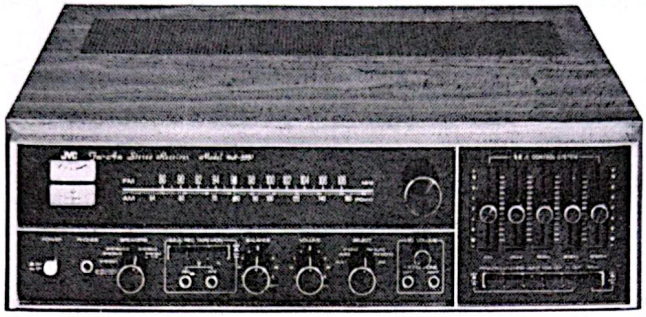
JVC
NIVICO

No. 2259

SERVICE MANUAL



MODEL VR-5551

FM/AM STEREO RECEIVER

DIMENSIONS : H-5⅞″, W-19⅜″, D-14½″ WEIGHT : 28.6 lbs.

SPECIFICATIONS

AUDIO SECTION

Total Dynamic Power :	240W(120W+120W) IHF 4Ω		
	170W(85W+85W) IHF 8Ω		
Continuous Power	130W(65W+65W) 4Ω		
Both Channel Driven :	100W(50W+50W) 8Ω		
Load Impedance :	4~16Ω		
THD at Rated Power :	0.5% at 1kHz		
IM Distortion at Rated Power :	0.8%		
Power Bandwidth	15~30kHz		
Input Sensitivity for Rated Output :	MIC		8mV
	Phono (Mag.)		2.5mV
	Aux.-1		150mV
	Aux.-2		150mV
	Tape Play	(Pin)	150mV
		(DIN)	150mV
Recording Output :		(Pin)	150mV
		(DIN)	30mV
		(Dubbing)	150mV
Signal to Noise Ratio :	MIC		65dB
	Phono (Mag.)		65dB
	Aux. 1, 2		75dB
	Tape Play		75dB
Crosstalk at 1kHz Aux. Input :	50dB		
Damping Factor at 8Ω :	50		
Tracking Error :	Less than 4dB		
S.E.A. Center Frequency :	40, 250, 1,000, 5,000, 15,000Hz		

S.E.A Control Range :	±12dB
Low Cut Filter :	−10dB at 50Hz
High Cut Filter :	−10dB at 10kHz
Loudness Control :	+ 10dB at 50Hz
	+ 6dB at 10kHz
Power Source :	AC 120V, 50/60Hz (For U.S.A.)
	AC 100,120,220,240V, 50/60Hz (Except for U.S.A.)
Power Consumption :	220W at 8Ω Non clip output

FRONT PANEL CONTROLS

Power Switch :	Push Switch
Tape Monitor Switch (A,B) :	Push Switch
S.E.A. Recording Switch :	Push Switch
Mode :	Push Switch
Loudness :	Push Switch
FM Muting :	Push Switch
Low Cut :	Push Switch
High Cut :	Push Switch
S.E.A. Defeat :	Push Switch
S.E.A. Slide Controls :	Slide Volume
Speaker Selector :	Phones, system 1, 2, 1+2, 3, 1+3
MIC Mixing Control :	
Balance :	
Volume :	
Select :	Aux. 1, Aux. 2, Phono, FM auto, FM mono, AM

Headphone Jack, Tape P/B & Rec. Jacks, · · · ·equipped

VICTOR COMPANY OF JAPAN, LIMITED.

REAR PANEL TERMINALS

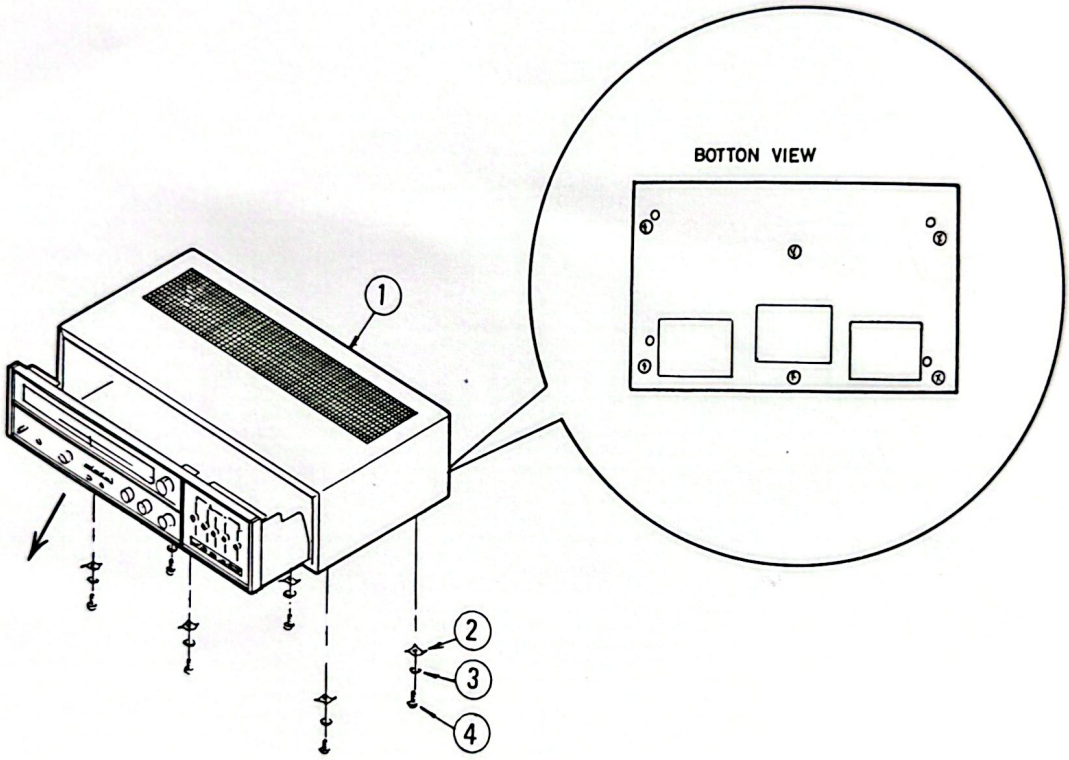
AM and FM Antenna (75/300Ω) Terminals
DIN Jack for Tape Playback and Recording
AC Outlet ×2
Speaker Terminals, System 1, 2, 3
Pre-out (L. R)
Main-in (L. R)
Aux. 1, 2
Phono

REAR PANEL CONTROLS

Muting adjustor

REMOVAL OF CHASSIS

1. **Loosen 6 screws 4 from the bottom of the Cabinet.**
2. **Pull out the chassis in the direction of arrow tilting up slightly with both hands.**



