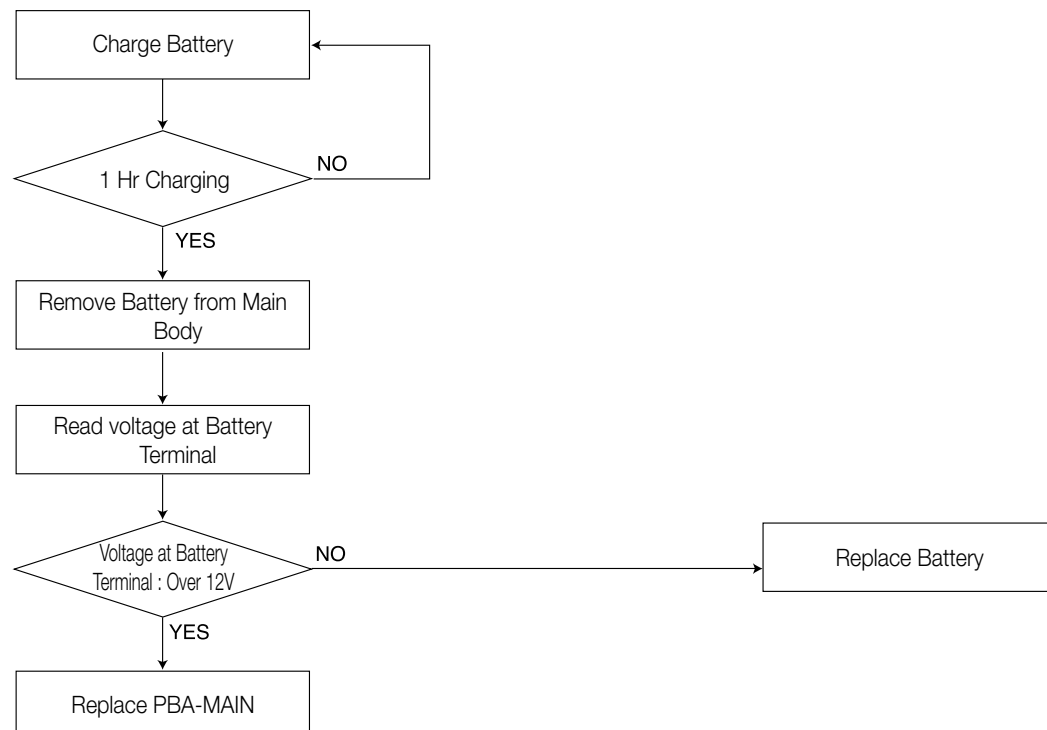
#### 5-4-1-1. CHECK CHARGER

※ Make sure to switch off the Power Switch before replacing parts.



