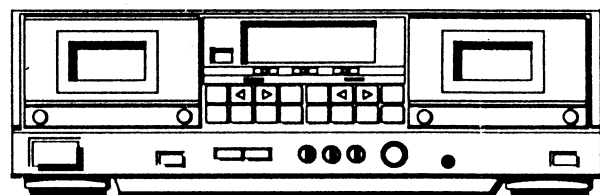


AIWA®**AD-WX777****SERVICE
MANUAL**

STEREO CASSETTE DECK


• BASIC TAPE MECHANISM : $\alpha - 14$

• TYPE. H,U,C,E,K,Z

SPECIFICATIONS

Type	Stereo cassette tape deck
Track format	4 tracks, 2 channels
Power supply	AD-WX777E, Z AC 220 V, 50/60 Hz AD-WX777K AC 240V, 50/60 Hz AD-WX777U, C AC 120 V, 60 Hz AD-WX777H AC 120 V/220 V/240 V switchable, 50/60 Hz
Power consumption	23 W
Frequency response	METAL tape: 20-18,000 Hz CrO ₂ tape: 20-17,000 Hz NORMAL tape: 20-16,000 Hz
Signal-to-noise ratio	73 dB (METAL tape DOLBY C NR ON)
Wow and flutter	Deck 1 (P.B.) 0.12% (According to DIN 45500) 0.065% (WRMS) Deck 2 0.18% (According to DIN 45500) 0.065% (WRMS)
Tape speed	4.8 cm/sec. (1 ⁷ / ₈ ips), 9.5 cm/sec (Double speed)
Recording system	AC bias (frequency 108 kHz)
Erase system	AC erase

Motor	DC Servomotor × 2
Heads	Record/playback head × 1 Playback head × 1 Erase head × 1
Inputs	LINE IN maximum input sensitivity: 50 mV (over 50 k Ω) LINE OUT standard output level: 360 mV (0 VU); suitable load impedance: over 50 k Ω
Outputs	430(W) × 140(H) × 313(D) mm
Dimensions	5.2 kg
Weight	

- Design and specifications are subject to change without notice.
- Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
- Dolby and the  symbol are trademarks of Dolby Laboratories Licensing Corporation.

AIWA Co., Ltd.

Tokyo Japan

Printed in Japan

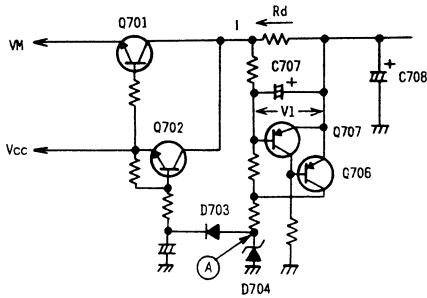
Cautions when servicing

The power circuit in this unit incorporates an overcurrent protector (shut-down circuit). When the overcurrent protector operates, voltages, VM and Vcc are not supplied. Once the overcurrent protector has operated, the power circuit will not be recovered automatically when is turned on, even after the cause of overcurrent is removed. Perform the following procedure to recover the power circuit.

1. Turn the power switch off.
2. Discharge C708 through a resistor of 100Ω or more. (It takes about 5 seconds to discharge C708 through a 100Ω resistor.)

Note : It takes about 60 seconds to discharge if step 2 is not performed.

Operation of Overcurrent Protector



During normal operation (Q701: OFF, Q706: ON)

Since current I flowing to Rd is not large, V1 becomes lower than 0.6V and Q701 turns off. This causes Q706 to turn on, and the voltage at point A becomes about 12V, so VM and Vcc are output.

When overcurrent occurs (Q701: ON, Q706: OFF)

When current I rises due to trouble on the VM and Vcc lines, V1 becomes higher than 0.6V and Q701 turns on. This causes Q706 to turn off, and the voltage at point A drops abnormally, so VM or Vcc is not output.



2SA933
2SA952
2SA1296
2SC1740
2SC1815
2SC2001
2SD1406



DTA123
DTC114
DTC144



2SK373



2SD2096

ELECTRICAL MAIN PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
--- IC ---					
	87-001-440-019	IC, BA15218N	C404	*87-018-129-019	CAP, CERA-SOL SS 680P
	87-001-143-019	IC, CX20187	C409	*87-010-400-019	CAP, ELECT 0.47-50V SME
	87-001-350-019	IC, HD14052BP	C410	*87-010-400-019	CAP, ELECT 0.47-50V SME
	87-001-198-019	IC, HD14066BP	C411	*87-010-677-019	CAP, ELECT 0.15-50V SRA
	87-020-261-019	IC, LA6358S	C412	*87-010-677-019	CAP, ELECT 0.15-50V SRA
	87-001-164-019	IC, LB1408	C415	*87-010-545-019	CAP, ELECT 0.22-50V SME
	87-001-334-010	IC, LB9051A	C416	*87-010-545-019	CAP, ELECT 0.22-50V SME
	84-792-606-010	IC, LC6520H-407C	C425	*87-010-405-019	CAP, ELECT 10-50V SME
	87-020-758-019	IC, NJM2068SD	C426	*87-010-405-019	CAP, ELECT 10-50V SME
			C427	*87-010-404-019	CAP, ELECT 4.7-50V SME
			C428	*87-010-404-019	CAP, ELECT 4.7-50V SME
			C429	*87-010-402-019	CAP, ELECT 2.2-50V SME
--- TRANSISTOR ---					
	89-503-735-019	FET, 2SK373GR	C430	*87-010-402-019	CAP, ELECT 2.2-50V SME
	87-026-462-019	TRANSISTOR, 2SC1740S, SR	C451	*87-015-241-019	CAP, ELECT 1UF 50V LL
	87-026-463-019	TRANSISTOR, 2SA933S, SR	C452	*87-015-241-019	CAP, ELECT 1UF 50V LL
	89-109-521-019	TRANSISTOR, 2SA952K	C455	*87-010-402-019	CAP, ELECT 2.2-50V SME
	89-112-965-019	TRANSISTOR, 2SA1296GR	C456	*87-010-402-019	CAP, ELECT 2.2-50V SME
	89-318-156-019	TRANSISTOR, 2SC1815(BL)	C457	*87-010-263-019	CAP, ELECT 100-10V
	89-320-011-019	TRANSISTOR, 2SC2001K	C458	*87-010-263-019	CAP, ELECT 100-10V
	89-414-065-019	TRANSISTOR, 2SD1406GR	C459	*87-018-134-019	CAP, CERA-SOL SS 0.01
	89-420-962-019	TRANSISTOR, 2SD2096E	C501	*87-018-119-019	CAP, CERA-SOL SS 100P
	87-026-483-019	TRANSISTOR, DTA123JS	C502	*87-018-119-019	CAP, CERA-SOL SS 100P
	87-026-215-019	TRANSISTOR, DTC114YS	C503	*87-018-200-019	CAP, CERA-SOL SS 3900P
	87-026-218-019	TRANSISTOR, DTC144ES	C504	*87-018-200-019	CAP, CERA-SOL SS 3900P
			C521	*87-010-404-019	CAP, ELECT 4.7-50V SME
--- DIODE ---					
	87-001-783-019	DIODE, 1N4002-T	C522	*87-010-404-019	CAP, ELECT 4.7-50V SME
	87-020-465-019	DIODE, 1S5133	C701	*87-010-252-019	CAP, ELECT 1000-6.3V
	87-020-123-019	DIODE, DS446	C702	*87-010-237-019	CAP, ELECT 1000-16SME
	87-027-676-019	DIODE, ZENER HZ12B3L T	C703	*87-010-371-019	CAP, ELECT 470-6.3V
	87-027-393-019	DIODE, ZENER HZ4C2	C704	*87-010-263-019	CAP, ELECT 100-10V
	87-027-332-019	DIODE, ZENER HZ6B1L	C705	*87-010-235-019	CAP, ELECT 470-16
			C706	*87-010-101-019	CAP, ELECT 220-16V
--- MAIN CIRCUIT BOARD SECTION ---					
C101	*87-018-123-019	CAP, CERA-SOL SS 220P	C707	*87-010-374-019	CAP, ELECT 47-10V
C102	*87-018-123-019	CAP, CERA-SOL SS 220P	C708	*87-010-390-019	CAP, ELECT 3300-25V SME
C107	*87-010-405-019	CAP, ELECT 10-50V SME	C801	*87-010-401-019	CAP, ELECT 1-50V
C108	*87-010-405-019	CAP, ELECT 10-50V SME	C802	*87-010-401-019	CAP, ELECT 1-50V
C109	*87-010-405-019	CAP, ELECT 10-50V SME	C803	*87-010-235-019	CAP, ELECT 470-16
C110	*87-010-405-019	CAP, ELECT 10-50V SME	C804	*87-010-235-019	CAP, ELECT 470-16
C113	*87-018-132-019	CAP, CERA-SOL SS 2200P	C805	*87-010-382-019	CAP, ELECT 22UF-25V SME
C114	*87-018-132-019	CAP, CERA-SOL SS 2200P	C806	*87-010-402-019	CAP, ELECT 2.2-50V SME
C115	*87-018-134-019	CAP, CERA-SOL SS 0.01	C807	*87-010-382-019	CAP, ELECT 22UF-25V SME
C201	*87-018-121-019	CAP, CERA-SOL SS 150P	C808	*87-010-402-019	CAP, ELECT 2.2-50V SME
C202	*87-018-121-019	CAP, CERA-SOL SS 150P	C809	*87-010-235-019	CAP, ELECT 470-16
C203	*87-018-123-019	CAP, CERA-SOL SS 220P	C810	*87-010-235-019	CAP, ELECT 470-16
C204	*87-018-123-019	CAP, CERA-SOL SS 220P	C811	*87-010-374-019	CAP, ELECT 47-10V
C209	*87-010-405-019	CAP, ELECT 10-50V SME	C812	*87-018-134-019	CAP, ELECT 100-10V
C210	*87-010-405-019	CAP, ELECT 10-50V SME	C814	*87-010-544-019	CAP, ELECT 0.1-50V
C211	*87-010-405-019	CAP, ELECT 10-50V SME	CF801	87-030-167-019	CERALOCK CST4.0MHZ
C212	*87-010-405-019	CAP, ELECT 10-50V SME	J451	84-790-635-019	JACK, 6.3(PHONES)
C215	*87-018-134-019	CAP, CERA-SOL SS 0.01	L301	*81-693-60E-019	COIL OSC BIAS 108K
C216	*87-018-134-019	CAP, CERA-SOL SS 0.01	L401	*84-790-623-019	FILTER DOLBY LPF 105K
C301	*87-018-123-019	CAP, CERA-SOL SS 220P	L402	*84-790-623-019	FILTER DOLBY LPF 105K
C302	*87-018-123-019	CAP, CERA-SOL SS 220P	L403	*82-231-622-010	COIL 22MMH-J
C303	*87-018-131-019	CAP, CERA-SOL SS 1000P	L404	*82-231-622-010	COIL 22MMH-J
C304	*87-014-063-019	CAP, PP 1800P	L501	*82-231-622-010	COIL 22MMH-J
C306	*87-018-134-019	CAP, CERA-SOL SS 0.01	L502	*82-231-622-010	COIL 22MMH-J
C309	*87-010-406-019	CAP, ELECT 22-50V	L503	*87-003-13E-019	MICRO INDUCTOR 10MMH
C310	*87-010-406-019	CAP, ELECT 22-50V	L504	*87-003-13E-019	MICRO INDUCTOR 10MMH
C401	*87-018-133-019	CAP, CERA-SOL SS 4700P	L505	*87-003-12E-019	MICRO INDUCTOR 5.6MMH
C402	*87-018-133-019	CAP, CERA-SOL SS 4700P	L506	*87-003-12E-019	MICRO INDUCTOR 5.6MMH
C403	*87-018-129-019	CAP, CERA-SOL SS 680P	SFR101	*87-024-16E-019	SFR 1K
			SFR102	*87-024-16E-019	SFR 1K
			SFR201	*87-024-16E-019	SFR 1K
			SFR202	*87-024-16E-019	SFR 1K

ACCESSORIES/PACKAGE LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	QTY
1		*84-792-904-119	INSTRUCTION BOOKLET (E)	*	1
2		*87-032-845-119	PLUG SIEMENS(H)		1
3		*87-034-773-119	CORD PIN, R-237W-10		2

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
SFR301	*87-024-175-019	SFR 47K	△D1	87-019-113-019	CAP, SPARK KILLER (0,0022
SFR302	*87-024-175-019	SFR 47K	△PT1	84-792-605-019	POWER TRANSFORMER H(H)
SFR501	*87-024-169-019	SFR 2.2K	△PT1	84-792-603-019	POWER TRANSFORMER U(U,C)
SFR502	*87-024-169-019	SFR 2.2K	△PT1	84-792-615-019	POWER TRANSFORMER E(E,Z)
VR301	84-790-632-019	VR,250KB(S IS FINE NORM.)	△PT1	84-792-611-019	POWER TRANSFORMER K(K)
VR302	84-790-632-019	VR,250KB(S IS FINE CRO2)	△S1	87-036-015-019	PUSH SW(POWER)
VR451	84-790-631-019	VR,100K(EALANCE)	△S2	87-036-135-019	ROTARY SW(AC VOLTAGE)(H)
VR452	84-790-630-019	VR,50KA(REI LEVEL)			
=== FRONT CIRCUIT BOARD SECTION ===			=== DECK-1 CIRCUIT BOARD SECTION ===		
C901	*87-010-405-019	CAP,ELECT 1-50	S1	87-036-109-010	PUSH SW(CAST)
C902	*87-010-405-019	CAP,ELECT 1-50	S2	87-036-110-010	PUSH SW(CRO2)
C903	*87-010-405-019	CAP,ELECT 1-50	SFR1	*87-024-291-019	SFR 4.7K
D918	87-001-745-010	LED,SEL132-3(PLAY,D1)	SFR2	*87-024-291-010	SFR 4.7K
D919	87-001-745-010	LED,SEL132-3(PLAY,D2)	SOL1	*86-535-611-210	SOL X-3 PL(PLAY)
D920	84-792-624-019	LED,SLH-38.5,H15.5(R/R MUTE,D2)	SOL2	*86-535-612-210	SOL X-3 FR(F/R)
D921	84-792-616-019	LED,SLB25G(DOLBY-B)	=== DECK-2 CIRCUIT BOARD SECTION ===		
D922	84-792-615-019	LED,SLB25R(DOLBY-C)	S1	87-036-109-010	PUSH SW(CAST)
D923	84-792-625-019	LED,SLH-38.5,H15.5(PAUSE,D2)	S2	87-036-110-010	PUSH SW(CRO2)
D924	84-792-624-019	LED,SLH-38.5,H15.5(SYNC DUBB H)	S3	87-036-110-010	PUSH SW(REA)
D925	84-792-624-019	LED,SLH-38.5,H15.5(SYNC DUBB N)	S4	87-036-109-010	PUSH SW(REB)
D926	84-792-617-019	LED,SLB55G(DIR<,D1)	S5	87-036-109-110	PUSH SW(METAL)
D927	84-792-617-019	LED,SLB55G(DIR>,D1)	SFR1	*87-024-291-019	SFR 4.7K
D928	84-792-617-019	LED,SLB55G(DIR<,D2)	SFR2	*87-027-291-019	SFR 4.7K
D929	84-792-617-019	LED,SLB55G(DIR>,D2)	SOL1	*86-535-611-210	SOL X-3 PL(PLAY)
D930	84-792-615-019	LED,SLB25R(-10,L)	SOL2	*86-535-612-210	SOL X-3 FR(F/R)
D931	84-792-615-019	LED,SLB25R(-5,L)	=== SENSOR-1 CIRCUIT BOARD SECTION ===		
D932	84-792-615-019	LED,SLB25R(-3,L)	CP1	87-001-367-019	PHOTO,SP1-315(O)CD
D933	84-792-616-019	LED,SLB25G(-3,L)	=== SENSOR-2 CIRCUIT BOARD SECTION ===		
D934	84-792-616-019	LED,SLB25G(-3,L)	CP1	87-001-367-019	PHOTO,SP1-315(O)CD
D935	84-792-616-019	LED,SLB25G(-7,L)	=== RELAY-1 CIRCUIT BOARD SECTION ===		
D936	84-792-616-019	LED,SLB25G(-20,L)	=== RELAY-2 CIRCUIT BOARD SECTION ===		
D937	84-792-615-019	LED,SLB25R(-10,R)	=== MISCELLANEOUS ===		
D938	84-792-615-019	LED,SLB25R(-6,R)	△	87-034-749-019	AC CORD (H) W/PLUG(H)
D939	84-792-615-019	LED,SLB25R(-3,R)	△	87-034-584-019	AC CORD (U)SPT-2(U,C)
D940	84-792-616-019	LED,SLB25G(-3,R)	△	82-187-797-019	AC CORD (E)(E,Z)
D941	84-792-616-019	LED,SLB25G(-3,R)	△	82-187-796-019	AC CORD (BS)(K)
D942	84-792-616-019	LED,SLB25G(-7,R)	△	87-085-184-010	BUSHING AC CORD D(H)
D943	84-792-616-019	LED,SLB25G(-20,R)	△	87-085-189-010	AC CORD BUSHING (SPT-2)(U,C)
D944	84-792-616-019	LED,SLB25G(-∞L)	△	87-085-185-010	BUSHING AC CORD E(E,K,Z)
D945	84-792-616-019	LED,SLB25G(-∞R)	M1	87-045-273-019	MOTOR,MM16H2 LWC1(D1)
S901	84-790-637-019	SLIDE SW(REV MODE)	M2	87-045-273-019	MOTOR,MM16H2 LWC1(D2)
S902	84-790-637-019	SLIDE SW(TIMER)	PH	87-046-334-010	HEAD,PH 14K(D1)
S903	84-790-637-019	SLIDE SW(DOLBY-NR)	RPEH	87-04-335-010	HEAD,RPEH 14K(D2)
S904	87-036-142-019	TACT SW(>,J1)			
S905	87-036-142-019	TACT SW(<,J1)			
S906	87-036-142-019	TACT SW(<,J2)			
S907	87-031-893-010	TACT SW(R/R MUTE,D2)			
S908	87-036-142-019	TACT SW(>,J2)			
S909	87-036-142-019	TACT SW(STOP,D1)			
S910	87-036-142-019	TACT SW(STOP,D2)			
S911	87-031-893-010	TACT SW(PAUSE,D2)			
S912	87-036-142-019	TACT SW(SYNC DUBB HIGH)			
S913	87-036-142-019	TACT SW(>>,D1)			
S914	87-036-142-019	TACT SW(>>,J2)			
S915	87-036-142-019	TACT SW(SYNC DUBB NORM)			
S916	87-036-142-019	TACT SW(<<,J1)			
S917	87-036-142-019	TACT SW(<<,J2)			
=== JACK CIRCUIT BOARD SECTION ===					
J452	*87-009-023-019	JACK,PIN(LINE IN/OUT)			
=== POWER CIRCUIT BOARD SECTION ===					

IC DESCRIPTION

IC, 6520H-4070

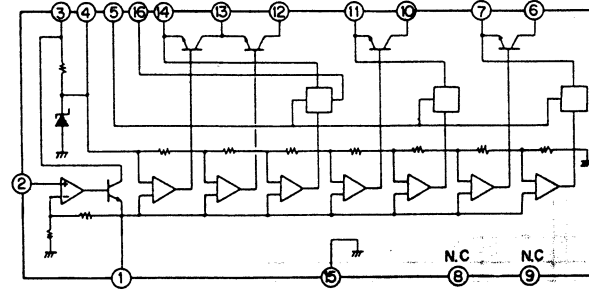
Pin No.	Pin Name	I/O	Description	Remarks
1	O · DIR1	O	DECK 1 direction indicator LED control.	Open drain
2	O · DIR2	O	DECK 2 direction indicator LED control.	
3	I · AUTO1	I	DECK 1 tape end detection input.	Exclusively for inputs
4	I · AUTO2	I	DECK 2 tape end detection input.	
5	I · REMO	I	Serial signal input from remote control.	
6	I · HOLD	I	Hold input. When the power switch is turned off, this pin goes "L", the low current consumption mode is entered and the tape running direction is stored in memory.	
7	O · MOTOR	O	Motor on/off control. "L" output turns the motor.	
8	O · BIAS	O	Bias oscillation control. "H" output causes oscillations.	
9	O · DOLBY	O	Dolby NR on/off control. "L" output turns Dolby NR on.	
10	O · DOLBY-C	O	Dolby B/C NR switching. "L" output switches the Dolby NR to type C with Dolby NR on.	"L" at initial state
11	O · PB1	O	DECK 1 play output on/off. Goes "H" when DECK 1 plays the tape.	
12	O · PB2	O	DECK 2 play output on/off. Goes "H" when DECK 2 plays the tape.	Open drain
13	O · C/R MUTE	O	CUE/REVIEW muting on/off control. Goes "L" during CUE and REVIEW.	
14	O · HSP	O	Motor high/normal-speed control. Switches between PB and REC EQs. "H" output causes the high speed.	Open drain
15	O · RMT	O	REC MUTE control. Goes "H" during REC.	
16	O · LMT	O	LINE MUTE control. Goes "L" during REC, DECK 1/2 PLAY, CUE and REVIEW.	
17	O · REC	O	Dolby NR REC/PB switching. Goes "L" during REC.	
18	O · HSP	O	High speed switching. "L" output causes the high speed.	
19	TEST	I	Connected to GND.	
20	V _{SS}	-	Connected to GND.	
21	OSC1	-	Clock input 1.	A crystal oscillator (4MHz) is connected.
22	OSC2	-	Clock input 2.	
23	RES	I	Reset input. "L" input resets the IC.	
24	KS0	O	D0~D7 KEY SCAN outputs.	Open drain
25	KS1	O		
26	KS2	O		
27	KS3	O		
28	D7	I	KS0~KS3 KEY SCAN inputs.	
29	D6	I		
30	D5	I		
31	D4	I		
32	D3	I		
33	D2	I		
34	D1	I		
35	D0	I		

KEY MATRIX					
CIRCUIT NAME	INPUT				DISPLAY
	KS0	KS1	KS2	KS3	DISP
D0	CST-2	—	F-PLAY-1	—	PLAY-1
D1	QUICK-2	1ME.1WAY	R-PLAY-1	R-PLAY-2	PLAY-2
D2	—	REC/RMT	REV-MODE	F-PLAY-2	REC-2
D3	CST-1	—	STOP-1	STOP-2	DOLBY-B
D4	QUICK-1	TIMER PLAY	DOLBY-B	DOLBY-C	DOLBY-C
D5	—	TIMER REC	REV-MODE	PAUSE -2	PAUSE-2
D6	RE-A	HI SPEED DUB	▷▷ 1	▷▷ 2	H/DUB
D7	RE-B	NORMAL SPEED DUB	◁◁ 1	◁◁ 2	N/DUB

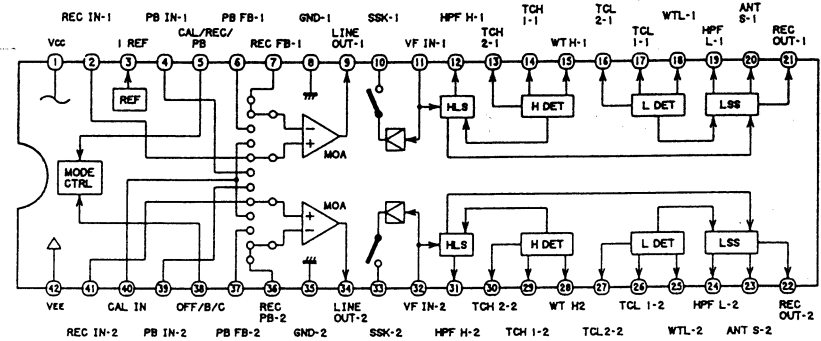
Pin No.	Pin Name	I/O	Description	Remarks
36	DISP	O	D0~D7 LED SCAN output.	Open drain
37	O · SOL-FRP2	O	DECK 2 FRP solenoid control.	
38	O · SOL-PLAY2	O	DECK 2 PLAY solenoid control.	
39	O · SOL-FRP1	O	DECK 1 FRP solenoid control.	Open drain
40	V _{DD}	-	Power supply pin (+5V).	
41	O · SOL-PLAY1	O	DECK 1 PLAY solenoid control.	
42	I/O · SYNC	I/O	Unused. Connected to GND.	

IC BLOCK DIAGRAM

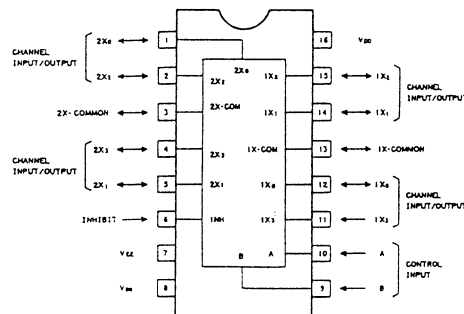
IC, LB1408



IC, CX20187



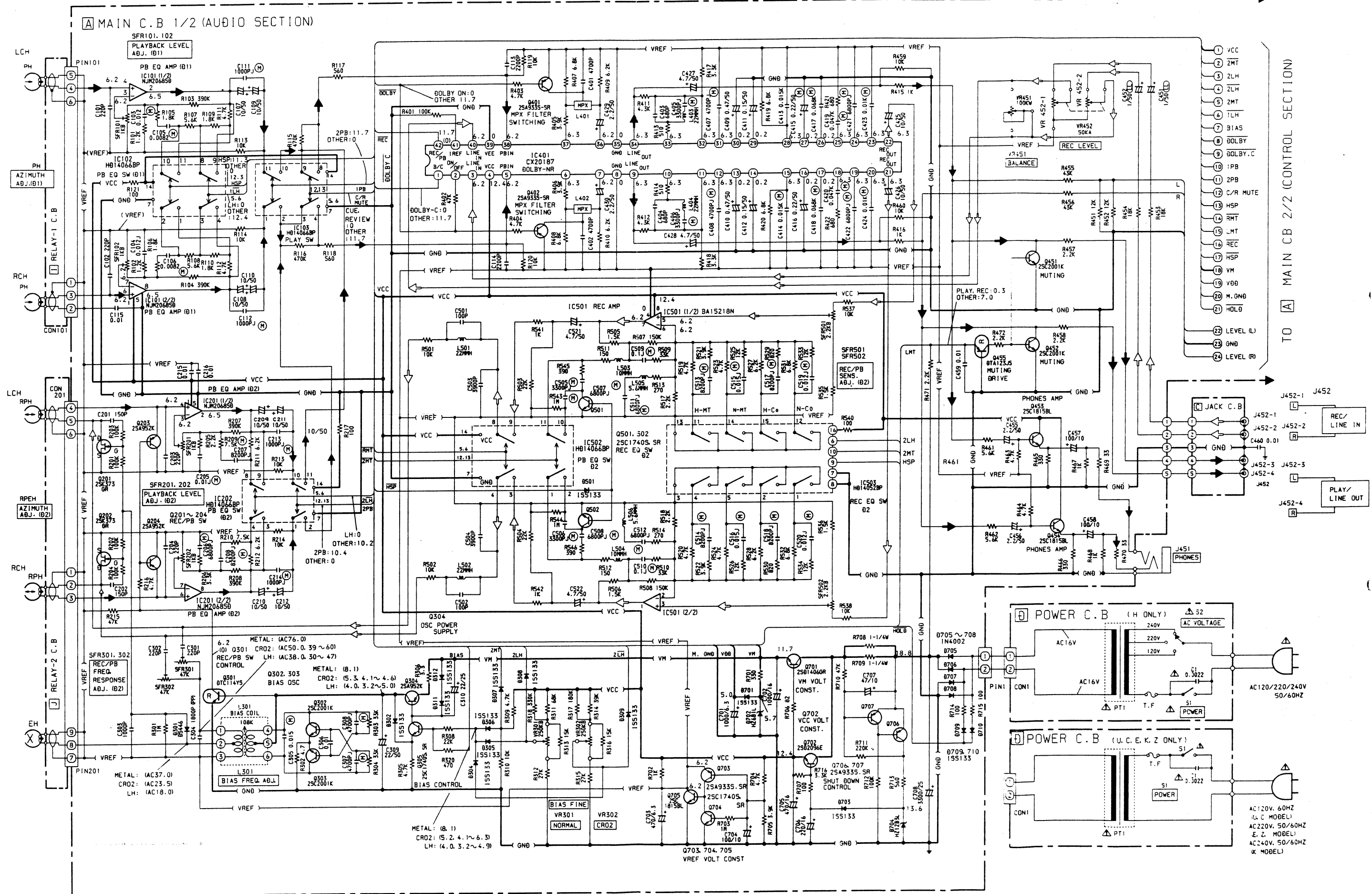
IC, HD14052BP



TRUTH TABLE

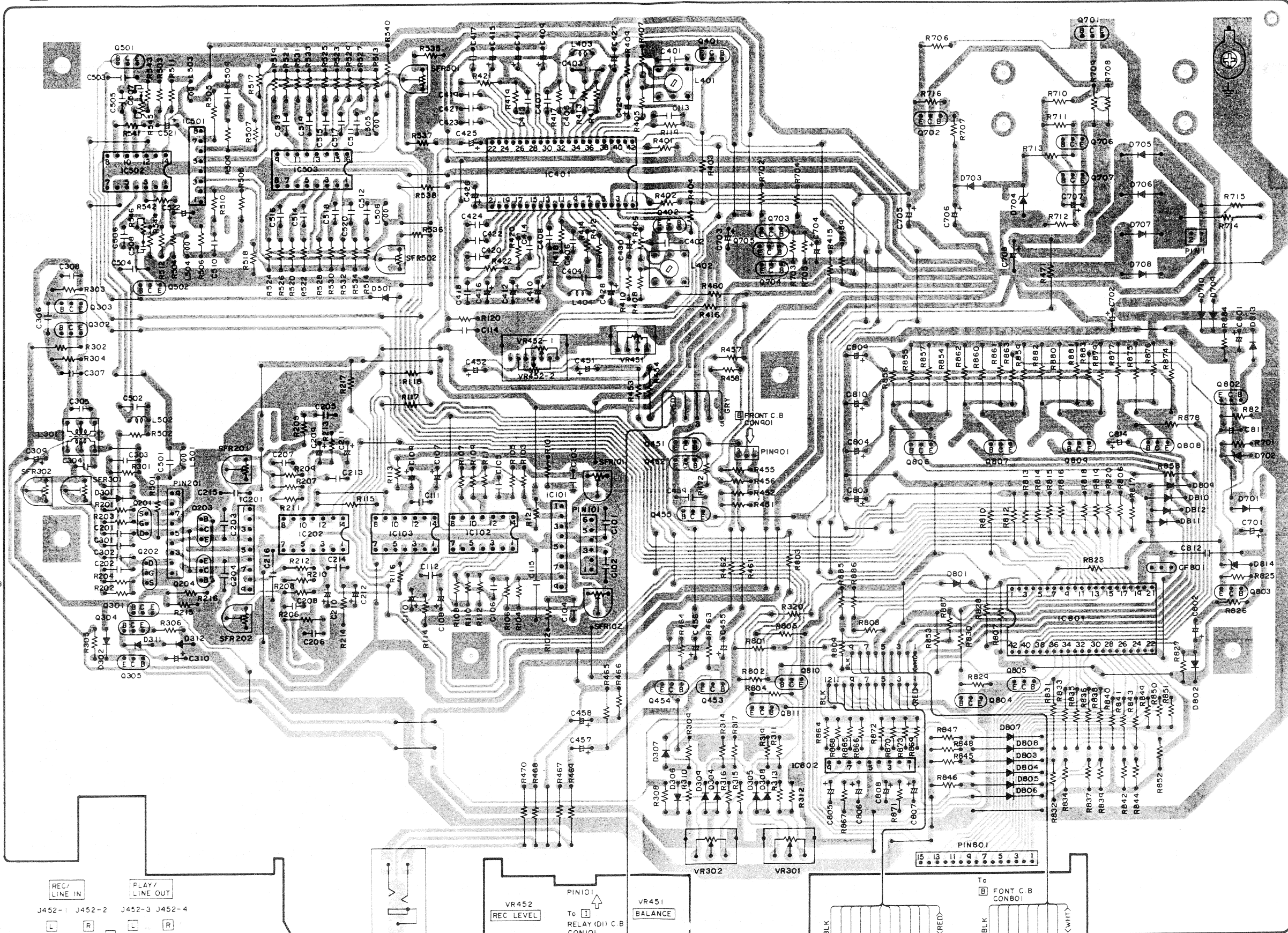
INHIBIT INPUT	CONTROL INPUT	CHANNEL INPUT/OUTPUT SWITCH OF COMMON TERMINAL				
INHIBIT	B A	X ₀	X ₁	X ₂	X ₃	
L	L L	ON	OFF	OFF	OFF	
L	L H	OFF	ON	OFF	OFF	
L	H L	OFF	OFF	ON	OFF	
L	H H	OFF	OFF	OFF	ON	
H	X X	OFF	OFF	OFF	OFF	

Note 1 X: "H" or "L"



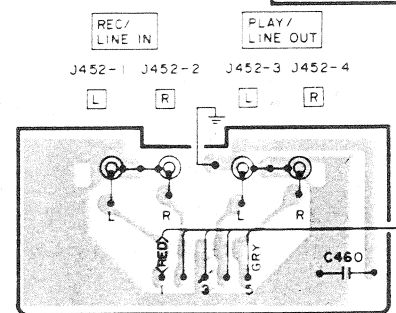
A MAIN C.B

A
B
C
D
E
F
G
H
I
J
K

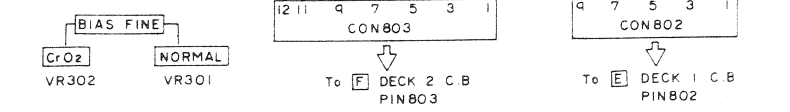


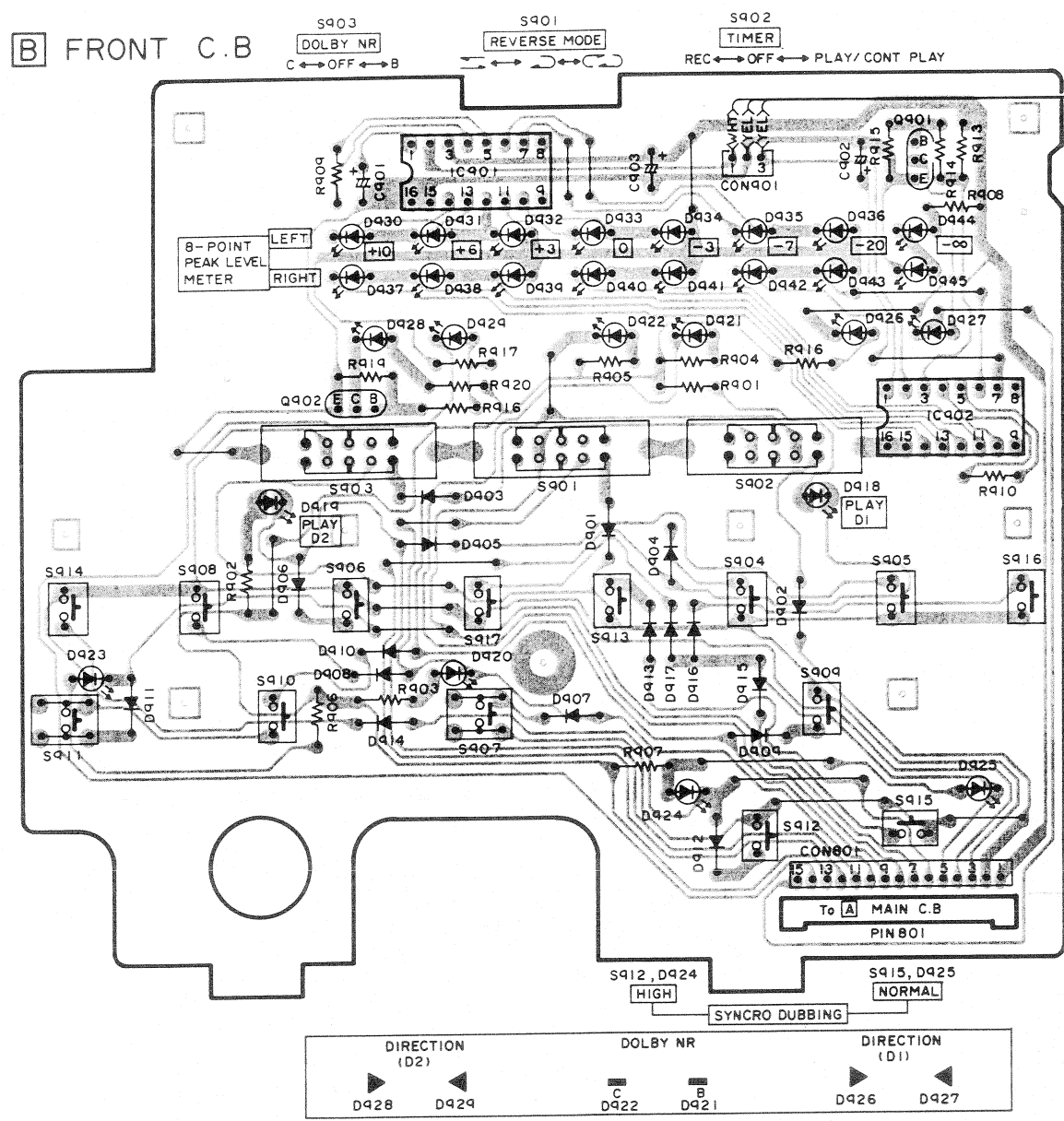
To POWER C.B CON1

To RELAY(D) C.B CON201

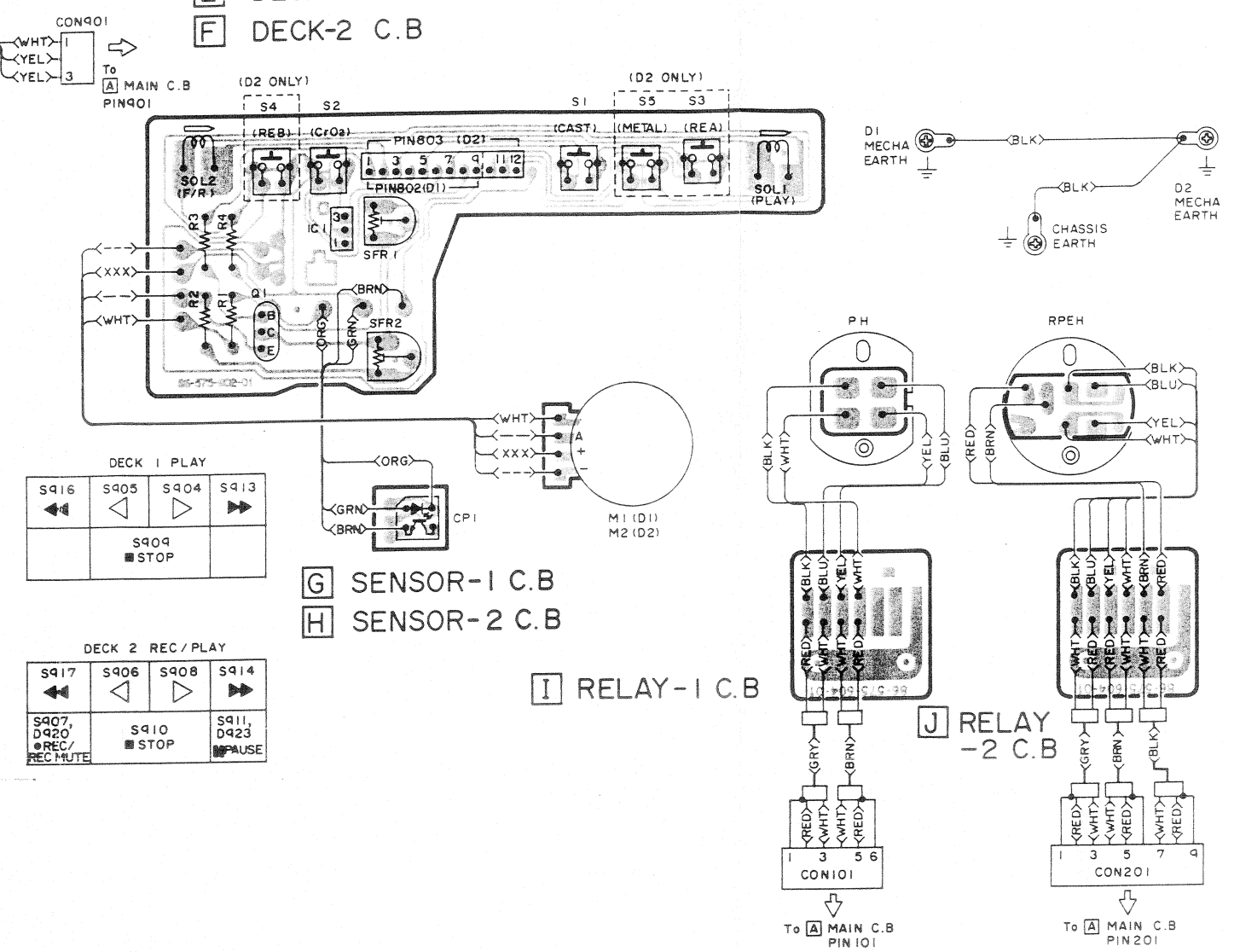


C JACK C.B





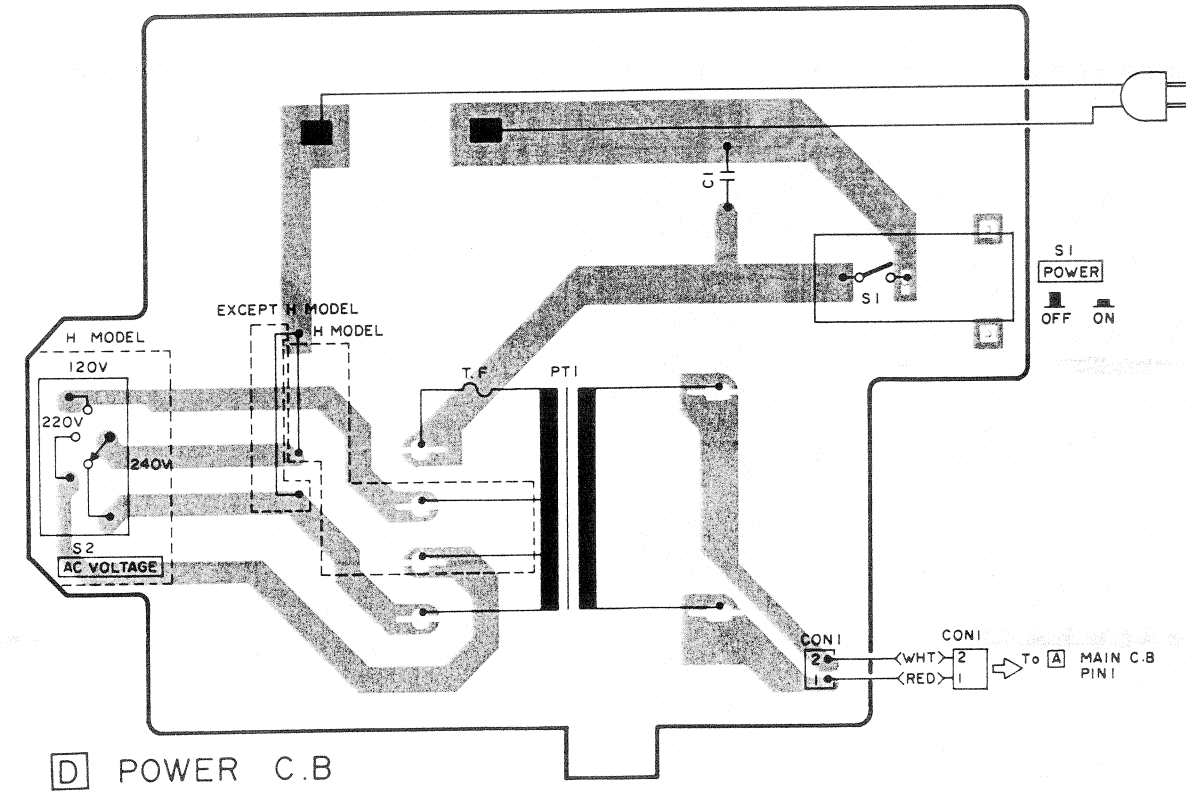
E DECK-1 C.B.
F DECK-2 C.B.



G SENSOR-1 C.B.
H SENSOR-2 C.B.

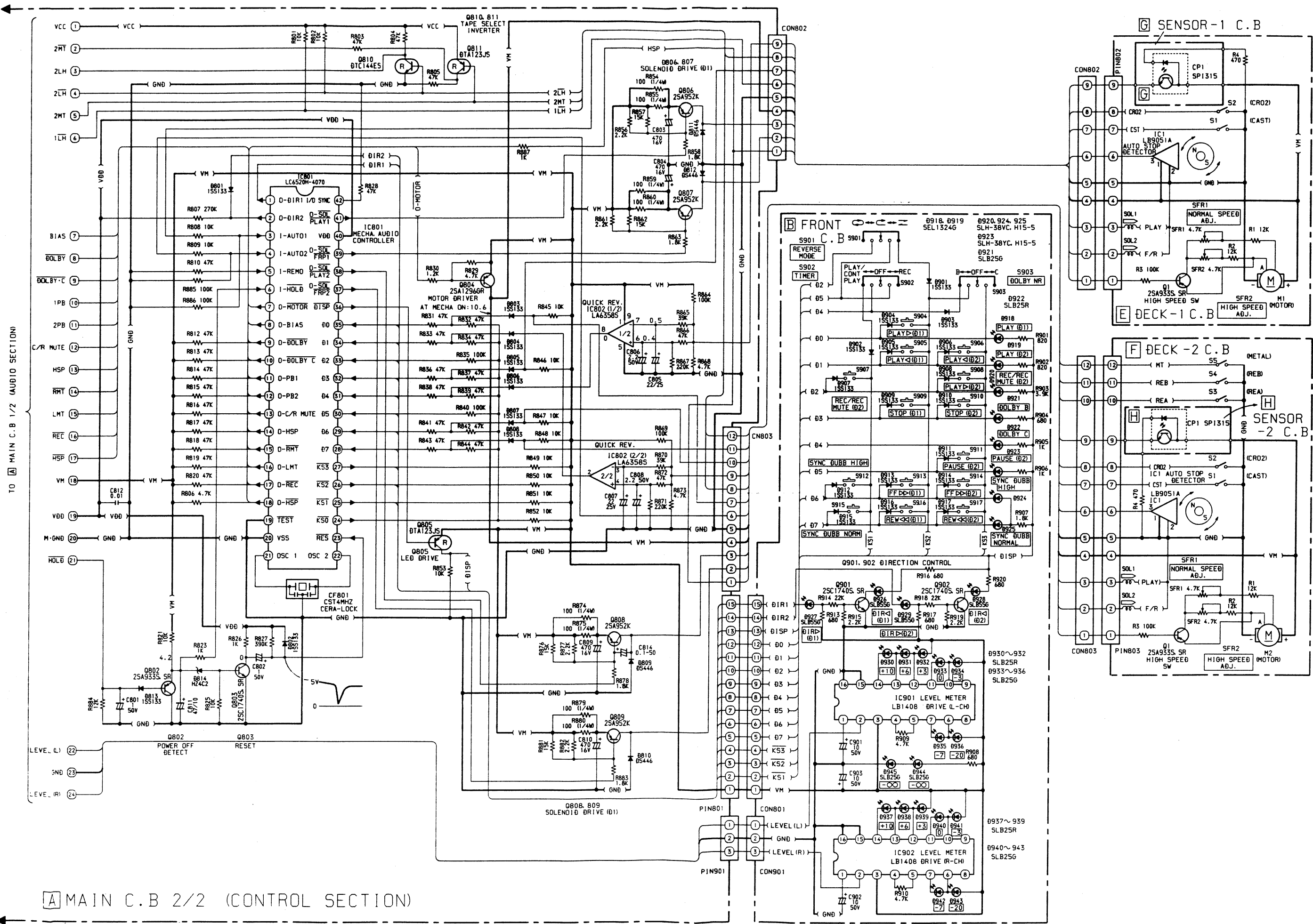
I RELAY-1 C.B.

J RELAY-2 C.B.



D POWER C.B.

(H MODEL)
AC120/220/240V
50/60Hz
(U, C MODEL)
AC120V, 60Hz
(E, Z MODEL)
AC220V, 50/60Hz
(K MODEL)
AC240V, 50/60Hz



A MAIN C.B. 2/2 (CONTROL SECTION)

ADJUSTMENT

Initial Settings

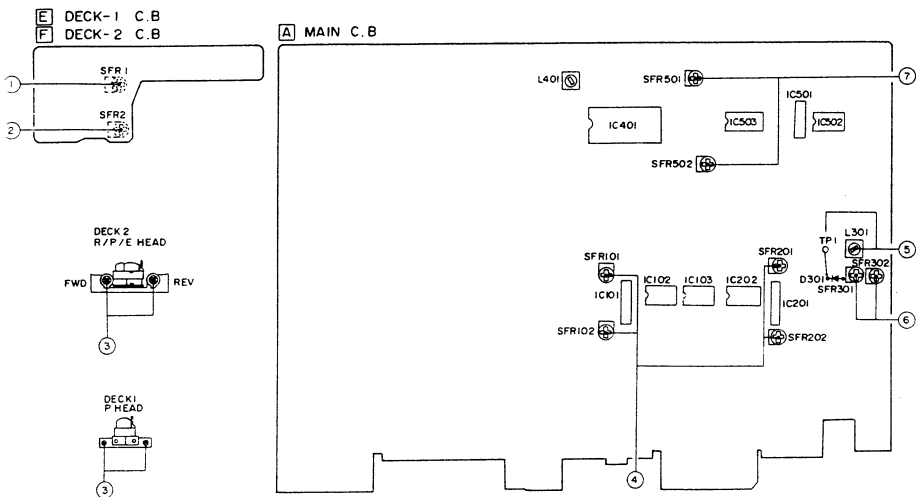
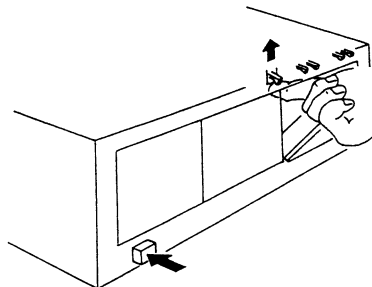
TIMER : OFF
 STSD MODE : $\overline{\text{---}}$
 DOLBY NR : OFF
 BIAS FINE (NORMAL) : Center
 BIAS FINE (CrO₂) : Center
 BALANCE : Center
 REC LEVEL : Center
 OVC LEVEL : 1kHz, 370mV

Tape Speed Adjustment

Set the unit to the test mode by the following procedure before performing speed adjustment. Be sure to perform normal speed adjustment first. If high speed adjustment is done first, adjustment will drift.

To set the test mode :

1. Turn the power switch off.
2. Open the cassette lid of DECK 2.
3. Turn the power switch on while pressing the miserasure prevention lever (FWD side) of DECK 2 as shown in the figure.
4. After several seconds, the LED display light showing that the unit has entered the test mode.



Normal Speed Adjustment (DECK 1, DECK 2)

Settings : • Test tape: TTA-100 (TTA-111S)
 • Test point: LINE OUT jack
 • Adjustment location: SFR1 on [E] DECK-1 C.B.
 SFR1 on [F] DECK-2 C.B.

Method : Play the test tape and adjust so that the frequency is 3000Hz.

High Speed Adjustment (DECK 1, DECK 2)

Settings : • Test tape: TTA-100 (TTA-111S)
 • Test point: LINE OUT jack
 • Adjustment location: SFR2 on [E] DECK-1 C.B.
 SFR2 on [F] DECK-2 C.B.

Method :

1. Set the unit to the test mode.
2. Load test tape TTA-100 (TTA-111S).

3. Press the PLAY button and then the HIGH button to set the unit to the high speed mode.
 4. Adjust SFR2 so that the frequency is 6000Hz.
 5. After adjustment is completed, press the HIGH button to set the unit to the normal speed mode.
 6. Press the STOP button.
 7. Turn the power switch off to release the test mode.
- Notes: (1) Keys other than the HIGH button will not operate in the high speed mode.
 (2) Do not turn the power switch off in the high speed mode.

3. Azimuth Adjustment (DECK 1, DECK 2)

Settings : • Test tape: TTS-310 (TTA-317E)
 • Test point: LINE OUT jack
 • Adjustment location: Azimuth adjustment screws (DECK-1, DECK-2, FWD, REV)

Method : Play the 10kHz signal of test tape and adjust so that the output is maximum and the waveforms in the Lissajours are in phase. Then tighten the screw slightly so that the output is within -0.5dB for the maximum value and the waveforms are within 90°.

4. Playback Level Adjustment (DECK 1, DECK 2)

Settings : • Test tape: TTA-200 (TTA-161, TCC-130)
 • Test point: LINE OUT jack
 • Adjustment location: SFR101 (DECK 1, Lch)
 SFR102 (DECK 1, Rch)
 SFR201 (DECK 2, Lch)
 SFR202 (DECK 2, Rch)

Method : Play the test tape and adjust so that the output level is 520mV±20mV.

5. Bias Frequency Adjustment (DECK 2)

Settings : • Test tape: TTA-620 (TTA-119MP)
 • Test point: TP1 (D301 cathode)
 • Adjustment location: L301

Method : Set to the record mode and adjust so that the frequency is 108kHz±0.3kHz.

6. REC/PB Frequency Response Adjustment (DECK 2)

Settings : • Test tape: TTA-600 (TTA-119K)
 • Input signal: 1kHz/10kHz (LINE IN jack)
 • Test point: LINE OUT jack
 • Adjustment location: SFR301 (Lch)
 SFR302 (Rch)

Method : Apply a 1kHz signal and adjust an attenuator so that the output level is 35mV at LINE OUT jack. Record and play back the 1kHz and 10kHz signals and adjust so that the output level of 10kHz signal is -0.5dB±0.5dB for 1kHz signal.

7. REC/PB Sensitivity Adjustment (DECK 2)

Settings : • Test tape: TTA-600 (TTA-119K)
 • Input signal: 1kHz (LINE IN jack)
 • Test point: LINE OUT jack
 • Adjustment location: SFR501 (DECK 2, Lch)
 SFR502 (DECK 2, Rch)

Method : Apply a 1kHz signal and adjust an attenuator so that the output level is 35mV at LINE OUT jack. Record and play back the 1kHz signal and adjust so that the output is -0.4dB±0.2dB.

PRACTICAL SERVICE FIGURE

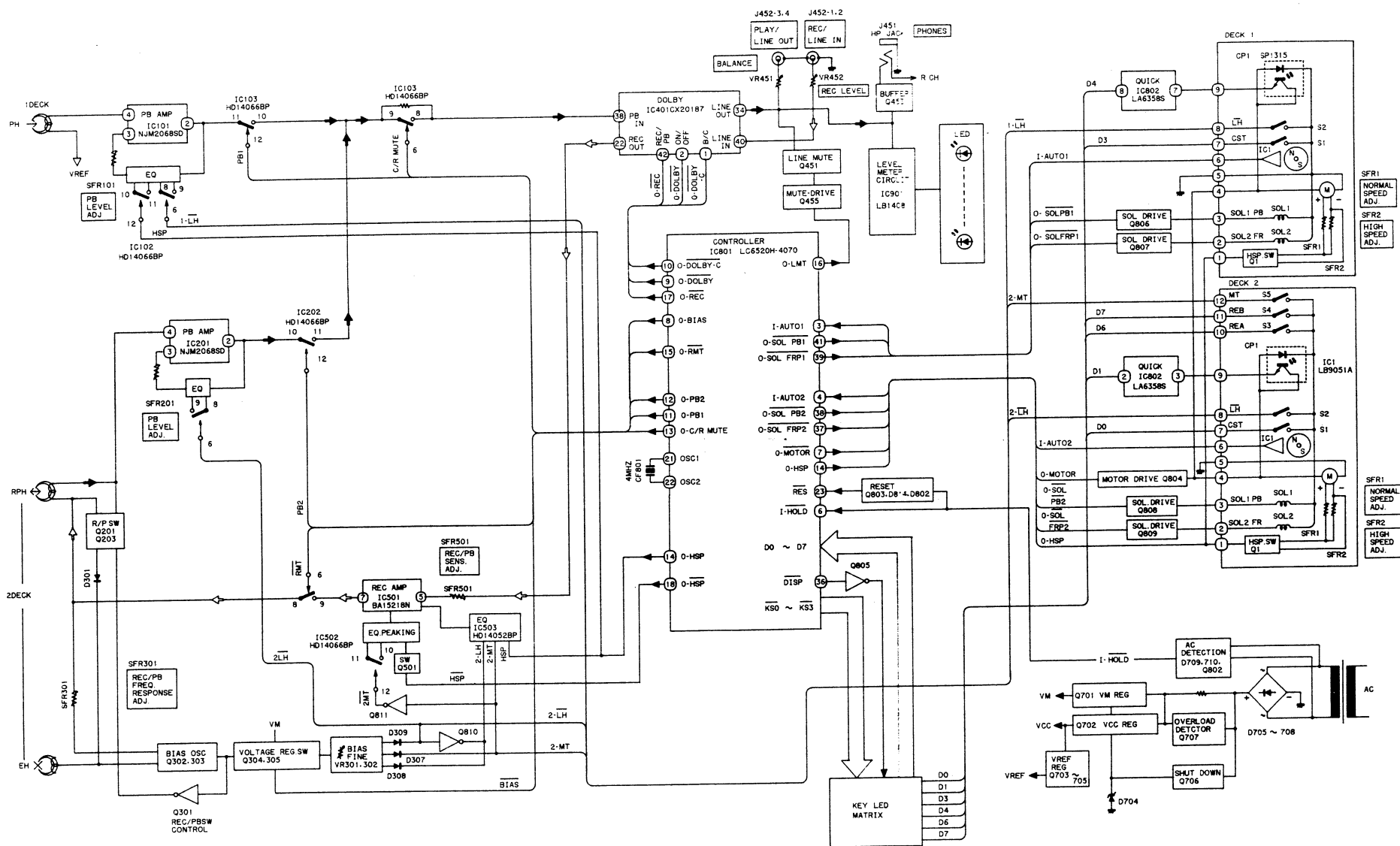
Playback output : 520mV±50mV (LINE OUT)
 TTA-200 (TTA-161, TCC-130)
 PB/REC output : 0VU±1.3dB (LINE OUT)
 0VU±1.7dB
 TTA-600 (TTA-119K)
 (At Dubbing, Master tape TTA-200)

PB/REC distortion : Less than 1.8% (MT, CrO₂, NORM.)
 Playback noise : Less than 1.1/1.0mV
 (CrO₂, DOLBY NR B/C)
 (DIN AUDIO) Less than 2.0mV
 (NORM., DOLBY NR OFF)

Erase ratio (125Hz) : More than 60dB
 Cross talk (PB) : More than 65dB
 Channel separation (PB) : More than 35dB
 Level drift : Within 1dB
 PB/REC S/N ratio : More than 45dB
 (DIN AUDIO) (MT, CrO₂, DOLBY NR OFF)
 More than 43dB
 (NORM., DOLBY NR OFF)
 (Weighted-A) More than 49/50dB
 (MT, CrO₂, DOLBY NR B/C)
 More than 48/49dB
 (NORM., DOLBY NR B/C)

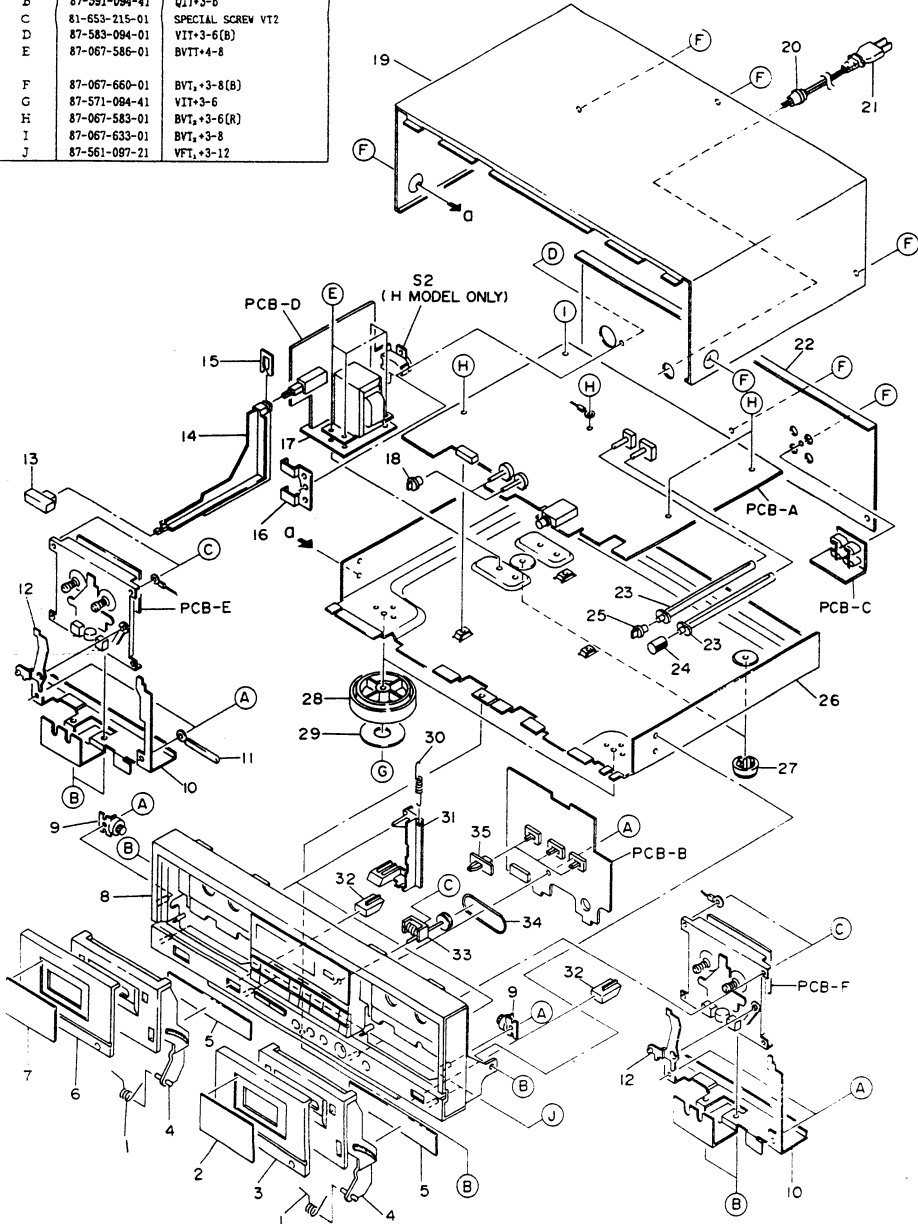
Recording bias frequency: 108kHz
 Tape speed : 3kHz±1.5% (D1, 2)
 TTA-100 (TTA-111S)
 Wow & flutter : Less than 0.075% (D1, 2)
 (W.R.M.S.)
 Take-up torque : 30~60 g-cm (D1, 2)
 F. FWD torque : 80~160 g-cm (D1, 2)
 Rewind torque : 80~160 g-cm (D1, 2)
 Back-tension : 1~5 g-cm (D1, 2)
 Test tapes : METAL TTA-620 (TTA-119MP)
 CrO₂ TTA-610 (TTA-119H)
 NORMAL TTA-600 (TTA-119K)

BLOCK DIAGRAM



EXPLODED VIEW - 1

REF. NO.	PART NO.	DESCRIPTION
A	87-067-578-01	BVT, +3-8
B	87-591-094-41	QIT+3-6
C	81-653-215-01	SPECIAL SCREW VT2
D	87-583-094-01	VIT+3-6(B)
E	87-067-586-01	BVT+4-8
F	87-067-660-01	BVT, +3-8(B)
G	87-571-094-41	VIT+3-6
H	87-067-583-01	BVT, +3-6(R)
I	87-067-633-01	BVT, +3-8
J	87-561-087-21	VFT, +3-12

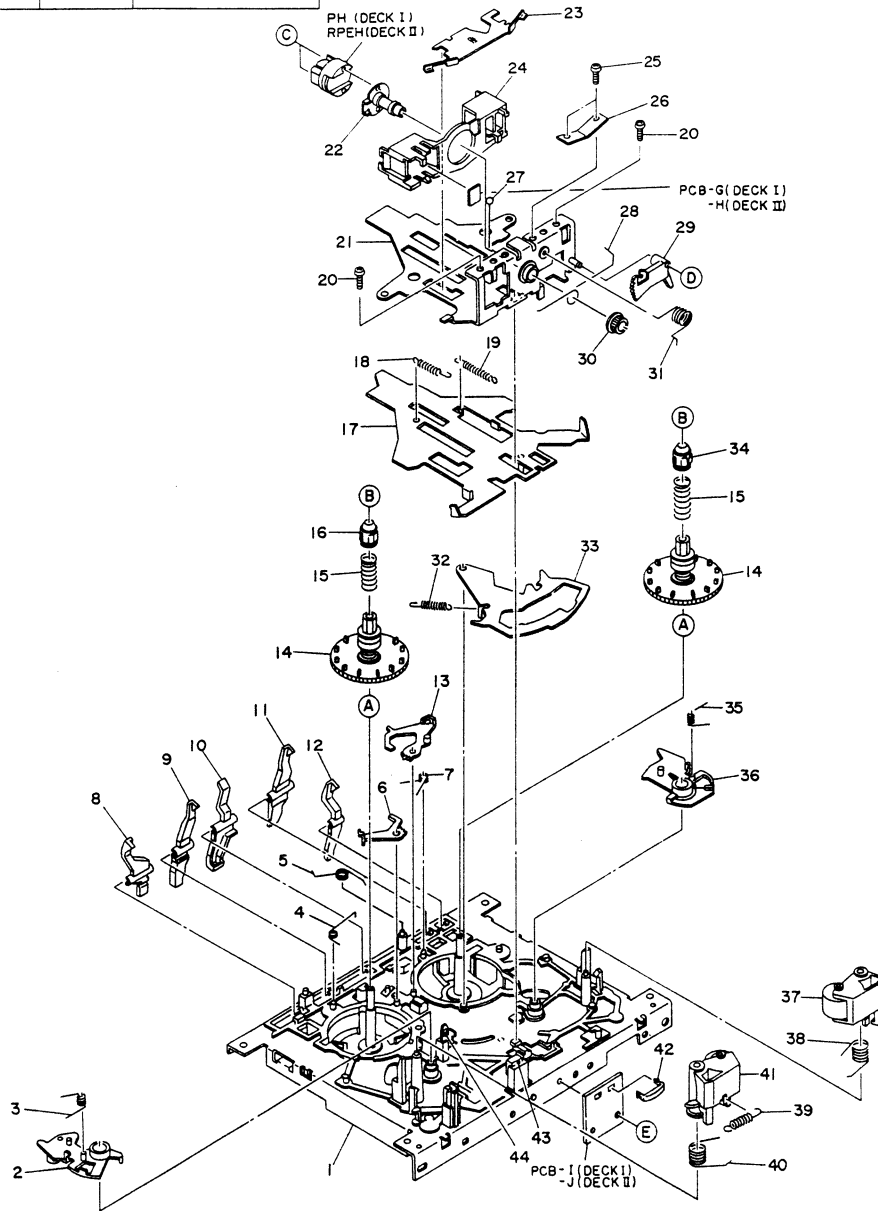


MECHANICAL PARTS LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q. TY
	1-1	*84-790-208-019	SPRING, EJECT		2
	1-2	*84-790-027-019	WINDOW, CASSETTE BOX 2		1
	1-3	*84-792-018-019	PANEL, CASSETTE BOX 2L	*	1
	1-4	*09-047-508-010	BOX, CASSETTE ASSY(H, C, E, K, Z)	*	2
	1-4	*09-047-509-010	BOX, CASSETTE ASSY(U)	*	2
	1-5	---	SHEET FOAMED MAT 250-25		2
	1-6	*84-792-017-019	PANEL, CASSETTE BOX 1L	*	1
	1-7	*84-791-016-019	WINDOW, CASSETTE BOX 1M		1
	1-8	*09-047-508-010	CABINET, FRONT ASSY(H, C, E, K, Z)	*	1
	1-8	*09-047-507-010	CABINET, FRONT ASSY(U)	*	1
	1-9	*87-063-143-010	OIL-DAMPER 75		2
	1-10	*84-790-207-019	HOLDER, MECHANISM		2
	1-11	---	WIRE BINDER		1
	1-12	*86-535-393-019	LEVER, EJECT STOPPER		2
	1-13	*84-721-023-010	BUTTON, POWER		1
	1-14	*84-790-209-019	ROD, POWER		1
	1-15	*82-385-383-010	STOPPER, ROD		1
	1-16	*83-317-212-019	HOLDER, VS(H)		1
	1-17	*84-790-218-010	PLATE, SHIELD		2
	1-18	*84-424-008-019	KNOB, VOLUME		1
	1-19	*84-790-003-019	CABINET, STEEL		1
	1-20	*87-085-184-010	BUSHING AC CORD(H)		1
	1-20	*87-085-189-010	BUSHING AC CORD(U, C)		1
	1-20	*87-085-185-010	BUSHING AC CORD(E, K, Z)		1
	1-21	*87-034-749-019	AC CORD(H)		1
	1-21	*87-034-584-019	AC CORD(U, C)		1
	1-21	*82-187-797-019	AC CORD(E, Z)		1
	1-21	*82-187-796-019	AC CORD(K)		1
	1-22	*84-792-004-019	PANEL, REAR(H)	*	1
	1-22	*84-792-010-019	PANEL, REAR(HJ)	*	1
	1-22	*84-792-005-019	PANEL, REAR(U)	*	1
	1-22	*84-792-006-019	PANEL, REAR(C)	*	1
	1-22	*84-792-007-019	PANEL, REAR(E)	*	1
	1-22	*84-792-008-019	PANEL, REAR(K)	*	1
	1-22	*84-792-009-019	PANEL, REAR(Z)	*	1
	1-23	*84-790-216-019	SHAFT, VOLUME		2
	1-24	*84-790-015-019	KNOB, VOLUME		1
	1-25	*84-790-040-010	KNOB, BALANCE		1
	1-26	---	CHASSIS, 9D		1
	1-27	*81-675-010-010	FOOT, H10		2
	1-28	*84-738-022-010	FOOT		2
	1-29	*84-731-027-010	FELT, FOOT		2
	1-30	*84-790-212-019	E-SPRING, ROD		2
	1-31	*84-790-206-019	ROD, EJECT		2
	1-32	*84-790-014-019	BUTTON, EJECT		2
	1-33	*84-792-016-010	COUNTER, 19.1	*	1
	1-34	*82-196-240-010	BELT, CIR 45.2		1
	1-35	*84-790-039-019	KNOB, SLIDE N		3

EXPLODED VIEW-2

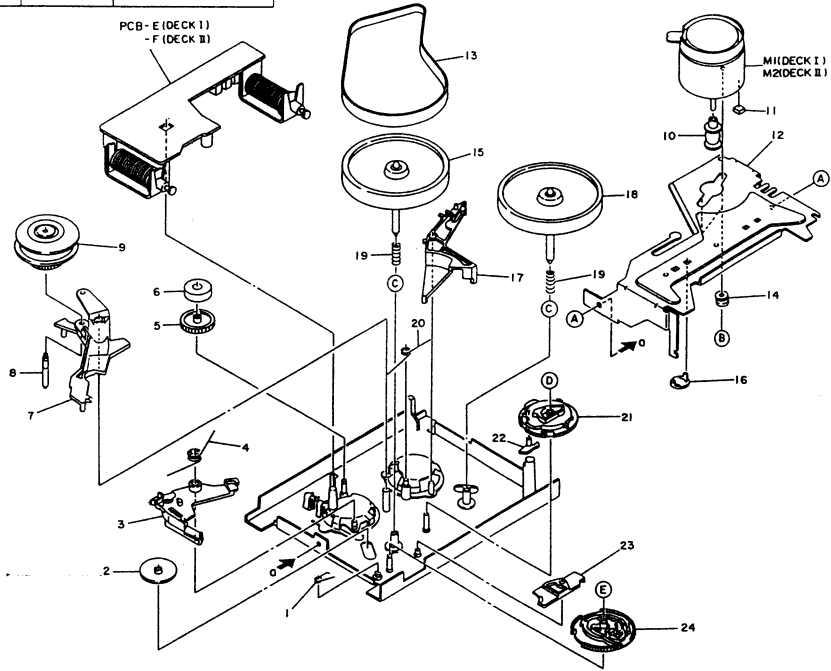
REF. NO.	PART NO.	DESCRIPTION
A	87-067-470-01	PW4, 1-6, 9-0, 13
B	86-524-418-01	VFT 2+1, 4-5
C	87-067-177-01	V+1, 6-5, 5
D	87-081-489-01	PW1, 7-3, 5-0, 25
E	87-067-174-01	VTT+2-4



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	2-1	★86-575-217-110	MECHANISM CHASSIS ASSY		1
	2-2	★86-535-239-110	LEVER, PLAY R		1
	2-3	★86-535-283-019	T-SPRING, PLAY GEAR R		1
	2-4	★86-535-371-019	T-SPRING, BRAKE R		1
	2-5	★86-575-225-010	T-SPRING, CASSETTE		1
	2-6	★86-535-252-210	LEVER, BRAKE R		1
	2-7	★86-535-370-019	T-SPRING, BRAKE F		1
	2-8	★86-535-247-210	LEVER, REC GUARD A (DECK II)		1
	2-9	★86-535-250-010	LEVER, METAL (DECK II)		1
	2-10	★86-535-249-210	LEVER, CASSETTE SENSOR		1
	2-11	★86-535-254-110	LEVER, CR		1
	2-12	★86-535-248-310	LEVER, REC GUARD B (DECK II)		1
	2-13	★86-535-251-010	LEVER, BRAKE F		1
	2-14	★86-535-240-210	REEL TABLE R ASSY		2
	2-15	★86-535-293-019	C-SPRING, REEL TABLE		2
	2-16	★86-524-218-119	STOPPER, REEL TABLE S		1
	2-17	★86-535-215-310	SLIDE PLATE ASSY		1
	2-18	★86-575-227-010	E-SPRING, LEVER SLIDE		1
	2-19	★86-575-226-010	E-SPRING, CHASSIS HEAD		2
	2-20	★86-575-236-010	S-SCREW, TAPE ADJUSTMENT		2
	2-21	★86-575-209-010	HEAD CHASSIS ASSY		1
	2-22	★86-575-207-010	HEAD HOUSING ASSY		1
	2-23	★86-535-289-010	P-SPRING, HEAD CHASSIS		1
	2-24	★86-575-214-110	GUIDE, TAPE		1
	2-25	★86-575-235-010	S-SCREW, AZIMUTH		2
	2-26	★86-524-300-019	P-SPRING, AZIMUTH		1
	2-27	★87-073-018-019	STEEL BALL 1.588		1
	2-28	★86-575-240-010	T-SPRING, GUIDE		1
	2-29	★86-535-246-210	GEAR, SEGMENT		1
	2-30	★86-575-206-010	GEAR, HEAD FR		1
	2-31	★86-535-290-010	T-SPRING, GEAR SEGMENT		1
	2-32	★86-535-284-010	E-SPRING, LEVER DIRECTION		1
	2-33	★86-535-218-210	LEVER DIRECTION ASSY		1
	2-34	★86-524-233-119	STOPPER, REEL TABLE T		1
	2-35	★86-535-282-019	T-SPRING, PLAY GEAR F		1
	2-36	★86-535-238-210	LEVER, PLAY F		1
	2-37	★86-535-226-110	PINCH LEVER F ASSY		1
	2-38	★86-575-222-010	T-SPRING, PINCH F		1
	2-39	★86-535-287-110	E-SPRING, PINCH		1
	2-40	★86-575-223-010	T-SPRING, PINCH R		1
	2-41	86-535-228-110	PINCH LEVER R ASSY		1
	2-42	★86-575-234-010	HOLDER, WIRE		1
	2-43	★86-535-353-010	FELT SQ 5-4-2		1
	2-44	★86-517-353-019	SHEET, QUICK		1

EXPLODED VIEW - 3

REF. NO.	PART NO.	DESCRIPTION
A	87-081-501-01	VTT+26-4
B	86-575-243-01	MOTOR SCREW
C	87-067-332-01	PW2.8-4.7-0.13
D	87-081-489-01	PW1.7-3.5-0.25
E	87-067-380-01	PW1.7-7-0.5



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	3-1	★86-535-291-210	T-SPRING, FR CAM		1
	3-2	★86-535-259-310	GEAR, PLAY		1
	3-3	86-535-230-310	LEVER, TRIGGER FR		1
	3-4	★86-535-278-019	T-SPRING, FR		1
	3-5	★86-575-220-010	GEAR, IDLER		1
	3-6	★86-535-614-010	RING, MAGNET		1
	3-7	86-535-233-110	LEVER FR		1
	3-8	86-575-213-010	SHAFT, FR		1
	3-9	★86-535-301-110	SLIP DISK ASSY		1
	3-10	★86-575-237-010	PULLEY, MOTOR B		1
	3-11	★86-575-261-019	G CUSHION 5-5-1.3.5		1
	3-12	★86-575-218-010	HOLDER, MOTOR		1
	3-13	★86-575-210-110	BELT 1		1
	3-14	★86-575-242-010	G CUSHION DIAL 3.9-3.2		2
	3-15	86-575-203-010	FLYWHEEL F ASSY		1
	3-16	★86-535-255-010	RETAINER, FLYWHEEL		2
	3-17	86-535-231-210	LEVER, TRIGGER PLAY		1
	3-18	86-575-201-010	FLYWHEEL R ASSY		1
	3-19	★86-535-288-019	C-SPRING, FLYWHEEL		1
	3-20	★86-535-279-010	T-SPRING, MAIN		1
	3-21	★86-535-260-310	CAM, MAIN		1
	3-22	★86-535-308-110	LEVER, CHANGE		1
	3-23	★86-575-229-010	LEVER, PAUSE B		1
	3-24	★86-535-261-310	CAM, FRP		1

SPRING APPLICATION POSITION

