

# Service Manual

Rechargeable Shaver

Model No. **ES8249**


North America



## **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.

## **IMPORTANT SAFETY NOTICE**

There are special components used in this equipment which are important for safety. These parts are marked by  in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

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# 1 Warning

## Caution:

- Pb free solder has a higher melting point than standard solder; Typically the melting point is 50 - 70°F (30 - 40°C) higher. Please use a soldering iron with temperature control and adjust it to 750 ± 20°F (400 ± 10°C). In case of using high temperature soldering iron, please be careful not to heat too long.
- Pb free solder will tend to splash when heated too high (about 1100°F / 600°C).

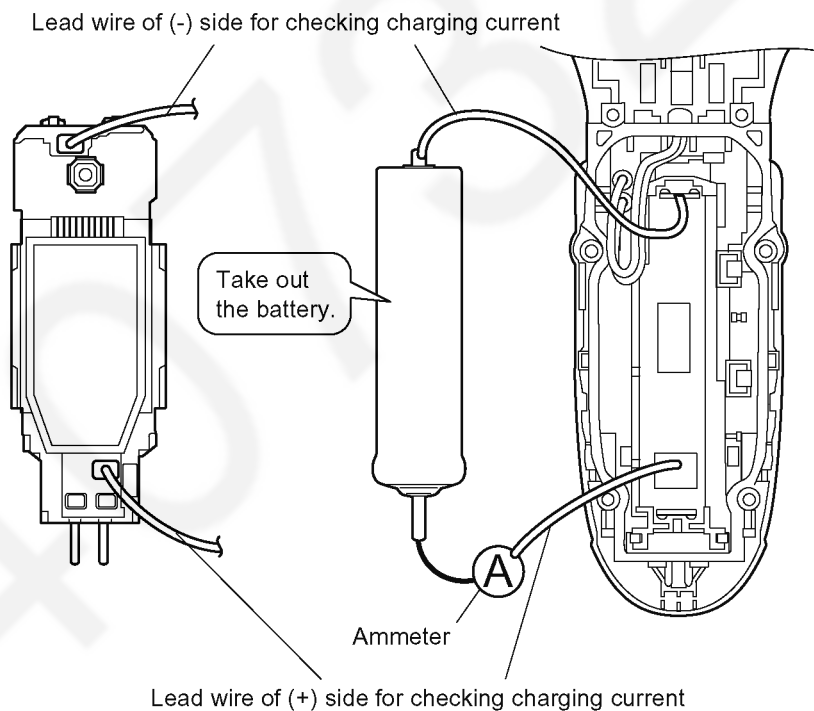
# 2 Specifications

Power source	AC 100-240V, 50-60Hz (Automatic voltage conversion)
Power consumption	Approx. 6W (when charging)
Charging time	1 Hour
Shaves per charge	14 times (3 minutes shave)
Measurement	(H)15.7 x (W)6.1 x (D)4.6 cm
Weight	180g
Supplied accessories	Self-cleaning recharger
	Soft case

