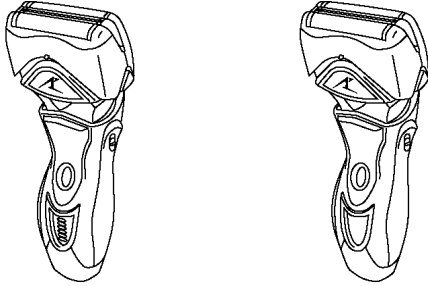


# Service Manual

## AC/Rechargeable Shaver

**ES8172-A3**  
**ES8175-A3**  
**ES8176-A3**



### SPECIFICATIONS

Power source	AC 100-240V, 50-60Hz (Automatic voltage conversion)
Power consumption	Approx. 7W ( at AC drive)
Motor voltage	3.6V DC
Charging time	1 Hour
Shaves per charge	14 times (3 minutes shave)
Measurement	(H)15.3 x (W)6.2 x (D)4.6 cm
Weight	180g (without protective cap)
Supplied accessories	Soft case Cleaning brush Charging stand Self-clean recharger ( ES8175 / ES8176 )

### **⚠ 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.

### CONTENTS

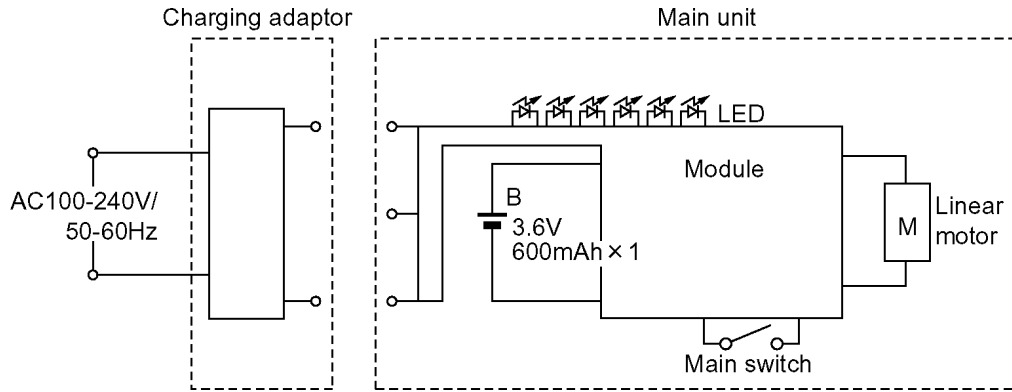
	Page		Page
1 SCHEMATIC DIAGRAM .....	2	4 TROUBLESHOOTING GUIDE .....	7
2 DISASSEMBLY INSTRUCTIONS .....	3	5 OPERATION OF SELF-CLEANING RECHARGER .....	10
3 CAUTION IN ASSEMBLY .....	5	6 EXPLODED VIEW & REPLACEMENT PARTS LIST .....	12

# Panasonic

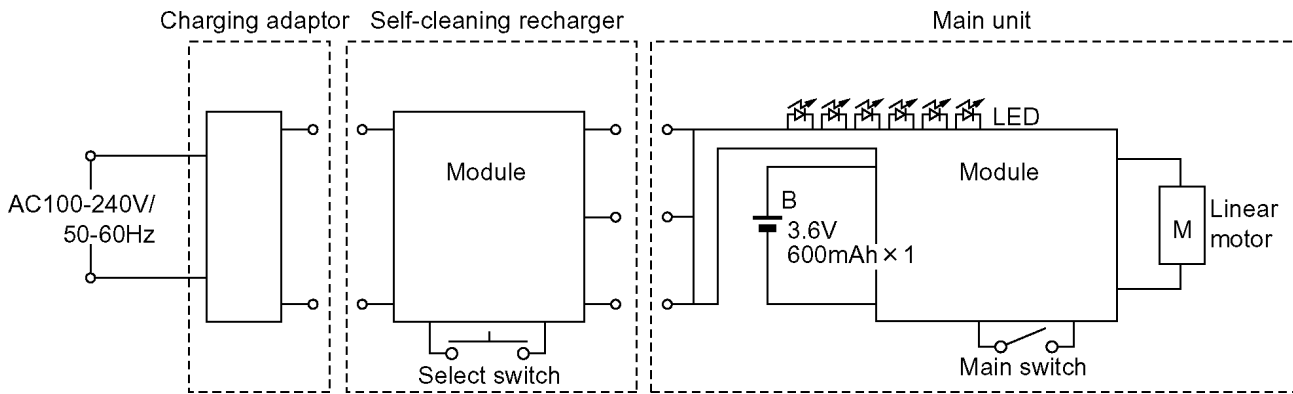
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# 1 SCHEMATIC DIAGRAM

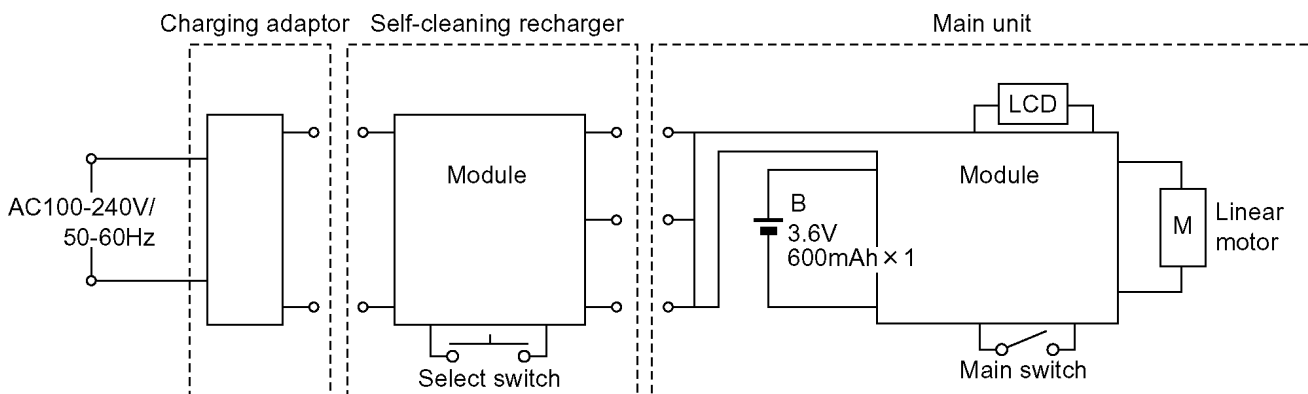
## 1.1. ES8172



## 1.2. ES8175



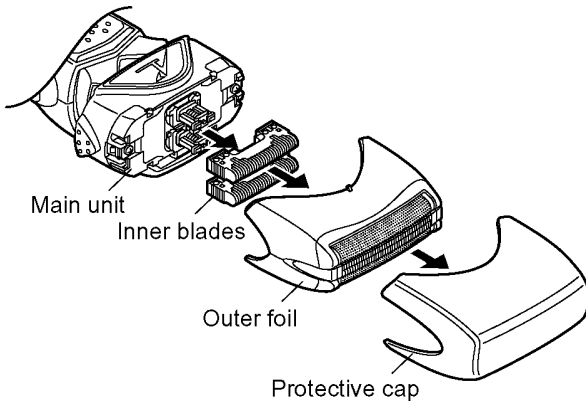
## 1.3. ES8176



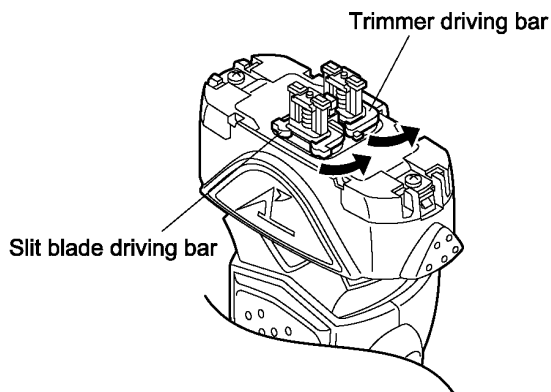
## 2 DISASSEMBLY INSTRUCTIONS

Follow the procedure below to disassemble the main unit.

