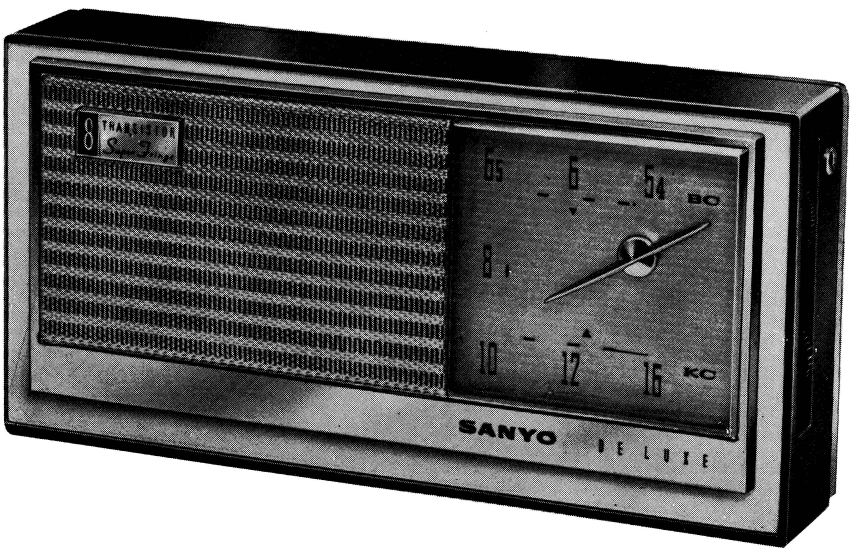
SANYO

MODEL
8C-028

All-transistor Radio
Service Manual



SPECIFICATIONS

TUNING RANGE
Standard Broadcast 535 - 1,605 kc

INTERMEDIATE FREQUENCY
455 kc

OUTPUT POWER
Undistorted 150 mW
Maximum 250 mW

RADIATION SENSITIVITY
50 μV/m for 10 mV output

SIGNAL TO NOISE RATIO
40 db at 2 mV/m signal input

POWER SOURCE
6 volts (four $1\frac{1}{2}$ V size "C" flashlight batteries)

CURRENT DRAIN
No Signal 10 mA
Maximum 70 mA

LOUDSPEAKER
$3\frac{1}{2}''$ Permanent Dynamic Speaker
Voice Coil Impedance 7 ohms

TRANSISTOR COMPLEMENT

2SA220	RF Amplifier
2SA201	Frequency Converter
2SA202	1st IF Amplifier
2SA203	2nd IF Amplifier
2SB185	1st AF Amplifier
2SB186	2nd AF Amplifier
2SB187 × 2	Power Amplifier

GERMANIUM DIODE & THERMISTOR

1N60	Detector & AGC
SDT-20	Temperature Compensator

CABINET DIMENSIONS
$8\frac{1}{2}''$ wide × $4\frac{1}{8}''$ high × $1\frac{3}{4}''$ thick

NET WEIGHT
$1\frac{1}{2}$ lbs approx. (excl. batteries)
$1\frac{7}{8}$ lbs approx. (incl. batteries)

SANYO ELECTRIC CO., LTD.

PART NO.	STOCK NO.	DESCRIPTION			

ELECTROLYTIC CAPACITORS

C 6	R-C9078	5μF	+150–10%	6V	Vertical
C 7	R-C9080	30μF	〃	3V	〃
C 9	R-C9080	30μF	〃	〃	〃
C 14	R-C9079	10μF	〃	〃	〃
C 15	R-C9079	10μF	〃	〃	〃
C 16	R-C9080	30μF	〃	3V	〃
C 17	R-C9078	5μF	〃	6V	〃
C 18	R-C9080	30μF	〃	3V	〃
C 20	R-C9081	50μF	〃	9V	〃
C 22	R-C9081	50μF	〃	〃	〃

CABINET

	R-31330	Cabinet
	R-41133	Speaker grill net
	R-421022	Spacer -black paper
	R-26201	Metal panel -perforated
	R-26593	Badge
	R-32115	Dial panel
	R-26658	Metal frame "SANYO DELUXE"
	R-S2025b	Antenna jack
	R-23204L	Soldering lug terminal
	R-31494	Back cover
	R-47448	Specification sheet
	R-41137a	Battery cushion attached to back cover
	R-47106	Battery instruction sheet

