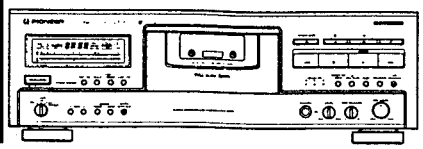
PIONEER®
The Art of Entertainment

Service Manual



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The chapter 1 of this Service Manual will not be reprinted. On your additional orders, we may supply only the chapter 2. For the chapter 1, please make copies and attach to the chapter 2 at your side if necessary.

STEREO CASSETTE DECK

CT-S830S
CT-S830S-G

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model		Power Requirement	The voltage can be converted by the following method.
	CT-S830S	CT-S830S-G		
HEM	○	○	AC220 – 230V	AC230 – 240V, *

*: Alter the wiring of the Power-supply block at the primary winding of power transformer referring to the "Line Voltage Selection" described in Service Manual.

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T – SSK APR. 1994 Printed in Japan

CHAPTER 1

1.1 SPECIFICATIONS

System ..... 4 track, 2 channel stereo
Heads
Recording/Playback head:
Combined Hard permalloy recording/Hard permalloy playback head x 1
Erasing head: Ferrite head x 1
Motor ..... DC servo capstan motor x 1
DC reel motor x 1
DC assist motor x 1
Wow and Flutter ..... 0.023% (WRMS)
±0.056% (DIN)
Fast Winding Time ..... Approximately 80 seconds (C-60 tape)
Frequency Response
–20 dB recording:
TYPE IV (Metal) tape ..... 15 to 25,000 Hz (±6 dB)
TYPE II (High/CrO_2) tape ..... 15 to 20,000 Hz (±6 dB)
TYPE I (Normal) tape ..... 15 to 20,000 Hz (±6 dB)
Signal-to-Noise Ratio (Dolby NR off) ..... More than 60 dB
Noise Reduction Effect
Dolby B-type NR ON ..... More than 10 dB (at 5 kHz)
Dolby C-type NR ON ..... More than 19 dB (at 5 kHz)
Dolby S-type NR ON
(CT-S830S) ..... More than 22 dB (at 5 kHz)
Harmonic Distortion ..... No more than 0.6% (at –4 dB: 160 nwb/m)
Input (Sensitivity)
LINE (INPUT) ..... 100 mV (Input impedance 23 kΩ)
Output (Reference level)
LINE (OUTPUT) ..... 0.5 V (Output impedance 2.2 kΩ)
Headphone ..... 9 mW (Load impedance 32 Ω, LEVEL control max.)

Subfunctions

- SUPER AUTO BLE system
- BIAS control
- Dolby HX Pro Headroom Extension system
- Dolby S-type noise reduction system (CT-S830S)
- Dolby B-type and C-type noise reduction systems
- MPX filter
- Level meter with 2 modes peak hold selection (12+1 segments)
- Level meter range selection (wide/expanded)
- 4-digit electronic tape counter with mode selection (Normal/Time/Remain)
- Auto monitor selection (Tape/Source)
- Display off
- Music search (over ±15 selections)
- Automatic Tape Loose Canceller (ATLC)
- Tape return/return play
- Auto space recording mute
- Auto tape selector
- Playback/recording timer start function
- CD•DECK SYNCHRO recording
- Headphones jack with level control
- Power eject (Open/Close)
- Repeat playback
- System remote control available
- Last memory

Miscellaneous

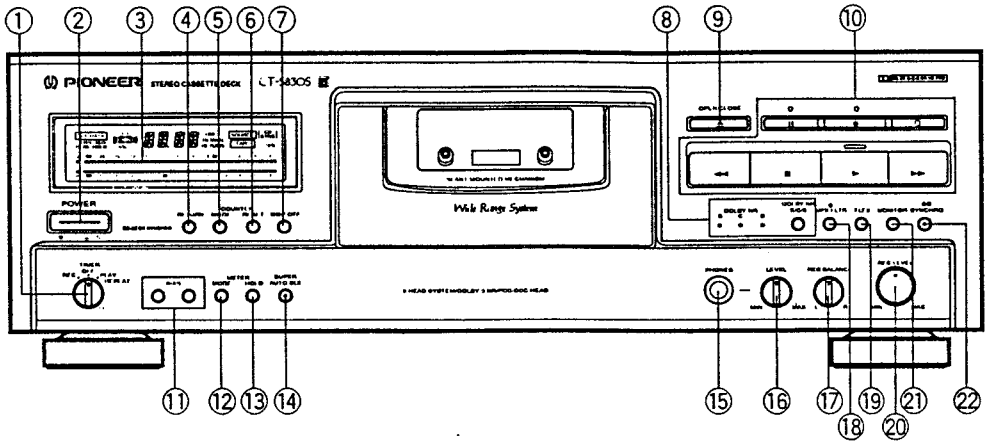
Power Requirements
European model ..... AC 220 — 230 Volts~, 50/60 Hz
Multivoltage model ..... AC 110/120 — 127/220/240 V (switchable), 50/60 Hz
Power consumption
CT-S830S ..... 28 W
CT-S730 ..... 27 W
Dimensions ..... 420 (W) x 140 (H) x 381 (D) mm
Weight (without package) ..... 7.1 kg

Accessories

Operating instructions 1
Connection cord with pin plugs 2
CD•DECK SYNCHRO control cord 1
Remote control cord 1

NOTE:
Specifications and design subject to possible modifications without notice, due to improvements.

1.2 PANEL FACILITIES



This illustration shows model CT-S830S.

① **TIMER mode/repeat play switch (TIMER REC/OFF/PLAY-REPEAT)**
REC: Set to this position to perform timer recording.
OFF: Set to this position under ordinary conditions (when not using the timer or repeat functions).
PLAY-REPEAT:
Set to this position to perform timer playback. When the switch is set to this position during normal playback, repeat playback of a single tape can be performed.

② **Power switch (POWER ▮ OFF/ ⎓ ON)**
After pressing the switch, the WAIT message will appear in the counter display and the level meter scale will flash for about four seconds (the time necessary for circuitry to stabilize). When the display is flashing, no operating buttons will respond, with the exception of the cassette door OPEN/CLOSE button (⏏). To close the cassette door, do it while the power is turned on.

③ **Function display**

④ **Return button (RETURN)**
This button is used in the normal tape counter mode to fast forward or rewind the tape to a point near the counter reading "0000".

⑤ **Counter mode button (COUNTER MODE)**
Each time this button is pressed, one of the three modes (Normal tape counter/Timer counter/Remaining time counter) is set in sequence.

⑥ **Counter reset button (COUNTER RESET)**
Reset the counter indication to "0000" in the normal tape counter or the time counter mode.
To indicate the correct time value in the remaining time counter mode, this button must be set in accordance with the tape used.

⑦ **Display off button (DISP OFF)**
Press this button to turn off the function display.

⑧ **DOLBY* NR button/indicators (OFF/B/C/S) (CT-S830S)**
DOLBY* NR button/indicators (OFF/B/C) (CT-S730)
Press to select the Dolby NR system in the following order. The selected indicator lights up.

For the CT-S830S: OFF → B → C → S →
For the CT-S730: OFF → B → C →

When the DOLBY NR button is set to OFF, the DOLBY NR indicators go off.

*
- *Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.*
- *"DOLBY", the double-D symbol ⧈ and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.*

⑨ **OPEN/CLOSE button (⏏)**
Press this button to open or close the cassette door. Whenever inserting or removing a cassette tape, be sure that the power is turned on.

⑩ **Operation buttons**
- ▮▮ : Pause
- ● : Recording
- ○ : Recording mute
- ◄◄ : Rewind/music search
- ■ : Stop
- ► : Playback
- ►► : Fast forward/music search

⑪ **Recording bias buttons (BIAS –/+)**
When desired, these buttons can be used to manually adjust the recording bias after performing SUPER AUTO BLE tuning.
– : Changes tone by reducing recording bias
+ : Changes tone by increasing recording bias

⑫ **Level meter mode selector button (METER MODE)**
Switches between wide range, expanded range, and bias display.

⑬ **Level meter hold button (METER HOLD)**
Selects the display mode of the peak level.
Press this button so that the PEAK HOLD indicator lights up. The level meter holds the maximum level indications of the signal. To erase the maximum level indications, press this button again. When the PEAK HOLD indicator goes off, the level meter holds peak indications for about 1.2 second.

⑭ **SUPER AUTO BLE button**

⑮ **Headphones jack (PHONES)**

⑯ **Headphones level control (LEVEL)**

⑰ **Recording balance control (REC BALANCE)**

⑱ **MPX Filter button (MPX FLTR)**
The indicator lights when the MPX Filter button is set to ON.

⑲ **FLEX button**

⑳ **Recording level control (REC LEVEL)**

㉑ **Monitor selector button (MONITOR)**
Used to monitor the source sound or adjust recorded sound during recording.
- When the unit is set to record or playback mode, the TAPE indicator lights up and monitor mode is automatically selected.

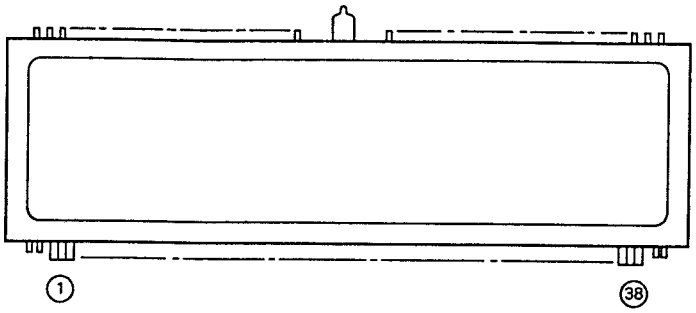
㉒ **CD•DECK SYNCHRO recording button (CD SYNCHRO)**

ATLC (Automatic Tape Loose Canceler)

With the tape slack prevention function, when the cassette door closes, the reel automatically revolves to eliminate any tape slack.

1.3 FL INFORMATION

RAW1128 (V1501)

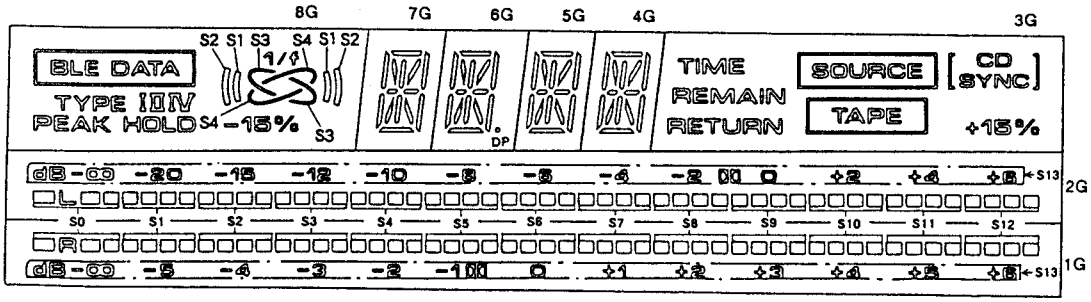


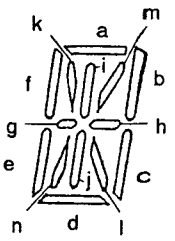
Pin Connection

TERMINAL NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
ELECTRODE	F1	F1	NP	NP	NC	8G	7G	6G	5G	4G	3G	2G	1G	P14	P13	P12	P11	P10	P9	
TERMINAL NO.		20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
ELECTRODE		P8	P7	P6	P5	P4	P3	P2	P1	P0	NP	NP	NP	NP	NP	NP	NP	NP	F2	F2

Notes F : Filament G : Grid P : Anode NP : No pin

Grid Assignment





Anode Connection

	8G	7G	6G	5G	4G	3G	2G	1G
S0	1/f	a	a	a	a	TIME	S0	S0
S1	( ) S1	b	b	b	b	REMAIN	S1	S1
S2	( ) S2	c	c	c	c	RETURN	S2	S2
S3	S3	d	d	d	d	TAPE	S3	S3
S4	S4	e	e	e	e	SOURCE	S4	S4
S5	–	f	f	f	f	[CD SYNC]	S5	S5
S6	BLE DATA	g	g	g	g	+15%	S6	S6
S7	TYPE	h	h	h	h	–	S7	S7
S8	I	i	i	i	i	–	S8	S8
S9	II	j	j	j	j	–	S9	S9
S10	IV	k	k	k	k	–	S10	S10
S11	−15%	l	l	l	l	–	S11	S11
S12	HOLD	m	m	m	m	–	S12	S12
S13	PEAK	n	DP	n	n	–	S13	S13
S14	–	–	n	–	–	–	–	–

1.4 ADJUSTMENTS

1. MECHANICAL ADJUSTMENT

1. Tape Speed Adjustment			
Mode	Test tape	Adjustment position	Specification rating (playback frequency)
PLAY	Play the STD-301 tape (3kHz)	Tape speed adjustment hole	3000Hz ± 5Hz

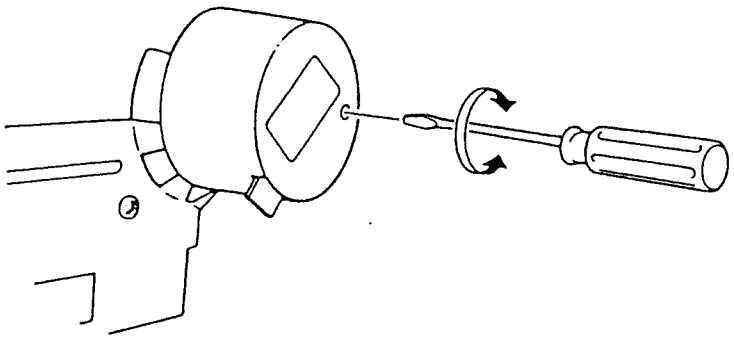


Fig. 1 Tape speed adjustment

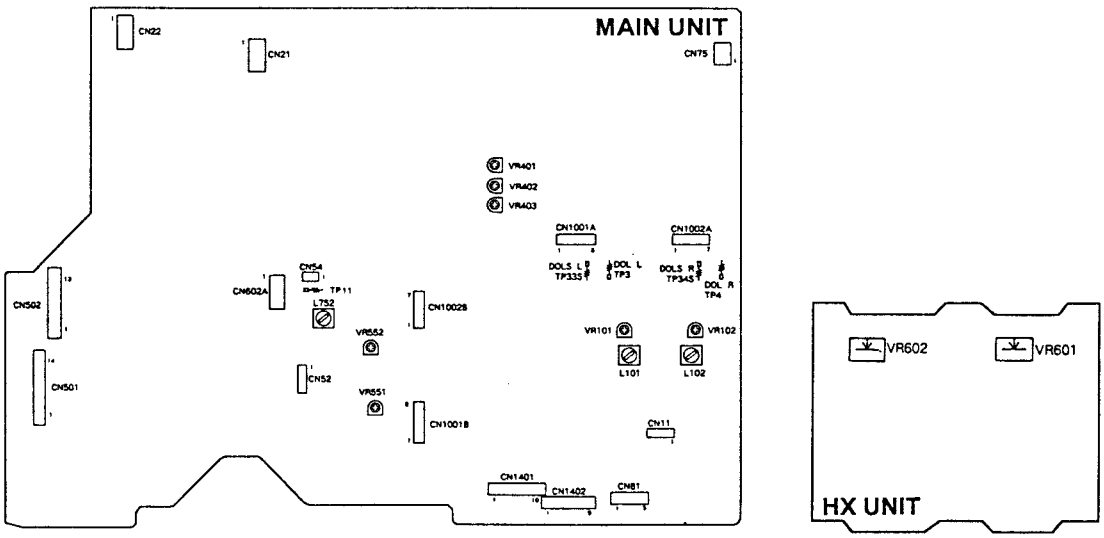


Fig. 2 Adjusting points

2. ELECTRICAL ADJUSTMENTS

Adjustment Conditions

1. The mechanical adjustments must be completed first.
2. The head must be cleaned and demagnetized.
3. Turn power on allow the deck to warm up for at least a few minutes before commencing any electrical adjustments.
4. The reference signal is 0 dBV=1 Vrms.
5. Connect a 10 kΩ load resistance to the OUTPUT terminals.
6. Unless otherwise specified, the switches listed below are left in the positions indicated.
   DOLBY NR : OFF
   TAPE SELECTOR : NORM

Test Tapes

STD–331E : Playback adjustments (See Fig. 3)
STD–631 : NORMAL blank tape
STD–621 : CrO_2 blank tape
STD–610 : METAL blank tape

* As the reference recording level is 250 nwb/m for STD–331E, the recording level will be higher by 4 dB for STD–331B (160 nwb/m). When adjusting, pay carefull attention to the type of tape used.

