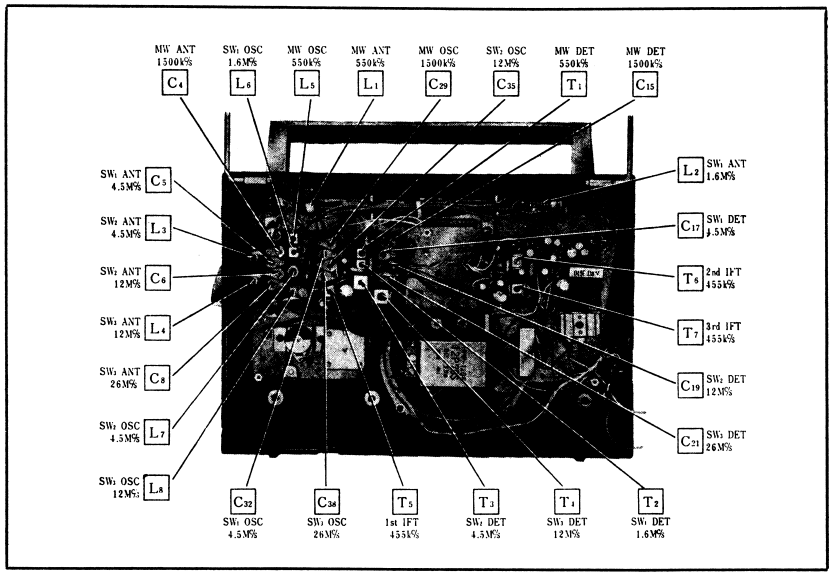

Fig. 5 Top View - Alignment Points

ALIGNMENT INSTRUCTIONS

TUNING INDICATOR ADJUSTMENT

1. Radio Receiver Setting.
   - Set band selector switch to MW.
   - Set tuning gang to non-interference point (on/about 550kc/s).
   - Set power source voltage to 6 volts DC.
2. Adjusting Method.
   Adjust 5KΩ potentiometer (R_{16}) so that the pointer of the tuning indicator stays as shown in Fig. 6.

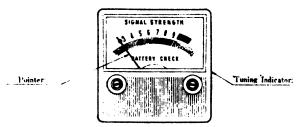

Fig. 6

FREQUENCY & DISTANCE ON DIAL SCALE

To accurately align the proper frequencies to the dial scale, refer to Table and mark the edge of the dial scale plate accordingly using the "Start point" mark on the dial scale as a reference point.

TABLE

Band	Frequency	Distance from "Start Point"	
MW	550 kc/s	11.6 mm	9/16"
	1500 kc/s	111.9 mm	4 13/16"
SW1	1.6 Mc/s	3.9 mm	1/8"
	4.5 Mc/s	119.6 mm	4 3/16"
SW2	4.5 Mc/s	3.9 mm	1/8"
	12.0 Mc/s	119.6 mm	4 3/16"
SW3	12.0 Mc/s	3.9 mm	1/8"
	26.0 Mc/s	119.6 mm	4 3/16"

