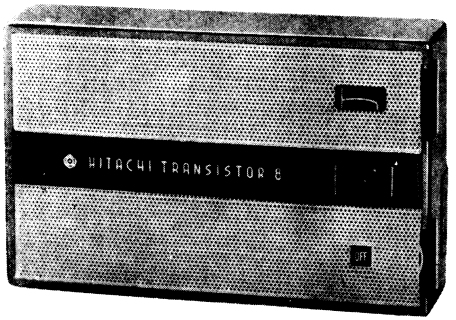



# model TH-862R
# 8 TRANSISTOR RADIO
# SERVICE MANUAL

Hitachi, Ltd.

## DESCRIPTION

This new pocket radio is the smallest of its type yet produced anywhere, and fully maintains Hitachi's consistently high standards as to sensitivity, tone and reliability.

It fits easily in a pocket.

This instrument contains 8 Hitachi transistors, 2 germanium diodes and 1 varistor for temperature and voltage compensation.

In this service manual are described operation of the set, the circuit system, and several simplified methods of repair.

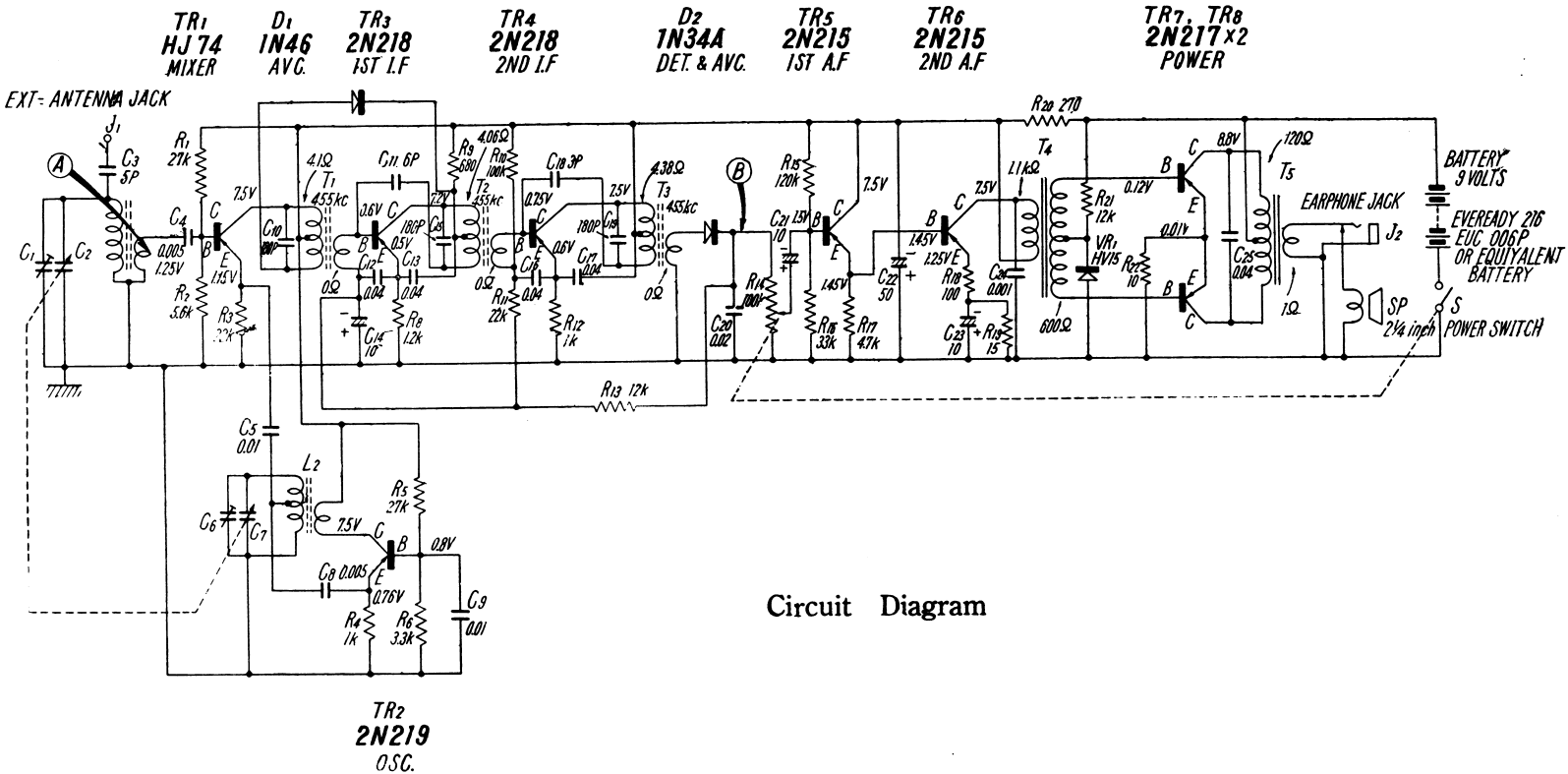
## FEATURES

1. The use of the high efficiency Hitachi transistor with almost endless life assures that this radio will be operating at optimum reception for many years.
2. The all-printed circuit and the new "dip-soldering" method adopted for parts attachment eliminate all risk of failure and assure almost endless life for this radio.
3. The high quality speaker with a wide sound range and powerful 3-stage A. F. Amplifier circuit reproduce undistorted tones, rich in volume.
4. Uniformly exellent reception is assured by the temperature and voltage compensating varistor even under wide variation of ambient temperature and battery voltage.
5. The case is of shock-proof molded plastic and comes in three attractive colors which will not discolor even after years of use.

## SPECIFICATIONS

| | |
|---|---|
| Circuit system | 8-transistor superheterodyne |
| Tuning range | 535-1605 kc |
| Intermediate frequency | 455 kc |
| Transistor components | HJ 74 Frequency converter |
| | 2N219 Oscillator |
| | 2N218×2 Intermediate frequency amplifier |
| | 1N34A, 1N46 Detector and automatic gain controller |
| | 2N215×2 Audio frequency amplifier |
| | 2N217×2 Push-pull audio frequency power amplifier |
| Varistor | HV15 Temperature and voltage compensation |
