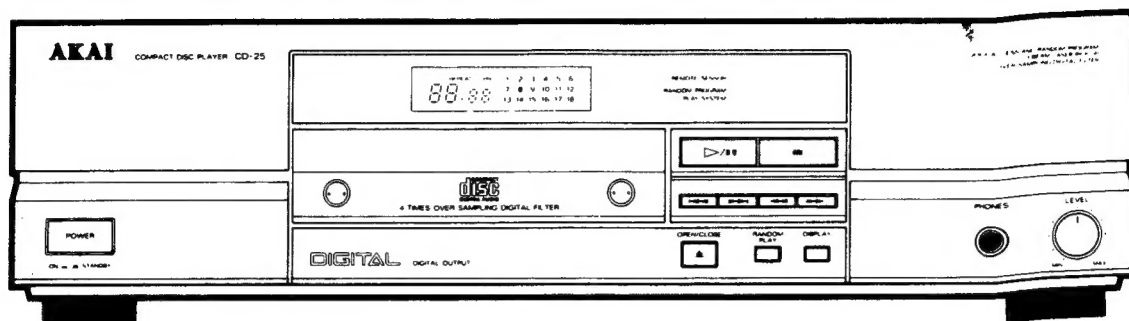


AKAI SERVICE MANUAL



COMPACT DISC PLAYER

MODEL **CD-25**

SPECIFICATIONS

Pick-up system	3 beam laser pick-up
Sampling frequency	44.1kHz
Digital filter	16 bit, 4 times over sampling
D/A converter	16 bit linear
Error correction system	Cross Interleave Reed Solomon
Number of channels	2 channels stereo
Frequency response	4Hz to 20kHz $\pm$ 0.5dB
Dynamic range	92dB
S/N ratio	100dB
Total harmonic distortion	0.013%
Wow & flutter	Less than measurable limits
Output level	
Analog output (line)	2V(0dB)
Digital output (coaxial)	0.5V p-p/750ohms
Headphone output	70mW/32ohms
Power requirements	220V, 50Hz for Europe except UK 240V, 50Hz for UK and Australia 110V-120V/220V-240V, 50Hz/60Hz convertible for other countries
Dimensions	425(W) $\times$ 121(H) $\times$ 343(D)mm (16.7 $\times$ 4.8 $\times$ 13.5 inches)
Weight	3.6kg (7.9 lbs)

Standard accessories

Connection cord	$\times$ 1
Remote control unit	$\times$ 1
Batteries for the remote control unit	$\times$ 2
Operator's manual	$\times$ 1

* For improvement purposes, specifications and design are subject to change without notice.

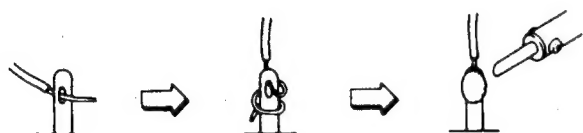
★ SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts identified by the Δ (*) symbol are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.

Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.

3. Use specified internal wiring. Note especially:
 - 1) Wires covered with PVC tubing
 - 2) Double insulated wires
 - 3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
 - 1) Insulation Tape
 - 2) PVC tubing
 - 3) Spacers (Insulating Barriers)
 - 4) Insulation sheets for transistors
 - 5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).

7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.

The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal-input/output connectors, etc.) and the earth ground through a resistor of 1500 ohms paralleled with a 0.15 μ F capacitor, under the unit's normal working conditions. The leakage-current should be less than 0.5 mA rms AC.

The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 Mohms.

★ INFORMATION

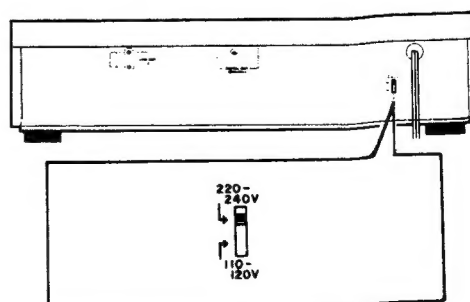
SYMBOLS FOR PRIMARY DESTINATION

Alphabet indicates the destination of the units as listed below.

Symbols	Principal Destinations
A	USA
B	UK
C	Canada
E	Europe (except UK)
J	Japan
S	Australia
V	W. Germany only
U	Universal Area
Y*	Custom version

VOLTAGE CONVERSION (U Model only)

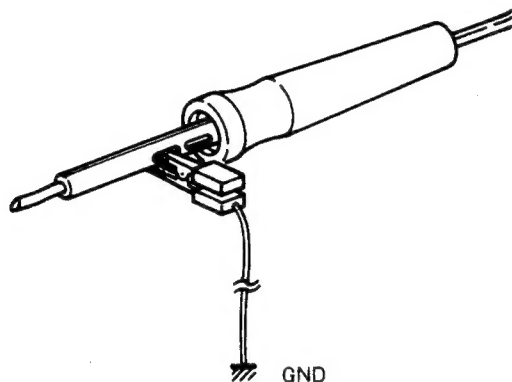
Before connecting the power cord. Set the VOLTAGESELECTOR located on the rear panel with a screwdriver so that the correct voltage is indicated.



PRECAUTIONS IN REPAIRING

When repairing or adjusting the unit, please note the following points.

1. Do not put excessive pressure on the mechanical part (operation part), including the pick-up block, as extremely high mechanical precision is required in these parts.
2. When the base is removed for repair or adjustment, make sure that there are no metal objects in the narrow gap between the P.C. board or the mecha parts and the base.
3. The Micro-Computer and the CD signal processing ICs can be damaged by static electricity or leakage from a soldering iron during repairing. While soldering, please take the precautions against leakage as in the illustration.



4. Do not loosen any screws in the pick-up block.

When handing the pick-up block, please refer to the points to NOTE when replacing the pick-up block.

5. Keep safety for hazardous invisible Laser Radiation, DO NOT watch the Laser Beam (Objective lens) directly.
6. Models for the some countries, laser warning labels are affixed on the unit and inside of the unit, as shown below.
Read it carefully for your safety, when repairing or adjusting the unit.

[DENMARK, UK, USA]

**CLASS 1
LASER PRODUCT**

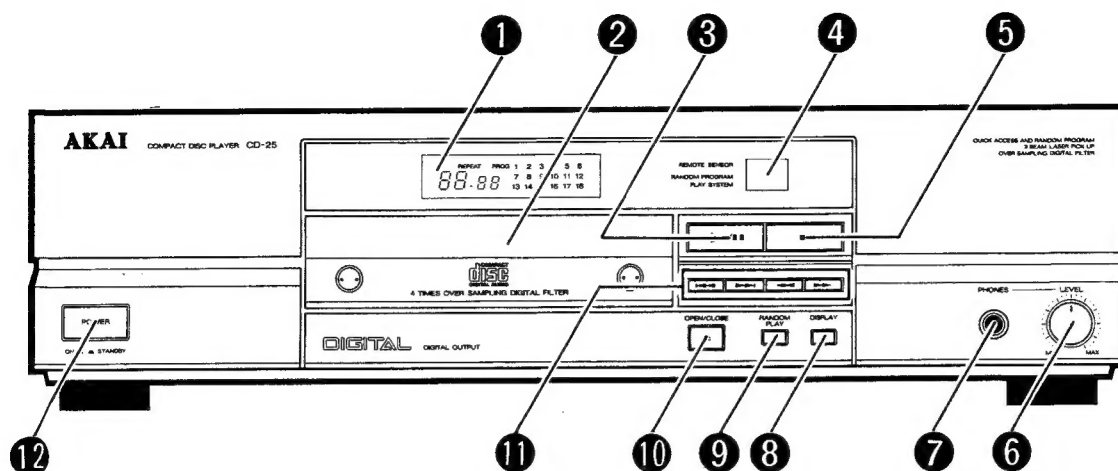
A Label affixed on the unit

CAUTION: INVISIBLE LASER
RADIATION WHEN OPEN AND INTERLOCKS
DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL:
USYNLIG LASERSTRALING VED ÅBNING
NÅR SIKKERHEDSAFBRYDERE ER UDE AF
FUNKTION UNDGA UDSÆTTELSE FOR
STRALING.

A Label affixed inside of the unit

I. CONTROLS

1-1. FRONT PANEL



① FL (Fluorescent) Display

Tells you what the CD player is doing.

② Disc Drawer

Load a compact disc here.

③ ▷ / || PLAY/PAUSE Button

To start and stop playback temporarily.

④ REMOTE SENSOR Window

For reception of the remote control signal from the provided RC-C25 remote control unit. Keep away from strong light and direct sunlight as this will interfere with the remote control function.

⑤ ■ STOP Button

To stop playback.

⑥ LEVEL Control

To adjust the PHONES jack output levels.

⑦ PHONES Jack

For headphone listening.

⑧ DISPLAY Button

To display the total remaining playback time, elapsed playback time or the track and index number on the digital display.

⑨ RANDOM PLAY Button

To start random playback.

⑩ ▲ OPEN/CLOSE Button

To open and close the disc drawer.

⑪ ◀◀/▶▶ and ◀◀/▶▶ Search Buttons

◀◀/▶▶ Buttons

For manual search during playback.

◀◀/▶▶ Buttons

To skip tracks during playback.

⑫ POWER Button (ON / OFF)

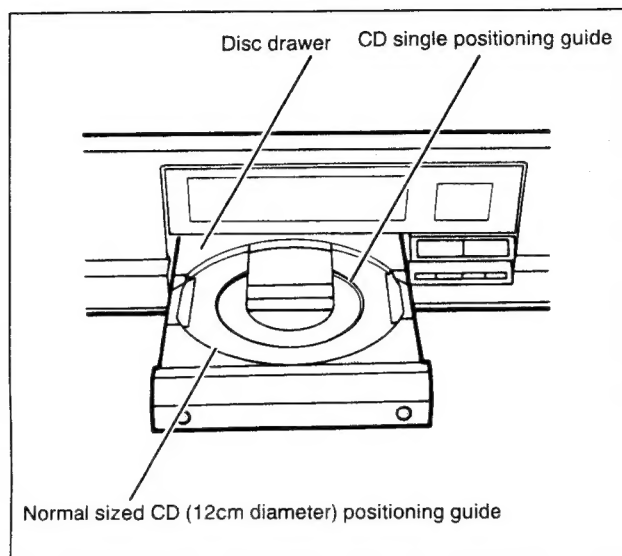
To turn the power on and off.

Attention

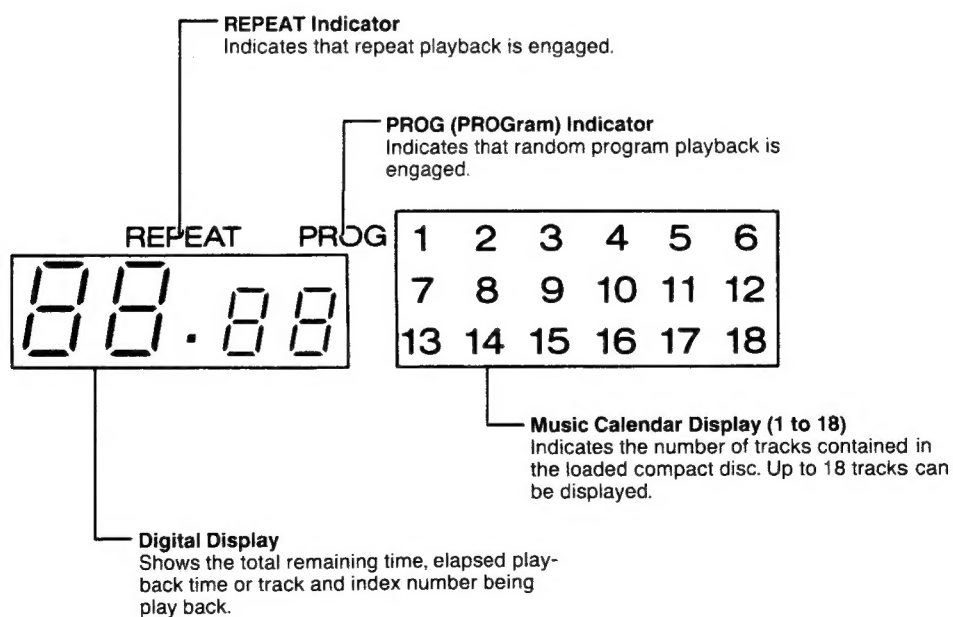
The POWER button is not a primary power switch. Even when the POWER button is set to STANDBY, the power supply to this CD player is not completely turned off. If you wish to completely turn the power off, disconnect the power cord from the household AC outlet.

On the disc drawer

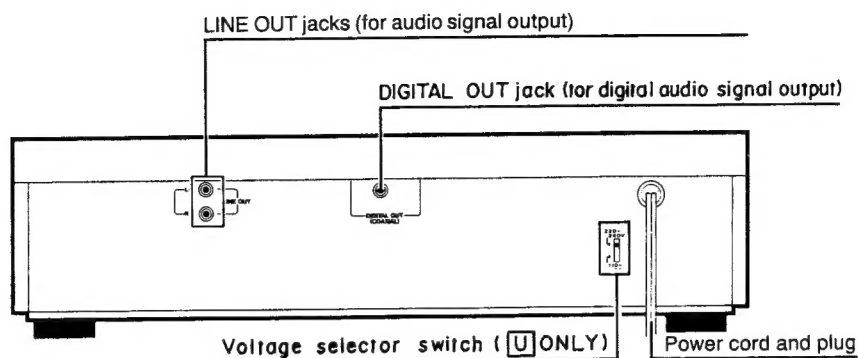
The disc drawer of this CD player is capable of holding a CD single (8cm diameter CD) for playback. Place the CD single on the center of the disc drawer as shown in the following illustration.



