

TC-FX330

SERVICE MANUAL

*AEP Model
UK Model
E Model*



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SPECIFICATIONS

Recording system 4-track 2-channel stereo
Fast-forward and rewind time
Approx. 100 sec. (with C-60 cassette)
Bias frequency 105 kHz
Signal-to-noise ratio (NAB, at peak level)

Cassette	DOLBY NR switch	
	OFF	ON
TYPE IV (Sony METAL-ES)	58 dB	65 dB
TYPE II (Sony UCX)	56 dB	63 dB
TYPE I (Sony HF-S)	54 dB	61 dB

Total harmonic distortion

1.0% (with Sony METAL-ES cassettes)

Frequency response

DOLBY NR OFF

- With TYPE IV cassette (Sony METAL-ES)

20 - 16,000 Hz

30 - 15,000 Hz (± 3 dB)

30 - 13,000 Hz (± 3 dB, 0 VU recording)

30 - 15,000 Hz (DIN)

- With TYPE II cassette (Sony UCX)

20 - 15,000 Hz

30 - 14,000 Hz (± 3 dB)

30 - 14,000 Hz (DIN)

- With TYPE I cassette (Sony HF-S)

20 - 14,000 Hz

30 - 13,000 Hz (DIN)

Wow and flutter

0.08% WRMS (NAB)

$\pm 0.2\%$ (DIN)

Inputs

Microphone inputs (phone jacks)

Sensitivity 0.25 mV (-70 dB)

For a low-impedance microphone

Line inputs (phono jacks)

Sensitivity 77.5 mV (-20 dB)

Input impedance 47 kilohms

Tape Transport Mechanism

TCM-C80F30B

Outputs

Line outputs (phono jacks)

Output level 0.44 V (-5 dB) at load impedance 47 kilohms

Load impedance over 10 kilohms

Headphone output (stereo phone jack)

Output level -28 dB at a load impedance of 8 ohms

0 dB = 0.775 V

— Continued on page 2 —

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

STEREO CASSETTE DECK
SONY



General**Power requirements**

- AEP model: 220 V ac, 50/60 Hz
(240 V ac adjustable by
authorized Sony personnel)
- UK model: 240 V ac, 50/60 Hz
(220 V ac adjustable by
authorized Sony personnel)
- E model: 120 or 220 – 240 V ac
adjustable, 50/60 Hz

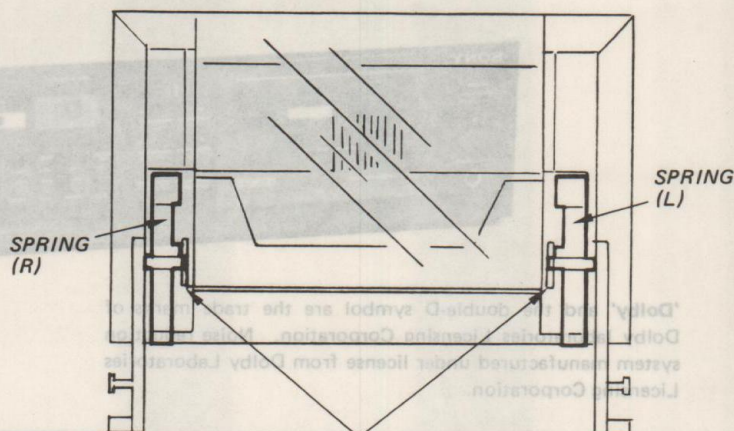
Power consumption 12 watts

Dimensions Approx. 430 × 105 × 250 mm (w/h/d)
(17 × 4 1/4 × 9 7/8 inches)
including projecting parts and controls

Weight Approx. 3.3 kg (7 lbs 5 oz)

NOTE ON REPAIRING• **SPRING L/R**

Spring (L) and (R) are similar in their shape as shown in figure below. Be careful when installing them.



Be careful not to break
these portions.

