

# Service Manual

Wet/Dry Rechargeable Shaver

ES8093-A3



## SPECIFICATIONS

Power source	AC 100-240V, 50-60Hz (Automatic voltage conversion)
Power consumption	7W
Motor voltage	24V DC
Charging time	1 Hour
Shaves per charge	14 times (3 minutes shave)
Measurement	(H)14 x (W)5.9 x (D)5.0 cm
Weight	230g
Supplied accessories	Semi hard case Cleaning brush

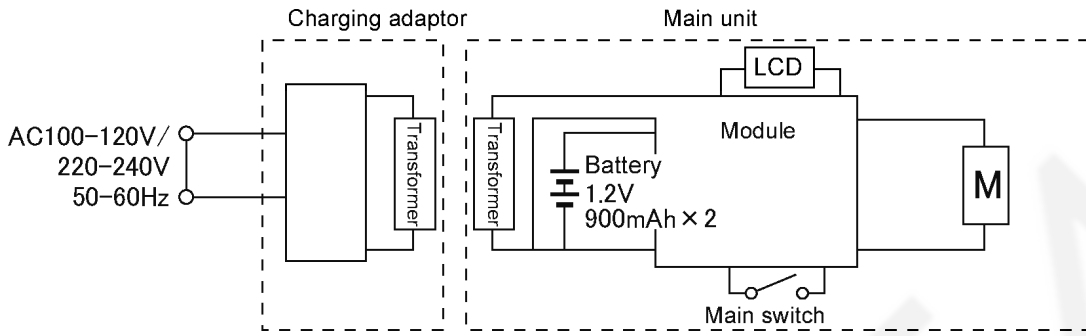
### WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

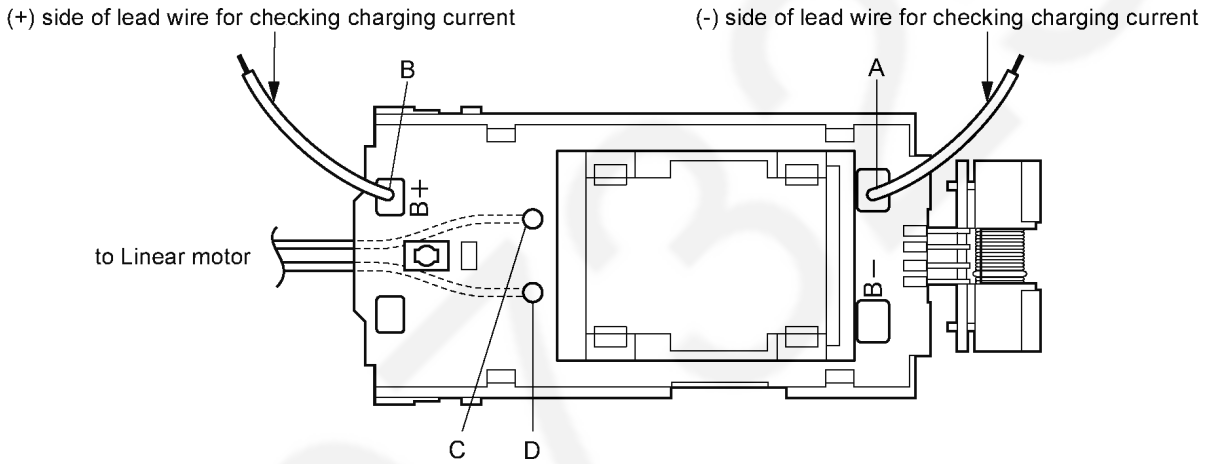
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# 1 SCHEMATIC DIAGRAM



