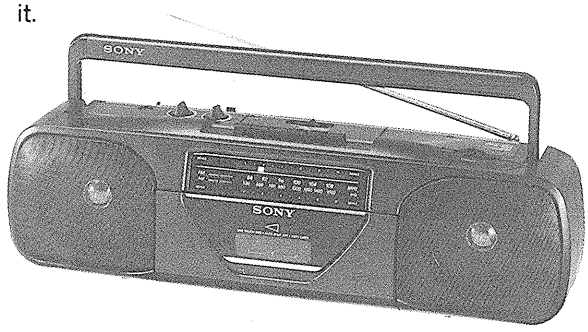
CFS-201

SERVICE MANUAL

Discard CFS-201 Service Manual
(No. 9-953-639-12) previously issued.
This Service Manual contains it.

US Model
Canadian Model
AEP Model
E Model
Australian Model



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SPECIFICATIONS

AUDIO POWER SPECIFICATIONS (US model)

POWER OUTPUT AND TOTAL HARMONIC DISTORTION
With 3.2 ohm loads, both channels driven, from 150–10,000 Hz; rated 1.5 W per channel minimum RMS power, with no more than 10% total harmonic distortion in AC operation.

Other specifications

Frequency range

	FM	AM
US, CND, E, AUS model	87.6-108MHz	530-1,710kHz
AEP model	87.6-107MHz	531-1,602kHz
IT model	87.5-108MHz	526.5-1,606.5kHz

Recording system	4-track 2-channel stereo
Frequency response	80-8,000 Hz
Speakers	Full-range: 10 cm (4 inches) dia. × 2
Power output (except US model)	2.3W+2.3W (at 10% harmonic distortion) at DC operation
Output	HEADPHONES (stereo minijack), 16-68Ω impedance
Power requirements	120V AC, 60Hz (US, CND, E model) 220V AC, 50Hz (AEP, IT model) 240V AC, 50Hz (AUS model) 9 V DC, six size D (R20) batteries
Power consumption	14 W
Battery life	

Battery	FM recording
Sony SUM-1 (NS)	Approx. 17 hours
Sony AM-1 (N) alkaline	Approx. 30 hours

Model Name Using Similar Mechanism	**CFS-210, 210L, 210S**
Tape Transport Mechanism Type	**MF-210-75D (2)**

Dimensions	Approx. 480 × 147 × 148 mm (w/h/d) (19 × 5⅞ × 5⅞ inches) incl. projecting parts and controls
Weight	Approx. 3.0 kg (6 lb 10 oz), incl. batteries
Supplied accessory	AC power cord (1)

Design and specifications subject to change without notice.

CND : Canadian model
IT : Italian model
AUS : Australian model

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ 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.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

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

RADIO CASETTE-CORDER

SONY®

SECTION 1
GENERAL

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

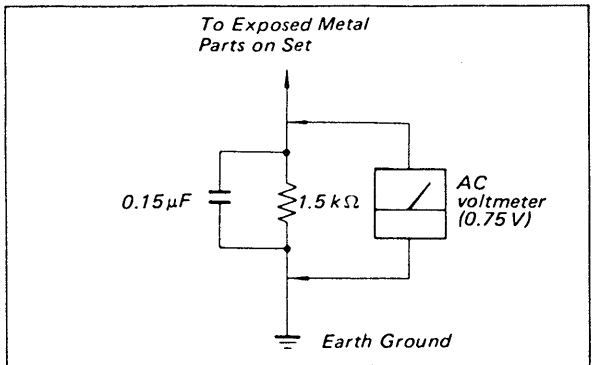


Fig. A. Using an AC voltmeter to check AC leakage.

SERVICING NOTE

• Repairing printed resistor

Cut both sides of the resistor and solder the carbon resistor having same value in place of printed one of the conductor side.
1/32W carbon resistor is supplied for the replacing part of the printed resistor.

• Note for tape operation buttons

When replacing tape operation buttons, cut them off and attach new parts with locking compound.

• Note for audio mounted board replacement

Replacement part of audio mounted board is set for CND model.
When replacing audio mounted board of US, E or AUS model, change the parts as shown below.

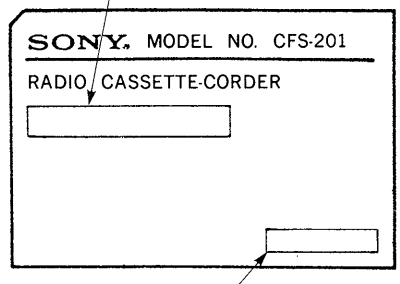
Ref. No.	CND model (replacement part)	US, E, AUS model
R315	1-217-640-11 fusible 3.3Ω	1-249-387-11 carbon 3.3Ω

MODEL IDENTIFICATION

— Model Number Label —

US, CND model: Carved on rear cabinet
AEP, IT, E, AUS model: Model number label

US, CND, E model: AC: 120V 60Hz 14W
AEP, IT model: AC: 220V~50Hz 14W
AUS model: AC: 240V~50Hz 14W

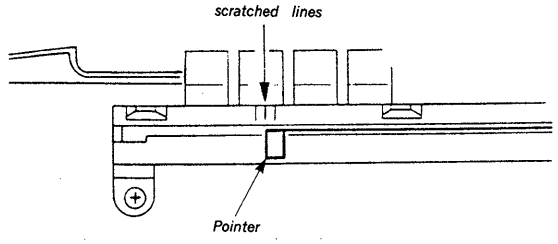


AEP model: 3-356-114-01
IT model: 3-356-115-01
E model: 3-351-394-01
AUS model: 3-351-393-01

CND: Canadian model
IT: Italian model
AUS: Australian model

SECTION 2
DIAL POINTER SETTING

1. Turn TUNING knob fully counterclockwise.
2. Set the left end of the pointer to the middle of the scratched lines.



SECTION 3
MECHANICAL ADJUSTMENTS

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. (Do not bring the head demagnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
6. Power supply voltage: 9V dc.

Torque Measurement

Torque	Meter Reading	Torque Meter
Forward	22.5-55g•cm (0.31-0.76oz•inch)	CQ-102C
Fast Forward and Rewind	60-120g•cm (0.83-1.67oz•inch)	CQ-201B
Back Tension	2-5g•cm (0.03-0.07oz•inch)	CQ-102C

Tape Tension Measurement

Meter	Meter Reading
CQ-403A	more than 150g (5.29oz)

SECTION 4
ELECTRICAL ADJUSTMENTS

4-1. TAPE RECODER SECTION

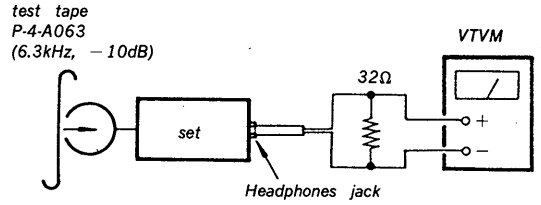
• Test Tape

Type	Signal	Used for
WS-48A	3kHz, 0dB	tape speed adjustment
P-4-A063	6.3kHz, −10dB	head azimuth adjustment

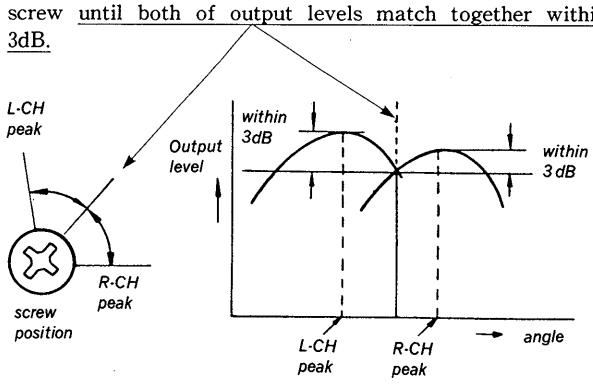
REC/PB Head Azimuth Adjustment

Procedure:

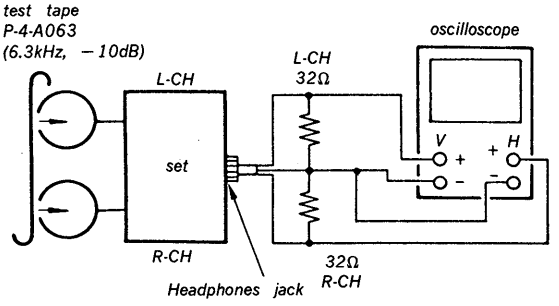
1. Mode: playback

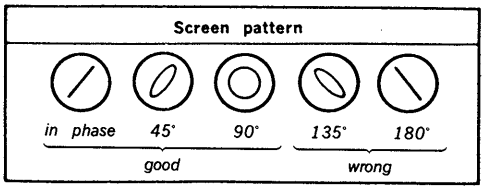


2. Turn the adjustment screw for the maximum output levels. If these levels do not match. turn the adjustment screw until both of output levels match together within 3dB.

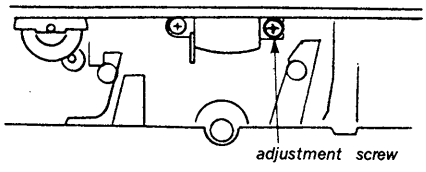


3. Phase Check
   Mode: playback



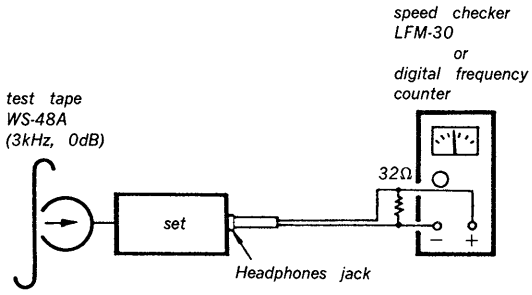


Adjustment Location:



Tape Speed Adjustment

Procedure :
Mode : playback

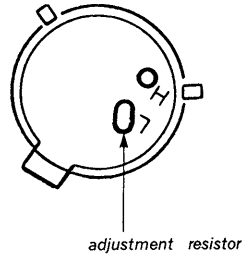


Adjustment Value :

Speed checker	Digital frequency counter
−3.5 to +2.5%	2,895−3,075Hz

Frequency difference between the beginning and the end of the tape should be within 1.5% (45Hz).

