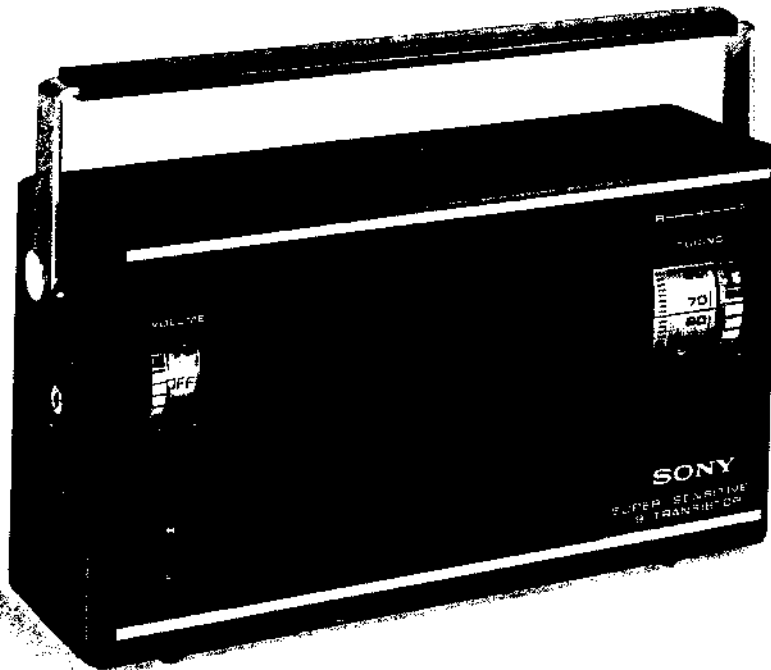


For USA

# 6R-33



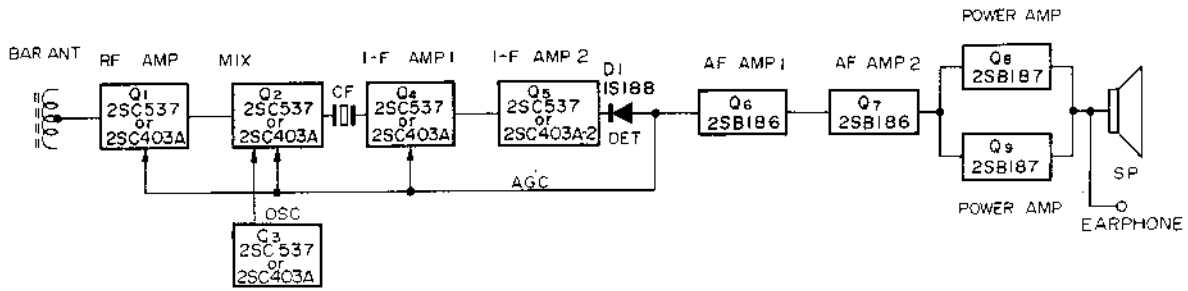
## SPECIFICATIONS

<b>Circuit System:</b>	9-transistor 1-diode superheterodyne
<b>Frequency Coverage:</b>	530 ~ 1,605 kHz (566 ~ 187 m)
<b>Intermediate Frequency:</b>	455 kHz
<b>Antenna System:</b>	Built-in ferrite bar antenna
<b>Power Requirements:</b>	Three "D" size flashlight batteries, 4.5 volt in total or house current by using "SONY" ac adaptor AC-81W (110~120V), AC-33W (110~120V), AC-33E (220~240V)
<b>Power Output:</b>	240 mW (undistorted) 400 mW (maximum)
<b>Current Drain:</b>	8 mA at zero signal, 100 mA at 240 mW output
<b>Maximum Sensitivity:</b> (at 50 mW output)	25 $\mu$ V/m
<b>Selectivity:</b>	22 dB at 10 kHz off resonance at 1,400 kHz
<b>Speaker:</b>	3 $\frac{1}{2}$ " (92 mm) PM dynamic, 8 $\Omega$
<b>Dimensions:</b>	8 $\frac{1}{16}$ " (W) $\times$ 4 $\frac{3}{4}$ " (H) $\times$ 2 $\frac{3}{4}$ " (D) (220 $\times$ 120 $\times$ 70 mm)
<b>Weight:</b>	1 lb 15 oz (900g) without batteries

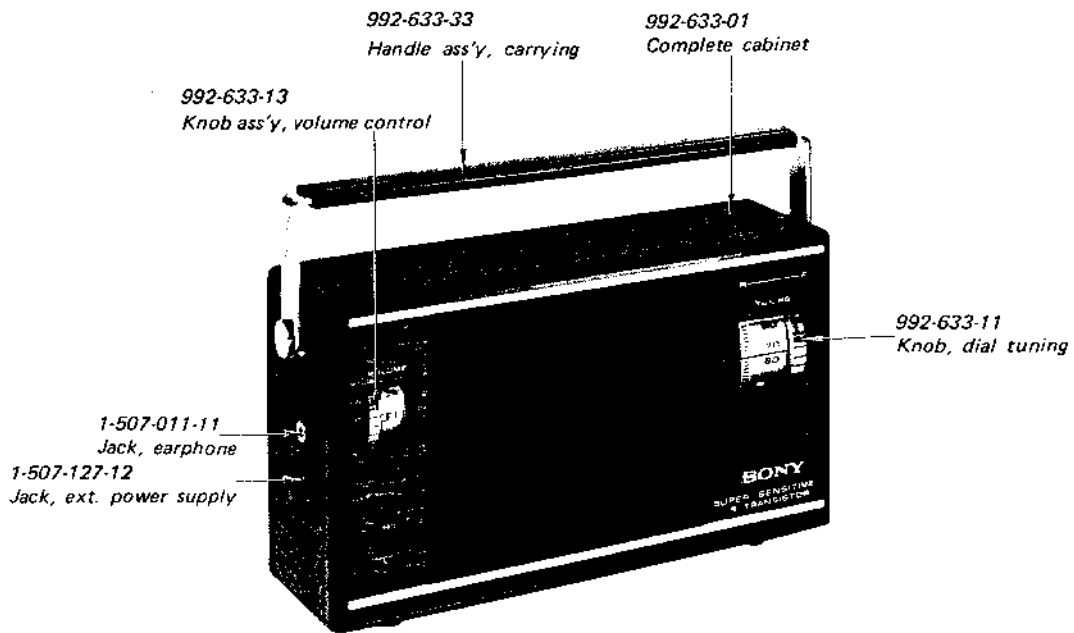
**SONY**<sup>®</sup>  
**SERVICE MANUAL**

