S/M Code No. 85-034
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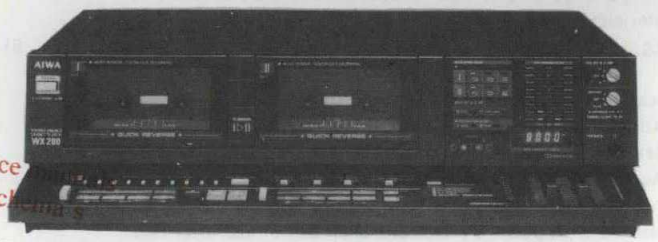
AIWA®
SERVICE MANUAL

STEREO DOUBLE CASSETTE DECK

MODEL NO.
AD-WX200
WX20



TYPE. HB, CB, EB, KB, GB, ZB(AD-WX200), UB(AD-WX20)

SPECIFICATIONS

Type	Stereo cassette tape deck
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	73 dB (METAL tape DOLBY C NR ON)
Wow and flutter	According to DIN 45 500 0.18% 0.06% (WRMS)
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 × 2
Heads	Playback head: SH head Record/playback head: DX head Erase head: Double-gap ferrite head

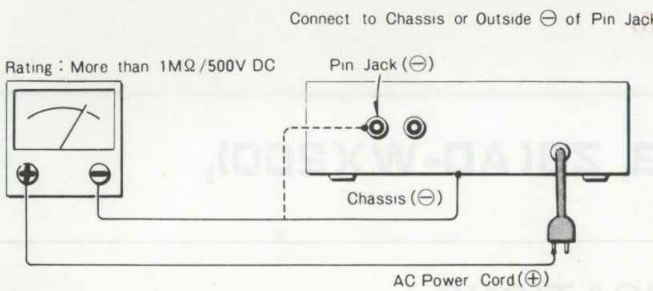
Inputs	LINE IN maximum input sensitivity: 50 mV (over 50 kΩ)
Outputs	LINE OUT standard output level: 380 mV (0 VU); suitable load impedance: over 50 kΩ; Headphones: 8 Ω
Dimensions	420(W) × 110(H) × 317(D) mm
Weight	5.6 kg
Accessories	Stereo pin cord (2)

- 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.

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 space distance in an a.c. primary circuit as well as soldering.
   2) Wiring and holding of lead-wires with wire-clips and binders
   3) Materials of lead-wires
      * e.g.; For UL models, lead-wires to be used shall be approved or accepted by the UL.
   4) Location of all kinds of insulators
   5) Setting of voltage selector switch
      * Set the Voltage Selector Switch to 240V, 220V, or 120V, According to your Local Voltage.
5. **After repaired, the insulation resistance or leakage current shall be measured with 500 ± 5V D.C and shall be not less than 1MΩ.**

   Measuring Point



6. **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 not to run over and be dispersed. Note should be taken of the metal fitting for the capstan and rotating portions of the idlers and pinch roller, especially.
   4) E-rings and poly slider washers shall be replaced with new ones, if once those have been removed. — No re-utilization due to unreliability.
   5) Regular spare-parts shall always be used for repair, because using irregular parts and tampering with the products shall cause deterioration, mulfunction and damage.

·ONE-POINT ADVICE

To remove the mechanism easily, push the illustrated position by which the azimuth adjusting screw may be caught.

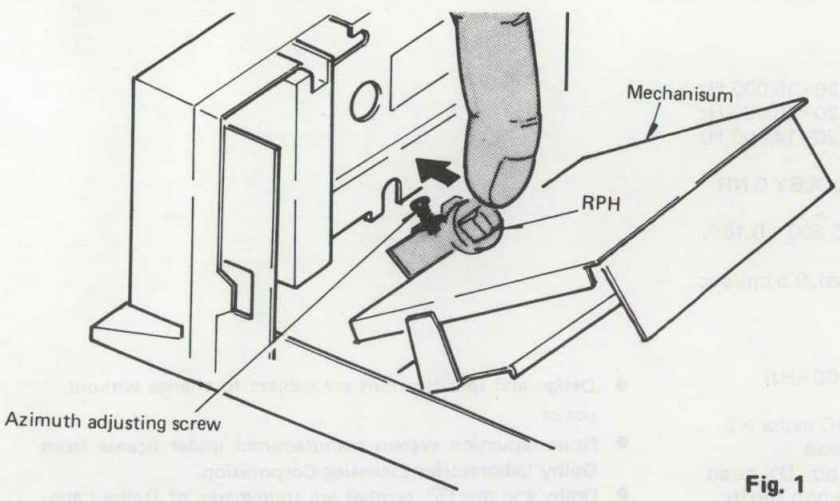


Fig. 1

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,2SA1587
	89-206-051	TRANSISTOR,2SB605K L
	89-206-415	TRANSISTOR,2SB641,S
	89-412-763	TRANSISTOR,2SC12760P
	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	* 82-196-603	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	* 82-196-603	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
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)
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 ===
	82-020-132	DOLBY UNIT HA12058J (W/PCB-I)
		=== SWITCH-2 CIRCUIT BOARD SECTION ===
PCB-J	*	SWITCH-2 CIRCUIT BOARD
S1	82-109-613	PUSH SW,SPH 22ZK (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
		=== 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 MMA682LW (DECK1)
M102	87-045-235	MOTOR MMA682LW (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

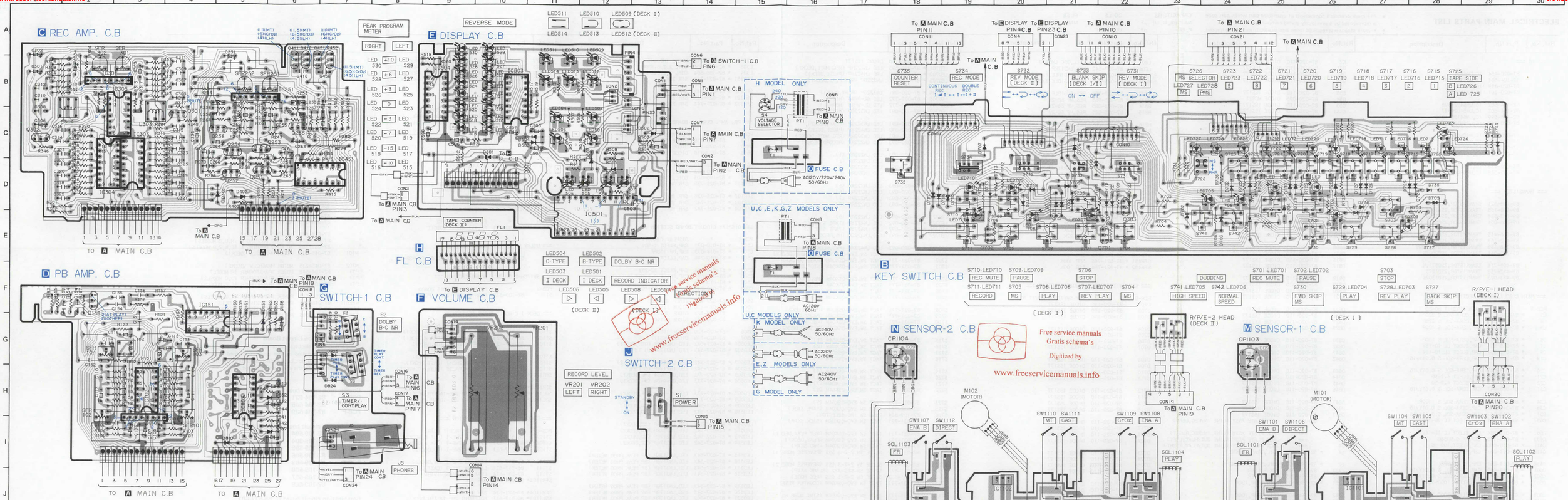
PCB-B	82-109-604
PCB-C	82-109-604
PCB-D	82-109-605
PCB-E	82-109-606
PCB-F	82-109-603
PCB-G	82-109-608
PCB-H	82-109-607
PCB-J	82-109-609

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.