PART NO.	STOCK NO.	DESCRIPTION

MISCELLANEOUS

	R-33193	Volume control knob
	R-33176	Tuning control knob
	R-24225d	Tuning control shaft
	R-13027La	C washer
	R-23367	Battery terminal -positive
	R-25098	Spring terminal -negative
	R-11825b	Chassis
	R-41117	Printed wiring board
	R-44089	Rubber grommet 6φ for P.W. board mtg.
	R-11826a	P.W. board reinforcer against warp
	R-26203a	Back screen behind dial
	R-24096	Pointer shaft
	R-26204	Pointer
	R-32091a	Drum
	R-15111	Tension spring
	R-44046	Cushion seat for tuning gang
	R-44045	Rubber grommet 9.5φ for back screen mtg.
	R-11827	Coil mtg. angle A
	R-11828	Coil mtg. angle B
	R-35077b	Ferrite core holder
	R-25145	Speaker mtg. metal
	R-12088	Speaker mtg. metal two tips used as one metal
	R-24233	Stud nut speaker mtg.
	R-24099	Stud nut P.W. board mtg.
	R-24031b	Screw -mates with nut above
	R-13004L	Lock washer for screw above
	R-31175a	Earphone jack mtg. base
	R-S2040	Earphone jack
	R-12011	Lead clamp for OPT lead
	R-S6210	Earphone
	R-S8625	Antenna lead with cup & plug
	R-35173	Battery holder
	R-48112	Carrying leather case
	R-48083	Leather case for accessary
	R-47447	Instruction sheet

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

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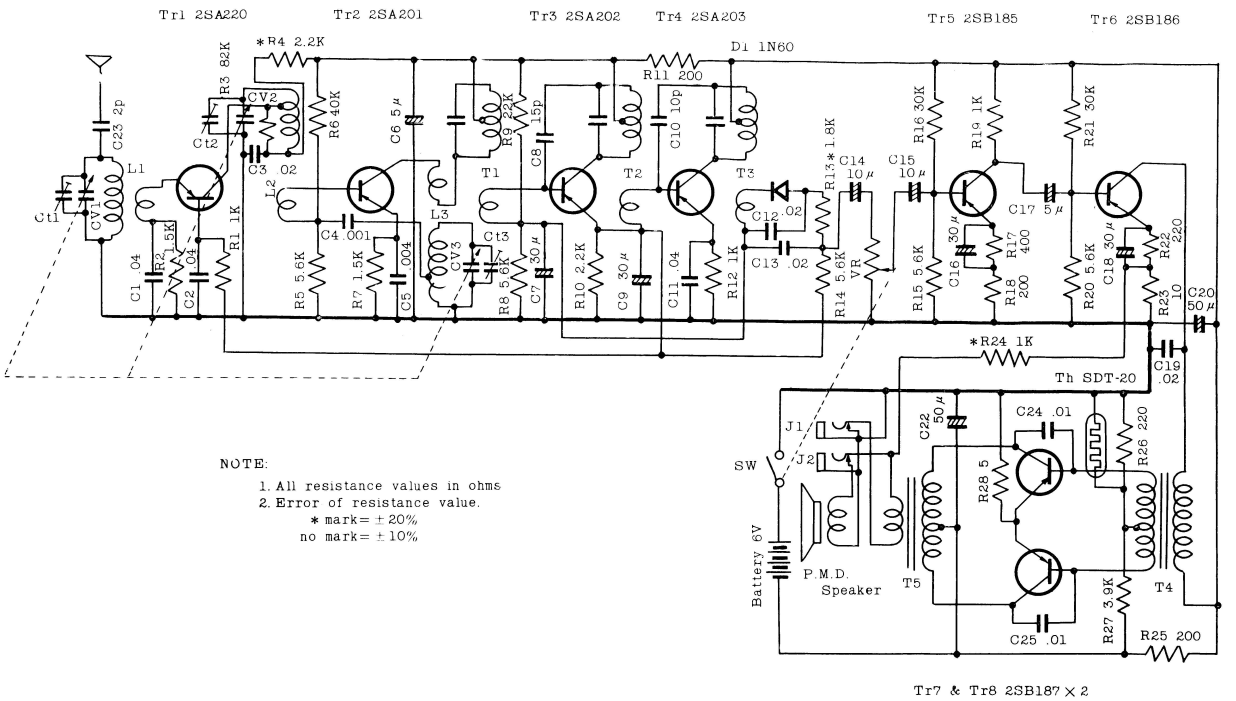
CIRCUIT DIAGRAM



ALIGNMENT PROCEDURES

Apply volt-meter across the voice coil. Volume control should be up to maximum position. Output of signal generator should be not higher than necessary to obtain output reading so as to avoid AGC function.

