

CDP-C50/C50M

SERVICE MANUAL

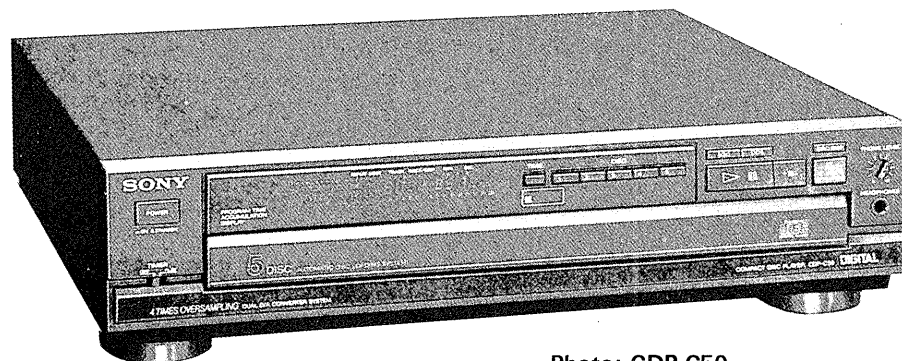


Photo: CDP-C50

AEP Model
Canadian Model
E Model
CDP-C50

AEP Model
UK Model
E Model
CDP-C50M

COMPACT
disc
DIGITAL AUDIO

SPECIFICATIONS

COMPACT DISC PLAYER

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.
Frequency response	2 Hz – 20 kHz ($\pm 1.0 \text{ dB}$)
Signal to noise ratio	More than 100 dB
Dynamic range	More than 88 dB
Harmonic distortion	Less than 0.05% (1 kHz)
Channel separation	More than 95 dB (1 kHz)
Wow and flutter	Below measurable limit
Outputs	LINE OUT (phono jacks) Output level 2 V (at 50 kilohms) Load impedance over 10 kilohms HEADPHONES (stereo phone jack) Output level 0 – 2.4 mW (variable) (at 32 ohms)

General

Power requirements	UK model: 240 V AC, 50 Hz AEP model: 220 V AC, 50 Hz Canadian model: 120 V AC, 60 Hz E model: 110–120 or 220–240 V AC, adjustable, 50/60 Hz
Power consumption	12 W

Dimensions

CDP-C50:	Approx. 430 x 110 x 385 mm (w/h/d) (17 x 4 $\frac{3}{8}$ x 15 $\frac{1}{8}$ inches)
CDP-C50M:	Approx. 355 x 105 x 385 mm (w/h/d) (14 x 4 $\frac{1}{4}$ x 15 $\frac{1}{8}$ inches)
	not including projecting parts and controls

Weight

CDP-C50:	Approx. 5.7 kg (12 lbs 10 oz), net
CDP-C50M:	Approx. 5.1 kg (11 lbs 4 oz), net

REMOTE COMMANDER (RM-D55)

Remote control system	Infrared control
Power requirements	3 V DC with two size AA (R6) batteries
Dimensions	Approx. 61 x 20 x 150 mm (w/h/d) (2 $\frac{1}{2}$ x 1 $\frac{3}{16}$ x 6 inches)
Weight	Approx. 110 g (4 oz) including batteries

SUPPLIED ACCESSORIES

Audio signal connecting cord	(phono plug x 2 $\leftrightarrow$ phono plug x 2) (1)
Sony SUM-3 (NS) batteries	(2)

COMPACT DISC PLAYER
SONY[®]

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Features

The compact disc player is equipped with 5 disc trays which allow you to choose from a large number and wide variety of selections.

Any disc at any time

can be played using the DISC SELECT buttons.

Multiple functions include:

- PROGRAM play which allows you to play up to 32 selections on any disc in any desired order.
- SHUFFLE play for playing selections in random order.
- REPEAT play for playing a single selection, a single disc, or all the discs again.

SERVICING NOTE

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.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optical Pick-up Block (including APC board).

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

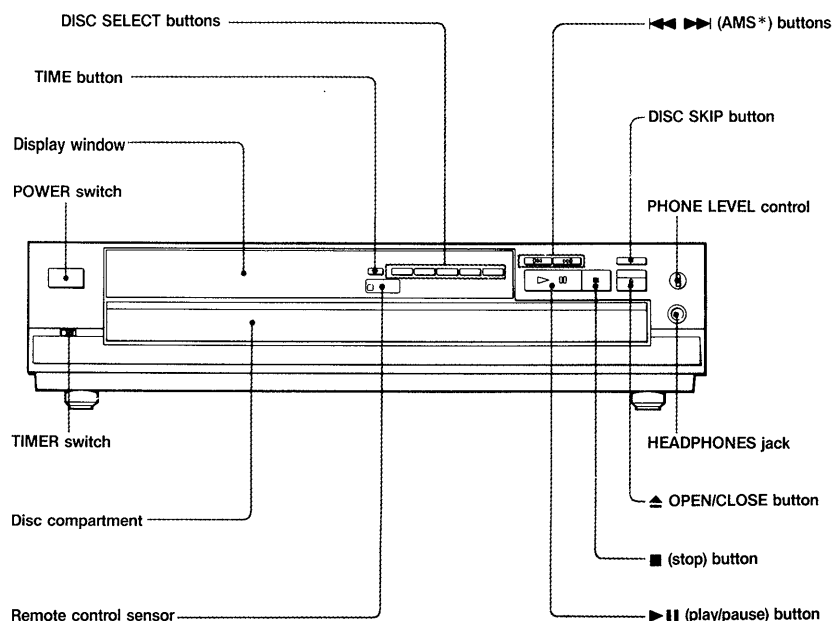
LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1 GENERAL

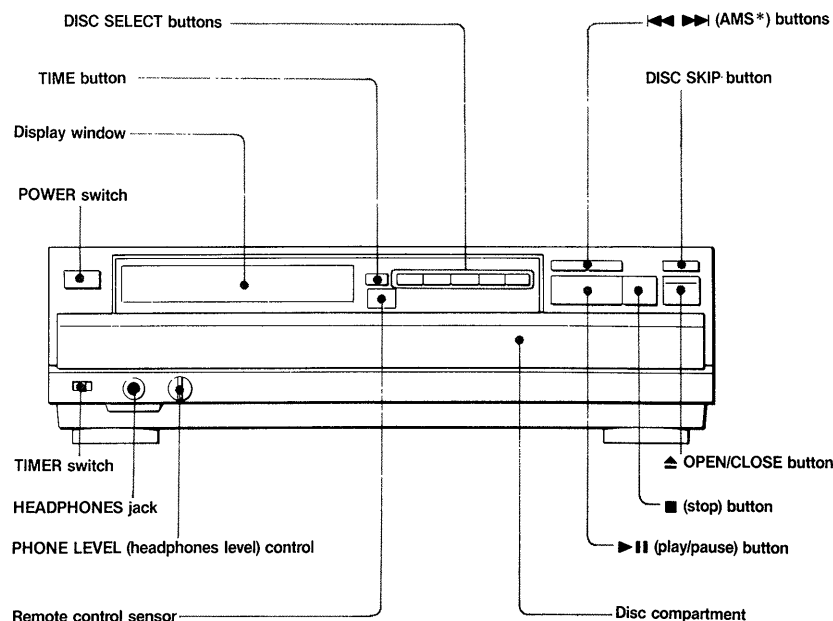
LOCATION AND FUNCTION OF CONTROLS

* AMS is the abbreviation of Automatic Music Sensor

Front Panel of the CDP-C50



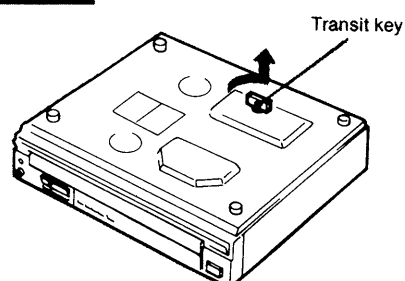
Front Panel of the CDP-C50M



Note on the Transit Key

The white transit key on the bottom exterior of the unit protects the optical system against shock during transportation. Before operating the CD player, be sure to remove the key by following the instructions on the label, and store it in a safe place.

When transporting the unit, replace the key in its original hole and lock it in place.



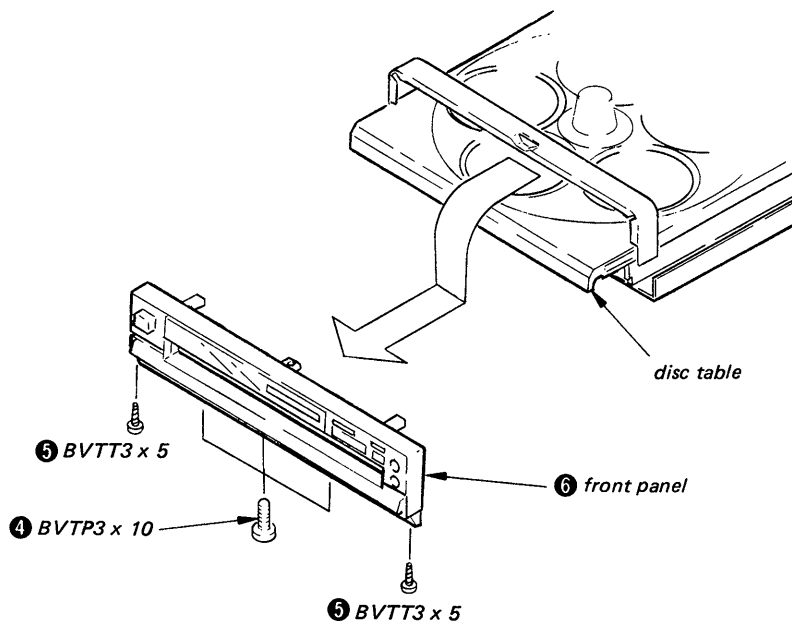
SECTION 2 DISASSEMBLY

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

FRONT PANEL

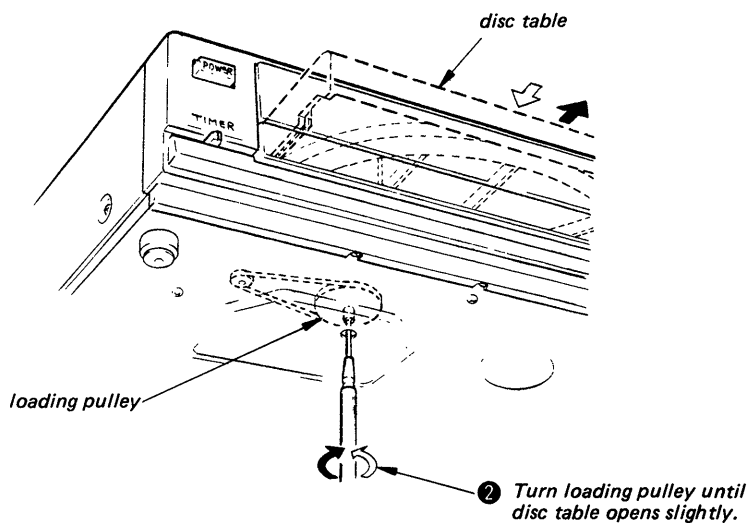
A. When disc table opens automatically by pressing OPEN/CLOSE button;

- ① Remove top cover.
- ② Press POWER switch to turn the power on.
- ③ Press OPEN/CLOSE button to open disc table.



