

# JVC

# SERVICE MANUAL

MODEL  
**JR-S200L**

STEREO RECEIVER

**SEA**



No. 2372  
MAR. 1976

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## 1. Specifications

**Dimensions** : 6-15/16"(H) x 19-11/16"(W) x 13-3/16"(D)  
(16cm x 50cm x 33.5cm)

**Weight** : 21.6 lbs. (9.8kg)

### Amplifier Section

**RMS Power (Both channels driven)**

: 35 watts per channel, min. RMS at 8 ohms  
39 watts per channel, min. RMS at 4 ohms  
(from 20Hz to 20kHz at no more than 0.5%  
total harmonic distortion.)

**RMS Power (Both channels driven at 1kHz)**

: 38 watts per channel at 8 ohms  
43 watts per channel at 4 ohms

**Total Harmonic Distortion** : 0.5% at rated output,  
4 & 8 ohms; 0.08% at 1kHz, 1 watt

**Damping Factor** : 50 at 8 ohms, 25 at 4 ohms

**Input Sensitivity, Impedance and Signal to Noise Ratio at  
Rated Output Power (Unweighted)**

: Phono: 2.5mV/50k $\Omega$  & 63dB  
Aux: 150mV/60k $\Omega$  & 84dB  
Tape Mon: 150mV/50k $\Omega$  & 84dB

**Recording Output Level** : 150mV (Pin), 30mV/80k $\Omega$  (DIN)

**Frequency Response** : 10Hz to 80kHz +0, -3dB

**S.E.A. Center Frequency**

: 40Hz, 250Hz, 1kHz, 5kHz & 15kHz

**S.E.A. Control Range** :  $\pm$ 12dB

**Loudness Control Range** : 12dB at 50Hz, 4dB at 10kHz

### FM Tuner Section

**Usable Sensitivity ( $\pm$ 40kHz Deviation)**

: 1.9 $\mu$ V IHF at 300 $\Omega$  and S/N: 30dB

**Total Harmonic Distortion at 1kHz and 100% modulation**

: DIN 45 500  
0.2% (Mono), 0.4% (Stereo)

IHF 1975

100Hz: 0.2% (Mono), 0.4% (Stereo)

1kHz: 0.2% (Mono), 0.4% (Stereo)

6kHz: 0.25% (Mono), 0.5% (Stereo)

**Signal to Noise Ratio**

: DIN 45 500 60dB (Mono), 58dB (Stereo)

**Selectivity** : 60dB IHF alternated

**Capture Ratio** : 1.2dB

**Image Rejection** : 70dB

**IF Rejection** : 85dB at 98MHz

**Stereo Separation**

: 35dB at 100Hz, 45dB at 1kHz, 35dB at 10kHz

### MW & LW Tuner Section

**Usable Sensitivity** : MW 50 $\mu$ V; LW 100 $\mu$ V

**Selectivity** : MW 30dB; LW 30dB

**Image Rejection** : MW 45dB; LW 35dB

**IF Rejection** : MW 40dB; LW 40dB

**Signal to Noise Ratio** : MW 55dB; LW 55dB

## 2. Removal of Top Cover, Bottom Plate and Front Panel

### Procedure and Part Numbers (Top Cover and Bottom Plate)

1. Remove 4 screws (Item No. 4) through the both sides of the cover and one screw (Item No. 2) from the back of the top cover.
2. Remove the top cover.
3. Remove 4 screws (Item No. 7) from bottom plate (Item No. 6) and remove the bottom plate from the chassis.

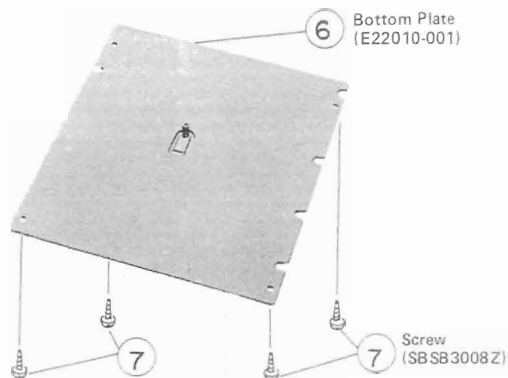
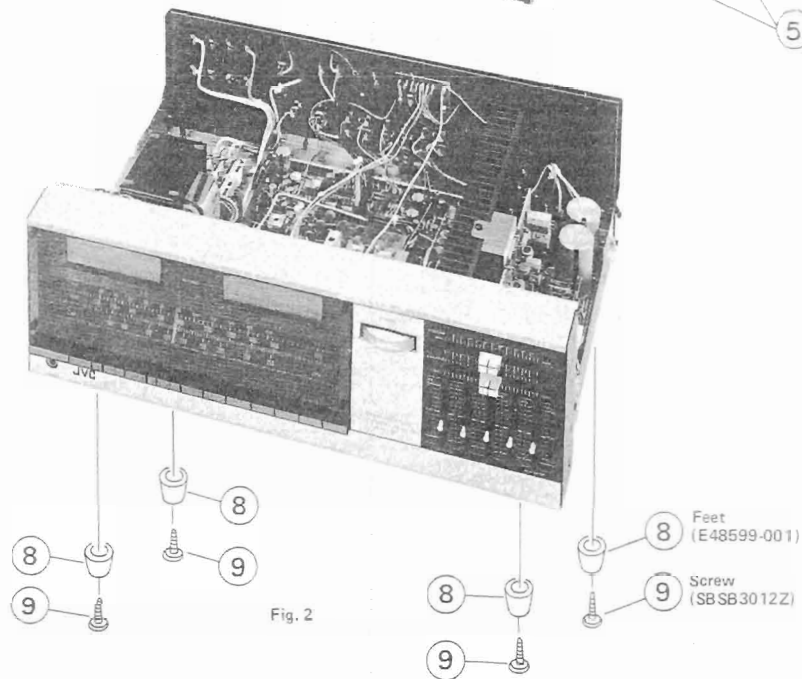
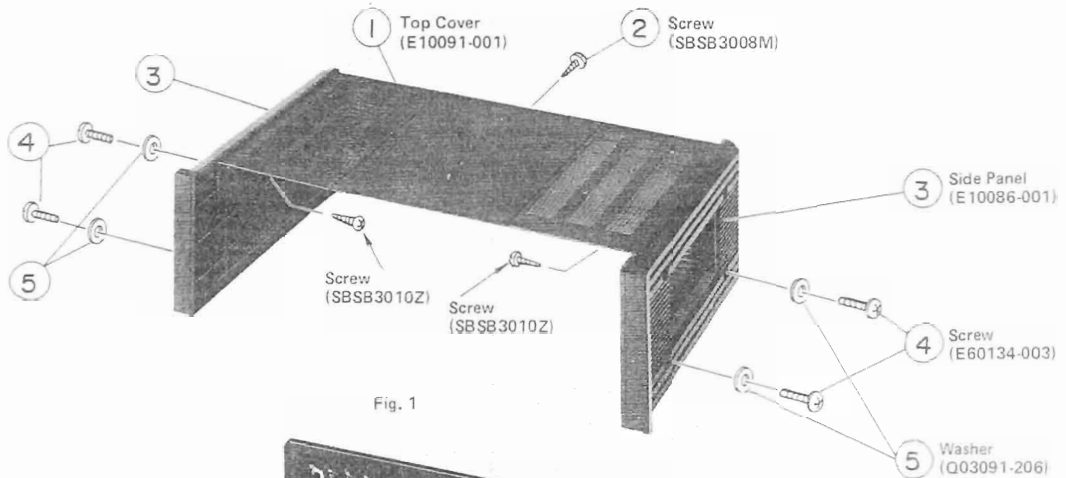


Fig. 3

### Procedure and Part Number (Front Panel)

1. Remove the top cover. (Refer to the removal of the top cover on page 2.)
2. Remove the dial pointer carefully according to the steps below:
  - a. Slide the dial pointer to the center position of the dial rail.
  - b. Remove the dial cord from the dial pointer. Do not pull the dial cord strong.
  - c. Remove the dial pointer from dial rail carefully.

**Note:** Refer to Fig. 11 of the dial stringing procedure on page 7 when replacing the dial pointer onto the dial rail.

3. Remove 3 screws, item No. 2 located on the bottom of the front panel.
4. Remove 4 screws, item No. 1 located on the both sides of the front panel.

### In case of removing the window screen

Remove 4 hexagonal screws located on four corners of window screen. Refer to item Nos. 2 and 3 of Fig. 8 on page 5.

**Warning:** Use a 3/32" hexagonal wrench to tighten the screws. Do not screw in excessively hard when replacing the window screen.

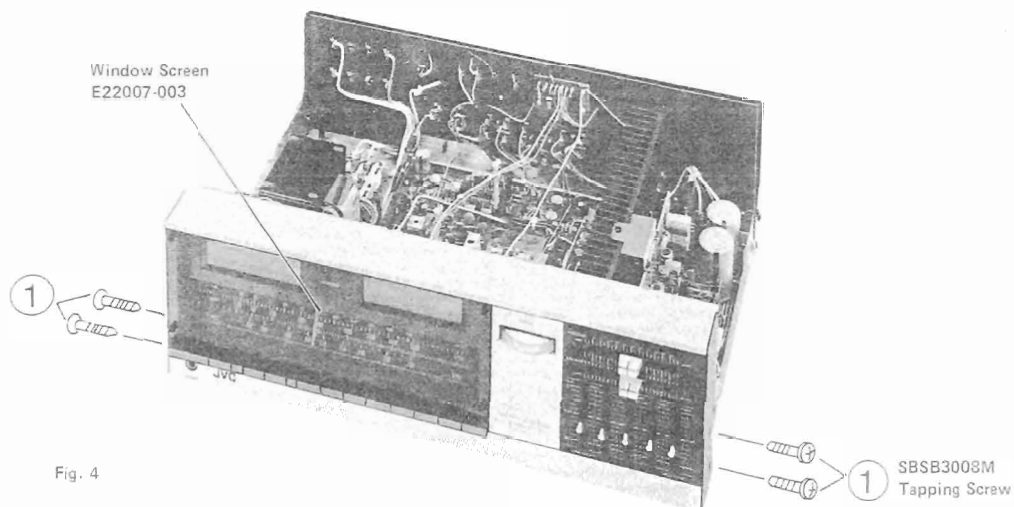


Fig. 4

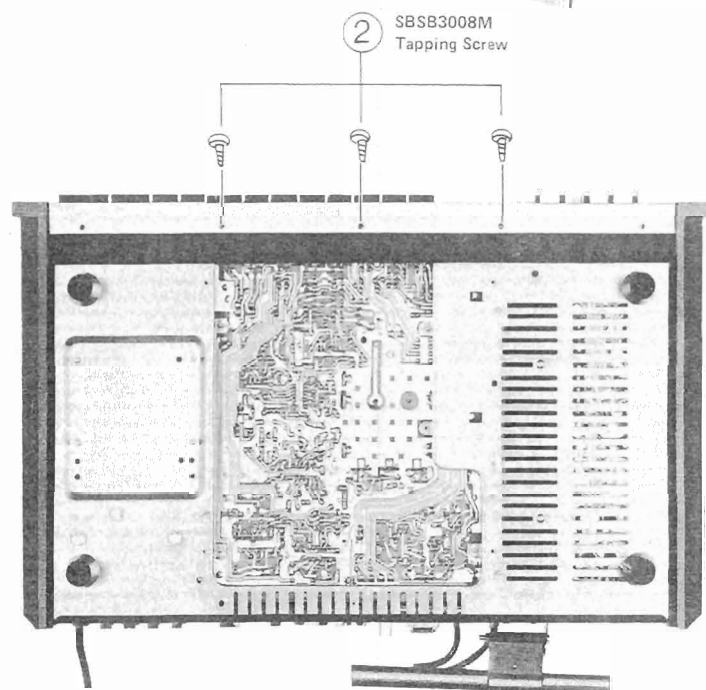
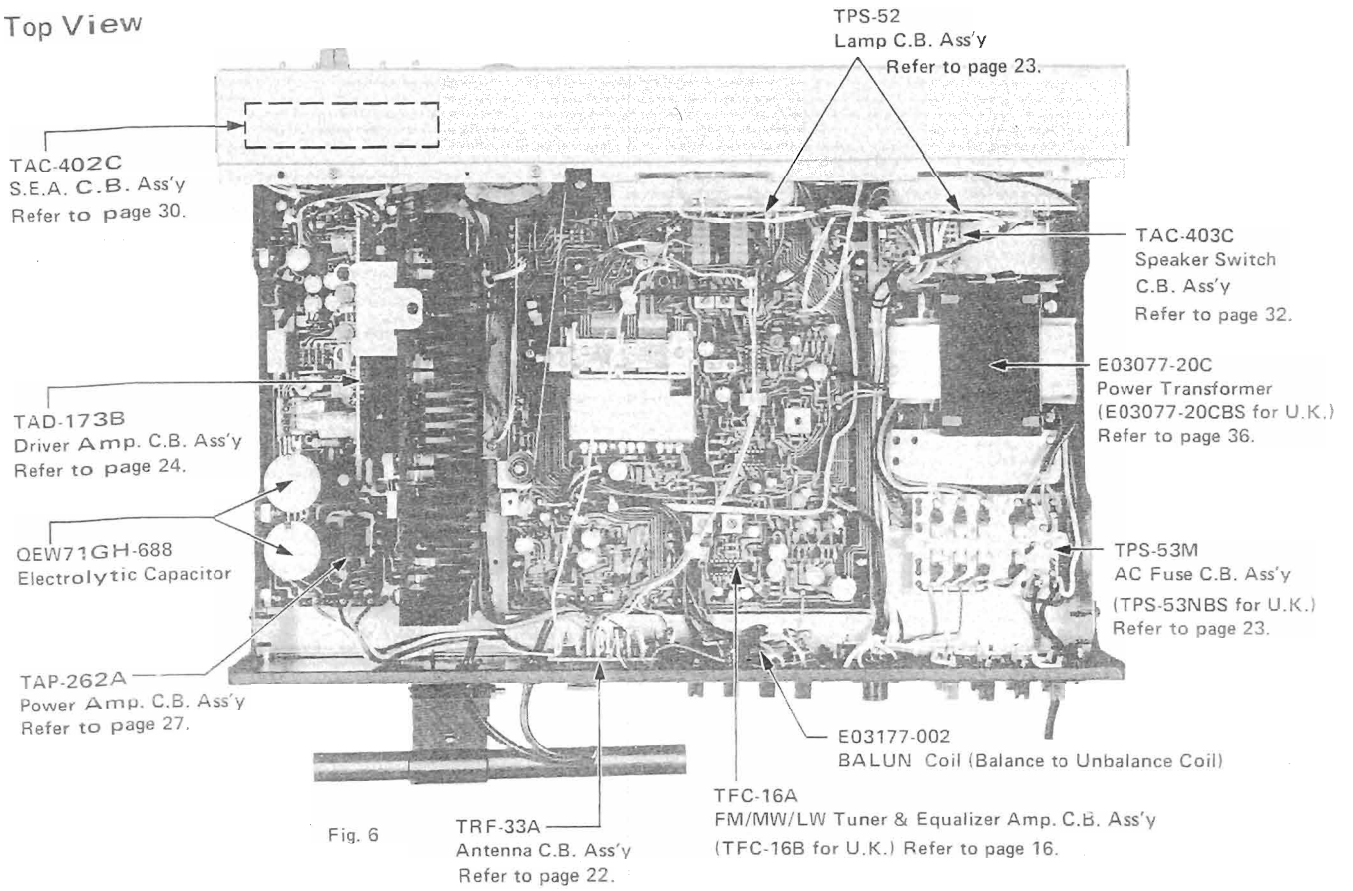