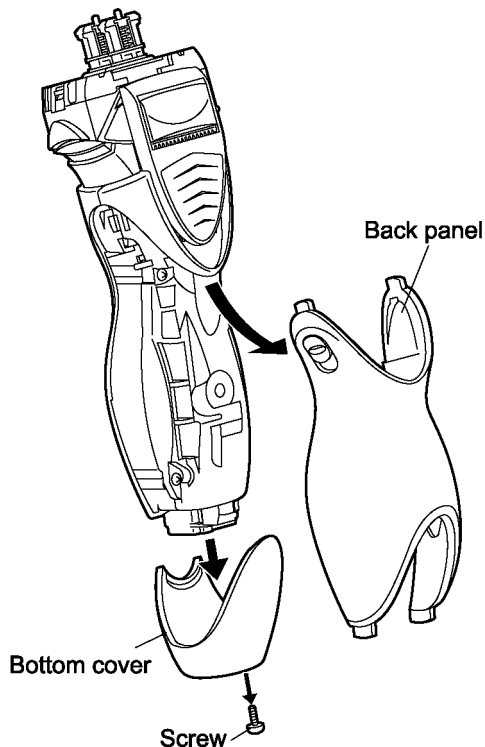
1. Remove the cap, the outer foil and the inner blade.



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

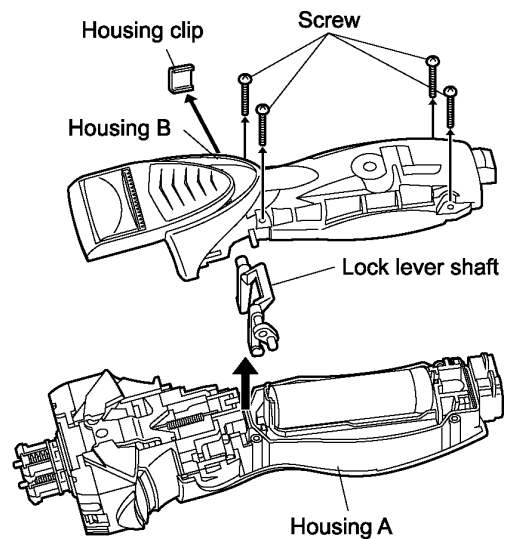


3. Loosen a screw and remove the bottom cover. Set the pivot action selector to "LOCK". Slide the back panel and remove it with care of pivot action selector.

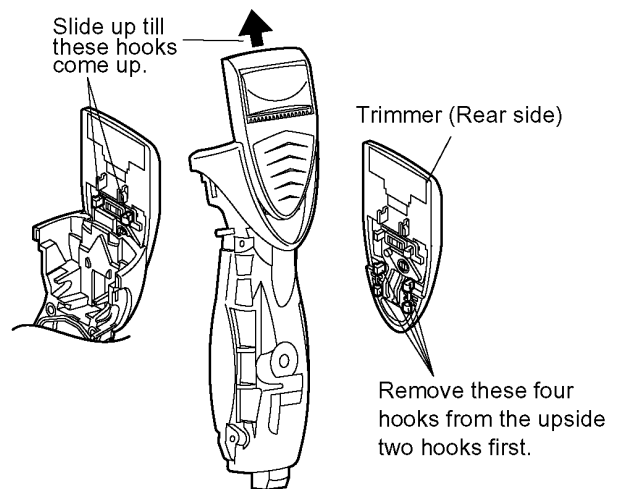


4. Remove the housing clip.

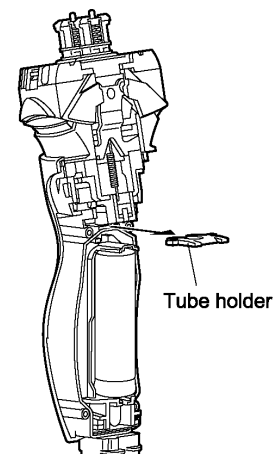
Loosen four screws and remove housing B.  
Take out the lock lever shaft.



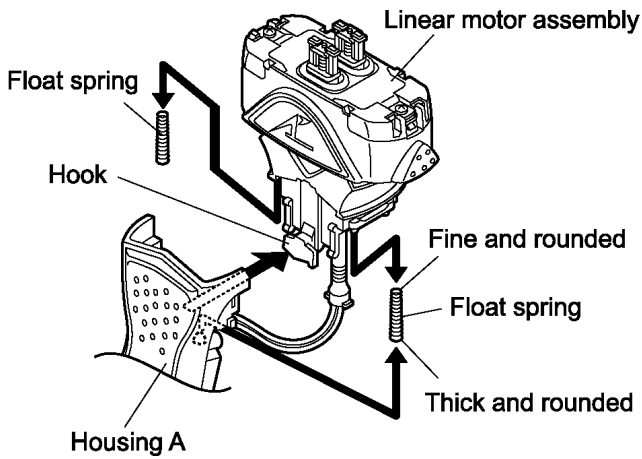
5. Set the trimmer at about 8mm sliding above. To unhook the right and left side of upside hooks, slightly pull the trimmer forward. Then, slightly pull the trimmer in each side.



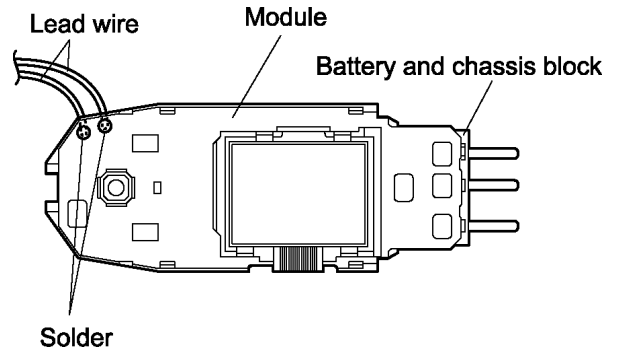
6. Take out the tube holder.



