

CFM-10/10L

SERVICE MANUAL

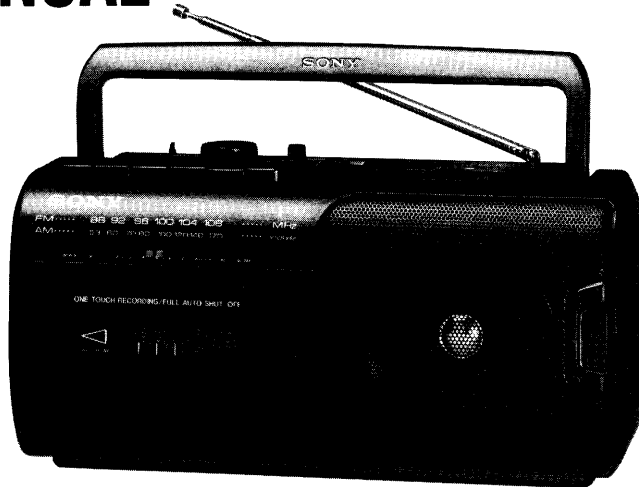


Photo : CFM-10

US Model
Canadian Model
UK Model
E Model
Australian Model
CFM-10
AEP Model
CFM-10/10L

Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	MF-10C

SPECIFICATIONS

Frequency range

CFM-10

US, Canadian, E models

FM : 87.6-108MHz

AM : 530-1,710kHz

AEP model

FM : 87.6-107MHz

AM : 531-1,602kHz

Italian model

FM : 87.5-108MHz

AM : 526.5-1,606.5kHz

Other models

FM : 87.6-108MHz

AM : 530-1,605kHz

CFM-10L

FM : 87.6-108MHz

LW : 153-279kHz

IF

FM : 10.7MHz

AM/LW : 455kHz

Antennas

FM : Telescope antenna

AM : Built-in ferrite bar antenna

Recording system

2-track, mono

Frequency response

100-8,000Hz

Speakers

Full-range : 7.7 cm (3 1/8 inches) dia. x1

Power output (US, Canadian, E, Australian models)

0.9 W

(at 10% harmonic distortion in DC operation)

Maximum power output

(AEP, UK, Italian, Singapore models)

0.9W

Output (EXCEPT US, Canadian, E models)

Earphone jack, 32 ohms impedance

Power requirements

US, Canadian, E models

120V AC, 60Hz

AEP, Italian models

220-230V AC, 50Hz

UK, Australian models

230-240V AC, 50Hz

Other models

110-120V/220-240V AC selectable, 50/60Hz

6V DC, four size D (R20) batteries

Power consumption

5W in AC operation

Battery life

FM recording	Playback
Sony R20P : Approx. 24 hours	Approx. 20hours
Sony LR20 alkaline : Approx. 55 hours	Approx. 50 hours

Dimensions

Approx. 272x130x121.5 mm (w/h/d)

(10³/₄x5¹/₈x4⁷/₈ inches) incl. projecting parts and controls

Mass

US, Canadian, E models

Approx. 1.7kg (3lb 12 oz) including batteries

Other models

Approx. 1.5kg (3lb 5 oz) including batteries

Design and specifications are subject to change without notice.



RADIO CASSETTE-CORDER
SONY®

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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.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE \triangle 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.

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.

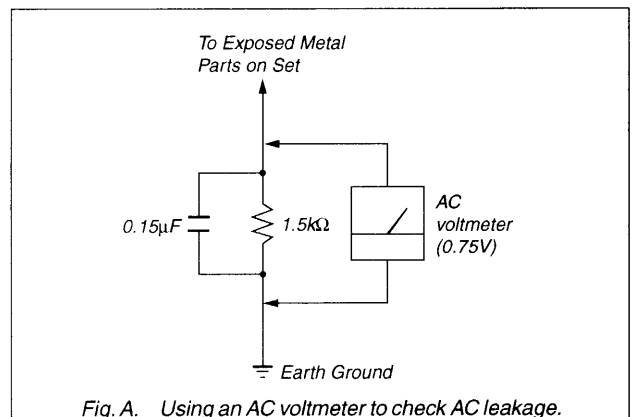
LEAKAGE TEST

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 0.5mA (500 microamperes).

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.

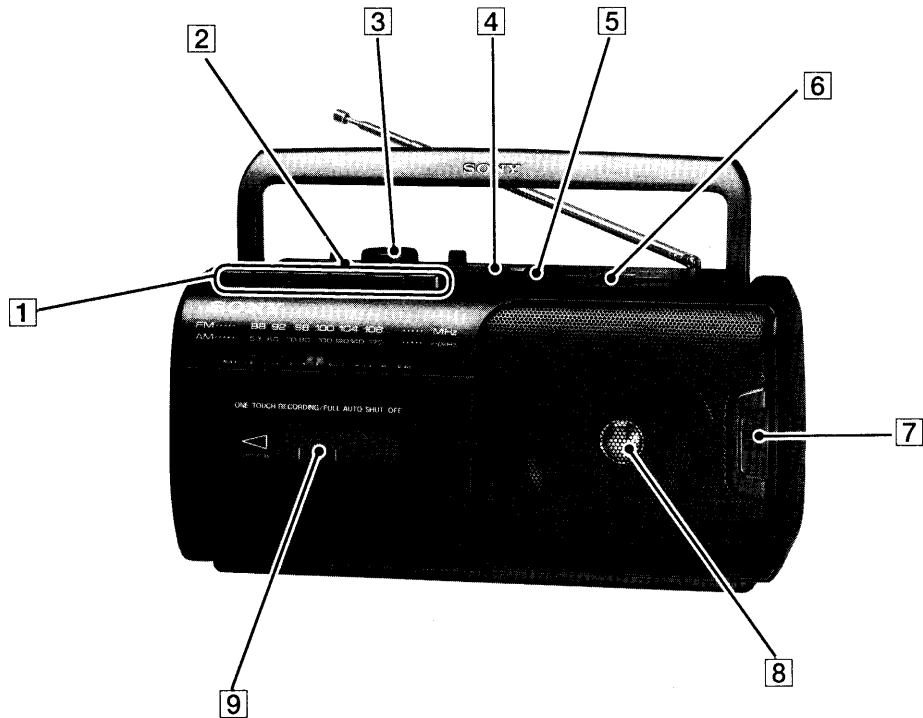
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)



SECTION 1







GENERAL

LOCATION AND FUNCTION CONTROLS



1 EARPHONE 

2 TAPE OPERATION BUTTONS

-  PAUSE
-  STOP/EJECT
-  FF (fast-forward)
-  REW (rewind)
-  PLAY (Play back)
-  REC (Record)

3 VOLUME KNOB

4 FUNCTION KNOB (TAPE (RADIO OFF) ↔ FM ↔ AM)
(CFM-10)

FUNCTION KNOB (TAPE (RADIO OFF) ↔ FM ↔ LW)
(CFM-10L)

5 OPR/BATT INDICATOR

6 TUNING KNOB

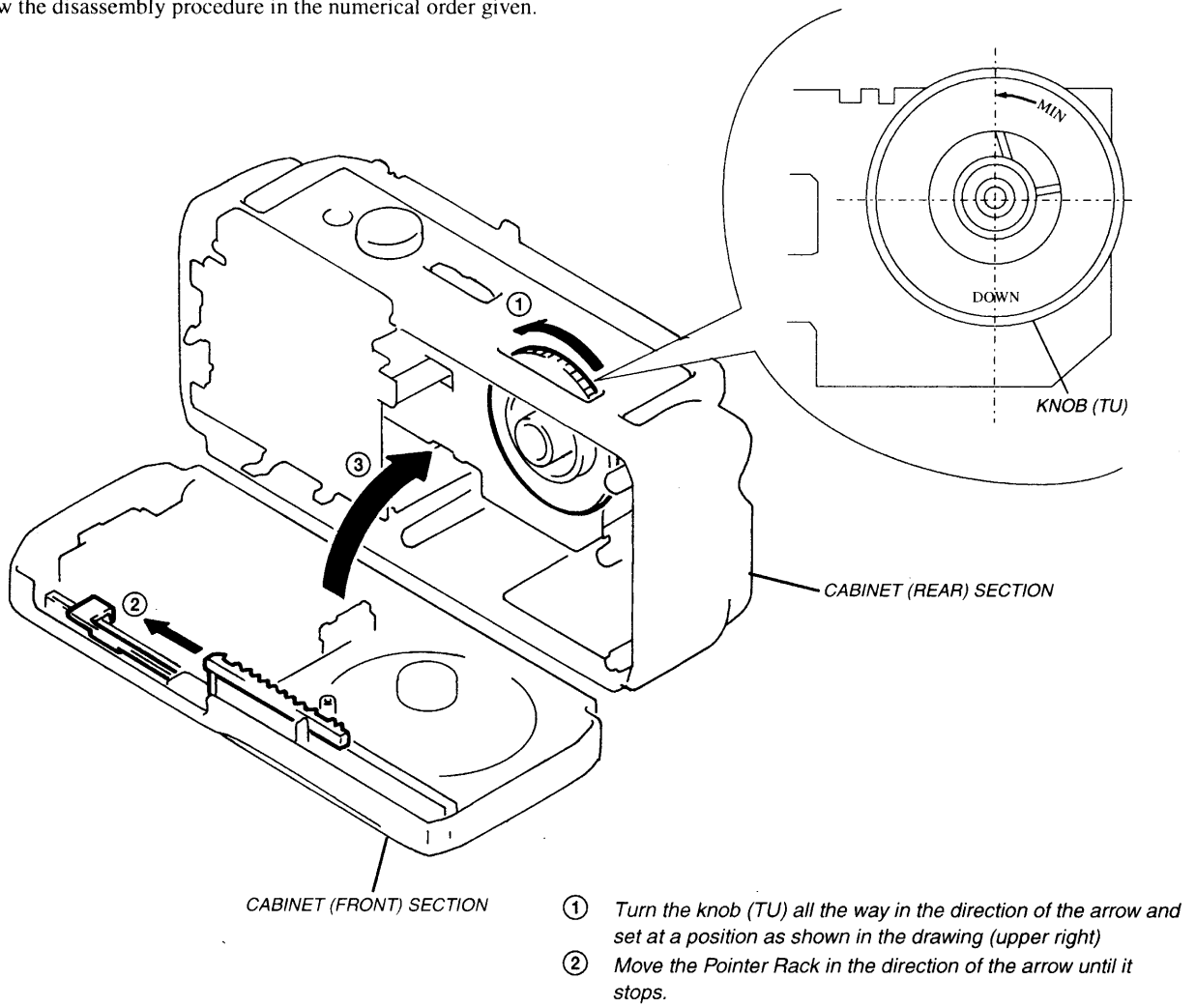
7 MIC (built-in)

8 SPEAKER

9 TAPE COMPARTMENT

SECTION 2 DIAL POINTER SETTING

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



SECTION 3 ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS AND MEASUREMENTS

PRECAUTION

- Clean the following parts with a denatured-alcohol-moistened swab :
 - record/playback head pinch roller
 - erase head rubber belts
 - capstan idlers
- Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Torque	Torque Meter	Meter Reading
Playback	CQ-102C	25 - 60g•cm (0.35 - 0.83 oz•inch)
Rewind	CQ-201B	55 - 140g•cm (0.77 - 1.94 oz•inch)
Fast Forward	CQ-201B	55 - 140g•cm (0.77 - 1.94 oz•inch)
Back Tention	CQ-102C	1 - 5g•cm (0.02 - 0.06 oz•inch)

Tape Tension Measurement

Torque Meter	Meter Reading
CQ-403A	more than 170g (5.99 oz)

3-2. ELECTRICAL ADJUSTMENTS

CASSETTE SECTION

Note : The adjustment should be performed in the order given in this service manual.

- Switches and controls should be set as follows unless otherwise specified.