MODEL IDENTIFICATION

— Printed on Jack Plate —

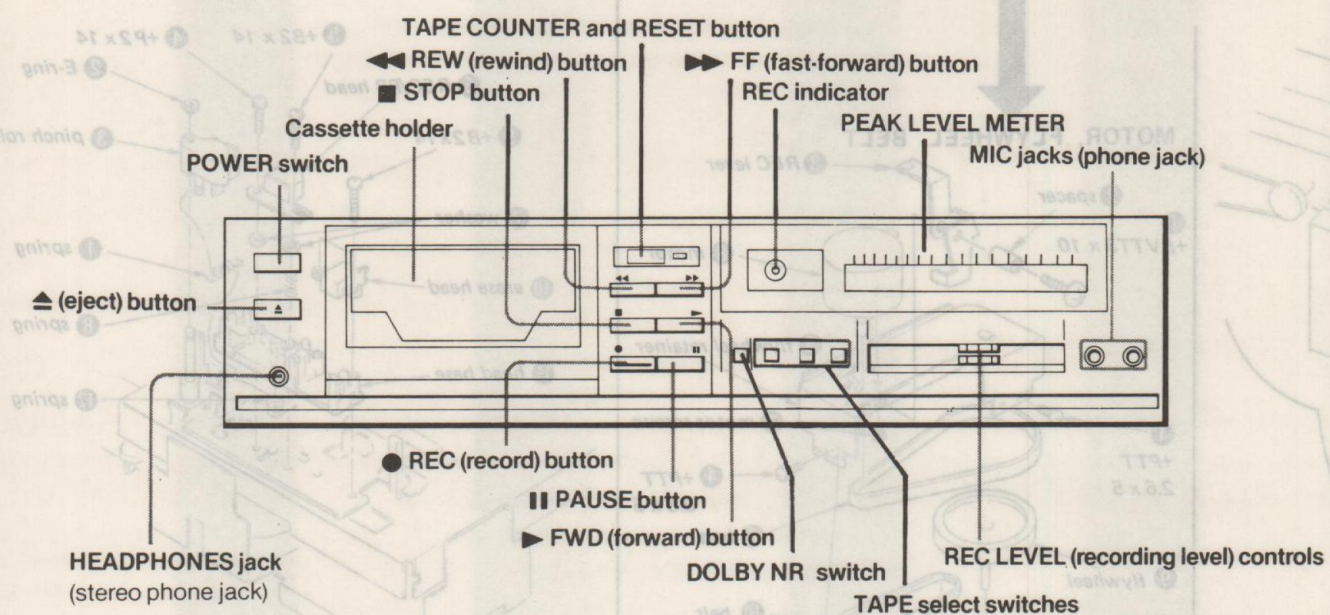


AEP model: AC: 220 V ~ 50/60 Hz 12 W

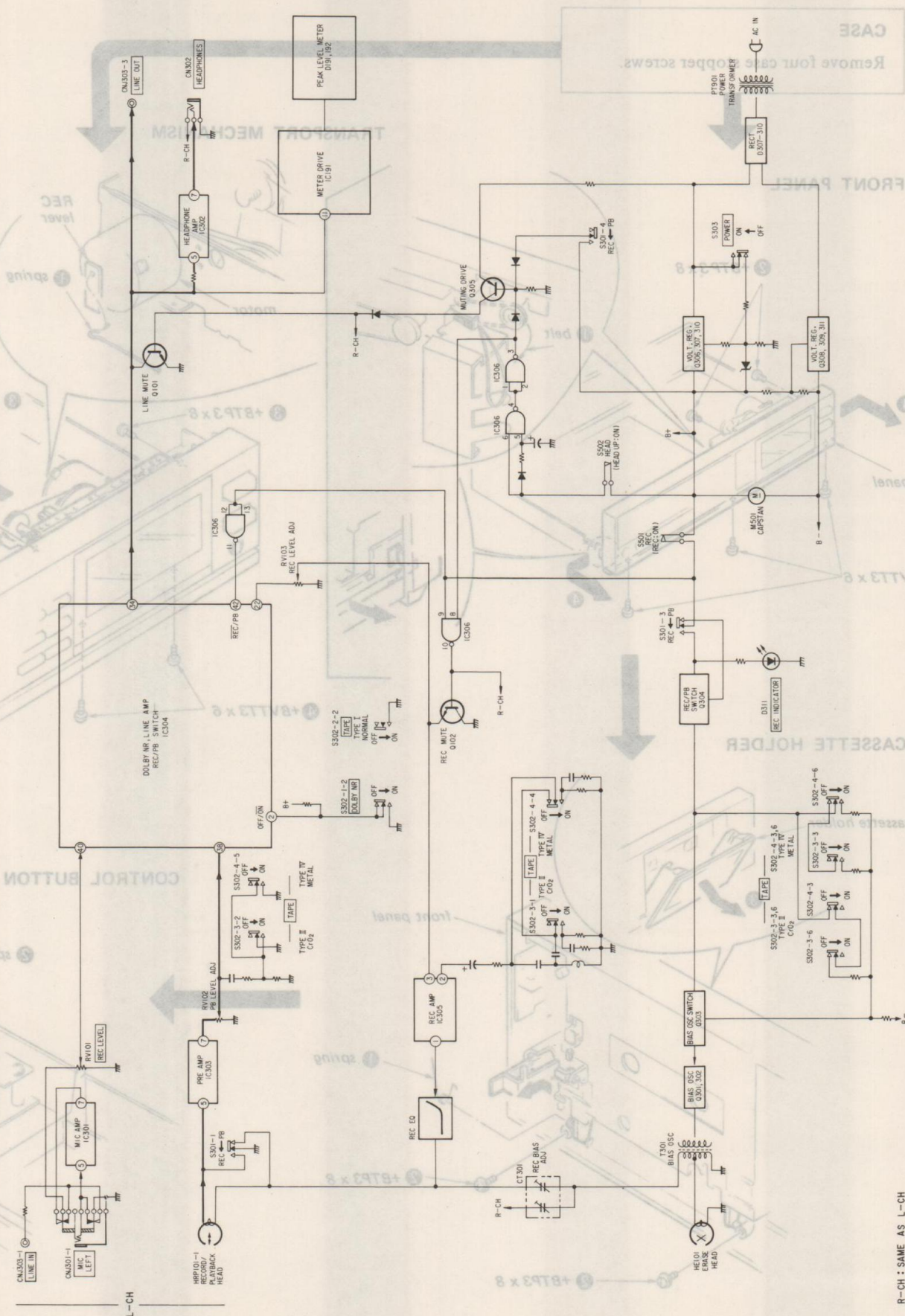
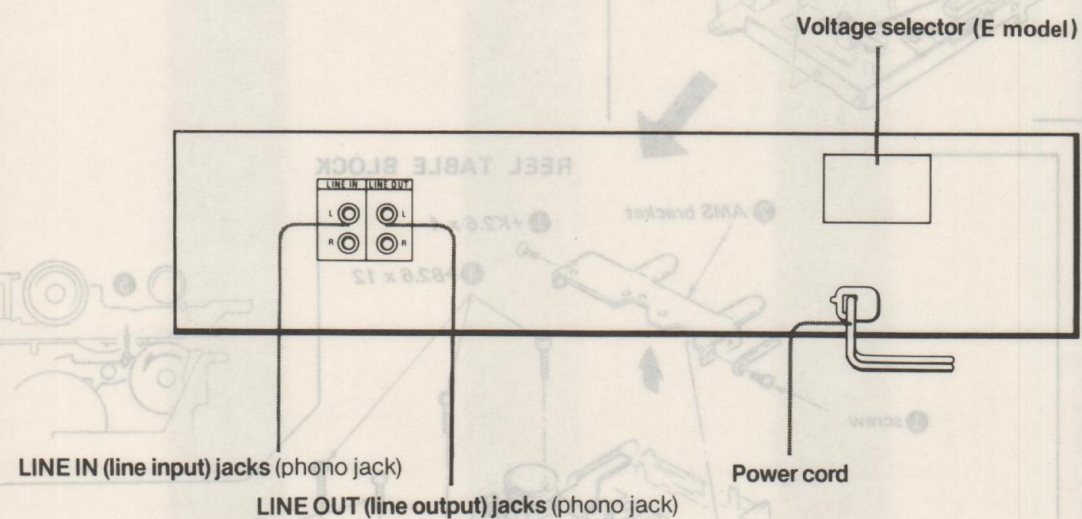
UK model: AC: 240 V ~ 50/60 Hz 12 W

