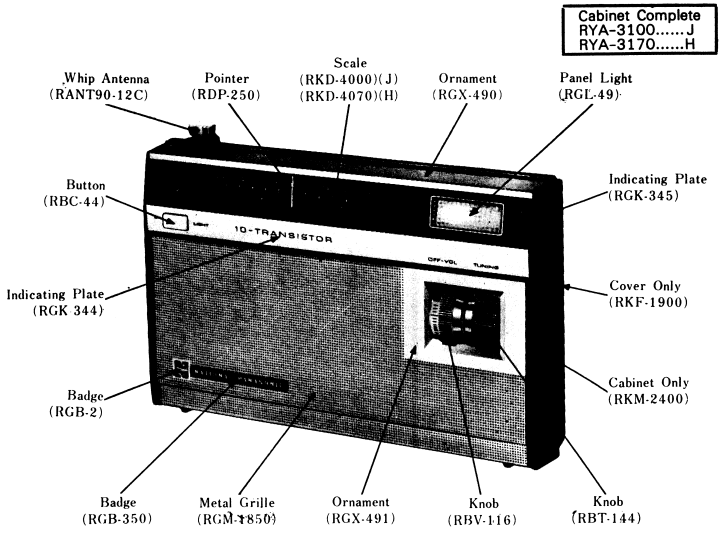


Fig. 1 Cabinet & Appearance - Parts Identification.

To Remove Chassis (Refer to Fig. 2)

1. Remove cabinet back cover mounting screw.
2. Remove five (5) red chassis mounting screws, Nos. 1~5, as illustrated in Fig. 2
3. To remove chassis completelv, unsolder leadwires to dial light switch, EXT. antenna jack, speaker & battery terminals.
4. To reassemble, reverse the above procedure.

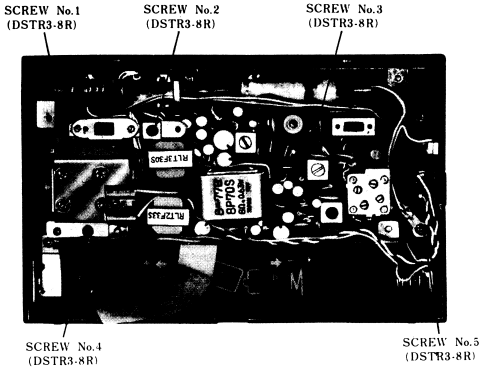


Fig. 2 Top View - Disassembly Points.

ALIGNMENT INSTRUCTIONS

Model R-237H

Output of signal generator should be no higher than necessary to obtain an output reading.
Set volume control to maximum.
Set tone switch to high.
Set power source voltage to 4.5 volts DC.