FUNCTION TAPE (RADIO OFF)
VOLUME max

Standard Output Level

	SP OUT	EARPHONE
load impedance	12Ω	32Ω
output level	0.775V (0dB)	0.25V (-10dB)

Test Tape

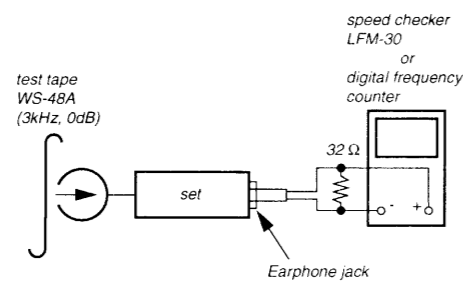
Type	Signal	Used for
WS-48A	3kHz, 0dB	Tape Speed Adjustment
P-4-A063	6.3kHz, -10dB	Azimuth Adjustment

0 dB=0.775V

● Tape Speed Adjustment

Procedure :

Mode : playback

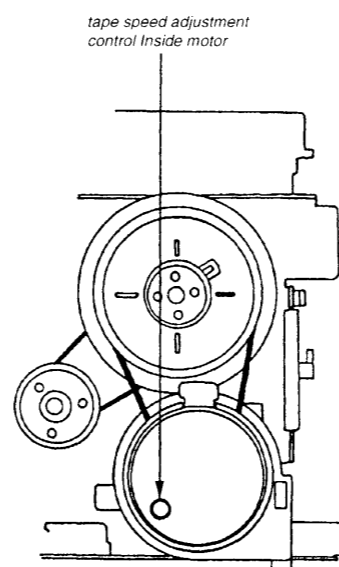


Adjustment Value :

Speed checker	Digital frequency counter
-1 to +1%	2,970 - 3,030 Hz

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

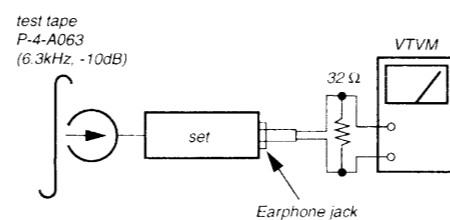
Adjustment Location :



● Record/Playback Head Azimuth Adjustment

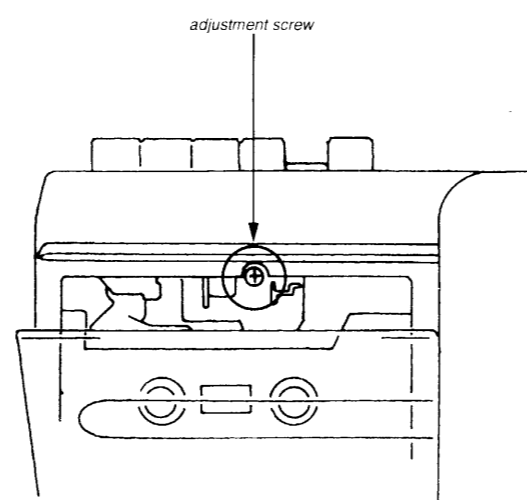
Procedure :

Mode : playback



Turn the adjustment screw for the maximum output levels.

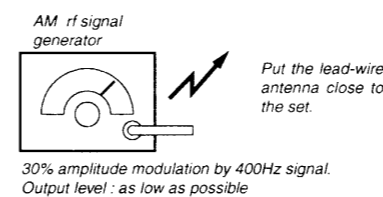
Adjustment Location :



RADIO SECTION

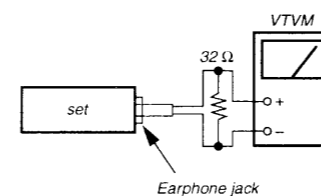
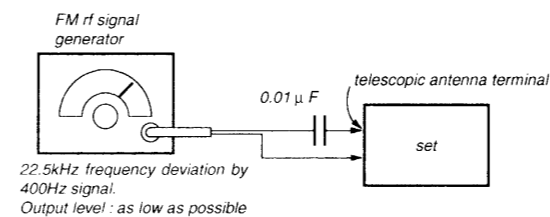
● AM Section

BAND switch : AM



● FM Section

BAND switch : FM



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

no mark : US, Canadian, E. Australian, Singapore model
() : AEP, UK model
(()) : Italian model

AM IF ALIGNMENT		
Adjust for a maximum reading on VTVM.		
T2	455kHz	(455kHz) ((455kHz))

CFM-10

AM FREQUENCY COVERAGE ADJUSTMENT		
Adjust for a maximum reading on VTVM.		
L6	520kHz	(520kHz) ((516kHz))
CT2	1,780kHz	(1,680kHz) ((1,630kHz))

AM TRACKING ADJUSTMENT		
Adjust for a maximum reading on VTVM.		
L3	620kHz	(620kHz) ((620kHz))
CT1	1,400kHz	(1,400kHz) ((1,400kHz))

CFM-10L

LW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L6	145kHz
CT2	300kHz

LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L3	160kHz
CT1	260kHz

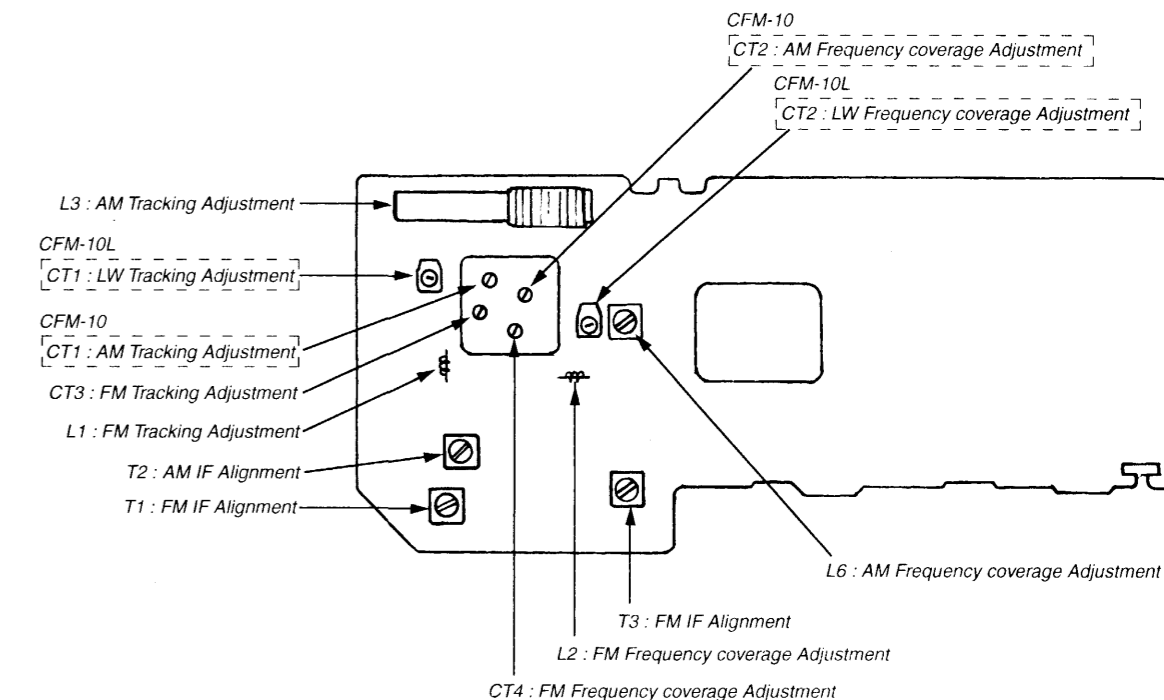
FM TRACKING ADJUSTMENT		
Adjust for a maximum reading on VTVM.		
T1, T3	10.7MHz	(10.7MHz) ((10.7MHz))

FM FREQUENCY COVERAGE ADJUSTMENT		
Adjust for a maximum reading on VTVM.		
L2	86.5MHz	(87.0MHz) ((87.35MHz))
CT4	109.5MHz	(108.3MHz) ((108.25MHz))

FM TRACKING ADJUSTMENT		
Adjust for a maximum reading on VTVM.		
L1	86.5MHz	(87.0MHz) ((87.35MHz))
CT3	109.5MHz	(108.3MHz) ((108.25MHz))

Adjustment Location :