# 3 Troubleshooting Guide

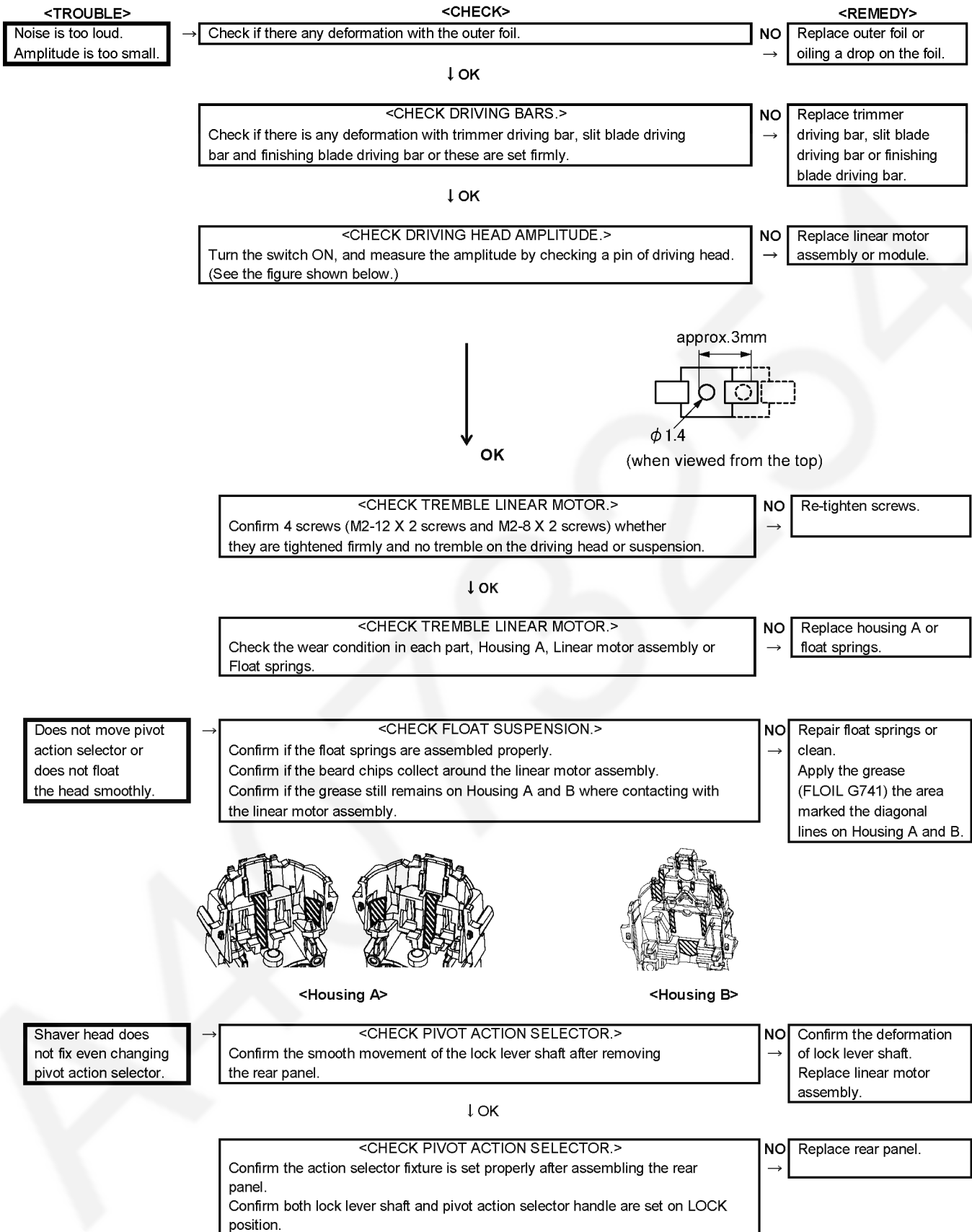
## 3.1. Main unit and charging adaptor

<TROUBLE>	<CHECK>	<REMEDY>
Motor does not rotate. Does not charge. Functions for a moment and stops.	<b>&lt;CHECK CHARGING ADAPTOR.&gt;</b> Supply the rated voltage to the adaptor. And confirm the continuity. OK if it is approx. DC6V between the terminals of the plug at the no-load operation.	NO → Replace charging adaptor.
↓ OK		
	<b>&lt;CHECK RECHARGEABLE BATTERY.&gt;</b> Okay if the voltage of rechargeable battery is more than approximately 3.6V DC between (+) and (-) terminal.	NO → Replace rechargeable battery.
↓ OK		
	<b>&lt;CHECK MODULE.&gt;</b> Wire the main unit returned from a customer refer with the following figure, and connect the rated voltage to it by the normal adaptor. When switching ON and OFF, check if motor rotates and the indicator ■ of LCD is lid. Discharge the battery completely and check charging current, if it is more than 600mA when connecting AC power source.	NO → Check the soldering points. ↓ OK Replace module. ↓ OK Replace linear motor assembly.

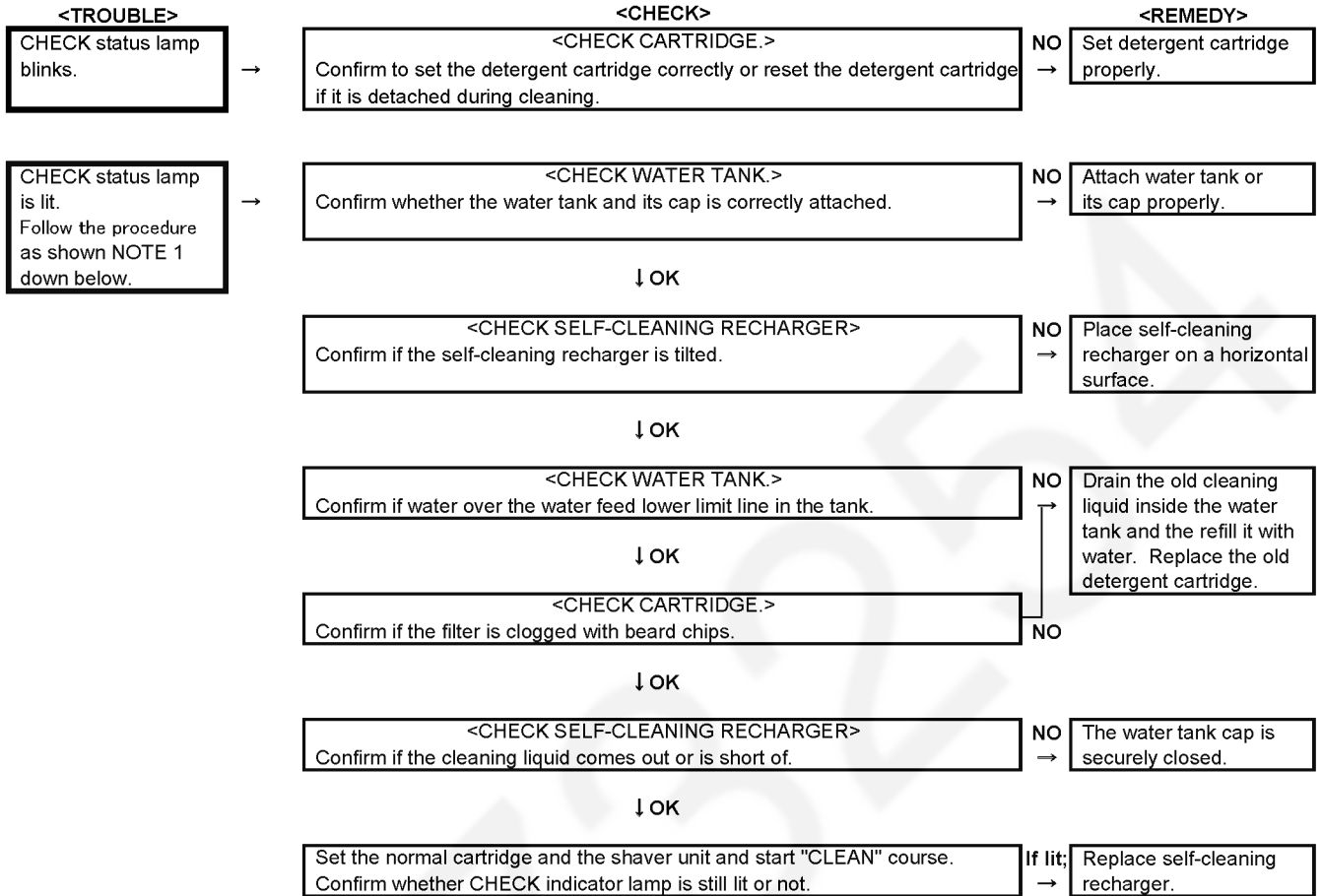


**NOTE: Once taking the battery out, the shaver is RESET. The shaver must be charged for several seconds first.**

**NOTE: Completely discharge and then fully charge before returning the shaver to the customer.**



## 3.2. Self-cleaning recharger



NOTE 1: Hold down the SELECT button for approximately two seconds to extinguish the CHECK indicator lamp.

