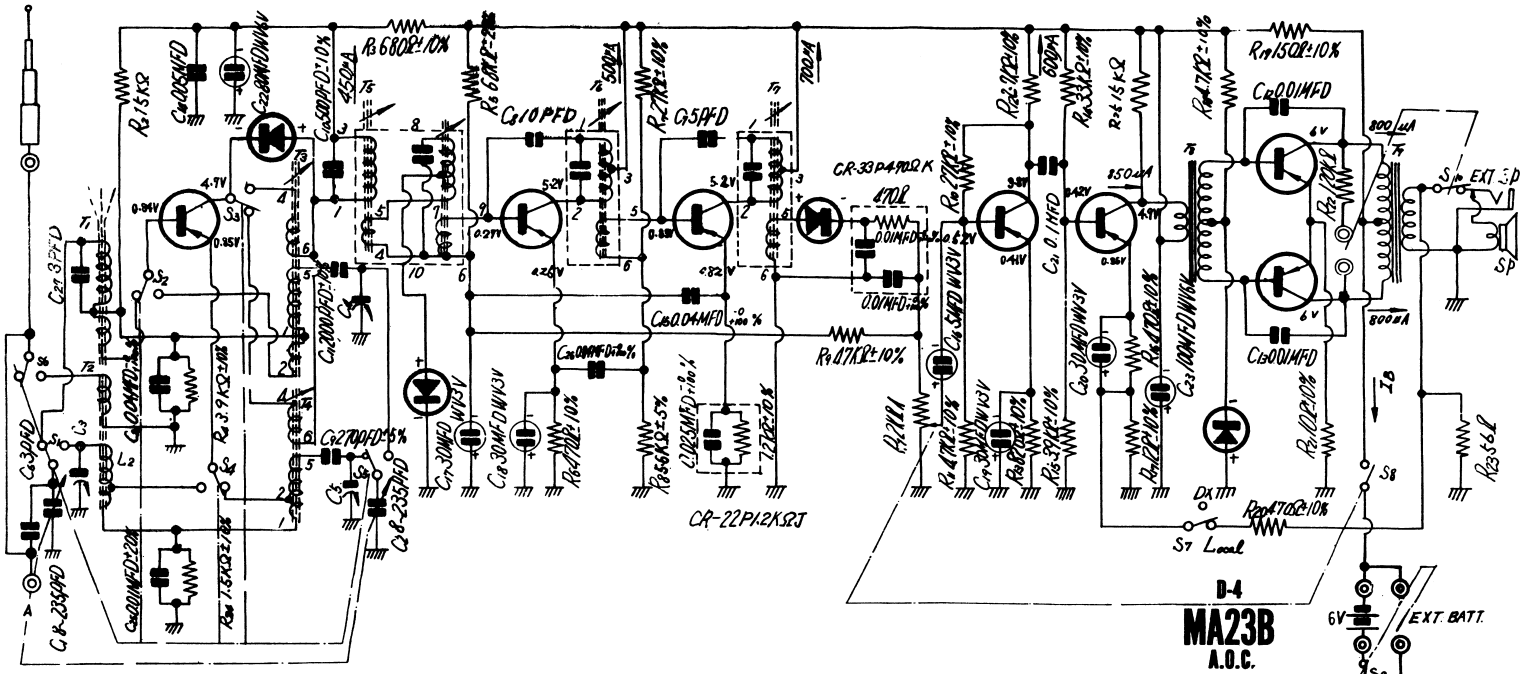
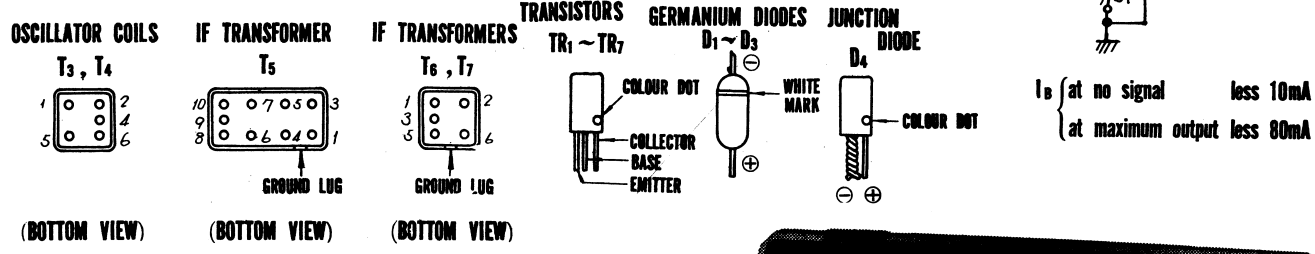
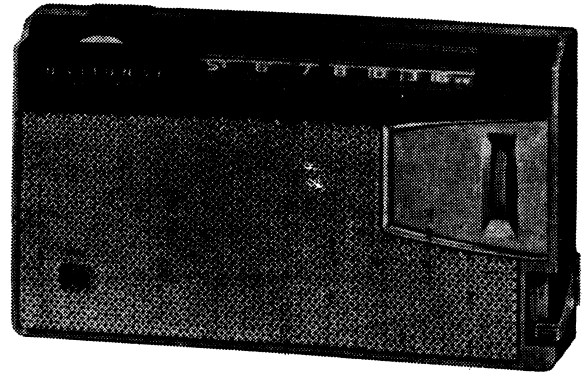
TR-1	D-1	D-2	TR-2	TR-3	D-3	TR-4	TR-5	TR-6 & TR-7
MC103CA	OA70Y	OA70X	OC45C	OC45B	OA70X	OC71AN	OC71B	OC72 AVB or D×2
Conv.	OSC Comp.	D.A.G.C.	1st IF Amp.	2nd IF Amp.	Det. & A.G.C.	1st AF Amp.	2nd AF Amp.	Power Output





