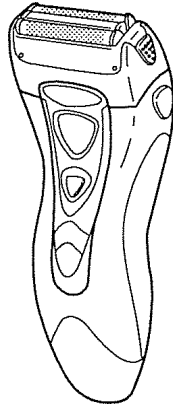


Service Manual

AC/Rechargeable Shaver

ES8016-A3

ES8017-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)15 x (W)6.1 x (D)3.7 cm
Weight	220g
Supplied accessories	Soft case Cleaning brush Charging stand

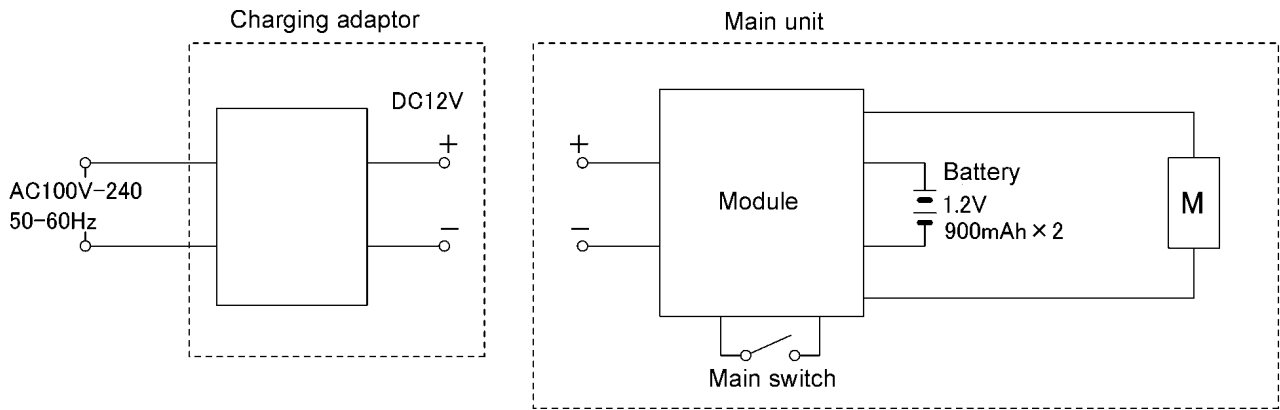
WARNING

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.

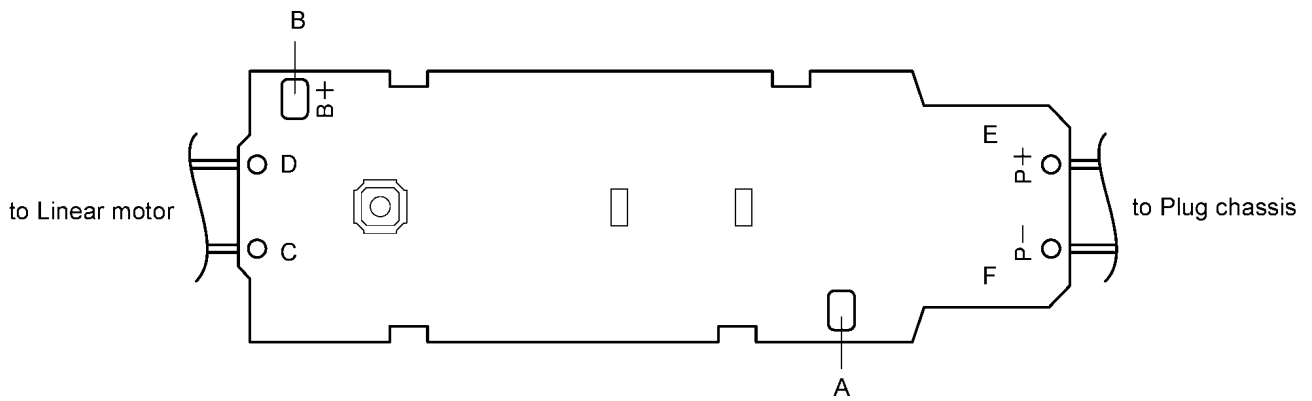
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1 SCHEMATIC DIAGRAM



