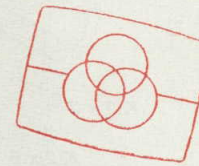


# ECM-969

*E Model*  
*AEP Model*



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## ELECTRET CONDENSER MICROPHONE

### SPECIFICATIONS

#### GENERAL

**Type:** Electret condenser microphone  
(with back-electret condenser)

**FET:** Sony junction FET

**Battery:** Penlight battery  
Size AA (IEC Designation-R6)  
SONY SUM-3 (Manganese)

**Microphone Output  
Terminal:** Cannon XLR-5-12C

**Dimensions:** 40 mm dia. x 245 mm  
1 5/8 inch dia. x 9 3/4 inches

**Weight:** 272 g, 9.6 oz (including battery)

**Finish:** Metallic gray finish

#### PERFORMANCE

**Directivity:** Variable

**Frequency Response:** 40 Hz to 20,000 Hz

**Output Impedance:** 600  $\Omega$   $\pm$  20 %, balanced

**Output Level  
(deviation  $\pm$  3 dB):** Open circuit voltage\*:  
600  $\Omega$ : -70.0 dB (0.282 mV)  
\*0 dB = 1 mW/10  $\mu$ bar at 1,000 Hz  
Recommended load impedance is more  
than 3 k $\Omega$ .

**Power Requirements:** Normal operating voltage: 1.5 V DC  
Minimum operating voltage: 1.1 V DC  
Current drain: Less than 8.0 mA  
Battery life: Approx. 100 hours with  
EVEREADY No. 1015, SONY SUM-3

**Noise Level:** Signal-to-noise ratio;  
More than 44 dB (1,000 Hz, 1  $\mu$ bar)  
Inherent noise; Less than 30 dB SPL  
(0 dB = 2  $\times$  10<sup>-4</sup>  $\mu$ bar) wind noise \*1:  
(with the wind screen)  
Less than 45 dB SPL  
Induction noise from external magnetic field  
\*2: Less than 5 dB SPL/m gauss

\*1 Wind noise is the value measured by applying a wind velocity of 2 m/sec. from all directions to the microphone. The mean value is taken and converted to the equivalent input sound level.

\*2 The external magnetic field induction noise is measured with the microphone placed in an alternating magnetic field of 50 Hz, 1 milligauss. The maximum noise value is taken and converted to the equivalent input sound level.  
(0 dB = 2  $\times$  10<sup>-4</sup>  $\mu$ bar)

**Maximum Sound  
Pressure Input Level:**  
(at 1,000 Hz,  
1 % distortion) 130 dB SPL (0 dB = 2  $\times$  10<sup>-4</sup>  $\mu$ bar)

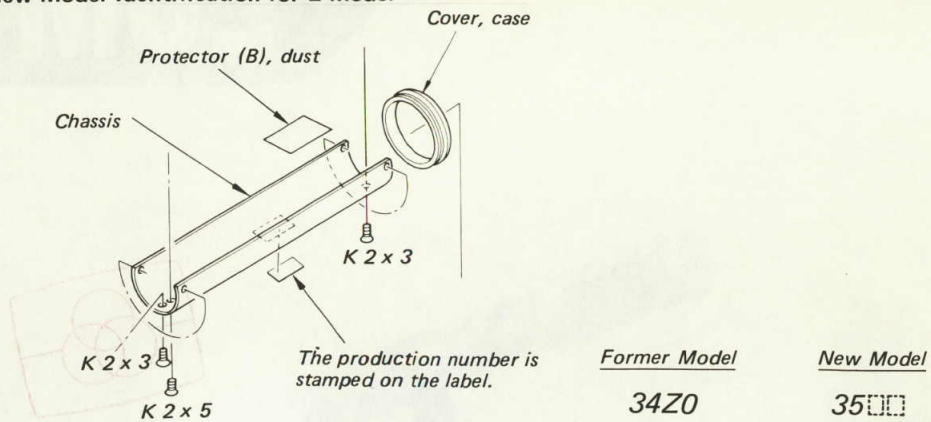
**Dynamic Range:** More than 100 dB

**Environmental  
Temperatures:** -20 $^{\circ}$ C to +60 $^{\circ}$ C for storage  
0 $^{\circ}$ C to +60 $^{\circ}$ C for operation

