

<R42-239-0>

Service Manual

AM/FM STEREO RECEIVER

SX-727 / KUW, FVZW, FW

NOTE

MODEL SX-727 COMES IN THREE VERSIONS DISTINGUISHED AS FOLLOWS:

Round label on rear panel	Voltage	Type
KUW FVZW FW	120V only 5-position selector 5-position selector	UL approved(U.S.A.) FTZ approved(West Germany) General export model

<71L03Y61F>

PIONEER®

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1. SPECIFICATIONS

SEMICONDUCTORS

FETs	4	Transistors	56
ICs	4	Diodes	37

POWER AMPLIFIER SECTION

Music Power Output (IHF)	195 Watts (4Ω) 122 Watts (8Ω)
Continuous Power Output (1kHz: each channel driven)	69W/69W (4Ω) 48W/48W (8Ω)
Continuous Power Output (1kHz: both channels driven)	50W + 50W (4Ω) 40W + 40W (8Ω)
Power Output in the Range of 20Hz to 20kHz (both channels driven)	37W + 37W (8Ω, Harmonic Distortion less than 0.5%)
Harmonic Distortion	Less than 0.5% (Continuous power output) Less than 0.03% (8Ω, 24W/24W power output)
Intermodulation Distortion	Less than 0.5% (Continuous power output) Less than 0.03% (8Ω, 24W/24W power output)
Power Bandwidth (IHF)	10Hz to 60kHz (8Ω, Harmonic Distortion less than 0.5%)
Frequency Response	7Hz to 80kHz, ±1dB
Input Sensitivity/Impedance (1kHz, continuous power output)	500mV/50kΩ
Speakers	4 to 16Ω
Damping Factor	40 (8Ω, 1kHz)

PREAMPLIFIER SECTION

Output Voltage	500mV (Rated output), 4V (Max.)
Harmonic Distortion	Less than 0.1%
Frequency Response	10Hz to 20kHz, ±1dB
Input Sensitivity/Impedance (1kHz, for rated output)	PHONO 1 MAG 3mV/50kΩ PHONO 2 MAG 3mV/50kΩ MIC 2.7mV/50kΩ AUX 200mV/100kΩ TAPE MONITOR 1, 2 200mV/100kΩ
Recording Output	TAPE REC 1, 2 (Pin jack) 200mV TAPE REC (DIN connector) 35mV
BASS Control	-10dB, + 10dB/100Hz
TREBLE Control	-10dB, + 10dB/10kHz
LOW Filter	-8dB/50Hz (6dB/oct.)
HIGH Filter	-9dB/10kHz (6dB/oct.)
Equalization Curve	PHONO: RIAA S.T.D.
Loudness Contour	+10dB/100Hz, + 6dB/10kHz with Volume Control set at -40dB position.
Muting	-20dB
Hum and Noise (IHF)	PHONO More than 85dB AUX More than 95dB

SX-727

FM TUNER SECTION

Frequency Range	88MHz to 108MHz 87.5MHz to 108MHz (FTZ approved)
Usable Sensitivity (IHF)	1.8 μ V
Capture Ratio (IHF)	2.0dB
Selectivity (IHF)	More than 70dB
Image Rejection	More than 85dB (98MHz)
IF Rejection	More than 100dB (90MHz)
Spurious Rejection	More than 90dB (98MHz)
AM Suppression	50dB
Signal-to-Noise Ratio	70dB
Harmonic Distortion	Mono: Less than 0.3% (100% Mod.) Stereo: Less than 0.5% (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 50dB
Antenna Input	Impedance 300 Ω balanced and 75 Ω unbalanced.

AM TUNER SECTION

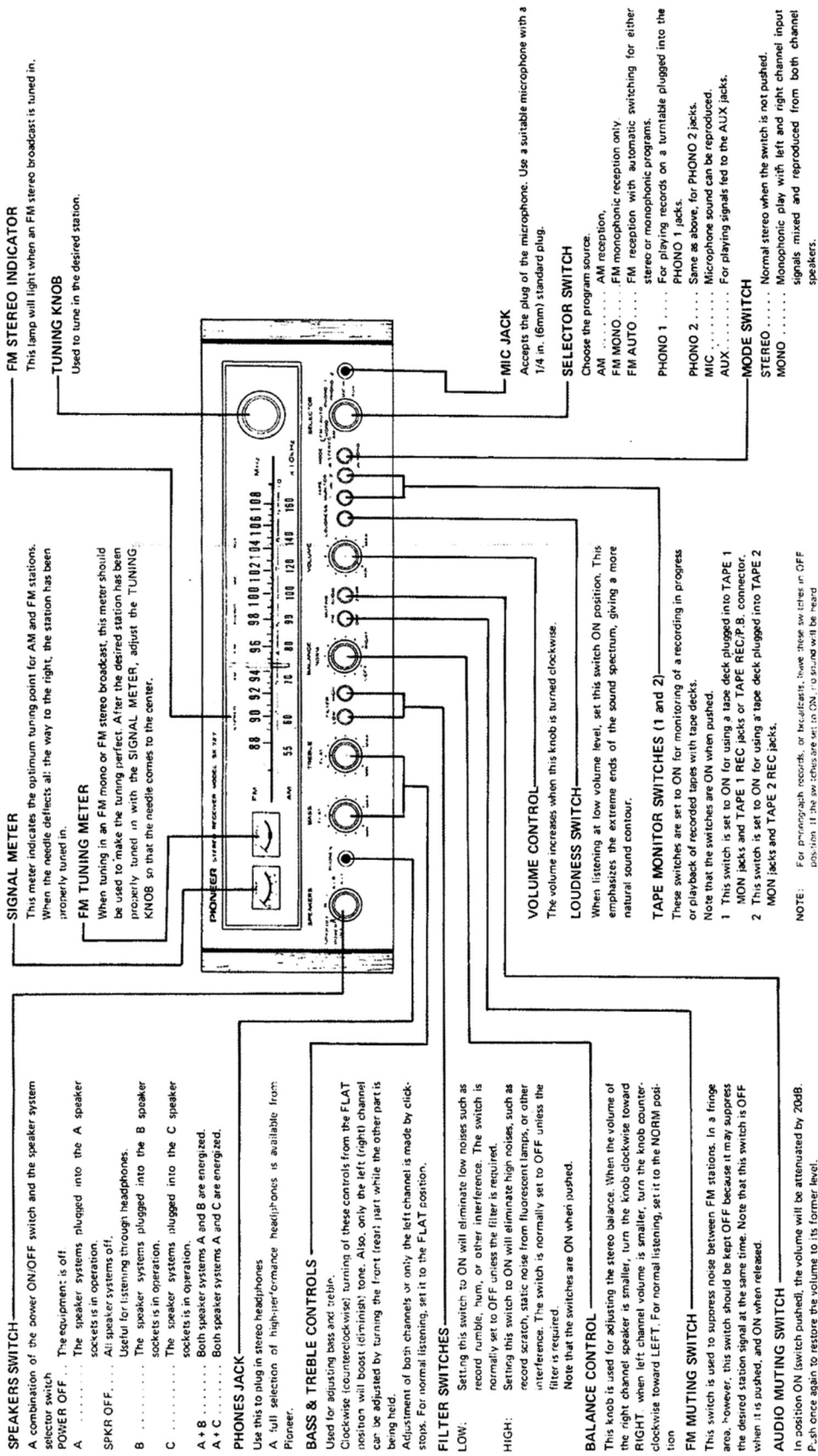
Frequency Range	525kHz to 1,605kHz
Usable Sensitivity (IHF)	10 μ V
Selectivity (IHF)	More than 35dB
Image Rejection	More than 80dB (1,000kHz)
IF Rejection	More than 75dB
Signal-to-Noise Ratio	More than 50dB
Antenna	Built-in ferrite loopstick antenna

MISCELLANEOUS

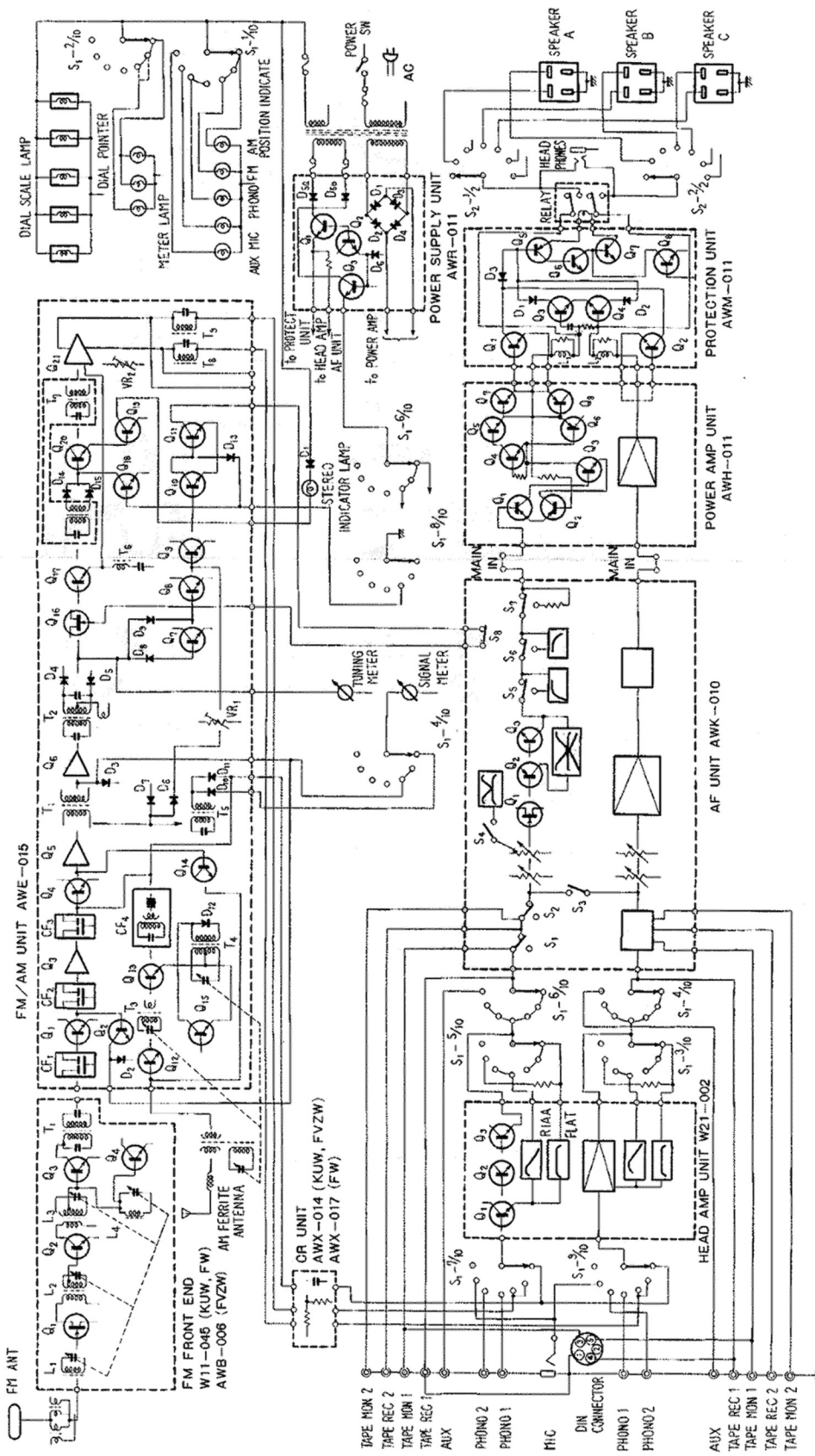
Power Requirements	120V 60Hz, or 110V, 120V, 130V, 220V and 240V (switchable) 50-60Hz
Power Consumption	270W (Max.)
AC Outlets	Switched 1, Unswitched 2.
Dimensions (overall)	19- $\frac{1}{16}$ in./485mm (width) 5- $\frac{7}{8}$ in./150mm (height) 15- $\frac{3}{8}$ in./390mm (depth)
Weight	Without package 30lb, 14oz/14kg With package 37lb, 8oz/17kg
Furnished Parts	
FM T-type Antenna	1 Fuse 1.5A (5 line voltage model only) 1
Pin Plug	2 3A 2
Speaker Plug	6 Polishing Cloth 1
	Operating Instructions 1

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

2. FRONT PANEL FACILITIES



4. BLOCK DIAGRAM



- S₁ INPUT SELECTOR**
1. AM
 2. FM
 3. FM AUTO
 4. PHONO 1
 5. PHONO 2
 6. MIC
 7. AUX
- S₂ OUTPUT SELECTOR**
1. POWER OFF
 2. SPEAKER A
 3. " B
 4. " C
 5. " A+B
 6. " A+C
 7. " B+C
- IN AF UNIT**
- S₁ TAPE MONITOR 1
 - S₂ TAPE MONITOR 2
 - S₃ MODE
 - S₄ LOUDNESS
 - S₅ LOW FILTER
 - S₆ HIGH FILTER
 - S₇ AFS/O MUTING
 - S₈ FM MUTING

5. DISASSEMBLY

5-1 WOODEN CASE

Remove the 4 screws from the side of the wooden case. Pull the case backward off from the receiver housing. See Photo 1.

