

# ECM-737

## SERVICE MANUAL

US Model  
Canadian Model  
AEP Model  
UK Model  
E Model



### Specifications

<b>General</b>	
Type	One-point stereo (employing the Mid-Side system), electret condenser microphone (with back-electret condenser capsules)
Output plug	Stereo miniplug
Cord length	Approx. 2 m (6 feet 7 inches)
Battery	R6 (size AA) battery
Dimensions	Approx. 48 x 145 x 40 mm (w/h/d) (1 15/16 x 5 3/4 x 1 5/8 inches)
Weight	Approx. 225 g (8 oz) incl. battery
Supplied accessories	Wind screen (1) Microphone holder (with PF 1/2 screw) (1) Microphone stand (1) (UK, AEP, E Model) Case (1) Sony battery SUM-3 (NS) (1)
<b>Performance</b>	
Frequency response	80-15,000 Hz
Directivity	Directive angle: 90° or 120°
Output impedance	200 Ω ±20% unbalanced
Output level (at 1,000 Hz, directive angle 120°)	Open circuit voltage: -41 ±3 dB (0 dB = 1 V/Pa) Effective output level: -40 ±3 dBm (0 dBm = 1 mW/Pa) Difference between L and R output level: Less than 3 dB Recommended load impedance: More than 3 kilohms
Power requirements	Normal operating voltage: 1.5 V Minimum operating voltage: Approx. 1.1 V Battery life: Approx. 50 hours with Sony battery SUM-3 (NS) Approx. 120 hours with Sony alkaline battery AM 3 (N)
Noise level	Signal-to-noise ratio: More than 69 dB (1,000 Hz, 1 Pa) Inherent noise: Less than 25 dB SPL (0 dB SPL = 2 x 10 <sup>-5</sup> Pa = 2 x 10 <sup>-4</sup> μbar) Wind noise*: Less than 35 dB SPL, using wind screen
Maximum sound pressure level	More than 125 dB SPL (at 1,000 Hz, 1% distortion)
Dynamic range	More than 100 dB
Operating temperature range	0°C to 60°C (32°F to 140°F)
Storage temperature range	-20°C to 60°C (-4°F to 140°F)

\* Wind noise is the value measured by applying a wind velocity of 2 m/sec. (6.6 ft./sec.) from all directions to the microphone. The mean value is taken and converted to the equivalent input sound level.

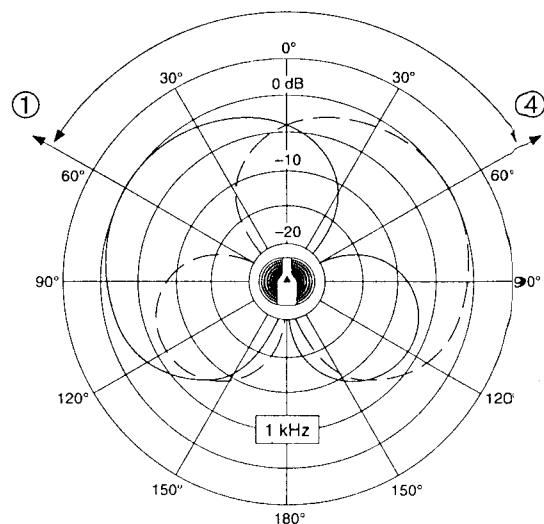
Design and specifications subject to change without notice.

### Features

- Compact stereo microphone for a portable digital audio tape-corder or a cassette-corder.
- Either 90° or 120° of the directive angle between the left and the right channels (directivity characteristics) can be selected according to the sound source.
- The Mid-Side Stereo System assures a steady sound pickup, preventing a "hole in the middle", and gives a truer duplication of the original sound distribution.
- The gold plated plug and the OFC microphone cord assure good sound reproduction.

Directivity characteristics

- ① L-channel directional axis  
② Front  
③ Directive angle 120°  
④ R-channel directional axis

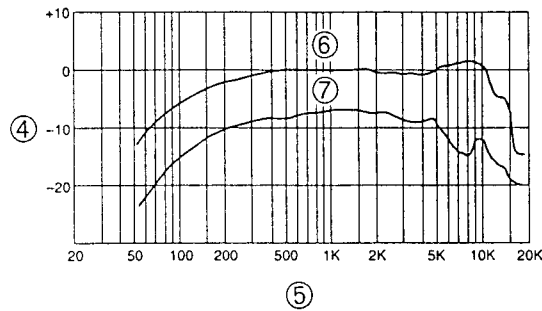
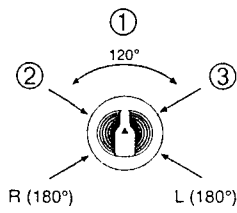


