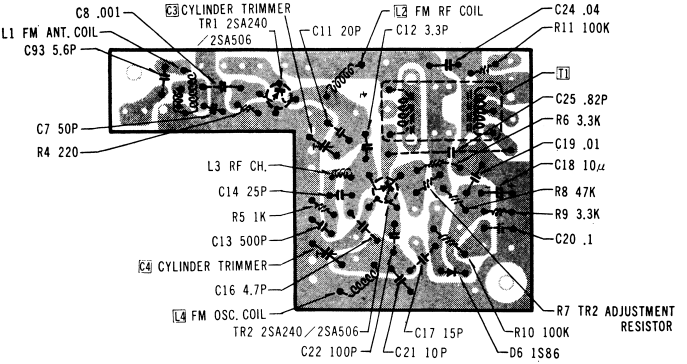
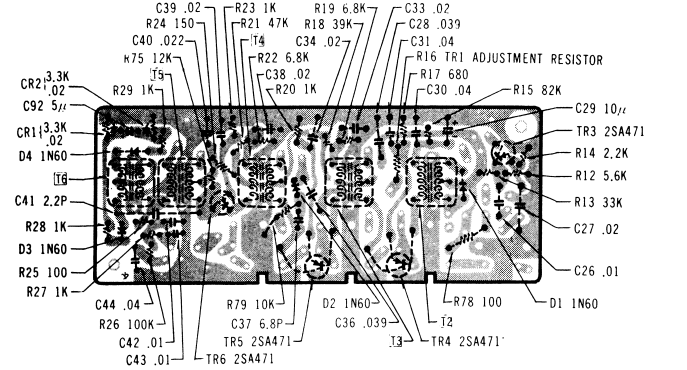
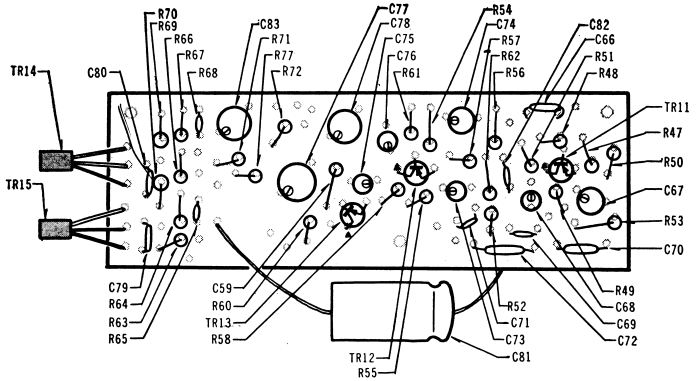


