ST-160/160A



ST-J60:

US Model
Canadian Model
AEP Model
UK Model
PX Model

ST-J60A:

AEP Model



FM STEREO TUNER

SPECIFICATIONS

GENERAL

System:

PLL crystal locked digital synthesizer

system

Power Requirements:

US, Canadian model: 120 V ac, 60 Hz

AEP, UK, PX model:

110, 120, 220 or 240 V ac ~ adjustable,

50/60 Hz

Power Consumption:

13 W

Dimensions:

Approx. 430 (w) x 80 (h) x 310 (d) mm

17 (w) x 31/4 (h) x 121/4 (d) inches

including projecting parts and controls

Weight:

US, Canadian model:

Approx. 4.3 kg, 9 lb 8 oz (net)

Approx. 5.1 kg, 11 lb 4 oz (in shipping

carton)

AEP, UK, PX model:

Approx. 4.5 kg, 10 lb (net)

Approx. 5.3 kg, 11 lb 11 oz (in shipping

carton)

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.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UN TRAMÉ ET UNE MARQUE SUR LES DIAGRAMMES SCHÉMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DES SUPPLÉMENTS PUBLIÉS PAR SONY.

TUNER SECTION

Tuning Range:

87.5-107.9 MHz (US, Canadian model) 87.5-108 MHz (AEP, UK, PX model)

Antenna Terminals:

300 Ω , balanced

75 Ω , unbalanced coaxial input

Intermediate Frequency:

10.7 MHz

Sensitivity at 50 dB Quieting:

 $3.5 \mu V$, $16.1 dBf (mono) (US, Canadian 40 <math>\mu V$, 37.3 dBf (stereo)) model)

- Continued on page 2 -



Sensitivity at 46 dB Quieting

(40 kHz deviation):

 $3.2 \,\mu\text{V (mono)}$ (AEP, UK, PX model)

Usable Sensitivity: US, Canadian model:

stereo

 $1.8 \mu V$, 10.3 dBfAEP, UK, PX model:

72 dB

 $1.2 \mu V (S/N = 26 dB, 40 kHz deviation)$

64 dB

1.8 µV, 10.3 dBf (IHF)

Limiting Threshold:

1 μV (AEP, UK, PX model)

AEP, UK, PX model S/N Ratio: US, Canadian model (40 kHz deviation) 68 dB 77 dB mono

Harmonic Dis

stortion:	US, Canadi	ian model	AEP, UK, PX mod (40 kHz deviation		
	mono	stereo	mono	stereo	
at 100 Hz	0.06 %	0.08 %	0.1 %	0.3 %	
at 1 kHz	0.06 %	0.08 %	0.1 %	0.2 %	
at 10 kHz	0.06 %	0.15 %	0.1 %	0.5 %	

IM Distortion:

istortion:	US, Canadian model	AEP, UK, PX model (40 kHz deviation)
mono	0.06 %	0.1 %
stereo	0.08 %	0.2 %

48 dB at 100 Hz Separation:

50 dB at 1 kHz 40 dB at 10 kHz

US, Canadian model: Frequency Response:

30 Hz-15 kHz +0.2 dB

AEP, UK, PX model:

40 Hz-12.5 kHz ±0.2 dB

30 Hz-15 kHz +0.2 dB

US, Canadian model: Selectivity:

85 dB at 400 kHz AEP, UK, PX model: 80 dB at 300 kHz

Capture Ratio: 1,0 dB

60 dB AM Suppression Ratio:

85 dB Image Response Ratio:

> 95 dB IF Response Ratio:

100 dB Spurious Response Ratio:

> 70 dB RF Intermodulation:

72 dB (US, Canadian model) Sub-carrier Product Ratio:

64 dB (AEP, UK, PX model)

Muting and Auto-Tuning

Approx. $5 \mu V$ Threshold:

Output Level

750 mV, 4 k Ω (75 kHz deviation):

> 50 % modulation (37.5 kHz CAL TONE:

deviation), 400 Hz

MODEL IDENTIFICATION

Specification Label —

US model

SONY

SERIAL NO.

FM STEREO TUNER

ST - J60 MODEL NO.

FREQ. RANGE : FM87.5-107.9MHz IF 10.7MHz : FM

AC 120V 60Hz 13W

DESIGN CERTIFIED AS COMPLYING CERTIFICATION : WITH F. C. C. RULES PART 15, IN EFFECT AS OF DATE OF MANUFACTURE.

Canadian model

SONY

FM STEREO TUNER

ST - J60 MODEL NO. FREQ. RANGE : FM87.5-107.9MHz

IF 10.7MHz : FM AC 120V 60Hz 13W

SERIAL NO.

MADE IN JAPAN

ST-J60 ST-J60A

MADE IN JAPAN

AEP model

SONY

FM STEREO TUNER

MODEL NO.

FREQ. RANGE : FM87.5-108MHz : FM 10.7MHz

AC 110, 120, 220, 240V ~ 50/60Hz

SERIAL NO.

FTZ-PRÜFNUMMER U185

MADE IN JAPAN

UK model

SONY

FM STEREO TUNER

ST-J60 MODEL NO. FREQ. RANGE : FM87.5-108MHz

1F : FM 10.7MHz AC 110, 120, 220, 240V ~ 50/60Hz

SERIAL NO.

MADE IN JAPAN

PX1 model

SONY

FM STEREO TUNER

ST - J60 MODEL NO. FREQ. RANGE : FM87.5-108MHz

10.7MHz : FM AC 110, 120, 220, 240V ~ 50/60Hz 13W

SERIAL NO.

MADE IN JAPAN

PX2 model

ASCO

120V

13 W

50 / 60Hz

SONY

FM STEREO TUNER

MODEL NO. ST - J60 FREQ. RANGE : FM87.5-108MHz

1F 10.7MHz : FM

AC 110, 120, 220, 240V ~ 50/60Hz 13W

SERIAL NO.

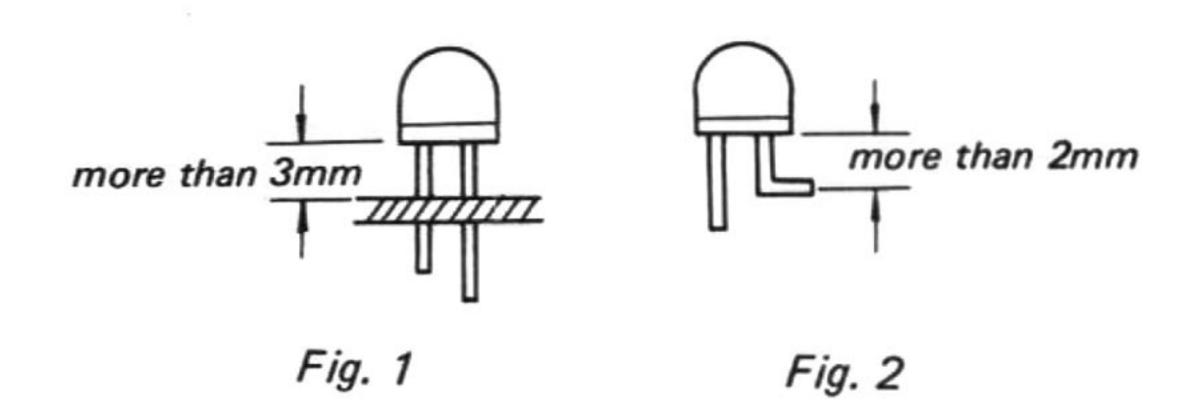
MADE IN JAPAN

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).
- When changing the position of the luminous diode, do not move it right after soldering, but move it after it naturally cools off.
- 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).

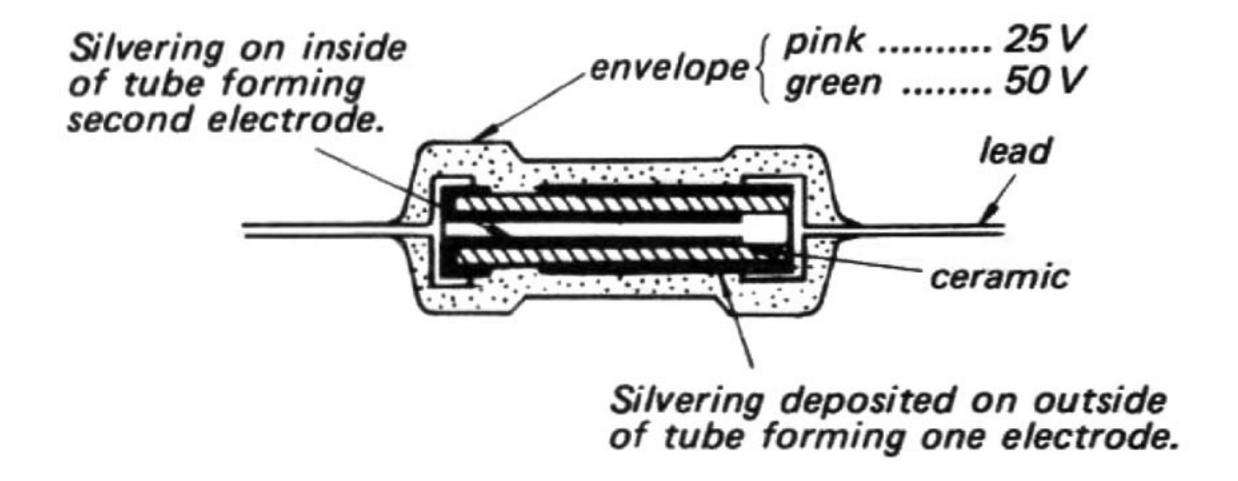


THE CERAMIC CAPACITORS

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.

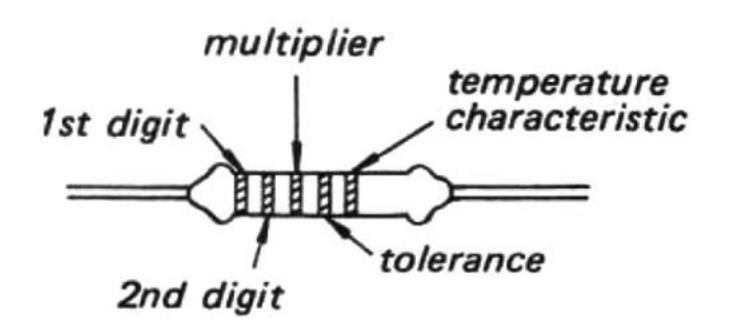
Disc-type ceramic capacitors can be used for replacing those originally used in the set.

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.

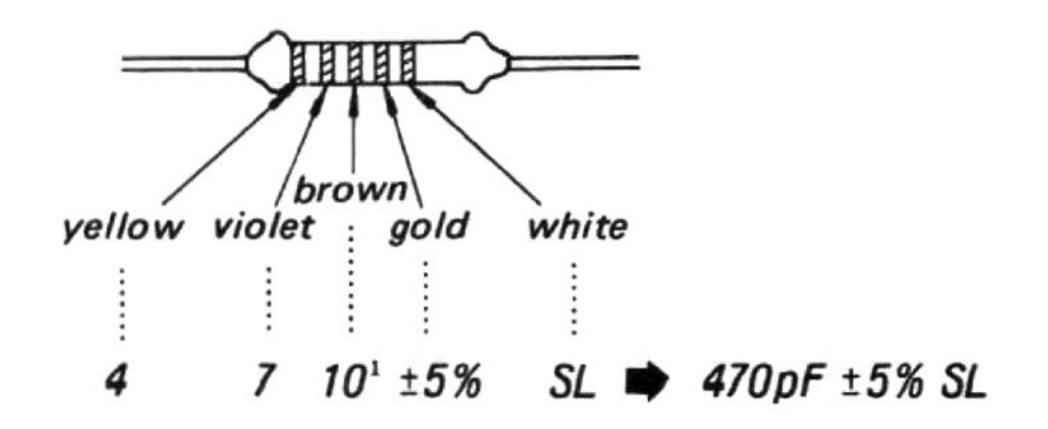


COLOR CODE (in pF)

Color	1st or 2nd Digit	Multiplier	Tolerance	Temperature characteristic
brown	1	10¹		Y
red	2	10 ²		D
orange	3	10³		
yellow	4	104		RH
green	5			
blue	6			
violet	7			UJ
gray	8		± 30%	X
white	9			SL
black	0	10°	± 20%	СН
gold		10-1	± 5%	V
silver		10-2	±10%	В



Example:



Handling Precautions for MOS ICs

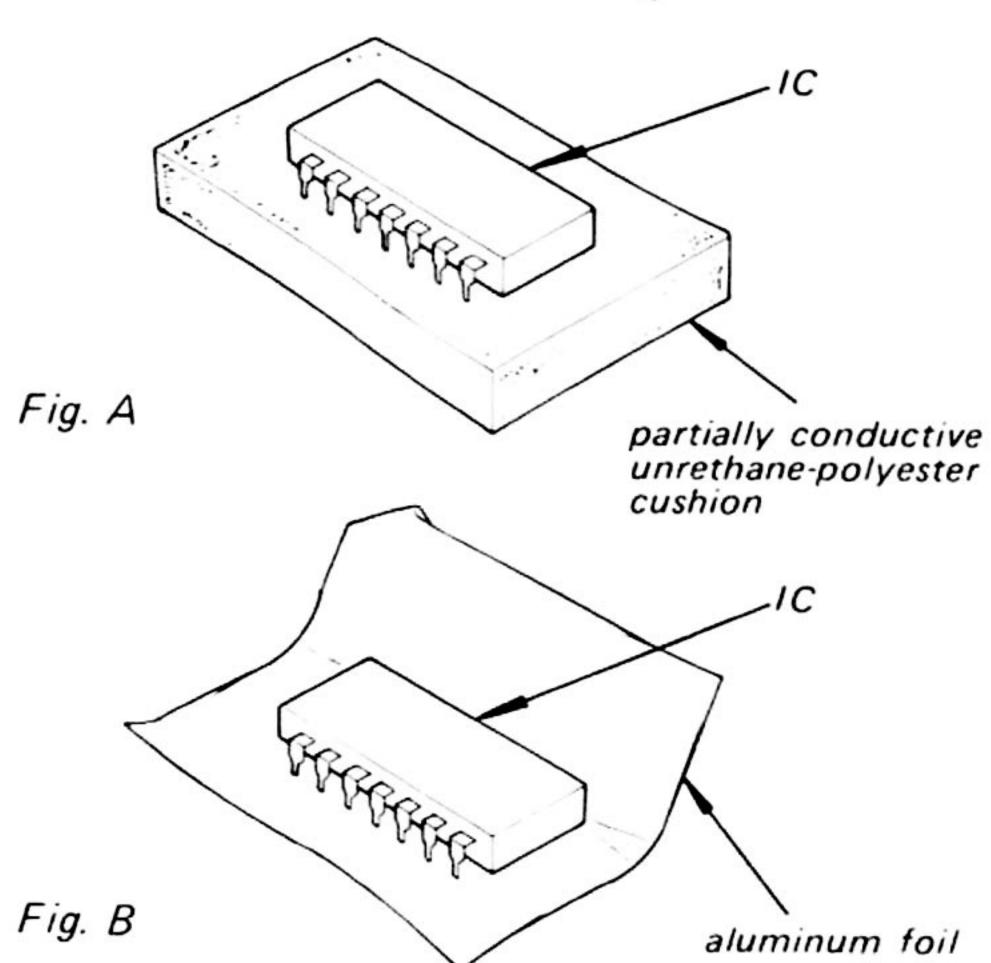
Generally, the insulation resistance of the oxide layer in MOS IC structures is very high, and the oxide layer is very thin. Because of this, it is possible that the static voltages usually present on clothes and the human body will be enough to generate a potential difference across the insulator, high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

The following precautions should be taken while handling these ICs.

