

Service Manual

Epilator



Model No. **ES-ED90**
ES-ED70
ES-ED50
ES-ED20

Europe
 CIS

⚠ 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.

TABLE OF CONTENTS

| | PAGE | PAGE |
|---|----------|------|
| 1 Warning ----- | 2 | |
| 2 Specifications ----- | 2 | |
| 3 Troubleshooting Guide ----- | 3 | |
| 4 Schematic Diagram ----- | 4 | |
| 5 Exploded View and Replacement Parts List ----- | 5 | |

Panasonic

© Panasonic Corporation, 2013. All rights reserved.
 Unauthorized copying and distribution is a violation
 of law.

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).

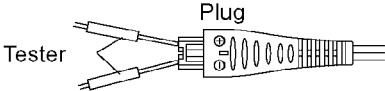
2 Specifications

| | |
|----------------------|--|
| Power source | 100-240V AC, 50-60Hz (Automatic voltage conversion) |
| Charging time | 1 hour |
| Power consumption | Approx. 5W (when charging) |
| Dimension | 12.6 (H) X 5.5 (W) X 4.1 (D) cm |
| Weight | Approx. 170g with Epilation head for underarms without Cap |
| Supplied accessories | Soft case |
| | Cleaning brush |

3 Troubleshooting Guide

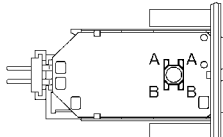
3.1. CHECK MAIN BODY AND ADAPTOR

NOTE: When charging, the unit does not operate even switching ON.

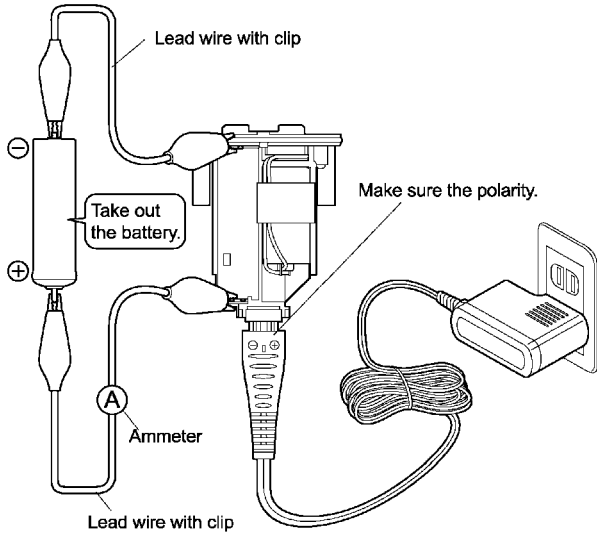
| <TROUBLE> | <CHECK.> | <REMEDY> |
|---|--|--------------------------------|
| Motor does not operate. Does not work without attaching the epilation head or shaver head. Does not charge. Does not light the charging indication lamp. | → <CHECK CHARGING ADAPTOR.> Connect to rated voltage with the charging adaptor. OK if it is approximately $DC5.5 \pm 0.5V$. ↓ OK  | NO → Replace charging adaptor. |

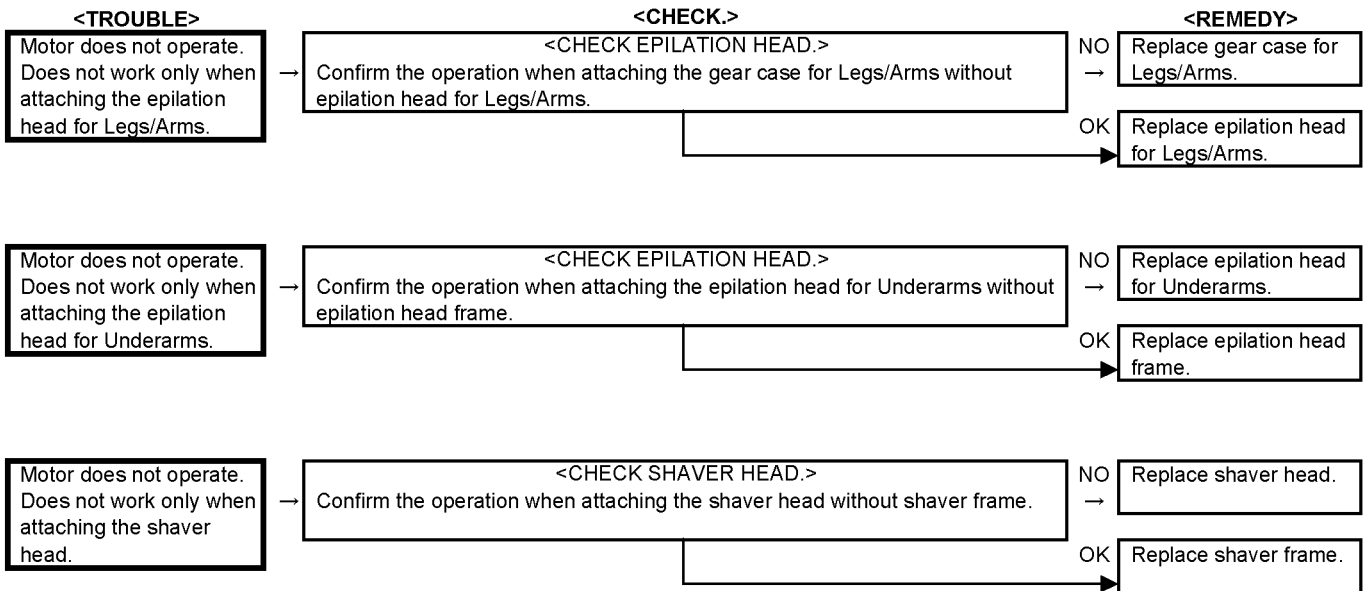
| | |
|--|-------------------------|
| <CHECK MOTOR.> The motor should turn when 3.6V DC is applied to terminals. ↓ OK | NO → Replace the motor. |
|--|-------------------------|

