

Service Manual

AC/Rechargeable Beard/Hair Trimmer

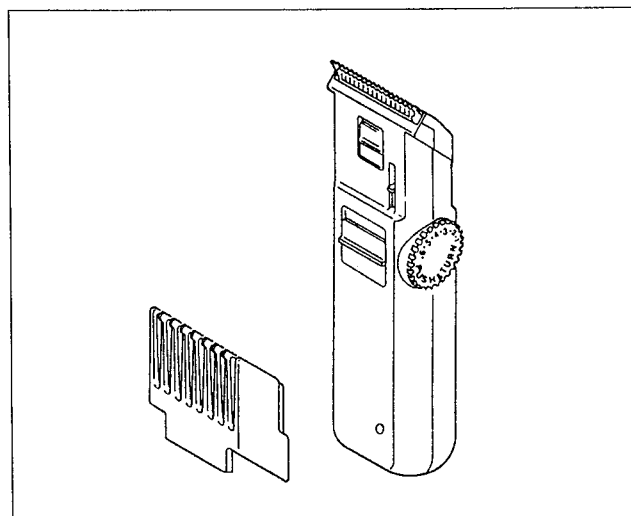
ER203/204

<Specifications>

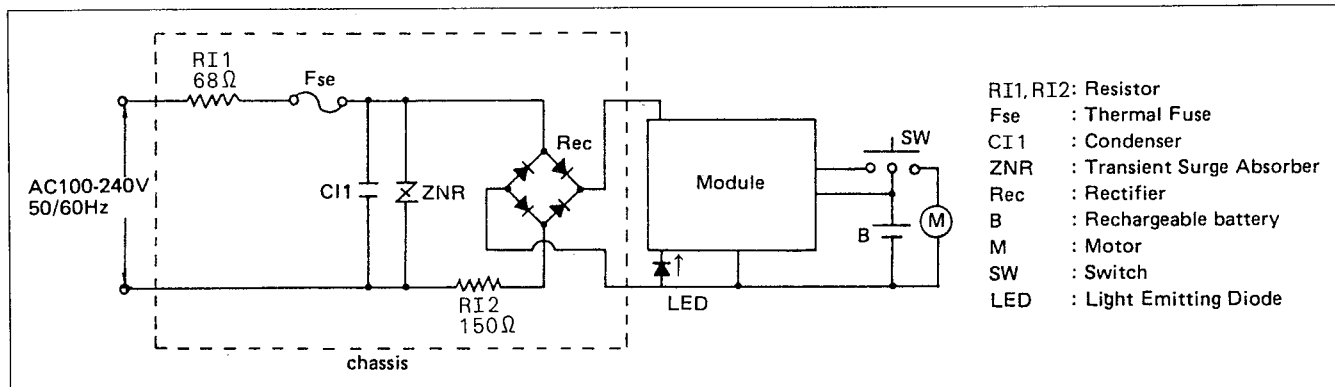
Power source	: 100-240 V AC, 50 - 60Hz
Power consumption	: 5.0W
Charging time (ER203)	: standard 8 hours
(ER204)	: standard 1 hour
Rated time	: 40 minutes
Weight	: 156g (including attachment)

<Standard equipment>

Comb attachment
AC power cord
Oil
Cleaning brush
Soft case



SCHEMATIC DIAGRAM



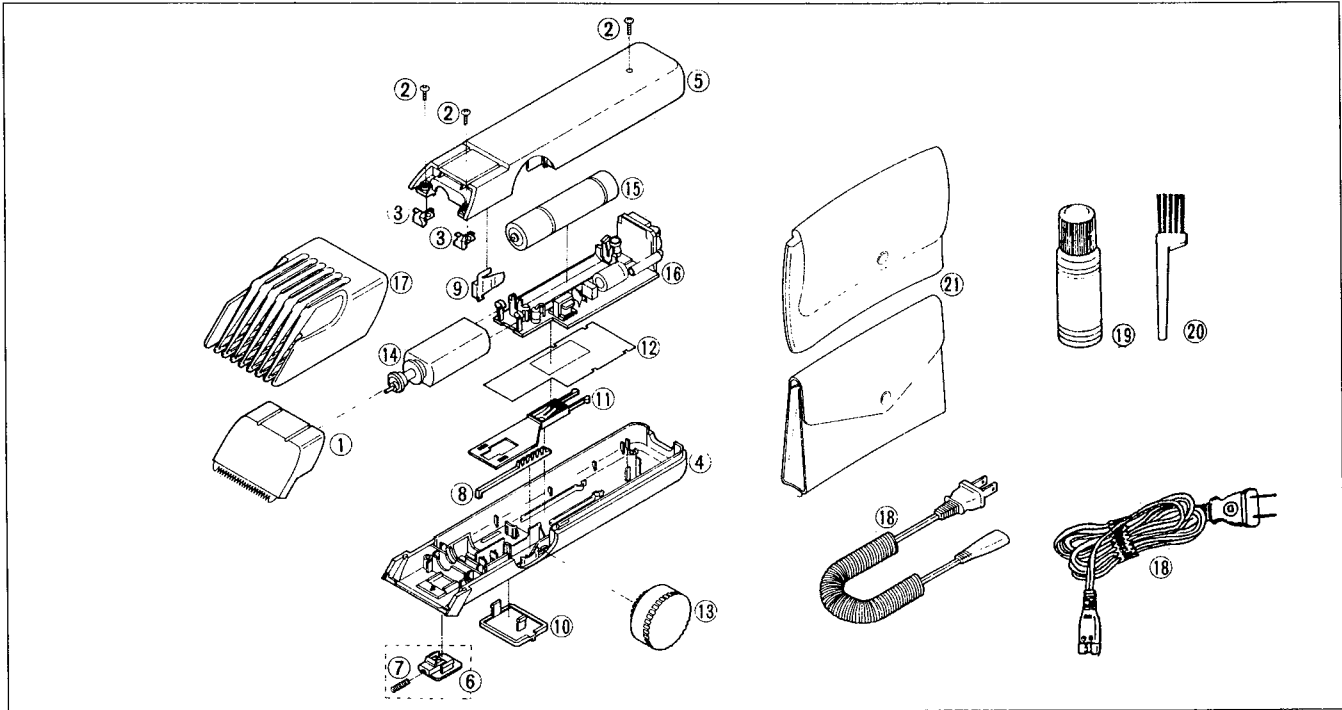
⚠ WARNING

This service literature 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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Panasonic