B. When disc table does not open even if OPEN/CLOSE button is pressed;

- ① Remove top cover.
- ③ Perform steps A-4 to A-6.



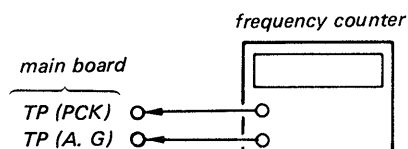
SECTION 3

ELECTRICAL ADJUSTMENTS

1. Perform adjustments in the order given.
2. Use YEDS-18 (Part No.: 3-702-101-01) disc unless otherwise indicated.
3. Use the oscilloscope with more than 10 M Ω impedance.

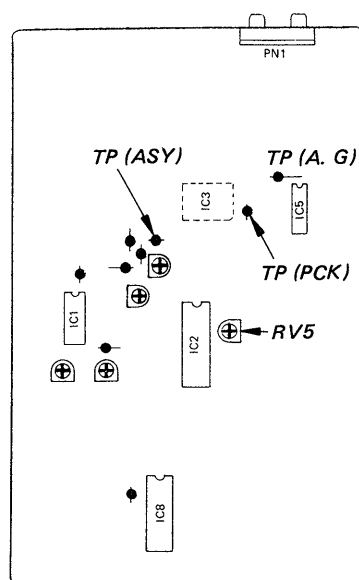
RF PLL Frequency Adjustment/Lock Frequency Check

Procedure:



1. Connect test point TP (ASY) to ground with lead wire.
2. Turn POWER switch on.
3. Connect the frequency counter to test points TP (PCK).
4. Adjust RV5 so that the reading on frequency counter is 4.3218 MHz $\pm$ 30 kHz.
..... (RF PLL frequency adjustment)
5. Remove lead wire connecting TP (ASY) to ground.
6. Put disc (YEDS-18) in and press button.
7. Confirm that the reading on frequency counter is 4.3218 MHz.

Adjustment Location: main board

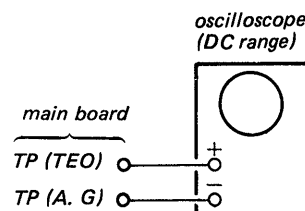


COMPONENT SIDE (FRONT)

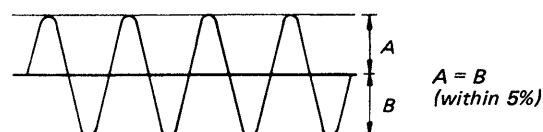
E-F Balance Adjustment

This adjustment should be made when replacing TOP (T-type Optical Pick-up).

Procedure:

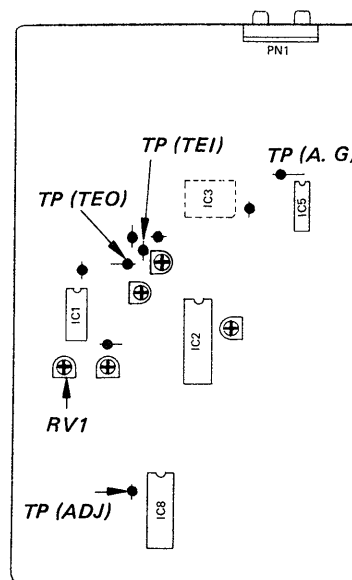


1. Connect test point TP (ADJ) and test point TP (TEI) to ground with lead wire.
2. Connect oscilloscope to test point TP (TEO).
3. Turn POWER switch on.
4. Put disc (YEDS-18) in and press button.
5. Adjust RV1 so that the traverse waveform is symmetrical above and below.
6. After adjustment, remove the lead wire connected in step 5.



VOLT/DIV: 1 V
TIME/DIV: 1 ms

Adjustment Location: main board

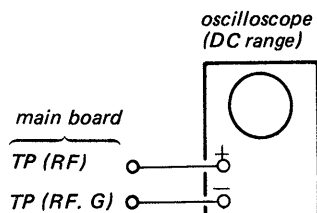


COMPONENT SIDE (FRONT)

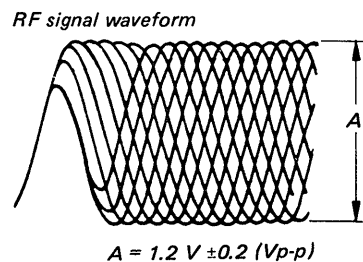
Focus Bias Adjustment

This adjustment should be made when replacing TOP (T-type Optical Pick-up).

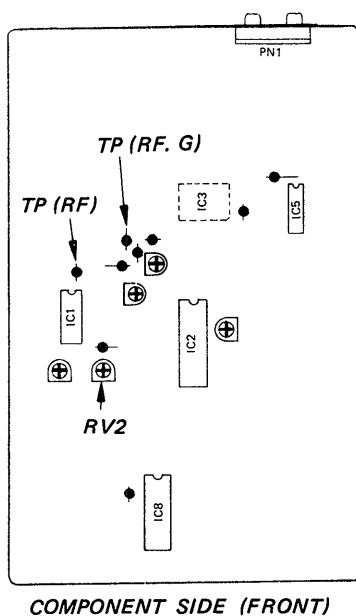
Procedure:



1. Connect oscilloscope to test points TP (RF) and test point TP (RF. G).
2. Turn POWER switch on.
3. Put disc (YEDS-18) in and press ▷ button.
4. Adjust RV2 for an optimum waveform eye pattern or so that the peak is maximum. Optimum eye pattern means that shape "◇" can be clearly distinguished at the center of the waveform.