The course will be aborted if the power is cut off during cleaning.

(Phenomenon)

The cleaning liquid remains the tray even the course is completed normally.

(Action)

Try to re-operate the course once again to exhaust the cleaning liquid on the cartridge tray.

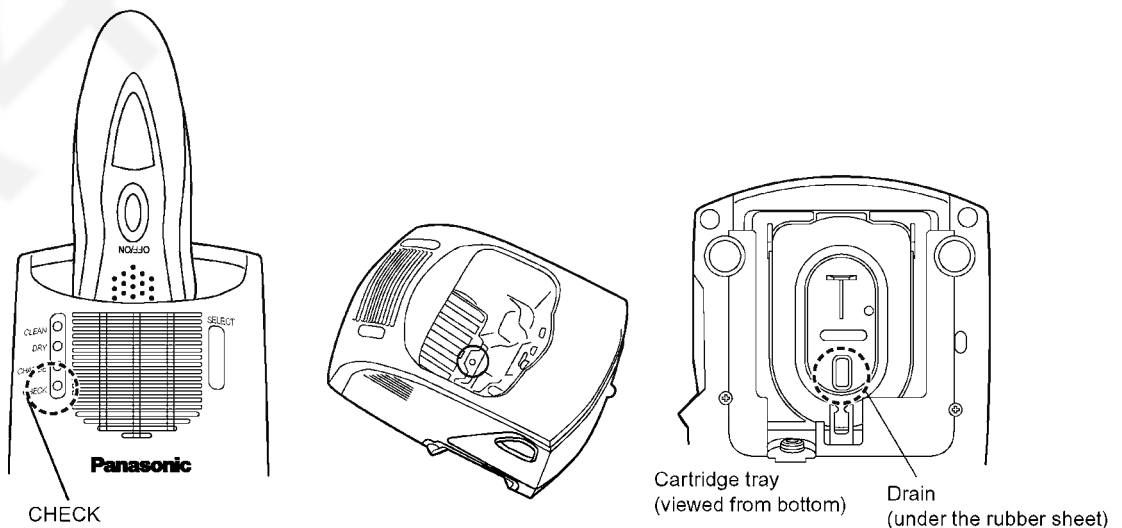
Too much cleaning liquid remains the tray.

(Phenomenon)

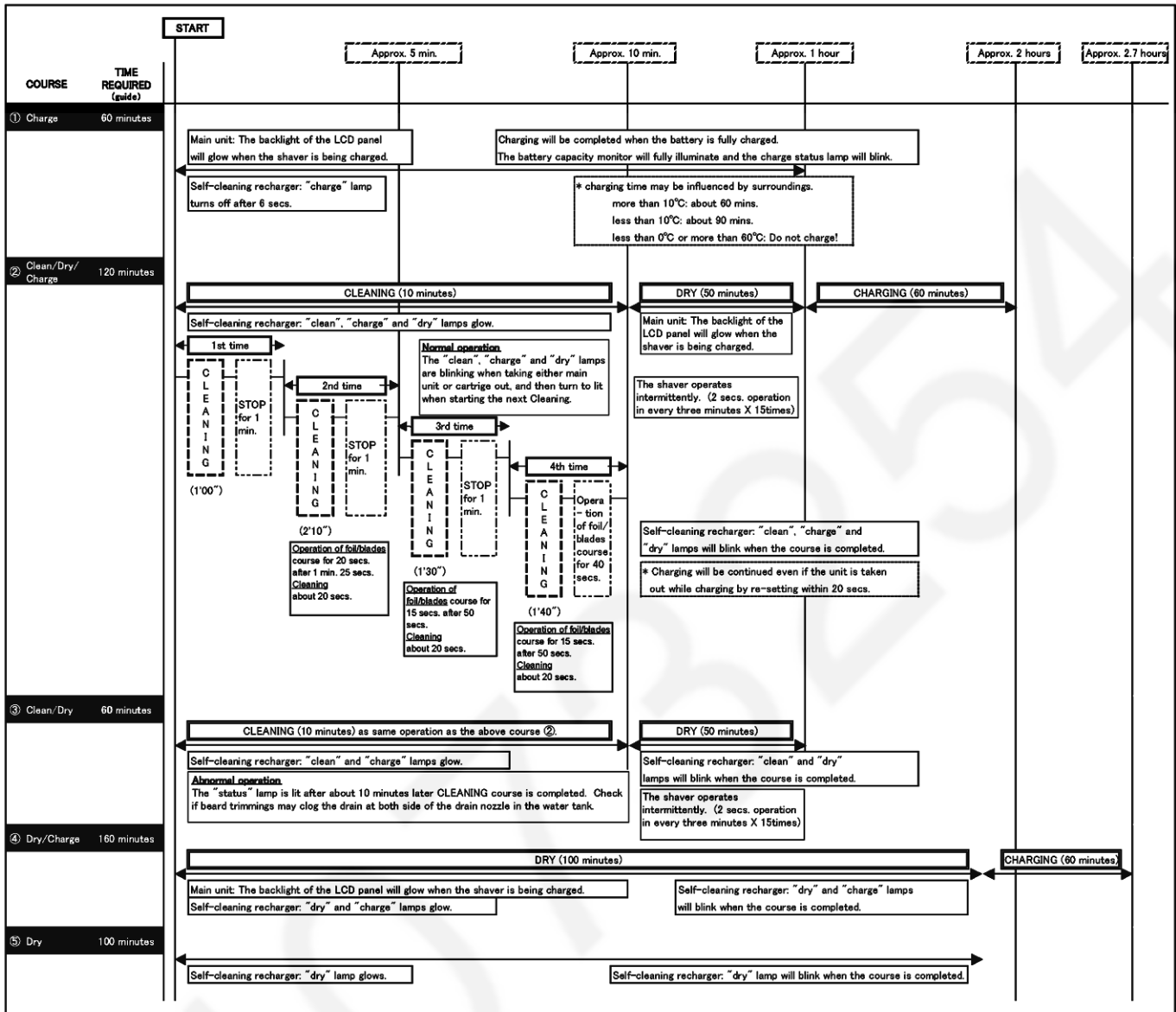
The cleaning liquid remains the tray even the course is completed normally.

