

STR-V45L

*AEP Model
UK Model*



FM STEREO/FM-AM RECEIVER

SPECIFICATIONS

GENERAL

Power Requirements:	220 V ac, 50/60 Hz (AEP model) 240 V ac, 50/60 Hz (UK model)
Power Consumption:	180 W (AEP model) 210 W (UK model)
Dimensions:	Approx. 430 (w) x 135 (h) x 380 (d) mm 17 (w) x 5 1/4 (h) x 14 7/8 (d) inches including projecting parts and controls
Weight:	Approx. 8.5 kg, 18 lb 12 oz (net) 9.7 kg, 21 lb 7 oz (in shipping carton)

Intermodulation (IM)

Distortion: Less than 0.04 % at rated output
(60Hz : 7kHz = 4 : 1)

Damping Factor: 50 at 1 kHz, 8 Ω

Dynamic Headroom: 1.4 dB

Residual Noise: Less than 0.23 mV at 8 Ω

Inputs:

	Sensitivity	Impedance	S/N	Weighting network
PHONO	2.5 mV (-50 dB)	50 k Ω	80 dB 77 dB*	A
TAPE 1, 2	150 mV (-13.5 dB)	50 k Ω	97 dB 74 dB*	A
AUX	150 mV (-13.5 dB)	50 k Ω	97 dB 74 dB*	A

* '78 IHF, Measured with rated output power into 8 Ω loads
(both channels driven simultaneously) at 1 kHz.

AMPLIFIER SECTION

Continuous RMS Power Output: (less than 0.04% THD, both channels driven simultaneously)	At 1 kHz 40 + 40 W (8 Ω) At 20 Hz - 20 kHz 40 + 40 W (8 Ω) According to DIN 45500 40 + 40 W (8 Ω)
Power Bandwidth (IHF):	5 Hz - 35 kHz
Harmonic Distortion:	Less than 0.04 % at rated output

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SONY

SERVICE MANUAL

- Continued on page 2 -

STR-V45L**Outputs:**

REC OUT 1, 2	Voltage 150 mV (−13.5 dB), Impedance 10 k Ω
HEADPHONES	Accepts low-impedance headphones
SPEAKERS	8 – 16 Ω speakers are suitable

Measured with rated input, FM 30 % modulation

Frequency Response:	PHONO: RIAA equalization curve ± 0.5 dB AUX, TAPE 1, 2: 5 Hz – 50 kHz $\begin{smallmatrix} +0 \\ -1 \end{smallmatrix}$ dB
Tone Controls:	BASS: ± 10 dB at 50 Hz TREBLE: ± 10 dB at 20 kHz
Loudness Control: (att. 30dB)	+10 dB at 50 Hz, +3 dB at 10 kHz
Filter:	LOW: 12 dB/octave attenuation below 15Hz

FM TUNER SECTION

Tuning Range:	87.5 – 108.0 MHz
Antenna Terminals:	300 Ω balanced, 75 Ω unbalanced
Intermediate Frequency:	10.7 MHz

	(at 40 kHz deviation)
Sensitivity:	at 46 dB quieting 18.3 dBf, 4.5 μ V (13 dB) (mono) 38.3 dBf, 45 μ V (33 dB) (stereo)
Usable Sensitivity:	11.2 dBf, 2.0 μ V (6 dB) (IHF) 9.8 dBf, 1.7 μ V (4.5 dB) (S/N 26 dB)
Signal-to-noise Ratio:	72 dB (mono), 66 dB (stereo)
Harmonic Distortion:	at 100 Hz 0.1 % (mono), 0.25 % (stereo) at 1 kHz 0.1 % (mono), 0.2 % (stereo) at 6 kHz 0.15 % (mono), 0.2 % (stereo)

Separation:	40 dB at 100 Hz, 50 dB at 1 kHz, 35 dB at 10 kHz
Frequency Response:	40 Hz – 12.5 kHz ± 0.3 dB 30 Hz – 15 kHz $\begin{smallmatrix} +0.5 \\ -1.5 \end{smallmatrix}$ dB
Selectivity:	80 dB (300 kHz)

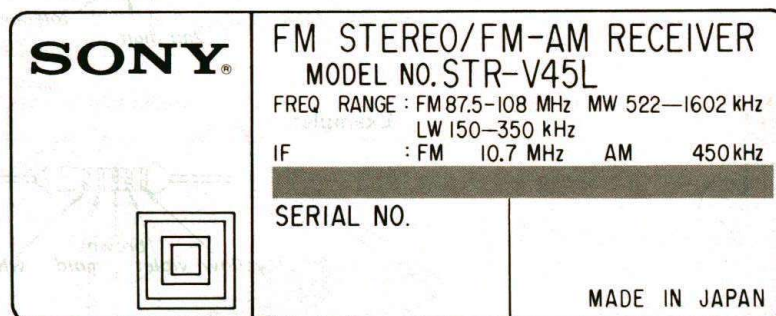
Capture Ratio:	1.5 dB
AM Suppression Ratio:	60 dB
Image Response Ratio:	85 dB
IF Response Ratio:	100 dB
Spurious Response Ratio:	95 dB
RF Intermodulation:	78 dB (IHF), 93 dB (2.4 MHz)
Sub-carrier Product Ratio:	55 dB
Muting Threshold:	Approx. 25.2 dBf, 10 μ V (20 dB)
Auto Tuning Level:	LOW: 30 dBf, MID: 40 dBf, HIGH: 55 dBf

AM TUNER SECTION

	MW	LW
Tuning Range:	522 kHz – 1,602 kHz (9 kHz steps)	155 kHz – 344 kHz (1 kHz steps)
Antenna:		
built-in antenna	provided	provided
external antenna terminal	provided	provided
Intermediate Frequency:	450 kHz	450 kHz
Usable Sensitivity:		
built-in antenna	250 μ V/m (48 dB/m) (1,000 kHz)	500 μ V/m (54 dB/m) (254 kHz)
external antenna	100 μ V (40 dB) (1,000 kHz)	150 μ V (43.5 dB) (254 kHz)
Signal-to-noise Ratio: (at 50 mV/m (34 dB/m))	52 dB	52 dB
Harmonic Distortion: (at 50 mV/m (34 dB/m), 400 Hz)	0.5 %	0.5 %
Selectivity:	40 dB (9 kHz)	40 dB (9 kHz)

MODEL IDENTIFICATION

– Specification Label –



AEP MODEL AC 220V~ 50/60Hz 180W
UK MODEL AC 240V~ 50/60Hz 210W

SERVICING NOTES

INSTALLATION PRECAUTION

The epoxy resin used in a luminous diode is a kind of thermosetting resin, but as a diode must let the light pass through, its heat resistance cannot be raised by mixing silica or glass fiber.

Thus, the resin used in the luminous diodes is usually weak against heat. As the tensile strength is not so strong while it is heated, note the following precautions during soldering.

- 1) Perform the soldering within 5 seconds with a soldering iron below 25W. The clearance between the tube and the board should be more than 3 mm (Fig. 1).
- 2) When changing the position of the luminous diode, do not move it right after soldering, but move it after it naturally cools off.
- 3) When bending the lead terminals, be sure to bend the point 2 mm farther from the tube. At this time, fix the foot of the terminal with a round nose plier and be sure that no force is applied to the tube. If not, a crack may occur (Fig. 2).

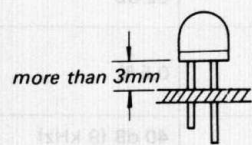


Fig. 1

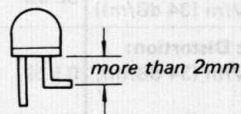


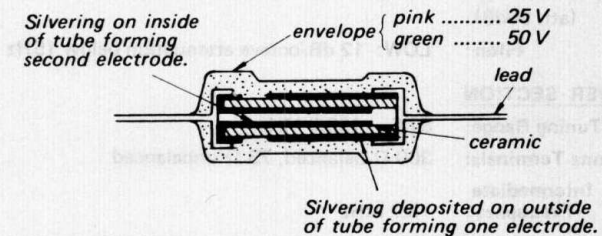
Fig. 2

THE CERAMIC CAPACITORS

This set uses tube-type ceramic capacitors whose shape is identical with the carbon resistors. Be careful not to use resistors instead of capacitors in repairing.

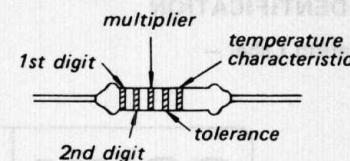
Disc-type ceramic capacitors can be used for replacing those originally used in the set.

Two kinds of drilled holes are provided in some patterns for mounting the tube-type and disc-type ceramic capacitors. Use appropriate holes where applicable.

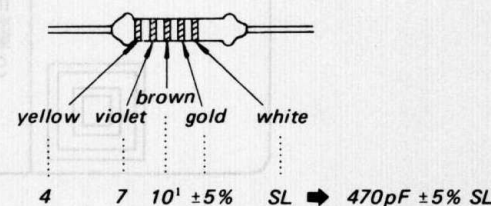


COLOR CODE (in pF)

Color	1st or 2nd Digit	Multiplier	Tolerance	Temperature characteristic
brown	1	10^1		Y
red	2	10^2		D
orange	3	10^3		
yellow	4	10^4		RH
green	5			
blue	6			
violet	7			UJ
gray	8		$\pm 30\%$	X
white	9			SL
black	0	10^0	$\pm 20\%$	CH
gold		10^{-1}	$\pm 5\%$	V
silver		10^{-2}	$\pm 10\%$	B



Example:



Handling Precautions for MOS ICs

Generally, the insulation resistance of the oxide layer in MOS IC structures is very high, and the oxide layer is very thin. Because of this, it is possible that the static voltages usually present on clothes and the human body will be enough to generate a potential difference across the insulator, high enough to cause a breakdown of the insulating layer.

The following precautions should be taken while handling these ICs.

(Particular care should be taken under conditions of low humidity.)

Precautions in Replacing MOS ICs

1. Store new ICs by inserting them into a urethane-polyester cushion (which is somewhat conductive), or wrapping it in aluminum foil, so that all the pins are at the same potential. (The ICs should be stored in that manner until mounted on the circuit board.)

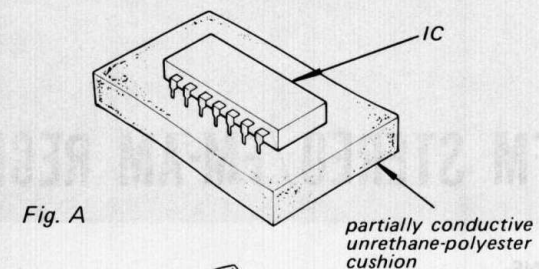


Fig. A

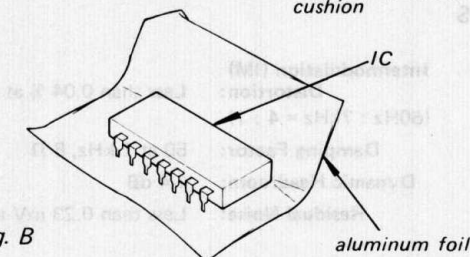


Fig. B

2. Check the soldering iron for possible power-line leakage current. Make sure that there is no leakage path by connecting an ohmmeter to the tip of the soldering iron and the plug as shown in Fig. C. If there is a leakage path, use some other soldering iron.

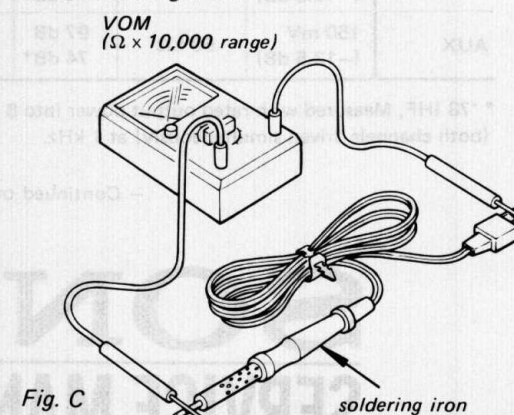


Fig. C

3. Equalize any potential difference between the clothes, the tools in use, the work bench, the set being worked on, and the packaged IC by touching them all in succession with the hands or a conductive wire or tool.
4. The following are effective methods for handling ICs that remove the potential difference across the oxide layer.
 - Use a paper clip modified by soldering in a wire braid insert.

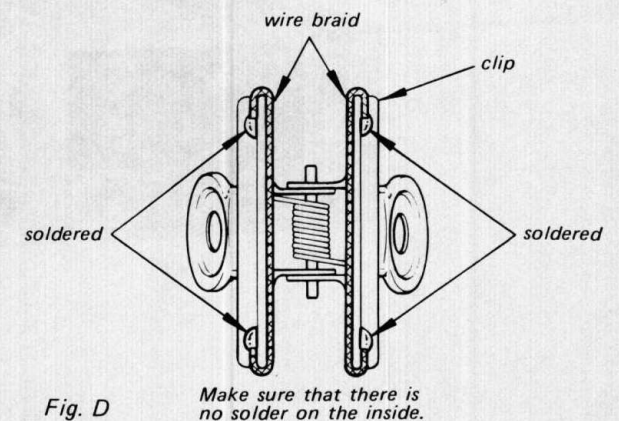


Fig. D

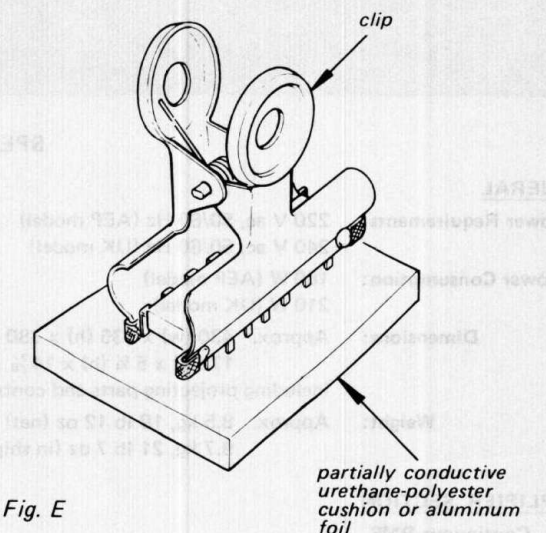


Fig. E

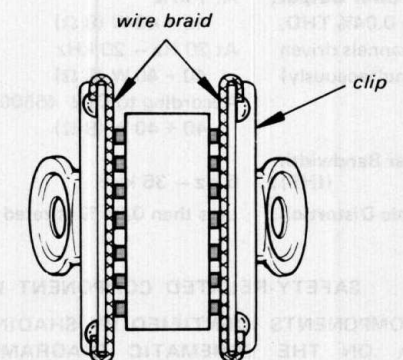


Fig. F

- Take a short length of fine bare wire and wind it around the IC so that it shorts all the pins of the IC, while it is still in the urethane-polyester cushion or aluminum foil. This ensures that all the pins are at the same potential.

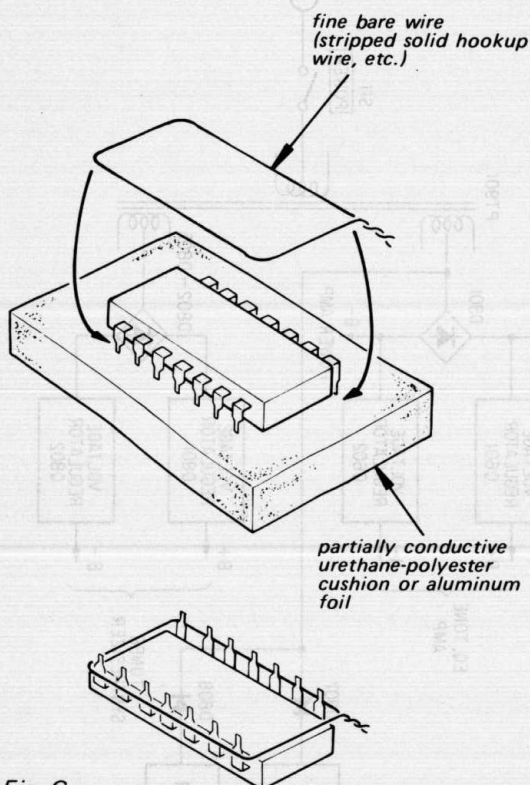


Fig. G

- When it is necessary to handle the IC with the fingers, do not touch any pin, and hold the IC at the ends of its plastic-package case as shown in Fig. H.

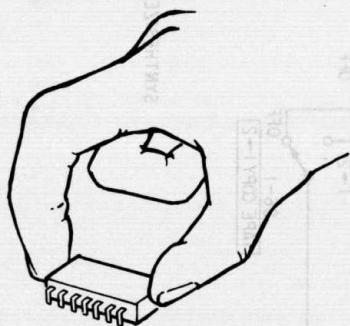


Fig. H

5. Method of Mounting

Insert the IC while holding it with the modified clip, and solder all the pins with the clip still shorting the pins. (Similarly, solder all the pins while the bare shorting wire is still wound around them.). Remove the clip or the bare shorting wire only after all the pins have been soldered.

Precaution while Checking C-MOS ICs

The C-MOS ICs (Complementary MOS) are MOS ICs that have their output sections made up of N-channel and P-channel push-pull stages to increase their speed of operation. If the output terminal of these ICs comes into contact with B+ or B- voltage, then the FET which is ON at that time will either become shorted or open.

This is valid for all the output sections that are connected together by the interconnections. Even the circuits that are physically separated (and not on the same board) can be destroyed simultaneously.

Example:

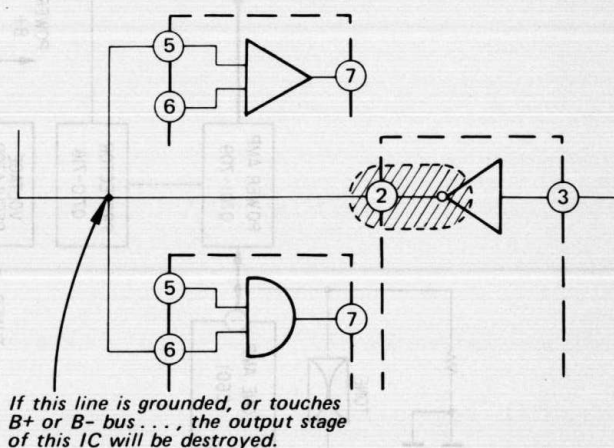


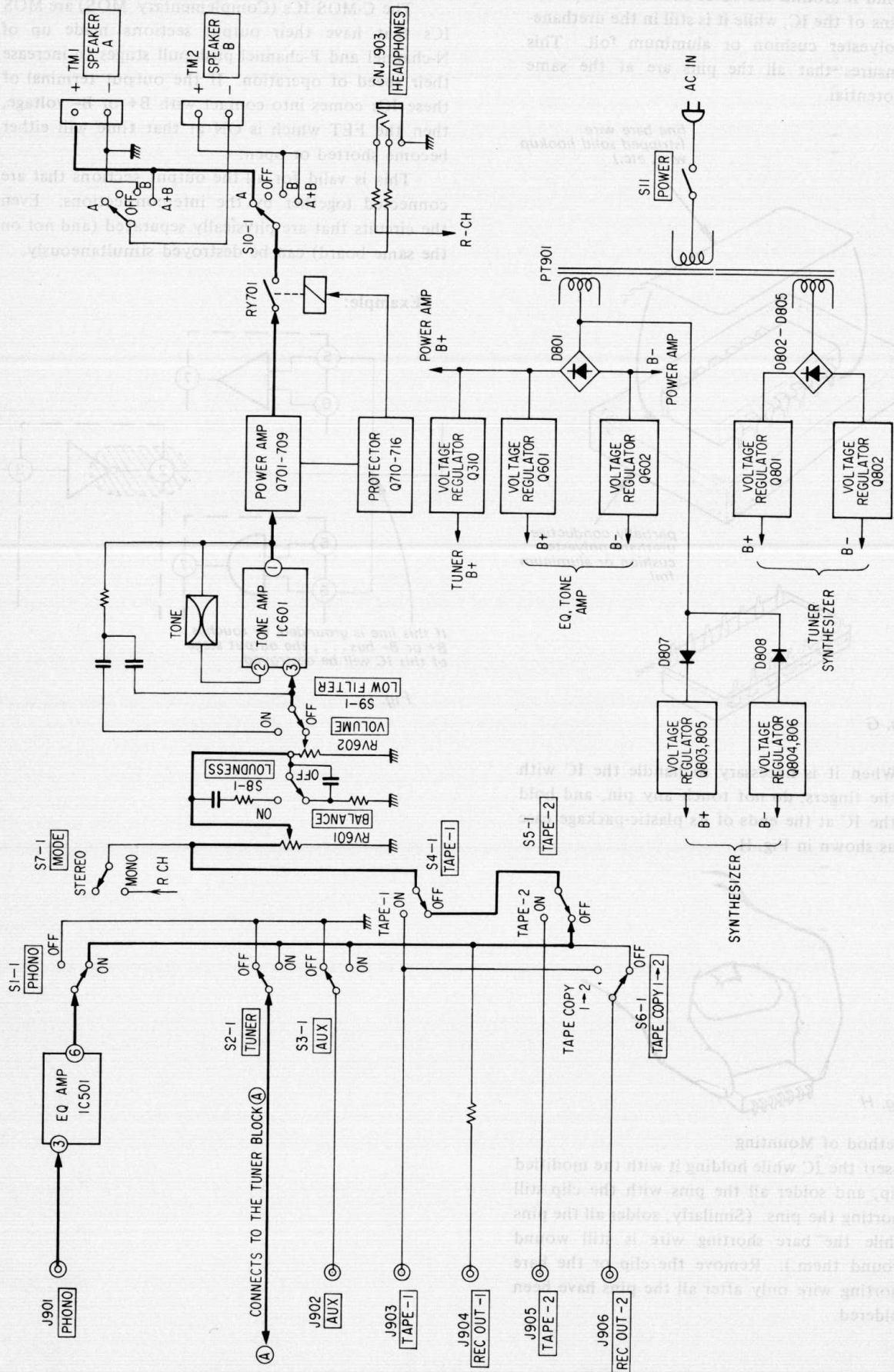
Fig. I

SECTION 1

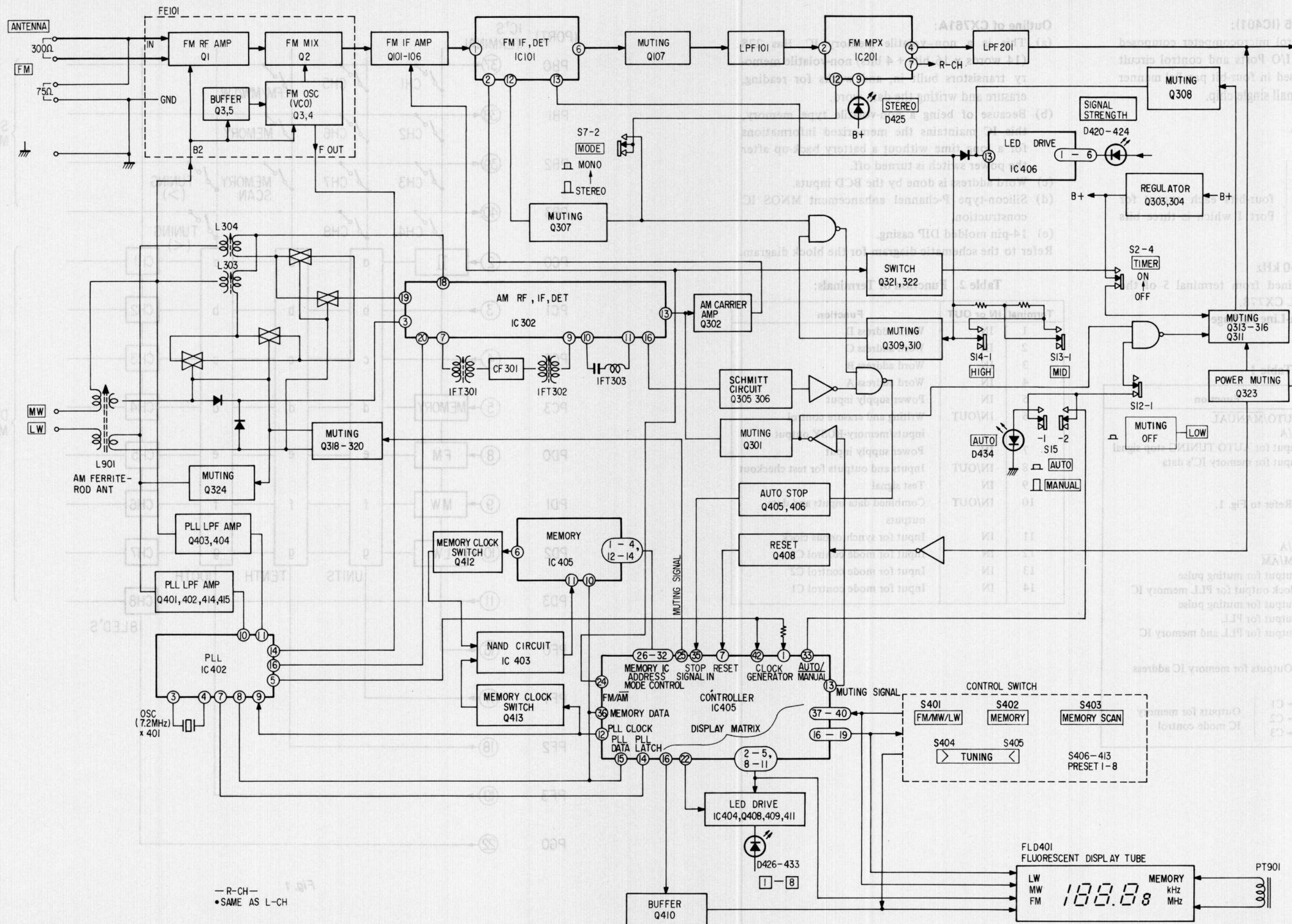
OUTLINE

1-1. BLOCK DIAGRAM

— Audio Amp and Power Supply Sections —



— Tuner Section —



MEMORY IC CX761A (IC405)

Outline of CX761A:

- (a) This is a non-volatile memory IC. Has 228 (14 words x 16 bits + 4 bits) non-volatile memory transistors built in, and works for reading, erasure and writing the data word.
 - (b) Because of being a non-volatile type memory, this IC maintains the memorized informations for a long time without a battery back-up after the power switch is turned off.
 - (c) Word address is done by the BCD inputs.
 - (d) Silicon-type P-channel enhancement MNOS IC construction.
 - (e) 14-pin molded DIP casing.
- Refer to the schematic diagram for the block diagram.

Table 2. Function of Terminals:

Terminal	IN or OUT	Function
1	IN	Word address D
2	IN	Word address C
3	IN	Word address B
4	IN	Word address A
5	IN	Power supply input
6	IN/OUT	Writing and erasure control inputs/memory-BUSY output
7	IN	Power supply input
8	IN/OUT	Inputs and outputs for test checkout
9	IN	Test signal
10	IN/OUT	Combined data inputs and data outputs
11	IN	Input for synchronous clock
12	IN	Input for mode control C3
13	IN	Input for mode control C2
14	IN	Input for mode control C1

Outline of μ PD553C-065 (IC401):

This is a four-bit control microcompeter composed of ALU, ROM, RAM, I/O Ports and control circuit all of which are processed in four-bit parallel manner and are included on a small single chip.

P-channel MOS

ROM (1000 x 8-bits)

RAM (64 x 4-bits)

Input Ports

A and B

Input/output Ports

four-bits each except for Port I which is three bits

C and D

Output Ports

E, F, G, H and I

Clock Frequency: 360 kHz

Input signal is obtained from terminal 5 of the divider output in PLL CX778.

42-pin Plastic Dual-in-Line Package

I/O Ports:

Table 1

Port	Terminal	Function
PA0	33	AUTO/MANUAL
PA1	34	N/A
PA2	35	Input for AUTO TUNING stop signal
PA3	36	Input for memory IC's data
PB0-3	37 - 40	Refer to Fig. 1.
PC0-3	2 - 5	
PD0-3	8 - 11	
PF0-3	16 - 19	
PG0	22	N/A
PG1	23	
PG2	24	
PG3	25	
PE0	12	Clock output for PLL memory IC
PE1	13	Output for muting pulse
PE2	14	Output for PLL
PE3	15	Output for PLL and memory IC
PH0	26	Outputs for memory IC address
PH1	27	
PH2	28	
PH3	29	
PI0	30	Outputs for memory IC mode control
PI1	31	
PI2	32	

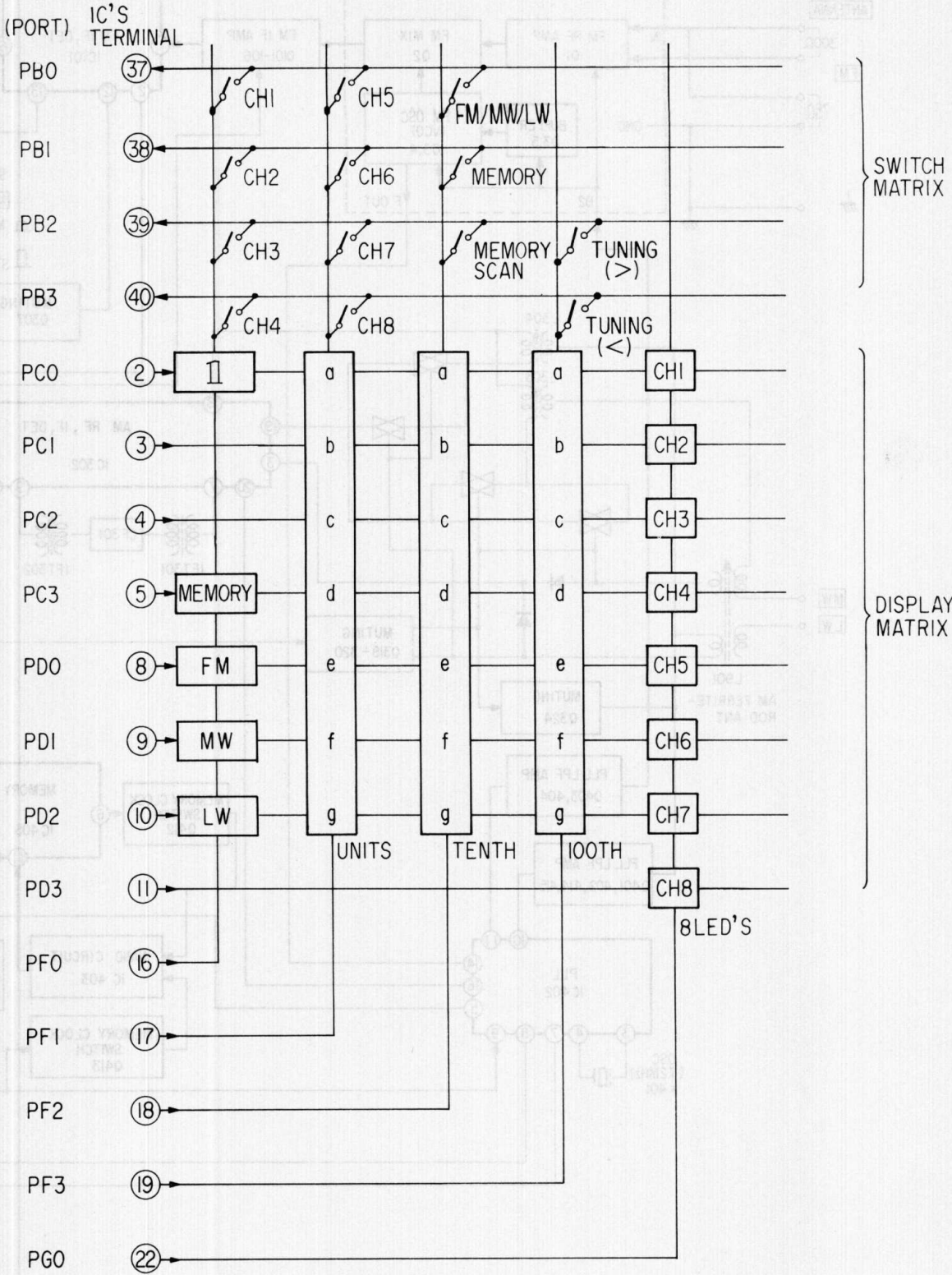


Fig. 1

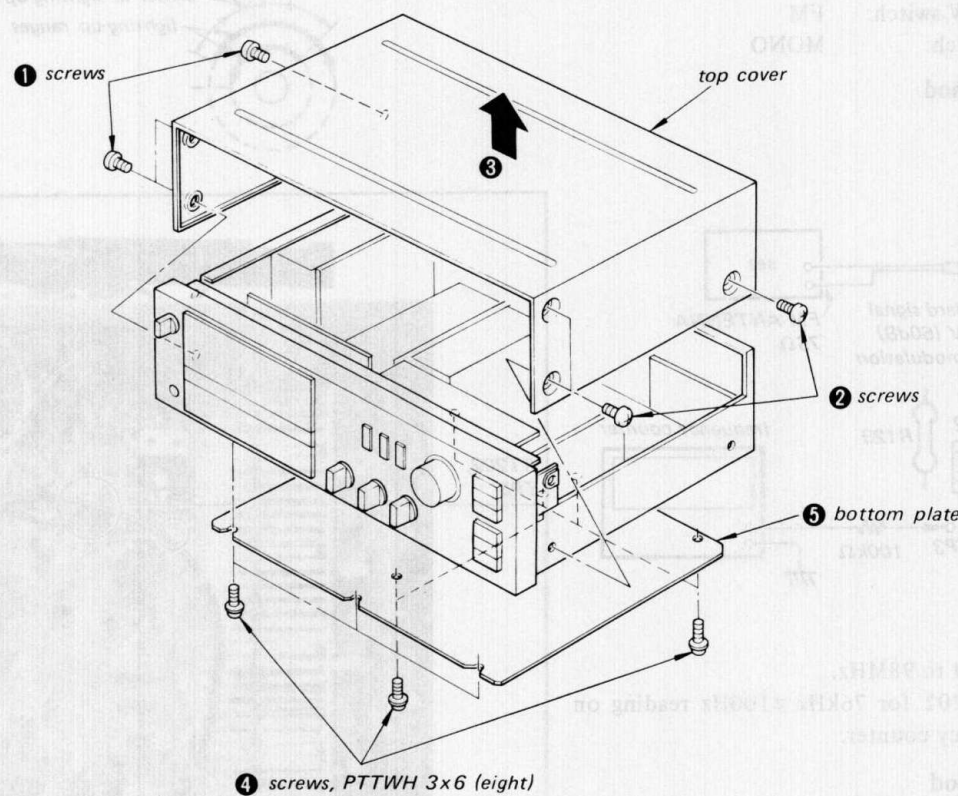
SECTION 2 DISASSEMBLY

STR-V45L STR-V45L

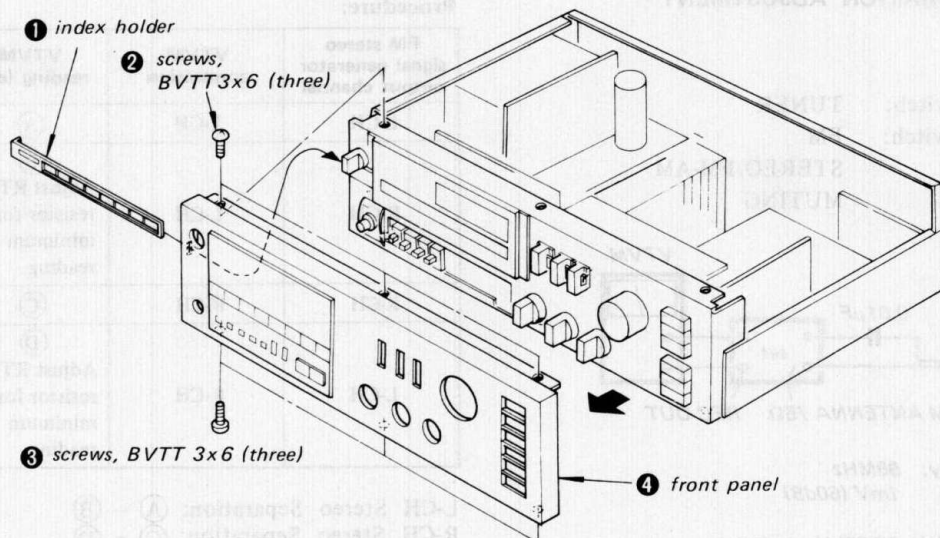
Note: Follow the disassembly procedure in the numerical order given.

TOP COVER AND BOTTOM PLATE REMOVAL

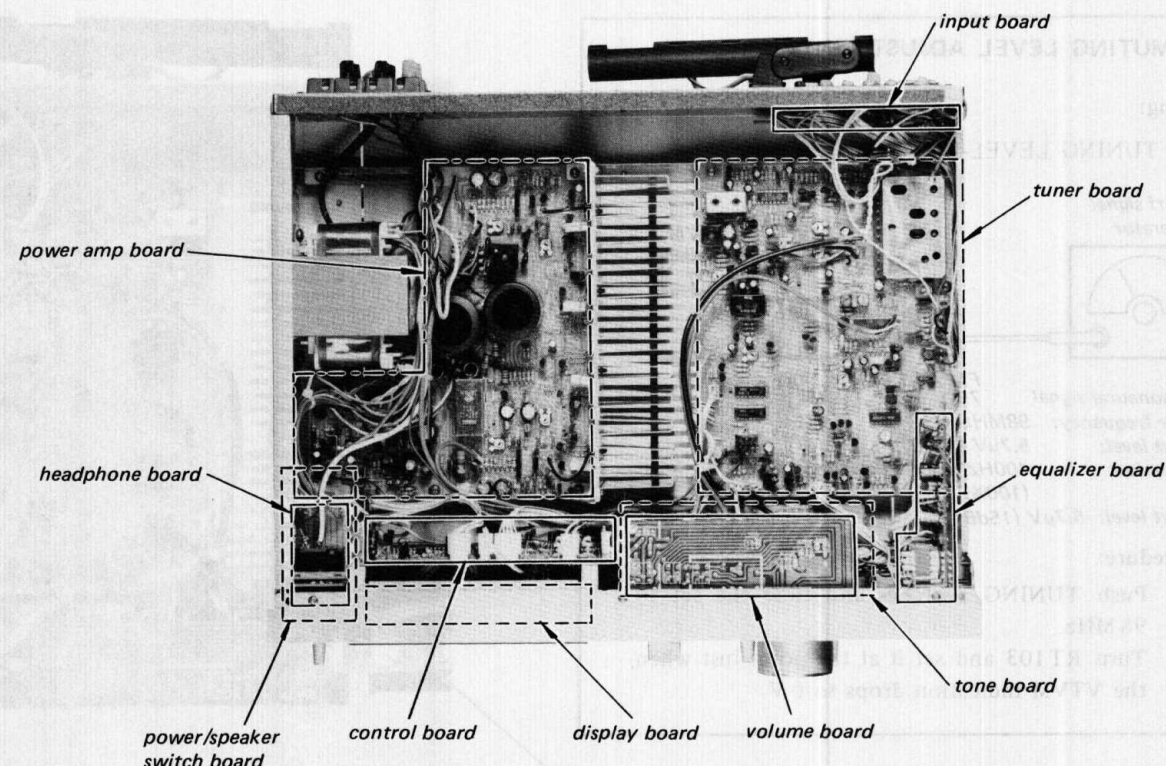
Note: Circuit-board checkouts and adjustments can be made after this removal.



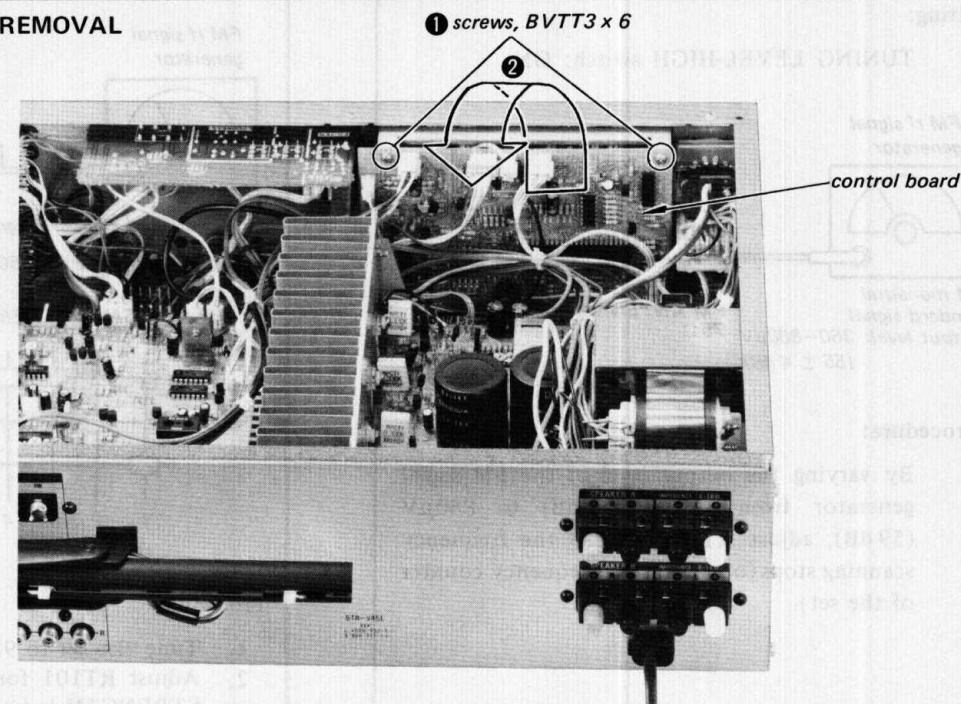
FRONT PANEL REMOVAL



CIRCUIT BOARDS LAYOUT



CONTROL BOARD REMOVAL



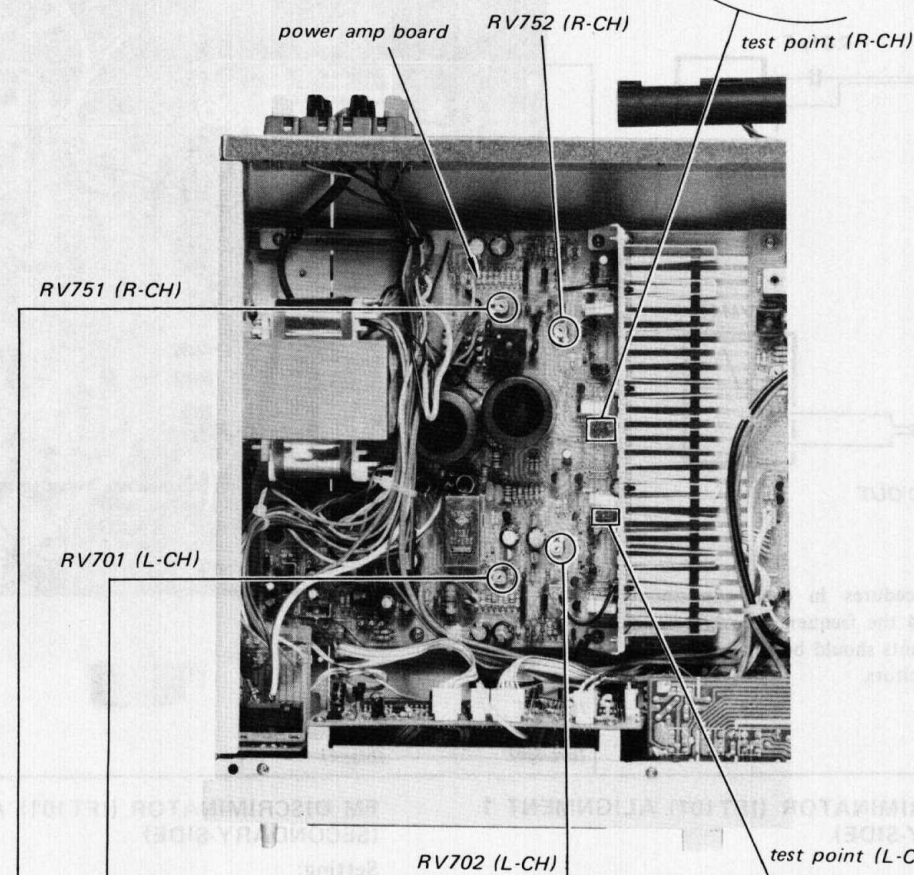
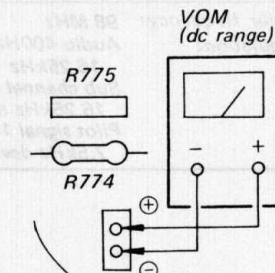
SECTION 3 ADJUSTMENTS

3-1. AMP SECTION

Note:

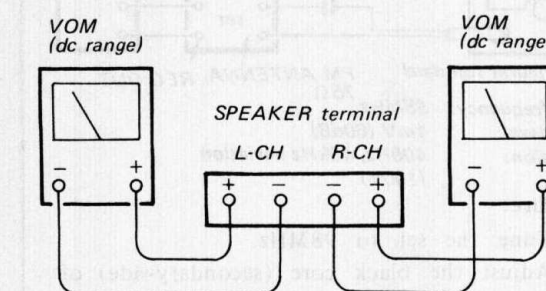
1. DC bias and DC balance adjustments should be made several minutes later after the POWER switch is turned on (POWER ON).
2. Make DC bias adjustment first.
3. Repeat DC bias and DC balance adjustments two or three times.
4. After replacing the power transistors, DC bias and DC balance adjustments should be made.

DC Bias Adjustment



DC Balance Adjustment (With no signal input)

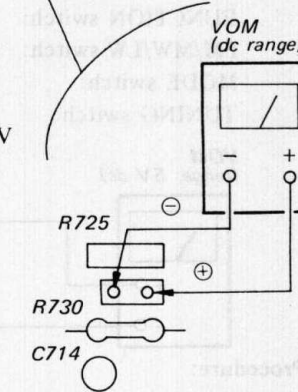
- L-CH—
Adjust RV701 for 0V dc reading on VOM.
- R-CH—
Adjust RV751 for 0V dc reading on VOM.



DC Bias Adjustment (With no signal input)

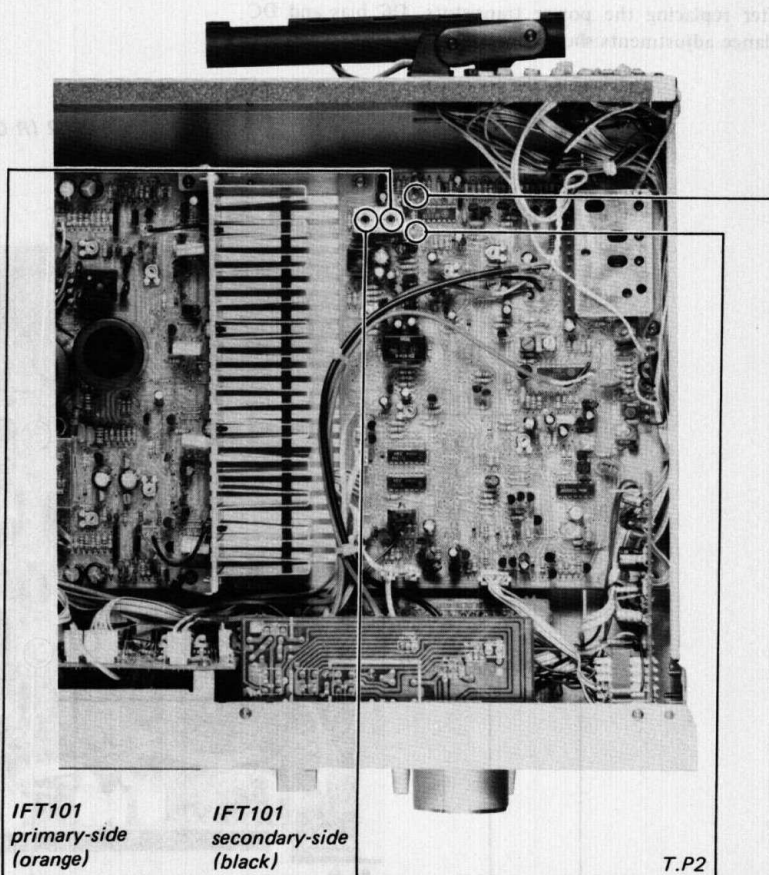
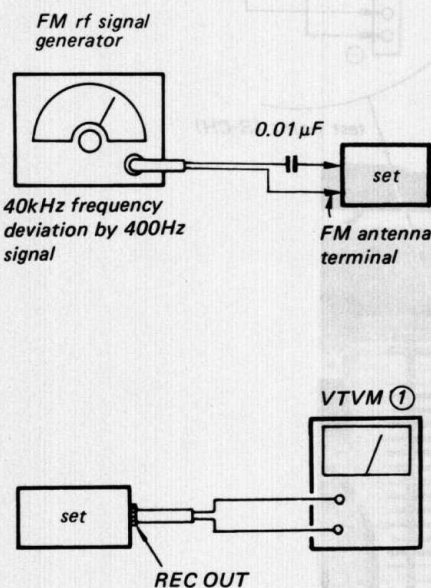
- L-CH—
Adjust RV702 for 10 mV dc reading on VOM.

- R-CH—
Adjust RV752 for 10 mV dc reading on VOM.



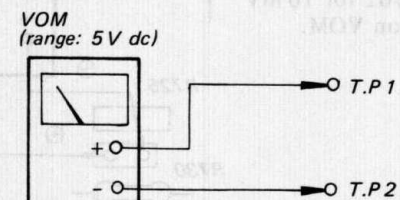
3-2. FM SECTION

FM stereo standard signal	FM monaural standard signal
Carrier frequency: 98 MHz Modulation: Audio 400Hz 16.25kHz deviation Sub channel 38kHz, 16.25kHz deviation Pilot signal 19kHz, 7.5kHz deviation	Carrier frequency: 98 MHz Modulation: 400 Hz, 40kHz deviation (100%)



FM DISCRIMINATOR (IFT101) ALIGNMENT 1 (PRIMARY-SIDE)

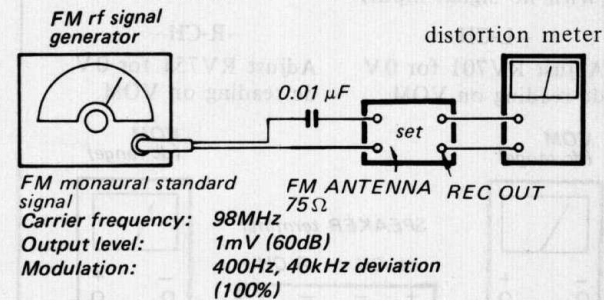
Setting:
FUNCTION switch: TUNER
FM/MW/LW switch: FM
MODE switch: MONO
TUNING switch: Detuned position



- Procedure:
1. Tune the set to 98MHz.
 2. Adjust the orange core (primary-side) of IFT101 for 0V reading on VOM.
- Note:** When replacing the ceramic filters (CF101-CF104), perform this alignment.

FM DISCRIMINATOR (IFT101) ALIGNMENT 2 (SECONDARY-SIDE)

Setting:
FUNCTION switch: TUNER
FM/MW/LW switch: FM
MODE switch: MONO

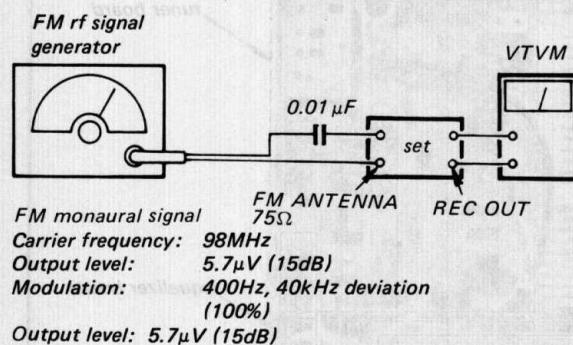


- Procedure:
1. Tune the set to 98MHz.
 2. Adjust the black core (secondary-side) of IFT101 for minimum distortion.
- Note:** Repeat the primary-side and secondary-side alignments several times.

FM MUTING LEVEL ADJUSTMENT

Setting:

TUNING LEVEL-LOW switch: ON



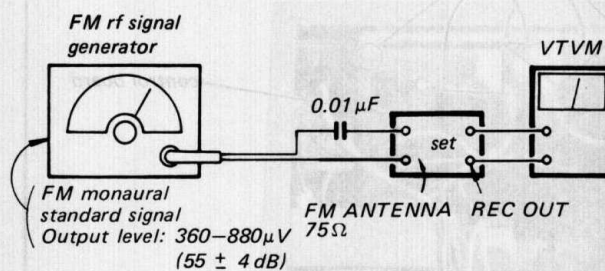
Procedure:

1. Push TUNING switches and tune the set to 98 MHz.
2. Turn RT103 and set it at the point just when the VTVM indication drops to 0V.

FM TUNING LEVEL ADJUSTMENT

Setting:

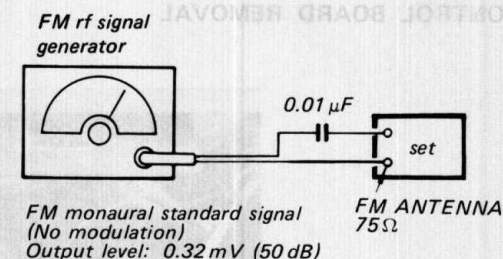
TUNING LEVEL-HIGH switch: ON



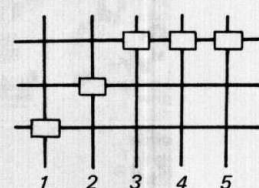
Procedure:

By varying the output level of the FM signal generator from 360µV (51 dB) to 880µV (59 dB), adjust RT102 so that the frequency scanning stops (observing the frequency counter of the set).

SIGNAL INDICATOR ADJUSTMENT



SIGNAL STRENGTH



Procedure:

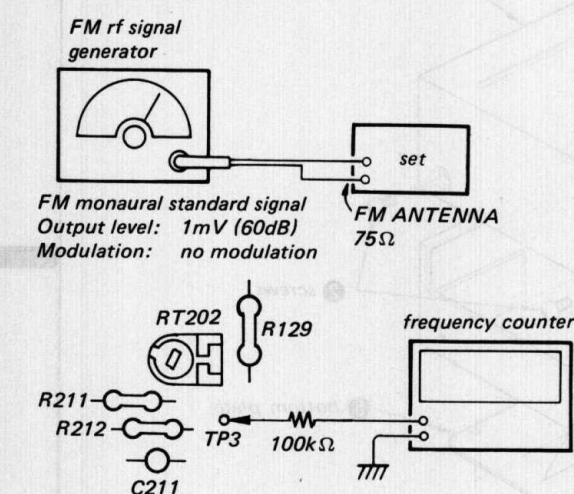
1. Tune the set to 98MHz.
2. Adjust RT101 for all five LEDs of SIGNAL STRENGTH indicator lighting.

VCO ADJUSTMENT

Setting:

FUNCTION switch: TUNER
FM/MW/LW switch: FM
MODE switch: MONO

A) Regular Method



Procedure:

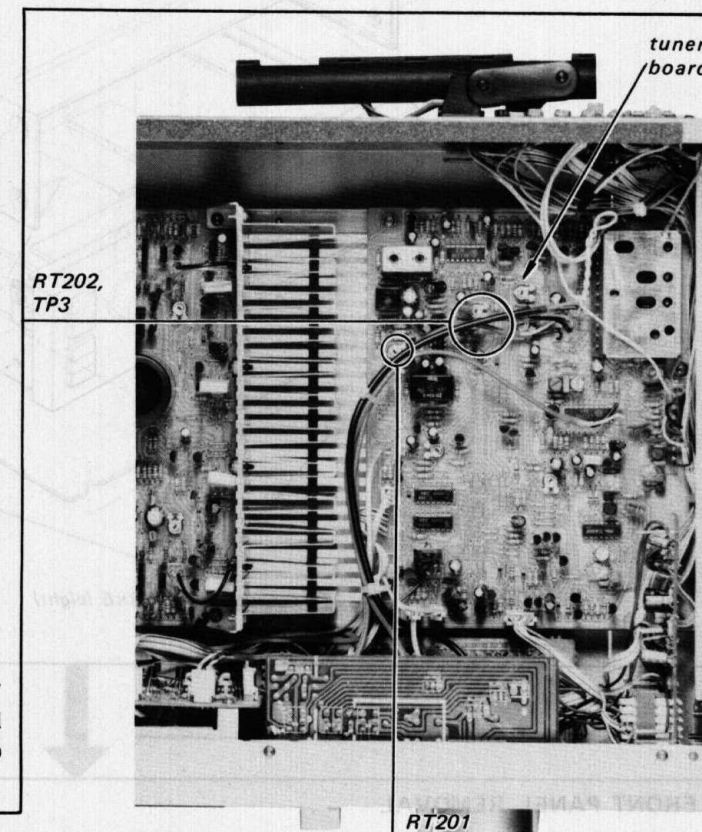
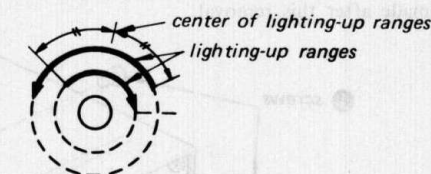
1. Tune the set to 98MHz.
2. Adjust RT202 for 76kHz ±100Hz reading on the frequency counter.

B) Simple Method

Procedure:

1. Tune the set to the FM stereo broadcasting signal.
2. Turn RT202 clockwise or counterclockwise and memorize the lighting-up ranges of STEREO lamp.

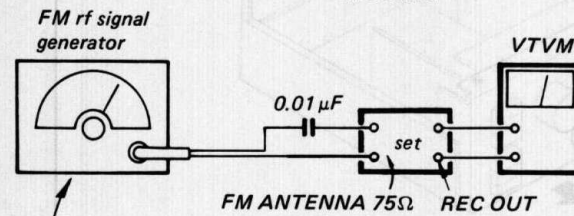
3. Secure RT202 at the center of the lighting-up range of both turns as shown below.



FM STEREO SEPARATION ADJUSTMENT

Setting:

FUNCTION switch: TUNER
FM/MW/LW switch: FM
MODE switch: STEREO/FM-AM
MUTING



Procedure:

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	(A)
R-CH	L-CH	(B) Adjust RT301 resistor for minimum reading.
R-CH	R-CH	(C)
L-CH	R-CH	(D) Adjust RT301 resistor for minimum reading.

L-CH Stereo Separation: (A) - (B)
R-CH Stereo Separation: (C) - (D)

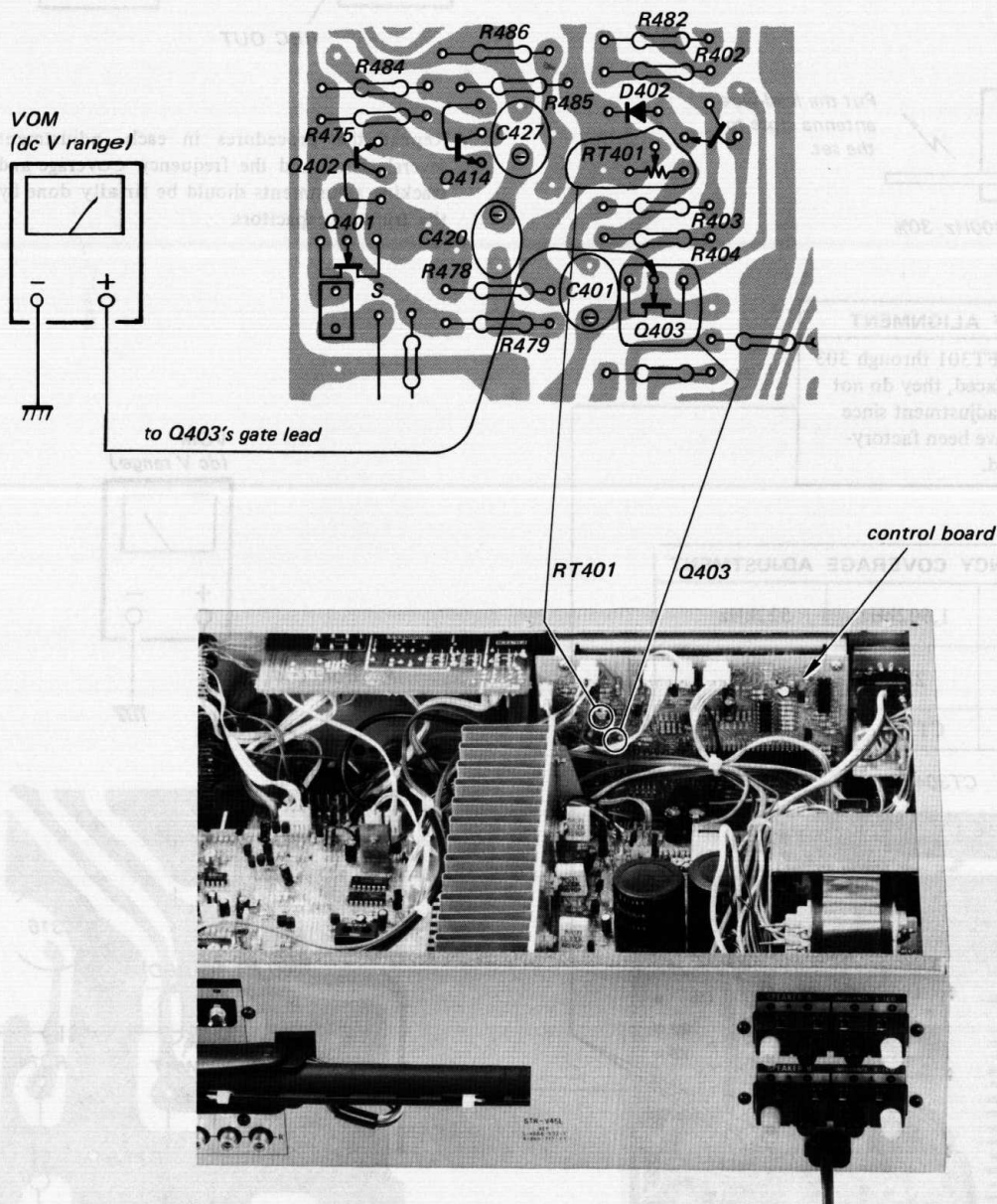
The separations of both channels should be equal.

PLL ADJUSTMENT

Setting:

FM/MW/LW switch: FM

Setting Up and Adjustment Location:



Procedure:

1. Tune the set to 98MHz.
2. Turn RT401 to its clockwise stop.
3. Turn RT401 counterclockwise to obtain 1.8V dc at the gate lead of Q403.

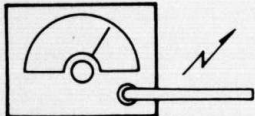
3-3. AM SECTION

MW Section

Setting:

FUNCTION switch TUNER
FM/MW/LW switch: MW

AM rf signal
generator



Put the lead-wire
antenna close to
the set.

Modulation: 400Hz, 30%

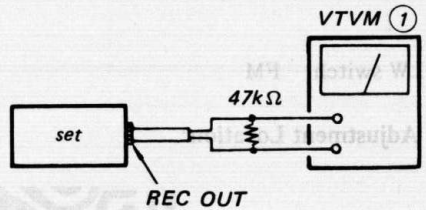
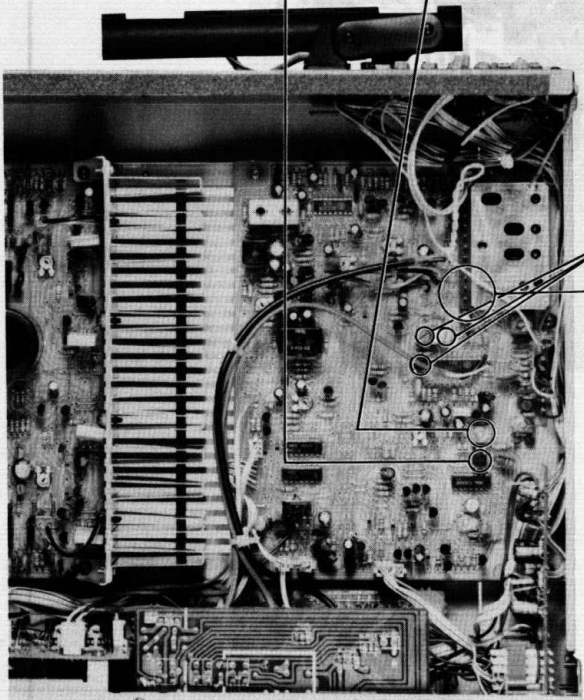
AM I-F ALIGNMENT

When IFT301 through 303
are replaced, they do not
need readjustment since
they have been factory-
adjusted.

MW FREQUENCY COVERAGE ADJUSTMENT		
Frequency Dial Indication	1,602kHz	522kHz
VOM reading	22V	1.5V
Adjust	CT304	L303

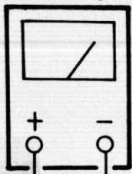
CT304

L303

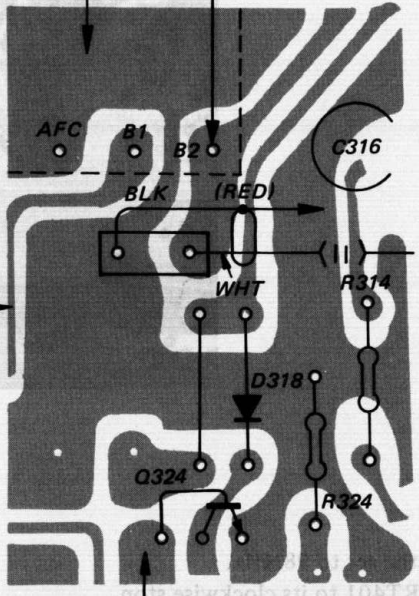


- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

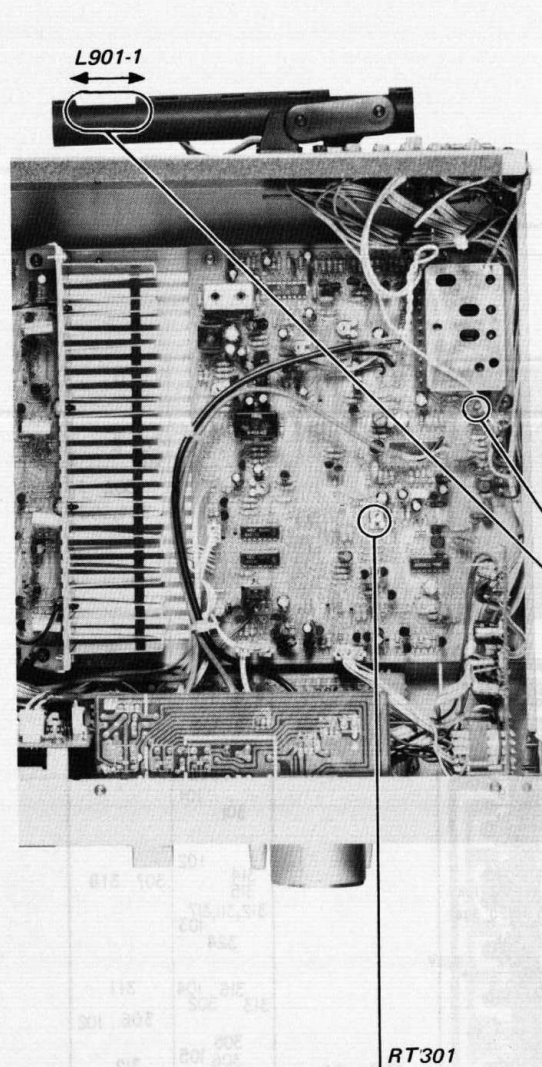
VOM
(dc V range)



FM front end
to B2 of
FM front
end



tuner board



MW TRACKING ADJUSTMENT

AM rf signal generator

30% amplitude modulation by 400Hz signal

Output level: 30 – 100µV (30 – 40dB)
Carrier frequency: 603kHz or 1,404kHz

REC OUT

set

MW ANTENNA

VOM (ac V range)

Procedure:

Tune the set to the frequency of AM rf signal generator and adjust L901-1 and CT302 for maximum reading on the VOM.

	AM Rf Signal Generator Frequency	Adjust	VOM Reading
1	603kHz	L901-1	maximum
2	1,404kHz	CT302	

Note: Repeat the above adjustment several times ending with CT302.

TUNING LEVEL ADJUSTMENT

Setting:

TUNING LEVEL LOW switch: ON

AM signal generator

loop antenna

Carrier frequency: 1,000kHz
Output level: 0.02V (86dB)
Modulation: 400Hz, 30%

set

REC OUT

VTVM

Procedure:

1. Place the loop antenna at a distance of 60cm (23½") away from the ferrite-rod antenna in the set.
2. Turn RT301 until the VTVM indication drops to 0V with the output level of AM signal generator of 86 ± 4dB.

LW Section

AM rf signal generator

30% amplitude modulation by 400Hz signal

Put the lead-wire antenna close to the set.

VOM (dc V range)

LW FREQUENCY COVERAGE ADJUSTMENT

Frequency Dial Indication	344kHz	155kHz
VOM reading	19V	2.5V
Adjust	CT303	L304

tuner board

AFC B1 B2

BLK (RED)

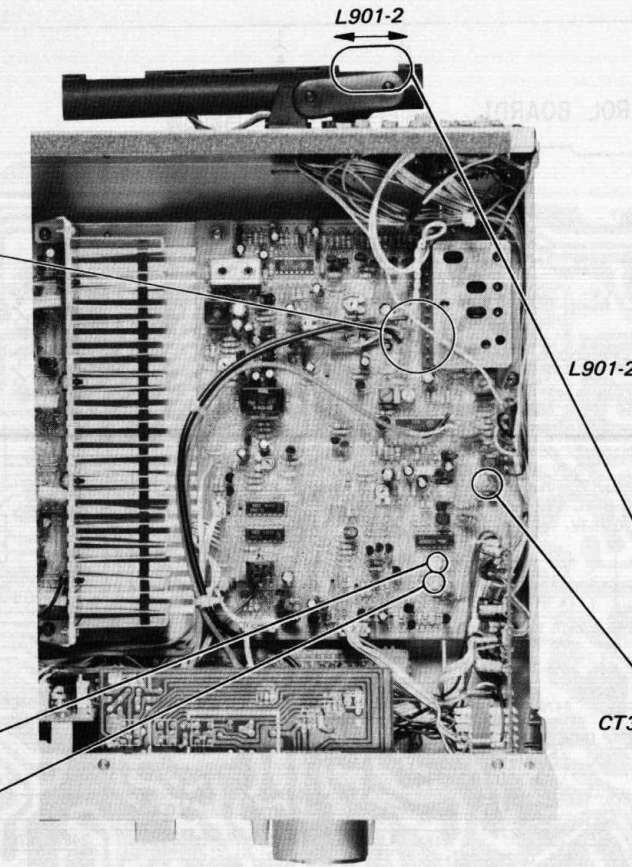
WHT

R314

D318

Q324

OR324



LW TRACKING ADJUSTMENT

AM rf signal generator

30% amplitude modulation by 400Hz signal

Output level: 30 – 100µV (30 – 40dB)
Carrier frequency: 173kHz or 308kHz

REC OUT

set

LW ANTENNA

VOM (ac V range)

Procedure:

Tune the set to the frequency of AM rf signal generator and adjust L901-2 and CT301 for maximum reading on the VOM.

	AM Rf Signal Generator Frequency	Adjust	VOM Reading
1	173kHz	L901-2	maximum
2	308kHz	CT301	

Note: Repeat the above adjustment several times ending with CT301.

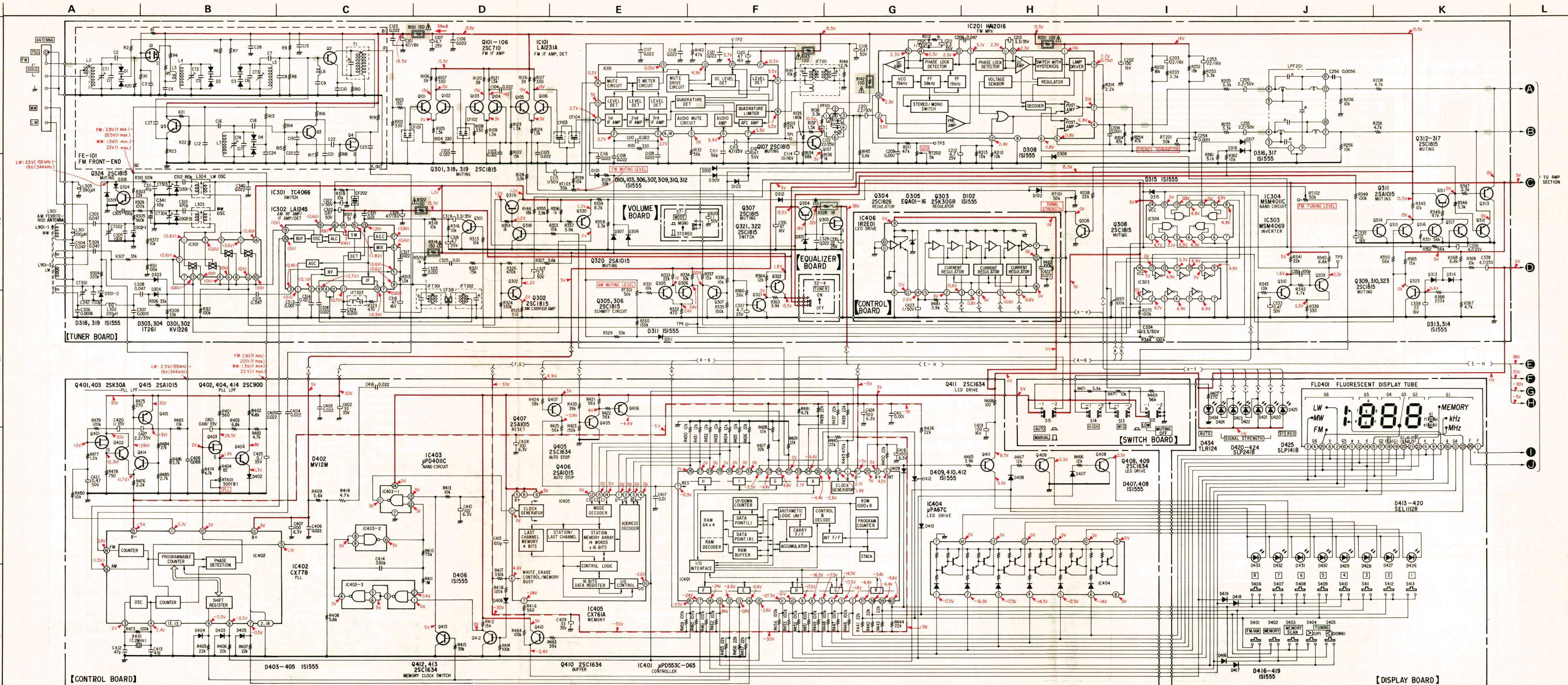
STR-V45L STR-V45L

STR-V45L STR-V45L

STR-V45L STR-V45L

STR-V45L STR-V45L

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- Note:**
- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics.
 - All resistors are in ohms, $\frac{1}{2}\text{W}$ unless otherwise noted. $\text{k}\Omega$: 1000Ω , $\text{M}\Omega$: $1000\text{k}\Omega$
 - $\triangle$: internal component.
 - $\square$: panel designation.
 - $\square$: adjustment for repair.
 - $\bullet$: B+ bus.
 - --- : B- bus.
 - Voltages are dc with respect to ground unless otherwise noted.
 - Voltage variations may be noted due to normal production tolerances.
 - Readings are taken under no-signal (detuned) conditions with a VOM (20 $\text{k}\Omega/\text{V}$).
 - II : FM STEREO
 - $\langle \rangle$: AM
 - no mark : FM
 - $\rightarrow$: signal path

• Switch

Ref. No.	Switch	Position
S2	FUNCTION TUNER	OFF
S7	MODE	STEREO
S12-15	TUNING LEVEL	MANUAL
S401	FM/MW/LW	FM
S402	MEMORY	OFF
S403	MEMORY SCAN	OFF
S404	TUNING (UP)	OFF
S405	TUNING (DOWN)	OFF
S406-413	preset (1-8)	OFF

Note: The components identified by shading and mark $\triangle$ are critical for safety. Replace only with part number specified.

Semiconductor Lead Layouts:

2SA1015 	2SK30-GR 2SK30A 2SK30A-GR3 	MB84069B MSM4011C MSM4069 $\mu\text{PD4011C}$ 	MV12N
2SC710 2SC710-14 	CX761A $\mu\text{PD553C065}$ 	TC4066 μPA67C $\mu\text{PD4066C}$ 	TLR124
2SC900 2SC1362 2SC1364 2SC1634 2SC1815 	CX778 	EQA01-16 EQB01-16 	KV1226
2SC1826 	HA12016 	1S1555 1T26 1T261 	SEL1112R
2SC1986 	IR2E01 LA1231 LA1231A LA1245 	SLP141B SLP241B 	

STR-V45L

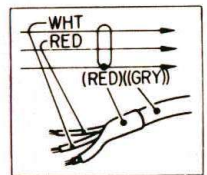
STR-V45L

STR-V45L

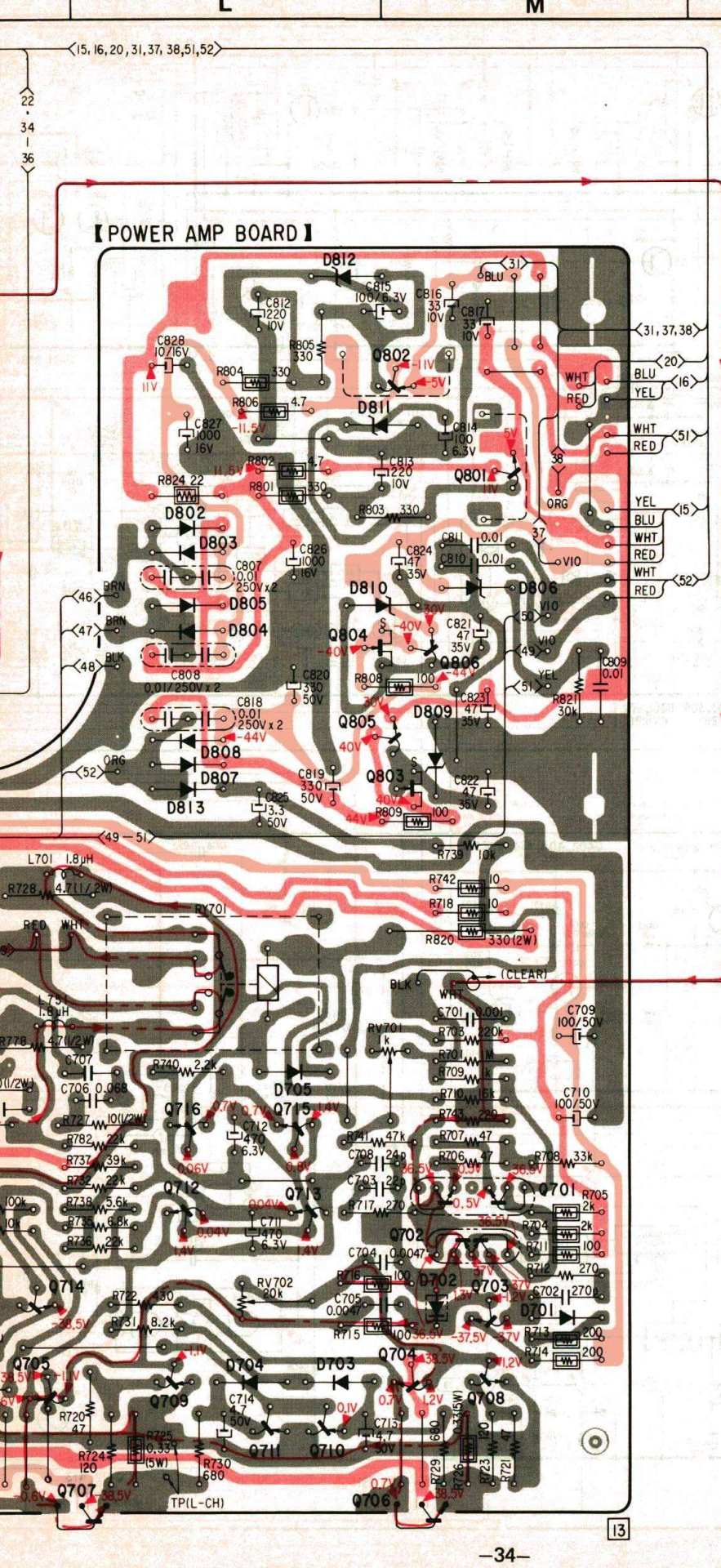
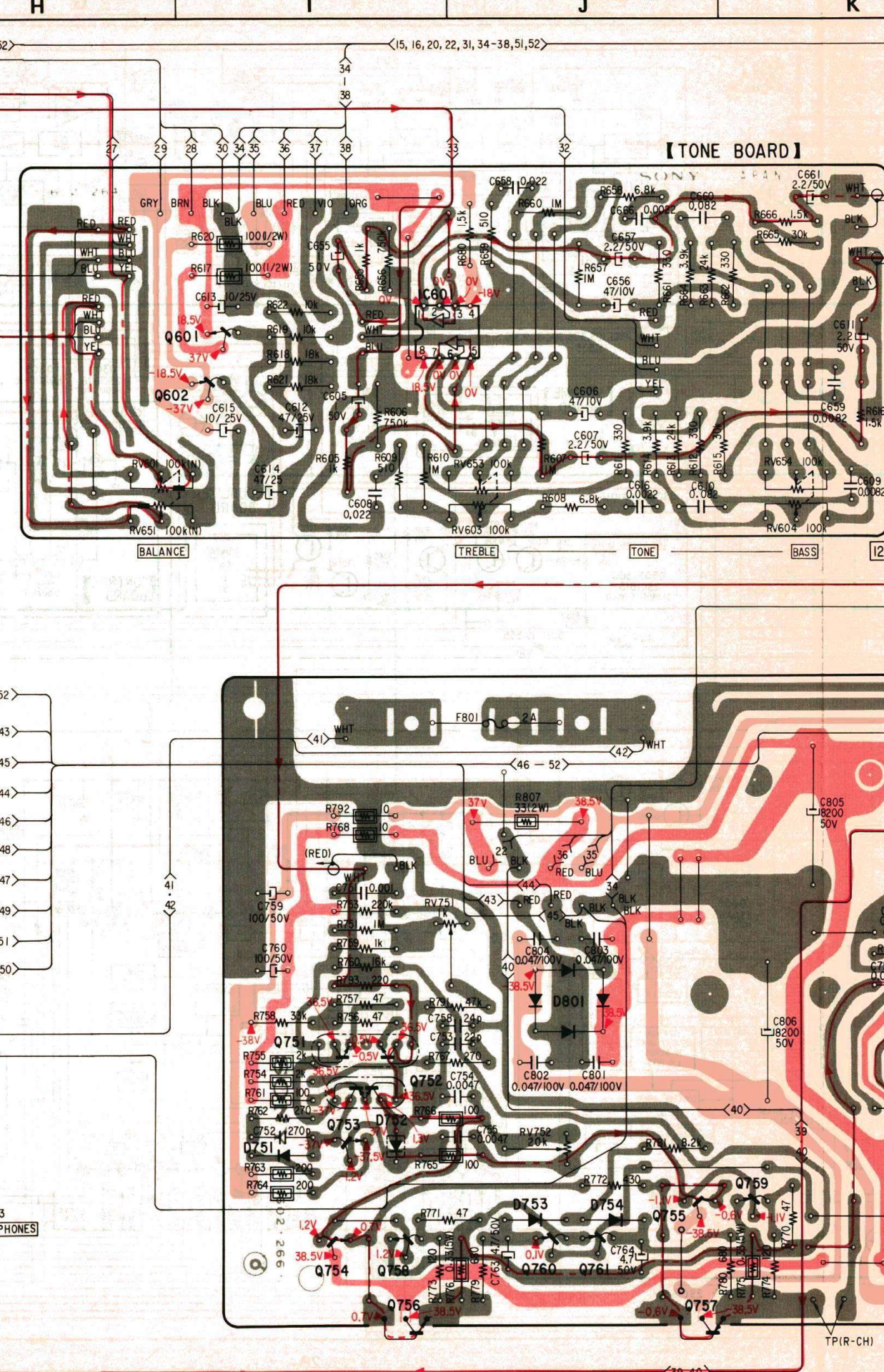
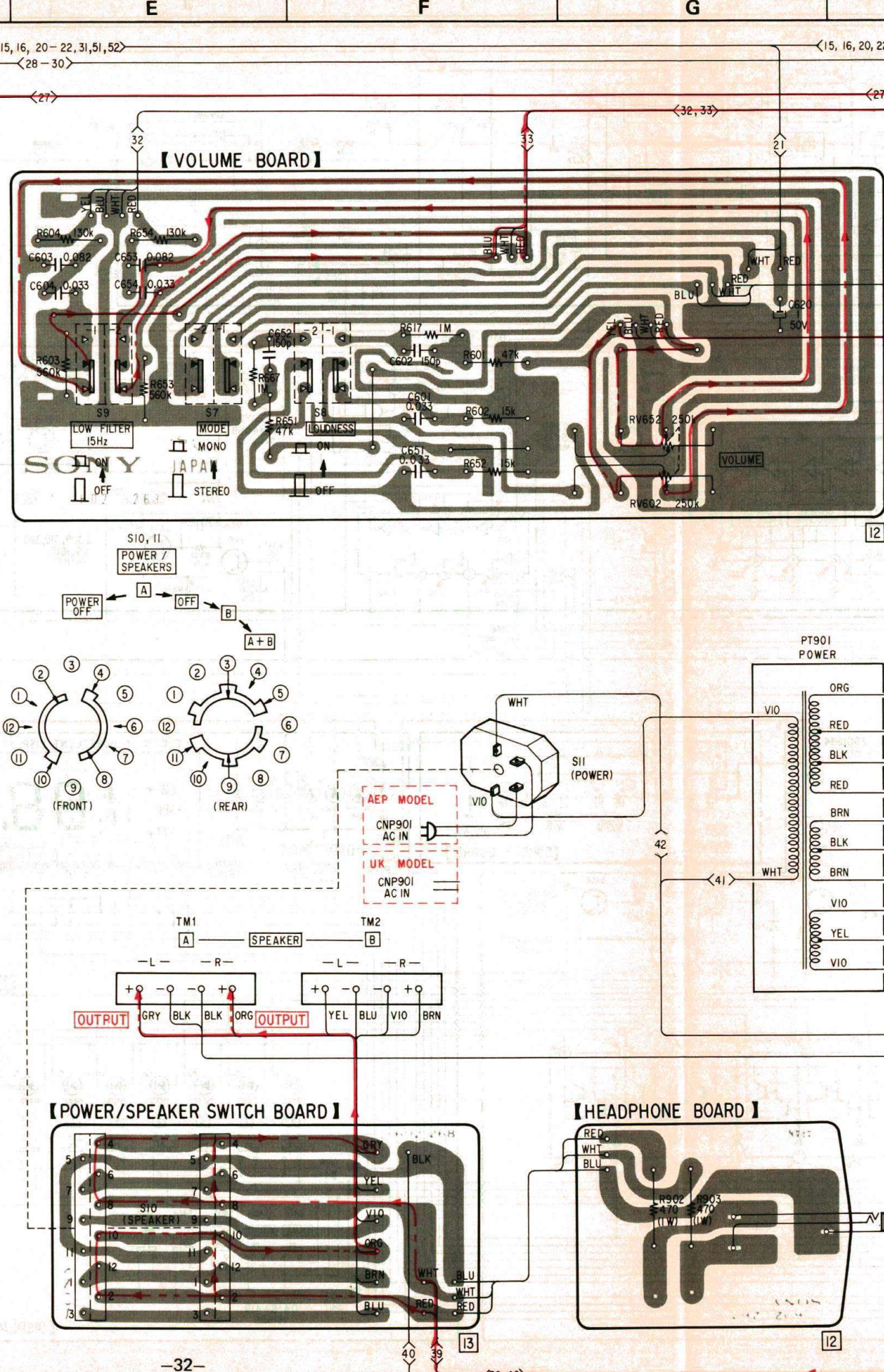
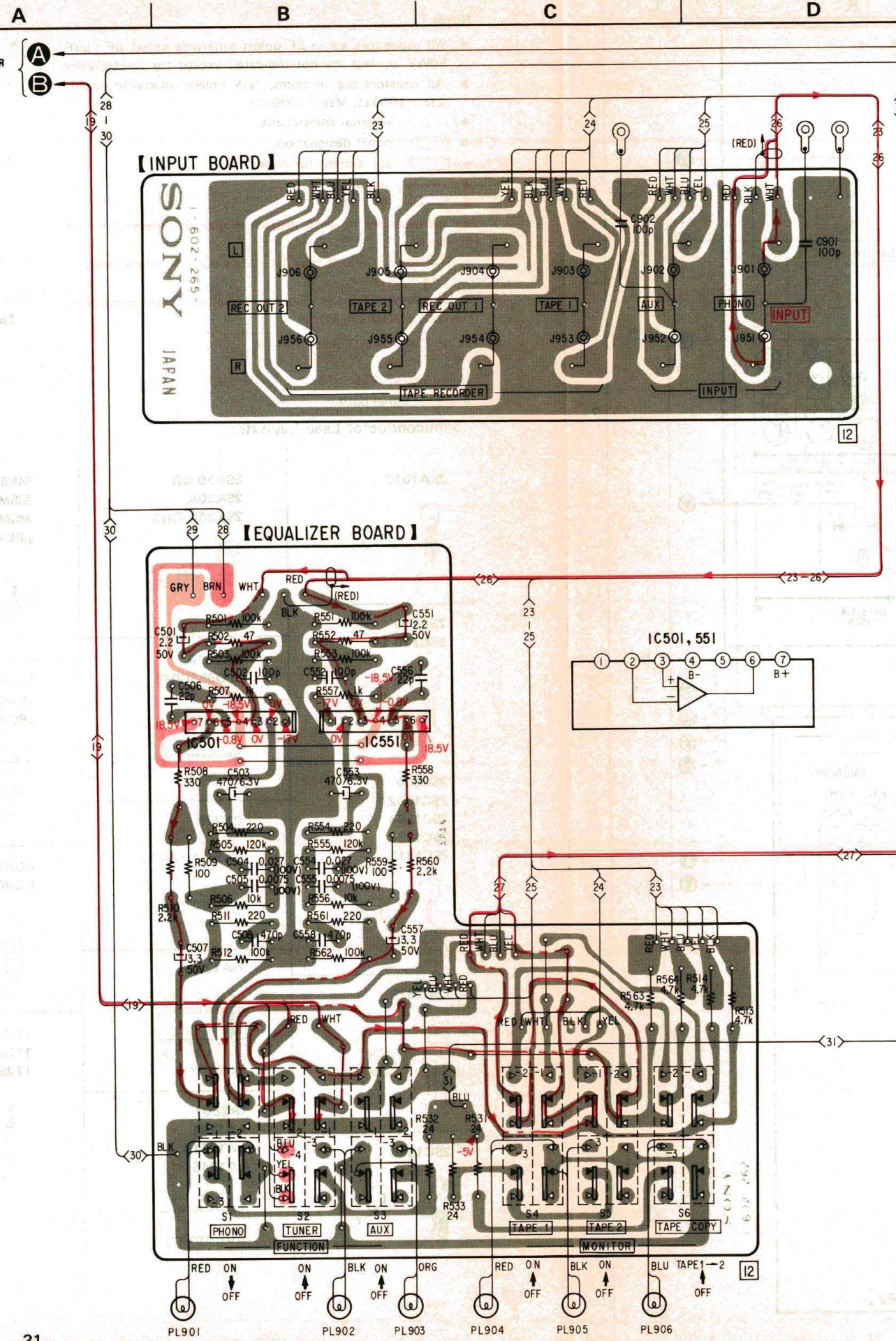
STR-V45L