| | |
|--|------------------------------------|
| <CHECK RECHARGEABLE BATTERY.> Okay if the voltage of fully charged battery is more than approximately 3.6V DC between (+) and (-) terminals. ↓ OK | NO → Replace rechargeable battery. |
|--|------------------------------------|

| | |
|--|----------------------|
| <CHECK MODULE.> Check continuity between (A)-(A) and (B)-(B) when pushing on the push switch. Check if the switch button works smoothly. ↓ OK  | NO → Replace module. |
|--|----------------------|

| | |
|--|--|
| <CHECK MODULE.> Replace the battery and connect the rated voltage with switch OFF position after 5 minutes charging. Check charging current, if it is approximately $750 \pm 100mA$. | NO → Repair soldering parts. NO → Replace module. |
|--|--|

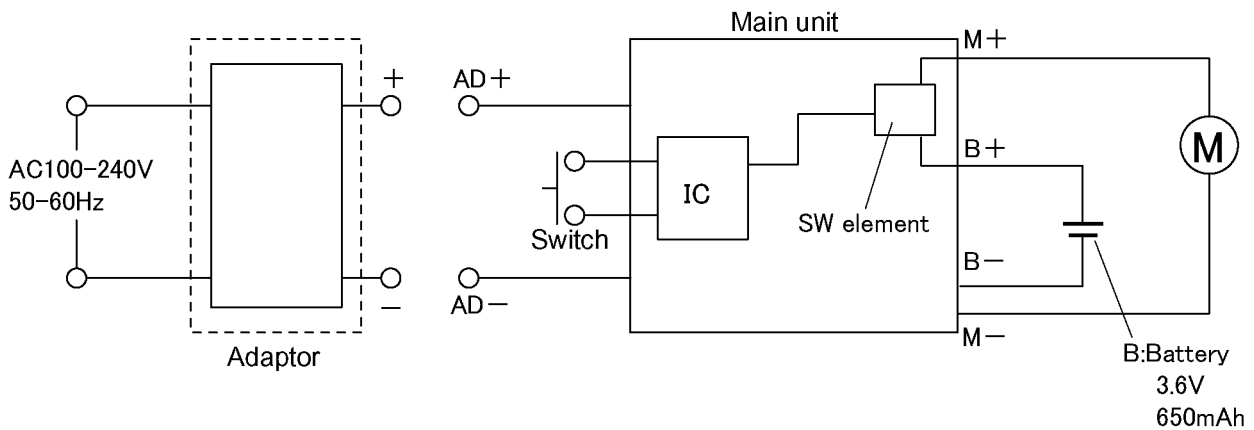




3.2. CHECK MAIN BODY AND ADAPTOR

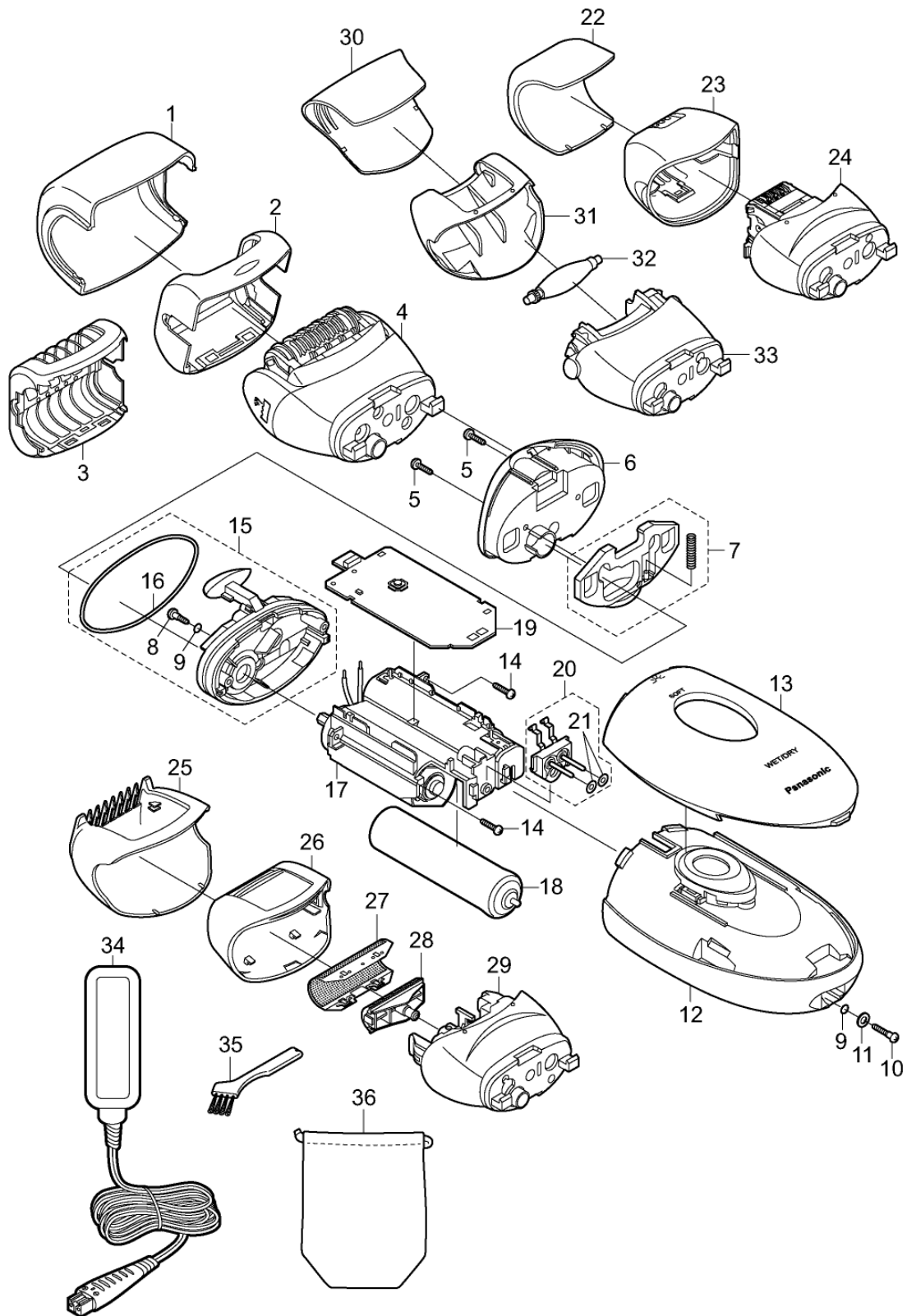
1. Confirm the smooth operation when switching ON and OFF.
2. Confirm if the motor and disc may rotate when holding the disc slightly.
3. Confirm if there is no dirt or scratch.
4. Confirm if the main unit may operate approximately 40 minutes after fully charging.