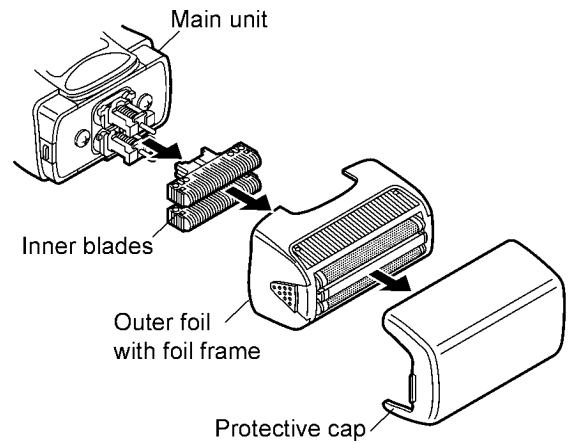
2 WIRING CONNECTION DIAGRAM



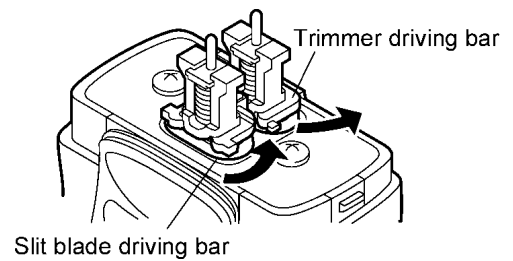
3 DISASSEMBLY INSTRUCTIONS

Follow the procedure below to disassemble the main unit.

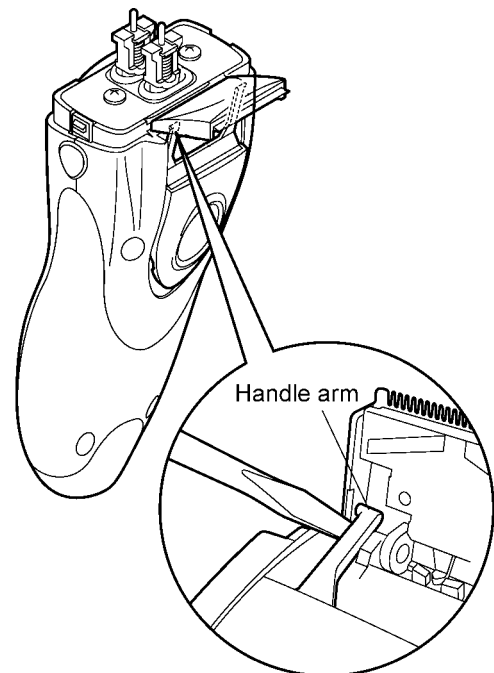
1. Remove the cap, the outer foil with foil frame and the inner blade.



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

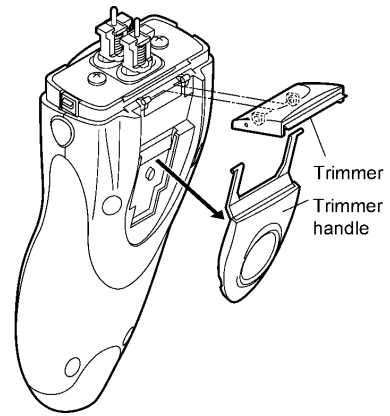
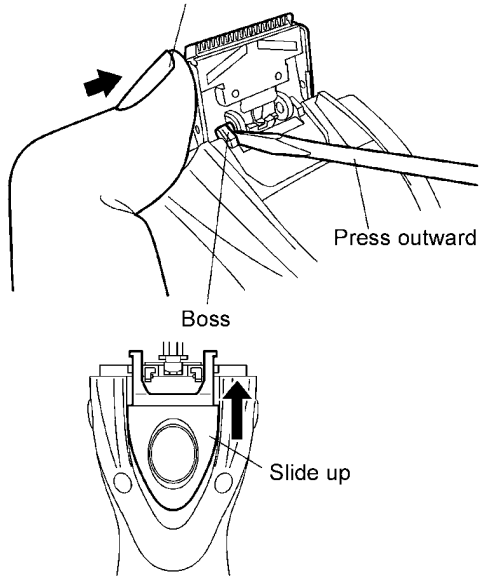


3. Slide the trimmer handle up to open the trimmer and undo the boss of handle arm with something like a slotted-head screw driver.