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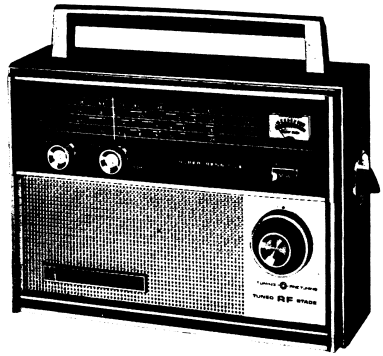
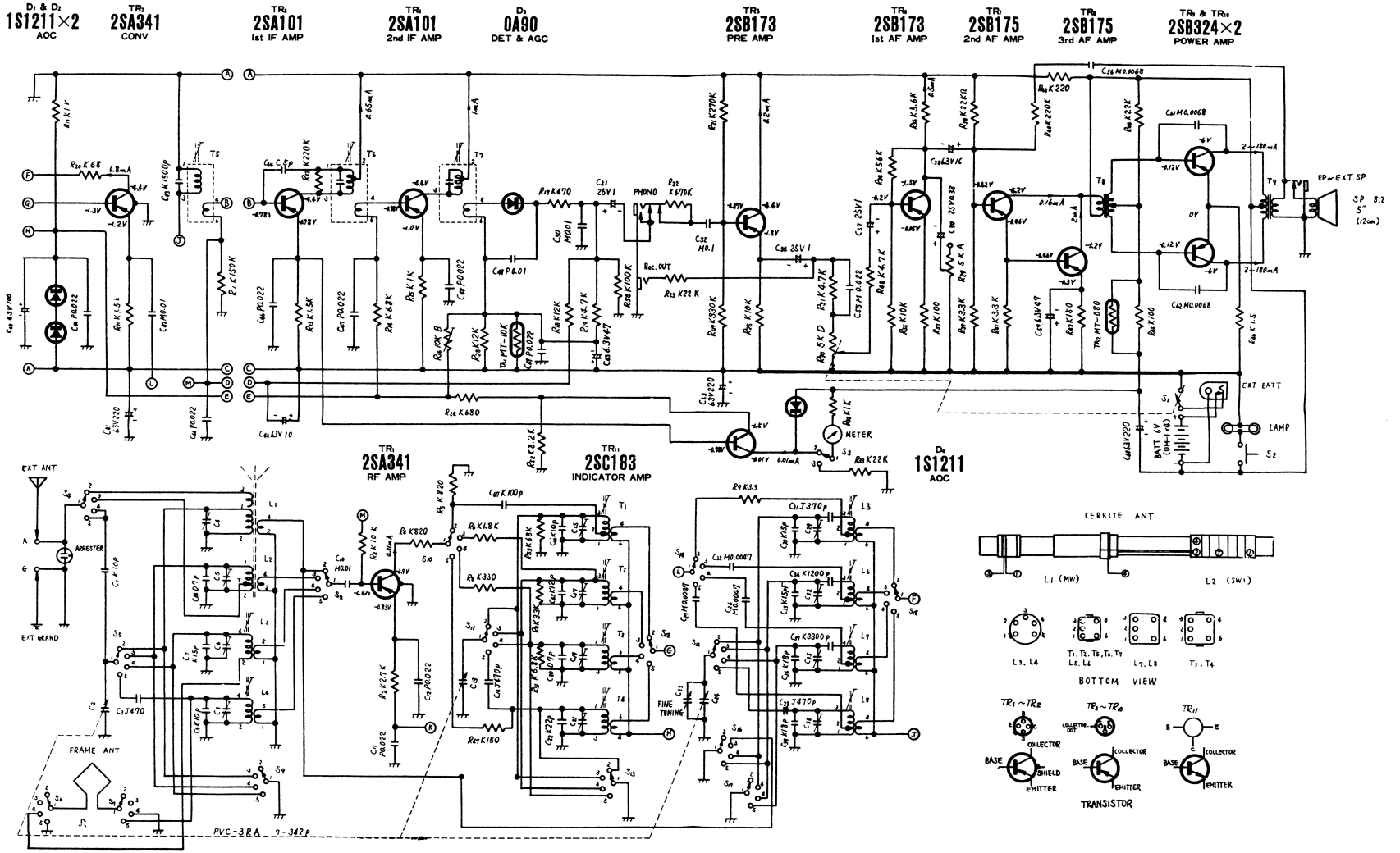