STEP	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	ADJUST FOR MAXIMUM OUTPUT
IF ALIGNMENT				
1	Positive side through 0.1 μF capacitor to antenna stator lug on tuning gang. Negative side to ground.	455 kc	lower end	IF transformer T 3 T 2 T 1
RF ALIGNMENT				
2	Make loop of several turns of wire and feed signal into it.	530 kc	lower end	Osc. coil L3
3		1650 kc	upper end	Osc. trimmer Ct3
4		Repeat steps 2 and 3.		
5		600 kc	600 kc	Inter-stage coil L2
6		1400 kc	1400 kc	Inter-stage trim Ct2
7		Repeat steps 5 and 6.		
*8	Make radio tune in 600 kc signal (signal level 4 mV/m) and adjust volume control as to have 10 mW output across voice coil. And then, stop modulating the signal and access tuning wand to antenna coil (L1). Adjust location of coil winding so as to have noise increase at both access of ferrite core end or brass end.			
*9	Make radio tune in 1400 kc signal (signal level 2 mV/m) and adjust volume control as to have 10 mW output across voice coil. After stopping modulating the signal, adjust antenna trimmer (Ct1) so as to get noise increase at both access of ferrite core end or brass end of tuning wand.			
*10	Repeat steps 8 and 9.			

* Note: In order to obtain high S/N ratio, alignment method different from usual one is taken.

PART NO.	STOCK NO.	DESCRIPTION

TRANSISTORS

Tr	1	2SA220	RF amplifier
Tr	2	2SA201	Frequency converter
Tr	3	2SA202	1st IF amplifier (green)
Tr	4	2SA203	2nd IF amplifier (green)
Tr	5	2SB185	1st AF amplifier
Tr	6	2SB186	2nd AF amplifier
Tr	7	2SB187	Power amplifier (red or yellow)
Tr	8	2SB187	Power amplifier (red or yellow)

DIODE AND THERMISTOR

D	1	1N60	Diode : Detector & AGC
T	h	SDT-20	Thermistor : Temperature compensator

TRANSFORMERS

T	1	R-W5T052	1st IF transformer FMC-6038R 50K : 400 yellow
T	2	R-W5T009	2nd IF transformer FMC-6029A 50K : 300 white
T	3	R-W5T023	3rd IF transformer FMC-6022A 30K : 5K black
T	4	R-W6083	Input transformer 3K : 3K IT-26GA
T	5	R-W6084	Output transformer 250 : 7 OT-26GA

COILS

L	1	R-W2066d	Antenna coil 430μH
L	2	R-W4009	Inter-stage coil 430μH FLN-5645AC
L	3	R-W8013	Oscillator coil #847

CONTROLS

	R-C1044	Tuning capacitor PVC-3M	Either of two used
	R-C1052	Tuning capacitor 3P-24	
R	15	R-R11606b	Volume control with switch 5K T curve