1771

**BLOCK DIAGRAM**



**EXTERNAL VIEW**



**INTERIOR VIEW**

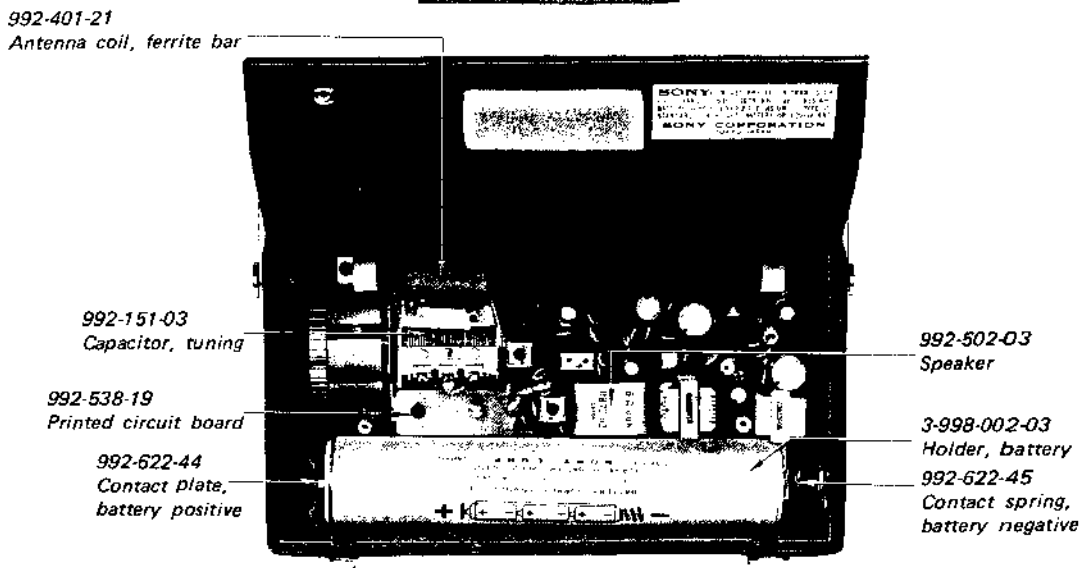


Fig. 2

SONY CORPORATION

Complete Spare Parts List for 6R-33

<u>Part No.</u>	<u>Description</u>	<u>Unit Price</u>
<u>A. Cabinet and Appearance Items</u>		
992-633-01	Complete Cabinet, including -----	
992-633-27-1	Cover, dial indicator -----	
992-633-27-2	Cover, volume control -----	
992-633-34-1	Sash, upper -----	
992-633-34-2	Sash, lower -----	
992-633-28-1	Panel, front (RF indicating) -----	
992-633-28-2	Panel, front (tone indicating) -----	
992-633-33	Handle Assembly, carrying -----	
992-622-35-2	Escutcheon, jack -----	
992-633-71-1	Cushion, battery -----	
992-633-72	Specification Label -----	
992-633-73	Holder Ass'y, carrying handle -----	
	* * * *	
992-633-11	Knob, dial tuning -----	
992-633-48	Drum Ass'y, dial tuning -----	
992-633-13	Knob Ass'y, volume control -----	
<u>B. Mechanical Parts</u>		
992-633-54	Fixing Metal, volume control -----	
992-633-55	Fixing Metal, dial tuning drum -----	
992-611-42-1	Holder-A, ferrite bar antenna -----	
992-611-42-2	Holder-B, ferrite bar antenna -----	
992-611-71-2	Cushion, tuning capacitor -----	
992-611-43	Bracket, tone switch -----	
992-622-44	Contact Plate, battery positive -----	
992-622-45	Contact Spring, battery negative -----	
992-611-41	Metal, speaker retaining -----	
992-633-50	Boss -----	
3-998-002-03	Holder, battery -----	
992-611-76	Ribbon, battery -----	
<u>C. Electrical Parts</u>		
992-502-03	Speaker -----	

<u>Part No.</u>	<u>Description</u>	<u>Unit Price</u>
992-538-19	Printed Circuit Board -----	
1-507-011-11	Jack, earphone -----	
1-507-127-12	Jack, ext. power supply -----	
992-513-01	Switch, tone control -----	
<u>Potentiometer</u>		
992-221-03	Volume Control -----	
<u>Variable Capacitor</u>		
992-151-03	Capacitor, tuning -----	
<u>Coil and Transformer</u>		
992-401-21	Antenna Coil, ferrite bar -----	
992-405-04	Coil, oscillator -----	
992-425-01	Coil, R.F. -----	
1-403-163	Filter, I.F. -----	
1-403-128	Transformer, I.F. -----	
992-423-03	Transformer, driver -----	
992-427-03	Transformer, output -----	
<u>Semiconductor</u>		
	Transistor 2SC537E (2SC403A-5) Q1 -----	
	2SC537E (2SC403A4 or 5) Q2 -----	
	2SC537F (2SC403A5) Q3 -----	
	2SC537F (2SC403A5) Q4 -----	
	2SC537G (2SC403A2) Q5 -----	
	2SB186A 06 -----	
	2SB186A 07 -----	
	2SB187C 08 -----	
	2SB187C 09 -----	
	Diode 1S188AM D -----	
8-691-001-11	Thermistor CS120 Th -----	
<u>Composition Resistor</u>		
1-244-602	R25 1.1 $\Omega$ -----	
1-201-409	R23 4.7 $\Omega$ -----	
1-201-100	R7,16,18 100 $\Omega$ -----	
1-201-081	R26 220 $\Omega$ -----	
1-201-096	R1 470 $\Omega$ -----	
1-201-021	R2,5,6,11,13,14,17, 19,22 1k $\Omega$ -----	