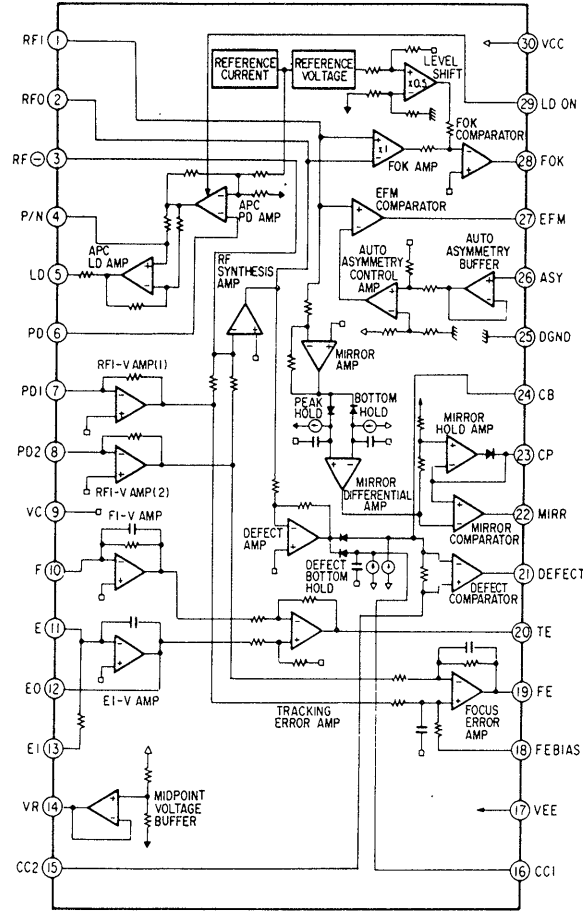
Adjustment Location: main board



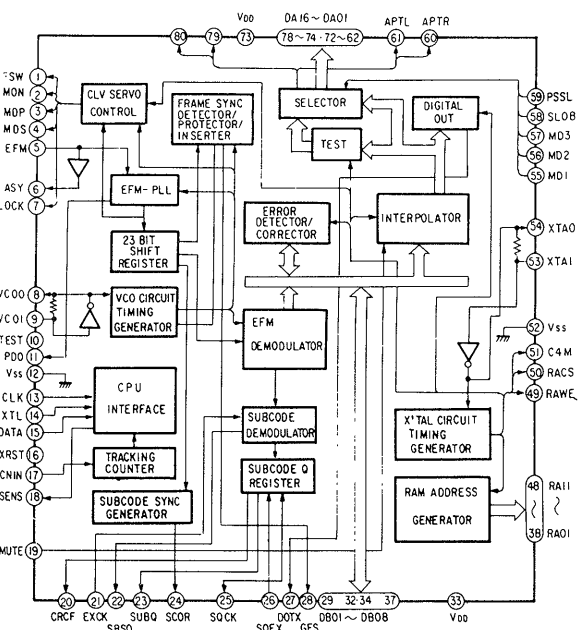
SECTION 4 DIAGRAMS

4-1. IC BLOCK DIAGRAMS

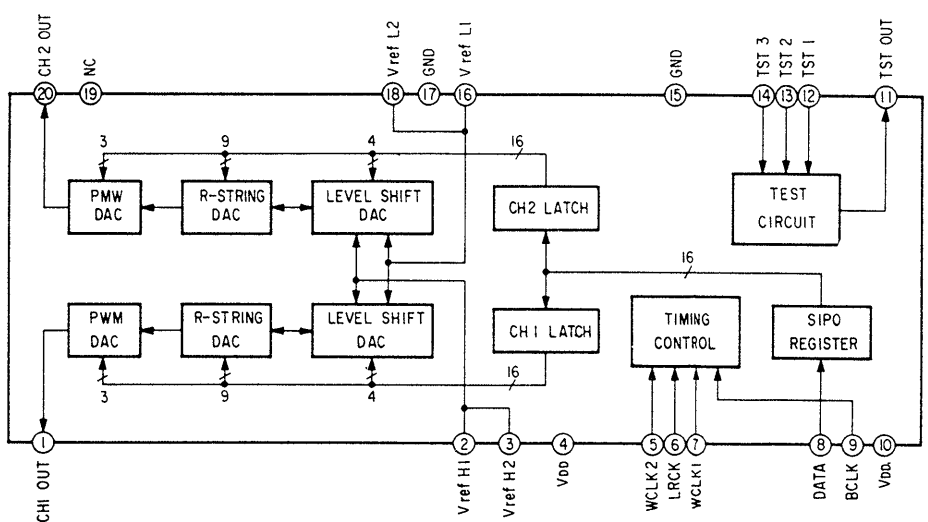
IC1 CXA1081S



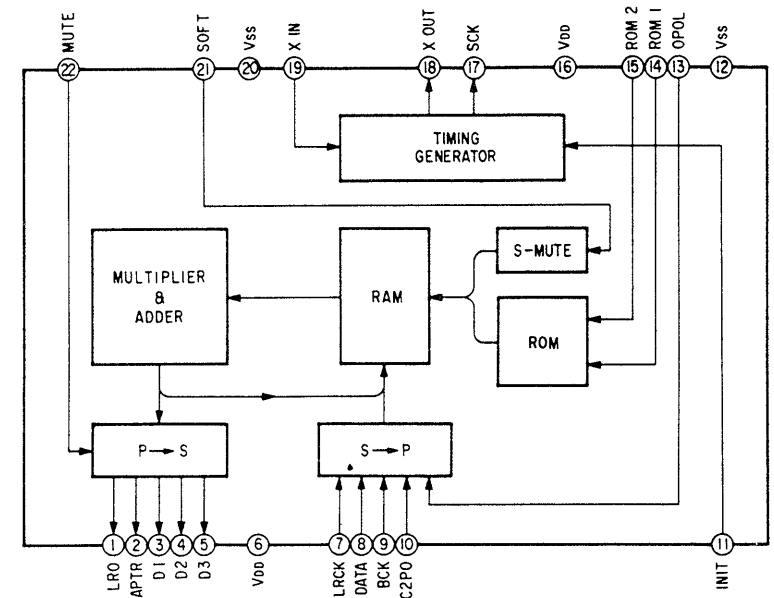
IC3 CXD1125Q



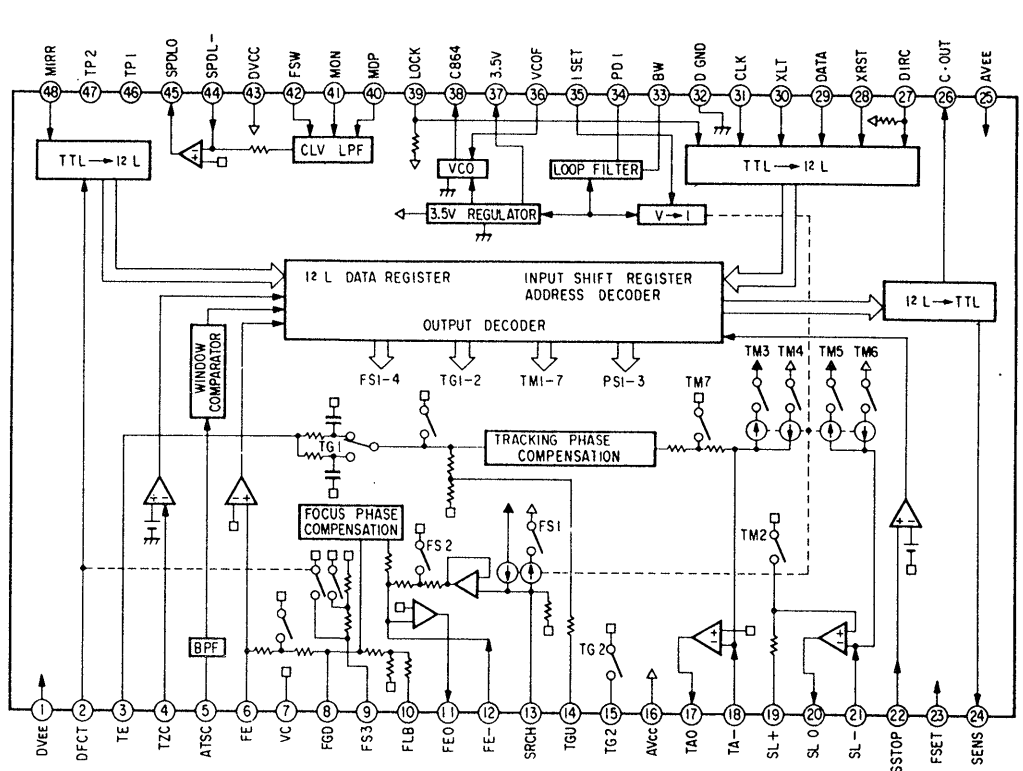
IC5 CXD1161P-2



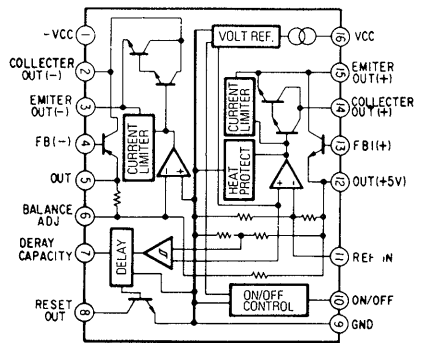
IC4 CXD1162P



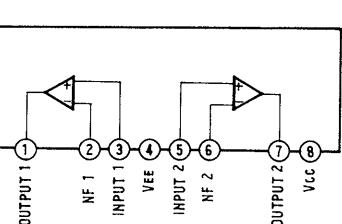
IC2 CXA1182S



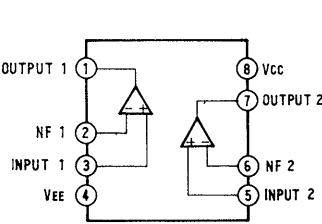
IC9 M5290-16



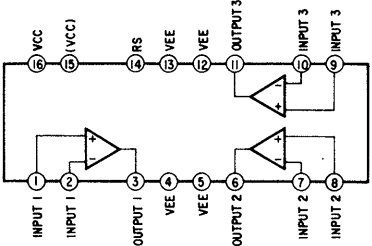
IC6, 7 M5218L



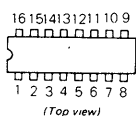
IC201 μPC4558C



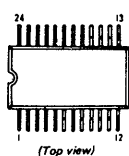
IC11, 12 LA6520



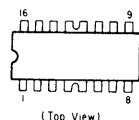
4-2. SEMICONDUCTOR LEAD LAYOUTS

CX23042-10
M5290P-16

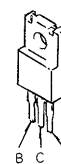
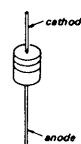
CXK5816M-10L



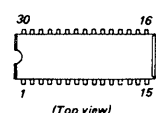
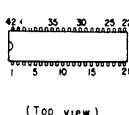
LA6520

