

Service Manual

4-CHANNEL RECEIVER

QX-8000A/KUW, FW, FSAW

NOTE:

MODEL QX-8000A COMES IN THREE VERSIONS DISTINGUISHED AS FOLLOWS:

Round level on rear panel	Voltage	Type
KUW FSAW FW	120V only 5-position selector 5-position selector	UL approved (U.S.A.) SABS approved (South Africa) General export model with de-emphasis selector switch

RECORDERS

The following information is provided for your reference. It is not intended to constitute an offer of insurance or any other financial product. For more information, please contact your agent or the company directly.

Life Insurance: Life insurance provides financial protection for your family in the event of an untimely death. It can also be used as a tool for estate planning and wealth accumulation. The amount of coverage and the type of policy (term or permanent) will depend on your individual needs and circumstances.

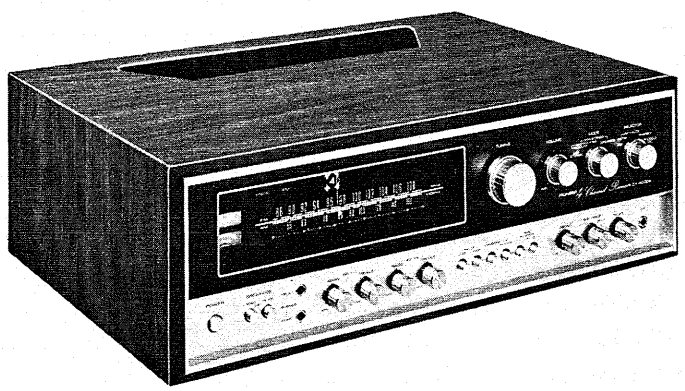
Health Insurance: Health insurance is essential for covering the cost of medical care. It typically covers hospitalization, surgery, and other medical services. The specific benefits and costs will vary by plan and provider.

Disability Insurance: Disability insurance provides income replacement if you are unable to work due to a disability. It can help cover living expenses and medical costs during a period of recovery.

Retirement Savings: Retirement savings plans, such as 401(k) or IRA, allow you to accumulate funds for your retirement. Contributions are often made on a pre-tax basis, and the funds grow tax-deferred until withdrawal.

Investment Services: We offer a variety of investment options to help you grow your wealth. Our advisors can provide personalized recommendations based on your risk tolerance and financial goals.

Financial Planning: Our financial planners can help you create a comprehensive plan for your future. This includes assessing your current financial situation, setting goals, and developing strategies to achieve them.



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1. SPECIFICATIONS

SEMICONDUCTORS

FETs	3
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Transistors	77
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POWER AMPLIFIER SECTION

Music Power Output (IHF)	180W (4 Ω) 130W (8 Ω)
Continuous Power Output (1kHz each channel driven)	43W/43W/43W/43W (4 Ω) 30W/30W/30W/30W (8 Ω)
Continuous Power Output (1kHz 2 channels driven)	36W + 36W/36W + 36W (4 Ω) 27W + 27W/27W + 27W (8 Ω)
Continuous Power Output (1kHz 4 channels driven)	27W x 4 (4 Ω) 22W x 4 (8 Ω)
Power Output in the Range of 20Hz to 20kHz (2 channels driven)	21W + 21W/21W + 21W (8 Ω , Harmonic Distortion less than 1%)
Harmonic Distortion	Less than 1% (Continuous Power Output) Less than 0.05% (8 Ω 14W + 14W/14W + 14W Power Output)
Intermodulation Distortion	Less than 1% (Continuous Power Output) Less than 0.1% (8 Ω 14W + 14W/14W + 14W Power Output)
Power Bandwidth (IHF)	10Hz to 100kHz (8 Ω , Harmonic Distortion less than 1%)
Frequency Response	5Hz to 100kHz, \pm 3dB
Input Sensitivity/Impedance (1kHz Continuous Power Output)	400mV/70k Ω
Speakers	4 to 16 Ω
Damping Factor	35 (8 Ω , 1kHz)

PREAMPLIFIER SECTION

Output Voltage	400mV (Rated output), 2.5V (Max.)
Harmonic Distortion	Less than 0.5%
Frequency Response	10Hz to 40kHz, \pm 3dB
Input Sensitivity/Impedance (1kHz, for rated output)	PHONO 1 MAG 2mV/50k Ω PHONO 2 MAG 2mV/50k Ω MIC 8mV/120k Ω AUX 1, 2 170mV/120k Ω TAPE MONITOR 1, 2 170mV/130k Ω
Recording Output	TAPE REC 1, 2 (Pin jack) 170mV
BASS Control	-12dB, +11dB/100Hz
TREBLE Control	-8.5dB, +10.5dB/10kHz
LOW Filter	-6.5dB/50Hz (6dB/oct.)
HIGH Filter	-11.5dB/10kHz (6dB/oct.)
Equalization Curve	PHONO: RIAA S.T.D.
Loudness Contour	+11.5dB/100Hz, +7dB/10kHz with Volume Control set at -40dB position.
Hum and Noise (IHF Short circuit, A Network)	PHONO More than 75dB AUX More than 90dB

QX-8000A

FM TUNER SECTION

Frequency Range	88MHz to 108MHz
Usable Sensitivity (IHF)	2.2 μ V
Capture Ratio (IHF)	3dB
Selectivity (IHF)	More than 40dB
Image Rejection	More than 50dB (98MHz)
IF Rejection	More than 85dB (90MHz)
Spurious Rejection	More than 80dB (98MHz)
AM Suppression	50dB
Signal to Noise Ratio	60dB
Harmonic Distortion	Mono: less than 0.6% (100% Mod.) Stereo: less than 0.8% (100% Mod.)
Tuning Indicator	Signal strength type and Center tuning type
Muting	Switchable to ON-OFF
Stereo Separation	More than 40dB (1kHz)
Sub Carrier Suppression	More than 32dB
Antenna Input	Impedance 300 Ω balanced and 75 Ω unbalanced
De-emphasis switch	75 μ s/50 μ s (5-line voltage model except SABS-approved model)

AM TUNER SECTION

Frequency Range	525kHz to 1,605kHz
Usable Sensitivity (IHF)	15 μ V
Selectivity (IHF)	More than 25dB
Image Rejection	More than 45dB (1,000kHz)
IF Rejection	More than 30dB
Signal to Noise Ratio	More than 50dB
Antenna	Built-in ferrite loopstick antenna

MISCELLANEOUS

Power Requirements	120V 60Hz (KUW model) 110V, 120V, 130V, 220V and 240V (switchable) 50-60Hz (FW, FSAW models)
Power Consumption	250W (Max.)
AC Outlets	Switched 1, Unswitched 1
Dimensions (overall)	20 in./509 mm (width) 6-3/4 in./172 mm (height) 15-5/8 in./377 mm (depth)
Weight	Without package 34 lb 5 oz/15.6 kg With package 40 lb 15 oz/18.6 kg
Furnished Parts	FM T-type Antenna 1 Pin Plugs 4 Speaker Plugs 4 Polishing Cloth 1 Operating Instructions 1

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

2. FRONT PANEL FACILITIES

POWER

Push once to switch the power ON, once again to turn it OFF.

SPEAKER SWITCHES

These push-button switches turn the speaker systems ON or OFF.

Depressing the FRONT button will disconnect the speaker systems connected to the speaker sockets CH. 1 and CH. 3. Depressing the REAR button will disconnect the speaker systems connected to the speaker sockets CH. 2 and CH. 4. To return the button from OFF to ON, depress the button once again.

PHONES JACKS

Plug the headphones into FRONT jack to hear in the left and right ears through CH. 1 and CH. 3. Likewise, plug the headphones into REAR jack to hear in the left and right ears through CH. 2 and CH. 4.

FRONT BASS CONTROL

Controls the bass of channels 1 and 3. Turning the control to the right will increase the tone, and to the left will decrease the tone.

FRONT TREBLE CONTROL

Controls the treble of channels 1 and 3. Use the control in the same way as FRONT BASS CONTROL.

REAR BASS CONTROL

Controls the bass of channels 2 and 4. Use the control in the same way as FRONT BASS CONTROL.

REAR TREBLE CONTROL

Controls the treble of channels 2 and 4. Use the control in the same way as FRONT BASS CONTROL.

FILTERS

LOW: Use this filter to cut out low-frequency interference, such as motor rumbling or hum.

HIGH: Use this filter to cut out high-frequency interference, such as that from fluorescent lights.

LOUDNESS

To listen to quieter sound, set this to the ON position. This emphasizes the low and high notes. For normal listening, set it to the OFF position.

FM MUTING

This switch is used to suppress much noise between FM stations when tuning. In a fringe area, however, this switch should be kept off to avoid suppressing the desired station signal at the same time.

TUNING INDICATOR

When selecting an AM broadcast, tune so that the dial pointer of the lower meter deflects as far to the right as possible. For an FM broadcast, use the lower meter in the same way. Precise FM tuning is also possible by adjusting so that the dial pointer of the upper meter is centered.

TUNING KNOB

This knob is used to locate AM or FM stations. Watch the pointer(s) deflection of the tuning indicator for more precise tuning.

VOLUME CONTROL

Controls the output volumes of all four channels simultaneously. Turning the knob to the right will increase the volume, and left will decrease the volume.

MODE SWITCH

This switch sets the desired mode; 2-channel stereo, matrix 4-channel, discrete 4-channel.

2 CH STEREO . . . Used for reproduction of 2-channel stereo. Use this position for listening to FM monophonic and AM broadcasts.

4 CH STEREO

MATRIX-REGULAR . . . Used for 4-channel reproduction of regular matrix records or FM stereo broadcasts. Also use this position in the case of listening to 2-channel records and FM stereo broadcasts.

4 CH STEREO

MATRIX-SQ . . . Used for 4-channel reproduction of SQ system records and FM broadcasts. Also use this position in the case of listening to 2-channel stereo records and FM stereo broadcasts.

4 CH STEREO

DISCRETE . . . Used for reproduction of discrete 4-channel tapes and cartridge tapes. If an adaptor is added, this position may be used to reproduce 4-channel records (CD-4).

NOTE: With this switch set to 2 CH STEREO sound from the left rear speaker (CH.2) will be the same as that from the left front speaker (CH.1), while sound from the right rear speaker (CH.4) will be the same as that from the right front speaker (CH.3).

SELECTOR SWITCH

This switch selects the program source.

AM AM reception.

FM MONO . . . FM monophonic reception only.

FM AUTO . . . FM reception by automatic switching for either stereo or monophonic program.

PHONO 1 . . . For playing records on a turntable plugged into the PHONO 1 jacks.

PHONO 2/MIC . Same as above for PHONO 2 jacks; or for using microphone.

AUX 1 For playing signals fed to the AUX 1 jacks.

AUX 2 Same as above, for AUX 2 jacks.

MIC JACK

This jack accepts a standard microphone plug (6mm diameter). The microphone should be of high impedance (to the order of 50kΩ). When a microphone is plugged into this jack, the signal fed from the PHONO 2 jack is stopped.

TAPE MONITOR SWITCHES (1 AND 2)

These switches are set to ON for checking the recording conditions or for playback with tape decks.

1: This switch is set to ON for monitoring recording now in progress or for playback with a tape deck plugged into TAPE 1 MON jacks and TAPE 1 REC jacks.

2: This switch is set to ON for checking the recording conditions or for playback with a tape deck plugged into TAPE 2 MON jacks and TAPE 2 REC jacks.

NOTE: For a record playback or listening to broadcasts, leave these switches set to the OFF position. With the switches set to ON, speakers will not operate.

FRONT LEFT-RIGHT BALANCE CONTROL

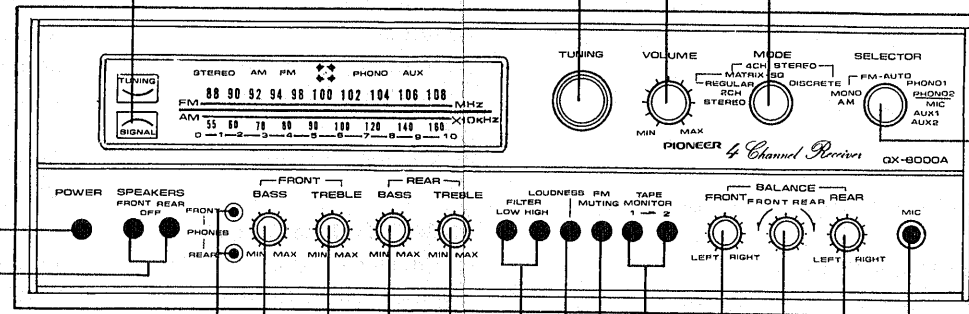
Controls the level balance of front speaker systems. Turning the control to the right (clockwise) from center will increase the sound of the right-side speaker, and turning it to the left (counterclockwise) will increase the sound of the left-side speaker.

FRONT-REAR BALANCE CONTROL

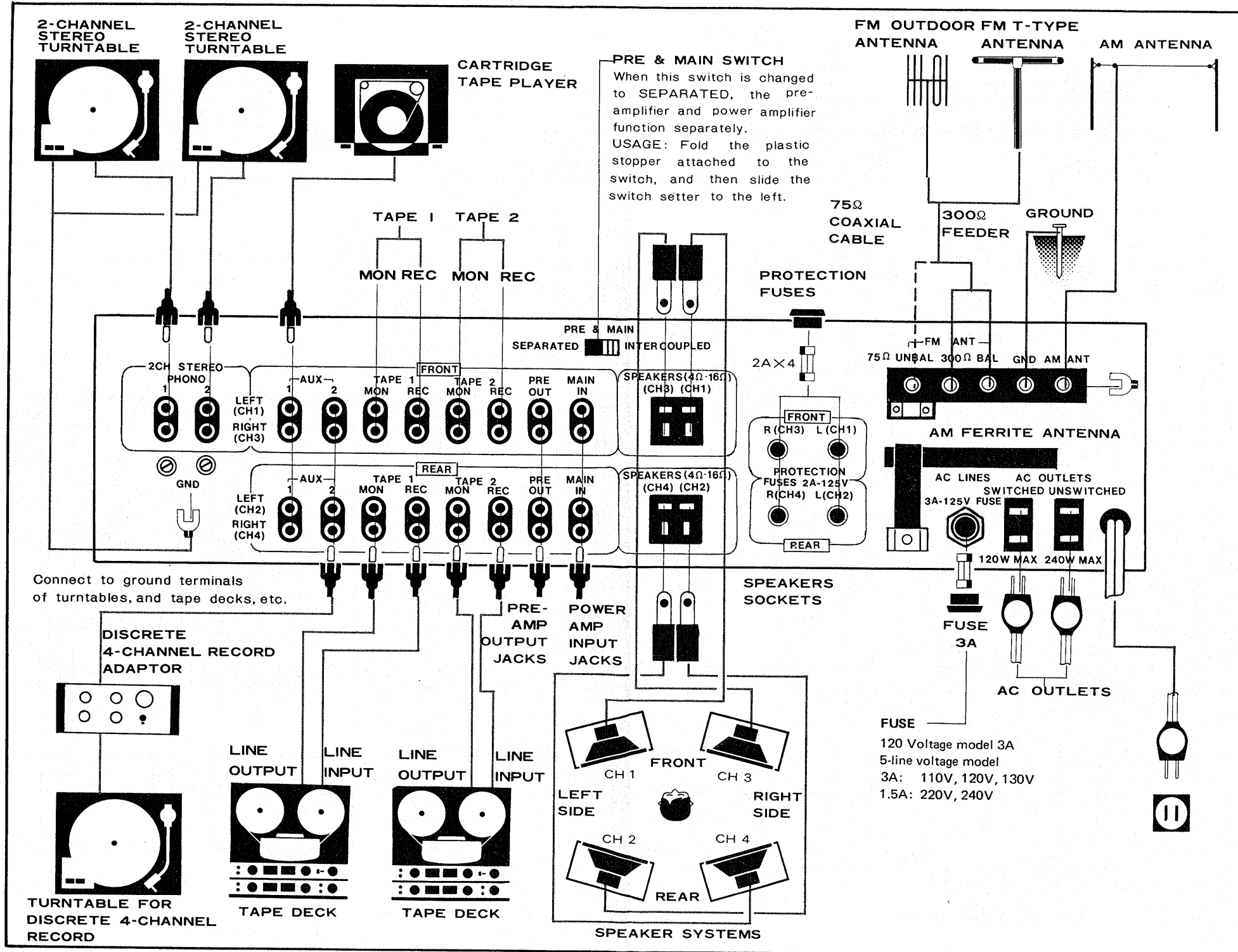
Controls the level balance between the speaker systems in front and rear speaker systems. Turning the control to the right from the center will increase the sounds of the rear-side speaker system, and turning it to the left will increase the sounds of the front-side speaker system.

REAR LEFT-RIGHT BALANCE CONTROL

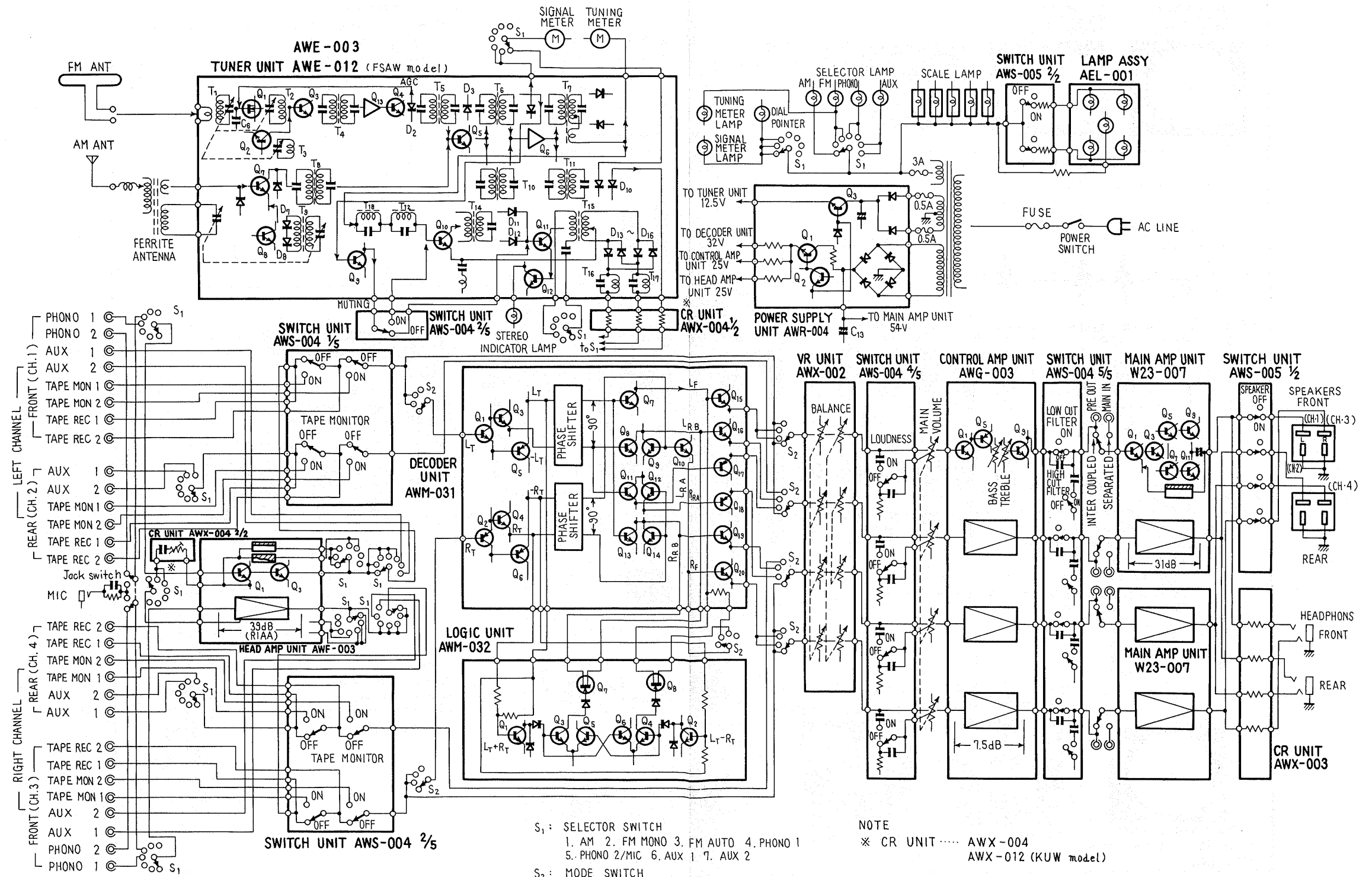
Controls the level balance of rear speaker systems. Turning the control to the right (clockwise) from center will increase the sound of the right-side speaker, and turning it to the left (counterclockwise) will increase the sound of the left-side speaker.



3. CONNECTION DIAGRAM



4. BLOCK DIAGRAM



S₁: SELECTOR SWITCH
 1. AM 2. FM MONO 3. FM AUTO 4. PHONO 5. PHONO 2/MIC 6. AUX 1 7. AUX 2

S₂: MODE SWITCH
 1. 2CH. STEREO 2. MATRIX REGULAR 3. MATRIX SQ 4. DISCRETE

NOTE
 * CR UNIT AWX-004 AWX-012 (KUW model)

5. CIRCUIT DESCRIPTION

5.1 RF CIRCUITRY

● FM Section

The FM signal from the antenna passes to T1 of the tuner, where it is applied to the gate of Q1 (FET). This stage provides RF amplification. In order to obtain high gain from Q1, the bridge circuit consisting of feedback capacitance Crss, neutralizing capacitance C6, and T2 is balanced, preventing feedback of a part of the output to the input through Crss. Frequency conversion is effected with Q3. The local oscillator is a Colpitts type (Q2).

The converted signal passes to the IF amplifier, consisting of four stages (Q13, Q4, Q5, and Q6). Ratio detection is effected with diodes on the secondary side of T7. Resultant audio passes to the base of Q10 as a simple signal in the case of monaural broadcasts, or as a composite signal in the case of stereo broadcasts.

AGC action is effected with DC rectified from the collector circuit of Q4 and applied to the gate of Q1. D3 in the secondary side of T5 provides limiting action under strong inputs. Q5 and Q6 function as the AM intermediate frequency amplifier. The signal applied to the base of Q10 includes the 19kHz pilot. This pilot is extracted with T14 and formed into a 38kHz signal with D11, D12, Q11, and T15. The resultant signal is fed to switching diodes D13 through D16. The primary and sub-carrier signals pass from the emitter of Q10 to the center tap of T15, are switched, and are fed to the AF amplifier.

Q12 is part of an electronic switch for control of the FM stereo indicator lamp. With Q11 conducting, this switch conducts and the indicator lamp lights.

Stage Q9 handles muting and FM AUTO switching. With the muting switch set to the ON position, the collector of Q9 is connected to the base of Q10; with the muting switch set to the OFF position, the Q9 collector is connected to the base of Q11. When the potential of the base of Q9 is low (that is, when the antenna input signal is low), Q9 conducts, reducing the base potential of Q10 or Q11 and preventing the signal from passing.

● AM Section

The AM section consists of four transistors, Q7, Q8, Q5, and Q6. The AM signal received by the ferrite antenna is converted to an intermediate frequency (455kHz) with circuitry consisting of Q7 and Q8.

Amplification at the intermediate frequency is effected with Q5 and Q6 (also used for FM IF amplification). D10 on the secondary side of T11 is used for detection. AGC action is effected with a part of the detected signal applied to the base of Q8, while D7 and D8 are used to prevent excessive input.

5.2 AUDIO CIRCUITRY

● Head Amplifier Section

The signal from PHONO jacks selected with the SELECTOR switch passes through a two-stage direct coupled equalizer amplifier which provides low- and high-range compensation in compliance with RIAA specifications.

The microphone signal also passes through this stage, but the microphone circuit includes an RC circuit connected in series for low-range attenuation. Overall, this signal becomes essentially flat.

FM and AM signals from respective tuners are also applied to the head amplifier section. With the SELECTOR switch set to FM or AM, resistance of the internal negative feedback circuit drops, yielding nearly flat characteristics.

● Control Amplifier Section

The signal from the head amplifier, TAPE MON jack, AUX jack, or decoder section passes to BALANCE and VOLUME controls, and to the control amplifier.

The control amplifier consists of NPN and PNP transistors in a direct coupled configuration, along with a negative feedback tone control stage consisting of one transistor.

A large amount of negative feedback is applied in the direct coupled amplifier to insure a high degree of stability and high input impedance. Low and high emphasis and attenuation are effected by changing the degree of feedback (with a potentiometer). Output of the control amplifier section passes to low-pass and high-pass filters, and to main amplifier input.

