AIWA®

S.M Code No. [illegible]
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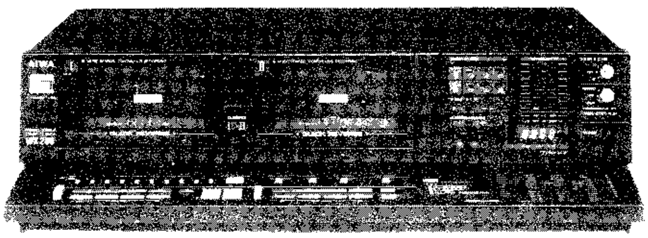
SERVICE MANUAL

MODEL NO.

STEREO DOUBLE CASSETTE DECK

AD-WX200
WX20



TYPE HB, CB, EB, KB, GB, ZB(AD-WX200),

SPECIFICATIONS

Type	Stereo cassette tape [illegible]
Track format	4 tracks 2 channels
Power supply	AD-WX200E, Z AC 220 V, 50/60 Hz AD-WX200K, G AC 240 V, 50/60 Hz AD-W20U, AD-WX200C AC 120 V, 60 Hz AD-WX200H AC 120 V/220 V/240 V switchable 50/60 Hz
Power consumption	32 W
Frequency response	METAL tape: 20 16,000 Hz CrO$_2$ tape: 20 15,000 Hz NORMAL tape 20 14,000 Hz
Signal-to-noise ratio	[illegible] dB (METAL tape DOLBY C NR ON)
Wow and flutter	According to DIN 45 500 0.18% 0.06% (W.RMS)
Tape speed	4.8 cm/sec. (1-7/8 ips) 9.5 cm/sec. (Dubble speed)
Rewind time	90 sec. (C-60)
Fast forward time	90 sec. (C-60)
Recording system	AC bias (frequency 100 kHz)
Erase system	AC erase
Motor	DC Servomotor × 2, DC motor × 1
Heads	Playback head: SH head Record/playback head: DX head Erase head: Double-gap ferrite head
Inputs	[illegible] [illegible] 50 mV (over 50 kΩ)
Outputs	[illegible] [illegible] suitable load impedance over 50 kΩ headphones [illegible]
Dimensions	[illegible]
Weight	[illegible] kg
Accessories	[illegible]

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

Follow the instructions carefully which will allow the user to optimise the products' performance and give many years of serivce.

1. No scratch and melting shall be made to covered lead-wires of an a.c. primary circuit including mains leads.
2. No illegibility shall be given to the specification plate, the caution labels, the fuse labels and others.
3. When, on pattern sides of circuit boards, additional repair parts have been made up, the parts shall be firmly glued to circuit boards or other components, unless the parts can be attached firmly.
4. The following matters shall be maintained as they are, when repairing.
   1) Soldering of lead-wire ends
      * Care should be taken of the [illegible] primary circuit as well as [illegible]
   2) Wiring and holding of lead-wires [illegible]
   3) Materials of lead-wires
      * [illegible] For UL models, lead-wires to be used shall be approved or accepted by the UL.
   4) [illegible]
   5) [illegible] of voltage selector switch
      * Set the Voltage Selector Switch to 240V, 220V [illegible]
[illegible] After repaired, the insulation resistance or leakage current shall be measured with 500 V D.C. and shall be not less than 1 MΩ.

Wiring [illegible]

[illegible]. General instructions for mechanism repair
   1) The heads, capstan and pinch roller shall be cleaned of good quality alcohol after repaired, because dirty heads shall cause distorted sounds while dirty capstan and pinch roller shall occur wow/flutter and take up fault.
   2) Lubricants been stained the surfaces of transmitting portion of the belts, idlers, capstan and pinch roller shall be removed, because slippery and faulty tape travel shall be caused.
   3) When oiling, only one or two drops shall be applied so as [illegible]
   4) [illegible]

[illegible]

ONE POINT ADVICE

[illegible]

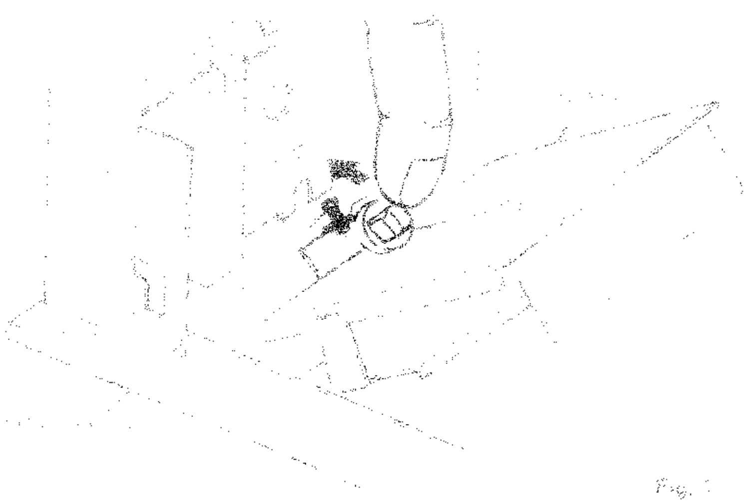


Fig. 1

ELECTRICAL MAIN PARTS LIST

- +++ mark denotes a component of assembled part which part code is represented by a previously stated component.
- ★ -mark means less required items and availabilities may be limited.

CAPACITORS No mark, U, UF: μF P, PF : pF
COILS MMH: mH UH : μH
FUSE MMA: mA

Ref. No.	Part No.	Description
	=== IC ===	
	87-020-454	IC,DM6851
⏚	82-104-601	IC,HD38702A37
	87-020-489	IC,IR2E19
	87-020-261	IC,LA6358S
⏚	82-104-602	IC,LM6402-596
⏚	82-104-603	IC,LM6402-597
⏚	82-104-699	IC,LM6413E-1860
	87-020-140	IC,L78M12
	87-020-096	IC,M4066BP
	87-020-157	IC,M5210L
	87-027-895	IC,M5218L
	87-027-827	IC,TC4069UBP
	87-020-438	IC,TD62504P
	87-027-538	IC,UPD-4069
	=== TRANSISTOR ===	
	89-109-521	TRANSISTOR,2SA952K
	89-110-155	TRANSISTOR,2SA1015,GR
	89-113-584	TRANSISTOR,2SA1358Y
	89-206-051	TRANSISTOR,2SB605K L
	89-206-415	TRANSISTOR,2SB641,S
	89-412-763	TRANSISTOR,2SC1276QP
	89-318-155	TRANSISTOR,2SC1815,GR
	89-320-011	TRANSISTOR,2SC2001K
	89-405-711	TRANSISTOR,2SD571,K
	89-412-753	TRANSISTOR,2SD1275
	89-413-023	TRANSISTOR,2SD1302S
	=== MAIN CIRCUIT BOARD SECTION ===	
PCB-A	*	MAIN CIRCUIT BOARD
C3	* 87-018-036	CAP,CERA-SOL S 220P
C4	* 87-018-036	CAP,CERA-SOL S 220P
C5	* 87-018-032	CAP,CERA-SOL S 100P
C6	* 87-018-032	CAP,CERA-SOL S 100P
C7	* 87-015-954	CAP,ELECT LL 10-16V
C8	* 87-015-954	CAP,ELECT LL 10-16V
C19	* 87-018-047	CAP,CERA-SOL S 0.01Y/16
C20	* 87-018-047	CAP,CERA-SOL S 0.01Y/16
C21	* 87-015-698	CAP,ELECT 4.7-50
C22	* 87-015-698	CAP,ELECT 4.7-50
C31	* 87-018-047	CAP,CERA-SOL S 0.01Y/16
C34	* 87-018-044	CAP,CERA-SOL S 1000P
C36	* 87-018-047	CAP,CERA-SOL S 0.01Y/16
C51	* 87-018-047	CAP,CERA-SOL S 0.01Y/16
C65	* 87-015-954	CAP,ELECT LL 10-16V
C66	* 87-015-954	CAP,ELECT LL 10-16V
C403	* 87-014-115	CAP,PP 0.0056G
C411	* 87-010-060	CAP,ELECT,100-16
C414	* 87-014-061	CAP,PP 1500PF
C454	* 87-014-061	CAP,PP 1500PF
C601	* 87-018-047	CAP,CERA-SOL S 0.01Y/16
C602	* 87-018-047	CAP,CERA-SOL S 0.01Y/16
C603	* 87-010-411	CAP,ELECT 1000-50V
C605	* 87-010-437	CAP,ELECT 1000-50V (U,C,E,K,G,Z MODELS)
C611	* 87-018-047	CAP,CERA-SOL S 0.01Y/16
C804	* 87-010-237	CAP,ELECT 1000-16(SR)
C805	* 87-010-237	CAP,ELECT 1000-16(SR)
C806	* 87-010-237	CAP,ELECT 1000-16(SR)
C807	* 87-010-237	CAP,ELECT 1000-16(SR)
C816	* 87-018-044	CAP,CERA-SOL S 1000P
D1	87-020-110	DIODE 1SS177
D2	87-020-110	DIODE 1SS177
D31	87-020-110	DIODE 1SS177
D51	87-020-110	DIODE 1SS177
D52	87-020-110	DIODE 1SS177
D53	87-020-110	DIODE 1SS177
D54	87-020-095	DIODE MC921
D55	87-020-110	DIODE 1SS177
D101	87-020-110	DIODE 1SS177
D102	87-020-110	DIODE 1SS177
D251	87-027-475	DIODE,ZENER HZ-6B1
D301	87-027-475	DIODE,ZENER HZ-6B1
D601	87-020-025	DIODE 2B4B41,LC-2
D602	87-020-123	DIODE DS446
D603	87-020-123	DIODE DS446
D604	87-027-455	DIODE S2V10,F
D606	87-027-365	DIODE S5277B
D607	87-020-110	DIODE 1SS177
D801	87-020-110	DIODE 1SS177
D802	87-020-123	DIODE DS446
D803	87-020-123	DIODE DS446
D804	87-020-123	DIODE DS446
D805	87-020-123	DIODE DS446
D806	87-020-110	DIODE 1SS177
D807	87-020-123	DIODE DS446
D808	87-020-123	DIODE DS446
D811	87-020-110	DIODE 1SS177
D813	87-020-110	DIODE 1SS177
D817	87-020-110	DIODE 1SS177
D818	87-020-110	DIODE 1SS177
D819	87-020-110	DIODE 1SS177
D820	87-020-110	DIODE 1SS177
D821	87-020-110	DIODE 1SS177
D823	87-020-110	DIODE 1SS177
D826	87-020-110	DIODE 1SS177
D827	87-020-110	DIODE 1SS177
D829	87-020-110	DIODE 1SS177
D830	87-020-110	DIODE 1SS177
D832	87-020-110	DIODE 1SS177
D841	87-020-110	DIODE 1SS177
D842	87-020-110	DIODE 1SS177
D843	87-020-110	DIODE 1SS177
D844	87-020-110	DIODE 1SS177
D845	87-020-110	DIODE 1SS177
D846	87-020-110	DIODE 1SS177
D847	87-020-110	DIODE 1SS177
D848	87-020-110	DIODE 1SS177
D851	87-020-110	DIODE 1SS177
J1	87-049-301	JACK PLATE ASSY (LINE IN/REC,LEFT)
J2	+++	JACK PLATE ASSY (LINE IN/REC,RIGHT)
J3	+++	JACK PLATE ASSY (LINE OUT/PLAY,LEFT)
J4	+++	JACK PLATE ASSY (LINE OUT/PLAY,RIGHT)
L1	* 82-196-603	COIL,TRAP,100KHZ
L2	* 82-196-603	COIL,TRAP,100KHZ
L201	82-198-715	MPX FILTER
L202	82-198-715	MPX FILTER
L251	* 82-196-603	COIL,TRAP,100K
L252	* 82-196-603	COIL,TRAP,100K
L301	* 82-196-603	COIL,TRAP,100K
L302	* 82-196-603	COIL,TRAP,100K
L401	* 82-104-642	COIL OSC,1
L411	* 82-104-643	COIL OSC,2
L412	* 87-003-051	CHOKE COIL 470 UH
L451	* 82-104-643	COIL OSC,2
L452	* 87-003-051	CHOKE COIL 470 UH
L801	* 82-189-642	COIL,OSC LM6400
LED601	* 87-027-542	LED,LN217RP
⚠ R405	, 87-029-067	RES,FUSIBLE,1/4W-4.7
⚠ R603	, 87-029-366	RES,FUSIBLE 1/2W-4.7
⚠ R607	, 87-029-083	RES,FUSIBLE,1/2W-10
R813	* 87-025-085	RES,MF 68-2W
R814	* 87-025-085	RES,MF 68-2W
R815	* 87-025-085	RES,MF 68-2W
R816	* 87-025-085	RES,MF 68-2W
RA801	* 82-146-611	RES,ARRAY 47KX9
RA802	* 82-104-619	RES,ARRAY 47KX12
RA803	* 82-104-618	RES,ARRAY 47KX11
RA804	* 82-146-611	RES,ARRAY 47KX9
RA805	* 82-146-611	RES,ARRAY 47KX9
RA806	* 82-104-617	RES,ARRAY 47KX8
RA807	* 82-146-613	RES,ARRAY 47KX7
RY1	* 87-045-237	RELAY,GSA-237P 12VDC
RY2	* 87-045-237	RELAY,GSA-237P 12VDC
SFR1	* 87-021-738	SFR 1K
SFR2	* 87-021-738	SFR 1K
SFR3	* 87-021-743	SFR 22K
SFR4	* 87-021-743	SFR 22K
SFR5	* 87-021-743	SFR 22K
SFR6	* 87-021-743	SFR 22K
SFR411	* 87-021-746	SFR 100K
SFR412	* 87-021-746	SFR 100K
SFR451	* 87-021-746	SFR 100K
SFR452	* 87-021-746	SFR 100K
	=== KEY SWITCH CIRCUIT BOARD SECTION ===	
PCB-B	*	KEY SWITCH CIRCUIT BOARD
D701	87-020-110	DIODE 1SS177
D702	87-020-110	DIODE 1SS177
D703	87-020-110	DIODE 1SS177
D704	87-020-110	DIODE 1SS177
D705	87-020-110	DIODE 1SS177
D706	87-020-110	DIODE 1SS177
D707	87-020-110	DIODE 1SS177
D708	87-020-110	DIODE 1SS177
D709	87-020-110	DIODE 1SS177
D710	87-020-110	DIODE 1SS177
D711	87-020-110	DIODE 1SS177
D712	87-020-110	DIODE 1SS177
D713	87-020-110	DIODE 1SS177
D714	87-020-110	DIODE 1SS177
D715	87-020-110	DIODE 1SS177
D716	87-020-110	DIODE 1SS177
D717	87-020-110	DIODE 1SS177
D721	87-020-110	DIODE 1SS177
D722	87-020-110	DIODE 1SS177
D723	87-020-110	DIODE 1SS177
D724	87-020-110	DIODE 1SS177
D725	87-020-110	DIODE 1SS177
D726	87-020-110	DIODE 1SS177
D727	87-020-110	DIODE 1SS177
D728	87-020-110	DIODE 1SS177
D729	87-020-110	DIODE 1SS177
D730	87-020-110	DIODE 1SS177
D731	87-020-110	DIODE 1SS177
D732	87-020-110	DIODE 1SS177
D734	87-020-110	DIODE 1SS177
D735	87-020-110	DIODE 1SS177
D736	87-020-110	DIODE 1SS177
D737	87-020-110	DIODE 1SS177
D738	87-020-110	DIODE 1SS177
LED701	* 87-020-093	LED LN222RP (REC MUTE,DECK1)
LED702	* 87-020-092	LED LN422YP (PAUSE,DECK1)
LED703	* 87-020-091	LN322GP (REV PLAY,DECK1)
LED704	* 87-020-091	LN322GP (PLAY,DECK1)
LED705	* 87-027-772	LED GL-9PR4 (HIGH)
LED706	* 87-027-772	LED GL-9PR4 (NORMAL)
LED707	* 87-020-091	LED LN322GP (REV PLAY,DECK2)
LED708	* 87-020-091	LED LN322GP (PLAY,DECK2)
LED709	* 87-020-092	LED LN422YP (PAUSE,DECK2)
LED710	* 87-020-093	LED LN222RP (REC MUTE,DECK2)
LED711	* 87-020-093	LED LN222RP (RECORD,DECK2)
LED715	* 87-020-093	LED LN222RP (1)
LED716	* 87-020-093	LED LN222RP (2)
LED717	* 87-020-093	LED LN222RP (3)
LED718	* 87-020-093	LED LN222RP (4)
LED719	* 87-020-093	LED LN222RP (5)
LED720	* 87-020-093	LED LN222RP (6)
LED721	* 87-020-093	LED LN222RP (7)
LED722	* 87-020-093	LED LN222RP (8)
LED723	* 87-020-093	LED LN222RP (9)
LED725	* 87-020-092	LED LN422YP (TAPE SIDE A)
LED726	* 87-020-092	LED LN422YP (TAPE SIDE B)
LED727	* 87-020-091	LED,LN322GP (MS,DECK1)
LED728	* 87-020-092	LED LN422YP (PMS,DECK1)
S701	87-031-771	TACT SW,EVQ-QSK04M (REC MUTE,DECK1)
S702	87-031-771	TACT SW,EVQ-QSK04M (PAUSE,DECK1)
S703	87-031-771	TACT SW,EVQ-QSK04M (STOP,DECK1)
S704	87-031-771	TACT SW,EVQ-QSK04M (MS,DECK2)
S705	87-031-771	TACT SW,EVQ-QSK04M (MS,DECK2)
S706	87-031-771	TACT SW,EVQ-QSK04M (STOP,DECK2)
S707	87-031-771	TACT SW,EVQ-QSK04M (REV PLAY,DECK2)
S708	87-031-771	TACT SW,EVQ-QSK04M (PLAY,DECK2)
S709	87-031-771	TACT SW,EVQ-QSK04M (PAUSE,DECK2)
S710	87-031-771	TACT SW,EVQ-QSK04M (REC MUTE,DECK2)
S711	87-031-771	TACT SW,EVQ-QSK04M (RECORD,DECK2)
S715	87-031-771	TACT SW,EVQ-QSK04M (1)
S716	87-031-771	TACT SW,EVQ-QSK04M (2)
S717	87-031-771	TACT SW,EVQ-QSK04M (3)
S718	87-031-771	TACT SW,EVQ-QSK04M (4)
S719	87-031-771	TACT SW,EVQ-QSK04M (5)
S720	87-031-771	TACT SW EVQ-QSK04M (6)
S721	87-031-771	TACT SW EVQ-QSK04M (7)
S722	87-031-771	TACT SW EVQ-QSK04M (8)
S723	87-031-771	TACT SW EVQ-QSK04M (9)
S725	87-031-771	TACT SW EVQ-QSK04M (TAPE SIDE)
S726	87-109-614	PUSH SW (MS SELECTOR)
S727	87-031-771	TACT SW EVQ-QSK04M (BACK SKIP)
S728	87-031-771	TACT SW EVQ-QSK04M (REV PLAY,DECK1)
S729	87-031-771	TACT SW EVQ-QSK04M (PLAY,DECK1)
S730	87-031-771	TACT SW EVQ-QSK04M (FWD SKIP)
S731	87-031-802	SLIDE SW 2-2-3 SSS (REVERSE MODE 1)
S732	87-031-802	SLIDE SW 2-2-3 SSS (REVERSE MODE 2)
S733	87-031-873	SLIDE SW-SSS-322 (BLANK SKIP)
S734	87-031-802	SLIDE SW 2-2-3 SSS (REC MODE)
S735	87-031-771	TACT SW EVQ-QSK04M (COUNTER RESET)
S741	87-031-771	TACT SW EVQ-QSK04M (SYNC DUBB H)
S742	87-031-771	TACT SW EVQ-QSK04M (SYNC DUBB N)
	=== REC. AMP. CIRCUIT BOARD SECTION ===	
PCB-C	*	REC. AMP. CIRCUIT BOARD
D401	87-020-110	DIODE 1SS177
D402	87-020-110	DIODE 1SS177
L253	* 87-005-242	MICRO INDUCTOR 5.6MMH

Description
SS177
22RP (REC MUTE,DECK1)
22YP (PAUSE,DECK1)
(REV PLAY,DECK1)
(PLAY,DECK1)
9PR4 (HIGH)
9PR4 (NORMAL)
22GP (REV PLAY,DECK2)
22GP (PLAY,DECK2)
22YP (PAUSE,DECK2)
22RP (REC MUTE,DECK2)
22RP (RECORD,DECK2)
22RP (1)
22RP (2)
22RP (3)
22RP (4)
22RP (5)
22RP (6)
22RP (7)
22RP (8)
22RP (9)
22YP (TAPE SIDE A)
22YP (TAPE SIDE B)
22GP (MS,DECK1)
22YP (PMS,DECK1)
,EVQ-QSK04M (REC MUTE,DECK1)
,EVQ-QSK04M (PAUSE,DECK1)
,EVQ-QSK04M (STOP,DECK1)
,EVQ-QSK04M (MS,DECK2)
,EVQ-QSK04M (MS,DECK2)
,EVQ-QSK04M (STOP,DECK2)
,EVQ-QSK04M (REV PLAY,DECK2)
,EVQ-QSK04M (PLAY,DECK2)
,EVQ-QSK04M (PAUSE,DECK2)
,EVQ-QSK04M (REC MUTE,DECK2)
,EVQ-QSK04M (RECORD,DECK2)
,EVQ-QSK04M (1)
,EVQ-QSK04M (2)
,EVQ-QSK04M (3)
,EVQ-QSK04M (4)
,EVQ-QSK04M (5)
EVQ-QSK04M (6)
EVQ-QSK04M (7)
EVQ-QSK04M (8)
EVQ-QSK04M (9)
EVQ-QSK04M (TAPE SIDE)
(MS SELECTOR)
EVQ-QSK04M (BACK SKIP)
EVQ-QSK04M (REV PLAY,DECK1)
EVQ-QSK04M (PLAY,DECK1)
EVQ-QSK04M (FWD SKIP)
2-2-3 SSS (REVERSE MODE 1)
2-2-3 SSS (REVERSE MODE 2)
-SSS-322 (BLANK SKIP)
2-2-3 SSS (REC MODE)
EVQ-QSK04M (COUNTER RESET)
EVQ-QSK04M (SYNC DUBB H)
EVQ-QSK04M (SYNC DUBB N)
ECTION ===
. CIRCUIT BOARD
S177
S177
DUCTOR 5.6MMH