4 Schematic Diagram



) '9I d`cXYX`JJYk `UbX`FYd`UW`a YbhDUf`hg` @gh

Model No. : ES-ED90 Exploded View



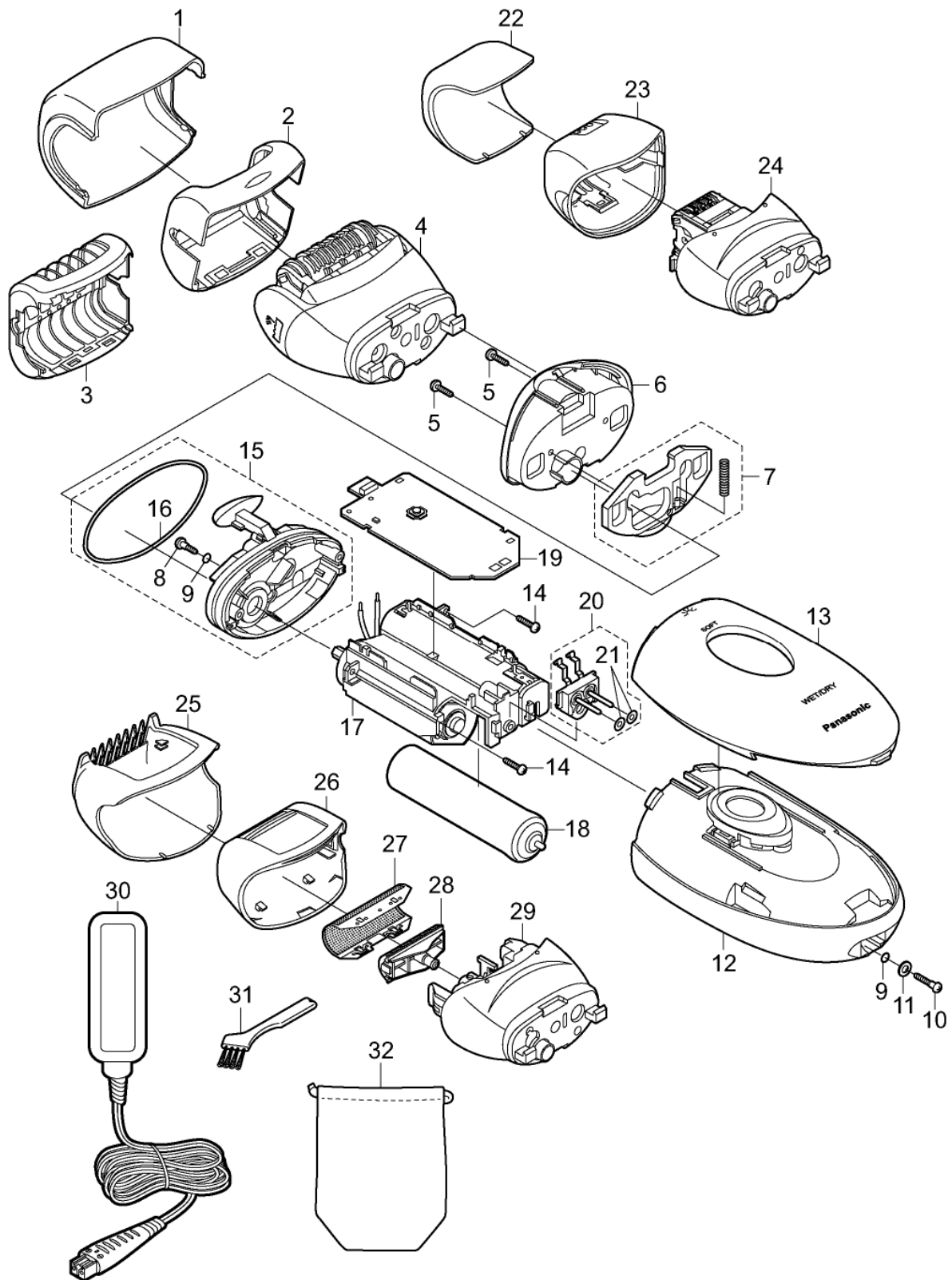
Model No. : ES-ED90 Parts List

| Safety | Ref. No. | Part No. | Part Name & Description | Q'ty | Remarks |
|---------|----------|--------------|------------------------------|------|-------------------------|
| ES-ED90 | | | | | |
| | 1 | WESED90X7158 | PROTECTION CAP | 1 | |
| | 2 | WESED90P3128 | FAST CAP | 1 | |
| | 3 | WESED90P3108 | GENTLE CAP | 1 | |
| | 4 | WESED90W1068 | EPILATION HEAD FOR LEGS/ARMS | 1 | |
| | 5 | WESWD51L9397 | TAPPING SCREW | 3 | K2-5 |
| | 6 | WESED90W3368 | MOUNTING BASE B | 1 | |
| | 7 | WESED90W3278 | HEAD RELEASE BUTTON | 1 | |
| | 8 | WES2047S9707 | SCREW | 1 | K2-8 |
| | 9 | WER504L0966 | O-RING | 2 | (2PCS/PK) |
| | 10 | WES701S9706 | SCREW | 1 | K2-12 |
| | 11 | WESWD94L6118 | WASHER | 1 | |
| | 12 | WESED90P3058 | HOUSING | 1 | |
| | 12 | WESED90P3059 | HOUSING | 1 | only for CIS |
| | 13 | WESED90P3378 | FRONT PANEL | 1 | |
| | 14 | WES331B9257 | TAPPING SCREW | 2 | K2-8 |
| | 15 | WESED90L0498 | MOUNTING BASE A | 1 | |
| | 16 | WES2067L0997 | HOUSING O-RING | 1 | |
| | 17 | WESED90L1008 | MOTOR ASSEMBLY | 1 | |