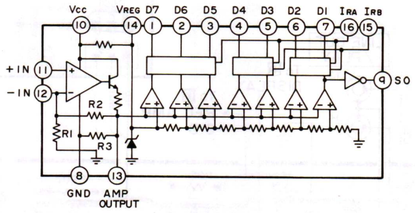


(1) ■ Earth pattern ■ Others pattern

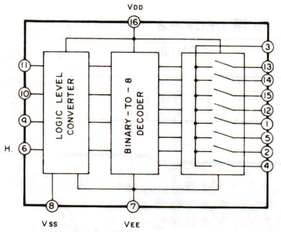
(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals. An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.

IC BLOCK DIAGRAM (AD-WX200, WX20)

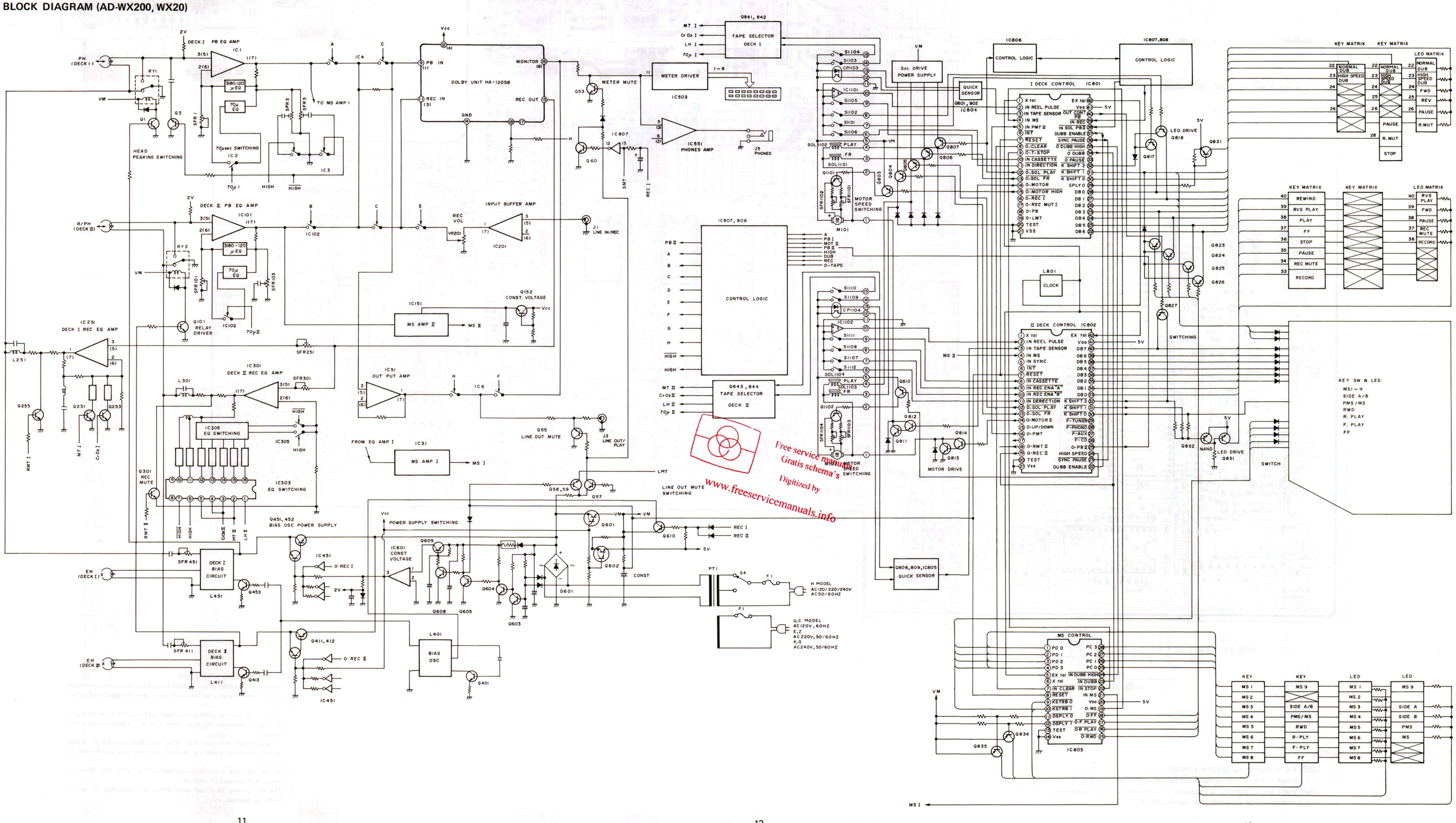
IR2E19

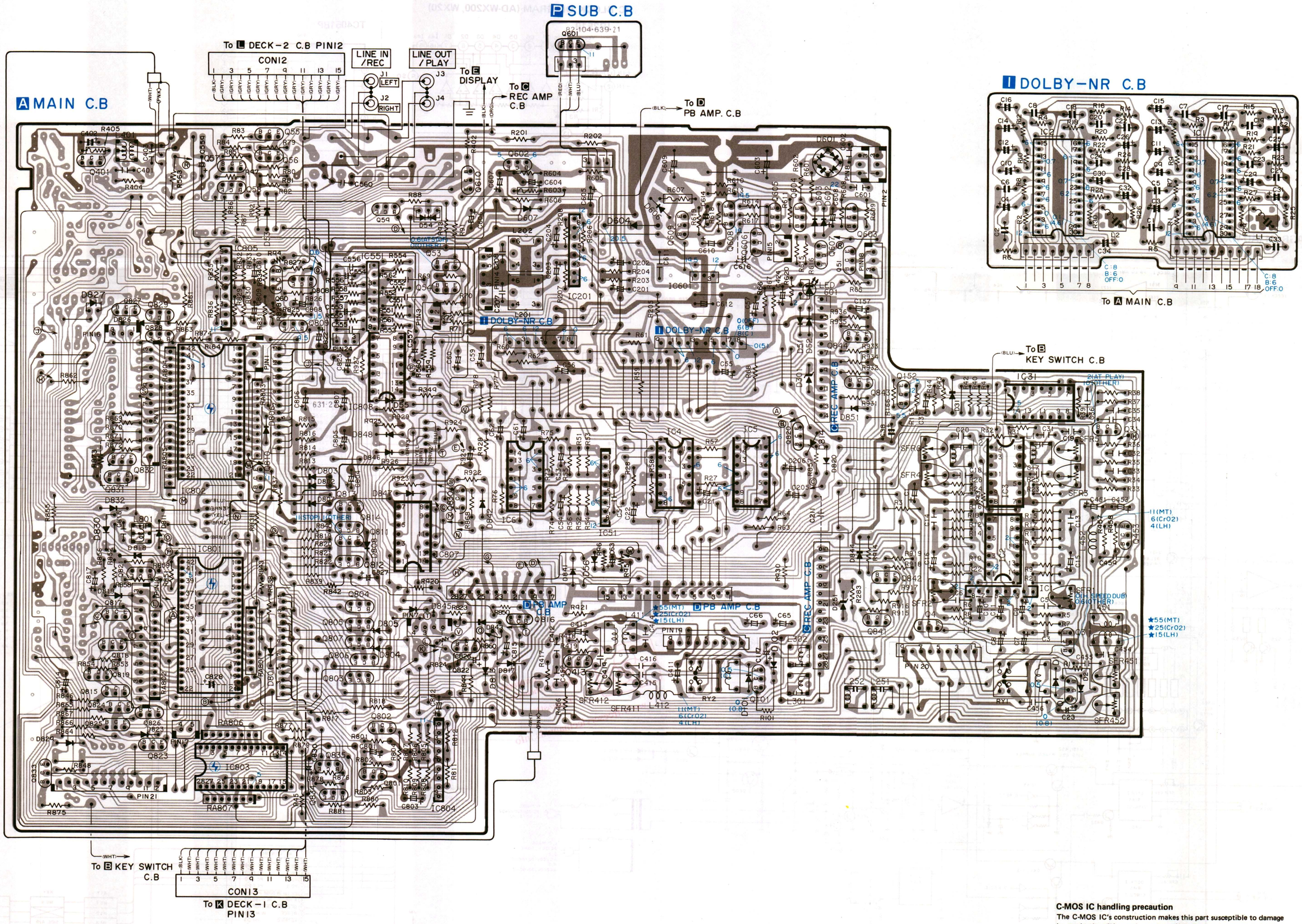


TC4051BP



BLOCK DIAGRAM (AD-WX200, WX20)





NOTES

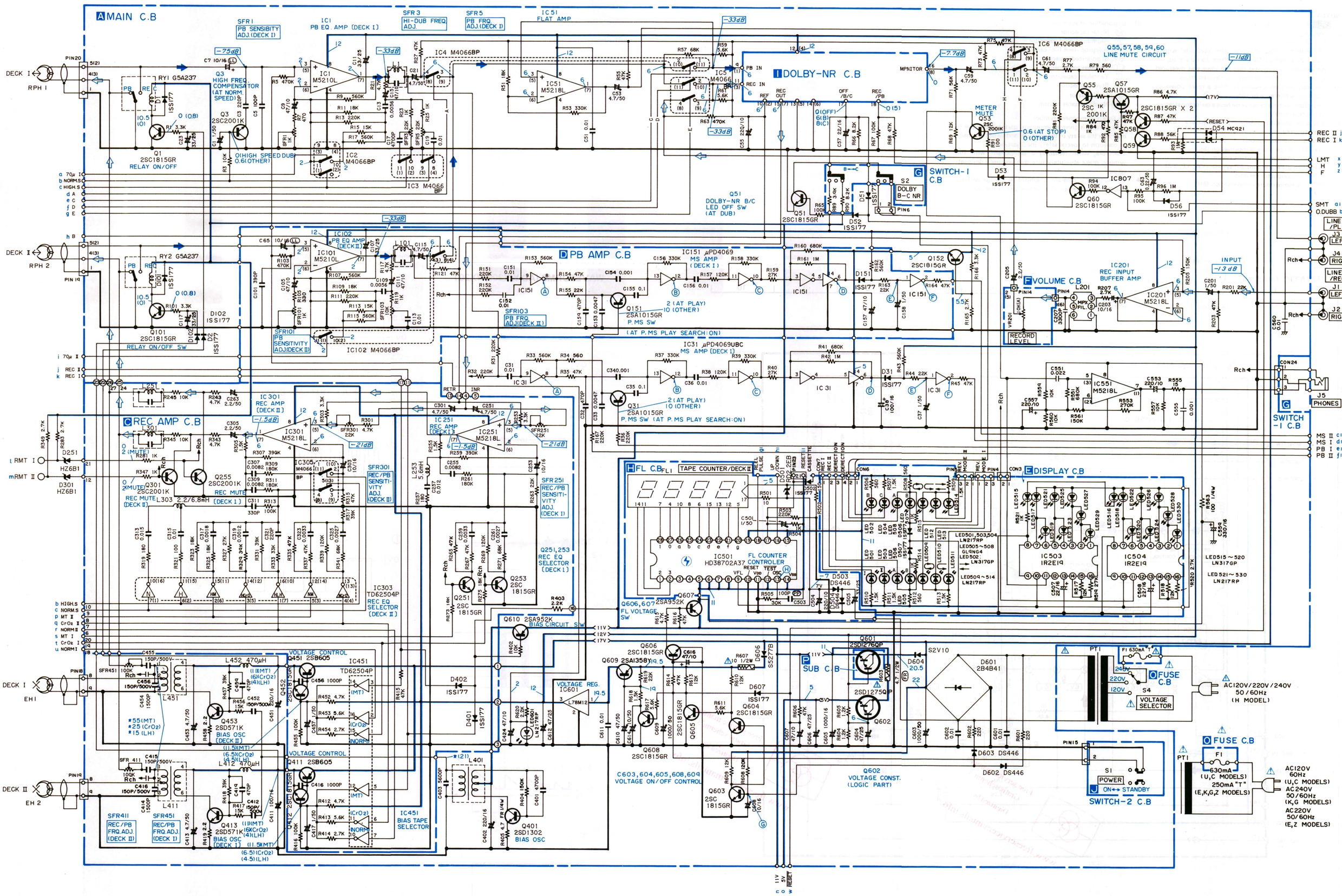
(1) ■ Earth pattern ■ Others pattern

(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.

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 (ϕ).



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 (✱).

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

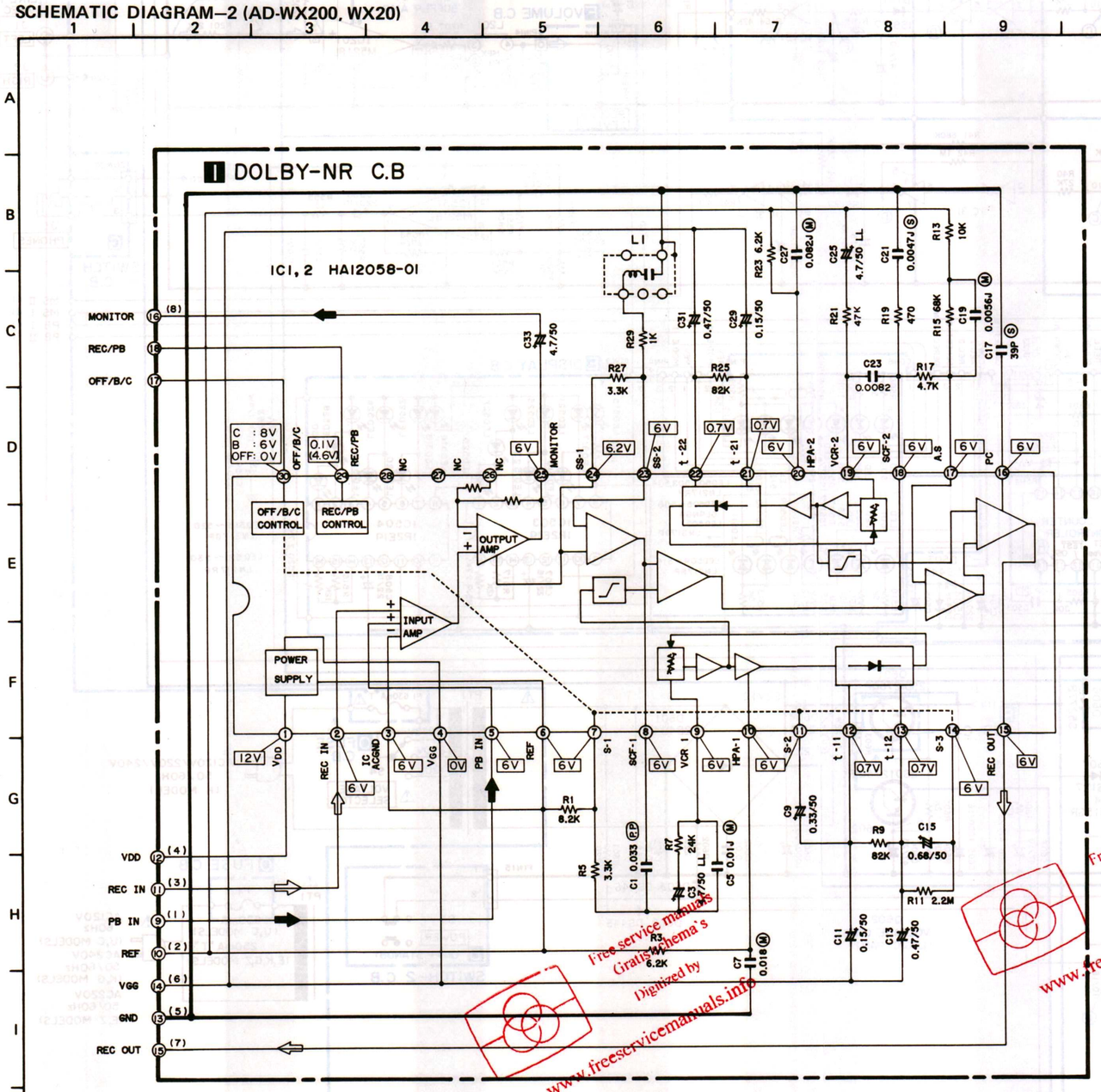
NOTES:

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

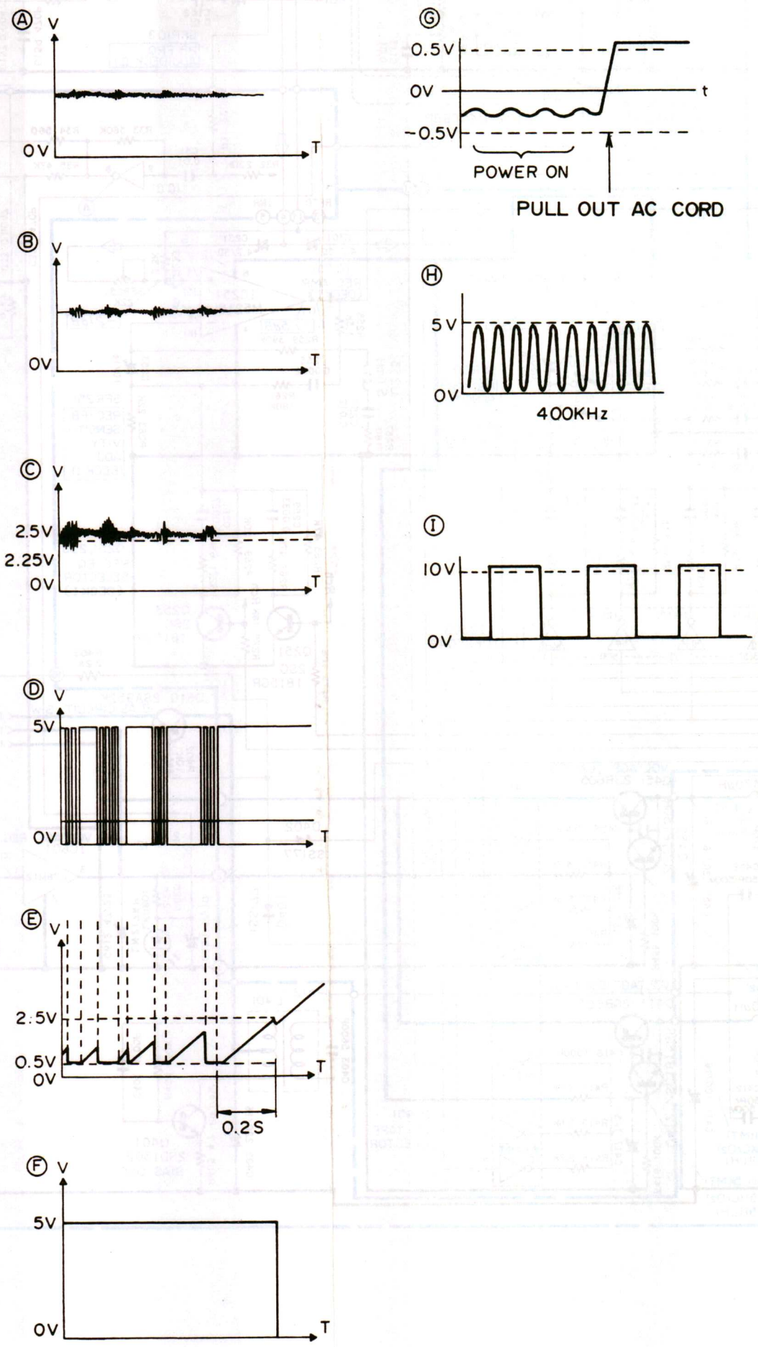
⚠ Safety component symbol
This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications.
Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

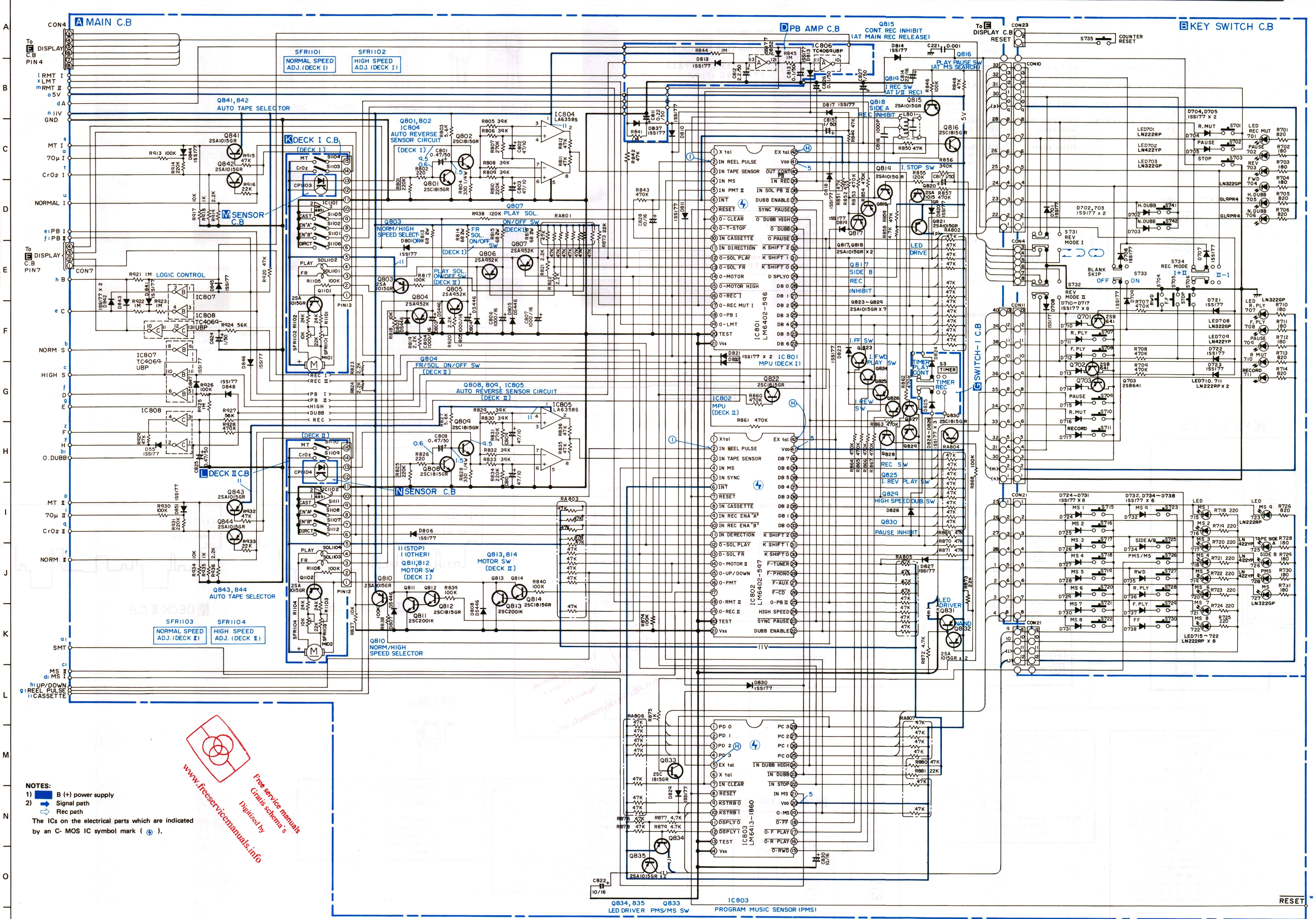
● This schematic diagram is subject to change without notice in the interests of improved performance.