ELECTRET CONDENSER MICROPHONE  
**SONY**®

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## SECTION 1 GENERAL

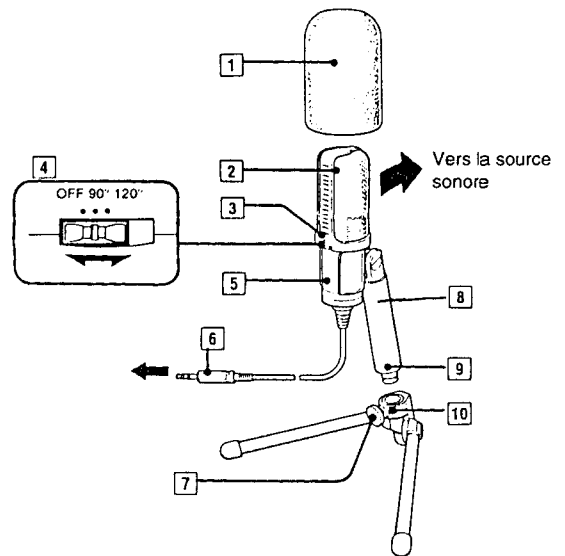
Frequency response



- ① Directive angle
- ② L-channel directional axis
- ③ R-channel directional axis
- ④ Response in dB
- ⑤ Frequency in Hz
- ⑥ Axis
- ⑦ 180° from the axis

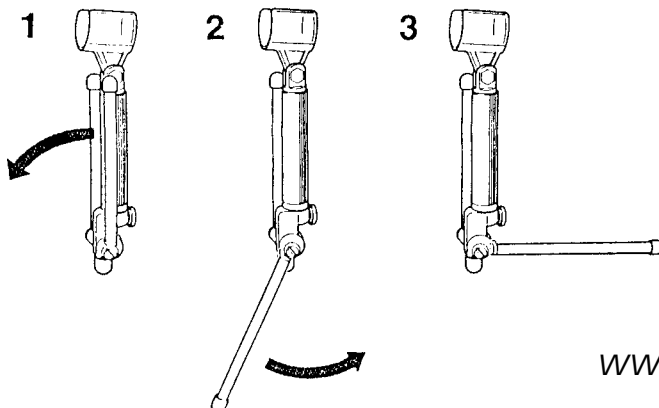
### Parts Identification

- ① **Wind screen**  
Reduces wind or breath noises.
- ② **Microphone unit**  
Set the microphone vertical to the sound source.
- ③ **Battery check indicator**  
When the power/directive angle switch is moved from OFF to 90°, this indicator will light momentarily, if the battery is in good condition.
- ④ **Power/directive angle switch**  
OFF: To turn off the power  
90°: To pick up the source more clearly than the sound around the source (e.g. to pick up the sound of a string quartet or jazz trio, or bird and insect noises)  
120°: To pick up a sound well distributed to the left and right (e.g. to pick up the sound of an orchestra, chorus, moving steam locomotive, motor race)
- ⑤ **Grip**
- ⑥ **Stereo miniplug**  
Connect to the microphone jack of a portable digital audio tape-corder or a cassette-corder.
- ⑦ **Lock screw**  
Adjust the angle of the microphone, and then tighten this screw to set the microphone steadily.
- ⑧ **Microphone holder**  
Attach to the microphone grip.
- ⑨ **Joint screw**  
If you remove the screw, you can attach the microphone holder to an ordinary microphone stand.  
By using this screw, you can also attach the microphone to a camera tripod.
- ⑩ **Microphone stand**



#### How to extend the legs of the microphone stand C

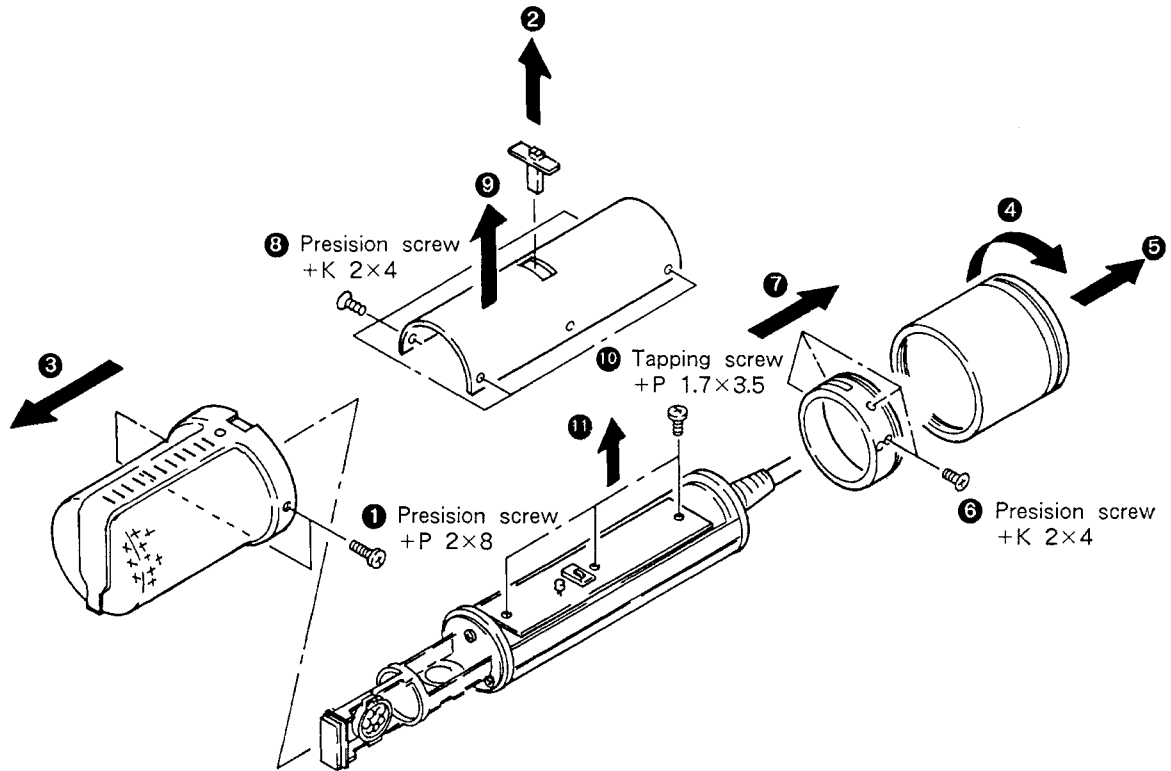
Extend each leg as illustrated.  
To retract the legs, follow the steps in the opposite order.



