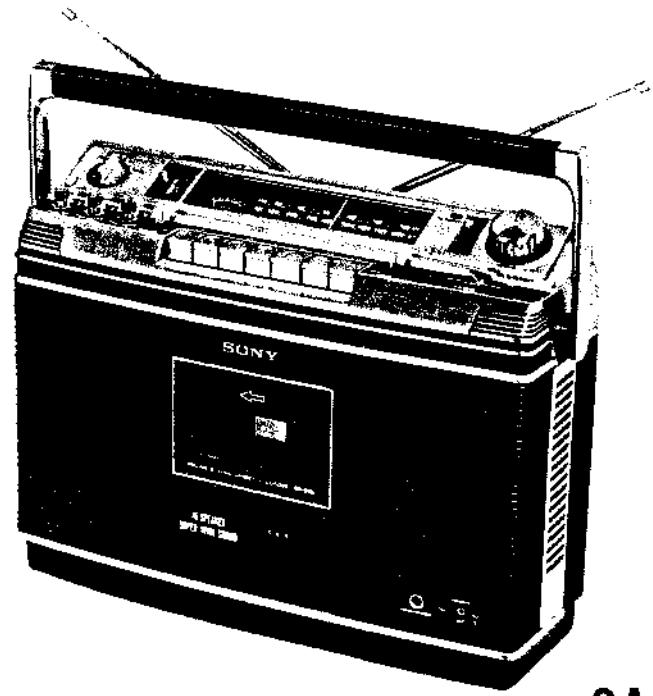
CF-580

E Model
UK Model
AEP Model
US Model
Canadian Model



FM/AM STEREO CASSETTE-CORDER

SPECIFICATIONS

GENERAL

Power Requirements: 100–110, 115–127, 200–220 or 230–250 V ac, 50/60 Hz (E model)
110, 127, 220 or 240 V ac, 50/60 Hz (AEP model)
240 V ac, 50 Hz (UK model)
120 V ac, 60 Hz (US, Canadian model)
12 V dc, eight batteries size "D" (IEC Designation R20), or 12 V car battery with Sony Car Battery Cord DCC-9

Power Consumption: 11W ac (E, UK model)
12W ac (US, Canadian model)
13W ac (AEP model)

Power Output: 5.8W (2.9W × 2) max. (E, AEP, Canadian model)
4.6W (2.3W × 2) max. (UK model)
2W (1W × 2) max. (US model)

Speakers: two 8 × 12 cm (3 × 5 inches)
two 10 × 15 cm (4 × 6 inches)

Battery Life: Approx. 10 hours (E, UK, AEP model)
Approx. 14 hours (US, Canadian model)
continuous recording from the Built-in Microphones with Sony Long-life Batteries size "D"

Dimensions: Approx. 390 (w) × 303 (h) × 143 (d) mm
$15\frac{3}{8}$ (w) × 12 (h) × $5\frac{5}{8}$ (d) inches
including projecting parts and controls not including handle

Weight: Approx. 7.9 kg, 17 lb 7 oz
including batteries

RADIO SECTION

Frequency Range: FM 87.5–108 MHz
AM 530–1,605 kHz

Antennas: FM: Two telescopic antennas
AM: Built-in ferrite-rod antenna

TAPE RECORDER SECTION

Recording System: 4-track 2-channel stereo or monaural

Fast Winding Time: Approx. 90 sec. with Sony Cassette C-60

Frequency Response: 40–10,000 Hz (E, AEP, US, Canadian model)
50–10,000 Hz (UK model)
(with standard cassette, with the TAPE SELECT switch set to NORMAL)
40–13,000 Hz (E, AEP, US, Canadian model)
50–12,000 Hz (UK model)
(with chromium dioxide cassette with the TAPE SELECT switch set to CrO_2, or with Sony Ferri-Chrome cassette with the TAPE SELECT switch set to Fe-Cr)

S/N Ratio: 45 dB

Total Harmonic Distortion: 2.5%

Wow and Flutter: 0.19% (WRMS) (E, AEP, US, canadian model)
0.25% (WRMS) (UK model)

– Continued on page 2 –

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING ON THE SCHEMATIC DIAGRAMS 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

6/8

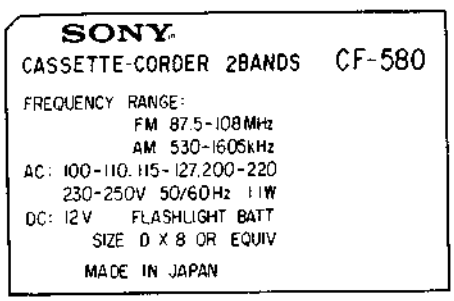
Inputs: MIC ..... 2 (minijack)
sensitivity 0.2 mV (-72 dB)
for low impedance microphone
LINE IN ..... 2 (phono jack)
sensitivity 0.14 V (-15 dB)
input impedance 100 kilohms
PHONO ..... 2 (phono jack)
sensitivity 1.5 mV (-54 dB)
input impedance 47 kilohms

Outputs: LINE OUT ..... 2 (phono jack)
rated output 0.44 V (-5 dB) at load impedance 100 kilohms, load impedance 10 kilohms or higher
EXT SP ..... 2 (minijack)
for 4-ohm or 8-ohm impedance speakers
HEADPHONES ..... 1 (stereo binaural jack)
for 8-ohm impedance headphones

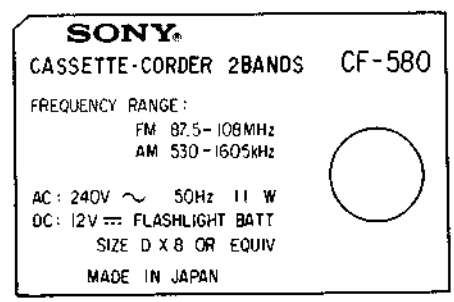
Other Jacks: Remote control jack 1
Record/Playback connector ..... 1 (E, UK, AEP model)

IDENTIFICATION OF SET

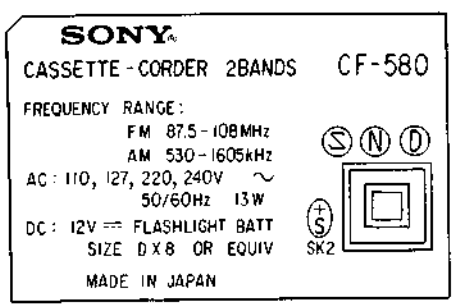
E model



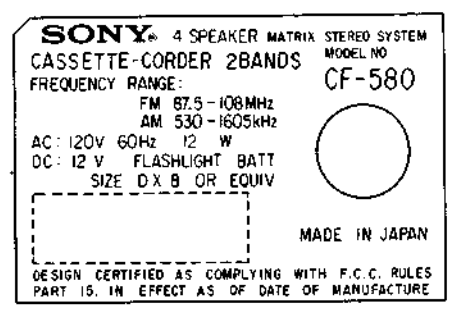
UK model



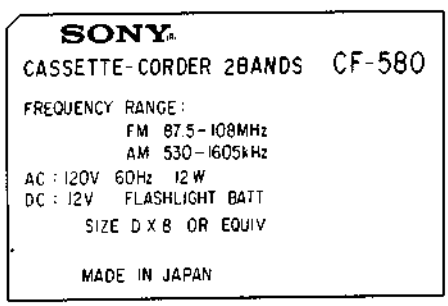
AEP model



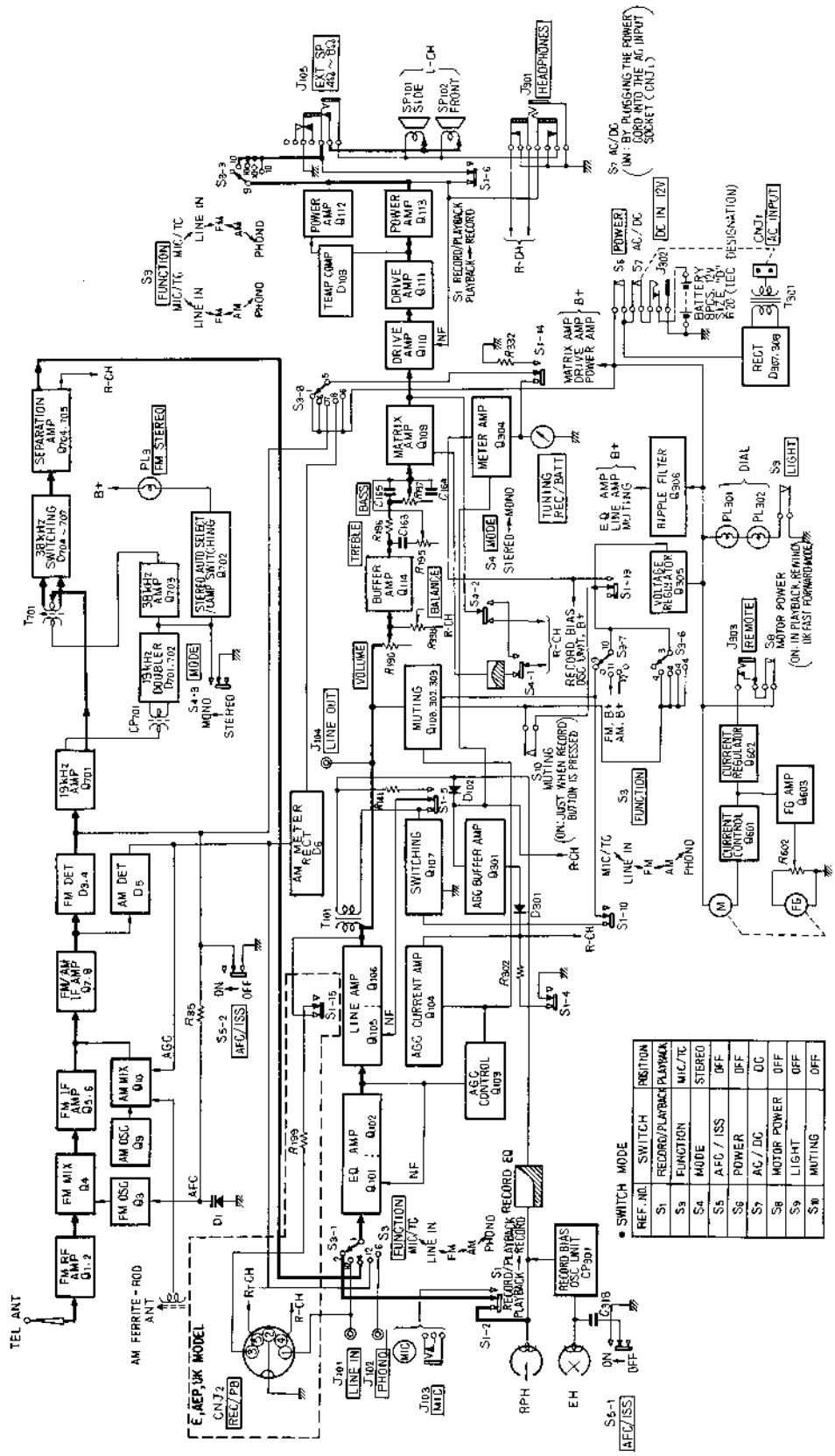
US model



Canadian model



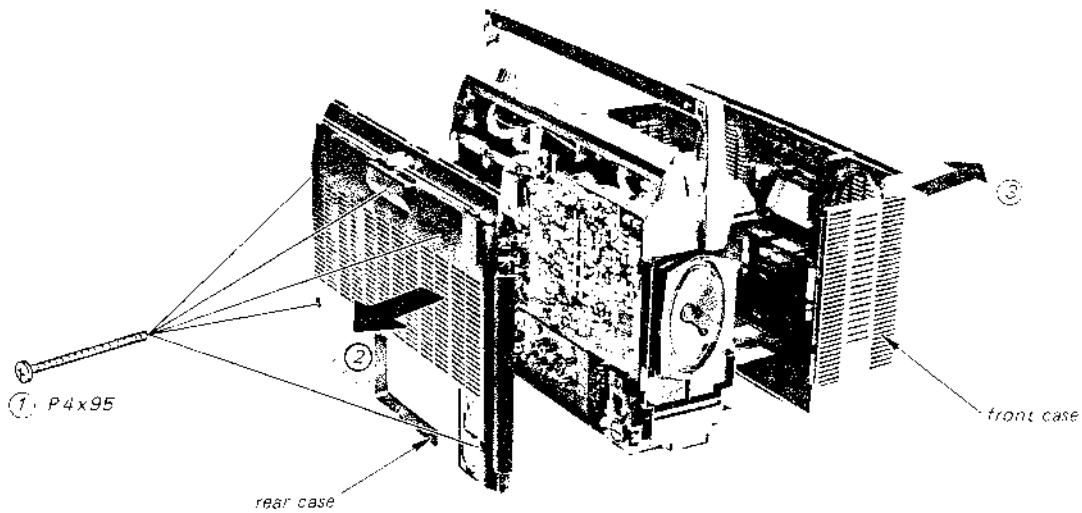
SECTION 1
BLOCK DIAGRAM



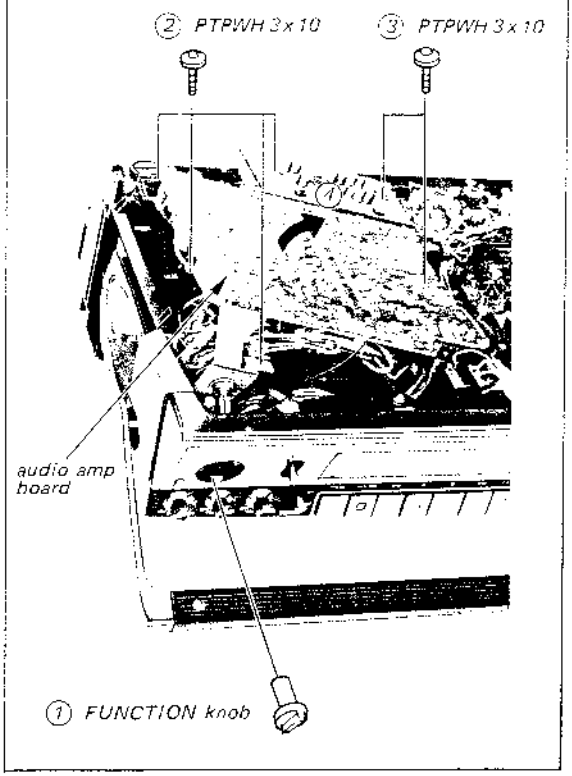
SECTION 2
DISASSEMBLY

2-1. REMOVALS

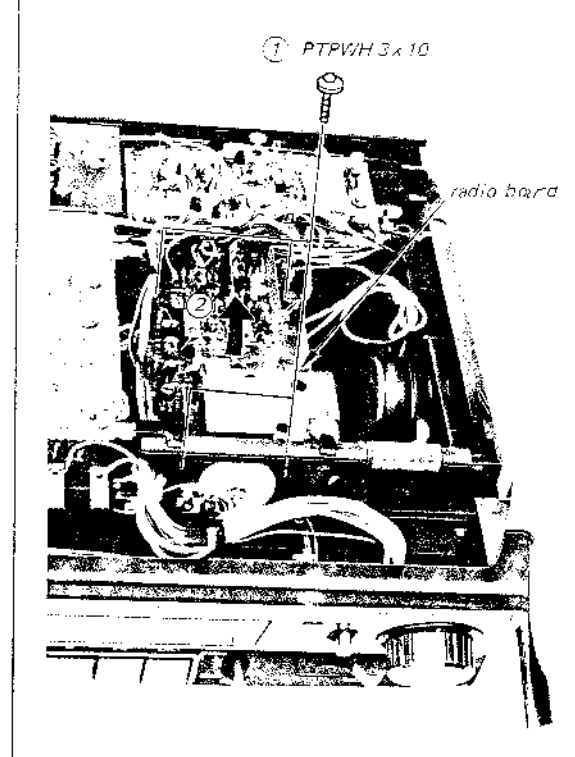
Front and Rear Cases



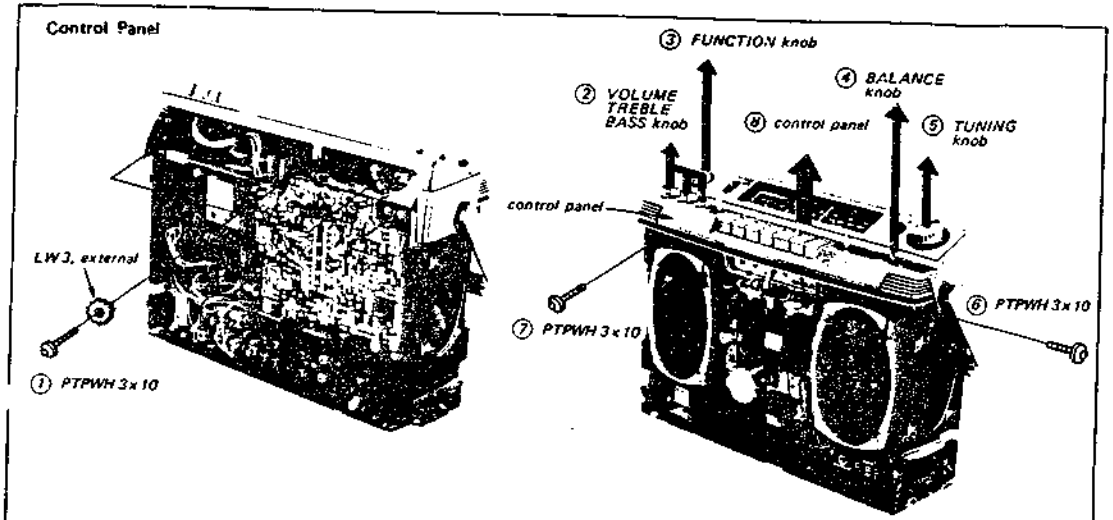
Audio Amp Board



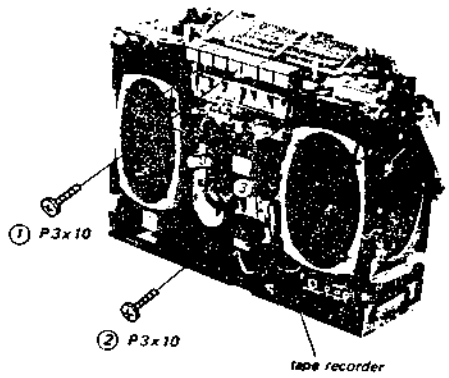
Radio Board



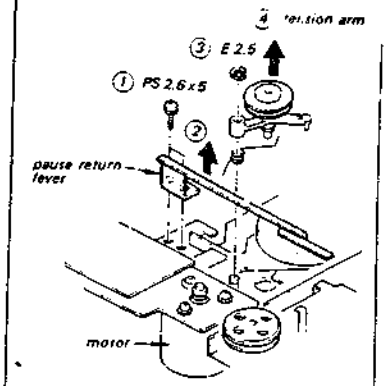
Control Panel



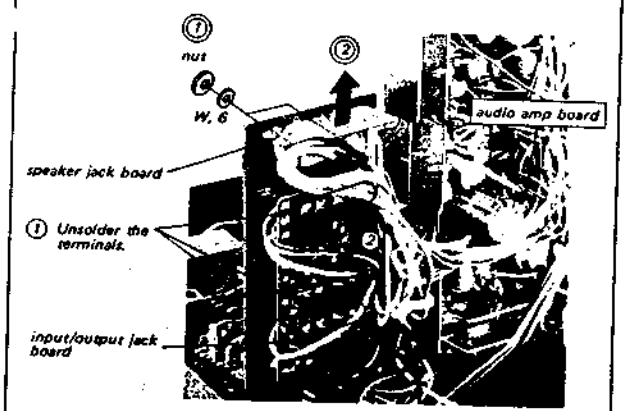
Tape Recorder



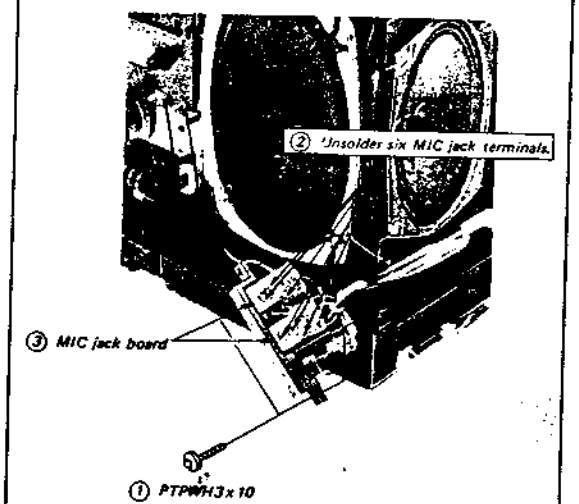
Tension Arm



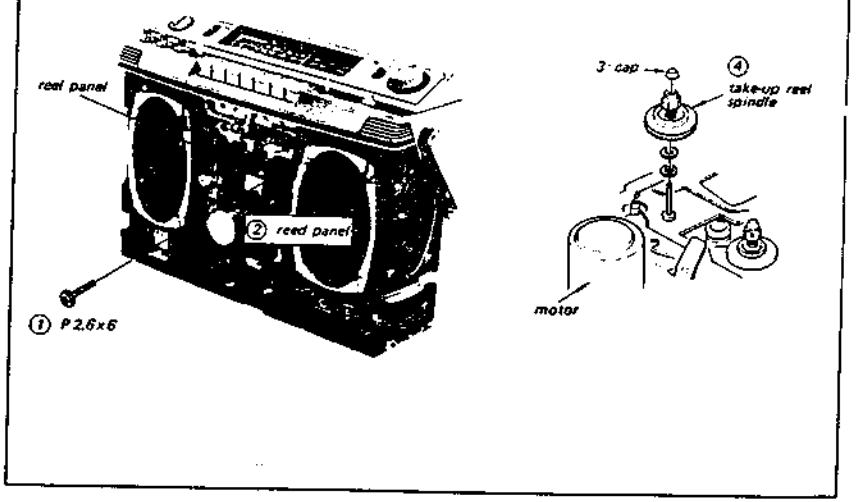
Input/Output Jack Board (①, ②) and Speaker Jack Board (①, ②)