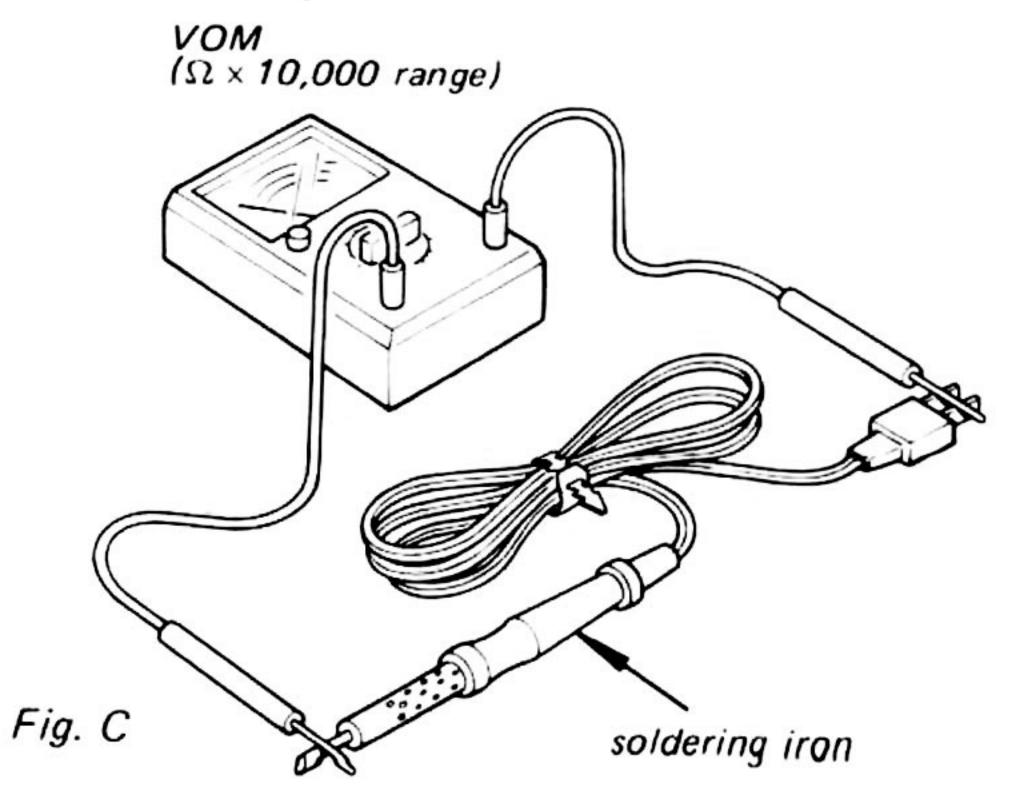
(Particular care should be taken under conditions of low humidity.)

Precautions in Replacing MOS ICs

- 1. Store new ICs by inserting them into a urethanepolyester 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.)



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.



- 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.

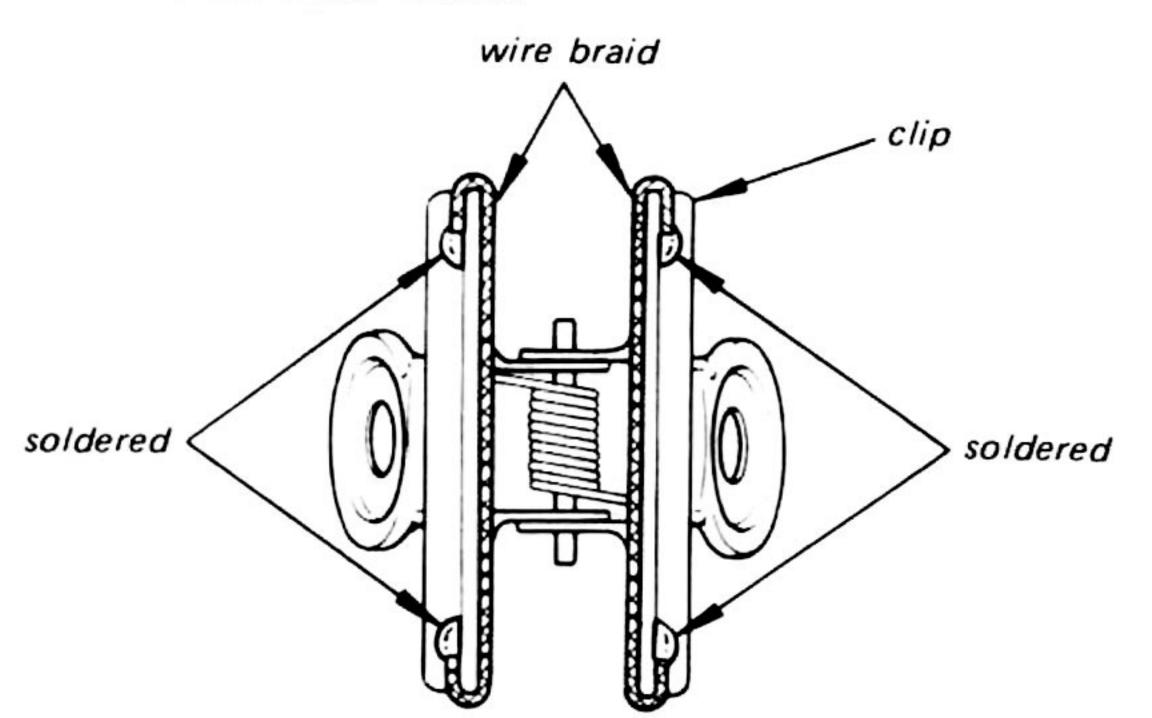
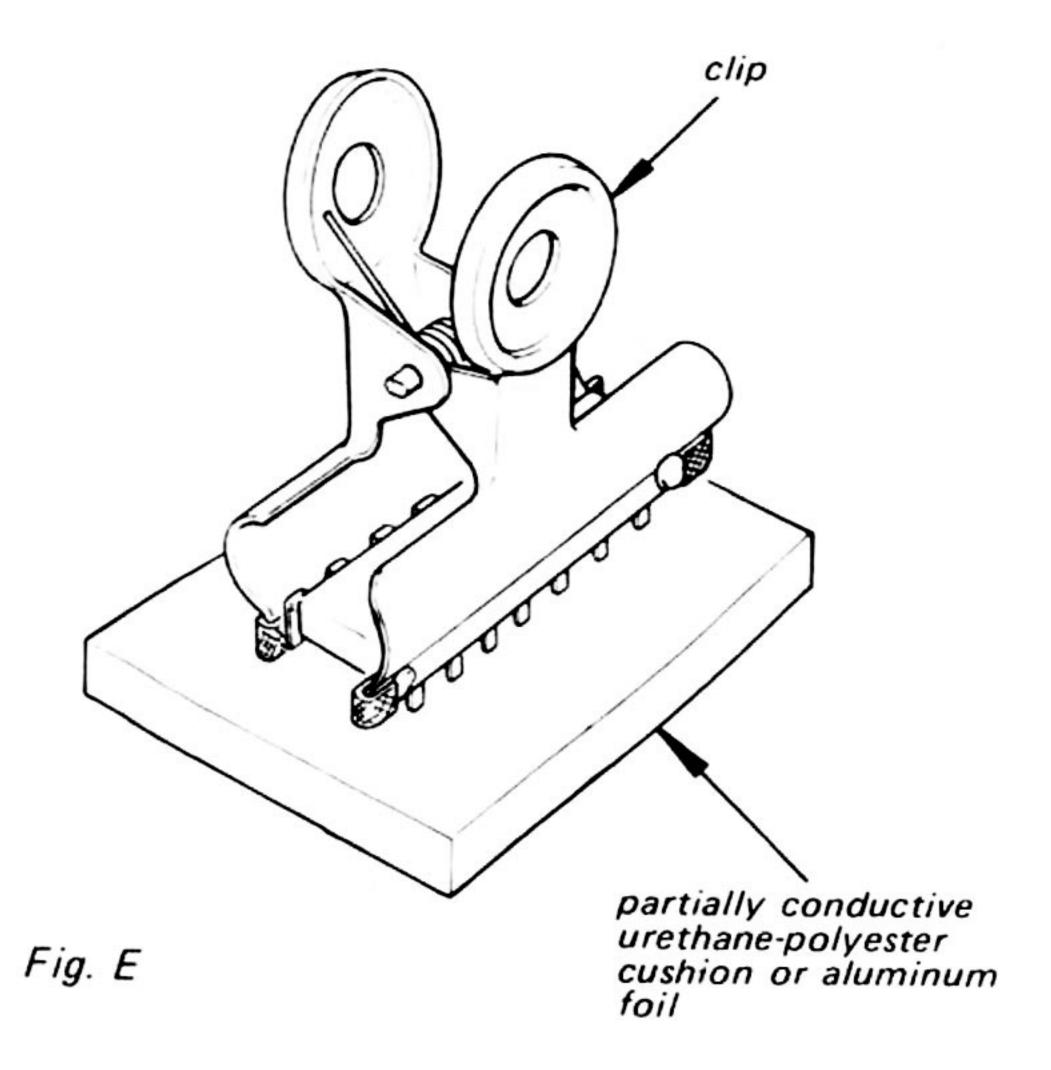
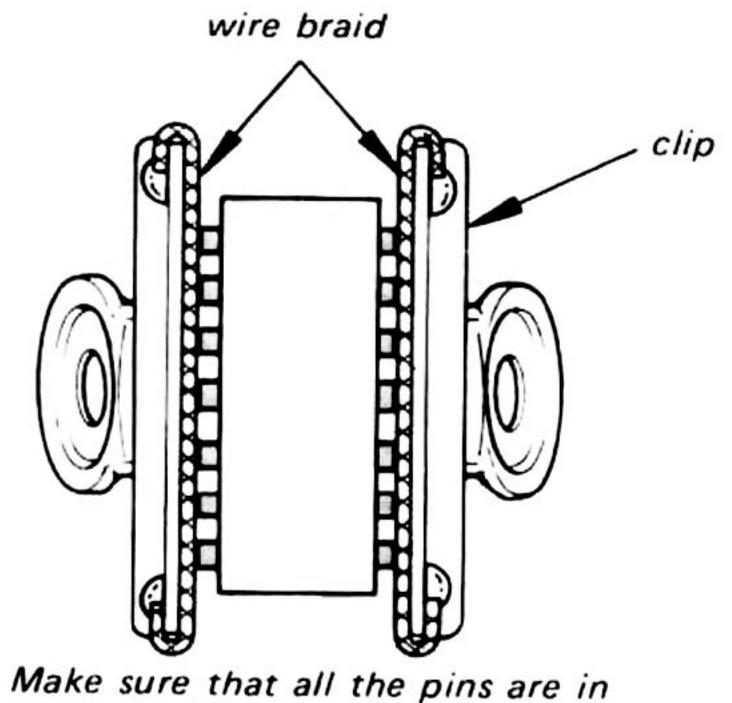


Fig. D

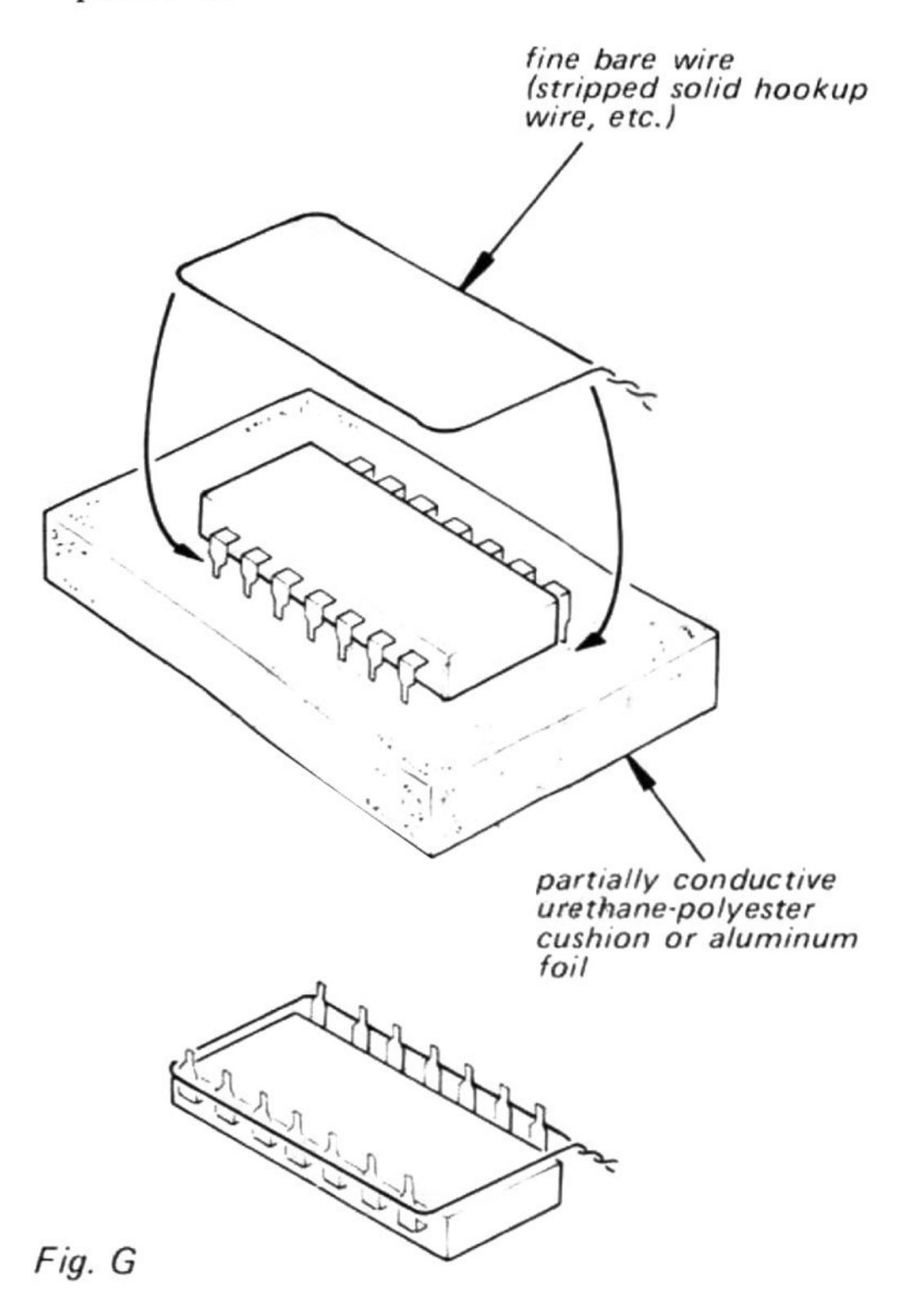
Make sure that there is no solder on the inside.



