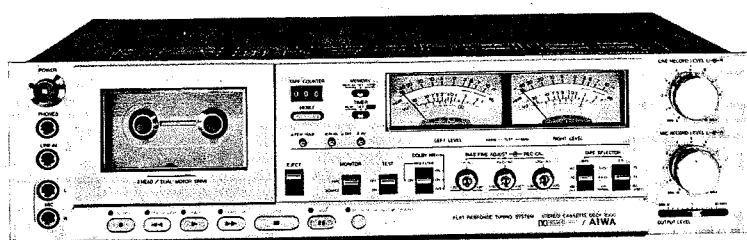


STEREO CASSETTE DECK WITH DOLBY NR SYSTEM

MODEL NO. AD-6900E, K, G

AIWA®

[SERVICE MANUAL]



DATE OF ISSUE 9/1978

SPECIFICATIONS

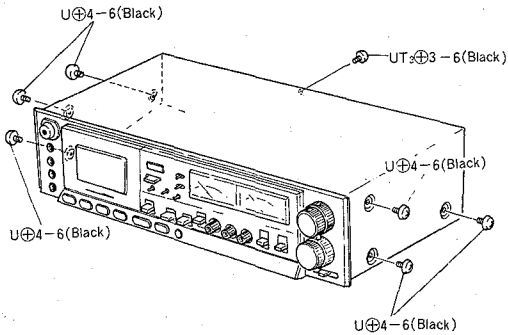
Semiconductors:	13 IC's, 171 transistors, 82 diodes, 12 FET's & 6 LED's	Frequency response:	LH type, 20~16 kHz 25~14 kHz ($+2$ -3 dB)
Power source:	AC 110~120V/220V/240V (E model) AC 120V/240V (K, G model) (switchable) 50/60 Hz, 50Hz		Fe-Cr tape, 20~20 kHz 25~18 kHz ($+2$ -3 dB)
Power consumption:	26W		CrO ₂ tape, 20~19 kHz 25~17 kHz ($+2$ -3 dB)
Dimensions:	450(W) x 120(H) x 327(D) mm		
Weight:	9.8 kg	Motor:	38 pulse FG servo motor (for capstan) DC servo motor
Track system:	4-track 2-channel stereo	Head:	V-cut combination ferrite head (for Rec./Pb) Double cap ferrite head (for Erasure)
Tape speed:	4.76 cm/sec. $\pm$ 0.5%	Input:	MIC; Max. input sensitivity 0.25 mV (200 Ω ~10 k Ω suitable)
Wow & flutter:	Less than 0.04% (WRMS) at Pb		LINE IN; Max. input sensitivity 75 mV (More than 50 k Ω)
Automatic stop system:	Full auto-stop	Output:	DIN; Max. input sensitivity 0.25 mV (50 k Ω)
Automatic shut-off action time:	2 $\pm$ 0.5 sec.		LINE OUT; Standard output level 0.41V (0 VU) Optimum load impedance More than 50 k Ω
Pinch roller pressure:	580 $+70$ -40 g		DIN; Standard output level 0.41 V (0 VU) Optimum load impedance More than 50 k Ω
Take-up torque:	50 $\pm$ 10 g-cm		PHONES; 8 Ω ~150 Ω
FF & rewind torque:	155 $\pm$ 25 g-cm		
FF & rewind time:	65 $\pm$ 5 sec. (w/c-60 cassette)		
Unattended recording acting time:	3 sec.		
Playback output:	0.58 $\pm$ 0.06 V (LINE) (TTA-161)		
Playback noise:	Less than 3.5 mV (LH, DOLBY OFF) Less than 1.0 mV (Fe-Cr, CrO ₂ , DOLBY ON)		
Rec./Pb output:	0 VU $\pm$ 1.0 dB (LINE)		
Rec./Pb distortion:	Less than 1.5% (LH) Less than 1.0% (Fe-Cr) Less than 1.5% (CrO ₂)		
Rec./Pb S/N:	More than 40/45 dB (LH, DOLBY OFF/ON) More than 43/46 dB (Fe-Cr, CrO ₂ , DOLBY OFF/ON)		
Channel separation:	More than 30 dB		
Cross talk:	More than 60 dB		
Erasing ratio:	More than 60 dB		
VU meter display error:	0 VU $\pm$ 0.5 dB		
Peak meter display error:	(0 VU +7 dB) +7 dB $\pm$ 1 dB (0 VU -10 dB) -10 dB $\pm$ 1 dB (0 VU -20 dB) -20 dB $\pm$ 2 dB		
Bias frequency:	105 kHz		

- Specifications and external appearance are subject to change without notice due to product improvement.
- Dolby Noise Reduction System is licensed from Dolby Laboratories Incorporated.
- The name "Dolby" and the "Double D" symbol are trademarks of Dolby Laboratories Incorporated.

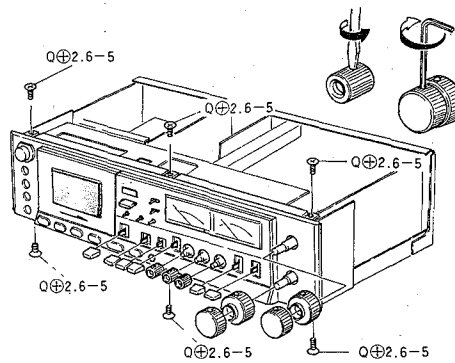
DISASSEMBLY INSTRUCTIONS

To Remove Top Panel

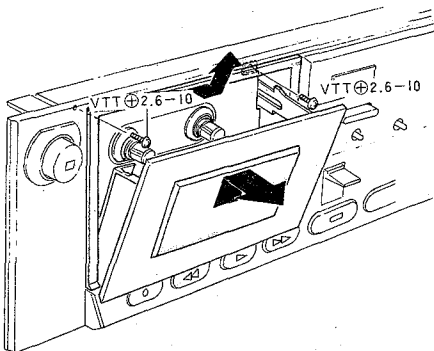
- 1) Remove 7 screws.

**To Remove Front Panel**

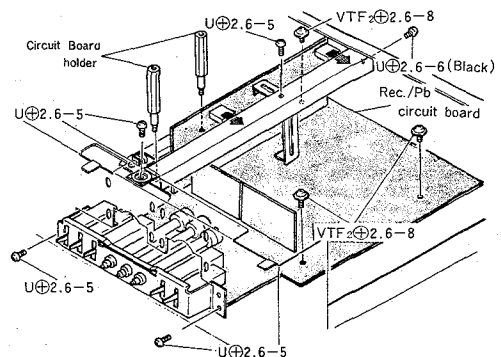
- 1) Pull out the 13 knobs.
- 2) Remove 6 screws.

**To Remove Cassette Lid, Blinder and Cassette Plate**

- 1) Remove the cassette lid.
- 2) Remove the blinder.
- 3) Remove 2 screws, securing the cassette plate in place.

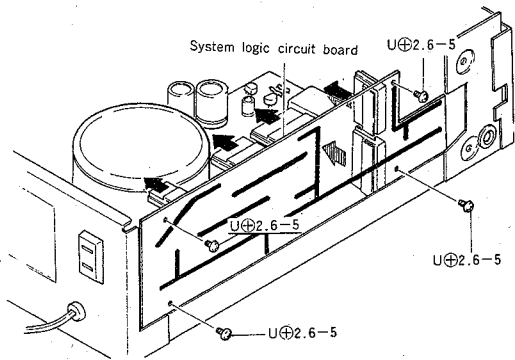
**To Remove REC/PB Circuit Board**

- 1) Remove 2 circuit board holders.
- 2) Disconnect 2 connectors.
- 3) Remove 8 screws.



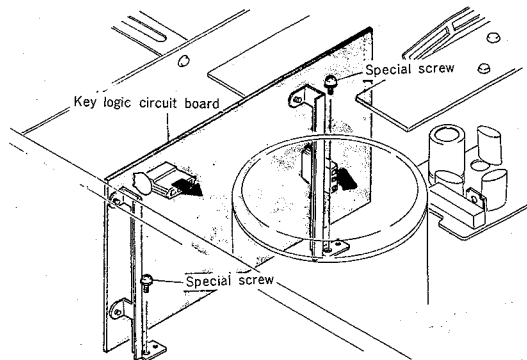
To Remove System Logic Circuit Board

- 1) Remove 4 screws.



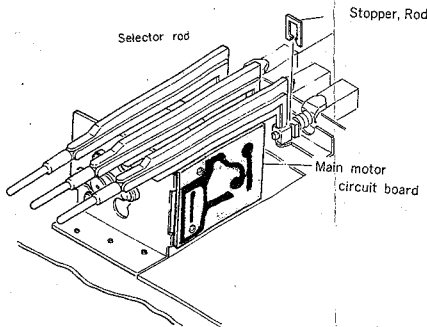
To Remove Key Logic Circuit Board

- 1) Disconnect 2 connectors.
- 2) Remove 2 screws.

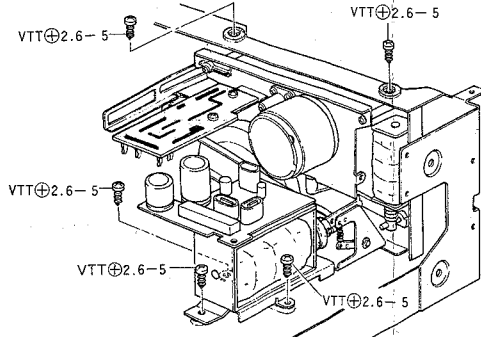
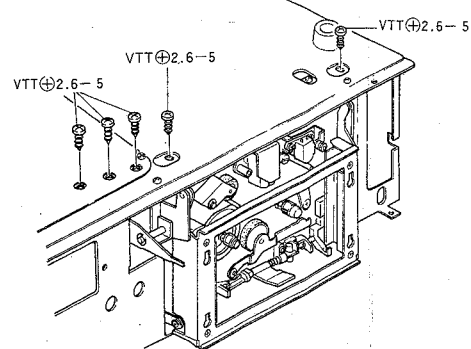


To Remove Mechanism

- 1) Remove 2 screws, securing the player shync circuit board in place.
- 2) Remove 4 screws, securing the power transformer in place.
- 3) Remove 2 screws, securing the power switch holder in place.
- 4) Remove the counter belt and main belt.
- 5) Remove the rod stoppers and take out the selector rods.

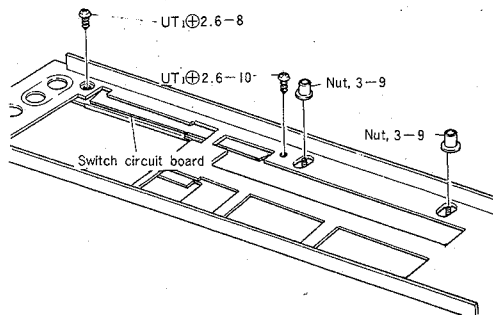


- 6) Remove 10 screws.



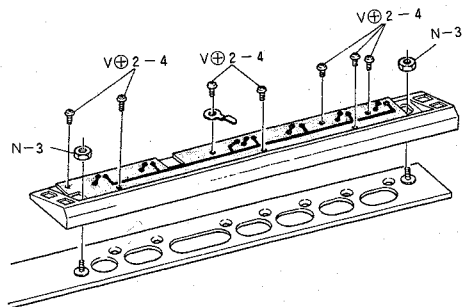
To Remove Front Panel B Ass'y

- 1) Remove 2 nuts.
- 2) Remove 2 screws.



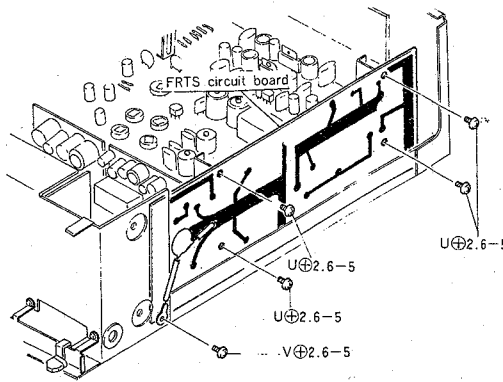
To Remove Switch Board Ass'y and Switch Circuit Board

- 1) Remove 2 nuts.
- 2) Remove 7 screws.



