

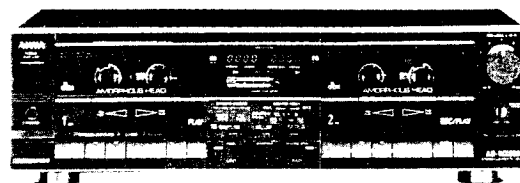
SERVICE MANUAL

MODEL No. **AD-WX808**

■ STEREO CASSETTE DECK

■ TYPE. HB,UB,EB,KB,ZB

■ BASIC MECHANISM : X-3



SPECIFICATIONS

Type Stereo cassette tape deck
Track format 4 tracks, 2 channels
Power supply **AD-WX808E, Z**
AC 220 V, 50/60 Hz
AD-WX808K
AC 240 V, 50/60 Hz
AD-WX808U
AC 120 V, 60 Hz
AD-WX808H
AC 120 V/220 V/240 V
switchable, 50/60 Hz

Power consumption **AD-WX808E, K, Z**
36 W
AD-WX808H, U
30 W

Frequency response METAL tape: 20 - 18,000 Hz
CrO₂ tape: 20 - 17,000 Hz
NORMAL tape: 20 - 16,000 Hz

Signal-to-noise ratio 92 dB (CrO₂ tape dbx NR ON)
73 dB
(METAL tape DOLBY C NR ON)

Wow and flutter Deck ①
0.1% (According to DIN 45500)
0.055% (WRMS)
Deck ②
0.1% (According to DIN 45500)
0.055% (WRMS)

Tape speed 4.8 cm/sec. (1-7/8 ips), 9.5 cm/sec (Double speed)

Recording system AC bias (frequency 100 kHz)

Erase system AC erase

Motor DC Servomotor × 2

Heads Record/playback head × 1 (AMORPHOUS HEAD)
Playback head × 1 (AMORPHOUS HEAD)
Erase head × 1


Inputs LINE IN maximum input sensitivity: 50 mV (over 50 kΩ)

Outputs LINE OUT standard output level: 400 mV (0 VU); suitable load impedance: over 47 kΩ.

Dimensions 430(W) × 126.5(H) × 318.5(D)mm

Weight 5.5 kg

• HX professional originated by BANG&OLUFSEN.

- 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.

REF.NO. PART NO. ORDER DESCRIPTION

--- IC ---

87-001-144-010	IC,AN6292NK
87-020-180-010	IC,BA6146
87-001-143-010	IC,CX20187
87-020-454-010	IC,DM6851
82-202-621-010	IC,HD38702A39
87-020-140-010	IC,L78M12
87-020-261-010	IC,LA6358S
82-224-614-010	IC,LC6520H-3386
87-020-533-010	IC,M4069UBP
87-027-895-010	IC,M5218L
87-020-680-010	IC,NJM2068S
87-020-758-010	IC,NJM2068SD
87-001-133-010	IC,NJU4052BP
87-020-908-010	IC,NJU4066BD

--- TRANSISTOR ---

89-503-735-010	FET,2SK373GR
87-026-219-010	TRANSISTOR,DTA144ES
87-026-292-010	TRANSISTOR,DTA144WS
87-026-218-010	TRANSISTOR,DTC144ES
89-109-521-010	TRANSISTOR,2SA952K
89-110-155-010	TRANSISTOR,2SA1015GR
89-313-834-010	TRANSISTOR,2SC1383(S)
89-318-155-010	TRANSISTOR,2SC1815GR
89-320-011-010	TRANSISTOR,2SC2001K
89-331-138-010	TRANSISTOR,2SC3113B
89-309-456-010	TRANSISTOR,2SC945LP
89-411-110-010	TRANSISTOR,2SD1111
89-413-023-010	TRANSISTOR,2SD1302S
89-414-065-010	TRANSISTOR,2SD1406GR

--- MAIN CIRCUIT BOARD SECTION ---

PCB-A	*	MAIN CIRCUIT BOARD
C1	*82-186-685-010	CAP,ELECT 3300-35
C3	*87-010-235-010	CAP,ELECT 470-16
C5	*87-010-237-010	CAP,ELECT 1000-16 SME
C6	*87-010-623-010	CAP,ELECT 470-63
C7	*87-010-623-010	CAP,ELECT 470-63
C8	*87-010-374-010	CAP,ELECT 47-10
C9	*87-010-565-010	CAP,ELECT 470-12
C10	*87-010-248-010	CAP,ELECT 220-10 SME
C11	*87-010-404-010	CAP,ELECT 4.7-50 SME
C12	*87-010-260-010	CAP,ELECT 47-25 SME
C22	*87-010-401-010	CAP,ELECT 1-50 SME
C23	*87-010-248-010	CAP,ELECT 220-10 SME
C101	*87-018-121-010	CAP,CERA-SOL SS 150P
C102	*87-018-121-010	CAP,CERA-SOL SS 150P
C103	*87-018-106-010	CAP,CERA-SOL SS 15P
C104	*87-018-106-010	CAP,CERA-SOL SS 15P
C107	*87-010-134-010	CAP,ELECT BP 4.7-35
C108	*87-010-134-010	CAP,ELECT BP 4.7-35
C111	*87-018-205-010	CAP,CERA-SOL SS 0.022
C112	*87-010-101-010	CAP,ELECT 220-16 SME
C113	*87-018-119-010	CAP,CERA-SOL SS 100P
C114	*87-018-119-010	CAP,CERA-SOL SS 100P
C201	*87-018-121-010	CAP,CERA-SOL SS 150P
C202	*87-018-121-010	CAP,CERA-SOL SS 150P
C203	*87-018-106-010	CAP,CERA-SOL SS 15P
C204	*87-018-106-010	CAP,CERA-SOL SS 15P
C207	*87-010-134-010	CAP,ELECT BP 4.7-35
C208	*87-010-134-010	CAP,ELECT BP 4.7-35
C211	*87-018-205-010	CAP,CERA-SOL SS 0.022

REF.NO. PART NO. ORDER DESCRIPTION

C221	*87-018-119-010	CAP,CERA-SOL SS 100P
C222	*87-018-119-010	CAP,CERA-SOL SS 100P
C223	*87-018-121-010	CAP,CERA-SOL SS 150P
C224	*87-018-121-010	CAP,CERA-SOL SS 150P
C251	*87-018-133-010	CAP,CERA-SOL SS 4700P
C252	*87-018-097-010	CAP,CERA-SOL SS 2.2P
C253	*87-018-133-010	CAP,CERA-SOL SS 4700P
C254	*87-018-205-010	CAP,CERA-SOL SS 0.022
C255	*88-337-790-010	CAP,ELECT 0.68-50
C256	*87-010-112-010	CAP,ELECT 100-16
C301	*87-010-402-010	CAP,ELECT 2.2-50 SME
C302	*87-010-402-010	CAP,ELECT 2.2-50 SME
C319	*87-018-131-010	CAP,CERA-SOL SS 1000P
C320	*87-018-131-010	CAP,CERA-SOL SS 1000P
C413	*87-010-385-010	CAP,ELECT 220-25
C421	*87-010-260-010	CAP,ELECT 47-25 SME
C422	*87-010-382-010	CAP,ELECT 22-25 SME
C425	*87-018-133-010	CAP,CERA-SOL SS 4700P
C428	*87-014-079-010	CAP,PP 8200P
C429	*87-018-131-010	CAP,CERA-SOL SS 1000P
C430	*87-010-378-010	CAP,ELECT 10-16
C431	*87-018-121-010	CAP,CERA-SOL SS 150P
C432	*87-018-121-010	CAP,CERA-SOL SS 150P
C451	*87-018-131-010	CAP,CERA-SOL SS 1000P
C452	*87-018-131-010	CAP,CERA-SOL SS 1000P
C455	*87-018-131-010	CAP,CERA-SOL SS 1000P
C456	*87-018-131-010	CAP,CERA-SOL SS 1000P
C457	*87-018-131-010	CAP,CERA-SOL SS 1000P
C458	*87-018-131-010	CAP,CERA-SOL SS 1000P
C461	*87-018-123-010	CAP,CERA-SOL SS 220P
C462	*87-018-123-010	CAP,CERA-SOL SS 220P
C465	*87-010-260-010	CAP,ELECT 47-25 SME
C466	*87-010-565-010	CAP,ELECT 470-12
C505	*87-010-378-010	CAP,ELECT 10-16
C506	*87-010-378-010	CAP,ELECT 10-16
C507	*87-010-378-010	CAP,ELECT 10-16
C508	*87-010-378-010	CAP,ELECT 10-16
C509	*87-010-624-010	CAP,ELECT 220-16 SXJ
C510	*87-010-624-010	CAP,ELECT 220-16 SXJ
C515	*87-010-400-010	CAP,ELECT 0.47-50 SME
C516	*87-010-400-010	CAP,ELECT 0.47-50 SME
C521	*87-010-545-010	CAP,ELECT 0.22-50 SME
C522	*87-010-545-010	CAP,ELECT 0.22-50 SME
C531	*87-010-378-010	CAP,ELECT 10-16
C532	*87-010-378-010	CAP,ELECT 10-16
C601	*87-010-379-010	CAP,ELECT 22-16 SME
C602	*87-010-379-010	CAP,ELECT 22-16 SME
C605	*87-014-044-010	CAP,PP 300P
C606	*87-014-044-010	CAP,PP 300P
C607	*87-010-621-010	CAP,ELECT 1.5-50 MA
C608	*87-010-621-010	CAP,ELECT 1.5-50 MA
C609	*87-018-197-010	CAP,CERA-SOL SS 1800P
C610	*87-018-197-010	CAP,CERA-SOL SS 1800P
C611	*87-018-197-010	CAP,CERA-SOL SS 1800P
C612	*87-018-197-010	CAP,CERA-SOL SS 1800P
C613	*87-010-403-010	CAP,ELECT 3.3-50 SME
C614	*87-010-403-010	CAP,ELECT 3.3-50 SME
C615	*87-010-137-010	CAP,ELECT BP 22-16
C616	*87-010-137-010	CAP,ELECT BP 22-16
C629	*87-014-045-010	CAP,PP 330P
C630	*87-014-045-010	CAP,PP 330P
C641	*87-010-624-010	CAP,ELECT 220-16 SXJ
C643	*87-010-624-010	CAP,ELECT 220-16 SXJ
C645	*87-010-620-010	CAP,TANTALUM 22-16 J

REF.NO.	PART NO.	ORDER	DESCRIPTION	REF.NO.	PART NO.	ORDER	DESCRIPTION	REF.NO.	PART NO.	ORDER	DESCRIPTION	REF.NO.	PART NO.	ORDER	DESCRIPTION		
C646	*87-010-620-010		CAP,TANTALUM 22-16 J	D813	87-020-752-010		DIODE 1SS270	SFR451	*87-027-746-010		SFR 100K	C753	*87-010-101-010		CAP,ELECT 220-16 SME		
C700	*87-018-134-010		CAP,CERA-SOL SS 0.01	D814	87-020-752-010		DIODE 1SS270	SFR452	*87-027-746-010		SFR 100K	C754	*87-010-101-010		CAP,ELECT 220-16 SME		
C701	*87-015-241-010		CAP,ELECT LL 1-50	D851	87-020-123-010		DIODE DS446	SFR601	*87-021-741-010		SFR 4.7K	C755	*87-010-385-010		CAP,ELECT 220-25		
C702	*87-015-241-010		CAP,ELECT LL 1-50	D852	87-020-123-010		DIODE DS446	SFR1451	*87-021-747-010		SFR 220K	J751	87-049-827-010		JACK HLJ-0521-010(PHONES)		
C801	*87-018-118-010		CAP,CERA-SOL SS 82P	D853	87-020-123-010		DIODE DS446	SFR1452	*87-021-747-010		SFR 220K	△ S1	82-224-617-010		PUSH SW(POWER)		
C802	*87-018-205-010		CAP,CERA-SOL SS 0.022	D854	87-020-123-010		DIODE DS446	=== KEY CIRCUIT BOARD SECTION ===				=== SW-1 CIRCUIT BOARD SECTION ===					
C851	*87-010-565-010		CAP,ELECT 470-12 SME	D901	87-020-752-010		DIODE 1SS270	PCB-B	*	KEY CIRCUIT BOARD	PCB-E	*	SW-1 CIRCUIT BOARD				
C852	*87-010-565-010		CAP,ELECT 470-12 SME	D902	87-020-752-010		DIODE 1SS270	D1001	87-020-752-010		DIODE 1SS270	D1501	87-020-752-010		DIODE 1SS270		
C853	*87-010-565-010		CAP,ELECT 470-12 SME	D903	87-020-752-010		DIODE 1SS270	D1002	87-020-752-010		DIODE 1SS270	D1502	87-020-752-010		DIODE 1SS270		
C854	*87-010-565-010		CAP,ELECT 470-12 SME	D904	87-020-752-010		DIODE 1SS270	D1003	87-027-556-010		DIODE,ZENER HZ11B3	D1561	*87-001-159-010		LED,SLV31MC 3F GR(D1 PLAY)		
C881	*87-010-379-010		CAP,ELECT 22-16 SME	D951	87-020-752-010		DIODE 1SS270	D1505	87-020-752-010		DIODE 1SS270	D1562	*87-001-159-010		LED,SLV31MC 3F GR(D1 PLAY)		
C882	*87-010-402-010		CAP,ELECT 2.2-50 SME	D952	87-020-752-010		DIODE 1SS270	D1506	87-020-752-010		DIODE 1SS270	D1563	*87-001-159-010		LED,SLV31MC 3F GR(D1 PLAY)		
C883	*87-010-379-010		CAP,ELECT 22-16 SME	D953	87-020-752-010		DIODE 1SS270	D1507	87-020-752-010		DIODE 1SS270	D1564	*87-001-159-010		LED,SLV31MC 3F GR(D1 PL'Y)		
C884	*87-010-402-010		CAP,ELECT 2.2-50 SME	D1401	87-020-752-010		DIODE 1SS270	D1508	87-020-752-010		DIODE 1SS270	SW1501	87-031-893-010		TACT SW(FWD PLAY D1)		
C900	*87-018-134-010		CAP,CERA-SOL SS 0.01	D1402	87-020-752-010		DIODE 1SS270	D1509	87-020-752-010		DIODE 1SS270	SW1502	87-031-893-010		TACT SW(REV PLAY D1)		
C901	*87-010-401-010		CAP,ELECT 1-50 SME	△ FR1	87-029-090-010		RES,FUSIBLE 22-1/4W	D1510	87-020-752-010		DIODE 1SS270	=== SW-2 CIRCUIT BOARD SECTION ===					
C902	*87-010-401-010		CAP,ELECT 1-50 SME	ICP1	*83-203-688-010		PROTECTOR ICP-N25	D1511	87-020-752-010		DIODE 1SS270	PCB-F	*	SW-2 CIRCUIT BOARD			
C951	*87-010-404-010		CAP,ELECT 4.7-50 SME	ICP2	*87-001-211-010		PROTECTOR ICP-N50	D1512	87-020-752-010		DIODE 1SS270	D1503	87-020-752-010		DIODE 1SS270		
C952	*87-010-404-010		CAP,ELECT 4.7-50 SME	J701	87-049-420-010		PIN JACK 4P-14(LINE IN)	D1513	87-020-752-010		DIODE 1SS270	D1504	87-020-752-010		DIODE 1SS270		
C953	*87-010-378-010		CAP,ELECT 10-16	J901	87-049-420-010		PIN JACK 4P-14(LINE OUT)	D1514	87-020-752-010		DIODE 1SS270	D1565	*87-001-160-010		LED,SLV31VC 3F RED(D2 PLAY)		
C954	*87-010-378-010		CAP,ELECT 10-16	L251	*81-760-621-010		COIL 130UH	D1515	87-020-752-010		DIODE 1SS270	D1566	*87-001-160-010		LED,SLV31VC 3F RED(D2 PLAY)		
C955	*87-010-380-010		CAP,ELECT 47-16 SME	L301	*87-003-128-010		INDUCTOR 5.6MMH	D1516	87-020-752-010		DIODE 1SS270	D1567	*87-001-160-010		LED,SLV31VC 3F RED(D2 PLAY)		
C956	*87-010-380-010		CAP,ELECT 47-16 SME	L302	*87-003-128-010		INDUCTOR 5.6MMH	D1517	87-020-752-010		DIODE 1SS270	D1568	*87-001-160-010		LED,SLV31VC 3F RED(D2 PLAY)		
C957	*87-010-385-010		CAP,ELECT 220-25	L303	*87-003-131-010		COIL CHOKE 10MMH	D1518	87-020-752-010		DIODE 1SS270	D1569	*87-001-159-010		LED,SLV31MC 3F GR(D2 REC)		
C959	*87-015-244-010		CAP,ELECT LL 4.7-50	L304	*87-003-131-010		COIL CHOKE 10MMH	D1519	87-020-752-010		DIODE 1SS270	D1570	*87-001-159-010		LED,SLV31MC 3F GR(D2 REC)		
C960	*87-015-244-010		CAP,ELECT LL 4.7-50	L305	*82-196-603-010		COIL TRAP 100K	D1571	*87-001-137-010		LED,SLP981C50 R(REC MUTE)	D1571	*87-001-159-010		LED,SLV31MC 3F GR(D2 REC)		
C961	*87-018-134-010		CAP,CERA-SOL SS 0.01	L306	*82-196-603-010		COIL TRAP 100K	D1572	*87-001-138-010		LED,SLP481C50 Y(D1 PAUSE)	D1572	*87-001-159-010		LED,SLV31MC 3F GR(D2 REC)		
C1404	*87-010-404-010		CAP,ELECT 4.7-50 SME	L401	*82-203-623-010		COIL OSC BIAS 100K	D1573	*87-001-137-010		LED,SLP981C50 R(SYNC.DUB.HI)	D1573	*87-001-159-010		LED,SLV31MC 3F GR(D2 REC)		
C1451	*87-010-402-010		CAP,ELECT 2.2-50 SME	L451	*82-203-624-010		COIL HX 100K AM W/C	D1574	*87-001-138-010		LED,SLP481C50 Y(D1 PAUSE)	SW1500	82-221-614-010		SLIDE SW(DOLBY B-C/DBX)		
C1452	*87-010-402-010		CAP,ELECT 2.2-50 SME	L452	*82-203-624-010		COIL HX 100K AM W/C	D1575	*87-001-138-010		LED,SLP481C50 Y(D2 PAUSE)	SW1505	87-031-893-010		TACT SW(REC D2)		
D1	82-001-187-010		DIODE S5277B,LC6	L501	*82-221-697-010		FILTER SQ,CX	D1576	*87-001-137-010		LED,SLP981C50 R(SYNC.DUB.HI)	SW1506	87-031-893-010		TACT SW(REC MUTE)		
D2	82-001-187-010		DIODE S5277B,LC6	L502	*82-221-697-010		FILTER SQ,CX	D1577	*87-001-137-010		LED,SLP981C50 R(SYNC.DUB.NOR)	SW1507	87-031-893-010		TACT SW(SYN.DUB.HI)		
D3	82-001-187-010		DIODE S5277B,LC6	L503	*82-224-612-010		FILTER DOLBY 100K	SW1508	87-031-893-010		TACT SW(SYN.DUB.NOR)	SW1508	87-031-893-010		TACT SW(SYN.DUB.NOR)		
D4	82-001-187-010		DIODE S5277B,LC6	L504	*82-224-612-010		FILTER DOLBY 100K	SW1509	87-031-893-010		TACT SW(STOP D1)	W1510	87-031-893-010		TACT SW(STOP D1)		
D5	82-001-187-010		DIODE S5277B,LC6	L801	*82-202-624-010		COIL OSC LC6520H	W1511	87-031-893-010		TACT SW(PAUSE D1)	W1511	87-031-893-010		TACT SW(MS/PAUSE D1)		
D6	87-020-123-010		DIODE DS446	R603	*87-025-442-010		RES,MF 6.2K 1/8W F	SW1512	87-031-893-010		TACT SW(44/MS D1)	SW1512	87-031-893-010		TACT SW(44/MS D1)		
D7	87-027-393-010		DIODE,ZENER HZ-4C2	R604	*87-025-442-010		RES,MF 6.2K 1/8W F	SW1513	87-031-893-010		TACT SW(STOP D2)	SW1513	87-031-893-010		TACT SW(STOP D2)		
D8	87-020-752-010		DIODE 1SS270	R605	*87-025-443-010		RES,MF 24K 1/8W F	SW1514	87-031-893-010		TACT SW(PAUSE D2)	SW1514	87-031-893-010		TACT SW(PAUSE D2)		
D9	87-027-286-010		DIODE,ZENER HZ-5C1	R606	*87-025-443-010		RES,MF 24K 1/8W F	SW1515	87-031-893-010		TACT SW(MS/PAUSE D2)	SW1515	87-031-893-010		TACT SW(MS/PAUSE D2)		
D10	87-027-661-010		DIODE,ZENER H30-ZL	R615	*87-025-428-010		RES,MF 33K 1/8W	SW1516	87-031-893-010		TACT SW(44/MS D2)	SW1516	87-031-893-010		TACT SW(44/MS D2)		
D11	87-027-347-010		DIODE,ZENER HZ-18-ZL T2	R616	*87-025-428-010		RES,MF 33K 1/8W	SW1517	87-036-032-010		SLIDE SW(TIMER)	SW1517	87-036-032-010		SLIDE SW(TIMER)		
D251	87-027-286-010		DIODE,ZENER HZ-5C1	R617	*87-025-444-010		RES,MF 91K 1/8W F	SW1518	87-036-033-010		SLIDE SW(REV.MODE)	SW1518	87-036-033-010		SLIDE SW(REV.MODE)		
D252	87-020-752-010		DIODE 1SS270	R618	*87-025-444-010		RES,MF 91K 1/8W F	SW1519	87-036-033-010		SLIDE SW(BLANK SKIP)	SW1519	87-036-033-010		SLIDE SW(BLANK SKIP)		
D401	87-020-752-010		DIODE 1SS270	R619	*87-025-423-010		RES,MF 4.7K 1/8W	=== FL CIRCUIT BOARD SECTION ===				PCB-C	*	FL CIRCUIT BOARD			
D402	87-020-752-010		DIODE 1SS270	R620	*87-025-423-010		RES,MF 4.7K 1/8W	C1401	*87-018-119-010		CAP,CERA-SOL SS 100P	C1401	*87-018-119-010		CAP,CERA-SOL SS 100P		
D404	87-020-123-010		DIODE DS446	R621	*87-025-428-010		RES,MF 33K 1/8W	C1402	*87-010-421-010		CAP,ELECT 4.7-50 SRE	C1402	*87-010-421-010		CAP,ELECT 4.7-50 SRE		
D421	87-020-752-010		DIODE 1SS270	R622	*87-025-428-010		RES,MF 33K 1/8W	C1403	*87-010-421-010		CAP,ELECT 4.7-50 SRE	C1403	*87-010-421-010		CAP,ELECT 4.7-50 SRE		
D451	87-020-752-010		DIODE 1SS270	R623	*87-025-376-010		RES,MF 6.8K 1/8W	C1406	*87-010-075-010		CAP,ELECT 10-16	C1406	*87-010-075-010		CAP,ELECT 10-16		
D452	87-020-752-010		DIODE 1SS270	R624	*87-025-376-010		RES,MF 6.8K 1/8W	C1407	*87-010-075-010		CAP,ELECT 10-16	C1407	*87-010-075-010		CAP,ELECT 10-16		
D453	87-020-752-010		DIODE 1SS270	R625	*87-025-367-010		RES,MF 1K 1/8W	FL1	*82-221-700-010		FL CPS319 AGR(DISPLAY)	FL1	*82-221-700-010		FL CPS319 AGR(DISPLAY)		
D454	87-020-752-010		DIODE 1SS270	R626	*87-025-367-010		RES,MF 1K 1/8W	SW1401	87-031-893-010		TACT SW(COUNT,RESET D1)	SW1401	87-031-893-010		TACT SW(COUNT,RESET D1)		
D457	87-027-416-010		DIODE,ZENER HZ3C2	R627	*87-025-424-010		RES,MF 10K 1/8W	SW1402	87-031-893-010		TACT SW(COUNT,RESET D2)	SW1402	87-031-893-010		TACT SW(COUNT,RESET D2)		
D801	87-020-752-010		DIODE 1SS270	R628	*87-025-367-010		RES,MF 1K 1/8W	=== POWER CIRCUIT BOARD SECTION ===				PCB-D	*	POWER CIRCUIT BOARD			
D802	87-020-752-010		DIODE 1SS270	SFR101	*87-021-738-010		SFR 1K	△ C15	*87-019-112-010		SPARK KILLER 0.01 E	△ C15	*87-019-112-010		SPARK KILLER 0.01 E		
D803	87-020-752-010		DIODE 1SS270	SFR102	*87-021-738-010		SFR 1K	C751	*87-010-544-010		CAP,ELECT 0.1-50	C751	*87-010-544-010		CAP,ELECT 0.1-50		
D804	87-020-752-010		DIODE 1SS270	SFR103	*87-021-739-010		SFR 2.2K	C752	*87-010-544-010		CAP,ELECT 0.1-50	C752	*87-010-544-010		CAP,ELECT 0.1-50		
D805	87-020-752-010		DIODE 1SS270	SFR104	*87-021-739-010		SFR 2.2K	△ PCB-E	*87-019-112-010		SPARK KILLER 0.01 E	△ PCB-E	*87-019-112-010		SPARK KILLER 0.01 E		
D806	87-020-752-010		DIODE 1SS270	SFR201	*87-021-738-010		SFR 1K	SFR110	87-021-966-010		SFR 4.7K(D1)	SFR110	87-021-966-010		SFR 4.7K(D1)		
D807	87-020-752-010		DIODE 1SS270	SFR202	*87-021-738-010		SFR 1K	SFR110	87-021-966-010		SFR 4.7K(D1)	SFR110	87-021-966-010		SFR 4.7K(D1)		
D808	87-020-752-010		DIODE 1SS270	SFR203	*87-021-739-010		SFR 2.2K	SFR110	87-021-966-010		SFR 4.7K(D1)	SFR110	87-021-966-010		SFR 4.7K(D1)		
D809	87-020-752-010		DIODE 1SS270	SFR204	*87-021-739-010		SFR 2.2K	SFR110	87-021-966-010		SFR 4.7K(D1)	SFR110	87-021-966-010		SFR 4.7K(D1)		
D810	87-020-752-010		DIODE 1SS270	SFR301	*87-021-741-010		SFR 4.7K	SFR110	87-021-966-010		SFR 4.7K(D1)	SFR110	87-021-966-010		SFR 4.7K(D1)		
D811	87-020-752-010		DIODE 1SS270	SFR302	*87-021-741-010		SFR 4.7K	SFR110	87-021-966-010		SFR 4.7K(D1)	SFR110	87-021-966-010		SFR 4.7K(D1)		
D812	87-020-752-010		DIODE 1SS270					SFR110	87-021-966-010		SFR 4.7K(D1)	SFR110	87-021-966-				

SCHEMATIC DIAGRAM-1

REF.NO. PART NO. ORDER DESCRIPTION

SOL110 86-535-612-010 SOLENOID X-3 FR(D2)

--- SENSOR CIRCUIT BOARD SECTION ---

PCB-K *
CP1101 87-020-755-010 PHOTO SENSOR SPI-900

--- MISCELLANEOUS ---

△ *87-034-732-010 AC CORD H ASSY(H)
△ *87-034-731-010 AC CORD (UL) ASSY(U)
△ *87-034-736-010 AC CORD E ASSY(E)
△ *87-034-734-010 AC CORD K ASSY(K)
△ *87-085-184-010 AC CORD BUSHING(H)
△ *87-085-189-010 AC CORD BUSHING U(U)
△ *87-085-185-010 AC CORD BUSHING E(E)
D1201 *87-020-109-010 LED SLF-201C(D1)

D1202 *87-020-109-010 LED SLF-201C(D2)
M1001 87-045-235-010 MOTOR MMA6B2LW(D1)
M1002 87-045-235-010 MOTOR MMA6B2LW(D2)
PH 87-046-296-010 HEAD PH(D1)

REF.NO. PART NO. ORDER DESCRIPTION

△ PT1 82-221-621-010 POWER TRANSFORMER H(H)
△ PT1 82-221-622-010 POWER TRANSFORMER UC(U,C)
△ PT1 82-221-623-010 POWER TRANSFORMER EZ(E,Z)
△ PT1 82-221-625-010 POWER TRANSFORMER KG(K,G)

RPEH 87-046-289-010 HEAD RPEH HADKH 5503A(D2)
△ SW2 87-031-586-010 ROTARY SW(H)(AC VOLTAGE)

Combination circuit board A 82-221-601-010

PCB-A 82-221-602-010

PCB-B 82-221-603-010

PCB-C 82-221-604-010

PCB-D 82-221-605-010

PCB-E 82-221-606-010

PCB-F 82-221-607-010

PCB-G 82-221-610-010

PCB-H 82-221-609-010

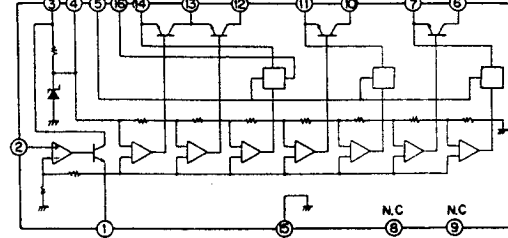
Combination circuit board B 86-535-601-210

PCB-I,J 86-535-602-210

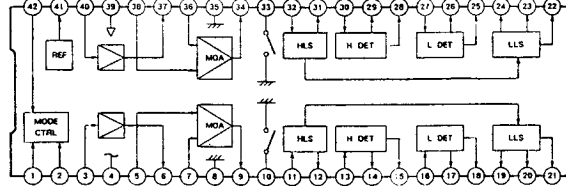
PCB-K,L 86-535-603-210

IC BLOCK DIAGRAM

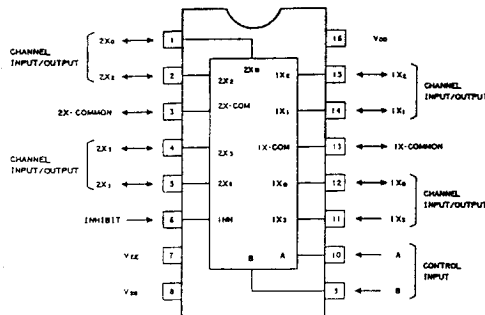
LB1408



CX 20187



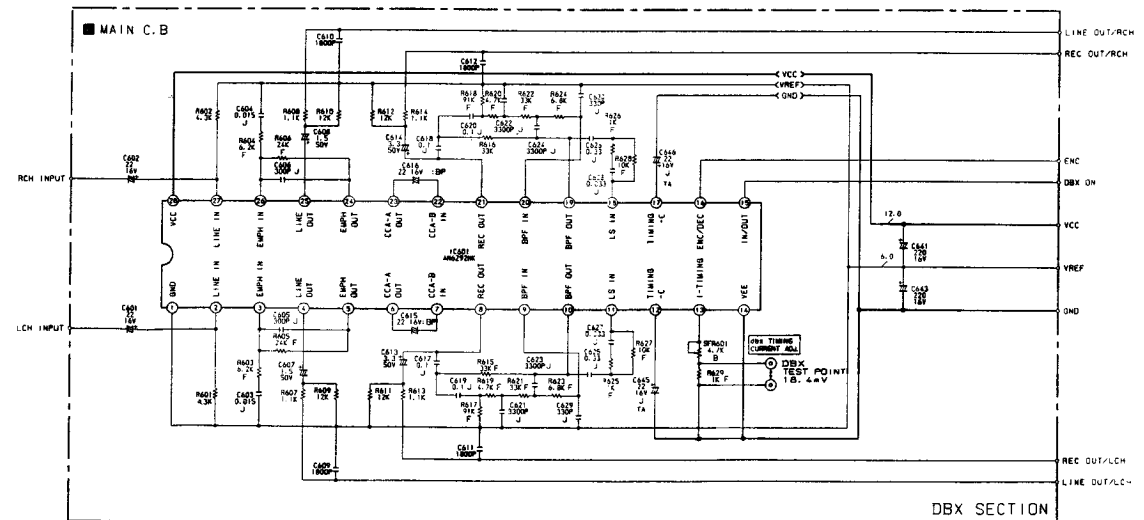
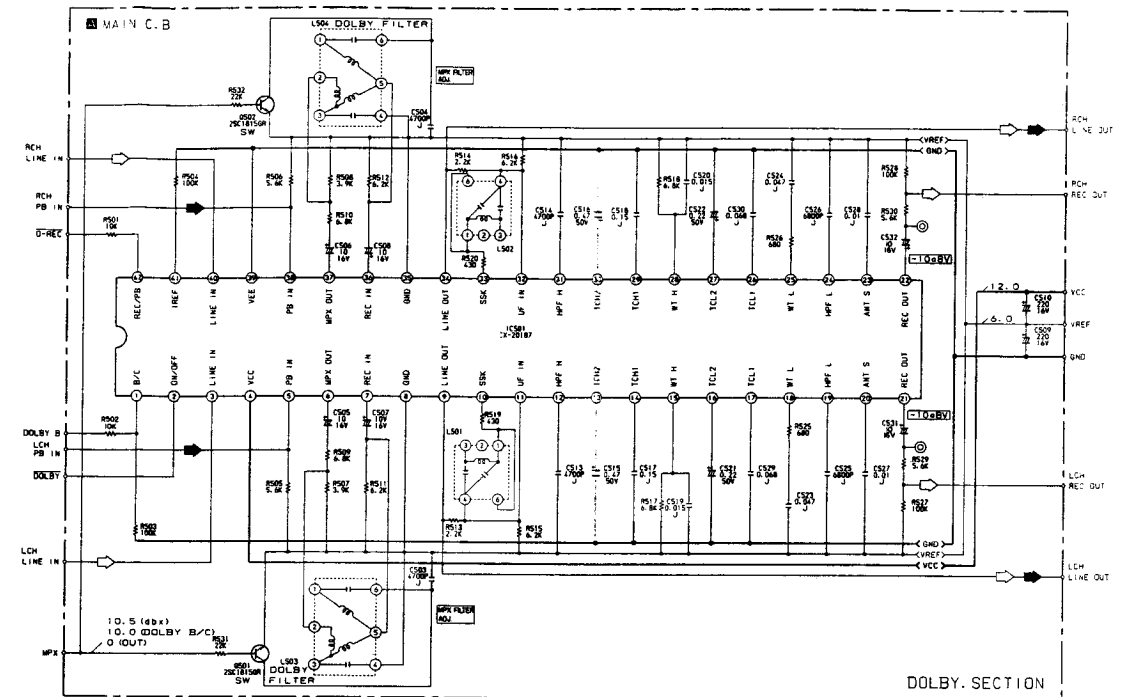
NJU4052BP



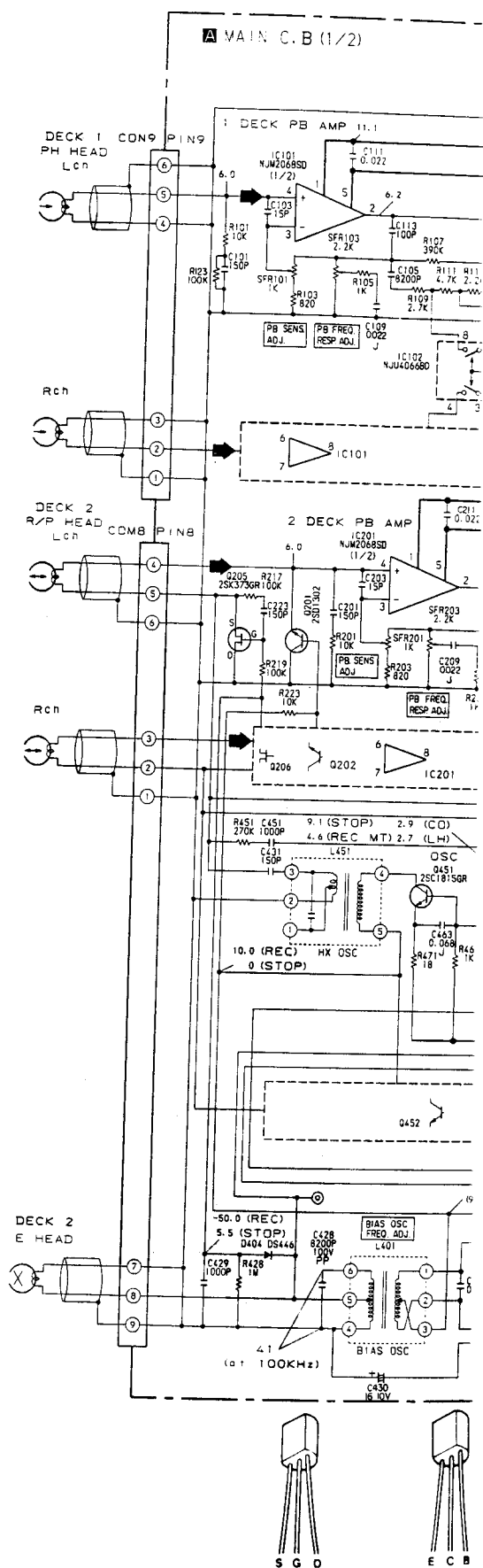
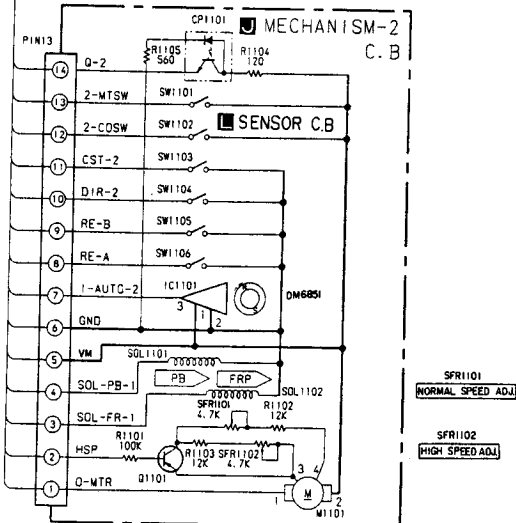
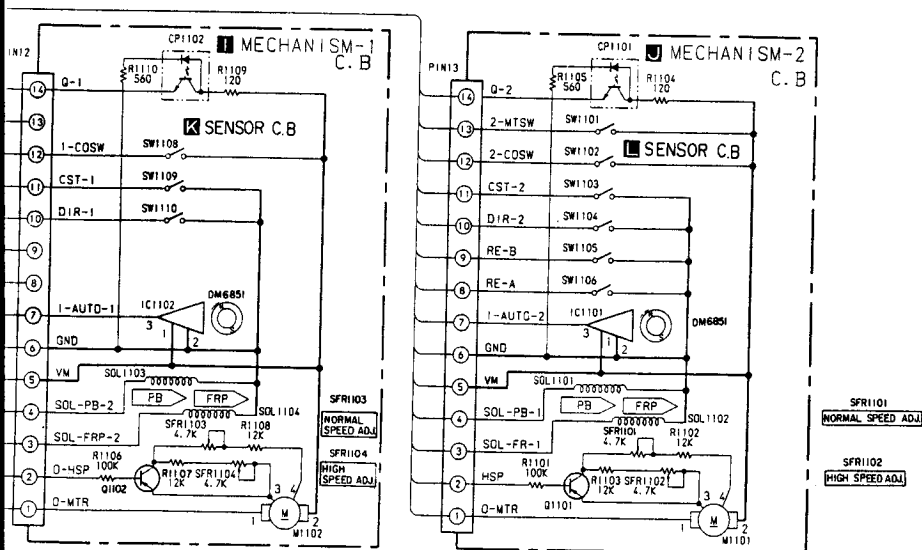
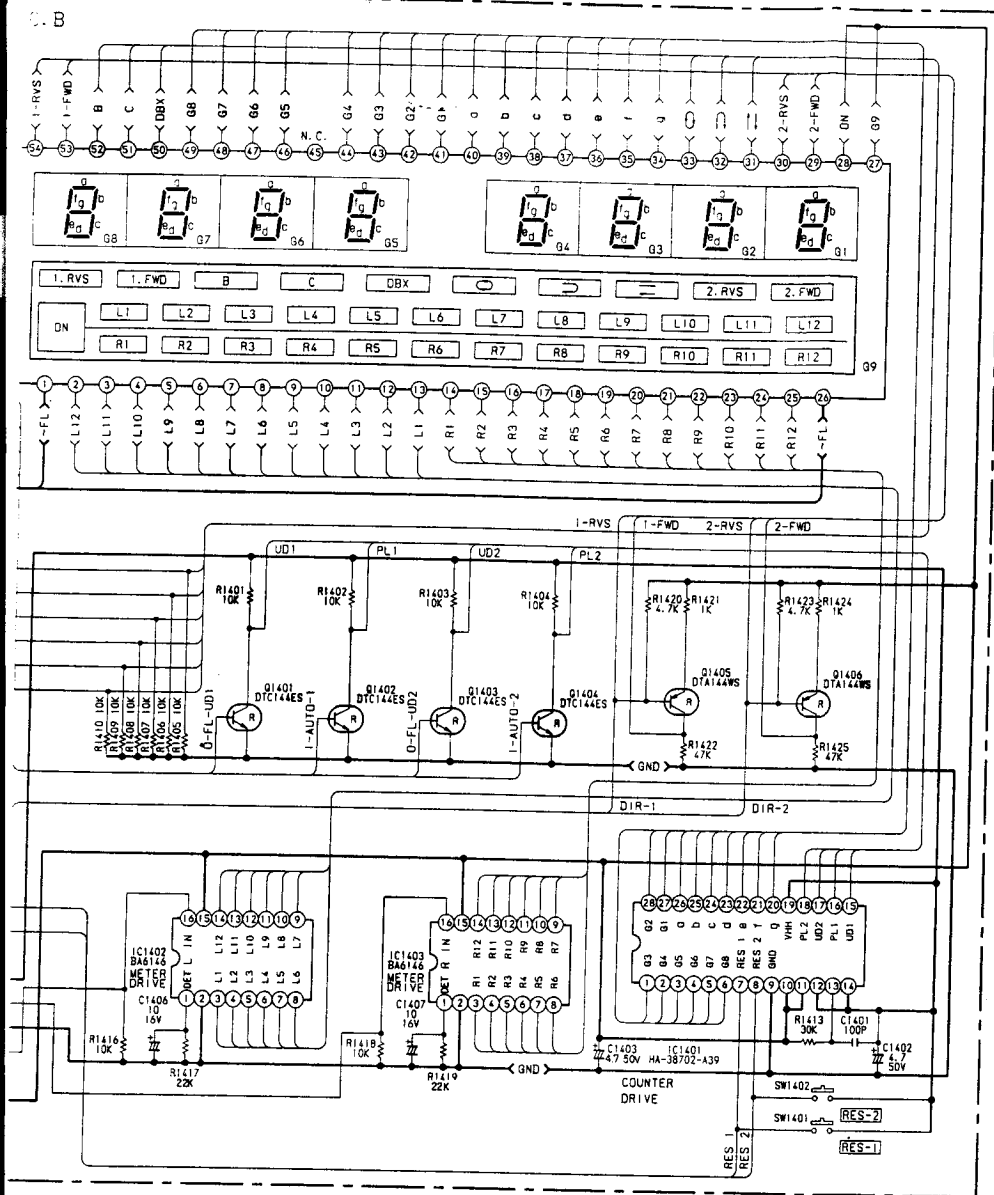
TRUTH TABLE

INHIBIT INPUT	CONTROL INPUT	CHANNEL INPUT/OUTPUT SWITCH OF COMMON TERMINAL				
INHIBIT	B	A	X0	X1	X2	X3
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"







2SK373

2SA95

2SA10

2SC 94

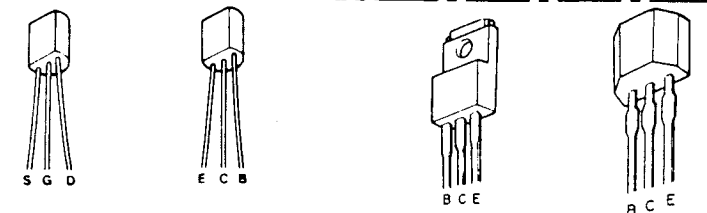
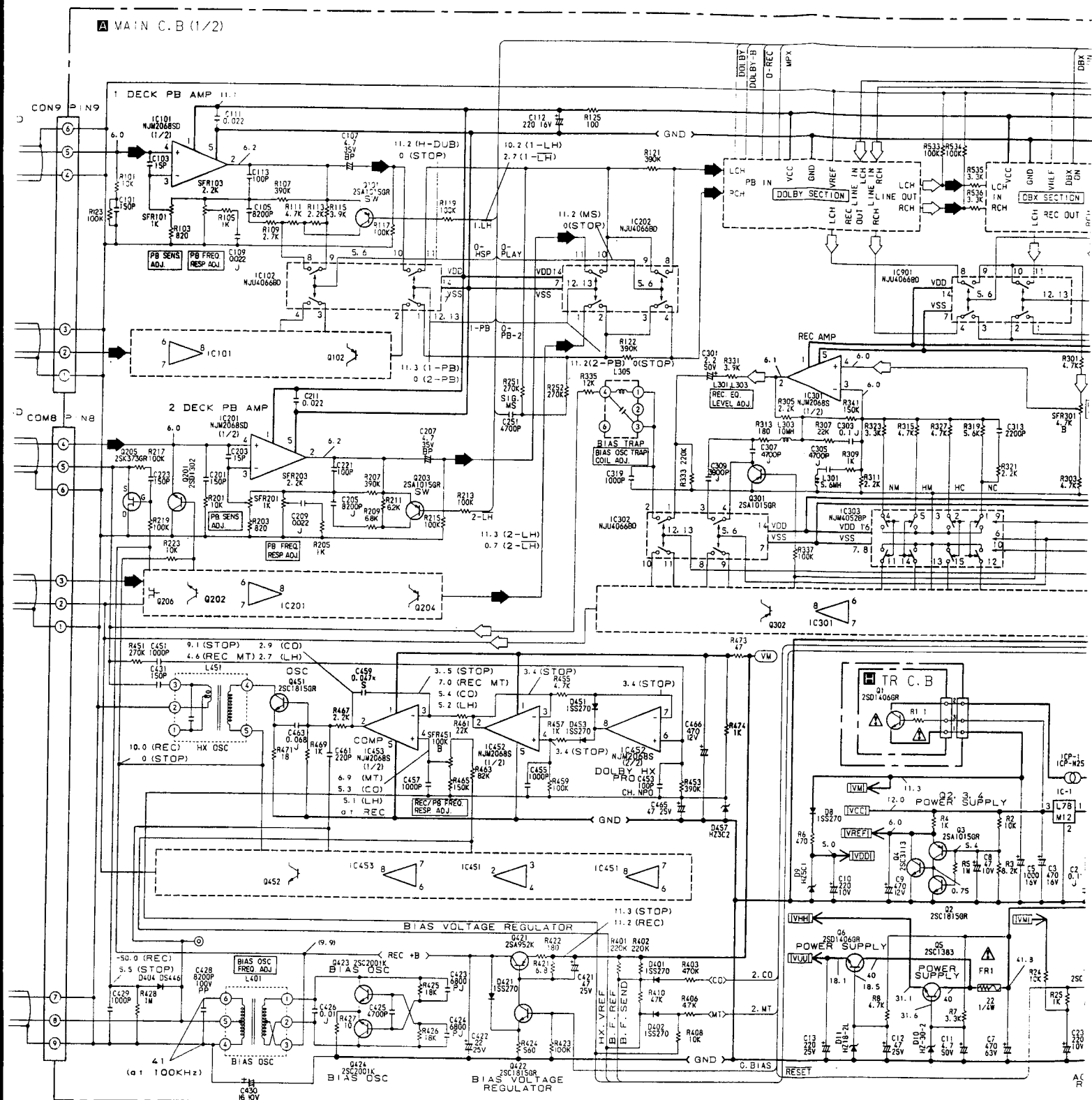
2SC 18

2SC 20

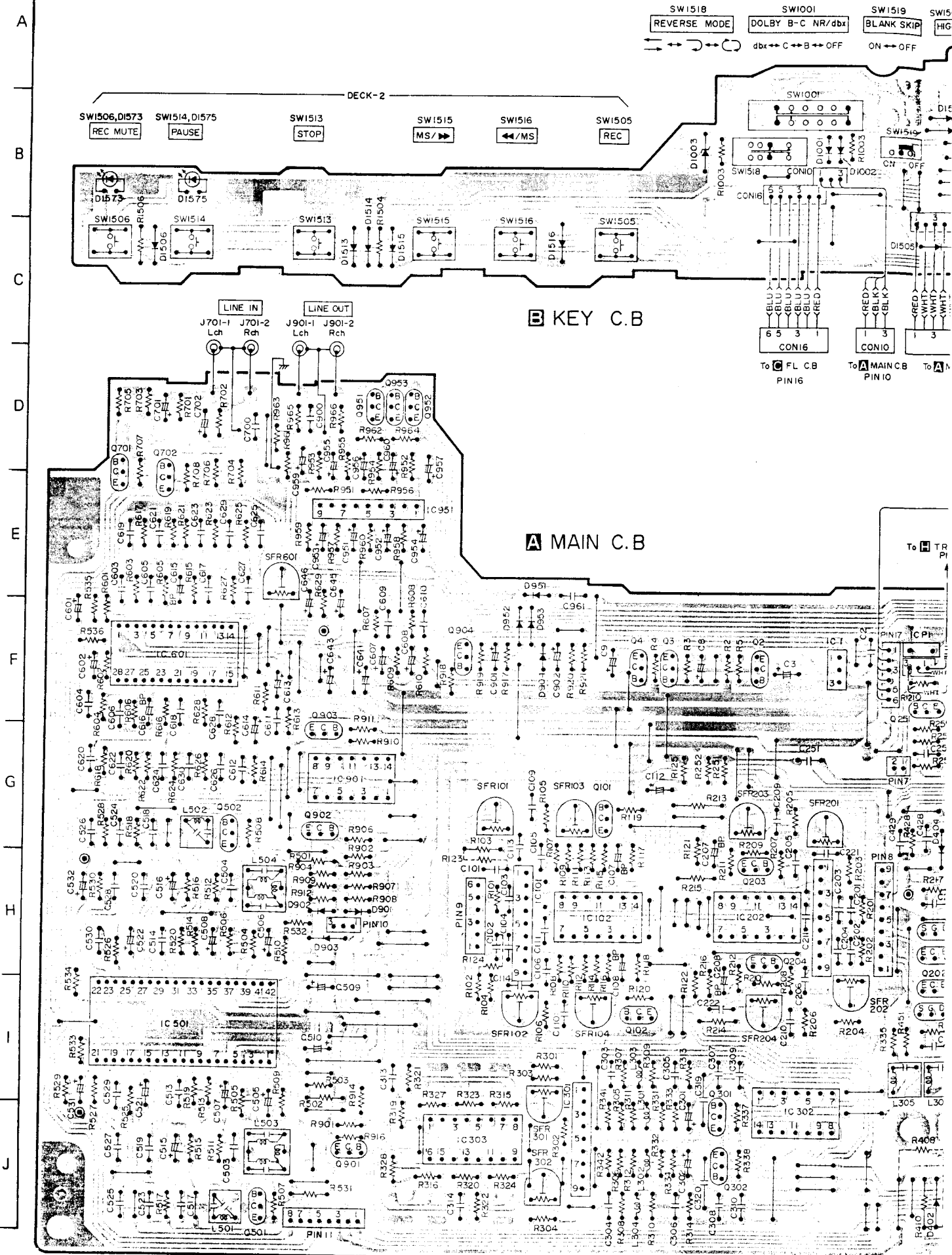
2SD11

2SD13:

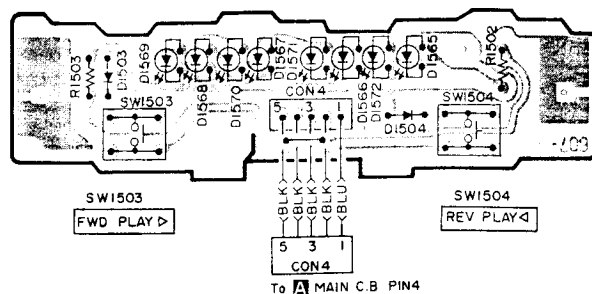
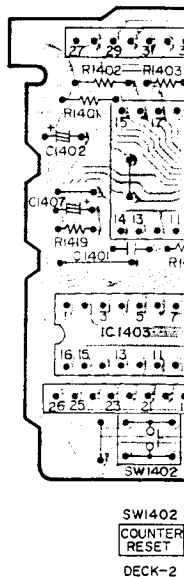
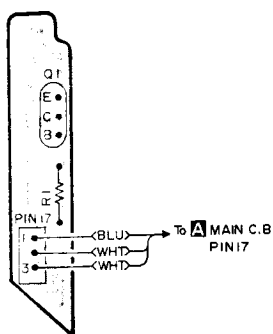
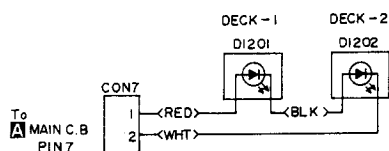
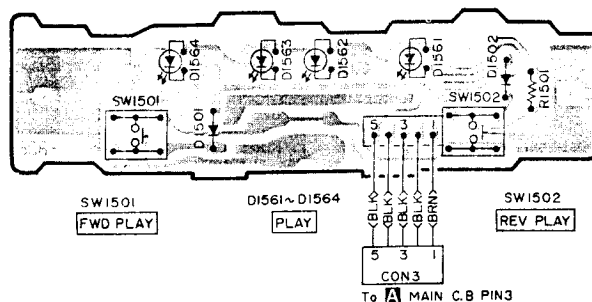
2SC13.



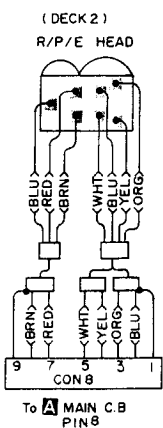
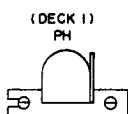
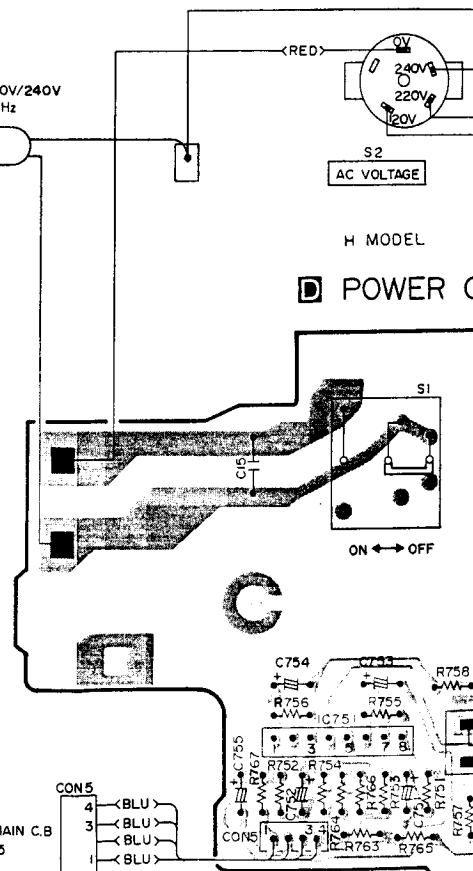
2SK373 2SA952 2SD1406 DT A144
2SC945 2SA1015 2SC3113





F SW-2 C.B.D1569~D1572 REC
D1565~D1568 PLAY**C** FL C.B.**H** TR C.B.**E** SW-1 C.B.AC120V/220V/240V
50/60 Hz

H MODEL

D POWER C**K** SENSOR C.B.

CP1102

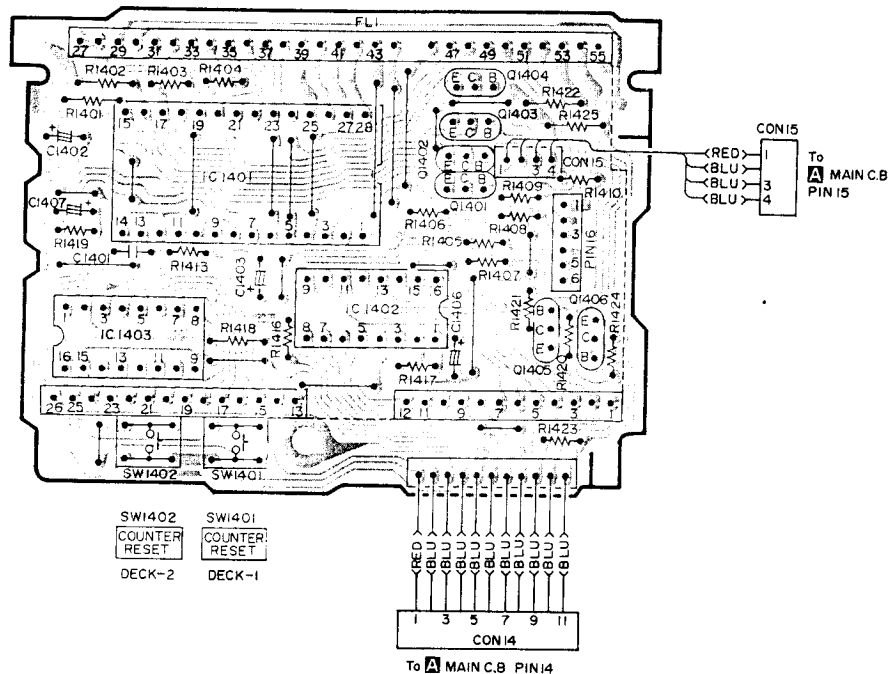
L SENSOR C.B.

CP1101

U MODEL
AC120V 60Hz
E, Z MODEL
AC220V 50/60Hz
K, G MODEL
AC240V 50/60Hz

DI565~DI568

C FL C.B

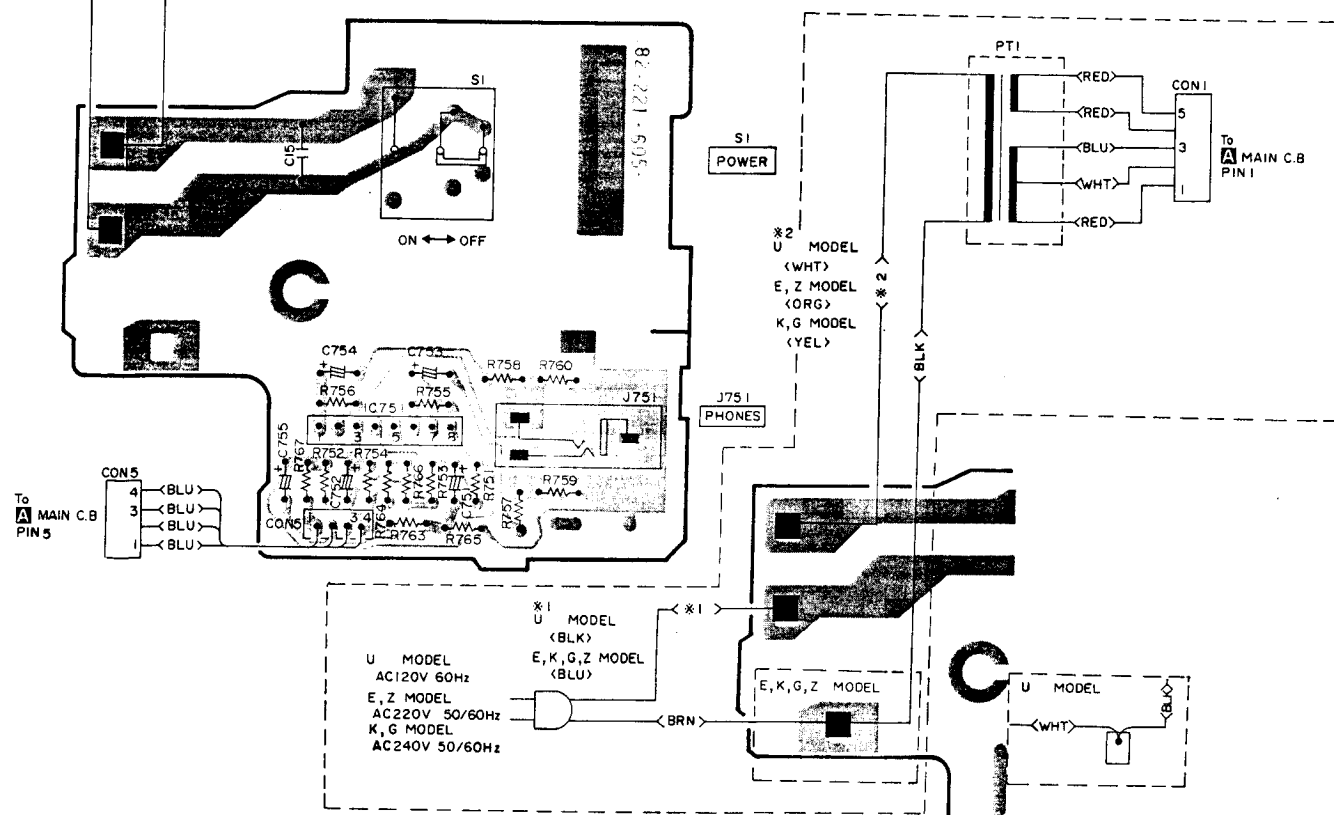
FLI
TAPE COUNTER/
12 POINT PEAK METERSW1402
COUNTER
RESET
DECK-2SW1401
COUNTER
RESET
DECK-1

To A MAIN C.B. PIN14

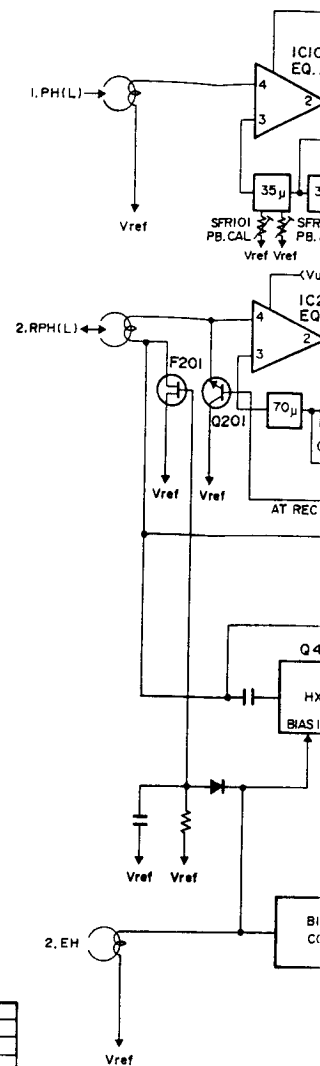
W1502
V PLAY120V/220V/240V
50/60 Hz

H MODEL

D POWER C.B

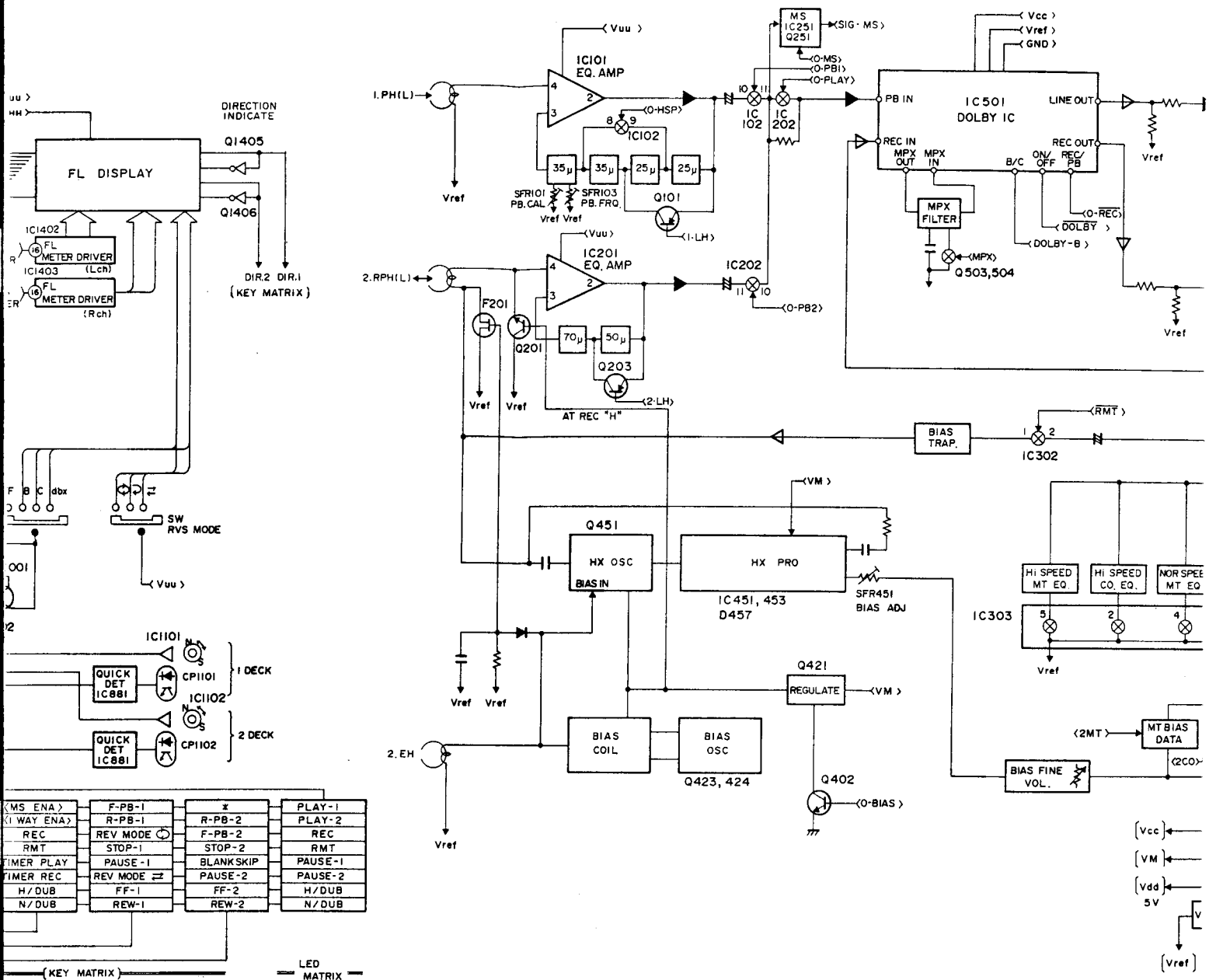
S1
POWERJ751
PHONESU MODEL
AC120V 60Hz
E, Z MODEL
AC220V 50/60Hz
K, G MODEL
AC240V 50/60Hz*1 MODEL
(WHT)
E, K, G, Z MODEL
(BLU)*2 MODEL
(BLK)
E, K, G, Z MODEL
(BLU)*3 MODEL
(ORG)
E, K, G, Z MODEL
(BLU)*4 MODEL
(YEL)
E, K, G, Z MODEL
(BLU)*5 MODEL
(BLK)
E, K, G, Z MODEL
(BLU)*6 MODEL
(WHT)
E, K, G, Z MODEL
(BLU)*7 MODEL
(BLK)
E, K, G, Z MODEL
(BLU)*8 MODEL
(WHT)
E, K, G, Z MODEL
(BLU)*9 MODEL
(BLK)
E, K, G, Z MODEL
(BLU)*10 MODEL
(WHT)
E, K, G, Z MODEL
(BLU)*11 MODEL
(BLK)
E, K, G, Z MODEL
(BLU)*12 MODEL
(WHT)
E, K, G, Z MODEL
(BLU)*13 MODEL
(BLK)
E, K, G, Z MODEL
(BLU)*14 MODEL
(WHT)
E, K, G, Z MODEL
(BLU)*15 MODEL
(BLK)
E, K, G, Z MODEL
(BLU)*16 MODEL
(WHT)
E, K, G, Z MODEL
(BLU)*17 MODEL
(BLK)
E, K, G, Z MODEL
(BLU)*18 MODEL
(WHT)
E, K, G, Z MODEL
(BLU)*19 MODEL
(BLK)
E, K, G, Z MODEL
(BLU)*20 MODEL
(WHT)
E, K, G, Z MODEL
(BLU)*21 MODEL
(BLK)
E, K, G, Z MODEL
(BLU)*22 MODEL
(WHT)
E, K, G, Z MODEL
(BLU)*23 MODEL
(BLK)
E, K, G, Z MODEL
(BLU)*24 MODEL
(WHT)
E, K, G, Z MODEL
(BLU)*25 MODEL
(BLK)
E, K, G, Z MODEL
(BLU)*26 MODEL
(WHT)
E, K, G, Z MODEL
(BLU)*27 MODEL
(BLK)
E, K, G, Z MODEL
(BLU)*28 MODEL
(WHT)
E, K, G, Z MODEL
(BLU)*29 MODEL
(BLK)
E, K, G, Z MODEL
(BLU)*30 MODEL
(WHT)
E, K, G, Z MODEL
(BLU)

BLOCK DIAGRAM-2



V _{HH}	30V voltage doubler ar
V _{UU}	18V voltage doubler ar
V _{DD}	5V micro computer IC p
O-LMT	Line mute, dbx sw mute
O-BIAS	Bias osc control.
O-PB-1	1 tape deck mute contr
O-PB-2	2 tape deck mute contr
O-PLAY	CUE/REV mute control.
O-HSP	Hi-speed mode control.
O-RMT	REC MUTE control.
ENC	dbx IC ENC/DEC switchi
O-REC	Dolby IC REC/PLAY swit
DBX	REC OUT SELECT: dbx-IC
<u>DBX</u>	REC OUT SELECT: Dolby
MPX	MPX filter ON/OFF swit
Dolby B	Dolby IC B/C switching
SIG-MS	MS circuit input signa
SIG-METER	meter driver input sig
dbx-ON	dbx IN on/off switchin
<u>Dolby</u>	Dolby on/off switching

BLOCK DIAGRAM-2

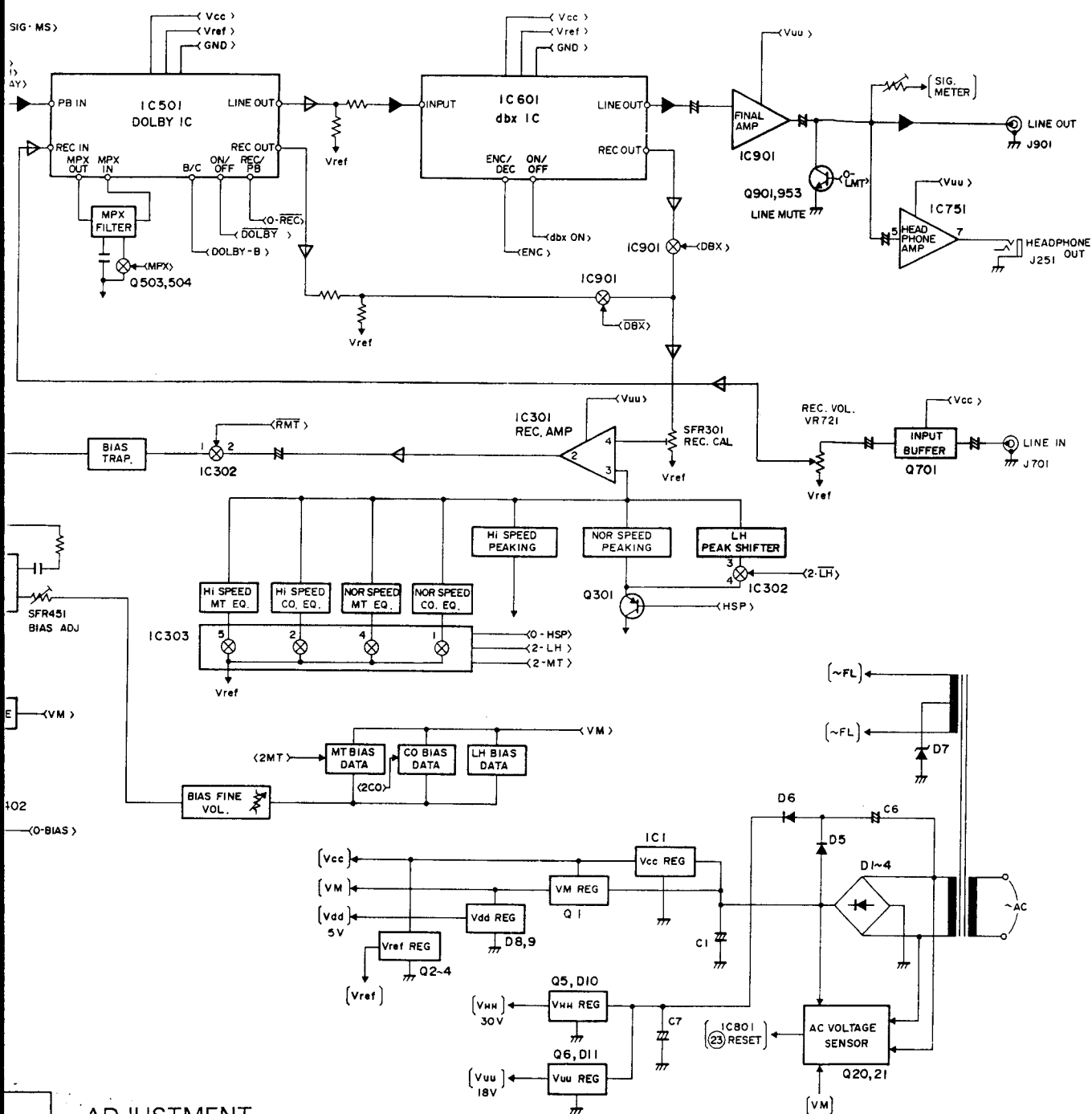


ABBREVIATIONS

V _{HH}	30V voltage doubler and regulator power source
V _{uu}	18V voltage doubler and regulator power source
V _{dd}	5V micro computer IC power source.
O-LMT	Line mute, dbx sw mute.
O-BIAS	Bias osc control.
O-PB-1	1 tape deck mute control.
O-PB-2	2 tape deck mute control.
O-PLAY	CUE/REV mute control.
O-HSP	Hi-speed mode control.
O-RMT	REC MUTE control.
ENC	dbx IC ENC/DEC switching signal.
O-REC	Dolby IC REC/PLAY switching signal.
DBX	REC OUT SELECT: dbx-IC
DBX	REC OUT SELECT: Dolby IC
MPX	MPX filter ON/OFF switching signal
Dolby B	Dolby IC B/C switching signal.
SIG-MS	MS circuit input signal.
SIG-METER	meter driver input signal.
dbx-ON	dbx IN on/off switching signal.
Dolby	Dolby on/off switching signal.

ADJUSTMENT

- Normal Speed Adjustment (DECK-1)
 - Load the unit with a test ta and play its intermediate ar
 - Then adjust the variable res screwdriver through the adju so that the frequency counte
 - Check the reverse running of



ADJUSTMENT

1. Normal Speed Adjustment (DECK-1, DECK-2)

1. Load the unit with a test tape (TTA-111S) and play its intermediate area.
2. Then adjust the variable resistor inserting a screwdriver through the adjustment SFR1103(1101) so that the frequency counter reads 3000Hz.
3. Check the reverse running of tape for DECK 2.

2. High Speed Adjustment (DECK-1, DECK-2)

1. Short-Circuit the pattern of the MOTOR P.C.B in the DECK to be adjusted as shown in Fig.
2. Load the unit with a test tape (TTA-111H) and play its intermediate area.
3. Adjust the variable resistor SFR1104(1102) so that the frequency counter reads 3000Hz
4. After adjustment is completed, release the short-circuit of the pattern.

Note: Always perform the normal speed adjustment and then the high-speed adjustment. Adjusting the high-speed only will cause an error in the normal tape speed.

3. Head A:

Settin:

Method

Note:

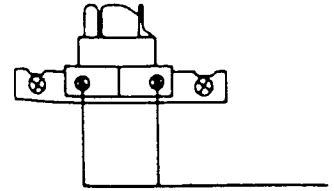
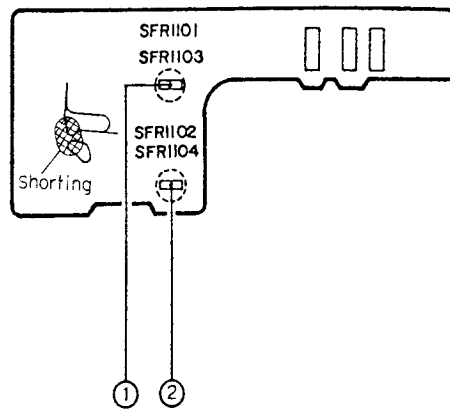
4. PB Fre:

Settin:

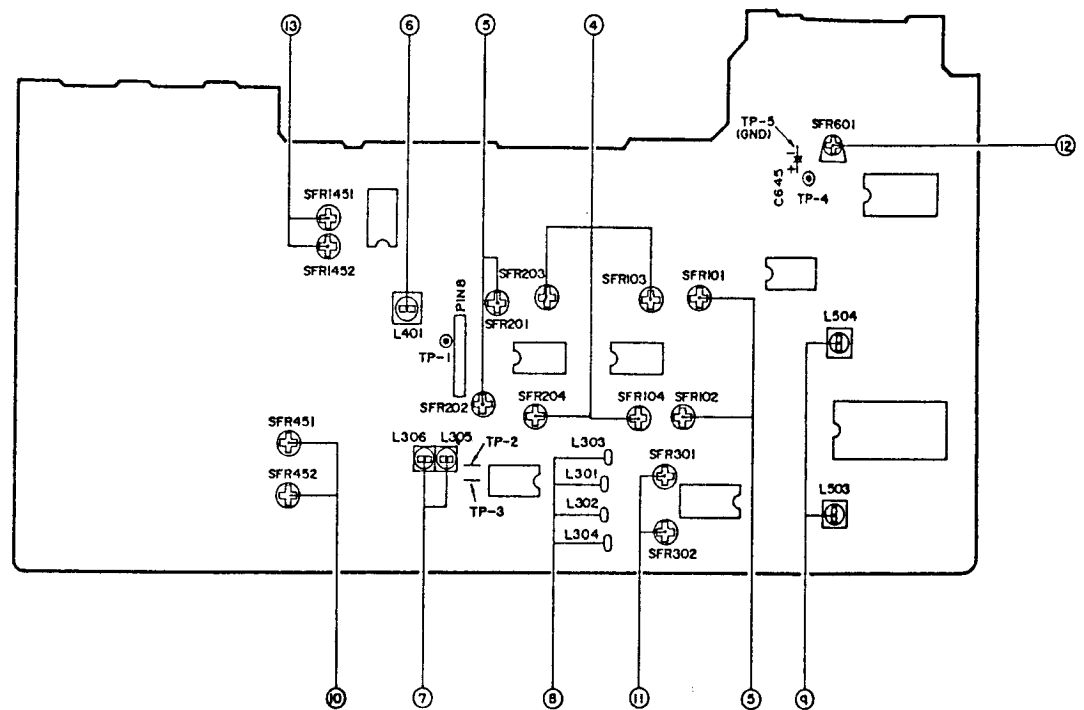
Method

■ MECHANISM-1 C.B.
 ■ MECHANISM-2 C.B.

DECK 2
 R/P/E HEAD



■ MAIN C.B.



3. Head Azimuth Adjustment (DECK-1, DECK-2)

Settings: • Test tape: SCC-1429 (TTA-317E)

• Test point: LINE OUT

• Adjustment location: Head azimuth adjustment screw

Method: Play back the test tape, and adjust so that the output becomes maximum.

Note: Perform on each PLAY and REV PLAY mode.

4. PB Frequency Response Adjustment (DECK-1, DECK-2)

Settings: • Test tape: SCC-1429 (TTA-317E)

• Test point: LINE OUT

• Adjustment location: SFR103 (DECK-1, Lch)
 SFR104 (DECK-1, Rch)
 SFR203 (DECK-2, Lch)
 SFR204 (DECK-2, Rch)

Method: Play back the test tape, and adjust so that the output becomes $+0.3 \pm 0.2$ dB.

5. PB Sensitivity Adjustment (DECK-1, DECK-2)

Settings: • Test tape: TCC-130 (TTA-161)

• Test point: LINE OUT

• Adjustment location: SFR101 (DEC)
 SFR102 (DEC)
 SFR201 (DEC)
 SFR202 (DEC)

Method: Play back the test tape, and adjust becomes 560 ± 10 mV.

6. Bias OSC Frequency Adjustment (DECK-2)

Settings: • Test tape: TTA-119K

• Test point: TP-1

• Adjustment location: L401

Method: Adjust so that the output frequency

7. Bias OSC Trap Coil Adjustment (DECK-2)

Settings: • Test tape: TTA-119K

• Test point: TP-2 (Lch)

TP-6 (Rch)

• Adjustment location: L305 (Lch)

L306 (Rch)

Method: Record the test tape, and adjust for minimum output.

8. REC Equalizer Level Adjustment

Settings: • Test tape: Metal tape

• Input level: -20VU (40mV at LINE OUT)

• Test point: TP-2 (Lch)

TP-3 (Rch)

• Adjustment location: L301, L303 (Lch)

L302, L304 (Rch)

Method: Record the test tape, adjust so that the output becomes minimum at the peak level (about 20kHz).

9. MPX Filter Adjustment

Settings: • Test tape: Blank tape

• Input signal: 19kHz signal at LINE IN

• Test point: LINE OUT

• Adjustment location: L503 (Lch)

L504 (Rch)

Method: Record the test tape, and adjust so that the output at DOLBY B/C SW ON becomes up to 27dB for the output at DOLBY B/C SW OFF.

10. REC/PB Frequency Response Adjustment (DECK-2)

Settings: • Test tape: TTA-119K

• Output level: 40mV at LINE OUT

• Test point: LINE OUT

• Adjustment location: SFR451 (Lch)

SFR452 (Rch)

Method: Record the 1kHz and 10kHz signals, then play back the recorded tape and adjust so that the output difference between 1kHz and 10kHz becomes $+0.5\text{dB}$ $^{+0.5}_{-0.5}\text{dB}$.

11. REC/PB Sensitivity Adjustment (DECK-2)

Settings: • Test tape: TTA-119K

• Input signal: 400Hz (or 1kHz)

• Test point: LINE OUT

• Adjustment location: SFR301 (Lch)

SFR302 (Rch)

Method: Record the input signal and play back the test tape.

Adjust so that the output difference between REC level and PB level becomes 40mV $^{+0.3}_{-0.1}\text{dB}$.

12. dbx Timing Current Adjustment

Settings: • Test point: TP4

TP5 (C645)

• Adjustment location: SFR601

Method: Adjust so that the output between testpoints becomes DC 18.4mV.

13. Peak Meter Adjustment

Settings: • Test tape: Blank tape

• Output level: 400mV at LINE OUT

• Adjustment location: SFR1451 (Lch)

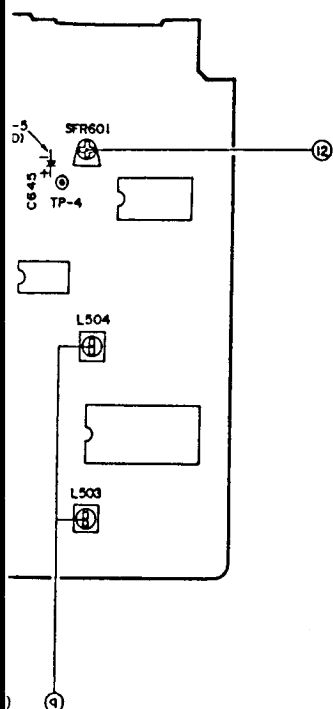
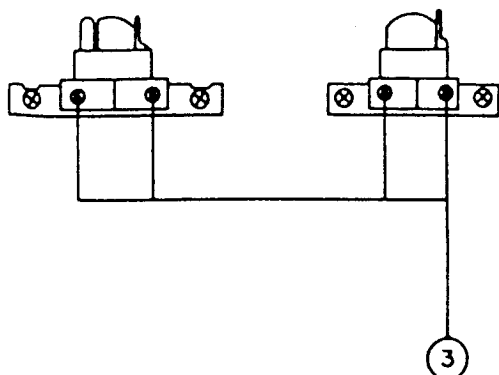
SFR1452 (Rch)

Method: Adjust so that the peak meter (FL1) displays 0dB.

Confirm that the peak meter displays correctly for -7, -2, +3, +6dB.

DECK 2
R/P/E HEAD

DECK 1
P HEAD



ty Adjustment (DECK-1, DECK-2)

Test tape: TCC-130 (TTA-161)

Test point: LINE OUT

Adjustment location: SFR101 (DECK-1, Lch)

SFR102 (DECK-1, Rch)

SFR201 (DECK-2, Lch)

SFR202 (DECK-2, Rch)

Play back the test tape, and adjust so that the output becomes $560 \pm 10\text{mV}$.

Frequency Adjustment (DECK-2)

Test tape: TTA-119K

Test point: TP-1

Adjustment location: L401

Adjust so that the output frequency becomes 100kHz $^{+0}_{-0.5}\text{kHz}$.

IC DESCRIPTION

LC6520H (IC801)

Pin No	Pin Name	Description
1	—	Pulled up to 10.8 V by a resistor.
2	—	Pulled up to 10.8 V by a resistor.
3	I-AUTO-1	DECK 1 auto-stop input. DECK 1 stops automatically without level change of "L" and "H".
4	I-AUTO-2	DECK 2 auto-stop input. DECK 2 stops automatically without level change of "L" and "H".
5	—	GND
6	—	Pulled down by a resistor and grounded.
7	O-MOTOR	Motor drive output (active "H"). Outputs "L" only when both DECKs 1 & 2 are in the stop mode. This pin outputs a signal 320 msec before SOL-PB and SOL-FRP, waiting for the O-MOTR rotating steadily.
8	O-BIAS	Bias oscillation output. Goes "L" during REC PAUSE and "H" during REC and DUBBING.
9	O-FL-RES	Outputs "H" when MPU is reset (initialized).
10	O-DUBB	Noise reduction control output during dubbing. Goes "L" during dubbing.
11	O-PB1	DECK 1 PB request output. Goes "L" when DECK 2 is in the play, play pause, cue and review modes.
12	O-PB2	DECK 2 PB request output. Goes "H" when DECK 1 is in the play; play pause, cue and review modes.
13	O-PLAY	CUE/REVIEW MUTE output. Goes "H" when the DECK which is selected by O-PB1 and O-PB2 is in the play mode.
14	O-HSP	Motor high-speed request output. Goes "H" at high-speed.
15	O-RMT	REC MUTE output. Goes "H" during REC and PLAY. Goes "L" during PAUSE, RMT and REC→REVERSE.
16	O-LMT	LINE MUTE output. Goes "L" during PLAY, CUE REVIEW, REC, REC PLAY, REC MUTE and REC→PAUSE.
17	O-REC	REC/PLAY switching output. Goes "H" during REC and REC REVERSE. Goes "L" during dubbing.
18	—	GND
19	TEST	MPU test pin connected to Vss
20	Vss	Common terminal (GND) of each input/output power of MPU.
21	OSC-1	4MHz clock oscillation pin.
22	OSC-2	4MHz clock oscillation pin.
23	RESET	MPU reset input. "H" resets the MPU.
24		} Refer to the next page.
36		
37	O-SOL-FRP2	
38	O-SOL-PB2	DECK 2 / solenoid absorption output (active "L"). DECK 2 performs F.FWD/REW and CUE/REVIEW according to the absorption timing.
39	O-SOL-FRP1	DECK 2 / solenoid absorption output (active "L"). DECK 2 performs PLAY, PAUSE and REVERSE according to the absorption timing.
40	VDD	DECK 1 / solenoid absorption output (active "L"). DECK 1 performs F.FWD/REW and CUE/REVIEW according to the absorption timing.
41	O-SOL-PB1	MPU power pin connected to +5 V.
42	—	DECK 1 PB solenoid absorption output (active "L"). DECK 1 performs PLAY, PAUSE and REVERSE according to the absorption timing.
		Pulled down by a resistor and grounded.

Pin No	Pin Name	Description				
		Input : Key DATA				Output : LED
		Key SW IN = ON at "L", PULSE = ON at "H"				Lights when
		When KS3 is "L"	When KS2 is "L"	When KS1 is "L"	When KS0 is "L"	DISP is "L"
35	DT ϕ	*	F.PLAY-1 KEY IN	MS-ENABLE	CST-2 SW IN	PLAY-1 LED OUT
34	DT1	R.PLAY-2 KEY IN	REV-1 KEY IN	$\overline{\text{I-WAY-ENABLE}}$	QUICK-2 PULSE IN	PLAY-2 LED OUT
33	DT2	F.PLAY-2 KEY IN	REV.MODE \rightarrow SW IN	REC KEY IN	DIR-2 SW IN	REC LED OUT
32	DT3	STOP-2 KEY IN	STOP-1 KEY IN	RMT KEY IN	CST-1 SW IN	RMT LED OUT
31	DT4	BLANK SKIP SW IN	PAUSE-1 KEY IN	TIMER PLAY SW IN	QUICK-1 PULSE IN	PAUSE-1 LED OUT
30	DT5	PAUSE-2 KEY IN	REV.MODE \leftarrow SW IN	TIMER REC SW IN	DIR-1 SW IN	PAUSE-2 LED OUT
29	DT6	FF-2 KEY IN	FF-1 KEY IN	H/DUB KEY IN	RE-A SW IN	H/DUB LED OUT
28	DT7	REV-2 KEY IN	REV-1 KEY IN	N/DUB KEY IN	RE-B SW IN	N/DUB LED OUT
27 26 25 24	$\overline{\text{KS0}}$ $\overline{\text{KS1}}$ $\overline{\text{KS2}}$ $\overline{\text{KS3}}$	DT ϕ - DT7 KEY SCAN OUT				
36	DISP	DT ϕ - DT7 LED SCAN OUT				

PRACTICAL SERVICE FIGURE

Playback output : (TTA-161)	560 \pm 60mV (LINE OUT, 400Hz)	(WTD-A)	(DOLBY C NR OFF/ON with MT, CrO ₂ tapes) More than 46/61dB (DOLBY C OFF/ON with NORM, tape) More than 72dB (dBx ON with MT, CrO ₂ and NORM tapes)
PB/REC output : (TTA-119K)	400 \pm 50mV (LINE OUT, 1kHz)		
PB/REC distortion :	Less than 1.5% (NORM) Less than 2.0% (MT, CrO ₂)	Recording bias frequency : 100kHz	
Playback noise :	Less than 1.2mV (DOLBY C NR ON, with CrO ₂ , NORM. tapes) Less than 3.5mV (DOLBY B NR OFF, with NORM. tapes)	Tape speed : (TTA-111S)	3kHz \pm 1.5%
		Wow & flutter : (W. R. M. S)	Less than 0.065% (FWD)(DECK1,2)
Erase ratio (125Hz) :	More than 60dB	Take-up torque :	30~60g-cm (DECK1,2)
PB/REC S/N ratio :	More than 47/62dB (CrO ₂), 63dB (MT)	Fast forward torque :	130 \pm 30g-cm (DECK1,2)
		Rewind torque :	130 \pm 30g-cm (DECK1,2)
		Back-tension :	2.5~5.5g-cm (DECK1,2)
		Pinch roller pressure :	290 \pm 70g (DECK1,2)
		Test tape :	METAL TTA-119MP CrO ₂ TTA-119H NORMAL TTA-119K

CIRCUIT DESCRIPTION

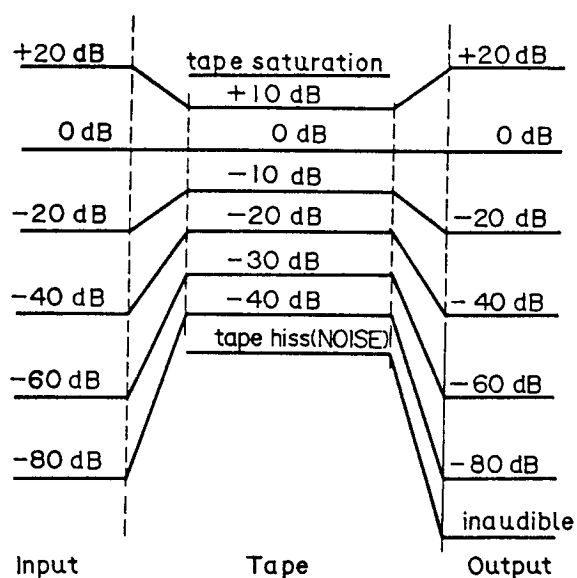
The dbx Noise Reduction System

1. Overview

The dbx noise reduction system compresses signals that are recorded on tape and expands them when they are played back to extend dynamic range and substantively reduce noise level.

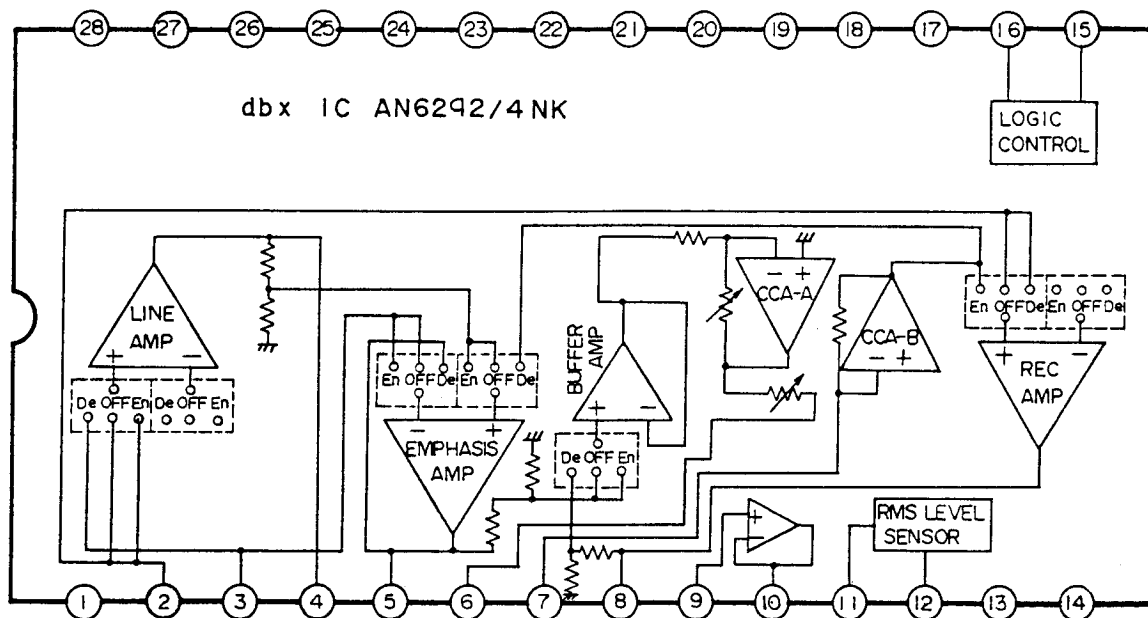
The tape used in cassette tape decks has saturation and noise levels (tape hiss) that permit only a very narrow, 55dB dynamic range. This is why the inputting of a program with a dynamic range wider than 55dB will saturate and clip large signals and bury small signals in noise level.

Before recording, the dbx noise reduction system accurately compresses, by one-half algebraic value, recording signals, even those from wide dynamic range program sources. Compressing a program source's 80dB dynamic range to 40dB width, for example, records all program sources in the cassette deck's dynamic range without distortion and burying in noise. The signal is expanded during playback to double what it was, i.e., expanded to an 80dB program source, which is the original dynamic range. This is an effective means of overall noise reduction because, at this time, noise level will also decrease over the entire range by about 30dB. This also improves saturation level, equivalently, by about 10dB.



2. Operations in each mode

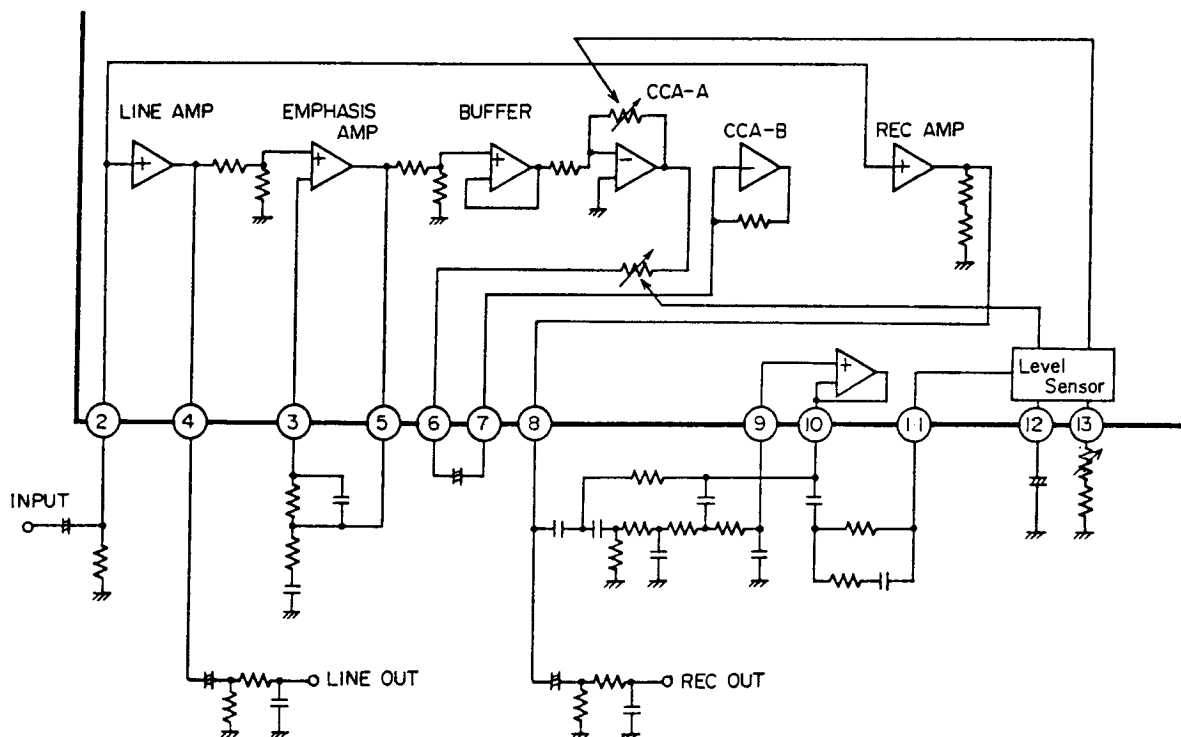
The switches in the IC are changed over depending on the levels at pins 15 and 16, and dbx turning off, encoding and decoding are performed. The following describes the flow of signals and operation of circuits in each mode.



1) dbx-OFF (BYPASS MODE)

The signal that enters pin 2 passes through LINE AMP to be output through pin 4. The signal becomes playback output during playback and monitor output during recording. The signal input to pin 2 also passes through the REC AMP to be output through pin 8. But if dbx is OFF, the analog switch in IC901 prevents output from pin 8 going to the recording circuits.

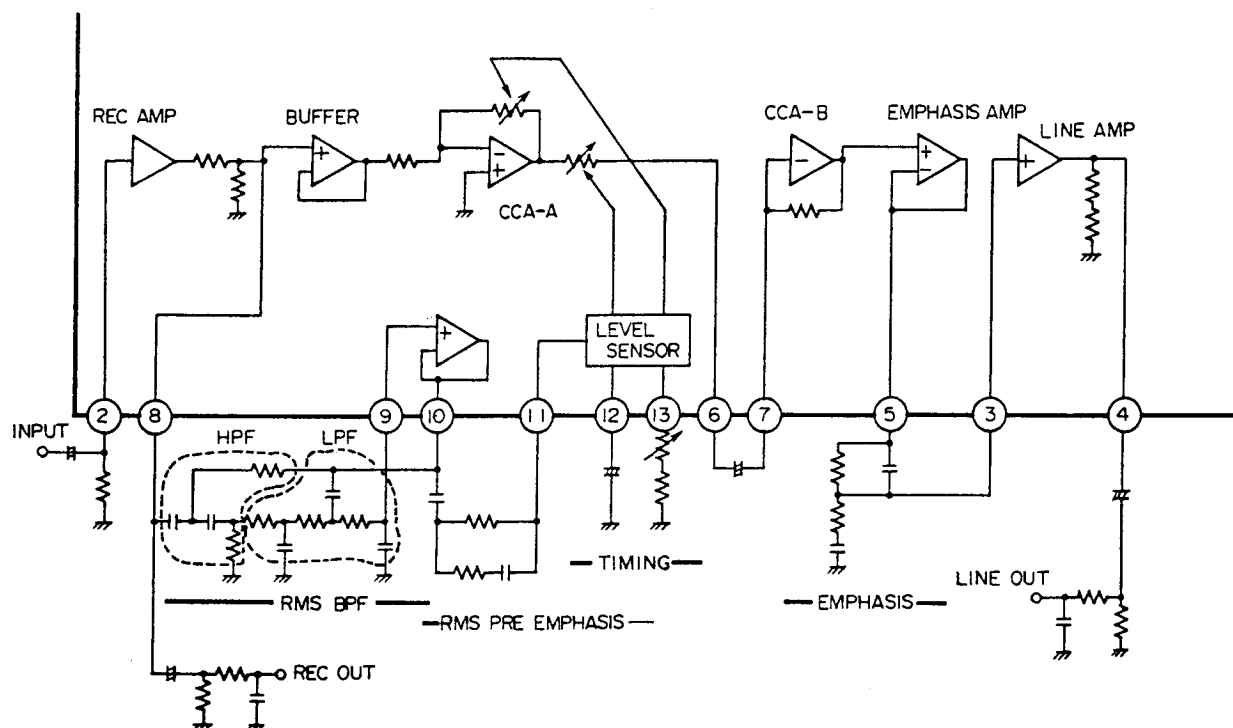
The remaining sections (EMPHASIS AMP, BUFFER, CCA-A and CCA-B) have no connection with this operation.



2) dbx playback (DECODE MODE)

Signal input to pin 2 passes through the REC AMP, then through the RMS BPF and the RMS PRE-EMPHASIS to be input to pin 11 and then to the LEVEL SENSOR.

The output which has left the REC AMP passes through the BUFFER to enter the CCA-A whose gain is controlled by the control signals from the LEVEL SENSOR. The signal passes out of pin 6, reenters pin 7, passes through CCA-B, the EMPHASIS AMP and LINE AMP to be output from pin 4 as playback output.



6292/94NK Decode Mode (During dbx playback)

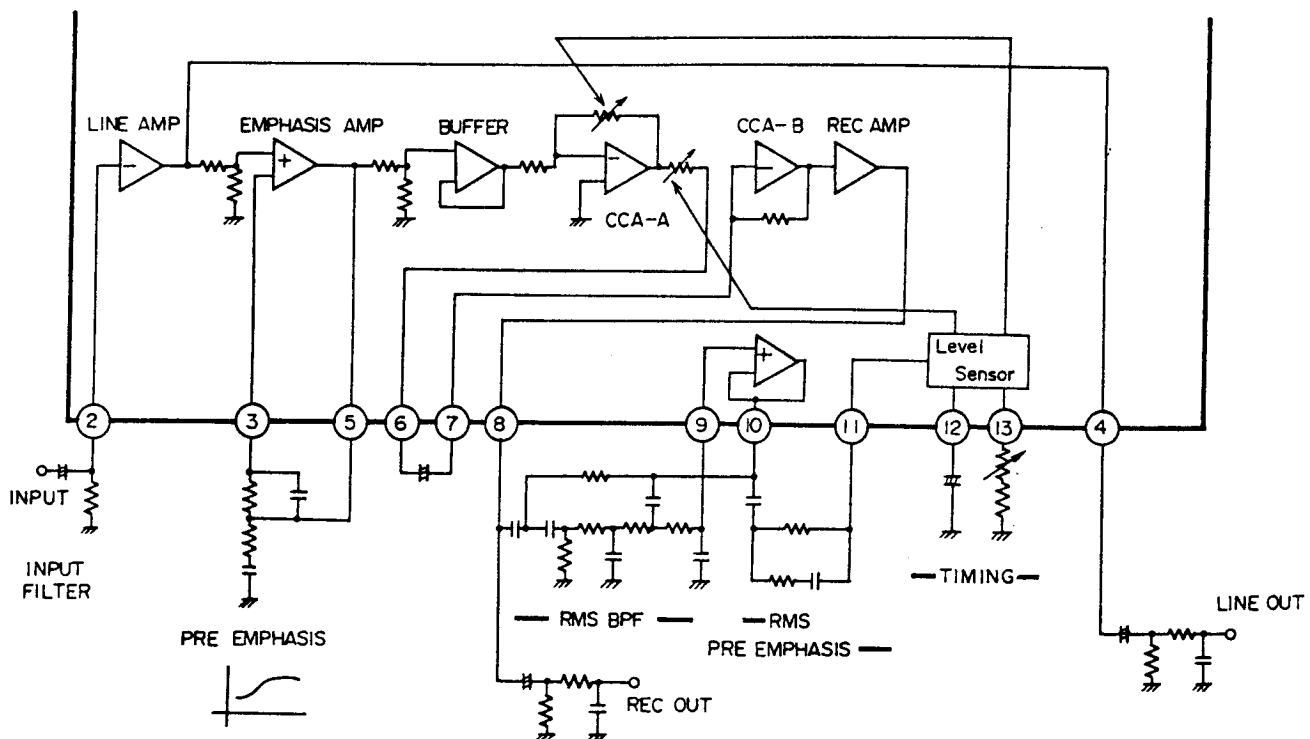
Signal levels during Dolby level tape playback (TTA-161) (dbx ON)

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SIG. LEVEL (VP-P)	0	5.0	1.2	5.0	1.9	0	0	5.0	4.4	4.6	0	0	0	0	0	0

3) dbx Record (ENCODE MODE)

Signal input to pin 2 passes through the LINE AMP, EMPHASIS AMP and BUFFER to enter the CCA-A which outputs it through pin 6. The signal then passes through a capacitor and reenters through pin 7 to go through CCA-B and the REC AMP to be output through pin 8 and sent to the recording circuits.

Output from pin 8 passes through the RMS BPF and RMS PRE-EMPHASIS then goes through pin 11 and into the LEVEL SENSOR. The LEVEL SENSOR sends control signals to CCA-A that control CCA-A's gain. LINE AMP output goes through pin 4 for use as a recording monitor signal.



3. Functions of each section

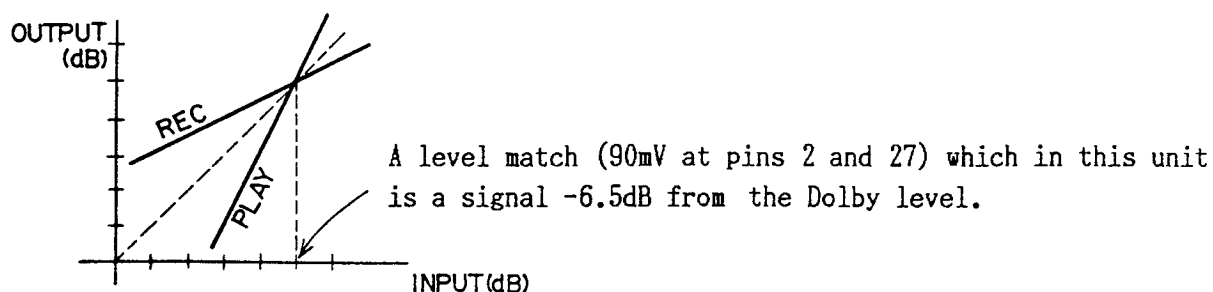
1) RMS LEVEL SENSOR

This sensor creates the signal that controls the gain of CCA (CURRENT CONTROL AMP). Signal input to pin 11 (18) is rectified, algebraically converted and square-rooted. The square-rooted signal is filtered by the capacitor connected to pin 12 (17) to create a voltage that is proportional to the input signal's RMS value, which is then current-converted to become a CCA gain control signal.

2) CCA (CURRENT CONTROL AMP)

CCA is the amplifier which converts the degree of amplification, algebraically and linearly, as determined by the RMS LEVEL SENSOR's control signal. During the compression operation, for example, compression is linear with no relation to frequency band, thus a -60dB signal will be compressed to -30dB, a +10dB signal will be compressed to +5dB. (The process would be the exact opposite in the expansion operation).

CCA-A is the amplifier component and CCA-B is the buffer component.



3) RMS BPF and RMS PRE-EMPHASIS

The dbx's large rate of compression and expansion means that blooming will easily occur when input signals change rapidly. Inserting an RMS BPF and RMS PRE-EMPHASIS in the stage in front of the LEVEL SENSOR improves the blooming effect.

The RMS BPF eliminates the effects of tape hiss and head contact. The RMS PRE-EMPHASIS raises sensitivity in the high-frequency band to decrease the compression and expansion rate.

4) CR externally attached to pins 12, 17 and 19

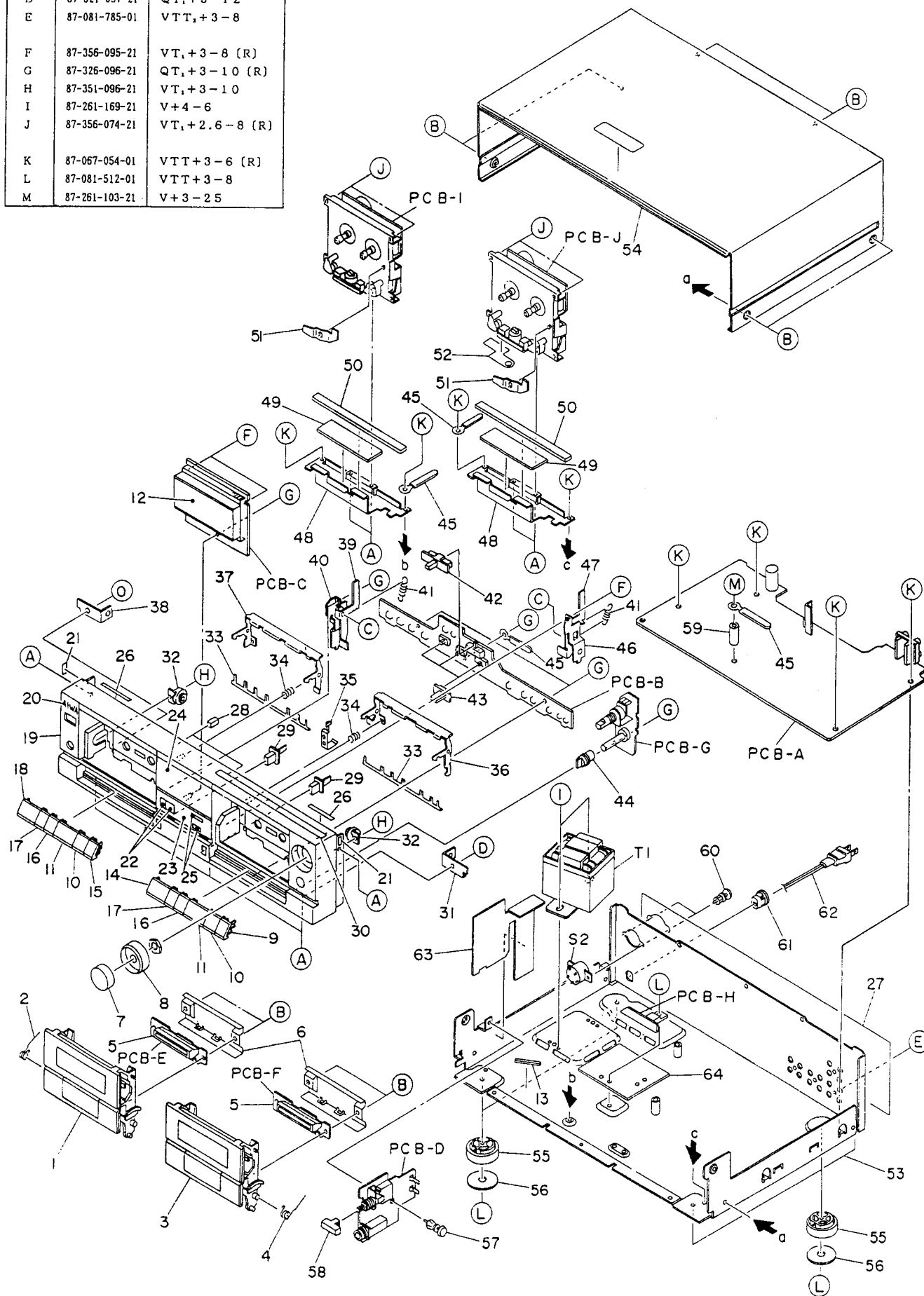
The CR sets the rate of CCA gain reduction (rate of change in gain after the input signal rapidly disappears). The standard value is 125dB/s. Adjust the SFR so that the voltage across R11 (1K Ω) in the STOP mode.

5) LOGIC CONTROL

LOGIC CONTROL selects the switch in the IC as determined by the logic state at pins 15 and 16. If pin 15 is "Hi", dbx is on, if pin 15 is "Lo", dbx is off. When pin 16 is "Hi", the unit is in encode (record) state, when pin 16 is "Lo", the unit is in decode (playback) state.

EXPLODED VIEW-1

REF.NO.	PART NO.	DESCRIPTION
A	87-081-531-01	QTT+3-6
B	87-347-095-21	UT ₁ +3-8 (B)
C	87-441-008-01	STE-2.5
D	87-321-097-21	QT ₁ +3-12
E	87-081-785-01	VTT ₁ +3-8
F	87-356-095-21	VT ₁ +3-8 (R)
G	87-326-096-21	QT ₁ +3-10 (R)
H	87-351-096-21	VT ₁ +3-10
I	87-261-169-21	V+4-6
J	87-356-074-21	VT ₁ +2.6-8 (R)
K	87-067-054-01	VTT+3-6 (R)
L	87-081-512-01	VTT+3-8
M	87-261-103-21	V+3-25



MECHANICAL PARTS LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	ORDER	DESCRIPTION	COMMON MODEL	Q, TY
1-1		09-047-284-010		CASSETTE BOX 1 ASSY(EXCEPT U)	*	1
1-1		09-047-286-010		CASSETTE BOX 1 ASSY(U ONLY)	*	1
1-2		*82-221-223-110		T-SPRING,EJECT 1	*	1
1-3		09-047-285-010		CASSETTE BOX 2 ASSY(EXCEPT U)	*	1
1-3		09-047-287-010		CASSETTE BOX 2 ASSY(U ONLY)	*	1
1-4		*82-221-224-110		T-SPRING,EJECT 2	*	1
1-5		*82-221-204-010		GUIDE,LED	*	2
1-6		*82-221-033-010		PLATE,BOX REAR	*	2
1-7		82-221-012-010		KNOB,VOLUME R	*	1
1-8		82-221-011-010		KNOB,VOLUME L	*	1
1-9		*82-221-039-010		PUSH-KEY ASSY,MUTE	*	1
1-10		*82-221-038-010		PUSH-KEY ASSY,PAUSE	*	2
1-11		*82-221-019-010		PUSH-KEY,STOP	*	2
1-12		*82-221-035-010		SHHET,FL FILTER	*	1
1-13		*82-785-273-010		CUSHION 35-5	*	1
1-14		*82-221-017-010		PUSH-KEY,REC	*	1
1-15		*82-221-024-010		PUSH-KEY,DUMMY B	*	1
1-16		*82-221-020-010		PUSH-KEY,FF	*	2
1-17		*82-221-018-010		PUSH-KEY,REW	*	2
1-18		*82-221-023-010		PUSH-KEY,DUMMY A	*	1
1-19		*82-221-002-110		CABINET,FRONT	*	1
1-20		84-721-024-010		BADGE,AIWA	XC-001	1
1-21		*81-544-235-010		SHEET 14-6-0.3	CS-W550	2
1-22		*82-221-032-010		PUSH-KEY ASSY,DUBB	*	1
1-23		*82-221-005-010		PANEL,CENTER	*	1
1-24		*82-221-008-010		WINDOW,INDICATOR	*	1
1-25		*82-221-028-010		PUSH-KEY,COUNTER RESET	*	1
1-26		*82-221-232-010		FELT 4-30	*	2
1-27		---		NAME PLATE, JACK		1
1-28		*81-525-222-010		G CUSHION 6X3X2	HS-J300	2
1-29		*82-221-029-010		PUSH-BUTTON,EJECT	*	2
1-30		*82-174-045-110		BIAS EXPLANATION SHEET EX		1
1-31		*82-221-209-010		HOLDER,C-BOX 2	*	1
1-32		*87-063-143-010		OIL-DAMP 75	*	2
1-33		*82-221-207-010		P-SPRING,PUSH-KEY	*	2
1-34		*82-217-211-110		C-SPRING,LEVER EJECT	AD-WX909	2
1-35		*82-221-206-010		EARTH PLATE,CENTER	*	1
1-36		*82-221-222-010		PLATE,EJECT(3)-2	*	1
1-37		*82-221-221-110		PLATE,EJECT(3)-1	*	1
1-38		*82-221-208-010		HOLDER,C-BOX 1	*	1
1-39		*82-221-210-010		LEVER,EJECT 1	*	1
1-40		*82-221-216-010		HOLDER ASSY,EJECT 1	*	1
1-41		*84-123-293-010		E-SPRING,M	*	2
1-42		*82-221-014-010		KNOB,DOLBY	*	1
1-43		*82-221-013-010		KNOB,REV MODE	*	3
1-44		*84-424-008-010		KNOB,VOLUME		1
1-45		---		WIRE BINDER		4
1-46		*82-221-215-110		HOLDER ASSY,EJECT 2	*	1
1-47		*82-221-211-010		LEVER,EJECT 2	*	1
1-48		*82-221-214-010		HOLDER,MECHANISM	*	2
1-49		*82-221-050-010		DAMPER,MECHANISM	*	2
1-50		*82-217-248-010		DAMPER,MECHANISM 2	AD-WX909	2
1-51		*82-217-213-110		LEVER,EJECT BLOCKING L	AD-WX909	2
1-52		*82-221-229-010		PLATE,WIRE	*	1
1-53		---		CHASSIS ASSY,AMP.		1
1-54		*82-217-041-010		CABINET,STEEL	AD-WX909	1
1-55		*81-715-051-010		FOOT 40		4
1-56		*82-217-069-010		FELT 33.5	AD-WX909	4
1-57		*87-084-086-010		NYLON RIVET 3.5-4.5		1
1-58		84-721-023-010		PUSH-BUTTON,POWER	XC-001	1
1-59		*82-221-230-010		COLLAR 18,LED	*	1
1-60		*87-085-090-010		NYLON RIVET 3-6.5(H ONLY)		2
1-61		*87-085-184-010		AC CORD BUSHING(H ONLY)		1
1-61		*87-085-189-010		AC CORD BUSHING(U ONLY)		1
1-61		*87-085-185-010		AC CORD BUSHING(E,K,Z ONLY)		1
1-62		*87-034-732-010		AC CORD ASSY(H ONLY)		1
1-62		*87-034-731-010		AC CORD ASSY(U,ONLY)		1
1-62		*87-034-736-010		AC CORD ASSY(E,Z ONLY)		1
1-62		*87-034-734-010		AC CORD ASSY(K, ONLY)		1
1-63		*82-221-225-010		COVER,TERMINAL	*	1
1-64		---		HEAT SINK		1

See the X-3 Mechanism (Supplement of Service Manual) for the exploded views.
The following parts have been changed for this model.

■ DECK 1 (X-3 P3)

ALTERATION PARTS LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	ORDER	DESCRIPTION	COMMON MODEL	Q, TY
	1-20	*86-535-351-110		ACTUATING CHASSIS PH ASSY		1
	1-23	*86-535-356-010		HEAD HOUSING PH ASSY		1
	1-44	*86-535-353-010		FELT 5-4-2		1
	2-17	86-535-354-010		BELT		1

The following REF. NOS. are not used in this model.

1-4-1-6, 1-9, 2-9

ADDITIONAL PARTS LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	ORDER	DESCRIPTION	COMMON MODEL	Q, TY
	1-45	*86-535-358-010		T-SPRING, BRAKE		1

■ DECK 2 (X-3 R3)

ALTERATION PARTS LIST

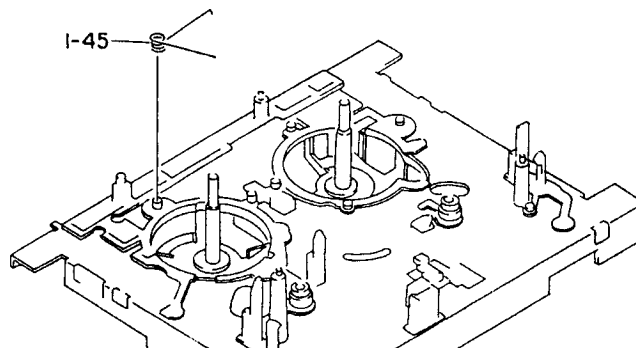
PART NO. CHANGED TO	REF. NO.	PART NO.	ORDER	DESCRIPTION	COMMON MODEL	Q, TY
	1-20	*86-535-351-110		ACTUATING CHASSIS PH ASSY		1
	1-23	*86-535-356-010		HEAD HOUSING PH ASSY		1
	1-44	*86-535-353-010		FELT 5-4-2		1
	2-17	86-535-354-010		BELT		1

The following REF. NOS. are not used in this model.

1-4, 2-9

ADDITIONAL PARTS LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	ORDER	DESCRIPTION	COMMON MODEL	Q, TY
	1-45	*86-535-358-010		T-SPRING, BRAKE R		1



■ ACCESSORIES/PACKAGE LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	ORDER	DESCRIPTION	COMMON MODEL	Q, TY
	1	*82-221-901-010		INSTRUCTION BOOKLET	*	1
	2	*87-032-845-010		SIEMENS PLUG (H ONLY)		1