| Output | 80 mW (Undistorted), 100 mW (Maximum) |
| Power source | 9 V Battery |
| | Eveready 216 |
| | N.E.D.A. 1604 |
| | Ray-O-Vac 1604 |
| | Burgess 2V6 |
| | G.E. 88 |
| | EUC. 006P |
| Earphone | EL-213 type magnetic earphone |
| Speaker | 2 inch P.M. speaker |
| Dimensions | $4\frac{5}{8}$"W×$2\frac{13}{16}$"H×$1\frac{1}{4}$"D |

# HITACHI TH-862R




Circuit Diagram

# ALIGNMENT PROCEDURE

### ADJUSTMENT ON IF CIRCUIT

(1) Before adjustment, check the battery voltage in operating condition. If the voltage is insufficient turn OFF the power supply switch and replace with a new battery.

(2) Make a coil of 10 cm diameter and about 2 or 3 turns and connect the test oscillator's output to this coil. Then fix the coil about 10 cm away from the receiver set with the coil surface parallel with the side surface of the set.

(3) Turn the volume control to maximum and set the test oscillator's frequency at 455 kc (modulated with 1,000 c/s). At this time, set the receiver's dial at 1,600 kc.

(4) Detach the circuit board. Switch over the tester or V. T. V. M. to the AC voltmeter range of about 3~1.5 V and connect it to both terminals of the speaker.

(5) Adjust the IF transformer so that the voltmeter reading will be maximum for $T_3$ (4), $T_2$ (3) and $T_1$ (2) (indicated in circuit board diagram), respectively, in this order. This adjustment must be applied with the test oscillator output made as small as possible.

(6) After completing adjustment, melt the wax on the adjusting parts by means of a heated soldering iron tip and fix the adjusting screws.

### ADJUSTMENT OF RF CIRCUIT

(1) Set the test oscillator's frequency at 525 kc and set the receiver's dial at the lowest frequency. Then adjust the core ((5) in circuit board diagram) of the oscillator coil ($L_2$) to obtain the point where the voltmeter will give maximum indication.

