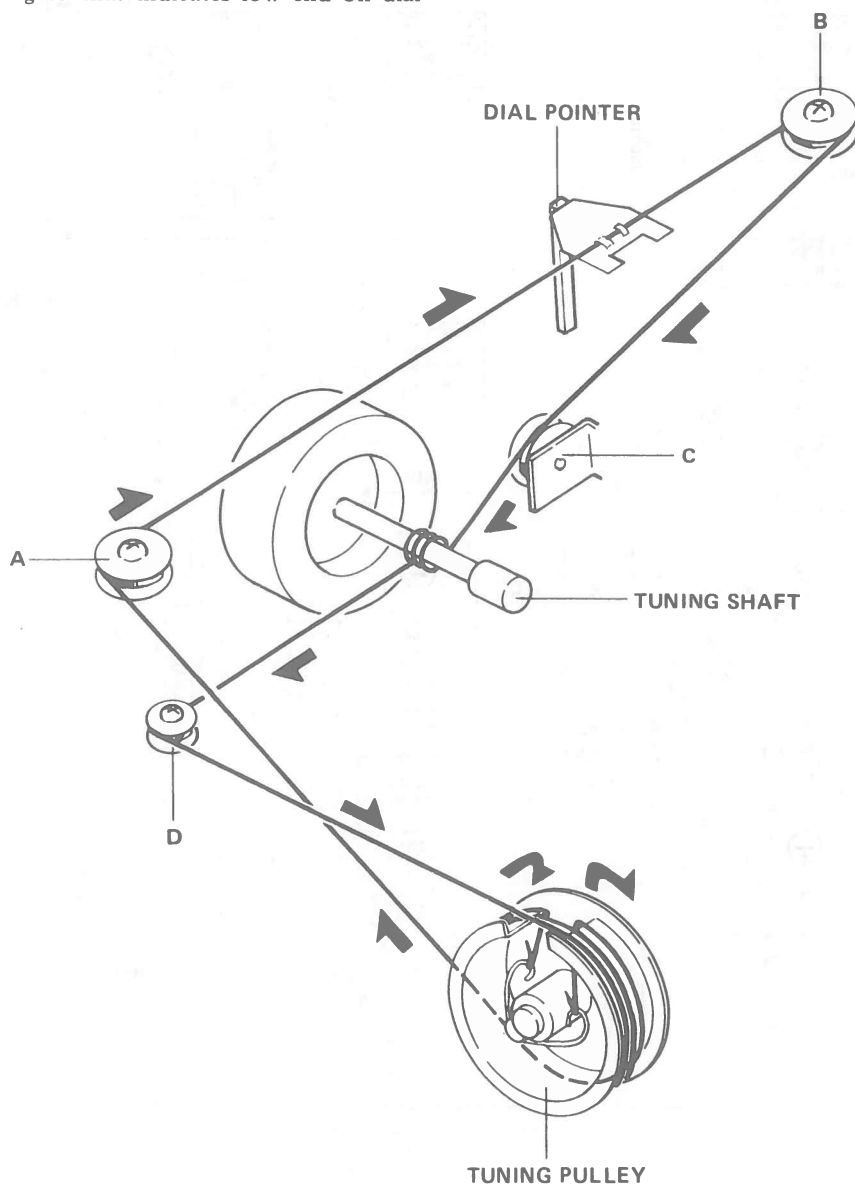


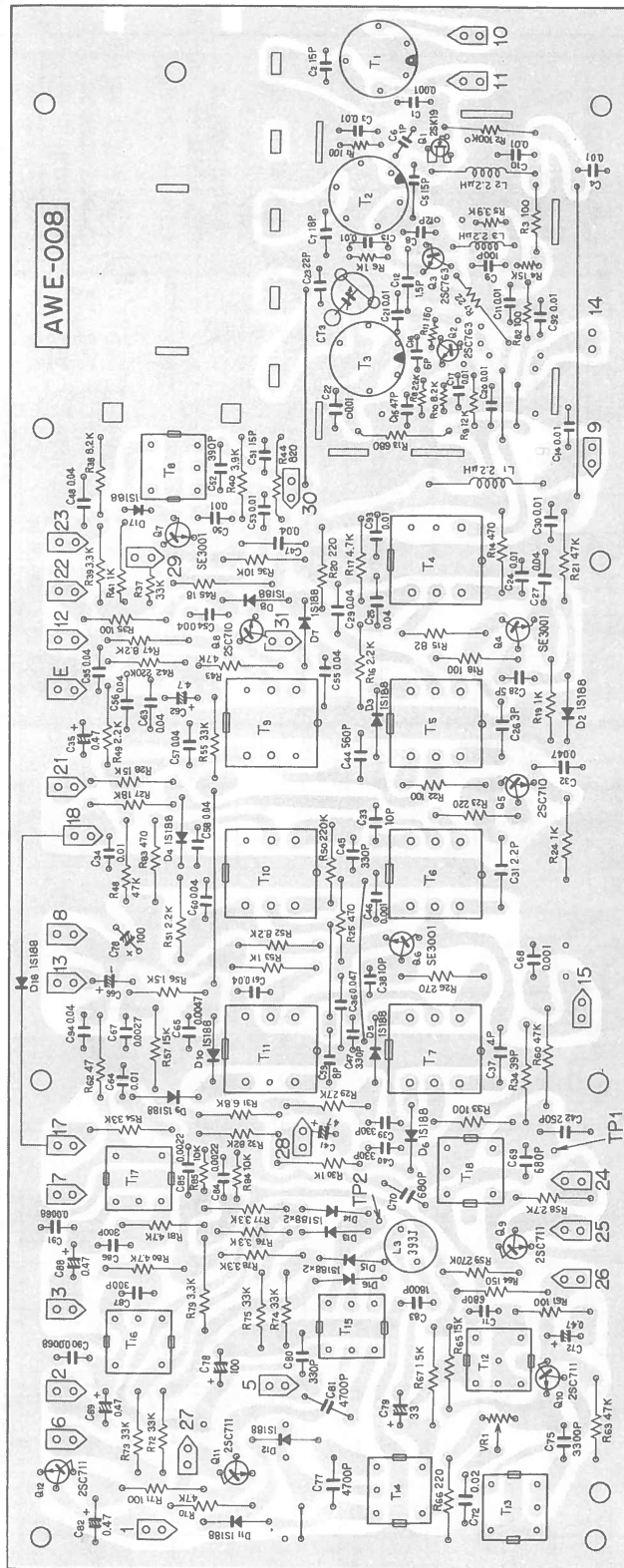
DIAL CORD STRINGING

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



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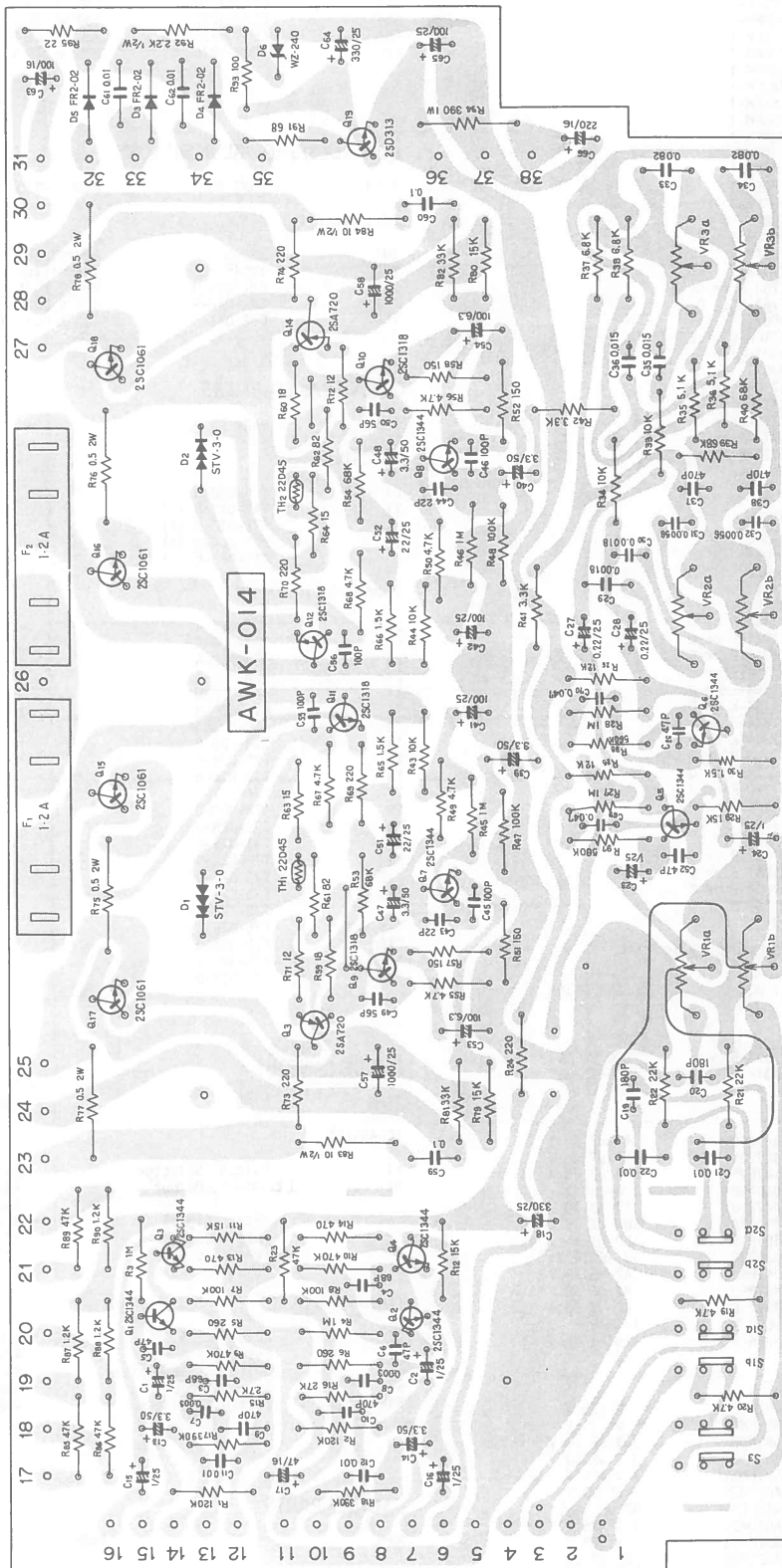




AF UNIT (AWK-014)



AWK-014



SEMICONDUCTORS

ITEM PART NO./TYPE

(TUNER, AWE-008)

D2	1S188FM-1
D3	1S188FM-1
D4	1S188FM-1
D5	1S188FM-1
D6	1S188FM-1
D7	1S188FM-1
D8	1S188FM-1
D9	1S188FM-1
D10	1S188FM-1
D11	1S188FM-1
D12	1S188FM-1
D13	1S188FM-1
D14	1S188FM-1
D15	1S188FM-1
D16	1S188FM-1
D17	1S188FM-1
D18	1S188FM-1
Q1	2SK19-Y
Q2	2SC763-D or C
Q3	2SC763-D or C
Q4	SE3001
Q5	2SC710R-D or C
Q6	SE3001
Q7	SE3001
Q8	2SC710-D or R-D
Q9	2SC711-F
Q10	2SC711-E or F
Q11	2SC711-E or F
Q12	2SC711-F

(AF; AWK-014)