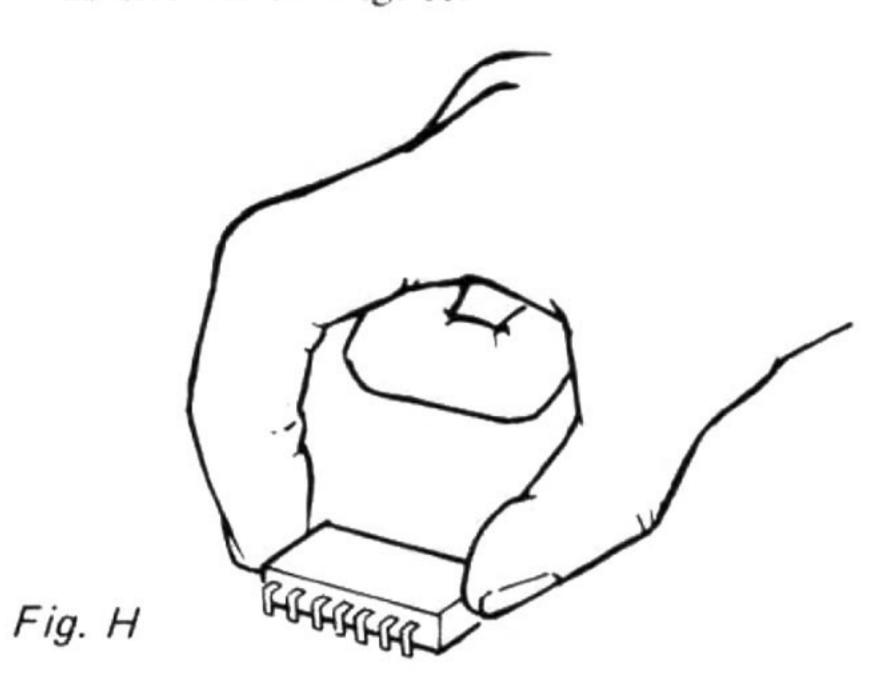


contact with the wire braid (all the pins will then be at the same potential.).

• 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 urethanepolyester cushion or aluminum foil. This ensures that all the pins are at the same potential.



 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.



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:

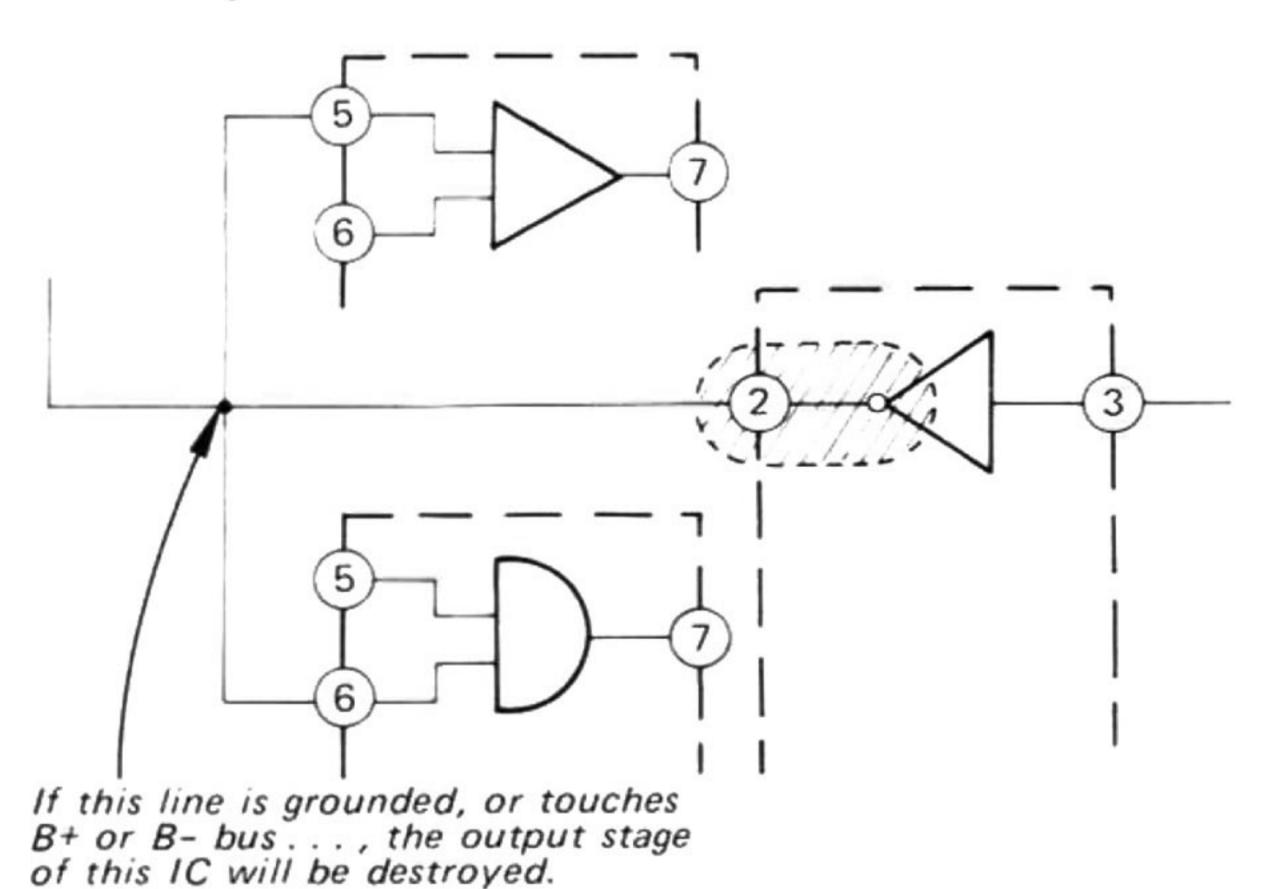
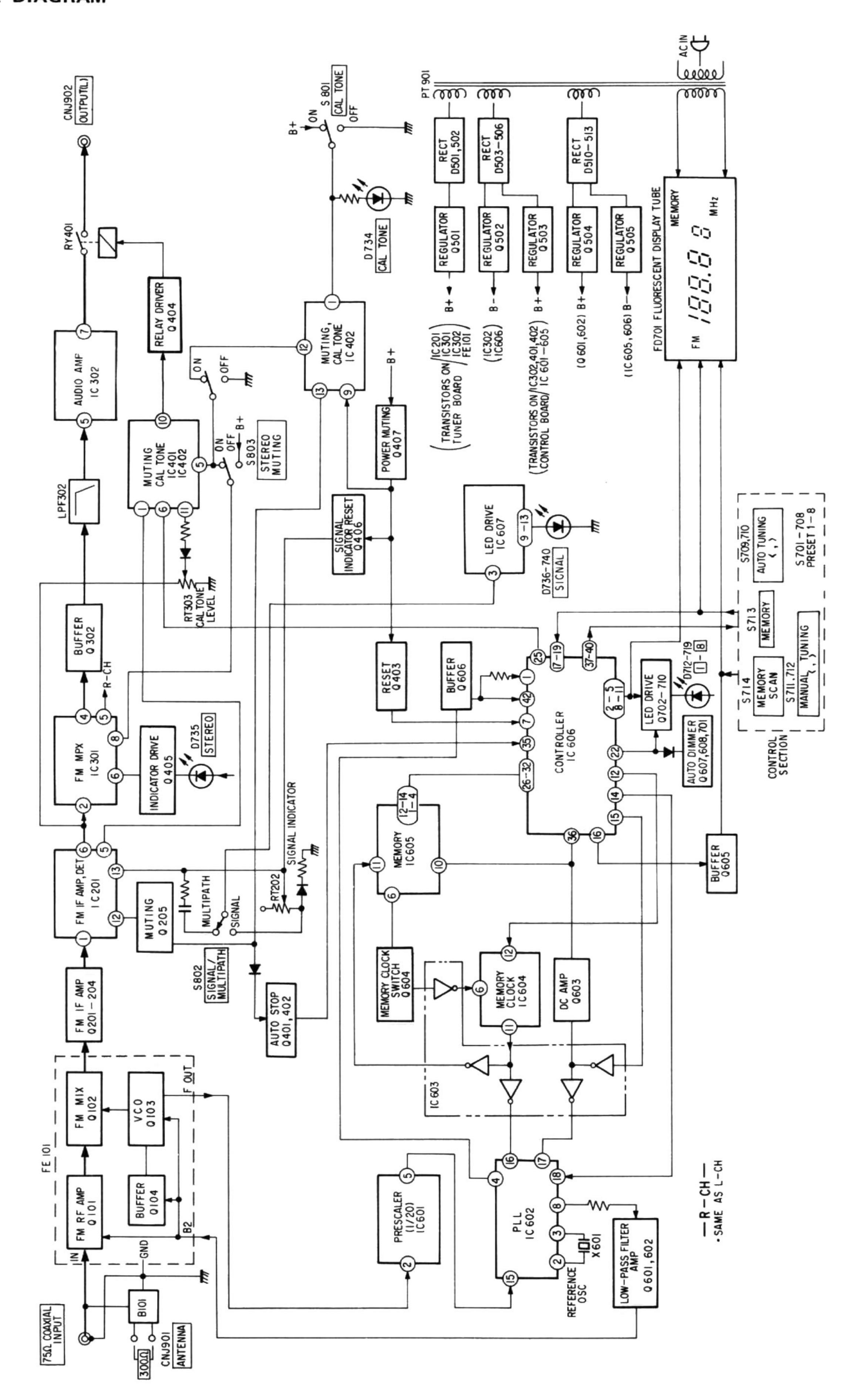