SPEAKER

	R-S6102	3½″ permanent dynamic speaker 7 ohms 0.4W

PART NO.	STOCK NO.	DESCRIPTION

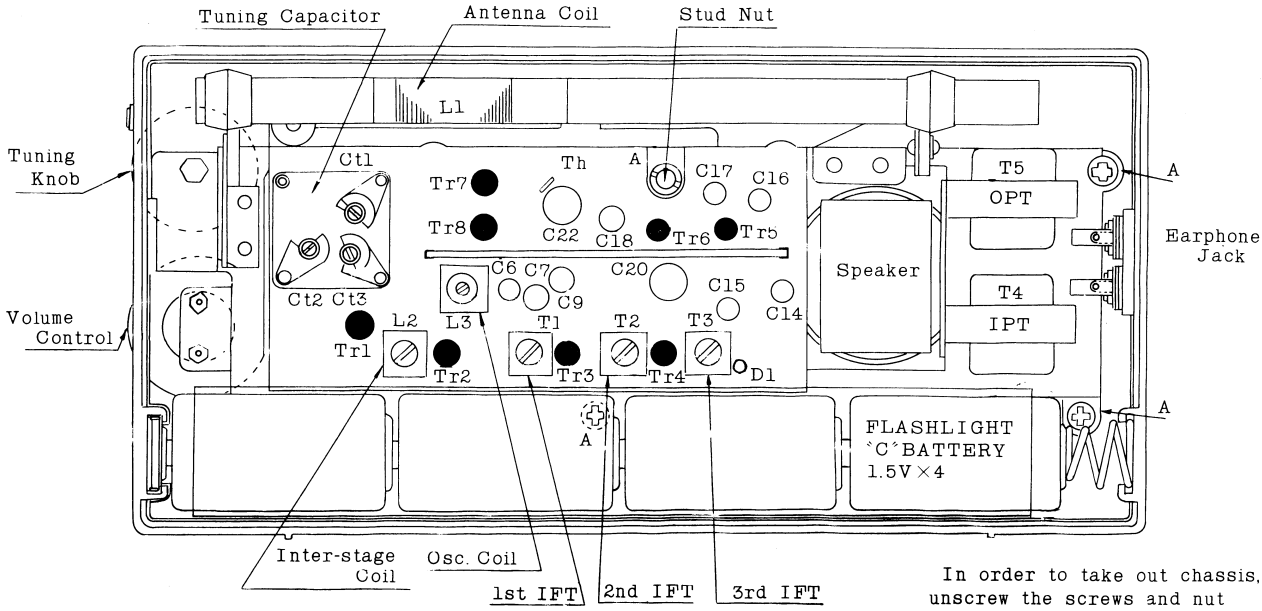
FIXED RESISTORS

R	1		Carbon film	1K	ohms ±10%	¼W
R	2		〃	1.5 K	〃 〃	〃
R	3		〃	82 K	〃 〃	〃
R	4		Solid	2.2 K	〃 ±20%	½W
R	5		Carbon film	5.6 K	〃 ±10%	¼W
R	6		〃	40 K	〃 〃	〃
R	7		〃	1.5 K	〃 〃	〃
R	8		〃	5.6 K	〃 〃	〃
R	9		〃	22 K	〃 〃	〃
R	10		〃	2.2 K	〃 〃	〃
R	11		〃	200	〃 〃	〃
R	12		〃	1 K	〃 〃	〃
R	13		Solid	1 K	〃 ±20%	½W
R	14		Carbon film	5.6 K	〃 ±10%	¼W
R	15		〃	5.6 K	〃 〃	〃
R	16		〃	30 K	〃 〃	〃
R	17		〃	400	〃 〃	〃
R	18		〃	200	〃 〃	〃
R	19		〃	1 K	〃 〃	〃
R	20		〃	5.6 K	〃 〃	〃
R	21		〃	30 K	〃 〃	〃
R	22		〃	220	〃 〃	〃
R	23		〃	10	〃 〃	〃
R	24		Solid	1 K	〃 ±20%	½W
R	25		Carbon film	200	〃 ±10%	¼W
R	26		〃	220	〃 〃	〃
R	27		〃	3.9 K	〃 〃	〃
R	28		〃	5	〃 〃	〃