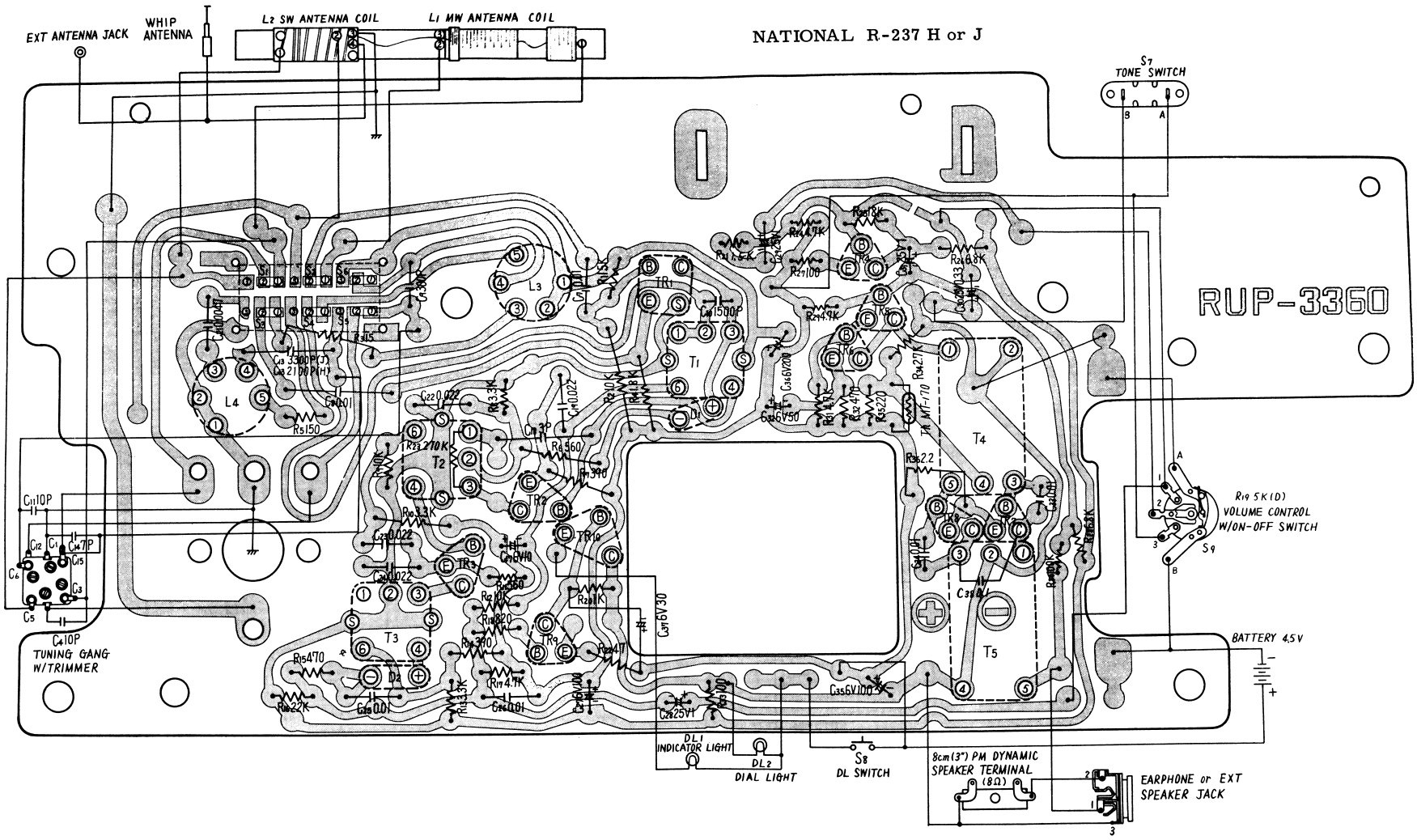
	Band Switch Position	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1	MW	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kc/s (400~ Mod.)	Point of non-interfereence (on/about 600kc/s)	Output meter across earphone jack.	T_1 (1st IFT) T_2 (2nd IFT) T_3 (3rd IFT)	Adjust for maximum output.
2	MW	〃	600 kc/s (400~ Mod.)	600 kc/s	〃	L_3 (OSC Coil) L_1 (ANT Coil)	Adjust for maximum ouput by sliding coil (L_1) along ferrite core.
3	MW	〃	1500 kc/s (400~ Mod.)	1500 kc/s	〃	C_6 (OSC Trimmer) C_3 (ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
4	SW	Connect to EXT antenna leadwire through Ceramic capacitor (10PF). Common to chassis.	3.9 kc/s (400~ Mod.)	3.9 kc/s	〃	L_4 (OSC Coil) L_2 (ANT Coil)	Adjust for maximum output by sliding coil (L_2) along ferrite core.
5	SW	〃	12 kc/s (400~ Mod.)	12 kc/s	〃	C_{15} (OSC Trimmer) C_5 (ANT Trimmer)	Adjust for maximum output. Repeat steps (4) and (5).

Model R-237J

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 tone switch to high.
Set power source voltage to 4.5 volts DC.

	Band Switch Position	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1	MW	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kc/s (400~ Mod.)	Point of noni-nterference (on/about 600 kc/s)	Output meter across earphone jack (Imp. 8Ω)	T_1 (1st IFT) T_2 (2nd IFT) T_3 (3rd IFT)	Adjust for maximum output.
2	MW	〃	600 kc/s (400~ Mod.)	600 kc/s	〃	L_3 (OSC Coil) L_1 (ANT Coil)	Adjust for maximum output by sliding coil (L_1) along ferrite core.
3	MW	〃	1500 kc/s (400~ Mod.)	1500 kc/s	〃	C_6 (OSC Trimmer) C_3 (ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
4	SW	Connect to EXT antenna leadwire through Ceramic capacitor (10PF). Common to chassis.	5.9 Mc/s (400~ Mod.)	5.9 Mc/s	〃	L_4 (OSC Coil) L_2 (ANT Coil)	Adjust for maximum output by sliding coil (L_2) along ferrite core.
5	SW	〃	18 Mc/s (400~ Mod.)	18 Mc/s	〃	C_{15} (OSC Trimmer) C_5 (ANT Trimmer)	Adjust for maximum output. Repeat steps (4) and (5).

