

SPECIFICATIONS

CIRCUIT SYSTEM 8-transistor superheterodyne with R.F. amp
 TUNING RANGE 535-1,605 kc
 INTERMEDIATE FREQUENCY 455 kc
 TRANSISTOR COMPLEMENT
 2SA355 R.F. Amp.
 2SA354 Freq. Conv.
 2SA12 1st I.F. Amp.
 2SA12 2nd I.F. Amp.
 2SB75 1st A.F. Amp.
 2SB77 2nd A.F. Amp.
 2SB88 x 2 Class-B Push-pull Output Amp.
 GERMANIUM DIODE
 1N34A Detector & Automatic Gain Controller
 1N34A Complementary A.G.C.
 VARISTOR HV 16 (Temperature Compensator)
 SENSITIVITY (Maximum)
 When used as auto radio Approx. 26 dB
 When used as portable radio Approx. 28 dB
 POWER OUTPUT
 As auto radio (6.6 V., 500 mW (max.), 300 mW (undistorted)
 (13.2 V., 700 mW (max.), 500 mW (undistorted)

As portable radio 400 mW (max.), 250 mW (undistorted)
 ROUDSPEAKER Oval 2 3/4" x 4" dynamic P.M.
 EARPHONE JACK
 Hitachi accessory magnetic earphone EL-213 or EL-216 is recommended.
 POWER SOURCE
 As auto radio (Negative grounded or positive-grounded battery, 6 or 12 volts
 As portable radio (Four, JAPAN UM-3A, EVEREADY 1015 or equivalent, 1 1/2 volts each
 CURRENT CONSUMPTION (With no signal)
 As auto radio 190 mA
 As portable radio 15 mA
 DIMENSIONS (Overall)
 As auto radio Height 2 1/4", Width 6 1/2", Depth 6 1/2"
 As portable radio Height 1 3/4", Width 6 1/2", Depth 4 3/4"
 WEIGHT (Net)
 As auto radio 4 lbs.
 As portable radio 1 1/2 lbs.



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HITACHI AUTO-RADIO MODEL TM-816U & EXTERNAL SPEAKER MODEL ES-60

D1
 1N34A
 (A.G.C.)

TR3
 2SA12
 (1ST. I.F.)

TR4
 2SA12
 (2ND. I.F.)

D2
 1N34A
 (DET. A.G.C.)

TR5
 2SB75
 (1ST. A.F.)

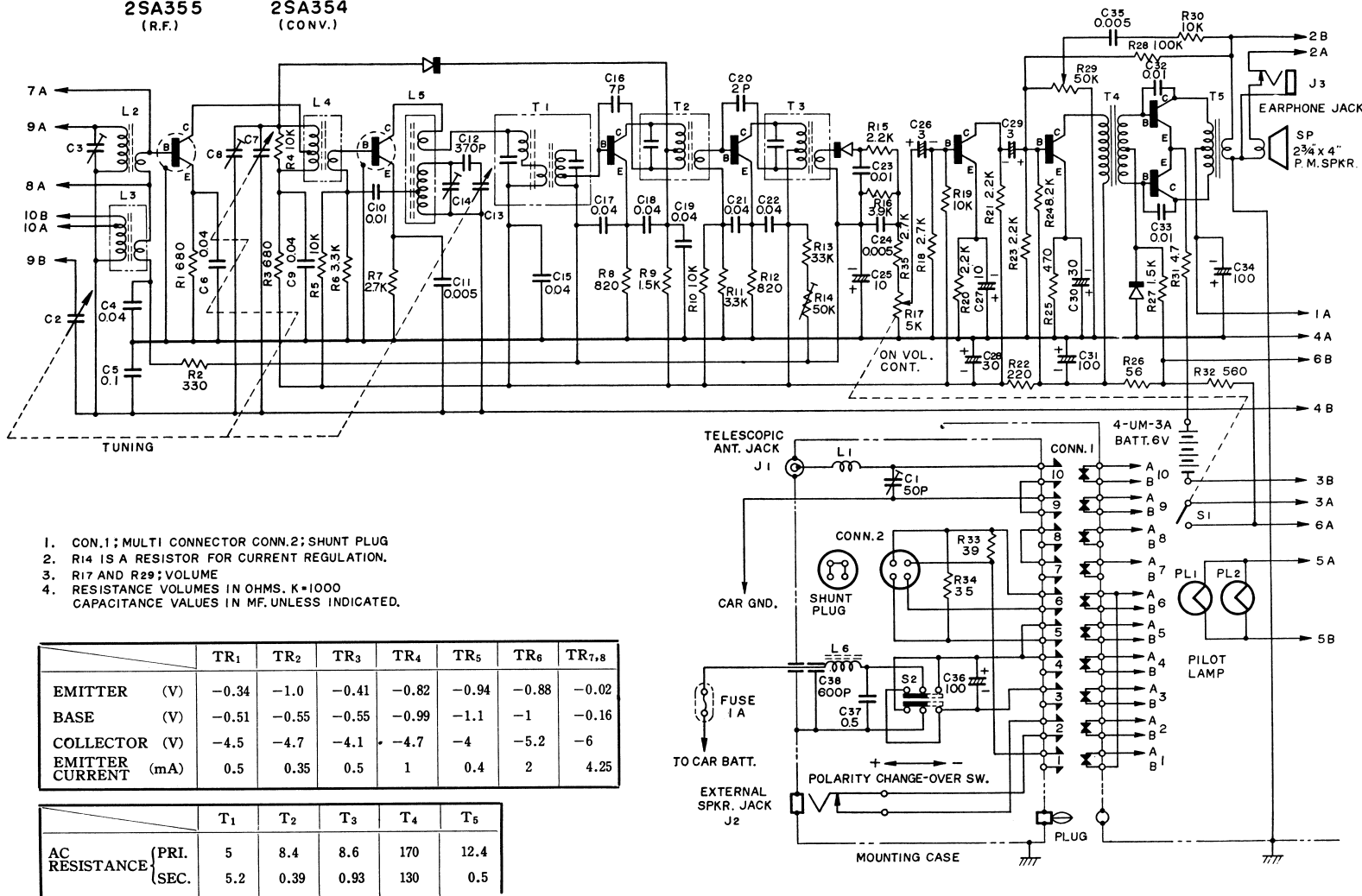
TR6
 2SB77
 (2ND. A.F.)