SPECIFICATIONS

Frequency Range :	MW 540~1600Kc/s (556~187.5m) S W 3.9 ~ 10 Mc/s (77 ~ 30 m)
Intermediate Frequency :	455 Kc/s
Sensitivity :	MW 100 μV / m / 5 mW S W 160 μV / m / 5 mW
Power Output :	150 mW, undistorted 200 mW, maximum
Power Supply :	6V (Four No. 3 penlight cells 1.5V) (NATIONAL UM-3 or equivalents)
Speaker :	2½″ PM dynamic speaker Voice coil impedance, 10Ω



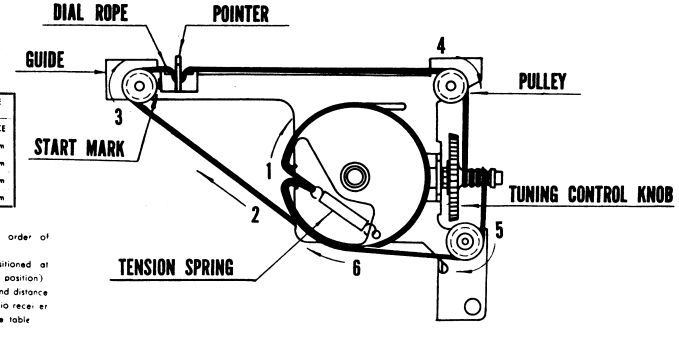
NATIONAL MODEL T-25U

ALIGNMENT PROCEDURE

OUTPUT METER ..... Connect Output Meter across speaker voice coil.
OUTPUT LEVEL ..... Attenuate Signal Generator output always to maintain 0.5 volt on Output Meter to prevent overloading of the receiver.
TEST OSCILLATOR ..... Modulate Signal Generator at 1000 c/s and connect the lead wires of Signal Generator output to Radiation Loop Coil.
RADIO RECEIVER ..... Place the radio receiver 60cm away from Radiation Loop Coil. Set volume control to maximum and DX-LOCAL switch to "DX".

