**Notes:**

1. S<sub>1</sub>~S<sub>9</sub>: Band selector switch in "MW" position.
2. S<sub>10</sub>: Power source switch in "OFF" position.
3. S<sub>11</sub>: Tone switch in "HIGH" position.
4. S<sub>12</sub>: Dial light switch in "OFF" position.
5. DC Voltage measurements are taken with circuit tester (10KΩ/V).
6. Measured voltages for TR<sub>1</sub>~TR<sub>12</sub> are from transistor

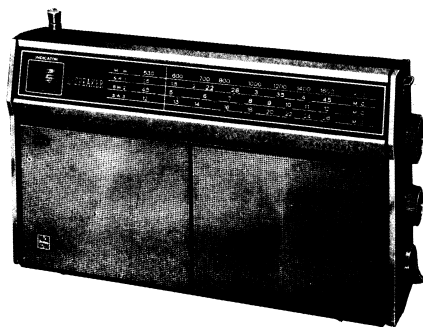
terminal to positive side of battery.

7. Capital letters (J, K, M, P, C) in the circuit diagram show allowable tolerances of resistors and capacitors as follows:  
J=±5% K=±10% M=±20% P=+100%  
C=±0.25PF — 0%
8. Battery current: No signal.....18mA  
Maximum output.....220mA

# NATIONAL PANASONIC Service Manual

## 4-BAND 12-TRANSISTOR PORTABLE RADIO

### MODEL R-457



### SPECIFICATIONS

Frequency Range:	MW 525~1605 kc/s (571~187m) SW1 1.6~4.5 Mc/s (187~66.7m) SW2 4.5~12 Mc/s (66.7~ 25m) SW3 12~26.1 Mc/s ( 25~11.5m)
Intermediate Frequency:	455 kc/s
Transistors:	2SA341 Converter 2SA101 1st IF Amplifier 2SA101 2nd IF Amplifier 2SB175 Indicator Control Amplifier 2SB175 1st AF Amplifier 2SB173 2nd AF Amplifier 2SB175 3rd AF Amplifier 2SB175 4th AF Amplifier 2SB176 x4 Power Amplifier (Parallel Push-Pull)
Diodes:	O A 7 0 D. AGC O A 9 0 Detector & AGC
Sensitivity:	MW 50 $\mu$ V/m for 50mW Output SW1 50 $\mu$ V/m for 50mW Output SW2 50 $\mu$ V/m for 50mW Output SW3 50 $\mu$ V/m for 50mW Output
Power Output:	400mW Undistorted 700mW Maximum
Batteries:	4.5V (Three "D" Size Flashlight Batteries) (NATIONAL UM-1 or equivalent)
Speakers:	9cm (3 $\frac{1}{2}$ ") PM Dynamic Speakers
Cabinet Dimensions:	262(Wide) x 156(High) x 63(Deep)mm (10 $\frac{1}{2}$ " x 6 $\frac{1}{4}$ " x 2 $\frac{1}{2}$ " )
Weight:	1.55kg (3 lb. 7 oz.) with Batteries

