

Service Manual

AM/FM STEREO RECEIVER

SX-880

 **PIONEER®**

1. SPECIFICATIONS

Semiconductors

FETs	5
ICs	9
Transistors	37
Diodes	37

Amplifier Section

Continuous Power Output of 60 watts* per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz with no more than 0.05% total harmonic distortion, or 60 watts per channel at 4 ohms from 20 Hertz to 20,000 Hertz with no more than 0.08% total harmonic distortion.

Total Harmonic Distortion (20 Hertz to 20,000 Hertz, from AUX)

continuous rated power output	No more than 0.05%
30 watts per channel power output,	
8 ohms	No more than 0.03%
1 watt per channel power output,	
8 ohms	No more than 0.03%

Intermodulation Distortion (50 Hertz : 7,000 Hertz = 4 : 1, from AUX)

continuous rated power output	No more than 0.05%
30 watts per channel power output,	
8 ohms	No more than 0.03%
1 watt per channel power output,	
8 ohms	No more than 0.03%

Input (Sensitivity/Impedance)

PHONO	2.5mV/50 kilohms
AUX	150mV/50 kilohms
TAPE PLAY 1	150mV/50 kilohms
TAPE PLAY 2	150mV/50 kilohms

Damping Factor (20Hertz to 20,000Hertz, 8 ohms) . . . 30

PHONO Overload Level (1kHz, T.H.D.: 0.05%) . . . 200mV Output (Level/Impedance)

TAPE REC 1	150mV
TAPE REC 2	150mV
SPEAKERS	A, B, A+B
HEADPHONES	Low impedance

Frequency Response

PHONO (RIAA Equalization)	20Hz to 20,000Hz ± 0.2 dB
AUX, TAPE PLAY	5Hz to 80,000Hz ± 1 dB

Tone Control

BASS	+8dB, -7dB (100Hz)
TREBLE	+7dB, -6dB (10kHz)

Filter Low 15Hz (6dB/oct.)

Loudness Contour (Volume control set at -40dB position)
 +6dB (100Hz), +3dB (10kHz)

Hum and Noise (IHF, short-circuited, A network, rated power)

PHONO	76dB
AUX, TAPE PLAY	95dB

FM Section

Usable Sensitivity

MONO	10.3dBf (1.8 μ V)
------	-----------------------

50dB Quieting Sensitivity

MONO	16.2dBf (3.6 μ V)
STEREO	37.0dBf (39 μ V)

Signal-to-Noise Ratio at 65dBf

MONO	80dB
STEREO	72dB

Distortion at 65dBf

100Hz	MONO	0.07%
	STEREO	0.15%
1kHz	MONO	0.07%
	STEREO	0.15%
6kHz	MONO	0.12%
	STEREO	0.25%

Frequency Response 30Hz to 15,000Hz ± 0.2 dB

Capture Ratio 1.0dB

Selectivity 75dB

Spurious Response Ratio 65dB

Image Response Ratio 65dB

IF Response Ratio 90dB

AM Suppression Ratio 50dB

Muting Threshold 19.2dBf (10 μ V)

Stereo Separation . . . 45dB (1kHz), 35dB (30Hz~15kHz)

Subcarrier Production Ratio 55dB

SCA Rejection Ratio 65dB

Antenna Input 300 ohms balanced
 75 ohms unbalanced

AM Section

Sensitivity (IHF, ferrite antenna) 300 μ V/m

(IHF, ext. antenna) 15 μ V

Selectivity 26dB

Signal-to-Noise Ratio 50dB

Image Response Ratio 40dB

IF Response Ratio 40dB

Antenna Built-in ferrite loopstick antenna

Miscellaneous

Power Requirements 120V, 60Hz

Power Consumption 190W (UL), 340VA (CSA)

Dimensions 480(W) x 140(H) x 320(D)mm
 18-7/8(W) x 5-1/2(H) x 12-5/8(D)in

Weight . . Without package 12.2kg (26lb 14oz)

With package 13.8kg (30lb 6oz)

2. FRONT PANEL FACILITIES

POWER METERS

These meters allow you to read out the rated power level when speakers with a nominal impedance of 8 ohms are connected to the receiver's speaker terminals.

NOTE:

These values are related to the impedance of the speakers and they vary according to the frequency. In order to find out the exact output level, connect an 8-ohm dummy load instead of the speakers.

POWER SWITCH

Set this switch to ON to supply power to the receiver. There will be a short delay when it is set to ON, because the muting circuit has been actuated to suppress the unpleasant noise that is sometimes generated when the power is switched on and off.

PHONES JACK

Plug the headphones into this jack when you want to listen through your stereo headphones. Release both **SPEAKERS** buttons if you want to listen to the sound through your headphones only (This means that both buttons will be released).

SPEAKERS SWITCHES

Depress the button corresponding to the speakers connected to the **SPEAKERS** terminals (A or B) on the rear panel. You can depress both of these buttons to listen to sound from two pairs of speaker systems at the same time.

BASS AND TREBLE CONTROLS

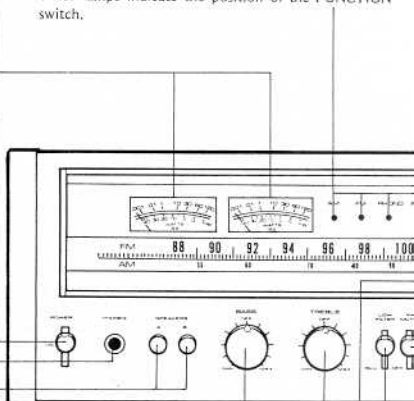
When turned clockwise from the OFF position, the response in the bass or treble range respectively, is boosted. Turning counterclockwise attenuates the response. At the OFF position the tone control circuit is bypassed and frequency response is flat.

STEREO INDICATOR

This indicator lights up when the receiver is tuned in to receive a stereo broadcast.

FUNCTION INDICATORS

These lamps indicate the position of the **FUNCTION** switch.



DIAL POINTER

This pointer indicates the broadcasting stations.

LOW FILTER SWITCH

When this switch is set to 15Hz, a 6dB/oct attenuation can be provided for frequencies below 15Hz. This means that you can cancel out noise in the ultra-low frequencies which is generated by low-pitched rumble from a turntable and other forms of distortion. Although this noise cannot be heard, it can generate intermodulation distortion and damage the speakers.

FM MUTING SWITCH

When this switch is set to the upper position (On), the FM muting function acts to suppress unpleasant interstation noise while tuning between the FM broadcasting stations. When the switch is set to the OFF position, the FM muting function does not act, thus enabling suitable reception of weak radio stations.

SIGNAL METER

When tuning in to an AM or FM station, the optimum reception position is indicated by the maximum deflection of the meter pointer to the right.

TUNING METER

When tuning in to an FM station, the optimum reception position is indicated when the meter pointer deflects to dead center. Check that the SIGNAL meter pointer has deflected as far to the right as possible.

TUNING KNOB

Use this knob to tune in to broadcasting stations. Select the station and tune for optimum reception by observing the dial scale and the tuning meters.

VOLUME CONTROL

Use this control to adjust the output level to the speakers and headphones. Turn it clockwise to increase the output level. No sound will be heard if you set to MIN.

LOUDNESS SWITCH

Set this switch to ON when listening at a low volume. The frequency response of the human ear varies according to the listening volume, and setting this switch to the ON position compensates for hearing response by emphasizing the bass and treble.

BALANCE CONTROL

Use this control to balance the volume of the left and right channels. First, however, set the MODE switch to MONO. If the sound appears to be louder on the right, it means that the volume of the right channel is higher. Turn the BALANCE control to the left and adjust. Conversely, if the sound appears to be louder on the left, it means that the volume of the left channel is higher. Therefore, turn the BALANCE control to the right and adjust. After adjusting, return the MODE switch to STEREO.

TAPE MONITOR SWITCH

Employ for tape playback or to monitor a recording in progress.

- 1: Playback or monitoring of a tape deck connected to the TAPE 1 jacks.
- 2: SOURCE: Be sure to set to this position when not using the tape deck for playback.
- 2: Playback or monitoring of a tape deck connected to the TAPE 2 jacks.

NOTE:

When listening to records or broadcasts, be sure to set this switch to SOURCE. Sound will not be obtained from speakers if it is set to 1 or 2.

FUNCTION SWITCH

Use this switch to select the program source. For a second after the switch is selected, no sound will be heard. This is due to the operation of the muting circuit, which can suppress the unpleasant switching noise generated when the FUNCTION switch is selected.

AM: When listening to AM broadcasting.

FM: When listening to FM broadcasting.

The STEREO indicator lights up when the receiver is tuned in to an FM stereo broadcast.

PHONO: When playing a record on the turntable connected to the PHONO jacks.

AUX: When listening to an audio component connected to the AUX jacks.

TAPE DUPLICATE SWITCH

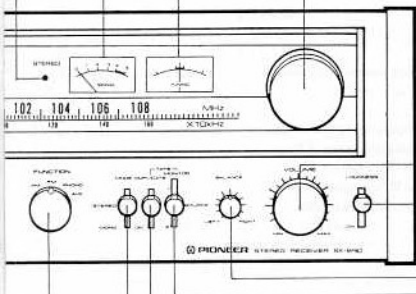
Set this switch to ON when you want to duplicate or edit a pre-recorded tape using two tape decks.

MODE SWITCH

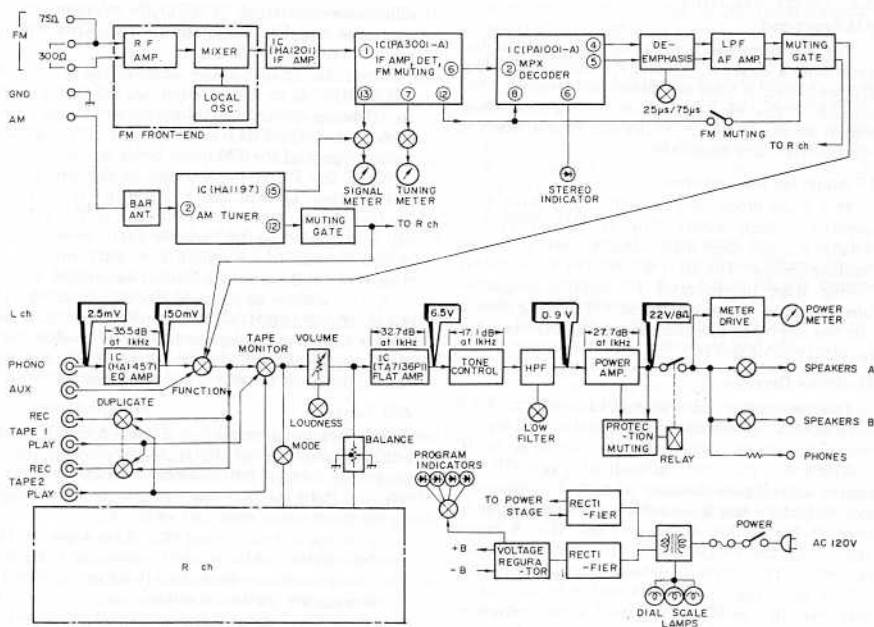
Use this switch for selecting mono or stereo performances.

STEREO: Set to this position for normal stereo operation.

MONO: When set to this position, the left and right channel signals will be mixed and reproduced monophonically from both speaker systems.



3. BLOCK DIAGRAM



4. CIRCUIT DESCRIPTIONS

4.1 TUNER SECTION

FM Front-end

The FM front-end consists of a 3-ganged tuning capacitor, a dual-gate MOS FET equipped 1-stage RF amplifier, a local oscillator and a mixer. The output of the local oscillator (a modified Clapp circuit employing a single transistor) is applied to the base of mixer transistor.

IF Amplifier and Detector

This stage made up of two ICs, and three dual-element ceramic filters. The IC (HA1201) constitutes a single-stage differential amplifier current-limiting limiter. The IC (PA3001-A) in the following stage incorporates IF amplifiers, quadrature detector, meter drive and FM muting circuit, etc. See the block diagram on page 31 for the internal structure of this IC.

Multiplex Decoder

The sub-carrier generator (PLL system), NFB demodulator, automatic pilot canceller, and stereo/mono automatic switch are also built in an IC (PA1001-A). With the addition of a few CR elements, a multiplex decoder of high S-N ratio and low distortion has been achieved. (Again, refer to page 31 for further details of this IC). A major feature of the PA1001-A is the automatic pilot canceller. This circuit detects the level of the 19kHz pilot signal, and automatically adjusts to that level to cancel out the pilot signal completely. This has made the designing of the low-pass filter in the following stage very much easier, and has further extended the frequency response at the high end.

The output signal from the multiplex decoder is passed on via the de-emphasis circuit and AF amplifier (which serves as both low-pass filter and crosstalk canceller) to the FM muting gate.

FM Muting Circuit

The FET gate circuit connected to the output of the FM tuner serves as a muting circuit which eliminates unwanted FUNCTION selector switching noise and FM interstation noise. This muting circuit is shown in Fig. 1.

When the FUNCTION selector switch is at AUX, PHONO or AM position, Q_1 will turn on due to +B being applied to its base via the FUNCTION switch, and Q_2 (FET) being turned off, and the output signal of the FM tuner being muted.

When the FUNCTION switch is changed to the FM position, Q_1 will turn off due to +B being not applied to its base. The potential at the gate of Q_2 will consequently increase (at a speed determined by the C_1 , R_1 time constant) until Q_2 is turned on, and muting condition terminated.

A DC voltage appears at No.12 pin of the IF Amp IC (PA3001-A) whenever there is more than $\pm 70\text{kHz}$ detuning, or the input level is very weak, which is applied to the base of Q_1 , and the output signal of the FM tuner being muted.

AM Tuner

The AM tuner employs a 2-ganged tuning capacitor coupled to an IC (HA1197) which incorporates a 1-stage RF amplifier, 2-stage IF amplifier and detector. See the block diagram on page 31 for the internal structure of this IC.

Q_1 of the output circuit (Fig. 2) is a special AM muting circuit. This circuit is operated until the AM tuner stabilizes immediately after the FUNCTION selector switch has been set to the AM position. The instant the FUNCTION selector switch is set to AM position, +B is supplied to R_1 , through C_1 , and the base of Q_1 is forward biased. Consequently, Q_1 is turned on, the AM output signal is shorted to during the time constant of C_1 , R_1 .

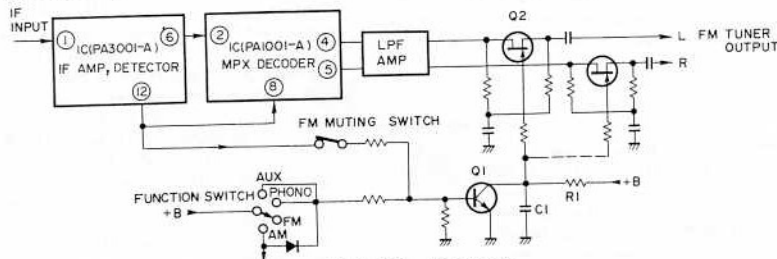


Fig. 1 FM muting circuit

4.2 AUDIO SECTION

Phono Equalizer Amplifier

This circuit is an NFB type equalizer, with one IC (HA1457) in both L and R channels. This IC is low noise type, and gives an open loop gain of 82dB.

The main performance specifications for this circuit include a voltage gain of 35.5dB (at 1kHz), a phono dynamic margin or overload level of 200mV (RMS, at 1kHz, with 0.05% total harmonic distortion), and PHONO equalization within $\pm 0.2\text{dB}$ (20–20,000Hz).

Tone Control Circuit

A CR-type tone control circuit is used in this unit. The signal is amplified to necessary level by the Flat amplifier (IC) with voltage gain of about 31.4dB in front of the control circuit.

When BASS and TREBLE controls are at center position, the tone control networks are automatically switched out of the signal path in order to provide perfectly flat frequency response.

Power Amplifier

The first stage is a differential amplifier formed by dual transistor, while the load circuit forms a current mirror circuit. The current mirror serves to make this stage operate in push-pull mode, thereby eliminating the even numbered harmonics, and doubling the gain.

The pre-driver stage is a Darlington connection, while the load circuit forms a constant-current source, thereby obtaining a high voltage gain.

The power stage is a 2-stage Darlington connection SEPP capable of delivering 60 watts per channel at 8Ω (20–20,000Hz, 0.05% THD).

Because there are no low-end time constant in the NFB circuit, amplification down to the DC region becomes possible, resulting in an outstanding low end frequency response. (Note, however, that DC inputs will be cut by the input coupling capacitor.)

The transistor in the input circuit has been designed to absorb the base current of the first stage to prevent the appearance of a DC voltage, thereby maintaining the output neutral point voltage (DC) at 0 volts.