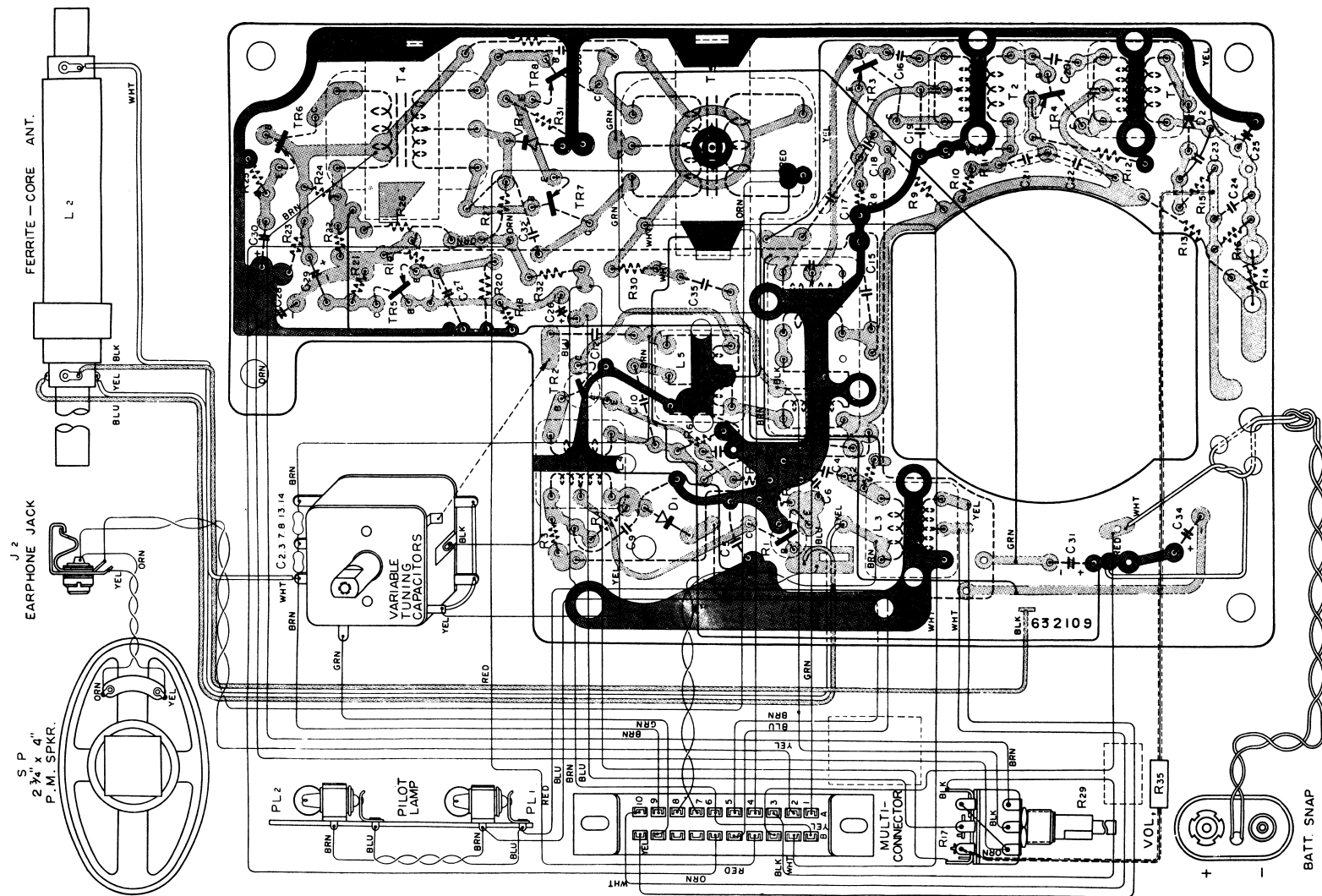
VR1
 HV16
 TEMPERATURE
 COMPENSATOR

TR7,8
 2SB89
 (OUTPUT)

TR1
 2SA355
 (R.F.)

TR2
 2SA354
 (CONV.)





dial drum, and tie cord to the spring at the position ⑥.

4. Loosen the dial drum shaft screw and fix the spring

holder ⑦ at the position as described in Fig. 10.

5. Apply binding agent at positions ① and ⑥.

ALIGNMENT PROCEDURE

ALIGNMENT AS PORTABLE RADIO

1. Use batteries having the specified voltage. Voltage, when the switch is turned on (with no signal), must not be less than 5.5 volts.

2. Adjust the resistor R_{14} so that the emitter current in the transistor TR_3 may be 0.5 mA (both ends voltage of the resistor R_8 may be 0.41 V.).

3. Adjust with an insulated screw driver.

4. Rotate the volume control to maximum, connect the output of a signal generator (modulated with 1,000 c/s $\pm 30\%$) to a loop antenna (4 inch in diameter, wound 2 or 3 rounds), the earth terminal of the signal generator to the receiver chassis. And couple the loop antenna to the ferrite-core

antenna.

5. Connect a vacuum-tube voltmeter (with an AC 3 V~1.5 V scale) to the earphone jack (with the negative \ominus and the positive \oplus connected with a 10 Ω resistor).