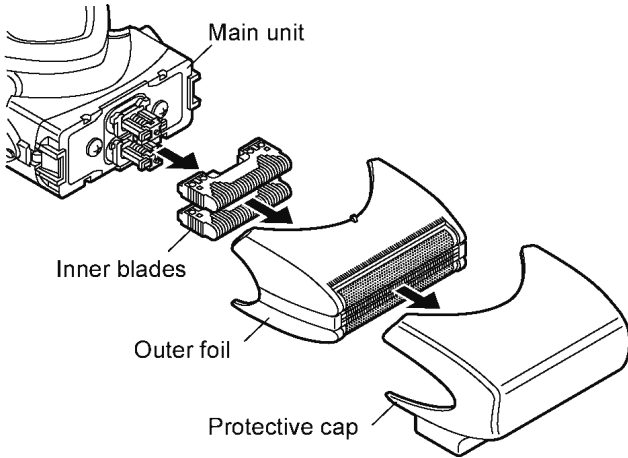
# 2 WIRING CONNECTION DIAGRAM



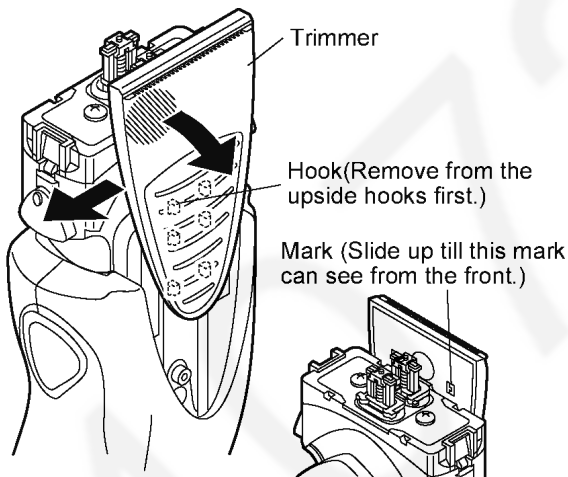
### 3 DISASSEMBLY INSTRUCTIONS

Follow the procedure below to disassemble the main unit.

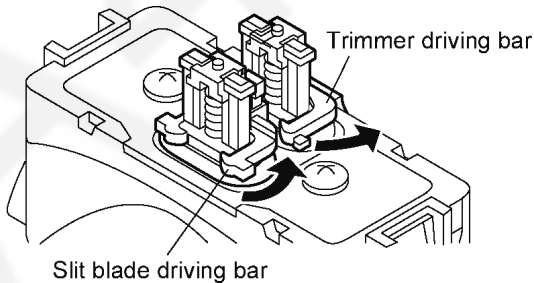
1. Remove the cap, the outer foil with foil frame and the inner blade.



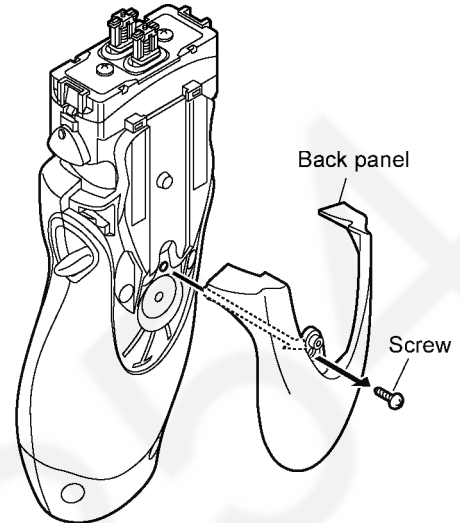
2. Set the trimmer at about 19mm sliding above. To unhook the right and left side of upside hooks, slightly pull the trimmer forward. Then, slightly pull the trimmer in each side.



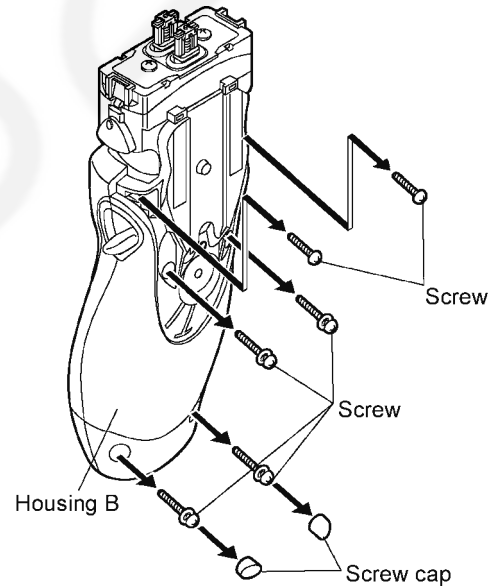
3. To remove the trimmer driving bar or the slit blade driving bar, press bars outward.



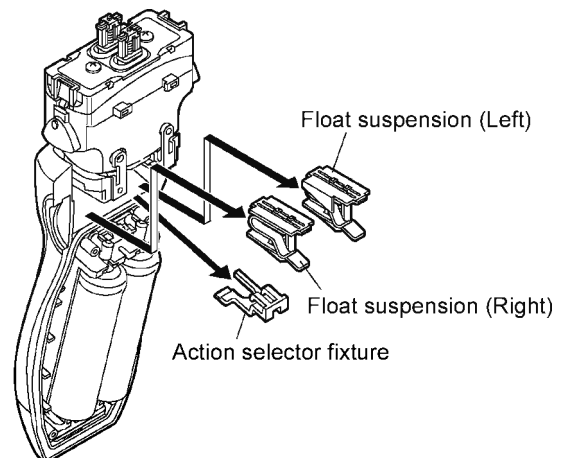
4. Remove the back panel and loosen a screw.