List of Adjustments

Playback sections

1. Head azimuth adjustment.
2. Playback level adjustment.

Recording sections

1. Bias oscillator adjustment.
2. Bias trap adjustment.
3. Recording bias adjustment.
4. Recording level adjustment.
5. AUTO BLE adjustment.

NOTE: This unit has an automatic tape selection feature.

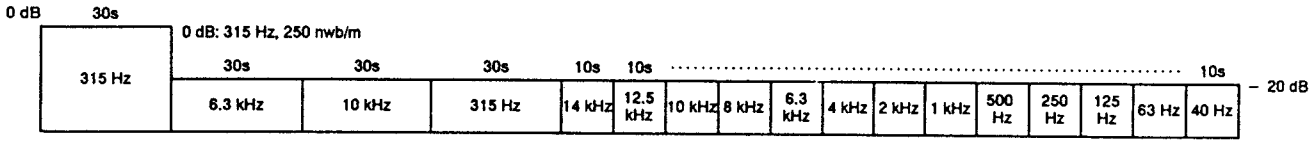


Fig. 3 Constants of the test tape STD–331E

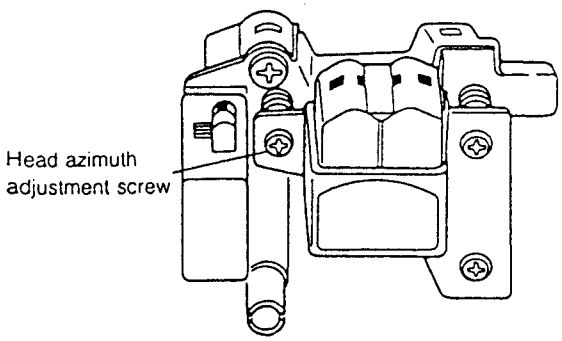


Fig. 4 Head azimuth adjustment

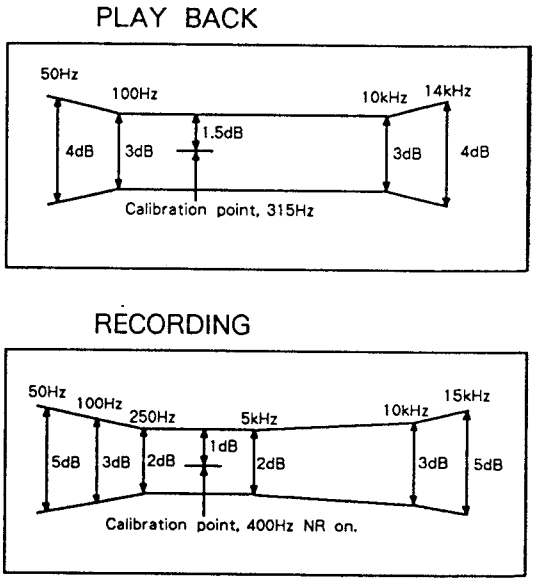


Fig. 5 Frequency response zone

PLAYBACK SECTION

1. Head Azimuth Adjustment

- Turn VR101, 102 to mechanical center positions.

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	PLAY	Play the 10 kHz/–20 dB section of STD–331E test tape.	Head azimuth adjustment screw. (See Fig. 4)	LINE OUT	Maximum playback signal level.	
2.	STOP	Lock the screw with screw lock after completing adjustment.				

Note: The left and right phase difference for the 12.5 kHz tone should be within 75 degrees. (That for the 10 kHz tone should be within 60 degrees.)

2. Playback Level Adjustment

- This adjustment determines the DOLBY NR level, and must be performed with great care.

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	PLAY	Play the 315 Hz/0 dB section of the STD–331E test tape.	Deck	VR101 (Lch) VR102 (Rch)	TP. 3 (Lch) TP. 4 (Rch)	– 7.2 dBV	
2.	Set the DOLBY NR switch to the S position.						
3.	PLAY	Play the 315 Hz/0 dB section of the STD–331E test tape.			TP. 33S (Lch) TP. 34S (Rch)	–7.2 dBV ± 0.5 dB	

RECORDING SECTION

1. Bias Oscillator Adjustment

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	REC/ PLAY	Load the STD–610 test tape with no input signal.	Deck	L752	TP. 11	105 kHz ± 300 Hz	

2. Bias Trap Adjustment

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	REC/ PLAY	Load the STD–610 test tape with no input signal.	Deck	L101 (Lch) L102 (Rch)	LINE OUT	Minimum output	

3. Recording Bias Adjustment

- After the adjustment, Caution should be exercised so as not to become under bias by checking the distortion rate.
- Set the DOLBY NR switch to the OFF position.

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	REC/ PLAY	Record the 315 Hz and 10kHz signals at – 26 dBV input level onto the STD – 631 test tape, and Playback.	Deck	VR601 (Lch) VR602 (Rch)	LINE OUT	Repeatedly record, playback and adjust so that the playback level of 10 kHz signal becomes 0 dB ± 0.5dB when compared with the 315Hz signal.	

4. Recording Level Adjustment

- Set the DOLBY NR switch to the OFF position.

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	REC PAUSE	Apply a 315 Hz/ – 4 dBV signal to the line input terminals, load the STD–631 test tape.	REC level control volume		TP. 1 (Lch) TP. 2 (Rch)	–11.2 dBV	
2.	REC/ PLAY	Record the above signal onto the STD – 631 test tape, and playback.	Deck	VR551 (Lch) VR552 (Rch)	TP. 3 (Lch) TP. 4 (Rch)	Repeatedly record, playback and adjust so that the playback signal level becomes –11.2 dB.	
3.	REC/ PLAY	Record the above signal onto the STD – 621 test tape, and playback.	Check			–11.2 dBV ± 1 dB	
4.	REC/ PLAY	Record the above signal onto the STD – 610 test tape, and playback.	Check			–11.2 dBV ± 1 dB	
5.	STOP	Set the DOLBY NR switch to the S position.					
6.	REC/ PLAY	Record the above signal onto the STD – 631 test tape, and playback.	Check		LINE OUT	0 dB ± 1.0 dB for paragraph 2.(*1)	

*1: If this confirmation value cannot be obtained, perform "Playback Level Adjustment" once again.

5. AUTO BLE Adjustment

- BLE Adjustment must be performed after all other adjustments are completed.
- This adjustment should be performed in the test mode.
- Entering the test mode
  Press the COUNTER MODE, COUNTER RESET and PAUSE keys on the front panel simultaneously, with the power ON. The unit enters the test mode and oscillates a 400 Hz signal.
  Thereafter, each time the AUTO BLE key is pressed, the oscillation frequency changes as follows: 3 kHz oscillation → 15 kHz oscillation → 400Hz oscillation

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	–	Set to test mode	–	–		
2.		Press the AUTO BLE key on the front panel.	VR401	Level meter Lch	Adjust the Lch segment which is lit until Rch is not lighting up. Lch ■→□ Rch ■■□■■ (■: light up □: not light up)	400 Hz adjustment (FL indication 1)
3.		Press the AUTO BLE key on the front panel.	VR402			3 kHz adjustment (FL indication 2)
4.		Press the AUTO BLE key on the front panel.	VR403			15 kHz adjustment (FL indication 3)
5.	When the COUNTER RESET key is pressed again, the test mode is released.					

1.5 PARTS LIST FOR EXPLODED VIEWS AND PACKING

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

1. EXTERIOR

■ CONTRAST OF CT-S830S/HEM AND CT-S830S-G/HEM

CT-S830S/HEM and CT-S830-G/HEM have the same construction except for the following:

Mark	No.	Symbol & Description	Part No.		Remarks
			CT-S830S/HEM	CT-S830S-G/HEM	
	16	Panel stay	RNT1197	RNT1196	
	19	Operation button	RAC1900	RAC1897	
	20	VR knob	RAC1902	RAC1899	
	21	Rotary knob	RAC1903	RAC1895	
	22	Power button	RAC1904	RAC1894	
	24	Lower panel	RAH2406	RAH2404	
	27	Front panel	RAH2409	RAH2403	
	29	Bonnet assy	REA1131	REA1132	
	30	Rear panel	RNA1810	RNA1805	
	31	Door	RNK2063	RNK2061	
	32	Escutcheon mold	RNK2065	RNK2062	
	36	Lower mold	RNK2081	RNK2080	
	37	Name plate	VAM1032	RAN1011	

■ PARTS LIST FOR CT-S830S/HEM

Mark	No.	Description	Part No.
⚠	1	Strain relief	CM – 22B
⚠	2	AC power cord	PDG1003
⚠	3	Fuse (T1.6A)	REK – 102
⚠	4	Power transformer	RTT1233
	5	Mechanism unit	RYM1232
NSP	6	Cord stopper	DNF1128
	7	Door spring	RBH1395
NSP	8	Rubber spacer (A)	REB1057
	9	Door cushion	REB1174
	10	Protector	RED1020
NSP	11	Main chassis	RNB1059
NSP	12	PCB base	RNE1221
	13	VR shield plate	RNE1773
	14	HP holder	RNE1776
	15	Cord clamper	RNH – 184
	16	Panel stay	RNT1197
	17	Snap plate	VNE1102
	18	Insulator	PNW1912
	19	Operation button	RAC1900
	20	VR knob	RAC1902
	21	Rotary knob	RAC1903
	22	Power button	RAC1904
	23	FL filter	RAH1936
	24	Lower panel	RAH2406
	25	FL lens	RAH2407
	26	Door lens	RAH2408
	27	Front panel	RAH2409
	28	Door sheet	REB1191
	29	Bonnet assy	REA1131
	30	Rear panel	RNA1810

Mark	No.	Description	Part No.
	31	Door	RNK2063
	32	Escutcheon mold	RNK2065
	33	LED lens 1	RNK2066
	34	Lens L	RNK2067
	35	Spacer	REC1197
	36	Lower mold	RNK2081
	37	Name plate	VAM1032
	38	Screw	BBT30P100FZK
	39	Screw	BBZ26P080FZK
	40	Screw	BBZ30P060FCC
	41	Screw	FBT40P080FZK
	42	Screw	IBZ30P060FCC
	43	Screw	IBZ30P060FCC
	44	Screw	IBZ30P080FCC
	45	Screw	IBZ30P100FCC
	46	Screw	IBZ40P080FCC
NSP	47	Binder	Z09 – 058
NSP	48	HPHN unit	RWZ3232
	49	FL unit	RWZ3234
	50	OPSW unit	RWZ3236
NSP	51	VR unit	RWZ3270
	52	MAIN unit	RWZ3272
	53	HX unit	RWX1069
	54	1/F unit	RWX1086
	55	Dolby S unit	RWX1103
NSP	56	PWSW unit	RWZ3275
NSP	57	TRN 2 unit	RWZ3279
NSP	58	TRN 1 PCB	RNZ2452
NSP	59	UL tube	Z09 – 019

2. MECHANISM UNIT

Mark	No.	Description	Part No.
	1	Rotary encoder	RSX1004
	2	Capstan motor assembly	RXX1491
	3	Reel motor assembly	REA1075
	4	Step screw	RBA – 064
	5	Cassette plate assembly	RXX1064
	6	Rubber cushion	REB1125
	7	Pinch spring	RBL – 028
	8	Pinch thrust spring	RBL – 030
	9	Sub – pinch spring	RBL – 098
	10	Capstan belt	REB1143
	11	Capstan belt (A)	REB – 509
	12	Tape guide	RNK1823
	13	Flywheel assembly	RXA1374
	14	Sub – flywheel assembly	RXA1375
	15	Metal holder assembly (A)	RXA1426
	16	Metal holder assembly (B)	RXA1343
	17	Pinch roller arm (R) assembly	RXB – 876
	18	Pinch roller arm (A) assembly	RXB – 877
	19	BT spring (A)	RBL – 031
	20	BT spring (B)	RBL – 032
	21	Idler pressure spring	RBL – 033
	22	Reel shaft cap (B)	RNK – 815
	23	BT disk assembly	RXB – 751
	24	Reel base assembly	RXB – 874
	25	Take – up idler assembly	RXA1554
	26	Washer	RBF – 065
	27	Head base spring	RBL – 037
	28	Brake spring	RBL – 038
	29	Drive belt	REB1182
	30	Brake shoe	REB – 511
	31	Brake	RNL – 723
	32	Cam gear	RNK1640
	33	Side cam gear	RNK1765
	34	Stabilizer	REB1161
	35	Eject spring	RBL – 039
	36	Half set arm spring	RBL – 040
	37	REC functioning spring	RBL – 041
	38	Detection functioning spring	RBL – 042
	39	Reel motor mounting plate	RNE1604
	40	Flywheel holder	RNH – 304
	41	Cord clamper	RNH – 184
	42	Washer	RBF – 057
	43	REC detector arm	RNL – 733
	44	Chrom detector arm	RNL – 734
	45	Metal detector arm	RNL – 735
	46	Thrust holder	RNL – 743
	47	Motor pulley	PNW1634
	48	Pressure arm (R)	RNL – 725
	49	Collar	RNL – 742
	50	Pressure arm (L)	RNL – 726