Step	Band Switch position	Signal Generator output	Dial setting	Adjusting to maximum output
1	M W	455 KC	Variable capacitor at maximum capacity	IF transformers (T_5, T_6, T_7)
2		455 KC		Repeat step ①.
3		535 KC		MW OSC coil (T_4)
4		1630 KC	Variable capacitor at minimum capacity	MW OSC trimmer (C_5)
5		535 KC or 1650 KC	Variable capacitor at max. or min. capacity	Repeat steps ③ and ④.
6		600 KC	600 KC	MW ANT coil (T_1)
7		1500 KC	1500 KC	Capacity of (C_{24})
8		600 KC or 1500 KC	600 KC or 1500 KC	Repeat steps ⑥ and ⑦.
9	S W	3.8 MC	Variable capacitor at maximum capacity	SW OSC coil (T_8)
10		10.4 MC	Variable capacitor at minimum capacity	SW OSC trimmer (C_4)
10		4 MC	4 MC	SW ANT coil (T_2)
11		10 MC	10 MC	SW ANT trimmer (C_3)
12		4 MC or 10 MC	4 MC or 10 MC	Repeat steps ⑩ and ⑪.

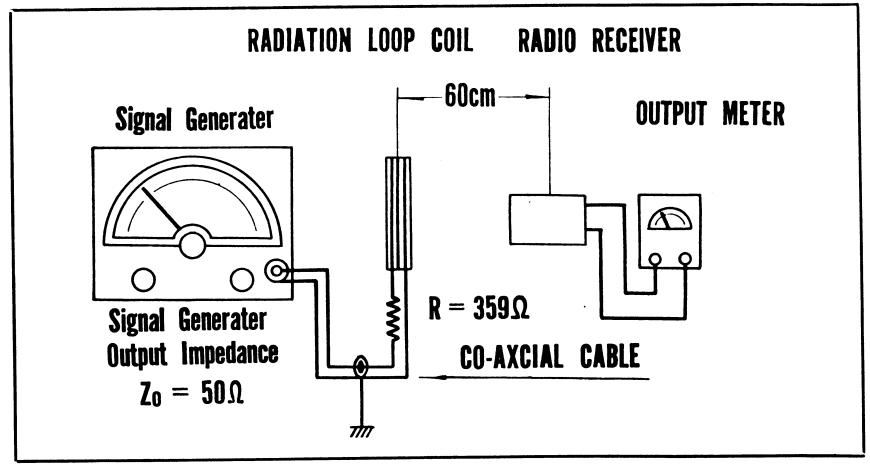
DIAL CORD DRIVE MECHANISM & FREQUENCY ALIGNMENT



FREQUENCY AND DISTANCE ON THE DIAL SCALE		
	FREQUENCY	DISTANCE
MW	600 KC	15mm
	1500 KC	62mm
SW	4MC	7.1mm
	10MC	64mm

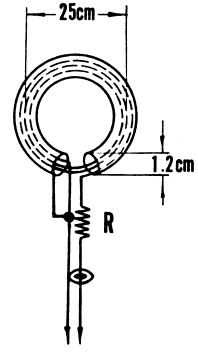
Notes:
- Arrow marks indicate the order of hanging the dial rope
- Tuning capacitor is positioned at maximum capacity (closed position)
- Frequency to be aligned and distance on the dial scale of the radio receiver are indicated in the above table

Connection of Signal Generator, Radiation Loop Coil, Radio Receiver and Output Meter.



Radiation Loop Coil:

As illustrated, install three turns of 0.8mm diameter copper wire into the brass pipe of the diameters as indicated in the sketch. Adjust the value of R so that the output impedance Zo of the signal generator plus series resistor R becomes 409Ω.