Fig. 1

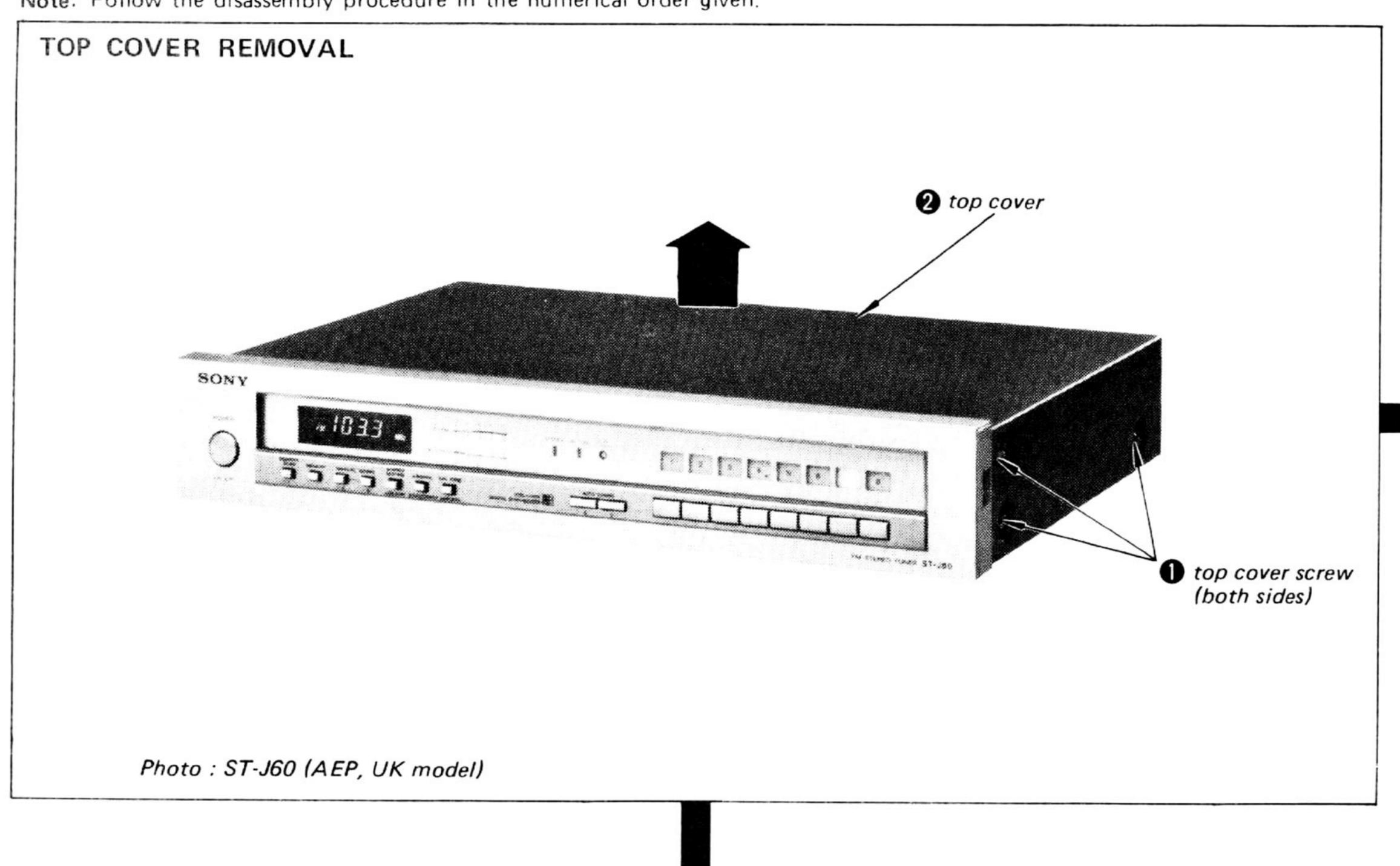
SECTION 1 OUTLINE

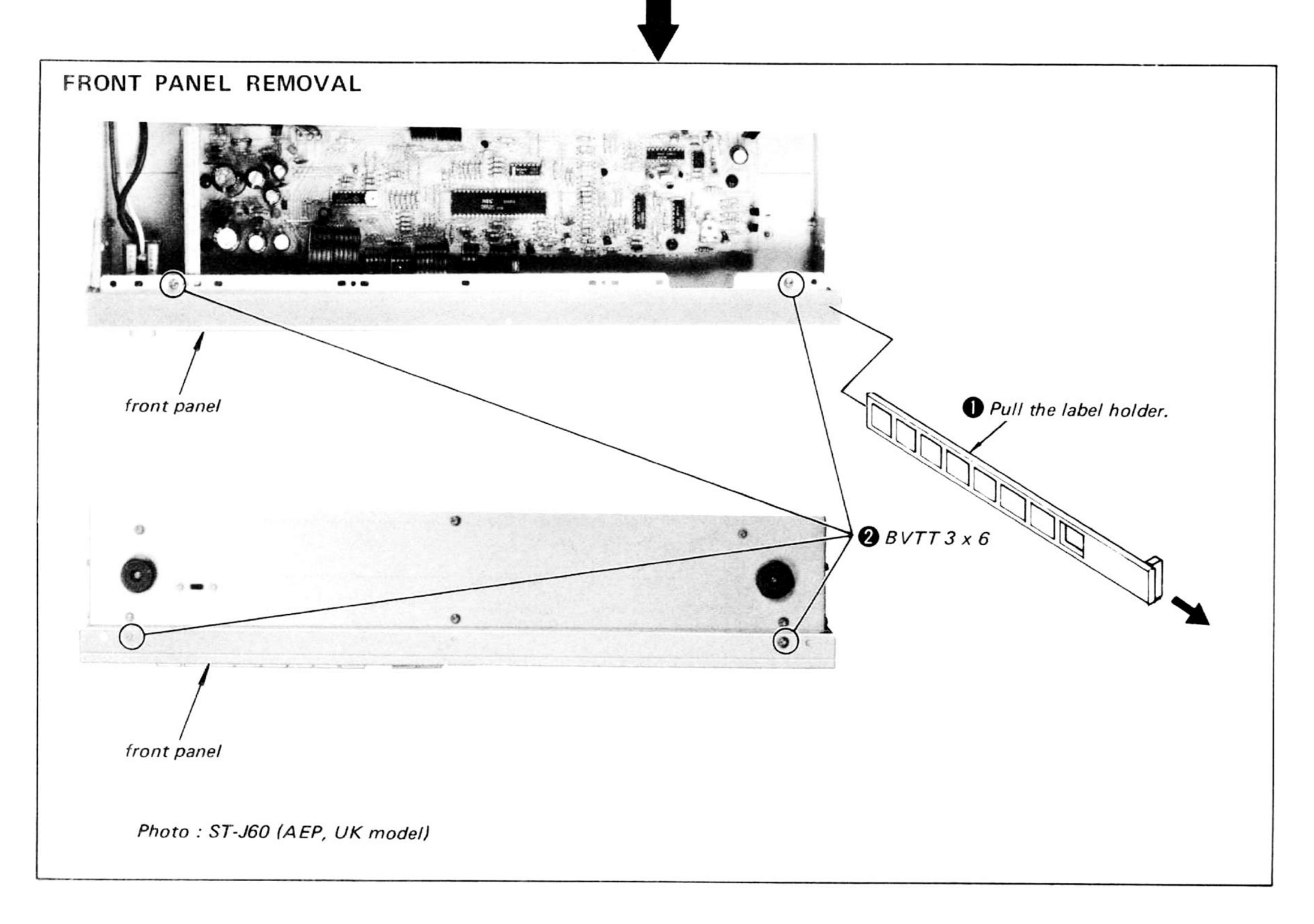
1-1. BLOCK DIAGRAM

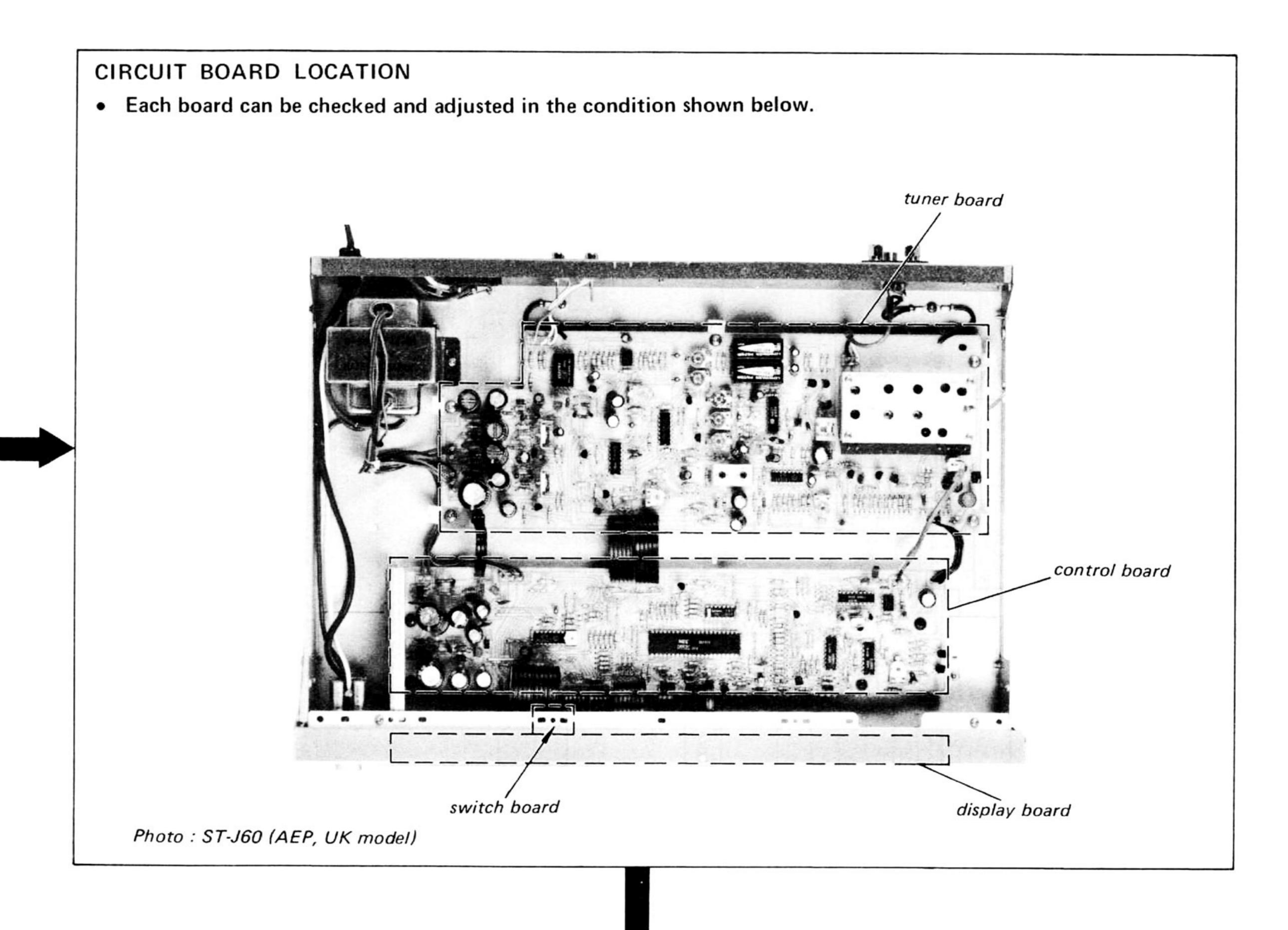


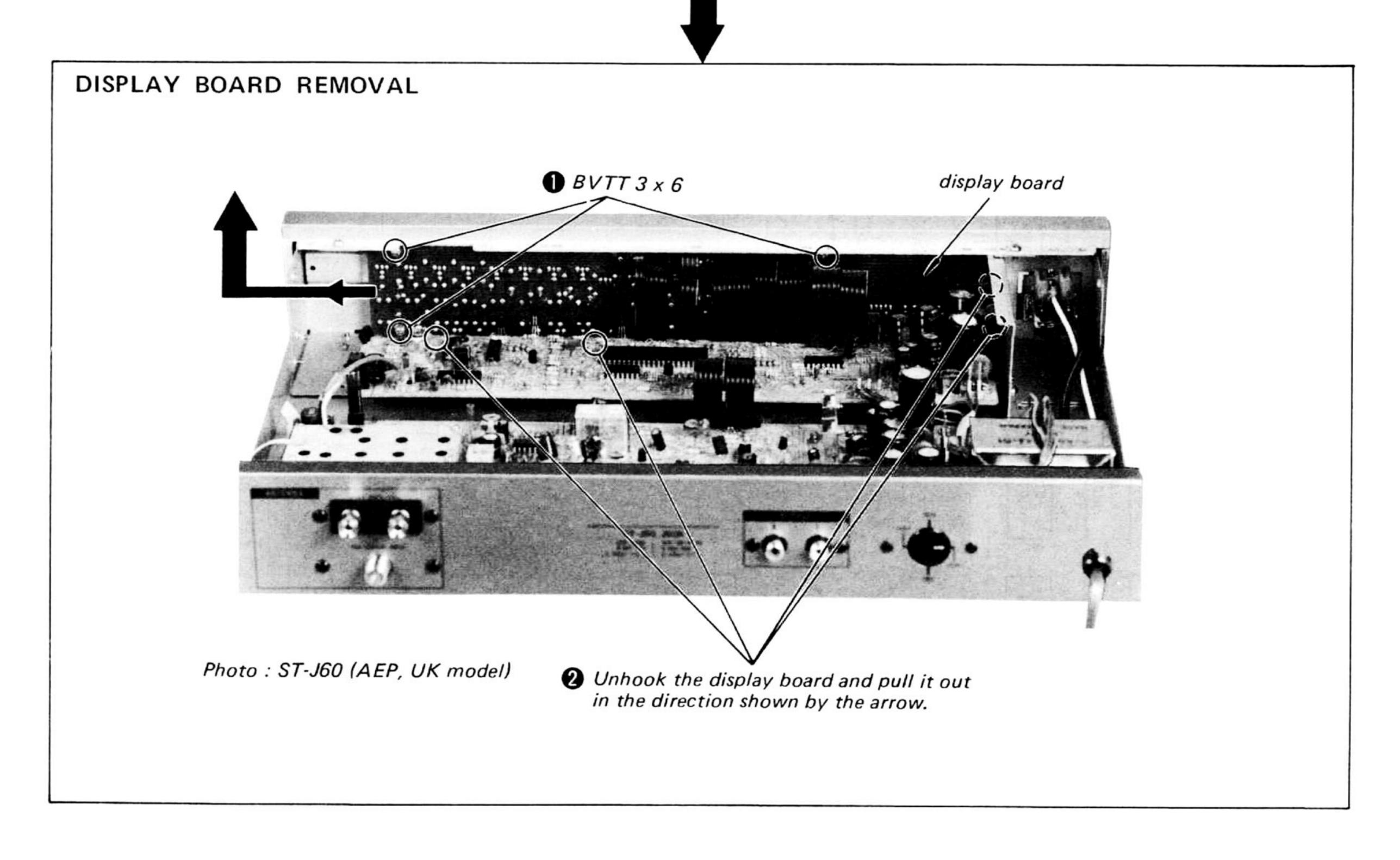
SECTION 2 DISASSEMBLY

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









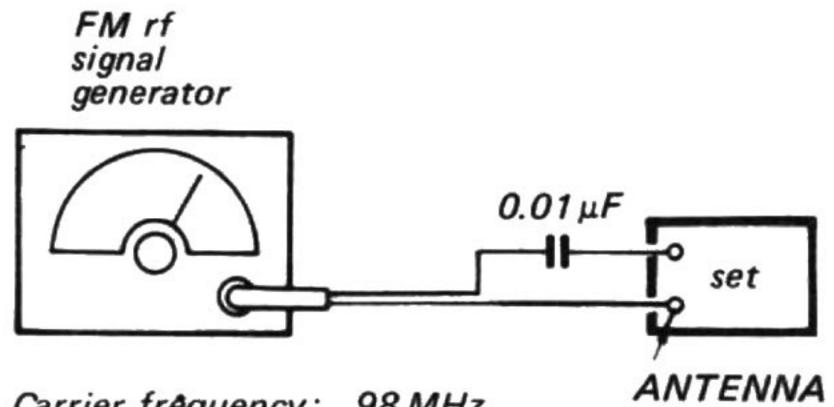
SECTION 3 ADJUSTMENTS

Signal Indicator Adjustment

Setting:

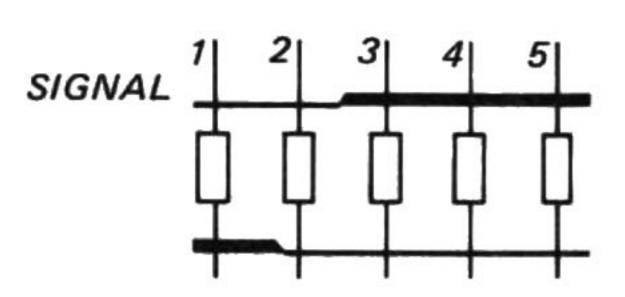
SIGNAL/MULTIPATH switch: SIGNAL

Procedure:



Carrier frequency: 98 MHz
Modulation: no modulation
Output level: 3.2 mV (70 dB)

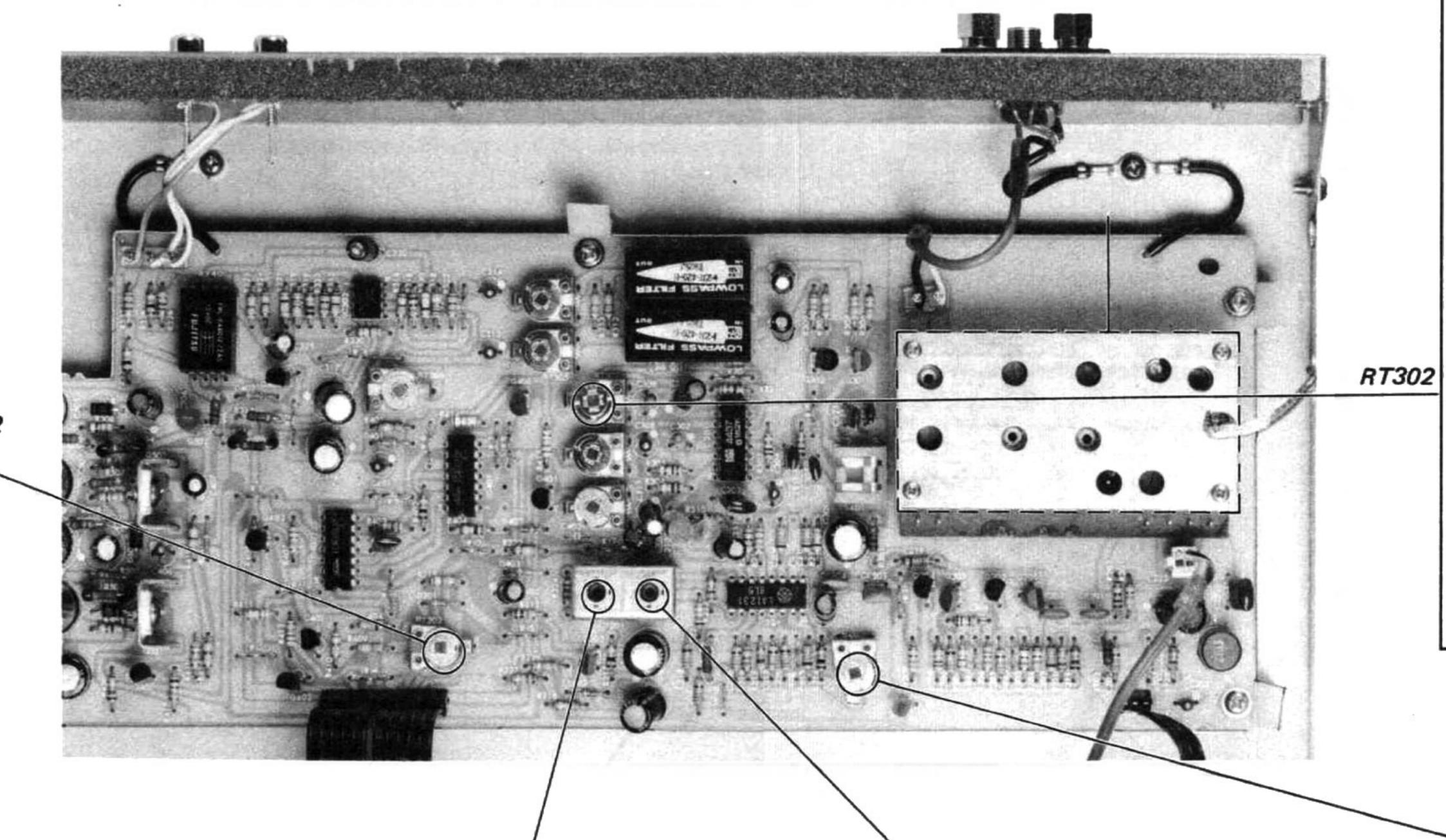
Tune the set to 98MHz by pressing the AUTO TUNING switch and adjust RT202 so that all signal elements light up. (See figure below.)



Servicing Precaution

The front-end section can not be repaired and it is only supplied as the front-end block.

This section has been carefully adjusted at the factory.



Pilot Cancel Adjustment Procedure: FM rf stereo AF osc VTVMsignal FM rf signal generator generator Carrier frequency: 98 MHz OUTPUT ANTENNA Modulation: terminal Audio (400 Hz): 33.75 kHz deviation (45%) Pilot (19 kHz): 7.5 kHz deviation (10%)

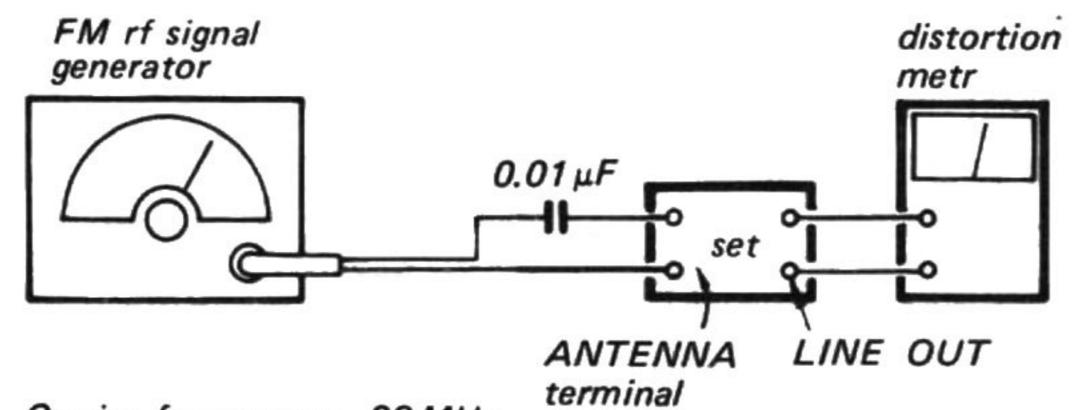
Subchannel (38 kHz): 33.75 kHz deviation (45%)

- 1. Tune the set to 98MHz by pressing the AUTO TUNING switch and turn OFF the audio modulation (400Hz) of the FM stereo signal generator.
- Adjust RT302 for minimum reading on the VTVM.
 Output level of both channels should be equal.



A) Secondary Side

Procedure:



(secondary side : black)

IFT201

Carrier frequency: 98 MHz Modulation: 400 Hz,

Output level:

400 Hz, 75 kHz deviation (100%) 1mV (60 dB)

1. Tune the set to 98MHz by pressing the AUTO TUNING switch.

2. Turn the core (secondary side; black) of IFT201 for minimum distortion reading on the distortion meter.

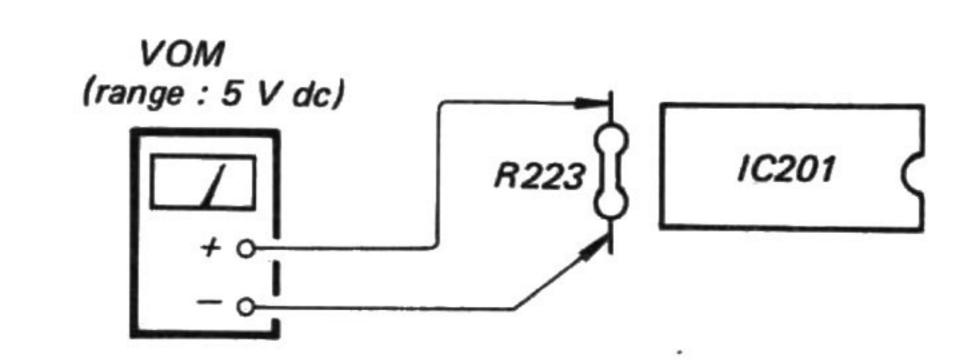
Note: Repeat the secondary side and primary side adjustments several times.

B) Primary Side

IFT201

(primary side : orange)

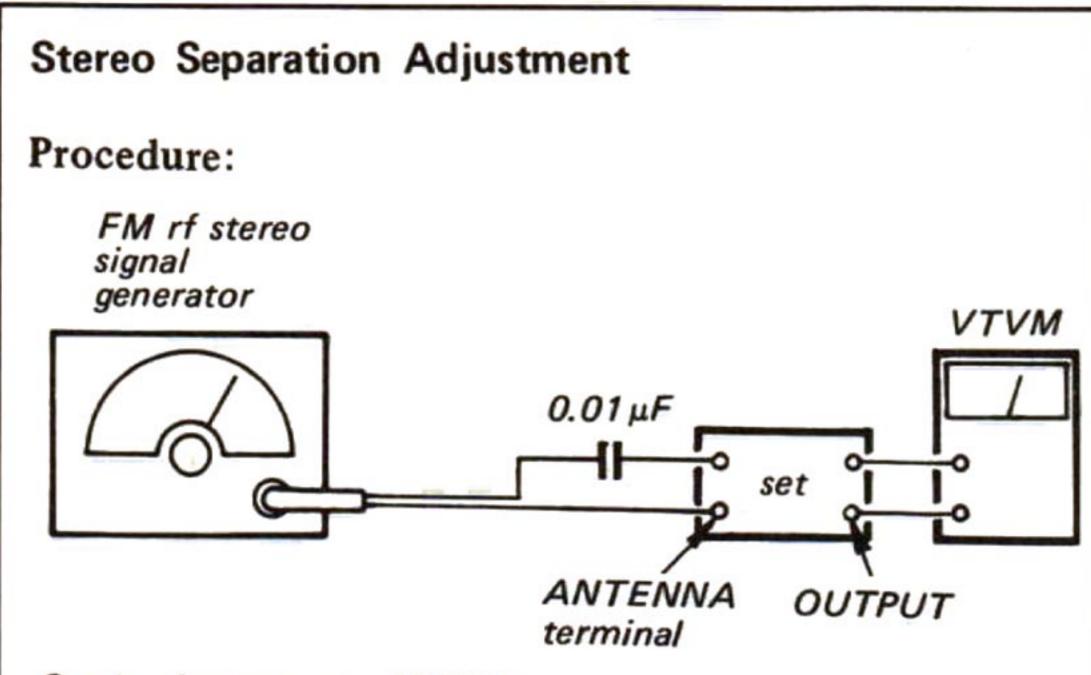
Procedure:



- 1. Press the MANUAL TUNING switch to detune the set.
- 2. Turn the core (primary side: orange) of IFT201 for 0V reading on VOM.

Note: When the ceramic filter is replaced, these adjustments should be made.

RT201 FM Muting Level Adjustment Setting: STEREO MUTING switch: ON Procedure: FM rf signal generator VTVM $0.01 \mu F$ ANTENNA OUTPUT terminal Carrier frequency: 98 MHz Modulation: 400 Hz, 75 kHz deviation (100%)Output level: 10 μV (20 dB) 1. Tune the set to 98MHz by pressing the AUTO TUNING switch. 2. Adjust RT201 for a 0V reading on the VTVM.



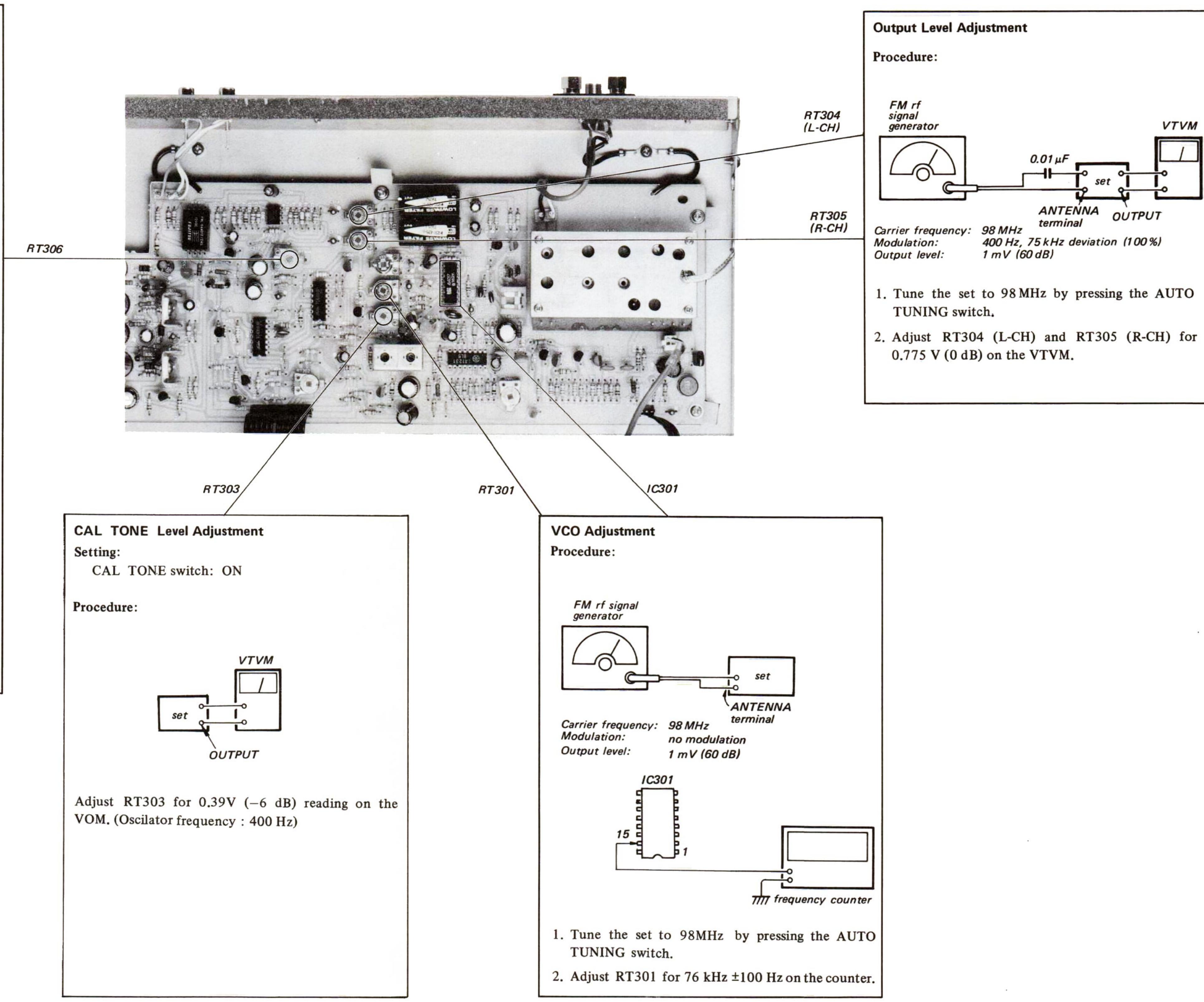
Carrier frequency: 98 MHz Output level: 1 mV (60 dB) Mode: Stereo Modulation:

Audio (400 Hz): 33.75 kHz deviation (45%) Pilot (19 kHz): 7.5 kHz deviation (10%) Subchannel (38 kHz):33.75 kHz deviation (45%)

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	A
R-CH	L-CH	Adjust RT306 for minimum reading.
R-CH	R-CH	©
L-CH	R-CH	Adjust RT306 for minimum reading.

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

The separations of both channels should be equal.



VTVM

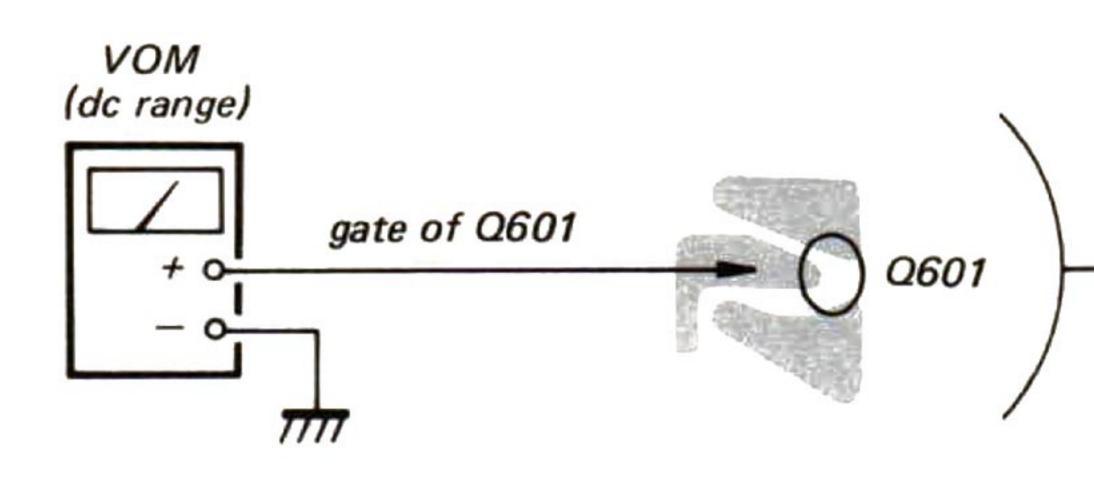
ANTENNA

400 Hz, 75 kHz deviation (100%)

1 mV (60 dB)

PLL Voltage Adjustment

Procedure:

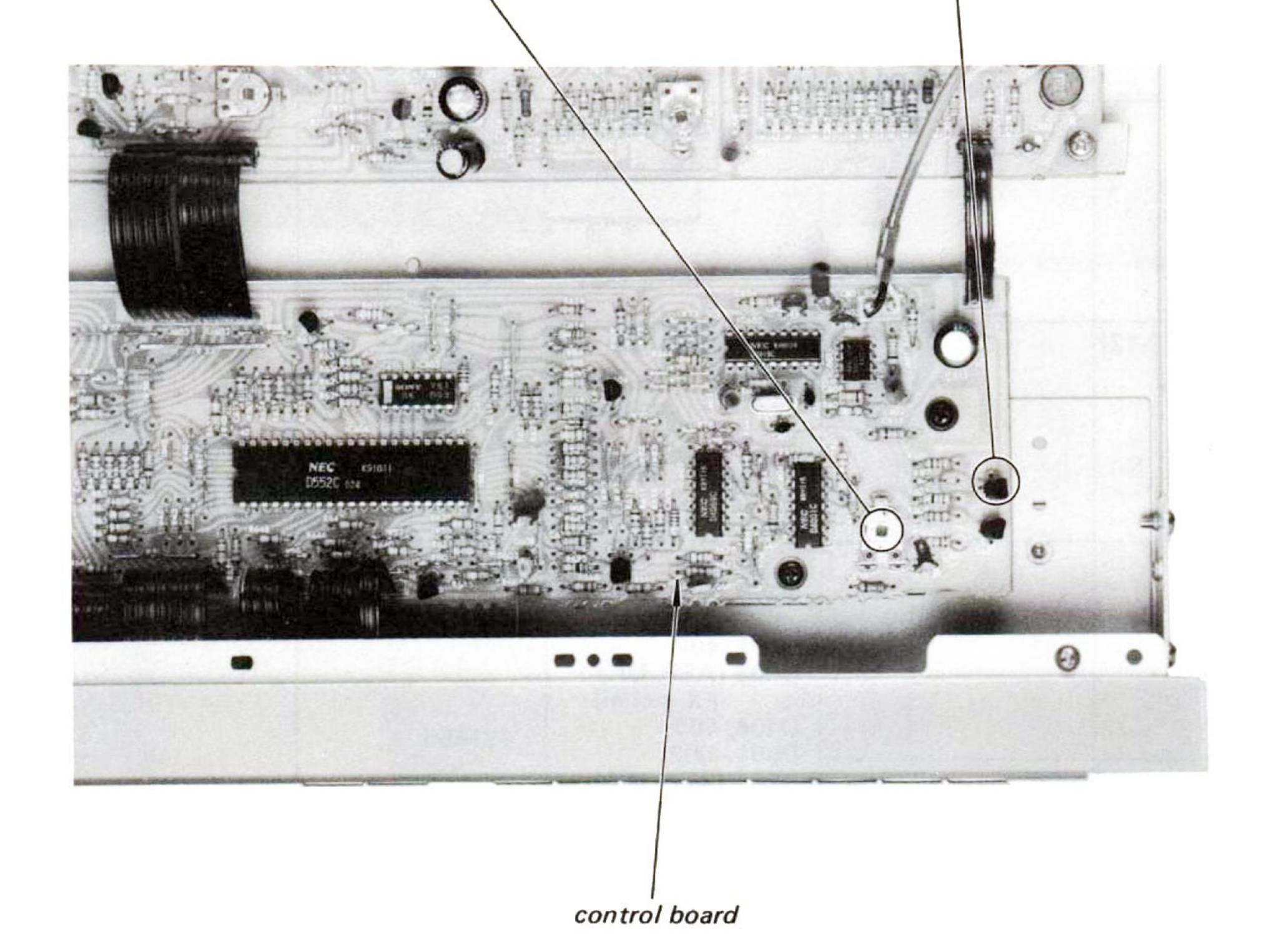


- 1. Press the MANUAL TUNING switch so that the frequency counter displays 87.50 MHz.
- 2. Adjust RT601 for the specified reading on the VOM.

Specification:

US, Canadian model: 0.45 - 0.55 VAEP, UK, PX model: 0.65 - 0.75 V

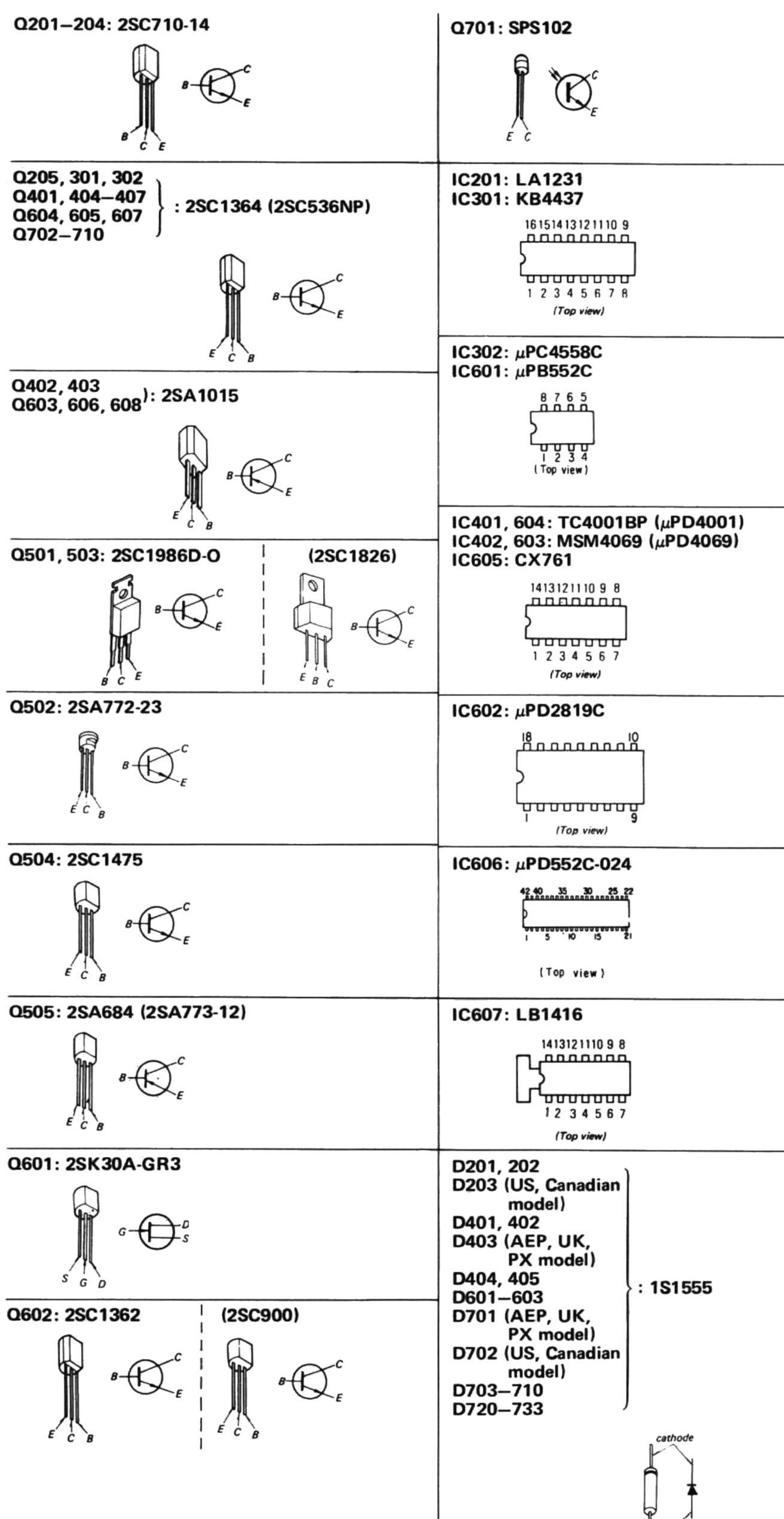
RT601

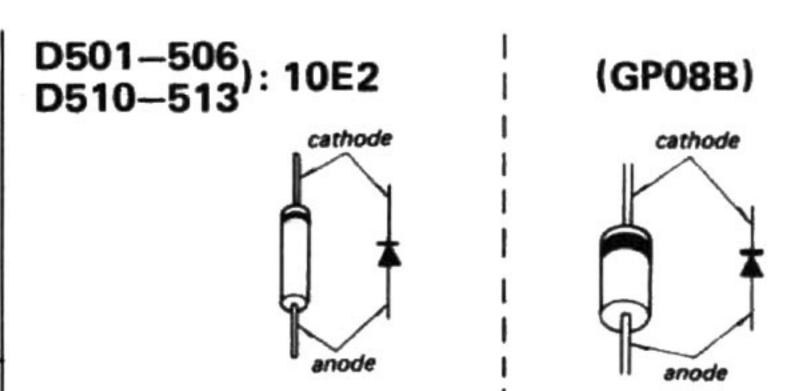


Replacement Semiconductors

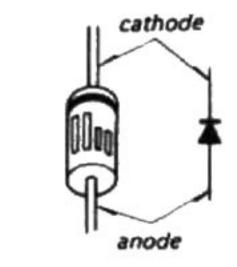
For replacement, use semiconductors except in ().

Q201–204: 2SC710-14

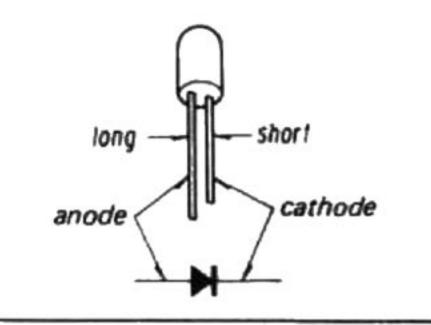




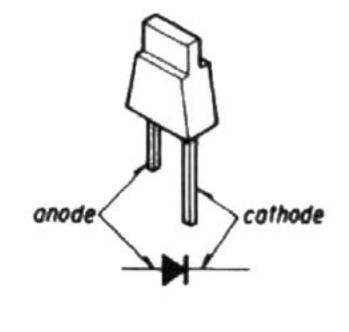
D507: EQB01-16 (EQA01-16R) D508, 509: EQB01-06 (EQA01-06R) D514, 515: EQB01-30 (EQA01-30R) D516: EQB01-08 (EQA01-08R)



D712-719: PY3423S



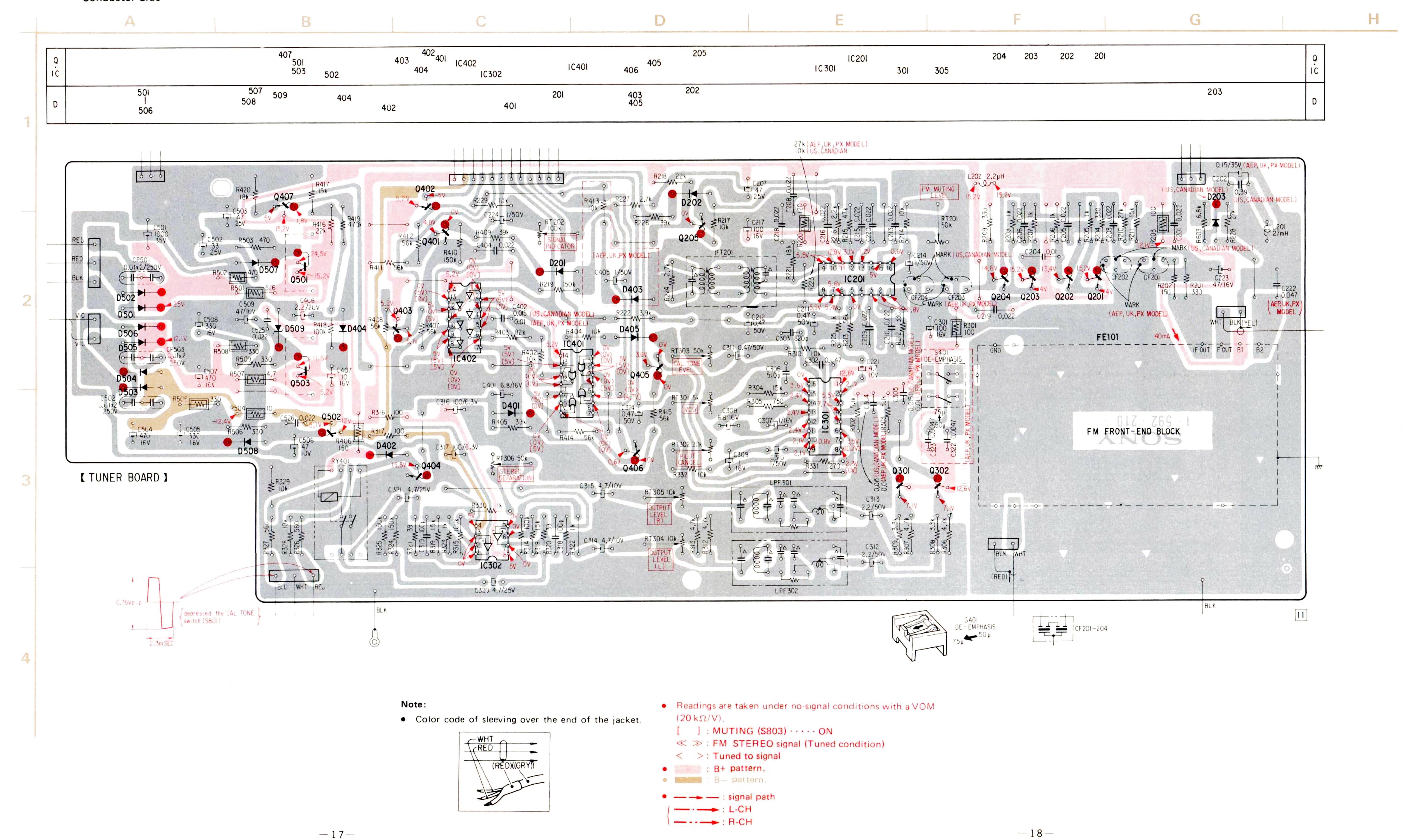
D734 D736-740) : SLP241D D735 : SLP141D



SECTION 4 DIAGRAMS

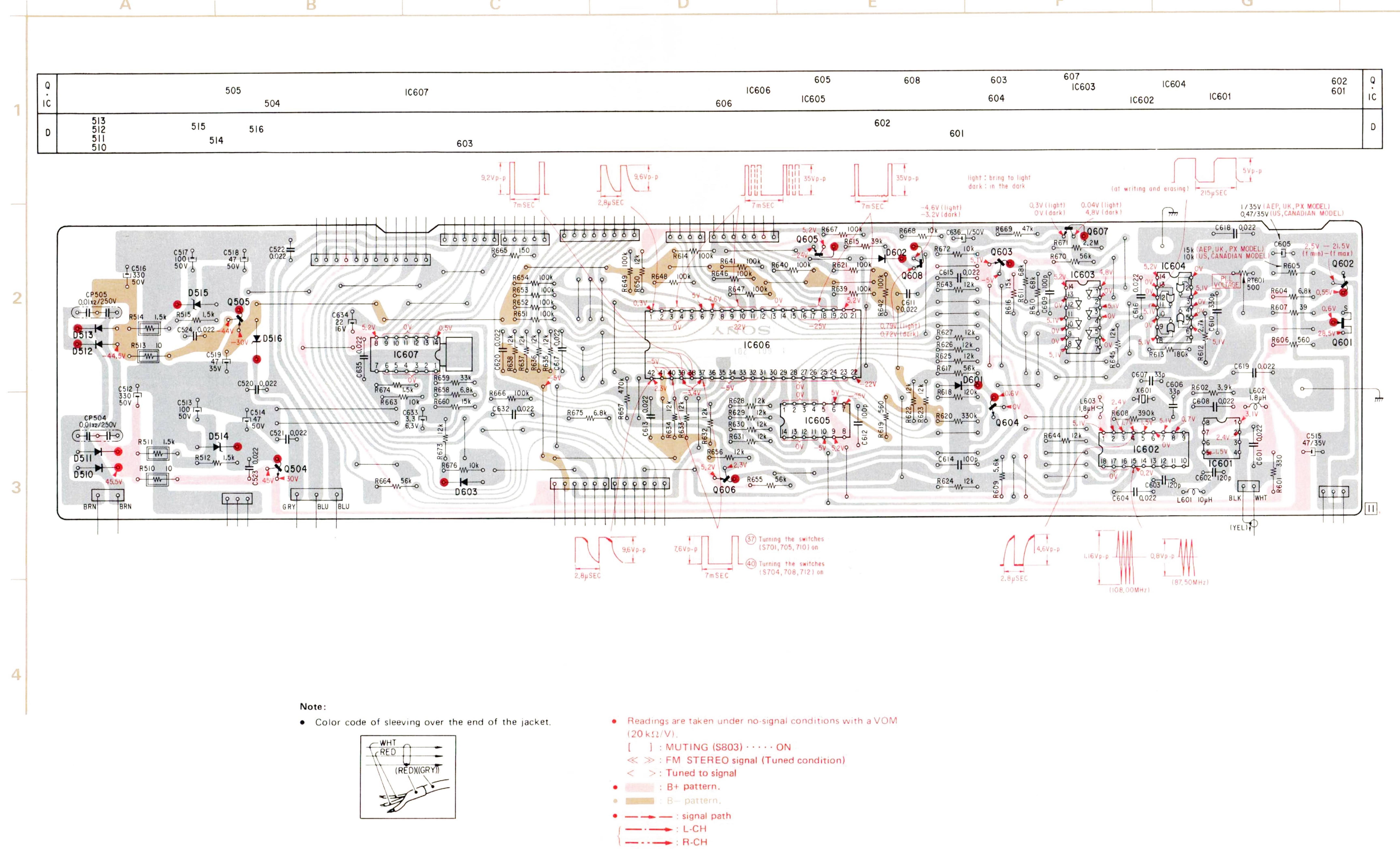
4-1. MOUNTING DIAGRAM (TUNER BOARD)

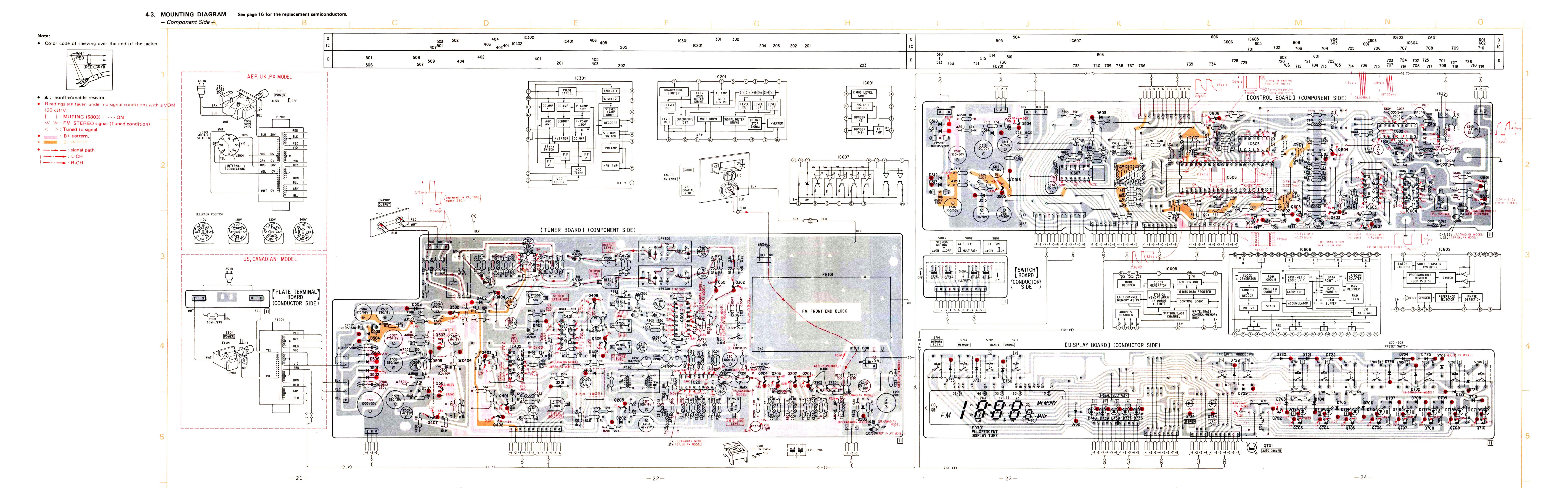
Conductor Side —

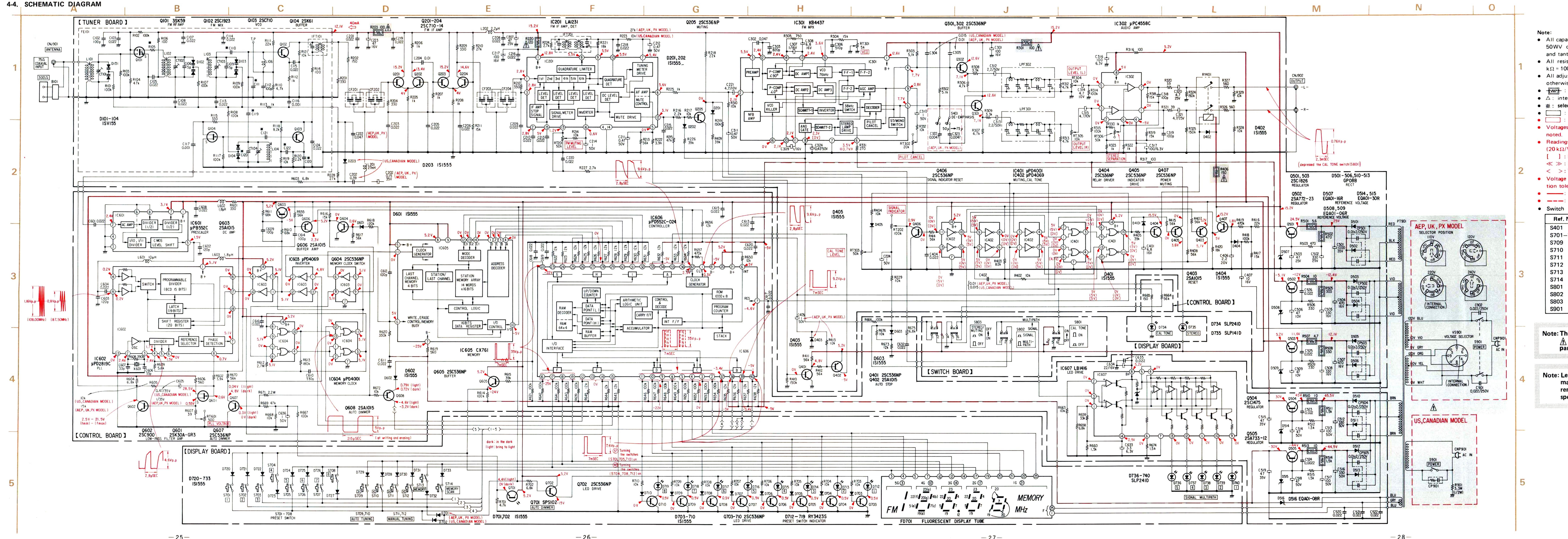


4-2. MOUNTING DIAGRAM (CONTROL BOARD)

-'Conductor Side -







- All capacitors are in μF unless otherwise noted. $pF = \mu \mu F$
- and tantalum. All resistors are in ohms, ¼W unless otherwise noted.
- All adjustable resistors have characteristic curve B, unless otherwise noted.

- * : selected to yield optimum performance.

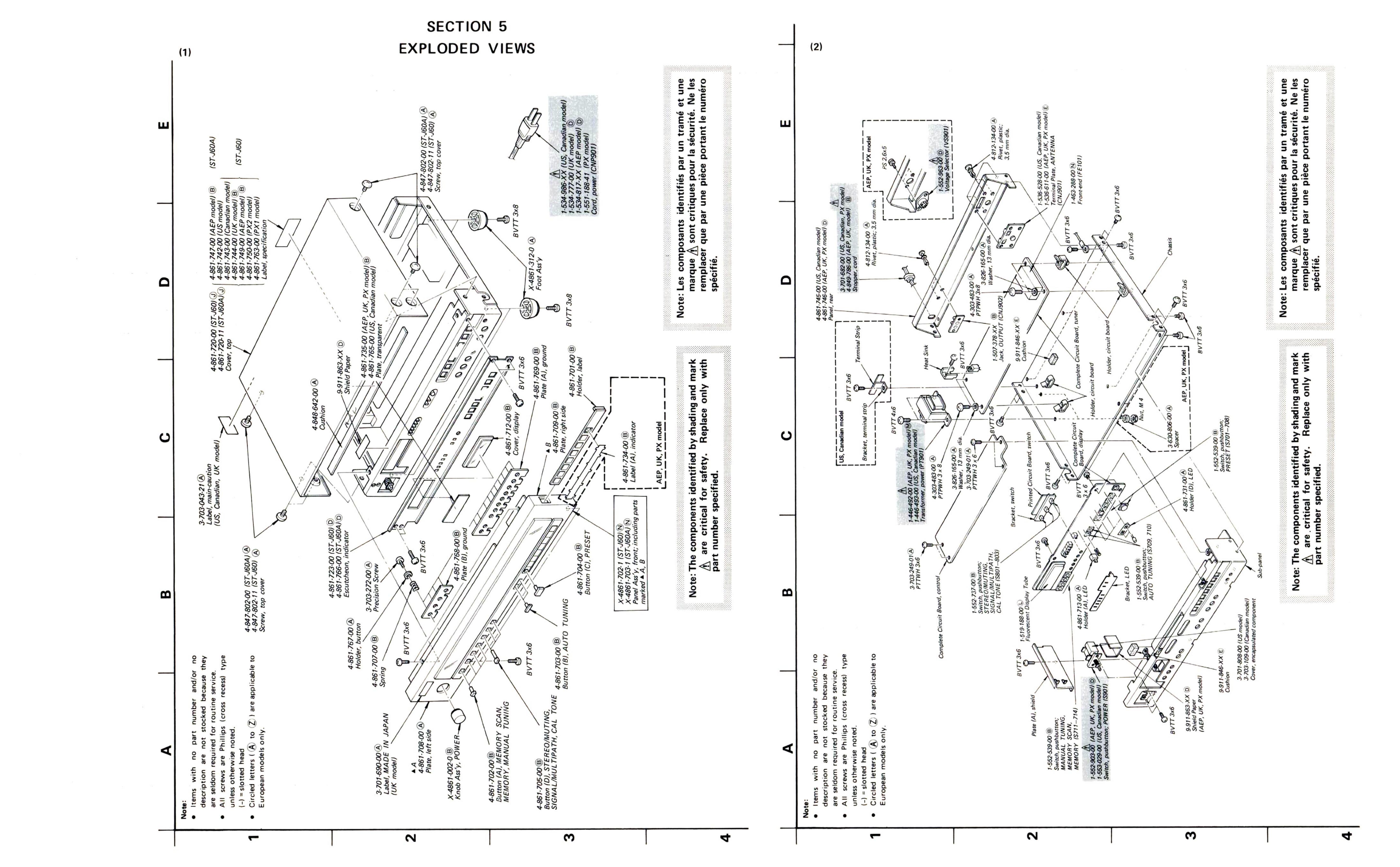
- Readings are taken under no-signal conditions with a VOM

- tion tolerances.
- B+ bus.
- ——: B- bus.

Ref. No.	Switch	Position
S401	DE-EMPHASSIS	50 μs
S701-708	PRESET (1-8)	OFF
S709	AUTO TUNING (>)	OFF
S710	AUTO TUNING (<)	OFF
S711	MANUAL TUNING (>)	OFF
S712	MANUAL TUNING (<)	OFF
S713	MEMORY	OFF
S714	MEMORY SCAN	OFF
S801	CAL TONE	OFF
S802	SIGNAL/MULTIPATH	SIGNAL
S803	STEREO/MUTING	ON
S901	POWER	OFF

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

Note: Les composants identifiés par un tramé et une



SECTION 6 ELECTRICAL PARTS LIST

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

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	
	SEMICO	NDUCTORS		Dio	odes	
	Tra	nsistors	D201, 202 D203	8-719-815-55 (8-719-815-55	B 1S1555 1S1555 (US, Ca	nadian model)
0201 204	8-729-671-14 (F	250710-14	D401, 402	8-719-815-55 (B 1S1555	
	8-729-663-47		D403	8-719-815-55 (B 1S1555 (AEP,	UK, PX model)
$\Rightarrow Q205$ $\Rightarrow Q301, 302$	>	<	D404, 405	8-719-815-55 (B 1S1555	
\Rightarrow Q301, 302 \Rightarrow Q401	8-729-663-47	<i>(</i>		• A CONTRACTOR	HISTORY CONTRACTOR OF	
-	8-729-201-52 (A		⇒ D501-506	<u>1</u> 8-719-200-02 (B 10E2	
Q402, 403	0-127-201-32	25/1015	⇒ D507	8-719-931-16 (B EQB01-16	
⇒Q404-407	8-729-663-47 (2SC1364		8-719-931-06 (
⇒Q501	8-729-308-72 (I		⇒ D510-513∠	<u>1</u> 8-719-200-02 (B 10E2	
Q501	8-760-523-10		⇒ D514, 515	8-719-931-30 (B EQB01-30	
⇒Q502	8-729-308-72 (I				_	
Q504	8-760-413-10 (F		⇒ D516	8-719-931-08 (\sim	
QJOT	0 700 115 10 (D601-603	8-719-815-55 (_	
⇒Q505	8-729-468-43 (2SA684	D701	8-719-815-55 (B) 1S1555 (AEP, 1	
Q601		3) 2SK30A-GR3	D702	8-719-815-55	1S1555 (US, Ca	anadian model)
⇒Q602	8-729-665-47 (H		D703-710	8-719-815-55 (B) 1S1555	
Q603	8-729-201-52 (A					
⇒Q604, 605	8-729-663-47		The second secon	8-719-904-23 (_	
			D720-733	8-719-815-55 (
Q606	8-729-201-52 (A	S) 2SA1015	D734	8-719-902-41 (•	
⇒Q607	8-729-663-47		D735	8-719-901-41 (
Q608	8-729-201-52 (A		D736-740	8-719-902-41 (B) SLP241D	
Q701	8-729-810-20				COLLS	
\Rightarrow Q702-710	8-729-663-47				COILS	
			L201	1-407-878-00	B 27 mH, microi	nductor
		ICs	L202	1-407-182-XX	A 2.2 μH, microi	nductor
			L601	1-407-190-XX	A 10 μH, microin	nductor
IC201	8-759-812-31 (F	E) LA1231	L602, 603	1-407-181-XX	B 1.8 μH, microi	nductor
IC301	8-759-944-37	KB4437				
IC302	8-759-145-58 (I) μPC4558C		TRA	NSFORMERS	
⇒ IC401	8-759-240-01	TC4001BP				
⇒ IC402	8-759-904-69 (MSM4069	IFT201	1-404-170-00	(D) IFT	
				 Add [17] Add [18] Add [18]	M Power (AEP, U	JK, PX model)
IC601	8-759-155-21 (I	PB552C	11701	№ 1-446-493-00	Power(US, Car	nadian model)
IC602	8-759-128-19 (μPD2819C	•			
⇒ IC603	8-759-904-69 (C) MSM4069		CA	PACITORS	
⇒ IC604	8-759-240-01	TC4001BP				
IC605	8-757-610-00	K)CX761	All capacito	ors are in μ F and	ceramic unless oth	erwise noted.
			50WV or le	ss are not indicat	ted except for elect	rolytics and
IC606		μPD552C-024	tantalums.	$p: \mu\mu F$, elect: e	lectrolytic	
IC607	8-759-814-16 (1	E) LB1416				
			C201	1-161-494-00	•	
				1-108-593-00	0.39	mylar

⇒: Due to standardization, interchangeable replacements

part number specified.

may be substituted for parts specified in the diagrams.

Note: The components identified by shading and mark Note: Les composants identifiés par un tramé et une marque A sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro nare critical for safety. Replace only with

(US, Canadian model)
1-131-210-00 B 0.15 35V tantals

(AEP, UK, PX model)

C202

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

Ref. No.	Part No.	Descriptio	on		Ref. No.	Part No.	Descri	ption	
C203	1-161-494-00 (A	0.022			C324	1-123-351-00 (0.47	50V	elect
C204	1-161-379-00 (A)						9 0		
0201	1 101 577 00 (.)	0.01			C401	1-131-198-00 (3)6.8	16V	tantalum
C205, 206	1-161-494-00 (A)	0.022			C 401	(1-108-579-00			mylar
C207	1-123-493-00 (B)		V elect		C402	1100377000		J K, PX r	177
C208-210	1-161-494-00 (A)		. 0.001		C. 402	1-108-583-00	0.015	,	mylar
C211,212	1-123-351-00 (A)		V elect			1-100-303-00		nadian r	
C211,212	1-161-494-00 (A)		, Cicci		C404	1-161-494-00 (madiani	iiodei)
C213	1-101-474-00.0	0.022			C404	1-123-352-00 (50V	elect
C214	1-123-352-00 (A)	1 50	V elect		C403	1-125-552-00 (J K, PX r	
C214 C215, 216	1-161-494-00 (A)		, Cicci				(AEP, C	K, PA I	nodel)
C213, 210	1-123-484-00 (B)		V elect		C406	1-131-196-00 (1	0 2 2	20V	tantalum
C217	1-161-494-00 (A)		ov cicci		C400	1-123-316-00		16V	elect
C218-220	1-131-192-00 (B)		V tantalu	ım	C407	1-123-310-00 (7	9 10	10 4	cicci
C221	1-131-192-00 (B)	7.7	, v tantaru		C501	1-123-508-00	1000	35V	elect
Cara	1-108-595-00 (A)	0.047	mylar		C502	1-123-496-00 (AND THE STREET, STREET,	25V	elect
C222	1-106-393-00 (A)		-		C503	1-123-493-00 (1		25V	elect
C222	1 122 402 00 1	(AEP, UK,	CON 100 NO 100 (100 (100 (100 (100 (100 (100 (100			1-123-493-00 (I		16V	
C223	1-123-483-00 B				C505	Petrological State	A STATE OF THE PARTY OF	All Sales	elect
C224	1-123-352-00 A) 1 50	V elect		C303	1-123-486-00 (1	5) 330	16V	elect
C301	1-123-484-00 B	100 16	V elect		C506	1-123-306-00 (1	3) 47	10V	elect
C302	1-108-595-00 (A)	0.047	mylar		C507	1-123-487-00	470	16V	elect
C303	1-104-075-00 (B)	820p	polyet	hylene	C508	1-123-486-00 (330	16V	elect
	(1-108-579-00 (A)		mylar		C509	1-123-306-00 (1	3) 47	10V	elect
C304	{	(AEP, UK,	PX model)		C512	1-123-515-00	330	50V	elect
	1-108-583-00	0.015	mylar						
		(US, Canad	ian model)		C513	1-123-513-00 (1	100	50V	elect
					C514	1-123-512-00 (1		50V	elect
	(1-108-579-00 (A)	0.01	mylar		C515	1-123-503-00 (1		35V	elect
C305	{		PX model)			1-123-515-00 (I	£	50V	elect
	1-108-583-00	0.015	mylar		C517	1-123-513-00 (1	AND THE RESERVED IN	50V	elect
		(US, Canad			001				
C306	1-104-070-00 (A)		polyet	hvlene	C518	1-123-512-00 (1	3) 47	50V	elect
C307	1-131-347-00 (B)		-		C519	1-123-503-00 (1		35V	elect
C308	1-131-198-00 (B)			1	C520-526	1-101-005-00		551	Cicci
C300	1-131-190-00 (1)	, 0.0	, v tairtaic		(.320-320	1-101-003-00 (0.022		
C309	1-131-347-00 (B)) 1 16	V tantalu	ım	C601	1-161-494-00 (0.022		
C310	1-123-352-00 (A)				C602, 603	1-101-340-00			
C311	1-123-351-00 (A)				C604	1-161-494-00			
C312, 313	1-121-450-00 (A)					(1-131-213-00	0.47	35V	tantalum
	\simeq			ım	C605	1 131 213 00		nadian r	
0314, 313	1 131 172 00 0		•		0000	1-131-215-00 (1		35V	tantalum
C316, 317	1-123-464-00 (B)	100 6.3	3V elect			- 101 210 00 (-	JK, PX 1	
	1-161-271-00 (A)				C606, 607	1-102-518-00 (JK, IAI	
C320, 321	×		V elect		C608	1-161-494-00			
C322, 323	1-123-332-00 (A)		mylar		C609	1-161-494-00 (
C322, 323	1-100-371-00 (A	(AEP, UK,			0009	1-101-271-00 (y roop		
		(ALI, UK,	A Middel)	1					

Note: The components identified by shading and mark

A are critical for safety. Replace only with
part number specified.

Note: Les composants identifiés par un tramé et une marque A sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

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

Ref. No.	Part No.	Descri	ption	
C610	1-161-317-00 (A) 330p		
C611	1-101-005-00 (A	0.022		
C612	1-161-271-00 (A	100p		
C613	1-161-494-00 (A	0.022		
C614	1-161-271-00 (A	100p		
C615-620	1-161-494-00 (A	0.022		
C632	1-161-494-00 (A	0.022		
C633	1-131-422-00 B	3.3	6.3V	tantalum
C634	1-123-317-00 (A	22	16V	elect
C635	1-161-494-00 (A	0.022		
C636	1-123-352-00 (A) 1	50V	elect
C901, 902 Z	1-130-267-00 C	0.022	250V	polyethylene
		(AEP, U	K, PX n	nodel)

RESISTORS

All resistors are in ohms. Common ¼W carbon resistors are omitted. Refer to the list on the last page for their part numbers.

R203	⚠1-247-107-00 (A) 100	1/4W	carbon
			(nonflammable)
R220	⚠1-247-109-00 (A) 120	1/4W	carbon
			(nonflammable)
R301	⚠1-247-107-00 (A) 100	1/4W	carbon
			(nonflammable)
R406	⚠1-247-111-00 (A) 150	1/4W	carbon
			(nonflammable)
R501	⚠1-247-080-00 (A) 5.6	1/4W	carbon
			(nonflammable)
R502	1-247-123-00 (A) 470	1/4W	carbon
			(nonflammable)
R504	⚠1-247-083-00 (A) 10	1/4W	carbon
			(nonflammable)
R505	⚠1-247-119-00 (A) 330	1/4W	carbon
			(nonflammable)
R507	⚠1-247-079-00 (A) 4.7	1/4W	carbon
			(nonflammable)
R508	⚠1-247-119-00 (A) 330	1/4W	carbon
			(nonflammable)
R510	1-247-083-00 (A) 10	1/4W	carbon
			(nonflammable)
R511	▲1-247-135-00 (A) 1.5k	1/4W	carbon
			(nonflammable)

Ref. No.	Part No.		Descr	iption	
R513	1-247-083-00	(A)	10	1/4W	carbon
					(nonflammable)
R514	№ 1-247-135-00	A	1.5k	1/4W	carbon
				100	(nonflammable)
R901	1-202-725-00		3.3M	$\frac{1}{2}W$	composition
				(US,	Canadian model)
RT201	1-226-238-00	(A)	50k-B,	adjusta	ble; FM muting level
RT202	1-226-239-00	(A)	100k-E	3, adjust	able; signal
		_	indicat	or	
RT301	1-226-235-00	(A)	5k-B, a	djustab	le; VCO
RT302		$\underline{\hspace{0.1cm}}$			ble; pilot cancel
RT-303		$\underline{}$			ble; CAL TONE lev
		_			
RT304, 30	1-226-236-00	\smile			
RT306		\simeq			ble; stereo separation
RT601	1-226-232-00	(B)	500-B,	adjusta	ble; PLL voltage
	S	WIT	CHES		
S401	1-552-130-00	B	De-em	phasis (A	AEP, UK, PX model)
S701 - 714	1-552-539-00	$^{\odot}$	Pushbu	itton, P	RESET, AUTO
			TUNIN	NG, MA	NUAL TUNING,
					EMORY SCAN
S801-803	1-552-737-00	$^{\circ}$	Pushbu	itton, C	AL TONE,
			SIGNA	L/MUL	TIPATH,
	•			EO/MU1	
(<u>1-552-903-00</u>	0	Pushbu	tton, Po	OWER
S901			(AEP,	UK, PX	model)
	<u>1-553-029-00</u>		Pushbu	tton, Po	OWER
			(US, C	anadian	model)
	MISC	ELL	ANEO	US	
	(1-527-307-XX		Filter,	ceramic	
CF201-20)4{		(US, C	anadian	model)
	04 \bigg\{ \biggl_{1-527-307-XX} \\ \biggl_{1-527-344-91} \end{array}	(D)	Filter,	ceramic	
				UK, PX	
	1-536-528-00		Termin	al Plate	, ANTENNA
CNJ901	\begin{cases} \ 1-536-528-00 \\ \ \ 1-536-611-00 \end{cases}		(US, Ca	anadian	model)
	1-536-611-00	E	Termin	al Plate	, ANTENNA
			(AEP,	UK, PX	model)
CNJ902	1-507-378-XX	(B)	Jack, C	UTPUT	

Note: The components identified by shading and mark A are critical for safety. Replace only with part number specified. Note: Les composants identifiés par un tramé et une marque not sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

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

PACKING MATERIALS AND ACCESSORIES

Ref. No.	Part No.	Description
	▲1-534-777-00 (1	Cord, power (UK model)
		Cord, power (AEP model)
CNP901	▲1-534-986-XX	Cord, power
		(US, Canadian model)
	▲1-551-188-41	Cord, power (PX model)
CP501-50	5M-102-394-00 (A	Capacitor, ceramic; dual type;
		(0.01 µF 250V) x 2
	A1-231-326-11	Encapsulated Component
CP901		(US model)
L	▲1-231-341-00	Encapsulated Component
		(Canadian model)
FD701	1-519-188-00 (I	Fluorescent Display Tube
FE101	1-463-288-00	Front-end
LPF301,30	2 1-231-420-00	Filter, low-pass
RY401	1-515-297-00 (F	Relay, reed
VS901	∆1-552-963-00 (I	Voltage Selector
		(AEP, UK, PX model)
X601	1-527-404-00 (E	Crystal, OSC

Part No.		Description
1-501-161-00	F	FM Ribbon Antenna
1-506-305-00		Plug, FP-33 (US, Canadian model)
1-526-565-00		Adaptor, ac plug (PX1 model)
1-534-049-31	Œ	Cord, connection; RK-74H
1-551-734-11	D	Cord, connection; RK-74A
3-701-620-00	(A)	Bag, plastic; for accessories
3-701-630-00	A	Bag, plastic; for instruction manual
3-770-646-11	(D)	Manual, instruction (AEP, UK, PX model)
3-770-646-21		Manual, instruction (US model)
3-770-646-21		Manual instruction (Consdian model)
3-794-496-31		Manual, instruction (Canadian model)
3-794-233-21		Separate Sheet, consumer products
		(US model)
4-861-751-00		Station Label (M) (US, Canadian, PX model)
4-861-752-00		Station Label (1-A) (US, Canadian, PX model)
4-861-753-00		Station Label (2-A) (US, Canadian, PX model)
4-861-754-00		Station Label (3-A) (US, Canadian, PX model)
4-861-755-00		Station Label (1-B) (PX model)
4-861-756-00		Station Label (2-B) (PX model)
4-861-757-00		Station Label (3-B) (PX model)
4-861-758-00	(D)	Station Label (E-1) (AEP, UK model)
4-861-759-00	D	Station Label (E-2) (AEP, UK model)
4-861-760-00	(D)	Station Label (E-3) (AEP, UK model)
4-861-761-00	(D)	Station Label (E-4) (AEP, UK model)
4-863-543-00	Ö	Cushion
4-891-037-00	$\widecheck{\mathbf{B}}$	Bag, plastic; for set

Note: The components identified by shading and mark

A are critical for safety. Replace only with part number specified.

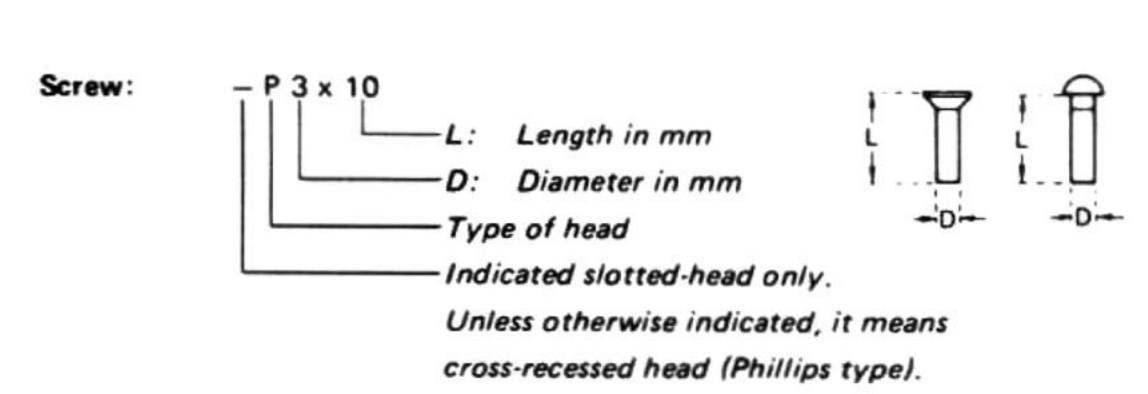
Note: Les composants identifiés par un tramé et une marque A sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

1/4 WATT CARBON RESISTORS A

Note: Circled letter (A) is applicable to European models only.

							•				European n	lodeis	omy.
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	1-246-576-00	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	1-246-577-00	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	1-246-578-00	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	1-246-579-00	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	1-246-580-00	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	1-246-581-00	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	1-246-582-00	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	1-246-583-00	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	1-246-584-00	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	1-246-585-00	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	1-246-586-00	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	1-246-587-00	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



Reference Designation Shape		Description	Remarks		
		SCREWS	-		
Р	₽	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	85 3-	pan-head screw with spring washer	binding-head (B) screw and spring washer for replace- ment		
PSW PSPW	98	pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement		
R	€3	round-head screw	binding-head (B) screw for replacement		
K	Ð	flat-countersunk-head screw			
RK	€	oval-countersunk-head screw			
В	P	binding-head screw			
T (₽		truss-head screw	binding-head (B) screw for replacement		
F	₽⊃	flat-fillister-head screw			
RF	€3	fillister-head screw			

braizer-head screw

Nut, Washer, Retaining ring:	
N 3	Diameter of usable screw or shaft
	Reference designation

Reference Designation Shape		Description	Remarks			
		SELF-TAPPING SCRE	ws			
TA (III)		self-tapping screw	ex: TA, P 3 x 10			
PTP		pan-head self-tapping screw	binding-head self- tapping (TA, B) screw for replacement			
РТРИН		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	-⊚€-3-	hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket			
		NUT				
N	-0-0	nut				
		WASHERS				
W	0	flat washer				
SW	-⊘ - { -	spring washer				
LW	0	internal-tooth lock washer	ex: LW3, internal			
LW		external-tooth lock washer	ex: LW3, external			
		RETAINING RINGS				
E	E retaining ring					
G (i)		grip-type retaining ring				

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