(Action)

Clean the drain holes as pointed with the circule down below.



### 3.3. Operation of Self-cleaning Recharger



**NOTE:** When the shaver is set on the self-cleaning recharger, ① "Charge" course is selected automatically. Press the select button within six seconds to choose a difference course starting from ①⇒②⇒③⇒④⇒⑤⇒①.....

Course	Course selection indications				Changeable course halfway through	Course completion summary				Time required (guide) [In the low temperature]
	On recharger			On shaver		On recharger			On shaver	
	clean	dry	charge			clean	dry	charge		
① Charge	○	○	●*	②③④⑤	▶	○	○	○	Blinks	1 hour
② Clean/Dry/Charge	●	●	○	③	▶	☀	☀	○	Blinks	2 hours [+30 min]
③ Clean/Dry	●	●	○	②	▶	☀	☀	○	—	1 hour [+30min]
④ Dry/Charge	○	●	●	②③⑤	▶	○	☀	○	Blinks	2 h 40 min
⑤ Dry	○	●	○	②③④	▶	○	☀	○	—	1 h 40 min

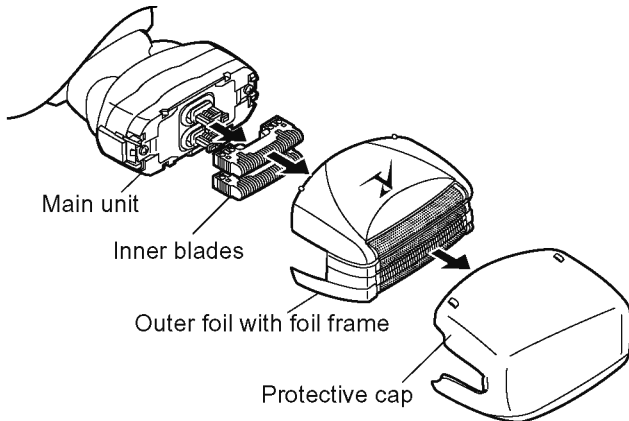
\*The lamp goes out in 6 seconds.

# 4 Disassembly and Assembly Instructions

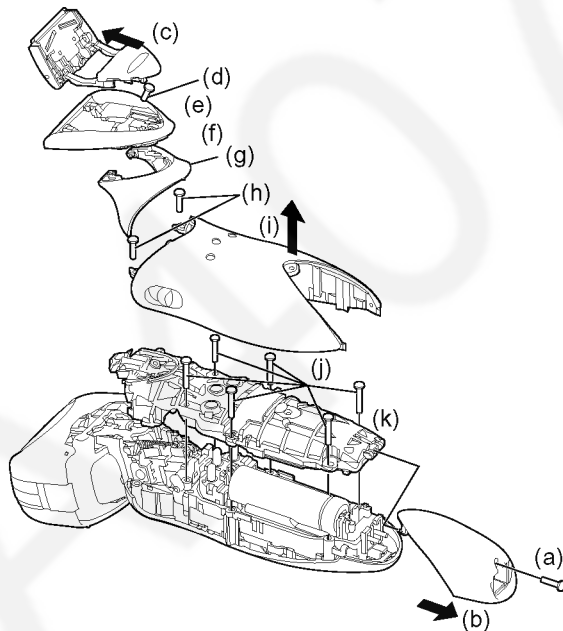
## 4.1. Disassembly Instructions

Follow the procedure below to disassemble the main unit.

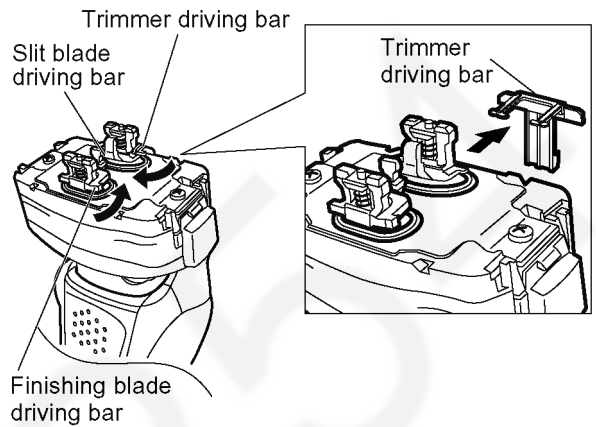
1. Remove the cap, the outer foil and the inner blade.



2. How to disassemble the housing A and B.
  - a. Loosen a screw.
  - b. Remove the bottom cover.
  - c. Slide the trimmer handle up.
  - d. Loosen a screw.
  - e. Slide the trimmer handle down.
  - f. Remove the trimmer sliding downward.
  - g. Remove the upper rear panel.
  - h. Loosen two screws.
  - i. Remove the rear panel.
  - j. Loosen six screws.
  - k. Remove the housing B.