E model: AC: 110, 120, 220, 240 V ~ 50/60 Hz 12 W

Front panel



Rear panel



R-CH : SAME AS L-CH

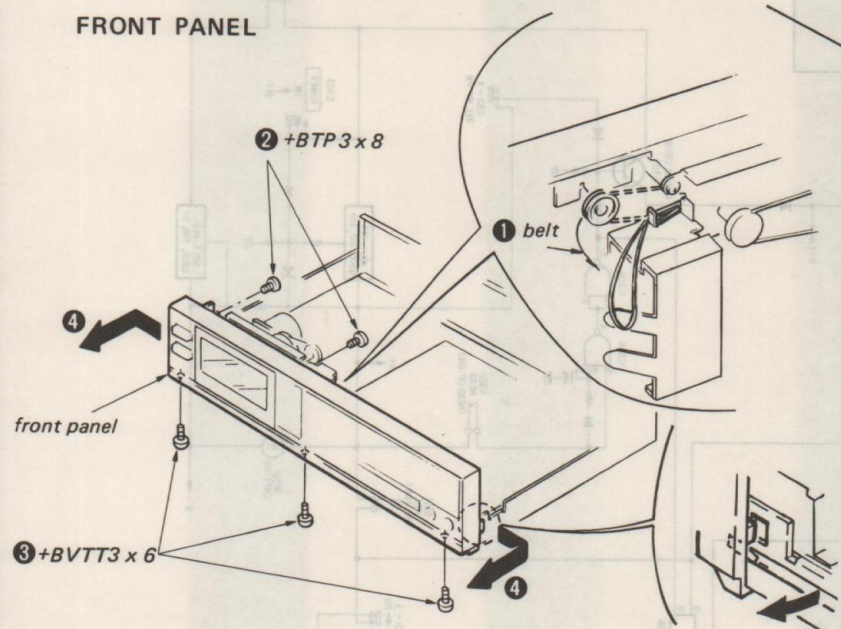
SECTION 2 DISASSEMBLY

- Follow the disassembly procedure in the numerical order given.

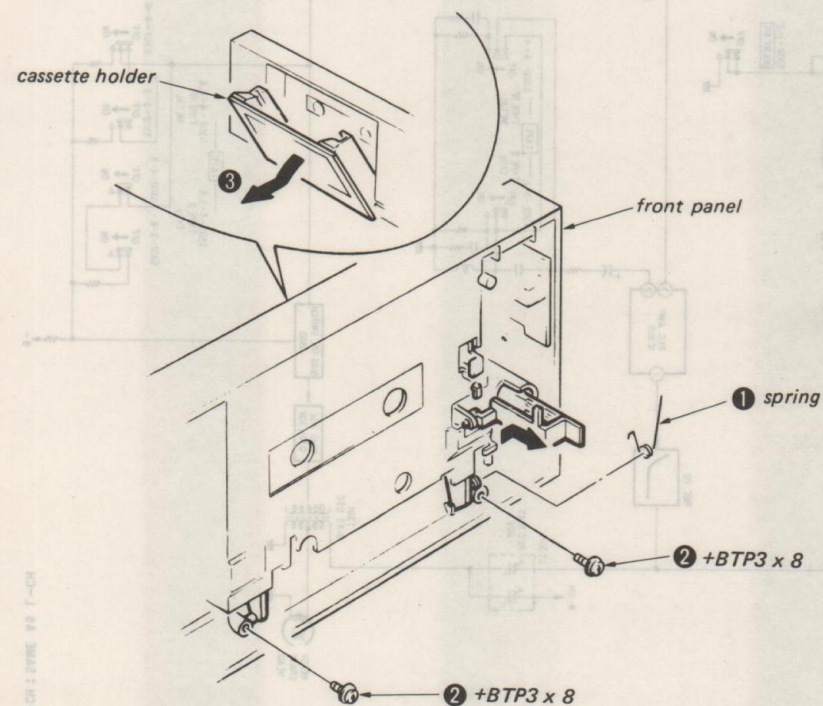
CASE

Remove four case stopper screws.