FIXED CAPACITORS

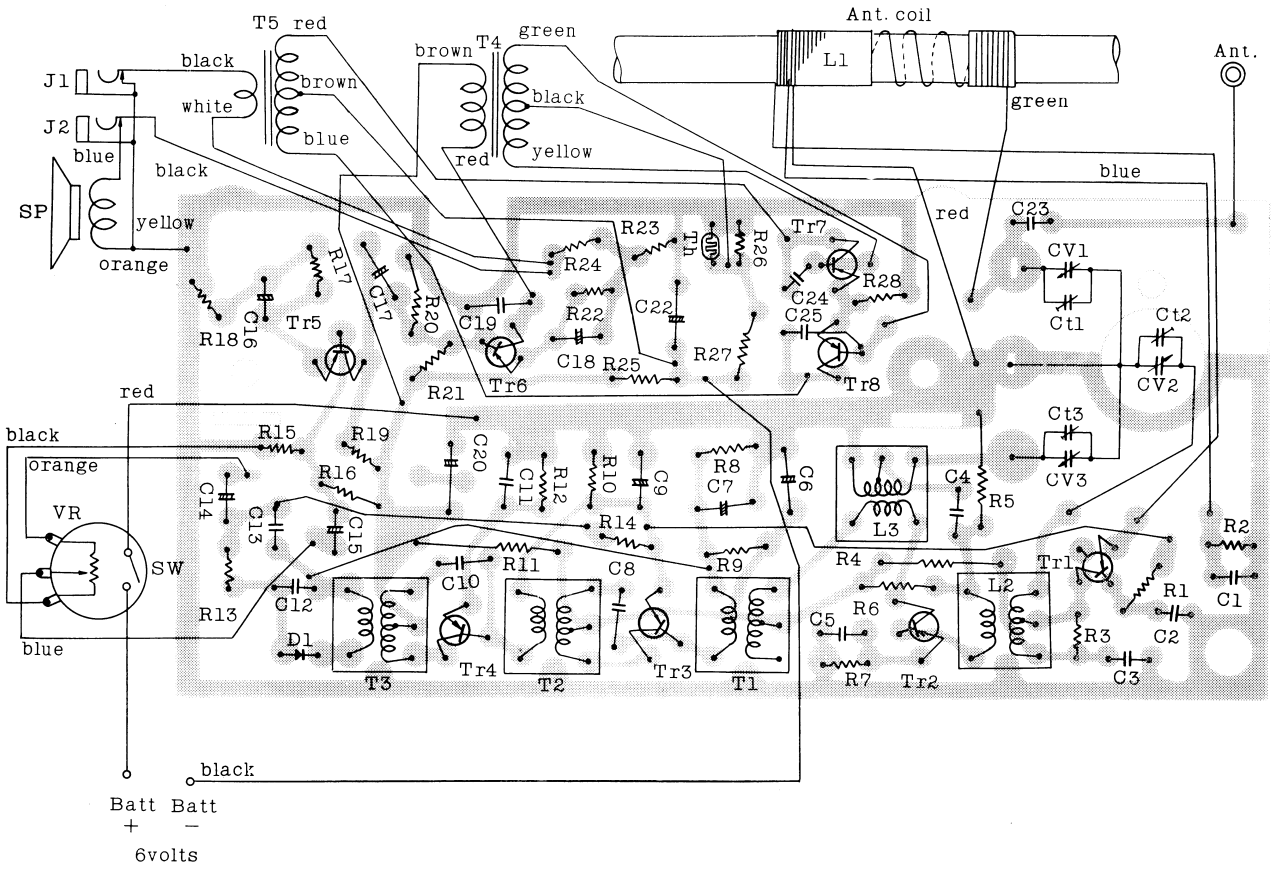
C	1		0.04μF	+30-20%	50V	Mylar Square
C	2		0.04μF	〃	〃	〃 〃
C	3		0.02μF	〃	〃	〃 〃
C	4		0.001μF	〃	〃	〃 〃
C	5		0.004μF	〃	〃	〃 〃
C	8		13pF	±10%	〃	Ceramic
C	10		5pF	±0.5pF	〃	〃
C	11		0.04μF	+30-20%	〃	Mylar Square
C	12		0.02μF	〃	〃	〃 〃
C	13		0.02μF	〃	〃	〃 〃
C	19		0.02μF	〃	〃	Mylar 〃
C	23		2pF	±0.5pF	〃	Ceramic
C	24		0.01μF	+30-20%	〃	Mylar Square
C	25		0.01μF	〃	〃	〃 〃

MAIN PARTS LAYOUT



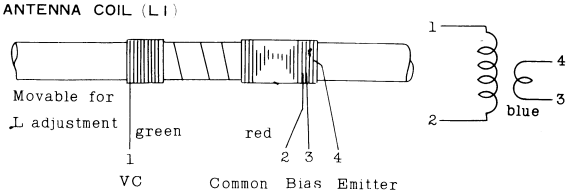
In order to take out chassis, unscrew the screws and nut marked with A.