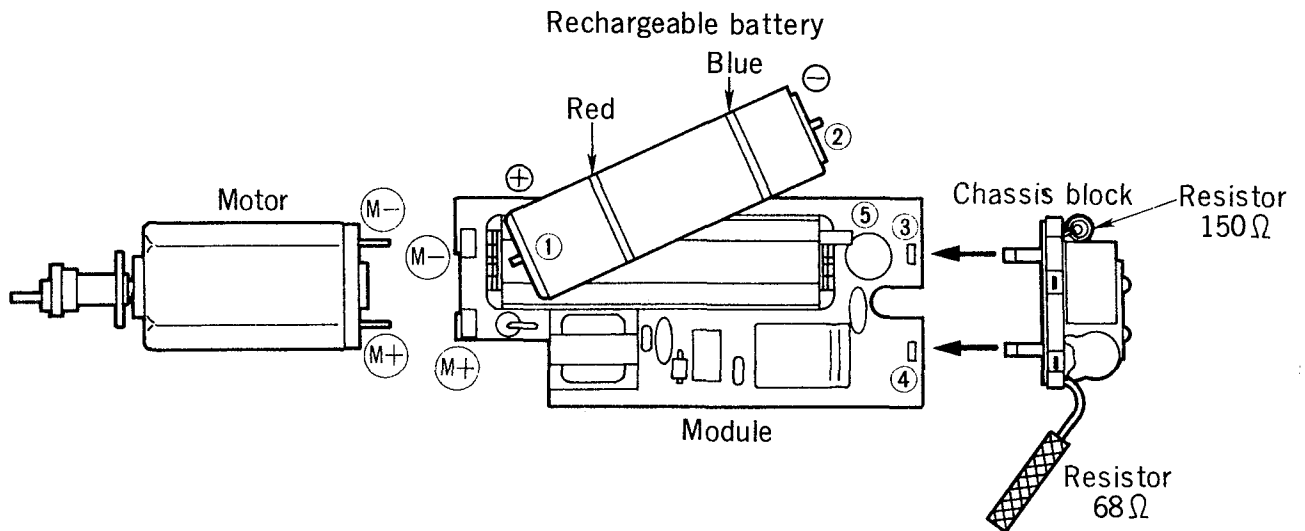
EXPLODED VIEW



REPLACEMENT PARTS LIST

Ref. No.	Part No. ER203	Part No. ER204	Part Name & Descriptions	Per set	Remarks
1	WER964Y	WER964Y	BLADE BLOCK	1	
2	WER203K6008	WER203K6008	HOUSING SCREW	3	
3	WER300R0167	WER300R0167	SPRING FOR BLADE	2	
4	WER203K3058	WER204K3058	HOUSING A	1	
5	WER203K3068	WER204K3068	HOUSING B	1	OTHERS
5	WER203K3069	WER204K3069	HOUSING B	1	SCANDINAVIA
5	WER203K3070	WER204K3070	HOUSING B	1	UK/E. EUROPE
6	WER203K3268	WER203K3268	LOCK RELEASE BUTTON	1	
7	WER550V0197	WER550V0197	SPRING FOR BUTTON	1	
8	WER203K0288	WER203K0288	RACK	1	
9	WER203L1578	WER203L1578	CLICK SPRING	1	
10	WER203K3208	WER203K3208	SWITCH HANDLE	1	
11	WER203L3578	WER203L3578	SWITCH PLATE	1	
12	WER203L0308	WER203L0308	SHEET	1	
13	WER203K3288	WER204H3288	DIAL	1	
14	WER203L1008	WER203L1008	MOTOR BLOCK	1	
15	WER203L2508	WER203L2508	RECHARGEABLE BATTERY	1	
16	WER203L2108	WER204L2108	MODULE BLOCK	1	
17	WER203K7398	WER203K7398	COMB ATTACHMENT	1	
18	WER203K2058	—	AC CORD (STRAIGHT)	1	C2 PLUG
18	—	WER200B2069	AC CORD (CURL)	1	C2 PLUG
19	WER203X7918	WER203X7918	OIL	1	
20	WER210B7077	WER210B7077	CLEANING BRUSH	1	
21	WER203K7008	WER204K7008	SOFT CASE	1	
—	WER203K8008	WER204K8008	INDIVIDUAL BOX	1	OTHERS
—	WER203K8009	WER204K8009	INDIVIDUAL BOX	1	SCANDINAVIA
—	WER203K8108	WER203K8108	OPERATING INSTRUCTIONS	1	OTHERS
—	WER203K8109	WER203K8109	OPERATING INSTRUCTIONS	1	SCANDINAVIA

WIRING CONNECTION DIAGRAM



DISASSEMBLY METHOD

1. Remove the attachment and blade block.
2. Remove the three housing screws.
3. If the body block can not be disassemble, insert the slotted screwdriver about 1/4" (6mm) into the body at points (A). (See Fig. 1)

ASSEMBLY METHOD

1. Place the switch handle, the switch plate with springs, and the blade release button into housing A.
2. Set the rack with the lowest position. (See Fig. 2)
3. Push the click spring into the housing A.
NOTE : If the click spring is not pressed enough, it cause the chink between housing A and B.
4. Place the insulating sheet, the module block, and the motor.
5. Make sure the rack is set to the lowest position. Set the dial with fitting position '1' into the edge of housing A. (See Fig. 3)
6. Check the location the dial and the click spring. (See Fig. 4)
7. Assemble the housing B onto housing A.
8. Tighten the three screws and attach the blade block.