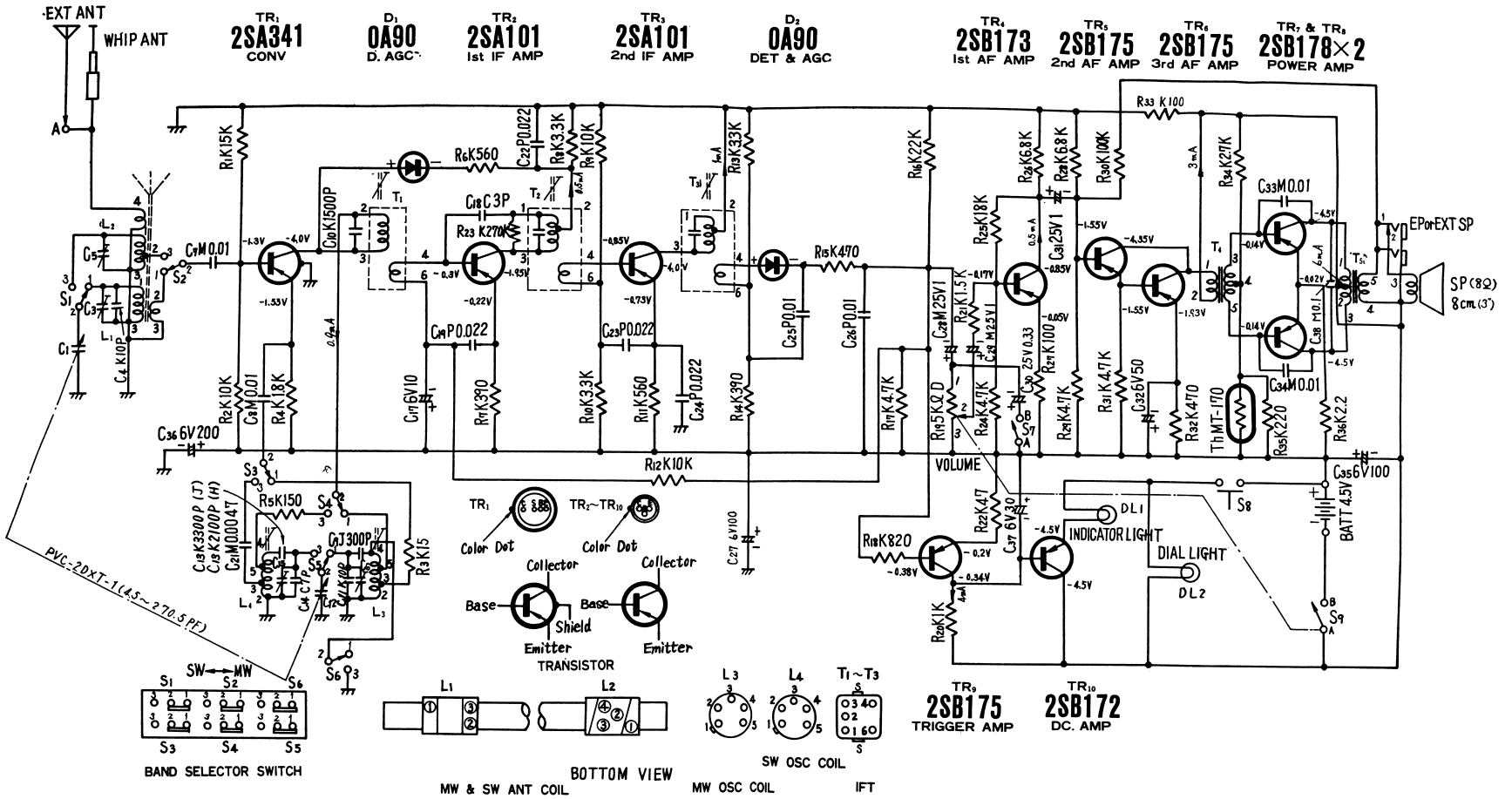
Note: Cement antenna bobbin with wax after completion alignment.