Notes:

① $S_1 \sim S_6$: Radio Band Selection now at "MW" position

② S_7 : DX-LOCAL Switch now at "LOCAL"

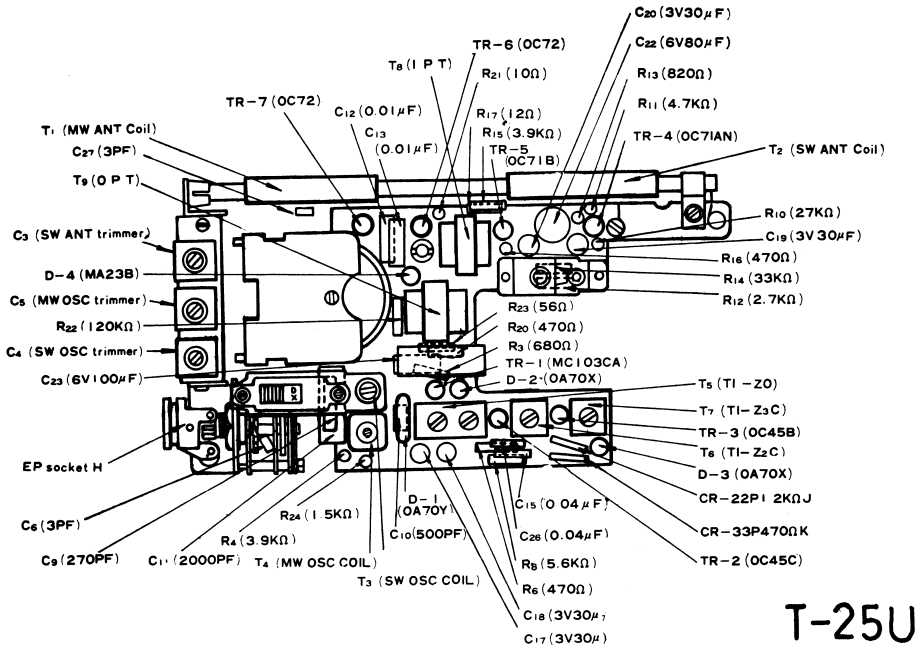
③ S_8 : Power Switch now at "OFF" position

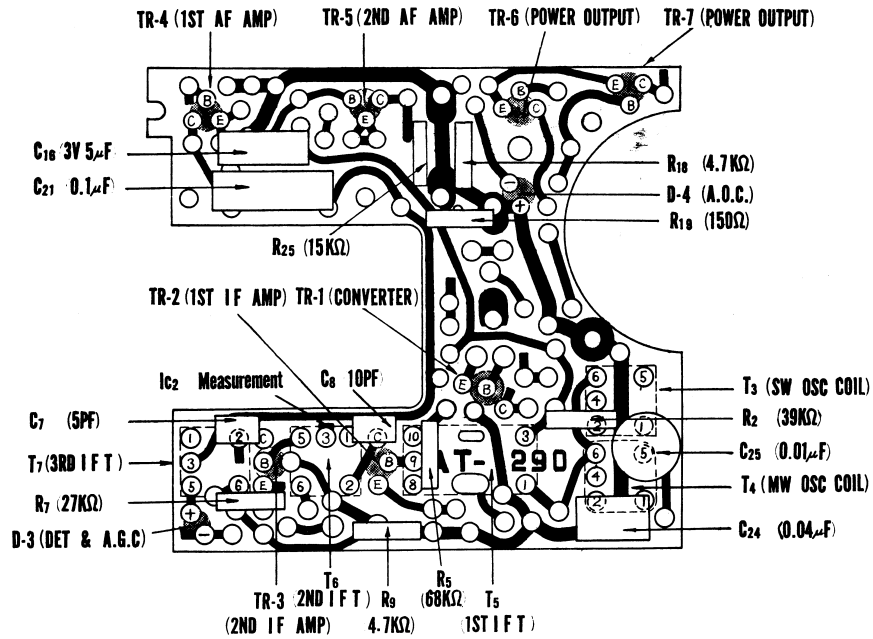
④ S_9 : Battery Switch now at internal position

⑤ S_{10} : Speaker-Earphone Switch now at speaker position

⑥ Voltages and current indicated are the standard values measured at no signal. They may be variable a little on each set.