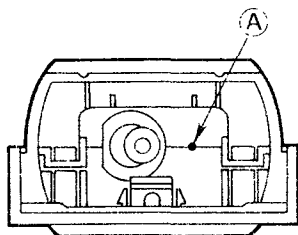


Fig. 1

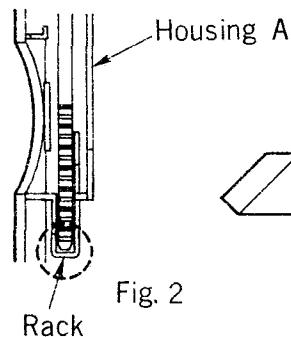


Fig. 2

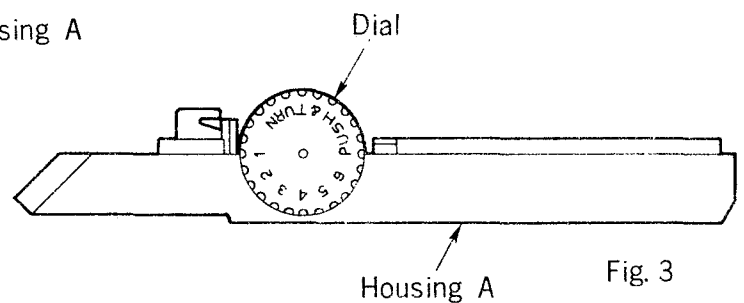


Fig. 3

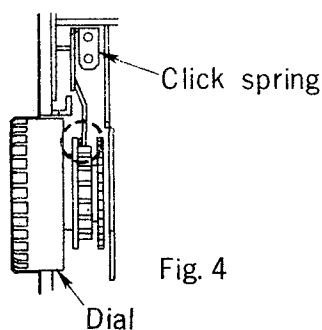


Fig. 4

TROUBLESHOOTING GUIDE

(TROUBLE)

(CHECK)

(REMEDY)

Does not operate with AC source.

(Connect power cord, charge for 10 seconds turn switch ON to confirm.)

<CHECK CORD.>

The current should run the length of the cord between the plug blades and the contacts of connectors (terminal plug in holes).

NO

Replace cord.

OK

<CHECK PROTECTIVE RESISTOR & RECTIFIER.>

There should be 100-240V DC at ③ and ④ when the power cord is connected and 100-240V AC are applied to the two terminal pins. When the voltage does not completely reach this level, unplug the power cord and inspect the two protective resistors. They should each read 68Ω or 150Ω. If the protective resistors are defective, change the module after confirming that the motor and the battery are not defective. When the voltage is not correct, and the protective resistors check out good, then the rectifier is defective.

NO

Replace module.

OK

<CHECK CHASSIS BLOCK.>

NO

Replace chassis block.

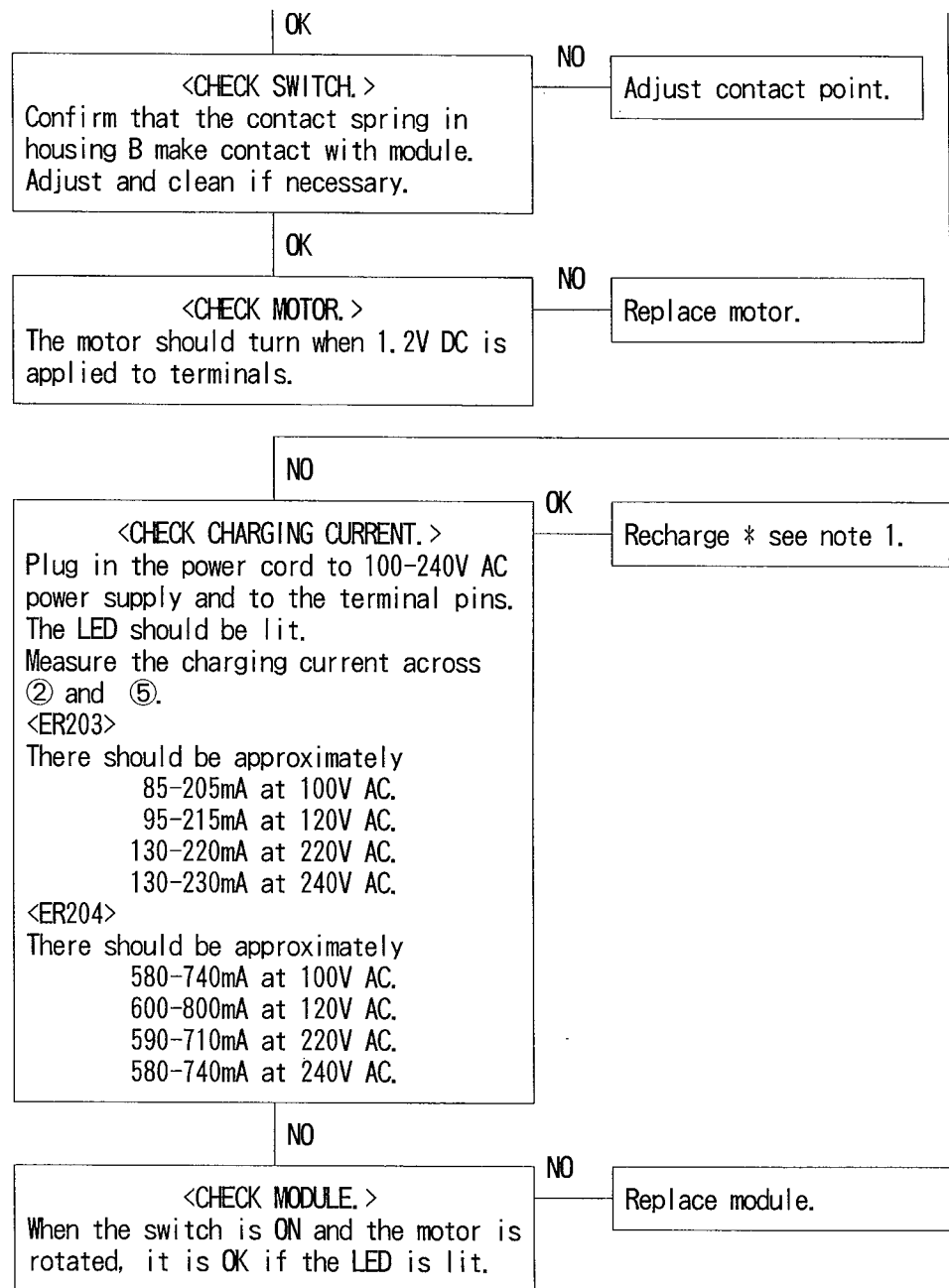
OK

<CHECK RECHARGEABLE BATTERY.>

* Remove only the (-) terminal of the rechargeable battery from the module and inspect. Do not touch the battery on the module.
The voltage should be at least 1.2V DC at terminals ① and ②. If even after charging the voltage is less than 1.1V DC or if there is leakage, the battery is defective. After charging, if the voltage is 1.2V DC or more, but the trimmer can be used only a few minutes, the battery is defective.