Ref.No.	Part No.	Descripton
L254	* 87-005-242	MICRO INDUCTOR 5.6MMH
L303	* 82-196-604	COIL 2.2/6.8MMH
L304	* 82-196-604	COIL 2.2/6.8MMH
SFR251	* 87-021-743	SFR 22K
SFR252	* 87-021-743	SFR 22K
SFR301	* 87-021-743	SFR 22K
SFR302	* 87-021-743	SFR 22K
		=== PB. AMP. CIRCUIT BOARD SECTION ===
PCB-D	*	PB. AMP. CIRCUIT BOARD
D151	87-020-110	DIODE 1SS177
D810	87-020-110	DIODE 1SS177
D813	87-020-110	DIODE 1SS177
D852	87-020-110	DIODE 1SS177
L101	* 82-196-603	COIL,TRAP,100K
L102	* 82-196-603	COIL,TRAP,100K
SFR101	* 87-021-738	SFR 1K
SFR102	* 87-021-738	SFR 1K
SFR103	* 87-021-742	SFR 10K
SFR104	* 87-021-742	SFR 10K
		=== DISPLAY CIRCUIT BOARD SECTION ===
PCB-E	*	DISPLAY CIRCUIT BOARD
C501	* 87-010-071	CAP,ELECT 1-50V
C503	* 87-014-033	CAP,PP 100PF
C504	* 87-010-248	CAP,ELECT 220-10V
C505	* 87-010-414	CAP,ELECT 33-25V
C506	* 87-015-697	CAP,ELECT 3.3-50V
C507	* 87-010-244	CAP,ELECT 22-16V
C508	* 87-010-244	CAP,ELECT 22-16V
D501	87-027-405	ZENER RD2.2EB
D502	87-020-110	DIODE 1SS177
D503	87-020-123	DIODE DS446
D504	87-020-123	DIODE DS446
D506	87-020-110	DIODE 1SS177
D507	87-020-110	DIODE 1SS177
LED501	* 87-027-542	LED LN217RP (REC,DECK1)
LED502	* 87-027-543	LED LN317GP (B TYPE)
LED503	* 87-027-542	LED LN217RP (REC,DECK2)
LED504	* 87-027-542	LED LN217RP (C TYPE)
LED505	* 87-027-773	LED,GL-9NG4 (◀,DECK1)
LED506	* 87-027-773	LED,GL-9NG4 (▶,DECK1)
LED507	* 87-027-773	LED,GL-9NG4 (◀,DECK2)
LED508	* 87-027-773	LED,GL-9NG4 (▶,DECK2)
LED509	* 87-027-542	LED LN217RP (⊂⊃,DECK1)
LED510	* 87-027-542	LED LN217RP (⊃⊂,DECK1)
LED511	* 87-027-542	LED LN217RP (⊐⊏,DECK1)
LED512	* 87-027-542	LED LN217RP (⊂⊃,DECK2)
LED513	* 87-027-542	LED LN217RP (⊃⊂,DECK2)
LED514	* 87-027-542	LED LN217RP (⊏⊐,DECK2)
LED515	* 87-027-543	LED,LN317GP (8P PEAK PROG METER)
LED516	* 87-027-543	LED,LN317GP (8P PEAK PROG METER)
LED517	* 87-027-543	LED,LN317GP (8P PEAK PROG METER)
LED518	* 87-027-543	LED,LN317GP (8P PEAK PROG METER)
LED519	* 87-027-543	LED,LN317GP (8P PEAK PROG METER)
LED520	* 87-027-543	LED,LN317GP (8P PEAK PROG METER)
LED521	* 87-027-542	LED,LN217RP (8P PEAK PROG METER)
LED522	* 87-027-542	LED,LN217RP (8P PEAK PROG METER)
LED523	* 87-027-542	LED,LN217RP (8P PEAK PROG METER)
LED524	* 87-027-542	LED,LN217RP (8P PEAK PROG METER)
LED525	87-027-542	LED LN217RP (8P PEAK PROG METER)
LED526	87-027-542	LED LN217RP (8P PEAK PROG METER)

Ref. No.	Part No.	Description
LED527	87-027-542	LED LN217RP (8P PEAK PROG METER)
LED528	87-027-542	LED LN217RP (8P PEAK PROG METER)
LED529	87-027-542	LED LN217RP (8P PEAK PROG METER)
LED530	87-027-542	LED LN217RP (8P PEAK PROG METER)
		=== VOLUME CIRCUIT BOARD SECTION ===
PCB-F	*	VOLUME CIRCUIT BOARD
VR201	82-196-608	VOLUME 10K (RECORD LEVEL,L)
VR202	82-196-608	VOLUME 10K (RECORD LEVEL,R)
		=== SWITCH-1 CIRCUIT BOARD SECTION ===
PCB-G	*	SWITCH-1 CIRCUIT BOARD
D824	87-020-110	DIODE 1SS177
D825	87-020-110	DIODE 1SS177
J5	82-109-612	JACK (PHONES)
S2	82-109-615	ROTARY SW (DOLBY B-C NR)
S3	82-109-615	ROTARY SW (TIMER)
		=== FL CIRCUIT BOARD SECTION ===
PCB-H	*	FL CIRCUIT BOARD
FL1	* 82-198-601	FL,4ST-01ZS1 4DIGIT
		=== DOLBY NR CIRCUIT BOARD SECTION ===
	87-020-132	DOLBY UNIT HA12058J (W/PCB-I)
		=== SWITCH-2 CIRCUIT BOARD SECTION ===
PCB-J	*	SWITCH-2 CIRCUIT BOARD
S1	82-109-613	PUSH SW,SPH 222K (POWER)
		=== DECK-1 CIRCUIT BOARD SECTION ===
PCB-K	*	DECK-1 CIRCUIT BOARD
S1101	86-517-621	LEAF SW 2ME-1 (ENA B,DECK1)
S1102	86-517-621	LEAF SW 2ME-1 (ENA A,DECK1)
S1103	86-517-621	LEAF SW 2ME-1 (CO,DECK1)
S1104	86-517-621	LEAF SW 2ME-1 (MT,DECK1)
S1105	86-517-621	LEAF SW 2ME-1 (CAST,DECK1)
S1106	87-031-874	LEAF SW,PAUSE (91BN) (DIRECT)
SFR1101	* 87-021-825	SFR 22K
SFR1102	* 87-021-824	SFR 10K
SOL1101	* 86-517-611	SOLENOID 2ME-1A (FR,DECK1)
SOL1102	* 86-517-612	SOLENOID 2ME-1B (PLAY,DECK1)
		=== DECK-2 CIRCUIT BOARD SECTION ===
PCB-L	*	DECK-2 CIRCUIT BOARD
S1107	86-517-621	LEAF SW 2ME-1 (ENA B,DECK2)
S1108	86-517-621	LEAF SW 2ME-1 (ENA A,DECK2)
S1109	86-517-621	LEAF SW 2ME-1 (CO,DECK2)
S1110	86-517-621	LEAF SW 2ME-1 (MT,DECK2)
S1111	86-517-621	LEAF SW 2ME-1 (CAST,DECK2)
S1112	87-031-874	LEAF SW, PAUSE (91BN) (DIRECT)
SFR1103	* 87-021-825	SFR 22K
SFR1104	* 87-021-824	SFR 10K
SOL1103	* 86-517-611	SOLENOID 2ME-1A (FR,DECK2)
SOL1104	* 86-517-612	SOLENOID 2ME-1B (PLAY,DECK2)
		=== SENSOR-1 CIRCUIT BOARD SECTION ===
PCB-M	*	SENSOR-1 CIRCUIT BOARD
CP1103	* 87-020-457	PHOTO SENSOR NJL-5144L-BC

Ref. No.	Part No.	Description
		=== SENSOR-2 CIRCUIT BOARD SECTION ===
PCB-N	*	SENSOR-2 CIRCUIT BOARD
CP1104	87-020-457	PHOTO SENSOR NJL-5144L-BC
		=== FUSE CIRCUIT BOARD SECTION ===
⚠PCB-O	*	FUSE CIRCIUT BOARD SECTION
⚠	* 87-033-147	FUSE CLAMP
⚠F1	87-035-220	FUSE,T630MMA (H MODEL)
⚠F1	87-035-295	FUSE,630MA (U,C MODELS)
⚠F1	87-035-145	FUSE,T250MA (E,K,Z,G MODELS)
		=== SUB CIRUCIT BOARD SECTION ===
PCB-P	*	SUB CIRCUIT BOARD
		=== MISCELLANEOUS ===
⚠	87-034-958	AC CORD (H MODEL)
⚠	87-034-578	AC CORD (U,C MODELS)
⚠	87-034-877	AC CORD (E,Z MODELS)
⚠	87-034-975	AC CORD (K MODEL)
⚠	87-034-892	AC CORD (G MODEL)
⚠	87-085-184	AC CORD BUSHING D (H,U,C MODELS)
⚠	87-085-185	AC CORD BUSHING E (E,K,Z,G MODELS)
M101	87-045-235	MOTOR MMA6B2LW (DECK1)
M102	87-045-235	MOTOR MMA6B2LW (DECK2)
⚠PT1	82-104-648	POWER TRANSFORMER (H MODEL)
⚠PT1	82-104-645	POWER TRANSFORMER (U,C MODELS)
⚠PT1	82-104-646	POWER TRANSFORMER (E,Z MODELS)
⚠PT1	82-104-647	POWER TRANSFORMER (K,G MODELS)
RPEH1	87-046-259	RPEH HD425821RVJ (DECK1)
RPEH2	87-046-259	RPEH HD425821RVJ (DECK2)
S4	87-031-586	ROTARY SW (VOLT.SEL.) (H MODEL)

Note; Combination Circuit Board

The parts on the electrical parts list which are indicated by an asterisk (*) are supplied as one single combined circuit board. Therefore, they will not be supplied separately. If this becomes necessary,please order the entire circuit board.

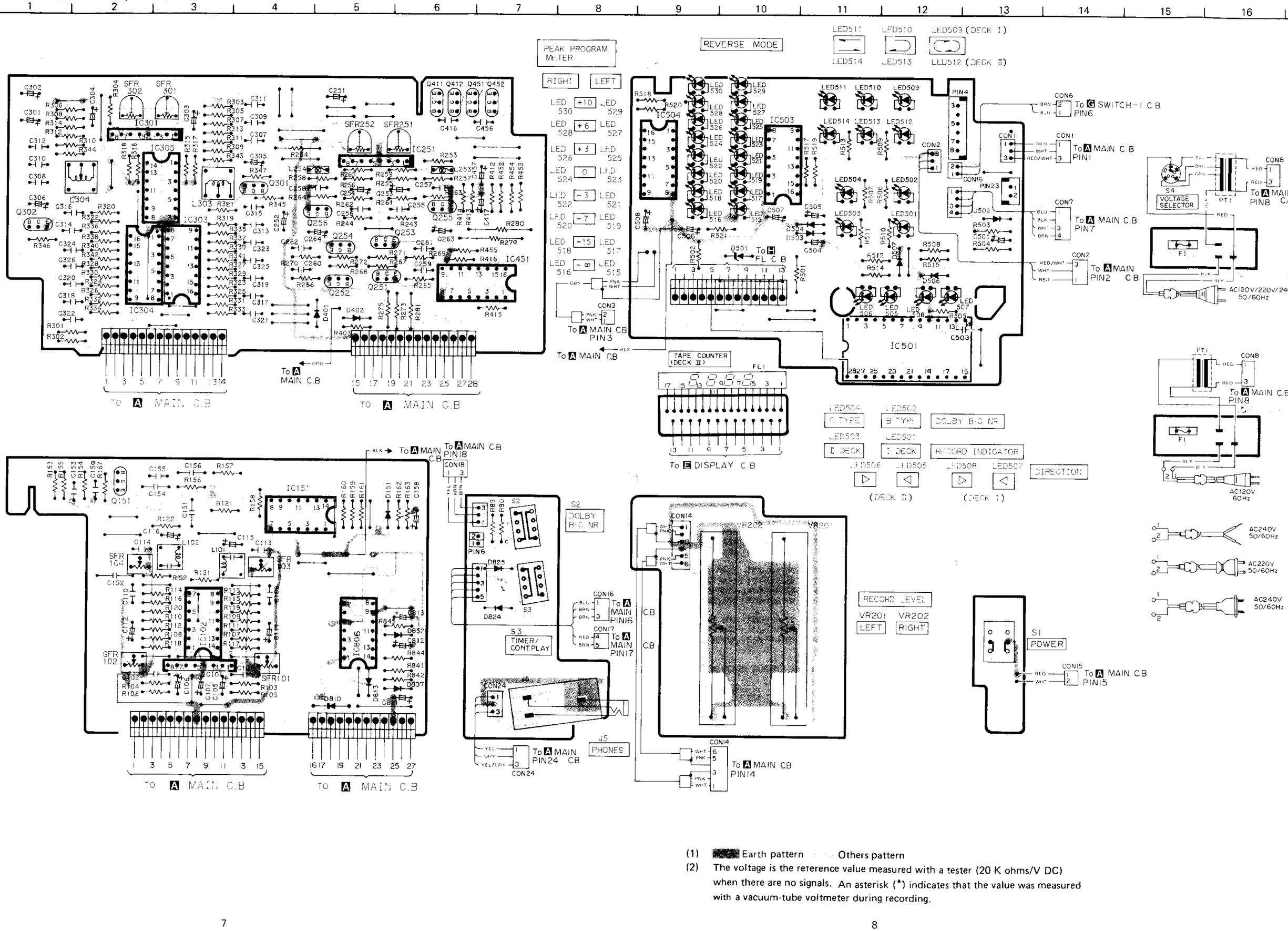
Combination circuit board A 82-104-630
PCB-A 82-104-631
PCB-O 82-104-605
PCB-P 82-104-639

Combination circuit board B 82-109-601
PCB-B 82-109-604
PCB-C 82-109-604
PCB-D 82-109-605
PCB-E 82-109-606
PCB-F 82-109-603
PCB-G 82-109-608
PCB-H 82-109-607
PCB-J 82-109-609

Combination circuit board C 86-517-601
PCB-K,L 86-517-602
PCB-M,N 86-517-603

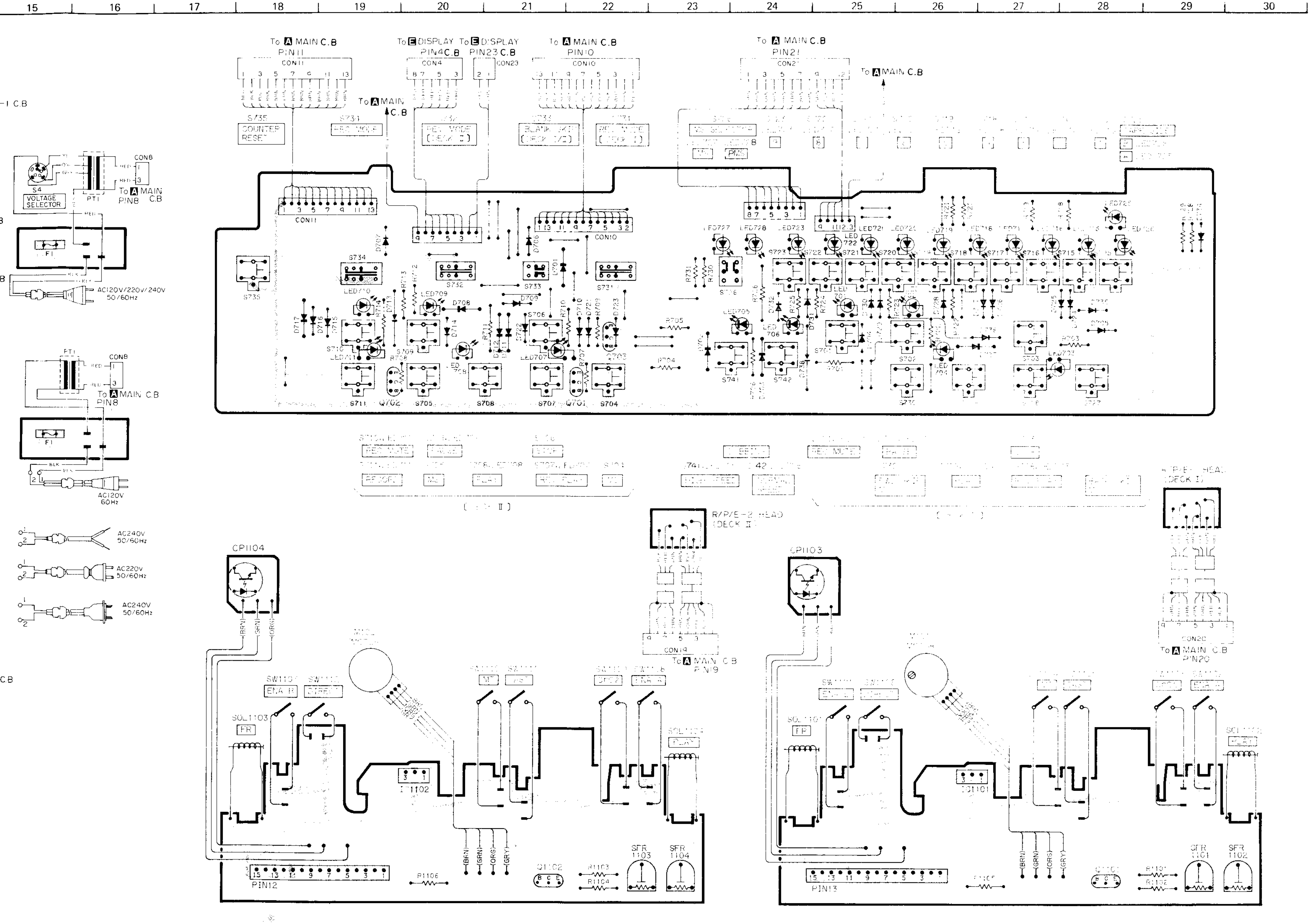
⚠ Safety component symbol

This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.



(1) Earth pattern Others pattern

(2) The voltage is the rereference value measured with a tester (20 K ohms/V DC) when there are no signals. An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.



15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
To A MAIN C.B PIN11
CON11
To E DISPLAY PIN4 C.B
CON4
To E DISPLAY PIN23 C.B
CON23
To A MAIN C.B PIN10
CON10
To A MAIN C.B PIN21
CON21
To A MAIN C.B
To A MAIN C.B
COUNTER RESET
REC MODE
BLANK SKIP
PMS
CON8
S4
VOLTAGE SELECTOR
PT1
To A MAIN C.B PIN8
F1
AC120V/220V/240V 50/60Hz
AC120V 60Hz
AC240V 50/60Hz
AC220V 50/60Hz
AC240V 50/60Hz
S735
S734
S732
S733
S731
S736
LED710
LED709
LED708
LED707
LED711
LED705
LED706
LED727
LED728
LED723
LED722
LED721
LED720
LED719
LED716
LED717
D708
D709
D714
S710
S709
S706
S711
Q702
S705
S708
S707
Q701
S704
Q703
S741
S742
S701
S702
S703
S723
S722
S721
S720
S718
S717
S716
S715
R705
R704
R701
R703
R730
R731
R710
R711
R712
R713
R714
R709
REC/PLAY
R/P/E-2 HEAD (DECK II)
CON19
To A MAIN C.B PIN19
CP1104
CP1103
SW1101
SW1102
ENA R
SOL1103
SOL1101
FR
S1102
S1101
SFR 1103
SFR 1104
SFR 1101
SFR 1102
R1103
R1104
R1106
R1101
R1102
Q1102
Q1101
PIN12
PIN13
(BRN)
(GRN)
(ORG)
(GRY)
CON20
To A MAIN C.B PIN20

ELECTRICAL MAIN PARTS LIST

- +++ mark denotes a component of assembled part which part code is represented by a previously stated component.
- ★-mark means less required items and availabilities may be limited.