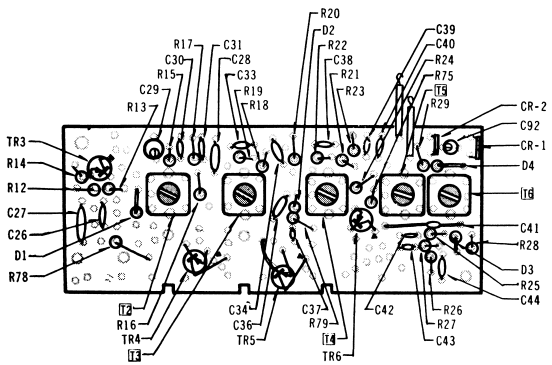


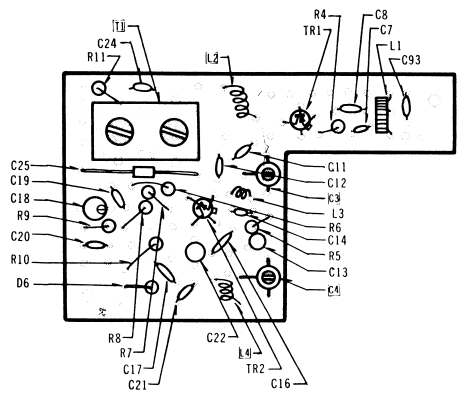
BOTTOM VIEW OF FM SECTION

T32. TOSHIBA MODEL 15L-822F

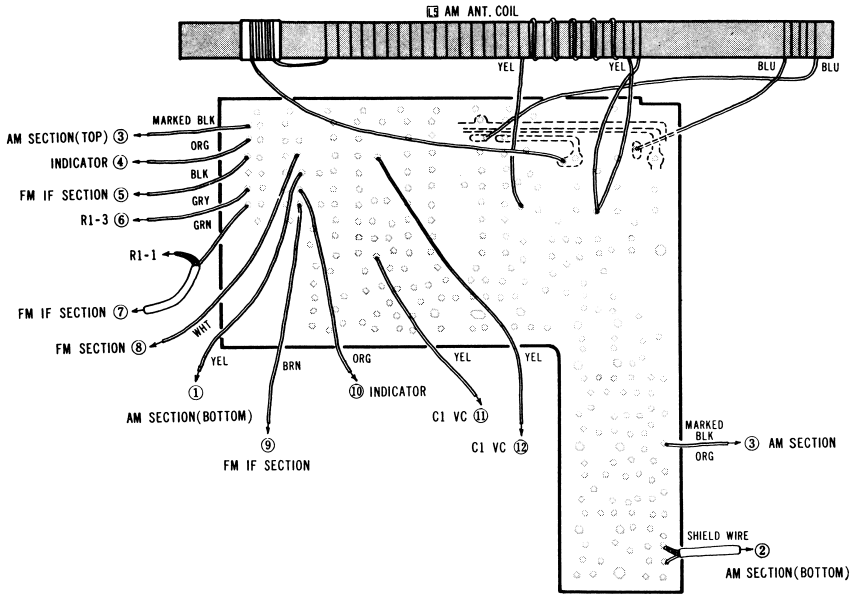


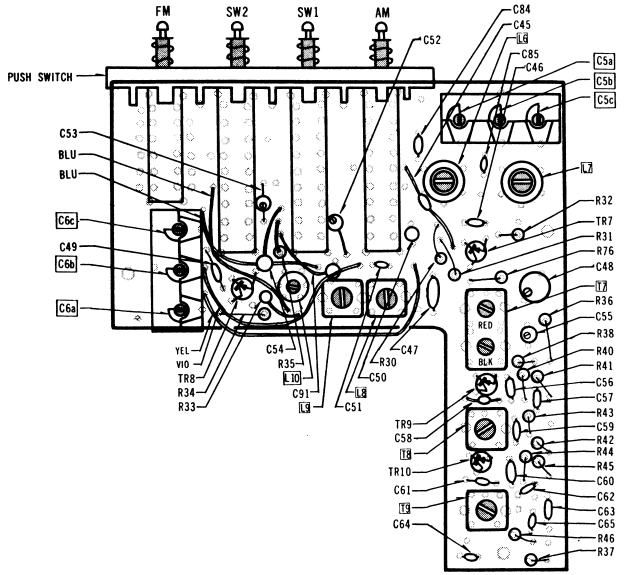
TOP VIEW OF AUDIO SECTION





TOP VIEW OF FM SECTION





TOP VIEW OF AM SECTION

T32. TOSHIBA MODEL 15L-822F

ALIGNMENT PROCEDURE

The following equipment is required for alignment:

1. Signal generator with a frequency range of at least from 455 KC to 19 MC, AM.
2. Signal generator with a frequency range of at least from 10.7 MC to 109 MC, FM.
3. Vacuum tube volt meter.
4. Sweep signal generator with a sweep range of at least 300 KC and center frequency of 10.7 MC with a 10.7 MC marker (Ext. marker may be used.)
5. Oscilloscope with a wide range amplifier of approximately 100 KC.
6. Test Loop, a coil of any size wire, one turn or more.
7. For alignment points, see schematic.

NOTES:

During alignment keep the signal generator outputs at the lowest level that will maintain a useable output from the set.