Notes:

1. All resistor values in ohms (K=1000Ω).
2. All capacitor values in micro farads (P=μμF).

Fig. 6 Circuit Board Wiring View (Conductor View)



Notes:

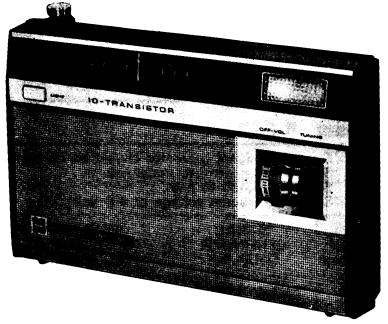
1. S1~S6: Band selector switch in "MW" position.
2. S7 : Tone switch in "HIGH" position.
3. S8 : Dial light switch in "OFF" position.
4. S9 : Power source switch in "OFF" position.
5. DC voltage measurements are taken with circuit tester (10KΩ/V) from positive terminal of battery. Band selector is set in MW & no signal applied
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.....20mA
   Max. output.....170mA
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=μμF).

Fig. 5 Schematic Diagram

NATIONAL PANASONIC
Service Manual

2-BAND 10-TRANSISTOR PORTABLE RADIO

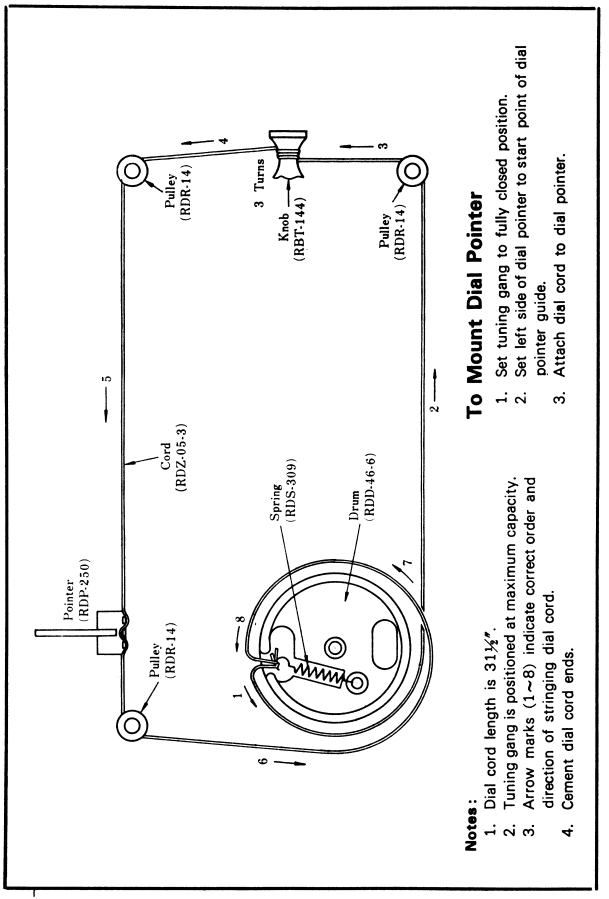
MODEL R-237 H or J



SPECIFICATIONS

Frequency Range:	MW 525~1605 kc/s (571~187m)	Diodes:	OA90 D. AGC
	SW 3.9~12 Mc/s(76.9~25m)...H		OA60 Detector & AGC
	5.9~18 Mc/s(50.8~16.7m)...J	Sensitivity:	MW 100μV/m for 50mW Output
Intermediate Frequency:	455 kc/s		SW 100μV/m for 50mW Output
Transistors:	2SA341 Cenverter	Power Output:	300mW Undistorted
	2SA101 1st IF Amplifier		500mW Maximum
	2SA101 2nd IF Amplifier	Power Source:	4.5V (three "D" sizs flashlight batteries)
	2SB173 1st AF Amplifier		(NATIONAL UM-1 or equivalent)
	2SB175 2nd AF Amplifier	Speaker:	8cm (3") PM Dynamic Speaker (8Ω)
	2SB175 3rd AF Amplifier	Cabinet Dimensions:	203)Wide)×131(High)×43(Deep)mm
	2SB178, 2SB178 Power Amplifier (push-pull)		(8"×5⅝"×1⅝")
	2SB175 1st Indicator Amplifier	Weight:	1.1 kg. (2½ lb.) with Batteries
	2SB172 2nd Indicator Amplifier		

MODEL R-237H or J



To Mount Dial Pointer

1. Set tuning gang to fully closed position.
2. Set left side of dial pointer to start point of dial pointer guide.
3. Attach dial cord to dial pointer.

Notes:

1. Dial cord length is 31½".
2. Tuning gang is positioned at maximum capacity.
3. Arrow marks (1~8) indicate correct order and direction of stringing dial cord.
4. Cement dial cord ends.

Fig. 7 Dial Cord Stringing Guide.