TOSHIBA MODEL 15M-915

ALIGNMENT PROCEDURE

INSTRUMENT REQUIRED

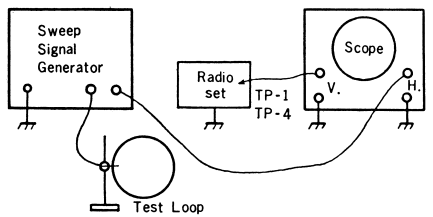
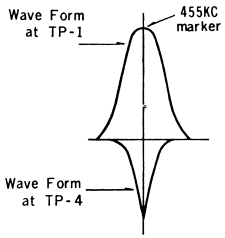
1. RF Signal Generator with a frequency range of at least from 500 KC to 1700 KC, AM.
2. Vacuum Tube Voltmeter.
3. Sweep Signal Generator and Scope with a sweep range of at least 50 KC and center frequency of 455 KC marker (Ext. marker may be used.)
4. Test Loop, a coil of any size wire, one turn or more.
5. Thin non-metallic shaft screwdriver alignment tool.

GENERAL CONDITIONS

1. Signal Generator's outputs must be kept at lowest level that will maintain a useable output from the set.
2. Standard modulation is 400 cycle 30% amplitude.

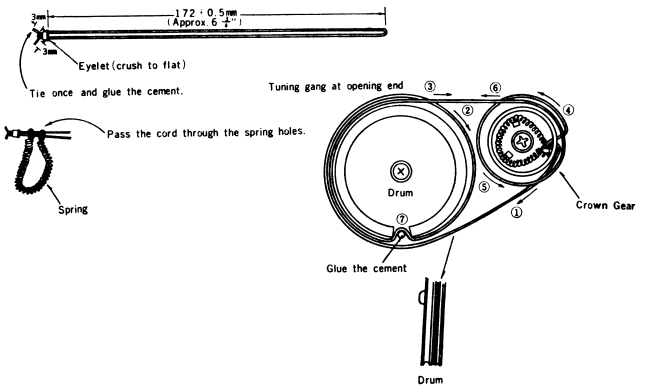
NOTES

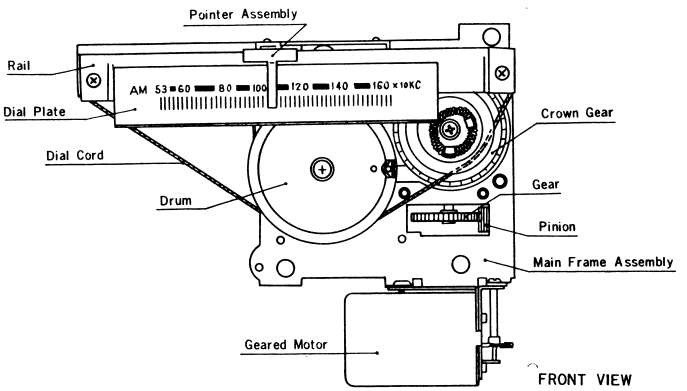
1. For alignment points, see figure of top view or schematic.
2. Take off the coupler joining the shaft of geared motor and the pinion, and turn the gear to move the tuning gang. (See figure of auto-tuning mechanism.)
3. Rotate the screw of gang end-stopper clockwise until it stops.
4. Separate the soldered TP-3 and TP-4.

Step	Signal Source-- / connected to-	Set Signal to-	Set Radio Dial to-	Output Indicator-- / connected to-	Adjust	Adjust for-
1	Sweep Signal Generator-- / Test Loop	455 KC	Approx. 1000kc (Gang half closed)	Scope-- / across TP-1 and ground	T1, 2, 3,	Maximum as shown in figure
2				Scope-- / across TP-4 and ground	T4, 5,	
	 					
3	RF Signal Generator-- / Test Loop	520 kc	Gang closed	V. T. V. M.-- / across voice coil	L2 (Osc. Coil)	Maximum
4		1650 kc	Gang open		TC1 (Osc. Trim.)	
5	Repeat steps 3 and 4					
6	RF Signal Generator-- / Test Loop	600 KC	600 KC	V. T. V. M.-- / across voice coil	L1 (Ant. Coil)	Maximum
7		1400 KC	1400 KC		TC2 (Ant. Trim.)	
8	Repeat steps 6 and 7 as necessary to obtain best tracking					
9	After alignment step 8, connect TP-4 and TP-3, and set the coupler and release the gang end-stopper as it was. If necessary slightly adjust R2 so that proper sensitivity of auto-tuning is obtained at D position of the sensitivity switch.					