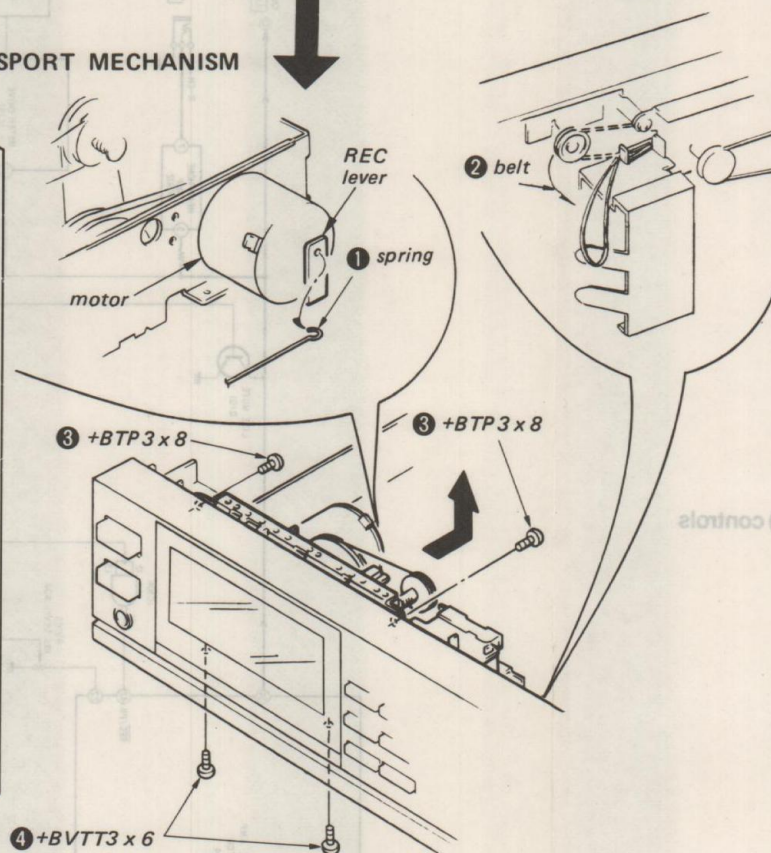
FRONT PANEL



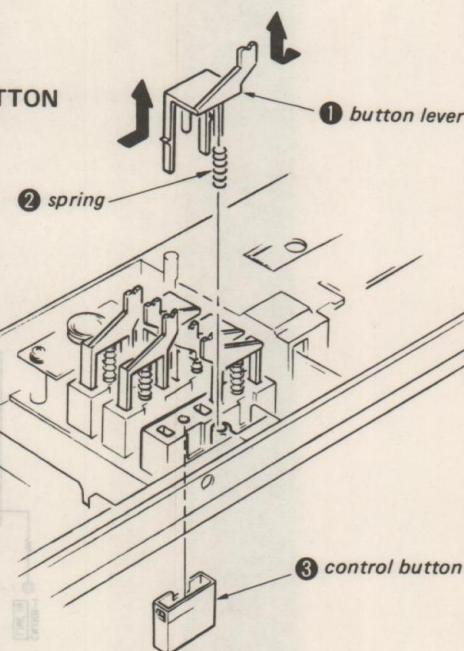
CASSETTE HOLDER



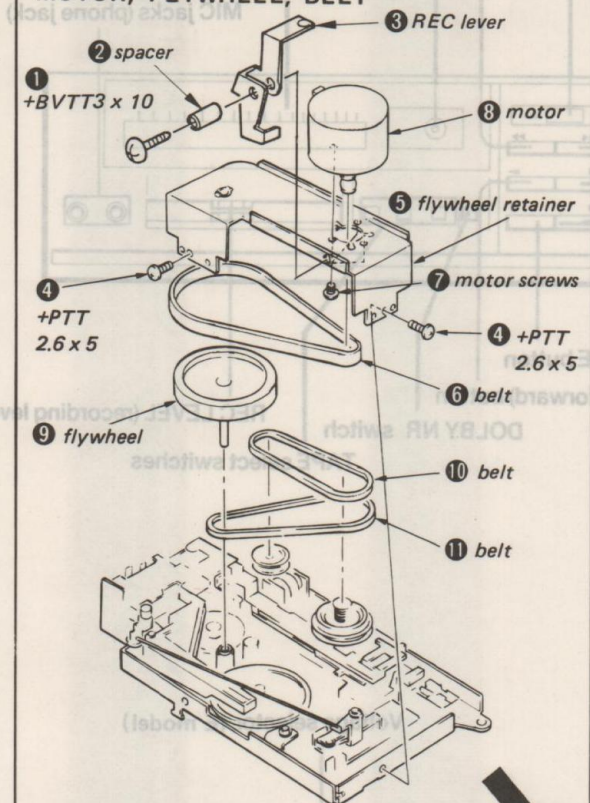
TRANSPORT MECHANISM



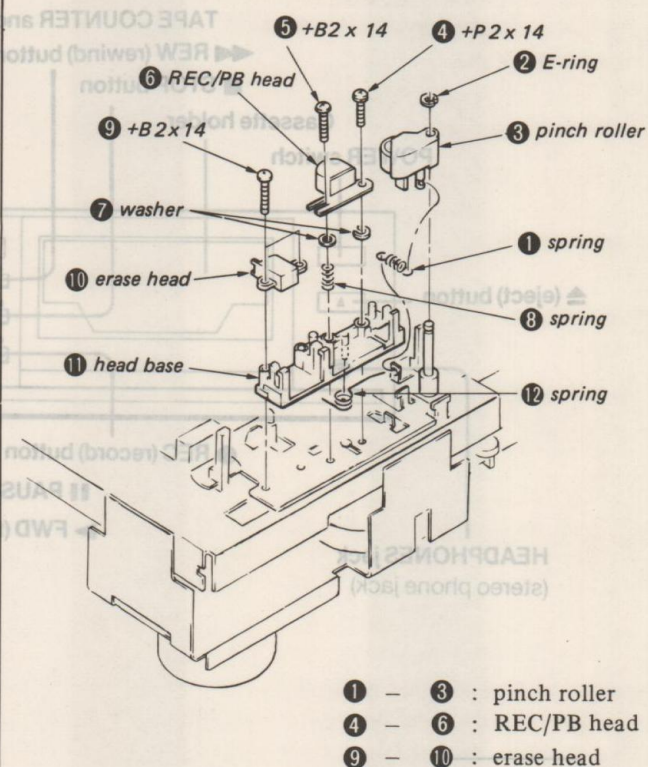
CONTROL BUTTON



MOTOR, FLYWHEEL, BELT

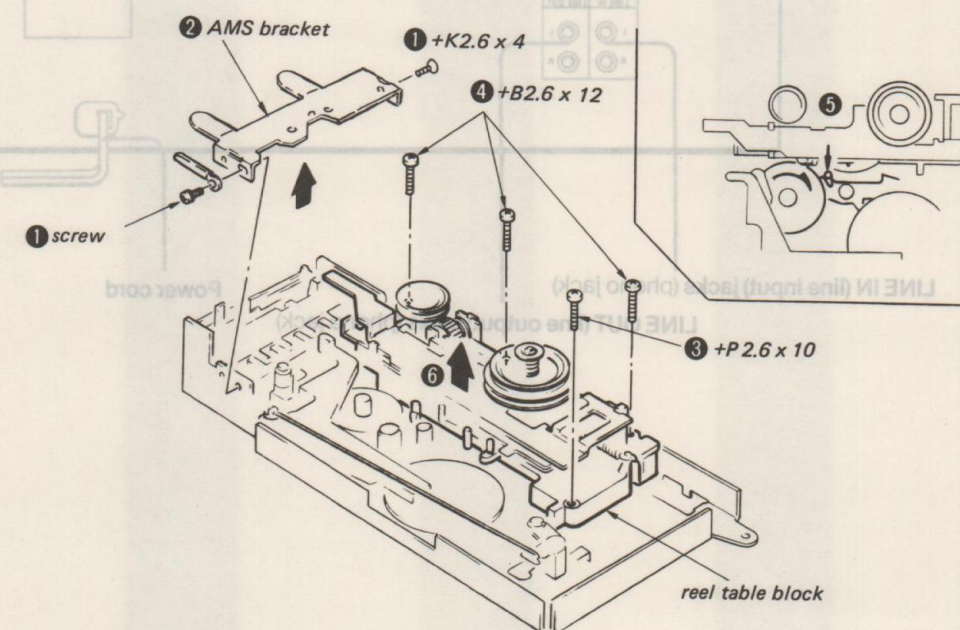


REC/PB HEAD, ERASE HEAD, PINCH ROLLER



- | | | |
|-----|------|--------------|
| 1 - | 3 : | pinch roller |
| 4 - | 6 : | REC/PB head |
| 9 - | 10 : | erase head |

REEL TABLE BLOCK



SECTION 3 ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENT

No mechanical adjustments applied to this unit.

• Torque Measurement

Mode	Torque Meter	Torque
FWD	CQ-102C	40 to 70 g·cm (0.55 to 0.97 oz·inch)
FF	CQ-201B	70 to 150 g·cm (0.97 to 2.08 oz·inch)
REW	CQ-201B	70 to 150 g·cm (0.97 to 2.08 oz·inch)
FWD back tension	CQ-102C	2 to 6 g·cm (0.028 to 0.083 oz·inch)

3-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual.
The adjustments should be performed for both L-CH and R-CH.

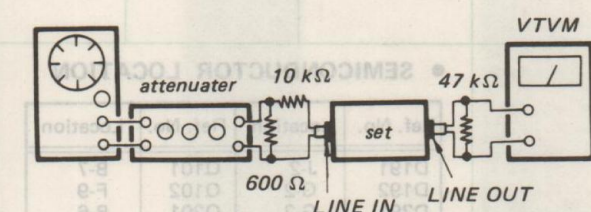
- Set the TAPE switches according to the tape as follows.