5-2 BOTTOM PLATE

The bottom plate can be removed after loosening the 8 screws. See Photo 2.

5-3 FRONT PANEL

Pull off all knobs, then remove nuts and washers from shafts and remove 2 screws from top of front panel as in Photo 4. The front panel can now be removed.

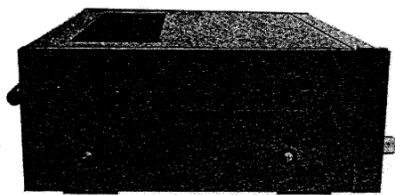


Photo 1

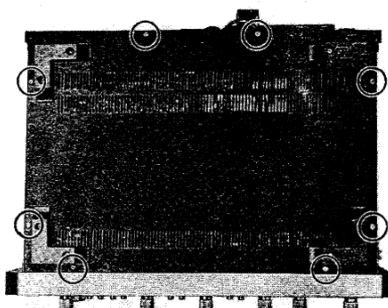


Photo 2

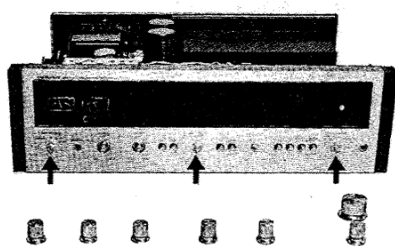


Photo 3

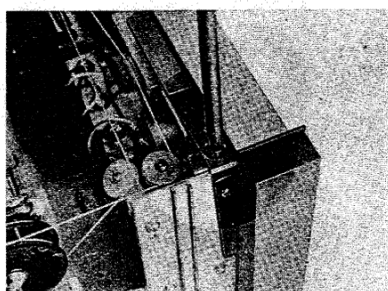
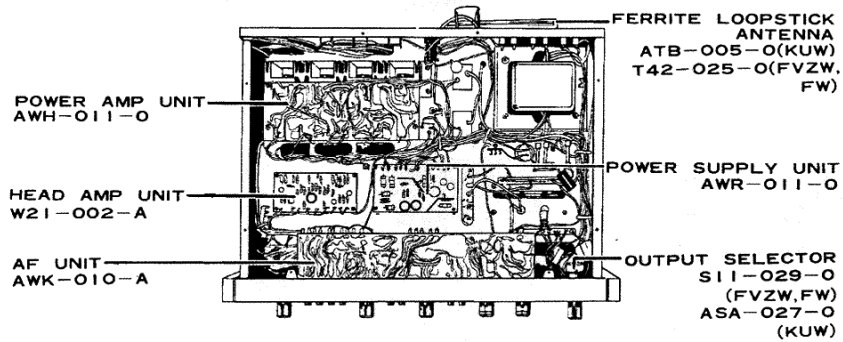
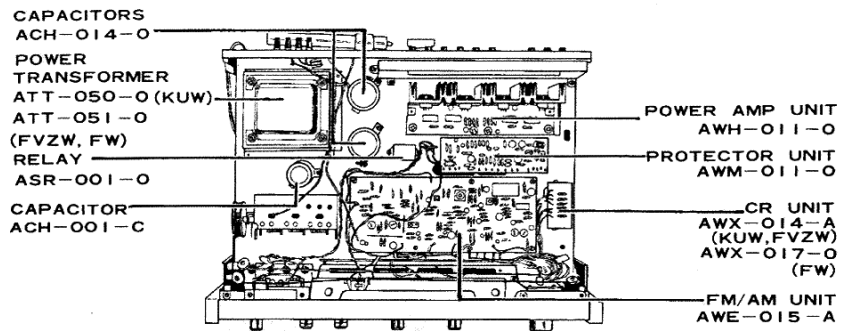


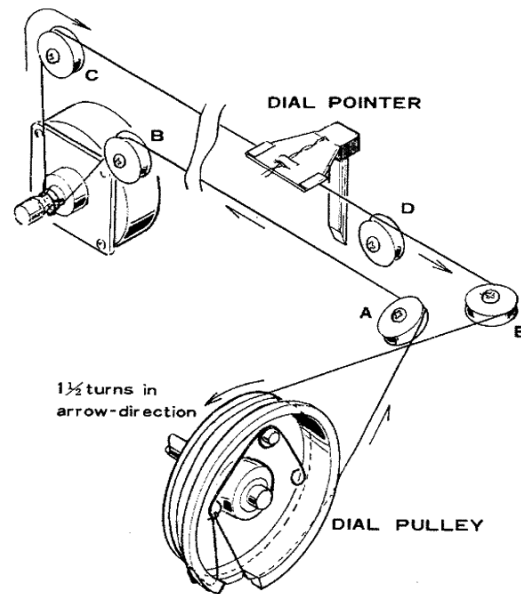
Photo 4

6. PARTS AND PCB LOCATION



7. DIAL CORD STRINGING

1. Set the tuning capacitor to maximum capacitance.
2. Tie one end of the string to dial pulley.
3. Wind the string $\frac{1}{2}$ turns around the tuning pulley.
4. Pull the string around the small pulleys A and B, then wind it 2 turns around the tuning shaft.
5. Lead the string around the small pulleys C and D, then fasten string to the dial pointer.
6. Lead the string around the small pulley E.
7. Finally, tie the end of the string to remaining side of spring on the tuning pulley.
8. Tune receiver to low end. Fasten dial pointer to string so that it indicates low end on dial scale.



8. ALIGNMENT PROCEDURE

The following alignments are required only in very rare cases and should never be attempted without the proper test equipment. Also, only non-metallic tools must be used.

8-1 REQUIRED INSTRUMENTS

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

8-2 FM 10.7 MHz ALIGNMENT

1. Confirm +B voltage and current for 12V \pm 1V which should be 46mA to 50mA at pin 4.
2. Disconnect leads from pins 22 (input) and 24, then connect resistor 2.2k Ω as shunted to pin 24 of FM/AM unit.
3. Connect 10.7MHz sweep generator to pins 22 (hot) and 23 (ground) of FM/AM unit. Set controls as follows:
Center frequency: 10.7MHz
Output: 55dB (500 μ V)
4. Connect vertical scope input to pin 24.
5. Align core of T1 for maximum gain and symmetry to obtain scope pattern as in Fig. 1.
6. Raise generator output gradually to 80dB (10mV), repeat step 5 realignment for each output level, if necessary.
7. Disconnect one side of C23. Disconnect oscilloscope and resistor 2.2k Ω from pin 24. Then reconnect lead to pin 24.
8. Connect scope input to pin 9.
9. Set generator output back to 55dB (500 μ V).
10. Adjust bottom core of T2 for maximum gain and linearity.
Adjust top core so that center frequency mark is located on zero axis, as shown in Fig. 2.
11. Reconnect C23.
12. Reconnect input lead to pin 22.

8-3 FM FRONT END ALIGNMENT

1. Confirm +B current (drain 11mA \pm 4mA).
2. Connect FM signal generator output to 300 Ω antenna input.
3. Connect AC VTVM to TAPE REC jack on rear panel.
4. Adjust generator for 400Hz, 100% modulation.
5. Set SELECTOR switch on front panel to FM MONO.

6. Adjust generator frequency and tuning dial to 90MHz.
During the following adjustments, keep the generator output as low as possible.
7. Adjust L4 core first, then adjust cores of L1, L2, L3 for maximum reading on VTVM and so that tuning meter indicates center position (Fig. 3).
8. Set generator frequency and tuning dial to 106MHz.
9. Adjust trimmer capacitor CT4 first, then adjust CT1, CT2, CT3 for maximum reading on VTVM.
10. Repeat these alignments several times until satisfactory reading is obtained.
11. Finally, adjust T1 core for maximum reading on VTVM.

8-4 FM MPX DECODER ALIGNMENT

1. Set SELECTOR switch on front panel to FM AUTO.
2. Connect RF output of FM multiplex signal generator to 300 Ω antenna input.
3. Adjust MPX generator as follows:
Signal Mode Deviation
L+R 40.5kHz
19kHz (pilot) 7.5kHz
4. Connect AC VTVM to TAPE REC jack on rear panel.
5. Set generator signal mode to L-R (sub), adjust core of T6 (located on FM/AM unit) to obtain maximum reading on VTVM.
6. Set generator signal mode to L. Adjust VR2 (located on FM/AM unit) for minimum crosstalk on R channel TAPE REC output.
7. Set generator signal mode to R. Repeat above adjustment for minimum crosstalk on L channel.

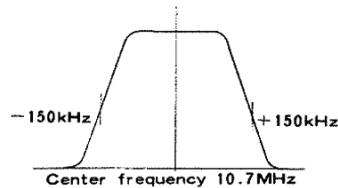


Fig. 1

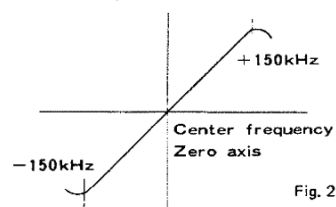


Fig. 2

8-5 MUTING THRESHOLD LEVEL ALIGNMENT

1. Set SELECTOR switch to FM MONO.
2. Turn FM MUTING switch to ON.
3. Connect FM signal generator to 300Ω antenna input.
4. Connect AC VTVM to TAPE REC jack.
5. Set output level of generator to 25dB (20μV), with ±22.5kHz deviation, and 400Hz or 1kHz modulation.
6. Tune receiver accurately to generator frequency.
7. Adjust VR1 on FM/AM unit exactly on the borderline between muting and non-muting.

8-6 AM 455kHz ALIGNMENT

1. Set SELECTOR switch on front panel to AM.
2. Connect 455kHz sweep generator to pin 15. Adjust generator output level to 60dB (1mV).
3. Connect vertical oscilloscope input to either L or R of TAPE REC jack.
4. Set tuning dial to high end position.
5. Adjust cores of CF4 and T5 for maximum gain and symmetrical pattern on oscilloscope.

8-7 AM TRACKING ALIGNMENT

1. Set SELECTOR switch to AM position.
2. For this alignment, bottom plate must be installed.
3. Set signal generator to AM function, 30% modulation with 400Hz. Connect loop antenna to generator RF output and place near receiver's ferrite antenna. See Fig. 4.
4. Connect VTVM to TAPE REC jack.
5. Keep generator as low as possible for minimum VTVM reading.
6. Tune generator and receiver to 600kHz. Adjust core of T4 on FM/AM unit for maximum VTVM reading, then adjust core of T3 and ferrite antenna.
7. Re-tune generator and receiver to 1,400kHz.
8. Adjust trimmers of tuning capacitor indicated in Fig. 3 to obtain maximum VTVM reading.

