

**AIWA®****XC-007****SERVICE  
MANUAL**COMPACT DISC PLAYER

• BASIC CD MECHANISM : KSL-510ABM

• TYPE. H, C, E, K

**SPECIFICATIONS**

<b>Type:</b>	Compact disc digital audio system
<b>Disc:</b>	Compact disc
<b>Scanning method:</b>	Non contact optical scanner (semiconductor laser application)
<b>Laser:</b>	Semiconductor laser ( $\lambda=780$ nm)
<b>Rotation speed:</b>	Approx. 500 rpm—200 rpm (CLV)
<b>Error correction:</b>	Cross Interleave, Read Solomon Code
<b>No. of channels:</b>	2 channels
<b>D-A conversion:</b>	16-bit linear
<b>Frequency response:</b>	4 Hz—20 kHz $\pm$ 0.3 dB
<b>Harmonic distortion:</b>	0.003% (1kHz) (EIAJ)
<b>Dynamic range:</b>	98 dB
<b>Channel separation:</b>	100 dB (1 kHz)
<b>S/N Ratio:</b>	115 dB (A) (EIAJ)
<b>Wow/Flutter:</b>	Unmeasurable

**Disc specifications**

<b>Playing time:</b>	Approx. 60 minutes (max. 74 minutes)
<b>Dimensions:</b>	Diameter 120 mm, Thickness 1.2 mm
<b>Track pitch:</b>	1.6 $\mu$ m
<b>Sampling frequency:</b>	44.1 kHz

**Power and Miscellaneous**

<b>Power supply:</b>	
H	AC 120V/220V/240V, 50/60 Hz
E	AC 220V, 50/60 Hz
K	AC 240V, 50/60 Hz
C	AC 120V, 60 Hz
<b>Power consumption:</b>	22W
<b>Dimensions:</b>	466(W) $\times$ 126(H) $\times$ 365(D)mm
<b>Weight:</b>	13 kg

- Design and specifications are subject to change without notice.

**AIWA Co., Ltd.****Tokyo Japan**

Printed in Japan

# PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

## WARNING !!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

"Varoitus". Laite sisältää laserdiodin, joka lähettää näkymätöntä silmille vaarallista lasersäteilyä."

## LASER WARNING LABELS

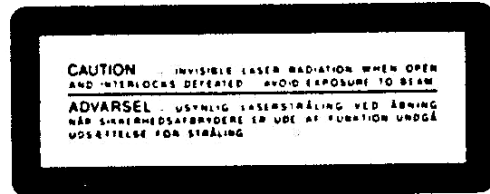
1. Protective Housing Label  
WARNING Label 1 (E,K,Y model)



2. WARNING Label 4 (E,K,Y model)



3. WARNING Label 3 (E,K,Y model)



## ACCESSORIES/PACKAGE LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	QTY
		*24-745-904-010	INSTRUCTION BOOKLET H	*	1
		*84-733-207-010	SCREW, DRIVER		1
		*87-032-845-010	SIEMENS PLUG (H ONLY)		1
		*86-247-813-010	RC-C007YB		1

## DISASSEMBLY INSTRUCTIONS

### A) Removing the Mechanism

- 1) Remove the 4 screws and 5 connectors (a through e), then remove the mechanism while moving in the direction indicated by the arrow. (See Figure-1)

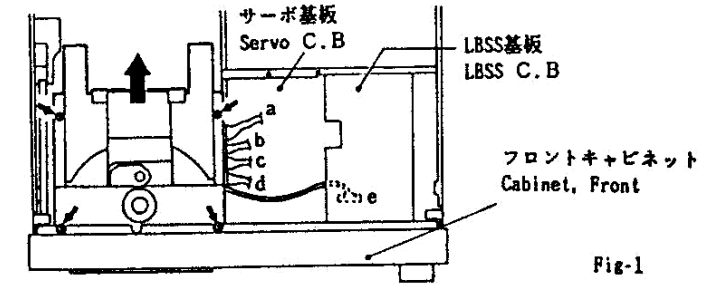


Fig-1

### B) Removing the Tray, Replacing the ML Belt, and Inserting the Tray

#### 1. Removing the Chuck Chassis

- 1) Remove the 2 screws, then remove it upward so that the chuck chassis is open. (See Figure-2)

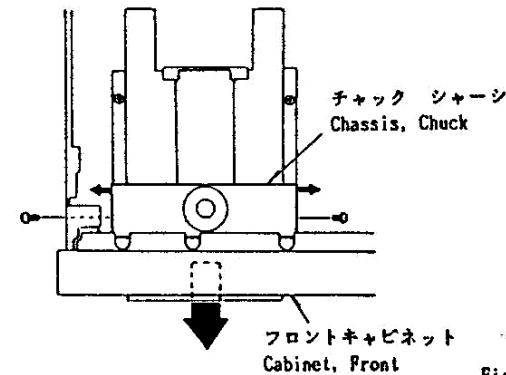


Fig-2

#### 3. Removing the ML Belt

- 1) Remove one screw with the tray removed, then remove the gear cover. (See Figure-4)
- 2) Replace the ML belt.

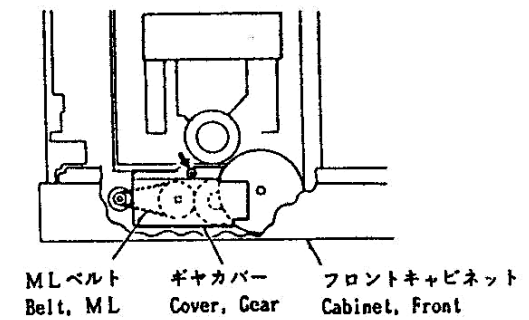


Fig-4

#### 2. Removing the Tray

- For automatic operation
  - 1) Turn on the power with the chuck chassis removed.
  - 2) Press the OPEN/CLOSE key, eject the tray, and pull out it toward you. (See Figure-2)
- For manual operation
  - 1) When the control cam in is turned the direction indicated by arrow ①, mechanism chassis SPD is lowered and the tray is moved toward you.
  - 2) Pull out the tray in the direction indicated by arrow ②. (See Figure-3)

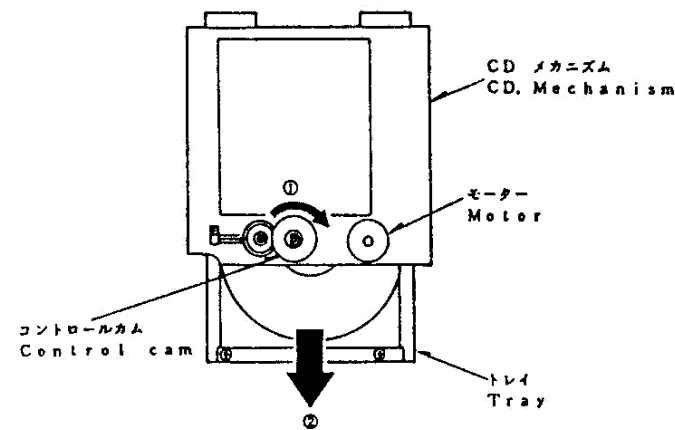


Fig-3

#### 4. Inserting the Tray

- 1) Fully turn the drive gear in the direction indicated by arrow ㊸.
- 2) Pass the tray under the guide of boss ② until it reaches the edge of boss ① so that the tray does not touch the drive gear. (See Figure-5)  
Note: At that time, hold the drive gear so that it is not moved.
- 3) The gear and tray are engaged in Step 2. Turn the gear in the direction indicated by arrow ㊸ and check that the tray is completely engaged with the gear. Next, push the tray from the direction indicated by arrow ㊹. (See Figure-5)  
Note: Be sure to turn the gear by fingers and to engage it with the tray. If the tray is pushed out of engagement, it cannot be inserted completely.

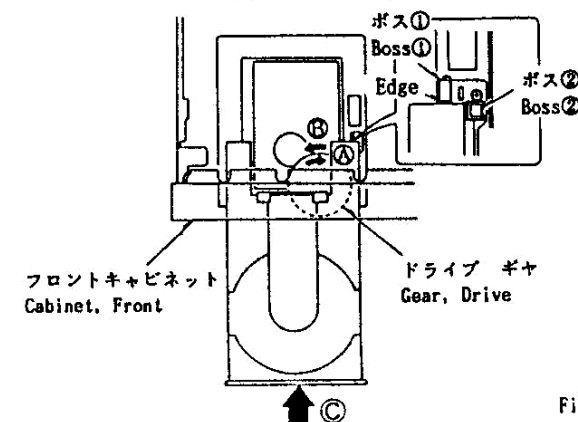
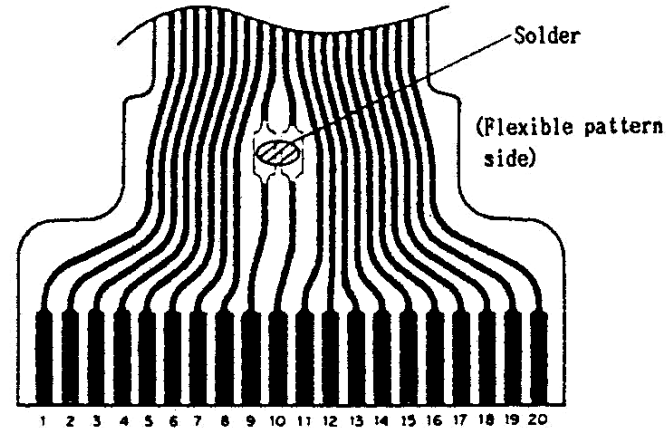


Fig-5

1. Precautions on Optical Block (KSS-151A) Replacement

The electrostatic potential of clothes or the body may ruin the laser diode in the optical block. Be sure to ground the body and workbench and pay attention that the clothes do not touch the diode.

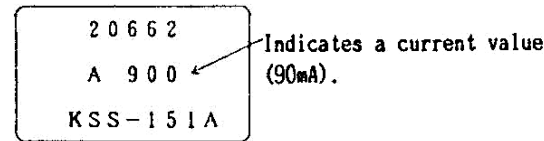
After the connector is connected, remove the solder shown in the figure below.



Pin No.	
1	SD
2	SD
3	2-axis FCS⊖
4	2-axis TRK⊖
5	2-axis TRK⊕
6	2-axis FCS⊕
7	VS
8	VS
9	LD GND
10	LD Laser
11	LD monitor
12	LD reference
13	GND
14	PD D
15	PD C
16	PD A
17	PD B
18	PD Vcc
19	PD F
20	PD E

2. Checking the Laser Diode

1) Observe the current value on the label which is attached to the optical pickup.



The current value varies depending on the set.

- 2) Turn on the power switch
- 3) Measure the voltage at both ends of R102 (22-ohm).

$$I_{op} = \frac{V_{R102}}{R102} = \frac{V_{R102}}{22\Omega}$$

ELECTRICAL MAIN PARTS LIST

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
====IC====					
87-001-184-010	IC,CXA1081S		C129	*87-010-265-010	CAP,ELECT 33-16SME
87-001-400-010	IC,CXA1082S		C136	*87-010-400-010	CAP,ELECT 50-0.47SME
87-001-403-010	IC,CXD1088Q		C138	*87-010-265-010	CAP,ELECT 33-16SME
87-020-896-010	IC,CXD1125		C139	*87-010-379-010	CAP,ELECT 22-16SME
87-020-796-010	IC,CXK5816M		C141	*87-010-404-010	CAP,ELECT 4.7-50SME
84-736-610-010	IC,L740150		C142	*87-010-401-010	CAP,ELECT 1-50SME
84-736-642-010	IC,M50955-421SP		C148	*87-010-378-010	CAP,ELECT 10-16
87-020-901-010	IC,M51945B		C150	*87-010-687-010	CAP,ELECT 120-6.3 SXE
87-027-925-010	IC,M5220		C151	*87-010-687-010	CAP,ELECT 120-6.3 SXE
87-001-383-010	IC,M5220P		C152	*87-018-209-010	CAP,CERA-SOL 0.1
87-020-619-010	IC,M5238L		C153	*87-018-209-010	CAP,CERA-SOL 0.1
87-001-401-010	IC,M54564P		C154	*87-010-379-010	CAP,ELECT BP 22-16
87-020-940-010	IC,M5F7805L		C155	*87-010-265-010	CAP,ELECT 33-16SME
87-020-871-010	IC,M5F78M12L		C157	*87-010-265-010	CAP,ELECT 33-16SME
87-001-416-010	IC,M5F79M05		C159	*87-010-265-010	CAP,ELECT 33-16SME
87-020-892-010	IC,M74HC02P		C161	*87-010-265-010	CAP,ELECT 33-16SME
87-001-415-010	IC,PCM56PK		C163	*87-010-265-010	CAP,ELECT 33-16SME
87-001-409-010	IC,SBX1483-52(REMOTE SENSOR)		C165	*87-010-255-010	CAP,ELECT 33-16SME
87-001-413-010	IC,TA7256P		C169	*87-010-265-010	CAP,ELECT 33-16SME
87-001-414-010	IC,TC74HC4053AP		EM101	*87-008-372-010	FILTER EMI BLORNI
84-700-748-010	IC,TC74HC74P		EM102	*87-008-372-010	FILTER EMI BLORNI
84-736-609-010	IC,TMM2464AF CAL		EM103	*87-008-372-010	FILTER EMI BLORNI
87-001-411-010	IC,TOTX172		L101	*87-003-102-010	COIL,CHCKE 10UH
			L102	*87-003-102-010	COIL,CHCKE 10UH
			L103	*87-003-102-010	COIL,CHCKE 10UH
			R202	*87-022-048-010	RES,ARRAY RYLS 10J 22K
			R203	*87-022-047-010	RES,ARRAY RYLS 9J 22K
			R204	*87-022-046-010	RES,ARRAY RYLS 8J 22K
			R205	*87-022-049-010	RES,ARRAY RYLS 8J 1K
====TRANSISTOR====					
89-502-465-010	FET,2SK246GR		SFR101	*87-021-739-010	SFR 2.2K
89-110-154-010	TRANSISTOR,2SA1015Y		SFR102	*87-021-743-010	SFR 22K
89-106-837-010	TRANSISTOR,2SA683 S		SFR103	*87-021-743-010	SFR 22K
89-109-705-010	TRANSISTOR,2SA970GR		SFR104	*87-021-743-010	SFR 22K
89-210-154-010	TRANSISTOR,2SB1015Y		SFR105	*87-021-743-010	SFR 22K
89-313-834-010	TRANSISTOR,2SC1383(S)		SFR106	*87-021-797-010	SFR 1K
89-318-155-010	TRANSISTOR,2SC1815GR				
89-318-154-010	TRANSISTOR,2SC1815Y				
89-322-405-010	TRANSISTOR,2SC2240GR				
89-328-785-010	TRANSISTOR,2SC2878A				
89-414-064-010	TRANSISTOR,2SD1406Y				
87-026-219-010	TRANSISTOR,DTA144ES				
87-026-218-010	TRANSISTOR,DTC144ES				
====DIODE====					
87-020-110-010	DIODE,1SS177		C502	*87-010-682-010	CAP,ELECT 220-16 KS
87-020-123-010	DIODE,DS446		C503	*87-010-682-010	CAP,ELECT 220-16 KS
87-001-428-010	DIODE,EGP100		C504	*87-010-682-010	CAP,ELECT 220-16 KS
87-027-626-010	DIODE,S5277D		C505	*87-018-123-010	CAP,CERA-SOL SS 220P
87-027-364-010	DIODE,ZENER HZ12A3L		C506	*87-018-123-010	CAP,CERA-SOL SS 220P
87-027-393-010	DIODE,ZENER HZ4C2		C507	*87-010-679-010	CAP,ELECT 10-16 KS
87-027-552-010	DIODE,ZENER HZ683L		C508	*87-010-679-010	CAP,ELECT 10-16 KS
			C509	*87-010-679-010	CAP,ELECT 10-16 KS
			C510	*87-010-679-010	CAP,ELECT 10-16 KS
			C511	*87-014-199-010	CAP,PP 390P
			C512	*87-014-199-010	CAP,PP 390P
			C513	*87-014-199-010	CAP,PP 390P
====SERVO CIRCUIT BOARD SECTION====					
PCB-A	*	SERVO CIRCUIT BOARD	C514	*87-014-199-010	CAP,PP 390P
C101	*87-018-104-010	CAP,CERA-SOL SS 10P	C515	*87-014-194-010	CAP,PP 0.015G
C103	*87-013-097-010	CAP,CERA-SOL SS 2.2P	C516	*87-014-194-010	CAP,PP 0.015G
C104	*87-010-263-010	CAP,ELECT 100-10	C517	*87-014-203-010	CAP,PP 100P
C105	*87-010-378-010	CAP,ELECT 10-16	C518	*87-014-203-010	CAP,PP 100P
C106	*87-010-400-010	CAP,ELECT 0.47-50SME	C519	*87-014-196-010	CAP,PP 2200PG
C111	*87-010-265-010	CAP,ELECT 33-16SME	C520	*87-014-196-010	CAP,PP 2200PG
C113	*87-010-265-010	CAP,ELECT 33-16SME	C521	*87-014-200-010	CAP,PP 470PJ
C114	*87-010-265-010	CAP,ELECT 33-16SME	C522	*87-014-200-010	CAP,PP 470PJ
C116	*87-010-265-010	CAP,ELECT 33-16SME	C525	*87-010-690-010	CAP,ELECT BP 47-16 KS
C122	*87-015-624-010	CAP,ELECT BP 4.7-50	C526	*87-010-690-010	CAP,ELECT BP 47-16 KS
C127	*87-014-164-010	CAP,FILM (TF) 0.56-50J	C527	*87-013-134-010	CAP,CERA-SOL SS 0.01