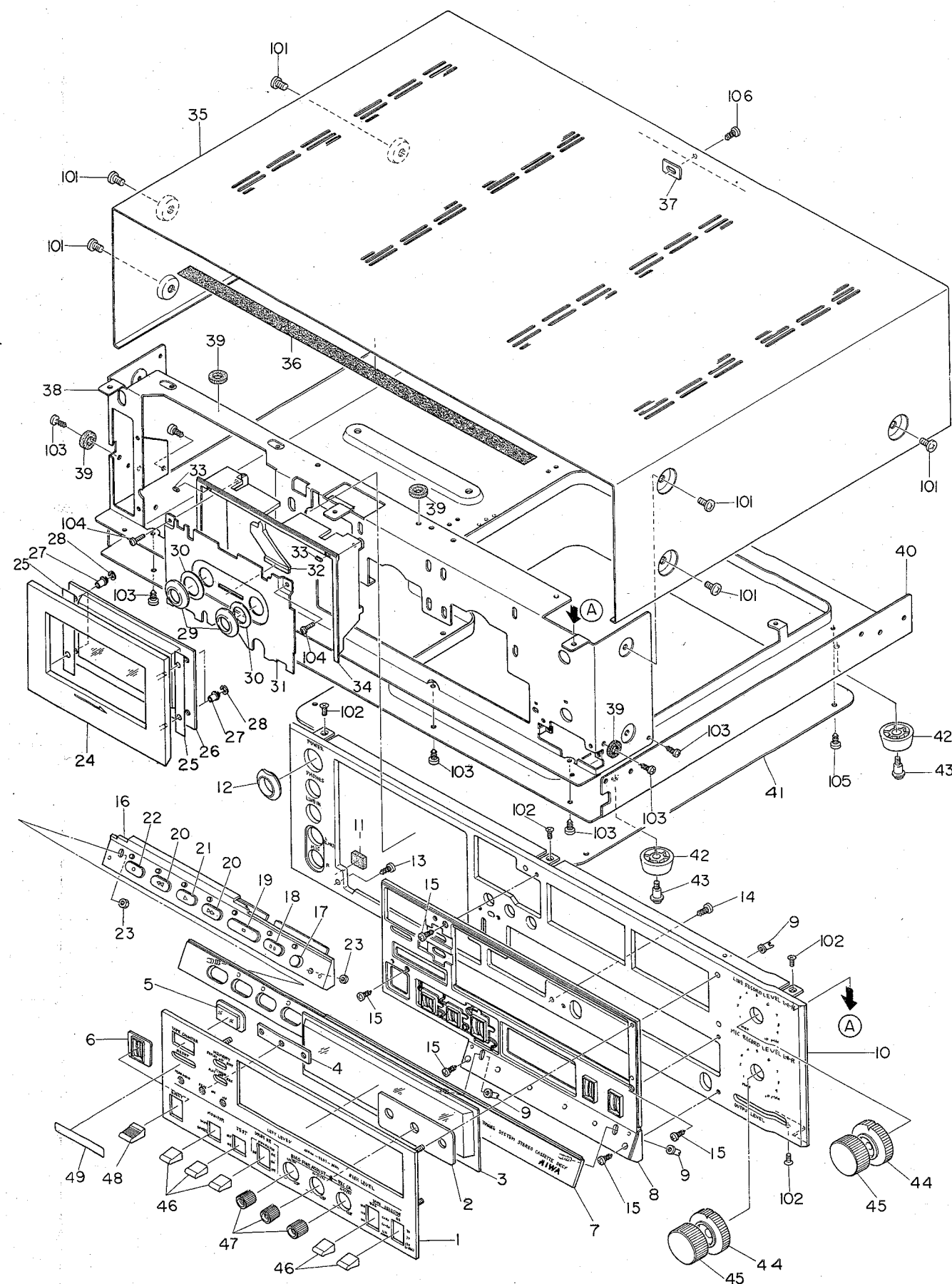
To Remove FRTS Circuit Board

- 1) Remove 5 screws.



☆☆☆☆☆☆☆☆☆☆ MEMO ☆☆☆☆☆☆☆☆☆

EXPLODED VIEW-1



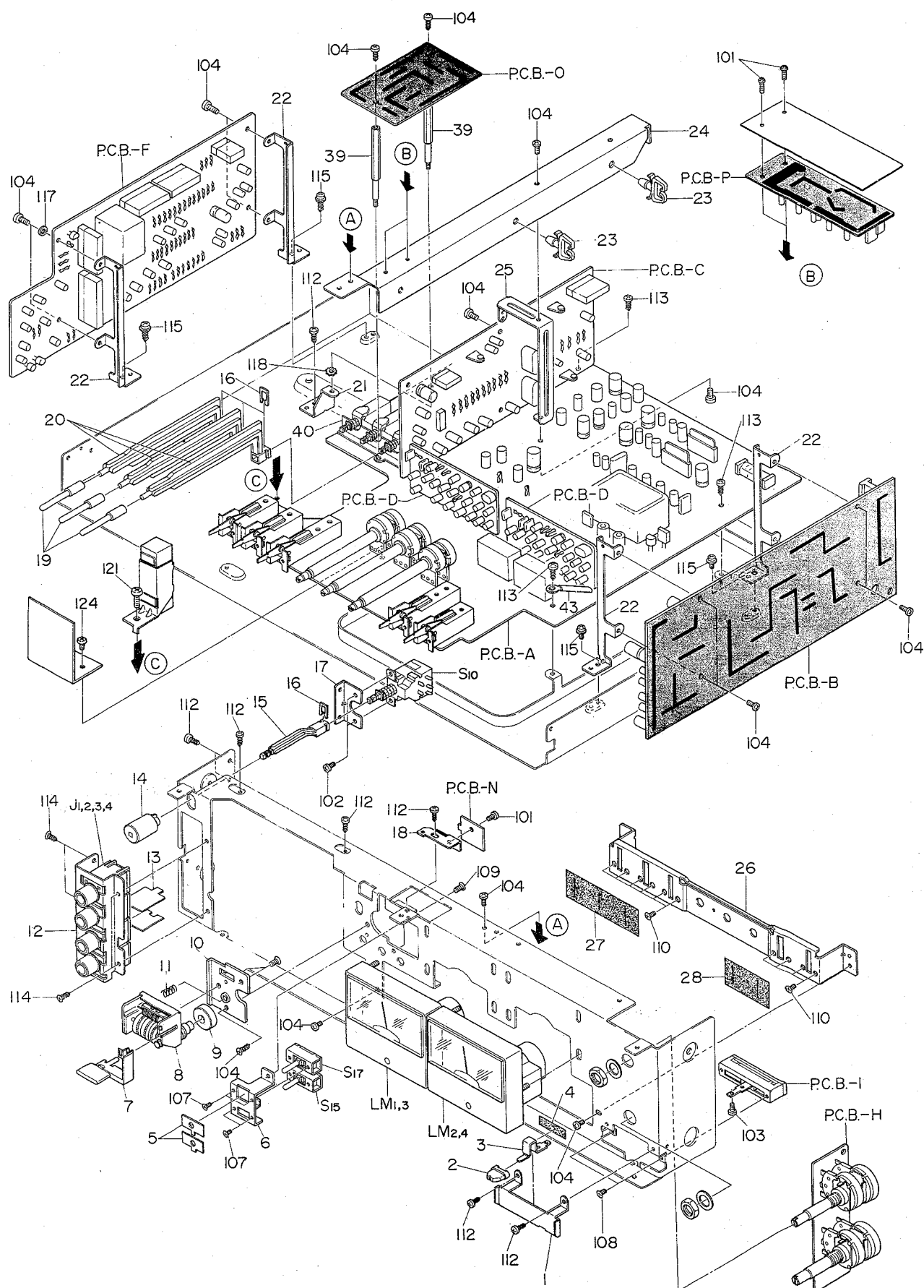
PARTS LIST

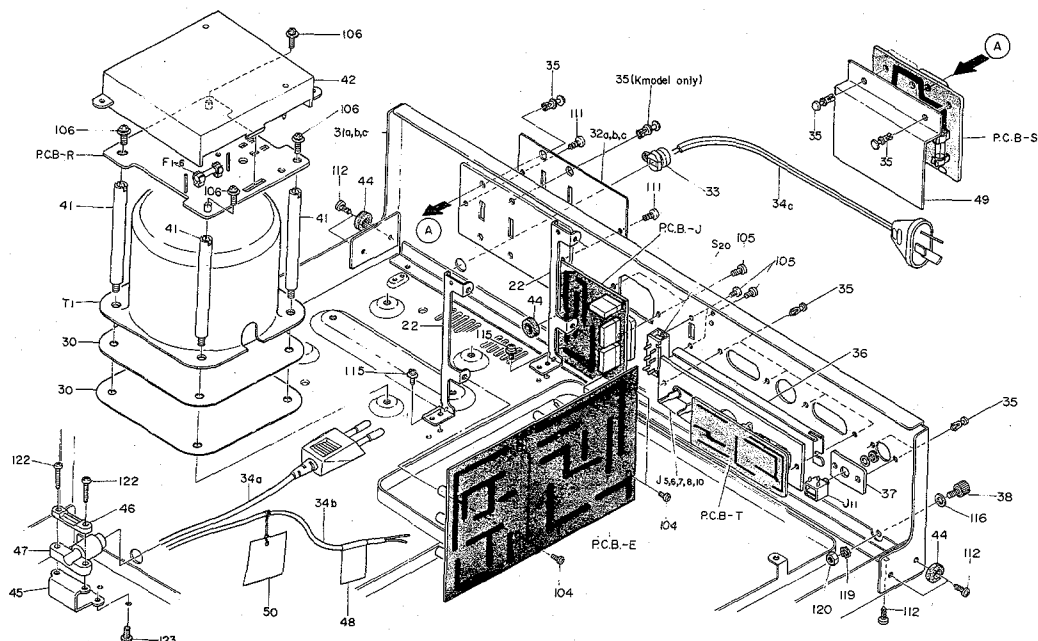
MECHANICAL PARTS

■ * mark in this part list shows exclusive part
(which is used) for only Model AD-6900.

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
1-1	82-304-004-11		Front panel A ass'y	*	1
1-2	82-304-053-01		Cover, Bias	*	1
1-3	82-304-026-01		Window, Meter	*	1
1-4	82-304-255-01		Guide, Push button	*	1
1-5	82-304-061-01		Window, Counter	*	1
1-6	82-304-051-01		Cover, Eject	*	1
1-7	82-304-010-01		Front panel B ass'y	*	1
1-8	82-304-008-01		Front panel (M)	*	1
1-9	82-304-245-01		Nut, 3-9	*	6
1-10	82-304-002-01		Front panel, Base	*	1
1-11	82-303-367-01		Cushion, Actuating lock		1
1-12	82-478-012-01		Ring, Power button		1
1-13	87-342-074-01		UT ₁ + 2.6-8		1
1-14	87-342-075-01		UT _r + 2.6-10		1
1-15	87-081-765-01		VT ₂ + 2.6-8		5
1-16	82-304-653-01		Switch board ass'y	*	1
1-17	82-304-060-01		Push key, REC MUTE	*	1
1-18	82-304-058-01		Push key, PAUSE	*	1
1-19	82-304-059-01		Push key, STOP	*	1
1-20	82-304-057-01		Push key, F.F	*	2
1-21	82-304-056-01		Push key, PLAY	*	1
1-22	82-304-055-01		Push key, REC	*	1
1-23	87-391-017-01		N-3		2
1-24	82-304-040-01		Cassette lid ass'y	*	1
1-25	82-304-246-01		Adhesive sheet, Cassette lid	*	2
1-26	82-304-043-01		Window, Cassette lid	*	1
1-27	82-304-231-01		Clamp, Cassette lid	*	4
1-28	87-441-003-01		STE 1.5		4
1-29	82-397-039-01		Ring, Reel table	AD-6550	2
1-30	82-397-290-01		Adhesive sheet, Ring	AD-6550	2
1-31	82-304-073-01		Cassette plate	*	1
1-32	82-304-044-01		Guide, Light	*	1
1-33	82-304-066-01		Cushion, Cassette lid	*	2
1-34	82-304-049-01		Blinder	*	1
1-35	82-304-063-01		Steel cabinet ass'y	*	1
1-36	82-397-245-01		Himeron cloth, Cabinet	AD-6550	1
1-37	82-380-439-01		Spacer, Back panel	AD-6500	1
1-38	82-304-202-21		Chassis, Front	*	1
1-39	82-304-302-01		Spacer, Cushion	*	4
1-40	82-304-201-31		Chassis, Amp.	*	1
1-41	82-304-203-01		Bottom lid	*	1
1-42	87-085-161-01		Leg		4
1-43	82-304-276-01		Screw, Leg	*	4
1-44	82-304-034-01		Knob B ass'y	*	2
1-45	82-304-032-01		Knob A ass'y	*	2
1-46	82-304-030-01		Knob, Selector	*	5
1-47	82-304-036-01		Knob C ass'y	*	3
1-48	82-304-062-01		Knob, Eject key	*	1
1-49	82-304-080-01		Caution label, Timer	*	1