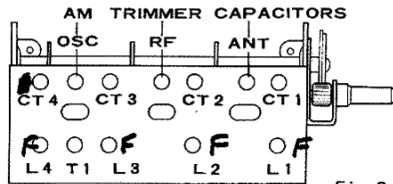
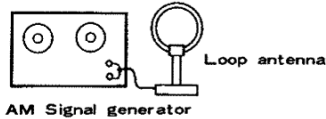


Fig. 3

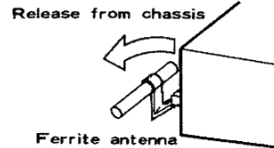
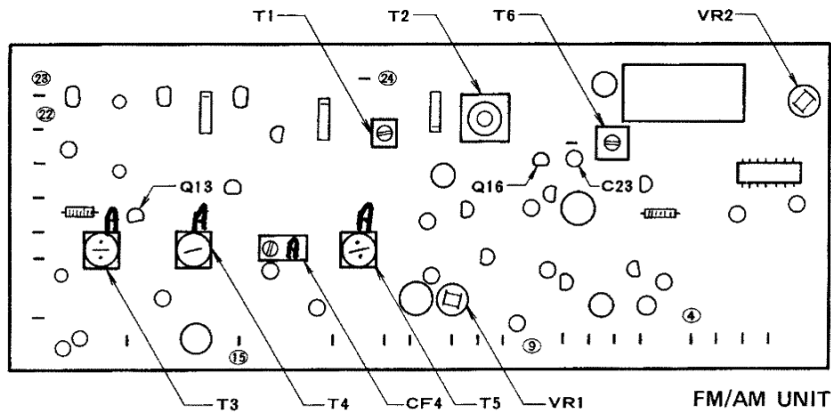
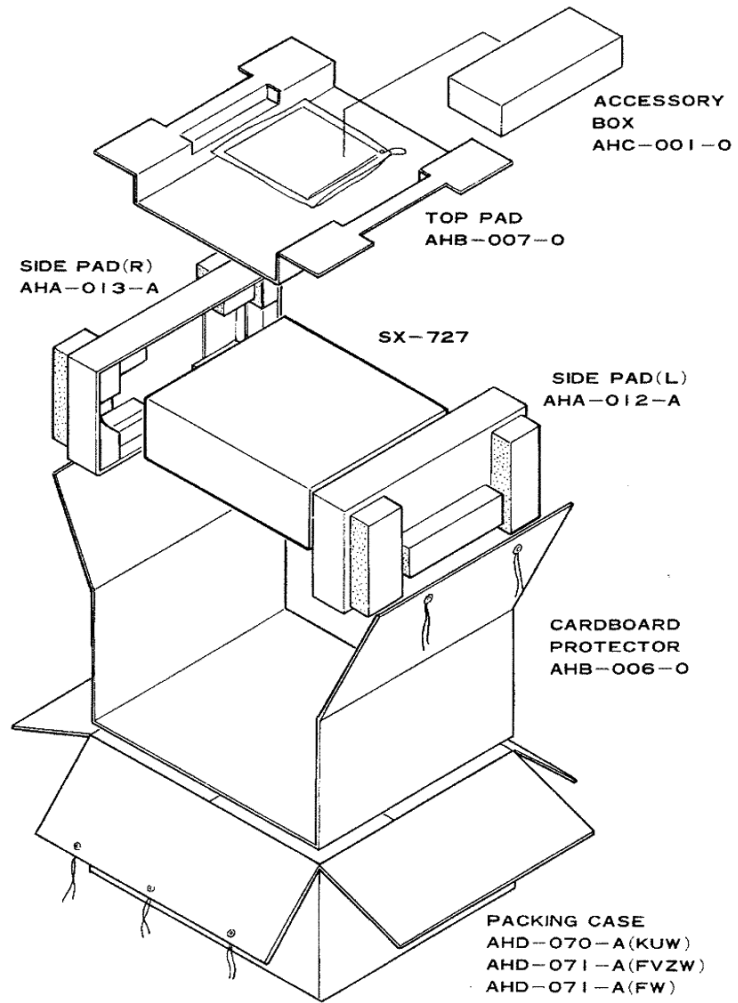


Fig. 4



9. PACKING METHOD AND PART NUMBERS



4.1 MISCELLANEOUS PARTS

NOTE

This parts list is for the KUW model, the FVZW or FW model uses some different parts as following pages:
 for FVZW model page 19
 for FW model page 21

CAPACITORS

IN μ F UNLESS OTHERWISE NOTED, p: μ pF.

Symbol	Description	Part No.
C1	Electrolytic 6800 50V	ACH-014-0
C2	Electrolytic 6800 50V	ACH-014-0
C3	Electrolytic 1000 63V	ACH-001-C
C4	Ceramic 0.01 50V	CKDYF 103Z 50
C5	Ceramic 0.01 50V	CKDYF 103Z 50
C6	Electrolytic 220 10V	CEA 221M 10
C7	Electrolytic 330 16V	CEA 331M 16
C8	Ceramic 0.01 DC 1.4kV	C43-003-0
C9	Oil paper 0.01 800V	ACE-001-A

RESISTORS

IN Ω , $\%W$ UNLESS OTHERWISE NOTED, k: $k\Omega$, M: $M\Omega$.

Symbol	Description	Part No.
	Compound part for REC terminal	W52-004-0
R7	Carbon film 18k	RD $\frac{1}{2}$ PS 183J
R8	Carbon film 18k	RD $\frac{1}{2}$ PS 183J
R9	Wire wound 150 5W	RT5B 151K
R10	Wire wound 150 5W	RT5B 151K
R11	Carbon film 33	RD $\frac{1}{2}$ PS 330J
R12	Carbon film 2.2M $\%W$	RD $\frac{1}{2}$ PW 225J
R13	Carbon film 22	RD $\frac{1}{2}$ PS 220J

5. OTHERS

Symbol	Description	Part No.
	FM front end	W11-045-0
	FM/AM unit	AWE-015-A
	Head amp unit	W21-002-A
	AF unit	AWK-010-A
	Power amp unit	AWH-011-0
	Protector unit	AWM-011-0
	Power supply unit	AWR-011-0
	CR unit	AWX-014-A
	Lamp box unit	AWX-016-0
	Front panel ass'y	ANB-121-0
	Wooden case	AMM-012-0
	Dial shaft ass'y	AXA-013-0
	Dial pulley ass'y	M42-080-A
	Ferrite loopstick antenna holder ass'y	AXB-001-0
	Foot	AEC-027-B
	Pilot lamp for dial scale	E22-017-0
	Pilot lamp for meter	E22-032-0
	Pilot lamp for program indicator	AEL-007-0
	Fuse 3A	E21-021-0
	Fuse 3A for protection	E21-022-0
	Fuse 0.5A for protection	E21-019-A
	Spare AC outlet	AKP-002-0
	Speaker socket	K72-028-0
	Headphones jack	K72-026-0
	Microphone jack	K72-024-0
	SP connector (DIN)	K93-003-B
	Pilot lamp (for dial scale) socket	K91-005-A
	Fuse Holder	AKR-007-0
	Jumper plug	K71-026-0
	Screw for grounding	B11-012-A

DIODE

Symbol	Description	Part No.
D1	SIB01-01	

SWITCHES AND RELAY

Symbol	Description	Part No.
	Selector switch	ASB-011-A
	Output selector	S11-029-0
	Relay	ASR-001-0

COILS AND TRANSFORMERS

Symbol	Description	Part No.
	Power transformer	ATT-050-0
	Ferrite loopstick antenna	ATS-005-0
	Balun transformer	T22-025-A
	Choke coil	T24-030-0

Symbol	Description	Part No.
	Screw to fix wooden case	B11-016-B
	AC power cord	D11-003-E
	Speaker plug	K72-007-B
	Pin plug	K72-015-A
	Operating instructions	ARB-045-0
	FM T-type antenna	D52-013-0
	Packing case	AHD-070-A
	Side pad (L)	AHA-012-A
	Side pad (R)	AHA-013-A
	Cardboard protector	AHB-006-0
	Top pad	AHB-007-0
	Accessory box	AHC-001-0
	Dial scale	AAG-029-0
	Dial pointer ass'y	AAF-011-A
	Signal meter	AAW-006-0
	Tuning meter	AAW-007-0
	Knob for tuning	AAA-005-0
	Knob for volume, balance, selector speakers and mode	AAB-007-B
	Knob for bass and treble (L)	AAB-013-0
	Knob for bass and treble (R)	AAB-014-0
	Knob for push switch	AAD-026-0
	6P input terminal board (PHONE terminal)	AKB-007-0
	6P input terminal board (TAPE terminal)	AKB-006-0
	Antenna terminal board	K11-043-C
	4p ground terminal	K13-047-0

For FVZW model

CAPACITORS

IN μ F UNLESS OTHERWISE NOTED, μ : μ F.

Symbol	Description	Part No.
C1	Electrolytic 6800 50V	ACH-014-0
C2	Electrolytic 6800 50V	ACH-014-0
C3	Electrolytic 1000 63V	ACH-001-C
C4	Ceramic 0.01 50V	CKDYF 103Z 50
C5	Ceramic 0.01 50V	CKDYF 103Z 50
C6	Electrolytic 220 10V	CEA 221M 10
C7	Electrolytic 330 16V	CEA 331M 16
C8	Ceramic 0.01 DC 1.4kV	C43-003-0
C9	Ceramic 0.01 DC 1.4kV	C43-003-0
C10	Ceramic 0.01 DC 1.4kV	C43-003-0

RESISTORS

IN Ω , $\%W$ UNLESS OTHERWISE NOTED, k: k Ω , M: M Ω .

Symbol	Description	Part No.
	Compound part for REC terminal	W52-004-0
R7	Carbon film 18k	RD \times PS 183J
R8	Carbon film 18k	RD \times PS 183J
R9	Wire wound 150 5W	RTS8 151K
R10	Wire wound 150 5W	RTS8 151K
R11	Carbon film 33	RD \times PS 330J
R13	Carbon film 22 $\%W$	RD \times PS 220J

DIODE

Symbol	Description	Part No.
D1	SI801-01	

SWITCHES

Symbol	Description	Part No.
	Selector switch	ASS-011-A
	Output selector	S11-029-0
	Relay	ASR-001-0

COILS AND TRANSFORMERS

Symbol	Description	Part No.
	Power transformer	ATT-051-0
	Ferrite loopstick antenna	T42-025-0
	Balun transformer	T22-025-A
	Choke coil	T24-030-0

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OTHERS

Symbol	Description	Part No.
	FM front end	AWB-006-0
	FM/AM unit	AWE-015-A
	Head amp unit	W21-002-A
	AF unit	AWK-010-A
	Power amp unit	AWH-011-0
	Protector unit	AWM-011-0
	Power supply unit	AWR-011-0
	CR unit	AWX-014-A
	Lamp box unit	AWX-019-0
	Front panel ass'y	ANB-121-0
	Wooden case	AMM-012-0
	Dial shaft ass'y	AXA-013-0
	Dial pulley ass'y	M42-080-A
	Ferrite loopstick antenna holder ass'y	AXB-001-0
	Foot	AEC-027-B
	Pilot lamp for dial scale	E22-017-0
	Pilot lamp for meter	E22-032-0
	Pilot lamp for program indicator	AEL-007-0
	Fuse 1.5A	E21-012-0
	Fuse 3A for protection	E21-022-0
	Fuse 0.5A for protection	E21-019-A
	Spare AC outlet	AKP-002-0
	Speaker socket	K72-028-0
	Headphones jack	K72-026-0
	Microphone jack	K72-024-0
	5P connector (DIN)	K93-003-B
	Pilot lamp (for dial scale) socket	K91-005-A
	Line voltage selector	AKR-001-0
	Jumper plug	K71-026-0
	Screw for grounding	B11-012-A

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Symbol	Description	Part No.
	Screw to fix wooden case	B11-016-B
	AC power cord	D11-002-B
	Speaker plug	K72-007-B
	Pin plug	K72-015-A
	Fuse 3A	E21-006-0
	Operating instructions	ARB-045-0
	FM T-type antenna	D52-013-0
	Packing case	AHD-071-A
	Side pad (L)	AHA-012-A
	Side pad (R)	AHA-013-A
	Cardboard protector	AHB-006-0
	Top pad	AHB-007-0
	Accessory box	AHC-001-0
	Dial scale	AAG-029-0
	Dial pointer ass'y	AAF-011-A
	Signal meter	AAW-006-0
	Tuning meter	AAW-007-0
	Knob for tuning	AAA-006-0
	Knob for volume, balance, selector, speakers and mode	AAB-007-B
	Knob for bass and treble (L)	AAB-013-0
	Knob for bass and treble (R)	AAB-014-0
	Knob for push switch	AAD-026-0
	6P input terminal board (PHONE terminal)	AKB-007-0
	6P input terminal board (TAPE terminal)	AKB-006-0
	Antenna terminal board	K11-043-C
	4P ground terminal	K13-047-0

5X-741

12 For FW model

CAPACITORS

IN μ F UNLESS OTHERWISE NOTED, p: μ F.