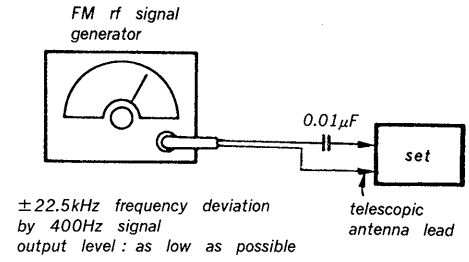
Adjustment Location :



4-2. RADIO SECTION

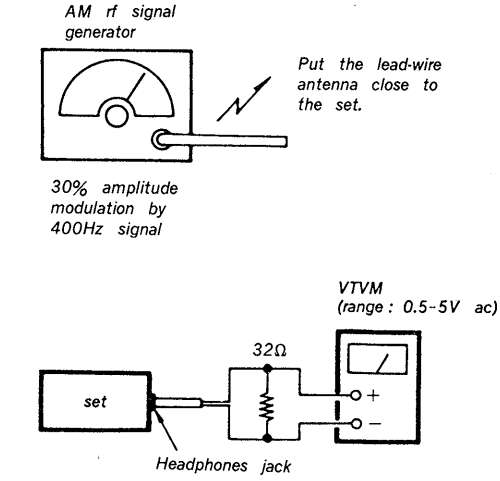
• FM Section

Setting :
FUNCTION switch : FM



• AM Section

Setting :
FUNCTION switch : AM



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

AM IF ADJUSTMENT
Adjust for a maximum reading on VTVM.
T1
455kHz

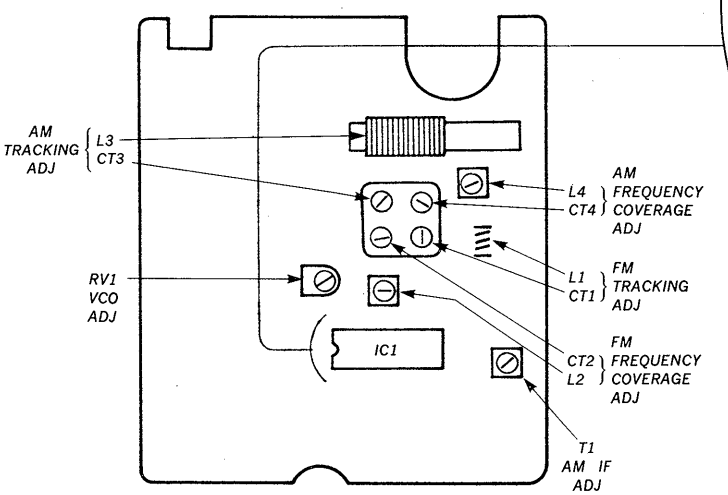
AM FREQUENCY COVERAGE ADJUSTMENT		
Adjust for a maximum reading on VTVM.		
	L4	CT4
US, CND model	520kHz	1,780kHz
AEP, E, AUS model	520kHz	1,680kHz
IT model	516kHz	1,630kHz

AM TRACKING ADJUSTMENT		
Adjust for a maximum reading on VTVM.		
	L3	CT3
US, CND model	600kHz	1,500kHz
AEP, IT, E, AUS model	600kHz	1,400kHz

FM FREQUENCY COVERAGE ADJUSTMENT		
Adjust for a maximum reading on VTVM.		
	L2	CT2
US, CND, E, AUS model	86.5MHz	109.5MHz
AEP model	87.35MHz	107.8MHz
IT model	87.35MHz	108.3MHz

FM TRACKING ADJUSTMENT		
Adjust for a maximum reading on VTVM.		
	L1	CT1
US, CND, E, AUS model	86.5MHz	109.5MHz
AEP model	87.35MHz	107.8MHz
IT model	87.35MHz	108.3MHz

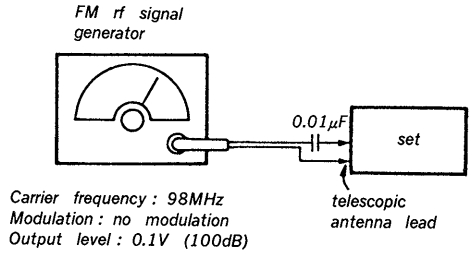
Adjustment Location : tuner board



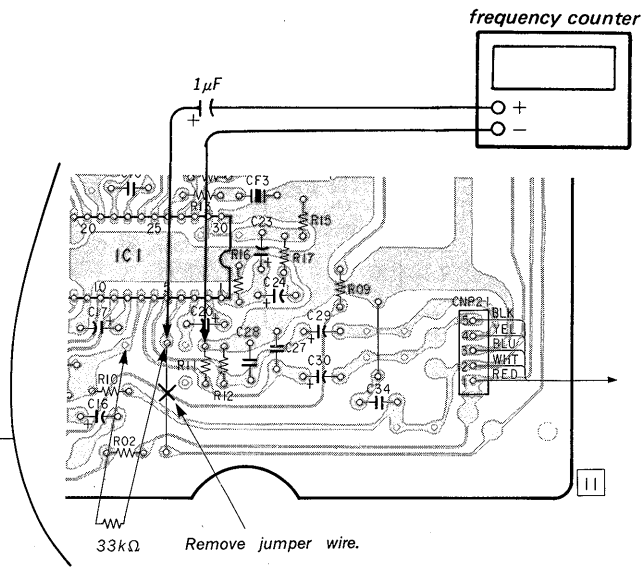
VCO Adjustment

A) Regular Method

Procedure :



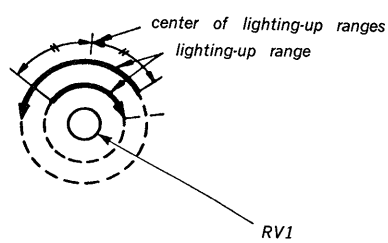
1. Remove jumper wire as shown below.
2. Connect frequency counter to it as shown below.
3. Tune the set to 98MHz.
4. Adjust RV1 for 76kHz±500Hz reading on the frequency counter.
5. After adjustment, connect jumper wire removed in step 1.



B) Simple Method

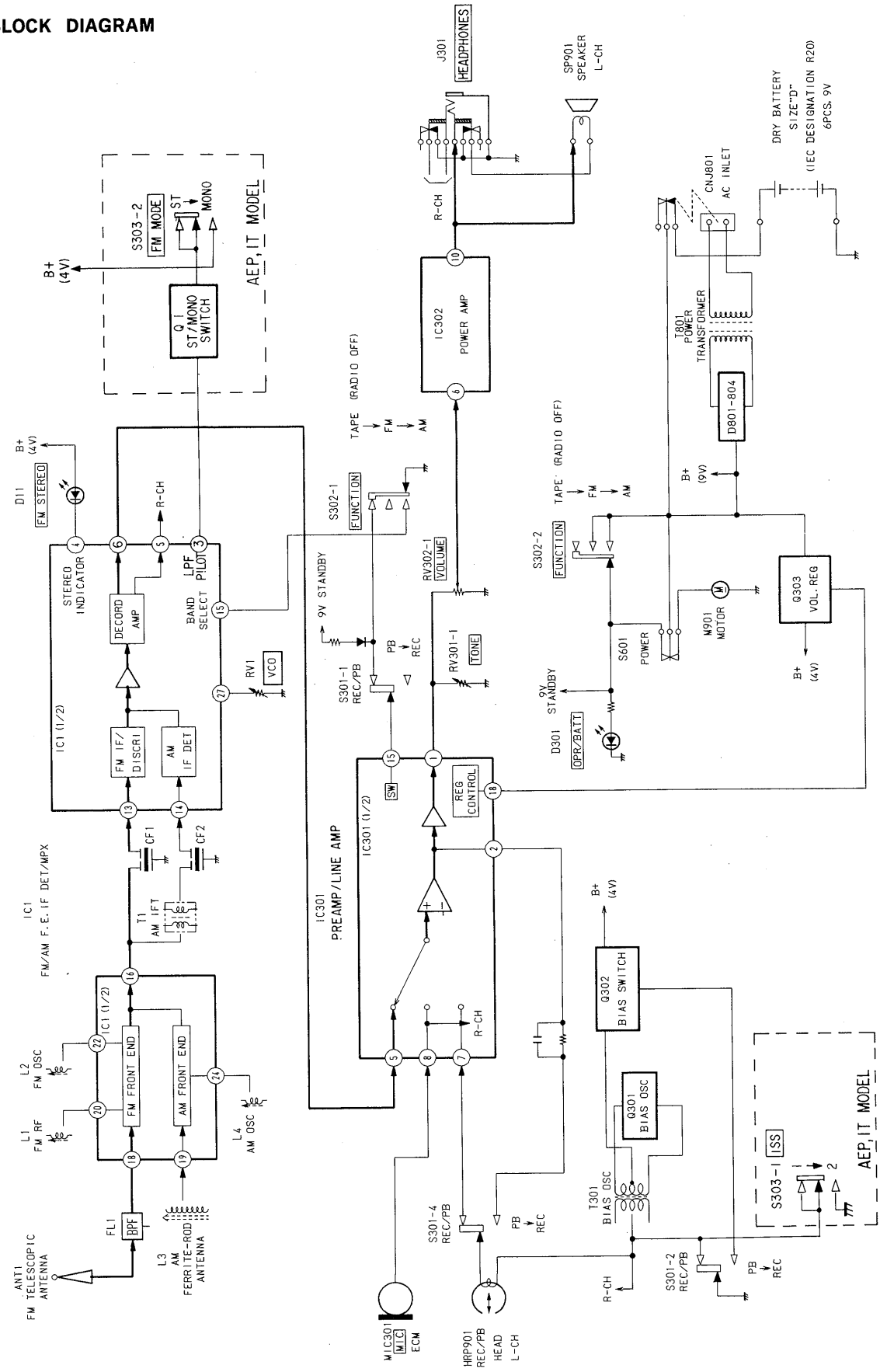
Procedure :

1. Tune the set to the FM stereo broadcasting signal.
2. Turn RV1 clockwise or counterclockwise and memorize the lighting-up range of the FM STEREO lamp.
3. Secure RV1 at the center of the lighting-up range of both turns as shown below.

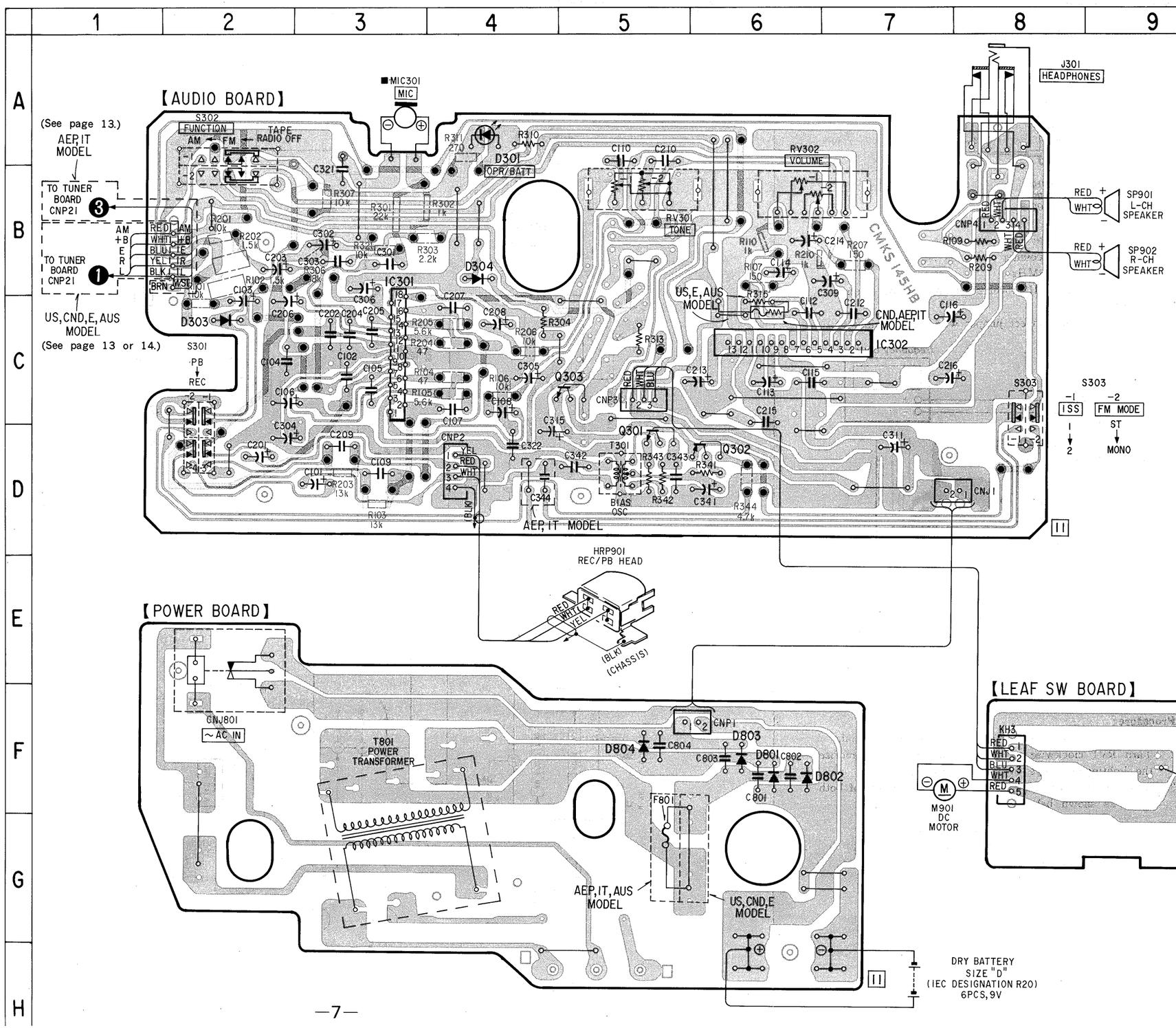


SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAM



5-2. PRINTED WIRING BOARDS —AUDIO SECTION—

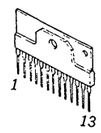


Note:

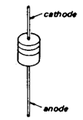
- ○—— : parts extracted from the component side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
- ▨ : Pattern of the rear side.
- [□] : Printed resistor from the rear side.
- CND: Canadian model
  IT: Italian model
  AUS: Australian model

• Semiconductor Lead Layouts

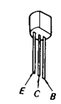
LA4597



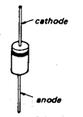
1SS119



2SC1815-GR
2SC2001

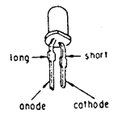


10E2



2SA1175-HFE

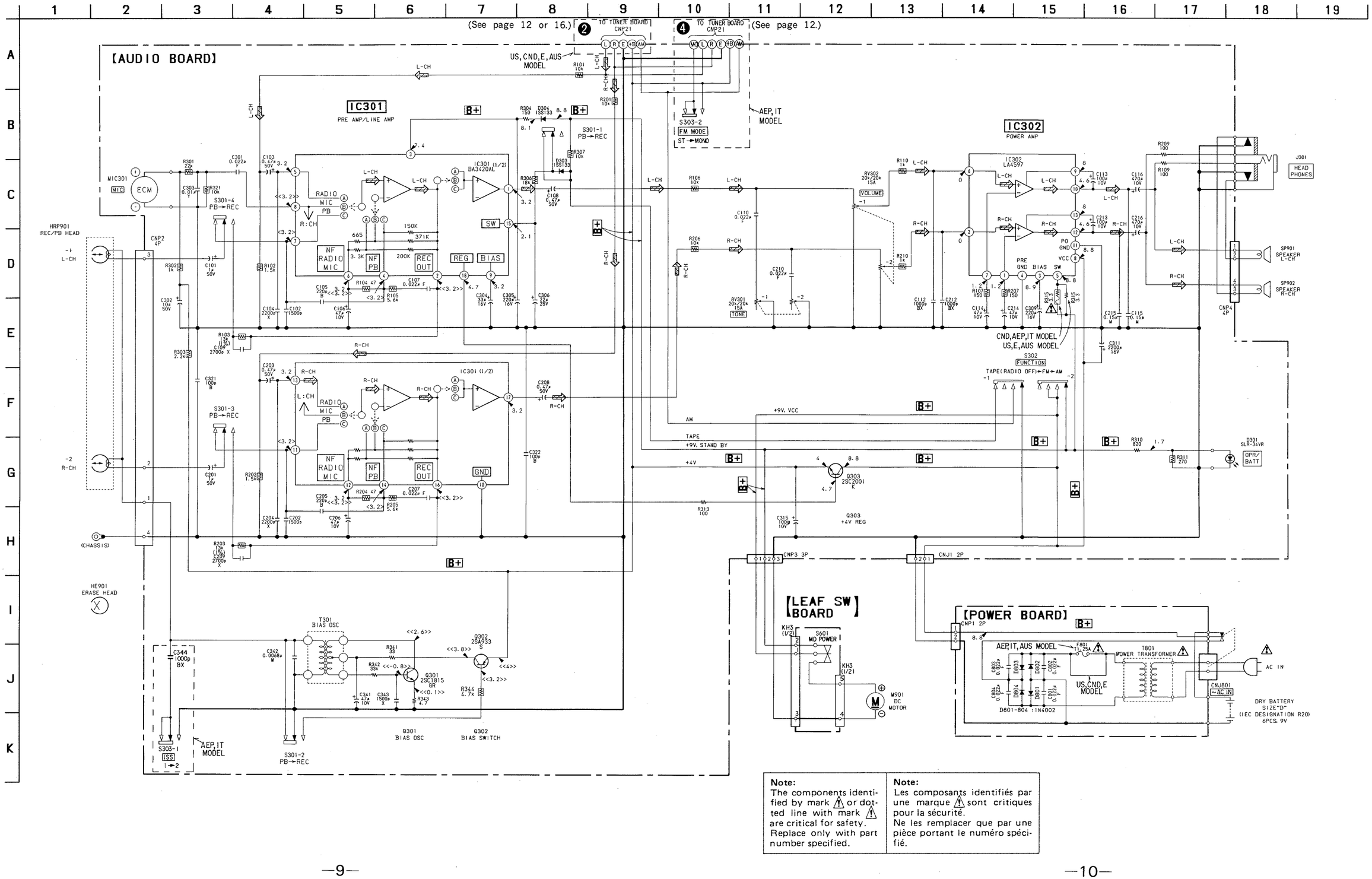
GL-3PR9



• Semiconductor Location

Ref.No.	Location
D301	B-4
D303	C-2
D304	B-4
D801	F-6
D802	F-6
D803	F-6
D804	F-5
IC301	C-3
IC302	C-6
Q301	D-6
Q302	D-5
Q303	C-5

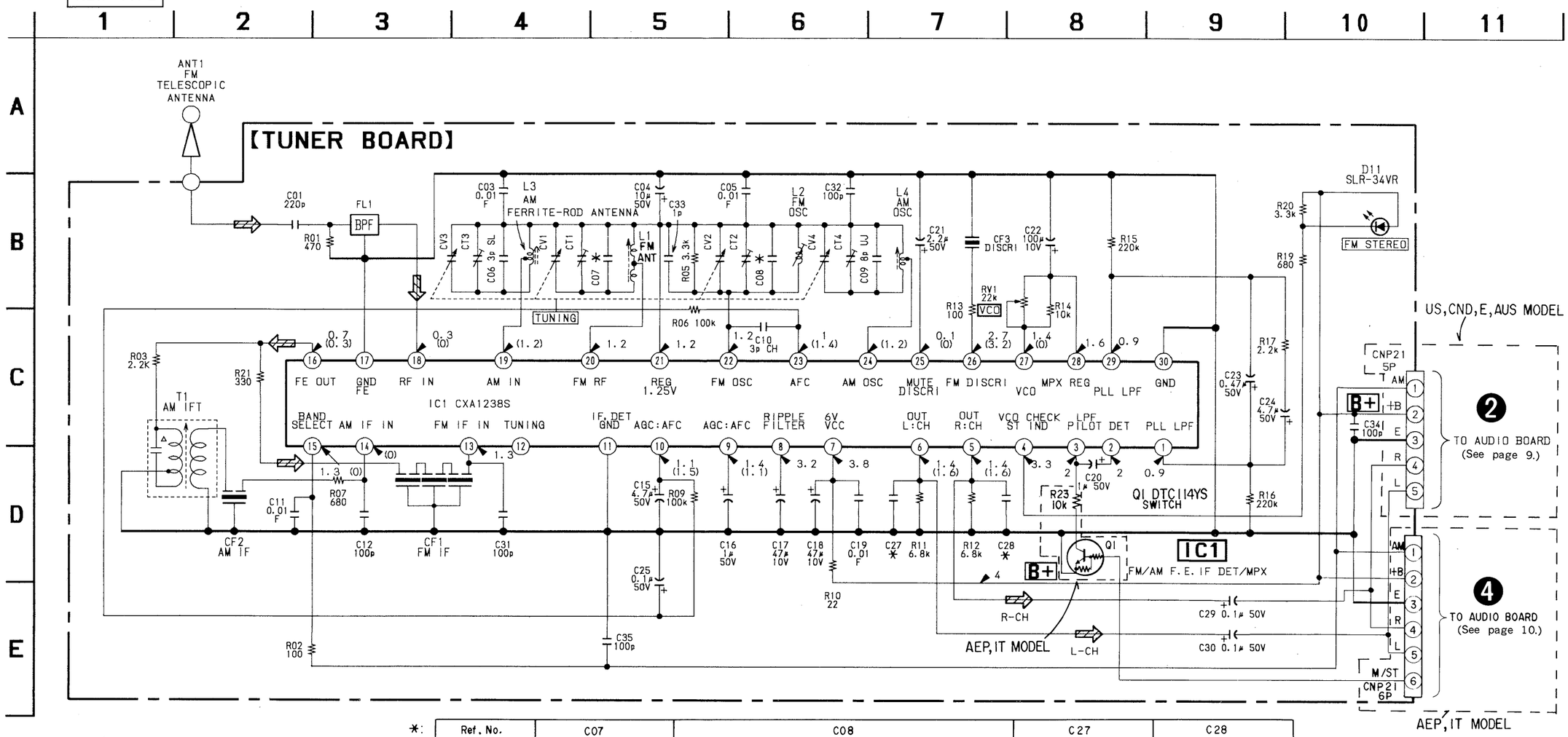
5-3. SCHEMATIC DIAGRAM —AUDIO SECTION— ●See page 12 for Note.



Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

5-4. SCHEMATIC DIAGRAM —TUNER SECTION—

NEW TYPE

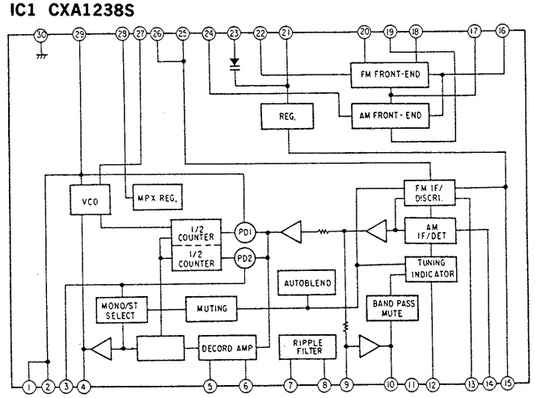


*:

Ref. No.	C07		C08					C27		C28	
DESTINATIONS	AEP, IT	US,CND,E,AUS	AEP, IT	US,CND,E,AUS	AEP	IT	US,CND,E,AUS	AEP, IT	US,CND,E,AUS	AEP, IT	US,CND,E,AUS
VALUE	27pF	24pF	27pF	24pF	24pF	22pF	24pF	0.012MF	0.015MF	0.012MF	0.015MF
(TYPE)			NEW TYPE-1		NEW TYPE-2		NEW TYPE-3				