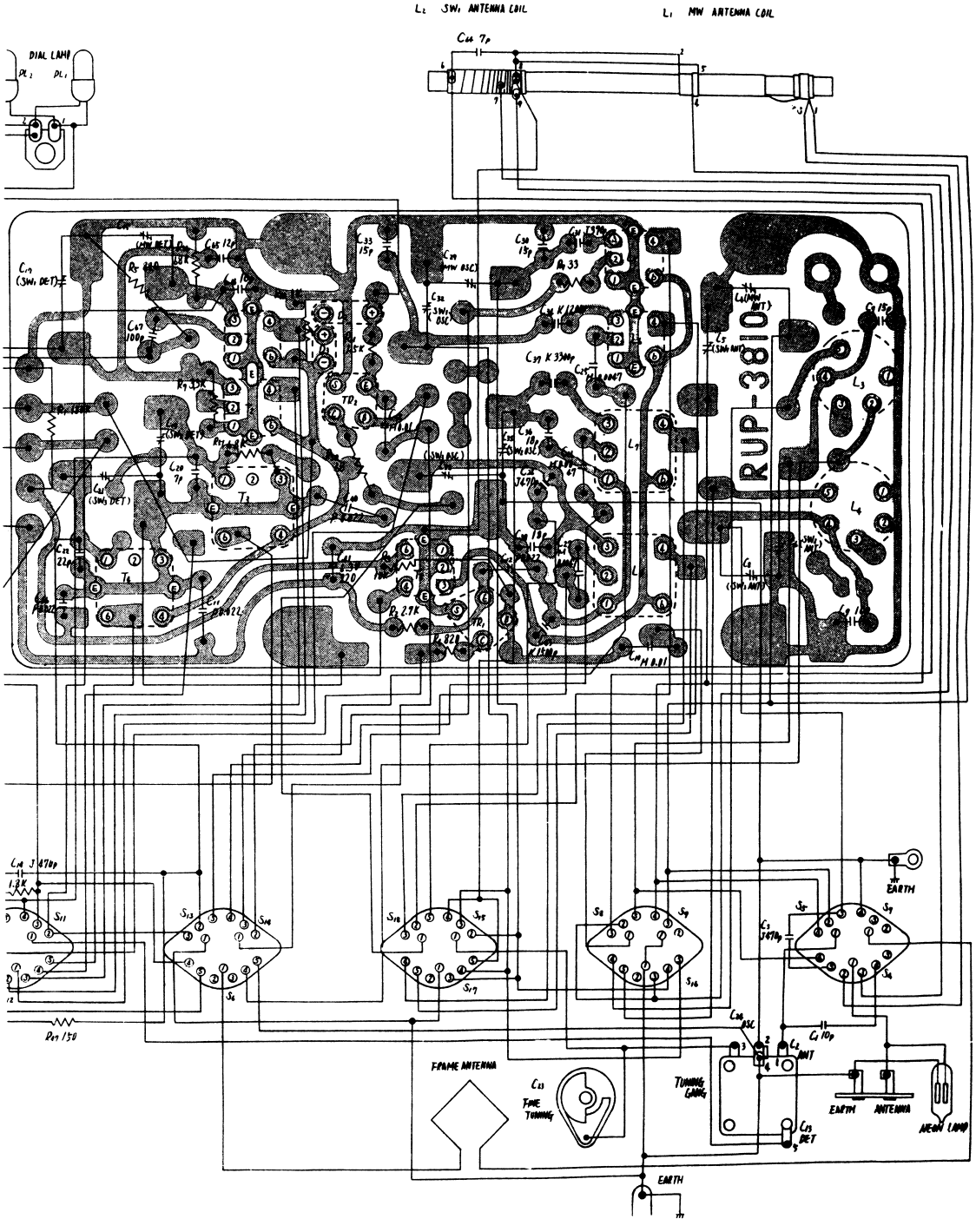
SPECIFICATIONS

Frequency Range:	MW 525~1605 kc/s (571~187 m) SW1 1.6~4.5 Mc/s (187~66.7 m) SW2 4.5~12 Mc/s (66.7~25 m) SW3 12~26.1 Mc/s (25~11.5 m)
Intermediate Frequency:	455 kc/s
Transistors:	2SA341 RF Amplifier 2SA341 Converter 2SA101 1st IF Amplifier 2SA101 2nd IF Amplifier 2SC183 Indicator Amplifier 2SB173 PRE-Amplifier 2SB173 1st AF Amplifier 2SB175 2nd AF Amplifier 2SB175 3rd AF Amplifier 2SB324 / 2SB324 Power Amplifier (push-pull)
Diodes:	OA90 Detector & AGC 1S1211 / 1S1211 Operation Compensator 1S1211 Operation Compensator
Sensitivity:	MW 30μV/m for 50mW Output SW1 20μV/m for 50mW Output SW2 10μV/m for 50mW Output SW3 10μV/m for 50mW Output
Power Output:	1W Undistorted 1.8 W Maximum
Batteries:	6 V (Four "D" size flashlight batteries) (NATIONAL UM-1 or equivalent)
Speaker:	12 cm (5") PM Dynamic Speaker
Cabinet Dimensions:	293(Wide)×207(High)×95(Deep) mm (11 15/16"×8 3/16"×3 3/4")
Weight:	2.7 kg (6 lb) with batteries



Notes:

1. S_1: Power source switch in "OFF" position.
2. S_2: Dial light switch in "OFF" position.
3. S_3: Tuning/Battery indicator switch in "Tuning" position.
4. S_4~S_{18}: Band selector switch in "MW" position.
5. DC voltage measurements are taken with circuit tester (10KΩ/V) from positive terminal of battery.
6. Capital letters (M, K, J, P, C, D) in the circuit diagram show allowable tolerances of resistors and capacitors as follows:
   M=±20% K=±10% J=±5% P=+100% − 0%
   C=±0.25PF D=±0.5PF
7. Battery current: No Signal..... 25mA
   Maximum Output.....370mA
8. PF=pico farad=mmf
   μF=micro farad=MF
9. All resistor values in ohms (K=1000Ω).
10. All capacitor values in micro farads (P=mmf).


L2 SW1 ANTENNA COIL
L1 MW ANTENNA COIL
DIAL LAMP
RUP-3810