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
C526	*87-018-134-010	CAP,CERA-SOL SS 0.01	R542	*87-025-271-010	RES,MF 5.1KF 1/4W	S351	87-031-893-010	TACT SW(←B SKIP)	---H.P CIRCUIT BOARD SECTION---		
C529	*87-010-685-010	CAP,ELECT 33-16 SXE	R543	*87-025-276-010	RES,MF 1KF 1/4W	S354	87-031-893-010	TACT SW(A←B)	PCB-H	*	H,P CIRCUIT BOARD
C530	*87-010-685-010	CAP,ELECT 33-16 SXE	R544	*87-025-276-010	RES,MF 1KF 1/4W	S355	87-031-893-010	TACT SW(▶PLAY)	C573	*87-018-209-010	CAP,CERA-SOL 0.1
C531	*87-018-209-010	CAP,CERA-SOL 0.1	R545	*87-025-276-010	RES,MF 1KF 1/4W	S356	87-031-893-010	TACT SW(AC)	C575	*87-018-209-010	CAP,CERA-SOL 0.1
C532	*87-018-209-010	CAP,CERA-SOL 0.1	R546	*87-025-276-010	RES,MF 1KF 1/4W	S357	87-031-893-010	TACT SW(+10)	EM501	*87-008-372-010	FILTER EMI BLORNI
C533	*87-010-679-010	CAP,ELECT 10-16 KS	R549	*87-025-279-010	RES,MF 3.3KF 1/4W	S358	87-031-893-010	TACT SW(0)	EM502	*87-008-372-010	FILTER EMI BLORNI
C534	*87-010-679-010	CAP,ELECT 10-16 KS	R550	*87-025-279-010	RES,MF 3.3KF 1/4W	S359	87-031-893-010	TACT SW(▲ OPEN/CLOSE)	EM503	*87-008-372-010	FILTER EMI BLORNI
C535	*87-010-679-010	CAP,ELECT 10-16 KS	R587	*87-022-044-010	RES,MF 1.3K-1/4W	S360	87-031-893-010	TACT SW(◀F BWD)	EM504	*87-008-372-010	FILTER EMI BLORNI
C536	*87-010-679-010	CAP,ELECT 10-16 KS	R588	*87-022-044-010	RES,MF 1.3K-1/4W	S361	87-031-893-010	TACT SW(▶F SKIP)	J103	87-009-018-010	JACK 6.3 HP-AU(PHONES)
C541	*87-010-678-010	CAP,ELECT 3300-25 GS	SFR503	*87-021-805-010	SFR 100K(M)	S362	87-031-893-010	TACT SW(TIME)	S253	84-736-619-010	ROTARY SW(TIMER)
C542	*87-010-678-010	CAP,ELECT 3300-25 GS	SFR504	*87-021-805-010	SFR 100K(M)	S363	87-031-893-010	TACT SW(PRGW)	---SWITCH CIRCUIT BOARD SECTION---		
C543	*87-018-209-010	CAP,CERA-SOL 0.1	SFR505	*87-021-801-010	SFR 10K(M)	S364	87-031-893-010	TACT SW(7)	PCB-I	*	SWITCH CIRCUIT BOARD
C544	*87-018-209-010	CAP,CERA-SOL 0.1	SFR506	*87-021-801-010	SFR 10K(M)	S365	87-031-893-010	TACT SW(8)	C601	*87-019-113-010	SPARK KILLER 0.0022E(E,K ONLY)
C545	*87-018-134-010	CAP,CERA-SOL SS 0.01	VR501	87-024-147-010	VOLUME 10K(PHONE/VARIABLE)	S366	87-031-893-010	TACT SW(9)	C601	*87-019-110-010	SPARK KILLER 0.01D(H ONLY)
C546	*87-018-134-010	CAP,CERA-SOL SS 0.01	---LBSS CIRCUIT BOARD SECTION---			S367	87-031-893-010	TACT SW(▶F FWD)	C601	*87-019-111-010	SPARK KILLER 0.01U(C ONLY)
C547	*87-010-683-010	CAP,ELECT 100-16 KS	PCB-C	*	LBSS CIRCUIT BOARD	S368	87-031-893-010	TACT SW(■ STOP)	△S301	87-036-015-010	SWITCH AC SDDL1(POWER)
C548	*87-010-683-010	CAP,ELECT 100-16 KS	C1	*87-018-209-010	CAP,CERA-SOL 0.1	S369	87-031-893-010	TACT SW(BLANK)	---LED CIRCUIT BOARD SECTION---		
C549	*87-010-650-010	CAP,ELECT 1000-25 AWD	C2	*87-010-265-010	CAP,ELECT 33-16SME	S370	87-031-893-010	TACT SW(DEL)	PCB-J	*	LED CIRCUIT BOARD
C550	*87-010-650-010	CAP,ELECT 1000-25 AWD	C3	*87-018-209-010	CAP,CERA-SOL 0.1	S371	87-031-893-010	TACT SW(4)	D251	87-001-412-010	LED LT9010N(OUTPUT)
C551	*87-010-683-010	CAP,ELECT 100-16 KS	C4	*87-018-209-010	CAP,CERA-SOL 0.1	S372	87-031-893-010	TACT SW(5)	---MISCELLANEOUS---		
C552	*87-010-683-010	CAP,ELECT 100-16 KS	C5	*87-018-209-010	CAP,CERA-SOL 0.1	S373	87-031-893-010	TACT SW(6)	△	*87-034-732-010	AC CORD H(H ONLY)
C555	*87-010-396-010	CAP,ELECT 470-35SME	C402	*87-018-209-010	CAP,CERA-SOL 0.1	S374	87-031-893-010	TACT SW(ALL/1)	△	*87-034-731-010	AC CORD(U/L)(C ONLY)
C557	*87-018-209-010	CAP,CERA-SOL 0.1	C403	*87-018-107-010	CAP,CERA-SOL SS 18P	S375	87-031-893-010	TACT SW(■ PAUSE)	△	*87-034-734-010	AC CORD E(E ONLY)
C558	*87-018-209-010	CAP,CERA-SOL 0.1	C404	*87-018-107-010	CAP,CERA-SOL SS 18P	S376	87-031-893-010	TACT SW(REC CAL)	△	*87-085-207-010	CORD BUSHING
C559	*87-018-209-010	CAP,CERA-SOL 0.1	C405	*87-018-209-010	CAP,CERA-SOL 0.1	S377	87-031-893-010	TACT SW(CHECK)	△	*87-034-736-010	AC CORD BUSHING D(H ONLY)
C561	*87-018-209-010	CAP,CERA-SOL 0.1	C406	*87-010-265-010	CAP,ELECT 33-16SME	S378	87-031-893-010	TACT SW(1)	△	*87-085-187-010	AC CORD BUSHING U(C ONLY)
C562	*87-018-209-010	CAP,CERA-SOL 0.1	C407	*87-010-263-010	CAP,ELECT 100-10	S379	87-031-893-010	TACT SW(2)	△	*87-085-185-010	AC CORD BUSHING E(E,K ONLY)
C563	*87-018-107-010	CAP,CERA-SOL SS 18P	C408	*87-018-209-010	CAP,CERA-SOL 0.1	S380	87-031-893-010	TACT SW(3)	98-848-047-010	PICK UP KSS-151A	
C564	*87-018-107-010	CAP,CERA-SOL SS 18P	C409	*87-018-209-010	CAP,CERA-SOL 0.1	---POWER CIRCUIT BOARD SECTION---			9A-491-013-7A0	LINEAR MOTOR ASSY(DETECT)	
C565	*87-018-119-010	CAP,CERA-SOL SS 100P	C410	*87-010-265-010	CAP,ELECT 33-16SME	PCB-E	*	POWER CIRCUIT BOARD	9A-491-013-8B0	LINEAR MOTOR ASSY(DRIVE)	
C566	*87-018-119-010	CAP,CERA-SOL SS 100P	C411	*87-018-209-010	CAP,CERA-SOL 0.1	C301	*87-010-687-010	CAP,ELECT 120-6.3 SXE	9X-264-240-810	MECHANISM CHASSIS ASSY(W/M201)	
C567	*87-018-209-010	CAP,CERA-SOL 0.1	C412	*87-010-265-010	CAP,ELECT 33-16SME	C302	*87-018-209-010	CAP,CERA-SOL 0.1	9A-491-014-1A0	RELAY C.B ASSY(W/PCB-K)	
C568	*87-018-131-010	CAP,CERA-SOL 1000P	C413	*87-018-131-010	CAP,CERA-SOL 1000P	C303	*87-010-687-010	CAP,ELECT 120-6.3 SXE	M701	9A-491-013-1A0	MOTOR ASSY(LOADING)
C569	*87-018-119-010	CAP,CERA-SOL SS 100P	C421	*87-018-117-010	CAP,CERA-SOL 68P	C304	*87-018-209-010	CAP,CERA-SOL 0.1	△PT101	84-736-605-010	TRANSFORMER PT AU,H(H ONLY)
C570	*87-018-119-010	CAP,CERA-SOL SS 100P	C422	*87-018-117-010	CAP,CERA-SOL 68P	C305	*87-010-689-010	CAP,ELECT 4700-16 SXE	△PT101	84-736-602-010	TRANSFORMER PT AU,U(C ONLY)
C571	*87-018-134-010	CAP,CERA-SOL SS 0.01	C423	*87-018-209-010	CAP,CERA-SOL 0.1	C306	*87-010-689-010	CAP,ELECT 4700-16 SXE	△PT101	84-736-603-010	TRANSFORMER PT AU,E(E ONLY)
C572	*87-018-134-010	CAP,CERA-SOL SS 0.01	C424	*87-018-209-010	CAP,CERA-SOL 0.1	C307	*87-018-209-010	CAP,CERA-SOL 0.1	△PT101	84-736-604-010	TRANSFORMER PT AU,K(K ONLY)
C577	*87-015-141-010	CAP,ELECT BP 10-16	C425	*87-018-209-010	CAP,CERA-SOL 0.1	C308	*87-010-407-010	CAP,ELECT 33-50 SME	△PT102	84-736-615-010	TRANSFORMER PT DG,H(H ONLY)
C578	*87-015-141-010	CAP,ELECT BP 10-16	C426	*87-018-209-010	CAP,CERA-SOL 0.1	C309	*87-010-699-010	CAP,ELECT 330-63 KME	△PT102	84-736-612-010	TRANSFORMER PT DG,U(C ONLY)
C579	*87-018-209-010	CAP,CERA-SOL 0.1	C428	*87-018-209-010	CAP,CERA-SOL 0.1	△S302	87-036-136-010	ROTARY SW 1-1-3(AC VOLTAGE)(H)	△PT102	84-736-613-010	TRANSFORMER PT DG,E(E ONLY)
C580	*87-018-209-010	CAP,CERA-SOL 0.1	C429	*87-018-119-010	CAP,CERA-SOL SS 100P	---DIGITAL OUTPUT CIRCUIT BOARD SECTION---			△PT102	84-736-614-010	TRANSFORMER PT DG,K(K ONLY)
C581	*87-018-209-010	CAP,CERA-SOL 0.1	C431	*87-018-209-010	CAP,CERA-SOL 0.1	PCB-F	*	DIGITAL OUTPUT CIRCUIT BOARD	SW701	91-471-312-110	LEAF SW(LOAD SW)
C583	*87-018-209-010	CAP,CERA-SOL 0.1	C701	*87-018-030-010	CAP,CERA-SOL 82P	C251	*87-010-265-010	CAP,ELECT 33-16SME	---Combination Circuit board A 84-736-631-010		
C585	*87-018-209-010	CAP,CERA-SOL 0.1	EM401	*87-008-372-010	FILTER EMI BL OIRNI	C252	*87-010-265-010	CAP,ELECT 33-16SME	PCB-A	84-736-632-010	
C591	*87-010-685-010	CAP,ELECT 33-16 SXE	EM402	*87-008-372-010	FILTER EMI BL OIRNI	C253	87-018-134-010	CAP,CERA-SOL SS 0.01	PCB-C	84-736-633-010	
C592	*87-010-685-010	CAP,ELECT 33-16 SXE	L401	*87-003-102-010	COIL CHOKE 10UH	C254	*87-010-680-010	CAP,ELECT 33-16(KS)	PCB-D	84-736-634-010	
EM505	*87-008-372-010	FILTER EMI BLORNI	L402	*87-003-102-010	COIL CHOKE 10UH	C256	*87-018-134-010	CAP,CERA-SOL SS 0.01	PCB-G	84-736-636-010	
EM506	*87-008-372-010	FILTER EMI BLORNI	X401	*84-733-617-010	CRYSTAL 15.9344MHZ	C257	*87-018-134-010	CAP,CERA-SOL SS 0.01	PCB-J	84-736-635-010	
EM507	*87-008-372-010	FILTER EMI BLORNI	---FRONT CIRCUIT BOARD SECTION---			C258	*87-018-134-010	CAP,CERA-SOL SS 0.01	---Combination Circuit board B 84-736-621-010		
EM508	*87-008-372-010	FILTER EMI BLORNI	PCB-D	*	FRONT CIRCUIT BOARD	C259	*87-018-119-010	CAP,CERA-SOL SS 100P	PCB-B	84-736-622-010	
EM509	*87-008-372-010	FILTER EMI BLORNI	C351	*87-018-209-010	CAP,CERA-SOL 0.1	C260	*87-018-134-010	CAP,CERA-SOL SS 0.01	PCB-E	84-736-625-010	
EM510	*87-008-372-010	FILTER EMI BLORNI	C352	*87-010-265-010	CAP,ELECT 33-16SME	J251	87-009-028-010	JACK PIN 1P T5384(COAXIAL)	PCB-F	84-736-626-010	
J101	*87-009-029-010	PIN JACK 2P T6180(FIXED)	C353	*87-018-209-010	CAP,CERA-SOL 0.1	J253	87-049-866-010	CONNECTOR 3P M36 SYNC(DAT SYNC)	PCB-H	84-736-623-010	
J102	*87-009-029-010	PIN JACK 2P T6180(VARIABLE)	C354	*87-010-265-010	CAP,ELECT 33-16SME	T251	*87-006-155-010	COIL TPS247MN-0386AN	PCB-J	84-736-624-010	
L501	*87-003-102-010	COIL CHOKE 10UH	C355	*87-018-209-010	CAP,CERA-SOL 0.1	---D/A SW CIRCUIT BOARD SECTION---					
L502	*87-003-102-010	COIL CHOKE 10UH	C356	*87-018-209-010	CAP,CERA-SOL 0.1	PCB-G	*	D/A SW CIRCUIT BOARD			
R520	*87-025-307-010	RES,MF 1.5KF 1/4W	D359	87-001-402-010	LED SLP-274B(PLAY)	S251	87-036-131-010	SLIDE SW 2-3NS(OUTPUT)			
R521	*87-025-284-010	RES,MF 18KF 1/4W	D360	87-001-404-010	LED SLP-474B(PAUSE)						
R522	*87-025-284-010	RES,MF 18KF 1/4W	FL351	84-736-607-010	FL,8-BT-71GK						
R523	*87-025-283-010	RES,MF 12KF 1/4W	S353	87-031-893-010	TACT SW(←)						
R524	*87-025-283-010	RES,MF 12KF 1/4W	S352	87-031-893-010	TACT SW(→)						
R525	*87-025-283-010	RES,MF 12KF 1/4W									
R526	*87-025-283-010	RES,MF 12KF 1/4W									
R529	*87-025-307-010	RES,MF 1.5KF 1/4W									
R530	*87-025-307-010	RES,MF 1.5KF 1/4W									
R539	*87-022-045-010	RES,MF 4.3K-1/4W									
R540	*87-022-045-010	RES,MF 4.3K-1/4W									
R541	*87-025-271-010	RES,MF 5.1KF 1/4W									

IC DESCRIPTION

1. IC, CXA1082S

Pin No.	Pin name	I/O	Description
1	DVEE		-5V
2	DFCT	I	Interface input terminal for microcomputer.
3	TE	I	Tracking error signal input terminal.
4	TZC	I	Tracking zero-cross comparator input terminal.
5	ATSC	I	ATSC detection window comparator input terminal.
6	FE	I	Focus error signal input terminal.
7	VC		GND
8	FGD		Capacitor is inserted between this pin and pin 9 to decrease the focus servo's high-frequency gain.
9	FS3		Focus servo's high-frequency gain is selected by FS3 on/off operation.
10	FLB		Time-constant external terminal for raising the focus servo's low-frequency range.
11	FEO	O	Power transistor drive's operational amplifier output terminal.
12	FEO	I	Focus amplifier inversion input terminal.
13	SRCH		Time-constant external terminal for forming a focus search wave.
14	TGU		Time-constant external terminal for tracking high-frequency gain selection.
15	TG2		Time-constant external terminal for tracking high-frequency gain selection.
16	AVCC		+5V
17	TAO	O	Power transistor drive's operational amplifier output terminal.
18	TAO	I	Tracking amplifier's inversion input terminal.
19	SLO	I	Threading amplifier's noninversion input terminal.
20	SLO	O	Power transistor drive's operational amplifier output terminal.
21	SLO	I	Threading amplifier's inversion input terminal.
22	SSTOP	I	On/off detection signal terminal of disk's innermost detection limit switch
23	FSET		Terminal for setting the focus tracking's phase compensation peak and CLV LPP ( $f_0$ ).
24	SENS	O	Interface output terminal for microcomputer.
25	AVEE		-5V
26	C. OUT	O	Interface output terminal for microcomputer.
27	DIRC	I	Interface input terminal for microcomputer. A pull-up resistor (47k ohms) is inserted only at pins 27 and 39.
28	XRST	I	Interface input terminal for microcomputer. A pull-up resistor (47k ohms) is inserted only at pins 27 and 39.
29	DATA	I	Interface input terminal for microcomputer. A pull-up resistor (47k ohms) is inserted only at pins 27 and 39.

Pin No.	Pin name	I/O	Description
30	XLT	I	Interface input terminal for microcomputer. A pull-up resistor (47k ohms) is inserted only at pins 27 and 39.
31	CLK	I	Interface input terminal for microcomputer. A pull-up resistor (47k ohms) is inserted only at pins 27 and 39.
32	D GND		GND
33	BW	I	Loop filter's time-constant external terminal.
34	PDI	I	CX23035/CXD1135 phase comparator output PDO input terminal.
35	ISET		Passes a current to determine the focus search, tracking jump, and threading kick height.
36	VCOF		VCO's free-running frequency is proportional to the resistance value between this pin and pin 31.
37	3.5V		
38	C864	O	8.64MHz VCO output terminal.
39	LOCK	I	Interface input terminal for microcomputer. A pull-up resistor (47k ohms) is inserted only at pins 27 and 39.
40	MDP		CX23035/CXD1135 MDP connection terminal.
41	MON		CX23035/CXD1135 MON connection terminal.
42	FSW		LPF time-constant external terminal of CLV servo's error signal.
44	SPDL	I	Spindle drive amplifier's inversion input terminal.
45	SPDLO	O	Power transistor drive's operational amplifier output terminal.
46	WDCK	I	Interface input terminal for microcomputer.
47	FOK	I	Interface input terminal for microcomputer.
48	MIRR	I	Interface input terminal for microcomputer.