Output Meter Drive Circuit

Fundamentally, this circuit is the same as those employed in the SA-7700 and the SA-6700. A wide meter range is obtained by compressing the dynamic range of the output signal by taking advantage of the initial portion of the diode V_F – I_F relation.

Protection Circuit

The purpose of this circuit is to protect both the speakers and the power amplifiers. The relay in the output circuit is automatically opened in any of the following cases:

1. During the "transient operations" when the power supply is turned on and off.
2. Upon detection of an overload, caused by a short circuit in the load.
3. Upon detection of a DC voltage in the output circuit, caused by component failure or accident.

The relay-activating transistor is controlled by the IC (PA3004). Fundamentally, this circuit is the same as those employed in the SA-7700.

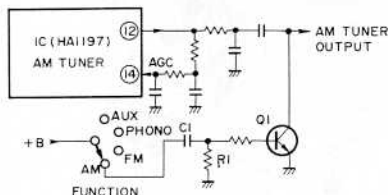


Fig. 2 AM muting circuit

5. DISASSEMBLY

Wooden Cover

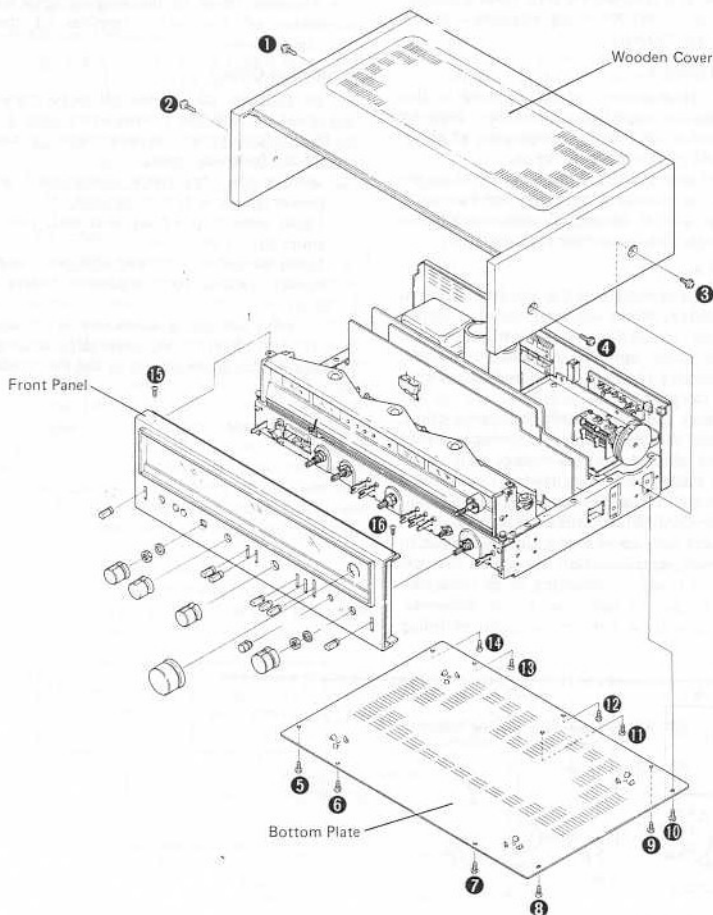
Remove the two screws on each of the wooden cover (1 - 4).

Bottom Plate

Remove the ten screws (5 - 14) to detach the bottom plate.

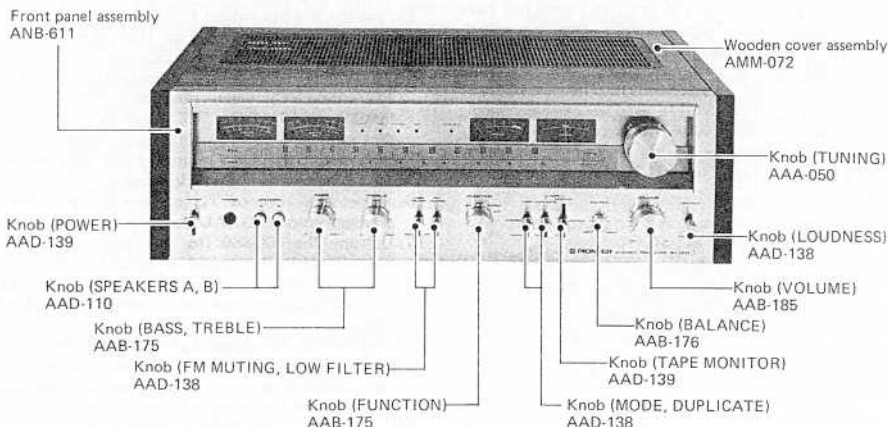
Front Panel

Remove all the knobs by pulling (excluding the push buttons). Remove the two screws (15 - 16) from the top edge of the front panel. Remove the two nuts and washers from control shafts.

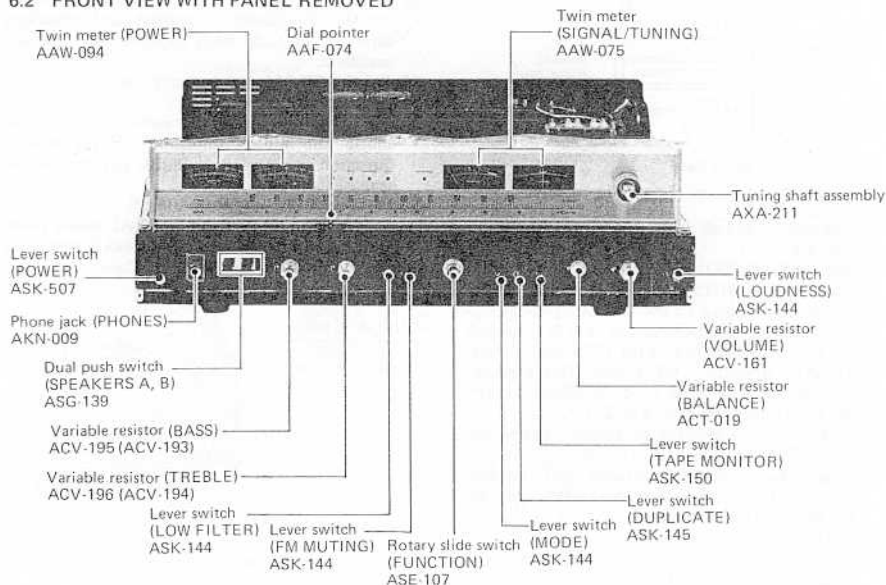


6. PARTS LOCATION

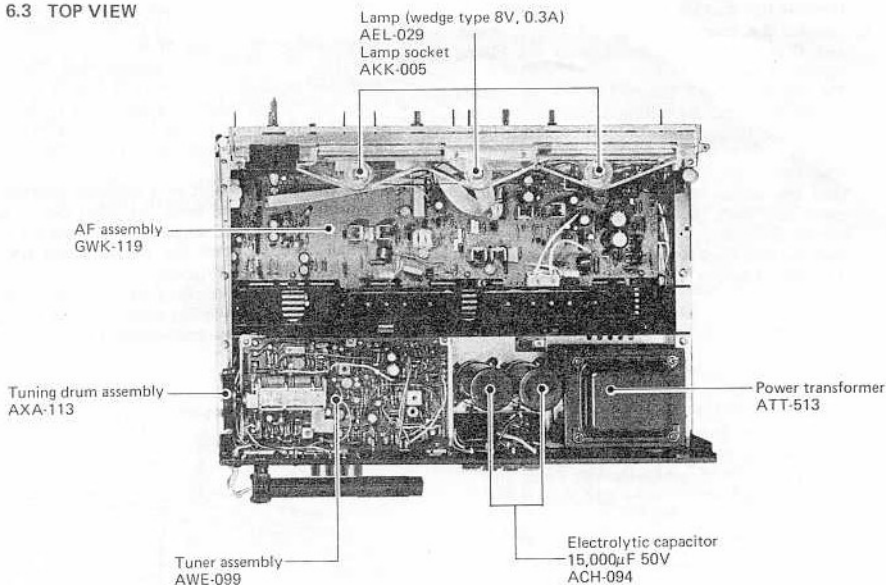
6.1 FRONT PANEL VIEW



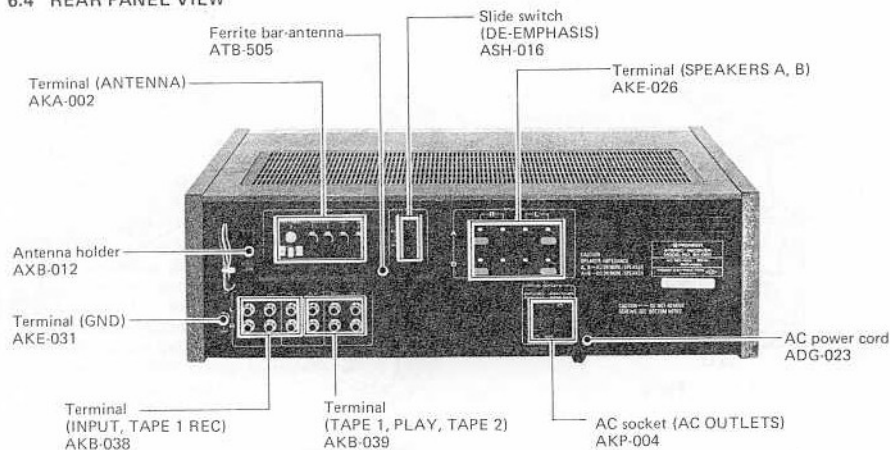
6.2 FRONT VIEW WITH PANEL REMOVED



6.3 TOP VIEW



6.4 REAR PANEL VIEW



7. DIAL CORD STRINGING

1. Remove the wooden cover and front panel.
2. Loosen the screw securing the tuning drum, and then remove the drum from the tuning capacitor shaft.
3. Tie one end of the dial cord to the peg located on the inside of the tuning drum, and lead the cord out through the cut-out section (see Fig. 4).
4. With the tuning capacitor blades turned full in, turn the tuning drum around on the tuning capacitor shaft so that the setscrew faces directly upwards.
5. Pass the dial cord around pulleys A, B and C in that order (see Fig. 7).

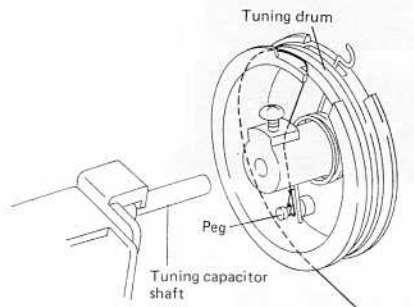


Fig. 4

6. Wind it 3 times around the tuning shaft in a clockwise direction (as viewed from the rear panel).
7. Pass the dial cord around pulley D, make 2 winds around the tuning drum.
8. Tie it to the spring hook, making sure there is sufficient tension in the cord (see Fig. 5).
9. Turn the tuning shaft back and forth to check that the dial cord moves smoothly and efficiently. Then cut off any excess dial cord remaining.
10. Turn the tuning shaft in a counter-clockwise direction (as viewed from the front panel) as far as it will go, and attach the dial pointer to the dial cord so that the pointer reads start point (87MHz) (see Fig. 6).
11. Finally apply the locking paint to the cord securing positions (tuning drum peg and spring hook) and the dial pointer connection.

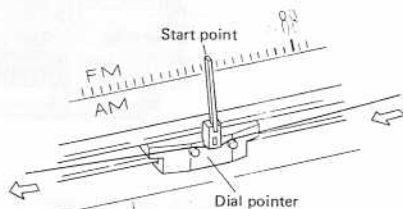


Fig. 6 Attach the pointer

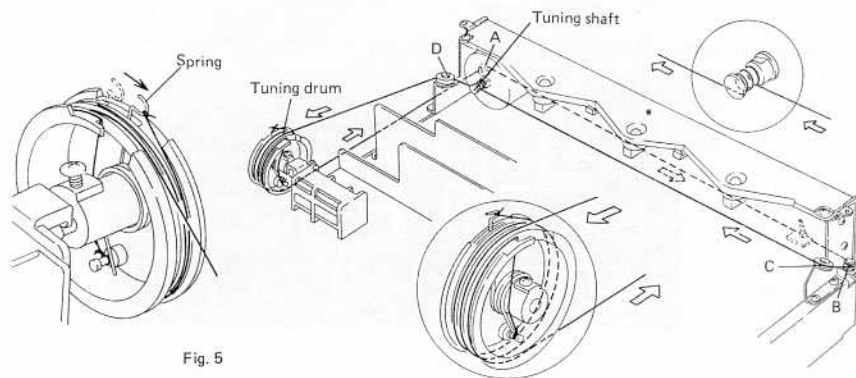


Fig. 5

Fig. 7 Dial cord stringing

8. ADJUSTMENTS

8.1 FM TUNER

Tuning coil in the FM front-end does not have an adjusting core. Consequently, tracking adjustments at 90MHz are performed by regulating the gap between the rotor and stator of the tuning capacitors (VC_1 , VC_2 , VC_3). The expression "adjust VC_1 " (VC_2 , VC_3) found in the text means that the two outer rotor blades of each of these tuning capacitors are to be extended outwards with spatula (Part No.: GGG-066) as shown in Fig. 8).

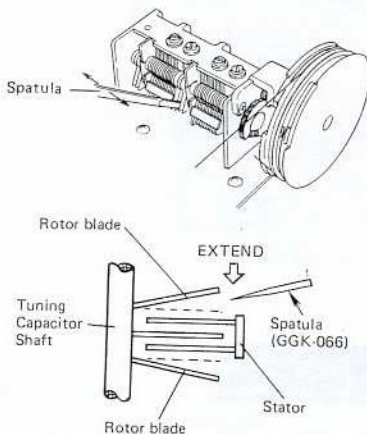


Fig. 8 Adjustment of the tuning capacitor

1. Connect the test instruments as shown in Fig. 10.
2. Set the FUNCTION switch to FM.
3. Turn the FM MUTING switch to OFF.
4. Set the dial pointer of the SX-880 to 106MHz.
5. Set the FM Signal Generator (FM SG) output to 60dB at 106MHz, with 100% modulation (± 75 kHz deviation) for 400Hz. This modulation setting should be used for all the following adjustments (section 6 to 23).
6. Adjust TC_1 to give the maximum reading on the SIGNAL meter of the SX-880.
7. Adjust the primary (lower) core of T_2 so that the TUNING meter indicator needle of the SX-880 reads dead center.
8. Set the FM SG output to 15dB.
9. Adjust TC_1 and TC_2 to give the maximum reading on the SIGNAL meter.

10. Set the SX-880 dial pointer to 90MHz.
11. Set the FM SG output to 60dB at 90MHz.
12. Adjust VC_3 for maximum reading on the SIGNAL meter.
13. Set the FM SG output to 15dB.
14. Adjust VC_1 and VC_2 so that the SIGNAL meter reading reaches a maximum.
15. Alternately repeat the adjustments of VC_3 , VC_1 and VC_2 when the dial pointer is at 90MHz, and of TC_3 , TC_1 and TC_2 when the dial pointer is at 106MHz, until adjustment at the one frequency requires no further re-adjustment at the other frequency.
16. Adjust the core of T_1 to give the maximum reading on the SIGNAL meter.
17. De-tune the SX-880 (to a position at which only inter-station noise is heard), and adjust the primary (lower) core of T_2 so that the TUNING meter indicator needle reads dead center.
18. Set the FM SG output to 60dB at 98MHz.
19. Tune the SX-880 to a dial reading of 98MHz and check that the TUNING meter is reading correctly at the center of meter scale.
20. Adjust the secondary (upper) core of T_2 to give a minimum level of distortion.
21. Repeat the steps detailed in section 17 to 20 for the adjustment of primary and secondary cores of T_2 until both requirements are fully satisfied.
22. Set the SX-880 dial indication and FM SG frequency for 98MHz.
23. Turn the FM MUTING switch to ON, and check the muting threshold. If the muting threshold is more than 28dB, cut the jumper lead N (Fig. 10).
24. Set the FM SG output to 106dB.
25. Adjust VR_{11} so that the SIGNAL meter reads 4.8 (80% of the distance between 4 and 5 on the scale, see Fig. 9).

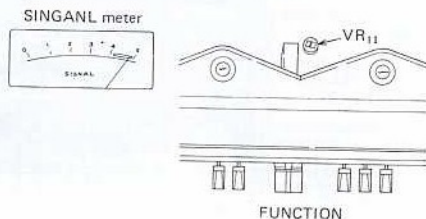


Fig. 9 SIGNAL meter calibration

Multiplex Decoder

26. Connect an Multiplex Signal Generator (MPX SG) to the external modulator terminal of the FM SG.
27. Connect the pilot signal (19kHz) output terminal of the MPX SG to the X-plates (horizontal input) of an oscilloscope, and use a probe to connect the Y-plates (vertical input) to the No. 23 terminal on the Tuner assembly.
28. Set the FM SG output to 66dB, unmodulated.
29. Adjust VR_1 to freeze the motion of the resulting Lissajous figure.