EARTH
FRAME ANTENNA
FINE TUNING
TUNING GANG
EARTH
ANTENNA
NEON LAMP
EARTH

IF & RF ALIGNMENT

Output of signal generator should be no higher than necessary to obtain an output reading.
Set volume control to maximum. Set fine tuning control to center.
Set power source voltage to 6 volts DC.

	Band Switch Position	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUSTMENT	REMARKS
1	MW	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kc/s (400~ Mod.)	Point of non-interference (on/about 600 kc/s)	Output meter across voice coil.	T_5 (1st IFT) T_6 (2nd IFT) T_7 (3rd IFT)	Adjust for maximum output.
2	MW	〃	550kc/s (400~ Mod.)	550 kc/s	〃	L_5 (OSC Coil) L_1 (ANT Coil) T_1 (DET Coil)	Adjust for maximum output by sliding coil (L_1) along ferrite core.
3	MW	〃	1500 kc/s (400~ Mod.)	1500 kc/s	〃	C_{29} (OSC Trimmer) C_4 (ANT Trimmer) C_{15} (DET Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
4	SW_1	〃	1.6 Mc/s (400~ Mod.)	1.6 Mc/s	〃	L_6 (OSC Coil) L_2 (ANT Coil) T_2 (DET Coil)	Adjust for maximum output by sliding coil (L_2) along ferrite core.
5	SW_1	〃	4.5 Mc/s (400~ Mod.)	4.5 Mc/s	〃	C_{32} (OSC Trimmer) C_5 (ANT Trimmer) C_{17} (DET Trimmer)	Adjust for maximum output. Repeat steps (4) and (5).
6	SW_2	〃	4.5 Mc/s (400~ Mod.)	4.5 Mc/s	〃	L_7 (OSC Coil) L_3 (ANT Coil) T_3 (DET Coil)	Adjust for maximum output.
7	SW_2	〃	12.0 Mc/s (400~ Mod.)	12.0 Mc/s	〃	C_{35} (OSC Trimmer) C_6 (ANT Trimmer) C_{19} (DET Trimmer)	Adjust for maximum output. Repeat steps (6) and (7).
8	SW_3	〃	12.0 Mc/s (400~ Mod.)	12.0 Mc/s	〃	L_8 (OSC Coil) L_4 (ANT Coil) T_4 (DET Coil)	Adjust for maximum output.
9	SW_3	〃	26.0 Mc/s (400~ Mod.)	26.0 Mc/s	〃	C_{38} (OSC Trimmer) C_8 (ANT Trimmer) C_{21} (DET Trimmer)	Adjust for maximum output. Repeat steps (8) and (9).

