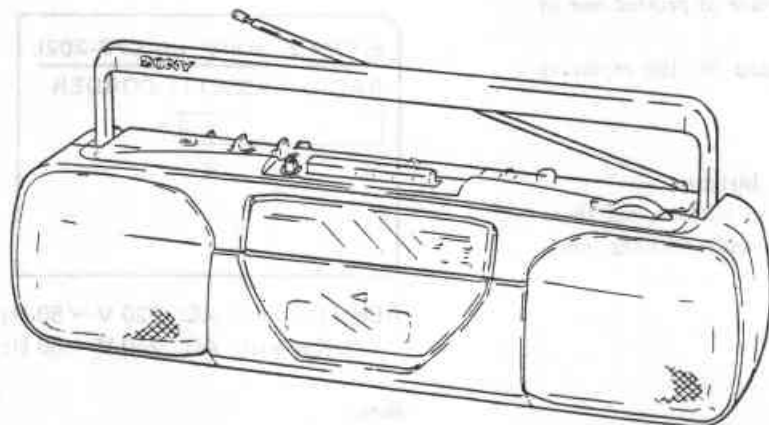


CFS-202L

SERVICE MANUAL

AEP Model
UK Model



SPECIFICATIONS

Model Name Using Similar Mechanism	CFS-D20L, S30
Tape Transport Mechanism Type	MF-202-78D

Frequency range

Model	FM	MW	LW	SW
AEP, UK	87.6—107MHz	531—1602kHz	153—281kHz	595—18MHz
Italian	87.5—108MHz	526.5—1606.5kHz	148.5—283.5kHz	

Recording system 4-track 2-channel stereo

Frequency response 80—8,000Hz

Speakers Full-range: 10cm (4 inches) dia. x 2

Power output 2.3W+2.3W (at 10% harmonic distortion)

at DC operation

Output HEADPHONES (Stereo minijack), 16—68 Ω impedance

Power requirements

AEP, Italian model	220V AC, 50Hz
UK model	240V AC, 50Hz

9V DC, six R20 (size D) batteries

Power consumption 18 W (UK), 14 W (AEP, Italian)

Battery life

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

Dimensions

Approx. 480 x 147 x 148 mm (w/h/d) (19 x 5 $\frac{7}{8}$ x 5 $\frac{7}{8}$ inches) incl. projecting parts and controls

Weight

Approx. 3.0 kg (6 lb 10 oz), incl. batteries

Design and specifications subject to change without notice.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINE WITH MARK \triangle 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.



RADIO CASSETTE-CORDER
SONY[®]

SECTION 1 GENERAL

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.

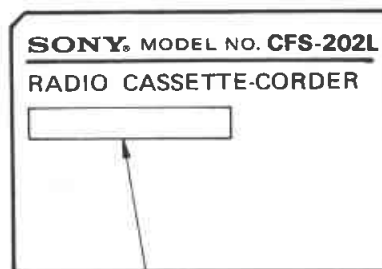
1/32W carbon resistor is supplied for the replacing part of the printed resistor.

● Note for tape operation buttons

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

MODEL IDENTIFICATION

— Model Number Label —



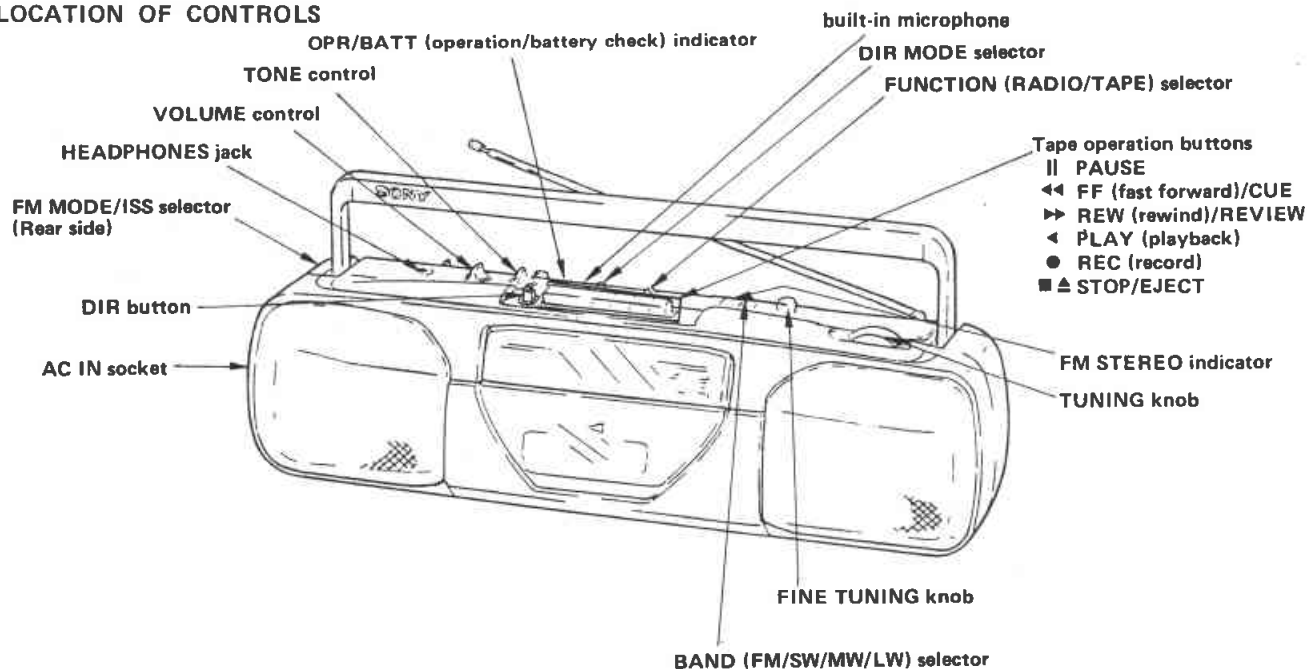
AEP, IT model: AC: 220 V ~ 50 Hz 14 W

UK model: AC: 240 V ~ 50 Hz 18 W

Note:

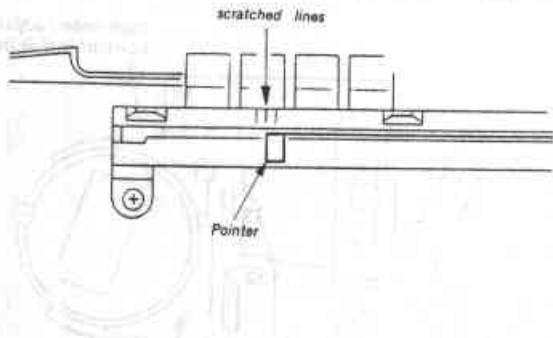
IT: Italian

LOCATION OF CONTROLS



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

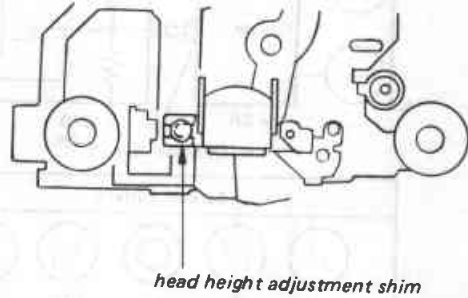
Torque	Torque meter	Meter reading
FWD	CQ-102C	24-70 g·cm (0.33-0.97 oz·inch)
FWD Back Tension	CQ-102C	2-6 g·cm (0.028-0.083 oz·inch)
REV	CQ-102RC	24-70 g·cm (0.33-0.97 oz·inch)
REV Back Tension	CQ-102RC	2-6 g·cm (0.028-0.083 oz·inch)
FF	CQ-201B	more than 85 g·cm (more than 1.18 oz·inch)
REW	CQ-201B	85-150 g·cm (1.18-2.08 oz·inch)

Tape Tension Measurement

Mode	Tension meter	Meter reading
FWD	CQ-403A	more than 110 g
REV	CQ-403R	(more than 3.88 oz)

Tape Path Adjustment

When the mode is playback (FWD, REV), run a mirror cassette, then turn adjustment screw to eliminate tape curl and tape twist at tape guide on erase head and record/playback head. Adjust the height by using head shim if needed. Standard (t:0.1)



Part No.	t
3-578-138-01	0.1
3-578-138-11	0.2

SECTION 4 ELECTRICAL ADJUSTMENTS

4-1. TAPE RECORDER SECTION

• Test Tape

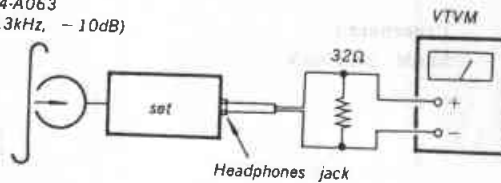
Type	Signal	Used for
WS-48A	3kHz, 0dB	tape speed adjustment
P-4-A063	6.3kHz, -10dB	head azimuth adjustment

REC/PB Head Azimuth Adjustment

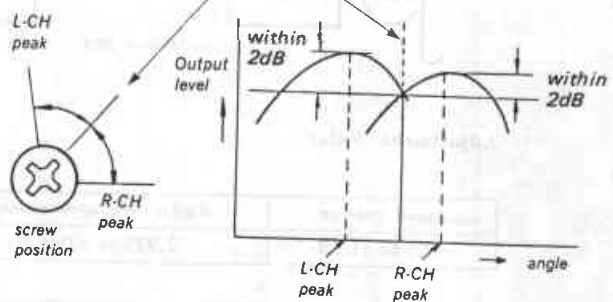
Procedure:

1. Mode: playback

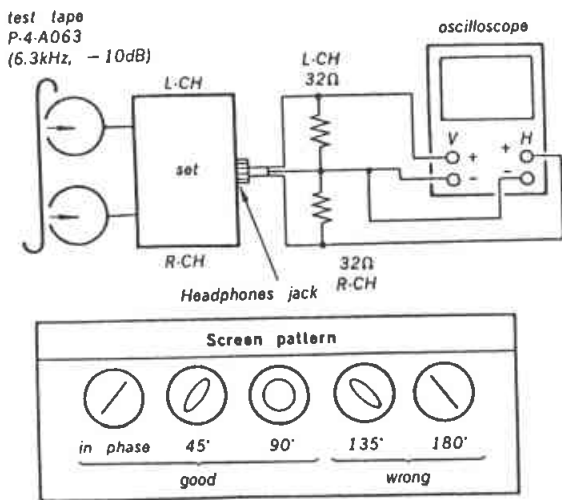
test tape
P-4-A063
(6.3kHz, -10dB)



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 2dB.

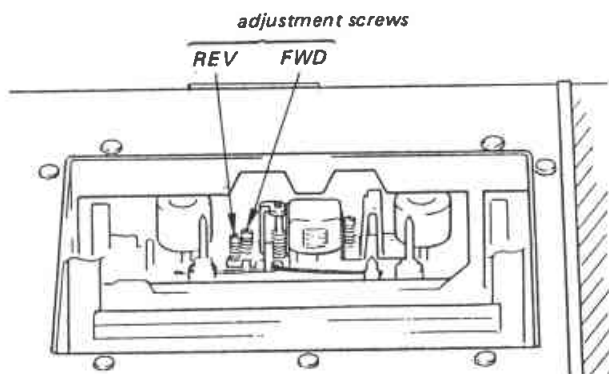


3. Phase Check
Mode : playback



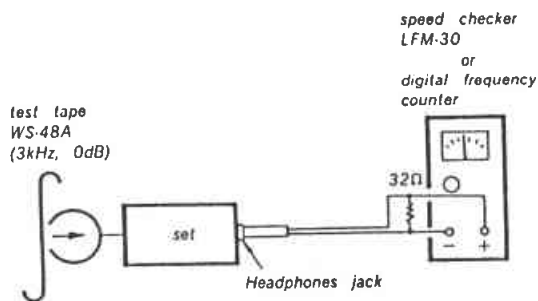
Note: Finish the screw adjustment with a turn in the clockwise direction.
After the adjustment, lock the adjustment screw.