CAPACITORS No mark, U, UF: μF P, PF : pF
COILS MMH: mH UH : μH
FUSE MMA: mA

Ref. No.	Part No.	Description
=== IC ===		
	87-020-454	IC,DM6851
⚡	82-104-601	IC,HD38702A37
	87-020-489	IC,IR2E19
	87-020-261	IC,LA6358S
⚡	82-104-602	IC,LM6402-596
⚡	82-104-603	IC,LM6402-597
⚡	82-104-699	IC,LM6413E-1860
	87-020-140	IC,L78M12
	87-020-096	IC,M4066BP
	87-020-157	IC,M5210L
	87-027-895	IC,M5218L
	87-027-827	IC,TC4069UBP
	87-020-438	IC,TD62504P
	87-027-538	IC,UPD-4069
=== TRANSISTOR ===		
	89-109-521	TRANSISTOR,2SA952K
	89-110-155	TRANSISTOR,2SA1015,GR
	89-113-584	TRANSISTOR,2SA1358Y
	89-206-051	TRANSISTOR,2SB605K L
	89-206-415	TRANSISTOR,2SB641,S
	89-412-763	TRANSISTOR,2SC1276QP
	89-318-155	TRANSISTOR,2SC1815,GR
	89-320-011	TRANSISTOR,2SC2001K
	89-405-711	TRANSISTOR,2SD571,K
	89-412-753	TRANSISTOR,2SD1275
	89-413-023	TRANSISTOR,2SD1302S
=== MAIN CIRCUIT BOARD SECTION ===		
PCB-A	*	MAIN CIRCUIT BOARD
C3	* 87-018-036	CAP,CERA-SOL S 220P
C4	* 87-018-036	CAP,CERA-SOL S 220P
C5	* 87-018-032	CAP,CERA-SOL S 100P
C6	* 87-018-032	CAP,CERA-SOL S 100P
C7	* 87-015-954	CAP,ELECT LL 10-16V
C8	* 87-015-954	CAP,ELECT LL 10-16V
C19	* 87-018-047	CAP,CERA-SOL S 0.01Y/16
C20	* 87-018-047	CAP,CERA-SOL S 0.01Y/16
C21	* 87-015-698	CAP,ELECT 4.7-50
C22	* 87-015-698	CAP,ELECT 4.7-50
C31	* 87-018-047	CAP,CERA-SOL S 0.01Y/16
C34	* 87-018-044	CAP,CERA-SOL S 1000P
C36	* 87-018-047	CAP,CERA-SOL S 0.01Y/16
C51	* 87-018-047	CAP,CERA-SOL S 0.01Y/16
C65	* 87-015-954	CAP,ELECT LL 10-16V
C66	* 87-015-954	CAP,ELECT LL 10-16V
C403	* 87-014-115	CAP,PP 0.0056G
C411	* 87-010-060	CAP,ELECT,100-16
C414	* 87-014-061	CAP,PP 1500PF
C454	* 87-014-061	CAP,PP 1500PF
C601	* 87-018-047	CAP,CERA-SOL S 0.01Y/16
C602	* 87-018-047	CAP,CERA-SOL S 0.01Y/16
C603	* 87-010-411	CAP,ELECT 1000-50V
C605	* 87-010-437	CAP,ELECT 1000-50V (U,C,E,K,G,Z MODELS)
C611	* 87-018-047	CAP,CERA-SOL S 0.01Y/16
C804	* 87-010-237	CAP,ELECT 1000-16(SR)
C805	* 87-010-237	CAP,ELECT 1000-16(SR)
C806	* 87-010-237	CAP,ELECT 1000-16(SR)
C807	* 87-010-237	CAP,ELECT 1000-16(SR)
C816	* 87-018-044	CAP,CERA-SOL S 1000P
D1	87-020-110	DIODE 1SS177
D2	87-020-110	DIODE 1SS177
D31	87-020-110	DIODE 1SS177
D51	87-020-110	DIODE 1SS177
D52	87-020-110	DIODE 1SS177
D53	87-020-110	DIODE 1SS177
D54	87-020-095	DIODE MC921
D55	87-020-110	DIODE 1SS177
D101	87-020-110	DIODE 1SS177
D102	87-020-110	DIODE 1SS177
D251	87-027-475	DIODE,ZENER HZ-6B1
D301	87-027-475	DIODE,ZENER HZ-6B1
D601	87-020-025	DIODE 2B4B41,LC-2
D602	87-020-123	DIODE DS446
D603	87-020-123	DIODE DS446
D604	87-027-455	DIODE S2V10,F
D606	87-027-365	DIODE S5277B
D607	87-020-110	DIODE 1SS177
D801	87-020-110	DIODE 1SS177
D802	87-020-123	DIODE DS446
D803	87-020-123	DIODE DS446
D804	87-020-123	DIODE DS446
D805	87-020-123	DIODE DS446
D806	87-020-110	DIODE 1SS177
D807	87-020-123	DIODE DS446
D808	87-020-123	DIODE DS446
D811	87-020-110	DIODE 1SS177
D813	87-020-110	DIODE 1SS177
D817	87-020-110	DIODE 1SS177
D818	87-020-110	DIODE 1SS177
D819	87-020-110	DIODE 1SS177
D820	87-020-110	DIODE 1SS177
D821	87-020-110	DIODE 1SS177
D823	87-020-110	DIODE 1SS177
D826	87-020-110	DIODE 1SS177
D827	87-020-110	DIODE 1SS177
D829	87-020-110	DIODE 1SS177
D830	87-020-110	DIODE 1SS177
D832	87-020-110	DIODE 1SS177
D841	87-020-110	DIODE 1SS177
D842	87-020-110	DIODE 1SS177
D843	87-020-110	DIODE 1SS177
D844	87-020-110	DIODE 1SS177
D845	87-020-110	DIODE 1SS177
D846	87-020-110	DIODE 1SS177
D847	87-020-110	DIODE 1SS177
D848	87-020-110	DIODE 1SS177
D851	87-020-110	DIODE 1SS177
J1	87-049-301	JACK PLATE ASSY (LINE IN/REC,LEFT)
J2	+++	JACK PLATE ASSY (LINE IN/REC,RIGHT)
J3	+++	JACK PLATE ASSY (LINE OUT/PLAY,LEFT)
J4	+++	JACK PLATE ASSY (LINE OUT/PLAY,RIGHT)
L1	* 82-196-603	COIL,TRAP,100KHZ
L2	* 82-196-603	COIL,TRAP,100KHZ
L201	82-198-715	MPX FILTER
L202	82-198-715	MPX FILTER
L251	* 82-196-603	COIL,TRAP,100K
L252	* 82-196-603	COIL,TRAP,100K
L301	* 82-196-603	COIL,TRAP,100K
L302	* 82-196-603	COIL,TRAP,100K
L401	* 82-104-642	COIL OSC,1
L411	* 82-104-643	COIL OSC,2
L412	* 87-003-051	CHOKE COIL 470 UH
L451	* 82-104-643	COIL OSC,2
L452	* 87-003-051	CHOKE COIL 470 UH
L801	* 82-189-642	COIL,OSC LM6400
LED601	* 87-027-542	LED,LN217RP
⚠R405	, 87-029-067	RES,FUSIBLE,1/4W-4.7
⚠R603	, 87-029-366	RES,FUSIBLE 1/2W-4.7
⚠R607	, 87-029-083	RES,FUSIBLE,1/2W-10
R813	* 87-025-085	RES,MF 68-2W
R814	* 87-025-085	RES,MF 68-2W
R815	* 87-025-085	RES,MF 68-2W
R816	* 87-025-085	RES,MF 68-2W
RA801	* 82-146-611	RES,ARRAY 47KX9
RA802	* 82-104-619	RES,ARRAY 47KX12
RA803	* 82-104-618	RES,ARRAY 47KX11
RA804	* 82-146-611	RES,ARRAY 47KX9
RA805	* 82-146-611	RES,ARRAY 47KX9
RA806	* 82-104-617	RES,ARRAY 47KX8
RA807	* 82-146-613	RES,ARRAY 47KX7
RY1	* 87-045-237	RELAY,GSA-237P 12VDC
RY2	* 87-045-237	RELAY,GSA-237P 12VDC
SFR1	* 87-021-738	SFR 1K
SFR2	* 87-021-738	SFR 1K
SFR3	* 87-021-743	SFR 22K
SFR4	* 87-021-743	SFR 22K
SFR5	* 87-021-743	SFR 22K
SFR6	* 87-021-743	SFR 22K
SFR411	* 87-021-746	SFR 100K
SFR412	* 87-021-746	SFR 100K
SFR451	* 87-021-746	SFR 100K
SFR452	* 87-021-746	SFR 100K
=== KEY SWITCH CIRCUIT BOARD SECTION ===		
PCB-B	*	KEY SWITCH CIRCUIT BOARD
D701	87-020-110	DIODE 1SS177
D702	87-020-110	DIODE 1SS177
D703	87-020-110	DIODE 1SS177
D704	87-020-110	DIODE 1SS177
D705	87-020-110	DIODE 1SS177
D706	87-020-110	DIODE 1SS177
D707	87-020-110	DIODE 1SS177
D708	87-020-110	DIODE 1SS177
D709	87-020-110	DIODE 1SS177
D710	87-020-110	DIODE 1SS177
D711	87-020-110	DIODE 1SS177
D712	87-020-110	DIODE 1SS177
D713	87-020-110	DIODE 1SS177
D714	87-020-110	DIODE 1SS177
D715	87-020-110	DIODE 1SS177
D716	87-020-110	DIODE 1SS177
D717	87-020-110	DIODE 1SS177
D721	87-020-110	DIODE 1SS177
D722	87-020-110	DIODE 1SS177
D723	87-020-110	DIODE 1SS177
D724	87-020-110	DIODE 1SS177
D725	87-020-110	DIODE 1SS177
D726	87-020-110	DIODE 1SS177
D727	87-020-110	DIODE 1SS177
D728	87-020-110	DIODE 1SS177
D729	87-020-110	DIODE 1SS177
D730	87-020-110	DIODE 1SS177
D731	87-020-110	DIODE 1SS177
D732	87-020-110	DIODE 1SS177
D734	87-020-110	DIODE 1SS177
D735	87-020-110	DIODE 1SS177
D736	87-020-110	DIODE 1SS177
D737	87-020-110	DIODE 1SS177
D738	87-020-110	DIODE 1SS177
LED701	* 87-020-093	LED LN222RP (REC MUTE,DECK1)
LED702	* 87-020-092	LED LN422YP (PAUSE,DECK1)
LED703	* 87-020-091	LN322GP (REV PLAY,DECK1)
LED704	* 87-020-091	LN322GP (PLAY,DECK1)
LED705	* 87-027-772	LED GL-9PR4 (HIGH)
LED706	* 87-027-772	LED GL-9PR4 (NORMAL)
LED707	* 87-020-091	LED LN322GP (REV PLAY,DECK2)
LED708	* 87-020-091	LED LN322GP (PLAY,DECK2)
LED709	* 87-020-092	LED LN422YP (PAUSE,DECK2)
LED710	* 87-020-093	LED LN222RP (REC MUTE,DECK2)
LED711	* 87-020-093	LED LN222RP (RECORD,DECK2)
LED715	* 87-020-093	LED LN222RP (1)
LED716	* 87-020-093	LED LN222RP (2)
LED717	* 87-020-093	LED LN222RP (3)
LED718	* 87-020-093	LED LN222RP (4)
LED719	* 87-020-093	LED LN222RP (5)
LED720	* 87-020-093	LED LN222RP (6)
LED721	* 87-020-093	LED LN222RP (7)
LED722	* 87-020-093	LED LN222RP (8)
LED723	* 87-020-093	LED LN222RP (9)
LED725	* 87-020-092	LED LN422YP (TAPE SIDE A)
LED726	* 87-020-092	LED LN422YP (TAPE SIDE B)
LED727	* 87-020-091	LED,LN322GP (MS,DECK1)
LED728	* 87-020-092	LED LN422YP (PMS,DECK1)
S701	87-031-771	TACT SW,EVQ-QSK04M (REC MUTE,DECK1)
S702	87-031-771	TACT SW,EVQ-QSK04M (PAUSE,DECK1)
S703	87-031-771	TACT SW,EVQ-QSK04M (STOP,DECK1)
S704	87-031-771	TACT SW,EVQ-QSK04M (MS,DECK2)
S705	87-031-771	TACT SW,EVQ-QSK04M (MS,DECK2)
S706	87-031-771	TACT SW,EVQ-QSK04M (STOP,DECK2)
S707	87-031-771	TACT SW,EVQ-QSK04M (REV PLAY,DECK2)
S708	87-031-771	TACT SW,EVQ-QSK04M (PLAY,DECK2)
S709	87-031-771	TACT SW,EVQ-QSK04M (PAUSE,DECK2)
S710	87-031-771	TACT SW,EVQ-QSK04M (REC MUTE,DECK2)
S711	87-031-771	TACT SW,EVQ-QSK04M (RECORD,DECK2)
S715	87-031-771	TACT SW,EVQ-QSK04M (1)
S716	87-031-771	TACT SW,EVQ-QSK04M (2)
S717	87-031-771	TACT SW,EVQ-QSK04M (3)
S718	87-031-771	TACT SW,EVQ-QSK04M (4)
S719	87-031-771	TACT SW,EVQ-QSK04M (5)
S720	87-031-771	TACT SW EVQ-QSK04M (6)
S721	87-031-771	TACT SW EVQ-QSK04M (7)
S722	87-031-771	TACT SW EVQ-QSK04M (8)
S723	87-031-771	TACT SW EVQ-QSK04M (9)
S725	87-031-771	TACT SW EVQ-QSK04M (TAPE SIDE)
S726	87-109-614	PUSH SW (MS SELECTOR)
S727	87-031-771	TACT SW EVQ-QSK04M (BACK SKIP)
S728	87-031-771	TACT SW EVQ-QSK04M (REV PLAY,DECK1)
S729	87-031-771	TACT SW EVQ-QSK04M (PLAY,DECK1)
S730	87-031-771	TACT SW EVQ-QSK04M (FWD SKIP)
S731	87-031-802	SLIDE SW 2-2-3 SSS (REVERSE MODE 1)
S732	87-031-802	SLIDE SW 2-2-3 SSS (REVERSE MODE 2)
S733	87-031-873	SLIDE SW-SSS-322 (BLANK SKIP)
S734	87-031-802	SLIDE SW 2-2-3 SSS (REC MODE)
S735	87-031-771	TACT SW EVQ-QSK04M (COUNTER RESET)
S741	87-031-771	TACT SW EVQ-QSK04M (SYNC DUBB H)
S742	87-031-771	TACT SW EVQ-QSK04M (SYNC DUBB N)
=== REC. AMP. CIRCUIT BOARD SECTION ===		
PCB-C	*	REC. AMP. CIRCUIT BOARD
D401	87-020-110	DIODE 1SS177
D402	87-020-110	DIODE 1SS177
L253	* 87-005-242	MICRO INDUCTOR 5.6MMH

Description
SS177
22RP (REC MUTE,DECK1)
22YP (PAUSE,DECK1)
(REV PLAY,DECK1)
(PLAY,DECK1)
9PR4 (HIGH)
9PR4 (NORMAL)
22GP (REV PLAY,DECK2)
22GP (PLAY,DECK2)
22YP (PAUSE,DECK2)
22RP (REC MUTE,DECK2)
22RP (RECORD,DECK2)
22RP (1)
22RP (2)
22RP (3)
22RP (4)
22RP (5)
22RP (6)
22RP (7)
22RP (8)
22RP (9)
22YP (TAPE SIDE A)
22YP (TAPE SIDE B)
22GP (MS,DECK1)
22YP (PMS,DECK1)
EVQ-QSK04M (REC MUTE,DECK1)
EVQ-QSK04M (PAUSE,DECK1)
EVQ-QSK04M (STOP,DECK1)
EVQ-QSK04M (MS,DECK2)
EVQ-QSK04M (MS,DECK2)
EVQ-QSK04M (STOP,DECK2)
EVQ-QSK04M (REV PLAY,DECK2)
EVQ-QSK04M (PLAY,DECK2)
EVQ-QSK04M (PAUSE,DECK2)
EVQ-QSK04M (REC MUTE,DECK2)
EVQ-QSK04M (RECORD,DECK2)
EVQ-QSK04M (1)
EVQ-QSK04M (2)
EVQ-QSK04M (3)
EVQ-QSK04M (4)
EVQ-QSK04M (5)
EVQ-QSK04M (6)
EVQ-QSK04M (7)
EVQ-QSK04M (8)
EVQ-QSK04M (9)
EVQ-QSK04M (TAPE SIDE)
(MS SELECTOR)
EVQ-QSK04M (BACK SKIP)
EVQ-QSK04M (REV PLAY,DECK1)
EVQ-QSK04M (PLAY,DECK1)
EVQ-QSK04M (FWD SKIP)
2-2-3 SSS (REVERSE MODE 1)
2-2-3 SSS (REVERSE MODE 2)
-SSS-322 (BLANK SKIP)
2-2-3 SSS (REC MODE)
EVQ-QSK04M (COUNTER RESET)
EVQ-QSK04M (SYNC DUBB H)
EVQ-QSK04M (SYNC DUBB N)
ECTION ===
. CIRCUIT BOARD
S177
S177
DUCTOR 5.6MMH

Ref.No.	Part No.	Descripton
L254	* 87-005-242	MICRO INDUCTOR 5.6MMH
L303	* 82-196-604	COIL 2.2/6.8MMH
L304	* 82-196-604	COIL 2.2/6.8MMH
SFR251	* 87-021-743	SFR 22K
SFR252	* 87-021-743	SFR 22K
SFR301	* 87-021-743	SFR 22K
SFR302	* 87-021-743	SFR 22K
=== PB. AMP. CIRCUIT BOARD SECTION ===		
PCB-D	*	PB. AMP. CIRCUIT BOARD
D151	87-020-110	DIODE 1SS177
D810	87-020-110	DIODE 1SS177
D813	87-020-110	DIODE 1SS177
D852	87-020-110	DIODE 1SS177
L101	* 82-196-603	COIL,TRAP,100K
L102	* 82-196-603	COIL,TRAP,100K
SFR101	* 87-021-738	SFR 1K
SFR102	* 87-021-738	SFR 1K
SFR103	* 87-021-742	SFR 10K
SFR104	* 87-021-742	SFR 10K
=== DISPLAY CIRCUIT BOARD SECTION ===		
PCB-E	*	DISPLAY CIRCUIT BOARD
C501	* 87-010-071	CAP,ELECT 1-50V
C503	* 87-014-033	CAP,PP 100PF
C504	* 87-010-248	CAP,ELECT 220-10V
C505	* 87-010-414	CAP,ELECT 33-25V
C506	* 87-015-697	CAP,ELECT 3.3-50V
C507	* 87-010-244	CAP,ELECT 22-16V
C508	* 87-010-244	CAP,ELECT 22-16V
D501	87-027-405	ZENER RD2.2EB
D502	87-020-110	DIODE 1SS177
D503	87-020-123	DIODE DS446
D504	87-020-123	DIODE DS446
D506	87-020-110	DIODE 1SS177
D507	87-020-110	DIODE 1SS177
LED501	* 87-027-542	LED LN217RP (REC,DECK1)
LED502	* 87-027-543	LED LN317GP (B TYPE)
LED503	* 87-027-542	LED LN217RP (REC,DECK2)
LED504	* 87-027-542	LED LN217RP (C TYPE)
LED505	* 87-027-773	LED,GL-9NG4 (◀,DECK1)
LED506	* 87-027-773	LED,GL-9NG4 (▶,DECK1)
LED507	* 87-027-773	LED,GL-9NG4 (◀,DECK2)
LED508	* 87-027-773	LED,GL-9NG4 (▶,DECK2)
LED509	* 87-027-542	LED LN217RP (⟲,DECK1)
LED510	* 87-027-542	LED LN217RP (⟳,DECK1)
LED511	* 87-027-542	LED LN217RP (⥱,DECK1)
LED512	* 87-027-542	LED LN217RP (⟲,DECK2)
LED513	* 87-027-542	LED LN217RP (⟳,DECK2)
LED514	* 87-027-542	LED LN217RP (⥱,DECK2)
LED515	* 87-027-543	LED,LN317GP (8P PEAK PROG METER)
LED516	* 87-027-543	LED,LN317GP (8P PEAK PROG METER)
LED517	* 87-027-543	LED,LN317GP (8P PEAK PROG METER)
LED518	* 87-027-543	LED,LN317GP (8P PEAK PROG METER)
LED519	* 87-027-543	LED,LN317GP (8P PEAK PROG METER)
LED520	* 87-027-543	LED,LN317GP (8P PEAK PROG METER)
LED521	* 87-027-542	LED,LN217RP (8P PEAK PROG METER)
LED522	* 87-027-542	LED,LN217RP (8P PEAK PROG METER)
LED523	* 87-027-542	LED,LN217RP (8P PEAK PROG METER)
LED524	* 87-027-542	LED,LN217RP (8P PEAK PROG METER)
LED525	87-027-542	LED LN217RP (8P PEAK PROG METER)
LED526	87-027-542	LED LN217RP (8P PEAK PROG METER)

Ref. No.	Part No.	Description
LED527	87-027-542	LED LN217RP (8P PEAK PROG METER)
LED528	87-027-542	LED LN217RP (8P PEAK PROG METER)
LED529	87-027-542	LED LN217RP (8P PEAK PROG METER)
LED530	87-027-542	LED LN217RP (8P PEAK PROG METER)
=== VOLUME CIRCUIT BOARD SECTION ===		
PCB-F	*	VOLUME CIRCUIT BOARD
VR201	82-196-608	VOLUME 10K (RECORD LEVEL,L)
VR202	82-196-608	VOLUME 10K (RECORD LEVEL,R)
=== SWITCH-1 CIRCUIT BOARD SECTION ===		
PCB-G	*	SWITCH-1 CIRCUIT BOARD
D824	87-020-110	DIODE 1SS177
D825	87-020-110	DIODE 1SS177
J5	82-109-612	JACK (PHONES)
S2	82-109-615	ROTARY SW (DOLBY B-C NR)
S3	82-109-615	ROTARY SW (TIMER)
=== FL CIRCUIT BOARD SECTION ===		
PCB-H	*	FL CIRCUIT BOARD
FL1	* 82-198-601	FL,4ST-01ZS1 4DIGIT
=== DOLBY NR CIRCUIT BOARD SECTION ===		
	87-020-132	DOLBY UNIT HA12058J (W/PCB-I)
=== SWITCH-2 CIRCUIT BOARD SECTION ===		
PCB-J	*	SWITCH-2 CIRCUIT BOARD
S1	82-109-613	PUSH SW,SPH 222K (POWER)
=== DECK-1 CIRCUIT BOARD SECTION ===		
PCB-K	*	DECK-1 CIRCUIT BOARD
S1101	86-517-621	LEAF SW 2ME-1 (ENA B,DECK1)
S1102	86-517-621	LEAF SW 2ME-1 (ENA A,DECK1)
S1103	86-517-621	LEAF SW 2ME-1 (CO,DECK1)
S1104	86-517-621	LEAF SW 2ME-1 (MT,DECK1)
S1105	86-517-621	LEAF SW 2ME-1 (CAST,DECK1)
S1106	87-031-874	LEAF SW,PAUSE (91BN) (DIRECT)
SFR1101	* 87-021-825	SFR 22K
SFR1102	* 87-021-824	SFR 10K
SOL1101	* 86-517-611	SOLENOID 2ME-1A (FR,DECK1)
SOL1102	* 86-517-612	SOLENOID 2ME-1B (PLAY,DECK1)
=== DECK-2 CIRCUIT BOARD SECTION ===		
PCB-L	*	DECK-2 CIRCUIT BOARD
S1107	86-517-621	LEAF SW 2ME-1 (ENA B,DECK2)
S1108	86-517-621	LEAF SW 2ME-1 (ENA A,DECK2)
S1109	86-517-621	LEAF SW 2ME-1 (CO,DECK2)
S1110	86-517-621	LEAF SW 2ME-1 (MT,DECK2)
S1111	86-517-621	LEAF SW 2ME-1 (CAST,DECK2)
S1112	87-031-874	LEAF SW, PAUSE (91BN) (DIRECT)
SFR1103	* 87-021-825	SFR 22K
SFR1104	* 87-021-824	SFR 10K
SOL1103	* 86-517-611	SOLENOID 2ME-1A (FR,DECK2)
SOL1104	* 86-517-612	SOLENOID 2ME-1B (PLAY,DECK2)
=== SENSOR-1 CIRCUIT BOARD SECTION ===		
PCB-M	*	SENSOR-1 CIRCUIT BOARD
CP1103	* 87-020-457	PHOTO SENSOR NJL-5144L-BC

Ref. No.	Part No.	Description
=== SENSOR-2 CIRCUIT BOARD SECTION ===		
PCB-N	*	SENSOR-2 CIRCUIT BOARD
CP1104	87-020-457	PHOTO SENSOR NJL-5144L-BC
=== FUSE CIRCUIT BOARD SECTION ===		
⚠PCB-O	*	FUSE CIRCIUT BOARD SECTION
⚠	* 87-033-147	FUSE CLAMP
⚠F1	87-035-220	FUSE,T630MMA (H MODEL)
⚠F1	87-035-295	FUSE,630MA (U,C MODELS)
⚠F1	87-035-145	FUSE,T250MA (E,K,Z,G MODELS)
=== SUB CIRUCIT BOARD SECTION ===		
PCB-P	*	SUB CIRCUIT BOARD
=== MISCELLANEOUS ===		
⚠	87-034-958	AC CORD (H MODEL)
⚠	87-034-578	AC CORD (U,C MODELS)
⚠	87-034-877	AC CORD (E,Z MODELS)
⚠	87-034-975	AC CORD (K MODEL)
⚠	87-034-892	AC CORD (G MODEL)
⚠	87-085-184	AC CORD BUSHING D (H,U,C MODELS)
⚠	87-085-185	AC CORD BUSHING E (E,K,Z,G MODELS)
M101	87-045-235	MOTOR MMA6B2LW (DECK1)
M102	87-045-235	MOTOR MMA6B2LW (DECK2)
⚠PT1	82-104-648	POWER TRANSFORMER (H MODEL)
⚠PT1	82-104-645	POWER TRANSFORMER (U,C MODELS)
⚠PT1	82-104-646	POWER TRANSFORMER (E,Z MODELS)
⚠PT1	82-104-647	POWER TRANSFORMER (K,G MODELS)
RPEH1	87-046-259	RPEH HD425821RVJ (DECK1)
RPEH2	87-046-259	RPEH HD425821RVJ (DECK2)
S4	87-031-586	ROTARY SW (VOLT.SEL.) (H MODEL)

Note; Combination Circuit Board

The parts on the electrical parts list which are indicated by an asterisk (*) are supplied as one single combined circuit board. Therefore, they will not be supplied separately. If this becomes necessary,please order the entire circuit board.