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



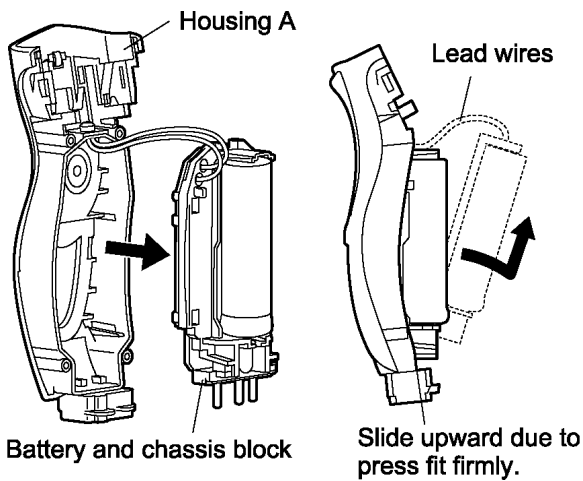
10. Unsolder the lead wires from the module.



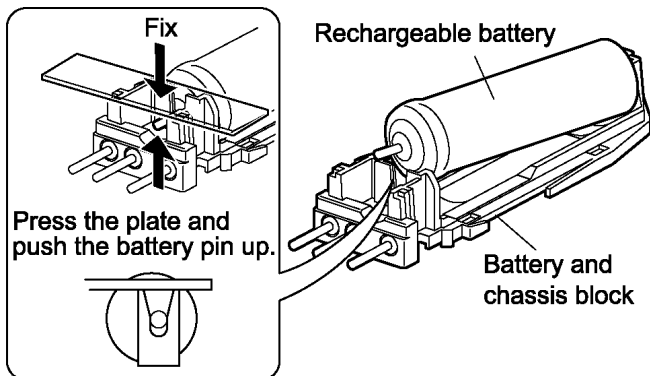
8. Pull up the battery and chassis block from the linear motor side first. Then, slide it upward and take it out from the housing A.

**NOTE:**

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



9. Take out the battery from the chassis.



### 3 CAUTION IN ASSEMBLY

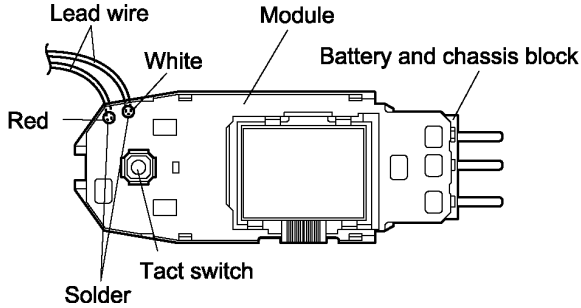
**NOTE:** When reassembling, replace the new waterproof rubber.

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

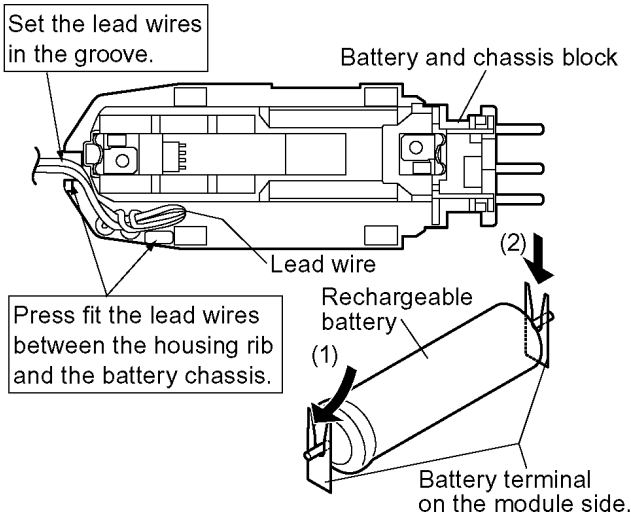
1. Solder the lead wires with the module.

**NOTE:**

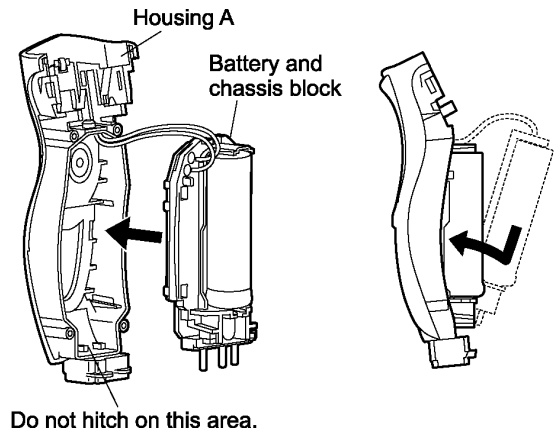
Make sure of the color of lead wires.



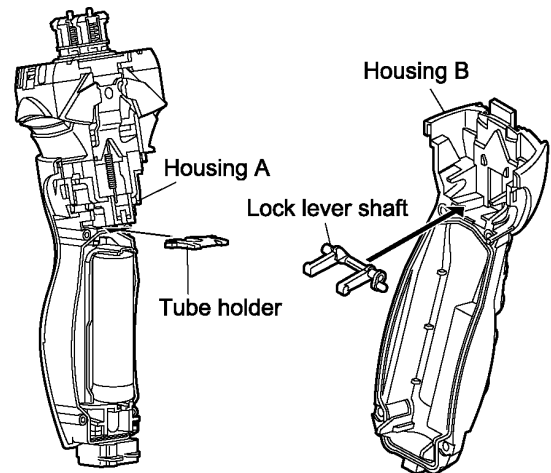
2. Make sure that the lead wires set in position. Install (+) terminal of battery into the terminal plate at the linear motor side and firmly set the battery sliding the direction of arrow. Attach (-) terminal of battery.



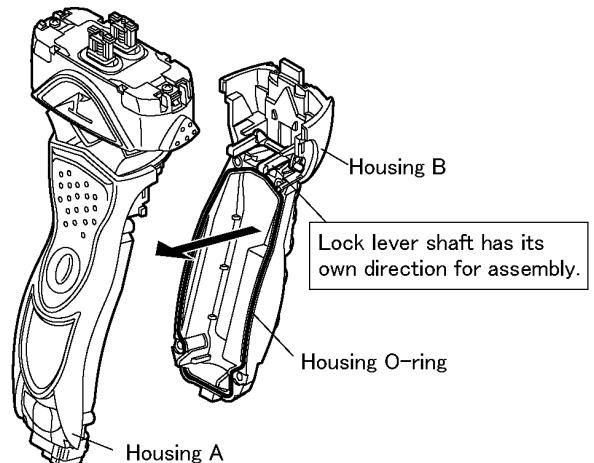
3. When inserting the battery and module assembly into the housing A, confirm if the module does not get any damage or deformation.



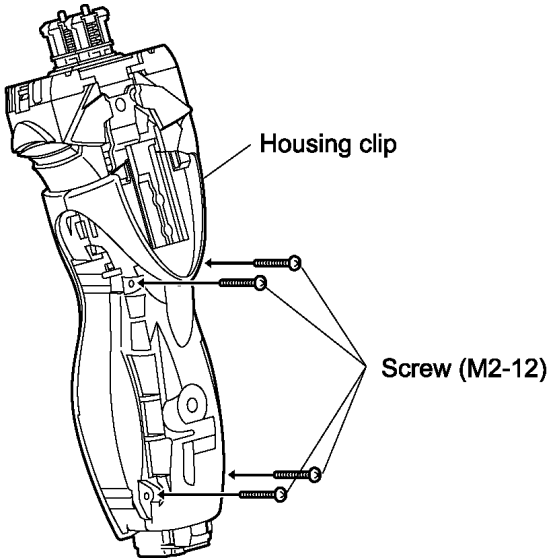
4. Set the linear motor assembly on the housing A and sliding it upward to hook. Confirm that the lead wire tube fits to the housing A firmly and no foreign substance sticking around. Attach the tube holder to housing A with care of the direction. And attach the rock lever shaft to housing B.