6. Make adjustments of the following tables to gain maximum reading on voltmeter. During alignment, be sure to adjust the output of the signal generator so that the reading on voltmeter may not exceed 0.5 V at maximum as it rises in proportion to adjustment.

7. When an adjustment is over, fix the antenna coil by waxing, adjusted cores with white lacquer.

Adjustment of I.F. Circuit

Step	Sig. gen. output	Turn radio dial to—	Adjust for max. output
Ⓐ	455 kc	Quiet point at high freq. end	T ₃
Ⓑ			T ₂
Ⓒ			T ₁
Ⓓ	Repeat steps Ⓐ, Ⓑ and Ⓒ		

Adjustment of R.F. Circuit

Step	Sig. gen. output	Turn radio dial to—	Adjust for max. output
Ⓔ	520 kc	Quiet point at low freq. end	L_5
Ⓕ	1,650 kc	Quiet point at high freq. end	C_{14}
Ⓖ	Repeat steps Ⓔ and Ⓕ		
Ⓗ	600 kc	600 kc signal	L_2 position and L_4
①	1,400 kc	1,400 kc signal	C_3 and C_8
②	Repeat steps Ⓗ and ①		

ALIGNMENT AS AUTO-RADIO

Operate the receiver as auto-radio, connect the output of a signal generator to such a dummy antenna as Fig. 11 instead of the loop antenna, connect the dummy antenna to the telescopic rod antenna jack, and make adjustments of the following table.

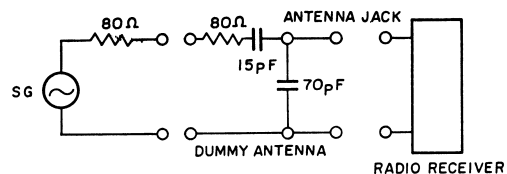


Fig. 11

Step	Sig. gen. output	Turn radio dial to—	Adjust for max. output
Ⓗ	600 kc	600 kc signal	L_3
①	1,400 kc	1,400 kc signal	C_1
②	Repeat steps Ⓗ and ①		