EXPLODED VIEW-2

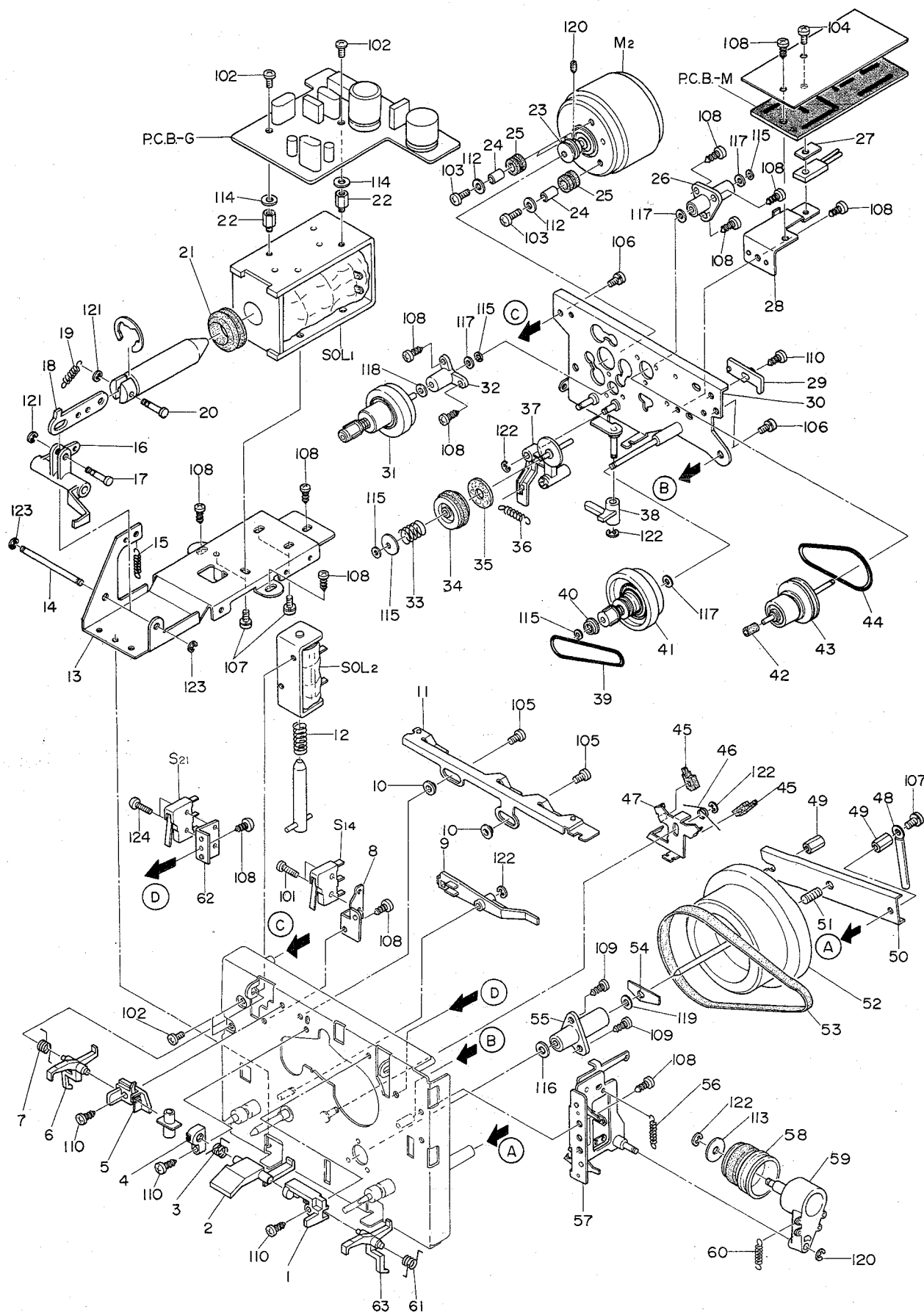




Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
2-1	82-304-052-01		Cover, PB volume	*	1
2-2	82-304-054-01		Knob D ass'y	*	1
2-3	82-304-254-01		Holder, Volume	*	1
2-4	82-304-291-01		Himeron cloth, PB volume	*	1
2-5	82-304-048-01		Cover, Selector	*	2
2-6	82-304-205-01		Switch holder B	*	1
2-7	82-304-027-01		Button, RESET	*	1
2-8	87-040-100-01		Counter	*	1
2-9	82-379-617-01		Ring, Magnet	AD-1800	1
2-10	82-304-206-01		Holder, Counter	*	1
2-11	82-304-303-01		Spring, RESET	*	1
2-12	82-304-634-01		Jack ass'y	*	1
2-13	82-304-647-01		Shield plate, Jack	*	1
2-14	82-399-025-01		AC switch button ass'y	*	1
2-15	82-304-210-01		Rod, Power	*	1
2-16	82-385-383-01		Stopper, Rod	*	4
2-17	82-304-258-01		Holder, Power	*	1
2-18	82-397-265-01		Holder, Hall	*	1
2-19	82-304-028-01		Push button	*	3
2-20	82-304-211-01		Rod, Selector	*	3
2-21	82-304-306-01		Holder F, Circuit board	*	1
2-22	82-304-207-01		Holder A, Circuit board	*	6
2-23	87-064-083-01		Wire clip	*	2
2-24	82-304-261-21		Holder C, Circuit board	*	1
2-25	82-304-262-01		Holder D, Circuit board	*	1
2-26	82-304-204-01		Holder A, Switch	*	1
2-27	82-304-273-01		Himeron cloth, Selector A	*	1
2-28	82-304-274-01		Himeron cloth, Selector B	*	1
2-29	82-488-234-01		Holder, Voltage selector	*	1
2-30	82-304-735-01		Shield plate, Power transformer	*	2
2-31a	82-304-014-01		Panel, Back (E model only)	*	1
2-31b	82-304-015-01		Panel, Back (K model only)	*	1
2-31c	82-304-074-01		Panel, Back (G model only)	*	1
2-32a	82-304-020-01		Name plate, Spec. (E model only)	*	1
2-32b	82-304-021-01		Name plate, Spec. (K model only)	*	1
2-32c	82-304-023-01		Name plate, Spec. (G model only)	*	1
2-33	87-085-101-01		Cord bushing (G model only)	*	1
2-34a	87-034-835-01		AC power cord (E model only)	*	1
2-34b	87-034-872-01		AC power cord (K model only)	*	1
2-34c	87-034-846-01		AC power cord (G model only)	*	1
2-35	87-085-102-01		Nylon rivet	E:12 K:10 G:10	1
2-36	82-386-629-01		Shield plate, Jack	AD-1250	1
2-37	82-387-273-01		Holder, Jack	AD-6800	1
2-38	87-033-088-01		Earth terminal	*	1
2-39	82-304-322-01		Holder H, Circuit board	*	2
2-40	82-304-300-01		Holder, Selector switch	*	1
2-41	82-304-325-01		Holder, Circuit board	*	4
2-42	82-304-326-01		Fuse Shield case	*	1
2-43	87-038-039-01		Wire binder	*	1
2-44	82-304-302-01		Cushion, Spacer	*	3
2-45	82-397-244-01		Holder, Pressure AC power cord	AD-6550	1
2-46	87-085-094-01		Pressure AC power cord A	*	1
2-47	87-085-095-01		Pressure AC power cord B	*	1
2-48	87-056-008-01		Label, AC power cord (K model only)	*	1
2-49	82-304-749-01		Insulation plate, Voltage selector	*	1
2-50	87-056-014-01		Tag, Main voltage	*	1

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
3-1	82-304-264-01		Spring, Eject lever	*	1
3-2	82-304-236-01		Lever, Eject key	*	1
3-3	82-304-275-01		Himeron cloth, Eject	*	1
3-4	82-304-215-01		Holder, Cassette box R ass'y	*	1
3-5	82-304-252-01		Spring, Cassette lid	*	1
3-6	82-304-212-01		Cassette box ass'y	*	1
3-7	82-304-046-01		Cassette holder R	*	1
3-8	82-304-284-01		Cushion, Cassette	*	2
3-9	82-304-047-01		Cassette holder L	*	1
3-10	82-304-219-01		Holder, Cassette box L ass'y	*	1
3-11	82-365-280-01		Holder, Wire		2
3-12	82-304-308-01		Shield plate,	*	1
3-13	82-304-317-01		Nut, Azimuth	*	1
3-14	82-304-069-01		Label, Head	*	1
3-15	82-304-289-01		Screw, Rec./Pb. head	*	1
3-16	82-304-290-01		Spring, Rec./Pb. head	*	1
3-17	82-303-377-01		Spring A, Erase head		1
3-18	82-303-375-01		Stopper, Erase head		1
3-19	82-303-371-01		Collar, Erase head		1
3-20	82-303-374-01		Holder, Erase head		1
3-21	82-303-376-01		Spring, Erase head		1
3-22	82-303-294-01		Holder, Spring		1
3-23	82-303-306-01		Flange collar, Actuating		1
3-24	82-303-236-01		Actuating chassis ass'y		1
3-25	82-303-315-01		Spring, Actuating		1
3-26	82-303-295-01		Flange collar, Actuating lock		1
3-27	82-303-288-01		Lever, Actuating lock		1
3-28	82-303-302-01		Roller, Actuating		3
3-29	82-303-312-01		Cushion, Actuating		2
3-30	82-303-299-01		Spring, Actuating B		2
3-31	82-215-341-01		Steel ball		3
3-32	82-303-303-01		Flange collar idler lever		1
3-33	82-303-337-01		Lever, Play idler B ass'y		1
3-34	82-303-342-01		Lever, Play idler ass'y		1
3-35	82-303-325-01		Spring, Play idler		1
3-36	82-303-272-01		Play idler ass'y		1
3-37	82-303-298-01		Spring, Actuating A		1
3-38	82-304-201-31		Mechanism chassis ass'y		1
3-39	82-304-287-01		Flange collar, Cassette lid	*	1
3-40	82-304-239-01		Lock plate, Cassette lid	*	1
3-41	87-830-504-01		UL tube 5φ x 40		1
3-42	82-304-318-01		Spring, Lock plate	*	1
3-43	82-304-237-01		Slide plate, Eject	*	1
3-44	82-304-241-01		Flange collar, Eject	*	1
3-45	82-304-235-01		Holder, Lead switch	*	1
3-46	82-303-372-01		Felt, Erase head		1
3-47	82-303-290-01		Guide, Cassette lid		1
3-48	82-303-316-01		Spring, Pinch lever		1
3-49	82-303-260-01		Pinch roller ass'y		1
3-50	82-303-301-01		Motor pulley, Flywheel		1
3-51	82-304-701-01		Spacer, Insulation	*	1
3-52	82-304-256-01		Holder, Motor A	*	1
3-53	87-087-029-01		Rubber cushion		3
3-54	87-081-483-01		Motor screw, M2.6		3
3-55	82-304-265-01		Spring, Eject	*	1
3-56	82-304-257-01		Holder, Motor B	*	1
3-57	82-303-367-01		Cushion, Actuating		1
3-58	82-303-382-01		Felt, Brake		1
3-59	82-303-326-01		Spring, Back tension		1

EXPLODED VIEW-4



ELECTRICAL MAIN PARTS LIST

Symbol No.	Part No.	Description
« REC/PB CIRCUIT BOARD SECTION »		
PCB-A	82-304-602-21	REC/PB circuit board
IC1,2	82-304-682-01	IC, TA-7220P
Q1,2	89-314-005-01	Transistor, 2SC1400 (E)
Q3,4	87-027-245-01	FET, 2SK68A (M)
Q5,6,7,8,101,102	89-312-222-01	Transistor, 2SC1222 (E)
Q103,104,105,106,301,303,305,306	89-318-154-51	Transistor, 2SC1815 (Y, GR)
Q201,202,203,251	89-405-712-01	Transistor, 2SD571 (L)
Q204	89-206-051-01	Transistor, 2SB605 (K)
Q205	89-405-711-01	Transistor, 2SD571 (K)
Q206	89-402-344-01	Transistor, 2SD234 (Y)
Q302	89-316-347-01	Transistor, 2SC1634 (7)
Q307,308,309,310	89-402-275-01	Transistor, 2SD227 (V)
Q311,312	89-320-011-01	Transistor, 2SC2001 (K)
Q401~414	89-309-455-01	Transistor, 2SC945L (Q)
D201,203	87-027-163-01	Diode, 1B4B1
D202	82-372-631-01	Zener diode, XZ-315
D204,205	87-027-283-01	Zener diode, 05Z-13U
D206,207,208	87-027-083-01	Diode, 1S1885
D209	87-027-244-01	Zener diode, 05Z-8.2U
D210	87-032-199-01	Zener diode, 05Z-15U
D301,302,304,305,306,308,310,401,402,403	87-027-097-01	Diode, 1S1555
D303	88-052-188-11	Diode, 1S188 (FM)
D309	87-026-069-01	Zener diode, WZ-052
L1,2,3,4	82-371-622-01	Coil, 23mH
L107,108	82-304-701-01	Coil, 22mH
L101,102	82-385-636-01	Coil, 6.8mH
L103,104	82-304-714-01	Coil, 3.3mH
L105,106	82-304-715-01	Coil, 3.9mH
LPF101,102	82-397-634-01	Low-pass filter
TC251,252	85-708-604-21	Trimer, 30pF
OSC UNIT	82-304-631-01	OSC unit
RY1, S9	84-184-612-01	Relay, HA212N (STOP MUTING)
VR7,8,9,10,13,14	82-304-623-11	Volume, 50kΩ x 2, 20kΩ x 1 (REC CAL, BIAS FINE ADJ)
VR11,12,15	82-304-624-11	Volume, 50kΩ x 3 (REC CAL, BIAS FINE ADJ)
S1,2	82-304-627-01	Lever switch (MONITOR, TEST)
S3,4	82-304-629-01	Lever switch (DOLBY-NR, BIAS)
S5	82-304-628-01	Lever switch (EQ)
S6,7,8	82-304-626-01	Push switch (PEAK HOLD, PEAK VU)
SFR1,2,3,4,105,106	87-021-363-01	Semi-fixed resistor, 47kΩ-B
SFR101,102,103,104	87-021-366-01	Semi-fixed resistor, 10kΩ-B
SFR251	87-021-406-01	Semi-fixed resistor, 4.7kΩ-B
SFR252	87-021-422-01	Semi-fixed resistor, 22kΩ-B
Th1,2	82-304-720-01	Thermistor, 1.7kΩ
Th3,4	82-304-722-01	Thermistor, 20kΩ
« RESISTORS »		
R217	87-029-066-01	1.5Ω 1/2W Fuse resistor
R218	87-029-067-01	4.7Ω 1/4W Fuse resistor
R209	87-029-017-01	10Ω 1/4W Fuse resistor
R210	87-029-007-01	22Ω 1/4W Fuse resistor
R202	87-029-016-01	22Ω 1/2W Fuse resistor
« CAPACITORS »		
C21,22	87-015-327-01	0.1μF 50V Electrolytic LL
C115,116	87-988-410-01	100pF 500V Dipt mica
C35,36	87-014-033-01	100pF ±5% PP
C25,26	87-014-047-01	390pF ±5% PP
C37,38	87-014-049-01	470pF ±5% PP
C17,18	82-304-648-01	0.018μF ±2% PP
« FRTS CIRCUIT BOARD SECTION »		
PCB-B	82-304-607-21	FRTS circuit board
IC1,2	87-027-137-01	IC, TA-7122AP
IC3	87-027-235-01	IC, NJM-4558D
Q1,2	82-371-625-01	FET, 2SK30 (D)
Q3,4,5,6	89-312-222-01	Transistor, 2SC1222 (E)
Q7,8,12	89-402-275-01	Transistor, 2SD227 (V)
Q9,10,11,13,14	89-318-154-51	Transistor, 2SC1815 (Y, GR)
D1,2	87-027-171-01	Zener diode, RD2.7E
D3,4,5,6	87-026-066-01	Diode, M8513A (O)
SFR1,2	87-021-525-01	Semi-fixed resistor, 3kΩ-B
SFR3	87-021-481-01	Semi-fixed resistor, 100kΩ-B
SFR4	87-021-431-01	Semi-fixed resistor, 30kΩ-B
SFR5	87-021-480-01	Semi-fixed resistor, 50kΩ-B
SFR6	87-021-434-01	Semi-fixed resistor, 20kΩ-B
PIN-1	87-032-897-01	Pin, 3P
« Resistor »		
R92	82-304-683-01	56Ω 10W Cement resistor
« Capacitors »		
C49,50	87-015-241-01	1μF 50V Electrolytic LL
C57,58	87-015-242-01	2.2μF 50V Electrolytic LL
C33,34	87-015-243-01	3.3μF 50V Electrolytic LL
C53,54	87-015-246-01	4.7μF 25V Electrolytic LL