NOTE:

Lissajous figure adopts the general form shown in Figure 11 due to the fact that the MPX SG 19kHz pilot signal output is a sine wave, and the No. 23 terminal carries a 76kHz saw-tooth wave as determined by the adjustment of VR_1 .

30. Turn the FM SG modulation mode setting to external modulation.
31. Set the MPX SG to pilot signal (19kHz) only ($\pm 7.5\text{kHz}$ deviation).
32. Adjust VR_2 so that an AC voltmeter (REC terminal) shows minimum reading (19kHz leak).
33. Adjust the MPX SG modulation setting to 1kHz, L+R, 90% modulation ($\pm 67.5\text{kHz}$ deviation), with 10% pilot modulation ($\pm 7.5\text{kHz}$ deviation).
34. Adjust the core of T_1 for minimum distortion in the 1kHz demodulated output from L or R channel.

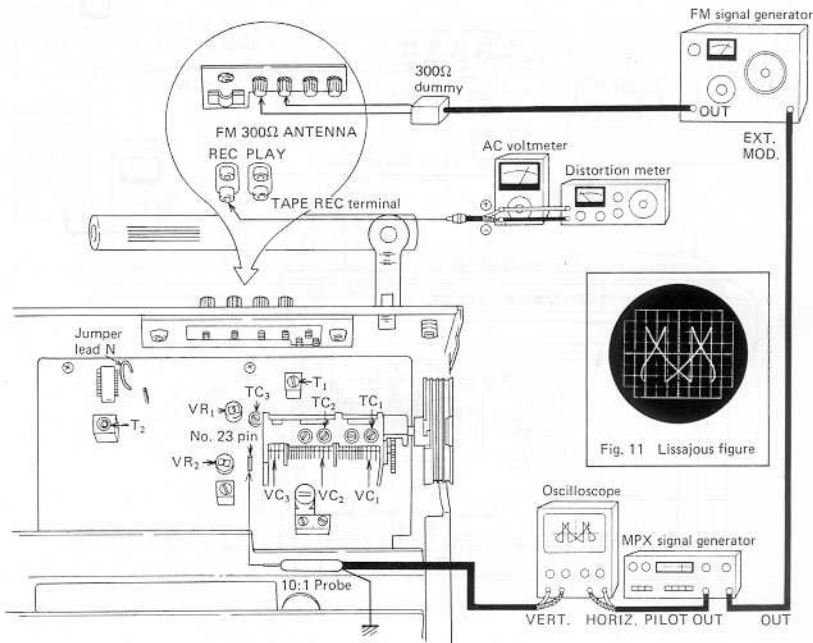


Fig. 10 Connection diagram for FM tuner adjustment

Fig. 11 Lissajous figure

8.2 AM TUNER

1. Connect the test instruments as shown in Fig. 12.
2. Set the FUNCTION switch to AM.
3. Set the AM Signal Generator (AM SG) for 400Hz 30% modulation 100dB output.
4. Set the SX-880 dial indication and AM SG frequency for 600kHz.
5. Adjust T_3 core for maximum reading on an AC voltmeter.
6. Set the SX-880 dial indication and AM SG frequency for 1400kHz.
7. Adjust TC_4 for maximum reading on an AC voltmeter.

8. Set the AM SG for 30dB output.
9. Set the SX-880 dial indication and AM SG frequency for 600kHz.
10. Adjust T_3 and the bar-antenna core for maximum reading on an AC voltmeter.
11. Set the SX-880 dial indication and AM SG frequency for 1400kHz.
12. Adjust TC_4 and TC_5 for maximum reading on an AC voltmeter.
13. Repeat steps 9 to 12 alternately, until adjustment at the one frequency requires no further re-adjustment at the other frequency.
14. Adjust F_5 core to give the maximum reading on an AC voltmeter.

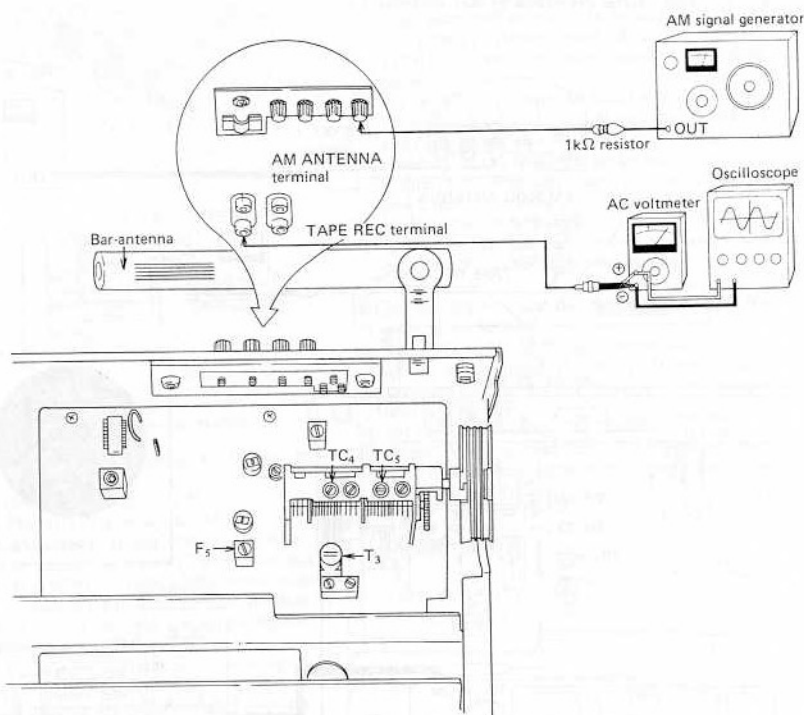


Fig. 12 Connection diagram for AM tuner adjustment

8.3 POWER AMPLIFIER

Turn $VR_7(L)$ and $VR_8(R)$ fully around in the counter-clockwise direction, but set $VR_5(L)$ and $VR_6(R)$ to the center positions. Without any load or input signal, turn the POWER switch ON.

DC Balance

Adjust $VR_5(L)$ and $VR_6(R)$ so that potential difference between terminals 5 (L) and 12 (R) and ground reads zero volts (to within $\pm 30mV$).

If this level cannot be attained, disconnect the jumper leads P(L) and Q(R) (or reconnect if already disconnected), and then readjust.

Idle Current

Adjust $VR_7(L)$ and $VR_8(R)$ so that the potential difference between the plus(+) terminals 8 (L) and 14 (R), and the minus (-) terminals 10 (L) and 16 (R) reads 30mV (or at least in the 20 to 40mV range).

After passing a current for about 10 minutes, check these voltage readings again.

Output Meter Calibration

1. Set the SPEAKERS A switch to ON, and connect an AC voltmeter to the SPEAKERS A terminals.
2. Set the BASS and TREBLE controls to the flat (center) position.
3. Set the FUNCTION switch to the AUX position, and apply a 1kHz, 150mV signal to the input terminals.
4. Adjust the VOLUME control for an AC voltmeter reading of 21.9V.
5. Adjust $VR_9(L)$ and $VR_{10}(R)$ for reading of 60W (0dB) at the output meter under this condition.

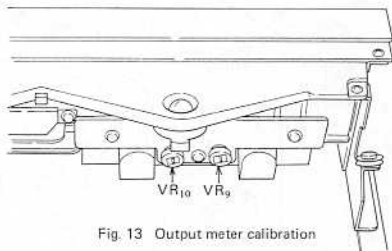


Fig. 13 Output meter calibration

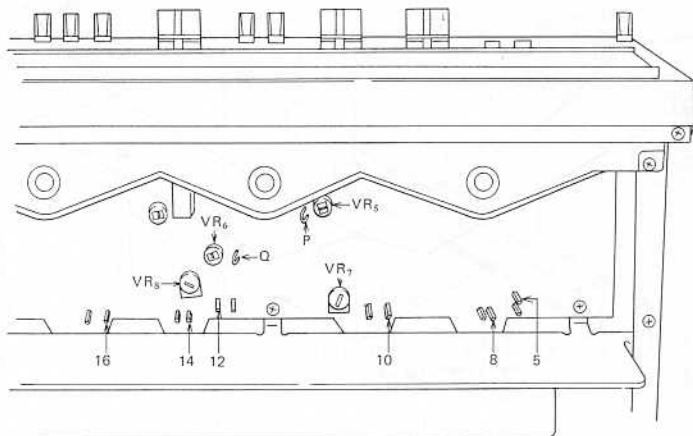
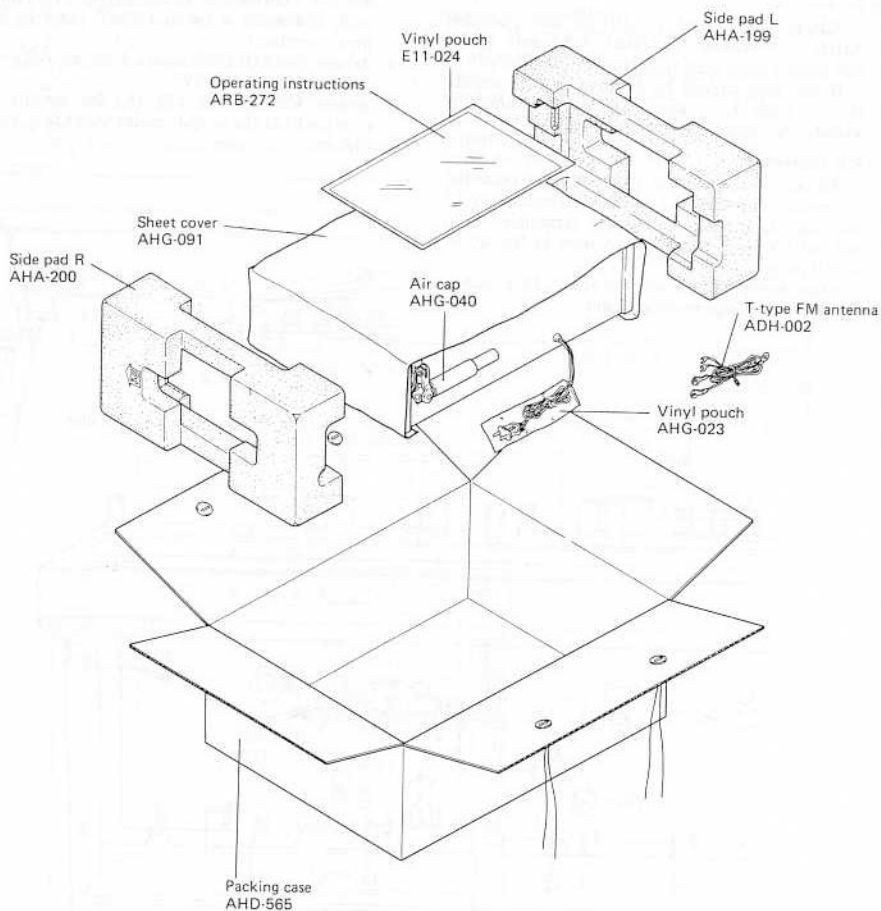


Fig. 14 Power amplifier adjustment

9. PACKING



10. EXPLODED VIEW

Screw 4x15
ABA-209

Wooden cover assembly
AMM-072

Terminal
AKE-026

Carbon
2.2MΩ
ACN-026

Screw 4x15
ABA-209

Front panel assembly
ANB-611

Screw 3x6
ABA-064

Knob (SPEAKERS A, B)
AAD-110

Coil spring
ABH-025

Spacer

Screw 3x6
ABA-064

Knob (POWER)
AAD-139

Washer 9φ
M45-086
Nut M9
B71-004

Knob (BASS, TREBLE)
AAB-175

Knob (FM MUTING, LOW FILTER)
AAD-138

Knob (FUNCTION)
AAB-175

Knob (TUNING)
AAA-050

Knob (TAPE MONITOR)
AAD-139

Knob (BALANCE)
AAB-176

Knob (VOLUME)
AAB-185

Knob (MODE, LOUDNESS,
DUPLICATE)
AAD-138


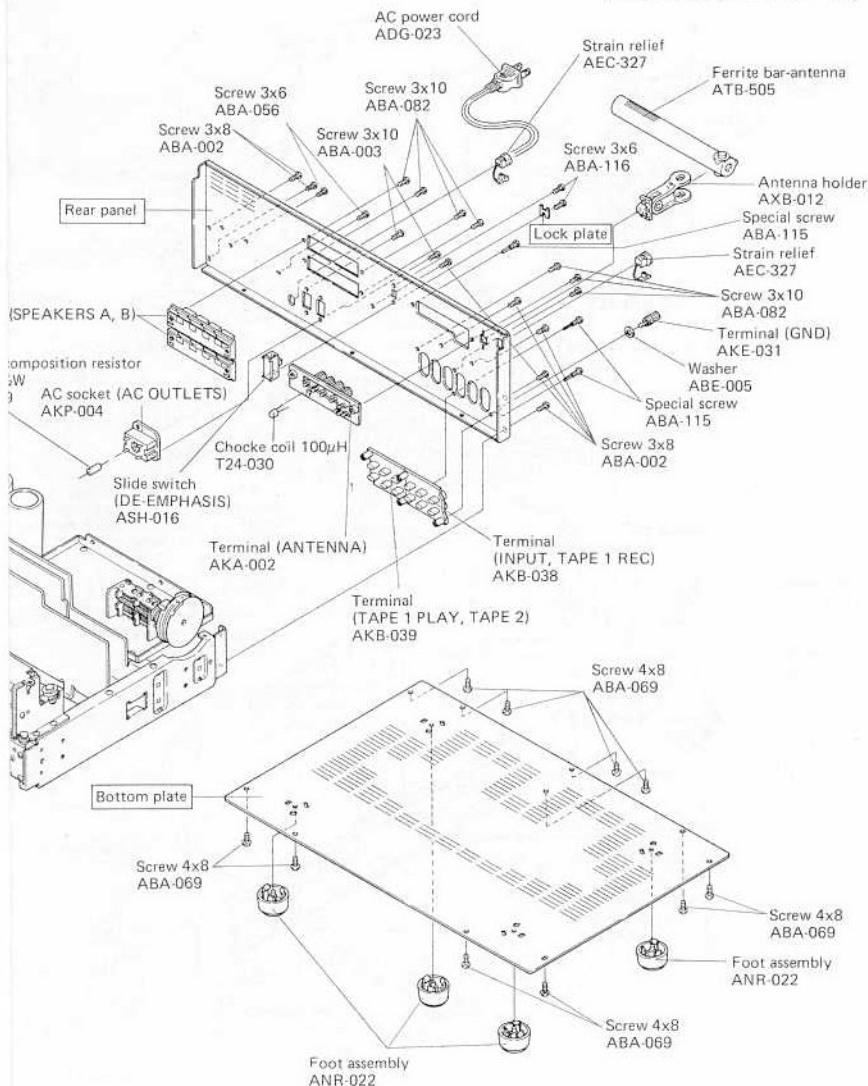
Washer 9φ
M45-086
Nut M9
B71-004

4

5

6

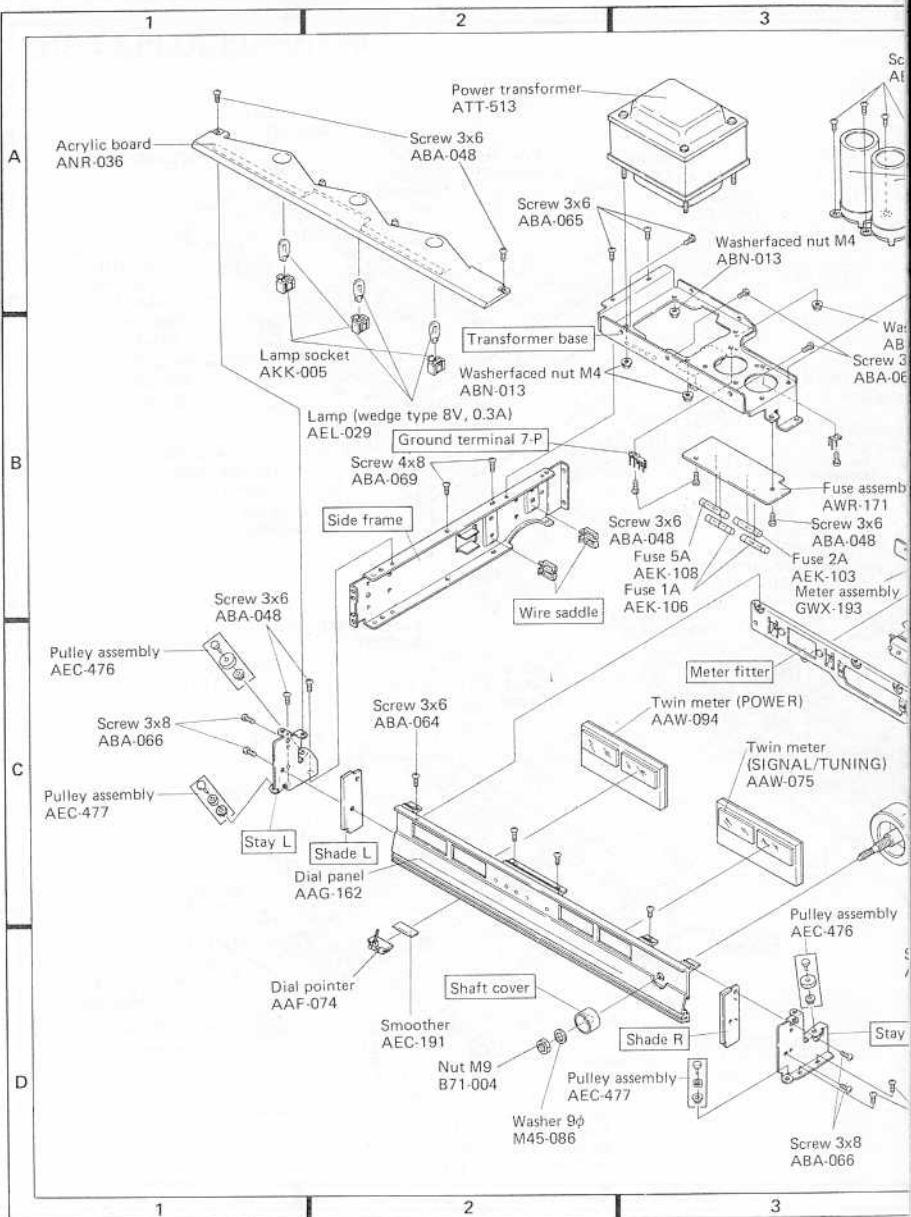
NOTE:

 marked parts cannot be supplied.