Combination circuit board A 82-104-630
PCB-A 82-104-631
PCB-O 82-104-605
PCB-P 82-104-639

Combination circuit board B 82-109-601
PCB-B 82-109-604
PCB-C 82-109-604
PCB-D 82-109-605
PCB-E 82-109-606
PCB-F 82-109-603
PCB-G 82-109-608
PCB-H 82-109-607
PCB-J 82-109-609

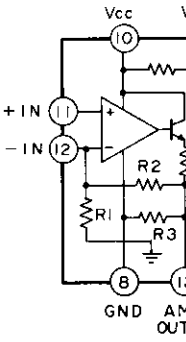
Combination circuit board C 86-517-601
PCB-K,L 86-517-602
PCB-M,N 86-517-603

⚠ Safety component symbol

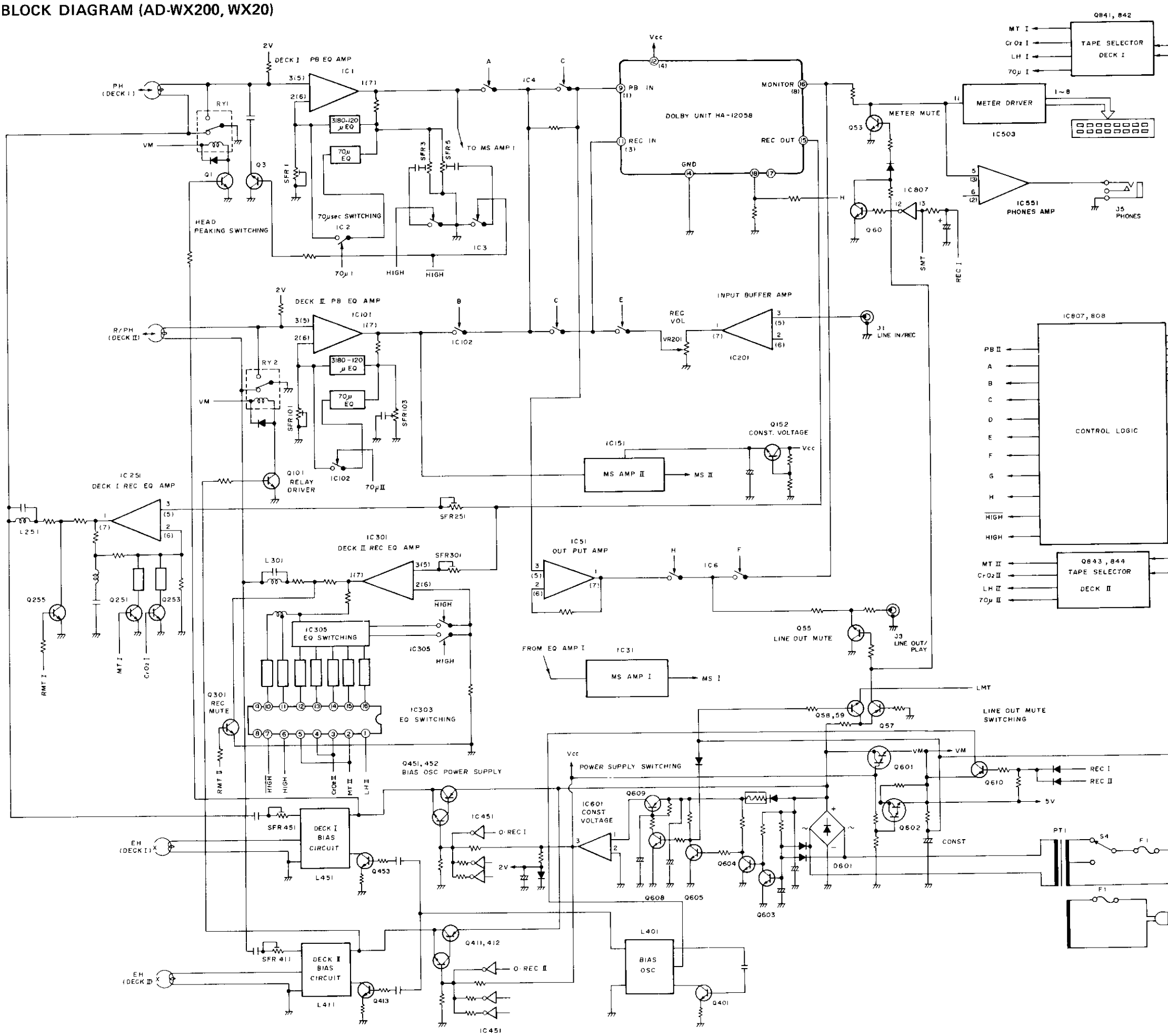
This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

IC BLOCK D

IR2E19

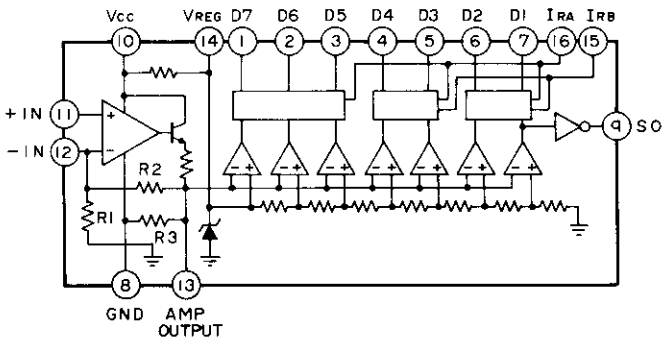


BLOCK DIAGRAM (AD-WX200, WX20)

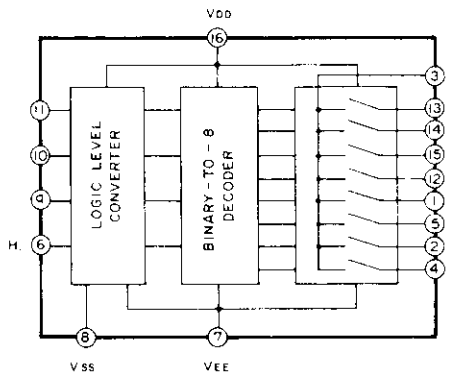


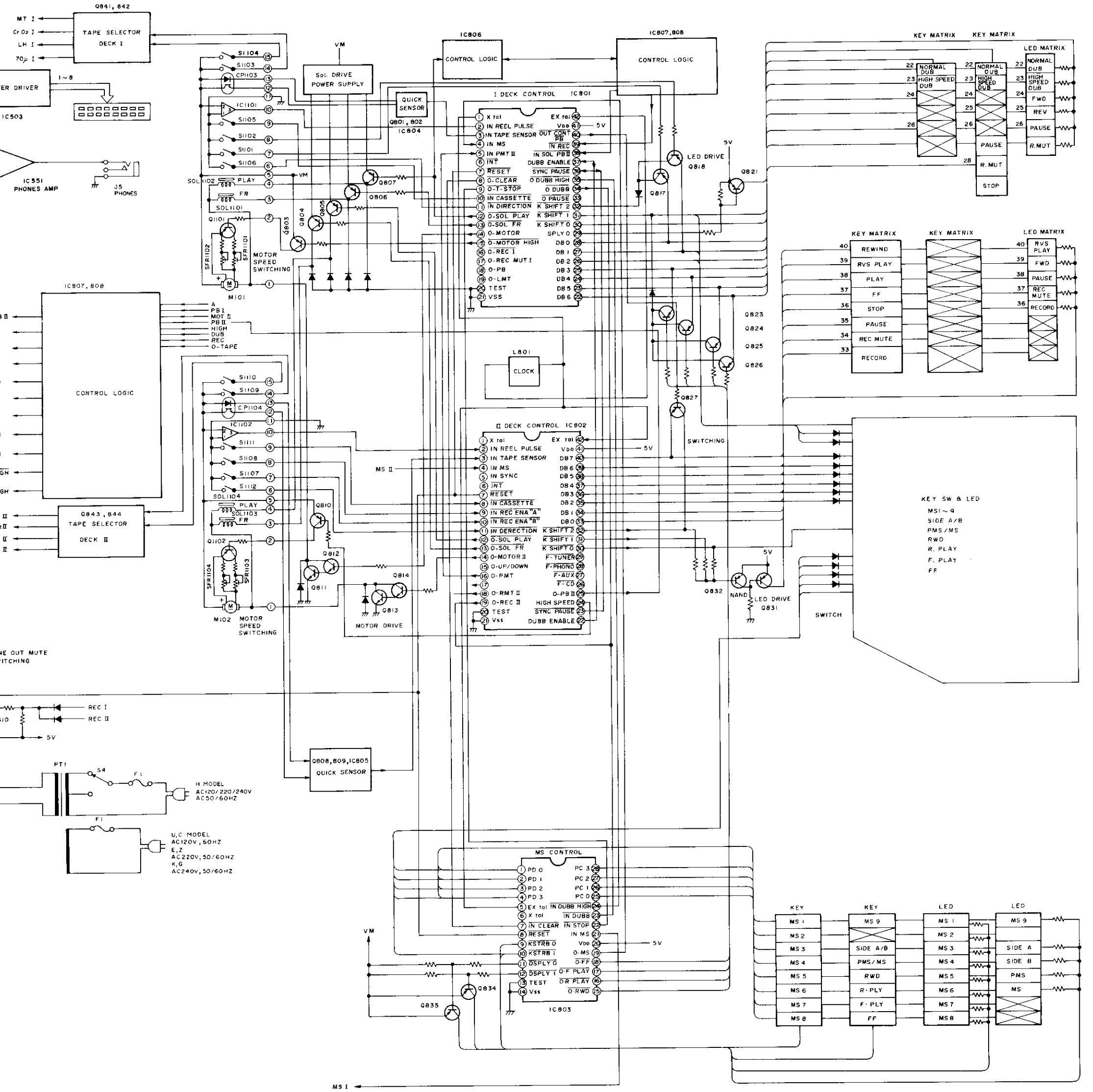
IC BLOCK DIAGRAM (AD-WX200, WX20)

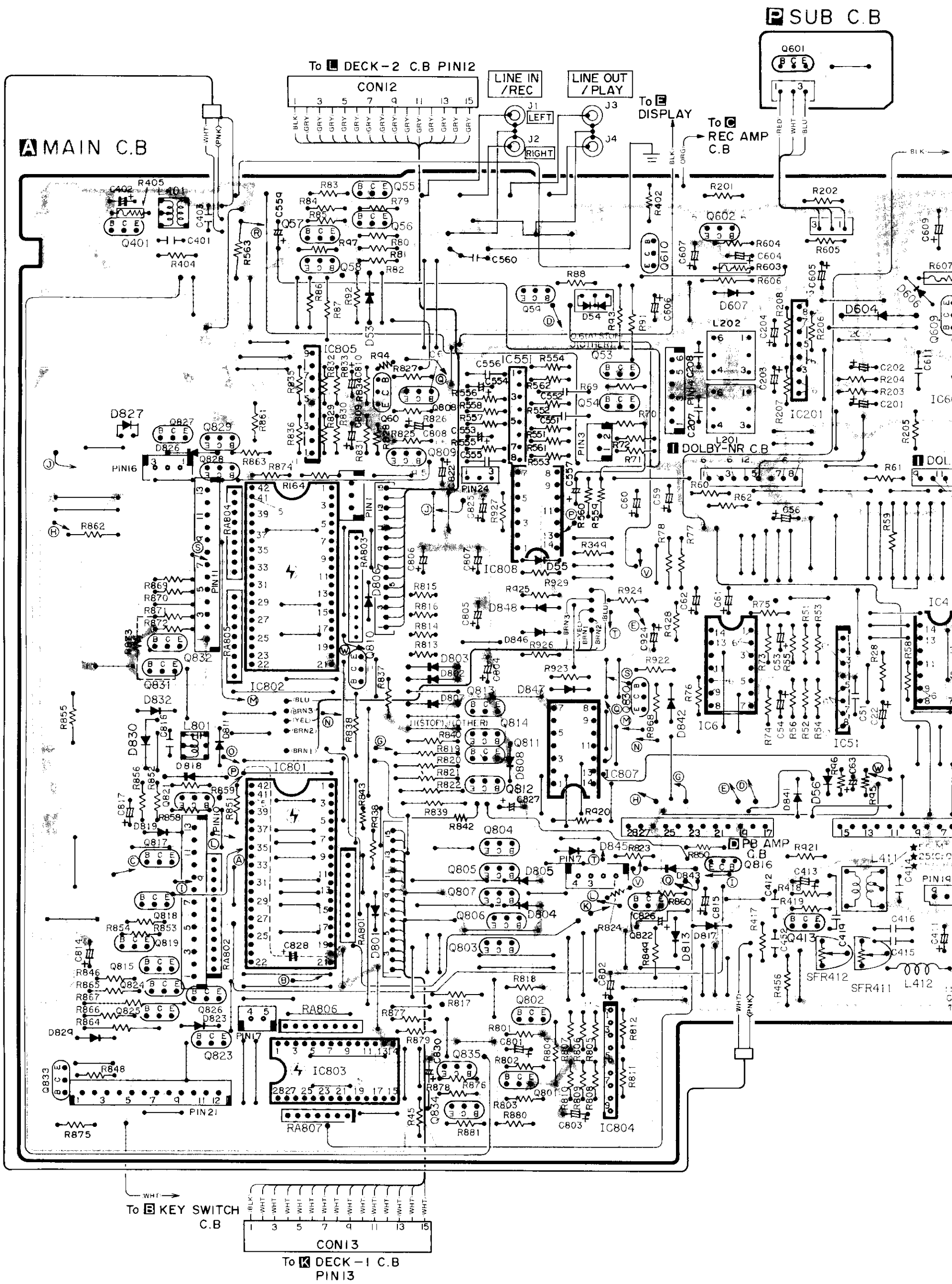
IR2E19



TC4051BP





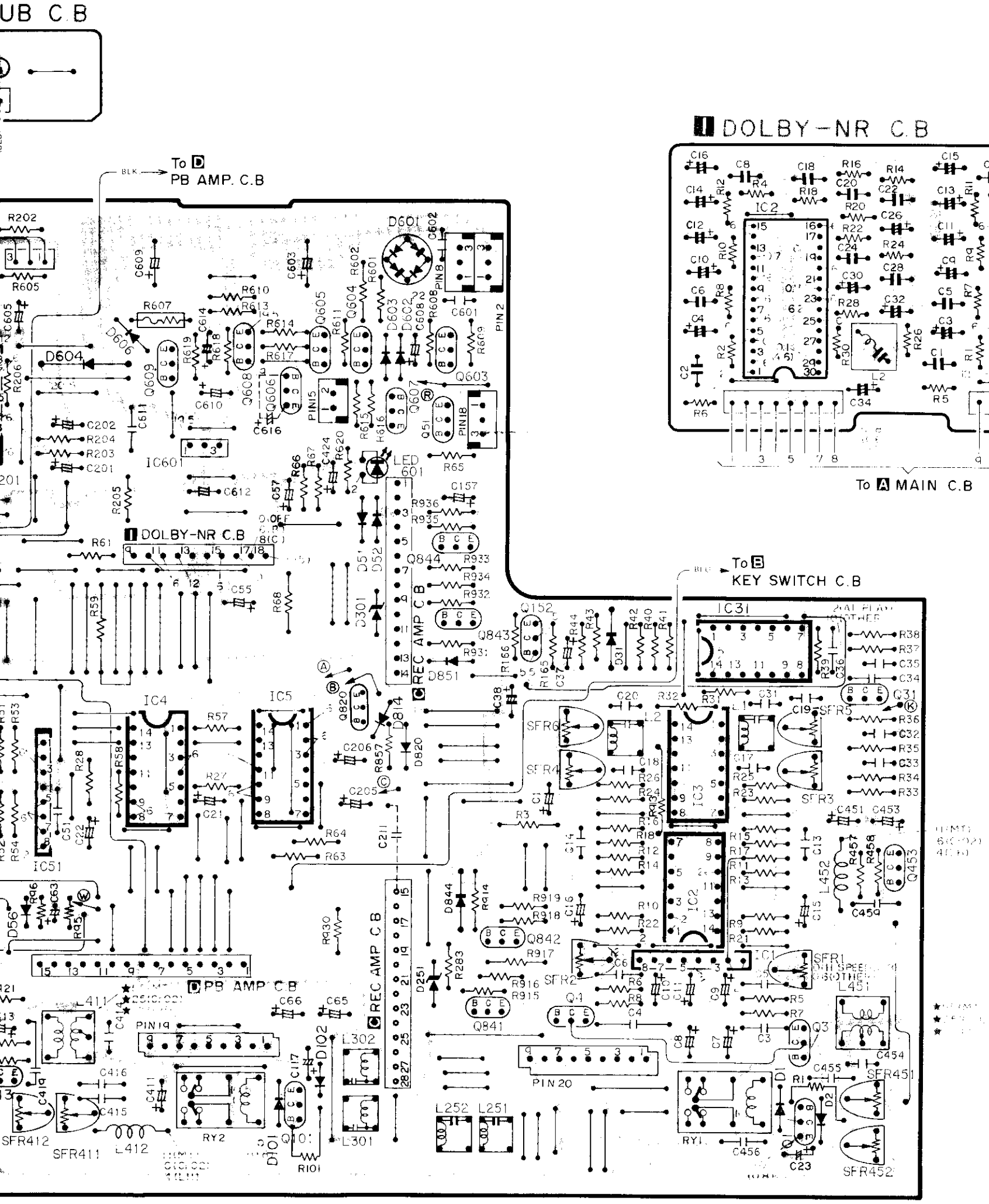


NOTES

(1) ▓▓ Earth pattern Others pattern

(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals. An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.

UB C.B

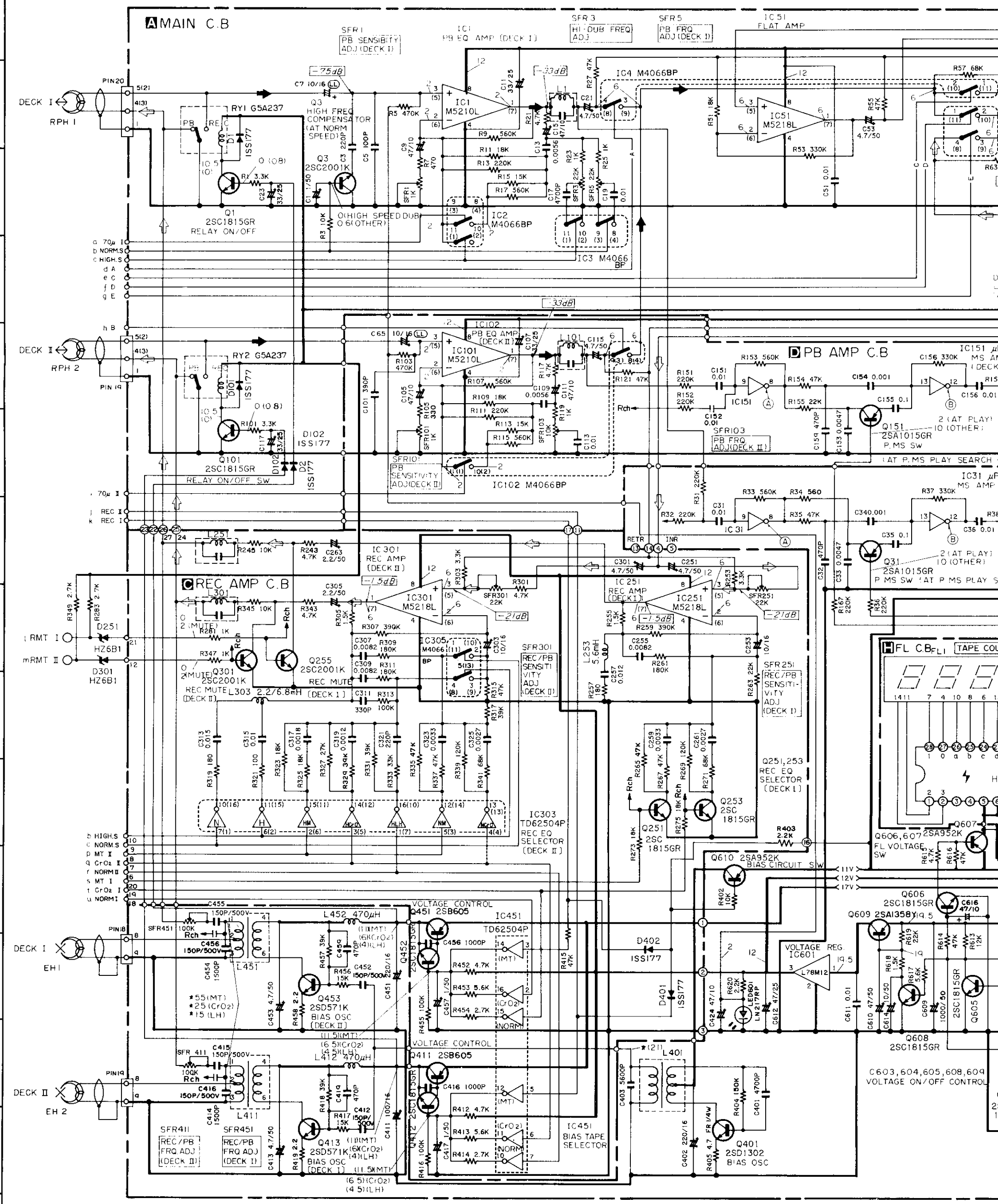


C-MOS IC handling precaution

The C-MOS IC's construction makes this part susceptible to damage by static electricity and so take sufficient care in regard to following articles.

1. Need to be put on conductive sheet, to be put in a metallic box and to be wrapped by aluminium foil for transportation and deposit.
2. To use solder iron less than 40W (less than 260℃) of power consumption for soldering. But do not overheat more than 10 second.
3. Do not perform a conductivity test with a tester, etc. Refer to the circuit voltages of each part.
4. The ICs on the electrical parts which are indicated by an C-MOS IC symbol mark ( ).

SCHEMATIC DIAGRAM–1 (AD-WX200, WX20)



NOTES:

1) ■ B (+) power supply
2) ➡ Signal path
   ⟨⟩ Rec path

⚠ Safety component symbol

This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

- The ICs on the electrical parts which are indicated by an C-MOS IC symbol mark (ϕ).

11 12 13 14 15 16 17 18 19 20 21

-33dB
R57 68K
R59 5.6K
IC5 M4066
R61 5.6K
R63 470K
-33dB
C55 220/10
PB IN
REC IN
DOLBY-NR C.B
REF
REC OUT
OFF /B/C
REC /PB
C57 22/16
R66 8.2K
R67 100K
R68 47K
-2.7dB
MPNITOR
R71 56K
R73 47K
R75 47K
C59 4.7/50
IC6 M4066BP
Q55,57,58,59,60 LINE MUTE CIRCUIT
C61 4.7/50
R77 2.7K
R79 560
-11dB
Q55 2SC 1K 2001K
Q57 2SA1015GR
R86 4.7K
17V
2SC1815GR X 2
R97 47K
R87 47K
R84 1K
R92 470
R85 47K
Q58
R88 56K
RESET
D54 MC421
R93 1M
Q59
METER MUTE Q53 2SC 2001K
0.6 (AT STOP)
0 (OTHER)
R69 12K
R91 100
R81 220K
H
F
REC II j
REC I k
LMT x
H y
F z
SMT a
O.DUBB b
SWITCH-1 C.B
S2
DOLBY B-C NR
PIN6
D53 ISS177
D51 ISS177
D52 ISS177
Q51 2SC1815GR
R65 100K
R89 3.9K
R90 8.2K
B→C
Q51 DOLBY-NR B/C LED OFF SW (AT DUB)
IC807
R94 100K
Q60 2SC1815GR
C63 0.22/50
R96 1M
R95 100K
D56 ISS177
LINE OUT /PLAY
J3 LEFT
J4 RIGHT
Rch
LINE IN /REC
J1 LEFT
J2 RIGHT
Rch
C560 0.01
IC151 μPD4069 MS AMP (DECK I)
C156 330K
R158 330K
R157 120K
C156 0.01
R159 27K
C155 0.1
Q151 2SA1015GR P.MS SW
2 (AT PLAY) 10 (OTHER)
(AT P.MS PLAY SEARCH ON)
R160 680K
R161 1M
IC151
D151 ISS177
R162 560K
R163 22K
C158 1/50
Q152 2SC1815GR
R166 3.3K
R165 2.7K
C157 47/10
R164 47K
IC151
F VOLUME C.B
L201
C205 2.2/50
VR201 10K(A)
PIN14
C207 3300P
R207 2.7K
C203 10/16
IC201 MIC INPUT BUFFER AMP
IC201 M5218L
R205 150K
INPUT -7.3dB
C201 1/50
R201 22K
R203 47K
RECORD LEVEL
IC31 μPD4069UBC MS AMP (DECK I)
R37 330K
R39 330K
R40 27K
C36 0.01
C35 0.1
Q31 2SA1015GR P.MS SW (AT P.MS PLAY SEARCH ON)
2 (AT PLAY) 10 (OTHER)
R41 680K
R42 1M
IC 31
D31 ISS177
R43 560K
R44 22K
C38 100/16
C37 1/50
IC 31
R45 47K
C551 0.022
R554 10K
R551 680K
IC551 M5218L
R553 270K
C553 220/10
R555 15
R557 10K
C555 0.001
C557 220/10
R560 10K
R561 150K
Rch
CON24
J5 PHONES
G SWITCH -1 C.B
MS II c
MS I d
PB I e
PB II f
FL C.B FL1
TAPE COUNTER/DECK II
REEL PULSE
UP /DOWN
RESET
CASSETTE
CON7
REC I
REC II
DERECTION
DERECTION
CON6
REV. MODE II
REV. MODE I
PIN5
PIN4
CON3
DISPLAY C.B
R501 10
R502 560
R503 220K
C501 1/50
R504
IC501 HD38702A37 FL COUNTER CONTROLER
RESET
TEST
VFL
Vdd
OSC
Vss
R505 100P 30K
C503
D503 DS446
C504 220/10
C505 33/25
R506 560
R507 1.5K
R508 560
R509 1.5K
LED514
LED501 LED502 LED503 LED504 LED505 LED506 LED507 LED508 LED509 LED510 LED511 LED512 LED513
D506 D507 D508 ISS177
R510 1.5K
R511 1.5K
R512 560
R513 1.5K
R514
R515 1K
LED501,503,504 LN217RP
LED505~508 GL4NG4
LED502: LN317GP
LED509~514 LN217RP
LED515 LED516 LED517 LED518 LED519 LED520 LED521 LED522 LED523 LED524 LED525 LED526 LED527 LED528 LED529 LED530
R521 1K
IC503 IR2E19
IC504 IR2E19
C507 22/16
C508 22/16
R517 12K
R518 12K
R519 27K
R520 2.7K
R563 100 1/4W
C559 330/16
LED515~520 LN317GP
LED521~530 LN217RP
Q607 2SA952K
Q606,607
FL VOLTAGE SW
R615 4.7K
R616 47K
Q606 2SC1815GR
C616 47/10
2SA1358Y
R607 10 1/2W
D606 S5277B
SUB C.B
Q601 2SD1276QP
2SD1275QP
R603
4.7 1/2W
FR
D604 20.5
S2V10
D601 2B4B41
PTI
FI 630mA T
240V
220V
120V
S4
VOLTAGE SELECTOR
FUSE C.B
AC120V/220V/240V 50/60Hz (H MODEL)
R619 22K
R614 47K
R613 1.2K
R610 12K
D607 ISS177
R618 1.5K
R617 5.6K
R611 5.6K
Q604 2SC1815GR
Q605 2SC1815GR
C609 1000/50
C614 10/50
Q608 2SC1815GR
R609 12K
R608 120K
Q603 2SC 1815GR
C608 10/16
C607 47/10
R606 47K
C606 47/25
C605 1000/16
R605 1.2K
R604 1.2K
C604 47/25
Q602
C603 1000/50
C602 0.01
R602 220
C601 0.01
R601 220
D603 DS446
D602 DS446
Q602 VOLTAGE CONST. (LOGIC PART)
PIN15
S1
POWER
ON↔STANDBY
SWITCH-2 C.B
FUSE C.B
F1
630mA (U,C MODELS)
250mA "T" (E,K,G,Z MODELS)
AC120V 60Hz (U,C MODELS)
AC240V 50/60Hz (K,G MODELS)
AC220V 50/60Hz (E,Z MODELS)
11V
5V
RESET