BA1A4M
BN1L4M
2SA1346-TP
2SC3399
2SC3400

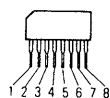
2SB1375

RD4.7ES-B2
RD5.6ES-B2
US1060M

CXA1081S

HD614128SA61
MSM6408-26SS

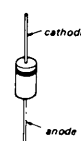
M5218L

2SA1175
2SC3623-L

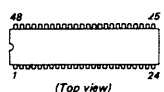
2SD2012



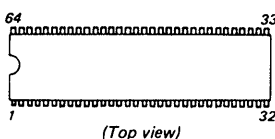
10E2N



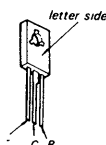
CXA1182S



M50747-101SP



2SB731



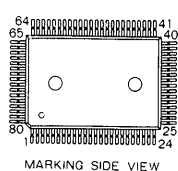
GP1A521



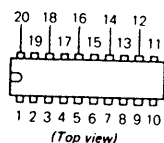
SRA-989A-1



CXD1125Q



CXD1161P-2



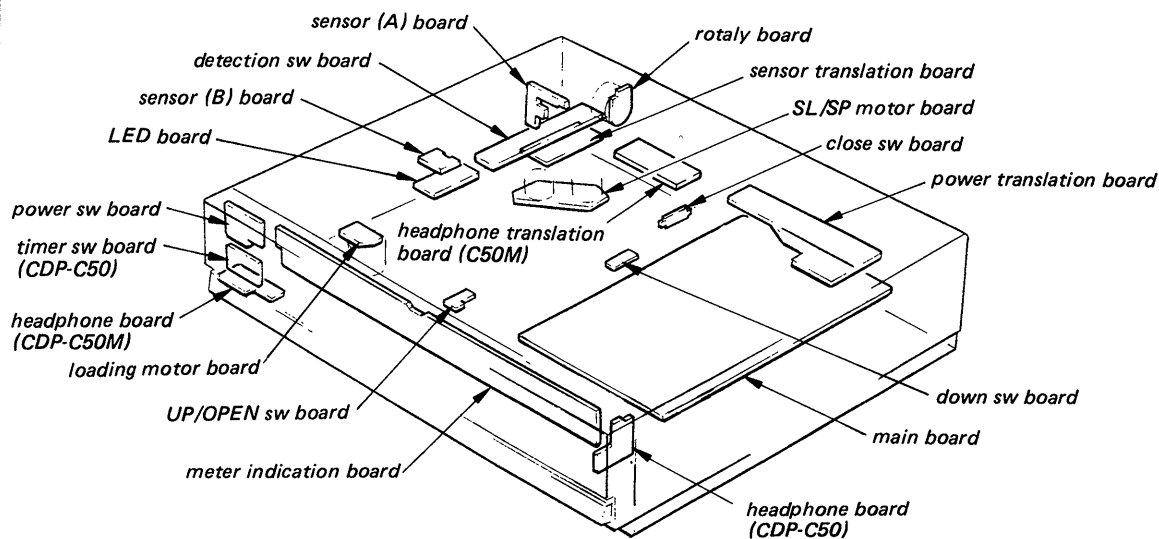
2SB1013



PT360FS



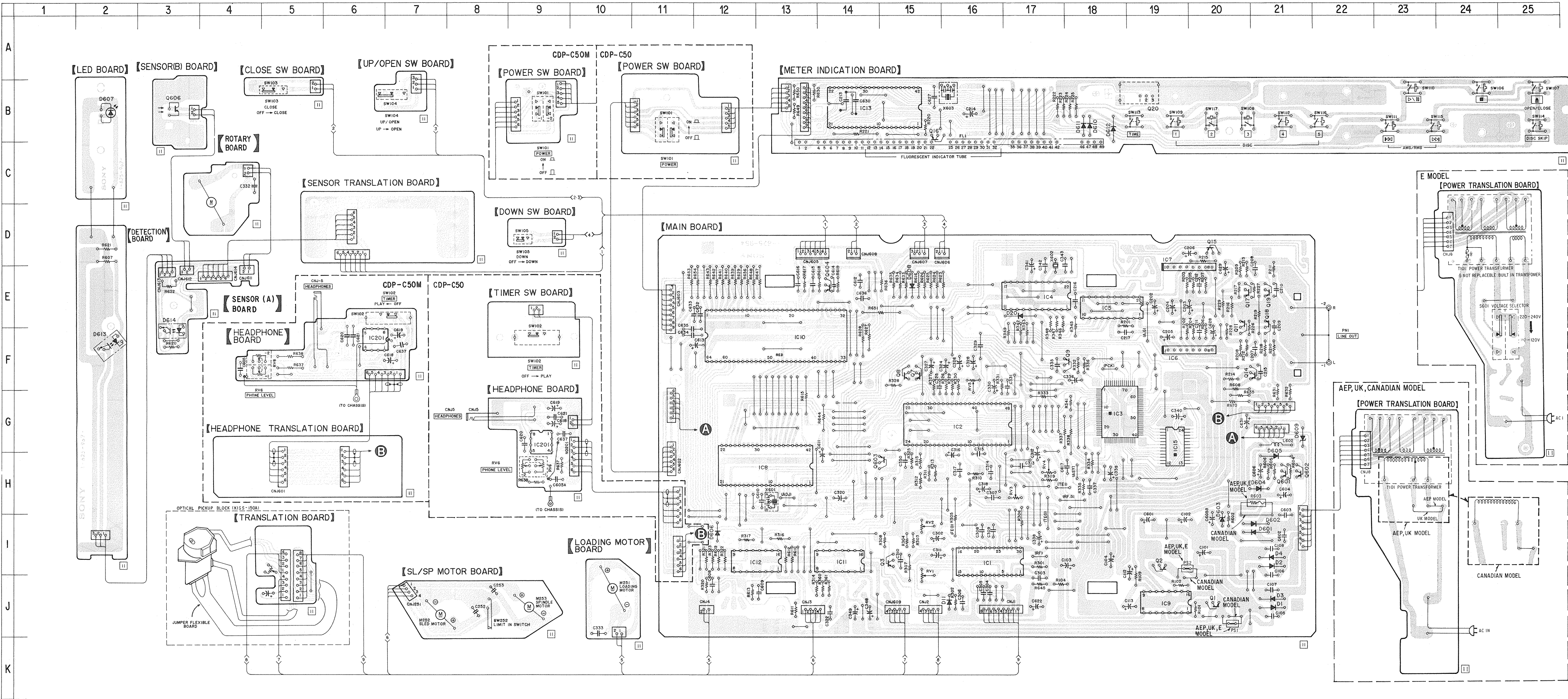
● Circuit Boards Location



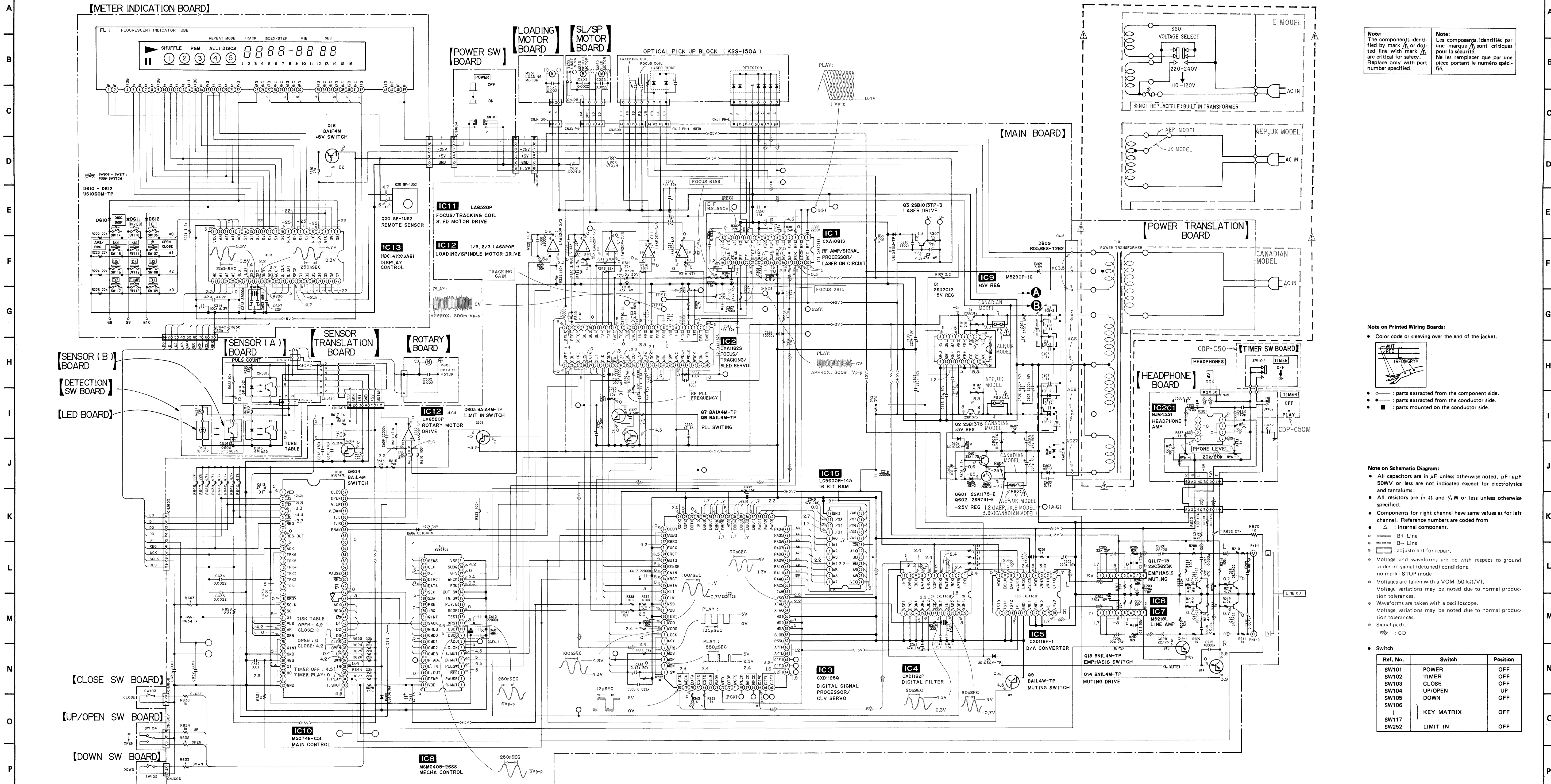
- See page 11 for Semiconductor Lead Layouts and Circuit Boards Location.
- See page 18 for notes.

● Semiconductor Location

Ref. No.	Location
D1	J-21
D2	I-21
D3	J-21
D4	I-21
D11	J-16
D20	E-17
D601	H-21
D602	I-21
D603	H-20
D604	H-21
D605	G-21
D606	I-12
D607	B-2
D608	E-15
D609	G-21
D610	B-18
D611	B-18
D612	B-18
D613	E-2
D614	E-3
IC1	I-16
IC2	G-16
IC3	G-18
IC4	E-17
IC5	E-18
IC6	F-19
IC7	D-19
IC8	G-13
IC9	J-19
IC10	E-13
IC11	I-14
IC12	I-12
IC13	B-14
IC15	G-19
IC201	E-6, G-9
Q1	J-20
Q2	I-19
Q3	I-15
Q7	F-15
Q8	F-15
Q9	F-17
Q11	E-20
Q14	F-20
Q15	D-20
Q16	B-15
Q17	E-20
Q18	E-21
Q19	E-21
Q20	B-19
Q601	H-21
Q602	H-21
Q603	G-14
Q604	E-14
Q606	B-3



4-4. SCHEMATIC DIAGRAM • See page 9 for IC Block Diagrams.



SECTION 5

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.

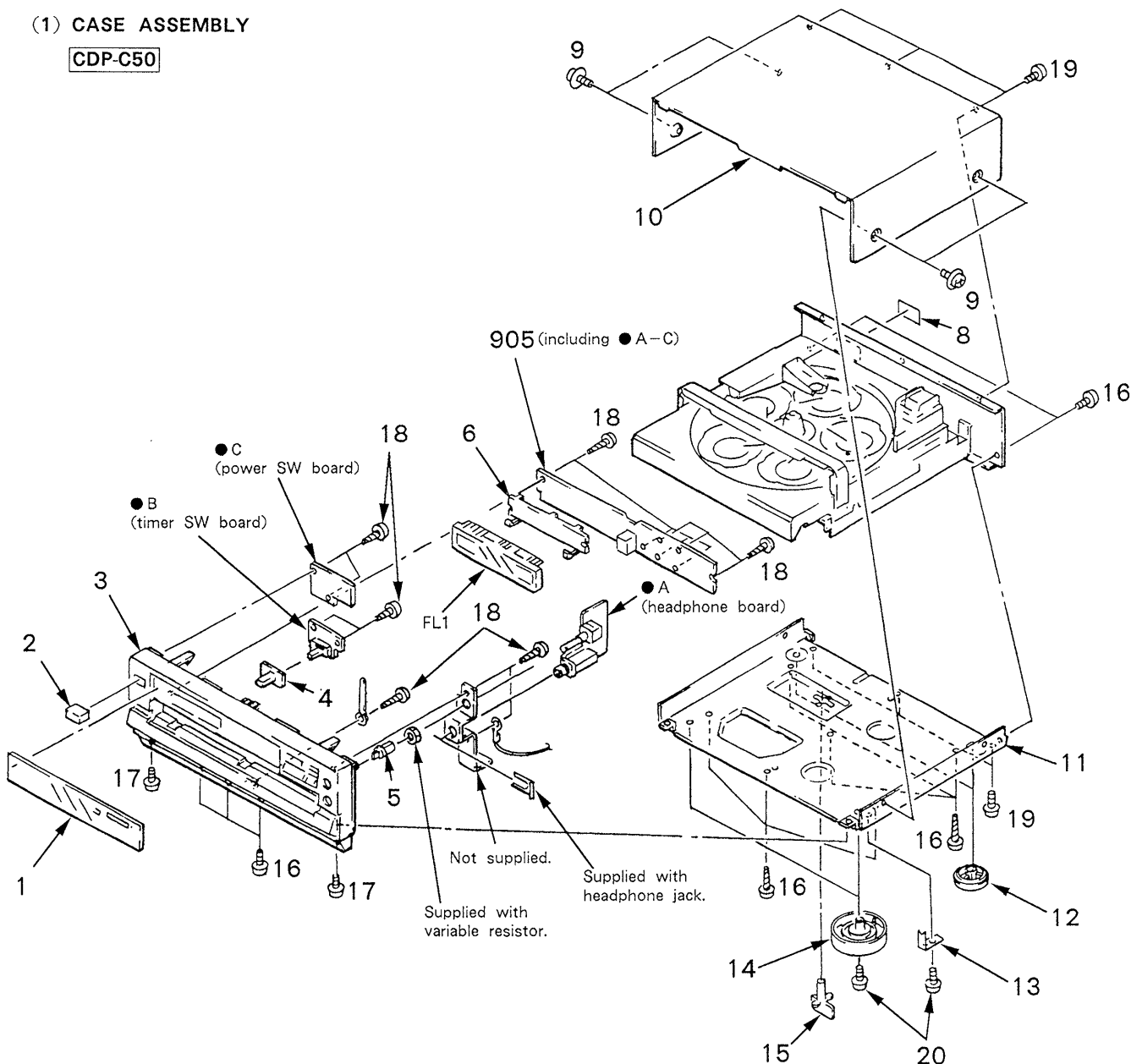
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
Example:
(RED) ... KNOB, BALANCE (WHITE)

↑
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.