1-2. FL DISPLAY

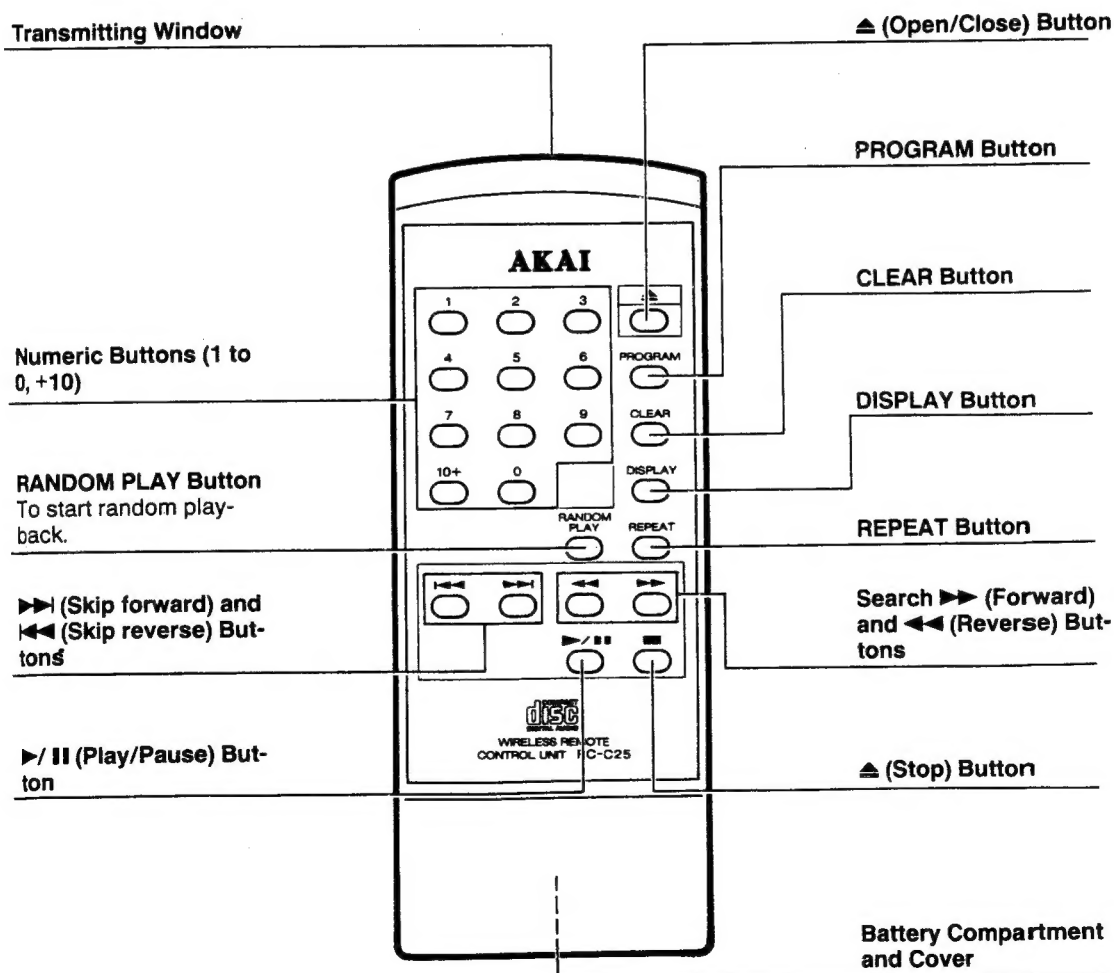


1-3. REAR PANEL



1-4. REMOTE CONTROL (RC-25)

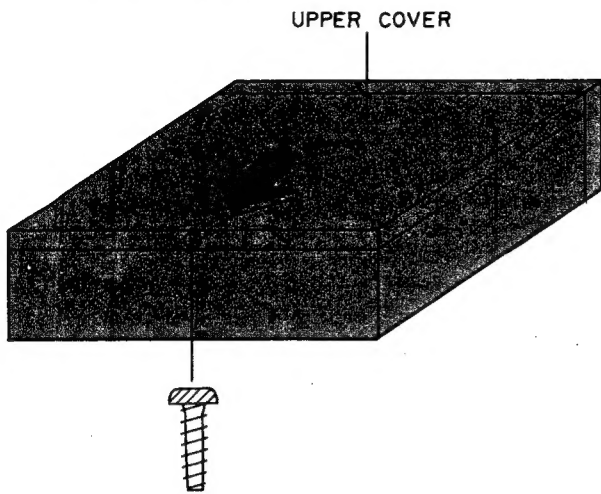
The operation buttons on the remote control unit are the same as those on the CD player and can be used to conveniently control all the CD player's functions except power on/off and headphone volume.



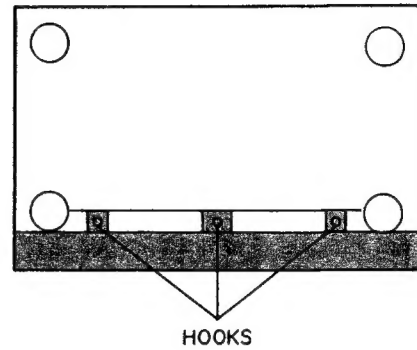
II. DISASSEMBLY

In case of trouble, etc, necessitating dismantling, please dismantle in the order shown in the illustrations.
Reassemble in reverse order.

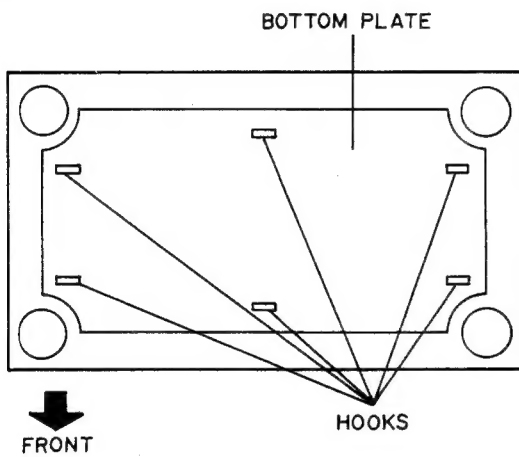
1. Removal of UPPER COVER



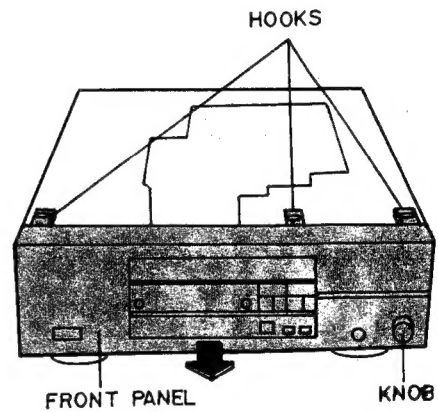
3. Removal of FRONT PANEL



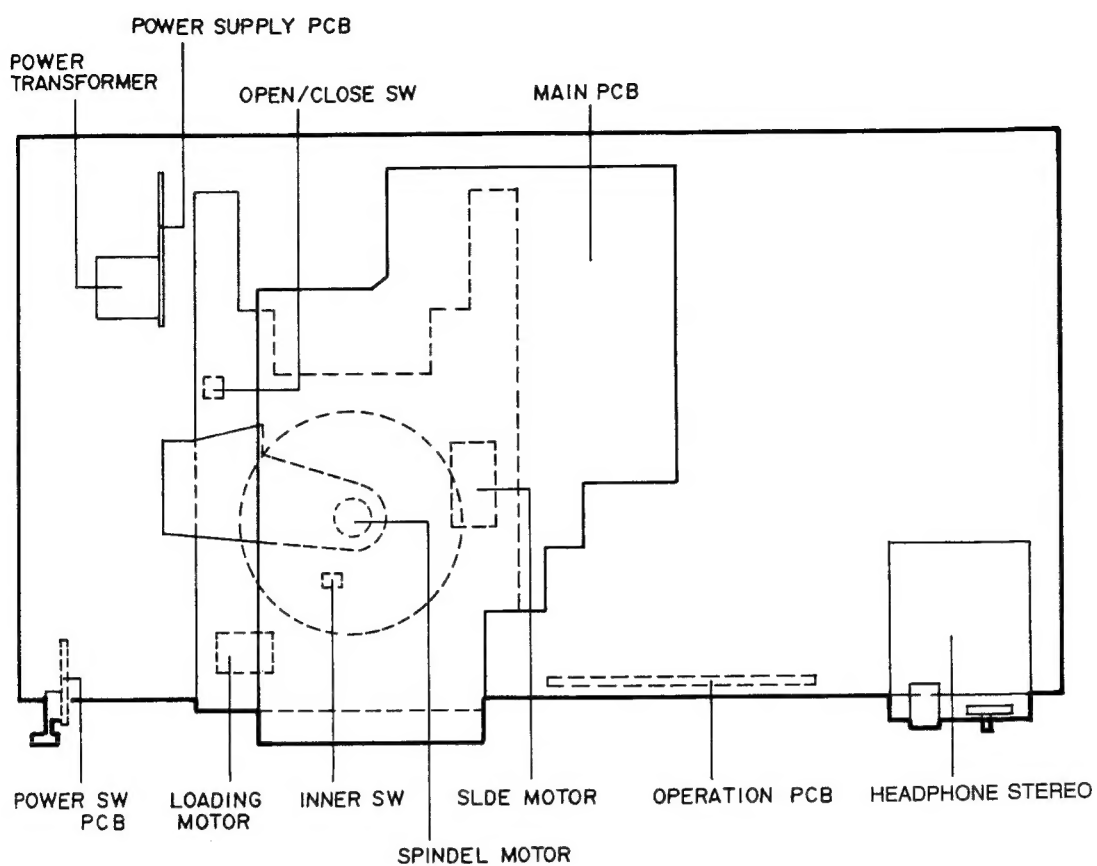
2. Removal of BOTTOM PLATE



4.



III. PRINCIPAL PARTS LOCATION



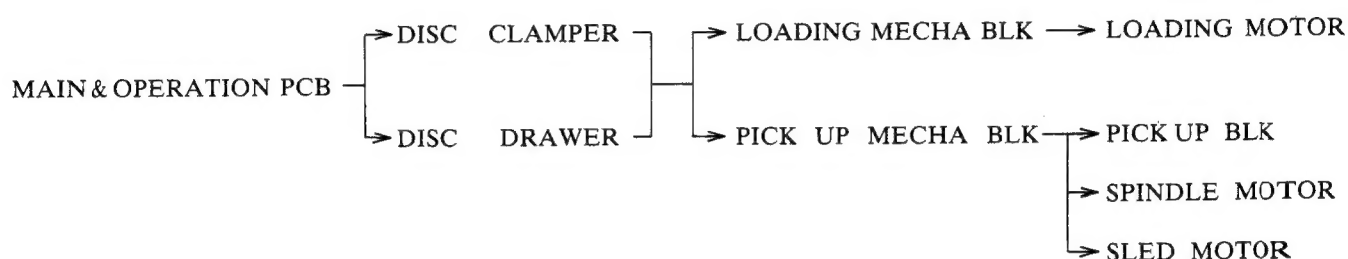
IV. REPLACEMENT OF PRINCIPAL COMPONENT

* Refer to "II. DISASSEMBLY" for removal of UPPER COVER, BOTTOM PLATE and FRONT PANEL.

4-1. DISASSEMBLE/REASSEMBLE PROCEDURE OF COMPONENT

* When replacement of mechanical part is necessary, replace the part as following procedure.

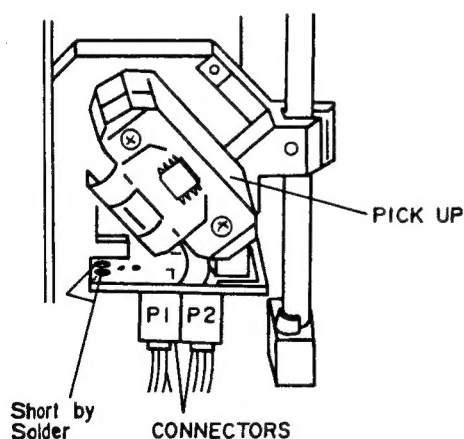
STEP 1	STEP 2	STEP 3	STEP 4
--------	--------	--------	--------



4-2. PRECAUTION, WHEN REPLACING THE PICK UP BLOCK

When connecting or disconnecting the connectors P1 and P2 on the MAIN PCB or PCB on the PICK UP BLK, the circuit of the PCB on the PICK UP BLK has to be shorted by solder as shown Fig.4-1.

After connecting the connectors P1 and P2, remove the solder from the circuit.



* View from bottom side.

Fig.4-1

4-3. REMOVAL OF MAIN & OPERATION PC BOARDS

- 1) Remove screw ① and remove solder as shown Fig. 4-2
- 2) Remove MAIN PCB and OPERATION PCB while releasing the HOOKS.

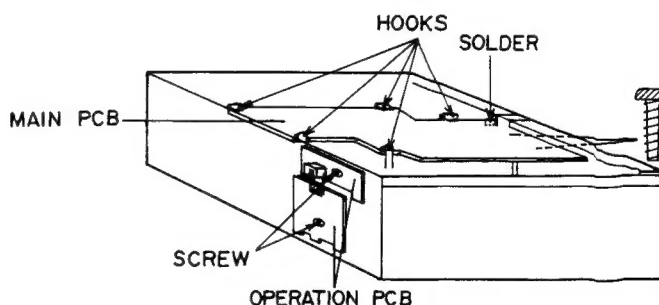


Fig. 4-2

4-4. REMOVAL OF DISC CLAMPER

NOTE: Keep your safety from hazardous invisible laser radiation. Make sure that the POWER switch is "OFF", when removing the DISC CLAMPER.

- 1) Remove DISC CLAMPER while releasing the HOOKs as shown Fig.4-3.
- 2) When reassembling the DISC CLAMPER, set the PIN (A) of the DISC CLAMPER into the HOLE (B) on the LOADING MOTOR BLK.

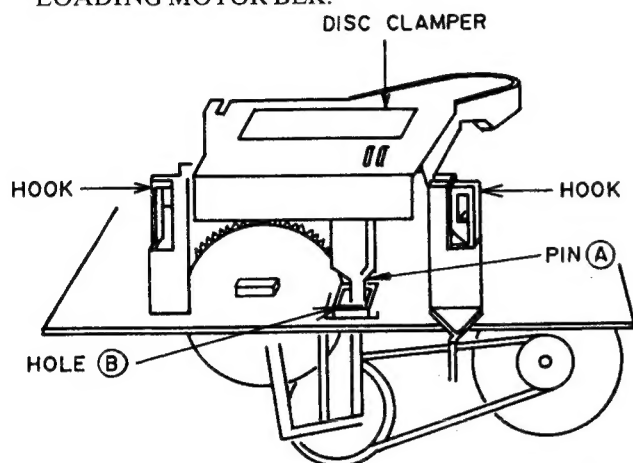


Fig. 4-3

4-6. REMOVAL OF LOADING MECHA BLOCK

- 1) Turn the LEVERS (C) while releasing the STOPPERS (D) as shown Fig.4-6.
- 2) Pull out the LOADING MECHA BLK.
- 3) Reassemble in reverse order.

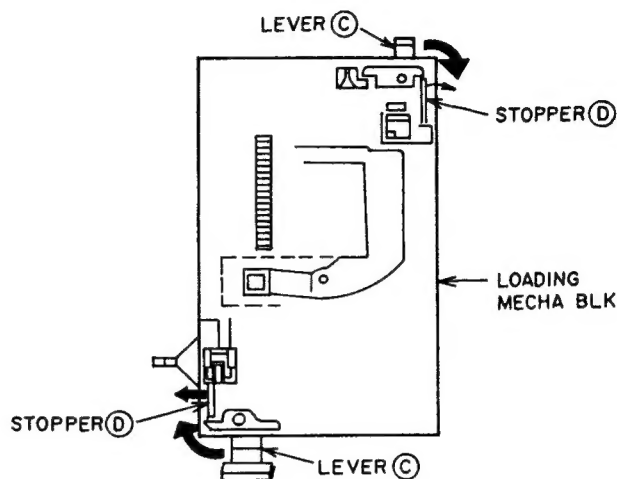


Fig.4-6

4-5. REMOVAL OF DISC DRAWER

- 1) Push the end of rail on the DISC DRAWER and set the DISC DRAWER to open position.
- 2) Turn the LEVER (C) while releasing the STOPPER (D) as shown Fig.4-5, and pull out the DISC DRAWER.
- 3) Reassemble in reverse order.