| | 18 | WESWD70L2508 | RECHARGEABLE BATTERY | 1 | LM-ion TYPE |
| | 19 | WESED90L2108 | MODULE | 1 | |
| | 20 | WESED90L2158 | PLUG CHASSIS | 1 | |
| | 21 | WES2047L0327 | O-RING A | 2 | (2PCS/PK) |
| | 22 | WESED90X7168 | PROTECTION CAP | 1 | |
| | 23 | WESED90W3128 | EPILATION HEAD FRAME | 1 | |
| | 24 | WESED90W1078 | EPILATION HEAD FOR UNDERARMS | 1 | |
| | 25 | WESWD51X3557 | BIKINI COMB | 1 | |
| | 26 | WESED90W4038 | FOIL FRAME | 1 | |
| | 27 | WES9753Y | OUTER FOIL | 1 | |
| | 28 | WES9752Y | INNER BLADE | 1 | |
| | 29 | WESED90W0788 | SHAVER HEAD | 1 | |
| | 30 | WESWD92X7158 | PROTECTION CAP | 1 | |
| | 31 | WESWD92W3138 | FOOT CARE HEAD FRAME | 1 | |
| | 32 | WESWD92H7178 | FILE | 1 | |
| | 33 | WESED90W4068 | FILE HEAD | 1 | |
| | 34 | WESED90W7661 | POWER ADAPTOR | 1 | C-2 PLUG (only for CIS) |
| | 34 | WESED90W7664 | POWER ADAPTOR | 1 | C-2 PLUG |
| | 34 | WESED90W7660 | POWER ADAPTOR | 1 | BF3 PLUG |
| | 35 | WES2047H6767 | CLEANING BRUSH | 1 | |
| | 36 | WESED90W7008 | SOFT CASE | 1 | |
| | - | WESED90P8008 | INDIVIDUAL BOX | 1 | |
| | - | WESED90P8009 | INDIVIDUAL BOX | 1 | only for CIS |
| | - | WESED90P8000 | INDIVIDUAL BOX | 1 | only for U.K. |