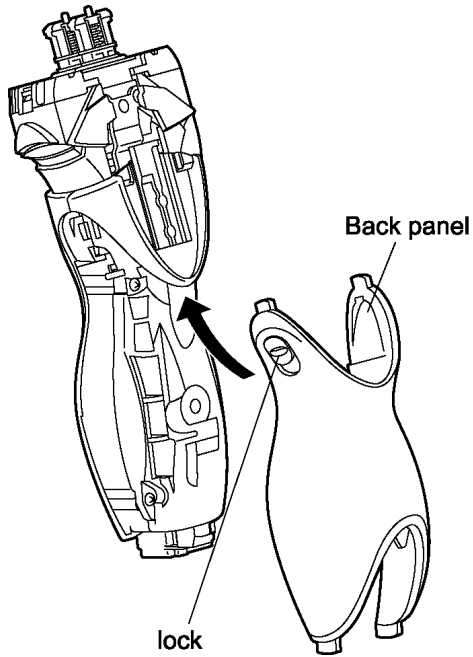
5. When putting the housing A and the housing B together, make sure if the waterproof seal must be fitted properly and no foreign substance sticking around.



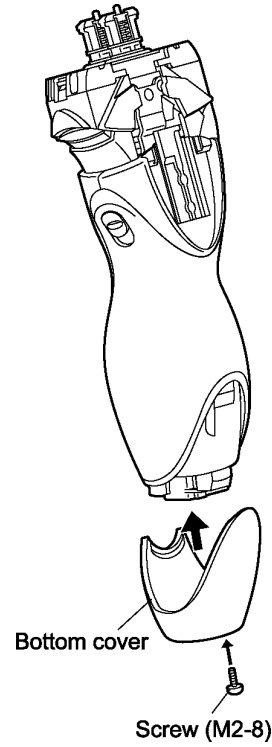
6. Tighten the four screws and set the housing clip.



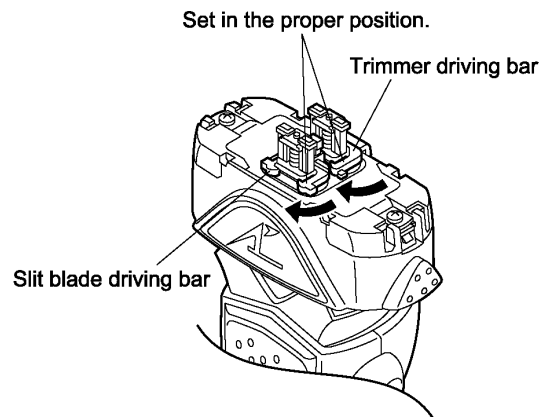
7. Attach the back panel with the position "LOCK".



8. Set the bottom cover tight with a screw.

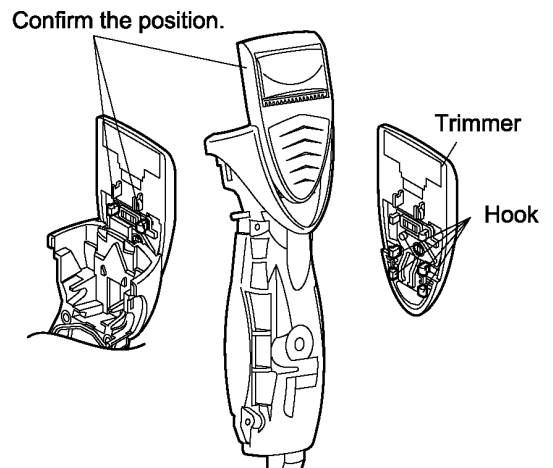


9. Set the trimmer driving bar and the slit blade driving bar.



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

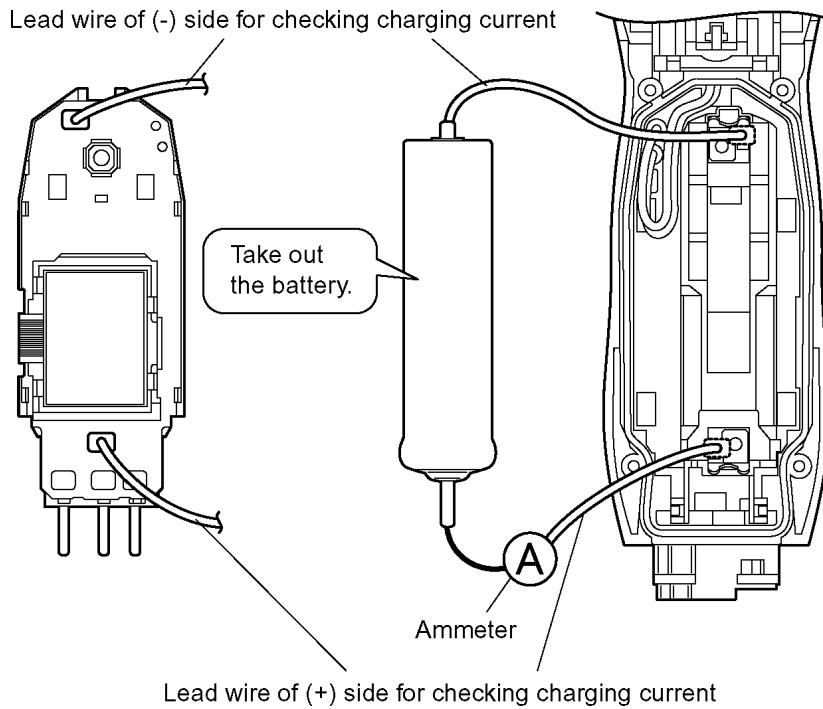
If the position is not properly, it makes the deformation of the hook.