Ground connection of signal generator·····chassis ground

Generator madulation (FM) (other than I.F. alignment)·····30%, 400⁄s

Generator modulation (AM) ·····30%, 400⁄s

Step	Generator connection	Generator frequency	Band Setting	Position of tuning gang	Meter or oscillo-scope connection	Adjustment	Remarks
				AM ALIGNMENT			
1.	Test Loop	455 KC	AM	Tuning Gang fully closed	Across Voice Coil	T7, T8, T9	Adjust for maximum
2.	Same	525 KC	Same	Same	Same	L 8 AM (Osc. Coil)	Same
3.	Same	1670 KC	Same	Tuning Gang fully open	Same	C 6 a AM (Osc. Trimmer)	Same
4.	Repeat Step 2 and 3						
5.	Same	600 KC	Same	600 KC	Same	L 5 AM (Ant. Coil)	Same
6.	Same	1400 KC	Same	1400 KC	Same	C 5 a AM (Ant. Trimmer)	Same
7.	Repect Step 5 and 6						
				SW 1 ALIGNMENT			
1.	Signal Generator to Ant. directly	1.9 MC	SW1	Tuning gang fully closed	Across voice coil	L 9 SW 1 (Osc. Coil)	Same
2.	Same	6.2 MC	Same	Tuning gang fully open	Same	C 6 b SW 1 (Osc. Trimmer)	Same
3.	Repeat step 1 and 2						
4.	Same	2.5 MC	Same	2.5 MC	Same	L 6 SW 1 (Ant. Coil)	Same
5.	Same	5.5 MC	Same	5.5 MC	Same	C 5 b SW1 (Ant. Trimmer)	Same
6.	Repeat step 4 and 5						
				SW 2 ALIGNMENT			
1.	Signal Generator to Ant. directry	5.8 MC	SW2	Tuning gang fully closed	Across voice coil	L 10 SW 2 (Osc. Coil)	Same
2.	Same	18.5 MC	Same	Tuning gang fully open	Same	C 6 c SW 2 (Osc. Trimmer)	Same
3.	Repeat step 1 and 2						
4.	Same	7 MC	Same	7 MC	Same	L 7 SW 2 (Ant. Coil)	Same
5.	Same	17 MC	Same	17 MC	Same	C 5 c SW 2 (Ant. Trimmer)	Same
6.	Repeat step 4 and 5						

FM, IF ALIGNMENT

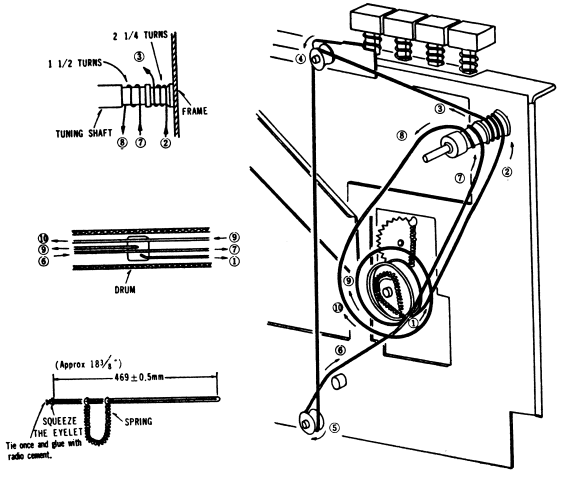
1.	Sweep generator to test point TP-1 thru .05μF, Fig. C	10.7 MC center freq. sweep with 10.7 MC, Marker	FM	Tuning gang fully open	Set scope for external sweep point TP-2, Fig. C	T1, T2, T3 T4, T5	Adjust for scope pattern illustrated below with 10.7 MC marker in center, Fig. A
2.	Same	Same	Same	Same	Set scope for external sweep point TP-3 directly	T5, T6	Adjust for radio detector "S" curve as illustrated below, Fig. B