Mark	No.	Description	Part No.
	51	Head base set spring	RBL – 026
	52	Gear chassis assembly	RXA1171
	53	Screw	BBZ26P080FZK
	54	Pinch base assembly	RXB – 878
	55	Screw	BBZ30P080FZK
	56	Eject lever	RNK1763
	57	Screw	BCZ30P060FMC
	58	Screw	BMZ26P030FZK
	59	Screw	IBZ20P060FMC
	60	Screw	BMZ26P060FZK
	61	Screw	BMZ30P080FZK
	62	Screw	PMZ30P040FMC
	63	Screw	PMA26P050FZK
	64	Screw	PMA26P060FZK
	65	Screw	PMZ20P080FZK
	66	Washer	RBF – 030
	67	Stabilizer (B)	REB1038
	68	Earth spring	RBL – 059
	69	Washer	RBF – 076
	70	Washer	RBF1040
	71	Binder	REC – 371
	72	Steel ball (3mm)	REF – 022
	73	Steel ball (4mm)	REF – 023
	74	Screw	VCT30P060FZK
	75	LED (D3)	SLF – 401C
	76	Washer	WA21D040DO13
	77	Washer	WA26N070W040
	78	Washer	WA32D080DO50
	79	E ring	YE20FUC
	80	E ring	YE25FUC
	81	E ring	YE30FUC
	82	Snap ring	YS24FBT
	83	Shift shaft assembly	RXB – 885
	84	Head base assembly	RXX1333
	85	Mechanism chassis assembly	RXA1366
	86	Brake lever	RNK1638
	87	Second pulley assembly	RXA1350
	88	Door frame (L)	RNE1774
	89	Pinch lever assembly	RXA1360
	90	Door frame (R)	RNE1775
	91	Damper assembly	VXA1153
	92	Half pressure spring	RBK1004
	93	Door pocket	RNK1764
	94	Loading motor	VXM1034
	95	Screw	PBZ20P060FMC
	96	Capstan motor	RXM1054
	97	Reel motor	RXM1065
	98	2.5mm pitch side post (5P)	BS5P – SHF – 1
	99	Connector assembly (4P)	RKP1383
	100	Connector assembly (2P)	RKP1384

Mark	No.	Description	Part No.
NSP	101	Gear base assembly	RXB – 882
NSP	102	E head	RPB1042
NSP	103	R & P head	RPB1041
NSP	104	Connector unit	RWZ1751
NSP	105	Adjustment nut	RBA1047
NSP	106	Head adjustment spring C	RBL – 034
NSP	107	Hight spring	RBL – 036
NSP	108	Head base	RNK1645
NSP	109	Sub – head base	RNG – 335
NSP	110	E head base	RNG1033
NSP	111	Earth lead assembly	RDF – 001
NSP	112	REC switch unit	RWZ1749
NSP	113	Tape selector unit	RWZ1750
NSP	114	Sensor unit (B)	RWZ1753
NSP	115	Cassette plate	RAH1306
NSP	116	Lead wire holder	RNL – 793
NSP	117	Shift roller	RNL – 731
NSP	118	Sensor unit (A)	RWZ1752
NSP	119	Motor pulley	RNK1676
NSP	120	Reel motor pulley	RLA1186
NSP	121	Connector assembly (4P)	RKP1111
NSP	122	Connector assembly (2P)	RKP – 895
NSP	123	Friction spring	RBL – 047
NSP	124	Spring cup	RNL – 012
NSP	125	Idle pulley	RNL – 549
NSP	126	Idler arm	RNK1908
	127	Spacer	REF1004

3. PACKING

Mark	No.	Description	Part No.
	1	Pad (F)	RHA1145
	2	Pad (R)	RHA1146
	3	Packing case (CT-S830S/HEM)	RHG1555
	3	Packing case (CT-S830S-G/HEM)	RHG1559
	4	Sheet	RHX1007
	5	Control cord (For CD • DECK SYNCHRO)	RDE1038
	6	Operating instructions (English/Spanish)	RRE1094
	7	Connection cord (For SR cord)	PDE1247
	8	Connection cord assembly	RDE1036
	9	Operating instructions (French/German/Italian/ Dutch/Swedish/Portuguese)	RRD1146
	10	Vinyl bag	Z21 – 038

1.6. PCB PARTS LIST

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω → 56 × 10^1 → 561 ····· RD1/8PM 5 6 1 J
47k Ω → 47 × 10^3 → 473 ····· RD1/4PS 4 7 3 J
0.5 Ω → 0R5 ····· RN2H 0 R 5 K
1 Ω → 010 ····· RS1P 0 1 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 × 10^1 → 5621 ····· RN1/4PC 5 6 2 1 F

Mark	No.	Description	Part No.
	LIST OF ASSEMBLIES		
NSP	MOTHER UNIT		RWM1716
	├MAIN UNIT		RWZ3272
	│ ├HX UNIT		RWX1069
	│ ├1/F UNIT		RWX1086
	│ └DOLBY S UNIT		RWX1103
NSP	├PWSW UNIT		RWZ3275
NSP	├TRN 2 UNIT		RWZ3279
NSP	└TRN 1 PCB		RNZ2452
NSP	SUB UNIT		RWM1701
NSP	├HPHN UNIT		RWZ3232
	├FL UNIT		RWZ3234
	├OPSW UNIT		RWZ3236
NSP	└VR UNIT		RWZ3270
	JUNCTION CIRCUIT UNIT		RWM1615
NSP	├REC SWITCH UNIT		RWZ1749
NSP	├TAPE SELECTOR UNIT		RWZ1750
NSP	├CONNECTOR UNIT		RWZ1751
NSP	├SENSOR UNIT(A)		RWZ1752
NSP	└SENSOR UNIT(B)		RWZ1753
	MAIN UNIT		
	SEMICONDUCTORS		
	IC521		BA10339
	IC401, IC501		BA15218N
	IC871		BA6109
	IC551		CXA1198AP
	IC121, IC321		CXA1330S
⚠	IC901, IC902		ICP-N20
	IC702		LC7570
	IC141, IC903		M5218AP
	IC101		M5220P
⚠	IC812		NJM7805FA
⚠	IC811		NJM7812FA
	IC703		NM93C46N
	IC701		PD4444A
	IC851		TA7291P
	IC543		TC4050BP
	IC251		TC4052BP
	IC151, IC351		TC4066BP
⚠	Q801		2SA1283
	Q701, Q871-Q874, Q902		2SA1309A
⚠	Q904		2SB1185
	Q751, Q752		2SC3243
	Q621, Q630, Q831-Q833, Q901		2SC3311A
⚠	Q903		2SD1762
	Q251, Q252, Q305, Q306		2SD2144S
	Q551, Q552, Q557, Q558, Q753		2SD2144S
	Q304		2SK246
	Q142, Q163, Q302, Q771, Q835		DTA124ES
	Q952, Q971-Q974		DTA124TS
	Q101, Q102, Q875		DTC114ES
	Q851, Q852		DTC114TS
	Q141, Q161, Q162, Q301		DTC124ES
	Q401, Q402, Q461-Q476		DTC124ES
	Q501, Q502, Q521, Q522		DTC124ES
	Q553-Q555, Q624-Q629		DTC124ES
	Q735-Q738, Q834, Q951		DTC124ES
	Q622, Q623		DTC124TS
⚠	D901-D904		10DF2FA9
⚠	D801, D811, D871		1SR35-100AVL
	D813, D814		1SS252
	D101-D104, D141, D301, D302		1SS254
	D501-D506, D701, D703-D713		1SS254
	D751, D831, D832, D951-D960		1SS254
	D971-D976		1SS254
⚠	D905, D906		HZS6C1L
	D833		MTZ3. 6B
⚠	D803		MTZJ33B
	D702		MTZJ9. 1A/B
⚠	D802		MTZJ9. 1C
⚠	D812		S2VB20

Mark	No.	Description	Part No.
COILS AND FILTERS			
	L751		LFA121K
	L752		RTD1057
	L101, L102		RTF1060
	L851		RTF1068
	L551, L552		RTF1094
	F301, F302		RTF1210
CAPACITORS			
	C871		CEANP4R7M35
	C251, C401, C551, C552, C564		CEAS010M50
	C954		CEAS010M50
	C4, C503, C504, C771, C852		CEAS100M50
	C751, C815, C875		CEAS101M16
	C802, C804		CEAS101M50
	C817		CEAS102M6R3
	C509, C756, C874		CEAS330M16
	C702, C721, C833		CEAS470M16
	C129, C130, C317, C318, C872		CEASR22M50
	C127, C128, C131, C132		CEASR33M50
	C315, C316, C319, C320		CEASR33M50
	C505, C506		CEASR47M50
	C133, C134, C252, C253		CENA101M25
	C323, C324		CENA101M25
	C113, C114, C147-C150		CENA470M25
	C559, C560		CENA470M25
	C305, C306		CEYA010M50
	C141, C142, C145, C146		CEYA100M50
	C353, C354, C907, C908		CEYA100M50
	C107, C108, C135, C136		CEYA220M25
	C555, C556		CEYA220M25
	C137, C138, C321, C322		CEYA330M25
	C121, C122, C309, C310		CEYA4R7M50
	C553, C554, C831, C832		CEYA4R7M50
	C123-C126, C311-C314		CFTXA222J50
	C405, C753, C754		CFTXA332J50
	C406, C755		CFTXA682J50
	C752		CFTYA223J50
	C109, C110, C402		CFTYA273J50
	C501, C502		CFTYA473J50
	C105, C106, C403, C909, C910		CFTYA563J50
	C255-C257		CKCYB561K50
	C541, C701, C703-C705, C722		CKCYF103Z50
	C873, C951, C952		CKCYF103Z50
	C254, C303, C801, C803		CKCYF473Z50
	C811-C813, C851, C901, C902		CKCYF473Z50
	C953		CKCYF473Z50
	C103, C104, C507, C508		CKPUYB101K50
	C111, C112, C557, C558		CKPUYB102K50
	C143, C144		CKPUYB122K50
	C407		CQMA103J50
	C404		CQMA823J50
	C757		CQPA752J100
	C101, C102		CQSXA221J160
	C814 (6800/25)		RCH1033
	C903, C904 (2200/25)		RCH1096
	C911, C912 (220/25)		RCH1103
	C816 (10000/16)		VCH1054
RESISTORS			
	R701, R702, R707		RA4T223J
	R545		RA5T223J
	R705, R706, R712		RA7T223J
	R369, R370 (560Ω)		RCN1024
	R153, R154, R157, R158 (12K)		RCN1064
	R546 (11K/22K)		RCX1020
	R608		RD1/2LMF010J
	R855		RD1/2LMF100J
	R802		RD1/2LMF562J
	R753, R754		RD1/2LMF6R2J
	R327, R328		RDR1/4PM103J
	R257, R258		RDR1/4PM471J
⚠	R801		RFA1/4L470J
	R871		RS1LMF010J
⚠	R903, R904		RS1LMF151J
	R803		RS1LMF152J
	VR551, VR552 (22K)		RCP1046
	VR101, VR102, VR401, VR403 (47K)		RCP1047
	VR402 (100K)		RCP1048
	Other Resistors		RD1/6PM□□□J
OTHERS			
	CN75, CN76 JUMPER CONNECTOR 3P		KPC3
	CN21, CN22 JANPER CONNECTOR 5P		KPC5
	JA953 MINI JACK		PKN1005
	JA251, JA301 JACK 2P		RKB1020
	JA951, JA952 REMOTE CONTROL JACK		RKN1004
	CN81 JUMPER CONNECTOR 5P		SBRK05S
	CN1402 JUMPER CONNECTOR 9P		SBRK09S
	CN1401 JUMPER CONNECTOR 10P		SBRK10S
	CN502 JUMPER CONNECTOR 13P		SBRK13S
	CN501 JUMPER CONNECTOR 14P		SBRK14S
	EARTH PLATE		VNF-091
	X701 CERAMIC RESONATOR (4.19MHz)		VSS1014
	CN54 SP CONNECTOR		W-P5102#51
	CN52 SP CONNECTOR		W-P5104#52
	CN11 SP CONNECTOR		W-P5104#56

HX UNIT

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC601		UPC1297CA
	Q602		2SA1309A
	Q603		DTC124ES
	D602		1SS254
COILS AND FILTERS			
	L601, L602 (4.6MH)		RTD1011
CAPACITORS			
	C609, C610		CCCSL101K500
	C616, C617		CEAS330M35
	C614		CEASR10M50
	C601, C602		CFTXA103J50

Mark	No.	Description	Part No.
	C605, C606		CFTXA223J50
	C607, C608		CGCYX223K25
	C613		CKPUYB101K50
	C603, C604		CKPUYB821K50
	C611, C612	(390P/500)	RCG1004
RESISTORS			
	VR601, VR602		VRTB6HS473
	Other Resistors		RD1/6PM□□□J

1/F UNIT

SEMICONDUCTORS			
	IC1111, IC1131		BA15218N
	Q1131-Q1136		DTC124ES
	D1111		1SS254
CAPACITORS			
	C1141-C1143		CEAS010M50
	C1117, C1118		CEAS101M10
	C1139, C1140		CEAS4R7M50
	C1119		CEASR47M50
	C1133, C1134		CGCYX152K25
	C1135, C1136		CGCYX272K25
	C1115, C1116		CGCYX332K25
	C1120		CGCYX473K25
	C1137, C1138		CGCYX562K25
	C1111, C1112		CGCYX822K25
	C1113		CKPUYB101K50
RESISTORS			
	All Resistors		RD1/6PM□□□J

DOLBY S UNIT

SEMICONDUCTORS			
	IC1001, IC1002		CXA1417Q
	IC1003		M5218AFP
CAPACITORS			
	C1003, C1004, C1015, C1016		CEJA010M50
	C1051, C1052		CEJA010M50
	C1033, C1034		CEJAR10M50
	C1001, C1002, C1031, C1032		CEJAR22M50
	C1045, C1046, C1091, C1092		CEJAR22M50
	C1027, C1028, C1041, C1042		CEJAR47M50
	C1075, C1076		CEJAR47M50
	C1019, C1020		CFTYA224J50
	C1037, C1038		CFTYA334J50
	C1013, C1014, C1055, C1056		CKSQYB102K50
	C1007, C1008, C1025, C1026		CKSQYB104K25
	C1043, C1044, C1067, C1068		CKSQYB104K25
	C1077, C1078, C1081, C1082		CKSQYB104K25
	C1087, C1088		CKSQYB104K25
	C1023, C1024, C1049, C1050		CKSQYB153K50
	C1065, C1066, C1069-C1072		CKSQYB182K50
	C1083, C1084		CKSQYB182K50
	C1079, C1080		CKSQYB183K50
	C1059, C1060		CKSQYB222K50
	C1009, C1010, C1073, C1074		CKSQYB223K50
	C1093, C1094		CKSQYB333K50
	C1005, C1006, C1061, C1062		CKSQYB393K50
	C1063, C1064		CKSQYB471K50
	C1047, C1048		CKSQYB473K50
	C1011, C1012		CKSQYB681K50
	C1017, C1018, C1053, C1054		CKSQYB822K50
	C1021, C1022, C1039, C1040		CKSQYB823K25
	C1089, C1090	(10/25)	RCH1093
	C1085, C1086	(22/25)	RCH1094
	C1029, C1030, C1035, C1036	(47/16)	RCH1095
RESISTORS			
	All Resistors		RS1/10S□□□J
OTHERS			
	CN1002		6034B-07Z001
	CN1001		6034B-08Z001

PWSW UNIT

SWITCHES AND RELAYS			
⚠	S991		RSA1001
CAPACITORS			
⚠	C991		VCG-044
OTHERS			
⚠	TERMINAL		RKC-061

TRN 2 UNIT

TRN 2 unit has no service part.

TRN 1 PCB

TRN1 PCB has no service part.

HPHN UNIT

SEMICONDUCTORS			
	IC201		M5218AP
CAPACITORS			
	C201, C202		CEAS010M50
	C203, C204		CEAS101M10
RESISTORS			
	VR201	(20KB)	PCS1002
	Other Resistors		RD1/6PM□□□J
OTHERS			
	JA201		RKN1002

FL UNIT

SEMICONDUCTORS			
	D1501-D1510, D1512, D1513		1SS254
SWITCHES AND RELAYS			
	S1511		RSB1011
	S1501-S1509		RSG1039
OTHERS			
	V1501 FL INDICATOR TUBE		RAW1128

Mark	No.	Description	Part No.
OPSW UNIT			
SEMICONDUCTORS			
	Q1409		DTA124TS
	Q1401-Q1408		DTC124ES
	D1409-D1411		1SS254
	D1407		SEL6410E
	D1401-D1403, D1405		SEL6910A
	D1406, D1408		SEL6C10R
SWITCHES AND RELAYS			
	S1401-S1413		RSG1030
CAPACITORS			
	C1401		CEJA100M16
RESISTORS			
	All Resistors		RD1/6PM□□□J
VR UNIT			
RESISTORS			
	VR2102		RCV1102
	VR2101		RCV1103
REC SWITCH UNIT			
SWITCHES			
	S3		RSG-143
TAPE SELECTOR UNIT			
SWITCHES			
	S1, S2		RSH-070
CONNECTOR UNIT			
CAPACITORS			
	C1		CKCYF473Z50
RESISTORS			
	ALL RESISTORS		RD1/6PM□□□J
SENSOR UNIT (A)			
SEMICONDUCTORS			
	D1		GP1A51HR
CAPACITORS			
	C2		CKPUYY103N16
RESISTORS			
	ALL RESISTORS		RD1/6PM□□□J
SENSOR UNIT (B)			
SEMICONDUCTORS			
	D2		GP1A51HR
CAPACITORS			
	C3		CKPUYY103N16
RESISTORS			
	ALL RESISTORS		RD1/6PM□□□J

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The Art of Entertainment

Service Manual

ORDER NO.
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The chapter 1 of this Service Manual will not be reprinted. On your additional orders, we may supply only the chapter 2. For the chapter 1, please make copies and attach to the chapter 2 at your side if necessary.

STEREO CASSETTE DECK

CT-S830S
CT-S830S-G

CHAPTER 2

CONTENTS

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
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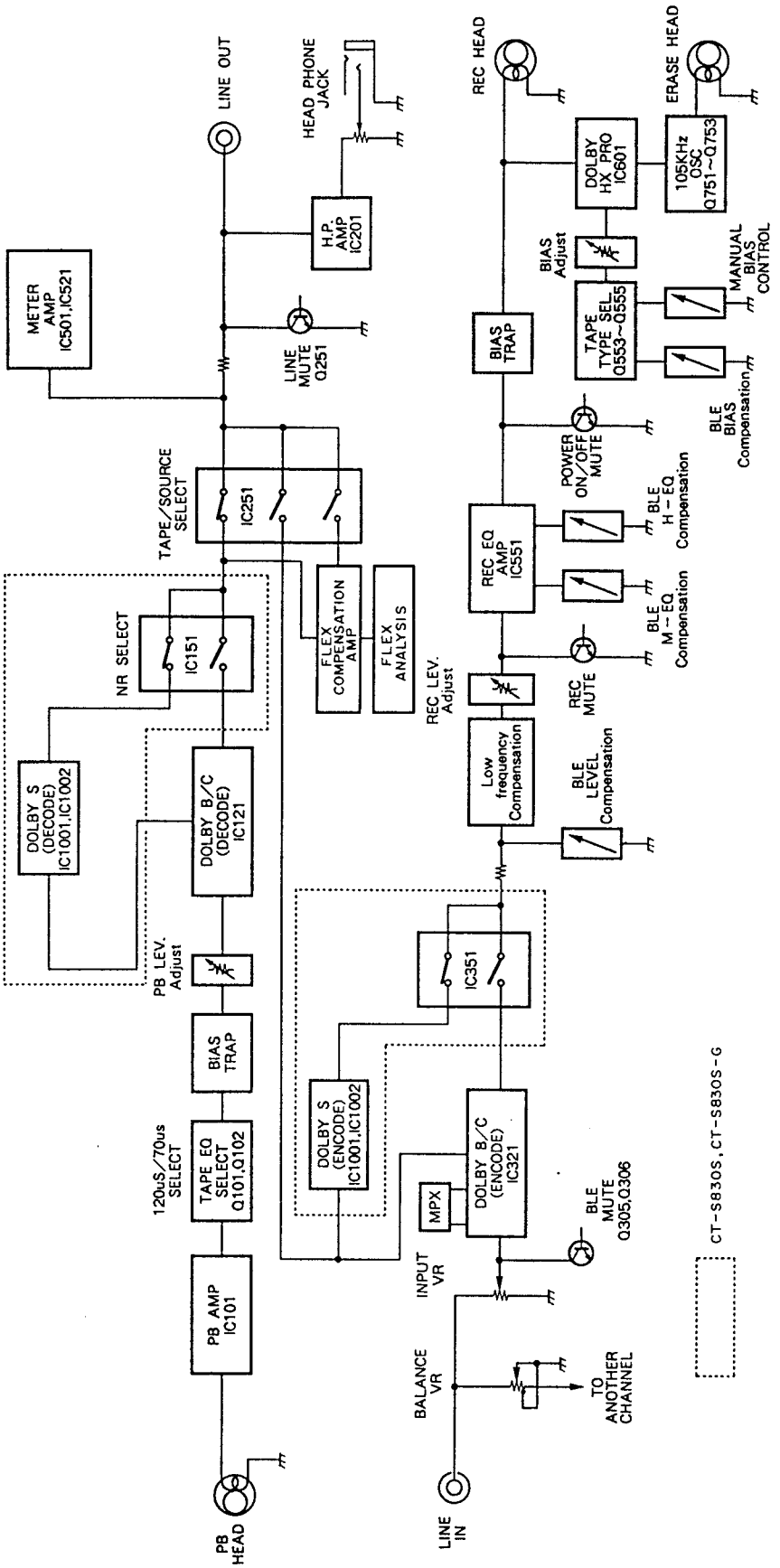
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911

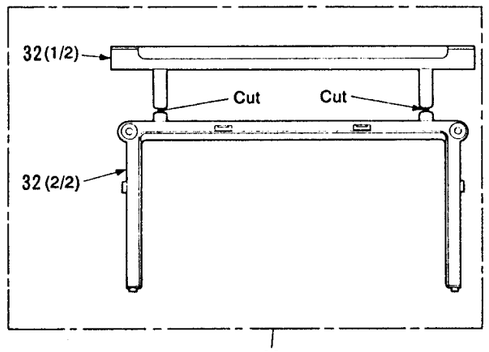
T – SSK APR. 1994 Printed in Japan

2.1 BLOCK DIAGRAM



2.2 EXPLODED VIEWS AND PACKING

1. EXTERIOR



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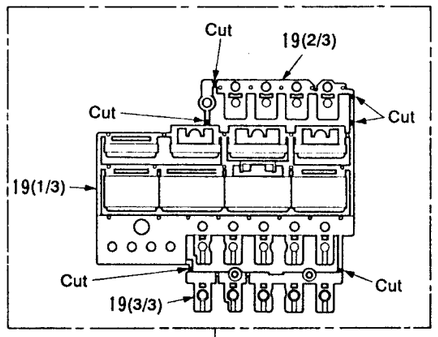