Adjustment Location:



Tape Speed Adjustment

Procedure :
Mode : playback

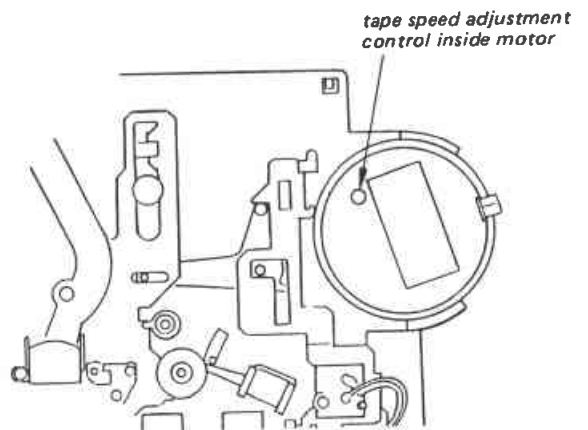


Adjustment Value :

Speed checker	Digital frequency counter
-2.5 to +1.5%	2.925 to 3.045 Hz

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

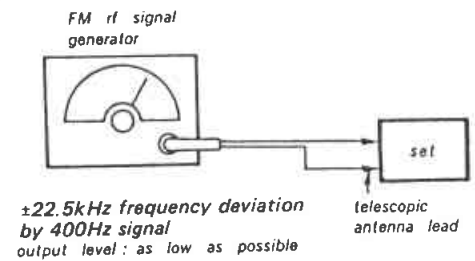
Adjustment Location :



4-2. RADIO SECTION

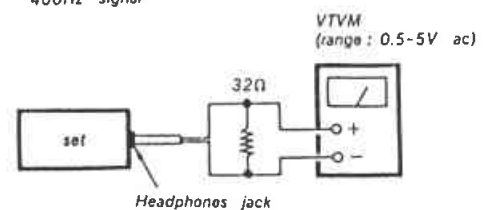
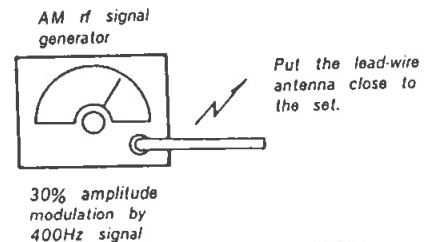
• FM Section

Setting :
FUNCTION switch : RADIO
BAND switch : FM



• AM Section

Setting :
FUNCTION switch : RADIO
BAND switch : MW, LW, SW



• 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	455 kHz

MW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L4	520 (516) kHz
CT4	1,680 (1,630) kHz

MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L3	600 kHz
CT3	1,400 kHz

LW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L8	145 (140) kHz
CT8	295 (293) kHz

LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L7	160 kHz
CT7	260 kHz

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L2	87.35 MHz
CT2	107.8 (108.3) MHz

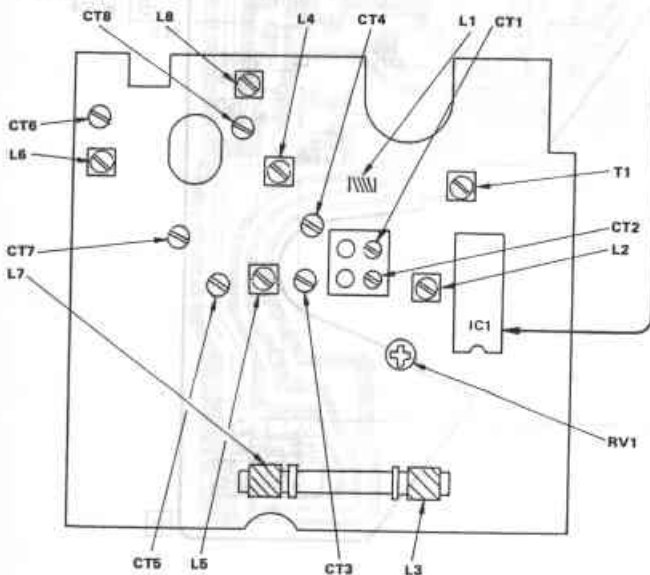
FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L1	87.35 MHz
CT1	107.8 (108.3) MHz

SW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L6	5.8 MHz
CT6	18.4 MHz

SW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L5	7 MHz
CT5	14 MHz

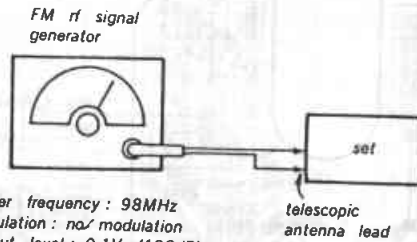
• () : Italian model

Adjustment Location: tuner board



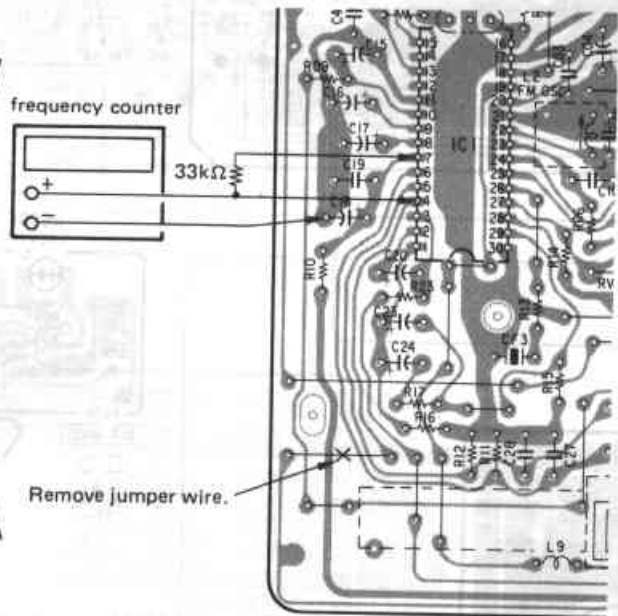
FM VCO Adjustment

A) Regular Method Procedure :



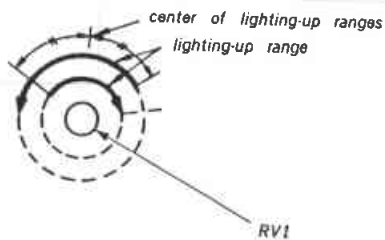
Carrier frequency : 98MHz
Modulation : no modulation
Output level : 0.1V (100dB)

1. Remove jumper wire as shown below.
2. Connect frequency counter to the positions 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.



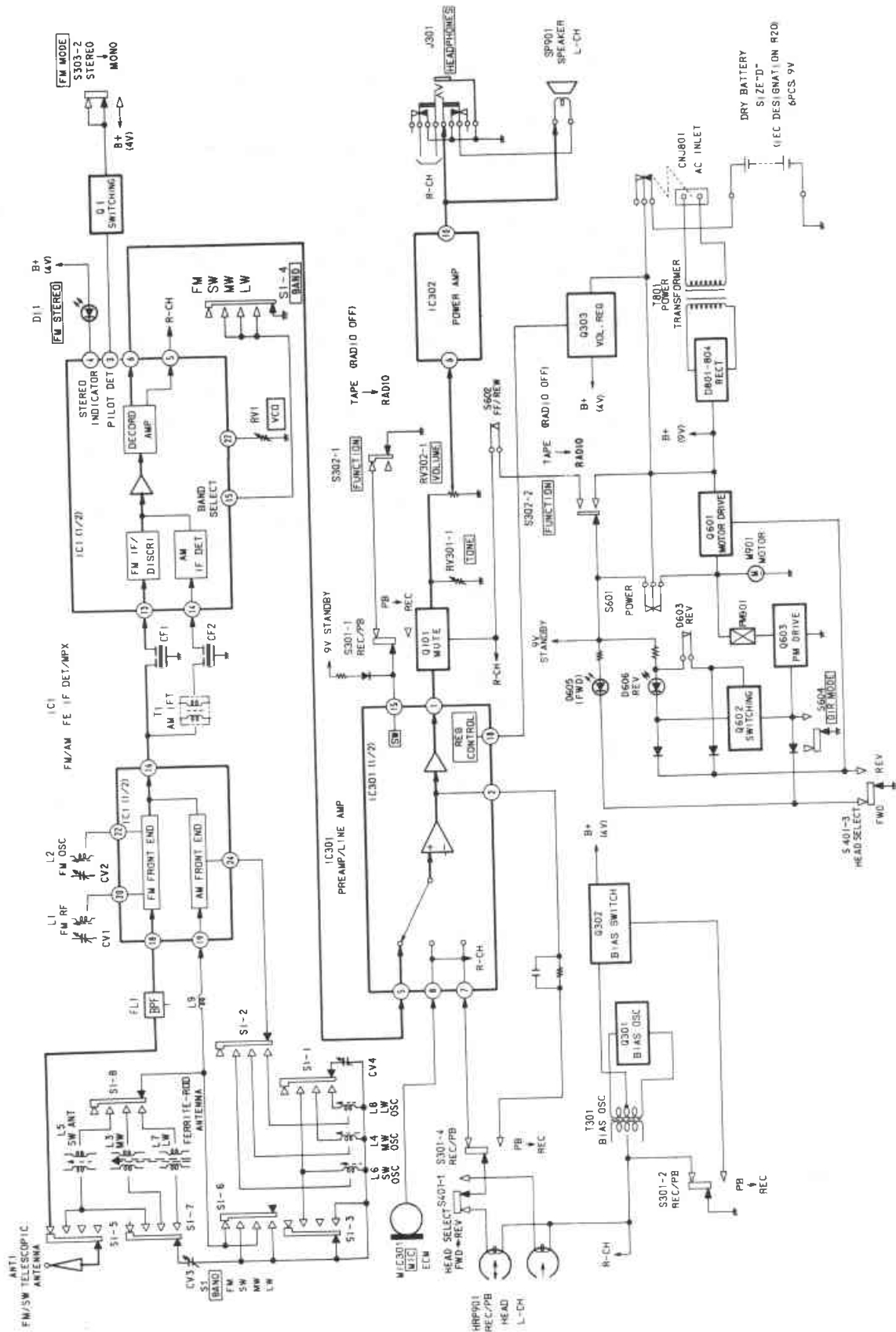
B) Simple Method Procedure :

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.