MAIN PARTS LOCATION & PRINTED CIRCUIT BOARD





Notes :

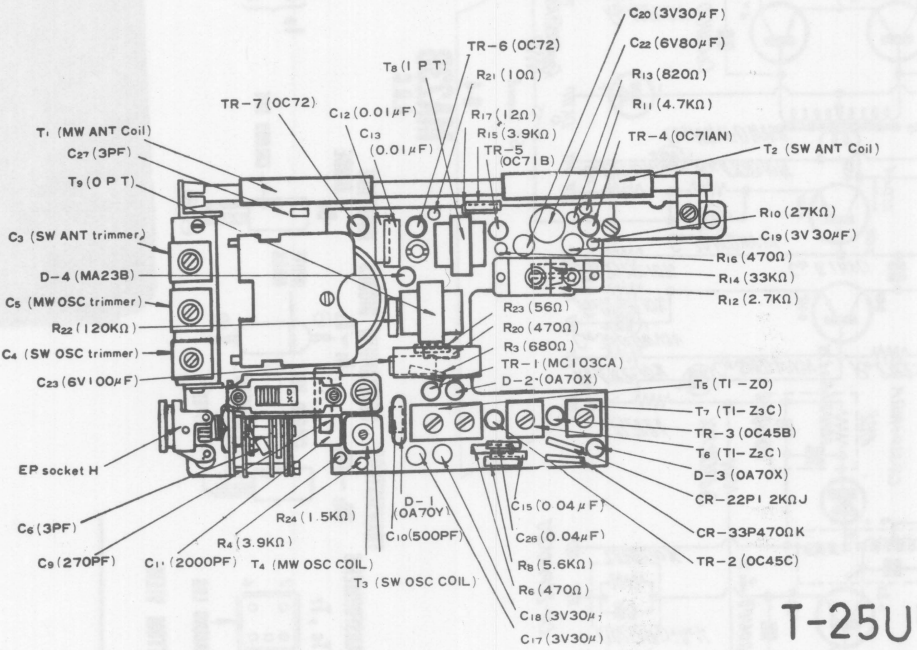
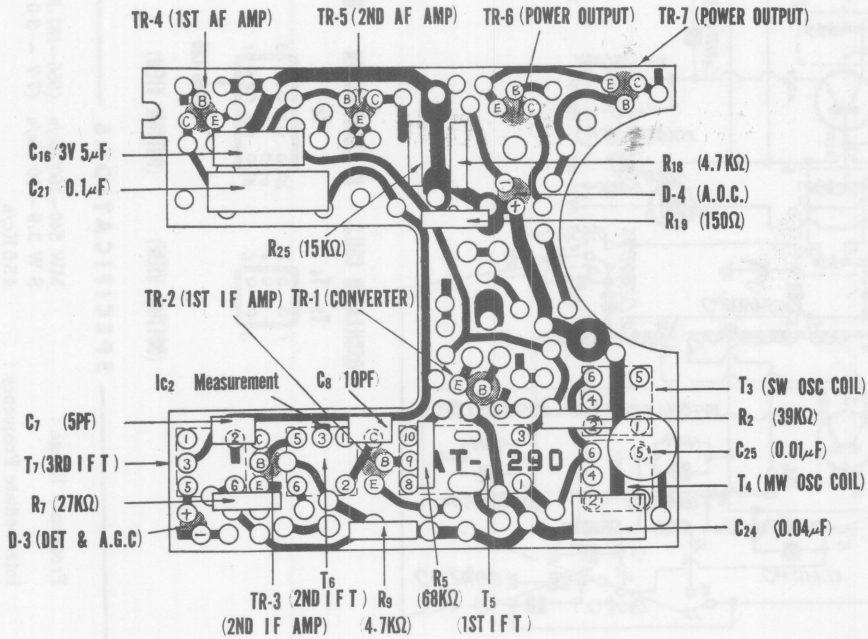
① $S_1 \sim S_6$: Radio Band Selection now at "MW" position

② S_7 : DX-LOCAL Switch now at "LOCAL"

③ S_8 : Power Switch now at "OFF" position

④ S_9 : Battery Switch now at internal position

⑤ S_{10} : Speaker-Earphone Switch now at speaker position

⑥ Voltages and current indicated are the standard values measured at no signal. They may be variable a little on each set.

MAIN PARTS LOCATION & PRINTED CIRCUIT BOARD