## SECTION 2 DISASSEMBLY

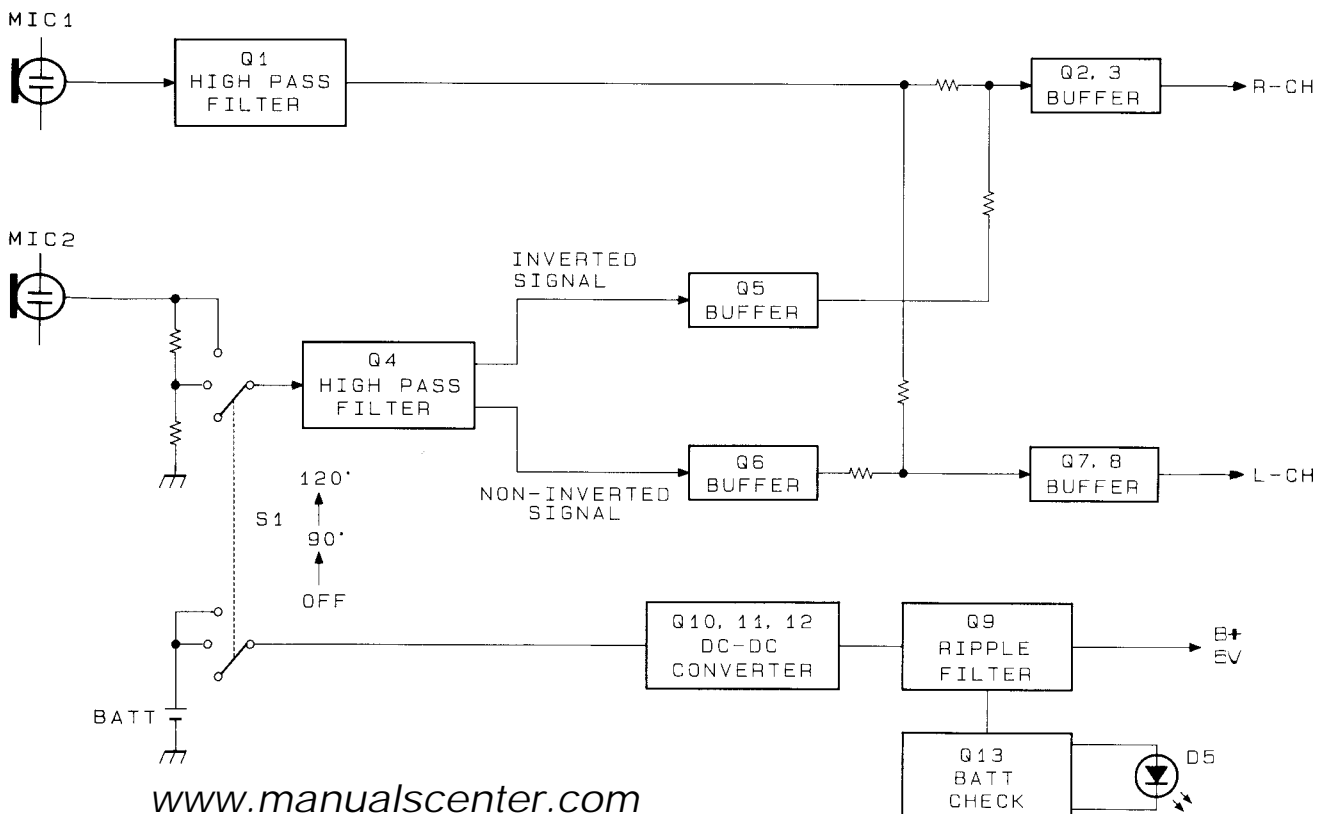
### CASE REMOVAL

**Note:** Follow the disassembly procedure in the numerical order given.

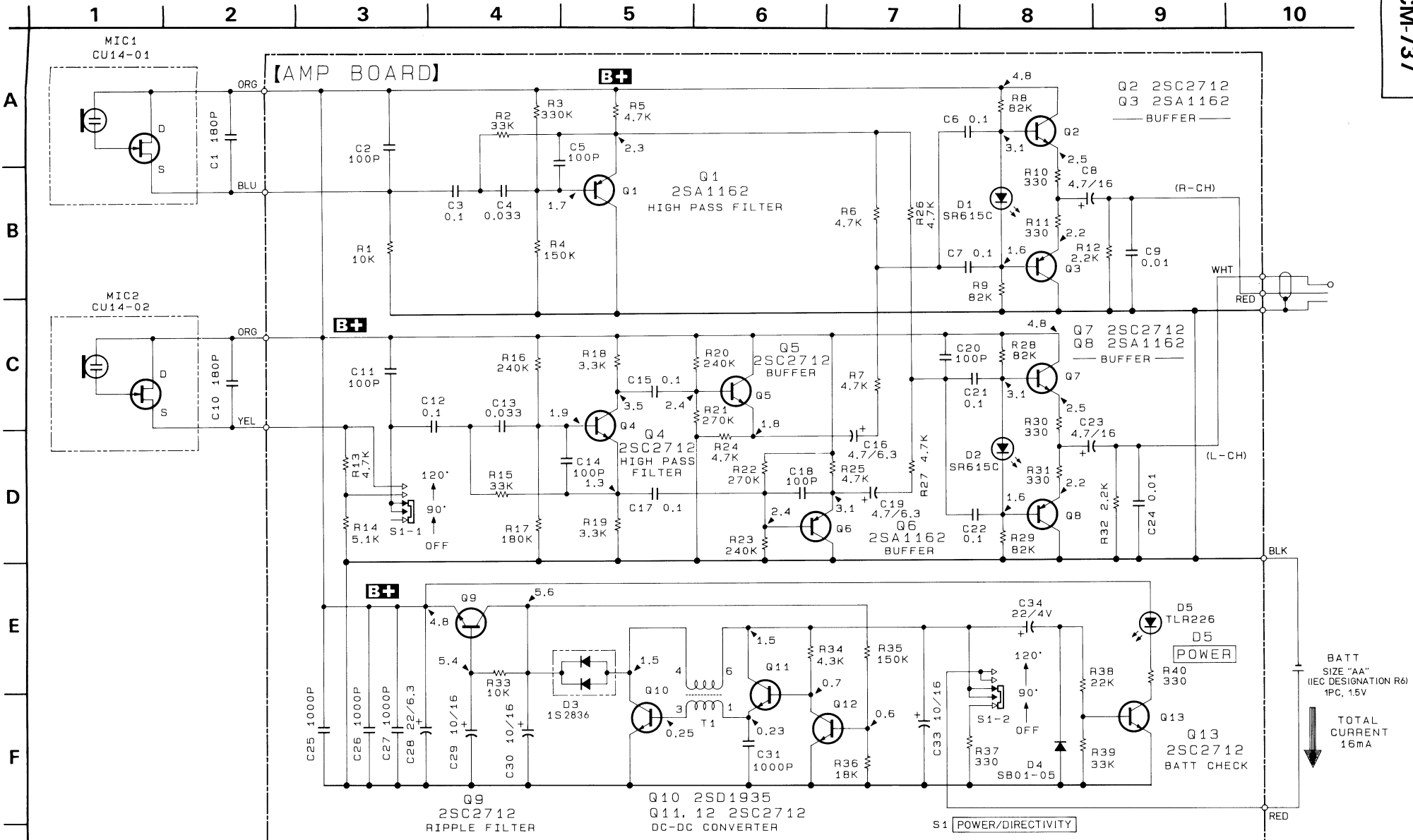


## SECTION 3 DIAGRAMS

### 3-1. BLOCK DIAGRAM



### 3-2. SCHEMATIC DIAGRAM



**Note:**

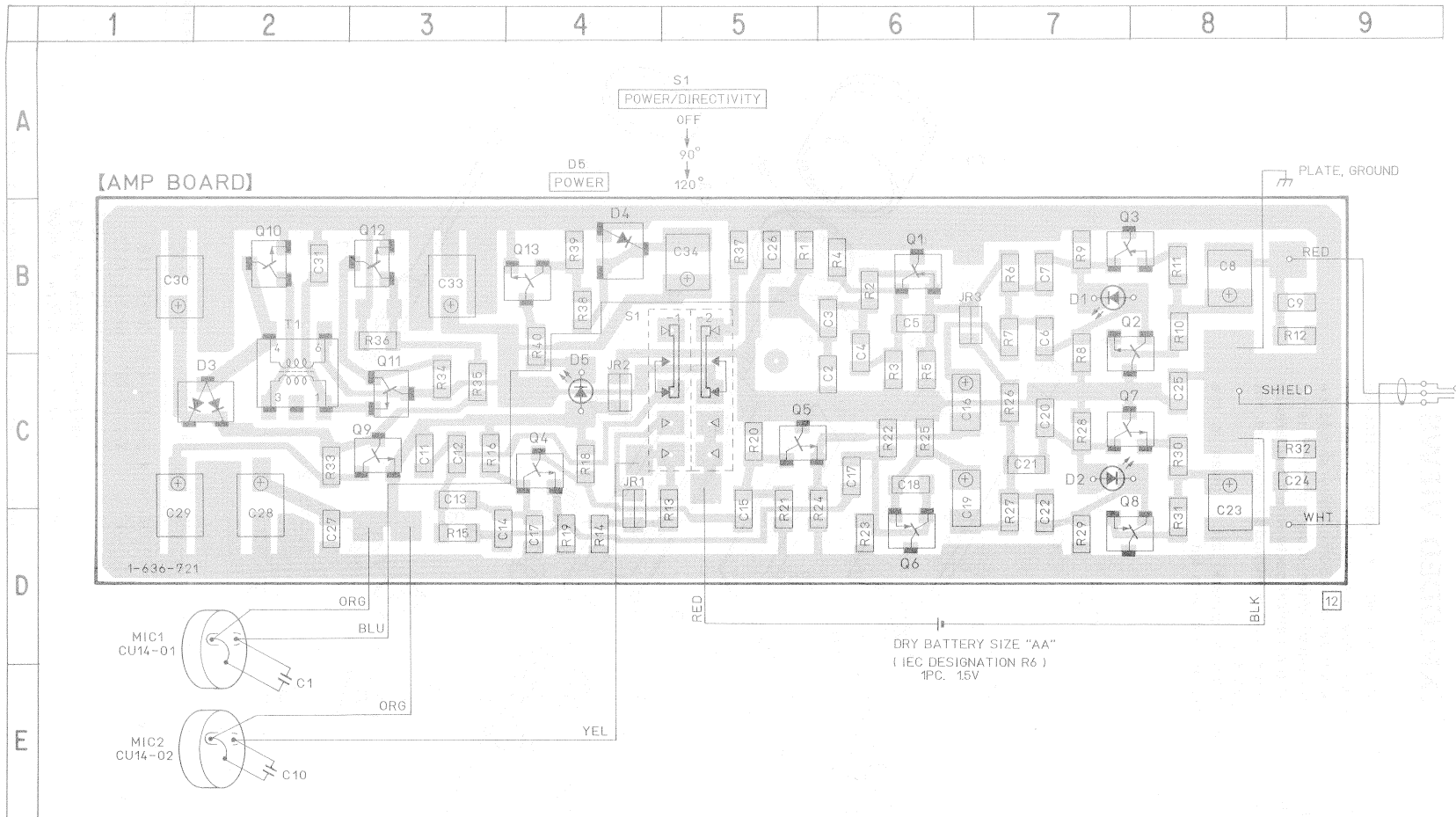
- All capacitors are in  $\mu F$  unless otherwise noted. pF:  $\mu \mu F$   
50WV or less are not indicated except for electrolytics and tantalums.

- All resistors are in  $\Omega$  and  $\frac{1}{4}W$  or less unless otherwise specified.
- Voltages are taken with a VOM (Input impedance 10M  $\Omega$ ). Voltage variations may be noted due to normal production tolerances.

• SEMICONDUCTOR LOCATION

Ref. No.	Location
D1	B-7
D2	C-7
D3	C-2
D4	B-4
D5	C-4
Q1	B-6
Q2	B-7
Q3	B-7
Q4	C-4
Q5	C-5
Q6	D-6
Q7	C-7
Q8	D-7
Q9	C-3
Q10	B-2
Q11	C-3
Q12	B-3
Q13	B-4

3-3. PRINTED WIRING BOARDS

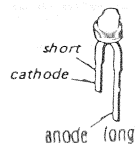


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• SEMICONDUCTOR LEAD LAYOUTS

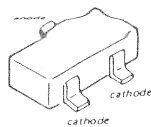
SR615C



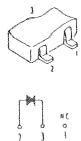
TLR226



1S2836



SB01-05CP



2SA1162  
2SC2712-G  
2SD1935-CT6



Note :

- — : parts extracted from the component side.
- : parts extracted from the conductor side.
- ⊞ : Pattern on the side which is seen.
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

