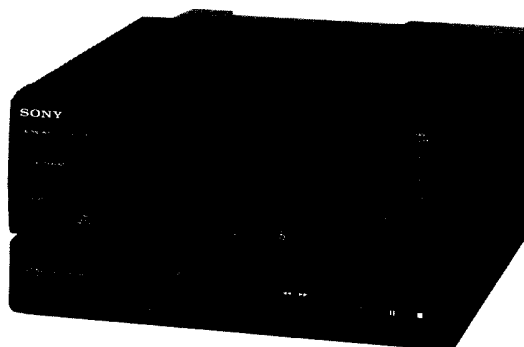


CDP-H3750

SERVICE MANUAL



*US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model
Tourist Model*

This set is the CD player section
in FH-E705C, MHC-2750/3750.

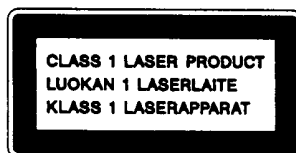
Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM23-5BD3
Optical Pick-Up Block Type	BU-5BD3

SPECIFICATIONS

System	Compact disc digital audio system
Laser	Semiconductor laser ($\lambda = 780 \text{ nm}$) Emission duration: continuous
Laser output	Max. $44.6 \mu\text{W}^*$ * This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.
Signal to noise ratio	More than 90 dB
Dynamic range	More than 90 dB
Harmonic distortion	Less than 0.05% (at 1 kHz)
Channel separation	More than 90 dB
Output level	1.6 V (at 50 kilohms)
Load impedance	More than 10 kilohms

Design and specifications subject to change
without notice.

For the United Kingdom and European
countries.



This appliance is classified as
a CLASS 1 LASER product.
The CLASS 1 LASER
PRODUCT label is located on
the rear exterior.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK Δ OR DOTTED
LINE WITH MARK Δ 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 Δ
SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE
DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ
DE FONCTIONNEMENT. NE REMPLACER CES COM-
POSANTS QUE PAR DES PIÈCES SONY DONT LES
NUMÉROS SONT DONNÉS DANS CE MANUEL OU
DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

COMPACT DISC PLAYER
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 0.5 mA (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 0.75 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 2V AC range are suitable. (See Fig. A)

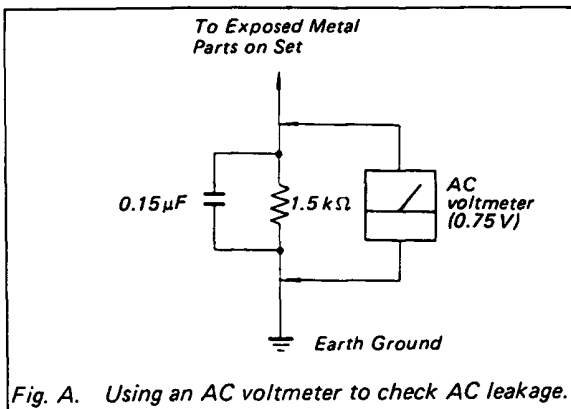


Fig. A. Using an AC voltmeter to check AC leakage.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

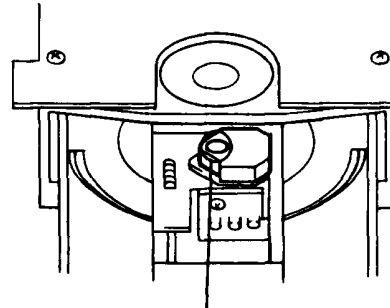
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30cm away from the objective lens.

LASER DIODE AND FOCUS SERCH OPERATION CHECK

1. Make POWER switch on with no disc inserted and disc table closed.
2. Confirm that the following operation is performed while observing the objective lens.



- Confirm that laser beam is spread.
- Up and down motion of the objective lens. (3 times)

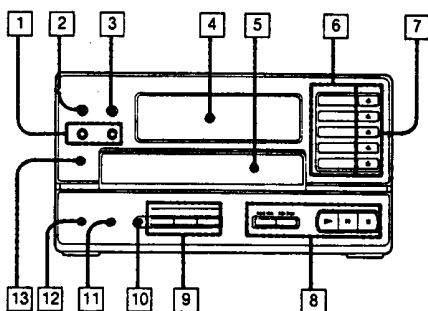
TABLE OF CONTENTS

<i>Section</i>	<i>Title</i>	<i>Page</i>
1. GENERAL		
1-1.	Parts Identification	3
2. DISASSEMBLY		
2-1.	Remove the Main Block	4
2-2.	Exchange of Stocker Assy	4
2-3.	Exchange of Rotary Encoder	5
3. ELECTRICAL BLOCK CHECKING		6
4. DIAGRAMS		
4-1.	Semiconductor Lead Layouts	8
4-2.	Circuit Boards Location	9
4-3.	Printed Wiring Boards	10
4-4.	Schematic Diagram	13
5. EXPLODED VIEWS		
5-1.	Cabinet Section	19
5-2.	CD Mechanism Section (1)	20
5-3.	CD Mechanism Section (2)	21
5-4.	Optical Pick-Up Section	22
6. ELECTRICAL PARTS LIST		23

SECTION 1
GENERAL

1-1. PARTS IDENTIFICATION

This section is extracted from instruction manual.