Model No. : ES-ED90 Parts List

| Safety | Ref. No. | Part No. | Part Name & Description | Q'ty | Remarks |
|--------|----------|--------------|-------------------------|------|--------------|
| | - | WESED90P8108 | OPERATING INSTRUCTIONS | 1 | |
| | - | WESED90P8109 | OPERATING INSTRUCTIONS | 1 | only for CIS |

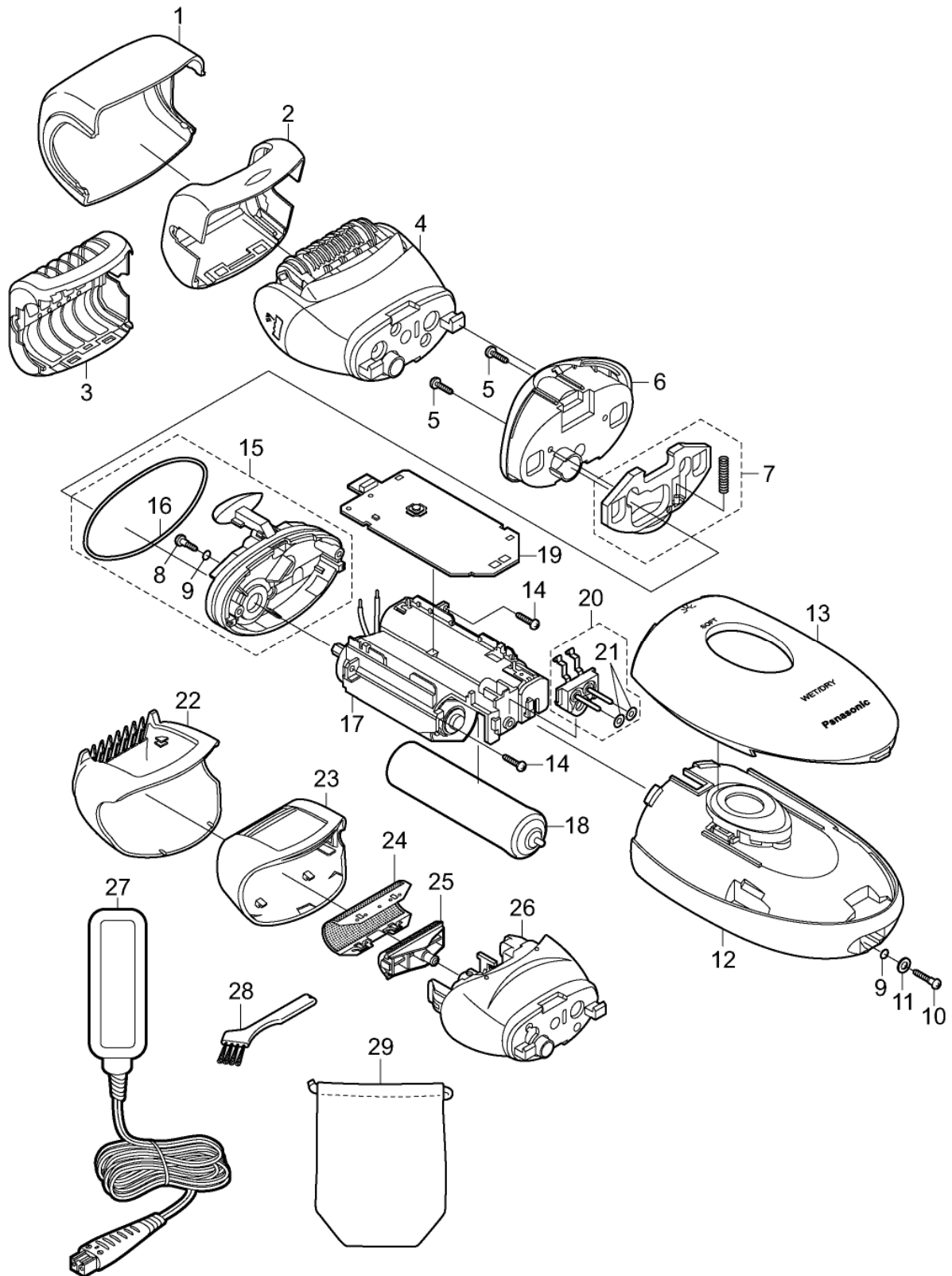
Model No. : ES-ED70 Exploded View



Model No. : ES-ED70 Parts List

| Safety | Ref. No. | Part No. | Part Name & Description | Q'ty | Remarks |
|---------|----------|--------------|------------------------------|------|-------------------------|
| ES-ED70 | | | | | |
| | 1 | WESED90X7158 | PROTECTION CAP | 1 | |
| | 2 | WESED70G3128 | FAST CAP | 1 | |
| | 3 | WESED70G3108 | GENTLE CAP | 1 | |
| | 4 | WESED70W1068 | EPILATION HEAD FOR LEGS/ARMS | 1 | |
| | 5 | WESWD51L9397 | TAPPING SCREW | 3 | K2-5 |
| | 6 | WESED90W3368 | MOUNTING BASE B | 1 | |
| | 7 | WESED90W3278 | HEAD RELEASE BUTTON | 1 | |
| | 8 | WES2047S9707 | SCREW | 1 | K2-8 |
| | 9 | WER504L0966 | O-RING | 2 | (2PCS/PK) |
| | 10 | WES701S9706 | SCREW | 1 | K2-12 |
| | 11 | WESWD94L6118 | WASHER | 1 | |
| | 12 | WESED70G3058 | HOUSING | 1 | |
| | 12 | WESED70G3059 | HOUSING | 1 | only for CIS |