# SONY<sup>®</sup>

## SERVICE MANUAL

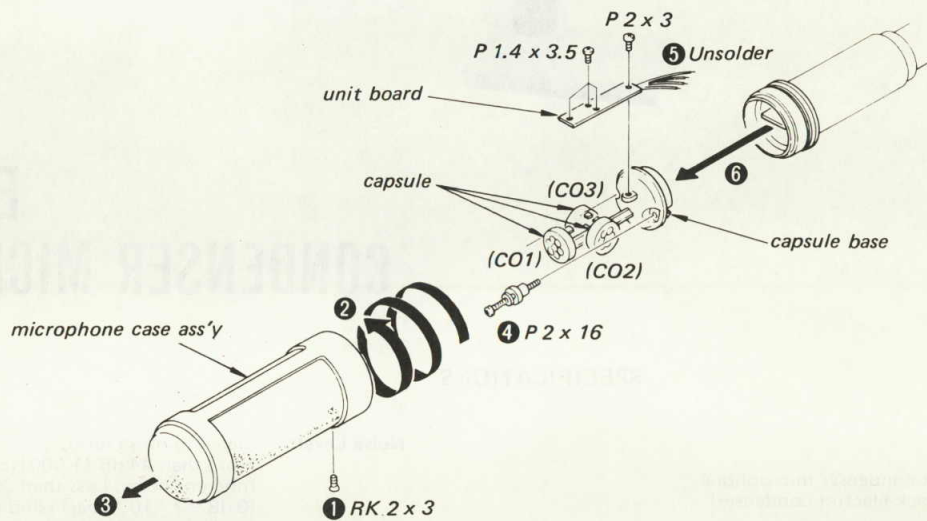
**Former and New Model Identification for E Model**



