ECM-77S/77B

E Model
J Model
US Model

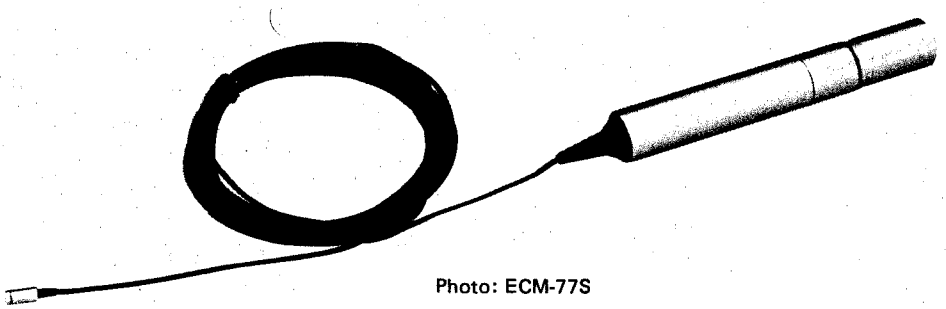


Photo: ECM-77S

ECM-77S: Silver type
ECM-77B: Black type

ELECTRET CONDENSER MICROPHONE

SPECIFICATIONS

Type Electret condenser microphone

Power supply Battery: IEC designation R6 or LR6 (size AA)
External power:
Phantom powering system
For J and E models, use optional Sony AC-148F external power supply.

Power requirements
Normal operating voltage:
1.5 Vdc at battery operation
48 Vdc at external power operation
Minimum operating voltage:
1.1 Vdc at battery operation
Current drain:
Less than 0.2 mA (with battery)
Less than 2 mA (with external power supply)
Battery life:
Approx. 5,000 hours with Sony SUM-3 (NS) New Super Battery (manganese battery)
Approx. 6,000 hours with Sony Eveready AM3 (LR6) alkaline battery

Frequency range 40–20,000 Hz

Directivity Omni-directional

Output impedance
150 ohms ±20% (1 kHz), balanced

Sensitivity (deviation ±2 dB)
Open circuit voltage:
−52.0 dB (2.51 mV, 0 dB = 1 V/1 Pa, 1 kHz)
Effective output level:
−49.8 dBm
(0 dBm = 1 mW/1 Pa, 1 kHz)
Recommended load impedance is more than 3 kohms.

Continued on next page.

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Noise level Signal-to-noise ratio:
More than 64 dB (1 kHz, 1 Pa)
Inherent noise:
Less than 30 dB SPL
Wind noise*1 :
Less than 40 dB SPL
(with wind screen)
Induction noise from external magnetic field*2:
Less than 5 dB SPL/mG

Maximum input sound pressure level *3
120 dB SPL (20.0 Pa)

Dynamic range More than 90 dB

Environmental temperatures
−20°C to +60°C (−4°F to +140°F)
for storage
0°C to +60°C (+32°F to +140°F)
for operation

0 dB SPL = 20 μPa
*1 Wind noise is the value measured by applying 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 pressure 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 then converted to the equivalent input sound pressure level.
*3 This is the maximum input level which produces 1% distortion at the output with 1,000 Hz.

Microphone output terminal
Cannon XLR-3-12C type

Microphone cable
Approx. 2.0 mm dia., 3 m long
($^3/_{32}$ inch dia., 10 feet long)

Dimensions Microphone:
Approx. 5.6 mm dia. x 12.5 mm long
($^1/_4$ in. dia. x $^1/_2$ in. long)
Power supply section:
Approx. 20 mm dia x 133 mm long
($^{13}/_{16}$ in. dia. x 5 $^1/_4$ in. long)

Weight Microphone:
Approx. 1.5 g (0.053 oz)
Power supply section:
Approx. 120 g (4.2 oz)
(including cable, not including battery)

Finish ECM-77S: Non-reflective satin-nickel finish
ECM-77B: Black chromium finish
(microphone capsule section)
Non-reflective satin-nickel finish
(power supply section)