①	DL-ED91257	WOODEN CASE
②	E7857-1	MOUNTING WASHER
③	WLS4000Z	LOCK WASHER
④	SPSP4025ZS	SCREW

Fig. 1

WIRE CONNECTION OF VOLUME AND BALANCE

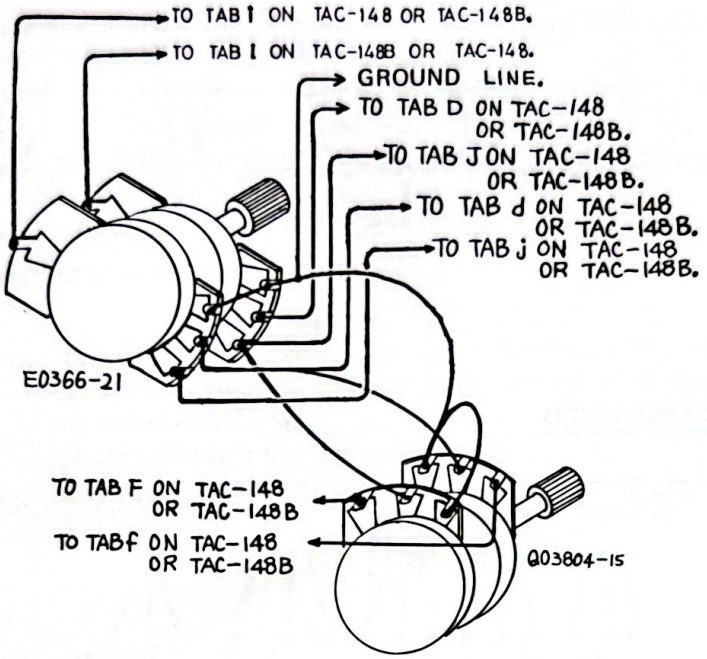


Fig. 2

WIRE CONNECTION OF SPEAKER SELECTOR

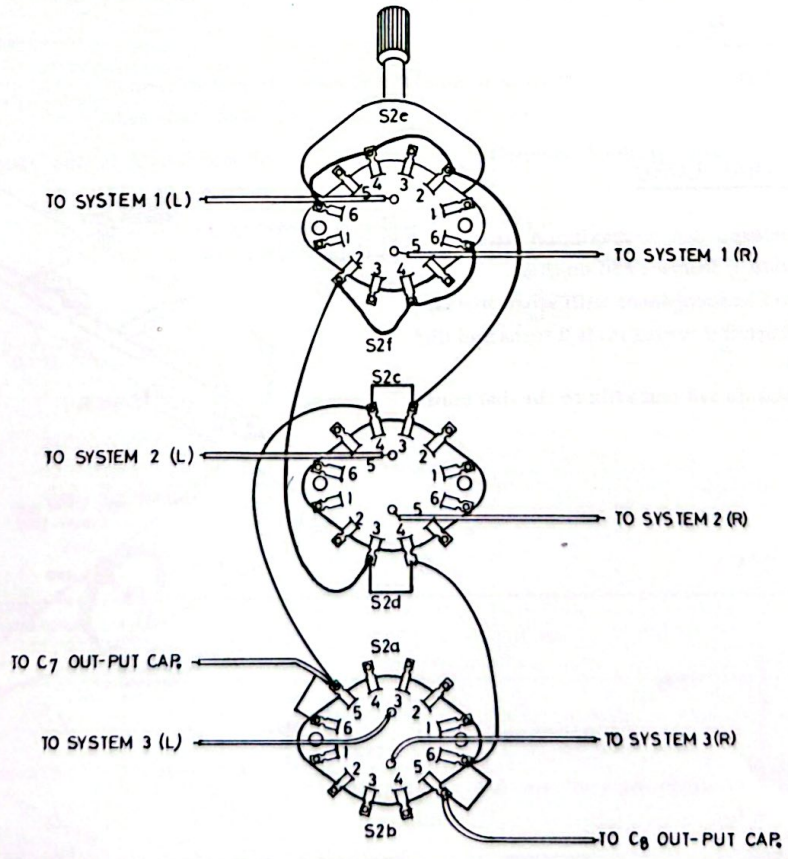


Fig. 3

VR-5551

PILOT LAMP CIRCUIT

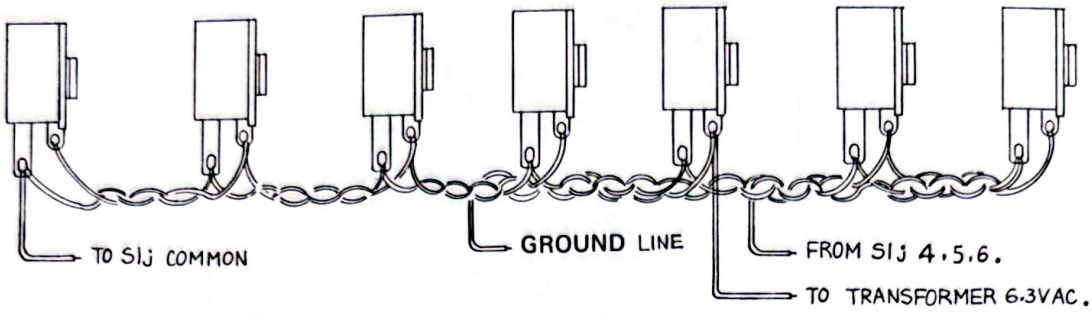


Fig. 4

TRANSISTOR & IC EMPLOYED

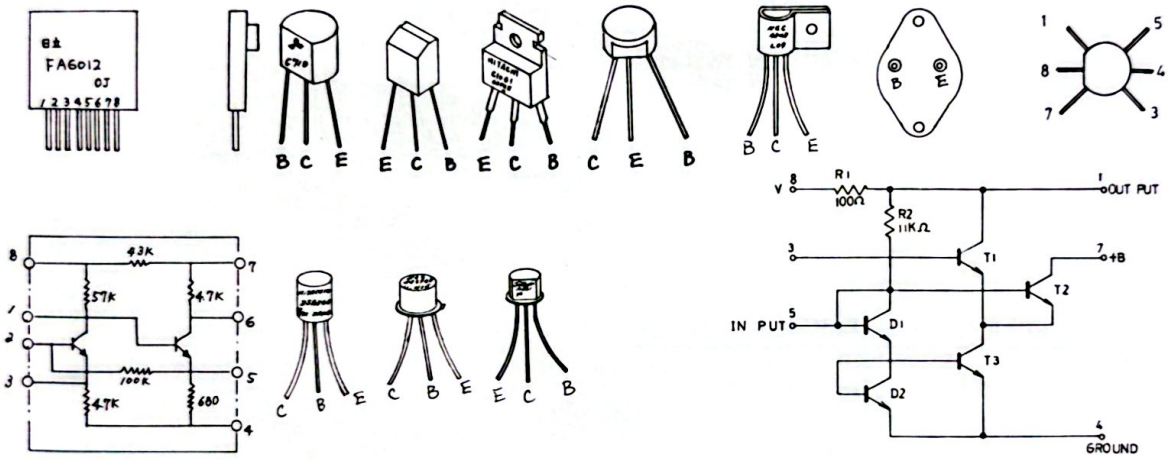


Fig. 5

HOW TO FIT THE DIAL CORD

① **Set the variable capacitor on maximum capacity.**
② **Be sure dial drum is firmly fixed on shaft.**
③ **Fit the dial cord in accordance with arrow marks.**
④ **Wind the cord around tuning shaft 3 turns and dial drum 2 Turns.**
⑤ **Place the pointer on rail and affix to the dial cord.**

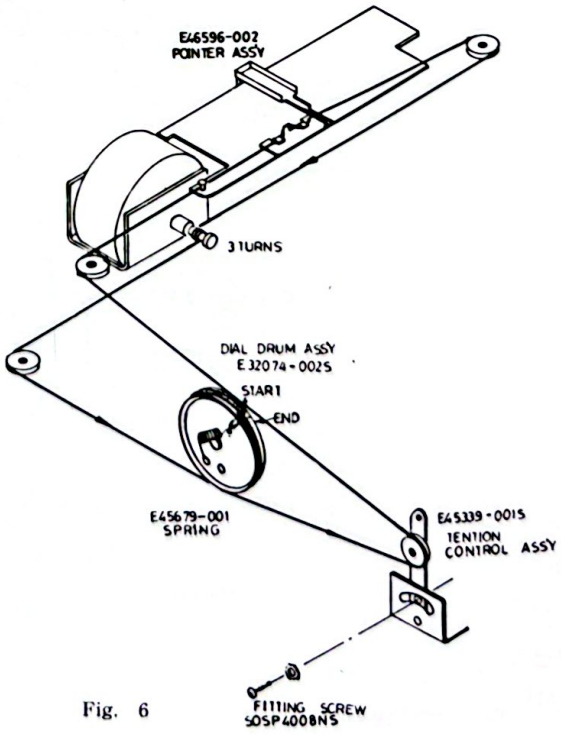


Fig. 6

ALIGNMENT INSTRUCTION

Maintain line voltage indicated on Receiver. Use only enough generator output to obtain a suitable indication. Allow 15 minutes warm up for receiver and equipment.

AM ALIGNMENT —— Selector in AM Position ——

1. AM IF Stage Ⅰ

Test equipment

Signal generator : Tune in 455kHz and connect output of S. S. G. to loop antenna (See Fig. 12).
VTVM : Set to AC low range and connect to speaker terminals on rear panel.
Set volume control at maximum.
Set the tuning gang to minimum position.
Alignment : Adjust generator output so that the VTVM reading becomes 2V approximately. Adjust T106, T107 for maximum gain.

AM IF Stage Ⅱ

Test equipment

Oscilloscope : Connect vertical input of scope to AM out on TFM-903GUA Tuner Circuit Board Ass'y.
Sweep Generator : Adjust generator level and sweep to observe IF response curve. Set generator output as low as possible.
Marker : Couple Marker output (455kHz, 450kHz, 460kHz) lightly to Sweeper out.
Adjustment : Repeat alignment T106, T107 until maximum gain and Symmetry are obtained. (See chart below)

AM IF Stage Ⅲ Using Genescope

Test equipment

Genescope : Connect output of Genescope to Base of Converter and Vertical input of Genescope to AM out (See chart below).

Connect output Genescope to

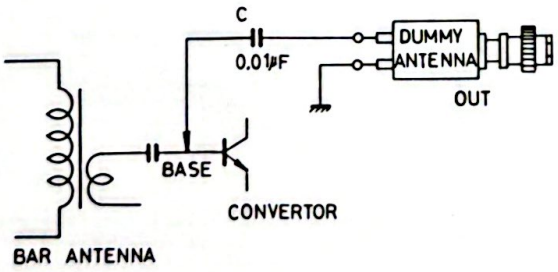


Fig. 7

Connect Vertical input of Genescope to

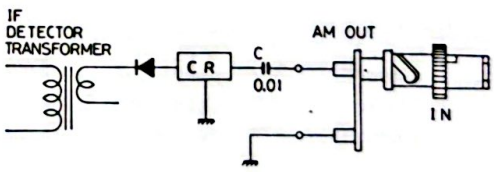
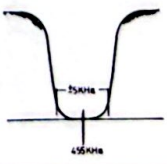


Fig. 8

Adjustment :

Genescope		Adjust	Waveform
Output Level	Input Level		
Vary with amplitude from maximum output to 55dB approximately.	0.3V/6cm	Repeat alignment T106 and T107 until maximum gain and symmetry are obtained.	

2. RF Stage

Test equipment

Signal generator : To apply generator output, use loop antenna as shown below.
VTVM : Connection (See chart below).

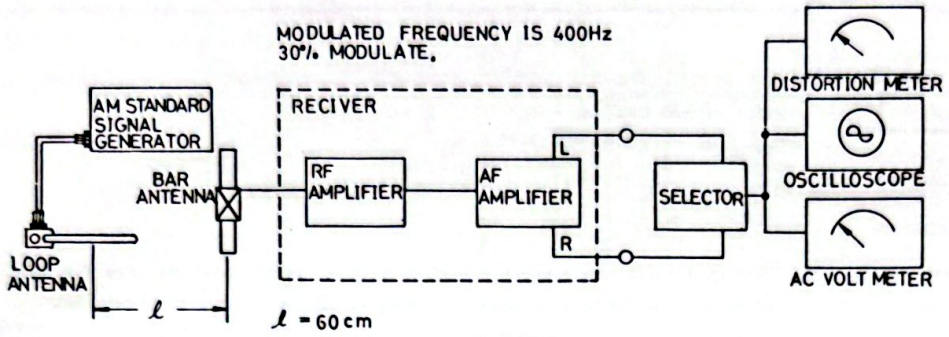


Fig. 10

Alignment :

STEP	GENERATOR	ADJUST	DESCRIPTION
1	600kHz	T108 (Osc. Coil)	Repeat the step 1~3 for Tuning Dial Scale Correctly
2	1400kHz	TCO (Trimmer)	
3	1000kHz	Check Dial Scale	
4	600kHz	Slide Bar Antenna Coil and T109	Adjust for maximum output by moving Coil of Bar Ant. along ferrite core.
5	1400kHz	TCA TCR (Trimmer)	Adjust for maximum output.
Repeat above steps as necessary to obtain maximum sensitivity.			

FM ALIGNMENT

1. IF Stage I

Test equipment

Sweeper : Connect to test point on FM Tuner Ass'y
Marker : Couple 10.7MHz output lightly to sweeper output.
Oscilloscope : For vertical input connections, See Fig. 12, 13.

FM IF Stage II

Test equipment

Genescope : Connect output of Genescope to Base of top Transistor on IF Stages and Vertical input of Genescope to FM Detect out (See chart below).

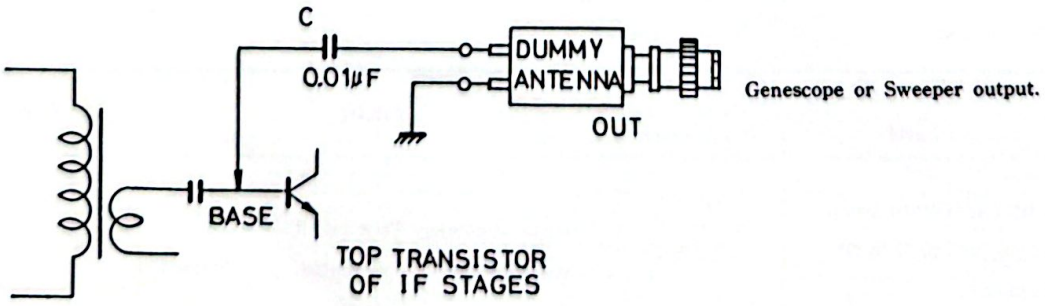


Fig. 11

Alignment :

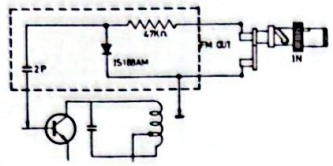
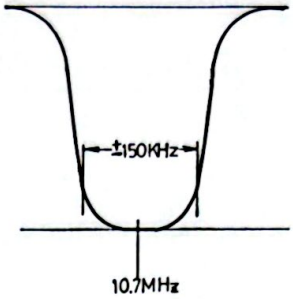
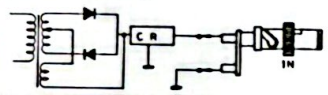
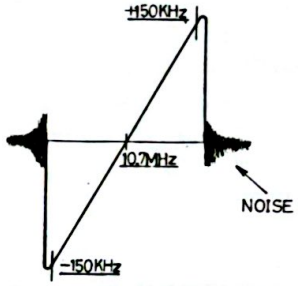
STEP	CONNECT OSCILLOSCOPE	ADJUST	WAVEFORM ON OSCILLOSCOPE	DESCRIPTION
1	Make use of detector 	IF	 RESPONSE OF BAND-PASS FREQUENCY CURVE	Repeat alignment IF until maximum gain and symmetly are obtained. IF : See Fig. 13
2	DETECTOR TRANSFORMER FM OUT  FM DETECTOR OUT	T101	 DETECTED FREQUENCIES CURVE	① Adjust generator level and Sweep to observe detector "S" curve. And adjust top core of T101 so that center meter reading of "0" first and Bottom core for max. gain and straightness of clossover line. ② Adjust top core of T101 for center meter reading of "0" on reception of noise.
3	Repeat the step 1 and 2 until maximum gain and symmetry are obtained.			

Fig. 12

2. RF stage

Test equipment

Signal generator : Connect 300 ohms balanced output of standard signal generator to FM antenna terminal. Modulation 400Hz 100%.

VTVM : Set to AC low range and connect to speaker terminal on the rear panel. Adjust Generator output so that the VTVM reading becomes 2V approximately.

Alignment :

STEP	GENERATOR	ADJUST	DESCRIPTION
1	88.0MHz	LO	Repeat the STEP 1~3 for Tuning Dial Scale Correctly
2	108.0MHz	TCO	
3	98.0MHz	Check Dial Scale	
Next			
4	88.0MHz	TA LR	Repeat the STEP 4~5 for maximum amplitude
5.	108.0MHz	TCA TCR	
6	Repeat above steps as necessary to obtain maximum sensitivity.		