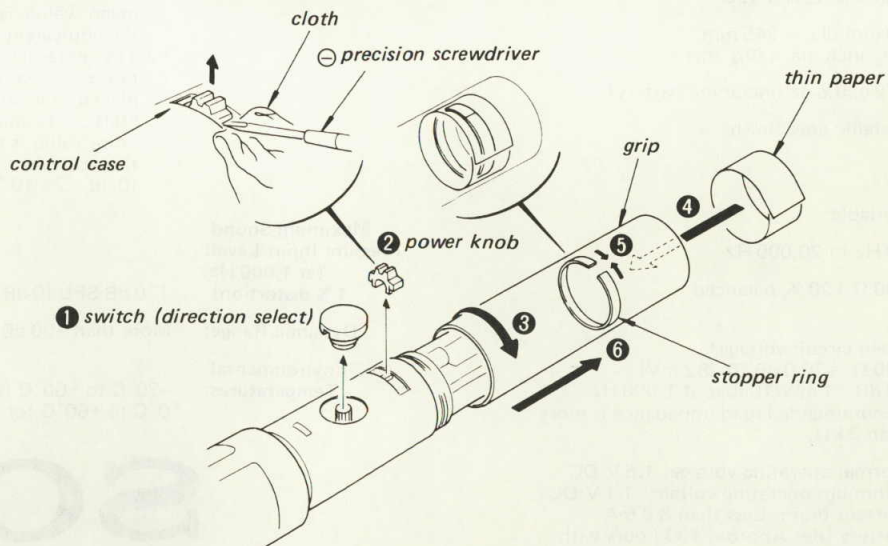
**DISASSEMBLY**

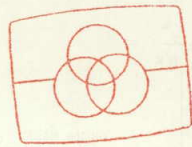
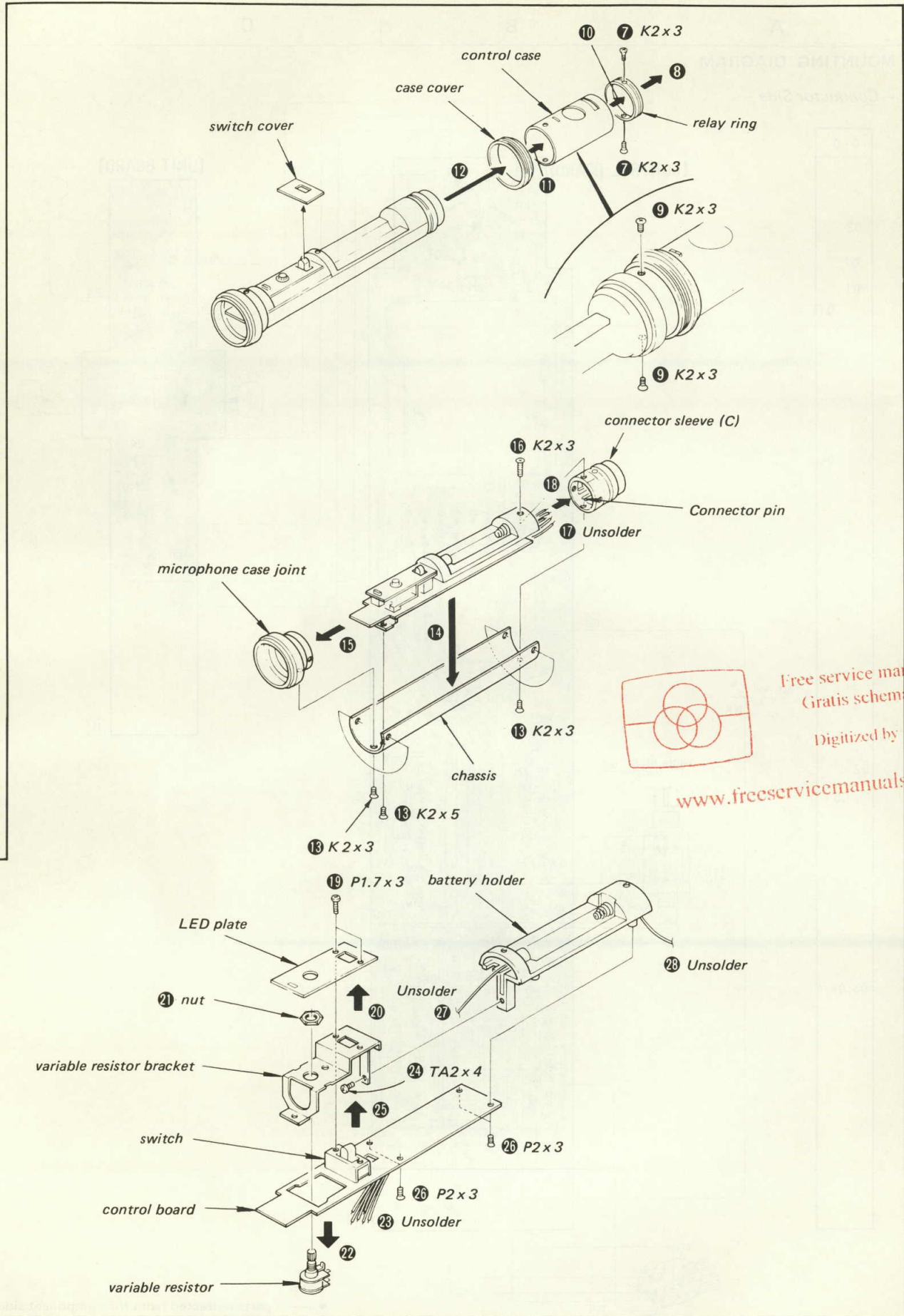
**Note:** Follow the disassembly procedure in the numerical order given.

**CAPSULE AND UNIT BOARD REMOVAL**



**CONTROL BOARD, SWITCH, VARIABLE RESISTOR, CANNON PIN INSERT REMOVAL**





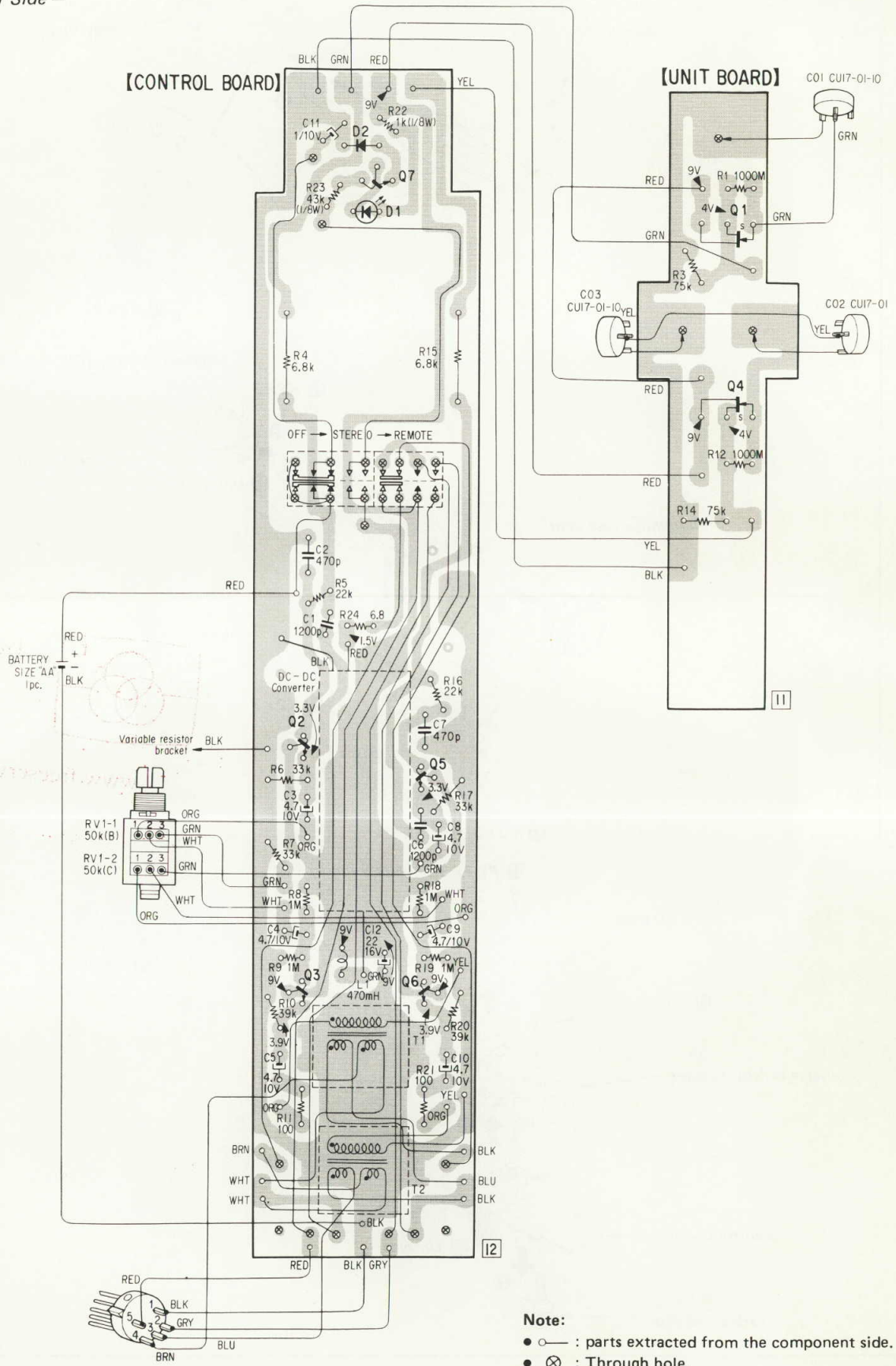
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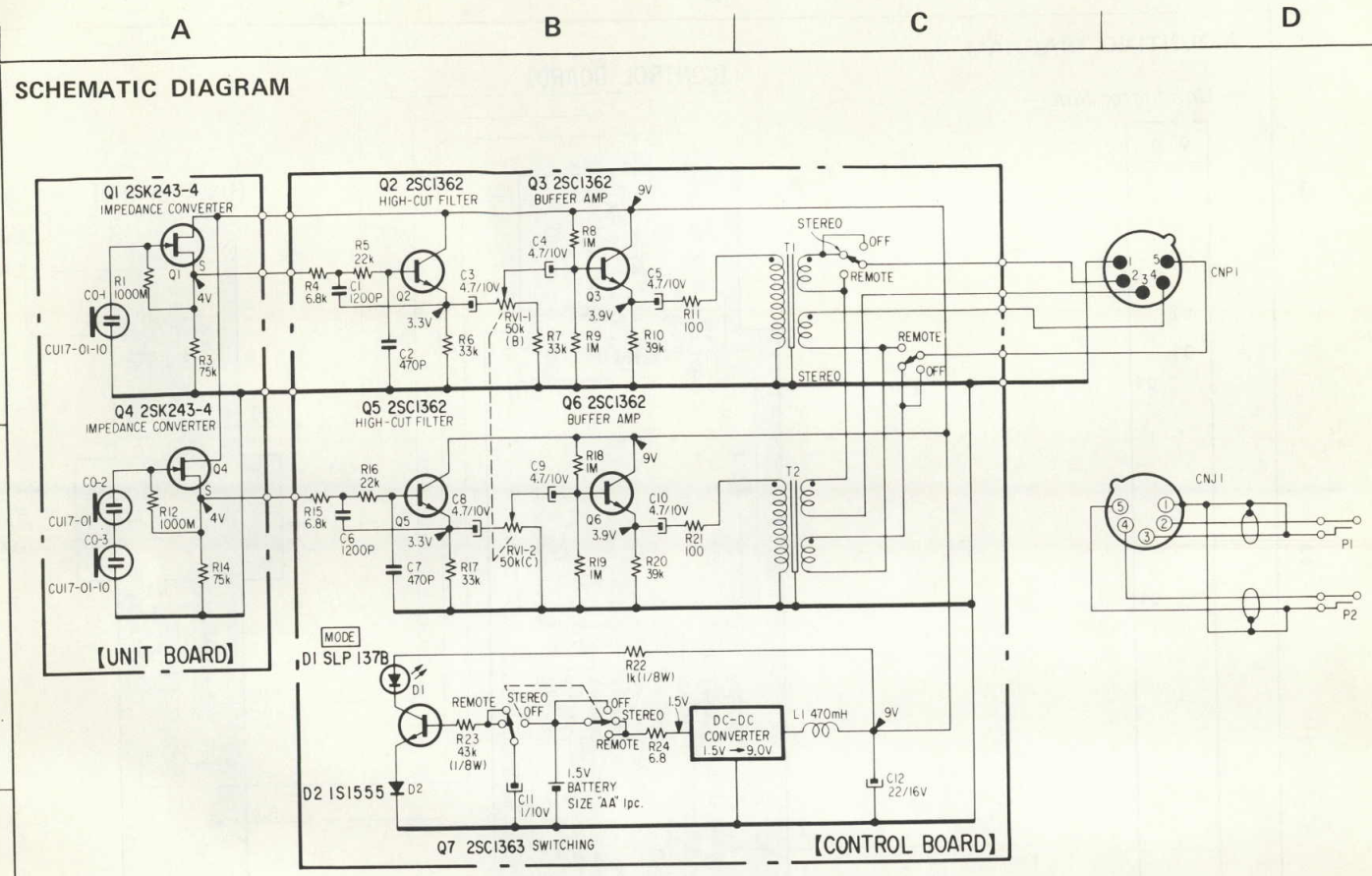
www.freesevicemanuals.info