Symbol	Description	Part No.
C1	Electrolytic 6800 50V	ACH-014-0
C2	Electrolytic 6800 50V	ACH-014-0
C3	Electrolytic 1000 63V	ACH-001-C
C4	Ceramic 0.01 50V	CKDYF 103Z 50
C5	Ceramic 0.01 50V	CKDYF 103Z 50
C6	Electrolytic 220 10V	CEA 221P 10
C7	Electrolytic 330 16V	CEA 331P 16
C8	Ceramic 0.01 DC 1.4kV	C43-003-0
C9	Ceramic 0.01 DC 1.4kV	C43-003-0
C10	Ceramic 0.01 DC 1.4kV	C43-003-0

RESISTORS

IN Ω , $\%W$ UNLESS OTHERWISE NOTED, k: $k\Omega$, M: $M\Omega$

Symbol	Description	Part No.
	Compound part for REC terminal	W52-004-0
R7	Carbon film 18k	RD1/PS 183J
R8	Carbon film 18k	RD1/PS 183J
R9	Wire wound 150 5W	RT5B 151K
R10	Wire wound 150 5W	RT5B 151K
R11	Carbon film 33	RD1/PS 330J
R13	Carbon film 22 $\%W$	RD1/PS 220J

DIODE

Symbol	Description	Part No.
D1	S1801-01	

SWITCHES

Symbol	Description	Part No.
	Selector switch	ASB-011-A
	Output selector	S11-029-0
	Relay	ASR-001-0

COILS AND TRANSFORMERS

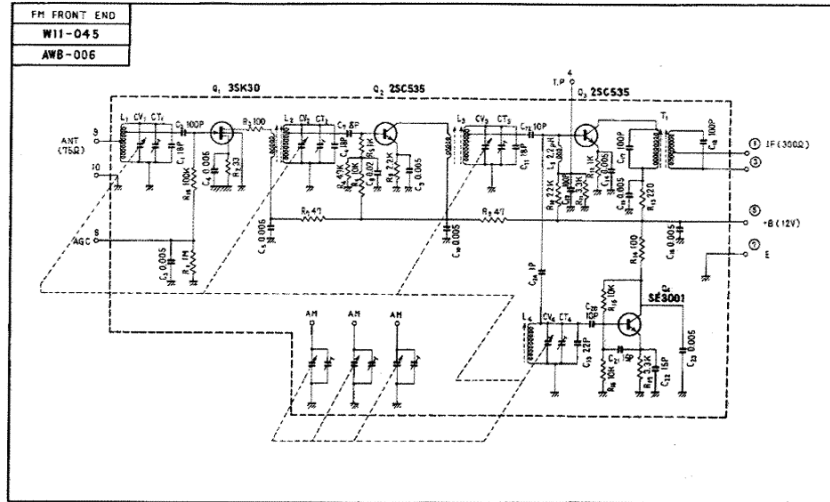
Symbol	Description	Part No.
	Power transformer	ATT-061-0
	Ferrite loopstick antenna	T42-025-0
	Balun transformer	T22-025-A
	Choke coil	T24-030-0

22 **OTHERS**

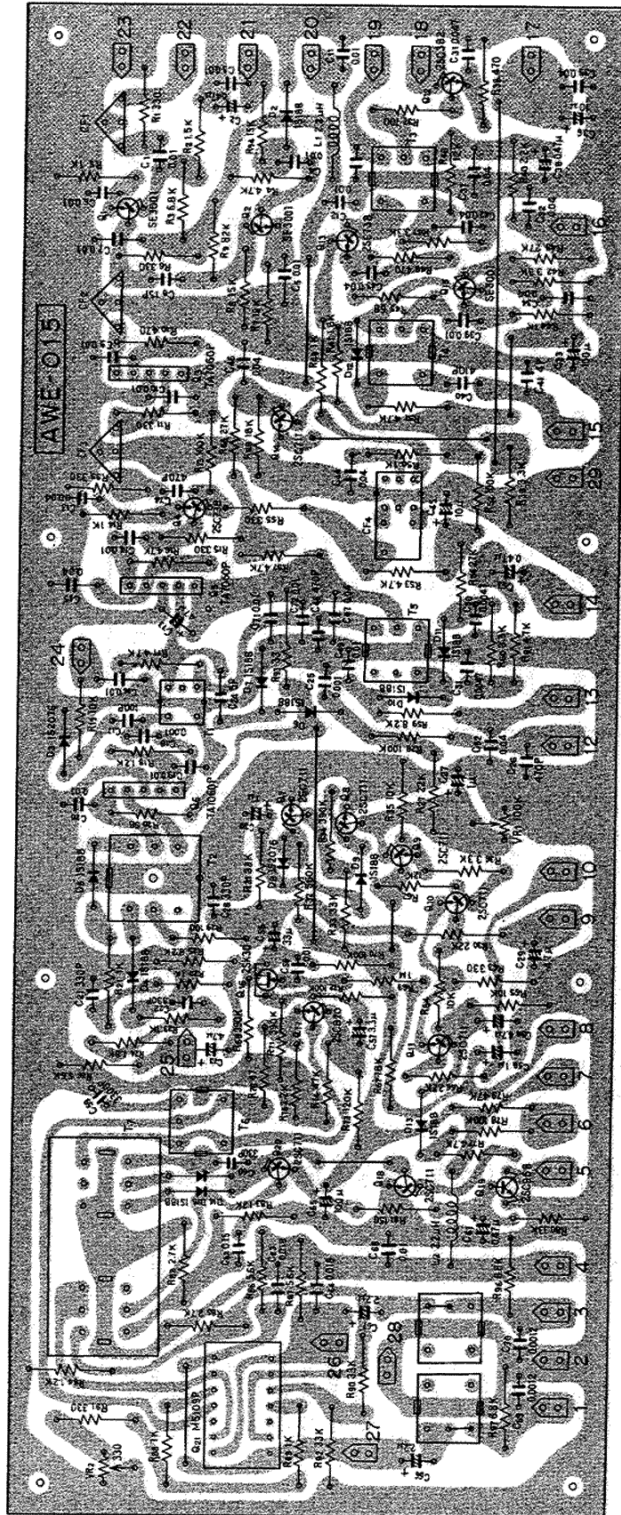
Symbol	Description	Part No.
	Fit front end	W11-045-0
	FM/AM unit	AWE-016-A
	Head amp unit	W21-002-A
	AF unit	AWK-010-A
	Power amp unit	AWH-011-0
	Protector unit	AWM-011-0
	Power supply unit	AWR-011-0
	CR unit	AWX-017-0
	Lamp box unit	AWX-016-0
	Front panel ass'y	ANB-121-0
	Wooden case	AMM-012-0
	Dial shaft ass'y	AXA-013-0
	Dial pulley ass'y	M42-080-A
	Ferrite loopstick antenna holder ass'y	AXB-001-0
	Foot	AEC-027-B
	Pilot lamp for dial scale	E22-017-0
	Pilot lamp for meter	E22-032-0
	Pilot lamp for program indicator	AEL-007-0
	Fuse 1.5A	E21-012-0
	Fuse 3A for protection	E21-022-0
	Fuse 0.5A for protection	E21-019-A
	Spare AC outlet	AKP-002-0
	Speaker socket	K72-028-0
	Headphones jack	K72-026-0
	Microphone jack	K72-024-0
	SP connector (DIN)	K93-003-B
	Pilot lamp (for dial scale) socket	K91-005-A
	Line voltage selector	AKR-001-0
	Jumper plug	K71-026-0
	Screw for grounding	B11-012-A

Symbol	Description	Part No.
	Screw to fix wooden case	B11-016-B
	AC power cord	D11-002-B
	Speaker plug	K72-007-B
	Pin plug	K72-015-A
	Fuse 3A	E21-008-0
	Operating instructions	ARB-045-0
	FM T-type antenna	D52-013-0
	Packing case	AHD-071-A
	Side pad (L)	AHA-012-A
	Side pad (R)	AHA-013-A
	Cardboard protector	AHB-006-0
	Top pad	AHB-007-0
	Accessory box	AHC-001-0
	Dial scale	AAG-029-0
	Dial pointer ass'y	AAF-011-A
	Signal meter	AAW-006-0
	Tuning meter	AAW-007-0
	Knob for tuning	AAA-006-0
	Knob for volume, balance, selector, speakers and mode	AAB-007-B
	Knob for bass and treble (L)	AAB-013-0
	Knob for bass and treble (R)	AAB-014-0
	Knob for push switch	AAD-026-0
	6P input terminal board (PHONO terminal)	AKB-007-0
	6P input terminal board (TAPE terminal)	AKB-006-0
	Antenna terminal board	K11-043-C
	4P ground terminal	K13-047-0

10.3 FM FRONT END (W11-045)(AWB-006)



NOTE: AWB-006 is FTZ-approved and W11-045 is applied to any place except FTZ-approved one.



2 PARTS LIST OF FM/AM UNIT

CAPACITORS

Symbol	Description	Part No.
C1	Ceramic	CKDYF 103Z 50
C2	Electrolytic	CEA R47P 50
C3	Ceramic	CKDYF 103Z 50
C4	Ceramic	CKDYF 103Z 50
C5	Ceramic	CKDYF 103Z 50
C6	Ceramic	CKDYF 103Z 50
C7	Ceramic	CKDYB 103K 50
C8	Ceramic	CCDSL 150K 50
C9	Ceramic	CKDYF 103Z 50
C10	Ceramic	CKDYB 103K 50
C11	Ceramic	CKDYF 103Z 50
C12	Ceramic	CKDYB 103K 50
C13	Ceramic	CKDYF 403Z 50
C14	Ceramic	CKDYF 103Z 50
C15	Ceramic	CKDYF 403Z 50
C16	Ceramic	CKDYF 103Z 50
C17	Ceramic	CCDSL 101K 50
C18	Ceramic	CKDYB 102K 50
C19	Ceramic	CKDYF 103Z 50
C20	Ceramic	CKDYF 103Z 50
C21	Ceramic	CKDYB 331K 50
C22	Ceramic	CKDYB 331K 50
C23	Electrolytic	CEA 4R7P 25
C24	Ceramic	CCDSL 050D 50
C25	Ceramic	CKDYB 102K 50

Symbol	Description	Part No.
C26	Ceramic	CKDYB 471K 50
C27	Electrolytic	CEA 010P 50
C28	Ceramic	CKDYB 331K 50
C29	Electrolytic	CEA 4R7P 25
C30	Electrolytic	CEA 010P 50
C31	Ceramic	CKDBC 473Z 25
C32	Ceramic	CKDYF 403Z 50
C33	Electrolytic	CEA 101P 16
C34	Ceramic	CKDYF 403Z 50
C35	Ceramic	CKDYF 403Z 50
C36	Electrolytic	CEA 100P 16
C37	Ceramic	CKDYF 403Z 50
C38	Electrolytic	CEA R47P 50
C39	Mylar	COMA 103K 50
C40	Styrol	COSA 411K 50
C41	Ceramic	CCDSL 040D 50
C42	Ceramic	CKDYF 403Z 50
C43	Ceramic	CKDYF 403Z 50
C44	Ceramic	CKDYF 403Z 50
C45	Electrolytic	CEA 100P 16
C46	Ceramic	CKDYF 403Z 50
C47	Ceramic	CKDYF 403Z 50
C48	Ceramic	CKDYB 471K 50
C49	Ceramic	CKDYF 103Z 50
C50	Mylar	COMA 472K 50
C51	Mylar	COMA 472K 50
C52	Ceramic	CKDYF 403Z 50
C53	Electrolytic	CSSA R47X 25
C54	Electrolytic	CEA 4R7P 25
C55	Electrolytic	CSSA 3R3M 16