are indicated by an

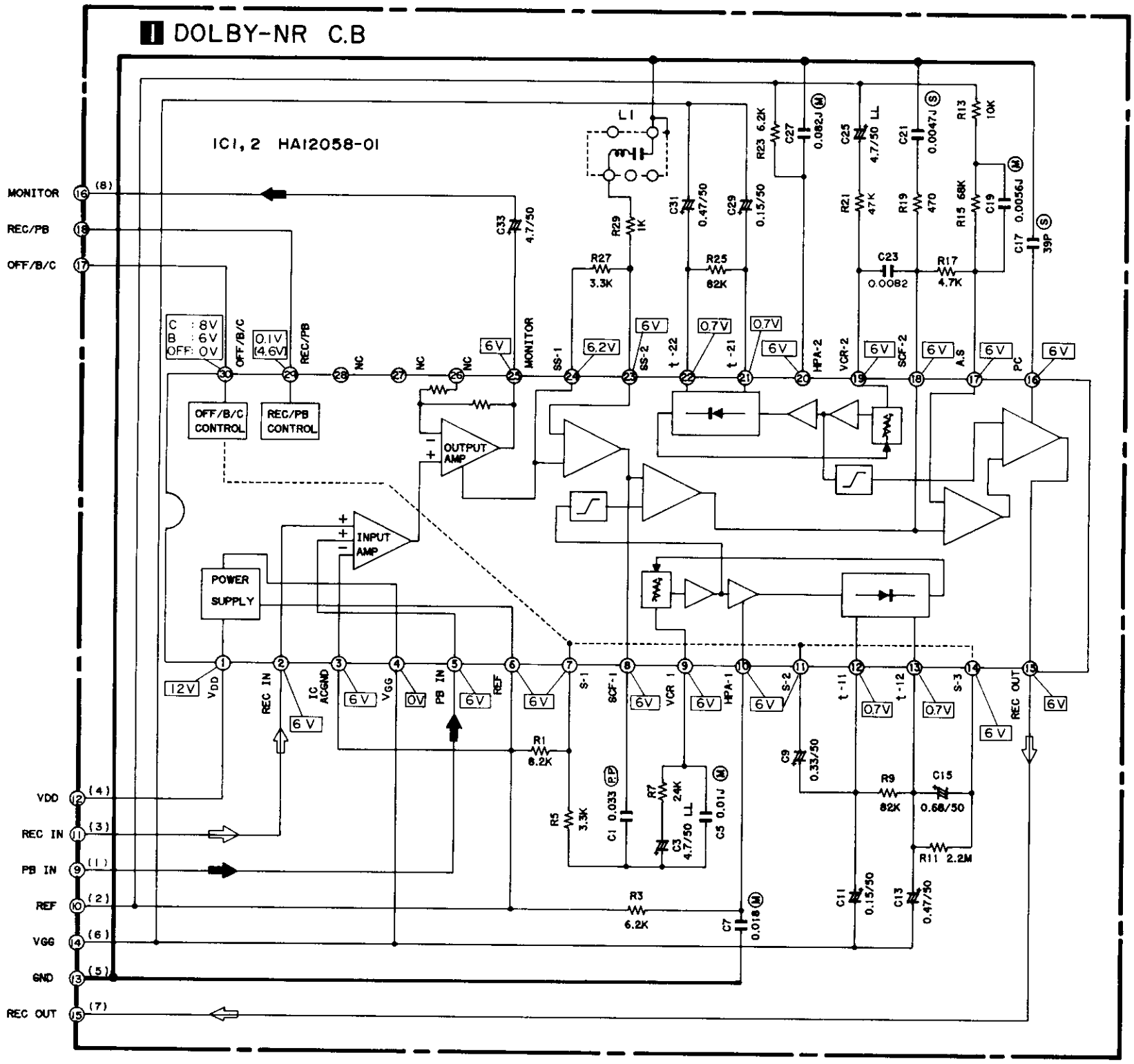
NOTES:

1) ■ B (+) power supply
2) ➡ Signal path
   ⇨ Rec path
3) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals.
   An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.
4) Resistors with no designation have a rated power of 1/8W and a tolerance of ±5%.
5) Capacitors with no designation have a dielectric strength of less than 50WV.
6) The only capacitor tolerance indicated are ±5% (J) and ±10% (K).
7) Ceramic capacitor symbols:
   —|(—For temperature compensation (SL)
   —|(—High dielectric constant system (YY)
   —|(—High dielectric constant system (YW, YP, YZ)
   —|(—Semiconductor ceramic
   —|(—For temperature compensation (SH)
8) Explanation of symbols
   Ⓜ Mylar capacitor
   Ⓐ Aluminum solid capacitor
   Ⓟ Polypropylene film capacitor
   Ⓑ Bi-polarized capacitor
   Ⓛ Low-leakage capacitor
   Ⓣ Tantalum capacitor
   Ⓢ Styrol capacitor
   Fuse resistor
   Nonflammable resistor

⚠ Safety component symbol
This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications.
Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

- This schematic diagram is subject to change without notice in the interests of improved performance.

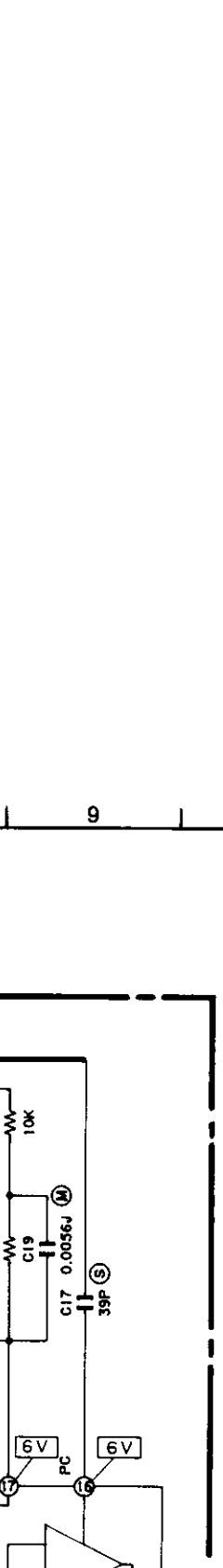
SCHEMATIC DIAGRAM—2 (AD-WX200, WX20)



AD-WX200 HB, CB, EB, KB, GB, ZB UB [AD-WX20]

AD-WX200 HB, CB, EB, KB, GB, ZB UB [AD-WX20]

9 10



WAVEFORMS (AD-WX200,WX20)

Ⓐ V
0V
T

Ⓑ V
0V
T

Ⓒ V
2.5V
2.25V
0V
T

Ⓓ V
5V
0V
T

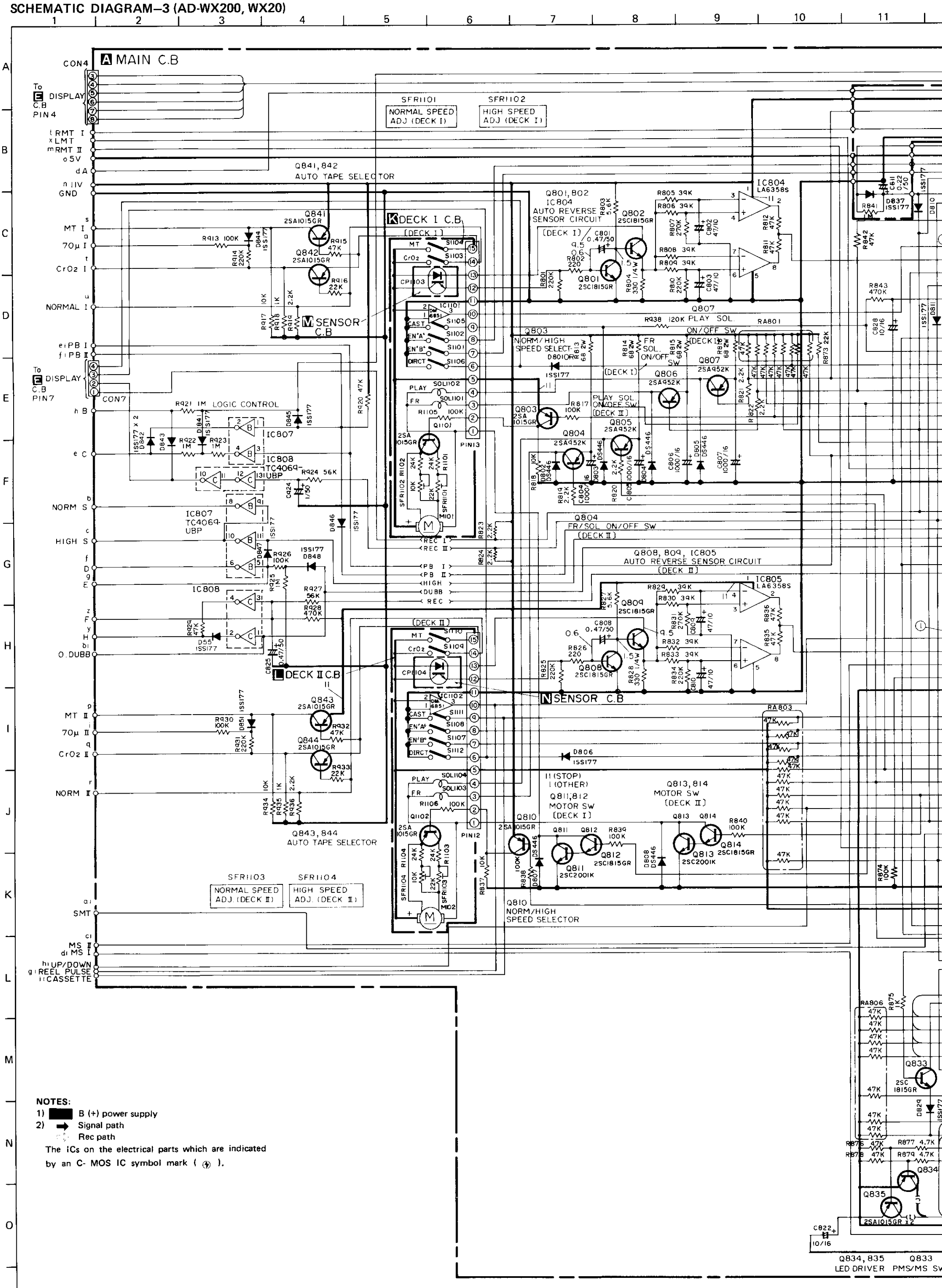
Ⓔ V
2.5V
0.5V
0V
T
0.2S

Ⓕ V
5V
0V
T

Ⓖ
0.5V
0V
t
-0.5V
POWER ON
PULL OUT AC CORD

Ⓗ
5V
0V
400KHz

Ⓘ
10V
0V


A MAIN C.B
CON4
To E DISPLAY C.B PIN4
RMT I
LMT
RMT II
5V
A
Q841, 842
AUTO TAPE SELECTOR
GND
MT I
70μ I
CrO2 I
NORMAL I
PB I
PB II
To E DISPLAY C.B PIN7
CON7
M SENSOR C.B
K DECK I C.B
SFR1101
NORMAL SPEED ADJ (DECK I)
SFR1102
HIGH SPEED ADJ (DECK I)
Q841
2SA1015GR
Q842
2SA1015GR
R913 100K
R914 220K
D844 1SS177
R915 47K
R916 22K
R917 10K
R918 1K
R919 2.2K
Q801, 802
IC804
AUTO REVERSE SENSOR CIRCUIT
IC804 LA6358S
Q802 2SC1815GR
Q801 2SC1815GR
R801 220K
R802 220
R803 5.6K
R804 330 1/4W
R805 39K
R806 39K
R807 270K
R808 39K
R809 39K
R810 220K
R811 47K
R812 47K
C801 0.47/50
C802 47/10
C803 47/10
C611 0.22/50
D837 1SS177
D810
R841
R842 47K
R843 470K
C828 10/16
Q807
R938 120K PLAY SOL. ON/OFF SW
RA801
Q803
NORM/HIGH SPEED SELECT
D8010R
R813 68 2W
R814 68 2W
R815 68 2W
R816 68 2W
FR SOL. ON/OFF SW (DECK I)
Q807 2SA952K
Q806 2SA952K
R821 2.2K
R822 2.2K
R873 22K
PLAY SOL. ON/OFF SW (DECK II)
Q804 2SA952K
Q805 2SA952K
R817 100K
Q803 2SA1015GR
R818 10K
D802 DS446
D803 DS446
D804 DS446
D805 DS446
C804 1000/16
C805 1000/16
C806 1000/16
C807 1000/16
R819 2.2K
R820 2.2K
R823 2.2K
R824 2.2K
Q804
FR/SOL ON/OFF SW (DECK II)
Q808, 809, IC805
AUTO REVERSE SENSOR CIRCUIT (DECK II)
IC805 LA6358S
Q809 2SC1815GR
Q808 2SC1815GR
R825 220K
R826 220
R827 5.6K
R828 330 1/4W
R829 39K
R830 39K
R831 270K
R832 39K
R833 39K
R834 220K
R835 47K
R836 47K
C808 0.47/50
C809 47/10
C810 47/10
N SENSOR C.B
RA803
D806 1SS177
II (STOP)
I (OTHER)
Q811, 812
MOTOR SW (DECK I)
Q813, 814
MOTOR SW (DECK II)
Q810 2SA1015GR
Q811 2SC2001K
Q812 2SC1815GR
Q813 2SC2001K
Q814 2SC1815GR
R838 100K
R839 100K
R840 100K
D807 DS446
D808 DS446
R874 100K
Q810
NORM/HIGH SPEED SELECTOR
IC807 TC4069-UBP
IC808 TC4069-UBP
R921 1M LOGIC CONTROL
R920 47K
R922 1M
R923 1M
R924 56K
C824 1/50
R925 1M
R926 100K
R927 56K
R928 470K
R929 47K
D55 1SS177
C825 0.47/50
D841 1SS177
D842 1SS177 x 2
D843
D845 1SS177
D846 1SS177
D847 1SS177
D848 1SS177
DECK II C.B
Q843 2SA1015GR
Q844 2SA1015GR
R930 100K
R931 220K
R932 47K
R933 22K
R934 10K
R935 1K
R936 2.2K
Q843, 844
AUTO TAPE SELECTOR
SFR1103
NORMAL SPEED ADJ (DECK II)
SFR1104
HIGH SPEED ADJ (DECK II)
SMT
MS II
MS I
UP/DOWN
REEL PULSE
CASSETTE
NOTES:
1) B (+) power supply
2) Signal path
Rec path
The ICs on the electrical parts which are indicated by an C- MOS IC symbol mark ( ).
RA806
R875 1K
Q833 2SC1815GR
D829 1SS177
R876 47K
R877 4.7K
R878 47K
R879 4.7K
Q834
Q835
2SA1015GR x2
C822 10/16
Q834, 835 LED DRIVER
Q833 PMS/MS SW

11 12 13 14 15 16 17 18 19 20 21

D PB AMP C.B

Q815 CONT. REC INHIBIT (AT MAIN REC RELEASE)

IC806 TC4069UBP

B KEY SWITCH C.B

To E DISPLAY C.B RESET

CON23

S735 COUNTER RESET

CON10

D704, D705 ISS177 x 2

LED701 LN222RP

LED702 LN422YP

LED703 LN322GP

R. MUT S701

PAUSE S702

STOP S703

H. DUBB S741

N. DUBB S742

D702, 703 ISS177 x 2

S731 REV MODE I

S732 REV MODE II

D710~D717 ISS177 x 8

Q701 2SB641

Q702 2SB641

Q703 2SB641

R. PLY S707

F. PLY S708

PAUSE S709

R. MUT S710

RECORD S711

R707 470K

R708 470K

R709 470K

Q703 2SB641

LED710, 711 LN222RP x 2

S733 BLANK SKIP OFF ON

S734 REC MODE I+II II-I

D706 ISS177

D707 ISS177

D708 ISS177

D721 ISS177

D722 ISS177

D723 ISS177

LED R. MUT 701 R701 820

LED PAUSE 702 R702 180

LED REV 703 R703 180

LED FWD 704 R704 180

LED H. DUBB 705 R705 820

LED N. DUBB 706 R706 820

LED R. PLY 707 R710 180

LED F. PLY 708 R711 180

LED PAUSE 709 R712 180

LED R. MUT 710 R713 820

LED RECORD 711 R714 820

LED708 LN322GP

LED709 LN422YP

LN322GP

GL4PR4

CON4

CON11

CON21

D724~D731 ISS177 X 8

D732, D734~D738 ISS177 X 6

S715 MS 1

S716 MS 2

S717 MS 3

S718 MS 4

S719 MS 5

S720 MS 6

S721 MS 7

S722 MS 8

S723 MS 9

S725 SIDE A/B

S726 PMS/MS

S727 RWD

S728 R. PLY

S729 F. PLY

S730 FF

LED715~722 LN222RP X 8

LED723 LN222RP

LED TAPE SIDE A 725 R728 180

LED SIDE B 726 R729 180

LED PMS 727 R730 180

LED MS 728 R731 180

LN422YP

R718 220

R719 220

R720 220

R721 220

R722 220

R723 220

R724 220

R725 220

SWITCH-I C.B

IC801 LM6402-596

IC802 LM6402-597

IC803 LM6413-1860

IC801 MPU (DECK I)

IC802 MPU (DECK II)

IC803 PROGRAM MUSIC SENSOR (PMS)

ISS177 x 2

2SA1015GR x 7

2SA1015GR x 2

2SC1815GR x 3

2SC1815GR

Q817 SIDE B REC INHIBIT

Q818 SIDE A REC INHIBIT

Q819 I STOP SW

Q820 2SA1015GR

Q821 2SA1015GR RA802

Q822 2SC1815GR

Q823 I FWD PLAY SW

Q824

Q825 I REV PLAY SW

Q826

Q827

Q828 REC SW

Q829 HIGH SPEED DUB. SW

Q830 PAUSE INHIBIT

Q831 LED DRIVER

Q832 NAND

Q833 2SC1815GR

Q834

Q835 2SA1015GR x 2

Q816 2SC1815GR

Q815 2SA1015GR

Q817, Q818 2SA1015GR x 2

Q834, 835 Q833 LED DRIVER PMS/MS SW

IC803 PROGRAM MUSIC SENSOR (PMS)

RESET

Practical Service Figure

Wow and flutter:	FWD. side Less than 0.08% REV. side Less than 0.085%
Pinch roller pressure:	290±70g (2.8±0.7N) (DECK I, II)
Take up torque:	30~60g-cm (2.9~5.9mN・m) (DECK I, II)
F. FWD torque:	130±30g-cm (12.7±2.9mN・m) (DECK I, II)
Rewind torque:	130±30g-cm (12.7±2.9mN・m) (DECK I, II)
Back tension:	2.5~5.5g-cm (0.24~0.54mN・m) (DECK I, II)
Playback output: (TTA-161)	580mV±1dB (LINE)
Bias frequency:	100kHz (DECK II)

Playback noise:	Less than 2.0mV (CrO_2, DOLBY B NR ON) Less than 3.0mV (NORMAL, DOLBY NR OFF)
PB/REC Output: (0VU)	380mV±2dB (DECK II)
PB/REC Distortion: (400Hz, 0VU)	METAL: Less than 3.0% (DECK II) CrO_2: Less than 2.5% (DECK II)
PB/REC Signal noise ratio: (400Hz, 0VU) (Unweighted)	More than 42/45dB (DECK II) (METAL, CrO_2 DOLBY B NR OFF/ON) More than 40/43dB (DECK II) (NORMAL, DOLBY B NR OFF/ON)

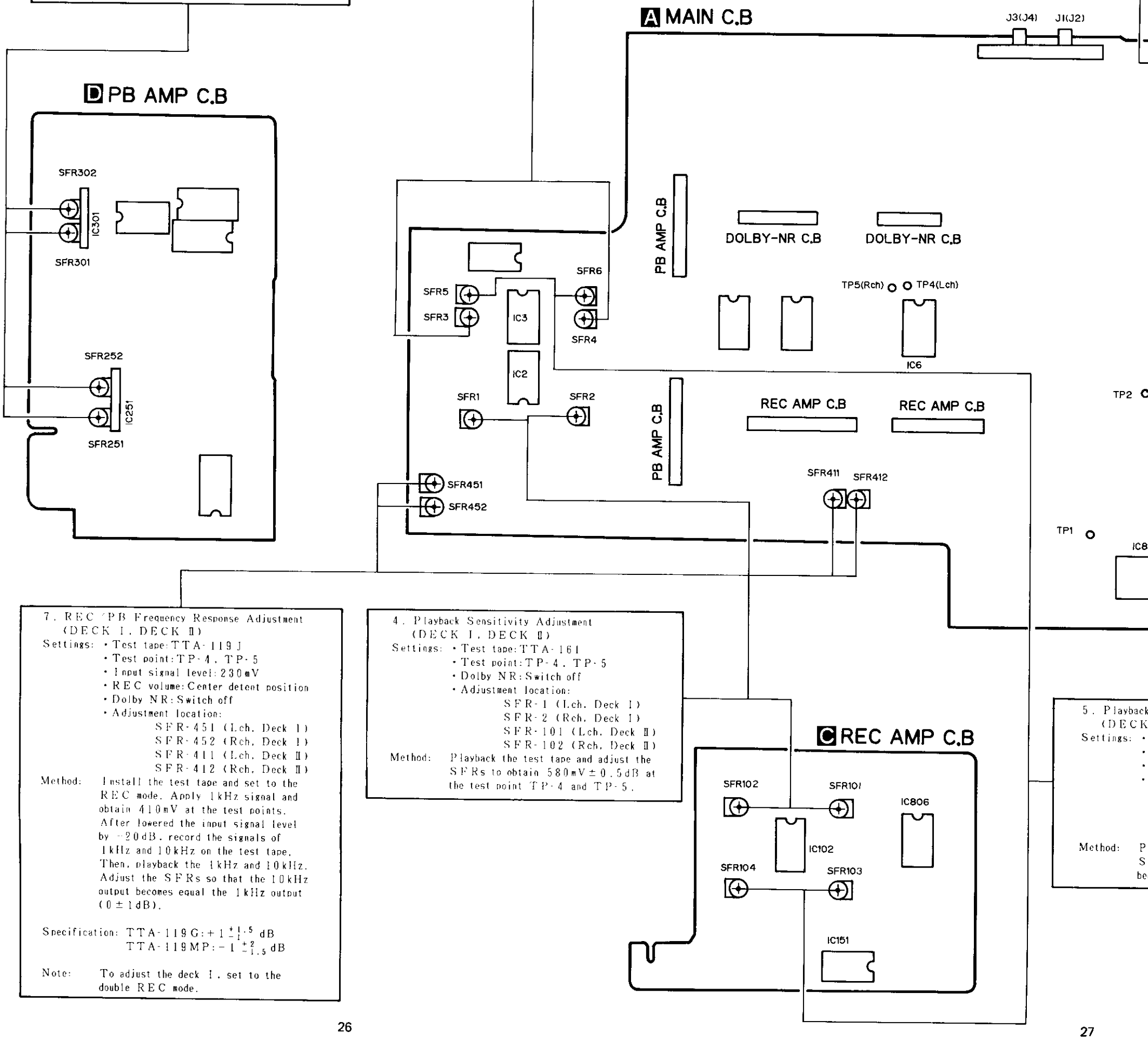
Channel separation: (1kHz, 0VU)	More than 30dB
Erasing ratio: (125Hz)	More than 55dB (DECK II)
Test tape:	・TTA-119MX (METAL) ・TTA-119G (CrO_2) ・TTA-119J (NORMAL)

ADJUSTMENT (AD-WX200, WX20)

8. REC/PB Sensitivity Adjustment
(DECK I, DECK II)
Settings: ・Test tape: TTA-119J
・Test point: TP-4, TP-5
・Dolby NR: Switch off
・Adjustment location:
SFR-251 (Lch, Deck I)
SFR-252 (Rch, Deck I)
SFR-301 (Lch, Deck II)
SFR-302 (Rch, Deck II)
Method: Set to the REC mode. Apply 1kHz signal so as to obtain 410mV at the TP-4 and TP-5. Then, record this level of the signal on the test tape and playback it. Adjust the SFRs until the playback level becomes 410mV±0.5dB.
Specification: TTA-119G: 410mV±1dB
TTA-119MP: 410mV±1.5dB

9. High Speed Dubbing REC/PB
Frequency Response
Settings: ・Test tape: TTA-317H (Deck I)
TTA-119G (Deck II)
・Test point: LINE OUT/PLAY
・Adjustment location: SFR-3 (Lch)
SFR-4 (Rch)
Method: In the high speed dubbing mode, adjust the SFRs to obtain the level difference of +1dB or less between 1kHz and 10kHz signals.
Specification: TTA-119G: 1±3dB
TTA-119MP: 1±3dB

6. Oscillation Frequency Adjustment
Settings: ・Test tape: TTA-119J
・Test point: TP-3
・Adjustment location: L401
Method: Install the test tape and set to the REC mode. Connect a frequency counter to the test point TP-3 and adjust the coil L401 for 100kHz ±300Hz.



