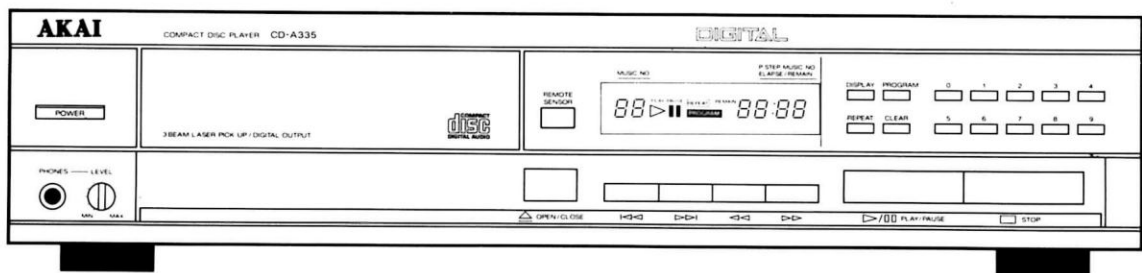


AKAI SERVICE MANUAL



COMPACT DISC PLAYER

MODEL CD-22
MODEL CD-A335



SPECIFICATIONS

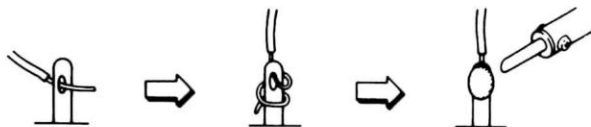
<p>Pick-up system 3 beam Laser pick-up</p> <p>Sampling frequency 44.1 kHz</p> <p>Digital filter..... 16 bit, 2 times over sampling</p> <p>D/A converter..... 16 bit linear</p> <p>Error correction system Cross Interleave Reed Solomon</p> <p>Number of channels 2 channel stereo</p> <p>Frequency response 5 Hz to 20 kHz ± 0.5 dB</p> <p>Dynamic range 90 dB or more</p> <p>S/N 98 dB or more</p> <p>Total harmonic distortion..... 0.005% or less</p> <p>Wow & flutter Less than measurable limits</p> <p>Output level</p> <p> Analog..... 2 V (0 dB)</p> <p> Digital (Coaxial)..... 0.5 Vp-p/75 ohms</p> <p>Headphone output level/Impedance 8 mW/32 ohms</p>	<p>Power requirements</p> <p> CD-22 120 V, 60 Hz for USA and Canada</p> <p> CD-A335 220 V, 50 Hz for Europe except UK</p> <p> 240 V, 50 Hz for UK and Australia</p> <p> 110 V—120 V/220 V—240 V, 50 Hz/60 Hz convertible for other countries</p> <p>Dimensions</p> <p> CD-22 425(W)×98(H)×330(D) mm (16.7×3.9×13.0 inches)</p> <p> CD-A335 425(W)×102(H)×330(D) mm (16.7×4.0×13.0 inches)</p> <p>Weight..... 4.3 kg (9.5 lbs)</p> <p>Standard accessories</p> <p> Connection cord 1</p> <p> Remote control unit (RC-C32) 1</p> <p> Batteries for remote control unit 2</p> <p> Operator's manual 1</p>
---	---

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

★ SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVING

1. Parts identified by the ⚠ (*) symbol parts 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

Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 M ohms, but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for or , specified insulation resistance should be headphone jacks line-in-out jacks etc. more than 2.2 M ohms (ground terminals, microphone jacks).

★ INFORMATION

SYMBOLS FOR PRIMARY DESTINATION

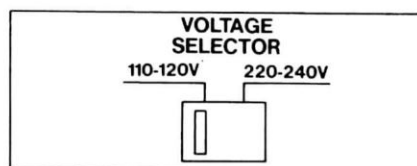
Alphabet indicates the destination of the units as listed below.

Symbols	Principal Destinations
<input type="checkbox"/> A	USA
<input type="checkbox"/> B	UK
<input type="checkbox"/> C	Canada
<input type="checkbox"/> E	Europe (except UK)
<input type="checkbox"/> J	Japan
<input type="checkbox"/> S	Australia
<input type="checkbox"/> V	W. Germany only
<input type="checkbox"/> U	Universal Area
<input type="checkbox"/> Y*	Custom version

VOLTAGE CONVERSION

(CD-A335 Model only)

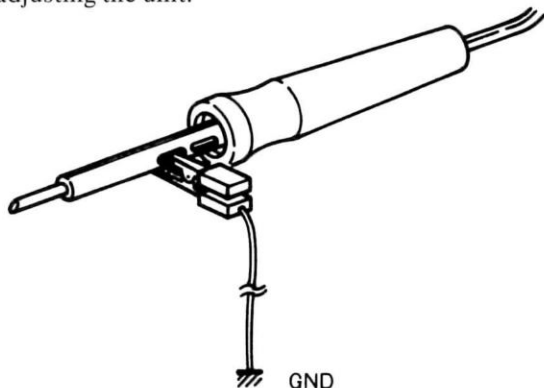
Before connecting the power cord. Set the VOLTAGE SELECTOR located on the rear panel with a screwdriver so that the correct voltage is indicated for your area.



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 below.
4. Do not loosen any screws in the pick-up block.
When handling the Pick-up block, please refer to the points to NOTE when replacing the pick-up block.
5. Keep safety from 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.



CLASS 1 LASER PRODUCT

[DENMARK and UK]



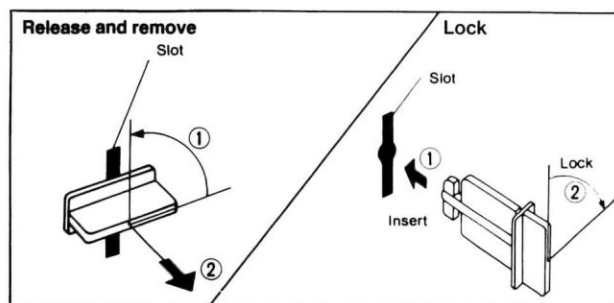
A Label affixed on the Rear Panel of the unit

[USA]



A Label Printed on the Rear Panel of the unit

ABOUT THE TRANSPORT LOCKING PLUGS



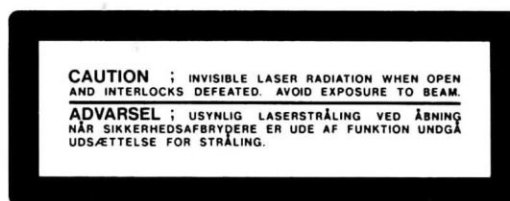
This CD player has three Transport Locking Plugs located on the bottom panel. These plugs lock the laser pick up mechanism to prevent vibration during transportation.

Make sure to remove these plugs before repairing.

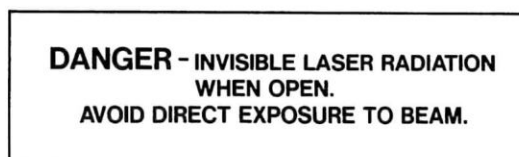
Raise the CD player and turn the Transport Locking Plugs 1/4 turn counter-clockwise and pull out to remove. Do not lose these plugs.

When transporting the CD player

Make sure to remove the compact disc from the CD player, and reinsert the Transport Locking Plugs to lock the laser pick-up.

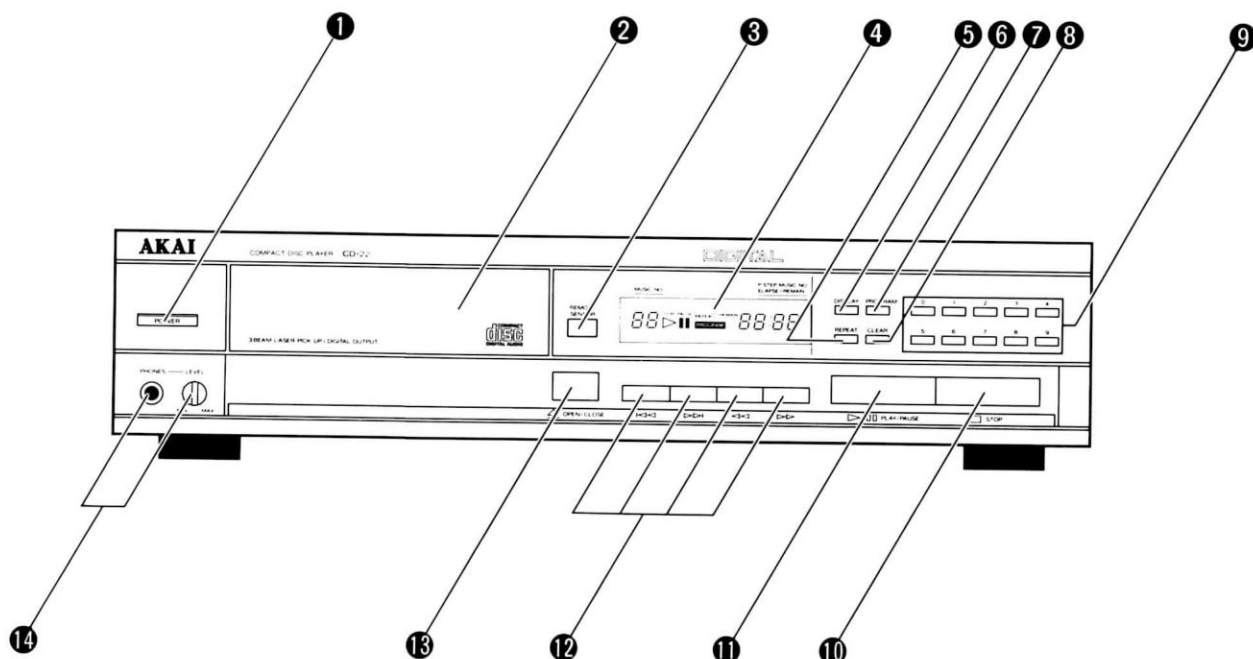


A Label affixed on the Disc clamber inside of the unit



A Label affixed on the Disc clamber inside of the unit

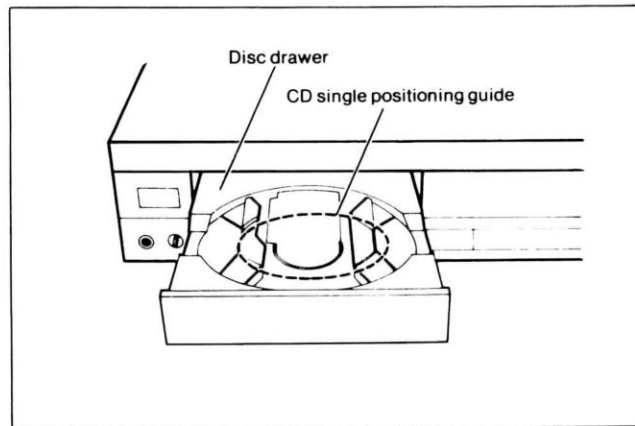
I. CONTROLS



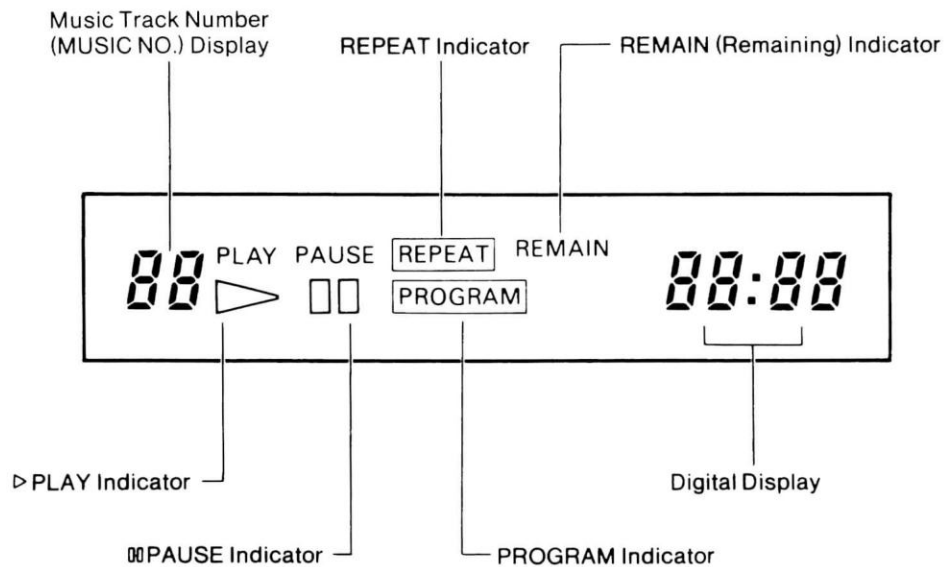
- ❶ POWER Button**
To turn the power on and off.
- ❷ Disc Drawer**
Load a compact disc here.
- ❸ REMOTE SENSOR Window**
For reception of the remote control signal from the provided RC-C32 remote control unit. Keep away from strong light and direct sunlight as this will interfere with the remote control function.
- ❹ FL (Fluorescent) Display**
Tells you what the CD player is doing.
- ❺ REPEAT Button**
For repeat playback of all the tracks or the random program.
- ❻ DISPLAY Button**
To switch between the remaining playback time display and the elapsed playback time display.
- ❼ PROGRAM Button**
For random program playback.
- ❽ CLEAR Button**
To cancel all the programmed tracks for random program playback.
- ❾ Numeric Buttons (0 to 9)**
For direct search of the track you wish to playback and for programming for random program playback.
- ❿ ◻ STOP Button**
To stop playback.
- ⓫ ▷/◻ PLAY/PAUSE Button**
To start and stop playback temporarily.
- ⓬ ◀◀ / ▶▶ and ◀◀ / ▶▶ Search Buttons**
◀◀ / ▶▶ Buttons
For manual search during playback.
◀◀ / ▶▶ Buttons
To skip tracks during playback.
- ⓭ △ OPEN/CLOSE Button**
To open and close the disc drawer.
- ⓮ PHONES Jack and LEVEL Control**
For headphone listening.

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.



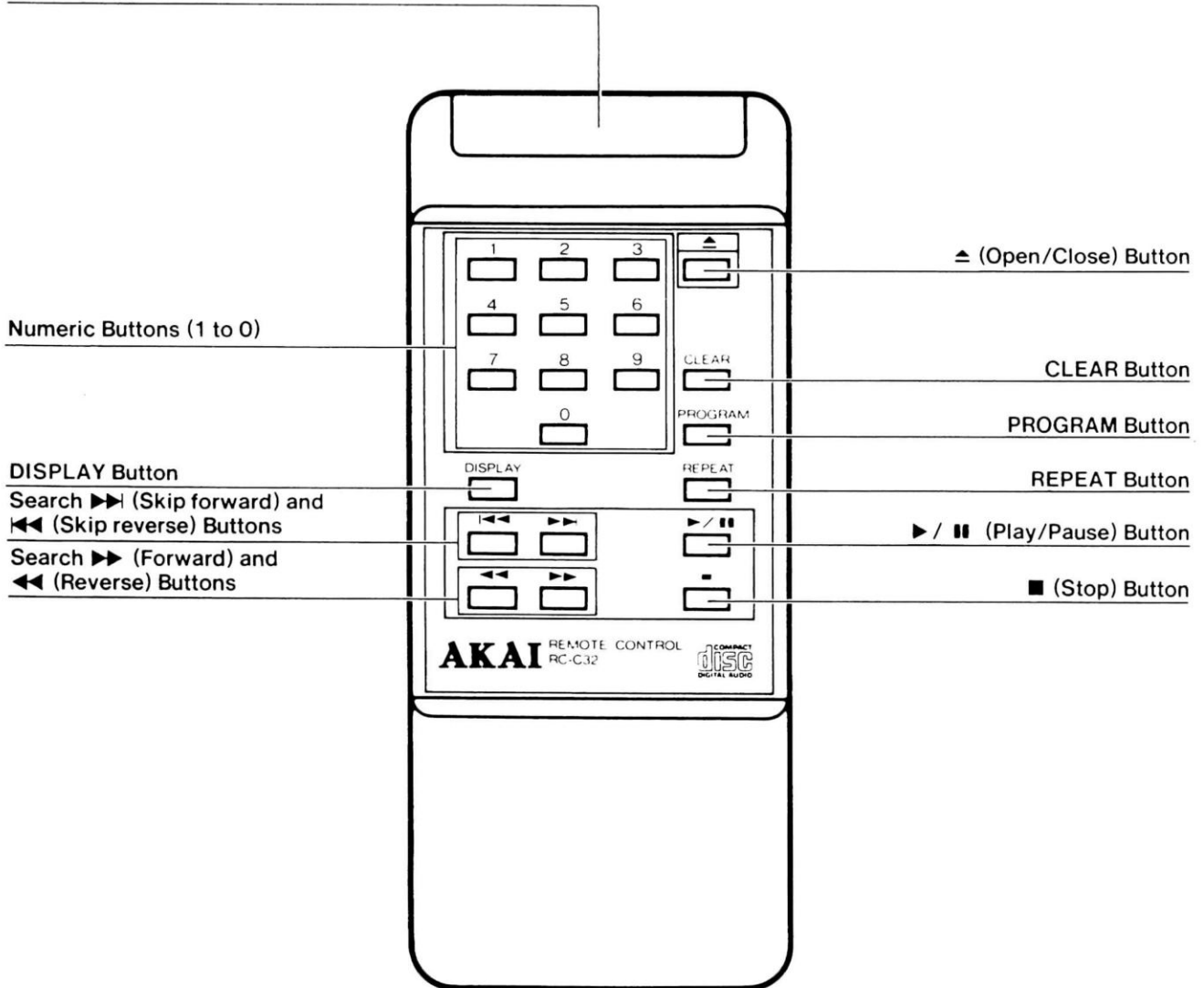
FL (Fluorescent) Display



REMOTE CONTROL UNIT

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 control.