Symbol	Description	Part No.
R6	Carbon film	RD½PS 331J
R7	Carbon film	RD½PS 122J
R8	Carbon film	RD½PS 153J
R9	Carbon film	RD½PS 823J
R10	Carbon film	RD½PS 471J
R11	Carbon film	RD½PS 331J
R13	Carbon film	RD½PS 104J
R14	Carbon film	RD½PS 102J
R15	Carbon film	RD½PS 331J
R16	Carbon film	RD½PS 472J
R17	Carbon film	RD½PS 472J
R18	Carbon film	RD½PS 122J
R19	Carbon film	RD½PS 103J
R20	Carbon film	RD½PS 560J
R21	Carbon film	RD½PS 102J
R22	Carbon film	RD½PS 102J
R23	Carbon film	RD½PS 102J
R24	Carbon film	RD½PS 182J
R25	Carbon film	RD½PS 822J
R26	Carbon film	RD½PS 562J
R27	Carbon film	RD½PS 223J
R28	Carbon film	RD½PS 104J
R29	Carbon film	RD½PS 101J
R30	Carbon film	RD½PS 223J
R31	Carbon film	RD½PS 333J
R32	Carbon film	RD½PS 564J
R33	Carbon film	RD½PS 333J
R34	Carbon film	RD½PS 394J
R35	Carbon film	RD½PS 103J
R36	Carbon film	RD½PS 332J

Symbol	Description	Part No.
C56	Mylar	COIMA 103K 50
C57	Electrolytic	CSSA 3R3M 16
C58	Electrolytic	CEA 010P 50
C59	Styrol	C15-011-A
C60	Ceramic	CKDYB 331K 50
C61	Electrolytic	CEA R47P 50
C62	Mylar	COIMA 154K 50
C63	Mylar	COIMA 183K 50
C64	Mylar	COIMA 183K 50
C65	Electrolytic	CEA 101P 16
C66	Electrolytic	CSSA 2R2M 16
C67	Electrolytic	CSSA 2R2M 16
C68	Ceramic	CKDYF 103Z 50
C69	Mylar	COIMA 122K 50
C70	Mylar	COIMA 122K 50
C71	Ceramic	CKDYB 103K 50
C72	Ceramic	CKDYB 103K 50
C73	Electrolytic	CEA 470P 16
C74	Ceramic	CKDYB 471K 50

RESISTORS

Symbol	Description	Part No.
VR1	Semi-fixed	C92-047-0
VR2	Semi-fixed	C92-066-A
R1	Carbon film	RD½PS 331J
R2	Carbon film	RD½PS 152J
R3	Carbon film	RD½PS 682J
R4	Carbon film	RD½PS 4.7k
R5	Carbon film	RD½PS 102J

Symbol	Description	Part No.
R67	Carbon film	RD½PS 183J
R68	Carbon film	RD½PS 394J
R69	Carbon film	RD½PS 105J
R70	Carbon film	RD½PS 104J
R71	Carbon film	RD½PS 394J
R72	Carbon film	RD½PS 104J
R73	Carbon film	RD½PS 124J
R74	Carbon film	RD½PS 473J
R75	Carbon film	RD½PS 222J
R76	Carbon film	RD½PS 470J
R77	Carbon film	RD½PS 472J
R78	Carbon film	RD½PS 104J
R79	Carbon film	RD½PS 473J
R80	Carbon film	RD½PS 333J
R81	Carbon film	RD½PS 151J
R82	Carbon film	RD½PS 272J
R83	Carbon film	RD½PS 122J
R84	Carbon film	RD½PS 122J
R85	Carbon film	RD½PS 272J
R86	Carbon film	RD½PS 562J
R87	Carbon film	RD½PS 562J
R88	Carbon film	RD½PS 102J
R89	Carbon film	RD½PS 102J
R90	Carbon film	RD½PS 333J
R91	Carbon film	RD½PS 331J
R92	Carbon film	RD½PS 333J
R93	Carbon film	RD½PS 330J
R94	Carbon film	RD½PS 153J
R95	Carbon film	RD½PS 331J
R96	Carbon film	RD½PS 682J
R97	Carbon film	RD½PS 682J

Symbol	Description	Part No.
R37	Carbon film	RD½PS 101J
R38	Carbon film	RD½PS 471J
R39	Carbon film	RD½PS 332J
R40	Carbon film	RD½PS 222J
R41	Carbon film	RD½PS 182J
R42	Carbon film	RD½PS 332J
R43	Carbon film	RD½PS 273J
R44	Carbon film	RD½PS 102J
R45	Carbon film	RD½PS 680J
R46	Carbon film	RD½PS 123J
R47	Carbon film	RD½PS 332J
R48	Carbon film	RD½PS 471J
R49	Carbon film	RD½PS 102J
R50	Carbon film	RD½PS 102J
R51	Carbon film	RD½PS 472J
R52	Carbon film	RD½PS 104J
R53	Carbon film	RD½PS 472J
R54	Carbon film	RD½PS 273J
R55	Carbon film	RD½PS 331J
R56	Carbon film	RD½PS 273J
R57	Carbon film	RD½PS 472J
R58	Carbon film	RD½PS 183J
R59	Carbon film	RD½PS 822J
R60	Carbon film	RD½PS 332J
R61	Carbon film	RD½PS 472J
R62	Carbon film	RD½PS 123J
R63	Carbon film	RD½PS 331J
R64	Carbon film	RD½PS 103J
R65	Carbon film	RD½PS 103J
R66	Carbon film	RD½PS 222J

SEMICONDUCTORS

Symbol	Description	Part No.
Q1	SE3001 Transistor	
Q2	SE3001 Transistor	
Q3	TA7060P-R or W IC	
Q4	2SC738-P Transistor	
Q5	TA7060P-W IC	
Q6	TA7060P-W IC	
Q7	2SC711-F or E Transistor	
Q8	2SC711-F or E Transistor	
Q9	2SC711-F or E Transistor	
Q10	2SC711-F or E Transistor	
Q11	2SC711-F or E Transistor	
Q12	2SC382 Transistor	
Q13	2SC738-P Transistor	
Q14	2SC711-F Transistor	
Q15	SE3001 Transistor	
Q16	2SK30-Y or GR FET	
Q17	2SC870-F or E Transistor	
Q18	2SC711-F or E Transistor	
Q19	2SC968-Y Transistor	
Q20	2SC711-F or E Transistor	
Q21	M6108P IC	
D2	1S188 FM-1 Diode	
D3	1S2076 Diode	
D4	1S188 FM-1 Diode	
D5	1S188 FM-1 Diode	
D6	1S188 FM-1 Diode	
D7	1S188 FM-1 Diode	
D8	1S2076 Diode	
D9	1S2076 Diode	
D10	1S2076 Diode	
D11	1S188 FM-1 Diode	

Symbol	Description	Part No.
D12	1S188 FM-1 Diode	
D13	1S188 FM-1 Diode	
D14	1S188 FM-1 Diode	
D15	1S188 FM-1 Diode	

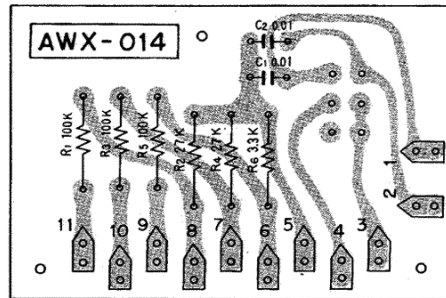
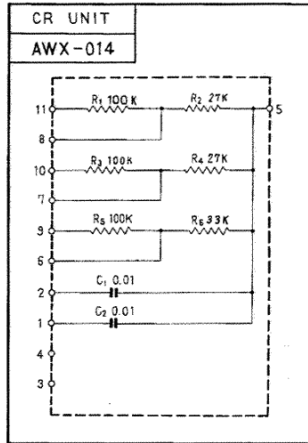
FILTERS

Symbol	Description	Part No.
CF1	FM Ceramic filter	ATF-003-0
CF2	FM Ceramic filter	ATF-001-0
CF3	FM Ceramic filter	ATF-001-0
CF4	AM Ceramic filter	ATF-002-A

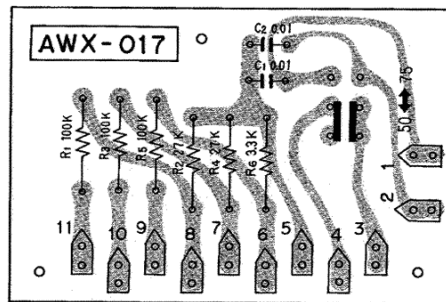
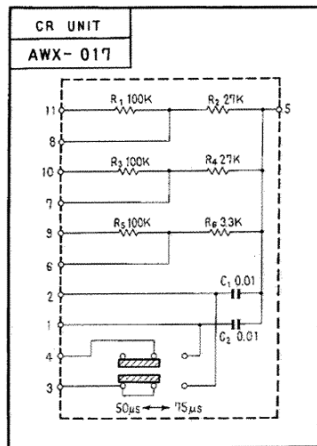
COILS AND TRANSFORMERS

Symbol	Description	Part No.
T1	Matching transformer	ATE-002-0
T2	FM Det. transformer	T74-003-A
T3	AM RF transformer	ATB-003-A
T4	AM OSC transformer	ATB-004-B
T5	AM Det. transformer	ATE-003-B
T6	19KHz coil	T75-023-B
T7	MPX transformer	T75-026-0
T8	38kHz leak filter	ATM-004-0
T9	38kHz leak filter	ATM-004-0
L1	RF choke coil	T24-028-A
L2	RF choke coil	T24-028-A

10.5 CR UNIT(AWX-014)(AWX-017)



For FW moel



PARTS LIST OF CR UNIT

CAPACITORS

Symbol	Description	Part No.
C1	MyIar 0.01 50V	COMA 103K 50
C2	MyIar 0.01 50V	COMA 103K 50

RESISTORS

Symbol	Description	Part No.
R1	Carbon film 100k	RD¼PS 104J
R2	Carbon film 27k	RD¼PS 273J
R3	Carbon film 100k	RD¼PS 104J
R4	Carbon film 27k	RD¼PS 273J
R5	Carbon film 100k	RD¼PS 104J
R6	Carbon film 3.3k	RD¼PS 332J