(2) Set the test oscillator's frequency at 1,650 kc and adjust the oscillator trimmer of the variable capacitor so that the signal will be received at the highest point on the receiver dial.

(3) Set the test oscillator's frequency at 600 kc and set the receiver dial at 600 kc. Then shift the bobbin of the antenna coil ((1) in circuit board diagram) to obtain the point where the voltmeter gives maximum indication.

Since the antenna coil is fixed with insulation wax, this wax must be melted with a soldering iron before moving the bobbin.

(4) Set the test oscillator's frequency at 1,400 kc and also tune the receiver to 1,400 kc. Then adjust the antenna trimmer of the variable condenser so that the voltmeter will give maximum reading.

(5) Repeat the above procedure once or twice.

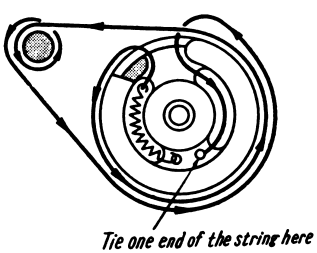



**Fig. 2. How to Apply the Dial String**

# HINTS FOR SERVICE-MEN

**1. When demounting the circuit board, open the rear cover first, extract batteries and remove screws (1), (2), (3) and (4) in Fig. 1.**

**2. When applying the dial string, tie one end of the string to the spring, apply in the direction of arrow and tie other end to the hole of the dial drum.**

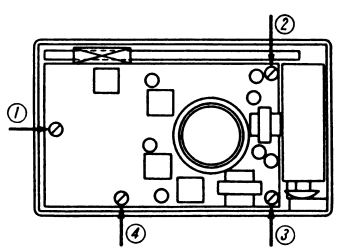
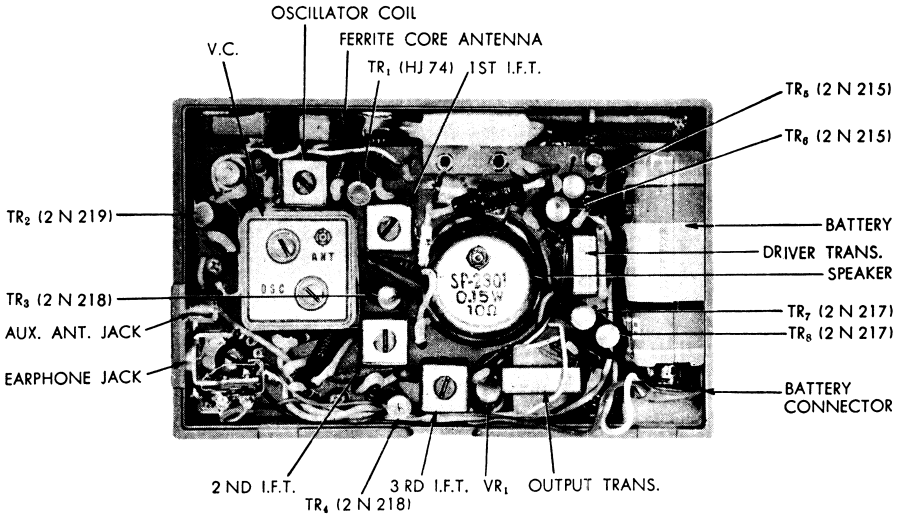
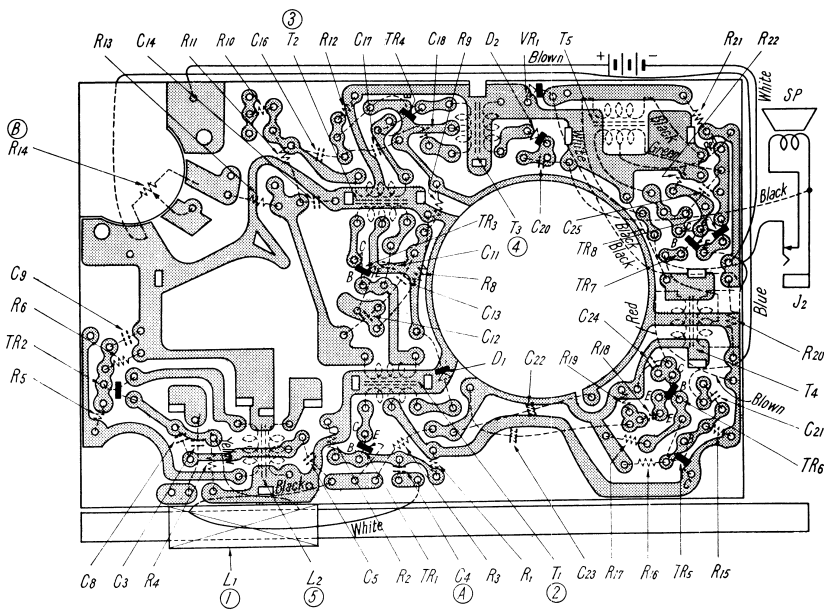