Symbol No.	Part No.	Description
C43,44	87-015-247-01	10μF 25V Electrolytic LL
C2,4	87-014-049-01	470pF ±5% PP
« PEAK METER CIRCUIT BOARD SECTION »		
PCB-C	82-304-606-41	Peak meter circuit board
IC1,3,101	87-027-183-01	IC, NJM-4558
IC2	87-027-184-01	IC μPC 324C
Q1,2	89-107-505-01	Transistor, 2SA750 (E)
Q3,4	87-027-198-01	FET, 2SK68 (N)
Q5,6,7,8	87-027-245-01	FET, 2SK68A (M)
Q9,10,12	89-107-335-61	Transistor, 2SA733 (K, P)
Q11,13,101,102,103,104	89-309-455-61	Transistor, 2SC945L (P, Q)
D1~8	87-027-253-01	Diode, M8513A (AIWA)
D9,10,11,12,43,44	87-027-097-01	Diode, 1S1555
D41	82-371-647-01	Zener diode, RD-7.5E
D101,102,103,104,105,106	88-052-188-01	Diode, 1S188 (FM)
SFR1,2	87-021-522-01	Semi-fixed resistor, 1MΩ-B
SFR3,4	87-021-524-01	Semi-fixed resistor, 10kΩ-B
SFR5,6	87-021-512-01	Semi-fixed resistor, 2kΩ-B
SFR101,102	87-021-520-01	Semi-fixed resistor, 5kΩ-B
Th1,2	82-304-721-01	Thermistor, 5kΩ
PIN-3	87-032-904-01	Pin, 4P
PIN	87-032-635-01	Pin, 5P
PIN-2	87-032-906-01	Pin, 6P
PIN	87-032-638-01	Pin, 8P
« Capacitors »		
C5,6	87-015-379-01	1μF 50V Electrolytic BP
C1,2	87-015-380-01	4.7μF 25V Electrolytic BP
103,104		
C7,8	87-014-082-01	0.47μF 50V Mylar
« DOLBY-NR CIRCUIT BOARD SECTION »		
PCB-D	82-304-728-01	Dolby-NR circuit board
IC1,2	82-304-729-01	IC, CR713
D1	82-371-647-01	Zener diode, RD-7.5 (E)
D2,3	88-051-060-01	Diode, 1N60
	87-032-898-01	IC socket, 16P
PIN	87-032-646-01	Pin, 16P
« Resistor »		
R9,10	82-371-652-01	3.3kΩ 1/4W ±1%
« Capacitors »		
C1,2	87-015-241-01	1μF 50V Electrolytic LL
C9,10	87-015-247-01	10μF 25V Electrolytic LL
C11,12	82-371-643-01	4700pF ±2% PP
C3,4	82-371-642-01	5600pF ±2% PP
C13,14	82-371-641-01	0.027μF ±2% PP
« KEY-LOGIC CIRCUIT BOARD SECTION »		
PCB-E	82-304-686-21	Key-logic circuit board
Q1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,29,30,31,32,33	89-309-455-01	Transistor, 2SC945 (L, Q)
D1,2,3,5,6,11,12	87-027-097-01	Diode, 1S1555
D4,7,10	88-052-188-11	Diode, 1S188 (FM)
PIN-4	87-032-905-01	Pin, 5P
PIN-5	87-032-908-01	Pin, 8P
« SYSTEM LOGIC CIRCUIT BOARD SECTION »		
PCB-F	82-304-608-21	System logic circuit board
Q1,6,9,10,11,12,25,26,27,28,29,30,33,34,35,36,37,38,39,40,41,44,45,46,47,50,51,52,53,54,55,56,57,58,59,60,64,65,66	89-309-455-01	Transistor, 2SC945 (L, Q)
Q5	89-405-712-01	Transistor, 2SD571 (L)
Q7,8	87-027-217-01	FET, 2SK68 (M, N)
Q31,32,42,43,48,49,61,62,63	89-107-335-01	Transistor, 2SA733 (K)
D1,4,7,8,9,10,11,13,17,20,21,25,26,27	87-027-097-01	Diode, 1S1555
RY1, S18	82-304-651-01	Relay
PIN-6	87-032-904-01	Pin, 4P
PIN-7	87-032-909-01	Pin, 9P
PIN-8,9	87-032-910-01	Pin, 10P
PIN-10	87-032-784-01	Pin, 14P

Symbol No.	Part No.	Description
« CL CIRCUIT BOARD SECTION »		
PCB-G	82-304-609-21	CL circuit board
Q13,14,15,17,19,22,23	89-309-455-01	Transistor, 2SC945L (L)
Q16,18,20,21,24	89-402-344-01	Transistor, 2SD234 (Y)
D6	87-027-097-01	Diode, 1S1555
D23	87-027-083-01	Diode, 1S1885
« Resistor »		
R35	82-304-738-01	47Ω 10W Ceme
« VOLUME CIRCUIT BOARD-2 SECTION »		
PCB-H	82-304-691-21	Volume circuit board-2
VR1,2	82-304-680-11	Volume, 20kΩ-A (MIC RECORD LEVEL)
VR3,4	82-304-681-11	Volume, 50kΩ-A (LIN RECORD LEVEL)
« VOLUME CIRCUIT BOARD-1 SECTION »		
PCB-I	82-304-605-11	Volume circuit board-1
VR5,6	82-304-622-01	Slide volume, 10kΩ-A (OUT PUT LEVEL)
« REMORT CONTROL JACK CIRCUIT BOARD SECTION »		
PCB-J	82-304-688-21	Remort control jack circuit board
J9	82-304-671-01	Connector (REMORT CONTROL)
« SWITCH CIRCUIT BOARD SECTION »		
PCB-K	82-304-740-01	Switch circuit board ass
D1,6	87-026-112-01	Light-emitting diode, SEL-1033 (RED)
D2,3,4,5	87-026-113-01	Light-emitting diode, SEL-303E (GRN)
« DME CIRCUIT BOARD SECTION »		
PCB-N	82-304-687-11	DME circuit board
DME	82-397-642-01	DME
« PLAYER SYNC CIRCUIT BOARD SECTION »		
PCB-O	82-304-711-11	Player sync circuit board
Q1,2,3	89-318-154-01	Transistor, 2SC1815 (Y)
D1	87-027-097-01	Diode, 1S1555
« EQ CIRCUIT BOARD SECTION »		
PCB-P	82-304-713-11	EQ circuit board
Q1,2,3,4,5,6	89-318-154-51	Transistor, 2SC1815 (Y)
« THERMISTOR CIRCUIT BOARD SECTION »		
PCB-Q	82-304-719-01	Thermistor circuit board
Th1	82-304-720-01	Thermistor, 1.7kΩ
Th2	82-304-721-01	Thermistor, 5kΩ
« FUSE CIRCUIT BOARD SECTION »		
PCB-R	82-304-731-01	Fuse circuit board
F1,3,4	87-035-107-01	Fuse, "T" 315mA
F2	87-098-011-01	Fuse label, "T" 315mA
F5	87-035-063-01	Fuse, "T" 630mA
F6	87-098-014-01	Fuse label, "T" 630mA
	87-035-117-01	Fuse, "T" 1.25A
	87-098-017-01	Fuse label, "T" 1.25A
	87-035-064-01	Fuse, "T" 1A
	87-098-016-01	Fuse label, "T" 1A
	87-033-147-01	Fuse clamp
« VOLTAGE SELECTOR CIRCUIT BOARD SECTION »		
PCB-S	82-304-730-01	Voltage selector circuit board
S22,23	87-031-364-01	Slide switch (VOLTAGE SELECTOR) (E model only)
S22	87-031-364-01	Slide switch (VOLTAGE SELECTOR) (K, G model only)
F7	87-035-075-01	Fuse, "T" 500mA (E model only)
F7	87-098-013-01	Fuse label, "T" 500mA (E model only)
F7	87-035-107-01	Fuse, "T" 315mA (K, G model only)
F8	87-098-011-01	Fuse label, "T" 315mA (K, G model only)
F8	87-035-075-01	Fuse, "T" 500mA (K, G model only)
	87-098-013-01	Fuse label, "T" 500mA (K, G model only)
« Capacitors »		
C1,2	87-019-096-01	0.01μF Compound capacitor
« JACK CIRCUIT BOARD SECTION »		
PCB-T	82-304-734-01	Jack circuit board
RY1, S19	84-184-612-01	Relay, HA212N
J5,6,7,8,10	82-304-737-01	Pin jack 4P, DIN JACK (LINE OUT/PLAY, LINE REC, REC/PLAY)
Q1	89-316-347-01	Transistor, 2SC1634 (7)
D1	87-027-097-01	Diode, 1S1555
« MISCELLANEOUS »		
T1	82-304-644-01	Power transformer (E model only)
T1	82-304-645-01	Power transformer (K, G model only)

Description
ION >
circuit board
ansistor, 2SC945L (Q)
ansistor, 2SD234 (Y)
ode, 1S1555
ode, 1S1885
Resistor >
2 10W Cement resistor
2 SECTION >
ume circuit board-2
ume, 20kΩ-A (MIC
CORD LEVEL)
ume, 50kΩ-A (LINE
CORD LEVEL)
1 SECTION >
ume circuit board-1
e volume, 10kΩ-A
T PUT LEVEL)

Symbol No.	Part No.	Description
RH,PH	82-304-635-11	REC/PB combination head
EH	82-304-636-01	Erase head
D24	87-027-083-01	Diode, 1S1885
M1,PCB-L	82-304-637-11	Main motor, DC-EG
M2,PCB-M	82-304-638-01	Sub motor, DC-EG
LM1,2,3,4	82-387-603-51	Meter (PEAK/VU)
PL3	82-304-718-01	Pilot lamp (CASSETTE WINDOW)
SOL1	82-304-639-01	Plunger (FWD)
SOL2	82-304-640-11	Plunger (FR)
J1,2,3,4	82-304-634-01	Jack ass'y (PHONES, LINE IN, MIC)
J11	87-032-882-01	Jack 2.5φ (PLAYER SYNC)
S10	87-031-408-01	Push switch (POWER)
S11	82-304-723-01	Micro switch (PLAY DETECTION)
S13,14,21	82-304-724-01	Micro switch (CASSETTE DETECTION, ERASE PREVENTION DETECTION, CrO ₂ AUTO)
S15,17	82-304-630-01	Slide switch (TIMER, MEMORY)
S16	87-040-100-01	Counter (MEMORY COUNTER)
S20	82-375-623-01	Slide switch (DIN OUTPUT LEVEL)

Symbol No.	Part No.	Description
CON-1	82-304-703-01	Connector ass'y, 3P
CON-3	82-304-657-11	Connector ass'y, 4P
CON-6	82-304-664-11	Connector ass'y, 4P
CON-13	82-304-668-01	Connector ass'y, 4P
CON-4	82-304-661-11	Connector ass'y, 5P
CON-12	82-304-669-01	Connector ass'y, 5P
CON-2	82-304-659-11	Connector ass'y, 6P
CON-11	82-304-670-01	Connector ass'y, 6P
CON-5,9	82-304-663-11	Connector ass'y, 8P, 10P
CON-7	82-304-666-11	Connector ass'y, 9P
CON-8	82-304-665-11	Connector ass'y, 10P
CON-10	82-304-667-01	Connector ass'y, 14P

⚠: Symbol is used to indicate that a specific component must be replaced only by the component for safety reasons.

CIRCUIT BOARD

ort control jack circuit board
ector (REMORT
TROL)

ECTION >
ch circuit board ass'y
-emitting diode,
1033 (RED)
-emitting diode,
303E (GRN)

ION >
circuit board

ARD SECTION >
sync circuit board
istor, 2SC1815 (Y)
, 1S1555
ON >
circuit board
istor, 2SC1815 (Y, GR)

RD SECTION >
ister circuit board
ister, 1.7kΩ
ister, 5kΩ

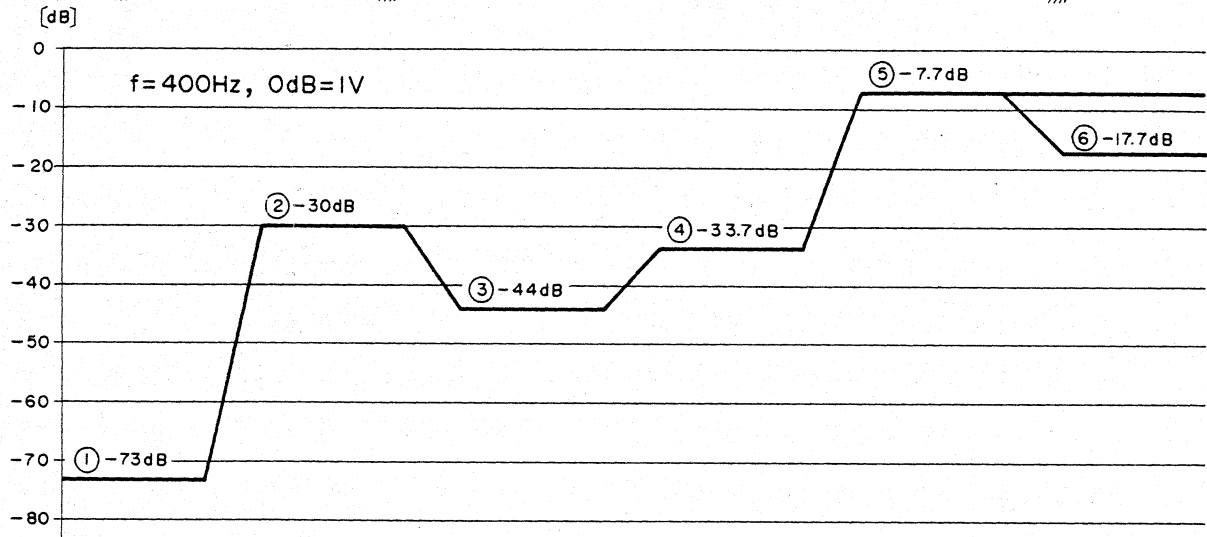
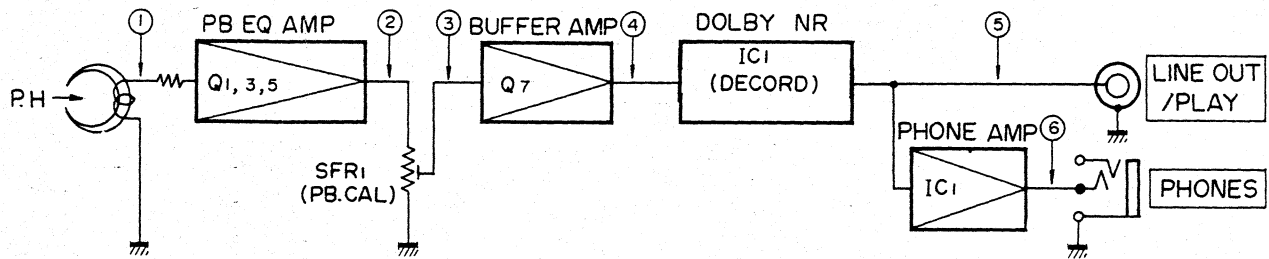
ION >
circuit board
"T" 315mA
abel, "T" 315mA
"T" 630mA
abel, "T" 630mA
"T" 1.25A
bel, "T" 1.25A
"T" 1A
bel, "T" 1A
amp