Tape	Tape Switch
CS-121	TYPE I NORMAL

- Switches and controls should be set as follows unless otherwise specified.
DOLBY NR switch: OFF
TAPE SELECT switch: TYPE I NORMAL

- Standard Record:
Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

— Record Mode —



Standard Input Level

	MIC	LINE IN
source impedance	300 Ω	10 kΩ
input level	0.77 mV (−60 dB)	0.25 V (−10 dB)

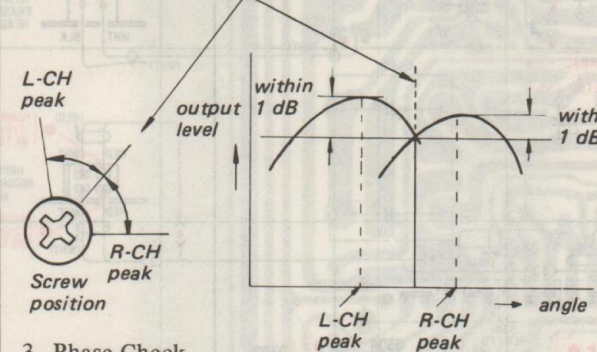
Standard Output Level

	HEADPHONES	LINE OUT
load impedance	8 Ω	47 kΩ
output level	31 mV (−28 dB)	0.435 V (−5 dB)

Record/playback Head Azimuth Adjustment

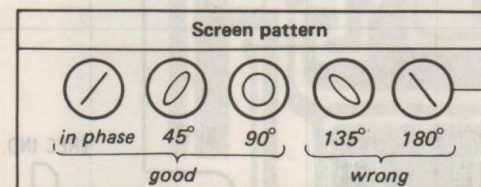
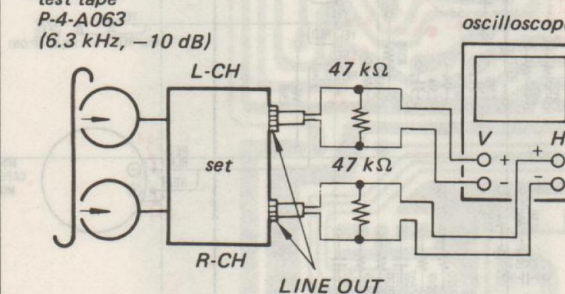
Procedure:

- Mode: playback
test tape P-4-A063 (6.3 kHz, −10 dB)
- Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1 dB.

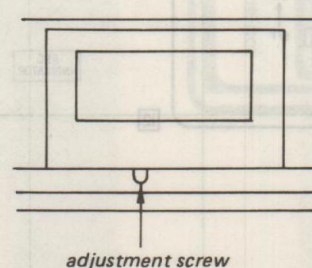


3. Phase Check

Mode: playback
test tape P-4-A063 (6.3 kHz, −10 dB)



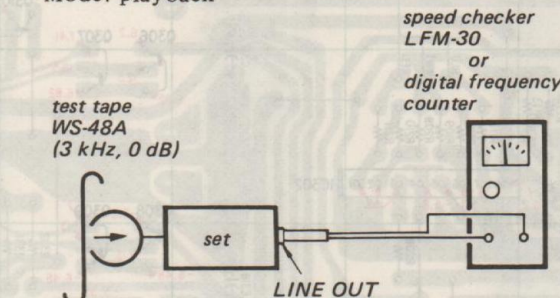
Adjustment Location:



Tape Speed Adjustment

Procedure:

Mode: playback

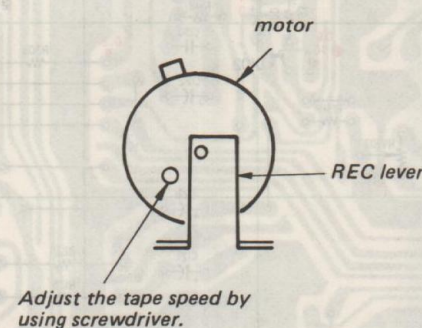


Specification:

Speed checker	Digital frequency counter
±0.3%	2,990 to 3,010 Hz

Frequency difference between the beginning and the end of the tape should be within 0.8% (25 Hz).

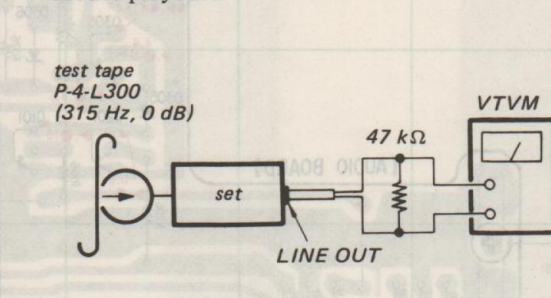
Adjustment Location:



Playback Level Adjustment

Procedure:

Mode: playback



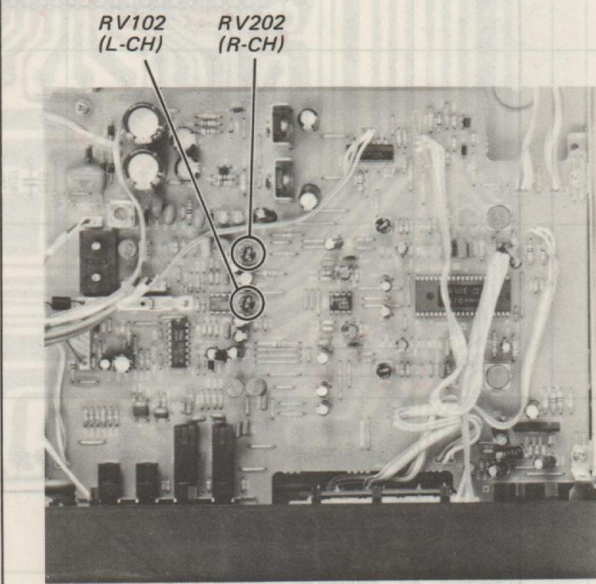
Specification:

LINE OUT level: 0.41 to 0.46 V
(−5.5 to −4.5 dB)

Level difference between channels:
less than 0.5 dB

Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location: audio board



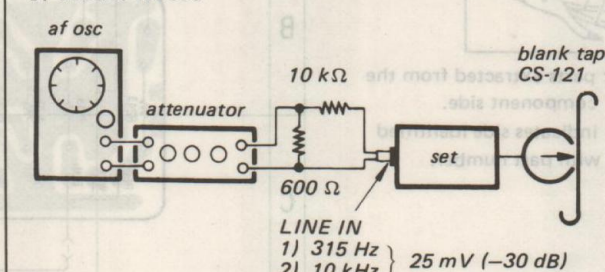
Record Bias Adjustment

Setting:

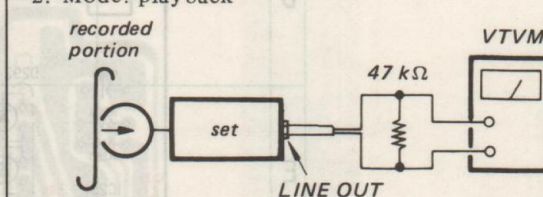
REC LEVEL control: standard record
(See page 7)

Procedure:

- Mode: record



- Mode: playback

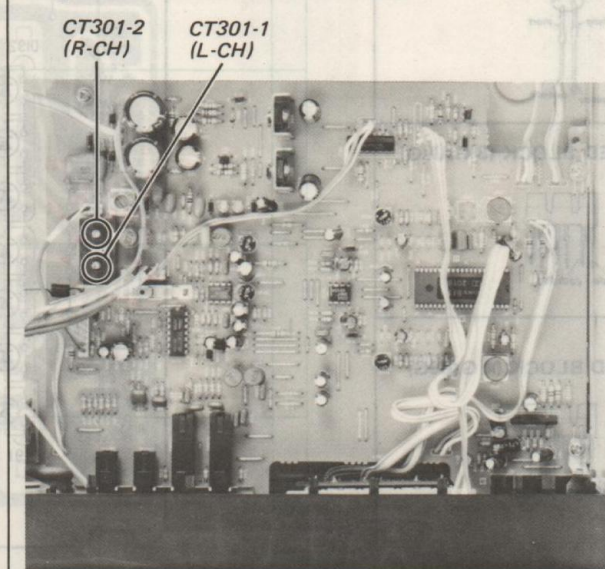


Play back the tape recorded in step 1.
Confirm that the LINE OUT level of 10 kHz signal is 0 dB relative to that of 315 Hz. If not, adjust the CT301-1 (L-CH), CT301-2 (R-CH) and repeat steps 1 and 2.

Specification:

0 ±0.5 dB

Adjustment Location: audio board



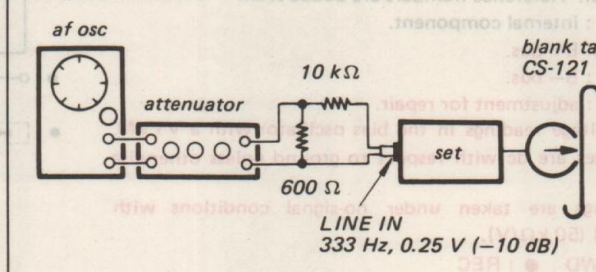
Record Level Adjustment

Setting:

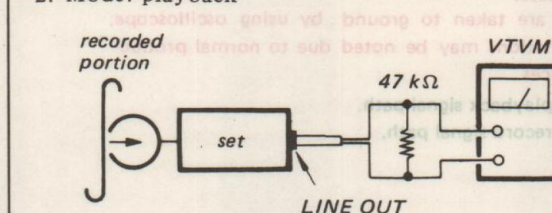
REC LEVEL control: standard record
(See page 7)

Procedure:

- Mode: record



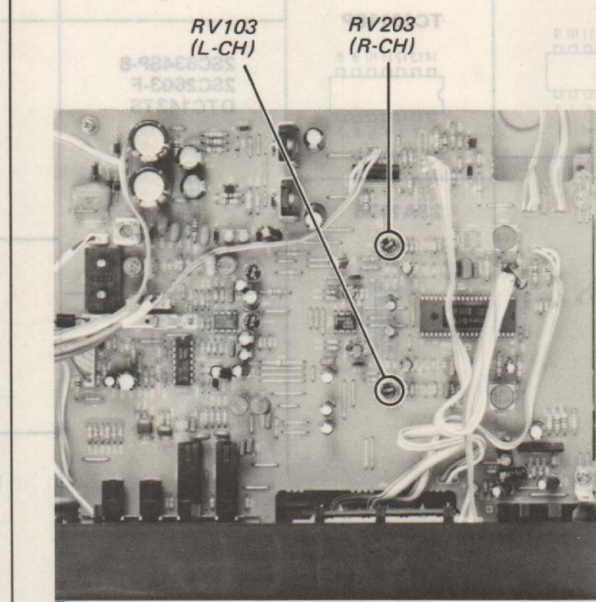
- Mode: playback



Specification:

LINE OUT level: 0.41 to 0.46 V
(−5.5 to −4.5 dB)

Adjustment Location: audio board



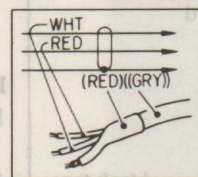
SECTION 4 DIAGRAMS

Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- Components for right channel have same values as for left channel. Reference numbers are coded from
- Δ : internal component.
- B+ bus.
- B- bus.
- adjustment for repair.
- AC voltage readings in the bias oscillator with a VTVM.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM (50 $\text{k}\Omega/\text{V}$).
- FWD: REC
- Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken to ground by using oscilloscope. Voltage variations may be noted due to normal production tolerances.