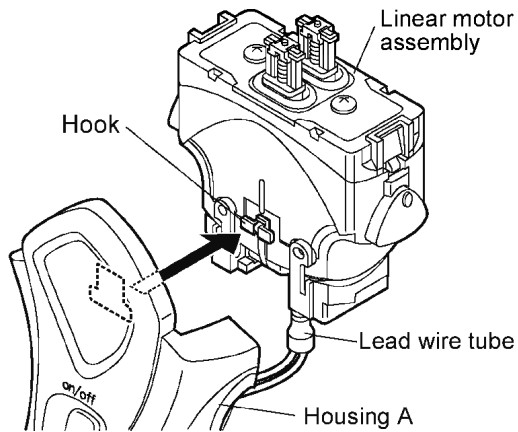
5. Remove the two screw caps using something like a toothpick and loosen the six screws.



6. Take out the right and left side of the float suspensions and the action selector fixture.



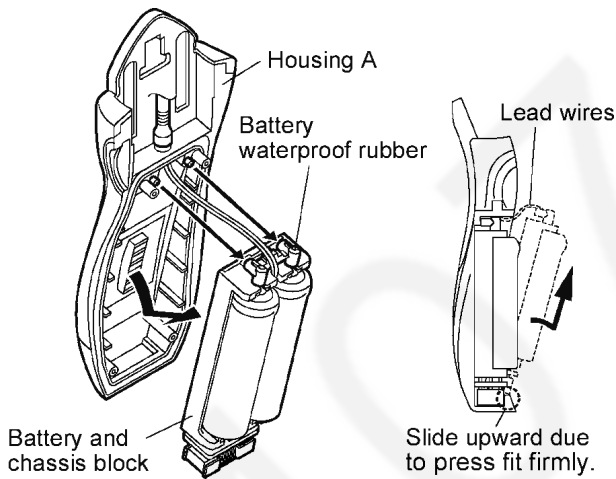
7. Move gently the linear motor assembly down and unhook it from the housing A. Remove the lead wire tube from the housing A.



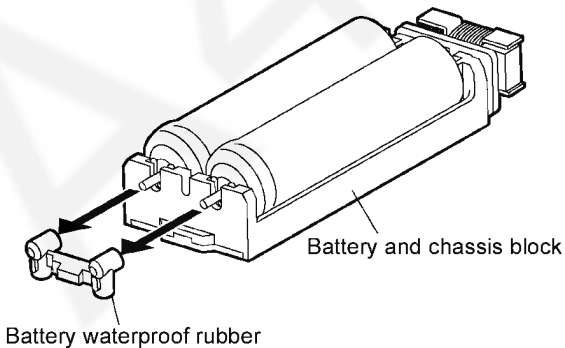
8. Pull up the battery and chassis block at the linear motor side first. Then, slide it upward and take it out from the housing A.

**NOTE:**

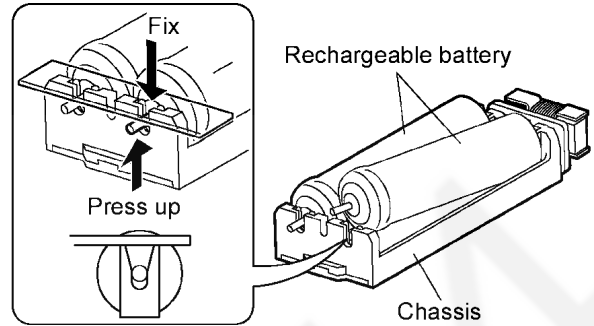
Do not pull the battery and chassis block forcefully due to connecting the linear motor by the lead wires.



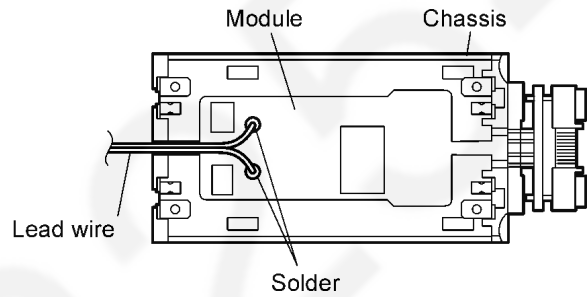
9. Remove the battery waterproof rubber from the battery pins.



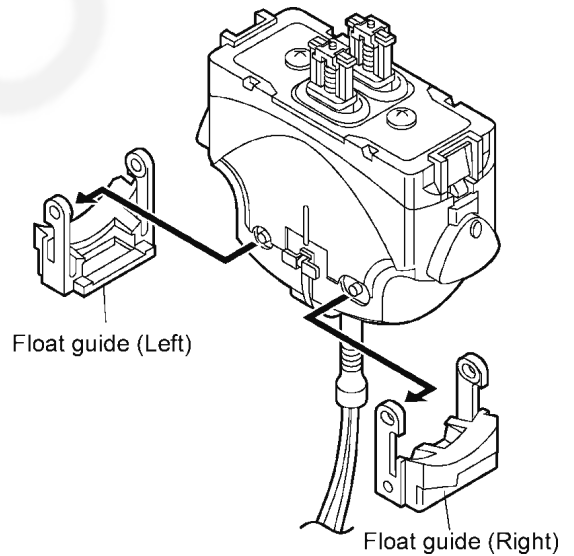
10. Take out the batteries from the chassis.