T BOARD SECTION >
selector circuit board
witch (VOLTAGE
TOR) (E model only)
witch (VOLTAGE
TOR) (K, G model only)
"T" 500mA (E model only)
le, "T" 500mA
el only)
"T" 315mA
odel only)
el, "T" 315mA
odel only)
"T" 500mA
odel only)
el, "T" 500mA
odel only)
ors >
Compound capacitor
ON >
uit board
A212N
4P, DIN JACK
UT/PLAY, LINE IN/
C/PLAY)
r, 2SC1634 (7)
S1555

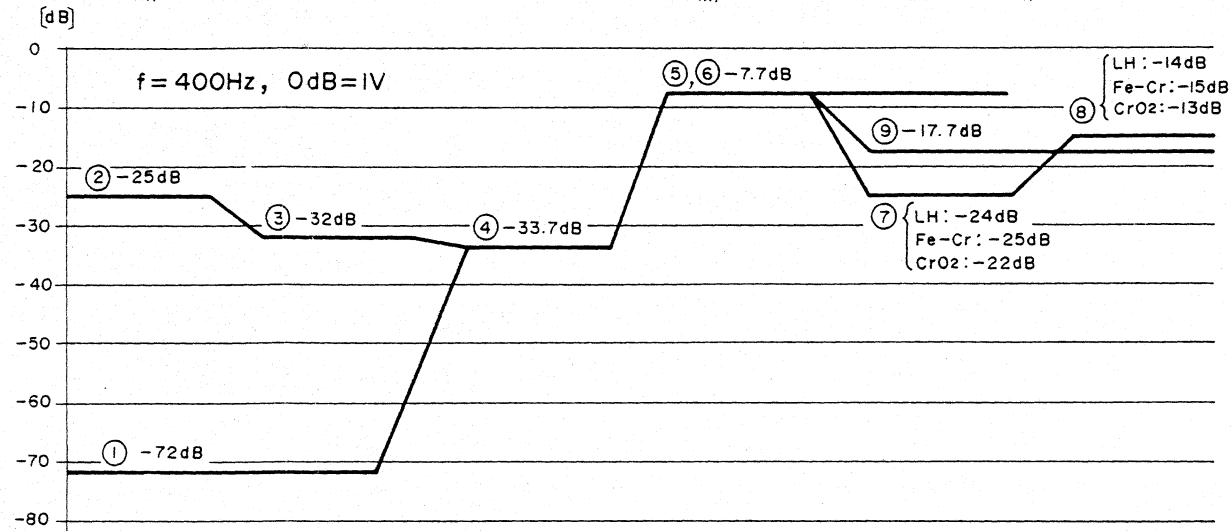
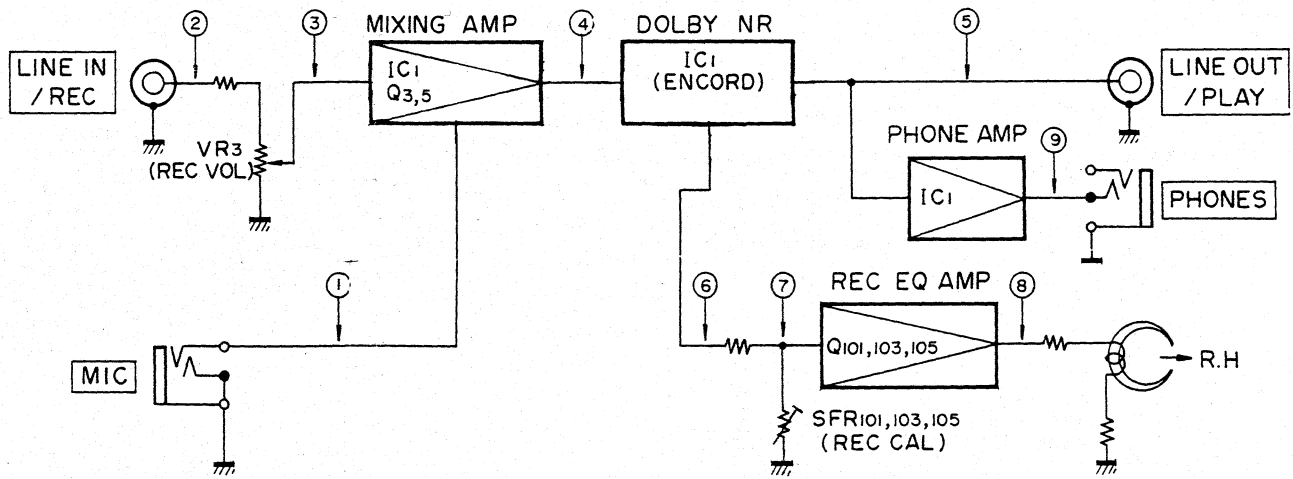
nsformer
only)
nsformer
del only)