- **Main Amplifier Section**

The main amplifier section is a standard quasicomplementary circuit. It amplifies the signal from the control amplifier and supplies output to the speaker connector.

The fuse in the +B circuit provides protection for the power transistors.

5.3 POWER SUPPLY CIRCUIT

DC power for the tuner is obtained from full-wave (diode) rectification of AC power. A stabilizing circuit consisting of a zener diode and transistor is included.

Another bridge rectifier circuit is used for power supply to the audio section. Power is furnished directly to the main amplifier unit, but through a stabilizing circuit (zener diode and transistors) for other units.

5.4 DECODER CIRCUIT

The signal passing through the MODE switch is applied to the decoder unit.

When the MODE switch is set to MATRIX REGULAR or SQ, the decoder functions.

- **At REGULAR**

Signals applied to the decoder (L_T and R_T) are formed into L_T and $-L_T$ signals (phase difference of 180°) with Q3 and Q5 and R_T and $-R_T$ signals (phase difference of 180°) with Q4 and Q6. Outputs are applied to a pair of phase shifters. Each phase shifter provides a pair of outputs. Thus, the four outputs are separated in terms of phase by 90° for each other.

These outputs are applied to Q7 through Q14, where addition and level adjustment take place. Subsequent output is taken from emitter followers Q15, Q17, Q18, and Q20. The bases of Q15 and Q20 are connected through resistance, providing for blending between the front left and right channels.

- **At SQ**

With the MODE switch set to SQ, Q7 through Q14 outputs are extracted from emitter followers Q15, Q16, Q19, and Q20. FET's in the logic unit are connected between the bases of Q15 and Q20 and Q16 and Q19, providing for blending between the front left and right channels and rear left and right channels.

The degree of blending and timing are controlled by two differential amplifiers in the logic unit. Sum ($L_T + R_T$) and difference ($L_T - R_T$) levels are compared. When the sum signal is the larger of the two, the FET between Q16 and Q19 conducts; when the difference signal is the larger of the two, the FET between Q15 and Q20 conducts.

6. DISASSEMBLY

6.1 WOODEN CASE

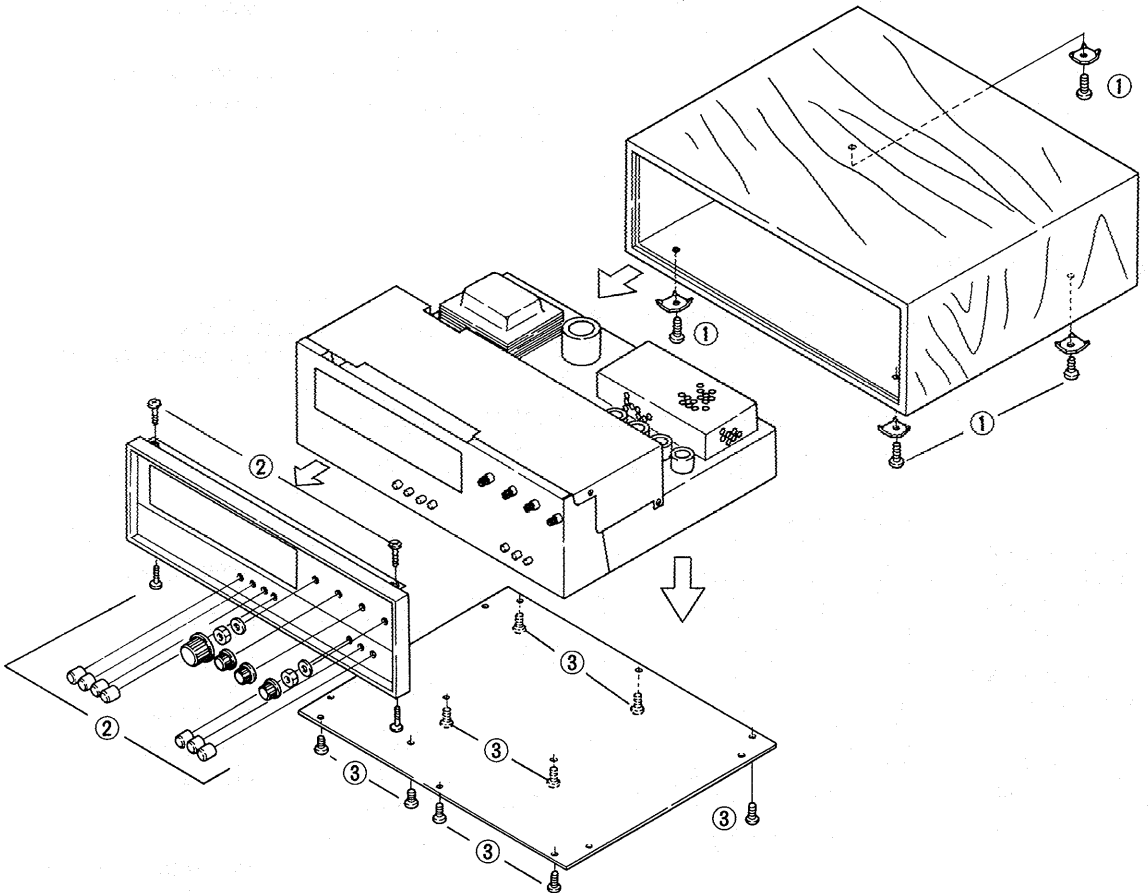
Remove the 4 screws from the bottom of the wooden case.
Pull the case backward off the receiver housing.

6.2 FRONT PANEL

Pull off all knobs, then remove nuts and washers from shafts and remove 4 screws from top and bottom of front panel as illustrated in figure. The front panel can now be removed.

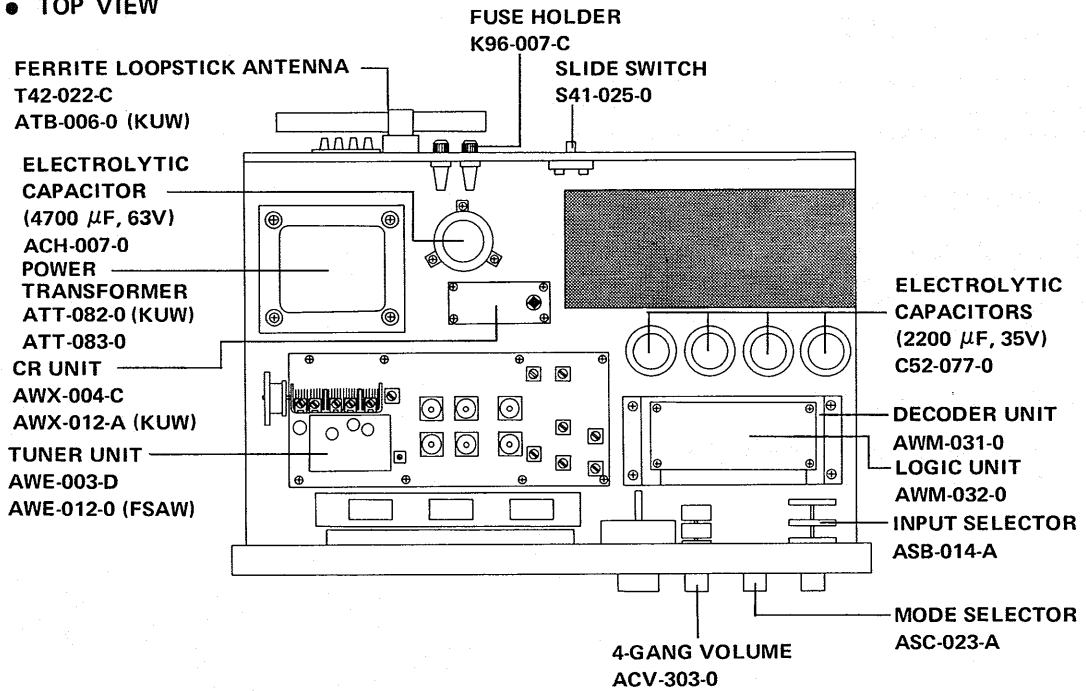
6.3 BOTTOM PLATE

The bottom plate can be removed after loosening the 9 screws.

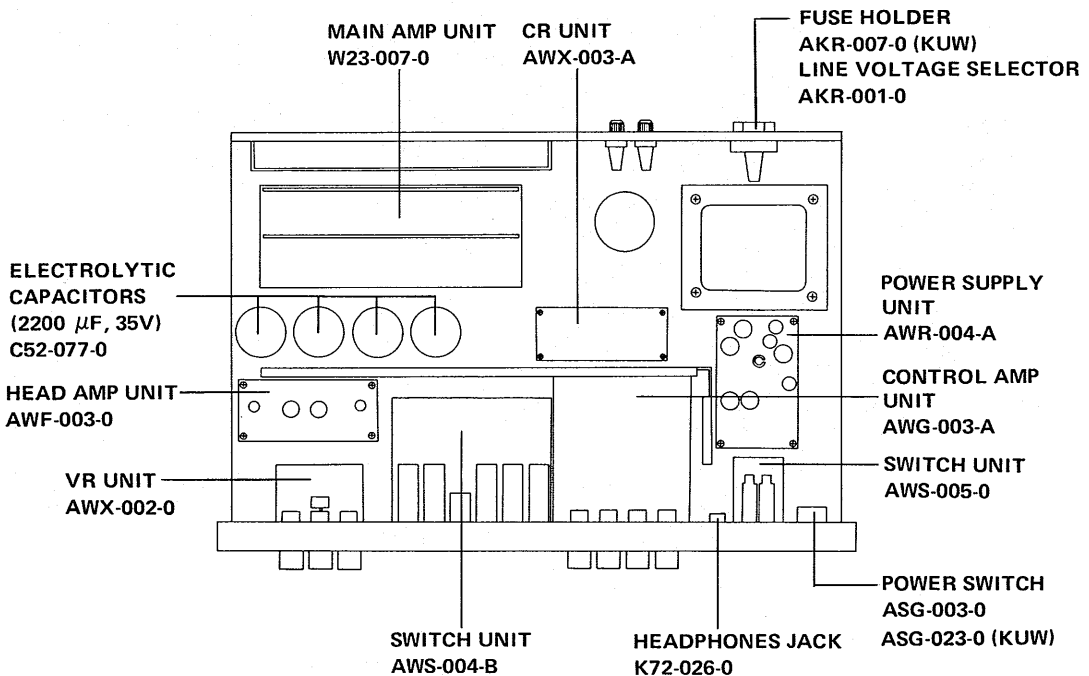


7. PARTS AND P.C.B. LOCATION

• TOP VIEW

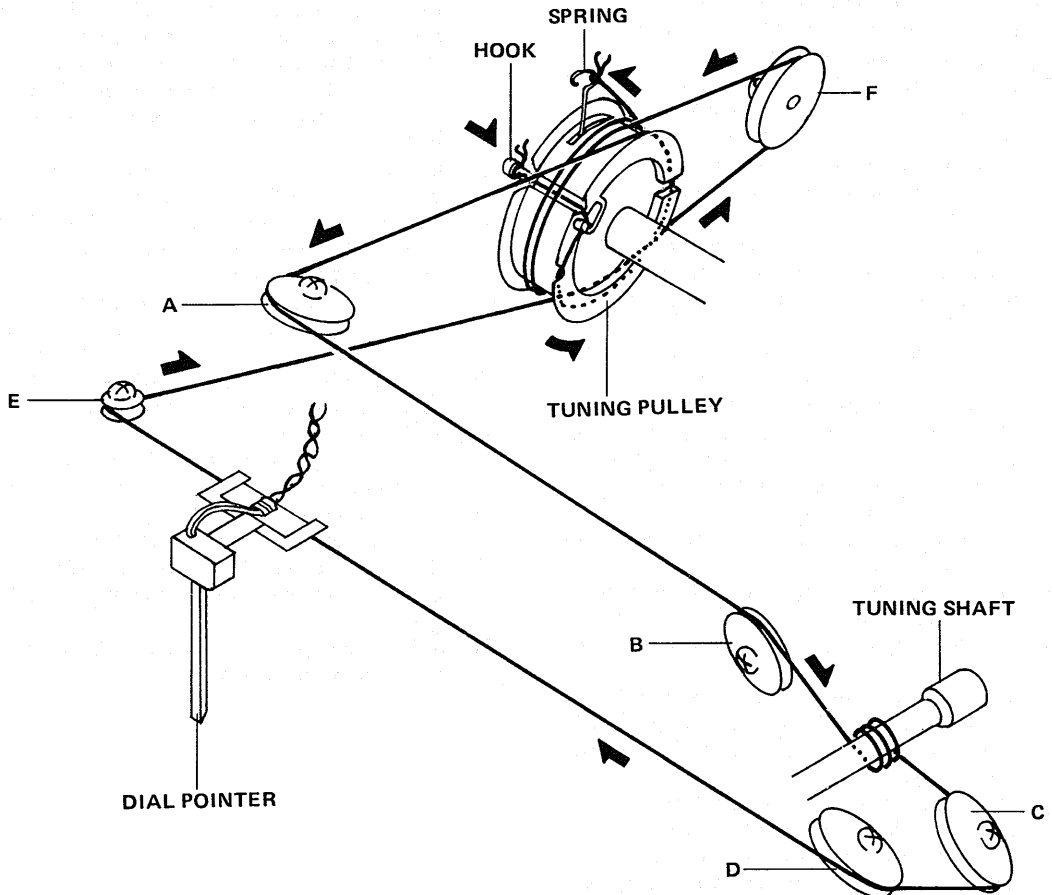


• BOTTOM VIEW



8. DIAL CORD STRINGING

1. Set the tuning capacitor to minimum capacitance.
2. Tie one end of the string to the hook on the side of the tuning pulley, then lead it to the arrow-indicated direction shown in the figure.
3. Wind the string $3/4$ turn around the tuning pulley, then lead it to the small pulleys A and B.
4. Wind the string 3 turns around the tuning shaft, then lead it to the small pulleys C, D, and E.
5. Lead the string to the small pulley F, then wind it 2 turns around the tuning pulley.
6. Finally, tie the end of the string to the spring on the tuning pulley.
7. Tune receiver to low end. Fasten dial pointer to string so that it indicates low end on dial scale.



9. ALIGNMENT PROCEDURE

REQUIRED INSTRUMENTS

- FM/AM Signal generator
- FM/AM Sweep generator: Center frequency 10.7MHz, 455kHz
- Oscilloscope
- AC VTVM
- FM multiplex signal generator preferably with RF output

9.1 FM/AM IF ALIGNMENT

● FM SECTION

- a) Connect a 0.01 μ F capacitor between TP1 and ground before the alignment.
- b) Connect a 220k Ω resistor in series with the vertical input terminal of the oscilloscope.
- c) Remove the meter lead from terminal 18, then terminate a 4.7k Ω resistor between terminal 18 and ground.
- d) Connect the vertical input to terminal 18.
- e) Set the selector switch to FM MONO.
- f) Connect the output lead of the sweep generator to the FM antenna terminals.
- g) Set the output level of the sweep generator to 85dB.
- h) Adjust the primary and secondary cores of T6 to obtain a symmetrical pattern.
- i) Set the output level of the sweep generator to 65dB.
- j) Adjust the cores of T4 and T5 for maximum gain and symmetry of the pattern.
- k) Vary the output level of the sweep generator from 60dB to 90dB, then keep the top of the pattern flat and make sure that the center frequency does not drift. If it drifts, repeat steps (g) to (j).
- l) Remove the capacitor (4.7 μ F) from terminal 28.
- m) Disconnect the vertical input from terminal 18, then reconnect it to TP1.
- n) Set the output level of the sweep generator to 70dB.
- o) Observe the S-curve pattern when adjusting the cores of T7. (Linearity is improved by the primary core; symmetry by the secondary core.)
- p) Disconnect the 0.01 μ F capacitor from TP1 after the alignment has been completed.
- q) Connect the capacitor (4.7 μ F) to terminal 28 after the alignment has been completed.

● AM SECTION

- a) Turn the selector switch to AM.
- b) Connect the output lead of the sweep generator to the AM antenna terminal.
- c) Connect the vertical input of the oscilloscope to the TAPE REC jack.
- d) Set the output level of the sweep generator to 40dB.
- e) Adjust the IFT cores (T9, T10, T11) as shown in Fig. 1, for maximum gain and symmetrical pattern.

9.2 FM/AM TRACKING ALIGNMENT

● FM SECTION

- a) Turn the selector switch to FM MONO.
- b) Connect the output leads of the FM signal generator to the FM antenna terminals.
- c) Set the FM signal generator to modulation 400Hz, 100% and output level 12dB frequency 90MHz; also set the receiver dial at 90MHz.
- d) Connect the VTVM and oscilloscope (in parallel) to the TAPE REC jack.
- e) Observing the output level on the VTVM, adjust the following cores for maximum reading on the meter.
T3 Oscillator circuit
T1 Antenna circuit
T2 RF circuit
- f) Set the frequency of the FM signal generator and the receiver dial to 106MHz.
- g) Adjust as follows:
Trimmer capacitor CT3: Oscillator circuit
Trimmer capacitor CT1 .. Antenna circuit
Trimmer capacitor CT2 RF circuit
- h) Repeat steps (e) to (g) several times.
- i) Set the output level of the FM signal generator to maximum signal meter deflection.
- j) Adjust the primary core of T7 for minimum sound distortion.

● **AM SECTION**

- a) Turn the selector switch to AM.
- b) Connect the AM signal generator to the AM antenna terminal.
- c) Set the AM signal generator to modulation 400Hz, 30%, output level 30dB, frequency 600kHz. Set the receiver dial at 600kHz.
- d) Connect the VTVM and oscilloscope (in parallel) to the TAPE REC jack.
- e) Observing the output level on the VTVM, adjust the following cores for maximum reading.

T8 Oscillator circuit
 Ferrite loopstick antenna: Antenna circuit

- f) Set the AM signal generator and the receiver dial to 1,400kHz.
- g) Observing the output level on the VTVM, adjust the following cores for maximum reading.
 CT5 Oscillator circuit
 CT4 Antenna circuit
- h) Repeat alignments (e) to (g) several times.
- i) After these alignments, lock the trimmer capacitor with paint.

9.3 MPX DECODER ALIGNMENT

- a) Modulate the FM signal generator output by FM MPX modulator.
- b) Turn the selector switch to FM AUTO.
- c) Connect the FM signal generator to the FM antenna terminals.
- d) Set the FM MPX modulator to modulation; main 1kHz (L + R) 100%, pilot 10%.
- e) Set the output level of the FM signal generator to 60dB.
- f) Turn the tuning knob to maximum reading on the signal meter.

- g) Set the modulation of the FM MPX modulator to pilot only.
- h) Connect the oscilloscope to TP2.
- i) Adjust the transformers (T13, T14, T15) until the output level of the 19kHz becomes maximum on the scope.
- j) Set the FM MPX modulator to pilot with L or R signal.
- k) Connect the oscilloscope and VTVM to the TAPE REC jacks.
- l) Adjust the semi-fixed potentiometer on the CR unit (AWX-004, 012) until the output level of the L or R signal becomes maximum on the scope.

9.4 OTHER ALIGNMENTS

● **CHECKING THE SCA FILTER**

- a) Connect the FM signal generator to the FM antenna terminals.
- b) Modulate the FM signal generator connected to the audio generator, check that the frequency response shows troughs at around 67kHz and 72kHz.
- c) Should the item (b) give the unsatisfactory result, adjust T18 and T12.

● **CHECKING THE STEREO INDICATOR**

- a) Connect the FM signal generator to the FM antenna terminals.
- b) Turn the selector switch to FM AUTO.
- c) Modulate the FM signal generator connected to the FM MPX modulator, and set the FM MPX modulator pilot on. Check that the stereo indicator lamp goes in. Then set the FM MPX modulator to pilot off, and check that the stereo indicator lamp goes out.

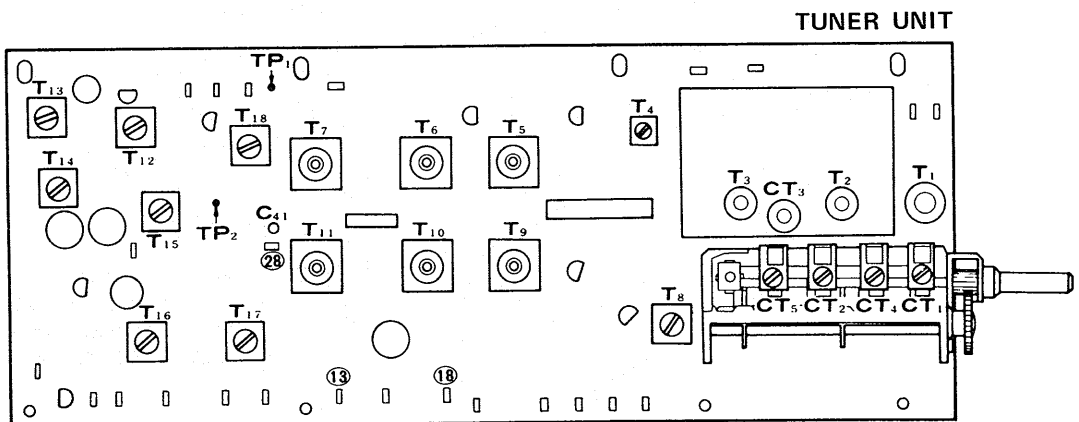
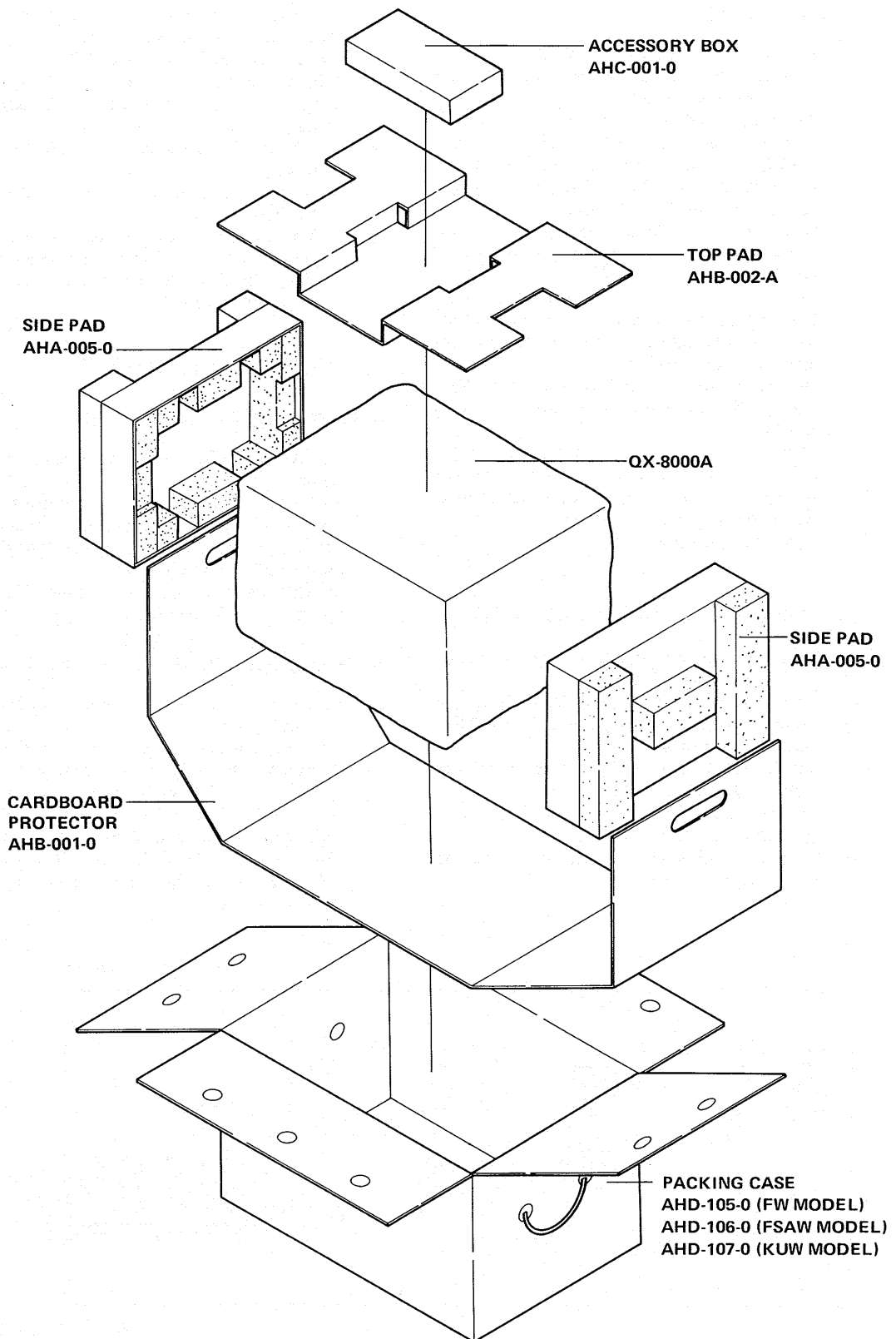