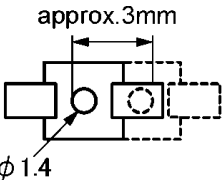


# 4 TROUBLESHOOTING GUIDE

## 4.1. Main unit and charging adaptor

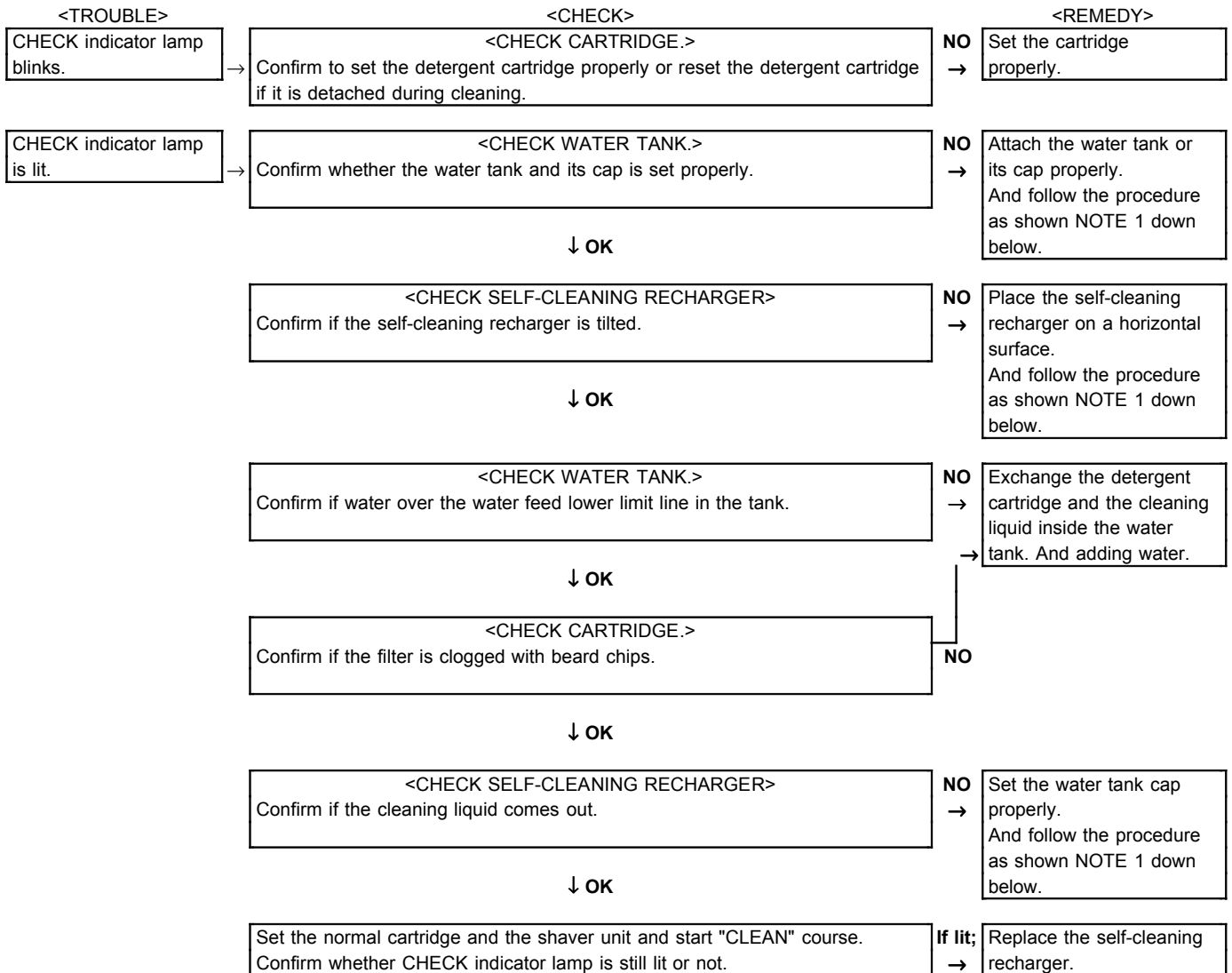
<TROUBLE>	<CHECK>	<REMEDY>	
Motor does not rotate. Does not charge. Functions for a moment and stops.	→ <b>&lt;CHECK CHARGING ADAPTOR.&gt;</b> Supply the rated voltage to the adaptor. And confirm the continuity. OK if it is approx. DC5.7V between the terminals of the plug at the no-load operation.	<b>NO</b> → 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.			<b>NO</b> → 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 back light of LCD is lid. Discharge the battery and check charging current, if it is more than 600mA when connecting AC power source.			<b>NO</b> → Check the soldering points. ↓ OK Replace module. ↓ OK Replace linear motor assembly.



<TROUBLE>	<CHECK>	<REMEDY>
Noise is too loud. Amplitude is too small.	Check if there any deformation with the outer foil.	<b>NO</b> → Replace the outer foil or oiling a drop on the foil.
↓ OK		
	<b>&lt;CHECK DRIVING BARS.&gt;</b> Check if there is any deformation with trimmer driving bar and slit blade driving bar.	<b>NO</b> → Replace the trimmer driving bar or slit blade driving bar.
↓ OK		
	<b>&lt;CHECK DRIVING HEAD AMPLITUDE.&gt;</b> Turn the switch ON, and measure the amplitude by checking a pin of driving head. (See the figure shown below.)	<b>NO</b> → Replace linear motor assembly or module.
 <p>(when viewed from the top)</p>		
↓ OK		
	<b>&lt;CHECK TREMBLE LINEAR MOTOR.&gt;</b> Confirm housing screws if these are tightened firmly after replacing the back panel.	<b>NO</b> → Tighten four screws.
↓ OK		
	<b>&lt;CHECK TREMBLE LINEAR MOTOR.&gt;</b> Check the wear condition in each part, Housing A, Linear motor assembly or Float springs.	<b>NO</b> → Replace housing A or float springs.
Does not move pivot action selector or does not float the head smoothly.	<b>&lt;CHECK FLOAT SUSPENSION.&gt;</b> Confirm if the float springs are assembled properly. Confirm if the beard chips collect around the linear motor assembly.	<b>NO</b> → Repair float springs or clean.
↓ OK		
	<b>&lt;CHECK FLOAT SUSPENSION.&gt;</b> Check if the grease still remains on the housing A and the housing B.	<b>NO</b> → Greasing "FLOIL G741".
Shaver head does not fix even changing pivot action selector.	<b>&lt;CHECK PIVOT ACTION SELECTOR.&gt;</b> Confirm the smooth movement of the lock lever shaft after removing the back panel.	<b>NO</b> → Confirm the deformation of lock lever shaft. Replace linear motor assembly.
↓ OK		
	<b>&lt;CHECK FLOAT SUSPENSION.&gt;</b> Confirm the action selector fixture is set properly after assembling the back panel.	<b>NO</b> → Replace back panel.