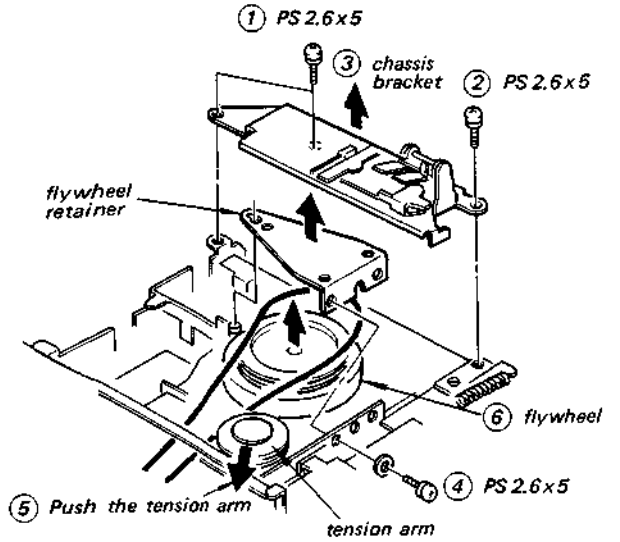
MIC JACK Board (L-ch and R-ch)



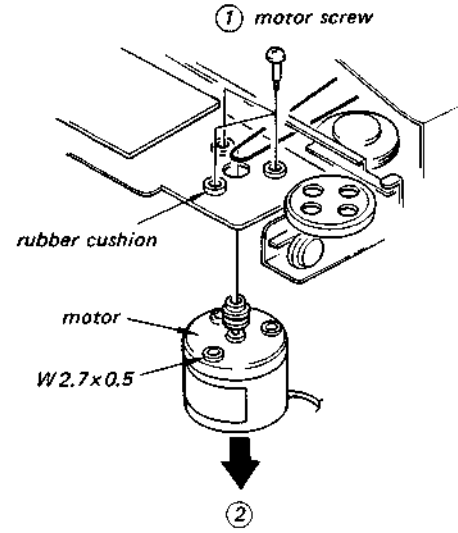
Take-up Reel Spindle



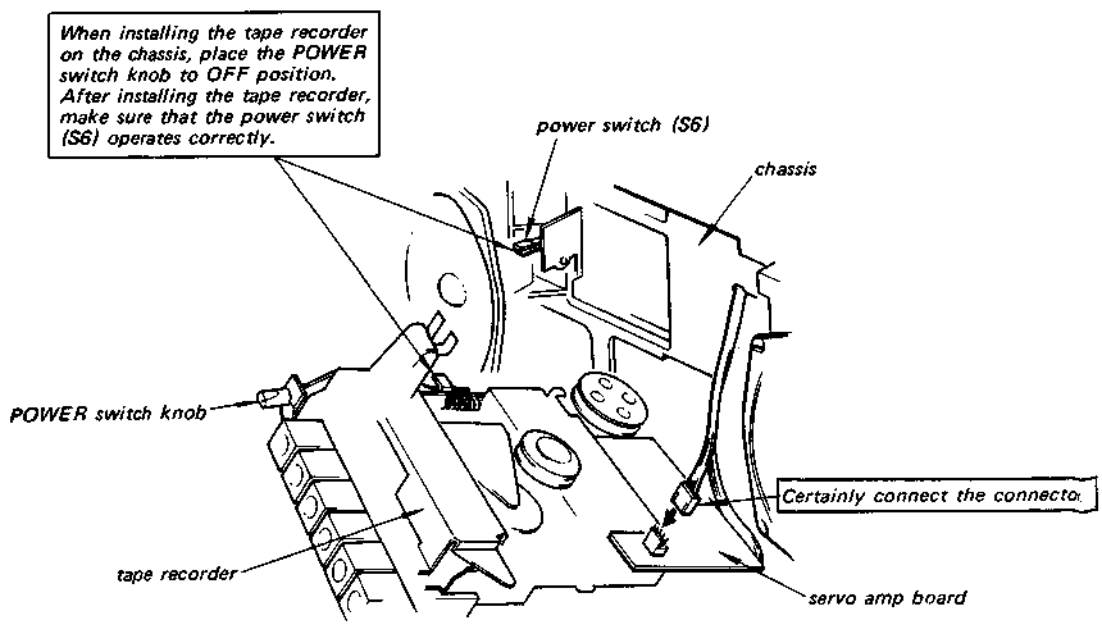
Flywheel



Motor



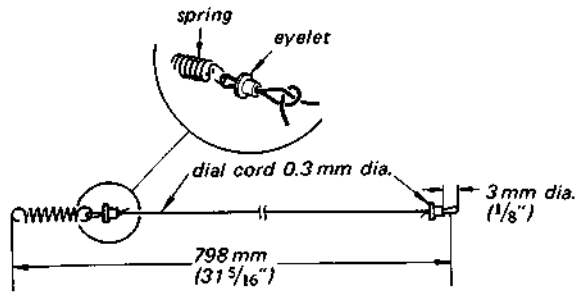
Notice of Tape Recorder Installation



2-2. DIAL CORD STRINGING

1. Preparation (1)

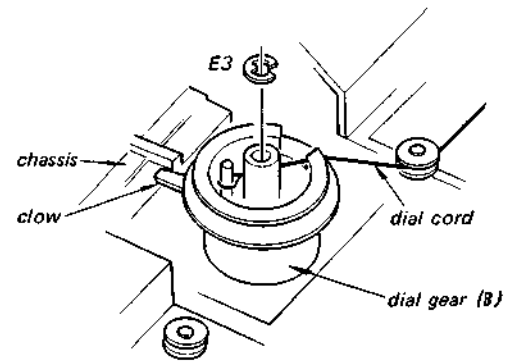
- *Crimp two eyelets.*



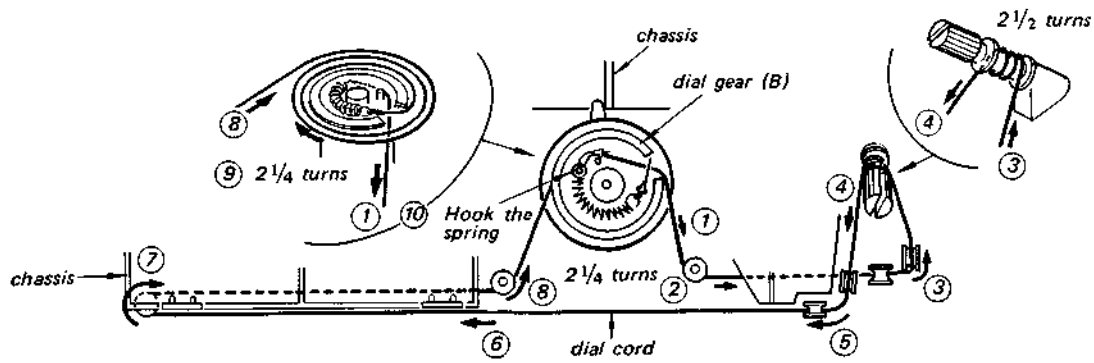
2. Preparation (2)

(1) *Pull the dial gear (B) up and place it as shown below.*

(2) *Hook the loop of dial cord on the projection of dial gear (B).*



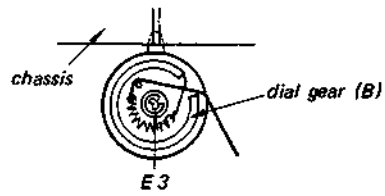
3. Stringing



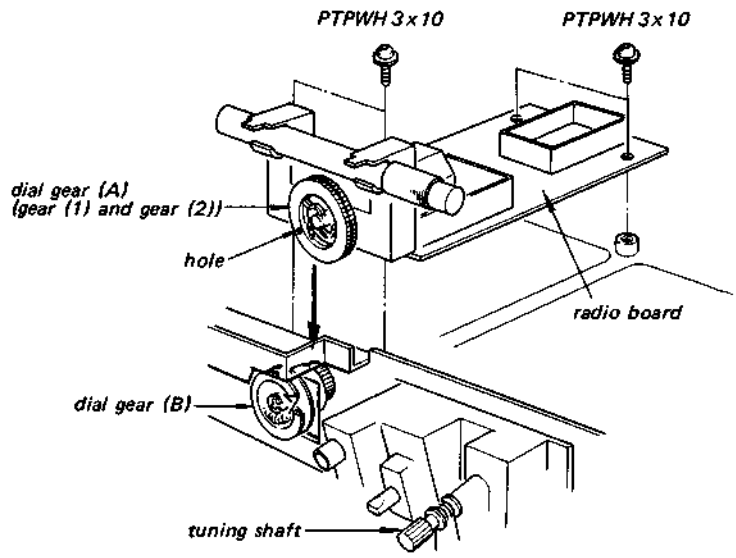
(11) *Secure the ties and the spring hooking positions with a suitable locking compound.*

4. Dial Gear (A) and (B) Installation

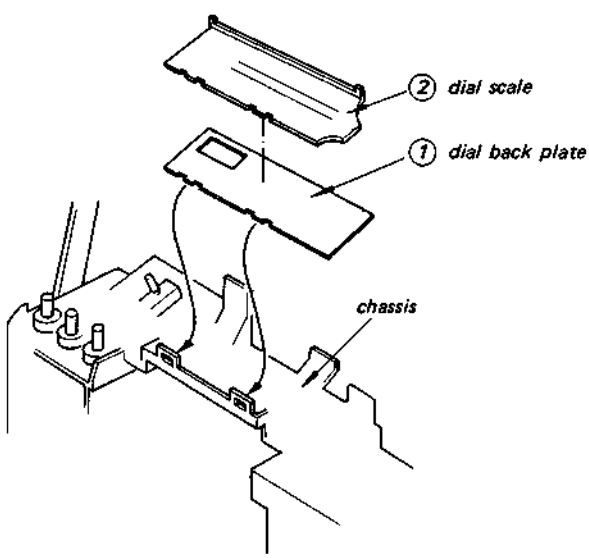
(1) *Install the dial gear (B) in the hollow on the chassis.*
(2) *Position the dial gear (B) as shown right.*
(3) *Install the retaining ring (E3) on the shaft of the dial gear (B).*
(4) *Turn the dial gear (B) twice counterclockwise by turning the tuning shaft clockwise, and position the dial gear (B) as shown right.*



(5) *Turn the dial gear (A) fully clockwise.*
(6) *Fit the hole of the gear (1) to the hole of gear (2) by turning the both gears in the counter direction each other.*
(7) *Install the radio board by engaging the dial gear (A) to the dial gear (B).*
(After installing the dial gear (A), one of the holes may be shifted from the other hole.)

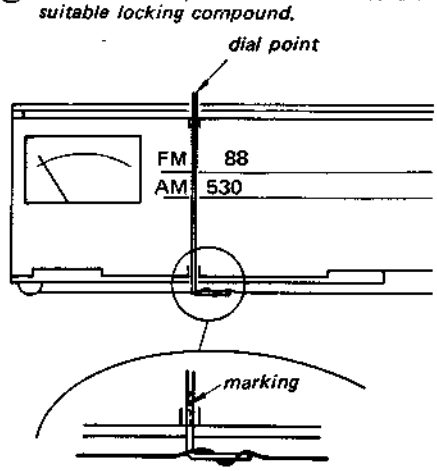


5. Dial Scale Installation



6. Dial Pointer Installation

(1) *Turn the tuning shaft fully counterclockwise.*
(2) *Place the dial pointer on the marking as shown below.*
(3) *Secure the dial pointer to the dial cord with a suitable locking compound.*



SECTION 3
ADJUSTMENTS

3-1. TAPE RECORDER SECTION

MECHANICAL ADJUSTMENTS AND MEASUREMENTS

PRECAUTION

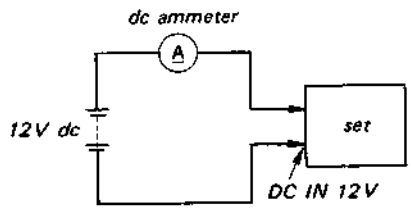
1. Clean the following parts with a denatured-alcohol-moistened swab:

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers

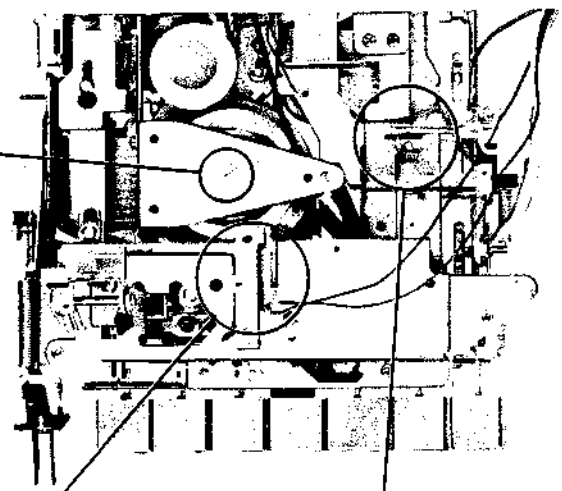
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply a suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Flywheel Thrust Play Adjustment

Procedure:

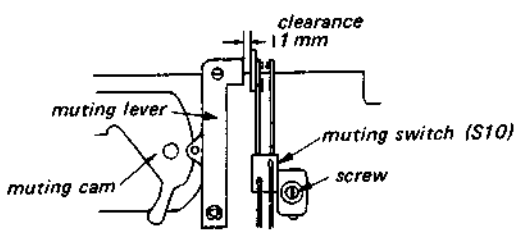


1. Place the set horizontally and reel-spindle-side-down.
2. Loosen the screw by turning it counterclockwise.
3. Carefully tighten the screw until current suddenly increases.
   Then, loosen the screw 1/4 turn.



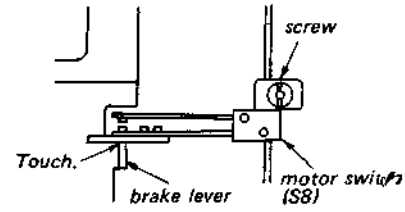
Muting Switch (S10) Adjustment

1. Press the record button.
2. Loosen the screw and change the muting switch position for specified clearance.
3. When pressing or releasing the record button, make sure that the muting switch turns on and returns off soon.



Motor Switch (S8) Adjustment

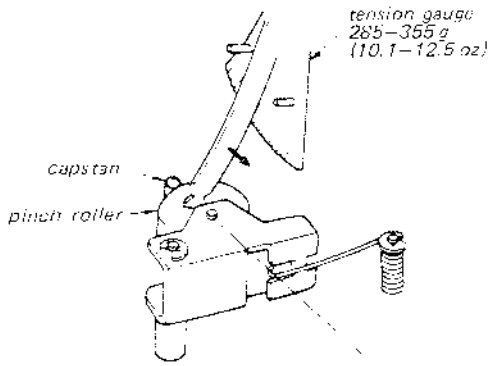
1. Loosen the screw and change the motor switch position to touch the brake lever.
2. When pressing the forward, fast forward or rewind button, make sure that the motor switch turns on.

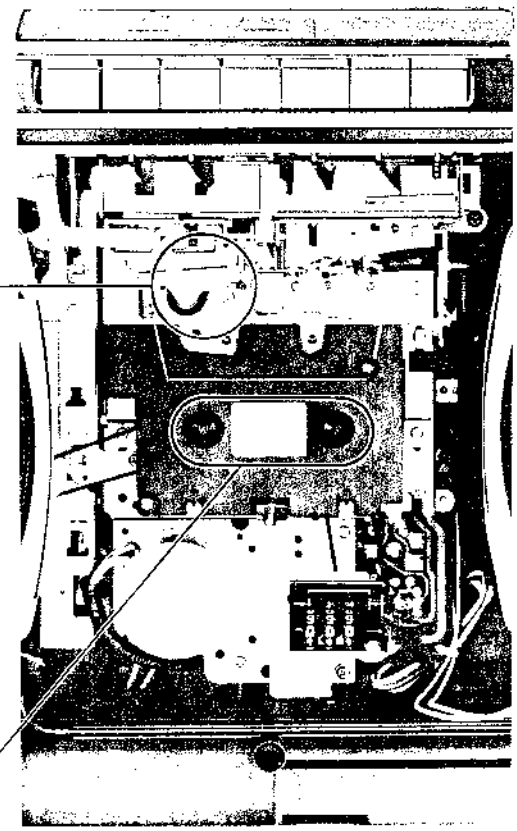


Pinch Roller Pressure Measurement

– Playback mode –

1. Push the tension gauge.
2. Slowly return the pinch roller and read the tension gauge just when the pinch roller starts to rotate.





Torque Measurement

Forward:

Torque meter	Meter reading
CQ-101A CQ-102A CQ-103A	20–65 g.cm (0.28–0.91 oz.inch)

Fast Forward, Rewind:

Torque meter	Meter reading
CQ-201A	more than 50 g.cm (more than 0.7 oz.inch)

CUE, REVIEW:

Torque meter	Meter reading
CQ-201A	more than 50 g.cm (more than 0.7 oz.inch)

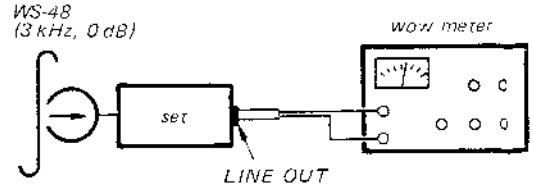
Wow and Flutter Measurement

Setting:

FUNCTION switch: MIC/TC
Power source: 12V dc

Procedure:

1. Mode: playback



Specification:

less than 0.32% (RMS)

Note: Measure wow and flutter for beginning and end portion of the test tape (WS-48).

ELECTRICAL ADJUSTMENTS

Note: The adjustments should be performed in the order given in this service manual. The adjustments should be performed for both L-CH and R-CH.

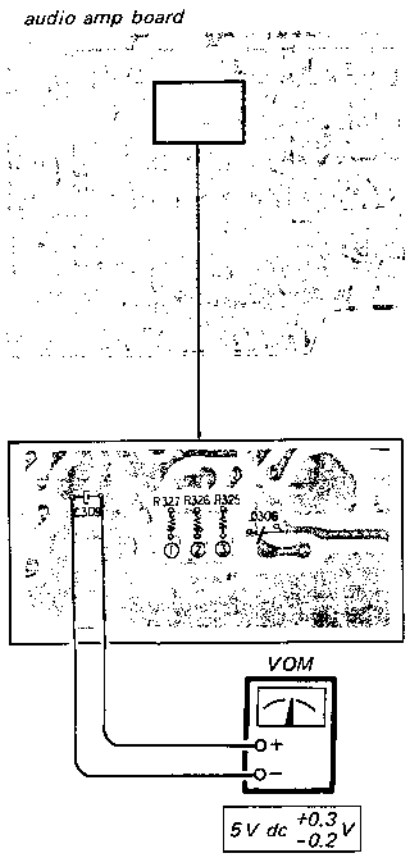
B+ Voltage Adjustment

Setting:

Power supply voltage:	12 V dc
FUNCTION switch:	MIC/TC
VOLUME control:	minimum
Mode:	playback with no cassette loaded

Adjustment Location and Specification:

Pattern connection	B+ Voltage
①	low ↕ high
②	
③	



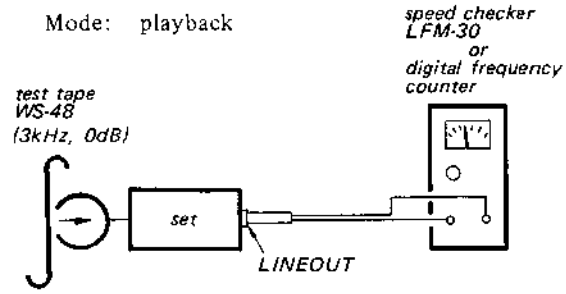
Tape Speed Adjustment

Setting:

FUNCTION switch: MIC/TC

Procedure:

Mode: playback

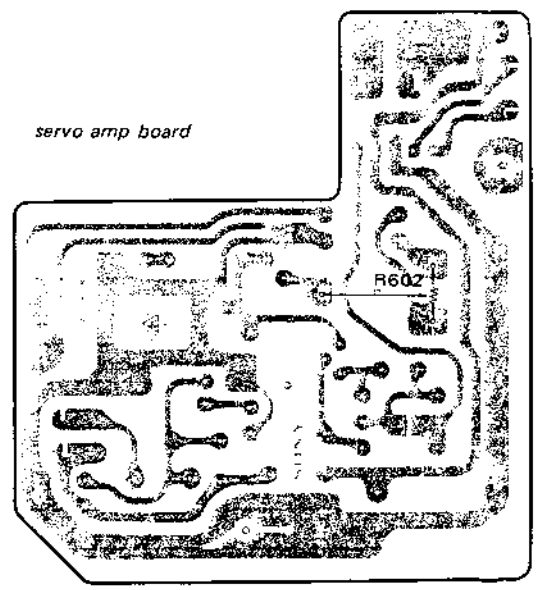


Specification:

Speed checker	Digital frequency counter
−2.5–+3%	2,925–3,090 Hz

Frequency difference between beginning and end of tape should be within 1% (30 Hz).