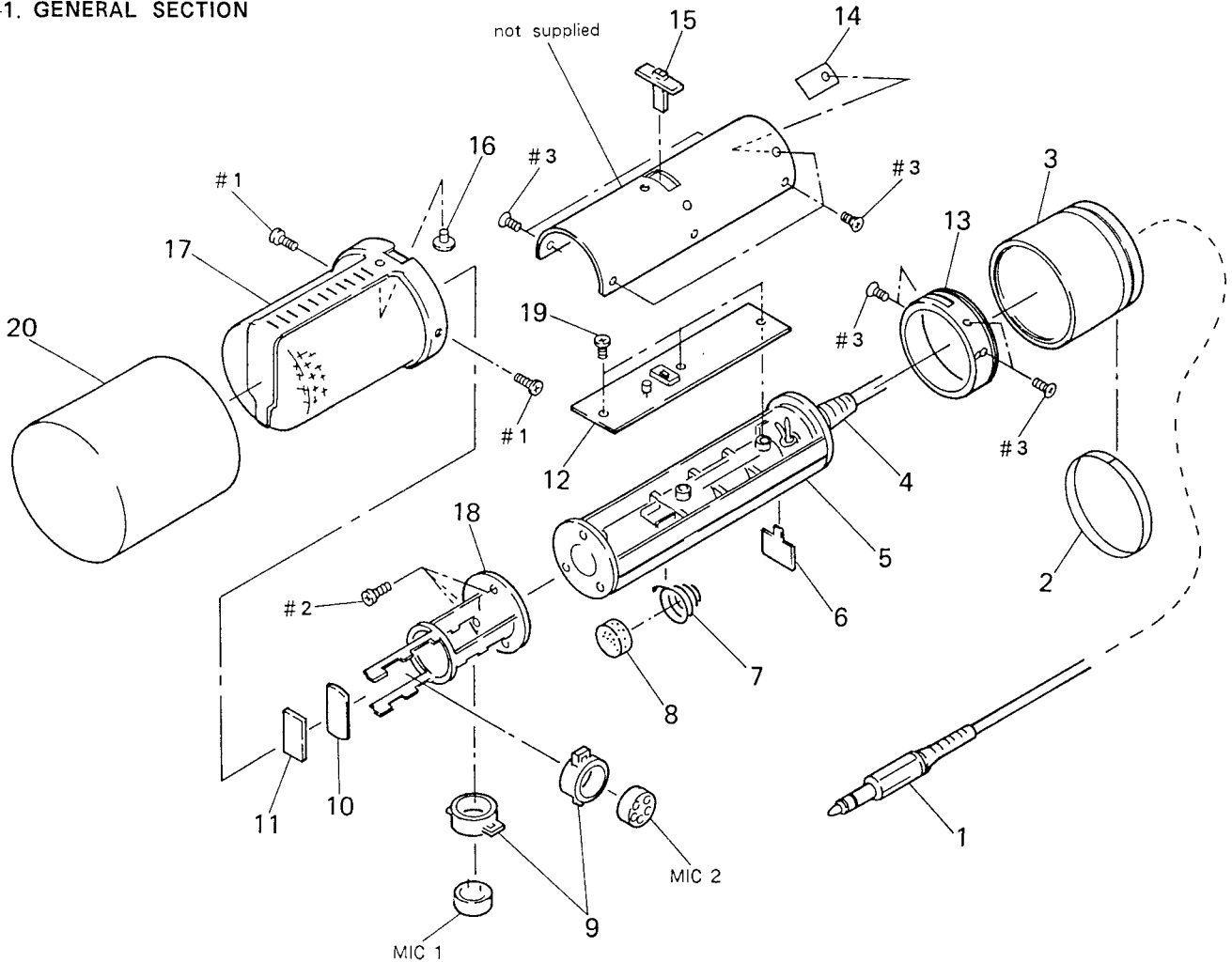
ECM-737

## SECTION 4 EXPLODED VIEWS

**NOTE:**

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Color indication of Appearance Parts  
Example:  
KNOB, BALANCE (WHITE)...(RED)  
          ↑                  ↑  
          Parts color Cabinet's color
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