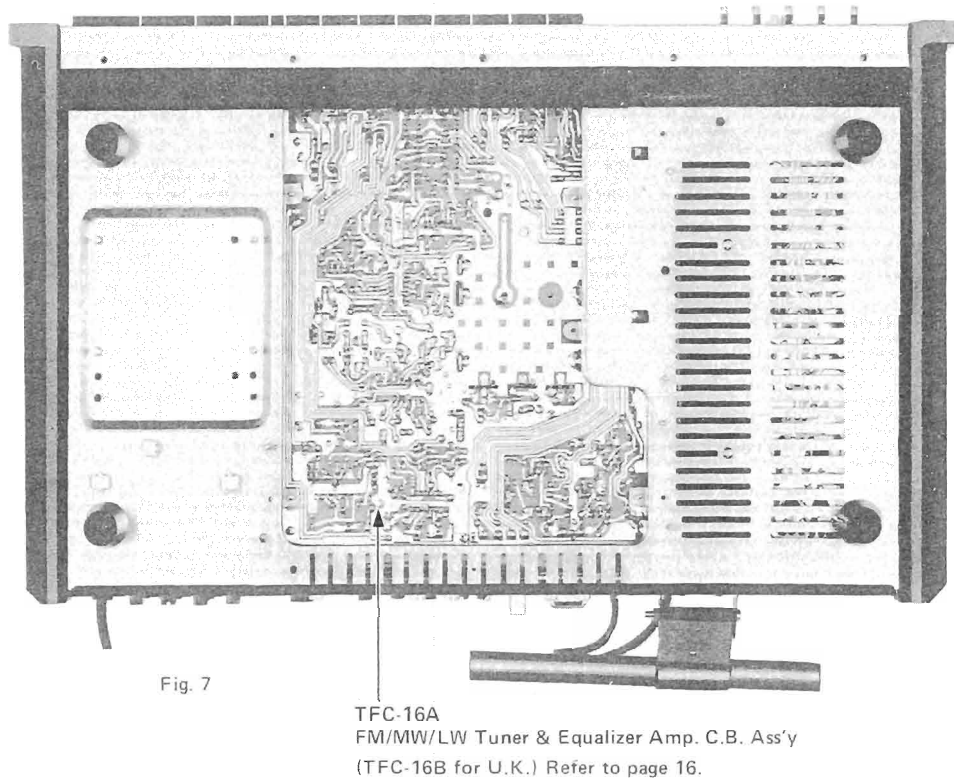
Fig. 5

# 3. Main Parts Location and Part Numbers

Top View



Bottom View



# 5. Dial Stringing Procedure

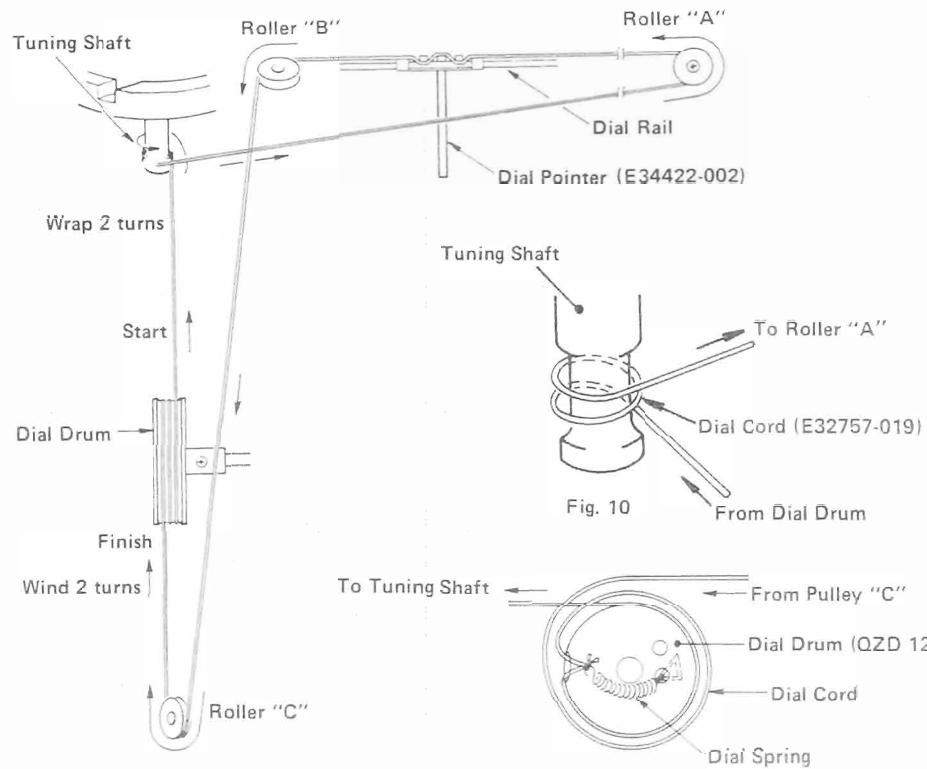


Fig. 11

## Removing heat sink and power amp. C.B. ass'y

Top View

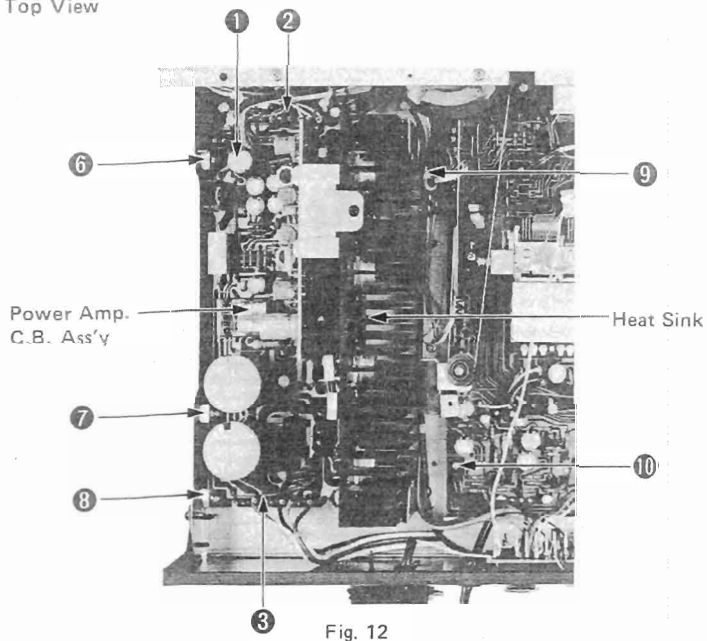


Fig. 12

Bottom View

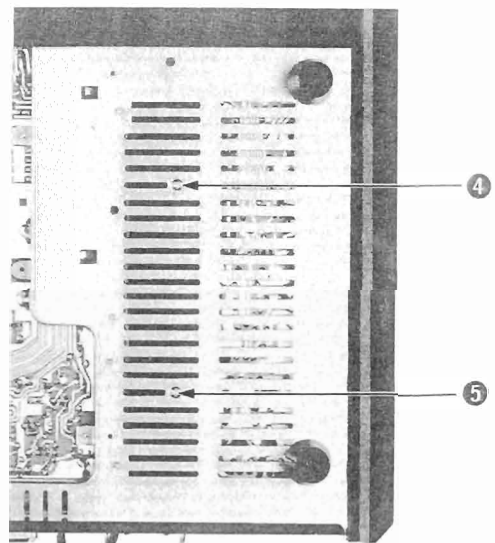


Fig. 13

Remove plugs and screws according to steps below:

Step 1: 3 plugs (Item No. 1, No. 2 & No. 3)

Step 2: 2 screws (Item No. 4 & No. 5)

Step 3: 5 screws (Item No. 6 through No. 10)

- (1) Remove heat sink and power supply amp. C.B. ass'y, see Figs. 12 & 13.
- (2) Remove dial pointer and old dial cord.
- (3) Tie end of new dial cord to one end of dial spring, connect other end of dial spring of bottom right eye inside dial drum, see Fig. 11.
- (4) Rotate the tuning capacitor dial drum to its maximum clockwise.
- (5) Run the dial cord through the slot in the rim of the dial drum.
- (6) Pull dial cord taut and wrap 2 turns counterclockwise around tuning shaft. Refer to Fig. 10.
- (7) Guide the dial cord under and around roller "A", around rollers "B" and "C". Keep the dial cord taut during this procedure.
- (8) Guide the dial cord over the dial drum and wind 2 turns counterclockwise. See Fig. 11.
- (9) Turn the tuning shaft to rotate the dial drum fully counterclockwise and fully clockwise to distribute the tensioning along the dial cord.
- (10) Place the dial cord over and under the tabs on the rear of the dial pointer (see detail) and place the pointer on the top of the dial panel rail.
- (11) Turn the tuning shaft clockwise. Slide the dial pointer to zero (0) calibration marker on the logging scale while holding tuning shaft fully clockwise. Cement the dial pointer to dial cord to prevent slippage. Allow cement to dry thoroughly.
- (12) Reinstall the heat sink and power amp. C.B. ass'y. Reconnect all plugs (removed previously) to their respective sockets. Refer to Fig. 14B.
- (13) Check dial calibration. Refer to FM/MW/LW Tuner Alignment on page 9.
- (14) Replace top cover.

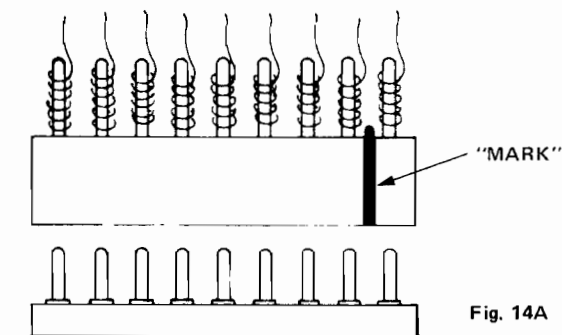
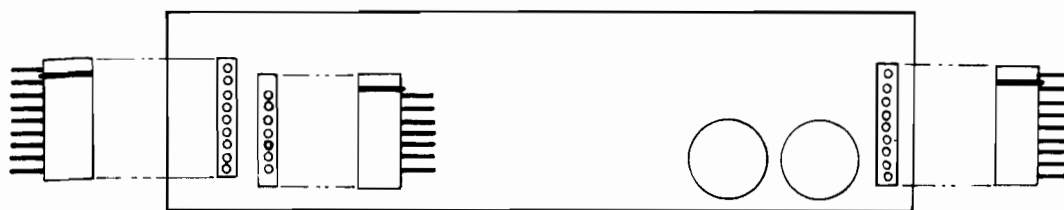


Fig. 14A

**Precaution**

Reconnect the female plug to proper position as indicated "MARK". Refer to Fig. 14B.

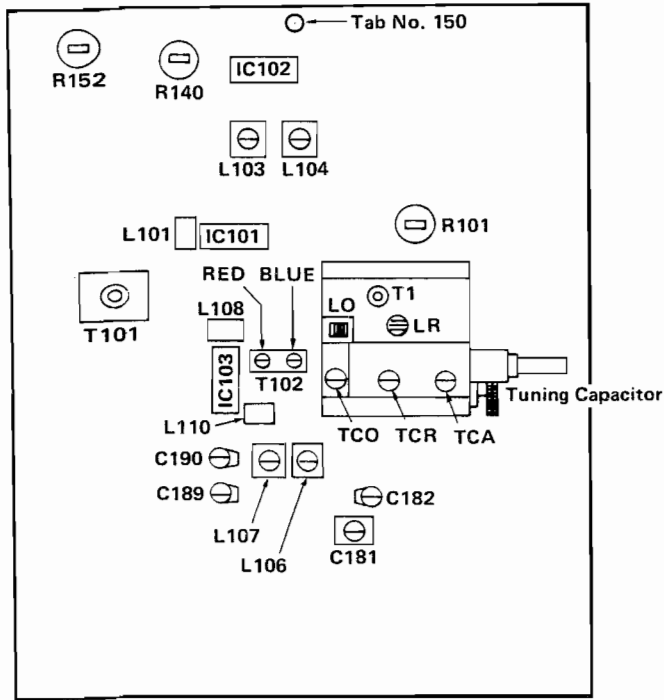


TAP-262A Power Amp. C.B. Ass'y

Fig. 14B

# 6. FM/MW/LW Tuner Alignment Procedures

Alignment locations for FM/MW/LW Tuner section



TFC-16A FM/MW/LW Tuner & Equalizer Amp. C.B. Assy

Fig. 15

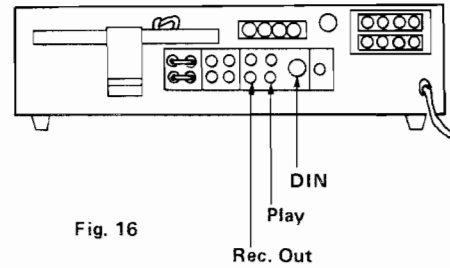


Fig. 16

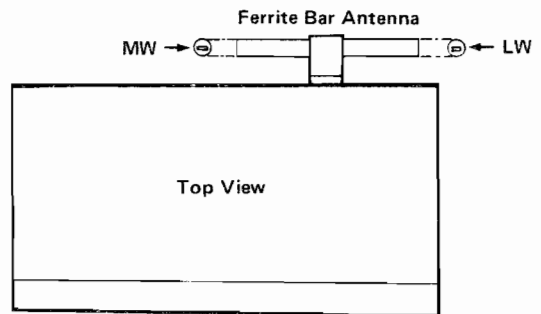


Fig. 17

## 6-(1) FM Section

Discriminator, Center Meter, Distortion and Signal Gain

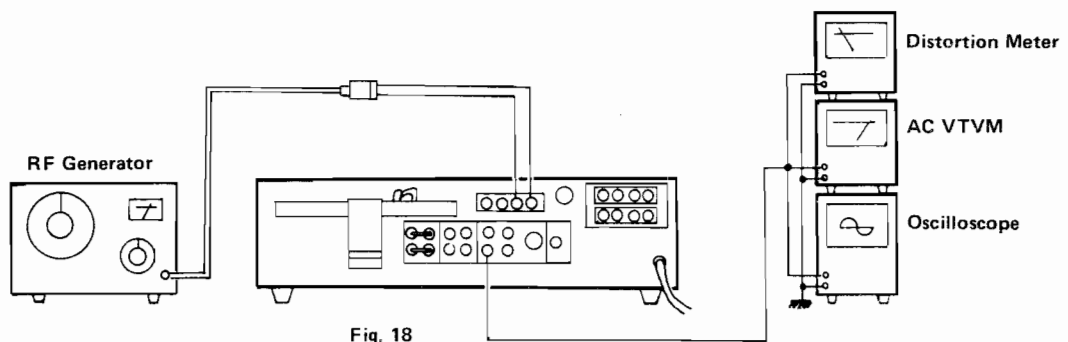


Fig. 18

1. Connect an RF generator, 1kHz modulation and 75kHz deviation, to the antenna terminals on the rear panel through a dummy antenna. Refer to Fig. 16.
2. Connect an oscilloscope, distortion meter and VTVM to the Rec. Out Jacks on the rear panel. Refer to Fig. 16.
3. Tune to a frequency where there is no broadcasting.
4. Adjust the bottom core of T101 so that the center meter indicates "0" (zero). Refer to Fig. 15.
5. Set the RF generator to 98MHz.
6. Set the dial pointer to 98MHz.
7. Adjust the top core of T101 so that the distortion meter is minimized at a value less than 0.4%.
8. Set the output level of RF generator to 90 $\mu$ V and adjust R101 so that the signal meter deflects "2.5" (level number is shown on meter). If not deflect up to "2.5" after turning R101 clockwise fully, keep this position of R101 clockwise fully even deflecting a level number less than "2.5". Refer to Fig. 15.



## Tracking and Sensitivity

**Precaution:** NO adjustment is required. The tracking and sensitivity has been adjusted properly and completely at the factory. If any special reason occasioned, take the following procedures very carefully:

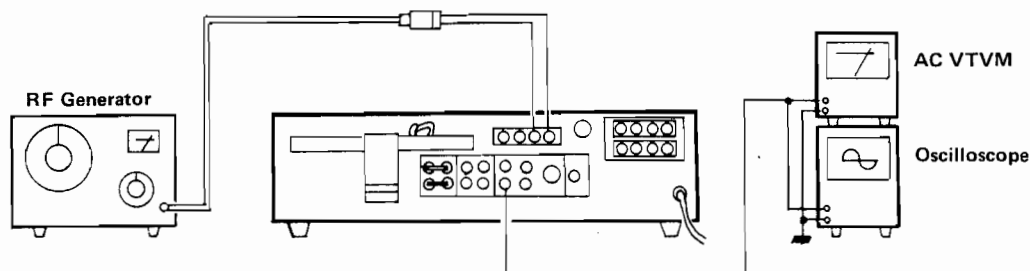


Fig. 19

### Low Frequency

1. Connect an RF generator to the antenna terminals on the rear panel through a dummy antenna. Refer to Fig. 16.
2. Set the RF generator to 88MHz, a modulation of 1kHz and a deviation of 75kHz, to provide an input of  $2\mu V$ .
3. Connect a VTVM and an oscilloscope to the Rec. Out Jacks on the rear panel. Refer to Fig. 16.
4. Set the dial pointer to 88MHz.
5. Adjust two coils LO and LR in the tuning gang to maximize the output. Refer to Fig. 15.