Adjustment Location:



ELECTRICAL ADJUSTMENTS

Note: The adjustments should be performed in the order given in this service manual. The adjustments should be performed for both L-CH and R-CH.

B+ Voltage Adjustment

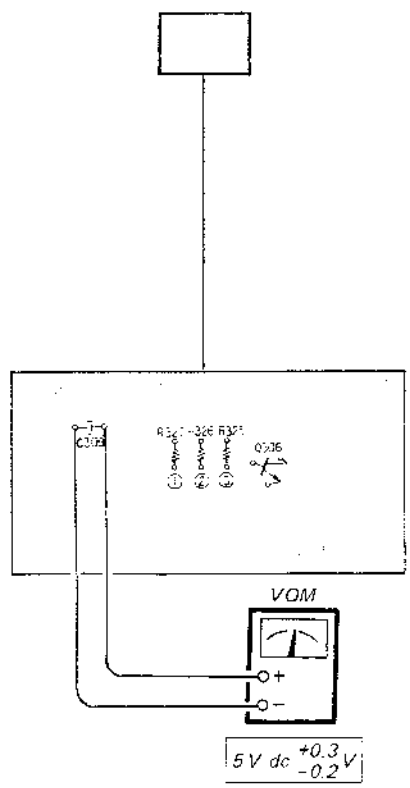
Setting:

Power supply voltage:	12V dc
FUNCTION switch:	MIC/TC
VOLUME control:	minimum
Mode:	playback with no cassette loaded

Adjustment Location and Specification:

Pattern connection	B+ Voltage
①	low ↕ high
②	
③	

audio amp board



5 V dc $^{+0.3}_{-0.2}$ V

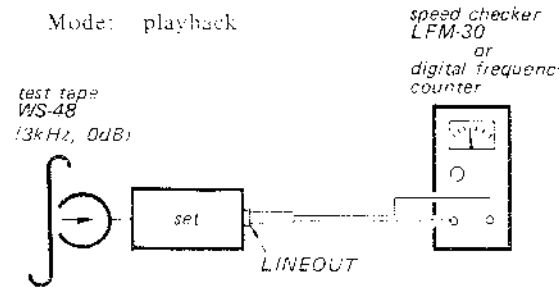
Tape Speed Adjustment

Setting:

FUNCTION switch: MIC/TC

Procedure:

Mode: playback

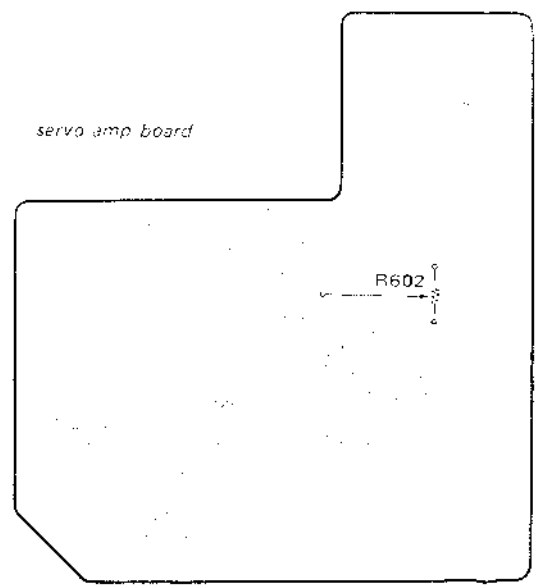


Specification:

Speed checker	Digital frequency counter
−2.5 +3%	2,925 3,090 Hz

Frequency difference between beginning and end of tape should be within 1% (30 Hz).

Adjustment Location:



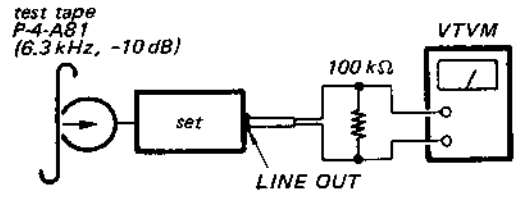
Record/playback Head Azimuth Adjustment

Setting:

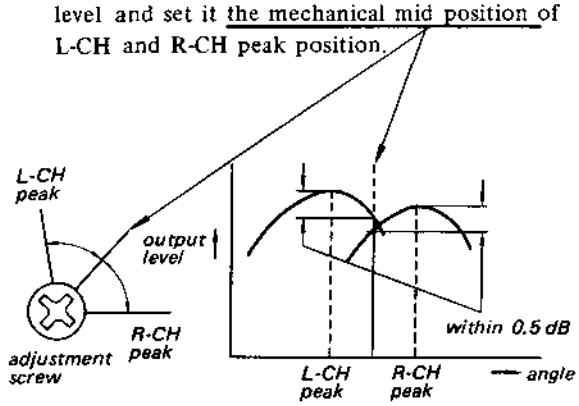
FUNCTION switch: MIC/TC
MODE switch: STEREO

Procedure:

1. Mode: playback

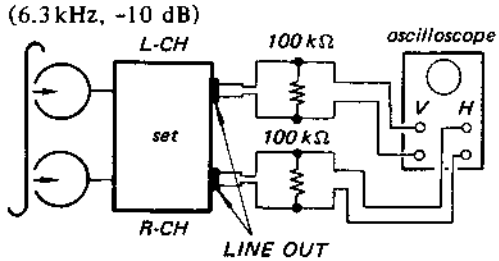


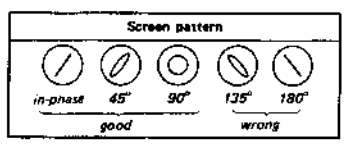
2. Turn the adjustment screw for the maximum level and set it the mechanical mid position of L-CH and R-CH peak position.



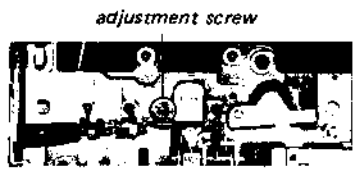
3. Mode: playback

P-4-A81
(6.3 kHz, -10 dB)





Adjustment Location:

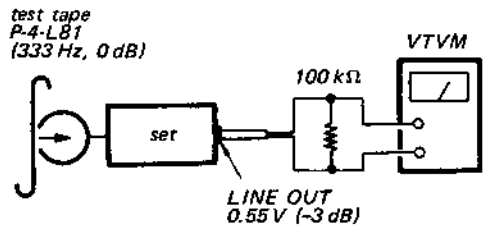


Playback Level Adjustment

Setting:

FUNCTION switch: MIC/TC
TAPE SELECT switch: NORMAL
MODE switch: STEREO

Procedure:

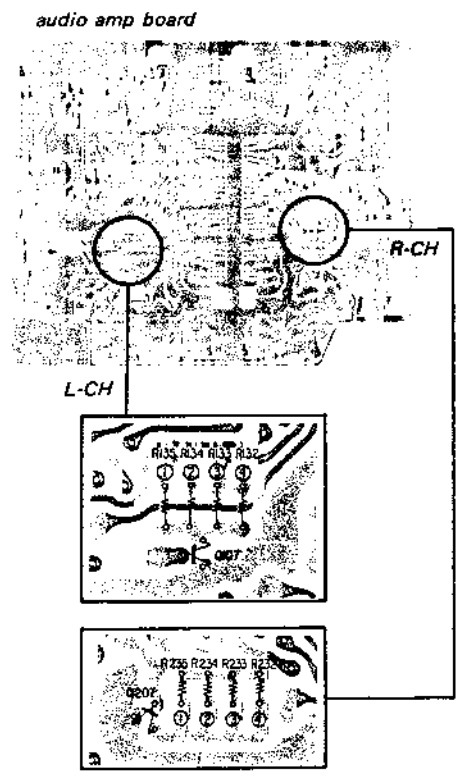


Specification:

LINE OUT Level: 0.55 V (-3 dB)

Adjustment Location:

Pattern connection	LINE OUT Level
①	low ↕ high
②	
③	
④	

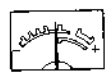


Battery Meter Calibration

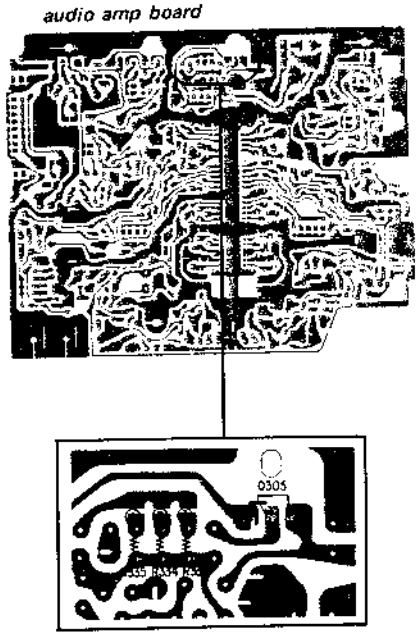
Setting:

Power Supply Voltage:	8.8 V dc
VOLUME control:	minimum
FUNCTION switch:	MIC/TC
Mode:	playback with no cassette loaded

Adjustment Location and Specification:

Pattern connection	Pointer deflection	Meter indication
①	decrease ↑	
②		
③	↓ increase	

audio amp board



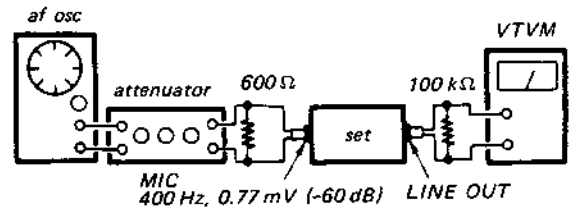
AGC Balance Adjustment

Setting:

FUNCTION switch:	MIC/TC
MODE switch:	STEREO

Procedure:

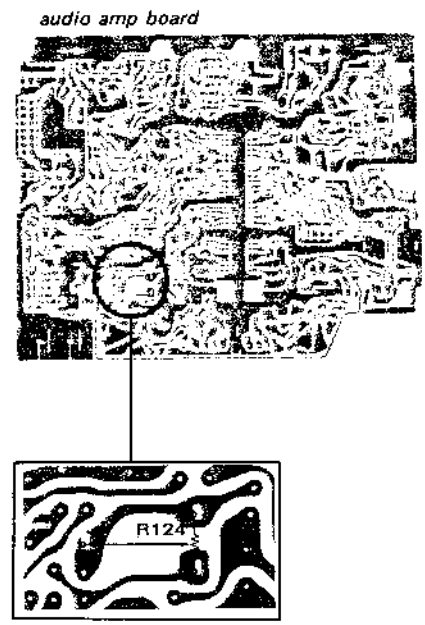
1. Mode: record



2. Adjust R124 so that LINE OUT of L-CH becomes the same as R-CH.

Adjustment Location:

audio amp board



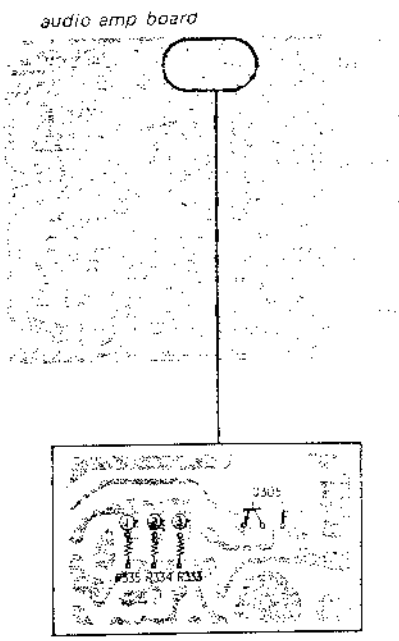
Battery Meter Calibration

Setting:

Power Supply Voltage:	8.8 V dc
VOLUME control:	minimum
FUNCTION switch:	MIC/TC
Mode:	playback with no cassette loaded

Adjustment Location and Specification:

Pattern connection	Pointer deflection	Meter indication
①	decrease ↕ increase	
②		
③		



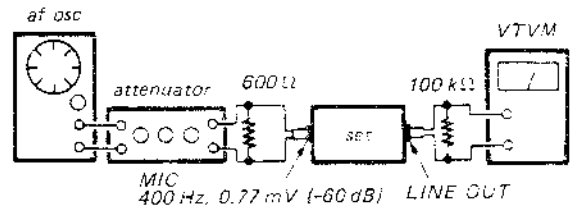
AGC Balance Adjustment

Setting:

FUNCTION switch:	MIC/TC
MODE switch:	STEREO

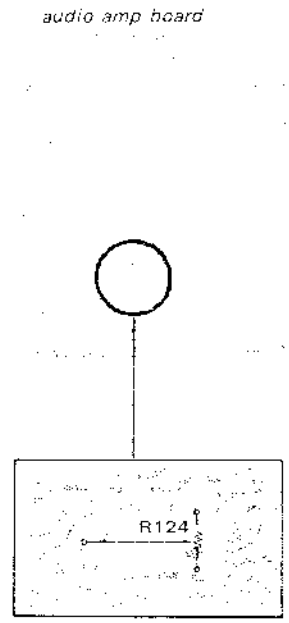
Procedure:

1. Mode: record



2. Adjust R124 so that LINE OUT of L-CH becomes the same as R-CH.

Adjustment Location:



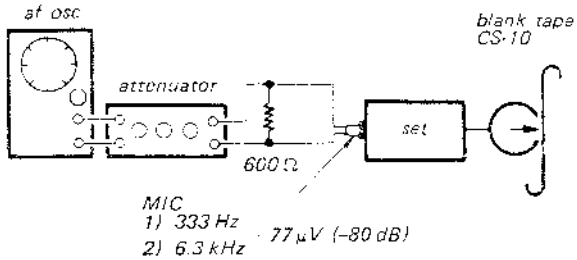
Record Bias Adjustment

Setting:

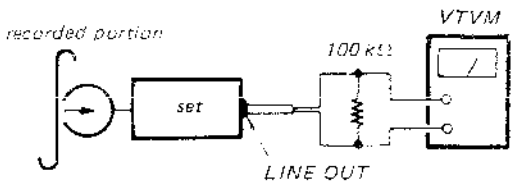
FUNCTION switch:	MIC/TC
TAPE SELECT switch:	NORMAL

Procedure:

1. Mode: record



2. Mode: playback

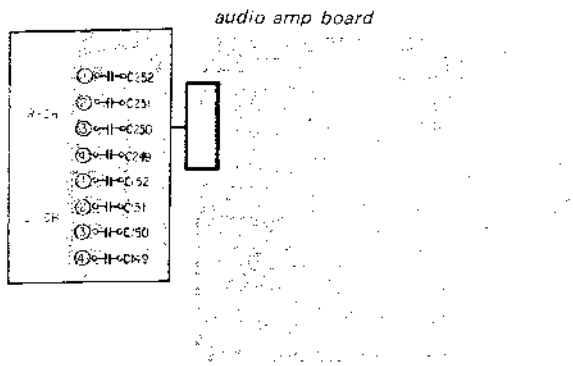


Specification:

6.3 kHz level difference from 333 Hz:
0 dB ∓ 1.5 dB

Adjustment Location:

Pattern connection	6.3 Hz VTVM reading
①	down
②	
③	
④	up



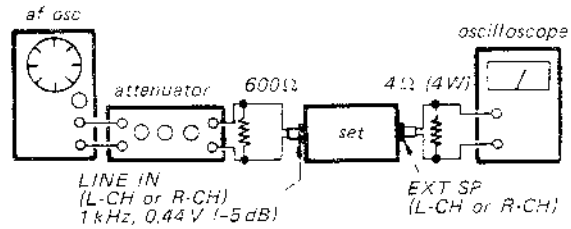
Note: If necessary, repeat above steps.

AC Bias Adjustment

Setting:

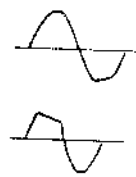
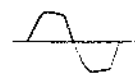
FUNCTION switch:	LINE IN
Power supply voltage:	12 V dc

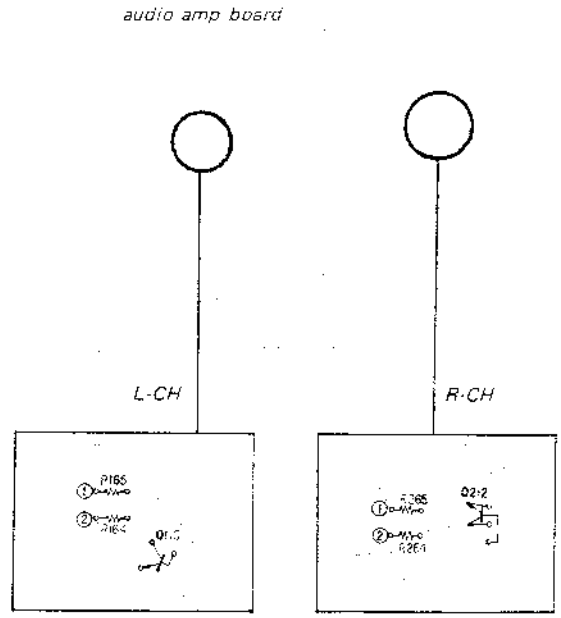
Procedure:



1. Turn the VOLUME control to MIN position.
2. Slowly turn the VOLUME control clockwise and adjust the pattern connection to obtain the oscilloscope pattern as shown below.

Oscilloscope pattern:

Wrong	Good
	



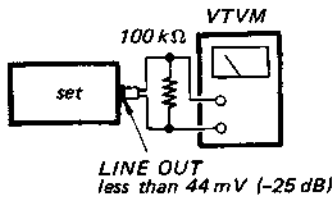
Bias Leakage Adjustment

Setting:

FUNCTION switch: LINE IN
AFC/ISS switch: ON or OFF

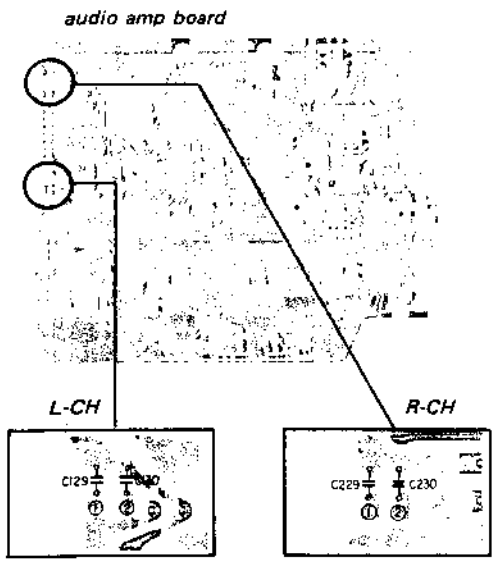
Procedure:

Mode: record (no signal input)



Adjust pattern connection for the specified reading on VTVM.