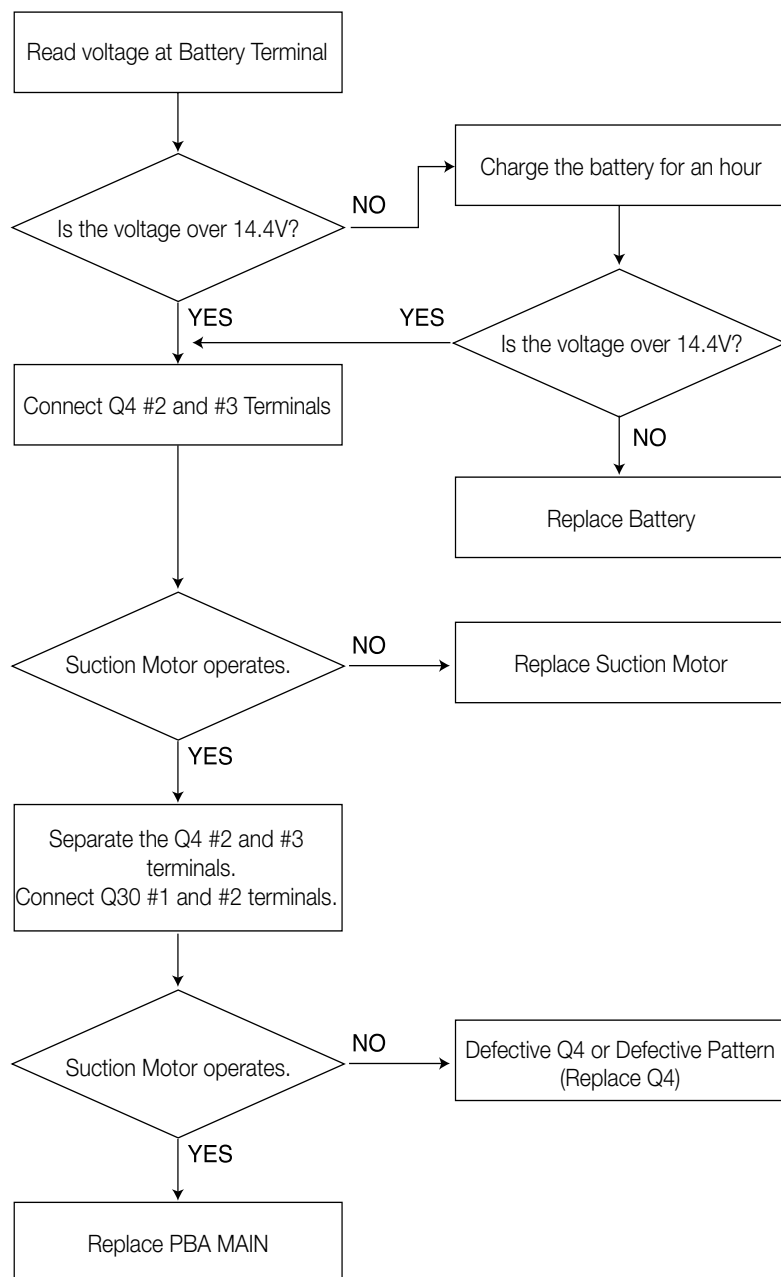
#### 5-4-1-2. CHECK BATTERY

※ Make sure to switch off the Power Switch before replacing parts.



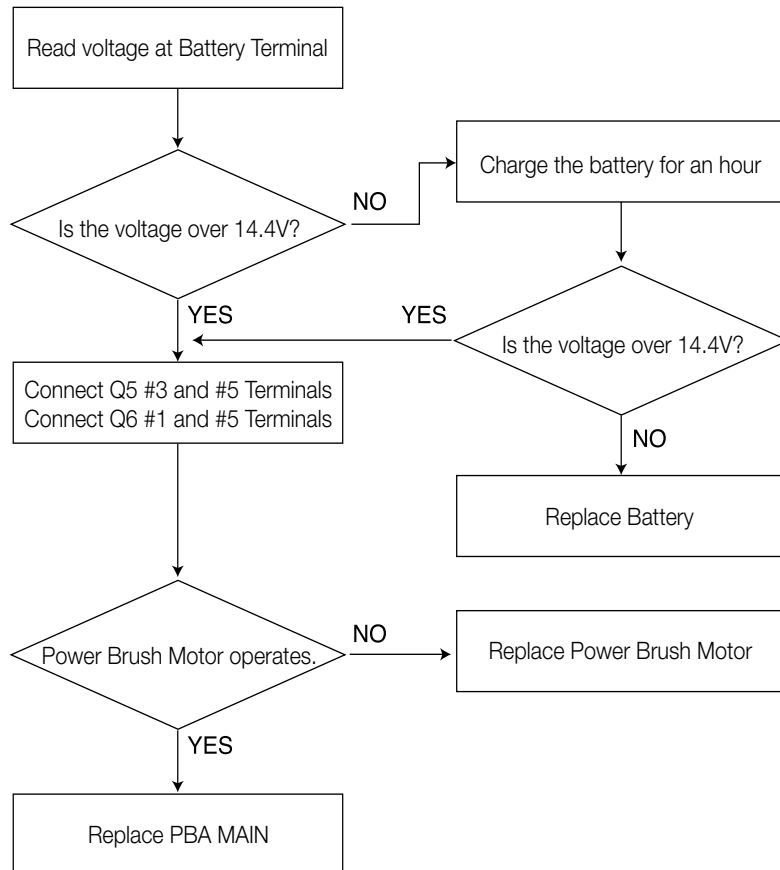
## 5-4-2. Suction Motor Rotating Defect

※ Make sure to switch off the Power Switch before replacing parts.