Transmitting Window



II. DISASSEMBLY

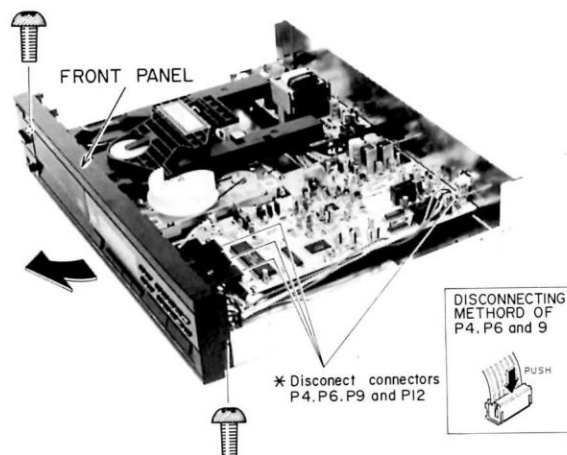
In case of trouble, etc, necessitating dismantling, please dismantle in the order shown in the photographs.
Reassemble in reverse order.

* Photographs employed here are model CD-A335.

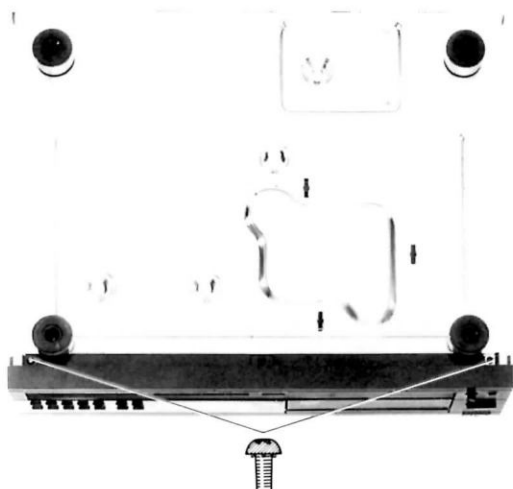
1. Removal of UPPER COVER



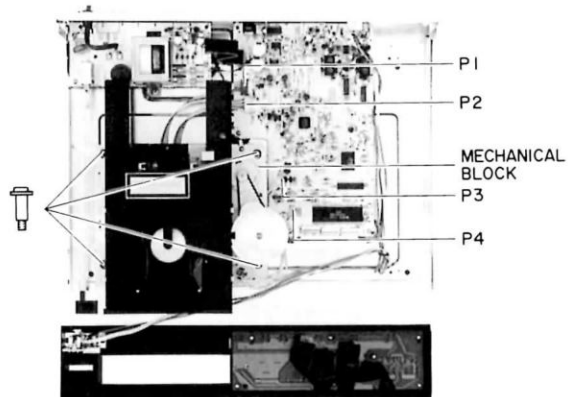
3.



2. Removal of FRONT PANEL



4. Removal of MECHA BLOCK



Remove the fixing screws and connectors P1 to P4.
* See NOTE.

* NOTE:

When disconnecting or connecting the connectors P1 and P2, make sure that th P.C. Board (On the PICK-UP BLOCK) has to be shorted circuit. (Refer to IV. REPLACEMENT OF PICK-UP BLOCK AND MOTORS)

III. PRINCIPAL PARTS LOCATION

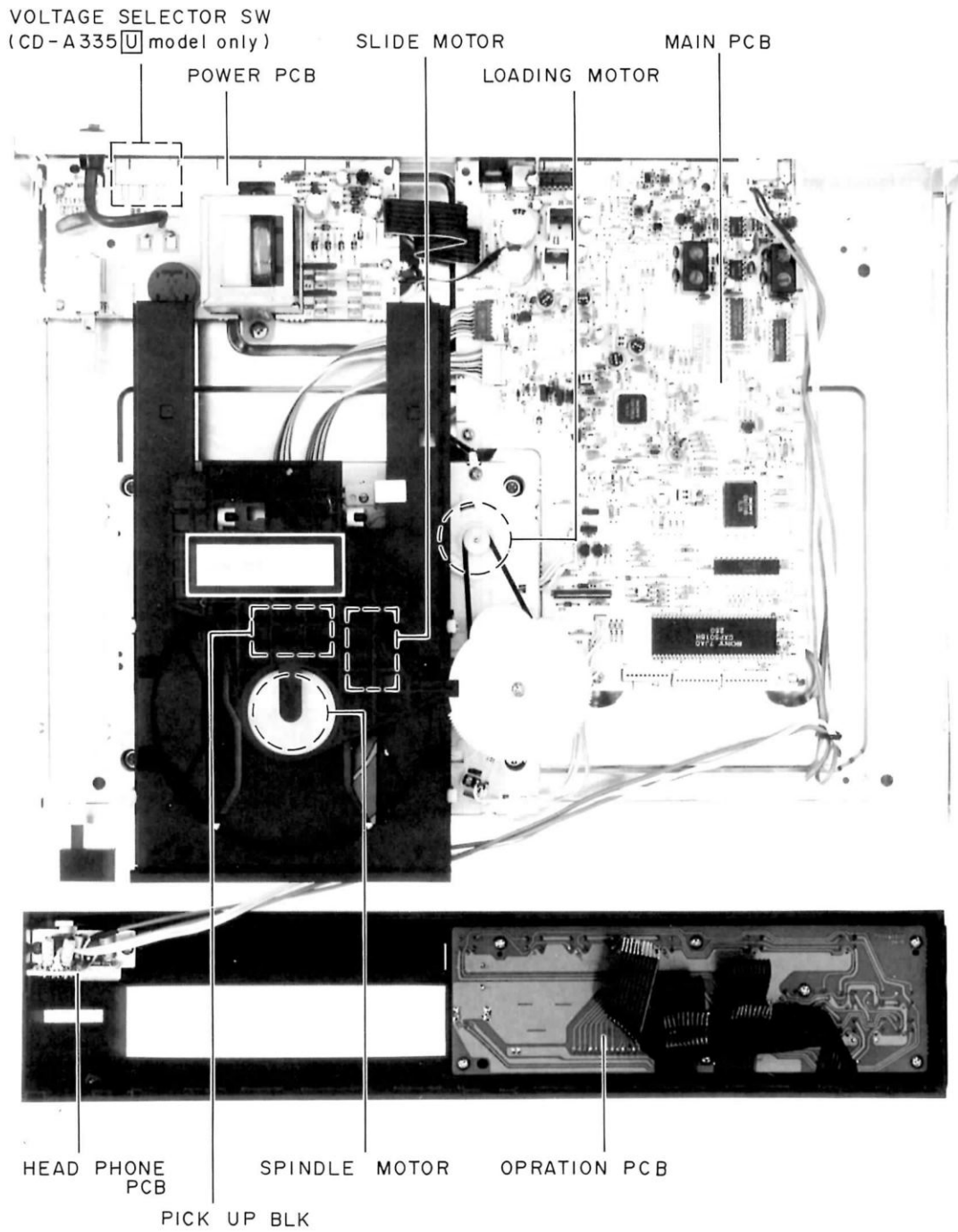


Fig. 3-1

IV. REPLACEMENT OF PICK-UP BLOCK AND MOTORS

Note: Keep your safety from hazardous invisible Laser Radiation. Make sure that the power switch is OFF, when removing the DISC CLAMPER.

4-1. REMOVAL OF THE DISC CLAMPER

(Refer to Fig. 4-1)

- 1) Turn the LOADING CAM GEAR to counter-clockwise (①), then open the DISC TRAY.
- 2) Slightly pull up the DISC CLAMPER to ↑ direction (②), at the same time move the DISC CLAMPER to ← direction (③), then remove the DISC CLAMPER.

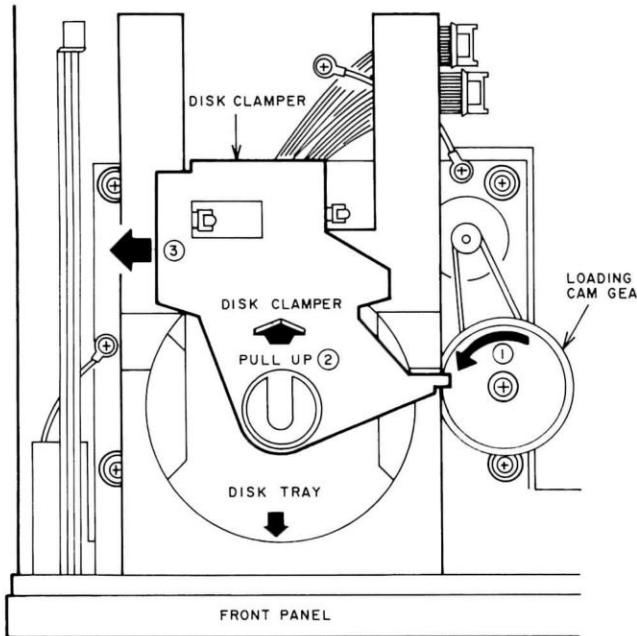


Fig. 4-1

4-3. REPLACEMENT OF THE PICK-UP BLOCK

(Refer to Fig. 4-3)

- 1) Open the disc tray and disconnect the connectors P1 and P2 on the pick-up block. (See 4-2 PRECAUTION)
- 2) Push the Ⓐ part in a ← direction, at the same time, push the Ⓑ part of shaft in a ← direction, then remove the PICK-UP BLOCK.
- 3) Reassemble in reverse order.

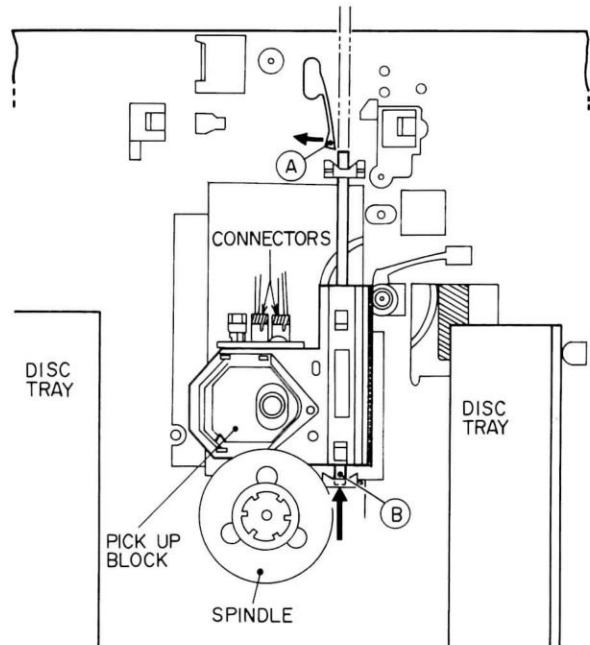


Fig. 4-3

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

When connecting or disconnecting the connectors P1 and P2, the circuit of the PC Board (on the Pick-up Block) has to be shorted by solder as shown 4-2. After connecting the connectors P1 and P2, resolder from the circuit.

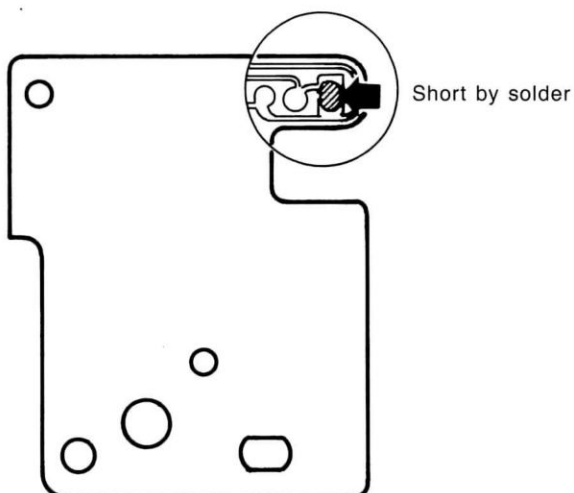


Fig. 4-2

4-4. REPLACEMENT OF THE SPINDLE MOTOR
(Refer to Fig. 4-4 and Fig. 4-5)

- 1) Turn the GEAR HOLD LEVER ① counter-clockwise, then pull out the SLIDE GEAR (Fig. 4-4).
- 2) Move the PICK-UP BLOCK to opposite direction from the SPINDLE MOTOR (← direction). (Fig. 4-5)
- 3) Remove two fixation screws of the SPINDLE MOTOR through the hole on the TURNTABLE as shown Fig. 4-5.
- 4) Reassemble in reverse order.

4-5. REPLACEMENT OF THE LOADING MOTOR
(Refer to Fig. 4-5)

- 1) Remove the LOADING BELT from the LOADING MOTOR.
- 2) Extend motor holders ②, at the same time push the LOADING MOTOR from pulley side, then remove the LOADING MOTOR.
- 3) Reassemble, just push in the LOADING MOTOR and put the LOADING BELT.

4-6. REPLACEMENT OF THE SLIDE MOTOR
(Refer to Fig. 4-4)

- 1) Turn the MOTOR HOLD LEVER ③ clockwise, then pull out the SLIDE MOTOR.
- 2) Reassemble in reverse order.

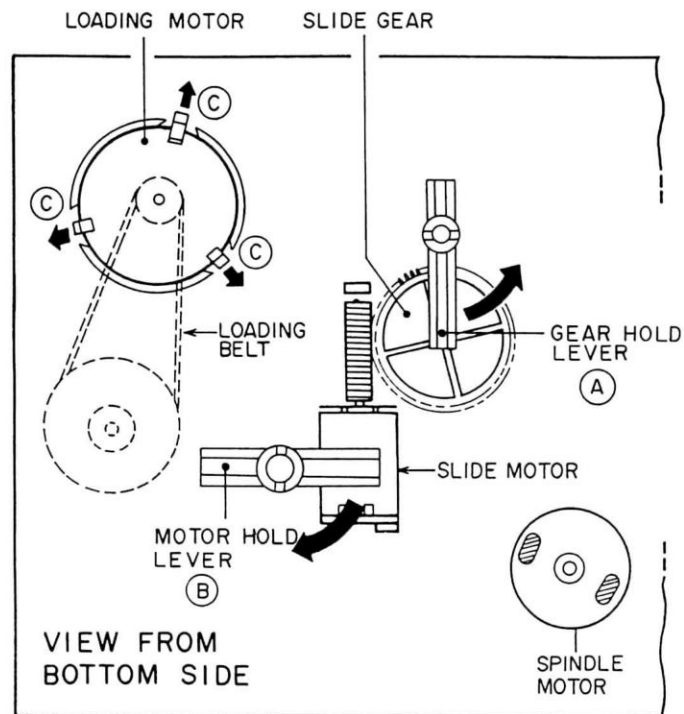


Fig. 4-4

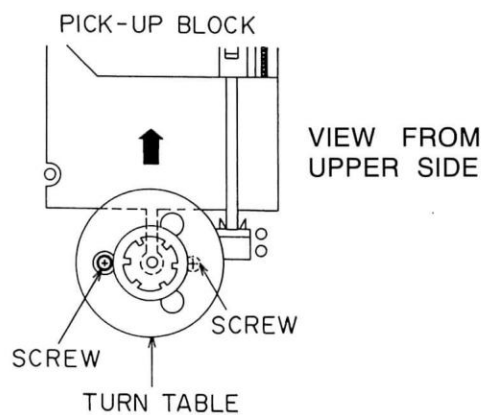


Fig. 4.5

V. ELECTRICAL ADJUSTMENT (SERVO)

ABOUT THE TEST MODE

- This test mode is used for the adjustment or check.
- Turn on the power while pressing the 0, 1 and 2 button on the FRONT PANEL, then unit is set to the TEST MODE.
- Display on the FRONT PANEL is indicate "0 ES:-0" when unit is into the when TEST MODE.
- When change the TEST MODE number, press the ►► button on the FRONT PANEL.
- When press the STOP button, TEST MODE number is return to "0 ES:-0".
- When release from the test mode, turn the power off.