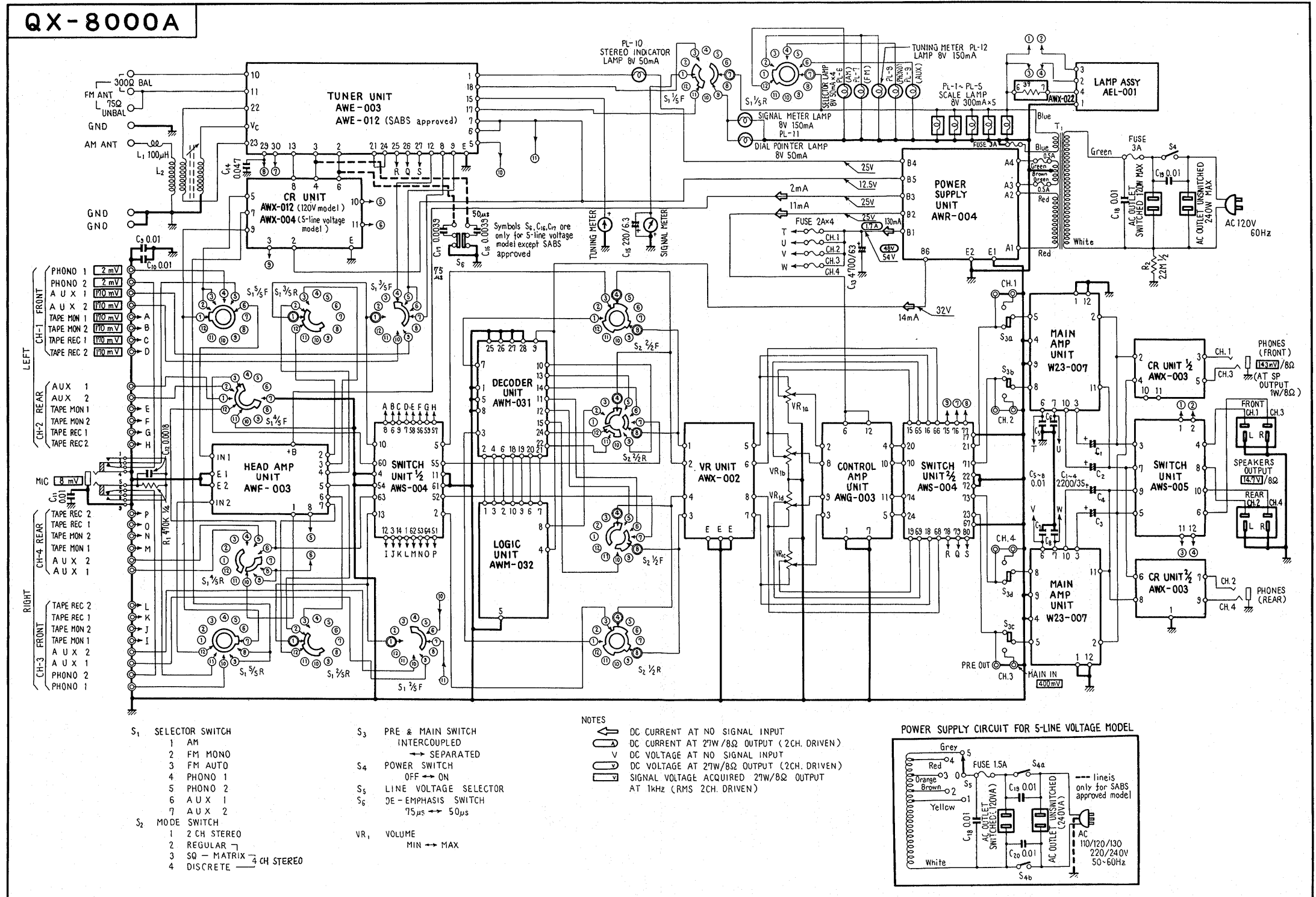
Fig. 1

10. PACKING METHOD AND PART NUMBERS



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

11.1 UNIT CONNECTION DIAGRAM AND MISCELLANEOUS PARTS



16 MISCELLANEOUS PARTS LIST

- CAPACITORS: IN μF UNLESS OTHERWISE NOTED. p: $\mu\mu\text{F}$.
- RESISTORS: IN Ω , $\frac{1}{2}\text{W}$ UNLESS OTHERWISE NOTED. k: $\text{k}\Omega$, M: $\text{M}\Omega$.

NOTE

This parts list is for the KUW model, the FW, FSAW models use some different parts as the following pages:

For FW model 21
 For FSAW model 23

CAPACITORS

Symbol	Description	Part No.
C1	Electrolytic 2200 35V	C52-077-0
C2	Electrolytic 2200 35V	C52-077-0
C3	Electrolytic 2200 35V	C52-077-0
C4	Electrolytic 2200 35V	C52-077-0
C5	Ceramic 0.01 DC1.4kV	C43-003-0
C6	Ceramic 0.01 DC1.4kV	C43-003-0
C7	Ceramic 0.01 DC1.4kV	C43-003-0
C8	Ceramic 0.01 DC1.4kV	C43-003-0
C9	Ceramic 0.01 50V	CKDYF 103Z 50
C10	Ceramic 0.01 50V	CKDYF 103Z 50
C11	Ceramic 0.01 50V	CKDYF 103Z 50
C12	Mylar 0.0018 50V	CQMA 182K 50
C13	Electrolytic 4700 63V	ACH-007-0
C14	Mylar 0.047 50V	CQMA 473K 50
C15	Electrolytic 220 6V	CEA 221P 6
C18	Metalized Mylar 0.01 250V	ACE-002-0
C19	Ceramic 0.01 DC1.4kV	C43-003-0

POTENTIOMETER AND RESISTORS

Symbol	Description	Part No.
VR1	4-gang VOLUME	ACV-303-0
R1	Carbon film 470k	RD $\frac{1}{2}$ PS 474J
R2	Carbon film 2.2M $\frac{1}{2}\text{W}$	RD $\frac{1}{2}$ PS 225J

TRANSFORMER AND COILS

Symbol	Description	Part No.
T1	Power transformer	ATT-082-0
L1	Choke coil	T24-030-0
L2	Ferrite loopstick antenna	ATB-006-0

SWITCHES

Symbol	Description	Part No.
S1	Input selector	ASB-014-A
S2	Mode selector	ASC-023-A
S3	Slide switch	S41-025-0
S4	Power switch	ASG-023-0

OTHERS

Symbol	Description	Part No.
	Head amp unit	AWF-003-0
	Decoder unit	AWM-031-0
	Logic unit	AWM-032-0
	Control amp unit	AWG-003-A
	Main amp unit	W23-007-0

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Symbol	Description	Part No.
	Tuner unit	AWE-003-D
	Power supply unit	AWR-004-A
	Switch unit	AWS-004-B
	Switch unit	AWS-005-0
	VR unit	AWX-002-0
	CR unit	AWX-003-A
	CR unit	AWX-012-A
	Lug unit	AWX-002-A
	Front panel ass'y	ANB-136-A
	Wooden case	AMM-004-F
	Dial shaft ass'y	M42-071-F
	Knob, TUNING	AAA-001-A
	Knob, BASS, TREBLE and BALANCE	AAB-027-A
	Knob, VOLUME, MODE and SELECTOR	AAB-026-A
	Knob, POWER	AAD-001-A
	Dial pointer	AAF-013-0
	Dial scale	AAG-003-B
	Signal meter	AAW-001-A
	Tuning meter	AAW-002-A
	Knob, push switch	AAD-011-0
	Antenna terminal board	K11-043-D
	4P input terminal board (A)	AKB-010-0
	6P input terminal board (A)	AKB-007-0
	4P input terminal board	AKB-005-0
	4P ground terminal	K13-047-0
PL1	Pilot lamp for dial scale	E22-017-0
PL2	Pilot lamp for dial scale	E22-017-0
PL3	Pilot lamp for dial scale	E22-017-0
PL4	Pilot lamp for dial scale	E22-017-0
PL5	Pilot lamp for dial scale	E22-017-0

Symbol	Description	Part No.
PL6	Pilot lamp for program indicator	AEL-007-0
PL7	Pilot lamp for program indicator	AEL-007-0
PL8	Pilot lamp for program indicator	AEL-007-0
PL9	Pilot lamp for program indicator	AEL-007-0
PL10	Pilot lamp for program indicator	AEL-007-0
PL11	Pilot lamp for meter	E22-002-0
PL12	Pilot lamp for meter	E22-002-0
	Fuse 2A for protection	E21-035-A
	Fuse 3A	E21-021-0
	Fuse 3A for protection	AEK-003-0
	Fuse 0.5A for protection	AEK-005-0
	Pilot lamp (meter) socket	K41-002-B
	Microphone jack	K72-020-0
	Headphones jack	K72-026-0
	Speaker socket	K72-028-0
	Pilot lamp (dial scale) socket	K91-005-A
	Spare AC outlet	AKP-002-0
	Fuse holder (protection)	K96-007-C
	Fuse holder	AKR-007-0
	Lamp ass'y	AEL-001-A
	Dial pulley ass'y	AXA-003-C
	Ferrite loopstick antenna holder	AXB-001-0
	Screw for grounding	B11-012-A
	Screw to fix wooden case M4 x 30	
	Special washer (square)	M52-010-0
	AC power cord	ADG-003-0
	FM T-type antenna	D52-013-0
	Operating instructions	ARB-028-0
	Pin plug	K72-015-A
	Speaker plug	K72-007-B
	Packing case	AHD-107-0
	Side pad	AHA-005-0
	Cardboard protector	AHB-001-0
	Top pad	AHB-002-A
	Accessory box	AHC-001-0

For FW model

CAPACITORS

Symbol	Description			Part No.
C1	Electrolytic	2200	35V	C52-077-0
C2	Electrolytic	2200	35V	C52-077-0
C3	Electrolytic	2200	35V	C52-077-0
C4	Electrolytic	2200	35V	C52-077-0
C5	Ceramic	0.01	DC1.4kV	C43-003-0
C6	Ceramic	0.01	DC1.4kV	C43-003-0
C7	Ceramic	0.01	DC1.4kV	C43-003-0
C8	Ceramic	0.01	DC1.4kV	C43-003-0
C9	Ceramic	0.01	50V	CKDYF 103Z 50
C10	Ceramic	0.01	50V	CKDYF 103Z 50
C11	Ceramic	0.01	50V	CKDYF 103Z 50
C12	Mylar	0.0018	50V	CQMA 182K 50
C13	Electrolytic	4700	63V	ACH-007-0
C14	Mylar	0.047	50V	CQMA 473K 50
C15	Electrolytic	220	6V	CEA 221P 6
C16	Mylar	0.0039	50V	CQMA 392J 50
C17	Mylar	0.0039	50V	CQMA 392J 50
C18	Ceramic	0.01	DC1.4kV	C43-003-0
C19	Ceramic	0.01	DC1.4kV	C43-003-0
C20	Ceramic	0.01	DC1.4kV	C43-003-0

POTENTIOMETER AND RESISTOR

Symbol	Description	Part No.
VR1	4-gang VOLUME	ACV-303-0
R1	Carbon film 470k	RD½PS 474J

TRANSFORMER AND COILS

Symbol	Description	Part No.
T1	Power transformer	ATT-083-0
L1	Choke coil	T24-030-0
L2	Ferrite loopstick antenna	T42-022-C

SWITCHES

Symbol	Description	Part No.
S1	Input selector	ASB-014-A
S2	Mode selector	ASC-023-A
S3	Slide switch	S41-025-0
S4	Power switch	ASG-003-0
S6	De-emphasis switch	S41-022-A

OTHERS

Symbol	Description	Part No.
	Head amp unit	AWF-003-0
	Decoder unit	AWM-031-0
	Logic unit	AWM-032-0
	Control amp unit	AWG-003-A
	Main amp unit	W23-007-0
	Tuner unit	AWE-003-D
	Power supply unit	AWR-004-A
	Switch unit	AWS-004-B
	Switch unit	AWS-005-0
	VR unit	AWX-002-0

Symbol	Description	Part No.	
	CR unit	AWX-003-A	
	CR unit	AWX-004-C	
	Lug unit	AWX-022-A	
	Front panel ass'y	ANB-136-A	
	Wooden case	AMM-004-F	
	Dial shaft ass'y	M42-071-F	
	Knob, TUNING	AAA-011-A	
	Knob, BASS, TREBLE and BALANCE	AAB-027-A	
	Knob, VOLUME, MODE and SELECTOR	AAB-026-A	
	Knob, POWER	AAD-001-A	
	Dial pointer	AAF-013-0	
	Dial scale	AAG-003-B	
	Signal meter	AAW-001-A	
	Tuning meter	AAW-002-A	
	Knob, push switch	AAD-011-0	
	Antenna terminal board	K11-043-D	
	4P input terminal board (A)	AKB-010-0	
	6P input terminal board (A)	AKB-007-0	
	4P input terminal board	AKB-005-0	
	4P ground terminal	K13-047-0	
PL1	Pilot lamp for dial scale	E22-017-0	
PL2	Pilot lamp for dial scale	E22-017-0	
PL3	Pilot lamp for dial scale	E22-017-0	
PL4	Pilot lamp for dial scale	E22-017-0	
PL5	Pilot lamp for dial scale	E22-017-0	
PL6	Pilot lamp for program indicator	AEL-007-0	
PL7	Pilot lamp for program indicator	AEL-007-0	
PL8	Pilot lamp for program indicator	AEL-007-0	
PL9	Pilot lamp for program indicator	AEL-007-0	
PL10	Pilot lamp for program indicator	AEL-007-0	

Symbol	Description	Part No.	
PL11	Pilot lamp for meter	E22-002-0	
PL12	Pilot lamp for meter	E22-002-0	
	Fuse 2A for protection	E21-035-A	
	Fuse 3A for protection	E21-022-0	
	Fuse 0.5A for protection	E21-019-A	
	Pilot lamp (meter) socket	K41-002-B	
	Microphone jack	K72-020-0	
	Headphones jack	K72-026-0	
	Speaker socket	K72-028-0	
	Pilot lamp (scale lamp) socket	K91-005-A	
	Spare AC outlet	AKP-002-0	
	Fuse holder (protection)	K96-007-C	
	Line voltage selector	AKR-001-0	
	Lamp ass'y	AEL-001-A	
	Dial pulley ass'y	AXA-003-C	
	Ferrite loopstick antenna holder	AXB-001-0	
	Screw for grounding	B11-012-A	
	Screw to fix wooden case M4 x 30		
	Special washer (square)	M52-010-0	
	AC power cord	ADG-001-0	
	FM T-type antenna	D52-013-0	
	Operating instructions	ARB-058-0	
	Pin plug	K72-015-A	
	Fuse 1.5A	E21-012-0	
	Fuse 3A	E21-006-0	
	Speaker plug	K72-007-B	
	Packing case	AHD-105-0	
	Side pad	AHA-005-0	
	Cardboard protector	AHB-001-0	
	Top pad	AHB-002-A	
	Accessory box	AHC-001-0	

For FSAW model

CAPACITORS

Symbol	Description			Part No.
C1	Electrolytic	2200	35V	C52-077-0
C2	Electrolytic	2200	35V	C52-077-0
C3	Electrolytic	2200	35V	C52-077-0
C4	Electrolytic	2200	35V	C52-077-0
C5	Ceramic	0.01	DC1.4kV	C43-003-0
C6	Ceramic	0.01	DC1.4kV	C43-003-0
C7	Ceramic	0.01	DC1.4kV	C43-003-0
C8	Ceramic	0.01	DC1.4kV	C43-003-0
C9	Ceramic	0.01	50V	CKDYK 103Z 50
C10	Ceramic	0.01	50V	CKDYK 103Z 50
C11	Ceramic	0.01	50V	CKDYK 103Z 50
C12	Mylar	0.0018	50V	CQMA 182K 50
C13	Electrolytic	4700	63V	ACH-007-0
C14	Mylar	0.047	50V	CQMA 473K 50
C15	Electrolytic	220	6V	CEA 221P 6
C18	Ceramic	0.01	DC1.4kV	C43-003-0
C19	Ceramic	0.01	DC1.4kV	C43-003-0
C20	Ceramic	0.01	DC1.4kV	C43-003-0

POTENTIOMETER AND RESISTOR

Symbol	Description		Part No.
VR1	4-gang VOLUME		ACV-303-0
R1	Carbon film	470k	RD $\frac{1}{2}$ PS 474J

TRANSFORMER AND COILS

Symbol	Description	Part No.
T1	Power transformer	ATT-083-0
L1	Choke coil	T24-030-0
L2	Ferrite loopstick antenna	T42-022-C

SWITCHES

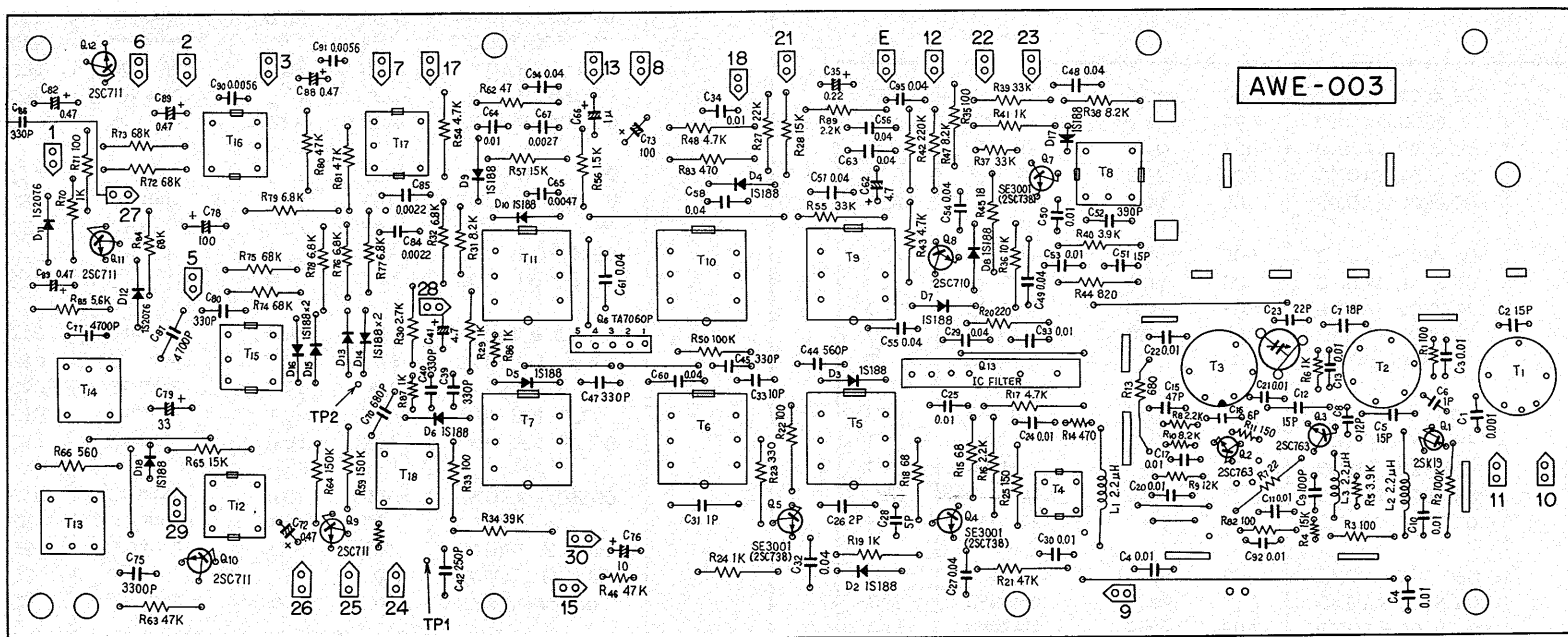
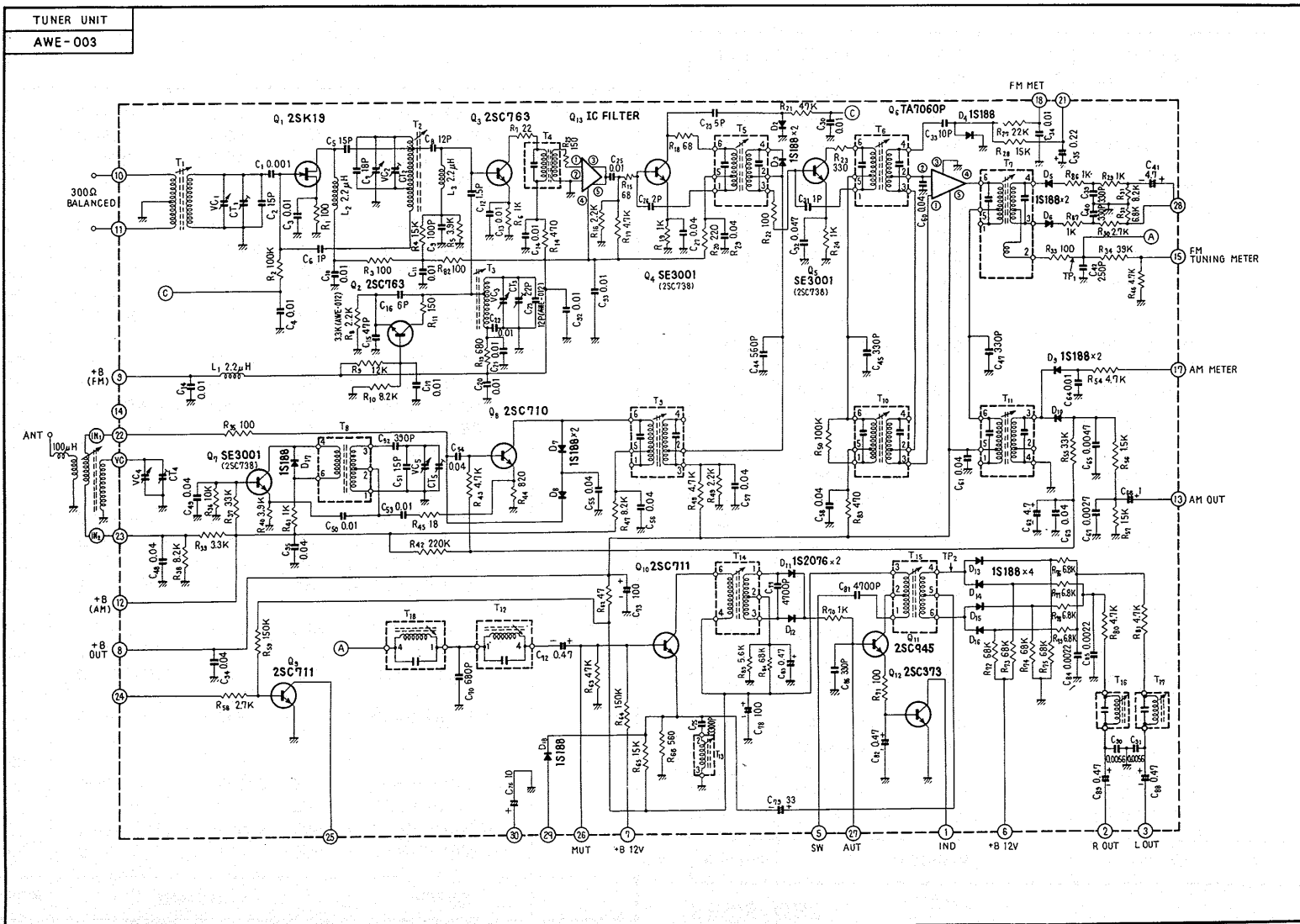
Symbol	Description	Part No.
S1	Input selector	ASB-014-A
S2	Mode selector	ASC-023-A
S3	Slide switch	S41-025-0
S4	Power switch	ASG-003-0

OTHERS

Symbol	Description	Part No.
	Head amp unit	AWF-003-0
	Decoder unit	AWM-031-0
	Logic unit	AWM-032-0
	Control amp unit	AWG-003-A
	Main amp unit	W23-007-0
	Tuner unit	AWE-012-0
	Power supply unit	AWR-004-A
	Switch unit	AWS-004-B
	Switch unit	AWS-005-0
	VR unit	AWX-002-0