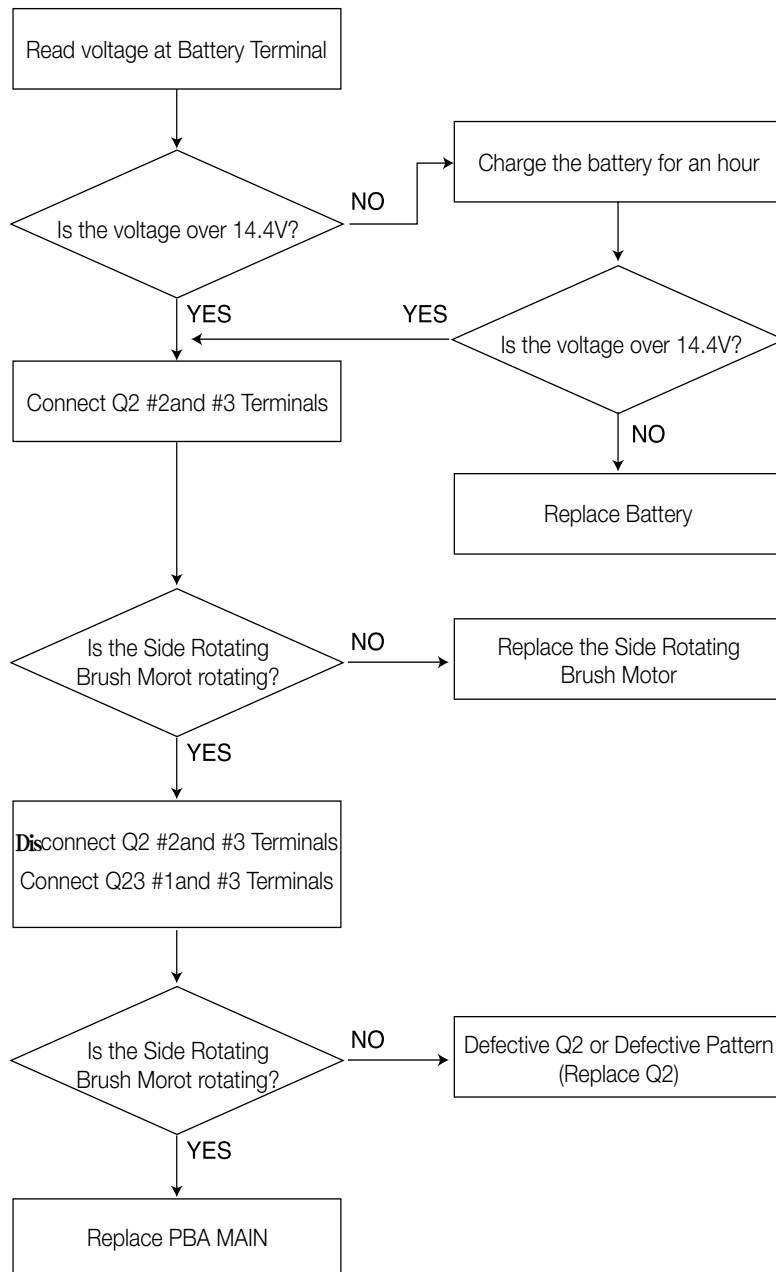
## 5-4-3. Brush Motor Rotating Defect

※ Make sure to switch off the Power Switch before replacing parts.



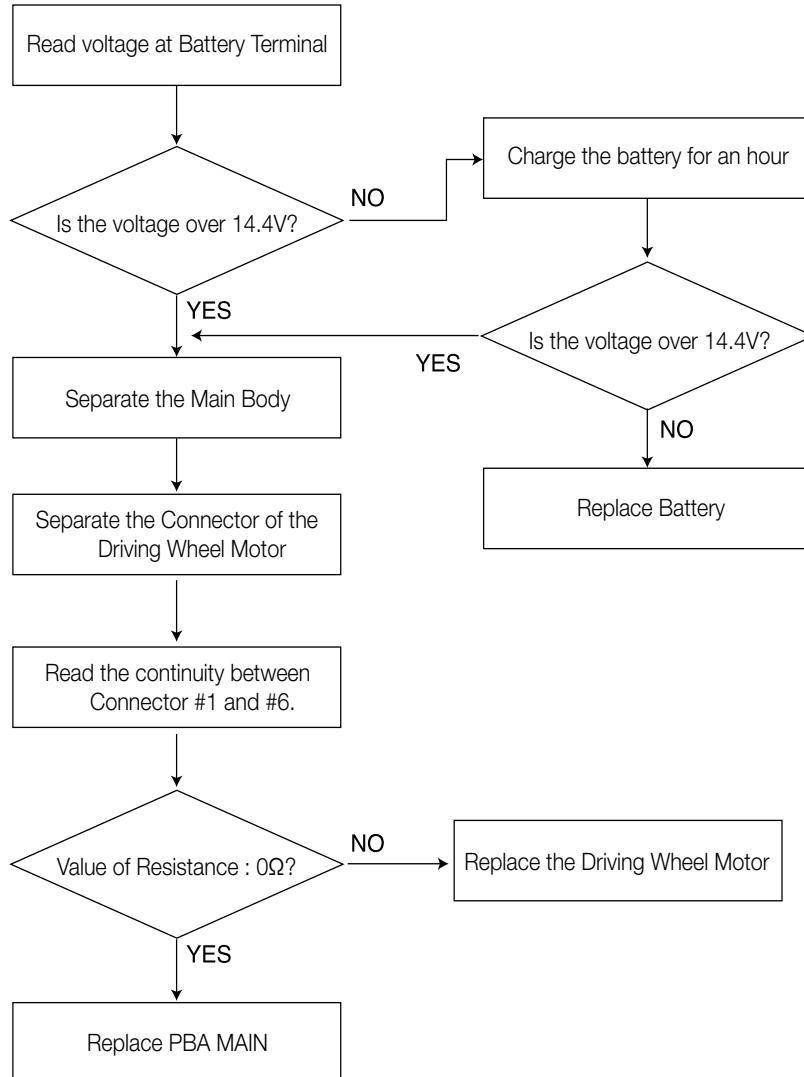
## 5-4-4. Side Brush Motor Rotating Defect

※ Make sure to switch off the Power Switch before replacing parts.



### 5-4-5. Wheel Motor Rotating Defect

※ Make sure to switch off the Power Switch before replacing parts.



## 5-4-6. Charger Docking Problem

※ Make sure to switch off the Power Switch before replacing parts.