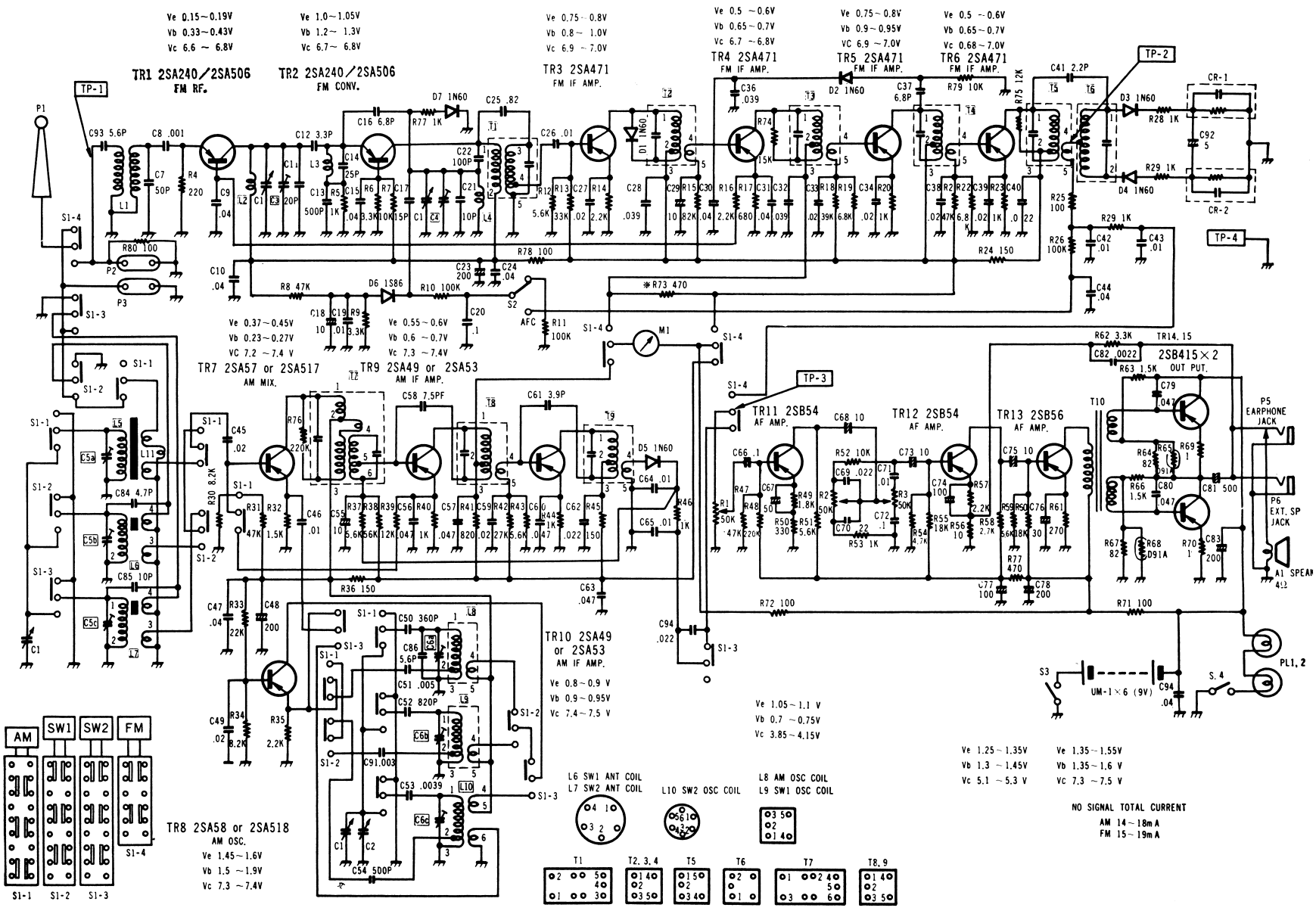
FM, RF ALIGNMENT

1.	FM signal generator to ant. dilectly Fig. D	86.5 MC	FM	Tuning gang fully closed	Across voice coil	L 4 FM (Osc. Coil)	adjust for maximum
2.	Same	109 MC	Same	Tuning gang fully open	Same	C 4 (Osc. Trimmer)	Same
3.	Repeat step 1 and 2						
4.	Same	88 MC	Same	88 MC	Same	L 2 FM (RF Coil)	Same
5.	Same	108 MC	Same	108 MC	Same	C 3 FM (RF Trimmer)	Same
6.	Repeat step 4 and 5						