Symbol	Description	Part No.	
	CR unit	AWX-003-A	
	CR unit	AWX-004-C	
	Lug unit	AWX-022-A	
	Front panel ass'y	ANB-136-A	
	Wooden case	AMM-004-F	
	Dial shaft ass'y	M42-071-F	
	Knob, TUNING	AAA-011-A	
	Knob, BASS, TREBLE and BALANCE	AAB-027-A	
	Knob, VOLUME, MODE and SELECTOR	AAB-026-A	
	Knob, POWER	AAD-001-A	
	Dial pointer	AAF-013-0	
	Dial scale	AAG-030-0	
	Signal meter	AAW-001-A	
	Tuning meter	AAW-002-A	
	Knob, push switch	AAD-011-0	
	Antenna terminal board	K11-043-D	
	4P input terminal board (A)	AKB-010-0	
	6P input terminal board (A)	AKB-007-0	
	4P input terminal board	AKB-005-0	
	4P ground terminal	K13-047-0	
PL1	Pilot lamp for dial scale	E22-017-0	
PL2	Pilot lamp for dial scale	E22-017-0	
PL3	Pilot lamp for dial scale	E22-017-0	
PL4	Pilot lamp for dial scale	E22-017-0	
PL5	Pilot lamp for dial scale	E22-017-0	
PL6	Pilot lamp for program indicator	AEL-007-0	
PL7	Pilot lamp for program indicator	AEL-007-0	
PL8	Pilot lamp for program indicator	AEL-007-0	
PL9	Pilot lamp for program indicator	AEL-007-0	
PL10	Pilot lamp for program indicator	AEL-007-0	

Symbol	Description	Part No.	
PL11	Pilot lamp for meter	E22-002-0	
PL12	Pilot lamp for meter	E22-002-0	
	Fuse 2A for protection	E21-035-A	
	Fuse 1.5A	E21-012-0	
	Fuse 3A for protection	E21-022-0	
	Pilot lamp (meter) socket	K41-002-B	
	Microphone jack	K72-020-0	
	Headphones jack	K72-026-0	
	Speaker socket	K72-028-0	
	Pilot lamp (dial scale) socket	K91-005-A	
	Spare AC outlet	AKP-002-0	
	Fuse holder (protection)	K96-007-C	
	Line voltage selector	AKR-001-0	
	Lamp ass'y	AEL-001-A	
	Dial pully ass'y	AXA-003-C	
	Ferrite loopstick antenna holder	AXB-001-0	
	Screw for ground	B11-012-A	
	Screw to fix wooden case		
	M4 x 30		
	Special washer (square)	M52-010-0	
	AC power cord	D54-003-A	
	FM T-type antenna	D52-013-0	
	Operating instructions	ARB-058-0	
	Pin plug	K72-015-A	
	Fuse 3A	E21-006-0	
	Speaker plug	K72-007-B	
	Packing case	AHD-106-0	
	Side pad	AHA-005-0	
	Cardboard protector	AHB-001-0	
	Top pad	AHB-002-A	
	Accessory box	AHC-001-0	



CAPACITORS

Symbol	Description			Part No.
VC	Tuning capacitor			C64-046-0
CT3	Ceramic trimmer			C43-007-A
C1	Ceramic	0.001	50V	CKDYF 102Z 50
C2	Ceramic	15p	50V	CCDSL 150K 50
C3	Ceramic	0.01	50V	CKDYF 103Z 50
C4	Ceramic	0.01	50V	CKDYF 103Z 50
C5	Ceramic	15p	50V	CCDSL 150K 50
C6	Ceramic	1p	500V	CGB 010K 500
C7	Ceramic	18p	50V	CCDSL 180K 50
C8	Ceramic	12p	50V	CCDSL 120K 50
C9	Ceramic	100p	50V	CCDSL 101K 50
C10	Ceramic	0.01	50V	CKDYF 103Z 50
C11	Ceramic	0.01	50V	CKDYF 103Z 50
C12	Ceramic	1.5p	500V	CGB1R5K 500
C13	Ceramic	0.01	50V	CKDYF 103Z 50
C14	Ceramic	0.01	50V	CKDYF 103Z 50
C15	Ceramic	47p	50V	CCDSL 470K 50
C16	Ceramic	6p	50V	CCDTJ 060D 50
C17	Ceramic	0.01	50V	CKDYF 103Z 50
C20	Ceramic	0.01	50V	CKDYF 103Z 50
C21	Ceramic	0.01	50V	CKDYB 103K 50
C22	Ceramic	0.01	50V	CKDYB 103K 50
C23	Ceramic	22p	50V	CCDRH 220K 50
C24	Ceramic	0.01	50V	CKDYF 103Z 50
C25	Ceramic	0.01	50V	CKDYF 103Z 50
C26	Ceramic	2p	50V	CCDSL 020C 50
C27	Ceramic	0.04	50V	CKDYF 403Z 50

Symbol	Description			Part No.
C28	Ceramic	5p	50V	CCDSL 050D 50
C29	Ceramic	0.04	50V	CKDYF 403Z 50
C30	Ceramic	0.01	50V	CKDYF 103Z 50
C31	Ceramic	1p	500V	CGB 010K 500
C32	Ceramic	0.047	25V	CKDBC 473Z 25
C33	Ceramic	10p	50V	CCDSL 100F 50
C34	Ceramic	0.01	50V	CKDYF 103Z 50
C35	Electrolytic	0.22	25V	CSSA R22M 25
C39	Ceramic	330p	50V	CKDYB 331K 50
C40	Ceramic	330p	50V	CKDYB 331K 50
C41	Electrolytic	4.7	25V	CEA 4R7P 25
C42	Ceramic	250p	50V	CCDSL 251K 50
C44	Ceramic	560p	50V	CKDYB 561K 50
C45	Ceramic	330p	50V	CKDYB 331K 50
C47	Ceramic	330p	50V	CKDYB 331K 50
C48	Ceramic	0.04	50V	CKDYF 403Z 50
C49	Ceramic	0.04	50V	CKDYF 403Z 50
C50	Mylar	0.01	50V	CQMA 103K 50
C51	Ceramic	15p	50V	CCDUJ 150K 50
C52	Styrol	390p	50V	CQSA 391K 50
C53	Mylar	0.01	50V	CQMA 103K 50
C54	Ceramic	0.04	50V	CKDYF 403Z 50
C55	Ceramic	0.04	50V	CKDYF 403Z 50
C56	Ceramic	0.04	50V	CKDYF 403Z 50
C57	Ceramic	0.04	50V	CKDYF 403Z 50
C58	Ceramic	0.04	50V	CKDYF 403Z 50
C60	Ceramic	0.04	50V	CKDYF 403Z 50
C61	Ceramic	0.04	50V	CKDYF 403Z 50
C62	Electrolytic	4.7	25V	CEA 4R7P 25
C63	Ceramic	0.04	50V	CKDYF 403Z 50

Symbol	Description			Part No.
C64	Ceramic	0.01	50V	CKDYF 103Z 50
C65	Mylar	0.0047	50V	CQMA 472K 50
C66	Electrolytic	1	50V	CEA 010P 50
C67	Mylar	0.0027	50V	CQMA 272K 50
C69				
C70	Styrol	680p	50V	CQSA 681J 50
C71				
C72	Electrolytic	0.47	50V	CEA R47P 50
C73	Electrolytic	100	16V	CEA 101P 16
C75	Styrol	0.0033	50V	C15-011-A
C76	Electrolytic	10	16V	CEA 100P 16
C77	Styrol	0.0047	50V	C15-013-A
C78	Electrolytic	100	16V	CEA 101P 16
C79	Electrolytic	33	16V	CEA 330P 16
C80				
C81	Styrol	0.0047	50V	C15-013-A
C82	Electrolytic	0.47	50V	CEA R47P 50
C83	Electrolytic	0.47	50V	CEA R47P 50
C84	Mylar	0.0022	50V	CQMA 222J 50
C85	Mylar	0.0022	50V	CQMA 222J 50
C86	Ceramic	330p	50V	CKDYB 331K 50
C88	Electrolytic	0.47	50V	CEA R47P 50
C89	Electrolytic	0.47	50V	CEA R47P 50
C90	Mylar	0.0056	50V	CQMA 562K 50
C91	Mylar	0.0056	50V	CQMA 562K 50
C92	Ceramic	0.01	50V	CKDYF 103Z 50
C93	Ceramic	0.01	50V	CKDYF 103Z 50
C94	Ceramic	0.04	50V	CKDYF 403Z 50
C95	Ceramic	0.04	50V	CKDYF 403Z 50

RESISTORS

Symbol	Description			Part No.
R1	Carbon film	100		RD $\frac{1}{4}$ VS 101J
R2	Carbon film	100k		RD $\frac{1}{4}$ PS 104J
R3	Carbon film	100		RD $\frac{1}{4}$ VS 101J
R4	Carbon film	15k		RD $\frac{1}{4}$ VS 153J
R5	Carbon film	3.9k		RD $\frac{1}{4}$ VS 392J
R6	Carbon film	1k		RD $\frac{1}{4}$ VS 102J
R7	Carbon film	22		RD $\frac{1}{4}$ VS 220J
R8	Carbon film	2.2k		RD $\frac{1}{4}$ VS 222J
R9	Carbon film	12k		RD $\frac{1}{4}$ VS 123J
R10	Carbon film	8.2k		RD $\frac{1}{4}$ VS 822J
R11	Carbon film	150		RD $\frac{1}{4}$ VS 151J
R13	Carbon film	680		RD $\frac{1}{4}$ PS 681J
R14	Carbon film	470		RD $\frac{1}{4}$ VS 471J
R15	Carbon film	68		RD $\frac{1}{4}$ PS 680J
R16	Carbon film	2.2k		RD $\frac{1}{4}$ VS 222J
R17	Carbon film	4.7k		RD $\frac{1}{4}$ VS 472J
R18	Carbon film	68		RD $\frac{1}{4}$ VS 680J
R19	Carbon film	1k		RD $\frac{1}{4}$ PS 102J
R20	Carbon film	220		RD $\frac{1}{4}$ PS 221J
R21	Carbon film	47k		RD $\frac{1}{4}$ PS 473J
R22	Carbon film	100		RD $\frac{1}{4}$ PS 101J
R23	Carbon film	330		RD $\frac{1}{4}$ PS 331J
R24	Carbon film	1k		RD $\frac{1}{4}$ PS 102J
R25	Carbon film	150		RD $\frac{1}{4}$ PS 151J
R27	Carbon film	22k		RD $\frac{1}{4}$ PS 223J
R28	Carbon film	15k		RD $\frac{1}{4}$ PS 153J
R29	Carbon film	1k		RD $\frac{1}{4}$ PS 102J
R30	Carbon film	2.7k		RD $\frac{1}{4}$ PS 272J
R31	Carbon film	8.2k		RD $\frac{1}{4}$ PS 822J
R32	Carbon film	6.8k		RD $\frac{1}{4}$ PS 682J

Symbol	Description	Part No.
R33	Carbon film 100	RD½PS 101J
R34	Carbon film 39k	RD½PS 393J
R35	Carbon film 100	RD½PS 101J
R36	Carbon film 10k	RD½PS 103J
R37	Carbon film 33k	RD½VS 333J
R38	Carbon film 8.2k	RD½PS 822J
R39	Carbon film 3.3k	RD½PS 332J
R40	Carbon film 3.9k	RD½PS 392J
R41	Carbon film 1k	RD½PS 102J
R42	Carbon film 220k	RD½PS 224J
R43	Carbon film 4.7k	RD½PS 472J
R44	Carbon film 820	RD½PS 821J
R45	Carbon film 18	RD½PS 180J
R46	Carbon film 4.7k	RD½VS 472J
R47	Carbon film 8.2k	RD½PS 822J
R48	Carbon film 4.7k	RD½PS 472J
R49	Carbon film 2.2k	RD½PS 222J
R50	Carbon film 100k	RD½PS 104J
R54	Carbon film 4.7k	RD½PS 472J
R55	Carbon film 33k	RD½PS 333J
R56	Carbon film 1.5k	RD½PS 152J
R57	Carbon film 15k	RD½PS 153J
R58	Carbon film 2.7k	RD½VS 272J
R59	Carbon film 150k	RD½PS 154J
R62	Carbon film 47	RD½PS 470J

Symbol	Description	Part No.
R63	Carbon film 47k	RD½PS 473J
R64	Carbon film 150k	RD½PS 154J
R65	Carbon film 15k	RD½PS 153J
R66	Carbon film 560	RD½PS 561J
R67		
R70	Carbon film 1k	RD½PS 102J
R71	Carbon film 100	RD½PS 101J
R72	Carbon film 68k	RD½PS 683J
R73	Carbon film 68k	RD½PS 683J
R74	Carbon film 68k	RD½PS 683J
R75	Carbon film 68k	RD½PS 683J
R76	Carbon film 6.8k	RD½PS 682J
R77	Carbon film 6.8k	RD½PS 682J
R78	Carbon film 6.8k	RD½PS 682J
R79	Carbon film 6.8k	RD½PS 682J
R80	Carbon film 4.7k	RD½PS 472J
R81	Carbon film 4.7k	RD½PS 472J
R82	Carbon film 100	RD½VS 101J
R83	Carbon film 470	RD½PS 471J
R84	Carbon film 68k	RD½PS 683J
R85	Carbon film 5.6k	RD½VS 562J
R86	Carbon film 1k	RD½VS 102J
R87	Carbon film 1k	RD½VS 102J

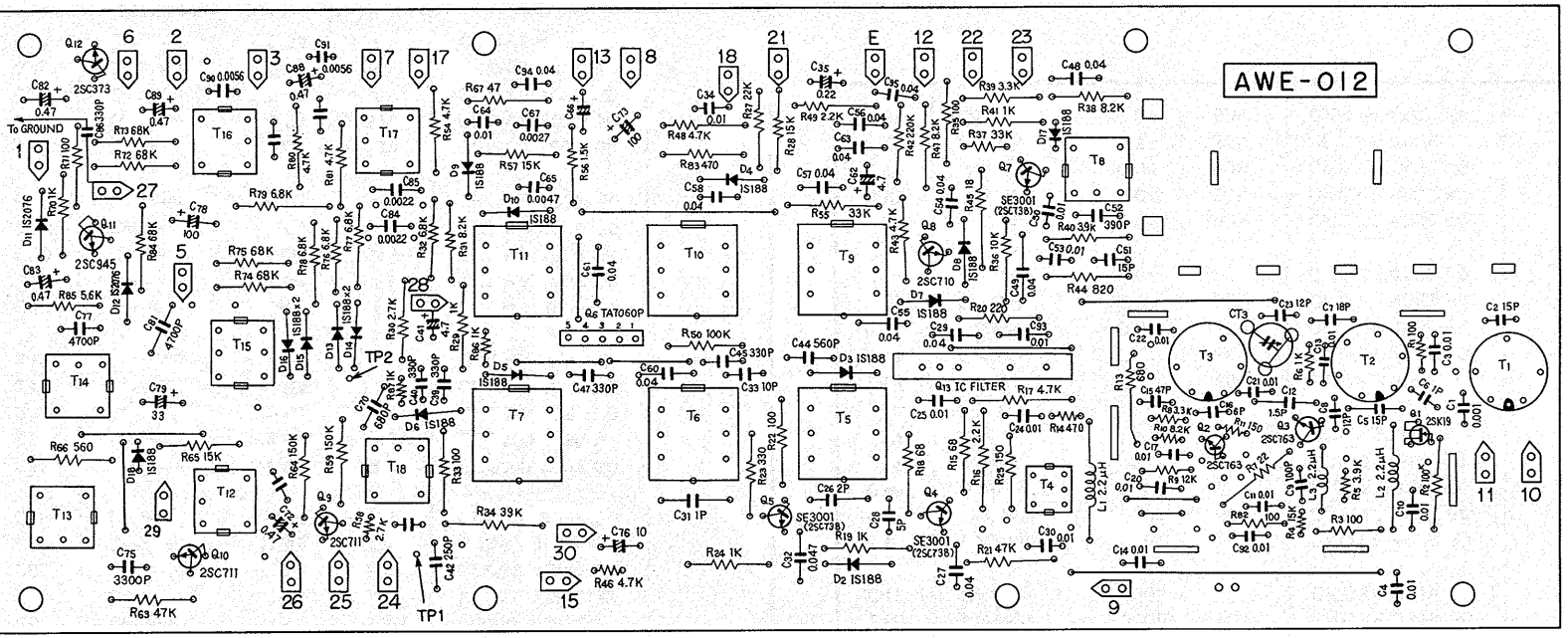
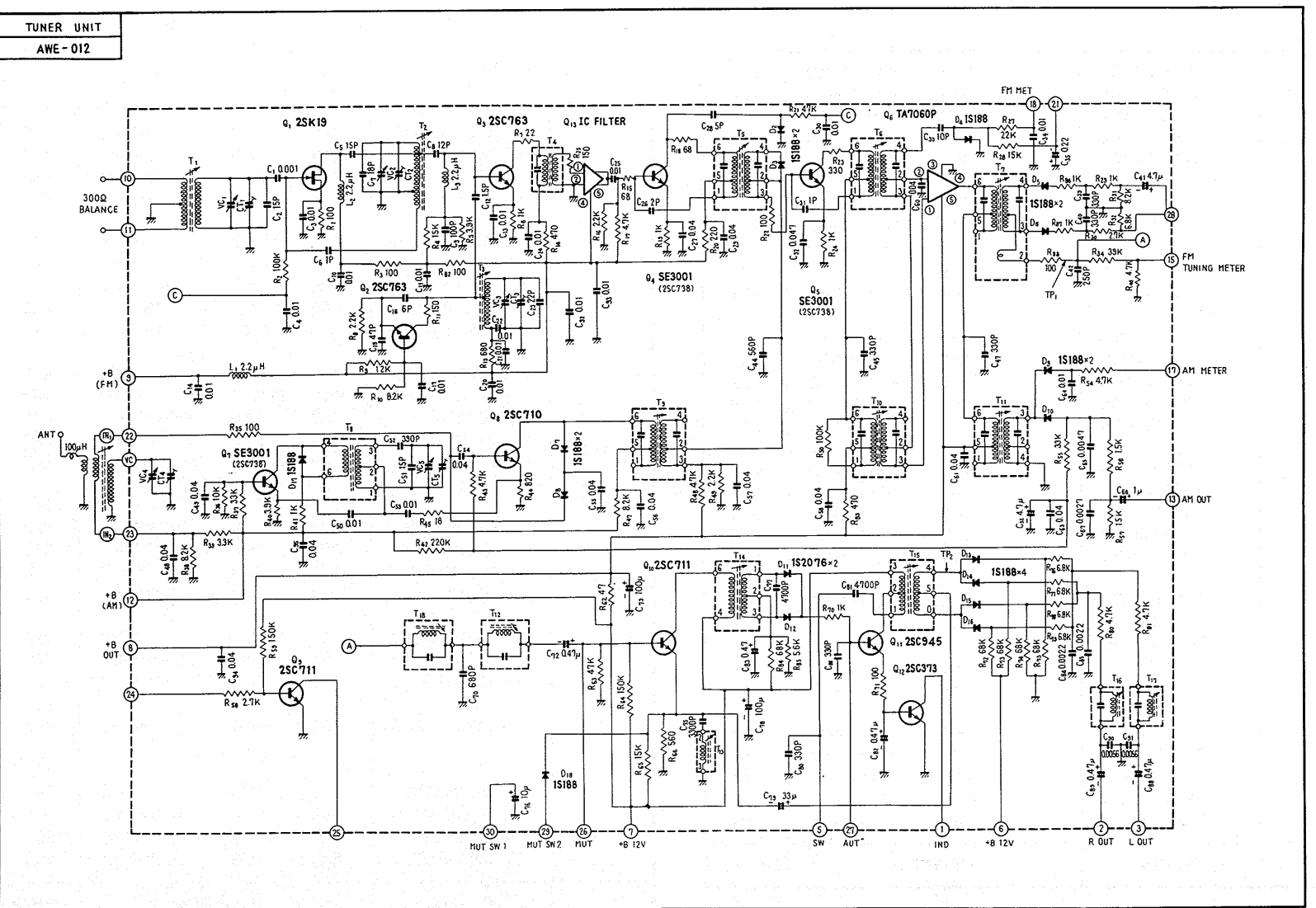
TRANSFORMERS AND COILS

Symbol	Description	Part No.	
T1	FM Antenna Coil	ATC-002-0	
T2	FM RF Coil	ATC-004-0	
T3	FM OSC Coil	ATC-003-0	
T4	Matching Transformer	ATE-001-A	
T5	FM IF Transformer	T73-035-A	
T6	FM IF Transformer	T73-036-0	
T7	FM IF Transformer	T74-003-A	
T8	AM OSC Coil	ATB-001-A	
T9	AM IF Transformer	T71-028-0	
T10	AM IF Transformer	T71-026-0	
T11	AM IF Transformer	T72-022-0	
T12	SCA Filter	ATM-006-0	
T13	19kHz Transformer	T75-023-B	
T14	19kHz Transformer	T75-024-B	
T15	38kHz Transformer	T75-025-B	
T16	38kHz Leak Filter	ATM-004-0	
T17	38kHz Leak Filter	ATM-004-0	
T18	SCA Filter	ATM-007-0	
L1	RF Choke Coil	T24-028-0	
L2	RF Choke Coil	T24-028-0	
L3	RF Choke Coil	T24-028-0	

SEMICONDUCTORS

Symbol	Description	Part No.	
Q1	2SK19-Y	FET	
Q2	2SC763-D or C	Transistor	
Q3	2SC763-D or C	Transistor	
Q4	SE3001 or 2SC738	Transistor	
Q5	SE3001 or 2SC738	Transistor	
Q6	TA7060P-BL	IC	
Q7	SE3001 or 2SC738	Transistor	
Q8	2SC710-D or DR	Transistor	
Q9	2SC711-F	Transistor	
Q10	2SC711-E or F	Transistor	
Q11	2SC945-R	Transistor	
Q12	2SC373	Transistor	
Q13	FM IC Filter		{ W53-046-A ATF-007-0
D2	1S188 FM-1	Diode	
D3	1S188 FM-1	Diode	
D4	1S188 FM-1	Diode	
D5	1S188 FM-1	Diode	
D6	1S188 FM-1	Diode	
D7	1S188 FM-1	Diode	
D8	1S188 FM-1	Diode	
D9	1S188 FM-1	Diode	
D10	1S188 FM-1	Diode	
D11	1S2076	Diode	
D12	1S2076	Diode	
D13	1S188 FM-1	Diode	
D14	1S188 FM-1	Diode	
D15	1S188 FM-1	Diode	
D16	1S188 FM-1	Diode	
D17	1S188 FM-1	Diode	
D18	1S188 FM-1	Diode	

1.3 TUNER UNIT (AWE-012) For FSAW model



CAPACITORS

Symbol	Description			Part No.
VC	Tuning capacitors			C64-046-A
CT3	Ceramic trimmer			C43-007-A
C1	Ceramic	0.001	50V	CKDYF 102Z 50
C2	Ceramic	15p	50V	CCDSL 150K 50
C3	Ceramic	0.01	50V	CKDYF 103Z 50
C4	Ceramic	0.01	50V	CKDYF 103Z 50
C5	Ceramic	15p	50V	CCDSL 150K 50
C6	Ceramic	1p	500V	CGB 010K 500
C7	Ceramic	18p	50V	CCDSL 180K 50
C8	Ceramic	12p	50V	CCDSL 120K 50
C9	Ceramic	100p	50V	CCDSL 101K 50
C10	Ceramic	0.01	50V	CKDYF 103Z 50
C11	Ceramic	0.01	50V	CKDYF 103Z 50
C12	Ceramic	1.5p	500V	CGB1R5K 500
C13	Ceramic	0.01	50V	CKDYF 103Z 50
C14	Ceramic	0.01	50V	CKDYF 103Z 50
C15	Ceramic	47p	50V	CCDSL 470K 50
C16	Ceramic	6p	50V	CCDUJ 060D 50
C17	Ceramic	0.01	50V	CKDYF 103Z 50
C20	Ceramic	0.01	50V	CKDYF 103Z 50
C21	Ceramic	0.01	50V	CKDYB 103K 50
C22	Ceramic	0.01	50V	CKDYB 103K 50
C23	Ceramic	12p	50V	CCDTH 120K 50
C24	Ceramic	0.01	50V	CKDYF 103Z 50
C25	Ceramic	0.01	50V	CKDYF 103Z 50
C26	Ceramic	2p	50V	CCDSL 020C 50
C27	Ceramic	0.04	50V	CKDYF 403Z 50