SCHEMATIC DIAGRAM–2 (AD-WX200, WX20)



WAVEFORMS (AD-WX200,WX20)



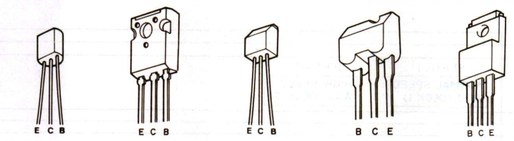

A MAIN C.B
D PB AMP C.B
B KEY SWITCH C.B
K DECK I C.B
L DECK II C.B
M SENSOR C.B
N SENSOR C.B
G SWITCH-I C.B
To E DISPLAY C.B PIN 4
To E DISPLAY C.B PIN 7
To E DISPLAY C.B RESET
SFR1101 NORMAL SPEED ADJ. (DECK I)
SFR1102 HIGH SPEED ADJ. (DECK I)
SFR1103 NORMAL SPEED ADJ. (DECK II)
SFR1104 HIGH SPEED ADJ. (DECK II)
Q841, 842 AUTO TAPE SELECTOR
Q843, 844 AUTO TAPE SELECTOR
Q801, 802 IC804 AUTO REVERSE SENSOR CIRCUIT (DECK I)
Q808, 809, IC805 AUTO REVERSE SENSOR CIRCUIT (DECK II)
Q803 NORM/HIGH SPEED SELECTOR
Q810 NORM/HIGH SPEED SELECTOR
Q804 FR/SOL. ON/OFF SW (DECK I)
Q811, 812 MOTOR SW (DECK I)
Q813, 814 MOTOR SW (DECK II)
Q815 CONT. REC INHIBIT (AT MAIN REC RELEASE)
IC801 LM6402-546 MPU (DECK I)
IC802 LM6402-547 MPU (DECK II)
IC803 LM6413-1860
IC806 TC4069UBP
IC807 TC4069UBP
IC808 TC4069UBP
LOGIC CONTROL
Q834, 835 LED DRIVER
Q833 PMS/MS SW
IC803 PROGRAM MUSIC SENSOR (PMS)
RESET

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 ( ).

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

Practical Service Figure

Wow and flutter:	FWD. side Less than 0.08% REV. side Less than 0.085%	Playback noise:	Less than 2.0mV (CrO_2, DOLBY B NR ON) Less than 3.0mV (NORMAL, DOLBY NR OFF)	Channel separation:	More than 30dB
Pinch roller pressure:	290±70g (2.8±0.7N) (DECK I, II)			Erasing ratio: (125Hz)	More than 55dB (DECK II)
Take up torque:	30~60g-cm (2.9~5.9mN·m) (DECK I, II)	PB/REC Output: (0VU)	380mV±2dB (DECK II)	Test tape:	・TTA-119MX (METAL) ・TTA-119G (CrO_2) ・TTA-119J (NORMAL)
F. FWD torque:	130±30g-cm (12.7±2.9mN·m) (DECK I, II)	PB/REC Distortion: (400Hz, 0VU)	METAL: Less than 3.0% (DECK II) CrO_2: Less than 2.5% (DECK 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)	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)		
Playback output: (TTA-161)	580mV±1dB (LINE)				
Bias frequency:	100kHz (DECK II)				



2SA952
2SA1015 2SA1358 2SB605 2SB641 2SD1276

ADJUSTMENT (AD-WX200, WX20)

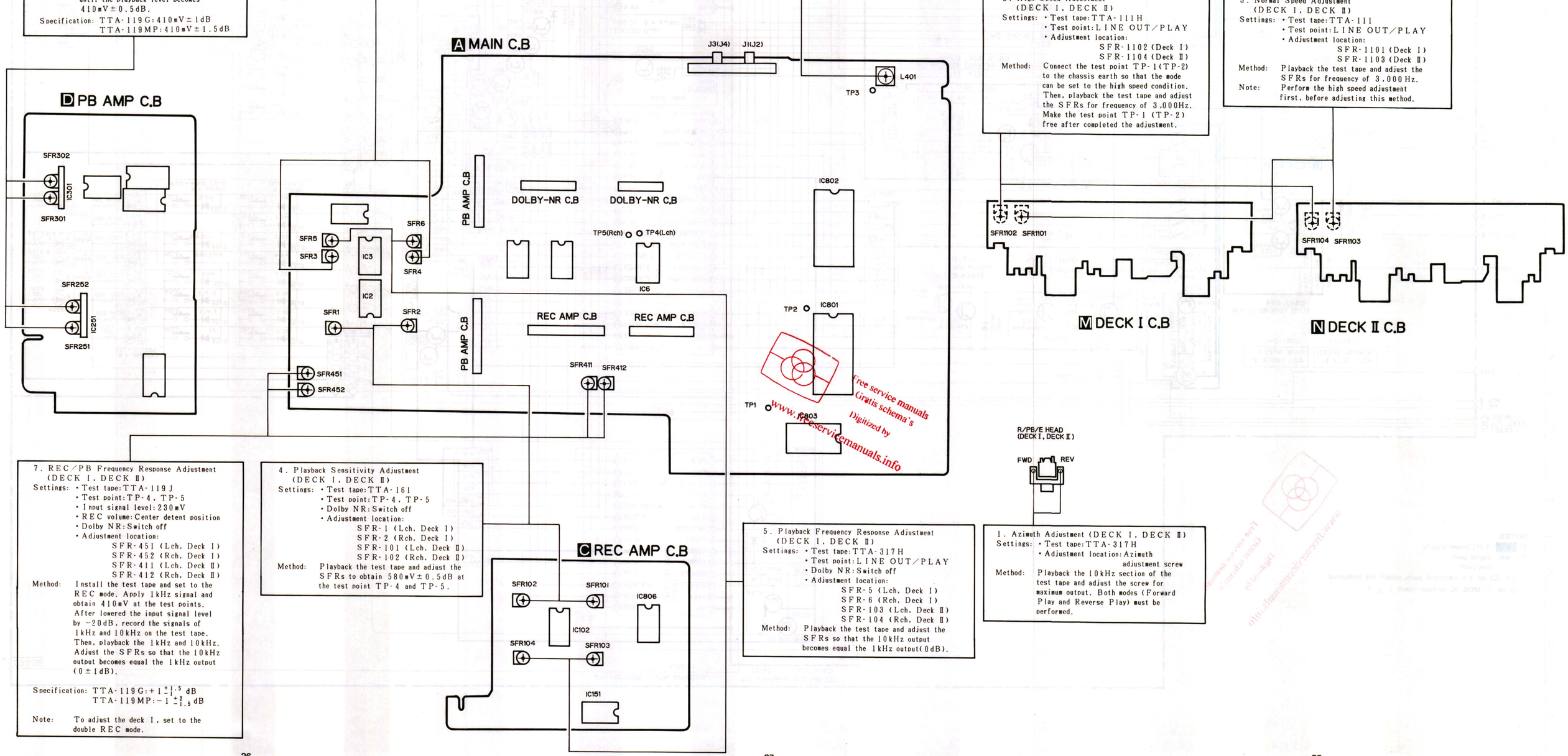
8. REC/PB Sensitivity Adjustment (DECK I, DECK II)
Settings: ・Test tape: TTA-119J
・Test point: TP-4, TP-5
・Dolby NR: Switch off
・Adjustment location:
SFR-251 (Lch, Deck I)
SFR-252 (Rch, Deck I)
SFR-301 (Lch, Deck II)
SFR-302 (Rch, Deck II)
Method: Set to the REC mode. Apply 1kHz signal so as to obtain 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.

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.



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.

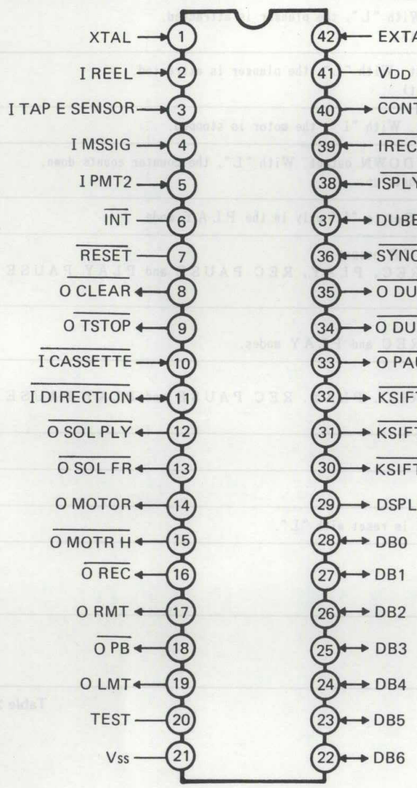
5. Playback Frequency Response Adjustment (DECK I, DECK II)
Settings: ・Test tape: TTA-317H
・Test point: LINE OUT/PLAY
・Dolby NR: Switch off
・Adjustment location:
SFR-5 (Lch, Deck I)
SFR-6 (Rch, Deck I)
SFR-103 (Lch, Deck II)
SFR-104 (Rch, Deck II)
Method: Playback the test tape and adjust the SFRs so 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. 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	

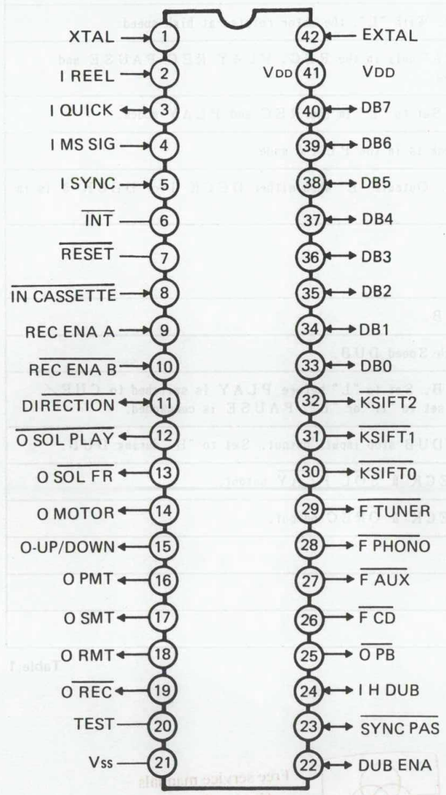
Table 1

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

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

2. IC,LM6402-597

2-1. Terminal name DECK II



Signal flow in the direction indicated by the arrow.

Fig.2

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. KSIFT0, KSIFT1, KSIFT2 — 4ms — 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.			

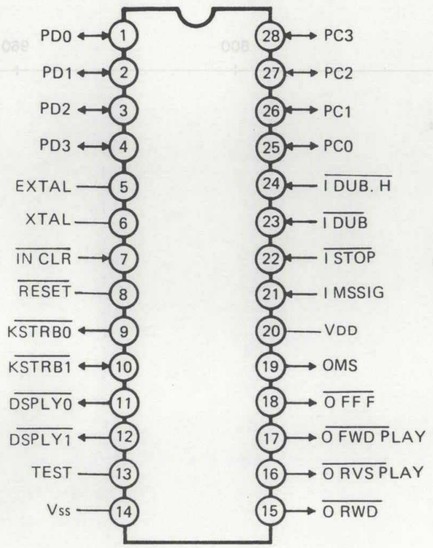
Pin No.	Pin Symbol	Description
11	$\overline{\text{I DIRECT.}}$	Head direction detection input/output. With "L", the head faces FWD SIDE.
12	$\overline{\text{O-SOL PLAY}}$	PLAY plunger output. With "L", the plunger is attracted. (Refer to the timing chart)
13	$\overline{\text{O SOL FR}}$	FF/RWD plunger 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

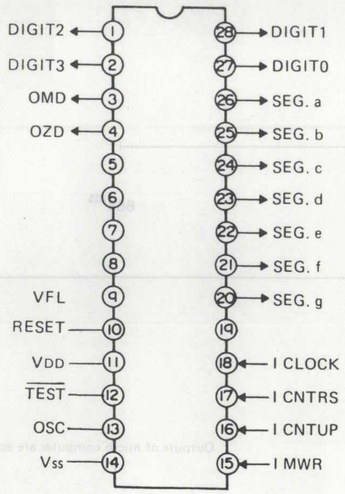
(IC,LM 6413-598)



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. KSTRB0 / KSTRB1 / DSPLY0 / DSPLY1 — 4ms — Waveform at pins — LED ON DUTY KSTRB2 20% KSTRB3 70%			
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	$\overline{\text{I STOP}}$	With "L", this IC detects that DECK I reel disks are stopped.			
23	$\overline{\text{I DUB}}$	Set to "L" during DUB.			
24	$\overline{\text{I DUB. H}}$	Set to "L" during High-Speed DUB.			

Table 3

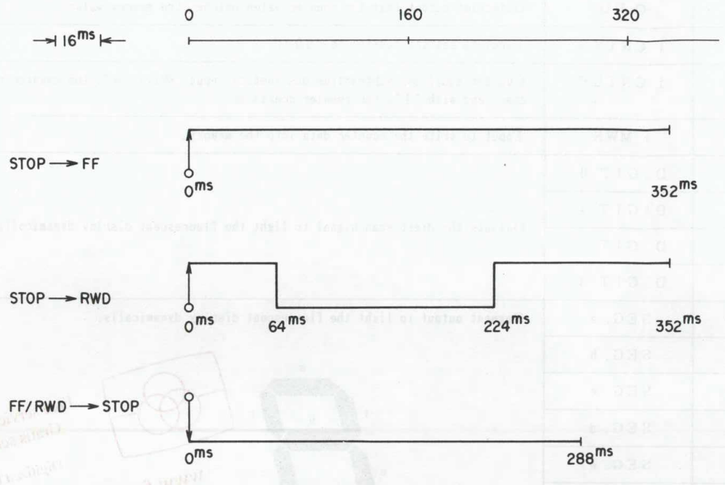
3-3. Pin function (HD38702A37)

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	V_{DD}	V_{DD} pin
12	$\overline{\text{TEST}}$	
13	OSC	Osc pin
14	Vss	Vss pin

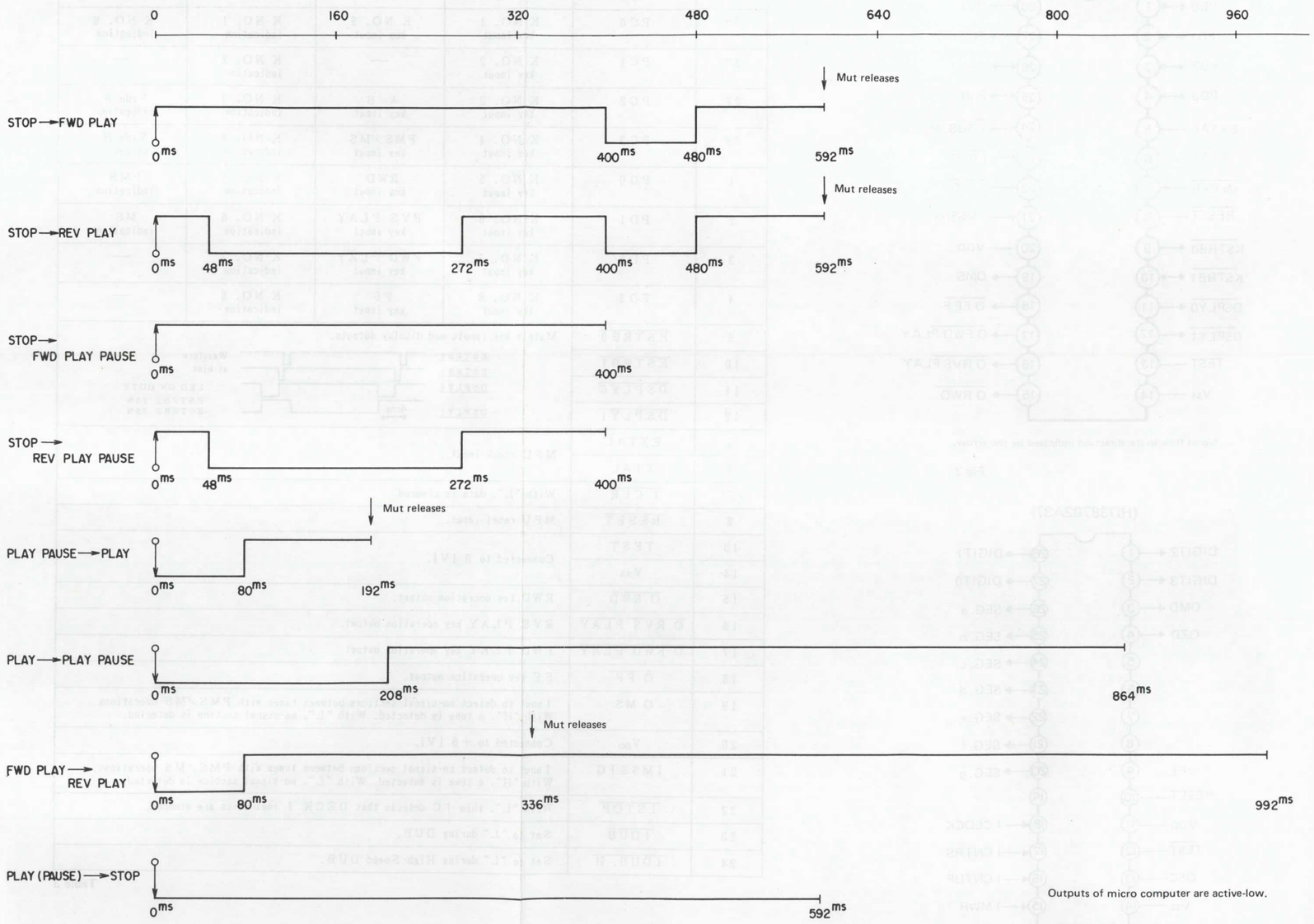
Table 4

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

TIMING CHART (AD-WX200, WX20)



Outputs of micro computer are active-low.

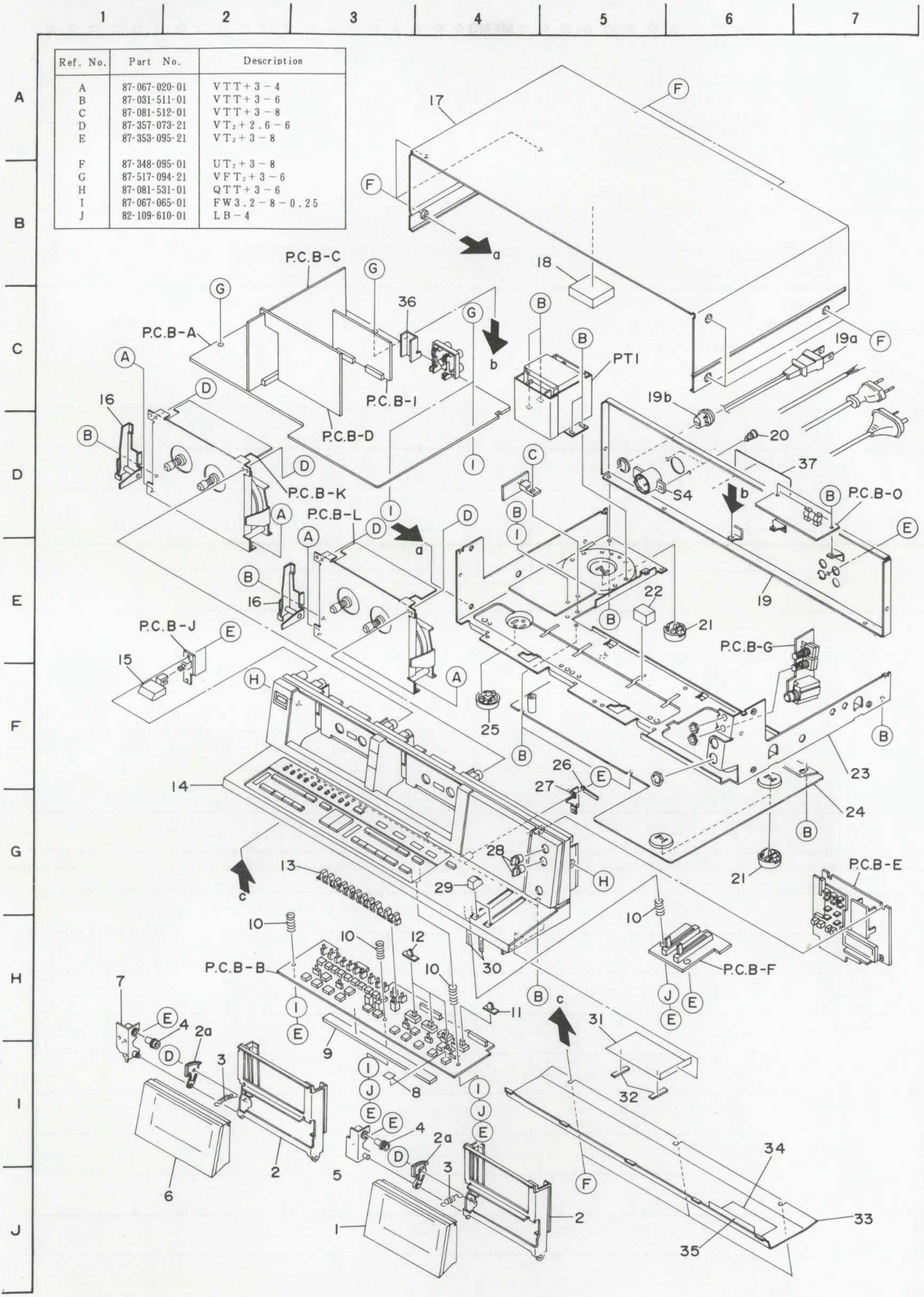


Outputs of micro computer are active-low.