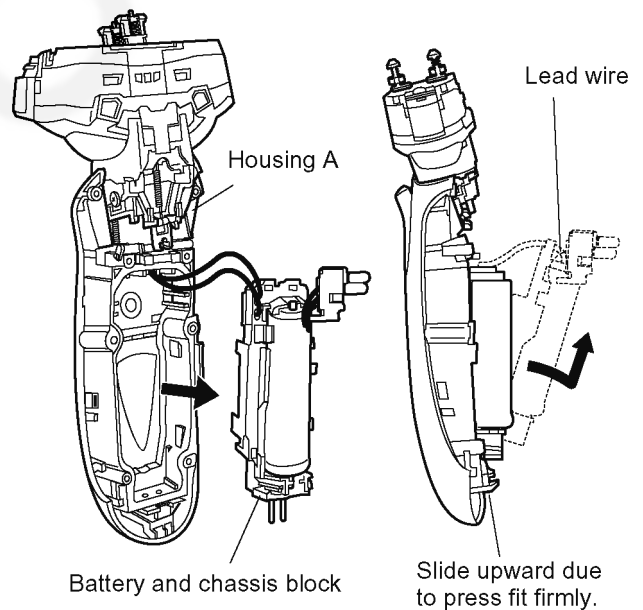
3. To remove the trimmer driving bar or the slit blade driving bar, press bars outward.



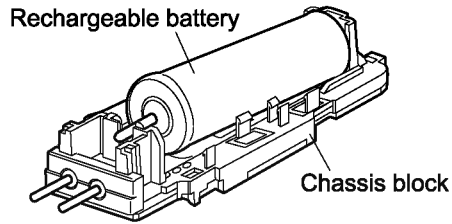
4. Pull up the battery and chassis block from the linear motor side first. Then, slide it upward and take it out from the housing A.

**NOTE:**

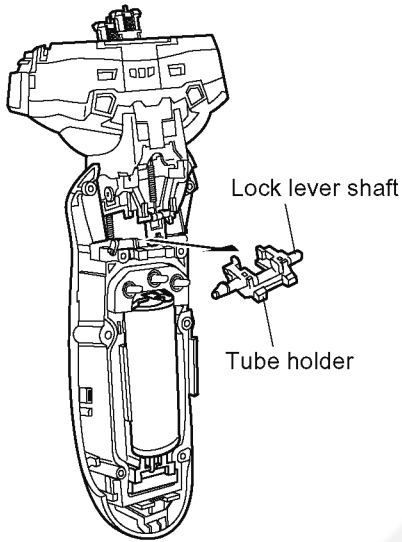
Do not pull the battery and chassis block forcefully due to connecting the linear motor by the lead wires.



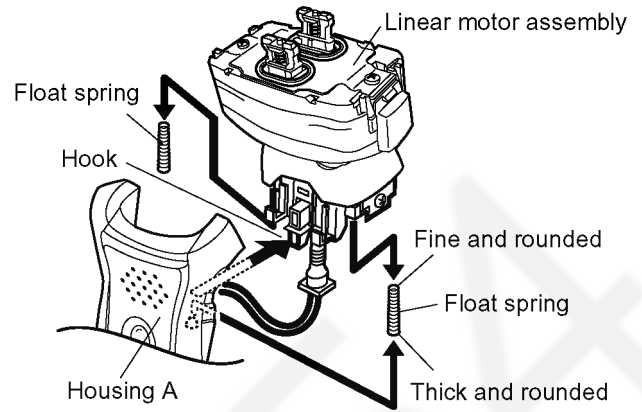
5. Take out the battery from the chassis.



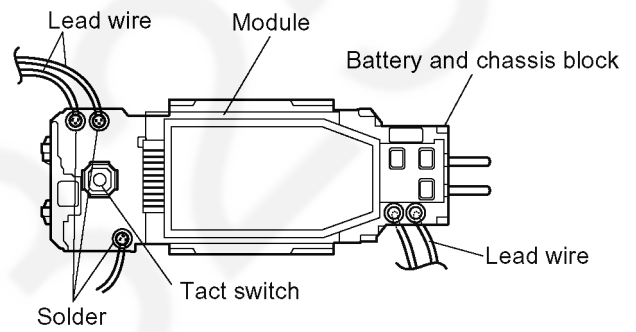
6. Take out the tube holder.



7. Move gently the linear motor assembly down and unhook it and remove the float springs from housing A.



8. Unsolder the lead wires from the module.





## 4.2. Caution in Assembly

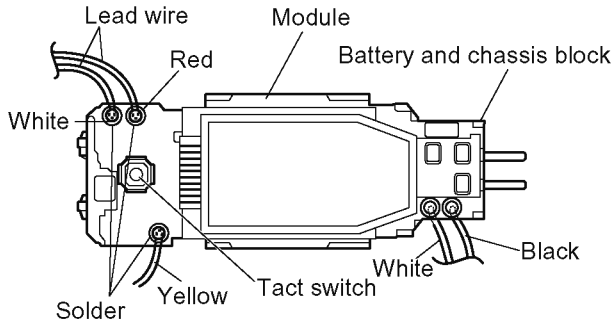
### NOTE:

When reassembling, replace the new waterproof seal. Make sure whether there is NO foreign substance sticking around a part covered with waterproof seal.

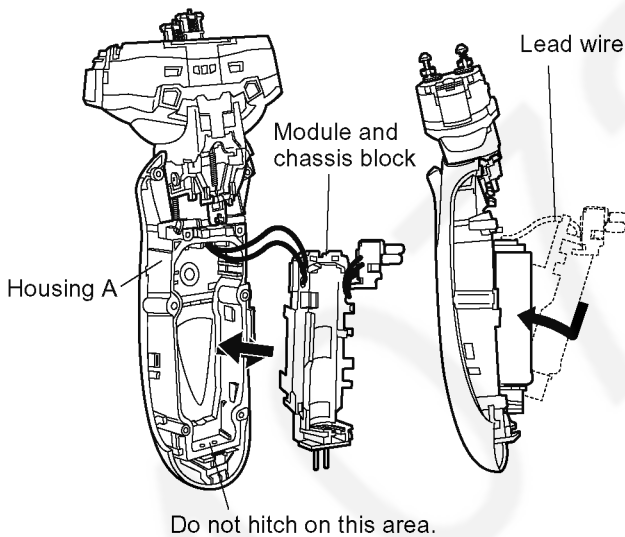
1. Solder the lead wires with the module.

### NOTE:

Make sure of the color of lead wires.



2. When inserting the module and chassis block into the housing A, confirm if the module does not get any damage or deformation.