Symbol	Description			Part No.
C28	Ceramic	5p	50V	CCDSL 050D 50
C29	Ceramic	0.04	50V	CKDYF 403Z 50
C30	Ceramic	0.01	50V	CKDYF 103Z 50
C31	Ceramic	1p	500V	CGB 010K 500
C32	Ceramic	0.047	50V	CKDDC 473Z 50
C33	Ceramic	10p	50V	CCDSL 100F 50
C34	Ceramic	0.01	50V	CKDYF 103Z 50
C35	Electrolytic	0.22	25V	CSSA R22M 25
C39	Ceramic	330p	50V	CKDYB 331K 50
C40	Ceramic	330p	50V	CKDYB 331K 50
C41	Electrolytic	4.7	25V	CEA 4R7P 25
C42	Ceramic	250p	50V	CCDSL 251K 50
C44	Ceramic	560p	50V	CKDYB 561K 50
C45	Ceramic	330p	50V	CKDYB 331K 50
C47	Ceramic	330p	50V	CKDYB 331K 50
C48	Ceramic	0.04	50V	CKDYF 403Z 50
C49	Ceramic	0.04	50V	CKDYF 403Z 50
C50	Mylar	0.01	50V	CQMA 103K 50
C51	Ceramic	15p	50V	CCDUJ 150K 50
C52	Styrol	390p	50V	CQSA 391K 50
C53	Mylar	0.01	50V	CQMA 103K 50
C54	Ceramic	0.04	50V	CKDYF 403Z 50
C55	Ceramic	0.04	50V	CKDYF 403Z 50
C56	Ceramic	0.04	50V	CKDYF 403Z 50
C57	Ceramic	0.04	50V	CKDYF 403Z 50
C58	Ceramic	0.04	50V	CKDYF 403Z 50
C60	Ceramic	0.04	50V	CKDYF 403Z 50
C61	Ceramic	0.04	50V	CKDYF 403Z 50
C62	Electrolytic	4.7	25V	CEA 4R7P 25
C63	Ceramic	0.04	50V	CKDYF 403Z 50

Symbol	Description			Part No.
C64	Ceramic	0.01	50V	CKDYF 103Z 50
C65	Mylar	0.0047	50V	CQMA 472K 50
C66	Electrolytic	1	50V	CEA 010P 50
C67	Mylar	0.0027	50V	CQMA 272K 50
C69				
C70	Styrol	680p	50V	CQSA 681J 50
C71				
C72	Electrolytic	0.47	50V	CEA R47P 50
C73	Electrolytic	100	16V	CEA 101P 16
C75	Styrol	0.0033	50V	C15-011-A
C76	Electrolytic	10	16V	CEA 100P 16
C77	Styrol	0.0047	50V	C15-013-A
C78	Electrolytic	100	16V	CEA 101P 16
C79	Electrolytic	33	16V	CEA 330P 16
C80				
C81	Styrol	0.0047	50V	C15-013-A
C82	Electrolytic	0.47	50V	CEA R47P 50
C83	Electrolytic	0.47	50V	CEA R47P 50
C84	Mylar	0.0022	50V	CQMA 222J 50
C85	Mylar	0.0022	50V	CQMA 222J 50
C86	Ceramic	330p	50V	CKDYB 331K 50
C88	Electrolytic	0.47	50V	CEA R47P 50
C89	Electrolytic	0.47	50V	CEA R47P 50
C90	Mylar	0.0056	50V	CQMA 562K 50
C91	Mylar	0.0056	50V	CQMA 562K 50
C92	Ceramic	0.01	50V	CKDYF 103Z 50
C93	Ceramic	0.01	50V	CKDYF 103Z 50
C94	Ceramic	0.04	50V	CKDYF 403Z 50
C95	Ceramic	0.04	50V	CKDYF 403Z 50

RESISTORS

Symbol	Description		Part No.
R1	Carbon film	100	RD%VS 101J
R2	Carbon film	100k	RD%PS 104J
R3	Carbon film	100	RD%VS 101J
R4	Carbon film	15k	RD%VS 153J
R5	Carbon film	3.9k	RD%VS 392J
R6	Carbon film	1k	RD%VS 102J
R7	Carbon film	22	RD%PS 220J
R8	Carbon film	3.3k	RD%VS 332J
R9	Carbon film	12k	RD%VS 123J
R10	Carbon film	8.2k	RD%VS 822J
R11	Carbon film	150	RD%VS 151J
R13	Carbon film	680	RD%PS 681J
R14	Carbon film	470	RD%VS 471J
R15	Carbon film	68	RD%PS 680J
R16	Carbon film	2.2k	RD%VS 222J
R17	Carbon film	4.7k	RD%VS 472J
R18	Carbon film	68	RD%VS 680J
R19	Carbon film	1k	RD%PS 102J
R20	Carbon film	220	RD%PS 221J
R21	Carbon film	47k	RD%PS 473J
R22	Carbon film	100	RD%PS 101J
R23	Carbon film	330	RD%PS 331J
R24	Carbon film	1k	RD%PS 102J
R25	Carbon film	150	RD%PS 151J
R27	Carbon film	22k	RD%PS 223J
R28	Carbon film	15k	RD%PS 153J
R29	Carbon film	1k	RD%PS 102J
R30	Carbon film	2.7k	RD%PS 272J
R31	Carbon film	8.2k	RD%PS 822J
R32	Carbon film	6.8k	RD%PS 682J

Symbol	Description	Part No.	
R33	Carbon film 100	RD¼PS 101J	
R34	Carbon film 39k	RD¼PS 393J	
R35	Carbon film 100	RD¼PS 101J	
R36	Carbon film 10k	RD¼PS 103J	
R37	Carbon film 33k	RD¼VS 333K	
R38	Carbon film 8.2k	RD¼PS 822J	
R39	Carbon film 3.3k	RD¼PS 332J	
R40	Carbon film 3.9k	RD¼PS 392J	
R41	Carbon film 1k	RD¼PS 102J	
R42	Carbon film 220k	RD¼PS 224J	
R43	Carbon film 4.7k	RD¼PS 472J	
R44	Carbon film 820	RD¼PS 821J	
R45	Carbon film 18	RD¼PS 180J	
R46	Carbon film 4.7k	RD¼VS 472J	
R47	Carbon film 8.2k	RD¼PS 822J	
R48	Carbon film 4.7k	RD¼PS 472J	
R49	Carbon film 2.2k	RD¼PS 222J	
R50	Carbon film 100k	RD¼PS 104J	
R54	Carbon film 4.7k	RD¼PS 472J	
R55	Carbon film 33k	RD¼PS 333J	
R56	Carbon film 1.5k	RD¼PS 152J	
R57	Carbon film 15k	RD¼PS 153J	
R58	Carbon film 2.7k	RD¼VS 272J	
R59	Carbon film 150k	RD¼PS 154J	
R62	Carbon film 47	RD¼PS 470J	
R63	Carbon film 47k	RD¼PS 473J	
R64	Carbon film 150k	RD¼PS 154J	
R65	Carbon film 15k	RD¼PS 153J	
R66	Carbon film 560	RD¼PS 561J	
R67			

Symbol	Description	Part No.	
R70	Carbon film 1k	RD¼PS 102J	
R71	Carbon film 100	RD¼PS 101J	
R72	Carbon film 68k	RD¼PS 683J	
R73	Carbon film 68k	RD¼PS 683J	
R74	Carbon film 68k	RD¼PS 683J	
R75	Carbon film 68k	RD¼PS 683J	
R76	Carbon film 6.8k	RD¼PS 682J	
R77	Carbon film 6.8k	RD¼PS 682J	
R78	Carbon film 6.8k	RD¼PS 682J	
R79	Carbon film 6.8k	RD¼PS 682J	
R80	Carbon film 4.7k	RD¼PS 472J	
R81	Carbon film 4.7k	RD¼PS 472J	
R82	Carbon film 100	RD¼VS 101J	
R83	Carbon film 470	RD¼PS 471J	
R84	Carbon film 68k	RD¼PS 683J	
R85	Carbon film 5.6k	RD¼VS 562J	
R86	Carbon film 1k	RD¼VS 102J	
R87	Carbon film 1k	RD¼VS 102J	

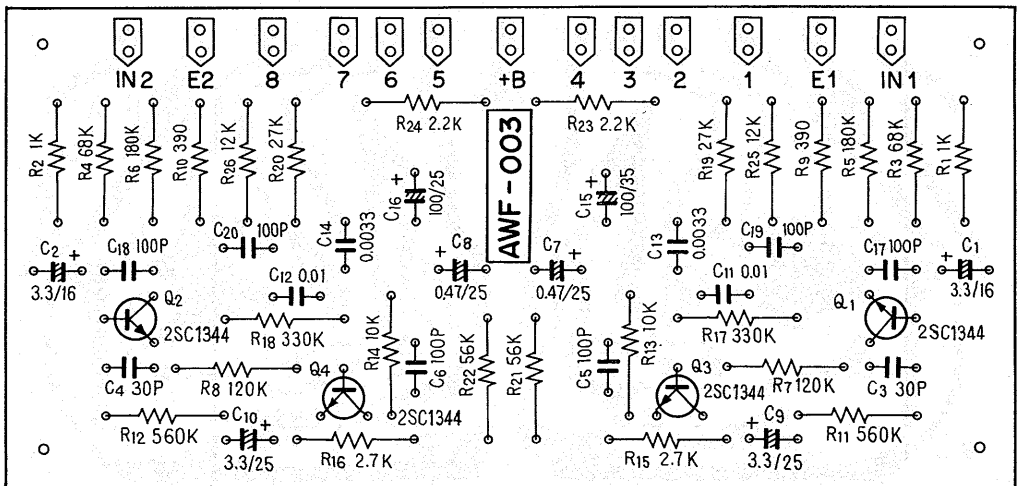
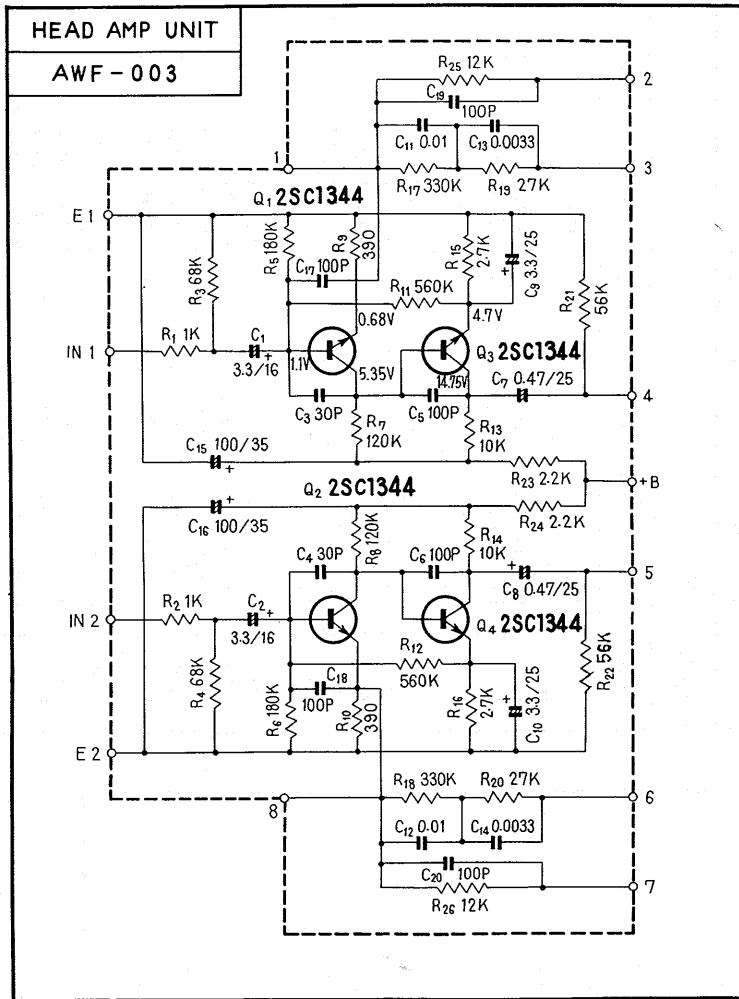
TRANSFORMERS AND COILS

Symbol	Description	Part No.	
T1	FM Antenna Coil	ATC-002-0	
T2	FM RF Coil	ATC-004-0	
T3	FM OSC Coil	ATC-007-0	
T4	Matching Transformer	ATE-001-A	
T5	FM IF Transformer	T73-035-A	
T6	FM IF Transformer	T73-036-0	
T7	FM IF Transformer	T74-003-A	
T8	AM OSC Coil	ATB-001-A	
T9	AM IF Transformer	T71-028-0	
T10	AM IF Transformer	T71-026-0	
T11	AM IF Transformer	T72-022-0	
T12	SCA Filter	ATM-006-0	
T13	19kHz Transformer	T75-023-B	
T14	19kHz Transformer	T75-024-B	
T15	38kHz Transformer	T75-025-B	
T16	38kHz Leak Filter	ATM-004-0	
T17	38kHz Leak Filter	ATM-004-0	
T18	SCA Filter	ATM-007-0	
L1	RF Choke Coil	T24-028-0	
L2	RF Choke Coil	T24-028-0	
L3	RF Choke Coil	T24-028-0	

SEMICONDUCTORS

Symbol	Description	Part No.	
Q1	2SK19-Y FET		
Q2	2SC763-D or C Transistor		
Q3	2SC763-D or C Transistor		
Q4	SE3001 or 2SC738 Transistor		
Q5	SE3001 or 2SC738 Transistor		
Q6	TA7060P-BL IC		
Q7	SE3001 or 2SC738 Transistor		
Q8	2SC710-D or DR Transistor		
Q9	2SC711-F Transistor		
Q10	2SC711-E or F Transistor		
Q11	2SC945-R Transistor		
Q12	2SC373 Transistor		
Q13	FM IC Filter		{ W53-046-A ATF-007-0
D2	1S188 FM-1 Diode		
D3	1S188 FM-1 Diode		
D4	1S188 FM-1 Diode		
D5	1S188 FM-1 Diode		
D6	1S188 FM-1 Diode		
D7	1S188 FM-1 Diode		
D8	1S188 FM-1 Diode		
D9	1S188 FM-1 Diode		
D10	1S188 FM-1 Diode		
D11	1S2076 Diode		
D12	1S2076 Diode		
D13	1S188 FM-1 Diode		
D14	1S188 FM-1 Diode		
D15	1S188 FM-1 Diode		
D16	1S188 FM-1 Diode		
D17	1S188 FM-1 Diode		
D18	1S188 FM-1 Diode		

11.4 HEAD AMP UNIT



PARTS LIST OF HEAD AMP UNIT

CAPACITORS

Symbol	Description	Part No.	
C1	Electrolytic 3.3 16V	CSSA 3R3M 16	
C2	Electrolytic 3.3 16V	CSSA 3R3M 16	
C3	Ceramic 30p 50V	CCDSL 300K 50	
C4	Ceramic 30p 50V	CCDSL 300K 50	
C5	Ceramic 100p 50V	CCDSL 101K 50	
C6	Ceramic 100p 50V	CCDSL 101K 50	
C7	Electrolytic 0.47 25V	CSSA R47M 25	
C8	Electrolytic 0.47 25V	CSSA R47M 25	
C9	Electrolytic 3.3 25V	CEA 3R3P 25	
C10	Electrolytic 3.3 25V	CEA 3R3P 25	
C11	Mylar 0.01 50V	CQMA 103K 50	
C12	Mylar 0.01 50V	CQMA 103K 50	
C13	Mylar 0.0033 50V	CQMA 332K 50	
C14	Mylar 0.0033 50V	CQMA 332K 50	
C15	Electrolytic 100 35V	CEA 101P 35	
C16	Electrolytic 100 35V	CEA 101P 35	
C17	Ceramic 100p 50V	CCDSL 101K 50	
C18	Ceramic 100p 50V	CCDSL 101K 50	
C19	Ceramic 100p 50V	CCDSL 101K 50	
C20	Ceramic 100p 50V	CCDSL 101K 50	

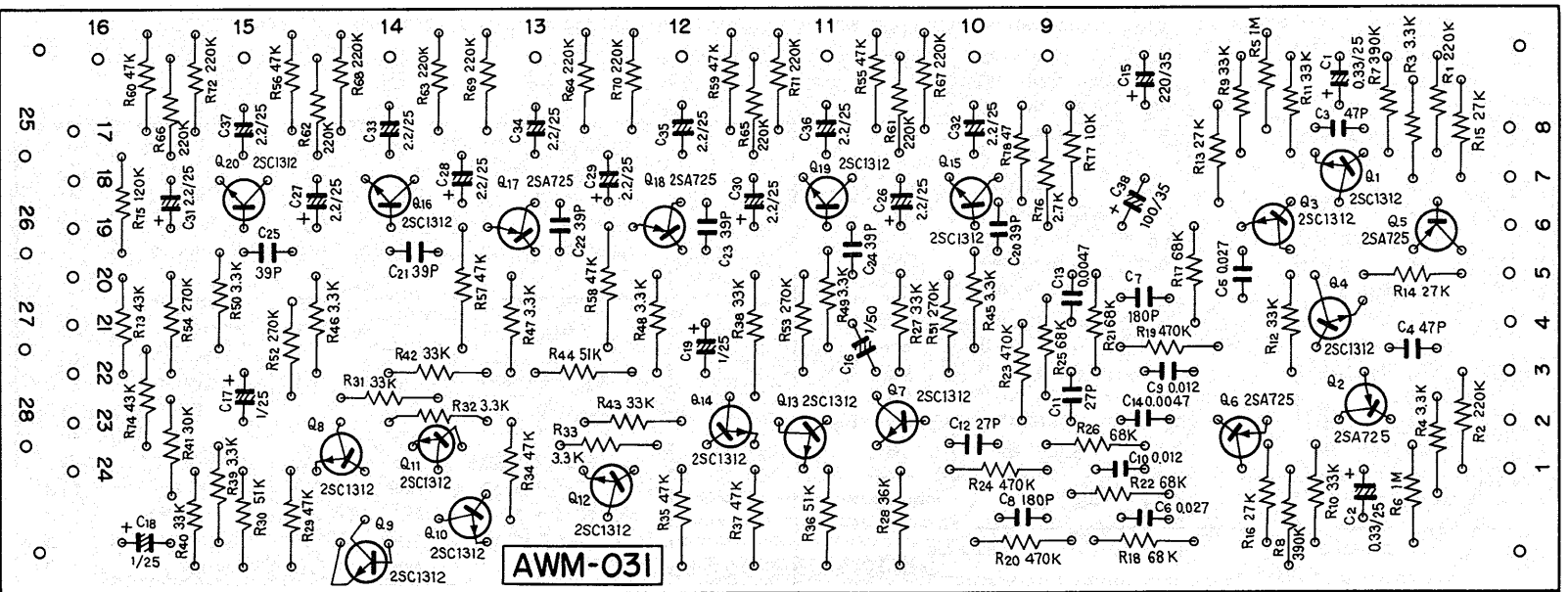
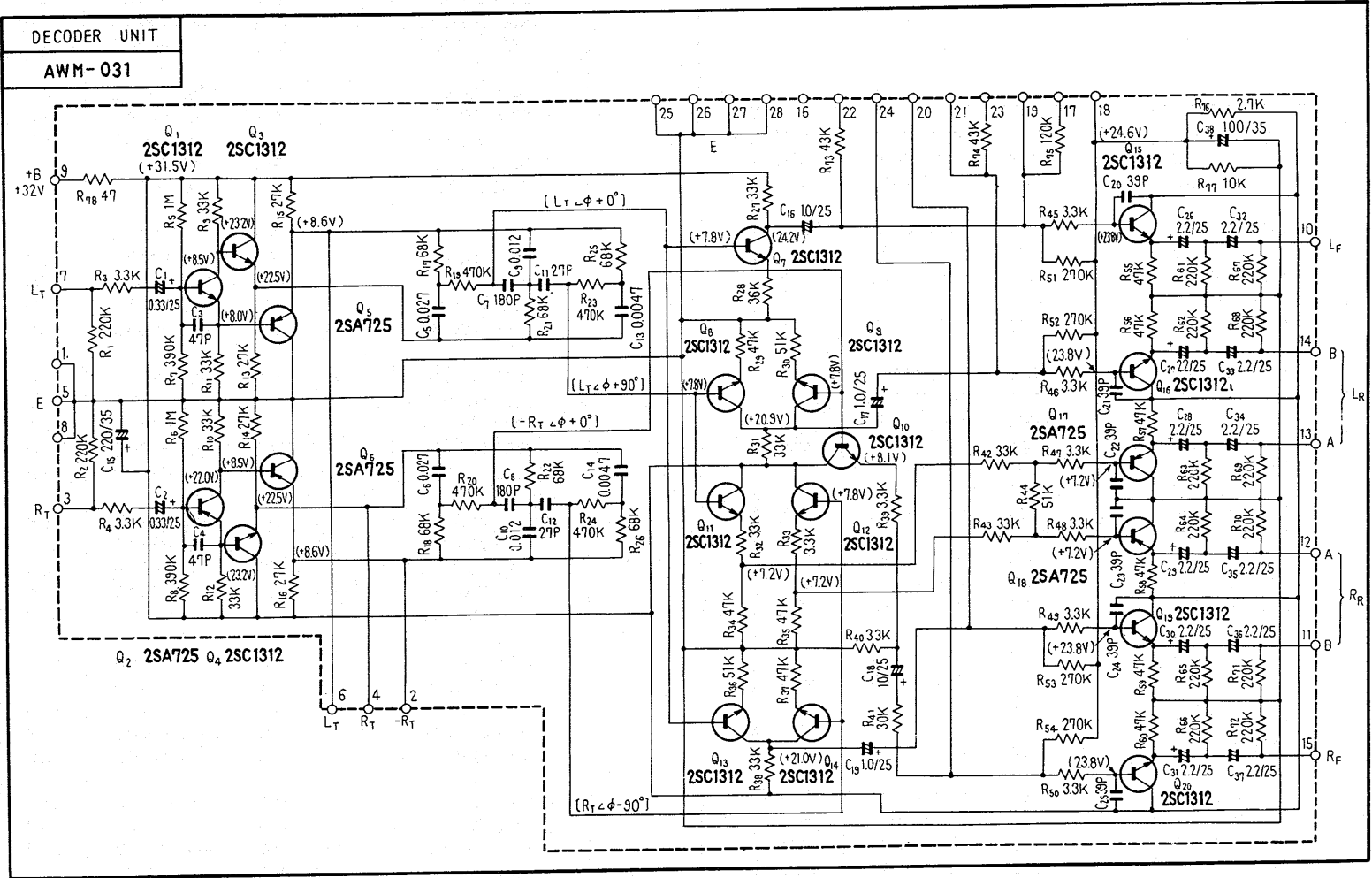
SEMICONDUCTORS

Symbol	Description	Part No.	
Q1	2SC1344-E or 2SC1312-G, F Transistor		
Q2	2SC1344-E or 2SC1312-G, F Transistor		

Symbol	Description	Part No.	
Q3	2SC1344-E or 2SC1312-G, F Transistor		
Q4	2SC1344-E or 2SC1312-G, F Transistor		

RESISTORS

Symbol	Description	Part No.	
R1	Carbon film 1k	RD¼PS 102J	
R2	Carbon film 1k	RD¼PS 102J	
R3	Carbon film 68k	RD¼PS 683J	
R4	Carbon film 68k	RD¼PS 683J	
R5	Carbon film 180k	RD¼PS 184J	
R6	Carbon film 180k	RD¼PS 184J	
R7	Carbon film 120k	RD¼PS 124J	
R8	Carbon film 120k	RD¼PS 124J	
R9	Carbon film 390	RD¼PS 391J	
R10	Carbon film 390	RD¼PS 391J	
R11	Carbon film 560k	RD¼PS 564J	
R12	Carbon film 560k	RD¼PS 564J	
R13	Carbon film 10k	RD¼PS 103J	
R14	Carbon film 10k	RD¼PS 103J	
R15	Carbon film 2.7k	RD¼PS 272J	
R16	Carbon film 2.7k	RD¼PS 272J	
R17	Carbon film 330k	RD¼PS 334J	
R18	Carbon film 330k	RD¼PS 334J	
R19	Carbon film 27k	RD¼PS 273J	
R20	Carbon film 27k	RD¼PS 273J	
R21	Carbon film 56k	RD¼PS 563J	
R22	Carbon film 56k	RD¼PS 563J	
R23	Carbon film 2.2k	RD¼PS 222J	
R24	Carbon film 2.2k	RD¼PS 222J	
R25	Carbon film 12k	RD¼PS 123J	
R26	Carbon film 12k	RD¼PS 123J	