4

5

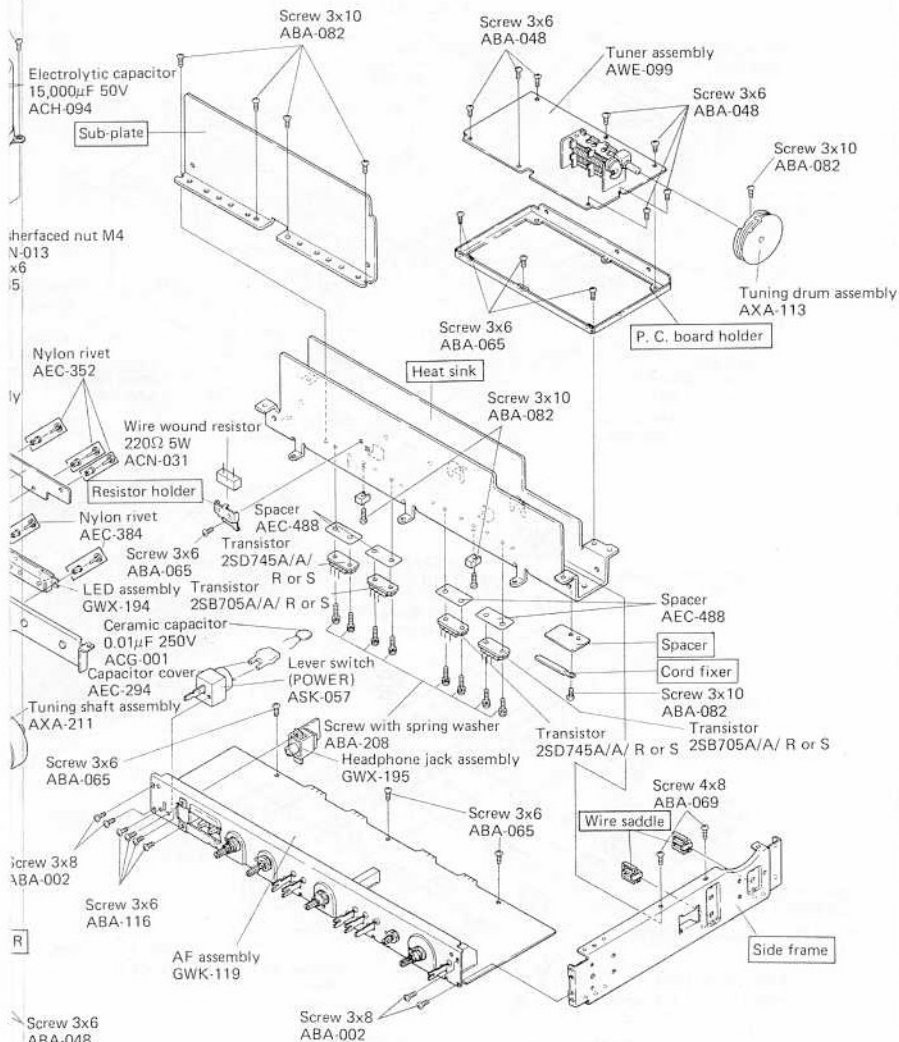
6



rew 3x6
3A-048

NOTE:

marked parts cannot be supplied.



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

11.1 MISCELLANEA

Miscellaneous Parts

NOTE:

When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω 56 × 10¹ 561 RD¼PS 561 J

47kΩ 47 × 10³ 473 RD¼PS 473 J

0.5Ω 0R5 RN2H 0R5 K

1Ω 010 RSIP 010 K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ 562 × 10¹ 5621 RN¼SR 5621 F

SWITCHES

Part No.	Symbol & Description
ASH-016	S10 Slide (DE-EMPHASIS)
ASK-057	S11 Lever (POWER)

TRANSFORMER AND COILS

Part No.	Symbol & Description
ATB-505	T1 Ferrite bar-antenna
ATT-513	T2 Power transformer
T24-030	L1 Choke coil 100μH

CAPACITORS

Part No.	Symbol & Description
ACG-001	C1 Ceramic 0.01/250V
ACH-094	C2, C3 Electrolytic 15,000/50V

RESISTORS

Part No.	Symbol & Description
ACN-031	R1 Wire wound 220/5W
ACN-029	R2 Carbon composition 2.2M/¼W

LAMPS AND FUSES

Part No.	Symbol & Description
AEL-029	PL1—PL3 Lamp (wedge type 8V,0.3A)
AEK-103	FU1 Fuse 2A
AEK-106	FU2, FU3 Fuse 1A
AEK-108	FU4 Fuse 5A

P.C. BOARD ASSEMBLIES

Part No.	Description
GWK-119	AF assembly
AWE-099	Tuner assembly
AWR-171	Fuse assembly
GWX-194	LED assembly
GWX-193	Meter assembly
GWX-195	Headphone jack assembly

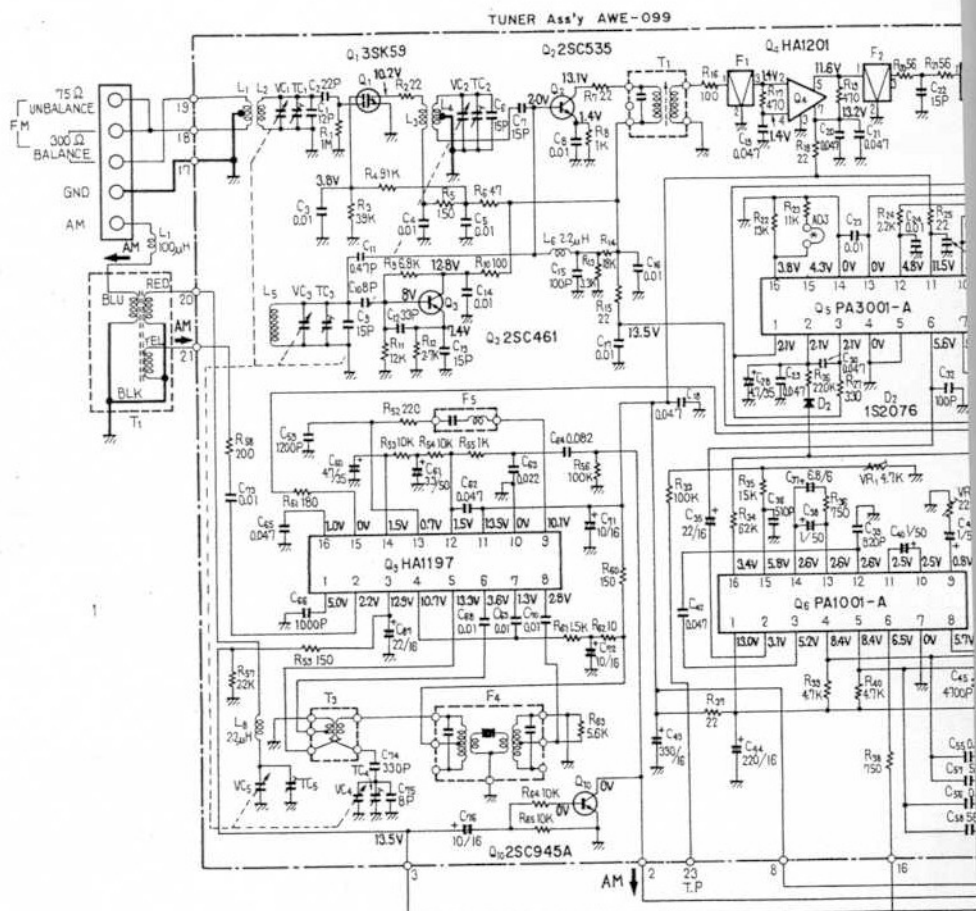
OTHERS

Part No.	Description
AAW-094	Twin meter (POWER)
AAW-075	Twin meter (SIGNAL/TUNING)
ADG-023	AC power cord
AKB-038	Terminal (INPUT, TAPE 1 REC)
AKB-039	Terminal (TAPE 1 PLAY, TAPE 2)
AKE-026	Terminal (SPEAKERS A, B)
AKE-031	Terminal (GND)
AKP-004	AC socket (AC OUTLETS)
AKK-005	Lamp socket

SEMICONDUCTORS

Part No.	Symbol & Description
2SD745A/A - R or S	Q1, Q2
2SB705A/A - R or S	Q3, Q4

11.2 SCHEMATIC DIAGRAM



SWITCHES:

S ₁	FUNCTION
1	AM
2	FM
3	PHONO
4	AUX
S ₂	TAPE MONITOR 1 - SOURCE - 2
S ₃	TAPE DUPLICATE OFF - ON
S ₄	MODE STEREO - MONO

S ₅	LOUDNESS OFF - ON
S ₆	LOW FILTER OFF - 15Hz
S ₇	PROTECTION RELAY OFF - ON
S _{8-a}	SPEAKER A OFF - ON
S _{8-b}	SPEAKER B OFF - ON

S ₉	FM MUTING ON - OFF
S ₁₀	DE-EMPHASIS 75μs - 25μs
S ₁₁	POWER OFF - ON

RESISTORS:

IN OHM 1/4W ±5% TOL
(F) : ±1% TOLERANCE

CAPACITORS:

IN μF UNLESS OTHERWISE SPECIFIED

⎓ : SIGNAL VOLT.
V : DC VOLTAGE
⎓A : DC CURRENT
(V) : DC VOLTAGE

This is the basic schematic diagram, but the may vary due to improvements in design.

The Δ mark found on some component pa importance of the safety factor of the part replacing, be sure to use parts of identical



7

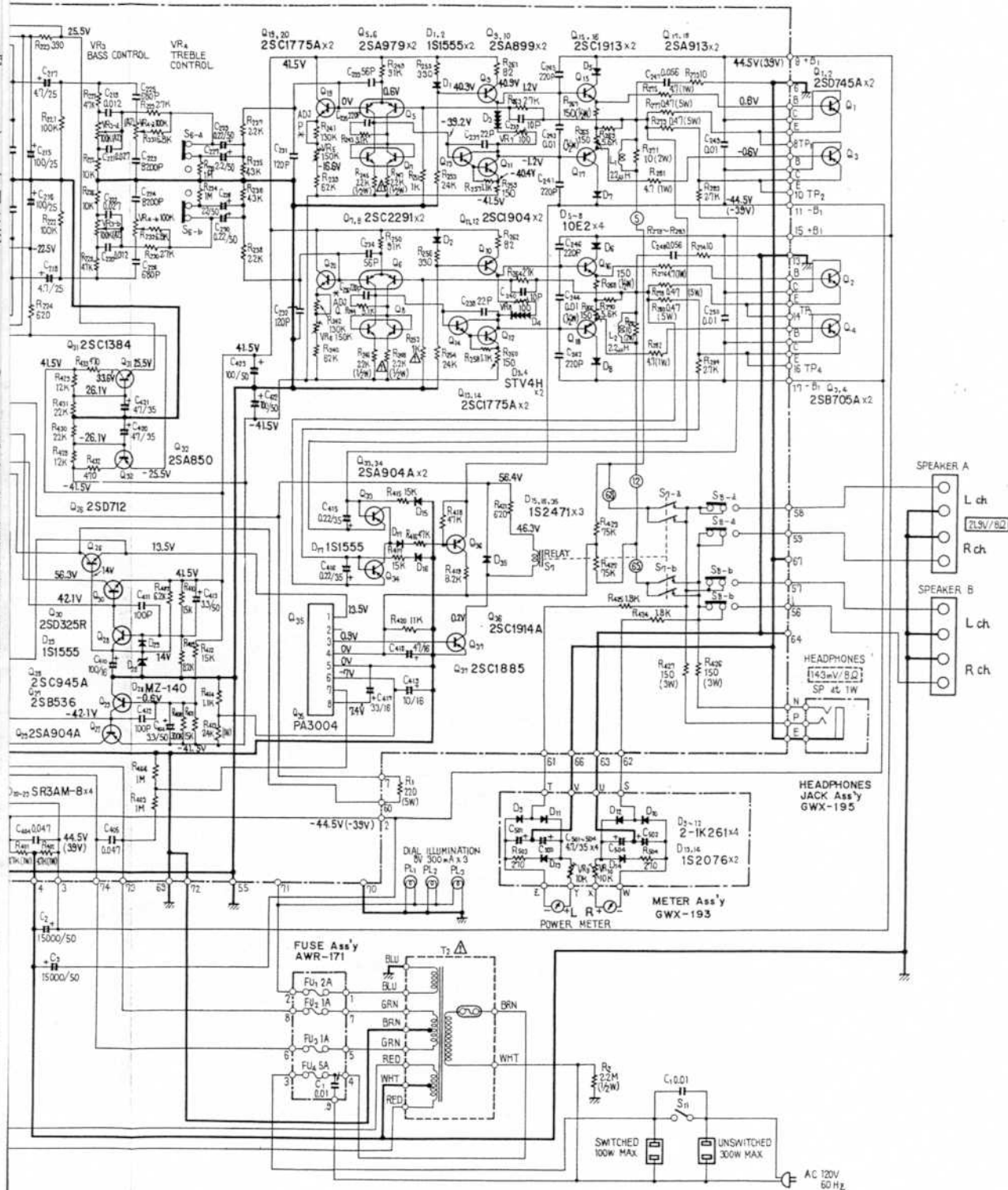
8

9

NOTE:

The indicated semiconductors are representative only. Other alternative semiconductors may be used and are listed in the parts list.