2. IC, TMM2464AF

Pin No.	Pin name	I/O	Description
1	VPP	-	Program power.
2 21 23	A0	I	} Address input.
5 5	5		
10 25	A12		
11 15	O0	I/O	} Data output (input).
5 5	5		
13 19	O7		
14	GND	-	GND
20	CE	I	Chip enable input.
22	OE	I	Output enable input.
26	N. C.	-	No connection
27	PGM	I	Program control input.
28	VCC	-	Power supply (+5V).

## 3. IC, CXA1081S

Pin No.	Pin name	I/O	Description
1	RF1	I	The RF summing amplifier output is C-connected and input.
2	RF0	O	RF summing amplifier output. Eye pattern test point.
3	RF-	I	Inverting input of the RF summing amplifier. A feedback resistor is connected between pins 2 and 3.
4	P/N	I	Switches the input according to the polarity of the laser diode.
5	LD	O	Output to control the laser diode output.
6	PD	I	Connects the photo-detector which detects the laser diode output.
7	PD1	I	RF1-V amplifier (1) inverting input. Connected to PIN diode A+C for the current input.
8	PD2	I	RF1-V amplifier (2) inverting input. Connected to PIN diode B+D for the current input.
9	VC	I	Reference voltage input within the IC. Connected to pin 14 with single power supply. Connected to the ground with the positive and negative power supply.
10	F	I	F1-V amplifier inverting input. Connected to PIN diode F for the current input.
11	E	I	E1-V amplifier inverting input. Connected to PIN diode E for the current input.
12	EO	O	E1-V amplifier output. A feedback resistor is connected.
13	E1	I	Adjusts the E1-V amplifier gain.
14	VR	O	Outputs the neutral voltage. Connected to pin 9 with the single power supply. OPEN with positive and negative power supply.
15	CC2	O	Defect bottom hold (1) output. A capacitor is connected between pins 15 and 16.
16	CC1	I	The defect bottom (1) output is C-connected and input.
17	VEE	-	Grounded with the single power supply. Becomes a negative power supply with the positive and negative power supply.
18	FE BIAS	I	Inputs a bias voltage for the positive-phase input of the focus error amplifier.
19	FE	O	Focus error amplifier output.
20	TE	O	Tracking error amplifier output.
21	DEFECT	O	Defect detection output. Outputs the "H" signal that detects a defect on the mirror surface.
22	MIRR	O	Mirror comparator output.
23	CP	O	A mirror hold capacitor is connected to this pin.
24	CB	O	The defect bottom hold (2) capacitor is connected to this pin.
25	DGND	-	Ground in the digital circuit.
26	ASY	I	Auto-symmetry control input.
27	EFM	O	EFM output comparator output.
28	FOK	O	Focus OK output.
29	LD ON	I	Laser diode ON/OFF control input.
30	VCC	-	Positive power supply

## 4. IC, CXD1125

Pin No.	Pin name	I/O	Description
1	FSW	O	Output to switch the time constant of the spindle motor output filter.
2	MON	O	Spindle motor on/off control output.
3	MDP	O	Spindle motor drive output. Coarse control in the CLV, S mode and phase control in the CLV, P mode.
4	MDS	O	Spindle motor drive output. Speed control in the CLV, S mode.
5	EFM	I	Inputs an EFM signal from the RF amplifier.
6	ASY	O	Output to control the slice level of the EFM signal.
7	LOCK	O	The GFS signal is sampled by the WFCK/16. When the GFS signal is "H", this pin outputs "H", and when the signal is "L" 8 times continuously, it outputs "L".
8	VCOO	O	VCO output. When this is locked to the EFM signal. f=8.6436MHz
9	VCOI	I	VCO input
10	TEST	I	(OV)
11	PDO	O	Phase comparison output between the EFM signal and VCO/2.
12	VSS	-	GND (0V)
13	CLK	I	Inputs a clock signal for the serial data transfer from CPU. Latches data at the rise of the clock signal.
14	XLT	I	Latch input from CPU. Latches 8 bit shift register data (serial data from CPU) to each register.
15	DATA	I	Inputs serial data from CPU.
16	XRST	I	System reset input. The system is reset at "L" input.
17	CNIN	I	Tracking pulse input.
18	SENSE	O	Outputs the internal state according to the address.
19	MUTG	I	Muting input. When the ATTM in the internal register is "L", the system is in the normal state if the MUTG is "L" and the sound is muted if the MUTG is "H".
20	CRCF	O	Outputs the CRC checking result of sub-code Q.
21	EXCK	I	Clock input for the sub-code serial output.
22	SBSO	O	Sub-code serial output.
23	SUBQ	O	Sub-code Q output.
24	SCOR	O	Sub-code sync S0+S1 output.
25	SQCK	I/O	Clock signal for reading of sub-code Q.
26	SQEX	I	SQCK select input.
27	DOTX	O	Digital audio interface output (WFCK is output when being off).
28	GFS	O	Display output of the frame sync locking state. Goes "H" when locked.
29	DB08	I/O	Data pin of the external RAM. DATA8 (MSB)

Pin No.	Pin name	I/O	Description	
30	DB07	I/O	Data pin of the external RAM. DATA7	
31	DB06	I/O	Data pin of the external RAM. DATA6	
32	DB05	I/O	Data pin of the external RAM. DATA5	
33	VDD	-	Power supply (+5V).	
34	DB04	I/O	Data pin of the external RAM. DATA4	
35	DB03	I/O	Data pin of the external RAM. DATA3	
36	DB02	I/O	Data pin of the external RAM. DATA2	
37	DB01	I/O	Data pin of the external RAM. DATA1 (LSB)	
38	RA01	O	Address output of the external RAM. ADDR01 (LSB)	
39	RA02	O	Address output of the external RAM. ADDR02	
40	RA03	O	Address output of the external RAM. ADDR03	
41	RA04	O	Address output of the external RAM. ADDR04	
42	RA05	O	Address output of the external RAM. ADDR05	
43	RA06	O	Address output of the external RAM. ADDR06	
44	RA07	O	Address output of the external RAM. ADDR07	
45	RA08	O	Address output of the external RAM. ADDR08	
46	RA09	O	Address output of the external RAM. ADDR09	
47	RA10	O	Address output of the external RAM. ADDR10	
48	RA11	O	Address output of the external RAM. ADDR11 (MSB)	
49	RAWE	O	Outputs the WRITE ENABLE signal to the external RAM (active at "L").	
50	RACS	O	Outputs the CHIP SELECT signal to the external RAM (active at "L").	
51	C4M	O	1/2 division output of the crystal oscillator. F=4.2336MHz	
52	VSS	-	GND (0V)	
53	XTAL	I	Crystal oscillator input. f=8.4672MHz	
54	XTAO	O	Crystal oscillator output. f=8.4672MHz	
55	MD1	I	Mode select input 1 used at "H" } (Used in the mode with the clock frequency 8.4672MHz, the digital output OFF, the digital filter ON)	
56	MD2	I		Mode select input 2 used at "L"
57	MD3	I		Mode select input 3 used at "L"
58	SLOB	I	Input to switch the code of the audio data output. "L" causes the 2 second complement output and "H" causes the offset binary output.	
59	PSSL	I	Input to switch the mode of the audio data output. "L" causes serial output and "H" causes parallel output.	
60	APTR	O	Aperture correction control output. 44.1kHz with the filter OFF.	
61	APTL	O	Aperture correction control output. 44.1kHz with the filter OFF.	

Pin No.	Pin name	I/O	Description
62	DA01	O	DA01 (LSB of parallel audio data) output with PSSL="H". C1F1 output with PSSL="L".
63	DA02	O	DA02 output with PSSL="H". C1F2 output with PSSL="L".
64	DA03	O	DA03 output with PSSL="H". C2F1 output with PSSL="L".
65	DA04	O	DA04 output with PSSL="H". C2F2 output with PSSL="L".
66	DA05	O	DA05 output with PSSL="H". C2FL output with PSSL="L".
67	DA06	O	DA06 output with PSSL="H". C2PO output with PSSL="L".
68	DA07	O	DA07 output with PSSL="H". RFCK output with PSSL="L".
69	DA08	O	DA08 output with PSSL="H". WFCK output with PSSL="L".
70	DA09	O	DA09 output with PSSL="H". PLCK output with PSSL="L". (Note 1)
71	DA10	O	DA10 output with PSSL="H". UGFS output with PSSL="L".
72	DA11	O	DA11 output with PSSL="H". GTOP output with PSSL="L".
73	VDD	-	Power supply (+5V)
74	DA12	O	DA12 output with PSSL="H". RA0V output with PSSL="L".
75	DA13	O	DA13 output with PSSL="H". C4LR output with PSSL="L".
76	DA14	O	DA14 output with PSSL="H". C210 output with PSSL="L".
77	DA15	O	DA15 output with PSSL="H". C210 output with PSSL="L". (Note 2)
78	DA16	O	DA16 (MSB of parallel audio data) output with PSSL="H". DATA output with PSSL="L". (Note 3)
79	WDCK	O	Strobe signal output. 88.2kHz with the filter OFF.
80	LRCK	O	Strobe signal output. 44.1kHz with the filter OFF.

Note 1) PLCK: VCO/2 output. When locked to the EFM signal. f=4.3218MHz

Note 2) C210: Bit clock signal. f=2.1168MHz

Note 3) DATA: Audio signal serial data output

5. IC. M50955-421SP

Pin No.	Pin name	I/O	Description
1	VCC		+5
2	AF ADJ	I	Adjustment mode terminal.
3	SYNC REC	I	} DAT sync rate terminal.
4	SYNC PAUSE	O	
5	SYNC RMT	O	
6	CAL 0	O	} REC calibration control.
7	CAL 1	O	
8	DF MUTE	O	Audio muting.
9	EMP	O	Presence of EMP signal is detected and output.
10	SUB Q	I	Serial data input of subcode Q. Connected to SUBQ of IC105.
11	SQCK	O	Read clock output of subcode Q. Connected to SQCK of IC105.
12	FOK	I	Focus OK signal input from RF amplifier. Connected to FOK of IC101.
13	LDON	O	Laser diode control output. Connected to LDON of IC101.
14	GFS	I	Frame sync locked input.
15	MUTG	O	Muting output of IC105. Connected to MUTG of IC105.
16	SENS	I	Sense input. Connected to SENS of IC102 and IC105.
17	DATA	O	Serial data output sent to IC102 and IC105.
18	XLT	O	Serial data latch output sent to IC102 and IC105.
19	CLK	O	Serial data transfer clock to IC102 and IC105.
20	CALZ	O	RBC calibration control.
21	LMCS		+5
22	SW TPLAY	I	TIMER PLAY detection switch input.
23	SW RANDOM	I	RANDOM PLAY detection switch input.
24	SCOR	I	Subcode S0 + S1 input. Connected to SCOR of IC105.
25	RMC	I	Remote control signal input.
26	CN VSS		GND
27	RESET	I	Reset terminal.
28	X IN	I	Crystal clock input.
29 30 31			} Not used.
32	VSS		GND
33	KEY 4	I	} Key matrix data input.
34	KEY 3	I	
35	KEY 2	I	
36	KEY 1	I	
37	KEY 0	I	
38	UP		GND
39	CLOSE	I	Disc table's CLOSE detection switch input.

Pin No.	Pin name	I/O	Description
40	OPEN	I	Disc table's OPEN detection switch input.
41 55 56	SEG 16 } SEG 1	O	} Fluorescent tube's segment output.
57 58 64	G8 } G1	O	} Operation key's digit signal output.

6. IC. L7A0150

Pin No.	Pin name	I/O	Description
1 60 2 5 52 64 5 57	AD00 } AD12	O	} Address output to calibration ROM
3	CENO	O	Chip enable to calibration ROM
4 11 5 5 8 13	D0 I } D7 I	I	} Data input from calibration ROM
9			+5V power supply.
26 58	VDD	-	
10			GND power.
25 59	VSS	-	
14	DFWCI	I	Word clock to LBSS circuit.
15	ADIN	I	A-channel data input to LBSS circuit.
16	ASIN	I	A-channel shift input to LBSS circuit.
17	BDIN	I	B-channel data input to LBSS circuit.
18	BSIN	I	B-channel shift input to LBSS circuit.
19	DFBCI	I	Bit clock to LBSS circuit.
20	DFLRI	I	L/R clock to LBSS circuit.
21	CZMI	I	Bit clock to calibration circuit.
22	MUXDO	O	Data output from calibration circuit.
23	DATAI	I	Data input to calibration circuit.
24	LRNI	I	L/R clock to calibration circuit.
27	STPN	I	Stop input in calibration circuit.
28 29 30	MD2 I MD1 I MD0 I	I	} Mode setting in calibration circuit.



Pin No.	Pin name	I/O	Description
31	RLNO	O	R/L clock from LBSS circuit.
32	SFTO	O	Shift/normal output from LBSS circuit.
33	DGB	O	B-channel deglich output from LBSS circuit.
34	DGA	O	A-channel deglich output from LBSS circuit.
35	BDOUT	O	B-channel data output from LBSS circuit.
36	WCOUT	O	Word clock output from LBSS circuit.
37	BCOUT	O	Bit clock output from LBSS circuit.
38	ADOUT	O	A-channel data output from LBSS circuit.
40	INTN	I	Initial
41	TESTO	O	Test terminal. (Usually, set to OPEN.)
44	DINVN	I	ADOUT and BDOUT logic inversion is designated.
45	BSO	I	LBSS circuit on/off
46	STOUT	I	Data output, time sharing, and simultaneous setting in LBSS circuit.
47	SRLN	I	DPLRI logic inversion is designated.
48	DLYZ	I	Input position of data ⑤ to ⑩ is designated. Usually, set to "1".
49	TSEL B	I	} Timer time setting in LBSS circuit.
51	TSEL A	I	

## 7. IC. CXD1088Q

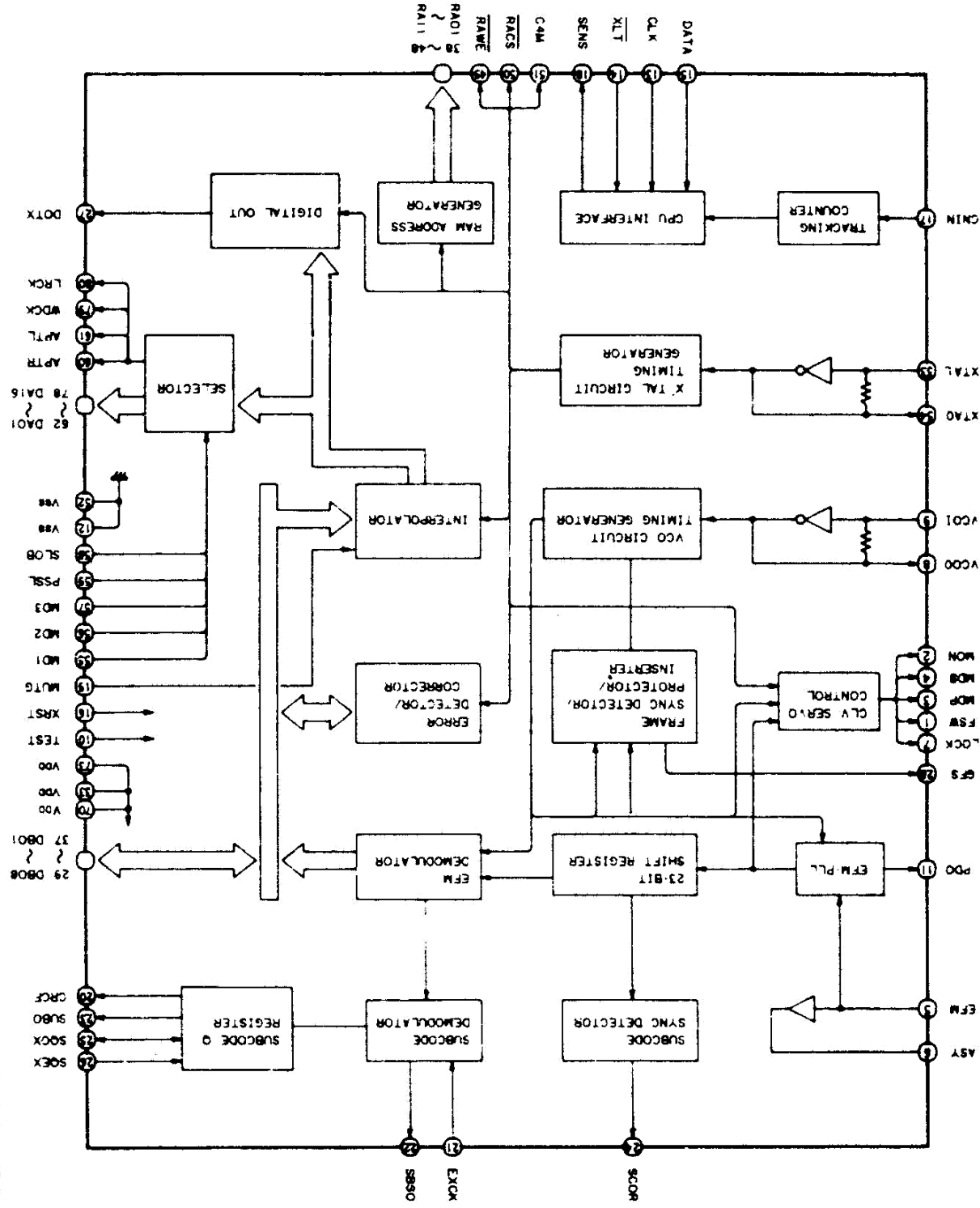
Pin No.	Pin name	I/O	Description
1	D12	O	D12 to D16 parallel output. Fixed in low during serial output.
5	5		
5	D16		
6	VSS	-	-Power supply (0V)
7	MUTE	I	Output is set to "0" or offset value. Valid in high.
8	TEST1	I	Test terminal. Usually, fixed in low.
9	SOFT	I	Software muting on/off. Muted in high.
10	HOLD	I	Muting is stopped. Stopped in high.
11	INIT	I	Power on Reset input. Active in low.
12	DPOL	I	Input data polarity is inverted.
13	LRCK	I	LRCK input.
14	DATA	I	16 bit x 2. Serial data input. 2's complement.
15	BCK	I	BCK input.
16	C2PO	I	Error flag input.
17	VDD	-	+Power supply (+5V)
18	TEST2	I	Test terminal. Usually, fixed in low.
19	ROM1	I	Used for 83rd. ROM selection. See the filter characteristic.
20	ROM2	I	Used for 21st. ROM selection. See the filter characteristic.
21	OFST	I	Offset is added to the output. Valid in high.
22	OPOL	I	Offset value's polarity is designated. "H" (+1X). "L" (-1X).
23	DRES	I	Data length during serial output. "H" : 18 bits. "L" : 16 bits.
24	FORM	I	Output format is designated. "H" : I <sup>2</sup> S. "L" : Sony.
25	SCK	O	System clock output for external IC (384F <sub>s</sub> ).
26	XOUT	O	Crystal oscillator output (384F <sub>s</sub> ).
27	XIN	I	Crystal oscillator input (384F <sub>s</sub> ).
28	VSS	-	-Power supply (0V).
29	APTR	O	R-channel aperture clock.
30	APTL	O	L-channel aperture clock.
31	SP	I	Output serial/parallel selection. "H" : parallel. "L" : serial.
32	LRO	O	LRCK output (4F <sub>s</sub> )
33	D1	O	D1 (MSB) parallel output. BCK serial output (4F <sub>s</sub> ).
34	D2	O	D2 parallel output. DAT serial output (4F <sub>s</sub> ).
35	D3	O	D3 parallel output. Serial : LRC output (I <sup>2</sup> mode), WCK output (Sony mode).
36	D4	O	D4 to D6 parallel output. Fixed in low during serial output.
5	5		
38	D6		
39	VDD	-	+Power supply (+5V).
40	D7	O	D7 to D11 parallel output. Fixed in low during serial output.
5	5		
44	D11		