11. Unsolder the lead wires from the module.



12. Remove the right and left side of the float guides from the front.



## 4 CAUTION IN ASSEMBLY

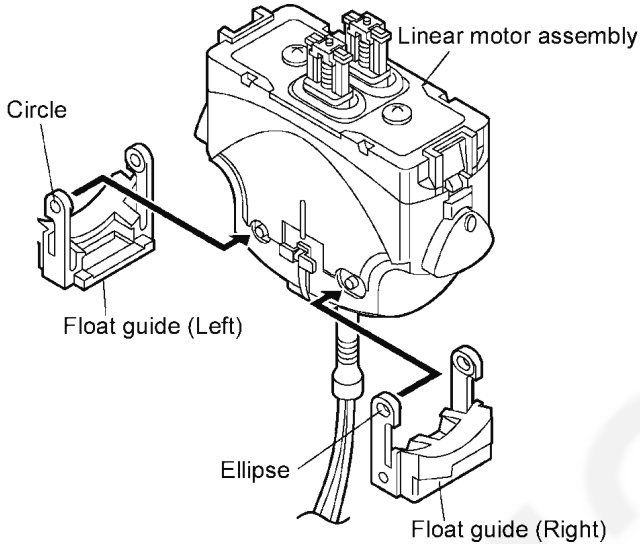
**NOTE:** When reassembling, replace the new waterproof rubber.

Make sure whether there is NO foreign substance sticking around a part covered with waterproof seal.

1. Attach the right and left side of the float guides.

**NOTE:**

Make sure that they have their own direction, the float guide with a circle should be left and the guide with an ellipse should be right.

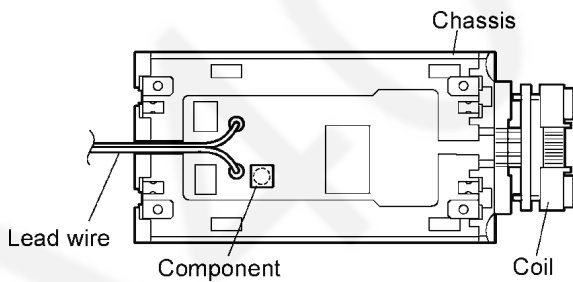


2. Solder the lead wires with the module.

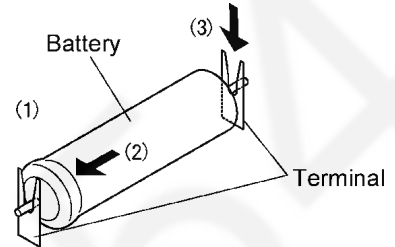
**NOTE:**

The red lead wire should connect with "MT1" on the module and the white lead wire should connect with "MT2".

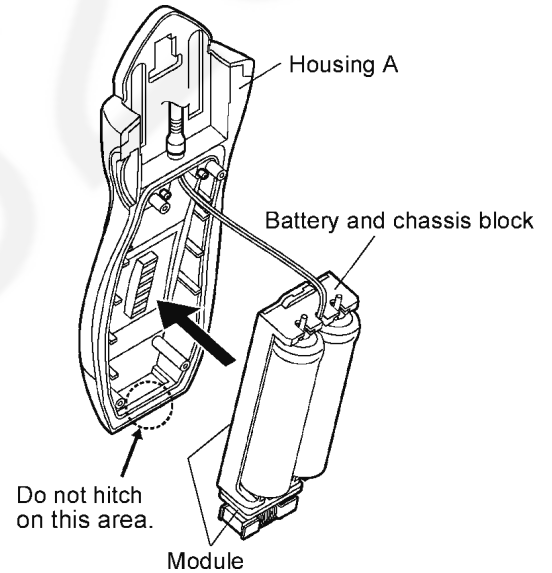
Make sure that the lead wires do not set on or over the components on the module.



3. Install (+) terminal of battery into the terminal at the linear motor side and firmly set the battery sliding the direction of arrow. Attach (-) terminal of battery.

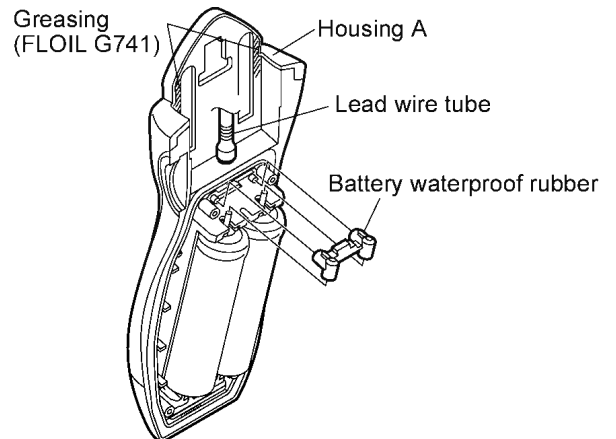


4. When inserting the battery and module assembly into the housing A, confirm if the modules or coil do not get any damage or deformation.