4. Remove trimmer and trimmer handle.

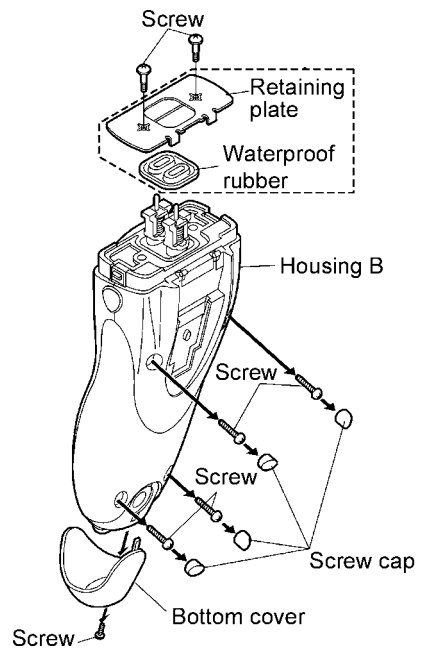
Unhook pressing on the side by finger.



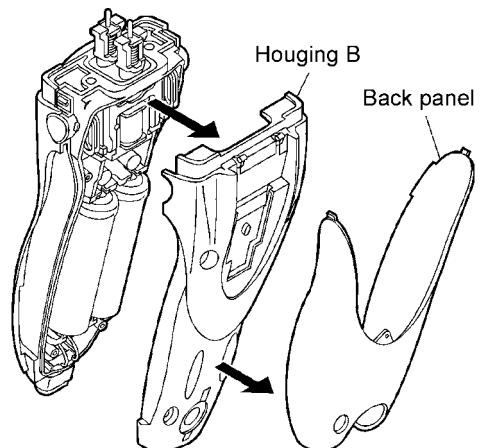
5. Loosen two screws and the retaining plate. Remove the waterproof rubber.

6. Remove the four screw caps using something like a toothpick and four screws.

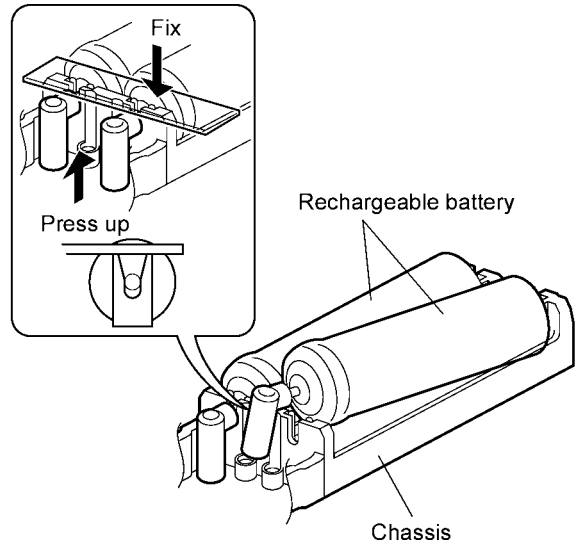
7. Loosen a screw and remove the bottom cover.



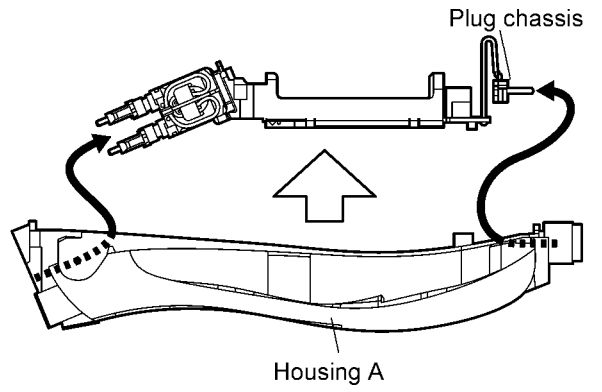
8. Take out the housing B and the back panel.



9. Take out the rechargeable batteries.



10. Take out the linear motor and module assembly from housing A. Remove the plug chassis.



4 CAUTION IN ASSEMBLY

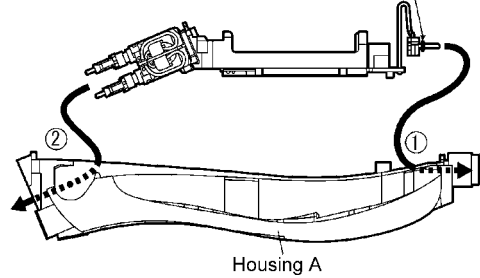
NOTE: When reassembling, replace the new waterproof rubber.