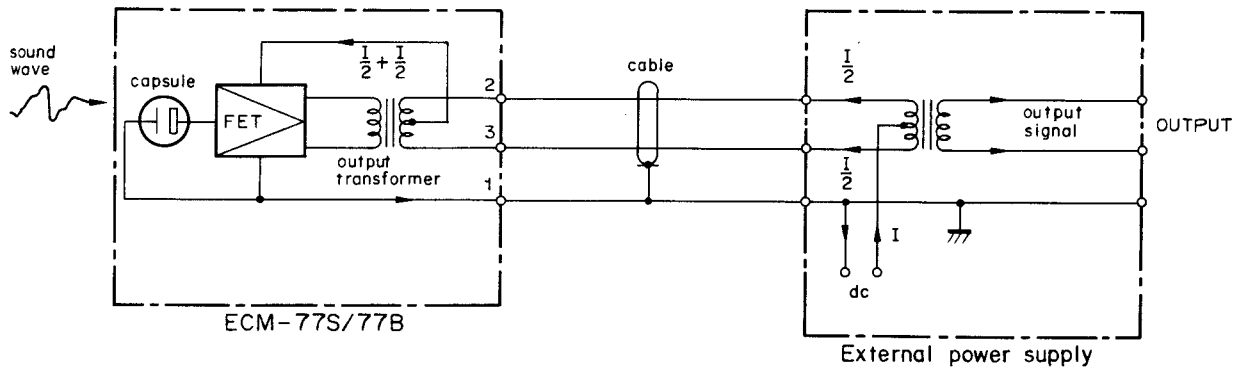
Supplied accessories
Carrying case (1)
Microphone holder (2)
Wind screen (1)

1. OUTLINE

External Power Supply

For J and E models, ECM-77S/77B can also operate on the Sony AC-148F external power supply or equivalent.

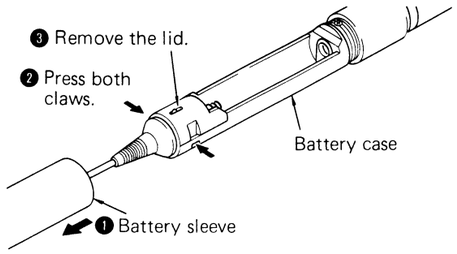
The microphone cable, shielded two-conductor cable, is used as both an audio signal cable and a dc power supply cable by connecting to the external power supply. Positive dc current is supplied to the microphone through the two inner conductors of the cable and negative dc current through the shielded conductor.

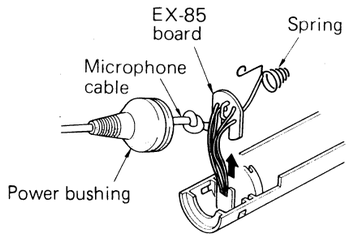


2. DISASSEMBLY

2-1. Power Supply Section

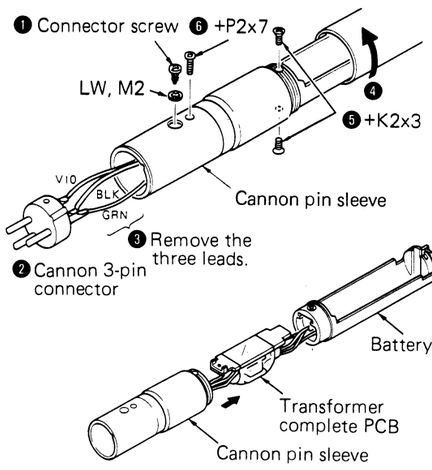
EX-85 Board and Microphone Cable Replacement



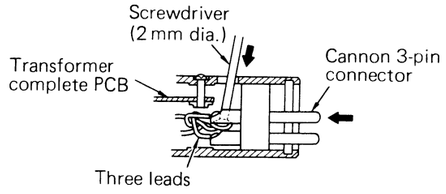


2-2. Transformer Section

Cannon Pin Insert and Transformer Complete PCB

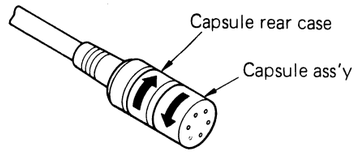


Note: Cannon 3-pin connector reinstallation
When reinstalling the Cannon 3-pin connector, turn the connector three times ccw to twist the leads and push the leads downwards with a screwdriver (2 mm dia.) through the 4 mm dia. hole not to catch on the transformer complete PCB.