• IC Block Diagram

IC1 CXA1238S

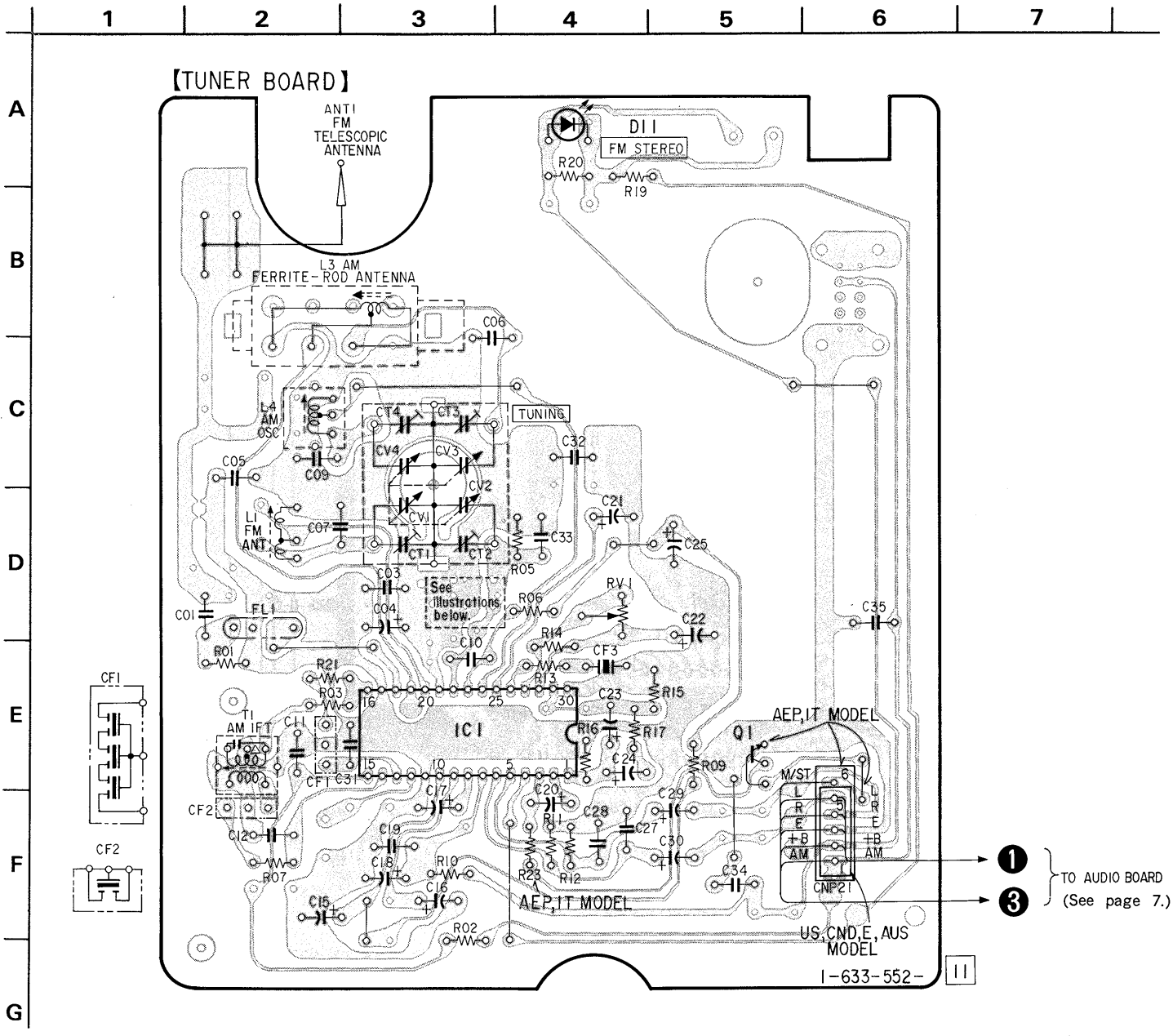


Note:

- 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 Ω and 1/4 W or less unless otherwise specified.
- : fusible resistor.
- : printed resistor.
- △ : internal component.
- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark: FM
  ( ): AM
  < >: PB
  ≪ ≫: REC
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  : FM
- CND: Canadian model
  IT: Italian model
  AUS: Australian model

5-5. PRINTED WIRING BOARD —TUNER SECTION—

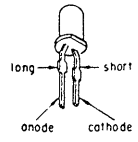
NEW TYPE



● Semiconductor Lead Layouts

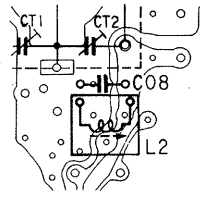
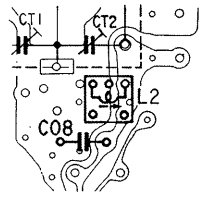
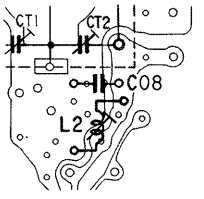
DTC114YS

GL-3PR9



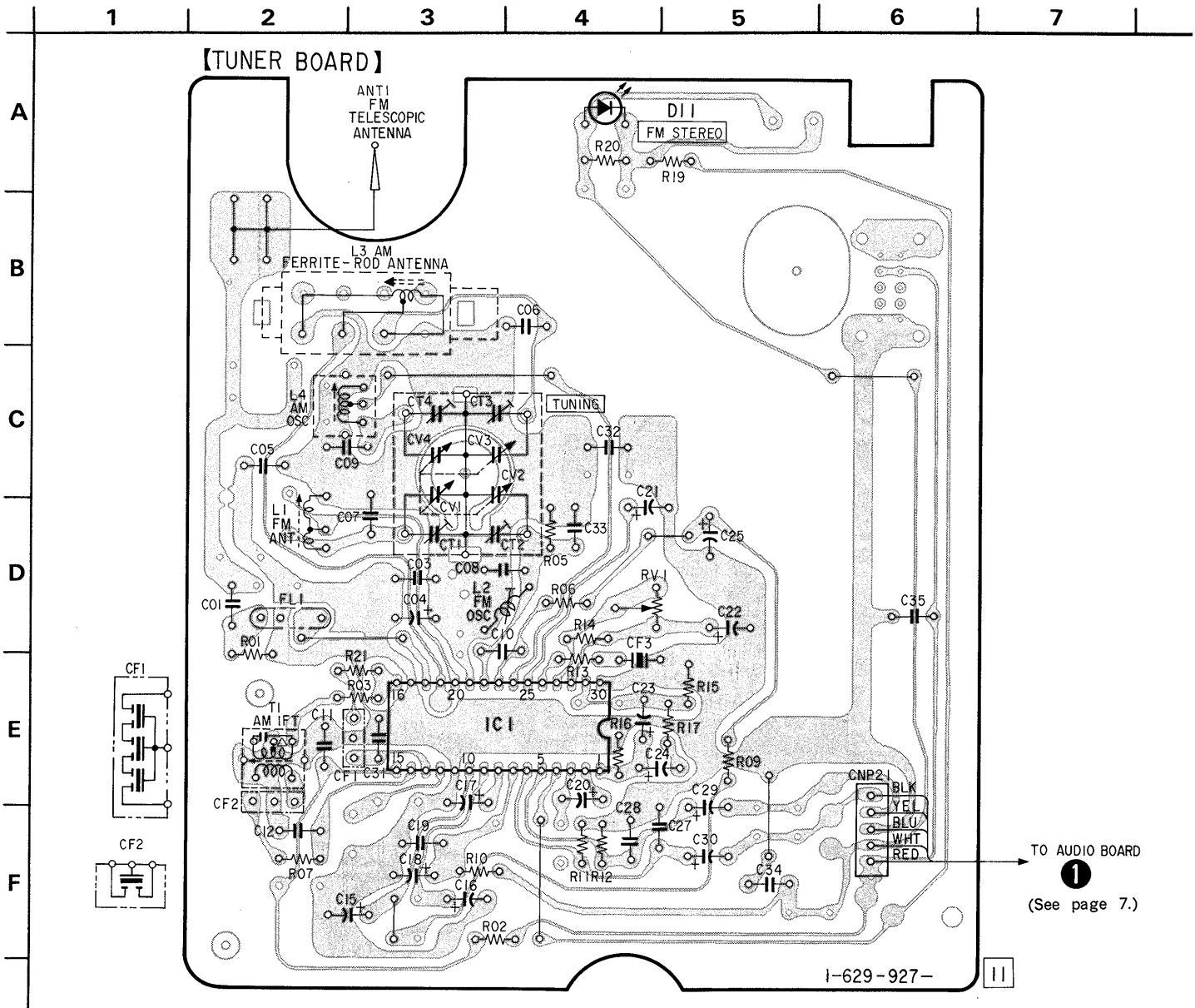
Note:

- ○—— : parts extracted from the component side.
- CND: Canadian model
  IT: Italian model
  AUS: Australian model

	NEW TYPE-1		NEW TYPE-2		NEW TYPE-3
L2	1-459-815-11		1-459-418-00		1-406-161-11
DESTINATIONS	AEP, IT	US,CND,E,AUS	AEP	IT	US,CND,E,AUS
C08 VALUE	27p	24p	24p	22p	24p
MOUNTED POSITION					

5-6. PRINTED WIRING BOARD —TUNER SECTION—

FORMER TYPE

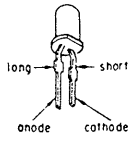


Note:

- ○—— : parts extracted from the component side.