Adjustment Location:



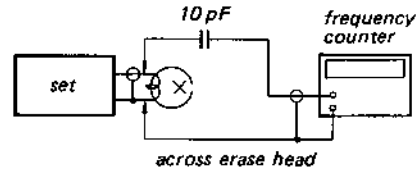
Bias Osc Frequency Adjustment

Setting:

FUNCTION switch: LINE IN

Procedure:

Mode: record (no signal input)

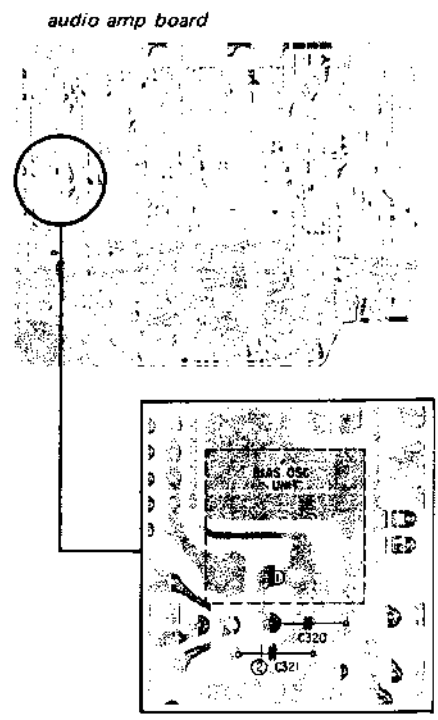


Specification:

AFC/ISS switch: ON
78.2 kHz--83.8 kHz
AFC/ISS switch: OFF
82 kHz–87 kHz

Adjustment Location:

Pattern connection	Bias Osc frequency
Open	high
①	↓
②	↓
① and ②	low

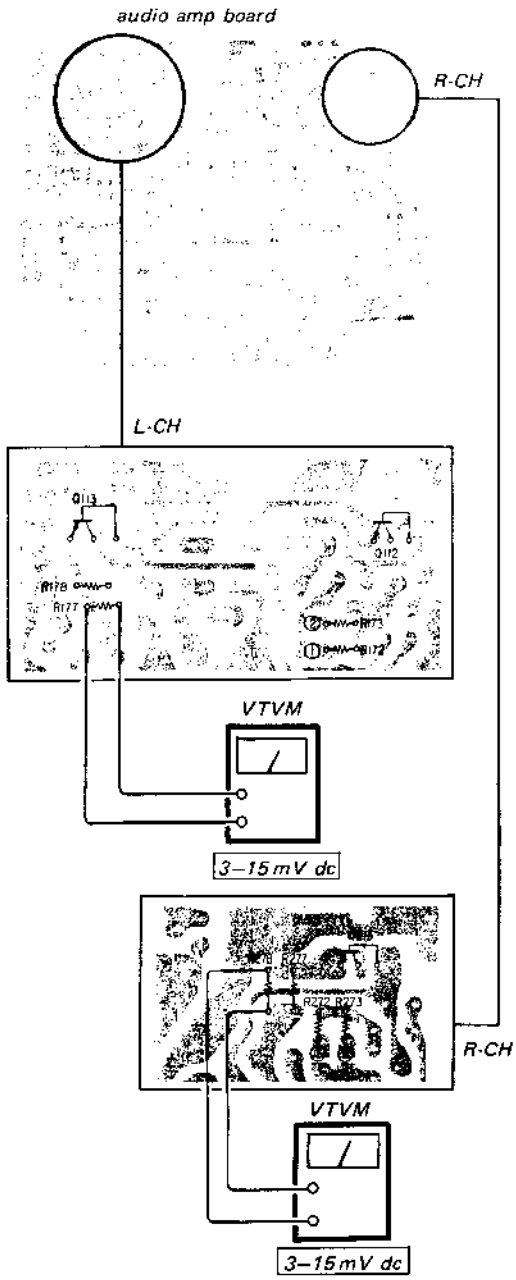


DC Bias Adjustment

Setting:

FUNCTION switch: MIC/TC

Adjustment Location and Specification:



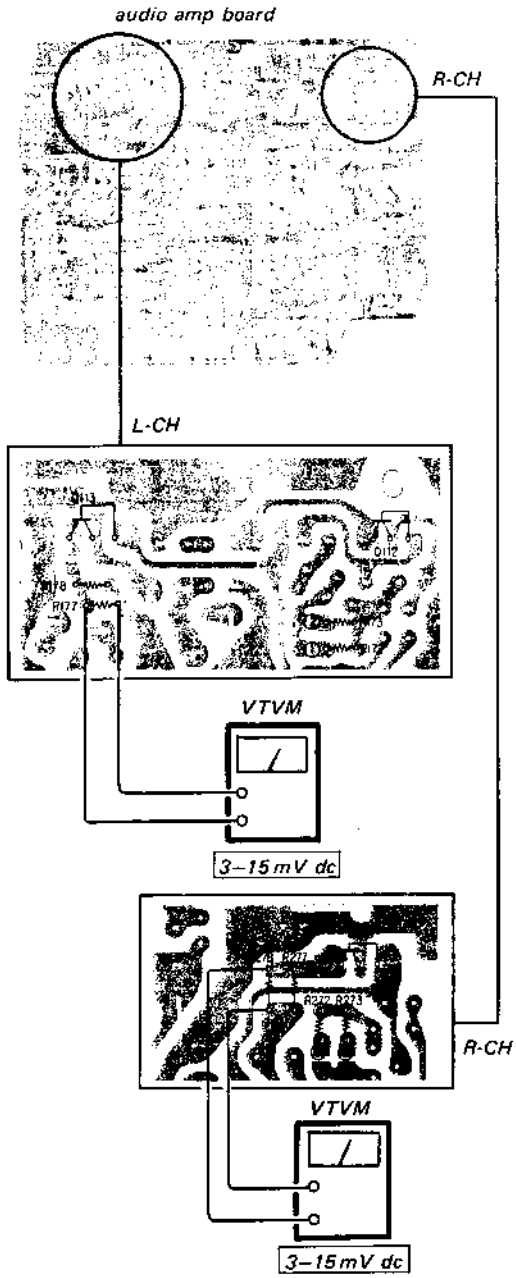
Pattern connection	VTVM Reading
Open	up
①	↓
②	
① and ②	down

DC Bias Adjustment

Setting:

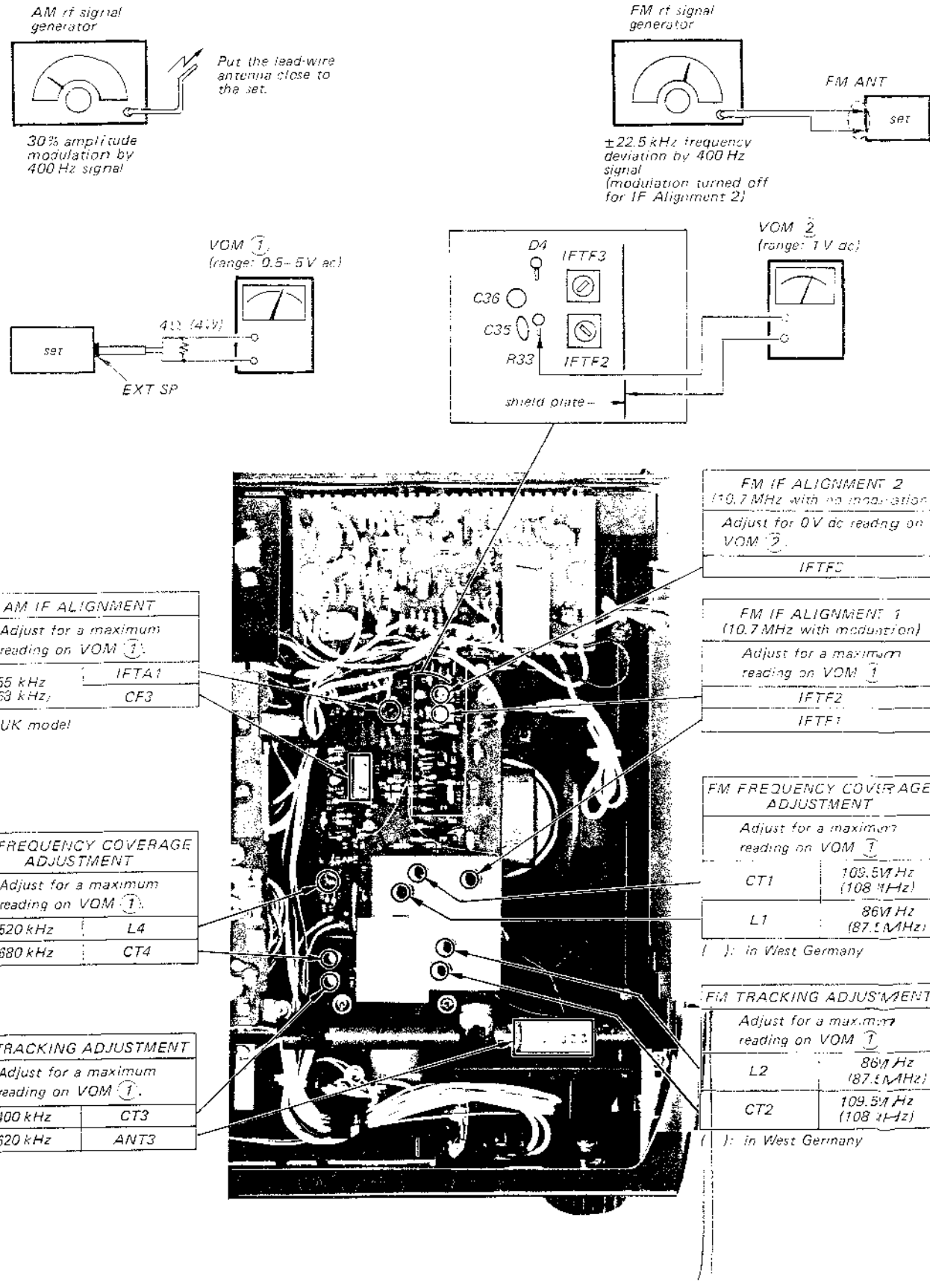
FUNCTION switch: MIC/TC

Adjustment Location and Specification:



Pattern connection	VTVM Reading
Open	up
①	↓
②	
① and ②	down

3-2. RADIO SECTION

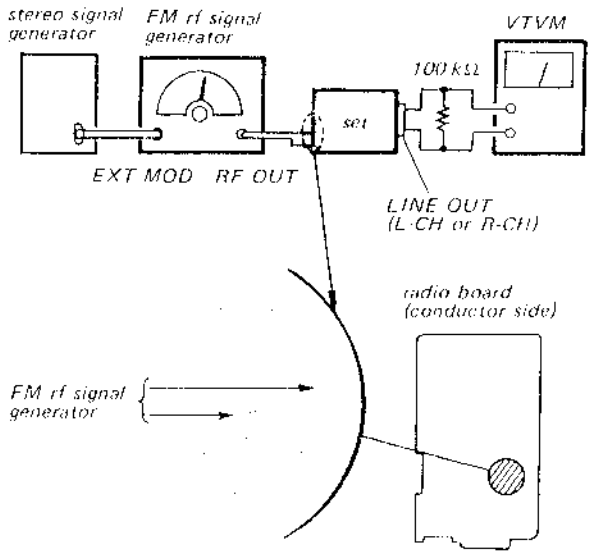


FM Stereo Separation Adjustment

Setting:

FUNCTION switch: FM
MODE switch: STEREO

Procedure:



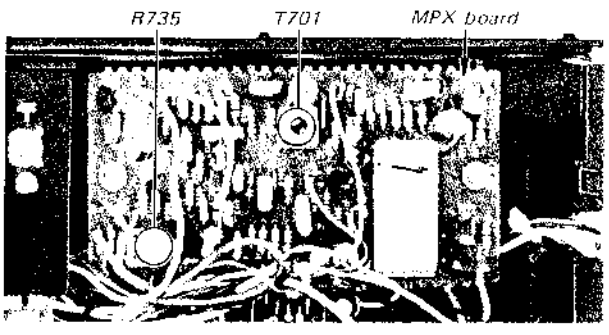
Carrier frequency: 98 MHz

	Main channel	Sub channel	Pilot signal
Frequency deviation	10.125 kHz (13.5%)	10.125 kHz (13.5%)	7.5 kHz (10%)
Modulation frequency	1 kHz	1 kHz	19 kHz

1. Adjust T701 for a maximum reading on VTVM at both channels.
2. Modulate L-ch (R-ch) only and adjust R735 for a minimum reading on VTVM at R-ch (L-ch).

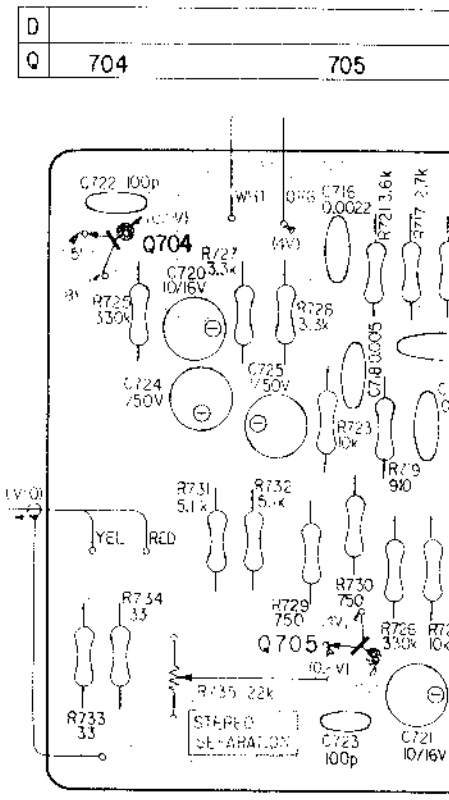
Specification:

Adjustment Location:



4-1. MOUNTING DIAGRAM – M

Component Side –

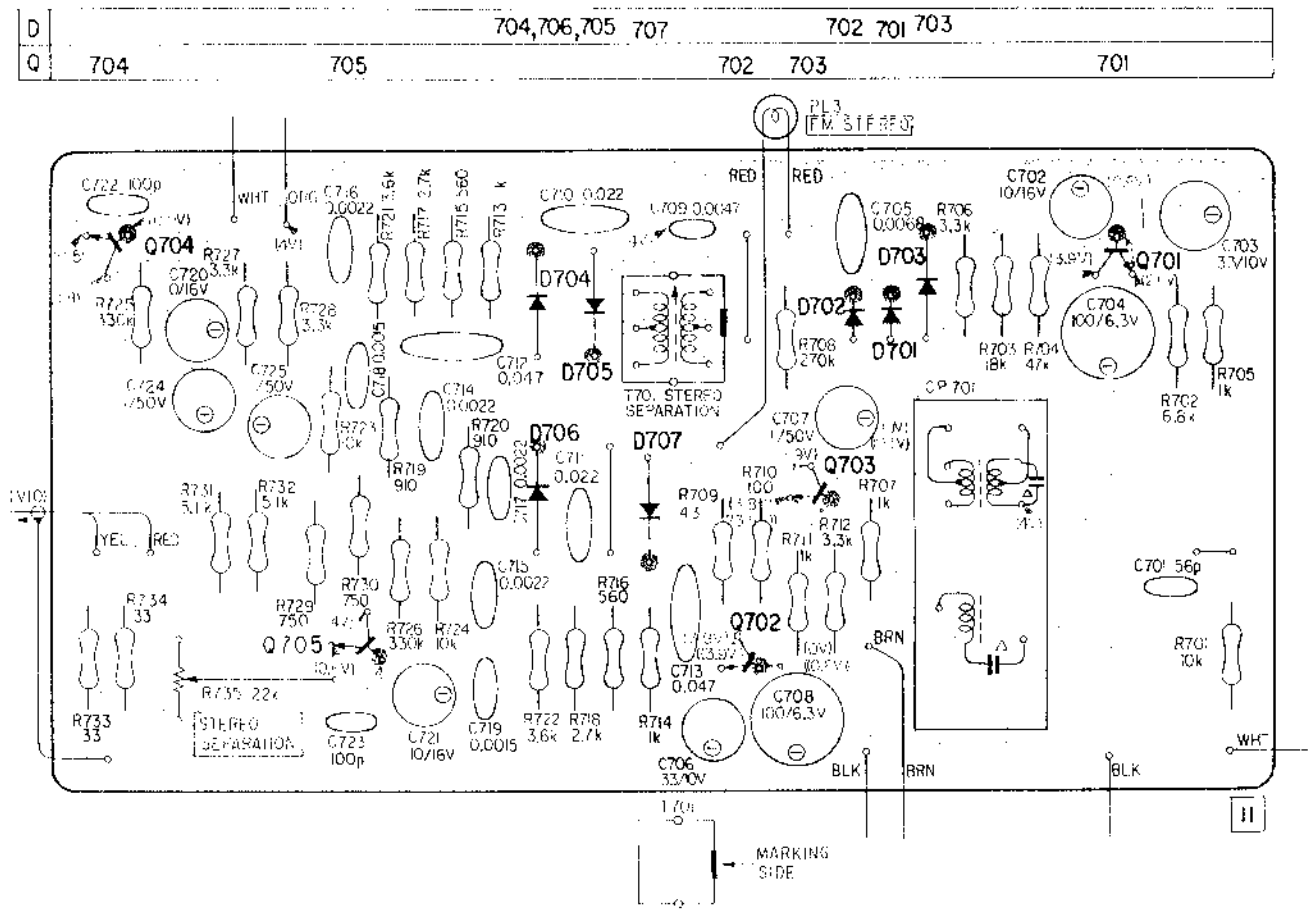


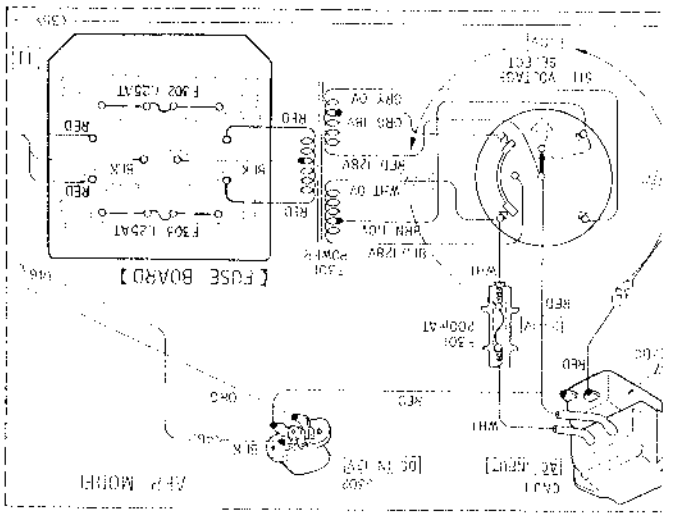
CF-580	CF-580
CF-580	CF-580

SECTION 4
DIAGRAMS

4-1. MOUNTING DIAGRAM - MPX Board -

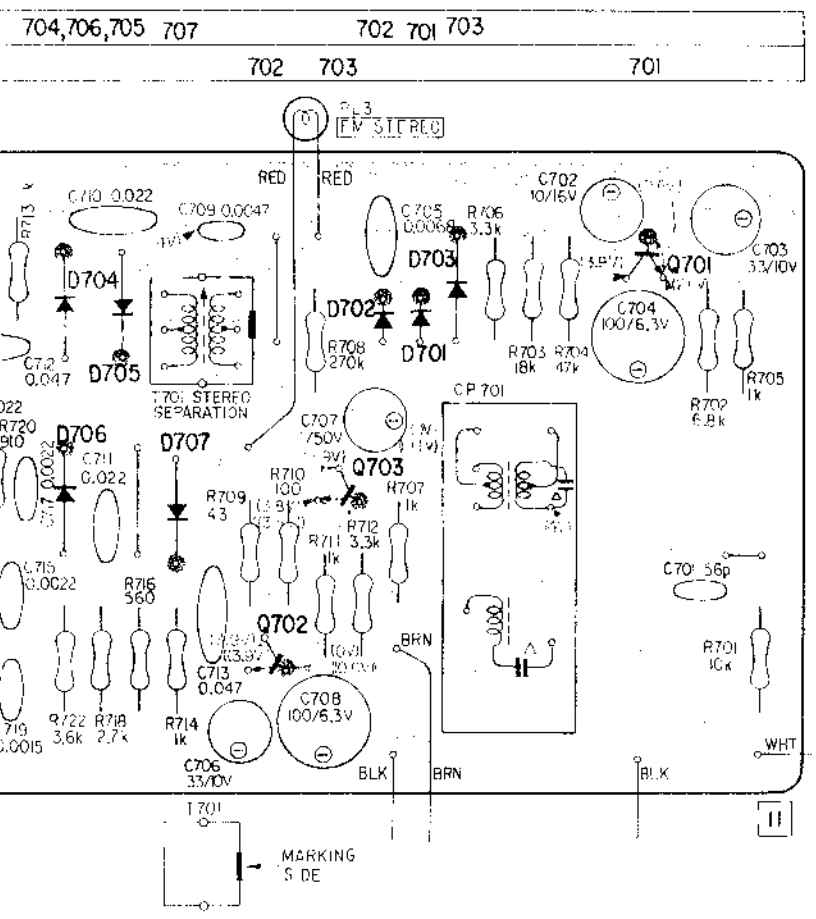
Component Side

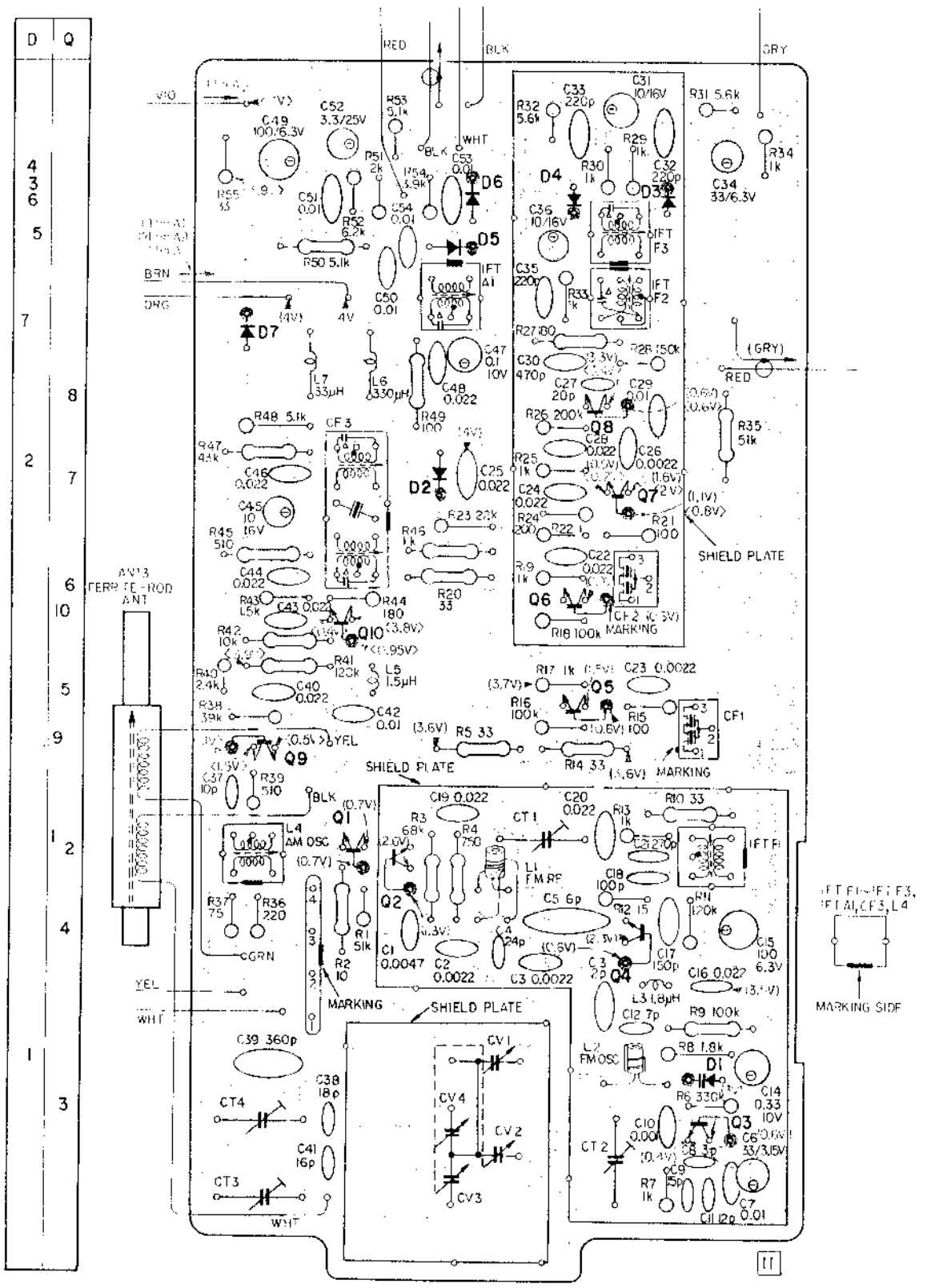


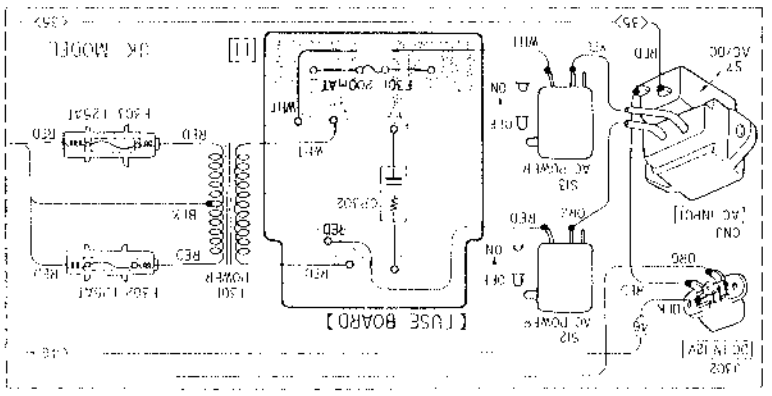


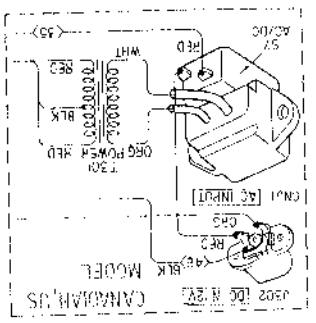
4.2. MOUNTING DIAGRAM – Radio Board –

Component Side

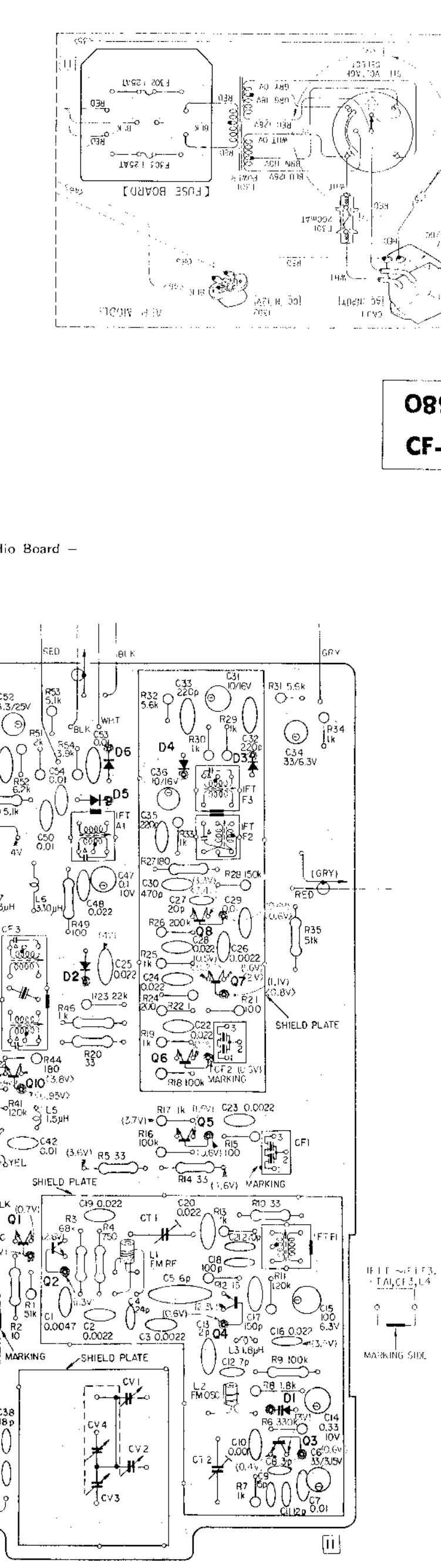






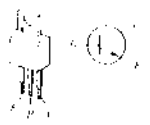


CF-580	CF-580
CF-580	CF-580



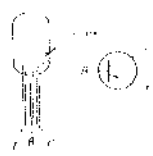
Q1,2,5 - 10: 2SC710

Q305, 601: 2SC1429



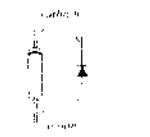
Q3, 4: 2SC930

Q602: 2SB475



Q101, 102	
Q201, 202	
Q103 - 111, 114	
Q203 211, 214	2SC633A
Q301 - 304, 306	2SC633A
Q701 - 705	
D103, 203	
Q603:	2SC633

D1:	1S2687S
D2, 7:	1S1555
D3, 4, 6:	1T261
D5:	1T23
D101, 201, 302, D305, 602, 703	
D102, 202, 301, D303, 304, 701,	1T22
D702	
D306:	RD6A (N)
D309:	RD4A (N)
D704 707:	1T22A



Q112, 212: 2SC1173

D307, 308, D601 : 10D2

Q113, 213: 2SA473

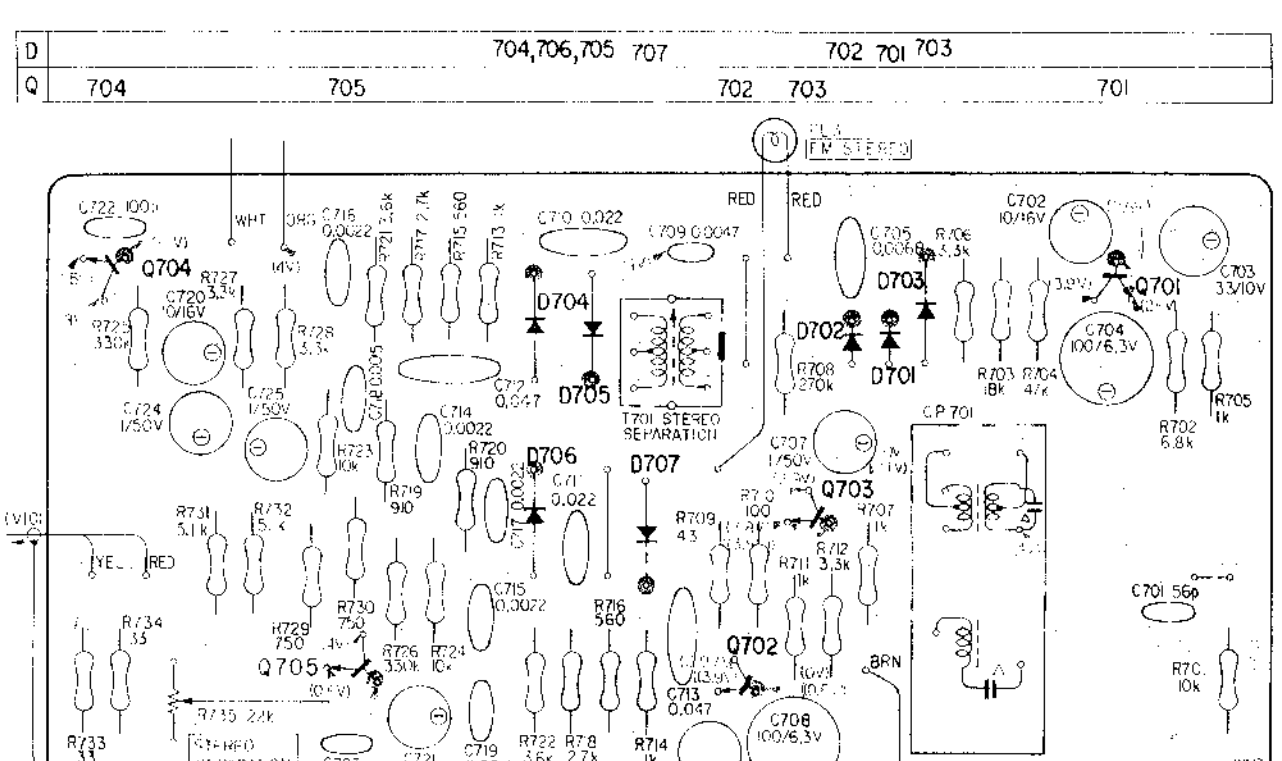
CF-580

CF-580

SECTION 4
DIAGRAMS

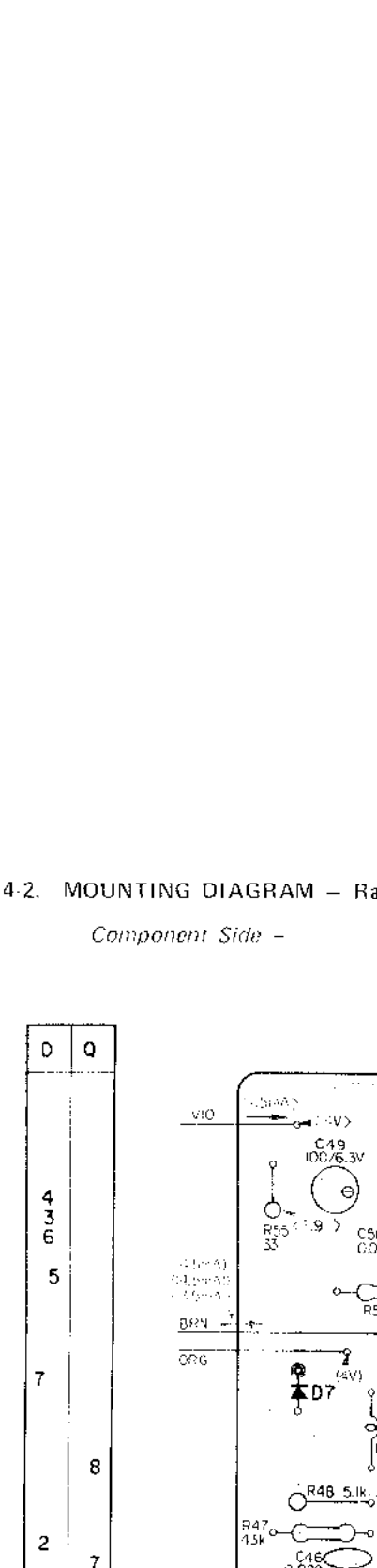
4-1. MOUNTING DIAGRAM – MPX Board –

Component Side



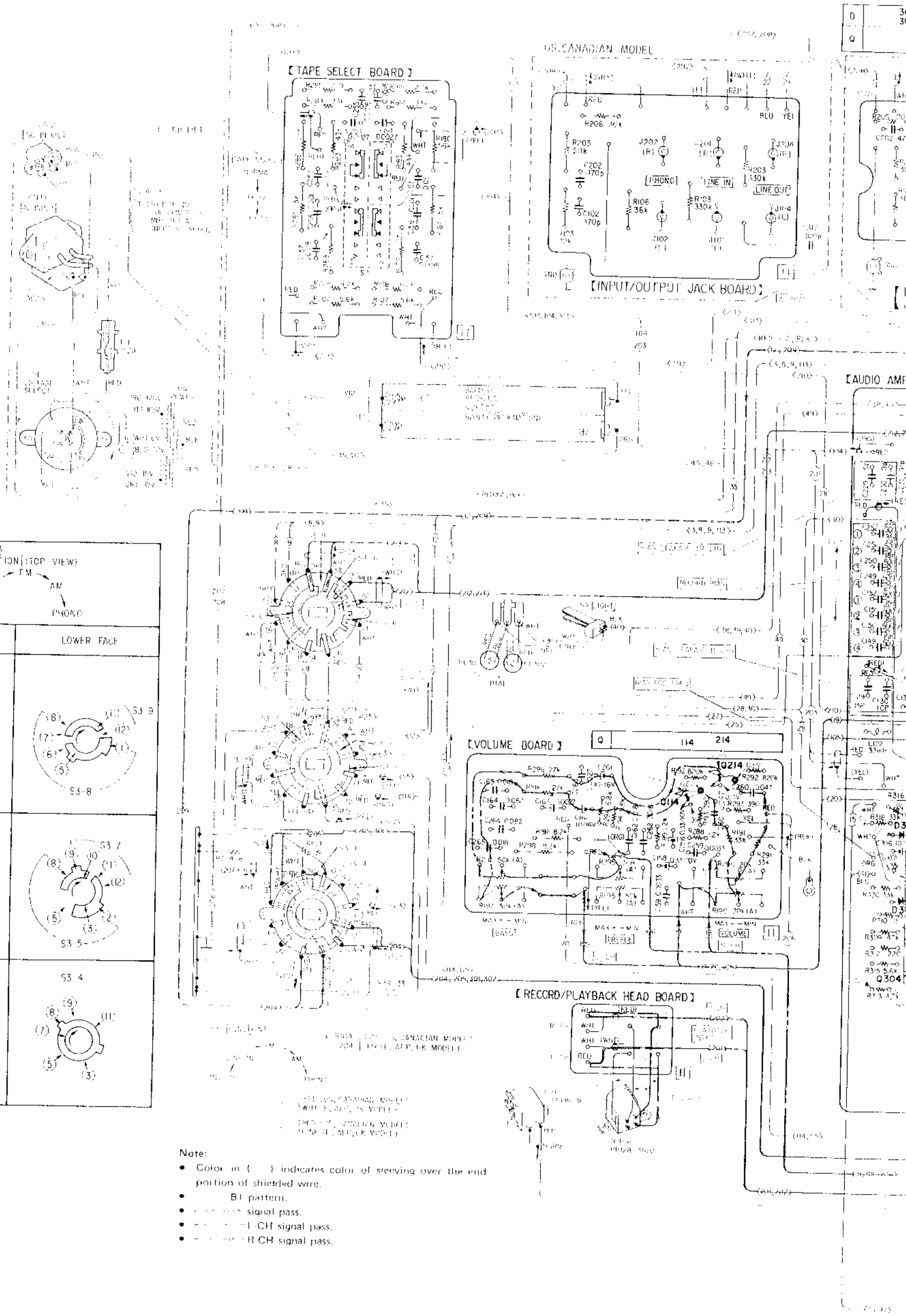
4-2. MOUNTING DIAGRAM – Ra

Component Side –



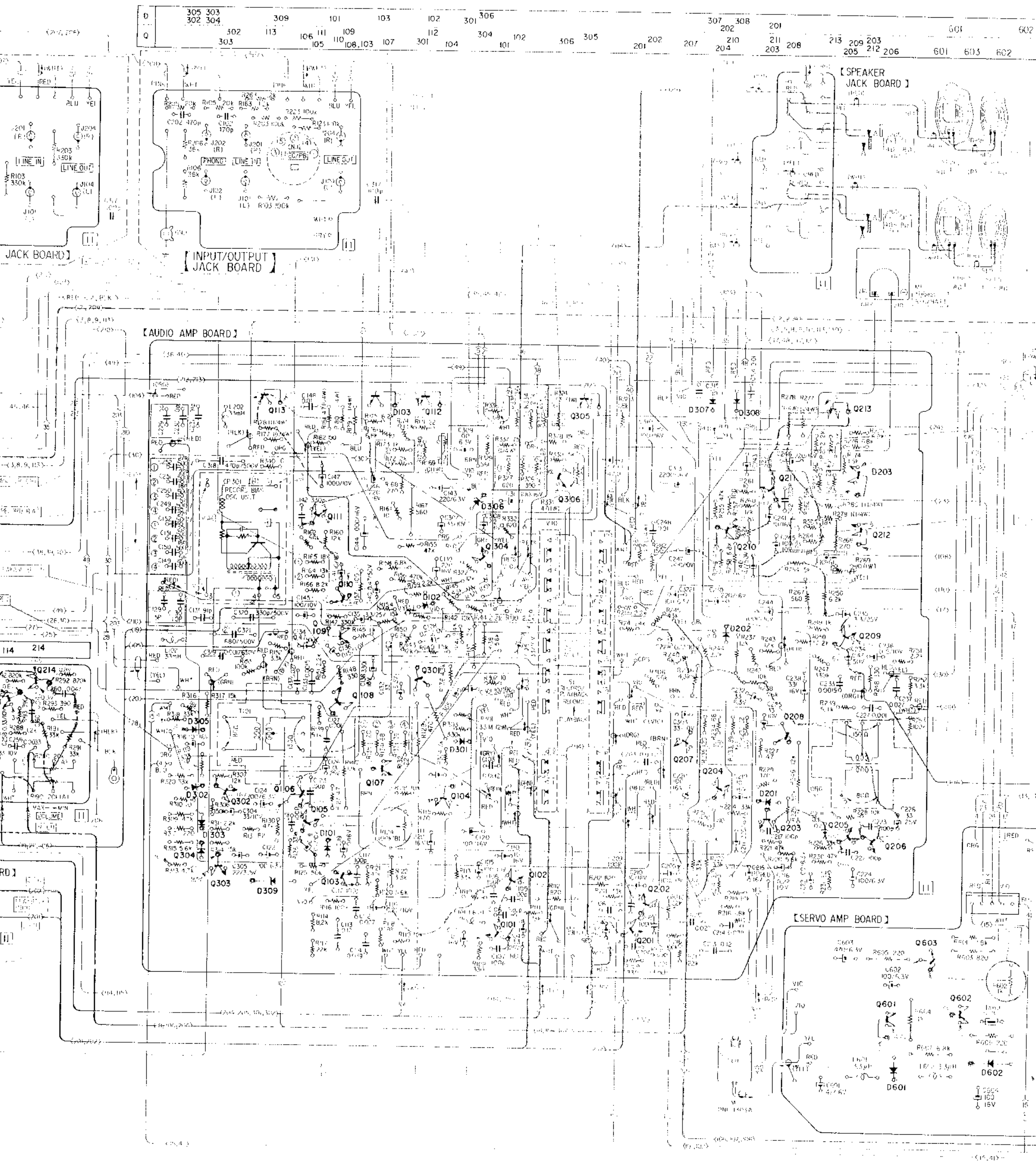
4-3. MOUNTING DIAGRAM

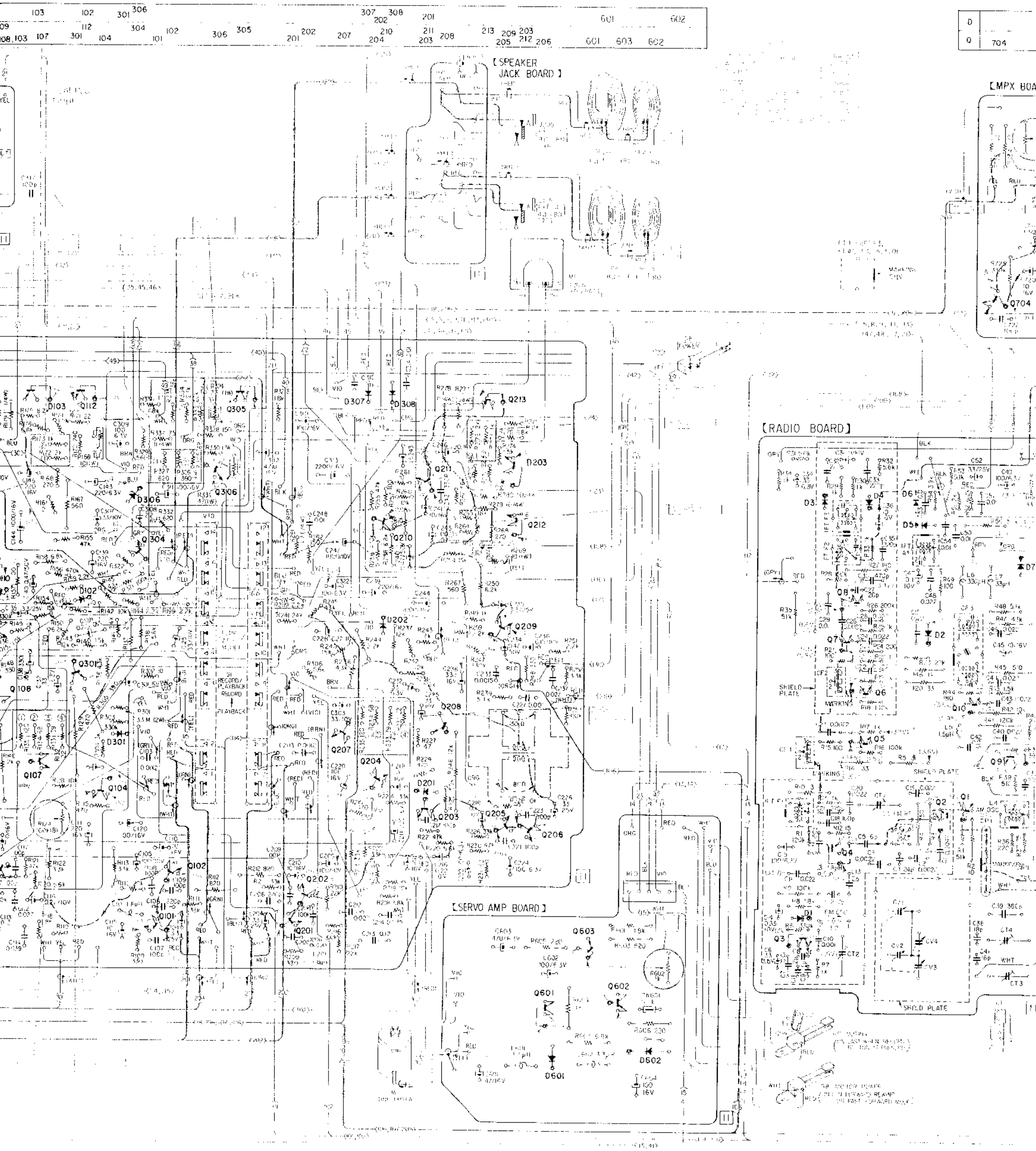
– Conductor Side –

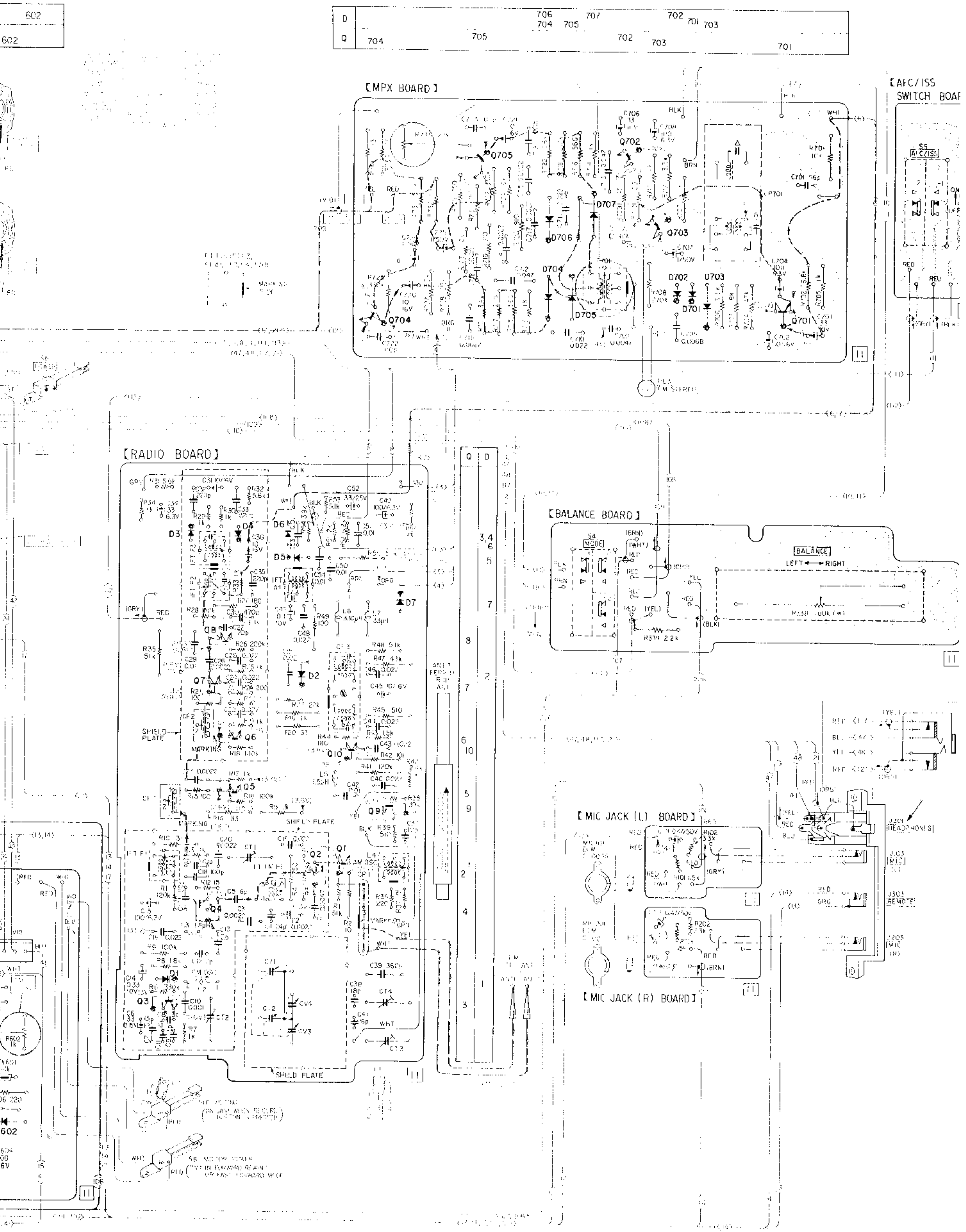


Note:

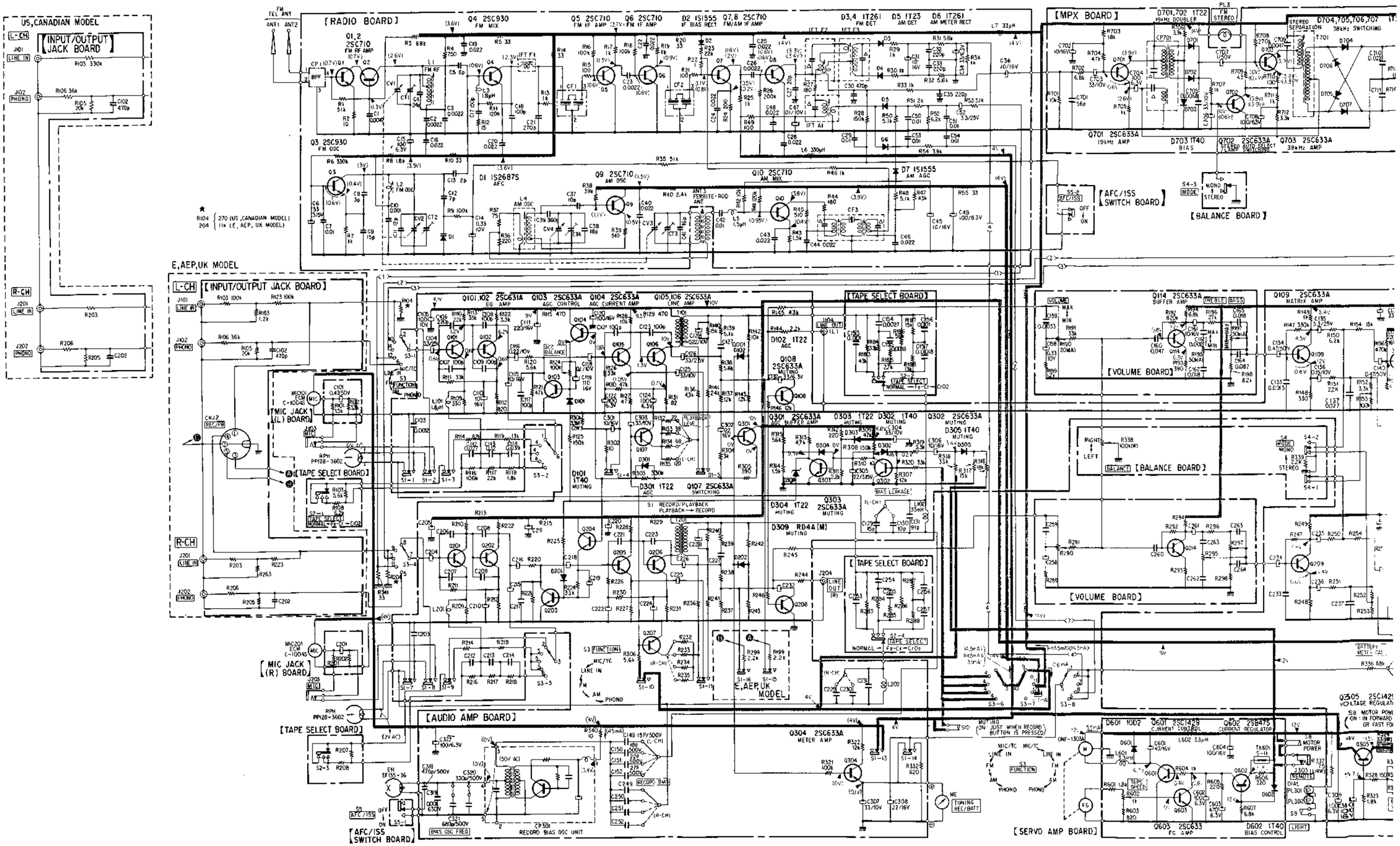
- Color in ( ) indicates color of sleeving over the end portion of shielded wire.
- B1 pattern.
- signal pass.
- L-CH signal pass.
- R-CH signal pass.


JACK BOARD
INPUT/OUTPUT JACK BOARD
SPEAKER JACK BOARD
AUDIO AMP BOARD
SERVO AMP BOARD
LINE IN
LINE OUT
PHONO
TAPE
CD/PB

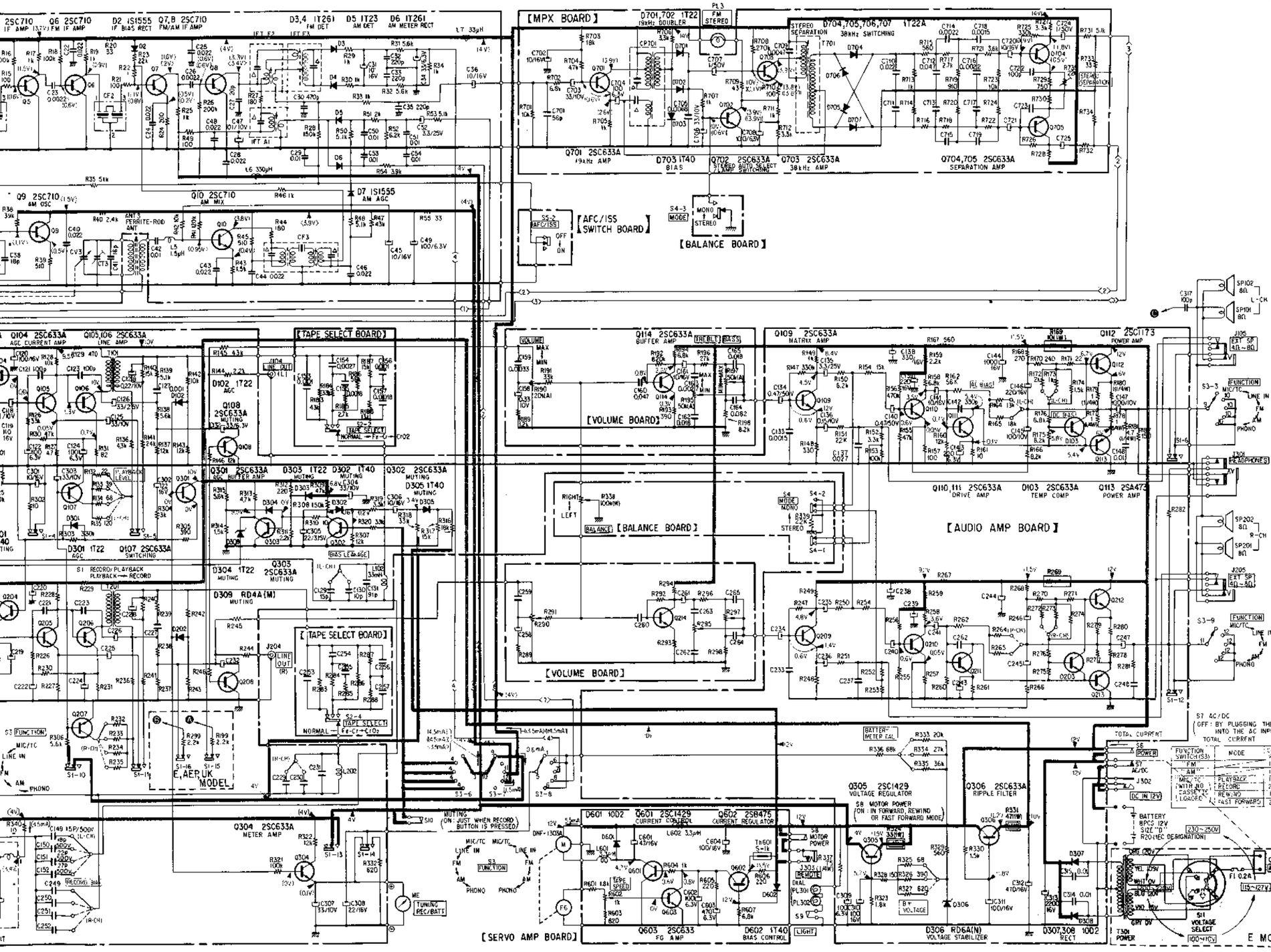

[SPEAKER JACK BOARD]
[MPX BOA
[RADIO BOARD]
[SERVO AMP BOARD]
SHIELD PLATE
MARKING
RECORD/ PLAYBACK
RECORD
PLAYBACK
Q704
Q601
Q602
Q603
D601
D602
D307
D308
D306
D203
D202
D201
D102
Q108
Q107
Q102
Q101
Q201
Q202
Q301
Q304
Q305
Q306
Q103
Q112
Q104
Q204
Q205
Q206
Q207
Q208
Q209
Q210
Q211
Q212
Q213

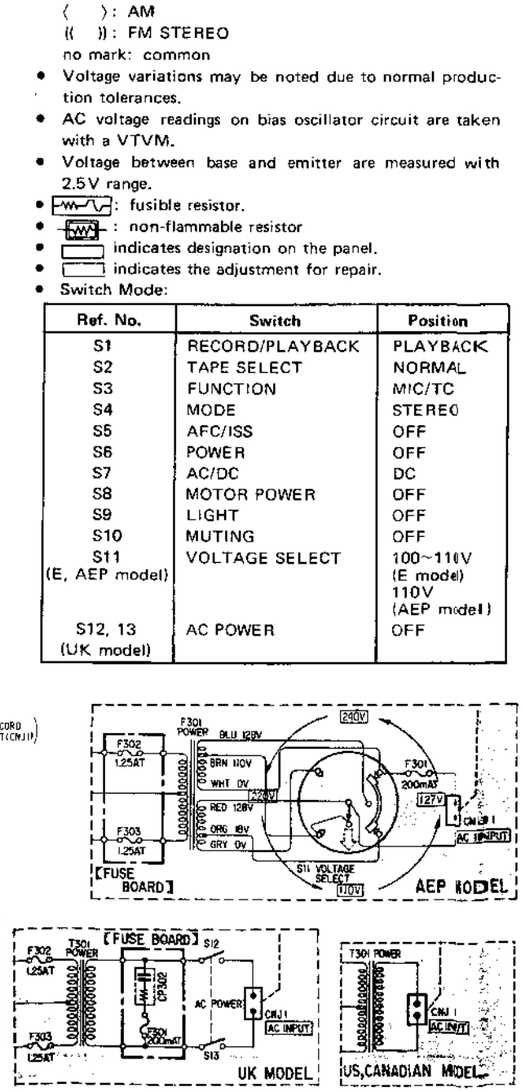

[MPX BOARD]
[AFC/ISS SWITCH BOAR
[RADIO BOARD]
[BALANCE BOARD]
[MIC JACK (L) BOARD]
[MIC JACK (R) BOARD]
SHIELD PLATE
SHIELD PLATE
Q705
Q702
Q703
Q704
Q701
D706
D707
D704
D705
D702
D703
D701
D3
D4
D6
D5
D7
D2
Q8
Q7
Q6
Q5
Q10
Q9
Q1
Q2
Q4
Q3
D1
BALANCE
LEFT ↔ RIGHT
S4 MODE
S5 AFC/ISS
J501 HEADPHONES
J502 REMOTE
J503 MIC
J504 MIC
J505 MIC
J506 MIC

4-4. SCHEMATIC DIAGRAM



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





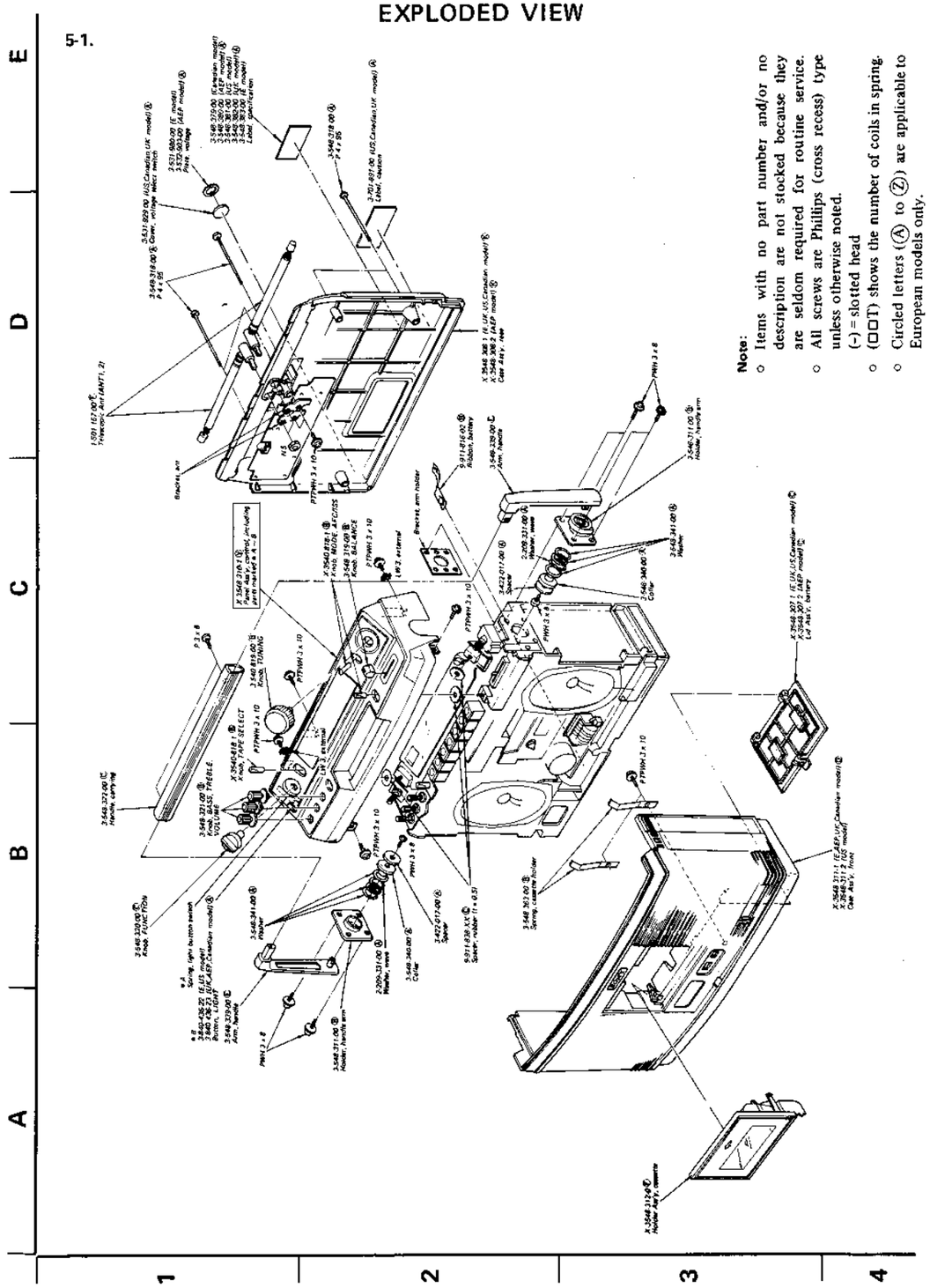
Note:

- All capacitors are in μF unless otherwise noted. 50 or less working voltages are not indicated except for electrolytic type. p = μμF
- All resistors are in Ω, 1/8W, unless otherwise noted. k = 1,000 M = 1,000 k
- △ indicates internal components.
- ⏚ indicates chassis ground.
- ⏚ indicates the connection point marked with ⏚ on the chassis.
- ▬ indicates B+ circuit.
- Voltages are DC with respect to ground unless otherwise noted. Readings are taken under no-signal conditions with a VOM (20 kΩ/V). Readings in [ ] are in record mode.
  ( ) : FM
  〈 〉 : AM
  (( )) : FM STEREO
  no mark: common
- Voltage variations may be noted due to normal production tolerances.
- AC voltage readings on bias oscillator circuit are taken with a VTVM.
- Voltage between base and emitter are measured with 2.5 V range.
- ⏦ : fusible resistor.
- ⏦ : non-flammable resistor
- ▭ indicates designation on the panel.
- ▭ indicates the adjustment for repair.
- Switch Mode:

Ref. No.	Switch	Position
S1	RECORD/PLAYBACK	PLAYBACK
S2	TAPE SELECT	NORMAL
S3	FUNCTION	MIC/TC
S4	MODE	STEREO
S5	AFC/ISS	OFF
S6	POWER	OFF
S7	AC/DC	DC
S8	MOTOR POWER	OFF
S9	LIGHT	OFF
S10	MUTING	OFF
S11 (E, AEP model)	VOLTAGE SELECT	100~110V (E model) 110V (AEP model)
S12, 13 (UK model)	AC POWER	OFF

SECTION 5
EXPLODED VIEW

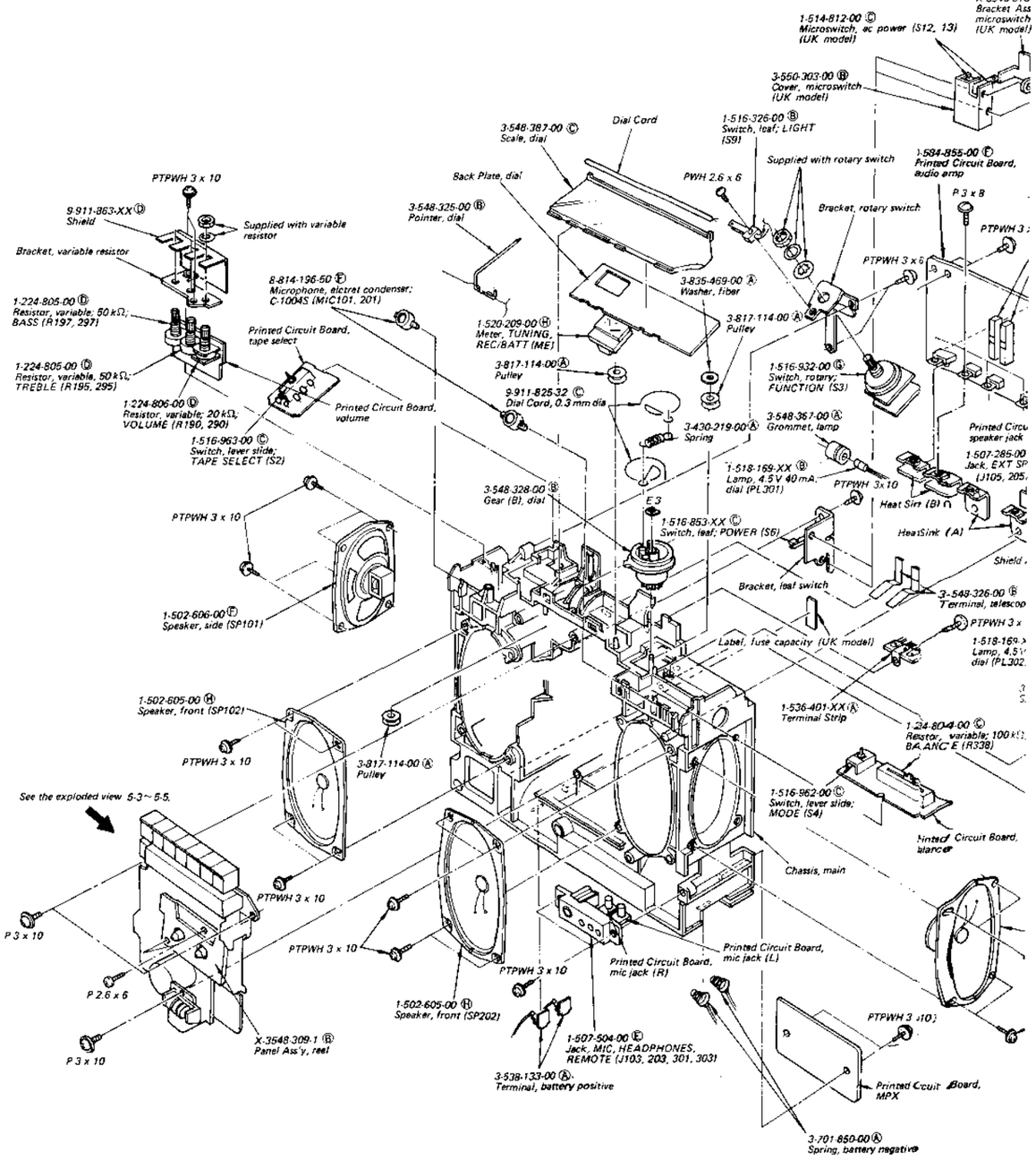
5-1.



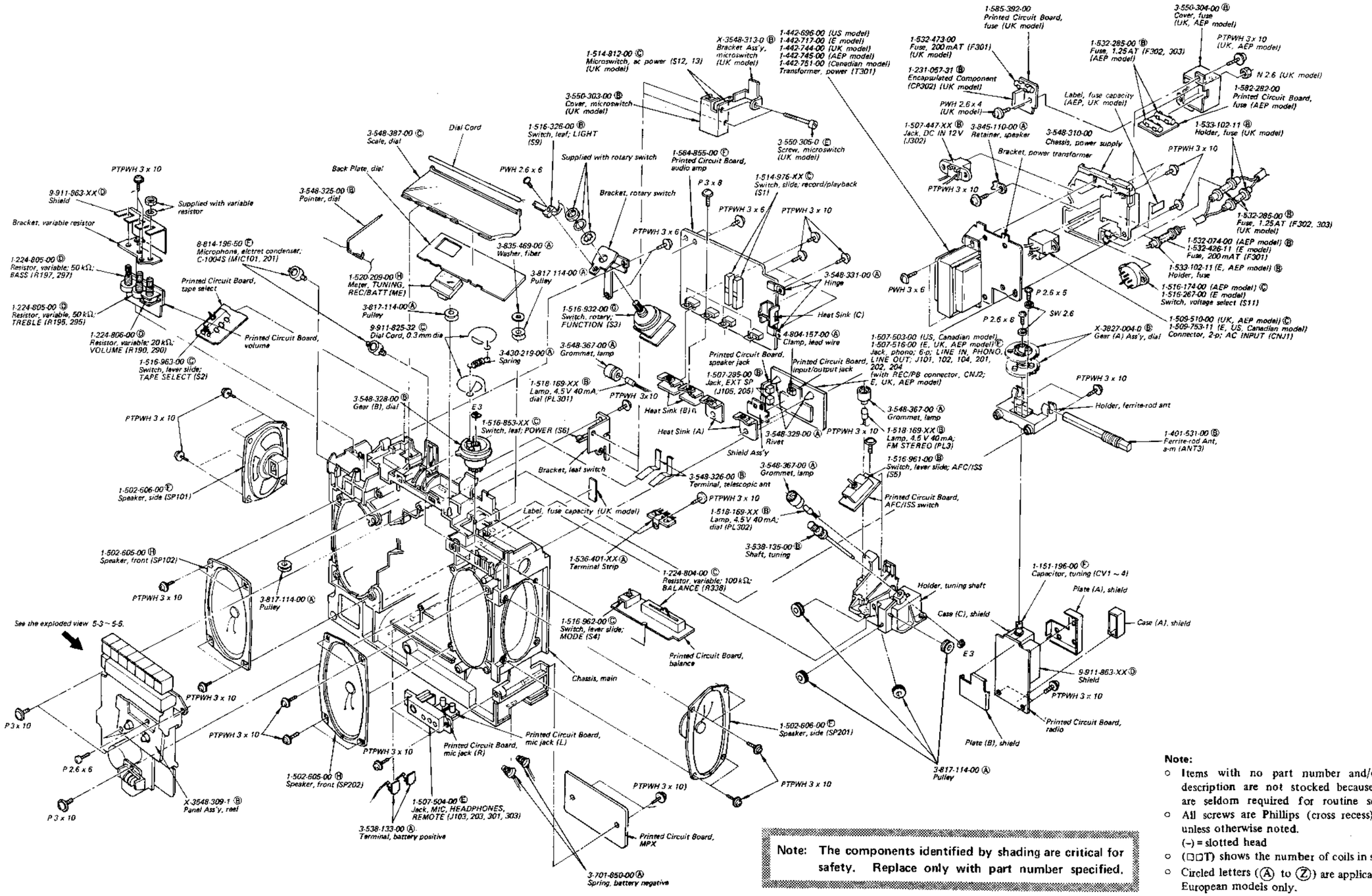
Note:

- 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
  (001) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

5-2.



5-2.

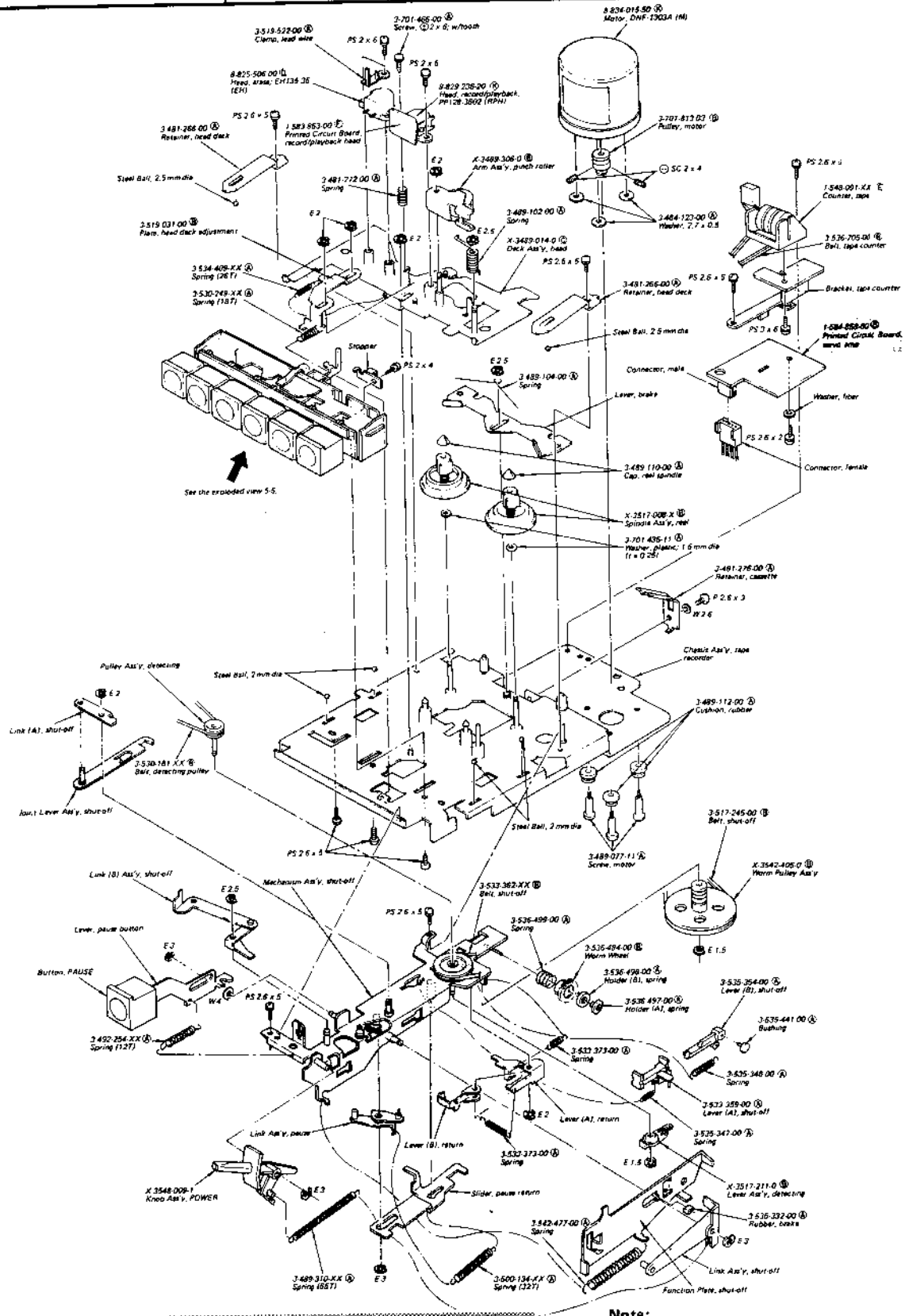


Note: The components identified by shading are critical for safety. Replace only with part number specified.

Note:

- 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
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

5-3.

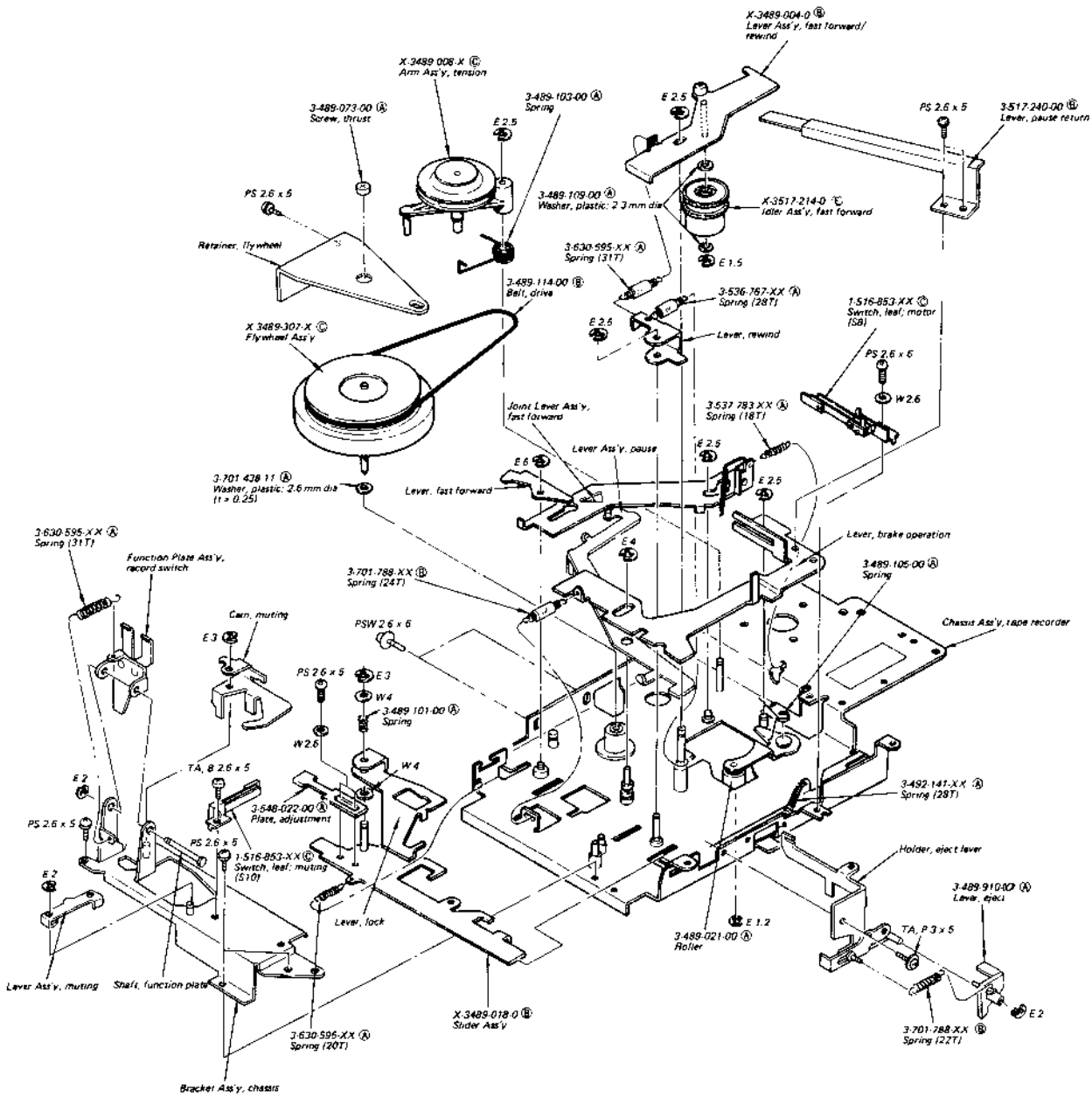


Note: The components identified by shading are critical for safety. Replace only with part number specified.

Note:

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

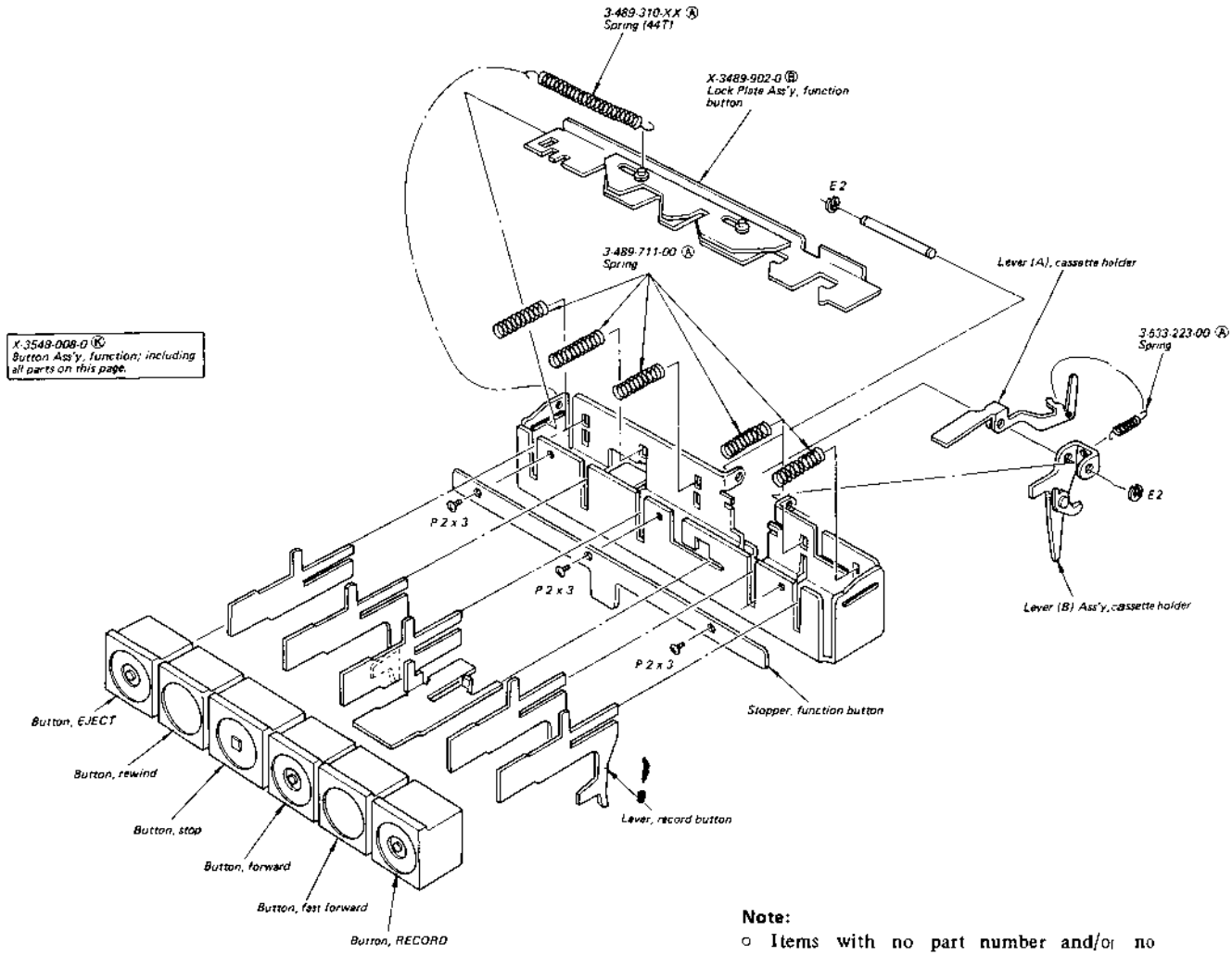
5-4.



Note:

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

5-5.



Note:

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

SECTION 6
ELECTRICAL PARTS LIST

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

Ref. No.	Part No.		Description
			PRINTED CIRCUIT BOARD
	1-583-863-00	Ⓕ	Record/Playback Head
	1-584-855-00	Ⓕ	Audio Amp
	1-584-858-00	Ⓑ	Servo Amp
	1-585-282-00		Fuse (AEP model)
	1-585-329-00		Fuse (UK model)
			SEMICONDUCTORS
			Transistors
Q1,2		Ⓑ	2SC710
⇒ Q3,4		Ⓑ	2SC930D
Q5~10		Ⓑ	2SC710
⇒ Q101,201 ⇒ Q102,202		Ⓑ	2SC632A
⇒ Q103,203 ⇒ Q104~107 ⇒ Q204~207		Ⓑ	2SC634A
⇒ Q108,208 ⇒ Q109~111 ⇒ Q209~211		Ⓑ	2SC634A
Q112,212		Ⓒ	2SC1173
Q113,213		Ⓔ	2SA473
⇒ Q114,214		Ⓑ	2SC634A
⇒ Q301~304		Ⓑ	2SC634A
⇒ Q305		Ⓒ	2SC1173
⇒ Q306		Ⓑ	2SC634A
⇒ Q601		Ⓒ	2SC1760
Q602		Ⓑ	2SB475
⇒ Q603		Ⓑ	2SC634A
⇒ Q701~705		Ⓑ	2SC634A
			Diodes
⇒ D1		Ⓑ	1S2687
D2		Ⓑ	1S1555
D3,4		Ⓐ	1T261
⇒ D5		Ⓐ	1T22A
D6		Ⓐ	1T261
D7		Ⓑ	1S1555
⇒ D101,201		Ⓑ	1S1555
⇒ D102,202		Ⓐ	1T22A
⇒ D103,203		Ⓑ	2SC634A
⇒ D301		Ⓐ	1T22A
⇒ D302		Ⓑ	1S1555
⇒ D303,304		Ⓐ	1T22A
⇒ D305		Ⓑ	1S1555
D306		Ⓑ	RD6A
D307,308		Ⓑ	10D2
D309		Ⓑ	RD4A
D601		Ⓑ	10D2
⇒ D602		Ⓑ	1S1555
⇒ D701,702		Ⓑ	1T22A
⇒ D703		Ⓑ	1S1555
D704~707		Ⓑ	1T22A
			Thermistor
Th601	1-800-198-XX	Ⓐ	S-1K
			COILS
L1	1-425-632-00	Ⓑ	FM/RF
L2	1-405-705-00	Ⓑ	FM Osc (UK, AEP model)
	1-459-157-00		FM Osc (E, US, Canadian model)
L3	1-407-670-00	Ⓑ	Microinductor, 1.8μH
L4	1-405-520-00	Ⓑ	AM Osc
L5	1-407-180-XX	Ⓐ	Microinductor, 1.5μH
L6	1-407-175-XX	Ⓐ	Microinductor, 330μH
L7	1-407-163-XX	Ⓐ	Microinductor, 33μH
L101,201	1-407-670-00	Ⓑ	Microinductor, 1.8μH
L102,202	1-407-212-XX	Ⓑ	Microinductor, 33mH
L601,602	1-407-487-00	Ⓑ	Microinductor, 3.3μH
			TRANSFORMERS
IFTA1	1-404-041-00	Ⓑ	AM IFT
IFTF1	1-404-049-00	Ⓑ	FM IFT
IFTF2	1-403-952-00	Ⓑ	FM Discriminator
IFTF3	1-403-953-00	Ⓑ	FM Discriminator

⇒: Due to replacement parts, the description are different on the schematic diagram.

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

Ref. No.	Part No.		Description
T101,201	1-423-209-00	Ⓒ	Input
T301	1-442-696-00		Power (US model)
	1-442-717-00		Power (E model)
	1-442-744-00		Power (UK model)
	1-442-745-00		Power (AEP model)
	1-442-751-00		Power (Canadian model)
T701	1-425-260-00	Ⓒ	MPX

FILTERS

CF1,2	1-527-184-XX	Ⓑ	Ceramic, 10.7 MHz
CF3	1-403-144-00	Ⓑ	AM IFT
CP1	1-231-313-00	Ⓑ	Band-pass

CAPACITORS

All capacitors are in μF and of ceramic unless otherwise noted.
50 and/or less working voltages are not indicated except for electrolytic type.
(p = μμF, elect = electrolytic)

Ref. No.	Part No.				
C1	1-102-922-11	Ⓐ	0.0047		
C2,3	1-101-919-11	Ⓐ	0.0022		
C4	1-102-960-11	Ⓐ	24p		
C5	1-102-943-11	Ⓐ	6p		
C6	1-131-184-11	Ⓐ	33	3.15V	tantalum
C7	1-101-923-11	Ⓐ	0.01		
C8	1-102-936-11	Ⓐ	3p		
C9	1-102-951-11	Ⓐ	15p		
C10	1-101-918-11	Ⓐ	0.001		
C11	1-102-949-11	Ⓐ	12p		
C12	1-102-944-11	Ⓐ	7p		
C13	1-102-935-11	Ⓐ	2p		
C14	1-127-047-11	Ⓑ	0.33	10V	solid aluminum
C15	1-121-413-11	Ⓐ	100	6.3V	elect
C16	1-101-924-11	Ⓐ	0.022		
C17	1-102-108-11	Ⓐ	150p		
C18	1-102-106-11	Ⓐ	100p		
C19,20	1-101-924-11	Ⓐ	0.022		
C21	1-102-111-11	Ⓐ	270p		
C22	1-101-924-11	Ⓐ	0.022		
C23	1-101-919-11	Ⓐ	0.0022		
C24,25	1-101-924-11	Ⓐ	0.022		
C26	1-101-919-11	Ⓐ	0.0022		
C27	1-102-958-11	Ⓐ	20p		

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

Ref. No.	Part No.				
C28	1-101-924-11	Ⓐ	0.022		
C29	1-101-923-11	Ⓐ	0.01		
C30	1-102-114-11	Ⓐ	470p		
C31	1-121-651-11	Ⓐ	10	16V	elect
C32,33	1-107-139-11	Ⓐ	220p		silvered mica
C34	1-121-402-11	Ⓐ	33	10V	elect
C35	1-102-110-11	Ⓐ	220p		
C36	1-121-651-11	Ⓐ	10	16V	elect
C37	1-102-947-11	Ⓐ	10p		
C38	1-102-953-11	Ⓐ	18p		
C39	1-107-241-11	Ⓐ	360p		silvered mica
C40	1-101-924-11	Ⓐ	0.022		
C41	1-102-952-11	Ⓐ	16p		
C42	1-101-923-11	Ⓐ	0.01		
C43,44	1-101-924-11	Ⓐ	0.022		
C45	1-121-651-11	Ⓐ	10	16V	elect
C46	1-101-924-11	Ⓐ	0.022		
C47	1-127-045-11	Ⓐ	0.1	10V	solid aluminum
C48	1-101-924-11	Ⓐ	0.022		
C49	1-121-413-11	Ⓐ	100	6.3V	elect
C50,51	1-101-923-11	Ⓐ	0.01		
C52	1-121-392-11	Ⓐ	3.3	25V	elect
C53,54	1-101-923-11	Ⓐ	0.01		
C101,201	1-121-726-11	Ⓐ	0.47	50V	elect
C102,202	1-102-114-11	Ⓐ	470p		
C103,203	1-161-002-11	Ⓐ	0.0012		
C104,204	1-121-392-11	Ⓐ	3.3	25V	elect
C105,205	1-121-414-11	Ⓐ	100	10V	elect
C106,206	1-102-983-11	Ⓐ	220p		
C107~109, C207~209	1-102-975-11	Ⓐ	100p		
C110,210	1-121-651-11	Ⓐ	10	16V	elect
C111,211	1-121-421-11	Ⓑ	220	16V	elect
C112,212	1-161-018-11	Ⓐ	0.027		
C113,213	1-108-363-12	Ⓑ	0.12		mylar
C114,214	1-161-020-11	Ⓐ	0.039		
C115,215	1-121-651-11	Ⓐ	10	16V	elect
C116,216	1-127-046-11	Ⓐ	0.22	10V	solid aluminum
C117,217	1-102-975-11	Ⓐ	100p		
C118,218	1-127-045-11	Ⓐ	0.1	10V	solid aluminum

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

Ref. No.	Part No.				
C119,219	1-121-651-11	Ⓐ	10	16V	elect
C120,220	1-121-415-11	Ⓐ	100	16V	elect
C121,221	1-102-975-11	Ⓐ	100p		
C122,222	1-121-413-11	Ⓐ	100	6.3V	elect
C123,223	1-102-975-11	Ⓐ	100p		
C124,224	1-121-413-11	Ⓐ	100	6.3V	elect
C125,225	1-121-402-11	Ⓐ	33	10V	elect
C126,226	1-121-404-11	Ⓐ	33	25V	elect
C127,227	1-161-001-11	Ⓐ	0.001		
C128,228	1-127-046-11	Ⓐ	0.22	10V	solid aluminum
C129,229	1-107-111-11	Ⓐ	15p		silvered mica
C130,230	1-107-107-11	Ⓐ	10p		silvered mica
C131,231	1-107-130-11	Ⓐ	91p		silvered mica
C132,232	1-131-229-11	Ⓑ	33	6.3V	tantalum
C133,233	1-161-003-11	Ⓐ	0.0015		
C134,234	1-121-726-11	Ⓐ	0.47	50V	elect
C135,235	1-121-392-11	Ⓐ	3.3	25V	elect
C136,236	1-127-386-11	Ⓑ	0.15	10V	solid aluminum
C137,237	1-161-018-11	Ⓐ	0.027		
C138,238	1-121-521-11	Ⓐ	330	16V	elect
C139,239	1-121-421-11	Ⓑ	220	16V	elect
C140,240	1-121-726-11	Ⓐ	0.47	50V	elect
C141,241	1-121-651-11	Ⓐ	10	16V	elect
C142,242	1-102-832-11	Ⓐ	330p		
C143,243	1-121-419-11	Ⓐ	220	6.3V	elect
C144,244	1-121-245-11	Ⓑ	1000	16V	elect
C145,245	1-121-414-11	Ⓐ	100	10V	elect
C146,246	1-121-421-11	Ⓑ	220	16V	elect
C147,247	1-121-736-11	Ⓑ	1000	10V	elect
C148,248	1-161-013-11	Ⓐ	0.01		
C149,249	1-107-051-11	Ⓐ	15p	500V	silvered mica
C150,250	1-107-001-11	Ⓐ	18p	500V	silvered mica
C151,251	1-107-052-11	Ⓐ	22p	500V	silvered mica
C152,252	1-107-053-11	Ⓐ	27p	500V	silvered mica
C153,253	1-161-001-11	Ⓐ	0.001		
C154,254	1-161-006-11	Ⓐ	0.0027		
C155,255	1-161-004-11	Ⓐ	0.0018		
C156,256	1-161-001-11	Ⓐ	0.001		
C157,257	1-161-004-11	Ⓐ	0.0018		
C158,258	1-127-047-11	Ⓑ	0.33	10V	solid aluminum
C159,259	1-161-007-11	Ⓐ	0.0033		

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

Ref. No.	Part No.				
C160,260	1-161-021-11	Ⓐ	0.047		
C161,261	1-121-651-11	Ⓐ	10	16V	elect
C162,262	1-161-016-11	Ⓐ	0.018		
C163,263	1-161-006-11	Ⓐ	0.0027		
C164,264	1-161-024-11	Ⓐ	0.082		
C165,265	1-161-016-11	Ⓐ	0.018		
C301	1-121-651-11	Ⓐ	10	16V	elect
C302	1-121-479-11	Ⓐ	22	16V	elect
C303	1-121-402-11	Ⓐ	33	10V	elect
C304	1-131-195-11	Ⓑ	33	10V	tantalum
C305	1-131-183-11	Ⓑ	22	3.15V	tantalum
C306	1-121-651-11	Ⓐ	10	16V	elect
C307	1-121-402-11	Ⓐ	33	10V	elect
C308	1-121-479-11	Ⓐ	22	16V	elect
C309	1-121-413-11	Ⓐ	100	6.3V	elect
C310,311	1-121-415-11	Ⓐ	100	16V	elect
C312	1-121-426-11	Ⓑ	470	16V	elect
C313	1-121-660-11	Ⓑ	2200	16V	elect
C314,315	1-101-004-11	Ⓐ	0.01		
C317	1-102-106-11	Ⓐ	100p		
C318	1-107-016-11	Ⓐ	470p	500V	silvered mica
C319	1-129-702-11	Ⓐ	0.001	630V	plastic
C320	1-107-006-11	Ⓐ	330p	500V	silvered mica
C321	1-107-213-11	Ⓑ	680p	500V	silvered mica
C322	1-121-413-11	Ⓐ	100	6.3V	elect
C601	1-121-409-11	Ⓐ	47	16V	elect
C602	1-121-413-11	Ⓐ	100	6.3V	elect
C603	1-121-424-11	Ⓑ	470	6.3V	elect
C604	1-121-415-11	Ⓐ	100	16V	elect
C701	1-107-125-11	Ⓐ	56p		silvered mica
C702	1-121-651-11	Ⓐ	10	16V	elect
C703	1-121-402-11	Ⓐ	33	10V	elect
C704	1-121-413-11	Ⓐ	100	6.3V	elect
C705	1-108-835-12	Ⓐ	0.0068		mylar
C706	1-121-402-11	Ⓐ	33	10V	elect
C707	1-121-391-11	Ⓐ	1	50V	elect
C708	1-121-413-11	Ⓐ	100	6.3V	elect
C709	1-103-575-11	Ⓑ	0.0047		polystyrol
C710,711	1-108-841-12	Ⓐ	0.022		mylar
C712,713	1-108-845-12	Ⓐ	0.047		mylar
C714~717	1-108-829-12	Ⓐ	0.0022		mylar

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

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

Ref. No.	Part No.		Description		
C718,719	1-108-827-12	Ⓐ	0.0015		mylar
C720,721	1-121-651-11	Ⓐ	10	16V	elect
C722,723	1-102-106-11	Ⓐ	100p		
C724,725	1-121-391-11	Ⓐ	1	50V	elect
CT1~4	1-141-138-XX	Ⓑ	Trimmer		
CV1~4	1-151-196-00	Ⓕ	Tuning		

RESISTORS

All resistors are in ohms. Regular-type ¼W carbon resistors are omitted.
Check the schematic diagram for the resistance values. (k = 1000)

R124	1-224-648-XX	Ⓑ	100 k, adjustable		
R169,269	1-213-060-11	Ⓐ	10	1W	fusible (nonflammable)
R190,290	1-224-806-00	Ⓓ	20 k, variable; VOLUME		
R195,295	1-224-805-00	Ⓓ	50 k, variable; TREBLE		
R197,297	1-224-805-00	Ⓓ	50 k, variable; BASS		
R324	1-213-125-11	Ⓐ	33	1W	metal-oxide (nonflammable)
R331	1-213-127-11	Ⓐ	47	1W	metal-oxide (nonflammable)
R338	1-224-804-00	Ⓒ	100 k, variable; BALANCE		
R339	1-246-431-35	Ⓐ	2.2 k	¼W	carbon (nonflammable)
R602	1-224-642-XX	Ⓑ	1 k, adjustable		
R735	1-224-646-XX	Ⓑ	22 k, adjustable		

SWITCHES

S1	1-514-976-XX	Ⓒ	Slide, record/playback
S2	1-516-963-00	Ⓒ	Lever Slide, TAPE SELECT
S3	1-516-932-00	Ⓖ	Rotary, FUNCTION
S4	1-516-962-00	Ⓒ	Lever Slide, MODE
S5	1-516-961-00	Ⓑ	Lever Slide, AFC/ISS
S6,8	1-516-853-XX	Ⓒ	Leaf, POWER, motor
S7	————		Included in CNJ2
S9	1-516-326-00	Ⓑ	Leaf, LIGHT
S10	1-516-853-XX	Ⓒ	Leaf, muting
S11	1-516-174-00	Ⓒ	Voltage Select (AEP model)
S11	1-516-267-00		Voltage Select (E model)
S12,13	1-514-812-00	Ⓒ	Micro, ac power (UK model)

Ref. No.	Part No.		Description
			JACKS
J101,102, J104,201, J202,204	1-507-503-00		Phono, 6-p; LINE IN, PHONO, LINE OUT (US, Canadian model)
J101,102, J104,201, J202,204	1-507-516-00	Ⓕ	Phono, 6-p; LINE IN, PHONO, LINE OUT (with REC/PB connector, CNJ2) (E, UK, AEP model)
J105,205	1-507-285-00	Ⓑ	EXT SP
J103,203 J301,303	1-507-504-00	Ⓔ	MIC, HEADPHONES, REMOTE
J302	1-507-447-XX	Ⓑ	DC IN 12V
			MISCELLANEOUS
ANT1,2	1-501-167-00	Ⓕ	Antenna, telescopic
ANT3	1-401-531-00	Ⓑ	Antenna, a-m ferrite-rod
CNJ1	1-509-510-00	Ⓒ	Connector, 2-p; AC INPUT (UK, AEP model)
CNJ1	1-509-753-11		Connector, 2-p; AC INPUT (E, US, Canadian model)
CNJ2	————		Connector, REC/PB; included in 6-p phono jack (E, UK, AEP model)
CP301	1-464-025-00	Ⓖ	Unit, bias osc
CP302	1-231-057-31	Ⓑ	Encapsulated Component (UK model)
CP701	1-425-548-00	Ⓔ	Unit, MPX
EH	8-825-506-00	Ⓒ	Head, erase; EH135-36
F301	1-532-074-00	Ⓑ	Fuse, 200 mAT (AEP, model)
F301	1-532-426-11		Fuse, 200 mAT (E model)
F301	1-532-473-00		Fuse, 200 mAT (UK model)
F302,303	1-532-285-00	Ⓑ	Fuse, 1.25AT (UK, AEP model)
M	8-834-015-50	Ⓚ	Motor, DNF-1303A
ME	1-520-209-00	Ⓗ	Meter, TUNING, REC/BATT
MIC101,201	8-814-196-50	Ⓕ	Microphone, electret condenser; C-1004S
PL3	1-518-169-XX	Ⓑ	Lamp, 4.5 V 40 mA; FM STEREO
PL301,302	1-518-109-XX	Ⓑ	Lamp, 4.5 V 40 mA; dial
RPH	8-829-236-20	Ⓚ	Head, record/playback; PP128-3602
SP101,201	1-502-606-00	Ⓕ	Speaker, side
SP102,202	1-502-605-00	Ⓗ	Speaker, front
	1-533-102-11	Ⓑ	Holder, fuse (E, AEP, UK model)
	1-535-050-21	Ⓐ	pin Cover, AC INPUT (AEP,UK model)
	1-536-401-XX	Ⓐ	Terminal Strip

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

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

ACCESSORIES AND PACKING MATERIALS

Part No.		Description
X-3701-018-2	Ⓐ	Tips Ass'y, cleaning
1-516-565-00		Adaptor, ac plug (E model)
1-534-830-12		Cord, power; DK-33 (E model)
1-534-840-XX	Ⓔ	Cord, power (AEP model)
1-534-867-00		Cord, power; DK-35 (US model)
1-551-002-XX		Cord, power (Canadian model)
1-551-218-00		Cord, power (UK model)
3-548-371-00	Ⓐ	Spacer
3-548-372-00	Ⓒ	Bag, plastic; set (E, UK, AEP, US model)
3-548-375-00	Ⓒ	Cushion, right
3-548-376-00	Ⓒ	Cushion, left
3-548-395-00		Bag, plastic; set (Canadian model)
3-548-398-00	Ⓔ	Carton
3-770-018-11	Ⓔ	Manual, instruction (AEP model)
3-770-018-21		Manual, instruction (US model)
3-770-018-31		Manual, instruction (Canadian model)
3-770-018-41	Ⓒ	Manual, instruction (UK model)
3-770-018-51	Ⓔ	Manual, instruction
3-793-455-00	Ⓐ	Tag, caution
3-793-828-00	Ⓐ	Card, caution; cassette
8-893-506-00	Ⓕ	Tape, demonstration; CD-803

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

HARDWARE NOMENCLATURE

Screw: P 3 × 10
- L: Length in mm
- D: Diameter in mm
- Type of head
  - Indicated slotted-head only. Unless otherwise indicated, it means cross-recessed head (Phillips type).

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

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 × 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 × 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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