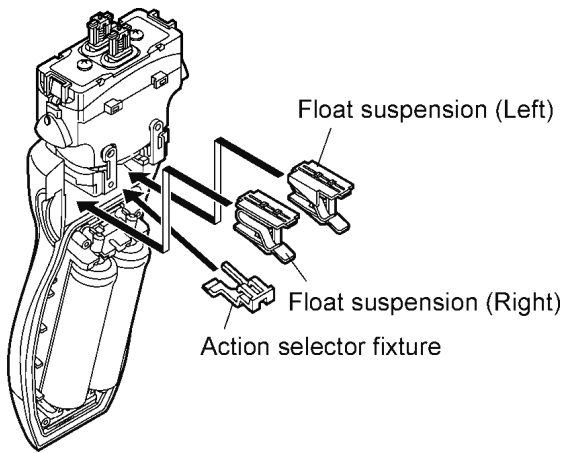


5. Attach the battery waterproof rubber to the battery pins and the housing bosses with care of its direction and no foreign substance sticking around.

6. Set the linear motor assembly on the housing A and sliding it upward to hook. Confirm that the lead wire tube fits to the housing A firmly and no foreign substance sticking around.

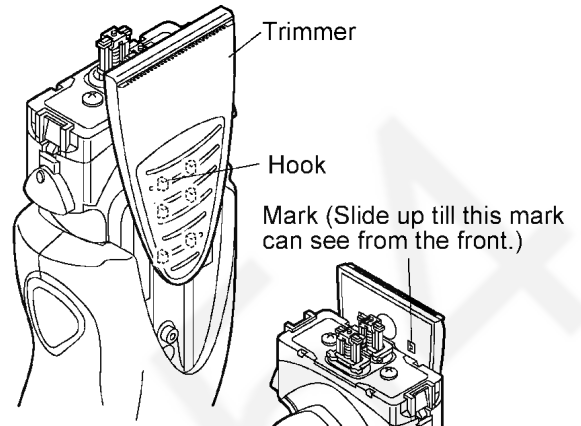


7. Attach the right and left sides of float suspension with care of its own direction.



10. Set the position where removing it and click hooked.

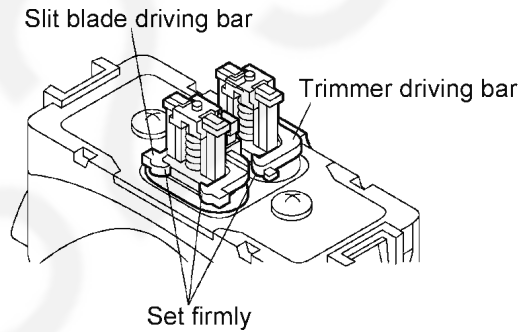
If the position is not properly, it makes the deformation of the hook.



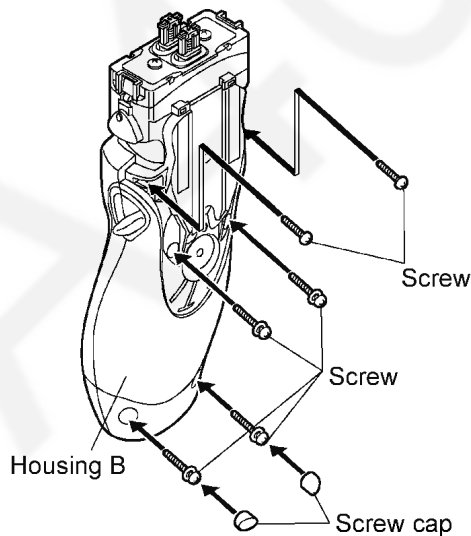
8. When putting the housing A and the housing B together, make sure if the waterproof seal and the screw o-rings must be fitted properly and no foreign substance sticking around. And make sure to set the pivot action selector to "soft" mode.