[TUNER BOARD] - COMPONENT SIDE -



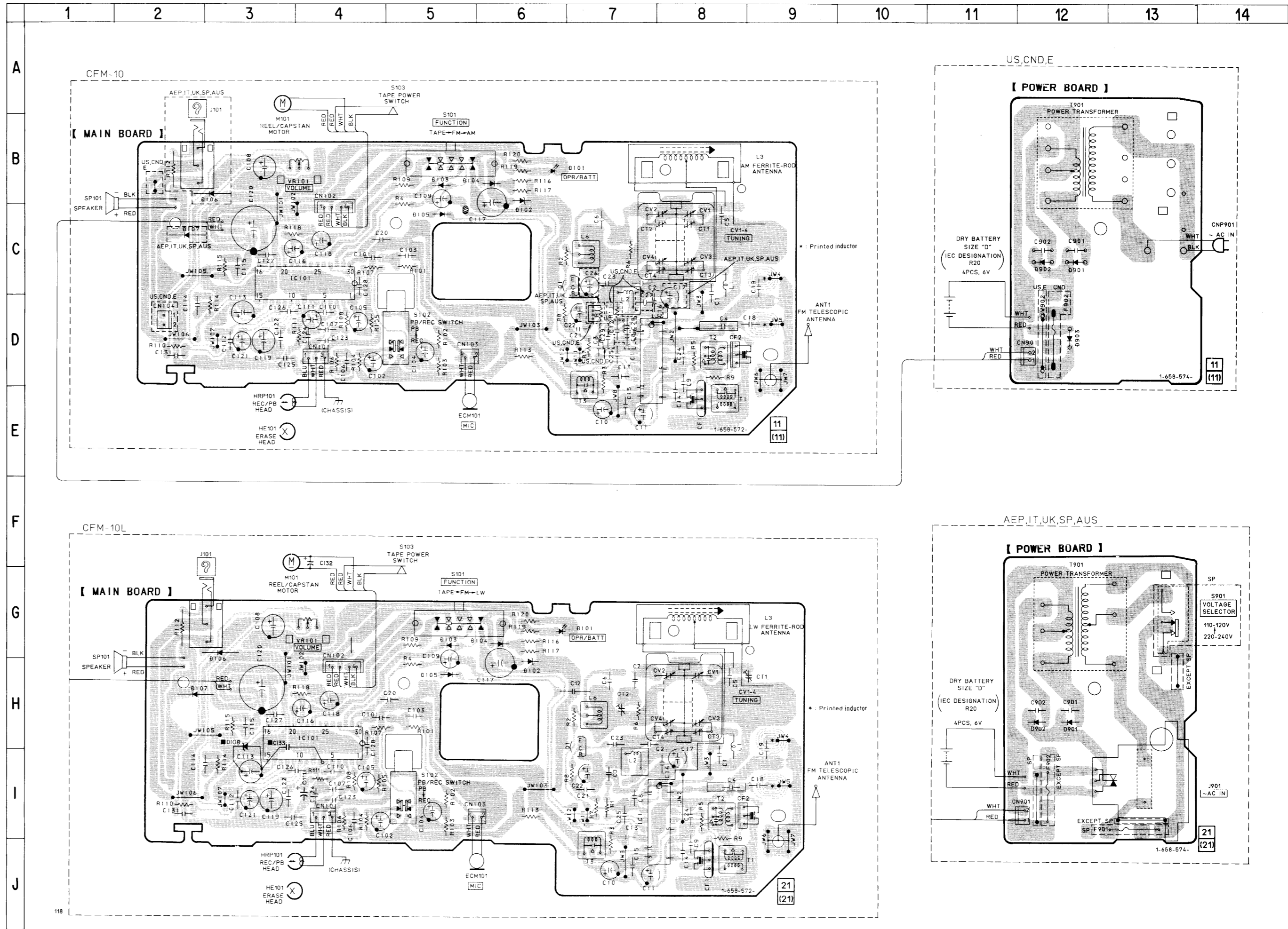
SECTION 4
DIAGRAMS

• SEMICONDUCTOR LOCATION

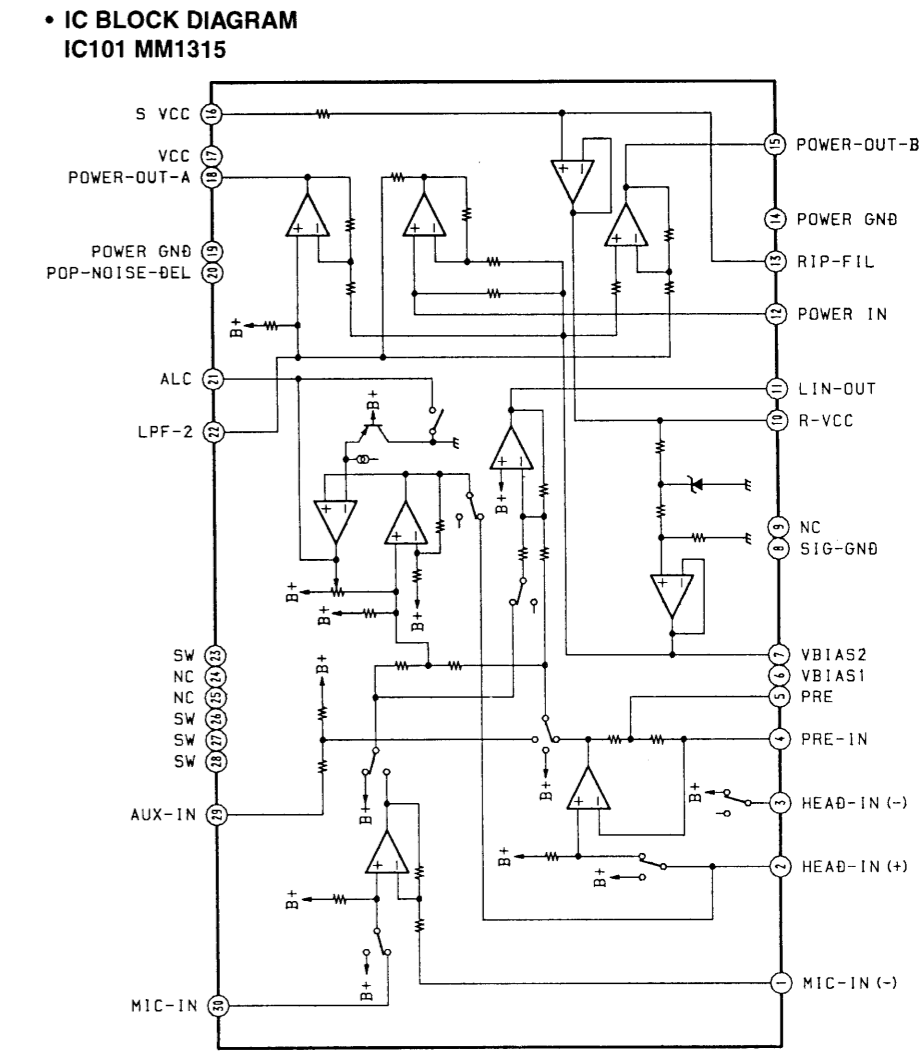
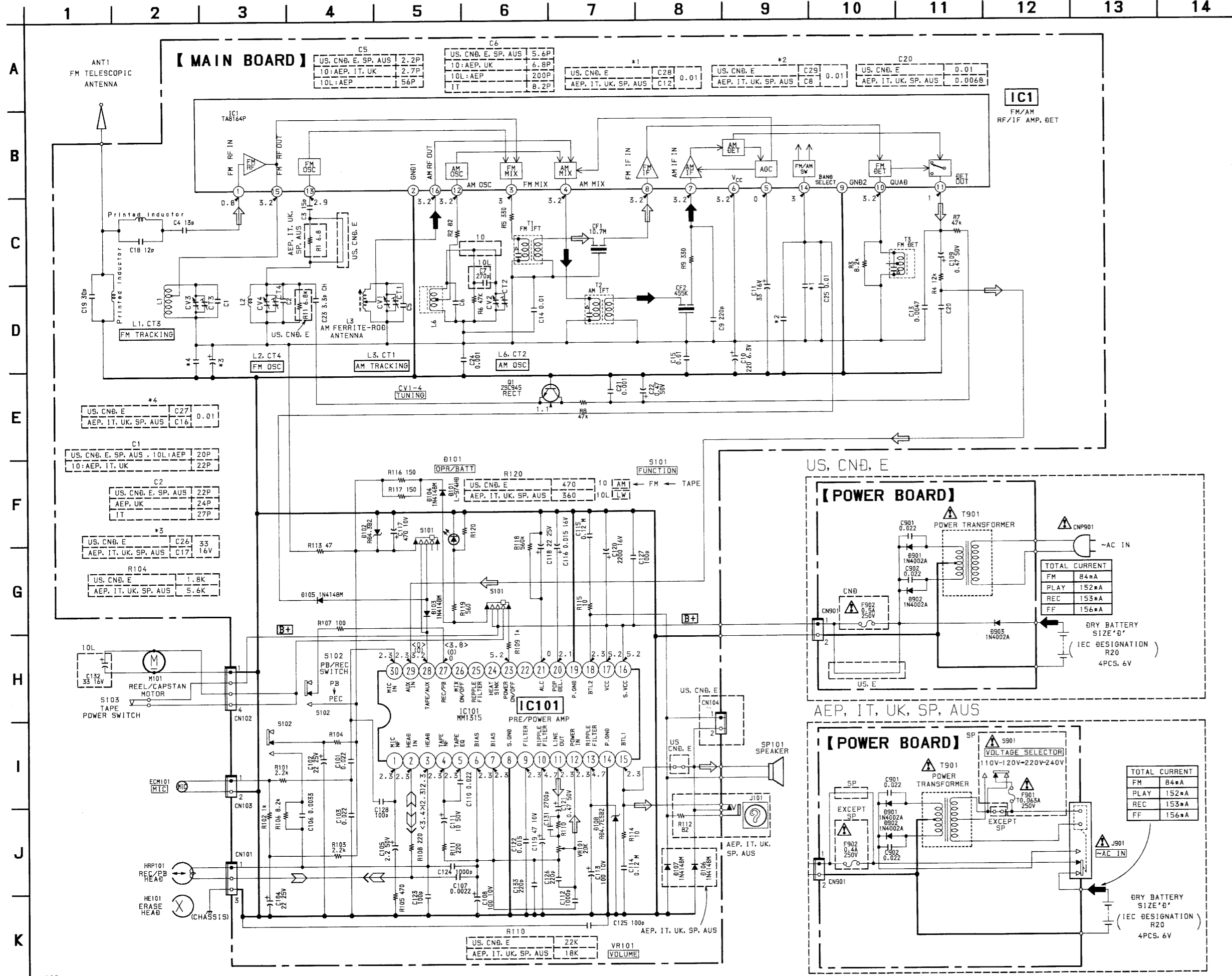
Ref. No.	Location (CFM-10)	Location (CFM-10L)
D101	B-6	G-6
D102	B-6	H-6
D103	B-5	G-5
D104	B-6	G-6
D105	C-5	H-5
D106	B-3	G-3
D107	C-2	H-2
D901	C-12	H-12
D902	C-12	H-12
D903	D-12	H-12
IC1	D-7	I-7
IC101	C-4	H-4
Q1	C-7	H-7

Note :
 • Δ : internal component.
 • [Pattern] : Pattern from the side which seeing.
 • Abbreviation
 CND : Canadian
 IT : Italian
 SP : Singapore
 AUS : Australian

4-1. PRINTED WIRING BOARDS



4-2. SCHEMATIC DIAGRAM



- Note :**
- All capacitors are in μF unless otherwise noted. pF: μF 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.
- Note :**
- The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.
- Note :**
- Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
- B+ :** B+ Line
- \square : panel designation.
 - \square : adjustment for repair.
 - Total current is measured with no cassette installed.
 - Power voltage is dc 6V and fed with regulated dc power supply from battery terminal.
 - Voltages are dc with respect to ground under no-signal (detuned) conditions.
 - no mark : FM
 - () : PLAY
 - < > : REC
 - Voltages are taken with a VOM (10M Ω).
 - Voltage variations may be noted due to normal production tolerances.
 - Signal path.
 - \square : FM
 - \square : PB
 - \square : REC
 - Abbreviation
 - CND : Canadian
 - IT : Italian
 - SP : Singapore
 - AUS : Australian

SECTION 5 EXPLODED VIEWS

NOTE :

- XX, -X mean standardized parts, so they may have some difference from the original one.

- The construction parts of an assembled part are indicated with a collation number in the remark column.

● Color indication of Appearance Parts

Example :
KNOB, BALANCE (WHITE) (RED)
↑ ↑
Parts color Cabinet's color

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- The mechanical parts with no reference number in the exploded views are not supplied.

- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

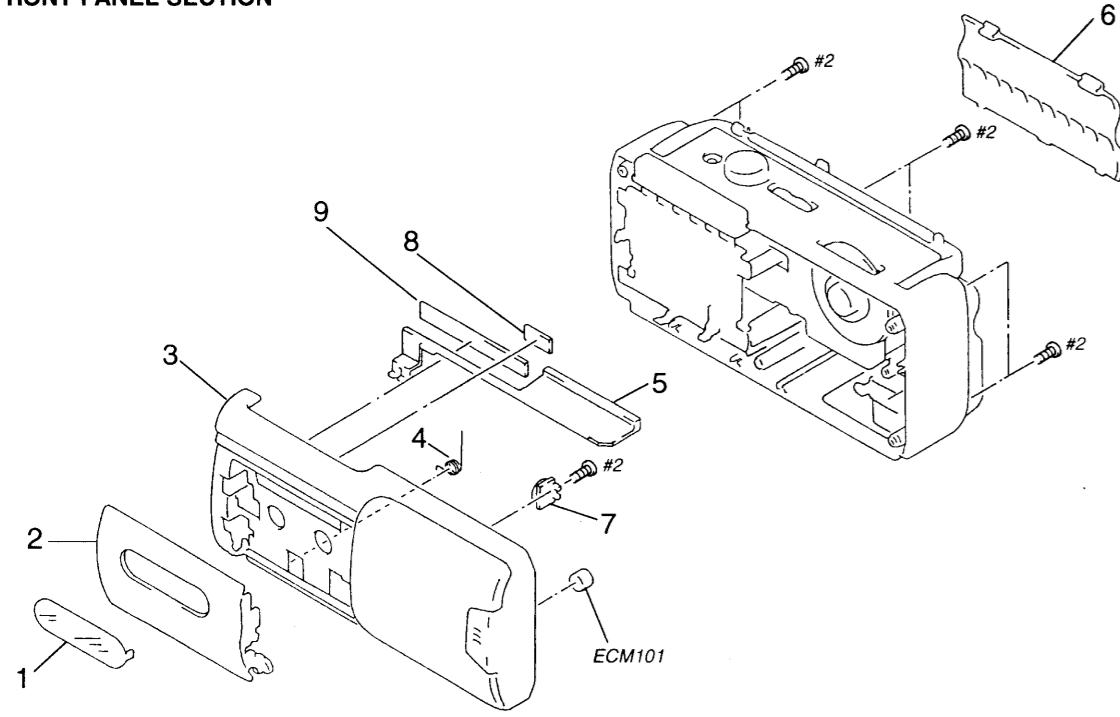
● Abbreviation

CND : Canadian
IT : Italian
SP : Singapore
AUS : Australian

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

Les composants identifiés par une marque Δ ou trait en pointillés avec la marque Δ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

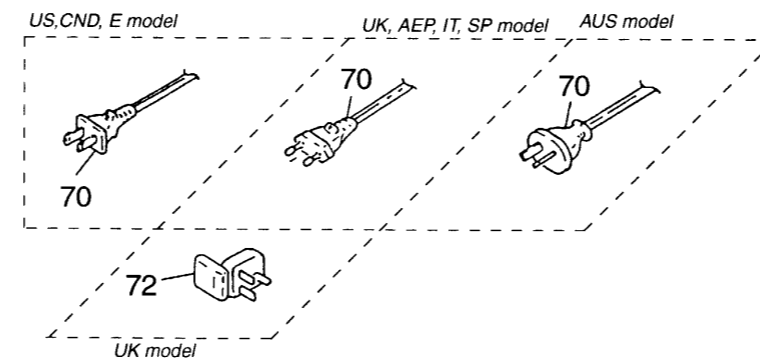
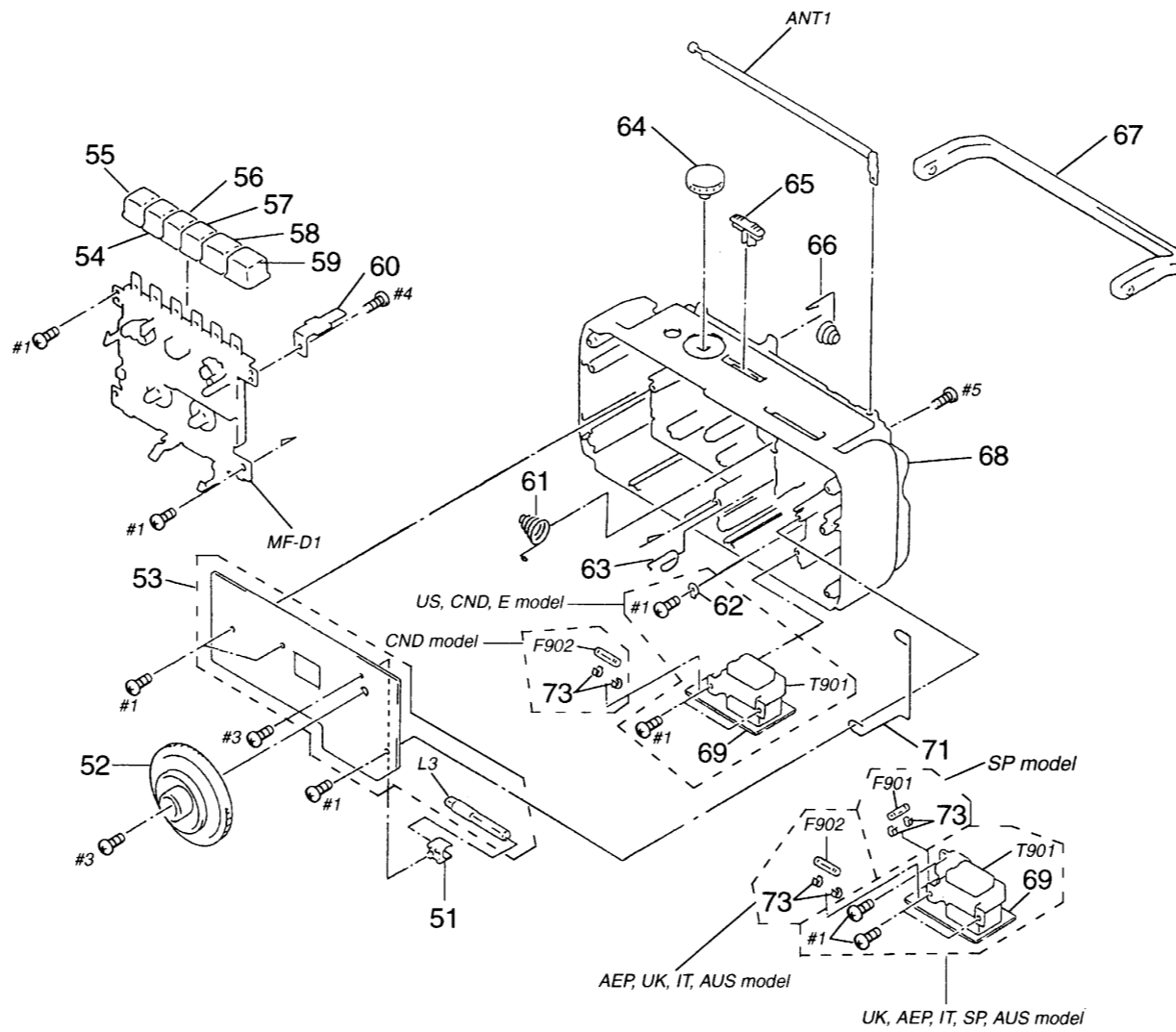
5-1. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
1	3-928-614-01	WINDOW, CASSETTE	
2	3-928-610-01	HOLDER (A), CASSETTE (BLACK)	
2	3-928-610-11	HOLDER (A), CASSETTE (WHITE)	
3	X-3371-312-1	CABINET (FRONT) ASSY, SUB (BLACK)	(10:CND,UK,AEP,AUS,IT/10L)
			(10:US,CND/10L)
3	X-3371-323-1	CABINET (FRONT) SUB ASSY (WHITE) (CND)	
3	X-3371-325-1	CABINET (FRONT) SUB ASSY (BLACK)	(10:UK,AEP)
3	X-3371-326-1	CABINET (FRONT) SUB ASSY (WHITE) (10L)	
3	X-3371-327-1	CABINET (FRONT) SUB ASSY (BLACK) (IT)	(10:AEP,UK,AUS,IT/10L)
3	X-3371-328-1	CABINET (FRONT) SUB ASSY (WHITE) (IT)	
3	X-3371-329-1	CABINET (FRONT) SUB ASSY (WHITE)	(10:UK,AEP)
3	X-3371-996-1	CABINET (FRONT) ASSY (BLACK) (E)	

Ref. No.	Part No.	Description	Remark
3	X-3371-998-1	CABINET (FRONT) ASSY (BLACK) (AUS,SP)	
3	X-3371-999-1	CABINET (FRONT) ASSY (WHITE) (AUS)	
4	3-911-263-01	SPRING, CASSETTE	
5	3-928-612-01	RACK, POINTER	
6	3-928-615-01	LID, BATTERY CASE (BLACK) (US,CND,E)	
6	3-928-615-11	LID, BATTERY CASE (WHITE) (CND)	
6	3-928-616-01	LID, BATTERY CASE (BLACK)	(10:AEP,UK,AUS,IT,SP/10L)
6	3-928-616-11	LID, BATTERY CASE (WHITE)	(10:AEP,UK,AUS,IT/10L)
7	3-922-112-11	DAMPER	
* 8	1-660-409-11	PC BOARD, GUIDE (B)	
* 9	1-660-408-11	PC BOARD, GUIDE (A)	
ECM101	8-814-186-00	MICROPHONE, ELECTRET CONDENSER	

5-2. REAR CABINET SECTION



Ref. No.	Part No.	Description	Remark
* 51	3-913-791-01	HOLDER, BAR ANTENNA	
52	3-928-617-01	KNOB (TU) (BLACK)	
52	3-928-617-01	KNOB (TU) (WHITE)	
* 53	A-3305-480-A	MAIN BOARD, COMPLETE (US,CND,E)	
* 53	A-3305-482-A	MAIN BOARD, COMPLETE (10L)	
* 53	A-3305-484-A	MAIN BOARD, COMPLETE (10:UK,AEP)	
* 53	A-3305-486-A	MAIN BOARD, COMPLETE (IT)	
* 53	A-3305-729-A	MAIN BOARD, COMPLETE (SP)	
* 53	A-3305-737-A	MAIN BOARD, COMPLETE (AUS)	
54	3-928-624-01	BUTTON (ST/EJ) (BLACK)	
54	3-928-624-11	BUTTON (ST/EJ) (WHITE)	
54	3-928-624-21	BUTTON (ST/EJ) (SILVER)	
55	3-928-625-01	BUTTON (PAUSE) (BLACK)	
55	3-928-625-11	BUTTON (PAUSE) (WHITE)	
55	3-928-625-21	BUTTON (PAUSE) (SILVER)	
56	3-928-623-01	BUTTON (FF) (BLACK)	
56	3-928-623-11	BUTTON (FF) (WHITE)	
56	3-928-623-21	BUTTON (FF) (SILVER)	
57	3-928-622-01	BUTTON (REW) (BLACK)	
57	3-928-622-11	BUTTON (REW) (WHITE)	
57	3-928-622-21	BUTTON (REW) (SILVER)	
58	3-928-620-01	BUTTON (PLAY) (BLACK)	
58	3-928-620-11	BUTTON (PLAY) (WHITE)	
58	3-928-620-21	BUTTON (PLAY) (SILVER)	
59	3-928-621-01	BUTTON (REC) (BLACK)	
59	3-928-621-11	BUTTON (REC) (WHITE)	
59	3-928-621-21	BUTTON (REC) (SILVER)	
* 60	3-928-627-01	SPRING, REC	
61	3-928-324-01	SPRING (MINUS), BATTERY (EXCEPT:SP)	
61	3-928-629-01	SPRING (MINUS), BATTERY (SP)	
* 62	1-660-407-11	PC BOARD, CORD STOPPER (US,CND,E)	
63	3-928-323-01	SPRING (PLUS), BATTERY	
64	3-928-618-01	KNOB (VOL) (BLACK)	

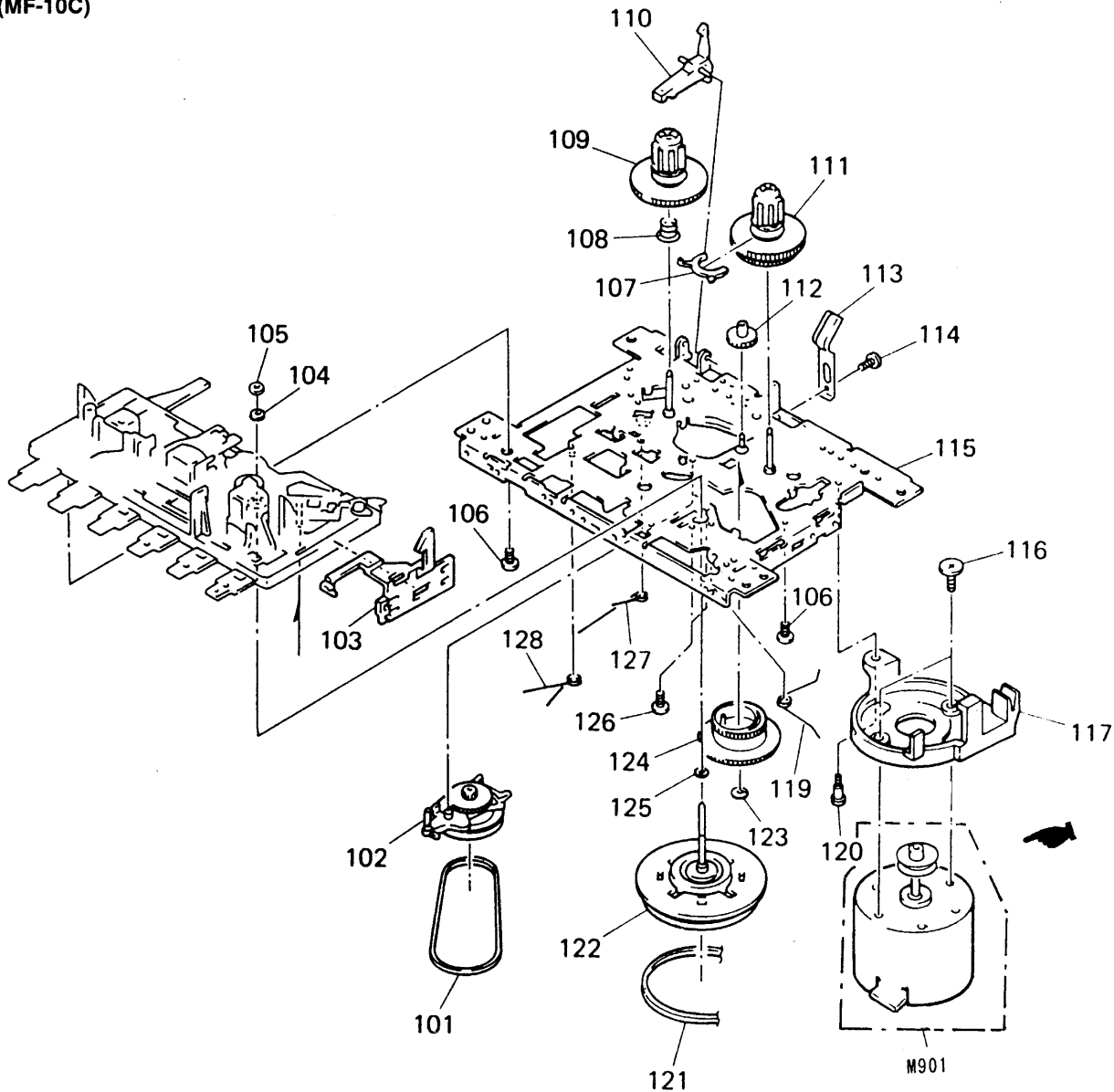
Ref. No.	Part No.	Description	Remark
64	3-928-618-11	KNOB (VOL) (WHITE)	
65	3-928-619-01	KNOB (FUNCTION) (BLACK)	
65	3-928-619-11	KNOB (FUNCTION) (WHITE)	
66	3-911-268-01	SPRING (+-), BATTERY	
67	3-928-611-01	HANDLE (BLACK)	
67	3-928-611-11	HANDLE (WHITE)	
68	3-928-608-01	CABINET (REAR) (BLACK) (US,CND,E)	
68	3-928-608-11	CABINET (REAR) (WHITE) (CND)	
68	3-928-609-01	CABINET (REAR) (BLACK) (10:UK,AEP,IT,AUS)	
68	3-928-609-11	CABINET (REAR) (WHITE) (10:UK,AEP,IT,AUS)	
68	3-928-609-21	CABINET (REAR) (BLACK) (10L)	
68	3-928-609-31	CABINET (REAR) (WHITE) (10L)	
68	3-928-609-41	CABINET (REAR) (BLACK) (SP)	
69	1-658-574-11	POWER BOARD (US,CND,E)	
69	1-658-574-21	POWER BOARD (AEP,IT,UK,SP,AUS)	
Δ 70	1-776-131-11	CORD, POWER (US,CND,E)	
Δ 70	1-696-819-11	CORD, POWER (AUS)	
Δ 70	1-769-412-11	CORD, POWER (10:UK,AEP,IT,SP/10L)	
Δ 70	1-551-983-00	CORD, POWER (E)	
71	3-928-630-01	TERMINAL, ANTENNA	
Δ 72	1-770-019-21	ADAPTOR, CONVERSION 3P (UK)	
73	1-533-233-11	HOLDER, FUSE	
ANT1	1-501-820-11	ANTENNA, TELESCOPIC	
Δ F901	1-532-233-00	FUSE (T0.0635A 250V) (SP)	
Δ F902	1-532-066-00	FUSE (T0.4A 250V) (AEP,IT,UK,AUS)	
Δ F902	1-532-819-11	FUSE (0.5A 250V) (CND)	
L3	1-501-805-11	ANTENNA, FERRITE-ROD (US,CND,E,SP,AUS)	
L3	1-501-817-11	ANTENNA, FERRITE-ROD (10:AEP,IT,UK)	
L3	1-501-816-11	ANTENNA, FERRITE-ROD (LW) (10L)	
Δ T901	1-429-272-11	TRANSFORMER, POWER (US,CND,E)	
Δ T901	1-429-328-11	TRANSFORMER, POWER (AEP,IT,UK,AUS)	
Δ T901	1-429-330-11	TRANSFORMER, POWER (SP)	

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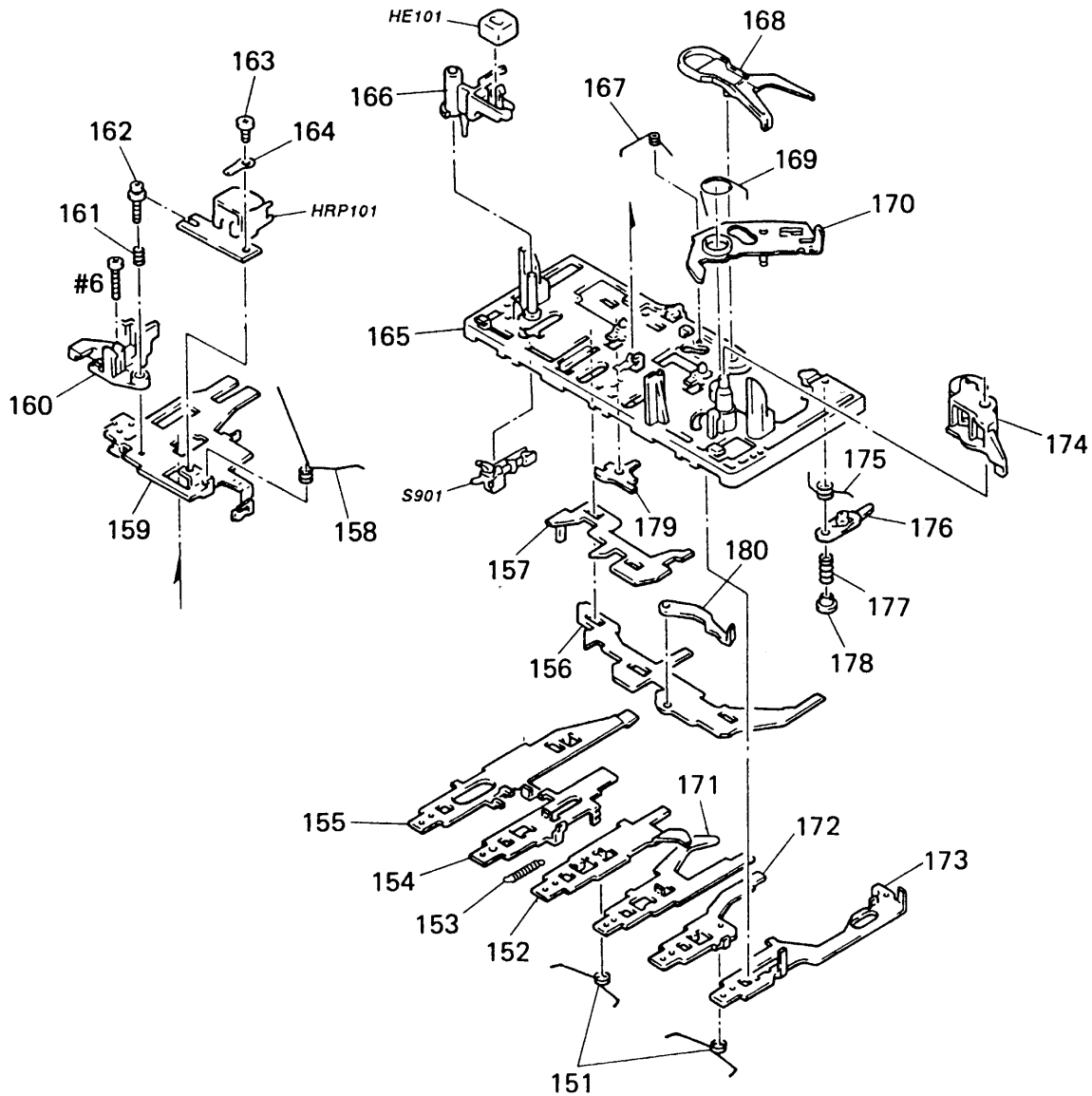
REVISED

5-3. MECHANISM DECK SECTION (1)
(MF-10C)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	3-596-931-01	BELT, RF		116	3-598-855-01	MOTOR COLLER SCREW	
102	3-913-441-01	CLUTCH ASSY, RF		117	3-913-435-01	BRACKET, MOTOR	
103	3-348-366-01	LEVER, EJECT SLIDE		118	3-395-984-01	PULLEY, MOTOR	
104	3-913-442-01	WASHER, POLY-SLIDER		119	3-348-336-01	SPRING	
105	3-913-434-01	WASHER, POLY-SLIDER		120	3-395-995-01	SCREW, MB	
106	3-348-370-01	SCREW (M2X5), P TIGHT BIND		121	3-913-432-01	BELT, MAIN	
107	3-348-380-01	SENSOR		122	3-348-356-01	FLYWHEEL ASSY	
108	3-913-429-01	SPRING, BACK TENSION		123	3-348-373-01	WASHER, POLYETHYLENE SLIDER	
109	3-913-430-01	REEL ASSY, SUPPLY		124	3-348-353-01	GEAR, CAM	
110	3-348-368-01	LEVER, REC SAFETY		125	3-913-433-01	WASHER, POLY-SLIDER	
111	3-913-431-01	REEL ASSY, TAKE-UP		126	3-348-371-01	SCREW (M2X4.5), CAMERA TAPPING	
112	3-348-357-01	GEAR, FF		127	3-348-341-01	SPRING	
113	3-348-367-01	PLATE, SP, PACK RETAINER		128	3-348-337-01	SPRING	
114	3-348-369-01	SCREW (M2X3), C TIGHT		M901	X-3372-889-1	MOTOR ASSY	
115	3-348-335-01	CHASSIS ASSY					

5-4. MECHANISM DECK SECTION (2)
(MF-10C)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	3-348-334-01	SPRING (A)		168	3-913-439-01	LEVER, SENSING	
* 152	3-394-739-01	LEVER, REW BUTTON		169	3-348-351-01	SPRING	
153	3-913-436-01	SPRING (S), PLAY BUTTON LEVER		* 170	3-913-440-01	PLATE ASSY, GEAR	
* 154	3-394-738-01	LEVER, PLAY BUTTON		* 171	3-394-740-01	LEVER, FF BUTTON	
* 155	3-394-737-01	LEVER, REC BUTTON		* 172	3-394-741-01	LEVER, STOP BUTTON	
* 156	3-348-323-01	PLATE, FUNCTION, PUSH BUTTON		* 173	3-394-742-01	LEVER, PAUSE BUTTON	
* 157	3-348-322-01	PLATE, FUNCTION, SWITCH		174	3-913-438-01	ARM ASSY, PINCH ROLLER	
158	3-394-744-01	SPRING		175	3-348-330-11	SPRING	
* 159	3-395-986-01	PANEL, HEAD		176	3-348-331-02	LEVER, PAUSE	
160	3-348-344-11	BASE, HEAD		177	3-348-332-01	SPRING	
161	3-598-845-01	SPRING		178	3-348-333-01	STOPPER, PAUSE	
162	3-394-749-01	SCREW (M2X7), AZIMUTH		179	3-348-340-01	STOPPER, PR	
163	3-348-372-01	SCREW (M2X3), + BIND		* 180	3-348-339-01	LEVER, E KICK	
164	3-394-748-01	LUG (B3)		HE101	1-500-232-11	HEAD, MAGNETIC (ERASE)	
165	3-348-347-01	CHASSIS (MOLD) ASSY		HRP101	1-543-277-11	HEAD, MAGNETIC (RECORD/PLAYBACK)	
166	3-348-346-01	ARM, MG		S901	1-692-978-11	SWITCH, LEAF (POWER)	
167	3-913-437-01	SPRING, M CONTROLLER					

SECTION 6 ELECTRICAL PARTS LIST

MAIN

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.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL : Metal-film resistor
METAL OXIDE :Metal oxide-film resistor
F : nonflammable

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u : μ , for example :
uA..... : μ A....., uPA..... : μ PA.....
uPB..... : μ PB....., uPC..... : μ PC.....
uPD..... : μ PD.....
- CAPACITORS
uF : μ F
- COILS
uH : μ H

- Abbreviation
CND : Canadian
IT : Italian
SP : Singapore
AUS : Australian

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

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

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-3305-480-A	MAIN BOARD, COMPLETE (US,CND,E)		C9	1-162-286-31	CERAMIC	220PF 10% 50V
*	A-3305-484-A	MAIN BOARD, COMPLETE (10:AEP,UK)		C10	1-104-666-11	ELECT	220uF 20% 6.3V
*	A-3305-486-A	MAIN BOARD, COMPLETE (IT)		C11	1-104-663-11	ELECT	33uF 20% 16V
*	A-3305-737-A	MAIN BOARD, COMPLETE (AUS)					
*	A-3305-729-A	MAIN BOARD, COMPLETE (SP)		C12	1-162-306-11	CERAMIC	0.01uF 30% 16V (AEP,IT,UK,SP,AUS)
*	A-3305-482-A	MAIN BOARD, COMPLETE (10L)	*****	C13	1-162-600-11	CERAMIC	0.0047uF 30% 16V
				C14	1-162-306-11	CERAMIC	0.01uF 30% 16V
				C15	1-162-306-11	CERAMIC	0.01uF 30% 16V
*	3-913-791-01	HOLDER, BAR ANTENNA					
	3-928-617-01	KNOB (TU)		C16	1-162-306-11	CERAMIC	0.01uF 30% 16V (AEP,IT,UK,SP,AUS)
	7-621-770-87	SCREW +B 2.6X5					
		< CAPACITOR >		C17	1-104-663-11	ELECT	33uF 20% 16V (AEP,IT,UK,SP,AUS)
C1	1-162-207-31	CERAMIC	22PF 5% 50V (10:AEP,IT,UK)	C18	1-162-201-31	CERAMIC	12PF 5% 50V
C1	1-162-206-31	CERAMIC	20PF 5% 50V (US,CND,E,SP,AUS,10L:AEP)	C19	1-102-962-00	CERAMIC	30PF 5% 50V
C2	1-102-960-00	CERAMIC	24PF 5% 50V (AEP,UK)	C20	1-162-305-11	CERAMIC	0.0068uF 30% 16V (AEP,IT,UK,SP,AUS)
C2	1-102-959-00	CERAMIC	22PF 5% 50V (US,CND,E,SP,AUS)	C20	1-162-306-11	CERAMIC	0.01uF 30% 16V (US,CND,E)
C2	1-102-961-00	CERAMIC	27PF 5% 50V (IT)	C21	1-162-294-31	CERAMIC	0.001uF 10% 50V
C3	1-162-203-31	CERAMIC	15PF 5% 50V	C22	1-124-902-00	ELECT	0.47uF 20% 50V
C4	1-162-202-31	CERAMIC	13PF 5% 50V	C23	1-162-193-31	CERAMIC	3.3PF 10% 50V
C5	1-162-191-31	CERAMIC	2.2PF 10% 50V (US,CND,E,SP,AUS)	C24	1-162-294-31	CERAMIC	0.001uF 10% 50V
C5	1-162-217-31	CERAMIC	56PF 5% 50V (10L)	C25	1-162-306-11	CERAMIC	0.01uF 20% 16V
C5	1-162-192-31	CERAMIC	2.7PF 10% 50V (10:AEP,IT,UK)	C26	1-104-663-11	ELECT	33uF 20% 16V (US,CND,E)
C6	1-162-196-31	CERAMIC	5.6PF 10% 50V (US,CND,E,SP,AUS)	C27	1-162-306-11	CERAMIC	0.01uF 30% 16V (US,CND,E)
C6	1-130-918-00	FILM	200PF 5% 63V (10L)	C28	1-162-306-11	CERAMIC	0.01uF 30% 16V (US,CND,E)
C6	1-162-197-31	CERAMIC	6.8PF 10% 50V (10:AEP,UK)	C29	1-162-306-11	CERAMIC	0.01uF 30% 16V (US,CND,E)
C6	1-162-198-31	CERAMIC	8.2PF 10% 50V (IT)	C101	1-162-843-11	CERAMIC	0.022uF 10% 16V
C7	1-130-011-00	FILM	270PF 5% 63V (10L)	C102	1-126-233-11	ELECT	22uF 20% 50V
C8	1-162-306-11	CERAMIC	0.01uF 30% 16V (AEP,IT,UK,SP,AUS)	C103	1-162-843-11	CERAMIC	0.022uF 10% 16V
				C104	1-126-233-11	ELECT	22uF 20% 50V
				C105	1-126-961-11	ELECT	2.2uF 20% 50V
				C106	1-161-045-00	CERAMIC	0.0033uF 10% 50V
				C107	1-161-043-00	CERAMIC	0.0022uF 10% 50V
				C108	1-124-443-00	ELECT	100uF 20% 10V
				C109	1-124-902-00	ELECT	0.47uF 20% 50V
				C110	1-162-843-11	CERAMIC	0.022uF 10% 16V

MAIN

Ref. No.	Part No.	Description	Remark
C111	1-124-907-11	ELECT	10uF 20% 50V
C112	1-162-294-31	CERAMIC	0.001uF 10% 50V
C113	1-124-443-00	ELECT	100uF 20% 10V
C114	1-130-496-00	MYLAR	0.12uF 5% 50V
C115	1-130-496-00	MYLAR	0.12uF 5% 50V
C116	1-162-841-11	ELECT	0.015uF 10% 16V
C117	1-124-472-11	ELECT	470uF 20% 10V
C118	1-126-233-11	ELECT	22uF 20% 50V
C119	1-104-664-11	ELECT	47uF 20% 10V
C120	1-126-768-11	ELECT	2200uF 20% 16V
C121	1-124-902-00	ELECT	0.47uF 20% 50V
C122	1-162-841-11	CERAMIC	0.015uF 10% 16V
C123	1-162-282-31	CERAMIC	100PF 10% 50V
C124	1-162-294-31	CERAMIC	0.001uF 10% 50V
C125	1-162-282-31	CERAMIC	100PF 10% 50V
C126	1-162-286-31	CERAMIC	220PF 10% 50V
C127	1-162-282-31	CERAMIC	100PF 10% 50V
C128	1-162-282-31	CERAMIC	100PF 10% 50V
C131	1-162-832-11	CERAMIC	2700PF 10%
C132	1-131-374-00	TANTAL	33uF 20% 16V (10L)
C133	1-162-286-31	CERAMIC	220PF 10% 50V
< FILTER >			
CF1	1-567-390-11	FILTER,CERAMIC 10.7M	
CF2	1-577-072-11	FILTER, CERAMIC	
< CONNECTOR >			
CN101	1-695-105-11	PIN, CONNECTOR (PC BOARD) 3P	
* CN102	1-566-779-11	PIN, CONNECTOR (PC BOARD) 4P	
* CN103	1-580-163-11	PIN, CONNECTOR (PC BOARD) 2P	
* CN104	1-580-154-11	PIN, CONNECTOR (PC BOARD) 2P(US,CND,E)	
< TRIMMER >			
CT1	1-141-416-11	CAP, ADJ (10L)	
CT2	1-141-416-11	CAP, ADJ (10L)	
< TRIMMER >			
CT1-4	1-151-628-11	CAP, VARIABLE (TUNING) (US,CND,E,SP,AUS)	
CT1-4	1-151-673-11	CAP, VARIABLE (TUNING) (10:AEP,IT,UK)	
CV1-4, CT3-4	1-151-637-11	CAP, VARIABLE (TUNING)(10L)	
< DIODE >			
D101	8-719-057-90	LED	L-974HD (OPR/BATT)
D102	8-719-109-75	DIODE	RD4.3ES-B2
D103	8-719-987-63	DIODE	1N4148M
D104	8-719-987-63	DIODE	1N4148M
D105	8-719-987-63	DIODE	1N4148M
D106	8-719-987-63	DIODE	1N4148M (AEP,IT,UK,SP,AUS)
D107	8-719-987-63	DIODE	1N4148M (AEP,IT,UK,SP,AUS)
D108	8-719-109-81	DIODE	RD4.7ESB2

Ref. No.	Part No.	Description	Remark
< IC >			
IC1	8-759-245-07	IC TA8164P	
IC101	8-759-367-15	IC MM1315SD-2	
< JACK >			
J101	1-563-330-11	JACK (EAR PHONE) (AEP,IT,UK,SP,AUS)	
< COIL >			
L1	1-422-317-31	COIL, AIR-CORE	
L2	1-422-230-11	COIL, AIR-CORE (US,CND,AEP,UK,E,SP,AUS)	
L2	1-411-333-11	COIL (WITH CORE) (IT)	
L3	1-501-805-11	ANTENNA, FERRITE-ROD (US,CND,E,SP,AUS)	
L3	1-501-817-11	ANTENNA, FERRITE-ROD (10:AEP,IT,UK)	
L3	1-501-816-11	ANTENNA, FERRITE-ROD (LW) (10L)	
L6	1-406-576-11	COIL MW OSC (10)	
L6	1-406-252-11	COIL (OSC) (10L)	
< TRANSISTOR >			
Q1	8-729-194-57	TRANSISTOR	2SC945-P
< RESISTOR >			
R1	1-249-391-11	CARBON	6.8 5% 1/4W (AEP,IT,UK,SP,AUS)
R2	1-249-440-11	CARBON	82 5% 1/4W
R3	1-249-428-11	CARBON	8.2K 5% 1/4W
R4	1-249-430-11	CARBON	12K 5% 1/4W
R5	1-249-411-11	CARBON	330 5% 1/4W
R6	1-247-871-11	CARBON	47K 5% 1/4W
R7	1-247-871-11	CARBON	47K 5% 1/4W
R8	1-247-871-11	CARBON	47K 5% 1/4W
R9	1-249-411-11	CARBON	330 5% 1/4W
R11	1-249-427-11	CARBON	6.8K 5% 1/4W (US,CND,E)
R101	1-247-839-11	CARBON	2.2K 5% 1/4W
R102	1-249-417-11	CARBON	1K 5% 1/4W
R103	1-247-839-11	CARBON	2.2K 5% 1/4W
R104	1-249-420-11	CARBON	1.8K 5% 1/4W (US,CND,E)
R104	1-247-849-11	CARBON	5.6K 5% 1/4W (AEP,IT,UK,SP,AUS)
R105	1-249-413-11	CARBON	470 5% 1/4W
R106	1-249-428-11	CARBON	8.2K 5% 1/4W
R107	1-247-807-31	CARBON	100 5% 1/4W
R108	1-247-815-91	CARBON	220 5% 1/4W
R109	1-249-417-11	CARBON	1K 5% 1/4W
R110	1-247-863-91	CARBON	22K 5% 1/4W (US,CND,E)
R110	1-249-432-11	CARBON	18K 5% 1/4W (AEP,IT,UK,SP,AUS)
R111	1-247-815-91	CARBON	220 5% 1/4W

Ref. No.	Part No.	Description	Remark
R112	1-249-440-11	CARBON	82 5% 1/4W (AEP,IT,UK,SP,AUS)
R113	1-249-401-11	CARBON	47 5% 1/4W
R114	1-249-393-11	CARBON	10 5% 1/4W
R115	1-249-393-11	CARBON	10 5% 1/4W
R116	1-249-407-11	CARBON	150 5% 1/4W
R117	1-249-407-11	CARBON	150 5% 1/4W
R118	1-247-897-11	CARBON	560K 5% 1/4W
R119	1-249-414-11	CARBON	560 5% 1/4W
R120	1-249-413-11	CARBON	470 5% 1/4W (US,CND,E)
R120	1-247-820-11	CARBON	360 5% 1/4W (AEP,IT,UK,SP,AUS)
< SWITCH >			
S101	1-762-535-11	SWITCH, SLIDE (FUNCTION)	
S102	1-762-565-11	SWITCH, R/P (PB/REC SW)	
< TRANSFORMER >			
T1	1-406-577-11	TRANSFORMER, IF	
T2	1-406-575-11	TRANSFORMER, IF	
T3	1-406-578-11	COIL, FM DETECTOR	
< VARIABLE RESISTOR >			
VR101	1-223-625-11	RES, VAR, CARBON 20K (VOLUME)	

*	1-658-574-11	POWER BOARD (US,CND,E)	
*	1-658-574-21	POWER BOARD (AEP,IT,UK,SP,AUS)	

	1-533-233-11	HOLDER, FUSE	
< CAPACITOR >			
C901	1-101-005-00	CERAMIC	22000PF 50V
C902	1-101-005-00	CERAMIC	22000PF 50V
< CONNECTOR >			
CN901	1-580-163-11	PIN, CONNECTOR (PC BOARD) 2P	
< CONNECTOR >			
CNP901	1-696-008-31	CORD, AC (US,CND,E)	
< DIODE >			
D901	8-719-200-02	DIODE	10E2
D902	8-719-200-02	DIODE	10E2
D903	8-719-200-02	DIODE	10E2 (US,CND,E)
< FUSE >			
△ F901	1-532-233-00	FUSE (T0.063A 250V)(SP)	
△ F902	1-532-006-00	FUSE (T0.4A 250V)(AEP,IT,UK,AUS)	
△ F902	1-532-819-11	FUSE (0.5A 250V)(CND)	

Ref. No.	Part No.	Description	Remark
< JACK >			
△ J901	1-526-838-11	INLET, AC 2P (-AC IN)(AEP,IT,UK,SP,AUS)	
< SWITCH >			
△ S901	1-552-921-00	SWITCH, POWER (VOLTAGE SELECTOR)(SP)	
< TRANSFORMER >			
△ T901	1-429-272-11	TRANSFORMER, POWER (US,CND,E)	
△ T901	1-429-328-11	TRANSFORMER, POWER (AEP,IT,UK,AUS)	
△ T901	1-429-330-11	TRANSFORMER, POWER (SP)	

MISCELLANEOUS *****			
* 8	1-660-409-11	PC BOARD, GUIDE (B)	
* 9	1-660-408-11	PC BOARD, GUIDE (A)	
△ 70	1-551-983-00	CORD, POWER (E)	
△ 70	1-696-819-11	CORD, POWER (AUS)	
△ 70	1-769-412-11	CORD, POWER (10:UK,AEP,IT,SP/10L)	
△ 70	1-776-131-11	CORD, POWER (US,CND)	
△ 72	1-770-019-21	ADAPTOR, CONVERSION 3P (UK)	
ANT1	1-501-820-11	ANTENNA, TELESCOPIC	
ECM101	8-814-186-00	MICROPHONE, ELECTRET CONDENSER	
HE101	1-500-232-11	HEAD, MAGNETIC (ERASE)	
HRP101	1-543-277-11	HEAD, MAGNETIC (RECORD/PLAYBACK)	
M901	X-3372-889-1	MOTOR ASSY	
S901	1-692-978-11	SWITCH, LEAF (POWER)	

ACCESSORIES & PACKING MATERIALS *****			
	1-696-819-11	CORD, POWER (AUS)	
	1-769-412-11	CORD, POWER (10:UK,AEP,IT,SP/10L)	
	1-770-019-21	ADAPTOR, CONVERSION PLUG 3P (UK)	
	3-810-277-11	MANUAL, INSTRUCTION (English) (US)	
	3-810-277-21	MANUAL, INSTRUCTION (English) (CND,E,AUS)	
	3-810-277-31	MANUAL, INSTRUCTION (French) (CND)	
	3-810-277-41	MANUAL, INSTRUCTION (English,French,German,Spanish) (10:UK,AEP,SP/10L)	
	3-810-277-51	MANUAL, INSTRUCTION (Dutch,Swedish,Italian,Portuguese)(10:AEP,IT/10L)	
	3-810-277-61	MANUAL, INSTRUCTION (Spanish)(E)	
*	3-932-703-01	CARTON, INDIVIDUAL (US,E)	
*	3-932-756-01	CARTON, INDIVIDUAL (CND)	

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

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

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
		***** HARDWARE LIST *****	
#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#2	7-685-649-79	SCREW +BVTP 3X14 TYPE2 IT-3	
#3	7-621-770-87	SCREW +B 2.6X5	
#4	7-685-782-01	SCREW +PTT 2X5 (S)	
#5	7-682-547-04	SCREW +B 3X6	
#6	7-621-255-45	SCREW +P 2X6	

CFM-10/10L

SONY SERVICE MANUAL

US Model
Canadian Model
UK Model
E model
Australian model
CFM-10
AEP Model
CFM-10/10L

SUPPLEMENT-1

File this supplement with the service manual.

Subject: Model Addition (CFM-10: Hong Kong)

- For detailed Hong Kong model refer to Singapore model (CFM-10)

Difference Table

Page	CFM-10 (Singapore model)			CFM-10 (Hong Kong model)		
	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
21		_____			1-770-019-21	ADAPTOR, CONVERSION PLUG 3P
	*	3-932-708-01	CARTON, INDIVIDUAL	*	3-937-685-01	CARTON, INDIVIDUAL

NOTE:

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CFM-10/10L

SONY.

SERVICE MANUAL

US Model
Canadian Model
UK Model
E Model
Australian Model
CFM-10
AEP Model
CFM-10/10L

SUPPLEMENT-2

File this Supplement with the Service Manual.

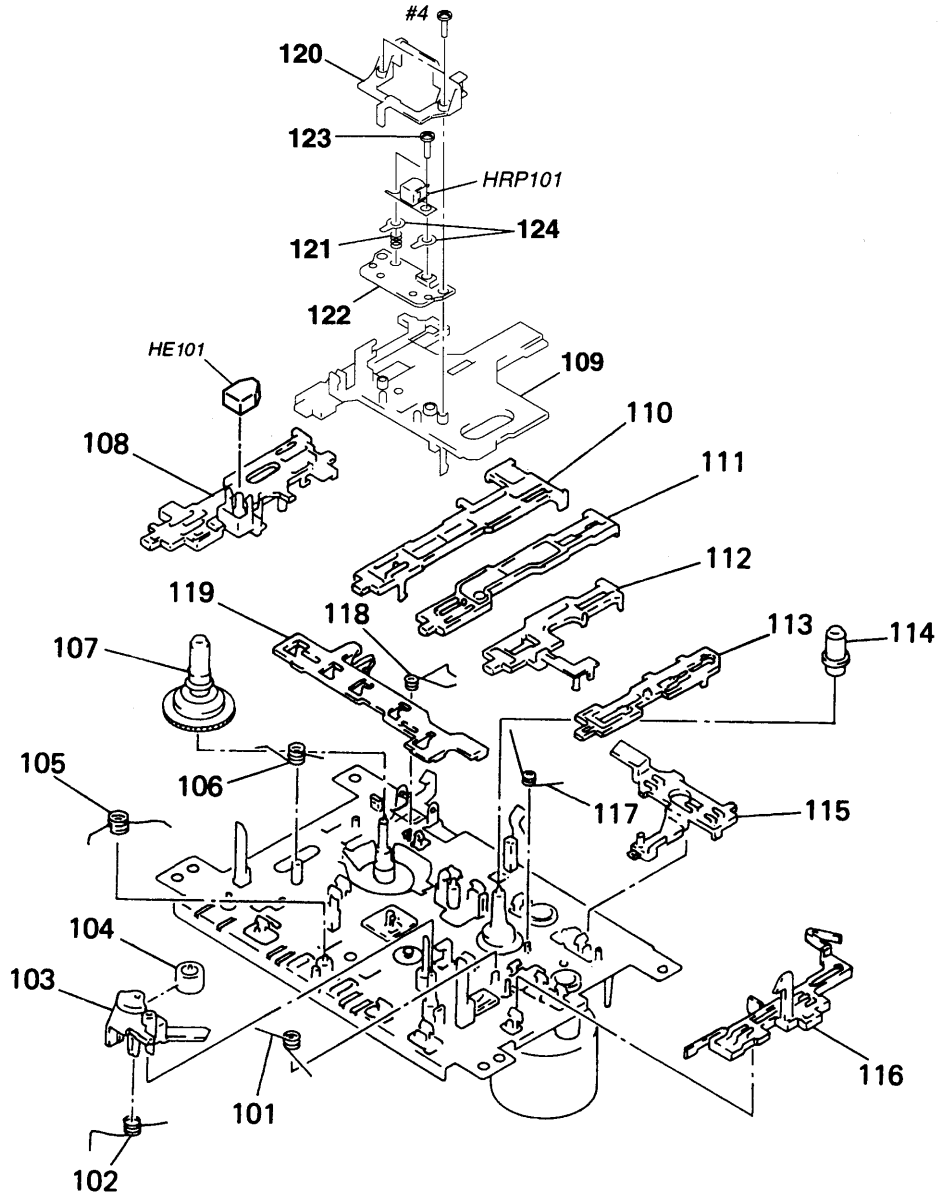
Subject :
Change of Tape Transport Mechanism

The tape transport mechanism has been changed.
Exploded views of new type, and changed parts list are described in this Supplement-2.
Refer to original service manual previously issued for the other information.

	Tape Transport Mechanism Type	Serial Number
Former Type	MF-10C	_____
New Type	MF-M10-117	0782939 and later

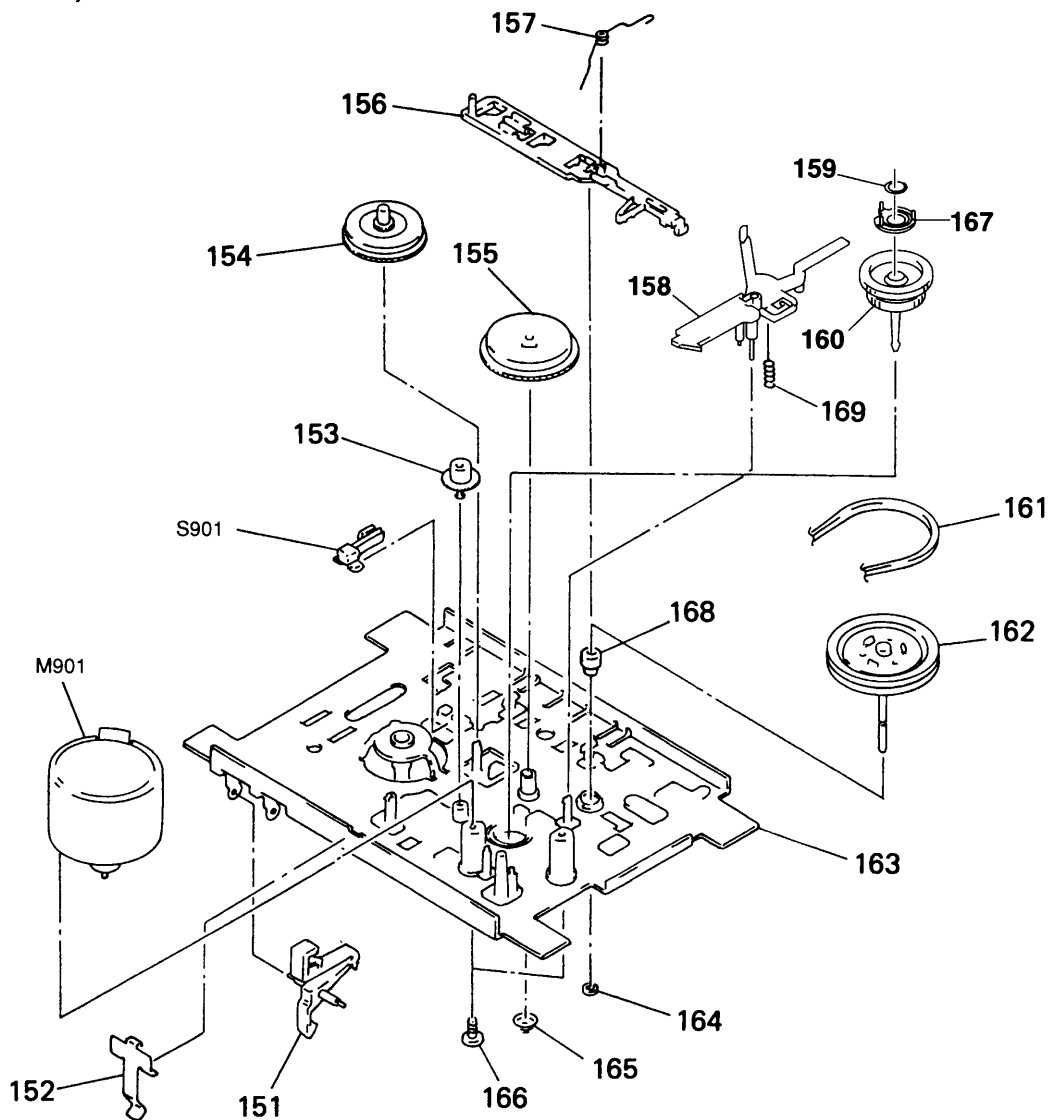
EXPLODED VIEWS (Service Manual see page 17)

**1. MECHANISM DECK SECTION (1)
(MF-M10-117)**



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	3-933-010-01	SPRING (S/P), TORSION		* 115	3-933-021-01	SLIDER (FRP)	
102	3-933-025-01	SPRING (P), TORSION		116	3-933-006-01	SLIDER (EJECT)	
103	3-933-026-01	LEVER (P)		117	3-934-833-01	SPRING (FRP)	
104	3-933-024-01	ROLLER, PINCH		118	3-934-834-01	SPRING (BT)	
105	3-933-019-01	SPRING (F/R), TORSION		* 119	3-933-007-01	PLATE, LOCK	
106	3-933-028-01	SPRING (FWD), TORSION		120	3-010-625-01	GUIDE, TAPE	
107	3-933-016-01	GEAR (S REEL)		121	4-936-201-01	SPRING	
108	3-933-023-01	SLIDER (REC)		* 122	3-009-076-01	CHASSIS (HEAD)	
109	3-933-022-11	BASE, HEAD		123	3-342-917-01	SCREW +B 2X5	
* 110	3-933-017-01	SLIDER (REW)		* 124	3-936-265-01	LUG (T)	
* 111	3-933-018-01	SLIDER (FF)		HE101	1-500-232-11	HEAD, MAGNETIC (ERASE)	
* 112	3-933-009-01	SLIDER (STOP)		HRP101	1-500-363-11	HEAD, MAGNETIC (RECORD/PLAYBACK)	
* 113	3-933-008-01	SLIDER (PAUSE)					
114	3-933-004-01	CLAW, REEL					

(Service Manual see page 18)
2. MECHANISM DECK SECTION (2)
 (MF-M10-117)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	3-933-029-01	LEVER, ERASING PREVENTION		162	X-3371-668-1	CAPSTAN ASSY	
152	3-933-182-01	SPRING, CASSETTE		163	3-932-993-01	CHASSIS, OUTSERT	
153	3-932-995-01	GEAR (MID)		164	3-343-358-01	RING, RETAINING	
154	X-3371-667-1	CLUTCH ASSY		165	3-933-005-01	SPRING (CAM), COMPRESSION	
155	3-932-997-01	GEAR (CAM)		166	7-621-770-87	SCREW +B 2.6X5	
* 156	3-932-999-01	SLIDER (SW)		167	3-936-438-01	LEVER (K)	
157	3-932-998-01	SPRING (GROUND), TORSION		168	3-934-336-01	BEARING	
158	3-009-648-01	LEVER (S.OFF)		169	3-939-383-01	SPRING, COMPRESSION	
159	3-009-650-02	SPRING (K)		M901	A-3304-621-A	MOTOR ASSY	
160	X-3373-572-1	REEL ASSY (N), T		S901	1-762-679-11	SWITCH, LEAF (POWER)	
161	3-933-020-01	BELT					

CFM-10/10L

SONY®

SERVICE MANUAL

Ver 1.0 1999.06

US Model
Canadian Model
UK Model
E Model
Australian Model
CFM-10
AEP Model
CFM-10/10L

SUPPLEMENT - 3

File this Supplement with the Service Manual.

Subject :

- **CHANGE OF MAIN BOARD**
(CFM-10 : US, Canadian, C&SA model only)
1-658-572-11 → 1-658-572-31

(ECN-RC802092)

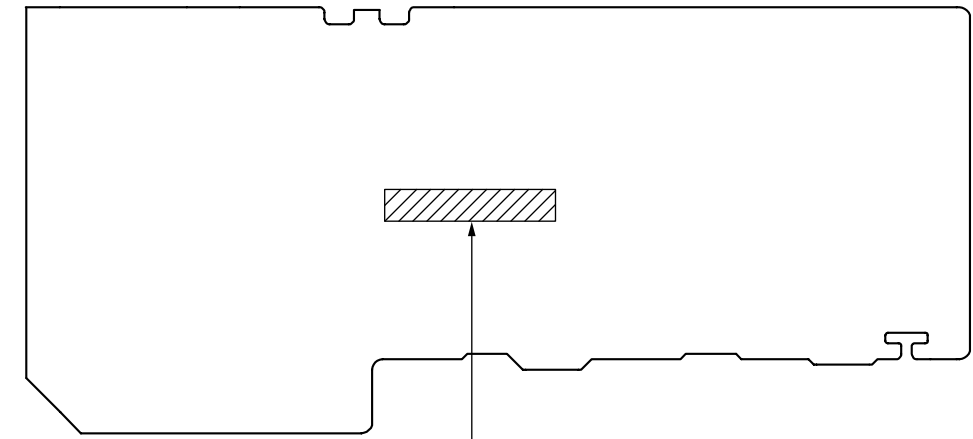
Due to this change, only printed wiring boards, schematic diagram and a electrical parts list of CFM-10 (US, Canadian, C&SA model) are described in this supplement-3.
For other information, please refer to the previously issued CFM-10/10L service manual (9-960-488-11), Supplement-1 (9-960-488-81) and Supplement-2 (9-960-488-83).

- Abbreviation
C&SA : Central & South America

- **CHANGE OF MAIN BOARD (CFM-10 : US, Canadian, C&SA model only)**

NEW TYPE IDENTIFICATION

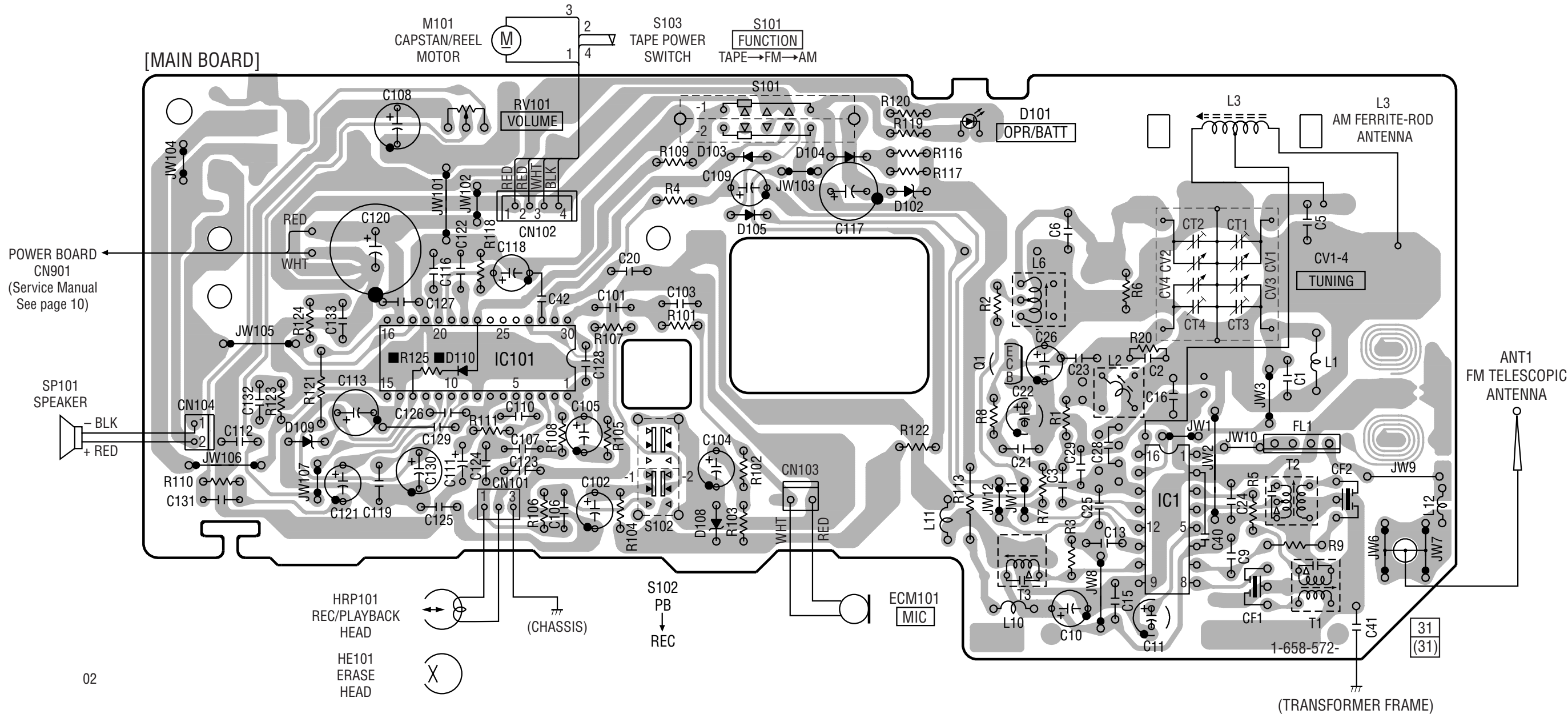
[MAIN BOARD] (COMPONENT SIDE)



Former Type: 1-658-572-11

New Type: 1-658-572-**31**

● **PRINTED WIRING BOARD (CFM-10 : US, Canadian, C&SA model only)**
 (Service Manual See page 9, 10)



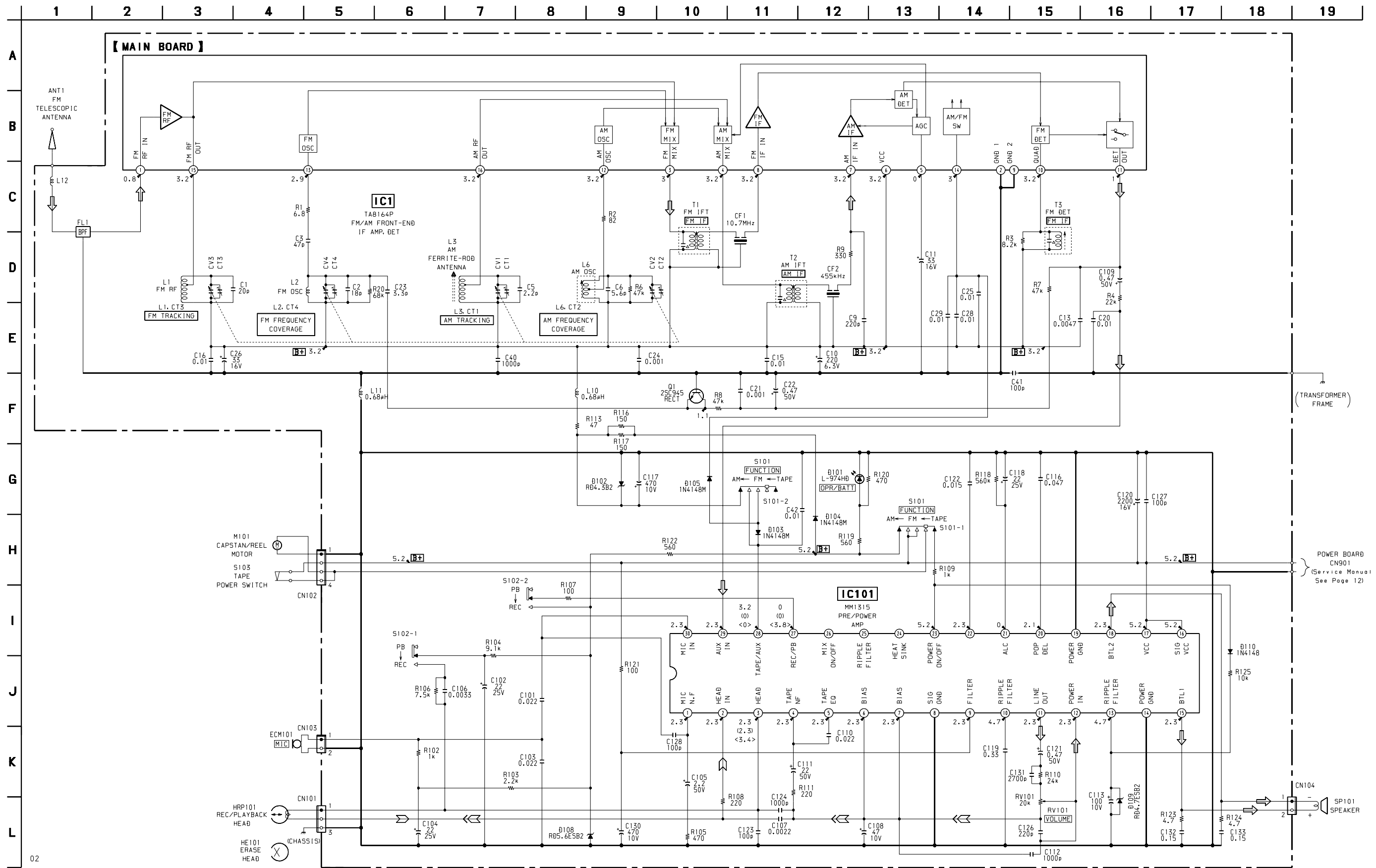
POWER BOARD
 CN901
 (Service Manual
 See page 10)

02

Note:

- : parts extracted from the component side.
- : parts mounted on the conductor side.
- △ : internal component.
- ▨ : Pattern from the side which enables seeing.
- Abbreviation
- C&SA : Central and South America

● SCHEMATIC DIAGRAM (CFM-10 : US, Canadian, C&SA model only) (Service Manual See page 11, 12)



- Note:**
- All capacitors are in μF unless otherwise noted. pF : μF 50 WV or less are not indicated except for electrolytics and tantalums.
 - All resistors are in Ω and $1/4\text{ W}$ or less unless otherwise specified.
 - Δ : internal component.
 - **B+** : B+ Line.
 - \square : adjustment for repair.
 - Voltages are dc with respect to ground under no-signal (detuned) conditions.
 - no mark : FM
 - () : PB
 - () : PLAY
 - Voltages are taken with a VOM (Input impedance $10\text{ M}\Omega$). Voltage variations may be noted due to normal production tolerances.
 - Signal path.
 - \Rightarrow : FM
 - \Rightarrow : PB
 - \Rightarrow : REC
 - Abbreviation
C&SA : Central and South America