E model (Former type)

**A B C D**  
**MOUNTING DIAGRAM**  
 — Conductor Side —

1	Q · D
	D2
	Q7
	D1
	Q1
2	Q4
3	Q2
	Q5
4	Q3, Q6
5	





1

2

3

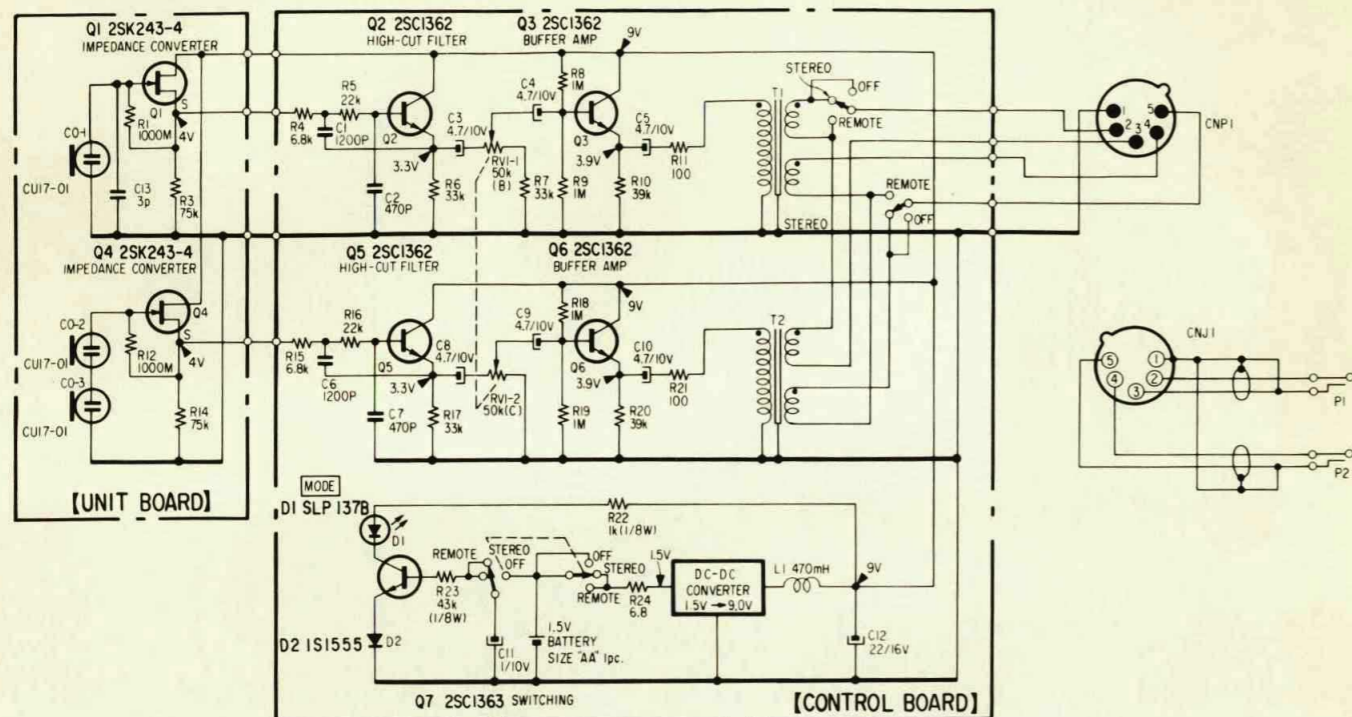
**Note:**

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\mu\text{F}$   
50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms,  $\frac{1}{4}\text{W}$  unless otherwise noted.  
 $\text{k}\Omega$ : 1,000  $\Omega$ ,  $\text{M}\Omega$ : 1,000  $\text{k}\Omega$
- Voltages are dc with respect to ground unless otherwise noted.

**Semiconductor Lead Layouts**

<p><b>D1: SLP137B</b></p>	<p><b>D2: 1S1555</b></p>	<p><b>Q1: 2SK243</b></p>	<p><b>Q2, 3: 2SC1362</b></p>
<p><b>Q4: 2SK243</b></p>	<p><b>Q5, 6: 2SC1362</b></p>	<p><b>Q7: 2SC1364</b></p>	

**SCHEMATIC DIAGRAM**

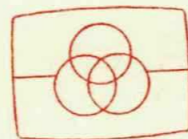


1

2

3

- Note:**
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF} : \mu\text{F}$  50  $\text{WV}$  or less are not indicated except for electrolytics and tantalums.
  - All resistors are in ohms,  $\frac{1}{4}\text{W}$  unless otherwise noted.  $\text{k}\Omega : 1,000 \Omega$ ,  $\text{M}\Omega : 1,000 \text{k}\Omega$
  - Voltages are dc with respect to ground unless otherwise noted.



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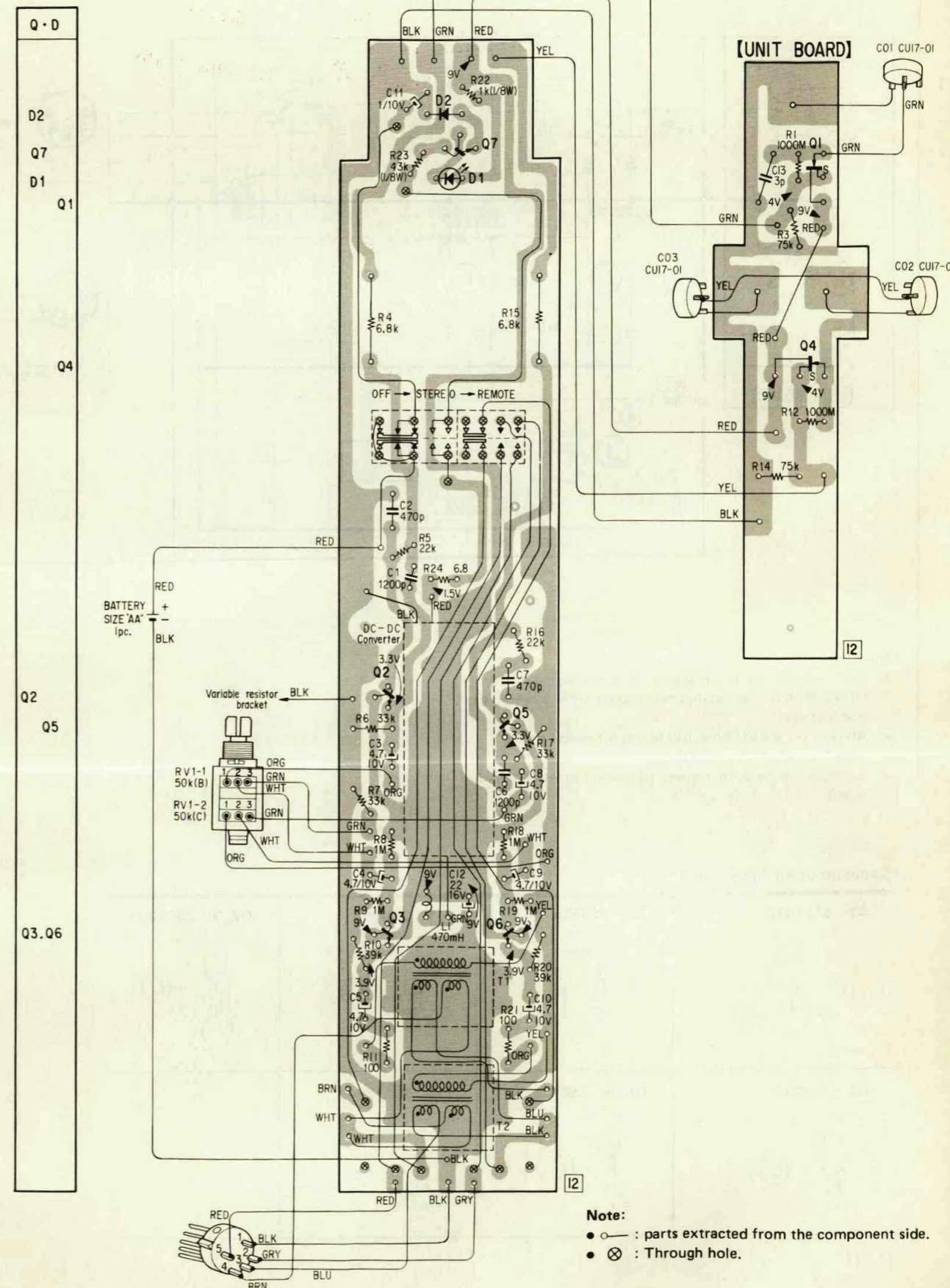
www.freeremotemanuals.info

**Semiconductor Lead Layouts**

<p><b>D1: SLP137B</b></p>	<p><b>D2: 1S1555</b></p>	<p><b>Q1: 2SK243</b></p>	<p><b>Q2, 3: 2SC1362</b></p>
<p><b>Q4: 2SK243</b></p>	<p><b>Q5, 6: 2SC1362</b></p>	<p><b>Q7: 2SC1364</b></p>	

**MOUNTING DIAGRAM**

- Conductor Side -



1

2

3

4

5

A

B

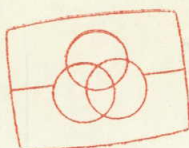
C

D

EXPLODED VIEW

Note:

- Items marked "!" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All screws are Phillips (cross recess) type unless otherwise noted.  
(-) = slotted head



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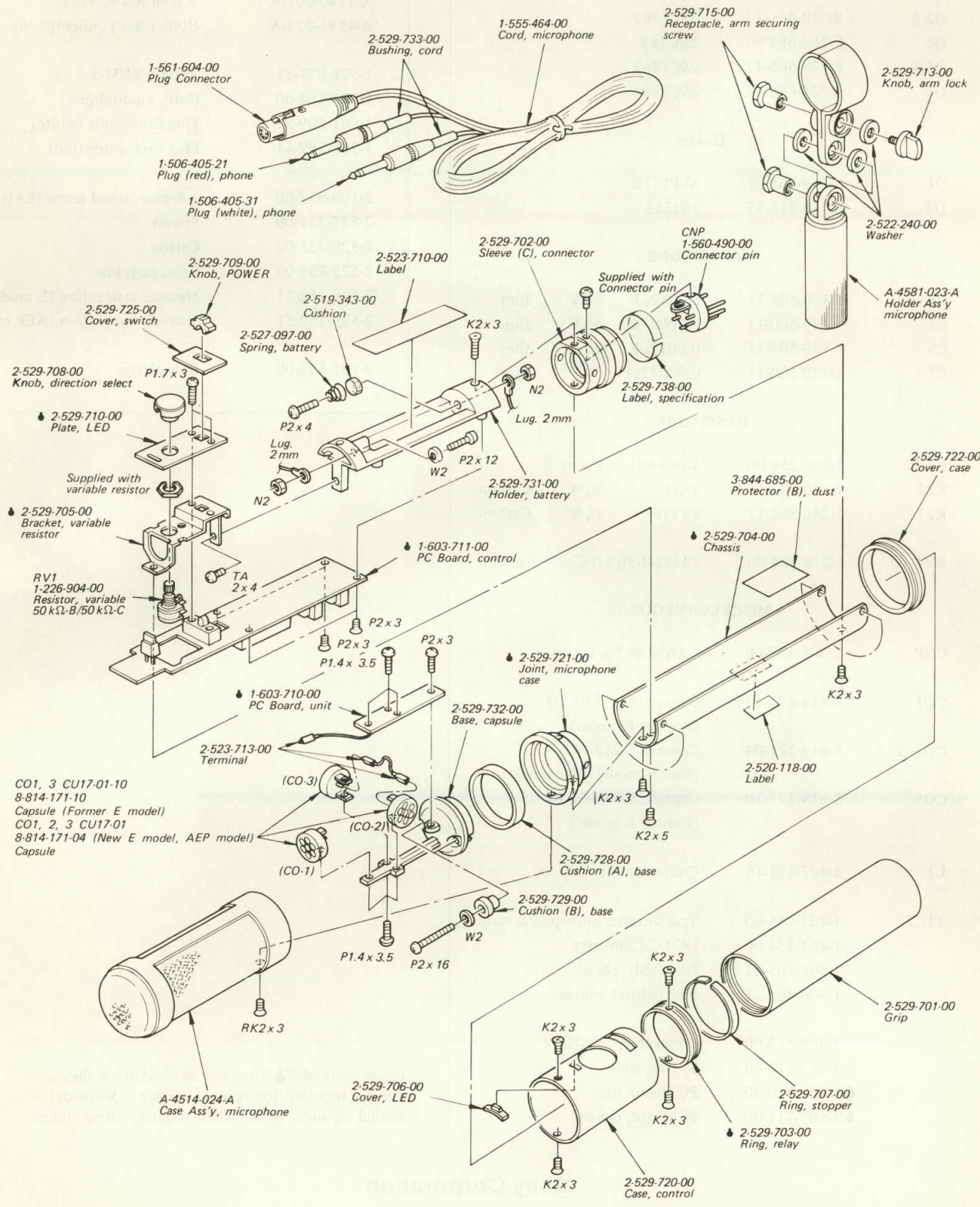
1

2

3

4

5



## ELECTRICAL PARTS LIST

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>		
<b>SEMICONDUCTORS</b>				
<b>Transistors</b>				
Q1	8-765-654-00	2SK243		
Q2,3	8-729-665-47	2SC1362		
Q4	8-765-654-00	2SK243		
Q5,6	8-729-665-47	2SC1362		
Q7	8-729-663-47	2SC1364		
<b>Diodes</b>				
D1	8-719-901-37	SLP137B		
D2	8-719-815-55	1S1555		
<b>CAPACITORS</b>				
C1	1-130-505-11	0.0012 $\mu$ F	50 V	film
C2	1-130-500-11	0.00047 $\mu$ F	50 V	film
C6	1-130-505-11	0.0012 $\mu$ F	50 V	film
C7	1-130-500-11	0.00047 $\mu$ F	50 V	film
<b>RESISTORS</b>				
R1,12	1-208-256-00	1,000 M $\Omega$	micro	
R22	1-246-783-11	1 k $\Omega$	1/8 W	Carbon
R23	1-246-863-11	43 k $\Omega$	1/8 W	Carbon
RV1	1-226-904-00	50 k $\Omega$ -B/50 k $\Omega$ -C		variable
<b>MISCELLANEOUS</b>				
CNP	1-506-139-00	CANNON Pin Insert		
CO1	8-814-171-10	Capsule, CU17-01-10 (Former E model)		
CO1, 2, 3	8-814-171-04	Capsule, CU17-01 (New E model, AEP model)		
CO3	8-814-171-10	Capsule, CU17-01-10 (Former E model)		
L1	1-407-171-10	Coil, microinductor		
T1, 2	1-427-486-00	Transformer, microphone output		
	1-464-134-00	DC-DC Converter		
	1-506-405-21	Plug (red), phone		
	1-506-405-51	Plug (white), phone		
	1-508-363-00	Connector, CANNON		
	1-553-414-00	Switch, slide		
	♣ 1-603-710-00	PC Board, unit		
	♣ 1-603-711-00	PC Board, control		

## ACCESSORIES AND PACKING MATERIALS

<u>Part No.</u>	<u>Description</u>
A-4580-007-A	Screen Ass'y, wind
A-4581-023-A	Holder Ass'y, microphone
1-528-027-11	Battery SUM-3
1-555-464-00	Cord, microphone
1-561-509-31	Plug Connector (white)
1-561-509-41	Plug Connector (red)
2-100-952-00	Adaptor, stand screw (SAD-35)
2-529-734-00	Spacer
2-529-735-00	Carton
2-529-736-00	Case, carrying
2-599-152-11	Manual, instruction (E model)
2-599-152-51	Manual, instruction (AEP model)
3-701-630-00	Bag, plastic

Items marked "♣" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

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