Note: Cement antenna bobbin with wax after completing alignment.

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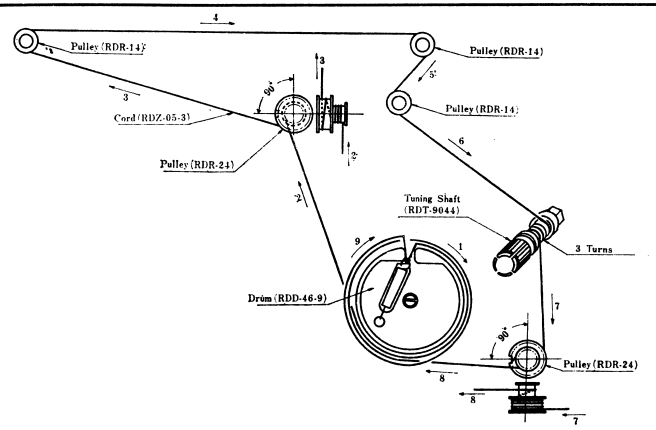


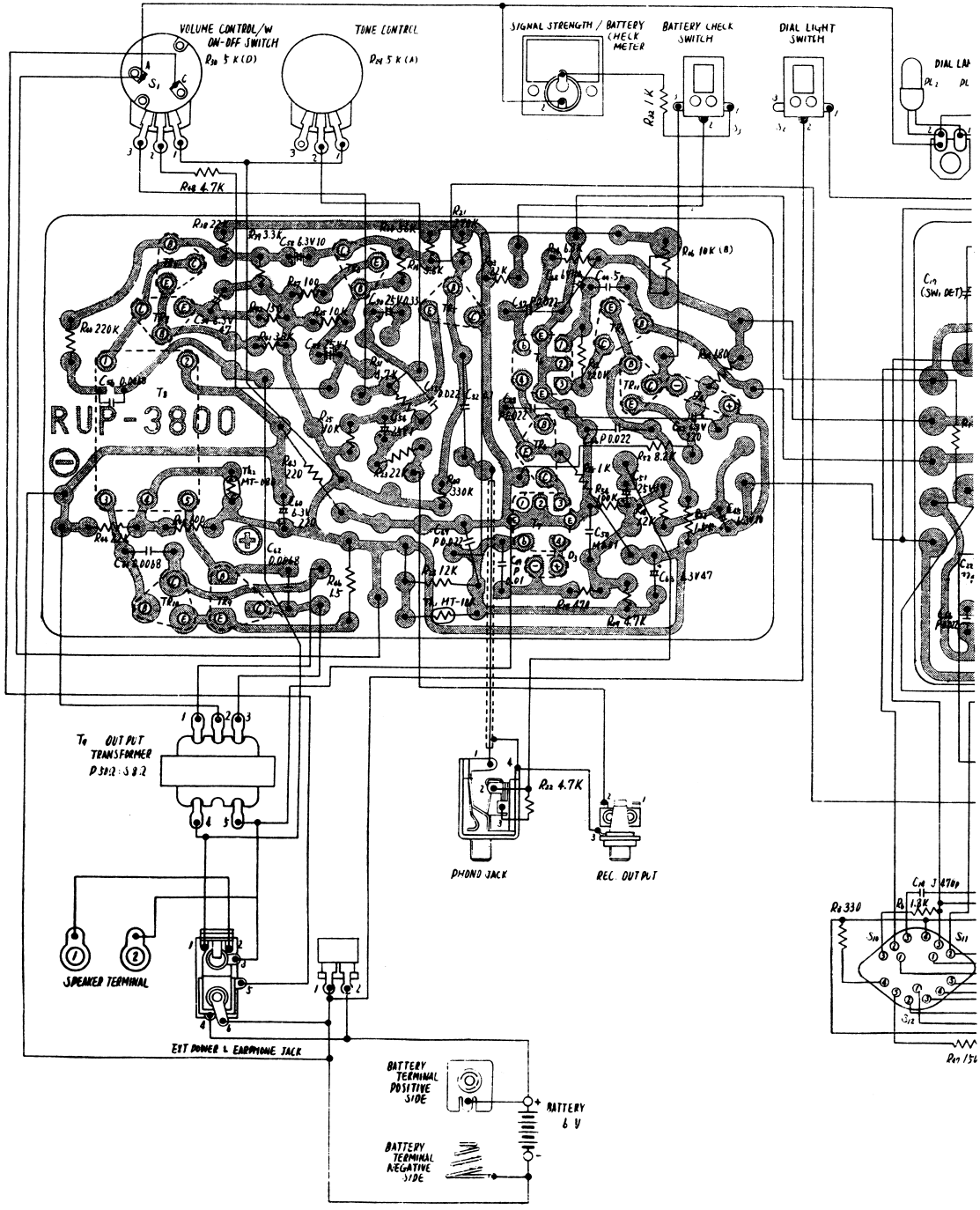
Notes:
1. Remove dial back plate.
2. Dial cord length is 150 cm (60").
3. Tuning gang is positioned at minimum capacity.
4. Arrow marks (1~9) indicate correct order and direction of stringing dial cord.
5. Cement dial cord ends.