8. FL351. 8-BT-71GK

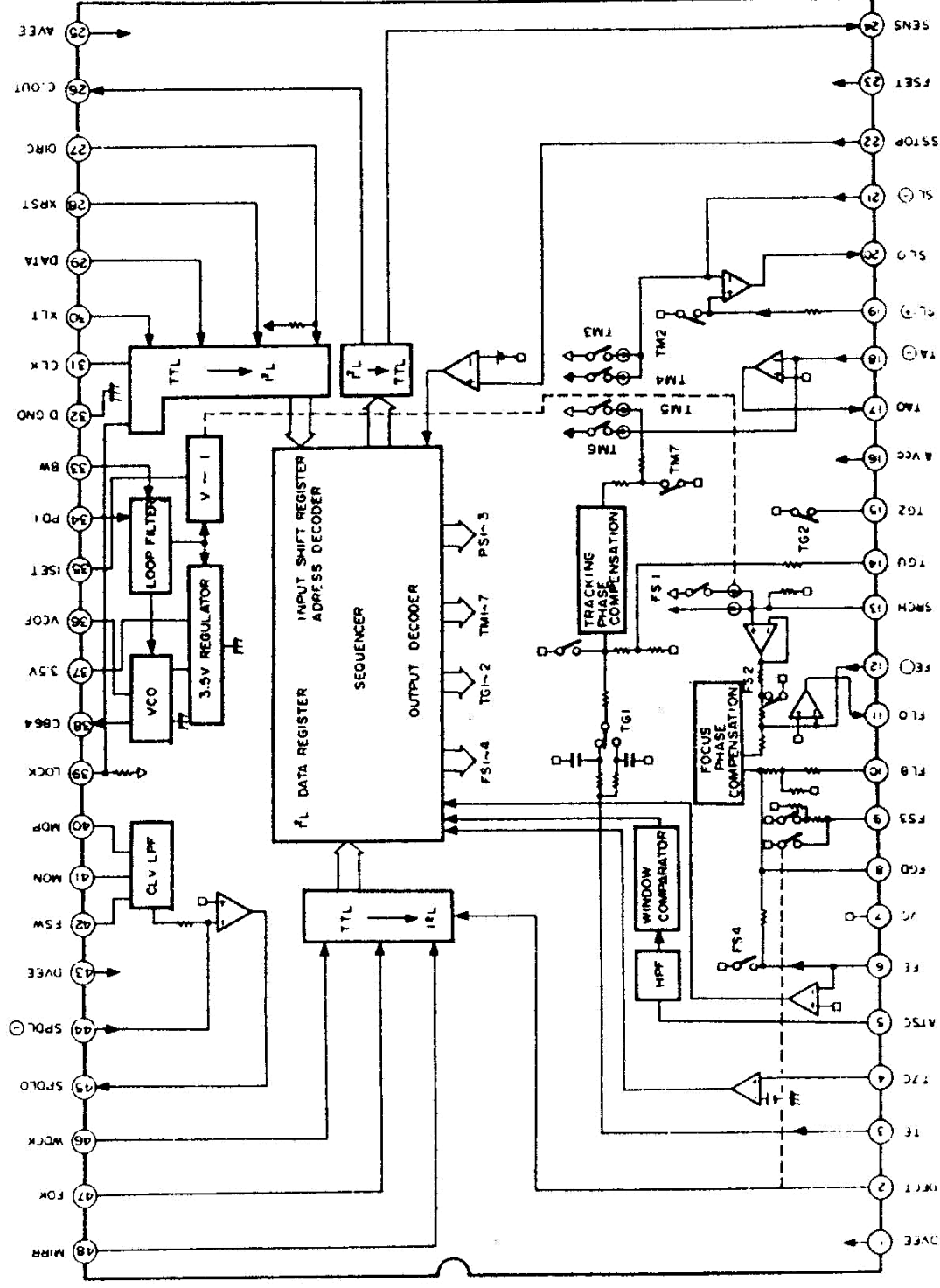
Pin No.		5	6	7	8	10	11	12	13
	Pin name	8G	7G	6G	5G	4G	3G	2G	1G
28	S 1	PLAY	REMAIN TIME	-	.	-	.	H <sub>z</sub>	2
29	S 2	PAUSE	-	MIN	SEC	MIN	SEC	-	20
30	S 3	1a	1a	1a	1a	1a	1a	EMPHASIS	3
31	S 4	1b	1b	1b	1b	1b	1b	PROGRAM	5
32	S 5	1f	1f	1f	1f	1f	1f	BLANK	8
34	S 6	1g	1g	1g	1g	1g	1g	RANDOM	10
35	S 7	1c	1c	1c	1c	1c	1c	REPEAT	13
36	S 8	1e	1e	1e	1e	1e	1e	A B	15
37	S 9	1d	1d	1d	1d	1d	1d	1	18
39	S10	2a	2a	2a	2a	2a	2a	1	4
40	S11	2b	2b	2b	2b	2b	2b	6	7
41	S12	2f	2f	2f	2f	2f	2f	11	9
42	S13	2g	2g	2g	2g	2g	2g	16	12
44	S14	2c	2c	2c	2c	2c	2c	-	14
45	S15	2e	2e	2e	2e	2e	2e	-	17
46	S16	2d	2d	2d	2d	2d	2d	ALL	19
47	S17	TRACK	INDEX	-	-	-	-	-	-
1 2 49	F	} Filament							
3 4 9 14 33 5 38 27 43 48	NP	} Not used.							

IC BLOCK DIAGRAM

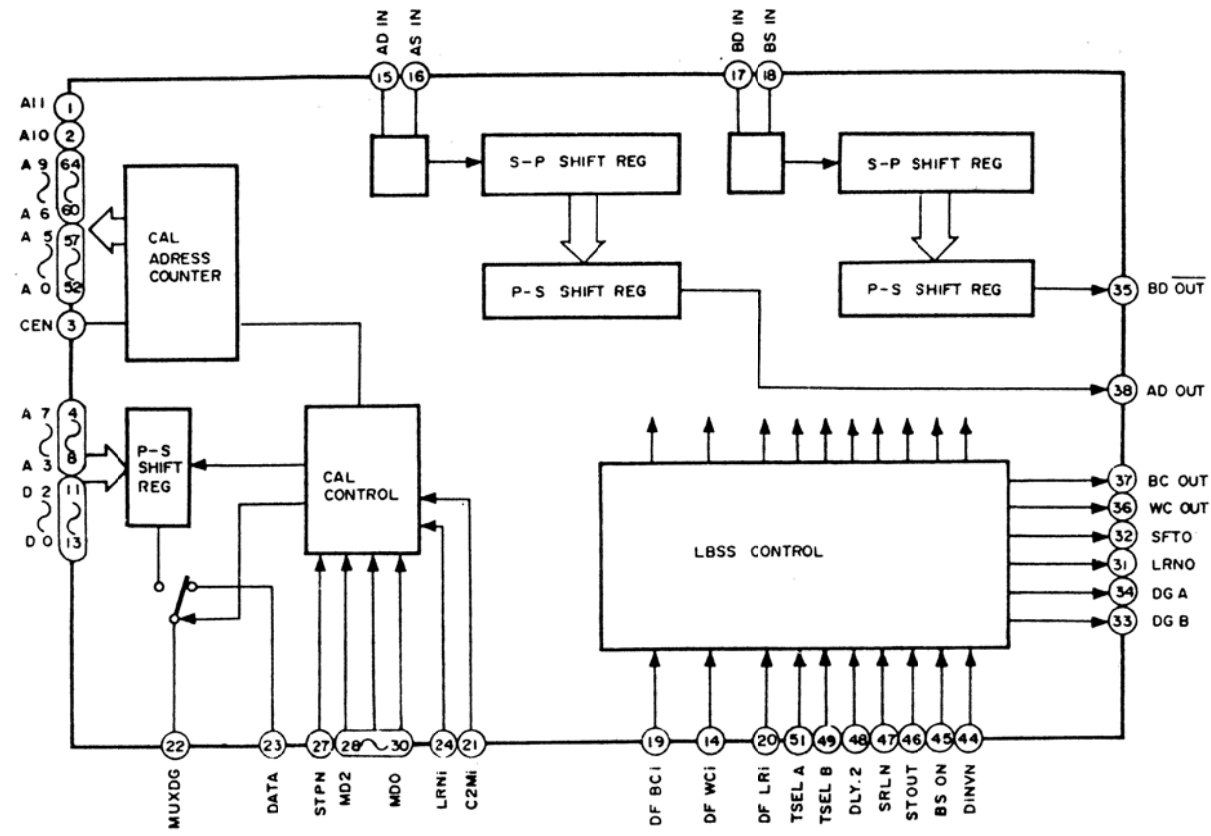
IC 105 CXD1125



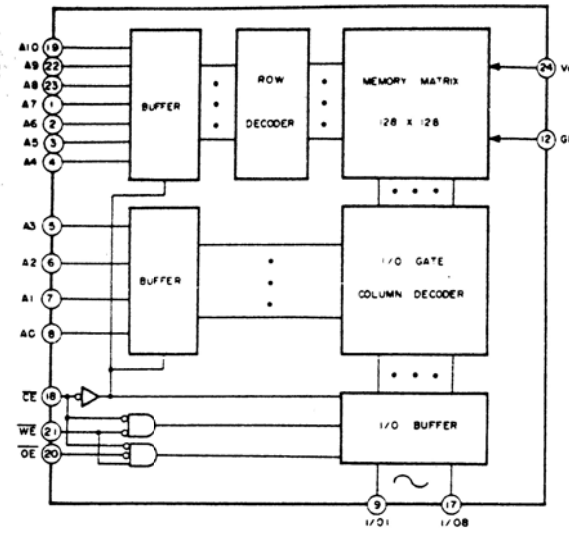
IC 102 CXA1082S



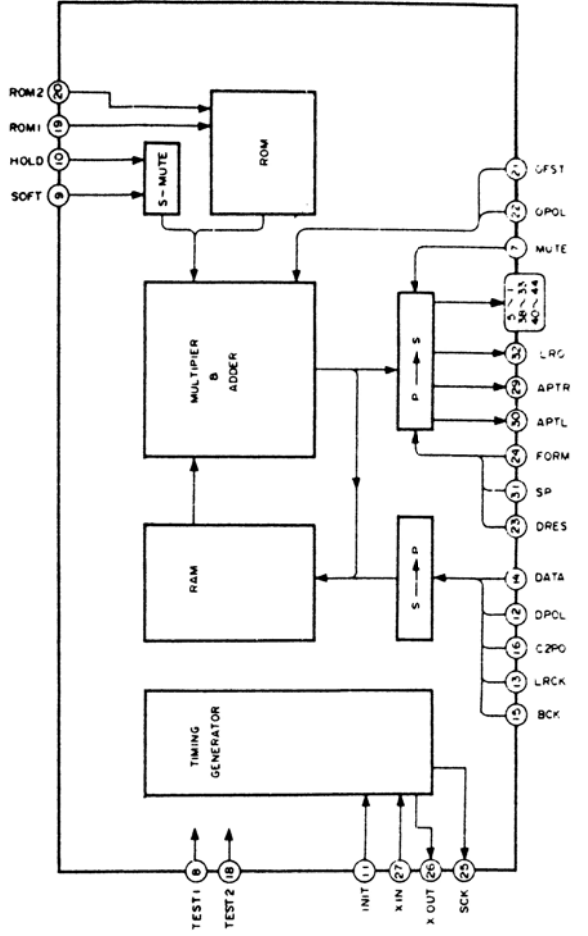
IC 403. 404 L7A0150



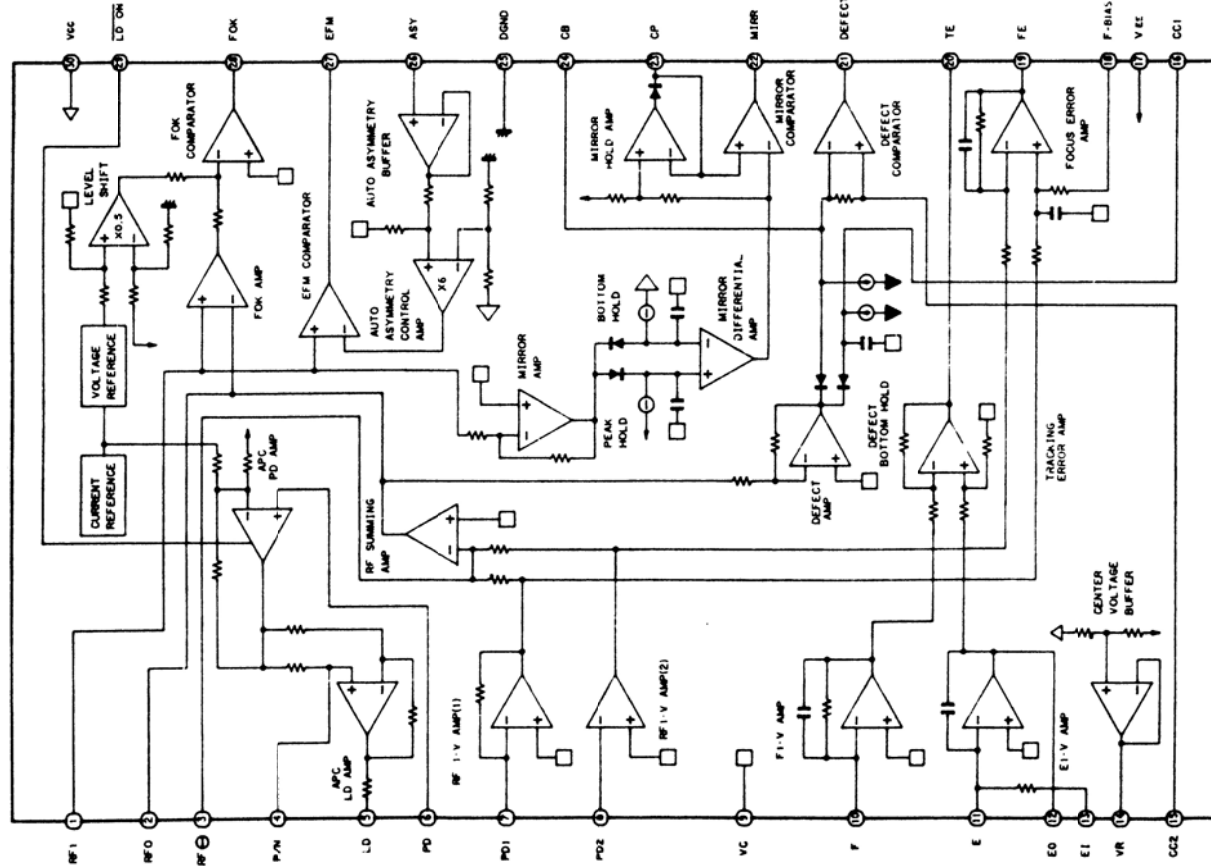
IC 106 CXK5816



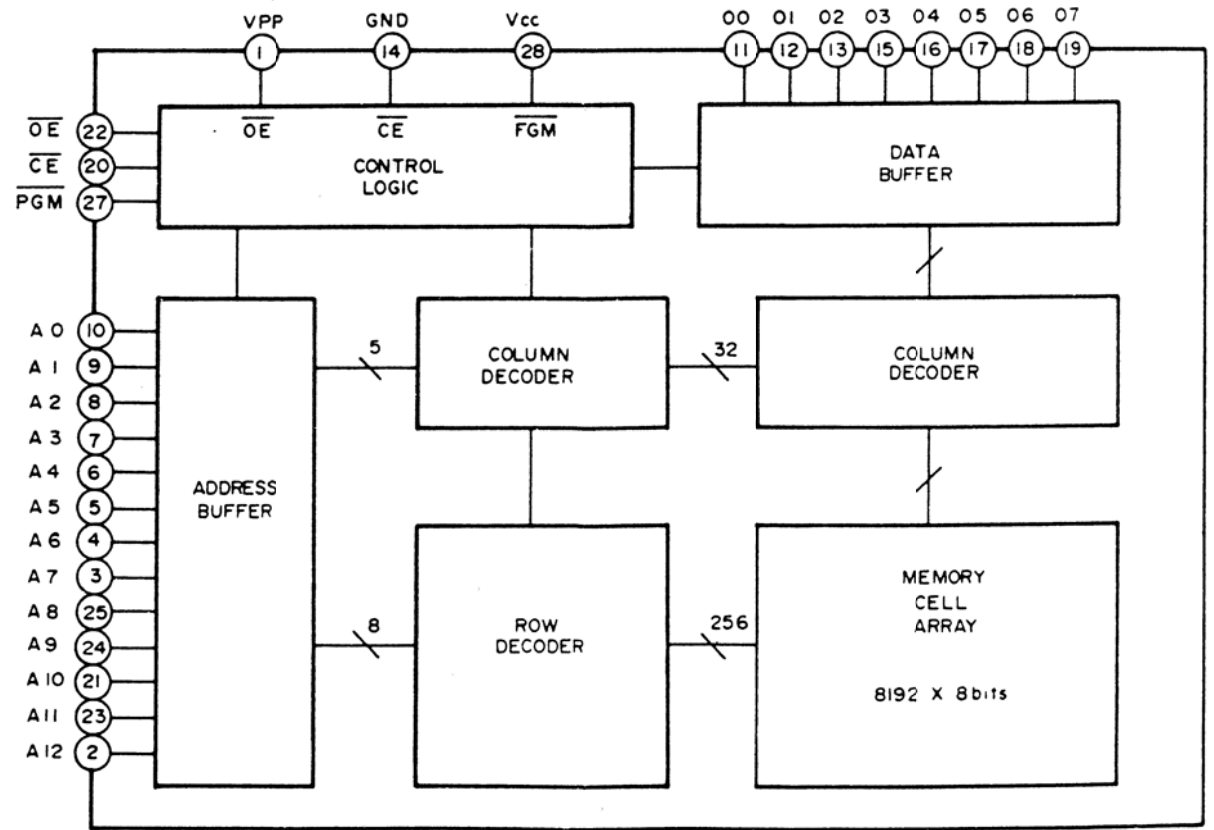
IC 402 CXD1088Q



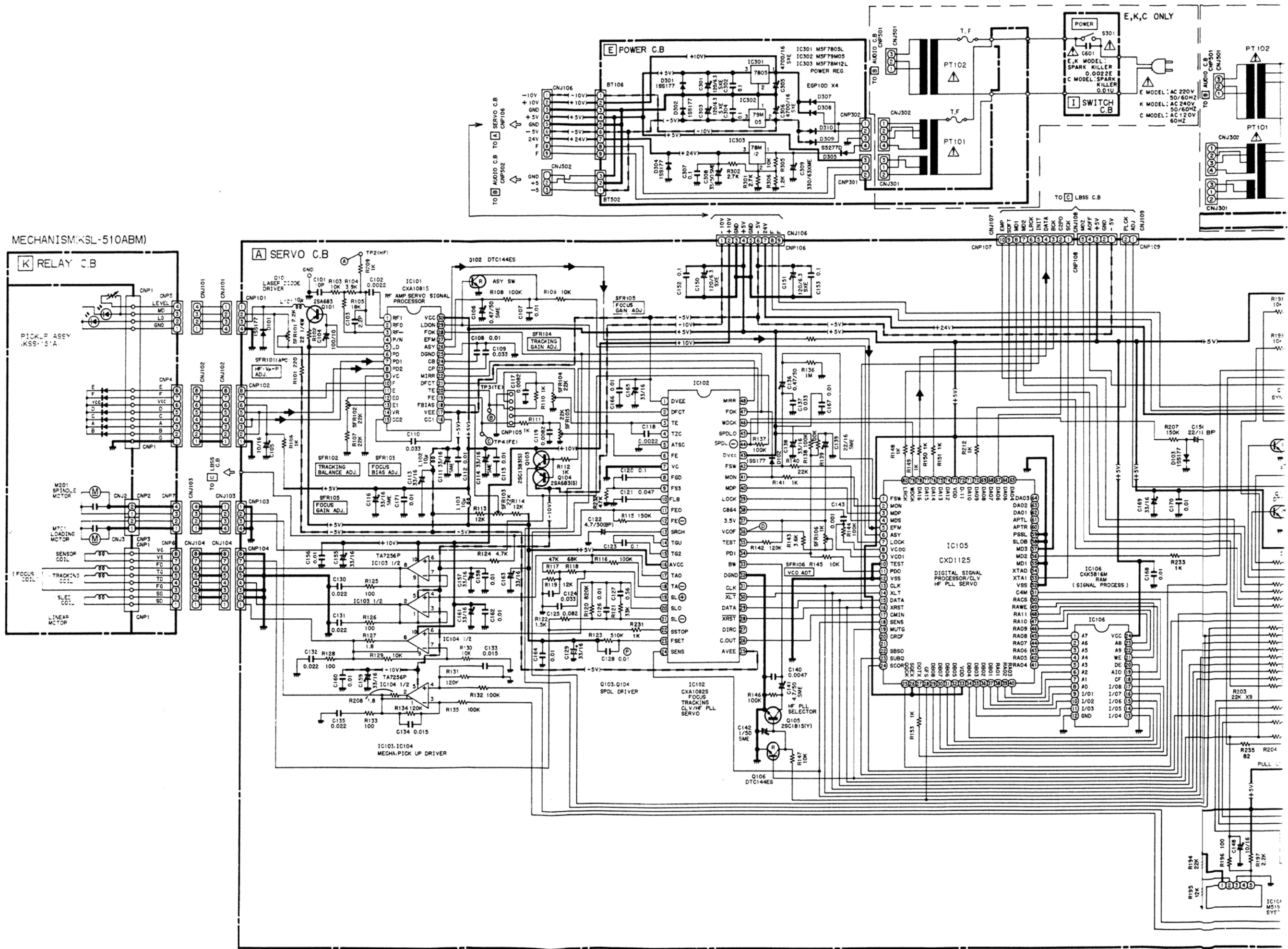
IC 101 CXA1081S

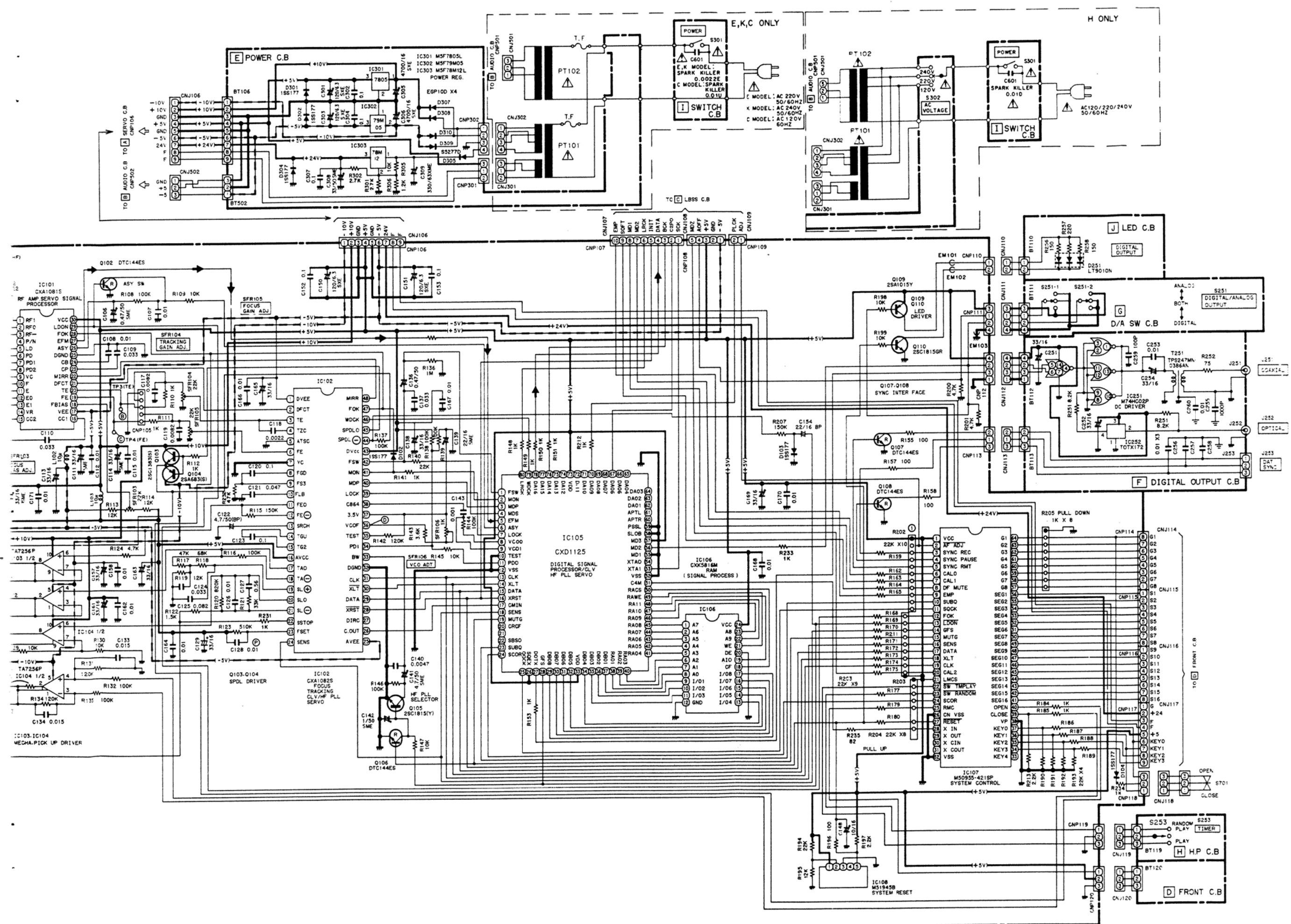


IC 401 TMM2464AF

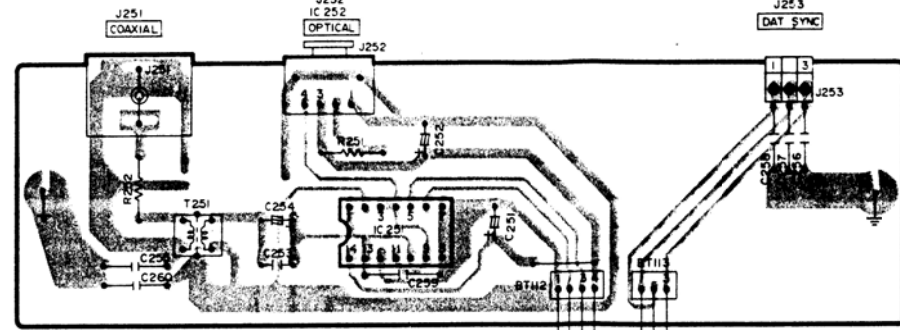


SCHEMATIC DIAGRAM-1

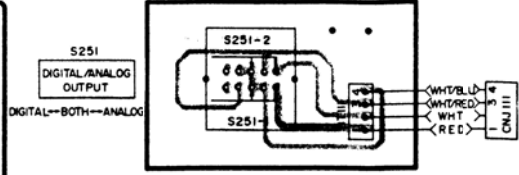




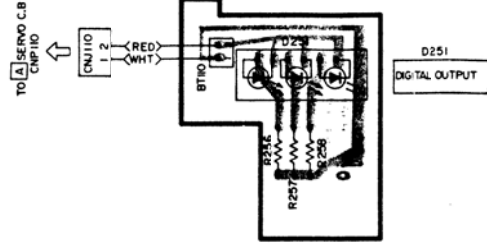
F DIGITAL OUTPUT C.B.



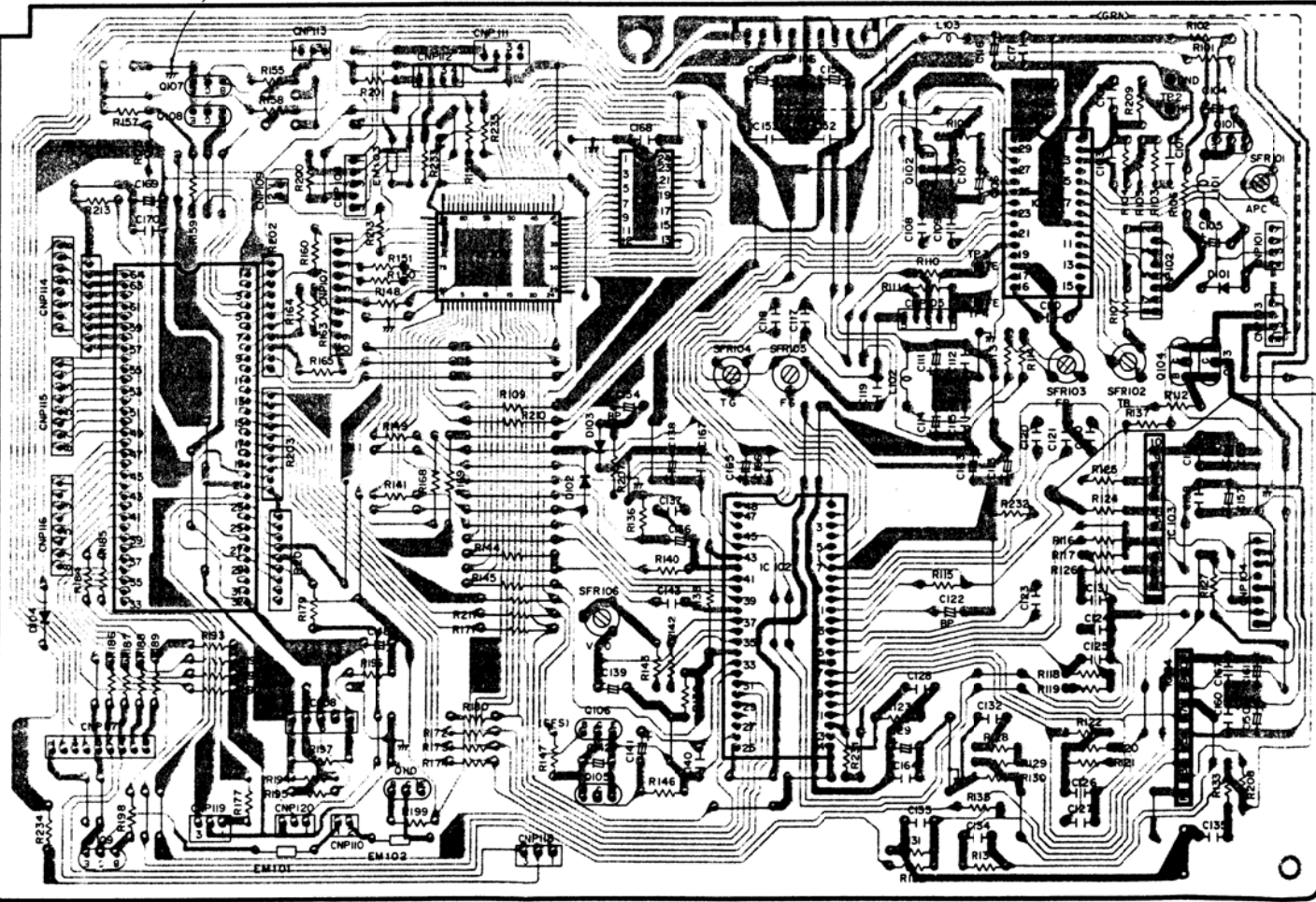
G D/A SW C.B.



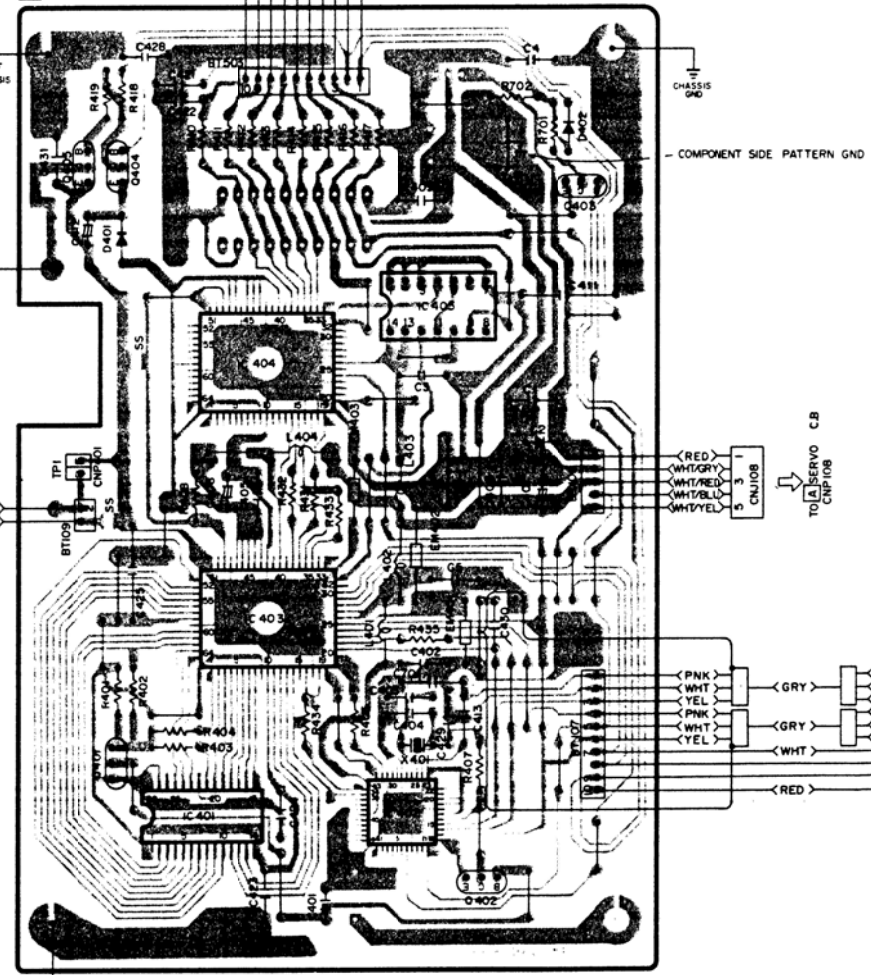
J LED C.B.



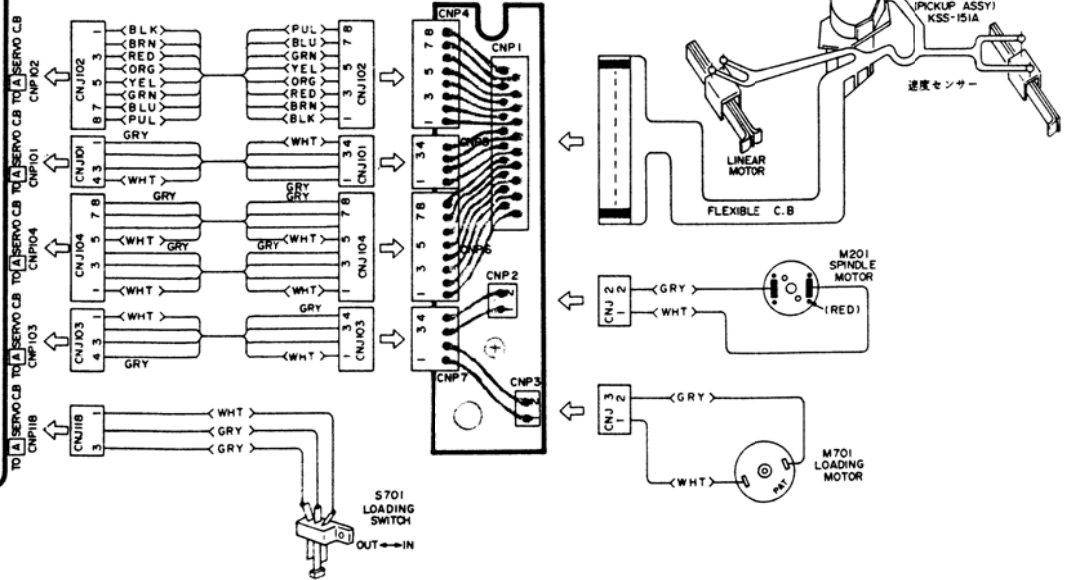
A SERVO C.B.



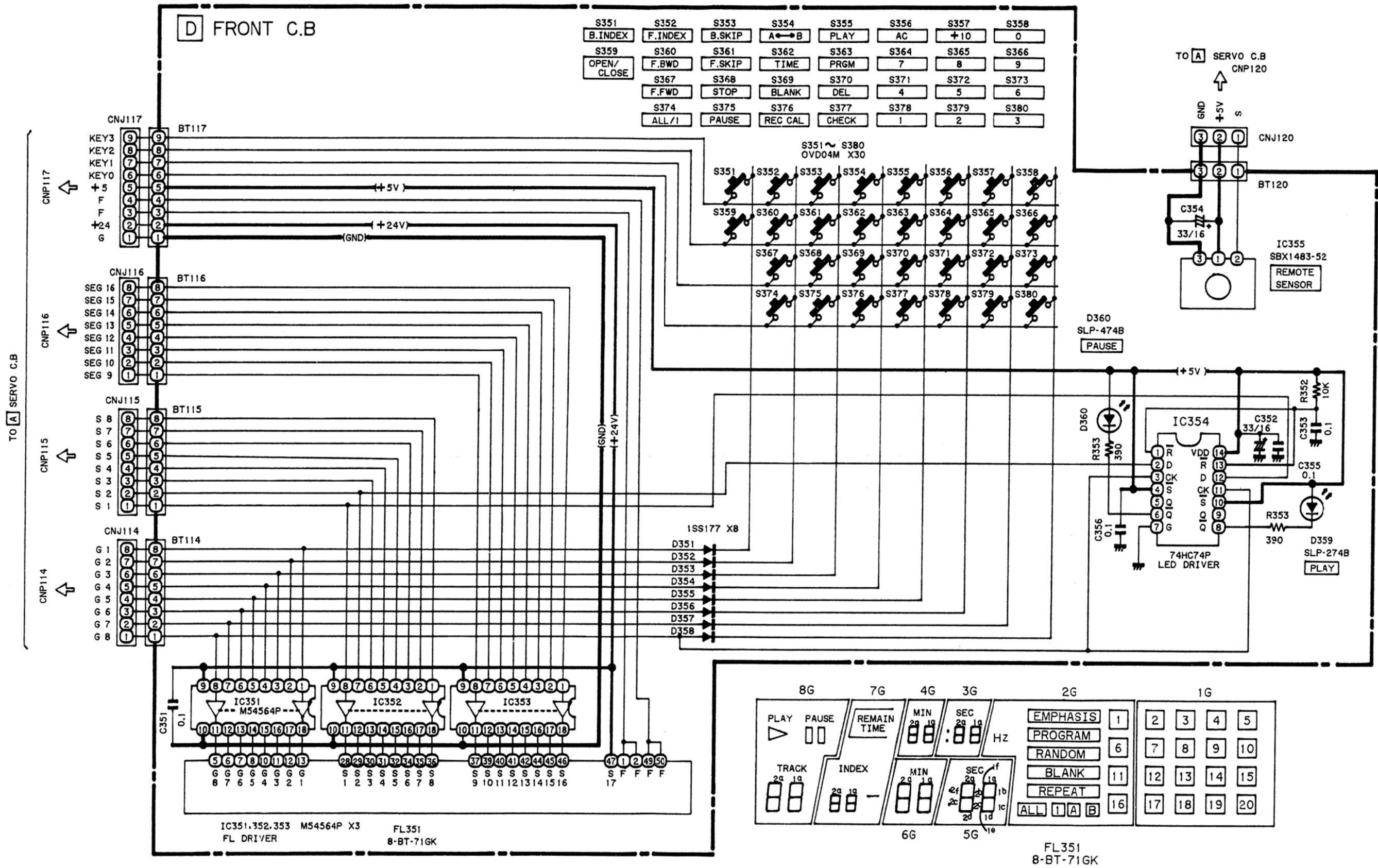
C LBSS C.B.



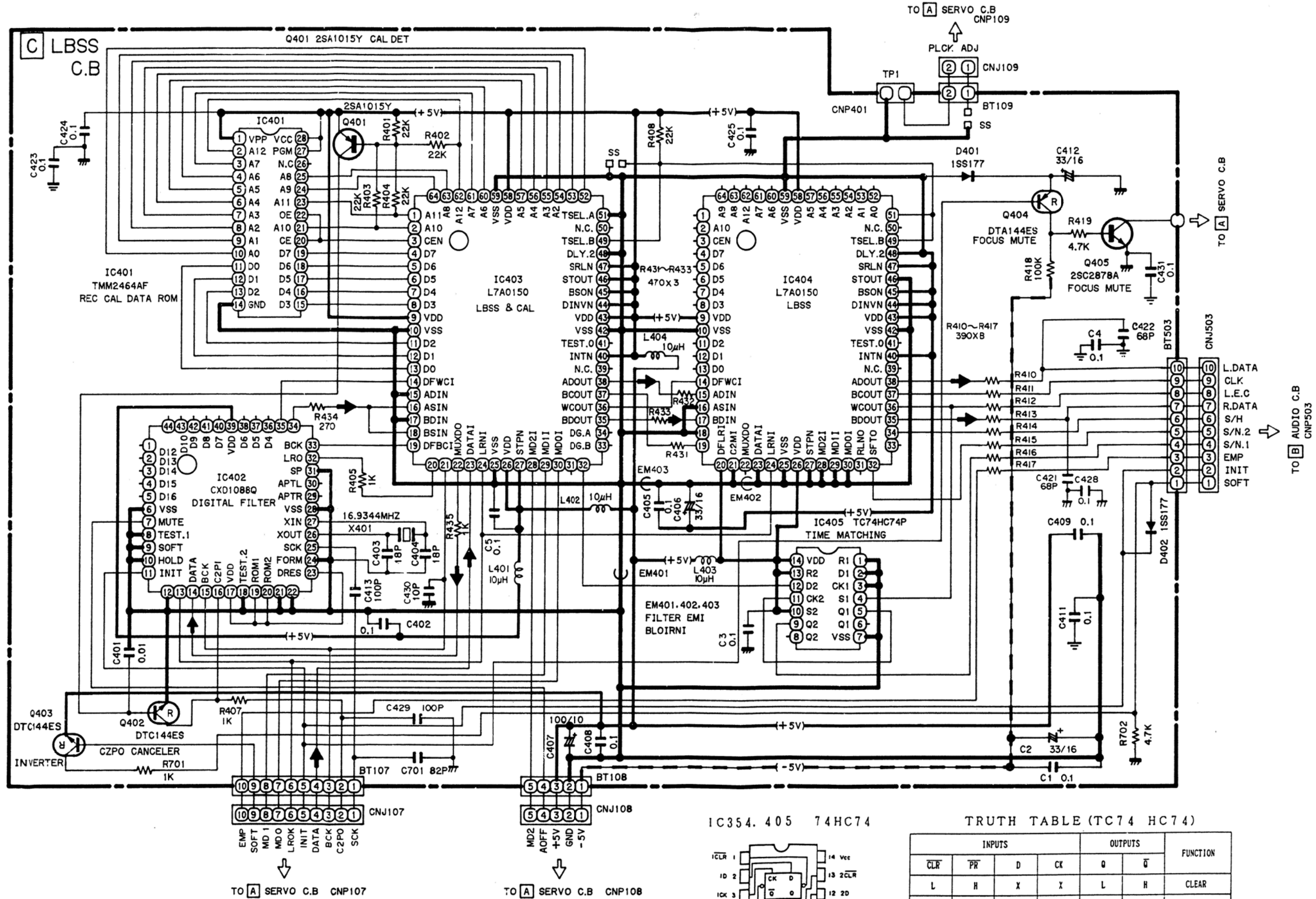
K RELAY C.B.



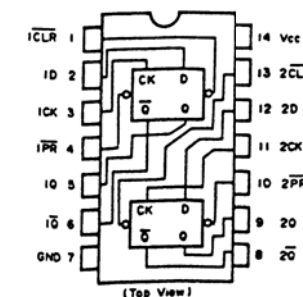
SCHEMATIC DIAGRAM-2







IC354. 405 74HC74

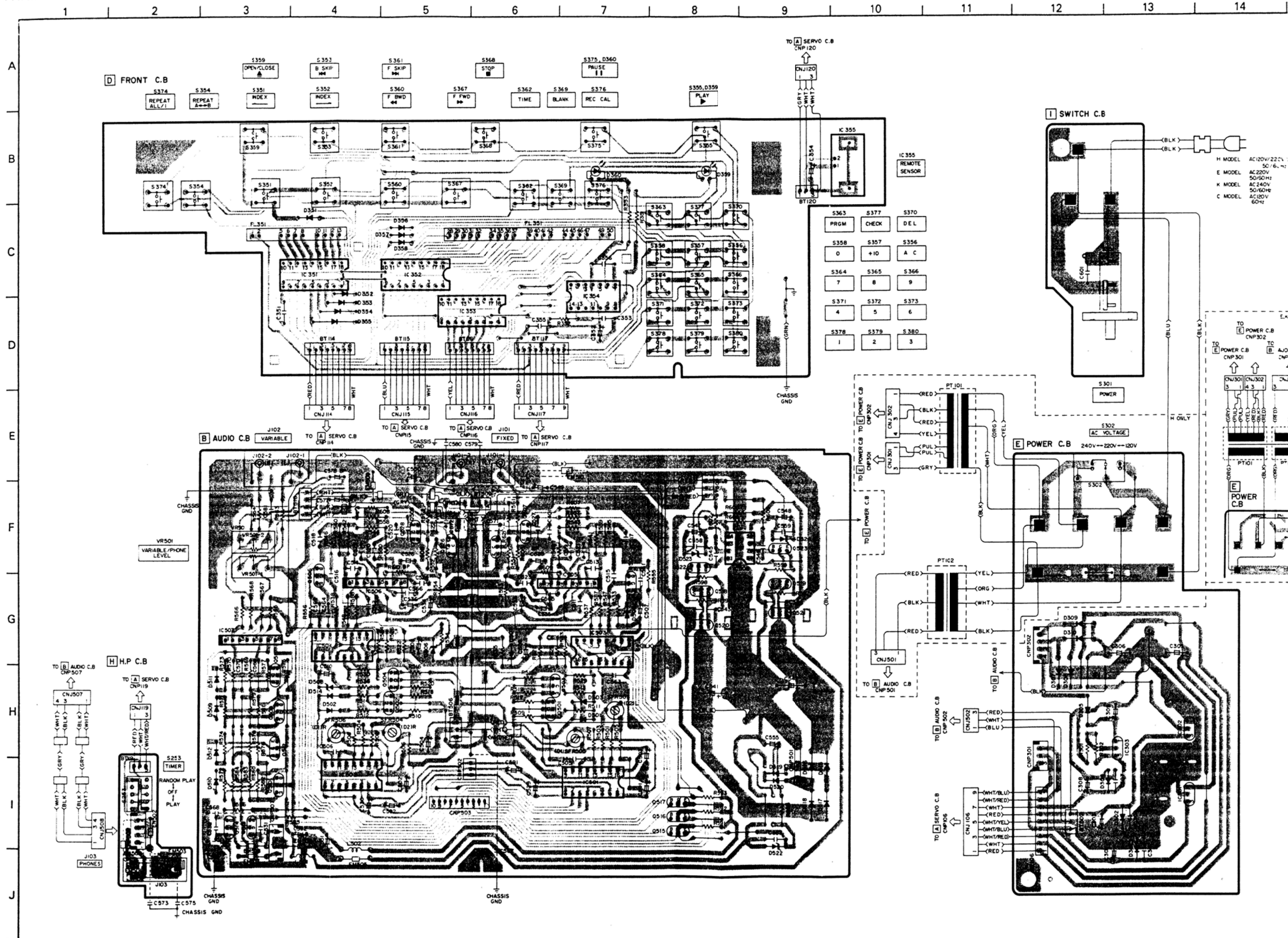


TRUTH TABLE (TC74 HC74)

INPUTS				OUTPUTS		FUNCTION
CLR	PR	D	CK	Q	Q̄	
L	H	X	X	L	H	CLEAR
H	L	X	X	H	L	PRESET
L	L	X	X	H	H	-
H	H	L	X	L	H	-
H	H	H	X	H	L	-
H	H	X	X	Q <sub>n</sub>	Q̄ <sub>n</sub>	NO CHANGE

X: Don't care





D FRONT C.B

B AUDIO C.B

H H.P. C.B

I SWITCH C.B

E POWER C.B

E.C. ONLY

TO POWER C.B CNP302

TO POWER C.B CNP301

TO AUDIO C.B CNP501

TO AUDIO C.B CNP502

TO AUDIO C.B CNP503

TO AUDIO C.B CNP504

TO AUDIO C.B CNP505

TO AUDIO C.B CNP506

TO AUDIO C.B CNP507

TO AUDIO C.B CNP508

TO AUDIO C.B CNP509

TO AUDIO C.B CNP510

TO AUDIO C.B CNP511

TO AUDIO C.B CNP512

TO AUDIO C.B CNP513

TO AUDIO C.B CNP514

TO AUDIO C.B CNP515

TO AUDIO C.B CNP516

TO AUDIO C.B CNP517

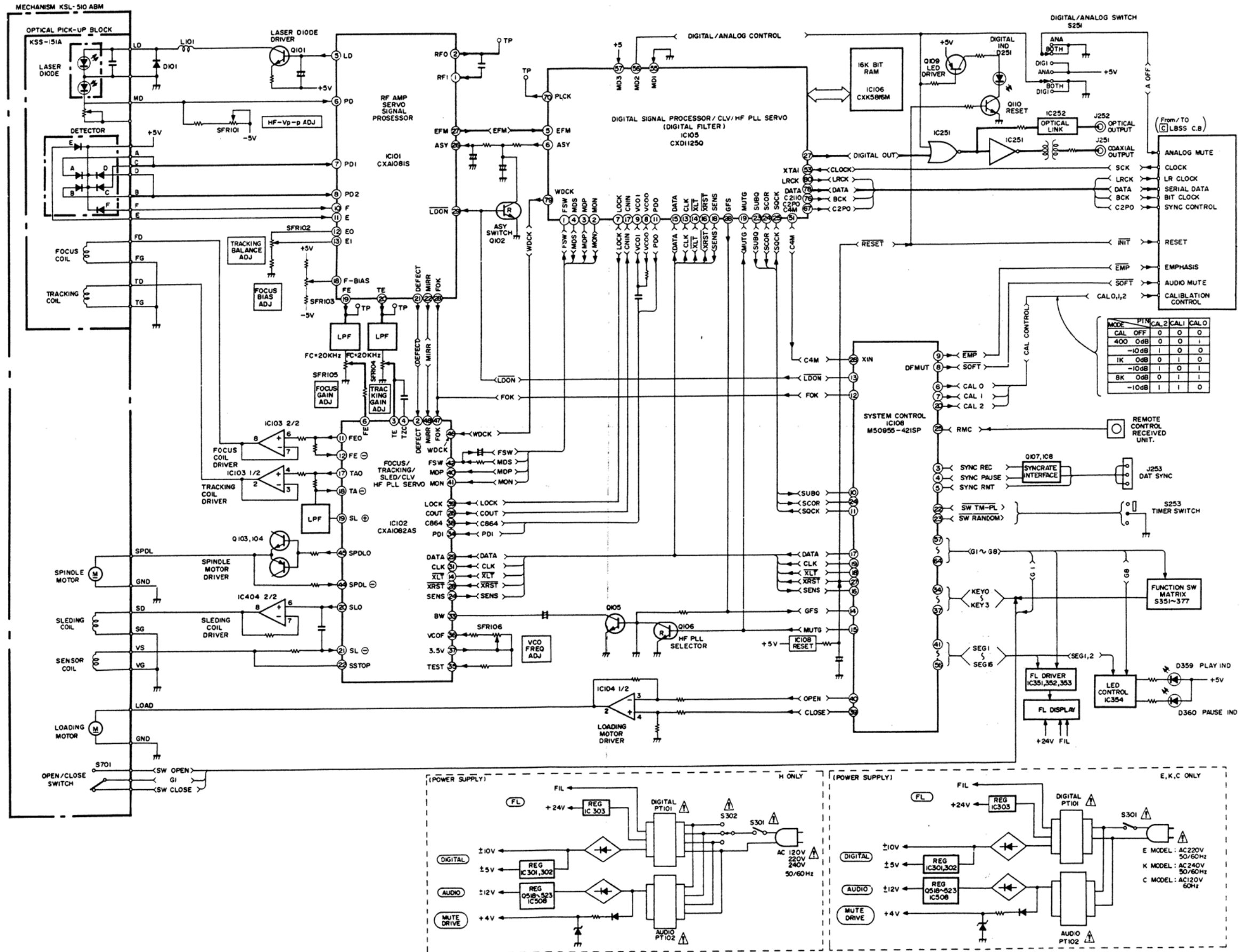
TO AUDIO C.B CNP518

TO AUDIO C.B CNP519

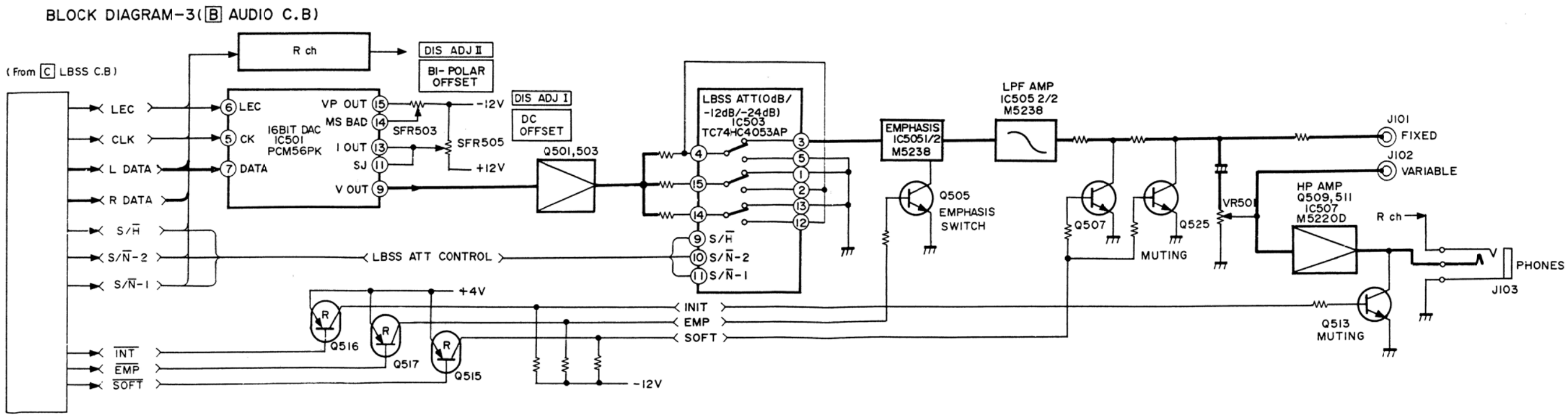
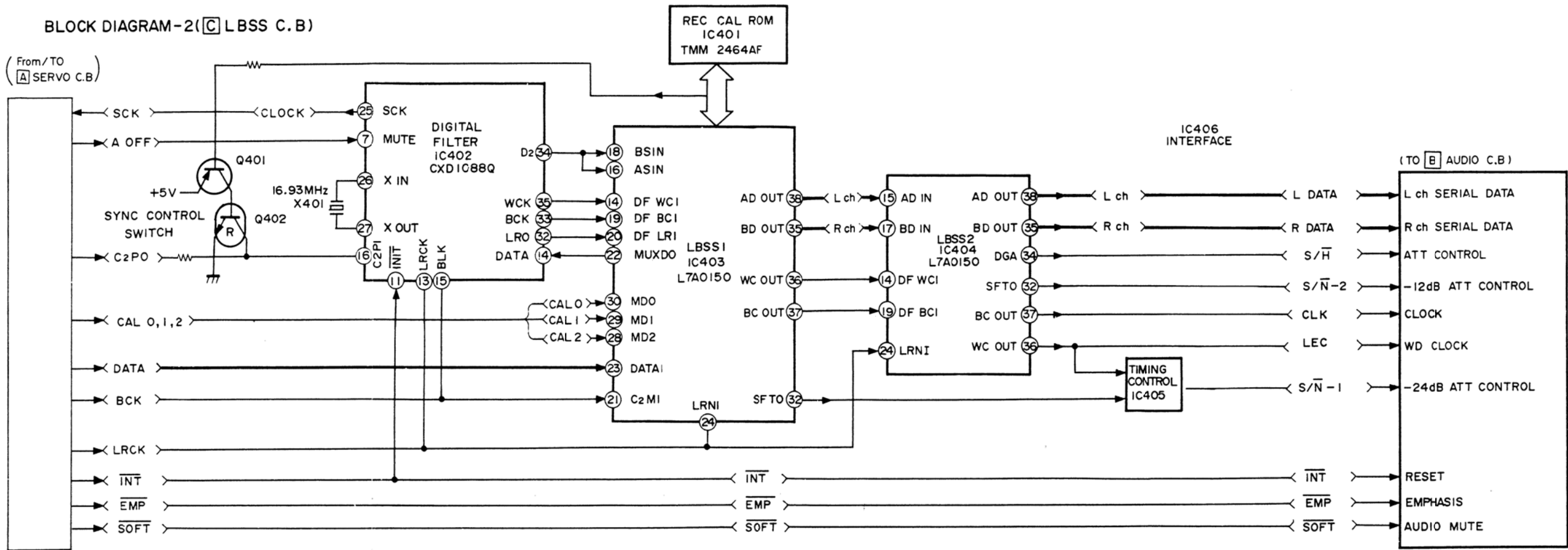
TO AUDIO C.B CNP520

BLOCK DIAGRAM-1

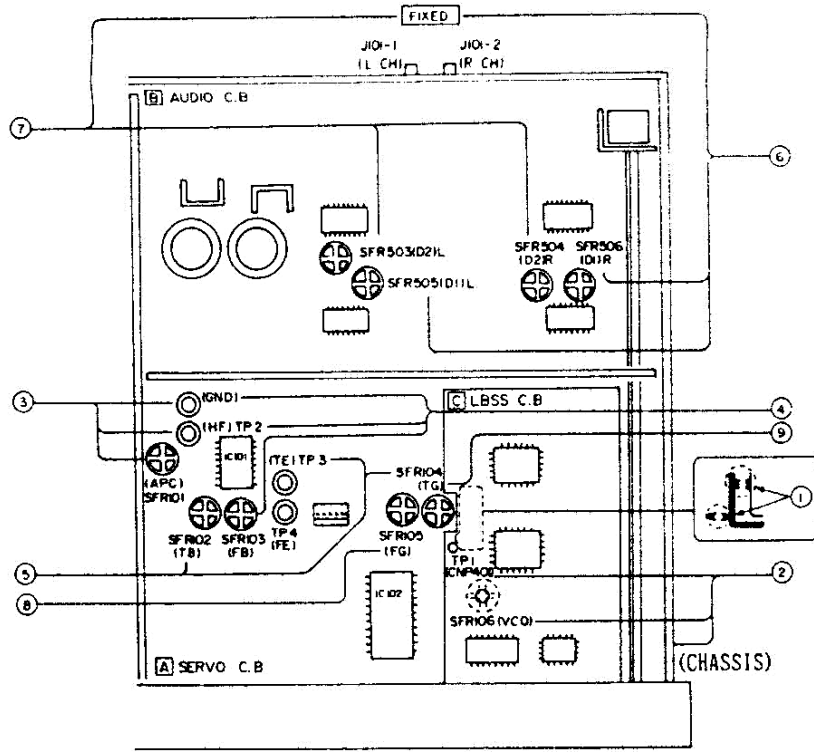
BLOCK DIAGRAM-1  
 (A) SERVO C.B. (D) FRONT C.B.



BLOCK DIAGRAM-2



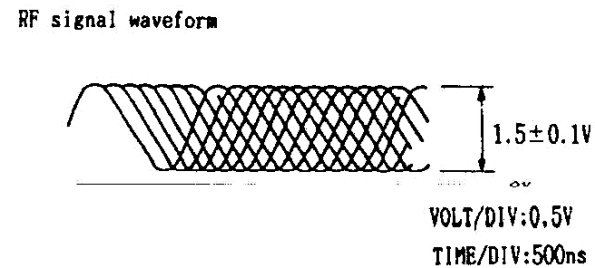
# ADJUSTMENT



- ① Initializing**
  - Sold and short two SSSs on the  $\square$  LBSS circuit board.
  - After adjustment, remove the grounding leads and solder.
- ② VCO Frequency Adjustment**
  - Open the tray using the OPEN/CLOSE button.
  - Connect a frequency counter to TP1 (CNP401), GND (CHASSIS).
  - Adjust SFR106 so that the frequency counter reading is 4.98MHz to 5.02MHz.
- ③ HF Vp-p Adjustment**

Make the HF Vp-p adjustment when replacing and repairing the optical block.

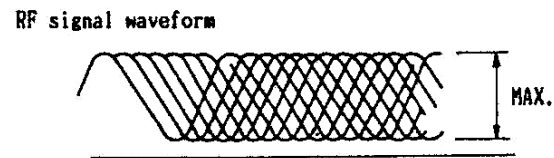
  - Connect an oscilloscope to TP2 (HF), GND.
  - Turn on the power switch.
  - Insert the disc YEDS-18 (YEDS-1) and press the  $\triangleright$ PLAY button.
  - Adjust SFR101 so that the waveform on the oscilloscope is as shown in the figure below.



- ④ Focus Bias Adjustment**

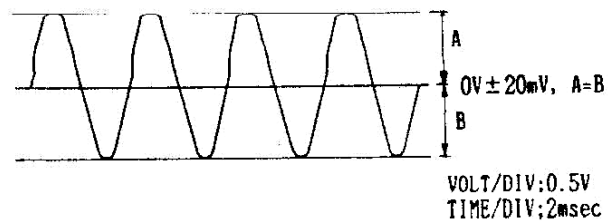
Make the focus bias adjustment when replacing and repairing the optical block.

  - Connect an oscilloscope to TP2 (HF), GND.
  - Turn on the power switch.
  - Insert the disc YEDS-18 (YEDS-1) and press the  $\triangleright$ PLAY button.
  - Adjust SFR103 to make clear and maximize the waveform amplitude on the oscilloscope. For clearer waveform, diamond shapes ( $\diamond$ ) can be distinguished in the center of the waveform.



Recheck the HF Vp-p after HF Vp-p and focus bias adjustments.

- ⑤ Tracking Balance Adjustment**
  - Connect an oscilloscope to TP3 (TE), GND.
  - Connect pin (TE) of SFR104 on the SERVO circuit board to ground.
  - Turn on the power switch.
  - Insert the disc YEDS-18 (YEDS-1) and press the  $\triangleright$ PLAY button.
  - Adjust SFR102 (TB) so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.



- ⑥ DC Offset Adjustment**

(When no distortion meter is available, be careful not to make the DC offset adjustment.)

  - Connect a harmonic distortion meter to OUTPUT (FIXED) J101-1 (L CH) and J101-2 (R CH).
  - Insert a sine wave signal test disk (1kHz, 0dB) and press the  $\triangleright$ PLAY button.
  - Adjust SFR505 (L CH) and SFR506 (R CH) so that the distortion factor is minimized.
- ⑦ Bipolar Offset Adjustment**

(When no distortion meter is available, be careful not to make the bipolar offset adjustment.)

  - Remove the solder in Initializing 1.
  - Connect a harmonic distortion meter to OUTPUT (FIXED) J101-1 (J101-2).
  - Insert a sine wave signal test disk (1kHz, 0dB) and press the  $\triangleright$ PLAY button.
  - Adjust SFR503 (L CH) and SFR504 (R CH) so that the distortion factor is minimized.
- ⑧, ⑨ Focus/Tracking Gain Adjustment**

A frequency response analyzer is necessary in order to perform this adjustment exactly. However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment. Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate. However, as these reciprocate, the adjustment is at the point where both are satisfied.

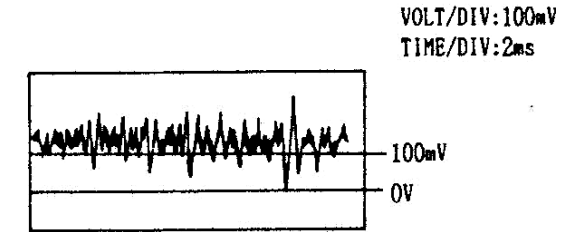
  - When gain is raised, the noise when the 2-axis device operates increases.
  - When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
  - When gain adjustment is off, the symptoms below appear.

Symptoms	Gain	Focus	Tracking
● The time until music starts becomes longer for STOP $\rightarrow$ PLAY or automatic selection ( $\lll$ , $\ggg$ buttons pressed.) (Normally takes about 2 seconds.)		low	low or high
● Music does not start and disc continues to rotate for STOP $\rightarrow$ $\triangleright$ PLAY or automatic selection ( $\lll$ , $\ggg$ buttons pressed.)		-	low
● Disc table opens shortly after STOP $\rightarrow$ $\triangleright$ PLAY.		low or high	-
● Sound is interrupted during PLAY. Or time counter display stops progressing.		-	low
● More noise during 2-axis device operation.	high	high	

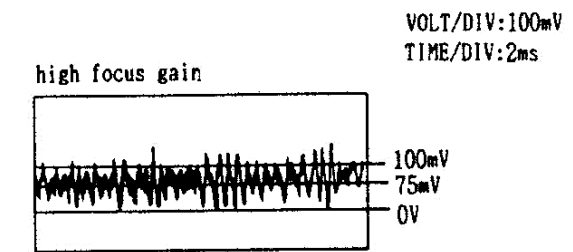
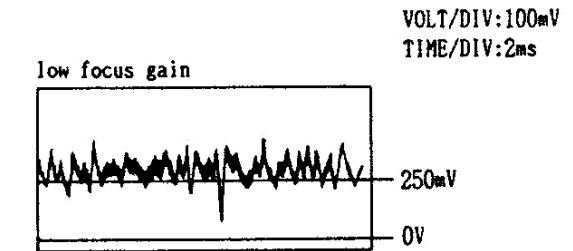
The following is a simple adjustment method.

- Simple Adjustment -
- Note : Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

- Procedure :
- Keep the set horizontal. (If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.)
  - Insert the disc YEDS-18 (YEDS-1) and press the  $\triangleright$ PLAY button.
  - Connect oscilloscope to SERVO circuit board TP4 (FE).
  - Adjust SFR105 so that the waveform is as shown in the figure below. (focus gain adjustment)

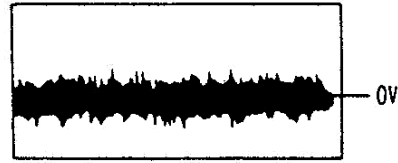


- Incorrect Examples (DC level changes more than on-adjusted waveform)



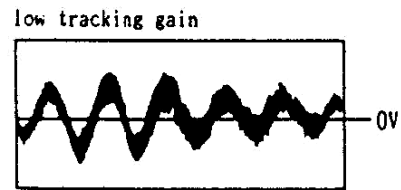
- Connect oscilloscope to SERVO circuit board TP3 (TE).
- Adjust SFR104 so that the waveform is as shown in the figure below. (tracking gain adjustment)

VOLT/DIV:0.5V  
TIME/DIV:2mS

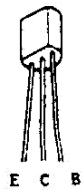
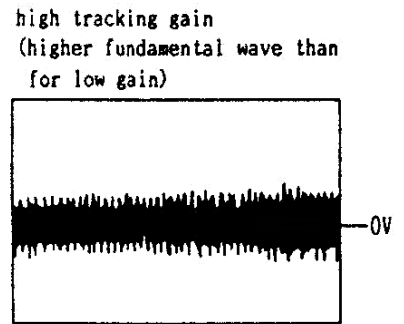


● Incorrect Example (fundamental wave appears)

VOLT/DIV:0.5V  
TIME/DIV:2mS



VOLT/DIV:0.5V  
TIME/DIV:2mS



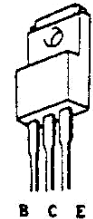
2SA970  
2SA1015  
2SC1815  
2SC2240  
2SC2878



2SA683  
2SC1383



2SK246



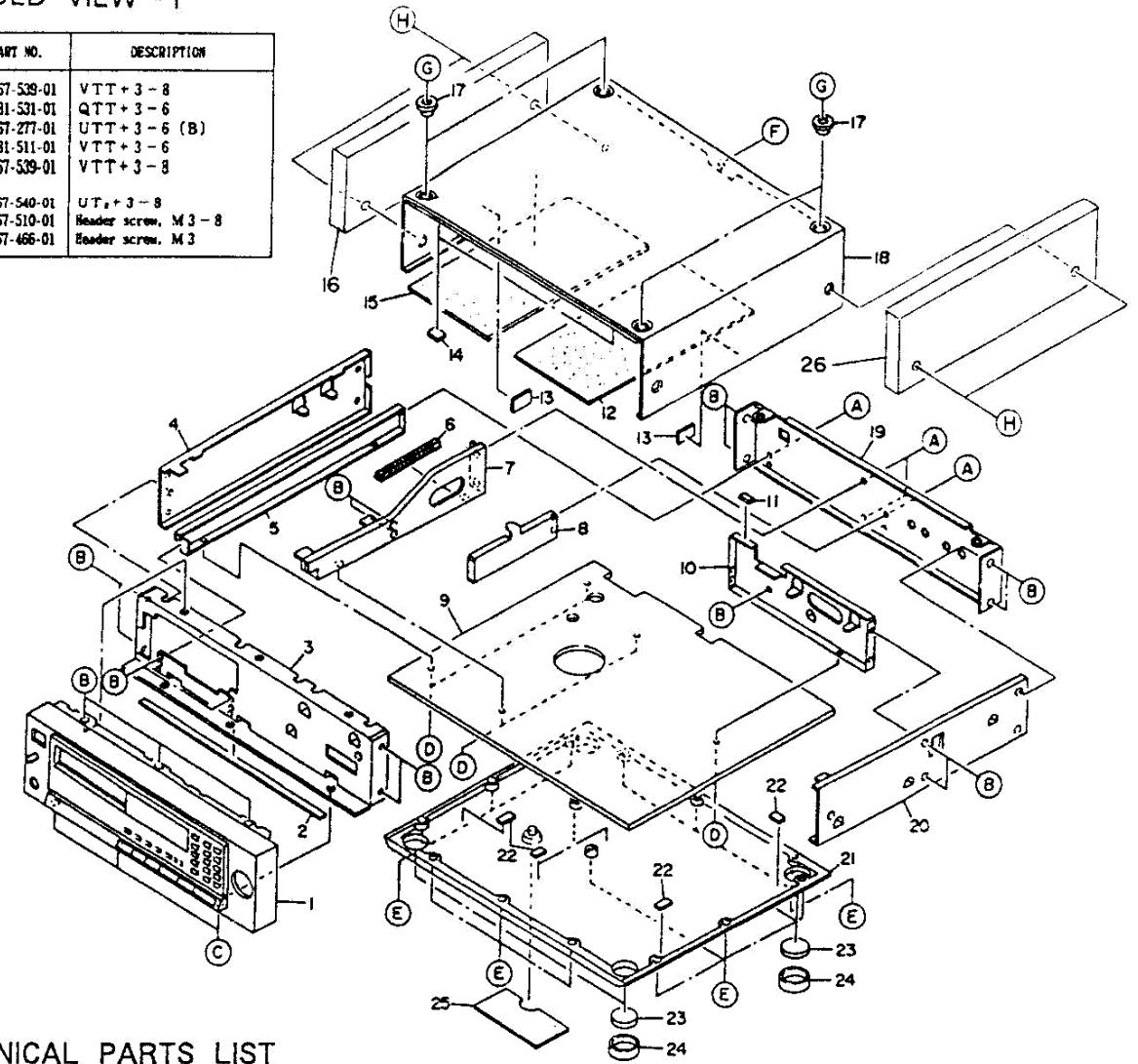
2SB1015  
2SD1406



DTA144  
DTC144

EXPLODED VIEW-1

REF. NO.	PART NO.	DESCRIPTION
A	87-067-539-01	VTT+3-8
B	87-081-531-01	QTT+3-6
C	87-067-277-01	UTT+3-6 (B)
D	87-081-511-01	VTT+3-6
E	87-067-539-01	VTT+3-8
F	87-067-540-01	UTT+3-8
G	87-067-510-01	Header screw, M3-8
H	87-067-466-01	Header screw, M3

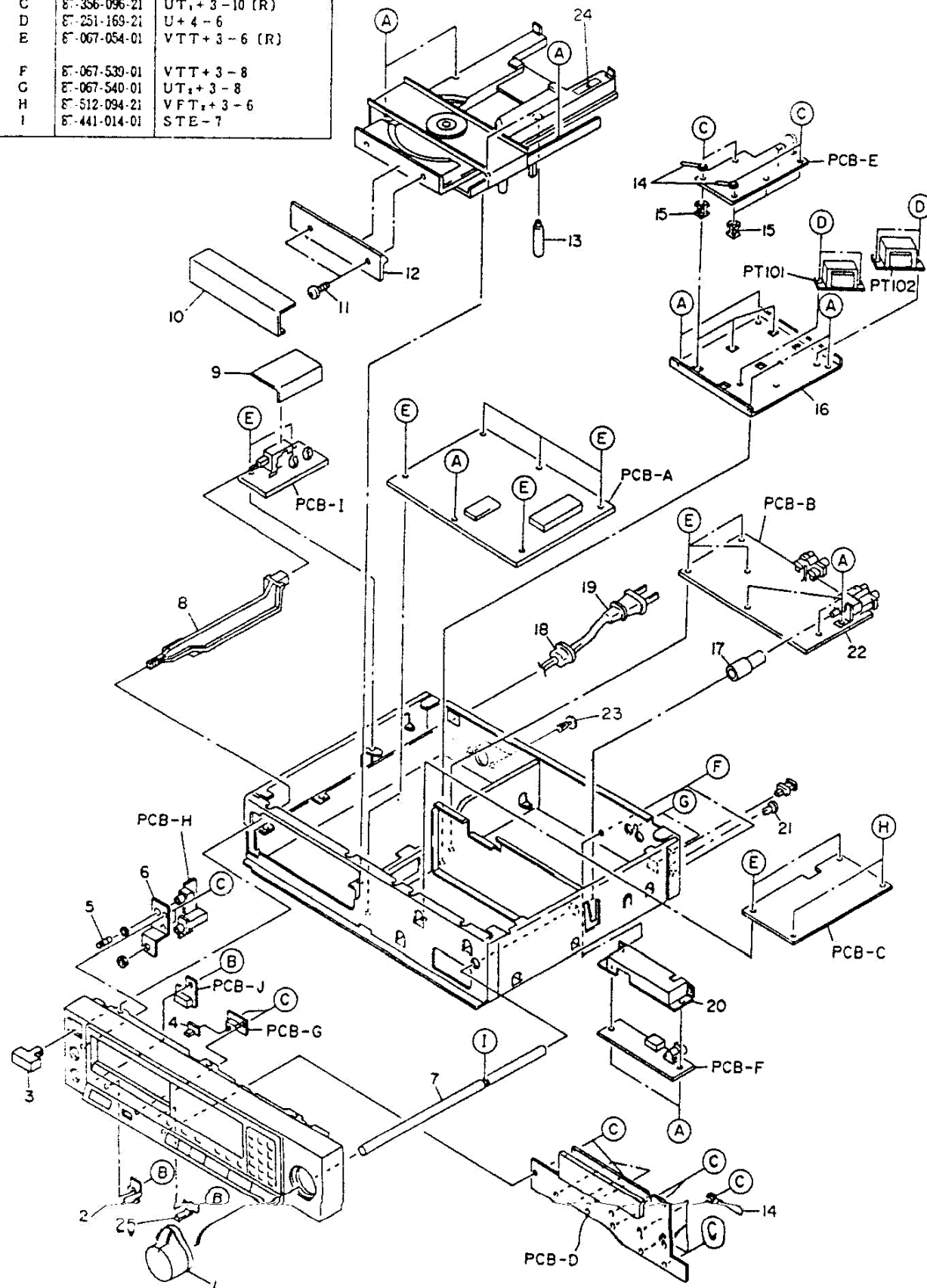


MECHANICAL PARTS LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	1-1	★09-057-013-010	CABINET FRONT ASSY	*	1
	1-2	★84-736-228-010	CUSHION, BOTTOM	*	1
	1-3	---	CHASSIS, FRONT	*	1
	1-4	---	CHASSIS, SIDE L.	*	1
	1-5	---	CHASSIS, MECHANISM L	*	1
	1-6	★84-736-232-010	COVER, WIRE	*	1
	1-7	---	CHASSIS, MECHANISM R	*	1
	1-8	★84-736-209-010	HOLDER, CIRCUIT BOARD	*	1
	1-9	---	CHASSIS, UNDER	*	1
	1-10	★84-736-208-010	HOLDER, CENTER	*	1
	1-11	★84-736-227-010	DAMPER D	*	1
	1-12	★84-736-225-010	DAMPER B	*	1
	1-13	★84-736-226-010	DAMPER C	*	2
	1-14	★84-736-229-010	HIMERON 20-15-0.5	*	3
	1-15	★84-736-224-010	DAMPER A	*	1
	1-16	★84-736-053-010	SIDE WOOD L ASSY	*	1
	1-17	★84-738-018-010	RING, TOP	*	1
	1-18	★84-738-029-010	STEEL, CABINET	*	1
	1-19	★84-736-046-010	PANEL, REAR (H ONLY)	*	1
	1-19	★84-736-043-010	PANEL, REAR (C ONLY)	*	1
	1-19	★84-736-044-010	PANEL, REAR (E ONLY)	*	1
	1-19	★84-736-048-010	PANEL, REAR (K ONLY)	*	1
	1-20	---	CHASSIS, SIDE R	*	1
	1-21	★84-736-032-010	COVER, BOTTOM	*	1
	1-22	★84-736-231-010	DAMPER E	*	6
	1-23	★84-736-034-010	INSULATOR	*	1
	1-24	★84-736-033-010	RING, FOOT	*	1
	1-25	---	LABEL 2, CAUTION	*	1
	1-26	★84-736-055-010	SIDE WOOD R ASSY	*	1

EXPLODED VIEW-2

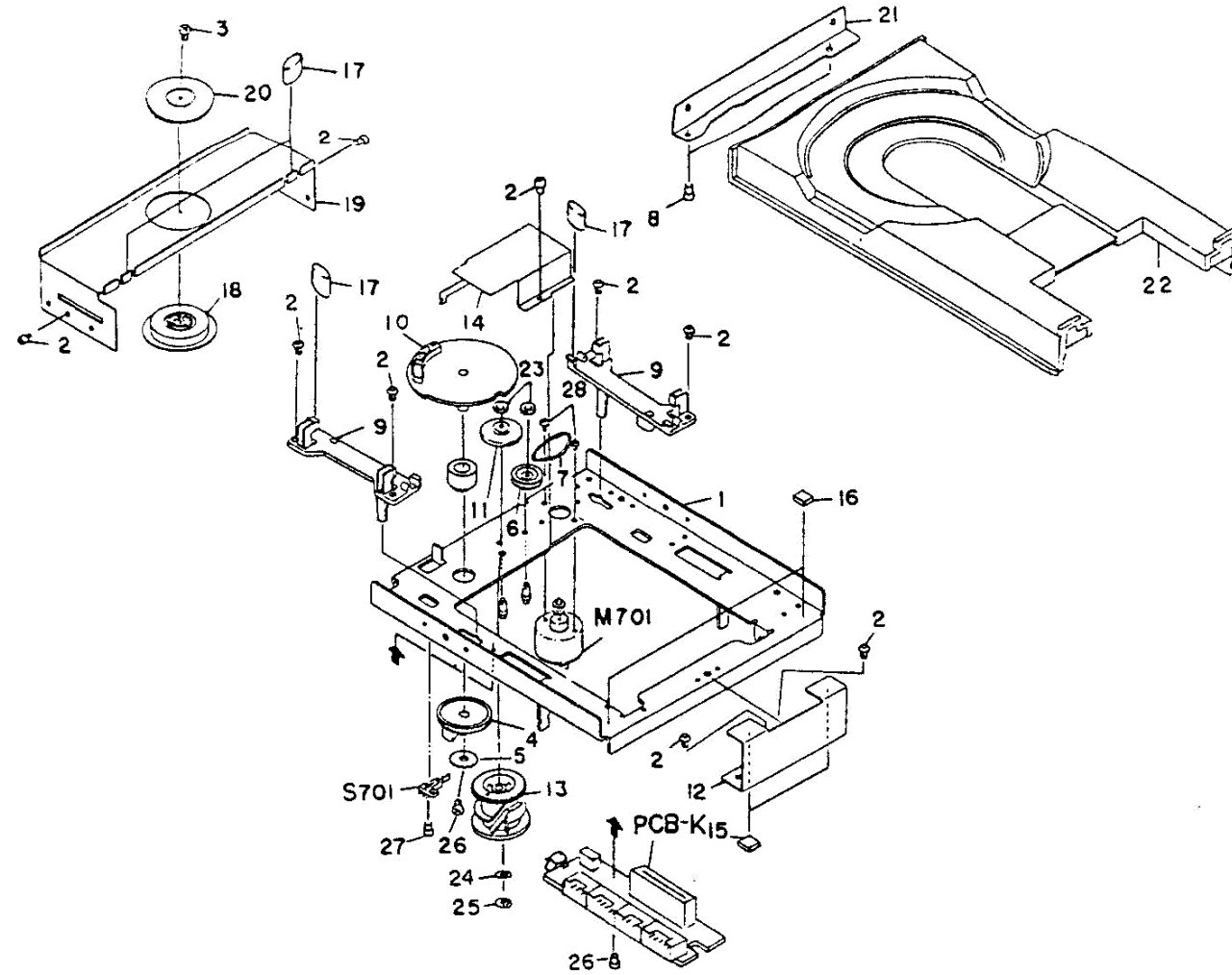
REF. NO.	PART NO.	DESCRIPTION
A	E-081-511-01	VTT+3-6
B	E-346-095-21	UT,+3-8 (R)
C	E-356-096-21	UT,+3-10 (R)
D	E-251-169-21	U+4-6
E	E-067-054-01	VTT+3-6 (R)
F	E-067-530-01	VTT+3-8
G	E-067-540-01	UT,+3-8
H	E-512-094-21	VFT,+3-6
I	E-441-014-01	STE-7



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	QTY
	2-1	★84-736-010-010	KNOB VOLUME ASSY	*	1
	2-2	★84-736-236-010	EARTH PLATE C	*	1
	2-3	★84-721-023-010	PUSH-BUTTON, POWER		1
	2-4	★84-732-010-010	KNOB, SLIDE TIME		1
	2-5	★84-738-015-110	KNOB, ROTARY		1
	2-6	★84-736-216-010	HOLDER, TIMER	*	1
	2-7	★84-736-217-010	SHAFT, VOLUME	*	1
	2-8	★84-711-234-210	ROD		1
	2-9	---	INSULATION SHEET		1
	2-10	---	LABEL CAUTION CD		1
	2-11	★82-226-051-010	SCREW, DECORATIVE BOX		2
	2-12	★84-736-005-010	PANEL, TRY	*	1
	2-13	★84-736-223-010	JOINT, P. U STOPPER	*	1
	2-14	---	WIRE BINDER		3
	2-15	★87-064-106-010	HOLDER, CIRCUIT BOARD		6
	2-16	---	CHASSIS, TRANSFORMER		1
	2-17	★84-736-218-010	JOINT, VOLUME	*	1
	2-18	★87-085-184-010	CORD BUSHING (H ONLY)		1
	2-18	★87-085-189-010	CORD BUSHING (C ONLY)		1
	2-18	★87-085-185-010	CORD BUSHING (E, K ONLY)		1
	2-19	★87-034-732-010	AC CORD ASSY (H ONLY)		1
	2-19	★87-034-731-010	AC CORD ASSY (C ONLY)		1
	2-19	★87-034-736-010	AC CORD ASSY (E ONLY)		1
	2-19	★87-034-734-010	AC CORD ASSY (K ONLY)		1
	2-20	★84-736-212-010	HOLDER, DIGITAL	*	1
	2-21	★87-084-063-010	NYLON RIVET #3-5.5		1
	2-22	★84-736-215-010	HOLDER, VOLUME	*	1
	2-23	★87-084-098-010	NYLON, RIVET 3-5.5 (H ONLY)		2
	2-24	---	LABEL CAUTION TRIANG (E, K ONLY)		1
	2-25	★84-736-235-010	EARTH PLATE B	*	1

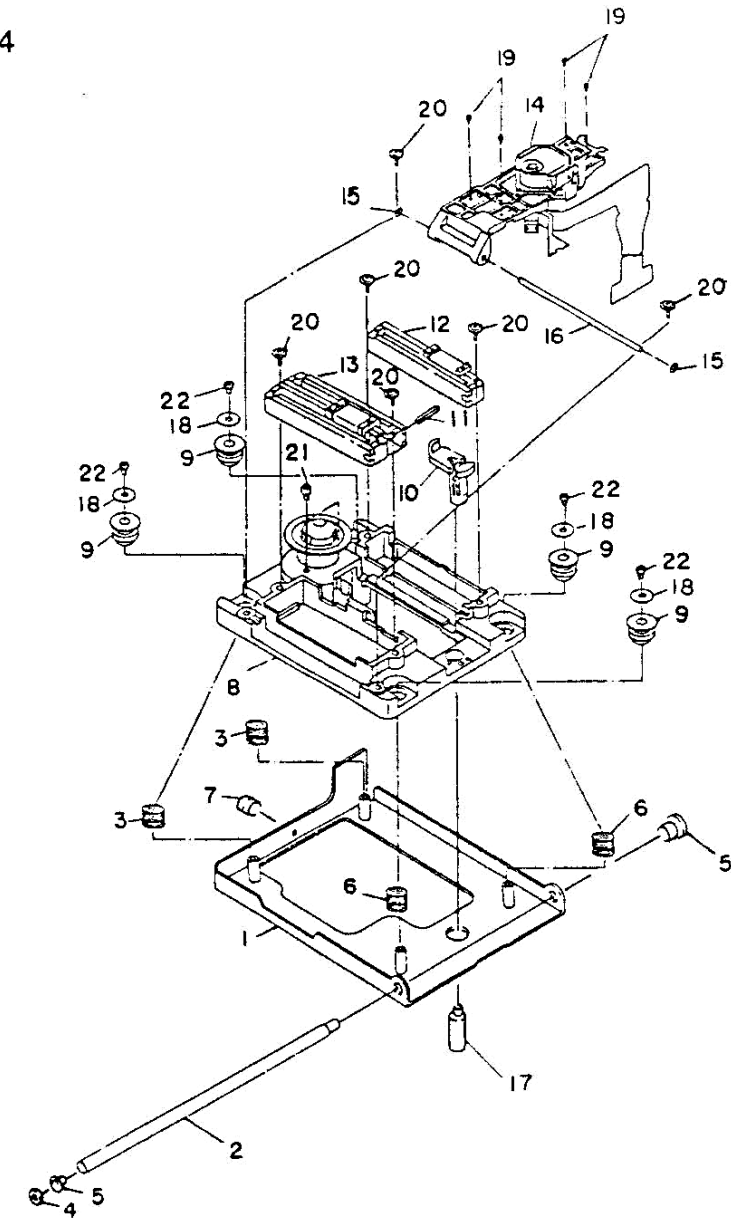


EXPLODED VIEW-3



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	3-1	★9X-264-240-630	MAIN CHASSIS ASSY		1
	3-2	★97-685-862-090	SCREW +BVTT 2.6×6		9
	3-3	★97-685-532-190	TAPPING +B 2.6×5 TYPE 2		1
	3-4	92-642-416-010	CAM DRIVE GEAR		1
	3-5	★93-464-123-110	WASHER 2.7φ×0.5		1
	3-6	★94-913-731-010	ROADING PULLEY		1
	3-7	93-653-387-010	LM BELT		1
	3-8	★97-685-647-290	TAPPING +BV 3×10 TYPE 2		2
	3-9	★92-642-418-020	TRAY HOLDER		2
	3-10	92-642-417-020	DRIVE GEAR		1
	3-11	92-642-107-010	RELAY GEAR		1
	3-12	★92-642-437-010	TRAY GUIDE		1
	3-13	92-642-422-020	CONTROL CAM		1
	3-14	★92-642-421-020	GEAR COVER		1
	3-15	★92-642-438-010	CUSHION (T)		2
	3-16	★93-565-343-010	CUSHION (F)		2
	3-17	★93-652-612-210	CUSHION (B)		4
	3-18	★92-642-432-010	CHAKING PULLEY		1
	3-19	★92-642-433-020	CHAKING CHASSIS		1
	3-20	★9A-491-013-480	MAGNET ASSY		1
	3-21	★92-642-419-020	PANEL PLATE		1
	3-22	92-642-434-020	TRAY		1
	3-23	★93-558-708-210	WASHER		2
	3-24	★93-701-441-210	POLY WASHER 1φ		1
	3-25	★97-624-106-040	E-RING		1
	3-26	★97-685-534-190	TAPPING +B 2.6×8 TYPE 2		2
	3-27	★97-685-104-190	TAPPING +P 2×6 TYPE 2		1
	3-28	★97-621-775-100	+B 2.6×4		2

EXPLODED VIEW-4



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	4-1	★9X-264-240-520	SUB CHASSIS ASSY		1
	4-2	★92-642-420-010	GUIDE SHAFT		1
	4-3	★92-642-402-020	SPRING, COMPRESSION (A)		2
	4-4	★97-624-190-110	E-RING, CS CAP		1
	4-5	★92-642-423-010	BUSH		2
	4-6	★92-642-401-020	SPRING, COMPRESSION (B)		2
	4-7	★92-642-104-010	ROLLER		1
	4-8	9X-264-240-810	MECHANISM CHASSIS ASSY (WITH TURNTABLE, MOTOR)		1
	4-9	★92-642-424-010	INSULATOR		4
	4-10	★92-642-414-010	LOCK STOPPER		1
	4-11	★92-642-411-010	YORK SPRING		1
	4-12	9A-491-013-7A0	LINEAR MOTOR ASSY (DETECT)		1
	4-13	9A-491-013-8B0	LINEAR MOTOR ASSY (DRIVE)		1
	4-14	98-848-047-010	PICK UP (KSS-151A)		1
	4-15	★92-642-436-020	SPRING (DISH)		2
	4-16	★92-642-410-010	GUIDE SHAFT		1
	4-17	84-733-216-010	JOINT PU 5V		1
	4-18	★93-464-123-110	WASHER 2.7φ×0.5		4
	4-19	★93-318-203-610	TAPPING B 1.7×4		4
	4-20	★33-703-135-210	TAPPING M 3×8		6
	4-21	★97-621-255-380	+P 2×5		2
	4-22	★97-621-775-100	+B 2.6×4		4
	4-23	---	TUBE 5φ-4		1