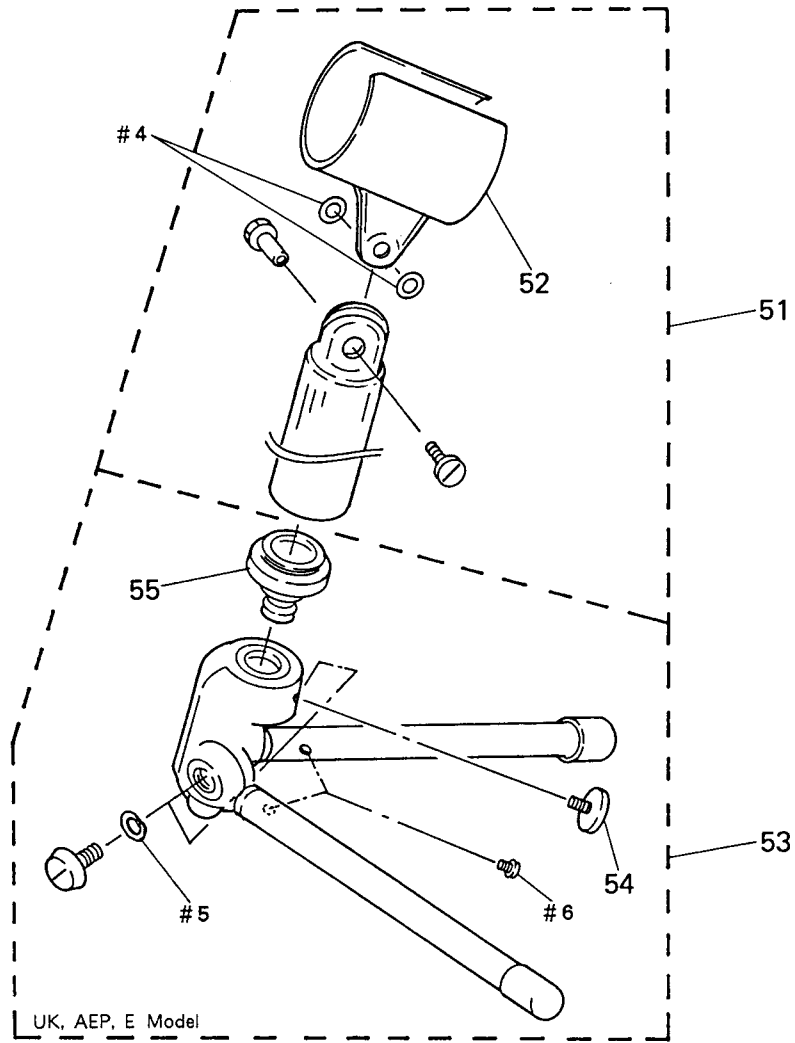
**4-1. GENERAL SECTION**



Ref. No.	Part No.	Description	Remark
1	1-590-558-11	CORD, MICROPHONE (2 CORE)	
2	2-542-115-01	LABEL, MODEL NUMBER	
3	2-542-098-01	GRIP	
4	2-542-107-01	BUSHING	
5	* 2-542-116-01	FRAME (MAIN)	
6	3-578-109-00	CONTACT	
7	3-325-414-01	SPRING	
8	9-911-846-XX	CUSHION	
9	* 2-542-106-01	SUSPENDOR	
10	* 2-542-109-01	RETAINER, FRAME	
11	2-519-343-00	CUSHION, TRANSFORMER	
12	* A-4542-038-A	AMPLIFIER BOARD, COMPLETE	
13	2-542-102-01	SCREW, TRANSLATION	
14	* 2-539-605-01	PLATE, GROUND	
15	2-542-097-02	KNOB, SWITCH	

Ref. No.	Part No.	Description	Remark
16	* 2-535-114-00	COVER, LED	
17	X-2542-007-1	GRILLE ASSY	
18	* 2-542-113-01	FRAME, CAPSULE	
19	3-892-535-01	SCREW +P1. 7X3. 5	
20	2-542-095-01	SCREEN, WINDOW	
MIC1	8-814-266-00	MICROPHONE CU14-01 SET	
MIC2	8-814-266-10	MICROPHONE CU14-02 SET	

4-2. MICROPHONE STAND SECTION



Ref. No.	Part No.	Description	Remark
51	X-2542-008-1	HOLDER ASSY, MICROPHONE	
52	* 2-542-114-01	HOLDER	
53	X-2542-009-1	STAND ASSY, MICROPHONE (UK, AEP, E)	
54	2-542-105-01	SCREW (B), SET	
55	2-542-103-01	SCREW, STAND	

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**AMPLIFIER**

**SECTION 5  
ELECTRICAL PARTS LIST**

**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms  
METAL: Metal-film resistor  
METAL OXIDE: Metal Oxide-film resistor  
F: nonflammable

- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA.....:  $\mu$ A....., uPA.....:  $\mu$ PA.....  
uPB.....:  $\mu$ PB....., uPC.....:  $\mu$ PC.....  
uPD.....:  $\mu$ PD.....
- CAPACITORS  
uF:  $\mu$ F
- COILS  
uH:  $\mu$ H

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
12	* A-4542-038-A	AMPLIFIER BOARD, COMPLETE *****		C33	1-126-394-11	ELECT CHIP 10uF 20% 16V	
		< CAPACITOR >		C34	1-135-202-21	TANTAL. CHIP 22uF 20% 4V	
C2	1-163-117-00	CERAMIC CHIP 100PF 5% 50V				< DIODE >	
C3	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		D1	8-719-123-70	DIODE SR615C	
C4	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V		D2	8-719-123-70	DIODE SR615C	
C5	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		D3	8-719-104-34	DIODE 1S2836	