C-119



7

8

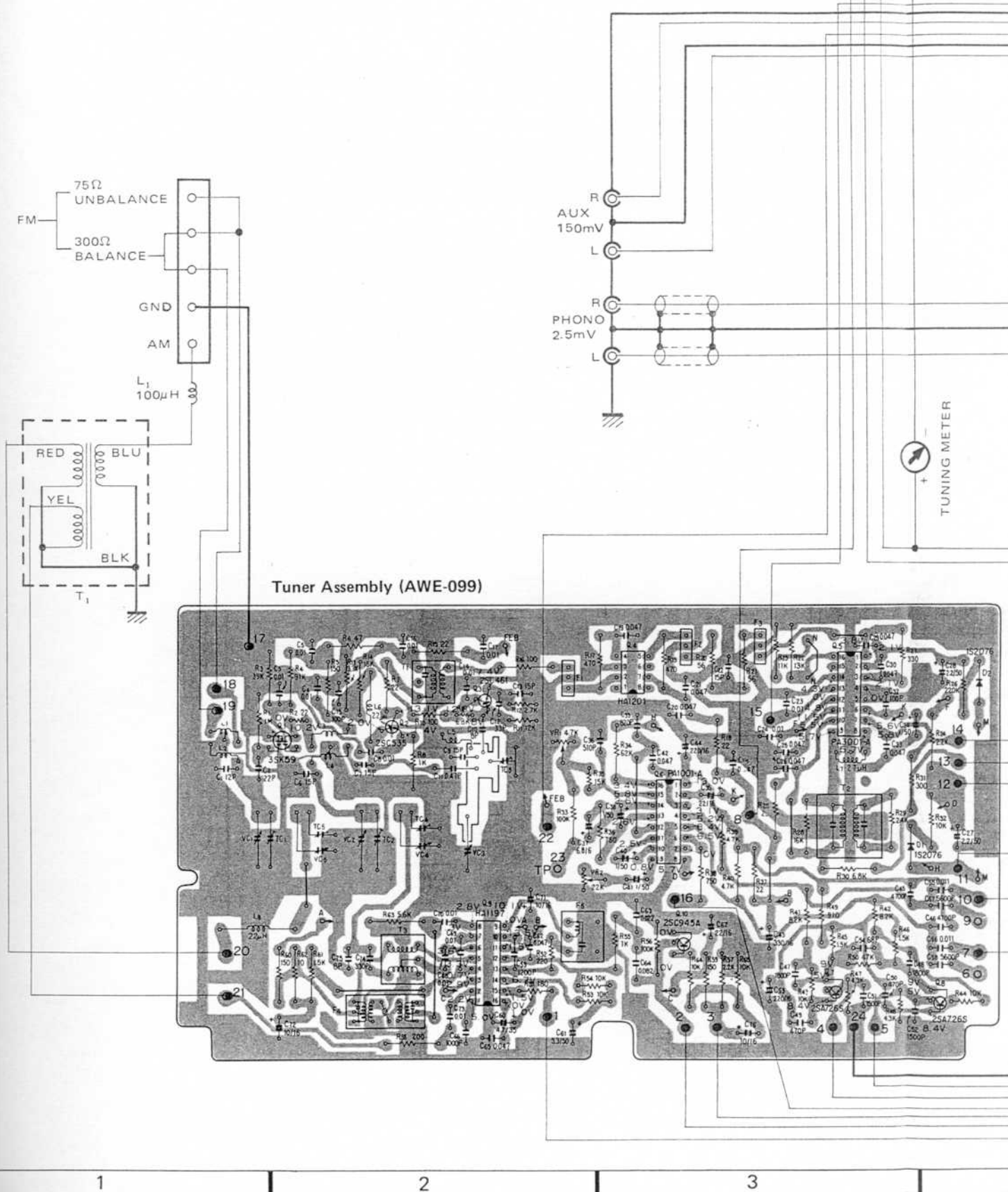
9

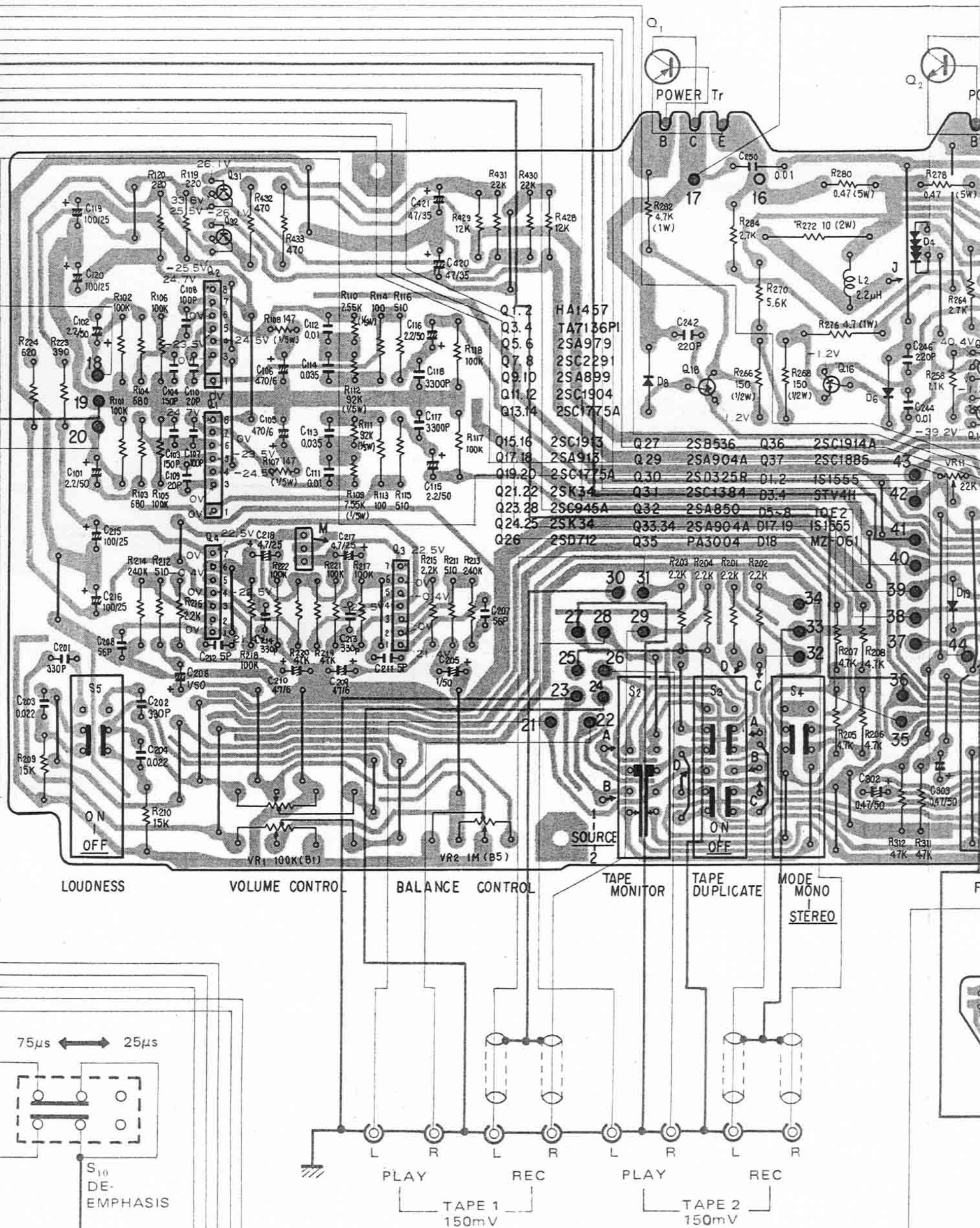
1

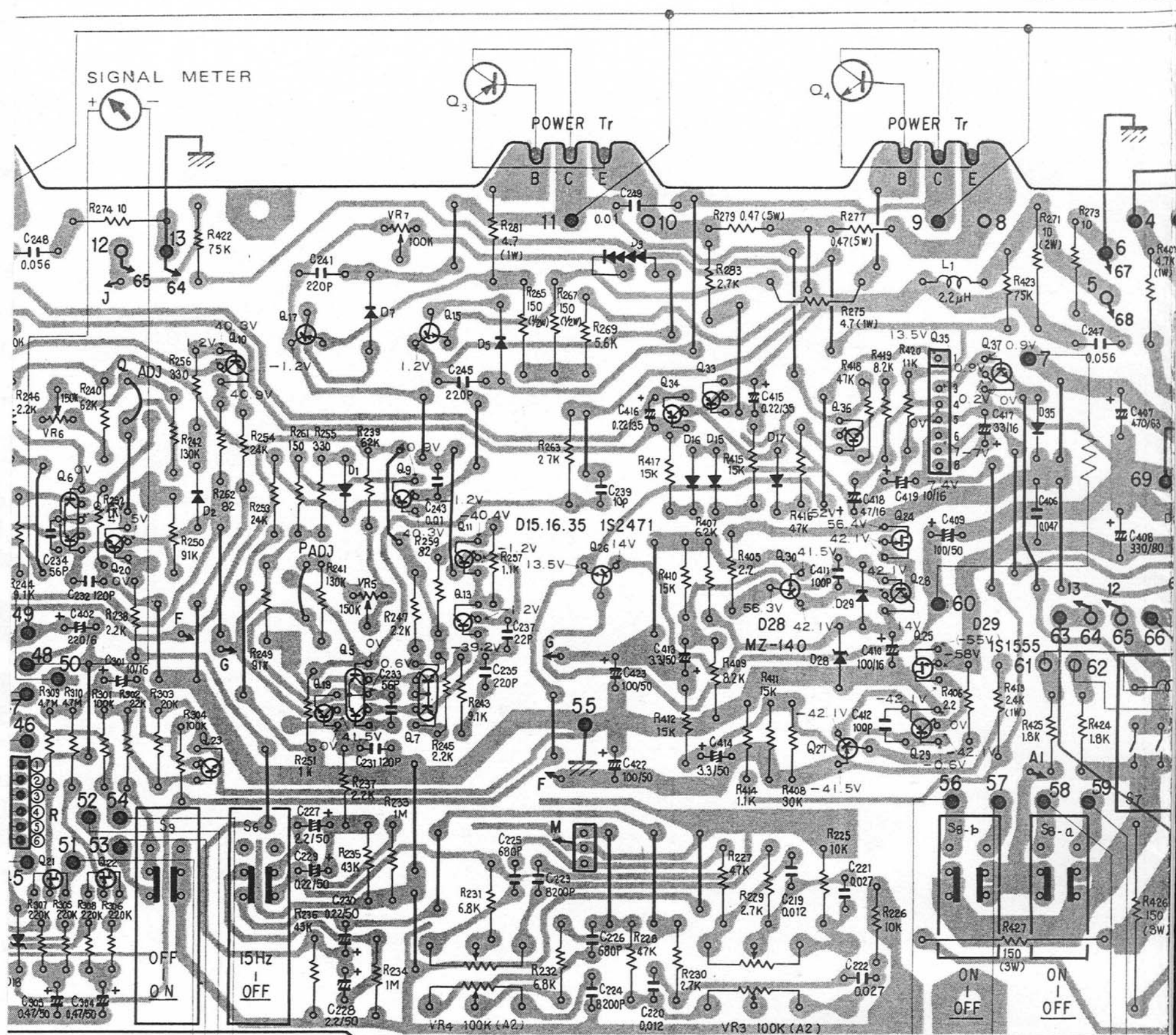
2

3

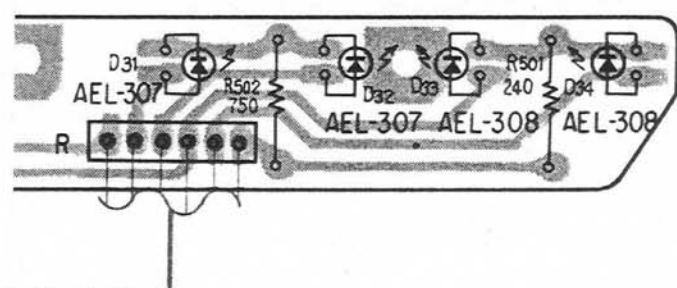
11.3 P.C. BOARD CONNECTION DIAGRAM





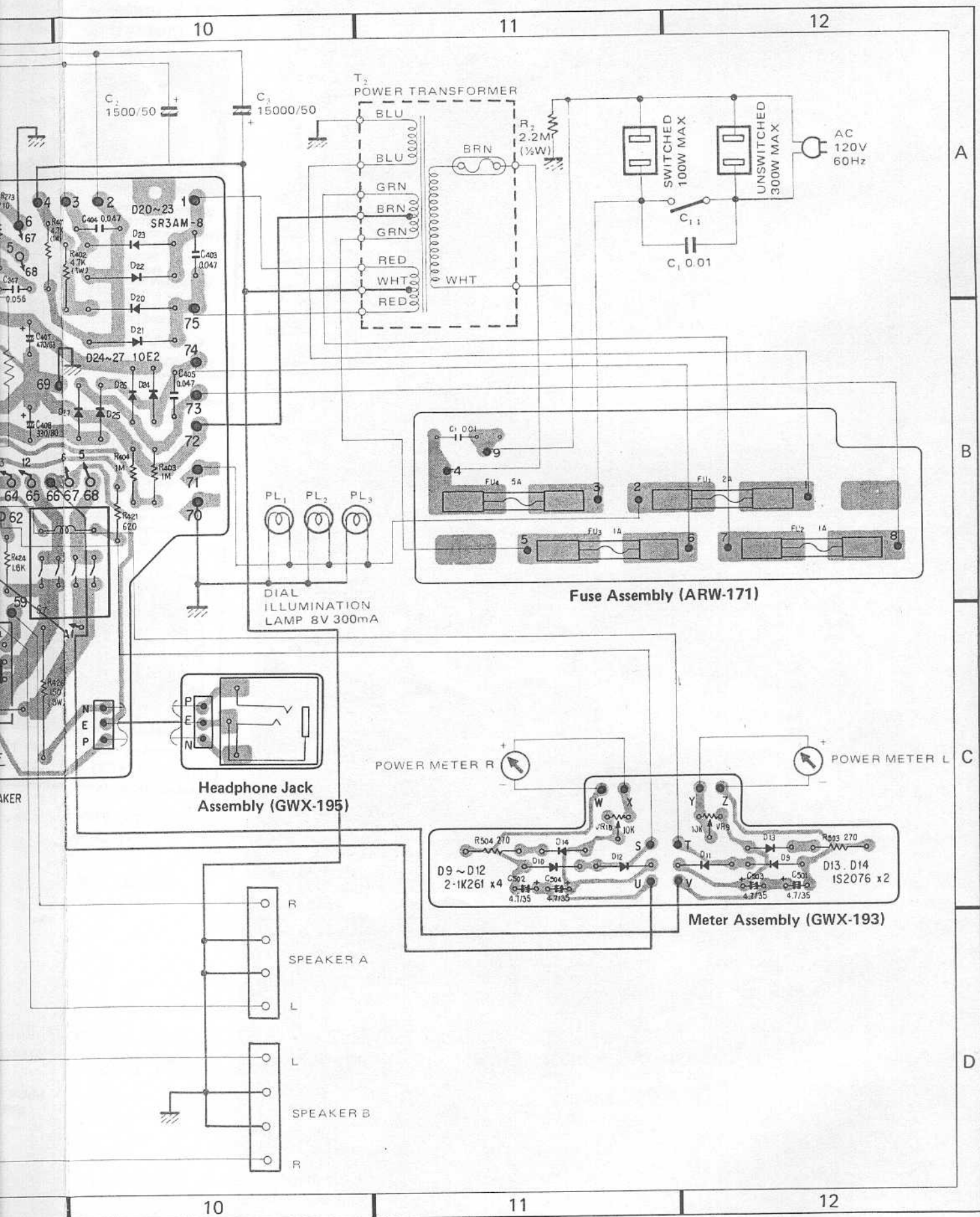


ED Assembly (GWX-194)



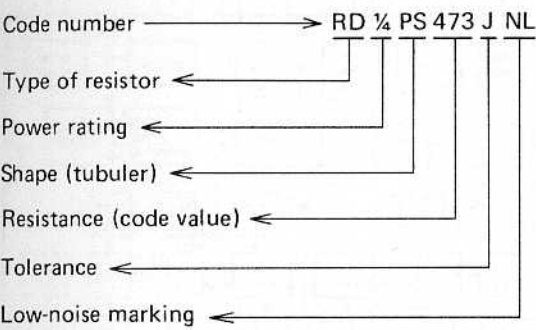
Q1.2	HA1457	Q27	2SB536
Q3.4	TA7136P1	Q29	2SA904A
Q5.6	2SA979	Q30	2SD325R
Q7.8	2SC2291	Q31	2SC1384
Q9.10	2SA899	Q32	2SA850
Q11.12	2SC1904	Q33.34	2SA904A
Q13.14	2SC1775A	Q35	PA3004
Q15.16	2SC1913	Q36	2SC1914A
Q17.18	2SA913	Q37	2SC1885
Q19.20	2SC1775A	D1.2	1S1555
Q21.22	2SK34	D3.4	STV4H
Q23.28	2SC945A	D5~8	10E2
Q24.25	2SK34	D17.19	1S1555
Q26	2SD712	D18	MZ-061

AF Assembly (GWK-119)



RESISTANCE VALUE CODES

Code numbers of resistors used in Pioneer equipment are expressed in the following way:—



Furthermore, in the list of parts found in the Service Manual, the resistance (code value) part of the above code number is expressed as □□□ or □□□□.

Resistors included in the Service Manual list of parts

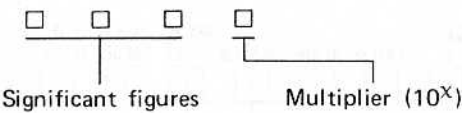
Ex. RD 1/4 PS □□□ JNL

When ordering resistor components, first ascertain the actual resistance value from the circuit diagram, and then convert it into code no. form as shown in the following examples.

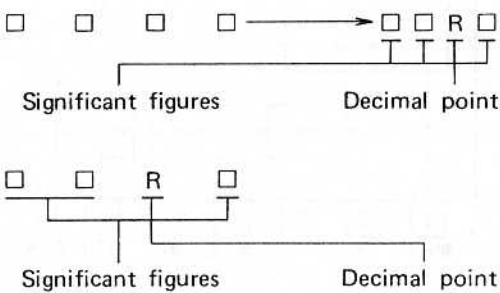
For further details on code numbers, refer to "Tuning Fork" VOL. 1.