LEVEL DIAGRAM

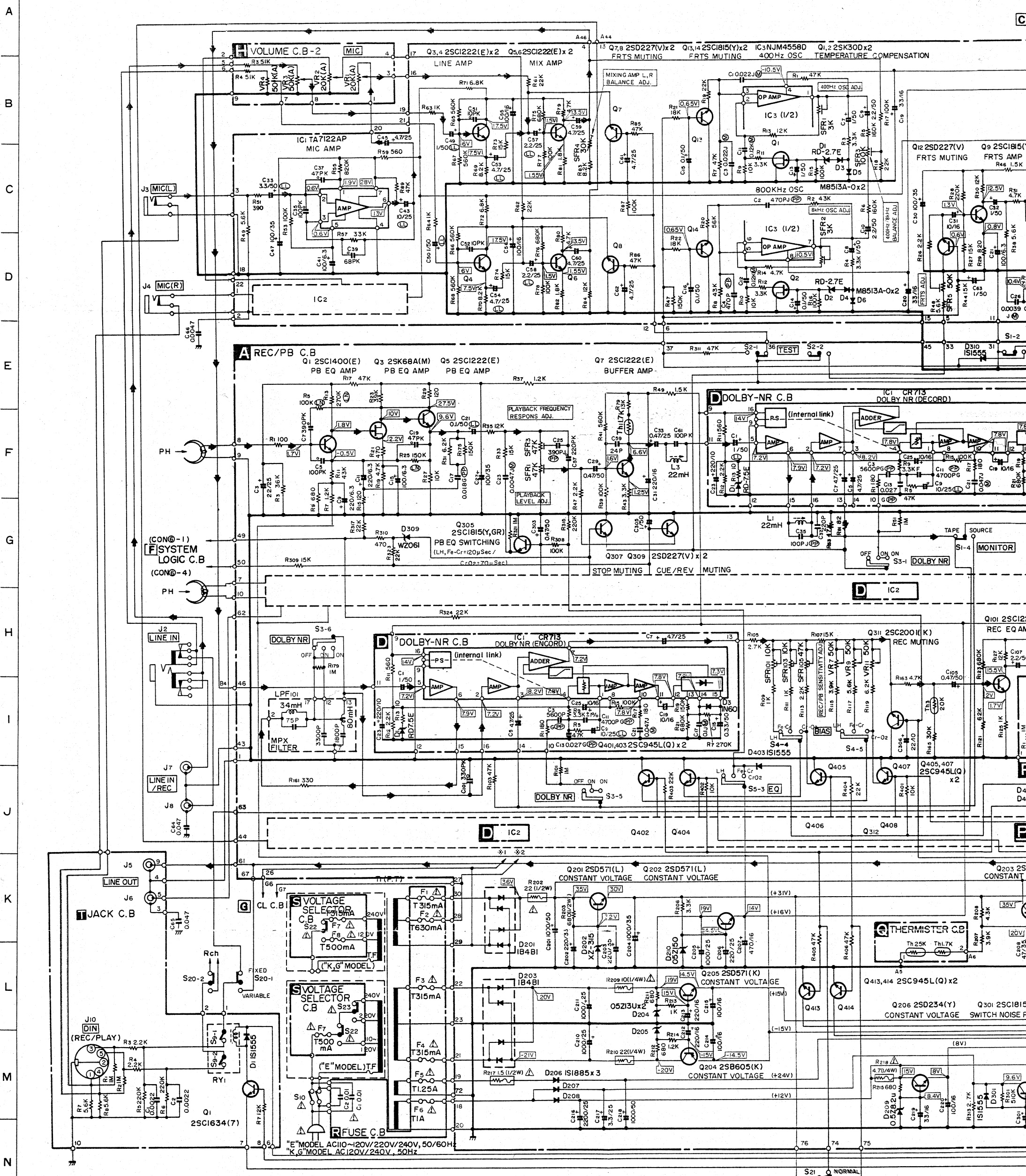
• PLAYBACK

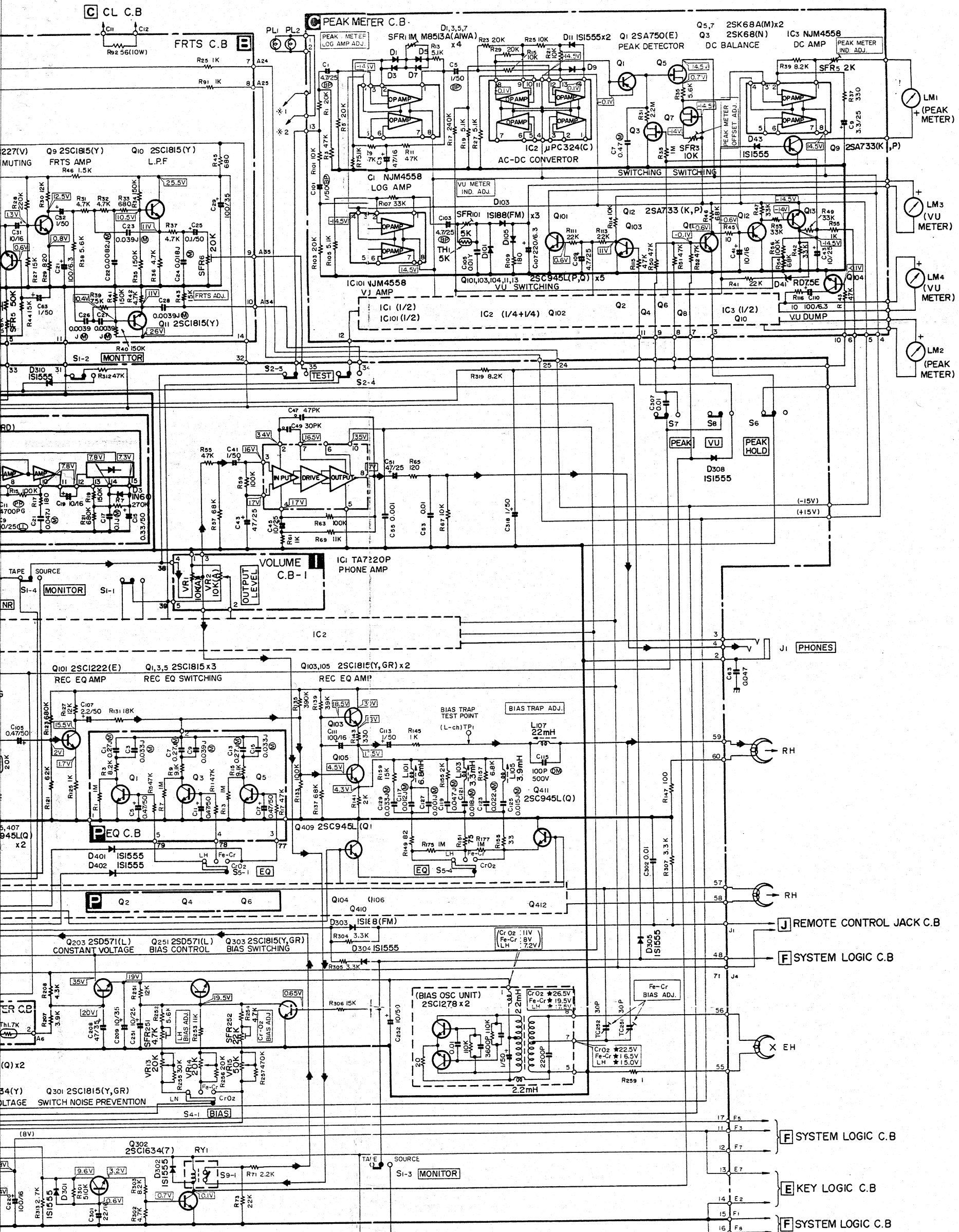


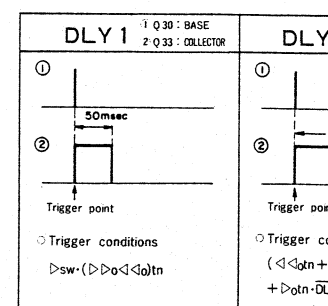
• RECORD



SCHEMATIC DIAGRAM -1

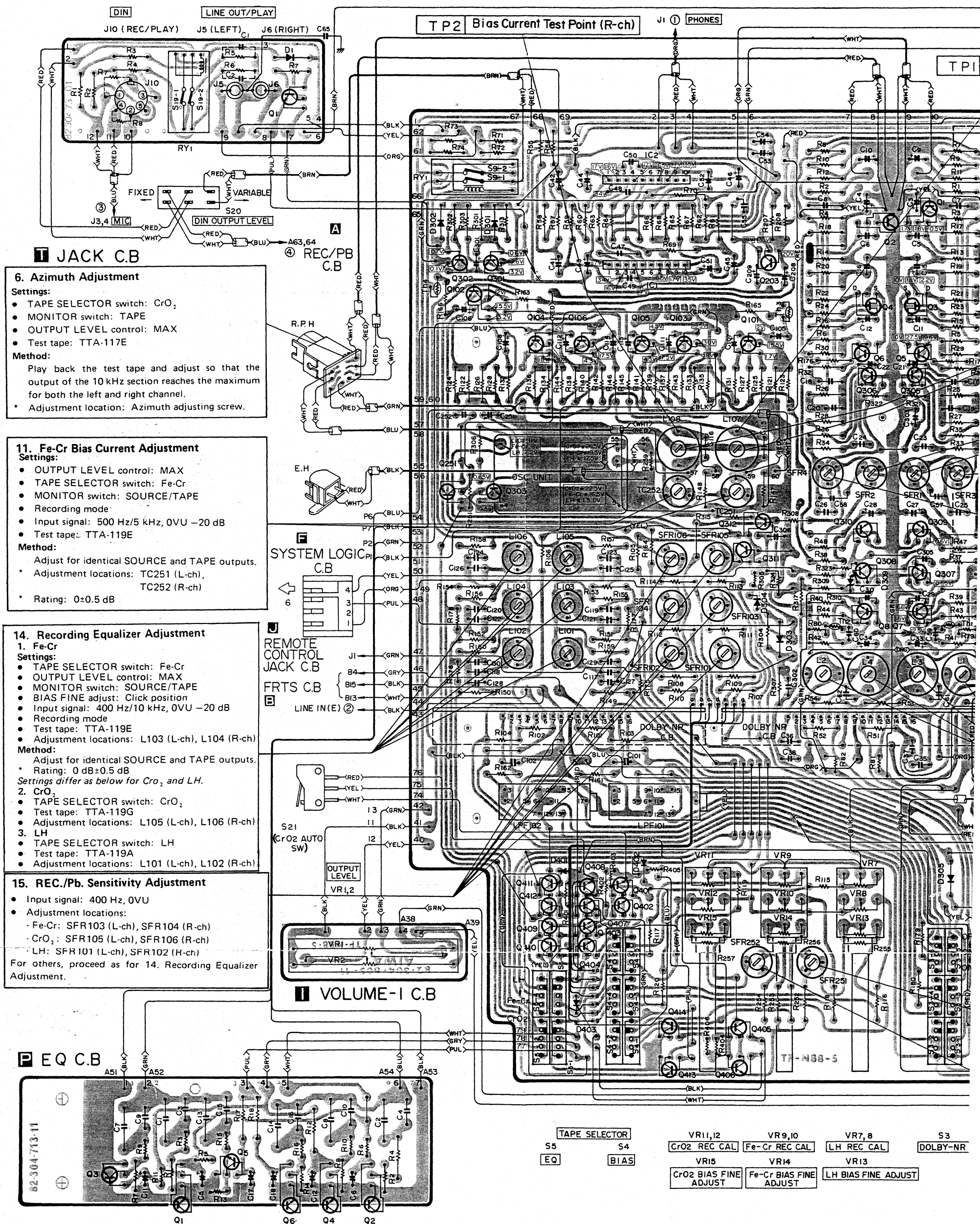






* This schematic diagram is subject to change without notice in the interests of improved performance.

WIRING-1



NOTES (1)

B(+) Pattern

Component side pattern

Others pattern

(2) The voltage is the reference value measured with a tester (20

12

13

14

15

16

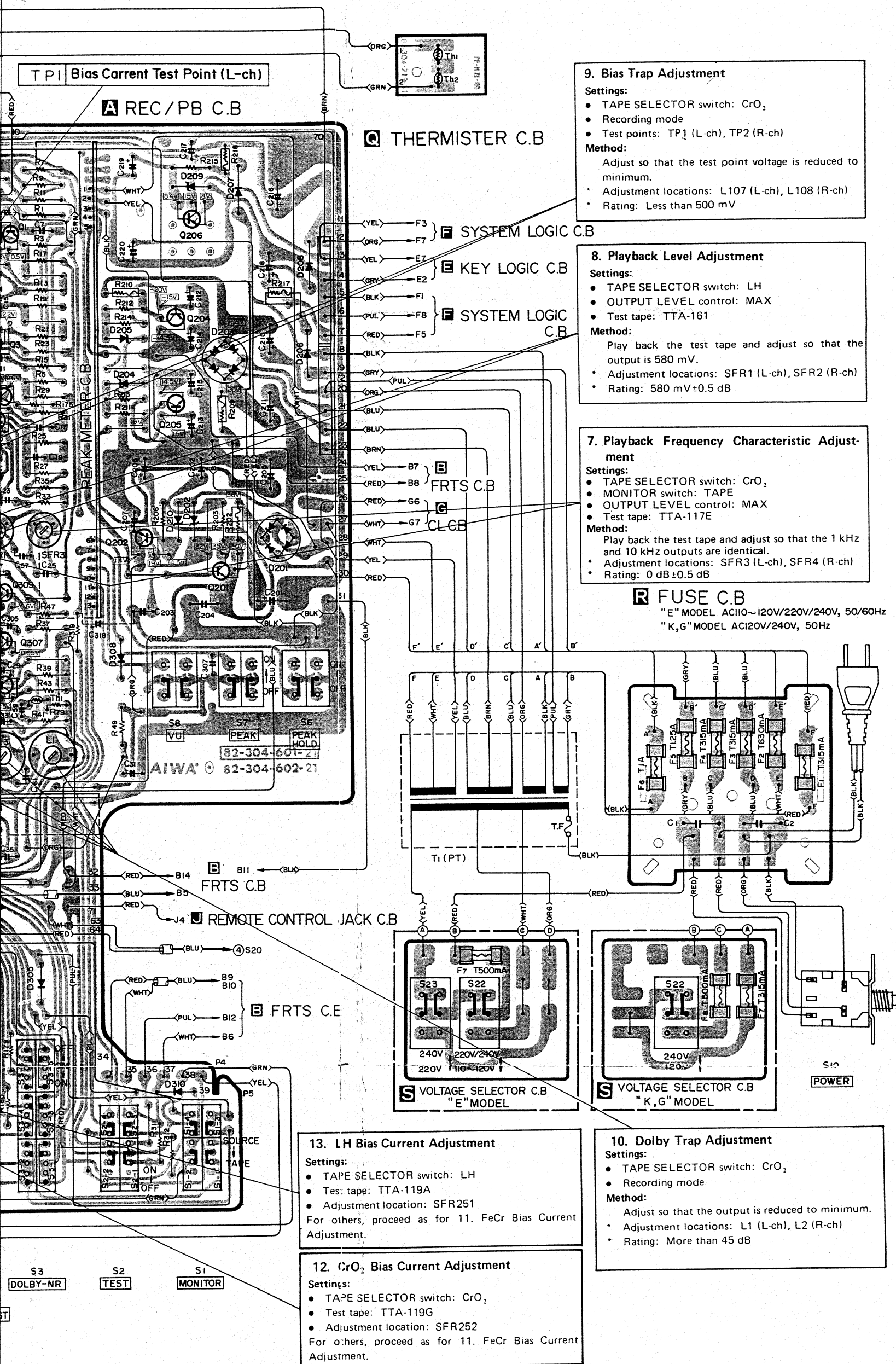
17

18

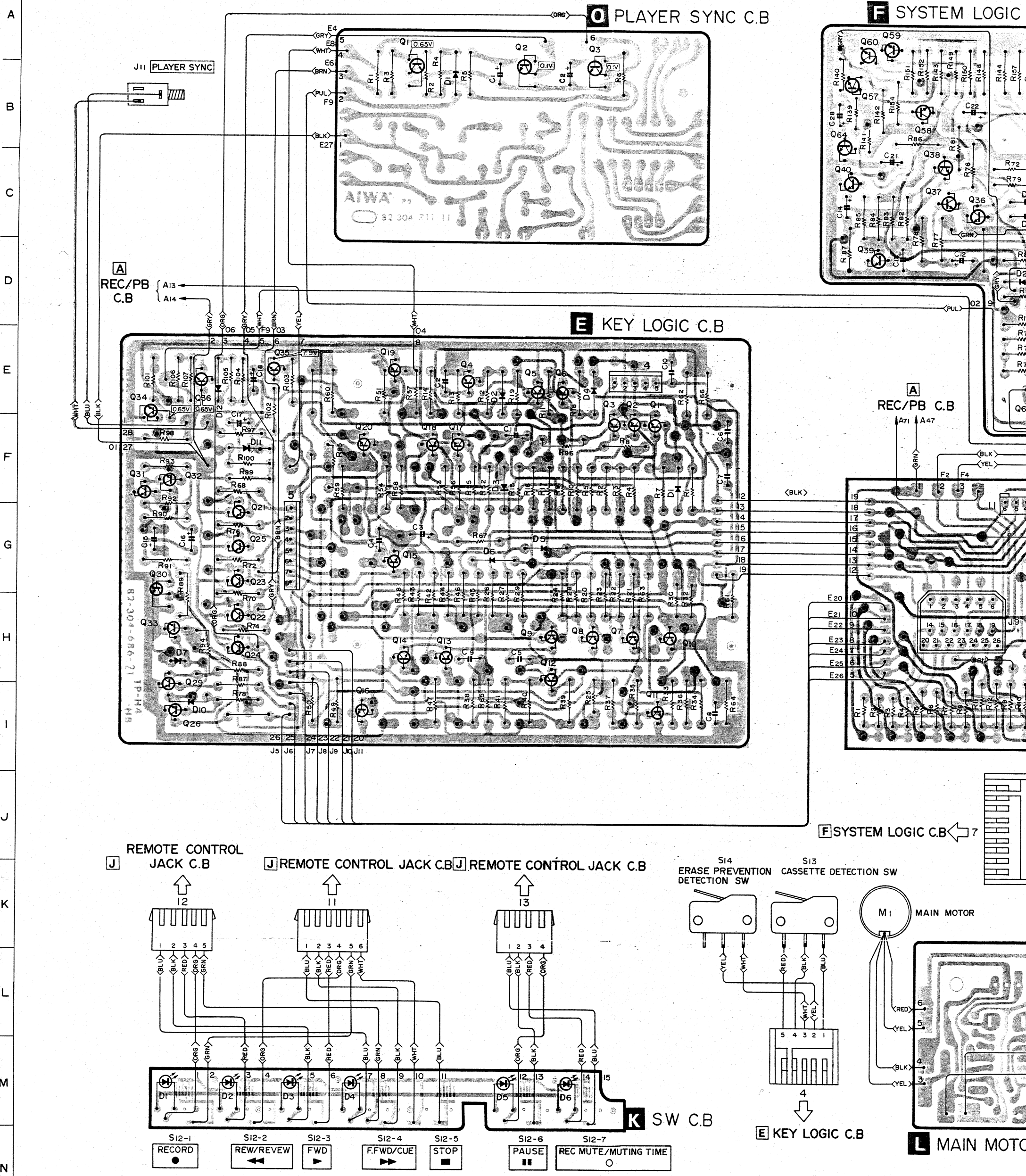
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20

21



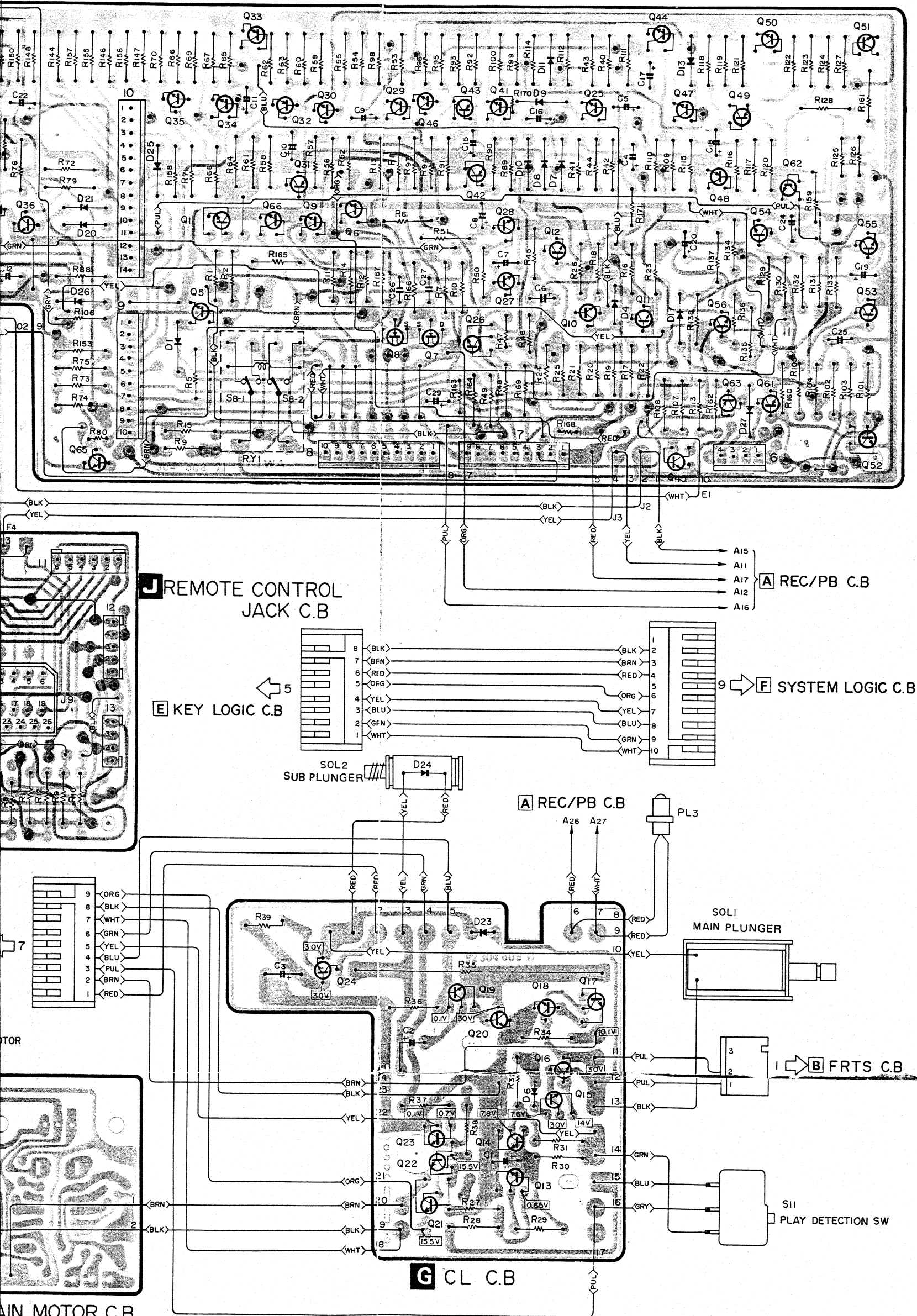
WIRING-3



NOTES (1) B(+) Pattern Component side pattern Others pattern (2) The voltage is the reference value measured with a tester

12 13 14 15 16 17 18 19 20

M LOGIC C.B



with a tester (20K ohms/VDC) when there are no signals.