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



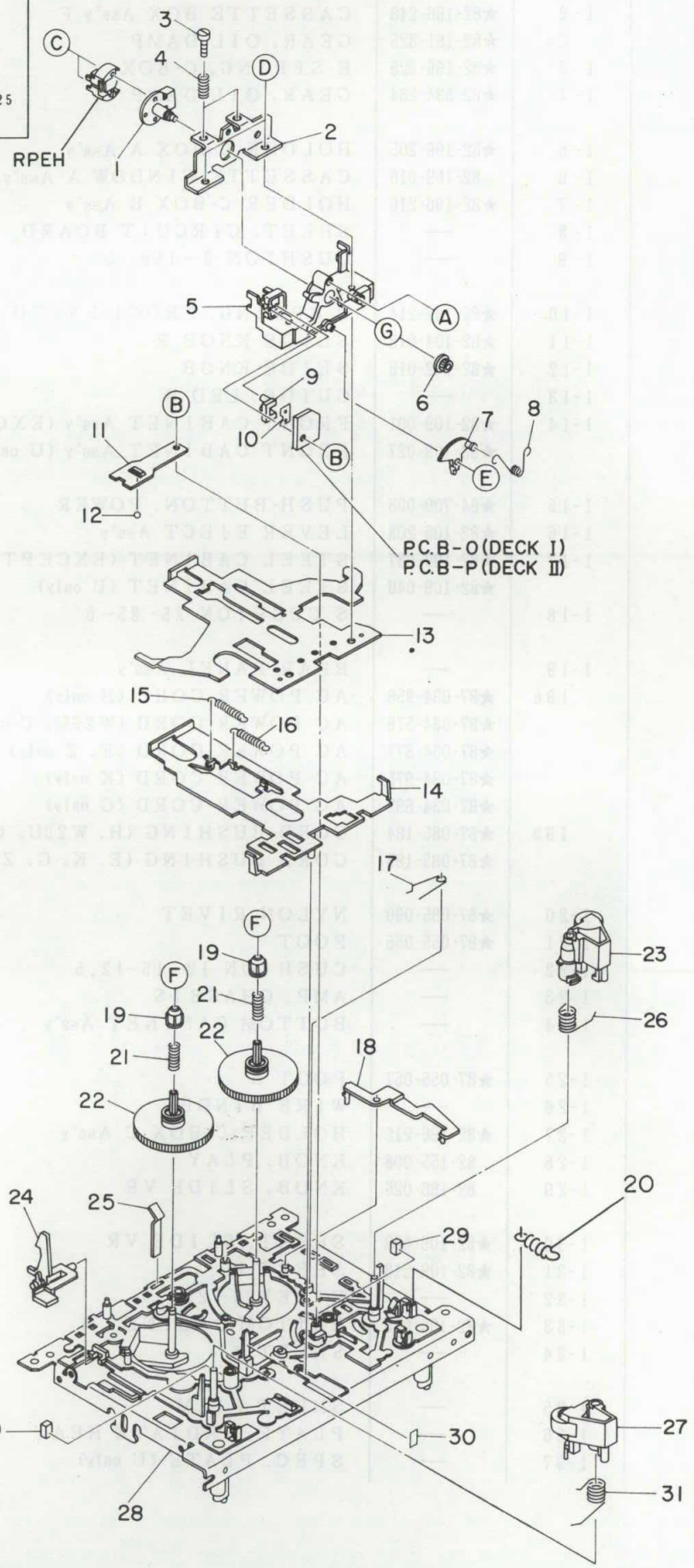
MECHANICAL PARTS LIST

- ※ 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

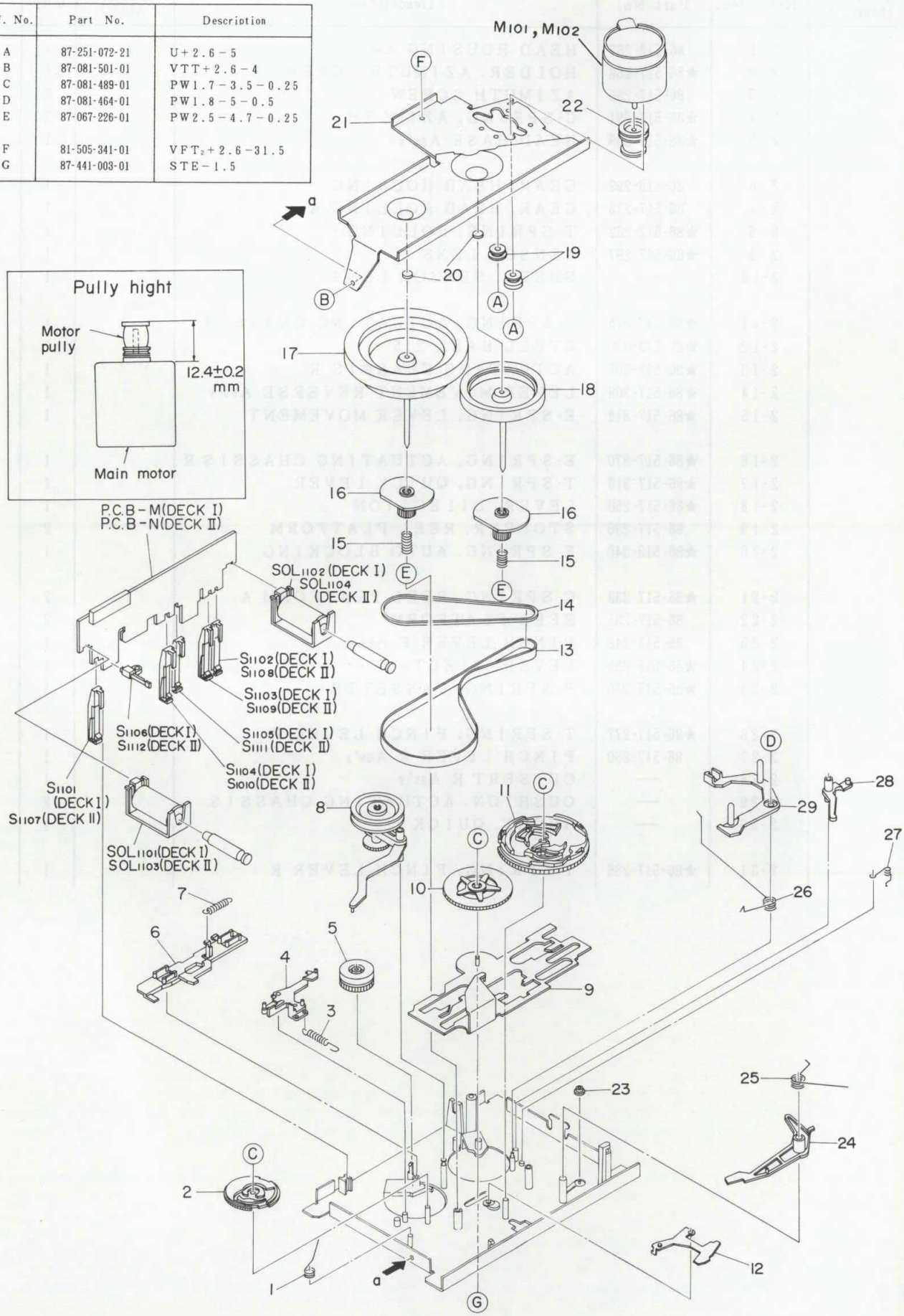
Ref. No.	Part No.	Description
A	87-251-036-21	U + 2 − 8
B	87-351-033-21	VT, + 2 − 4
C	87-067-177-01	V + 1.6 − 5.5
D	87-081-504-01	VTT + 2.6 − 10
E	87-067-217-01	VFT$_2$ + 2 − 6
F	87-081-808-01	PW1.7 − 3.5 − 0.25
G	87-067-105-01	PW3.4 − 8 − 0.5C



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	

AIWA Co., Ltd. Tokyo Japan