11. Set the trimmer driving bar and the slit blade driving bar.



9. Tighten the six screws and attach the two screw caps.



## 5 TROUBLESHOOTING GUIDE

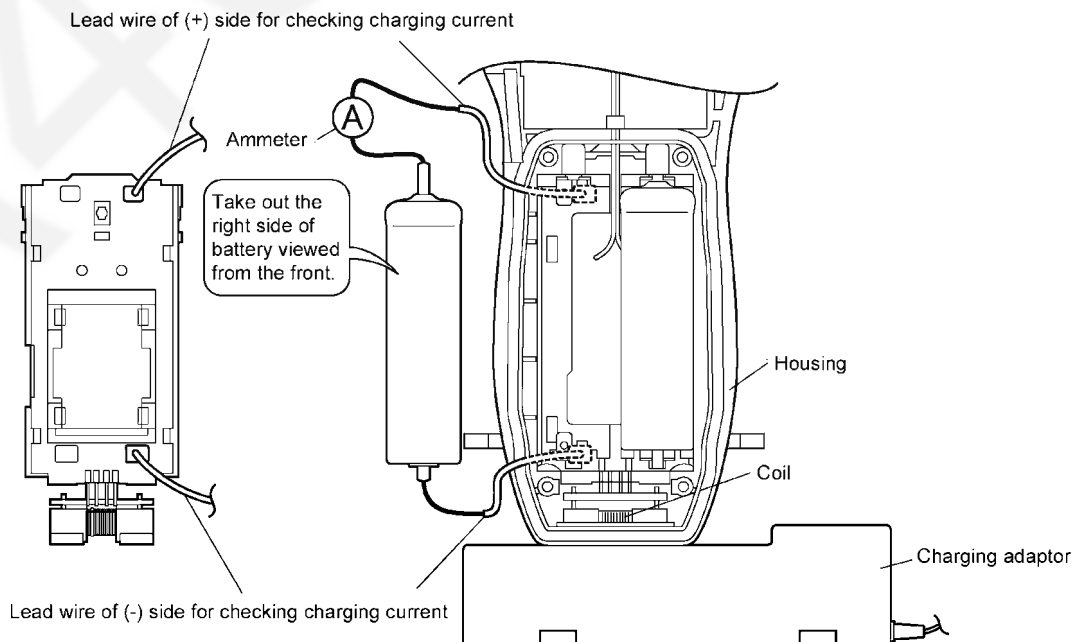
(Refer to WIRING CONNECTION DIAGRAM)

<TROUBLE>	<CHECK.>	<REMEDY>	
Motor does not rotate. Does not charge. Functions for a moment and stops.	<p align="center">&lt;CHECK CHARGING ADAPTOR.&gt;</p> → Connect the rated voltage to the normal main unit setting onto the adaptor. Check if the LCD display of main unit turns on.	NO → Replace charging adaptor.	
↓ OK			
<p align="center">&lt;CHECK RECHARGEABLE BATTERIES.&gt;</p> Okay if the voltage of rechargeable batteries is more than approximately 1.2V DC between (+) and (-) terminals. (Replace two rechargeable batteries at the same time even though one battery is defective due to series connection.)			NO → Replace both rechargeable batteries at the same time.
↓ OK			
<p align="center">&lt;CHECK MODULE.&gt;</p> Connect the rated voltage to the main unit returned from a customer by the normal charging adaptor. Check if the LCD display turns on.			NO → Check the soldering points.
↓ OK			
↓ OK			
↓ OK			
↓ OK			
Replace linear motor assembly.			
<p align="center">&lt;CHECK MODULE.&gt;</p> When switching ON and OFF, check if motor rotates and LCD is lit.			NO → Check the soldering points from A to D.
↓ OK			
<p align="center">&lt;CHECK MODULE.&gt;</p> Check charging current, if it is more than 600mA when connecting AC power source. NOTE: Please refer the procedure explained below.			NO → Replace module. ↓ OK → Replace linear motor assembly.

### NOTE:

Please follow the procedure below for measurement of charging current.

1. Take out the right battery when viewed from the front.
2. Connect the chassis to the (-) terminal of battery by the lead wire.
3. Connect the chassis with the lead wire.
4. Measure the charging current between the (+) terminal of battery and the lead wire comes from chassis at the procedure #3.



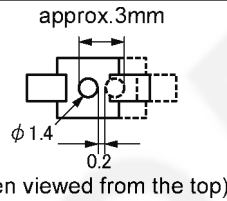
<TROUBLE>	<CHECK.>	<REMEDY>
Noise is too loud. Amplitude is too large.	→ Check if there any deformation with the outer foil.	NO → Replace the outer foil or oiling a drop for the foil.

↓ OK

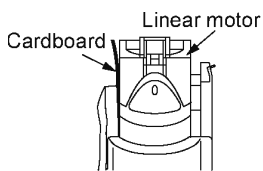
<CHECK DRIVING BARS.>	<REMEDY>
Check if there is any deformation with trimmer driving bar and slit blade driving bar.	NO → Replace the trimmer driving bar or slit blade driving bar.

↓ OK

<CHECK DRIVING HEAD AMPLITUDE.>	<REMEDY>
Turn the switch ON, and measure the amplitude using a pin of driving head. (See the figure shown below.)	NO → Replace linear motor and module assembly.



↓ OK



<CHECK TREMBLE LINEAR MOTOR.>	<REMEDY>
Confirm a screw if it is tightened firmly after replacing the back panel.	NO → Tighten the screw.