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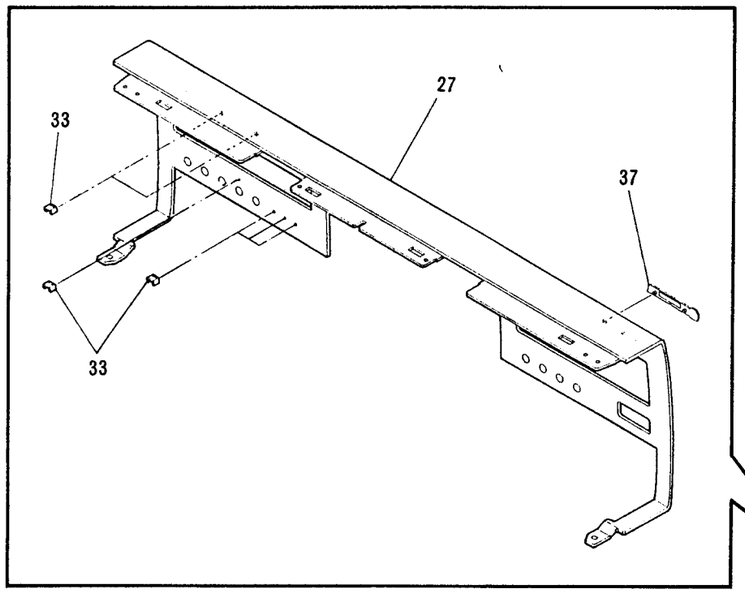
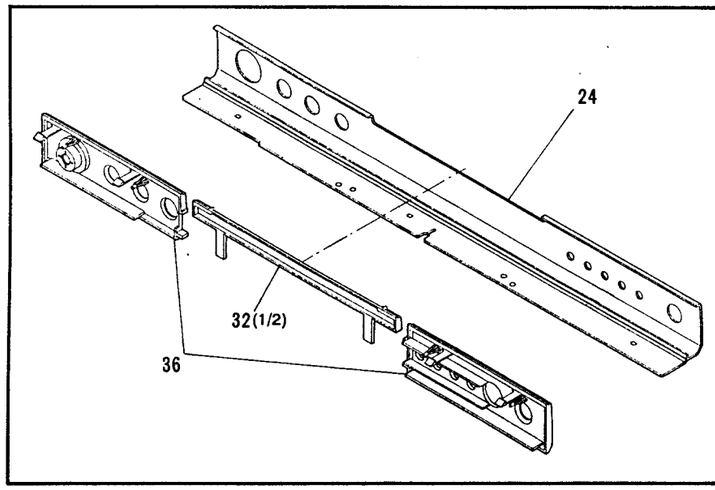
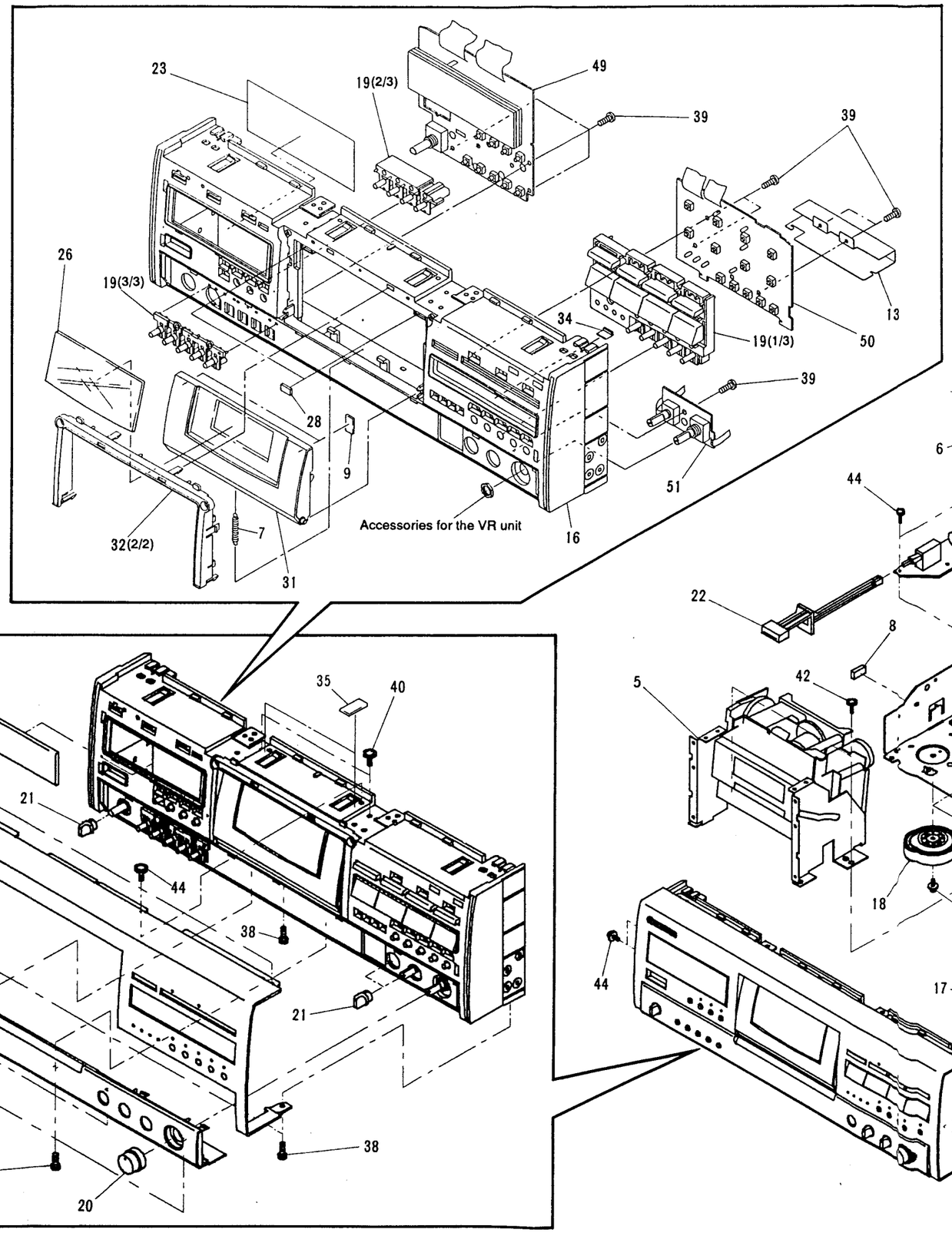
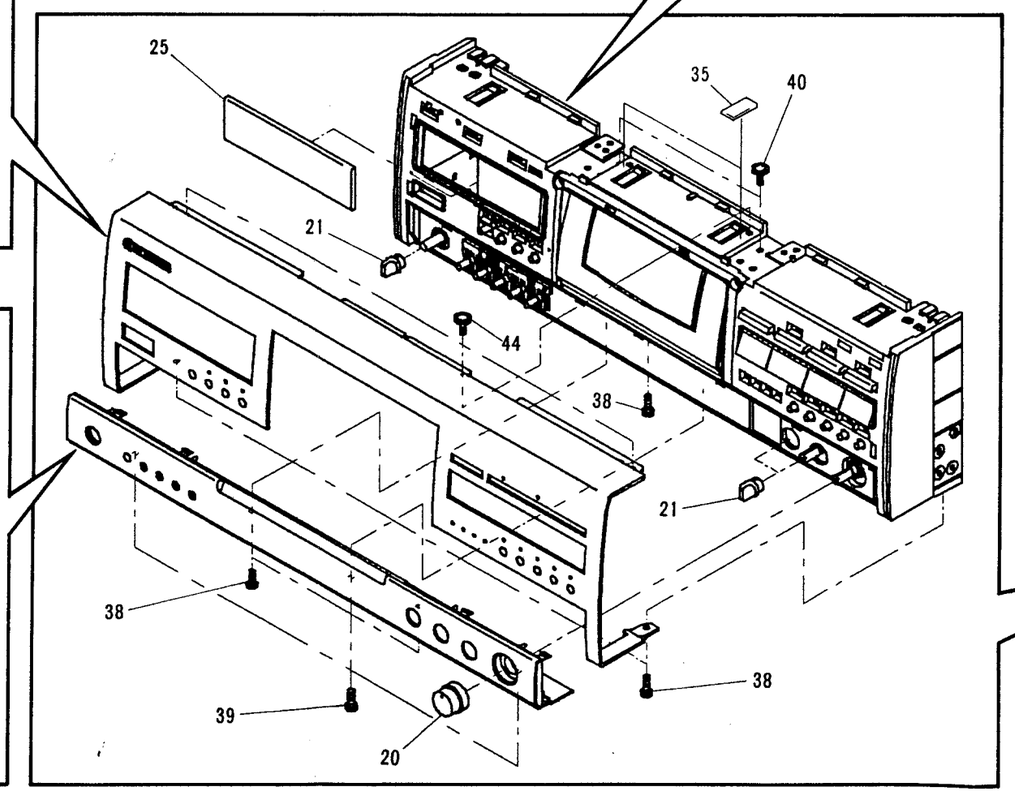
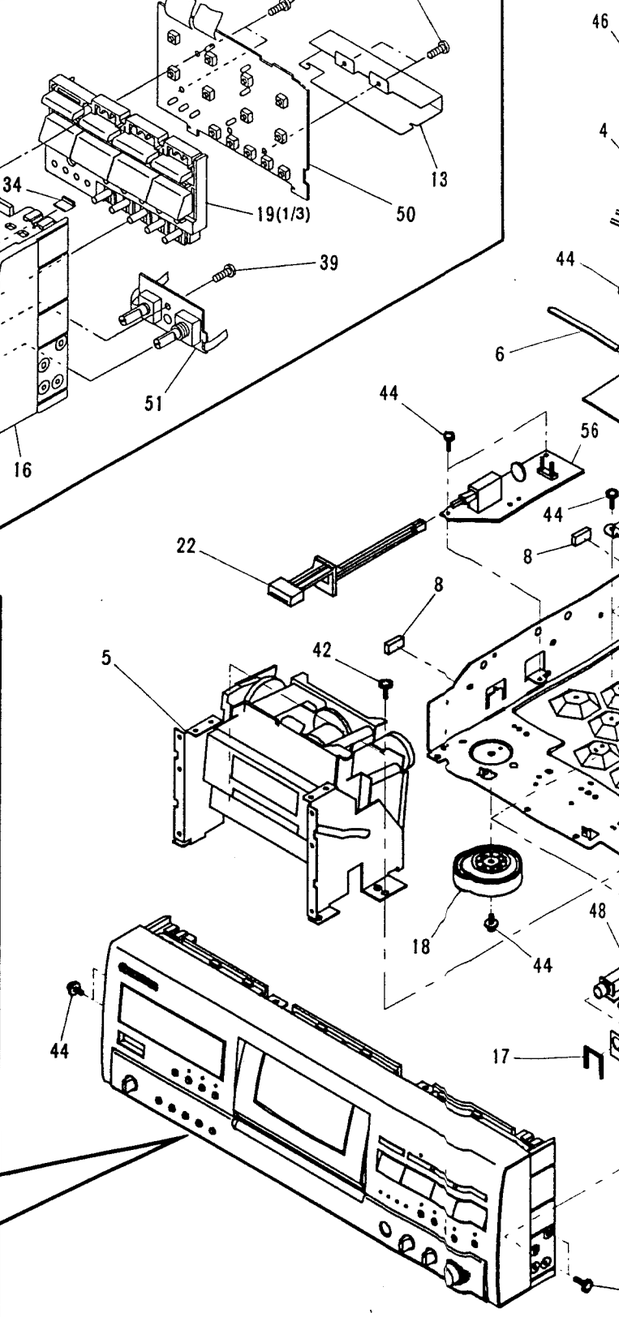
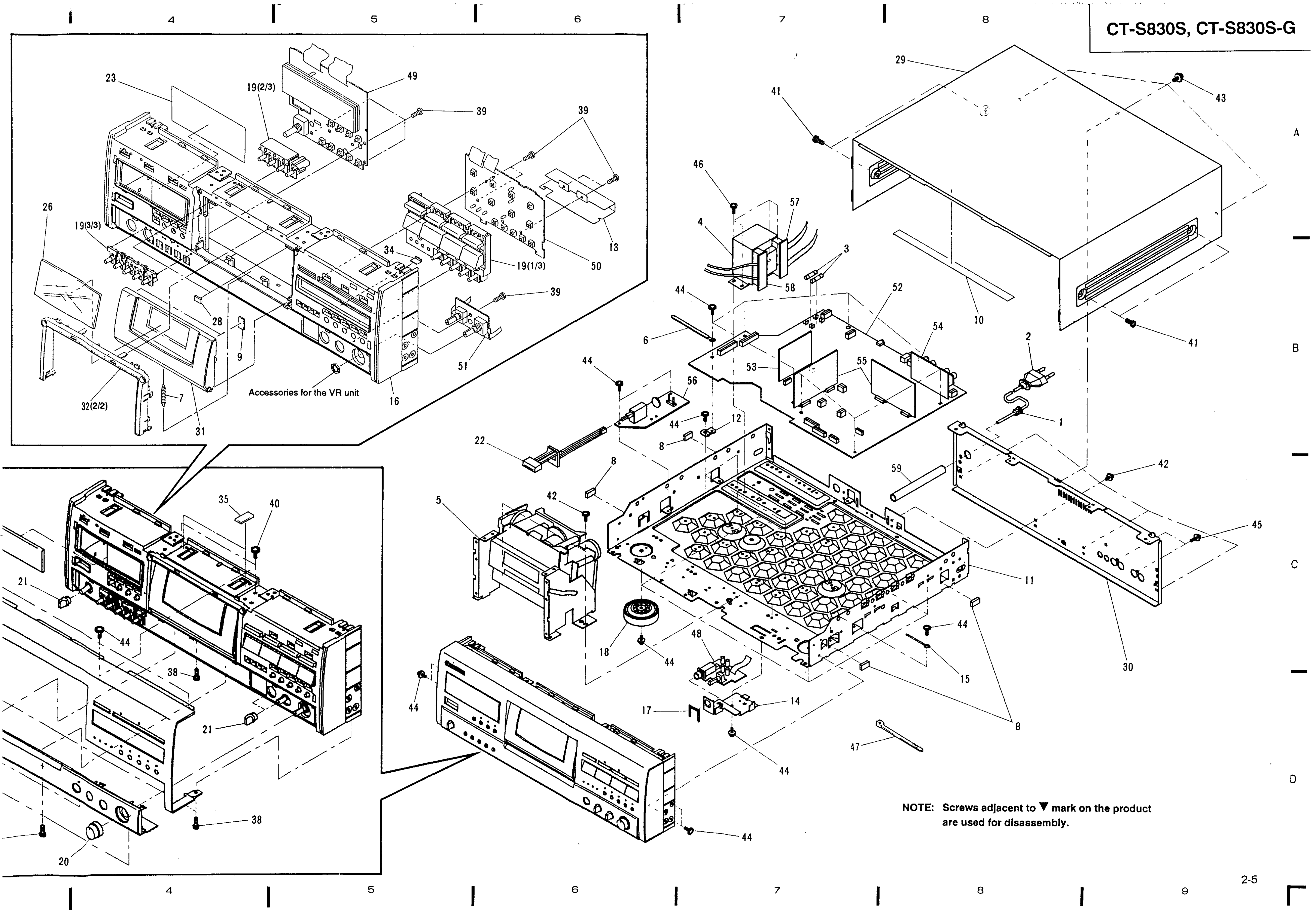






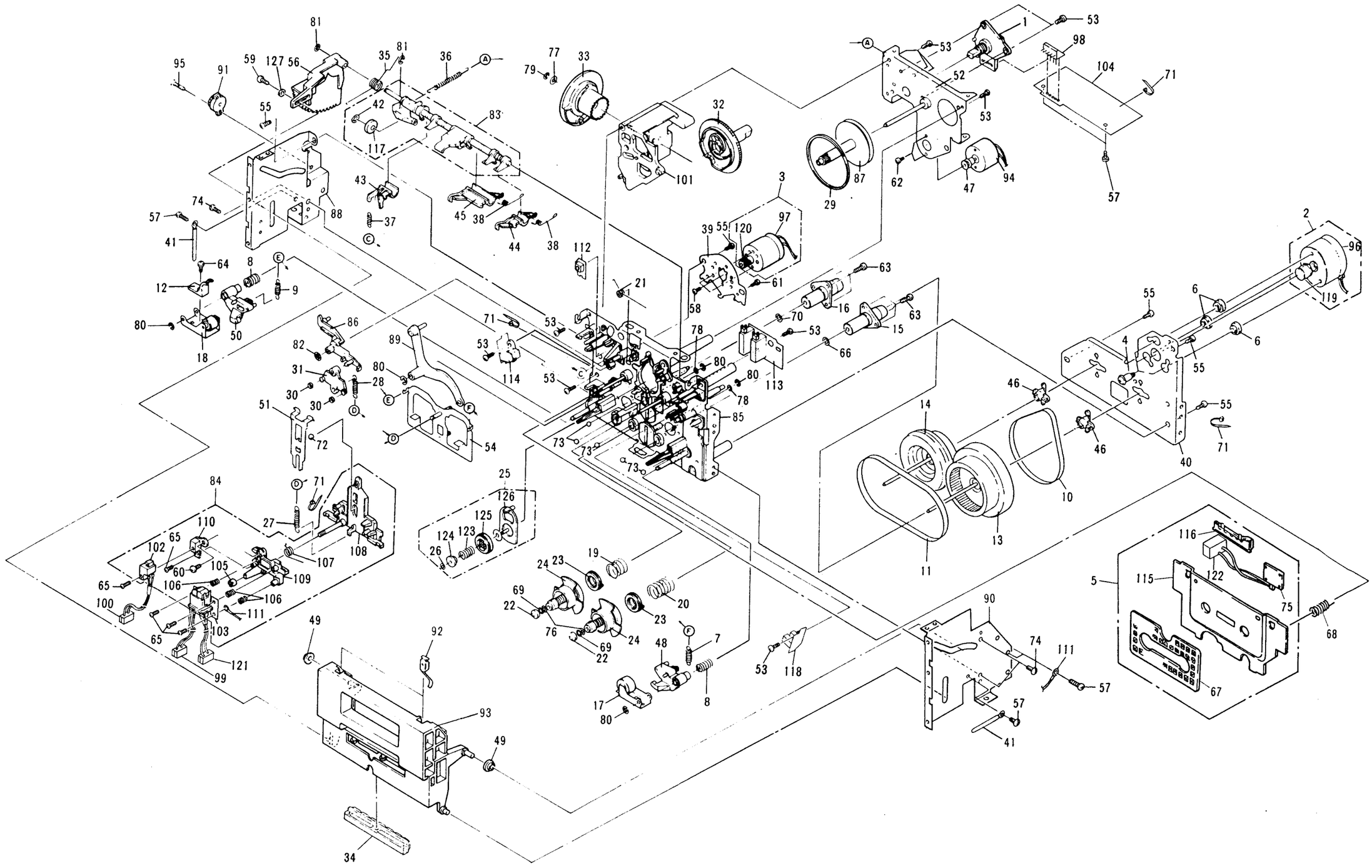


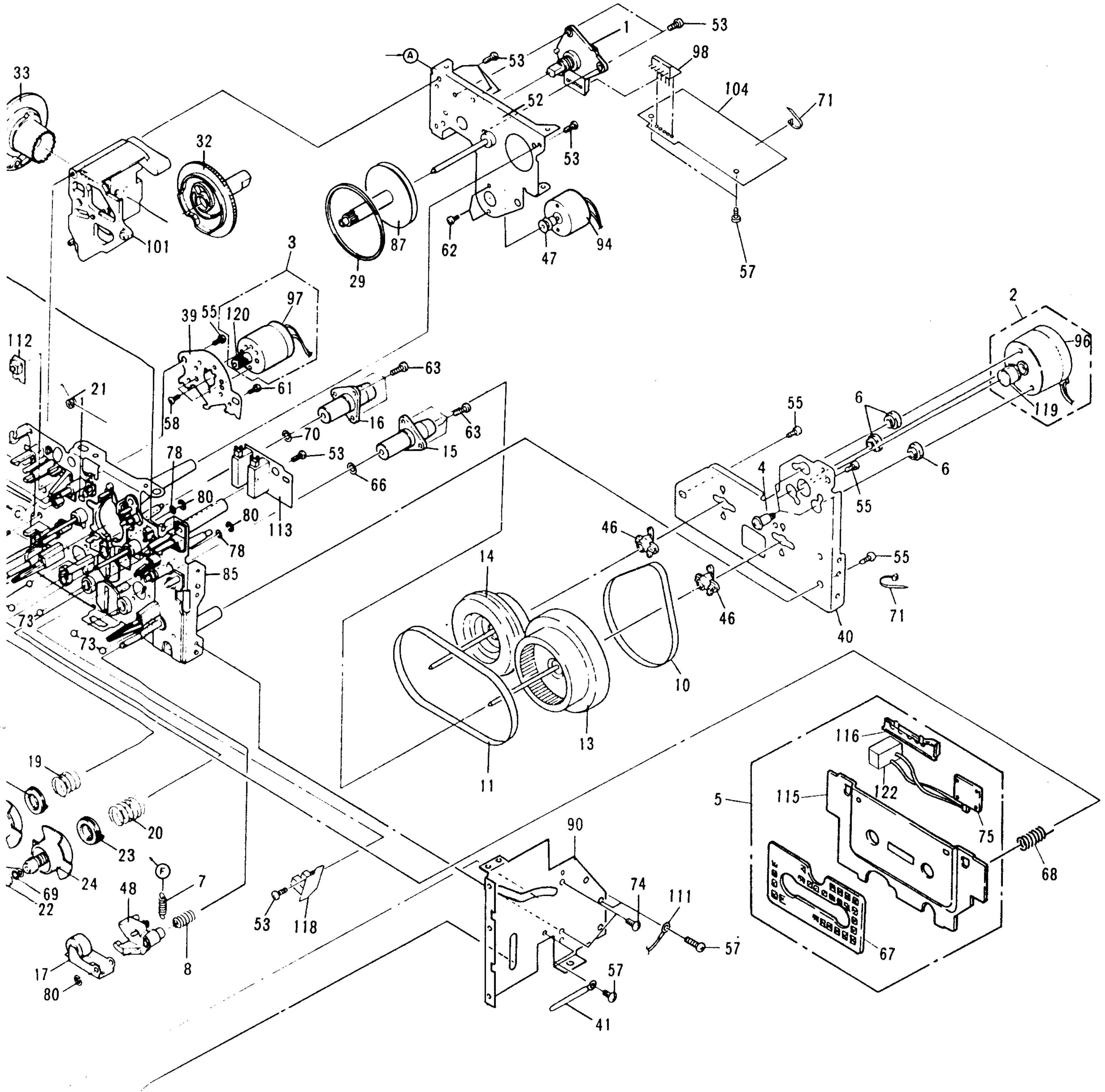




NOTE: Screws adjacent to ▼ mark on the product are used for disassembly.