| | 13 | WESED70G3378 | FRONT PANEL | 1 | |
| | 14 | WES331B9257 | TAPPING SCREW | 2 | K2-8 |
| | 15 | WESED90L0498 | MOUNTING BASE A | 1 | |
| | 16 | WES2067L0997 | HOUSING O-RING | 1 | |
| | 17 | WESED90L1008 | MOTOR ASSEMBLY | 1 | |
| | 18 | WESWD70L2508 | RECHARGEABLE BATTERY | 1 | LM-ion TYPE |
| | 19 | WESED90L2108 | MODULE | 1 | |
| | 20 | WESED90L2158 | PLUG CHASSIS | 1 | |
| | 21 | WES2047L0327 | O-RING A | 2 | (2PCS/PK) |
| | 22 | WESED90X7168 | PROTECTION CAP | 1 | |
| | 23 | WESWU31W3128 | EPILATION HEAD FRAME | 1 | |
| | 24 | WESED90W1078 | EPILATION HEAD FOR UNDERARMS | 1 | |
| | 25 | WESWD51X3557 | BIKINI COMB | 1 | |
| | 26 | WESED70W4038 | FOIL FRAME | 1 | |
| | 27 | WES9753Y | OUTER FOIL | 1 | |
| | 28 | WES9752Y | INNER BLADE | 1 | |
| | 29 | WESED90W0788 | SHAVER HEAD | 1 | |
| | 30 | WESED90W7661 | POWER ADAPTOR | 1 | C-2 PLUG (only for CIS) |
| | 30 | WESED90W7664 | POWER ADAPTOR | 1 | C-2 PLUG |
| | 31 | WES2047H6767 | CLEANING BRUSH | 1 | |
| | 32 | WESED90W7008 | SOFT CASE | 1 | |
| | - | WESED70G8008 | INDIVIDUAL BOX | 1 | |
| | - | WESED70G8009 | INDIVIDUAL BOX | 1 | only for CIS |
| | - | WESED90P8108 | OPERATING INSTRUCTIONS | 1 | |
| | - | WESED90P8109 | OPERATING INSTRUCTIONS | 1 | only for CIS |

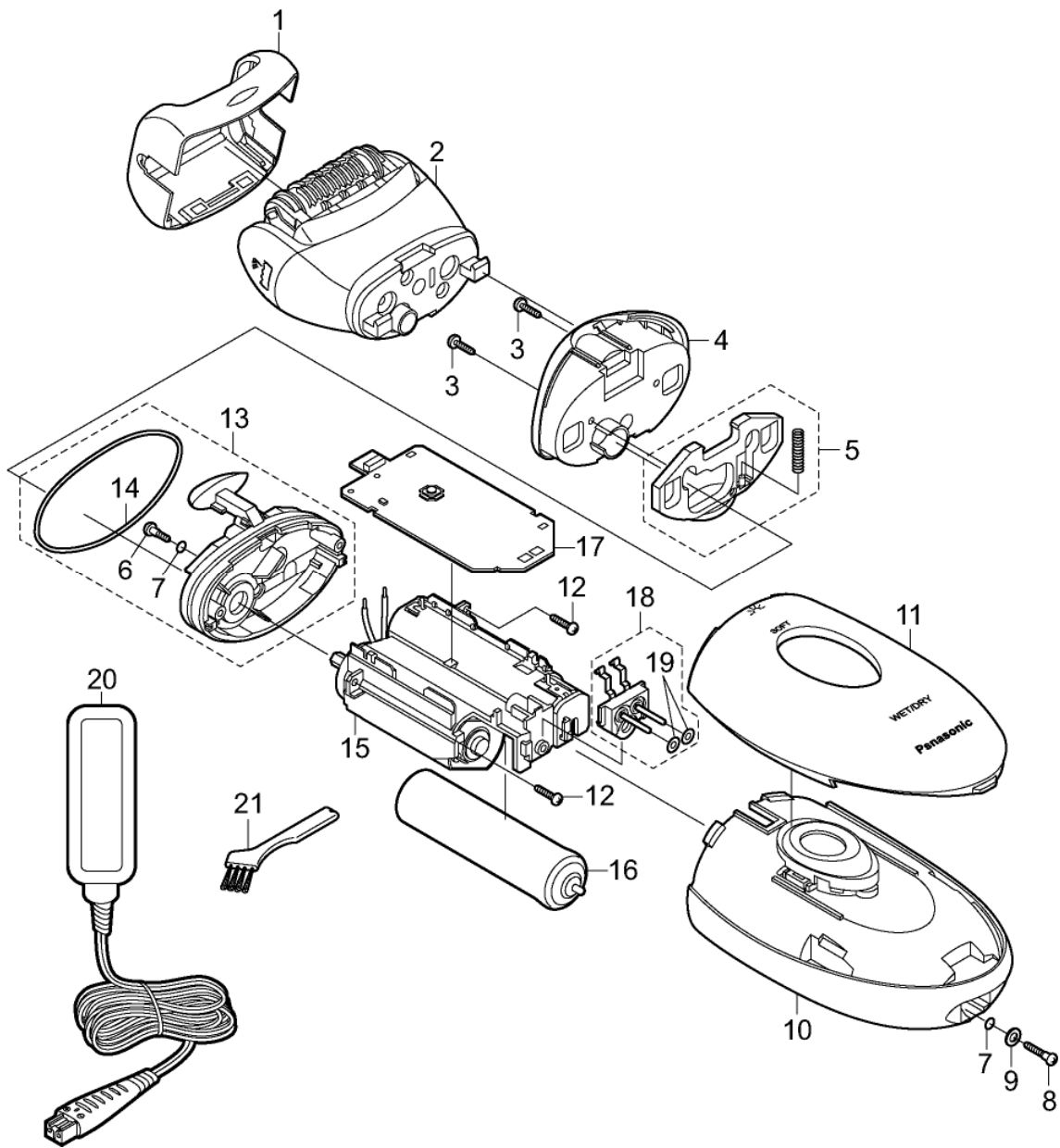
Model No. : ES-ED50 Exploded View



Model No. : ES-ED50 Parts List

| Safety | Ref. No. | Part No. | Part Name & Description | Q'ty | Remarks |
|---------|----------|--------------|------------------------------|------|-------------------------|
| ES-ED50 | | | | | |
| | 1 | WESED90X7158 | PROTECTION CAP | 1 | |
| | 2 | WESED50N3128 | FAST CAP | 1 | |
| | 3 | WESED50N3108 | GENTLE CAP | 1 | |
| | 4 | WESED50W1068 | EPILATION HEAD FOR LEGS/ARMS | 1 | |
| | 5 | WESWD51L9397 | TAPPING SCREW | 3 | K2-5 |
| | 6 | WESED90W3368 | MOUNTING BASE B | 1 | |
| | 7 | WESED90W3278 | HEAD RELEASE BUTTON | 1 | |
| | 8 | WES2047S9707 | SCREW | 1 | K2-8 |
| | 9 | WER504L0966 | O-RING | 2 | (2PCS/PK) |
| | 10 | WES701S9706 | SCREW | 1 | K2-12 |
| | 11 | WESWD94L6118 | WASHER | 1 | |
| | 12 | WESED50N3058 | HOUSING | 1 | |
| | 12 | WESED50N3059 | HOUSING | 1 | only for CIS |
| | 13 | WESED50N3378 | FRONT PANEL | 1 | |
| | 14 | WES331B9257 | TAPPING SCREW | 2 | K2-8 |
| | 15 | WESED90L0498 | MOUNTING BASE A | 1 | |
| | 16 | WES2067L0997 | HOUSING O-RING | 1 | |
| | 17 | WESED90L1008 | MOTOR ASSEMBLY | 1 | |
| | 18 | WESWD70L2508 | RECHARGEABLE BATTERY | 1 | LM-ion TYPE |
| | 19 | WESED90L2108 | MODULE | 1 | |
| | 20 | WESED90L2158 | PLUG CHASSIS | 1 | |
| | 21 | WES2047L0327 | O-RING A | 2 | (2PCS/PK) |
| | 22 | WESWD51X3557 | BIKINI COMB | 1 | |
| | 23 | WESED70W4038 | FOIL FRAME | 1 | |
| | 24 | WES9753Y | OUTER FOIL | 1 | |
| | 25 | WES9752Y | INNER BLADE | 1 | |
| | 26 | WESED90W0788 | SHAVER HEAD | 1 | |
| | 27 | WESED90W7661 | POWER ADAPTOR | 1 | C-2 PLUG (only for CIS) |
| | 27 | WESED90W7664 | POWER ADAPTOR | 1 | C-2 PLUG |
| | 27 | WESED90W7660 | POWER ADAPTOR | 1 | BF3 PLUG |
| | 28 | WES2047H6767 | CLEANING BRUSH | 1 | |
| | 29 | WESED90W7008 | SOFT CASE | 1 | |
| | - | WESED50N8008 | INDIVIDUAL BOX | 1 | |
