

**ALL TRANSISTOR
 FM/AM COMPACT STEREO
 with CASSETTE TAPE RECORDER
 MODEL KST-3410**

SERVICE MANUAL

No. 397

1971

SPECIFICATIONS

RADIO & AMPLIFIER

CIRCUIT SYSTEM	FM/AM all transistor superheterodyne with FM multiplex stereo adaptor
TUNING RANGE	FM: 88-108MHz AM: 530-1, 605KHz
INTERMEDIATE FREQ.	FM: 10.7MHz AM: 455KHz

TRANSISTORS

TR101	2SC535	FM RF Amp.
TR102	2SC535	FM Conv.
TR103	2SC535	FM Osc.
TR151	2SC460	AM Conv.
TR201	2SC460	FM/AM 1st IF Amp.
TR202	2SC460	FM/AM 2nd IF Amp.
TR203	2SC460	FM 3rd IF Amp.
TR301	2SC458	19KHz Amp.
TR302	2SC458	38 KHz Amp.
TR303	2SC458	DC Amp.
TR401A	2SC458	Pre-Amp. (R)
TR401B	2SC458	Pre-Amp. (L)
TR501A	2SC458	AF Amp. (R)
TR501B	2SC458	AF Amp. (L)
TR502A	2SA637	AF Amp. (Driver) (R)
TR502B	2SA637	AF Amp. (Driver) (L)
TR503A	2SC1162	Power Amp. (R)
TR503B	2SC1162	Power Amp. (L)
TR504A	2SA700	Power Amp. (R)
TR504B	2SA700	Power Amp. (L)

DIODES

D101	1S85	AFC
D201	1N60	FM Limiter
D202	1N60	FM Limiter
D203	1N60	AGC
D204	1N34A	AM Det.
D205	1N60P	FM RADIO Det.
D206	1N60P	FM RADIO Det.
D209	HV80	FM Limiter
D301	1N34A	Doubler
D302	1N34A	Doubler
D303	1N60P	Switching
D304	1N60P	Switching
D305	1N60P	Switching
D306	1N60P	Switching
D601	VO6A	Rectifier
D602	VO6A	Rectifier
D603	VO6A	Rectifier
D604	VO6A	Rectifier
D605	AW01-13	Voltage stabilizer (Zener diode)

VARISTOR

VAR501A	1S2076	Temperature Compensator
VAR501B	1S2076	Temperature Compensator

VAR502A	1S2076	Temperature Compensator
VAR502B	1S2076	Temperature Compensator
SPEAKER	6 1/2 (16cm)	P. M. 8ohms X2
AUDIO OUTPUT	3.8W X2	(RMS 5% THD 8ohm)
FREQUENCY RANGE	50-12,000Hz	
POWER SUPPLY	AC 120V, 60Hz	
POWER CONSUMPTION	50W	
ANTENNA	Built-in ferrite-core and line cord antenna	
SENSITIVITY	FM: 4µV (max.) 6µV (practical) AM: 100µV (max.) 300µV practical	

TERMINALS & IMPEDANCE

- HEADPHONE JACK (8 ohms)
- AUX IN JACKS (100k ohms)
- SPEAKER JACKS (8 ohms)
- REC OUT JACKS
- FM ANTENNA TERMINALS

TAPE DECK

TRANSISTORS

TR701A	2SC458LG	Pre-Amp. (R)
TR701B	2SC458LG	Pre-Amp. (L)
TR702A	2SC458LG	Pre-Amp. (R)
TR702B	2SC458LG	Pre-Amp. (L)
TR703A	2SC458LG	Pre-Amp. (R)
TR703B	2SC458LG	Pre-Amp. (L)
TR704A	2SC458	Pre-Amp. (R)
TR704B	2SC458	Pre-Amp. (L)
TR705A	2SC458	Pre-Amp. (R)
TR705B	2SC458	Pre-Amp. (L)
TR706A	2SB77(P)	Bias Osc.
TR706B	2SB77(P)	Bias Osc.

DIODES

D703A	1N34A	Rect. for level meter
D703B	1N34A	Rect. for level meter
D704A	1N34A	Rect. for level meter
D704B	1N34A	Rect. for level meter

TERMINAL & IMPEDANCE

- MIC JACKS (10kohm)

TAPE	Compact cassette
TAPE SPEED	1 7/8 ips (4.75cm/s)
RECORDING OR PLAYING TIME	60min. (using C-60)
RECORDING SYSTEM	AC bias
ERASING SYSTEM	AC erase
TRACK SYSTEM	Stereo 4 track
DIMENSIONS	RADIO: 4 3/8" (H) X 16 5/8" (W) X 10 1/8" (D) SPEAKER: 11 3/8" (H) X 8 1/8" (W) X 6 1/8" (D) X 2
WEIGHT	RADIO: 12 lbs. 11 oz. SPEAKER: 4 lbs. 11 oz. X2

ACCESSORIES

Dynamic microphone (with stand)	2
Compact cassette (C-60)	1

CONTROLS

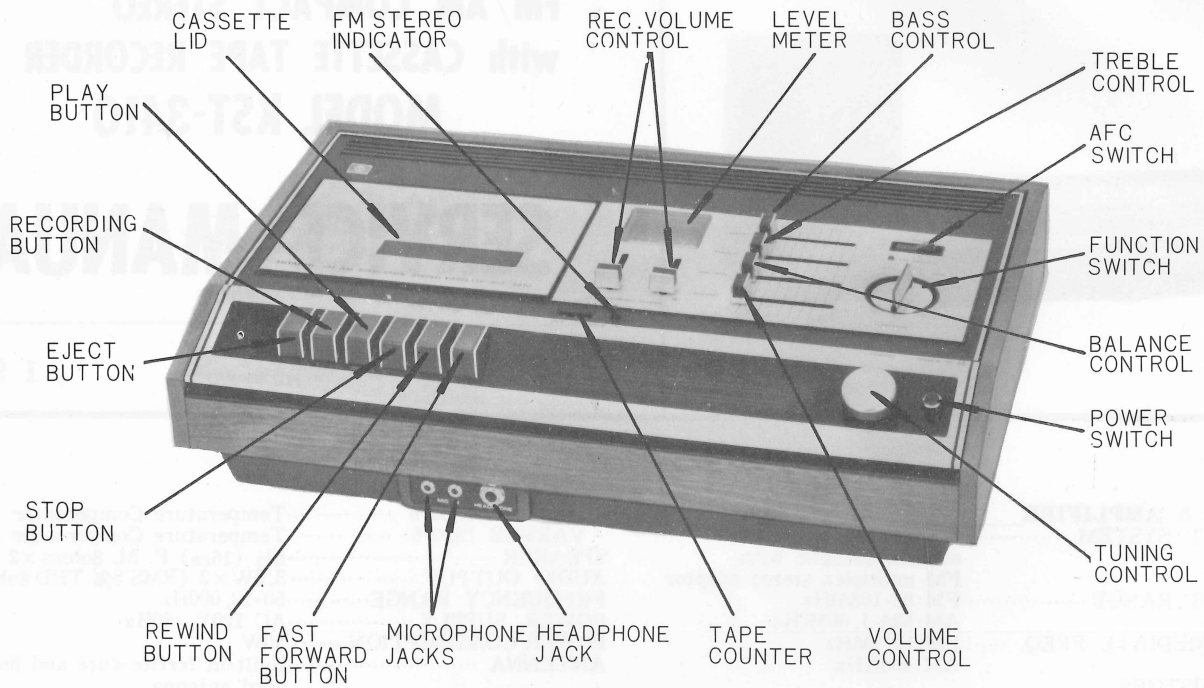


Fig. 1

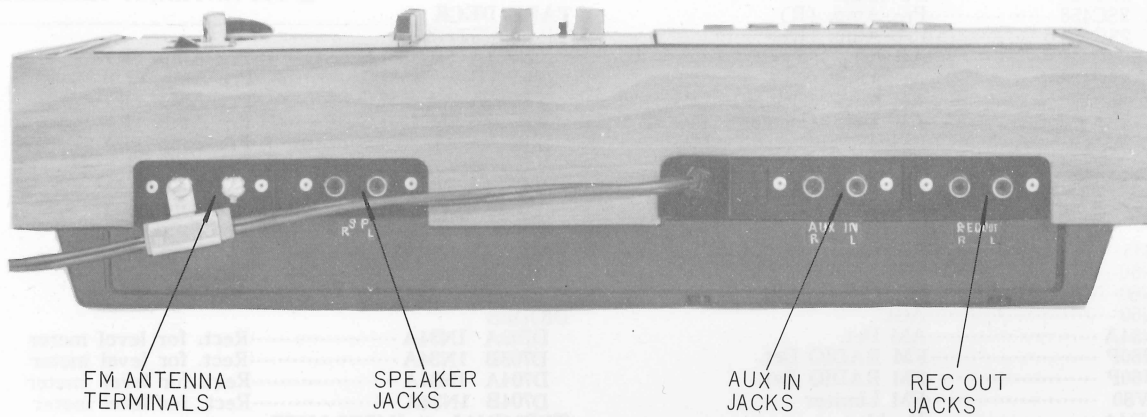


Fig. 2

BLOCK DIAGRAM

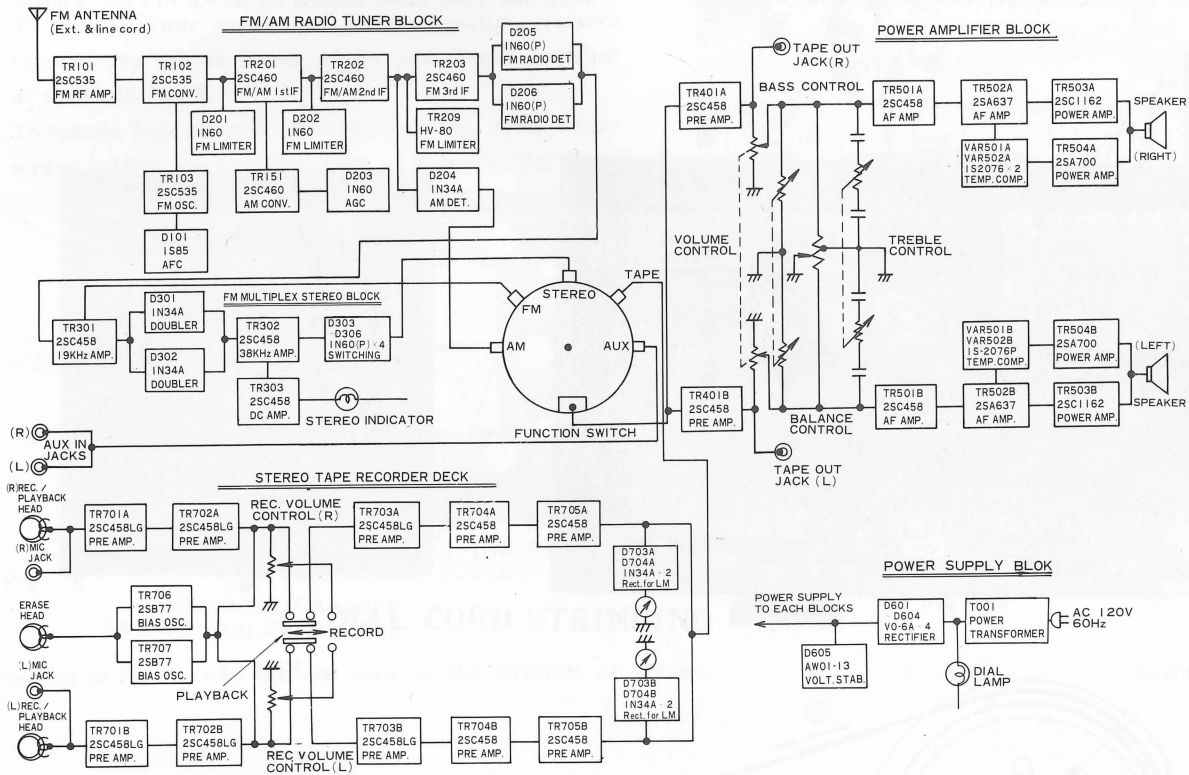


Fig. 3

DISASSEMBLY

1. Removal of bottom cover

Remove ten screws holding bottom cover shown in Fig. 4.

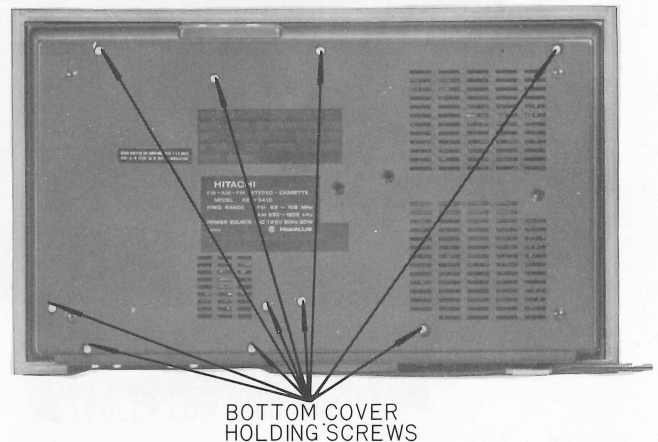


Fig. 4

2. Removal of Radio block and Tone block chassis

To remove Radio block and Tone block chassis, remove

two screws holding chassis and six screws holding Radio block and Tone block chassis as shown in Figs. 5 and 6.

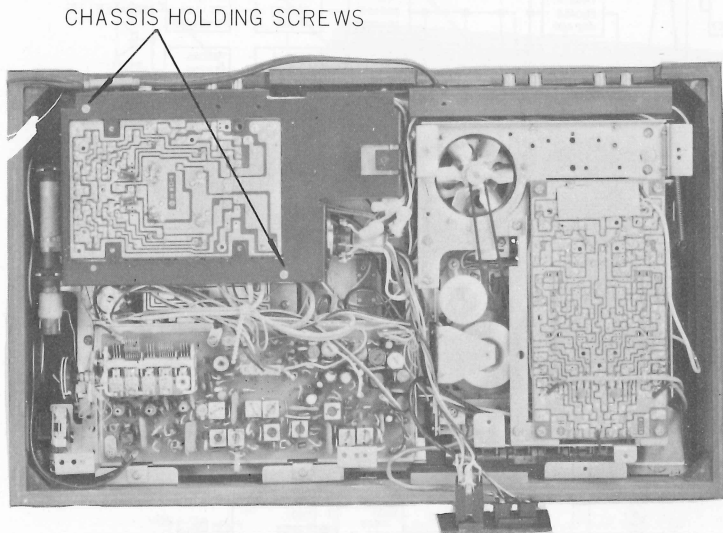


Fig. 5

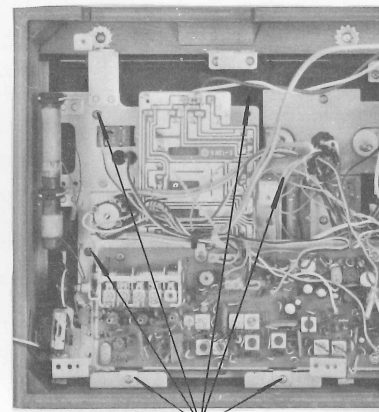


Fig. 6

3. Removal of Tape recorder deck chassis

Remove five screws holding Tape recorder deck chassis as shown in Figs. 7 and 8.

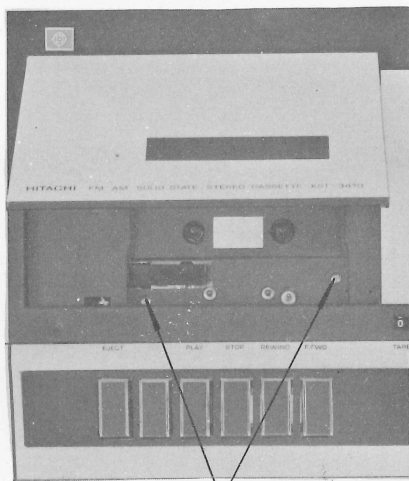


Fig. 7

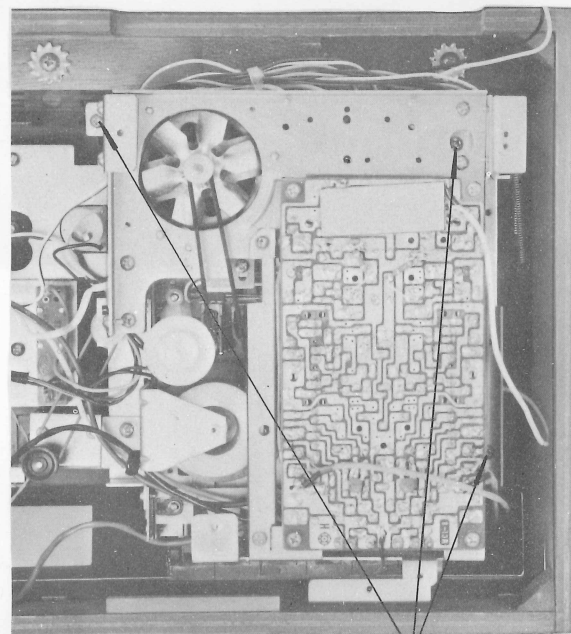


Fig. 8

4. Removal of Power supply, Power amplifier and Tape recorder pre-amplifier block.

To remove Power supply and Power amplifier, remove three screws holding Power supply and Power amplifier as shown in Fig. 9.

To remove Tape recorder pre-amplifier block, remove four screws holding pre-amplifier block as shown in Fig. 10.

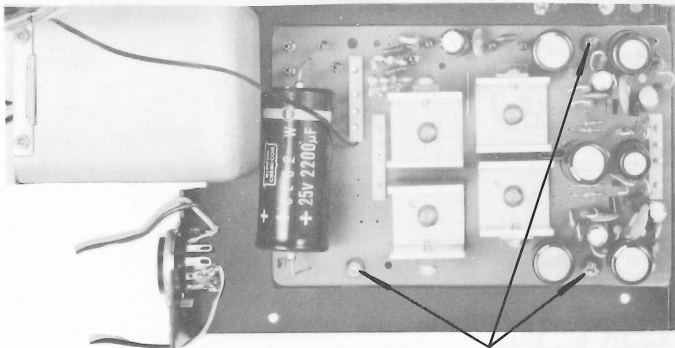


Fig. 9

POWER SUPPLY & POWER AMP
BLOCK HOLDING SCREWS

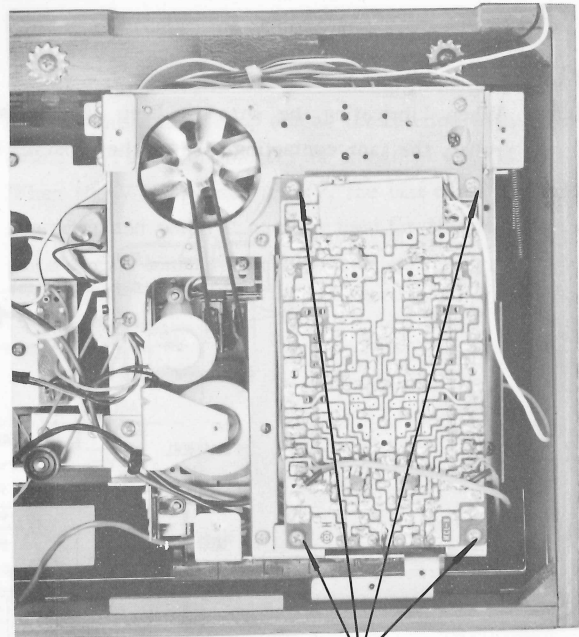


Fig. 10

PRE AMP .BLOCK
HOLDING SCREWS

DIAL CORD STRINGING

Referring to Fig. 11, loop the dial cord in the direction of arrows.

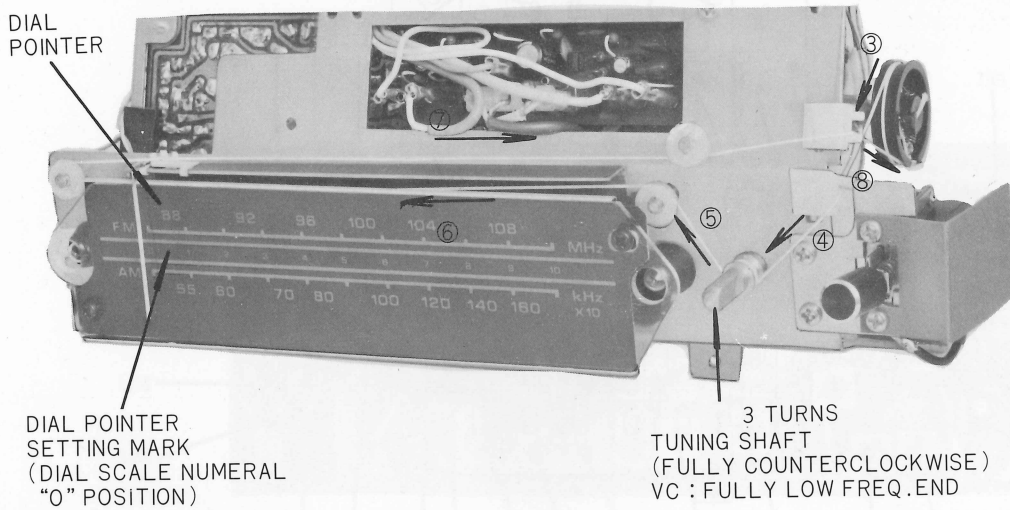
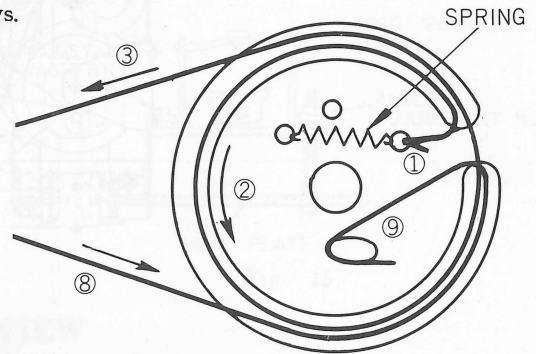


Fig. 11

ADJUSTMENT AND INSPECTION OF TAPE RECORDER DECK

CIRCUIT BOARD DIAGRAM

CIRCUIT

1. Adjustment of bias current

Adjust RV703A and RV703B so that the bias current flowing in the coil of the recording head may be within the normal range of $350\mu A \pm 30\mu A$. In this case, set the specified voltage and recording condition.

Measure the voltage drop across the resistor with a VTVM (Vacuum-Tube Volt-Meter) as shown in Fig. 14. When the VTVM reads 3.5mV, the bias current is $350\mu A$. Ammeter and tester cannot be used for this measurement since circuit constant and characteristics vary.

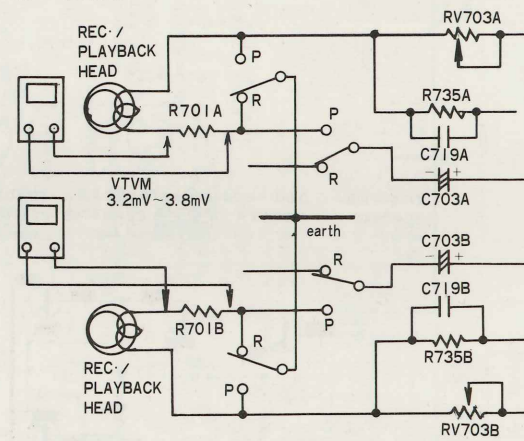


Fig. 14

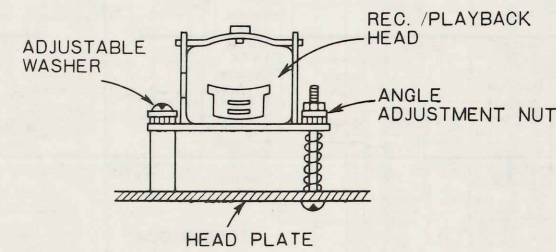
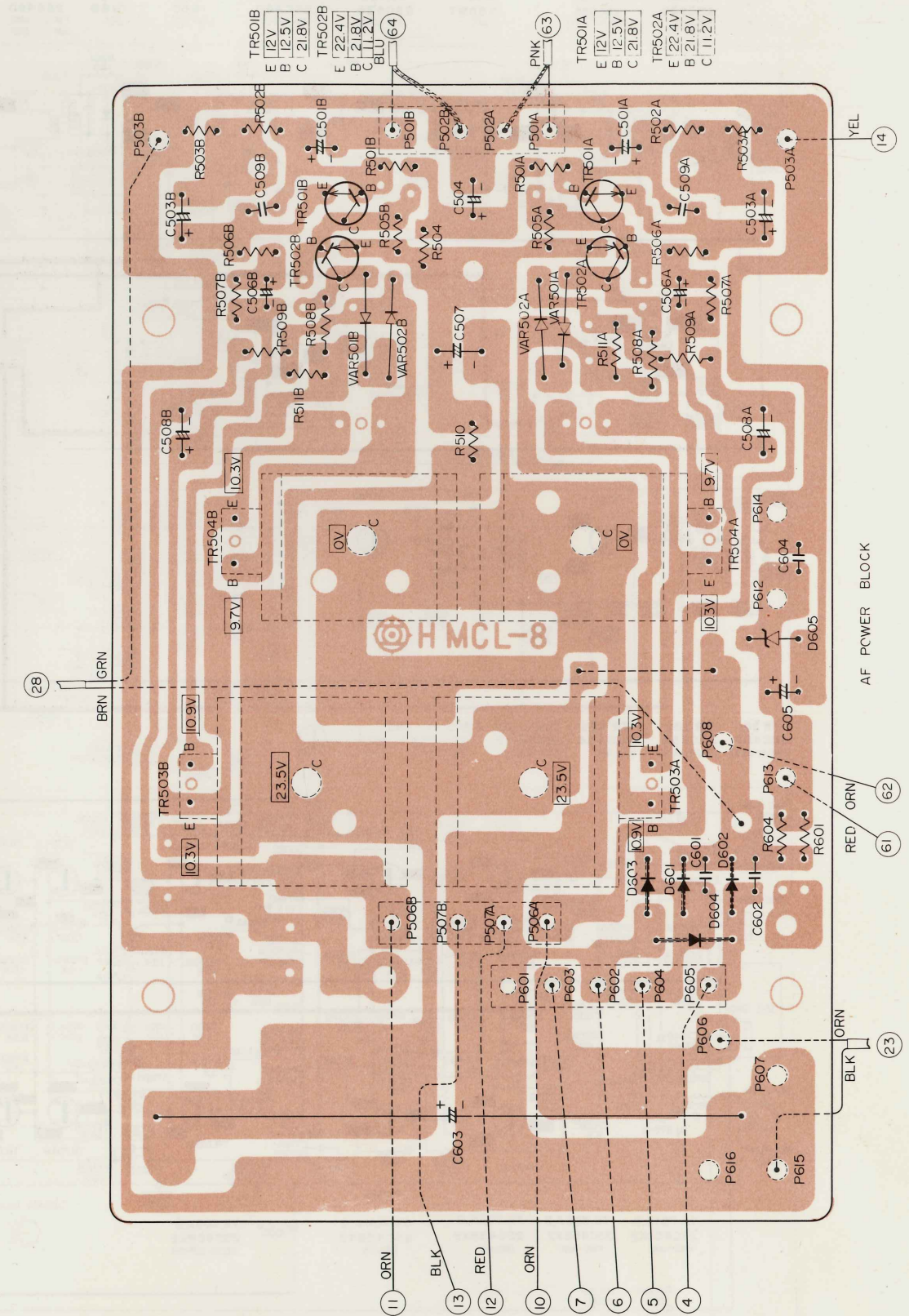
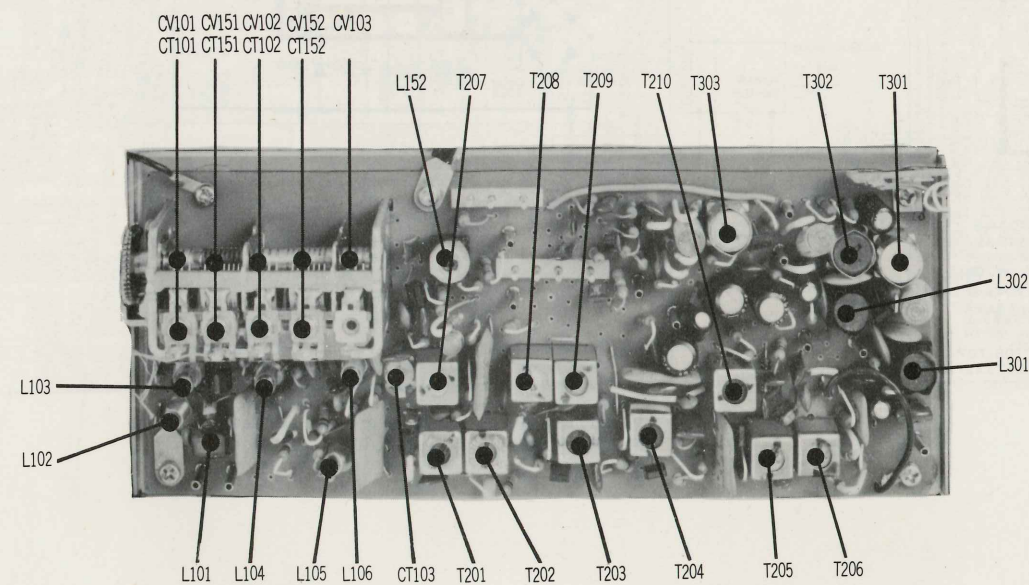


Fig. 15

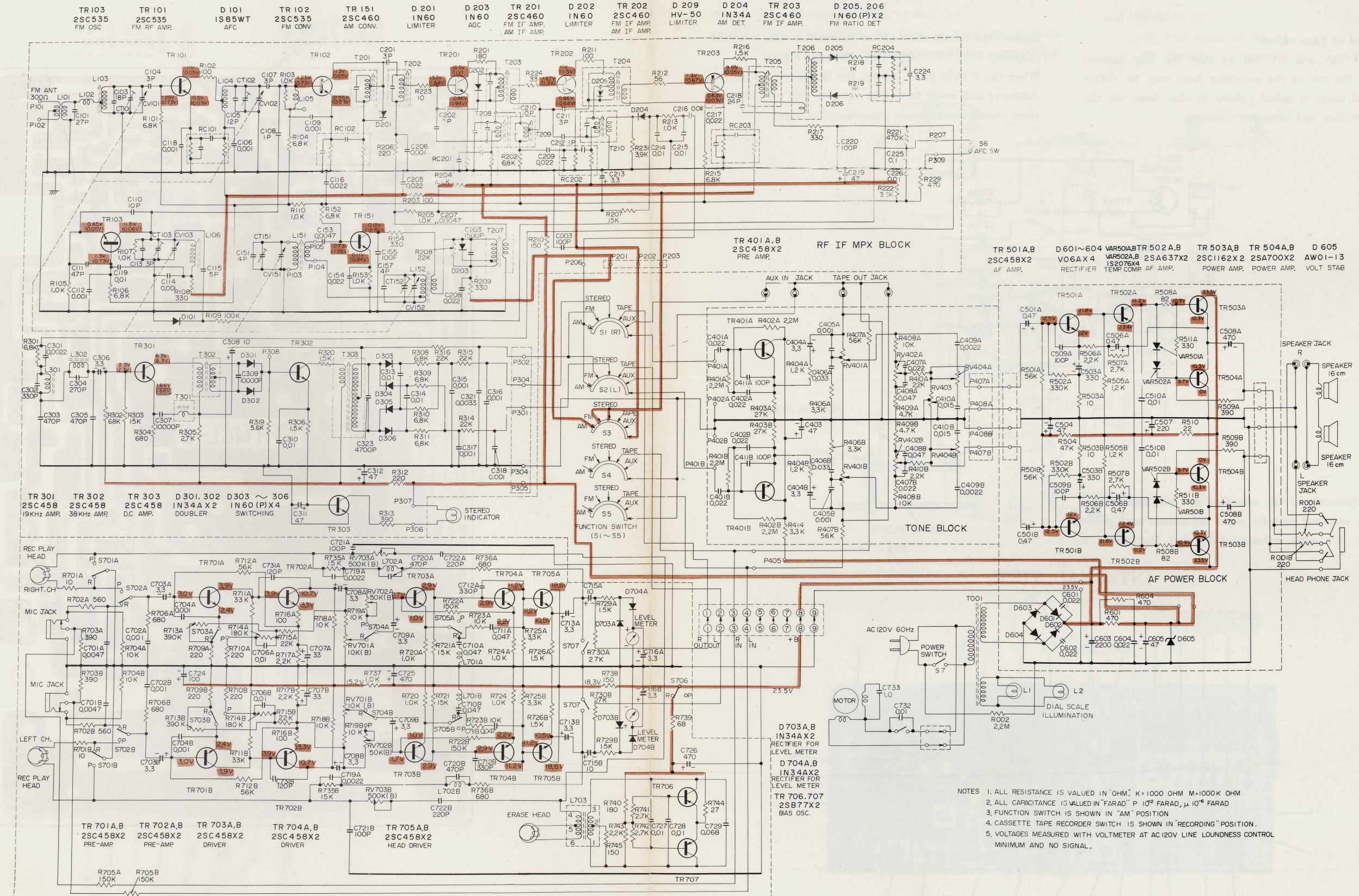
2. Angle adjustment of the recording and playback head

Prepare a standard tape for angle adjustment and adjust the screw for angle adjustment so that the output is maximum.

INTERNAL VIEW



SCHEMATIC DIAGRAM



NOTES 1. ALL RESISTANCE IS VALUED IN "OHM", K=1000 OHM M=1000K OHM
 2. ALL CAPACITANCE IS VALUED IN "FARAD" P=10¹² FARAD, μ=10⁶ FARAD
 3. FUNCTION SWITCH IS SHOWN IN "AM" POSITION
 4. CASSETTE TAPE RECORDER SWITCH IS SHOWN IN "RECORDING" POSITION.
 5. VOLTAGES MEASURED WITH VOLTMETER AT AC 120V LINE LOUDNESS CONTROL MINIMUM AND NO SIGNAL.

CIRCUIT BOARD DIAGRAM