3. Make sure that the lead wires set in position to avoid abnormal noise. Install (+) terminal of battery into the terminal plate at the bottom cover side and firmly set the battery sliding the direction of arrow. Attach (-) terminal of battery.

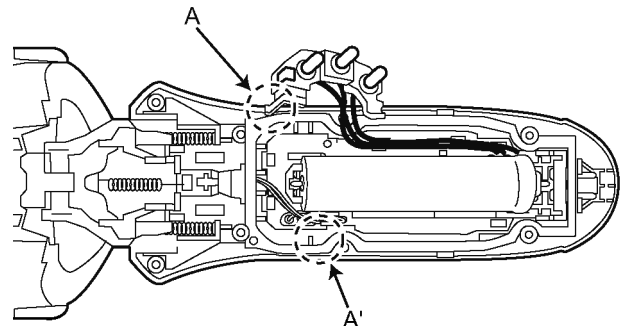
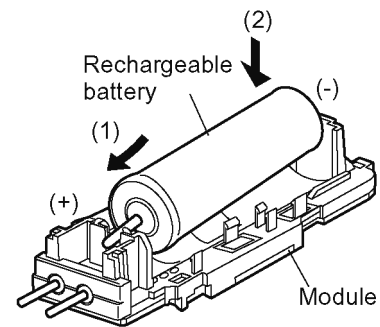
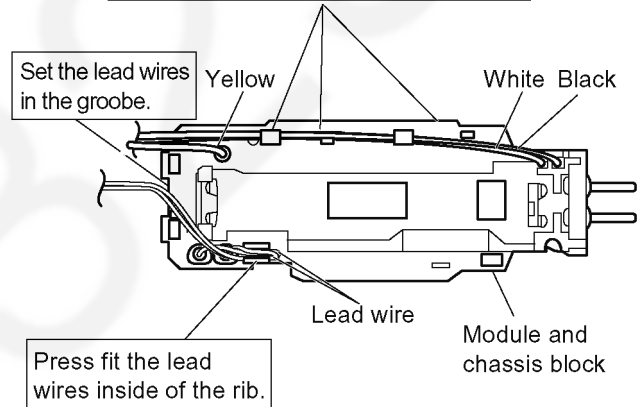
### NOTE:

Once taking the battery out, the shaver is RESET. The shaver must be charged for about 10 seconds first.

### NOTE:

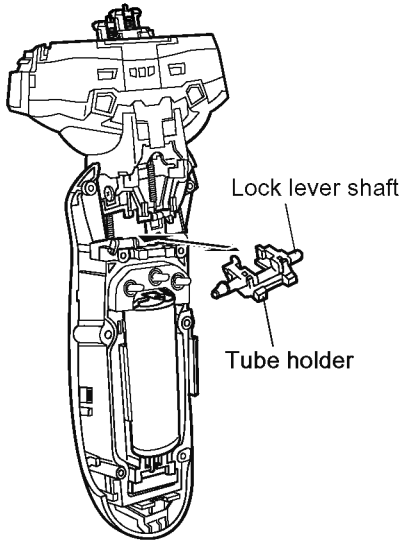
Completely discharge and then fully charge before returning the shaver to the customer.

Press fit the Yellow, Black and White lead wires in order and confirm to hook them at three hooks.

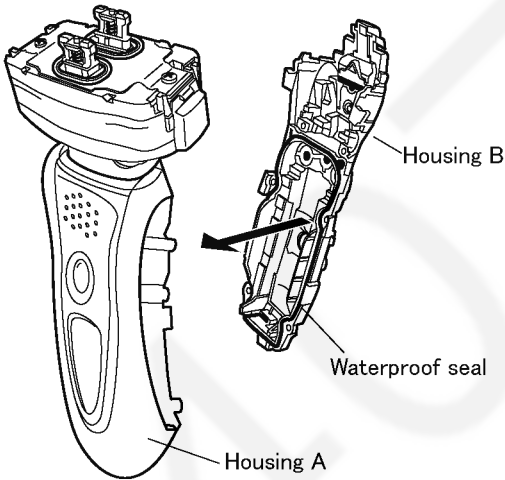


NOTE: The projection A should be set into the place A'

4. 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. Attach the tube holder with the lock lever shaft to housing A with care of the direction.



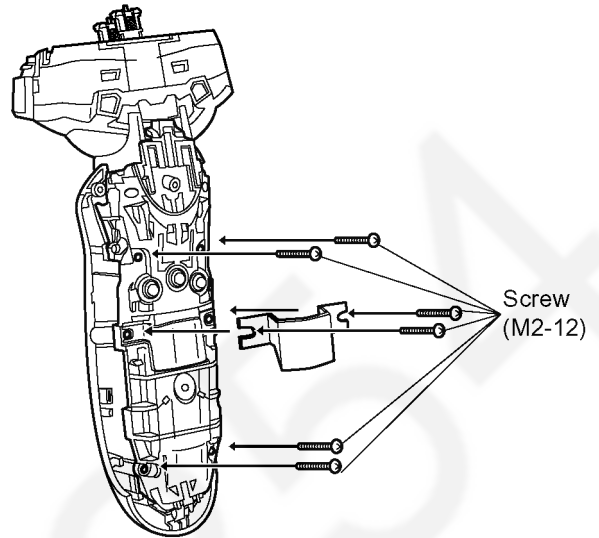
5. When putting the housing A and the housing B together, make sure if the waterproof seal must be fitted properly and no foreign substance sticking around.