Ex. 1 For □□□□ Codes

* General resistors



* Resistors with fractional values

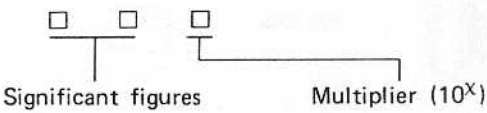


Ex. 1

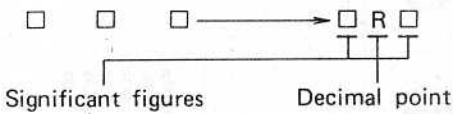
Nominal resistance (Ω)	Significant figure (two figures)	Multiplier (10 ^X)	Resistance value code
5.1	510	.....	5R10
5.62	562	.....	5R62
10	100	.....	10R0
22.5	225	.....	22R5
110	110	x10 ⁰	1100
1k (1000)	100	x10 ¹	1001
1.56k (1560)	156	x10 ¹	1561
10k (10000)	100	x10 ²	1002
33.6k (33600)	336	x10 ²	3362
112k (112000)	112	x10 ³	1123
1M (1000000)	100	x10 ⁴	1004
1.56M (1560000)	156	x10 ⁴	1564

Ex. 2 For □□□ Codes

* General resistors



* Resistors with fractional values



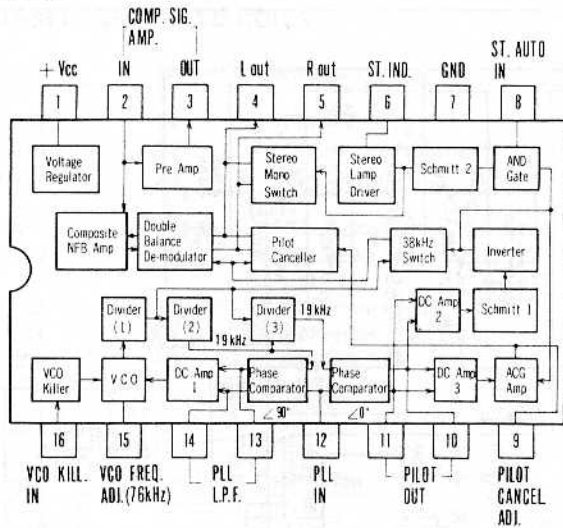
Ex. 2

Nominal resistance (Ω)	Significant figure (two figures)	Multiplier (10 ^X)	Resistance value code
0.5	01	.....	0R5
1.5	15	.....	1R5
1	01	x10 ⁰	010
22	22	x10 ⁰	220
330	33	x10 ¹	331
1k (1000)	10	x10 ²	102
5.6k (5600)	56	x10 ³	562
68k (68000)	68	x10 ³	683
820k (820000)	82	x10 ⁴	824
1M (1000000)	10	x10 ⁵	105
2.2M (2200000)	22	x10 ⁵	225

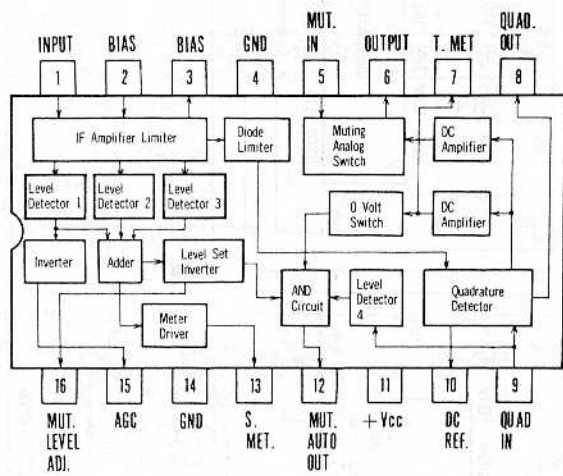
Block Diagram of ICs

External Appearance of Transistors and ICs

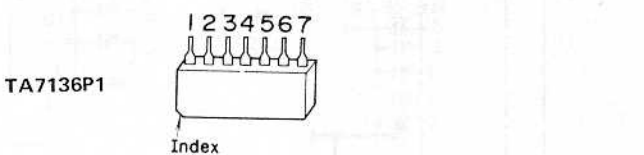
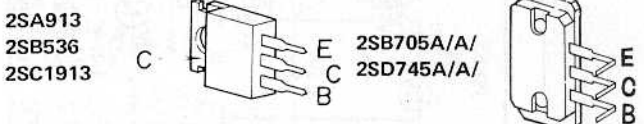
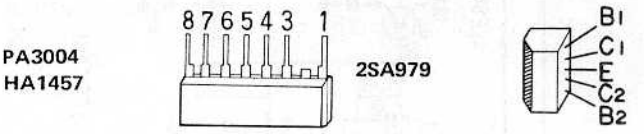
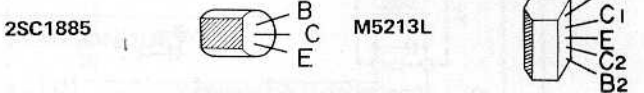
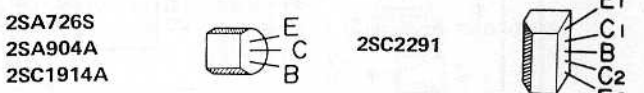
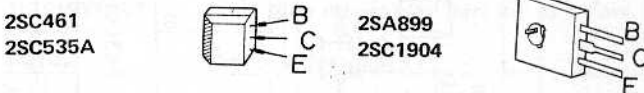
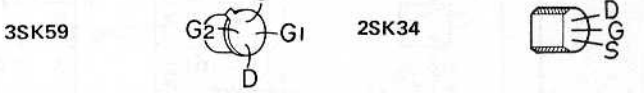
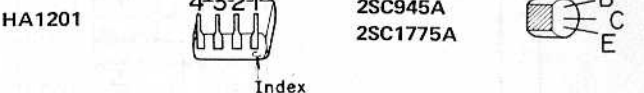
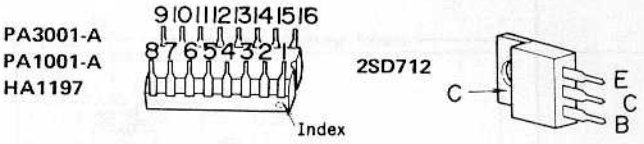
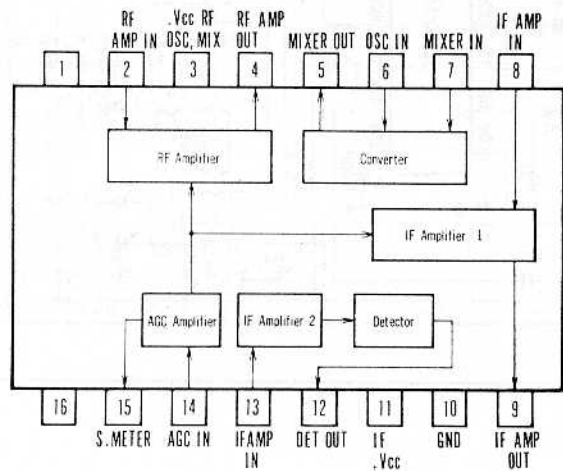
PA1001-A



PA3001-A



HA1197





Parts List of Tuner Assembly (AWE-099)
TRANSFORMERS AND COILS

Part No.	Symbol & Description	
ATE-039	T1	FM IFT
ATE-040	T2	FM det. transformer
ATB-013	T3	AM osc. coil
T24-028	L6, L8	RF choke coil 2.2μH
ATH-022	L7	RF choke coil 27μH
ATF-053	F1—F3	FM ceramic filter
ATF-034	F4	AM ceramic filter
ATF-038	F5	455 kHz BPF

CAPACITORS

Part No.	Symbol & Description	
ACK-012	VC	Tuning capacitor
ACM-006	TC3	Ceramic trimmer
CCDUJ 120K 50	C1	
CCDSL 220K 50	C2	
CKDYF 103Z 50	C3—C5, C8, C14, C16, C17, C23, C24	
CKDYF 103Z 50	C68—C70, C73	
CCDUJ 150K 50	C6	
CCDSL 150K 50	C7, C22	
CCDRH 150K 50	C9	
CCDSH 080F 50	C10	
CGB R47K 500	C11	
CCDCH 330K 50	C12	
CCDCH 150K 50	C13	
CCDSL 101K 50	C15, C32	
CKDYF 473Z 50	C18—C21, C25, C26, C29, C30, C33	
CKDYF 473Z 50	C62, C65	
CEA 2R2P 50	C27	
CEA 010P 50	C34, C41	
CEA 220P 16	C35, C67	
CQSH 511J 50	C36	
CSZA 6R8M 6	C37	
CEANL 010P 50	C38, C40	
CKDYB 821K 50	C39	
CQMA 473K 50	C42	
CEA 331P 16	C43	
CEA 221P 16	C44, C53	
CKDYA 472J 50	C45, C46	
CKDYB 182K 50	C47, C48	
CKDYB 471K 50	C49, C50	
CKDYB 152K 50	C51, C52	
CCDSL 680K 50	C54	

Part No.	Symbol & Description	
CQMA 113J 50	C55, C56	
CKDYA 562J 50	C57, C58	
CKDYB 122K 50	C59	
CEA 4R7P 35	C60, C28	
CEA 3R3P 50	C61	
CKDYF 223Z 50	C63	
CQMA 823K 50	C64	
CKDYB 102K 50	C66	
CEA 100P 16	C71, C72, C76	
CQSH 331J 50	C74	
CCDXL 080F 50	C75	

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

RESISTORS

Part No.	Symbol & Description	
RD¼PS □□□ J	R1, R3—R8, R13—R34, R36—R41, R49	
RD¼PS □□□ J	R55—R65	
RD¼VS □□□ J	R2, R9—R12, R42—R48, R50—R54	
RN¼SQ □□□□ F	R35	
ACP-018	VR1	Semi-fixed 4.7k-B
ACP-056	VR2	Semi-fixed 22k-B

SEMICONDUCTORS

Part No.	Symbol & Description	
3SK59-Y or GR	Q1	
2SC535-A	Q2	
2SC461-B	Q3	
HA1201	Q4	
PA3001-A	Q5	
PA1001-A	Q6	
2SA726S-F or G (2SA750-E or F)	Q7, Q8	
HA1197	Q9	
2SC945A-R or Q (2SC1914A-F)	Q10	
1S2076 (1S1555) (1S2473)	D1, D2	

11.5 AF ASSEMBLY (GWK-119)

Parts List

SWITCHES AND COILS

Part No.	Symbol & Description	
ASE-107	S1	Rotary slide (FUNCTION)
ASK-150	S2	Lever (TAPE MONITOR)
ASK-145	S3	Lever (DUPLICATE)
ASK-144	S4	Lever (MODE)
ASK-144	S5	Lever (LOUDNESS)
ASK-144	S6	Lever (LOW FILTER)
ASR-020	S7	Relay
ASG-139	S8	Dual push (SPEAKERS A, B)
ASK-144	S9	Lever (FM MUTING)
T63-009	L1, L2	AF choke coil 2.2 μ H

CAPACITORS

Part No.	Symbol & Description	
CEANL2R2P 50	C101, C102, C115, C116, C227, C228	
CCDSL 151K 50	C103, C104	
CEA 471P 6	C105, C106	
CCDSL 101K 50	C107, C108, C411, C412	
CCDSL 200K 50	C109, C110	
CQPA 103G 50	C111, C112	
CQPA 353G 50	C113, C114	
CQMA 332J 50	C117, C118	
CEA 101P 25	C119, C120, C215, C216	
CKDYB 331K 50	C201, C202, C213, C214	
CQMA 223K 50	C203, C204	
CEANL 010P 50	C205, C206	
CCDSL 560K 50	C207, C208, C233, C234	
CEA 470P 6	C209, C210	
CCDSL 050D 50	C211, C212	
CEANL 4R7P 25	C217, C218	
CQMA 123J 50	C219, C220	
CQMA 273J 50	C221, C222	
CQMA 822J 50	C223, C224	
CQSA 681J 50	C225, C226	
CEANL R22M 50	C229, C230	
CCDSL 121K 50	C231, C232	
CCDSL 221K 50	C235, C236	
CCDSL 220K 500	C237, C238	
CCDSL 221K 500	C241, C242, C245, C246	
CKDYF 103K 50	C243, C244	
CQMA 563K 50	C247, C248	
ACG-004	C249, C250	Ceramic 0.01/150V
CEA 100P 16	C301, C419	
CEA R47P 50	C302—C305	
CEA 010P 50	C401	
CEA 221P 6	C402	
ACG-009	C403—C406	Ceramic 0.047/150V

Part No.	Symbol & Description
CEA 471P 63	C407
CEA 331P 80	C408
CEA 101P 50	C409, C422, C423
CEA 101P 16	C410
CEA 3R3P 50	C413, C414
CSZA R22M 35	C415, C416
CEA 330P 16	C417
CEA 470P 16	C418
CEA 470P 35	C420, C421
CCDSL 100K 50	C239, C240

Note: When ordering resistors, convert the resistance value into code form and then rewrite the part no. as before.

RESISTORS

Part No.	Symbol & Description		
ACV-161	VR1	Variable (VOLUME)	
ACT-019	VR2	Variable (BALANCE)	
ACV-195	VR3	Variable (BASS)	
(ACV-193)			
ACV-196	VR4	Variable (TREBLE)	
(ACV-194)			
ACP-014	VR5, VR6	Semi-fixed	150k-B
C92-063	VR7, VR8	Semi-fixed	100-B
ACP-056	VR11	Semi-fixed	22k-B
RD $\frac{1}{4}$ PS $\square\square\square$ J	R101—R106, R113—R118, R201—R222		
RD $\frac{1}{4}$ PS $\square\square\square$ J	R225—R245, R249, R250, R253, R254		
RD $\frac{1}{4}$ PS $\square\square\square$ J	R257, R258, R263, R264, R269, R270		
RD $\frac{1}{4}$ PS $\square\square\square$ J	R283, R284, R301—R304, R309—R312		
RD $\frac{1}{4}$ PS $\square\square\square$ J	R403, R404, R407—R412, R414—R420		
RD $\frac{1}{4}$ PS $\square\square\square$ J	R422—R425, R428—R431		
RN $\frac{1}{5}$ SQ $\square\square\square\square$ F	R107, R108		
ACN-011	R109, R110	Metal film	7.55k/ $\frac{1}{5}$ W
(RN $\frac{1}{5}$ SQ 7551F)			
ACN-012	R111, R112	Metal film	92k/ $\frac{1}{5}$ W
(RN $\frac{1}{5}$ SQ 9202F)			
RD $\frac{1}{4}$ PSF $\square\square\square$ J	R119, R120, R251, R252, R255, R256		
RD $\frac{1}{4}$ PSF $\square\square\square$ J	R261, R262, R405, R406, R421, R259, R260		
	R273, R274, R223, R224, R432, R433		
RS1P $\square\square\square$ J	R401, R402, R413		
RD $\frac{1}{4}$ PSF $\square\square\square$ J	R265—R268, R245—R248		
RS2P $\square\square\square$ J	R271, R272		
RN1H $\square\square\square$ K	R275, R276, R281, R282		
RD $\frac{1}{4}$ VS $\square\square\square$ J	R305—R308		
RS3P $\square\square\square$ J	R426, R427		
ACN-032	R277—R280	Wire wound	0.47/5W