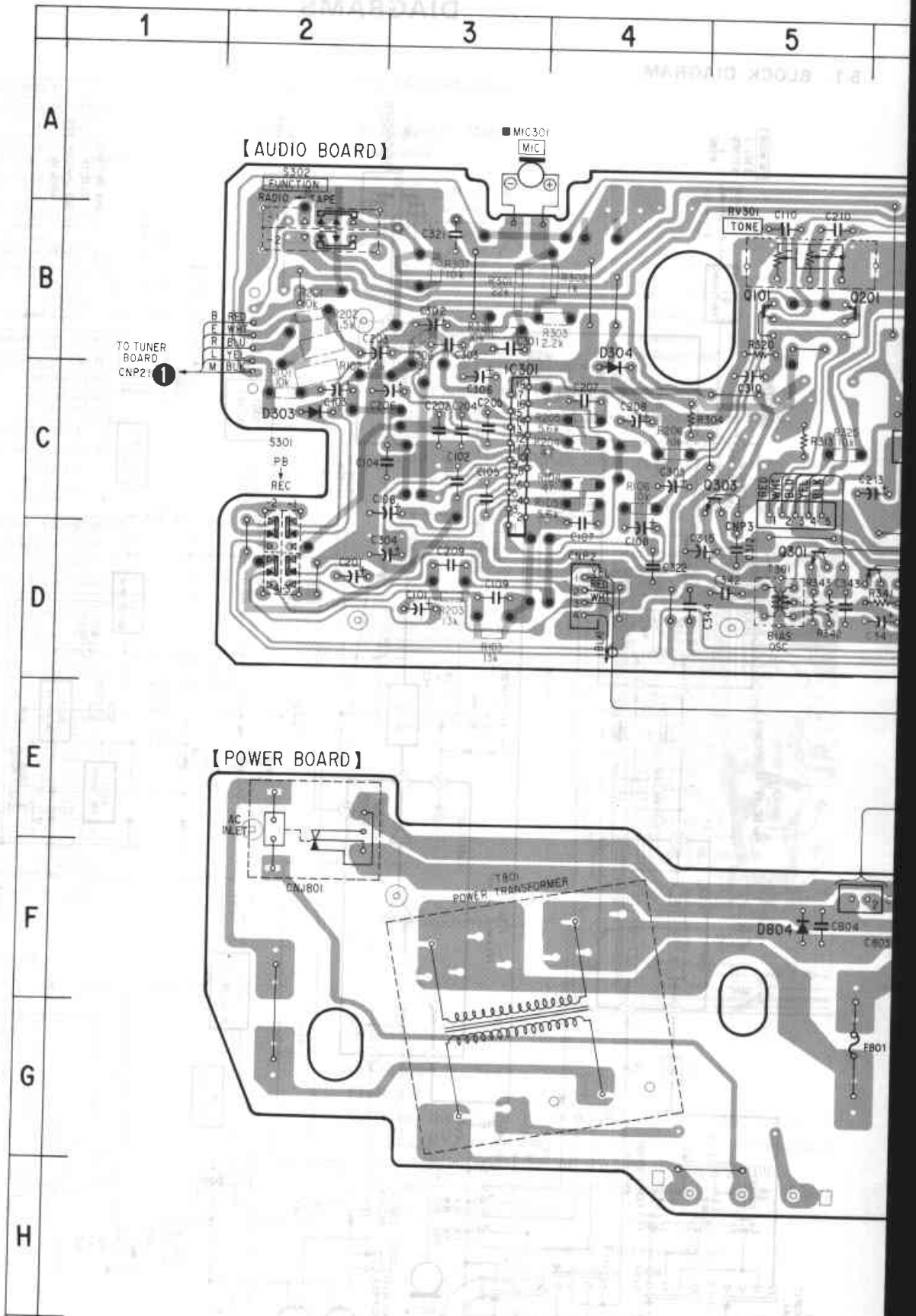
SECTION 5 DIAGRAMS

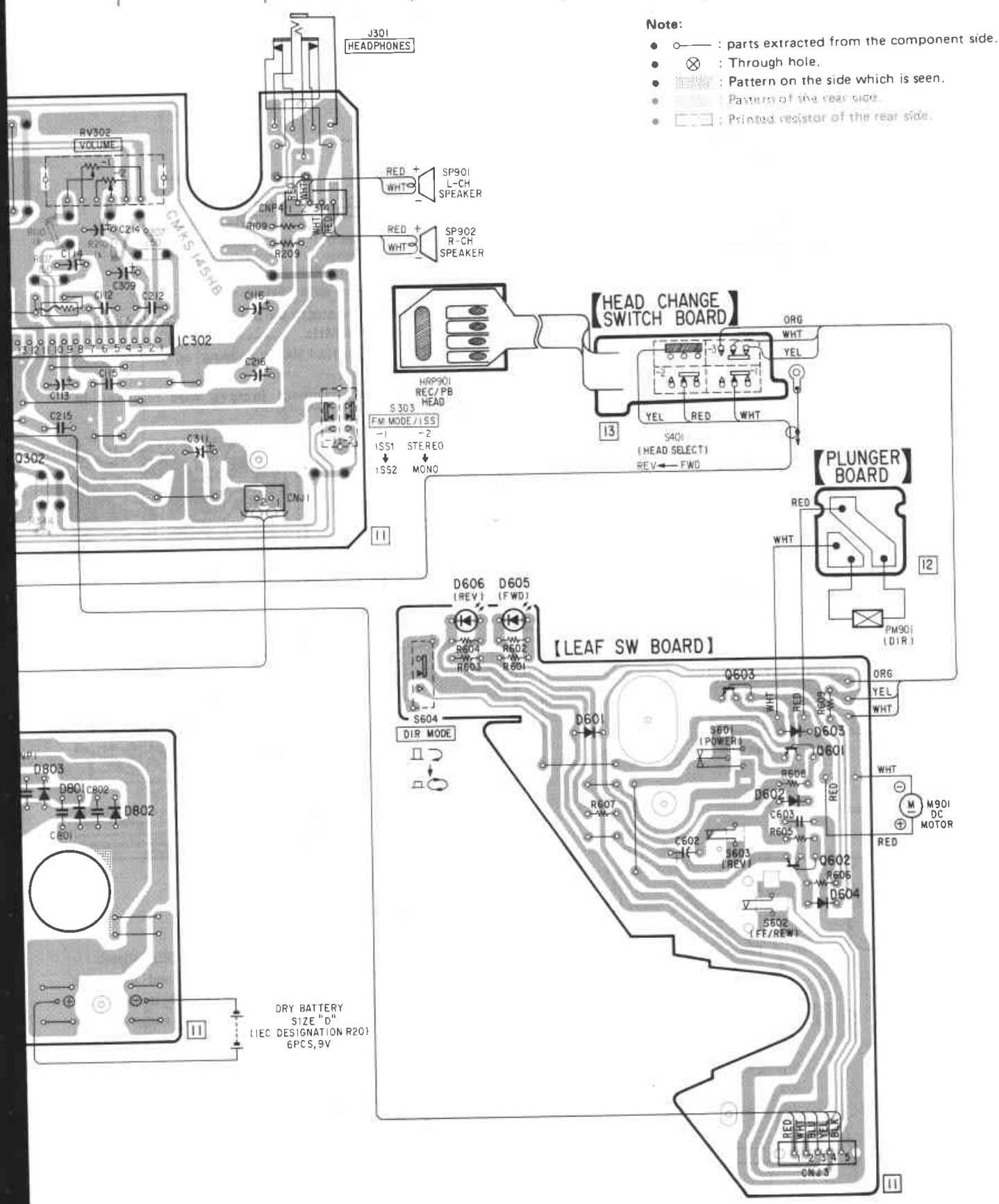
5-1. BLOCK DIAGRAM

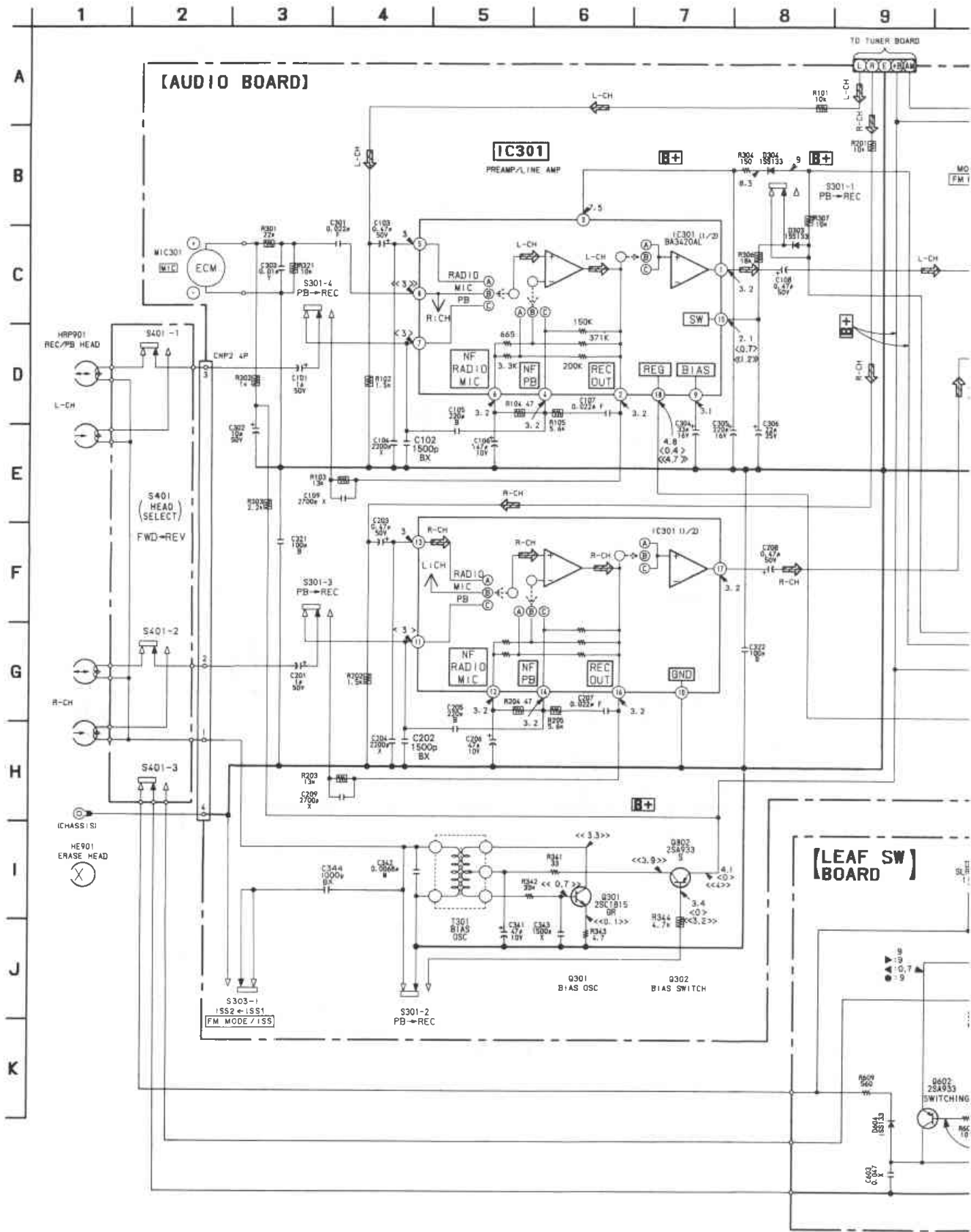


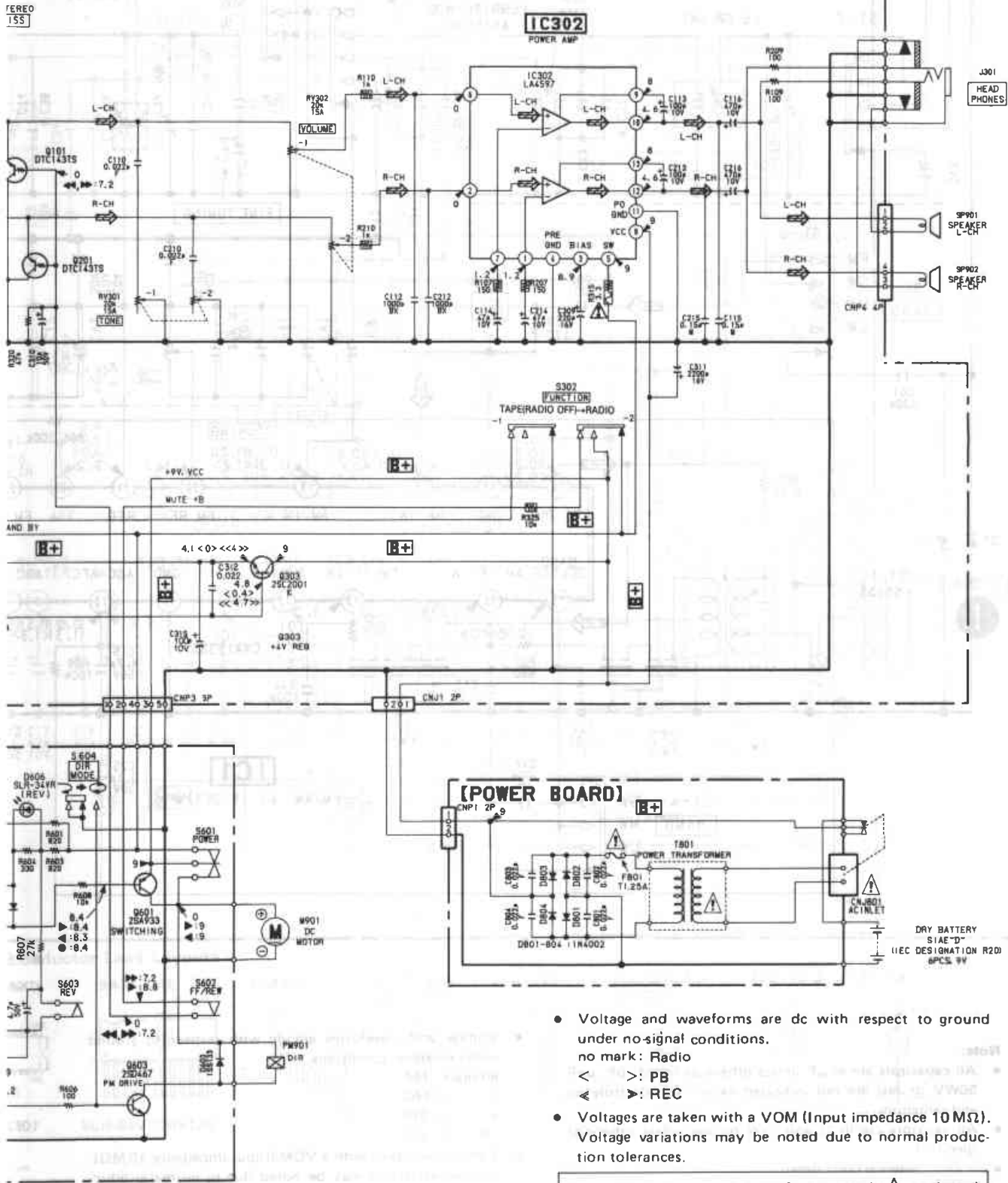
• Semiconductor Location

Ref. No.	Location
D303	C-2
D304	B-4
D601	F-10
D602	F-11
D603	F-11
D604	G-11
D605	E-9
D606	E-9
D801	F-8
D802	F-8
D803	F-6
D804	F-5
IC301	C-3
IC302	C-6
Q101	B-5
Q201	B-5
Q301	D-5
Q302	D-6
Q303	C-5
Q601	F-11
Q602	G-11
Q603	E-11