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

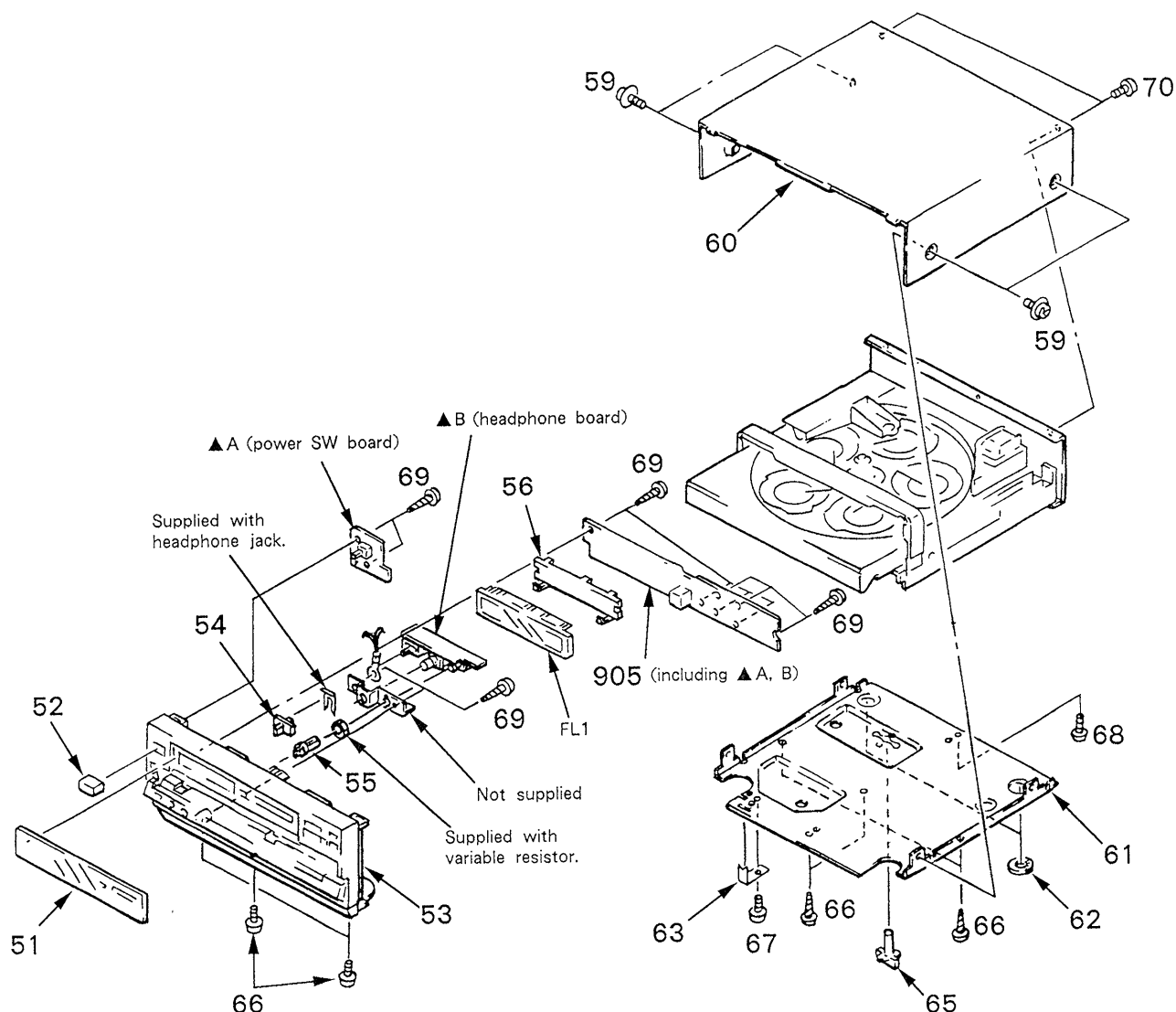
(1) CASE ASSEMBLY**CDP-C50**

No.	Part No.	Description	Remarks
1	4-924-440-01	(C50)...PLATE (B), INDICATION	
2	4-922-921-01	(C50)...BUTTON (POWER)	
3	X-4924-404-1	(C50:Canadian)...PANEL ASSY, FRONT	
	X-4924-412-1	(C50:AEP,E).....PANEL ASSY, FRONT	
4	4-924-444-01	(C50)...KNOB (TIMER)	
5	4-923-522-01	(C50)...KNOB (B TYPE), VOL	
6	*4-924-462-01	BRACKET (FL)	
8	*4-885-838-00	(AEP,UK,E)...LABEL, CLASS 1	
9	3-703-279-11	SCREW, S TIGHT, (+) PTTWH (3X8)	
10	4-924-442-01	(C50)...CASE (F)	

No.	Part No.	Description	Remarks
11	*4-924-441-01	(C50)...PLATE (FL), BOTTOM	
12	X-4922-001-1	(C50)...FOOT ASSY	
13	*4-924-467-01	PLATE, GROUND	
14	X-4922-508-1	(C50)...FOOT ASSY	
15	*4-924-418-01	PLATE (TRANSPORT), LOCK	
16	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
17	7-685-870-09	SCREW +BVTT 3X5 (S)	
18	7-685-534-19	SCREW +P 2.6X8 TYPE2 NON-SLIT	
19	3-703-685-31	(C50)...SCREW	
20	7-685-871-09	SCREW +BVTT 3X6	
905	*1-625-966-11	PC BOARD, METER INDICATION	
FL1	1-519-451-11	INDICATOR TUBE, FLUORESCENT	

(2) CASE ASSEMBLY

CDP-C50M

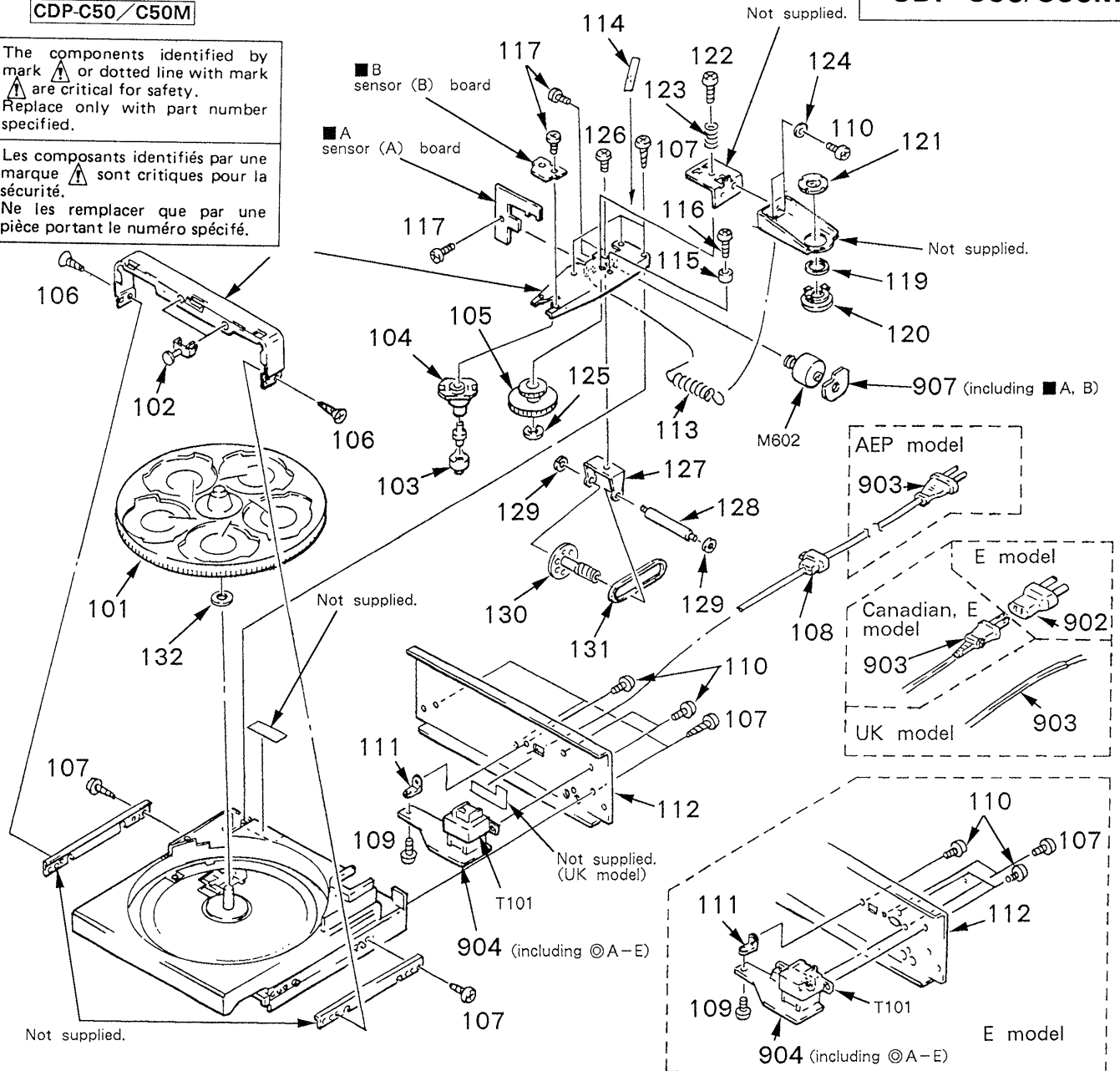


No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51	4-924-429-01	(C50M)...PLATE (A), INDICATION		61	*4-924-438-01	(C50M)...PLATE (M), BOTTOM	
52	4-922-903-01	(C50M:BLACK)...BUTTON (POWER)		62	4-924-410-01	(C50M)...FELT	
	4-922-903-11	(C50M:GRAY)...BUTTON (POWER)		63	*4-924-467-01	PLATE, GROUND	
53	X-4924-411-1	(C50M:BLACK)...PANEL ASSY, FRONT		65	*4-924-418-01	PLATE (TRANSPORT), LOCK	
	X-4924-419-1	(C50M:GRAY)...PANEL ASSY, FRONT		66	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
54	4-922-518-01	(C50M:BLACK)...KNOB (TIMER)		67	7-682-147-01	SCREW +BVTP 3X6 (S)	
	4-922-518-21	(C50M:GRAY)...KNOB (TIMER)		68	3-703-685-31	(C50)...SCREW	
55	4-922-531-01	(C50M:BLACK)...KNOB (A TYPE), LOV		69	7-685-534-19	SCREW +P 2.6X8 TYPE2 NON-SLIT	
	4-922-531-21	(C50M:GRAY)...KNOB (A TYPE), LOV		70	3-703-685-21	(BLACK)...SCREW (+BV 3X8)	
56	*4-924-462-01	BRACKET (FL)			3-703-685-31	(GRAY)...SCREW +BV 3X8	
58	*4-885-838-00	(AEP,UK,E)...LABEL, CLASS 1		905	*1-625-966-11	PC BOARD, METER INDICATION	
59	3-703-279-11	SCREW, S TIGHT, (+) PTTWH (3X8)		FL1	1-519-451-11	INDICATOR TUBE, FLUORESCENT	
60	4-924-436-01	(C50M:BLACK)...CASE (M)					
	4-924-436-11	(C50M:GRAY)...CASE (M)					