To Mount Dial Pointer
1. Set tuning gang to fully closed position.
2. Set dial pointer to start of pointer guide.
3. Attach dial cord to dial pointer.

Fig. 9 Dial Cord Stringing Guide

REPLACEMENT PARTS LIST

Notes: 1. ✱ Indicates parts for the complete cabinet which are included when the cabinet is ordered.
2. Part numbers are indicated on most mechanical parts. Please use this number, therefore, when ordering parts

Ref. No.	Part No.	Description
		TRANSISTORS AND DIODES
TR_1	2SA341	RF Amplifier
TR_2	2SA341	Converter
TR_3	2SA101	1st IF Amplifier
TR_4	2SA101	2nd IF Amplifier
TR_5	2SB173	PRE Amplifier
TR_6	2SB173	1st AF Amplifier
TR_7	2SB175	2nd AF Amplifier
TR_8	2SB175	3rd AF Amplifier
TR_9, TR_{10}	2SB324	Power Amplifier, (push-pull)
TR_{11}	2SC183	Indicator Amplifier
D_1, D_2, D_4	1S1211	Operation Compensator
D_3	OA90	Detector & AGC
		THERMISTORS
Th_1	MT-10K	Temperature Compensator
Th_2	MT-080	AOC
		CAPACITORS
C_{44}	ECC-D05050C	5PF, ±0.25PF, Ceramic
C_{20}, C_{64}	ECC-D05070D	7PF, ±0.5PF, Ceramic
C_1, C_9, C_{16}	ECC-D05100K	10PF, ±10%, Ceramic
C_{65}	ECC-D05120K	12PF, ±10%, Ceramic
C_7, C_{30}, C_{33}	ECC-D05150K	15PF, ±10%, Ceramic
C_{36}, C_{39}	ECC-D05180K	18PF, ±10%, Ceramic
C_{22}	ECC-D05220K	22PF, ±10%, Ceramic
C_{67}	ECC-U05101K	100PF, ±10%, Ceramic
C_{25}, C_{26}, C_{27}	ECK-D05472MY	0.0047μF, ±20%, Ceramic Disc

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