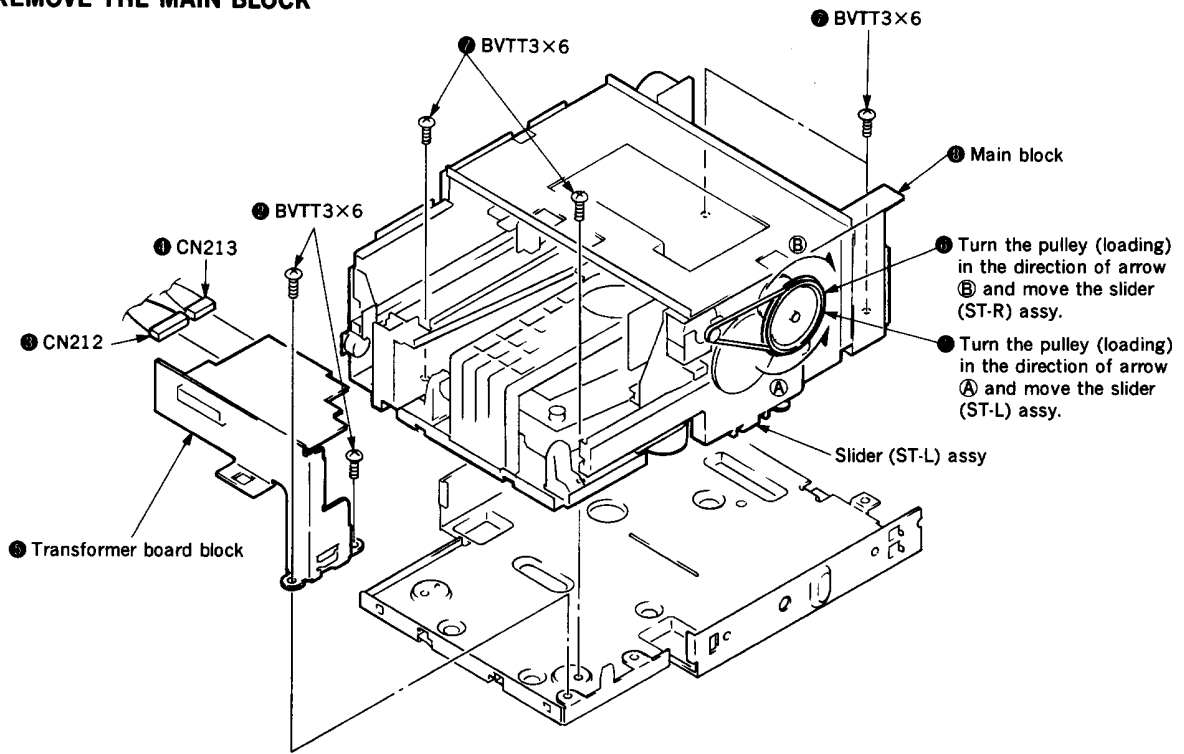


- 1 CHARACTER </> buttons 74
- 2 MEMO INPUT button 74
- 3 CURSOR button 74
- 4 Display window
- 5 Disc tray door
- 6 DISC 1 — 5 selectors and disc tray indicators 28 42
- 7 OPEN/CLOSE Δ buttons 28
- 8 CD operation buttons
 - : Stop button
 - II: Pause button
 - >: Play button
 - ◀◀◀▶▶▶: Manual search (when kept depressed)/AMS* (when pressed) buttons
- 9 PLAY MODE buttons
 - PROGRAM button 44
 - SHUFFLE button 40
 - CONTINUE button 30
- 10 REPEAT button 42
- 11 TIME/MEMO button 32 76
- 12 SOUND FIELD FILE button 78
- 13 ERASE button 76 78

SECTION 2 DISASSEMBLY

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

2-1. REMOVE THE MAIN BLOCK



2-2. EXCHANGE OF STOCKER ASSY

How to Attachment

- 1 Turn the pulley (loading) set the chassis hole position to slider (ST-L) assy. (See Fig. A)
- 2 Turn the pulley (loading) ③ set the position of illustration for slider (TB).
- 3 Attach the stocker assy.

Note) Sure attach to ditch of chassis side for shaft or claw of stocker assy.

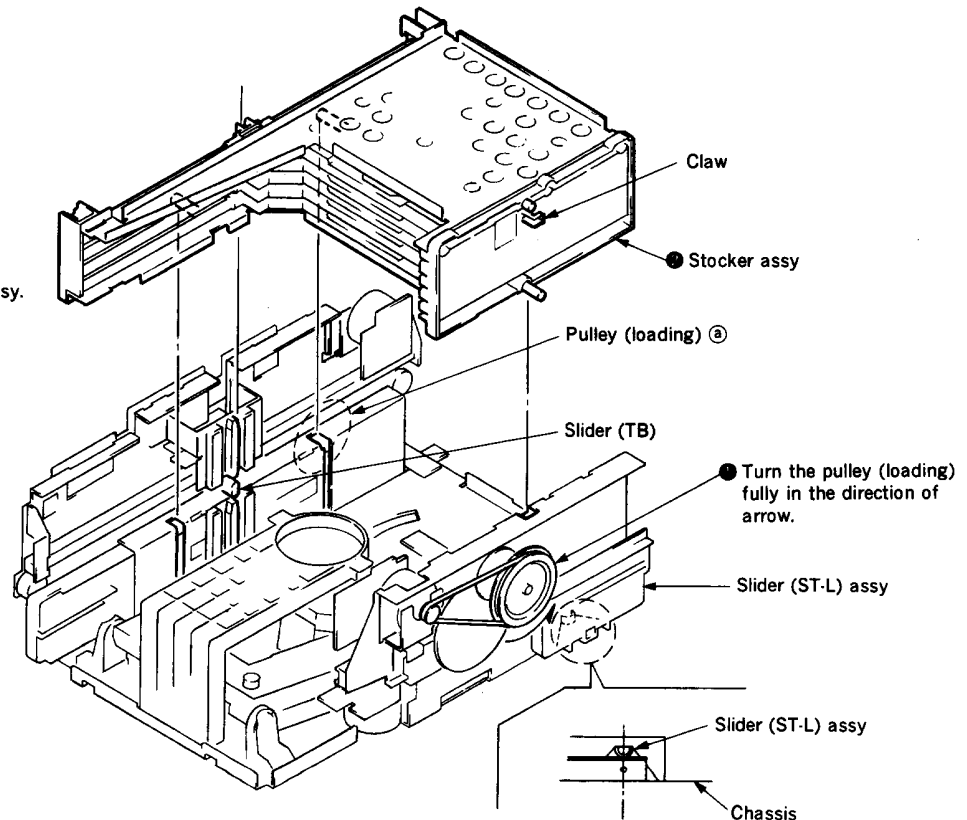
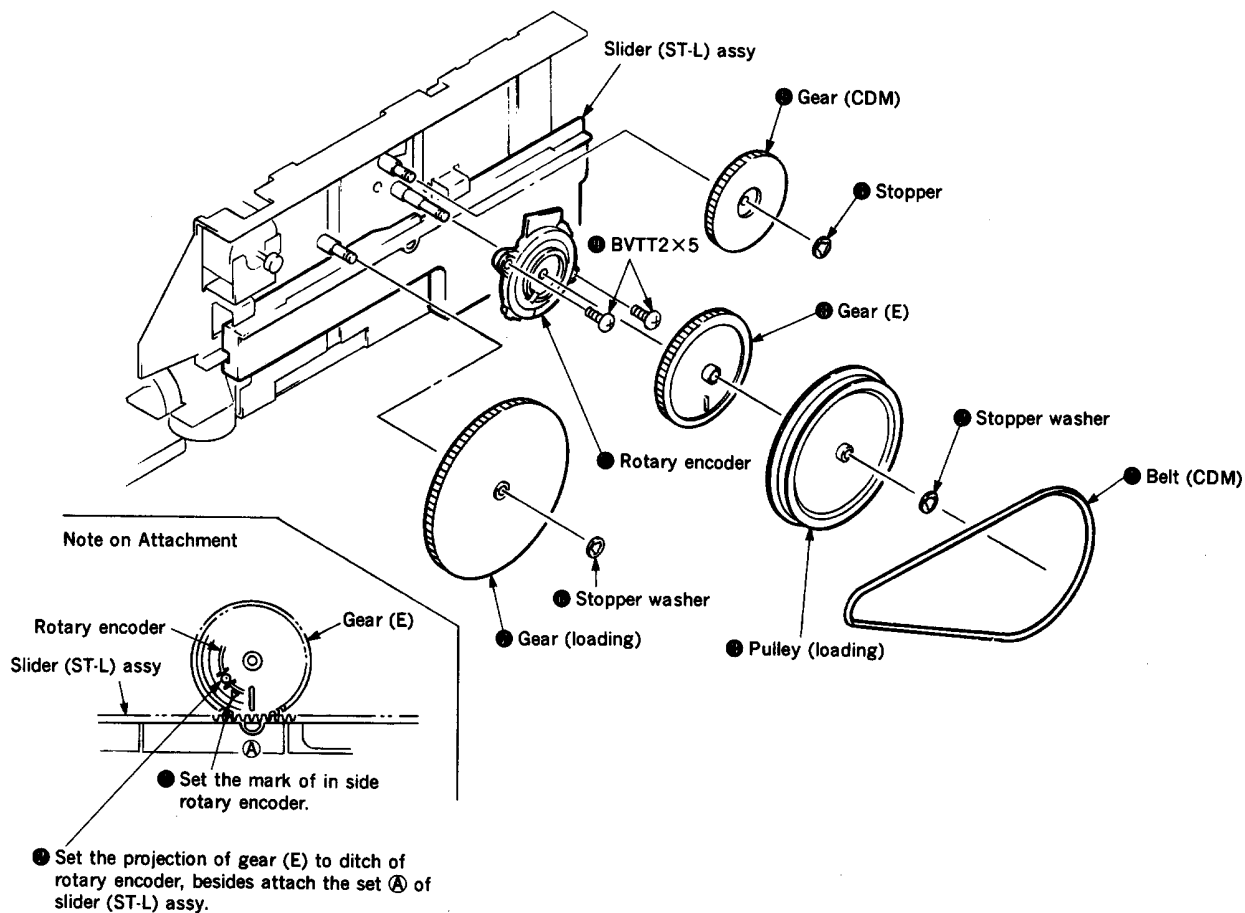


Fig. A

2-3. EXCHANGE OF ROTARY ENCODER

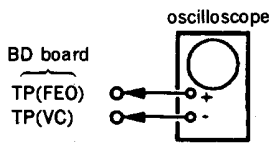


SECTION 3 ELECTRICAL BLOCK CHECKING

Note :

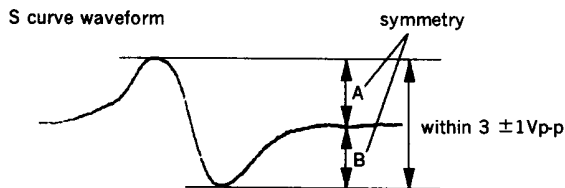
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check



Procedure :

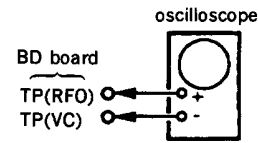
1. Connect oscilloscope to test point TP (FEO) on BD board.
2. Connect between test point TP (FES) and TP (VC) by lead wire.
3. Turned Power switch on and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within $3 \pm 1V_{p-p}$.



5. After check, remove the lead wire connected in step 2.

Note : • Try to measure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check



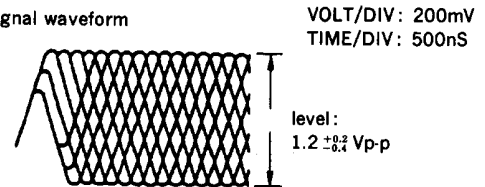
Procedure :

1. Connect oscilloscope to test point TP (RFO) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

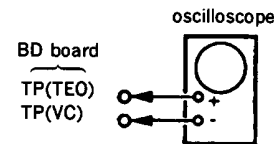
Note :

Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

RF signal waveform



E-F Balance Check



Procedure :

1. Connect test point TP (ADJ) to ground and TP (TES) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TEO) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

Traverse oscilloscope

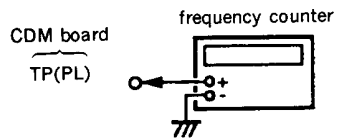


6. Remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

1. Connect frequency counter to test point (PL) with lead wire.



2. Turn Power switch on.
3. Confirm that reading on frequency counter is 4.3218MHz.

Focus/Tracking Gain

This gain has a margin, so even if it is slightly off.

There is no problem.

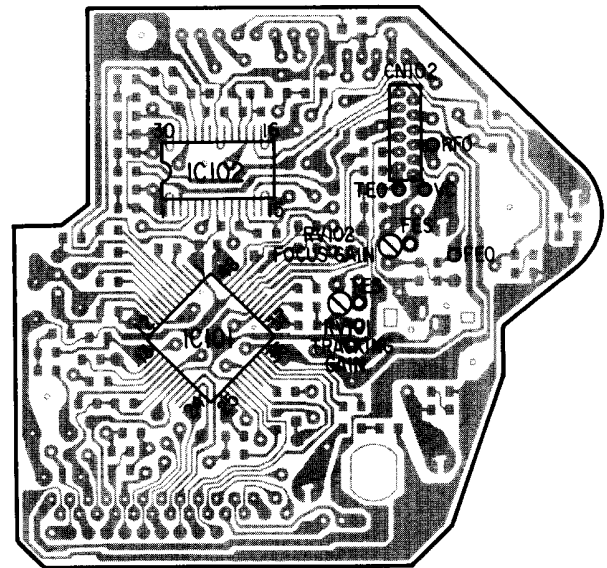
Therefore, do not perform, this adjustment.

Please note that it should be fixed to mechanical center position when you moved and do not know original position.

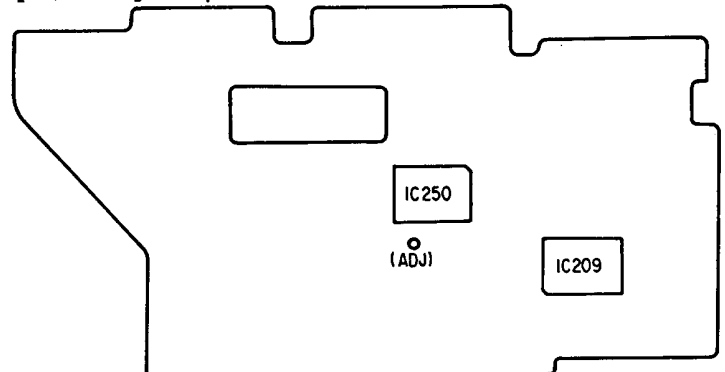
Checking Location :

【BD Board】

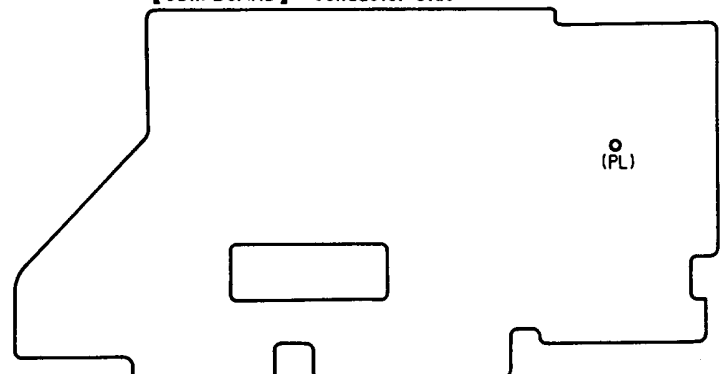
—Conductor Side—



【CDM BORD】-Component Side-



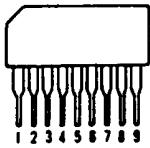
【CDM BOARD】-Conductor Side-



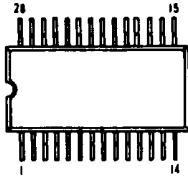
SECTION 4 DIAGRAMS

4-1. SEMICONDUCTOR LEAD LAYOUTS

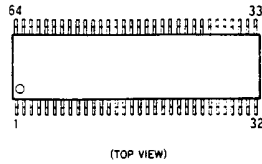
BA6418N



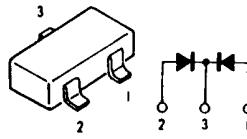
LH5160N-10L



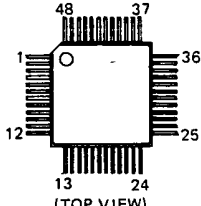
M66004M4FP



DCB010

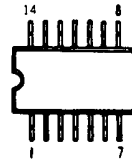


CXA1372AQ



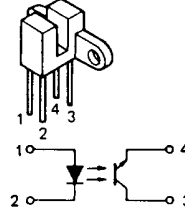
(TOP VIEW)

MC14011BF
MC14093BF

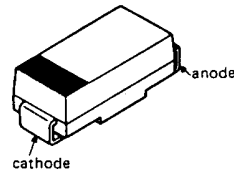


(TOP VIEW)

ON1023-S

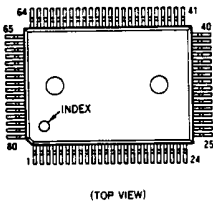


EC10DS2



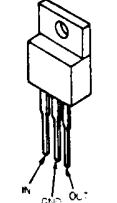
CXD2500AQ

μ PD75516GF
-399-3B9
 μ PD75518GF
-059-3B9

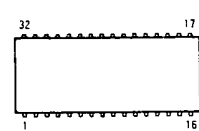


(TOP VIEW)

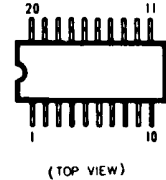
M5F7807L
M5F7808L



M5218AFP

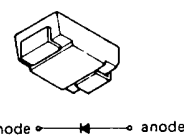


PCM67U

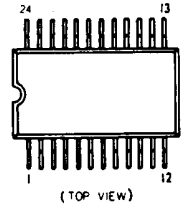


(TOP VIEW)

LN1361C
LN1461C

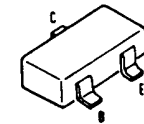
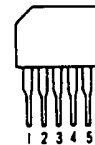


CXD2554M

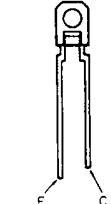


(TOP VIEW)

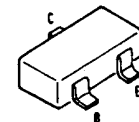
M5293L



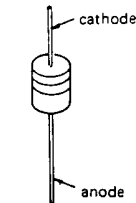
TPS626-F



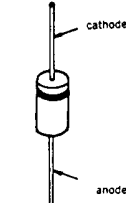
2SB1122-S



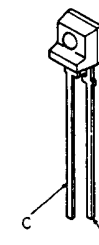
UZP-6.8BB
11EQS04
11ES2



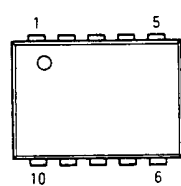
IN4148M



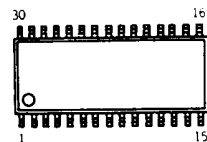
TLN117



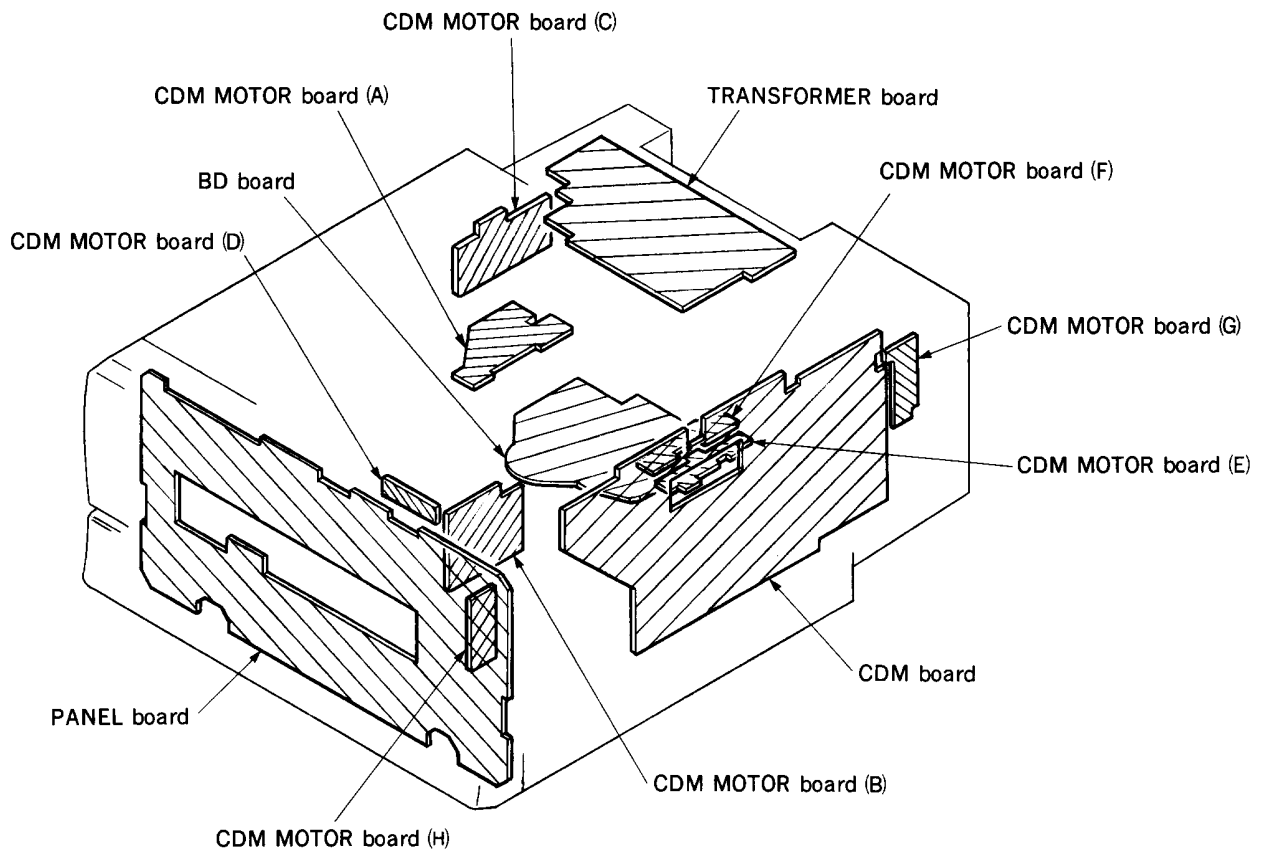
LA5601



LA6532M



TOP VIEW

4-2. CIRCUIT BOARDS LOCATION

IC101 CXA1372Q

IC101 CXA1372Q



IC210 CXD2554M



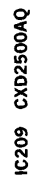
IC203, 204 LA5601



IC214-216 BA6418N



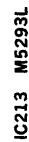
IC209 CXD2500AQ



IC102 LA6532M

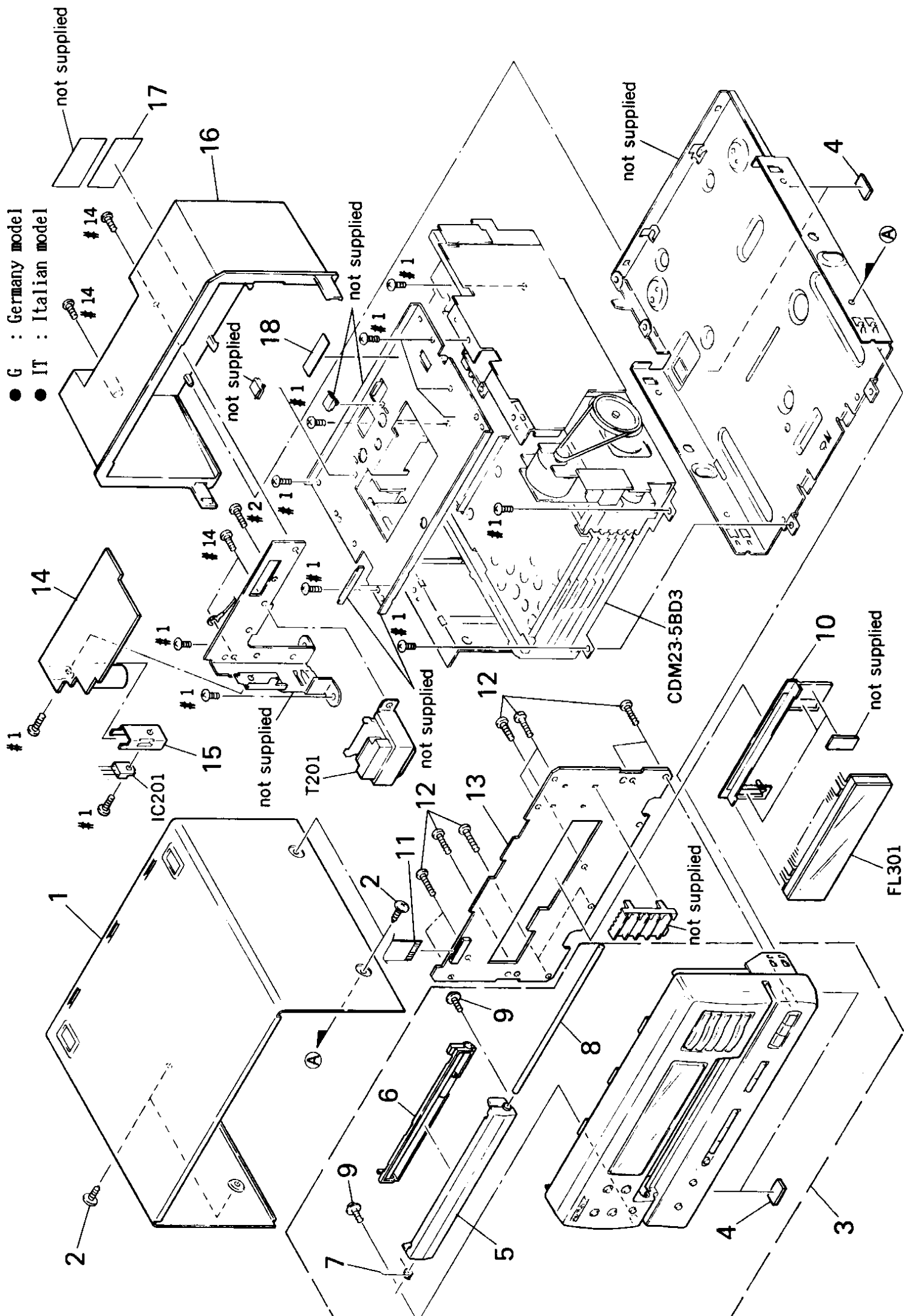


IC213 M5293L

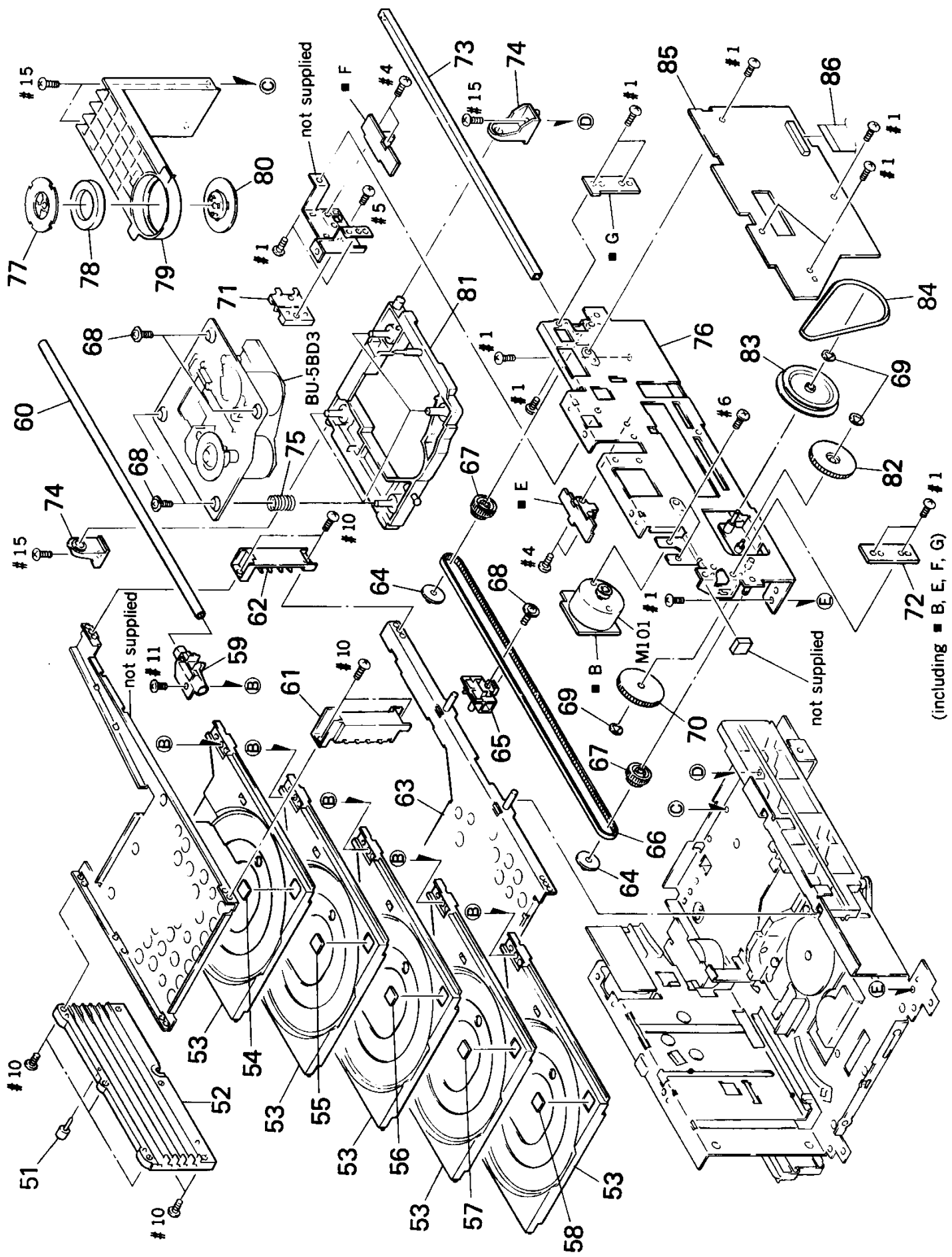


5-1. CABINET SECTION

- CND : Canadian model
- G : Germany model
- IT : Italian model



5-2. CD MECHANISM NECTION (1)
(CDM23-5BD3)



This exploded view diagram illustrates the assembly of a mechanical device. The main components and their assembly sequence are as follows:

- Part 101** is the base housing.
- Part 102** (a pin) is inserted into **Part 101** at location **F**.
- Part 103** (a gear) is mounted on the pin at **F**.
- Part 104** (a larger gear) is mounted on the pin at **F**.
- Part 105** (a lever) is attached to the pin at **F**.
- Part 106** (a pin) is inserted into **Part 101** at location **G**.
- Part 107** (a gear) is mounted on the pin at **G**.
- Part 108** (a lever) is attached to the pin at **G**.
- Part 109** (a bracket) is attached to the pin at **G**.
- Part 110** (a pin) is inserted into **Part 101** at location **H**.
- Part 111** (a gear) is mounted on the pin at **H**.
- Part 112** (a lever) is attached to the pin at **H**.
- Part 113** (a bracket) is attached to the pin at **H**.
- Part 114** (a pin) is inserted into **Part 101** at location **I**.
- Part 115** (a lever) is attached to the pin at **I**.
- Part 116** (a pin) is inserted into **Part 101** at location **J**.
- Part 117** (a lever) is attached to the pin at **J**.
- Part 118** (a bracket) is attached to the pin at **J**.
- Part 119** (a pin) is inserted into **Part 101** at location **K**.
- Part 120** (a gear) is mounted on the pin at **K**.
- Part 121** (a lever) is attached to the pin at **K**.
- Part 122** (a pin) is inserted into **Part 101** at location **L**.
- Part 123** (a gear) is mounted on the pin at **L**.
- Part 124** (a lever) is attached to the pin at **L**.
- Part 125** (a pin) is inserted into **Part 101** at location **M**.
- Part 126** (a gear) is mounted on the pin at **M**.
- Part 127** (a lever) is attached to the pin at **M**.
- Part 128** (a pin) is inserted into **Part 101** at location **N**.
- Part 129** (a gear) is mounted on the pin at **N**.
- Part 130** (a lever) is attached to the pin at **N**.
- Part 131** (a pin) is inserted into **Part 101** at location **O**.
- Part 132** (a gear) is mounted on the pin at **O**.
- Part 133** (a lever) is attached to the pin at **O**.
- Part 134** (a pin) is inserted into **Part 101** at location **P**.
- Part 135** (a gear) is mounted on the pin at **P**.
- Part 136** (a lever) is attached to the pin at **P**.
- Part 137** (a pin) is inserted into **Part 101** at location **Q**.
- Part 138** (a gear) is mounted on the pin at **Q**.
- Part 139** (a lever) is attached to the pin at **Q**.
- Part 140** (a pin) is inserted into **Part 101** at location **R**.
- Part 141** (a gear) is mounted on the pin at **R**.
- Part 142** (a lever) is attached to the pin at **R**.
- Part 143** (a pin) is inserted into **Part 101** at location **S**.
- Part 144** (a gear) is mounted on the pin at **S**.
- Part 145** (a lever) is attached to the pin at **S**.
- Part 146** (a pin) is inserted into **Part 101** at location **T**.
- Part 147** (a gear) is mounted on the pin at **T**.
- Part 148** (a lever) is attached to the pin at **T**.
- Part 149** (a pin) is inserted into **Part 101** at location **U**.
- Part 150** (a gear) is mounted on the pin at **U**.
- Part 151** (a lever) is attached to the pin at **U**.
- Part 152** (a pin) is inserted into **Part 101** at location **V**.
- Part 153** (a gear) is mounted on the pin at **V**.
- Part 154** (a lever) is attached to the pin at **V**.
- Part 155** (a pin) is inserted into **Part 101** at location **W**.
- Part 156** (a gear) is mounted on the pin at **W**.
- Part 157** (a lever) is attached to the pin at **W**.
- Part 158** (a pin) is inserted into **Part 101** at location **X**.
- Part 159** (a gear) is mounted on the pin at **X**.
- Part 160** (a lever) is attached to the pin at **X**.
- Part 161** (a pin) is inserted into **Part 101** at location **Y**.
- Part 162** (a gear) is mounted on the pin at **Y**.
- Part 163** (a lever) is attached to the pin at **Y**.
- Part 164** (a pin) is inserted into **Part 101** at location **Z**.
- Part 165** (a gear) is mounted on the pin at **Z**.
- Part 166** (a lever) is attached to the pin at **Z**.
- Part 167** (a pin) is inserted into **Part 101** at location **AA**.
- Part 168** (a gear) is mounted on the pin at **AA**.
- Part 169** (a lever) is attached to the pin at **AA**.
- Part 170** (a pin) is inserted into **Part 101** at location **AB**.
- Part 171** (a gear) is mounted on the pin at **AB**.
- Part 172** (a lever) is attached to the pin at **AB**.
- Part 173** (a pin) is inserted into **Part 101** at location **AC**.
- Part 174** (a gear) is mounted on the pin at **AC**.
- Part 175** (a lever) is attached to the pin at **AC**.
- Part 176** (a pin) is inserted into **Part 101** at location **AD**.
- Part 177** (a gear) is mounted on the pin at **AD**.
- Part 178** (a lever) is attached to the pin at **AD**.
- Part 179** (a pin) is inserted into **Part 101** at location **AE**.
- Part 180** (a gear) is mounted on the pin at **AE**.
- Part 181** (a lever) is attached to the pin at **AE**.
- Part 182** (a pin) is inserted into **Part 101** at location **AF**.
- Part 183** (a gear) is mounted on the pin at **AF**.
- Part 184** (a lever) is attached to the pin at **AF**.
- Part 185** (a pin) is inserted into **Part 101** at location **AG**.
- Part 186** (a gear) is mounted on the pin at **AG**.
- Part 187** (a lever) is attached to the pin at **AG**.
- Part 188** (a pin) is inserted into **Part 101** at location **AH**.
- Part 189** (a gear) is mounted on the pin at **AH**.
- Part 190** (a lever) is attached to the pin at **AH**.
- Part 191** (a pin) is inserted into **Part 101** at location **AI**.
- Part 192** (a gear) is mounted on the pin at **AI**.
- Part 193** (a lever) is attached to the pin at **AI**.
- Part 194** (a pin) is inserted into **Part 101** at location **AJ**.
- Part 195** (a gear) is mounted on the pin at **AJ**.
- Part 196** (a lever) is attached to the pin at **AJ**.
- Part 197** (a pin) is inserted into **Part 101** at location **AK**.
- Part 198** (a gear) is mounted on the pin at **AK**.
- Part 199** (a lever) is attached to the pin at **AK**.
- Part 200** (a pin) is inserted into **Part 101** at location **AL**.
- Part 201** (a gear) is mounted on the pin at **AL**.
- Part 202** (a lever) is attached to the pin at **AL**.
- Part 203** (a pin) is inserted into **Part 101** at location **AM**.
- Part 204** (a gear) is mounted on the pin at **AM**.
- Part 205** (a lever) is attached to the pin at **AM**.
- Part 206** (a pin) is inserted into **Part 101** at location **AN**.
- Part 207** (a gear) is mounted on the pin at **AN**.
- Part 208** (a lever) is attached to the pin at **AN**.
- Part 209** (a pin) is inserted into **Part 101** at location **AO**.
- Part 210** (a gear) is mounted on the pin at **AO**.
- Part 211** (a lever) is attached to the pin at **AO**.
- Part 212** (a pin) is inserted into **Part 101** at location **AP**.
- Part 213** (a gear) is mounted on the pin at **AP**.
- Part 214** (a lever) is attached to the pin at **AP**.
- Part 215** (a pin) is inserted into **Part 101** at location **AQ**.
- Part 216** (a gear) is mounted on the pin at **AQ**.
- Part 217** (a lever) is attached

5-4. OPTICAL PICK-UP SECTION (BU-5BD3)