CDP-C50 / C50M

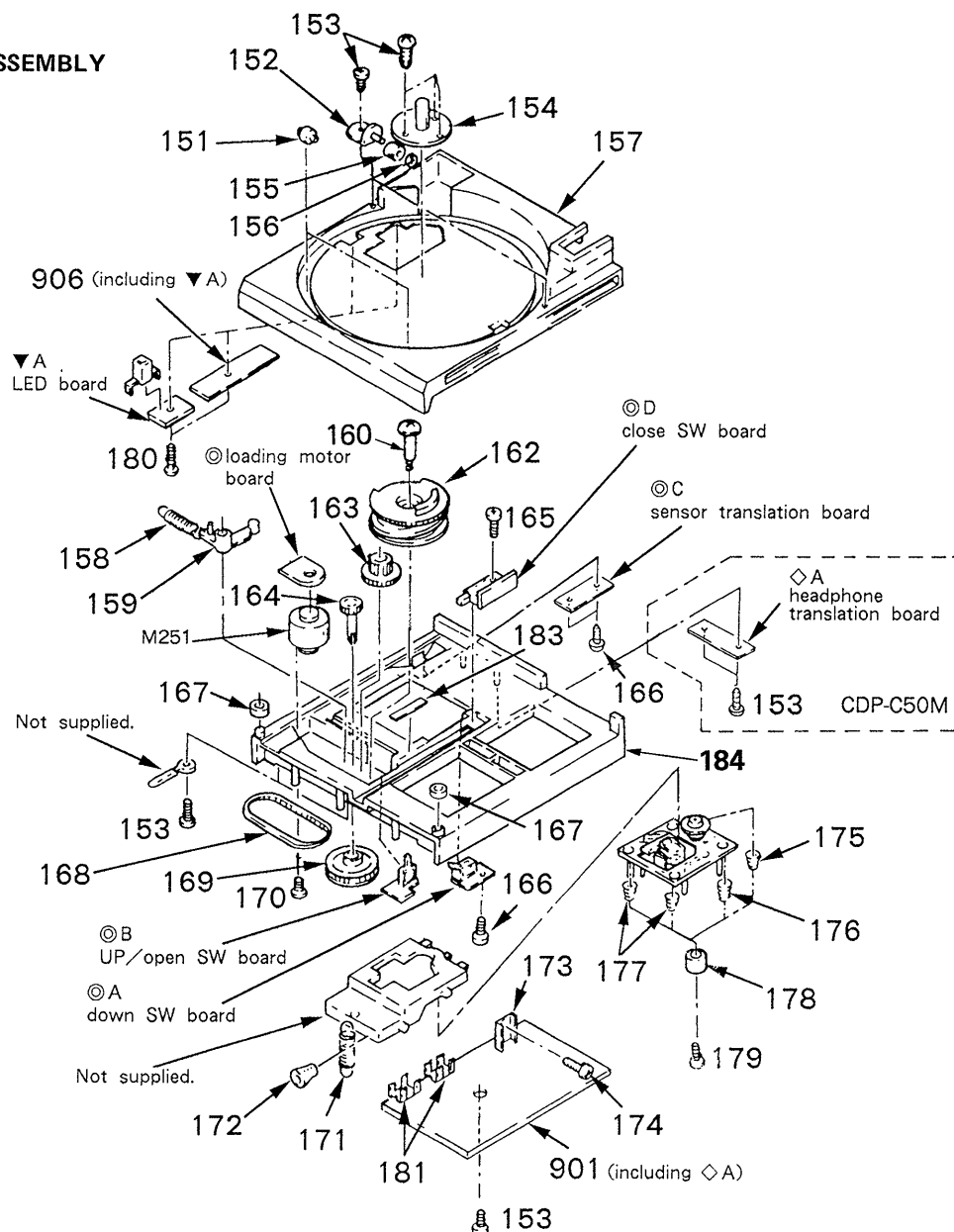
The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

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



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
101	*4-924-405-01	TABLE (B), DISK		119	1-452-340-21	MAGNET	
102	*4-837-107-00	SPACER		120	*4-921-022-01	PULLEY, CHUCKING	
103	*4-924-408-01	HOLDER (B), LED		121	*4-921-029-01	YOKE, CHUCKING	
104	*4-924-409-01	HOLDER (A), LED		122	7-685-870-09	SCREW +BVTP 3X5 (S)	
105	4-924-414-01	GEAR (WH)		123	4-924-477-01	SPRING, COMPRESSION	
106	7-685-248-19	SCREW +KTP 3X12 TYPE2 NON-SLIT		124	7-688-003-01	W 3, SMALL	
107	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S		125	7-624-106-04	STOP RING 3.0, TYPE -E	
108	△.3-703-244-00	(Canadian,AEP,UK)...BUSHING (2104), CORD		126	7-682-548-09	SCREW +B 3X8	
	△.3-703-571-11	(E).....BUSHING (S) (4516), CORD		127	*4-924-424-01	BRACKET (WORM)	
109	7-682-147-01	SCREW +BVTT 3X6 (S)		128	4-924-420-01	SHAFT (W)	
110	7-685-871-09	SCREW +BVTT 3X6		129	3-669-465-00	WASHER (1.5), STOPPER	
111	*4-923-506-01	BRACKET (PC BOARD)		130	4-924-419-01	PULLEY (WORM)	
112	*4-924-401-21	(C50:AEP).....PANEL (FL), BACK		131	4-917-548-02	BELT, DRIVING	
	*4-924-401-41	(C50:Canadian)...PANEL (FL), BACK		132	4-926-307-01	WASHER	
	*4-924-401-51	(C50:E).....PANEL (FL), BACK		902	△.1-526-565-00	(E)....AC PLUG ADAPTOR	
	*4-924-402-11	(C50M:UK)...PANEL (M), BACK		903	△.1-551-188-XX	(E)CORD, POWER	
	*4-924-402-21	(C50M:E).....PANEL (M), BACK			△.1-551-478-00	(Canadian)...CORD, POWER	
	*4-924-402-31	(C50M:AEP)...PANEL (M), BACK			△.1-555-795-00	(AEP).....CORD, POWER	
					△.1-556-035-00	(UK).....CORD, POWER	
113	4-924-421-01	SPRING (C), TENSION		904	*1-625-965-11	PC BOARD, POWER TRANSLATION	
114	3-831-441-XX	CUSHION (B), CABINET		907	*1-626-040-11	PC BOARD, ROTARY	
115	*3-654-058-00	SPACER 3X3		M602	A-4608-351-A	MOTOR ASSY, ROTARY	
116	7-685-872-09	SCREW +BVTT 3X8 (S)		T101	△.1-449-216-11	(Canadian)...TRANSFORMER, POWER	
117	7-621-259-15	SCREW +P 2.6X3		T101	△.1-449-217-11	(AEP,UK)....TRANSFORMER, POWER	
				T101	△.1-449-218-11	(E).....TRANSFORMER, POWER	

(4) DISK TABLE ASSEMBLY



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
151	*X-4924-409-1	SHAFT (ROLLER B) ASSY		169	4-924-474-01	PULLEY (LOADING)	
152	*X-4924-410-1	BRACKET (ROLLER) ASSY		170	7-628-254-00	+PSW, 2.6X5	
153	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S		171	4-924-411-01	SPRING (A), TENSION	
154	*X-4924-402-1	BRACKET (A) ASSY		172	4-917-515-01	ROLLER	
155	*X-4924-408-3	COLLAR (ROLLER) ASSY		173	*4-875-327-01	HEAT SINK	
156	3-325-290-21	WASHER, STOPPER		174	7-682-147-01	SCREW +BVTT 3X6 (S)	
157	4-924-406-01	(BLACK)...TABLE (A), DISK		175	4-918-669-01	SPRING (W)	
	4-924-406-11	(GRAY)...TABLE (A), DISK		176	4-917-541-01	SPRING (B)	
158	4-924-412-01	SPRING (B), TENSION		177	4-917-507-01	SPRING (H)	
159	4-917-519-01	LEVER, SET		178	4-917-508-01	HOLDER, SP	
160	4-926-317-01	SCREW, STEP		179	7-685-135-19	SCREW +P 2.6X10 TYPE2 NON-SLIT	
162	4-924-431-01	GEAR (LOADING A)		180	7-685-134-19	SCREW, TOTSU BTP 2.6X8 TYPE2	
163	4-924-426-01	GEAR (LOADING C)		181	*4-922-525-01	HEAT SINK	
164	4-924-425-01	GEAR (LOADING B)		183	*4-926-316-01	SHEET	
165	7-685-537-19	SCREW +P 2.6X14 TYPE2 NON-SLIT		184	4-924-407-06	FRAME	
166	7-685-646-11	SCREW +BVTP 3X8 TYPE2 N-S		901	*A-4651-192-A	(C50:Canadian)...MOUNTED PCB, MAIN	
167	*3-576-990-01	CUSHION			*A-4651-205-A	(C50M).....MOUNTED PCB, MAIN	
168	4-924-478-01	BELT (TIMING)			*A-4651-206-A	(C50:AEP,E).....MOUNTED PCB, MAIN	
				906	*1-625-967-11	PC BOARD, DETECTION SWITCH	
				M251	A-4608-350-A	MOTOR ASSY, LOADING	

SECTION 6

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 PF.**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

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

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.

Ref.No.	Part No.	Description
901	*A-4651-192-A	(C50:Canadian)...MOUNTED PCB, MAIN
	*A-4651-205-A	(C50M).....MOUNTED PCB, MAIN
	*A-4651-206-A	(C50:AEP,E).....MOUNTED PCB, MAIN
902	.1-526-565-00	(E).....AC PLUG ADAPTOR
903	Δ .1-551-188-XX	(E).....CORD, POWER
	Δ .1-551-478-00	(Canadian)...CORD, POWER
	Δ .1-555-795-00	(AEP).....CORD, POWER
	Δ .1-556-035-00	'UK').....CORD, POWER
904	*1-625-965-11	PC BOARD, POWER TRANSLATION
905	*1-625-966-11	PC BOARD, METER INDICATION
906	*1-625-967-11	PC BOARD, DETECTION SWITCH
907	*1-626-040-11	PC BOARD, ROTARY
910	*1-624-322-11	PC BOARD, SL/SP MOTOR
911	Δ .8-848-062-01	PICK UP, OPTICS KSS-150A
C101	1-124-556-11	ELECT 2200MF 20% 16V
C102	1-124-556-11	ELECT 2200MF 20% 16V
C103	1-124-444-00	ELECT 220MF 20% 10V
C104	1-124-444-00	ELECT 220MF 20% 10V
C105	1-136-165-00	FILM 0.1MF 5% 50V
C106	1-136-165-00	FILM 0.1MF 5% 50V
C107	1-136-165-00	FILM 0.1MF 5% 50V
C108	1-136-165-00	FILM 0.1MF 5% 50V
C112	1-123-875-11	ELECT 10MF 20% 50V
C113	1-123-875-11	ELECT 10MF 20% 50V
C202	1-124-444-00	ELECT 220MF 20% 10V
C203	1-124-444-00	ELECT 220MF 20% 10V
C204	1-124-444-00	ELECT 220MF 20% 10V
C205	1-124-908-11	ELECT 22MF 20% 25V
C206	1-124-908-11	ELECT 22MF 20% 25V
C207	1-136-159-00	FILM 0.033MF 5% 50V
C208	1-136-159-00	FILM 0.033MF 5% 50V
C209	1-106-347-00	MYLAR 0.0015MF 5% 50V
C210	1-106-347-00	MYLAR 0.0015MF 5% 50V
C211	1-162-211-31	CERAMIC 33PF 5% 50V
C212	1-162-211-31	CERAMIC 33PF 5% 50V
C213	1-161-494-00	CERAMIC 0.022MF 25V
C214	1-124-443-00	ELECT 100MF 20% 6.3V
C215	1-161-379-00	CERAMIC 0.01MF 30% 16V
C216	1-161-494-00	CERAMIC 0.022MF 25V
C217	1-161-494-00	CERAMIC 0.022MF 25V
C252	1-106-351-00	MYLAR 0.0022MF 5% 50V
C253	1-106-351-00	MYLAR 0.0022MF 5% 50V
C302	1-124-477-11	ELECT 47MF 20% 16V
C303	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C304	1-162-203-31	CERAMIC 15PF 5% 50V
C305	1-162-203-31	CERAMIC 15PF 5% 50V

Ref.No.	Part No.	Description
C306	1-136-159-00	FILM 0.033MF 5% 50V
C307	1-161-377-00	CERAMIC 0.0047MF 30% 16V
C308	1-136-159-00	FILM 0.033MF 5% 50V
C309	1-136-153-00	FILM 0.01MF 5% 50V
C310	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C311	1-124-477-11	ELECT 47MF 20% 16V
C312	1-124-477-11	ELECT 47MF 20% 16V
C313	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C314	1-136-165-00	FILM 0.1MF 5% 50V
C315	1-136-159-00	FILM 0.033MF 5% 50V
C316	1-123-382-00	ELECT 3.3MF 20% 50V
C317	1-136-165-00	FILM 0.1MF 5% 50V
C318	1-124-477-11	ELECT 47MF 20% 16V
C320	1-123-875-11	ELECT 10MF 20% 50V
C322	1-136-169-00	FILM 0.22MF 5% 50V
C324	1-124-499-11	ELECT 1MF 20% 50V
C325	1-161-377-00	CERAMIC 0.0047MF 30% 16V
C326	1-124-927-11	ELECT 4.7MF 20% 50V
C327	1-124-499-11	ELECT 1MF 20% 50V
C328	1-124-477-11	ELECT 47MF 20% 16V
C329	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C330	1-124-477-11	ELECT 47MF 20% 16V
C331	1-162-282-31	CERAMIC 100PF 10% 50V
C332	1-161-494-00	CERAMIC 0.022MF 25V
C333	1-161-494-00	CERAMIC 0.022MF 25V
C335	1-136-159-00	FILM 0.033MF 5% 50V
C336	1-124-902-00	ELECT 0.47MF 20% 50V
C337	1-161-379-00	CERAMIC 0.01MF 30% 16V
C338	1-124-902-00	ELECT 0.47MF 20% 50V
C339	1-124-477-11	ELECT 47MF 20% 16V
C340	1-124-477-11	ELECT 47MF 20% 16V
C341	1-124-477-11	ELECT 47MF 20% 16V
C342	1-162-203-31	CERAMIC 15PF 5% 50V
C343	1-162-203-31	CERAMIC 15PF 5% 50V
C348	1-124-477-11	ELECT 47MF 20% 16V
C349	1-124-477-11	ELECT 47MF 20% 16V
C350	1-161-379-00	CERAMIC 0.01MF 30% 16V
C601	1-124-556-11	ELECT 2200MF 20% 16V
C602	1-136-165-00	FILM 0.1MF 5% 50V
C603	1-136-165-00	FILM 0.1MF 5% 50V
C604	1-124-911-11	ELECT 220MF 20% 50V
C605A	1-136-165-00	FILM 0.1MF 5% 50V
C605B	1-124-910-11	ELECT 47MF 20% 50V
C606	1-124-122-11	ELECT 100MF 20% 35V
C608	1-161-494-00	CERAMIC 0.022MF 25V
C609	1-161-494-00	CERAMIC 0.022MF 25V

Ref.No.	Part No.	Description			
C610	1-161-494-00	CERAMIC	0.022MF		25V
C611	1-124-477-11	ELECT	47MF	20%	16V
C612	1-136-153-00	FILM	0.01MF	5%	50V
C613	1-124-477-11	ELECT	47MF	20%	16V
C614	1-162-290-31	CERAMIC	470PF	10%	50V
C615	1-162-290-31	CERAMIC	470PF	10%	50V
C616	1-162-290-31	CERAMIC	470PF	10%	50V
C617	1-161-494-00	CERAMIC	0.022MF		25V
C618	1-124-443-00	(C50)...ELECT	100MF	20%	6.3V
C618	1-126-101-11	(C50M)...ELECT	100MF	20%	16V
C619	1-124-443-00	(C50)...ELECT	100MF	20%	6.3V
C619	1-126-101-11	(C50M)...ELECT	100MF	20%	16V
C620	1-162-290-31	CERAMIC	470PF	10%	50V
C621	1-162-290-31	CERAMIC	470PF	10%	50V
C622	1-124-477-11	ELECT	47MF	20%	16V
C627	1-162-207-31	CERAMIC	22PF	5%	50V
C628	1-124-908-11	ELECT	22MF	20%	25V
C629	1-124-908-11	ELECT	22MF	20%	25V
C630	1-161-494-00	CERAMIC	0.022MF		25V
C631	1-124-443-00	ELECT	100MF	20%	6.3V
C632	1-161-379-00	CERAMIC	0.01MF	30%	16V
C633	1-161-379-00	CERAMIC	0.01MF	30%	16V
C634	1-161-494-00	CERAMIC	0.022MF		25V
C635	1-161-494-00	CERAMIC	0.022MF		25V
C636	1-136-153-00	FILM	0.01MF	5%	50V
C637	1-136-165-00	FILM	0.1MF	5%	50V
CNJ1	*1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P			
CNJ2	*1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P			
CNJ3	*1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P			
CNJ4	*1-564-336-51	PIN, CONNECTOR 2P			
CNJ5	1-563-485-21	JACK, LARGE TYPE			
CNJ8	*1-564-522-11	PLUG, CONNECTOR 7P			
CNJ251	*1-564-720-21	PIN, CONNECTOR (SMALL TYPE) 4P			
CNJ601	*1-564-509-11	(C50M)...PLUG, CONNECTOR 6P			
CNJ602	*1-564-499-11	PIN, CONNECTOR 6P			
CNJ603	*1-506-615-11	PIN, CONNECTOR 9P			
CNJ605	*1-564-340-51	PIN, CONNECTOR 6P			
CNJ606	*1-564-336-61	PIN, CONNECTOR 2P			
CNJ607	*1-564-337-71	PIN, CONNECTOR 3P			
CNJ608	*1-564-336-81	PIN, CONNECTOR 2P			
CNJ609	*1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P			
CNJ611	*1-564-336-51	PIN, CONNECTOR 2P			
CNJ612	*1-564-336-61	PIN, CONNECTOR 2P			
CNJ613	*1-564-337-71	PIN, CONNECTOR 3P			
CNJ614	*1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P			

Ref.No.	Part No.	Description	
D1	△.8-719-200-77	DIODE 10E2N	
D2	△.8-719-200-77	DIODE 10E2N	
D3	△.8-719-200-77	DIODE 10E2N	
D4	△.8-719-200-77	DIODE 10E2N	
D11	8-719-000-26	DIODE US1060M	
D20	8-719-000-26	DIODE US1060M	
D601	8-719-200-77	DIODE 10E2N	
D602	8-719-200-77	DIODE 10E2N	
D603	8-719-109-81	DIODE RD4.7ES-B2	
D604	8-719-000-26	DIODE US1060M	
D605	8-719-200-77	DIODE 10E2N	
D606	8-719-000-26	DIODE US1060M	
D607	8-719-950-62	DIODE SRA-989A-1	
D608	8-719-000-26	DIODE US1060M	
D609	8-719-109-89	DIODE RD5.6ES-B2	
D610	8-719-000-26	DIODE US1060M	
D611	8-719-000-26	DIODE US1060M	
D612	8-719-000-26	DIODE US1060M	
D613	8-719-970-19	DIODE GP1A521	
D614	8-719-970-19	DIODE GP1A521	
FL1	1-519-451-11	INDICATOR TUBE, FLUORESCENT	
IC1	8-752-031-80	IC CXA1081S	
IC2	8-752-032-33	IC CXA1182S	
IC3	8-759-947-02	IC CXD1125Q	
IC4	8-759-946-62	IC CXD1162P	
IC5	8-759-805-35	IC CXD1161P-2	
IC6	8-759-600-02	IC M5218L	
IC7	8-759-600-02	IC M5218L	
IC8	8-759-971-40	IC MSM6408-26SS	
IC9	8-759-630-21	IC M5290P-16	
IC10	8-759-631-28	IC M50747-101SP	
IC11	8-759-805-18	IC LA6520	
IC12	8-759-805-18	IC LA6520	
IC13	8-759-320-40	IC HD614128SA61	
IC15	8-752-320-44	IC CXK5816M-10L	
IC201	8-759-145-58	IC UPC4558C	
L602	1-408-096-00	INDUCTOR 470UH	
M251	A-4608-350-A	MOTOR ASSY, LOADING	
M252	X-4917-504-1	MOTOR ASSY, SLED	
M253	X-4917-523-1	MOTOR ASSY, SPINDLE	
M602	A-4608-351-A	MOTOR ASSY, ROTARY	
PN1	1-566-921-11	JACK, PIN 2P (LINE OUT)	
PS1	△1-532-685-00	(AEP,UK,E)...LINK, IC	
PS2	△1-532-685-00	(AEP,UK,E)...LINK, IC	

Note:

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

Note:

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Ref.No.	Part No.	Description				
Q1	8-729-209-15	TRANSISTOR 2SD2012				
Q2	8-729-209-60	TRANSISTOR 2SB1375				
Q3	8-729-801-83	TRANSISTOR 2SB1013				
Q7	8-729-115-79	TRANSISTOR BA1A4M				
Q8	8-729-806-38	TRANSISTOR 2SC3399				
Q9	8-729-806-38	TRANSISTOR 2SC3399				
Q11	8-729-107-77	TRANSISTOR 2SC3623-L				
Q14	8-729-115-12	TRANSISTOR BN1L4M				
Q15	8-729-115-12	TRANSISTOR BN1L4M				
Q16	8-729-806-34	TRANSISTOR 2SC3400				
Q17	8-729-107-77	TRANSISTOR 2SC3623-L				
Q18	8-729-107-77	TRANSISTOR 2SC3623-L				
Q19	8-729-107-77	TRANSISTOR 2SC3623-L				
Q20	8-749-920-03	IC GP1U52				
Q601	8-729-117-54	TRANSISTOR 2SA1175				
Q602	8-729-173-13	TRANSISTOR 2SB731				
Q603	8-729-115-79	TRANSISTOR BA1A4M				
Q604	8-729-806-38	TRANSISTOR 2SC3399				
Q606	8-729-904-10	TRANSISTOR PT360FS				
R101	1-249-425-11	CARBON	4.7K	5%	1/4W	
R102	1-249-425-11	CARBON	4.7K	5%	1/4W	
R104	1-249-424-11	CARBON	3.9K	5%	1/4W	
R109	1-249-385-11	CARBON	2.2	5%	1/4W	
R201	1-249-417-11	CARBON	1K	5%	1/4W	
R202	1-249-435-11	CARBON	33K	5%	1/4W	
R203	1-249-435-11	CARBON	33K	5%	1/4W	
R204	1-249-439-11	CARBON	68K	5%	1/4W	
R205	1-249-439-11	CARBON	68K	5%	1/4W	
R206	1-249-440-11	CARBON	82K	5%	1/4W	
R207	1-249-440-11	CARBON	82K	5%	1/4W	
R208	1-249-417-11	CARBON	1K	5%	1/4W	
R209	1-249-417-11	CARBON	1K	5%	1/4W	
R210	1-249-417-11	CARBON	1K	5%	1/4W	
R211	1-249-417-11	CARBON	1K	5%	1/4W	
R212	1-249-413-11	CARBON	470	5%	1/4W	
R213	1-249-413-11	CARBON	470	5%	1/4W	
R214	1-249-441-11	CARBON	100K	5%	1/4W	
R215	1-249-441-11	CARBON	100K	5%	1/4W	
R216	1-249-425-11	CARBON	4.7K	5%	1/4W	
R217	1-249-425-11	CARBON	4.7K	5%	1/4W	
R218	1-249-425-11	CARBON	4.7K	5%	1/4W	
R219	1-249-425-11	CARBON	4.7K	5%	1/4W	
R220	1-249-433-11	CARBON	22K	5%	1/4W	
R221	1-249-418-11	CARBON	1.2K	5%	1/4W	
R222	1-249-433-11	CARBON	22K	5%	1/4W	
R223	1-249-433-11	CARBON	22K	5%	1/4W	