| | - | WESED50N8009 | INDIVIDUAL BOX | 1 | only for CIS |
| | - | WESED50N8000 | INDIVIDUAL BOX | 1 | only for U.K. |
| | - | WESED90P8108 | OPERATING INSTRUCTIONS | 1 | |
| | - | WESED90P8109 | OPERATING INSTRUCTIONS | 1 | only for CIS |

Model No. : ES-ED20 Exploded View



Model No. : ES-ED20 Parts List

| Safety | Ref. No. | Part No. | Part Name & Description | Q'ty | Remarks |
|---------|----------|--------------|------------------------------|------|-------------------------|
| ES-ED20 | | | | | |
| | 1 | WESED20V3128 | FAST CAP | 1 | |
| | 2 | WESED20W1068 | EPILATION HEAD FOR LEGS/ARMS | 1 | |
| | 3 | WESWD51L9397 | TAPPING SCREW | 3 | K2-5 |
| | 4 | WESED90W3368 | MOUNTING BASE B | 1 | |
| | 5 | WESED90W3278 | HEAD RELEASE BUTTON | 1 | |
| | 6 | WES2047S9707 | SCREW | 1 | K2-8 |
| | 7 | WER504L0966 | O-RING | 2 | (2PCS/PK) |
| | 8 | WES701S9706 | SCREW | 1 | K2-12 |
| | 9 | WESWD94L6118 | WASHER | 1 | |
| | 10 | WESED20V3058 | HOUSING | 1 | |
| | 10 | WESED20V3059 | HOUSING | 1 | only for CIS |
| | 11 | WESED20V3378 | FRONT PANEL | 1 | |
| | 12 | WES331B9257 | TAPPING SCREW | 2 | K2-8 |
| | 13 | WESED90L0498 | MOUNTING BASE A | 1 | |
| | 14 | WES2067L0997 | HOUSING O-RING | 1 | |
| | 15 | WESED90L1008 | MOTOR ASSEMBLY | 1 | |
| | 16 | WESWD70L2508 | RECHARGEABLE BATTERY | 1 | LM-ion TYPE |
| | 17 | WESED90L2108 | MODULE | 1 | |
| | 18 | WESED90L2158 | PLUG CHASSIS | 1 | |
| | 19 | WES2047L0327 | O-RING A | 2 | (2PCS/PK) |
| | 20 | WESED90W7661 | POWER ADAPTOR | 1 | C-2 PLUG (only for CIS) |
| | 20 | WESED90W7664 | POWER ADAPTOR | 1 | C-2 PLUG |
| | 21 | WES2047H6767 | CLEANING BRUSH | 1 | |
| | - | WESED20V8008 | INDIVIDUAL BOX | 1 | |
| | - | WESED20V8009 | INDIVIDUAL BOX | 1 | only for CIS |
| | - | WESED90P8108 | OPERATING INSTRUCTIONS | 1 | |
| | - | WESED90P8109 | OPERATING INSTRUCTIONS | 1 | only for CIS |