D1	STV-3-0
D2	STV-3-0
D3	FR2-02
D4	FR2-02
D5	FR2-02
D6	WZ-240
Q1	2SC1344-E or D
Q2	2SC1344-E or D
Q3	2SC1344-E or D
Q4	2SC1344-E or D
Q5	2SC1344-E or D
Q6	2SC1344-E or D
Q7	2SC1344-E or D
Q8	2SC1344-E or D
Q9	2SC1318-R or Q
Q10	2SC1318-R or Q
Q11	2SC1318-R or Q
Q12	2SC1318-R or Q
Q13	2SA720-R or Q
Q14	2SA720-R or Q
Q15	2SC1061-B or C
Q16	2SC1061-B or C
Q17	2SC1061-B or C
Q18	2SC1061-B or C
Q19	2SC313-D or E

ELECTROLYTIC/VARIABLE CAPS

ITEM PART NO. DESCRIPTION

(CHASSIS)

C4	C52-074-B	2200 uF 50 V
C7	CEA101P10	100 uF 10 V

(TUNER, AWE-008)

C35	CEAR47P50	.47 uF 50 V
C41	CEA4R7P25	4.7 uF 25 V
C62	CEA4R7P25	4.7 uF 25 V
C66	CEA010P50	1 uF 50 V
C72	CEAR47P50	.47 uF 50 V
C73	CEA101P16	100 uF 16 V
C78	CEA101P16	100 uF 16 V
C79	CEA330P16	33 uF 16 V
C82	CEAR47P50	.47 uF 50 V
C88	CEAR47P50	.47 uF 50 V
C89	CEAR47P50	.47 uF 50 V
CT3	C43-007-A	Trimmer
VC	C64-046-A	Tuning Gang

(AF; AWK-014)

C1	CSSA010M25	1 uF 25 V
C2	CSSA010M25	1 uF 25 V
C13	CEA3R3P50	3.3 uF 50 V
C14	CEA3R3P50	3.3 uF 50 V
C15	CSSA010M25	1 uF 25 V
C16	CSSA010M25	1 uF 25 V
C17	CEA470P16	47 uF 16 V
C23	CSSA010M25	1 uF 25 V
C24	CSSA010M25	1 uF 25 V
C27	CSSAR22M25	.22 uF 25 V
C28	CSSAR22M25	.22 uF 25 V
C39	CEA3R3P50	3.3 uF 50 V
C40	CEA3R3P50	3.3 uF 50 V
C41	CEA101P25	100 uF 25 V
C42	CEA101P25	100 uF 25 V

- (1) Model SX-424/FVZW
(2) Model SX-424/KUW

C47	CEA3R3P50	3.3 uF 50 V
C48	CEA3R3P50	3.3 uF 50 V
C52	CEA220P25	22 uF 25 V
C53	CEA101P6	100 uF 6 V
C54	CEA101P6	100 uF 6 V
C57	CEA102P25	1000 uF 25 V
C58	CEA102P25	1000 uF 25 V
C63	CEA101P16	100 uF 16 V
C64	CEA331P25	330 uF 25 V
C65	CEA101P25	100 uF 25 V
C66	CEA221P16	220 uF 16 V

CONTROLS/SPECIAL RESISTORS

ITEM PART NO. DESCRIPTION

(AF; AWK-014)

TH1	22D45	Thermistor
TH2	22D45	Thermistor
VR1	C87-025-0	250 K Dual Volume
VR2	C82-046-A	100 K Dual Treble
VR3	C82-046-A	100 K Dual Bass

COILS/TRANSFORMERS

ITEM PART NO.

(CHASSIS)

L1	T24-030-0
T1	T42-022-B (1)
	ATB-010-0 (2)
T2	ATT-064-0 (1)
	ATT-063-0 (2)

(TUNER: AWE-008)

L1	T24-028-A
L2	T24-028-A
L3	T24-028-A
L5	T75-006-B
T1	ATC-002-0
T2	ATC-004-0
T3	ATC-003-0
T4	T73-034-0
T5	T73-035-A
T6	T73-036-0
T7	T74-011-0
T8	ATB-001-A
T9	T71-028-0
T10	T71-028-0
T11	T72-022-0
T12	T75-027-0
T13	T75-027-0
T14	T75-023-0
T15	T75-024-0
T16	T75-025-0
T17	T76-028-0
T18	T75-028-0
	T76-029-0

MISCELLANEOUS

ITEM NAME PART NO.