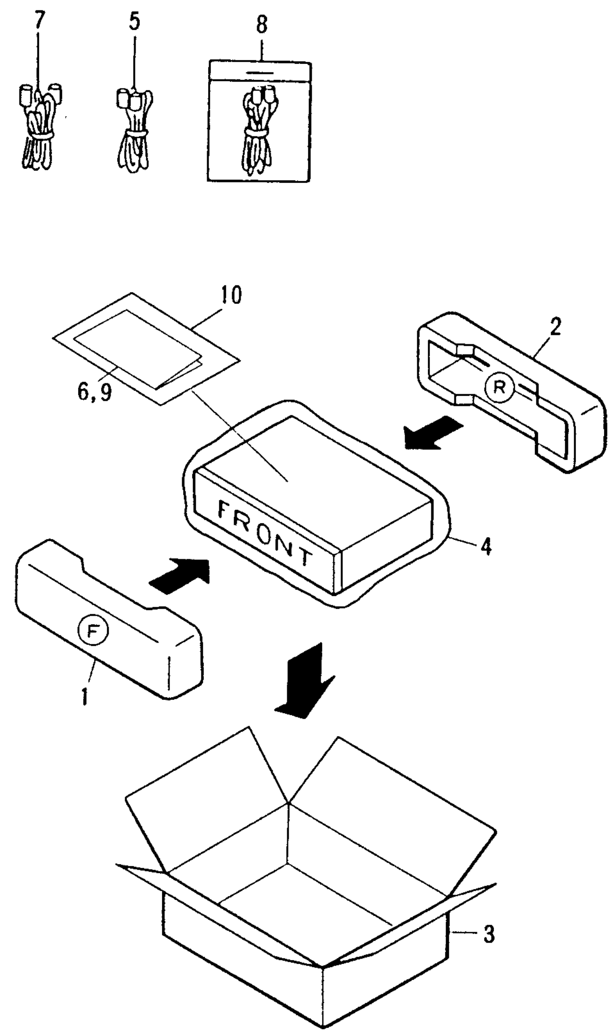
2. MECHANISM UNIT





A

3. PACKING



B

C

D

2.3 SCHEMATIC DIAGRAMS

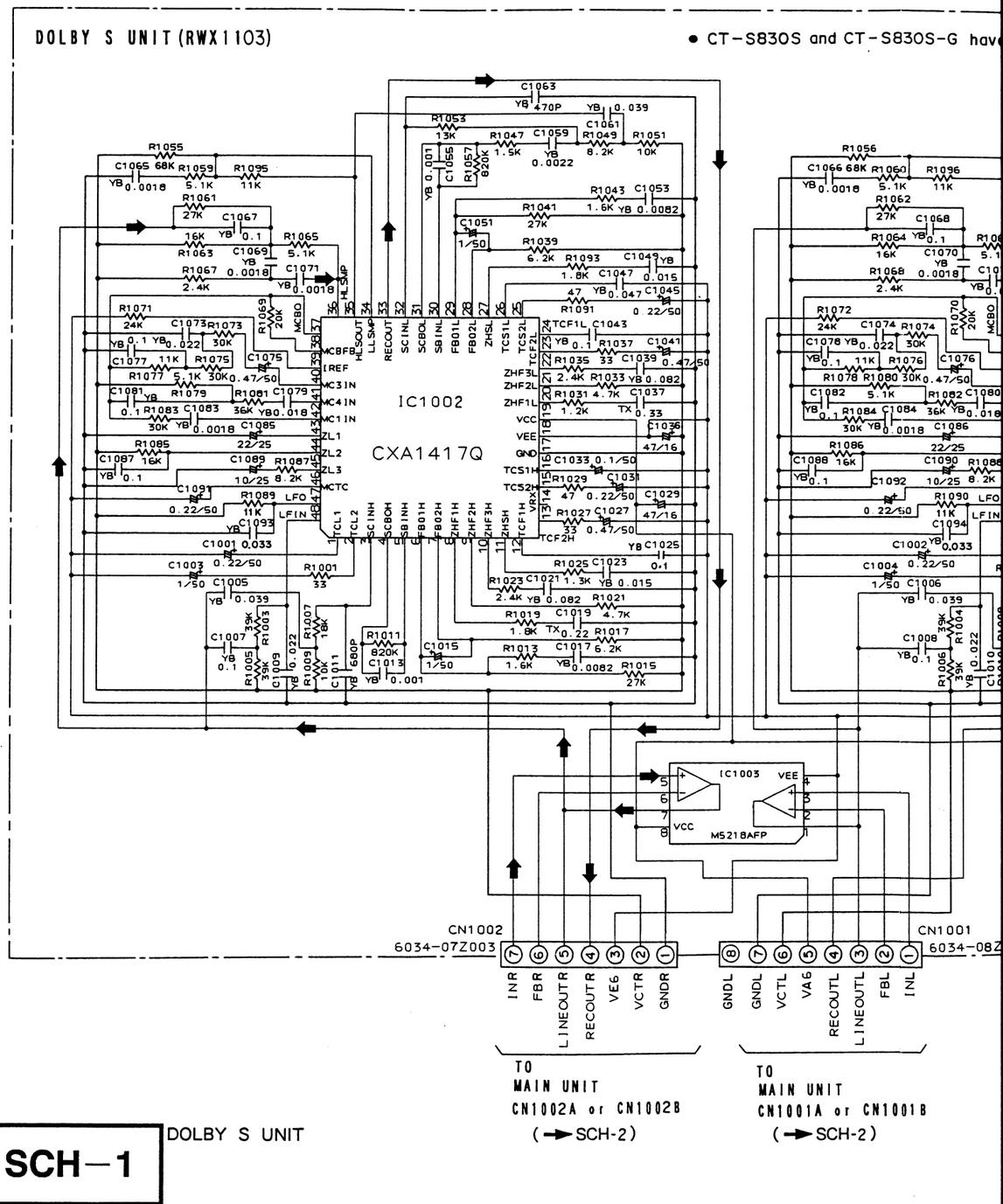
NOTE FOR SCHEMATIC DIAGRAMS (Type 6A)

1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**
2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**
3. **RESISTORS:**
   Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. **CAPACITORS:**
   Unit: p:pF or µF unless otherwise noted.
   Ratings: capacitor (µF)/ voltage (V) unless otherwise noted.
   Rated voltage: 50V except for electrolytic capacitors.
5. **COILS:**
   Unit: m:mH or µH unless otherwise noted.
6. **VOLTAGE AND CURRENT:**
   ▭ or ← V :
   DC voltage (V) in STOP mode unless otherwise noted.
   ⇦ mA or ← mA :
   DC current in STOP mode unless otherwise noted.
7. **OTHERS:**
   - ⊘ or ⊘ : Adjusting point.
   - ◁ : Measurement point.
   - The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SCH—□ ON THE SCHEMATIC DIAGRAM:**
   - SCH—□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
9. **SWITCHES** (Underline indicates switch position):

OPSW UNIT
S1401 : ▶PLAY
S1402 : ▮▮PAUSE
S1403 : CD-SYNCHRO
S1404 : MPX FILTER
S1405 : ◀◀REW
S1406 : ●REC
S1407 : ○MUTE
S1408 : DOLBY NR OFF/B/C/S
S1409 : ■STOP
S1410 : OPEN/CLOSE
S1411 : ▶▶FF
S1412 : FLEX (1/F)
S1413 : MONITOR

FL UNIT
S1501 : TAPE RETURN
S1502 : BIAS +
S1503 : DISPLAY OFF
S1504 : METER HOLD
S1505 : COUNTER RESET
S1506 : BIAS –
S1507 : METER MODE
S1508 : COUNTER MODE
S1509 : AUTO BLE
S1511 : TIMER MODE (REC – OFF – PLAY)

1. DOLBY S UNIT

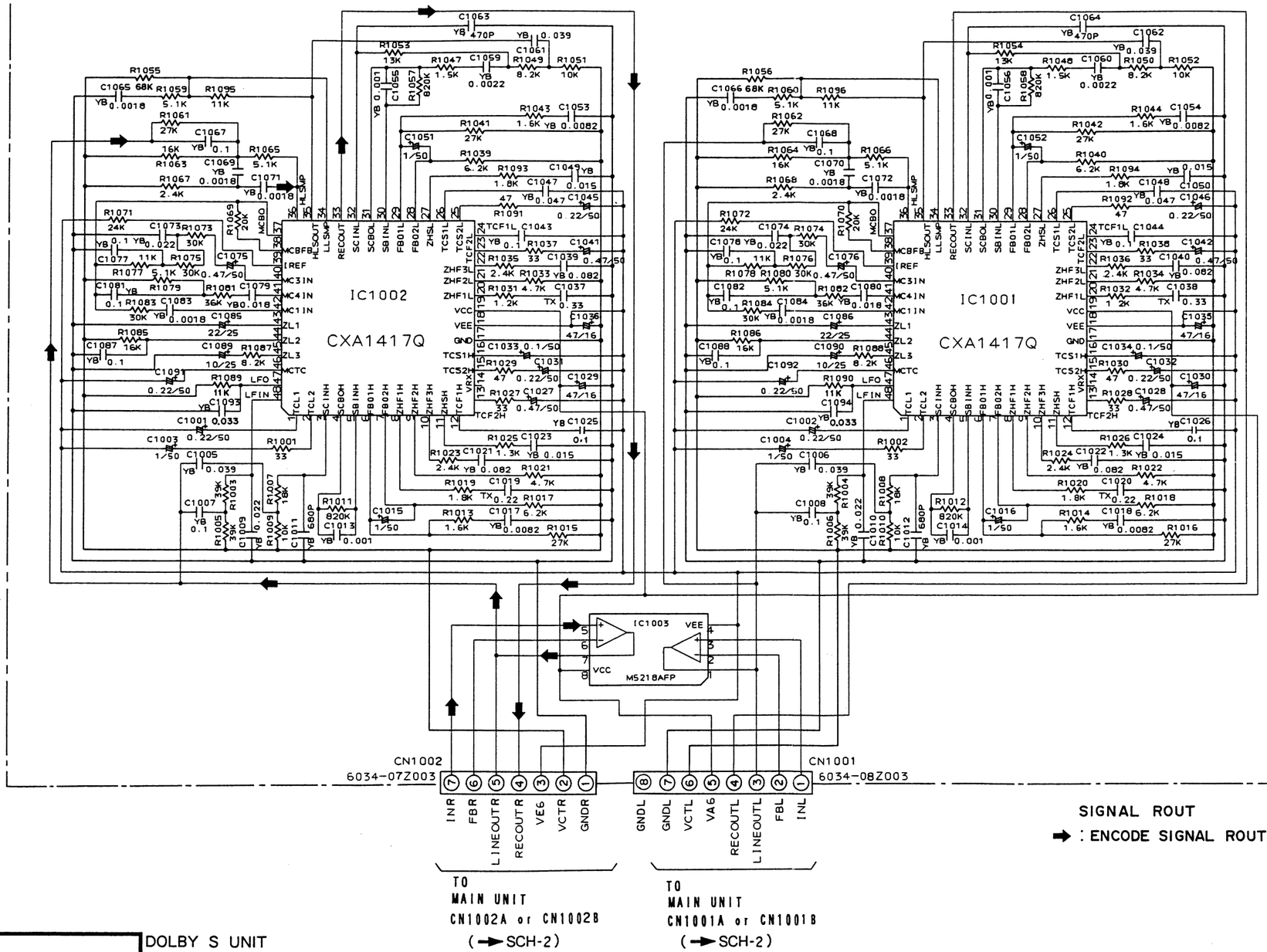


SCH—1 DOLBY S UNIT

1. DOLBY S UNIT

DOLBY S UNIT (RWX1103)

• CT-S830S and CT-S830S-G have tow DOLBY S Unit.



IC1001, IC1002
(CXA1417Q)

Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	-4.6	17	0	33	0
2	-4.6	18	-6.0	34	0
3	0	19	6.0	35	0
4	0	20	0	36	0
5	0	21	0	37	0
6	0	22	0	38	0
7	0	23	-4.6	39	-4.8
8	0	24	-4.6	40	0
9	0	25	-4.6	41	0
10	0	26	-4.6	42	0
11	0	27	0	43	0
12	-4.6	28	0	44	0
13	-4.6	29	0	45	0
14	-3.4	30	0	46	-3.9
15	-4.6	31	0	47	0
16	-4.6	32	0	48	0

SIGNAL ROUT
➡ : ENCODE SIGNAL ROUTE

SCH-1

SCH-1 DOLBY S UNIT

DOLBY S UNIT SCH-1

2. MAIN, HX, 1/F, PWSW, TRN 2, HPHN, FL, OPSW AND VR UNIT

SCH—2 MAIN UNIT, HX UNIT, 1/F UNIT, PWSW UNIT, TRN 2 UNIT, HPHN UNIT, FL UNIT, OPSW UNIT, VR UNIT

N, FL, OPSW AND VR UNIT

TO DOLBY S UNIT CN1001 (→SCH-1)

PB LEVEL Adj.