### High Frequency

6. Set the RF generator to 108MHz, a modulation of 1kHz and a deviation of 75kHz, to provide an input of  $2\mu V$ .
7. Set the dial pointer to 108MHz.
8. Adjust the FM trimmers TCO, TCR and TCA in the tuning gang to maximize the output.
9. Adjust the IF transformer T1 until maximum sensitivity is obtained.

**Note:** Repeat these high and low frequency adjustment alternately until maximum sensitivity is obtained.

### Muting Level (Check Up)

**Note:** No adjustment is necessary. However, if the check up is required, take the following steps.

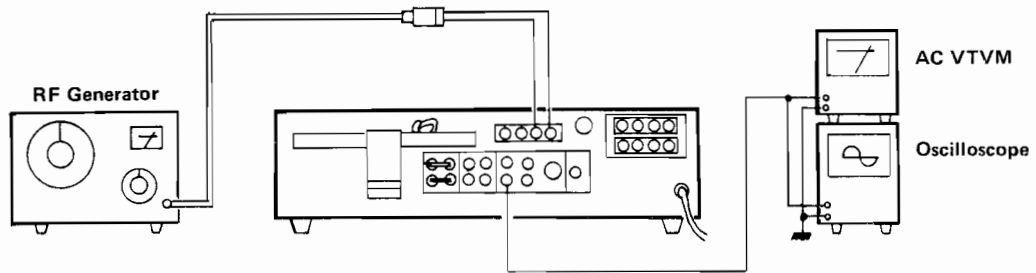


Fig. 20

1. Connect a VTVM and an oscilloscope to the Rec. Out Jacks.
2. Set the RF generator to 98MHz, a modulation of 1kHz and a deviation of 75kHz, to provide an input of  $10\mu\text{V}$  (operation range must be 5 to  $20\mu\text{V}$ ) and check that the muting is operating.

### Multiplex and Stereo Separation

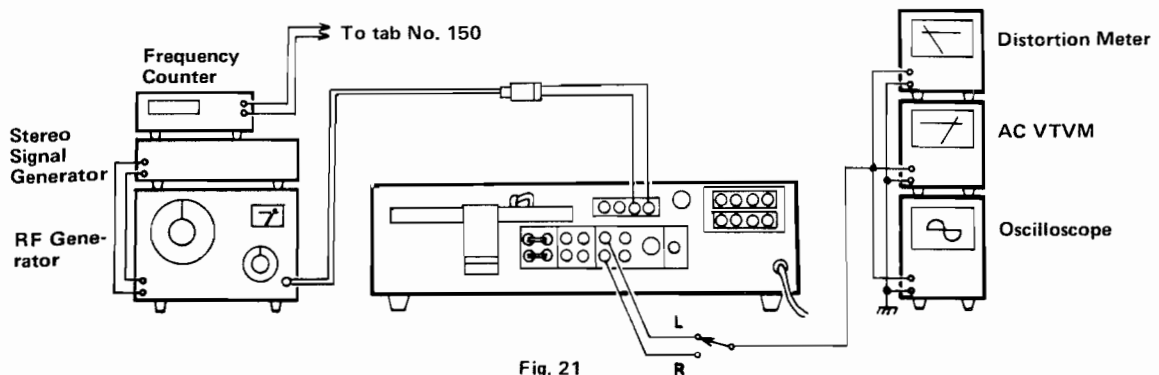


Fig. 21

#### Multiplex

1. Set the stereo signal generator as follows: Modulation frequency 1kHz, Deviation pilot 7.5kHz, Main and Sub. 67.5kHz. Connect its output of an RF generator.
2. Connect an RF generator to the antenna terminals through a dummy antenna.
3. Connect a VTVM, an oscilloscope and a distortion meter to the Rec. Out Jacks.
4. Set the RF generator to 98MHz and an output of 1mV.
5. Set the dial pointer to 98MHz.
6. Connect a frequency counter to Tab No. 150. Refer to Fig. 15.
7. Switch the pilot signal off (Stereo signal generator).
8. Adjust R140 so that the frequency counter indicates 19kHz ( $\pm 0.01\text{kHz}$ ).

#### Stereo Separation

9. Switch the selector of stereo signal generator to the left channel modulation.
10. Adjust R152 so that the output of the right channel is minimized.
11. Switch the selector of stereo signal generator to the right channel modulation.
12. Adjust R152 so that the output of the left channel is minimized.
13. Set R152 to average, if the separation of the right and left are different.

**Note:** Keep the muting pushbutton out during this procedure of stereo separation.

## 6-(2) MW Section

### Tracking and Sensitivity

**Precaution:** Pull the bar antenna down fully before taking the following procedures listed below.

#### Low Frequency

1. Connect an RF generator to the AM antenna terminals on the rear panel, set this to 600kHz with 30% modulation at 400Hz.
2. Connect an AC VTVM and an oscilloscope to the Rec. Out Jacks on the rear panel. Refer to Fig. 16.
3. Set the dial pointer to 600kHz.
4. Adjust Osc. transformer L106 and Left ferrite bar (Right ferrite bar is for LW) to maximize the output signal. Refer to Fig. 17.

#### High Frequency

5. Set the RF generator to 1,400kHz with 30% modulation at 400Hz.
6. Set the dial pointer to 1,400kHz.
7. Adjust the trimmers C189 and C181 so that the output signal is maximized.
8. Repeat these high and low frequency adjustments alternately until maximum sensitivity is obtained.

## 6-(3) LW Section

### Tracking and Sensitivity

**Precaution:** Pull the bar antenna down fully before taking the following procedures listed below.

#### Low Frequency

1. Connect an RF generator to the AM antenna terminals on the rear panel, set this to 160kHz with 30% modulation at 400Hz.
2. Connect an AC VTVM and an oscilloscope to the Rec. Out Jacks on the rear panel. Refer to Fig. 16.
3. Set the dial pointer to 160kHz.
4. Adjust Osc. transformer L107 and Right ferrite bar (Left ferrite bar is for MW) to maximize the output signal. Refer to Fig. 17.

#### High Frequency

5. Set the RF generator to 350kHz with 30% modulation at 400Hz.
6. Set the dial pointer to 350kHz.
7. Adjust the trimmers C190 and C182 so that the output signal is maximized.
8. Repeat these high and low frequency adjustments alternately until maximum sensitivity is obtained.

# 7. Power Amplifier Adjustment Procedures

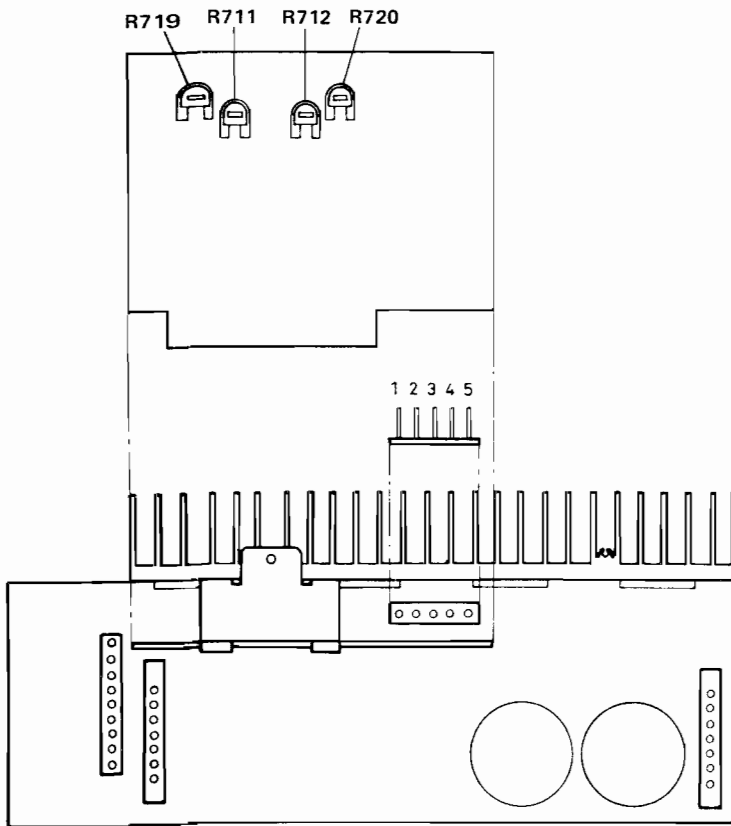


Fig. 22

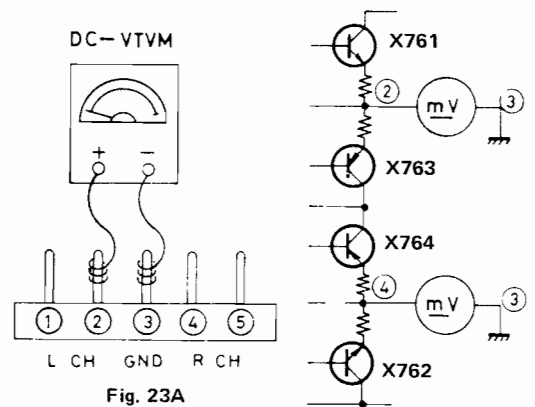


Fig. 23A

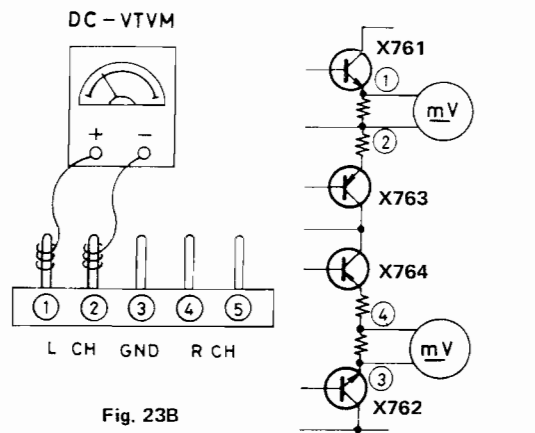


Fig. 23B

( ) : For right channel adjustment

**Precaution:** Allow set to warm up at least 5 minutes before connecting DC VTVM.

## 7-(1) Center Voltage

1. Tune volume control to minimum.
2. Connect ground lead of DC VTVM to pin 3 (pin 3) and connect probe of DC VTVM to pin 2 (pin 4). Refer to Fig. 23A.
3. Adjust R711 (R712). Meter should read 0 ( $\pm 0.05$ ) volt. Refer to Fig. 22.

## 7-(2) Idling Current

4. Connect ground lead of DC VTVM to pin 2 (pin 4) and connect probe of DC VTVM to pin 1 (pin 5). Refer to Fig. 23B.
5. Adjust pot R719 (R720) for DC VTVM reading of 10mV. Refer to Fig. 22.

# 8. Circuit Board Ass'y Part Locations and Parts List

8-(1) TFC-16A FM/MW/LW Tuner & Equalizer Amp. C.B. Ass'y  
 (TFC-16B for U.K.)

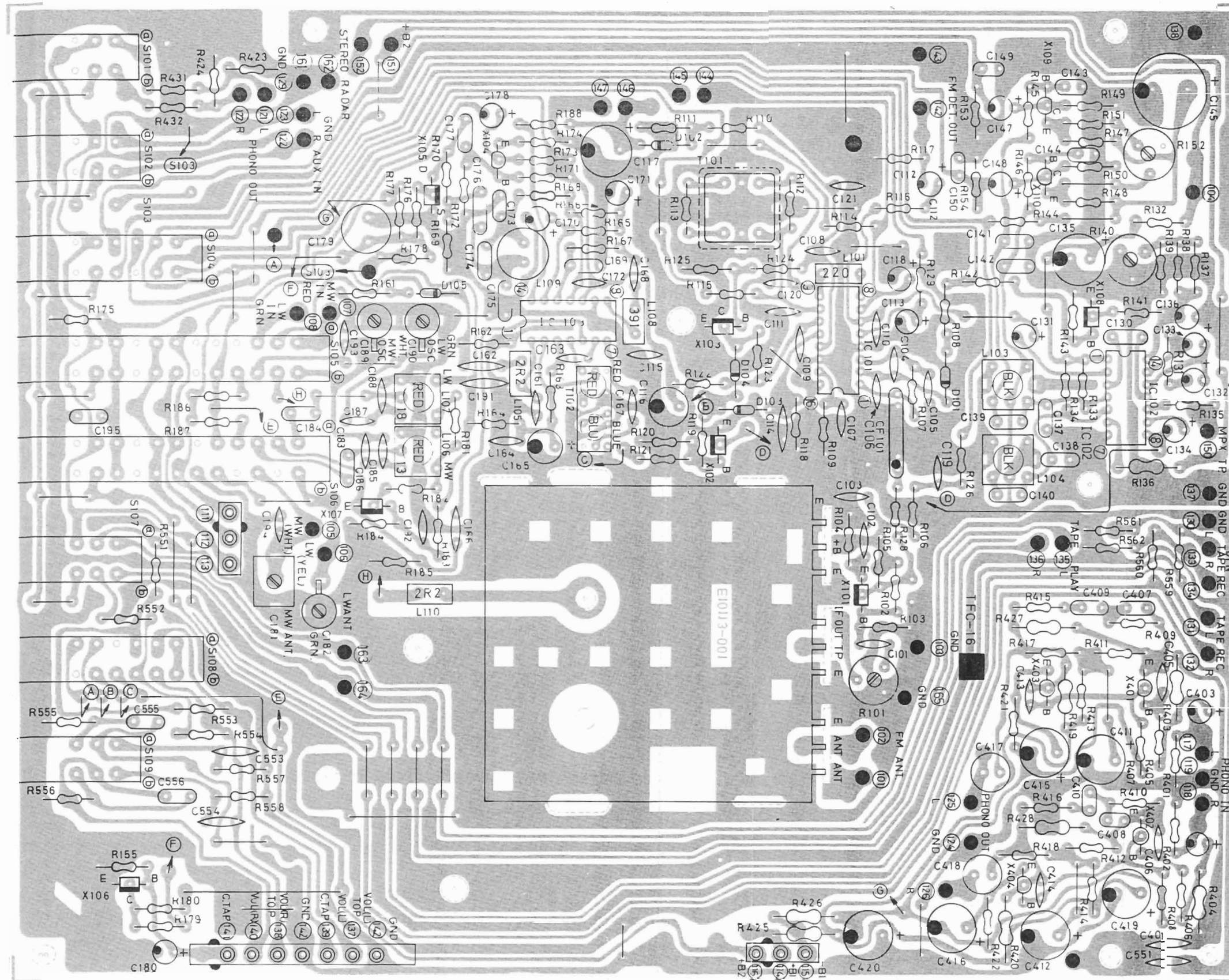


Fig. 24

### Transistors

Item No.	Part Number	Rating (Pc)	(fT)	Description	Maker
X101	2SC535 (B)	100mW	700MHz	Silicon	Hitachi
X102	2SC458 (C)	200mW	230MHz	"	"
X103	2SC458 (C)	"	"	"	"
X104	2SC1775AV (F)	300mW	200MHz	"	"
X105	2SK40C	IDSS: 3mA, NF: 5dB (f=120Hz)		F.E.T.	"
X106	2SC458 (C)	200mW	230MHz	Silicon	"
X107	2SC461 (C)	"	"	"	"
X108	2SC458 (C)	"	"	"	"
X109	2SA872AV (E)	300mW	200MHz	"	"
X110	2SA872AV (E)	"	"	"	"
X401	2SA872AV (E)	"	"	"	"
X402	2SA872AV (E)	"	"	"	"
X403	2SC1775AV (F)	"	"	"	"
X404	2SC1775AV (F)	"	"	"	"

### Integrated Circuits

Item No.	Part Number	Rating	Description	Maker
IC101	HA1137W	550mW	FM IF Det	Hitachi
IC102	HA1156W	400mW	MPX	"
IC103	HA1151	500mW	AM IF Det	"