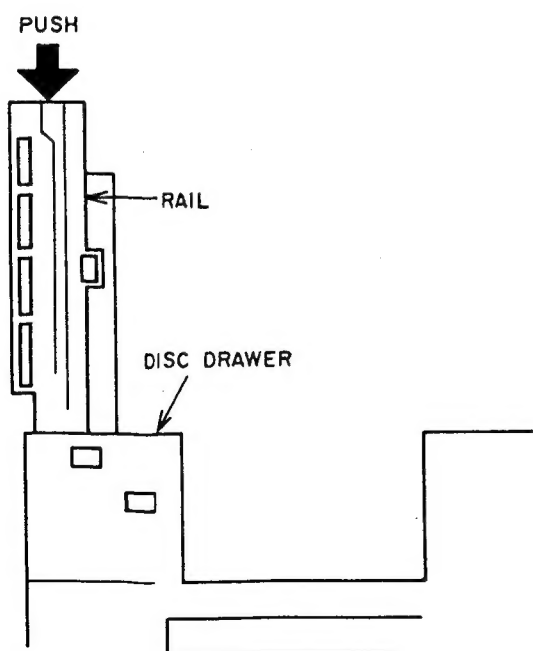


Fig. 4-4

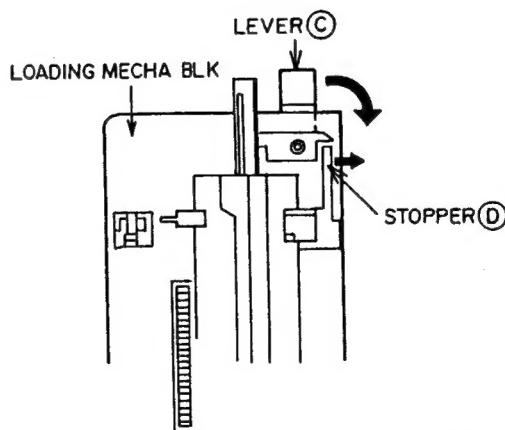


Fig. 4-5

4-7. REMOVAL OF PICK UP MECHA BLK

- 1) Turn the LEVERS ⑤ while releasing the STOPPERS ⑥ as shown Fig.4-7.
- 2) Pull out the PICK UP MECHA BLK.
- 3) Reassemble in reverse order.

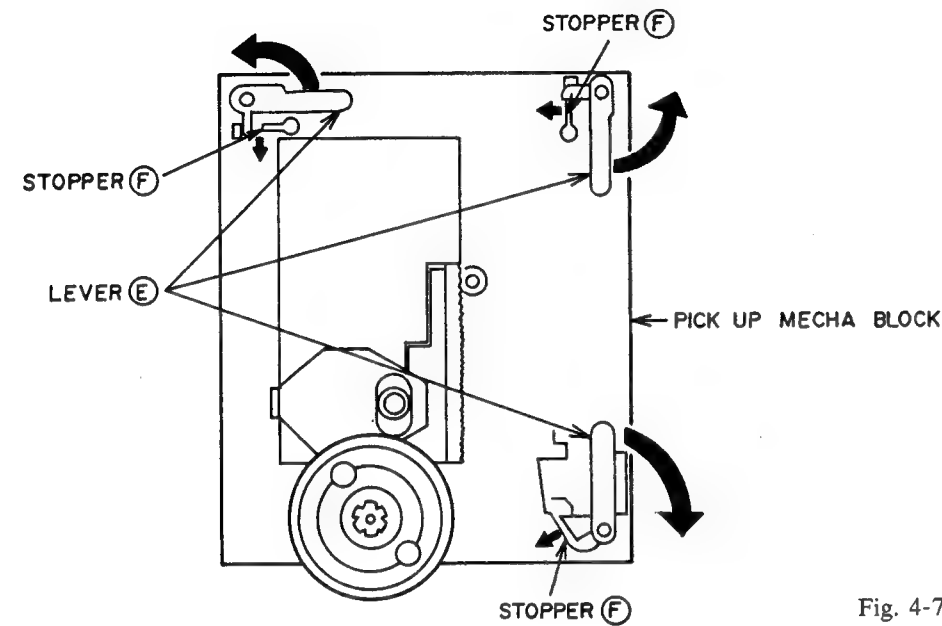


Fig. 4-7

4-8. REMOVAL OF LOADING MOTOR

- 1) Remove the LOADING BELT from MOTOR PULLEY.
- 2) Remove two SCREWS ⑤ and remove LOADING MOTOR.
- 3) Reassemble in reverse order.

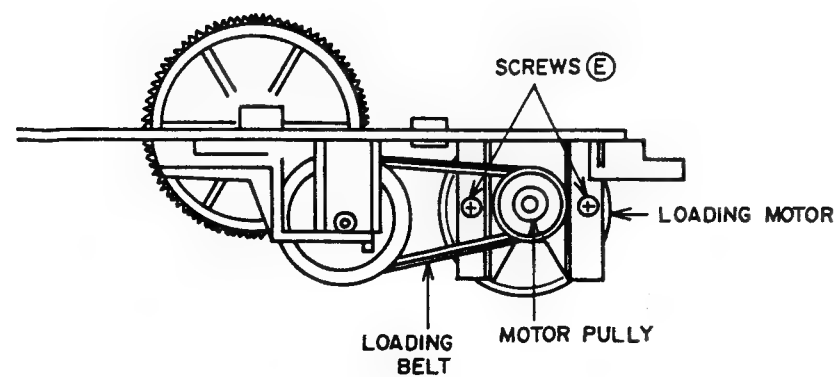


Fig. 4-8

4-9. REMOVAL OF PICK UP BLOCK

- 1) Push PICK UP SLED SHAFT while releasing the STOPPER ⑧ as shown Fig.4-9 and pull out the PICK UP SLED SHAFT, then remove PICK UP BLK.
- 2) Reassemble in reverse order.

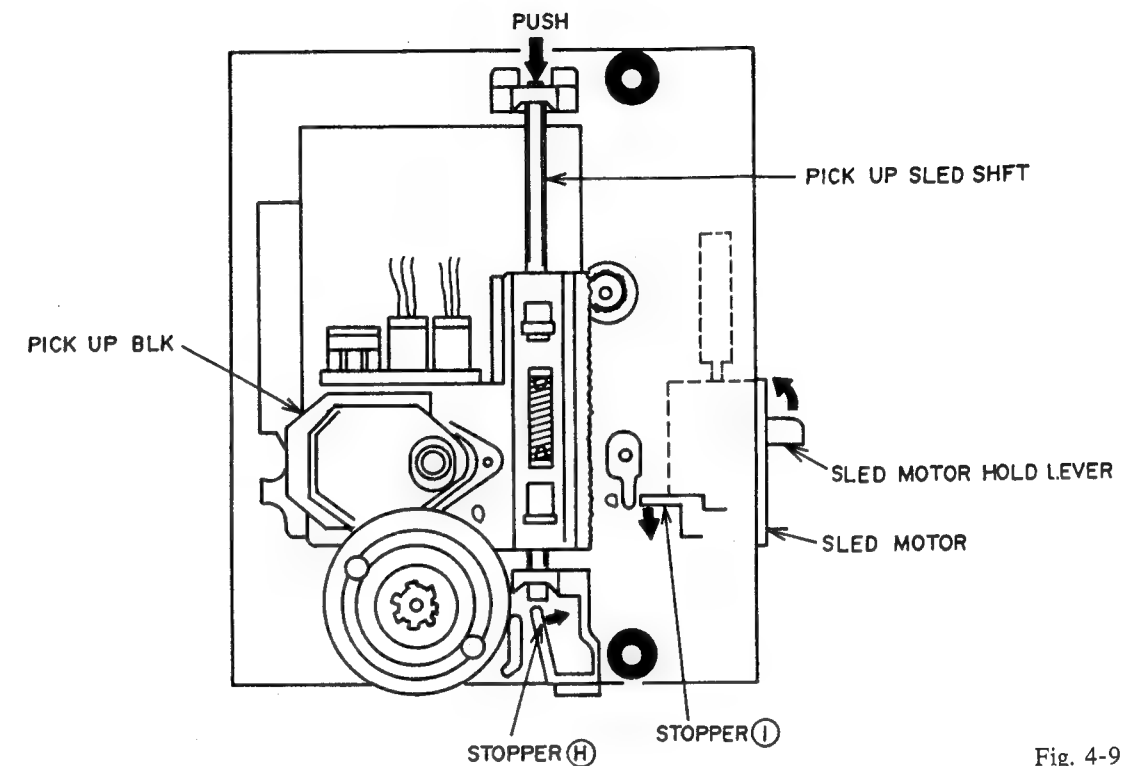


Fig. 4-9

4-11. REMOVAL OF SPINDLE MOTOR

- 1) Remove two fixation SCREWS ⑩ of the SPINDLE MOTOR through the hole on the TURN TABLE as shown Fig.4-10.
- 2) Reassemble in reverse order.

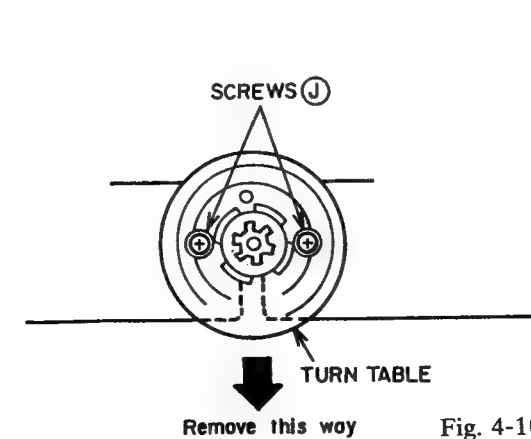


Fig. 4-10

V. ELECTRICAL ADJUSTMENT

[About the TEST mode]

- * This TEST mode use for the adjustment or check.
- * How to set into the TEST mode.
Turn the power on, while pressing the [◀] , [▶] and DISPLAY buttons on the front panel.
- * How to change the TEST mode number.
Press the [⏏] button, then advance ▢ TEST mode number, when TEST mode number is returned to intial TEST mode number, press [⏏] button.

STEP	ADJUSTMENT ITEM
1. TEST DISC	
2. MODE or TEST mode	
3. TEST POINT and ADJ. part	
4. RESULT & REMARKS	

Test Point ADJ. Part

* TEST mode condition and DISPLAY

	1 • Indicated that unit is set into the TEST mode.
	12 • Indicated that the end of FOCUS SEARCH.
	123 • Set into the CLV-S mode. Tracking servo gain is set to the same as "JUMP" mode.
	1234 • Tracking servo is on.
	12345 • Unit into the normal play mode except anti shock is "OFF".
	123456 • Anti shock is "ON" and unit is into nomal condition. • If press the [⏏] button again, unit will enter the normal "power ON" mode.

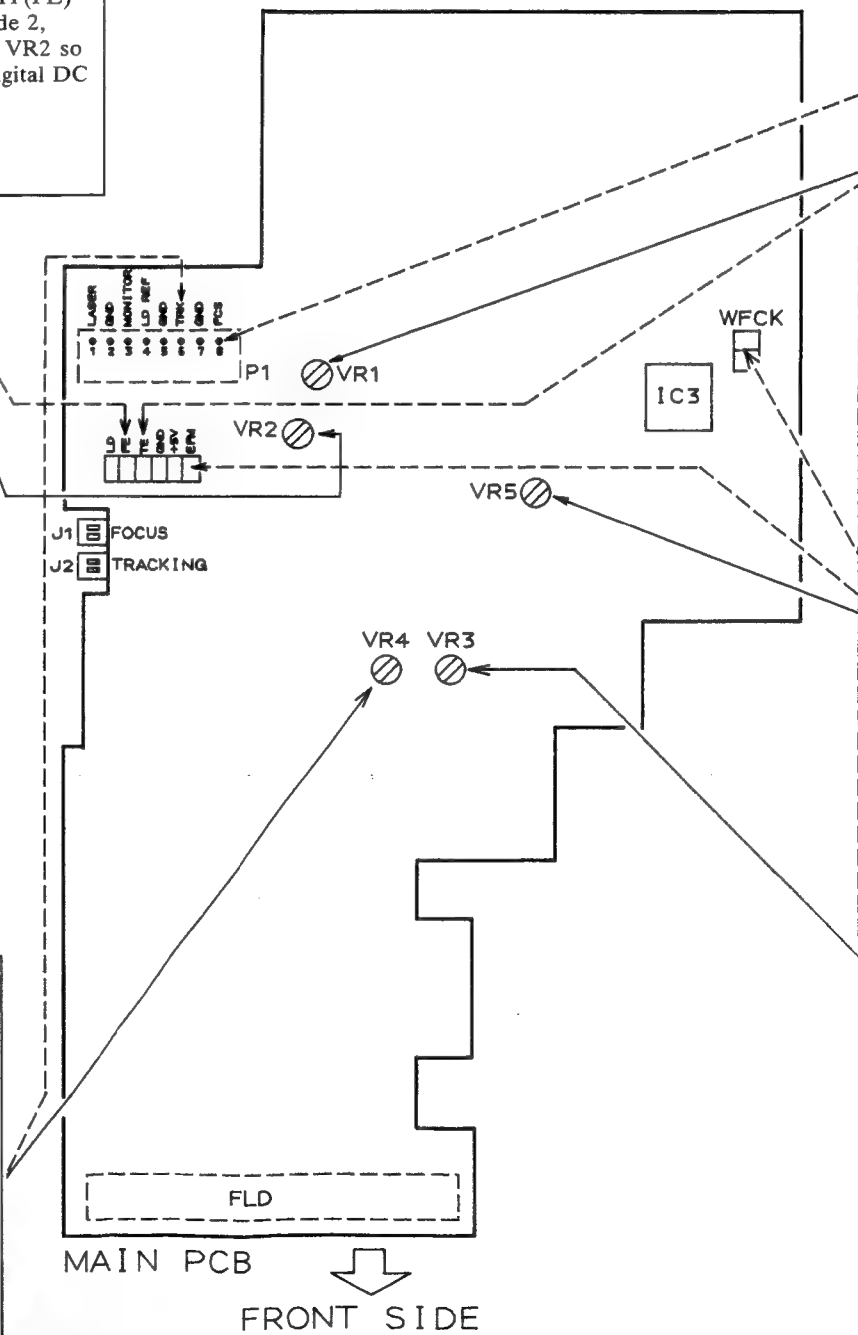
4	FOCUS OFF-SET
1. Test disc 5A(AT-751330)	
2. Test mode 2 and 1	
3. TP(FE) , VR2	
4. • Connect a digital DC voltmeter to TP(FE) and check voltage A in the test mode 2, then press STOP button and adjust VR2 so that the reading voltage B on the digital DC voltmeter is same as voltage A .	

2	E-F BALANCE
1. Test disc 5A(AT-751330)	
2. Test mode 3	
3. TP(TE), VR1	
4. • Connect an oscilloscope to TP(TE) * A=B	

1	VCO
1. —	
2. 10 seconds after power is on.	
3. TP(WFCK) , VR5	
4. • Connect a frequency counter to TP(WFCK). • Connect TP (EFM) to GND by jumper wire. * 7350 ± 10Hz	

3	FOCUS SERVO GAIN
1. Test disc 5A(AT-751330)	
2. PLAY	
3. Pin ⑥ (FCS) of connector P1, VR3	
4. • Connect an oscilloscope to pin ⑥ (FCS) of connector P1. * 1.0 to 1.4Vp-p	

5	TRACKING SERVO GAIN
1. Test disc 5A(AT-751330)	
2. PLAY	
3. Pin ⑥ of connector P1, VR4	
4. • Connect an oscilloscope to pin 6 (TRK) of connector P1. * 0.8 to 1.2Vp-p.	