INTER-PARTS WIRING ILLUSTRATION

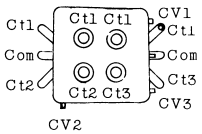


MAIN PARTS TERMINAL IDENTIFICATION

1. ANTENNA COIL (L1)

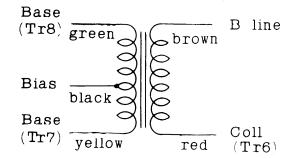


2. TUNING CAPACITOR

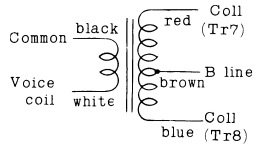


CV1 (ANT) 7 196pF
CV2 (INT) 8 87pF
CV3 (OSC) 9 198pF

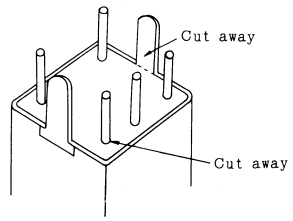
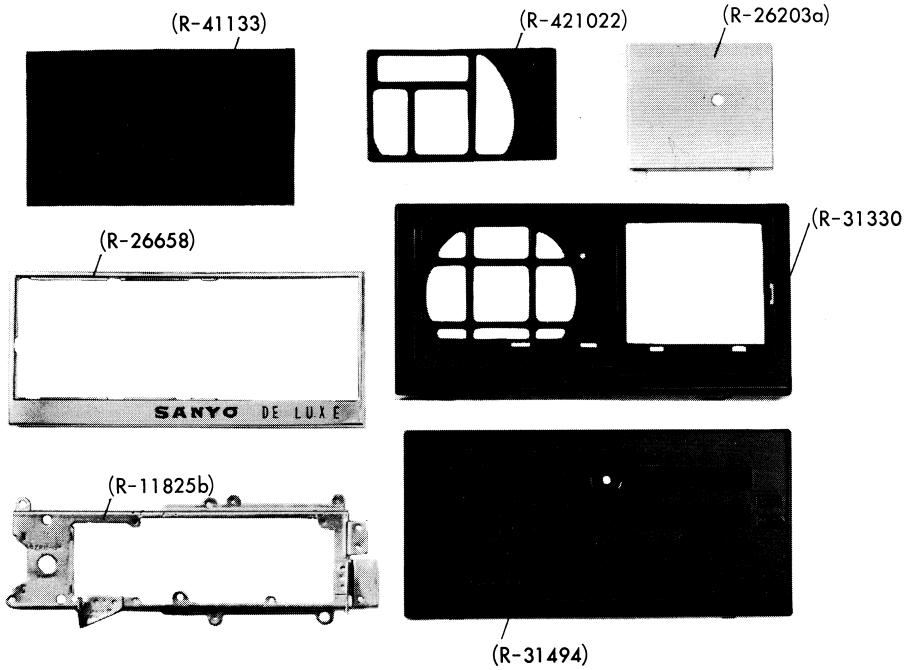
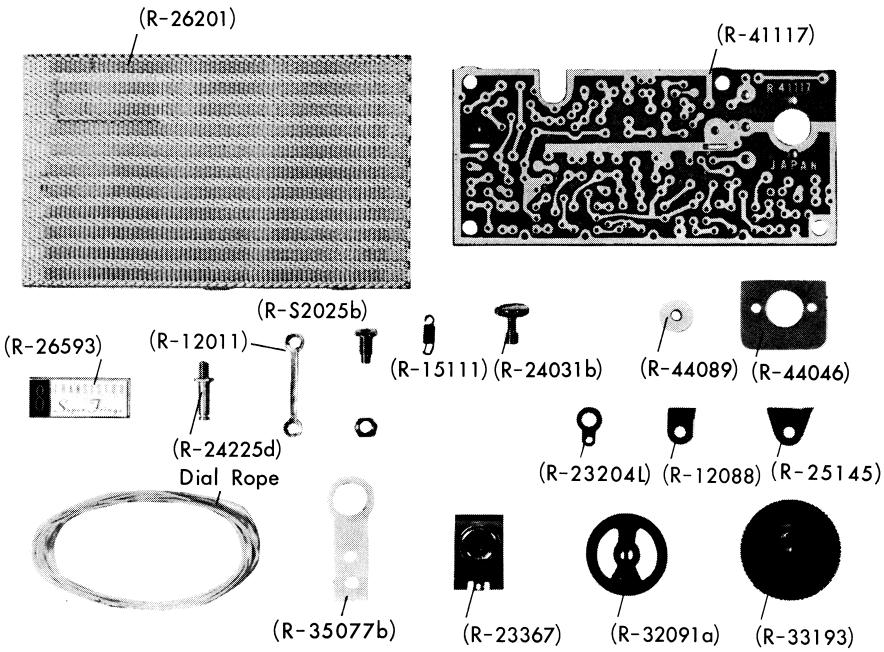
3. INPUT TRANSFORMER (T4)



4. OUTPUT TRANSFORMER (T5)



5. IF TRANSFORMER (T1)



*Cut the mounting foot and the connecting foot of 1st IFT (FMC-6038R)