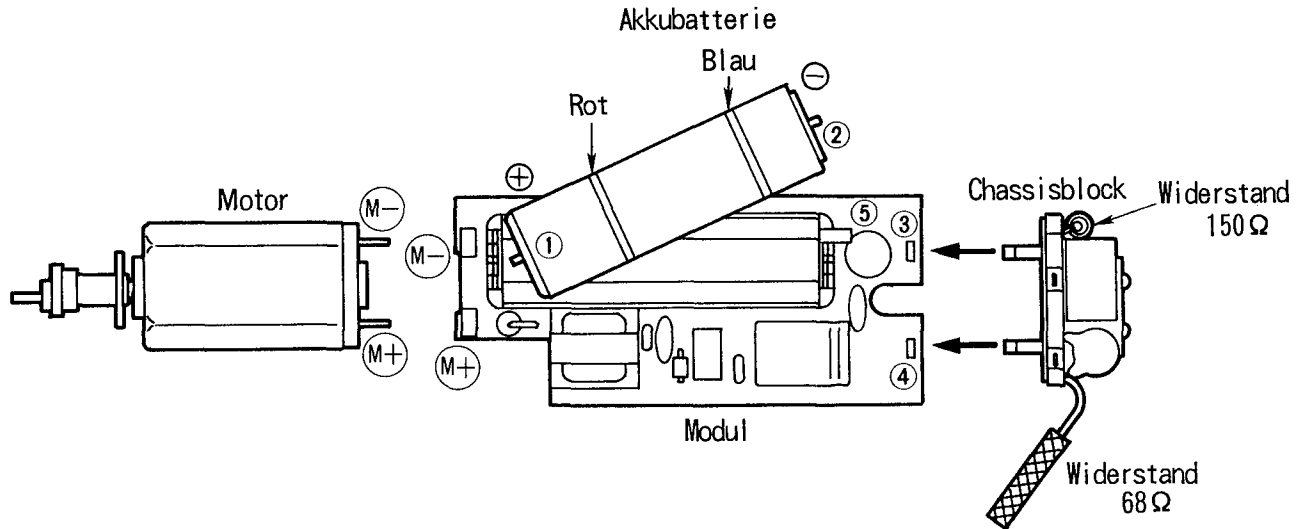
The rechargeable battery has an economical Lifespan.
We recommend replacing the battery if the following occur :

- * The voltage is below 1.2V or the operation period is very short even after a complete charge.
- * The electrolyte solution has leaked out and white or blue-green powder or crystals can be seen around the terminals.



NOTE : If after recharging has been completed the battery voltage is less than 1.1V DC or the charger will not more than 2 to 3 uses (5-10min.). Replace the battery.

ANSCHLUßDIAGRAMM



DEMONTAGEANLEITUNG

1. Den Aufsatz und den Messerblock entfernen.
2. 3 Befestigungsschrauben für Gehäuse abschrauben.
3. Schlitzschraubenzieher mit der Breite von 6mm (1/4") in den mit A gezeichneten Bereich einlegen, wenn der Hauptteilblock nicht auszubauen ist. (s.h. Abb. 1)

MONTAGEANLEITUNG

1. Schalterhebel, Schalterplatte mit Feder und Rasiermesserentriegeltaster ins Gehäuse A einsetzen.
2. Zahnstange auf die niedrigste Stelle setzen. (s.h. Abb. 2)
3. Sperrfeder ins Gehäuse A eindrücken.
Bemerkung : Ist der Sperrfeder nicht ganz eingedrückt, bewirkt es Klappen zwischen den beiden Gehäuse A und B.
4. Isolationsblatt, Modulblock und Motor einsetzen.
5. Feststellen, daß Zahnstange auf der niedrigsten Position sitzt. Wähler so richten, daß die Nummer '1' an die Ecke des Gehäuse A kommt. (s.h. Abb. 3)
6. Position des Wählers und Sperrfeder prüfen. (s.h. Abb. 4)
7. Gehäuse B auf das Gehäuse A aufsetzen.
8. 3 Befestigungsschrauben festziehen und Rasiermesserblock anbauen.

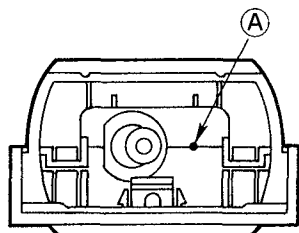
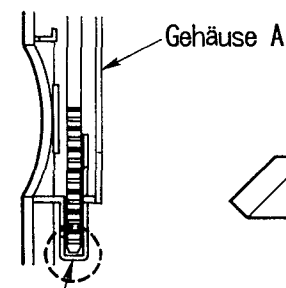
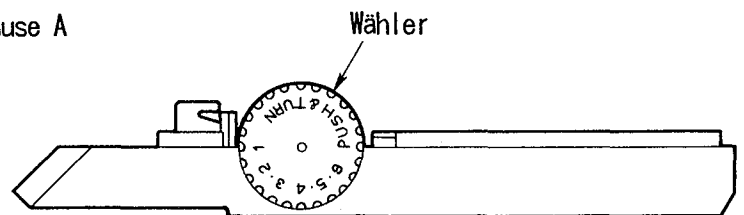


Abb. 1



Zahnstange
Abb. 2



Gehäuse A
Abb. 3

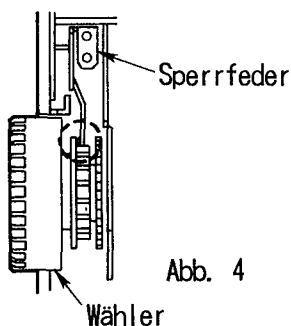


Abb. 4

Wähler

FEHLERSUCHE (Anschlußdiagramm)

(STÖRUNG)

(PRÜFEN)

(REPARATUR)

Arbeitet nicht bei
Netzbetrieb.

(Netzkabel verbinden, für 10 Sekunden laden, zur Probe einschalten.)