SWITCH

Symbol	Description	Part No.
	Slide switch	ASM-002-0

PARTS LIST OF CR UNIT

CAPACITORS

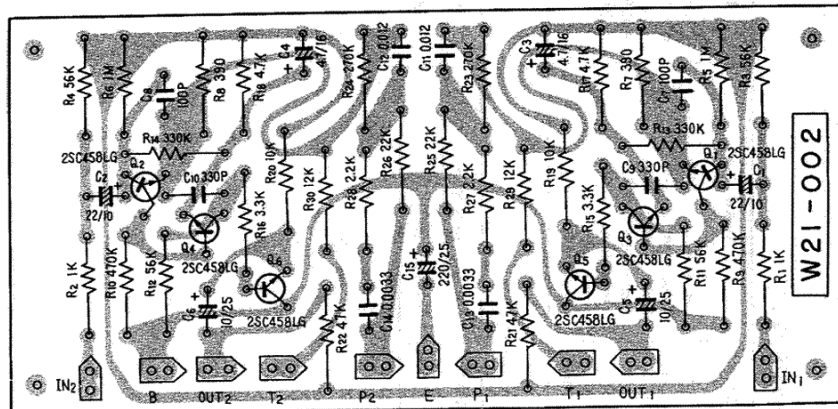
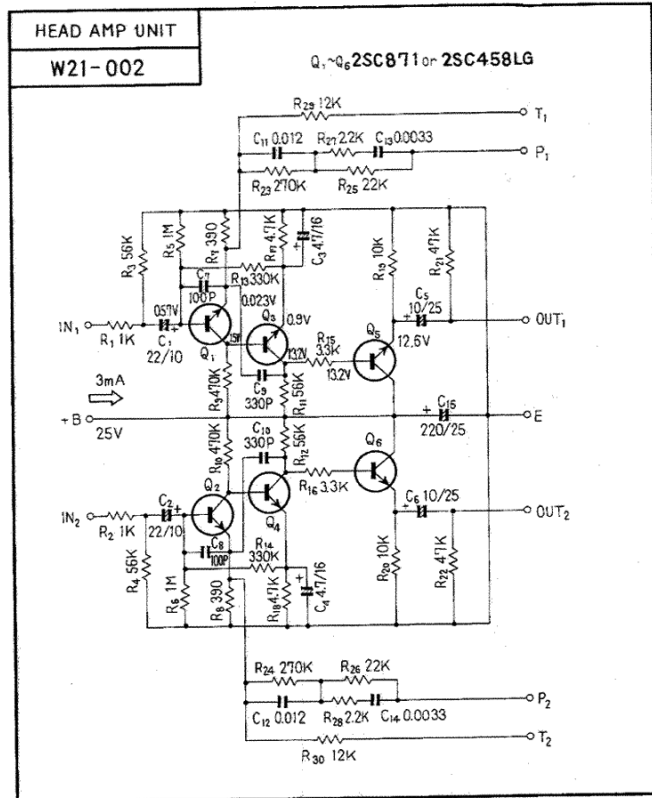
Symbol	Description	Part No.
C1	MyIar 0.01 50V	COMA 103K 50
C2	MyIar 0.01 50V	COMA 103K 50

RESISTORS

Symbol	Description	Part No.
R1	Carbon film 100k	RD¼PS 104J
R2	Carbon film 27k	RD¼PS 273J
R3	Carbon film 100k	RD¼PS 104J
R4	Carbon film 27k	RD¼PS 273J
R5	Carbon film 100k	RD¼PS 104J
R6	Carbon film 3.3k	RD¼PS 332J

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10.6 HEAD AMP UNIT (W21-002)



PARTS LIST OF HEAD AMP UNIT

CAPACITORS

Symbol	Description	Part No.
C1	Electrolytic 22 10V	CEA 220P 10
C2	Electrolytic 22 10V	CEA 220P 10
C3	Electrolytic 4.7 16V	CEA 4R7P 16
C4	Electrolytic 4.7 16V	CEA 4R7P 16
C5	Electrolytic 10 25V	CEA 100P 25
C6	Electrolytic 10 25V	CEA 100P 25
C7	Ceramic 100p	CCDSL 101K 50
C8	Ceramic 100p	CCDSL 101K 50
C9	Ceramic 330p	CCDSL 331K 50
C10	Ceramic 330p	CCDSL 331K 50
C11	Mylar 0.012	COMA 123K 50
C12	Mylar 0.01	COMA 103K 50
C13	Mylar 0.0033	COMA 332K 50
C14	Mylar 0.0033	COMA 332K 50
C15	Electrolytic 220 25V	CEA 221P 25

RESISTORS

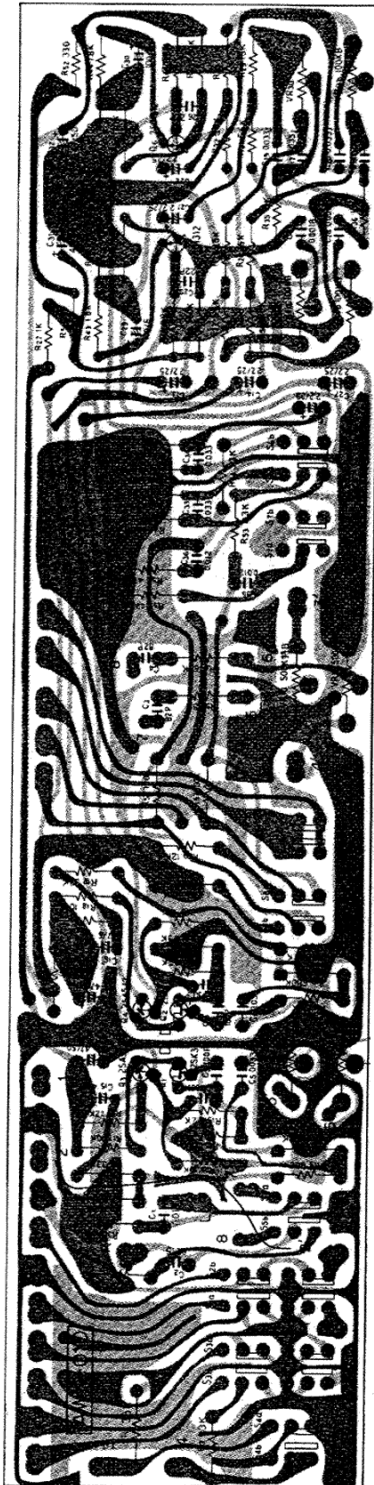
Symbol	Description	Part No.
R1	Carbon film 1k	RD4PS 102JNL
R2	Carbon film 1k	RD4PS 102JNL
R3	Carbon film 56k	RD4PS 563JNL
R4	Carbon film 56k	RD4PS 563JNL
R5	Carbon film 1M	RD4PS 105JNL
R6	Carbon film 1M	RD4PS 105JNL
R7	Carbon film 390	RD4PS 391JNL
R8	Carbon film 390	RD4PS 391JNL
R9	Carbon film 470k	RD4PS 474JNL
R10	Carbon film 470k	RD4PS 474JNL

Symbol	Description	Part No.
R11	Carbon film 56k	RD4PS 563JNL
R12	Carbon film 56k	RD4PS 563JNL
R13	Carbon film 330k	RD4PS 334JNL
R14	Carbon film 330k	RD4PS 334JNL
R15	Carbon film 3.3k	RD4PS 332JNL
R16	Carbon film 3.3k	RD4PS 332JNL
R17	Carbon film 4.7k	RD4PS 472JNL
R18	Carbon film 4.7k	RD4PS 472JNL
R19	Carbon film 10k	RD4PS 103JNL
R20	Carbon film 10k	RD4PS 103JNL
R21	Carbon film 47k	RD4PS 473JNL
R22	Carbon film 47k	RD4PS 473JNL
R23	Carbon film 270k	RD4PS 274JNL
R24	Carbon film 270k	RD4PS 274JNL
R25	Carbon film 22k	RD4PS 223JNL
R26	Carbon film 22k	RD4PS 223JNL
R27	Carbon film 2.2k	RD4PS 222JNL
R28	Carbon film 2.2k	RD4PS 222JNL
R29	Carbon film 12k	RD4PS 123JNL
R30	Carbon film 12k	RD4PS 123JNL

SEMICONDUCTORS

Symbol	Description	Part No.
Q1	2SC458LG-B or C Transistor	
Q2	2SC458LG-B or C Transistor	
Q3	2SC458LG-B or C Transistor	
Q4	2SC458LG-B or C Transistor	
Q5	2SC458LG-B or C Transistor	
Q6	2SC458LG-B or C Transistor	

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COMPONENT SIDE

3 PARTS LIST AF UNIT

CAPACITORS

Symbol	Description	Part No.
C1	Mylar	153K 50
C2	Mylar	153K 50
C3	Ceramic	CCDSL 820K 50
C4	Ceramic	CCDSL 82p 50
C5	Mylar	0.033 50V
C6	Mylar	0.033 50V
C7	Electrolytic	CEA 470P 50
C8	Electrolytic	CEA 470P 50
C9	Ceramic	CCDSL 101K 50
C10	Ceramic	CCDSL 101K 50
C11	Ceramic	CCDSL 301K 50
C12	Ceramic	CCDSL 301K 50
C13	Electrolytic	CSSA 2R2X 25
C14	Electrolytic	CSSA 2R2X 25
C15	Electrolytic	CEA 470P 6
C16	Electrolytic	CEA 470P 6
C17	Mylar	0.033 50V
C18	Mylar	0.033 50V
C19	Mylar	0.033 50V
C20	Mylar	0.033 50V
C21	Electrolytic	CSSA 2R2X 25
C22	Electrolytic	CSSA 2R2X 25
C23	Mylar	0.0018 50V
C24	Mylar	0.0018 50V
C25	Ceramic	CCDSL 22p 50V
C26	Ceramic	CCDSL 22p 50V
C27	Electrolytic	CSSA 2R2X 25
C28	Electrolytic	CSSA 2R2X 25

Symbol	Description	Part No.
C29	Electrolytic	100 6V
C30	Electrolytic	100 6V
C31	Electrolytic	47 50V
C32	Electrolytic	47 50V
C33	Mylar	0.033 50V
C34	Mylar	0.033 50V
C35	Mylar	0.012 50V
C36	Mylar	0.012 50V

RESISTORS

Symbol	Description	Part No.
VR1	Dual	100k-B
VR2	Dual	500k-B
VR3	Dual	100k-B
VR4	Dual	100k-B
R1	Carbon film	3.3k
R2	Carbon film	3.3k
R3	Carbon film	27k
R4	Carbon film	27k
R5	Carbon film	68k
R6	Carbon film	68k
R7	Carbon film	8.2k
R8	Carbon film	8.2k
R9	Carbon film	680k
R10	Carbon film	680k
R11	Carbon film	33k
R12	Carbon film	33k
R13	Carbon film	6.8k
R14	Carbon film	6.8k
R15	Carbon film	3.9k
R16	Carbon film	3.9k
R17	Carbon film	10k

Symbol	Description	Part No.
VR1	Dual	C82-049-0
VR2	Dual	ACV-105-0
VR3	Dual	ACV-202-A
VR4	Dual	ACV-202-A
R1	Carbon film	RD1/PS 332J
R2	Carbon film	RD1/PS 332J
R3	Carbon film	RD1/PS 273J
R4	Carbon film	RD1/PS 273J
R5	Carbon film	RD1/PS 683J
R6	Carbon film	RD1/PS 683J
R7	Carbon film	RD1/PS 822J
R8	Carbon film	RD1/PS 822J
R9	Carbon film	RD1/PS 684JNL
R10	Carbon film	RD1/PS 684JNL
R11	Carbon film	RD1/PS 333J
R12	Carbon film	RD1/PS 333J
R13	Carbon film	RD1/PS 682J
R14	Carbon film	RD1/PS 682J
R15	Carbon film	RD1/PS 392J
R16	Carbon film	RD1/PS 392J
R17	Carbon film	RD1/PS 103J

Symbol	Description	Part No.
R51	Carbon film 330	RD½PS 331J
R52	Carbon film 330	RD½PS 331J
R53	Carbon film 3.3k	RD½PS 332J
R54	Carbon film 3.3k	RD½PS 332J
R55	Carbon film 470k	RD½PS 474JNL
R56	Carbon film 470k	RD½PS 474JNL
R57	Carbon film 100k	RD½PS 104JNL
R58	Carbon film 100k	RD½PS 104JNL
R59	Carbon film 12k	RD½PS 123J
R60	Carbon film 12k	RD½PS 123J