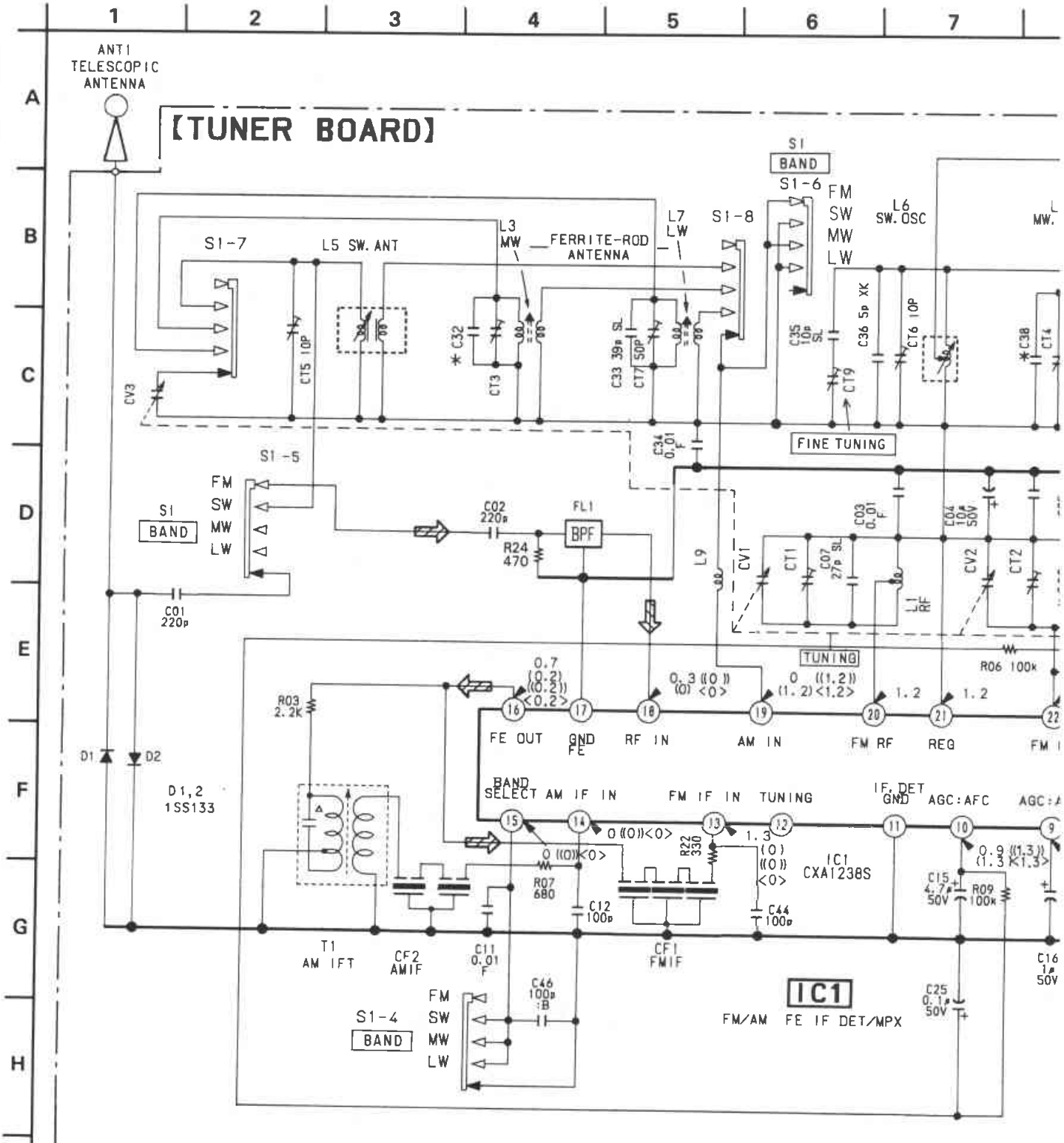




- Voltage and waveforms are dc with respect to ground under no-signal conditions.
no mark: Radio
< >: PB
◀ ▶: REC
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.

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

5-4. SCHEMATIC DIAGRAM — TUNER SECTION —

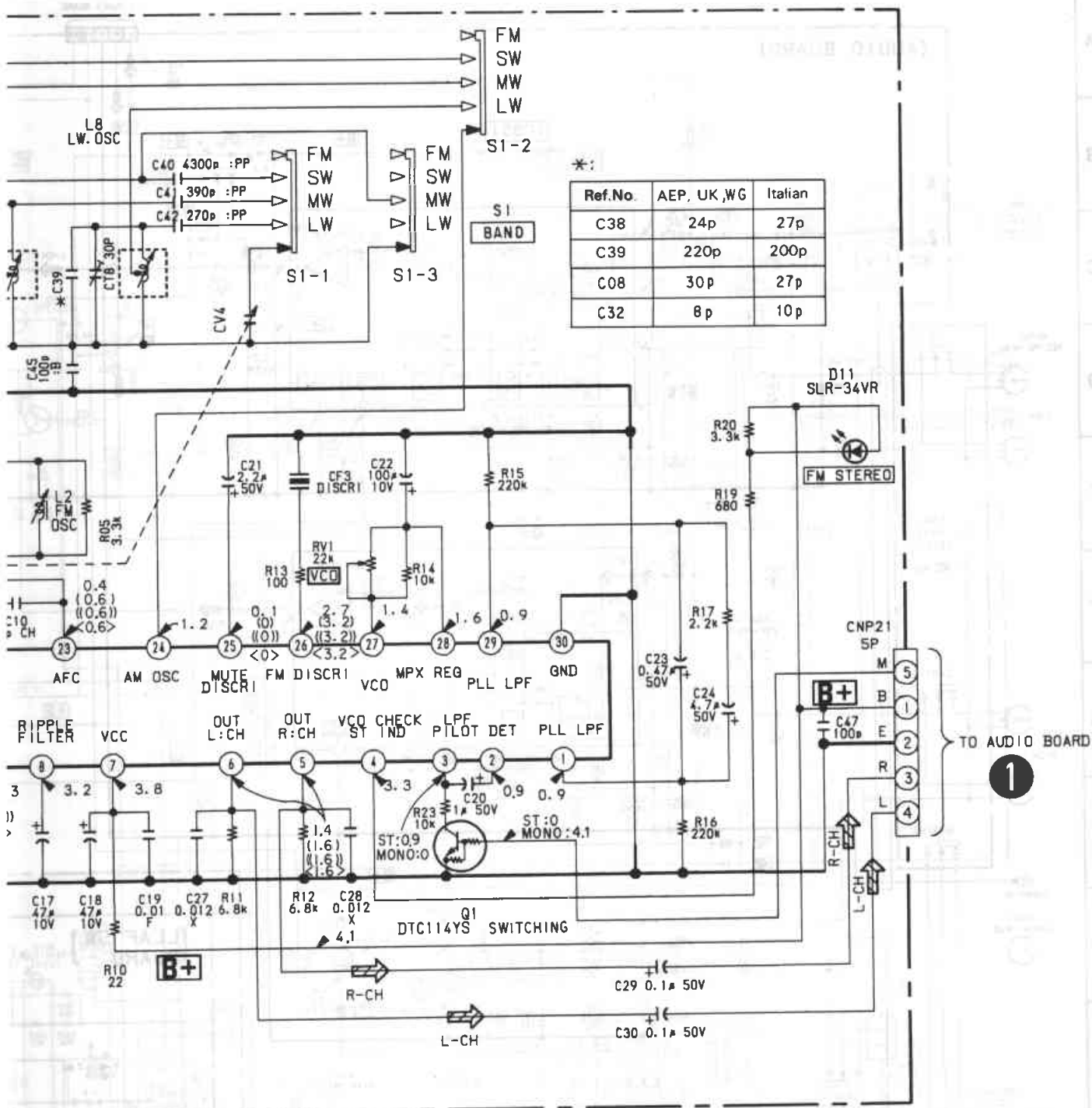


Note:

- All capacitors are in μF unless otherwise noted. pF: $\mu\mu\text{F}$ 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- Δ : internal component.
- $\text{---}\text{---}\text{---}$: fusible resistor.
- $\text{---}\text{---}\text{---}$: printed resistor.
- $\text{---}\text{---}\text{---}$: adjustment for repair.

- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark : FM
- () : MW
- < > : SW
- (()) : LW
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- $\text{---}\text{---}\text{---}$: FM