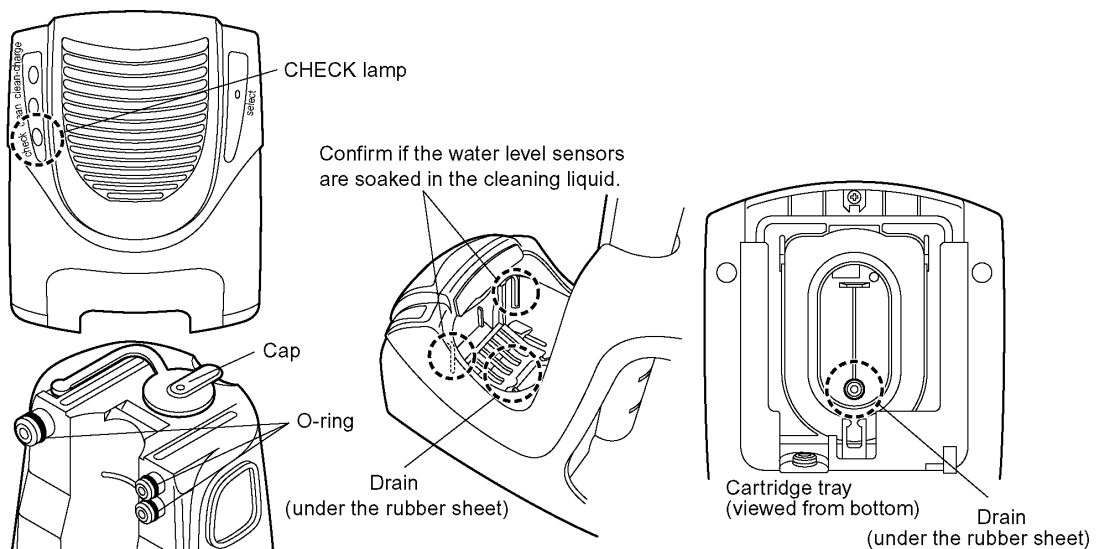
## 4.2. Self-cleaning recharger



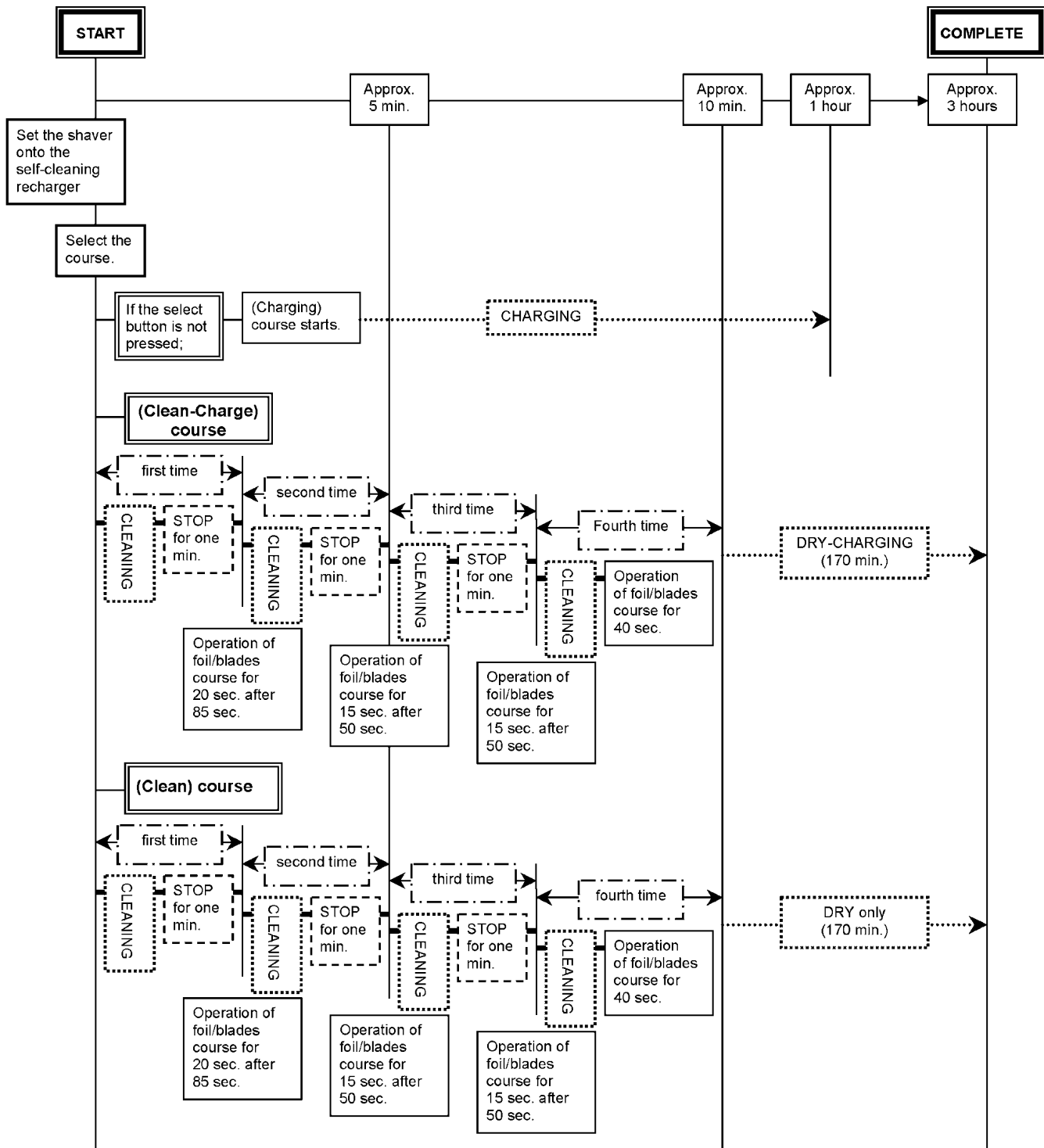
NOTE 1: Hold down the SELECT button for approximately two seconds to extinguish the CHECK indicator lamp.








NOTE 2: The course will be aborted if the power is cut off during cleaning. Try to re-operate the course once again to exhaust the cleaning liquid on the cartridge tray.

NOTE 3: If the cleaning liquid remains the tray even the course is completed normally, clean the drain and cartridge tray.



# 5 OPERATION OF SELF-CLEANING RECHARGER



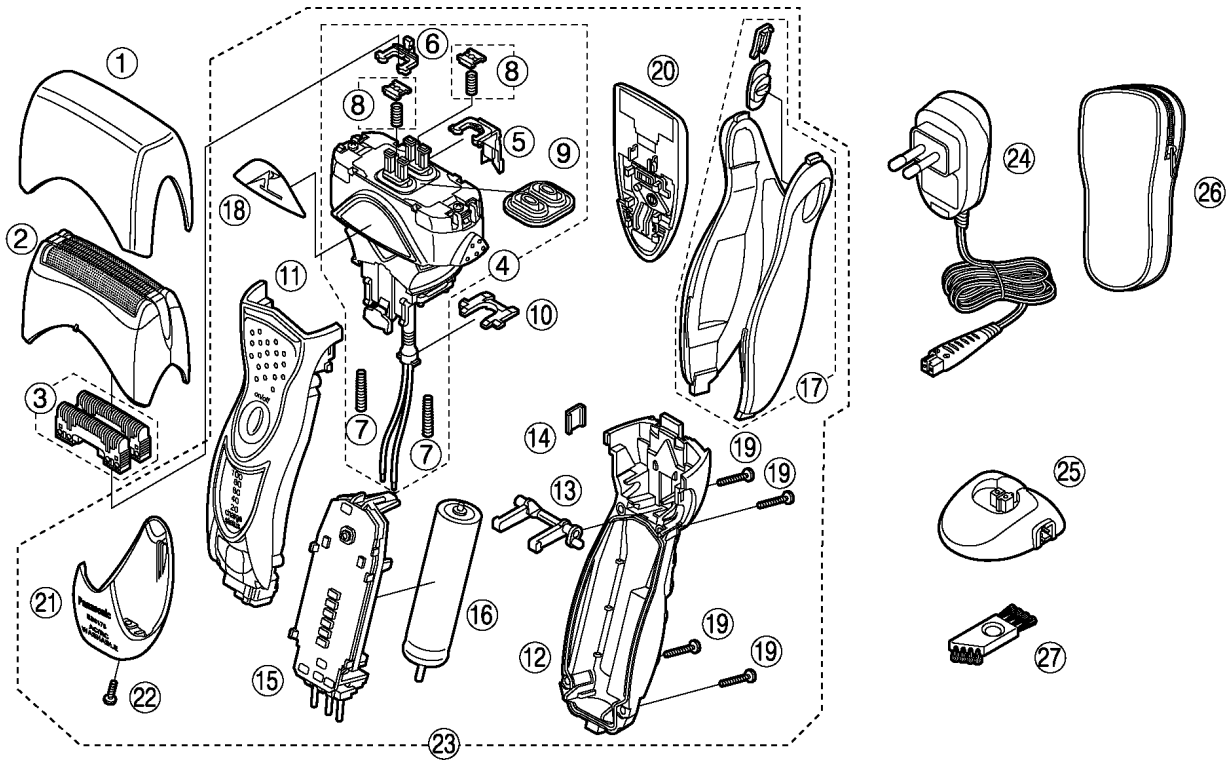
course	Operation	Sign of selection			Time required (Standard)	Sign of completion the course		
		Main unit	Self-cleaning recharger			Main unit	Self-cleaning recharger	
		LED/ LCD display	clean- charge	clean		LED/ LCD display	clean- charge	clean
charge	charging	 (lit)	/	/	about 1 hour	 (blinking)	/	/
clean-charge	cleaning drying charging	/	 (lit)	/	about 3 hours	 (blinking)	 (blinking)	/
clean	cleaning drying	/	/	 (lit)	about 3 hours	/	/	 (blinking)