41 PARTS LIST OF DECODER UNIT

CAPACITORS

Symbol	Description	Part No.
C1	Electrolytic 0.33 25V	CSSA R33M 25
C2	Electrolytic 0.33 25V	CSSA R33M 25
C3	Ceramic 47p 50V	CCDSL 470K 50
C4	Ceramic 47p 50V	CCDSL 470K 50
C5	Mylar 0.027 50V	CQMA 273J 50
C6	Mylar 0.027 50V	CQMA 273J 50
C7	Ceramic 180p 50V	CCDSL 181J 50
C8	Ceramic 180p 50V	CCDSL 181J 50
C9	Mylar 0.012 50V	CQMA 123J 50
C10	Mylar 0.012 50V	CQMA 123J 50
C11	Ceramic 27p 50V	CCDSL 270J 50
C12	Ceramic 27p 50V	CCDSL 270J 50
C13	Mylar 0.0047 50V	CQMA 472J 50
C14	Mylar 0.0047 50V	CQMA 472J 50
C15	Electrolytic 220 35V	CEA 221P 35
C16	Electrolytic 1 25V	CEA 010M 25NP
C17	Electrolytic 1 25V	CSSA 010M 25
C18	Electrolytic 1 25V	CSSA 010M 25
C19	Electrolytic 1 25V	CSSA 010M 25
C20	Ceramic 39p 50V	CCDSL 390K 50
C21	Ceramic 39p 50V	CCDSL 390K 50
C22	Ceramic 39p 50V	CCDSL 390K 50
C23	Ceramic 39p 50V	CCDSL 390K 50
C24	Ceramic 39p 50V	CCDSL 390K 50
C25	Ceramic 39p 50V	CCDSL 390K 50

Symbol	Description	Part No.
C26	Electrolytic 2.2 25V	CSSA 2R2M 25
C27	Electrolytic 2.2 25V	CSSA 2R2M 25
C28	Electrolytic 2.2 25V	CSSA 2R2M 25
C29	Electrolytic 2.2 25V	CSSA 2R2M 25
C30	Electrolytic 2.2 25V	CSSA 2R2M 25
C31	Electrolytic 2.2 25V	CSSA 2R2M 25
C32	Electrolytic 2.2 25V	CEA 2R2M 25NP
C33	Electrolytic 2.2 25V	CEA 2R2M 25NP
C34	Electrolytic 2.2 25V	CEA 2R2M 25NP
C35	Electrolytic 2.2 25V	CEA 2R2M 25NP
C36	Electrolytic 2.2 25V	CEA 2R2M 25NP
C37	Electrolytic 2.2 25V	CEA 2R2M 25NP
C38	Electrolytic 100 35V	CEA 101P 35

RESISTORS

Symbol	Description	Part No.
R1	Carbon film 220k	RD¼PM 224J
R2	Carbon film 220k	RD¼PM 224J
R3	Carbon film 3.3k	RD¼PM 332J
R4	Carbon film 3.3k	RD¼PM 332J
R5	Carbon film 1M	RD¼PM 105J
R6	Carbon film 1M	RD¼PM 105J
R7	Carbon film 390k	RD¼PM 394J
R8	Carbon film 390k	RD¼PM 394J
R9	Carbon film 33k	RD¼PM 333J
R10	Carbon film 33k	RD¼PM 333J
R11	Carbon film 33k	RD¼PM 333J
R12	Carbon film 33k	RD¼PM 333J
R13	Carbon film 27k	RD¼PM 273J
R14	Carbon film 27k	RD¼PM 273J
R15	Carbon film 27k	RD¼PM 273J

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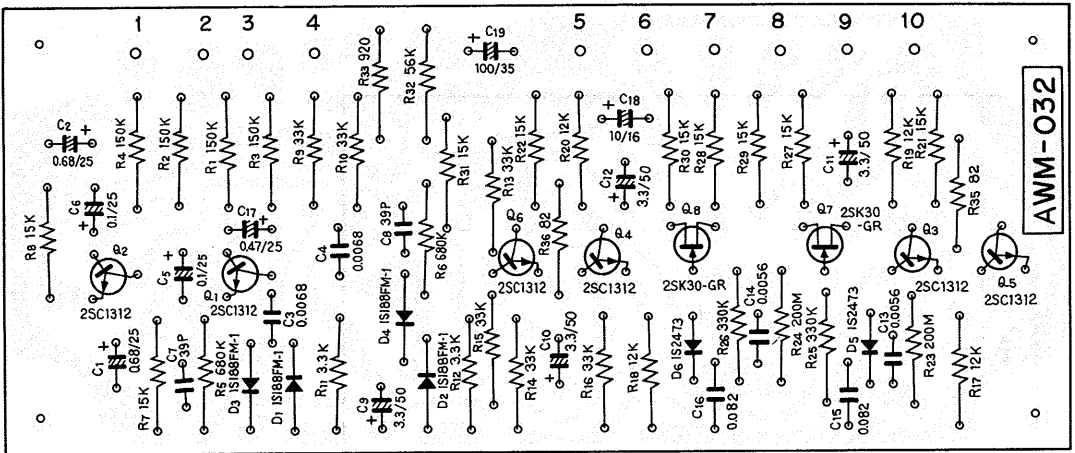
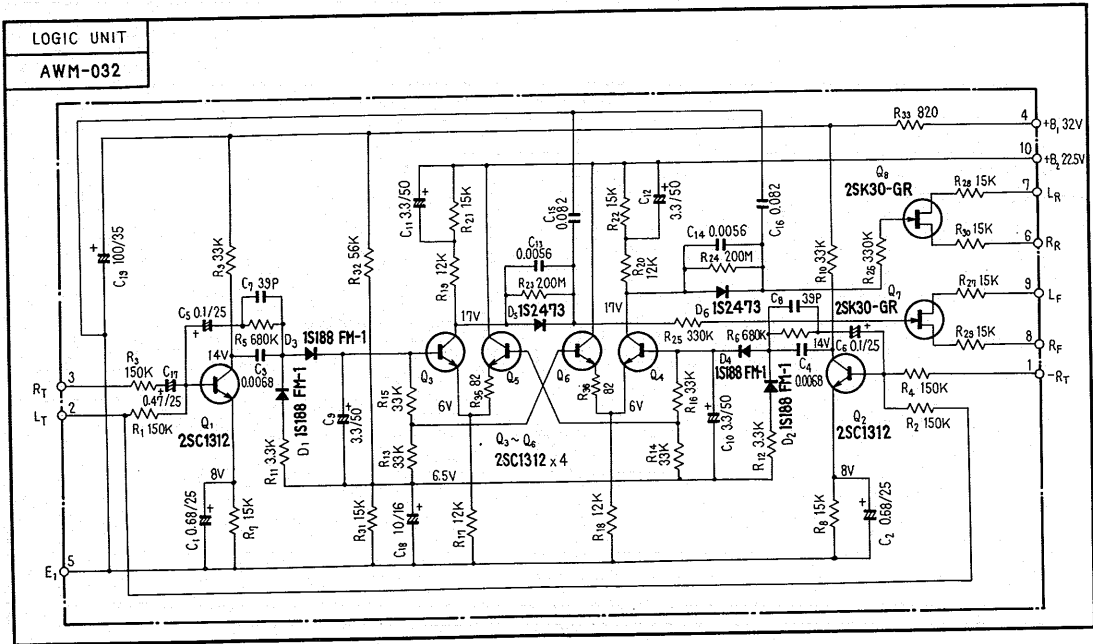
Symbol	Description	Part No.
R16	Carbon film 27k	RD¼PM 273J
R17	Carbon film 68k	RD¼PM 683J
R18	Carbon film 68k	RD¼PM 683J
R19	Carbon film 470k	RD¼PM 474J
R20	Carbon film 470k	RD¼PM 474J
R21	Carbon film 68k	RD¼PM 683J
R22	Carbon film 68k	RD¼PM 683J
R23	Carbon film 470k	RD¼PM 474J
R24	Carbon film 470k	RD¼PM 474J
R25	Carbon film 68k	RD¼PM 683J
R26	Carbon film 68k	RD¼PM 683J
R27	Carbon film 33k	RD¼PM 333J
R28	Carbon film 36k	RD¼PM 363J
R29	Carbon film 47k	RD¼PM 473J
R30	Carbon film 51k	RD¼PM 513J
R31	Carbon film 33k	RD¼PM 333J
R32	Carbon film 3.3k	RD¼PM 332J
R33	Carbon film 3.3k	RD¼PM 332J
R34	Carbon film 47k	RD¼PM 473J
R35	Carbon film 47k	RD¼PM 473J
R36	Carbon film 51k	RD¼PM 513J
R37	Carbon film 47k	RD¼PM 473J
R38	Carbon film 33k	RD¼PM 333J
R39	Carbon film 3.3k	RD¼PM 332J
R40	Carbon film 33k	RD¼PM 333J
R41	Carbon film 30k	RD¼PM 303J
R42	Carbon film 33k	RD¼PM 333J
R43	Carbon film 33k	RD¼PM 333J
R44	Carbon film 51k	RD¼PM 513J
R45	Carbon film 3.3k	RD¼PM 332J
R46	Carbon film 3.3k	RD¼PM 332J
R47	Carbon film 3.3k	RD¼PM 332J
R48	Carbon film 3.3k	RD¼PM 332J
R49	Carbon film 3.3k	RD¼PM 332J
R50	Carbon film 3.3k	RD¼PM 332J

Symbol	Description	Part No.
R51	Carbon film 270k	RD¼PM 274J
R52	Carbon film 270k	RD¼PM 274J
R53	Carbon film 270k	RD¼PM 274J
R54	Carbon film 270k	RD¼PM 274J
R55	Carbon film 47k	RD¼PM 473J
R56	Carbon film 47k	RD¼PM 473J
R57	Carbon film 47k	RD¼PM 473J
R58	Carbon film 47k	RD¼PM 473J
R59	Carbon film 47k	RD¼PM 473J
R60	Carbon film 47k	RD¼PM 473J
R61	Carbon film 220k	RD¼PM 224J
R62	Carbon film 220k	RD¼PM 224J
R63	Carbon film 220k	RD¼PM 224J
R64	Carbon film 220k	RD¼PM 224J
R65	Carbon film 220k	RD¼PM 224J
R66	Carbon film 220k	RD¼PM 224J
R67	Carbon film 220k	RD¼PM 224J
R68	Carbon film 220k	RD¼PM 224J
R69	Carbon film 220k	RD¼PM 224J
R70	Carbon film 220k	RD¼PM 224J
R71	Carbon film 220k	RD¼PM 224J
R72	Carbon film 220k	RD¼PM 224J
R73	Carbon film 43k	RD¼PM 433J
R74	Carbon film 43k	RD¼PM 433J
R75	Carbon film 120k	RD¼PM 124J
R76	Carbon film 2.7k	RD¼PM 272J
R77	Carbon film 10k	RD¼PM 103J
R78	Carbon film 47	RD¼PM 470J

SEMICONDUCTORS

Symbol	Description	Part No.	
Q1	2SC1312-F or G	Transistor	
Q2	2SA725-F or G	Transistor	
Q3	2SC1312-F or G	Transistor	
Q4	2SC1312-F or G	Transistor	
Q5	2SA725-F or G	Transistor	
Q6	2SA725-F or G	Transistor	
Q7	2SC1312-G	Transistor	
Q8	2SC1312-G	Transistor	
Q9	2SC1312-G	Transistor	
Q10	2SC1312-G	Transistor	
Q11	2SC1312-G	Transistor	
Q12	2SC1312-G	Transistor	
Q13	2SC1312-G	Transistor	
Q14	2SC1312-G	Transistor	
Q15	2SC1312-F or G	Transistor	
Q16	2SC1312-F or G	Transistor	
Q17	2SA725-F or G	Transistor	
Q18	2SA725-F or G	Transistor	
Q19	2SC1312-F or G	Transistor	
Q20	2SC1312-F or G	Transistor	

11.6 LOGIC UNIT



PARTS LIST OF LOGIC UNIT

CAPACITORS

Symbol	Description			Part No.
C1	Electrolytic	0.68	25V	CSSA R68M 25
C2	Electrolytic	0.68	25V	CSSA R68M 25
C3	Mylar	0.0068	50V	CQMA 682K 50
C4	Mylar	0.0068	50V	CQMA 682K 50
C5	Electrolytic	0.1	25V	CSSA 0R1M 25
C6	Electrolytic	0.1	25V	CSSA 0R1M 25
C7	Ceramic	39p	50V	CCDSL 390K 50
C8	Ceramic	39p	50V	CCDSL 390K 50
C9	Electrolytic	3.3	50V	CEA 3R3P 50
C10	Electrolytic	3.3	50V	CEA 3R3P 50
C11	Electrolytic	3.3	50V	CEA 3R3P 50
C12	Electrolytic	3.3	50V	CEA 3R3P 50
C13	Mylar	0.0056	50V	CQMA 562K 50
C14	Mylar	0.0056	50V	CQMA 562K 50
C15	Mylar	0.082	50V	CQMA 823K 50
C16	Mylar	0.082	50V	CQMA 823K 50
C17	Electrolytic	0.47	25V	CSSA R47M 25
C18	Electrolytic	10	16V	CEA 100P 16
C19	Electrolytic	100	35V	CEA 101P 35

RESISTORS

Symbol	Description		Part No.
R1	Carbon film	150k	RD¼PS 154J
R2	Carbon film	150k	RD¼PS 154J
R3	Carbon film	150k	RD¼PS 154J
R4	Carbon film	150k	RD¼PS 154J
R5	Carbon film	680k	RD¼PS 684J
R6	Carbon film	680k	RD¼PS 684J
R7	Carbon film	15k	RD¼PS 153J
R8	Carbon film	15k	RD¼PS 153J
R9	Carbon film	33k	RD¼PS 333J
R10	Carbon film	33k	RD¼PS 333J
R11	Carbon film	3.3k	RD¼PS 332J
R12	Carbon film	3.3k	RD¼PS 332J
R13	Carbon film	33k	RD¼PS 333J
R14	Carbon film	33k	RD¼PS 333J
R15	Carbon film	33k	RD¼PS 333J
R16	Carbon film	33k	RD¼PS 333J
R17	Carbon film	12k	RD¼PS 123J
R18	Carbon film	12k	RD¼PS 123J
R19	Carbon film	12k	RD¼PS 123J
R20	Carbon film	12k	RD¼PS 123J
R21	Carbon film	15k	RD¼PS 153J
R22	Carbon film	15k	RD¼PS 153J
R23	Composition	200M	ACN-001-0
R24	Composition	200M	ACN-001-0
R25	Carbon film	330k	RD¼PS 334J
R26	Carbon film	330k	RD¼PS 334J
R27	Carbon film	15k	RD¼PS 153J
R28	Carbon film	15k	RD¼PS 153J
R29	Carbon film	15k	RD¼PS 153J
R30	Carbon film	15k	RD¼PS 153J

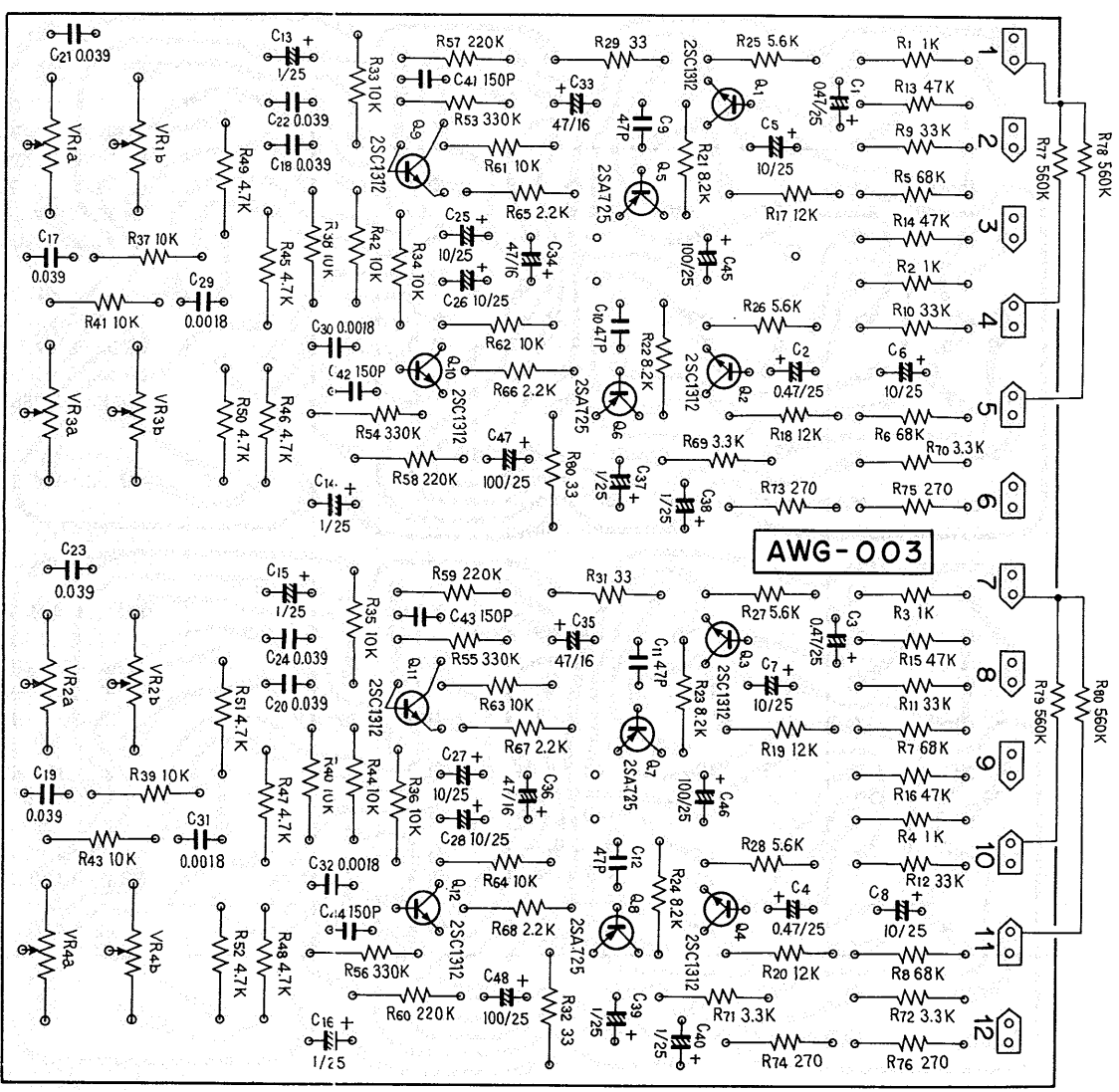
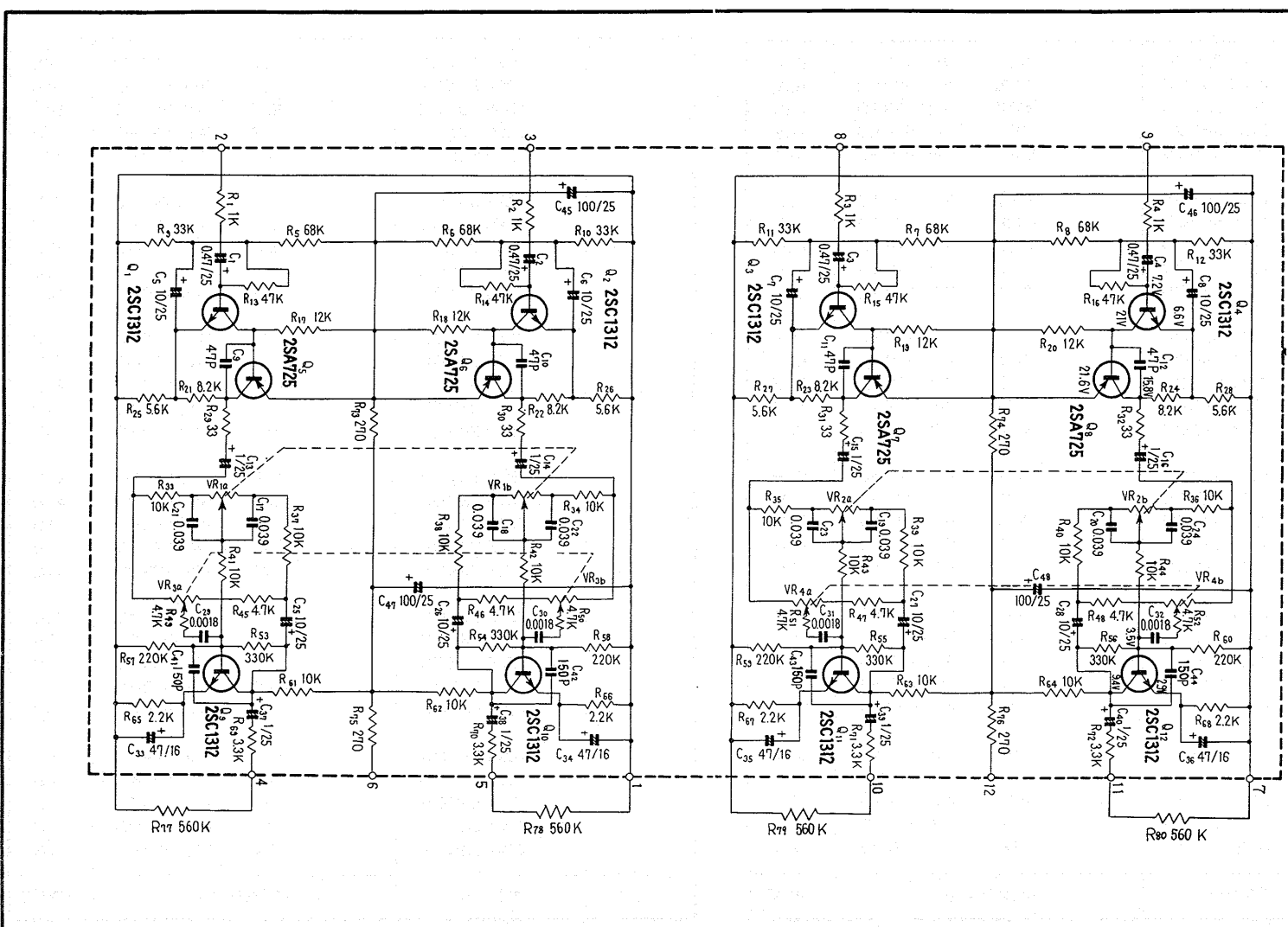
Symbol	Description	Part No.	
R31	Carbon film 56k	RD¼PS 563J	
R32	Carbon film 56k	RD¼PS 563J	
R33	Carbon film 820	RD¼PS 821J	
R34			
R35	Carbon film 82	RD¼PS 820J	
R36	Carbon film 82	RD¼PS 820J	

SEMICONDUCTORS

Symbol	Description	Part No.	
Q1	2SC1312-G or 2SC1344-E Transistor		
Q2	2SC1312-G or 2SC1344-E Transistor		
Q3	2SC1312-G or 2SC1344-E Transistor		
Q4	2SC1312-G or 2SC1344-E Transistor		
Q5	2SC1312-G or 2SC1344-E Transistor		
Q6	2SC1312-G or 2SC1344-E Transistor		
Q7	2SK30-GR FET		
Q8	2SK30-GR FET		
D1	1S188 FM-1 Diode		
D2	1S188 FM-1 Diode		
D3	1S188 FM-1 Diode		
D4	1S188 FM-1 Diode		
D5	1S2473 Diode		
D6	1S2473 Diode		

11.7 CONTROL AMP UNIT

CONTROL AMP UNIT
AWG - 003



QX-8000A

CAPACITORS

Symbol	Description	Part No.
C1	Electrolytic 0.47 25V	CSSA R47M 25
C2	Electrolytic 0.47 25V	CSSA R47M 25
C3	Electrolytic 0.47 25V	CSSA R47M 25
C4	Electrolytic 0.47 25V	CSSA R47M 25
C5	Electrolytic 10 25V	CEA 100P 25
C6	Electrolytic 10 25V	CEA 100P 25
C7	Electrolytic 10 25V	CEA 100P 25
C8	Electrolytic 10 25V	CEA 100P 25
C9	Ceramic 47p 50V	CCDSL 470K 50
C10	Ceramic 47p 50V	CCDSL 470K 50
C11	Ceramic 47p 50V	CCDSL 470K 50
C12	Ceramic 47p 50V	CCDSL 470K 50
C13	Electrolytic 1 25V	CSSA 010M 25
C14	Electrolytic 1 25V	CSSA 010M 25
C15	Electrolytic 1 25V	CSSA 010M 25
C16	Electrolytic 1 25V	CSSA 010M 25
C17	Mylar 0.039 50V	CQMA 393K 50
C18	Mylar 0.039 50V	CQMA 393K 50
C19	Mylar 0.039 50V	CQMA 393K 50
C20	Mylar 0.039 50V	CQMA 393K 50
C21	Mylar 0.039 50V	CQMA 393K 50
C22	Mylar 0.039 50V	CQMA 393K 50
C23	Mylar 0.039 50V	CQMA 393K 50
C24	Mylar 0.039 50V	CQMA 393K 50
C25	Electrolytic 10 25V	CEA 100P 25