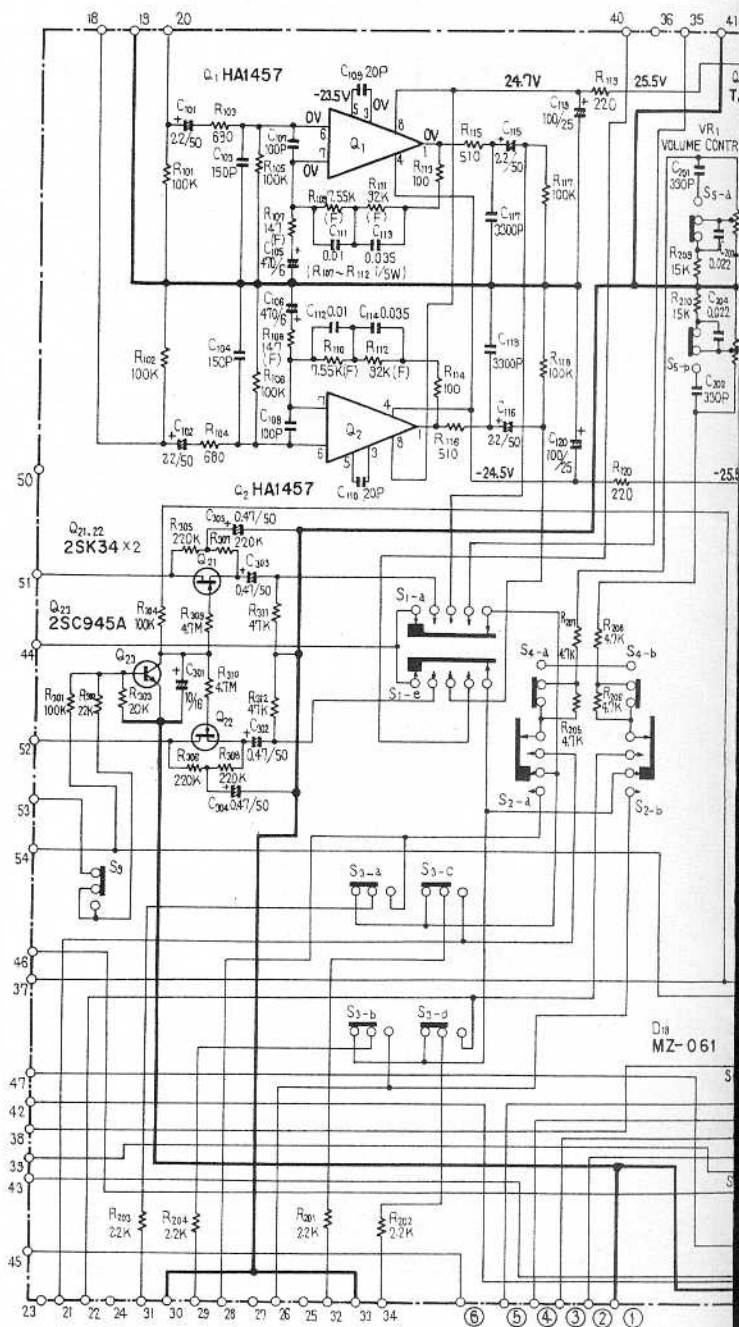
OTHERS

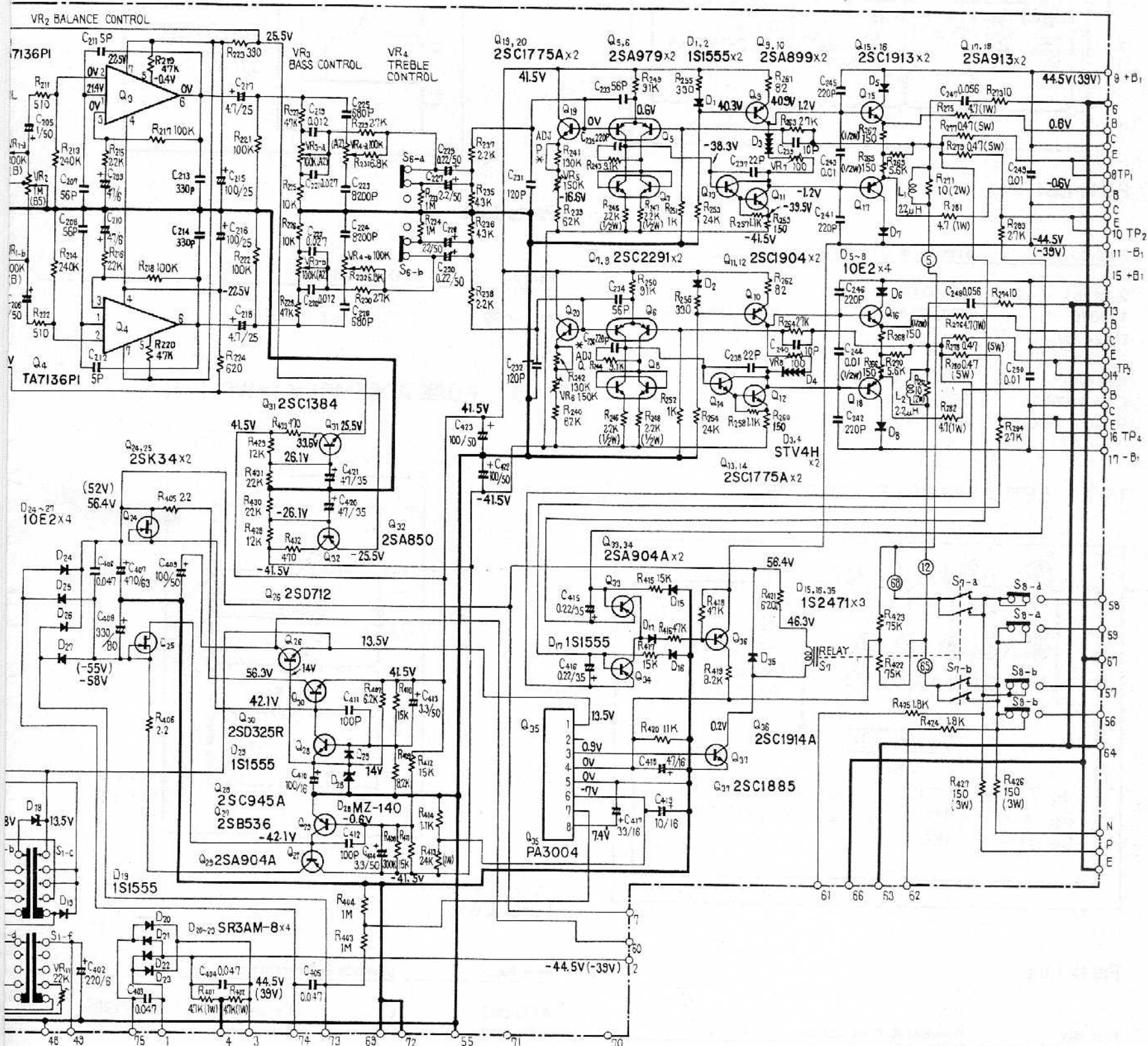
Part No.	Description
ANH-203	Heat sink
ABA-116	Screw 3x16
ABN-028	Nut M9

Part No.	Description
ABN-047	Union nut
B71-004	Nut M9
B71-010	Nut M7
ABE-001	Internal toothed lock washer 9φ
ABE-006	Internal toothed lock washer 7φ

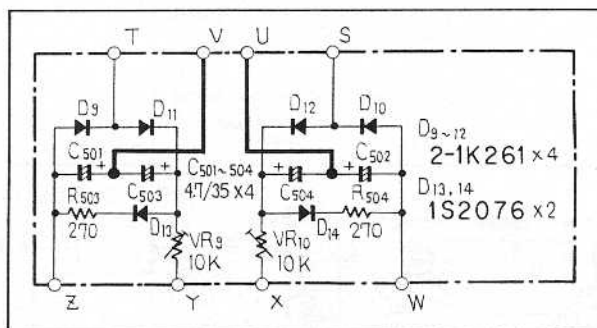
SEMICONDUCTORS

Part No.	Symbol & Description
HA1457	Q1, Q2
TA7136P1	Q3, Q4
2SA979-F	Q5, Q6
2SC2291-F or G	Q7, Q8
2SA899-V or B	Q9, Q10
2SC1904-V or B	Q11, Q12
2SC1775A-E or F	Q13, Q14
2SC1913-R or Q	Q15, Q16
2SA913-R or Q	Q17, Q18
2SC1775A-E	Q19, Q20
2SK34-C or D	Q21, Q22
(2SK117-Y or GR)	
2SC945A-Q or P	Q23, Q28
(2SC1914A-F)	
2SK34-C or D	Q24, Q25
2SD712-C or D	Q26
2SB536-L or M	Q27
(2SA968-O or Y)	
2SA904A-F	Q29
(2SA893A-E or D)	
2SD325R-D or E	Q30
2SC1384-R or Q	Q31
(2SC1735-C or D)	
2SA850-C or D	Q32
(2SA912-R or Q)	
2SA904A-F	Q33, Q34
(2SA893A-D or E)	
PA3004	Q35
2SC1914A-F	Q36
(2SC1649-Q or P)	
2SC1885-R or S	Q37
1S1555	D1, D2, D17, D19, D29
(1S2473)	
STV4H	D3, D4
10E2	D5-D8, D24-D27
(SIB01-02)	
1S2471	D15, D16, D35
MZ-061	D18
(WZ-061)	
SR3AM-8	D20-D23
MZ-140	D28
(WZ-140)	





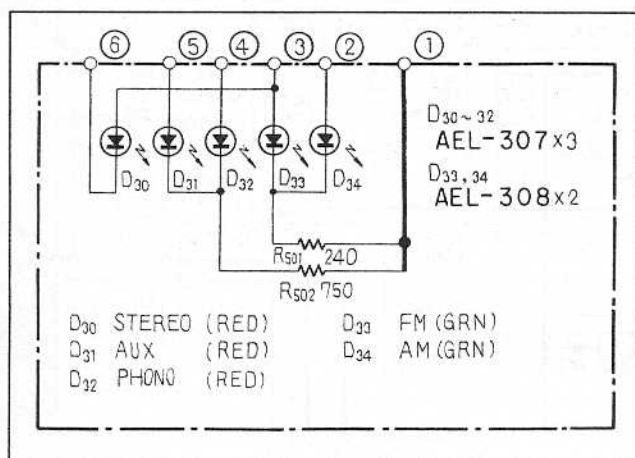
11.6 METER ASSEMBLY (GWX-193)



Parts List

Part No.	Symbol & Description
2-1K261	D9—D12
1S2076 (1S2473)	D13, D14
C92-049	VR9, VR10 Semi-fixed 10k-B
CEA 4R7P 35	C501—C504
RD4PS □□□ J	R503, R504

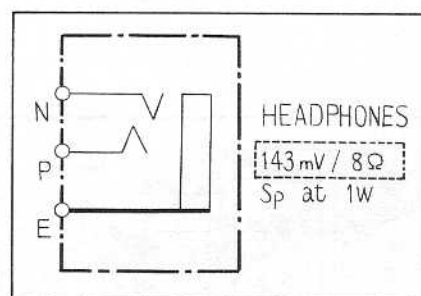
11.7 LED ASSEMBLY (GWX-194)



Parts List

Part No.	Symbol & Description
AEL-307	D30—D32 LED (red)
AEL-308	D33, D34 LED (green)
RD4PS □□□ J	R501, R502

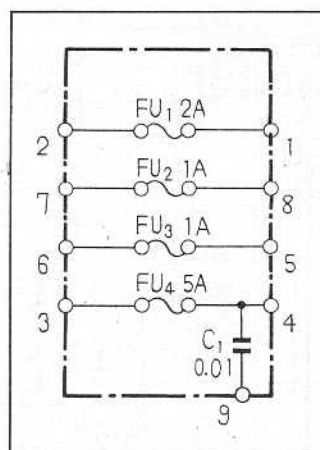
11.8 HEADPHONE JACK ASSEMBLY (GWX-195)



Parts List

Part No.	Description
AKN-009	Phone jack (PHONES)

11.9 FUSE ASSEMBLY (AWR-171)



Parts List

Part No.	Symbol & Description
ACG-003	C1 Ceramic 0.01/125V
AKR-013	Fuse clip

ADDITIONAL

 PIONEER®

Service Manual

AM/FM STEREO RECEIVER

SX-890

KU

SX-880

KC
S
S/G

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
U.S. PIONEER ELECTRONICS CORPORATION 85 Oxford Drive, Moonachie, New Jersey 07074, U.S.A.
PIONEER ELECTRONIC (EUROPE) N.V. Luthagen-Haven 9, 2030 Antwerp, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia

<ART-309-0>

©MAY 1978 Printed in Japan <78E01Y6H01>

MODEL SX-890/KU

Although the basic features of models SX-880/KU and SX-890/KU are the same, there are a few minor changes in design. For servicing of the SX-890/KU please refer to the SX-880/KU service manual with exception of descriptions in this supplement.

CONTRAST OF MISCELLANEOUS PARTS

Symbol	Part Name	Part No.	
		SX-880/KU	SX-890/KU
	Front panel assembly	ANB-611	ANB-617
	Dial panel	AAG-162	AAG-167
	Packing case	AHD-565	AHD-574
	Operating instructions	ARB-272	ARB-293

MODEL SX-880

MODEL SX-880 COMES IN FOUR VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Voltage	Remarks
KU	120V only	U.S.A. model
KC	120V only	Canada model
S	110V, 120V, 220V and 240V (Switchable)	General export model
S/G	110V, 120V, 220V and 240V (Switchable)	U.S. Military model

The variations in safety standards in different countries has also necessitated variations in power supply and circuit component specifications. Furthermore, the difference in pre-emphasis characteristics employed by FM broadcasting stations has also meant variations in de-emphasis circuit time constant.

CONTRAST OF MISCELLANEOUS PARTS

ASSEMBLIES

Symbol	Part Name	Part No.			
		SX-880/KU	SX-880/KC	SX-880/S	SX-880/S/G
	Fuse assembly	AWR-171	AWR-174	.....	AWR-175
	5P connector assembly	.....	.....	AWX-062	AWX-062

TRANSFORMER

Symbol	Part Name	Part No.			
		SX-880/KU	SX-880/KC	SX-880/S	SX-880/S/G
T2	Power transformer	ATT-513	ATT-518	ATT-522	ATT-522

SWITCHES

Symbol	Part Name	Part No.			
		SX-880/KU	SX-880/KC	SX-880/S	SX-880/S/G
S10	Slide (DE-EMPHASIS)	ASH-016	ASH-016	ASH-019	ASH-019
S11	Lever (POWER)	ASK-507 (ASK-066)	ASK-066	ASK-508 (ASK-097)	ASK-508 (ASK-097)
S12	Plug in selector (with fuse holder)	.....	.....	AKR-031	AKR-031

CAPACITORS

Symbol	Part Name	Part No.			
		SX-880/KU	SX-880/KC	SX-880/S	SX-880/S/G
C1	Ceramic 0.01 250V	ACG-001	.....	ACG-001	ACG-001
	Ceramic 0.01 125V	.....	ACG-014	.....	.....
C4	Ceramic 0.01 250V	.....	.....	ACG-001	ACG-001

PACKING AND FURNISHED PARTS

Symbol	Part Name	Part No.			
		SX-880/KU	SX-880/KC	SX-880/S	SX-880/S/G
	Packing case	AHD-565	AHD-566	AHD-565	AHD-567
	Cardboard spacer	.....	.....	.....	AHB-096
	Operating instructions	ARB-272	ARB-272	ARB-273	ARB-273
	Fuse 5A	.....	.....	AEK-108	AEK-108
	Fuse 2.5A	.....	.....	AEK-102	AEK-102
	Vinyl pouch (for fuses)	.....	.....	E11-033	E11-033

RESISTOR

Symbol	Part Name	Part No.			
		SX-880/KU	SX-880/KC	SX-880/S	SX-880/S/G
R2	Carbon composition	ACN-029	ACN-029	.....	.....