6. Tighten six screws.

**NOTE:**

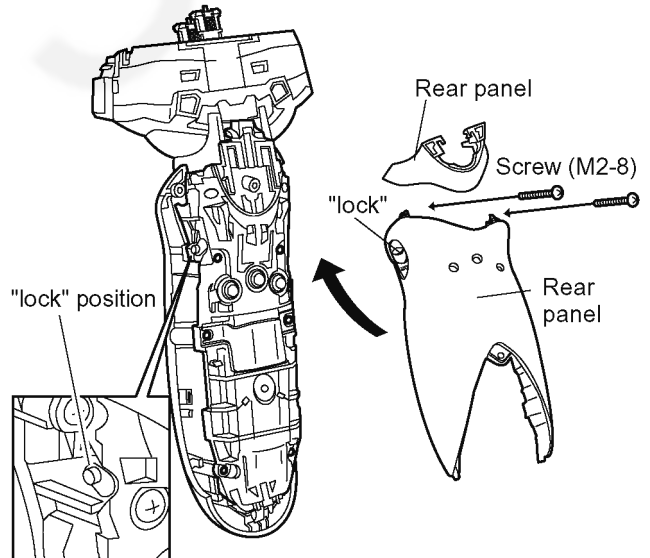
Make sure to attach the connecting plate.



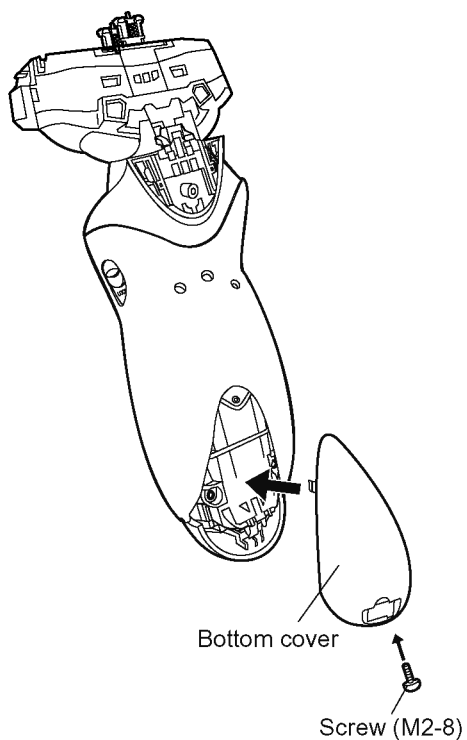
7. Insert two hooks on top of the rear panel into the dent of housing first and attach the rear panel firmly. Set the rear panel with the position "LOCK".

**NOTE:**

Make sure of the smooth movement of the lock lever shaft.