↓ OK

<CHECK TREMBLE LINEAR MOTOR.>	<REMEDY>
Check if there is any abnormal noise when putting the cardboard (ex. Individual box) between the linear motor assembly and the front panel.	NO → Replace linear motor.

↓ OK

<CHECK TREMBLE LINEAR MOTOR.>	<REMEDY>
Check the wear condition in each part, Housing A, Linear motor assembly or Float guides.	NO → Replace housing A.

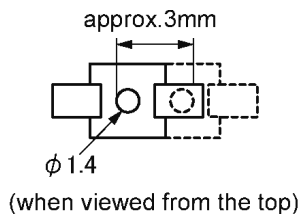
↓ NO

Replace linear motor.

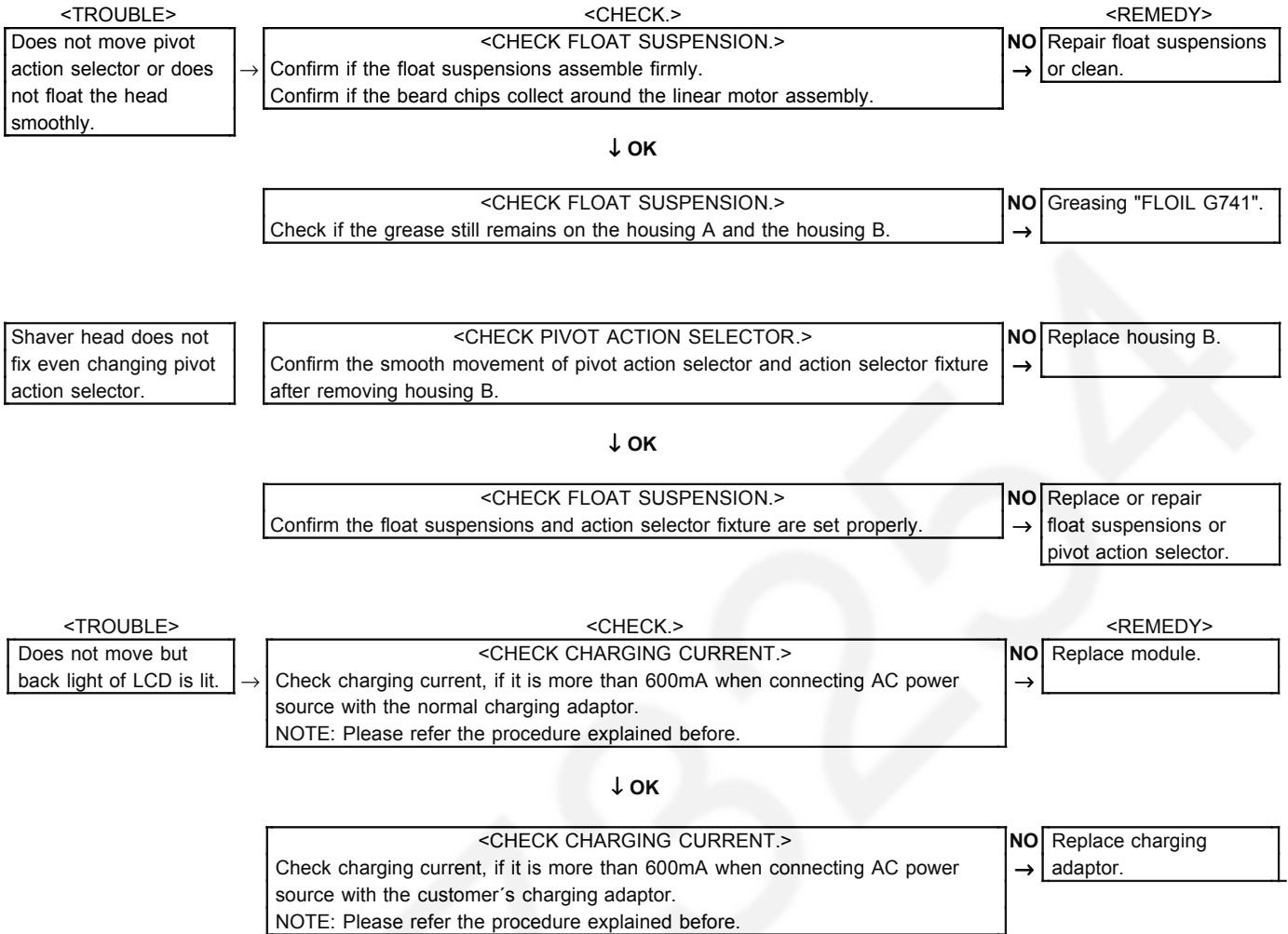
↓ OK

Replace float guides.