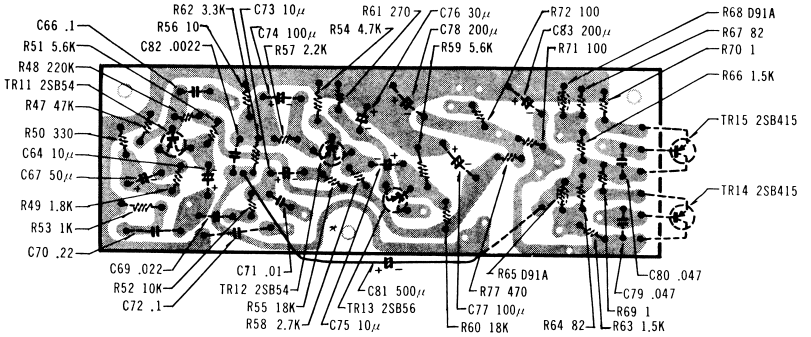
DIAL CORD STRINGING

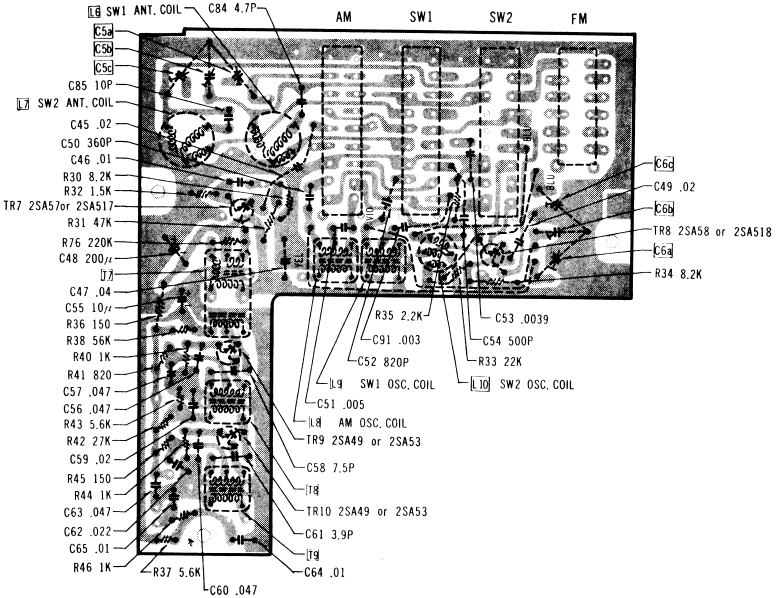
1. Set the variable capacitor to the minimum capacitance. (Open)
2. Set the dial cord as number in the diagram.