WIRING-2

4. Peak Meter Indication Adjustment

Settings:

- MONITOR switch: SOURCE
- OUTPUT LEVEL control: MAX
- Input signal: 400 Hz, 0VU
- Recording mode

Method:

- Adjust so that peak meter indication is 0 dB.
- Adjustment locations: SFR5 (L-ch), SFR6 (R-ch)
- Rating: 0 dB $\pm$ 0.5 dB

3. Peak Meter Offset Adjustment

Settings:

- PEAK HOLD switch: OFF
- OUTPUT LEVEL control: MIN

Method:

- Adjust so that peak meter pointer does not deflect with PEAK switch ON/OFF.
- Adjustment locations: SFR3 (L-ch), SFR4 (R-ch)

2. VU Meter Indication Adjustment

Settings:

- MONITOR switch: SOURCE
- OUTPUT LEVEL control: MAX
- Input signal: 400 Hz -16 dB (1V = 0 dB)
- Recording mode

Method:

- Rotate LINE RECORD LEVEL for an output of 410mV.
- Adjust so that VU meter indication is 0VU.
- Adjustment locations: SFR101 (L-ch), SFR102 (R-ch)
- Rating: 0VU $\pm$ 0.5 dB

1. Mixing Amp. Balance Adjustment

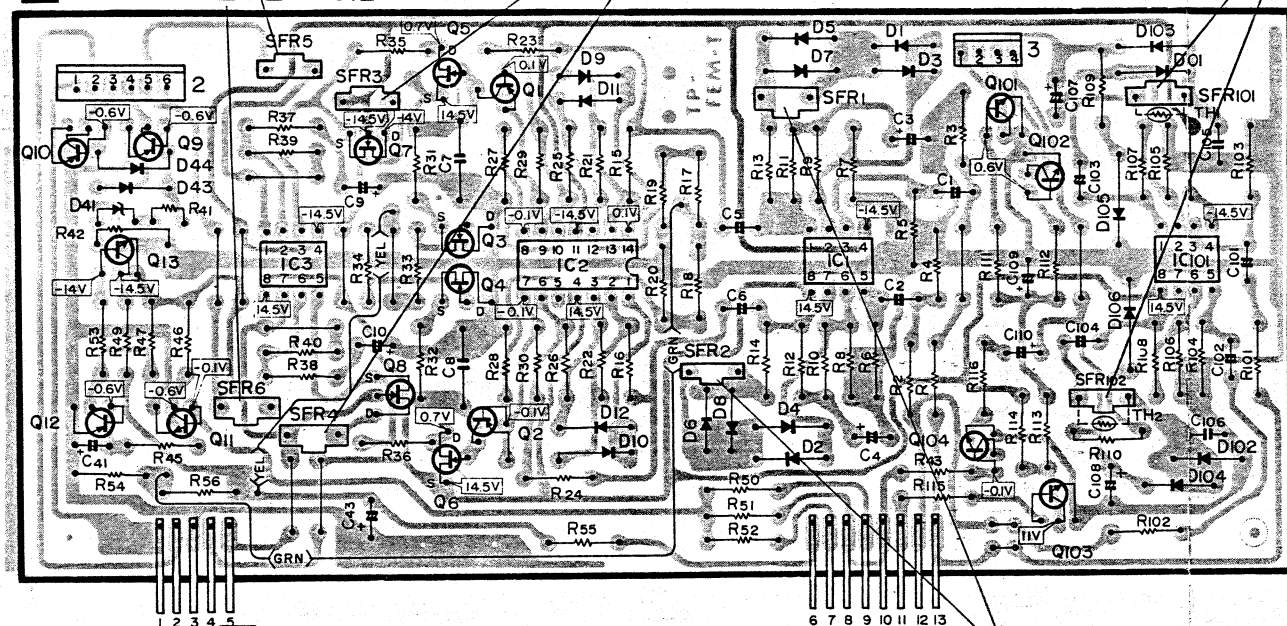
Settings:

- MONITOR switch: SOURCE
- OUTPUT LEVEL control: MAX
- Input signal: 400 Hz, 0VU
- Recording mode

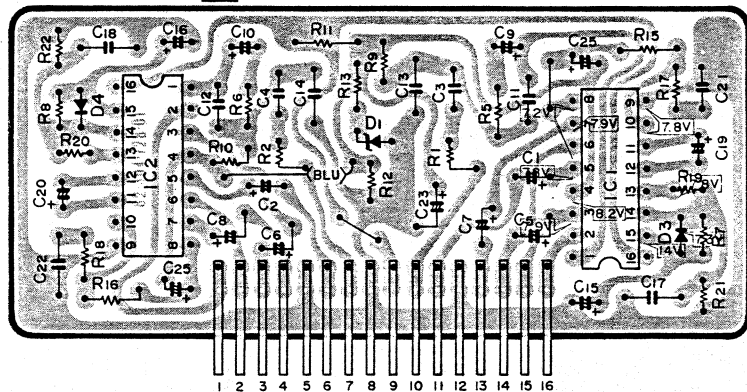
Method:

- Adjust so that output is same for left and right channels.
- Adjustment location: SFR4
- Rating: Within 0.5 dB

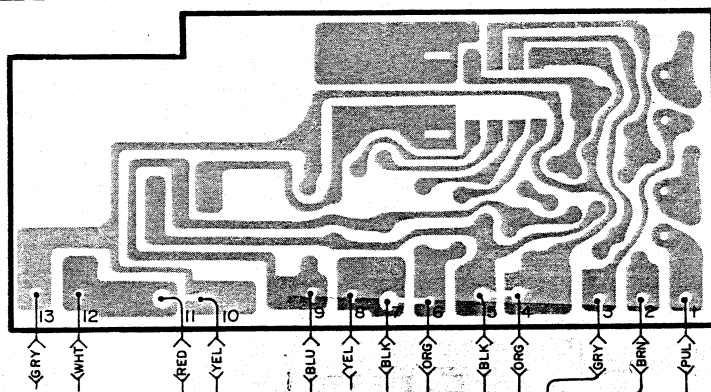
C PEAK METER C.B



D DOLBY-NR C.B



M SUB MOTOR C.B



5. Peak Meter Log. Amp. Adjustment

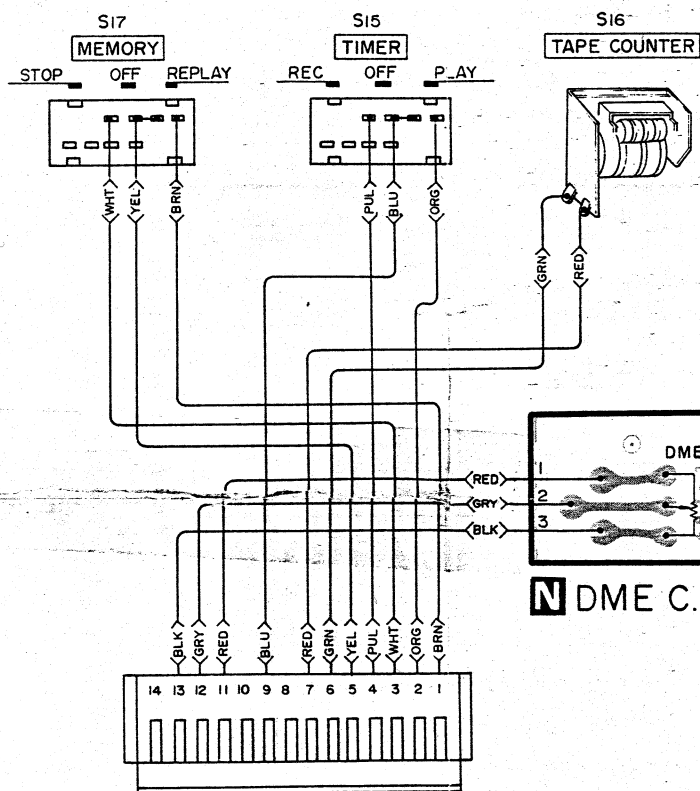
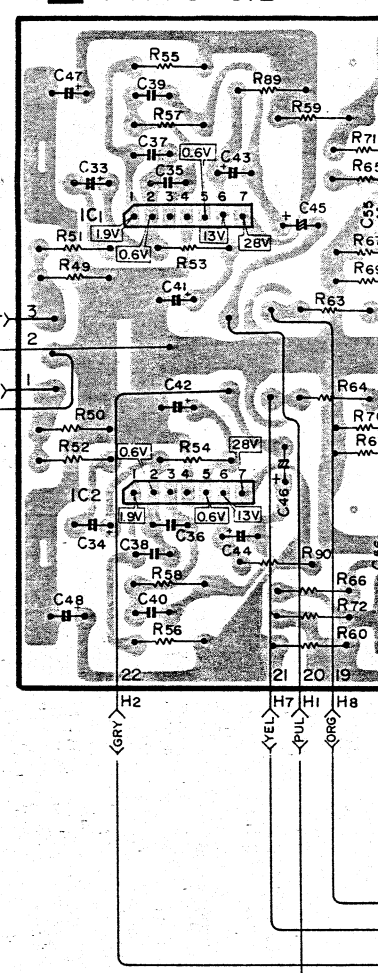
Settings:

- MONITOR switch: SOURCE
- OUTPUT LEVEL control: MAX
- Input signal: 400 Hz, 0VU
- Recording mode

Method:

- Adjust for a peak meter indication of -30 dB when the input is reduced by 17 dB.
- Adjustment locations: SFR1 (L-ch), SFR2 (R-ch)
- Rating: -30 dB $\pm$ 1 dB

B FRTS C.B



F SYSTEM LOGIC C.B

F SYSTEM LOGIC C.B

A REC/PB C.B

12 13 14 15 16 17 18 19 20 21

Balance Adjustment

Source
control: MAX
Hz, 0VU

Output is same for both left
s.
on: SFR4
5 dB

19. FRTS Adjustment

Settings:

- Recording mode
- OUTPUT LEVEL control: MAX
- Input signal: 400 Hz/8 kHz, 0VU -20 dB
- Test tape: TTA-119E

Method:

Using the test tape, check the frequency response of the 400 Hz and 8 kHz input signals, and adjust so that right channel meter

indication is 0VU when the TEST switch is set to ON.

Now adjust as follows for the left channel meter.

0 dB : 0VU
-1 dB : +1VU
+1 dB : -1VU

Adjustment locations: SFR5 (L-ch),
SFR6 (R-ch)

16. 400 Hz Osc Adjustment

Settings:

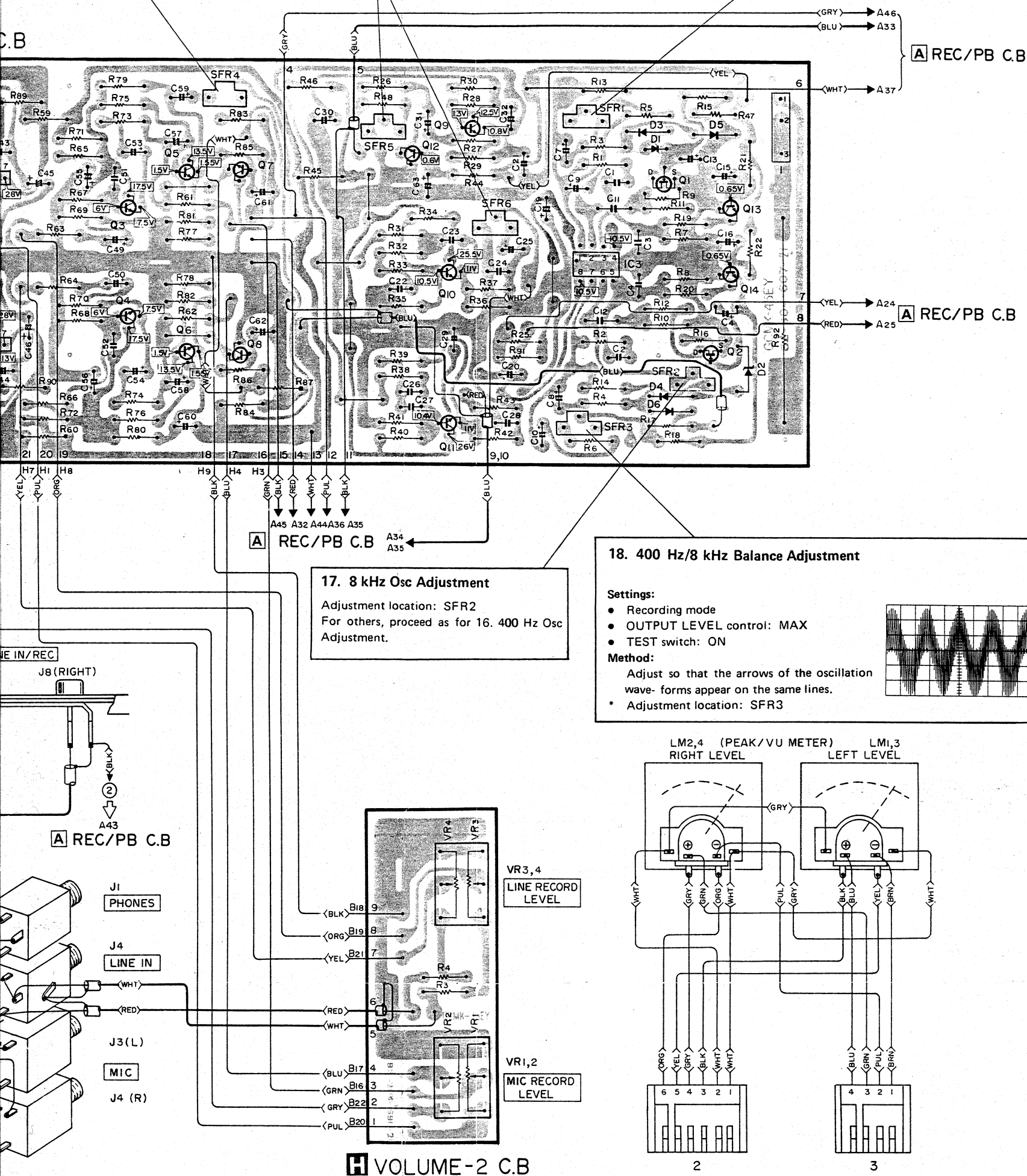
- Recording mode
- OUTPUT LEVEL control: MAX
- TEST switch: ON

Method:

Adjust so that waveforms appear on the oscilloscope.

Connect the oscilloscope to the right channel.

Adjustment location: SFR1



18. 400 Hz/8 kHz Balance Adjustment

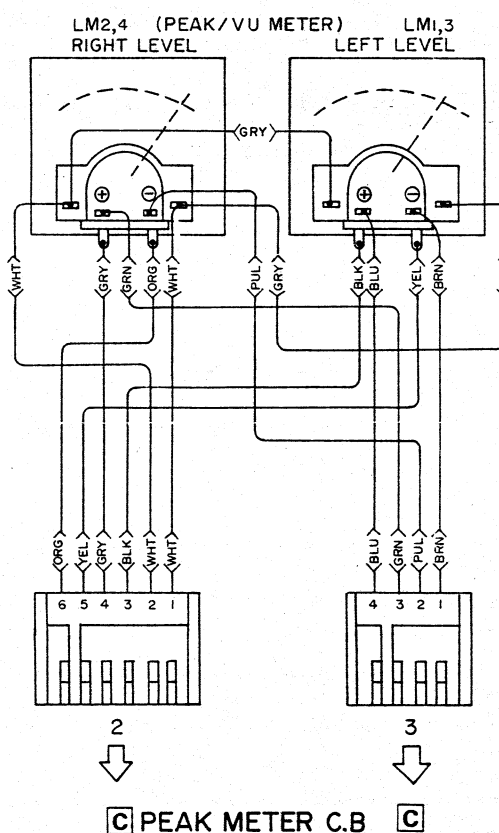
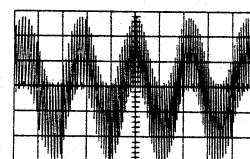
Settings:

- Recording mode
- OUTPUT LEVEL control: MAX
- TEST switch: ON

Method:

Adjust so that the arrows of the oscillation wave- forms appear on the same lines.

Adjustment location: SFR3



Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty	
4-1	82-303-285-01		Guide, Cassette R		1	
4-2	82-303-347-01		Lever, Cassette pressure		1	
4-3	82-303-355-01		Spring, Cassette pressure		1	
4-4	82-303-348-01		Holder, Cassette pressure		1	
4-5	82-303-289-01		Guide, Cassette L		1	
4-6	82-303-346-01		Lever, Rec.-blocking		1	
4-7	82-303-354-01		Spring, Rec.-blocking		1	
4-8	82-303-350-01		Holder, Rec.-blocking		1	
4-9	82-303-286-01		Lever, Brake		1	
4-10	82-304-286-01		Flange collar B	*	2	
4-11	82-304-238-01		Slide lever, Cassette pressure	*	1	
4-12	82-481-311-01		Spring, Plunger		1	
4-13	82-304-233-01		Holder, Plunger	*	1	
4-14	82-304-244-01		Shaft, Play lever	*	1	
4-15	82-304-248-01		Spring, Plunger	*	1	
4-16	82-304-232-01		Lever, PLAY	*	1	
4-17	82-304-243-01		Shaft B, Plunger	*	1	
4-18	82-304-234-01		Slide plate, PLAY	*	1	
4-19	82-304-249-01		Spring, Actuating	*	1	
4-20	82-304-242-01		Shaft A, Plunger	*	1	
4-21	82-304-283-01		Cushion, Plunger	*	1	
4-22	82-304-307-01		Screw, Plunger	*	2	
4-23	82-303-300-01		FR motor pulley		1	
4-24	87-085-135-01		Bushing 3-4-5		3	
4-25	87-087-029-01		Rubber cushion		3	
4-26	82-303-340-01		Shaft bearing ass'y		1	
4-27	82-304-701-01		Spacer, Insulation	*	1	
4-28	82-303-259-01		Holder, Motor circuit board		1	
4-29	82-304-260-01		Guide, Lock plate	*	1	
4-30	82-303-233-01		Mechanism chassis sub ass'y		1	
4-31	82-303-360-01		Supply reel platform ass'y		1	
4-32	82-303-358-01		Shaft bearing ass'y		1	
4-33	82-303-322-01		Spring, FR idler		1	
4-34	82-303-271-01		FR idler pulley ass'y		1	
4-35	82-303-335-01		Felt 6.4-14		1	
4-36	82-303-352-01		Spring, FR lever		1	
4-37	82-303-277-01		FR lever ass'y		1	
4-38	82-303-292-01		FR eject lever		1	
4-39	82-304-247-01		Rubber belt, Counter	*	1	
4-40	82-392-352-01		Cap, Take-up reel platform	AD-6550	1	
4-41	82-303-249-01		Take-up reel platform ass'y		1	
4-42	82-303-309-01		Rubber, Main drive		1	
4-43	82-303-330-01		Slip pulley ass'y		1	
4-44	82-303-385-01		Rubber belt B, FR		1	
4-45	82-439-426-01		Brake shoe A		2	
4-46	82-303-318-01		Spring, Brake		1	
4-47	82-303-297-01		Slide plate, Brake		1	
4-48	87-038-039-01		Wire binder		1	
4-49	82-303-314-01		Nut 2.6		2	
4-50	82-303-291-01		Plate, Flywheel		1	
4-51	82-385-311-01		Screw for thrust	AD-6300	1	
4-52	82-303-246-01		Flywheel ass'y		1	
4-53	82-303-310-01		Rubber belt, Flywheel		1	
4-54	82-303-224-01		Spring, Flywheel		1	
4-55	82-392-256-01		Shaft bearing ass'y	AD-6550	1	
4-56	82-304-251-01		Spring, Lock lever	*	1	
4-57	82-304-221-01		Lock lever ass'y	*	1	
4-58	82-397-354-01		Drum wheel C ass'y	AD-6550	1	
4-59	82-304-312-01		Idler oil E ass'y	*	1	
4-60	82-304-250-01		Spring, Oil	*	1	
4-61	82-303-356-01		Spring, CrO ₂		1	
4-62	82-303-351-01		Holder, CrO ₂		1	
4-63	82-303-349-01		Lever, CrO ₂		1	

Ref. No.	Part No.	Description	Q'ty
1-101	87-257-169-11	U + 4-6(Black)	6
1-102	87-233-072-01	Q + 2.6-5	6
1-103	87-081-480-01	VTT + 2.6-5	8

Ref. No.	Part No.	Description	Q'ty
1-104	87-081-504-01	VTT + 2.6-10	2
1-105	87-081-481-01	VTT + 3-5	4
1-106	87-347-094-01	UT ₂ + 3-6(Black)	1

Ref. No.	Part No.	Description	Q'ty
2-101	87-261-072-21	V + 2.6-5	3
2-102	87-261-093-21	V + 3-5	2
2-103	87-253-034-01	U + 2-5	1
2-104	87-251-072-21	U + 2.6-5	21
2-105	87-257-073-01	U + 2.6-6(Black)	3
2-106	87-491-074-01	VWS + 2.6-8	4
2-107	87-233-033-01	Q + 2-4	4
2-108	87-233-034-01	Q + 2-5	2
2-109	87-081-480-01	Q + 2.6-5	2
2-110	87-231-094-21	Q + 3-6	10
2-111	87-342-033-01	UT ₂ + 2-4(Black)	2
2-112	87-081-480-01	VTT + 2.6-5	15

Ref. No.	Part No.	Description	Q'ty
2-113	87-510-074-01	VTT ₂ + 2.6-8	5
2-114	87-081-522-01	QTT + 2.6-6	4
2-115	87-540-073-01	Special screw + 2.6-6	6
2-116	87-410-326-01	W4-10-1	1
2-117	87-081-015-01	FW3-8-0.5	1
2-118	87-432-907-01	WTE4.5	1
2-119	87-433-906-01	WTE4-9	1
2-120	87-391-034-01	N-4	1
2-121	87-081-481-01	VTT + 3-5	1
2-122	87-261-101-01	V + 3-18	2
2-123	87-251-094-21	U + 3-6	2

Ref. No.	Part No.	Description	Q'ty
3-101	87-253-035-01	V + 2-6	2
3-102	87-253-033-01	U + 2-4	3
3-103	87-253-035-01	U + 2-6	1
3-104	87-251-036-21	U + 2-8	4
3-105	87-251-072-21	U + 2.6-5	2
3-106	87-233-072-01	Q + 2.6-5	2
3-107	87-231-075-21	Q + 2.6-10	1
3-108	87-081-480-01	VTT + 2.6-5	10
3-109	87-081-501-01	VTT + 2.6-6	2
3-110	87-322-035-21	QT ₂ + 2-6	4

Ref. No.	Part No.	Description	Q'ty
3-111	87-410-304-01	W2-6-0.3	2
3-112	87-081-808-01	PW1.7-3.5-0.25	1
3-113	87-081-036-01	TW2-5-0.2	1
3-114	87-371-033-01	SS2-4	2
3-115	87-441-003-01	STE1.5	2
3-116	87-441-009-01	STE3	1
3-117	87-441-006-01	STE2.3	3
3-118	87-391-006-01	N-2	2
3-119	87-237-072-01	Q + 2.6-5(Black)	1

Ref. No.	Part No.	Description	Q'ty
4-101	87-251-036-21	V + 2-8	2
4-102	87-261-072-21	V + 2.6-5	4
4-103	87-171-074-21	V + 2.6-8	3
4-104	87-251-037-21	U + 2-10	1
4-105	87-251-071-21	U + 2.6-4	2
4-106	87-480-072-01	VS + 2.6-5	3
4-107	87-480-094-01	VS + 3-6	5
4-108	87-081-480-01	VTT + 2.6-5	15
4-109	87-081-501-01	VTT + 2.6-6	3
4-110	87-081-502-01	VTT + 2.6-8	4
4-111	82-303-328-01	W2-9.8-0.3	1
4-112	87-410-216-01	W3-8-0.8	3

Ref. No.	Part No.	Description	Q'ty
4-113	87-410-318-01	W3-13-0.8	1
4-114	87-081-031-01	FW3-8-0.5	2
4-115	87-081-808-01	PW1.7-3.5-0.25	4
4-116	82-416-358-01	PW6-2.5-0.5	1
4-117	87-081-036-01	TW2-5-0.2	4
4-118	87-081-319-01	TW2.3-8-0.2	1
4-119	87-081-031-01	TW3-8-0.3	1
4-120	87-371-033-01	SS2-4	1
4-121	87-441-005-01	STE2	2
4-122	87-441-006-01	STE2.3	6
4-123	87-441-009-01	STE3	2
4-124	87-251-036-21	U + 2-8	2

ACCESSORIES/PACKAGE

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
1	82-304-854-01		Printed indiv., Packing	*	1
2	82-304-852-01		Cushion L, Printed indiv.	*	1
3	82-304-853-01		Cushion R, Printed indiv.	*	1
4	87-051-135-01		Poly-vinyl sack (for AC power cord)		1
5	87-056-564-01		Curl stopper		2
6	87-056-607-01		Poly-vinyl sack (for case)		1
7	82-304-905-01		Instructions booklet (E model only)	*	1
8	82-304-906-01		Instructions booklet (K model only)	*	1
9	82-304-907-01		Instructions booklet (G model only)	*	1
10	87-051-175-01		Poly-tube A		1
11	87-056-008-01		Label AC power cord (K model only)		1
12	87-056-009-01		Distributors list		1
13	87-056-014-01		Tag, Main voltage (K model only)		1
14	87-056-032-01		Guarantee card (G model only)		1
15	80-291-645-01		Tape cassette, DMC-130A		1
16	82-304-951-01		Driver	*	1
17	86-925-006-01		Connection cord CW-115KS (E, K model only)		1
18	86-944-619-01		Connection cord CW-129KS (G model only)		2
19	87-058-023-01		Cord binder		1
20	87-058-024-01		Head cleaning pole ass'y		1

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