7. REC/PB Frequency Response Adjustment
(DECK I, DECK II)
Settings: ・Test tape: TTA-119J
・Test point: TP-4, TP-5
・Input signal level: 230mV
・REC volume: Center detent position
・Dolby NR: Switch off
・Adjustment location:
SFR-451 (Lch, Deck I)
SFR-452 (Rch, Deck I)
SFR-411 (Lch, Deck II)
SFR-412 (Rch, Deck II)
Method: Install the test tape and set to the REC mode. Apply 1kHz signal and obtain 410mV at the test points. After lowered the input signal level by −20dB, record the signals of 1kHz and 10kHz on the test tape. Then, playback the 1kHz and 10kHz. Adjust the SFRs so that the 10kHz output becomes equal the 1kHz output (0±1dB).
Specification: TTA-119G: $+1^{+1.5}_{-1}$ dB
TTA-119MP: $-1^{+2}_{-1.5}$ dB
Note: To adjust the deck I, set to the double REC mode.

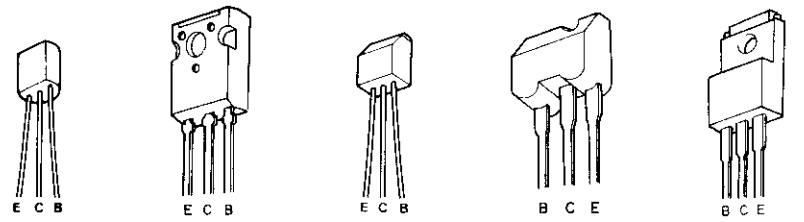
4. Playback Sensitivity Adjustment
(DECK I, DECK II)
Settings: ・Test tape: TTA-161
・Test point: TP-4, TP-5
・Dolby NR: Switch off
・Adjustment location:
SFR-1 (Lch, Deck I)
SFR-2 (Rch, Deck I)
SFR-101 (Lch, Deck II)
SFR-102 (Rch, Deck II)
Method: Playback the test tape and adjust the SFRs to obtain 580mV±0.5dB at the test point TP-4 and TP-5.

5. Playback Freq
(DECK I, D
Settings: ・Test
・Test
・Dolby
・Adjus
Method: Playbac
SFRs
becomes

AD-WX200 HB, CB, EB, KB, GB, ZB UB [AD-WX20] AD-WX200 HB, CB, EB, KB, GB, ZB UB [AD-WX20]

(DECK II)

(METAL)
(CrO_2)
(NORMAL)



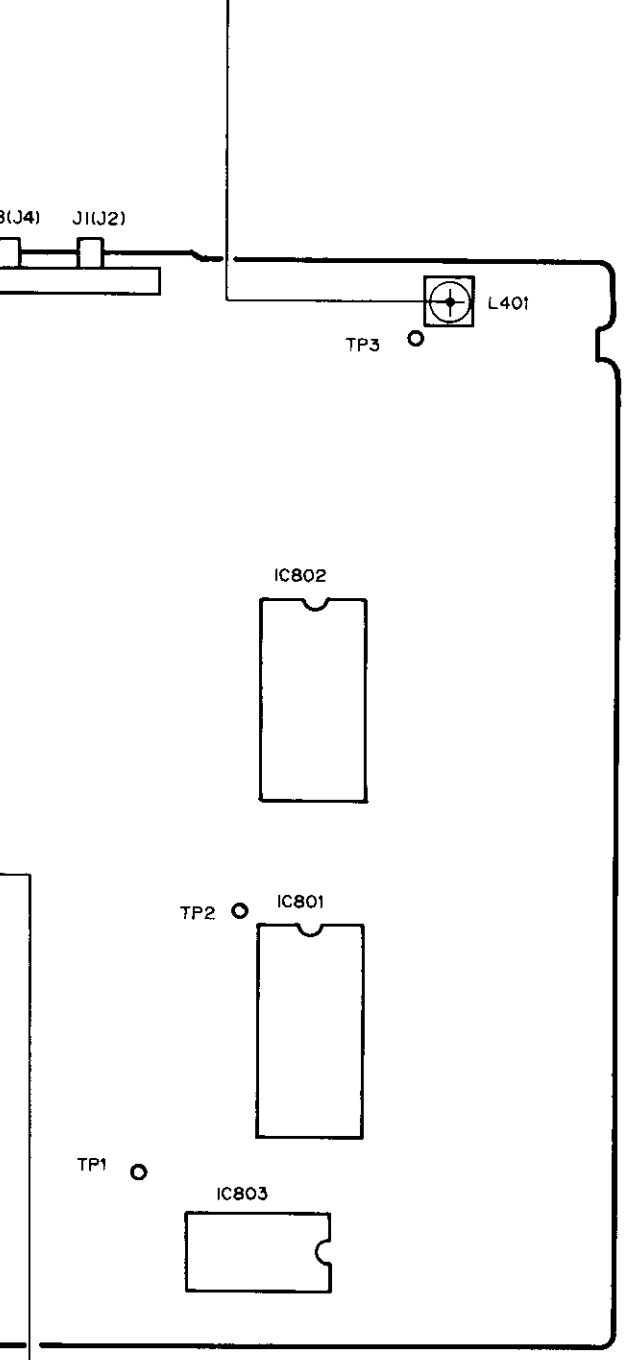
2SA952
2SA1015

2SA1358

2SB605

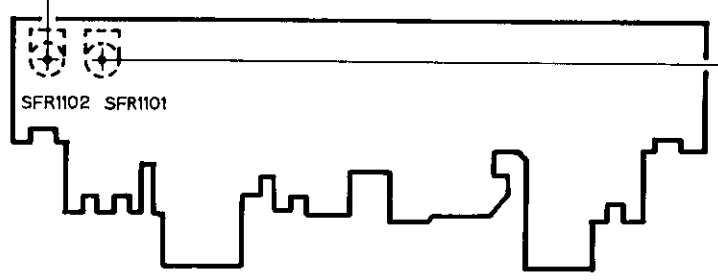
2SB641

2SD1276

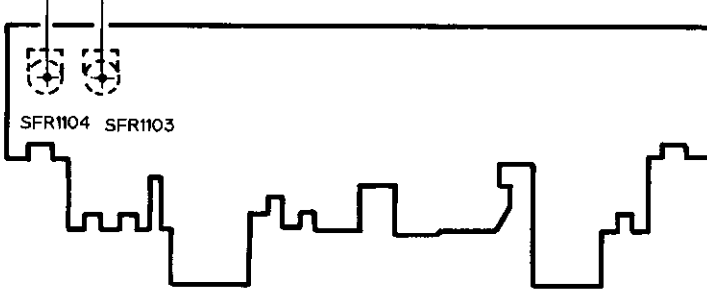


2. High Speed Adjustment
(DECK I, DECK II)
Settings: • Test tape: TTA-111H
• Test point: LINE OUT/PLAY
• Adjustment location:
SFR-1102 (Deck I)
SFR-1104 (Deck II)
Method: Connect the test point TP-1(TP-2) to the chassis earth so that the mode can be set to the high speed condition. Then, playback the test tape and adjust the SFRs for frequency of 3,000Hz. Make the test point TP-1 (TP-2) free after completed the adjustment.

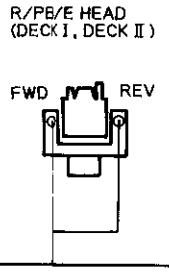
3. Normal Speed Adjustment
(DECK I, DECK II)
Settings: • Test tape: TTA-111
• Test point: LINE OUT/PLAY
• Adjustment location:
SFR-1101 (Deck I)
SFR-1103 (Deck II)
Method: Playback the test tape and adjust the SFRs for frequency of 3,000Hz.
Note: Perform the high speed adjustment first, before adjusting this method.



M DECK I C.B



N DECK II C.B

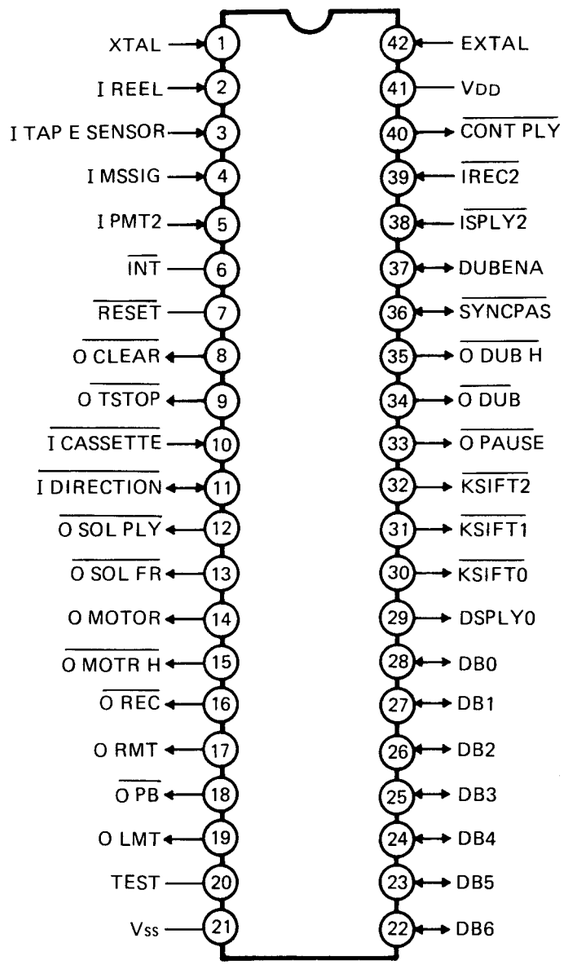


5. Playback Frequency Response Adjustment
(DECK I, DECK II)
Settings: • Test tape: TTA-317H
• Test point: LINE OUT/PLAY
• Doiby NR: Switch off
• Adjustment location:
SFR-5 (Lch, Deck I)
SFR-6 (Rch, Deck I)
SFR-103 (Lch, Deck II)
SFR-104 (Rch, Deck II)
Method: Playback the test tape and adjust the SFRs so that the 10kHz output becomes equal the 1kHz output(0dB).

1. Azimuth Adjustment (DECK I, DECK II)
Settings: • Test tape: TTA-317H
• Adjustment location: Azimuth adjustment screw
Method: Playback the 10kHz section of the test tape and adjust the screw for maximum output. Both modes (Forward Play and Reverse Play) must be performed.

DISCRIPTION OF IC TERMINAL
1. IC,LM6402Z

1-1. Terminal name DECK I



Signal flow in the direction indicated by the arrow.

Fig.-1

1-2. Pin function

Pin No.	Pin Symbol	Description			
		Matrix Key Input			LED Indication Output (Lights with "L")
		KSIFT0 is "L"	KSIFT1 is "L"	KSIFT2 is "L"	DSPLY0 is "L"
28	DB0	RVS MODE SW input	REC MUTE key input	REC ENA. B SW input	—
27	DB1	RVS MODE SW input	PAUSE key input	REC ENA. A SW input	REC MUTE indication
26	DB2	—	STOP key input	DOUBLE REC SW input	PAUSE indication
25	DB3	TIMER PLAY SW input	FF key input	CONT. REC SW input	RVS PLAY indication
24	DB4	—	FWD PLAY key input	BLANK SKIP SW input	FWD PLAY indication
23	DB5	HIGH DUB key input	RVS PLAY key input	DOUBLE REC key input	HIGH DUB indication
22	DB6	NOR DUB key input	REW key input	KSTOP2 key input	NOR DUB indication
30	$\overline{\text{KSIFT0}}$	Matrix key inputs and display outputs. KSIFT0 / KSIFT1 / KSIFT2 / DSPLY0 — Waveform at pins			
31	$\overline{\text{KSIFT1}}$				
32	$\overline{\text{KSIFT2}}$				
29	DSPLY0				
33	$\overline{\text{O PAUSE}}$	Outputs "L" when the mechanism is in the PAUSE modes.			
1	XTAL	MPU clock input.			
2	IREEL	AUTO STOP detection input.			
3	I TAPE SENSOR	Tape end sensor input.			
4	IMSSIG	MS inter-tune detection input. Set to "L" between tunes.			
5	IPMTII	PLAY MUTE control input.			
6	$\overline{\text{INT}}$	Connected to +5 [V].			
7	$\overline{\text{RESET}}$	MPU reset input. MPU is reset with "L".			
8	$\overline{\text{O CLEAR}}$	Outputs "L" when the cassette is removed, the stop key is ressed in F. F/RWD modes and REC is started.			
9	$\overline{\text{O TSTOP}}$	Set to "L" when the reel disk stops and no cassette is in the mechanism. Outputs "H" when one of F. F, RWD, FWD PLAY and RVS PLAY keys is pressed.			
10	$\overline{\text{I CASSETTE}}$	Cassette detection input. Set to "L" when a cassette is in.			
11	$\overline{\text{I DIRECT.}}$	Head direction detection input/output. With "L", the head faces the forward side.			
12	$\overline{\text{O SOL PLY}}$	PLAY plunger output. With "L", the plunger is attracted. (Refer to the timing chart)			
13	$\overline{\text{P SOL FR}}$	FF/RWD plunger output. With "L", the plunger is attracted. (Refer to the timing chart)			

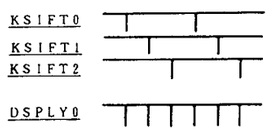
Pin No.	Pin Symbol	
14	O MOTOR	Motor ON/OFF output.
15	$\overline{\text{O MOTRH}}$	Motor high-speed output.
16	$\overline{\text{O REC}}$	REC output. Set to "L" PLAY PAUSE modes.
17	O RMT	REC MUTE output. Se
18	$\overline{\text{O PB}}$	Set to "L" when the deck
19	O LMT	LINE MUTE output. the PLAY mode.
20	TEST	Connected to 0 [V].
21	Vss	
34	$\overline{\text{O DUB}}$	Set to "L" during DUB.
35	$\overline{\text{O DUB. H}}$	Set to "L" during High-
36	$\overline{\text{SYNCPAS}}$	Set to "H" during DUB. REV when this pin is se
37	DUBENA	DUB start output and D
38	$\overline{\text{ISPLYII}}$	Input to detect the DEC
39	$\overline{\text{IRECII}}$	Input to detect the DEC
40	$\overline{\text{CONTPLY}}$	Continuous play output.
41	V_{DD}	Connected to +5 [V].
42	EXTAL	

— EXTAL
— VDD
→ $\overline{\text{CONT PLY}}$
— $\overline{\text{IREC2}}$
— $\overline{\text{ISPLY2}}$
→ DUBENA
→ $\overline{\text{SYNCPAS}}$
→ $\overline{\text{O DUB H}}$
→ $\overline{\text{O DUB}}$
→ $\overline{\text{O PAUSE}}$
→ $\overline{\text{KSIFT2}}$
→ $\overline{\text{KSIFT1}}$
→ $\overline{\text{KSIFT0}}$
→ DSPLY0
→ DB0
→ DB1
→ DB2
→ DB3
→ DB4
→ DB5
→ DB6

the arrow.

Fig.-1

1-2. Pin function

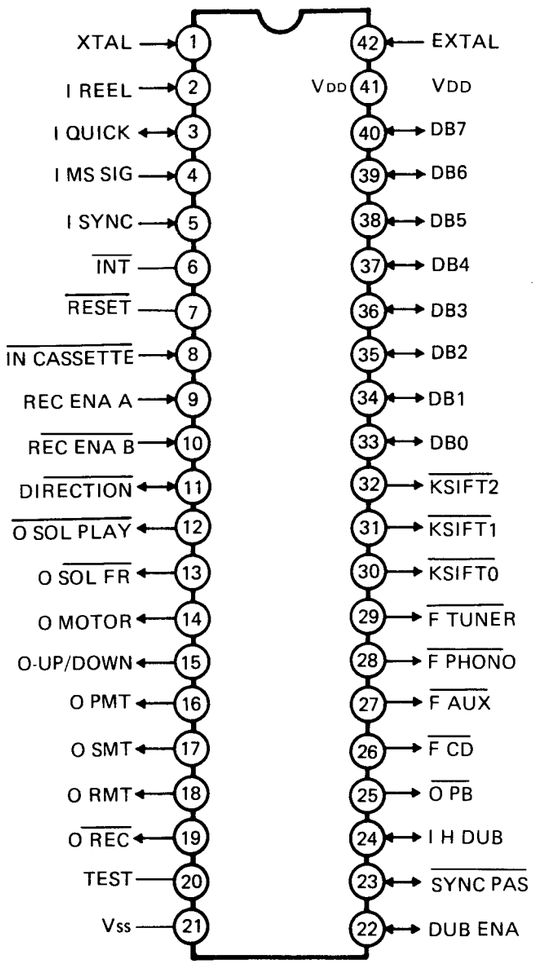
Pin No.	Pin Symbol	Description			
		Matrix Key Input			LED Indication Output (Lights with "L")
		KSIFT0 is "L"	KSIFT1 is "L"	KSIFT2 is "L"	DSPLY0 is "L"
28	DB0	RVS MODE SW input	REC MUTE key input	REC ENA. B SW input	—
27	DB1	RVS MODE SW input	PAUSE key input	REC ENA. A SW input	REC MUTE indication
26	DB2	—	STOP key input	DOUBLE REC SW input	PAUSE indication
25	DB3	TIMER PLAY SW input	FF key input	CONT. REC SW input	RVS PLAY indication
24	DB4	—	FWD PLAY key input	BLANK SKIP SW input	FWD PLAY indication
23	DB5	HIGH DUB key input	RVS PLAY key input	DOUBLE REC key input	HIGH DUB indication
22	DB6	NOR DUB key input	REW key input	KSTOP2 key input	NOR DUB indication
30	$\overline{\text{KSIFT0}}$	Matrix key inputs and display outputs.  Waveform at pins			
31	$\overline{\text{KSIFT1}}$				
32	$\overline{\text{KSIFT2}}$				
29	DSPLY0				
33	$\overline{\text{O PAUSE}}$	Outputs "L" when the mechanism is in the PAUSE modes.			
1	XTAL	MPU clock input.			
2	IREEL	AUTO STOP detection input.			
3	I TAPE SENSOR	Tape end sensor input.			
4	IMSSIG	MS inter-tune detection input. Set to "L" between tunes.			
5	IPMTII	PLAY MUTE control input.			
6	$\overline{\text{INT}}$	Connected to + 5 [V].			
7	$\overline{\text{RESET}}$	MPU reset input. MPU is reset with "L".			
8	$\overline{\text{O CLEAR}}$	Outputs "L" when the cassette is removed, the stop key is ressed in F. F/RWD modes and REC is started.			
9	$\overline{\text{O TSTOP}}$	Set to "L" when the reel disk stops and no cassette is in the mechanism. Outputs "H" when one of F. F, RWD, FWD PLAY and RVS PLAY keys is pressed.			
10	$\overline{\text{I CASSETTE}}$	Cassette detection input. Set to "L" when a cassette is in.			
11	$\overline{\text{I DIRECT.}}$	Head direction detection input/output. With "L", the head faces the forward side.			
12	$\overline{\text{O SOL PLY}}$	PLAY plunger output. With "L", the plunger is attracted. (Refer to the timing chart)			
13	$\overline{\text{P SOL FR}}$	FF/RWD plunger output. With "L", the plunger is attracted. (Refer to the timing chart)			

Pin No.	Pin Symbol	Description
14	O MOTOR	Motor ON/OFF output. With "L", the motor is stopped.
15	$\overline{\text{O MOTRH}}$	Motor high-speed output. With "L", the motor rotates at high-speed.
16	$\overline{\text{O REC}}$	REC output. Set to "L" only in the REC, PLAY REC PAUSE and PLAY PAUSE modes.
17	O RMT	REC MUTE output. Set to "L" in the REC and PLAY modes.
18	$\overline{\text{O PB}}$	Set to "L" when the deck is in the PLAY mode.
19	O LMT	LINE MUTE output. Outputs "L" when either DECK I or DECK II is in the PLAY mode.
20	TEST	Connected to 0 [V].
21	Vss	
34	$\overline{\text{O DUB}}$	Set to "L" during DUB.
35	$\overline{\text{O DUB. H}}$	Set to "L" during High-Speed DUB.
36	$\overline{\text{SYNCPAS}}$	Set to "H" during DUB. Set to "L" before PLAY is switched to CUE/REV when this pin is set to "H" or "L", PAUSE is commanded.
37	DUBENA	DUB start output and DUB stop input/output. Set to "H" during DUB.
38	$\overline{\text{ISPLYII}}$	Input to detect the DECK II $\overline{\text{SOL PLAY}}$ output.
39	$\overline{\text{IRECII}}$	Input to detect the DECK II $\overline{\text{OREC}}$ output.
40	$\overline{\text{CONTPLY}}$	Continuous play output.
41	VDD	Connected to + 5 [V].
42	EXTAL	

Table 1

2. IC,LM6402-597

2-1. Terminal name DECK II

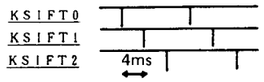


Signal flow in the direction indicated by the arrow.