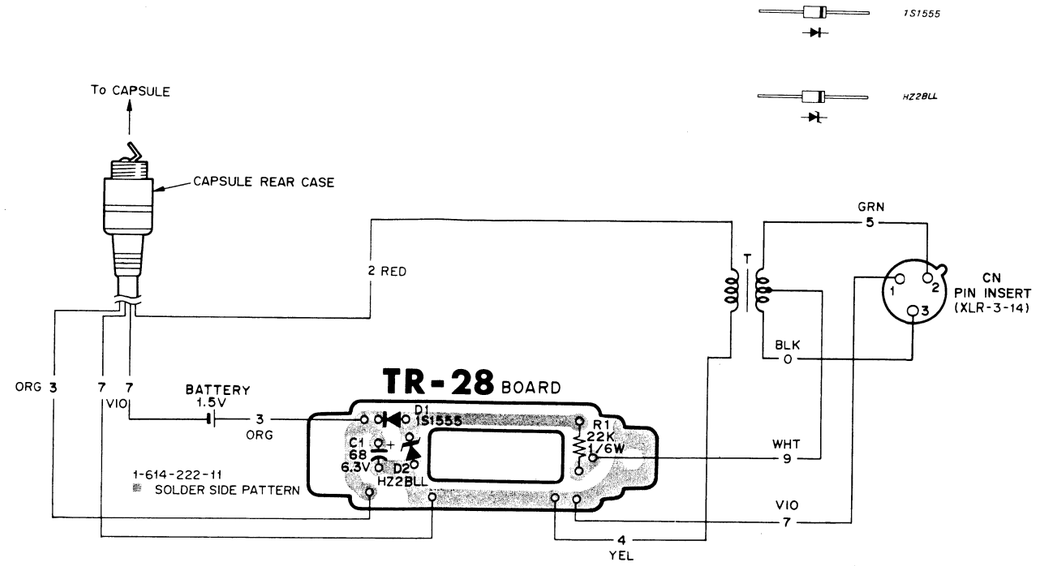
2-3. Microphone Capsule

Capsule Ass'y Replacement

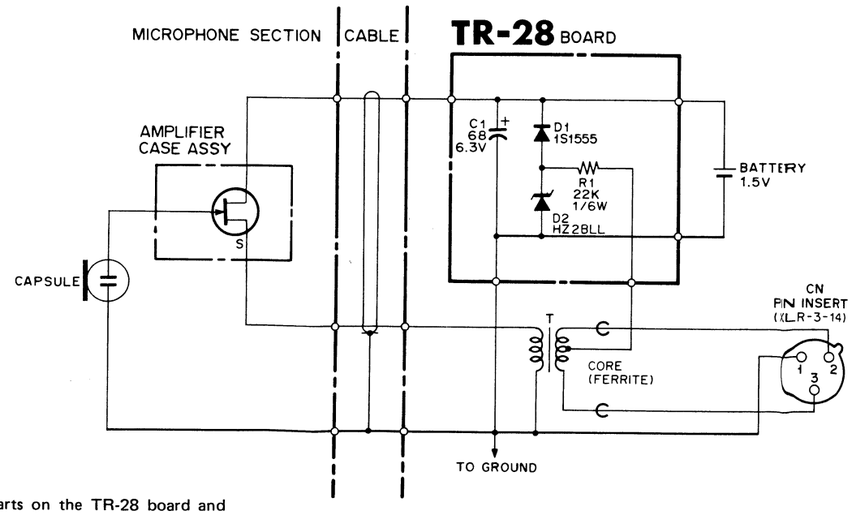


3. CIRCUIT BOARDS DIAGRAM

TR-28 BOARD (1-614-222-11)
EX-85 BOARD (1-614-223-12)



4. SCHEMATIC DIAGRAM



CAUTION:
The individual parts on the TR-28 board and amplifier board are not supplied.
If any trouble occurs on either board, replace the TR-28 complete circuit board or the amplifier case assy.