### Diodes

Item No.	Part Number	Rating	Description	Maker
D101	1S2473		Silicon	Toyo Dengu
D102	1S2473		"	"
D103	1S2473		"	"
D104	1S2473		"	"
D105	1S2473		"	"

### Filter, Coils & Transformers

Item No.	Part Number	Rating	Description
CF101	E03609-001		Ceramic Filter
L101	E03522-220J	22 $\mu$ H	Choke
L103	E03407-005		MPX
L104	E03407-005		"
L105	E03522-2R2KY	2.2 $\mu$ H	Choke
L106	E03079-13		OSC
L107	E03079-18		"
L108	E03522-391KY	390 $\mu$ H	Choke
L109	E03566-333		Ferrite Inductor
L110	E03522-2R2KY	2.2 $\mu$ H	Choke
L111	E03695-001	2 $\mu$ H	Choke
T101	E03134-020		FM Detector Transformer
T102	E03613-002		AM I.F. Transformer

### Capacitors

Item No.	Part Number	Rating		Description
C101	QCF11HP-223	0.022 $\mu$ F	50V	Ceramic
C102	QCZ0107-473	0.047 $\mu$ F	25V	"
C103	QCZ0107-473	"	"	"
C104	QCF11HP-223	0.022 $\mu$ F	50V	"
C105	QCZ0107-473	0.047 $\mu$ F	25V	"
C106	QCZ0107-473	"	"	"
C107	QCF11HP-223	0.022 $\mu$ F	50V	"
C108	QCF11HP-223	"	"	"
C109	QCZ0107-473	0.047 $\mu$ F	25V	"
C110	QCS11HJ-330	33pF	50V	"
C111	QCF11HP-223	0.022 $\mu$ F	"	"
C112	QEW41CA-106	10 $\mu$ F	16V	Electrolytic
C113	QEW41EA-475	4.7 $\mu$ F	25V	"
C114	QCF11HP-223	0.022 $\mu$ F	50V	Ceramic
C115	QCF11HP-223	"	"	"
C116	QEW41CA-476	47 $\mu$ F	16V	Electrolytic
C117	QEW40JA-227	220 $\mu$ F	6.3V	"
C118	QEW41HA-105	1 $\mu$ F	50V	"
C119	QEW41HA-105	"	"	"
C120	QCT05CH-150	15pF	"	Ceramic (Black)
C130	QFM41HK-473	0.047 $\mu$ F	"	Mylar
C131	QEB41EM-475	"	"	L.L.C. Electrolytic
C132	QEB41EM-106	10 $\mu$ F	25V	"
C133	QEB41HM-224	0.22 $\mu$ F	50V	"
C134	QEB41HM-105	1 $\mu$ F	"	"
C135	QEW41CA-227	220 $\mu$ F	16V	Electrolytic
C136	QFS42BJ-471	470pF	125V	Polystyrene
C137	QFM41HK-332	3300pF	50V	Mylar
C138	QFM41HK-332	"	"	"
C139	QFM41HK-182	1800pF	"	"
C140	QFM41HK-182	"	"	"
C141	QFM41HK-332	3300pF	"	"
C142	QFM41HK-332	"	"	"
C143	QFM41HK-222	2200pF	"	"
C144	QFM41HK-222	"	"	"
C145	QEW41CA-108	1000 $\mu$ F	16V	Electrolytic
C147	QEB41HM-224	0.22 $\mu$ F	50V	L.L.C. Electrolytic
C148	QEB41HM-224	"	"	"
C149	QFM41HK-152	1500pF	"	Mylar
C150	QFM41HK-152	"	"	"
C161	QCS11HJ-470	47pF	"	Ceramic
C162	QCZ0107-473	0.047 $\mu$ F	25V	"
C163	QCF11HP-223	0.022 $\mu$ F	50V	"
C164	QCF11HP-223	"	"	"
C165	QEW41CA-476	47 $\mu$ F	16V	Electrolytic
C166	QCZ0107-473	0.047 $\mu$ F	25V	Ceramic
C167	QCF11HP-223	0.022 $\mu$ F	50V	"
C168	QCS11HJ-331	330pF	"	"
C169	QFM41HK-102	1000pF	"	Mylar
C170	QEW41HA-105	1 $\mu$ F	"	Electrolytic
C171	QEW41CA-106	10 $\mu$ F	16V	"
C172	QCF11HP-223	0.022 $\mu$ F	50V	Ceramic
C173	QFM41HK-153	0.015 $\mu$ F	"	Mylar
C174	QFM41HK-183	0.018 $\mu$ F	"	"
C175	QFM41HK-333	0.033 $\mu$ F	"	"

### Capacitors

Item No.	Part Number	Rating		Description
C176	QEB41HM-684	0.68 $\mu$ F	50V	L.L.C. Electrolytic
C177	QFM41HK-473	0.047 $\mu$ F	"	Mylar
C178	QEB41HM-224	0.22 $\mu$ F	"	L.L.C. Electrolytic
C179	QEZ0046-106	10 $\mu$ F	"	Electrolytic
C180	QEW41CA-106	"	"	"
C181	QAT2001-001			Trimmer
C182	QAT3001-006			"
C183	QFM41HK-103	0.01 $\mu$ F	50V	Mylar
C184	QFM41HK-223	0.022 $\mu$ F	"	"
C185	QCS11HJ-151	150pF	"	Ceramic
C186	QCS11HJ-181	180pF	"	"
C187	QCS11HJ-151	150pF	"	"
C188	QCS11HJ-270	27pF	"	"
C189	QAT3001-005			Trimmer
C190	QAT3001-006			"
C191	QCZ0107-473	0.047 $\mu$ F	25V	Ceramic
C192	QCZ0107-473	"	"	"
C193	QCS11HJ-5R0	5pF	50V	"
C195	QFM41HK-682	6800pF	"	Mylar
C401	QCF11HP-223	0.022 $\mu$ F	"	Ceramic
C403	QEB41EM-475	4.7 $\mu$ F	25V	L.L.C. Electrolytic
C404	QEB41EM-475	"	"	"
C405	QCS11HJ-391	390pF	50V	Ceramic
C406	QCS11HJ-391	"	"	"
C407	QFM41HJ-392	3900pF	"	Mylar
C408	QFM41HJ-392	"	"	"
C409	QFM41HJ-103	0.01 $\mu$ F	"	"
C410	QFM41HJ-103	"	"	"
C411	QEW40JA-477	470 $\mu$ F	6.3V	Electrolytic
C412	QEW40JA-477	"	"	"
C413	QCS11HJ-180	18pF	50V	Ceramic
C414	QCS11HJ-180	"	"	"
C415	QEW40JA-227	220 $\mu$ F	16V	Electrolytic
C416	QEW40JA-227	"	6.3V	"
C417	QEZ0046-475	4.7 $\mu$ F	50V	Non Pole Electrolytic
C418	QEZ0046-475	"	"	"
C419	QEW41EA-107	100 $\mu$ F	25V	Electrolytic
C420	QEW41EA-107	"	"	"
C551	QCF11HP-223	0.022 $\mu$ F	50V	Ceramic
C553	QCS11HJ-271	270pF	"	"
C554	QCS11HJ-271	"	"	"
C555	QFM41HK-273	0.027 $\mu$ F	"	Mylar
C556	QFM41HK-273	"	"	"



## Resistors

Item No.	Part Number	Rating		Description
R101	QVP4A0B-471	470Ω		Variable
R102	QRD181J-123	12kΩ	1/8W	Carbon
R103	QRD181J-472	4.7kΩ	"	"
R104	QRD181J-102	1kΩ	"	"
R105	QRD181J-331	330Ω	"	"
R106	QRD181J-100	10Ω	"	"
R107	QRD181J-331	330Ω	"	"
R108	QRD181J-474	470kΩ	"	"
R109	QRD181J-104	100kΩ	"	"
R110	QRD181J-153	15kΩ	"	"
R112	QRD181J-562	5.6kΩ	"	"
R113	QRD181J-432	4.3kΩ	"	"
R114	QRD181J-271	270Ω	"	"
R115	QRD181J-752	7.5kΩ	"	"
R116	QRD181J-563	56kΩ	"	"
R117	QRD181J-223	22kΩ	"	"
R119	QRD181J-563	56kΩ	"	"
R120	QRD181J-103	10kΩ	"	"
R121	QRD181J-333	33kΩ	"	"
R122	QRD181J-100	10Ω	"	"
R123	QRD181J-123	12kΩ	"	"
R124	QRD181J-103	10kΩ	"	"
R125	QRD181J-273	27kΩ	"	"
R126	QRD181J-273	"	"	"
R128	QRD181J-271	270Ω	"	"
R129	QRD181J-123	12kΩ	"	"
R131	QRD181J-102	1kΩ	"	"
R132	QRD181J-560	56Ω	"	"
R133	QRD181J-392	3.9kΩ	"	"
R134	QRD181J-392	"	"	"
R135	QRD181J-105	1MΩ	"	"
R136	QRD126J-181	180Ω	1/2W	Uninflammable Carbon
R137	QRD181J-183	18kΩ	1/8W	Carbon
R138	QRD181J-474	470kΩ	"	"
R139	QRD181J-153	15kΩ	"	"
R140	QVP4A0B-472	4.7kΩ		Variable
R141	QRD181J-392	3.9kΩ	1/8W	Carbon
R142	QRD181J-563	56kΩ	"	"
R143	QRD181J-104	100kΩ	"	"
R144	QRD181J-681	680Ω	"	"
R145	QRD181J-183	18kΩ	"	"
R146	QRD181J-183	"	"	"
R147	QRD181J-102	1kΩ	"	"
R148	QRD181J-821	"	"	"
R149	QRD181J-392	3.9kΩ	"	"
R150	QRD181J-392	"	"	"
R151	QRD181J-682	6.8kΩ	"	"
R152	QVP4A0B-473	47kΩ		Variable
R153	QRD181J-473	"	1/8W	Carbon
R154	QRD181J-473	"	"	"
R155	QRD181J-474	470kΩ	"	"
R161	QRD181J-101	100Ω	"	"
R162	QRD181J-153	15kΩ	"	"
R163	QRD181J-472	4.7kΩ	"	"
R164	QRD181J-151	150Ω	"	"
R165	QRD181J-103	10kΩ	"	"

## Resistors

Item No.	Part Number	Rating		Description
R166	QRD181J-103	10k $\Omega$	1/8W	Carbon
R167	QRD181J-331	330 $\Omega$	"	"
R168	QRD181J-222	2.2k $\Omega$	"	"
R169	QRD181J-103	10k $\Omega$	"	"
R170	QRD181J-473	47k $\Omega$	"	"
R171	QRD181J-394	390k $\Omega$	"	"
R172	QRD181J-683	68k $\Omega$	"	"
R173	QRD181J-332	3.3k $\Omega$	"	"
R174	QRD181J-102	1k $\Omega$	"	"
R175	QRD181J-104	100k $\Omega$	"	"
R176	QRD181J-334	330k $\Omega$	"	"
R177	QRD181J-334	"	"	"
R178	QRD181J-561	560 $\Omega$	"	"
R179	QRD181J-683	68k $\Omega$	"	"
R180	QRD181J-683	"	"	"
R181	QRD181J-821	820 $\Omega$	"	"
R182	QRD181J-122	1.2k $\Omega$	"	"
R183	QRD181J-333	33k $\Omega$	"	"
R184	QRD181J-183	18k $\Omega$	"	"
R185	QRD181J-102	1k $\Omega$	"	"
R186	QRD181J-151	150 $\Omega$	"	"
R187	QRD181J-151	"	"	"
R188	QRD181J-152	1.5k $\Omega$	"	"
R401	QRD181J-683	68k $\Omega$	"	"
R402	QRD181J-683	"	"	"
R403	QRD141J-184	180k $\Omega$	1/4W	"
R404	QRD141J-184	"	"	"
R405	QRD181J-182	1.8k $\Omega$	1/8W	"
R406	QRD181J-182	"	"	"
R407	QRD181J-104	100k $\Omega$	"	"
R408	QRD181J-104	"	"	"
R409	QRD181J-223	22k $\Omega$	"	"
R410	QRD181J-223	"	"	"
R411	QRD181J-391	390 $\Omega$	"	"
R412	QRD181J-391	"	"	"
R413	QRD181J-474	470k $\Omega$	"	"
R414	QRD181J-474	"	"	"
R415	QRD181J-391	390 $\Omega$	"	"
R416	QRD181J-391	"	"	"
R417	QRD181J-334	330k $\Omega$	"	"
R418	QRD181J-334	"	"	"
R419	QRD126J-472	4.7k $\Omega$	1/2W	Uninflammable Carbon
R420	QRD126J-472	"	"	"
R421	QRD181J-102	1k $\Omega$	1/8W	Carbon
R422	QRD181J-102	"	"	"
R423	QRD181J-184	180k $\Omega$	"	"
R424	QRD181J-184	"	"	"
R425	QRD126J-101	100 $\Omega$	1/2W	Uninflammable Carbon
R426	QRD126J-101	"	"	"
R427	QRD141J-334	330k $\Omega$	1/4W	Carbon
R428	QRD141J-334	"	"	"
R431	QRD181J-471	470 $\Omega$	1/8W	"
R432	QRD181J-471	"	"	"
R551	QRD181J-472	4.7k $\Omega$	"	"
R552	QRD181J-472	"	"	"
R553	QRD181J-472	"	"	"

### Resistors

Item No.	Part Number	Rating		Description
R554	QRD181J-472	4.7k $\Omega$	1/8W	Carbon
R555	QRD181J-153	15k $\Omega$	"	"
R556	QRD181J-153	"	"	"
R557	QRD181J-564	560k $\Omega$	"	"
R558	QRD181J-564	"	"	"
R559	QRD181J-334	330k $\Omega$	"	"
R560	QRD181J-334	"	"	"
R561	QRD181J-104	100k $\Omega$	"	"
R562	QRD181J-104	"	"	"

### Switch

Item No.	Part Number	Rating	Description
	QSP0019-001		Push Switch

### Others

Item No.	Part Number	Part Number for U.K.	Description
	*E03546-010 E03606-001 E49829-003	E03546-011	Front End Male Contact Plug Shield Case

\*For U.K., refer to page 36.

## 8-(2) TRF-33A Antenna C.B. Ass'y

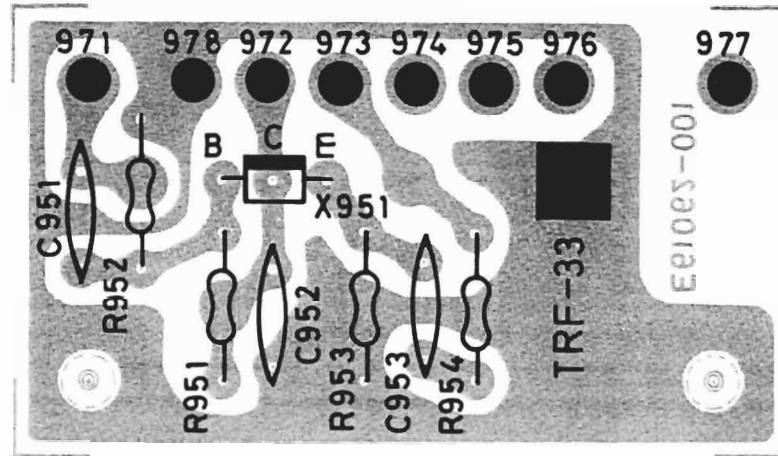


Fig. 25

### Transistor

Item No.	Part Number	Rating (Pc)	(f <sub>T</sub> )	Description	Maker
X951	2SC461 (B)	200mW	230MHz	Silicon	Hitachi

### Capacitors

Item No.	Part Number	Rating	Description
C951	QCZ0107-473	0.047 $\mu$ F	25V Ceramic
C952	QCZ0107-473	"	"
C953	QCZ0107-473	"	"

### Resistors

Item No.	Part Number	Rating	Description
R951	QRD181J-104	100k $\Omega$	1/8W Carbon
R952	QRD181J-153	15k $\Omega$	"
R953	QRD181J-222	2.2k $\Omega$	"
R954	QRD181J-821	820 $\Omega$	"

### 8-(3) TPS-52 Lamp C.B. Ass'y

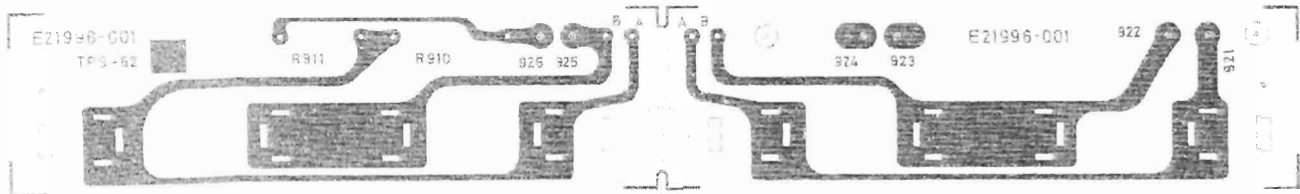


Fig. 26

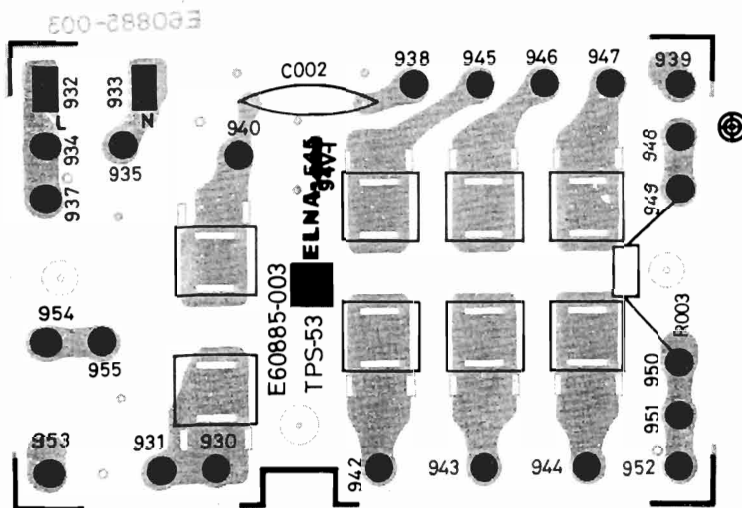
#### Resistors

Item No.	Part Number	Rating		Description
R910	QRG016J-680	68Ω	1W	O.M.F.
R911	QRD126J-681	680Ω	1/2W	Uninflammable Carbon

#### Other

Item No.	Part Number	Rating	Description
	E45524-001		Contact Clip

### 8-(4) TPS-53M AC Fuse C.B. Ass'y (TPS-53NBS for U.K.)



\*For U.K., refer to page 36.

Fig. 27

#### Capacitors

Item No.	Part Number	Part Number for U.K.	Rating	Description
* C002	QCZ9008-101	QCZ9008-101BS	100pF 4kV	Ceramic

#### Fuses

Item No.	Part Number	Part Number for U.K.	Rating	Description
	*QMF51A2-1R0	QMF51A2-1R0BS	1AT	Fuse (To be ordered separately)
	*QMF51A2-2R5	QMF51A2-2R5BS	2.5AT	"
	*QMF51A2-6R3	QMF51A2-6R3BS	6.3AT	"
	E48965-002			Fuse Clip

### 8-(5) TAD-173B Driver Amp. C.B. Ass'y

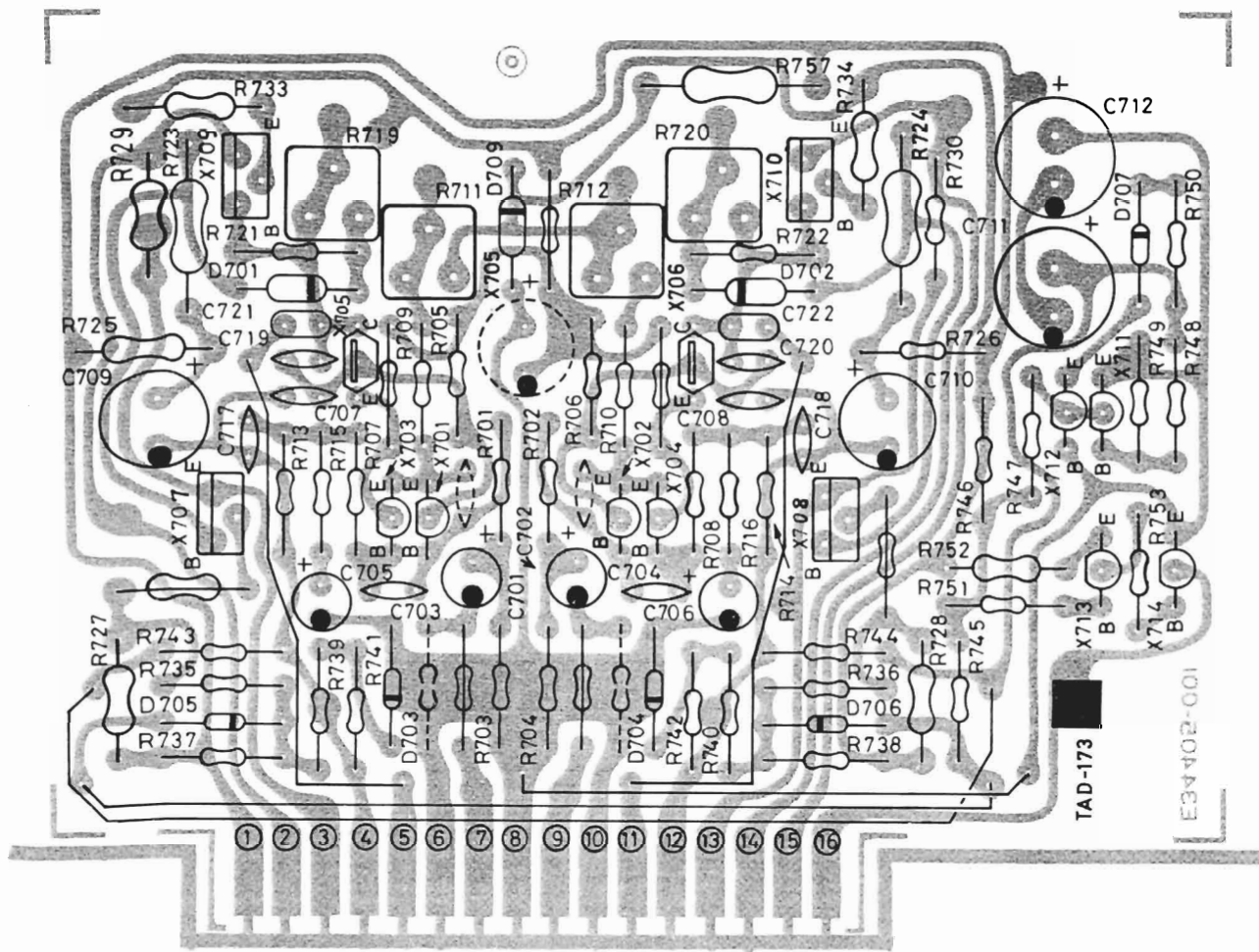


Fig. 28

#### Transistors

Item No.	Part Number	Rating			Description	Maker
		V <sub>CEO</sub>	P <sub>c</sub>	f <sub>T</sub>		
X701	2SA872AV(E)	120V	300mW	200MHz	Silicon Transistor	Hitachi
X702	"	"	"	"		"
X703	"	"	"	"		"
X704	"	"	"	"		"
X705	2SC1628(Y)	150V	1W	40MHz	"	Toshiba
X706	"	"	"	"	"	"
X707	2SC1904 (V)	"	"	130MHz	"	Fujitsu
X708	"	"	"	"	"	"
X709	2SA899 (V)	"	"	100MHz	"	"
X710	"	"	"	"	"	"
X711	2SC1775AV(F)	"	300mW	200MHz	"	Hitachi
X712	"	"	"	"	"	"
X713	2SA872AV(E)	"	"	"	"	"
X714	2SC1775AV(F)	"	"	"	"	"

### Diodes

Item No.	Part Number	Rating	Description	Maker
D701	SV03		Silicon Varistor	Sanken
D702	"		"	"
D703	1S2473		Silicon Diode	Toyo Dengu
D704	"		"	"
D705	"		"	"
D706	"		"	"
D707	"		"	"
D709	E0771-10		Zener Diode WZ-090 9V	Fuji

### Capacitors

Item No.	Part Number	Rating	Description
C701	QEW41HA-474	0.47 $\mu$ F	50V Electrolytic
C702	"	"	"
C703	QCS11HJ-391	390pF	" Ceramic
C704	"	"	"
C705	QEW41AA-106	10 $\mu$ F	16V Electrolytic
C706	"	"	"
C707	QCS12HJ-100	10pF	500V Ceramic
C708	"	"	"
C709	QEW41HA-476	47 $\mu$ F	50V Electrolytic
C710	"	"	"
C711	QEW41AA-477	470 $\mu$ F	10V "
C712	"	"	"
C717	QSC11HJ-220	22pF	50V Ceramic
C718	"	"	"
C719	QCS12HJ-100	10pF	500V "
C720	"	"	"
C721	QFM41HK-333	0.033 $\mu$ F	50V Mylar
C722	"	"	"

### Resistors

Item No.	Part Number	Rating		Description
R701	QRD141J-152	1.5k $\Omega$	1/4W	Carbon
R702	"	"	"	"
R703	QRD141J-563	56k $\Omega$	"	"
R704	"	"	"	"
R705	QRD141J-182	1.8k $\Omega$	"	"
R706	"	"	"	"
R707	QRD141J-152	1.5k $\Omega$	"	"
R708	"	"	"	"
R709	QRD141J-822	8.2k $\Omega$	"	"
R710	"	"	"	"
R711	QVP9AOB-472	4.7k $\Omega$		Variable
R712	"	"		"
R713	QRD141J-563	56k $\Omega$	1/4W	Carbon
R714	"	"	"	"
R715	QRD141J-332	3.3k $\Omega$	"	"
R716	"	"	"	"
R719	QVP9AOB-221	220 $\Omega$		Variable
R720	"	"		"
R721	QRD141J-121	120 $\Omega$	1/4W	Carbon
R722	"	"	"	"
R723	QRG017J-152	1.5k $\Omega$	1W	O.M.F.
R724	"	"	"	"
R725	QRG129J-272	2.7k $\Omega$	1/2W	Uninflammable O.M.F.
R726	"	"	"	"
R727	QRG129J-100	10 $\Omega$	"	"
R728	"	"	"	"
R729	QRX129J-221	220 $\Omega$	"	"
R730	"	"	"	"
R733	QRG129J-100	10 $\Omega$	"	"
R734	"	"	"	"
R735	QRD141J-272	2.7k $\Omega$	1/4W	Carbon
R736	"	"	"	"
R737	QRD141J-682	6.8k $\Omega$	"	"
R738	"	"	"	"
R739	QRD141J-473	47k $\Omega$	"	"
R740	"	"	"	"
R741	QRD141J-472	4.7k $\Omega$	"	"
R472	"	"	"	"
R473	QRD141J-103	10k $\Omega$	"	"
R474	"	"	"	"
R475	QRD141J-562	5.6k $\Omega$	"	"
R476	QRD141J-332	3.3k $\Omega$	"	"
R477	QRD141J-153	15k $\Omega$	"	"
R478	QRD141J-152	1.5k $\Omega$	"	"
R479	QRD141J-392	3.9k $\Omega$	"	"
R750	QRD141J-102	1k $\Omega$	"	"
R751	QRD141J-471	470 $\Omega$	"	"
R752	QRG129J-471	"	1/2W	Uninflammable O.M.F.
R753	QRD141J-473	47k $\Omega$	1/4W	Carbon
R757	QRG016J-392	3.9k $\Omega$	1W	Uninflammable O.M.F.



## 8-(6) TAP-262A Power Amp. C.B. Ass'y

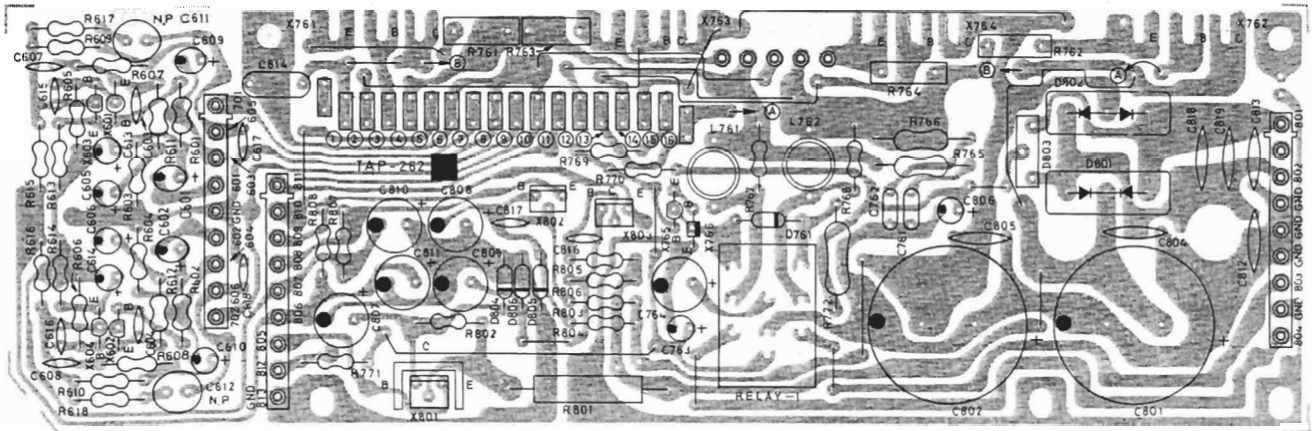


Fig. 29

### Transistors

Item No.	Part Number	Rating (Pc)	(ft)	Description	Maker
X601	2SA872AV (E)	300mW	200MHz	Silicon	Hitachi
X602	2SA872AV (E)	"	"	"	"
X603	2SC1775AV (F)	"	"	"	"
X604	2SC1775AV (E)	"	"	"	"
X761	2SC1030 (B, C)	50W	10MHz	"	"
X762	2SC1030 (B, C)	"	"	"	"
X763	2SA757 (B, C)	60W	24MHz	"	"
X764	2SA757 (B, C)	"	"	"	"
X765	2SC1775AV (F)	300mW	200MHz	"	"
X766	2SC1213A (C) S	400mW	150MHz	"	"
X801	2SD313V (D, E)	30W	8MHz	"	Sanyo
X802	2SB514V (D, E)	20W	"	"	"
X803	2SB514V (D, E)	"	"	"	"

### Diodes

Item No.	Part Number	Rating	Description	Maker
D761	1S2473		Silicon	Toyo Dengu
D801	ESAC04-02C		"	Kyodo Denki
D802	ESAC04-02N		"	"
D803	ESAB02-02C		"	"
D804	WZ-130		Zener	JRC
D805	WZ-240		"	"
D806	WZ-240		"	"

### Coils

Item No.	Part Number	Rating	Description
L761	E04059-2R7	2.7μH	Choke
L762	E04059-2R7	"	"

### Capacitors

Item No.	Part Number	Rating		Description
C601	QEB41EM-225	2.2 $\mu$ F	25V	L.L.C. Electrolytic
C602	QEB41EM-225	"	"	"
C603	QCS11HJ-391	390pF	50V	Ceramic
C604	QCS11HJ-391	"	"	"
C605	QEW41AA-476	47 $\mu$ F	10V	Electrolytic
C606	QEW41AA-476	"	"	"
C607	QCS11HJ-180	18pF	50V	Ceramic
C608	QCS11HJ-180	"	"	"
C609	QEW41AA-476	47 $\mu$ F	10V	Electrolytic
C610	QEW41AA-476	"	"	"
C611	QEZ0046-475	4.7 $\mu$ F	50V	Non Pole Electrolytic
C612	QEZ0046-475	"	"	"
C613	QEW41AA-476	47 $\mu$ F	10V	Electrolytic
C614	QEW41AA-476	"	"	"
C615	QCS11HJ-3R0	3pF	50V	Ceramic
C616	QCS11HJ-3R0	"	"	"
C617	QCS11HJ-151	150pF	"	"
C618	QCS11HJ-151	"	"	"
C761	QFM41HK-473	0.047 $\mu$ F	"	Mylar
C762	QFM41HK-473	"	"	"
C763	QEW41CA-106	10 $\mu$ F	16V	Electrolytic
C764	QEW40JA-227	220 $\mu$ F	6.3V	"
C801	QEW71GH-688	6800 $\mu$ F	42V	"
C802	QEW71GH-688	"	"	"
C804	QCF12HP-103	0.01 $\mu$ F	50V	Ceramic
C805	QCF12HP-103	"	"	"
C806	QEW41HA-106	10 $\mu$ F	"	Electrolytic
C807	QEW41CA-477	470 $\mu$ F	16V	"
C808	QEW41VA-107	100 $\mu$ F	35V	"
C809	QEW41VA-107	"	"	"
C810	QEW41EA-107	"	25V	"
C811	QEW41EA-107	"	"	"
C812	QCF12HP-103	0.01 $\mu$ F	50V	Ceramic
C813	QCF12HP-103	"	"	"
C816	QCF11HP-103	0.01 $\mu$ F	"	Ceramic
C817	QCF11HP-103	"	"	"
C818	QCF12HP-103	"	"	"
C819	QCF12HP-103	"	"	"

### Resistors

Item No.	Part Number	Rating		Description
R601	QRD141J-102	1k $\Omega$	1/4W	Carbon
R602	QRD141J-102	"	"	"
R603	QRD141J-184	180k $\Omega$	"	"
R604	QRD141J-184	"	"	"
R605	QRD141J-154	150k $\Omega$	"	"
R606	QRD141J-154	"	"	"
R607	QRD141J-682	6.8k $\Omega$	"	"
R608	QRD141J-682	"	"	"
R609	QRD141J-103	10k $\Omega$	"	"
R610	QRD141J-103	"	"	"
R611	QRD141J-222	2.2k $\Omega$	"	"
R612	QRD141J-222	"	"	"
R613	QRD141J-182	1.8k $\Omega$	"	"
R614	QRD141J-182	"	"	"
R615	QRD141J-562	5.6k $\Omega$	"	"
R616	QRD141J-562	"	"	"
R617	QRD141J-562	"	"	"
R618	QRD141J-562	"	"	"
R761	QRM054K-R47	0.47 $\Omega$	5W	Metalized Plate
R762	QRM054K-R47	"	"	"
R763	QRM054K-R47	"	"	"
R764	QRM054K-R47	"	"	"
R765	QRX017J-100	10 $\Omega$	1W	Uninflammable M.F.
R766	QRX017J-100	"	"	"
R767	QRD126J-4R7	4.7 $\Omega$	1/2W	Uninflammable
R768	QRD126J-4R7	"	"	"
R769	QRD141J-560	56 $\Omega$	1/4W	Carbon
R770	QRD141J-224	220k $\Omega$	"	"
R771	QRD141J-104	100k $\Omega$	"	"
R772	QRG026J-331	330 $\Omega$	2W	Oxide Metal Film
R801	QRF051K-101	100 $\Omega$	5W	Cement
R802	QRD141J-272	2.7k $\Omega$	1/4W	Carbon
R803	QRG129J-101	100 $\Omega$	1/2W	Uninflammable O.M.
R804	QRD141J-222	2.2k $\Omega$	1/4W	Carbon
R805	QRG129J-101	100 $\Omega$	1/2W	Uninflammable O.M.
R806	QRD141J-222	2.2k $\Omega$	1/4W	Carbon
R807	QRG129J-680	68 $\Omega$	1/2W	Uninflammable O.M.
R808	QRG129J-220	22 $\Omega$	"	"

### Switch

Item No.	Part Number	Rating	Description
	ESK1D24-311		Relay

### Others

Item No.	Part Number	Rating	Description
	E03606-001		Male Contact Plug
	E03677-002		Transistor Socket
	E22008-002		Heat Sink
	E34453-001		Heat Sink Holder
	E34453-002		"
	E49784-002		Connect Pin
	E60171-001		Heat Sink (For 2SD313V)

# 8-(7) TAC-402C S.E.A.(Sound Effect Amp.) C.B. A.ss'y

E34406-001

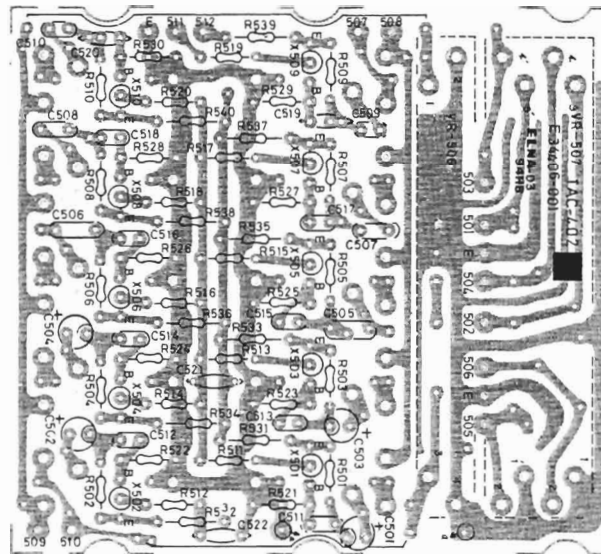


Fig. 30

## Transistors

Item No.	Part Number	Rating (Pc)	(fT)	Description	Maker
X501	2SC1775AV (F)	300mW	200MHz	Silicon	Hitachi
X502	2SC1775AV (F)	"	"	"	"
X503	2SC1775AV (F)	"	"	"	"
X504	2SC1775AV (F)	"	"	"	"
X505	2SC1775AV (F)	"	"	"	"
X506	2SC1775AV (F)	"	"	"	"
X507	2SC1775AV (F)	"	"	"	"
X508	2SC1775AV (F)	"	"	"	"
X509	2SC1775AV (F)	"	"	"	"
X510	2SC1775AV (F)	"	"	"	"

## Capacitors

Item No.	Part Number	Rating		Description
C501	QEB41EM-475	4.7 $\mu$ F	25V	L.L.C. Electrolytic
C502	QEB41EM-475	"	"	"
C503	QEB41HM-474	0.47 $\mu$ F	50V	"
C504	QEB41HM-474	"	"	"
C505	QFM41HK-124	0.14 $\mu$ F	"	Mylar
C506	QFM41HK-124	"	"	"
C507	QFM41HK-273	0.027 $\mu$ F	"	"
C508	QFM41HK-273	"	"	"
C509	QFM41HK-562	5600pF	"	"
C510	QFM41HK-562	"	"	"
C511	QFM41HK-223	0.022 $\mu$ F	"	"
C512	QFM41HK-223	"	"	"
C513	QFM41HK-822	8200pF	"	"
C514	QFM41HK-822	"	"	"
C515	QFM41HK-332	3300pF	"	"
C516	QFM41HK-332	"	"	"
C517	QFM41HK-102	1000pF	"	"
C518	QFM41HK-102	"	"	"
C519	QCS11HJ-681	680pF	"	Ceramic
C520	QCS11HJ-681	"	"	"
C521	QCF11HP-473	0.047 $\mu$ F	"	"
C522	QCF11HP-473	"	"	"

### Resistors

Item No.	Part Number	Rating		Description
R501	QRD181J-122	1.2k $\Omega$	1/8W	Carbon
R502	QRD181J-122	"	"	"
R503	QRD181J-122	"	"	"
R504	QRD181J-122	"	"	"
R505	QRD181J-122	"	"	"
R506	QRD181J-122	"	"	"
R507	QRD181J-122	"	"	"
R508	QRD181J-122	"	"	"
R509	QRD181J-122	"	"	"
R510	QRD181J-122	"	"	"
R511	QRD181J-391	390 $\Omega$	"	"
R512	QRD181J-391	"	"	"
R513	QRD181J-391	"	"	"
R514	QRD181J-391	"	"	"
R515	QRD181J-391	"	"	"
R516	QRD181J-391	"	"	"
R517	QRD181J-391	"	"	"
R518	QRD181J-391	"	"	"
R519	QRD181J-391	"	"	"
R520	QRD181J-391	"	"	"
R521	QRD181J-134	130k $\Omega$	"	Carbon
R522	QRD181J-134	"	"	"
R523	QRD181J-913	91k $\Omega$	"	"
R524	QRD181J-913	"	"	"
R525	QRD181J-513	51k $\Omega$	"	"
R526	QRD181J-513	"	"	"
R527	QRD181J-333	33k $\Omega$	"	"
R528	QRD181J-333	"	"	"
R529	QRD181J-243	24k $\Omega$	"	"
R530	QRD181J-243	"	"	"
R531	QRD141J-682	6.8k $\Omega$	1/4W	"
R532	QRD141J-682	"	"	"
R533	QRD141J-682	"	"	"
R534	QRD141J-682	"	"	"
R535	QRD141J-682	"	"	"
R536	QRD141J-682	"	"	"
R537	QRD141J-682	"	"	"
R538	QRD141J-682	"	"	"
R539	QRD141J-682	"	"	"
R540	QRD141J-682	"	"	"
VR501	QVZ5010-002			Slide Volume
VR502	QVZ5010-002			"
VR503	QVZ5010-002			"
VR504	QVZ5010-002			"
VR505	QVZ5010-002			"
VR506	QVT6C2W-6F5			"
VR507	QVT9C2B-5G5E			"

### Others

Item No.	Part Number	Rating	Description
	E34421-001		S.E.A. Bracket
	E60865-001		Felt Spacer
	E03565-7B0		7 Pins Socket
	E03565-9B0		9 Pins Socket

## 8-(8) TAC-403C Speaker Switch C.B. Ass'y

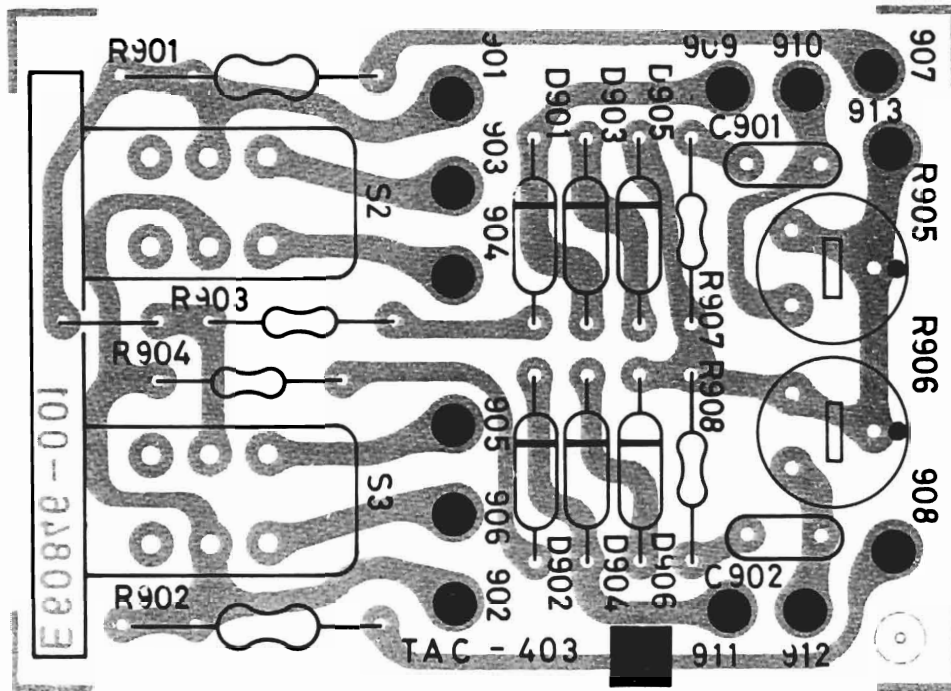


Fig. 31

### Resistors

Item No.	Part Number	Rating		Description
R901	QRD126J-221	220Ω	1W	Uninflammable Carbon
R902	QRD126J-221	"	"	"

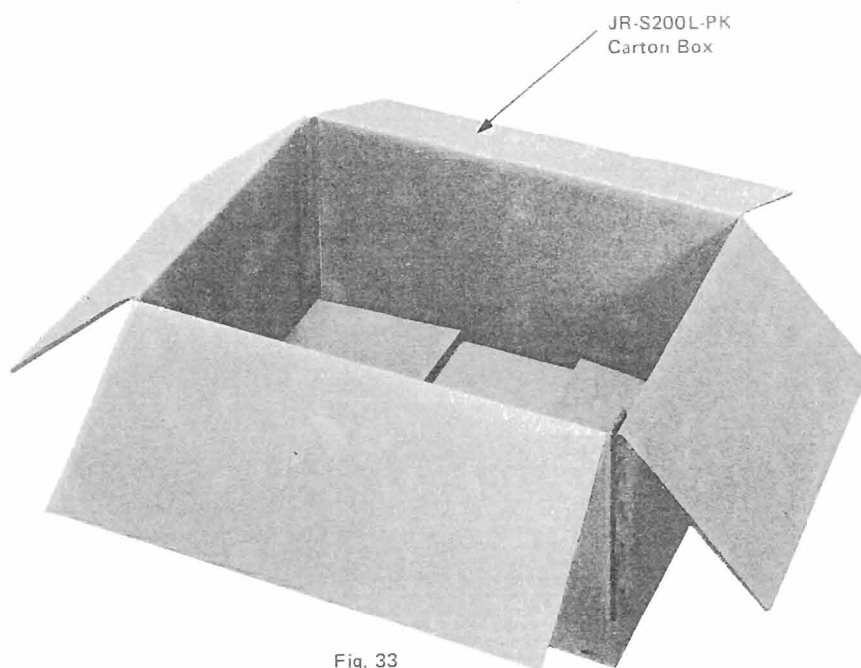
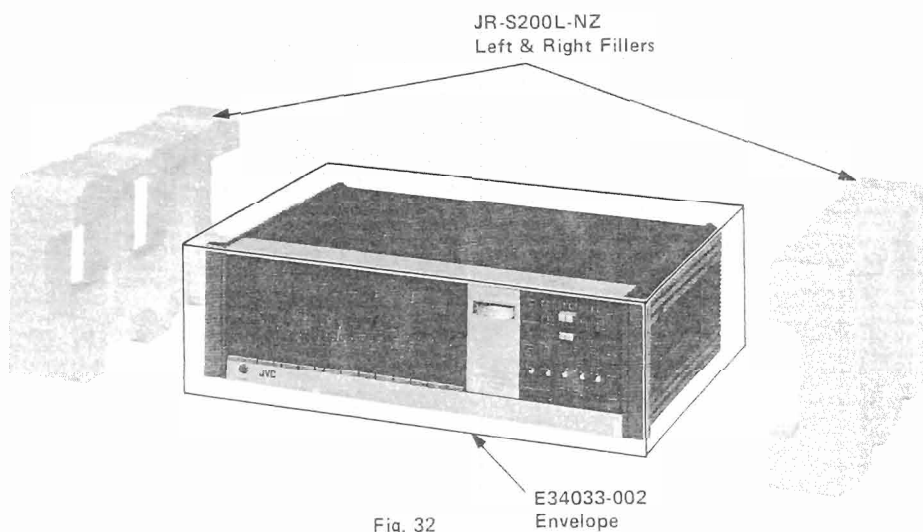
### Switches

Item No.	Part Number	Rating	Description
S2 & S3	QSP0229-004		Push Switch

### Others

Item No.	Part Number	Rating	Description
	E03565-9B0		9 Pins Socket
	QMS6301-001		Jack Ass'y

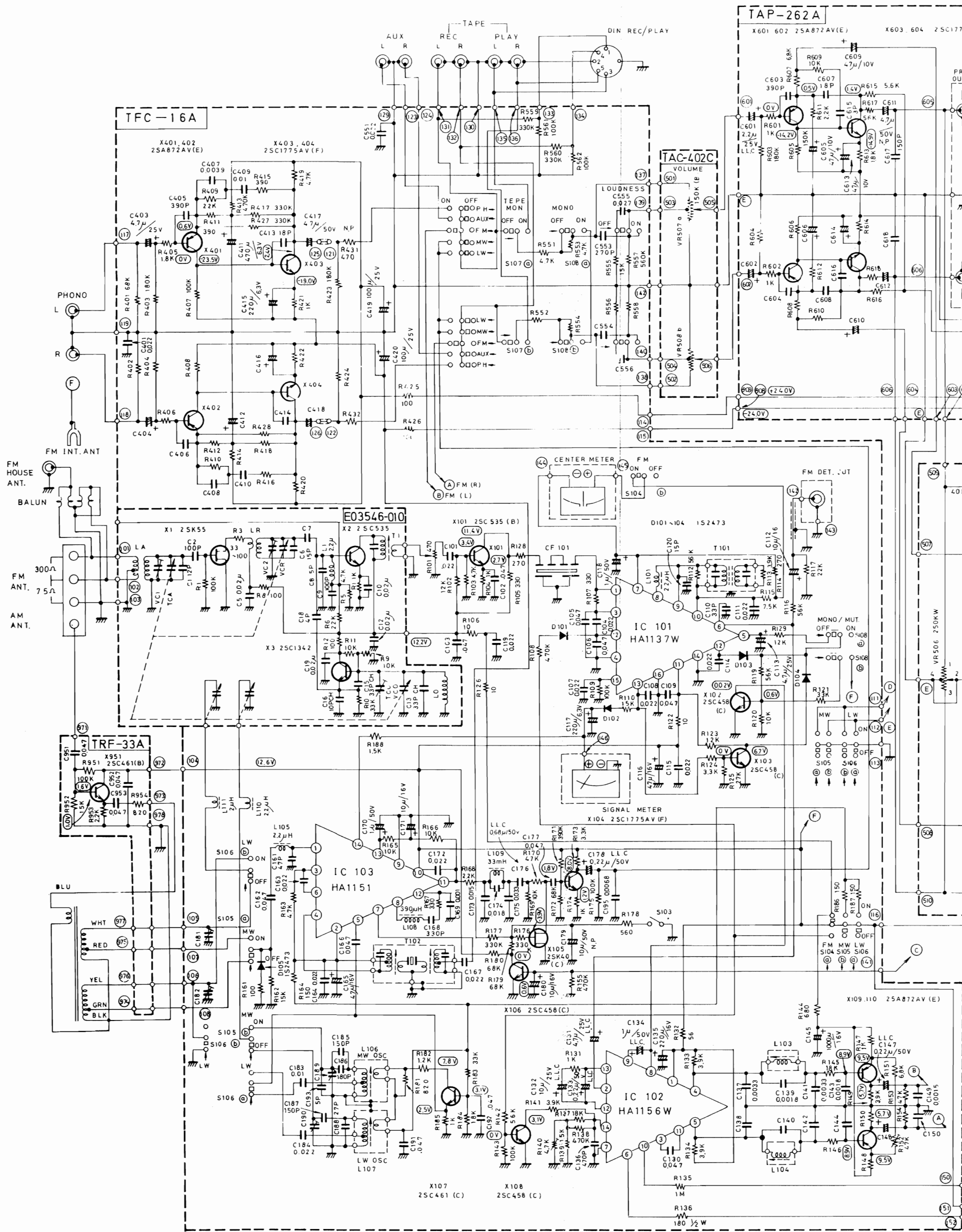
## 9. Packing Materials List



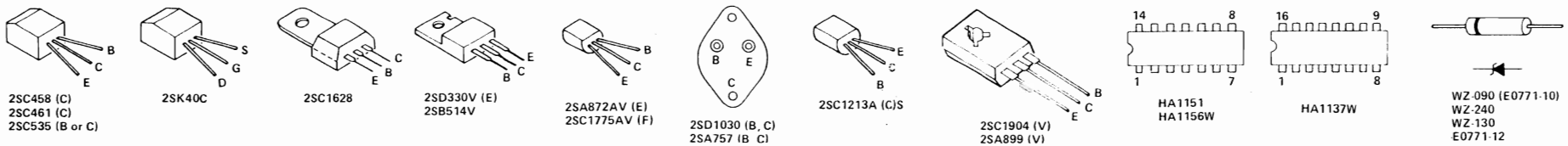
## 10. Accessories List

Part Number	Description	Q'ty
E30580-522A	Instruction Book	1
E64207-002	Envelope (for Instruction Book)	1

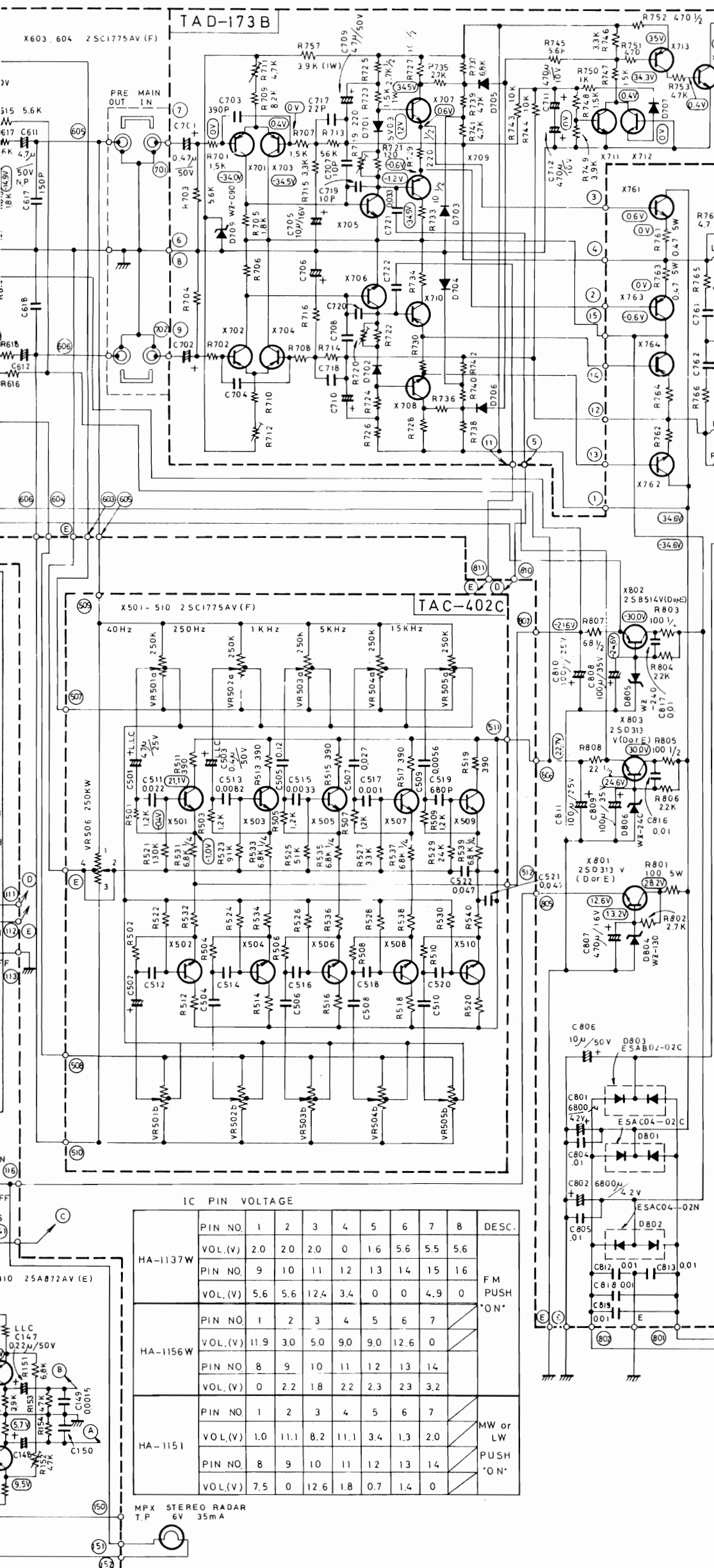
# 11. Schematic Diagram for Europe



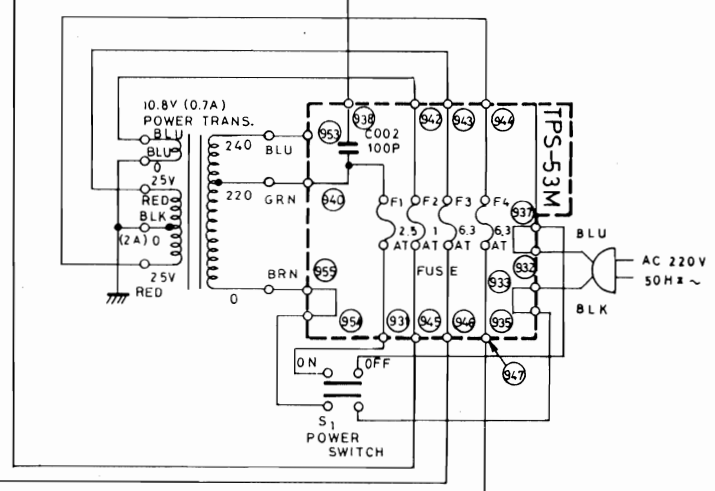
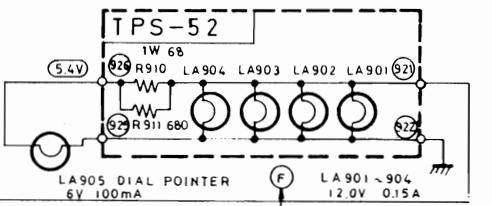
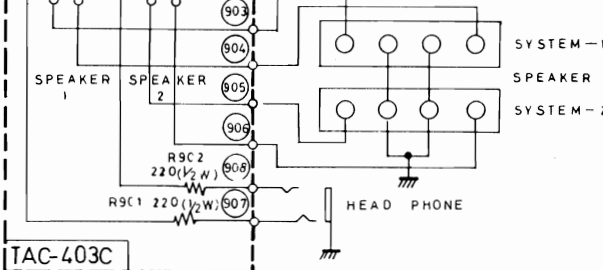
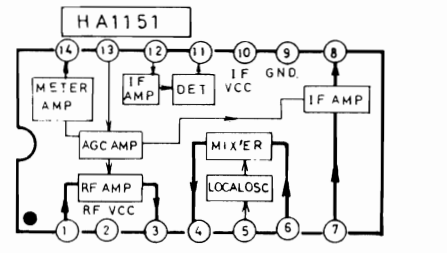
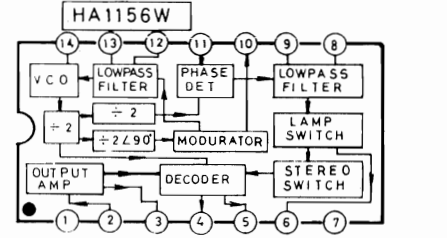
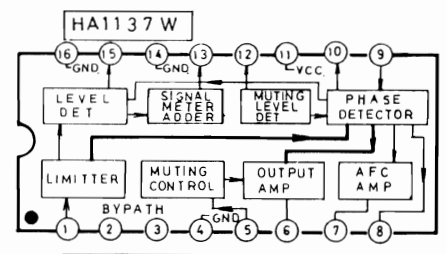
Transistor, I.C. and Diode Lead Identification





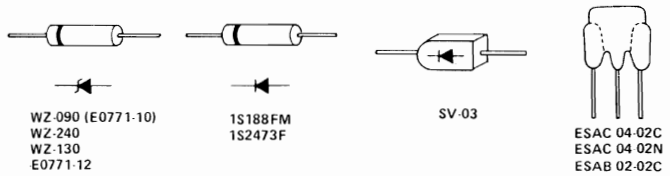


D703 ~ 707	761	1S2473
X701	702 703 704 713	2SA872AV (E)
X711, 712 714 765		2SC1775AV (F)
X705 706		2SC1628 (Y)
X707 708		2SC1904 (V)
X709 710		2SA899 (V)
X706		2SC1213A (C) S
X761 762		2SC1030 (B, C)
X763 764		2SA757 (B, C)



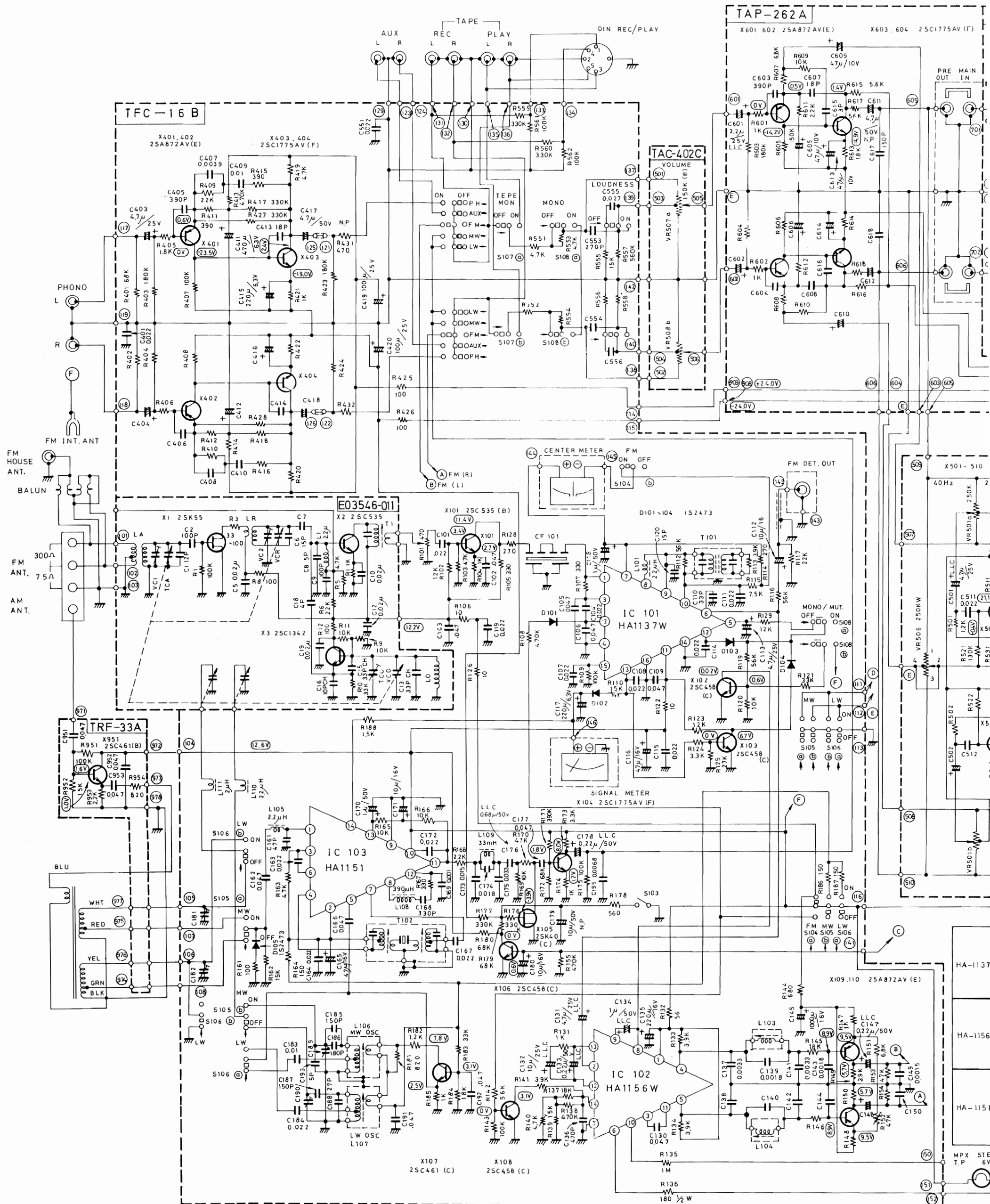
IC PIN VOLTAGE		PIN NO.	1	2	3	4	5	6	7	8	DESC.
HA-1137W	VOL. (V)	2.0	2.0	2.0	0	1.6	5.6	5.5	5.6		FM PUSH 'ON'
	PIN NO.	9	10	11	12	13	14	15	16		
HA-1156W	VOL. (V)	5.6	5.6	12.4	3.4	0	0	4.9	0		MW or LW PUSH 'ON'
	PIN NO.	1	2	3	4	5	6	7			
HA-1151	VOL. (V)	11.9	3.0	5.0	9.0	9.0	12.6	0			MW or LW PUSH 'ON'
	PIN NO.	8	9	10	11	12	13	14			
HA-1151	VOL. (V)	0	2.2	1.8	2.2	2.3	2.3	3.2			MW or LW PUSH 'ON'
	PIN NO.	1	2	3	4	5	6	7			
HA-1151	VOL. (V)	1.0	11.1	8.2	11.1	3.4	1.3	2.0			MW or LW PUSH 'ON'
	PIN NO.	8	9	10	11	12	13	14			
HA-1151	VOL. (V)	7.5	0	12.6	1.8	0.7	1.4	0			MW or LW PUSH 'ON'
	PIN NO.	1	2	3	4	5	6	7			

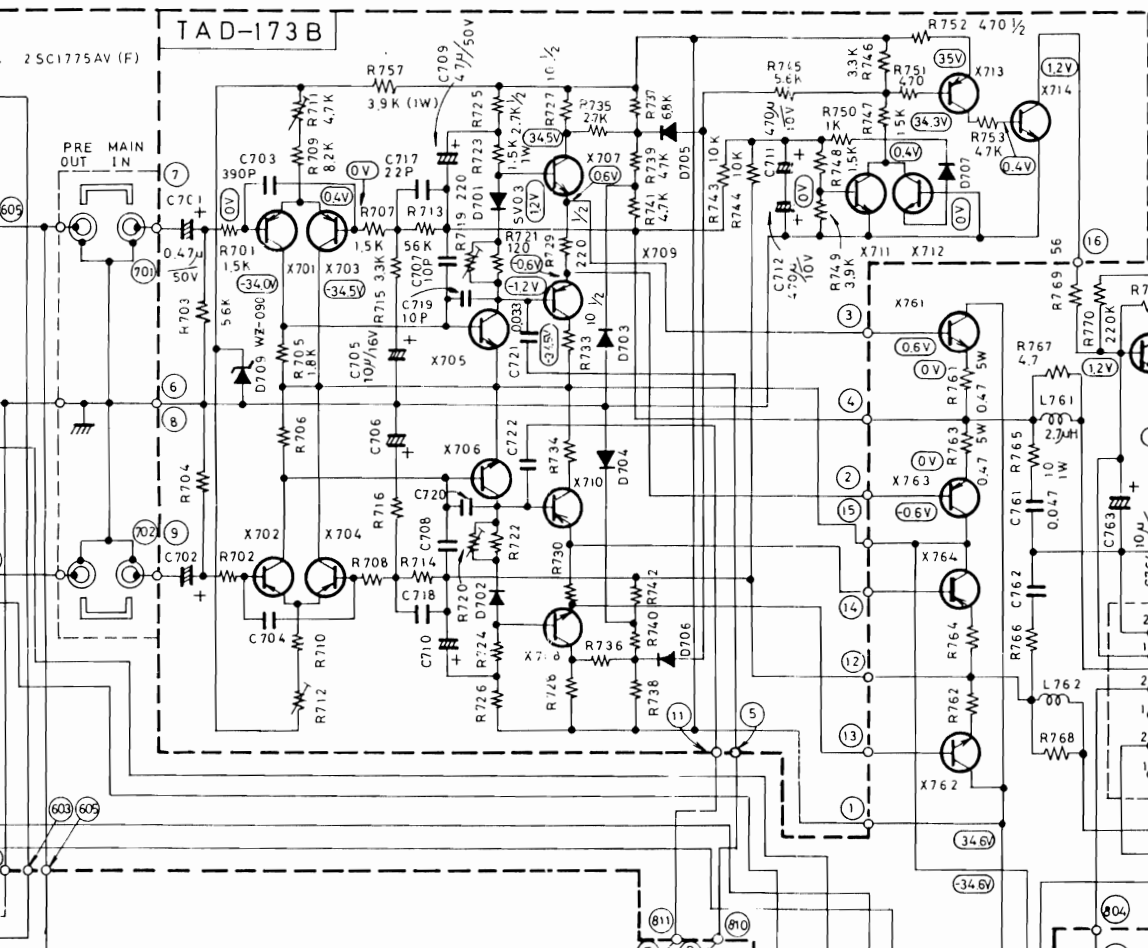
C.B. Ass'y	Description	Page
TFC-16A	FM/MW/LW Tuner & Equalizer Amp. C.B. Ass'y	16
TRF-33A	Antenna C.B. Ass'y	22
TPS-52	Lamp C.B. Ass'y	23
TPS-53M	AC Fuse C.B. Ass'y	23
TAD-173B	Driver Amp. C.B. Ass'y	24
TAP-262A	Power Amp. C.B. Ass'y	27
TAC-402C	S.E.A. (Sound Effect Amp.) C.B. Ass'y	30
TAC-403C	Speaker Switch C.B. Ass'y	32



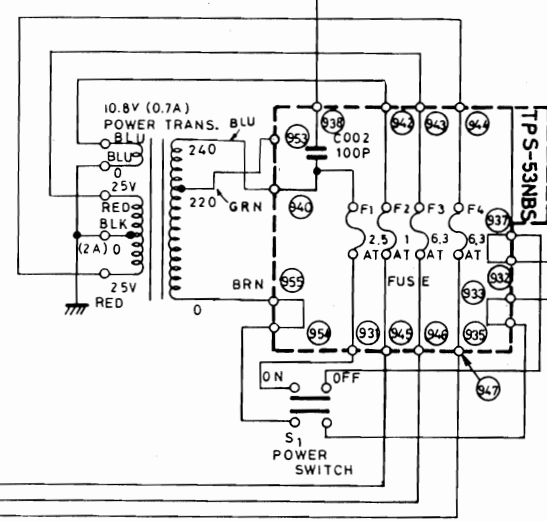
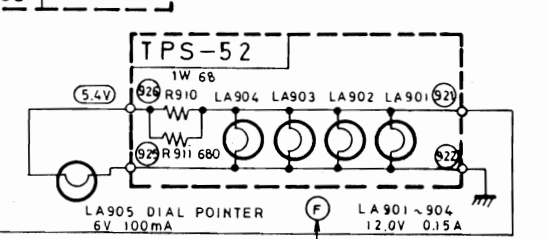
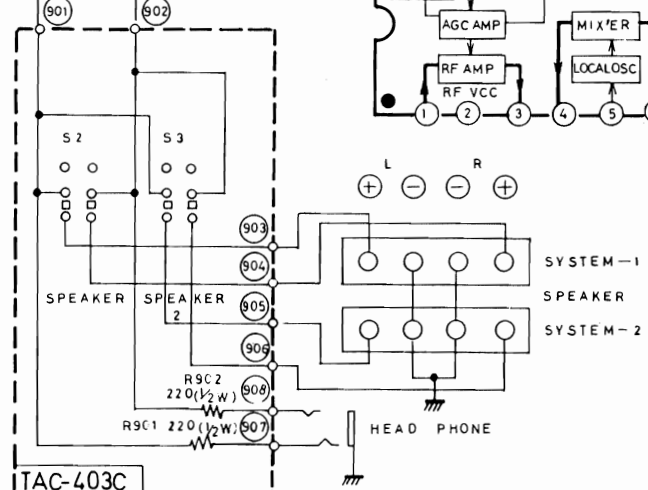
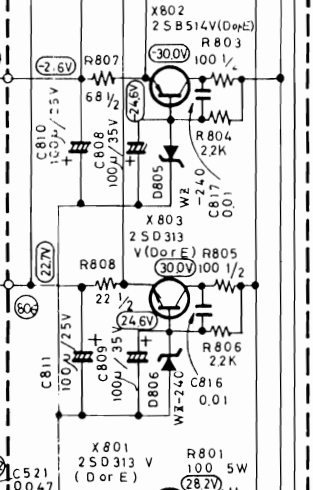
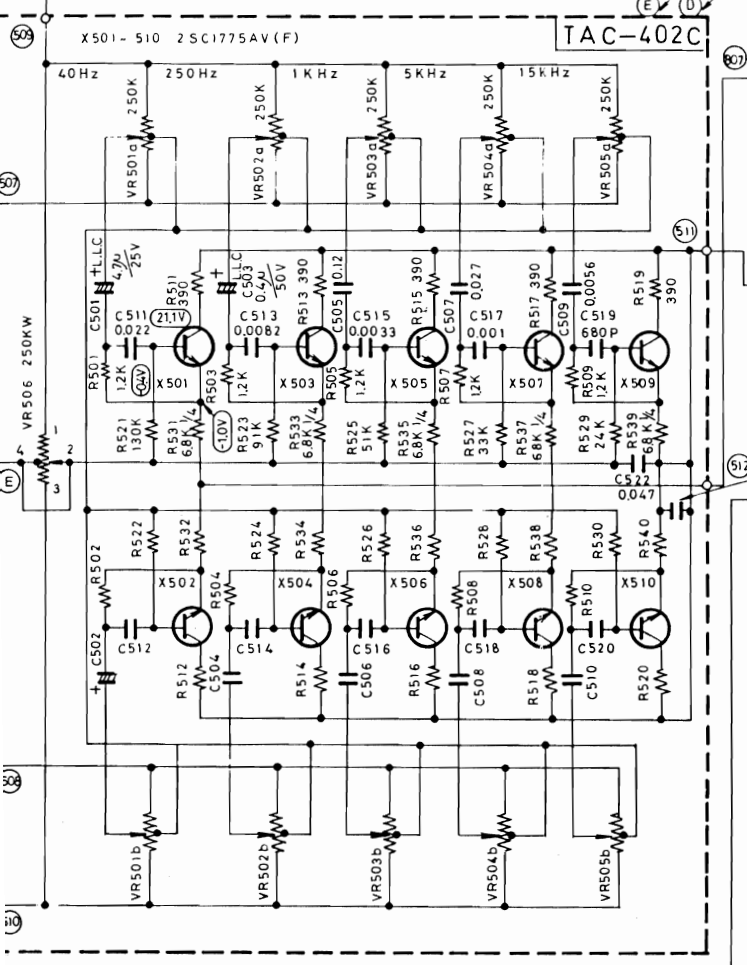
**Precaution**  
After replacement of output and driver transistors, check the bias adjustment (see power amplifier adjustment on page 13).

# 12. Schematic Diagram for U.K.

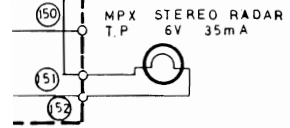




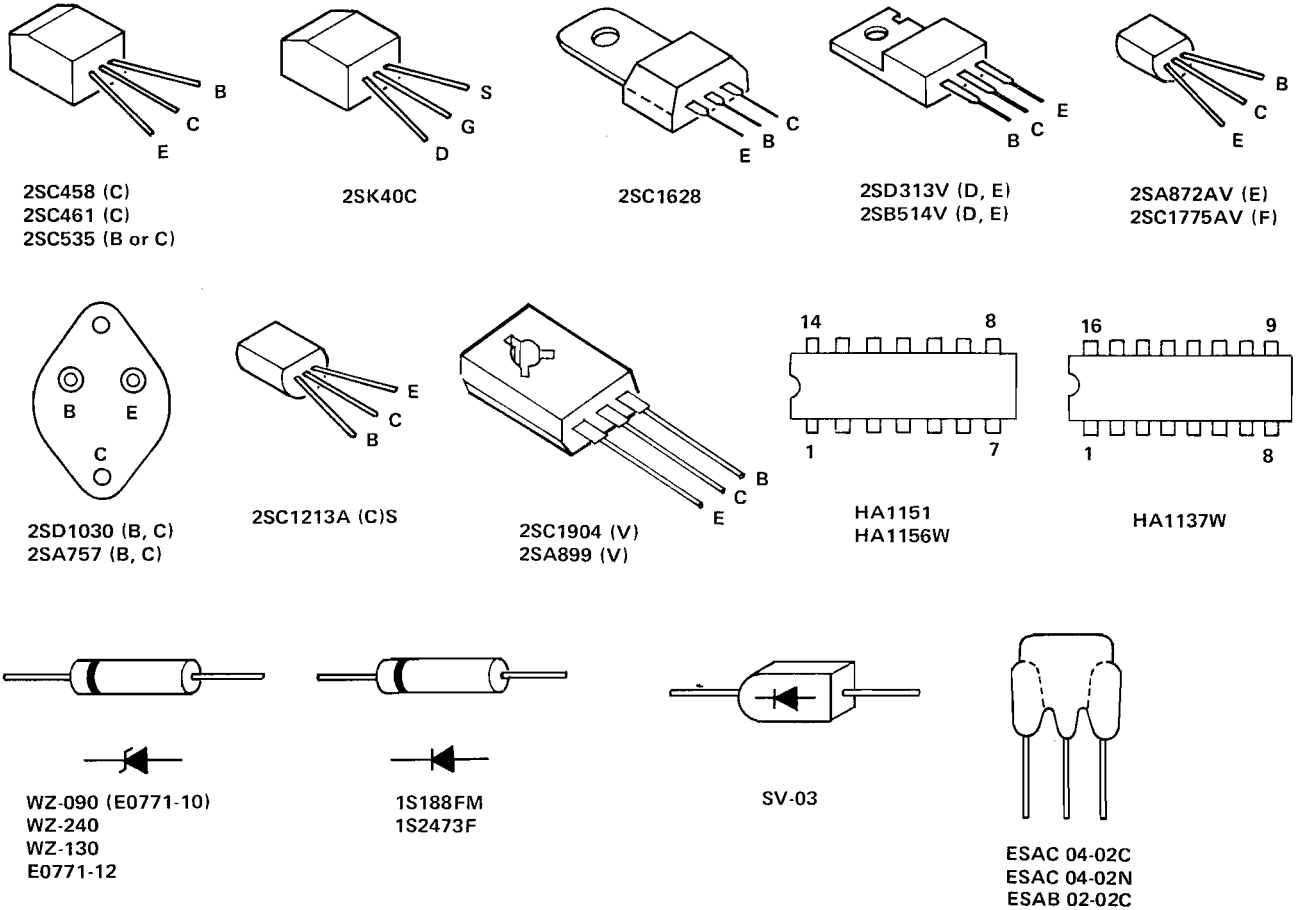
D703 ~ 707	761	1S2473
X701	702, 703, 704, 713	2SA872AV (E)
X711	712, 714, 765	2SC1775AV (F)
X705	706	2SC1628 (Y)
X707	708	2SC1904 (V)
X709	710	2SA899 (V)
X706		2SC1213A(C)S
X761	762	2SC1030 (B,C)
X763	764	2SA757 (B,C)



IC PIN VOLTAGE										
	PIN NO.	1	2	3	4	5	6	7	8	DESC.
HA-1137W	VOL.(V)	2.0	2.0	2.0	0	1.6	5.6	5.5	5.6	FM PUSH ON*
	PIN NO.	9	10	11	12	13	14	15	16	
HA-1156W	VOL.(V)	5.6	5.6	12.4	3.4	0	0	4.9	0	
	PIN NO.	1	2	3	4	5	6	7		
HA-1151	VOL.(V)	11.9	3.0	5.0	9.0	9.0	12.6	0		MW or LW PUSH ON*
	PIN NO.	8	9	10	11	12	13	14		
HA-1151	VOL.(V)	1.0	11.1	8.2	11.1	3.4	1.3	2.0		
	PIN NO.	1	2	3	4	5	6	7		
HA-1151	VOL.(V)	7.5	0	12.6	1.8	0.7	1.4	0		
	PIN NO.	8	9	10	11	12	13	14		



# 13. Transistor, I.C. and Diode Lead Identification



# 14. Parts List with Specified Numbers for U.K

Page	Item No.	Description	Original	For U.K.
5	8	Power Switch	QSP2111-011	QSP2111-011BS
6	10	Power Cord	QMP9017-007	QMP9017-007BS
6	9	Power Cord Stopper	QHS3876-162	QHS3876-162BS
23	8-(4)	Fuse (Primary) 2.5A	QMF51A2-2R5	QMF51A2-2R5BS
23	8-(4)	Fuse (Secondary) 1A	QMF51A2-1R0	QMF51A2-1R0BS
23	8-(4)	Fuse (Protection) 6.3A	QMF51A2-6R3	QMF51A2-6R3BS
4	3	Power Transformer	E03077-20C	E03077-20CBS
23	8-(4)	AC Fuse C.B. Ass'y	TPS-53M	TPS-53NBS
16	8-(1)	FM/MW/LW Tuner & Equalizer Amp. C.B. Ass'y	TFC-16A	TFC-16B
21	8-(1)	Front-end (Tuner)	E03546-010	E03546-011
33	10	Instruction Book Warranty Card	E30580-522A	E30580-523ABS BT20013