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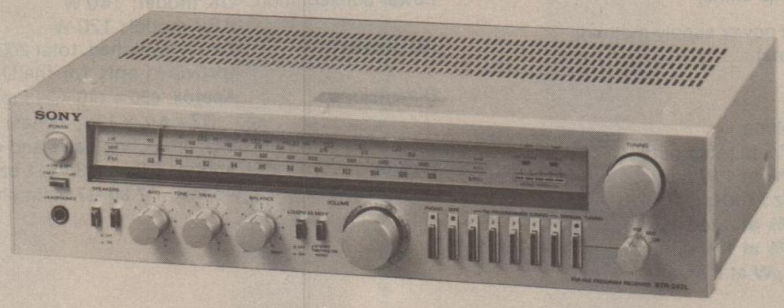
STR-242L

AEP Model
UK Model



FM-AM PROGRAM RECEIVER

SPECIFICATIONS

FM tuner section

Tuning range	87.5–108 MHz
Antenna terminals	300 ohm balanced 75 ohm unbalanced
Intermediate frequency	10.7 MHz
Sensitivity at 46 dB quieting (at 40 kHz deviation)	4.0 μV (mono), 45 μV (stereo)
Usable sensitivity	IHF 1.8 μV, 10.3 dBf 1.6 μV (S/N = 26 dB, 40 kHz deviation)
Signal-to-noise ratio	69 dB (mono), 64 dB (stereo)
Harmonic distortion	0.2% (mono), 0.3% (stereo), at 1 kHz
IM distortion	0.2% (mono), 0.3% (stereo)
Separation	45 dB at 1 kHz
Frequency response	40 Hz–12.5 kHz $^{+0.5}_{-1}$dB
Selectivity at 300 kHz (at 40 kHz deviation, S/N = 26 dB)	40 dB
Capture ratio	1.5 dB
AM suppression ratio	48 dB
Image response ratio	45 dB
Spurious response ratio	70 dB
Muting threshold	Approx. 5 μV

MW/LW tuner section

	MW	LW
Tuning range	522 kHz–1,602 kHz	150 kHz–350 kHz
Antenna	Built-in ferrite rod antenna, External antenna terminal	
Intermediate frequency	450 kHz	
Usable sensitivity	250 μV/m, built-in antenna (1,000 kHz) 100 μV, external antenna (1,000 kHz)	500 μV/m, built-in antenna (230 kHz) 100 μV, external antenna (230 kHz)
Signal-to-noise ratio	52 dB (50 mV/m)	52 dB (50 mV/m)
Harmonic distortion	0.3% (50 mV/m, 400 Hz)	0.3% (50 mV/m, 400 Hz)
Selectivity	35 dB (9 kHz)	35 dB (9 kHz)

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.

– Continued on page 2 –

SONY®
SERVICE MANUAL

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Amplifier section

Continuous RMS power output (less than 0.08% THD, both channels driven simultaneously)

at 20 Hz–20 kHz
22 + 22 watts (8 ohms)
at 1 kHz
25+ 25 watts (8 ohms)
according to DIN 45500
22 + 22 watts (8 ohms)

Dynamic power output (IHF constant power supply method)
65 watts (8 ohms)

Power bandwidth (IHF)
15 Hz–35 kHz

Damping factor 30 at 1kHz, 8 ohms

Harmonic distortion Less than 0.08% at rated output
Less than 0.05% at 1 W output

Intermodulation (IM) distortion (60 Hz : 7 kHz = 4:1)
Less than 0.08% at rated output
Less than 0.05% at 1 W output

Residual noise Less than 0.05 μW at 8 ohms

Inputs

	Sensitivity	Impedance	S/N	Weighting network
PHONO	2.5 mV	50 kilohms	75 dB	A
TAPE	150 mV	50 kilohms	90 dB	A

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

Outputs (with rated input)

REC OUT	Voltage 150 mV	Impedance 10 k ohms
HEADPHONES	Accepts all low or high impedance headphones.	
SPEAKER	8–16 ohm speakers are suitable.	

Frequency response PHONO
RIAA equalization curve ±0.5 dB
TAPE
10 Hz–50 kHz $^{+0}_{-3}$ dB

Tone controls BASS ±8 dB at 100 Hz
TREBLE ±8 dB at 10 kHz

Loudness control (att. 30 dB)
+8 dB at 100 Hz

General

System Superheterodyne FM/AM tuner, Direct coupled quasi-complementary symmetry power amplifier circuit (SEPP OTL)

Power requirements UK model: 240 V ac (or 220 V ac adjustable by authorized Sony personnel), 50 Hz
AEP model: 220 V ac (or 240 V ac adjustable by authorized Sony personnel), 50 Hz

Power consumption UK model: 140 W
AEP model: 120 W

AC outlets Two unswitched, total 200 W (provided only for the UK model)

Dimensions Approx. 430 × 110 × 315 mm (w/h/d) (17 × 4 1/4 × 12 3/8 inches) incl. projecting parts and controls

Weight Approx. 6.2 kg (13 lb 11 oz) net
Approx. 7.7 kg (17 lb) in shipping carton

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SERVICING NOTE

MELF (Metal Electrodes Face-Bonding) Components

Warning

If MELF components are forcibly removed from the printed circuit board with pincers or pliers, the circuit board pattern is likely to peel away. Always remove MELF components according to the procedure described on the next page. Replace MELF components with the lead type components.

MELF components are soldered directly to the surface of the printed circuit board.

MELF resistors and capacitors have the same dimensions and are distinguished by their background colors: light brown for resistors, and pink or light green for capacitors.

The MELF resistor color coding is the same as for conventional resistors, and MELF capacitor color coding is the same as for tube-type ceramic capacitors. Note, however, that all MELF resistors are rated at ¼W and ±5%.

Components larger than resistors and without a color code are cross conductors, which are used instead of jumper wires.

1. Structure

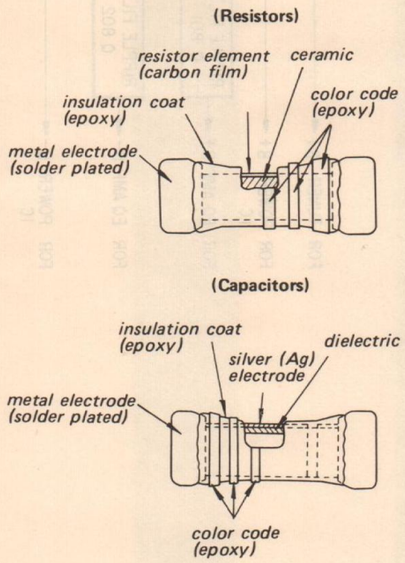
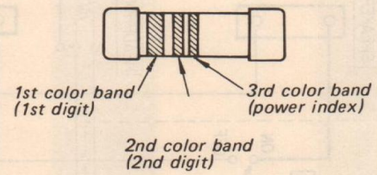


Fig. 1

2. Color Code Reading



(Example of Capacitor)

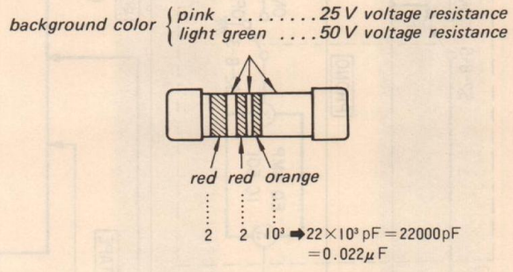


Fig. 2

3. How to Remove MELF Components and Mount Replacements

Use a soldering iron of at least 40W with an iron tip 4 mm in diameter and file the tip down to the angle shown in the diagram.

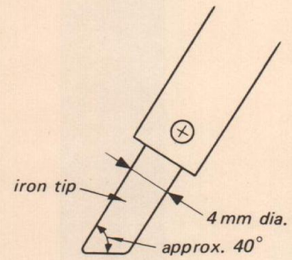


Fig. 3

1. Bring the flat surface of the soldering iron in equal contact with both soldered ends of the component.
2. The solder should melt in about 4 seconds. (The solder will melt more readily if a small amount of solder is attached to the iron tip and the iron tip is placed against the component.)
3. Once the solder has melted, tap the component aside with the tip of the soldering iron, and remove it from the board.

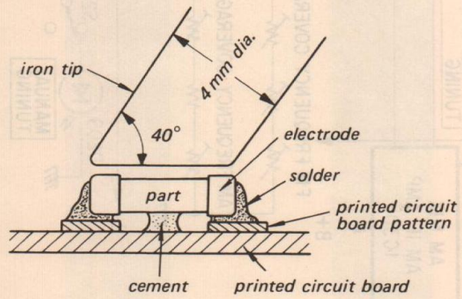


Fig. 4

4. Use lead type resistors or capacitors to replace the MELF components.
   These replacements may be mounted either with short leads (see Fig. 5), or by covering a lead with tubing (see Fig. 6).

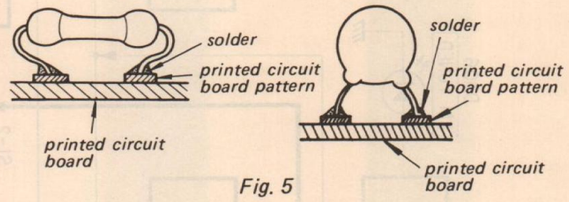


Fig. 5

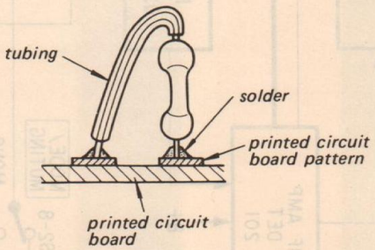


Fig. 6

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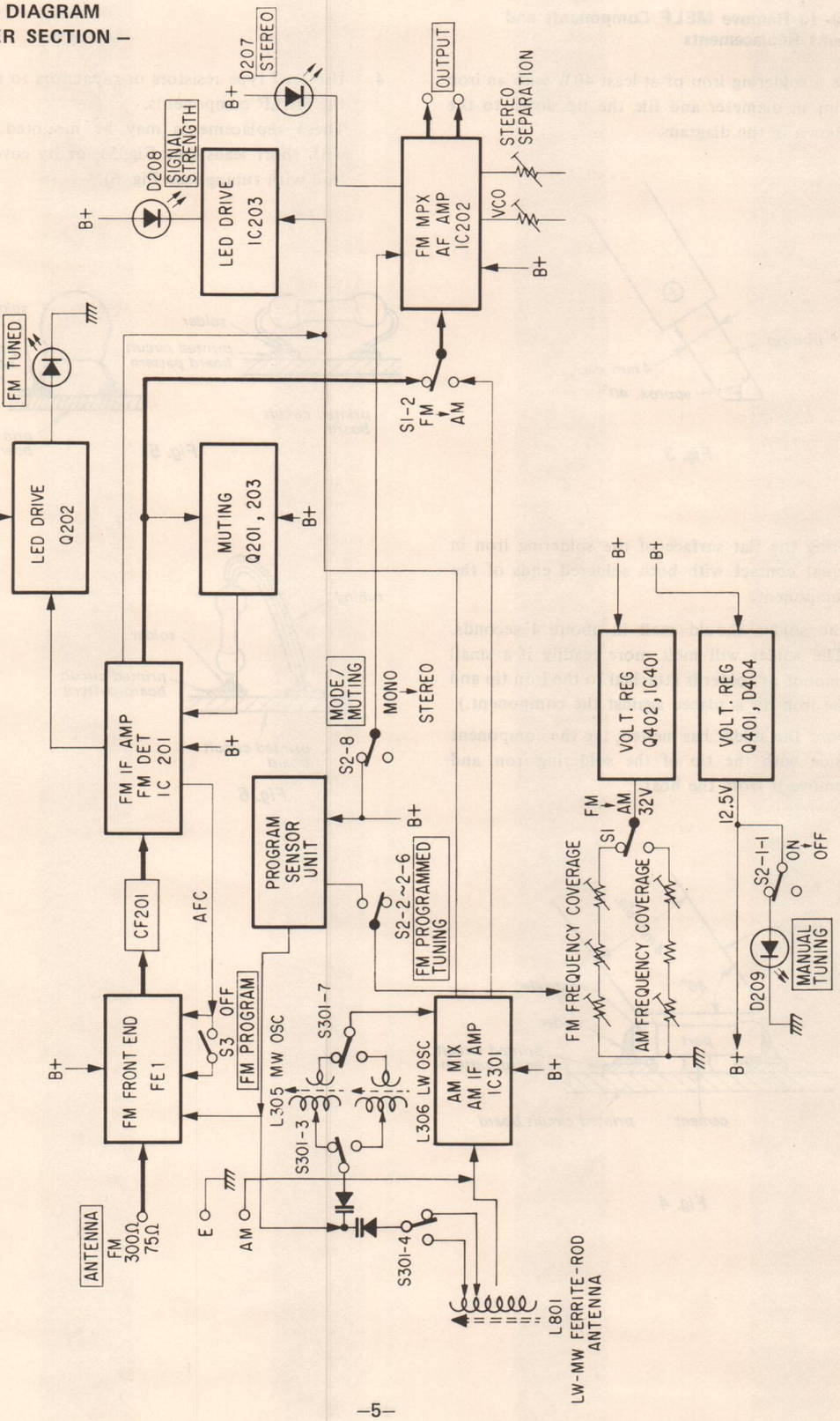
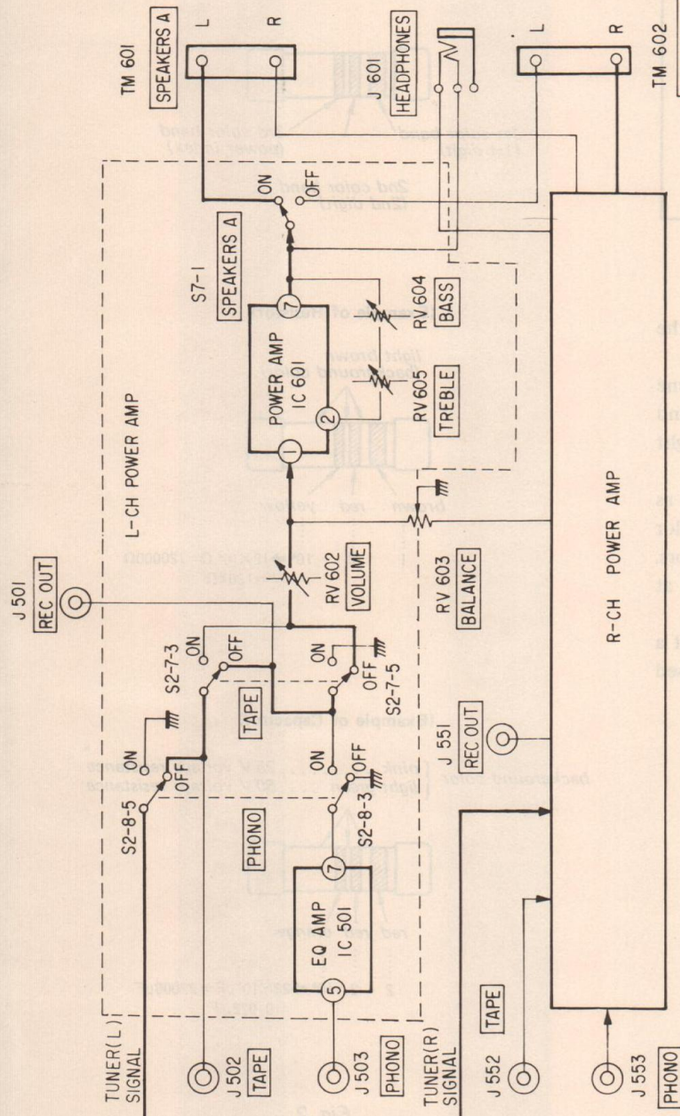
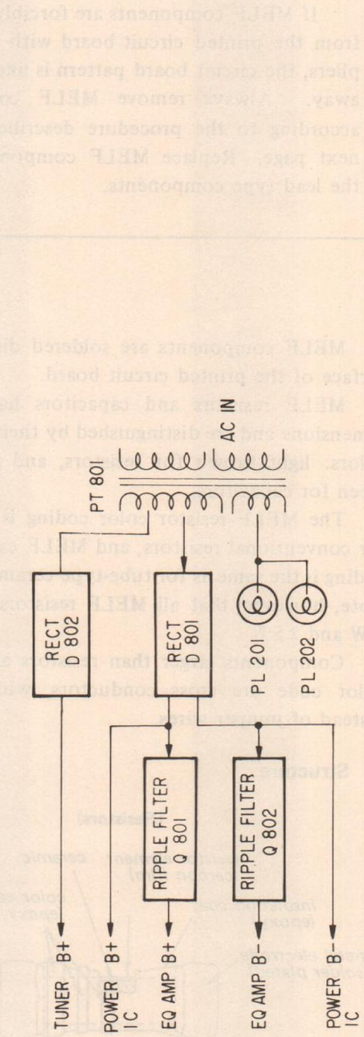
SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM
– TUNER SECTION –



– AUDIO AMP SECTION –





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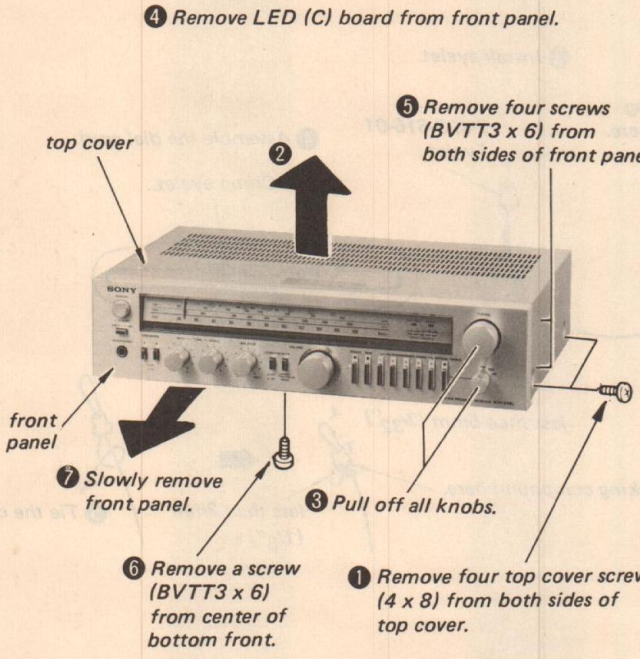
SECTION 2
DISASSEMBLY

2-1. DISASSEMBLY

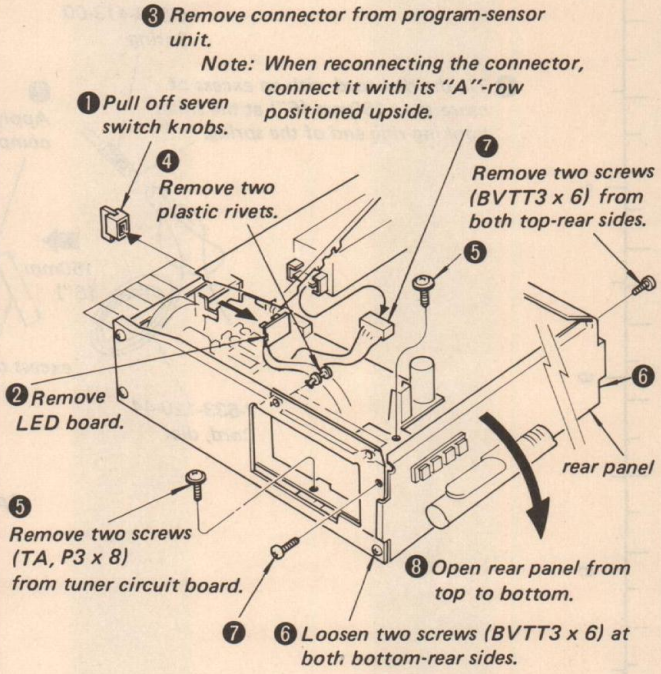
Note: Follow the disassembly procedure in the numerical order given.

TOP COVER AND FRONT PANEL

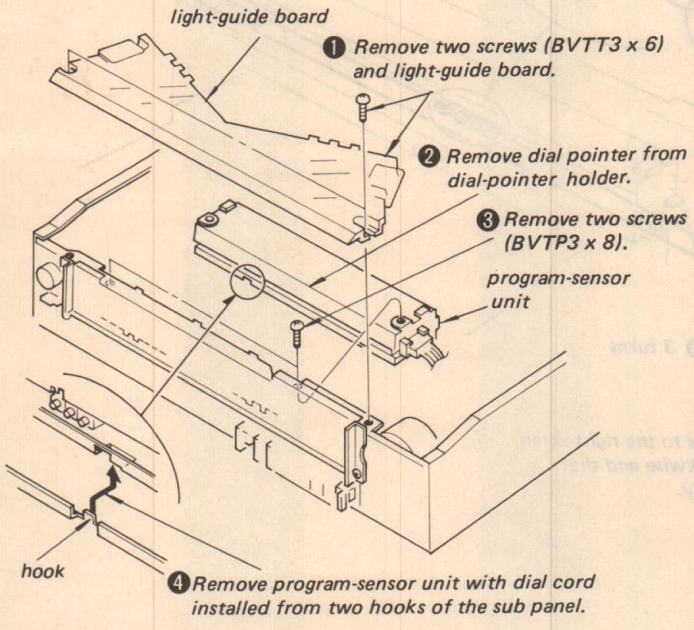
Top Cover: ❶ – ❷
Front Panel: ❶ – ❼

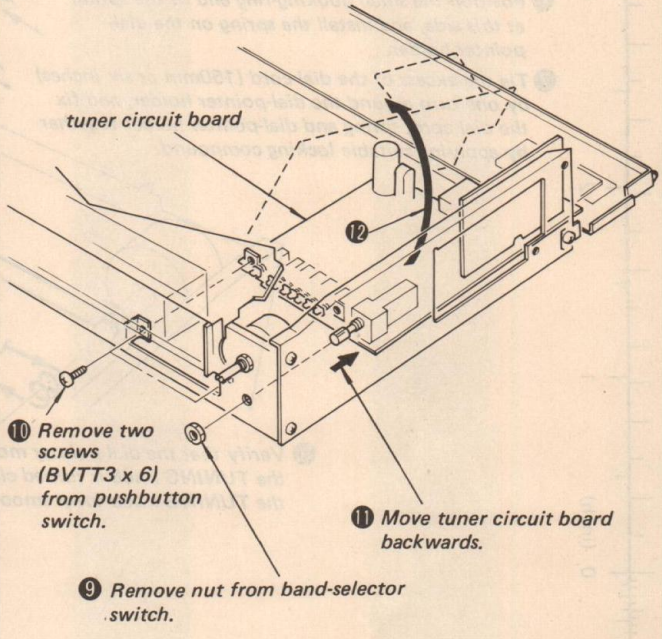


TUNER BOARD



PROGRAM-SENSOR UNIT





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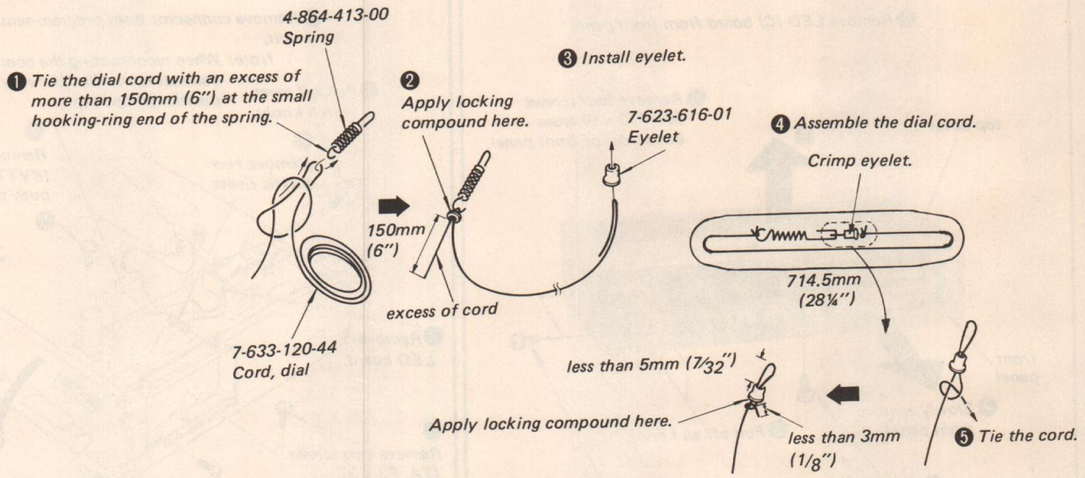
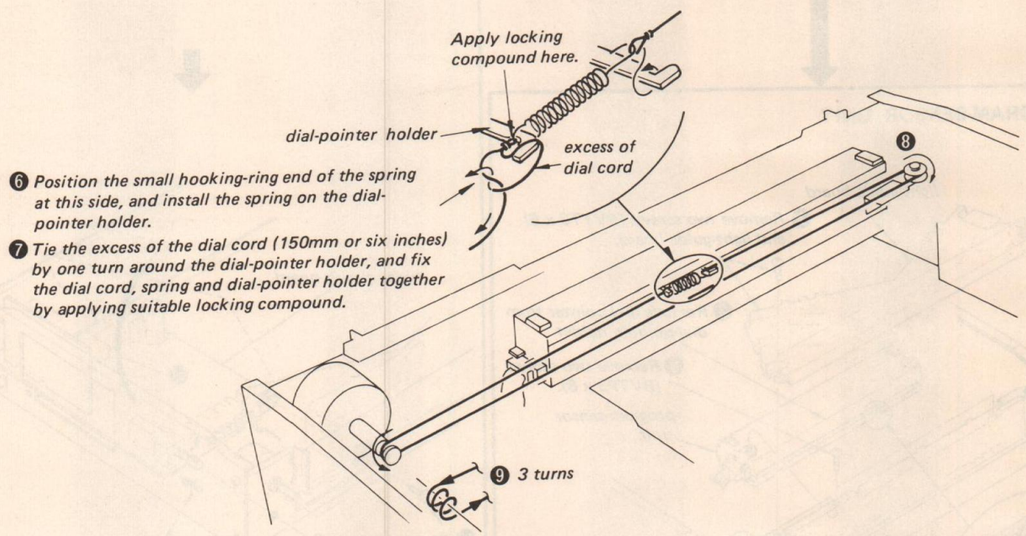
2-2. DIAL-CORD STRINGING





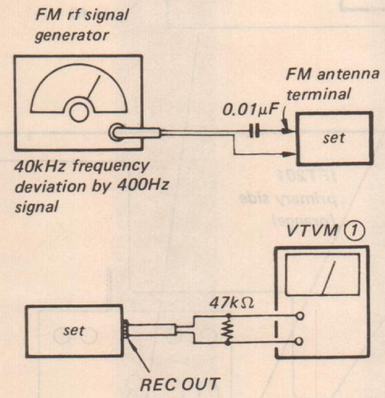
❿ Verify that the dial pointer moves to the right when the TUNING knob is turned clockwise and that the TUNING knob turns smoothly.

SECTION 3
ADJUSTMENTS

FM SECTION

Setting:

MANUAL TUNING switch: ON
Band Selector: FM
MODE switch: MONO



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

FM FRONT-END BLOCK

Adjustment is not necessary. But if it has been meddled with in some way, and if the adjustment is necessary by all means, adjust the FM front-end block as follows.

FM FREQUENCY COVERAGE ADJUSTMENT 1

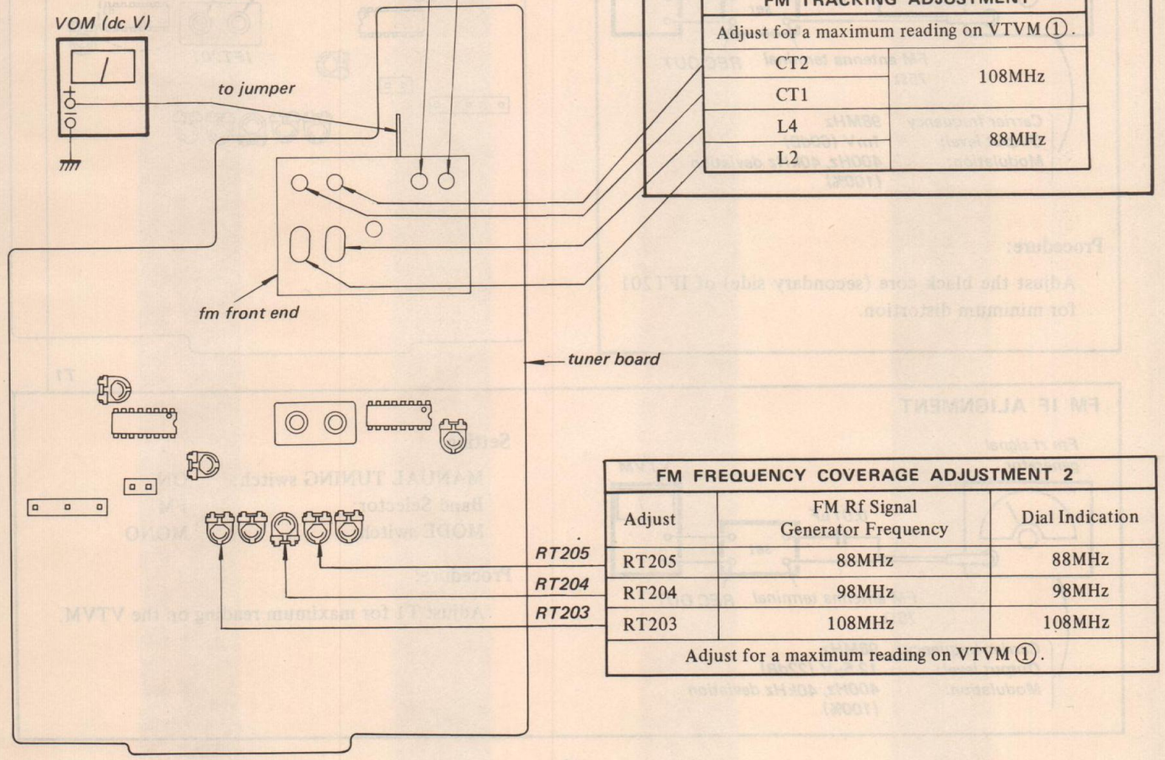
1) Be sure to perform this adjustment before the FM frequency coverage adjustment 2.

TUNING CONTROL VOLTAGE ADJUSTMENT		
Adjustment Part	Dial Indication	VOM Reading
RT205	lowest frequency	2.8V
RT204	98MHz	8.0V
RT203	highest frequency	22.5V
Adjust for a specified reading on VTVM ②.		

LOCAL OSCILLATOR FREQUENCY ADJUSTMENT		
Adjustment Part	Dial Indication	FM Rf Signal Generator Frequency
CT3	highest frequency	108MHz
T2	lowest frequency	88MHz
Adjust for a maximum reading on VTVM ①.		

2) Be sure to perform this adjustment after the FM frequency coverage adjustment 2.

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM ①.	
CT2	108MHz
CT1	
L4	88MHz
L2	



FM FREQUENCY COVERAGE ADJUSTMENT 2		
Adjust	FM Rf Signal Generator Frequency	Dial Indication
RT205	88MHz	88MHz
RT204	98MHz	98MHz
RT203	108MHz	108MHz
Adjust for a maximum reading on VTVM ①.		

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FM DISCRIMINATOR ALIGNMENT 1

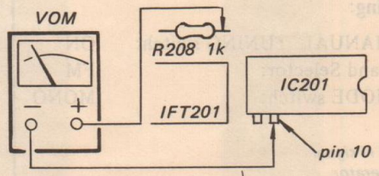
Setting:

MANUAL TUNING switch:	ON
Band Selector:	FM
MODE switch:	MONO
TUNING:	Detuned position

Procedure:

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

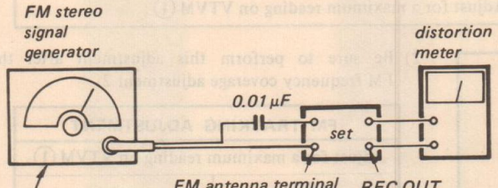
Note: When replacing the ceramic filter (CF201), perform this alignment.



FM DISCRIMINATOR ALIGNMENT 2

Setting:

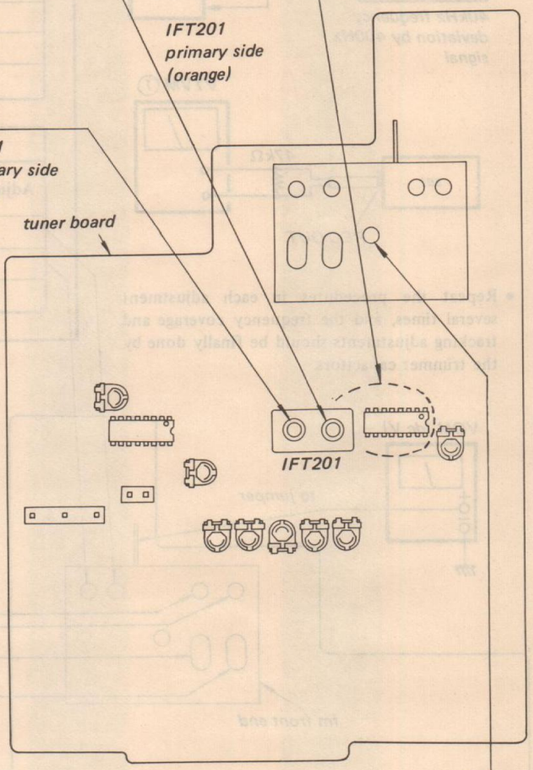
MANUAL TUNING switch:	ON
Band Selector:	FM
MODE switch:	MONO



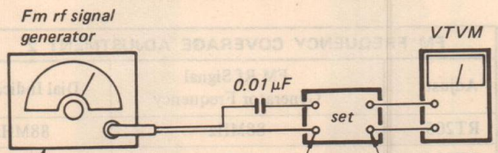
Carrier frequency 98MHz
Output level: 1mV (60dB)
Modulation: 400Hz, 40kHz deviation (100%)

Procedure:

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



FM IF ALIGNMENT



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

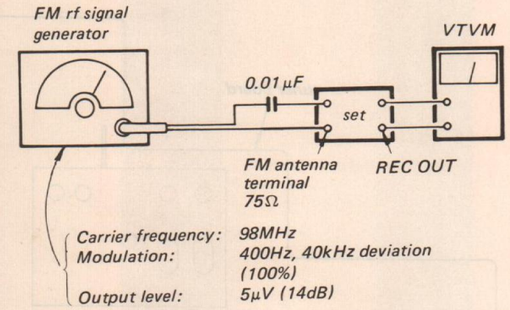
Setting:

MANUAL TUNING switch:	ON
Band Selector:	FM
MODE switch:	MONO

Procedure:

Adjust T1 for maximum reading on the VTVM.

MUTING LEVEL ADJUSTMENT



Carrier frequency: 98MHz
Modulation: 400Hz, 40kHz deviation (100%)
Output level: 5µV (14dB)

Setting:

MANUAL TUNING switch:	ON
MODE switch:	STEREO

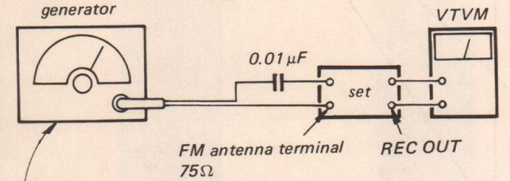
Procedure:

1. Turn RT208 and stop it just when the VTVM indication suddenly increases.
2. If necessary, turn RT208 fully clockwise and make sure that the VTVM indication increases when the output level of the FM rf signal generator is set to 16µV (24dB).

FM STEREO SEPARATION ADJUSTMENT

Setting:

MANUAL MUTING switch:	ON
Band Selector:	FM
MODE switch:	STEREO

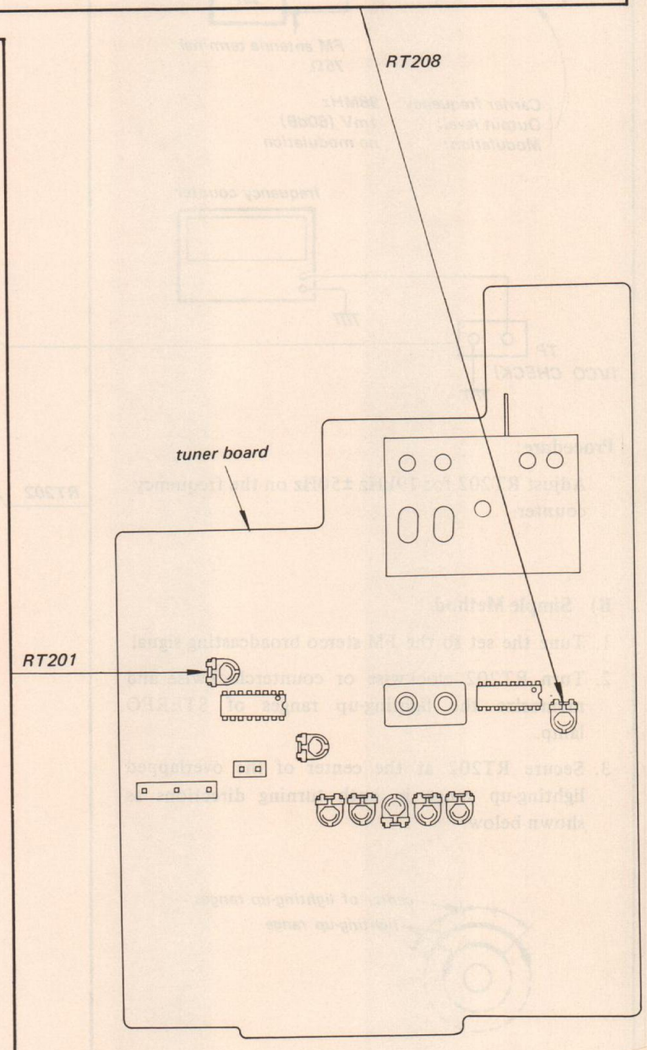


Carrier frequency: 98MHz
Output level: 1mV (60dB)
Modulation:
Audio (400Hz): 16.25kHz deviation (40%)
Pilot (19kHz): 7.5kHz deviation (19%)
Sub channel (38kHz): 16.25kHz deviation (40%)

Procedure:

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RT201 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RT201 for minimum reading.

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



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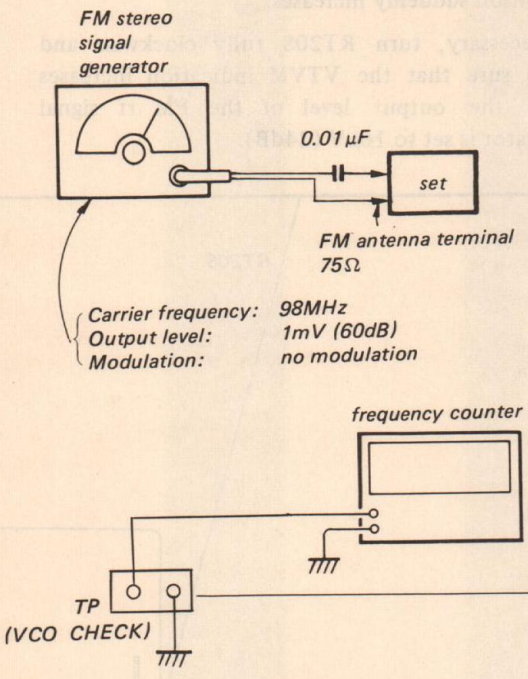
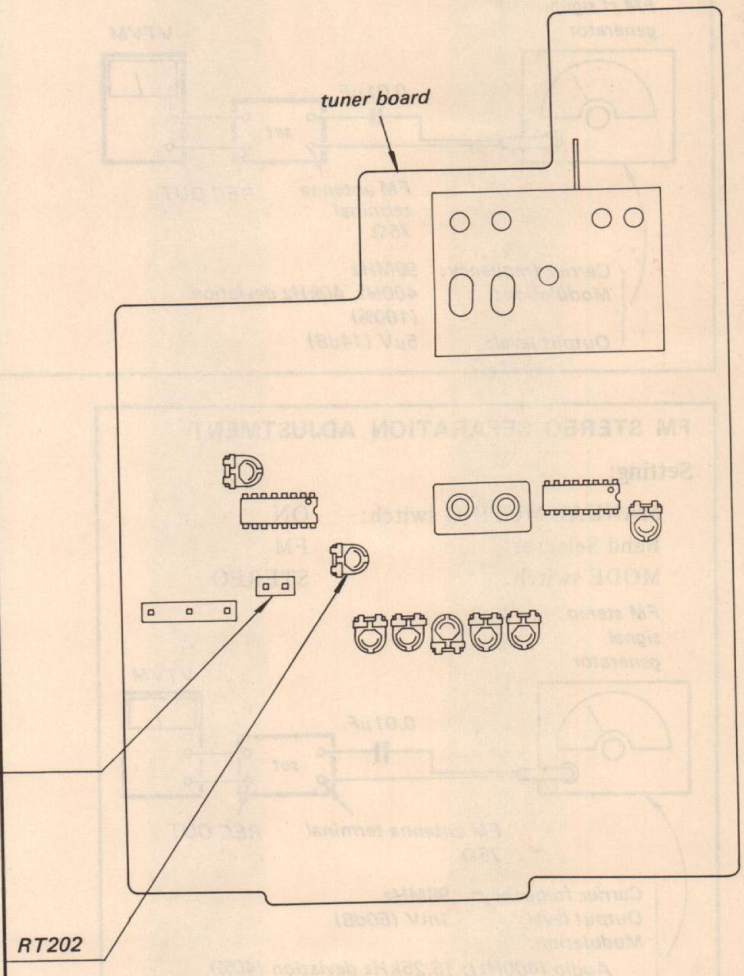
19kHz VCO ADJUSTMENT

Setting:

FUNCTION switch:	TUNER
Band Selector:	FM
MODE switch:	STEREO

A) Regular Method



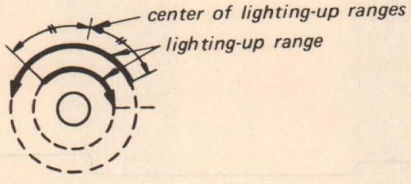


Procedure:

Adjust RT202 for 19kHz ±50Hz on the frequency counter.

B) Simple Method

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 overlapped lighting-up range in both turning directions as shown below.



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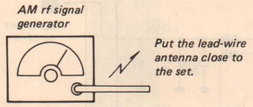
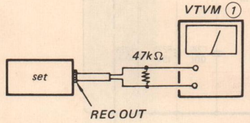
AM SECTION

(1) Setting:

MANUAL TUNING switch: ON
Band Selector: MW

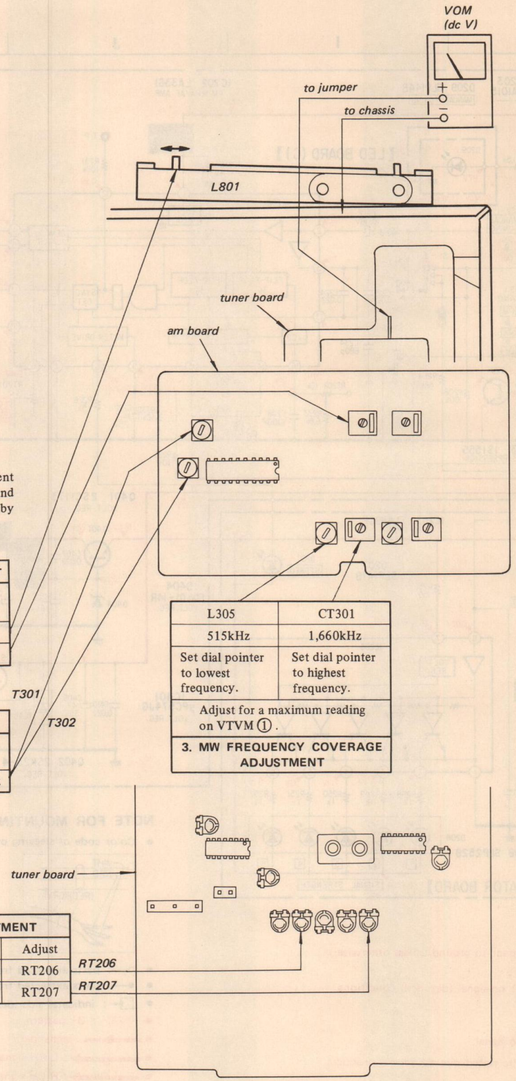




- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

4. MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM (1).	
600kHz	L801
1,400kHz	CT303

1. AM IF ALIGNMENT	
Adjust for a maximum reading on VTVM (1).	
450kHz	T301, T302



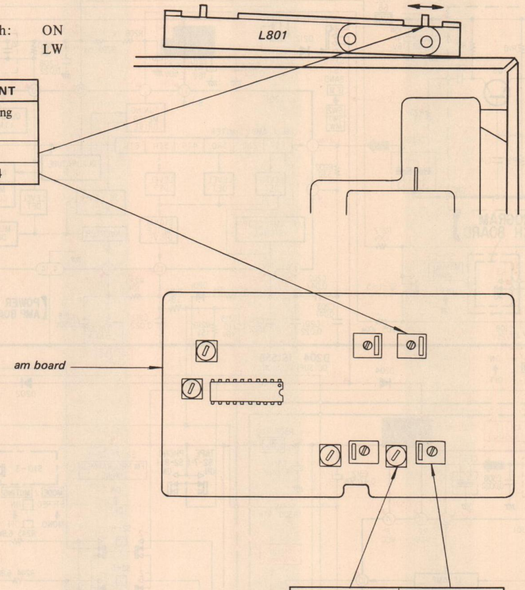
L305	CT301
515kHz	1,660kHz
Set dial pointer to lowest frequency.	Set dial pointer to highest frequency.
Adjust for a maximum reading on VTVM (1).	
3. MW FREQUENCY COVERAGE ADJUSTMENT	

2. AM TUNING VOLTAGE ADJUSTMENT		
Dial Indication	VOM Reading	Adjust
highest frequency	25V	RT206
lowest frequency	1V	RT207

(2) Setting:

MANUAL TUNING switch: ON
Band Selector: LW

LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM (1).	
170kHz	L801
310kHz	CT304



L306	CT302
145kHz	365kHz
Set dial pointer to lowest frequency.	Set dial pointer to highest frequency.
Adjust for a maximum reading on VTVM (1).	
LW FREQUENCY COVERAGE ADJUSTMENT	

MEMO

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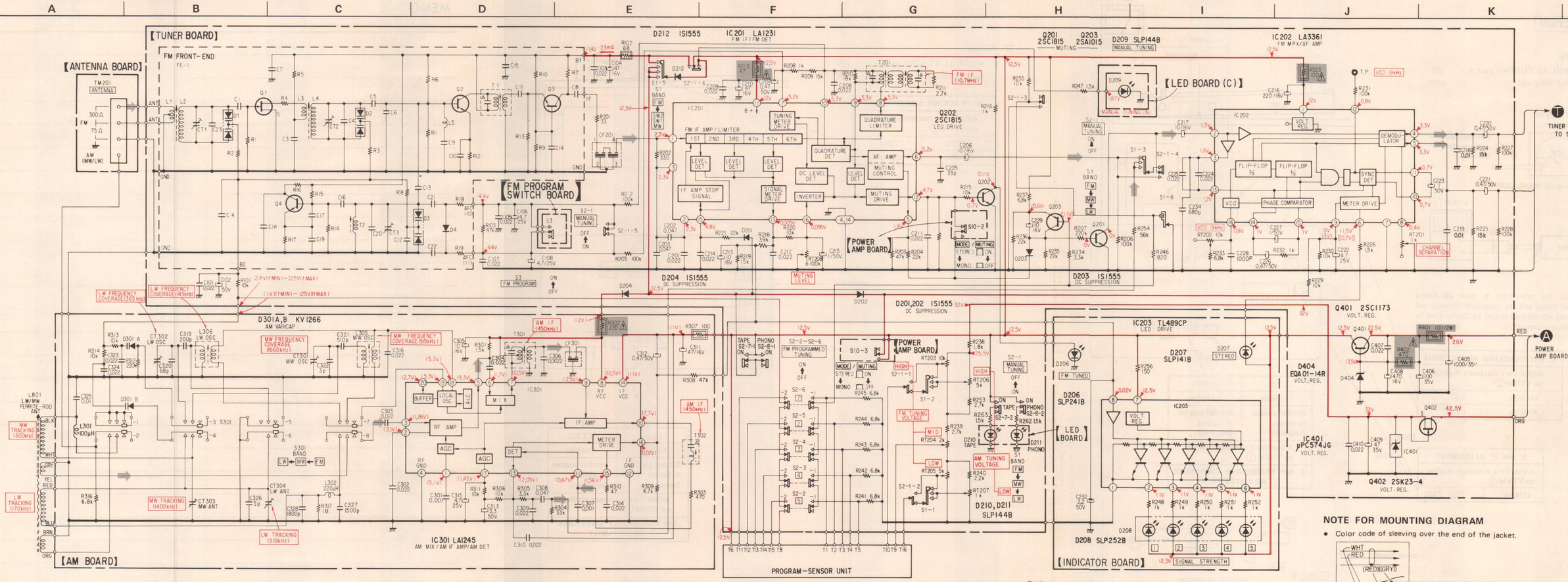
4-1. SCHEMATIC DIAGRAM – TUNER SECTION –



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

NOTE FOR SCHEMATIC DIAGRAM

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, ⅛W unless otherwise noted. kΩ : 1000 Ω, MΩ : 1000 kΩ
- ▭ : nonflammable resistor.
- △ : internal component.
- ▰ : signal path

- ——: B+ bus.
- – – –: B- bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal (detuned) conditions with a VOM (20 kΩ/V).
  ( ) : AM
  (( )) : Tuned in FM stereo signal.
- Voltage variations may be noted due to normal production tolerances.

NOTE FOR MOUNTING DIAGRAM

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

- ○—: parts extracted from the component side.
- —●—: parts extracted from the conductor side.
- —[—: indicates side identified with part number.
- ▭ : B+ pattern
- ——▶: signal path
- ——▶: L-CH signal path
- – – ▶: R-CH signal path

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4-2. MOUNTING DIAGRAM — TUNER SECTION —

Refer to page 25 for replacement semiconductors and page 18 for the note.

Q, IC, D
D207, 206
D208
D301A
D301B
D404
Q401
IC401 Q402
IC301
D203
IC201
IC202
Q202
D202
D201
Q203
D204
Q201
D212
D209
Q, IC, D

【AM BOARD】
(COMPONENT SIDE)

【TUNER BOARD】

【INDICATOR BOARD】

【ANTENNA BOARD】

IC203
TL489CP

IC301
LA1245

IC202
LA3361

IC201
LA1231

【FM PROGRAM
SWITCH BOARD】

FM FRONT-END

POWER AMP BOARD

EQ BOARD

【LED BOARD(A)】

【LED BOARD(B)】

【LED BOARD(C)】

PROGRAM-SENSOR UNIT

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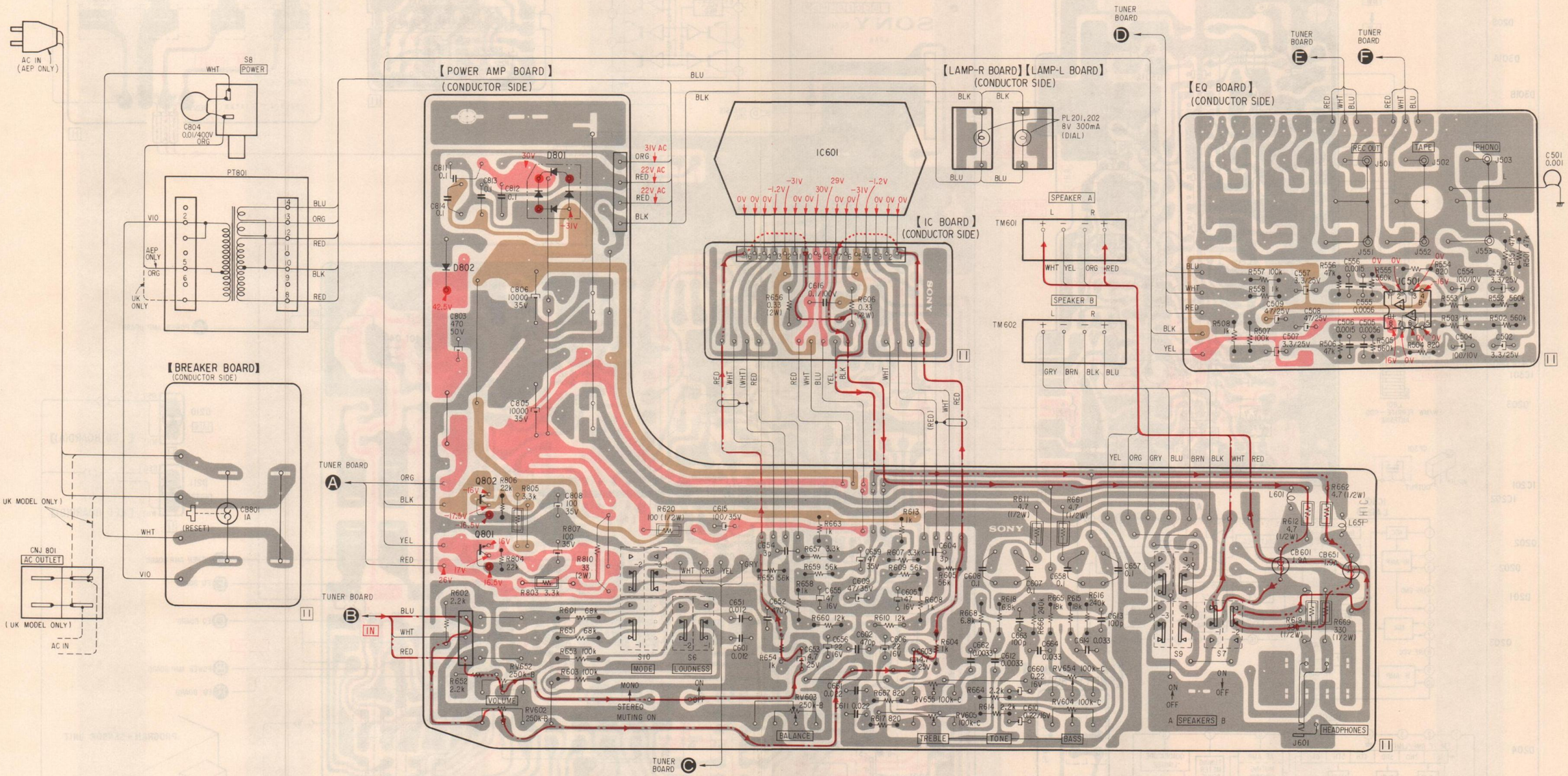
4-3. MOUNTING DIAGRAM –AUDIO AMP SECTION –

Refer to page 25 for replacement semiconductor and the note.



Q	802 801	IC601
IC		
D	802	801

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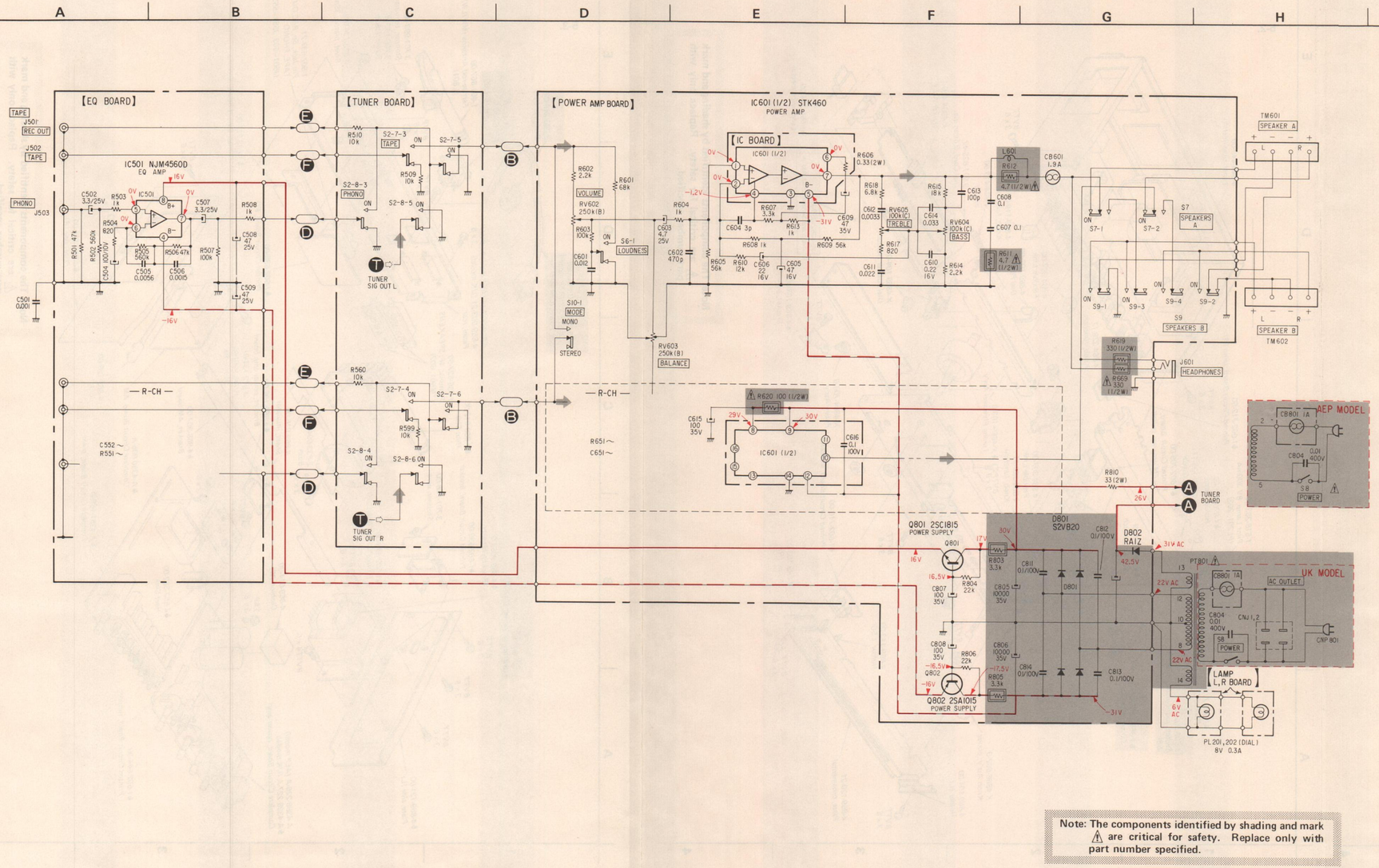
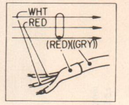
4-4. SCHEMATIC DIAGRAM — AUDIO AMP SECTION —



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

NOTE FOR MOUNTING DIAGRAM:

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



- ○— : parts extracted from the component side.
- —● : parts extracted from the conductor side.
- [ ] : indicates side identified with part number.
- B+ pattern
- B− pattern
- : signal path
- : L-CH signal path
- : R-CH signal path

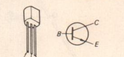
NOTE FOR SCHEMATIC DIAGRAM:

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, ⅛W unless otherwise noted. kΩ : 1000 Ω, MΩ : 1000 kΩ
- : nonflammable resistor.
- △ : internal component.
- ——: B+ bus.
- – – –: B− bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal (detuned) conditions with a VOM (20 kΩ/V).
  ( ) : AM
- Voltage variations may be noted due to normal production tolerances.
- : signal path

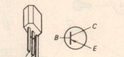
Replacement Semiconductors

For replacement, use semiconductors except in ( ).

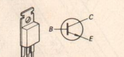
Q201, 202: 2SC1364 (2SC1815)



Q203: 2SA1015



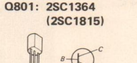
Q401: 2SC1173



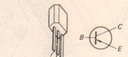
Q402: 2SK105A

2SK23

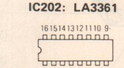
Q801: 2SC1364 (2SC1815)



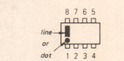
Q802: 2SA1015



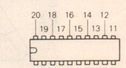
IC201: LA1231
IC202: LA3361



IC203: TL489CP

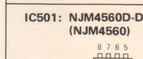


IC301: LA1245

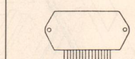


IC401: μPC574J

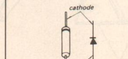
IC501: NJM4560D-D (NJM4560)



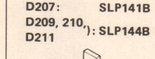
IC601: STK460



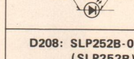
D201–204: 1S1555



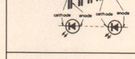
D206: SLP241B
D207: SLP141B
D209, 210, D211: SLP144B



D208: SLP252B-06 (SLP252B)



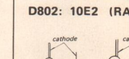
D301A, B: KV1226



D404: EQB01-14 (EQA01-14R)

D801: S2VB20

D802: 10E2 (RA-1Z)



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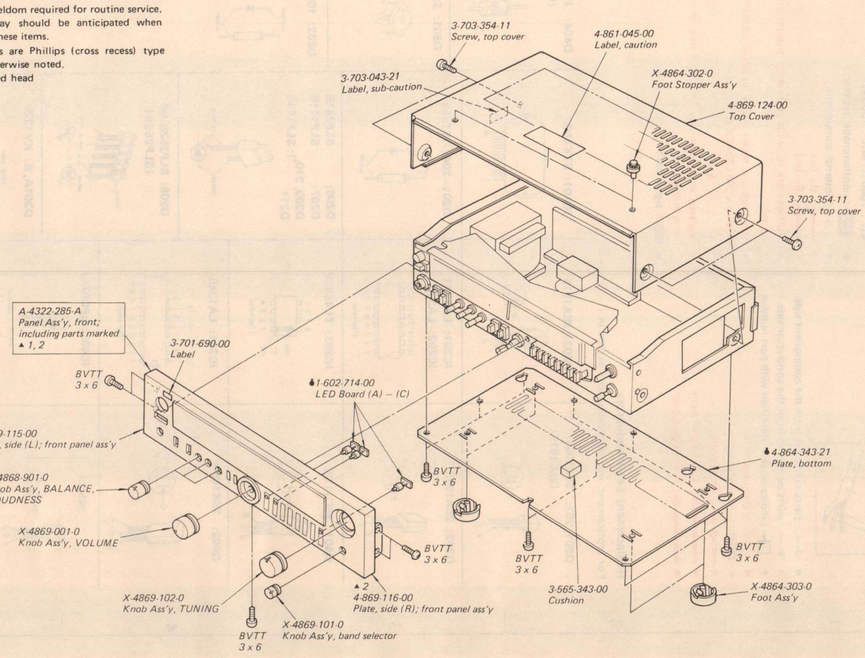
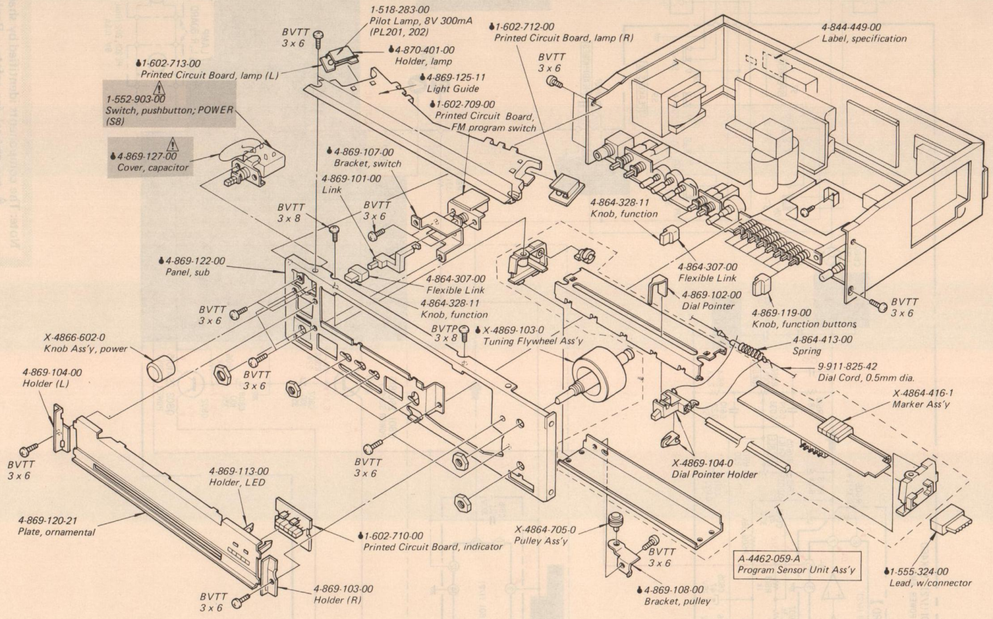
5-1.

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

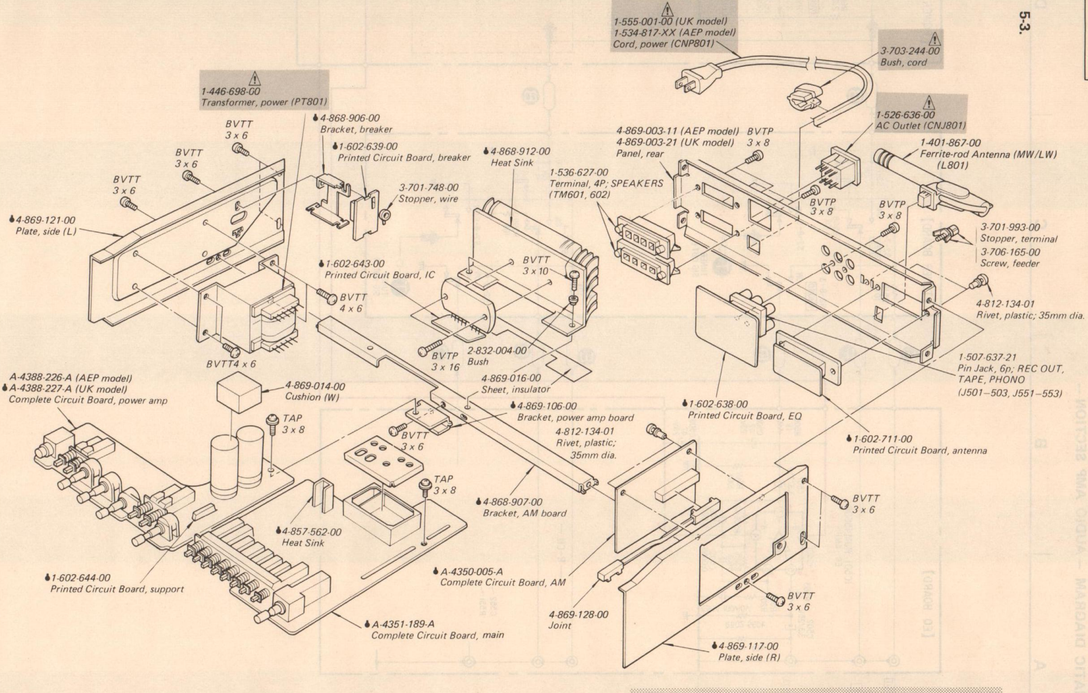


5-2.



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

5-3.



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

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SECTION 6
ELECTRICAL PARTS LIST

	Ref. No.	Part No.	Description
			SEMICONDUCTORS
			Transistors
⇒	Q201, 202	8-729-663-47	2SC1364
	Q203	8-729-201-52	2SA1015
	Q401	8-719-217-33	2SC1173
⇒	Q402	8-729-105-40	2SK105A
⇒	Q801	8-729-663-47	2SC1364
	Q802	8-729-201-52	2SA1015
			ICs
	IC201	8-759-812-31	LA1231
	IC202	8-759-833-61	LA3361
	IC203	8-759-904-89	TL489CP
	IC301	8-759-812-45	LA1245
	IC401	8-759-157-40	μPC574J
⇒	IC501	8-759-745-61	NJM4560D-D
	IC601	8-759-846-00	STK460
			Diodes
	D201–204	8-719-815-55	1S1555
	D206	8-719-922-41	SLP241B
	D207	8-719-900-41	SLP141B
⇒	D208	8-719-925-26	SLP252B, LED BLOCK
	D209–211	8-719-901-44	SLP144B
	D301A, B	8-719-912-27	KV1226
⇒	D404	8-719-931-14	EQB01-14
	D801	8-719-502-20	S2VB20
⇒	D802	8-719-200-02	10E2

CAPACITORS

All capacitors are in μF. Common capacitors are omitted. Refer to the lists on pages 31 and 32 for their part numbers.

Ref. No.	Part No.			
C803	⚠1-123-516-00	470	50V	elect
C804	⚠1-161-744-00	0.01	400V	ceramic
C805, 806	⚠1-123-642-00	10,000	35V	elect
C811–814	⚠1-108-389-00	0.1	100V	milar

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

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

Ref. No.	Part No.	Description
CT301–304	1-141-171-XX	Trimmer

RESISTORS

All resistors are in ohms. Common ¼W carbon resistors are omitted. Refer to the list on page 33 for their part numbers.

R213	⚠1-247-099-00	47	¼W	carbon (nonflammable)
R223	⚠1-247-107-00	100	¼W	carbon (nonflammable)
R302	⚠1-247-115-00	220	¼W	carbon (nonflammable)
R401	⚠1-247-192-00	10	½W	carbon (nonflammable)
R402	⚠1-247-123-00	470	¼W	carbon (nonflammable)
R606, 656	1-207-615-00	0.33	2W	metal plate
R611, 612	⚠1-247-188-00	4.7	½W	carbon (nonflammable)
R619	⚠1-247-228-00	330	½W	carbon (nonflammable)
R620	⚠1-247-216-00	100	½W	carbon (nonflammable)
R669	⚠1-247-228-00	330	½W	carbon (nonflammable)
R803, 805	⚠1-247-252-00	3.3k	½W	carbon (nonflammable)

RT201	1-226-233-00	1k-B, adjustable
RT202,203	1-226-236-00	10k-B, adjustable
RT204	1-226-234-00	2k-B, adjustable
RT205,206	1-226-235-00	5k-B, adjustable
RT207	1-226-233-00	1k-B, adjustable
RT208	1-226-239-00	100k-B, adjustable
RV602,652	1-226-836-00	250k-B/250k-B, variable
RV603	1-226-227-00	250k-B, variable
RV604,654 RV605,655	1-226-862-00	100k-C/100-k-C, variable

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Ref. No.	Part No.	Description
		MISCELLANEOUS
CB601,651	1-532-566-00	Circuit Breaker
CB801,802	⚠ 1-532-535-00	Circuit Breaker
CF201	1-527-534-XX	Filter, solid state
CF301	1-527-599-00	Filter, mechanical
CNJ801	⚠ 1-526-636-00	AC Outlet (UK model)
CNP801	⚠ 1-534-817-XX	Cord, power (AEP model)
	1-555-001-00	Cord, power (UK model)
FE1	1-463-322-00	FM Front-end (W)
J501–503, J551–553	1-507-637-21	Pin Jack, 6p; REC OUT, TAPE, PHONO
J601	1-507-659-00	Jack; HEADPHONES
L301	1-407-169-XX	100μH, microinductor
L302	1-407-173-XX	220μH, microinductor
L305	1-405-907-00	MW OSC Coil
L309	1-405-914-00	LW OSC Coil
♦L601, 651	1-420-872-00	Coil
L801	1-401-867-00	Ferrite-rod Antenna (MW, LW)
PL201,202	1-518-283-00	Pilot Lamp, 8V 300mA
PT801	⚠ 1-446-698-00	Transformer, power
S1	1-553-316-00	Switch, rotary
S2	1-553-309-00	Switch, pushbutton
S3	1-553-283-00	Switch, pushbutton
S6, 7	1-553-308-00	Switch, pushbutton; LOUDNESS, SPEAKERS
S8	⚠ 1-552-903-00	Switch, pushbutton; POWER
S9, 10	1-553-308-00	Switch, pushbutton; LOUDNESS, SPEAKERS
S301	1-553-314-00	Switch, slide; REMOTE TYPE
T201	1-404-170-00	Transformer, fm if
T301	1-409-348-00	Coil, mechanical filter
T302	1-404-266-00	Transformer, am if
TM601,602	1-536-627-00	Terminal, 4P; SPEAKERS
	1-217-589-00	Cross Conductor (MELF)
	1-463-322-00	Front-end (W)
	♦1-555-324-00	Lead, w/connector

Ref. No.	Part No.	Description
		COMPLETE CIRCUIT BOARDS
	♦A-4350-005-A	AM
	♦A-4351-189-A	Tuner
	♦A-4388-226-A	Power Amp
		PRINTED CIRCUIT BOARDS
	♦1-602-638-00	EQ
	♦1-602-639-00	Breaker
	♦1-602-643-00	IC
	♦1-602-644-00	Support
	♦1-602-709-00	FM PROGRAM Switch
	♦1-602-710-00	Indicator
	♦1-602-711-00	Antenna
	♦1-602-712-00	Lamp (R)
	♦1-602-713-00	Lamp (L)
	♦1-602-714-00	LED (A)–(C)

ACCESSORIES AND PACKING MATERIALS

Part No.	Description
1-501-184-00	FM Ribbon Antenna
3-701-630-00	Bag, plastic
3-783-227-11	Manual, instruction
3-794-869-11	Card, operation
4-864-354-00	Sheet, plastic
4-869-009-00	Carton

- 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.

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ELECTROLYTIC CAPACITORS

CAP. (μF)	RATING → : Use the high voltage rated one.					
	6.3 VOLT.	10 VOLT.	16 VOLT.	25 VOLT.	35 VOLT.	50 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	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	1-121-419-00	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.	160 VOLT.	250 VOLT.	350 VOLT.
	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.	CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (μF)	50 VOLT.
	PART No.		PART No.		PART No.		PART No.
0.5	1-101-837-00	22	1-102-959-00	150	1-101-361-00	0.001	1-102-074-00
0.75	1-101-586-00	24	1-102-960-00	160	1-101-367-00	0.0012	1-102-118-00
1.0	1-102-934-00	27	1-102-961-00	180	1-102-976-00	0.0015	1-102-119-00
1.5	1-101-576-00	30	1-102-962-00	200	1-102-977-00	0.0018	1-102-120-00
2.0	1-102-935-00	33	1-102-963-00	220	1-102-978-00	0.0022	1-102-121-00
3	1-102-936-00	36	1-102-964-00	240	1-102-979-00	0.0027	1-102-122-00
4	1-102-937-00	39	1-102-965-00	270	1-102-980-00	0.0033	1-102-123-00
5	1-102-942-00	43	1-102-966-00	300	1-102-981-00	0.0039	1-102-124-00
6	1-102-943-00	47	1-101-880-00	330	1-102-820-00	0.0047	1-102-125-00
7	1-102-944-00	51	1-101-882-00	360	1-102-821-00	0.0056	1-102-126-00
8	1-102-945-00	56	1-101-884-00	390	1-102-822-00	0.0068	1-102-127-00
9	1-102-946-00	62	1-101-886-00	430	1-102-823-00	0.0082	1-102-128-00
10	1-102-947-00	68	1-101-888-00	470	1-102-824-00	0.01	1-102-129-00
11	1-102-948-00	75	1-101-890-00	510	1-101-059-00	0.022	1-101-005-00
12	1-102-949-00	82	1-102-971-00	560	1-102-115-00	0.047	1-101-006-00
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

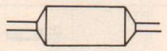
CAP. (μF)	RATING → : Use the high voltage rated one. 25 VOLT.	50 VOLT.	CAP. (μF)	25 VOLT.	50 VOLT.
	PART No.	PART No.		PART No.	PART No.
0.001	→	1-161-039-00	0.018	1-161-016-00	1-161-054-00
0.0012	→	1-161-040-00	0.022	1-161-017-00	1-161-055-00
0.0015		1-161-041-00	0.027	1-161-018-00	1-161-056-00
0.0018		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.	100 VOLT.	200 VOLT.	CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.	CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.
	PART No.	PART No.	PART No.		PART No.	PART No.	PART No.		PART No.	PART No.	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	1-108-389-00	1-108-433-00
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	1-108-390-00	1-108-434-00
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	1-108-391-00	1-108-435-00
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	1-108-392-00	1-108-436-00
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	1-108-393-00	1-108-437-00
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-[illegible]1-00	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.	6.3 VOLT.	10 VOLT.	16 VOLT.	20 VOLT.	25 VOLT.	35 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	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.	6.3 VOLT.	10 VOLT.	16 VOLT.	20 VOLT.	35 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	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					

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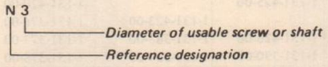
1/4 WATT CARBON RESISTORS

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	1-246-576-00	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

Screw:

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	

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