Ref.No.	Part No.	Description				
R224	1-249-433-11	CARBON	22K	5%	1/4W	
R225	1-249-433-11	CARBON	22K	5%	1/4W	
R226	1-247-903-00	CARBON	1M	5%	1/4W	
R227	1-247-903-00	CARBON	1M	5%	1/4W	
R228	1-247-883-00	CARBON	150K	5%	1/4W	
R229	1-247-883-00	CARBON	150K	5%	1/4W	
R301	1-247-864-11	CARBON	24K	5%	1/4W	
R302	1-249-433-11	CARBON	22K	5%	1/4W	
R303	1-249-431-11	CARBON	15K	5%	1/4W	
R304	1-249-431-11	CARBON	15K	5%	1/4W	
R305	1-215-437-00	METAL	4.7K	1%	1/6W	
R306	1-249-417-11	CARBON	1K	5%	1/4W	
R307	1-247-692-11	CARBON	22	5%	1/4W	
R308	1-249-405-11	CARBON	100	5%	1/4W	
R309	1-215-437-00	METAL	4.7K	1%	1/6W	
R310	1-247-882-11	CARBON	130K	5%	1/4W	
R311	1-247-889-00	CARBON	270K	5%	1/4W	
R312	1-249-435-11	CARBON	33K	5%	1/4W	
R313	1-249-440-11	CARBON	82K	5%	1/4W	
R314	1-249-425-11	CARBON	4.7K	5%	1/4W	
R315	1-249-423-11	CARBON	3.3K	5%	1/4W	
R316	1-249-437-11	CARBON	47K	5%	1/4W	
R317	1-249-435-11	CARBON	33K	5%	1/4W	
R320	1-247-880-11	CARBON	110K	5%	1/4W	
R321	1-249-441-11	CARBON	100K	5%	1/4W	
R322	1-247-880-11	CARBON	110K	5%	1/4W	
R323	1-249-441-11	CARBON	100K	5%	1/4W	
R325	1-247-896-11	CARBON	510K	5%	1/4W	
R326	1-249-414-11	CARBON	560	5%	1/4W	
R327	1-249-433-11	CARBON	22K	5%	1/4W	
R328	1-249-429-11	CARBON	10K	5%	1/4W	
R329	1-249-441-11	CARBON	100K	5%	1/4W	
R330	1-215-434-00	METAL	3.6K	1%	1/6W	
R331	1-249-441-11	CARBON	100K	5%	1/4W	
R332	1-247-903-00	CARBON	1M	5%	1/4W	
R333	1-249-434-11	CARBON	27K	5%	1/4W	
R334	1-249-429-11	CARBON	10K	5%	1/4W	
R335	1-249-441-11	CARBON	100K	5%	1/4W	
R336	1-249-441-11	CARBON	100K	5%	1/4W	
R337	1-215-469-00	METAL	100K	1%	1/6W	
R338	1-215-469-00	METAL	100K	1%	1/6W	
R341	1-249-429-11	CARBON	10K	5%	1/4W	
R342	1-249-417-11	CARBON	1K	5%	1/4W	
R343	1-249-417-11	CARBON	1K	5%	1/4W	
R345	1-249-417-11	CARBON	1K	5%	1/4W	

Ref.No.	Part No.	Description			
R346	1-249-417-11	CARBON	1K	5%	1/4W
R347	1-249-417-11	CARBON	1K	5%	1/4W
R348	1-249-417-11	CARBON	1K	5%	1/4W
R349	1-249-411-11	CARBON	330	5%	1/4W
R360	1-249-424-11	CARBON	3.9K	5%	1/4W
R361	1-249-438-11	CARBON	56K	5%	1/4W
R602	1-249-431-11	CARBON	15K	5%	1/4W
R603	1-212-857-00	(AEP,UK,E)...FUSIBLE	10	5%	1/4W F
R604	1-249-418-11	(AEP,UK,E)...CARBON	1.2K	5%	1/4W
R604	1-249-424-11	(Canadian)...CARBON	3.9K	5%	1/4W
R605	1-249-417-11	CARBON	1K	5%	1/4W
R606	1-247-850-11	CARBON	6.2K	5%	1/4W
R608	1-249-405-11	CARBON	100	5%	1/4W
R609	1-249-438-11	CARBON	56K	5%	1/4W
R610	1-249-441-11	CARBON	100K	5%	1/4W
R611	1-247-880-11	CARBON	110K	5%	1/4W
R612	1-249-441-11	CARBON	100K	5%	1/4W
R613	1-247-880-11	CARBON	110K	5%	1/4W
R615	1-249-436-11	CARBON	39K	5%	1/4W
R616	1-249-435-11	CARBON	33K	5%	1/4W
R617	1-249-417-11	CARBON	1K	5%	1/4W
R618	1-249-417-11	CARBON	1K	5%	1/4W
R619	1-249-429-11	CARBON	10K	5%	1/4W
R620	1-249-416-11	CARBON	820	5%	1/4W
R621	1-249-406-11	CARBON	120	5%	1/4W
R622	1-249-429-11	CARBON	10K	5%	1/4W
R623	1-249-433-11	CARBON	22K	5%	1/4W
R624	1-249-433-11	CARBON	22K	5%	1/4W
R625	1-249-433-11	CARBON	22K	5%	1/4W
R626	1-249-433-11	CARBON	22K	5%	1/4W
R627	1-249-433-11	CARBON	22K	5%	1/4W
R628	1-249-433-11	CARBON	22K	5%	1/4W
R629	1-249-421-11	CARBON	2.2K	5%	1/4W
R630	1-247-903-00	CARBON	1M	5%	1/4W
R631	1-249-434-11	CARBON	27K	5%	1/4W
R632	1-249-434-11	CARBON	27K	5%	1/4W
R633	1-249-417-11	CARBON	1K	5%	1/4W
R634	1-249-417-11	CARBON	1K	5%	1/4W
R635	1-249-417-11	CARBON	1K	5%	1/4W
R636	1-249-417-11	CARBON	1K	5%	1/4W
R637	1-249-417-11	CARBON	1K	5%	1/4W
R638	1-249-417-11	CARBON	1K	5%	1/4W
R639	1-249-425-11	CARBON	4.7K	5%	1/4W
R640	1-249-425-11	CARBON	4.7K	5%	1/4W
R641	1-249-425-11	CARBON	4.7K	5%	1/4W
R642	1-249-425-11	CARBON	4.7K	5%	1/4W
R643	1-249-425-11	CARBON	4.7K	5%	1/4W
R644	1-249-433-11	CARBON	22K	5%	1/4W
R645	1-249-417-11	CARBON	1K	5%	1/4W
R647	1-249-433-11	CARBON	22K	5%	1/4W
R648	1-249-433-11	CARBON	22K	5%	1/4W
R649	1-249-416-11	CARBON	820	5%	1/4W
R650	1-249-417-11	CARBON	1K	5%	1/4W
R651	1-249-417-11	CARBON	1K	5%	1/4W
R653	1-249-417-11	CARBON	1K	5%	1/4W
R654	1-249-417-11	CARBON	1K	5%	1/4W
R655	1-249-405-11	CARBON	100	5%	1/4W
R656	1-249-425-11	CARBON	4.7K	5%	1/4W
R670	1-249-417-11	CARBON	1K	5%	1/4W

Ref.No.	Part No.	Description
RV1	1-228-995-00	RES, ADJ, CARBON 22K
RV2	1-228-993-00	RES, ADJ, CARBON 4.7K
RV3	1-228-995-00	RES, ADJ, CARBON 22K
RV4	1-228-995-00	RES, ADJ, CARBON 22K
RV5	1-228-990-00	RES, ADJ, METAL GLAZE 1K
RV6	1-238-085-11	REA, VAR, CARBON 20K/20K
S252	1-571-274-11	SWITCH, LEAF (LIMIT IN)
S601	1-571-309-11	(E)...SWITCH, VOLTAGE SELECT
SW101	1-571-305-11	SWITCH, PUSH (1 KEY)(POWER)
SW102	1-570-157-21	(C50)...SWITCH, SLIDE (TIMER)
SW102	1-570-707-21	(C50M)...SWITCH, SLIDE (TIMER)
SW103	1-554-205-00	SWITCH, PUSH (CLOSE)
SW104	1-571-300-11	SWITCH, ROTARY (OPEN)
SW105	1-571-453-11	SWITCH, LEVER SLIDE (DOWN)
SW106	1-554-596-21	SWITCH, KEY BOARD (■)
SW107	1-554-596-21	SWITCH, KEY BOARD (OPEN/CLOSE)
SW108	1-554-596-21	SWITCH, KEY BOARD (3)
SW109	1-554-596-21	SWITCH, KEY BOARD (1)
SW110	1-554-596-21	SWITCH, KEY BOARD (▶/■)
SW111	1-554-596-21	SWITCH, KEY BOARD (◀◀)
SW112	1-554-596-21	SWITCH, KEY BOARD (4)
SW113	1-554-596-21	SWITCH, KEY BOARD (TIME)
SW114	1-554-596-21	SWITCH, KEY BOARD (DISK SKIP)
SW115	1-554-596-21	SWITCH, KEY BOARD (▶▶)
SW116	1-554-596-21	SWITCH, KEY BOARD (5)
SW117	1-554-596-21	SWITCH, KEY BOARD (2)
SW252	1-571-274-11	SWITCH, LEAF (LIMIT IN)
T101	1-449-216-11	(Canadian)...TRANSFORMER, POWER
T101	1-449-217-11	(AEP,UK)...TRANSFORMER, POWER
T101	1-449-218-11	(E)...TRANSFORMER, POWER
X601	1-567-686-11	OSCILLATOR, CERAMIC (4MHz)
X602	1-567-741-11	VIBRATOR, CRYSTAL (16MHz)
X603	1-577-082-11	VIBRATOR, CERAMIC (6MHz)

ACCESSORY & PACKING MATERIAL

1-463-990-11	REMOTE COMMANDER (RM-D55)
1-558-543-11	CORD, CONNECTION
3-769-921-11	MANUAL, INSTRUCTION
3-769-921-41	(AEP)...MANUAL, INSTRUCTION
*3-795-629-11	(AEP)...INSTRUCTION
*4-924-456-01	CUSHION (LEFT)
*4-924-457-01	CUSHION (RIGHT)
*4-924-458-01	(C50)...INDIVIDUAL CARTON
*4-924-459-11	(C50M)...INDIVIDUAL CARTON

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

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