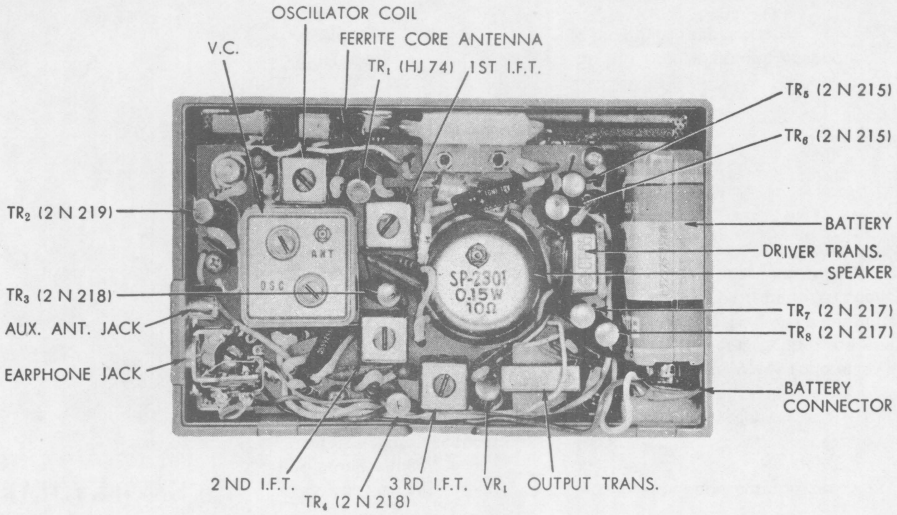

**Fig. 1. How to Demount the Circuit Board**



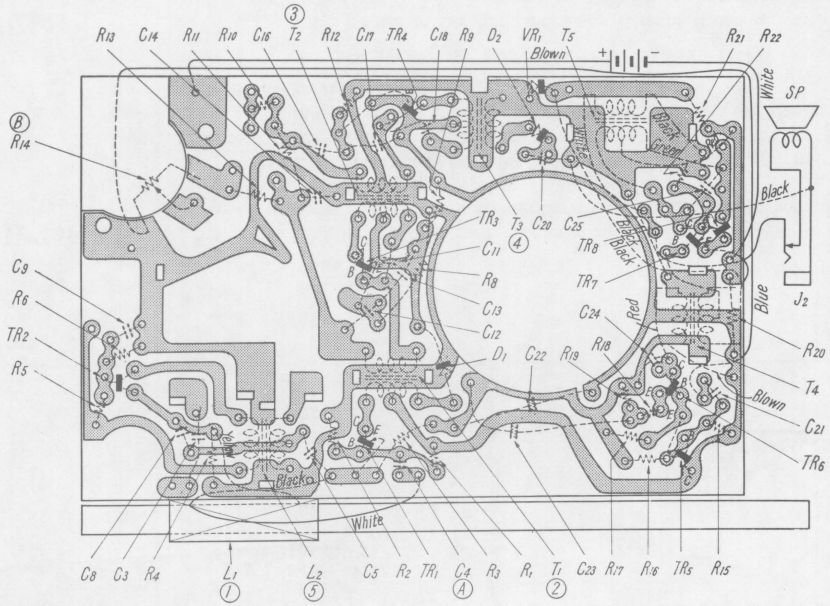

Internal View




Circuit Board Diagram




Internal View




Circuit Board Diagram