SEMICONDUCTORS

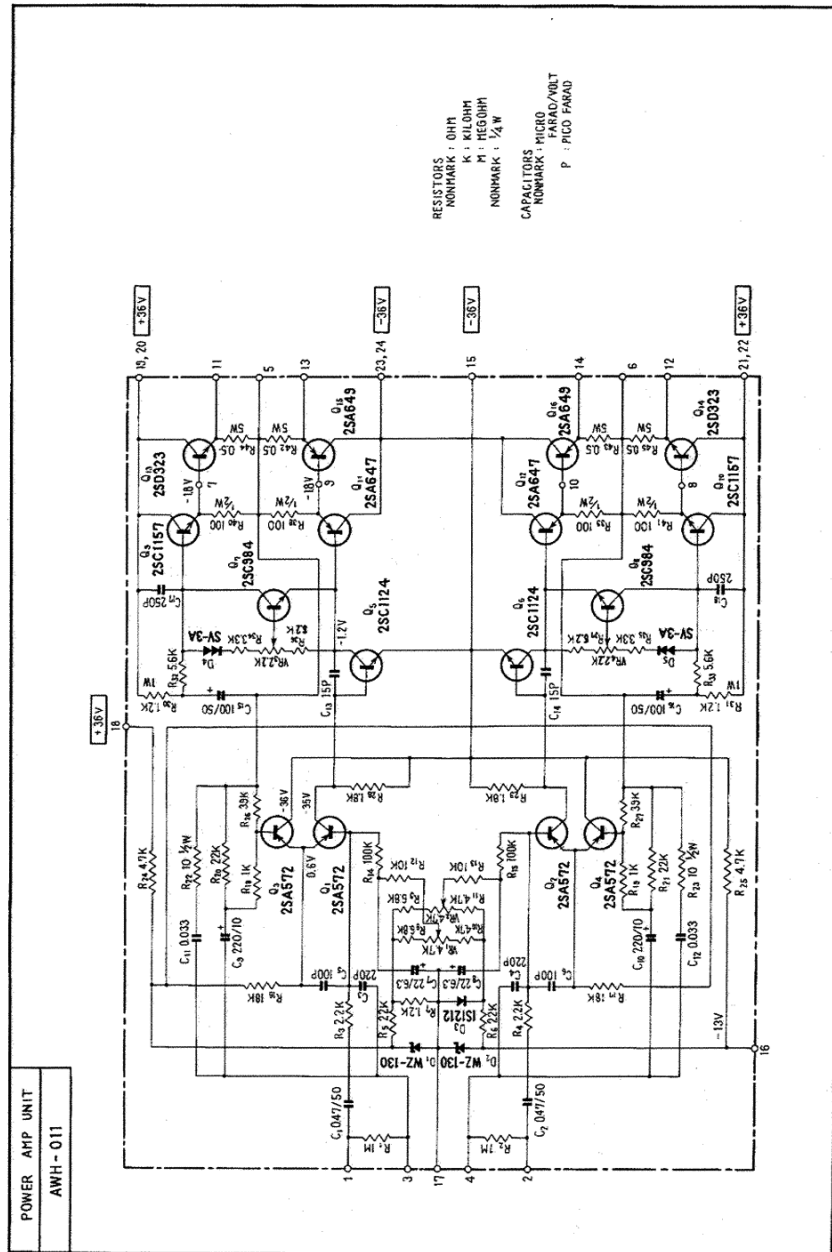
Symbol	Description	Part No.
Q1	2SK30-Y or GR FET	
Q2	2SK30-Y or GR FET	
Q3	2SA572-5A or 5B Transistor	
Q4	2SA572-5A or 5B Transistor	
Q5	2SC1312F-F or G Transistor	
Q6	2SC1312F-F or G Transistor	

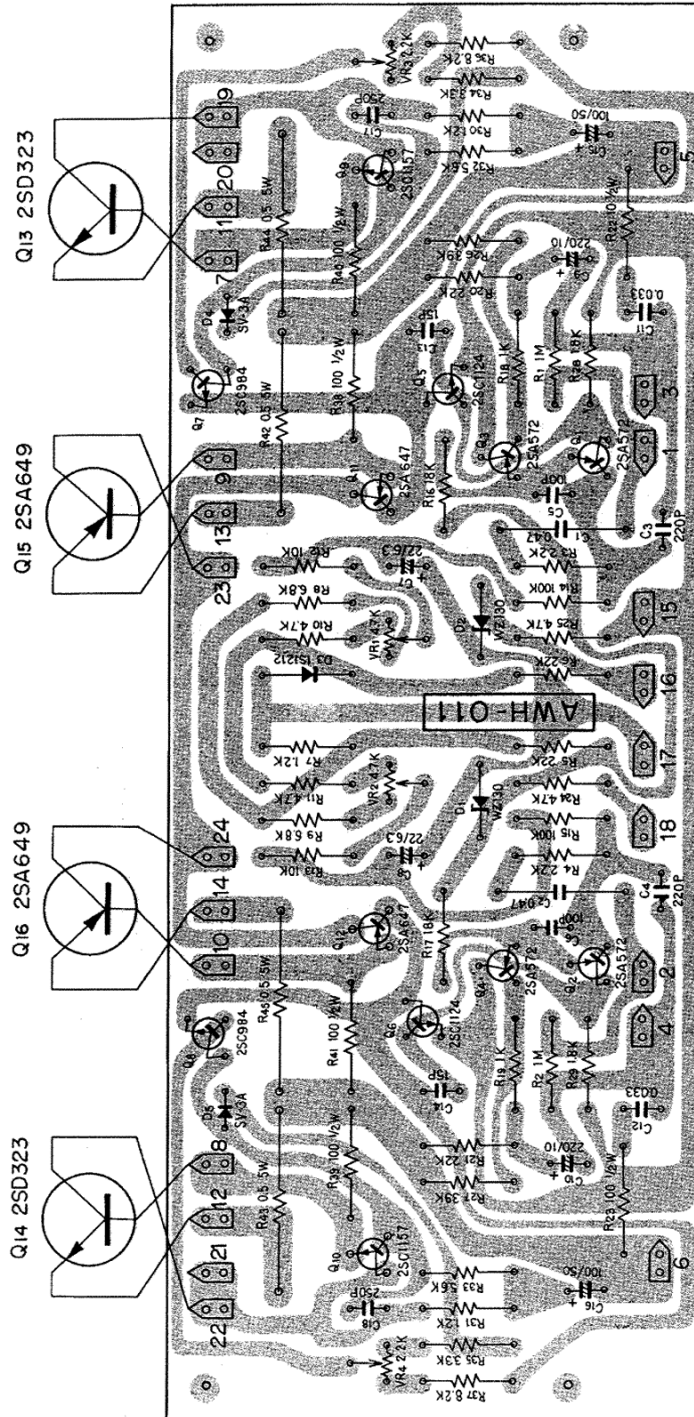
SWITCHES

Symbol	Description	Part No.
S1	Push switch	ASG-017-0
S2	Push switch	ASG-019-0
S3	Push switch	ASG-017-0
S4	Push switch	ASG-017-0
S5	Push switch	ASG-018-0
S6	Push switch	ASG-017-0
S7	Push switch	ASG-017-0
S8	Push switch	ASG-017-0

Symbol	Description	Part No.
R18	Carbon film 10k	RD½PS 103J
R19	Carbon film 8.2k	RD½PS 822J
R20	Carbon film 8.2k	RD½PS 822J
R21	Carbon film 10k	RD½PS 103J
R22	Carbon film 10k	RD½PS 103J
R23	Carbon film 1.2k	RD½PS 122J
R24	Carbon film 1.2k	RD½PS 122J
R25	Carbon film 15k	RD½PS 153J
R26	Carbon film 15k	RD½PS 153J
R27	Carbon film 1k	RD½PS 102J
R28	Carbon film 1k	RD½PS 102J
R29	Carbon film 15k	RD½PS 153J
R30	Carbon film 15k	RD½PS 153J
R31	Carbon film 5.6k	RD½PS 562J
R32	Carbon film 5.6k	RD½PS 562J
R33	Carbon film 5.6k	RD½PS 562J
R34	Carbon film 5.6k	RD½PS 562J
R35	Carbon film 10k	RD½PS 103J
R36	Carbon film 10k	RD½PS 103J
R37	Carbon film 120k	RD½PS 124JNL
R38	Carbon film 120k	RD½PS 124JNL
R39	Carbon film 560k	RD½PS 564JNL
R40	Carbon film 560k	RD½PS 564JNL
R41	Carbon film 100	RD½PS 101J
R42	Carbon film 100	RD½PS 101J
R43	Carbon film 1.8k	RD½PS 182J
R44	Carbon film 1.8k	RD½PS 182J
R45	Carbon film 8.2k	RD½PS 822J
R46	Carbon film 8.2k	RD½PS 822J
R47	Carbon film 560k	RD½PS 564JNL
R48	Carbon film 560k	RD½PS 564JNL
R49	Carbon film 120k	RD½PS 124JNL
R50	Carbon film 120k	RD½PS 124JNL

10.8 POWER AMP UNIT(AWH-011)





4 PARTS LIST OF POWER AMP UNIT

CAPACITORS

Symbol	Description	Part No.
C1	Mylar 0.47 50V	COMA 474K 50
C2	Mylar 0.47 50V	COMA 474K 50
C3	Ceramic 220p 50V	CCDSL 221K 50
C4	Ceramic 220p 50V	CCDSL 221K 50
C5	Ceramic 100p 50V	CCDSL 101K 50
C6	Ceramic 100p 50V	CCDSL 101K 50
C7	Electrolytic 22 6V	CEA 220P 6
C8	Electrolytic 22 6V	CEA 220P 6
C9	Electrolytic 220 10V	CEA 221P 10
C10	Electrolytic 220 10V	CEA 221P 10
C11	Mylar 0.033 50V	COMA 333M 50
C12	Mylar 0.033 50V	COMA 333M 50
C13	Ceramic 15p 50V	CCDSL 150K 50
C14	Ceramic 15p 50V	CCDSL 150K 50
C15	Electrolytic 100 50V	CEA 101P 50
C16	Electrolytic 100 50V	CEA 101P 50
C17	Ceramic 250p 50V	CCDSL 251K 50
C18	Ceramic 250p 50V	CCDSL 251K 50

RESISTORS

Symbol	Description	Part No.
VR1	Semi-fixed 4.7k-B	C92-051-0
VR2	Semi-fixed 4.7k-B	C92-051-0
VR3	Semi-fixed 2.2k-B	ACP-001-0
VR4	Semi-fixed 2.2k-B	ACP-001-0

Symbol	Description	Part No.
R1	Carbon film 1M	RD¼PS 105J
R2	Carbon film 1M	RD¼PS 105J
R3	Carbon film 2.2k	RD¼PS 222J
R4	Carbon film 2.2k	RD¼PS 222J
R5	Carbon film 22k	RD¼PS 223J
R6	Carbon film 22k	RD¼PS 223J
R7	Carbon film 1.2k	RD¼PS 122J
R8	Carbon film 6.8k	RD¼PS 682J
R9	Carbon film 6.8k	RD¼PS 682J
R10	Carbon film 4.7k	RD¼PS 472J
R11	Carbon film 4.7k	RD¼PS 472J
R12	Carbon film 10k	RD¼PS 103J
R13	Carbon film 10k	RD¼PS 103J
R14	Carbon film 100k	RD¼PS 104J
R15	Carbon film 100k	RD¼PS 104J
R16	Carbon film 18k	RD¼PS 183J
R17	Carbon film 18k	RD¼PS 183J
R18	Carbon film 1k	RD¼PS 102J
R19	Carbon film 1k	RD¼PS 102J
R20	Carbon film 22k	RD¼PS 223J
R21	Carbon film 22k	RD¼PS 223J
R22	Carbon film 10 ¼W	RD¼PS 100J
R23	Carbon film 10 ¼W	RD¼PS 100J
R24	Carbon film 4.7k	RD¼PS 472J
R25	Carbon film 4.7k	RD¼PS 472J
R26	Carbon film 39k	RD¼PS 393J
R27	Carbon film 39k	RD¼PS 393J
R28	Carbon film 1.8k	RD¼PS 182J
R29	Carbon film 1.8k	RD¼PS 182J
R30	Metal oxide 1.2k	RS1P 122K

Symbol	Description	Part No.
Q11	2SA647-D	Transistor
Q12	2SA647-D	Transistor
Q13	2SD323-F	Transistor
Q14	2SD323-F	Transistor
Q15	2SA649-L	Transistor
Q16	2SA649-L	Transistor
D1	WZ-130	Zener diode
D2	WZ-130	Zener diode
D3	1S1212	Diode
D4	SV-3A	Varistor
D5	SV-3A	Varistor