FUSES

Symbol	Part Name	Part No.			
		SX-880/KU	SX-880/KC	SX-880/S	SX-880/S/G
FU1	Fuse 2A	AEK-103	AEK-103	.....	AEK-103
	Fuse 2.5A	.....	.....	AEK-102	.....
	Fuse 5A	.....	.....	(AEK-108)	.....
FU2	Fuse 1A	AEK-106	AEK-106	.....	AEK-106
FU3	Fuse 1A	AEK-106	AEK-106	.....	AEK-106
FU4	Fuse 5A (for 110, 120V)	AEK-108	AEK-108	.....	AEK-108
	Fuse 2.5A (for 220, 240V)	.....	.....	.....	(AEK-102)

OTHERS

Symbol	Part Name	Part No.			
		SX-880/KU	SX-880/KC	SX-880/S	SX-880/S/G
	AC power cord	ADG-023	ADG-011	ADG-017	ADG-017
	AC socket (AC OUTLETS)	AKP-004	AKP-004	AKP-019	AKP-019
	Wooden cover	AMM-072	AMM-075	AMM-072	AMM-072
	Capacitor cover (for C1)	AEC-294	AEC-365	AEC-294	AEC-294
	Capacitor cover (for C4)	.....	.....	AEC-294	AEC-294

MODEL SX-880/KC

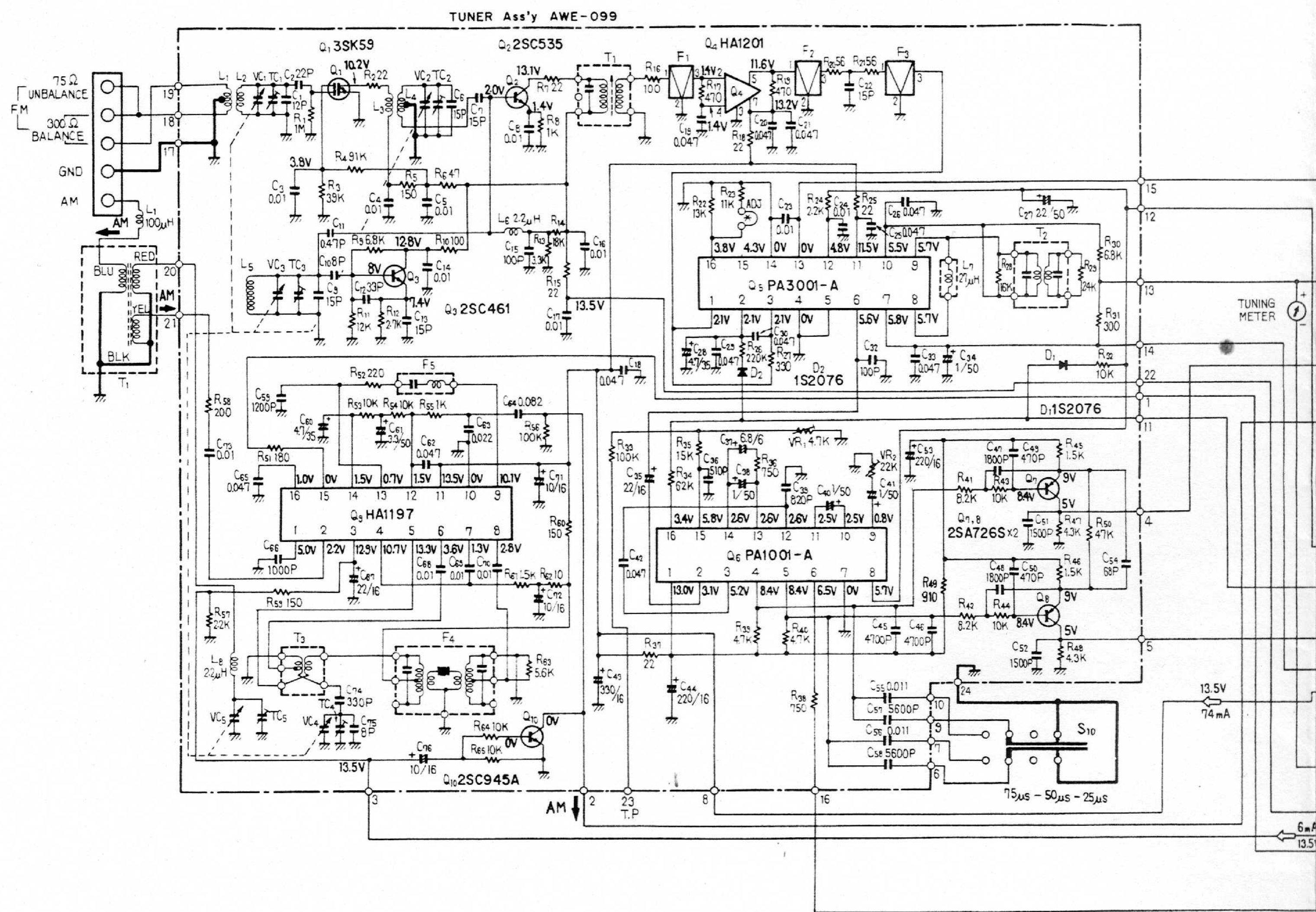
The circuitry of the SX-880/KC is the same as the SX-880/KU.

FUSE ASSEMBLY (AWR-174)

The circuitry of the Fuse assembly AWR-174 is the same as the AWR-171 (for SX-880/KU), with exception of the C1 as follows:

Symbol	Description	Part No. (for AWR-171)	Part No. (for AWR-174)
C1	Ceramic capacitor 0.01 μ F 125V	ACG-003	ACG-014

SCHEMATIC DIAGRAM FOR S, S/G TYPES



SWITCHES:

- S₁ FUNCTION
1 AM
2 FM
3 PHONO
4 AUX

- S₂ TAPE MONITOR
1 - SOURCE - 2

- S₃ TAPE DUPLICATE
OFF - ON

- S₄ MODE
STEREO - MONO

- S₅ LOUDNESS
OFF - ON

- S₆ LOW FILTER
OFF - 15 Hz

- S₇ PROTECTION RELAY
OFF - ON

- S_{8-a} SPEAKER A
OFF - ON

- S_{8-b} SPEAKER B
OFF - ON

- S₉ FM MUTING
ON - OFF

- S₁₀ DE-EMPHASIS
75 μs - 50 μs - 25 μs

- S₁₁ POWER
OFF - ON

- S₁₂ LINE VOLTAGE SELECTOR
110V - 120V - 220V - 240V

RESISTORS:

IN OHM 1/4W ±5% TOLERANCE UNLESS OTHERWISE NOTED K: kΩ M: MΩ
(F): ±1% TOLERANCE

CAPACITORS:

IN μF UNLESS OTHERWISE NOTED p: pF

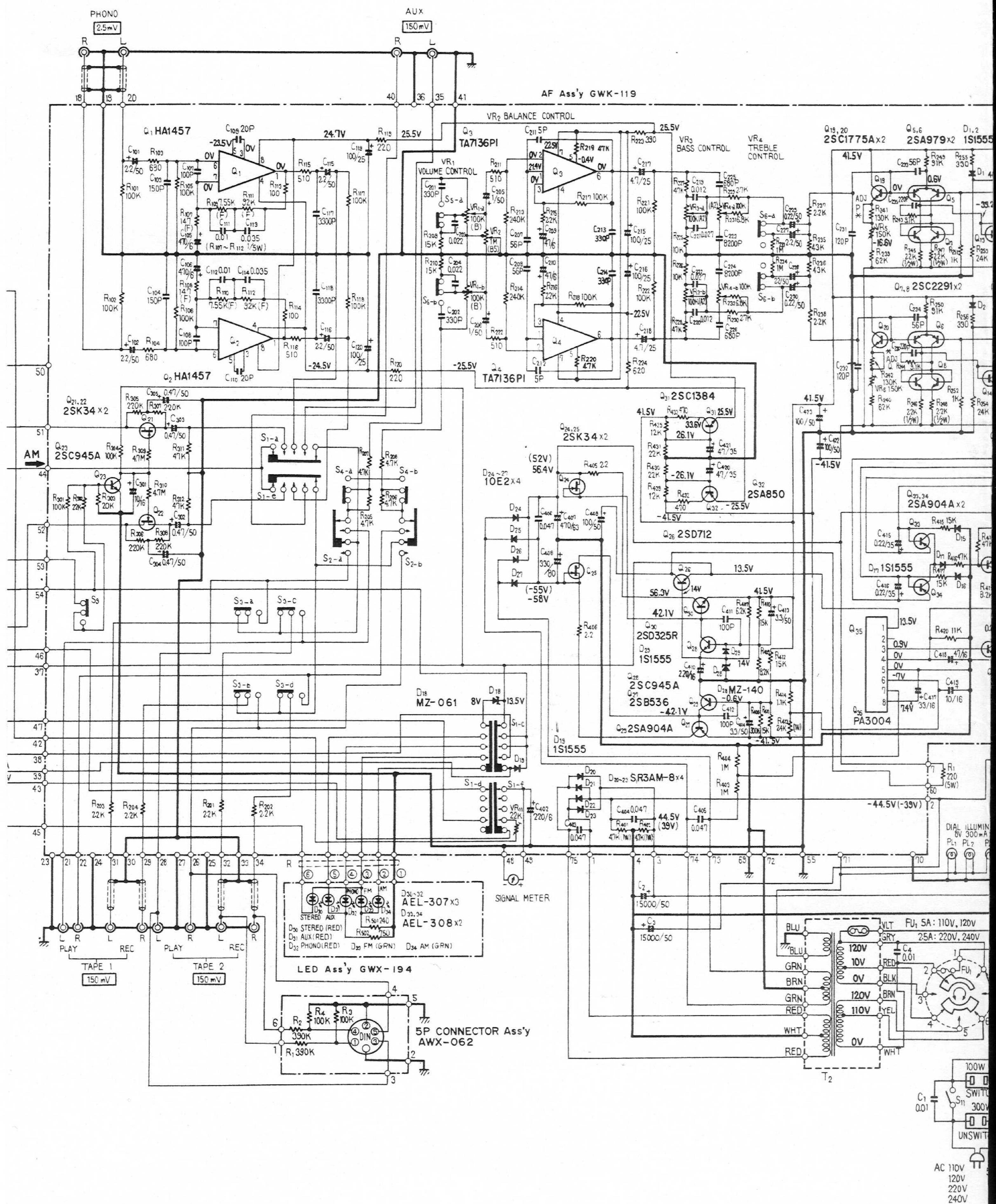
V: SIGNAL VOLTAGE AT 60W+60W 8Ω OUTPUT (1kHz)

V: DC VOLTAGE AT NO INPUT SIGNAL

mA: DC CURRENT AT NO INPUT SIGNAL

(V): DC VOLTAGE AT 60W OUTPUT

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.



7

8

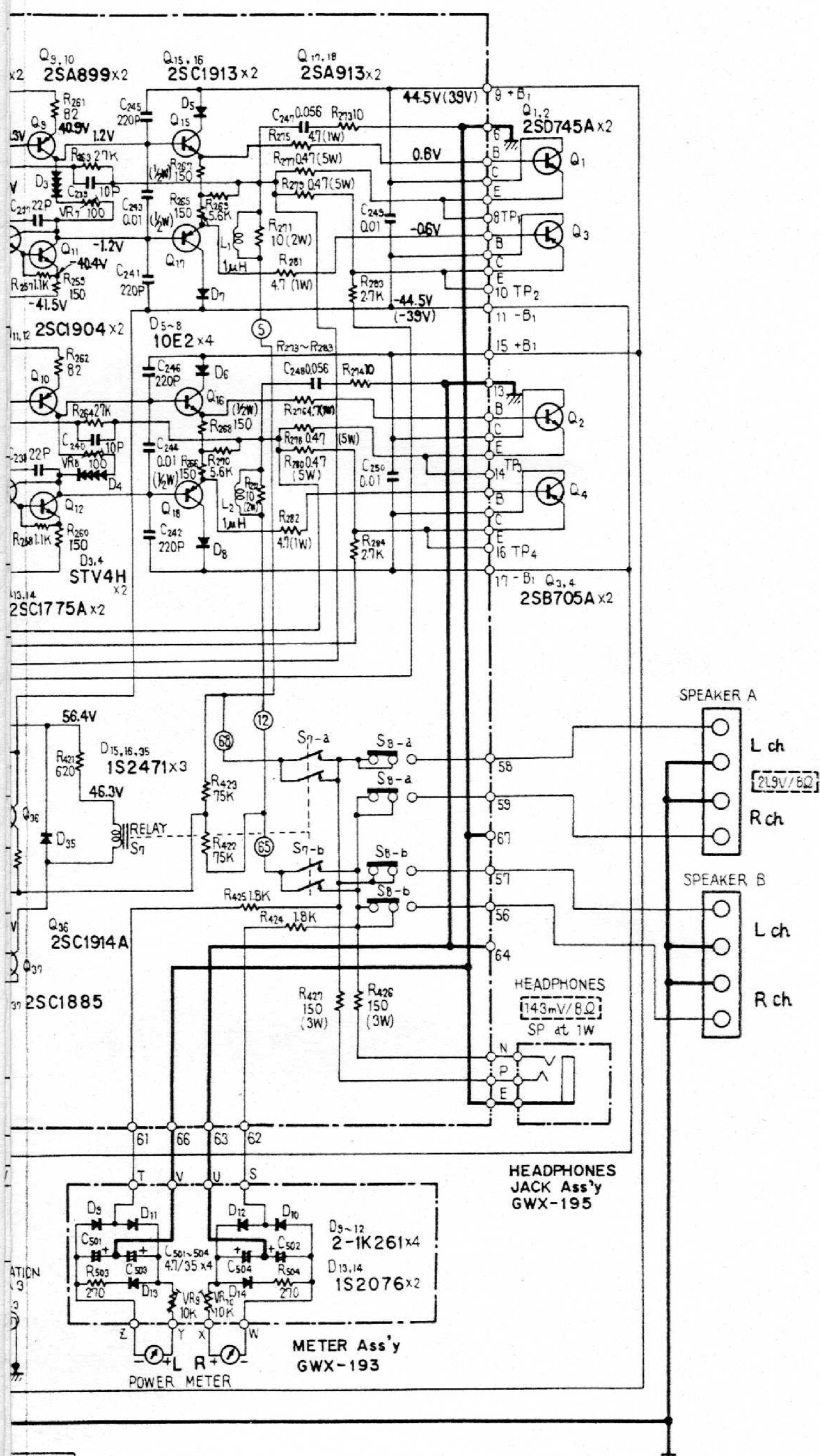
9

A

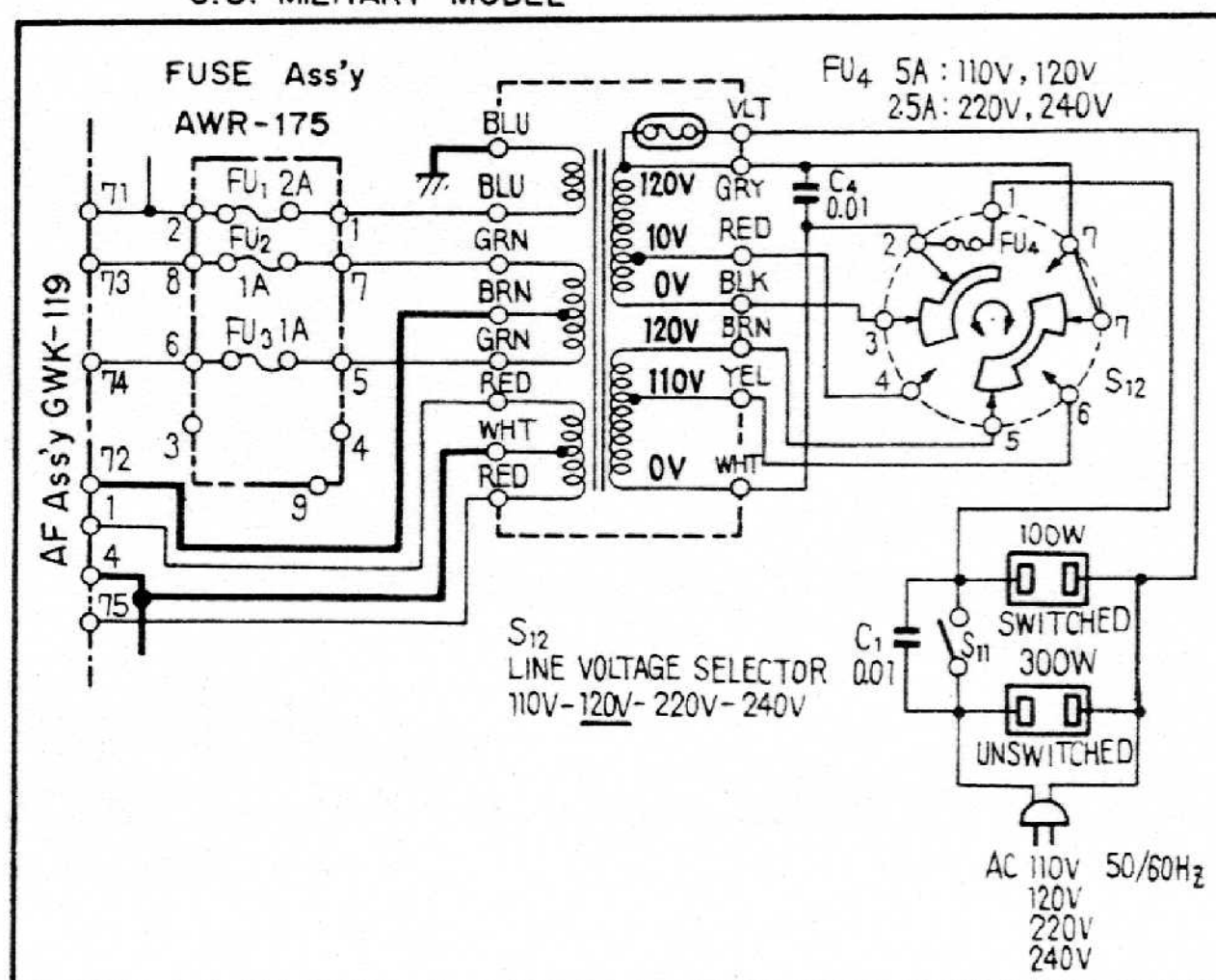
B

C

D



U.S. MILITARY MODEL



PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
U.S. PIONEER ELECTRONICS CORPORATION 85 Oxford Drive, Moonachie, New Jersey 07074, U.S.A.
PIONEER ELECTRONIC (EUROPE) N.V. Luithagen-Haven 9, 2030 Antwerp, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia