

STR-232L

AEP Model

UK Model



FM STEREO/FM-AM RECEIVER

SPECIFICATIONS

GENERAL

Power Requirements:	240 V ac, 50 Hz (UK model) 120 V, 220 V or 240 V ac adjustable, 50 Hz (AEP model)
Power Consumption:	110 W (UK model) 95 W (AEP model)
Dimensions:	Approx. 410 (w) x 145 (h) x 305 (d) mm 16 (w) x 5 7/8 (h) x 12 (d) inches including projecting parts and controls.
Weight:	5.9 kg, 13 lb (net) Approx. 7.1 kg, 15 lb 11 oz (in shipping carton)


FM SECTION

Tuning Range:	87.5 – 108 MHz
Antenna:	300 Ω balanced 75 Ω unbalanced
Intermediate Frequency:	10.7 MHz
Sensitivity at 50dB Quieting:	4 μ V (12 dB) (MONO) 45 μ V (33 dB) (STEREO)

Sensitivity at 46dB Quieting:	4.5 μ V (13 dB) (MONO) 50 μ V (34 dB) (STEREO)
Usable Sensitivity:	1.9 μ V (5.5 dB), IHF 1.7 μ V (4.5 dB), S/N = 26 dB (40 kHz deviation)
S/N Ratio:	73 dB (MONO) 68 dB (STEREO)
Harmonic Distortion:	At 1 kHz 0.3 % (MONO) 0.5 % (STEREO)
IM Distortion:	0.3 % (MONO) 0.5 % (STEREO)
Separation:	45 dB at 1 kHz
Frequency Response:	40 – 12,500 Hz +0.5 -1.0 dB 30 – 15,000 Hz +0.5 -2.0 dB

– Continued on page 2 –

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

Selectivity: 55 dB (300 kHz, S/N = 26 dB, 40 kHz deviation)
Capture Ratio: 1.0 dB
AM Suppression Ratio: 54 dB
Image Response Ratio: 45 dB
Spurious Response Ratio: 75 dB
Muting Threshold: Approx. 5 μ V

MW/LW SECTION

Tuning Range: MW: 530 – 1,605 kHz
 LW: 150 – 350 kHz
Antenna: MW: External antenna terminal
 Built-in ferrite-rod antenna
 LW: External antenna terminal
 Built-in ferrite-rod antenna
Intermediate Frequency: 468 kHz
Usable Sensitivity: MW: 250 μ V/m (40 dB/m),
 built-in antenna (1,000 kHz)
 LW: 500 μ V/m (53.8 dB/m),
 built-in antenna (230 kHz)
 100 μ V (40 dB),
 external antenna (230 kHz)
S/N Ratio: MW: 52 dB at 5 mV
 LW: 52 dB at 5 mV
Harmonic Distortion: MW: 0.3 % at 5 mV, 400 Hz
 LW: 0.3 % at 5 mV, 400 Hz
Selectivity: 28 dB (9 kHz)

AUDIO AMPLIFIER SECTION

Continuous RMS Power

Output: Less than 0.7 % THD, both channels driven simultaneously
 At 40 – 20,000 Hz
 18 W + 18 W (8 Ω)
 At 1 kHz
 20 W + 20 W (8 Ω)
 According to DIN 45500
 20 W + 20 W (8 Ω)

Dynamic Power Output: IHF constant power supply method
 56 W at 8 Ω
Power Bandwidth: 10 – 40,000 Hz, IHF
Damping Factor: 20 at 1 kHz (8 Ω)
Harmonic Distortion: Less than 0.7 % at rated output
 Less than 0.3 % at 1 W output
IM Distortion: Less than 0.7 % at rated output
 (60Hz : 7kHz = 4 : 1)
Residual Noise: Less than 0.08 μ W at 8 Ω
Frequency Response: PHONO:
 RIAA equalization curve \pm 1.0 dB
 TAPE:
 10 – 50,000 Hz +1 dB
 -3 dB

Inputs:

	Sensitivity	Impedance	S/N	Weighting network
PHONO	2.5 mV (-50 dB)	50 k Ω	70 dB	A
TAPE	150 mV (-14.5 dB)	100 k Ω	90 dB	A

Measured with rated output power into 8 Ω loads (both channels driven simultaneously) at 1 kHz.

Outputs: (with rated input)

	Voltage	Impedance
REC OUT	150 mV (-14.5 dB)	10 k Ω

Headphones: Accepts all low or high impedance headphones.
Speaker: 8 – 16 Ω speakers are suitable.
Tone Controls: BASS: \pm 8 dB at 100 Hz
 TREBLE: \pm 8 dB at 10 kHz
Loudness Control: +8 dB at 100 Hz
 (att. 30dB) +3 dB at 10 kHz

0 dB = 0.775 V

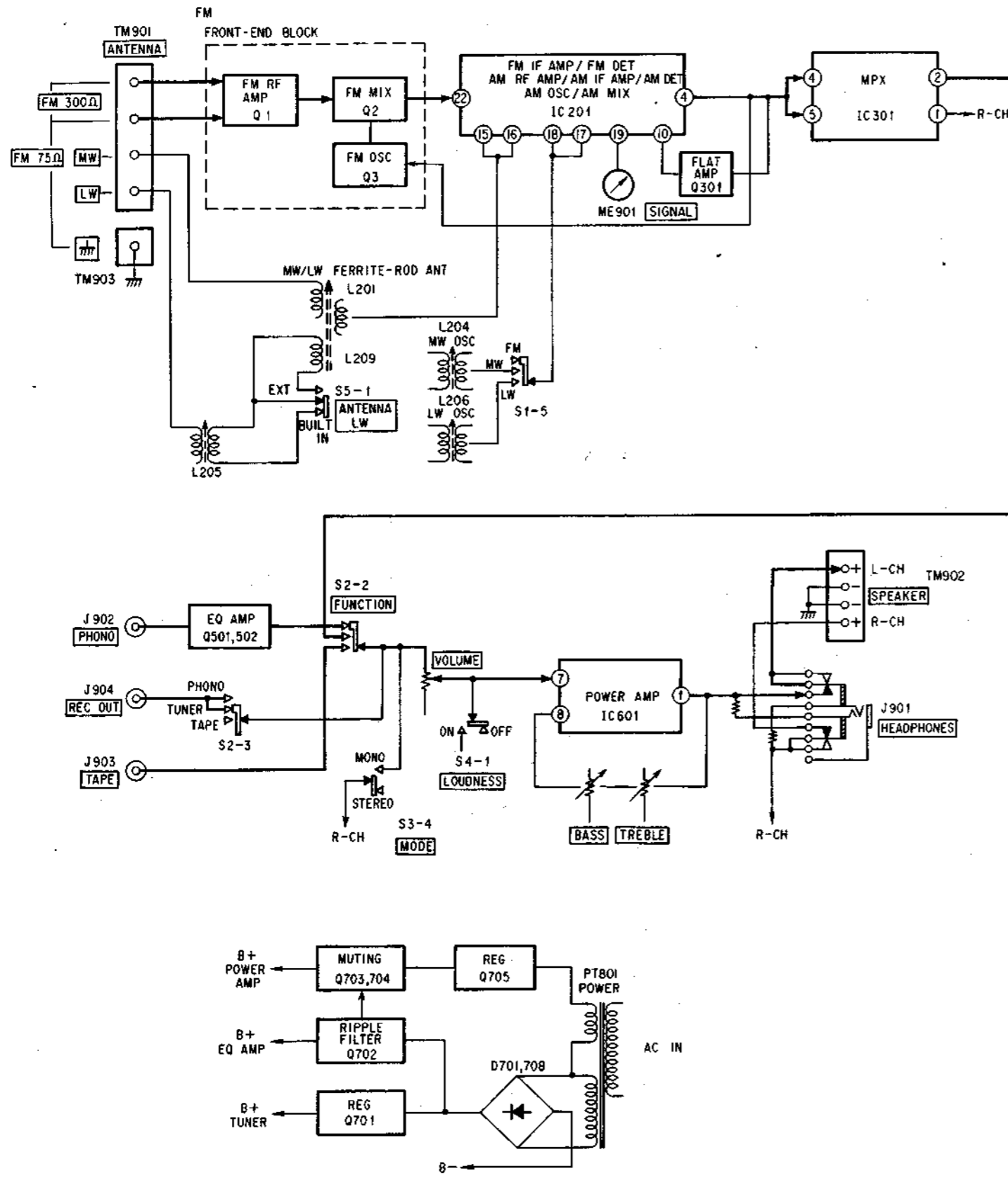
• MODEL IDENTIFICATION

– Voltage Selector –

Only in AEP models, the voltage selectors are installed.

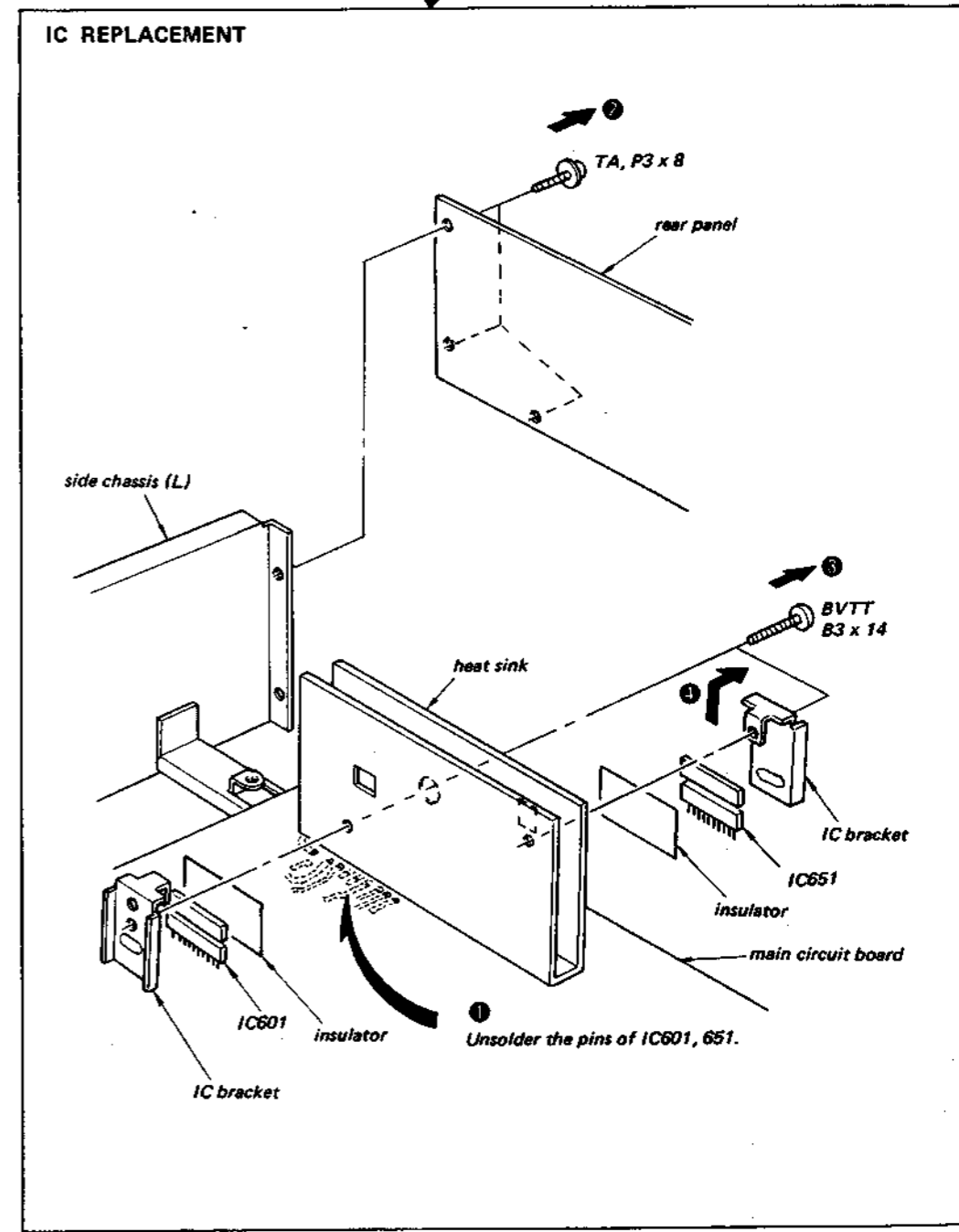
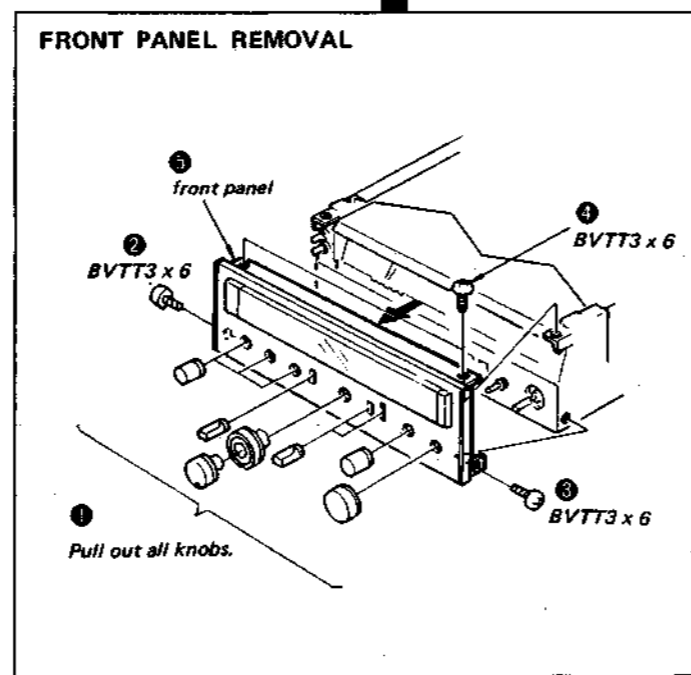
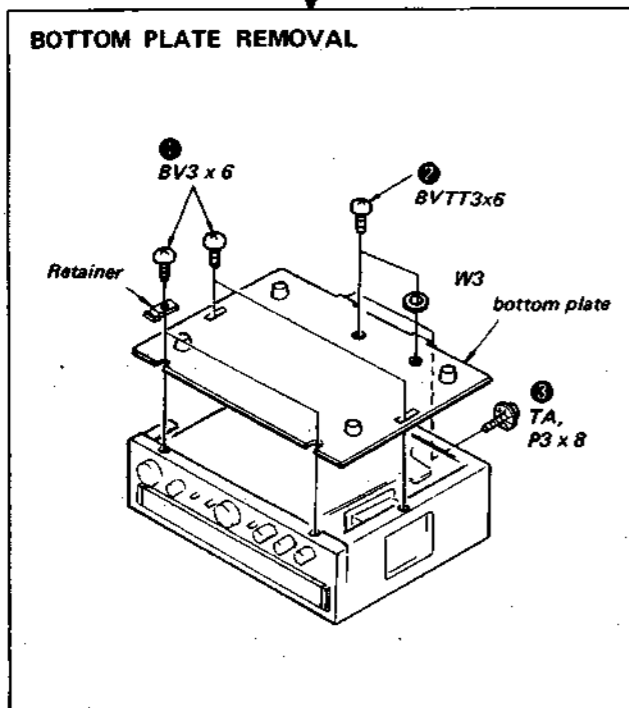
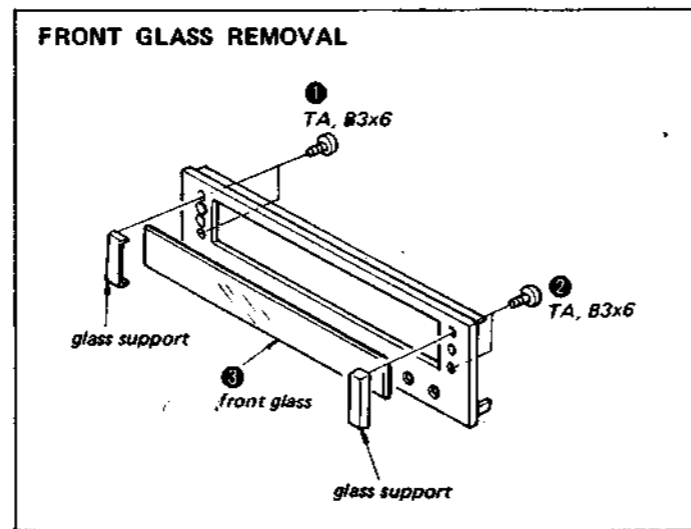
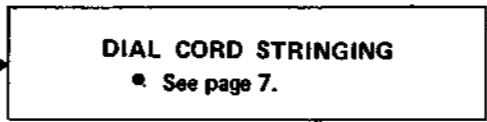
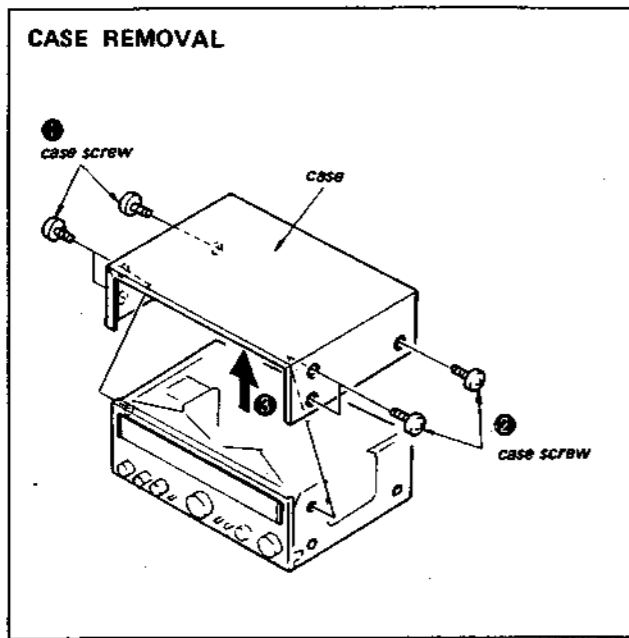
SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM



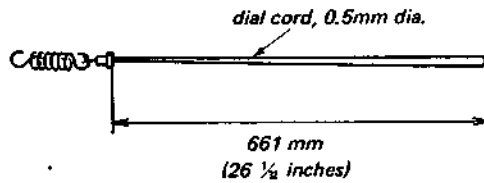
SECTION 2
DISASSEMBLY

• Follow the disassembly procedure in the numerical order given.



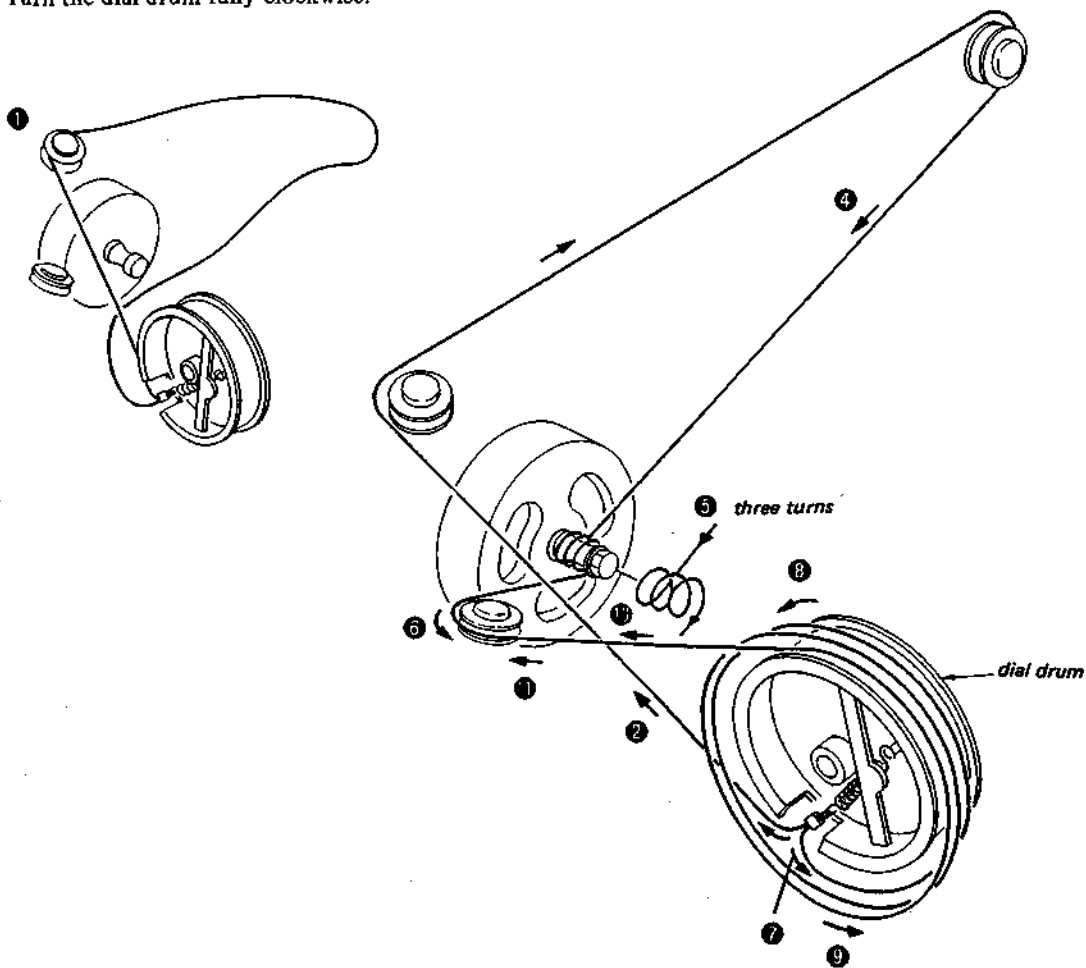
DIAL CORD STRINGING

1) Preparation



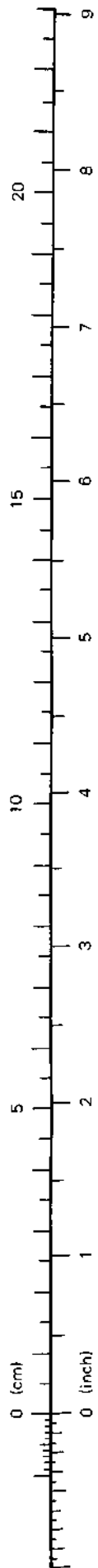
2) Stringing

- Turn the dial drum fully clockwise.



3) Dial Pointer Installation

1. Tune the receiver to the off-the-air signal.
2. Set the dial pointer to the frequency of the dial scale and install it.

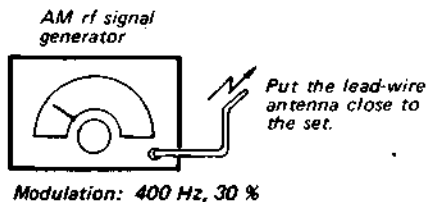
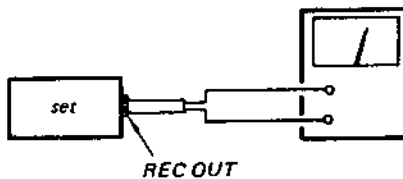


**SECTION 3
ADJUSTMENTS**

3-1. MW SECTION

Setting: **FUNCTION Selector:** TUNER
Band Selector: MW
MODE Selector: STEREO/FM-AM MUTE

VOM
(range: 0.5–5V ac)



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

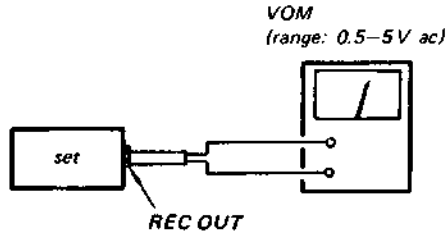
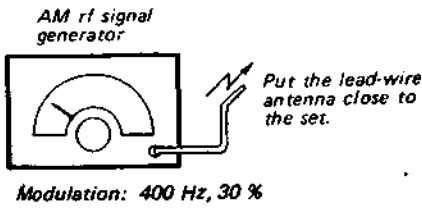
MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VOM.	
L201	600 kHz
CT203	1400 kHz

MW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VOM.	
CT201	1680 kHz
L204	520 kHz

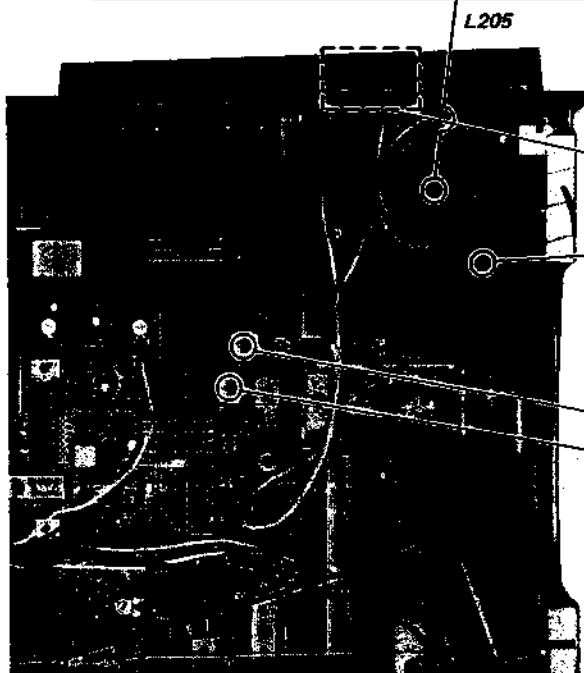
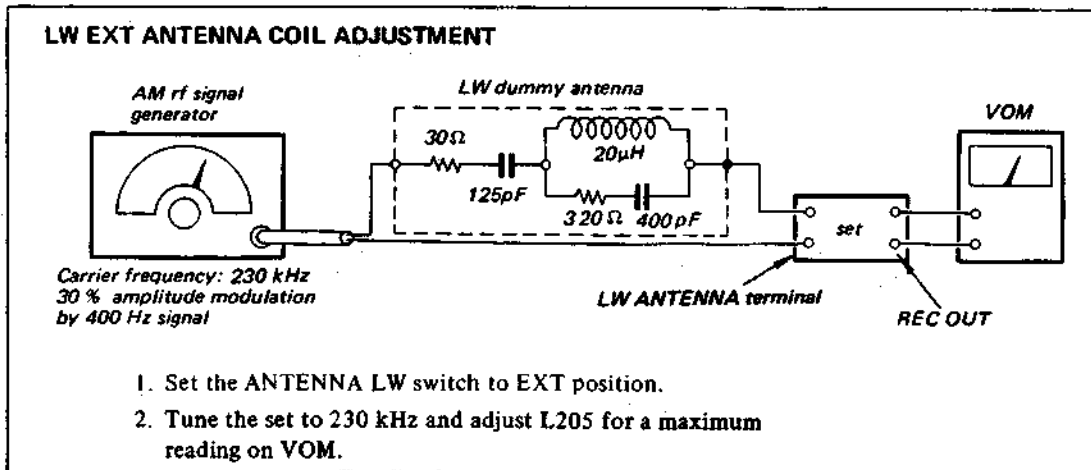
AM IF ALIGNMENT	
Adjust for a maximum reading on VOM.	
CFT201	

3-2. LW SECTION

Setting: FUNCTION Selector: TUNER
 Band Selector: LW
 MODE Selector: STEREO/FM-AM MUTE
 LW ANTENNA Selector: BUILT IN



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

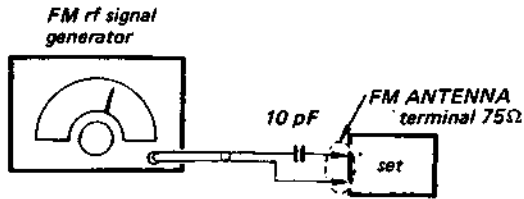


LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VOM.	
L209	170 kHz
CT204	310 kHz

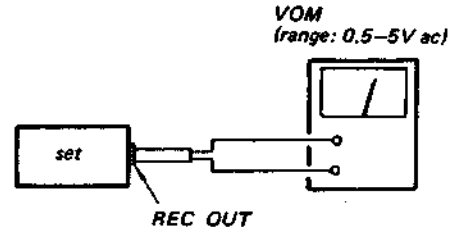
LW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VOM.	
CT202	365 kHz
L206	145 kHz

3-3. FM SECTION

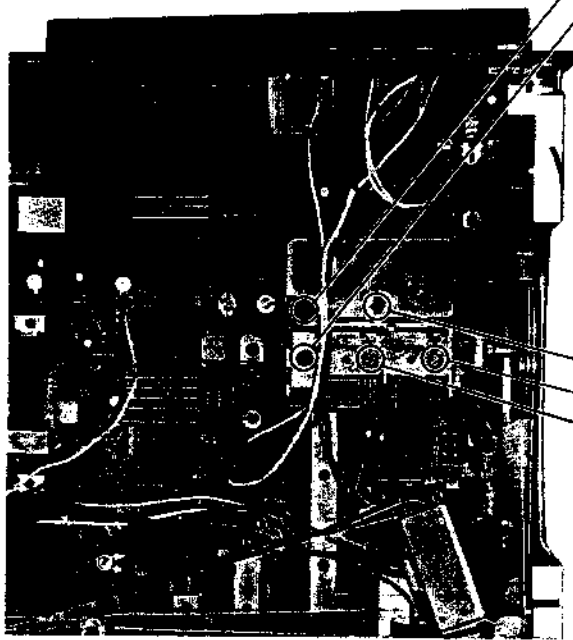
Setting: FUNCTION Selector: TUNER
 Band Selector: FM
 MODE Selector: STEREO/FM-AM MUTE



Modulation: 400 Hz, 40 kHz deviation (100%)



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



FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VOM.	
L3	87.1 MHz (87.5 MHz)
CT3	108.5 MHz (108 MHz)

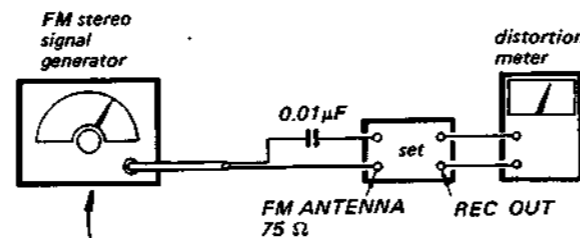
() : in West Germany

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VOM.	
L2	87.1 MHz (87.5 MHz)
CT1	108.5 MHz
CT2	(108 MHz)

() : in West Germany

FM DISCRIMINATOR ALIGNMENT 2

Setting: FUNCTION Selector: TUNER
Band Selector: FM
MODE Selector: MONO



Carrier frequency: 98 MHz
Output level: 1 mV (60 dB)
Modulation: 400 Hz, 40 kHz deviation (100%)

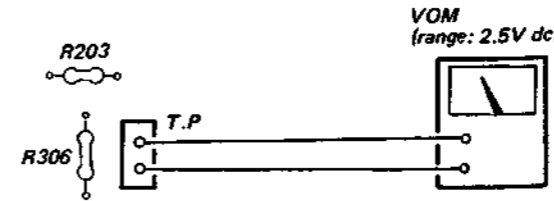
Procedure:

Adjust the black core (secondary side) of IFT201 for minimum distortion.

IFT201 (secondary side: black)

FM DISCRIMINATOR ALIGNMENT 1

Setting: FUNCTION Selector: TUNER
Band Selector: FM
MODE Selector: MONO
TUNING: Detuned position



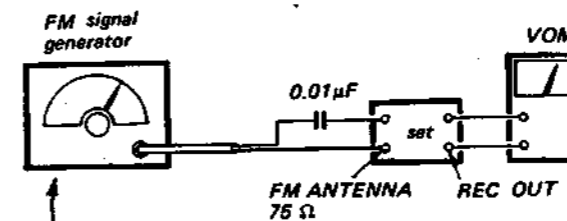
Procedure:

Adjust the blue core (primary-side) of IFT201 for 0 V reading on VOM.

Note: When replacing the ceramic filter (CF201), perform this alignment.

FM IF ALIGNMENT

Setting: FUNCTION Selector: TUNER
Band Selector: FM
MODE Selector: MONO



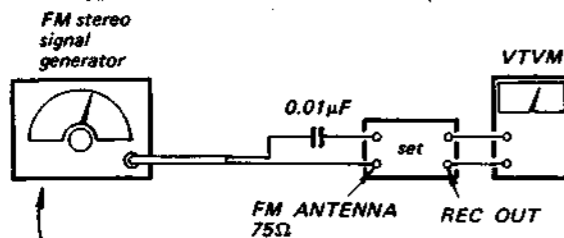
Carrier frequency: 98 MHz
Output level: 12.5 μV (22 dB)
Modulation: 400 Hz, 40 kHz deviation (100%)

Procedure:

Adjust IFT1 for maximum reading on the VOM.

FM STEREO SEPARATION ADJUSTMENT

Setting: FUNCTION Selector: TUNER
Band Selector: FM
MODE Selector: STEREO/FM-AM MUTE

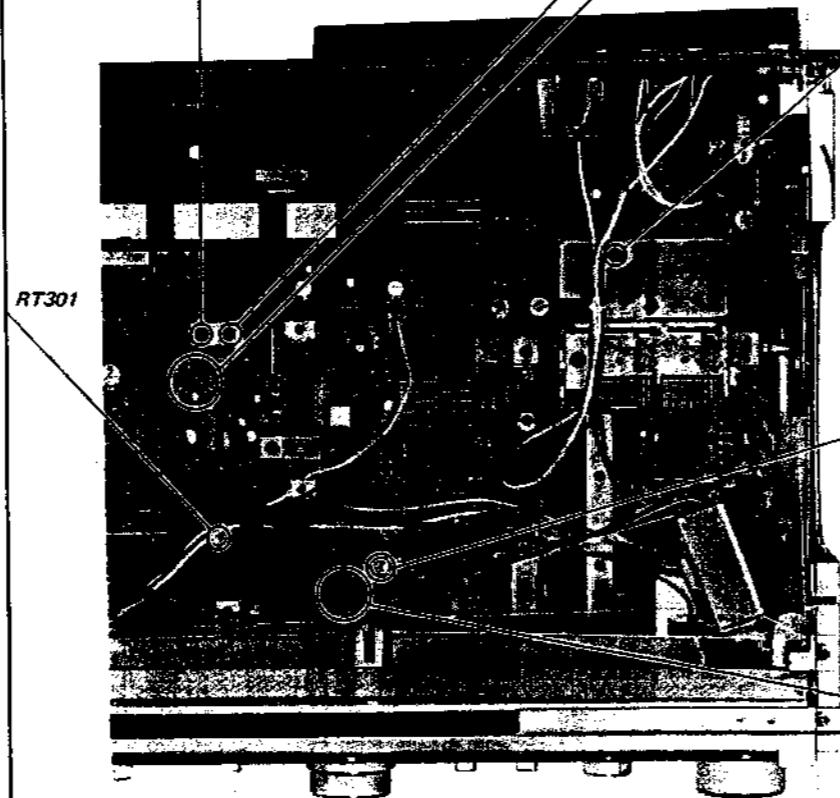


Carrier frequency: 98 MHz
Output level: 1 mV (60 dB)
Modulation:
Audio (400 Hz): 20 kHz deviation (50%)
Pilot (19 kHz): 6.3 kHz deviation (16%)
Sub channel (38 kHz): 20 kHz deviation (50%)

Procedure:

FM stereo signal generator output channel	VTVM connection	VTVM reading
L-CH	L-CH	(A)
R-CH	L-CH	(B)
R-CH	R-CH	(C)
L-CH	R-CH	(D)

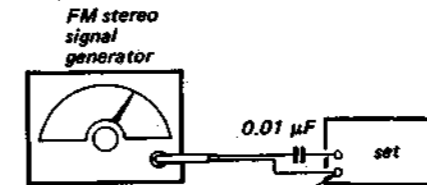
L-CH Stereo separation: (A) - (B)
R-CH Stereo separation: (C) - (D)
The difference between separations (A) - (B) and (C) - (D) are to be equal.



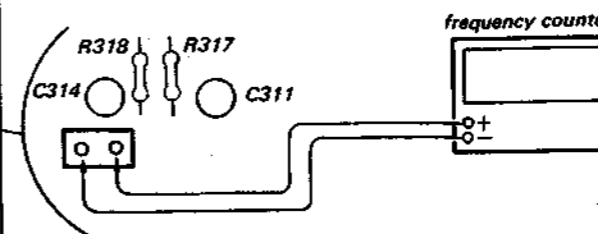
19kHz ADJUSTMENT

Setting: FUNCTION Selector: TUNER
Band Selector: FM
MODE Selector: STEREO/FM-AM MUTE

A) Regular Method



Carrier frequency: 98 MHz
Output level: 1 mV
Modulation: no modulation



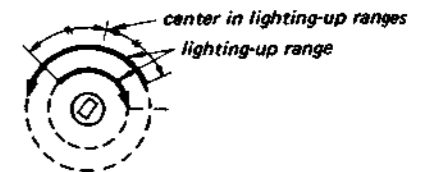
Procedure:

Adjust RT302 for 76 kHz ±100 Hz on the frequency counter.

B) Simple Method

Procedure:

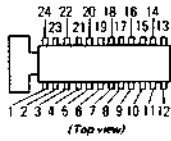
1. Turn the set to the FM stereo broadcasting signal.
2. Turn RT302 clockwise or counterclockwise and memorize the lighting-up range of STEREO lamp.
3. Secure RT302 at the center in lighting-up range of both turns as shown below.



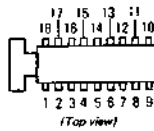
• Replacement Semiconductors

For replacement, use semiconductors except in ().

IC201: CX168



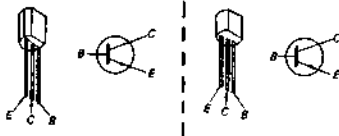
IC301: CX178



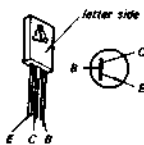
IC601, 651: HA1350S



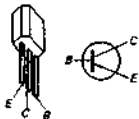
Q301, 702, 703 : 2SC1364
 Q501, 502 : 2SC1362 } (2SC1815)
 Q551, 552 : 2SC1362



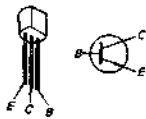
Q701: 2SD809



Q704: 2SA1027R (2SA844)



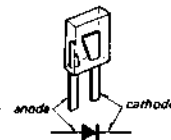
Q705: 2SC1475 (2SD789)



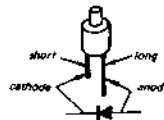
D201, 301, 302, 308, 309 : 1S1555
 D704, 706, 707, 709, 710 : 10E2
 D703 : 10E2



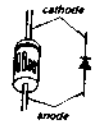
D303 : GL9PR21 (GL9PR)



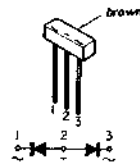
D304, 305, 306 : GL2PR1 (GL2PR)



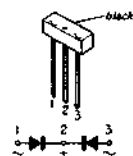
D307: EQB01-11Z (EQA01-11R)
 D702: EQB01-16 (EQA01-16R)
 D705: EQB01-26 (EQA01-26R)



D701: S3VC40R (S2VC20R)



D708: S3VC40 (S2VC20)

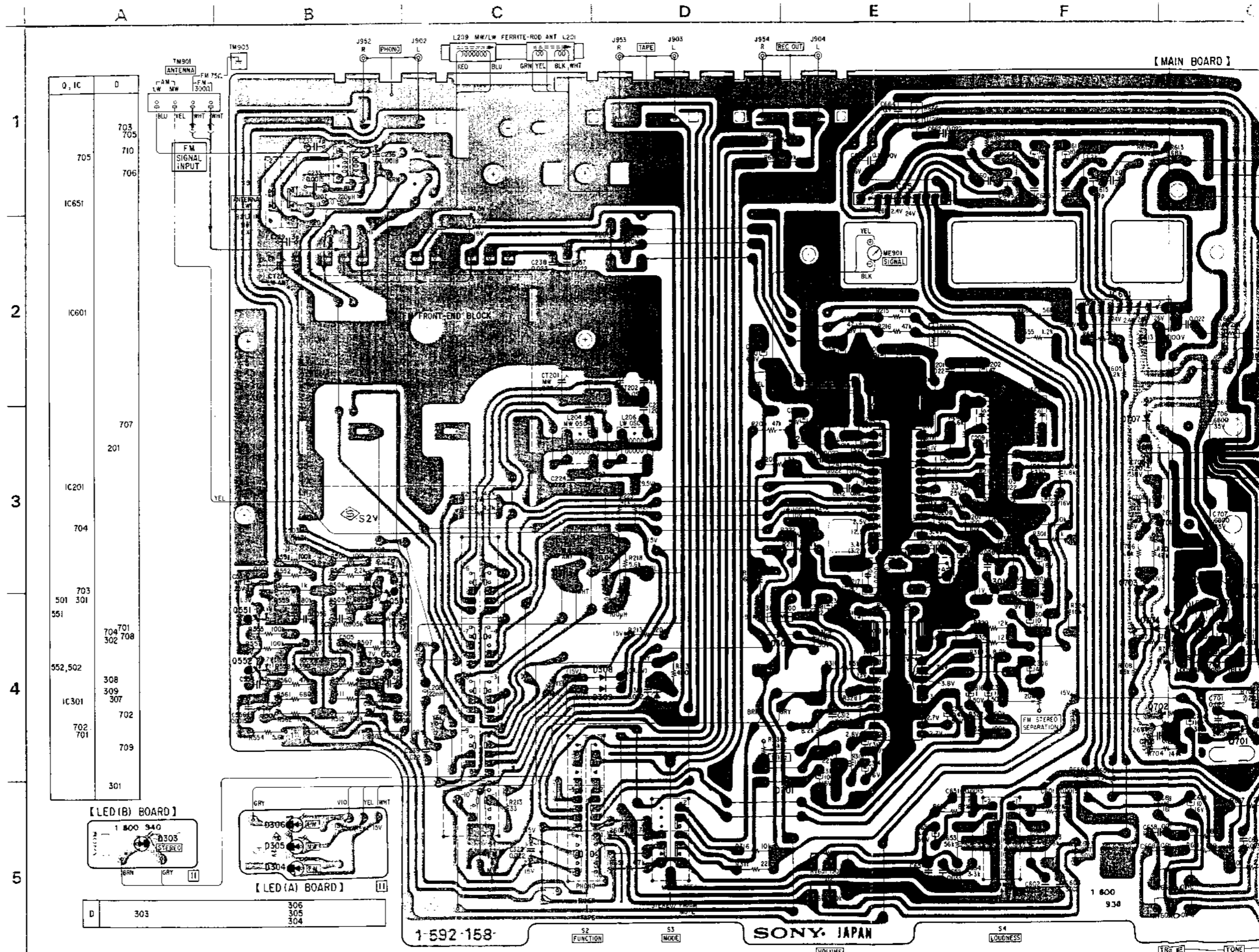


SECTION 4
DIAGRAMS

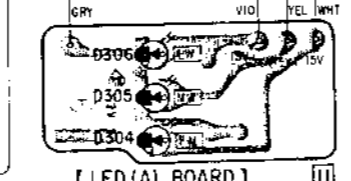
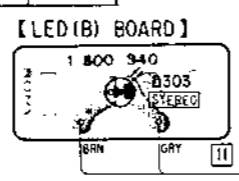
4-1. MOUNTING DIAGRAM
- Conductor Side -

Notes:

- [Symbol]: indicates side identified with part number.
- Color code of sleeving over the end of the jacket.
- [Symbol]: B+ pattern
- [Symbol]: B- pattern
- Signal Path
- L-CH
- R-CH
- Readings are taken under no-signal conditions with a VOM (20 k Ω /V).
- () : AM

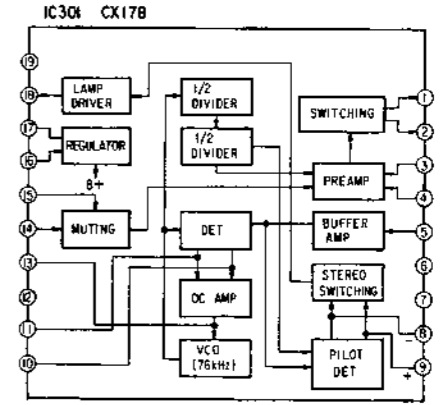
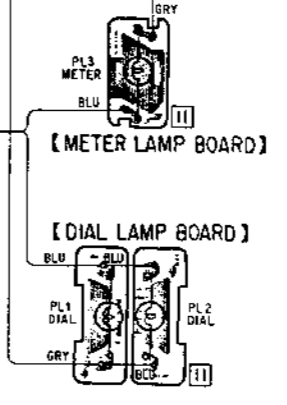
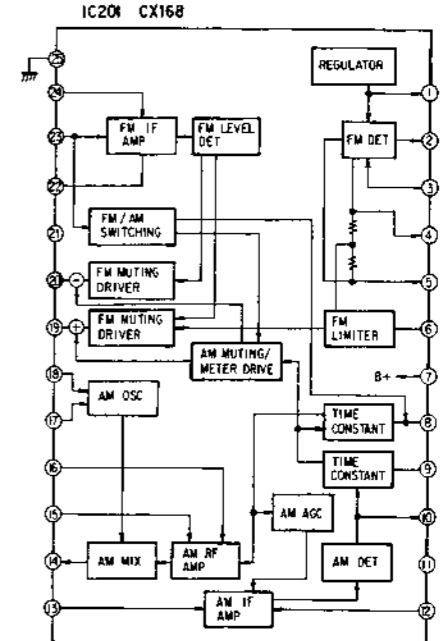
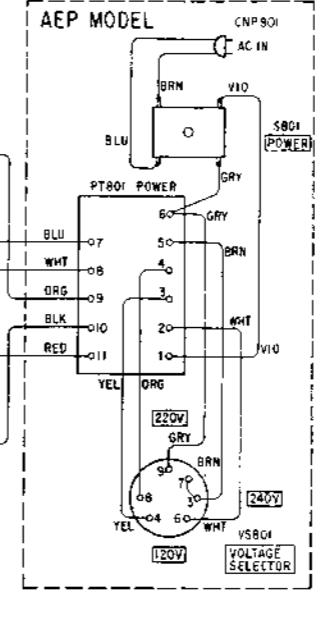
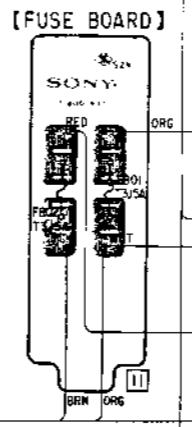
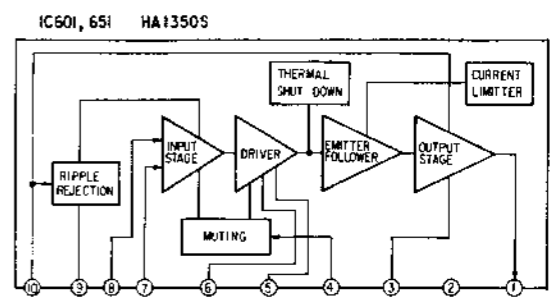
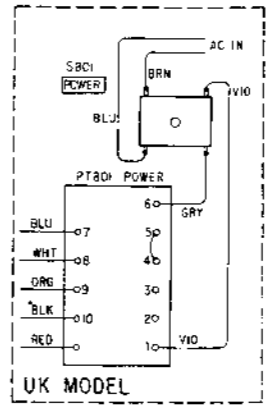
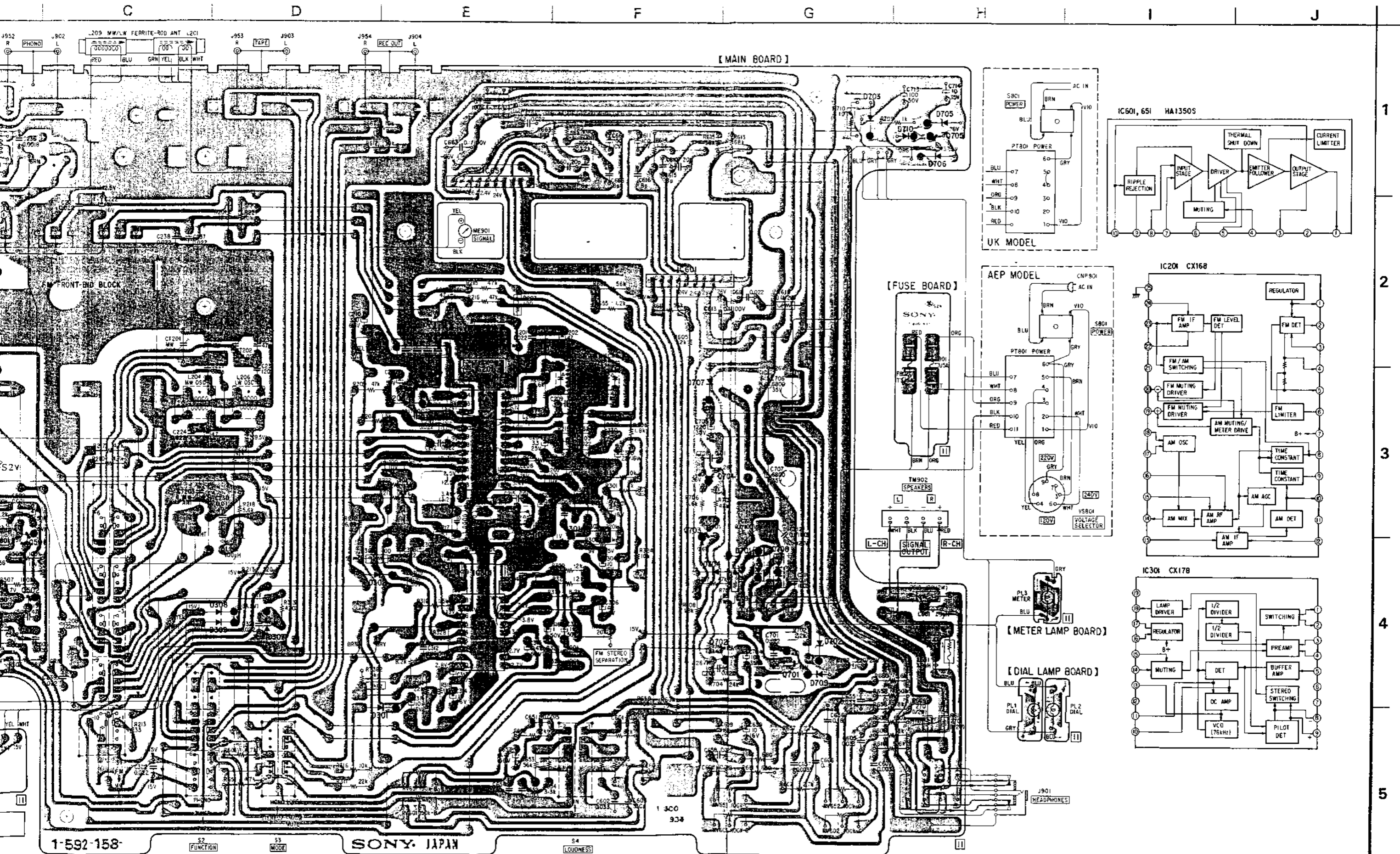


1	IC651	703 705 710 706
2	IC601	707 201
3	IC201	704 703 501 301 551
4	IC301	704 701 302 708 308 309 307 702 701 709 301
5		



D	303	306 305 304
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【MAIN BOARD】



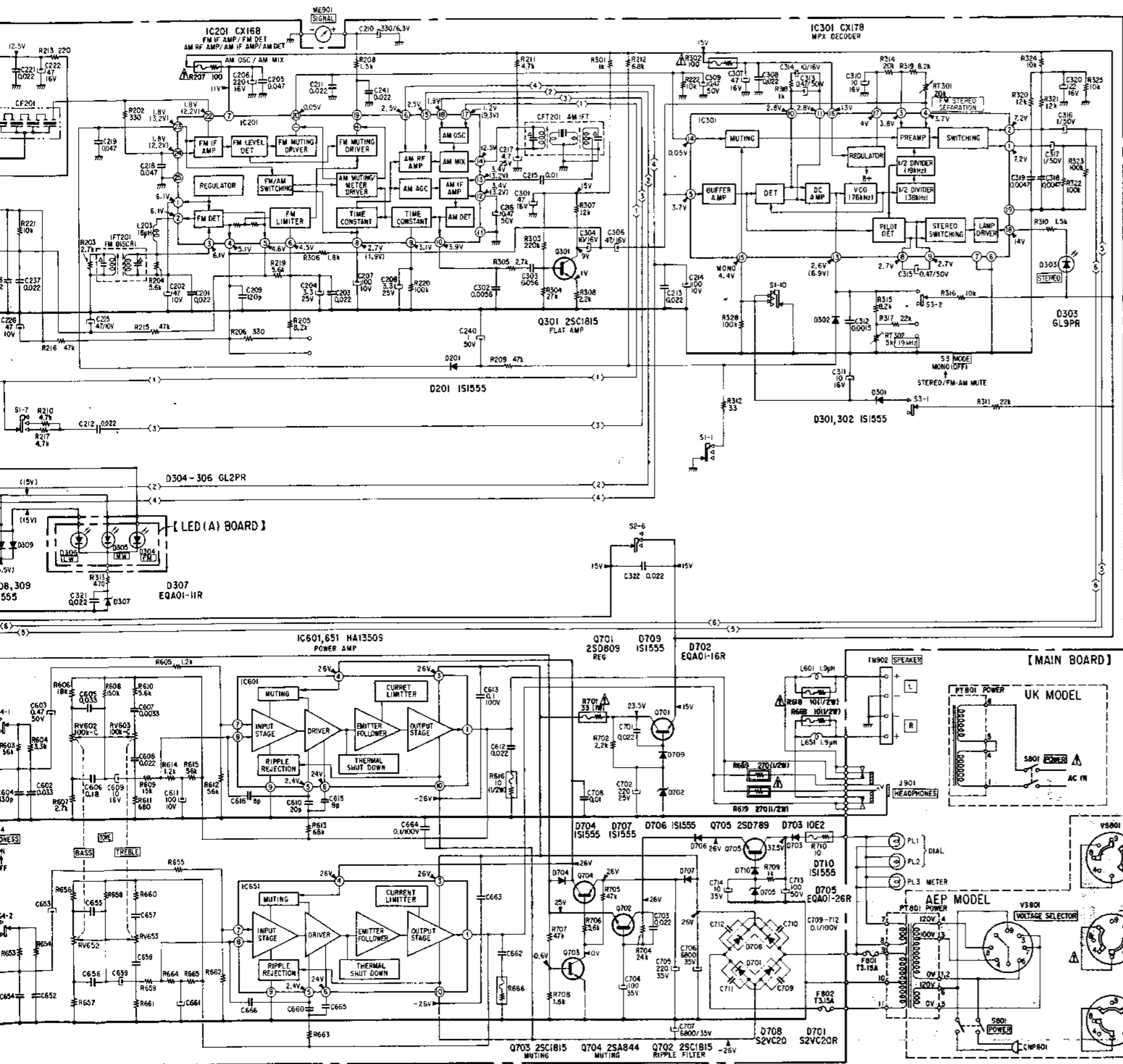
1-592-158

SONY JAPAN

-15- VOLUME

TREBLE TONE BASS

-16-



1
2
3
4
5

- Note:**
- All capacitors are in μF unless otherwise noted. $\text{pF} = \mu\mu\text{F}$. 50WV or less are not indicated except for electrolytics and tantalum.
 - All resistors are in ohms, $\frac{1}{4}\text{W}$ unless otherwise noted. $\text{k}\Omega = 1000\Omega$, $\text{M}\Omega = 1000\text{k}\Omega$.
 - : nonflammable resistor.
 - : fusible resistor.
 - : panel designation.
 - : B+ bus.
 - : B- bus.
 - : adjustment for repair.
 - Readings are taken under no-signal conditions with a VOM ($20\text{k}\Omega/\text{V}$). () : AM
 - Voltage variations may be noted due to normal production tolerances.
 - Switch

Ref. No.	Switch	Position
S1	Band Selector	FM
S2	FUNCTION	TUNER
S3	MODE	STEREO/FM-AM MUTE
S4	LOUDNESS	OFF
S5	ANTENNA LW	BUILT IN
S801	POWER	OFF

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

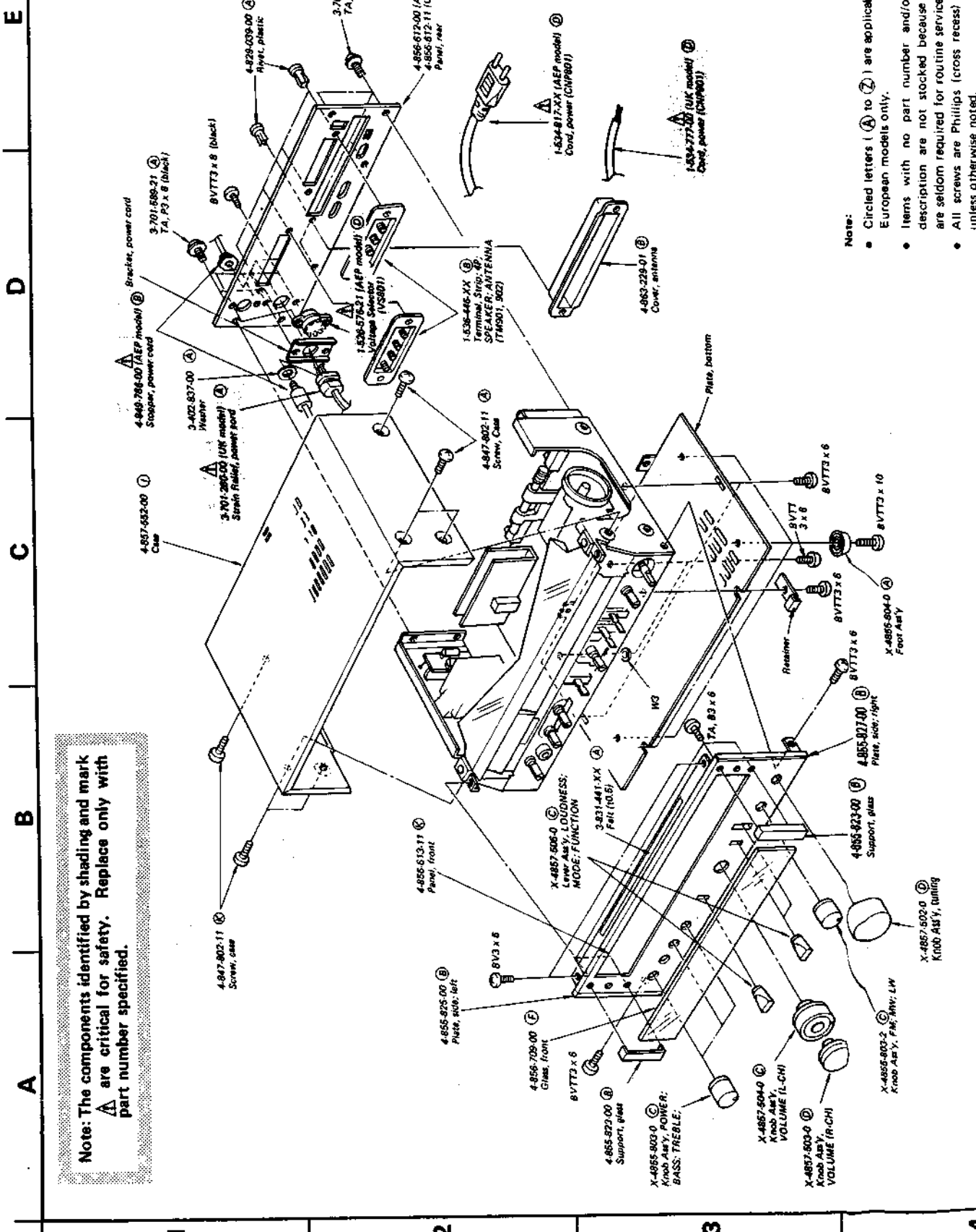
[MAIN BOARD]

UK MODEL

AEP MODEL

SECTION 5
EXPLODED VIEWS

5.1.



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

- Note:
- Circled letters (A to Z) are applicable to European models only.
 - Items with no part number and/or no description are not stocked because they are seldom required for routine service.
 - All screws are Phillips (cross recess) type unless otherwise noted.

A B C D E

1 2 3 4

5.3.

A B C D E

- Note:
- Circled letters (A) to (Z) are applicable to European models only.
 - Items with no part number and/or no description are not stocked because they are seldom required for routine service.
 - All screws are Phillips (cross recess) type unless otherwise noted.
 - (-) = slotted head

1-226-346-00 (E)
Resistor, variable, 150K Ω /10K Ω (B);
VOLUME (RV601, 651)

1-226-345-00 (C)
Resistor, variable, 100K Ω /100K Ω (C);
BASS; TREBLE (RV602, 652, 653, 653)

1-507-589-00 (C)
Jack, HEADPHONES (J801)

4-812-134-00 (A)
Rivet, plastic

1-535-31-00 (A)
Holder, fuse

Printed Circuit Board, fuse

Chassis (L), side

4-857-527-00 (A)
Insulator

1-446-844-00 (A)
Resistor, POWER (PT801)

1-552-265-00 (C)
Switch, lever-slide; LOUDNESS (S4)

1-552-231-00 (C)
Switch, lever-slide; MODE (S3)

1-552-556-00 (C)
Switch, lever-slide; FUNCTION (S2)

1-552-985-00 (E)
Switch, slide; band selector (S1)

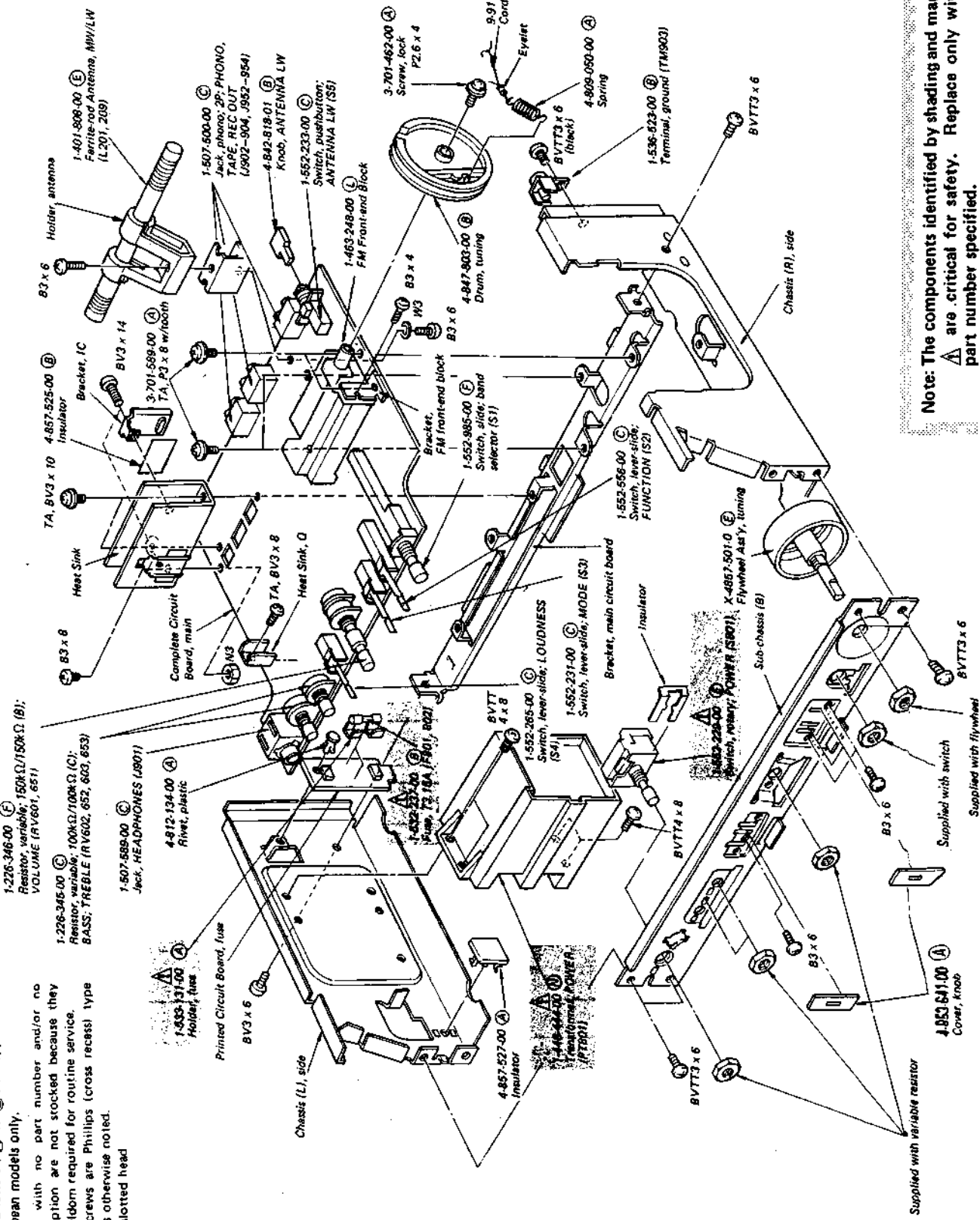
1-463-248-00 (L)
FM Front-end Block

1-552-233-00 (C)
Switch, pushbutton; ANTENNA LW (S5)

4-842-818-01 (E)
Knob, ANTENNA LW

1-507-500-00 (C)
Jack, phono; 2P; PHONO, TAPE, REC/DUT (J902-904, J952-954)

1-401-808-00 (E)
Ferrite-rod Antenna, MPV/LW (L201, 209)



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

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-22-

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4

SECTION 6 ELECTRICAL PARTS LIST

Note: Circled letters (A) to (Z) are applicable to European models only.

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
SEMICONDUCTORS		
Transistors		
Q1-3		included in front-end
⇒ Q301	8-729-663-47	(C) 2SC1364
⇒ Q501, 502 ⇒ Q551, 552	8-729-665-47	(B) 2SC1362
Q701	8-729-180-93	(B) 2SD809
⇒ Q702, 703	8-729-663-47	(C) 2SC1364
⇒ Q704	8-729-612-77	(B) 2SA1027R
⇒ Q705	8-760-413-10	(B) 2SC1475
ICs		
IC201	8-751-680-01	(I) CX168
IC301	8-751-780-00	(G) CX178
IC601, 651	8-759-313-50	(G) HA1350S
Diodes		
D1		included in front-end
D201	8-719-815-55	(B) 1S1555
D301, 302	8-719-815-55	(B) 1S1555
⇒ D303	8-719-909-21	(B) GL9PR21
⇒ D304-306	8-719-921-00	(B) GL2PR1
⇒ D307	8-719-930-11	(B) EQB01-11Z
D308, 309	8-719-815-55	(B) 1S1555
⇒ D701	8-719-501-34	(C) S3VC40R
⇒ D702	8-719-931-16	(B) EQB01-16
D703	8-719-200-02	(B) 10E2
D704	8-719-815-55	(B) 1S1555
⇒ D705	8-719-931-26	(B) EQB01-26
D706, 707	8-719-815-55	(B) 1S1555
⇒ D708	8-719-500-34	(C) S3VC40
D709, 710	8-719-815-55	(B) 1S1555

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
COILS		
L201, 209	1-401-808-00	(E) Antenna, MW/LW ferrite-rod
L202	1-407-169-XX	(A) 100 μ H, microinductor
L203	1-407-741-00	(B) 18 μ H, microinductor
L204	1-405-797-00	(B) MW OSC
L205	1-401-709-00	(C) LW ANT
L206	1-405-813-00	(B) LW OSC
L207	1-407-173-XX	(A) 220 μ H, microinductor
L208	1-407-210-XX	(A) 22mH, microinductor

TRANSFORMERS

CF201	1-527-534-XX	(D) Filter
CFT201	1-404-087-11	(D) AM IFT
IFT201	1-404-011-00	(C) FM Discriminator
PT801	(A) 1-446-444-00	(N) Power

CAPACITORS

All capacitors are in μ F and ceramic unless otherwise noted. 50WV or less are not indicated except for electrolytics. p : μ F, elect : electrolytic

C201	1-101-005-00	(A) 0.022		
C202	1-123-306-00	(B) 47	10V	elect
C203	1-101-005-00	(A) 0.022		
C204	1-121-392-00	(A) 3.3	25V	elect
C205	1-101-006-00	(A) 0.047		
C206	1-123-068-00	(B) 220	16V	elect
C207	1-123-307-00	(A) 100	10V	elect
C208	1-121-392-00	(A) 3.3	25V	elect
C209	1-102-816-00	(A) 120p		
C210	1-123-297-00	(B) 330	6.3V	elect
C211-213	1-101-005-00	(A) 0.022		
C214	1-123-307-00	(A) 100	10V	elect
C215	1-101-004-00	(A) 0.01		
C216	1-123-351-00	(B) 0.47	50V	elect
C217	1-123-328-00	(B) 4.7	25V	elect
C218, 219	1-101-006-00	(A) 0.047	50V	
C221	1-101-005-00	(A) 0.022	50V	
C222	1-123-319-00	(B) 47	16V	elect

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

STR-232L

Note: Circled letters (A to Z) are applicable to European models only.

Ref. No.	Part No.	Description
C223	1-123-328-00 (B) 4.7	25V elect
C224	1-101-005-00 (A) 0.022	
C225, 226	1-123-306-00 (B) 47	10V elect
C227	1-104-065-00 (B) 330p	polystyrol
C228	1-102-262-00 (B) 12p	
C229	1-102-940-00 (A) 3p	
C230	1-108-239-00 (A) 0.01	mylar
C231	1-104-055-00 (B) 120p	polystyrol
C232	1-101-880-00 (A) 47p	
C233	1-102-944-00 (A) 7p	
C235	1-108-228-00 (A) 0.0015	mylar
C236	1-108-352-00 (A) 0.0018	mylar
C237-239	1-101-005-00 (A) 0.022	
C240	1-123-352-00 (B) 1	50V elect
C241	1-101-005-00 (A) 0.022	
C301	1-123-319-00 (B) 47	16V elect
C302	1-108-355-00 (A) 0.0056	mylar
C303	1-108-361-00 (A) 0.056	mylar
C304	1-123-316-00 (B) 10	16V elect
C306	1-123-319-00 (B) 47	16V elect
C307	1-123-319-00 (B) 47	16V elect
C308	1-101-005-00 (A) 0.022	
C309	1-123-351-00 (B) 0.47	50V elect
C310, 311	1-123-316-00 (B) 10	16V elect
C312	1-104-081-00 (B) 0.0015	polystyrol
C313	1-123-351-00 (B) 0.47	50V elect
C314	1-123-316-00 (B) 10	16V elect
C315	1-123-351-00 (B) 0.47	50V elect
C316, 317	1-123-352-00 (B) 1	50V elect
C318, 319	1-108-234-00 (A) 0.0047	mylar
C320	1-123-317-00 (B) 22	16V elect
C321, 322	1-101-005-00 (A) 0.022	
C501, 551	1-123-328-00 (B) 4.7	25V elect
C502, 552	1-108-227-00 (A) 0.001	mylar
C503	1-123-307-00 (A) 100	10V elect
C504, 554	1-101-880-00 (A) 47p	
C505, 555	1-123-307-00 (A) 100	10V elect

Ref. No.	Part No.	Description
C506, 556	1-108-228-00 (A) 0.0015	mylar
C507, 557	1-108-355-00 (A) 0.0056	mylar
C508, 558	1-123-352-00 (B) 1	50V elect
C601, 651	1-108-228-00 (A) 0.0015	mylar
C602, 652	1-108-244-00 (B) 0.033	mylar
C603, 653	1-123-351-00 (B) 0.47	50V elect
C604, 654	1-102-820-00 (A) 330p	
C605, 655	1-108-244-00 (B) 0.033	mylar
C606, 656	1-108-364-00 (A) 0.18	mylar
C607, 657	1-108-232-00 (A) 0.0033	mylar
C608, 658	1-108-242-00 (A) 0.022	mylar
C609, 659	1-123-316-00 (B) 10	16V elect
C610, 660	1-102-958-00 (A) 20p	
C611, 661	1-123-307-00 (A) 100	10V elect
C612, 662	1-108-242-00 (A) 0.022	mylar
C613, 663	1-108-389-00 (B) 0.1	100V mylar
C615, 665	1-102-945-00 (A) 8p	
C616, 666		
C664	1-108-389-00	0.1 100V mylar
C701	1-101-005-00 (A) 0.022	
C702	1-123-334-00 (B) 220	25V elect
C703	1-101-005-00 (A) 0.022	
C704	1-123-062-00 (B) 100	35V elect
C705	1-123-063-00 (B) 220	35V elect
C706, 707	1-125-155-00 (E) 6800	35V elect
C708	1-108-239-00 (A) 0.01	mylar
C709-712	1-108-389-00 (B) 0.1	100V mylar
C713	1-123-059-00 (B) 100	50V elect
C714	1-123-341-00 (B) 10	35V elect
CT201	1-141-213-00 (B) Trimmer	
CT202	1-141-180-00 (B) Trimmer	
CT203, 204	1-141-213-00 (B) Trimmer	

RESISTORS

All resistors are in ohms. Common 1/4W carbon resistors are omitted. Refer to the list on the last page for their part numbers.

R207, 302 (A) 1-217-399-00 (B) 100 1/4W fusible

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

Note: Circled letters (A to Z) are applicable to European models only.

Ref. No.	Part No.	Description
R616, 666	1-212-958-00	(A) 10 1/4W fusible
R618, 668	A 1-212-958-00	(A) 10 1/4W fusible
R619, 669	A 1-211-624-00	(B) 270 1/4W carbon (nonflammable)
R701	A 1-213-072-00	(B) 33 1/4W fusible
R710	1-212-857-00	(A) 10 1/4W fusible
RT301	1-226-237-00	(B) 20k, adjustable; FM STEREO SEPARATION
RT302	1-226-235-00	(A) 5k, adjustable; 19kHz
RV601, 651	1-226-346-00	(E) 150k/150k-B, variable; VOLUME
RV602, 652	1-226-345-00	(C) 100k/100k-C, variable; BASS/TREBLE
RV603, 653		

SWITCHES

S1	1-552-985-00	(G) Slide, FM/MW/LW
S2	1-552-556-00	(D) Lever-slide, FUNCTION
S3	1-552-231-00	(C) Lever-slide, MODE
S4	1-552-265-00	(C) Lever-slide, LOUDNESS
S5	1-552-233-00	(C) Pushbutton, ANTENNA LW
S801	A 1-552-229-00	(F) Rotary, POWER

JACKS

J901	1-507-589-00	(C) HEADPHONES
J902-904	1-507-500-00	(B) PHONO/TAPE/REC OUT
J952-954		

MISCELLANEOUS

CNP801	A 1-534-777-00	(D) Conn. power (UK model)
CNP801	A 1-534-817-XX	(D) Conn. power (AEP model)
F801, 802	A 1-532-237-00	(B) Fuse, 13.15A
ME901	1-520-338-00	(I) Meter, signal
PL1, 2	1-518-395-00	(B) Lamp
PL3	1-518-362-00	(B) Lamp
TM901, 902	1-536-446-XX	(B) Terminal, ANTENNA/SPEAKER
TM903	1-536-523-00	(B) Terminal, ground
VS801	A 1-526-576-21	(E) Voltage Selector (AEP model)

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

Ref. No.	Part No.	Description
	1-463-248-00	(L) FM Front-end Block
	A 1-533-131-00	(A) Holder, fuse

ACCESSORIES AND PACKING MATERIALS

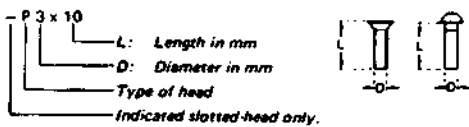
Part No.	Description
1-501-184-00	(C) Antenna, FM ribbon
3-770-945-11	(D) Manual, instruction
4-857-573-00	(C) Cushion, lower; left
4-857-574-00	(C) Cushion, lower; right
4-857-575-00	(E) Cushion, upper
4-864-401-00	(B) Carton
4-891-037-00	(B) Bag, plastic

1/4 WATT CARBON RESISTORS Ⓐ

Ω	Part No.	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	1.0M	1-246-545-00
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	1.1M	1-210-814-00
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	1.2M	1-210-815-00
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	1.3M	1-210-816-00
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	1.5M	1-210-817-00
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	1.6M	1-210-818-00
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	1.8M	1-210-819-00
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	2.0M	1-210-820-00
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	2.2M	1-210-821-00
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	2.4M	1-244-754-00
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	2.7M	1-244-755-00
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	3.0M	1-244-756-00
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	3.3M	1-244-757-00
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	3.6M	1-244-758-00
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	3.9M	1-244-759-00
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	4.3M	1-244-760-00
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	4.7M	1-244-761-00
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	5.1M	1-244-762-00
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		

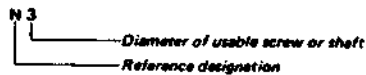
HARDWARE NOMENCLATURE

Screw:



Indicated slotted-head only.
Unless otherwise indicated, it means cross-recessed head (Phillips type).

Nut, Washer, Retaining ring:



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		braizer-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	