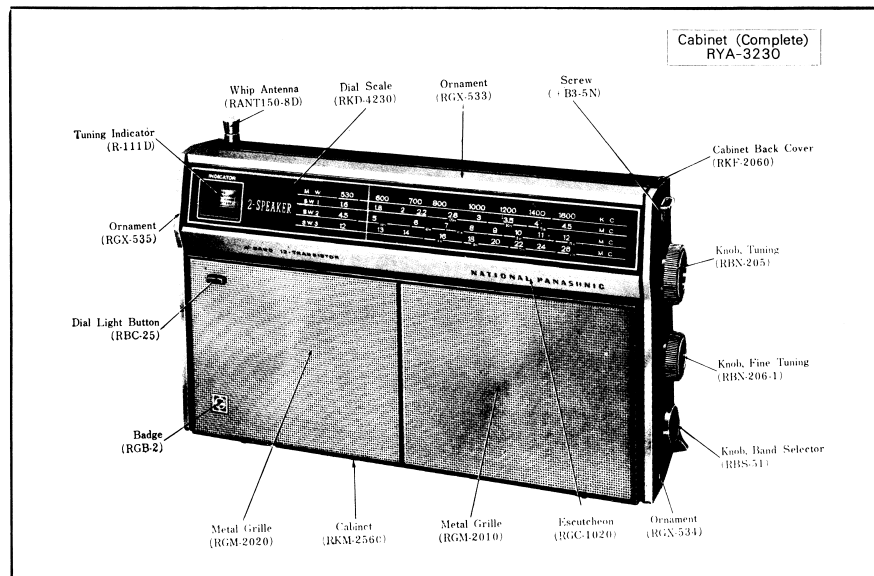


Fig. 1 Cabinet & Appearance-Parts Identification.

### To Remove Chassis (Refer to Fig. 2)

1. Remove two (2) cabinet back cover mounting screws.
2. Pull out the EXTERNAL ANTENNA and GROUND plugs.
3. Remove five (5) red chassis mounting screws, Nos. 1~5, in Fig. 2.