Fig.2

AD-WX200 HB, CB, EB, KB, GB, ZB UB [AD-WX20]

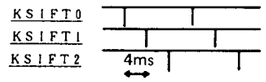
2-2. Pin function

Pin No.	Pin Symbol	Description			
		Matrix Key Input			LED Indication Output (Lights with "L")
		KSIFT0 is "L"	KSIFT1 is "L"	KSIFT2 is "L"	KSIFT0,1,2 are "H"
33	DB0	REC key input	—	—	—
34	DB1	REC MUTE key input	—	—	—
35	DB2	PAUSE key input	—	—	—
36	DB3	STOP key input	RVS MODE SW input	—	REC indication
37	DB4	FF key input	RVS MODE SW input	—	REC MUTE indication
38	DB5	FWD PLAY key input	TIMER REC SW input	CONT. PLAY SW input	PAUSE indication
39	DB6	RVS PLAY key input	TIMER PLAY SW input	BLANK SKIP SW input	FWD PLAY indication
40	DB7	RWD key input	—	CONT. PLAY start input	RVS PLAY indication
30	$\overline{\text{KSIFT0}}$	Matrix key input, and output to switch the indicator output.  Waveform at pins			
31	$\overline{\text{KSIFT1}}$				
32	$\overline{\text{KSIFT2}}$				
29	$\overline{\text{FTUNER}}$	Set to "L" in REC, PLAY, REC PAUSE and PLAY PAUSE modes of each function.			
28	$\overline{\text{FPHONO}}$				
27	$\overline{\text{FAUX}}$				
26	$\overline{\text{FCD}}$				
25	$\overline{\text{OPB}}$	Set to "L" when the deck is in the PLAY mode.			
22	DUBENA	DUB start input and DUB stop output. Set to "H" during DUB.			
23	$\overline{\text{SYNC PAS}}$	DUB PAUSE ON/OFF input. With "L", this becomes the syncrate output in PAUSE PHONO/CD REC mode.			
24	IHDUB	High-speed DUB input.			
2	IREEL	AUTO STOP detection input.			
3	IQUICK	Tape end sensor input.			
4	IMSSIG	MS inter-tune detection input. Set to "L" between turnes.			
5	ISYNC	PHONO/CD Synchronized REC input. REC mode with "L" and REC PAUSE with "H".			
8	$\overline{\text{I CASSETTE}}$	Cassette detection input. Set to "L" when a cassette is in.			
9	$\overline{\text{I REC ENA A}}$	FWD SIDE erasure prevention input. With "L", REC is enabled.			
10	$\overline{\text{I REC ENA B}}$	RVS SIDE erasure prevention input. With "L", REC is enabled.			

AD-WX200 HB, CB, EB, KB, GB, ZB UB [AD-WX20]

Pin No.	Pin Symbol	
11	$\overline{\text{I DIRECT.}}$	Head direction detection input/
12	$\overline{\text{O-SOL PLAY}}$	PLAY plunger output. With "L (Refer to the timing chart)
13	$\overline{\text{O SOL FR}}$	FF/RWD plunger output. Wit (Refer to the timing chart)
14	O MOTOR	Motor ON/OFF output. With
15	O-UP/DOWN	Electronic counter UP/DOWN With "H", the counter counts up
16	O PMT	PLAY MUTE output. Set to
17	O SMT	REC MONITOR MUTE ou Set to "L" only in the REC, modes.
18	O RMT	REC MUTE output. Set to "L" only in the REC a
19	$\overline{\text{O REC}}$	REC output. Set to "L" only in the REC, modes.
1	XTAL	MPU clock input.
42	EXTAL	
7	$\overline{\text{RESET}}$	MPU reset input. MPU is res
41	V_{DD}	Connected to +5 [V].
6	$\overline{\text{INT}}$	
20	TEST	Connected to 0 [V].
21	Vss	

2-2. Pin function

Pin No.	Pin Symbol	Description			
		Matrix Key Input			LED Indication Output (Lights with "L")
		KSIFT0 is "L"	KSIFT1 is "L"	KSIFT2 is "L"	KSIFT0,1,2 are "H"
33	DB0	REC key input	—	—	—
34	DB1	REC MUTE key input	—	—	—
35	DB2	PAUSE key input	—	—	—
36	DB3	STOP key input	RVS MODE SW input	—	REC indication
37	DB4	FF key input	RVS MODE SW input	—	REC MUTE indication
38	DB5	FWD PLAY key input	TIMER REC SW input	CONT. PLAY SW input	PAUSE indication
39	DB6	RVS PLAY key input	TIMER PLAY SW input	BLANK SKIP SW input	FWD PLAY indication
40	DB7	RWD key input	—	CONT. PLAY start input	RVS PLAY indication
30	$\overline{\text{KSIFT0}}$	Matrix key input, and output to switch the indicator output.  Waveform at pins			
31	$\overline{\text{KSIFT1}}$				
32	$\overline{\text{KSIFT2}}$				
29	$\overline{\text{FTUNER}}$	Set to "L" in REC, PLAY, REC PAUSE and PLAY PAUSE modes of each function.			
28	$\overline{\text{FPHONO}}$				
27	$\overline{\text{FAUX}}$				
26	$\overline{\text{FCD}}$				
25	$\overline{\text{OPB}}$	Set to "L" when the deck is in the PLAY mode.			
22	DUBENA	DUB start input and DUB stop output. Set to "H" during DUB.			
23	$\overline{\text{SYNC PAS}}$	DUB PAUSE ON/OFF input. With "L", this becomes the syncrate output in PAUSE PHONO/CD REC mode.			
24	IHDUB	High-speed DUB input.			
2	IREEL	AUTO STOP detection input.			
3	IQUICK	Tape end sensor input.			
4	IMSSIG	MS inter-tune detection input. Set to "L" between turnes.			
5	ISYNC	PHONO/CD Synchronized REC input. REC mode with "L" and REC PAUSE with "H".			
8	$\overline{\text{I CASSETTE}}$	Cassette detection input. Set to "L" when a cassette is in.			
9	$\overline{\text{I REC ENA A}}$	FWD SIDE erasure prevention input. With "L", REC is enabled.			
10	$\overline{\text{I REC ENA B}}$	RVS SIDE erasure prevention input. With "L", REC is enabled.			

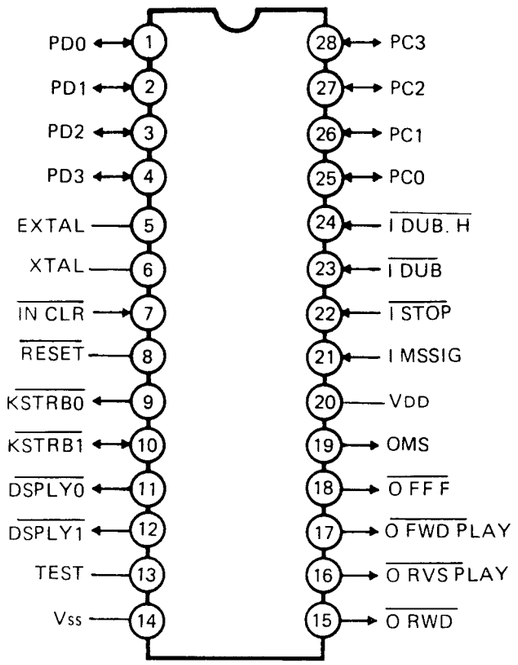
Pin No.	Pin Symbol	Description
11	$\overline{\text{I DIRECT.}}$	Head direction detection input/output. With "L", the head faces FWD SIDE.
12	$\overline{\text{O-SOL PLAY}}$	PLAY plunger output. With "L", the plunger is attracted. (Refer to the timing chart)
13	$\overline{\text{O SOL FR}}$	FF/RWD plunger output. With "L", the plunger is attracted. (Refer to the timing chart)
14	O MOTOR	Motor ON/OFF output. With "L", the motor is stopped.
15	O-UP/DOWN	Electronic counter UP/DOWN output. With "L", the counter counts down. With "H", the counter counts up.
16	O PMT	PLAY MUTE output. Set to "L" only in the PLAY mode.
17	O SMT	REC MONITOR MUTE output. Set to "L" only in the REC, PLAY, REC PAUSE and PLAY PAUSE modes.
18	O RMT	REC MUTE output. Set to "L" only in the REC and PLAY modes.
19	$\overline{\text{O REC}}$	REC output. Set to "L" only in the REC, PLAY, REC PAUSE and PLAY PAUSE modes.
1	XTAL	MPU clock input.
42	EXTAL	
7	$\overline{\text{RESET}}$	MPU reset input. MPU is reset with "L".
41	V_{DD}	Connected to +5 [V].
6	$\overline{\text{INT}}$	
20	TEST	Connected to 0 [V].
21	Vss	

Table 2

3. IC,LM6413-598,HD38702A37

3-1. Terminal name

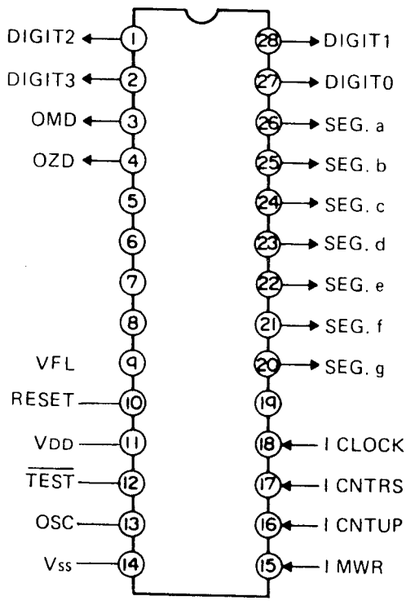
(IC,LM 6413-598)



Signal flow in the direction indicated by the arrow.

Fig.3

(HD38702A37)



Signal flow in the direction indication by the arrow.

Fig.4

3-2. Pin function (LM6413-598)

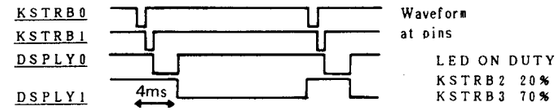
Pin No.	Pin Symbol	Description			
		Matrix Key Input		LED Indication Output (Lights with "L")	
		KSTRB0 is "L"	KSTRB1 is "L"	DSPLY0 is "L"	DSPLY1 is "L"
25	PC0	K NO. 1 key input	K NO. 9 key input	K NO. 1 indication	K NO. 9 indication
26	PC1	K NO. 2 key input	—	K NO. 2 indication	—
27	PC2	K NO. 3 key input	A/B key input	K NO. 3 indication	Side A indication
28	PC3	K NO. 4 key input	PMS/MS key input	K NO. 4 indication	Side B indication
1	PD0	K NO. 5 key input	RWD key input	K NO. 5 indication	PMS indication
2	PD1	K NO. 6 key input	RVS PLAY key input	K NO. 6 indication	MS indication
3	PD2	K NO. 7 key input	FWD PLAY key input	K NO. 7 indication	—
4	PD3	K NO. 8 key input	FF key input	K NO. 8 indication	—
9	$\overline{\text{KSTRB0}}$	Matrix key inputs and display outputs. 			
10	$\overline{\text{KSTRB1}}$				
11	$\overline{\text{DSPLY0}}$				
12	$\overline{\text{DSPLY1}}$				
5	EXTAL	MPU clock input.			
6	XTAL				
7	$\overline{\text{I CLR}}$	With "L", data is cleared.			
8	$\overline{\text{RESET}}$	MPU reset input.			
13	TEST	Connected to 0 [V].			
14	Vss				
15	$\overline{\text{O RWD}}$	RWD key operation output.			
16	$\overline{\text{O RVS PLAY}}$	RVS PLAY key operation output.			
17	$\overline{\text{O FWD PLAY}}$	FWD PLAY key operation output.			
18	$\overline{\text{O FF}}$	FF key operation output.			
19	O MS	Input to detect no-signal sections between tunes with PMS/MS operations. With "H", a tune is detected. With "L", no-signal section is detected.			
20	V_{DD}	Connected to +5 [V].			
21	IMSSIG	Input to detect no-signal sections between tunes with PMS/MS operations. With "H", a tune is detected. With "L", no-signal section is detected.			
22	$\overline{\text{ISTOP}}$	With "L", this IC detects that DECK I reel disks are stopped.			
23	$\overline{\text{IDUB}}$	Set to "L" during DUB.			
24	$\overline{\text{IDUB. H}}$	Set to "L" during High-Speed DUB.			

Table 3

3-3. Pin function (HD38702A37)

Pin No.	Pin Symbol	
18	I CLOCK	Count clock pulse inpu
4	O ZD	Detection output that
3	O HD	Detection output that
17	I CNTRS	Input to set the count
16	I CNTUP	Counter addition/subt down, and with "1", th
15	I MWR	Input to write the cou
27	DIGIT 0	Outputs the digit scan
28	DIGIT 1	
2	DIGIT 2	
3	DIGIT 3	
26	SEG. a	Segment output to ligh
25	SEG. b	
24	SEG. c	
23	SEG. d	
22	SEG. e	
21	SEG. f	
20	SEG. g	
9	V FL	Power supply for the f
10	RESET	Reset pin
11	V_{DD}	V_{DD} pin
12	$\overline{\text{TEST}}$	
13	OSC	Osc pin
14	Vss	Vss pin

- PC3
- PC2
- PC1
- PC0
- $\overline{\text{I DUB. H}}$
- $\overline{\text{I DUB}}$
- $\overline{\text{I STOP}}$
- I MSSIG
- VDD
- OMS
- $\overline{\text{O FF F}}$
- $\overline{\text{O FWD PLAY}}$
- $\overline{\text{O RVS PLAY}}$
- $\overline{\text{O RWD}}$

e arrow.

Fig.3

- DIGIT1
- DIGIT0
- EG. a
- EG. b
- EG. c
- EG. d
- EG. e
- EG. f
- EG. g

- CLOCK
- CNTRS
- CNTUP
- MWR

he arrow.

Fig.4

3-2. Pin function (LM6413-598)

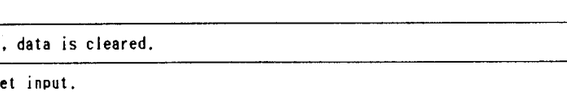
Pin No.	Pin Symbol	Description			
		Matrix Key Input		LED Indication Output (Lights with "L")	
		KSTRB0 is "L"	KSTRB1 is "L"	DSPLY0 is "L"	DSPLY1 is "L"
25	PC0	K NO. 1 key input	K NO. 9 key input	K NO. 1 indication	K NO. 9 indication
26	PC1	K NO. 2 key input	—	K NO. 2 indication	—
27	PC2	K NO. 3 key input	A/B key input	K NO. 3 indication	Side A indication
28	PC3	K NO. 4 key input	PMS/MS key input	K NO. 4 indication	Side B indication
1	PD0	K NO. 5 key input	RWD key input	K NO. 5 indication	PMS indication
2	PD1	K NO. 6 key input	RVS PLAY key input	K NO. 6 indication	MS indication
3	PD2	K NO. 7 key input	FWD PLAY key input	K NO. 7 indication	—
4	PD3	K NO. 8 key input	FF key input	K NO. 8 indication	—
9	$\overline{\text{KSTRB0}}$	Matrix key inputs and display outputs. 			
10	$\overline{\text{KSTRB1}}$				
11	$\overline{\text{DSPLY0}}$				
12	$\overline{\text{DSPLY1}}$				
5	EXTAL	MPU clock input.			
6	XTAL				
7	$\overline{\text{I CLR}}$	With "L", data is cleared.			
8	$\overline{\text{RESET}}$	MPU reset input.			
13	TEST	Connected to 0 [V].			
14	Vss				
15	$\overline{\text{O RWD}}$	RWD key operation output.			
16	$\overline{\text{O RVS PLAY}}$	RVS PLAY key operation output.			
17	$\overline{\text{O FWD PLAY}}$	FWD PLAY key operation output.			
18	$\overline{\text{O FF}}$	FF key operation output.			
19	O MS	Input to detect no-signal sections between tunes with PMS/MS operations. With "H", a tune is detected. With "L", no-signal section is detected.			
20	VDD	Connected to +5 [V].			
21	IMSSIG	Input to detect no-signal sections between tunes with PMS/MS operations. With "H", a tune is detected. With "L", no-signal section is detected.			
22	$\overline{\text{ISTOP}}$	With "L", this IC detects that DECK I reel disks are stopped.			
23	$\overline{\text{IDUB}}$	Set to "L" during DUB.			
24	$\overline{\text{IDUB. H}}$	Set to "L" during High-Speed DUB.			

Table 3

3-3. Pin function (HD38702A37)

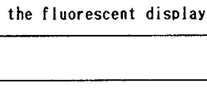
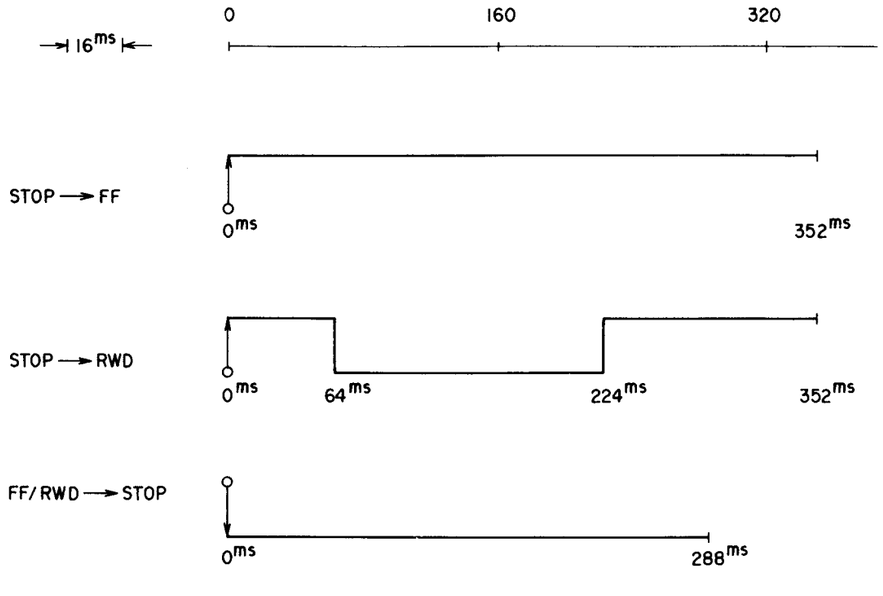
Pin No.	Pin Symbol	Description
18	I CLOCK	Count clock pulse input for the counter.
4	O ZD	Detection output that the counter reaches "0000".
3	O HD	Detection output that the counter value matches the memory value.
17	I CNTRS	Input to set the counter to "0000".
16	I CNTUP	Counter addition/subtraction designation input. With "0", the counter counts down, and with "1", the counter counts up.
15	I MWR	Input to write the counter data into the memory.
27	DIGIT 0	Outputs the digit scan signal to light the fluorescent display dynamically.
28	DIGIT 1	
2	DIGIT 2	
3	DIGIT 3	
26	SEG. a	Segment output to light the fluorescent display dynamically. 
25	SEG. b	
24	SEG. c	
23	SEG. d	
22	SEG. e	
21	SEG. f	
20	SEG. g	
9	V FL	Power supply for the fluorescent display.
10	RESET	Reset pin
11	VDD	VDD pin
12	$\overline{\text{TEST}}$	
13	OSC	Osc pin
14	Vss	Vss pin

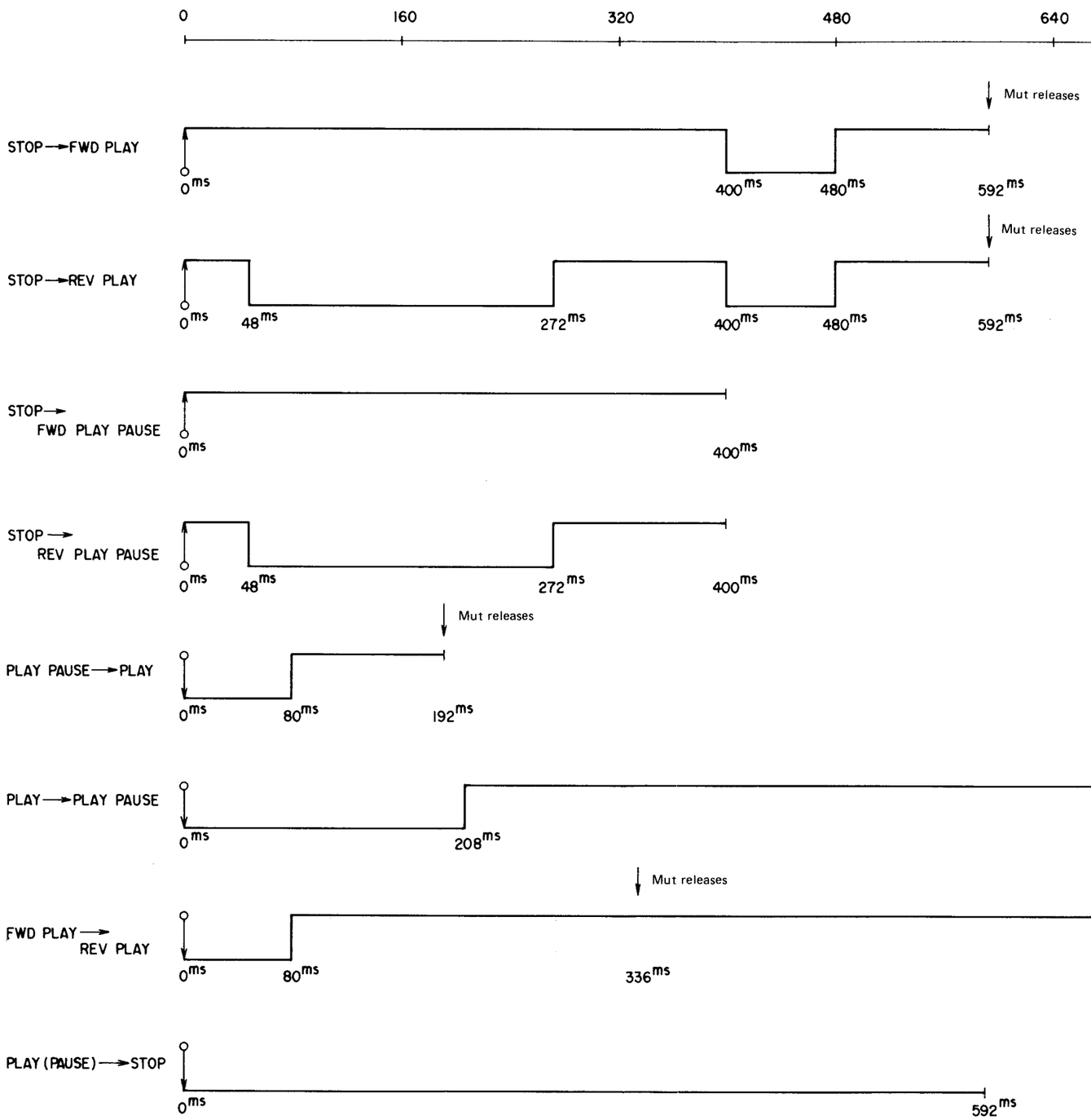
Table 4

TIMING CHART (AD-WX200, WX20)

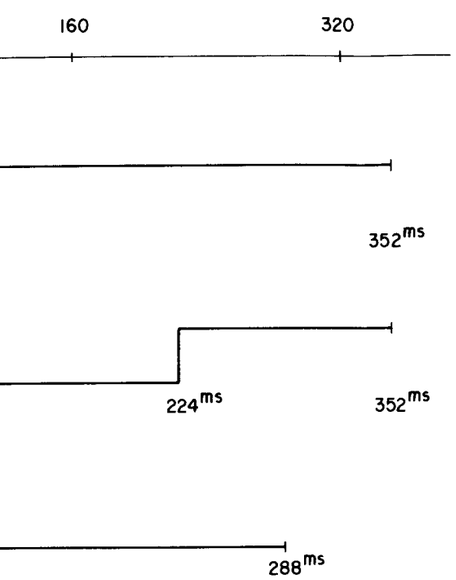


Outputs of micro computer are active-low.