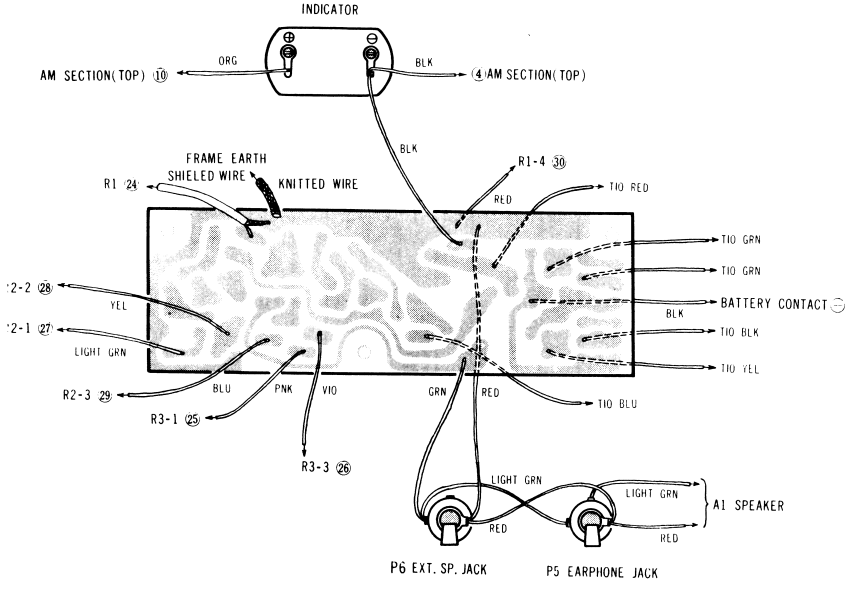




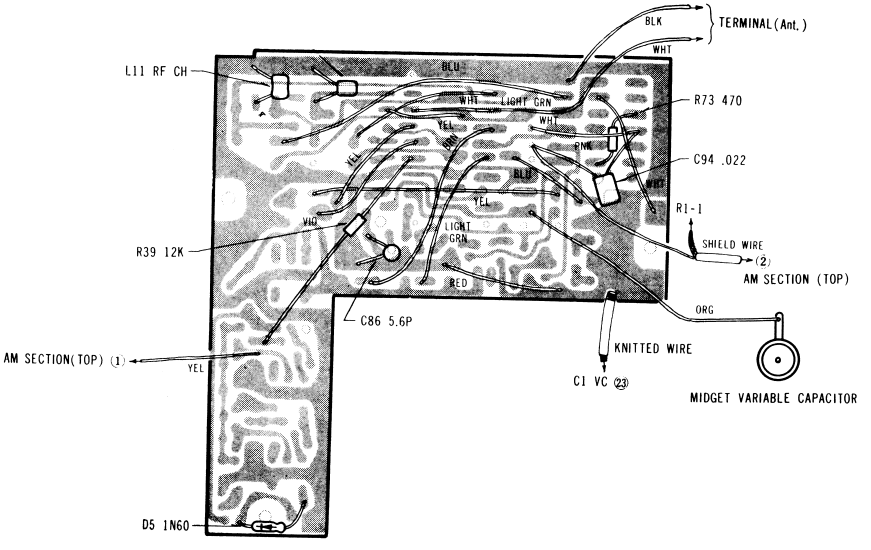
SCHEMATIC DIAGRAM





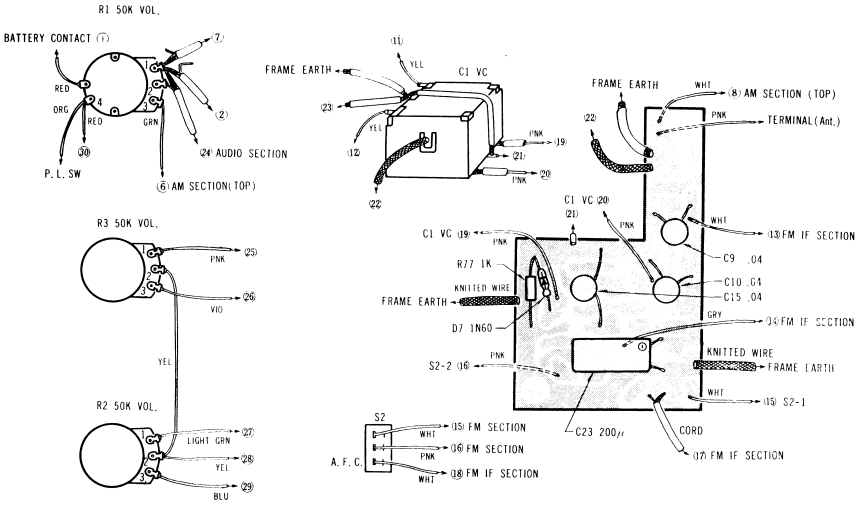


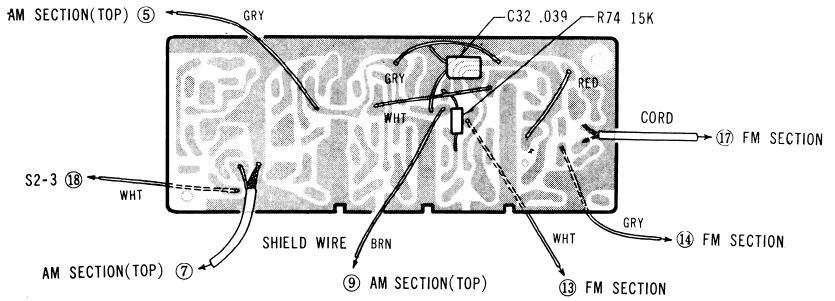
BOTTOM VIEW OF AUDIO SECTION



BOTTOM VIEW OF AM SECTION

TOSHIBA TRANSISTOR RADIO
SERVICE DATA

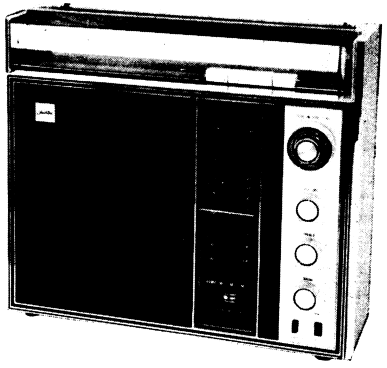




BOTTOM VIEW OF FM SECTION

SPECIFICATIONS

FREQUENCY RANGE :	AM 530～1650 KC SW1 2～6 MC SW2 6～18 MC FM 87.5～108 MC
INTERMEDIATE FREQUENCY :	AM 455 KC FM 10.7 MC
POWER SOURCE :	UM-1 (″D″) × 6……9V
POWER OUTPUT :	1.8 W (max.)
SPEAKER :	5″ P. M. D. Type
ANTENNAS :	Ferrite Core Antenna (AM) and Telescopic Antenna (SW1, SW2, FM)
JACKS :	Earphone Jack and External Speaker Jack
TERMINALS :	External Antenna Terminal × 2 (AM, FM)
TRANSISTORS & DIODES :	
TR 1 2SA240/2SA506	RF Amplifier (FM)
TR 2 2SA240/2SA506	Converter (FM)
TR3, TR4 TR5, TR6 2SA471	IF Amplifier (FM)
TR 7 2SA57/2SA517	Mixer (AM)