Note:

- Color code of sleeving over the end of the jacket.

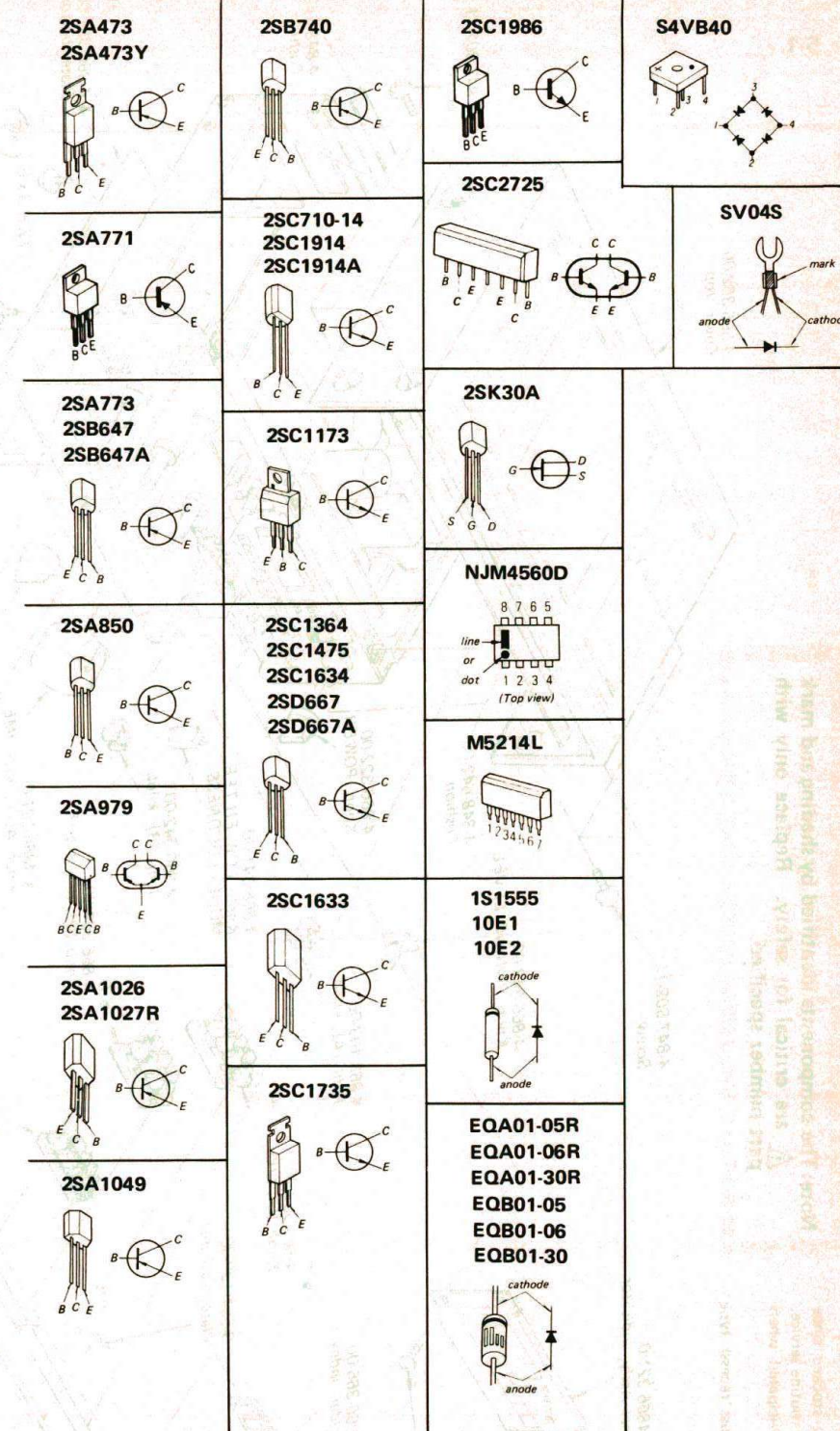


- B+ pattern
- B- pattern
- signal path
- L-CH signal path
- R-CH signal path



Q	IC	D
601	802	812
602	801	811
801	802	811
802	803	812
803	804	813
804	805	814
805	806	815
806	807	816
807	808	817
808	809	818
809	810	819
810	811	820
811	812	821
812	813	822
813	814	823
814	815	824
815	816	825
816	817	826
817	818	827
818	819	828
819	820	829
820	821	830
821	822	831
822	823	832
823	824	833
824	825	834
825	826	835
826	827	836
827	828	837
828	829	838
829	830	839
830	831	840
831	832	841
832	833	842
833	834	843
834	835	844
835	836	845
836	837	846
837	838	847
838	839	848
839	840	849
840	841	850
841	842	851
842	843	852
843	844	853
844	845	854
845	846	855
846	847	856
847	848	857
848	849	858
849	850	859
850	851	860
851	852	861
852	853	862
853	854	863
854	855	864
855	856	865
856	857	866
857	858	867
858	859	868
859	860	869
860	861	870
861	862	871
862	863	872
863	864	873
864	865	874
865	866	875
866	867	876
867	868	877
868	869	878
869	870	879
870	871	880
871	872	881
872	873	882
873	874	883
874	875	884
875	876	885
876	877	886
877	878	887
878	879	888
879	880	889
880	881	890
881	882	891
882	883	892
883	884	893
884	885	894
885	886	895
886	887	896
887	888	897
888	889	898
889	890	899
890	891	900
891	892	901
892	893	902
893	894	903
894	895	904
895	896	905
896	897	906
897	898	907
898	899	908
899	900	909
900	901	910
901	902	911
902	903	912
903	904	913
904	905	914
905	906	915
906	907	916
907	908	917
908	909	918
909	910	919
910	911	920
911	912	921
912	913	922
913	914	923
914	915	924
915	916	925
916	917	926
917	918	927
918	919	928
919	920	929
920	921	930
921	922	931

Semiconductor Lead Layouts:

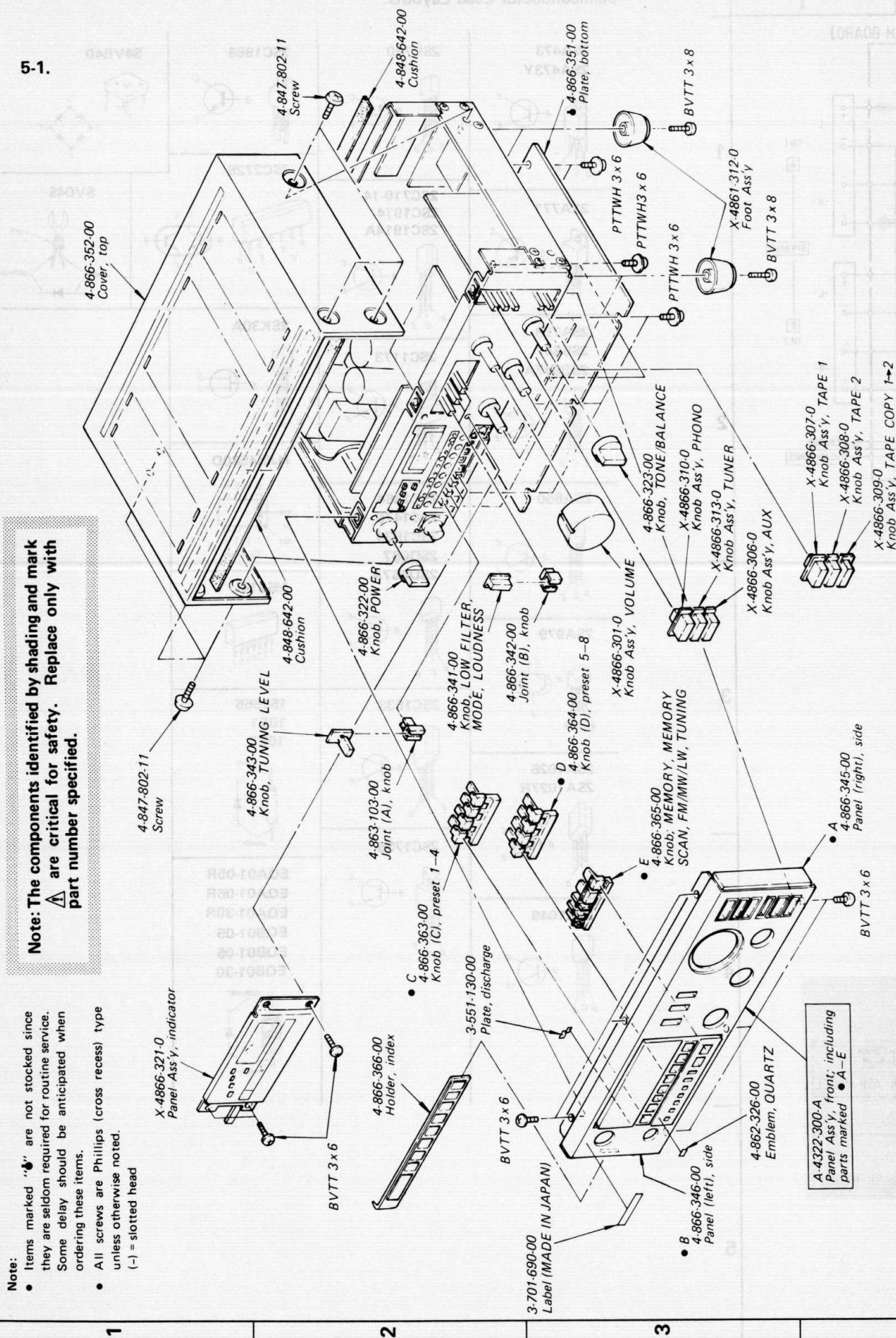


SECTION 5 EXPLODED VIEWS

Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

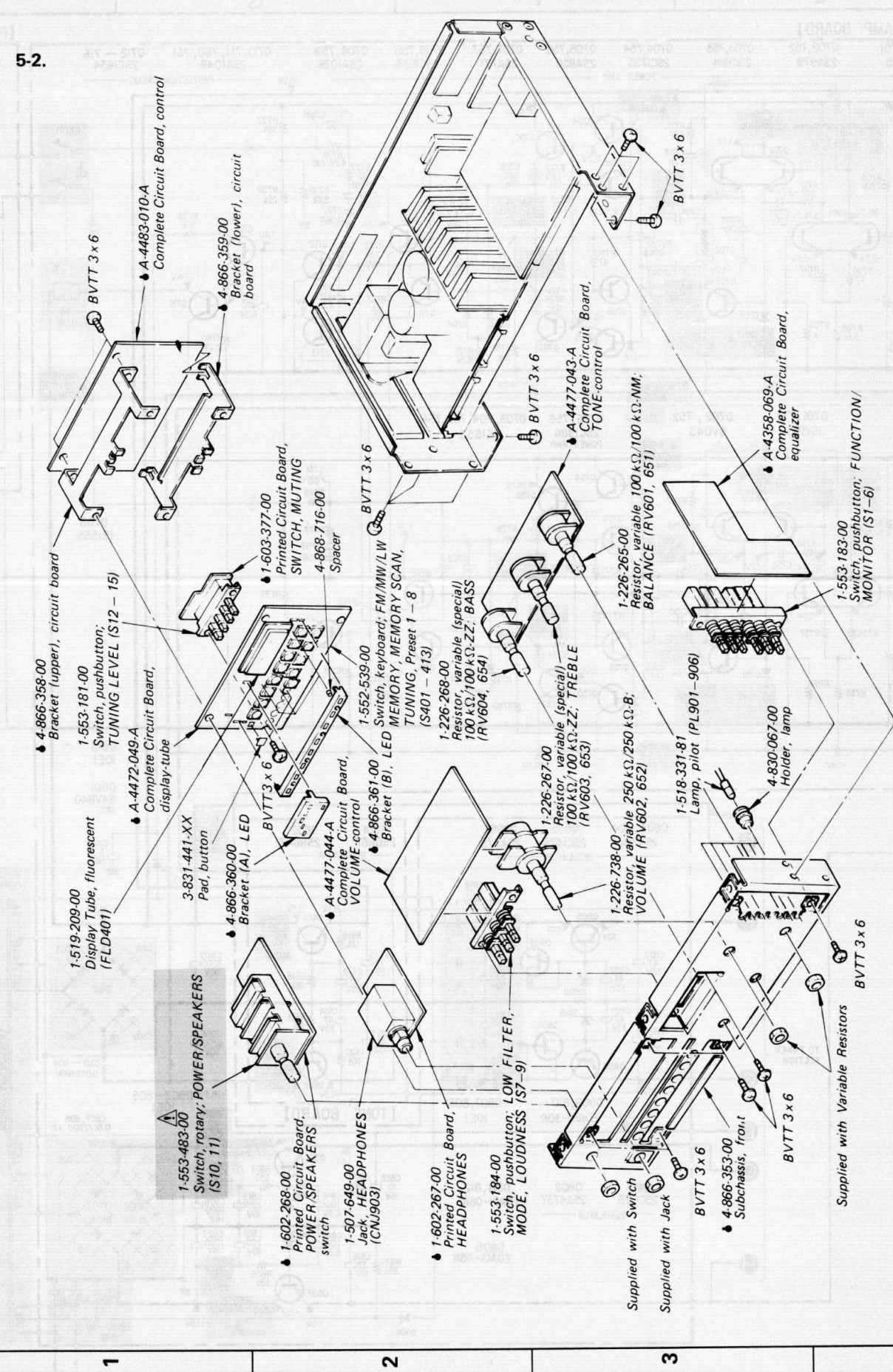
Note:

- Items marked "●" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All screws are Phillips (cross recess) type unless otherwise noted.
(-) = slotted head



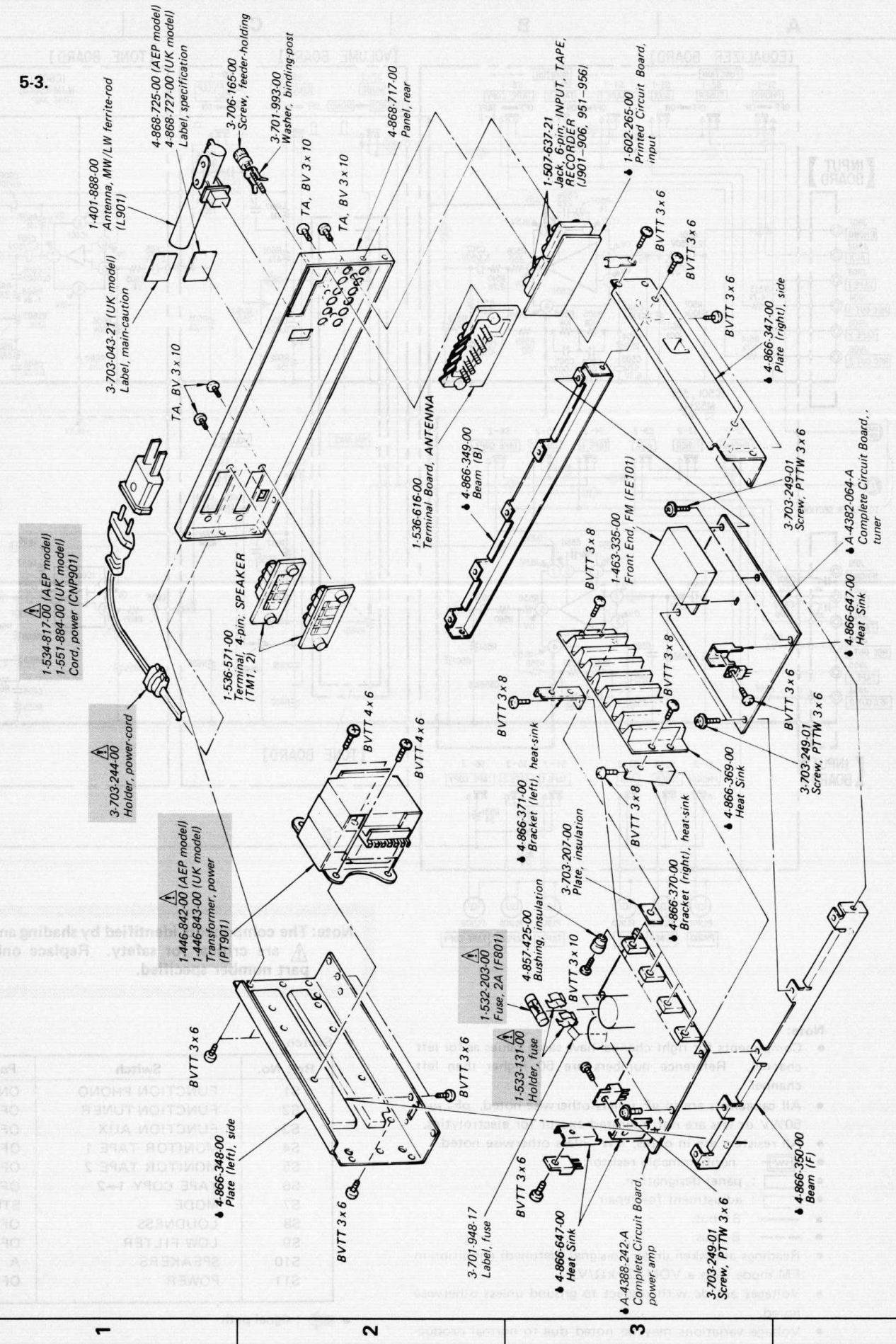
—38

5-2.



—39—

5-3.



-40-

SECTION 6

ELECTRICAL PARTS LIST

Ref. No. Part No. Description

SEMICONDUCTORS

Transistors

Q101-106	8-729-671-14	2SC710-14
Q107	8-729-663-47	2SC1364
Q301, 302	8-729-663-47	2SC1364
Q303	8-729-203-04	2SK30A
Q304	8-729-398-62	2SC1986
Q305-310	8-729-663-47	2SC1364
Q311	8-729-201-52	2SA1015
Q312-319	8-729-634-47	2SC1364
Q320	8-729-201-52	2SA1015
Q321-324	8-729-634-47	2SC1364
Q401	8-729-203-05	2SK30A-GR3
Q402	8-729-665-47	2SC1362
Q403	8-729-203-05	2SK30A-GR3
Q404	8-729-665-47	2SC1362
Q405	8-729-663-47	2SC1364
Q406, 407	8-729-201-52	2SA1015
Q408-413	8-729-663-47	2SC1364
Q414	8-729-665-47	2SC1362
Q601	8-729-906-72	2SD667A
Q602	8-729-300-72	2SB647A
Q701, 751	8-729-672-52	2SC2725
Q702, 752	8-729-697-92	2SA979
Q703, 753	8-729-601-42	2SC1914A
Q704, 754	8-729-673-53	2SC1735
Q705, 755	8-729-685-03	2SA850
Q706, 756	8-729-398-62	2SC1986
Q707, 757	8-729-377-12	2SA771
Q708, 758	8-729-663-47	2SC1364
Q709, 759	8-729-612-77	2SA1027R
Q710, 760	8-729-204-91	2SA1049
Q711, 761		
Q801	8-729-217-33	2SC1173
Q802	8-729-247-33	2SA473
Q803, 804	8-729-203-04	2SK30A
Q805	8-760-413-10	2SC1475
Q806	8-729-374-02	2SB740

Ref. No. Part No. Description

ICs

IC101	8-759-812-31	LA1231
IC201	8-759-320-16	HA12016
IC301	8-759-140-66	μPD4066C
IC302	8-759-812-45	LA1245
IC303	8-759-984-69	MB84069B
IC304	8-759-140-11	μPD4011C
IC401	8-759-153-65	μPD553C065
IC402	8-759-607-78	CX778
IC403	8-759-140-11	μPD4011C
IC404	8-759-100-67	UPA67C
IC405	8-757-611-00	CX761A
IC406	8-759-920-10	IR2E01
IC501, 551	8-759-652-14	M5214L
IC601	8-759-745-60	NJM4560D

Diodes

D101-103	8-719-815-55	1S1555
D301, 302	8-719-912-27	KV1226
D303, 304	8-712-600-00	1T26
D305	8-719-931-16	EQB01-16
D306-319	8-719-815-55	1S1555
D402	8-719-912-00	MV-12N
D403-412	8-719-815-55	1S1555
D416-419	8-719-815-55	1S1555
D420-424	8-719-922-41	SLP241B
D425	8-719-900-41	SLP141B
D426-433	8-719-311-12	SEL1112R
D434	8-719-812-41	TLR124
D701, 751	8-719-815-55	1S1555
D703, 753		
D704, 754		
D705		
D702, 752	8-719-300-11	SV04S
D801	8-719-504-40	S4VB40
D802-805	8-719-200-02	10E2
D806	8-719-931-05	EQB01-05
D807, 808	8-719-200-02	10E2

- Items marked "⚡" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Note: The components identified by shading and mark ⚡ are critical for safety. Replace only with part number specified.

Ref. No. Part No. Description

D809, 810	8-719-91-1-30	EQB01-30
D811, 812	8-719-91-1-06	EQB01-06

CAPACITORS

All capacitors are in μ F. Common capacitors are omitted. Refer to the lists on pages 44 and 45 for their part numbers.

C801-804	Δ 1-108-315-00	0.047	100V	mylar
C807, 808	Δ 1-102-314-00	0.01	250V	ceramic
C818	Δ 1-161-310-51	0.01	25V	film
C809-811	Δ 1-161-310-51	0.01	25V	film
C819, 820	Δ 1-123-515-00	330	50V	electrolytic

CT301, 302	1-141-110-00	Trimmer
CT303, 304	1-141-111-00	Trimmer

RESISTORS

All resistors are in ohms. Common $\frac{1}{4}$ W carbon resistors are omitted. Refer to the list on page 46 for their part numbers.

R101	Δ 1-247-107-00	1.00	$\frac{1}{4}$ W	carbon (nonflammable)
R142, 143	Δ 1-247-107-00	1.00	$\frac{1}{4}$ W	carbon (nonflammable)
R201	Δ 1-247-107-00	1.00	$\frac{1}{4}$ W	carbon (nonflammable)
R314	Δ 1-247-111-00	1.50	$\frac{1}{4}$ W	carbon (nonflammable)
R322	Δ 1-247-107-00	1.00	$\frac{1}{4}$ W	carbon (nonflammable)

R328	Δ 1-212-863-00	1.8	$\frac{1}{4}$ W	fusible (nonflammable)
R617	Δ 1-247-216-00	1.00	$\frac{1}{2}$ W	carbon (nonflammable)
R620	Δ 1-247-216-00	1.00	$\frac{1}{2}$ W	carbon (nonflammable)
R704, 754	Δ 1-247-138-00	2k	$\frac{1}{4}$ W	carbon (nonflammable)
R705, 755	Δ 1-247-138-00	2k	$\frac{1}{4}$ W	carbon (nonflammable)

Ref. No. Part No. Description

R711, 761	Δ 1-247-107-00	100	$\frac{1}{4}$ W	carbon (nonflammable)
R715, 765	Δ 1-247-107-00	100	$\frac{1}{4}$ W	carbon (nonflammable)
R716, 766	Δ 1-247-107-00	100	$\frac{1}{4}$ W	carbon (nonflammable)
R713, 763	Δ 1-247-114-00	200	$\frac{1}{4}$ W	carbon (nonflammable)
R714, 764	Δ 1-247-114-00	200	$\frac{1}{4}$ W	carbon (nonflammable)

R718, 768	Δ 1-247-083-00	10	$\frac{1}{4}$ W	carbon (nonflammable)
R725, 775	Δ 1-217-157-00	0.33	5W	metal oxide
R726, 776	Δ 1-217-157-00	0.33	5W	metal oxide
R727, 777	1-244-825-00	10	$\frac{1}{2}$ W	carbon
R728, 778	1-244-817-00	4.7	$\frac{1}{2}$ W	carbon
R742, 792	Δ 1-247-083-00	10	$\frac{1}{4}$ W	carbon (nonflammable)

R801	Δ 1-247-119-00	330	$\frac{1}{4}$ W	carbon (nonflammable)
R802	Δ 1-247-079-00	4.7	$\frac{1}{4}$ W	carbon (nonflammable)
R804	Δ 1-247-119-00	330	$\frac{1}{4}$ W	carbon (nonflammable)
R806	Δ 1-247-079-00	4.7	$\frac{1}{4}$ W	carbon (nonflammable)
R807	Δ 1-206-475-00	33	2W	metal oxide (nonflammable)

R808, 809	Δ 1-247-107-00	100	$\frac{1}{4}$ W	carbon (nonflammable)
R820	Δ 1-206-652-00	330	2W	metal oxide (nonflammable)
R824	Δ 1-247-091-00	22	$\frac{1}{4}$ W	carbon (nonflammable)
R902, 903	1-213-139-00	470	1W	metal oxide (nonflammable)

RT101-103	Δ 1-226-238-00	50k-B, adjustable; signal meter, FM tuning level, FM muting level, stereo separation, A-M muting level
RT201, 301	Δ 1-226-238-00	50k-B, adjustable; signal meter, FM tuning level, FM muting level, stereo separation, A-M muting level
RT202	1-226-235-00	5k-B, adjustable; VCO
RT401, 402	1-226-427-00	500-B, adjustable; PLL

RV601, 651	1-226-265-00	100k/100k, variable; BALANCE
RV602, 652	1-226-738-00	250k/250k-B, variable; VOLUME
RV603, 653	1-226-267-00	100k/100k, variable; TREBLE
RV604, 654	1-226-268-00	100k/100k, variable; BASS

Ref. No. Part No. Description

RV701, 751	1-226-233-00	1k-B, adjustable; dc balance
RV702, 752	1-226-237-00	20k-B, adjustable; dc bias

MISCELLANEOUS

CF101-104	1-527-344-91	Filter, ceramic
CF301	1-527-403-00	Filter, mechanical
CF302	1-527-732-00	Filter, ceramic
CNJ903	1-507-649-00	Jack, HEADPHONES
CNP901	Δ 1-534-817-31	Cord, power (AEP model)
	Δ 1-551-884-00	Cord, power (UK model)

F801	Δ 1-532-203-00	Fuse, 2A
FE101	1-463-335-00	Front End
FLD401	1-519-209-00	Tube, fluorescent-display
IFT101	1-404-258-00	Transformer, discriminator
IFT301	1-409-323-00	Coil, mechanical-filter (PRI)

IFT302	1-409-324-00	Coil, mechanical-filter (SEC)
IFT303	1-404-266-00	Transformer, a-m IF
J901-906	Δ 1-507-637-21	Jack, phono; 6-unit
J951-956	Δ 1-507-637-21	Jack, phono; 6-unit
L301	1-407-169-XX	100 μ H, microinductor

L302	1-407-173-XX	220 μ H, microinductor
L303	1-405-927-00	Coil, MW OSC
L304	1-405-914-00	Coil, LW OSC
L305	1-407-176-XX	390 μ H, microinductor
L701, 751	1-420-838-00	Coil, air-wound

L901	1-401-888-00	Antenna, LW/MW ferrite-rod
LPF101	1-231-729-00	Filter, lowpass
LPF201	1-231-574-00	Filter, lowpass
PL901-906	1-518-331-81	Lamp, pilot; 6V 35mA
RY701	Δ 1-553-227-00	Relay

S7-9	1-553-184-00	Switch, pushbutton; LOW FILTER, MODE, LOUDNESS
S10, 11	Δ 1-553-483-00	Switch, rotary; POWER/SPEAKERS
S12-15	1-553-181-00	Switch, pushbutton; TUNING LEVEL
S401-413	1-552-539-00	Switch, keyboard; FM/MW/LW, MEMORY, MEMORY SCAN, TUNING, preset 1-8

TP901	Δ 1-446-842-00	Transformer, power (AEP model)
	Δ 1-446-843-00	Transformer, power (UK model)

Ref. No. Part No. Description

X401	1-527-731-00	Crystal, quartz
	Δ 1-533-131-00	Holder, fuse

COMPLETE CIRCUIT BOARDS

A-4358-069-A	Equalizer
A-4382-064-A	Tuner
A-4388-242-A	Power Amp
A-4472-049-A	Display
A-4477-043-A	Tone-Control
A-4477-044-A	VOLUME-Control
A-4483-010-A	Control

PRINTED CIRCUIT BOARDS

1-602-265-00	Input
1-602-267-00	Headphone
1-602-268-00	POWER/SPEAKERS Switch
1-603-377-00	Switch, Muting

ACCESSORIES AND PACKING MATERIALS

Part No.	Description
1-501-161-00	Antenna, FM-feeder
3-701-630-00	Bag, plastic
3-783-168-11	Manual, instruction
3-795-036-11	Manual, instruction (Dutch and Swedish)
4-809-251-00	Bag, plastic
4-866-398-00	Cushion, top (front)
4-866-399-00	Cushion, bottom (left)
4-868-730-00	Carton
4-868-713-00	Cushion, top (back)
4-868-714-00	Cushion, bottom (right)

SONY-STANDARD CAPACITORS AND RESISTORS

ELECTROLYTIC CAPACITORS

CAP. (μF)	RATING → : Use the high voltage rated one.					
	6.3 VOLT. PART No.	10 VOLT. PART No.	16 VOLT. PART No.	25 VOLT. PART No.	35 VOLT. PART No.	50 VOLT. PART No.
0.47					→	1-121-726-00
1.0					→	1-121-391-00
2.2					→	1-121-450-00
3.3	→	→	→	1-121-392-00	→	1-121-393-00
4.7	→	→	→	1-121-395-00	→	1-121-396-00
10	→	→	1-121-651-00	1-121-398-00	→	1-121-738-00
22	→	→	1-121-479-00	1-121-480-00	1-121-662-00	1-121-152-00
33	→	→	1-121-403-00	1-121-404-00	1-121-652-00	1-121-405-00
47	→	1-121-352-00	1-121-409-00	1-121-410-00	1-121-653-00	1-121-411-00
100	→	1-121-414-00	1-121-415-00	1-121-416-00	1-121-357-00	1-121-417-00
220	1-121-417-00	1-121-420-00	1-121-421-00	1-121-422-00	1-121-261-00	1-121-423-00
330	1-121-751-00	1-121-805-00	1-121-521-00	1-121-654-00	1-121-655-00	1-121-656-00
470	1-121-424-00	1-121-425-00	1-121-426-00	1-121-733-00	1-121-361-00	1-121-810-00
1000	→	1-121-736-00	1-121-245-00	1-121-657-00	1-121-388-00	1-123-061-00
2200	1-121-658-00	1-121-659-00	1-121-660-00	1-123-067-00	1-121-984-00	
3300	1-121-661-00	1-123-075-00	1-123-071-00	→	→	→