O=LO

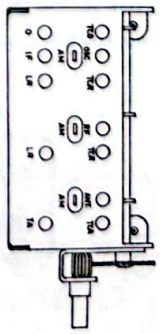


Fig. 13

ADJUSTMENT OF M. P. X. CIRCUIT

Connection of Measurement Instruments

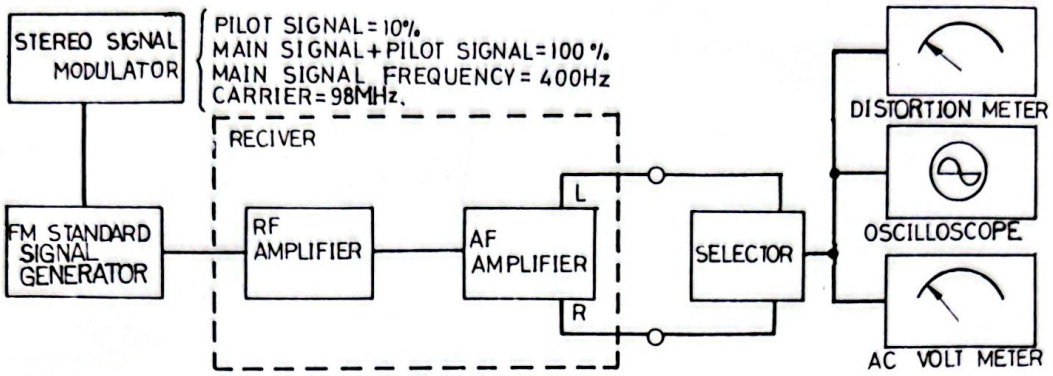


Fig. 14

1. A Set output carrier level of S. S. G. to 60dB, carrier frequency is 98MHz.
   B Set the modulation of S. S. G. carrier to 7.5kHz deviation by only PILOT signal of FM stereo modulator.
   C Then set the modulation of S. S. G. carrier to 75kHz deviation (100%) **by adjusting the output level of FM stereo** modulator that **is** the sum of PILOT and MAIN signal. Modulated frequency of MAIN signal is 400Hz.
2. A Set the output signal of FM stereo modulator as PILOT signal 19kHz only.
   B Connect V. T. V. M., oscilloscope &, Distortion meter to Base of Transistor X119.
   C Then adjust T103, 104 for maximum amplitude of wave form 38kHz on oscilloscope is obtained.
3. A Set output signal of FM stereo modulator to the sum of PILOT and SUB signal.
   B Connect V. T. V. M., oscilloscope & distortion meter to L out on TFM-903GUA.
   C Then adjust T105 **until** maximum output volume of M. P. X. circuit is obtained.
   NOTE : **• When setting the output signal of FM stereo modulator as L only, V.T.V.M., oscilloscope & distortion meter should be reading at L out only. (R→R only.)**
   • Adjust 19kHz coil T103, 104 and 38kHz coil T105 so that minimum distortion is obtained.
4. A Connect V. T. V. M., oscilloscope & distortion meter to speaker terminal thru. the SELECTOR (See Fig. 14, 15).
   B Set output signal of FM stereo modulator to the sum of PILOT and MAIN signal.
   C **Then adjust R238 so that separate R-ch and L-ch output signals are obtained.**

PROTECTOR ADJUSTMENT —— Select in Aux — Speaker Selector in System 1 — Mode Switch in Mono — Turn Volume to Minimum. ——

Test equipment

C. R. generator : Tune in 1kHz and connect output of C. R. generator to Aux.
AC voltmeter : Set to AC 10V range and connect input of AC voltmeter to speaker terminal (System 1)
Oscilloscope : **Connect in parallel in AC voltmeter.**
Adjustment : **—— Turn adjustor to minimum position and then Push on Power Switch. ——**

① Adjust output of C. R. generator so that AC voltmeter reading 3.0V.
② Switch on for short.
③ **Turn the adjustor from minimum position so that protector will founctions to protect power transistor.**

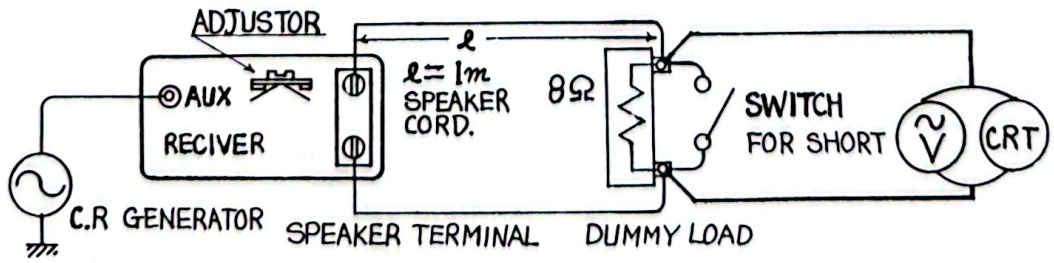


Fig. 15

ADJUSTMENT OF T102, TUNING METER AND MUTING SWITCH

NOTE : FM IF alignment should be performed before starting this procedure.

T102

Genescope : Connect output of Genescope to Test point 4 and Vertical input of it to cross T102 secondary winding.

Alignment : Repeat alignment top core of T102 until maximum gain and symmetry (See Fig. 12) and Tuning meter reading of maximum are obtained.

TUNING METER

S. S. G. : Connect 120dB output of S. S. G. to 300 ohm balanced antenna terminal.

Alignment : Adjust R235 10KΩ Variable Resistor for tuning meter reading of "9".

MUTING —— T102 alignment should be preformed before starting this procedure. ——

—— Turn the adjustor R19 on rear panel to minimum position. ——

S. S. G. : Connect 25dB output of S. S. G. to 300Ω balanced antenna terminal.

Alignment : Adjust R19 50KΩ Variable Resistor for muting "on" after Muting switch pushed "on".

CHECK POWER AMPLIFIER CENTER VOLTAGE AND IDLING CURRENT

NOTE : Allow set to warm up at least 10 minutes before starting the following procedure.

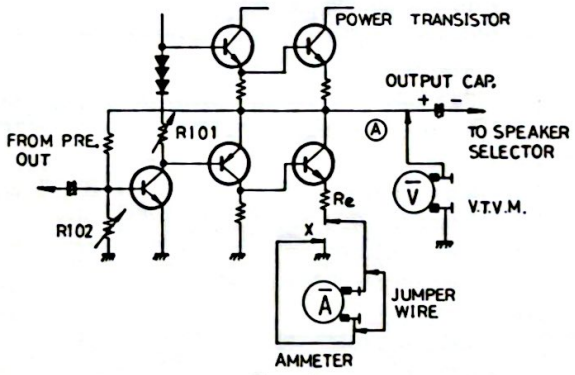


Fig. A

Connection of measurement instrument as shown Fig. A. —— This circuit is standard circuit of main amplifier. ——

- Turn VOLUME control to minimum.

(1) Connect probe of VTVM to positive pole of output capacitor. And connect ground lead of VTVM to chassis.

(2) Insert ammeter with jumper wire between Re to chassis as shown Fig. A.

NOTE : **Jumper wire is used only for the instant of power on to avoid surge current to the ammeter.**

- Tuner POWER SWITCH on

A. VTVM should read VB/2. If VTVM read no VB/2, adjust R102 for VTVM reading of VB/2.

B. Ammeter should read 10mA~20mA. If ammeter reading of volume are not 10mA~20mA, adjust R101 for ammeter reading of 10mA~20mA.

NOTE : Power amplifier center voltage test should be performed before starting measurment of idling current.

THE LIST OF FRONT PANEL PARTS

Dwg. No.	Parts No.	Parts Name	Description
①	E46608-001	Push Switch Knob	
②	**E46604-002**	Slide Knob	
③	E46605-001S	Tuning Knob	
④	E46607-001	Knob	For Select, Speaker
⑤	SHSA3008C	Tapping Screw	
⑥	E46605-001	Power Switch Knob	
⑦	**E32698-004**	Window Screen	
⑧	**E1567-008**	Front Panel Ass'y	
⑨	E32703-001	Dial Scale	
⑩	E46289-003	Color Screen	
⑪	E32702-001	Back Screen	
⑫	E1568-002	Front Bracket Ass'y	
⑬	SHSA3008N	Tapping Screw	
⑭	TAC-148	Push Switch Circuit Board Ass'y	
⑮	E03397-001S	Slide Volume	
⑯	TAC-147	S. E. A. Circuit Board Ass'y	
⑰	**E32705-002**	S. E. A. Bracket	
⑱	Q03961-001	Jack Ass'y (MIC)	
⑲	Q04720-001	MIC Volume	
⑳	Q30435-001	Rotary Switch	12C-6P
㉑	E0366-21	Volume	
㉒	Q03804-15	Balance Volume	
㉓	TAC-160	Tape Monitor Switch Circuit Board Ass'y	
㉔	E46588-001	Switch Bracket	
㉕	Q03963-001	Jack Ass'y	
㉖	Q03885-001S	Push Switch	For Power Switch
㉖A	E46589-001	Power Switch Bracket	
㉖B	E44865-001S	Screw	
㉗	Q03738-1	Rotary Switch	6C-6P
㉘	Q03963-001	Jack Ass'y	
㉙	E46588-001	Switch Bracket	
㉚	E03174-004	Indicator	Center Meter
㉛	E03174-005	〃	Tuning Meter
㉜	E44941-002	Meter Holder	
㉝	E46590-001	Lamp Bracket	
㉞	Q04967-9	Pilot lamp	8V 300mV
㉟	Q30110-A	Lamp Socket	
㊱	E32709-001	Shield Plate	
㊲	**E32704-003S**	Tuning Shaft Ass'y	
㊳	E46591-001	Mini Screen	Red
㊴	E32700-001	Lamp Holder	
㊵	E46591-002	Mini Screen	White
㊶	53243-4	Rubber Bushing	For Mini Lamp
㊷	Q04962-005	Mini Lamp	6V 35mA
	E46609-001	MIC Knob	MIC VOLUME

EXPLODED VIEW OF FRONT PANEL PARTS

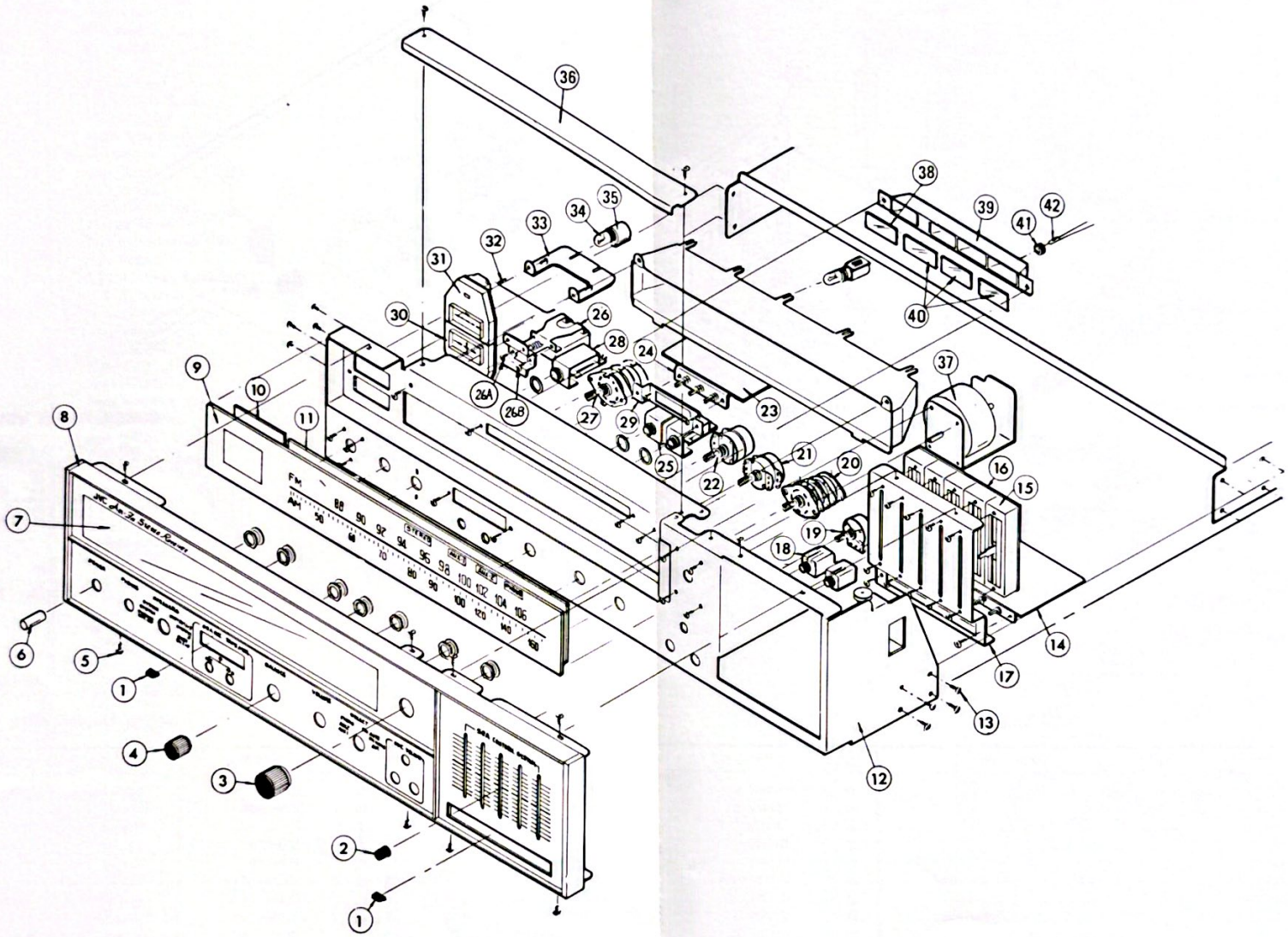


Fig. 16

EXPLODED VIEW OF REAR PANEL PARTS

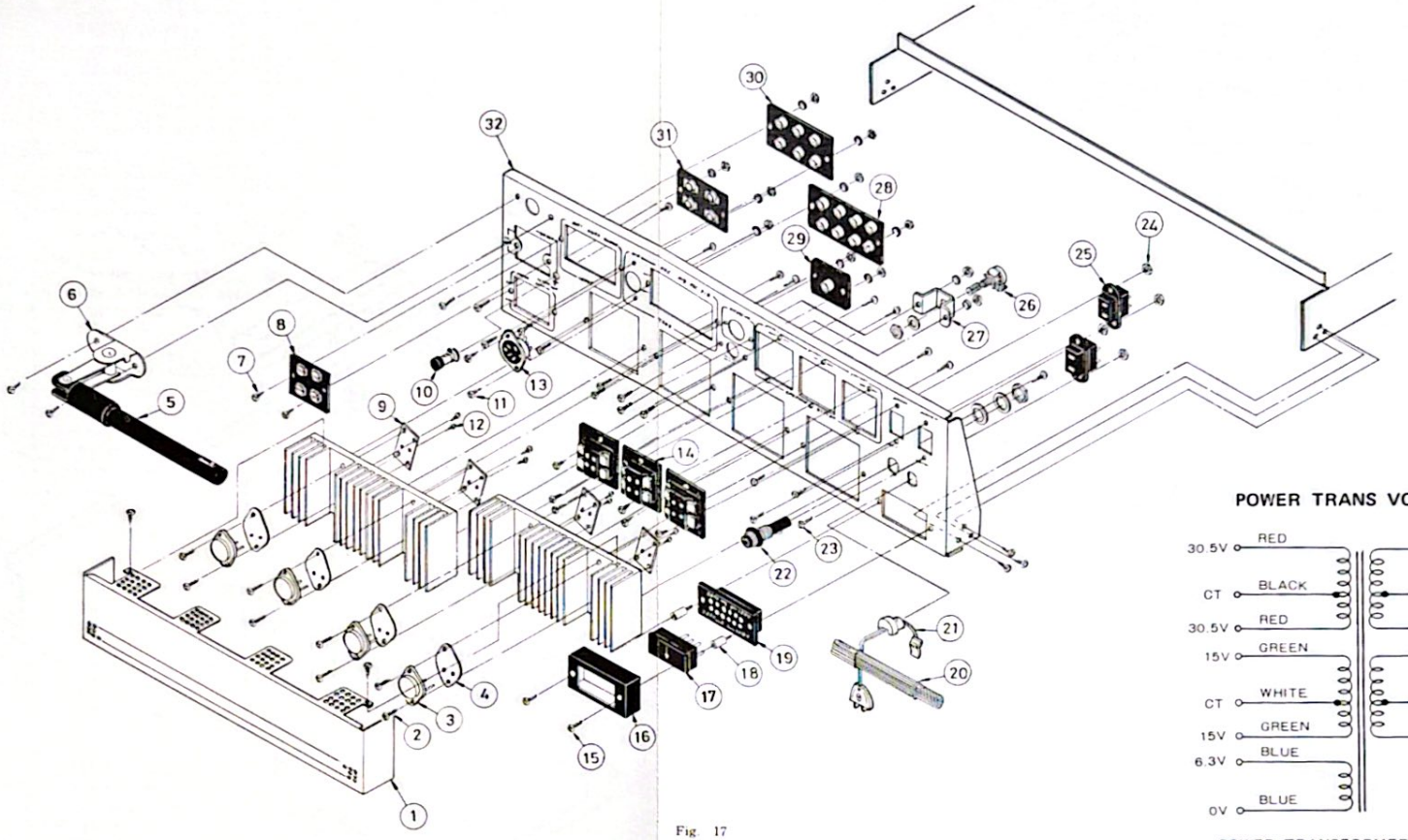


Fig. 17

POWER TRANS VOLTAGE

POWER TRANSFORMER (E03077-6S)

Dwg. No.	Parts No.	Parts Name	Dwg. No.	Parts No.	Parts Name	Dwg. No.	Parts No.	Parts Name
①	E32734-001	Radiation Cover	⑬	Q03967-S	DIN Socket	㉕	Q30120-001	AC Socket (UL)
②	SPBP-3016NS	Screw	⑭	E03410-001	Terminal Board Ass'y (For Speaker)	㉖	E03415-001	Variable Resistor
③	2SC1115	Power Transistor	⑮	LPSP3006NS	Screw	㉗	E46602-001	Volume Bracket
④	E46732-001	Insulater Film	⑯	E46603-002	Cover	㉘	E03043-80	〃 (Tape)
⑤	E03037-21	Bar Antenna Coil	⑰	E04085	Voltage Select Plug	㉙	E03043-10	〃 (FM out)
⑥	E32095-002	Socket Ass'y (For Bar Ant)	⑱	E44182-008S	Stud	㉚	E03043-60	Pin Jack Ass'y (Input)
⑦	SBSB3008M	Tapping Screw	⑲	E04084	Voltage Selector Socket	㉛	E03043-40	Pin Jack Ass'y (Pre-MEIN)
⑧	Q30156-006	Terminal Board Ass'y (For Ant.)	⑳	Q03056-14	Power Cord Ass'y (UL)	㉜	E20798-001S	Rear Panel
⑨	E04086S	Transistor Socket	㉑	E31704-001	Power Cord Stopper (UL)	㉝	**E03077-6S**	**Power Transformer**
⑩	E04069	Push Terminal with Screw	㉒	Q30210-001	Fuse Socket Ass'y (UL)			
⑪	SBSB3008N	Tapping Screw	㉓	SPKP3012S	Screw (Polycarbonate)			
⑫	SBSB3006N	Tapping Screw	㉔	NNZ3000ZS	Nut			

TAP-127 POWER SUPPLY CIRCUIT BOARD ASS'Y

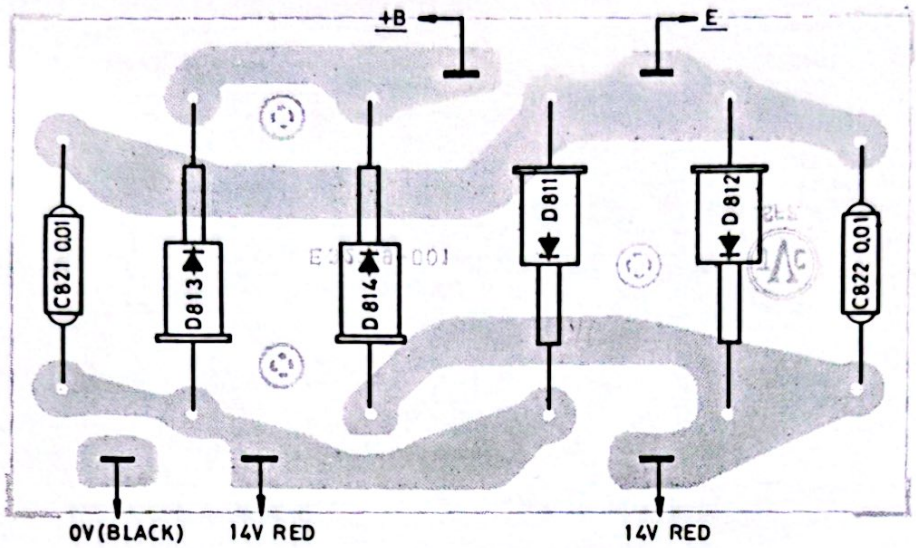


Fig. 18

Dwg. No.	Parts No.	Parts Name	Description	Dwg. No.	Parts No.	Parts Name	Description
1	TAP-127B	Circuit Board Ass'y		4	E40516	Tab	
2	DS-2P	Silicon Diode	D1~4	5	E41141-3	Heat Sink	
3	Q03206-103	OFT Capacitor	C4, 5				

TAP-113 POWER SUPPLY CIRCUIT BOARD ASS'Y

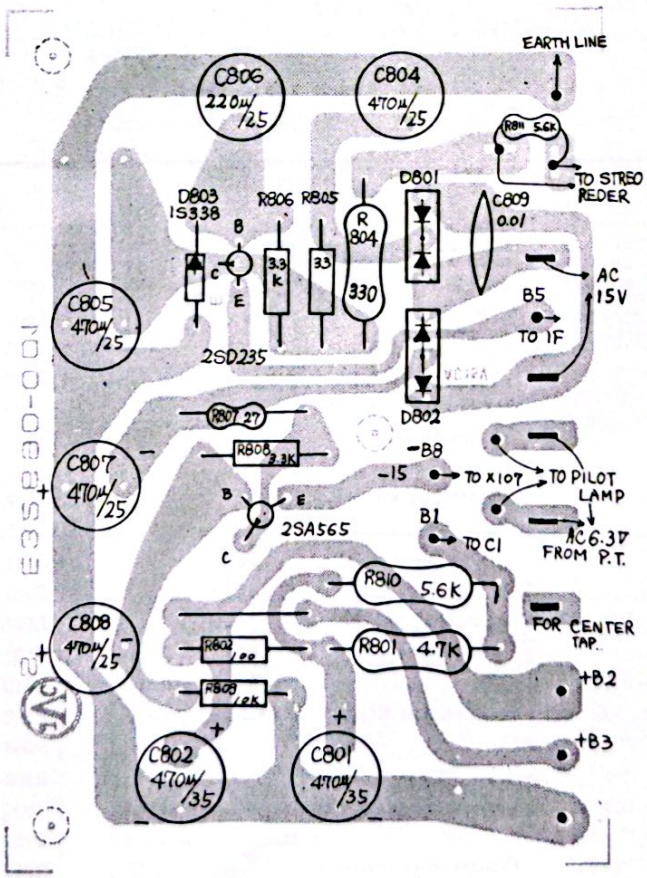


Fig. 19

VR-5551

TAP-113 POWER SUPPLY CIRCUIT ASS'Y

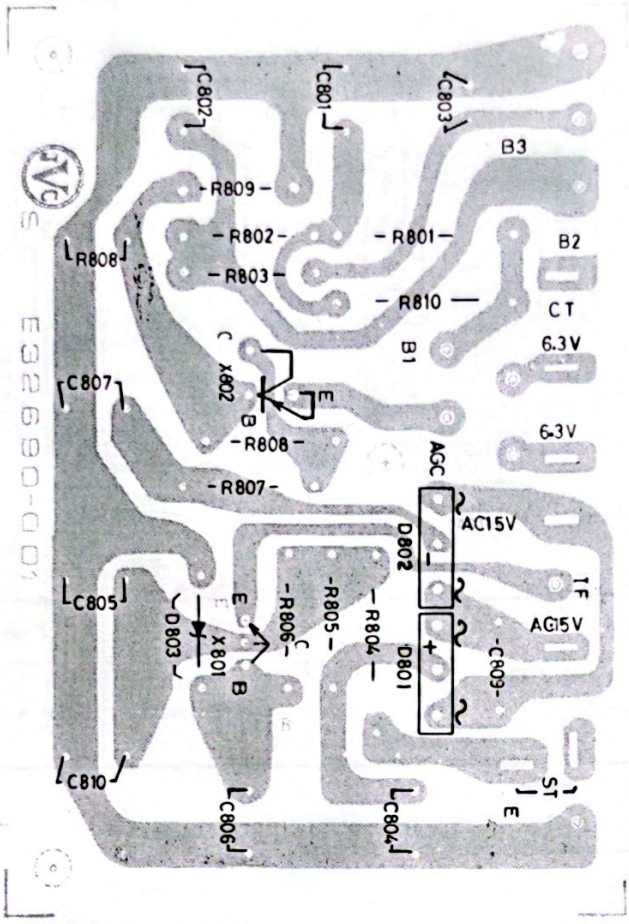


Fig. 20

Dwg. No.	Parts No.	Parts Name	Description
1	TAP-113	Circuit Board Ass'y	
2	2SD235R	Transistor	X801
3	2SA565	〃	X802
4	E03155-001	Diode (S1B02-C)	D801
5	〃 -002	〃 (S1B02-CR)	D802
6	E0771-6	Zener Diode (1S338)	D803
7	E43727-002	Wrapping Bar	
8	E40516	Tab	
9	Q03110-200	Electrolytic Capacitor	C808
10	Q03138-470	〃	C801, 802 470μF/35V
11	Q03110-470	〃	C804, 805, 806, 807 470μF/25V
12	Q42309-103	〃	C909
13	Q04772-330	Ceramic Capacitor	R804
14	〃 -4.7K	O. M. Resistor	R801
15	〃 -5.6K	〃	R810
16	04091-100	Composition Resistor	R802
17	〃 -27	〃	R807
18	〃 -33	〃	R805
19	〃 -3.3K	Carbon Resistor	R806, 808
20	〃 -10K	〃	R809
21	〃 -5.6K	Composition Resistor	R811

TAC-150 MICROPHONE AMPLIFIER CIRCUIT BOARD ASS'Y

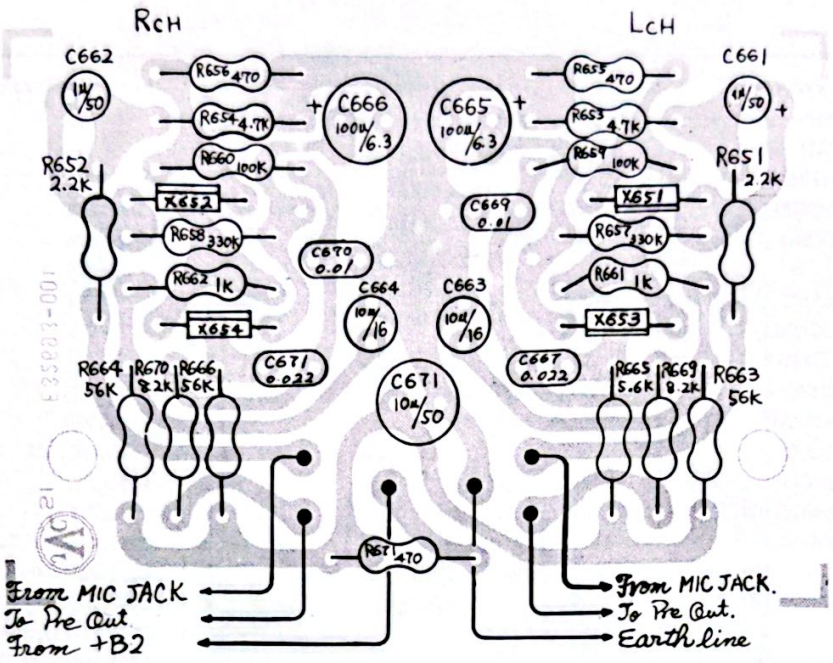


Fig. 21

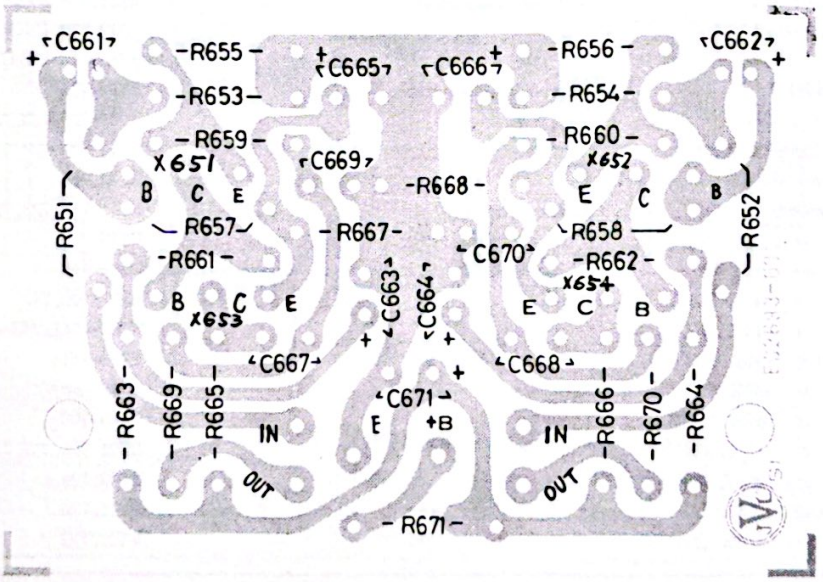


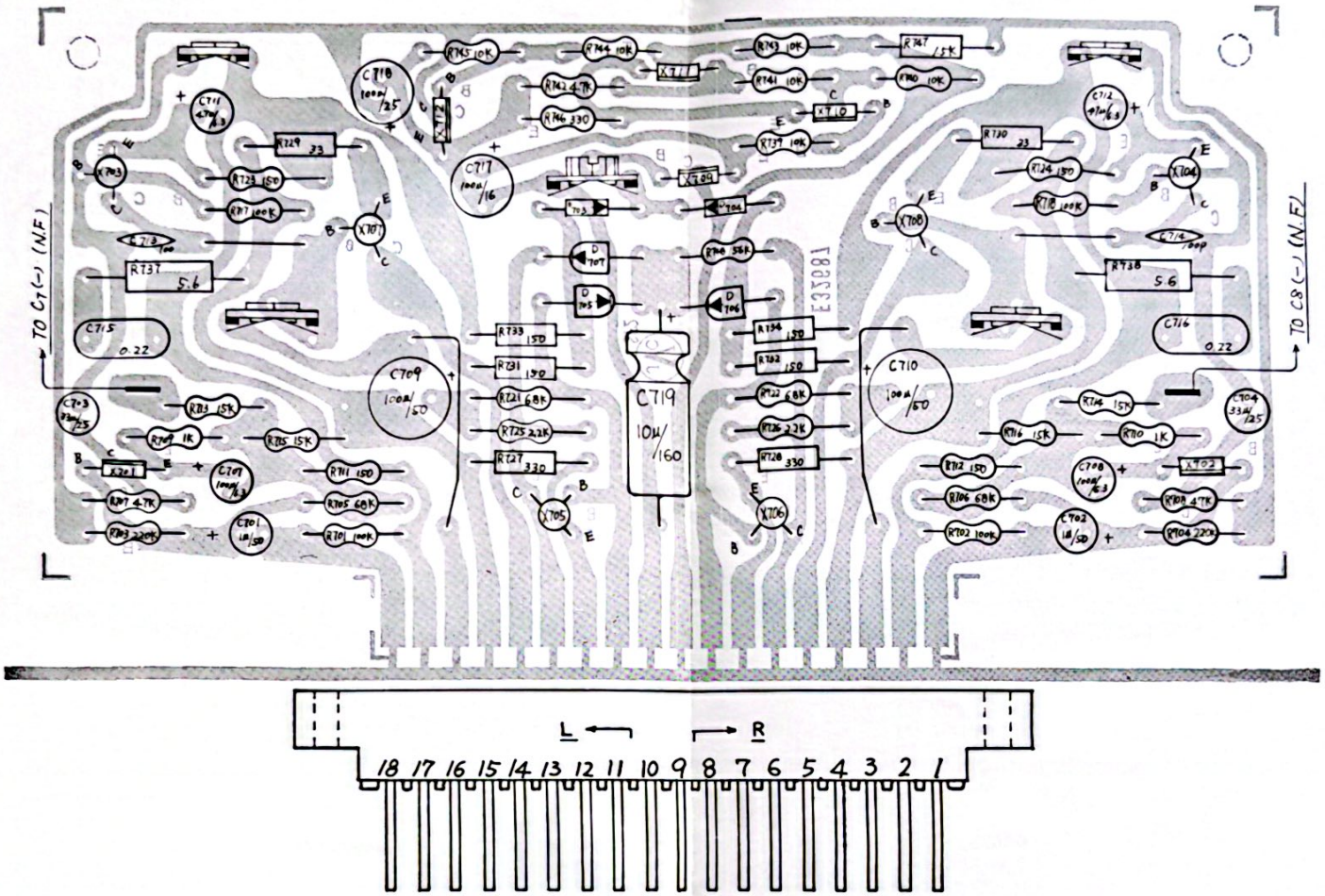
Fig. 22

Dwg. No.	Parts No.	Parts Name	Description
1	TAC-150	Circuit Board Ass'y	
2	E43727-002	Wrapping Bar	
3	2SC458LGC	Transistor	X601~604
4	Q03112-1	Electrolytic Capacitor	C661, 662
5	" -10	"	C671
6	Q03104-100	"	C695, 660
7	Q03108-10	"	C663, 664
8	Q04052-100	Ceramic Capacitor	C673, 674
9	Q03244-223	Mylar Capacitor	C667, 668
10	" -103	"	C669, 670

THE LIST OF TAD-79 DRIVE CIRCUIT BOARD ASS'Y

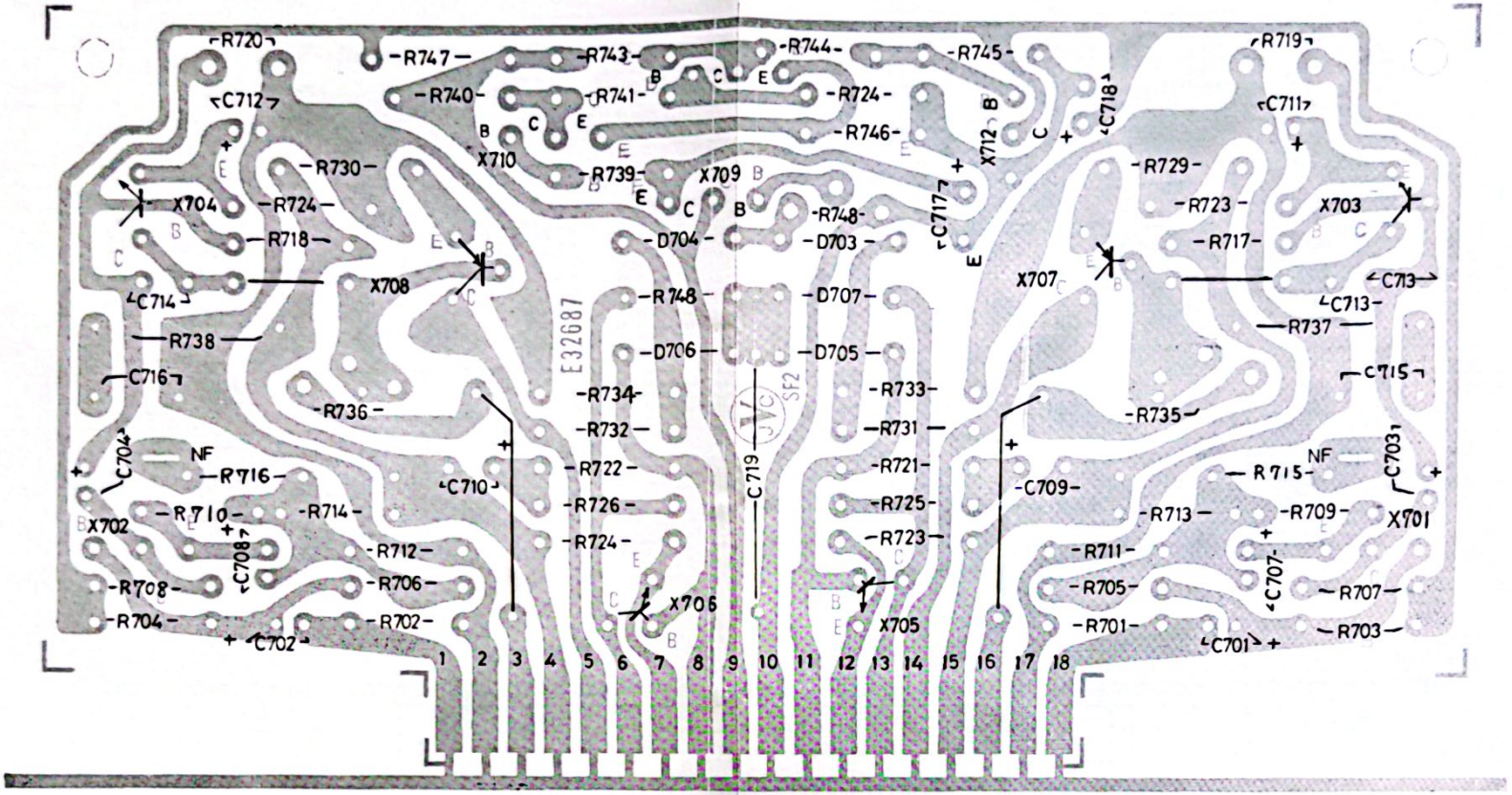
Dwg. No.	Parts No.	Parts Name	Description
1	TAD-79B	Circuit Board Ass'y	
2	A41096	Tab	
3	2SC458LGC	Transistor	X701, 702
4	2SC960 (1) M	〃	X703, 704
	〃	〃	X705, 706 } Pair
5	2SA607 (1) M	〃	X707, 708 } Pair
6	2SC458LC	〃	X709~712
7	E41141-3	Heat Sink	
8	E04062-001	Transistor Spacer	
9	1S188AM	Diode	D703, 704
10	FR2-02	〃	D705, 706, 707
11	Q03244-224	Mylar Capacitor	C715, 716
12	Q04052-100	Ceramic Capacitor	C713, 714
13	Q03112-1	Electrolytic Capacitor	C701, 702 1μF/50V
14	〃 -100	〃	C709, 710 100μF/50V
15	Q03104-100	〃	C707, 708 100μF/6.3V
16	〃 -50	〃	C711, 712 47μF/6.3V
17	Q03110-30	〃	C703, 704 33μF/25V
18	〃 -100	〃	C718 100μF/25V
19	Q03108-100	〃	C717 100μF/16V
20	Q03151-10	〃	C719 10μF/160V
21	Q04841-2	Variable Resistor	R735, 736 200Ω
22	Q04846-5	〃	R719, 720 10KΩ
23	〃 -4	〃	R749 10KΩ
24	04091-33	Composition Resistor	R729, 730
25	〃 -150	〃	R731, 732, 733, 734
26	〃 -1.5K (N)	〃	R747
27	〃 -330	〃	R727, 728
18	Q04800-150 (N)	Carbon Resistor	R711, 712, 723, 724
29	〃 -330 (N)	〃	R746
30	〃 -1K (N)	〃	R709, 710
31	〃 -4.7K (N)	〃	R707, 708, 742
32	〃 -10K (N)	〃	R739~741, 743~745
33	〃 -15K (N)	〃	R713~716
34	〃 -56K (N)	〃	R748
35	〃 -68K (N)	〃	R705, 706
36	〃 -100K (N)	〃	R701, 702, 717, 718
37	〃 -220K (N)	〃	R703, 704
38	Q04803-2.2K (N)	〃	R725, 726
39	〃 -6.8K (N)	〃	R721, 722

TAD-79 DRIVE CIRCUIT BOARD ASS'Y



① ⑱	Input	④ ⑮	Center Position (To C7, 8)	⑦ ⑫	To Base of X1, X2 (X2→⑫)
② ⑰	GROUND Line	⑤ ⑭	To Base of X3, X4 (X4→⑭)	⑧ ⑪	From Varistor
③ ⑯	To Varistor	⑥ ⑬	To +B	⑨	To +B
				⑩	GROUND Line

Fig. 23



① ⑱ Input
② ⑰ GROUND Line
③ ⑯ To Varistor
④ ⑮ Center Position (To C7, 8)
⑤ ⑭ To Base of X3, X4 (X4→⑭)
⑥ ⑬ To +B
⑦ ⑫ To Base of X1, X2 (X2→⑫)
⑧ ⑪ From Varistor
⑨ To +B
⑩ GROUND Line

Fig. 24

TFM-903GUA FM/AM TUNER CIRCUIT BOARD ASS'Y

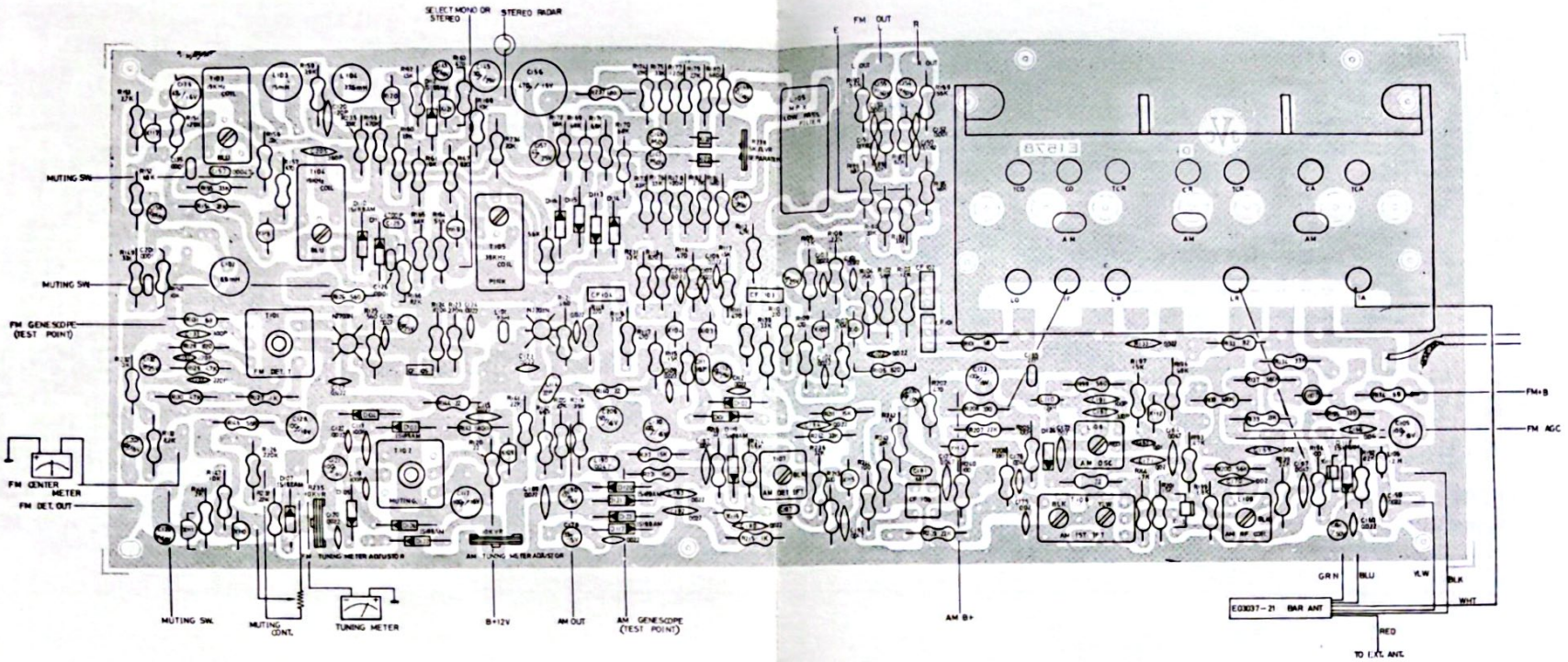


Fig. 25

Dwg. No.	Parts No.	Parts Name	Description	Dwg. No.	Parts No.	Parts Name	Description	Dwg. No.	Parts No.	Parts Name	Description
1	TFM-903GUA	Circuit Board Ass'y		16	E03134-014	FM IFT (DET)	T101	29	Q04846-5	Variable Resistor	R235 10KΩ B (T. M)
2	E43727-002	Wrapping Bar		17	E03074-6	Choke Coil (82μH)	L101	30	2SC871E	Silicon Transistor	X117, 122, 123
3	A41096	Tab		18	Q46962-022 (A)	Ceramic Capacitor	C101~103, 106~110, 112,	31	2SC711E	〃	X118, 119
4	E03416-001	FM Front End	FL-511U				115, 116, 120, 122~124,	32	2SC711F	〃	X120, 121
5		Rubber Bushing					126, 127, 204	33	1S188AM	Ge Diode	D110~112
6	LPSP3003NS	Screw		19	Q04052-18	〃	C113	34	1S426GFM	〃	D113~116
7	WNS3000NS	Washer		20	〃 -22	〃	C114	35	Q04051-330	Ceramic Capacitor	C158
8	2SA562Y	Silicon Transistor	X107	21	〃 -100	〃	C118, 119, 134	36	E0747-14	Ferri Indactor	L102
9	2SC710B	〃	X101~104	22	〃 -220	〃	C131, 133	37	E03407-001	Choke Coil	L104 37μH
10	2SC710C	〃	X108	23	Q03108-10	Electrolytic Capacitor	C129	38	〃 -002	〃	L103 15μH
11	2SC711F	〃	X109, 110	24	Q03104-10	〃	C203	39	E03405-001	Low Pass Filter	L105
12	NJ-703N	IC	X105, 106	25	〃 -30	〃	C121	40	E03117-017	MPX Coil Ass'y	T103, 104
13	1S188AM	Ge Diode	D101~107	26	〃 -50	〃	C134	41	〃 -018	〃	T105
14	E03357-001	Ceramic Filter	CF101~105	27	Q03110-4.7	〃	C104, 111, 125, 132	42	Q03269-472	Polystyrol Capacitor	C139
15	E03134-013	FM IFT (Muting)	T102	28	Q03108-100	〃	C105, 117, 128, 130	43	Q03269-471	〃	C220

TFM-903GUA FM/AM TUNER CIRCUIT BOARD ASS'Y

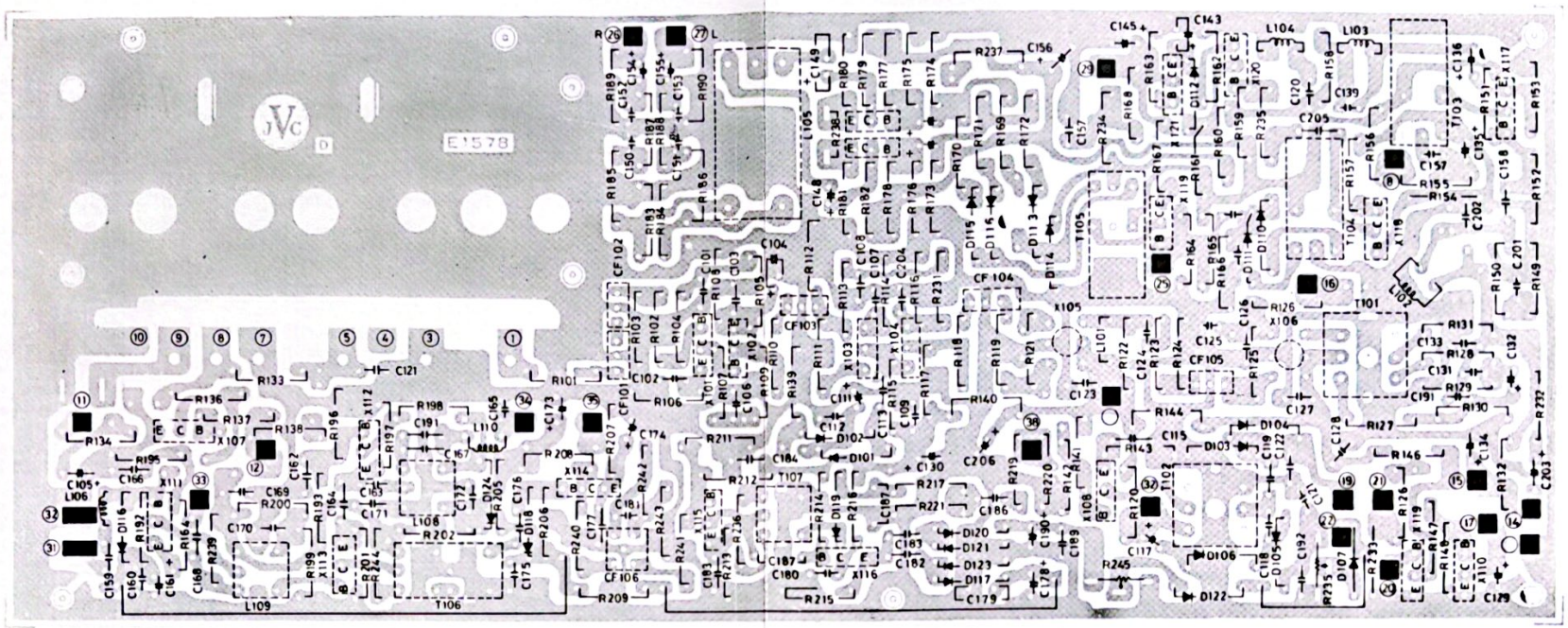


Fig. 26

Dwg. No.	Parts No.	Parts Name	Description
44	Q04052-360	Ceramic Capacitor	C205
45	〃 -120	〃	C140
46	Q03244-102	Mylar Capacitor	C135, 141, 152, 153, 201
47	〃 -472	〃	C142, 157
48	〃 -822	〃	C150, 151
49	Q03108-10	Electrolytic Capacitor	C138, 143, 148, 149
50	〃 -50	〃	C136
51	〃 -500	〃	C156
52	Q03112-1	〃	C146, 147, 154, 155
53	Q03110-30	〃	C145
54	〃 -50	〃	C144
55	Q04845-3	Variable Resistor	R238 5K For Separation
56	2SC460C	Silicon Transistor	X111, 113
57	2SC711F	〃	X112
58	2SC710C	〃	X114, 115, 116
59	1S188AM	Ge Diode	D116~124

Dwg. No	Parts No.	Parts Name	Description
60	E03178-002	AM RF Coil	L109
61	E03079-17	AM Osc. Coil	L108
62	E03062-19	AM IFT (1st)	T106
63	〃 -23	AM IFT (DET.)	T107
64	E03399-001	Ceramic Filter (455)	CF106
65	E03074-5	Choke Coil (12μH)	L106, 110
66	Q46962-022 (A)	Ceramic Capacitor	C159,160,169,170~172,175, 179,180,182,184,188,189
67	〃 -04 (A)	〃	C162, 166, 176
68	E03375-047	〃	C177, 183, 168, 164
69	Q03244-103	Mylar Capacitor	C163
70	〃 -223	〃	C186
71	Q03106-10	Electrolytic Capacitor	C161, 174
72	Q03104-30	〃	C178, 190
73	Q03108-100	〃	C173
74	〃 -50	〃	C206

NOTE : Used Carbon Resistor Parts Name are Q04800-×××.

For example

Q04800-100⇨Carbon Resistor 100Ω ¼W
Q04800-1K⇨ 〃 1KΩ ¼W
Q04800-1M⇨ 〃 1MΩ ¼W

TAE-47 EQUALIZER CIRCUIT BOARD ASS'Y

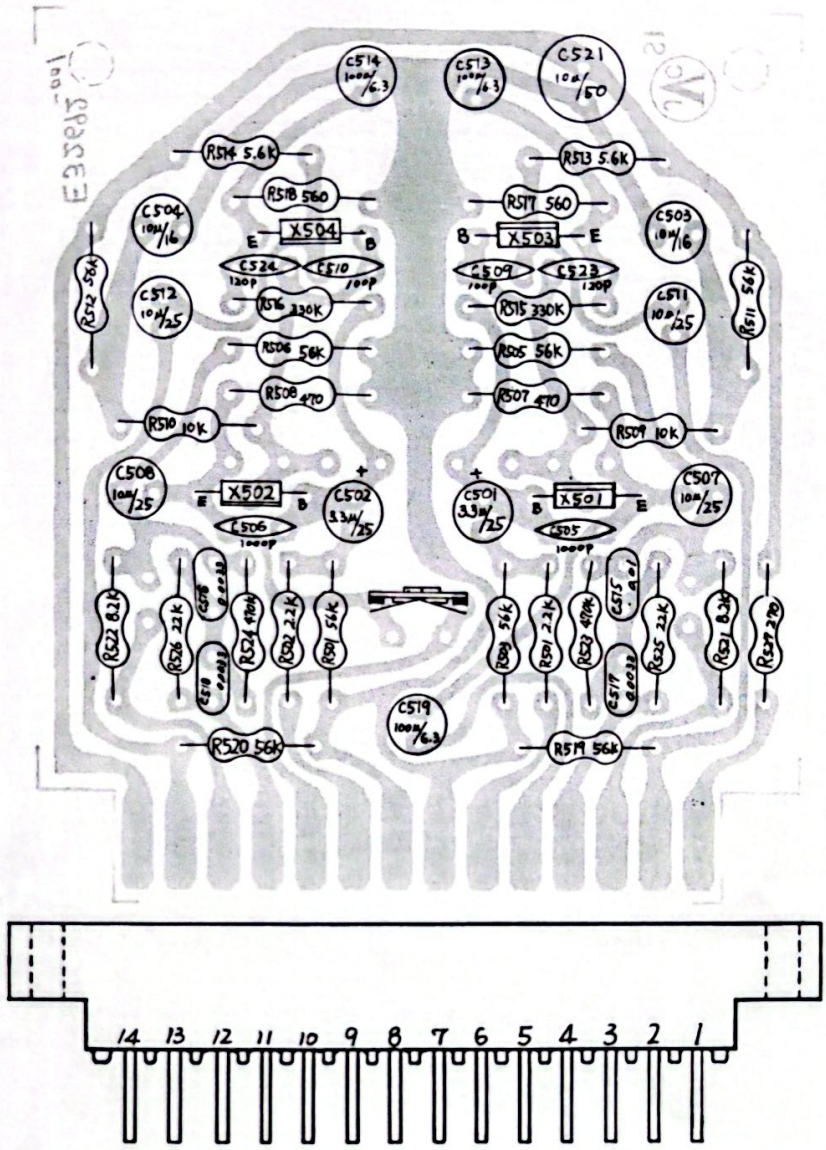


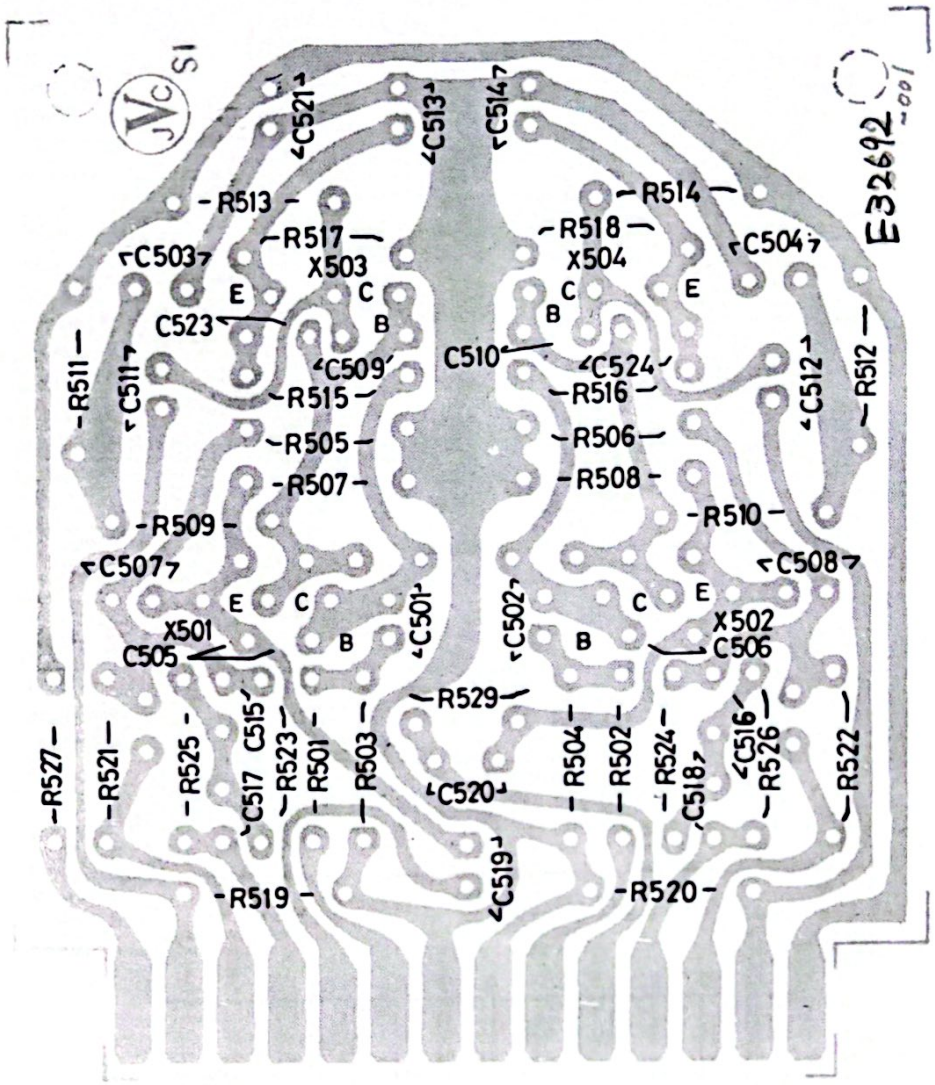
Fig. 27

① +B
② To Sl e, 3, 4, 5, 6 (EQ OUT)
③ To Sl c, 4, 5, 6
④ To Sl c, 1, 2, 3
⑤ To Sl i, Common
⑥ To Sl a, Common (EQ IN)
⑦ ⑧ To GROUND
⑨ To Sl b, Common (EQ IN)
⑩ To Sl i, 5, 6
⑪ To Sl d, 1, 2, 3
⑫ To Sl d, 4, 5, 6
⑬ To Sl f, 3, 4, 5, 6 (EQ OUT)
⑭ NC

Dwg. No.	Parts No.	Parts Name	Description	Dwg. No.	Parts No.	Parts Name	Description
1	TAE-47	Circuit Board Ass'y		7	Q03104-100	Electrolytic Capacitor	C513, 514, 519
2	2SC458LGC	Transistor	X501~504	8	Q04052-100	Ceramic Capacitor	C509, 510
3	Q03112-10	Electrolytic Capacitor	C521	9	〃 -120	〃	C523, 524
4	Q03110-3	〃	C501, 502	10	Q03244-102	Mylar Capacitor	C505, 506
5	〃 -10	〃	C507, 508, 511, 512	11	〃 -103	〃	C515, 516
				12	〃 -332	〃	C517, 518, 520
6	Q03108-10	〃	C503, 504	12	Q04845-3	Variable Resistor	R529 5KΩ

NOTE : Used Carbon Resistors Parts Name are Q04800-×××.
For example
Q04800-100⇨Carbon Resistor 100Ω ¼W
Q04800-1K⇨ 〃 1KΩ ¼W
Q04800-1M⇨ 〃 1MΩ ¼W

TAE-47 EQUALIZER CIRCUIT BOARD ASS'Y



①	+B	⑥	To SI a, Common (EQ IN)	⑪	To SI d, 1, 2, 3
②	To SI e, 3, 4, 5, 6 (EQ OUT)	⑦ ⑧	To Earth	⑫	To SI d, 4, 5, 6
③	To SI c, 4, 5, 6			⑬	To SI f, 3, 4, 5, 6 (EQ OUT)
④	To SI c, 1, 2, 3	⑨	To SI b, Common (EQ IN)	⑭	NC
⑤	To SI i, Common	⑩	To SI i, 5, 6		

Fig. 28

TAC-160 TAPE MONITOR CIRCUIT BOARD ASS'Y

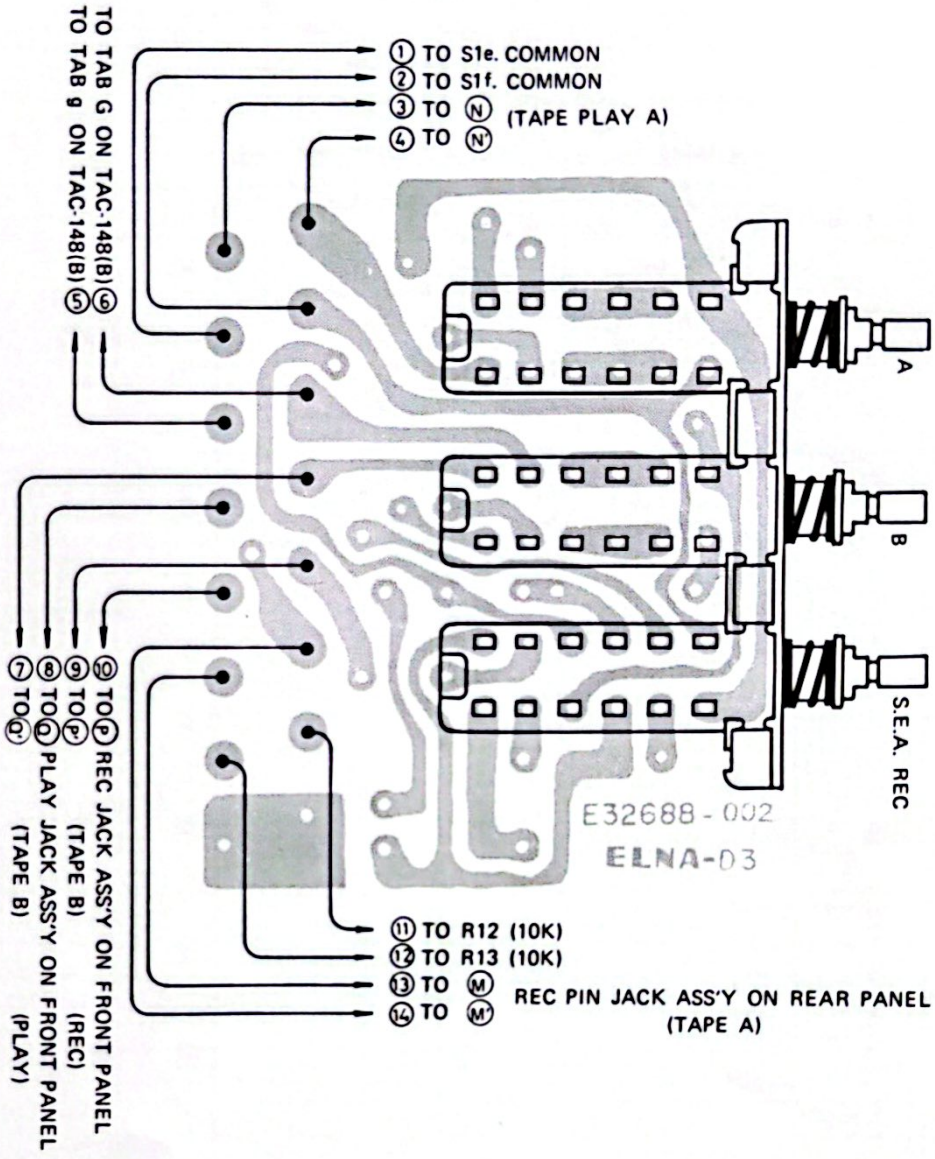


Fig. 29

Dwg. No.	Parts No.	Parts Name	Description
1	TAC-160	Circuit Board Ass'y	
2	E43727-002	Wrapping Tab	
3	Q30520-001	Push Switch	
4	E46558-001	Switch Bracket	
5	SBSB2608N	Tapping Screw	

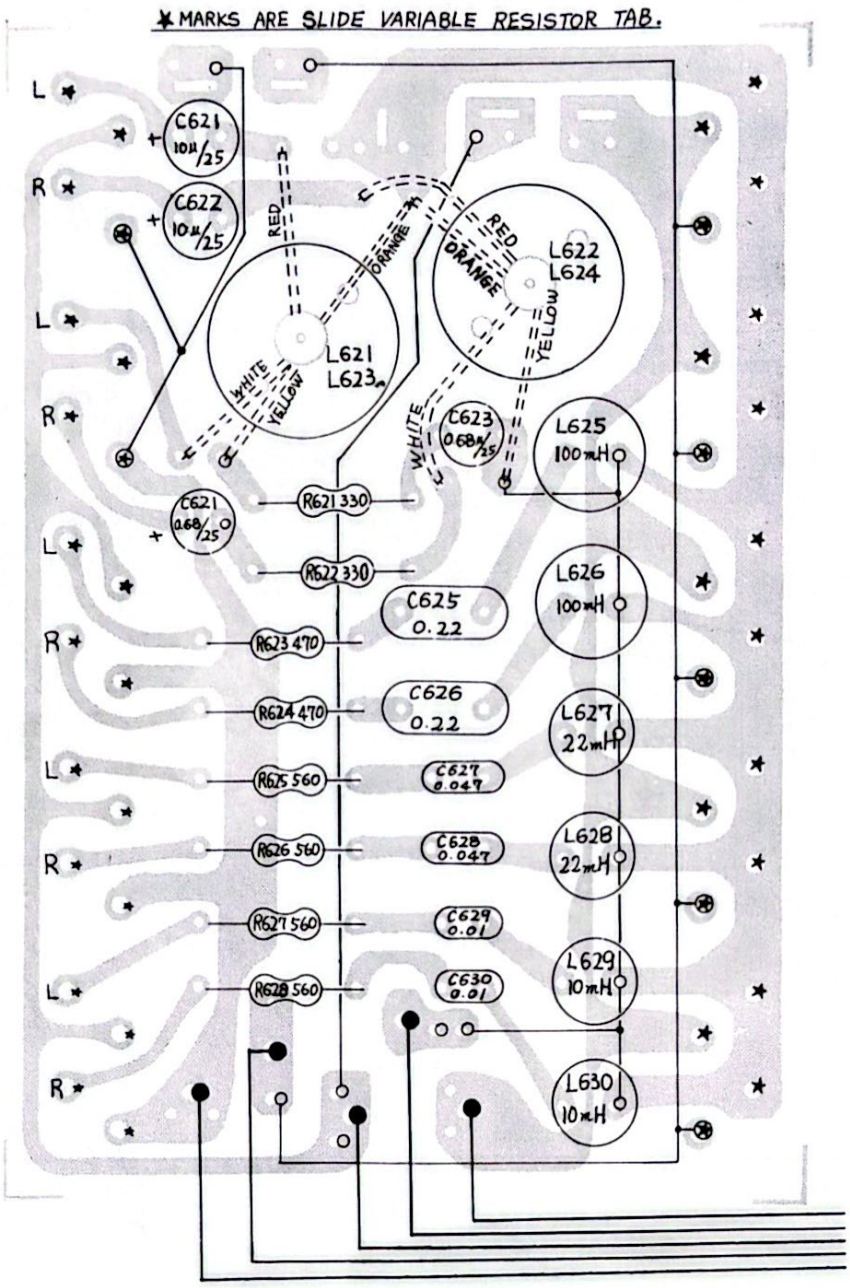


Fig. 30

Dwg. No.	Parts No.	Parts Name	Description	Dwg. No.	Parts No.	Parts Name	Description
1	TAC-147	Circuit Board Ass'y		6	E03131-0.68	Tantal Capacitor	C623, 624
2	E03108-11	Choke Coil	L621~624	7	〃 -10	〃	C621, 622
3	E0747-12	Ferri Inductor	L627, 628 (22mH)	8	Q03244-103	Mylar Capacitor	C629, 630
				9	〃 -473	〃	C627, 628
4	〃 -9	〃	L629, 630 (10mH)	10	〃 -224	〃	C625, 628
5	〃 -11	〃	L625, 626 (100mH)				

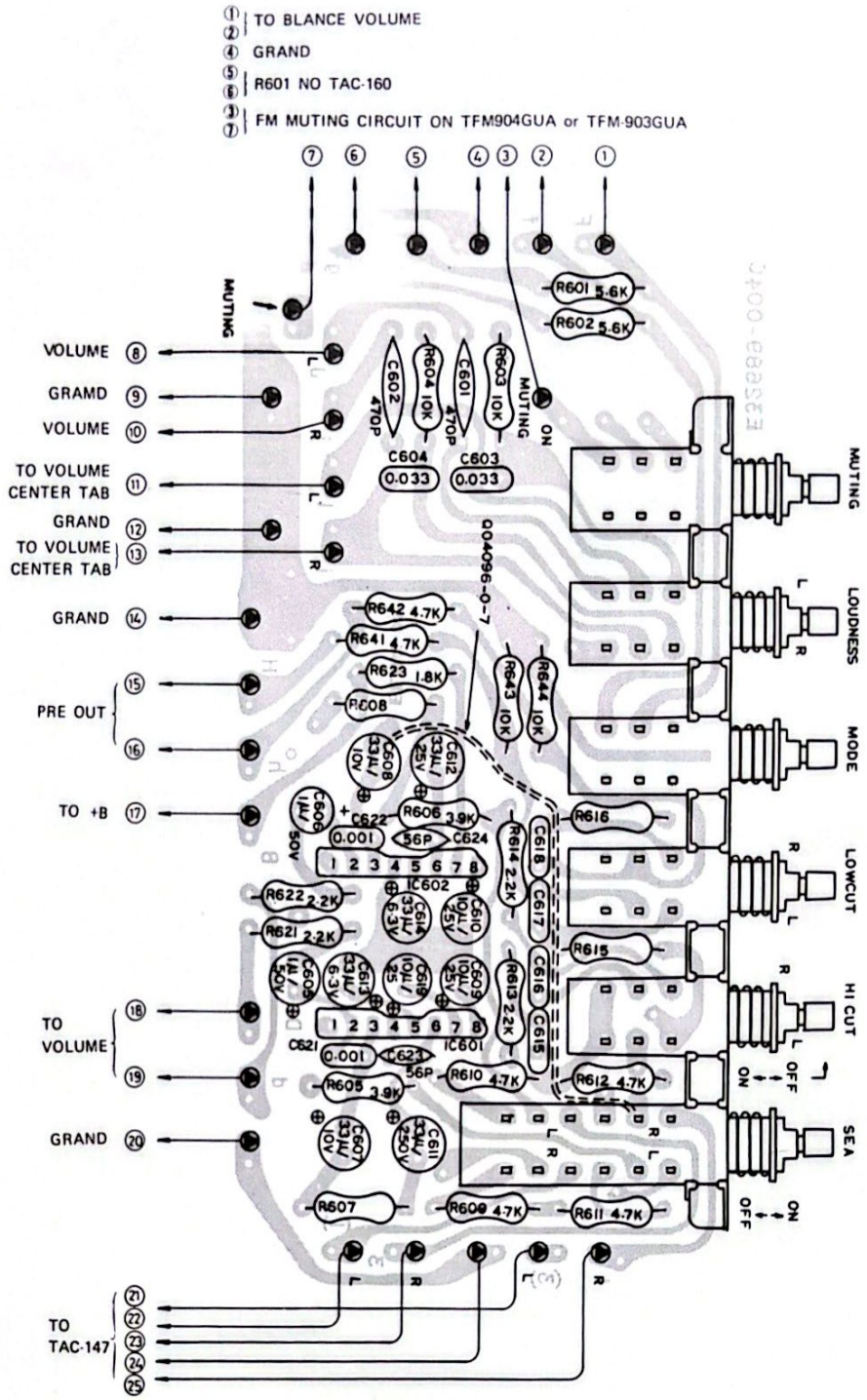


Fig. 31

DWG. No.	Parts No.	Parts Name	Description
1	TAC-148	Circuit Board Ass'y	
2	E43727-002	Wrapping Tab	
3	FA6012	IC	IC601, 602
4	Q30535-001	Push Switch	
5	Q03104-30	Electrolytic Capacitor	C613, 614 (33μ/6.3V)
6	Q03106-30	〃	C607, 608 (33μ/10V)