VII. PARTS LIST

ATTENTION

1. When placing an order for parts, be sure to list Part No., Model No. and the description of eachpart. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.
2. Please make sure that Part No. is correct when ordering.
If not, a part different from the one you ordered may be delivered.
3. Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

2. HEAD BASE BLOCK

REF. NO.	PART NO.	DESCRIPTION
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R/P PR4-8FU C
3	ZS-477876	PAN20X03STL CMT
4	ZS-536488	BID20X08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification

This number corresponds with the individual parts index number in that figure.

b) PC Board

6. MAIN PC BOARD

REF. NO.	PART NO.	DESCRIPTION
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C,A]
X1	EI-318384	OSC X'TAL NC-18C

Symbols for primary destination

[A]: AAL (U.S.A) [S]: SAA (Australia)
[B]: BEAB (England) [U]: U/T (Universa Area)
[C]: CSA (Canada) Area)
[E]: CEE (Europe) [V]: VDE (W. Germany)
[J]: JPN (Japan) [Y]: Custom Version

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No. listed at right of Part No.

WARNING

△(*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

△(*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

1. RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

Ref. No.	Part No.	Description
1	BM-730687T	MOTOR RD-050Y-10240
2	BM-730688T	MOTOR RF-310T-11400
3	BM-730695T	MOTOR RF-500TB-12560
4	BO-368598	PICK UP KSS-150A
5	*BT-730710T	TRANS POW EI-48K (B,S) [B,S]
6	*BT-730709T	TRANS POW EI-48K (E,V) [E]
7	*BT-730718T	TRANS POW EI-48K (U) [U]
8	ED-307572	D SILICON H 1SS131
9	*ED-389840J	D SILICON 1SR139-100HS F10
10	ED-200967	D ZENER H RD5.6E B2
11	ED-317690	D ZENER H RD7.5E B1
12	ED-300269	D ZENER H RD9.1E B
13	ED-384523J	D ZENER H 05AZ30-Z
14	*EF-358974	FUSE BET T 250V 630MA [E,B,S]
15	EI-727276T	DETECTOR QH3021H0
16	EI-330352	IC BA6109
17	EI-390112J	IC CXA1081S
18	EI-390120J	IC CXA1082BS
19	EI-388090J	IC CXD1125Q
20	EI-390121J	IC HD614081SA48 P2054-1
21	EI-382251J	IC LC3517BS-15
22	EI-307644	IC NJM4556D
23	EI-723861J	IC NJM4558DD
24	EI-390113J	IC PD0034
25	EI-360037J1	IC TC74HC00AP
26	EI-360039J1	IC TC74HC08AP
27	EI-390129J	IC TDA1543A
28	EI-371572	IC UPC7805H
29	EI-371573	IC UPC7905H
30	EI-390149J	OSC CE CST4.23MGW 4.230MHZ
31	EI-374176	OSC X'TAL AT-51 16.9344MHZ
32	EM-730699T	IND FL FV365
33	ES-730694T	SW LEAF LSC-1223-31
34	ES-390127J	SW PUSH SPPB12
35	*ES-390128J	SW PUSH SPUP12018A 02-02N
36	*ES-349464	SW SLIDE 00120319 01-2 [U]
37	ES-349474	SW TACT SKHHAM004A [OPEN/CLOSE]
38	ET-352726	TR 2SA1392 T,U
39	ET-336735	TR 2SA733A P,K
40	ET-356817	TR 2SB891 Q,R
41	ET-730702T	TR 2SB909MR
42	ET-338410	TR 2SC2878 A,B
43	ET-378524J	TR 2SC3383 S,T,U
44	ET-398788	TR 2SC945L R
45	ET-354083	TR 2SD1189 Q,R
46	ET-730698T	TR 2SD1225MR
47	EV-731160T	VR 20KAX2 RK16K12B0048
48	MB-730693T	BELT

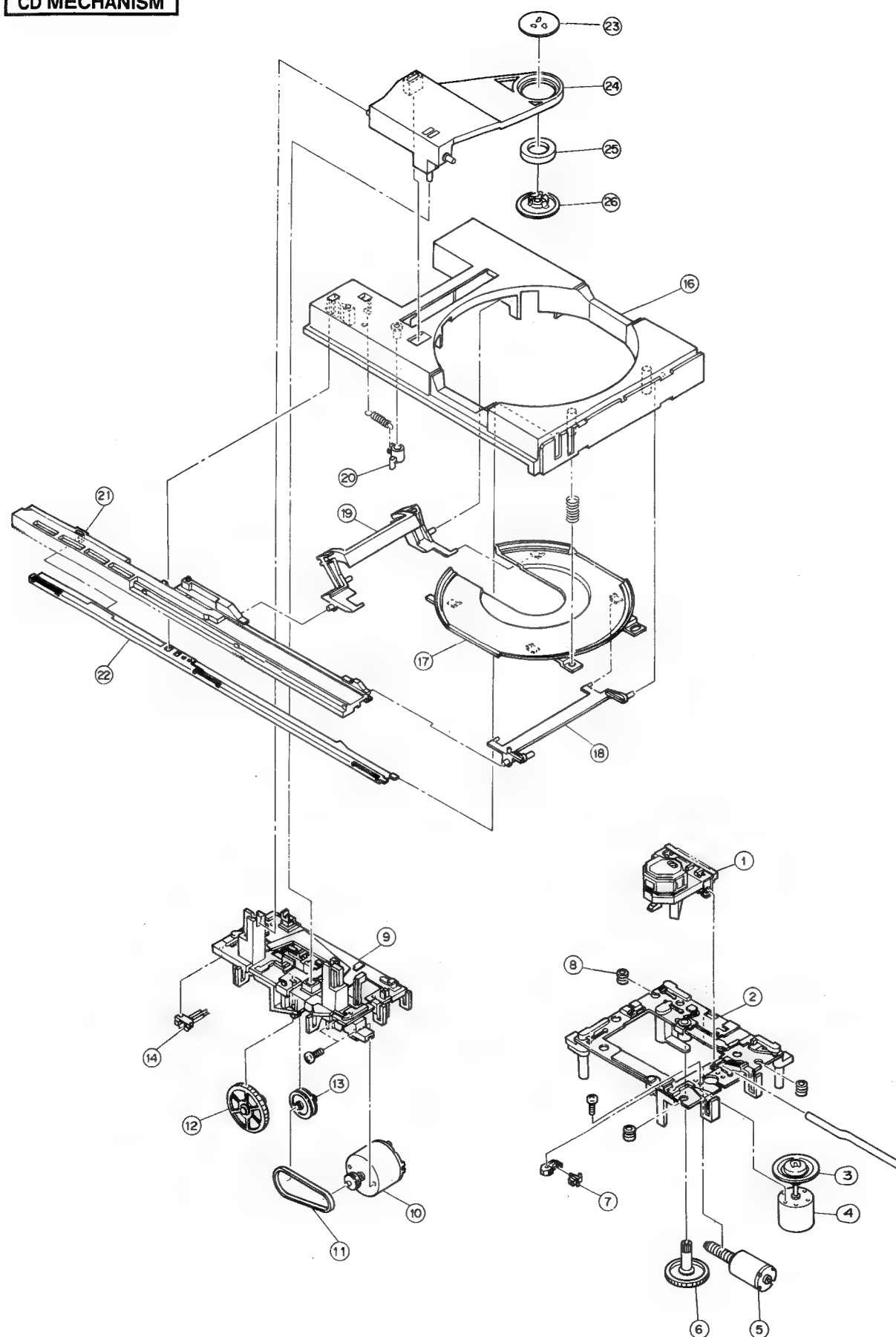
CD MECHANISM

Ref. No.	Part No.	Description
1	BO-368598	PICK UP KSS-150A
2	MA-731007T	CHASSIS OUTSERT
3	MZ-730685T	TURNTABLE OUTSERT
4	BM-730688T	MOTOR RF-310T-11400
5	BM-730687T	MOTOR RD-050Y-10240
6	MZ-731011T	GEAR WHEEL
7	ES-390127J	SW PUSH SPBP12
8	MB-730686T	RUBBER CUSHION
9	MA-731008T	LOADING CHASSIS OUTSERT
10	BM-730695T	MOTOR RF-500TB-12560
11	MB-730693T	BELT
12	MZ-730691T	GEAR LOADING
13	MZ-730692T	GEAR LOADING PULLEY
14	ES-730694T	SW LEAF LSC-1223-31
16	SC-731017T	DISC TRAY
17	MZ-731016T	DISC HOLDER
18	ML-730678T	DISC HOLDER (F)
19	ML-730679T	DISC HOLDER (R)
20	ML-730680T	LOCK LEVER
21	MZ-731019T	CAM LOADER
22	MZ-731018T	DISC TRAY GUIDE
23	MZ-731012T	CHUCKING PLATE
24	MZ-731015T	CLAMPER HOLDER
25	MZ-731014T	MAGNET 30X18X5
26	MZ-731013T	CLAMPING PLATE

NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

3. P.C BOARD BLOCK

Ref. No.	Part No.	Description
1	BA-731000T	MAIN PCB ASSY CD-25



4. MAIN P.C BOARD

Ref. No.	Part No.	Description
D1	*ED-389840J	D SILICON 1SR139-100HS F10
D2	*ED-389840J	D SILICON 1SR139-100HS F10
D3	*ED-389840J	D SILICON 1SR139-100HS F10
D4	*ED-389840J	D SILICON 1SR139-100HS F10
D5	*ED-389840J	D SILICON 1SR139-100HS F10
D6	*ED-389840J	D SILICON 1SR139-100HS F10
D7	ED-389840J	D SILICON 1SR139-100HS F10
D8	ED-389840J	D SILICON 1SR139-100HS F10
D9	ED-389840J	D SILICON 1SR139-100HS F10
D10	ED-389840J	D SILICON 1SR139-100HS F10
D11	ED-389840J	D SILICON 1SR139-100HS F10
D12	ED-384523J	D ZENER H 05AZ30-Z
D13	ED-200967	D ZENER H RD5.6E B2
D14	ED-317690	D ZENER H RD7.5E B1
D15	ED-307572	D SILICON H 1SS131
D16	ED-300269	D ZENER H RD9.1E B
D18	ED-307572	D SILICON H 1SS131
D19	ED-307572	D SILICON H 1SS131
D20	ED-307572	D SILICON H 1SS131
D21	ED-307572	D SILICON H 1SS131
D22	ED-307572	D SILICON H 1SS131
D23	ED-307572	D SILICON H 1SS131
D24	ED-307572	D SILICON H 1SS131
D25	ED-307572	D SILICON H 1SS131
D26	ED-307572	D SILICON H 1SS131
D27	ED-307572	D SILICON H 1SS131
D28	ED-307572	D SILICON H 1SS131
D29	ED-307572	D SILICON H 1SS131
D30	ED-200967	D ZENER H RD5.6E B2
IC1	EI-390112J	IC CXA1081S
IC2	EI-390120J	IC CXA1082BS
IC3	EI-368610	IC CXD1135Q
IC4	EI-382251J	IC LC3517BS-15
IC5	EI-390121J	IC HD614081SA48 P2054-1
IC7	EI-330352	IC BA6109
IC8	EI-390129J	IC TDA1543A
IC9	EI-390113J	IC PD0034
IC10	EI-723861J	IC NJM4558DD
IC11	EI-723861J	IC NJM4558DD
IC12	EI-371572	IC UPC7805H
IC13	EI-371573	IC UPC7905H
IC14	EI-360039J1	IC TC74HC08AP
IC15	EI-360037J1	IC TC74HC00AP
IN1	EM-730699T	IND FL FV365
J3	EJ-730700T	PIN J 2P (RCA RED)
J4	EJ-390116J	PIN J T6312-A444 1P
T1	EO-731158T	PULSE T. TWS-358-651
TR1	ET-336735	TR 2SA733A P,K
TR2	ET-354083	TR 2SD1189 Q,R
TR3	ET-730702T	TR 2SB909MR
TR4	ET-354083	TR 2SD1189 Q,R
TR5	ET-356817	TR 2SB891 Q,R
TR6	ET-730698T	TR 2SD1225MR
TR7	ET-730702T	TR 2SB909MR
TR8	ET-398788	TR 2SC945L R
TR9	ET-354083	TR 2SD1189 Q,R
TR10	ET-356817	TR 2SB891 Q,R
TR17	ET-398788	TR 2SC945L R
TR18	ET-336735	TR 2SA733A P,K
TR19	ET-398788	TR 2SC945L R
TR20	ET-336735	TR 2SA733A P,K
TR21	ET-336735	TR 2SA733A P,K
TR22	ET-398788	TR 2SC945L R
TR23	ET-398788	TR 2SC945L R
TR24	ET-336735	TR 2SA733A P,K
TR26	ET-398788	TR 2SC945L R
TR27	ET-378524J	TR 2SC3383 S,T,U
TR28	ET-352726	TR 2SA1392 T,U
VR1	EV-336849	R S-FIX H KVSF807U 0.10W 203 [E-F BALANCE]
VR2	EV-336849	R S-FIX H KVSF807U 0.10W 203 [FOCUS OFF SET]
VR3	EV-336849	R S-FIX H KVSF807U 0.10W 203 [FOCUS GAIN]
VR4	EV-336849	R S-FIX H KVSF807U 0.10W 203 [TRACKING GAIN]

Ref. No.	Part No.	Description
VR5	EV-341232	R S-FIX H TM8KV2-1S 0.50W102 [PLL]
X1	EI-374176	OSC XTAL AT-51 16.9344MHZ
X2	EI-390149J	OSC CE CST4.23MGW 4.230MHZ

5. POWER P.C BOARD

Ref. No.	Part No.	Description
C201A	*EC-338496	C CE V DE7 FZ 472P 400AC [E,B,S]
C201B	*EC-338411	C CE V DE7 FZ 103P 400AC [U]
C202A	*EC-338496	C CE V DE7 FZ 472P 400AC [E,B,S]
C202B	*EC-338411	C CE V DE7 FZ 103P 400AC [U]
F201	*EF-358974	FUSE BET T 250V 630MA [E,B,S]
F202	*EF-358974	FUSE BET T 250V 630MA [E,B,S]
LF201	*EH-730701T	LINE FILTER LF-2217
VS201	*ES-349464	SW SLIDE 00120319 01-2 [U]

6. CONTROL P.C BOARD

Ref. No.	Part No.	Description
RM1	EI-727276T	DETECTOR QH3021H0
TS1	ES-349474	SW TACT SKHHAM004A [OPEN/CLOSE]
TS2	ES-349474	SW TACT SKHHAM004A [PLAY]
TS3	ES-349474	SW TACT SKHHAM004A [STOP]
TS4	ES-349474	SW TACT SKHHAM004A [DISPLAY]
TS5	ES-349474	SW TACT SKHHAM004A [SKIP FWD]
TS6	ES-349474	SW TACT SKHHAM004A [SKIP REV]
TS7	ES-349474	SW TACT SKHHAM004A [SERCH FWD]
TS8	ES-349474	SW TACT SKHHAM004A [SERCH REV]
TS9	ES-349474	SW TACT SKHHAM004A [RANDOM PLAY]