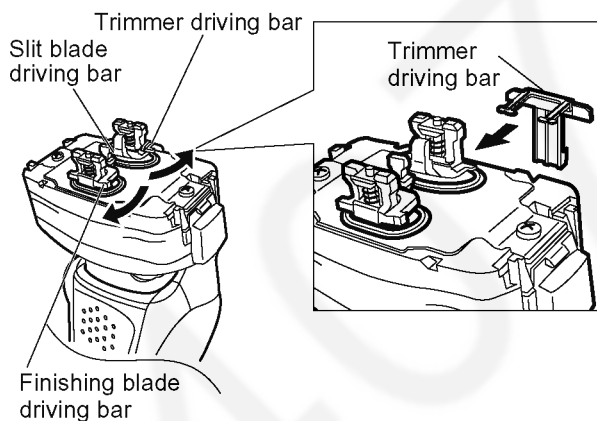


8. Attach the bottom cover and tighten a screw.

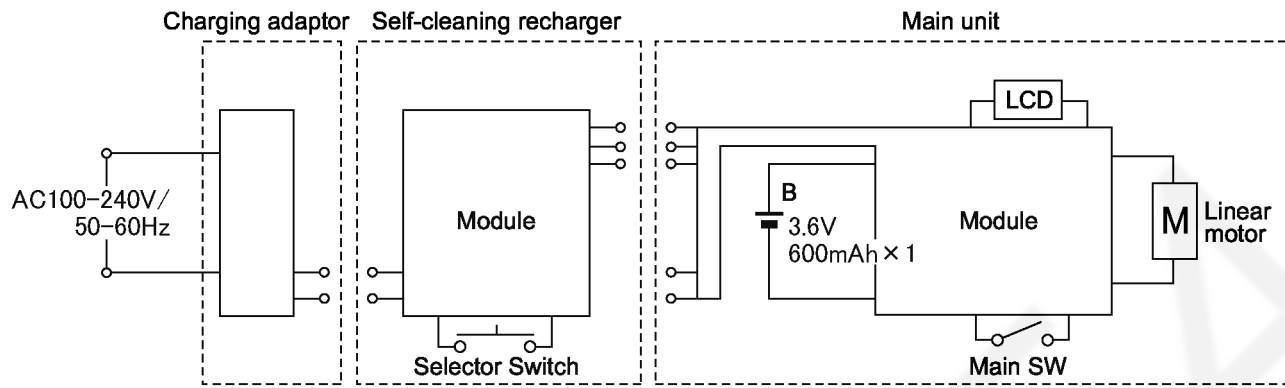


10. Set the trimmer and tighten a screw. If the position is not properly, it makes the deformation of the hook.

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

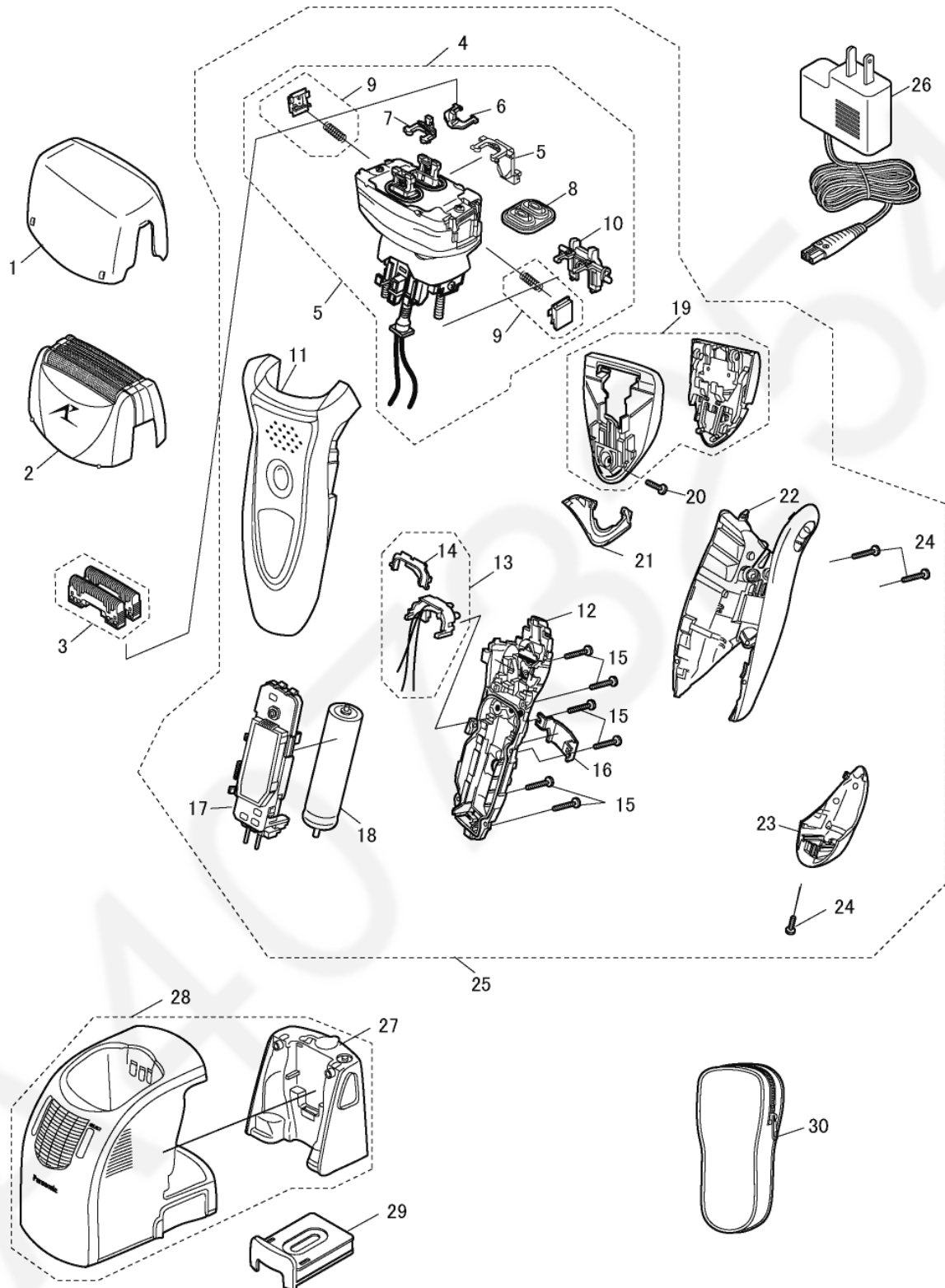


## 5 Schematic Diagram



# 6 Exploded View and Replacement Parts List

Model No. : ES8249 Exploded View



## Model No. : ES8249 Parts List

Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
	1	WES8243X7158	PROTECTIVE CAP	1	
	2	WES9161C	OUTER FOIL	1	
	3	WES9068PC	INNER BLADE	1ST	(for U.S.A.)
	3	WES9068C	INNER BLADE	1ST	(for Canada)
	4	WES8258L1007	LINEAR MOTOR ASSEMBLY	1	
	5	WES8258L1087	TRIMMER DRIVING BAR	1	
	6	WES8258L1077	SLIT BLADE DRIVING BAR	1	
	7	WES8258L1177	FINISHING BLADE DRIVING BAR	1	
	8	WES8258L0327	WATERPROOF RUBBER	1	
	9	WES8258K3267	FOIL RELEASE BUTTON	2	(2PCS/PK)
	10	WES8258L0537	TUBE HOLDER	1	
	11	WES8249S3058	HOUSING A	1	(for SILVER MODEL)
	11	WES8249K3058	HOUSING A	1	(for BLACK MODEL)
	12	WES8258H3067	HOUSING B	1	
	13	WES8258L0497	TERMINAL BASE	1	
	14	WES8238H0527	TERMINAL COVER	1	
	15	WES8176L6007	P TIGHT SCREW	6	(M2-12)
	16	WES8238L0487	CONNECTING PLATE	1	
	17	WES8249L2128	MODULE	1	
	18	WES8163L2509	RECHARGEABLE BATTERY	1	(LM-ION TYPE)
	19	WES8258S1507	TRIMMER	1	(for SILVER MODEL)
	19	WES8255K1507	TRIMMER	1	(for BLACK MODEL)
	20	WES8238L6007	P TIGHT SCREW	1	(M2-6)
	21	WES8258S3857	REAR PANEL (UPPER)	1	(for SILVER MODEL)
	21	WES8255K3857	REAR PANEL (UPPER)	1	(for BLACK MODEL)
	22	WES8258K3367	REAR PANEL	1	
	23	WES8249S3120	BOTTOM COVER	1	(for SILVER MODEL)
	23	WES8249K3128	BOTTOM COVER	1	(for BLACK MODEL)
	24	WES8176L6057	TAPPING SCREW	3	(M2-8)
	25	WES8249S3030	BODY BLOCK	1	(for SILVER MODEL)
	25	WES8249K3038	BODY BLOCK	1	(for BLACK MODEL)
	26	WES8228K7658	CHARGING ADAPTOR	1	(A-2 PLUG)
	27	WES8258K7357	WATER TANK	1	
	28	WES8259K4219	SELF-CLEANING RECHARGER	1	
	29	WES035P551	DETERGENT CARTRIDGE	1	[BG]
	30	WES8259K7018	SOFT CASE	1	
	-	WES8249S8000	INDIVIDUAL BOX	1	(for SILVER MODEL)
	-	WES8249K8008	INDIVIDUAL BOX	1	(for BLACK MODEL)
	-	WES8249K8108	OPERATING INSTRUCTIONS	1	