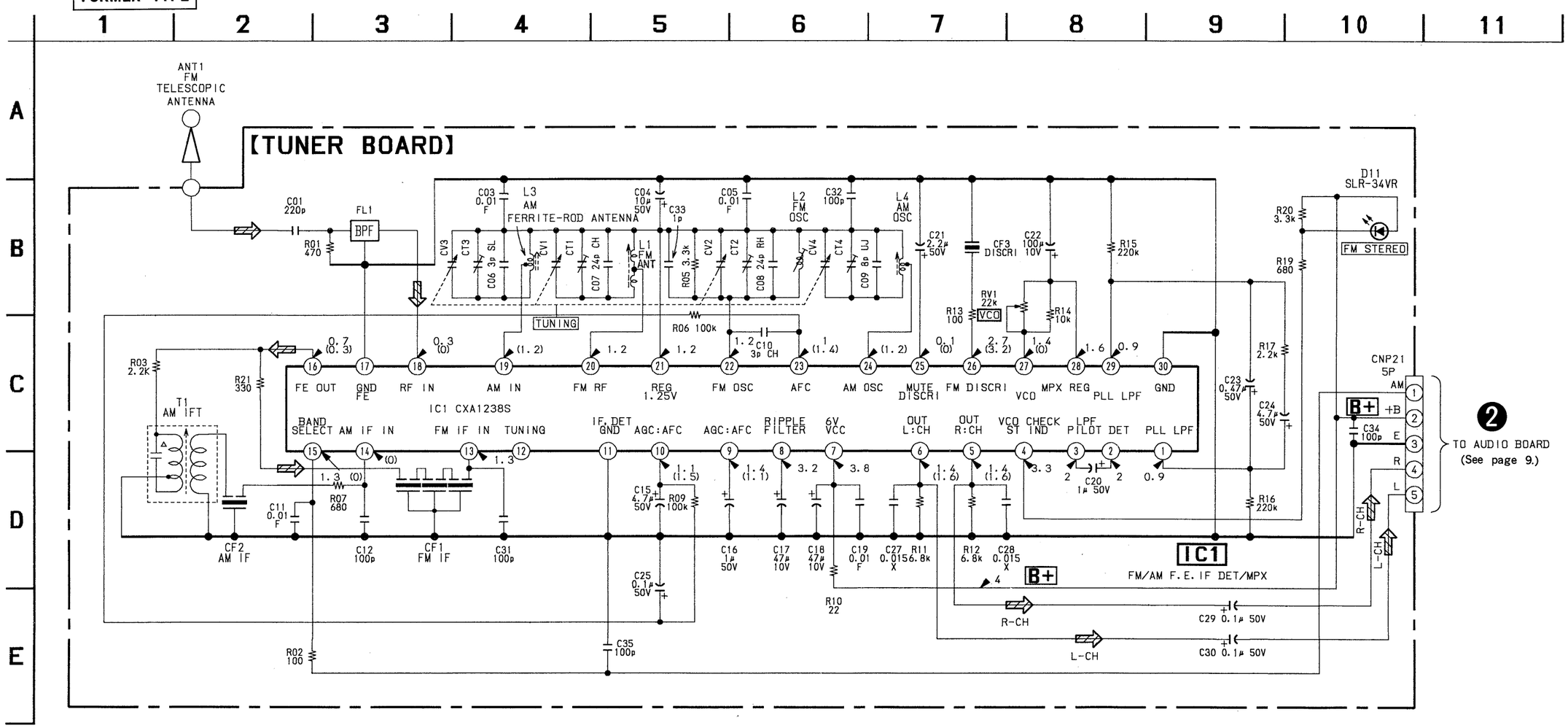
• Semiconductor Lead Layouts

GL-3PR9



5-7. SCHEMATIC DIAGRAM —TUNER SECTION—

FORMER TYPE

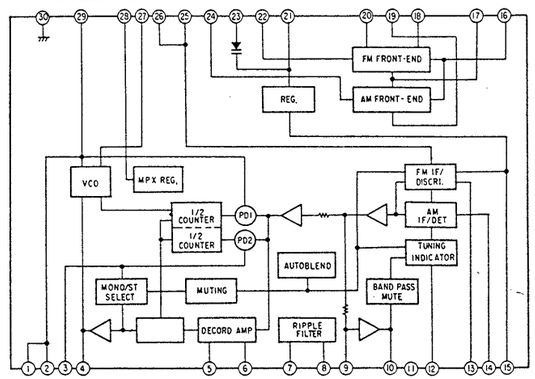


Note:

- 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 Ω and ¼W or less unless otherwise specified.
- △ : internal component.
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : FM
  ( ) : AM
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇒ : FM

• IC Block Diagram

IC1 CXA1238S



SECTION 6
EXPLODED VIEWS

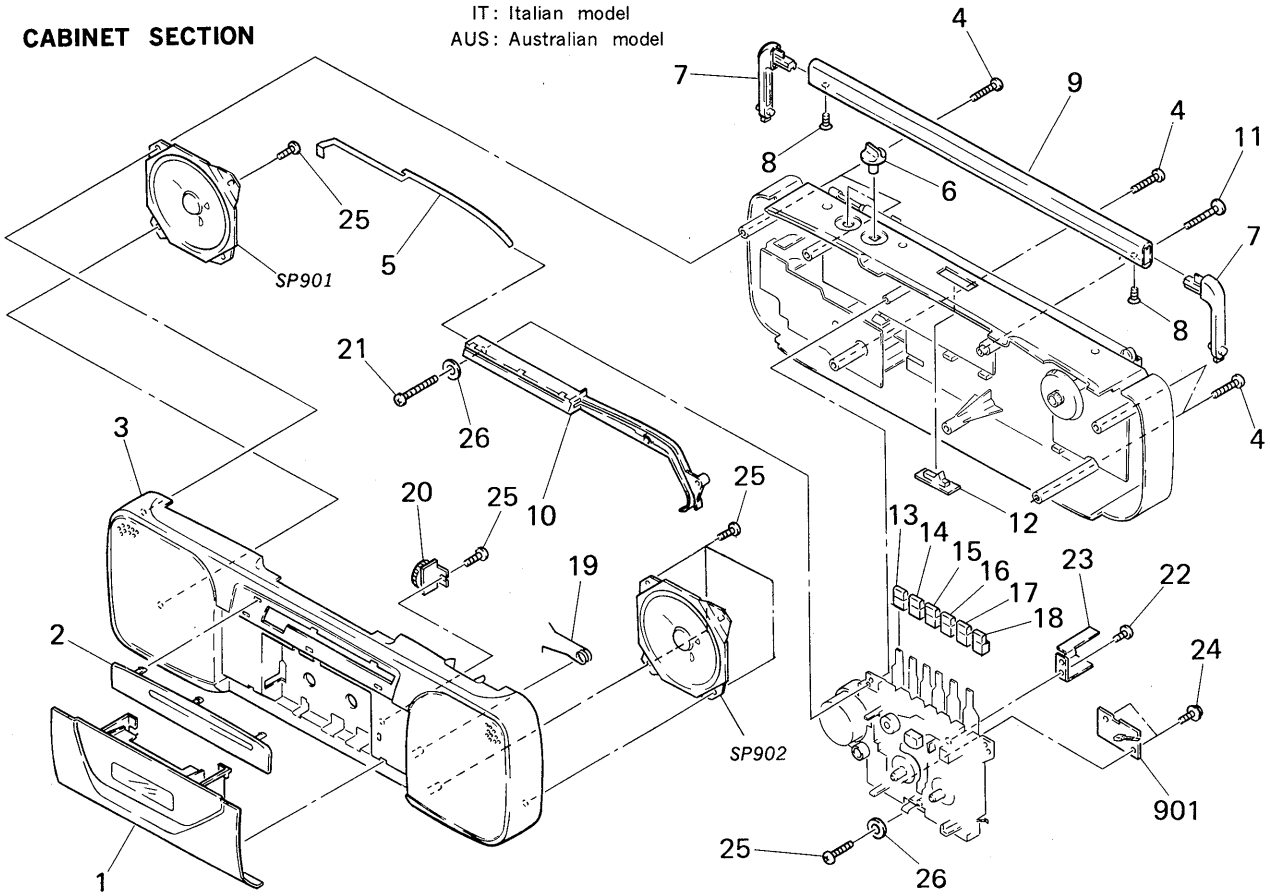
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
  Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ ↑
  Cabinet's Color Parts' Color
- CND: Canadian model
  IT: Italian model
  AUS: Australian model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

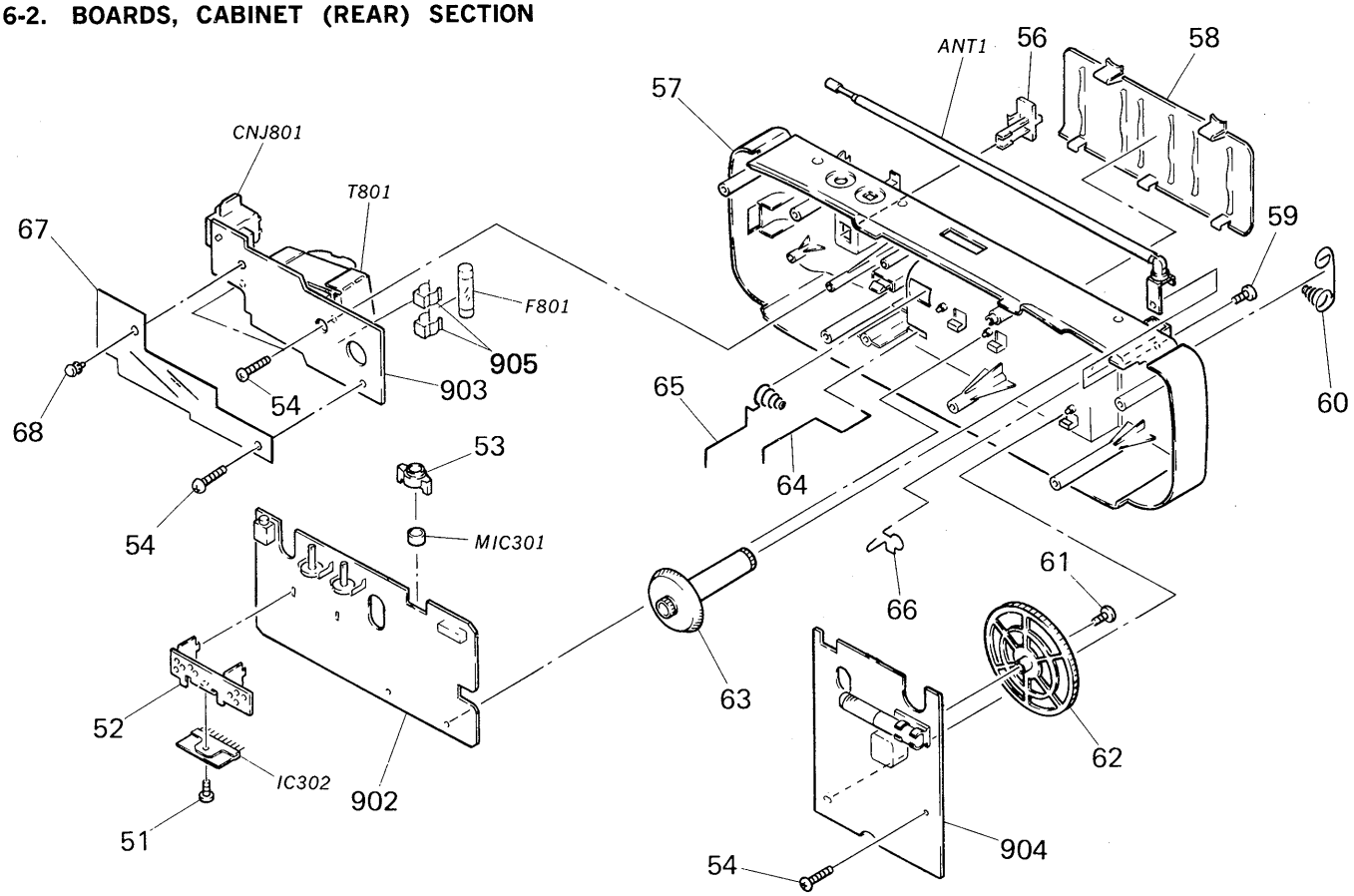
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifé.

6-1. CABINET SECTION



No.	Part No.	Description	Remarks
1	X-3338-560-1	(BLACK)...HOLDER ASSY, CASSETTE	
	X-3338-561-1	(WHITE)...HOLDER ASSY, CASSETTE	
	X-3338-573-1	(RED).....HOLDER ASSY, CASSETTE	
2	3-351-323-01	(US,CND,E,AUS)...PLATE, TRANSPARENT	
	3-351-323-61	(AEP).....PLATE, TRANSPARENT	
	3-351-323-71	(IT).....PLATE, TRANSPARENT	
3	X-3338-558-1	(BLACK)...CABINET ASSY, FRONT	
	X-3338-559-1	(WHITE)...CABINET ASSY, FRONT	
	X-3338-572-1	(RED).....CABINET ASSY, FRONT	
4	7-685-649-79	SCREW +BVTP 3X14 TYPE2 N-S	
5	3-351-322-01	POINTER	
6	3-351-338-01	(BLACK)...KNOB (VOLUME,TONE)	
	3-351-338-11	(WHITE)...KNOB (VOLUME,TONE)	
	3-351-338-21	(RED).....KNOB (VOLUME,TONE)	
7	3-343-063-01	(BLACK)...PLATE, SIDE, HANDLE	
	3-343-063-21	(WHITE)...PLATE, SIDE, HANDLE	
	3-343-063-31	(RED).....PLATE, SIDE, HANDLE	
8	7-685-248-14	(WHITE)...SCREW +KTP 3X12 TYPE2 NON-SLIT	
	7-685-248-19	(BLACK,RED)...SCREW +KTP 3X12 TYPE2 SLIT	
9	3-351-314-01	(BLACK)...HANDLE	
	3-351-314-11	(WHITE)...HANDLE	
	3-351-314-21	(RED).....HANDLE	
10	*3-351-333-01	CHASSIS (DIAL)	
11	7-685-154-19	SCREW +P 3X35 TYPE2 NON-SLIT	
12	3-351-317-01	(BLACK)...KNOB (FUNCTION)	
	3-351-317-11	(WHITE)...KNOB (FUNCTION)	
	3-351-317-21	(RED).....KNOB (FUNCTION)	
13	3-351-331-01	BUTTON (PAUSE)	
14	3-351-332-01	BUTTON (FF)	
15	3-351-328-01	BUTTON (REW)	
16	3-351-327-01	BUTTON (PLAY)	
17	3-351-330-01	BUTTON (REC)	
18	3-351-329-01	BUTTON (STOP)	
19	3-351-308-01	SPRING (CASSETTE)	
20	3-351-377-11	DAMPER	
21	7-685-152-19	SCREW +P 3X25 TYPE2 NON-SLIT	
22	7-621-773-86	SCREW +PTT 2.6X4 (S)	
23	*3-351-316-01	LEVER (REC 7)	
24	7-687-233-11	SCREW (+ PTPWH) (2.6X6)	
25	7-685-648-79	SCREW +BVTP 3X12 TYPE2 N-S	
26	7-623-208-22	SW 3, TYPE 2	
901	*1-629-925-11	PC BOARD, LEAF SW	
SP901	1-503-492-11	SPEAKER	
SP902	1-503-492-11	SPEAKER	

6-2. BOARDS, CABINET (REAR) SECTION

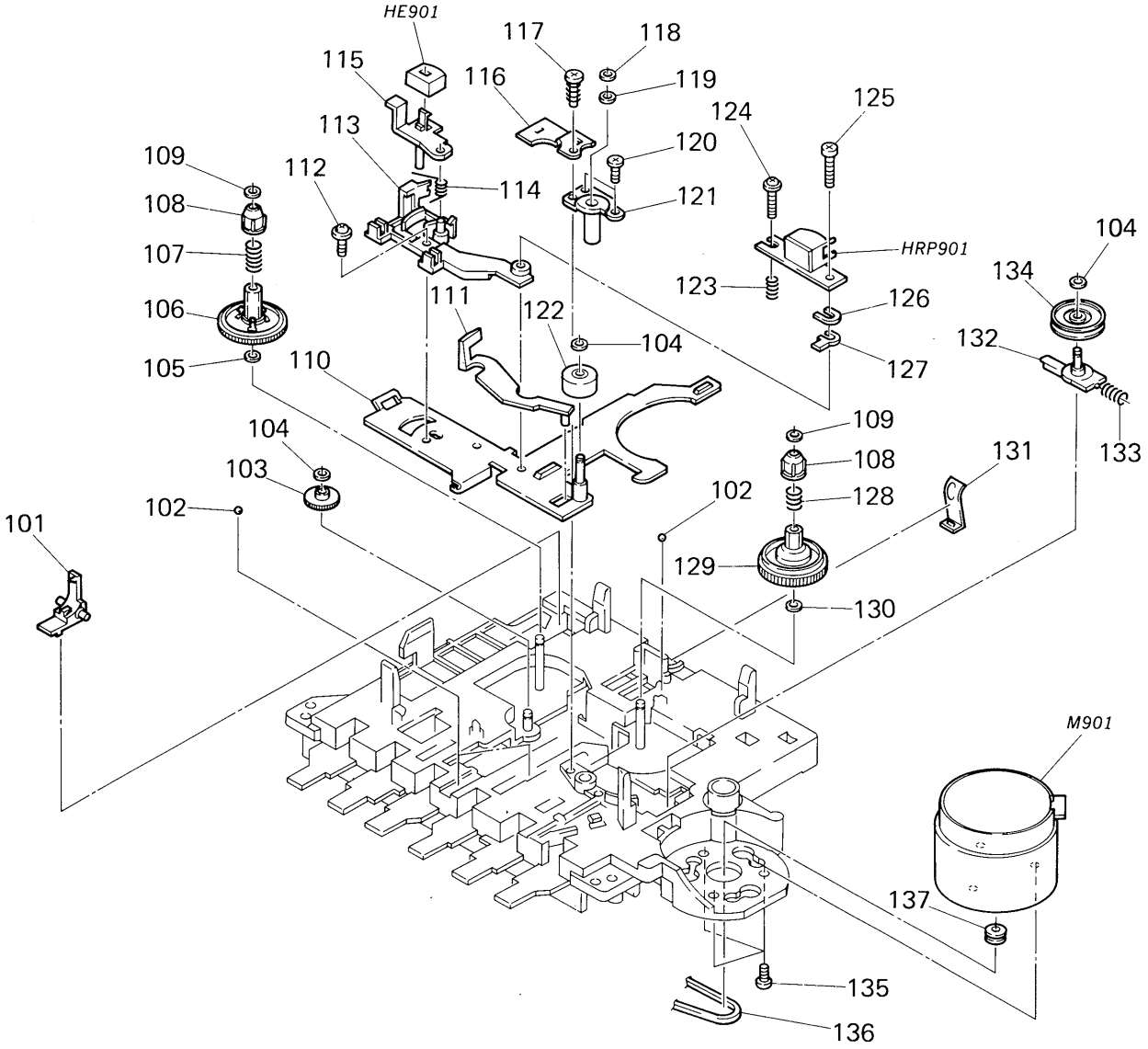


Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description	Remarks
51	7-685-870-01	SCREW +BVTT 3X5 (S)	
52	*3-351-311-01	HEAT SINK	
53	3-321-122-01	CUSHION, MICROPHONE	
54	7-685-648-79	SCREW +BVTP 3X12 TYPE2 N-S	
56	3-351-313-01	(BLACK)...KNOB (FM MODE/ISS)	
	3-351-313-11	(WHITE)...KNOB (FM MODE/ISS)	
	3-351-313-21	(RED).....KNOB (FM MODE/ISS)	
57	3-351-335-01	(US:BLACK).....CABINET (REAR)	
	3-351-335-11	(US:WHITE).....CABINET (REAR)	
	3-351-335-21	(CND:BLACK).....CABINET (REAR)	
	3-351-335-31	(CND:WHITE).....CABINET (REAR)	
	3-351-389-71	(E,AUS:BLACK)....CABINET (REAR)	
	3-351-389-81	(E,AUS:WHITE)....CABINET (REAR)	
	3-351-391-01	(AEP,IT:BLACK)...CABINET (REAR)	
	3-351-391-11	(AEP,IT:WHITE)...CABINET (REAR)	
	3-351-391-21	(AEP,IT:RED).....CABINET (REAR)	
58	3-343-064-01	(BLACK)...LID, BATTERY CASE	
	3-343-064-11	(WHITE)...LID, BATTERY CASE	
	3-343-064-21	(RED).....LID, BATTERY CASE	
59	7-682-548-09	SCREW +B 3X8	
60	3-351-387-01	SPRING (+,-)	
61	7-621-770-87	SCREW +P 2.6X5	
62	3-338-505-01	DRUM, TUNING CAPACITOR	
63	3-351-321-01	KNOB (TUNING)	

No.	Part No.	Description	Remarks
64	3-351-315-01	TERMINAL, PLUS	
65	3-351-320-01	SPRING (-)	
66	3-351-390-01	TERMINAL (S), ANTENNA	
67	*3-351-307-01	(AEP,IT)...SHEET, INSULATING	
68	4-812-134-00	(AEP,IT)...RIVET NYLON, 3.5	
902	*A-3270-558-A	(US,CND,E,AUS)...MOUNTED PCB, AUDIO	
	*A-3270-713-A	(AEP,IT).....MOUNTED PCB, AUDIO	
903	*1-629-928-11	PC BOARD, POWER	
904	*A-3266-519-A	(US,CND,E,AUS)...MOUNTED PCB, TUNER	
	*A-3266-603-A	(IT).....MOUNTED PCB, TUNER	
	*A-3266-604-A	(AEP)....PC BOARD ASSY, TUNER	
905	1-533-217-31	(AEP,IT,AUS)...HOLDER, FUSE	
ANT1	1-501-375-11	ANTENNA, TELESCOPIC	
CNJ801⚠	1-526-818-11	(US,CND,E).....INLET, AC	
CNJ801⚠	1-526-838-11	(AEP,IT,AUS)...INLET, AC	
F801 ⚠	1-532-285-00	(AEP,IT,AUS)...FUSE, 1.25A TIME LAG	
IC302	8-759-820-22	IC LA4597	
MIC301	1-542-092-11	MICROPHONE, ELECTRET CONDENSER	
T801 ⚠	1-448-759-21	(CND).....TRANSFORMER, POWER	
T801 ⚠	1-448-760-21	(AUS).....TRANSFORMER, POWER	
T801 ⚠	1-448-761-21	(AEP,IT)...TRANSFORMER, POWER	
T801 ⚠	1-448-832-31	(US,E).....TRANSFORMER, POWER	

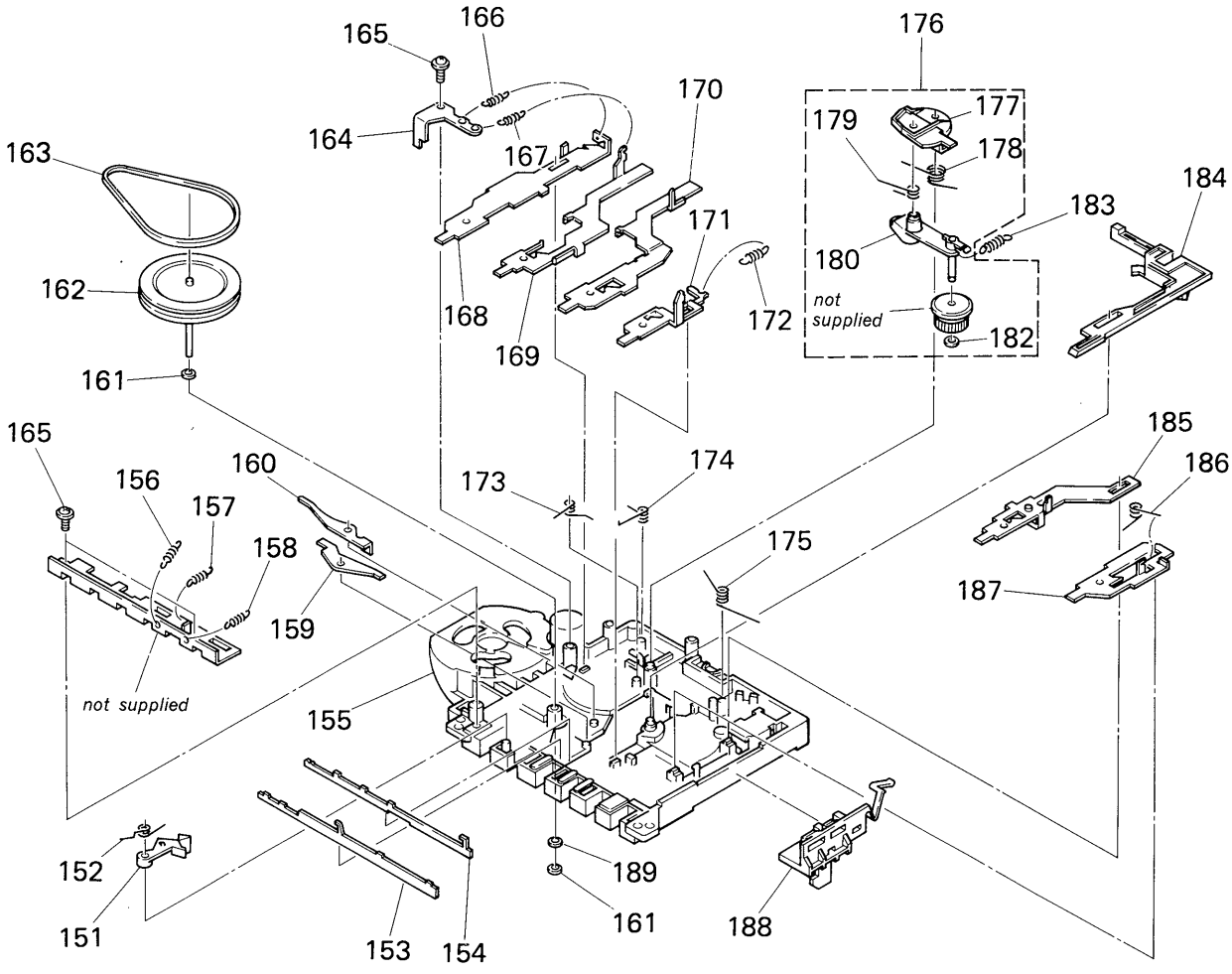
6-3. MECHANISM SECTION (1) (MF-210-75D (2))



Ref.No	Part No.	Description	Remark
101	3-313-357-00	CLAW, REC PREVENTION	
102	7-671-112-11	BALL, STEEL	
103	3-558-620-11	GEAR, REWIND	
104	3-307-948-01	WASHER, NYLON	
105	3-322-659-01	WASHER (A)	
106	3-313-305-00	TABLE, REEL, SUPPLY	
107	3-313-344-00	SPRING, COMPRESSION	
108	3-313-333-00	CLAW, REEL	
109	3-558-708-01	WASHER, STOPPER	
110	X-3313-311-1	CHASSIS ASSY	
111	3-313-316-00	LEVER, SHUT-OFF DETECTION	
112	7-621-255-35	SCREW (2MMX5), + PWH	
113	3-334-717-01	BRACKET (M), HEAD	
114	3-313-339-00	SPRING	
115	3-313-361-00	ARM, ERASE HEAD	
116	*3-332-309-01	SPRING (B)	
117	7-685-134-19	SCREW (B2.6), TAPPING	
118	3-307-948-41	WASHER, NYLON	
119	3-701-438-11	WASHER, 2.5	
120	3-318-203-71	SCREW (B1.7X5), TAPPING	
121	X-3319-945-1	BEARING ASSY, CAPSTAN	
122	3-703-597-41	PINCH ROLLER, STANDARD	
123	3-313-340-00	SPRING, COMPRESSION	

Ref.No	Part No.	Description	Remark
124	7-621-255-55	SCREW, LOCK	
125	7-621-772-40	SCREW +B 2X8	
126	3-578-138-01	SHIM (t=0.1)	
	3-578-138-11	SHIM (t=0.2)	
	3-578-138-21	SHIM (t=0.3)	
127	3-331-108-01	LUG (T), SHIM (t=0.1)	
	3-331-108-11	LUG (T), SHIM (t=0.2)	
	3-331-108-21	LUG (T), SHIM (t=0.3)	
	3-331-108-31	LUG (T), SHIM (t=0.4)	
	3-331-108-41	LUG (T), SHIM (t=0.5)	
128	3-313-345-00	SPRING, COMPRESSION	
129	A-3130-031-A	TABLE ASSY, REEL, TAKE-UP	
130	3-701-437-21	WASHER	
131	3-313-902-11	SPRING	
132	X-3313-301-0	BRACKET ASSY, T PULLEY	
133	3-573-464-00	SPRING, COMPRESSION	
134	X-3313-307-0	PULLEY ASSY, FWD	
135	7-621-770-87	SCREW +P 2.6X5	
136	3-313-335-00	BELT, CAPSTAN	
137	X-3313-308-1	PULLEY (C), MOTOR	
HE901	1-543-525-11	HEAD, MAGNETIC (ERASE)	
HRP901	1-543-283-11	HEAD, MAGNETIC (REC/PB)	
M901	1-541-624-11	MOTOR, DC	

6-4. MECHANISM SECTION (2)
(MF-210-75D (2))



Ref.No	Part No.	Description	Remark
151	3-313-322-02	LEVER (A), S.OFF	
152	3-313-323-00	SPRING	
153	*3-313-351-16	PLATE (A), LOCK	
154	*3-313-352-11	PLATE (B), LOCK	
155	A-3102-092-A	CHASSIS ASSY, MECHANICAL	
156	3-313-369-00	SPRING, TENSION	
157	3-313-343-00	SPRING, TENSION	
158	3-322-691-01	SPRING, TENSION	
159	*3-313-321-00	LEVER, PREVENTION, RFR	
160	*3-313-320-00	LEVER, RCP	
161	3-701-438-11	WASHER, 2.5	
162	X-3327-909-2	FLYWHEEL (G) ASSY	
163	3-313-335-00	BELT, CAPSTAN	
164	*3-356-111-01	HOOK, SPRING	
165	7-687-233-11	SCREW (+ PTPWH) (2.6X6)	
166	3-313-349-00	SPRING, TENSION	
167	3-313-348-00	SPRING, TENSION	
168	*3-313-381-01	LEVER (B), PAUSE BUTTON	
169	*3-313-353-00	LEVER, FF BUTTON	
170	*3-313-354-00	LEVER, REW BUTTON	

Ref.No	Part No.	Description	Remark
171	*3-313-326-00	LEVER, FWD BUTTON	
172	3-324-222-01	SPRING (HIGH TENSION), TENSION	
173	3-313-338-00	SPRING	
174	3-313-378-01	SPRING (A)	
175	3-313-327-00	SPRING	
176	A-3136-041-B	IDLER COMPLETE ASSY, FR	
177	3-313-314-00	LEVER (SI), FR	
178	3-313-315-00	SPRING	
179	3-313-313-00	SPRING	
180	X-3313-304-0	ARM ASSY, REW	
182	3-558-708-01	WASHER, STOPPER	
183	3-313-365-00	SPRING, TENSION	
184	3-313-356-00	BRAKE	
185	*3-313-350-00	LEVER, REC BUTTON	
186	3-313-331-00	SPRING	
187	*3-313-325-00	LEVER, STOP BUTTON	
188	3-313-380-01	CLAW (A), EJECT	
189	3-701-438-01	WASHER	

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

- CND: Canadian model
  IT: Italian model
  AUS: Australian model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description
901	*1-629-925-11	PC BOARD, LEAF SW
902	*A-3270-558-A	(US,CND,E,AUS)...MOUNTED PCB, AUDIO
	*A-3270-713-A	(AEP,IT).....MOUNTED PCB, AUDIO
903	*1-629-928-11	PC BOARD, POWER
904	*A-3266-519-A	(US,CND,E,AUS)...MOUNTED PCB, TUNER
	*A-3266-603-A	(IT).....MOUNTED PCB, TUNER
	*A-3266-604-A	(AEP).....PC BOARD ASSY, TUNER
905	1-533-217-31	(AEP,IT,AUS)...HOLDER, FUSE
ANT1	1-501-375-11	ANTENNA, TELESCOPIC
C01	1-162-286-31	CERAMIC 220PF 10% 50V
C03	1-164-096-11	CERAMIC 0.01MF 50V
C04	1-123-875-11	ELECT 10MF 20% 50V
C05	1-164-096-11	CERAMIC 0.01MF 50V
C06	1-164-039-11	CERAMIC 3PF 0.25PF 50V
C07	1-164-028-11	(US,CND,E,AUS) ...CERAMIC 24PF 5% 50V
C07	1-164-056-11	(AEP,IT)...CERAMIC 27PF 5% 50V
C08	1-101-982-11	(NEW TYPE-2:AEP) ...CERAMIC 24PF 5% 50V
C08	1-102-959-00	(NEW TYPE-2:IT) ...CERAMIC 22PF 5% 50V
C08	1-102-960-00	(NEW TYPE-1,3:US,CND,E,AUS) ...CERAMIC 24PF 5% 50V
C08	1-102-961-00	(NEW TYPE-1:AEP,IT) ...CERAMIC 27PF 5% 50V
C09	1-102-945-00	CERAMIC 8PF 0.5PF 50V
C10	1-164-012-11	CERAMIC 3PF 0.25PF 50V
C11	1-164-096-11	CERAMIC 0.01MF 50V
C12	1-162-282-31	CERAMIC 100PF 10% 50V
C15	1-124-927-11	ELECT 4.7MF 20% 50V
C16	1-124-791-11	ELECT 1MF 20% 50V
C17	1-124-446-11	ELECT 47MF 20% 10V
C18	1-124-446-11	ELECT 47MF 20% 10V
C19	1-164-096-11	CERAMIC 0.01MF 50V
C20	1-124-791-11	ELECT 1MF 20% 50V
C21	1-124-925-11	ELECT 2.2MF 20% 50V
C22	1-124-443-00	ELECT 100MF 20% 10V
C23	1-124-902-00	ELECT 0.47MF 20% 50V
C24	1-124-927-11	ELECT 4.7MF 20% 50V
C25	1-124-463-00	ELECT 0.1MF 20% 50V
C27	1-161-053-00	(US,CND,E,AUS) ...CERAMIC 0.015MF 10% 16V
C27	1-162-840-11	(AEP,IT)...CERAMIC 0.012MF 10% 16V
C28	1-161-053-00	(US,CND,E,AUS) ...CERAMIC 0.015MF 10% 16V
C28	1-162-840-11	(AEP,IT)...CERAMIC 0.012MF 10% 16V
C29	1-124-463-00	ELECT 0.1MF 20% 50V
C30	1-124-463-00	ELECT 0.1MF 20% 50V
C31	1-162-282-31	CERAMIC 100PF 10% 50V
C32	1-162-282-31	CERAMIC 100PF 10% 50V
C33	1-162-187-31	CERAMIC 1PF 20% 50V
C34	1-162-282-31	CERAMIC 100PF 10% 50V
C35	1-162-282-31	CERAMIC 100PF 10% 50V
C101	1-124-791-11	ELECT 1MF 20% 50V
C102	1-161-374-11	CERAMIC 0.0015MF 30% 16V
C103	1-124-902-00	ELECT 0.47MF 20% 50V
C104	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C105	1-162-286-31	CERAMIC 220PF 10% 50V
C106	1-124-446-11	ELECT 47MF 20% 10V
C107	1-162-843-11	CERAMIC 0.022MF 10% 16V
C108	1-124-902-00	ELECT 0.47MF 20% 50V
C109	1-162-832-11	CERAMIC 0.0027MF 10% 16V
C110	1-161-494-00	CERAMIC 0.022MF 25V
C112	1-162-294-31	CERAMIC 0.001MF 10% 50V
C113	1-124-443-00	ELECT 100MF 20% 10V
C114	1-124-446-11	ELECT 47MF 20% 10V
C115	1-130-497-00	MYLAR 0.15MF 5% 50V
C116	1-124-472-11	ELECT 470MF 20% 10V
C201	1-124-791-11	ELECT 1MF 20% 50V
C202	1-161-374-11	CERAMIC 0.0015MF 30% 16V
C203	1-124-902-00	ELECT 0.47MF 20% 50V
C204	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C205	1-162-286-31	CERAMIC 220PF 10% 50V
C206	1-124-446-11	ELECT 47MF 20% 10V
C207	1-162-843-11	CERAMIC 0.022MF 10% 16V
C208	1-124-902-00	ELECT 0.47MF 20% 50V
C209	1-162-832-11	CERAMIC 0.0027MF 10% 16V
C210	1-161-494-00	CERAMIC 0.022MF 25V
C212	1-162-294-31	CERAMIC 0.001MF 10% 50V
C213	1-124-443-00	ELECT 100MF 20% 10V
C214	1-124-446-11	ELECT 47MF 20% 10V
C215	1-130-497-00	MYLAR 0.15MF 5% 50V
C216	1-124-472-11	ELECT 470MF 20% 10V
C301	1-161-494-00	CERAMIC 0.022MF 25V
C302	1-123-875-11	ELECT 10MF 20% 50V
C303	1-161-379-00	CERAMIC 0.01MF 30% 16V
C304	1-124-963-11	ELECT 33MF 20% 16V
C305	1-124-120-11	ELECT 220MF 20% 16V

Ref.No.	Part No.	Description
C306	1-126-233-11	ELECT 22MF 20% 25V
C309	1-124-120-11	ELECT 220MF 20% 16V
C311	1-124-556-11	ELECT 2200MF 20% 16V
C315	1-124-443-00	ELECT 100MF 20% 10V
C321	1-162-282-31	CERAMIC 100PF 10% 50V
C322	1-162-282-31	CERAMIC 100PF 10% 50V
C341	1-124-446-11	ELECT 47MF 20% 10V
C342	1-130-481-00	MYLAR 0.0068MF 5% 50V
C343	1-161-374-11	CERAMIC 0.0015MF 30% 16V
C344	1-162-294-31	(AEP,IT)...CERAMIC 0.001MF 10% 50V
C801	1-101-005-00	CERAMIC 0.022MF 50V
C802	1-101-005-00	CERAMIC 0.022MF 50V
C803	1-101-005-00	CERAMIC 0.022MF 50V
C804	1-101-005-00	CERAMIC 0.022MF 50V
CF1, CF3	1-567-166-00	FILTER, CERAMIC, FM
CF2	1-527-870-00	FILTER, CERAMIC, AM
CNJ1	*1-563-307-11	CONNECTOR (SOCKET) 2P
CNJ801⚠	1-526-818-11	(US,CND,E).....INLET, AC (~ AC IN)
CNJ801⚠	1-526-838-11	(AEP,IT,AUS)...INLET, AC (~ AC IN)
CNP2	*1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P
CNP3	*1-506-985-11	PIN, CONNECTOR (PC BOARD) 3P
CNP4	*1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P
CNP21	*1-506-987-11	(US,CND,E,AUS)...PIN, CONNECTOR (PC BOARD)5P
CNP21	*1-506-988-11	(AEP,IT)...PIN, CONNECTOR (PC BOARD)6P
CT1-4, CV1-4	1-151-624-11	(US,CND,E,AUS)...CAP, VARIABLE(TUNING)
CT1-4, CV1-4	1-151-615-11	(AEP,IT).....CAP, VARIABLE(TUNING)
D11	8-719-918-76	DIODE GL-3PR9
D301	8-719-918-76	DIODE GL-3PR9
D303	8-719-911-19	DIODE 1SS119
D304	8-719-911-19	DIODE 1SS119
D801	8-719-200-02	DIODE 10E2
D802	8-719-200-02	DIODE 10E2
D803	8-719-200-02	DIODE 10E2
D804	8-719-200-02	DIODE 10E2
F801 ⚠	1-532-285-00	(AEP,IT,AUS)...FUSE, 1.25A TIME LAG
FL1	1-236-022-11	FILTER, BAND PASS
HE901	1-543-525-11	HEAD, MAGNETIC (ERASE)
HRP901	1-543-283-11	HEAD, MAGNETIC (REC/PB)

Ref.No.	Part No.	Description
IC1	8-752-035-68	IC CXA1238S
IC301	8-759-978-54	IC BA3420AL
IC302	8-759-820-22	IC LA4597
J301	1-566-891-11	JACK (HEADPHONES)
KH3	*1-565-386-11	HOLDER, CABLE 5P
L1	1-420-855-00	(US,CND,E,AUS)...COIL, FM ANT
L1	*1-422-180-11	(AEP,IT)...COIL, AIR-CORE, FM ANT
L2	1-406-161-11	(NEW TYPE-3:US,CND,E,AUS) ...COIL, FM OSC
L2	1-459-418-00	(NEW TYPE-2:AEP,IT) ...COIL (WITH CORE), FM OSC
L2	1-459-815-11	(NEW TYPE-1)...COIL (WITH CORE), FM OSC
L3	1-402-158-11	(AEP,IT)...ANTENNA, FERRITE-ROD (MW)
L3	1-402-416-11	(US,CND,E,AUS)...ANTENNA, FERRITE-ROD (MW)
L4	1-406-040-00	COIL (OSC), AM
M901	1-541-624-11	MOTOR, DC
MIC301	1-542-092-11	MICROPHONE, ELECTRET CONDENSER (MIC)
Q1	8-729-904-36	(AEP,IT)...TRANSISTOR DTC114YS
Q301	8-729-281-53	TRANSISTOR 2SC1815GR
Q302	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q303	8-729-100-13	TRANSISTOR 2SC2001-K2
R01	1-249-413-11	CARBON 470 5% 1/4W
R02	1-249-405-11	CARBON 100 5% 1/4W
R03	1-249-421-11	CARBON 2.2K 5% 1/4W
R05	1-249-423-11	CARBON 3.3K 5% 1/4W
R06	1-249-441-11	CARBON 100K 5% 1/4W
R07	1-249-415-11	CARBON 680 5% 1/4W
R09	1-249-441-11	CARBON 100K 5% 1/4W
R10	1-249-397-11	CARBON 22 5% 1/4W
R11	1-249-427-11	CARBON 6.8K 5% 1/4W
R12	1-249-427-11	CARBON 6.8K 5% 1/4W
R13	1-249-405-11	CARBON 100 5% 1/4W
R14	1-249-429-11	CARBON 10K 5% 1/4W
R15	1-247-887-00	CARBON 220K 5% 1/4W
R16	1-247-887-00	CARBON 220K 5% 1/4W
R17	1-249-421-11	CARBON 2.2K 5% 1/4W
R19	1-249-415-11	CARBON 680 5% 1/4W
R20	1-249-423-11	CARBON 3.3K 5% 1/4W
R21	1-249-411-11	CARBON 330 5% 1/4W
R23	1-249-429-11	(AEP,IT)...CARBON 10K 5% 1/4W
R101	1-249-429-11	CARBON 10K 5% 1/4W
R102	1-249-419-11	CARBON 1.5K 5% 1/4W

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note:** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description			
R103	1-215-448-00	METAL	13K	1%	1/6W
R104	1-249-401-11	CARBON	47	5%	1/4W
R105	1-249-426-11	CARBON	5.6K	5%	1/4W
R106	1-249-429-11	CARBON	10K	5%	1/4W
R107	1-249-407-11	CARBON	150	5%	1/4W
R109	1-249-405-11	CARBON	100	5%	1/4W
R110	1-249-417-11	CARBON	1K	5%	1/4W
R201	1-249-429-11	CARBON	10K	5%	1/4W
R202	1-249-419-11	CARBON	1.5K	5%	1/4W
R203	1-215-448-00	METAL	13K	1%	1/6W
R204	1-249-401-11	CARBON	47	5%	1/4W
R205	1-249-426-11	CARBON	5.6K	5%	1/4W
R206	1-249-429-11	CARBON	10K	5%	1/4W
R207	1-249-407-11	CARBON	150	5%	1/4W
R209	1-249-405-11	CARBON	100	5%	1/4W
R210	1-249-417-11	CARBON	1K	5%	1/4W
R301	1-249-433-11	CARBON	22K	5%	1/4W
R302	1-249-417-11	CARBON	1K	5%	1/4W
R303	1-249-421-11	CARBON	2.2K	5%	1/4W
R304	1-249-407-11	CARBON	150	5%	1/4W
R306	1-249-432-11	CARBON	18K	5%	1/4W
R307	1-249-429-11	CARBON	10K	5%	1/4W
R310	1-249-416-11	CARBON	820	5%	1/4W
R311	1-249-410-11	CARBON	270	5%	1/4W
R313	1-249-405-11	CARBON	100	5%	1/4W
R315	⚠1-217-640-11	(CND,AEP,IT)...FUSIBLE	3.3	5%	1/4W
R315	1-249-387-11	(US,E,AUS).....CARBON	3.3	5%	1/4W
R321	1-249-429-11	CARBON	10K	5%	1/4W
R341	1-249-399-11	CARBON	33	5%	1/4W
R342	1-249-435-11	CARBON	33K	5%	1/4W
R343	1-249-389-11	CARBON	4.7	5%	1/4W
R344	1-249-425-11	CARBON	4.7K	5%	1/4W
RV1	1-228-995-00	RES, ADJ, CARBON 22K			
RV301	1-238-431-11	RES, VAR, CARBON 20K/20K (TONE)			
RV302	1-238-430-11	RES, VAR, CARBON 20K/20K (VOLUME)			
S301	1-572-245-11	SWITCH, SLIDE (REC/PB)			
S302	1-571-307-11	SWITCH, SLIDE (FUNCTION)			
S303	1-554-222-00	(AEP,IT)...SWITCH, SLIDE (FM MODE/ISS)			
S601	1-572-116-11	SWITCH, LEAF (MD POWER)			
SP901	1-503-492-11	SPEAKER			
SP902	1-503-492-11	SPEAKER			

Ref.No.	Part No.	Description
T1	1-404-355-00	TRANSFORMER, IF
T301	1-433-268-00	TRANSFORMER, BIAS OSCILLATOR
T801	⚠1-448-759-21	(CND).....TRANSFORMER, POWER
T801	⚠1-448-760-21	(AUS).....TRANSFORMER, POWER
T801	⚠1-448-761-21	(AEP,IT)...TRANSFORMER, POWER
T801	⚠1-448-832-31	(US,E).....TRANSFORMER, POWER

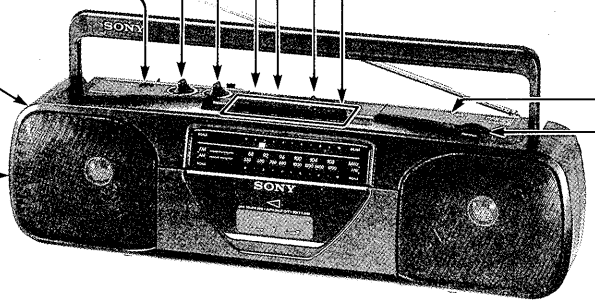
ACCESSORY & PACKING MATERIAL

⚠1-555-360-41	(AEP,IT).....CORD, POWER
⚠1-558-788-21	(AUS).....CORD, POWER
⚠1-559-047-21	(US,CND,E)...CORD, POWER
*3-351-372-01	(US,AEP,IT,E)...INDIVIDUAL CARTON
*3-351-373-01	(CND,AUS).....INDIVIDUAL CARTON
*3-351-378-01	CUSHION (LEFT) (RIGHT)
3-750-187-21	(US,CND,E,AUS)...MANUAL, INSTRUCTION (ENGLISH)
3-750-187-31	(CND)...MANUAL, INSTRUCTION (FRENCH)
3-750-187-51	(E).....MANUAL, INSTRUCTION (SPANISH)
3-750-187-61	(IT)....MANUAL, INSTRUCTION (ITALIAN)
3-750-187-71	(AEP)...MANUAL, INSTRUCTION (ENGLISH,SPANISH,DUTCH,SWEDISH)

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

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

LOCATION OF CONTROLS



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