CAP. (μF)	100 VOLT. PART No.	160 VOLT. PART No.	250 VOLT. PART No.	350 VOLT. PART No.
	PART No.	PART No.	PART No.	PART No.
0.47	→	→	→	→
1.0	1-123-249-00	1-123-252-00	1-123-003-00	1-121-168-00
2.2	1-123-250-00	1-123-026-00	→	1-123-028-00
3.3	1-121-995-00	→	1-123-004-00	1-123-006-00
4.7	1-123-255-00	1-121-246-00	1-121-759-00	1-123-007-00
10	1-121-126-00	1-121-999-00	1-123-254-00	1-123-008-00
22	1-121-996-00	1-123-253-00	1-123-005-00	1-123-022-00
33	1-121-997-00	1-121-757-00	→	→
47	1-123-251-00	1-121-919-00	→	→
100	1-123-084-00	→	→	→

CERAMIC CAPACITORS

CAP. (pF)	RATING					
	50 VOLT. PART No.	CAP. (pF)	50 VOLT. PART No.	CAP. (pF)	50 VOLT. PART No.	CAP. (pF)
0.5	1-101-837-00	22	1-102-959-00	150	1-101-361-00	0.001
0.75	1-101-586-00	24	1-102-960-00	160	1-101-367-00	0.0012
1.0	1-102-934-00	27	1-102-961-00	180	1-102-976-00	0.0015
1.5	1-101-576-00	30	1-102-962-00	200	1-102-977-00	0.0018
2.0	1-102-935-00	33	1-102-963-00	220	1-102-978-00	0.0022
3	1-102-936-00	36	1-102-964-00	240	1-102-979-00	0.0027
4	1-102-937-00	39	1-102-965-00	270	1-102-980-00	0.0033
5	1-102-942-00	43	1-102-966-00	300	1-102-981-00	0.0039
6	1-102-943-00	47	1-101-880-00	330	1-102-820-00	0.0047
7	1-102-944-00	51	1-101-882-00	360	1-102-821-00	0.0056
8	1-102-945-00	56	1-101-884-00	390	1-102-822-00	0.0068
9	1-102-946-00	62	1-101-886-00	430	1-102-823-00	0.0082
10	1-102-947-00	68	1-101-888-00	470	1-102-824-00	0.01
11	1-102-948-00	75	1-101-890-00	510	1-101-059-00	0.022
12	1-102-949-00	82	1-102-971-00	560	1-102-115-00	0.047
13	1-102-950-00	91	1-102-972-00	680	1-102-116-00	
15	1-102-951-00	100	1-102-973-00	820	1-102-117-00	
16	1-102-952-00	110	1-102-815-00			
18	1-102-953-00	120	1-102-816-00			
20	1-102-958-00	130	1-101-081-00			

0.001μF = 1,000pF

CERAMIC (SEMICONDUCTOR) CAPACITORS

CAP. (μF)	RATING → : Use the high voltage rated one.				
	25 VOLT. PART No.	50 VOLT. PART No.	CAP. (μF)	25 VOLT. PART No.	50 VOLT. PART No.
0.001	→	1-161-039-00	0.018	1-161-016-00	1-161-054-00
0.0012	→	1-161-040-00	0.022	1-161-017-00	1-161-055-00
0.0015	→	1-161-041-00	0.027	1-161-018-00	1-161-056-00
0.0018	→	1-161-042-00	0.033	1-161-019-00	1-161-057-00
0.0022	→	1-161-043-00	0.039	1-161-010-00	1-161-058-00
0.0027	→	1-161-044-00	0.047	1-161-021-00	1-161-059-00
0.0033	→	1-161-045-00	0.056	→	1-161-060-00
0.0039	→	1-161-046-00	0.068	→	1-161-061-00
0.0047	→	1-161-047-00	0.082	1-161-024-00	1-161-062-00
0.0056	→	1-161-048-00	0.1	1-161-025-00	1-161-063-00
0.0068	→	1-161-049-00			
0.0082	1-161-012-00	1-161-050-00			
0.01	1-161-013-00	1-161-051-00			
0.012	→	1-161-052-00			
0.015	1-161-015-00	1-161-053-00			

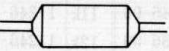
MYLAR CAPACITORS

CAP. (μF)	RATING								
	50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.	CAP. (μF)	50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.	CAP. (μF)	50 VOLT. PART No.
0.001	1-108-227-00	1-108-365-00	1-108-409-00	0.01	1-108-239-00	1-108-377-00	1-108-421-00	0.1	1-108-251-00
0.0012	1-108-351-00	1-108-366-00	1-108-410-00	0.012	1-108-357-00	1-108-378-00	1-108-422-00	0.12	1-108-363-00
0.0015	1-108-228-00	1-108-367-00	1-108-411-00	0.015	1-108-240-00	1-108-379-00	1-108-423-00	0.15	1-108-252-00
0.0018	1-108-352-00	1-108-368-00	1-108-412-00	0.018	1-108-358-00	1-108-380-00	1-108-424-00	0.18	1-108-364-00
0.0022	1-108-230-00	1-108-369-00	1-108-413-00	0.022	1-108-242-00	1-108-381-00	1-108-425-00	0.22	1-108-254-00
0.0027	1-108-353-00	1-108-370-00	1-108-414-00	0.027	1-108-359-00	1-108-382-00	1-108-426-00	0.27	1-108-854-00
0.0033	1-108-232-00	1-108-371-00	1-108-415-00	0.033	1-108-244-00	1-108-383-00	1-108-427-00	0.33	1-108-855-00
0.0039	1-108-354-00	1-108-372-00	1-108-416-00	0.039	1-108-360-00	1-108-384-00	1-108-428-00	0.39	1-108-856-00
0.0047	1-108-234-00	1-108-373-00	1-108-417-00	0.047	1-108-246-00	1-108-385-00	1-108-429-00	0.47	1-108-857-00
0.0056	1-108-355-00	1-108-374-00	1-108-418-00	0.056	1-108-361-00	1-108-386-00	1-108-430-00		
0.0068	1-108-237-00	1-108-375-00	1-108-419-00	0.068	1-108-249-00	1-108-387-00	1-108-431-00		
0.0082	1-108-356-00	1-108-376-00	1-108-420-00	0.082	1-108-362-00	1-108-388-00	1-108-432-00		



TANTALUM CAPACITORS

CAP. (μF)	RATING → : Use the high voltage rated one.						
	3.15 VOLT. PART No.	6.3 VOLT. PART No.	10 VOLT. PART No.	16 VOLT. PART No.	20 VOLT. PART No.	25 VOLT. PART No.	35 VOLT. PART No.
0.01					→	→	1-131-396-00
0.015					→	→	1-131-397-00
0.022					→	→	1-131-398-00
0.033					→	→	1-131-399-00
0.047					→	→	1-131-400-00
0.068					→	→	1-131-401-00
0.1					→	→	1-131-402-00
0.15					→	→	1-131-403-00
0.22					→	→	1-131-404-00
0.33					→	1-131-409-00	1-131-405-00
0.47	→	→	→	→	1-131-412-00	→	1-131-406-00
0.68	→	→	→	1-131-415-00	→	1-131-410-00	1-131-407-00
1.0	→	→	1-131-418-00	→	1-131-413-00	→	1-131-408-00
1.5	→	1-131-421-00	→	1-131-416-00	→	1-131-411-00	1-131-348-00
2.2	1-131-424-00	→	1-131-419-00	→	1-131-414-00	1-131-355-00	1-131-349-00
3.3	→	1-131-422-00	→	1-131-417-00	1-131-362-00	1-131-356-00	1-131-350-00
4.7	1-131-425-00	→	1-131-420-00	1-131-369-00	1-131-363-00	1-131-357-00	1-131-351-00
6.8	→	1-131-423-00	1-131-376-00	1-131-370-00	1-131-364-00	1-131-358-00	1-131-352-00
10	1-131-426-00	1-131-383-00	1-131-377-00	1-131-371-00	1-131-365-00	1-131-359-00	1-131-353-00
15	1-131-390-00	1-131-384-00	1-131-378-00	1-131-372-00	1-131-366-00	1-131-360-00	→
22	1-131-391-00	1-131-385-00	1-131-379-00	1-131-373-00	1-131-367-00		
33	1-131-392-00	1-131-386-00	1-131-380-00	1-131-374-00			
47	1-131-393-00	1-131-387-00	1-131-381-00	→			
68	1-131-394-00	1-131-388-00	→	→			
100	1-131-395-00	→	→	→			



TANTALUM CAPACITORS

CAP. (μF)	RATING					
	3 VOLT. PART No.	6.3 VOLT. PART No.	10 VOLT. PART No.	16 VOLT. PART No.	20 VOLT. PART No.	35 VOLT. PART No.
0.033						1-131-273-00
0.047						1-131-274-00
0.068						1-131-275-00
0.1						1-131-276-00
0.15						1-131-277-00
0.22					1-131-262-00	1-131-278-00
0.33					1-131-263-00	1-131-279-00
0.47			1-131-169-00		1-131-264-00	1-131-280-00
0.68			→	1-131-258-00	1-131-265-00	1-131-281-00
1.0			1-131-254-00	→	1-131-266-00	1-131-282-00
1.5		1-131-250-00	→	→	1-131-267-00	1-131-283-00
2.2		→	→	1-131-259-00	1-131-268-00	1-131-284-00
3.3		→	1-131-255-00	→	1-131-269-00	→
4.7		1-131-251-00	1-131-171-00	→	1-131-270-00	→
6.8		→	→	1-131-260-00	1-131-271-00	→
10	→		1-131-256-00	→	1-131-272-00	→
15	→	1-131-252-00	→	1-131-261-00		
22	→	→	1-131-257-00	→		
33	1-131-176-00	1-131-253-00	1-131-173-00	→		
47	1-131-288-00	1-131-174-00	→	→		
100	1-131-177-00					

1/16 WATT CARBON RESISTOR

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
2.0	—	13	—	91	1-210-354-00	620	1-210-367-00	4.3k	1-209-772-00	30k	1-210-380-00
2.2	—	15	—	100	1-210-355-00	680	1-210-106-00	4.7k	1-209-773-00	33k	1-210-381-00
2.4	—	16	—	110	1-210-356-00	750	1-210-107-00	5.1k	1-209-774-00	36k	1-210-394-00
2.7	—	18	1-211-688-00	120	1-210-357-00	820	1-210-108-00	5.6k	1-209-775-00	39k	1-210-382-00
3.0	—	20	—	130	1-210-358-00	910	1-210-368-00	6.2k	1-209-776-00	43k	1-210-383-00
3.3	—	22	—	150	1-210-102-00	1.0k	1-204-122-00	6.8k	1-209-777-00	47k	1-210-384-00
3.6	—	24	—	160	1-210-359-00	1.1k	1-210-369-00	7.5k	1-209-778-00	51k	1-210-385-00
3.9	—	27	—	180	1-210-360-00	1.2k	1-209-765-00	8.2k	1-209-779-00	56k	1-210-386-00
4.3	—	30	1-210-845-00	200	1-210-361-00	1.3k	1-210-370-00	9.1k	1-209-780-00	62k	1-210-387-00
4.7	—	33	1-210-846-00	220	1-210-362-00	1.5k	1-209-766-00	10k	1-209-781-00	68k	1-210-388-00
5.1	—	36	1-210-847-00	240	1-209-762-00	1.6k	1-210-371-00	11k	1-210-374-00	75k	1-210-389-00
5.6	—	39	1-210-848-00	270	1-210-363-00	1.8k	1-209-878-00	12k	1-210-111-00	82k	1-210-390-00
6.2	—	43	1-210-849-00	300	1-210-364-00	2.0k	1-209-767-00	13k	1-210-375-00	91k	1-210-391-00
6.8	—	47	1-210-395-00	330	1-209-763-00	2.2k	1-209-768-00	15k	1-210-112-00	100k	1-210-115-00
7.5	—	51	1-210-101-00	360	1-210-103-00	2.4k	1-209-769-00	16k	1-210-376-00	110k	—
8.2	—	56	1-210-351-00	390	1-210-365-00	2.7k	1-209-770-00	18k	1-210-113-00	120k	1-210-836-00
9.1	—	62	1-210-352-00	430	1-210-366-00	3.0k	1-210-372-00	20k	1-210-377-00	130k	—
10	—	68	1-210-353-00	470	1-209-764-00	3.3k	1-204-123-00	22k	1-210-114-00	150k	1-210-837-00
11	—	75	1-210-392-00	510	1-210-104-00	3.6k	1-210-373-00	24k	1-210-378-00	160k	—
12	—	82	1-210-393-00	560	1-210-105-00	3.9k	1-209-771-00	27k	1-210-379-00	180k	1-210-838-00

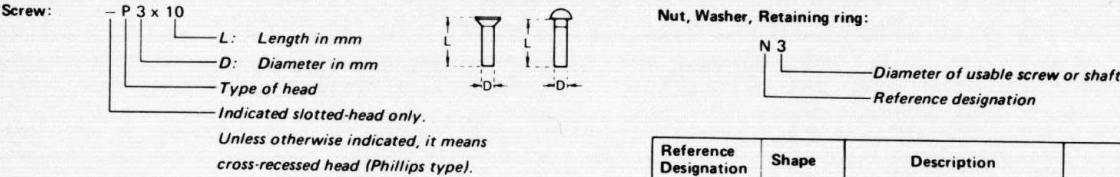
1/8 WATT CARBON RESISTOR

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
2.0	—	13	1-246-821-00	91	1-246-831-00	620	1-246-841-00	4.3k	1-246-851-00	30k	1-246-861-00
2.2	1-246-751-00	15	1-246-761-00	100	1-246-771-00	680	1-246-781-00	4.7k	1-246-791-00	33k	1-246-801-00
2.4	—	16	1-246-822-00	110	1-246-832-00	750	1-246-842-00	5.1k	1-246-852-00	36k	1-246-862-00
2.7	1-246-752-00	18	1-246-762-00	120	1-246-772-00	820	1-246-782-00	5.6k	1-246-792-00	39k	1-246-802-00
3.0	—	20	1-246-823-00	130	1-246-833-33	910	1-246-843-00	6.2k	1-246-853-00	43k	1-246-863-00
3.3	1-246-753-00	22	1-246-763-00	150	1-246-773-00	1.0k	1-246-783-00	6.8k	1-246-793-00	47k	1-246-803-00
3.6	—	24	1-246-824-00	160	1-246-834-00	1.1k	1-246-844-00	7.5k	1-246-854-00	51k	1-246-864-00
3.9	1-246-754-00	27	1-246-764-00	180	1-246-774-00	1.2k	1-246-784-00	8.2k	1-246-794-00	56k	1-246-804-00
4.3	—	30	1-246-825-00	200	1-246-835-00	1.3k	1-246-845-00	9.1k	1-246-855-00	62k	1-246-865-00
4.7	1-246-755-00	33	1-246-765-00	220	1-246-775-00	1.5k	1-246-785-00	10k	1-246-795-00	68k	1-246-805-00
5.1	—	36	1-246-826-00	240	1-246-836-00	1.6k	1-246-846-00	11k	1-246-856-00	75k	1-246-866-00
5.6	1-246-756-00	39	1-246-766-00	270	1-246-776-00	1.8k	1-246-786-00	12k	1-246-796-00	82k	1-246-806-00
6.2	—	43	1-246-827-00	300	1-246-837-00	2.0k	1-246-847-00	13k	1-246-857-00	91k	1-246-867-00
6.8	1-246-757-00	47	1-246-767-00	330	1-246-777-00	2.2k	1-246-787-00	15k	1-246-797-00	100k	1-246-807-00
7.5	1-246-818-00	51	1-246-828-00	360	1-246-838-00	2.4k	1-246-848-00	16k	1-246-858-00	110k	1-246-868-00
8.2	1-246-758-00	56	1-246-768-00	390	1-246-778-00	2.7k	1-246-788-00	18k	1-246-798-00	120k	1-246-808-00
9.1	1-246-819-00	62	1-246-829-00	430	1-246-839-00	3.0k	1-246-849-00	20k	1-246-859-00	130k	1-246-869-00
10	1-246-759-00	68	1-246-769-00	470	1-246-779-00	3.3k	1-246-789-00	22k	1-246-799-00	150k	1-246-809-00
11	1-246-820-00	75	1-246-830-00	510	1-246-840-00	3.6k	1-246-850-00	24k	1-246-860-00	160k	1-246-870-00
12	1-246-760-00	82	1-246-770-00	560	1-246-780-00	3.9k	1-246-790-00	27k	1-246-800-00	180k	1-246-810-00

1/4 WATT CARBON RESISTORS

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-476-00	13k	1-246-500-00	130k	1-246-524-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-477-00	15k	1-246-501-00	150k	1-246-525-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-478-00	16k	1-246-502-00	160k	1-246-526-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-479-00	18k	1-246-503-00	180k	1-246-527-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-480-00	20k	1-246-504-00	200k	1-246-528-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-481-00	22k	1-246-505-00	220k	1-246-529-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-482-00	24k	1-246-506-00	240k	1-246-530-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-483-00	27k	1-246-507-00	270k	1-246-531-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-484-00	30k	1-246-508-00	300k	1-246-532-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-485-00	33k	1-246-509-00	330k	1-246-533-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-486-00	36k	1-246-510-00	360k	1-246-534-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-487-00	39k	1-246-511-00	390k	1-246-535-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00

HARDWARE NOMENCLATURE



Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		brazer-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self-tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

Sony Corporation