C6	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		D4	8-719-938-72	DIODE SB01-05CP	
				D5	8-719-812-26	DIODE TLR226 (POWER)	
C7	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V				< RESISTOR >	
C8	1-135-155-21	TANTALUM CHIP 4.7uF 10% 16V		JR1	1-216-295-00	METAL CHIP 0 5% 1/10W	
C9	1-164-232-11	CERAMIC CHIP 0.01uF 50V		JR2	1-216-295-00	METAL CHIP 0 5% 1/10W	
C11	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		JR3	1-216-295-00	METAL CHIP 0 5% 1/10W	
C12	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V				< TRANSISTOR >	
C13	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V		Q1	8-729-216-22	TRANSISTOR 2SA1162	
C14	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		Q2	8-729-271-22	TRANSISTOR 2SC2712-G	
C15	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		Q3	8-729-216-22	TRANSISTOR 2SA1162	
C16	1-135-181-21	TANTALUM CHIP 4.7uF 20% 6.3V		Q4	8-729-271-22	TRANSISTOR 2SC2712-G	
C17	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		Q5	8-729-271-22	TRANSISTOR 2SC2712-G	
C18	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		Q6	8-729-216-22	TRANSISTOR 2SA1162	
C19	1-135-181-21	TANTALUM CHIP 4.7uF 20% 6.3V		Q7	8-729-271-22	TRANSISTOR 2SC2712-G	
C20	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		Q8	8-729-216-22	TRANSISTOR 2SA1162	
C21	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		Q9	8-729-271-22	TRANSISTOR 2SC2712-G	
C22	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		Q10	8-729-809-46	TRANSISTOR 2SD1935-CT6	
C23	1-135-155-21	TANTALUM CHIP 4.7uF 10% 16V		Q11	8-729-271-22	TRANSISTOR 2SC2712-G	
C24	1-164-232-11	CERAMIC CHIP 0.01uF 50V		Q12	8-729-271-22	TRANSISTOR 2SC2712-G	
C25	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V		Q13	8-729-271-22	TRANSISTOR 2SC2712-G	
C26	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V					
C27	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V					
C28	1-126-390-11	ELECT CHIP 22uF 20% 6.3V					
C29	1-126-394-11	ELECT CHIP 10uF 20% 16V					
C30	1-126-394-11	ELECT CHIP 10uF 20% 16V					
C31	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V					