BIAS TRAP

IC121 CXA1330S DOLBY B/C NR

TO DOLBY S UNIT CN1002 (→SCH-1)

TO DOLBY S UNIT CN1001 (→SCH-1)

IC321 CXA1330S DOLBY B/C NR

TO DOLBY S UNIT CN1002 (→SCH-1)

MPX REC	VC5V
REC	GND

IC151 TC4066BP

IC351 TC4066BP

IC1131 (1/2) BA15218

IC1131 (2/2) BA15218

IC1111 (1/2) BA15218

IC1111 (2/2) BA15218

1/F UNIT (RWX1086)

CN1130 CN1130A

CN1131 CN1131A

IC1130 TC40528BP

TAPE/SOURCE

MODE	B	A
TAPE	H	H
SOURCE	H	L
1/f	L	H
GND	L	L

LINE OUTPUT(PLAY) RKB1020

HPHN UNIT

IC521 (3/4) BA10339

IC521 (4/4) BA10339

REC LEVEL Adj.

REC EQ AMP

Q557: REC MUTE

IC551 CXA1198AP

TYPE1 TYPE2 TYPE4

MECHANISM UNIT(2/3) (RYM1232)

RPB1041

TAPE SELECT

Q553 - Q555: REC EQ SELECTOR

Q551,Q552,Q558: REC MUTE

IC702: SYSTEM CONTROL EXTENTION

IC702 LC7570

IC701 PD4444A

IC701: SYSTEM CONTROL

	FSE0	FSE1
400Hz	H	H
3KHz	H	L
12KHz	L	H

105kHz OSC

BIAS FREQ. ADJ.

IC401 (1/2) BA15218N 400Hz LEVEL ADJ.

IC401 (2/2) BA15218N 3kHz LEVEL ADJ.

12kHz LEVEL ADJ.

BIAS OSC

BIAS Adj

IC601 UPC1297CA

HX UNIT (RWX1069)

Q461 - Q468: BLE LEVEL ADJ

Q469 - Q472: BLE H-EQ ADJ

Q473 - Q476: BLE M-EQ ADJ

Q622,Q623: NOR/CrO2 BIAS ADJ

Q624,Q625: BLE BIAS ADJ

Q626 - Q629: MANUAL BIAS ADJ

REGULATOR

2 UNIT (Z3279)

POWER SUPPLY

POWER OFF

RESET

FL UNIT (RWZ3234)

V1501 RAW1128

DISPLAY OFF RETURN

METER MODE METER HOLD

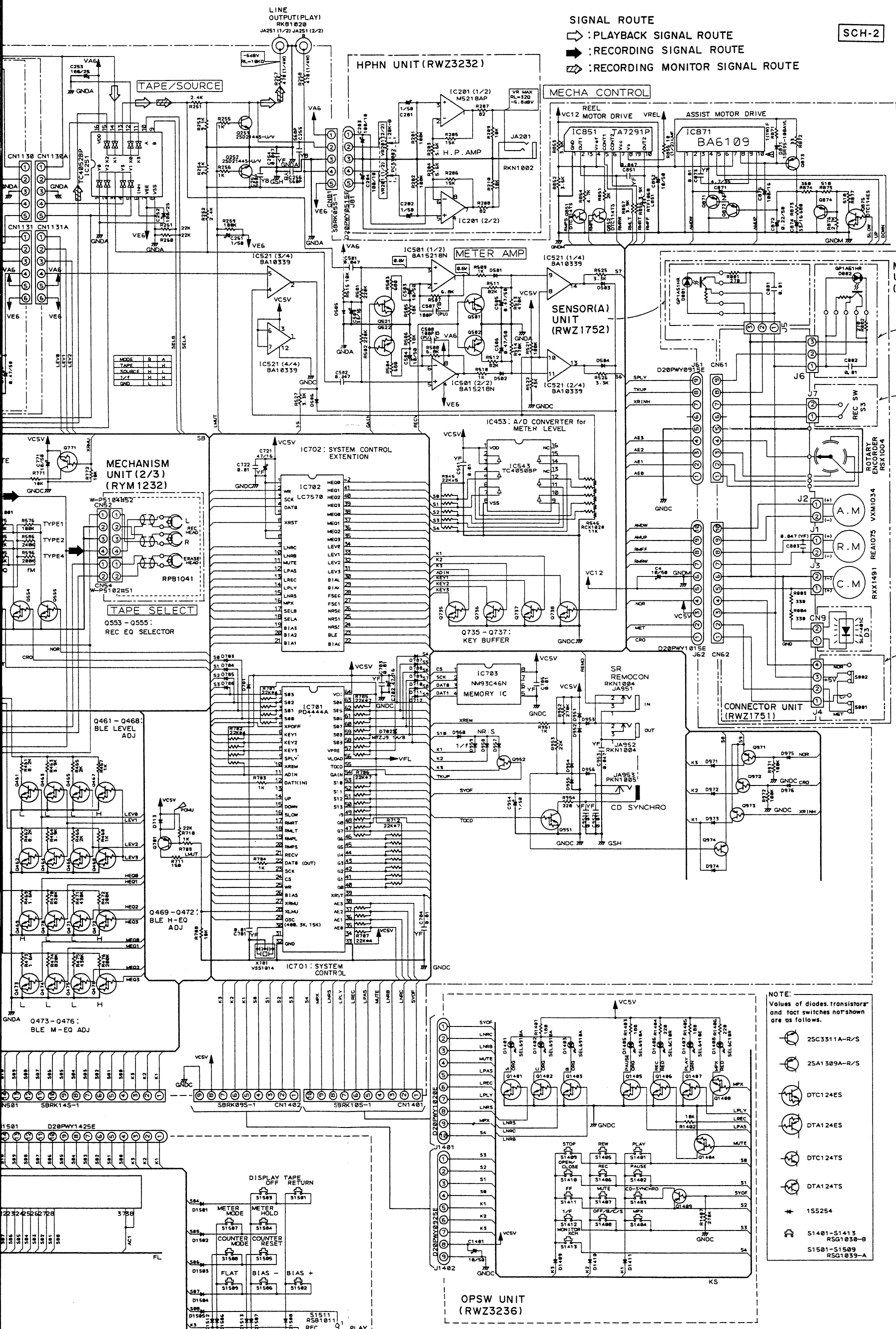
COUNTER MODE COUNTER RESET

FLAT BIAS - BIAS +

REC PLAY

SIGNAL ROUTE
⇨ : PLAYBACK SIGNAL ROUTE
➡ : RECORDING SIGNAL ROUTE
⇨ : RECORDING MONITOR SIGNAL ROUTE

SCH-2



NOTE:
Values of diodes. transistors and tact switches not shown are as follows.

- 2SC3311A-R/S
- 2SA1309A-R/S
- DTC124ES
- DTA124ES
- DTC124TS
- DTA124TS
- 1SS254
- S1401-S1413 RSG1030-B
- S1501-S1509 RSG1039-A

IC121, IC321 (CXA1330S)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	16	6.0
2	0	17	0
3	0	18	0
4	0	19	-5.7
5	-6.0	20	-5.7
6	0	21	0
7	0	22	0
8	0	23	0
9	0	24	0
10	0	25	0
11	-5.7	26	0
12	-5.7	27	0
13	0	28	0
14	-4.9	29	0
15	-6.0	30	0

IC551 (CXA1198AP)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	1.3	9	0.7
2	1.3	10	0
3	1.3	11	0
4	0	12	6.0
5	-6.0	13	1.2
6	0	14	1.3
7	0	15	1.3
8	0.7	16	1.3

IC601 (UPC1297CA)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	4.4	10	1.7
2	0	11	0
3	4.4	12	0
4	0.6	13	0
5	0	14	0
6	0	15	0.6
7	0	16	4.4
8	0	17	0
9	0	18	12.0

MAIN UNIT, HX UNIT, 1/F UNIT, PWSW UNIT, TRN 2 UNIT, HPHN UNIT, FL UNIT, OPSW UNIT, VR UNIT

SCH-2

2.4 PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS:

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
Q504 E Q504	Q504 Q504	Transistor
D203 D203	D203	Diode
C513 C513	C513	Capacitor (Polarized)

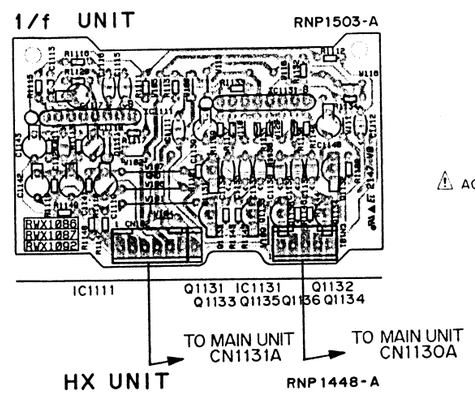
3. The transistor terminal marked with E or ⊏ shows the emitter.
4. The diode terminal marked with ◎ or ⊐ shows cathode side.
5. The capacitor terminal marked with ◎ or ⊏ shows negative terminal.

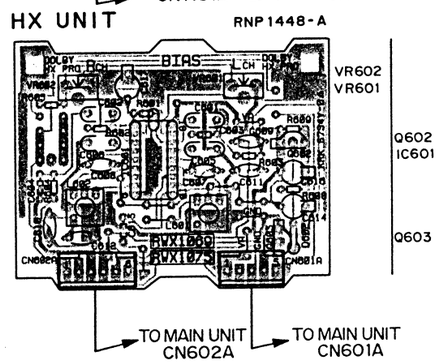
NOTE FOR PCB DIAGRAMS:

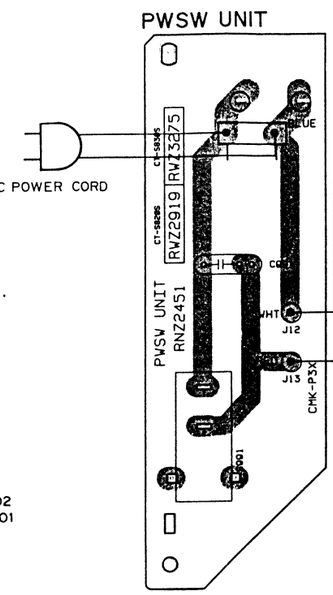
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

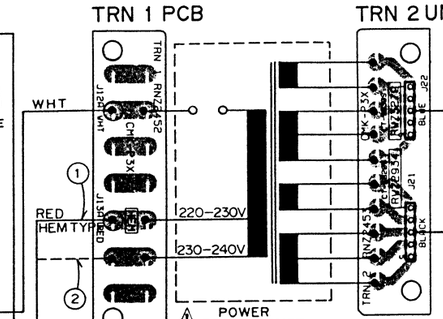
Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3- terminal regulator

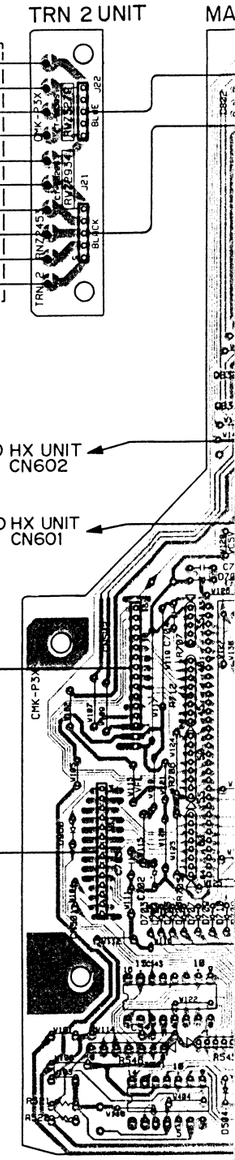
- **This diagram is viewed from the mounted parts side.**

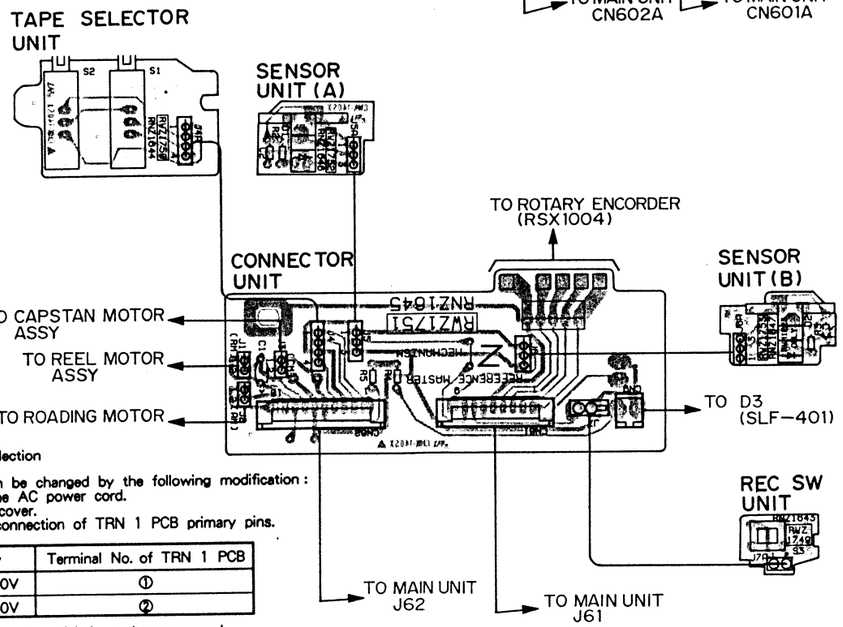


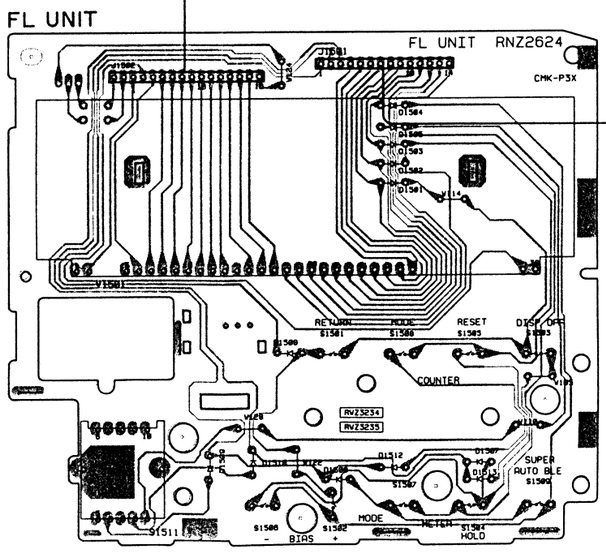












Line Voltage Selection

Line voltage can be changed by the following modification :

1. Disconnect the AC power cord.
2. Remove the cover.
3. Change the connection of TRN 1 PCB primary pins.

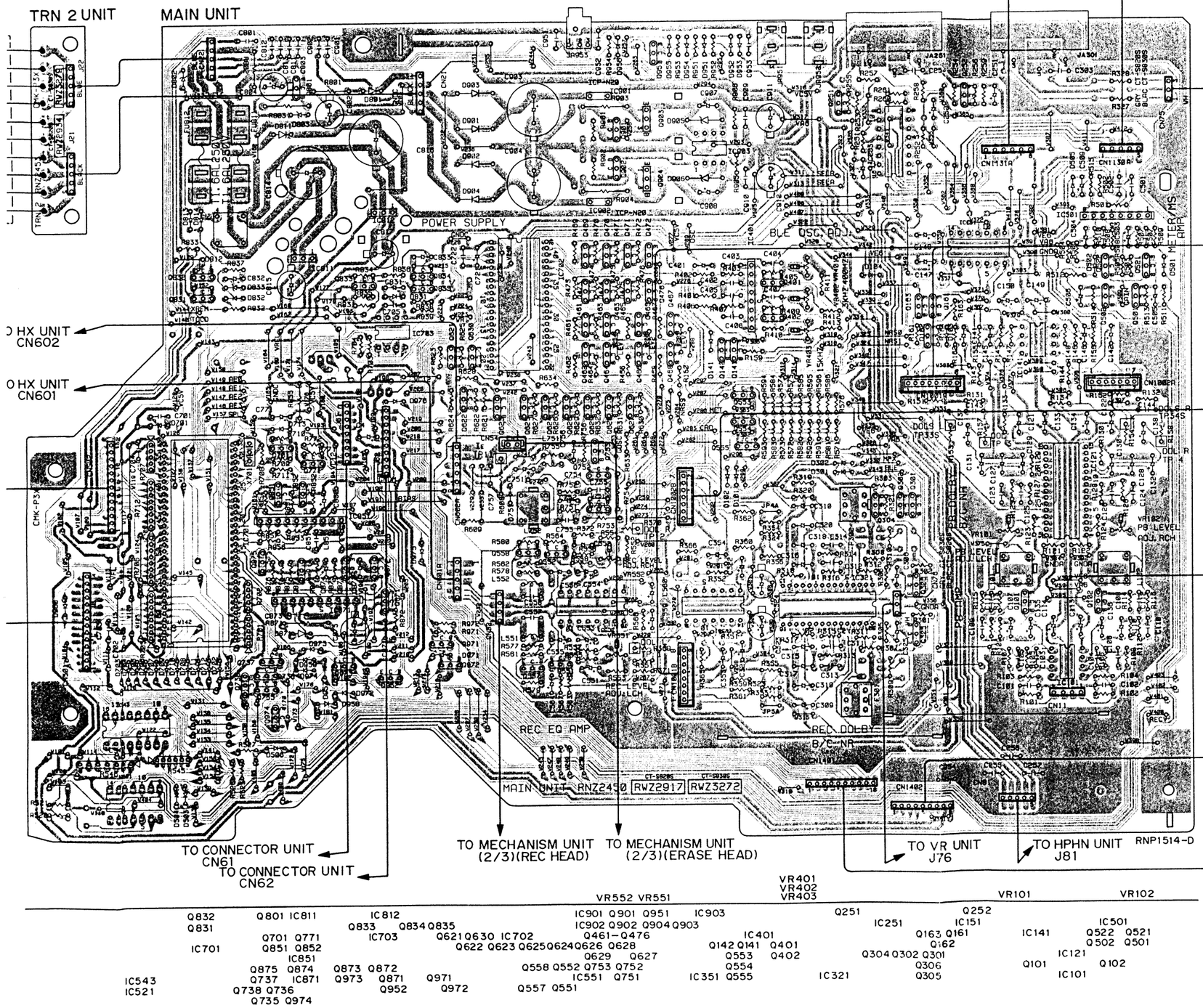
Voltagev	Terminal No. of TRN 1 PCB
220V – 230V	①
230V – 240V	②

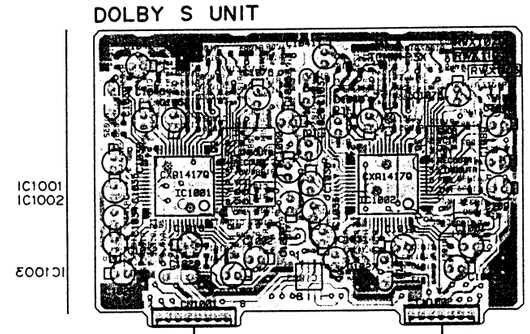
4. Stick the line voltage label on the rear panel.

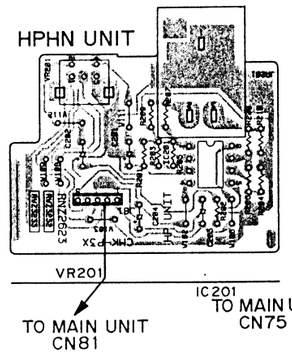
Parts No.	Description
AAX – 193	220V label
AAX – 192	240V label

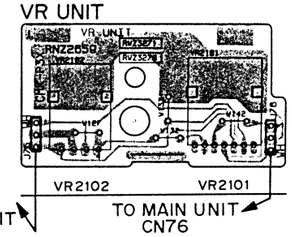
IC543
IC521

- This diagram is viewed from the pink colored foil side.
- This PCB is double sided.

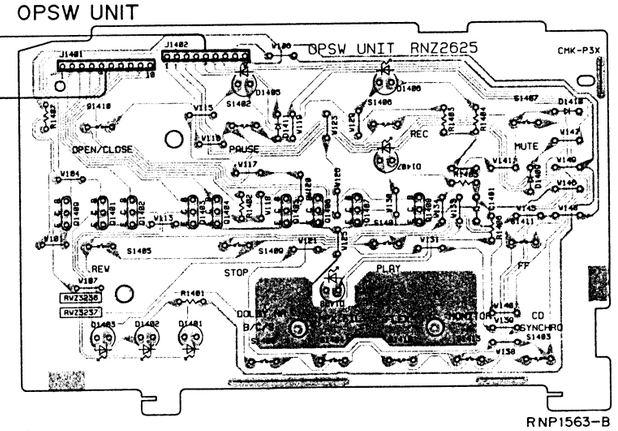


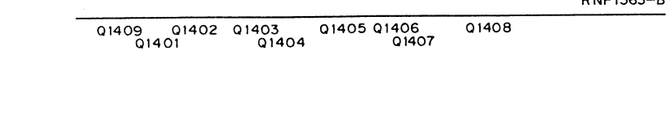




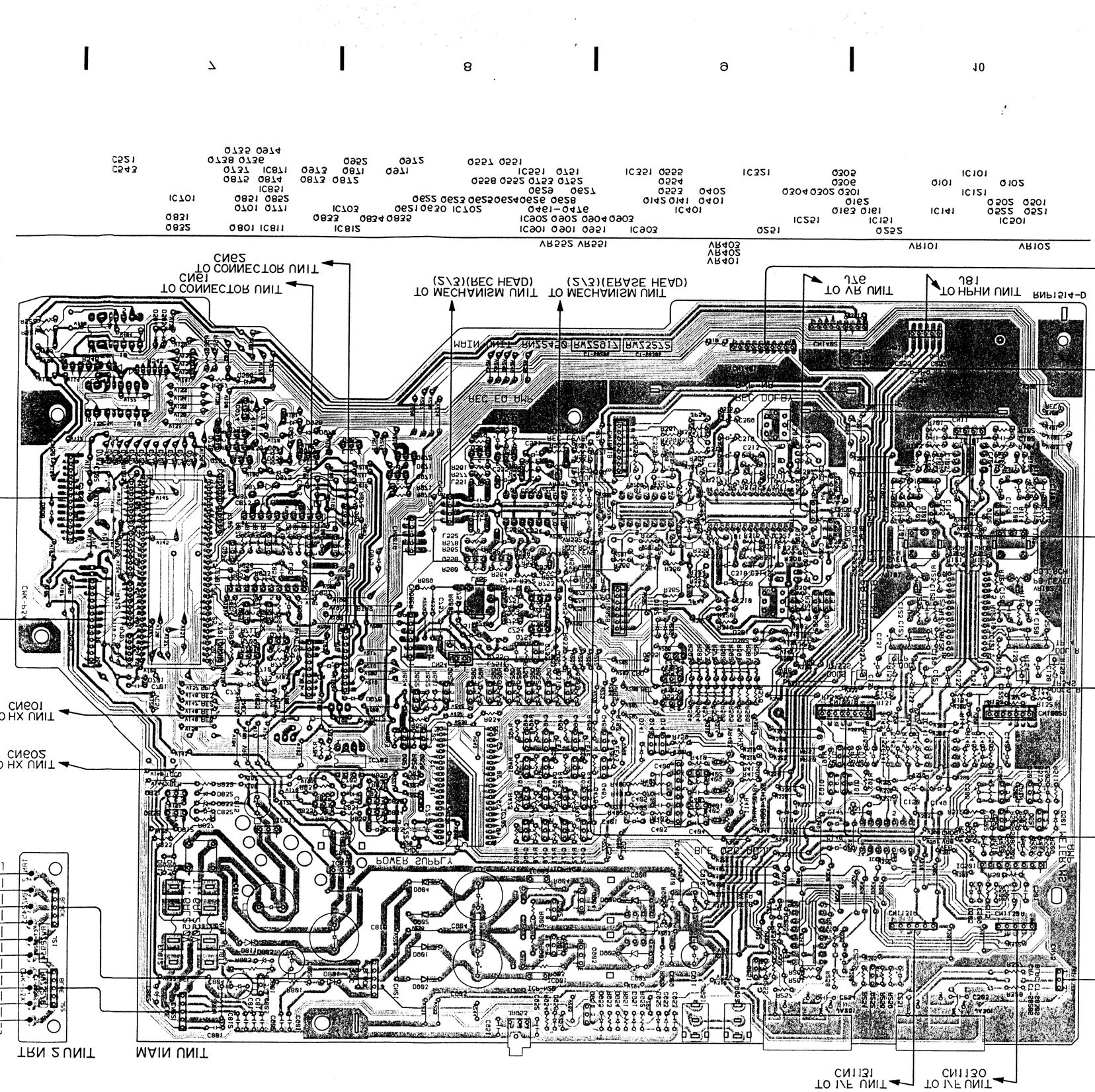


TO MECHANISM UNIT (1/3)(P.B HEAD)





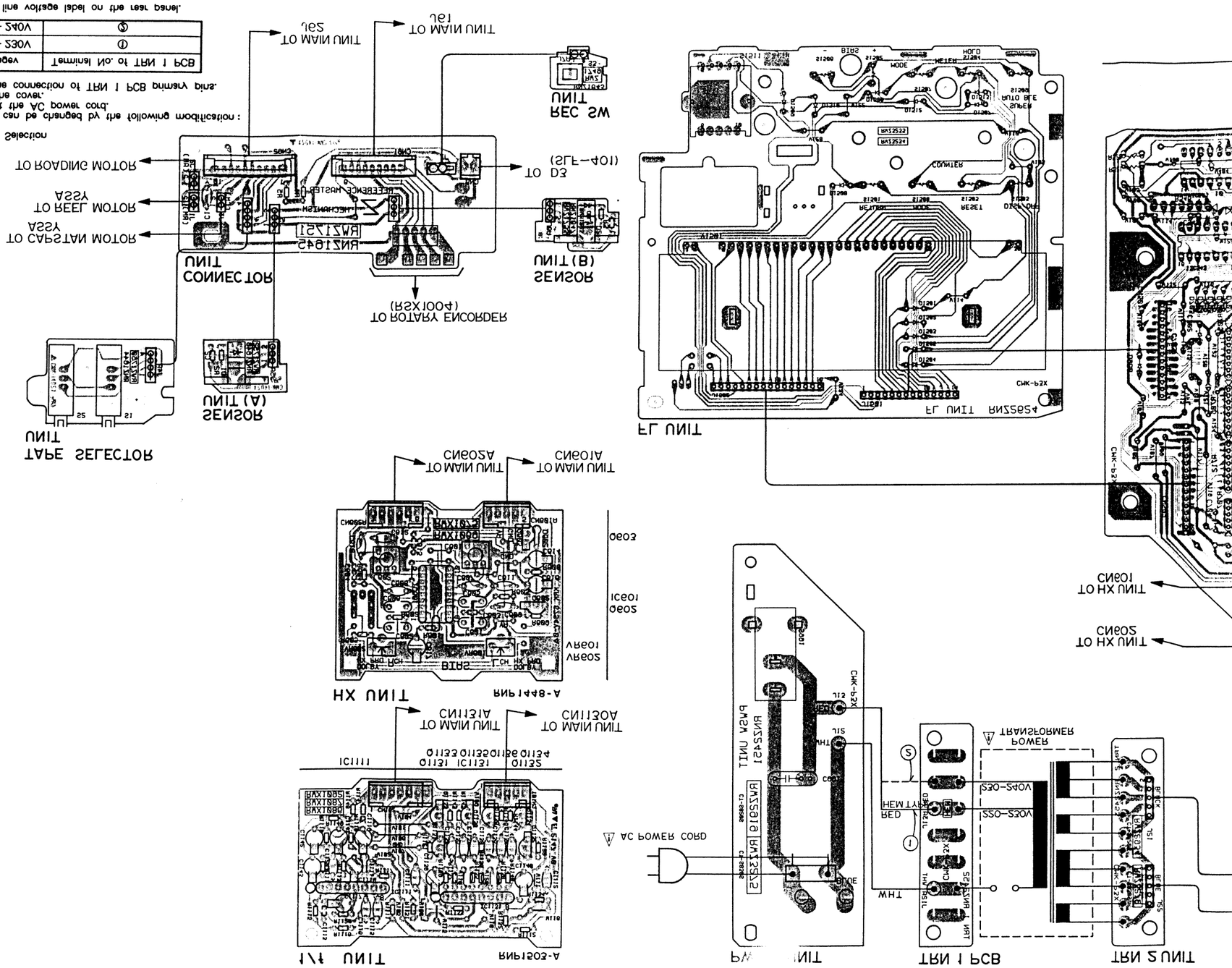
CT-28302, CT-28302-C



- This diagram is viewed from the gray colored foil side.
- This PCB is double sided.

2.4 PCB CONNECTION DIAGRAM

- This diagram is viewed from the foil side.



Line Voltage Selection

Line voltage can be changed by the following modification :

1. Disconnect the AC power cord.
2. Remove the cover.
3. Change the connection of TRN 1 PCB primary pins.

Voltage	Terminal No. of TRN 1 PCB
220V – 230V	①
230V – 240V	②

4. Stick the line voltage label on the rear panel.

Parts No.	Description
AAX – 193	220V label
AAX – 192	240V label