(CHASSIS)

S1	Switch, Selector	ASC-021-0
S2	Switch, Output	ASA-028-0 (1)
		ASA-017-0 (2)
	Meter, Signal	AAW-003-A
	Fuse, 0.5 A	E21-007-0 (1)
	Fuse, 1.0 A	E21-033-0 (2)
	Fuse, 3 A	E21-022-0

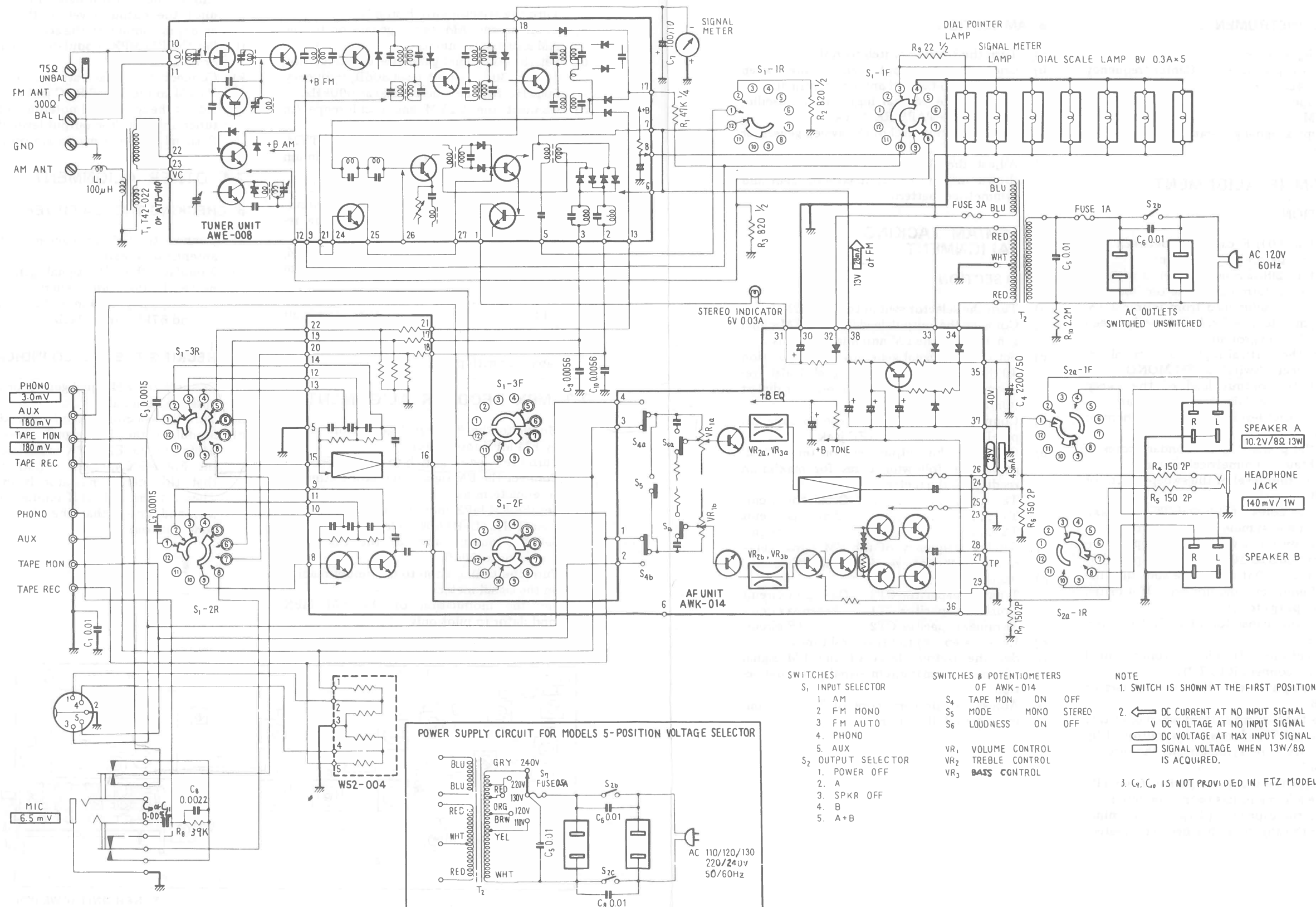
(AF; AWK-014)