ECM-77S/77B; (J) # 100,001 and higher
(U) # 200,001 and higher
(E) # 400,001 and higher

5. REPLACEABLE PARTS

Parts Ordering Information

Standardization of Parts
Repair parts supplied from Sony Parts Center may not be always identical with the part which actually in use due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts".
This manual's exploded views and electrical parts list are indicating the parts numbers of the "standardized genuine parts at present".

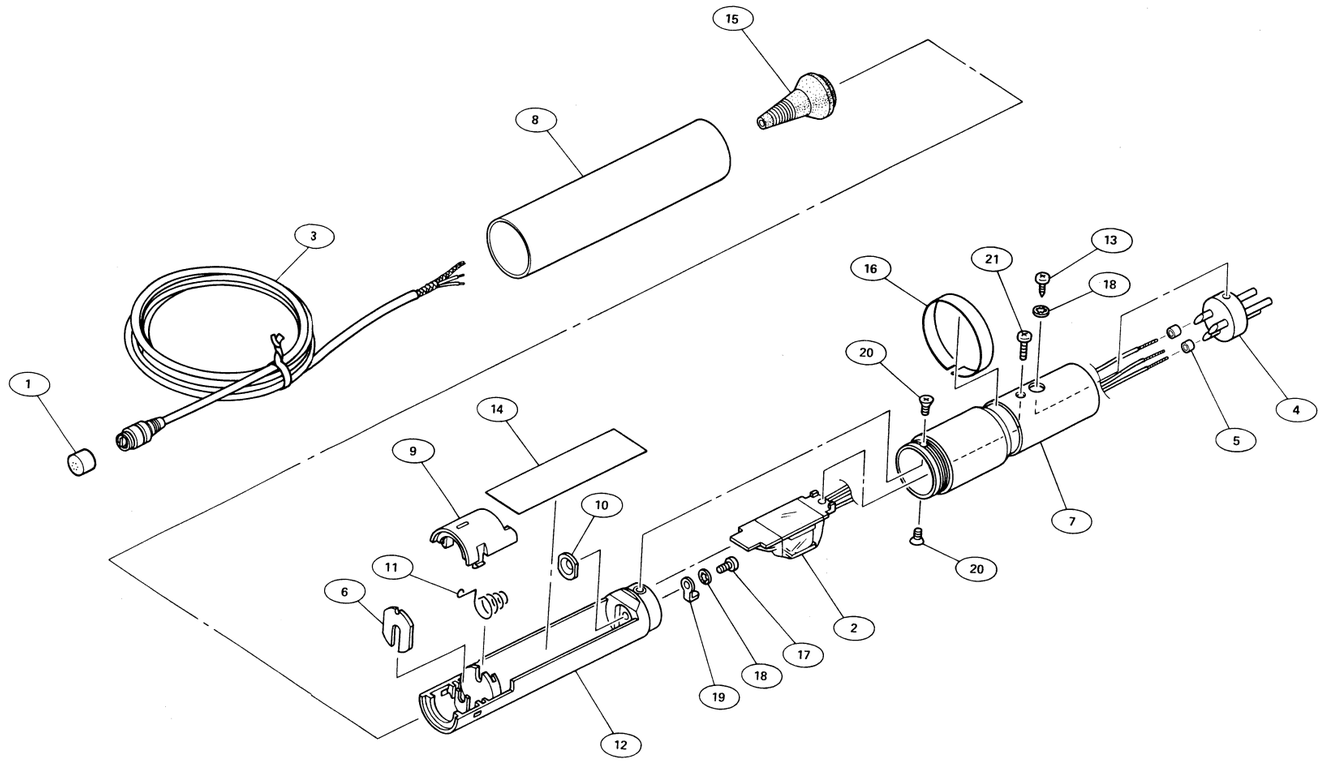
Parts marked with S in the column of SP
These parts are normally stocked as replaceable parts.

Parts marked with O in the column of SP
Orders for these parts will be processed, but allow for additional delivery time.

Parts without Part No.
These parts are not stocked because they are seldom required for routine service.

5-1. Exploded View and Parts List

Index No.	SP	Part No.	Description
ECM-77S/77B			
1	S	A-4510-049-A	CAPSULE ASSY (For ECM-77S)
	S	A-4510-050-A	CAPSULE ASSY (For ECM-77B)
2	S	A-4538-027-A	COMPLETE PCB,TR-28
3	S	X-2537-413-1	AMPLIFIER CASE ASSY (For ECM-77B)
	S	X-2537-414-1	AMPLIFIER CASE ASSY (For ECM-77S)
4	S	1-509-096-00	PIN INSERT,CANNON XLR-3-14
5	S	1-543-060-00	CORE
6	S	1-614-223-12	PC BOARD,EX-85
7	O	2-522-068-01	SLEEVE,PIN,CANNON
8	O	2-522-069-01	SLEEVE,BATTERY
9	S	2-522-070-01	LID,CASE
10	S	2-522-071-01	TERMINAL,BATTERY
11	S	2-522-072-01	SPRING
12	S	2-522-084-01	CASE,BATTERY
13	O	2-522-402-11	SCREW,CANNON CONNECTOR
14	O	2-523-710-00	LABEL,BATTERY
15	S	2-537-414-02	BUSHING,POWER
16	O	2-537-415-01	LABEL,MODEL NUMBER (For ECM-77S)
	O	2-537-417-01	LABEL,MODEL NUMBER (For ECM-77B)
17	S	7-621-255-12	SCREW,+P2x3
18	S	7-623-305-07	LOCK WASHER,M2,TYPE(A)
19	S	7-623-505-01	LUG 2
20	S	7-627-452-17	SCREW,PRECISION +K2x3
21	S	7-627-553-87	SCREW,PRECISION +P2x7



5-2. Electrical Parts List

Ref. No.	SP	Part No.	Description
AMPLIFIER CASE ASSY			
	S	X-2537-413-1	AMPLIFIER CASE ASSY (FOR ECM-77B)
	S	X-2537-414-1	AMPLIFIER CASE ASSY (FOR ECM-77S)
EX-85 BOARD			
	S	1-614-223-12	PC BOARD,EX-85
TR-28 BOARD			
	S	A-4538-027-A	COMPLETE PCB,TR-28
FRAME			
	S	1-509-096-00	PIN INSERT,CANNON XLR-3-14

5-3. Accessories

Qty	SP	Part No.	Description
1	S	2-599-253-01	MANUAL,INSTRUCTION (For J Model)
1	S	2-599-253-11	MANUAL,INSTRUCTION (For E Model)
1	S	2-599-253-21	MANUAL,INSTRUCTION (For US Model)
For ECM-77S Only			
1	S	X-2537-401-1	CLIP ASSY,HORIZONTAL
1	S	X-2537-402-1	CLIP ASSY,DOUBLE (For US Model Only)
1	S	X-2537-403-1	CLIP ASSY,VERTICAL (For J and E Models Only)
1	S	X-2537-409-1	WIND SCREEN ASSY
1	S	X-2537-411-1	CASE ASSY,CARRYING
For ECM-77B Only			
1	S	X-2537-404-1	CLIP ASSY,HORIZONTAL
1	S	X-2537-405-1	CLIP ASSY,DOUBLE (For US Model Only)
1	S	X-2537-406-1	CLIP ASSY,VERTICAL (For J and E Models Only)
1	S	X-2537-410-1	WIND SCREEN ASSY
1	S	X-2537-412-1	CASE ASSY,CARRYING

WIND SCREEN ASSY



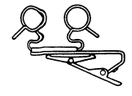
HORIZONTAL CLIP ASSY



VERTICAL CLIP ASSY



DOUBLE CLIP ASSY



ECM-77S/77B (J/U/E)
9-976-044-01

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