**AMPLIFIER**

Ref. No.	Part No.	Description	Remark
< RESISTOR >			
R1	1-216-073-00	METAL CHIP 10K	5% 1/10W
R2	1-216-085-00	METAL CHIP 33K	5% 1/10W
R3	1-216-109-00	METAL CHIP 330K	5% 1/10W
R4	1-216-101-00	METAL CHIP 150K	5% 1/10W
R5	1-216-065-00	METAL CHIP 4.7K	5% 1/10W
R6	1-216-065-00	METAL CHIP 4.7K	5% 1/10W
R7	1-216-065-00	METAL CHIP 4.7K	5% 1/10W
R8	1-216-095-00	METAL CHIP 82K	5% 1/10W
R9	1-216-095-00	METAL CHIP 82K	5% 1/10W
R10	1-216-037-00	METAL CHIP 330	5% 1/10W
R11	1-216-037-00	METAL CHIP 330	5% 1/10W
R12	1-216-057-00	METAL CHIP 2.2K	5% 1/10W
R13	1-216-065-00	METAL CHIP 4.7K	5% 1/10W
R14	1-216-066-00	METAL CHIP 5.1K	5% 1/10W
R15	1-216-085-00	METAL CHIP 33K	5% 1/10W
R16	1-216-106-00	METAL CHIP 240K	5% 1/10W
R17	1-216-103-00	METAL CHIP 180K	5% 1/10W
R18	1-216-061-00	METAL CHIP 3.3K	5% 1/10W
R19	1-216-061-00	METAL CHIP 3.3K	5% 1/10W
R20	1-216-106-00	METAL CHIP 240K	5% 1/10W
R21	1-216-107-00	METAL CHIP 270K	5% 1/10W
R22	1-216-107-00	METAL CHIP 270K	5% 1/10W
R23	1-216-106-00	METAL CHIP 240K	5% 1/10W
R24	1-216-065-00	METAL CHIP 4.7K	5% 1/10W
R25	1-216-065-00	METAL CHIP 4.7K	5% 1/10W
R26	1-216-065-00	METAL CHIP 4.7K	5% 1/10W
R27	1-216-065-00	METAL CHIP 4.7K	5% 1/10W
R28	1-216-095-00	METAL CHIP 82K	5% 1/10W
R29	1-216-095-00	METAL CHIP 82K	5% 1/10W
R30	1-216-037-00	METAL CHIP 330	5% 1/10W
R31	1-216-037-00	METAL CHIP 330	5% 1/10W
R32	1-216-057-00	METAL CHIP 2.2K	5% 1/10W
R33	1-216-073-00	METAL CHIP 10K	5% 1/10W
R34	1-216-064-00	METAL CHIP 4.3K	5% 1/10W
R35	1-216-101-00	METAL CHIP 150K	5% 1/10W
R36	1-216-079-00	METAL CHIP 18K	5% 1/10W
R37	1-216-037-00	METAL CHIP 330	5% 1/10W
R38	1-216-081-00	METAL CHIP 22K	5% 1/10W
R39	1-216-085-00	METAL CHIP 33K	5% 1/10W
R40	1-216-037-00	METAL CHIP 330	5% 1/10W
< SWITCH >			
S1	1-570-832-11	SWITCH, SLIDE (POWER/DIRECTIVITY)	

Ref. No.	Part No.	Description	Remark
< TRANSFORMER >			
T1	1-447-864-11	TRANSFORMER, DC-DC CONVERTER	
*****			
MISCELLANEOUS			
*****			
1	1-590-558-11	CORD, MICROPHONE (2 CORE)	
C1	1-164-076-11	CAP. CERAMIC 180PF B	
C10	1-164-076-11	CAP. CERAMIC 180PF B	
MIC1	8-814-266-00	MICROPHONE CU14-01 SET	
MIC2	8-814-266-10	MICROPHONE CU14-02 SET	
*****			
ACCESSORY & PACKING MATERIAL			
*****			
3-753-205-01 MANUAL, INSTRUCTION (UK, AEP, E)			
3-753-205-21 MANUAL, INSTRUCTION (US, Canadian)			
*****			
<b>HARDWARE LIST</b>			
*****			
# 1	7-627-553-98	SCREW, PRECISION +P 2X8	
# 2	7-685-105-19	SCREW +P 2X8 TYPE2 NON-SLIT	
# 3	7-627-452-28	SCREW, PRECISION +K 2X4	
# 4	7-623-927-01	WASHER 6.0, NYLON	
# 5	7-623-710-37	WASHER 6, WAVE	
# 6	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT	