

# **SERVICE MANUAL**

## **AM/FM STEREO RECEIVER** **SX-434** KCU, GN, FV

**NOTE:**

MODEL SX-434 COMES IN THREE VERSIONS DISTINGUISHED AS FOLLOWS:

Round label on rear panel	Voltage	Type
KCU GN	120V only 220V only	UL (U.S.A.) and CSA (Canada) approved. SEMCO (Sweden), NEMCO (Norway) and DEMCO (Denmark) approved.
FV	110V, 120V, 130V 220V, and 240V	General export model.

 **PIONEER®**

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# 1. SPECIFICATIONS

## SEMICONDUCTORS

FETs	1
ICs	3
Transistors	27
Diodes	13

## AMPLIFIER SECTION

Continuous Power Output 40Hz~20kHz (Both channels driven)	15W + 15W (8Ω) 15W + 15W (4Ω)
1kHz (Both channels driven)	16W + 16W (8Ω) 18W + 18W (4Ω)
Harmonic Distortion (40Hz~20kHz Continuous Power Output) (1W + 1W, Power Output)	Less than 0.8% Less than 0.1%
Intermodulation Distortion (Continuous Power Output) (1W + 1W, Power Output)	Less than 0.8% Less than 0.1%
Power Bandwidth (IHF, Both channels driven)	10Hz~70kHz (T.H.D. 0.8%)
Output Speaker	A, B, A + B, (4Ω~16Ω)
Headphone	4Ω~16Ω
Damping Factor (1kHz, 8Ω)	More than 25
Residual Hum & Noise (8Ω, Pre & Power amplifier)	Less than 0.5mV
Input Sensitivity/Impedance	
Phono	2.5mV/50kΩ
Phono Overload Level (rms/p-p)	100mV/280mV
MIC	10mV/90kΩ
AUX	150mV/80kΩ
Tape PB	150mV/80kΩ
Tape PB (DIN connector)	150mV/80kΩ
Output Level/Impedance	
Tape REC	150mV
Tape REC (DIN connector)	30mV/80kΩ
Frequency Response	
Phono (RIAA equalization)	30Hz~15kHz ±1dB
AUX, Tape PB	30Hz~25kHz ±1dB
Tone Control	
BASS	+9dB, -8dB (100Hz)
TREBLE	+5dB, -7dB (10kHz)

Loudness Contour (Volume control set at -40dB position)	+10dB (100Hz), +5dB (10kHz)
Hum & Noise (IHF, short-circuited, A Network)	
PHONO	More than 70dB
MIC	More than 65dB
AUX, Tape PB	More than 90dB

## FM SECTION

Usable Sensitivity (IHF)	1.9μV
Capture Ratio (IHF)	1.0dB
Selectivity (IHF)	60dB
Signal-to-Noise Ratio	70dB
Image Rejection (98MHz)	60dB
IF Rejection (98MHz)	90dB
Spurious Rejection	75dB
AM Suppression	50dB
Harmonic Distortion:	
MONO	Less than 0.2%
STEREO	Less than 0.4%
Frequency Response	20Hz~15kHz $\pm 0.2$ dB 50Hz~10kHz $\pm 0.2$ dB
Stereo Separation:	
1kHz	More than 40dB
50Hz~10kHz	More than 30dB
Sub Carrier Suppression	40dB
Antenna Input	300Ω Balanced 75Ω Unbalanced
Muting	ON-OFF

## AM SECTION

Sensitivity (IHF, Ferrite antenna)	30μV/m
(IHF, Ext. antenna)	15μV
Selectivity	35dB
Signal-to-Noise Ratio	50dB
Image Rejection	40dB
IF Rejection	50dB

## MISCELLANEOUS

Power Requirements	AC 120V 60Hz, 220V 50/60Hz or 110, 120, 130, 220 and 240V (switchable) 50/60Hz
Power Consumption	75W (UL approved model only) 110W Others
Dimensions	430(W) x 140(H) x 347(D)mm 16-15/16 x 5-1/2 x 13-11/16 in.
Weight:	
Without Package	8.1kg (17 lb 13 oz)
With Package	9.1kg (20 lb 1 oz)

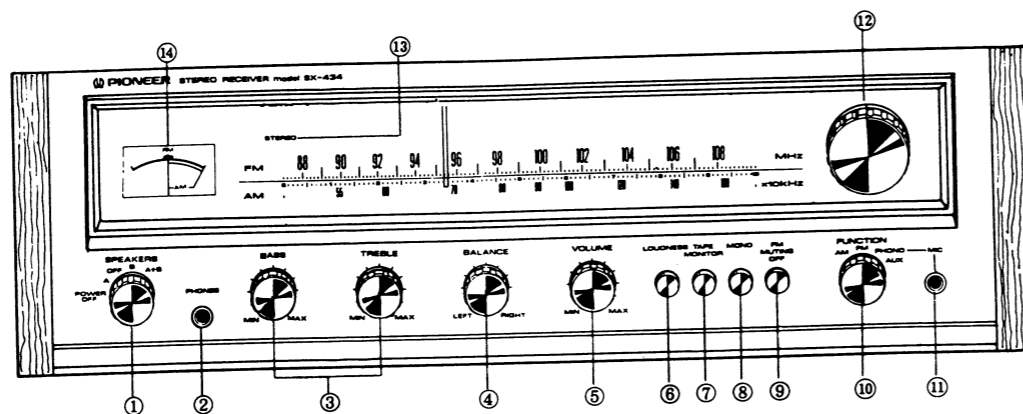
## FURNISHED PARTS

FM T-type Antenna	1
Operating Instructions	1
Fuse 3A	1 (5 line voltage model only)
Fuse 1.5A	1 (5 line voltage model only)

## NOTE:

Specifications and the design subject to possible modification without notice due to improvements.

## 2. FRONT PANEL FACILITIES



### ① SPEAKERS SWITCH

A combination of the power ON/OFF switch and the speaker system selector switch.  
**POWER OFF:** Receiver off.  
**A:** Speaker systems connected to speaker outputs A operate.  
**OFF:** All speakers off. Use this position when listening through headphones.  
**B:** Speaker systems connected to speaker outputs B operate.  
**A+B:** Both speaker systems A and B operate.

### ② HEADPHONE JACK

Accepts stereo headphones.  
 A wide variety of quality headphones are available from Pioneer.

### ③ BASS & TREBLE CONTROLS

Control bass and treble. Turning each control clockwise (counterclockwise) from the center position will boost (diminish) the tone.

### ④ BALANCE CONTROL

Balances the relative sound volume of the left and right channel speakers. Clockwise rotation will reduce the volume from the left speaker, counterclockwise rotation will decrease the volume from the right speaker.

### ⑤ VOLUME CONTROL

Governs both the volume of sound outputs from the speaker systems and from the headphones.

### ⑥ LOUDNESS BUTTON

Depress when listening at low volume levels for proper sound balance relative to human ear sensitivity.

### ⑦ TAPE MONITOR BUTTON

Depress this button to ON for monitoring a recording now in progress and for playback of recorded tapes, with the tape deck connected to the TAPE PB jacks and TAPE REC jacks or TAPE REC/PB connector.

### ⑧ MODE BUTTON

Selects stereo or mono sound.  
**STEREO:** Leave it undepressed.  
**MONO:** Depress it for monophonic sound into which the left and right channel signals blend.

### ⑨ FM MUTING BUTTON

Keep the button undepressed (ON) to make the FM MUTING circuit cancel out noise on unused bands (inter-station noise), but it also rejects very weak, faint FM stations. To receive such a station, depress the button to OFF.

### ⑩ FUNCTION SWITCH

This selects the program source:  
**AM:** AM reception.  
**FM:** FM reception with automatic switching for either of stereo or mono programs.  
**PHONO/MIC:** For playing records or using a microphone.  
**AUX:** For playing component connected to the AUX terminals.

### ⑪ MIC INPUT JACK

Accepts the plug of the microphone.  
 When a microphone is connected to the MIC jack, the turntable connected to PHONO input jacks cannot be used.

### ⑫ TUNING KNOB

Rotate to tune in AM or FM reception.

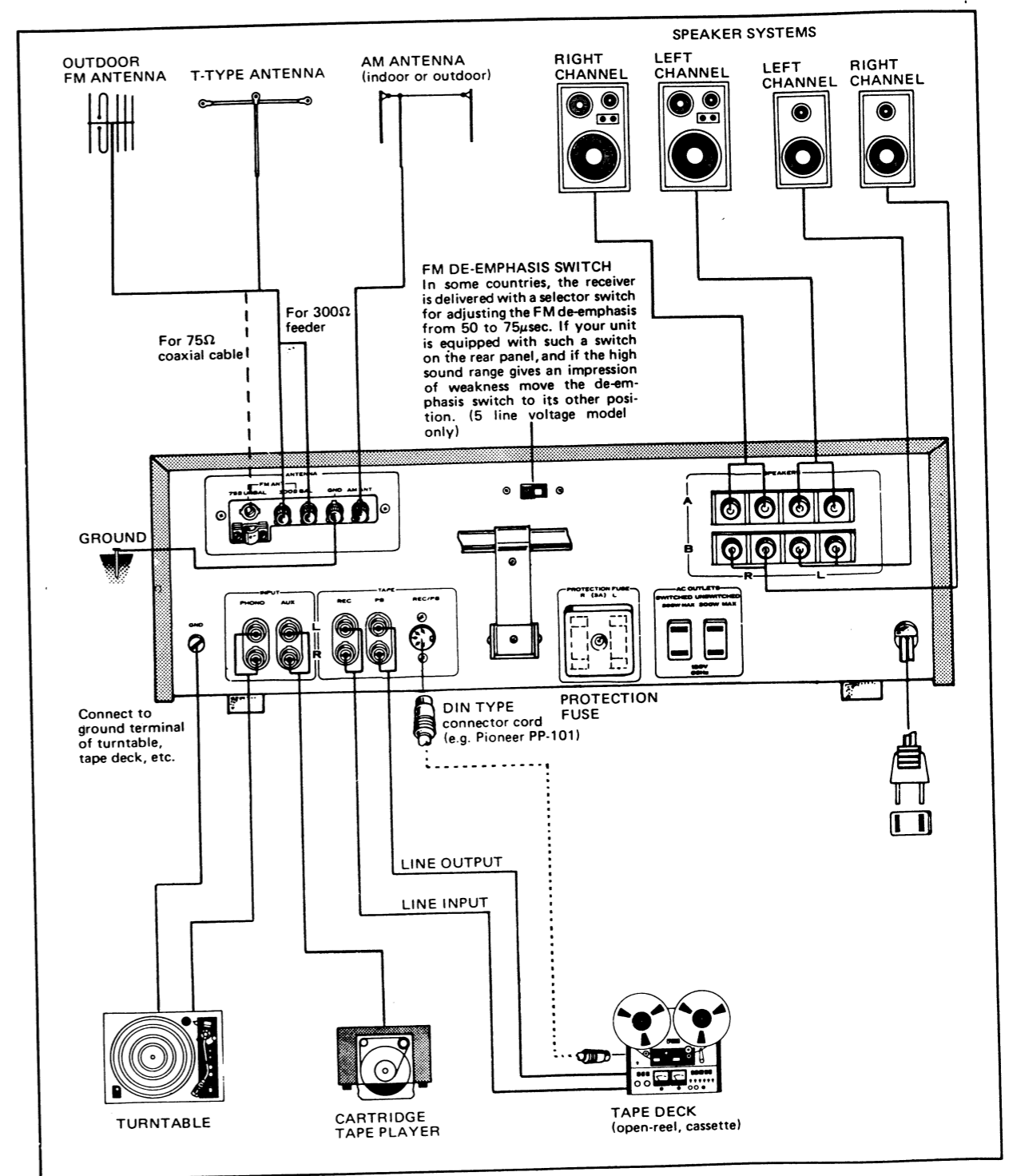
### ⑬ FM STEREO INDICATOR

This indicator will light up when the broadcast is in stereo.

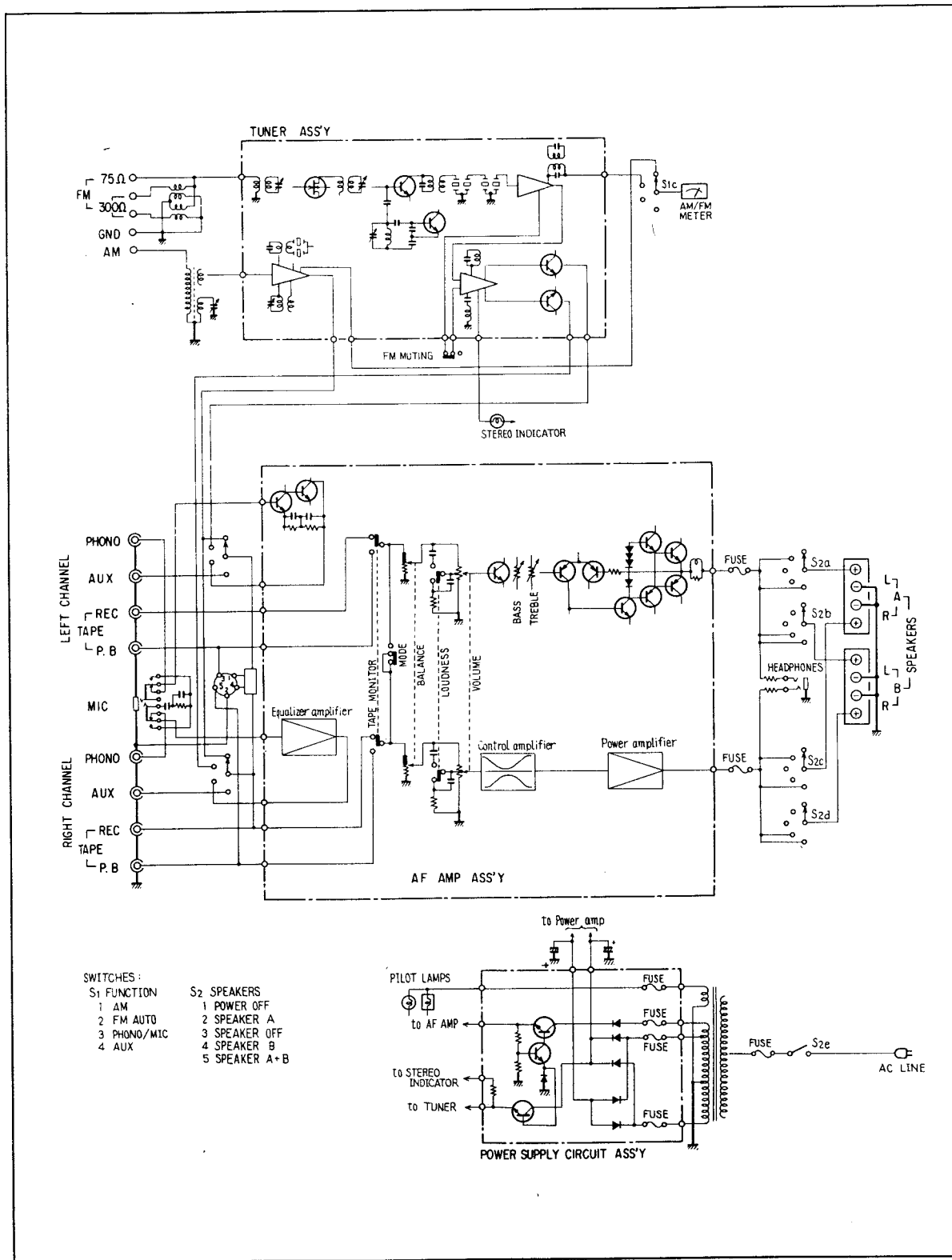
### ⑭ AM/FM TUNING METER

When tuning FM stations, meter should indicate in the center "FM" area. When tuning AM stations, tune for maximum meter deflection toward the right of the scale.

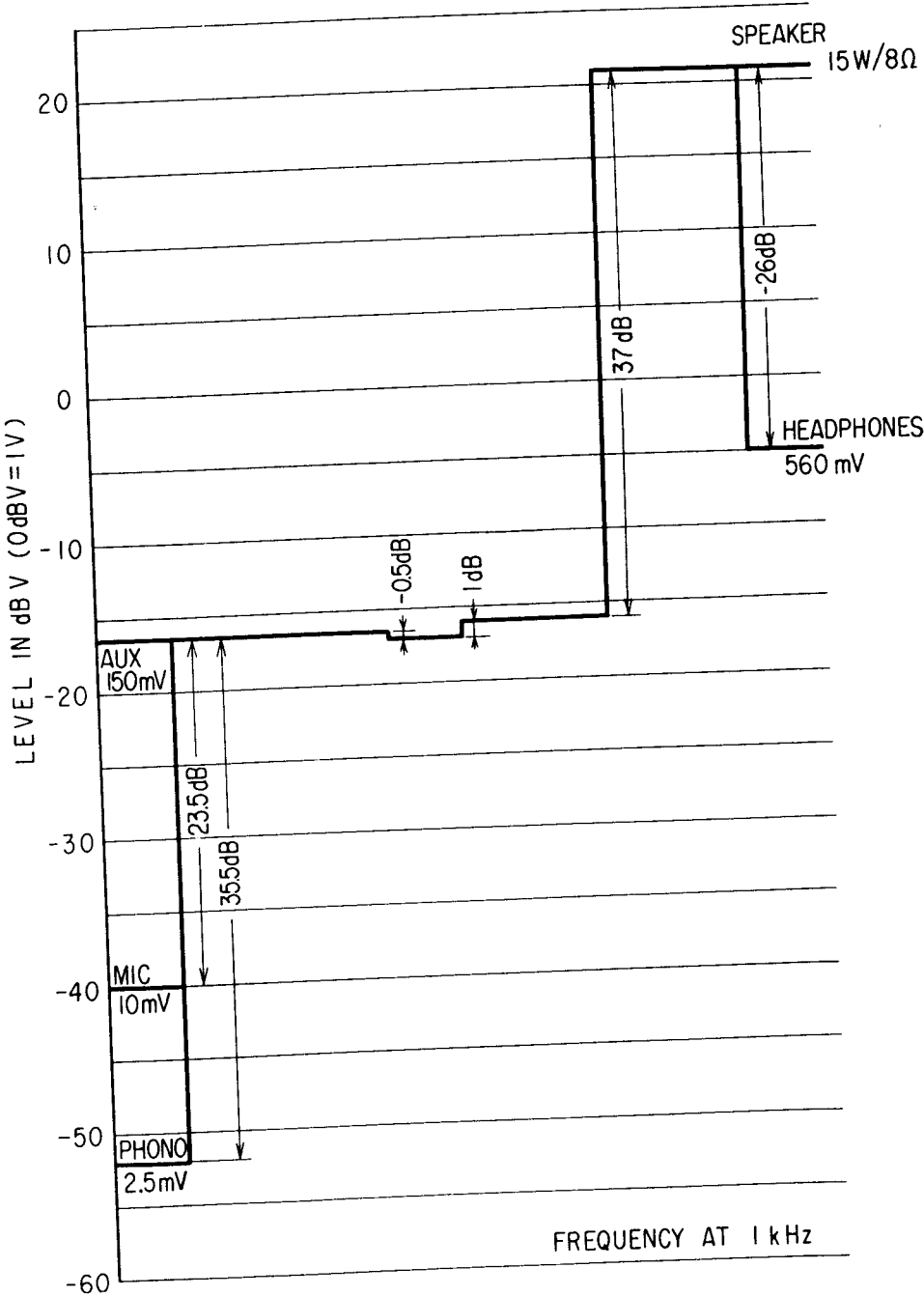
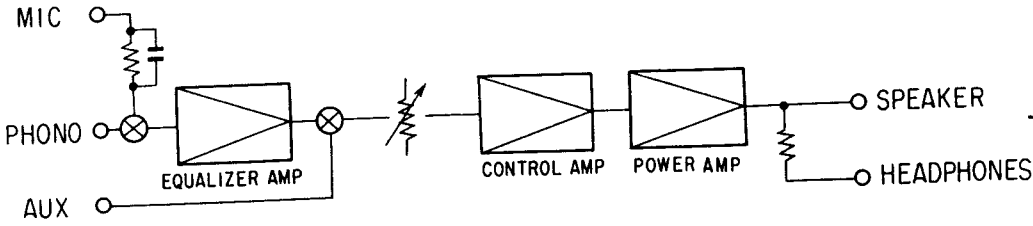
## 3. CONNECTION DIAGRAM



# 4. BLOCK DIAGRAM

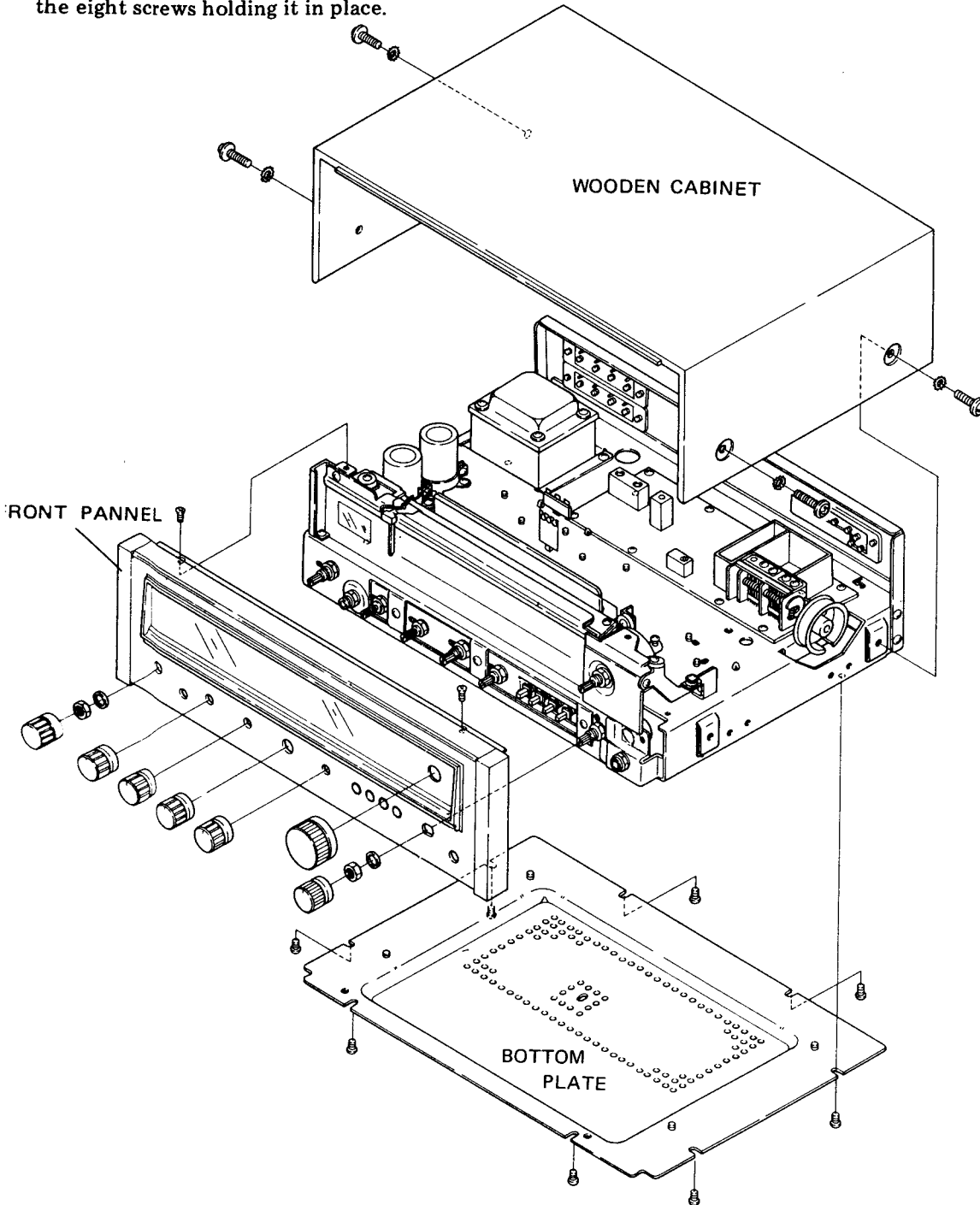


# 5. LEVEL DIAGRAM



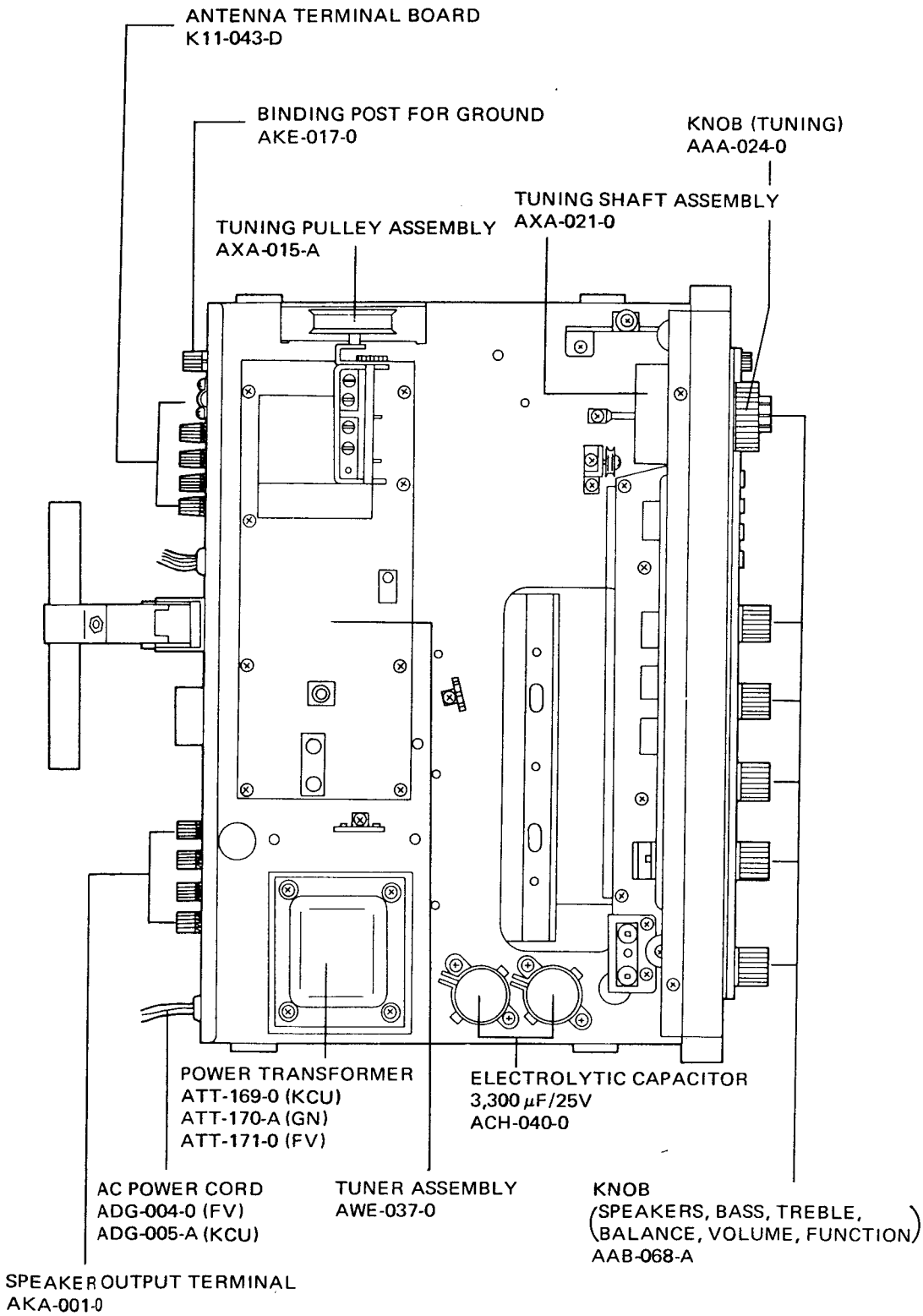
### 5. DISASSEMBLY

- . To remove the wooden cabinet, first remove the two screws holding each side, then lift the back of the wooden cabinet upward.
- . Pull off all knobs.
- . Remove the two screws in the upper edge of the front panel and remove two nuts and washers from the FUNCTION and SPEAKERS shaft. Then pull the panel gently forward.
- . To remove the bottom plate, first remove the eight screws holding it in place.



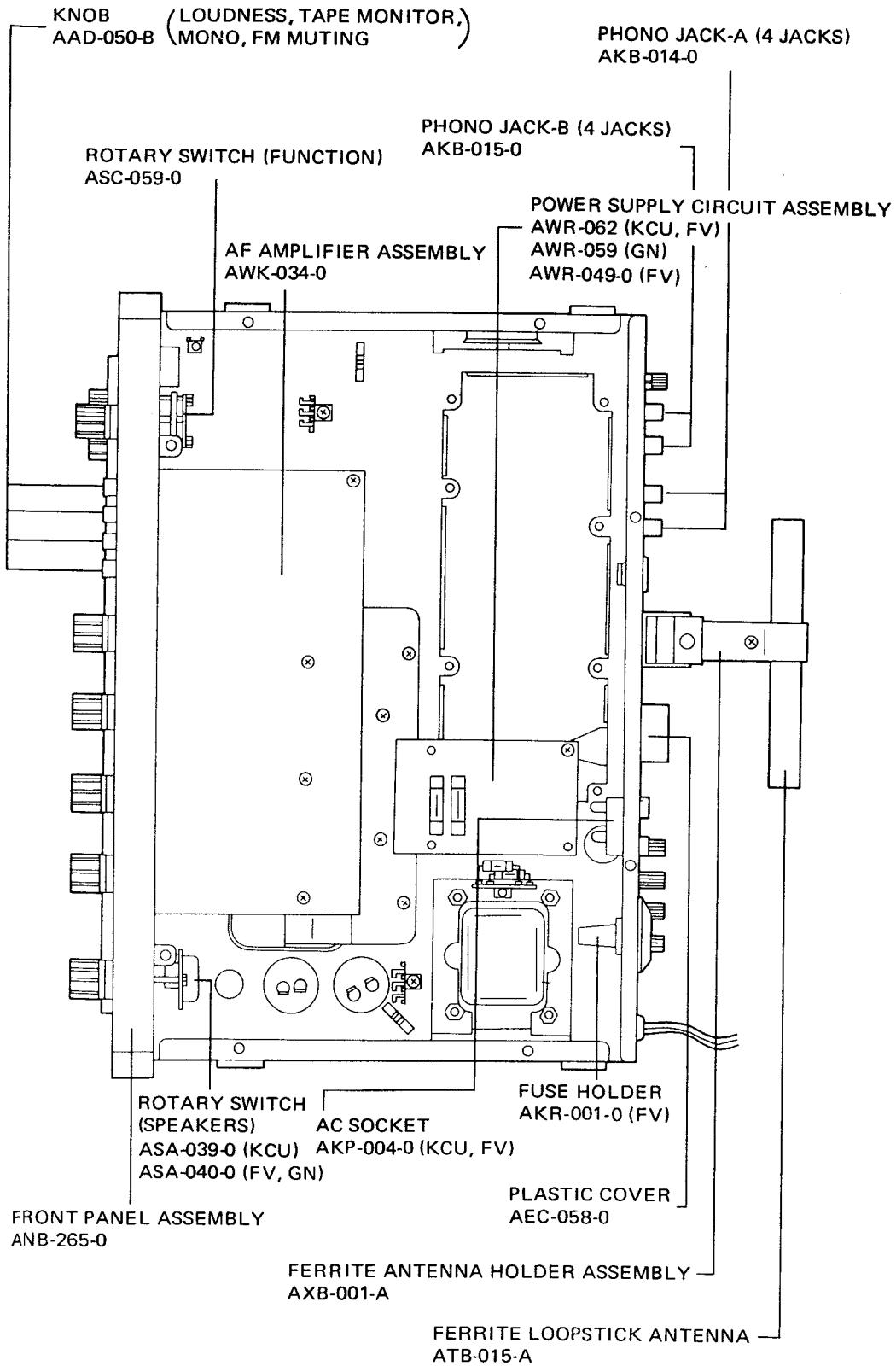
# 7. PARTS AND P.C. BOARD LOCATION

Top View



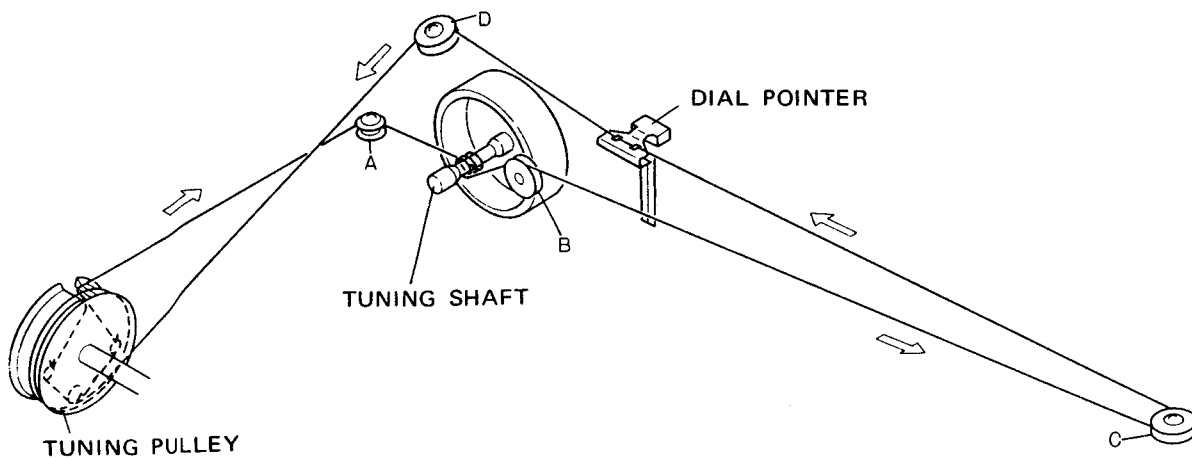


**Bottom View**



## 8. DIAL CORD STRINGING

1. Turn the tuning capacitor so that its plates protrude as much as possible.
2. Tie one end of the string to the spring on the TUNING pulley (attached to the tuning capacitor).
3. Lead the string around pulley A, then wind it three turns around the TUNING shaft.
4. Lead the string around pulleys B, C and D, then wind it 2 turns around the TUNING pulley.
5. Now tie the other end of the string to the spring on the TUNING pulley. Turn the TUNING shaft and check for proper function. Then trim the ends of the string.
6. Turn the TUNING shaft until the plates of the variable are all the way in. Move the dial pointer to the right-end "0" point on the dial and fasten it to the string in that position.



# I. ALIGNMENT PROCEDURE

## Aligning The FM Section

### SX-434 control settings

Set the controls (knobs and switches) of the SX-434 as follows:

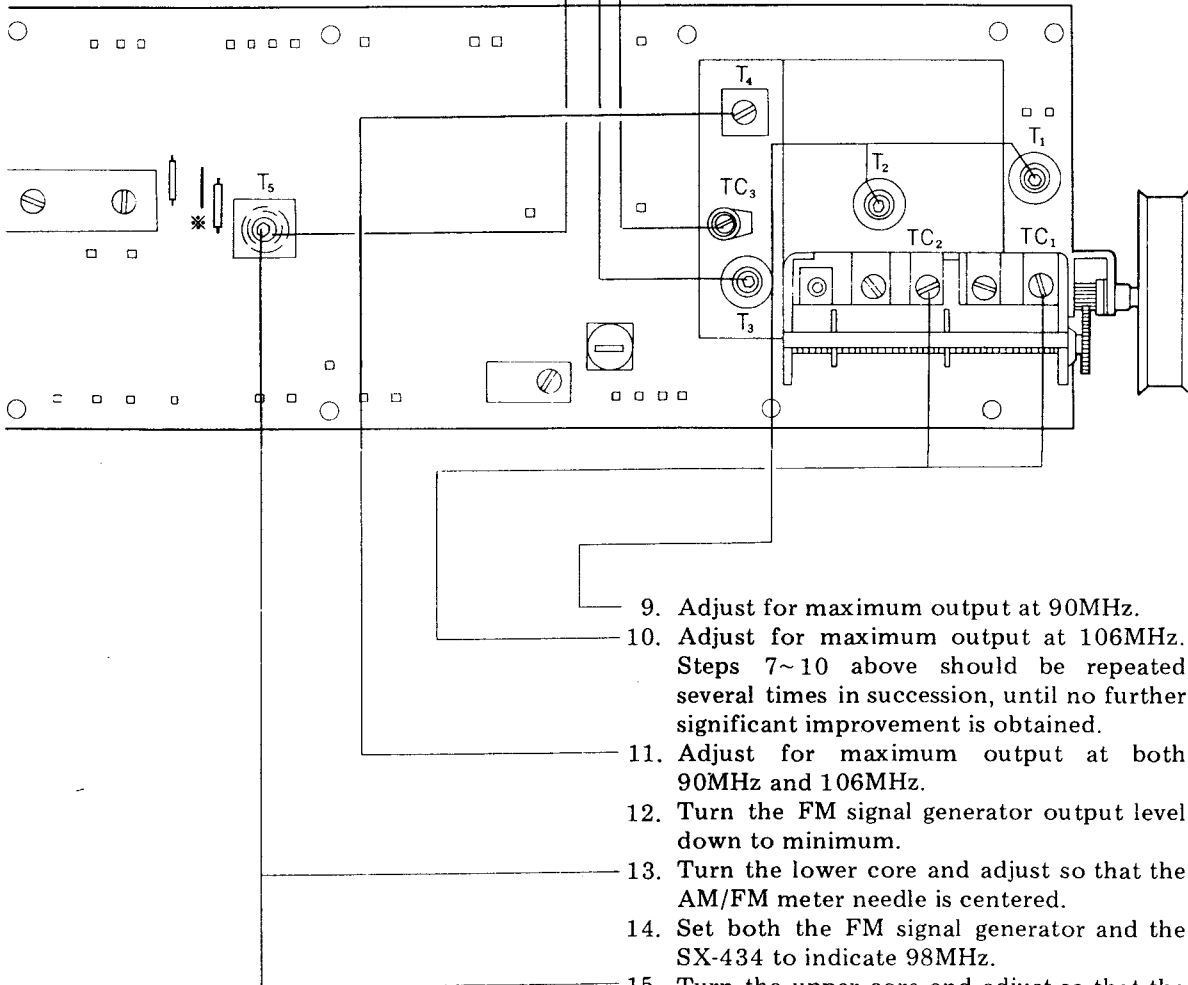
- FUNCTION: FM
- FM MUTING: OFF
- SPEAKERS: OFF (POWER ON)

Connections between Test Equipment and the SX-434

- The output from an FM signal generator should be connected to the 300Ω antenna terminals of the SX-434.
- A distortion meter should be connected to the TAPE REC terminal jacks on the SX-434.
- An AC millivolt meter should be connected to the TAPE REC terminal jacks on the SX-434 in parallel with the distortion meter.

3. Set both the FM signal generator and the SX-434 to indicate 90 MHz.
4. Set the FM signal generator output level to 100dB, modulated at 400Hz, with a deviation of 75kHz.
5. Turn the lower core and adjust so that the AM/FM meter needle is centered.
6. Set the FM signal generator output level to 10dB, modulated at 400Hz, with a frequency deviation of ±75kHz.
7. Adjust for maximum output at 87.4 MHz.
8. Adjust for maximum output at 106MHz.

TUNER ASSEMBLY (AWE-037)



9. Adjust for maximum output at 90MHz.
10. Adjust for maximum output at 106MHz. Steps 7~10 above should be repeated several times in succession, until no further significant improvement is obtained.
11. Adjust for maximum output at both 90MHz and 106MHz.
12. Turn the FM signal generator output level down to minimum.
13. Turn the lower core and adjust so that the AM/FM meter needle is centered.
14. Set both the FM signal generator and the SX-434 to indicate 98MHz.
15. Turn the upper core and adjust so that the distortion is at a minimum. Steps 12~15 above should be repeated several times in succession, until no further significant improvement is obtained.

## Aligning The FM MPX Section

### Notes:

This set of adjustments should not be carried out until the alignment of the FM section (1~15 on P-13) has been completed. The multiplex signal generator should be connected to the external modulator terminals of the FM signal generator.

### 1. SX-434 Control Settings

Set the controls (knobs and switches) of the SX-434 as follows:

FUNCTION: FM

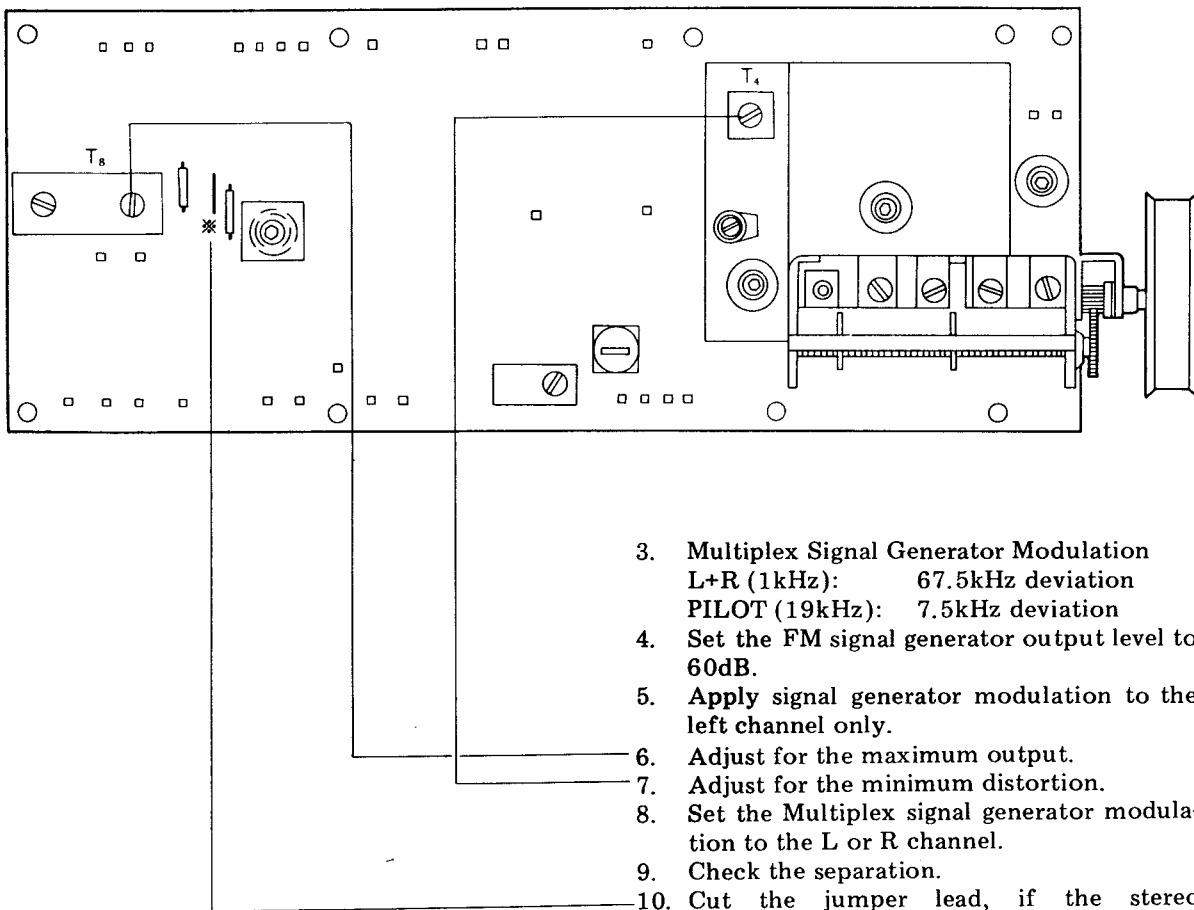
FM MUTING: OFF

SPEAKERS: OFF (POWER ON)

### 2. Connections between the Test Equipment and the SX-434.

- The output from the FM signal generator should be connected to the  $300\Omega$  antenna terminals of the SX-434.
- A distortion meter should be connected to the TAPE REC terminals.
- An AC millivolt meter should be connected to the TAPE REC terminals in parallel with the distortion meter (with changeover possible from L to R channels).

## TUNER ASSEMBLY (AWE-037)



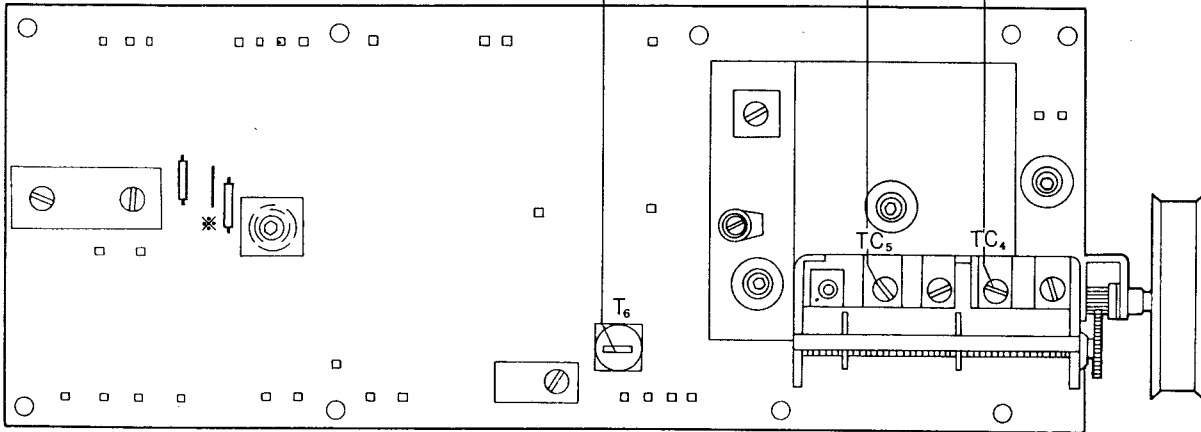
3. Multiplex Signal Generator Modulation  
L+R (1kHz): 67.5kHz deviation  
PILOT (19kHz): 7.5kHz deviation
4. Set the FM signal generator output level to 60dB.
5. Apply signal generator modulation to the left channel only.
6. Adjust for the maximum output.
7. Adjust for the minimum distortion.
8. Set the Multiplex signal generator modulation to the L or R channel.
9. Check the separation.
10. Cut the jumper lead, if the stereo separation under 35dB.

**Aligning The AM Section**

1. **SX-434 Control Settings**  
Set the controls (knob and switch) of the SX-434 as follows:  
FUNCTION: AM  
SPEAKERS: OFF (POWER ON)
2. **Connections between Test Equipment and the SX-434**
  - Connect the AM signal generator to the AM antenna terminals.
  - Connect the AC millivolt meter to the TAPE REC terminal jacks.

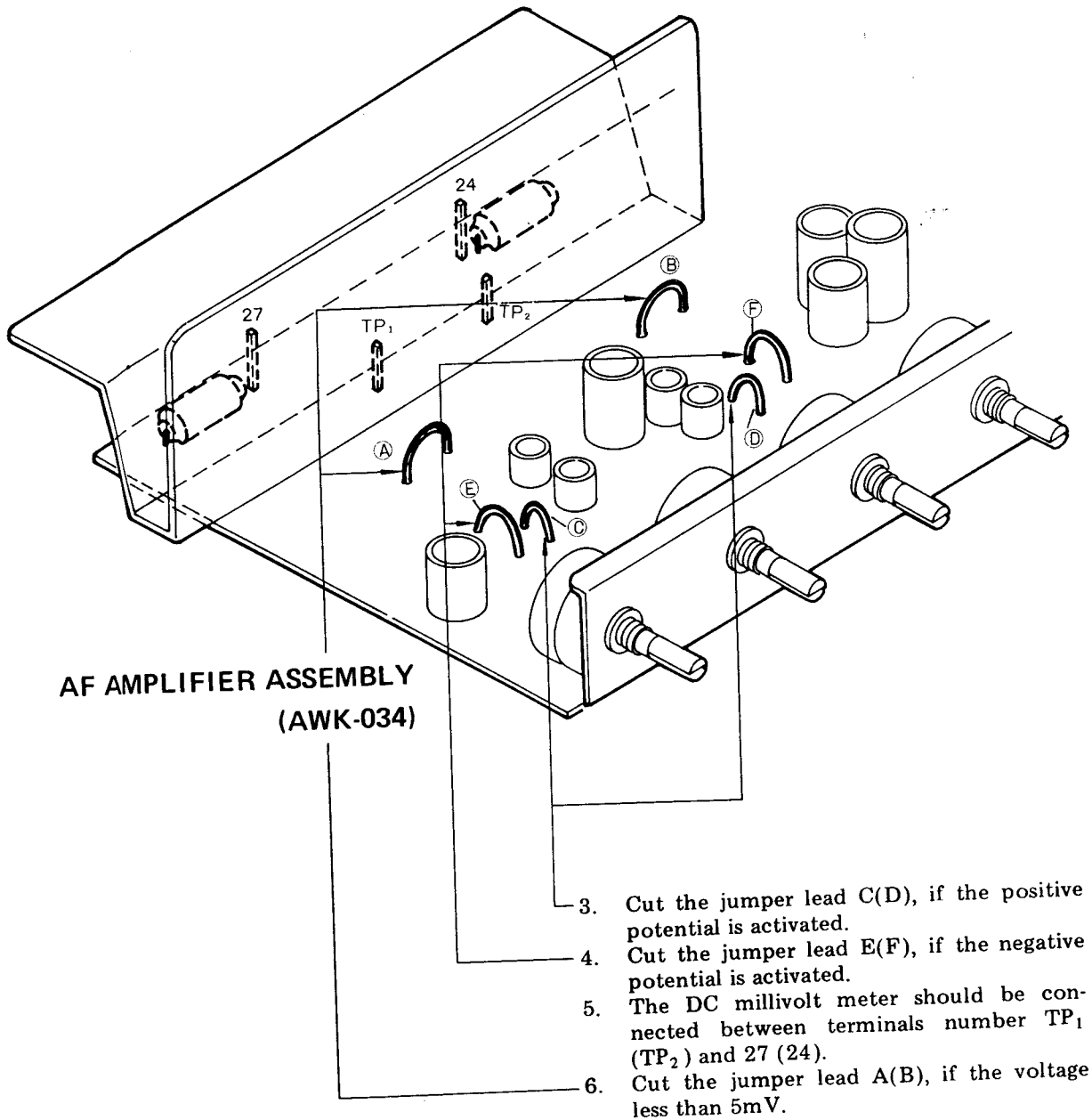
3. Set the AM signal generator to 30% modulation at 400Hz.
4. Set the AM signal generator output to 30dB at 600kHz.
5. Adjust for maximum output (carry out the ferrite loopstick antenna core adjustment at the same time).
6. Adjust for maximum output with the frequency set at 1,400kHz. Adjustments 4~6 above should be repeated several times until no further significant improvement is obtained.

**TUNER ASSEMBLY (AWE-037)**



## Aligning The Power Amplifier

1. Nothing should be connected to the input jacks of the SX-434, and an  $8\Omega$  dummy resistor should be connected across the speaker terminals.
2. A DC millivolt meter should be connected across between terminal number 27 (left channel, 24: for right channel) and earth.

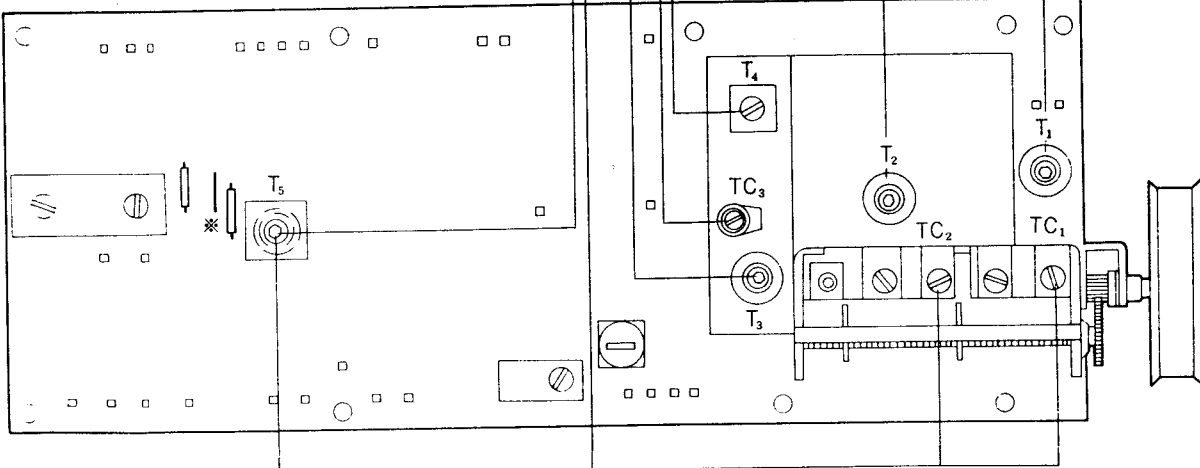


## ABGLEICHVERFAHREN

### Abgleichen Des FM-Teils

1. Regeleinstellungen am SX-434  
Die Steuerelemente (Knöpfe und Schalter) des SX-434 sind wie folgt einzustellen:  
FUNCTION (Betriebsartenschalter):  
FM (UKW)  
FM MUTING (FM-Stummabstimmung):  
OFF (Aus)  
SPEAKERS (Lautsprecher):  
OFF (Aus), POWER ON (Strom eingeschaltet)
2. Schaltungen zwischen Prüfsatz und dem SX-434  
— Der Ausgang von einem FM-Prüfsender ist mit den 300-Ohm-Anschlüssen des SX-434 zu verbinden.  
— Ein Klirrfaktormeßgerät ist mit den Anschlußbuchsen TAPE REC (Band/ Aufnahme) des SX-434 zu verbinden.  
— Ein Millivolt-Wechselspannungsmesser ist parallel zum Klirrfaktormeßgerät mit den Anschlußbuchsen TAPE REC (Band/ Aufnahme) des SX-434 zu verbinden.
3. Der FM-Prüfsender und der SX-434 sind beide auf eine Anzeige von 98 MHz einzustellen.

### TUNER-Schaltung (AWE-037)



4. Der Ausgang des FM-Prüfsenders ist, moduliert bei 400 Hz bei einer Abweichung von  $\pm 75$  kHz, auf 100 dB einzustellen.
5. Der untere Kern ist zu drehen und so einzustellen, daß die Nadel des Abstimm-Meters zentriert ist.
6. Der Ausgangspegel des FM-Prüfsenders ist, moduliert bei 400 Hz bei einer Frequenzabweichung von  $\pm 75$  kHz, auf 10 dB einzustellen.
7. Es ist auf maximalen Ausgang bei 87.4 MHz einzustellen.
8. Es ist auf maximalen Ausgang bei 106 MHz einzustellen.
9. Es ist auf maximalen Ausgang bei 90 MHz einzustellen.
10. Es ist auf maximalen Ausgang bei 106 MHz einzustellen.  
Obige Schritte 7-10 sind mehrmals nacheinander zu wiederholen, bis keine weitermerkliche Verbesserung erzielt wird.
11. Es ist auf maximalen Ausgang bei 90 MHz und 106 MHz einzustellen.
12. Der Ausgangspegel des FM-Prüfsenders ist auf minimale Einstellung herunterzudrehen.

13. Der untere Kern ist zu drehen und so einzustellen, daß die Nadel des Abstimm-Meters zentriert ist.
14. Der FM-Prüfsender und der SX-434 sind beide auf eine Anzeige von 98 MHz einzustellen.
15. Der obere Kern ist zu drehen und so einzustellen, daß die Verzerrung minimal wird.  
Die obigen Schritte 12-15 sollten mehrmals nacheinander wiederholt werden, bis keine weitere merkliche Verbesserung erzielt wird.

## Abgleichen Des FM-MPX-Teils

Zur Beachtung: Die folgenden Einstellschritte sollten nicht vor Beendigung des Abgleichs des FM-Teils (siehe oben 1 – 15) durchgeführt werden.

Der Multiplex-Prüfsender ist mit den Außenmodulatoranschlüssen des FM-Prüfsenders zu verbinden.

### 1. Regeleinstellungen am SX-434

Die Steuerelemente (Knöpfe und Schalter) des SX-434 sind wie folgt einzustellen:

FUNCTION (Betriebsartenschalter):

FM (UKW)

FM MUTING (FM-Stummabstimmung):

OFF (Aus)

SPEAKERS (Lautsprecher):

OFF (Aus), POWER ON  
(Strom eingeschaltet)

### 2. Schaltungen zwischen Prüfsatz und dem SX-434.

– Der Ausgang vom FM-Prüfsender ist mit den 300-Ohm-Antennenanschlüssen des SX-434 zu verbinden.

– Ein Klirrfaktormeßgerät ist mit den Anschlußbuchsen TAPE REC (Band/Aufnahme) zu verbinden.

– Ein Millivolt-Wechselspannungsmesser ist parallel zum Klirrfaktormeßgerät mit den Anschlußbuchsen TAPE REC (Band/Aufnahme) zu verbinden (mit Umschaltmöglichkeit von den Kanälen L auf R).

### 3. Modulation des Multiplex-Prüfsenders L + R ( 1 kHz ) : Abweichung von 67,5kHz

PILOT (19 kHz): Abweichung von 7,5kHz

### 4. Der FM-Prüfsender ist auf einen Pegelausgang von 60 dB einzustellen.

### 5. Die Prüfsender-Modulation ist nur auf den linken Kanal anzuwenden.

### 6. Es ist auf einen maximalen Ausgang einzustellen.

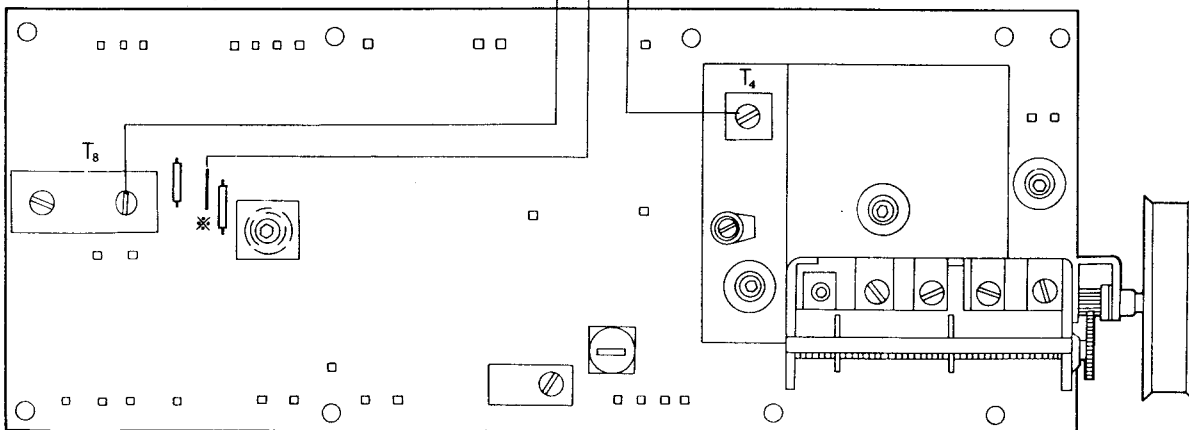
### 7. Es ist auf eine minimale Verzerrung einzustellen.

### 8. Die Multiplex-Prüfsender-Modulation ist auf den L-oder R-Kanal anzuwenden.

### 9. Die Trennung ist zu überprüfen.

### 10. Der Schalt draht ist zu trennen, wenn die Stereo-Trennung unter 35 dB liegt.

## TUNER-Schaltung (AWE-037)



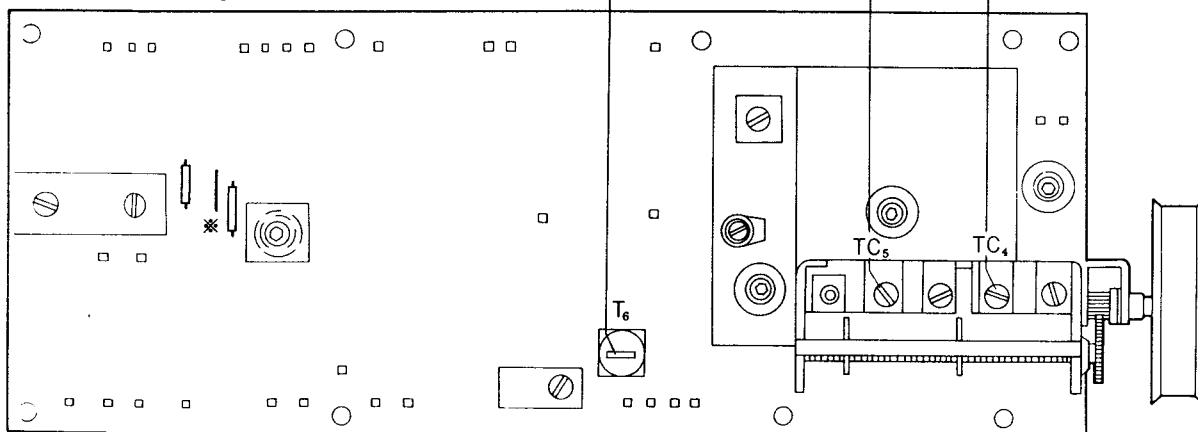


## Abgleichen Des AM-Teils

1. Regeleinstellungen am SX-434  
Die Steuerelemente (Knöpfe und Schalter) des SX-434 sind wie folgt einzustellen:  
FUNCTION (Betriebsartenschalter):  
AM (MW)  
SPEAKERS (Lautsprecher):  
OFF (Aus), POWER ON (Strom eingeschaltet)
2. Schaltungen zwischen Prüfsatz und dem SX-434
  - Der AM-Prüfsender ist mit den AM-Antennenanschlüssen zu verbinden.
  - Der Millivolt-Wechselspannungsmesser ist mit den Anschlußbuchsen TAPE REC (Band/Aufnahme) zu verbinden.

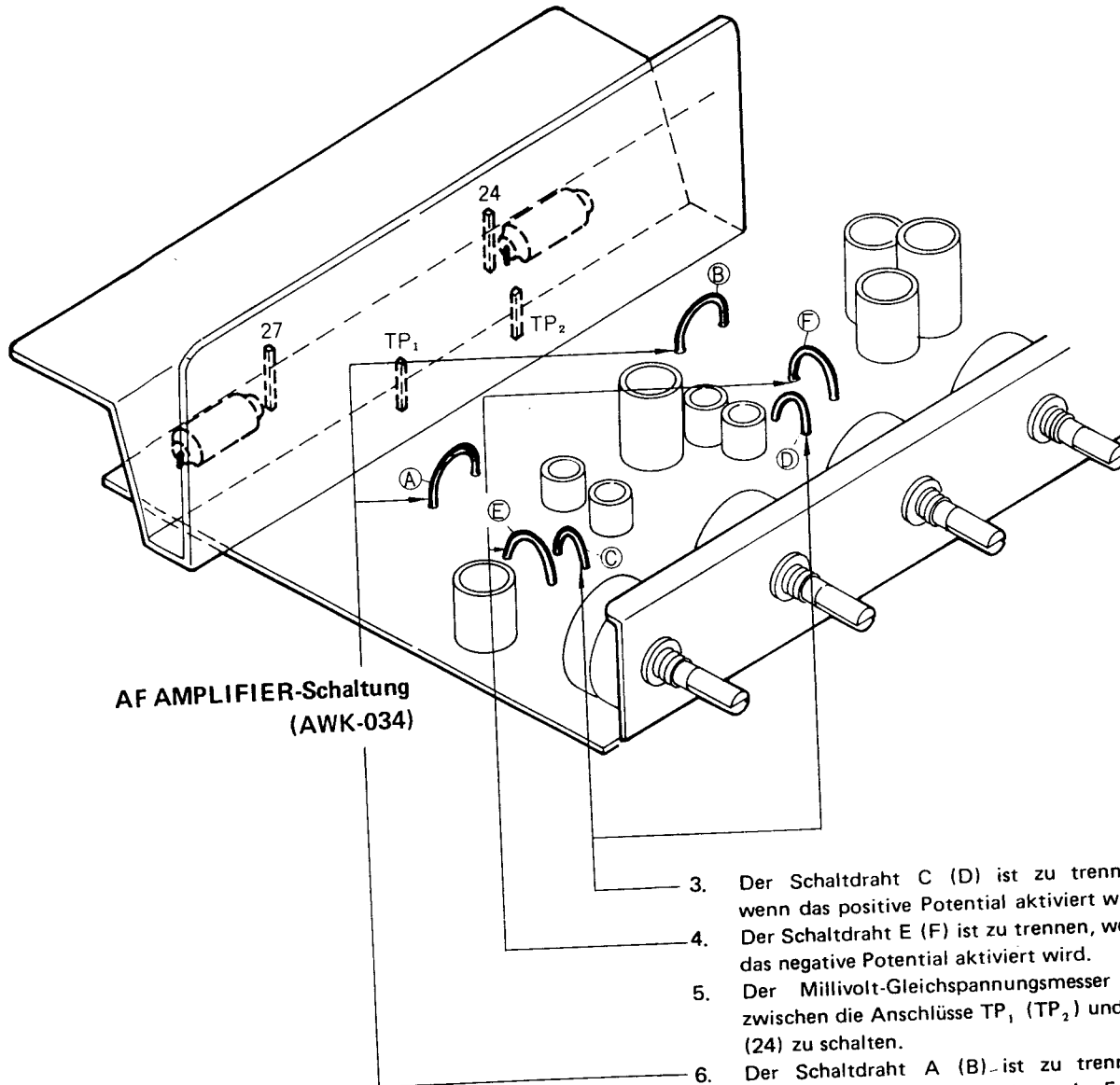
3. Der AM-Prüfsender ist auf eine Modulation von 30 % bei 400 Hz einzustellen.
4. Der Ausgang des AM-Prüfsenders ist auf 30 dB bei 600 kHz einzustellen.
5. Es ist der maximale Ausgang (bei gleichzeitiger Einstellung des Ferritstabantennenkerns) einzustellen.
6. Es ist der maximale Ausgang bei einer Frequenzeinstellung auf 1400 kHz einzustellen. Die obigen Einstellungen 4 – 6 sind mehrmals zu wiederholen, bis keine weitere merkliche Verbesserung erzielt wird.

## TUNER-Schaltung (AWE-037)



## Abgieichen Der Endverstärkerstufe

1. Es ist nichts an die Eingangsbuchsen des SX-434 anzuschließen; ein künstlicher Widerstand von  $8\Omega$  ist über die Lautsprecheranschlüsse anzulegen.
2. Ein Millivolt-Gleichspannungsmesser ist zwischen Anschluß 27 (linker Kanal, 24: für den rechten Kanal) und Erde zu schalten.



3. Der Schaltdraht C (D) ist zu trennen, wenn das positive Potential aktiviert wird.
4. Der Schaltdraht E (F) ist zu trennen, wenn das negative Potential aktiviert wird.
5. Der Millivolt-Gleichspannungsmesser ist zwischen die Anschlüsse  $TP_1$  ( $TP_2$ ) und 27 (24) zu schalten.
6. Der Schaltdraht A (B) ist zu trennen, wenn die Spannung weniger als 5 mV beträgt.

# 10. EXPLODED VIEW AND PARTS LIST

**NOTE:**

Parts number is subject to change for the purpose of improvement with notice of a service bulletin.

Service bulletin will be furnished whenever necessary and you are requested to amend parts number in this manual according to the instructions.

## Parts List of Exploded View

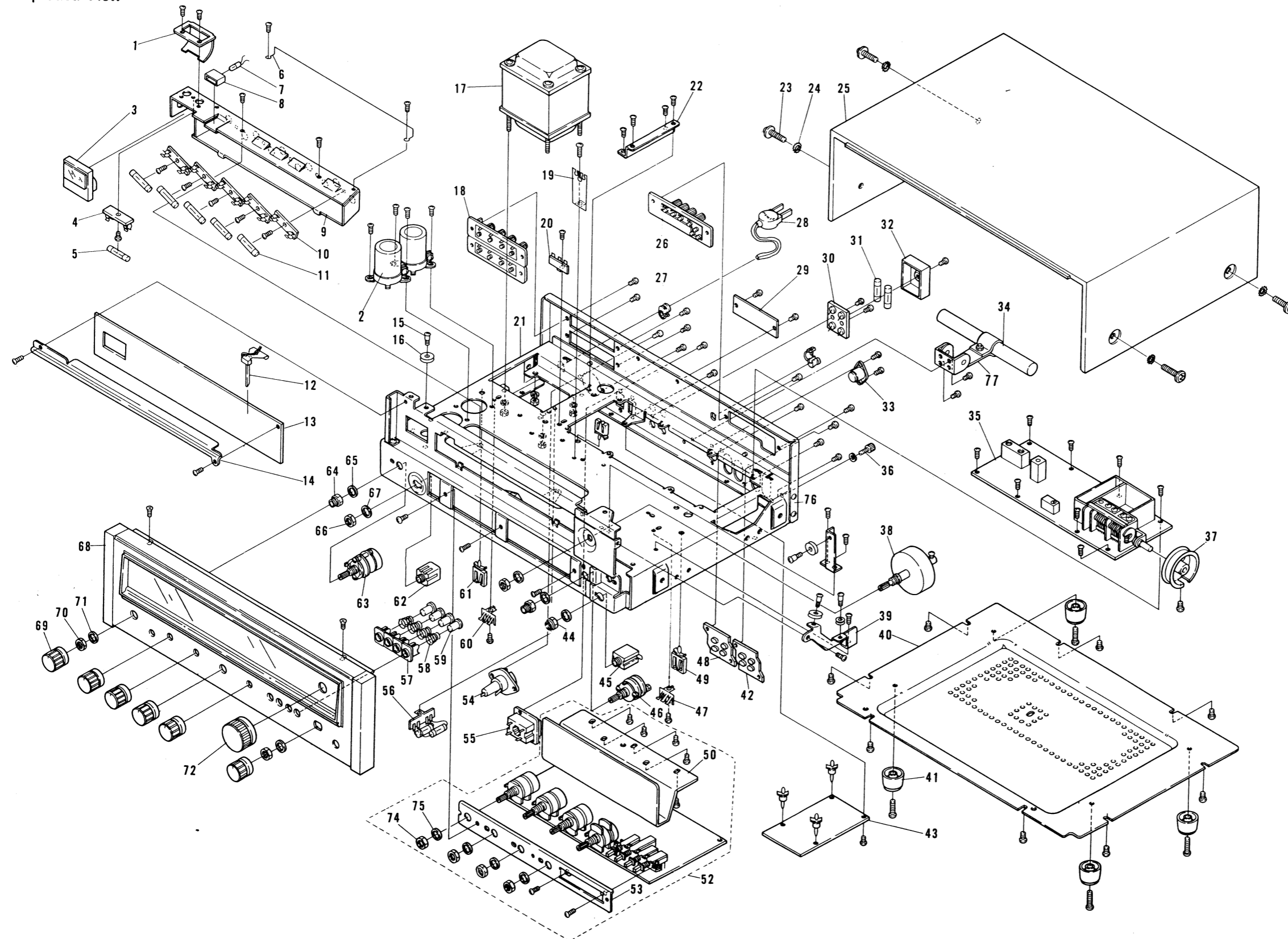
NOTICE: Any parts asterisked (\*) are subject to being not supplied.

Key No.	Description	Part No.	
1*	Meter-held metal	ANK-017-A	
2	Electrolytic capacitor 3,300 $\mu$ F, 25V	ACH-040-0	
3	Tuning meter	AAW-026-A	
4	Pilot lamp socket	AKK-002-0	
5	Pilot lamp 8V, 0.3A (meter)	E22-032-0	
6*	Wire supporter	M46-138-0	
7	Pilot lamp 6V, 30mA (stereo indicator)	AEL-017-0	
8	Rubber bracket	AEB-014-A	
9*	Lamp box	ANH-078-B	
10	Pilot lamp socket	AKK-002-0	
11	Pilot lamp 8V, 0.3A (dial scale)	E22-032-0	
12	Dial pointer	AAF-028-0	
13	Dial scale	AAG-076-A	
14*	Dial scale-held metal	ANG-096-0	
15*	Pulley shaft	M49-025-E	
16	Pulley	AEC-101-0	
17	Power transformer	ATT-169-0	KCU
	Power transformer	ATT-170-A	GN
	Power transformer	ATT-171-0	FV
18	Speaker output terminal	AKA-001-0	
19*	Wire supporter	M45-105-C	
20	Terminal strip (2P)	AKC-015-0	
21*	Chassis	ANA-062-B	
22*	Reinforced metal	ANF-204-0	
23	Screw M4x15	ABA-010-A	
24	Washer	B21-011-A	
25	Wooden cabinet	AMM-031-A	
26	Antenna terminal board	K11-043-D	
27	AC cord grommet	AEC-079-0	KCU, FV
	Connector (AC power)	AKP-008-0	GN
28	AC power cord	ADG-005-A	KCU
	AC power cord	ADG-004-0	FV
29*	Model name plate	AAL-211-0	KCU
	Model name plate	AAL-212-0	GN
	Model name plate	AAL-213-0	FV
30	Fuse holder (protection)	AKR-011-0	KCU, FV
	Fuse holder (protection)	AKR-017-0	GN
31	Fuse 3A (protection)	E21-036-A	KCU, FV
	Fuse 3.15A (protection)	AEK-042-0	GN
32	Plastic cover	AEC-058-0	
33	Connector (DIN type 5P)	K93-003-B	
34	Ferrite loopstick antenna	ATB-015-A	
35	Tuner assembly	AWE-037-0	

NOTICE: Any parts asterisked (\*) are subject to being not supplied.

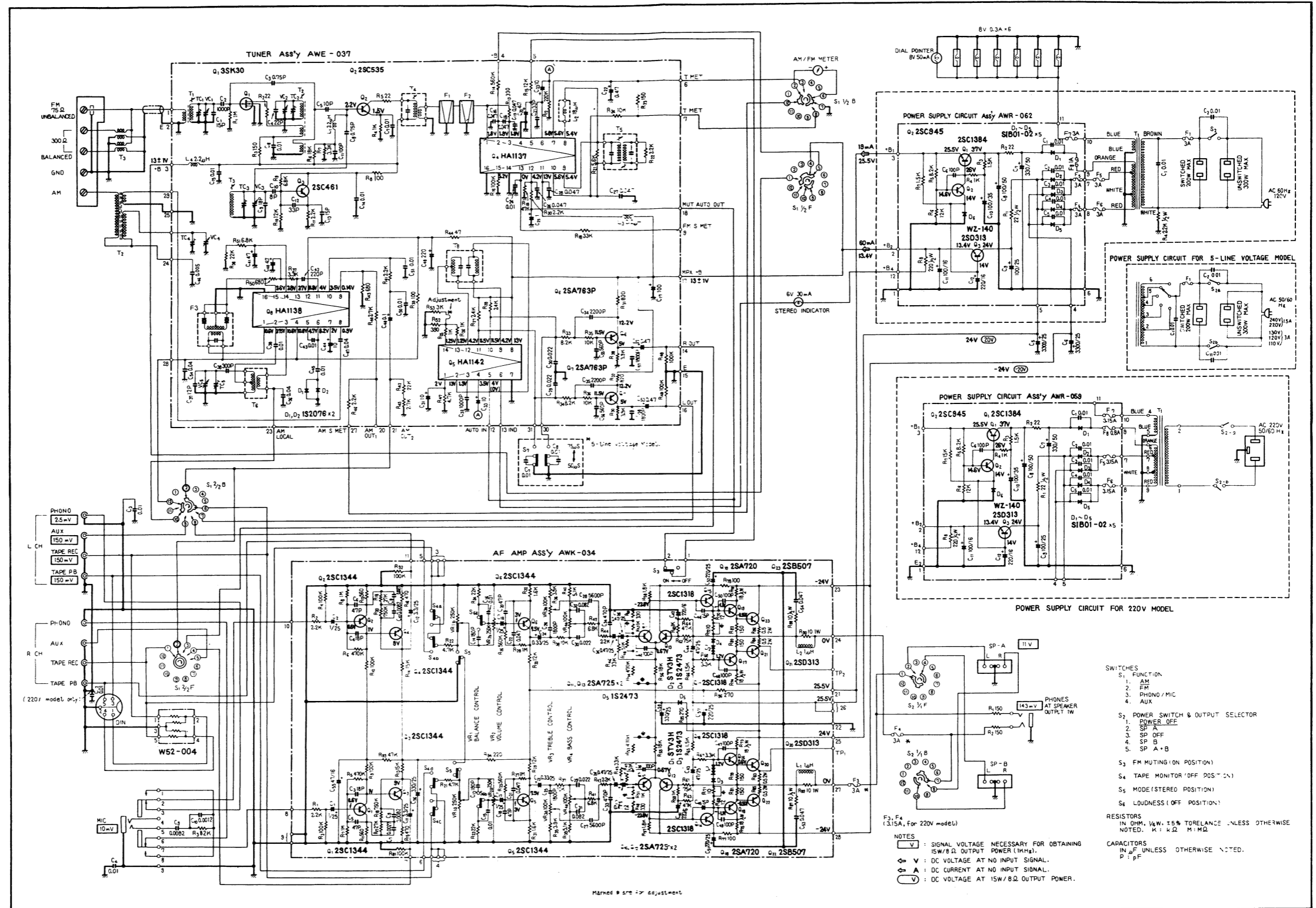
Key No.	Description	Part No.	
36	Binding post for ground	AKE-017-0	
37	Tuning pulley assembly	AXA-015-A	
38	Tuning shaft assembly	AXA-021-0	
39*	Pulley-held metal	ANG-043-0	
40*	Bottom plate	ANE-016-C	
41	Foot	AEC-061-A	
42	Phono jack-B (4 jacks)	AKB-015-0	
43	Power supply circuit assembly	AWR-062-0	KCU, FV
	Power supply circuit assembly	AWR-059-0	GN
	Power supply circuit assembly	AWR-049-0	FV
44	Nut (insulator)	B71-031-0	
45	Phone jack (Microphone)	K72-020-0	
46	Rotary switch (Function)	ASC-059-0	
47	Ground terminal strip (4P)	K13-047-0	
48	Phono jack-A (4 jacks)	AKB-014-0	
49*	Wire clip	AEC-004-0	
50*	Heat sink	ANH-192-0	
51			
52	AF amplifier assembly	AWK-034-0	
53*	P.C. board holder	ANF-202-0	
54	Fuse holder (AC power)	AKR-001-0	FV
55	AC socket	AKP-004-0	KCU, FV
56	Terminal strip (4P)	AKC-016-0	
57	Spacer	AEC-090-0	
58	Spring	AEF-002-C	
59	Knob (FM muting, Mono, Tape monitor, Loudness)	AAD-050-B	
60	Ground terminal strip (4P)	K13-047-0	
61*	Wire clip	AEC-004-0	
62	Phone jack (Headphone)	K72-026-0	
63	Rotary switch (Power)	ASA-039-0	KCU
	Rotary switch (Power)	ASA-040-0	FV, GN
64	Special nut	ALA-008-0	
65	Washer 1t	M45-086-A	
66	Nut 9 $\phi$	B71-004-0	
67	Washer 1t	M45-086-A	
68	Front panel assembly	ANB-265-0	
69	Knob (Speaker, Bass, Treble, Balance, Volume, Function)	AAB-068-A	
70	Nut 9 $\phi$	B71-004-0	
71	Washer 1t	M45-086-A	
72	Knob (Tuning)	AAA-024-0	
73			
74	Nut 9 $\phi$	B71-004-0	
75	Spacer 1t	M45-086-A	
76*	Rear panel	ANC-108-A	KCU
	Rear panel	ANC-109-A	GN
	Rear panel	ANC-110-A	FV
77	Ferrite antenna holder assembly	AXB-001-A	

Exploded View



# 11. SCHEMATIC DIAGRAMS, P.C. BOARD PATTERNS AND PARTS LIST

## 11.1 CIRCUIT CONNECTION DIAGRAM AND MISCELLANEOUS PARTS



Miscellaneous Parts

• CAPACITORS: IN  $\mu$ F UNLESS OTHERWISE NOTED p: pF  
 • RESISTORS: IN  $\Omega$ ,  $\frac{1}{4}$ W UNLESS OTHERWISE NOTED k: k $\Omega$ , M: M $\Omega$

CAPACITORS

Symbol	Description	Part No.	
C1	Ceramic 0.01 250V	ACG-001-0	FV
	Ceramic 0.01 250V	ACG-003-0	KCU
C2	Ceramic 0.01 250V	ACG-001-0	KCU, FV
	Ceramic 0.01 50V	CKDYF 103Z 50	GN
C3	Ceramic 0.01 50V	CKDYF 103Z 50	
C4	Ceramic 0.01 50V	CKDYF 103Z 50	
C5	Electrolytic 3,300 25V	ACH-040-0	
C6	Electrolytic 3,300 25V	ACH-040-0	KCU, FV
C7	Mylar 0.01 50V	QOMA 103K 50	KCU, FV
C8	Mylar 0.01 50V	QOMA 103K 50	
C9	Mylar 0.0082 50V	QOMA 822K 50	
C10	Mylar 0.0012 50V	QOMA 122K 50	
C11	Ceramic 0.01 250V	ACG-001-0	FV

RESISTORS

Symbol	Description	Part No.	
R1	Carbon film 150 $\frac{1}{2}$ W	RD $\frac{1}{2}$ PS 151J	
R2	Carbon film 150 $\frac{1}{2}$ W	RD $\frac{1}{2}$ PS 151J	
R3	Carbon film 82k	RD $\frac{1}{2}$ PS 823J	
R4	Carbon film 2.2M $\frac{1}{2}$ W	RD $\frac{1}{2}$ PW 225J	KCU

SWITCHES

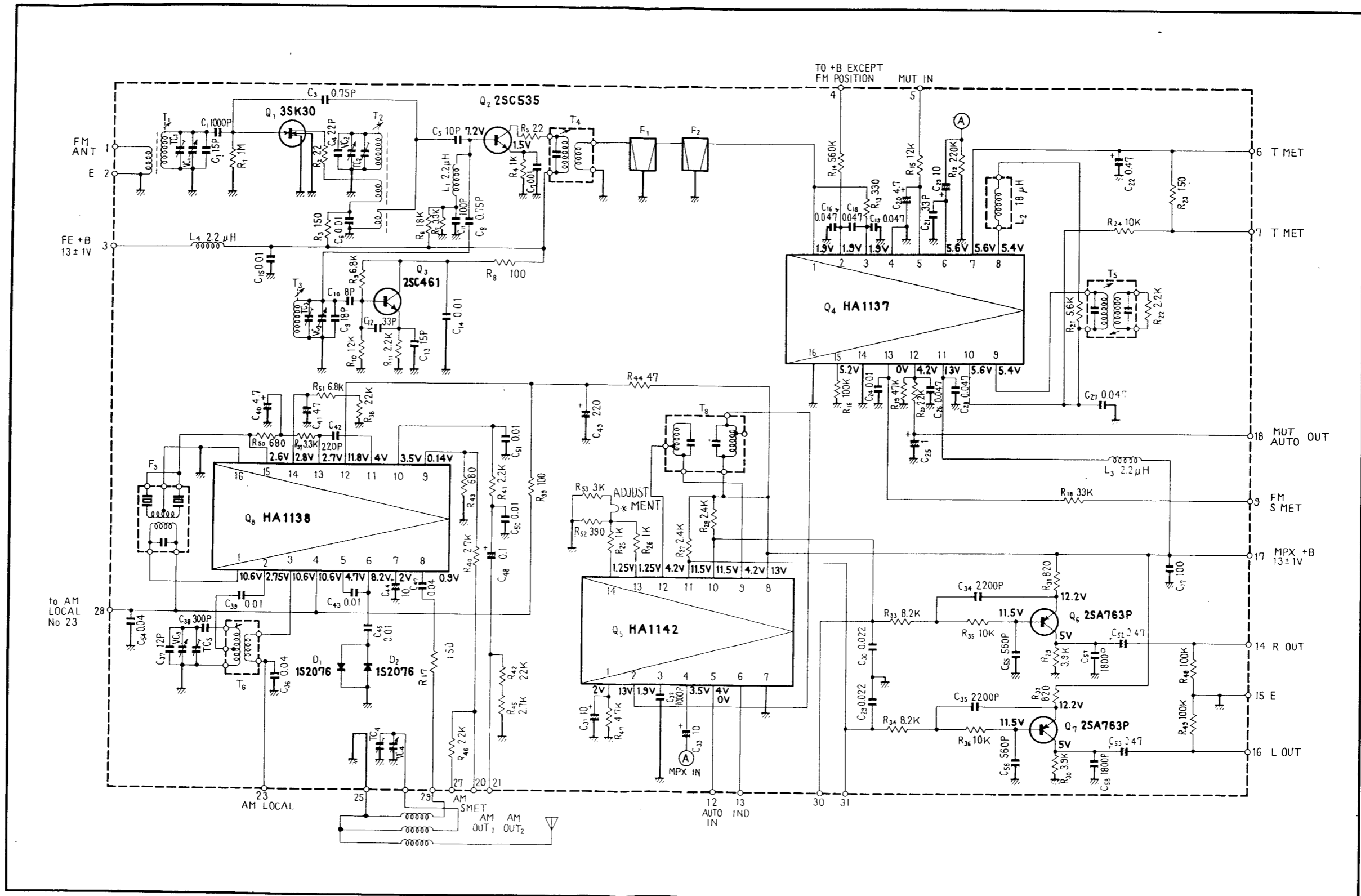
Symbol	Description	Part No.	
S1	Rotary switch (Function)	ASC-059-0	
S2	Rotary switch (Power)	ASA-039-0	KCU
S7	Rotary switch (Power)	ASA-040-0	GN, FV
	Slide switch (De-emphasis)	ASH-008-0	FV

OTHERS

Symbol	Description	Part No.	
	Tuner assembly	AWE-037-0	
	AF amplifier assembly	AWK-034-0	
	Power supply circuit assembly	AWR 062-0	KCU, FV
	Power supply circuit assembly	AWR-059-0	GN
	Power supply circuit assembly	AWR-049-0	FV
	Front panel assembly	ANB-265-0	
	Foot	AEC-061-A	
	Ferrite antenna holder assembly	AXB-001-A	
	Tuning pulley assembly	AXA-015-A	
	Tuning shaft assembly	AXA-021-0	
	Wooden cabinet	AMM-031-A	
	Knob (Tuning)	AAA-024-0	
	Knob (Speaker, Bass, Treble, Balance, Volume, Function)	AAB-068-A	
	Knob (FM muting, Mono, Tape monitor, Loudness)	AAD-050-B	
	Spring	AEF-002-C	
	Dial pointer	AAF-028-0	

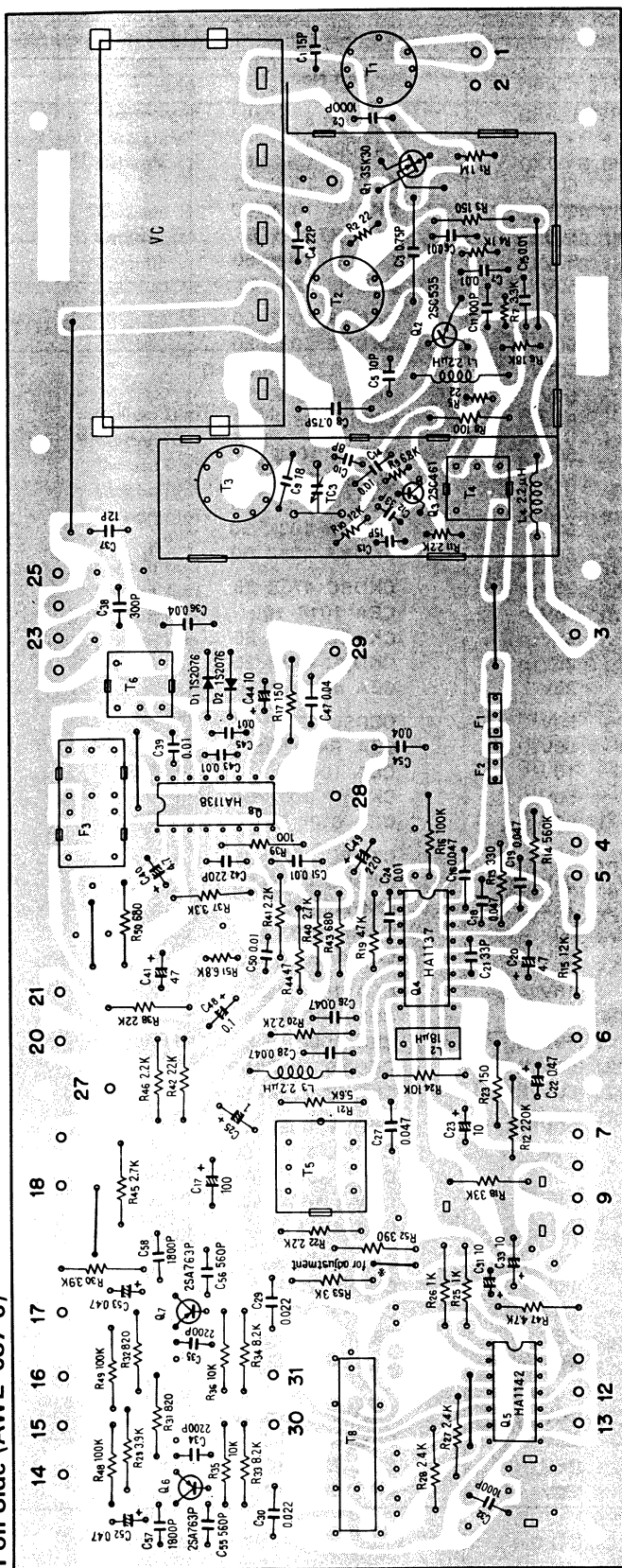
Symbol	Description	Part No.	
T1	Dial scale	AAG-076-A	
	Tuning meter	AAW-026-A	
	Spacer	AEC-090-0	
	Power transformer	ATT-169-0	KCU
T2	Power transformer	ATT-170-A	GN
	Power transformer	ATT-171-0	FV
	Ferrite loopstick antenna	ATB-015-A	
T3	Balun	T22-025-A	
	Antenna terminal board	K11-043-D	
	Phono jack-A (4 jacks)	AKB-014-0	
	Phono jack-B (4 jacks)	AKB-015-0	
F1	Fuse 3A (AC power)	AEK-200-0	KCU
	Fuse 1.5A (AC power)	AEK-009-0	FV
F3	Fuse 3A (protection)	E21-036-A	KCU, FV
	Fuse 3.15A (protection)	AEK-042-0	GN
F4	Fuse 3A (protection)	E21-036-A	KCU, FV
	Fuse 3.15A (protection)	AEK-042-0	GN
F5	Fuse 3A (protection)	AEK-101-0	KCU
	Fuse 3.15A (protection)	AEK-042-0	GN
	Fuse 3A (protection)	E21-036-A	FV
F6	Fuse 3A (protection)	AEK-101-0	KCU
	Fuse 3.15A (protection)	AEK-042-0	GN
	Fuse 3A (protection)	E21-036-A	FV
F7	Fuse 3A (protection)	AEK-101-0	KCU
	Fuse 3A (protection)	E21-036-A	FV
	Fuse 3.15A (protection)	AEK-042-0	GN
F8	Fuse 1A (protection)	AEK-106-0	KCU
	Fuse 0.8A (protection)	AEK-031-0	GN
	Fuse 1A (protection)	E21-034-A	FV
	Pilot lamp 6V, 30mA (stereo indicator)	AEL-017-0	
	Pilot lamp 8V, 0.3A (dial scale)	E22-032-0	
	Compound part for REC terminal	W52-004-A	
	Phone jack (Microphone)	K72-020-0	
	Phone jack (Headphone)	K72-026-0	
	Speaker output terminal	AKA-001-0	
	AC socket	AKP-004-0	KCU, FV
	Connector (AC power)	AKP-008-0	GN
	Connector (DIN type 5P)	K93-003-B	
	Fuse holder (AC power)	AKR-001-0	FV
	Fuse holder (protection)	AKR-011-0	KCU, FV
	Fuse holder (protection)	AKR-017-0	GN
	Plastic cover	AEC-058-0	
	Pilot lamp socket	AKK-002-0	
	AC power cord	ADG-005-A	KCU
	AC power cord	ADG-004-0	FV
	Binding post for ground	AKE-017-0	
	FM T-type antenna	ADH-002-0	
	Operating instructions (English)	ARB-102-0	
	Fuse 1.5A (AC power)	AEK-009-0	FV
	Packing case	AHD-215-0	
	Side pad	AHA-019-0	
	Operating instructions (French/German)	ARD-064-0	FV, GN

11.2 TUNER ASSEMBLY (AWE-037)

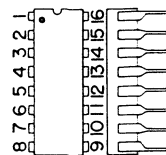




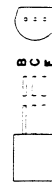
Foil Side (AWE-037-0)



HA1138  
HA1137



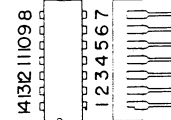
2SA725



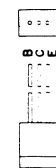
2SA725  
2SA763P



HA1142



2SC535  
2SC461



3SK30



## Parts List of Tuner Assembly (AWE-037-0)

### CAPACITORS

Symbol	Description	Part No.
VC1	Tuning capacitor	C64-046-A
TC3	Ceramic trimmer	C43-007-A
C1	Ceramic 15p 50V	CCDTH 150K 50
C2	Ceramic 0.001 50V	CKDYB 102K 50
C3	Ceramic 0.75p 500V	CGB R75K 500
C4	Ceramic 22p 50V	CCDTH 220K 50
C5	Ceramic 10p 50V	CCDSL 100F 50
C6	Ceramic 0.01 50V	CKDYF 103Z 50
C7	Ceramic 0.01 50V	CKDYF 103Z 50
C8	Ceramic 0.75p 500V	CGB R75K 500
C9	Ceramic 18p 50V	CCDSH 180K 50
C10	Ceramic 8p 50V	CCDLH 080F 50
C11	Ceramic 100p 50V	CCDSL 101K 50
C12	Ceramic 33p 50V	CCDCH 330K 50
C13	Ceramic 15p 50V	CCDCH 150K 50
C14	Ceramic 0.01 50V	CKDYB 103K 50
C15	Ceramic 0.01 50V	CKDYF 103Z 50
C16	Ceramic 0.047 25V	CKDBC 473Z 25
C17	Electrolytic 100 16V	CEA 101P 16
C18	Ceramic 0.047 25V	CKDBC 473Z 25
C19	Ceramic 0.047 25V	CKDBC 473Z 25
C20	Electrolytic 4.7 25V	CEA 4R7P 25
C21	Ceramic 33p 50V	CCDSL 330K 50
C22	Electrolytic 0.47 50V	CEA R47P 50
C23	Electrolytic 10 16V	CEA 100P 16
C24	Ceramic 0.01 50V	CKDYF 103Z 50
C25	Electrolytic 1 50V	CEA 010P 50
C26	Ceramic 0.047 25V	CKDBC 473Z 25
C27	Ceramic 0.047 25V	CKDBC 473Z 25
C28	Ceramic 0.047 25V	CKDBC 473Z 25
C29	Mylar 0.022 50V	CQMA 223J 50
C30	Mylar 0.022 50V	CQMA 223J 50
C31	Electrolytic 10 1 16V	CEA 100P 16
C32	Mylar 0.001 50V	CQMA 102K 50
C33	Electrolytic 10 16V	CEA 100P 16
C34	Ceramic 0.0022 50V	CKDYB 222K 50
C35	Ceramic 0.0022 50V	CKDYB 222K 50
C36	Ceramic 0.04 50V	CKDYF 403Z 50
C37	Ceramic 12p 50V	CCDXL 120K 50
C38	Styrol 300p 50V	CQSA 301J 50
C39	Mylar 0.01 50V	CQMA 103K 50
C40	Electrolytic 4.7 25V	CEA 4R7P 25
C41	Electrolytic 47 6V	CEA 470P 6
C42	Ceramic 220p 50V	CCDSL 221K 50
C43	Ceramic 0.01 50V	CKDYF 103Z 50
C44	Electrolytic 10 16V	CEA 100P 16
C45	Ceramic 0.01 50V	CKDYF 103Z 50
C46		
C47	Ceramic 0.04 50V	CKDYF 403Z 50
C48	Electrolytic 0.1 25V	CSSA 0R1M 25
C49	Electrolytic 220 16V	CEA 221P 16
C50	Ceramic 0.01 50V	CKDYB 103K 50

Symbol	Description			Part No.
C51	Ceramic	0.01	50V	CKDYB 103K 50
C52	Electrolytic	0.47	50V	CEA R47P 50
C53	Electrolytic	0.47	50V	CEA R47P 50
C54	Ceramic	0.04	50V	CKDYF 403Z 50
C55	Ceramic	560p	50V	CKDYB 561K 50
C56	Ceramic	560p	50V	CKDYB 561K 50
C57	Ceramic	0.0018	50V	CKDYB 182K 50
C58	Ceramic	0.0018	50V	CKDYB 182K 50

**RESISTORS**

Symbol	Description			Part No.
R1	Carbon film	1M		RD¼VS 105J
R2	Carbon film	22		RD¼VS 220J
R3	Carbon film	150		RD¼PS 151J
R4	Carbon film	1k		RD¼VS 102J
R5	Carbon film	22		RD¼VS 220J
R6	Carbon film	18k		RD¼VS 183J
R7	Carbon film	3.3k		RD¼VS 332J
R8	Carbon film	100		RD¼PS 101J
R9	Carbon film	6.8k		RD¼VS 682J
R10	Carbon film	12k		RD¼VS 123J
R11	Carbon film	2.2k		RD¼VS 222J
R12	Carbon film	220k		RD¼PS 224J
R13	Carbon film	330		RD¼PS 331J
R14	Carbon film	560k		RD¼PS 564J
R15	Carbon film	12k		RD¼PS 123J
R16	Carbon film	100k		RD¼PS 104J
R17	Carbon film	150		RD¼PS 151J
R18	Carbon film	33k		RD¼PS 333J
R19	Carbon film	47k		RD¼PS 473J
R20	Carbon film	2.2k		RD¼PS 222J
R21	Carbon film	5.6k		RD¼PS 562J
R22	Carbon film	2.2k		RD¼PS 222J
R23	Carbon film	150		RD¼PS 151J
R24	Carbon film	10k		RD¼PS 103J
R25	Carbon film	1k		RD¼PS 102J
R26	Carbon film	1k		RD¼PS 102J
R27	Carbon film	2.4k		RD¼PS 242J
R28	Carbon film	2.4k		RD¼PS 242J
R29	Carbon film	3.9k		RD¼PS 392J
R30	Carbon film	3.9k		RD¼PS 392J
R31	Carbon film	820		RD¼PS 821J
R32	Carbon film	820		RD¼PS 821J
R33	Carbon film	8.2k		RD¼PS 822J
R34	Carbon film	8.2k		RD¼PS 822J
R35	Carbon film	10k		RD¼PS 103J
R36	Carbon film	10k		RD¼PS 103J
R37	Carbon film	3.3k		RD¼PS 332J
R38	Carbon film	22k		RD¼PS 223J
R39	Carbon film	100		RD¼PS 101J
R40	Carbon film	2.7k		RD¼PS 272J

Continued on the Next Page 33

Symbol	Description	Part No.
R41	Carbon film 2.2k	RD½PS 222J
R42	Carbon film 22k	RD½PS 223J
R43	Carbon film 680	RD½PS 681J
R44	Carbon film 47	RD½PS 470J
R45	Carbon film 2.7k	RD½PS 272J
R46	Carbon film 2.2k	RD½PS 222J
R47	Carbon film 4.7k	RD½PS 472J
R48	Carbon film 100k	RD½PS 104J
R49	Carbon film 100k	RD½PS 104J
R50	Carbon film 680	RD½PS 681J
R51	Carbon film 6.8k	RD½PS 682J
R52	Carbon film 390	RD½PS 391J
R53	Carbon film 3k	RD½PS 302J

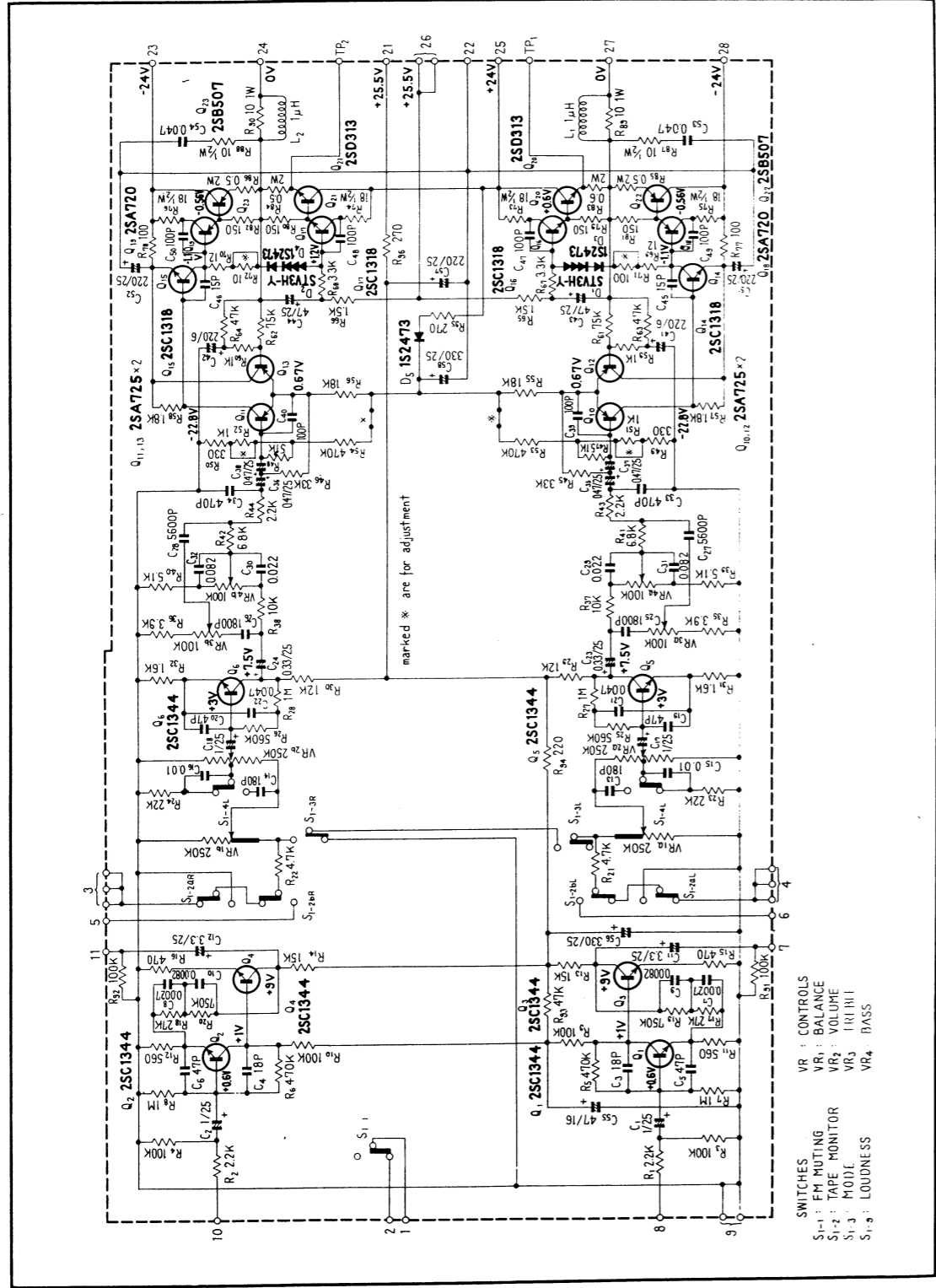
### SEMICONDUCTORS

Symbol	Description	Part No.
Q1	FET 3SK30-B	
Q2	Transistor 2SC535-A or B	
Q3	Transistor 2SC461-B	
Q4	IC HA1137	
Q5	IC HA1142	
Q6	Transistor 2SA763P-6 or 5 (2SA725-F or G)	
Q7	Transistor 2SA763P-6 or 5 (2SA725-F or G)	
Q8	IC HA1138	
D1	Diode 1S2076	
D2	Diode 1S2076	

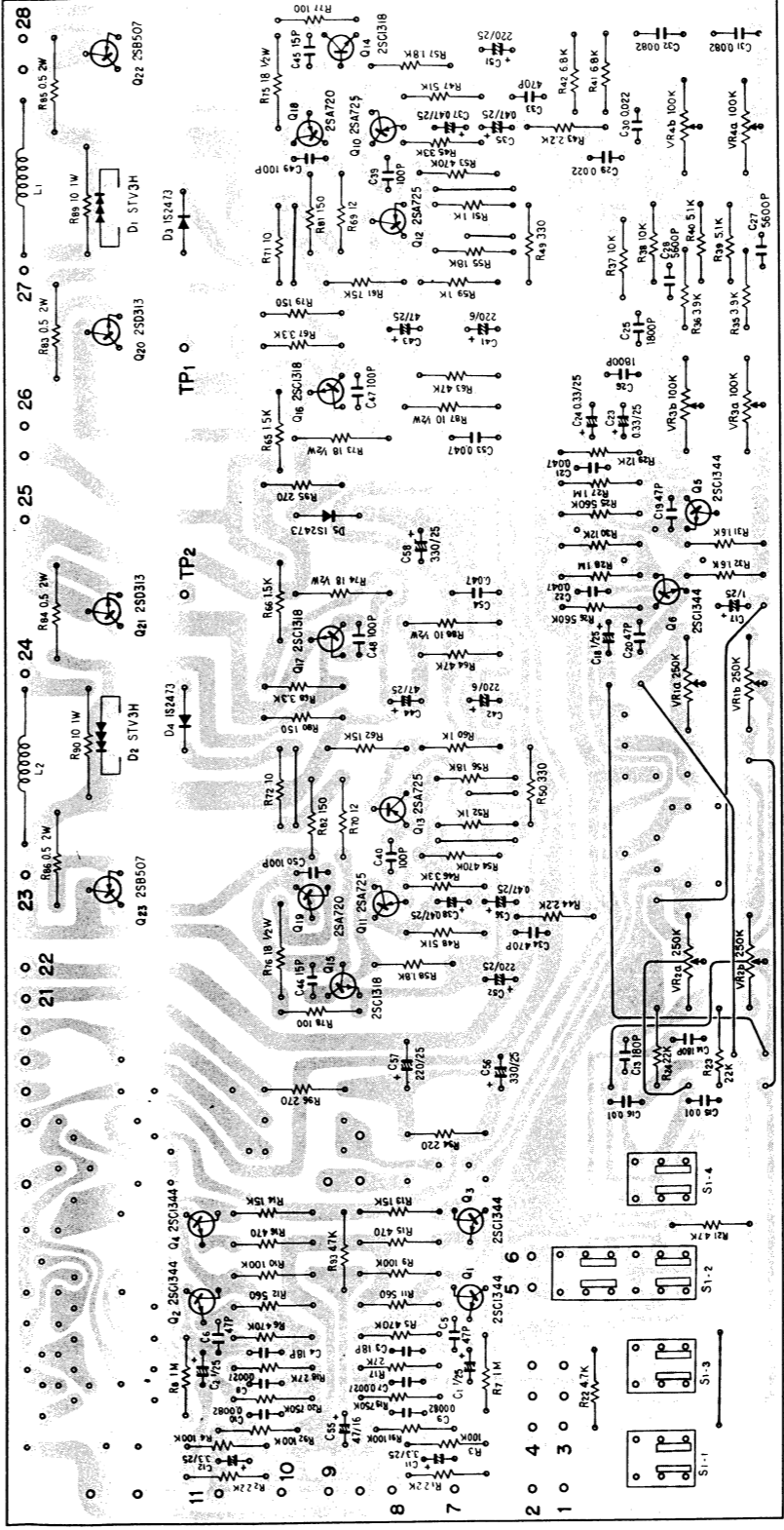
### COILS, TRANSFORMERS AND FILTERS

Symbol	Description	Part No.
T1	FM antenna coil	ATC-023-0
T2	FM RF coil	ATC-024-0
T3	FM OSC coil	ATC-025-0
T4	FM matching transformer	ATE-008-0
T5	FM IF transformer	T73-035-A
T6	AM OSC coil	ATB-013-0
T7		
T8	MPX transformer	ATM-020-0
F1	FM ceramic filter	ATF-013-B
F2	FM ceramic filter	ATF-013-B
F3	AM ceramic filter	ATF-009-0
L1	RF choke coil	T24-028-A
L2	Choke coil	ATH-007-0
L3	RF choke coil	T24-028-A
L4	RF choke coil	T24-028-A

11.3 AF AMPLIFIER ASSEMBLY (AWK-034)



Foil Side (AWK-034-0)



SX-434

- |         |         |         |         |         |        |
|---------|---------|---------|---------|---------|--------|
| 2SC1344 | 2SA725  | 2SC1312 | 2SA720  | 2SC900  | 2SA489 |
|         |         |         |         |         |        |
|         | 2SC1318 | 2SC1318 | 2SA763P | 2SC1318 | 2SC789 |
|         |         |         |         |         |        |

Parts List of AF Amplifier Assembly (AWK-034-0)

CAPACITORS

Symbol	Description	Part No.
C1	Electrolytic 1 25V	CSSA 010M 25
C2	Electrolytic 1 25V	CSSA 010M 25
C3	Ceramic 18p 50V	CCDSL 180K 50
C4	Ceramic 18p 50V	CCDSL 180K 50
C5	Ceramic 47p 50V	CCDSL 470K 50
C6	Ceramic 47p 50V	CCDSL 470K 50
C7	Mylar 0.0027 50V	CQMA 272J 50
C8	Mylar 0.0027 50V	CQMA 272J 50
C9	Mylar 0.0082 50V	CQMA 822J 50
C10	Mylar 0.0082 50V	CQMA 822J 50
C11	Electrolytic 3.3 25V	CEANL 3R3P 25
C12	Electrolytic 3.3 25V	CEANL 3R3P 25
C13	Ceramic 180p 50V	CCDSL 181K 50
C14	Ceramic 180p 50V	CCDSL 181K 50
C15	Mylar 0.01 50V	CQMA 103J 50
C16	Mylar 0.01 50V	CQMA 103J 50
C17	Electrolytic 1 25V	CSSA 010M 25
C18	Electrolytic 1 25V	CSSA 010M 25
C19	Ceramic 47p 50V	CCDSL 470K 50
C20	Ceramic 47p 50V	CCDSL 470K 50
C21	Mylar 0.047 50V	CQMA 473J 50
C22	Mylar 0.047 50V	CQMA 473J 50
C23	Electrolytic 0.33 25V	CSSA R33M 25
C24	Electrolytic 0.33 25V	CSSA R33M 25
C25	Ceramic 0.0018 50V	CKDYB 182K 50
C26	Ceramic 0.0018 50V	CKDYB 182K 50
C27	Ceramic 0.0056 50V	CKDYB 562K 50
C28	Ceramic 0.0056 50V	CKDYB 562K 50
C29	Mylar 0.022 50V	CQMA 223J 50
C30	Mylar 0.022 50V	CQMA 223J 50
C31	Mylar 0.082 50V	CQMA 823J 50
C32	Mylar 0.082 50V	CQMA 823J 50
C33	Ceramic 470p 50V	CKDYB 471K 50
C34	Ceramic 470p 50V	CKDYB 471K 50
C35	Electrolytic 0.47 25V	CSSA R47M 25
C36	Electrolytic 0.47 25V	CSSA R47M 25
C37	Electrolytic 0.47 25V	CSSA R47M 25
C38	Electrolytic 0.47 25V	CSSA R47M 25
C39	Ceramic 100p 50V	CCDSL 101K 50
C40	Ceramic 100p 50V	CCDSL 101K 50
C41	Electrolytic 220 6V	CEA 221P 6
C42	Electrolytic 220 6V	CEA 221P 6
C43	Electrolytic 47 25V	CEA 470P 25
C44	Electrolytic 47 25V	CEA 470P 25
C45	Ceramic 15p 50V	CCDSL 150K 50

Symbol	Description	Part No.
C46	Ceramic 15p 50V	CCDSL 150K 50
C47	Ceramic 100p 50V	CCDSL 101K 50
C48	Ceramic 100p 50V	CCDSL 101K 50
C49	Ceramic 100p 50V	CCDSL 101K 50
C50	Ceramic 100p 50V	CCDSL 101K 50
C51	Electrolytic 220 25V	CEA 221P 25
C52	Electrolytic 220 25V	CEA 221P 25
C53	Mylar 0.047 50V	CQMA 473J 50
C54	Mylar 0.047 50V	CQMA 473J 50
C55	Electrolytic 47 16V	CEA 470P 16
C56	Electrolytic 330 25V	CEA 331P 25
C57	Electrolytic 220 25V	CEA 221P 25
C58	Electrolytic 330 25V	CEA 331P 25

RESISTORS AND POTENTIOMETERS

Symbol	Description	Part No.
R1	Carbon film 2.2k	RD4PS 222J
R2	Carbon film 2.2k	RD4PS 222J
R3	Carbon film 100k	RD4PS 104J
R4	Carbon film 100k	RD4PS 104J
R5	Carbon film 470k	RD4PS 474J
R6	Carbon film 470k	RD4PS 474J
R7	Carbon film 1M	RD4PS 105J
R8	Carbon film 1M	RD4PS 105J
R9	Carbon film 100k	RD4PS 104J
R10	Carbon film 100k	RD4PS 104J
R11	Carbon film 560	RD4PS 561J
R12	Carbon film 560	RD4PS 561J
R13	Carbon film 15k	RD4PS 153J
R14	Carbon film 15k	RD4PS 153J
R15	Carbon film 470	RD4PS 471J
R16	Carbon film 470	RD4PS 471J
R17	Carbon film 27k	RD4PS 273J
R18	Carbon film 27k	RD4PS 273J
R19	Carbon film 750k	RD4PS 754J
R20	Carbon film 750k	RD4PS 754J
R21	Carbon film 4.7k	RD4PS 472J
R22	Carbon film 4.7k	RD4PS 472J
R23	Carbon film 22k	RD4PS 223J
R24	Carbon film 22k	RD4PS 223J
R25	Carbon film 560k	RD4PS 564J
R26	Carbon film 560k	RD4PS 564J
R27	Carbon film 1M	RD4PS 105J
R28	Carbon film 1M	RD4PS 105J
R29	Carbon film 12k	RD4PS 123J
R30	Carbon film 12k	RD4PS 123J
R31	Carbon film 1.6k	RD4PS 162J
R32	Carbon film 1.6k	RD4PS 162J
R33		
R34		
R35	Carbon film 3.9k	RD4PS 392J

Symbol	Description			Part No.
R36	Carbon film	3.9k		RD $\frac{1}{4}$ PS 392J
R37	Carbon film	10k		RD $\frac{1}{4}$ PS 103J
R38	Carbon film	10k		RD $\frac{1}{4}$ PS 103J
R39	Carbon film	5.1k		RD $\frac{1}{4}$ PS 512J
R40	Carbon film	5.1k		RD $\frac{1}{4}$ PS 512J
R41	Carbon film	6.8k		RD $\frac{1}{4}$ PS 682J
R42	Carbon film	6.8k		RD $\frac{1}{4}$ PS 682J
R43	Carbon film	2.2k		RD $\frac{1}{4}$ PS 222J
R44	Carbon film	2.2k		RD $\frac{1}{4}$ PS 222J
R45	Carbon film	33k		RD $\frac{1}{4}$ PS 333J
R46	Carbon film	33k		RD $\frac{1}{4}$ PS 333J
R47	Carbon film	51k		RD $\frac{1}{4}$ PS 513J
R48	Carbon film	51k		RD $\frac{1}{4}$ PS 513J
R49	Carbon film	330		RD $\frac{1}{4}$ PS 331J
R50	Carbon film	330		RD $\frac{1}{4}$ PS 331J
R51	Carbon film	1k		RD $\frac{1}{4}$ PS 102J
R52	Carbon film	1k		RD $\frac{1}{4}$ PS 102J
R53	Carbon film	470k		RD $\frac{1}{4}$ PS 474J
R54	Carbon film	470k		RD $\frac{1}{4}$ PS 474J
R55	Carbon film	18k		RD $\frac{1}{4}$ PS 183J
R56	Carbon film	18k		RD $\frac{1}{4}$ PS 183J
R57	Carbon film	1.8k		RD $\frac{1}{4}$ PS 182J
R58	Carbon film	1.8k		RD $\frac{1}{4}$ PS 182J
R59	Carbon film	1k		RD $\frac{1}{4}$ PS 102J
R60	Carbon film	1k		RD $\frac{1}{4}$ PS 102J
R61	Carbon film	75k		RD $\frac{1}{4}$ PS 753J
R62	Carbon film	75k		RD $\frac{1}{4}$ PS 753J
R63	Carbon film	47k		RD $\frac{1}{4}$ PS 473J
R64	Carbon film	47k		RD $\frac{1}{4}$ PS 473J
R65	Carbon film	1.5k		RD $\frac{1}{4}$ PS 152J
R66	Carbon film	1.5k		RD $\frac{1}{4}$ PS 152J
R67	Carbon film	3.3k		RD $\frac{1}{4}$ PS 332J
R68	Carbon film	3.3k		RD $\frac{1}{4}$ PS 332J
R69	Carbon film	12		RD $\frac{1}{4}$ PS 120J
R70	Carbon film	12		RD $\frac{1}{4}$ PS 120J
R71	Carbon film	10		RD $\frac{1}{4}$ PS 100J
R72	Carbon film	10		RD $\frac{1}{4}$ PS 100J
R73	Carbon film	18	$\frac{1}{2}$ W	RD $\frac{1}{2}$ PS 180J
R74	Carbon film	18	$\frac{1}{2}$ W	RD $\frac{1}{2}$ PS 180J
R75	Carbon film	18	$\frac{1}{2}$ W	RD $\frac{1}{2}$ PS 180J
R76	Carbon film	18	$\frac{1}{2}$ W	RD $\frac{1}{2}$ PS 180J
R77	Carbon film	100		RD $\frac{1}{4}$ PS 101J
R78	Carbon film	100		RD $\frac{1}{4}$ PS 101J
R79	Carbon film	150		RD $\frac{1}{4}$ PS 151J
R80	Carbon film	150		RD $\frac{1}{4}$ PS 151J
R81	Carbon film	150		RD $\frac{1}{4}$ PS 151J
R82	Carbon film	150		RD $\frac{1}{4}$ PS 151J
R83	Metal film	0.5	2W	RN2H 0R5K
R84	Metal film	0.5	2W	RN2H 0R5K
R85	Metal film	0.5	2W	RN2H 0R5K

Continued on the Next Page

Symbol	Description	Part No.
R86	Metal film 0.5 2W	RN2H 0R5K
R87	Carbon film 10 ½W	RD¼PS 100J
R88	Carbon film 10 ¼W	RD¼PS 100J
R89	Metal oxide 10 1W	RS1P 100J
R90	Metal oxide 10 1W	RS1P 100J
R91	Carbon film 100k	RD¼PS 104J
R92	Carbon film 100k	RD¼PS 104J
R93	Carbon film 47k	RD¼PS 473J
R94	Carbon film 220	RD¼PS 221J
R95	Carbon film 270	RD¼PS 271J
R96	Carbon film 270	RD¼PS 271J
VR1	Variable resistor 250k-HB (Balance)	ACV-111-B
VR2	Variable resistor 250k-B1 (Volume)	ACV-124-0
VR3	Variable resistor 100k-A2 (Treble)	ACV-137-0
VR4	Variable resistor 100k-A2 (Bass)	ACV-137-0

### SEMICONDUCTORS

Symbol	Description	Part No.
Q1	Transistor 2SC1344-E or D (2SC1312-G or F) (2SC900-E or U)	
Q2	Transistor 2SC1344-E or D (2SC1312-G or F) (2SC900-E or U)	
Q3	Transistor 2SC1344-E or D (2SC1312-G or F) (2SC900-E or U)	
Q4	Transistor 2SC1344-E or D (2SC1312-G or F) (2SC900-E or U)	
Q5	Transistor 2SC1344-E or D (2SC1312-G or F) (2SC900-E or U)	
Q6	Transistor 2SC1344-E or D (2SC1312-G or F) (2SC900-E or U)	
Q10	Transistor 2SA725-G or F (2SA763P-5 or 6)	
Q11	Transistor 2SA725-G or F (2SA763P-5 or 6)	
Q12	Transistor 2SA725-G or F (2SA763P-5 or 6)	
Q13	Transistor 2SA725-G or F (2SA763P-5 or 6)	
Q14	Transistor 2SC1318-R or Q	
Q15	Transistor 2SC1318-R or Q	
Q16	Transistor 2SC1318-R or Q	
Q17	Transistor 2SC1318-R or Q	
Q18	Transistor 2SA720-R or Q	

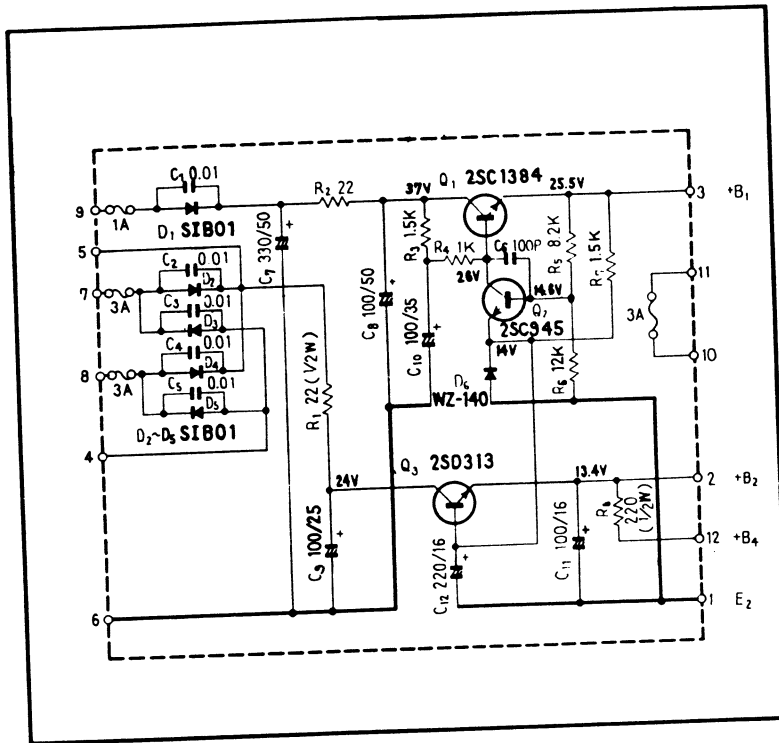


Symbol	Description	Part No.
Q19	Transistor	2SA720-R or Q
Q20	Transistor	2SD313-D or E (2SC789-Oor Y)
Q21	Transistor	2SD313-D or E (2SC789-Oor Y)
Q22	Transistor	2SB507-D or E (2SA489-Oor Y)
Q23	Transistor	2SB507-D or E (2SA489-Oor Y)
D1	Varistor	STV3H-Y or O
D2	Varistor	STV3H-Y or O
D3	Diode	1S2473
D4	Diode	1S2473
D5	Diode	1S2473

**OTHERS**

Symbol	Description	Part No.
L1	Choke coil	ATH-003-A
L2	Choke coil	ATH-003-A
	Heat sink	ANH-192-0
	Socket (transistor)	AKH-002-0
	Spacer (insulator)	AEC-078-0
	Push switch (Loudness, Mono, Tape monitor, FM muting)	ASG-055-0
	Nut 9φ	B71-004-0
	Washer 1t	M45-086-A

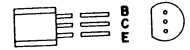
# 11.4 POWER SUPPLY CIRCUIT ASSEMBLY (AWR-062-0)



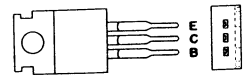
2SC1384



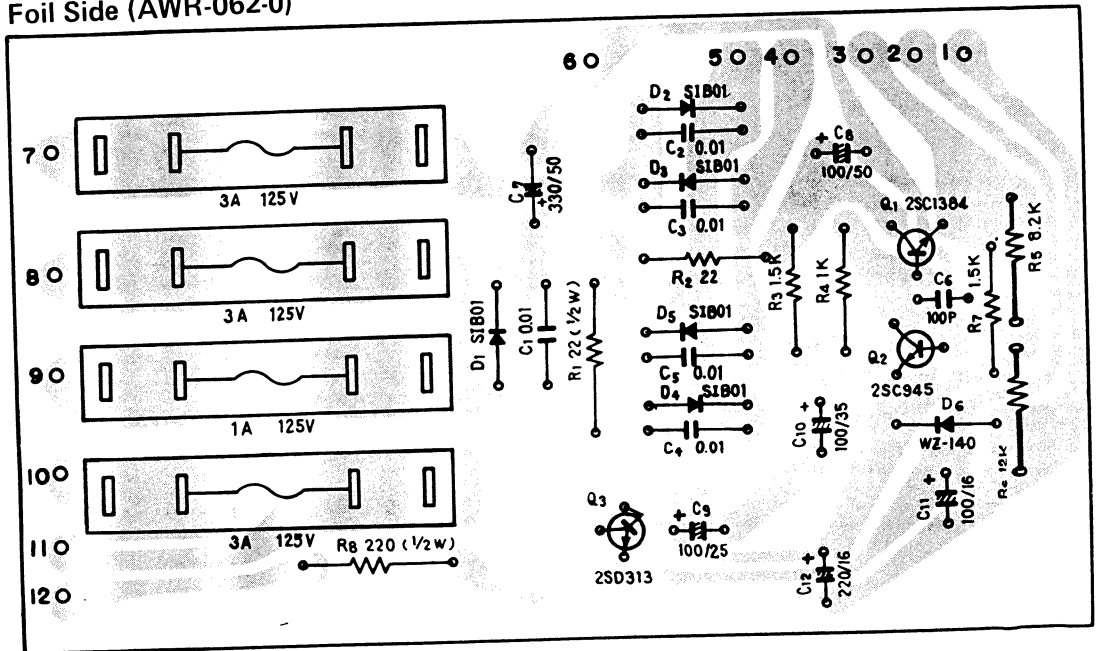
2SC945



2SD313



## Foil Side (AWR-062-0)



Parts List of Power Supply Circuit Assembly (AWR-062-0)

CAPACITORS

Symbol	Description			Part No.
C1	Ceramic	0.01	150V	ACG-004-0
C2	Ceramic	0.01	150V	ACG-004-0
C3	Ceramic	0.01	150V	ACG-004-0
C4	Ceramic	0.01	150V	ACG-004-0
C5	Ceramic	0.01	150V	ACG-004-0
C6	Ceramic	100p	50V	CCDSL 101K 50
C7	Electrolytic	330	50V	CEA 331P 50
C8	Electrolytic	100	50V	CEA 101P 50
C9	Electrolytic	100	25V	CEA 101P 25
C10	Electrolytic	100	35V	CEA 101P 35
C11	Electrolytic	100	16V	CEA 101P 16
C12	Electrolytic	220	16V	CEA 221P 16

RESISTORS

Symbol	Description			Part No.
R1	Carbon film	22	½W	RD½PS 220J
R2	Carbon film	22		RD½PS 220J
R3	Carbon film	1.5k		RD¼PS 152J
R4	Carbon film	1k		RD¼PS 102J
R5	Carbon film	8.2k		RD¼PS 822J
R6	Carbon film	12k		RD¼PS 123J
R7	Carbon film	1.5k		RD¼PS 152J
R8	Carbon film	220	½W	RD½PS 221J

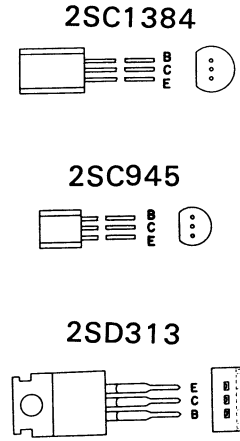
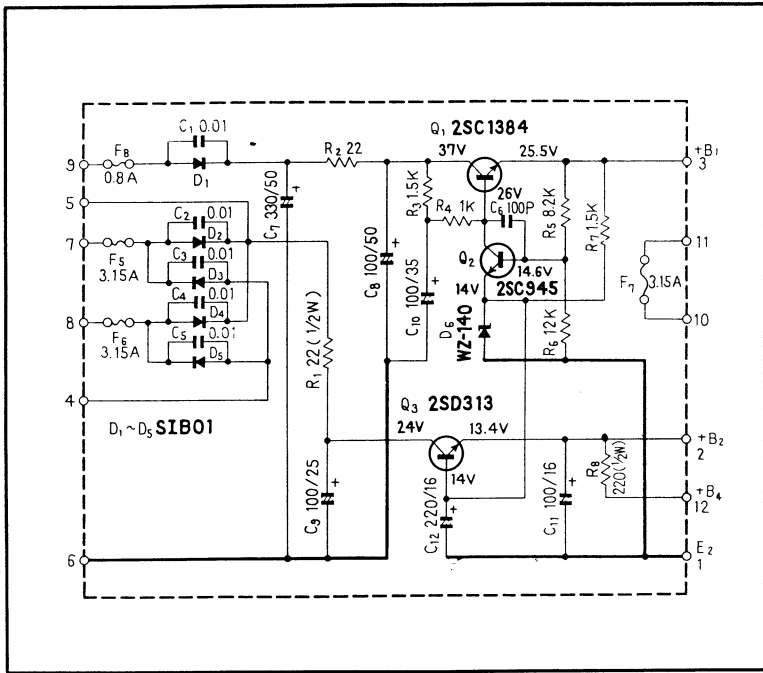
SEMICONDUCTORS

Symbol	Description			Part No.
Q1	Transistor	2SC1384-R or Q		
Q2	Transistor	2SC945-R or Q		
Q3	Transistor	2SD313-D or E		
D1	Diode	SIB01-02 or 1S1886		
D2	Diode	SIB01-02 or 1S1886		
D3	Diode	SIB01-02 or 1S1886		
D4	Diode	SIB01-02 or 1S1886		
D5	Diode	SIB01-02 or 1S1886		
D6	Zener diode	WZ-140		

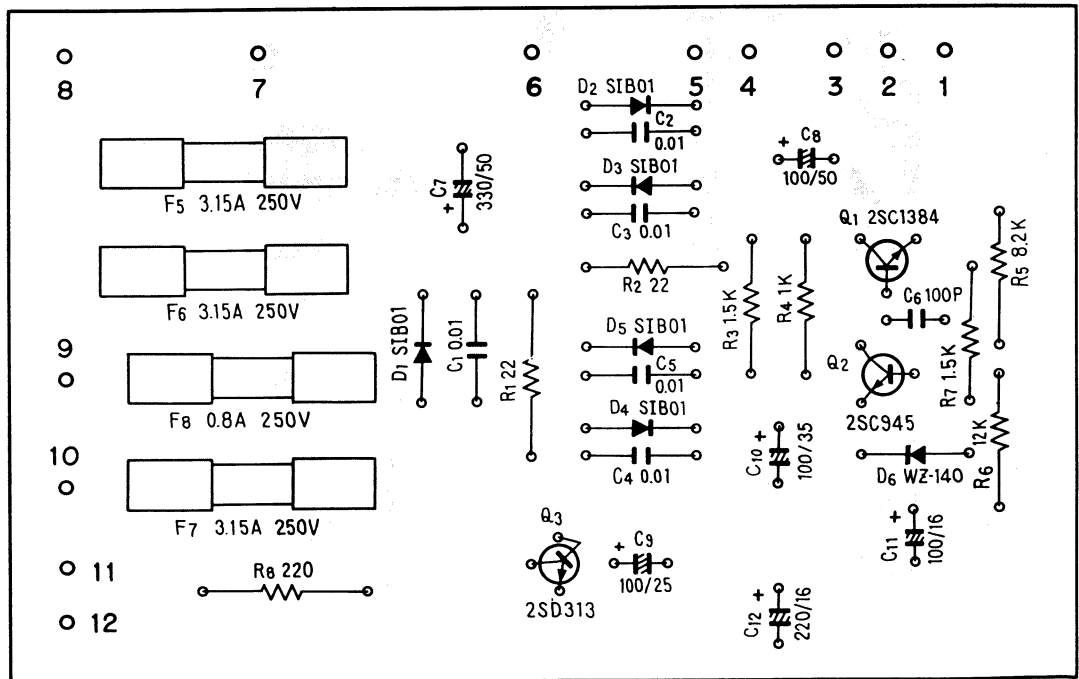
OTHERS

Symbol	Description	Part No.
	Clip-in type fuse holder	AKR-013-0
	Heat sink	ANH-117-0

# 11.5 POWER SUPPLY CIRCUIT ASSEMBLY FOR GN MODEL (AWR-059-0)



## Foil Side (AWR-059-0)



**Parts List of Power Supply Circuit Assembly (AWR-059-0)**

**CAPACITORS**

Symbol	Description			Part No.
C1	Ceramic	0.01	150V	ACG-004-0
C2	Ceramic	0.01	150V	ACG-004-0
C3	Ceramic	0.01	150V	ACG-004-0
C4	Ceramic	0.01	150V	ACG-004-0
C5	Ceramic	0.01	150V	ACG-004-0
C6	Ceramic	100p	50V	CCDSL 101K 50
C7	Electrolytic	330	50V	CEA 331P 50
C8	Electrolytic	100	50V	CEA 101P 50
C9	Electrolytic	100	25V	CEA 101P 25
C10	Electrolytic	100	35V	CEA 101P 35
C11	Electrolytic	100	16V	CEA 101P 16
C12	Electrolytic	220	16V	CEA 221P 16

**RESISTORS**

Symbol	Description			Part No.
R1	Carbon film	22	½W	RD½PS 220J
R2	Carbon film	22		RD¼PS 220J
R3	Carbon film	1.5k		RD¼PS 152J
R4	Carbon film	1k		RD¼PS 102J
R5	Carbon film	8.2k		RD¼PS 822J
R6	Carbon film	12k		RD¼PS 123J
R7	Carbon film	1.5k		RD¼PS 152J
R8	Carbon film	220	½W	RD½PS 221J

**SEMICONDUCTORS**

Symbol	Description		Part No.
Q1	Transistor	2SC1384-R or Q	
Q2	Transistor	2SC945-R or Q	
Q3	Transistor	2SD313-D or E	
D1	Diode	S1B01-02 or 1S1886	
D2	Diode	S1B01-02 or 1S1886	
D3	Diode	S1B01-02 or 1S1886	
D4	Diode	S1B01-02 or 1S1886	
D5	Diode	S1B01-02 or 1S1886	
D6	Zener diode	WZ-140	

**OTHERS**

Symbol	Description	Part No.
	Fuse holder	AKR-010-0
	Heat sink	ANH-117-0

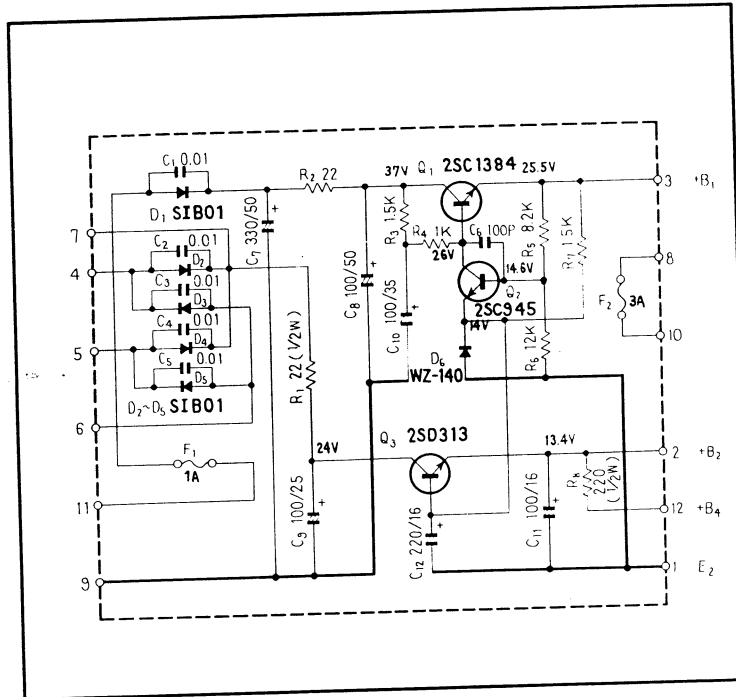
# 11.6 POWER SUPPLY CIRCUIT ASSEMBLY (AWR-049-0)

**NOTE:**

The assembly boards (AWR-049-0) are all used in 5-line voltage models marked with Serial numbers from 1300001 to 1302000.

However, the model which begins from Serial No. 1302001 and the following models use the power supply circuit assembly boards (AWR-062-0).

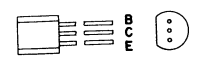
Before servicing, confirm serial number corresponding to the model to be repaired.



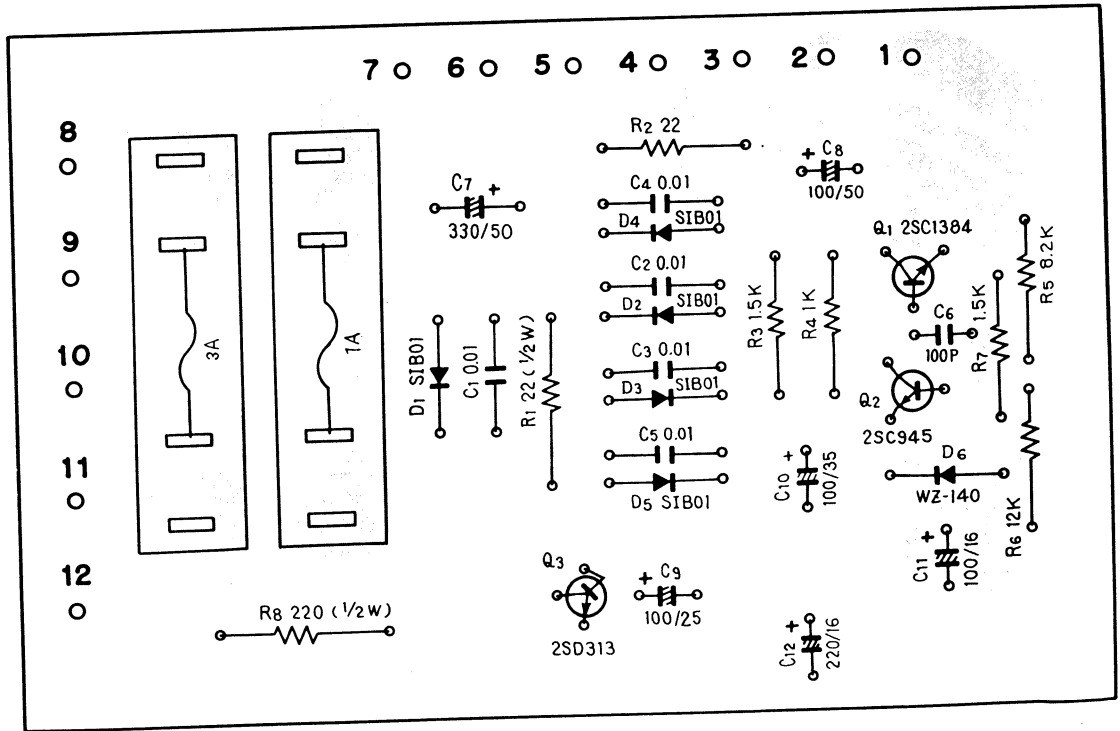
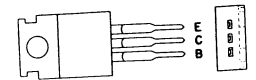
**2SC1384**



**2SC945**



**2SD313**



Parts List of Power Supply Circuit Assembly (AWR-049-0)

CAPACITORS

Symbol	Description			Part No.
C1	Ceramic	0.01	150V	ACG-004-0
C2	Ceramic	0.01	150V	ACG-004-0
C3	Ceramic	0.01	150V	ACG-004-0
C4	Ceramic	0.01	150V	ACG-004-0
C5	Ceramic	0.01	150V	ACG-004-0
C6	Ceramic	100p	50V	CCDSL 101K 50
C7	Electrolytic	330	50V	CEA 331P 50
C8	Electrolytic	100	50V	CEA 101P 50
C9	Electrolytic	100	25V	CEA 101P 25
C10	Electrolytic	100	35V	CEA 101P 35
C11	Electrolytic	100	16V	CEA 101P 16
C12	Electrolytic	220	16V	CEA 221P 16

RESISTORS

Symbol	Description			Part No.
R1	Carbon film	22	½W	RD¼PS 220J
R2	Carbon film	22		RD¼PS 220J
R3	Carbon film	1.5k		RD¼PS 152J
R4	Carbon film	1k		RD¼PS 102J
R5	Carbon film	8.2k		RD¼PS 822J
R6	Carbon film	12k		RD¼PS 123J
R7	Carbon film	1.5k		RD¼PS 152J
R8	Carbon film	220	½W	RD¼PS 221J

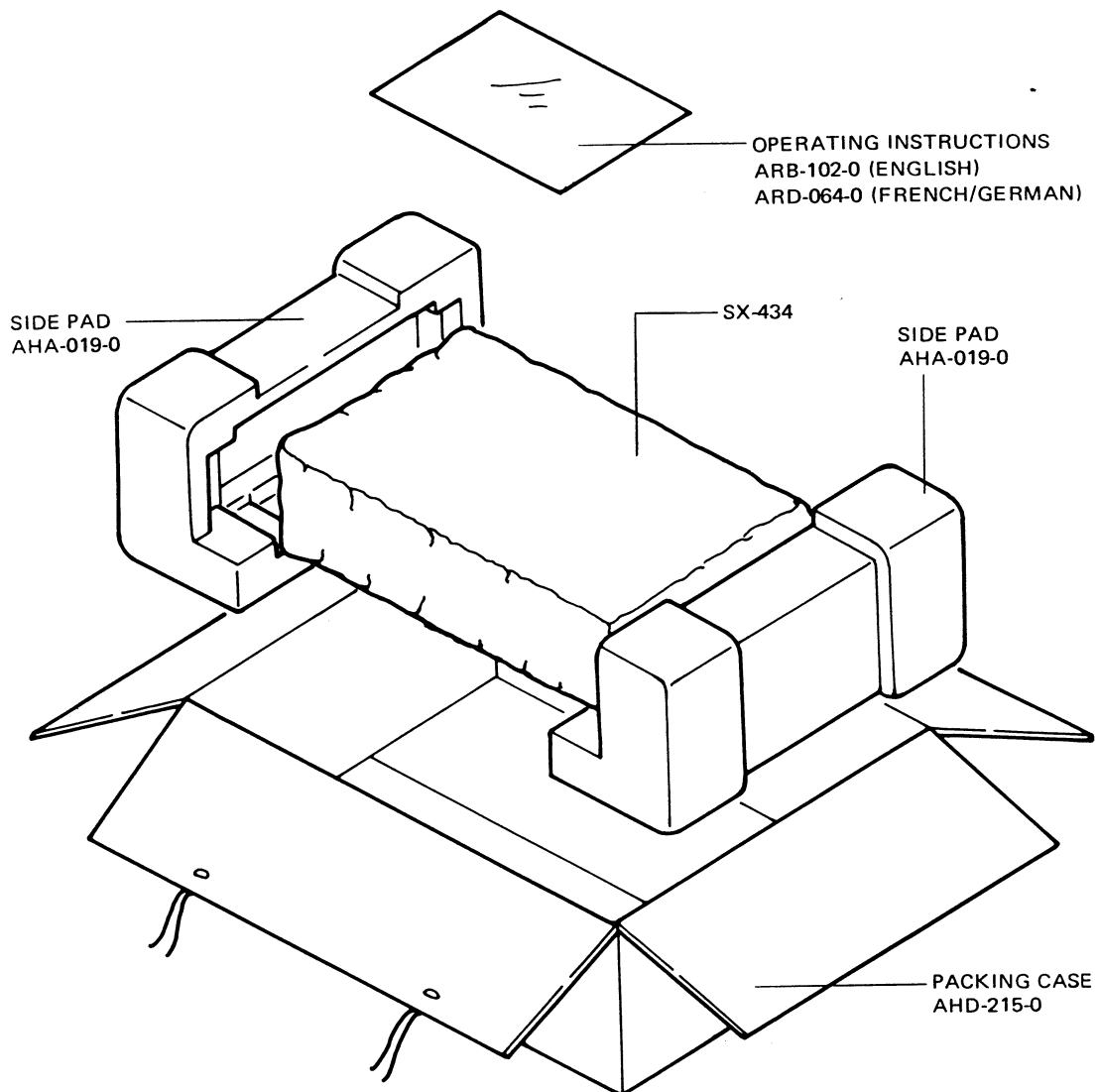
SEMICONDUCTORS

Symbol	Description			Part No.
Q1	Transistor	2SC1384-R or Q		
Q2	Transistor	2SC945-R or Q		
Q3	Transistor	2SD313-D or E		
D1	Diode	SIB01-02 or 1S1886		
D2	Diode	SIB01-02 or 1S1886		
D3	Diode	SIB01-02 or 1S1886		
D4	Diode	SIB01-02 or 1S1886		
D5	Diode	SIB01-02 or 1S1886		
D6	Zener diode	WZ-140		

OTHERS

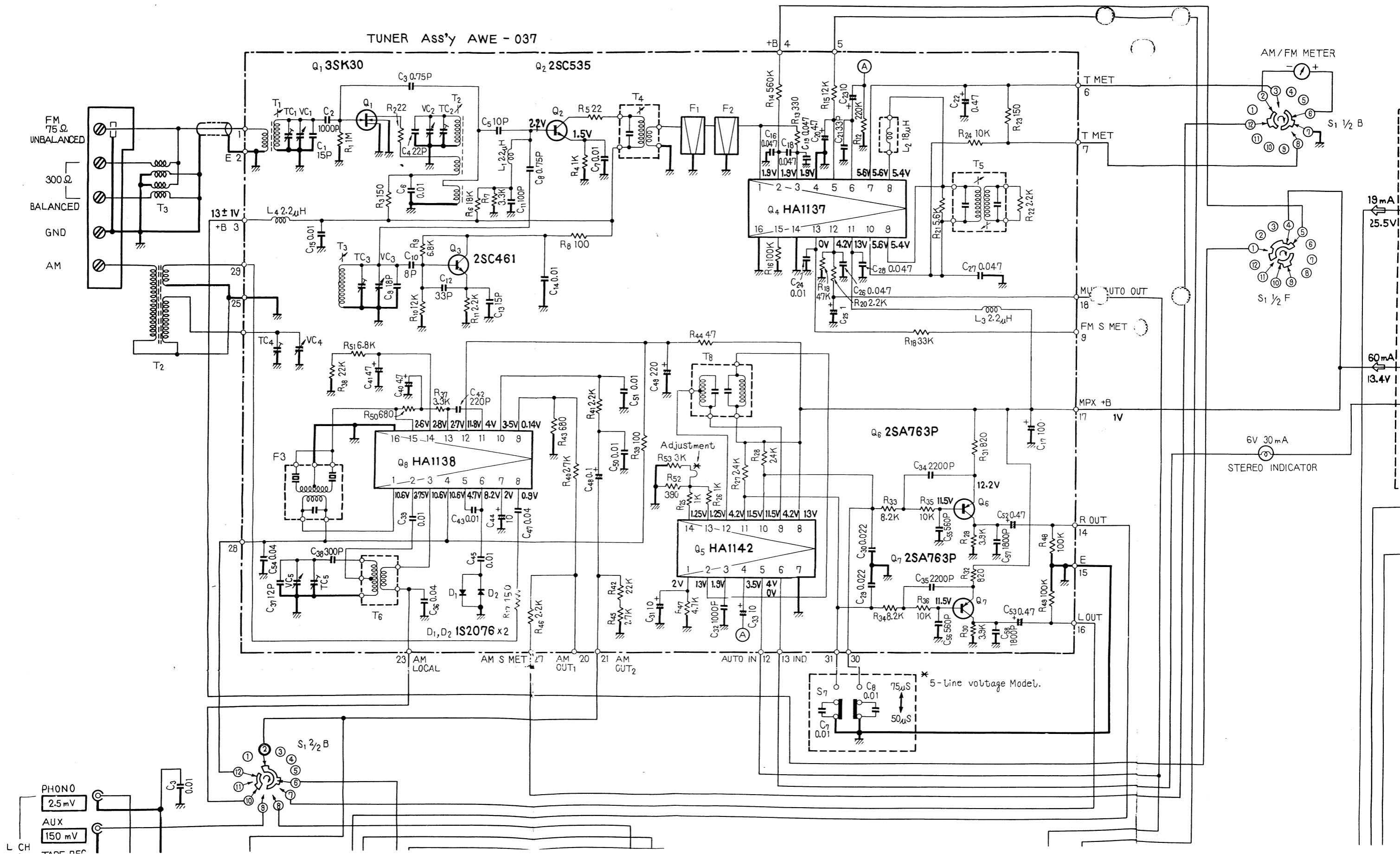
Symbol	Description	Part No.
	Clip-in type fuse holder	AKR-013-0
	Heat sink	ANH-117-0

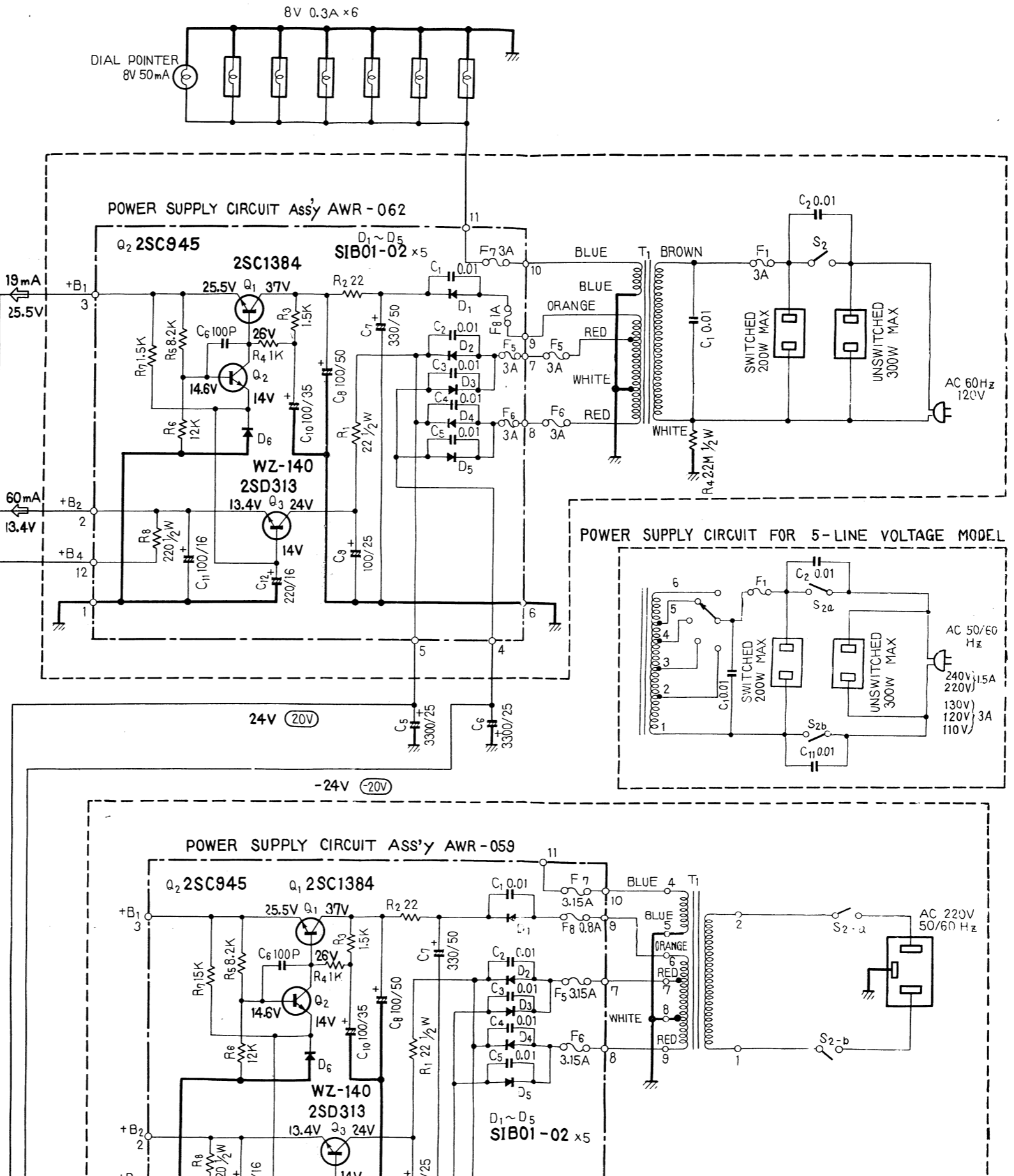
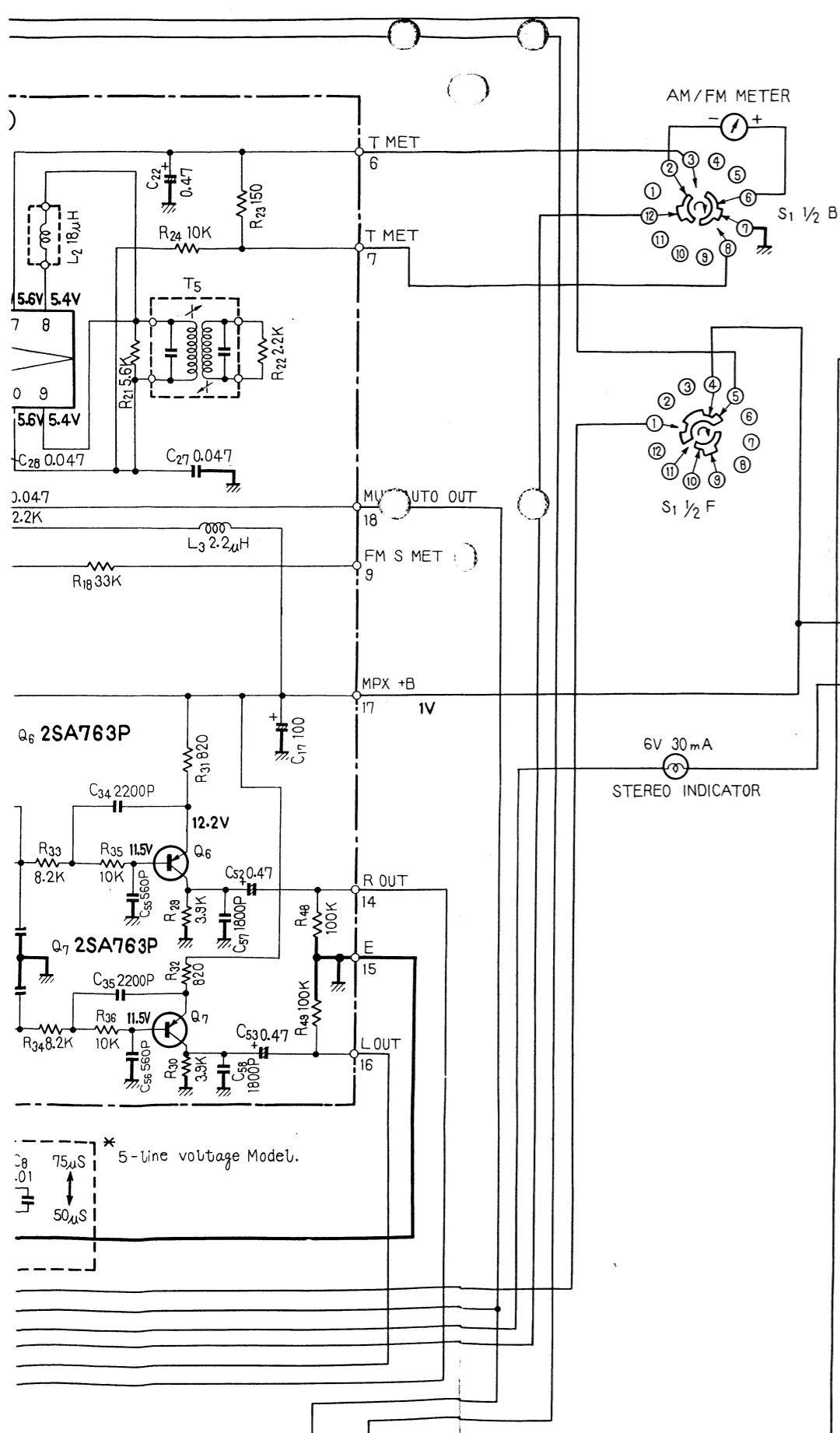
## 12. PACKING METHOD AND PARTS NUMBERS



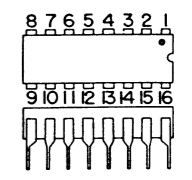


### TUNER Ass'y AWE - 037

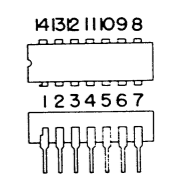




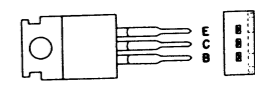
HA1138  
HA1137



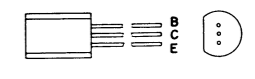
HA1142



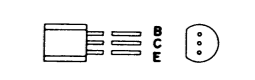
2SD313 2SA489  
2SB507 2SC789



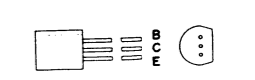
2SC1384



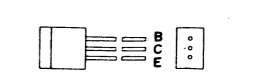
2SC945 2SA720 2SC900  
2SA763P 2SC1318



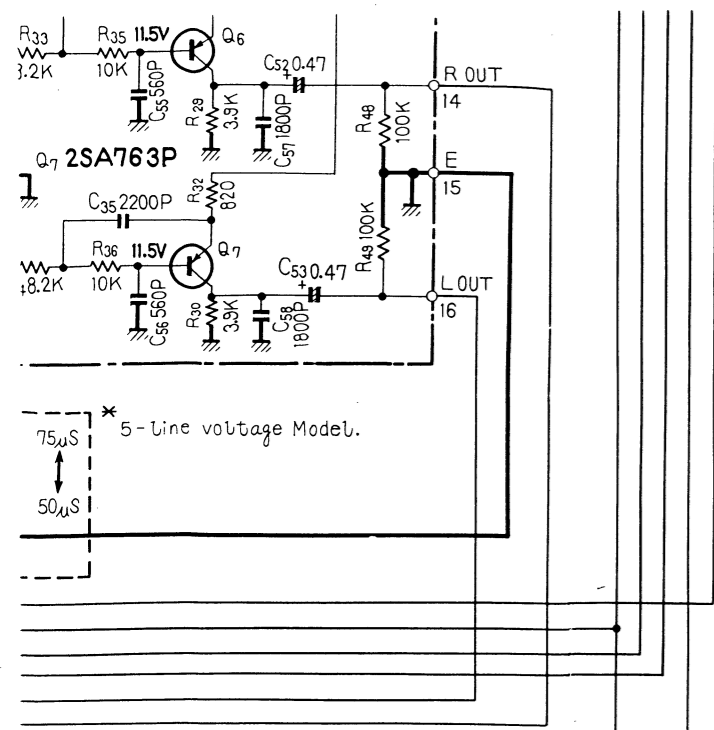
2SA725 2SC1312



2SC1344 2SC535 2SC461



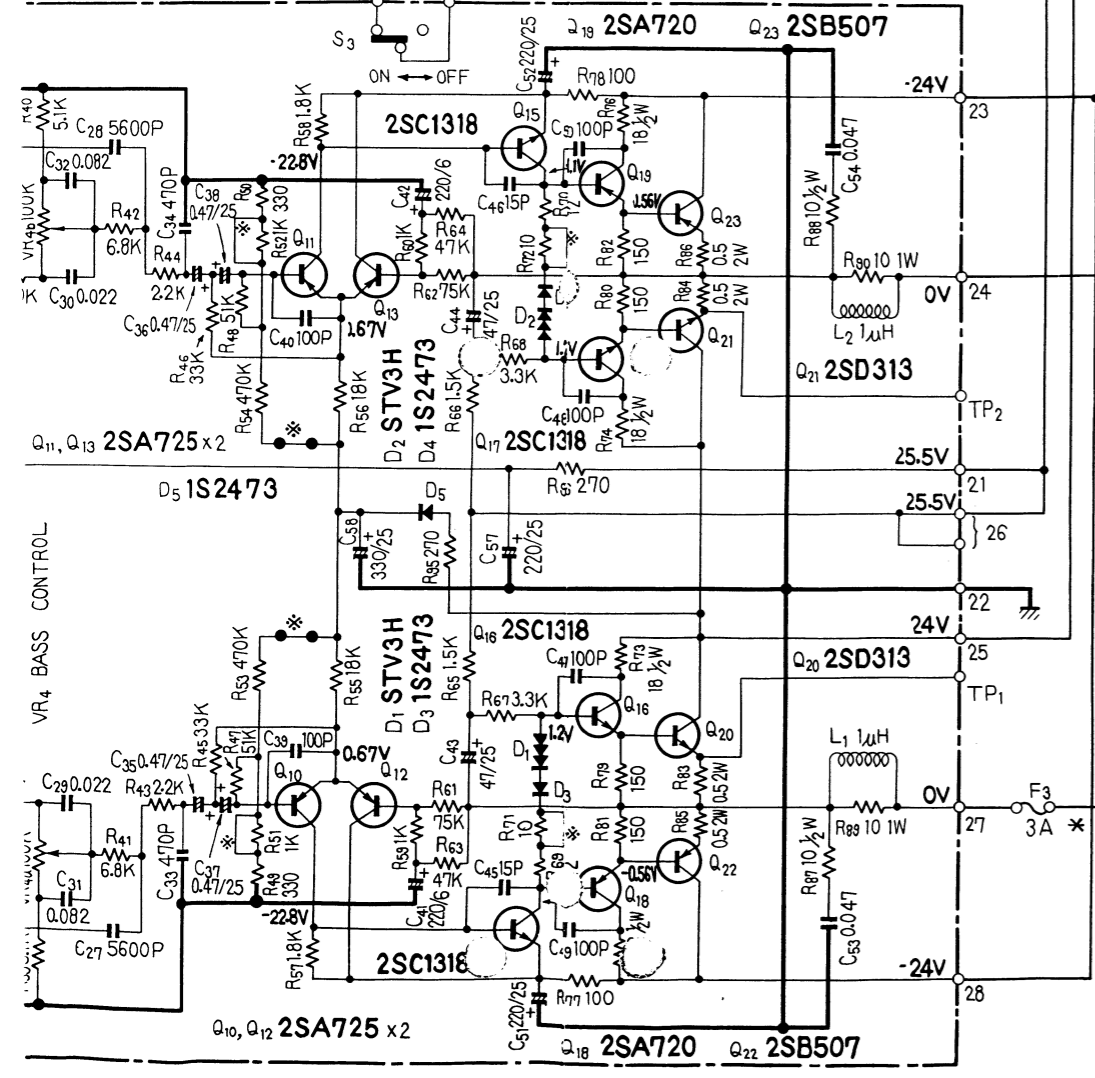
3SK30



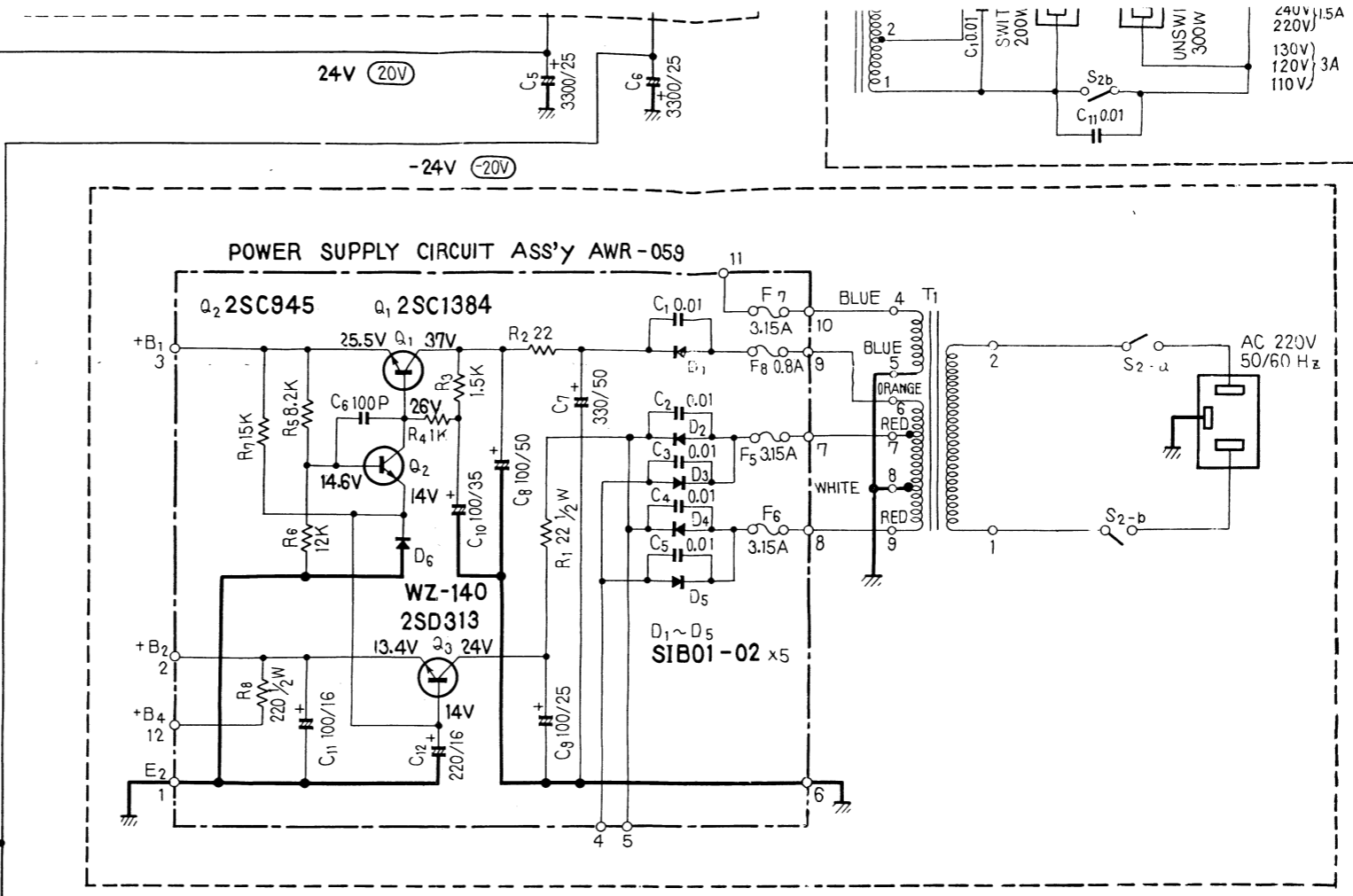
\* 5-line voltage Model.

75μs  
50μs

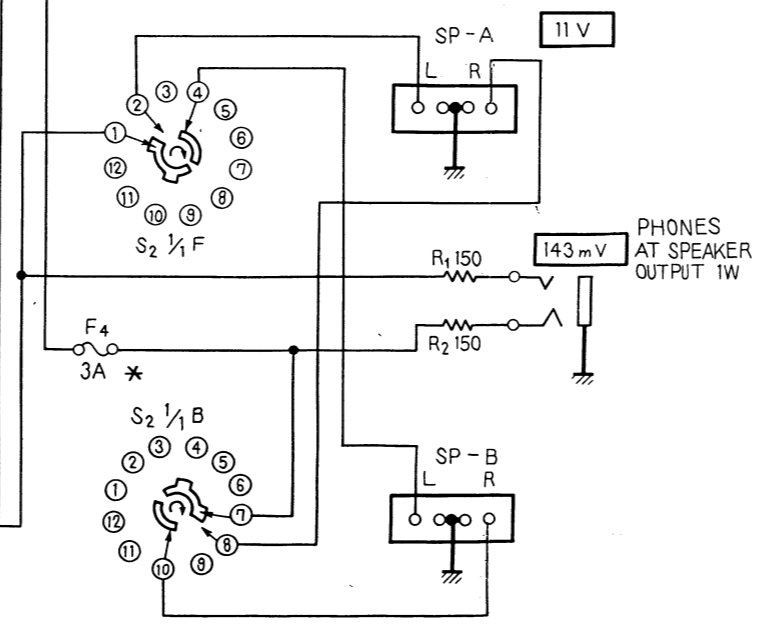
WK-034



Marked \* are for adjustment



POWER SUPPLY CIRCUIT FOR 220V MODEL



F3, F4 (3.15A, for 220V model)

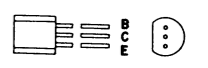
- NOTES
- V : SIGNAL VOLTAGE NECESSARY FOR OBTAINING 15W/8Ω OUTPUT POWER (1KHz).
  - V : DC VOLTAGE AT NO INPUT SIGNAL.
  - A : DC CURRENT AT NO INPUT SIGNAL.
  - V : DC VOLTAGE AT 15W/8Ω OUTPUT POWER.

- SWITCHES
- S1 FUNCTION
1. AM
  2. FM
  3. PHONO / MIC
  4. AUX
- S2 POWER SWITCH & OUTPUT SELECTOR
1. POWER OFF
  2. SP A
  3. SP OFF
  4. SP B
  5. SP A + B
- S3 FM MUTING (ON POSITION)
- S4 TAPE MONITOR (OFF POSITION)
- S5 MODE (STEREO POSITION)
- S6 LOUDNESS (OFF POSITION)

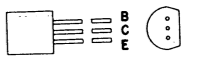
RESISTORS  
IN OHM, 1/4W, ±5% TOLERANCE UNLESS OTHERWISE NOTED.  
K : kΩ M : MΩ

CAPACITORS  
IN μF UNLESS OTHERWISE NOTED.  
P : pF

2SA720 2SC900  
2SA763P 2SC1318



2SA725  
2SC1312

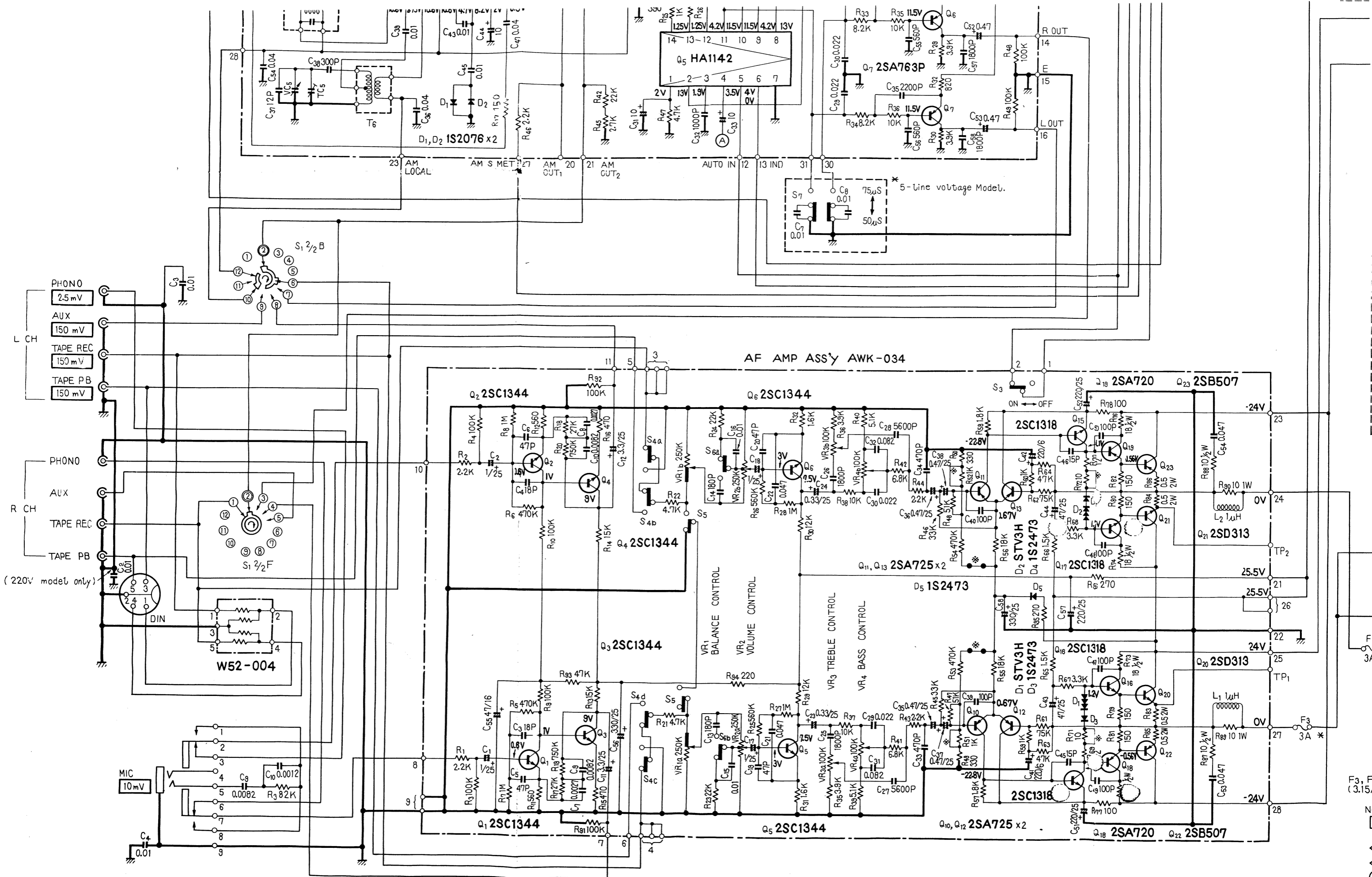


2SC1344  
2SC535  
2SC461



3SK30





Marked \* are for adjustment

F<sub>3</sub>, F<sub>1</sub>  
(3.15A)

NC

△

△

△

△

△