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

4.1. Linear motor and Module assembly

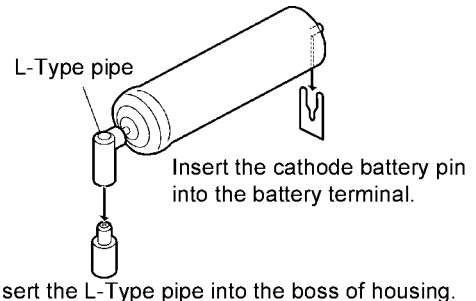
Set from the plug chassis side inserting terminal pins in, and insert the driving heads side into housing A.

Make sure to attach the O-ring of plug chassis.



4.2. Rechargeable batteries

Attach the L-Type pipe to the anode battery terminal (longer pin). Insert the rechargeable batteries into chassis.

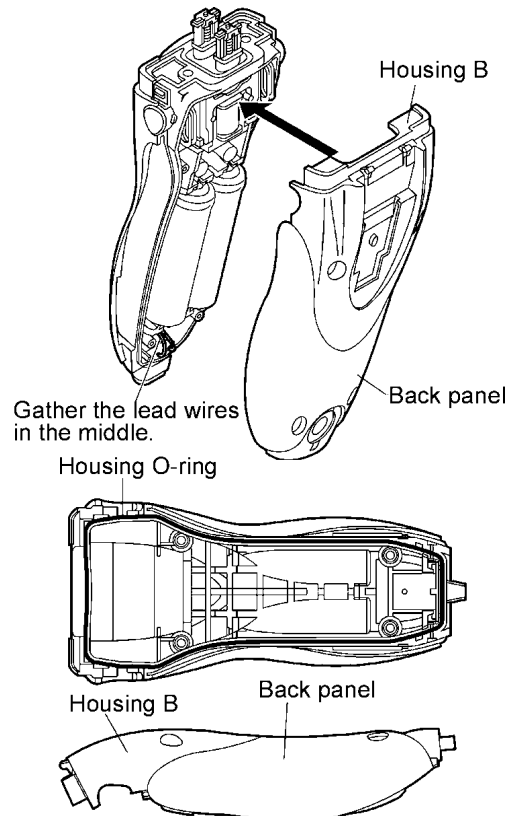
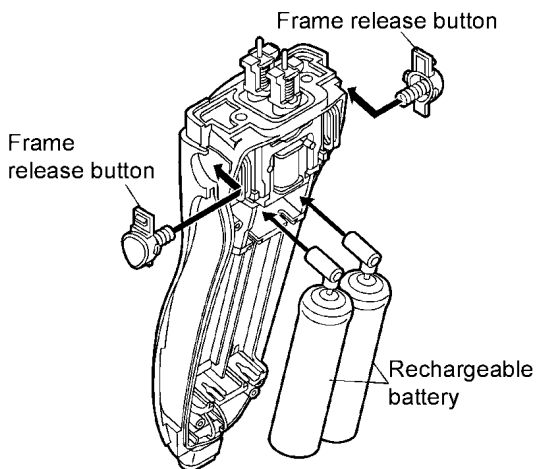


4.3. Housing

Set the both side of foil frame release buttons and their springs. Make sure of the position for the housing O-ring if it firmly sets into the groove of housing B. Make sure whether there is NO foreign substance sticking around a part covered with water seal.

Set the back panel on housing B and put it with housing A together.

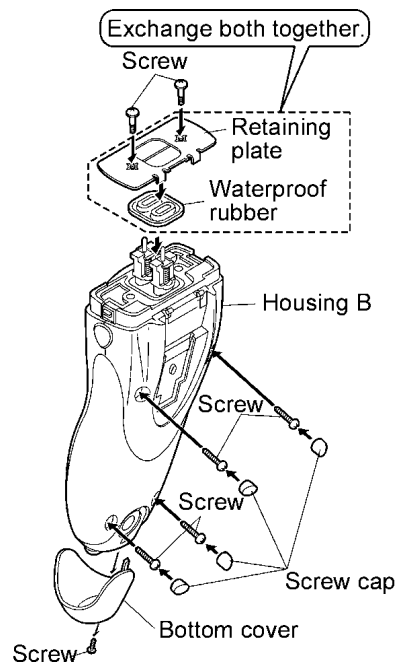
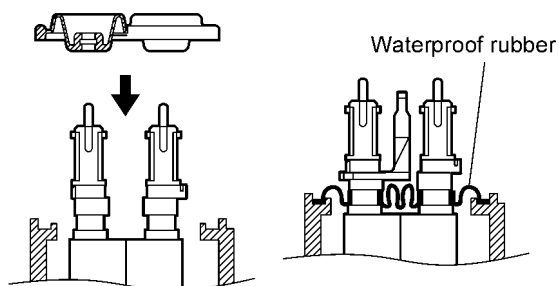
Tighten the screws with care of pinching screw o-rings.



4.4. Waterproof rubber

The waterproof rubber must be fitted the right way around. Install as shown in figure by inserting firmly to the proper position. Make sure to replace both retaining plate and waterproof rubber together when replacing one of each.

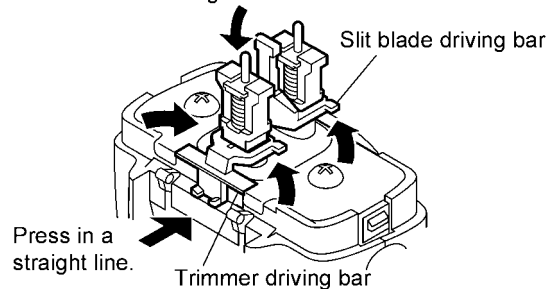
Cross section of Waterproof rubber



4.5. Driving bars

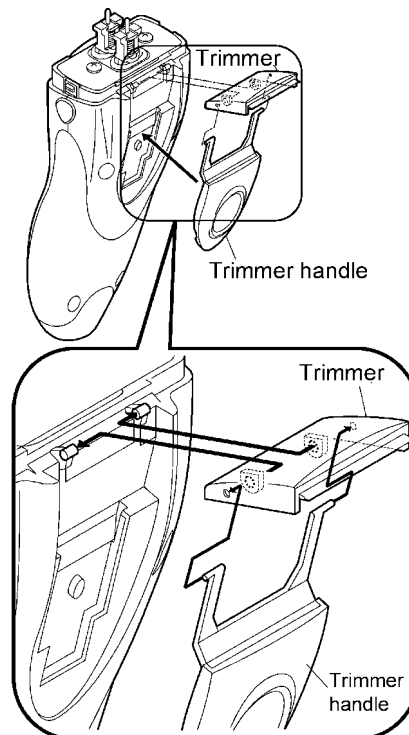
Set the trimmer driving bar and the slit blade driving bar.

Attach it with rotating from the side.



4.6. Trimmer

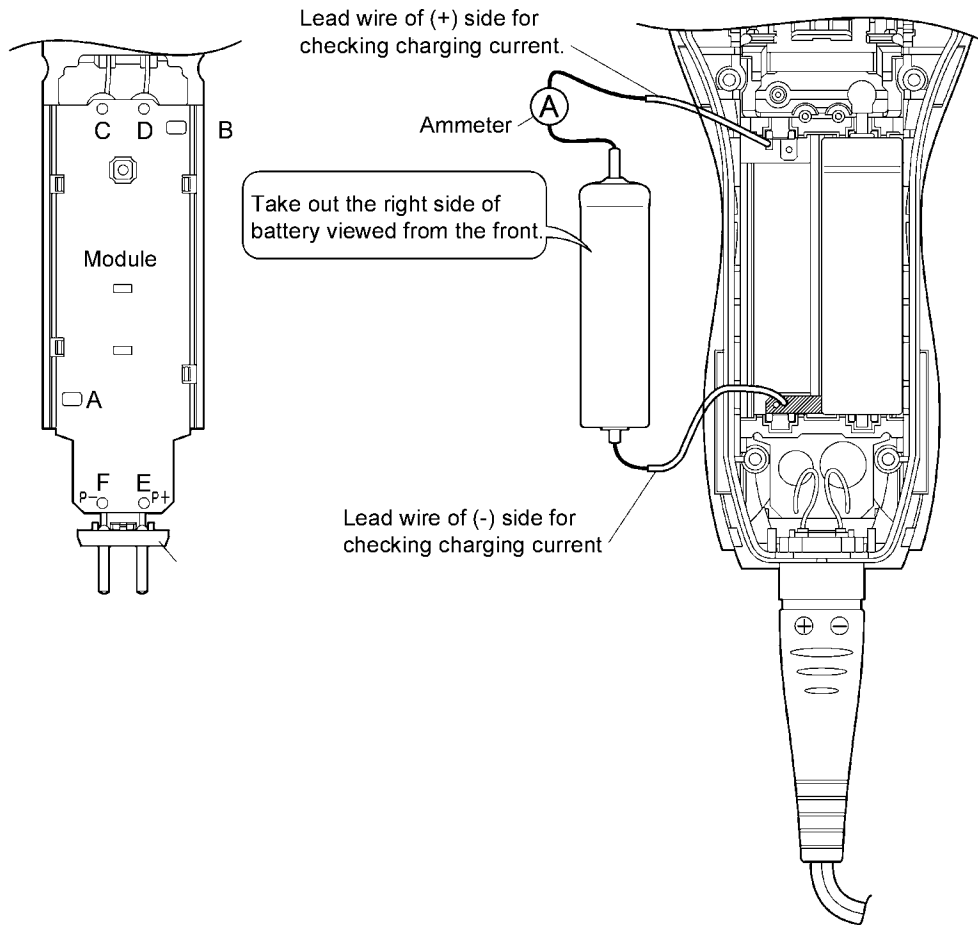
1. Make sure if the bosses of handle arm insert into the holes of trimmer.
2. Align the bosses of housing with the holes of trimmer, and hook the trimmer handle.
3. Confirm its operation or smooth movement of trimmer.



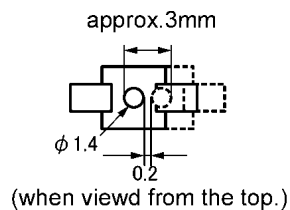
5 TROUBLESHOOTING GUIDE

(Refer to WIRING CONNECTION DIAGRAM)

<TROUBLE>	<CHECK.>	<REMEDY>	
Motor does not rotate. Does not charge. Functions for a moment and stops. Does not operate by AC power source.	<CHECK POWER CORD.> Connect the rated voltage to the normal main unit of empty charge capacity by the power cord. Check if the charge status lamp of main unit is lit. Confirm if the motor rotates more than one minutes by AC power source pushing the on/off switch.	NO → Replace power cord unit.	
↓ OK			
<CHECK RECHARGEABLE BATTERIES.> 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			
<CHECK MODULE.> Wire the main unit returned from a customer referring the following figure, and connect the rated voltage to it by the power cord. Check if the charge status lamp grows in red. Check charging current, if it is in between 800mA to 1000mA.			NO → Check the soldering points from A to F.
↓ OK (with connecting power cord)			
<CHECK MODULE.> When switching ON and OFF, check if motor rotates. Remove inner blades, outer foil and waterproof rubber. Check charging current, if it is in between 350mA to 550mA when connecting AC power source.			NO → Check the soldering points from A to F.
↓ OK			
Replace linear motor and module assembly.			

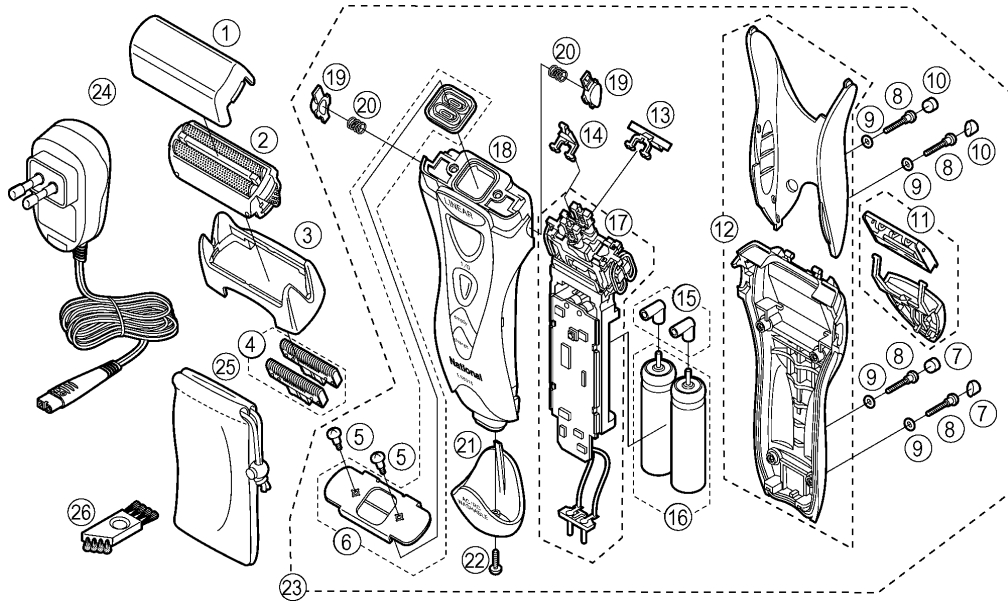


<TROUBLE>	<CHECK.>	<REMEDY>
Noise is too loud. Amplitude is too large.	→ Check if there any deformation with the outer foil.	NO → Replace the outer foil or oiling a drop for the foil.
↓ OK		
<CHECK DRIVING BARS.>		
Check if there is any deformation with trimmer driving bar and slit blade driving bar.		NO → Replace the trimmer driving bar or slit blade driving bar.
↓ OK		
<CHECK DRIVING HEAD AMPLITUDE.>		
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.



6 EXPLODED VIEW & REPLACEMENT PARTS LIST

6.1. EXPLODED VIEW for ES8016



6.2. REPLACEMENT PARTS LIST for ES8016

NOTE:

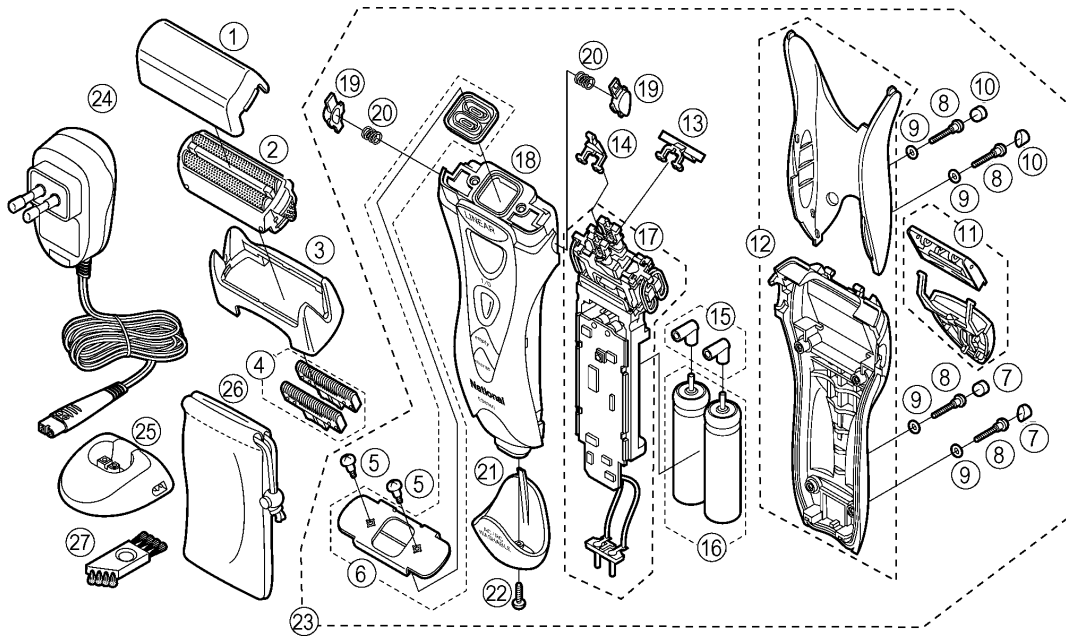
*A=available as an optional accessory

*B=only available as set

*C=available individually

Ref. No.	Part No.	Part Name & Description	Remarks	Per Unit
1	WES8017X7159	PROTECTIVE CAP		1
2	WES9077E	SYSTEM OUTER FOIL		1
3	WES8016S0047	OUTER FOIL FRAME		1
4	WES9074E	INNER BLADE	*B (2PCS/PK)	2
5	WES5405L6007	SCREW	*C	2
6	WES8016L0207	RETAINING PLATE W/RUBBER		1
7	WES8016A3777	SCREW CAP (BOTTOM)	*B (2PCS/PK) BLUE	2
8	WES8016L9017	P TIGHT SCREW	*C M2*13.5	4
9	WES8016L0967	O-RING	*B (4PCS/PK)	4
10	WES8016H3767	SCREW CAP (UPPER)	*B (2PCS/PK) GRAY	2
11	WES8017A1508	TRIMMER	BLUE	1
12	WES8016S3068	HOUSING B		1
13	WES8016L1087	TRIMMER DRIVING BAR		1
14	WES8016L1077	SLIT BLADE DRIVING BAR		1
15	WES8016L0337	L-TYPE PIPE	*B (2PCS/PK)	2
16	WES8017L2508	RECHARGEABLE BATTERY	*B (2PCS/PK) NI-MH TYPE	2
17	WES8016L1008	LINEAR MOTOR ASSEMBLY		1
18	WES8016S3058	HOUSING A		1
18	WES8016S3059	HOUSING A	only for KOREA	1
19	WES8016A3267	FRAME RELEASE BUTTON	*B (2PCS/PK) BLUE	2
20	WES8016L0187	BUTTON SPRING	*B (2PCS/PK)	2
21	WES8016A3128	BOTTOM COVER	BLUE	1
21	WES8016A3129	BOTTOM COVER	only for TAIWAN BLUE	1
22	WES8016L9267	TAPPING SCREW	K2-5	1
23	WES8016S3038	BODY BLOCK		1
23	WES8016S3039	BODY BLOCK	only for TAIWAN	1
23	WES8016S3031	BODY BLOCK	only for KOREA	1
24	WES8017K7663	POWER CORD	C-2 PLUG	1
24	WES8017K7662	POWER CORD	A-2 PLUG	1
24	WES8016K7671	POWER CORD	KOREAN PLUG	1
25	WES8023A7008	SOFT CASE		1
26	WES861B7057	CLEANING BRUSH		1
-	WES8016S8008	INDIVIDUAL BOX		1
-	WES8016S8009	INDIVIDUAL BOX	only for KOREA	1
-	WES8017N8100	OPERATING INSTRUCTIONS		1

6.3. EXPLODED VIEW for ES8017



6.4. REPLACEMENT PARTS LIST for ES8017

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	WES8017X7159	PROTECTIVE CAP		1
2	WES9077E	SYSTEM OUTER FOIL		1
3	WES8960N0047	OUTER FOIL FRAME		1
4	WES9074E	INNER BLADE	*B (2PCS/PK)	2
5	WES5405L6007	SCREW	*C	2
6	WES8016L0207	RETAINING PLATE W/RUBBER		1
7	WES8960H3777	SCREW CAP (BOTTOM)	*B (2PCS/PK) GRAY	2
8	WES8016L9017	P TIGHT SCREW	*C M2*13.5	4
9	WES8016L0967	O-RING	*B (4PCS/PK)	4
10	WES8016H3767	SCREW CAP (UPPER)	*B (2PCS/PK) GRAY	2
11	WES8018H1508	TRIMMER	GRAY	1
12	WES8017N3068	HOUSING B		1
13	WES8016L1087	TRIMMER DRIVING BAR		1
14	WES8016L1077	SLIT BLADE DRIVING BAR		1
15	WES8016L0337	L-TYPE PIPE	*B (2PCS/PK)	2
16	WES8017L2508	RECHARGEABLE BATTERY	*B (2PCS/PK) NI-MH TYPE	2
17	WES8017L1008	LINEAR MOTOR ASSEMBLY		1
18	WES8017N3058	HOUSING A		1
18	WES8017N3059	HOUSING A	only for KOREA	1
19	WES8960H3267	FRAME RELEASE BUTTON	*B (2PCS/PK) GRAY	2
20	WES8016L0187	BUTTON SPRING	*B (2PCS/PK)	2
21	WES8017H3128	BOTTOM COVER	GRAY	1
21	WES8017H3129	BOTTOM COVER	only for TAIWAN GRAY	1
22	WES8016L9267	TAPPING SCREW	K2-5	1
23	WES8017N3038	BODY BLOCK		1
23	WES8017N3039	BODY BLOCK	only for TAIWAN	1
23	WES8017N3031	BODY BLOCK	only for KOREA	1
24	WES8017K7663	POWER CORD	C-2 PLUG	1
24	WES8017K7662	POWER CORD	A-2 PLUG	1
24	WES8017K7671	POWER CORD	KOREAN PLUG	1
25	WES8017K7668	CHARTING STAND		1
26	WES8023A7008	SOFT CASE		1
27	WES861B7057	CLEANING BRUSH		1
-	WES8017N8008	INDIVIDUAL BOX		1
-	WES8017N8009	INDIVIDUAL BOX	only for KOREA	1
-	WES8017N8100	OPERATING INSTRUCTIONS		1