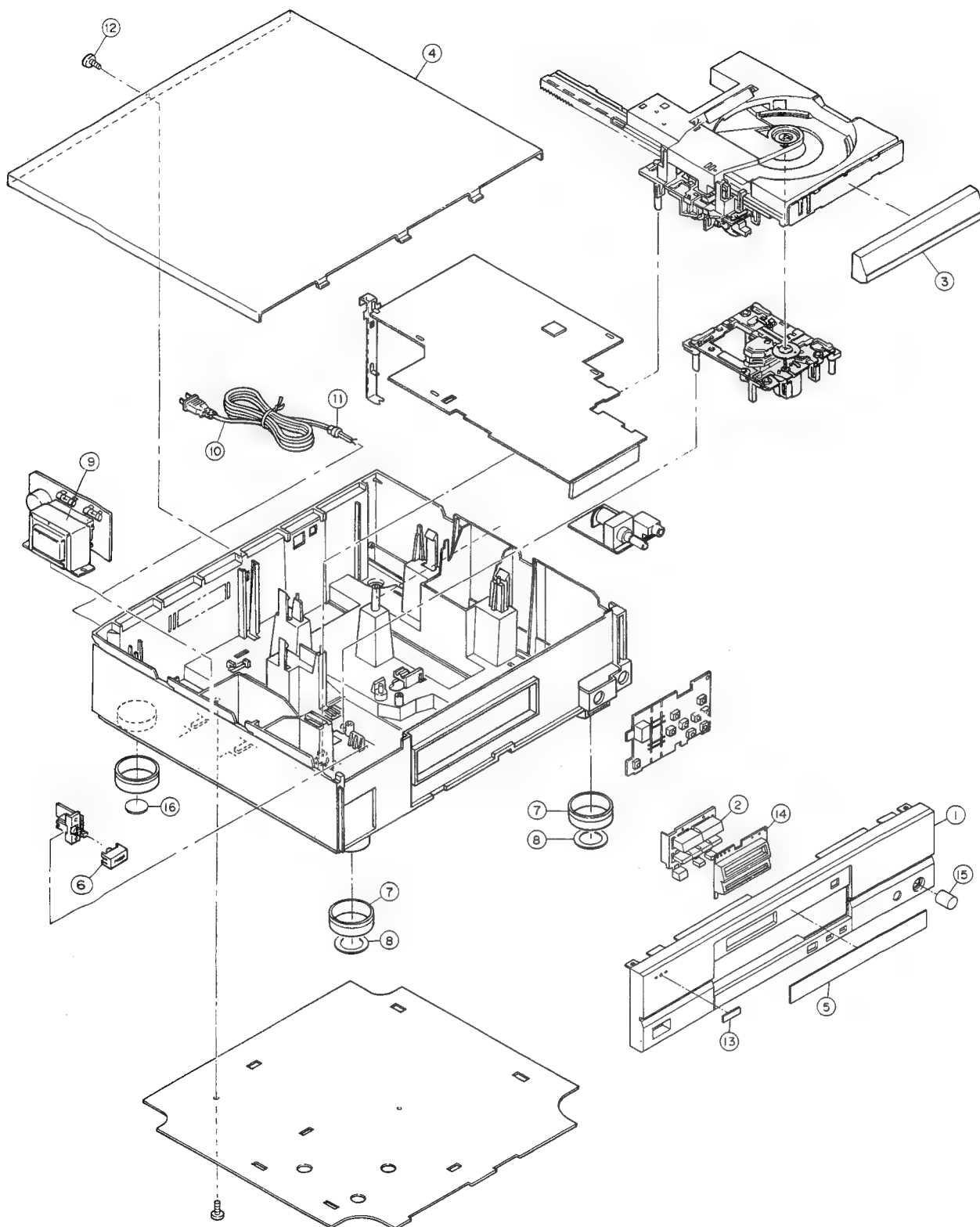
7. POWER SW P.C BOARD

Ref. No.	Part No.	Description
SW1	*ES-390128J	SW PUSH SPUP12018A 02-02N

8. PHONE AMP P.C BOARD

Ref. No.	Part No.	Description
IC100	EI-307644	IC NJM4556D
J100	EJ-731159T	PH JACK JY-6304-01-030
TR101	ET-338410	TR 2SC2878 A,B
VR100	EV-731160T	VR 20KAX2 RK16K12B0048

FINAL ASSEMBLY BLOCK



9. FINAL ASSEMBLY

Ref. No.	Part No.	Description
1	SP-731151T	FRONT ESCUTCHEON CD-25
2	SK-731146T	KNOB FUNCTION
3	SP-731152T	PANEL TRAY CD-25
4	SC-731147T	TOP COVER CD-25
5	SE-731148T	PLATE DISPLAY
6	SK-373236B	KNOB POWER-B
7	SA-731154T	RING FOOT
8	SA-731156T	SHEET FOOT (F)
9A	*BT-730709T	TRANS POW EI-48K (E,V) [E]
9B	*BT-730710T	TRANS POW EI-48K (B,S) [B,S]
9C	*BT-730718T	TRANS POW EI-48K (U) [U]
10A	*EW-336923	AC CORD 2C KP-419C,LTCE-2F EV [E]
10B	*EW-727063T	AC CORD BS6500 (B) [B]
10C	*EW-347898	AC CORD 2 CORES VM-0436,LCFL S [S]
10D	*EW-731025T	AC CORD UL 6.5F BLK2 SPT2 [U]
11	*EZ-730703T	STRAIN RELIEF SR-4K-6
12	ZS-365702	PLX BID30X10STL BNI
13	SM-365756C	NAME PLATE AKAI(2)
14	SK-731149T	KNOB ESCUTCHEON
15	SK-731150T	KNOB VR
16	SA-731155T	SHEET FOOT (R)

NOTE:

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

10. ACCESSARY

Ref. No.	Part No.	Description
1	AX-731157T	REMOTE TRANSMITTER ASSY RC-25
2	EW-387930J	CORD R-237P P-P 2P

INDEX

Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.
AX-731157T	10-1	EI-390113J	4-IC9	EW-731025T	9-10D		
BA-731000T	3-1	EI-390120J	1-18	EZ-730703T	9-11		
BM-730687T	1-1	EI-390120J	4-IC2	MA-731007T	2-2		
BM-730687T	2-5	EI-390121J	1-20	MA-731008T	2-9		
BM-730688T	1-2	EI-390121J	4-IC5	MB-730686T	2-8		
BM-730688T	2-4	EI-390129J	1-27	MB-730693T	1-48		
BM-730695T	1-3	EI-390129J	4-IC8	MB-730693T	2-11		
BM-730695T	2-10	EI-390149J	1-30	ML-730678T	2-18		
BO-368598	1-4	EI-390149J	4-X2	ML-730679T	2-19		
BO-368598	2-1	EI-723861J	1-23	ML-730680T	2-20		
BT-730709T	1-6	EI-723861J	4-IC10	MZ-730685T	2-3		
BT-730709T	9-9A	EI-723861J	4-IC11	MZ-730691T	2-12		
BT-730710T	1-5	EI-727276T	1-15	MZ-730692T	2-13		
BT-730710T	9-9B	EI-727276T	6-RM1	MZ-731011T	2-6		
BT-730718T	1-7	EJ-390116J	4-J4	MZ-731012T	2-23		
BT-730718T	9-9C	EJ-730700T	4-J3	MZ-731013T	2-26		
EC-338411	5-C201B	EJ-731159T	8-J100	MZ-731014T	2-25		
EC-338411	5-C202B	EM-730699T	1-32	MZ-731015T	2-24		
EC-338496	5-C201A	EM-730699T	4-IN1	MZ-731016T	2-17		
EC-338496	5-C202A	EO-731158T	4-T1	MZ-731018T	2-22		
ED-200967	1-10	ES-349464	1-36	MZ-731019T	2-21		
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ED-307572	4-D21	ES-349474	6-TS8	SK-731150T	9-15		
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ED-307572	4-D29	ET-336735	1-39				
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ED-384523J	1-13	ET-336735	4-TR20				
ED-384523J	4-D12	ET-336735	4-TR21				
ED-389840J	1-9	ET-336735	4-TR24				
ED-389840J	4-D1	ET-338410	1-42				
ED-389840J	4-D2	ET-338410	8-TR101				
ED-389840J	4-D3	ET-352726	1-38				
ED-389840J	4-D4	ET-352726	4-TR28				
ED-389840J	4-D5	ET-354083	1-45				
ED-389840J	4-D6	ET-354083	4-TR2				
ED-389840J	4-D7	ET-354083	4-TR4				
ED-389840J	4-D8	ET-354083	4-TR9				
ED-389840J	4-D9	ET-356817	1-40				
ED-389840J	4-D10	ET-356817	4-TR5				
ED-389840J	4-D11	ET-356817	4-TR10				
EF-358974	1-14	ET-378524J	1-43				
EF-358974	5-F201	ET-378524J	4-TR27				
EF-358974	5-F202	ET-398788	1-44				
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EI-307644	8-IC100	ET-398788	4-TR19				
EI-330352	1-16	ET-398788	4-TR22				
EI-330352	4-IC7	ET-398788	4-TR23				
EI-360037J1	1-25	ET-398788	4-TR26				
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EI-360039J1	1-26	ET-730698T	4-TR6				
EI-360039J1	4-IC14	ET-730702T	1-41				
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EI-371572	4-IC12	ET-730702T	4-TR7				
EI-371573	1-29	EV-336849	4-VR1				
EI-371573	4-IC13	EV-336849	4-VR2				
EI-374176	1-31	EV-336849	4-VR3				
EI-374176	4-X1	EV-336849	4-VR4				
EI-382251J	1-21	EV-341232	4-VR5				
EI-382251J	4-IC4	EV-731160T	1-47				
EI-388090J	1-19	EV-731160T	8-VR100				
EI-388090J	4-IC3	EW-336923	9-10A				
EI-390112J	1-17	EW-347898	9-10C				
EI-390112J	4-IC1	EW-387930J	10-2				
EI-390113J	1-24	EW-727063T	9-10B				

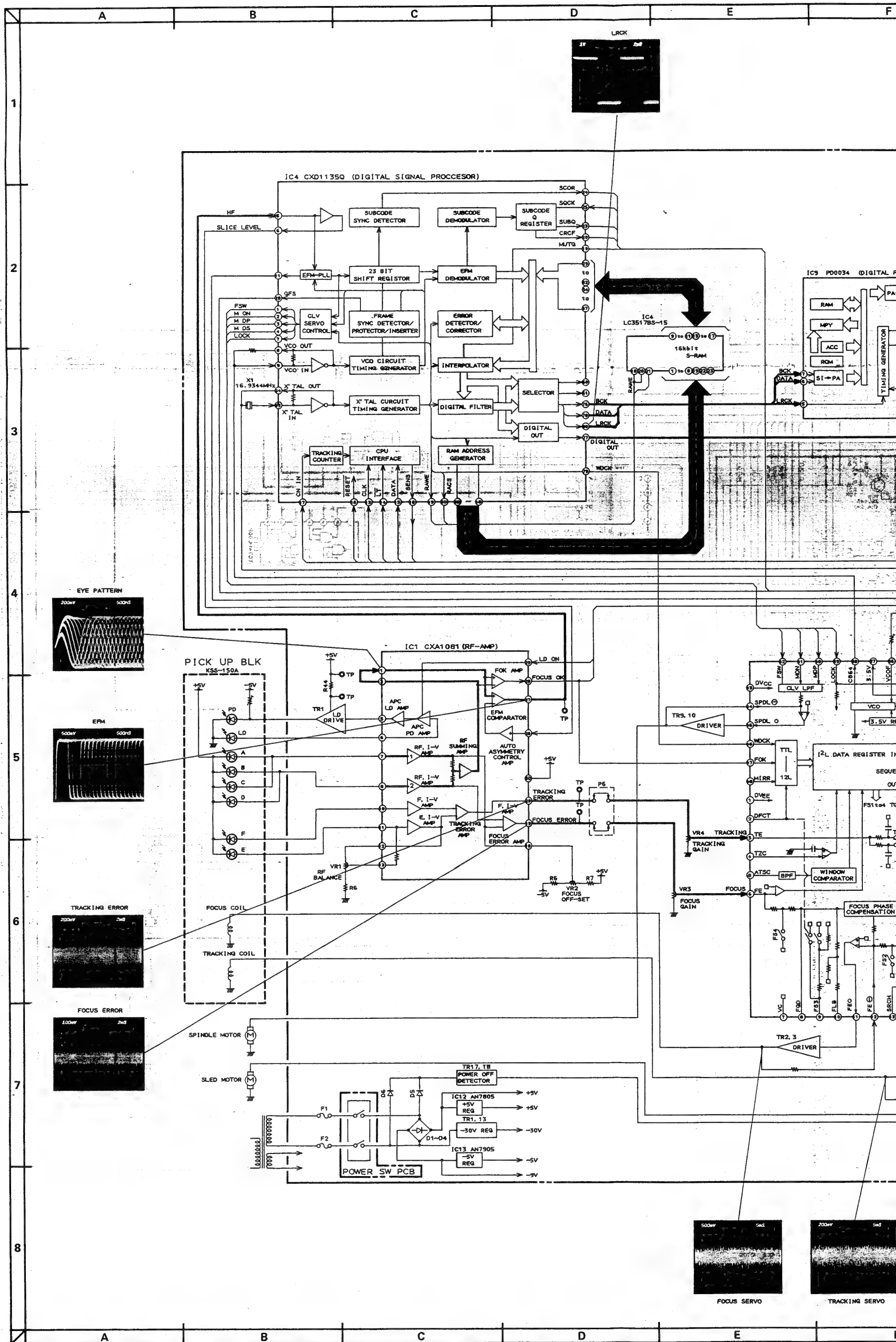
AKAI

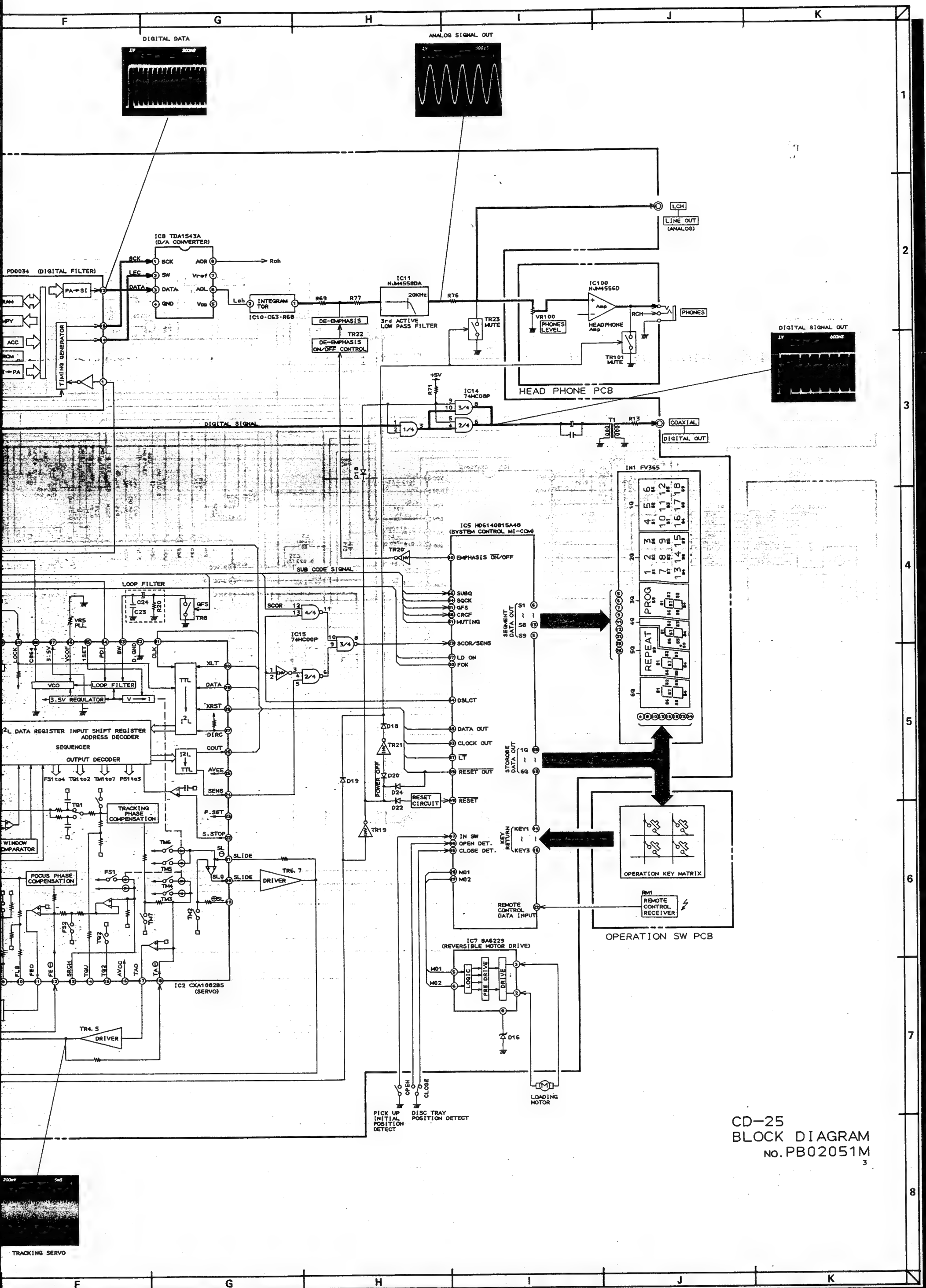
MODEL CD-25

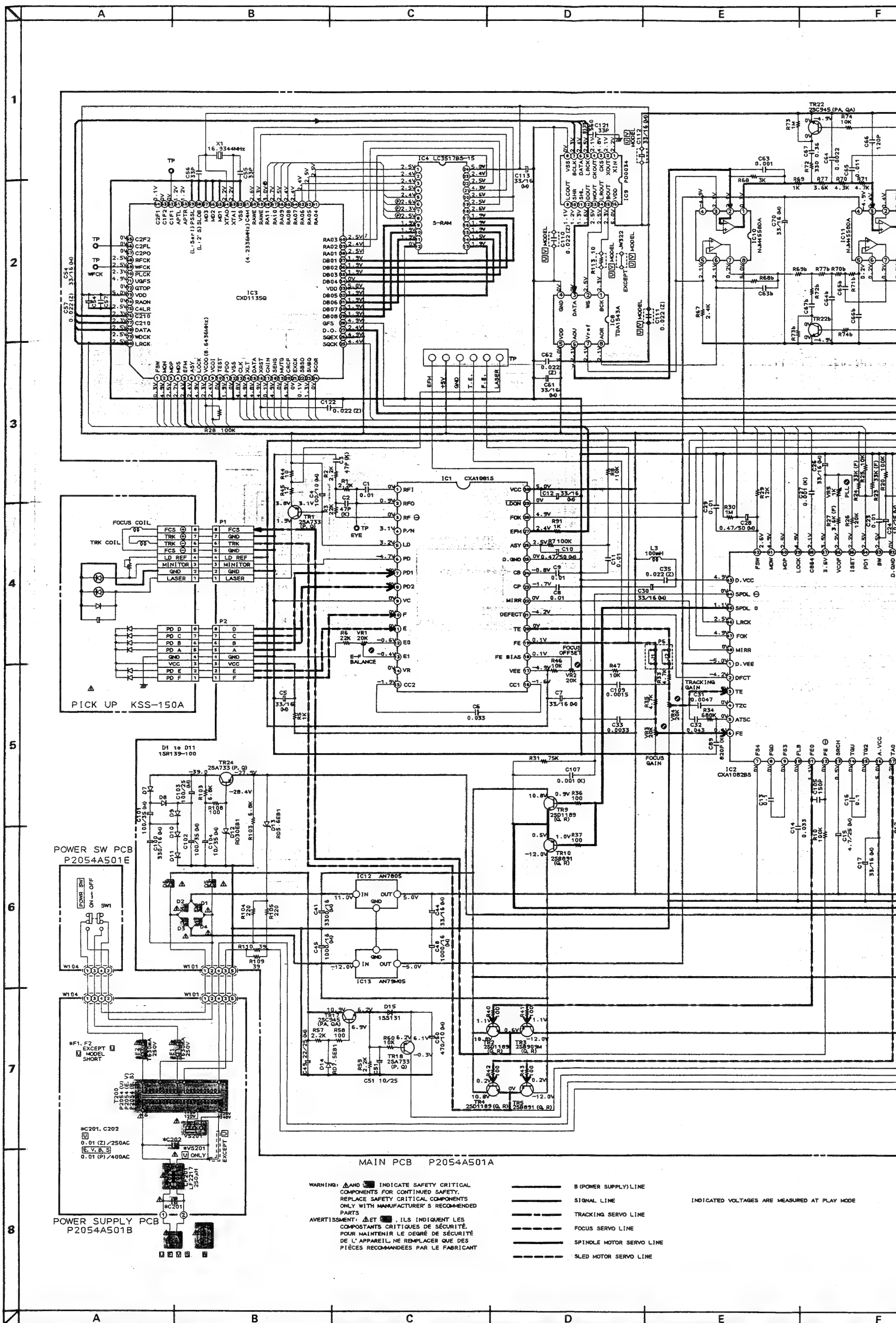
SCHEMATIC DIAGRAMS AND PC BOARDS

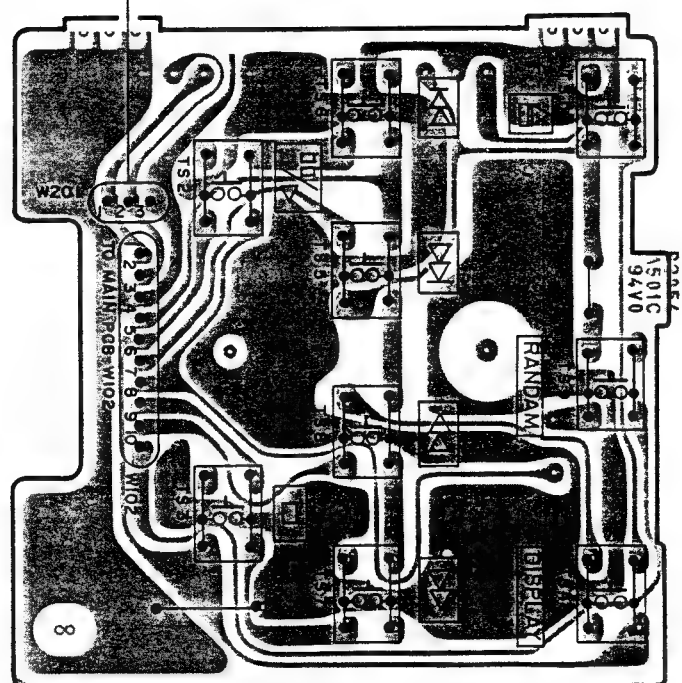
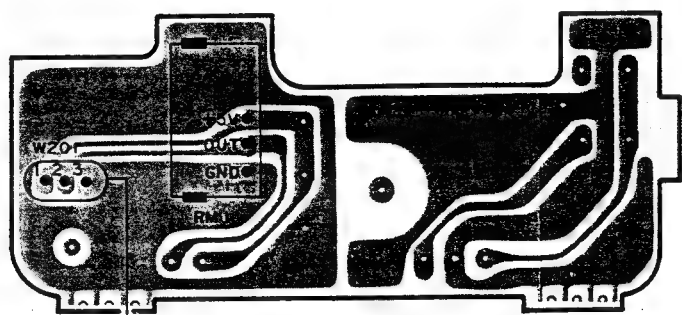
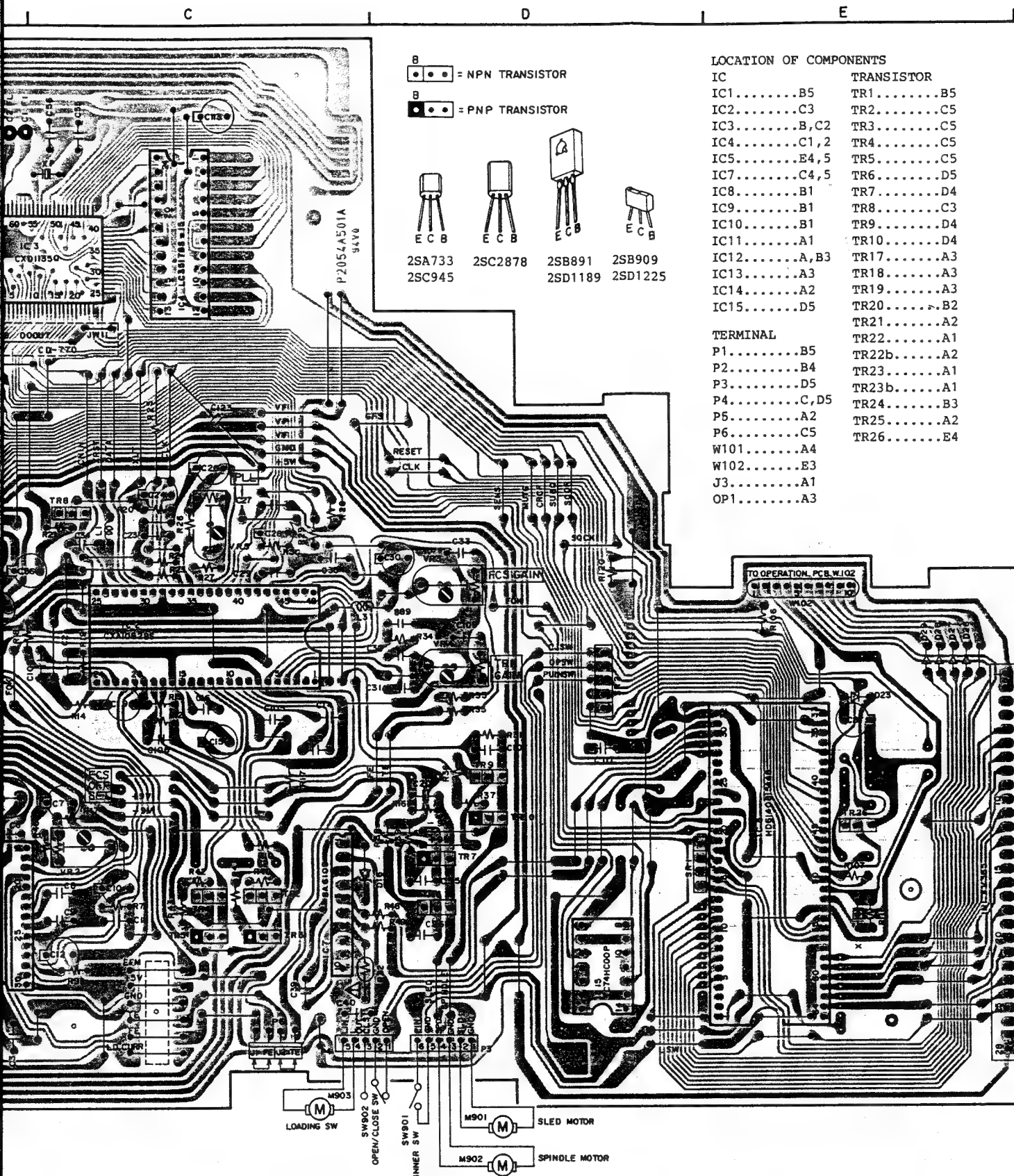
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2. SCHEMATIC DIAGRAM	4
3. MAIN AND OTHER PC BOARDS	5
4. INFORMATION OF ICs	6

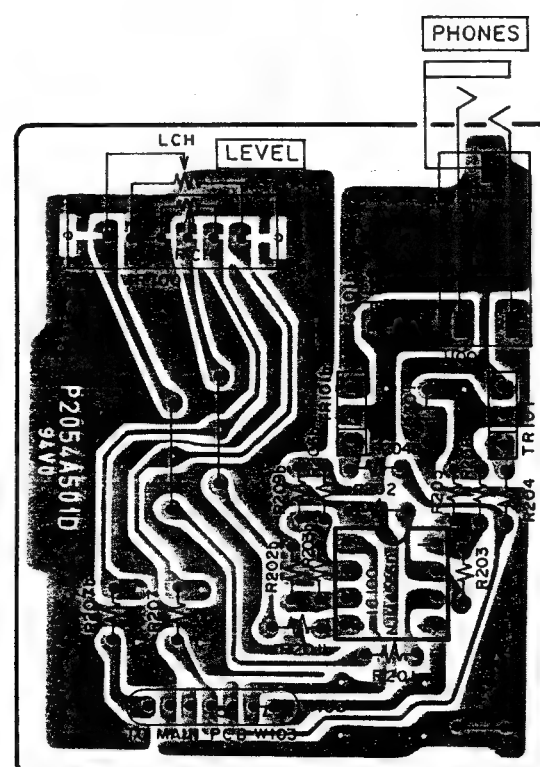




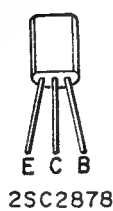




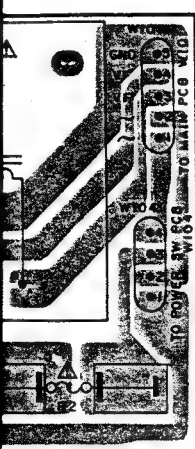
OPERATION PCB P2054A501C



HEAD PHONE PCB P2054A501D

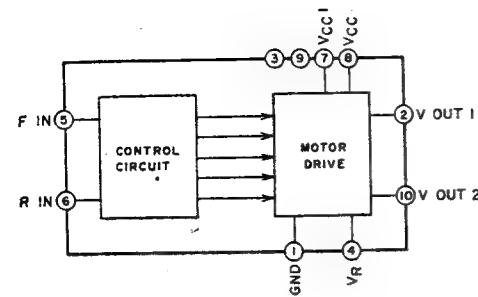


B
 • • • = NPN TRANSISTOR



COMPONENTS FOR CONTINUED SAFETY.
 PARTS ONLY WITH MANUFACTURER'S
 INSTRUCTIONS.
 PARTS CRITIQUES DE SÉCURITÉ.
 PARTS SEULEMENT AVEC LES INSTRUCTIONS
 DU FABRICANT.

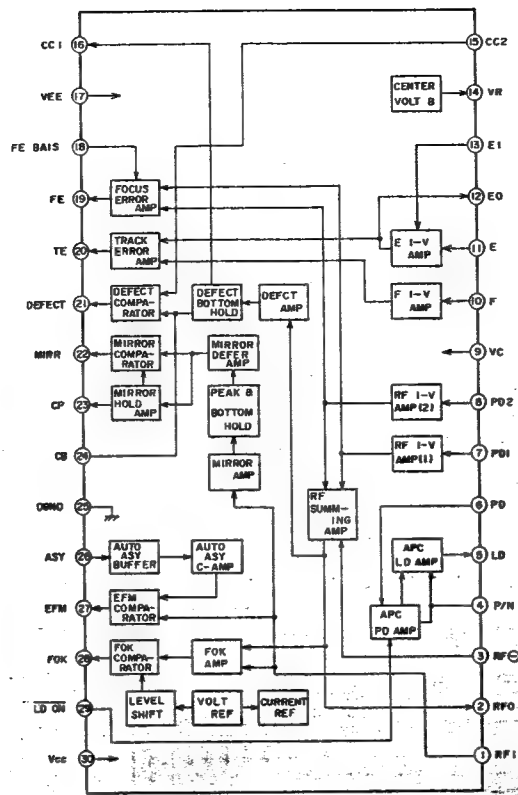
BA6109 (REVERSIBLE MOTOR DRIVE)



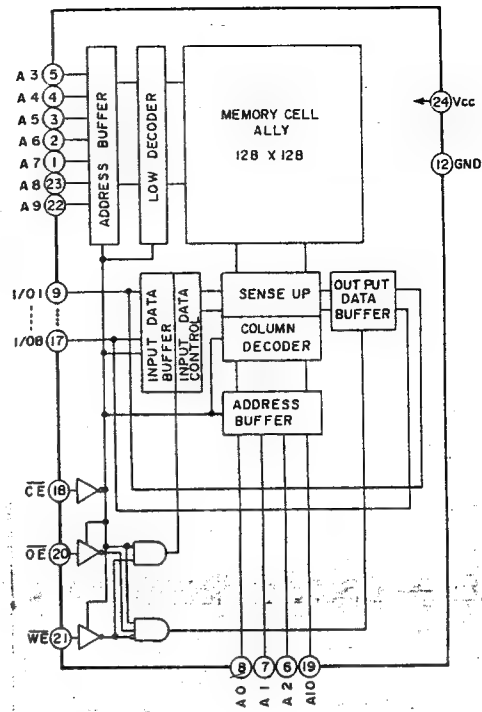
F IN	R IN	V OUT 1	V OUT 2
I	I	L	L
O	I	L	H
I	O	H	L
O	O	L	L

I = MORE THAN 2.0V
O = LESS THAN 0.7V

CXA1081S (RF-AMP)



LC3517BS-15 (16K BIT S-RAM)

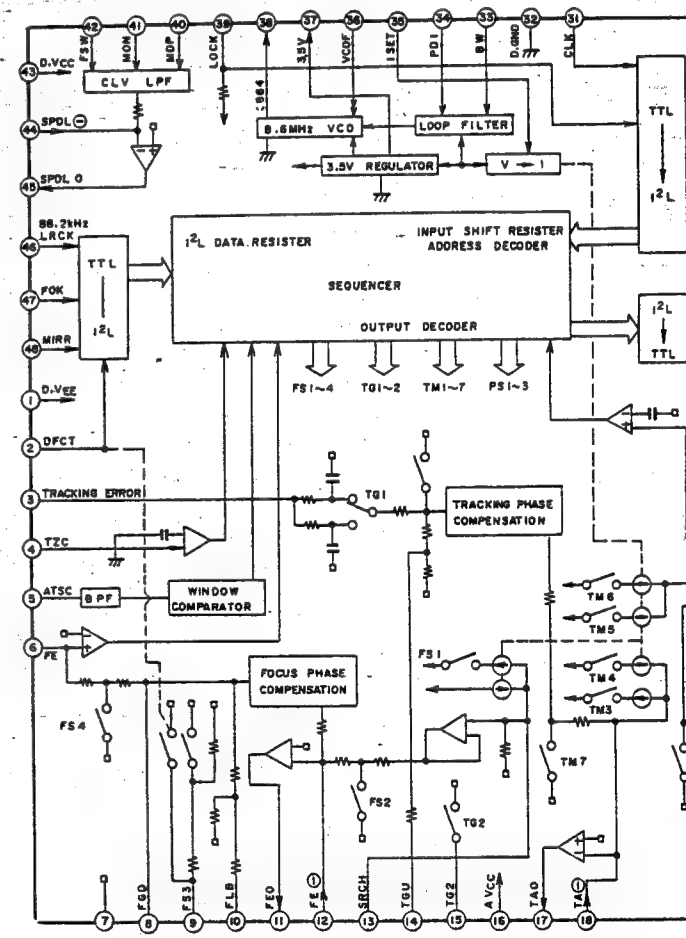


Pin No.	
1	
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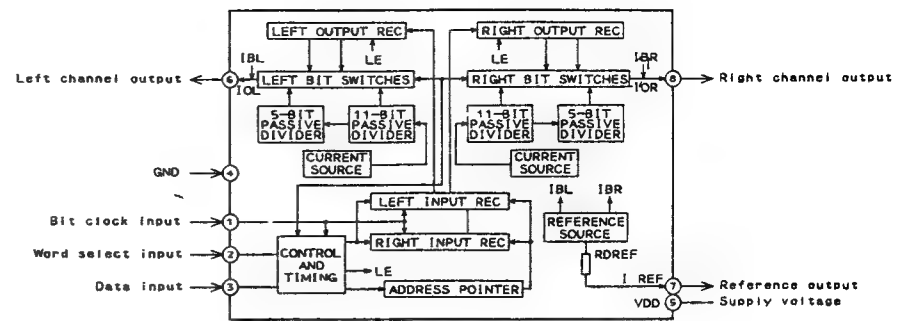
HD6140815A48 (SYSTEM CONTROL MI-COM)

Pin No.	Symbol	I/O	Description
1	Vcc	I	+5V power supply
2	SUBQ	I	Sub code-Q data input
3	SQCK	O	Reading clock output of sub code-Q data
4	LSW	O	Laser diode ON/OFF control output
5	EMP	O	Emphasis ON/OFF control output
6	FOK	I	Focus "OK" (Pick up is in focus) detect signal input
7	GFS	I	PLL(Frame sync) condition detect signal input("H": PLL lock, "L": PLL unlock)
8	MO1	O	Motor control output for LOADING and OUTPUT VOLUME motors. (Refer to pin 22 and 23)
9	INSW	I	Initial position detect signal input of pick up
10	CRCF	I	Result input of CRC(Error) check from LSI(CXD1135)
11	MUTG	O	Muting control output for LSI(CXD1135)
12	PSW	I	Input of power ON/OFF detect signal
13	OPSW	I	Input of disc tray open detect signal
14	CLSW	I	Input of disc tray close detect signal
15	RST	O	Reset signal output for LSI(CXD1135)
16	LT	O	Latch signal output of data transfer to LSI(CXD1135)
17	CLK	O	Clock signal output of data transfer to LSI(CXD1135)
18	DATA	O	Command data output to LSI(CXD1135)
19	MUTE 2	O	Mute control output during peak level search
20	AIN	I	Rectified audio signal input for peak level detection
21	SENS	I	Not used
22	MO2	O	Motor control output for LOADING and OUTPUT VOLUME motors
23	MO3	O	Motor control output for LOADING and OUTPUT VOLUME motors
24	REMO	I	Remote control receive serial data input
25	SCOR	I	Not used
26	CNVss		GND
27	RST	I	Reset signal input
28	XIN	I	X'tal connection terminal
29	XOUT	O	X'tal connection terminal
30	XCIN	I	Not used
31	XCOU	O	Not used
32	Vss	O	GND
33			Notused
34	KS4	I	Key scan input
35	KS3	I	
36	KS2	I	
37	KS1	I	
38	Vp	I	-30 V
39			Not used
40			Not used
41	S16	O	Segment data output for FL display
42	S15	O	
43	S14	O	
44	S13	O	
45	S12	O	
46	S11	O	
47	S10	O	
48	S09	O	
49	S08	O	
50	S07	O	
51	S06	O	
52	S05	O	
53	S04	O	
54	S03	O	
55	S02	O	
56	S01	O	
57	8G	O	Digit output for FL display and key scan
58	7G	O	
59	1G	O	
60	2G	O	
61	3G	O	
62	4G	O	

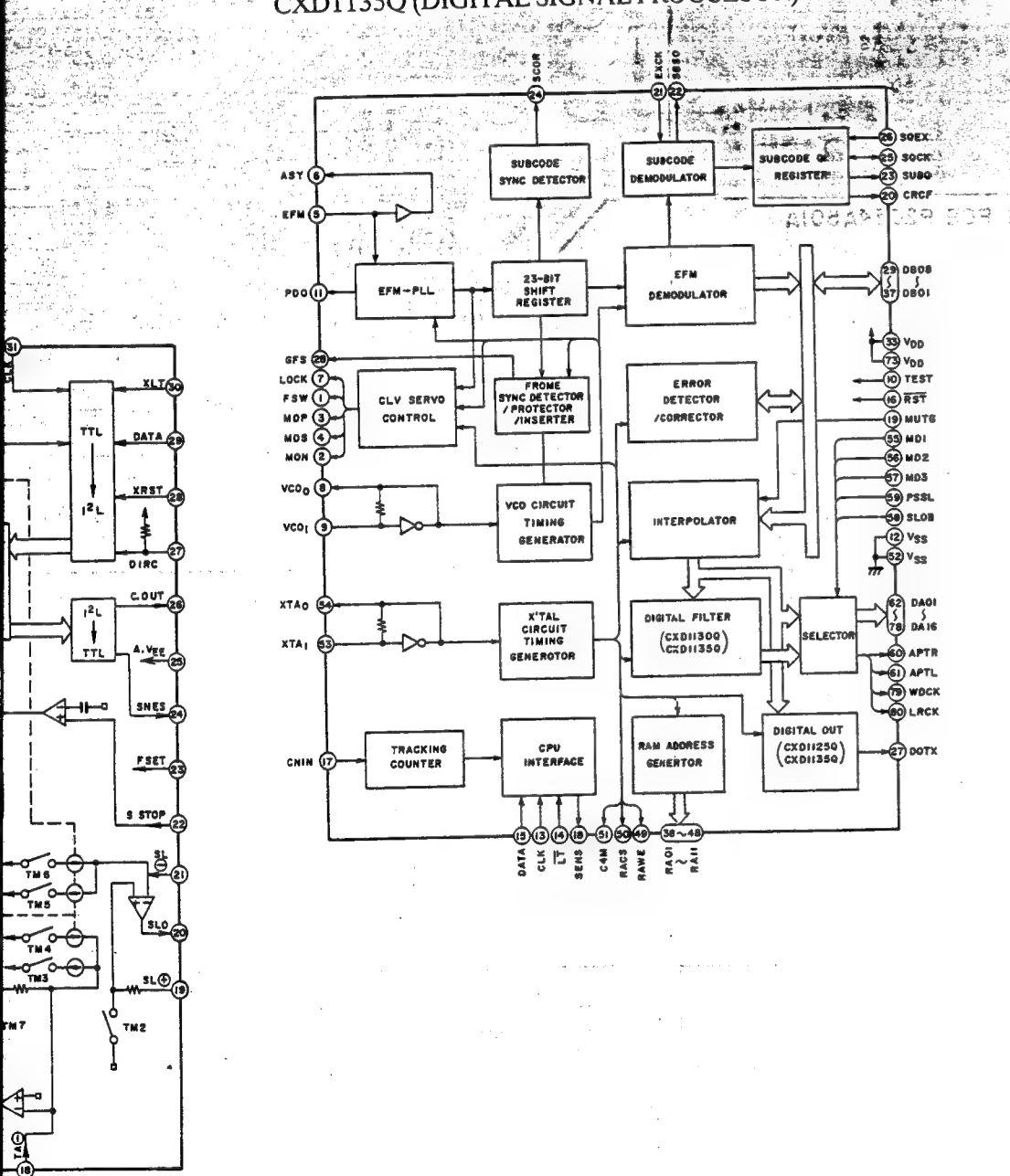
CXA1082BS (SERVO CONTROL)



Pin No.	Symbol	I/O	Description
1	XIN	I	Crystal OSC input or external input
2	XOUT	O	Crystal OSC output
3	CKS	I	H level:16.9344MHz L level:8.4672MHz
4	CKOUT	O	CKS=H level:16.9344MHz CKS=L level:8.4672MHz
5	LRCK	I	LR CLOCK input
6	DATA	I	Serial data input
7	BCLK	I	Bit clock for INPUT DATA
8	VSS		GND
9	LCOUT	O	Use for 2 DAC's L ch clock output
10	SHR	O	R ch sample and hold plus output
11	SHL	O	L ch sample and hold plus output
12	DOUT	O	Serial data output
13	WOUT	O	WORD CLOCK output
14	LROUT	O	LR select clock output
15	BOUT	O	Bit clock output for DOUT
16	VDD		+5V power supply



CXD1135Q (DIGITAL SIGNAL PROCCESSOR)



No.	Symbol	I/O	Description
1	FSW	O	Spindle motor filter switching control
2	MON	O	Spindle motor ON/OFF control
3	MPD	O	Spindle motor speed and phase control
4	MDS	O	Spindle motor speed control
5	EFM	I	EFM signal input
6	ASY	O	EFM signal slice level control
7	LOCK	O	Slide motor over reach guard signal output
8	VCOO	O	VCO output f=8.6436 MHz
9	VCOI	I	VCO input
10	TEST	I	OV (GND)
11	PDO	O	Phase comp. output
12	VSS		GND (OV)
13	CLK	I	Clock signal from CPU
14	LT	I	Lutch signal from CPU
15	DATA	I	Serial data from CPU
16	RST	I	RESET input "L" reset
17	CNIN	I	Tracking pulse input (5V)
18	SENS	O	Output of CPU interface
19	MUTG	I	Mute control signal input
20	CRCF	O	CRC check output of the subcode Q "L" detect error
21	EXCK	I	NOT USE
22	SBSO	O	NOT USE
23	SUBQ	O	Subcode Q output
24	SCOR	O	Subcode sync detection output
25	SQCK	I/O	Clock signal for subcode Q
26	SQEX	I	Select input of CQCK (+5V)
27	DOTX	O	Digital output
28	GPS	O	"H" frame sync lock "L" frame sync unlock
29	DB08	I/O	Data 8 (MSB) Data Bus line for the EXT.RAM (LC3517AS-15)
30	DB07	I/O	Data 7 Data Bus line for the EXT.RAM (LC3517AS-15)
31	DB06	I/O	Data 6 Data Bus line for the EXT.RAM (LC3517AS-15)
32	DB05	I/O	Data 5 Data Bus line for the EXT.RAM (LC3517AS-15)
33	VDD		+5V
34	DB04	I/O	Data 4 Data Bus line for the EXT.RAM (LC3517AS-15)
35	DB03	I/O	Data 3 Data Bus line for the EXT.RAM (LC3517AS-15)
36	DB02	I/O	Data 2 Data Bus line for the EXT.RAM (LC3517AS-15)
37	DB01	I/O	Data 1 (LSB) Data Bus line for the EXT.RAM (LC3517AS-15)
38	RA01	O	ADDR01 (LSB) Address signal output for the EXT. RAM (LC3517AS-15)
39	RA02	O	ADDR02 Address signal output for the EXT. RAM (LC3517AS-15)
40	RA03	O	ADDR03 Address signal output for the EXT. RAM (LC3517AS-15)

ABBREVIATIONS (COMPACT DISC)

ABBREVIATION	EXPLANATION	ABBREVIATION	EXPLANATION
A-D	Analog to Digital (Convertor)	Mb	Mega Bits
ADC	Analog to Digital (Convertor)	MDA	Motor Drive Amplifier
BCD	Binary Code Decimal	MFM	Modified Frequency Modulation
BPI	Bits per Inch	MM	Mono-stable Multivibrator
CD	Compact Disc	M ² FM	Modified Modified Frequency Modulation
CIRC	Cross Interleaving & Reed Solomon Coding	MOD2	Modulo 2 (Addition)
CLV	Constant Linear Velocity	MP	Microprocessor
CP	Clock Pulses	MSB	Most Significant Bit
CRCC	Cyclic Redundancy Check Codes	NA	Numerical Aperture
D Level	Decision Level	NRZ	Non Return to Zero
D-A	Digital to Analog (Convertor)	NRZ-I	Non Return to Zero Inverted
DAC	Digital to Analog (Convertor)	P	Parity Data
DAD	Digital Audio Disc	PAM	Pulse Amplitude Modulation
DEM	Dynamic Element Matching	PCM	Pulse Code Modulation
DPD	Differential Phase Detection	PD	Phase Detector
DSV	Digital Sum Value	PE	Phase Encode
EFM	Eight to fourteen Modulation	PLL	Phase Locked Loop
EX-OR	EXclusive OR	PNM	Pulse Number Modulation
FCI	Flux Changes per Inch	PPM	Pulse Phase Modulation
FIR	Finite Impulse Response	PWM	Pulse Width Modulation
FP	Front Pulse	Q	Parity Data
FPG	Front Pulse Gate	R,R ₁ ,R ₂ , etc.	Data for Right Channel
f	Frequency of Sampling	RAM	Random Access Memory
GF	Galois Field	RPG	Rear Pulse Gate
H&V (Parity)	Horizontal & Vertical	SCOOP	Self Coupled Optical Pick-up
IIR	Infinite Impulse Response	S&H	Sample & Hold
kb	Kilo Bits	S/N	Signal to Noise Ratio
L,L ₁ ,L ₂ , etc.	Data for Left Channel	SSG	Standard Signal Generator
LPF	Low Pass Filter	SYS CON	SYSTEM CONTROL
LSB	Least Significant Bit		

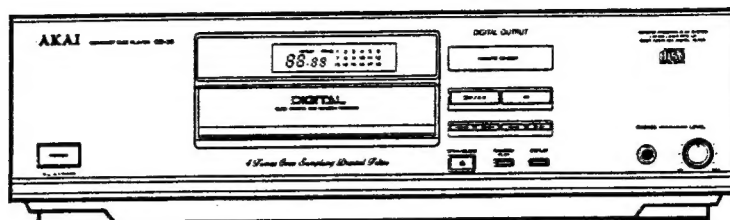
AKAI ELECTRIC CO., LTD.

12-14, 2-Chome, Higashi-Kojiya, Ohta-ku, Tokyo, Japan
SERVICE DEPARTMENT TEL:TOKYO (745)9884 TELEX: J26261
Printed No. 891120-A1-1800 Printed Date January 10, 1990
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AKAI

SERVICE MANUAL (ADDITIONAL)

Use this CD-26/36 service manual together with the AKAI CD-25 service manual.
For schematic diagrams and PC Boards please refer to those provided for the CD-25 model.



MODEL CD-26

COMPACT DISC PLAYER

MODEL CD-26/36

SPECIFICATIONS

Pick-up	3 beam Laser pick-up
Sampling frequency	44.1kHz
Digital filter	16 bit, 4 times over sampling
D/A converter	16 bit linear
Error correction system	Cross Interleave Reed Solomon
Number of channels	2 channel stereo
Frequency response	4Hz to 20kHz $\pm$ 0.5dB
Dynamic range	92dB
S/N	100dB
Total harmonic distortion ...	0.013%
Wow & flutter	Less than measurable limits
Output level/Impedance	
Analog output	2V (0dB)
Digital output	0.5Vp-p/75 ohms
Headphone output	70mW/32 ohms
Power requirements	220V, 50Hz for Europe except UK
	240V, 50Hz for UK and Australia
	110V-120V/220V-240V, 50Hz/60Hz convertible for other countries
Dimensions	425(W) $\times$ 121(H) $\times$ 343(D)mm (16.7 $\times$ 4.8 $\times$ 13.5 inches)
Weight	3.6kg (7.9 lbs)

* For improvement purposes, specifications and design are subject to change without notice.

MODEL CD-26

9. FINAL ASSEMBLY

Ref.No.	Part.No.	Description
1	SP-732543T	PANEL FRONT CD-26
2	SK-732551T	KNOB FUNCTION CD-26
3	SP-732545T	PANEL TRAY CD-26
4	SC-731147T	TOP COVER CD-25
5	SE-732548T	PLATE DISPLAY
6	SK-732549T	KNOB POWER (B)
7	SA-731154T	RING FOOT
8	SA-731156T	SHEET FOOT (F)
9A	*BT-730709T	TRANS POW EI-48K (E,V) [E]
9B	*BT-730710T	TRANS POW EI-48K (B,S) [B]
9C	*BT-730718T	TRANS POW EI-48K (U) [U]
10A	*EW-336923	AC CORD 2C KP-419C,LTCE-2F EV [E]
10B	*EW-727063T	AC CORD BS6500 (B) [B]
10C	*EW-731025T	AC CORD UL 6.5F BLK2 SPT2 [U]
11	*EZ-730703T	STRAIN RELIEF SR-4K-6
12	ZS-365702	PLX BID30X10STL BNI
13	SM-365756C	NAME PLATE AKAI (2)
15	SK-732554T	KNOB VR (B)
16	SA-731155T	SHEET FOOT (R)
17	SE-732556T	REMOCON SHEET

NOTE:

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

MODEL CD-36

9. FINAL ASSEMBLY

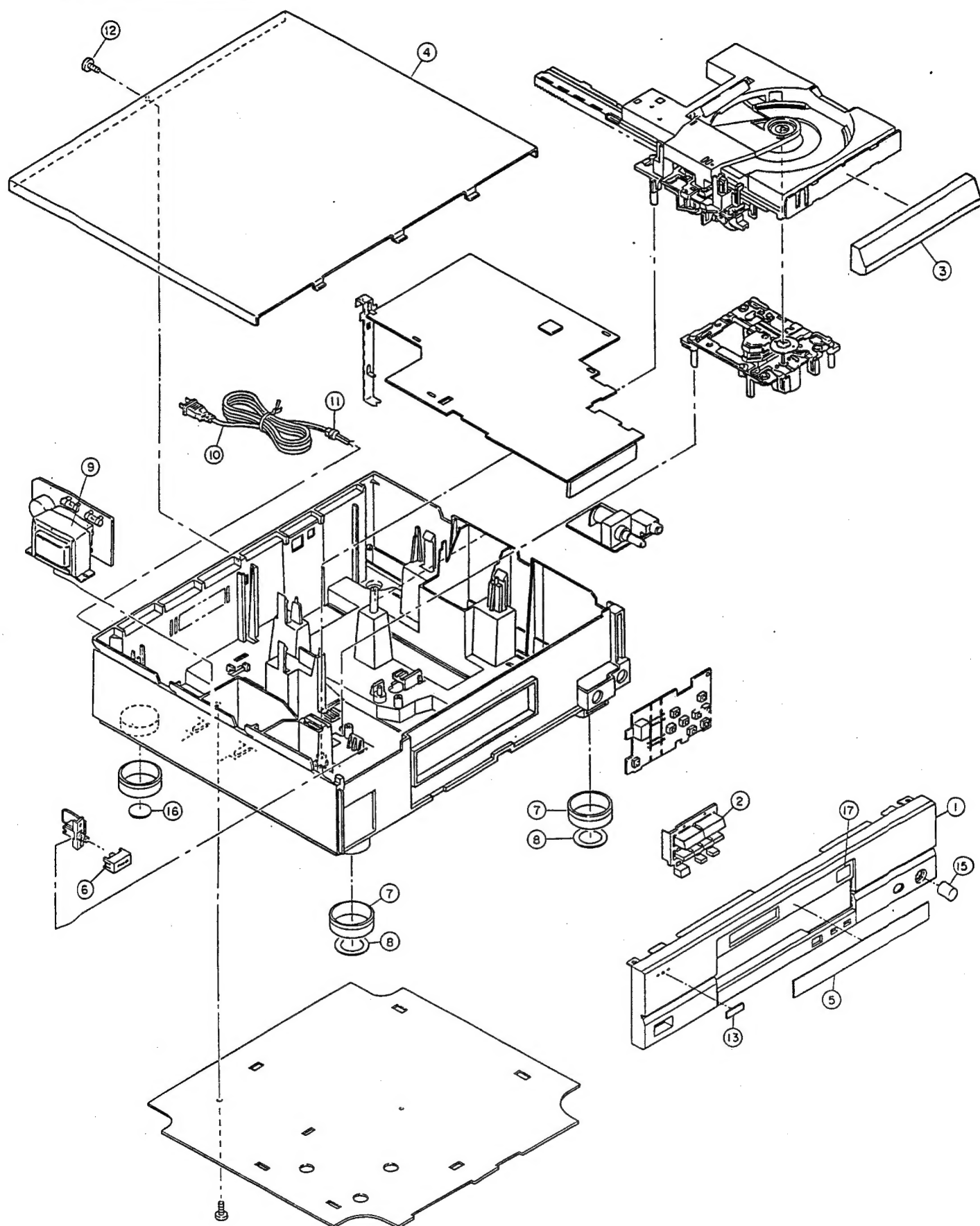
Ref.No.	Part No.	Description
1	SP-732544T	PANEL FRONT CD-36-B
2	SK-732552T	KNOB FUNCTION CD-36-B
3	SP-732546T	PANEL TRAY CD-36-B
4	SC-731147T	TOP COVER CD-25
5	SE-732548T	PLATE DISPLAY
6	SK-373236B	KNOB POWER-B
7	SA-731154T	RING FOOT
8	SA-731156T	SHEET FOOT (F)
9	*BT-730709T	TRANS POW EI-48K (E,V) [E]
10	*EW-336923	AC CORD 2C KP-419C,LTCE-2F EV [E]
11	*EZ-730703T	STRAIN RELIEF SR-4K-6
12	ZS-365702	PLX BID30X10STL BNI
13	SM-365756C	NAME PLATE AKAI (2)
15	SK-731150T	KNOB VR
16	SA-731155T	SHEET FOOT (R)
17	SE-732556T	REMOCON SHEET
18	SP-732557T	PANEL DECORATION CD-36-B

NOTE:

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

MODEL CD-26 :

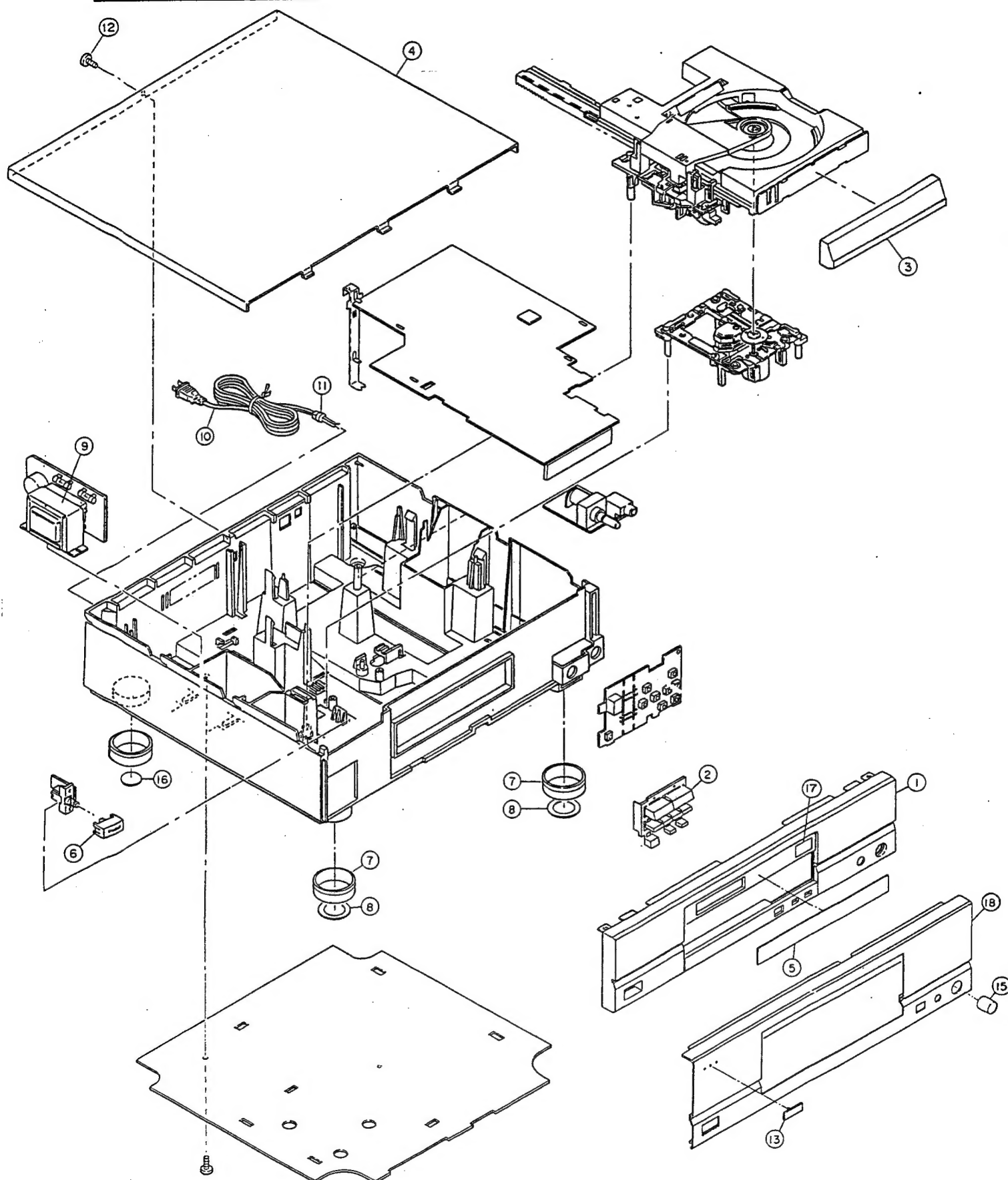
FINAL ASSEMBLY BLOCK



PARTS LIST

MODEL CD-36

FINAL ASSEMBLY BLOCK



PARTS LIST