OTHERS

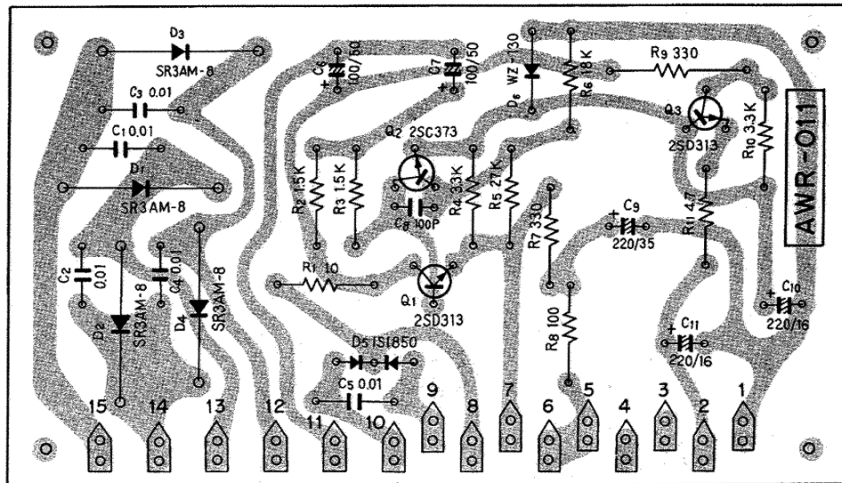
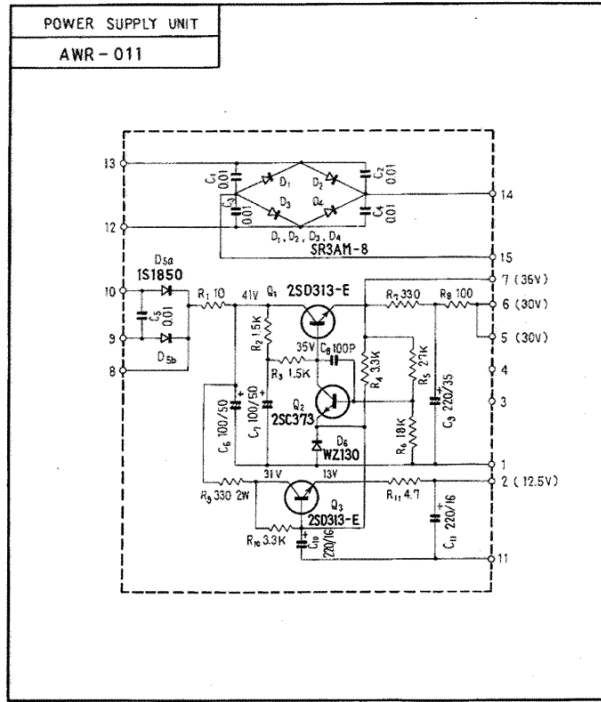
Symbol	Description	Part No.
	Heat sink	ANH-063-0
	Heat sink (small)	ANH-064-0
	Power transistor socket	K31-020-0

Symbol	Description	Part No.
R31	Metal oxide	RS 1P 122K
R32	Carbon film	RD $\frac{1}{4}$ PS 562J
R33	Carbon film	RD $\frac{1}{4}$ PS 562J
R34	Carbon film	RD $\frac{1}{4}$ PS 332J
R35	Carbon film	RD $\frac{1}{4}$ PS 332J
R36	Carbon film	RD $\frac{1}{4}$ PS 822J
R37	Carbon film	RD $\frac{1}{4}$ PS 822J
R38	Carbon film	RD $\frac{1}{4}$ PS 101J
R39	Carbon film	RD $\frac{1}{4}$ PS 101J
R40	Carbon film	RD $\frac{1}{4}$ PS 101J
R41	Carbon film	RD $\frac{1}{4}$ PS 101J
R42	Wire wound	RT5B 0R5K
R43	Wire wound	RT5B 0R5K
R44	Wire wound	RT5B 0R5K
R45	Wire wound	RT5B 0R5K

SEMICONDUCTORS

Symbol	Description	Part No.
Q1	2SA572-5A, 5B, or 4B	Transistor
Q2	2SA572-5A, 5B, or 4B	Transistor
Q3	2SA572-5A, 5B, or 4B	Transistor
Q4	2SA572-5A, 5B, or 4B	Transistor
Q5	2SC1124-3 or 2	Transistor
Q6	2SC1124-3 or 2	Transistor
Q7	2SC984-B	Transistor
Q8	2SC984-B	Transistor
Q9	2SC1157-D or C	Transistor
Q10	2SC1157-D or C	Transistor

10.9 POWER SUPPLY UNIT(AWR-011)



SEMICONDUCTORS

Symbol	Description	Part No.
Q1	2SD313-E or D Transistor	
Q2	2SC373 Transistor	
Q3	2SD313-E or D 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	

OTHER

Symbol	Description	Part No.
	Heat sink	ANH-004-A

PARTS LIST OF POWER SUPPLY UNIT

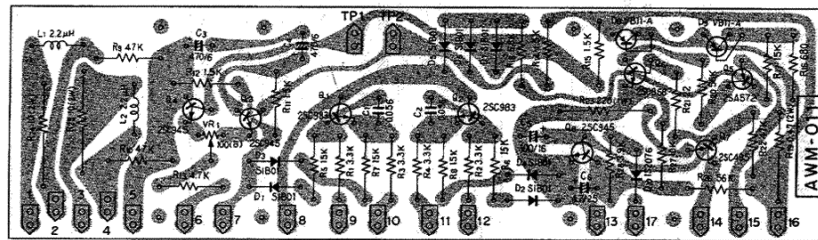
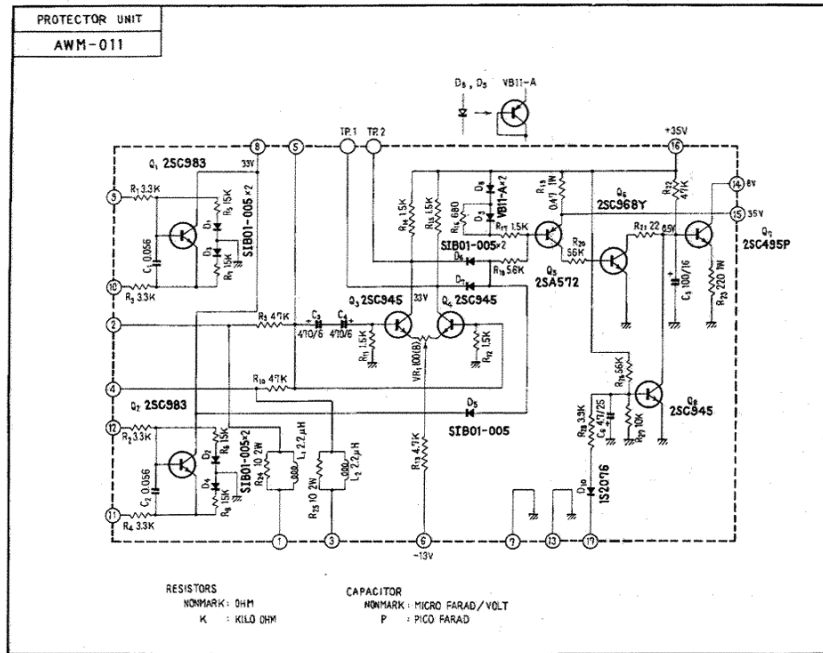
CAPACITORS

Symbol	Description	Part No.
C1	Ceramic 0.01 DC 1.4kV	C43-003-0
C2	Ceramic 0.01 DC 1.4kV	C43-003-0
C3	Ceramic 0.01 DC 1.4kV	C43-003-0
C4	Ceramic 0.01 DC 1.4kV	C43-003-0
C5	Ceramic 0.01 DC 1.4kV	C43-003-0
C6	Electrolytic 100 50V	CEA 101P 50
C7	Electrolytic 100 50V	CEA 101P 50
C8	Ceramic 100p	CCDSL 101K 50
C9	Electrolytic 220 35V	CEA 221P 35
C10	Electrolytic 220 16V	CEA 221P 16
C11	Electrolytic 220 16V	CEA 221P 16

RESISTORS

Symbol	Description	Part No.
R1	Carbon film 10	RD½PS 100J
R2	Carbon film 1.5k	RD½PS 152J
R3	Carbon film 1.5k	RD½PS 152J
R4	Carbon film 3.3k	RD½PS 332J
R5	Carbon film 27k	RD½PS 273J
R6	Carbon film 18k	RD½PS 183J
R7	Carbon film 330	RD½PS 331J
R8	Carbon film 100	RD½PS 101J
R9	Metal oxide 330 2W	RS2P 331K
R10	Carbon film 3.3k	RD½PS 332J
R11	Carbon film 4.7	RD½PS 4F7J

10.10 PROTECTOR UNIT(AWM-011)



PARTS LIST OF PROTECTOR UNIT

CAPACITORS

Symbol	Description	Part No.
C1	Mylar 0.056 50V	COMA 563K 50
C2	Mylar 0.056 50V	COMA 563K 50
C3	Electrolytic 470 6V	CEA 471P 6
C4	Electrolytic 470 6V	CEA 471P 6
C5	Electrolytic 100 16V	CEA 101P 16
C6	Electrolytic 4.7 25V	CEA 4R7P 25

RESISTORS

Symbol	Description	Part No.
VR1	Semi-fixed, 100-B	C92-063-0
R1	Carbon film 3.3k	RD/4PS 332J
R2	Carbon film 3.3k	RD/4PS 332J
R3	Carbon film 3.3k	RD/4PS 332J
R4	Carbon film 3.3k	RD/4PS 332J
R5	Carbon film 15k	RD/4PS 153J
R6	Carbon film 15k	RD/4PS 153J
R7	Carbon film 15k	RD/4PS 153J
R8	Carbon film 15k	RD/4PS 153J
R9	Carbon film 47k	RD/4PS 473J
R10	Carbon film 47k	RD/4PS 473J
R11	Carbon film 1.5k	RD/4PS 152J
R12	Carbon film 1.5k	RD/4PS 152J
R13	Carbon film 4.7k	RD/4PS 472J
R14	Carbon film 1.5k	RD/4PS 152J
R15	Carbon film 1.5k	RD/4PS 152J

Symbol	Description	Part No.
R16	Carbon film 680	RD/4PS 681J
R17	Carbon film 1.5k	RD/4PS 152J
R18	Carbon film 5.6k	RD/4PS 562J
R19	Metal oxide 0.47	RN1P R47K
R20	Carbon film 56k	RD/4PS 563J
R21	Carbon film 22	RD/4PS 220J
R22	Carbon film 47k	RD/4PS 473J
R23	Metal oxide 220	RS1P 221K
R24	Metal oxide 10	RS2P 100K
R25	Metal oxide 10	RS2P 100K
R26	Carbon film 56k	RD/4PS 563J
R27	Carbon film 10k	RD/4PS 103J
R28	Carbon film 3.9k	RD/4PS 392J

SEMICONDUCTORS

Symbol	Description	Part No.
Q1	2SC983-0 or Y Transistor	
Q2	2SC983-0 or Y Transistor	
Q3	2SC945-R Transistor	
Q4	2SC945-R Transistor	
Q5	2SA572-4 Transistor	
Q6	2SC968-2 or 3 Transistor	
Q7	2SC495P-Y Transistor	
Q8	2SC945-R Transistor	
D1	S1B01-005 Diode	
D2	S1B01-005 Diode	
D3	S1B01-005 Diode	
D4	S1B01-005 Diode	
D5	S1B01-005 Diode	
D6	S1B01-005 Diode	
D7	S1B01-005 Diode	

Symbol	Description	Part No.
D8	VB11-A	
D9	Varistor	
D10	VB11-A	
	Varistor	
	D10	
	1S2076	
	Diode	

COILS

Symbol	Description	Part No.
L1	AF choke coil	T63-009-0
L2	AF choke coil	T63-009-0