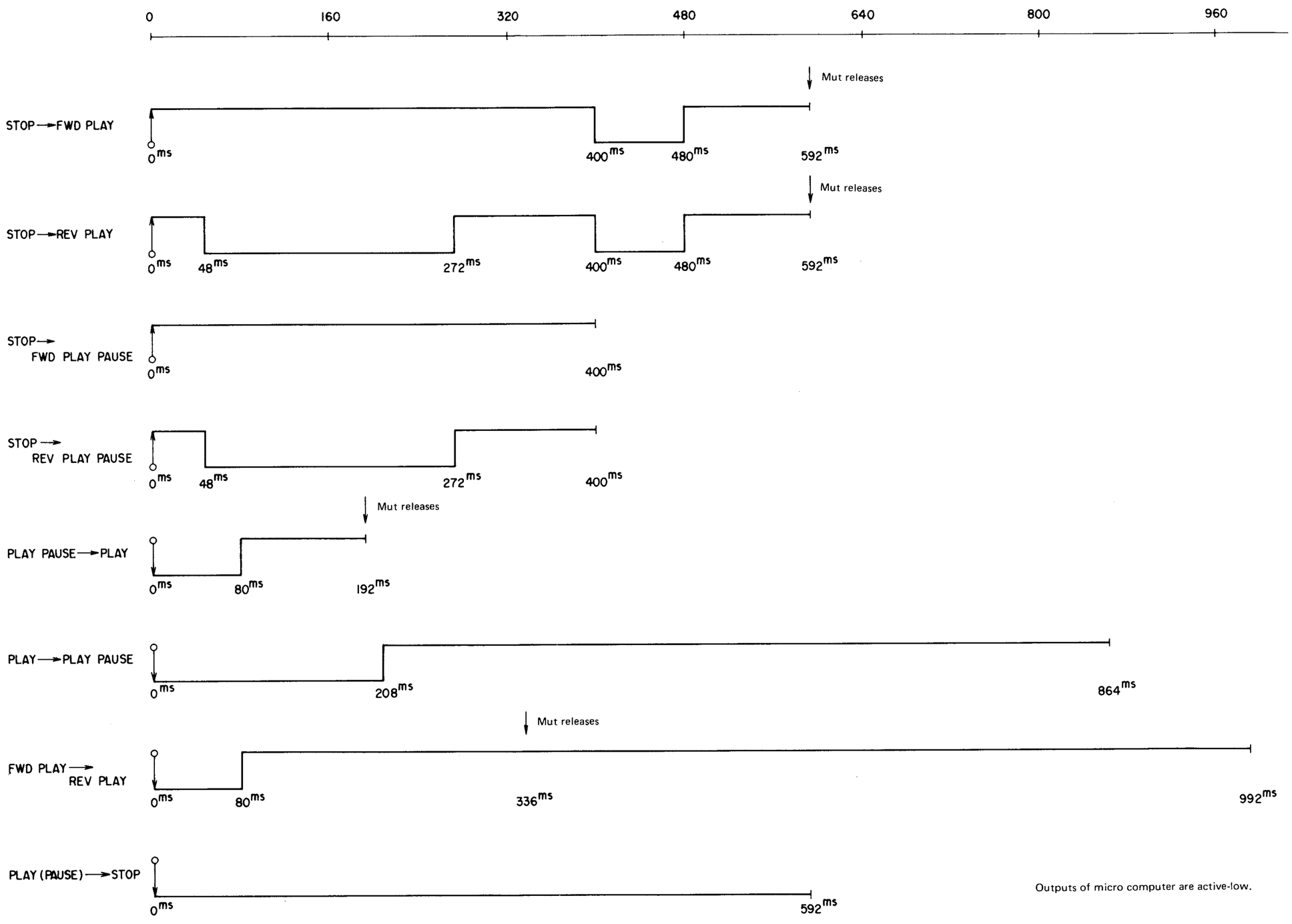
AD-WX200 HB, CB, EB, KB, GB, ZB UB [AD-WX20]



AD-WX200 HB, CB, EB, KB, GB, ZB UB [AD-WX20]



Outputs of micro computer are active-low.

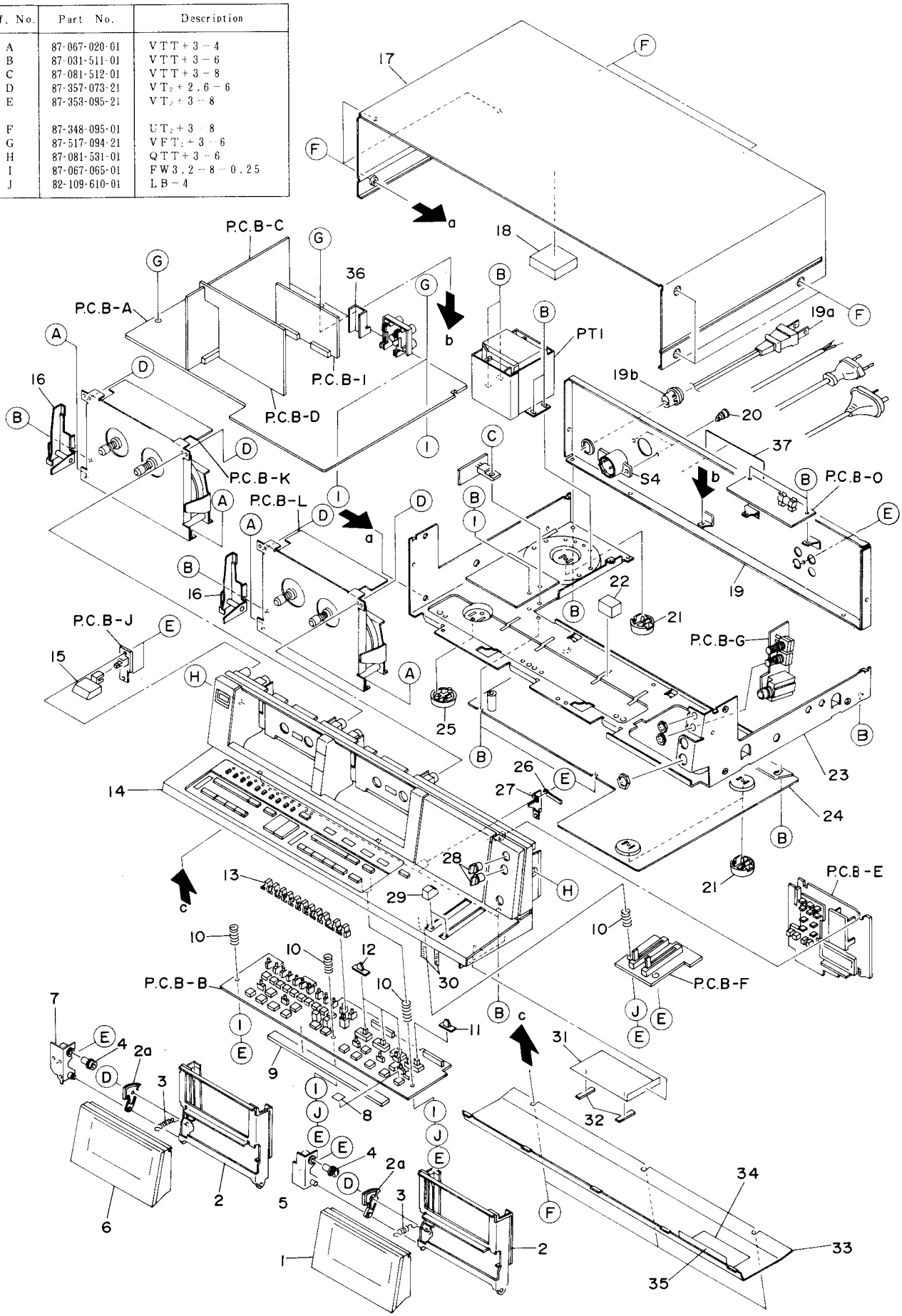


Outputs of micro computer are active-low.

☆ **MEMO** ☆

EXPLODED VIEW-1

Ref. No.	Part No.	Description
A	87-067-020-01	VTT+3-4
B	87-031-511-01	VTT+3-6
C	87-081-512-01	VTT+3-8
D	87-357-073-21	VT$_2$+2.6-6
E	87-353-095-21	VT$_2$+3-8
F	87-348-095-01	UT$_2$+3-8
G	87-517-094-21	VFT$_2$+3-6
H	87-081-531-01	QTT+3-6
I	87-067-065-01	FW3.2-8-0.25
J	82-109-610-01	LB-4



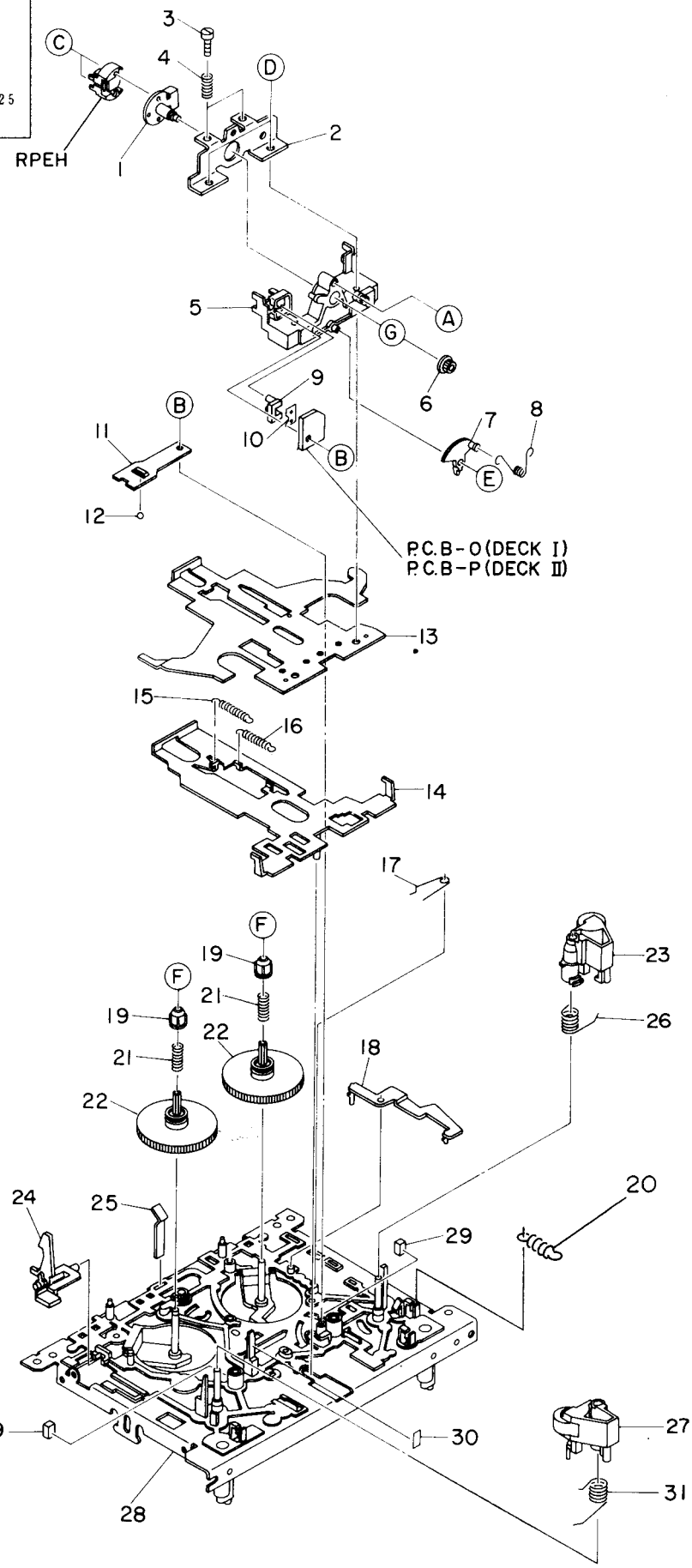
MECHANICAL PARTS LIST

- ※ mark in this part list shows exclusive part.
- ★-mark means less required items availabilities may be limited.
- No availability part is warked with ——— in Part No. list.

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	1-1	82-109-017	CASSETTE WINDOW B Ass'y	※	1
	1-2	★82-196-248	CASSETTE BOX Ass'y F	AD-WX220	2
	2a	★82-161-325	GEAR, OIL-DAMP		2
	1-3	★82-196-225	E-SPRING, C-BOX	AD-WX220	2
	1-4	★82-534-264	GEAR, OIL-DAMP		2
	1-5	★82-196-205	HOLDER C-BOX A Ass'y	AD-WX220	1
	1-6	82-109-016	CASSETTE WINDOW A Ass'y	※	1
	1-7	★82-196-210	HOLDER C-BOX B Ass'y	AD-WX220	1
	1-8	—	SHEET, CIRCUIT BOARD		1
	1-9	—	CUSHION 6-150-5		1
	1-10	★82-146-214	C-SPRING, FRONT EARTH		4
	1-11	★82-104-018	SLIDE KNOB R		1
	1-12	★82-142-015	SLIDE KNOB		3
	1-13	—	GUIDE, LED B		1
	1-14	★82-109-001	FRONT CABINET Ass'y (EXCEPT U)	※	1
		★82-109-027	FRONT CABINET Ass'y (U only)	※	1
	1-15	★84-700-003	PUSH-BUTTON, POWER		1
	1-16	★82-109-203	LEVER EJECT Ass'y	※	2
	1-17	★82-109-037	STEEL CABINET (EXCEPT U)	※	1
		★82-109-040	STEEL CABINET (U only)	※	1
	1-18	—	S CUSHION 25-25-6		1
	1-19	—	REAR PANEL Ass'y		1
	19a	★87-034-958	AC POWER CORD (H only)		1
		★87-034-578	AC POWER CORD (W20U, C only)		1
		★87-034-877	AC POWER CORD (E, Z only)		1
		★87-034-975	AC POWER CORD (K only)		1
		★87-034-892	AC POWER CORD (G only)		1
	19b	★87-085-184	CORD BUSHING (H, W20U, C only)		1
		★87-085-185	CORD BUSHING (E, K, G, Z only)		1
	1-20	★87-085-090	NYLON RIVET		2
	1-21	★87-055-055	FOOT		3
	1-22	—	CUSHION 12-15-12.5		1
	1-23	—	AMP. CHASSIS		1
	1-24	—	BOTTOM CABINET Ass'y		1
	1-25	★87-055-057	FOOT B		1
	1-26	—	WIRE BINDER		1
	1-27	★82-196-212	HOLDER C-BOX C Ass'y	AD-WX220	1
	1-28	82-155-008	KNOB, PLAY		2
	1-29	82-196-026	KNOB, SLIDE VR	AD-WX220	2
	1-30	★82-109-038	SHEET, SLIDE VR	※	2
	1-31	★82-109-213	SHEET B	※	1
	1-32	—	FIBER 6-25		2
	1-33	★82-196-015	BOTTOM CABINET A	AD-WX220	1
	1-34	—	SHEET A		1
	1-35	—	SHEET FILM		1
	1-36	—	PLATE, RADIATE HEAT		1
	1-37	—	SPEC. PLATE (U only)		1

EXPLODED VIEW-2

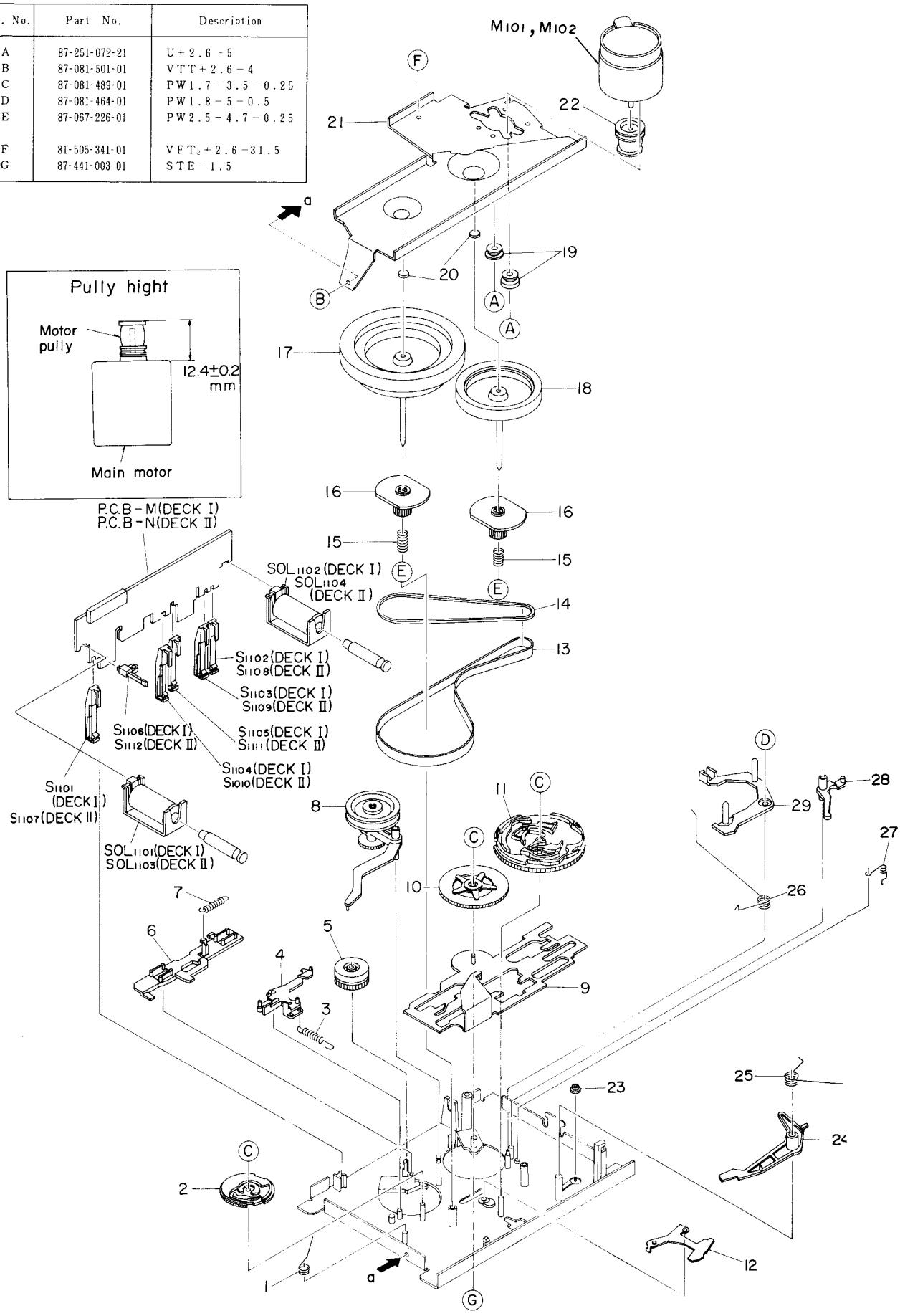
Ref. No.	Part No.	Description
A	87-251-036-21	U + 2 − 8
B	87-351-033-21	VT_1 + 2 − 4
C	87-067-177-01	V + 1.6 − 5.5
D	87-081-504-01	VTT + 2.6 − 10
E	87-067-217-01	VFT_2 + 2 − 6
F	87-081-808-01	PW1.7 − 3.5 − 0.25
G	87-067-105-01	PW3.4 − 8 − 0.5C



Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty	
	2-1	86-513-267	HEAD HOUSING Ass'y		1	
	2-2	★86-517-268	HOLDER, AZIMUTH SCREW		1	
	2-3	86-517-296	AZIMUTH SCREW		2	
	2-4	★86-517-291	C-SPRING, AZIMUTH		2	
	2-5	★86-517-269	HEAD BASE Ass'y		1	
	2-6	86-513-299	GEAR, HEAD HOUSING		1	
	2-7	86-517-273	GEAR, HEAD ROLLING A		1	
	2-8	★86-517-282	T-SPRING, ROLLING		1	
	2-9	★86-517-297	SENSOR LENS		1	
	2-10	—	SHEET, SENSOR LENS		1	
	2-11	★86-517-275	P-SPRING, ACTUATING CHASSIS		1	
	2-12	★87-073-008	STEEL BALL 2.5		1	
	2-13	★86-517-305	ACTUATING CHASSIS R		1	
	2-14	★86-517-308	LEVER MOVEMENT REVERSE Ass'y		1	
	2-15	★86-517-312	E-SPRING, LEVER MOVEMENT		1	
	2-16	★86-517-370	E-SPRING, ACTUATING CHASSIS R		1	
	2-17	★86-517-310	T-SPRING, QUICK LEVER		1	
	2-18	★86-517-258	LEVER, DILECTION		1	
	2-19	86-517-236	STOPPER, REEL PLATFORM		2	
	2-20	★86-513-340	E-SPRING, AUTO BLOCKING		1	
	2-21	★86-517-333	C-SPRING, REEL PLATFORM A		2	
	2-22	86-517-235	REEL PLATFORM		2	
	2-23	86-517-248	PINCH LEVER F Ass'y		1	
	2-24	★86-517-256	LEVER, EJECT		1	
	2-25	★86-517-276	P-SPRING, CASSETTE		1	
	2-26	★86-517-277	T-SPRING, PINCH LEVER F		1	
	2-27	86-517-250	PINCH LEVER R Ass'y		1	
	2-28	—	OUTSERT R Ass'y		1	
	2-29	—	CUSHION, ACTUATING CHASSIS		2	
	2-30	—	SHEET, QUICK		1	
	2-31	★86-517-289	T-SPRING, PINCH LEVER R		1	

EXPLODED VIEW-3

Ref. No.	Part No.	Description
A	87-251-072-21	U + 2.6 - 5
B	87-081-501-01	VTT + 2.6 - 4
C	87-081-489-01	PW1.7 - 3.5 - 0.25
D	87-081-464-01	PW1.8 - 5 - 0.5
E	87-067-226-01	PW2.5 - 4.7 - 0.25
F	81-505-341-01	VFT$_2$ + 2.6 - 31.5
G	87-441-003-01	STE - 1.5



Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty	
	3-1	★86-517-278	T-SPRING, FR CAM		1	
	3-2	86-517-215	GEAR, FR CAM C		1	
	3-3	★86-517-346	E-SPRING, TRIGGER LEVER FR		1	
	3-4	★86-517-257	TRIGGER LEVER FR		1	
	3-5	86-517-238	GEAR, FF		1	
	3-6	★86-517-254	LEVER, SLIDE BRAKE		1	
	3-7	★86-517-284	E-SPRING, SLIDE BRAKE		1	
	3-8	86-517-239	FR PULLEY A Ass'y		1	
	3-9	★86-517-263	SLIDE PLATE R Ass'y		1	
	3-10	86-517-225	GEAR PLAY R Ass'y		1	
	3-11	86-517-336	GEAR MAIN CAM R Ass'y		1	
	3-12	★86-517-306	LEVER QUICK Ass'y		1	
	3-13	86-517-354	MAIN BELT R-2-A		1	
	3-14	86-517-302	BELT FR-2		1	
	3-15	★86-517-323	C-SPRING, FLYWHEEL DC F		2	
	3-16	86-517-317	GEAR, FLYWHEEL DC F		2	
	3-17	86-517-314	FLYWHEEL DC F Ass'y		1	
	3-18	86-517-318	FLYWHEEL DC R Ass'y		1	
	3-19	★86-513-441	COLLAR		2	
	3-20	★86-517-348	FLYWHEEL BEARING		2	
	3-21	—	MOTOR HOLDER DC		1	
	3-22	86-517-360	MOTOR PULLEY R-2		1	
	3-23	★86-517-345	COLLAR, SLIDE PLATE R		1	
	3-24	★86-517-252	TRIGGER LEVER PLAY-A		1	
	3-25	★86-517-280	T-SPRING, TRIGGER LEVER PLAY		1	
	3-26	★86-517-332	T-SPRING, LEVER SWITCH		1	
	3-27	★86-517-281	T-SPRING, SLIDE LEVER R		1	
	3-28	★86-517-253	TRIGGER LEVER PLAY-B		1	
	3-29	★86-517-255	SWITCH LEVER		1	

■ACCESSORIES/PACKAGE LIST

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty	
	1	★82-109-905	INSTRUCTION BOOKLET	※	1	
	2	★87-032-845	SIEMENS PLUG (HB only)		1	
	3	★87-034-978	CONNECTION CORD, CW-254BSK		2	

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