**NOTE:**

The blinking of "Clean-Charge" lamp or "Clean" lamp will stay until either the shaver is detached from self-cleaning recharger or unplugging the self-cleaning recharger.

# 6 EXPLODED VIEW & REPLACEMENT PARTS LIST

## 6.1. ES8172 EXPLODED VIEW



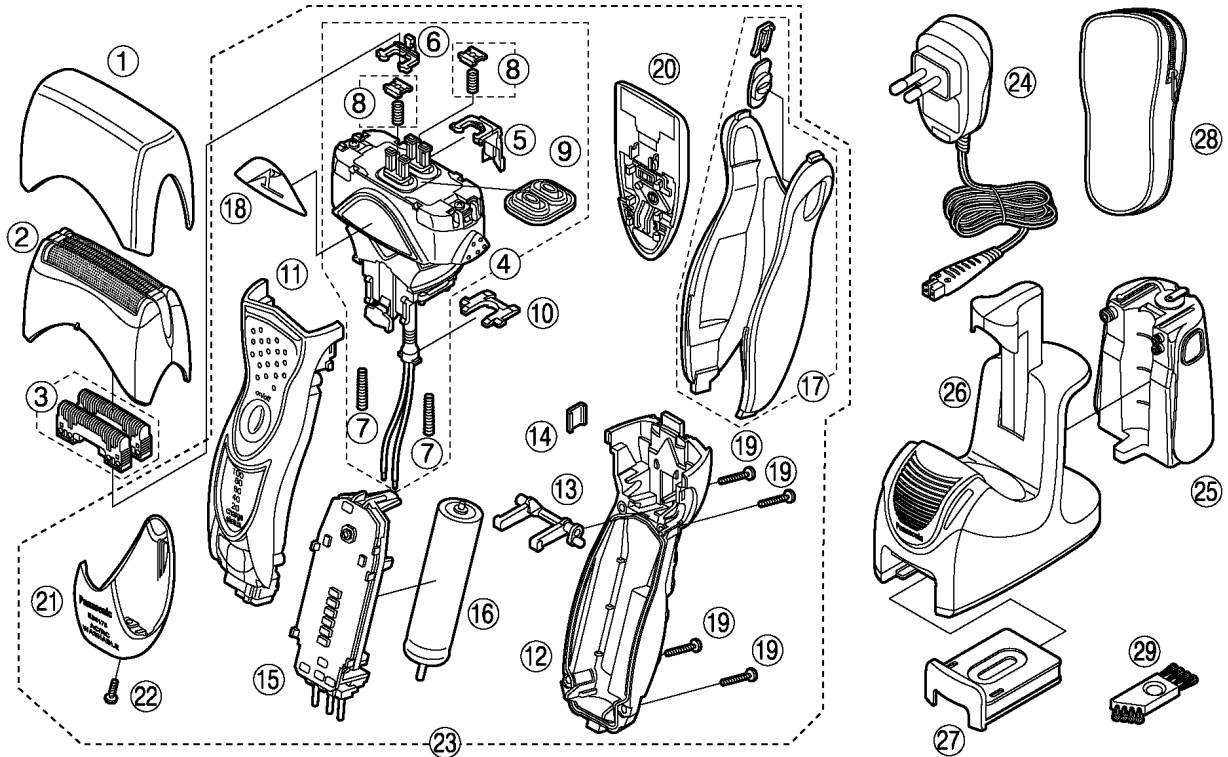
## 6.2. ES8172 REPLACEMENT PARTS LIST

**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	WES8176X7158	PROTECTIVE CAP		1
2	WES9065E	OUTER FOIL		1
3	WES9066E	INNER BLADE	*B (2PCS/PK)	1ST
4	WES8176L1007	LINEAR MOTOR ASSEMBLY		1
5	WES8176L1087	TRIMMER DRIVING BAR		1
6	WES8176L1077	SLIT BLADE DRIVING BAR		1
7	WES8176L0227	FLOAT SPRING	*B (2PCS/PK)	2
8	WES8176L0587	SPRING AND STOPPER	*B (2SETS/PK)	2
9	WES8176L0327	WATERPROOF RUBBER		1
10	WES8176L0207	TUBE HOLDER		1
11	WES8172S3058	HOUSING A		1
12	WES8172S3068	HOUSING B		1
13	WES8176L1157	LOCK LEVER SHAFT		1
14	WES8176L0167	HOUSING CLIP		1
15	WES8175L2127	MODULE		1
16	WES8163L2508	RECHARGEABLE BATTERY	LITHIUM-ION TYPE	1
17	WES8175H3367	REAR PANEL		1
18	WES8175S3347	LOGO PLATE		1
19	WES8176L6007	P TIGHT SCREW	*C M2-12	4
20	WES8175H1507	TRIMMER		1
21	WES8172S3848	BOTTOM COVER		1
22	WES8176L6057	TAPPING SCREW	M2-8	1
23	WES8172S3038	BODY BLOCK		1
24	WES8176K7663	CHARGING ADAPTOR	C-2 PLUG	1
25	WES8172K7668	CHARGING STAND		1
26	WES8176K7017	SOFT CASE		1
27	WES8093H7057	CLEANING BRUSH		1
-	WES8172S8008	INDIVIDUAL BOX		1
-	WES8172S8108	OPERATING INSTRUCTIONS		1