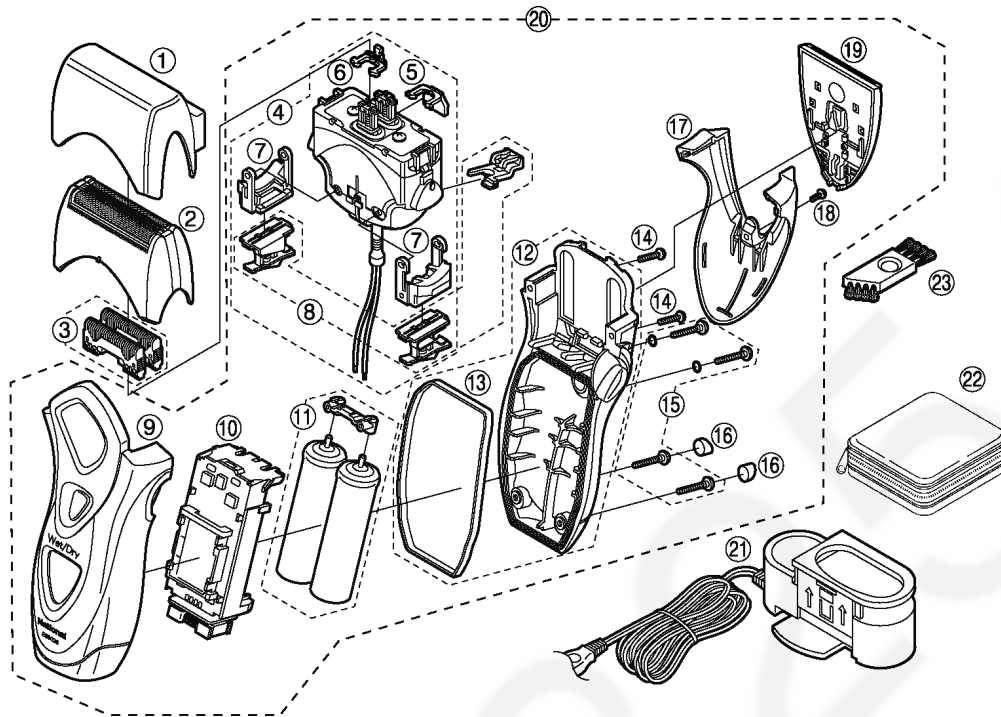
<TROUBLE>	<CHECK.>	<REMEDY>
Amplitude is too small. Does not sharp enough.	→ <CHECK DRIVING HEAD AMPLITUDE.> Turn the switch ON, and measure the amplitude using a pin of driving head. (See the figure shown below.)	NO → Replace linear motor. ↓ OK Replace module.







## 6 EXPLODED VIEW



## 7 REPLACEMENT PARTS LIST

### NOTE:

\*A=available as an optional accessory

\*B=only available as set

\*C=available individually

Ref. No.	Part No.	Part Name & Description	Remarks	Per Unit
1	WES8093X7159	PROTECTIVE CAP		1
2	WES9093E	SYSTEM OUTER FOIL		1
3	WES9064E	INNER BLADE	*B (2PCS/PK)	2
4	WES8093L1007	LINEAR MOTOR ASSEMBLY		1
5	WES8093L1087	TRIMMER DRIVING BAR		1
6	WES8093L1077	SLIT BLADE DRIVING BAR		1
7	WES8093L0227	FLOAT GUIDE		1
8	WES8093L0587	FLOAT SUSPENSION		1
9	WES8093N3059	HOUSING A		1
9	WES8093N3050	HOUSING A	only for Taiwan	1
10	WES8093L2127	MODULE		1
11	WES8093L2508	RECHARGEABLE BATTERY	*B (2PCS/PK) NI-MH TYPE	2
12	WES8093N3068	HOUSING B		1
12	WES8093N3069	HOUSING B	only for Taiwan	1
13	WES8093L0327	HOUSING WATERPROOF SEAL		1
14	WES5405L6007	P TIGHT SCREW	*C M2-10	2
15	WES8093L9017	SCREW W/O-RING	*B (4PCS/PK)	4
16	WES8095H3778	SCREW CAP	*B (2PCS/PK)	2
17	WES8093N3368	REAR PANEL		1
18	WES8093L9007	TAPPING SCREW	M2-6	1
19	WES8093H1507	TRIMMER		1
20	WES8093N3039	BODY BLOCK		1
20	WES8093N3030	BODY BLOCK	only for Taiwan	1
21	WES8093H7663	CHARGING ADAPTOR	C-2 PLUG	1
21	WES8093H7662	CHARGING ADAPTOR	A-2 PLUG	1
21	WES8093H7671	CHARGING ADAPTOR	KOREAN PLUG	1
22	WES8093K7018	SEMI HARD CASE		1
	WES8093H7057	CLEANING BRUSH		1
-	WES8093N8009	INDIVIDUAL BOX		1
-	WES8093N8109	OPERATING INSTRUCTIONS		1