2/4 (6R-33)

( R6-27 )

<u>Part No.</u>	<u>Description</u>	<u>Unit Price</u>
1-201-084	R24	3.3k $\Omega$ -----
1-201-086	R21	5.6k $\Omega$ -----
1-201-041	R3,9,12	10k $\Omega$ -----
1-201-087	R20	22k $\Omega$ -----
1-201-687	R4	27k $\Omega$ -----
1-201-052	R8,10	47k $\Omega$ -----
1-202-802	R15	150k $\Omega$ -----

Electrical Capacitor

1-121-359	C17,24	470 $\mu$ F - 6.3V -----
1-121-295	C12	220 $\mu$ F - 6.3V -----
1-121-284	C3,22	233 $\mu$ F - 6.3V -----
1-121-463	C9,19,18	4.7 $\mu$ F - 16V -----

Mylar Capacitor

1-105-148-12	C23	0.1 $\mu$ F +20% -----
1-105-841	C21	0.047 $\mu$ F +20% -----
1-105-837	C13,15	0.022 $\mu$ F +20% -----
1-105-833	C10,14,16	0.01 $\mu$ F +20% -----
1-105-829	C7,8,11	0.005 $\mu$ F +20% -----
1-105-821	C20	0.001 $\mu$ F +20% -----

Ceramic Capacitor

1-101-141	C1,2,4,5,6	0.01 $\mu$ F +80 -20% -----
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D. Screw and Washer

Screw

7-621-261-32	(+) P 3 $\phi$ x 5	(for Tuning Capacitor) -----
7-621-261-43	(+) P 3 $\phi$ x 6	(for Fixing Metal) -----
7-621-261-72	(+) P 3 $\phi$ x 12	(for Dial Drum) -----
7-621-461-52	(+) T 3 $\phi$ x 8	(for Rear Cabinet) -----
7-621-559-52	(+) K 2.6 $\phi$ x 8	(for Volume Control Knob, Tuning Knob) -----
7-621-722-68	Tapping (+) P 3 $\phi$ x 10	(for PC Board, Dial Drum Fixing Metal) -----
7-621-722-45	Tapping (+) P 3 $\phi$ x 6	(for Tone Switch Bracket) ---
7-621-720-36	Tapping (+) P 2 $\phi$ x 6	(for Jack Escutcheon) -----

Nut

7-622-108-09	3 $\phi$	(for Carrying Handle Holder) ----
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3/4 (6R-33)

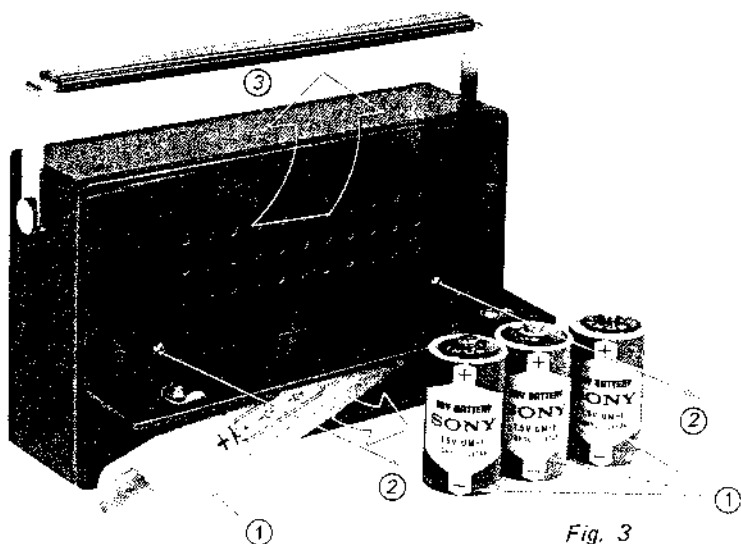
( R6-27 )

<u>Part No.</u>	<u>Description</u>	<u>Unit Price</u>
	<u>Washer</u>	
7-623-208-21	Spring 3ϕ (for Fixing Metal) -----	
-411-07	Ext. Tooth 4.5ϕ (for Carrying Handle Holder) -----	

E. Attached Items

992-633-87	Styrol Foam Cushion -----	
992-633-89	Individual Carton Box -----	
0-029-425-00	Bag, polyethylene -----	
992-633-84	Instruction Manual -----	
1-528-001	Battery -----	
992-504-01	Earphone -----	

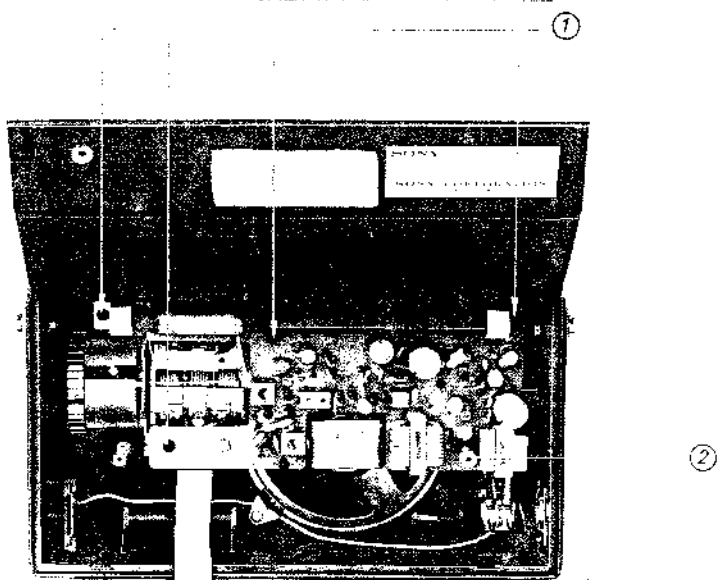
BACK COVER OPENING



- ① Take out three batteries and a battery holder.
- ② Remove two screws.
- ③ Open back cover.

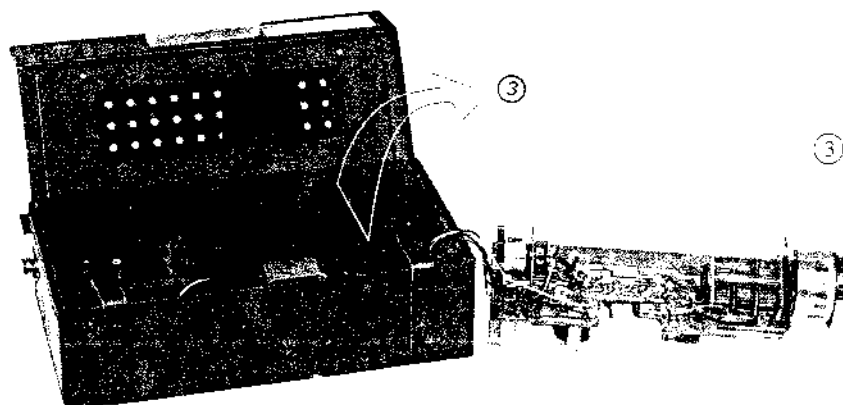
Fig. 3

CHASSIS REMOVAL



- ① Remove four screws (black).
- ② Remove a boss.

Fig. 4-1



- ③ Take out chassis as shown by the arrow.

Fig. 4-2

RF SIGNAL GENERATOR AND LOOP ANTENNA

Adj. Item	RF Signal Generator Coupling	RF Signal Generator Frequency	TUNING Knob Setting	VTVM Connection	Adjust (see Fig. 5-2)	Remarks
Frequency coverage	Loop antenna	520 kHz (1,000 Hz 30% a-m)	Fully downward	To EARPHONE jack with 8 Ω resistor in parallel	Osc coil (L3)	VOLUME : MAX Tone switch: H Power requirement: dc 4.5V  Adjust for maximum meter reading.
		1,680 kHz ( " )	Fully upward		Osc trimmer (CT-3)	
Tracking	--ditto--	620 kHz ( " )	Tune to 620 kHz signal	-- ditto --	Rf coil (L2) Antenna coil (L1)	
		1,400 kHz ( " )	Tune to 1,400 kHz signal		Antenna trimmer (CT-1) Rf trimmer (CT-2)	

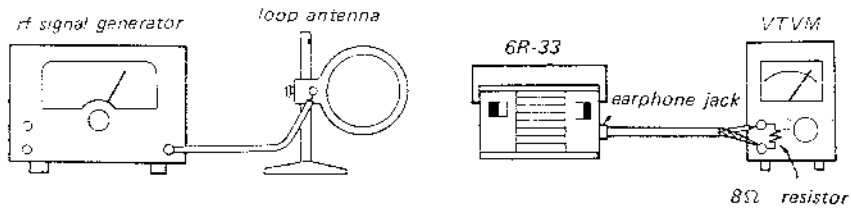


Fig. 5-1 Frequency coverage and tracking adjustment set-up

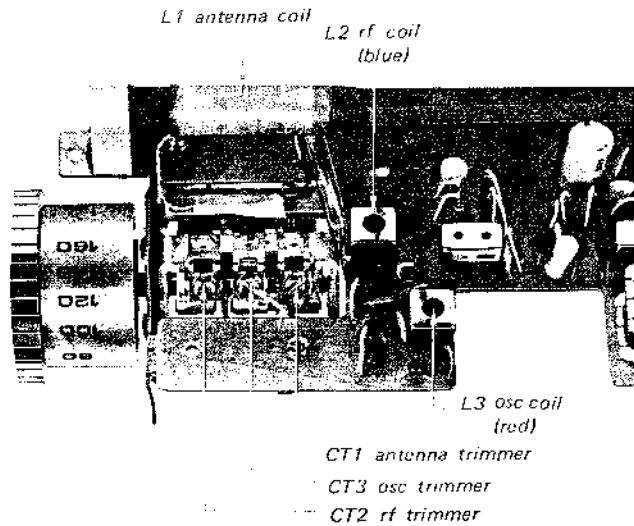
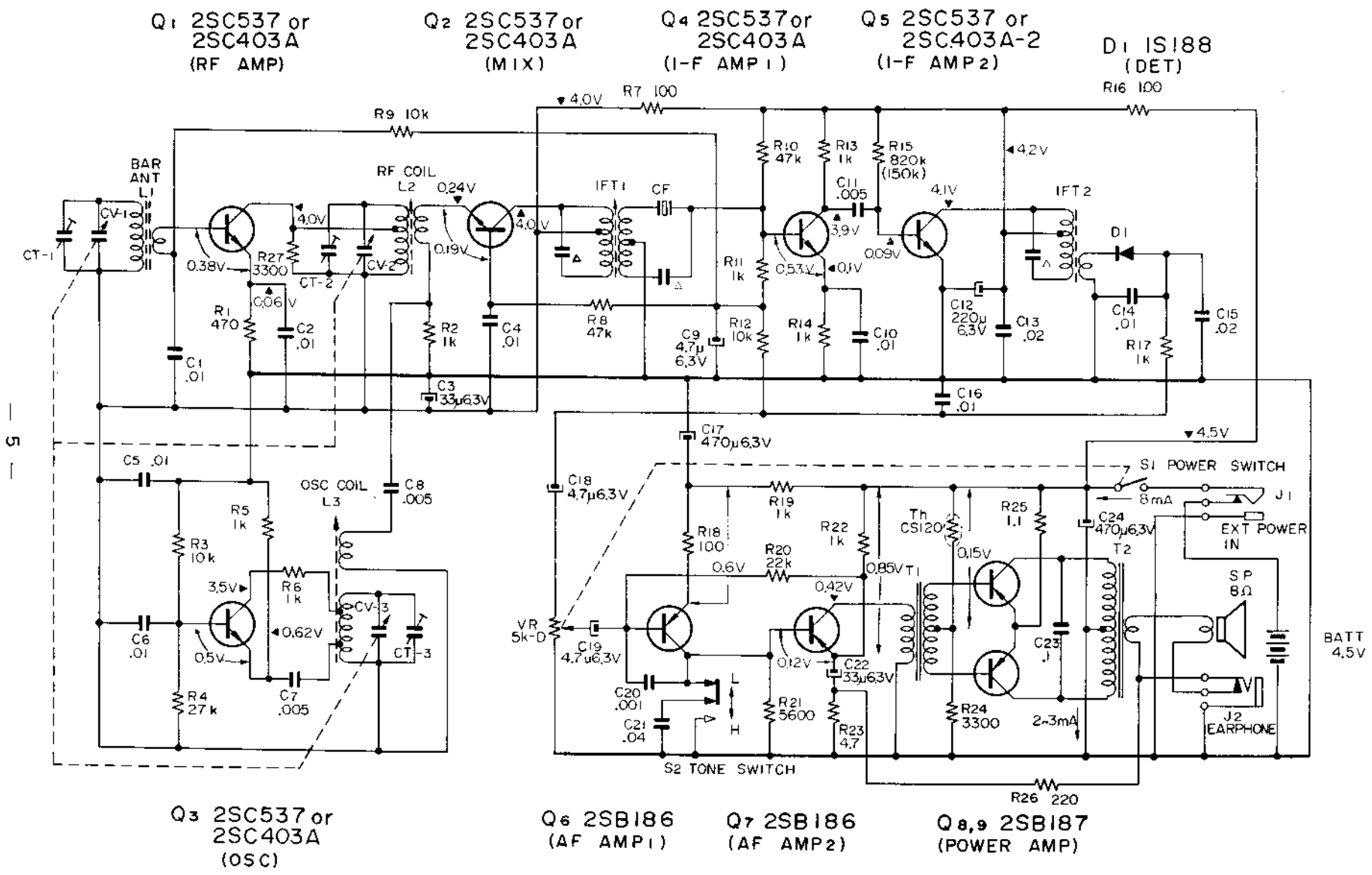


Fig. 5-2 Adjusting parts location



### SCHEMATIC DIAGRAM



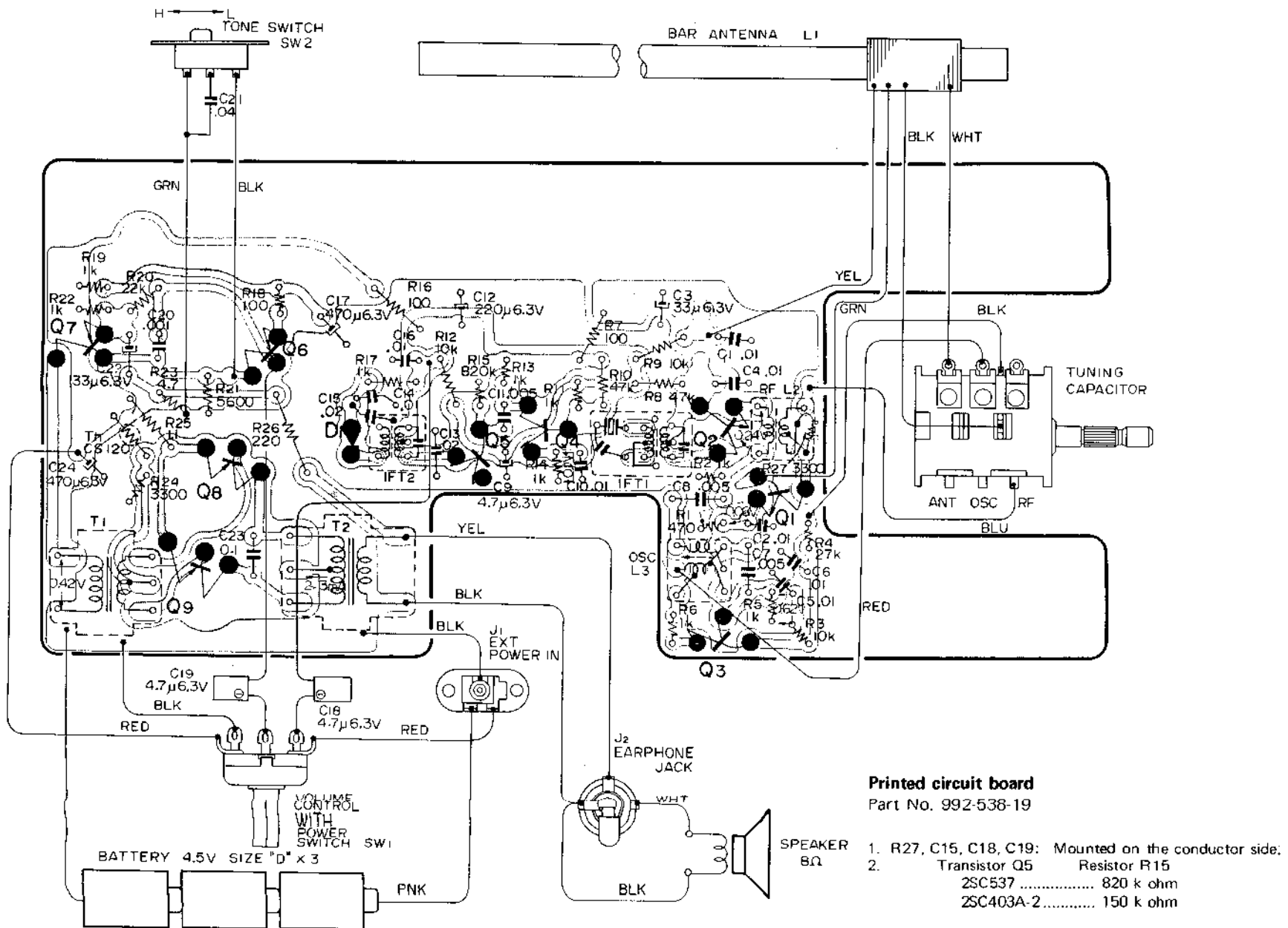
**NOTE:**

1. All resistors and capacitors are in  $\Omega$  and  $\mu\text{F}$ , unless otherwise indicated.
2. Capacitors marked with  $\Delta$  are built in i-f transformers.
3. Voltage values shown are measured with a dc voltmeter (20 k $\Omega$ /volt) with no radio signal received. Variations may be noted due to normal production tolerances.
4. Current values shown are measured with a dc ammeter with no radio signal received.
5.
 

Transistor Q5	Resistor R15
2SC537	820 k ohm
2SC403A-2	150 k ohm

### MOUNTING DIAGRAM

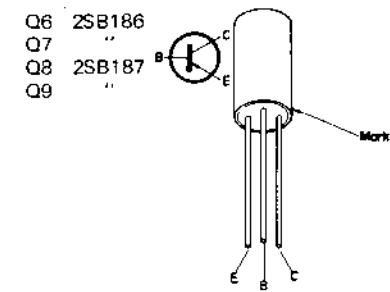
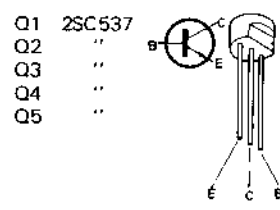
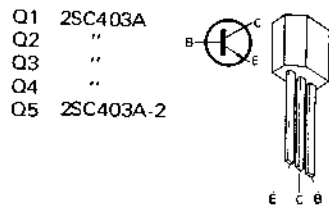
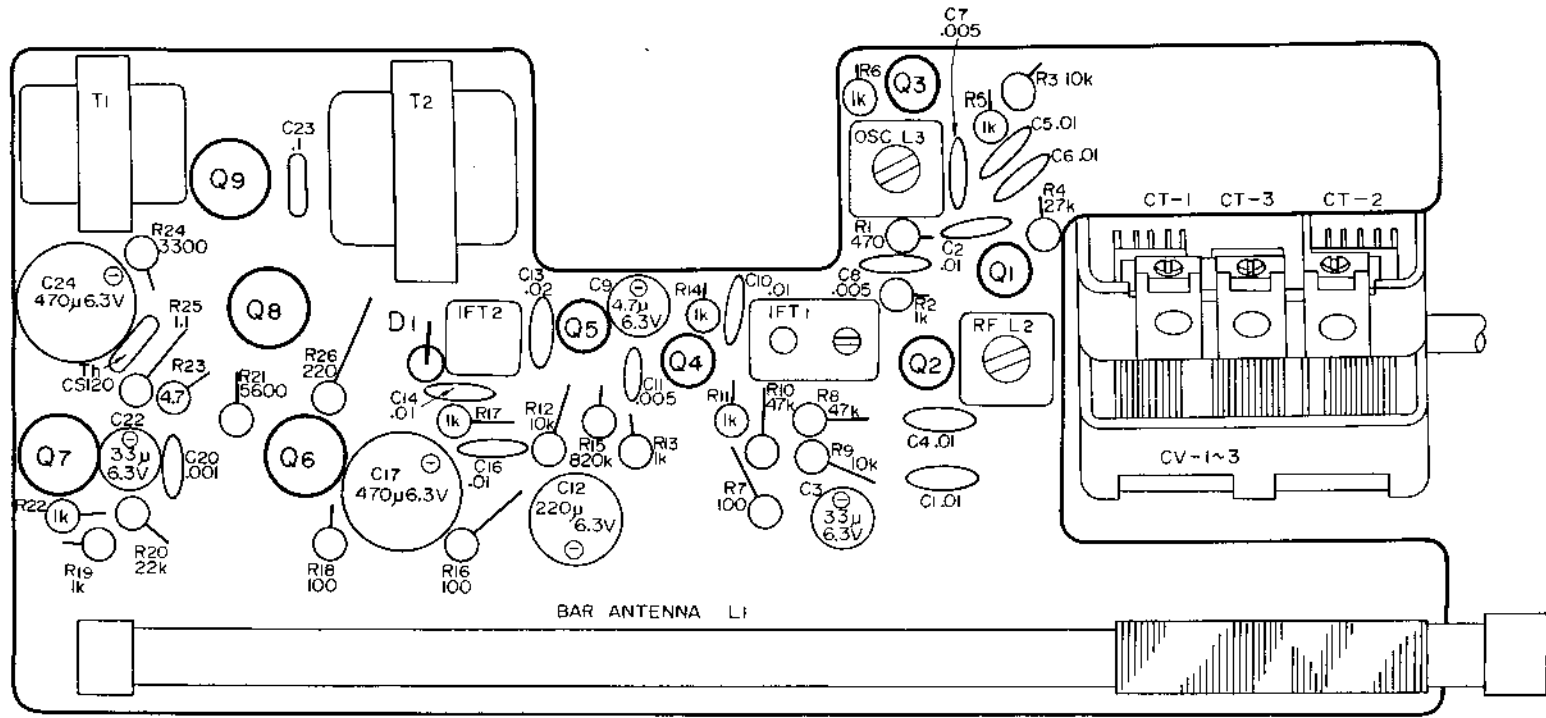
Conductor Side



**6R-33 6R-33**

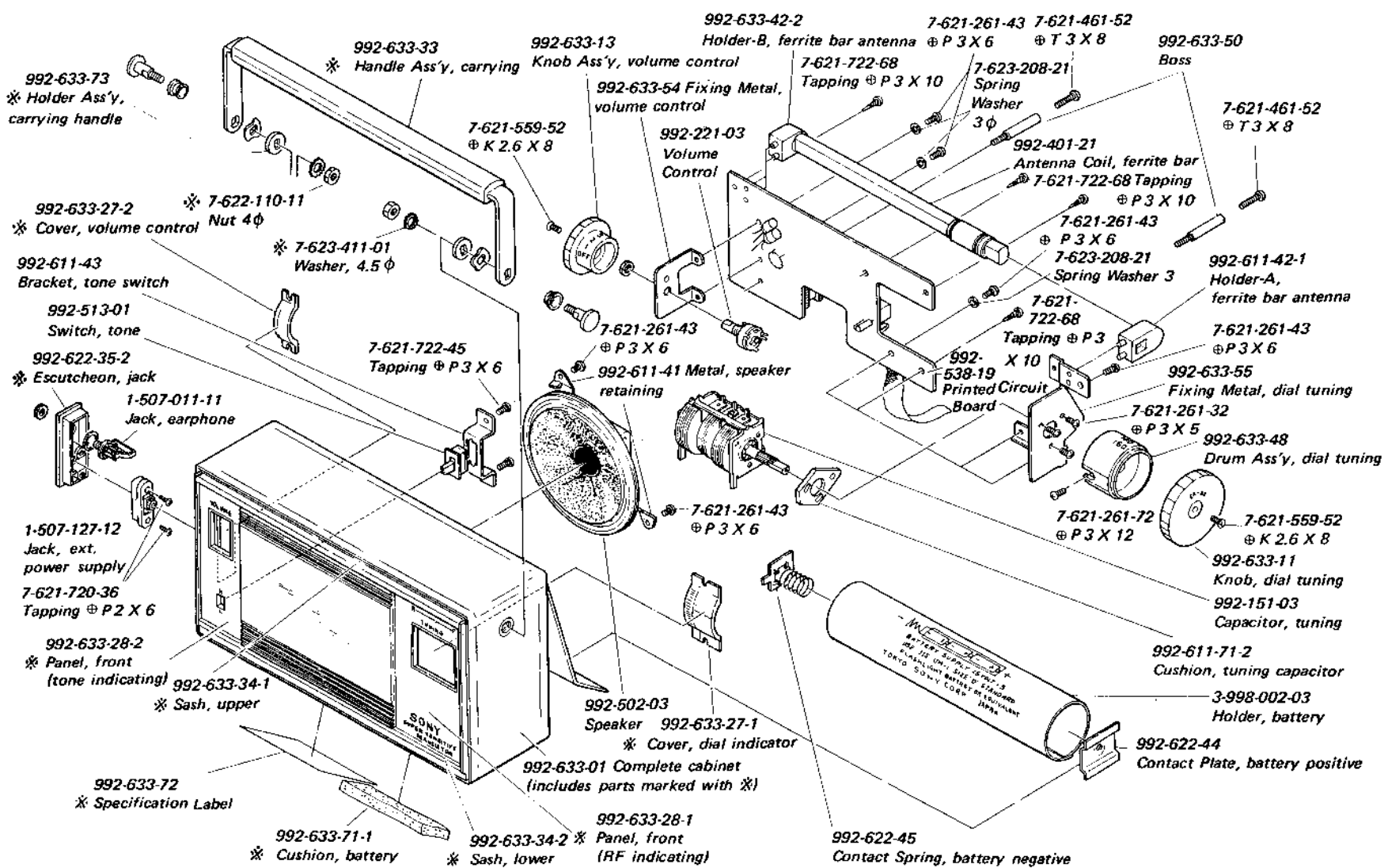
# MOUNTING DIAGRAM

Component Side



Printed circuit board  
Part No. 992-538-19

# EXPLODED VIEW

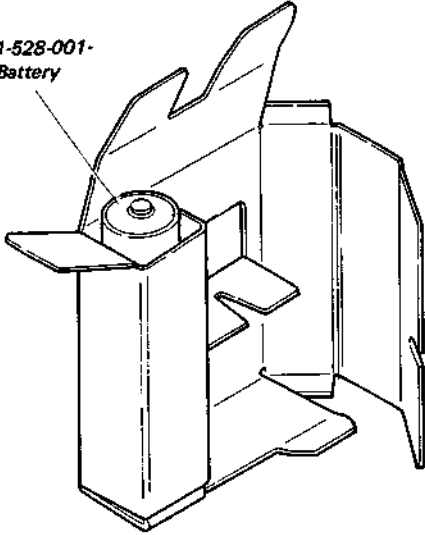


Parts marked with \* are included in complete cabinet.

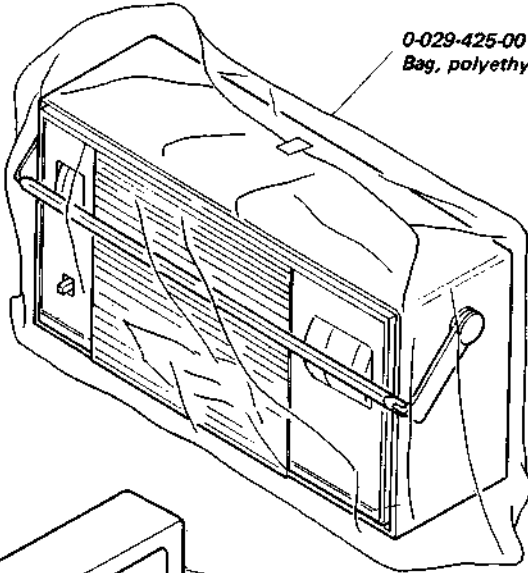
6R-33  
6R-33

**PACKING**

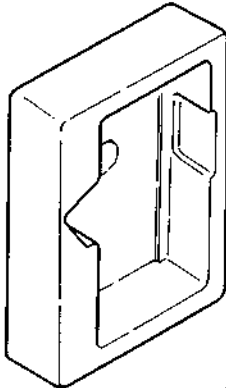
1-528-001-  
Battery



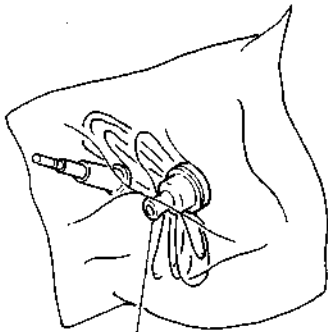
0-029-425-00  
Bag, polyethylene



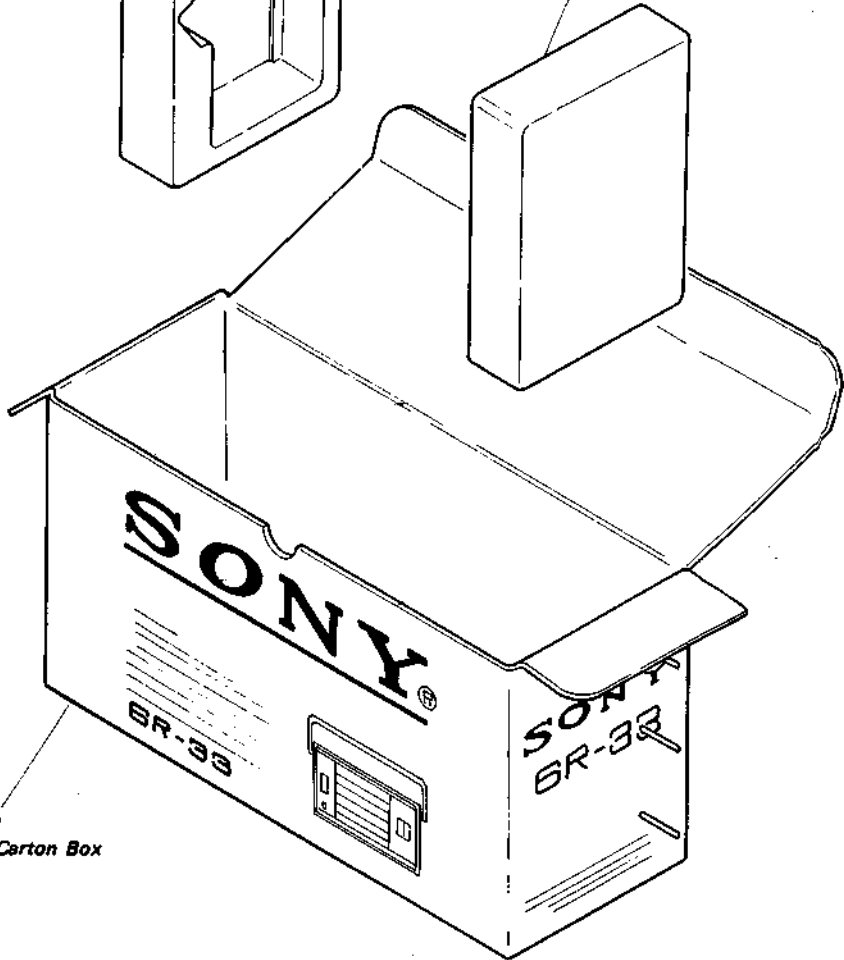
992-633-87  
Styro-Foam Cushion



992-504-01  
Earphone



992-633-89  
Individual Carton Box



Hardware Nomenclature

P	- Pan Head Screw			E	- Retaining Ring (E Washer)	
K	- Flat Countersunk Head Screw			W	- Washer	
B	- Binding Head Screw			SW	- Spring Washer	
RK	- Oval Countersunk Head Screw			LW	- Lock Washer	
T	- Truss Head Screw			N	- Nut	
R	- Round Head Screw			<p>— Example —</p> <p>Type of Slit</p> <p>⊕ P 3 x 10</p> <p>Length in mm (L)</p> <p>Diameter in mm (D)</p> <p>Type of Head</p>		
F	- Flat Fillister Head Screw					
SC	- Set Screw					

*When ordering replacement parts, you should use PART NUMBER listed on the Complete Spare Parts List attached herewith or shown in the EXPLODED VIEW. The symbol number should not be used for ordering purposes.*

SONY CORPORATION