TR 8 2SA58/2SA518	Oscillator (AM)
TR9,TR10 2SA49/2SA53	IF Amplifier (AM)
TR11,TR12 2SB54	AF Amplifier
TR 13 2SB56	AF Amplifier
TR14,TR15 2SB415	Power Amplifier
D1, D2, D3 D4, D5, D7 1N60	Detector and Limiter
D 6 1S86	A.F.C. (FM)
DIMENSIONS :	W…11⅜″ H…8¼″ D…3⅛″
WEIGHT :	9.5 Lbs (With Batteries)
ACCESSORY :	Earphone



CHASSIS REMOVAL

1. Remove the two screws marked (※) and take off the back lid B shown in the Fig. 1.
2. Remove the four screws marked (★) and take off the back lid A shown in the Fig. 1.
3. Remove the knobs (Tun. Fine-Tun. Vol. Tone)
4. Remove the two screws and four studs marked (※) with white enamel shown in the Fig. 2.

Carefully pull the chassis from the cabinet.

Remarks :

When separating the chassis, do not loosen any screw except the ones painted with white enamel.

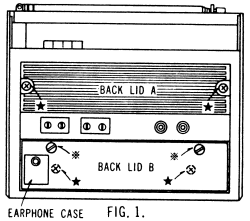


FIG. 1.

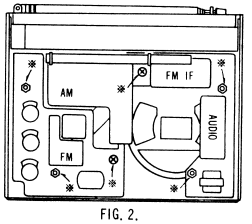


FIG. 2.