4. Take out the battery terminal and battery spring.
5. To remove chassis completely, unsolder leadwires to speaker, dial light switch and tuning indicator terminals.
6. To reassemble, reverse the above procedure.

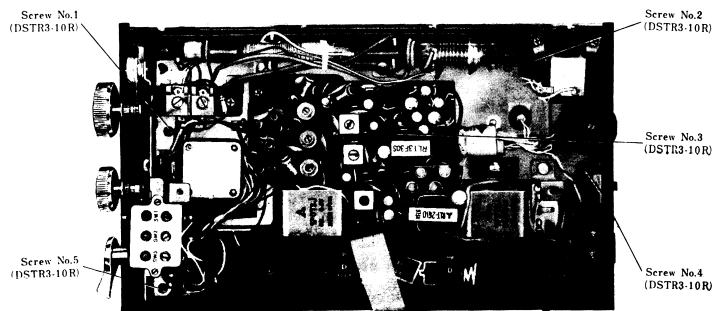
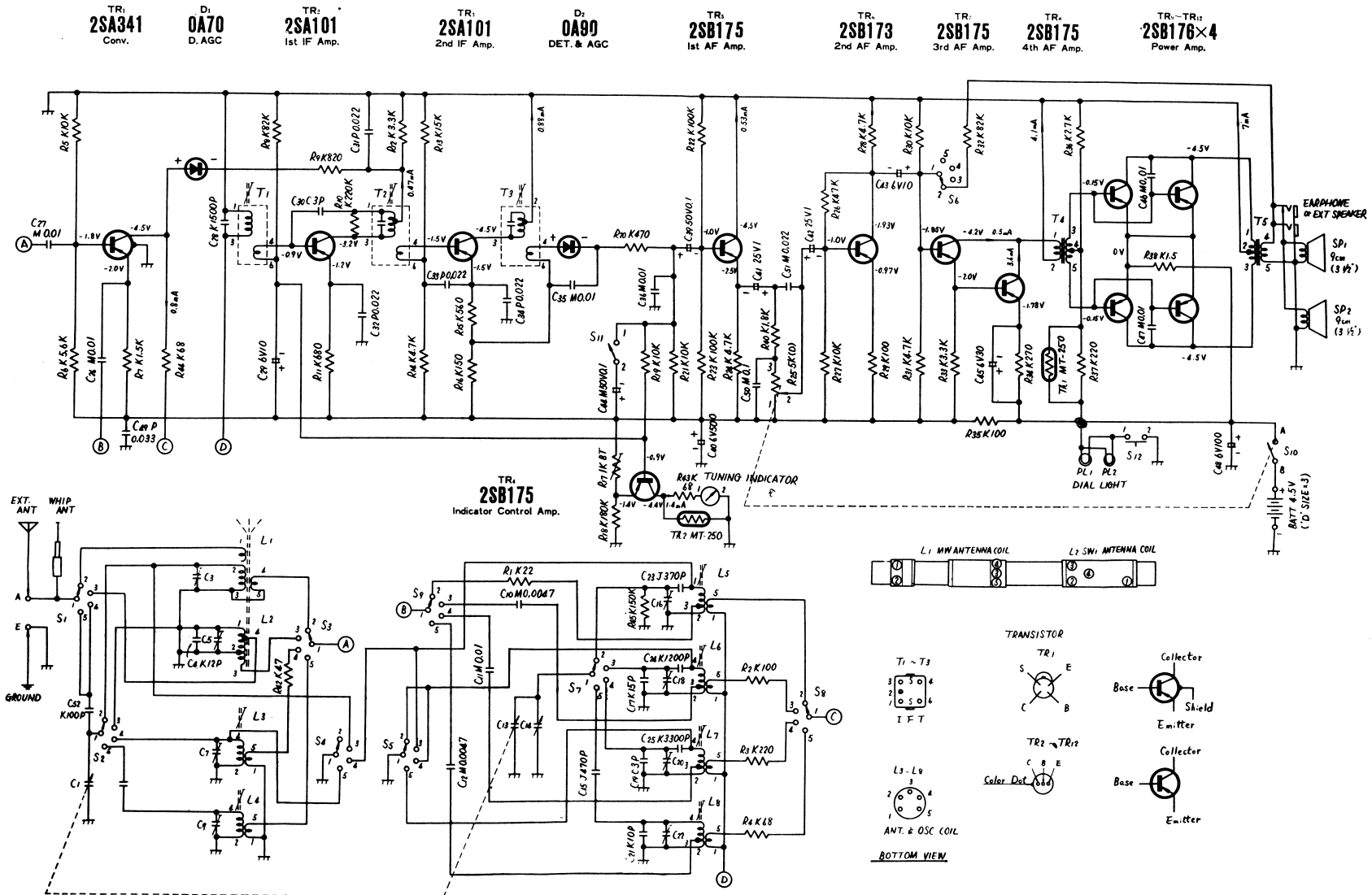


Fig. 2 Top View-Disassembly Points.



terminal to positive side of battery.

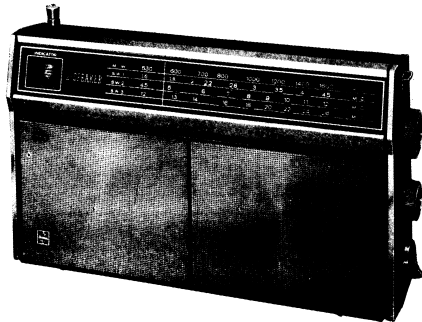
7. Capital letters (J, K, M, P, C) in the circuit diagram show allowable tolerances of resistors and capacitors as follows:  
 J =  $\pm 5\%$  K =  $\pm 10\%$  M =  $\pm 20\%$  P =  $\pm 100\%$   
 C =  $\pm 0.25$ PF — 0%
8. Battery current: No signal.....18mA  
 Maximum output.....220mA

# NATIONAL PANASONIC

## Service Manual

### 4-BAND 12-TRANSISTOR PORTABLE RADIO

### MODEL R-457



#### SPECIFICATIONS

Frequency Range:	MW 525~1805 kc/s (571~187m) SW <sub>1</sub> 1.6~4.5 Mc/s (187~66.7m) SW <sub>2</sub> 4.5~12 Mc/s (66.7~ 25m) SW <sub>3</sub> 12~26.1 Mc/s ( 25~11.5m)
Intermediate Frequency:	455 kc/s
Transistors:	2SA341 Converter 2SA101 1st IF Amplifier 2SA101 2nd IF Amplifier 2SB175 Indicator Control Amplifier 2SB175 1st AF Amplifier 2SB173 2nd AF Amplifier 2SB175 3rd AF Amplifier 2SB175 4th AF Amplifier 2SB175×4 Power Amplifier (Parallel Push-Pull) O A 7 0 D, AGC O A 9 0 Detector & AGC
Diodes:	
Sensitivity:	MW 50μV/m for 50mW Output SW <sub>1</sub> 50μV/m for 50mW Output SW <sub>2</sub> 50μV/m for 50mW Output SW <sub>3</sub> 50μV/m for 50mW Output
Power Output:	400mW Undistorted 700mW Maximum
Batteries:	4.5V (Three "D" Size Flashlight Batteries) (NATIONAL UM-1 or equivalent)
Speakers:	9cm (3½") PM Dynamic Speakers
Cabinet Dimensions:	262(Wide)×156(High)×63(Deep)mm (10½"×6¼"×2½")
Weight:	1.55kg (3 lb. 7 oz.) with Batteries

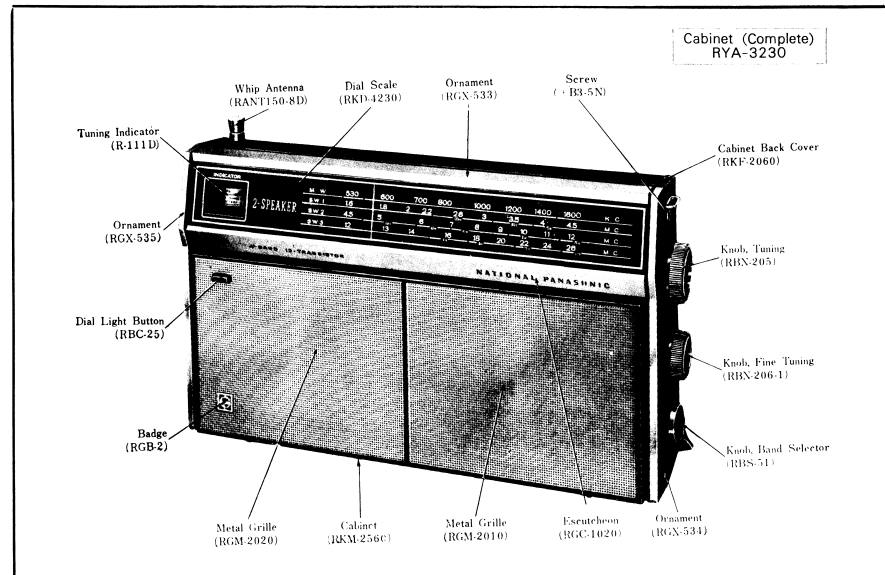


Fig. 1 Cabinet & Appearance-Parts Identification.

#### To Remove Chassis (Refer to Fig. 2)

1. Remove two (2) cabinet back cover mounting screws.
2. Pull out the EXTERNAL ANTENNA and GROUND plugs.
3. Remove five (5) red chassis mounting screws, Nos. 1~5, in Fig. 2.
4. Take out the battery terminal and battery spring.
5. To remove chassis completely, unsolder leadwires to speaker, dial light switch and tuning indicator terminals.
6. To reassemble, reverse the above procedure.

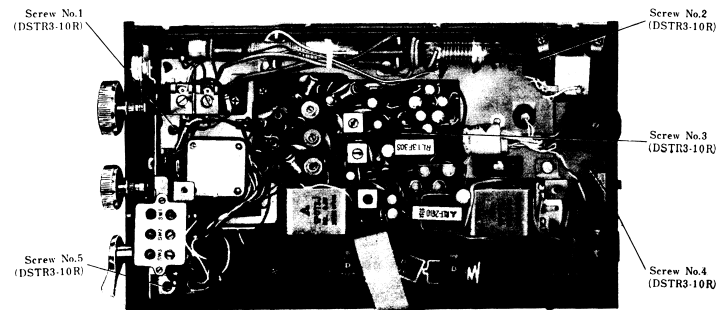


Fig. 2 Top View-Disassembly Points.