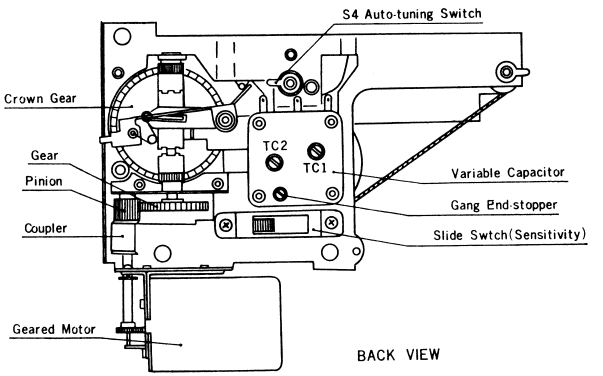
COUPLING CORD STRINGING

1. Take off the coupler and set the gang end-stopper by rotate the screw clockwise until it stops.
2. Set the gang at opening end by rotate the drum clockwise.
3. Pass the arranged cord through the slit in the side of crown gear and set the cord as number in the diagram exept ⑦.
4. Adjust the position of crown gear just to move the clutch for reverse.
5. Set the cord as ⑦ in the diagram.
6. After stringing, release the gang end-stopper and set the coupler.



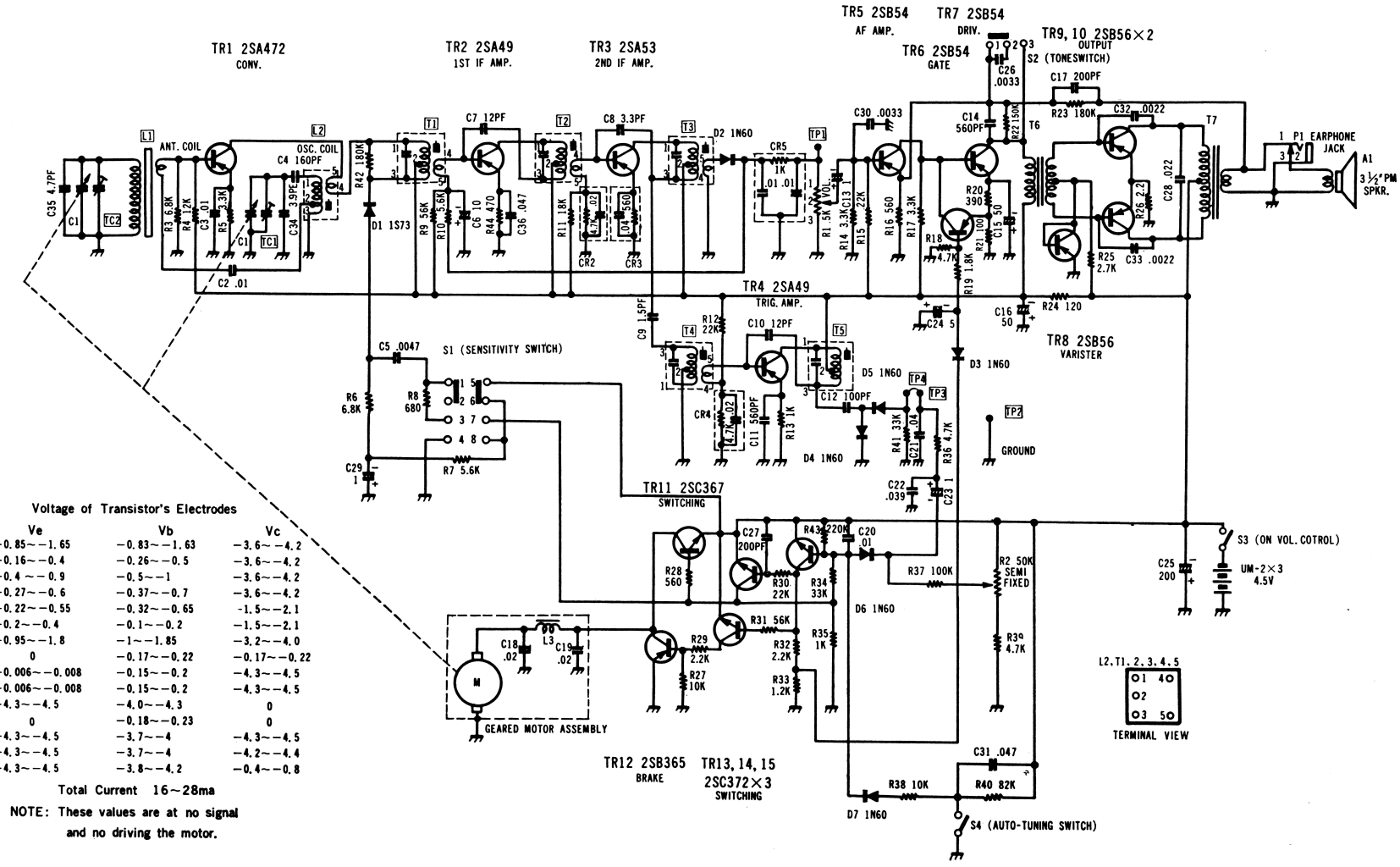


FRONT VIEW



BACK VIEW

AUTO-TUNING MECHANISM ASSEMBLY



Voltage of Transistor's Electrodes

	Ve	Vb	Vc
TR1	−0.85~−1.65	−0.83~−1.63	−3.6~−4.2
TR2	−0.16~−0.4	−0.26~−0.5	−3.6~−4.2
TR3	−0.4 ~ −0.9	−0.5~−1	−3.6~−4.2
TR4	−0.27~−0.6	−0.37~−0.7	−3.6~−4.2
TR5	−0.22~−0.55	−0.32~−0.65	-1.5~−2.1
TR6	−0.2~−0.4	−0.1~−0.2	−1.5~−2.1
TR7	−0.95~−1.8	−1~−1.85	−3.2~−4.0
TR8	0	−0.17~−0.22	−0.17~−0.22
TR9	−0.006~−0.008	−0.15~−0.2	−4.3~−4.5
TR10	−0.006~−0.008	−0.15~−0.2	−4.3~−4.5
TR11	−4.3~−4.5	−4.0~−4.3	0
TR12	0	−0.18~−0.23	0
TR13	−4.3~−4.5	−3.7~−4	−4.3~−4.5
TR14	−4.3~−4.5	−3.7~−4	−4.2~−4.4
TR15	−4.3~−4.5	−3.8~−4.2	−0.4~−0.8

Total Current 16~28ma

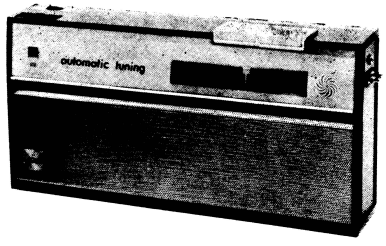
NOTE: These values are at no signal and no driving the motor.

SCHEMATIC DIAGRAM

TOSHIBA TRANSISTOR RADIO
SERVICE DATA

SPECIFICATIONS

FREQUENCY RANGE :		AM 530~1600 KC
INTERMEDIATE FREQUENCY :		455 KC
POWER SOURCE :		UM-2 ("C") ×3·····4.5 V
POWER OUTPUT :		300 mW (max.)
SPEAKER :		3½" P.M.D. Type
ANTENNA :		Ferrite Core Antenna
JACK :		Earphone Jack
TRANSISTOR & DIODE :		
TR 1	2 SA 472	Converter
TR 2	2 SA 49	IF Amplifier
TR 3	2 SA 53	IF Amplifier
TR 4	2 SA 49	Trigger Amplifier
TR 5, TR 7	2 SB 54	AF Amplifier
TR 6	2 SB 54	Gate
TR 8	2 SB 56	Varister
TR 9, TR 10	2 SB 56	Power Amplifier
TR 11	2 SC 367	Switching
TR 12	2 SB 365	Brake
TR13,TR14,TR15	2 SC 372	Switching
D 1	1 S 73	Switching
D 2, D 4, D 5	1 N 60	Detector
D 3, D 6, D 7	1 N 60	Switching
DIMENSIONS :		W···8¾" H···4⅜" D···1¾"
WEIGHT :		2.1 Lbs. (With Batteries)
ACCESSORIES :		Earphone, Earphone Case, Shoulder Belt

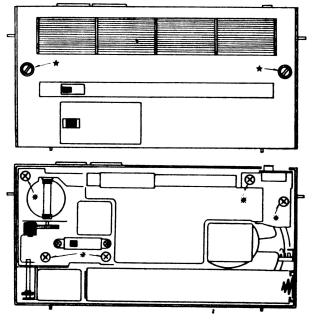


CHASSIS REMOVAL

1. Remove the two screws in back marked (★) shown in the diagram.
2. Lift cabinet back off carefully.
3. Remove the five screws marked (✲) shown in the diagram.
4. Carefully pull chassis out of cabinet.

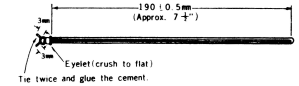
Remarks ;

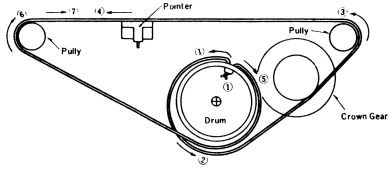
When separating chassis, do not loosen any screw except the ones painted with white enamel.

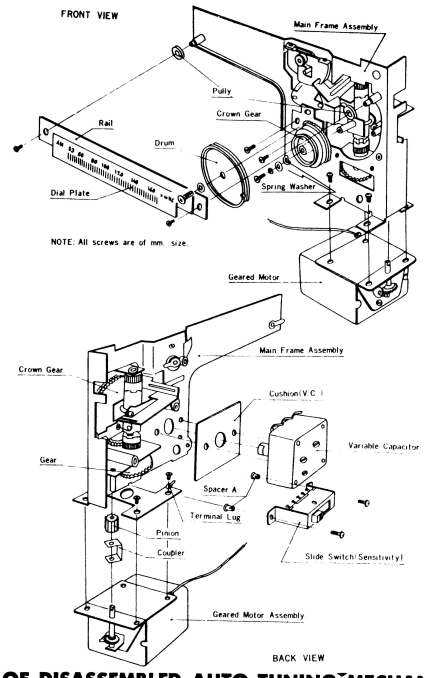


DIAL CORD STRINGING

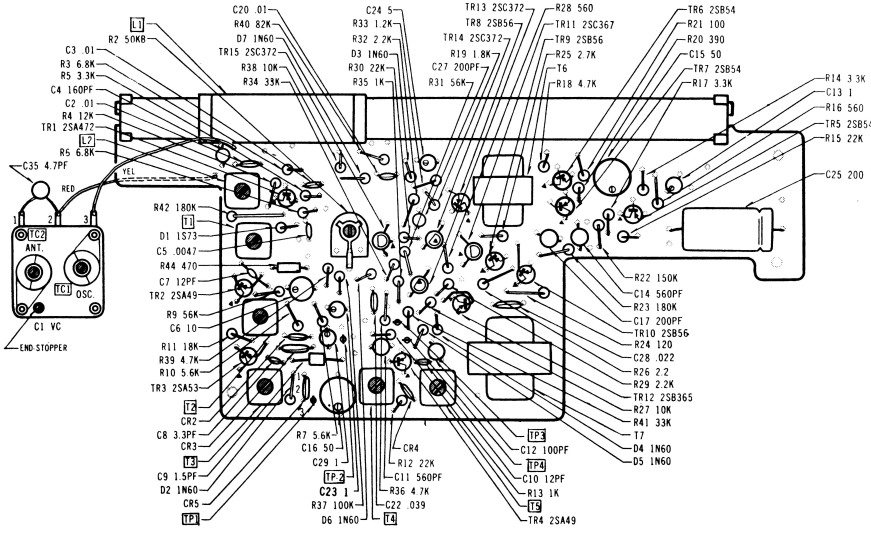
1. Let the assembled cord pass through the slit in the side of drum.
2. Set the cord as number in the diagram.







VIEW OF DISASSEMBLED AUTO-TUNING MECHANISM



MARK ▲ SHOWS COLLECTOR ELECTRODE OF TRANSISTOR