F1	Fuse, 1.2 A	AEK-010-0
F2	Fuse, 1.2 A	AEK-010-0
S1	Switch, Tape Monitor	ASG-017-0
S2	Switch, Mode	ASG-017-0
S3	Switch, Loudness	ASG-017-0

CABINET PARTS

NAME PART NO.

Case, Wooden	AMM-014-A
Panel, Front	ANB-127-A
Knob, Left Volume	AAB-013-0
Knob, Right Volume	AAB-014-0
Knob, Mode/Tape/Loudness	AAD-029-0



7. 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

7.1 FM/AM IF ALIGNMENT

● FM SECTION

- Connect a 0.01 μ F capacitor between TP1 and ground before the alignment.
- Connect a 220k Ω resistor in series with the vertical input terminal of the oscilloscope.
- Remove the meter lead from terminal 18, then terminate a 4.7k Ω resistor between terminal 18 and ground.
- Connect the vertical input to terminal 18.
- Set the selector switch to FM MONO.
- Connect the output lead of the sweep generator to the FM antenna terminals.
- Set the output level of the sweep generator to 90dB.
- Adjust the primary and secondary cores of T6 to obtain a symmetrical pattern.
- Set the output level of the sweep generator to 70dB.
- Adjust the cores of T4 and T5 for maximum gain and symmetry of the pattern.
- Vary the output level of the sweep generator from 60dB to 100dB, 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).
- Remove the capacitor (4.7 μ F) from terminal 28.
- Disconnect the vertical input from terminal 18, then reconnect it to TP1.
- Set the output level of the sweep generator to 70dB.
- Observe the S-curve pattern when adjusting the cores of T7. (Linearity is improved by the primary core; symmetry by the secondary core.)
- Disconnect the 0.01 μ F capacitor from TP1 after the alignment has been completed.
- Connect the capacitor (4.7 μ F) to terminal 28 after the alignment has been completed.

● AM SECTION

- Turn the selector switch to AM.
- Connect the output lead of the sweep generator to the AM antenna terminal.
- Connect the vertical input of the oscilloscope to the TAPE REC jack.
- Set the output level of the sweep generator to 75dB.
- Adjust the IFT cores (T9, T10, T11) as shown in Fig. 1, for maximum gain and symmetrical pattern.

7.2 FM/AM TACKING ALIGNMENT

● FM SECTION

- Turn the selector switch to FM MONO.
- Connect the output leads of the FM signal generator to the FM antenna terminals.
- Set the FM signal generator to modulation 400Hz, 30% and output level 15dB frequency 90MHz; also set the receiver dial at 90MHz.
- Connect the VTVM and oscilloscope (in parallel) to the TAPE REC jack.
- 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
- Set the frequency of the FM signal generator and the receiver dial to 106MHz.
- Adjust as follows:
Trimmer capacitor CT3: Oscillator circuit
Trimmer capacitor CT1 .. Antenna circuit
Trimmer capacitor CT2 RF circuit
- Repeat steps (e) to (g) several times.
- Set the output level of the FM signal generator to maximum signal meter deflection.
- Adjust the primary core of T7 for minimum sound distortion.

● AM SECTION

- Turn the selector switch to AM.
- Connect the AM signal generator to the AM antenna terminal.
- Set the AM signal generator to modulation 400Hz, 30%, output level 30dB, frequency 600kHz. Set the receiver dial at 600kHz.
- Connect the VTVM and oscilloscope (in parallel) to the TAPE REC jack.
- Observing the output level on the VTVM, adjust the following cores for maximum reading.
T8 Oscillator circuit
Ferrite loopstick antenna: Antenna circuit
- Set the AM signal generator and the receiver dial to 1,400kHz.
- Observing the output level on the VTVM, adjust the following cores for maximum reading.
CT5 Oscillator circuit
CT4 Antenna circuit
- Repeat alignments (e) to (g) several times.
- After these alignments, lock the trimmer capacitor with paint.

7.3 MPX DECODER ALIGNMENT

- Modulate the FM signal generator output by FM MPX modulator.
- Turn the selector switch to FM AUTO.
- Connect the FM signal generator to the FM antenna terminals.
- Set the FM MPX modulator to modulation; main 1kHz (L+R) 60%, pilot 8 ~ 10%.
- Set the output level of the FM signal generator to 60dB.
- Turn the tuning knob to maximum reading on the signal meter.
- Set the modulation of the FM MPX modulator to pilot only.

- Connect the oscilloscope to TP2.
- Adjust the transformers (T13, T14, T15) until the output level of the 19kHz becomes maximum on the scope.
- Set the FM MPX modulator to pilot with L or R signal.
- Connect the dual-trace oscilloscope and VTVM to the TAPE REC jacks.
- Adjust the semi-fixed potentiometer on the tuner unit until the output level of the L or R signal becomes maximum on the scope.

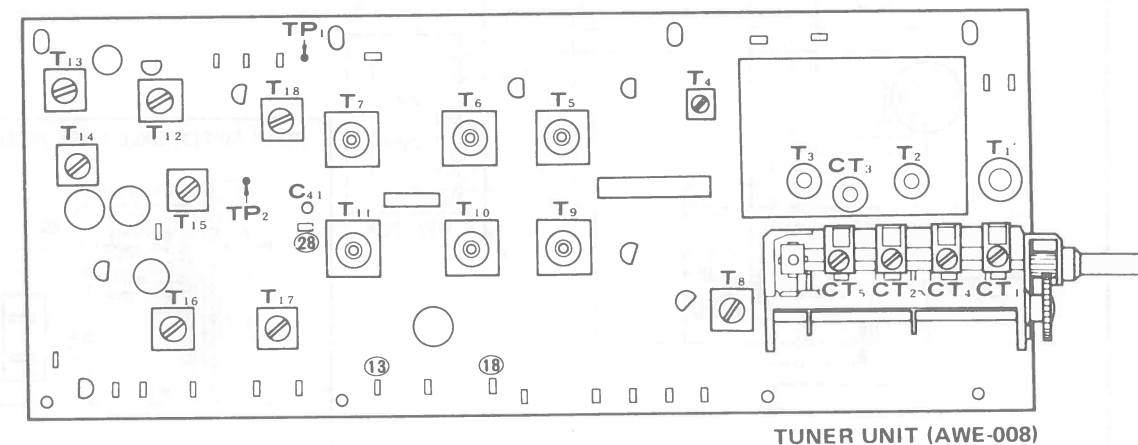
7.4 OTHER ALIGNMENT

● CHECKING THE SCA FILTER

- Connect the FM signal generator to the FM antenna terminals.
- Modulate the FM signal generator connected to the audio generator, check that the frequency response shows troughs at around 67kHz and 72kHz.

● CHECKING THE STEREO INDICATOR

- Connect the FM signal generator to the FM antenna terminals.
- Turn the selector switch to FM AUTO.
- 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.



TUNER UNIT (AWE-008)

Fig. 1