Symbol	Description	Part No.
C26	Electrolytic 10 25V	CEA 100P 25
C27	Electrolytic 10 25V	CEA 100P 25
C28	Electrolytic 10 25V	CEA 100P 25
C29	Mylar 0.0018 50V	CQMA 182K 50
C30	Mylar 0.0018 50V	CQMA 182K 50
C31	Mylar 0.0018 50V	CQMA 182K 50
C32	Mylar 0.0018 50V	CQMA 182K 50
C33	Electrolytic 47 16V	CEA 470P 16
C34	Electrolytic 47 16V	CEA 470P 16
C35	Electrolytic 47 16V	CEA 470P 16
C36	Electrolytic 47 16V	CEA 470P 16
C37	Electrolytic 1 25V	CSSA 010M 25
C38	Electrolytic 1 25V	CSSA 010M 25
C39	Electrolytic 1 25V	CSSA 010M 25
C40	Electrolytic 1 25V	CSSA 010M 25
C41	Ceramic 150p 50V	CCDSL 151K 50
C42	Ceramic 150p 50V	CCDSL 151K 50
C43	Ceramic 150p 50V	CCDSL 151K 50
C44	Ceramic 150p 50V	CCDSL 151K 50
C45	Electrolytic 100 25V	CEA 101P 25
C46	Electrolytic 100 25V	CEA 101P 25
C47	Electrolytic 100 25V	CEA 101P 25
C48	Electrolytic 100 25V	CEA 101P 25

50 RESISTORS

Symbol	Description	Part No.
R1	Carbon film 1k	RD½PS 102J
R2	Carbon film 1k	RD½PS 102J
R3	Carbon film 1k	RD½PS 102J
R4	Carbon film 1k	RD½PS 102J
R5	Carbon film 68k	RD½PS 683J
R6	Carbon film 68k	RD½PS 683J
R7	Carbon film 68k	RD½PS 683J
R8	Carbon film 68k	RD½PS 683J
R9	Carbon film 33k	RD½PS 333J
R10	Carbon film 33k	RD½PS 333J
R11	Carbon film 33k	RD½PS 333J
R12	Carbon film 33k	RD½PS 333J
R13	Carbon film 47k	RD½PS 473J
R14	Carbon film 47k	RD½PS 473J
R15	Carbon film 47k	RD½PS 473J
R16	Carbon film 47k	RD½PS 473J
R17	Carbon film 12k	RD½PS 123J
R18	Carbon film 12k	RD½PS 123J
R19	Carbon film 12k	RD½PS 123J
R20	Carbon film 12k	RD½PS 123J
R21	Carbon film 8.2k	RD½PS 822J
R22	Carbon film 8.2k	RD½PS 822J
R23	Carbon film 8.2k	RD½PS 822J
R24	Carbon film 8.2k	RD½PS 822J
R25	Carbon film 5.6k	RD½PS 562J
R26	Carbon film 5.6k	RD½PS 562J
R27	Carbon film 5.6k	RD½PS 562J
R28	Carbon film 5.6k	RD½PS 562J
R29	Carbon film 33	RD½PS 330J
R30	Carbon film 33	RD½PS 330J

Symbol	Description	Part No.
R31	Carbon film 33	RD½PS 330J
R32	Carbon film 33	RD½PS 330J
R33	Carbon film 10k	RD½PS 103J
R34	Carbon film 10k	RD½PS 103J
R35	Carbon film 10k	RD½PS 103J
R36	Carbon film 10k	RD½PS 103J
R37	Carbon film 10k	RD½PS 103J
R38	Carbon film 10k	RD½PS 103J
R39	Carbon film 10k	RD½PS 103J
R40	Carbon film 10k	RD½PS 103J
R41	Carbon film 10k	RD½PS 103J
R42	Carbon film 10k	RD½PS 103J
R43	Carbon film 10k	RD½PS 103J
R44	Carbon film 10k	RD½PS 103J
R45	Carbon film 4.7k	RD½PS 472J
R46	Carbon film 4.7k	RD½PS 472J
R47	Carbon film 4.7k	RD½PS 472J
R48	Carbon film 4.7k	RD½PS 472J
R49	Carbon film 4.7k	RD½PS 472J
R50	Carbon film 4.7k	RD½PS 472J
R51	Carbon film 4.7k	RD½PS 472J
R52	Carbon film 4.7k	RD½PS 472J
R53	Carbon film 330k	RD½PS 334J
R54	Carbon film 330k	RD½PS 334J
R55	Carbon film 330k	RD½PS 334J
R56	Carbon film 330k	RD½PS 334J
R57	Carbon film 220k	RD½PS 224J
R58	Carbon film 220k	RD½PS 224J
R59	Carbon film 220k	RD½PS 224J
R60	Carbon film 220k	RD½PS 224J

Symbol	Description	Part No.
R61	Carbon film 10k	RD½PS 103J
R62	Carbon film 10k	RD½PS 103J
R63	Carbon film 10k	RD½PS 103J
R64	Carbon film 10k	RD½PS 103J
R65	Carbon film 2.2k	RD½PS 222J
R66	Carbon film 2.2k	RD½PS 222J
R67	Carbon film 2.2k	RD½PS 222J
R68	Carbon film 2.2k	RD½PS 222J
R69	Carbon film 3.3k	RD½PS 332J
R70	Carbon film 3.3k	RD½PS 332J
R71	Carbon film 3.3k	RD½PS 332J
R72	Carbon film 3.3k	RD½PS 332J
R73	Carbon film 270	RD½PS 271J
R74	Carbon film 270	RD½PS 271J
R75	Carbon film 270	RD½PS 271J
R76	Carbon film 270	RD½PS 271J
R77	Carbon film 560k	RD½PS 564J
R78	Carbon film 560k	RD½PS 564J
R79	Carbon film 560k	RD½PS 564J
R80	Carbon film 560k	RD½PS 564J

SEMICONDUCTORS

Symbol	Description	Part No.
Q1	2SC1312-F or G Transistor	
Q2	2SC1312-F or G Transistor	
Q3	2SC1312-F or G Transistor	
Q4	2SC1312-F or G Transistor	
Q5	2SA725-F or G Transistor	
Q6	2SA725-F or G Transistor	
Q7	2SA725-F or G Transistor	
Q8	2SA725-F or G Transistor	
Q9	2SC1312-F or G Transistor	
Q10	2SC1312-F Transistor	
Q11	2SC1312-F Transistor	
Q12	2SC1312-F Transistor	

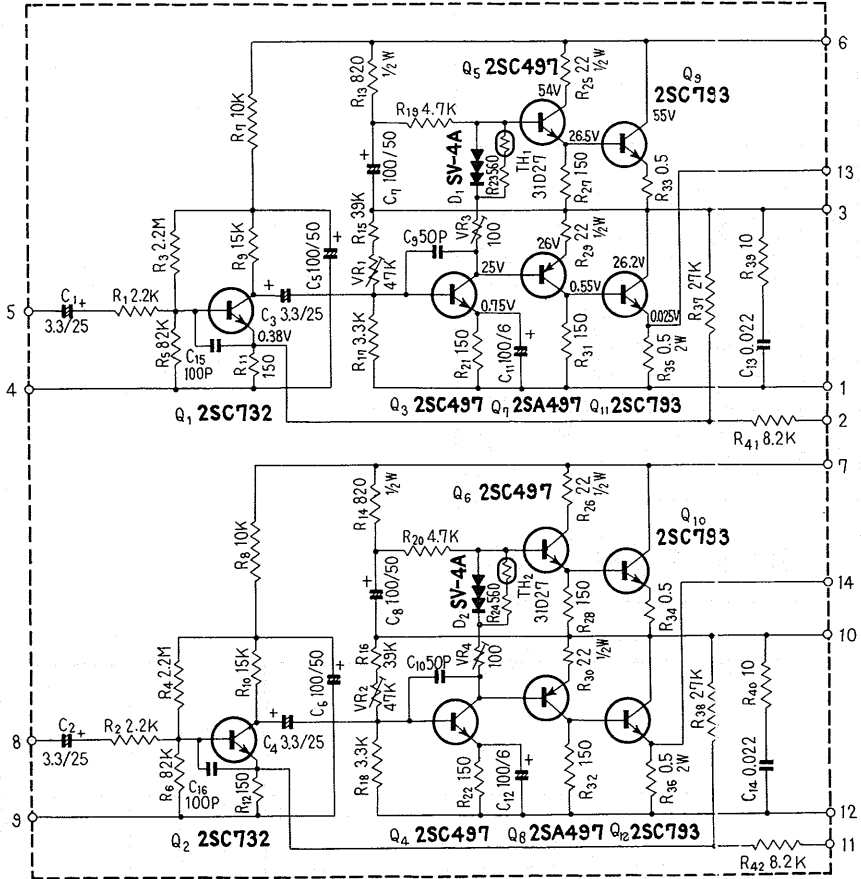
POTENTIOMETERS

Symbol	Description	Part No.
VR1	100k-B Dual	C82-045-0
VR2	100k-B Dual	C82-045-0
VR3	100k-B Dual	C82-045-0
VR4	100k-B Dual	C82-045-0

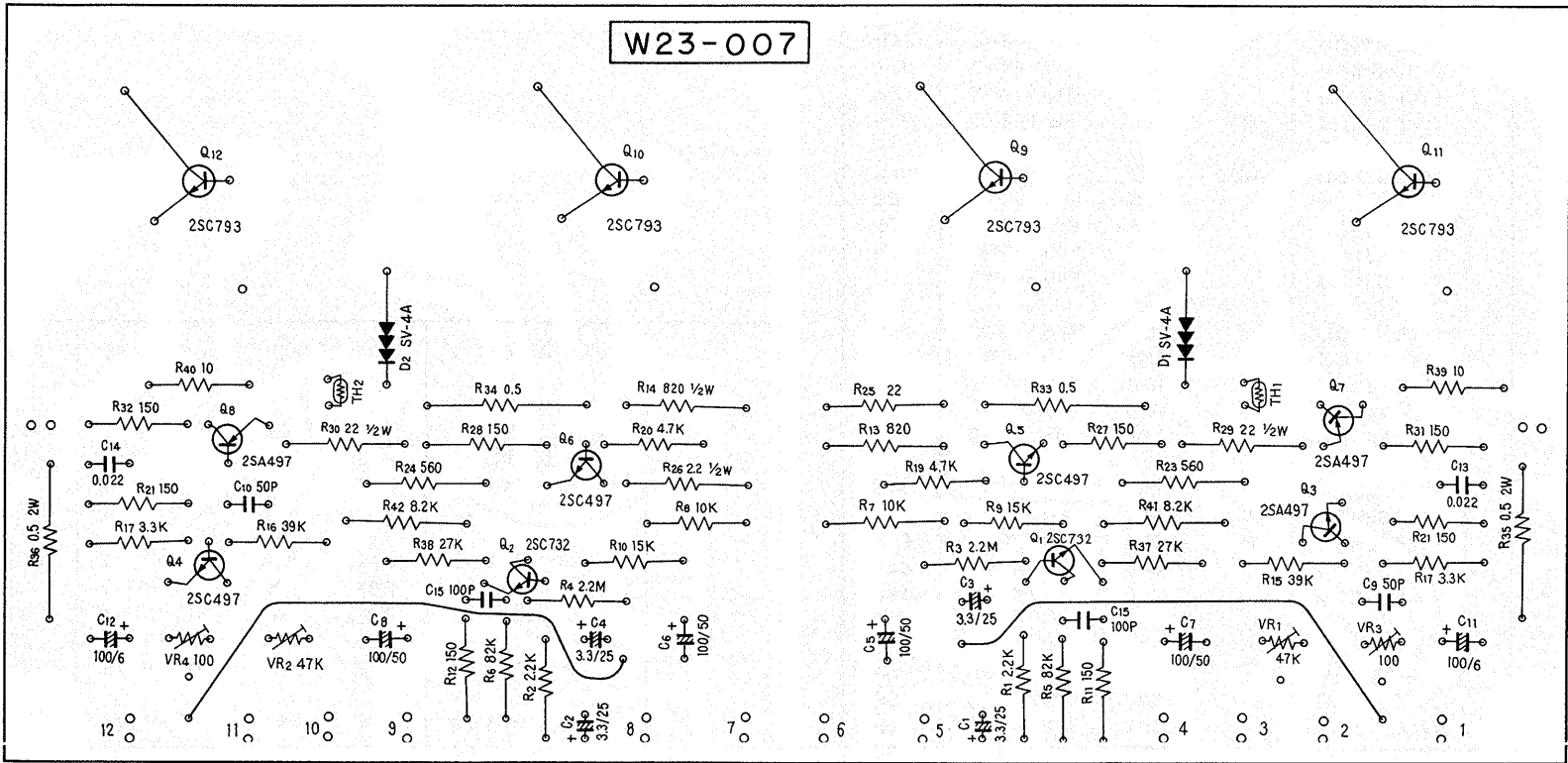
11.8 MAIN AMP UNIT

MAIN AMP UNIT

W23-007



W23-007



PARTS LIST OF MAIN AMP UNIT

CAPACITORS

Symbol	Description			Part No.
C1	Electrolytic	3.3	25V	CEA 3R3P 25
C2	Electrolytic	3.3	25V	CEA 3R3P 25
C3	Electrolytic	3.3	25V	CEA 3R3P 25
C4	Electrolytic	3.3	25V	CEA 3R3P 25
C5	Electrolytic	100	50V	CEA 101P 50
C6	Electrolytic	100	50V	CEA 101P 50
C7	Electrolytic	100	50V	CEA 101P 50
C8	Electrolytic	100	50V	CEA 101P 50
C9	Ceramic	50p	50V	CCDSL 500K 50
C10	Ceramic	50p	50V	CCDSL 500K 50
C11	Electrolytic	100	6V	CEA 101P 6
C12	Electrolytic	100	6V	CEA 101P 6
C13	Mylar	0.022	50V	CQMA 223M 50
C14	Mylar	0.022	50V	CQMA 223M 50
C15	Ceramic	100p	50V	CCDSL 101K 50
C16	Ceramic	100p	50V	CCDSL 101K 50

RESISTORS

Symbol	Description			Part No.
R1	Carbon film	2.2k		RD¼PS 222J
R2	Carbon film	2.2k		RD¼PS 222J
R3	Carbon film	2.2M		RD¼PS 225J
R4	Carbon film	2.2M		RD¼PS 225J
R5	Carbon film	82k		RD¼PS 823J
R6	Carbon film	82k		RD¼PS 823J
R7	Carbon film	10k		RD¼PS 103J
R8	Carbon film	10k		RD¼PS 103J
R9	Carbon film	15k		RD¼PS 153J
R10	Carbon film	15k		RD¼PS 153J
R11	Carbon film	150		RD¼PS 151J
R12	Carbon film	150		RD¼PS 151J
R13	Carbon film	820	¼W	RD¼PS 821J
R14	Carbon film	820	¼W	RD¼PS 821J
R15	Carbon film	39k		RD¼PS 393J
R16	Carbon film	39k		RD¼PS 393J
R17	Carbon film	3.3k		RD¼PS 332J
R18	Carbon film	3.3k		RD¼PS 332J
R19	Carbon film	4.7k		RD¼PS 472J
R20	Carbon film	4.7k		RD¼PS 472J
R21	Carbon film	150		RD¼PS 151J
R22	Carbon film	150		RD¼PS 151J
R23	Carbon film	560		RD¼PS 561J
R24	Carbon film	560		RD¼PS 561J
R25	Carbon film	22	¼W	RD¼PS 220J
R26	Carbon film	22	¼W	RD¼PS 220J
R27	Carbon film	150		RD¼PS 151J
R28	Carbon film	150		RD¼PS 151J
R29	Carbon film	22	¼W	RD¼PS 220J
R30	Carbon film	22	¼W	RD¼PS 220J

Symbol	Description	Part No.
R31	Carbon film 150	RD¼PS 151J
R32	Carbon film 150	RD¼PS 151J
R33	Wire wound 0.5 2W	RT2P 0R5K
R34	Wire wound 0.5 2W	RT2P 0R5K
R35	Wire wound 0.5 2W	RT2P 0R5K
R36	Wire wound 0.5 2W	RT2P 0R5K
R37	Carbon film 27k	RD¼PS 273J
R38	Carbon film 27k	RD¼PS 273J
R39	Carbon film 10	RD¼PS 100J
R40	Carbon film 10	RD¼PS 100J
R41	Carbon film 8.2k	RD¼PS 822J
R42	Carbon film 8.2k	RD¼PS 822J

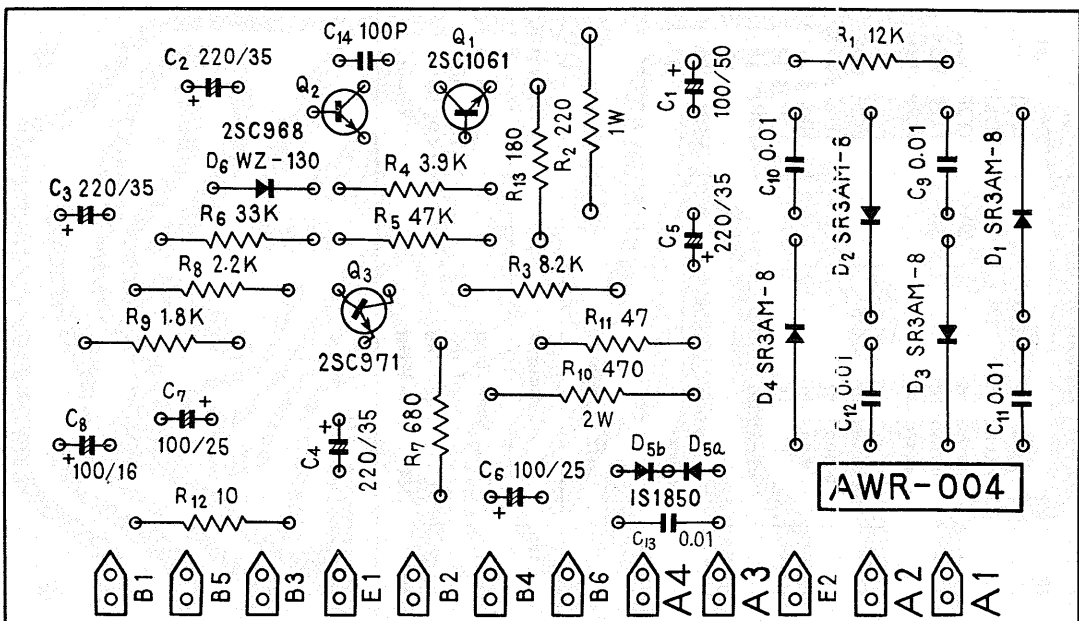
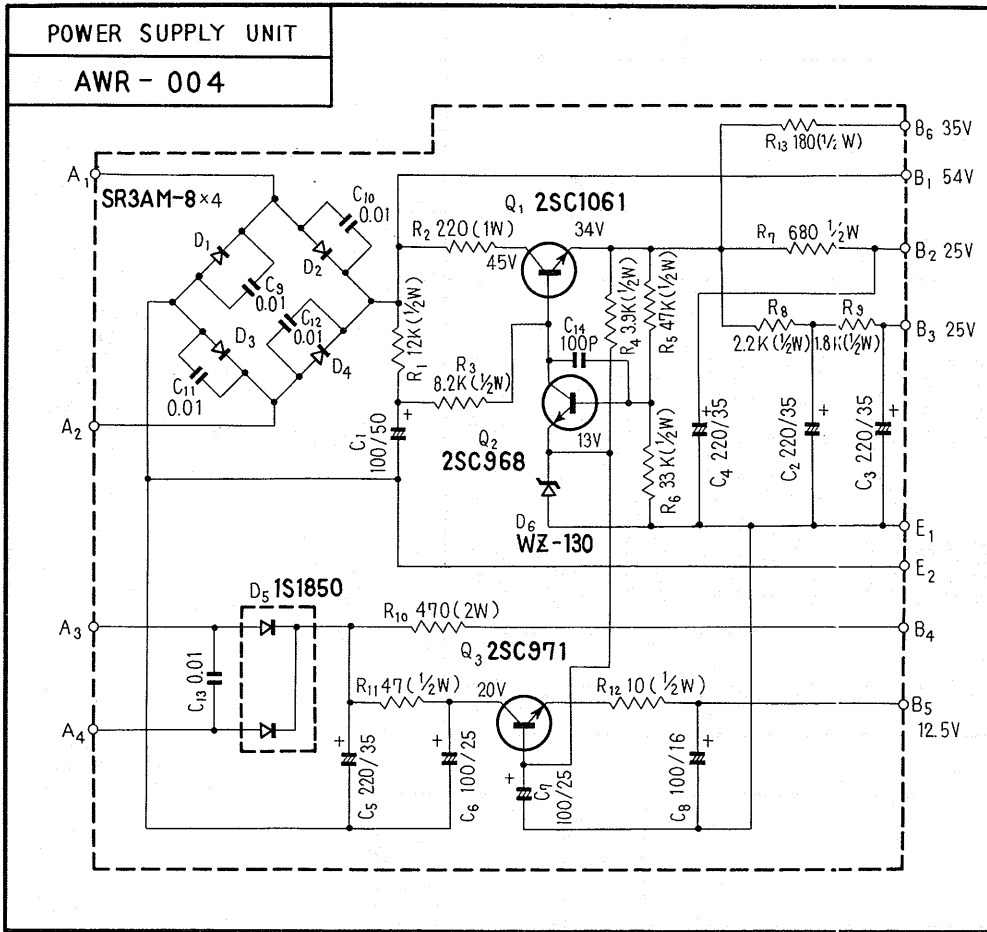
POTENTIOMETERS

Symbol	Description	Part No.
VR1	47k-B, Semi-fixed	C92-048-0
VR2	47k-B, Semi-fixed	C92-048-0
VR3	100-B, Semi-fixed	C92-063-0
VR4	100-B, Semi-fixed	C92-063-0

SEMICONDUCTORS

Symbol	Description	Part No.
Q1	2SC732 Transistor	
Q2	2SC732 Transistor	
Q3	2SC497-O or Y Transistor	
Q4	2SC497-O or Y Transistor	
Q5	2SC497-O or Y Transistor	
Q6	2SC497-O or Y Transistor	
Q7	2SA497-O or Y Transistor	
Q8	2SA497-O or Y Transistor	
Q9	2SC793-Y or BL Transistor	
Q10	2SC793-Y or BL Transistor	
Q11	2SC793-Y or BL Transistor	
Q12	2SC793-Y or BL Transistor	
D1	SV-4A Varistor	
D2	SV-4A Varistor	
TH1	31D27 Thermistor	
TH2	31D27 Thermistor	

11.9 POWER SUPPLY UNIT



PARTS LIST OF POWER SUPPLY UNIT

CAPACITORS

Symbol	Description			Part No.
C1	Electrolytic	100	50V	CEA 101P 50
C2	Electrolytic	220	35V	CEA 221P 35
C3	Electrolytic	220	35V	CEA 221P 35
C4	Electrolytic	220	35V	CEA 221P 35
C5	Electrolytic	220	35V	CEA 221P 35
C6	Electrolytic	100	25V	CEA 101P 25
C7	Electrolytic	100	25V	CEA 101P 25
C8	Electrolytic	100	16V	CEA 101P 16
C9	Ceramic	0.01	DC1.4kV	C43-003-0
C10	Ceramic	0.01	DC1.4kV	C43-003-0
C11	Ceramic	0.01	DC1.4kV	C43-003-0
C12	Ceramic	0.01	DC1.4kV	C43-003-0
C13	Ceramic	0.01	500V	CKDYF 103Z 500
C14	Ceramic	100p	50V	CCDSL 101K 50