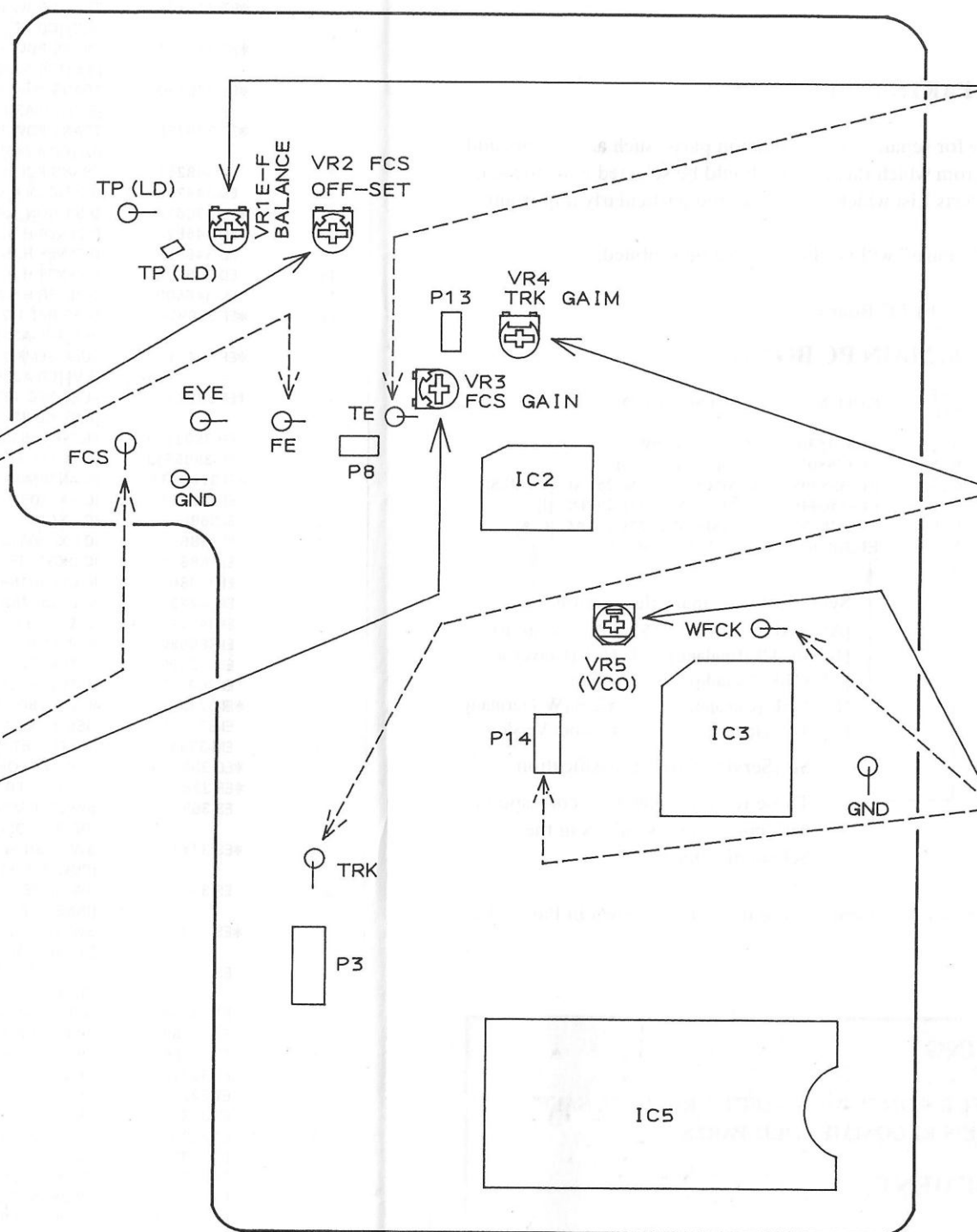
TEST MODE OPERATION, DISPLAY AND FUNCTION

OPERATION	DISPLAY	FUNCTION
POWER OR STOP	0 ES:-0	LASER OFF ALL SERVO OFF
FS ►►	1 ES:-1	LASER ON
FS ►►	2 ES:-2	FOCUS SERVO ON
FS ►►	3 ES:-3	*SPINDLE MOTOR ON *AUDIO MUTE OFF
FS ►►	4 ES:-4	TRACKING SERVO ON SLIDE SERVO ON

* This function operate only Focus servo is completed.

STEP	ADJUSTMENT ITEM
1.	Test Disc
2.	Mode
3.	Test Point & Adj. Part
4.	Result & Remarks

ADJ. Part
Test Point



2 FOCUS OFF-SET

1. Test disc 5A (AT-751330)
2. Test mode 2 and 0
3. TP (FE), VR2
4. Connect a digital voltmeter to TP (FE) and check the voltage A in the test mode 2, then press STOP button and adjust voltage B so that the reading on the digital voltmeter is same as voltage A.

4 FOCUS SERVO GAIN

1. Test disc 5A (AT-751330)
2. PLAY
3. TP (FCS), VR3
4. Connect an oscilloscope to TP (FCS).
* 1.0~1.4Vp-p

3 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 (DC Range)

5 TRACKING SERVO GAIN

1. Test disc 5A (AT-751330)
2. PLAY
3. TP (TRK), VR4
4. Connect an oscilloscope to TP (TRK).
* 800mV~1.2Vp-p

1 VCO

1. —
2. Power ON
3. TP (WFCK), VR5
4. Connect a frequency counter to TP (WFCK) and disconnect a short connector P14.
* 6350±10Hz
* Connect a short connector P14 after this adjustment.

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-1	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		

VI. PARTS LIST

ATTENTION

1. When placing an order for parts, be sure to list Part No., Model No. and the description of each part. 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	PAN20×03STL CMT
4	ZS-536488	BID20×08STL 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 (Universal Area)
 [C] : CSA (Canada)
 [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.

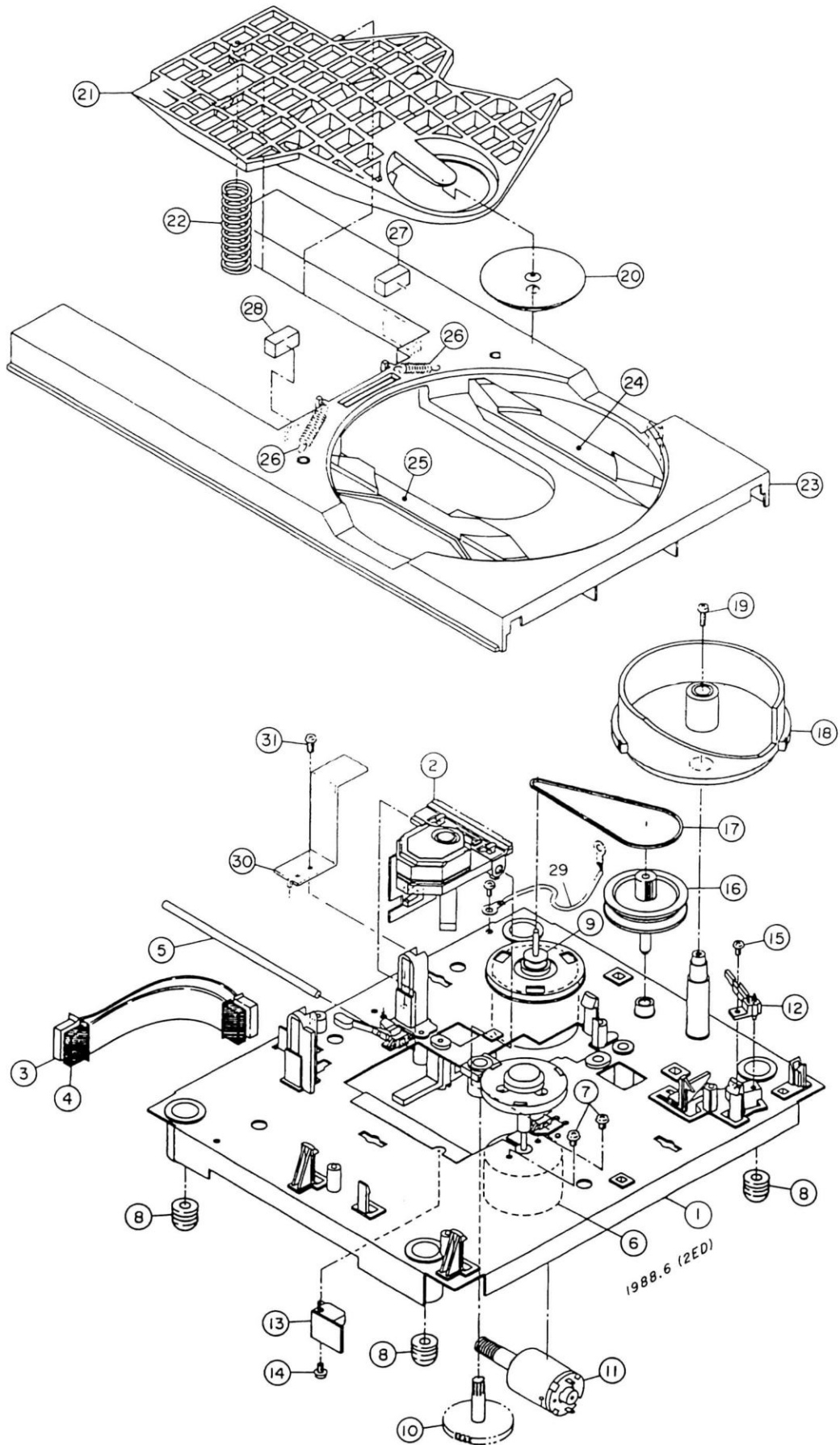
WARNING

⚠ (*) 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.

MECHA BLOCK



PARTS LIST

3. P.C BOARD BLOCK

Ref. No.	Part No.	Description
1A	BA-P2036D030E	PC(#) MAIN BLK CD-A335-B(U) [U,E,B,S] [CD-A335]
1B	BA-P2036A030F	PC(#) MAIN BLK CD-A335-B(V) [V] [CD-A335]
1C	BA-P2036A030H	PC(#) MAIN BLK CD-22-B(A) [A] [CD-22]
1E	BA-P2036D030E	PC(#) MAIN BLK CD-A335-B(U) [C] [CD-22]

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.

PC (#) MAIN BLK CONSISTS OF FOLLOWING P.C BOARD.

- * MAIN P.C BOARD
- * HEADPHONE P.C BOARD

4. MAIN P.C BOARD

Ref. No.	Part No.	Description
D3	ED-344280	D SILICON H GMA-01-FY2 F05
D6	ED-305706	D ZENER H HZ7 B3
D8	ED-344280	D SILICON H GMA-01-FY2 F05
D9	ED-344280	D SILICON H GMA-01-FY2 F05
D11	ED-344280	D SILICON H GMA-01-FY2 F05
D12	ED-344280	D SILICON H GMA-01-FY2 F05
D15	ED-346529	D ZENER H HZ6C2L
D201	ED-344280	D SILICON H GMA-01-FY2 F05
D202	ED-344280	D SILICON H GMA-01-FY2 F05
D203	ED-344280	D SILICON H GMA-01-FY2 F05
D204	ED-330622	D SILICON 1SR35A-100 100/1.0A
FL1	EH-380561J	FILTER LC LP BL-21TV 20KHZ
FL2	EH-380185J	FILTER EMI ZBF503S-01
IC1	EI-368608	IC CXA1081
IC2	EI-368609	IC CXA1082B
IC3	EI-368610	IC CXD1135Q
IC4	EI-382251J	IC LC3517BS-15
IC5	EI-379865J	IC CXP5016H-260S CUSTOM
IC7	EI-330352	IC BA6109
IC8	EI-385680J	IC PCM56P-L
IC9	EI-332259	IC TC4052BP
IC10	EI-349719	IC M5218P
IC11	EI-349719	IC M5218P
IC12	*EI-371572	IC UPC7805H
IC13	*EI-378893J	IC AN79M05F
IC14	EI-360039	IC TC74HC08P
L1	EO-351861	COIL FIX 1 LAL02 F05 100J
L2	EO-351861	COIL FIX 1 LAL02 F05 100J
P7	EJ-382473J	PIN J YKC21-0296 2P [LINE OUT]
P11	EJ-376482	PIN J YKB11-0422 1P [DIGITAL OUT]
R42	*ER-328278	R FUSE H ERD2FC 1/4W 10R0G
TR1	ET-318237	TR 2SB764 E,F
TR2	ET-310148	TR 2SD612K E,F
TR3	ET-318237	TR 2SB764 E,F
TR4	ET-310148	TR 2SD612K E,F
TR5	ET-322598	TR 2SB632K E,F
TR6	ET-200986	TR 2SD863-V8 F
TR7	ET-318237	TR 2SB764 E,F
TR8	ET-360067	TR 2SC3330 T,U F05
TR9	ET-310148	TR 2SD612K E,F
TR10	ET-322598	TR 2SB632K E,F
TR17	ET-360067	TR 2SC3330 T,U F05
TR18	ET-353899	TR 2SA1317 S,T,U
TR19	ET-360067	TR 2SC3330 T,U F05

Ref. No.	Part No.	Description
TR20	ET-352726	TR 2SA1392 T,U
TR21	*ET-353899	TR 2SA1317 S,T,U
TR22	ET-354897	TR FET 2SK170 BL,GR,V
TR23	ET-378524J	TR 2SC3383 S,T,U
TR28	ET-360067	TR 2SC3330 T,U F05
T1	BT-368261	TRANS PULSE TC-1027-04
VR1	EV-358829	R S-FIX H RH0615C 0.10W 223
VR2	EV-358829	R S-FIX H RH0615C 0.10W 223
VR3	EV-358829	R S-FIX H RH0615C 0.10W 223
VR4	EV-358829	R S-FIX H RH0615C 0.10W 223
VR5	EV-371279	R S-FIX H VM6CKPVB 0.30W 102
X1	EI-374176	OSC X'TAL AT-51 16.9344MHZ

5. HEADPHONE P.C BOARD

Ref. No.	Part No.	Description
FL3	EH-380185J	FILTER EMI ZBF503S-01 [A,V]
FL4	EH-380185J	FILTER EMI ZBF503S-01 [A,V]
IC6	EI-349719	IC M5218P
P15	EJ-358901	PHONE J 3P HLJ0541-010 W/NUT [HEADPHONE]
TR26	ET-360067	TR 2SC3330 T,U F05
VR6	EV-378175	VR ROTARY RK0971220 B203X2 [HEADPHONE LEVEL]