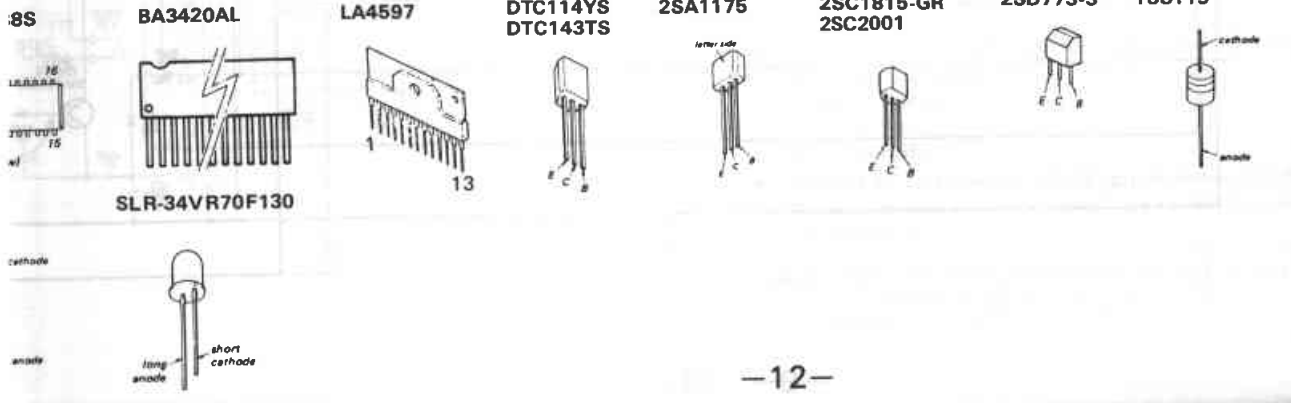
• Se
CX1238S
10E2



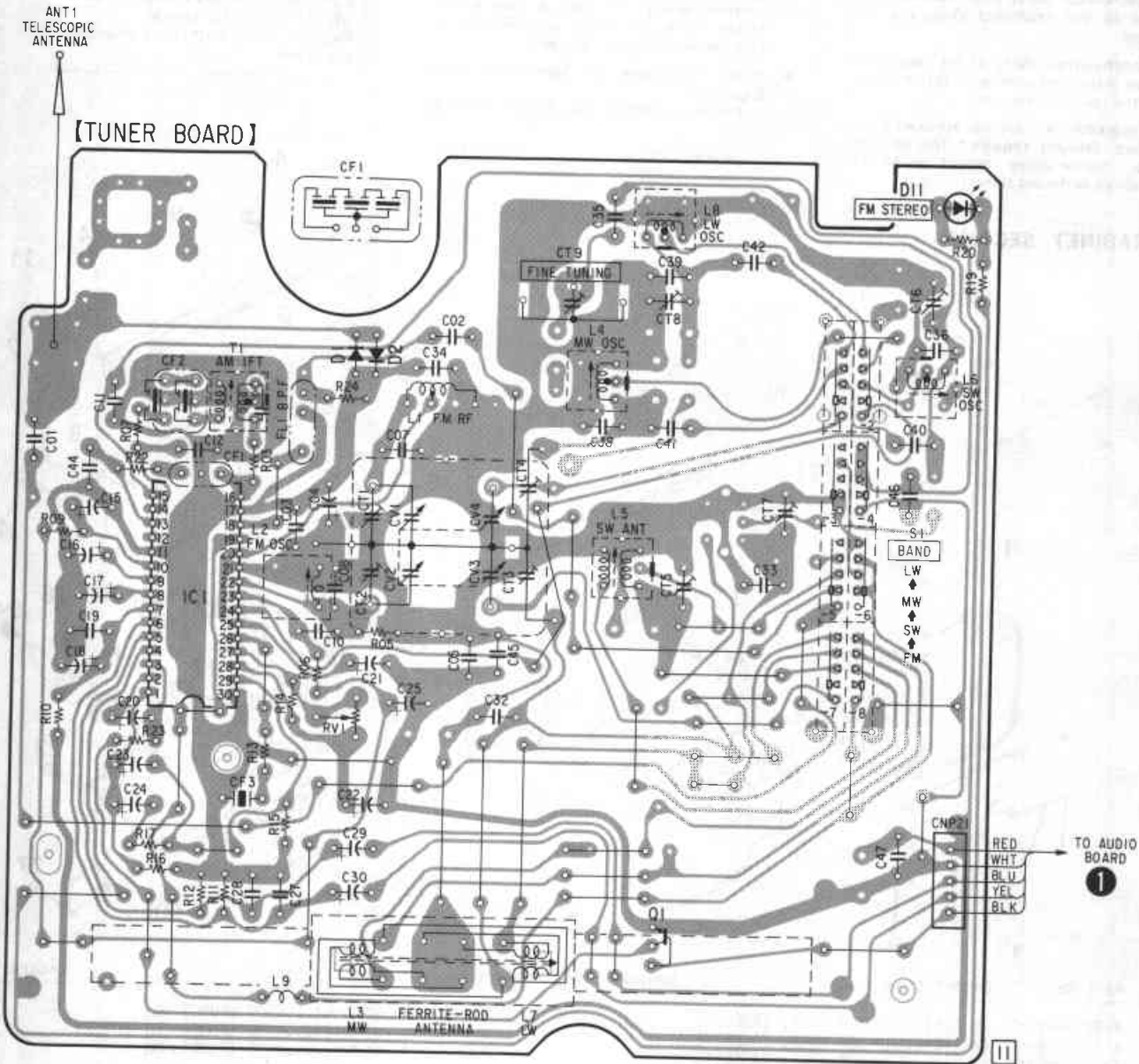
Ref. No. AEP, UK, WG Italian

C38	24p	27p
C39	220p	200p
C08	30p	27p
C32	8p	10p

Microconductor Lead Layouts

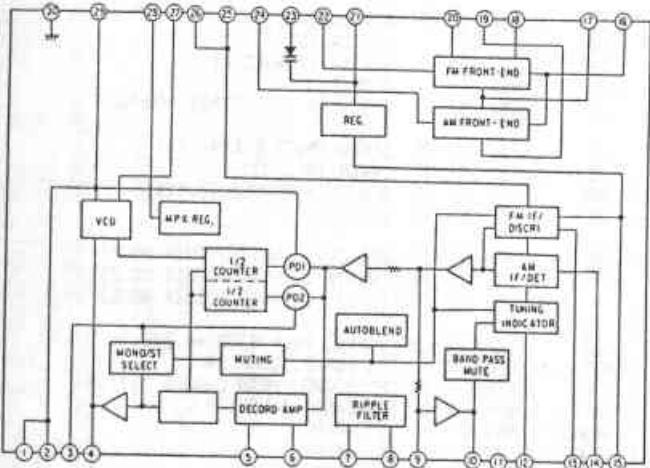


5-5. PRINTED WIRING BOARDS
- TUNER SECTION -



• IC Block Diagram

IC1 CXA1238S



SECTION 6 EXPLODED VIEWS

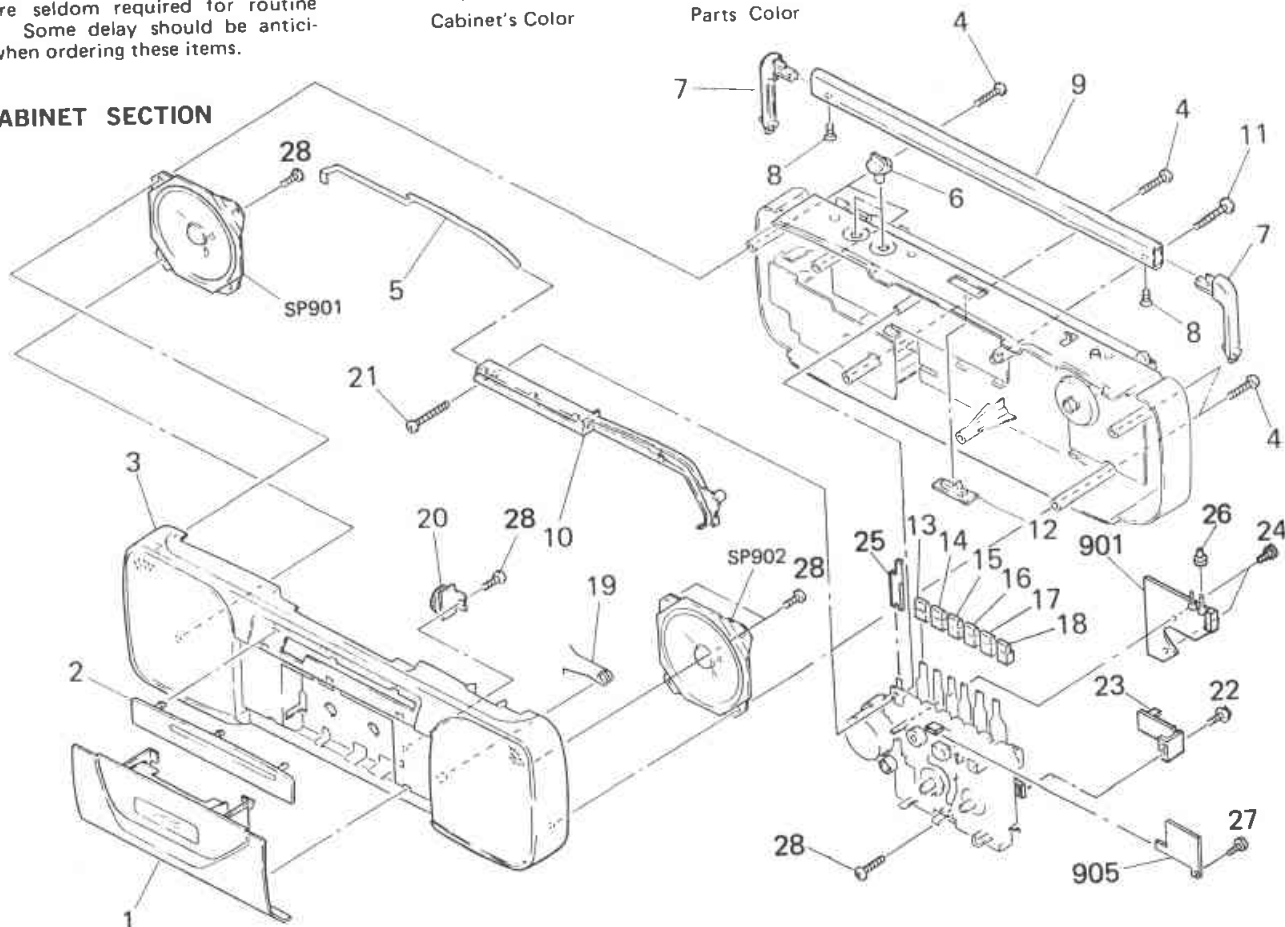
NOTE:

- 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

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

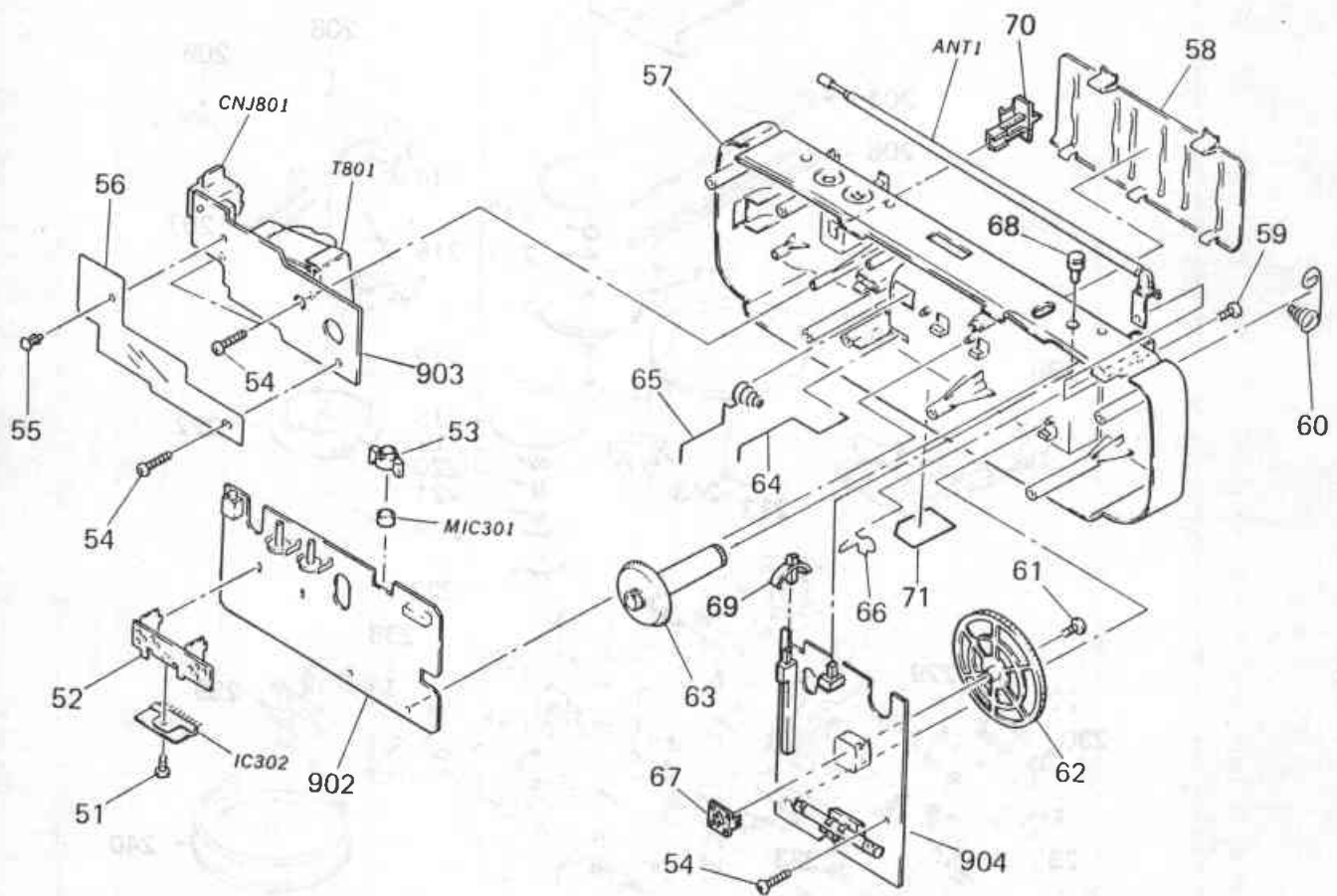
6-1. CABINET SECTION



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	X-3338-567-1 X-3338-568-1 X-3338-569-1	(BLACK)...HOLDER ASSY, CASSETTE (WHITE)...HOLDER ASSY, CASSETTE (RED).....HOLDER ASSY, CASSETTE		12	3-351-317-01 3-351-317-11 3-351-317-21	(BLACK)...KNOB (FUNCTION) (WHITE)...KNOB (FUNCTION) (RED).....KNOB (FUNCTION)	
2	3-351-323-11	PLATE, TRANSPARENT		13	3-351-331-01	BUTTON (PAUSE)	
3	X-3338-564-1 X-3338-565-1 X-3338-566-1	(BLACK)...CABINET ASSY, FRONT (WHITE)...CABINET ASSY, FRONT (RED).....CABINET ASSY, FRONT		14	3-351-332-01	BUTTON (FF)	
4	7-685-649-79	SCREW +BVTP 3X14 TYPE2 N-S		15	3-351-328-01	BUTTON (REW)	
5	3-351-322-01	POINTER		16	3-351-327-01	BUTTON (PLAY)	
6	3-351-338-01 3-351-338-11 3-351-338-21	(BLACK)...KNOB (VOLUME) (WHITE)...KNOB (VOLUME) (RED).....KNOB (VOLUME)		17	3-351-330-01	BUTTON (REC)	
7	3-343-063-01 3-343-063-21 3-343-063-31	(BLACK)...PLATE, SIDE, HANDLE (WHITE)...PLATE, SIDE, HANDLE (RED).....PLATE, SIDE, HANDLE		18	3-351-329-01	BUTTON (STOP)	
8	7-685-248-14 7-685-248-19	(WHITE)...SCREW +KTP 3X12 TYPE2 NON-SLIT (BLACK,RED)...SCREW +KTP 3X12 TYPE2 SLIT		19	3-351-308-01	SPRING (CASSETTE)	
9	3-351-314-01 3-351-314-11 3-351-314-21	(BLACK)...HANDLE (WHITE)...HANDLE (RED).....HANDLE		20	3-351-377-11	DAMPER	
10	*3-351-333-01	CHASSIS (DIAL)		21	7-685-152-19	SCREW +P 3X25 TYPE2 NON-SLIT	
11	7-685-154-19	SCREW +P 3X35 TYPE2 SLIT		22	7-621-773-86	SCREW +BVTT 2.6X4 (S)	
				23	*3-351-305-01	LEVER (REC 8)	
				24	7-687-233-11	SCREW (+ PTPWH) (2.6X6)	
				25	3-351-306-11	BUTTON (DIR)	
				26	3-351-380-01 3-351-380-11 3-351-380-21	(BLACK)...BUTTON (DIR MODE) (WHITE)...BUTTON (DIR MODE) (RED).....BUTTON (DIR MODE)	
				27	7-627-553-28	SCREW, PRECISION +P 2X2.5	
				901	*1-630-212-11	PC BOARD, LEAF SW	
				905	1-616-098-11	PC BOARD, HEAD CHANGE SWITCH	
				ANT1	1-501-375-11	ANTENNA, TELESCOPIC	
				SP901	1-503-492-11	SPEAKER	
				SP902	1-503-492-11	SPEAKER	

6-2. BOARDS, CABINET (REAR) SECTION

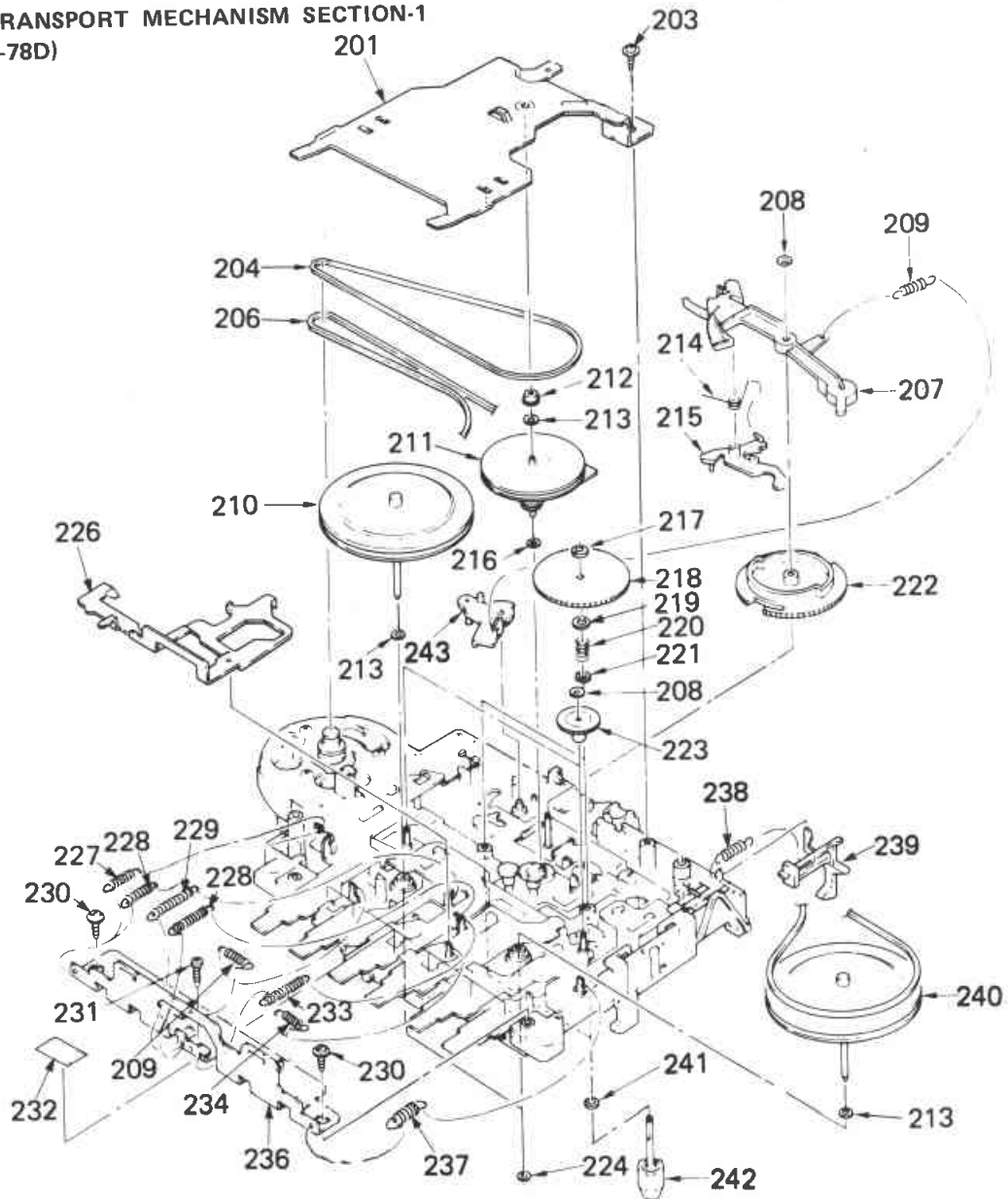
•IT: Italian model



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	
55	4-812-134-00	RIVET, NYLON 3.5	
56	*3-351-307-01	SHEET, INSULATING	
57	3-351-389-11	(BLACK)...CABINET (REAR)	
	3-351-389-21	(WHITE)...CABINET (REAR)	
	3-351-389-31	(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 COIL BATTERY (+,-)	
61	7-621-770-87	SCREW +P 2.6X5	
62	3-338-505-01	DRUM, TUNING CAPACITOR	
63	3-351-321-01	KNOB (TUNING)	
64	3-351-315-01	TERMINAL, PLUS	

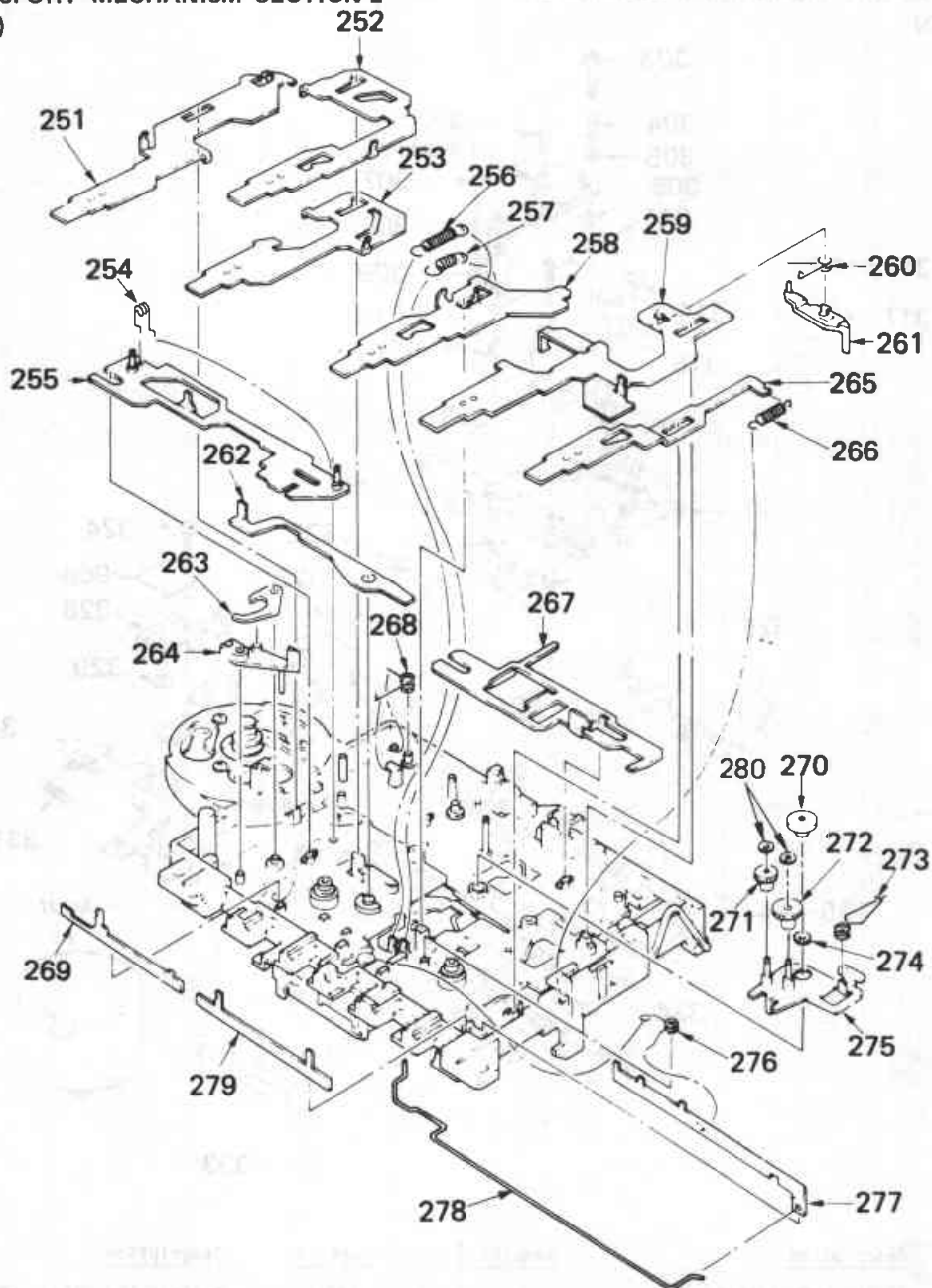
No.	Part No.	Description	Remarks
65	3-351-320-01	SPRING (MINUS)	
66	3-351-318-01	TERMINAL, ANTENNA	
67	*3-890-726-00	PLATE (C), SHIELD	
68	3-338-501-31	(BLACK)...KNOB (FINE TUNING)	
	3-338-501-41	(WHITE)...KNOB (FINE TUNING)	
	3-338-501-51	(RED)....KNOB (FINE TUNING)	
69	3-343-062-01	(BLACK)...KNOB (BAND)	
	3-343-062-11	(WHITE)...KNOB (BAND)	
	3-343-062-21	(RED)....KNOB (BAND)	
70	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)	
71	*3-352-339-01	(UK).....LABEL, MODEL NUMBER	
	*3-352-338-01	(AEP,IT)...LABEL, MODEL NUMBER	
902	*A-3270-611-A	MOUNTED PCB, AUDIO	
903	*1-630-411-11	PC BOARD, POWER	
904	*A-3266-532-A	(AEP,UK)...MOUNTED PCB, TUNER	
	*A-3266-533-A	(IT).....MOUNTED PCB, TUNER	