<KABEL ÜBERPRÜFEN.>
Der Ladestrom muß durch das Kabel zwischen den Steckerklingen und den Kontakten der Anschlüsse (Steckerlöcher der Buchse) laufen.

NEIN

Kabel ersetzen.

IN ORDNUNG

<SCHUTZWIDERSTAND UND GLEICHRICHTER ÜBERPRÜFEN.>

1. Netzkabel an 100-240V anschließen.
2. Spannung an Punkt③ und ④ messen
100-240 Volt
nein : Schutzwiderstände 68Ω und 150 Ω messen.

Wenn defekt : Motor und Akkubatterie überprüfen und dann Modul austauschen.
Wenn nicht defekt : Gleichrichter austauschen.

NEIN

Modul ersetzen.

IN ORDNUNG

<CHASSIS ÜBERPRÜFEN.>

NEIN

Chassis ersetzen.

IN ORDNUNG

<AUFLADBARE BATTERIE ÜBERPRÜFEN.>

* Nur die negative Anschlagstelle der wiederaufladbaren Batterie aus dem Modul abnehmen und prüfen. Die Batterie auf dem Modul nicht berühren.

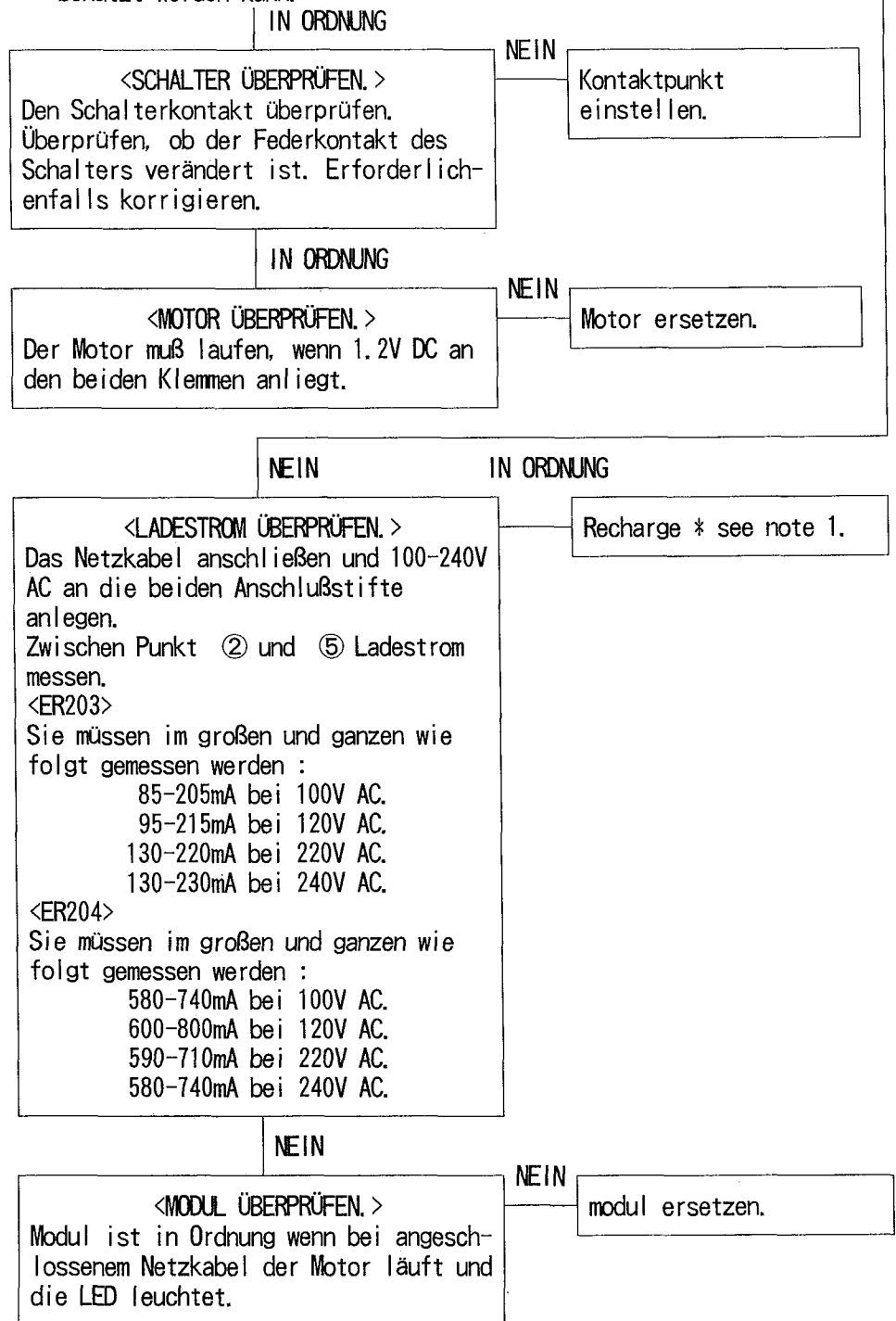
Die Spannung an den Klemmen ① und ② muß mindestens 1.2V DC betragen. Wenn die Spannung nach Aufladung weniger als 1.1V DC beträgt oder ein Kriechstrom vorhanden ist, ist die Batterie defekt. Wenn nach dem Laden die Spannung 1.2V DC oder mehr beträgt, aber der Bartschneider nur einige Male verwendet werden kann, ist die Batterie defekt.

Die Akkumulatorbatterie hat eine begrenzte Lebensdauer.

Die Batterie sollte ausgetauscht werden, wenn :

- * die Batterie nach dem Aufladen entsprechend der vorgeschriebenen Ladezeit eine Batteriespannung von unter 1.2V DC hat oder die Nutzzeit extrem kurz ist.
- * die Batterie leck ist. Prüfen Sie die Batterie auf Lecks und die Klemmen auf Ablagerung von weißem oder grünlichem Pulver.

* auch nach 8 Stunden Aufladungen der Rasierer nur für 2-3 Rasuren benutzt werden kann.