6. OPERATION P.C BOARD

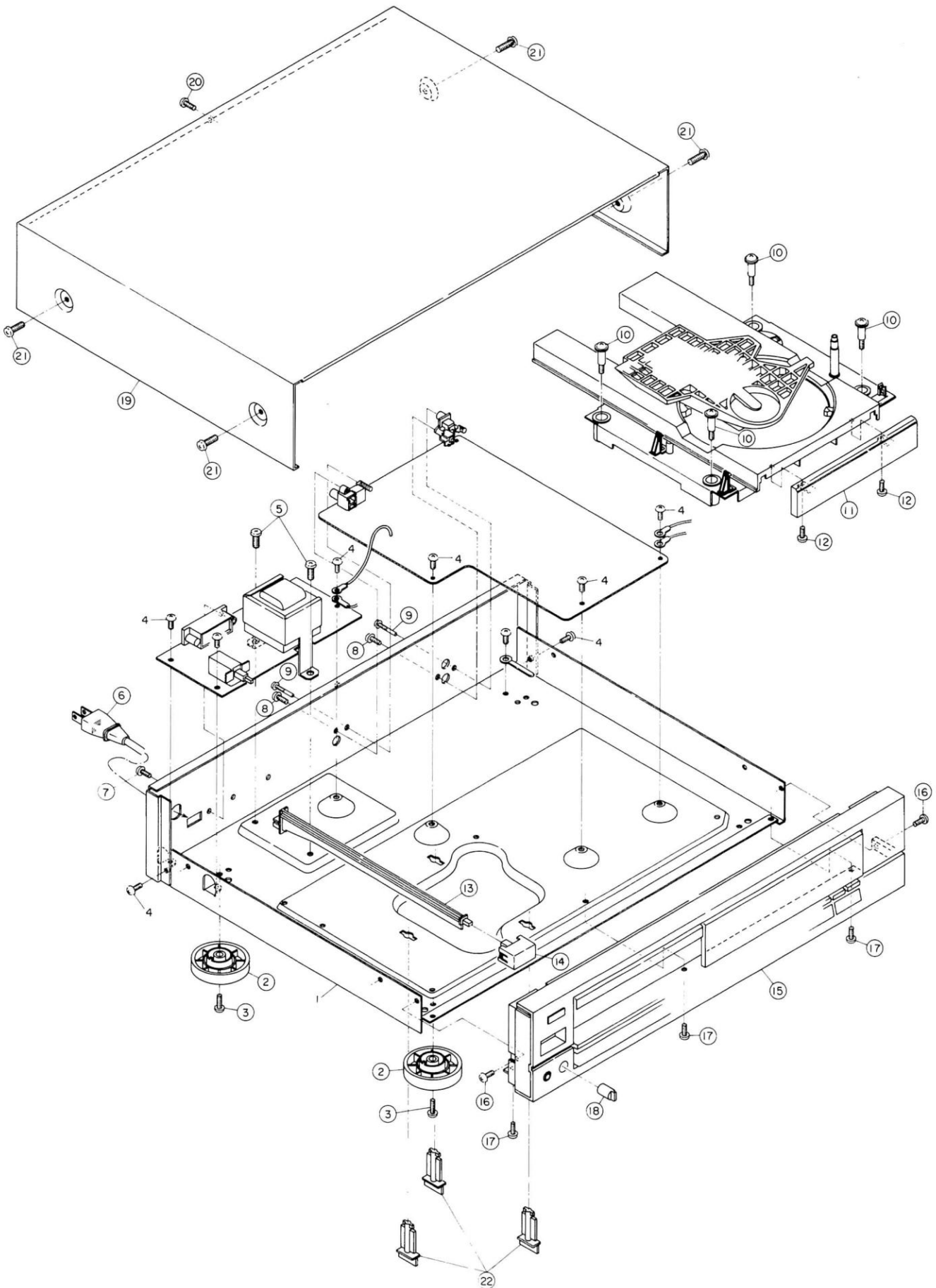
Ref. No.	Part No.	Description
FL1	EM-374177	IND FL 7-BT-83GK
PH1	ET-381683J	DETECTOR A1QH3021HO
TS1	ES-373381	SW TACT SKHHPP [REPEAT]
TS2	ES-373381	SW TACT SKHHPP [CLEAR]
TS3	ES-373381	SW TACT SKHHPP [PROGRAM]
TS4	ES-373381	SW TACT SKHHPP [DISPLAY]
TS5	ES-373381	SW TACT SKHHPP [9]
TS6	ES-373381	SW TACT SKHHPP [8]
TS7	ES-373381	SW TACT SKHHPP [7]
TS8	ES-373381	SW TACT SKHHPP [6]
TS9	ES-373381	SW TACT SKHHPP [5]
TS10	ES-373381	SW TACT SKHHPP [4]
TS11	ES-373381	SW TACT SKHHPP [3]
TS12	ES-373381	SW TACT SKHHPP [2]
TS13	ES-373381	SW TACT SKHHPP [1]
TS14	ES-373381	SW TACT SKHHPP [0]
TS15	ES-373381	SW TACT SKHHPP [OPEN/CLOSE]
TS16	ES-373381	SW TACT SKHHPP [RS]
TS17	ES-373381	SW TACT SKHHPP [FS]
TS18	ES-373381	SW TACT SKHHPP [FR]
TS19	ES-373381	SW TACT SKHHPP [FF]
TS20	ES-373381	SW TACT SKHHPP [PLAY/PAUSE]
TS21	ES-373381	SW TACT SKHHPP [STOP]

Ref. No.	Part No.	Description
T1A	*BT-378168	TRANS POW P2036(U) [U] [CD-A335]
T1B	*BT-378170	TRANS POW P2036(E,V) [E,V] [CD-A335]
T1C	*BT-378171	TRANS POW P2036(B,S) [B,S] [CD-A335]
T1D	*BT-378169	TRANS POW P2036(A,C) [A,C] [CD-22]
FL1	*EO-338409	COIL LF FKOB160MH02 250UH
F1A	*EF-601942	FUSE SEMKO T 250V 630MA [E,V] [CD-A335]
F2A	*EF-601942	FUSE SEMKO T 250V 630MA [E,V] [CD-A335]
F1B	*EF-358974	FUSE BET T 250V 630MA [B,S] [CD-A335]
F2B	*EF-358974	FUSE BET T 250V 630MA [B,S] [CD-A335]
F1C	*EF-309391	FUSE TSC 125V 800MA [A,C] [CD-22]
F2C	*EF-309391	FUSE TSC 125V 800MA [A,C] [CD-22]

7. POWER SUPPLY P.C BOARD

Ref. No.	Part No.	Description
C6	*EC-338496	C CE V FZ 472P 400AC
D1	*ED-330622	D SILICON 1SR35A-100 100/1.0A
D2	*ED-330622	D SILICON 1SR35A-100 100/1.0A
D3	*ED-330622	D SILICON 1SR35A-100 100/1.0A
D4	*ED-330622	D SILICON 1SR35A-100 100/1.0A
D5	*ED-330622	D SILICON 1SR35A-100 100/1.0A
D6	*ED-330622	D SILICON 1SR35A-100 100/1.0A
D7	*ED-330622	D SILICON 1SR35A-100 100/1.0A
D8	*ED-330622	D SILICON 1SR35A-100 100/1.0A
D9	*ED-330622	D SILICON 1SR35A-100 100/1.0A
D10	ED-346620	D ZENER H HZ27 2
D11	ED-346609	D ZENER H HZ9 C1
D12	*ED-330622	D SILICON 1SR35A-100 100/1.0A
SW1	*ES-371104	SW PUSH SDDL1082A 01-1 [POWER SW]
TR1	ET-318237	TR 2SB764 E,F
VS1	*ES-349464	SW SLIDE 00120319 01-2 [U] [VOLTAGE SELECTOR]

FINAL ASSEMBLY BLOCK



PARTS LIST

8. FINAL ASSEMBLY BLOCK

Ref. No.	Part No.	Description
2A	SA-383845J	FOOT CD-A355 PART [CD-A335]
2B	SA-379375	FOOT(N) [CD-22]
3A	ZS-342001	ST BR30X06STL NI3 [CD-A335]
3B	ZS-352133	ST BR30X10STL CMT [CD-22]
4	ZS-342001	ST BR30X06STL NI3
5	ZS-313796	ST BID40X06STL CMT
6A	*EW-363658	AC CORD 200 0129AVFF B 100 A U/ [U] [CD-A335]
6B	*EW-363671	AC CORD 200 0364 LCFL B 100 A E [E,V] [CD-A335]
6C	*EW-363683	AC CORD 200 LCFL B 100 A B [B] [CD-A335]
6D	*EW-363697	AC CORD 200 0436 LCFL B 100 A S [S] [CD-A335]
6E	*EW-363621	AC CORD200 0238 SPT1 B 100 A UC [A,C] [CD-22]
7	ZS-350934	PT BR30X08STL BNI
8	ZS-354771	T2BR30X08STL NI3 PROJECTION
9	ZS-308673	T2PAN30X20STL NI3 GUIDE
10	ZS-378163	SCREW GRADUATED
11	SP-383848J	PANRL TRAY(1) B2
12	ZS-351204	PT BR30X06STL BNI
13	MZ-378144	JOINT POW
14	SK-383510J	KNOB POW B
15A	BD-P2046A040A	PANEL FRONT BLK CD-A335-B
15B	BD-P2046E040B	PANEL FRONT BLK CD-22-B
16	ZS-354403	ST BR30X08STL BNI
17	ZS-365759	CT BR30X08STL BZN PROJECTION
18	SK-377733	KNOB VOL B
19A	SP-383849J	COVER UPPER B2 [CD-A335]
19B	SP-378157	COVER UPPER B [CD-22]
20	ZS-365759	CT BR30X08STL BZN PROJECTION
21	ZS-341960	ST BID40X06STL BNI
22	MZ-379285J	CLAMPER CHASSIS

9. ACCESSORY

Ref. No.	Part No.	Description
1	EW-344151	CORD RR-61A PINX2-PINX2
2	AX-380250J	REMOCON RC-C32 WIRELESS T

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Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.
AX-380250J	9-2	EI-360039	4-IC14	ET-354897	4-TR22		
BA-P2036A030F	3-1B	EI-368608	1-23	ET-360067	1-48		
BA-P2036A030H	3-1C	EI-368608	4-IC1	ET-360067	4-TR8		
BA-P2036D030E	3-1A	EI-368609	1-24	ET-360067	4-TR17		
BA-P2036D030E	3-1E	EI-368609	4-IC2	ET-360067	4-TR19		
BB-P2036D060A	2-32	EI-368610	1-25	ET-360067	4-TR28		
BD-P2046A040A	8-15A	EI-368610	4-IC3	ET-360067	5-TR26		
BD-P2046E040B	8-15B	EI-371572	1-32	ET-378524J	1-49		
BM-B328441	1-1	EI-371572	4-IC12	ET-378524J	4-TR23		
BM-B328441	2-9	EI-374176	1-33	ET-381683J	1-42		
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BM-B371552	2-11	EI-378893J	1-21	EV-358829	4-VR1		
BM-B372237	1-3	EI-378893J	4-IC13	EV-358829	4-VR2		
BM-B372237	2-6	EI-379865J	1-26	EV-358829	4-VR3		
BO-368598	1-4	EI-379865J	4-IC5	EV-358829	4-VR4		
BO-368598	2-2	EI-382251J	1-27	EV-371279	4-VR5		
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BT-368261	4-T1	EI-385680J	1-29	EV-378175	5-VR6		
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BT-378168	7-T1A	EJ-358901	5-P15	EW-363621	8-6E		
BT-378169	1-5	EJ-376482	4-P11	EW-363658	8-6A		
BT-378169	7-T1D	EJ-382473J	4-P7	EW-363671	8-6B		
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BT-378171	1-6	EO-338409	1-35	EW-368599	2-3		
BT-378171	7-T1C	EO-338409	7-FL1	EW-368600	2-4		
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EF-358974	1-16	ES-373381	6-TS21	ZS-342001	8-4		
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EI-349719	1-28	ET-352726	4-TR20				
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EI-349719	5-IC6	ET-353899	4-TR21				
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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-B328441	SC MOTOR LOADING PART [LOADING MOTOR]
2	BM-B371552	SC MOTOR SLIDE PART [SLIDE MOTOR]
3	BM-B372237	SC MOTOR SPINDLE PART [SPINDLE MOTOR]
4	BO-368598	PICK UP KSS-150A
5	*BT-378169	TRANS POW P2036(A,C) [A,C] [CD-22]
6	*BT-378171	TRANS POW P2036(B,S) [B,S] [CD-A335]
7	*BT-378170	TRANS POW P2036(E,V) [E,V] [CD-A335]
8	*BT-378168	TRANS POW P2036(U) [U] [CD-A335]
9	BT-368261	TRANS PULSE TC-1027-04
10	ED-344280	D SILICON H GMA-01-FY2 F05
11	*ED-330622	D SILICON 1SR35A-100 100/1.0A
12	ED-346620	D ZENER H HZ27 2
13	ED-346529	D ZENER H HZ6C2L
14	ED-305706	D ZENER H HZ7 B3
15	ED-346609	D ZENER H HZ9 C1
16	*EF-358974	FUSE BET T 250V 630MA [B,S] [CD-A335]
17	*EF-601942	FUSE SEMKO T 250V 630MA [E,V] [CD-A335]
18	*EF-309391	FUSE TSC 125V 800MA [A,C] [CD-22]
19	EH-380185J	FILTER EMI ZBF503S-01
20	EH-380561J	FILTER LC LP BL-21TV 20KHZ
21	*EI-378893J	IC AN79M05F
22	EI-330352	IC BA6109
23	EI-368608	IC CXA1081
24	EI-368609	IC CXA1082B
25	EI-368610	IC CXD1135Q
26	EI-379865J	IC CXP5016H-260S CUSTOM
27	EI-382251J	IC LC3517BS-15
28	EI-349719	IC M5218P
29	EI-385680J	IC PCM56P-L
30	EI-332259	IC TC4052BP
31	EI-360039	IC TC74HC08P
32	*EI-371572	IC UPC7805H
33	EI-374176	OSC X'TAL AT-51 16.9344MHZ
34	EM-374177	IND FL 7-BT-83GK
35	*EO-338409	COIL LF FKOB160MHO2 250UH
36	*ER-328278	R FUSE H ERD2FC 1/4W 10ROG
37	ES-368603	SW LEAF MSW-1585 [OPEN/CLOSE SW]
38	*ES-371104	SW PUSH SDDL1082A 01-1 [POWER SW]
39	ES-355842	SW SLIDE SSCTP1026A 1-01-02S [INNER SW]
40	*ES-349464	SW SLIDE 00120319 01-2 [U] [VOLTAGE SELECTOR]
41	ES-373381	SW TACT SKHPP [REPEAT]
42	ET-381683J	DETECTOR A1QH3021H0
43	ET-354897	TR FET 2SK170 BL,GR,V
44	ET-353899	TR 2SA1317 S,T,U
45	ET-352726	TR 2SA1392 T,U
46	ET-322598	TR 2SB632K E,F
47	ET-318237	TR 2SB764 E,F
48	ET-360067	TR 2SC3330 T,U F05
49	ET-378524J	TR 2SC3383 S,T,U
50	ET-310148	TR 2SD612K E,F
51	ET-200986	TR 2SD863-V8 F
52	EV-378175	VR ROTARY RK0971220 B203X2 [HEADPHONE LEVEL]
53	MB-368590J1	BELT LOADING
54	MZ-374138	CAM GEAR LOADING
55	MZ-368349	GEAR WORM WHEEL

2. MECHA BLOCK

Ref. No.	Part No.	Description
1	MA-380689J	CHASSIS MECHA OUTSERT PART
2	BO-368598	PICK UP KSS-150A
3	EW-368599	WIRE ASSY OT-M1 PU1 8P
4	EW-368600	WIRE ASSY OT-M1 PU2 8P
5	MS-368348	SHAFT
6	BM-B372237	SC MOTOR SPINDLE PART [SPINDLE MOTOR]
7	ZS-367463	PAN20X025STL CMT
8	MB-368350	CUSHION RUBBER
9	BM-B328441	SC MOTOR LOADING PART [LOADING MOTOR]
10	MZ-368349	GEAR WORM WHEEL
11	BM-B371552	SC MOTOR SLIDE PART [SLIDE MOTOR]
12	ES-368603	SW LEAF MSW-1585 [OPEN/CLOSE SW]
13	ES-355842	SW SLIDE SSCTP1026A 1-01-02S [INNER SW]
14	ZS-536488	BID20X08STL CMT
15	ZS-343082	PT BR26X08STL CMT
16	MR-374137J1	PULLEY GEAR
17	MB-368590J1	BELT LOADING
18	MZ-374138	CAM GEAR LOADING
19	ZS-365391	PT BR30X08STL CMT C080
20	MZ-368347	CLAMPER
21	SZ-374136J1	HOLDER CLAMPER
22	ZG-368591J1	SP PUSH CLAMP
23	SC-382692J2	DISK TRAY S PART
24	MZ-382686J1	HOLDER DISC S-(R)
25	MZ-382687J1	HOLDER DISC S-(L)
26	ZG-368592	SP PULL DISK HOLD
27	MB-377975	STOPPER RUBBER
28	MB-378827J	STOPPER RUBBER(B)
30	MZ-378828J	ANGLE TRAY
31	ZS-432843	PAN26X04STL CMT
32	BB-P2036D060A	MECHA BLK CD-32 [INCL. 1 TO 31]

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.

AKAI ELECTRIC CO., LTD.

12-14, 2-Chome, Higashi-Kojiya, Ohta-Ku, Tokyo, Japan
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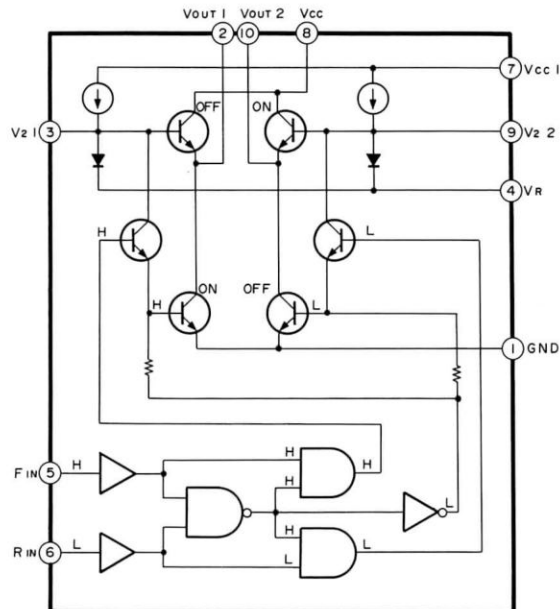
AKAI

MODEL **CD-22**

MODEL **CD-A335**

SCHEMATIC DIAGRAM AND PC BOARDS

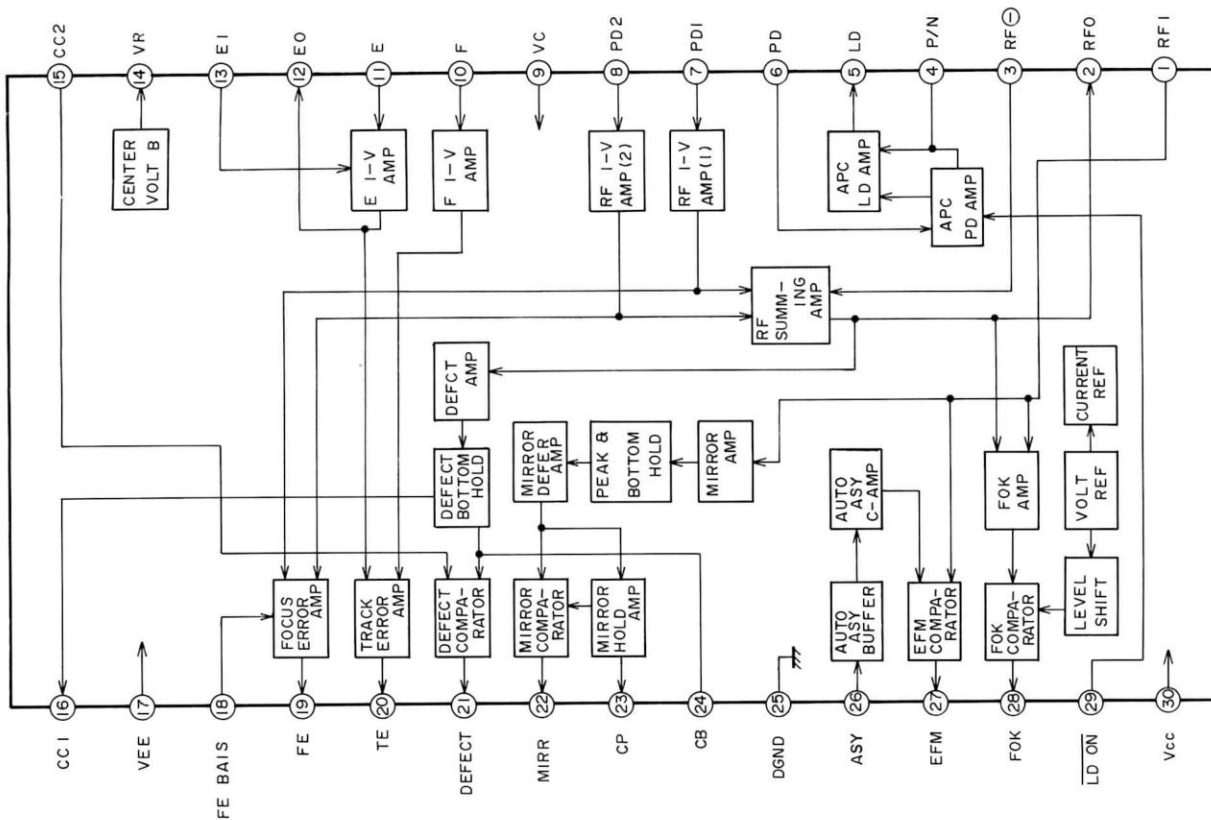
BA6019 REVERSIBLE MOTOR DRIVER



FIN	RIN	Vout1	Vout 2
1	1	L	L
0	1	L	H
1	0	H	L
0	0	L	L

1 = More than 2.0V
0 = Less than 0.7V

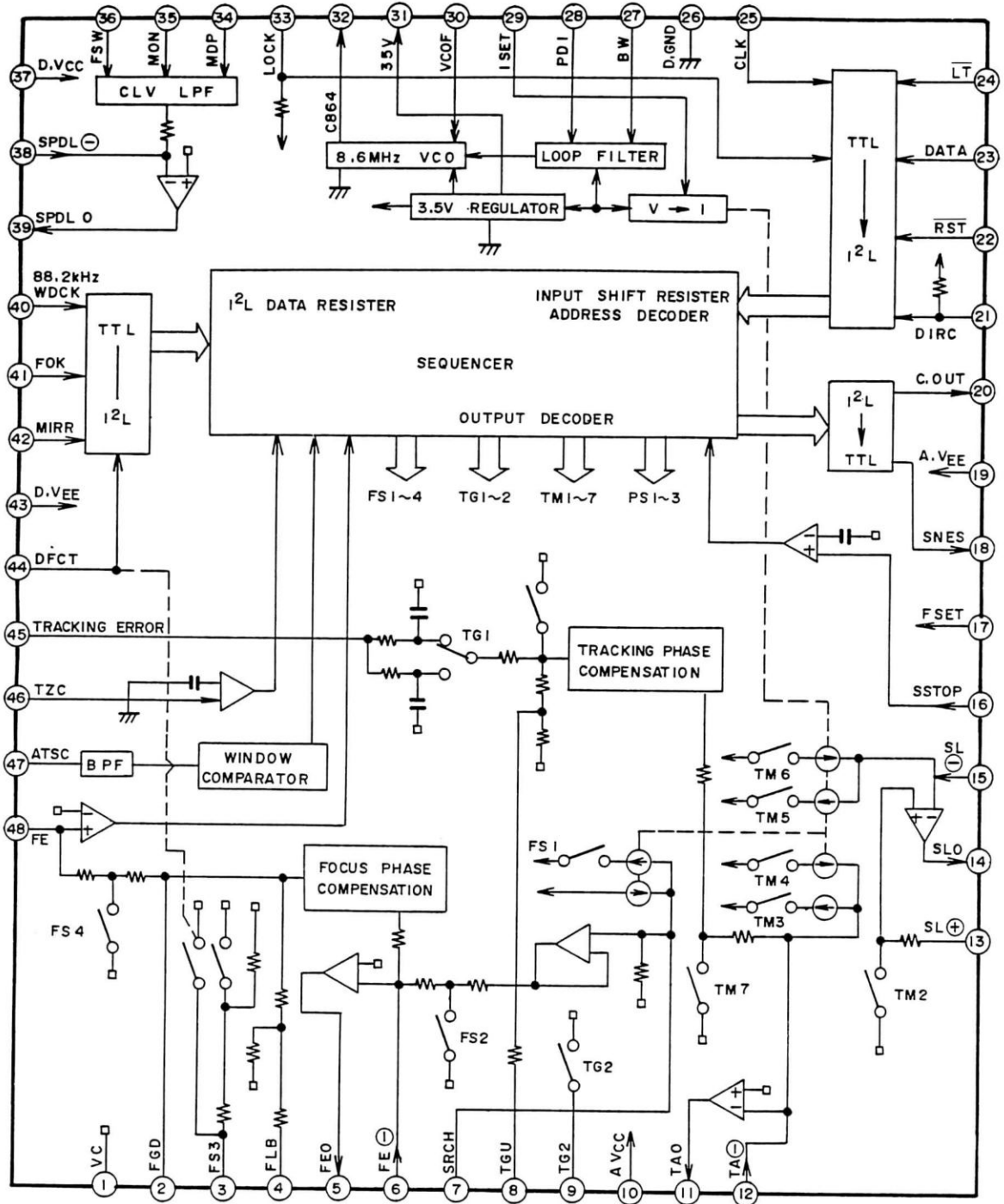
CXA1081 RF AMPLIFIER



CXA1081

PIN NO.	SYMBOL	I/O	FUNCTION
1	RF1	I	RF SIGNAL FROM SUMMING AMP
2	RF0	O	RF SIGNAL OUT (EYE PATTERN CHECK POINT)
3	RF \ominus	I	FEED BACK TO SUMMING AMP
4	P/N	—	NC
5	LD	O	AUTO POWER CONTROL OUT (TO LASER DIODE)
6	PD	I	AUTO POWER CONTROL IN (FROM PILOT DIODE)
7	PD1	I	A+C SIGNAL RF I-V AMP IN
8	PD2	I	B+D SIGNAL RF I-V AMP IN
9	VC	—	GND
10	F	I	TRACKING DIODE SIGNAL RF I-V AMP IN (F)
11	E	I	TRACKING DIODE SIGNAL RF I-V AMP IN (E)
12	E0	O	RF I-V AMP (E) OUT
13	E1	I	FEED BACK TO RF I-V AMP (E)
14	VR	—	NC
15	CC2	I	DEFECT BOTTOM HOLD IN
16	CC1	O	DEFECT BOTTOM HOLD OUT
17	VEE	—	-B
18	F · EBIAS	I	FOCUS OFF-SET VOLTAGE IN
19	FE	O	FOCUS ERROR OUT
20	TE	O	TRACKING ERROR OUT
21	DEFECT	O	DEFECT COMPALATOR OUT
22	MIRR	O	MIRROR COMPALATOR OUT
23	CP	I	CONNECT MIRROR HOLD CONDENSER
24	CB	I	CONNECT BOTTOM HOLD CONDENSER
25	DGND	—	GND
26	ASY	I	AUTO ASYMMETRY SIGNAL IN
27	EFM	O	EFM COMPALATOR OUT
28	FOK	O	FOCUS OK COMPALATOR OUT
29	LDON	I	LASER DIODE ON/OFF CONTROL IN
30	VCC	—	+B

CXA1082A SERVO SIGNAL PROCESOR

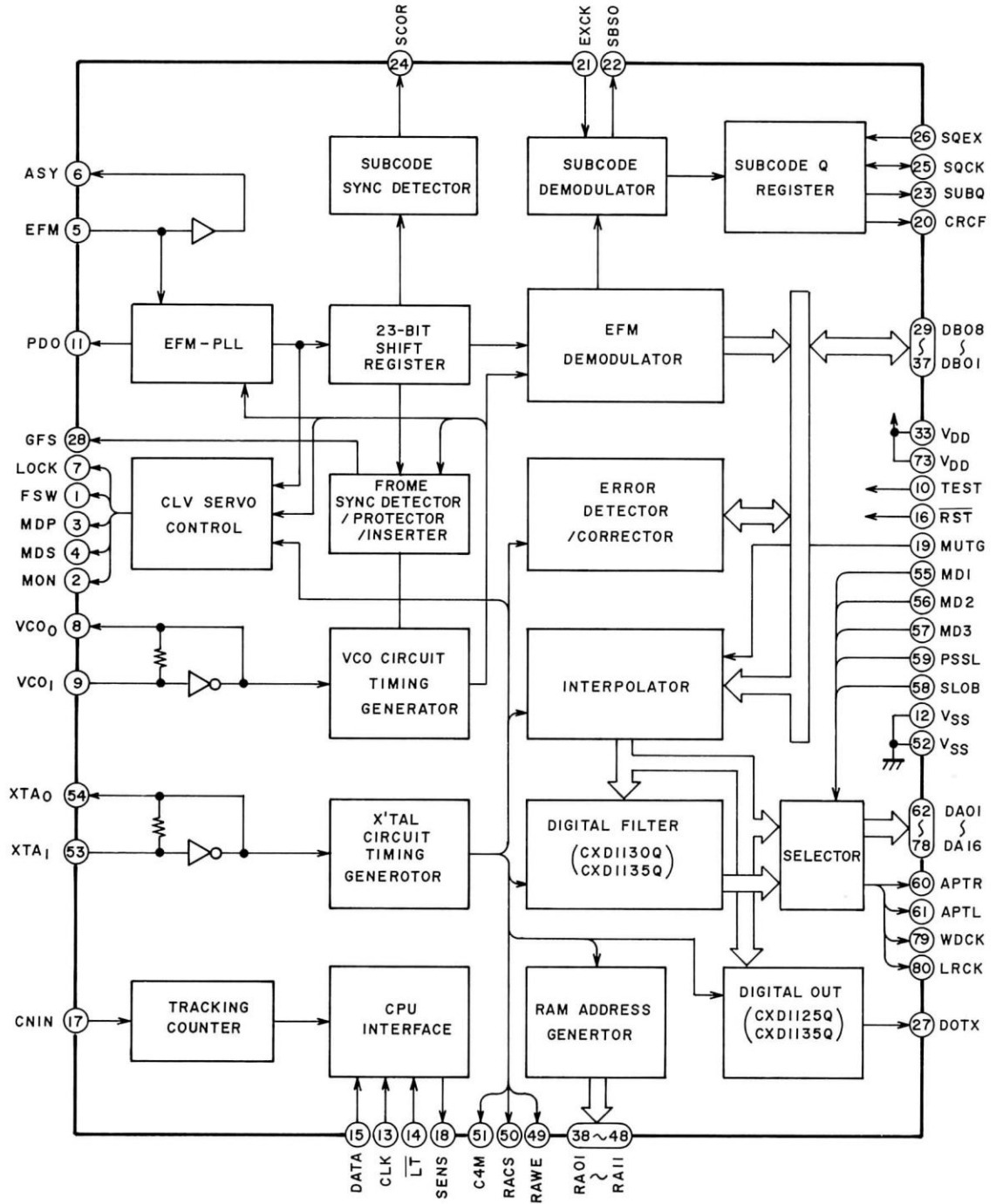


CXA 1082A

PIN NO.	SYMBOL	I/O	DESCRIPTION
1	VC	—	GND (0V)
2	FGD	—	Connect condenser for Focus servo gain control.
3	FS3	—	Focus servo gain select.
4	FLB	—	Connect condenser for Focus servo correction.
5	FE0	O	Focus drive output.
6	FE ⊖	I	FOCUS AMP. Inverting input.
7	SRCH	—	Connect condenser for Focus search wave.
8	TGU	—	Connect condenser for Tracking gain select.
9	TG2	—	Connect condenser for Tracking gain select.

PIN NO.	SYMBOL	I/O	DESCRIPTION
10	A.VCC	—	+5V
11	TA0	O	Tracking drive output.
12	TA \ominus	I	Tracking AMP. Inverting input.
13	SL \oplus	I	Slide motor non-inverting input
14	SLO	O	Slide motor drive output.
15	SL \ominus	I	Slide AMP. inverting input.
16	SSTOP	I	Not use (Holded "H" level).
17	FSET	I	Focus, Tracking compensation and CLV. LPF set up.
18	SENS	O	FZC. AS. TZC. SSTOP and $\overline{\text{BUSY}}$ output.
19	A. VEE	—	-5V.
20	C.OUT	O	Track count signal output.
21	DIRC	—	Not used
22	$\overline{\text{RST}}$	I	$\overline{\text{RESET}}$ Input.
23	DATA	I	Data signal input from CPU.
24	$\overline{\text{LT}}$	I	Lutch signal input from CPU.
25	CLK	I	Clock signal input from CPU.
26	D.GND	—	GND (0V).
27	BW	I	Connect condenser for Loop filter.
28	PDI	I	PDO signal from IC3 CXD1135Q (Pin 11).
29	ISET	I	Focus search, Track jump and slide kick current input.
30	VCOF	I	Connect register for VCO frequency.
31	3.5V	O	+3.5V REG. output.
32	C864	O	8.64 MHz VCO output.
33	LOCK	I	LOCK signal from IC3 CXD1135Q (Pin 7)
34	MDP	I	MDP signal from IC3 CXD1135Q (Pin 3)
35	MON	I	MON signal from IC3 CXD1135Q (Pin 2)
36	FSW	I	Connect condenser for CLV servo error signal LPF.
37	DVcc	—	+5V
38	SPDL \ominus	I	Spindle drive AMP. inverting input.
39	SPDLO	I	Spindle drive output.
40	WDCK	I	Auto sequence clock signal input (88.2 kHz)
41	FOK	I	Focus OK signal input.
42	MIRR	I	MIRR signal input.
43	DVEE	—	-5V
44	DFCT	I	Defect signal input "H" active.
45	TE	I	Tracking error signal input.
46	TZC	I	Tracking zero cross comparator input.
47	ATSC	I	ATSC detect window comparator input.
48	FE	I	Focus error signal input.

CXD1135Q DIGITAL SIGNAL PROCESOR



CXD1135Q

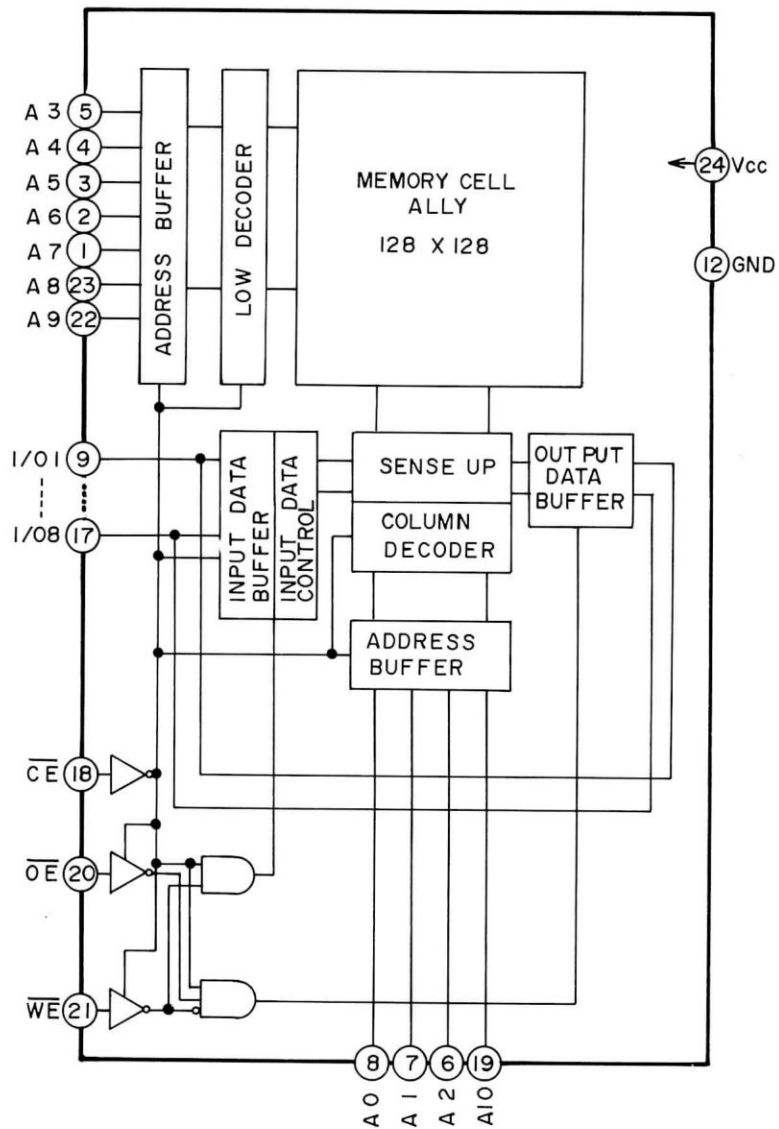
No.	Symbol	I/O	Description
1	FSW	O	Spindle motor filter switching control
2	MON	O	Spindle motor ON/OFF control
3	MPD	O	Spindle motor speed and phase control
4	MDS	O	Spindle motor speed control
5	EFM	I	EFM signal input
6	ASY	O	EFM signal slice level control
7	LOCK	O	Slide motor over reach guard signal 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	\overline{LT}	I	Lutch signal from CPU
15	DATA	I	Serial data from CPU
16	\overline{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	GFS	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)

No.	Symbol	I/O	Description	
41	RA04	O	ADDR04	Address signal output for the EXT. RAM (LC3517AS-15)
42	RA05	O	ADDR05	Address signal output for the EXT. RAM (LC3517AS-15)
43	RA06	O	ADDR06	Address signal output for the EXT. RAM (LC3517AS-15)
44	RA07	O	ADDR07	Address signal output for the EXT. RAM (LC3517AS-15)
45	RA08	O	ADDR08	Address signal output for the EXT. RAM (LC3517AS-15)
46	RA09	O	ADDR09	Address signal output for the EXT. RAM (LC3517AS-15)
47	RA10	O	ADDR10	Address signal output for the EXT. RAM (LC3517AS-15)
48	RA11	O	ADDR11 (MSB)	Address signal output for the EXT. RAM (LC3517AS-15)
49	RAWE	O	Write enable signal output "L" active	
50	RACS	O	Chip select signal output "L" active	
51	C4M	O	1/4X'tal OSC.output (f=4.2336MHz)	
52	V _{ss}	—	GND(0V)	
53	XTAI	I	X'tal OSC. input (f=16.9344MHz)	
54	XTAO	O	X'tal OSC.output (f=16.9344MHz)	
55	MD1	I	Mode select input 1 0V (GND)	
56	MD2	I	Mode select input 2 0V (GND)	
57	MD3	I	Mode select input 3 0V (GND)	
58	SLOB	I	0V (GND)	
59	PSSL	I	0V (GND)	
60	APTR	O	Aperture correction signal output "H" R-channel	
61	APTL	O	Aperture correction signal output "H" L-channel	
62	C1F1	O	NOT USE	
63	C1F2	O	TP-C1F2	
64	C2F1	O	NOT USE	
65	C2F2	O	NOT USE	
66	C2FL	O	TP-CSFL	
67	C2P0	O	NOT USE	
68	RFCK	O	NOT USE	
69	WFCK	O	TP-WFCK	
70	$\overline{\text{PLCK}}$	O	NOT USE	
71	UGFS	O	NOT USE	
72	GTOP	O	NOT USE	
73	VDD	—	+5V	
74	RA0V	O	NOT USE	
75	4CLR	O	NOT USE	
76	$\overline{\text{C210}}$	O	$\overline{\text{C210}}$ INV.C210 (Pin 77)	f=2.1168MHz
77	C210	O	NOT USE	
78	DATA	O	Data output	
79	WDCK	O	Word clock output	88.2kHz strobe
80	LRCK	O	NOT USE (L-ch, R-ch clock output)	

CXP5016-260S

PIN NO.	SYMBOL	I/O	FUNCTION
1	EMP	O	EMPHASIS CODE OUTPUT
2	SYNCP	—	GND
3	RMT	I	REMOTE CONTROL DATA INPUT
4	SQCK	I/O	SUB CODE Q CLOCK
5			
6			
7	SUBQ	I	SUB CODE Q SIGNAL INPUT
8	PD0	O	KEY STROBE SIGNAL OUTPUT
9	PD1	O	
10	PD2	O	
11	PD3	O	
12	PC0	I	KEY RETURN SIGNAL INPUT
13	PC1	I	
14	PC2	I	
15	PC3	I	
16	PF0	I	
17	PF1	I	
18	LDIN	O	LOADING MOTOR FWD
19	LDOUT	O	LOADING MOTOR REV
20	CLSW	I	DISC TRAY CLOSE SWITCH
21	OPSW	I	DISC TRAY OPEN SWITCH
22	INSW	I	PICKUP IN SWITCH
23	LOK	I	LASER (FOCUS) OK SIGNAL INPUT
24	LSW	O	LASER ON/OFF CONTROL
25	GFS	I	FRAME SYNC LOCK SIGNAL INPUT
26	MUT	O	MUTE SIGNAL OUTPUT "H" MUTE ON
27	SENS	I	SENS SIGNAL INPUT FROM IC3
28	DATA	O	SERIAL DATA OUT
29	\overline{LT}	O	LATCH SIGNAL OUT
30	CLK	O	CLOCK SIGNAL OUT
31	\overline{RST}	I	RESET SIGNAL INPUT
32	GND	—	GND
33	S0	O	FLD SEGMENT DRIVER OUT
34	S1	O	
35	S2	O	
36	S3	O	
37	S4	O	
38	S5	O	
39	S6	O	
40	S7	O	
41 to 49			NOT USE
50	G7	O	FLD GRID DRIVER OUT
51	G6	O	
52	G5	O	
53	G4	O	
54	G3	O	
55	G2	O	
56	G1	O	
57	VP	I	FLD DRIVE POWER INPUT
58	—		NOT USE
59	SCOR	I	SUB CODE DETECTION SIGNAL INPUT
60	—		NOT USE
61	EXTAL	I	CLOCK INPUT
62	RST	I	RESET SIGNAL INPUT
63	SYNCR		NOT USE
64	VCC	I	+5V

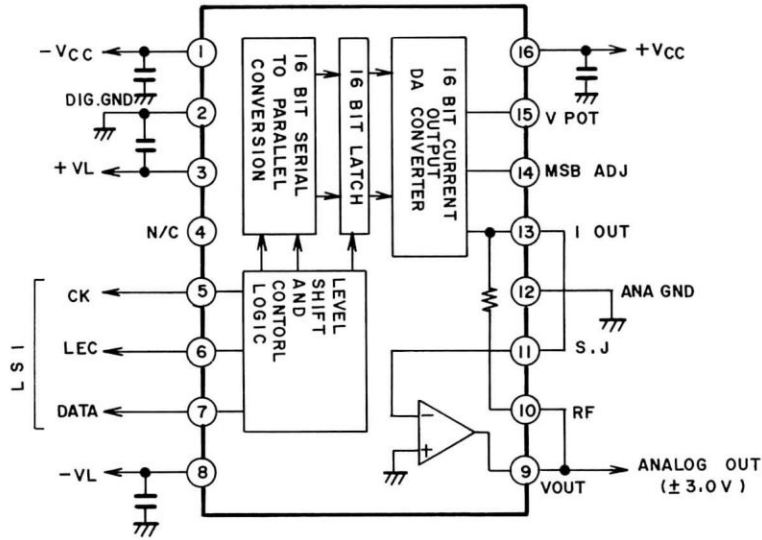
LC3517AS-15 16kBIT RAM



TRUTH TABLE

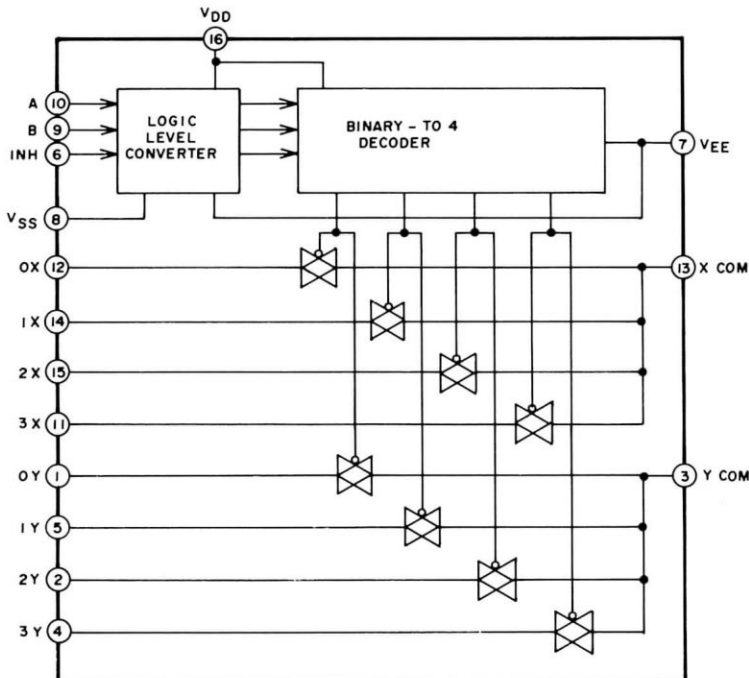
MODE	CE	OE	WE	I/O
READ CYCLE	L	L	H	DATA OUT
WRITE CYCLE	L	*	L	DATA IN
OUTPUT DISABLE	L	H	*	HIGH IMPEDANCE
INHIBIT	H	*	*	HIGH IMPEDANCE

PCM-56P 16BIT D/A CONVERTER



PIN NO.	FUNCTION	PIN NO.	FUNCTION
1	-Vcc	16	+Vcc
2	DIG.GND	15	V.POT
3	+VL	14	MSB ADJ
4	N C	13	Iout
5	CK	12	ANA.GND
6	LEC	11	S.J
7	DATA	10	RF
8	-VL	9	Vout

TC4052BP MULTI PLEXER



INH	B	A	"ON" CHANNELS
0	0	0	0X , 0Y
0	0	1	1X , 1Y
0	1	0	2X , 2Y
0	1	1	3X , 3Y
1	X	X	NONE

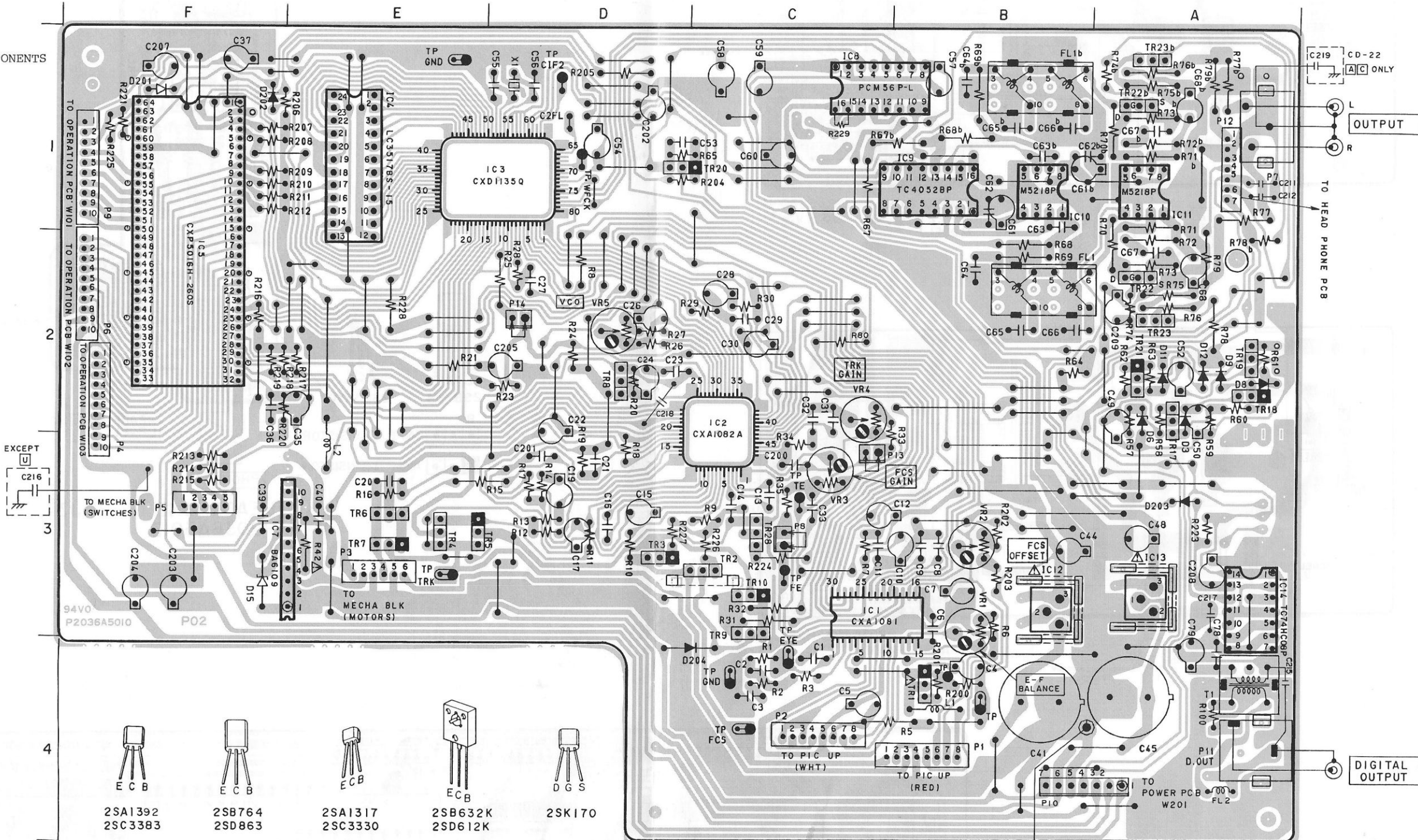
X : DON'T CARE

LOCATION OF COMPONENTS

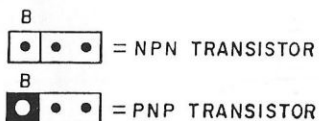
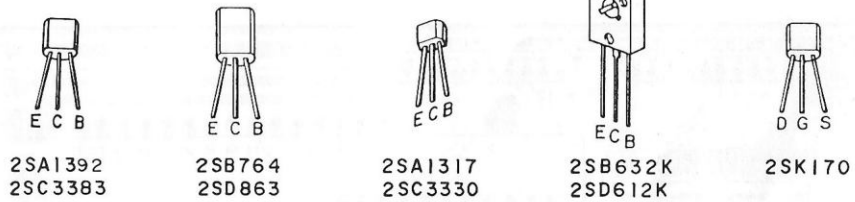
- IC'S
 IC1.....C3
 IC2.....C3
 IC3.....D1
 IC4.....E1
 IC5.....F1
 IC7.....E3
 IC8.....C1
 IC9.....B1
 IC10.....B1
 IC11.....A1
 IC12.....B3
 IC13.....A3
 IC14.....A3

- TRANSISTORS
 TR1.....B4
 TR2.....C3
 TR3.....D3
 TR4.....E3
 TR5.....E3
 TR6.....E3
 TR7.....E3
 TR8.....D2
 TR9.....C4
 TR10.....C3
 TR17.....A2
 TR18.....A2
 TR19.....A2
 TR20.....D1
 TR21.....A2
 TR22.....A2
 TR23b....A1
 TR23.....A2
 TR23b....A1
 TR28.....C3

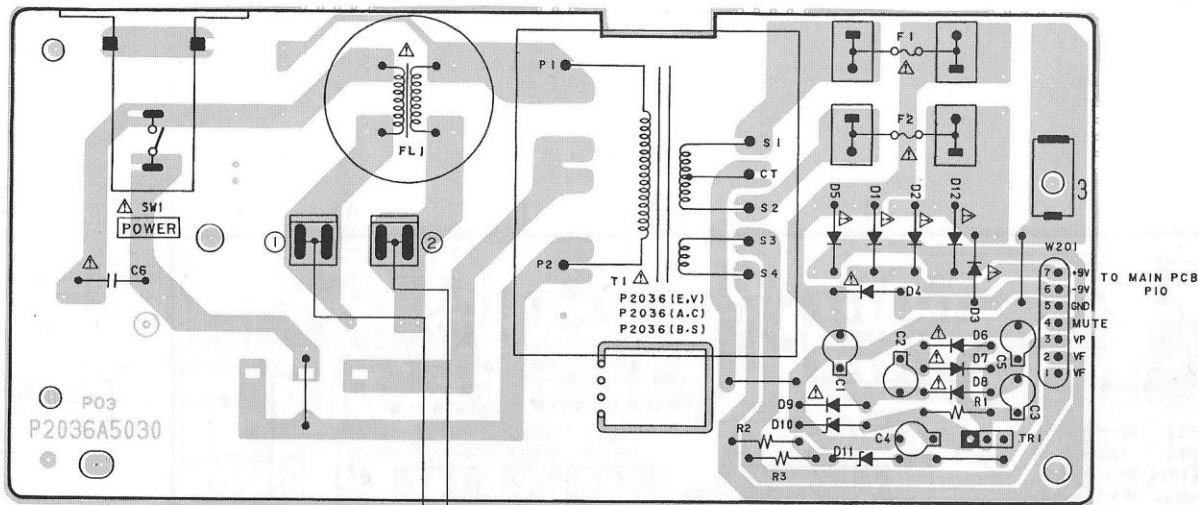
- CONNECTORS
 P1.....B4
 P2.....C4
 P3.....E3
 P4.....F2
 P5.....F3
 P6.....F2
 P7.....A1
 P8.....C3
 P9.....F1
 P10.....B4
 P11.....A4
 P12.....A1
 P13.....C3
 P14.....D2



MAIN PCB P2036A501A(J3)



WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
 AVERTISSEMENT: Δ 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.

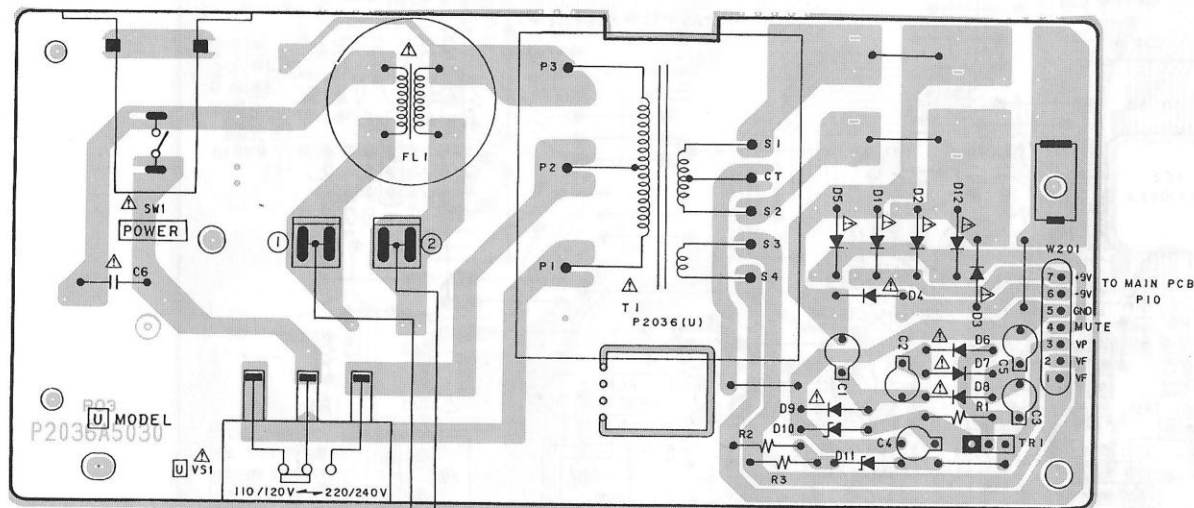


POWER PCB P2036A5030(J3)
(CD-22 **A.C.**, CD-A335 **E.V.B.S.**
MODEL)

E.V.
AC 220V/50Hz

A.C.
AC 120V/60Hz

S
AC 240V/50Hz

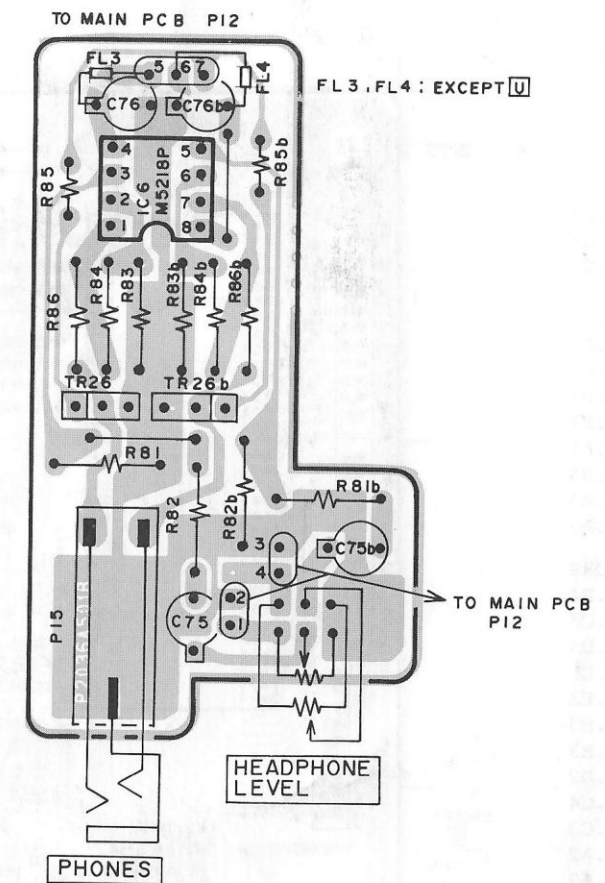


POWER PCB P2036A5030(J3)
(CD-A335 **U** MODEL)

U
AC 110/120/220/240V
50/60Hz

WARNING: **Δ** INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY,
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

AVERTISSEMENT: **Δ** 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



HEADPHONE PCB (J3)
P2036A501B



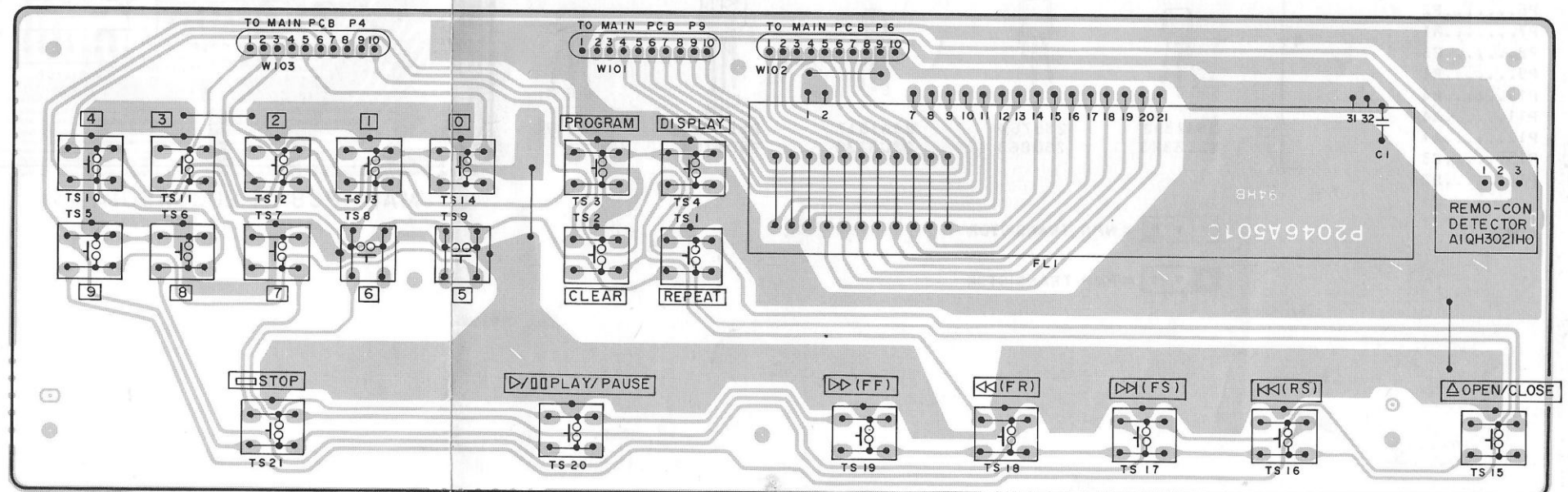
2SB764



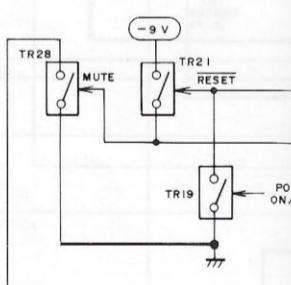
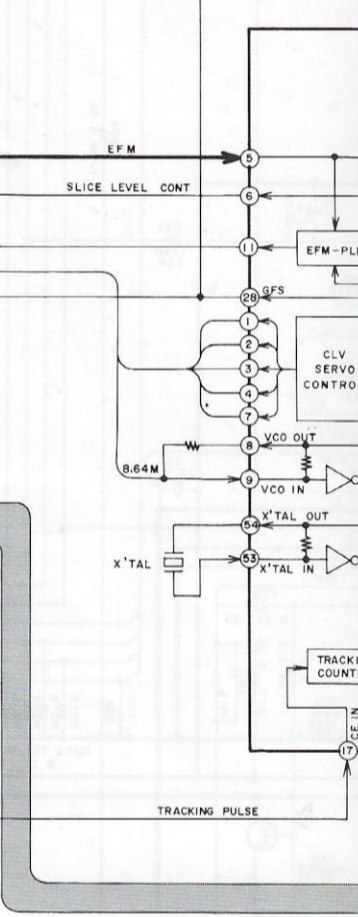
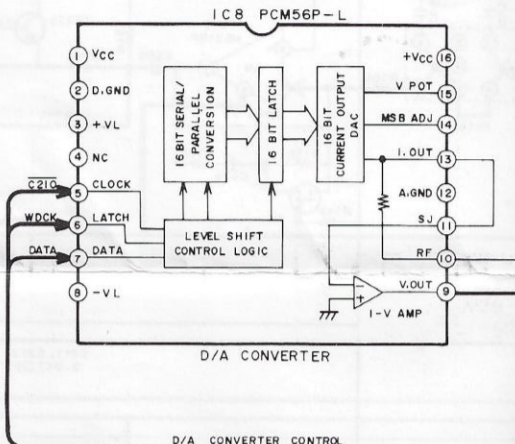
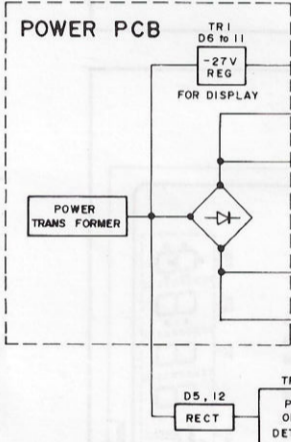
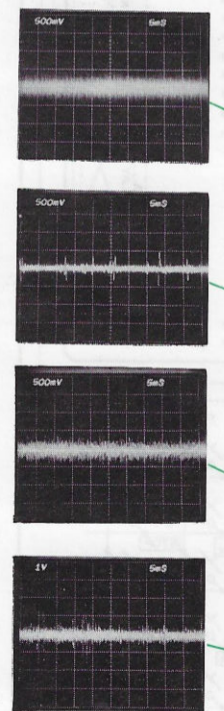
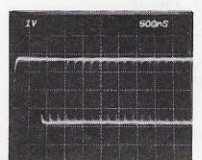
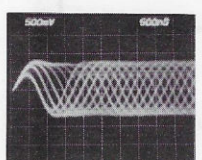
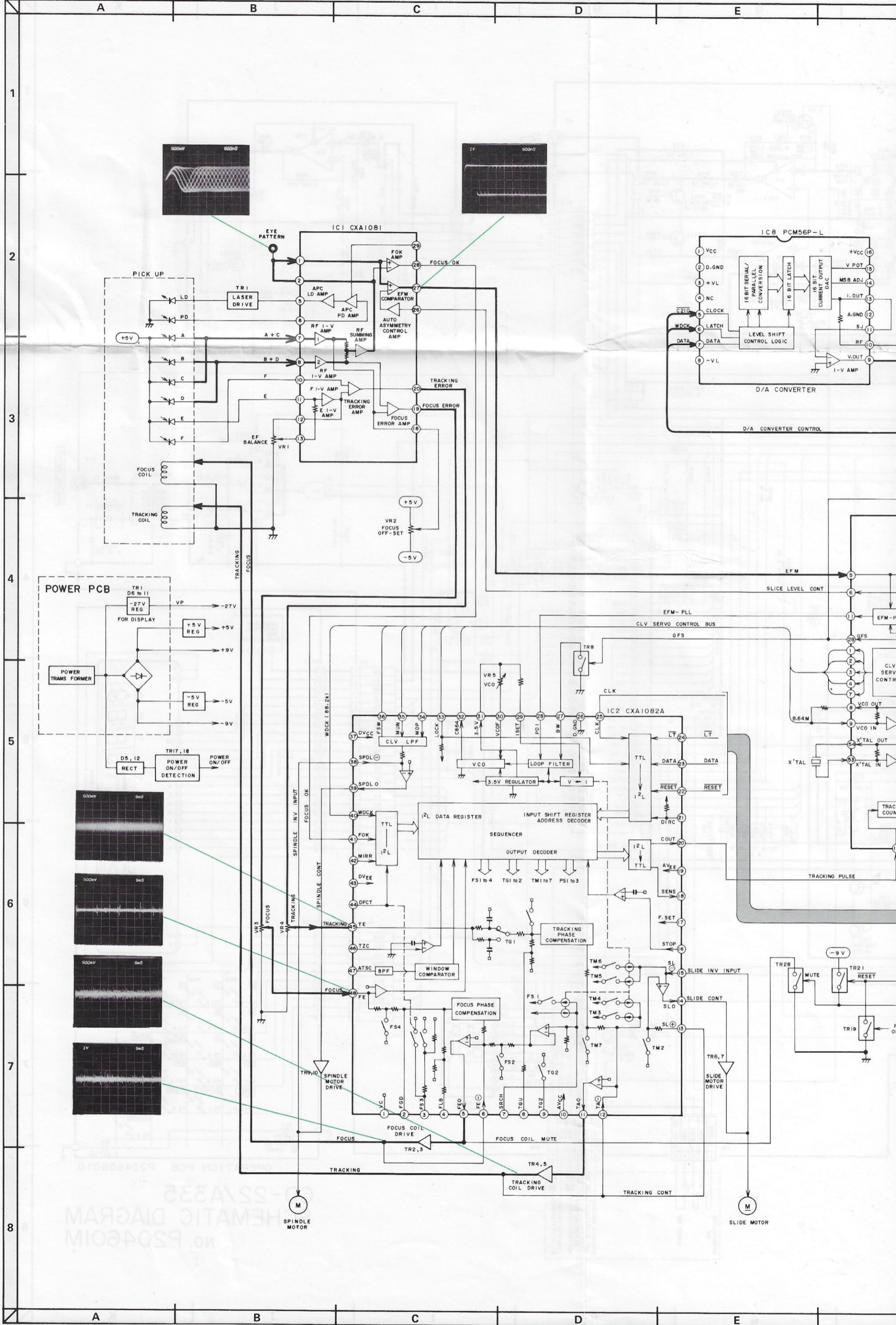
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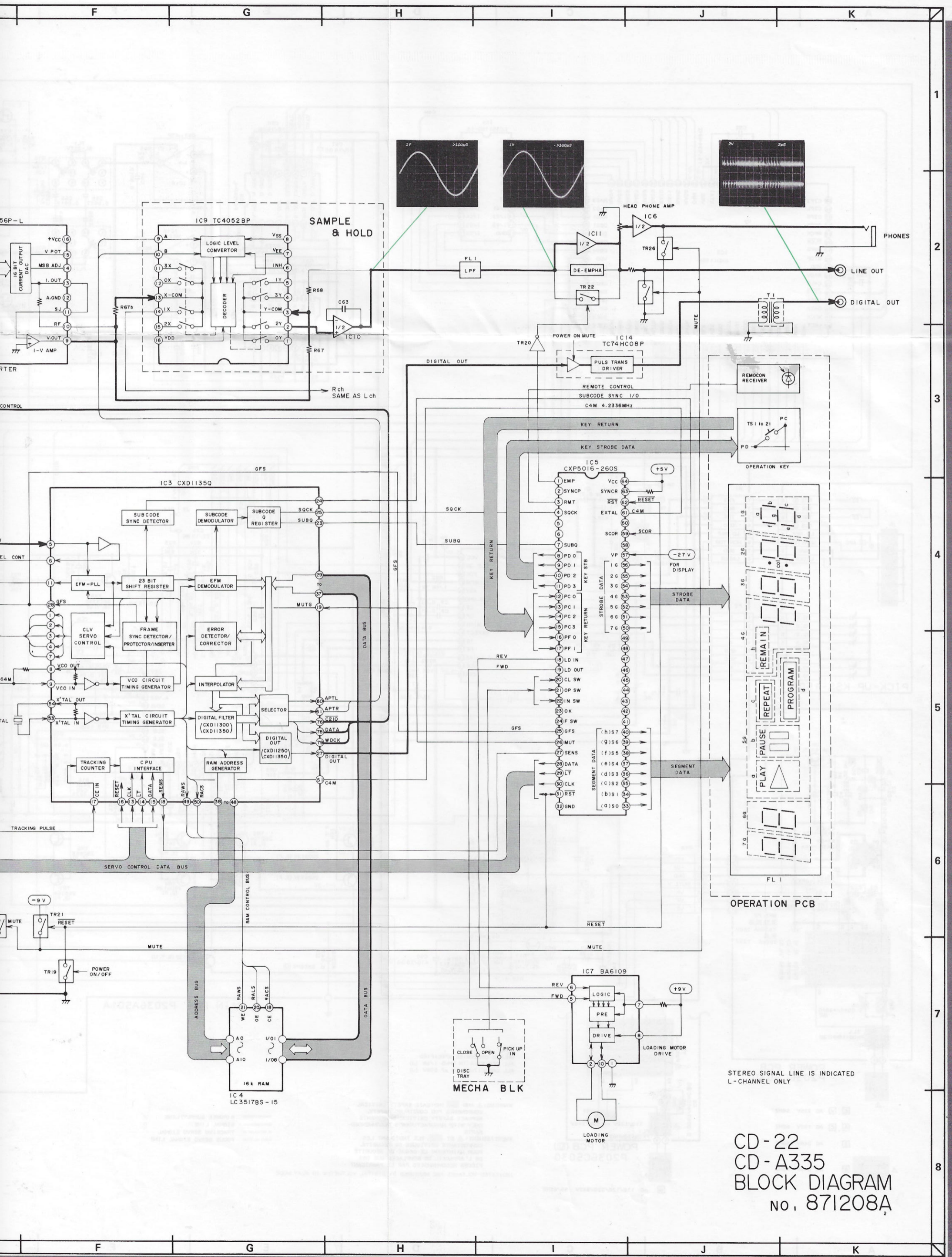
B ● ● ● = NPN TRANSISTOR

B ● ● ● = PNP TRANSISTOR



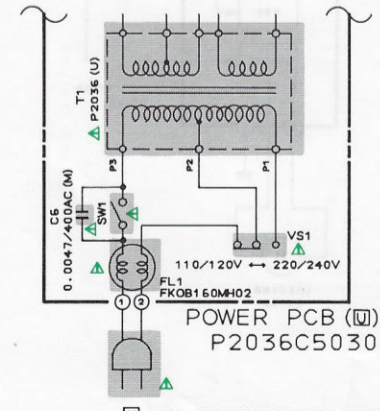
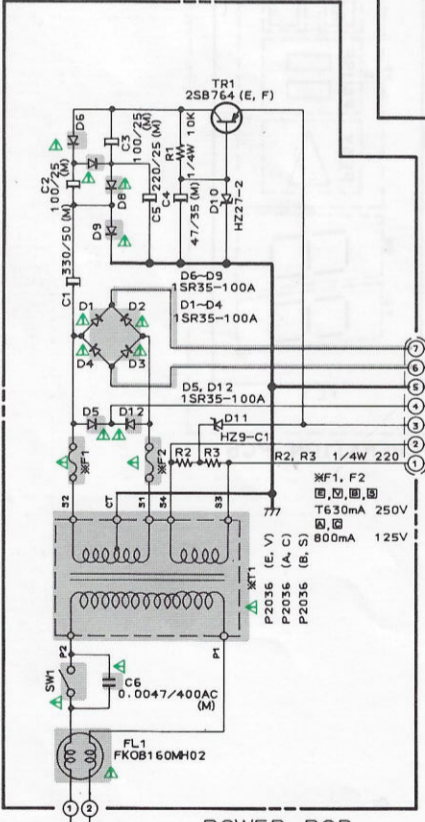
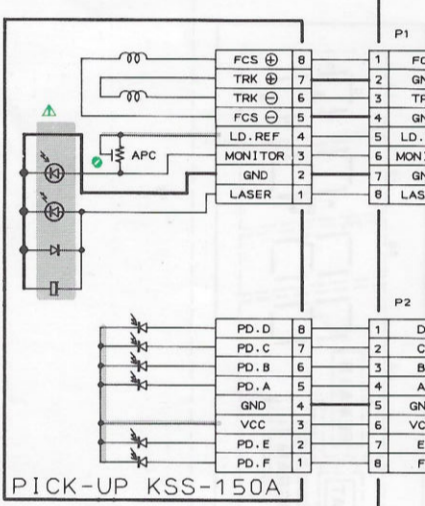
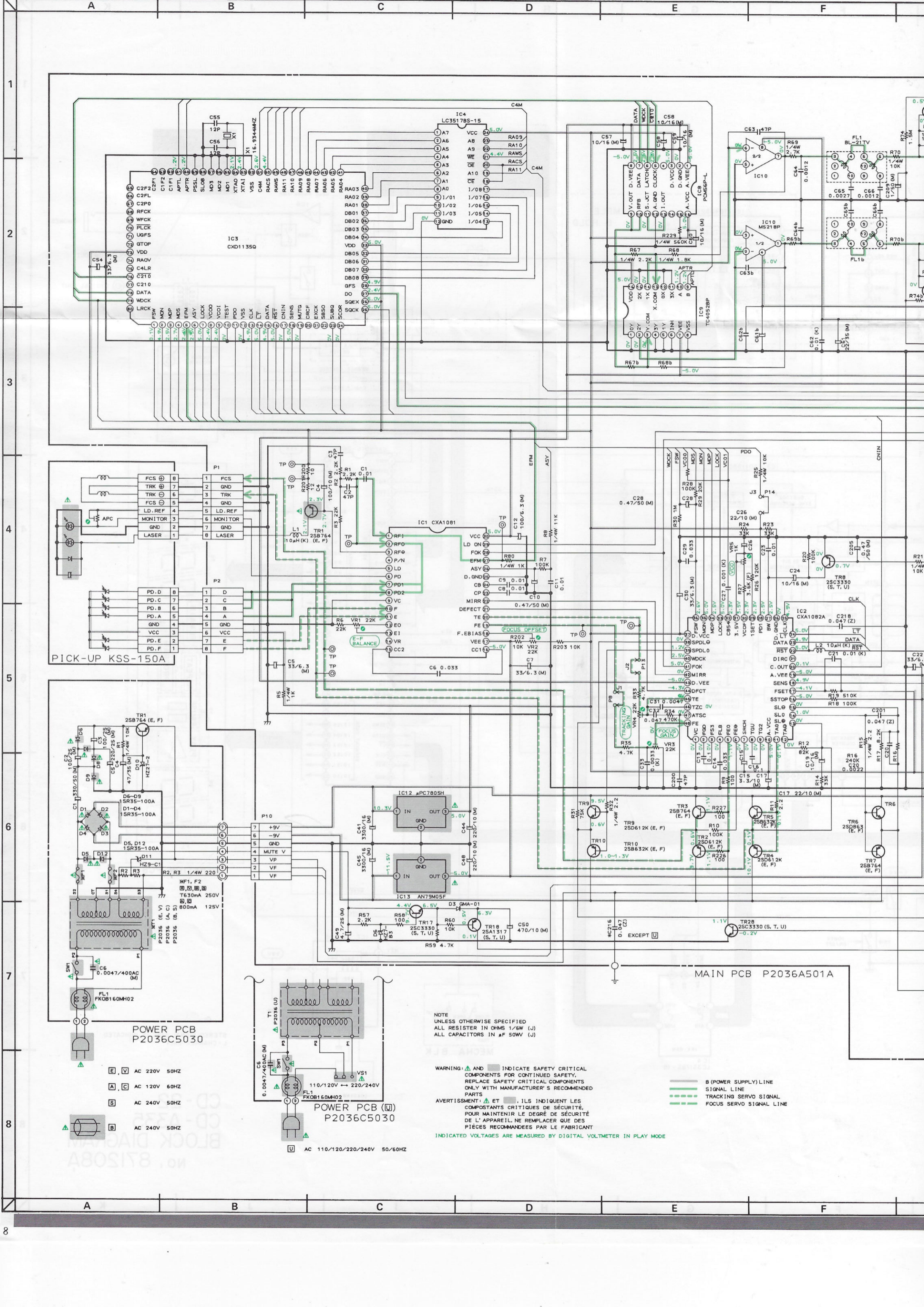
OPERATION PCB P2046A5010 (J)





STEREO SIGNAL LINE IS INDICATED
L-CHANNEL ONLY

CD-22
CD-A335
BLOCK DIAGRAM
No. 871208A



NOTE
 UNLESS OTHERWISE SPECIFIED
 ALL RESISTOR IN OHMS 1/6W (J)
 ALL CAPACITORS IN μ F 50WV (J)

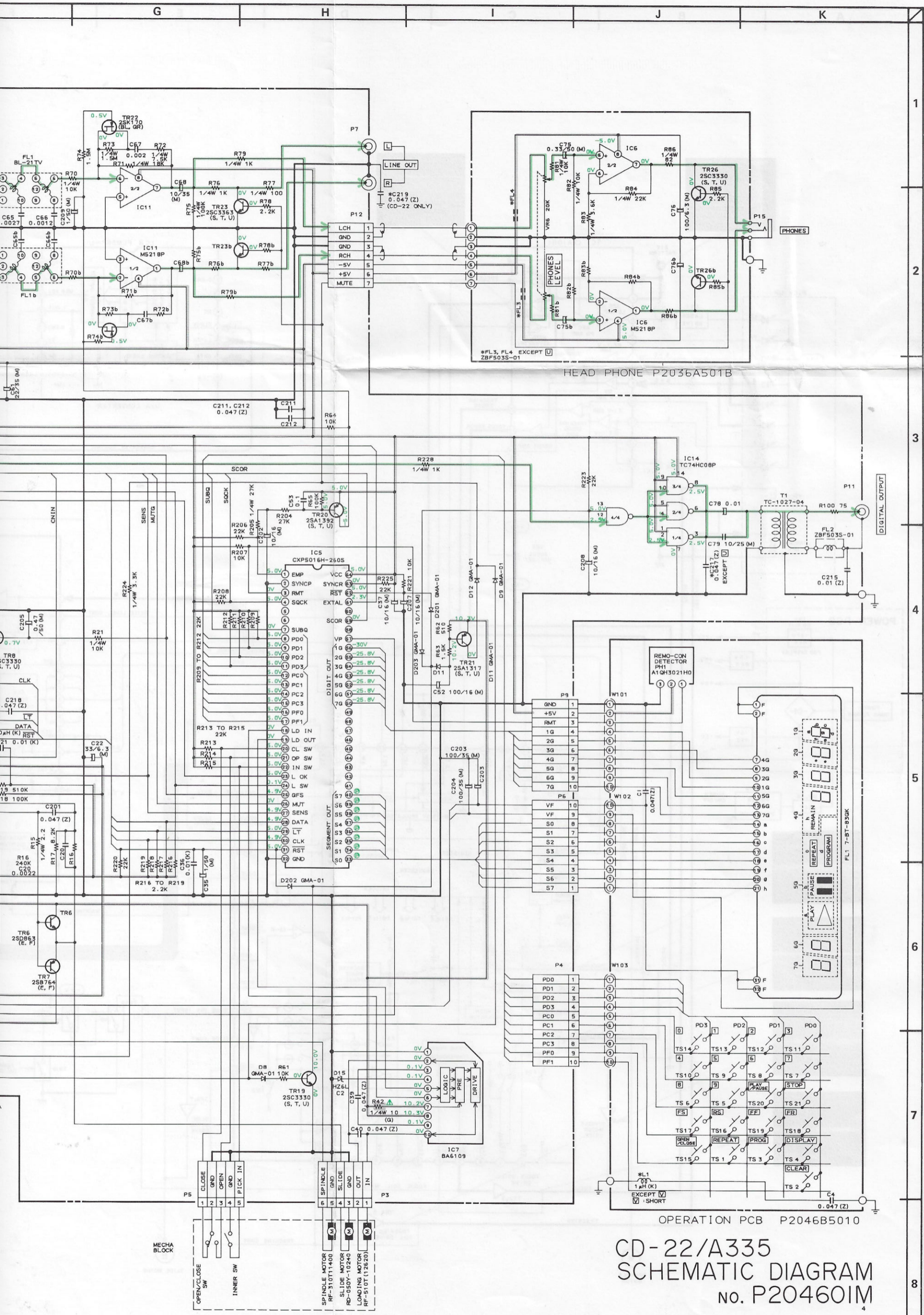
WARNING: Δ AND \square INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: Δ ET \square ILS INDIQUENT LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

INDICATED VOLTAGES ARE MEASURED BY DIGITAL VOLTMETER IN PLAY MODE

— B (POWER SUPPLY) LINE
 — SIGNAL LINE
 - - - TRACKING SERVO SIGNAL
 - - - FOCUS SERVO SIGNAL LINE

- \square AC 220V 50HZ
- \square AC 120V 60HZ
- \square AC 240V 50HZ
- \square AC 240V 50HZ
- \square AC 110/120/220/240V 50/60HZ



CD-22/A335
 SCHEMATIC DIAGRAM
 No. P20460IM