### 6.3. ES8175 EXPLODED VIEW



### 6.4. ES8175 REPLACEMENT PARTS LIST

**NOTE:**

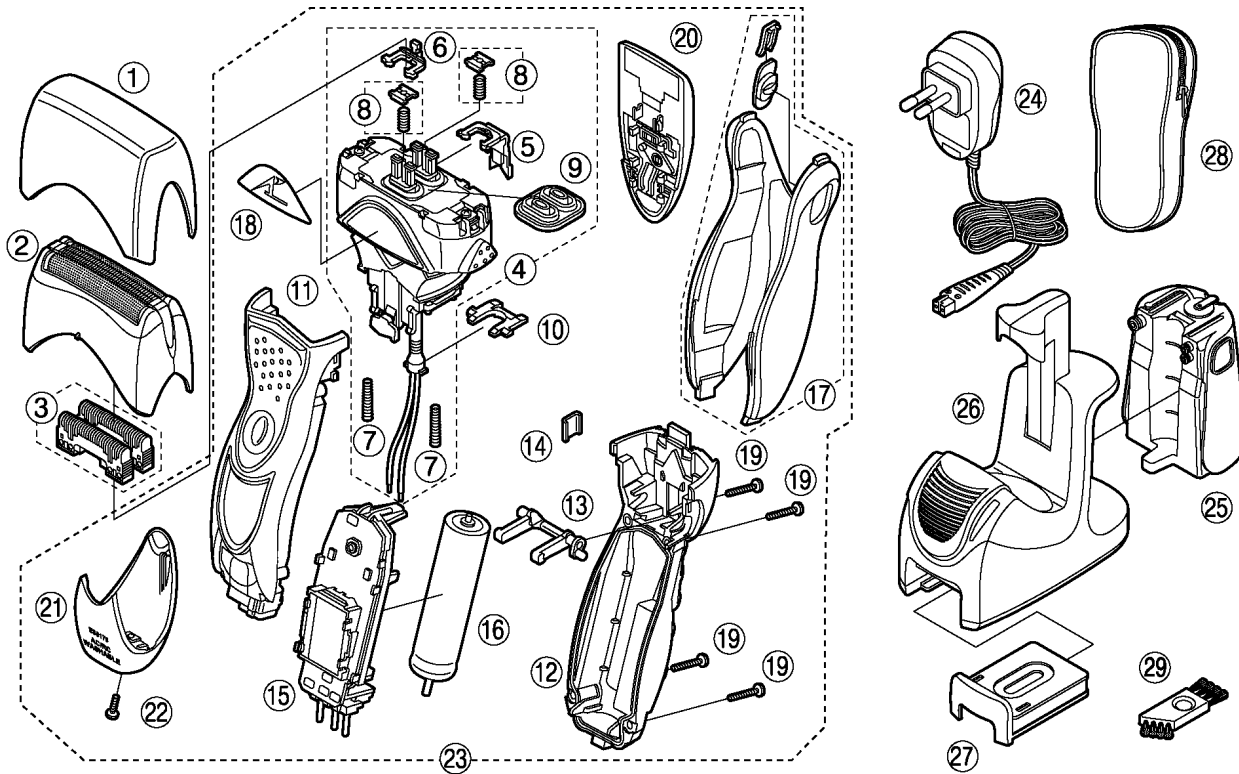
\*A=available as an optional accessory

\*B=only available as set

\*C=available individually

Ref. No.	Part No.	Part Name & Description	Remarks	Per Unit
1	WES8176X7158	PROTECTIVE CAP		1
2	WES9065E	OUTER FOIL		1
3	WES9066E	INNER BLADE	*B (2PCS/PK)	1ST
4	WES8176L1007	LINEAR MOTOR ASSEMBLY		1
5	WES8176L1087	TRIMMER DRIVING BAR		1
6	WES8176L1077	SLIT BLADE DRIVING BAR		1
7	WES8176L0227	FLOAT SPRING	*B (2PCS/PK)	2
8	WES8176L0587	SPRING AND STOPPER	*B (2SETS/PK)	2
9	WES8176L0327	WATERPROOF RUBBER		1
10	WES8176L0207	TUBE HOLDER		1
11	WES8175S3058	HOUSING A		1
12	WES8175S3068	HOUSING B		1
13	WES8176L1157	LOCK LEVER SHAFT		1
14	WES8176L0167	HOUSING CLIP		1
15	WES8175L2127	MODULE		1
16	WES8163L2508	RECHARGEABLE BATTERY	LITHIUM-ION TYPE	1
17	WES8175H3367	REAR PANEL		1
18	WES8175S3347	LOGO PLATE		1
19	WES8176L6007	P TIGHT SCREW	*C M2-12	4
20	WES8175H1507	TRIMMER		1
21	WES8175S3848	BOTTOM COVER		1
22	WES8176L6057	TAPPING SCREW	M2-8	1
23	WES8175S3038	BODY BLOCK		1
24	WES8176K7663	CHARGING ADAPTOR	C-2 PLUG	1
25	WES8176A7357	WATER TANK		1
26	WES8176H4218	SELF-CLEAN RECHARGER		1
27	ES035K751	DETERGENT CARTRIDGE		1
28	WES8176K7017	SOFT CASE		1
29	WES8093H7057	CLEANING BRUSH		1
-	WES8175S8008	INDIVIDUAL BOX		1
-	WES8176S8108	OPERATING INSTRUCTIONS		1

### 6.5. ES8176 EXPLODED VIEW



### 6.6. ES8176 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	WES8176X7158	PROTECTIVE CAP		1
2	WES9065E	OUTER FOIL	*A	1
3	WES9066E	INNER BLADE	*A (2PCS/PK)	1ST
4	WES8176L1007	LINEAR MOTOR ASSEMBLY		1
5	WES8176L1087	TRIMMER DRIVING BAR		1
6	WES8176L1077	SLIT BLADE DRIVING BAR		1
7	WES8176L0227	FLOAT SPRING	*B (2PCS/PK)	2
8	WES8176L0587	SPRING AND STOPPER	*B (2SETS/PK)	2
9	WES8176L0327	WATERPROOF RUBBER		1
10	WES8176L0207	TUBE HOLDER		1
11	WES8176S3058	HOUSING A		1
12	WES8175S3068	HOUSING B		1
13	WES8176L1157	LOCK LEVER SHAFT		1
14	WES8176L0167	HOUSING CLIP		1
15	WES8176L2127	MODULE		1
16	WES8163L2508	RECHARGEABLE BATTERY	LITHIUM-ION TYPE	1
17	WES8176H3367	REAR PANEL		1
18	WES8176N3347	LOGO PLATE		1
19	WES8176L6007	P TIGHT SCREW	*C M2-12	4
20	WES8176H1507	TRIMMER		1
21	WES8176S3848	BOTTOM COVER		1
22	WES8176L6057	TAPPING SCREW	M2-8	1
23	WES8176S3038	BODY BLOCK		1
24	WES8176K7663	CHARGING ADAPTOR	C-2 PLUG	1
25	WES8176A7357	WATER TANK		1
26	WES8176H4218	SELF-CLEAN RECHARGER		1
27	ES035K751	DETERGENT CARTRIDGE	*A	1
28	WES8176K7017	SOFT CASE		1
29	WES8093H7057	CLEANING BRUSH		1
-	WES8176S8008	INDIVIDUAL BOX		1
-	WES8176S8108	OPERATING INSTRUCTIONS		1