6-3. TAPE TRANSPORT MECHANISM SECTION-1
(MF-202-78D)



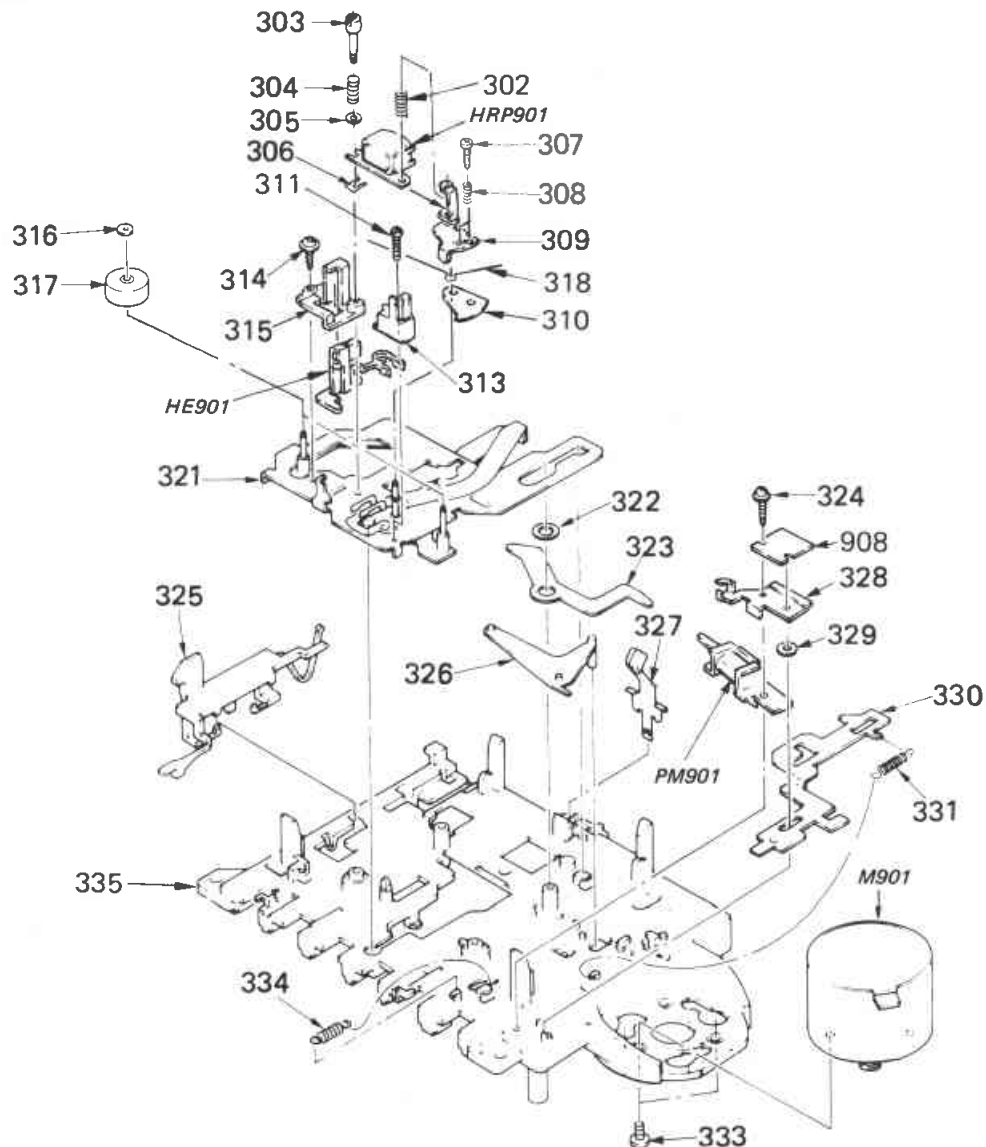
No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
201	*3-322-519-01	RETAINER, THRUST		222	3-322-553-01	GEAR, CAM	
203	7-685-134-19	SCREW (+ PTPWH) (2.6X8)		223	3-322-556-01	GEAR, FR	
204	3-657-035-XX	BELT, COUNTER		224	3-325-698-01	RING, RETAINING	
206	3-322-533-01	BELT		226	*3-330-606-01	LEVER, SELECTION, S.OFF	
				227	3-530-260-00	SPRING, TENSION	
207	3-330-833-01	LEVER (C), OA		228	3-322-522-01	SPRING, TENSION	
208	3-307-948-01	WASHER, NYLON					
209	3-322-527-01	SPRING, TENSION		229	3-328-103-01	SPRING, TENSION	
210	X-3341-303-1	FLYWHEEL (FW) ASSY		230	7-687-233-11	SCREW (+ PTPWH) (2.6X6)	
211	X-3322-540-1	DETECTION BLOCK ASSY		231	7-685-105-19	SCREW (2X8), + PTPWH	
				232	3-831-441-11	CUSHION (T)	
212	3-322-566-01	BEARING, PULLEY		233	3-322-526-01	SPRING, TENSION (POWER TENSION)	
213	3-701-437-11	WASHER					
214	3-322-534-01	SPRING		234	3-330-605-01	SPRING, TENSION	
215	3-330-826-01	LEVER (D), OA		236	*3-322-518-01	RETAINER, LEVER	
216	3-701-437-01	WASHER		237	3-322-691-01	SPRING, TENSION	
				238	3-313-384-01	SPRING, TENSION	
217	3-578-223-21	WASHER, NYLON		239	3-322-511-01	CLAW, ERASING PROTECTION	
218	3-322-508-01	GEAR, REEL					
219	3-322-660-01	WASHER (B)		240	X-3341-302-1	FLYWHEEL (RV) ASSY	
220	3-321-541-01	SPRING, COMPRESSION		241	3-545-715-00	WASHER	
221	3-322-659-01	WASHER (A)		242	X-3322-502-1	CLAW ASSY, REEL	
				243	3-330-827-01	LEVER (B), GEAR LOCK	

6.4. TAPE TRANSPORT MECHANISM SECTION-2
(MF-202-78D)



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
251	*3-330-829-11	LEVER (C), PAUSE BUTTON		266	3-322-528-01	SPRING, TENSION	
252	3-322-515-11	LEVER, REW BUTTON		267	*3-322-586-01	LEVER, DIRECTION	
253	*3-322-585-11	LEVER, FF BUTTON		268	3-322-577-01	SPRING	
254	3-322-578-01	SPRING		269	*3-322-587-01	PLATE (B), LOCK	
255	*X-3322-505-1	LEVER ASSY, FR		270	3-322-513-01	COLLAR	
256	3-322-520-01	SPRING, TENSION		271	3-343-145-01	GEAR (B), FWD	
257	3-322-693-01	SPRING, TENSION		272	3-343-146-01	GEAR (A), FWD	
258	*3-322-584-11	LEVER, PLAY BUTTON		273	3-322-576-01	SPRING	
259	*3-322-591-41	LEVER, REC BUTTON		274	3-322-689-01	RING	
260	3-322-575-01	SPRING		275	*X-3339-320-1	ARM ASSY (M), FWD GEAR	
261	3-322-554-01	ARM, REC LOCK		276	3-322-579-01	SPRING	
262	*3-322-517-01	LEVER, AMS		277	*3-322-589-01	LEVER, SWITCH	
263	3-322-555-01	LEVER (E), S.OFF		278	3-339-312-01	LEVER, SWITCH, POWER	
264	X-3330-610-1	LEVER (R) ASSY, S.OFF		279	*3-330-604-01	PLATE (C), LOCK	
265	*3-322-583-11	LEVER, STOP BUTTON		280	3-570-615-00	POLY-WASHER (DIA.1.2)	

6-5. TAPE TRANSPORT MECHANISM SECTION-3
(MF-202-78D)



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
302	3-341-163-01	SPRING, COMPRESSION		321	X-3337-810-1	CHASSIS (R) ASSY, HEAD	
303	3-322-567-11	SCREW, PAN, STEP		322	3-701-443-11	WASHER	
304	3-318-106-01	SPRING (H), COMPRESSION		323	*3-322-590-02	LEVER, DIRECTION RELEASE	
305	7-688-001-01	W 2, SMALL		324	7-685-105-19	TPG +P 2X8, TYPE 2, NON-SLIT	
306	3-578-138-01	SHIM		325	3-322-512-01	LEVER, EJECT	
	3-578-138-11	SHIM		326	3-322-514-01	LINK (A)	
307	7-627-851-27	SCREW, PRECISION +P 1.4X5		327	3-322-595-01	SPRING	
308	3-322-531-01	SPRING, COMPRESSION		328	*3-337-884-11	GUIDE (D), WIRING	
309	*3-341-161-01	LEVER, AZIMUTH		329	3-701-437-01	WASHER	
310	3-326-622-01	RETAINER, AZIMUTH		330	*3-330-601-11	LEVER, MANUAL BUTTON	
311	7-621-255-65	SCREW +P 2X10		331	3-322-528-01	SPRING, TENSION (POWER TENSION)	
313	3-326-625-01	RETAINER, PC BOARD		333	7-621-770-87	SCREW +P 2.6X5	
314	7-621-772-20	SCREW +B 2X5		334	3-330-633-01	SPRING, TENSION	
315	*3-339-701-01	GUIDE, TAPE		335	A-3102-109-A	CHASSIS ASSY, MECHANICAL	
316	3-307-948-01	WASHER, NYLON		908	*1-602-735-00	PC BOARD	
317	3-703-597-41	PINCH ROLLER, STANDARD		HE901	A-3114-042-A	ARM ASSY, EBF	
318	3-341-164-01	SPRING		HRP901	1-543-389-11	HEAD, MAGNETIC (REC/PB)	
				M901	A-3133-210-A	MOTOR ASSY	
				PM901	1-454-355-00	SOLENOID, PLUNGER	

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: μ F, PF: μ MF.

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

COILS
• MMH: mH, UH: μ H

SEMICONDUCTORS
In each case, U: μ , for example:
UA...: μ A..., UPA...: μ PA...,
UPC...: μ PC, UPD...: μ PD...

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

•IT: Italian model

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
901	*1-630-212-11	PC BOARD, LEAF SW	C39	1-130-048-00	(AEP,UK)...FILM 220PF 5% 50V
902	*A-3270-611-A	MOUNTED PCB, AUDIO	C39	1-136-010-00	(IT).....FILM 200PF 5% 50V
903	*1-630-411-11	PC BOARD, POWER	C40	1-136-307-11	FILM 0.0043MF 5% 50V
904	*A-3266-532-A	(AEP,UK)...MOUNTED PCB, TUNER	C41	1-130-013-00	FILM 390PF 5% 50V
	*A-3266-533-A	(IT).....MOUNTED PCB, TUNER	C42	1-130-011-00	FILM 270PF 5% 50V
905	1-616-098-11	PC BOARD, HEAD CHANGE SWITCH	C44	1-162-282-31	CERAMIC 100PF 10% 50V
906	1-533-217-31	HOLDER, FUSE	C45	1-162-282-31	CERAMIC 100PF 10% 50V
908	*1-602-735-00	PC BOARD	C46	1-162-282-31	CERAMIC 100PF 10% 50V
ANT1	1-501-375-11	ANTENNA, TELESCOPIC	C47	1-162-282-31	CERAMIC 100PF 10% 50V
C01	1-162-286-31	CERAMIC 220PF 10% 50V	C101	1-124-499-11	ELECT 1MF 20% 50V
C02	1-162-286-31	CERAMIC 220PF 10% 50V	C102	1-161-374-11	CERAMIC 0.0015MF 30% 16V
C03	1-164-096-11	CERAMIC 0.01MF 50V	C103	1-124-902-00	ELECT 0.47MF 20% 50V
C04	1-123-875-11	ELECT 10MF 20% 50V	C104	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C05	1-164-096-11	CERAMIC 0.01MF 50V	C105	1-162-286-31	CERAMIC 220PF 10% 50V
C07	1-164-056-11	CERAMIC 27PF 5% 50V	C106	1-124-446-11	ELECT 47MF 20% 10V
C08	1-102-961-00	(IT).....CERAMIC 30PF 5% 50V	C107	1-161-494-00	CERAMIC 0.022MF 25V
C08	1-102-962-00	(AEP,UK)...CERAMIC 27PF 5% 50V	C108	1-124-902-00	ELECT 0.47MF 20% 50V
C10	1-164-012-11	CERAMIC 3PF 0.25PF 50V	C109	1-162-832-11	CERAMIC 0.0027MF 10% 16V
C11	1-164-096-11	CERAMIC 0.01MF 50V	C110	1-161-494-00	CERAMIC 0.022MF 25V
C12	1-162-282-31	CERAMIC 100PF 10% 50V	C112	1-162-294-31	CERAMIC 0.001MF 10% 50V
C15	1-124-927-11	ELECT 4.7MF 20% 50V	C113	1-124-443-00	ELECT 100MF 20% 10V
C16	1-124-499-11	ELECT 1MF 20% 50V	C114	1-124-446-11	ELECT 47MF 20% 10V
C17	1-124-446-11	ELECT 47MF 20% 10V	C115	1-130-497-00	MYLAR 0.15MF 5% 50V
C18	1-124-446-11	ELECT 47MF 20% 10V	C116	1-124-472-11	ELECT 470MF 20% 10V
C19	1-164-096-11	CERAMIC 0.01MF 50V	C201	1-124-499-11	ELECT 1MF 20% 50V
C20	1-124-499-11	ELECT 1MF 20% 50V	C202	1-161-374-11	CERAMIC 0.0015MF 30% 16V
C21	1-124-925-11	ELECT 2.2MF 20% 50V	C203	1-124-902-00	ELECT 0.47MF 20% 50V
C22	1-124-443-00	ELECT 100MF 20% 10V	C204	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C23	1-124-902-00	ELECT 0.47MF 20% 50V	C205	1-162-286-31	CERAMIC 220PF 10% 50V
C24	1-124-927-11	ELECT 4.7MF 20% 50V	C206	1-124-446-11	ELECT 47MF 20% 10V
C25	1-124-463-00	ELECT 0.1MF 20% 50V	C207	1-161-494-00	CERAMIC 0.022MF 25V
C27	1-162-840-11	CERAMIC 0.012MF 10% 16V	C208	1-124-902-00	ELECT 0.47MF 20% 50V
C28	1-162-840-11	CERAMIC 0.012MF 10% 16V	C209	1-162-832-11	CERAMIC 0.0027MF 10% 16V
C29	1-124-463-00	ELECT 0.1MF 20% 50V	C210	1-161-494-00	CERAMIC 0.022MF 25V
C30	1-124-463-00	ELECT 0.1MF 20% 50V	C212	1-162-294-31	CERAMIC 0.001MF 10% 50V
C32	1-102-945-00	(AEP,UK)...CERAMIC 8PF 0.5PF 50V	C213	1-124-443-00	ELECT 100MF 20% 10V
C32	1-102-947-00	(IT).....CERAMIC 10PF 0.5PF 50V	C214	1-124-446-11	ELECT 47MF 20% 10V
C33	1-164-060-11	CERAMIC 39PF 5% 50V	C215	1-130-497-00	MYLAR 0.15MF 5% 50V
C34	1-164-096-11	CERAMIC 0.01MF 50V	C216	1-124-472-11	ELECT 470MF 20% 10V
C35	1-164-046-11	CERAMIC 10PF 0.5PF 50V	C301	1-161-494-00	CERAMIC 0.022MF 25V
C36	1-102-998-11	CERAMIC 5PF 0.5PF 50V	C302	1-123-875-11	ELECT 10MF 20% 50V
C38	1-102-722-00	(IT).....CERAMIC 27PF 5% 50V	C303	1-161-379-00	CERAMIC 0.01MF 30% 16V
C38	1-102-960-00	(AEP,UK)...CERAMIC 24PF 5% 50V	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	
C310	1-123-875-11	ELECT	10MF	20%	50V	
C311	1-124-556-11	ELECT	2200MF	20%	16V	
C312	1-161-494-00	CERAMIC	0.022MF		25V	
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	CERAMIC	0.001MF	10%	50V	
C602	1-124-927-11	ELECT	4.7MF	20%	50V	
C603	1-162-847-11	CERAMIC	0.047MF	10%	16V	
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}	1-567-166-00	FILTER, CERAMIC				
CF3}						
CF2	1-567-670-11	FILTER, CERAMIC				
CNJ1	*1-563-307-11	CONNECTOR (SOCKET) 2P				
CNJ801A}	*1-526-838-11	INLET, AC 2P (AC IN)				
CNP1			*1-568-259-11	PIN, CONNECTOR (PC BOARD) 2P		
CNP2	*1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P				
CNP3	*1-506-987-11	PIN, CONNECTOR (PC BOARD) 5P				
CNP4	*1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P				
CNP21	*1-506-987-11	PIN, CONNECTOR (PC BOARD) 5P				
CT5	1-141-290-41	CAP, VAR FILM TRIMMER				
CT6	1-141-290-41	CAP, VAR FILM TRIMMER				
CT7	1-141-260-00	TRIMMER, CERAMIC				
CT8	1-141-245-00	TRIMMER, CERAMIC				
CT9	1-141-328-11	CAP, TRIMMER				
CT1-4}	1-151-637-11	CAP, VARIABLE				
CV1-4}						
D1	8-719-911-19	DIODE 1SS119				
D2	8-719-911-19	DIODE 1SS119				
D11	1-807-738-11	DIODE SLR-34VR70F130 (LED)				
D303	8-719-911-19	DIODE 1SS119				
D304	8-719-911-19	DIODE 1SS119				
D601	8-719-911-19	DIODE 1SS119				
D602	8-719-911-19	DIODE 1SS119				
D603	8-719-911-19	DIODE 1SS119				
D604	8-719-911-19	DIODE 1SS119				

Ref.No.	Part No.	Description				
D605	1-807-738-11	DIODE SLR-34VR70F130 (LED)				
D606	1-807-738-11	DIODE SLR-34VR70F130 (LED)				
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	FUSE, TIME-LAG 1.25A				
FL1	1-236-022-11	FILTER, BAND PASS				
HE901	A-3114-042-A	ARM ASSY, EBF				
HRP901	1-543-389-41	HEAD, MAGNETIC (REC/PB)				
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	*1-422-180-11	COIL, AIR-CORE (RF)				
L2	1-459-815-11	COIL (WITH CORE)				
L3}	1-402-417-11	ANTENNA, FERRITE-ROD (LW/MW)				
L7}						
L4	1-406-253-11	COIL (OSC)				
L5	1-402-312-11	COIL (ANT)				
L6	1-406-280-11	COIL (OSC)				
L8	1-406-252-11	COIL (OSC)				
L9	*1-409-293-00	COIL, AIR CORE				
M901	A-3133-210-A	MOTOR ASSY				
MIC301	8-814-186-00	MICROPHONE, ELECTRET CONDENSER (MIC)				
PM901	1-454-355-00	SOLENOID, PLUNGER				
Q1	8-729-904-36	TRANSISTOR DTC114YS				
Q101	8-729-900-74	TRANSISTOR DTC143TS				
Q201	8-729-900-74	TRANSISTOR DTC143TS				
Q301	8-729-281-53	TRANSISTOR 2SC1815GR				
Q302	8-729-117-54	TRANSISTOR 2SA1175				
Q303	8-729-100-13	TRANSISTOR 2SC2001				
Q601	8-729-117-54	TRANSISTOR 2SA1175				
Q602	8-729-117-54	TRANSISTOR 2SA1175				
Q603	8-729-177-32	TRANSISTOR 2SD773-3				
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	

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

PARTS LIST

Ref.No.	Part No.	Description				
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	
R22	1-249-411-11	CARBON	330	5%	1/4W	
R23	1-249-429-11	CARBON	10K	5%	1/4W	
R24	1-249-413-11	CARBON	470	5%	1/4W	
R101	1-249-429-11	CARBON	10K	5%	1/4W	
R102	1-249-419-11	CARBON	1.5K	5%	1/4W	
R103	1-215-448-00	CARBON	13K	5%	1/4W	
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	CARBON	13K	5%	1/4W	
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	
R313	1-249-405-11	CARBON	100	5%	1/4W	
R315	△.1-217-640-11	FUSIBLE	3.3	5%	1/4W	F
R320	1-249-437-11	CARBON	47K	5%	1/4W	
R321	1-249-429-11	CARBON	10K	5%	1/4W	
R325	1-249-429-11	CARBON	10K	5%	1/4W	
R341	1-249-399-11	CARBON	33	5%	1/4W	

Ref.No.	Part No.	Description				
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	
R601	1-249-416-11	CARBON	820	5%	1/4W	
R602	1-249-410-11	CARBON	270	5%	1/4W	
R603	1-249-416-11	CARBON	820	5%	1/4W	
R604	1-249-411-11	CARBON	330	5%	1/4W	
R605	1-249-429-11	CARBON	10K	5%	1/4W	
R606	1-249-405-11	CARBON	100	5%	1/4W	
R607	1-249-434-11	CARBON	27K	5%	1/4W	
R608	1-249-429-11	CARBON	10K	5%	1/4W	
R609	1-249-414-11	CARBON	560	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)				
S1	1-571-147-11	SWITCH, LEVER SLIDE (BAND)				
S301	1-571-472-11	SWITCH, SLIDE (REC/PB)				
S302	1-571-547-11	SWITCH, SLIDE (FUNCTION)				
S303	1-554-222-00	SWITCH, SLIDE (FM MODE/ISS)				
S401	1-570-943-11	SWITCH, SLIDE (DIR)				
S601	1-570-441-11	SWITCH, LEAF (MD POWER SUPPLY)				
S602	1-570-012-11	SWITCH, LEAF (FF/REW)				
S603	1-552-864-00	SWITCH, LEAF (REV)				
S604	1-571-832-11	SWITCH, PUSH (1 KEY)(DIR MODE)				
SP901	1-503-492-11	SPEAKER				
SP902	1-503-492-11	SPEAKER				
T1	1-404-355-00	TRANSFORMER, IF				
T301	1-433-268-00	TRANSFORMER, BIAS OSCILLATOR				
T801	△.1-448-760-21	(UK).....TRANSFORMER, POWER				
T801	△.1-448-761-21	(AEP,IT)...TRANSFORMER, POWER				

ACCESSORY & PACKING MATERIAL

△.1-555-234-00	(AEP,IT)...CORD, POWER
△.1-558-032-11	(UK).....CORD, POWER
*3-351-378-01	CUSHION (LEFT) (RIGHT)
*3-352-937-01	INDIVIDUAL CARTON
3-750-178-11	(AEP,IT,UK)...MANUAL, INSTRUCTION (ENGLISH,FRENCH,SPANISH,PORTUGUESE)
3-750-178-41	(AEP,IT).....MANUAL, INSTRUCTION (GERMAN,DUTCH,SWEDISH,ITALIAN)

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