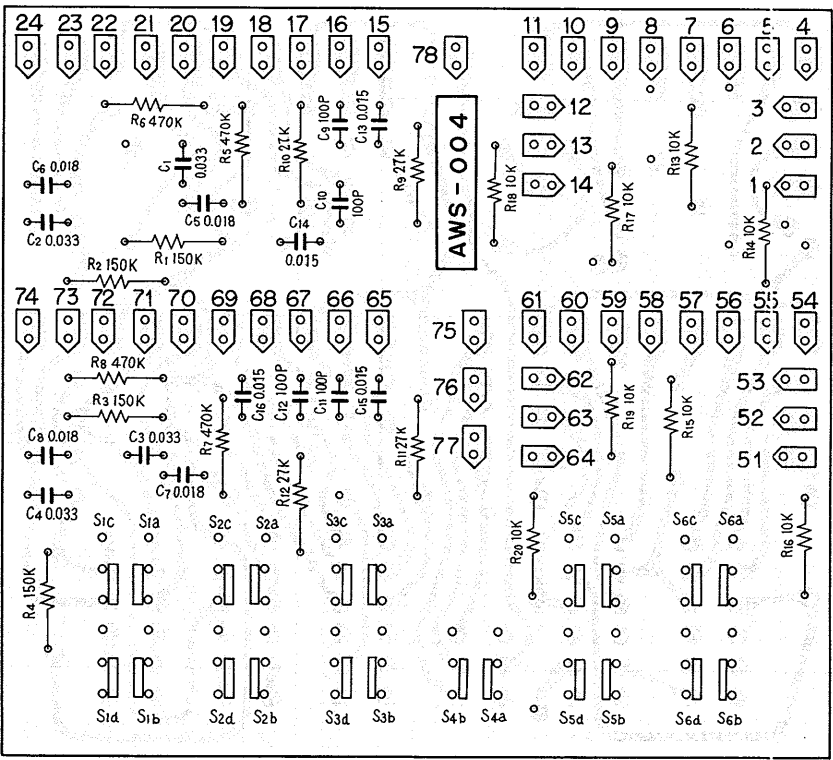
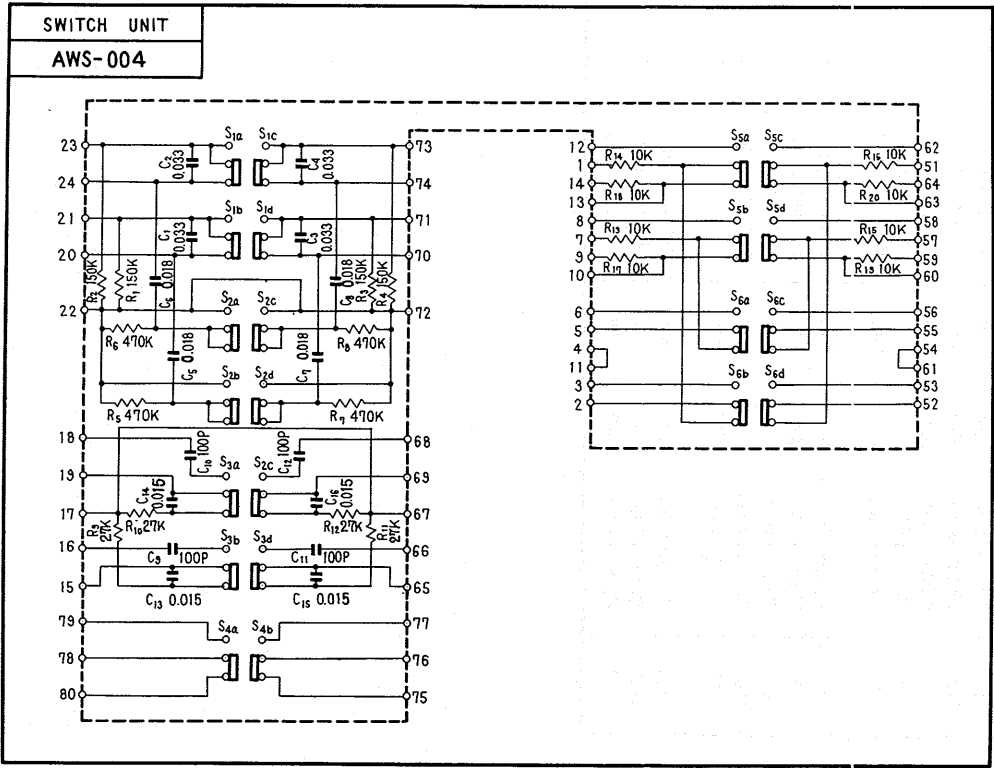
SEMICONDUCTORS

Symbol	Description		Part No.
Q1	2SC1061	Transistor	
Q2	2SC968 or 2SC905	Transistor	
Q3	2SC971	Transistor	
D1	SR3AM-8	Diode	
D2	SR3AM-8	Diode	
D3	SR3AM-8	Diode	
D4	SR3AM-8	Diode	
D5	1S1850	Diode	
D6	WZ-130	Zener diode	

RESISTORS

Symbol	Description			Part No.
R1	Carbon film	12k	1/2W	RD1/2PS 123J
R2	Metal oxide	220	1W	RS1P 221K
R3	Carbon film	8.2k	1/2W	RD1/2PS 822J
R4	Carbon film	3.9k	1/2W	RD1/2PS 392J
R5	Carbon film	47k	1/2W	RD1/2PS 473J
R6	Carbon film	33k	1/2W	RD1/2PS 333J
R7	Carbon film	680	1/2W	RD1/2PS 681J
R8	Carbon film	2.2k	1/2W	RD1/2PS 222J
R9	Carbon film	1.8k	1/2W	RD1/2PS 182J
R10	Metal oxide	470	2W	RS2P 471K
R11	Carbon film	47	1/2W	RD1/2PS 470J
R12	Carbon film	10	1/2W	RD1/2PS 100J
R13	Carbon film	180	1/2W	RD1/2PS 181J

11.10 SWITCH UNIT (AWS-004)



PARTS LIST OF SWITCH UNIT

CAPACITORS

Symbol	Description			Part No.
C1	Mylar	0.033	50V	CQMA 333K 50
C2	Mylar	0.033	50V	CQMA 333K 50
C3	Mylar	0.033	50V	CQMA 333K 50
C4	Mylar	0.033	50V	CQMA 333K 50
C5	Mylar	0.018	50V	CQMA 183K 50
C6	Mylar	0.018	50V	CQMA 183K 50
C7	Mylar	0.018	50V	CQMA 183K 50
C8	Mylar	0.018	50V	CQMA 183K 50
C9	Ceramic	100p	50V	CCDSL 101K 50
C10	Ceramic	100p	50V	CCDSL 101K 50
C11	Ceramic	100p	50V	CCDSL 101K 50
C12	Ceramic	100p	50V	CCDSL 101K 50
C13	Mylar	0.015	50V	CQMA 153K 50
C14	Mylar	0.015	50V	CQMA 153K 50
C15	Mylar	0.015	50V	CQMA 153K 50
C16	Mylar	0.015	50V	CQMA 153K 50

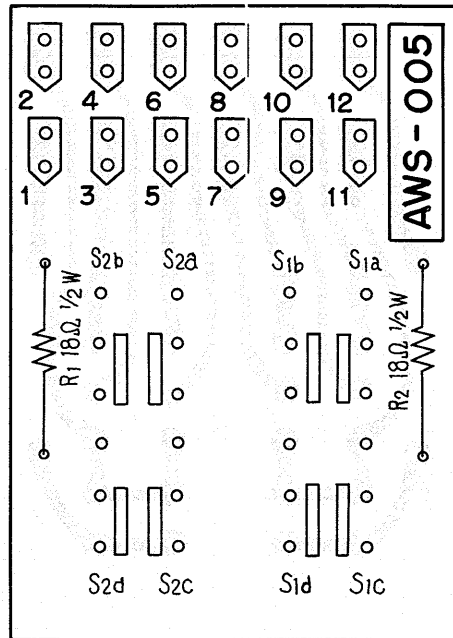
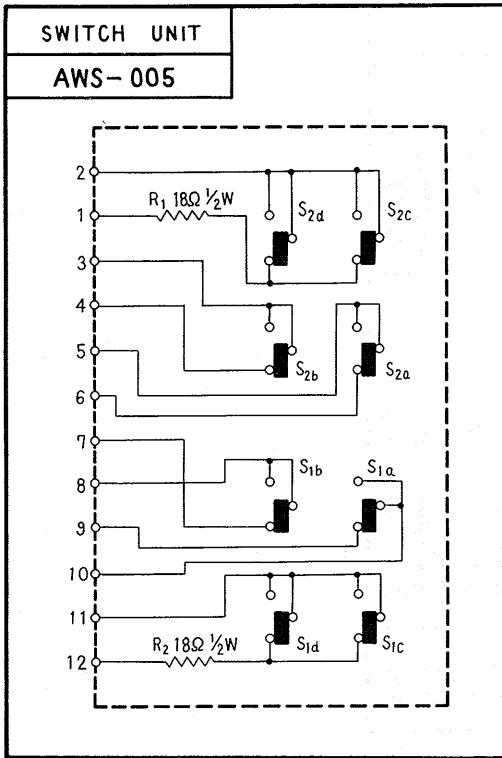
SWITCH

Symbol	Description	Part No.
	Mini-switch	ASG-005-0

RESISTOR

Symbol	Description		Part No.
R1	Carbon film	150k	RD¼PS 154J
R2	Carbon film	150k	RD¼PS 154J
R3	Carbon film	150k	RD¼PS 154J
R4	Carbon film	150k	RD¼PS 154J
R5	Carbon film	470k	RD¼PS 474J
R6	Carbon film	470k	RD¼PS 474J
R7	Carbon film	470k	RD¼PS 474J
R8	Carbon film	470k	RD¼PS 474J
R9	Carbon film	27k	RD¼PS 273J
R10	Carbon film	27k	RD¼PS 273J
R11	Carbon film	27k	RD¼PS 273J
R12	Carbon film	27k	RD¼PS 273J
R13	Carbon film	10k	RD¼PS 103J
R14	Carbon film	10k	RD¼PS 103J
R15	Carbon film	10k	RD¼PS 103J
R16	Carbon film	10k	RD¼PS 103J
R17	Carbon film	10k	RD¼PS 103J
R18	Carbon film	10k	RD¼PS 103J
R19	Carbon film	10k	RD¼PS 103J
R20	Carbon film	10k	RD¼PS 103J

11.11 SWITCH UNIT (AWS-005)



PARTS LIST OF SWITCH UNIT

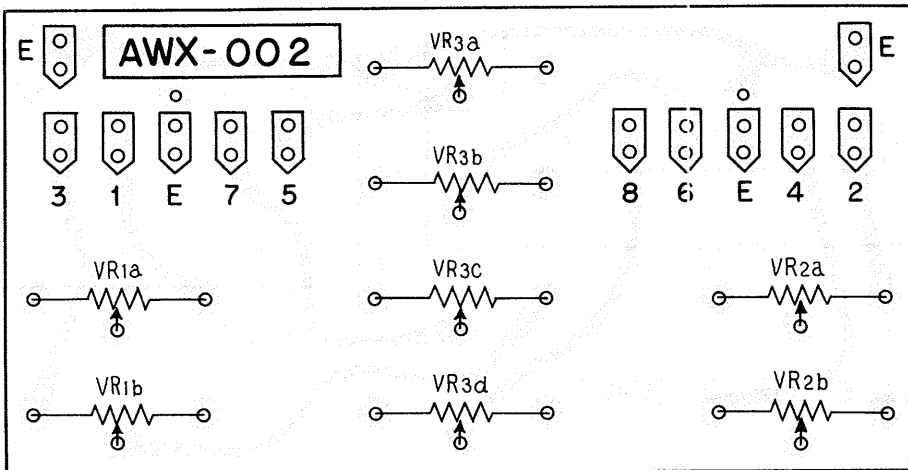
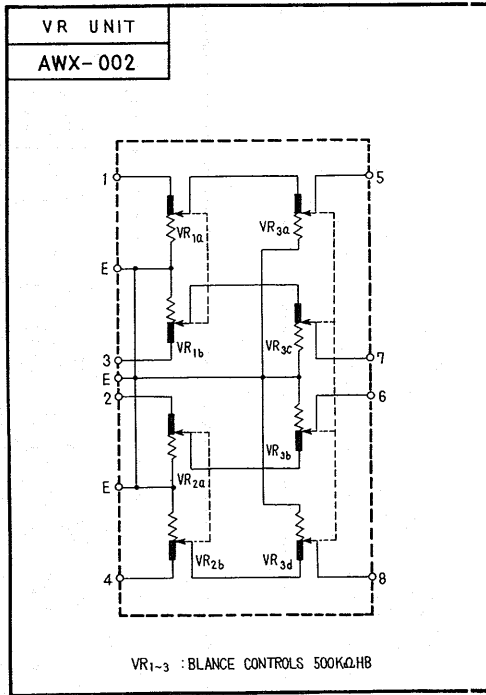
RESISTORS

Symbol	Description	Part No.	
R1	Carbon film 18 1/2W	RD1/2PS 180J	
R2	Carbon film 18 1/2W	RD1/2PS 180J	

SWITCH

Symbol	Description	Part No.	
	Mini-switch	S31-028-0	

11.12 VR UNIT (AWX-002)

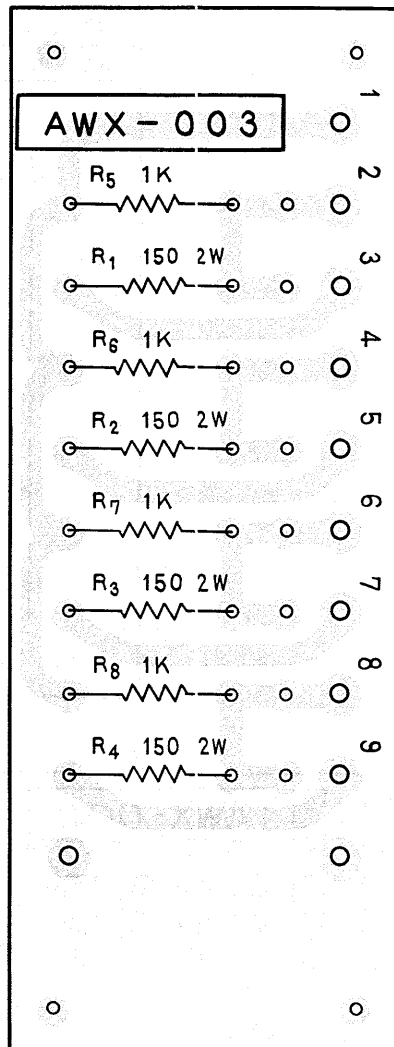
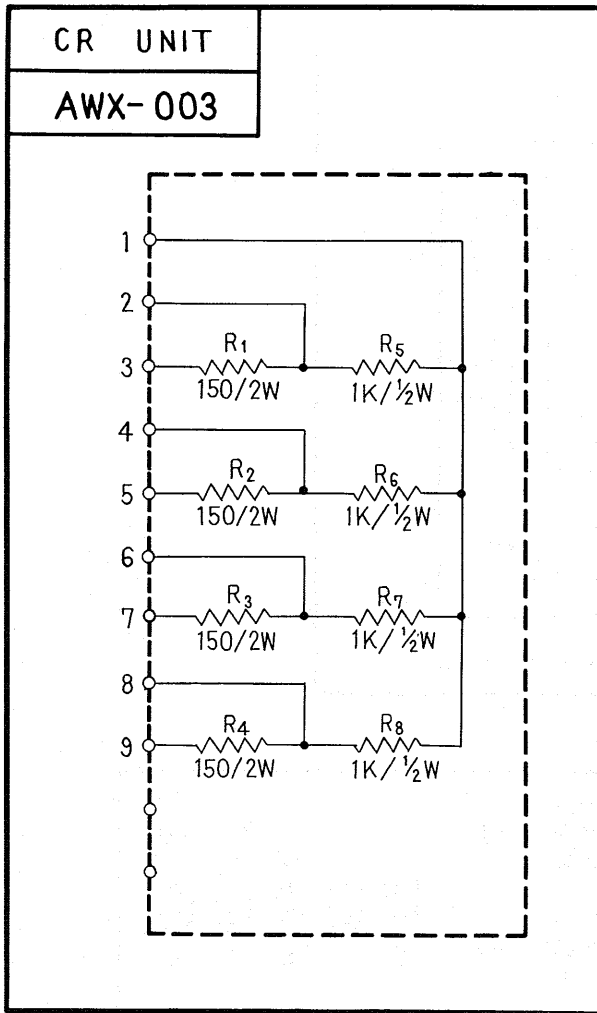


PARTS LIST OF VR UNIT

POTENTIOMETERS

Symbol	Description	Part No.	
VR1	500k HB Dual	ACT-102-0	
VR2	500k HB Dual	ACT-102-0	
VR3	500k HB 4-gang	ACT-301-A	

11.13 CR UNIT (AWX-003)

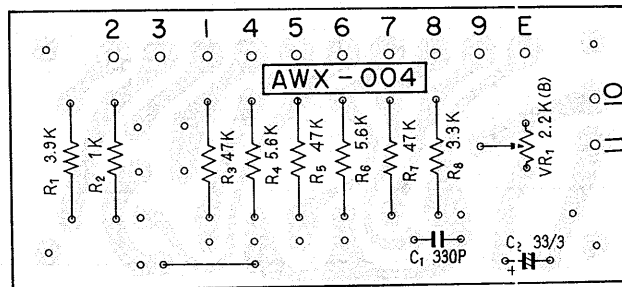
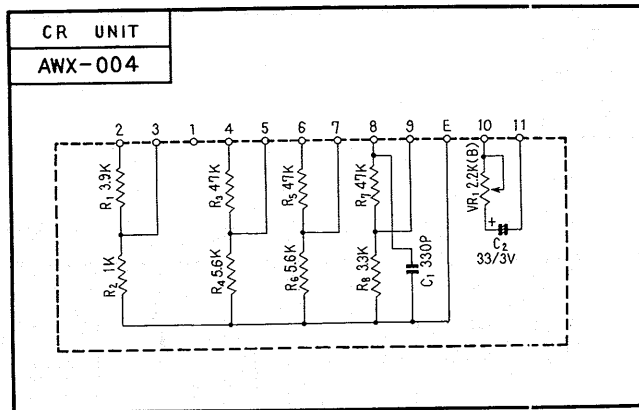


PARTS LIST OF CR UNIT

RESISTORS

Symbol	Description	Part No.
R1	Metal oxide 150 2W	RS2P 151K
R2	Metal oxide 150 2W	RS2P 151K
R3	Metal oxide 150 2W	RS2P 151K
R4	Metal oxide 150 2W	RS2P 151K
R5	Carbon film 1k 1/2W	RD1/2PS 102J
R6	Carbon film 1k 1/2W	RD1/2PS 102J
R7	Carbon film 1k 1/2W	RD1/2PS 102J
R8	Carbon film 1k 1/2W	RD1/2PS 102J

11.14 CR UNIT (AWX-004)



PARTS LIST OF CR UNIT

CAPACITORS

Symbol	Description	Part No.
C1	Ceramic 330p 50V	CKDYB 331K 50
C2	Electrolytic 33 10V	CEA 330P 10

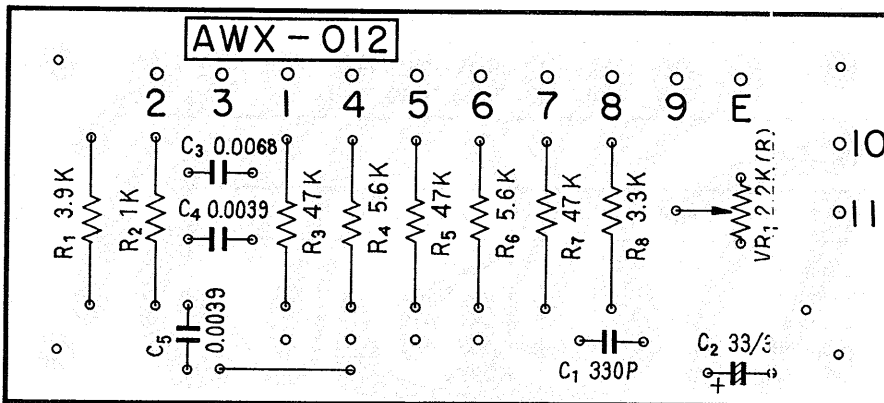
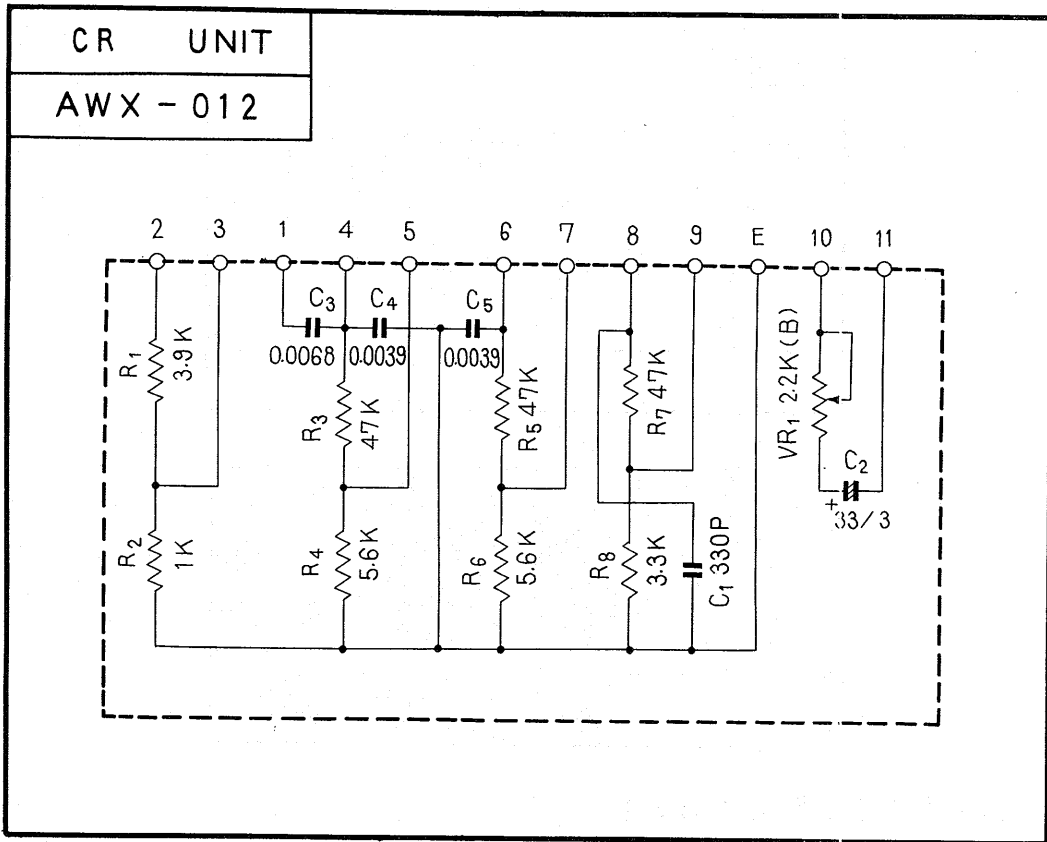
RESISTORS

Symbol	Description	Part No.
R1	Carbon film 3.9k	RD¼PS 392J
R2	Carbon film 1k	RD¼PS 102J
R3	Carbon film 47k	RD¼PS 473J
R4	Carbon film 4.7k	RD¼PS 472J
R5	Carbon film 47k	RD¼PS 473J
R6	Carbon film 4.7k	RD¼PS 472J
R7	Carbon film 47k	RD¼PS 473J
R8	Carbon film 3.3k	RD¼PS 332J

POTENTIOMETER

Symbol	Description	Part No.
VR1	2.2k B Semi-fixed	ACP-001-O

11.15 CR UNIT (AWX-012) For KUW model



PARTS LIST OF CR UNIT

CAPACITORS

Symbol	Description			Part No.
C1	Ceramic	330p	50V	CKDYB 331K 50
C2	Electrolytic	33	10V	CEA 330P 10
C3	Mylar	0.0068	50V	CQMA 682K 50
C4	Mylar	0.0039	50V	CQMA 392K 50
C5	Mylar	0.0039	50V	CQMA 392K 50

RESISTORS

Symbol	Description			Part No.
R1	Carbon film	3.9k		RD%PS 392J
R2	Carbon film	1k		RD%PS 102J
R3	Carbon film	47k		RD%PS 473J
R4	Carbon film	5.6k		RD%PS 562J
R5	Carbon film	47k		RD%PS 473J
R6	Carbon film	5.6k		RD%PS 562J
R7	Carbon film	47k		RD%PS 473J
R8	Carbon film	3.3k		RD%PS 332J

POTENTIOMETER

Symbol	Description	Part No.
VR1	22k-B Semi-fixed	ACP-001-0

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