Service Manual

AC/Rechargeable Beard/Hair Trimmer

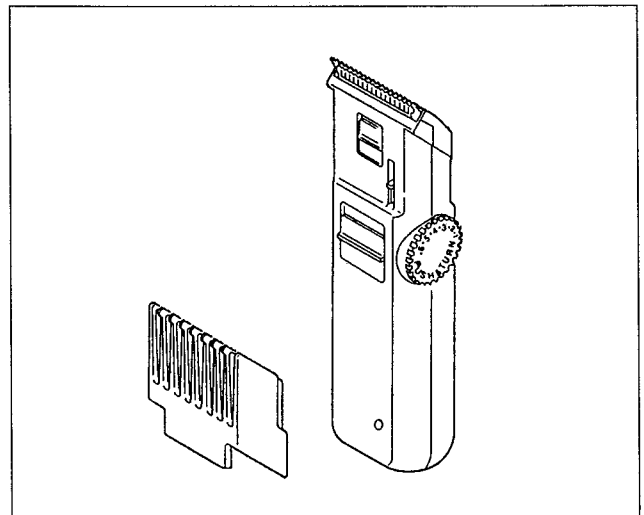
ER203/204

<Specifications>

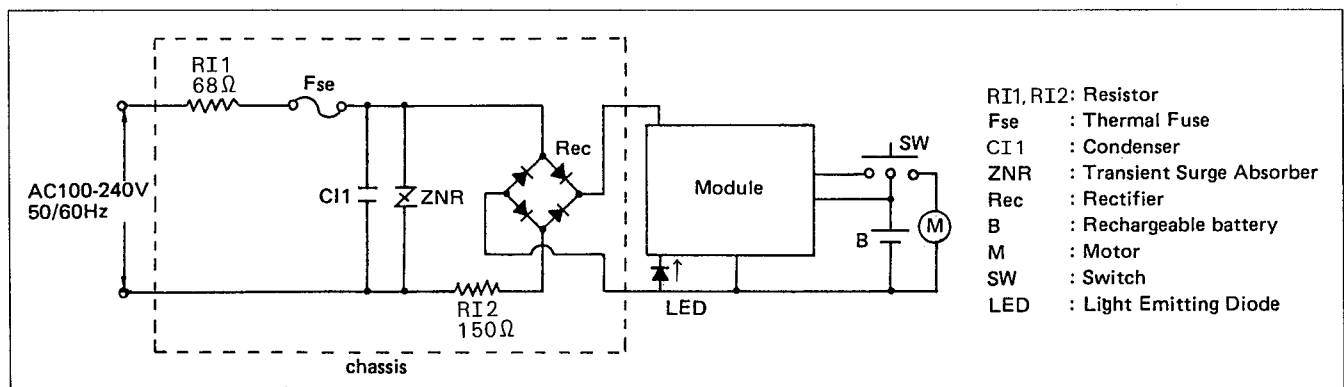
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Power consumption	: 5.0W
Charging time (ER203)	: standard 8 hours
(ER204)	: standard 1 hour
Rated time	: 40 minutes
Weight	: 156g (including attachment)

<Standard equipment>

Comb attachment
AC power cord
Oil
Cleaning brush
Soft case



SCHEMATIC DIAGRAM

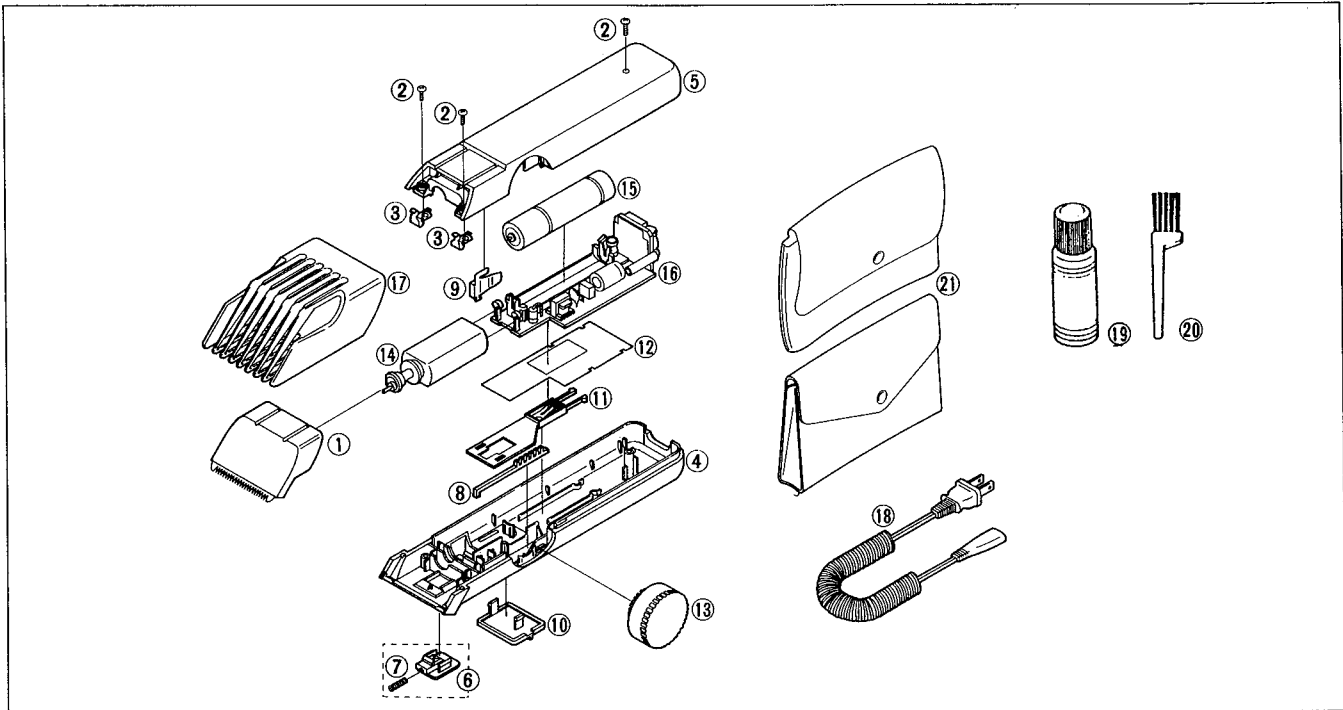


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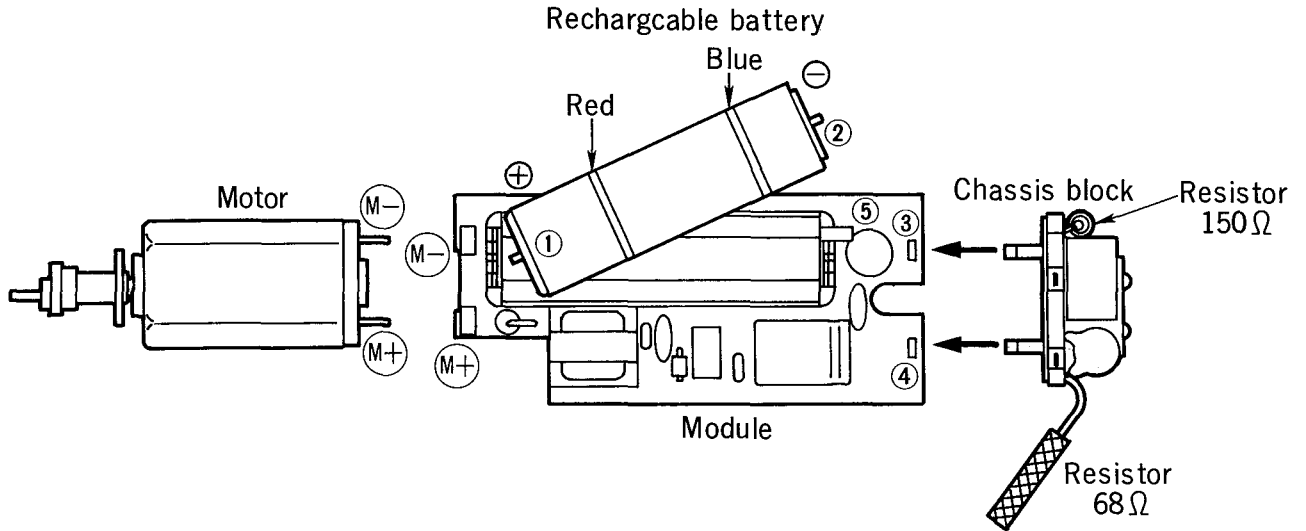
EXPLODED VIEW



REPLACEMENT PARTS LIST

Ref. No.	Part No. ER203	Part No. ER204	Part Name & Descriptions	Per set	Remarks
1	WER964E	WER964E	BLADE BLOCK	1	
2	WER203K6008	WER203K6008	HOUSING SCREW	3	
3	WER300R0167	WER300R0167	SPRING FOR BLADE	2	
4	WER203K3059	WER204K3059	HOUSING A	1	
5	WER203K3071	WER204K3071	HOUSING B	1	for Others
5	WER203K3072	WER204K3072	HOUSING B	1	for Saudi Arabia
6	WER203K3268	WER203K3268	LOCK RELEASE BUTTON	1	
7	WER550V0197	WER550V0197	SPRING FOR BUTTON	1	
8	WER203K0288	WER203K0288	RACK	1	
9	WER203L1578	WER203L1578	CLICK SPRING	1	
10	WER203K3208	WER203K3208	SWITCH HANDLE	1	
11	WER203L3578	WER203L3578	SWITCH PLATE	1	
12	WER203L0308	WER203L0308	SHEET	1	
13	WER203K3288	WER204H3288	DIAL	1	
14	WER203L1008	WER203L1008	MOTOR BLOCK	1	
15	WER203L2508	WER203L2508	RECHARGEABLE BATTERY	1	
16	WER203L2108	WER204L2108	MODULE BLOCK	1	
17	WER203K7398	WER203K7398	COMB ATTACHMENT	1	
18	WER200B2069	WER200B2069	AC CORD (CURL)	1	C-2 plug
18	WER130H2071	WER130H2071	AC CORD (CURL)	1	A-2 plug
19	WER203X7919	WER203X7919	OIL	1	
20	WER210B7077	WER210B7077	CLEANING BRUSH	1	
21	WER203K7008	WER204K7009	SOFT CASE	1	
—	WER203K8010	WER204K8010	INDIVIDUAL BOX	1	
—	WER203K8110	WER204K8110	OEPRATING INSTRUCTIONS	1	

WIRING CONNECTION DIAGRAM



DISASSEMBLY METHOD

1. Remove the attachment and blade block.
2. Remove the three housing screws.
3. If the body block can not be disassemble, insert the slotted screwdriver about 1/4" (6mm) into the body at points (A). (See Fig. 1)

ASSEMBLY METHOD

1. Place the switch handle, the switch plate with springs, and the blade release button into housing A.
2. Set the rack with the lowest position. (See Fig. 2)
3. Push the click spring into the housing A.
NOTE : If the click spring is not pressed enough, it cause the chink between housing A and B.
4. Place the insulating sheet, the module block, and the motor.
5. Make sure the rack is set to the lowest position. Set the dial with fitting position '1' into the edge of housing A. (See Fig. 3)
6. Check the location the dial and the click spring. (See Fig. 4)
7. Assemble the housing B onto housing A.
8. Tighten the three screws and attach the blade block.

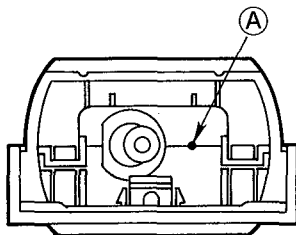


Fig. 1

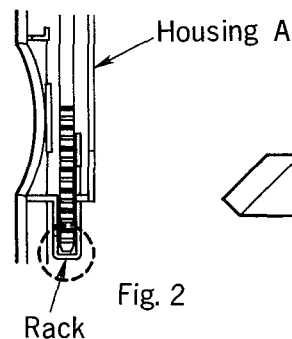


Fig. 2

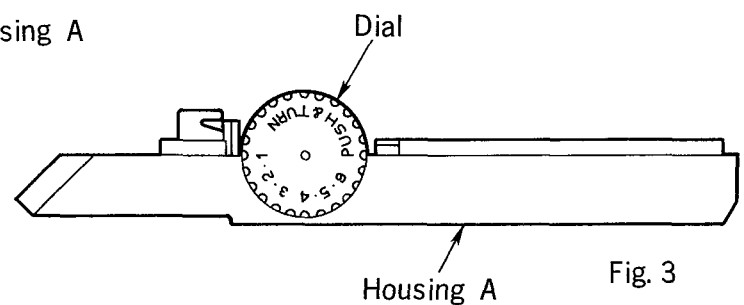


Fig. 3

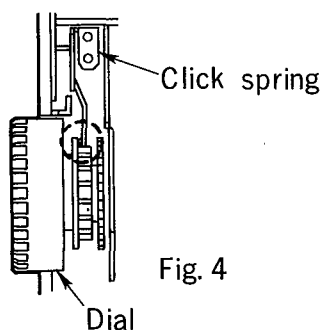


Fig. 4

TROUBLESHOOTING GUIDE

(TROUBLE)

(CHECK)

(REMEDY)

Does not operate with AC source.

(Connect power cord, charge for 10 seconds turn switch ON to confirm.)

<CHECK CORD.>
The current should run the length of the cord between the plug blades and the contacts of connectors (terminal plug in holes).

NO

Replace cord.

OK

<CHECK PROTECTIVE RESISTOR & RECTIFIER.>
There should be 100-240V DC at ③ and ④ when the power cord is connected and 100-240V AC are applied to the two terminal pins. When the voltage does not completely reach this level, unplug the power cord and inspect the two protective resistors. They should each read 68Ω or 150Ω. If the protective resistors are defective, change the module after confirming that the motor and the battery are not defective. When the voltage is not correct, and the protective resistors check out good, then the rectifier is defective.

NO

Replace module.

OK

<CHECK CHASSIS BLOCK.>

NO

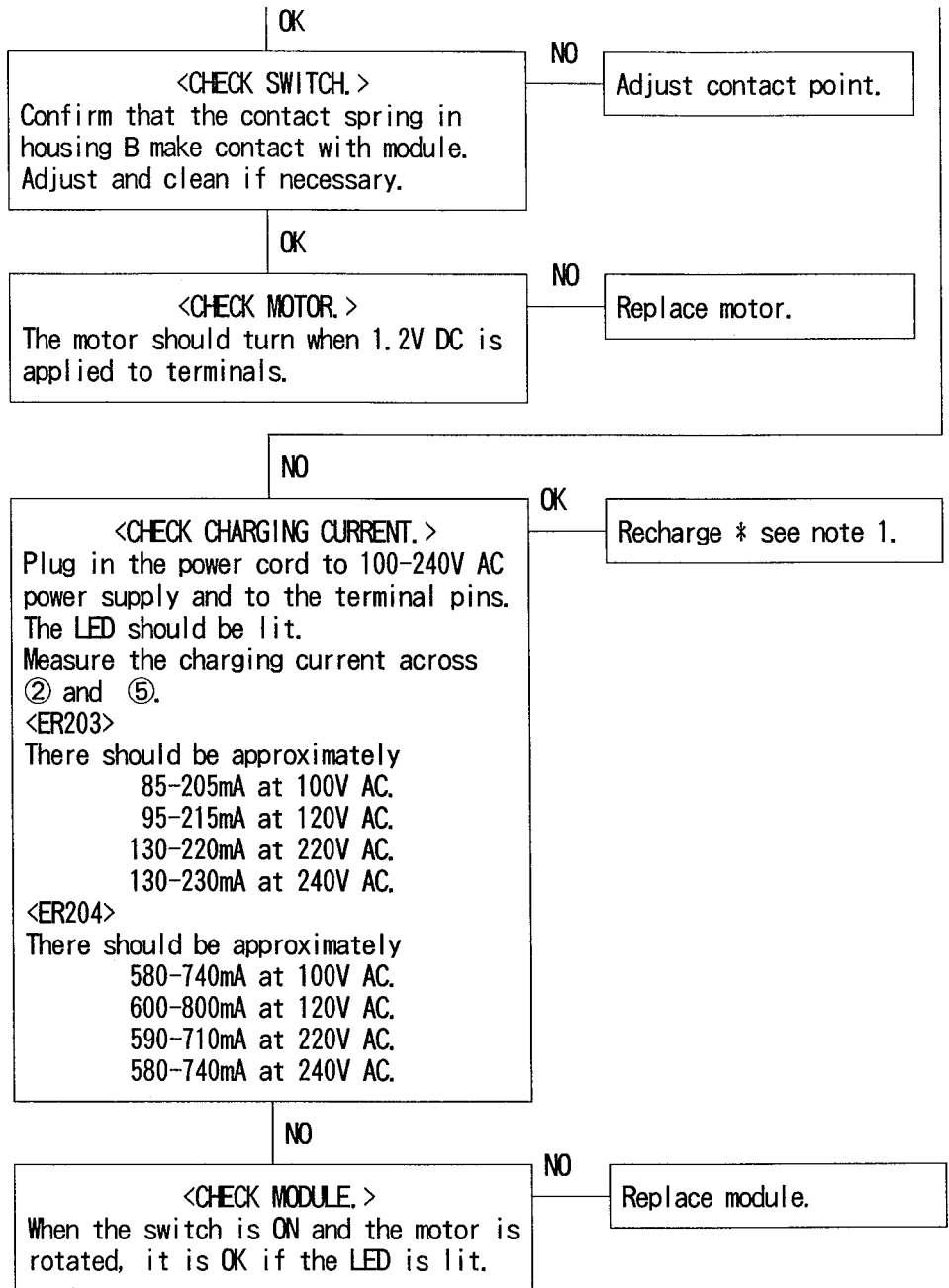
Replace chassis block.

OK

<CHECK RECHARGEABLE BATTERY.>
* Remove only the (-) terminal of the rechargeable battery from the module and inspect. Do not touch the battery on the module.
The voltage should be at least 1.2V DC at terminals ① and ②. If even after charging the voltage is less than 1.1V DC or if there is leakage, the battery is defective. After charging, if the voltage is 1.2V DC or more, but the trimmer can be used only a few minutes, the battery is defective.

The rechargeable battery has an economical Lifespan.
We recommend replacing the battery if the following occur :

- * The voltage is below 1.2V or the operation period is very short even after a complete charge.
- * The electrolyte solution has leaked out and white or blue-green powder or crystals can be seen around the terminals.



NOTE 1 : If after recharging has been completed the battery voltage is less than 1.1V DC or the charger will not more than 2 to 3 uses (5-10min.). Replace the battery.