Note

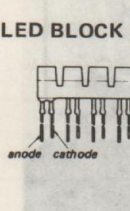
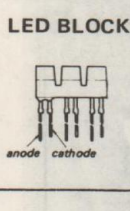
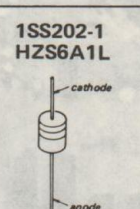
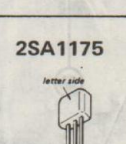
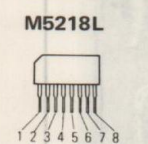
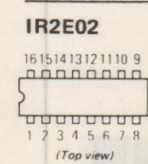
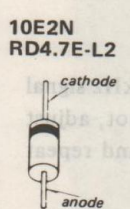
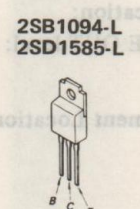
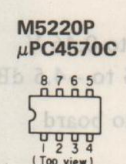
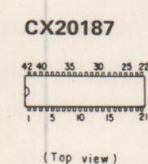
- Color code or sleeving over the end of the jacket.



- parts extracted from the component side.
- indicates side identified with part number.

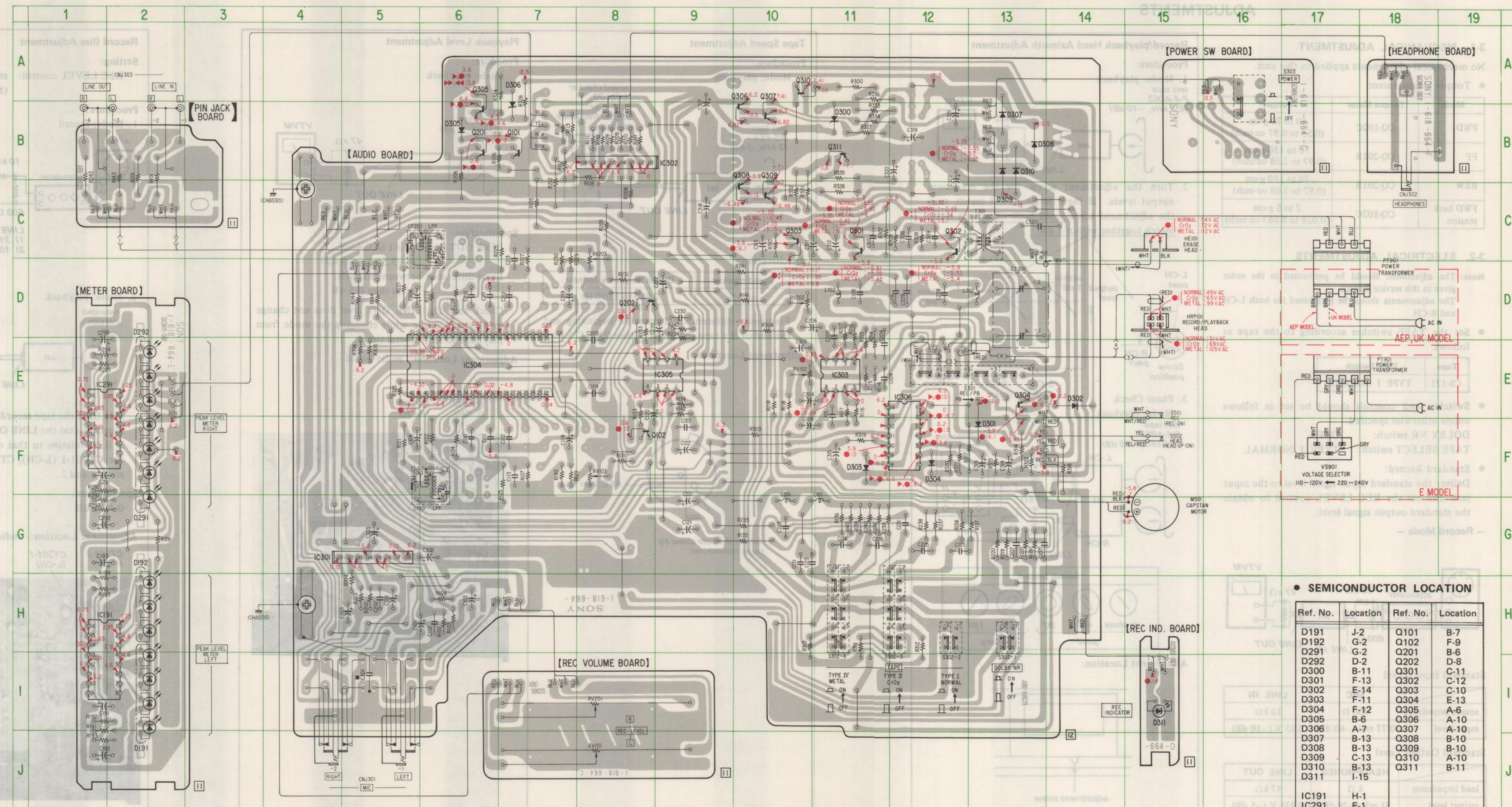
- playback signal path.
- record signal path.

Semiconductor Lead Layouts



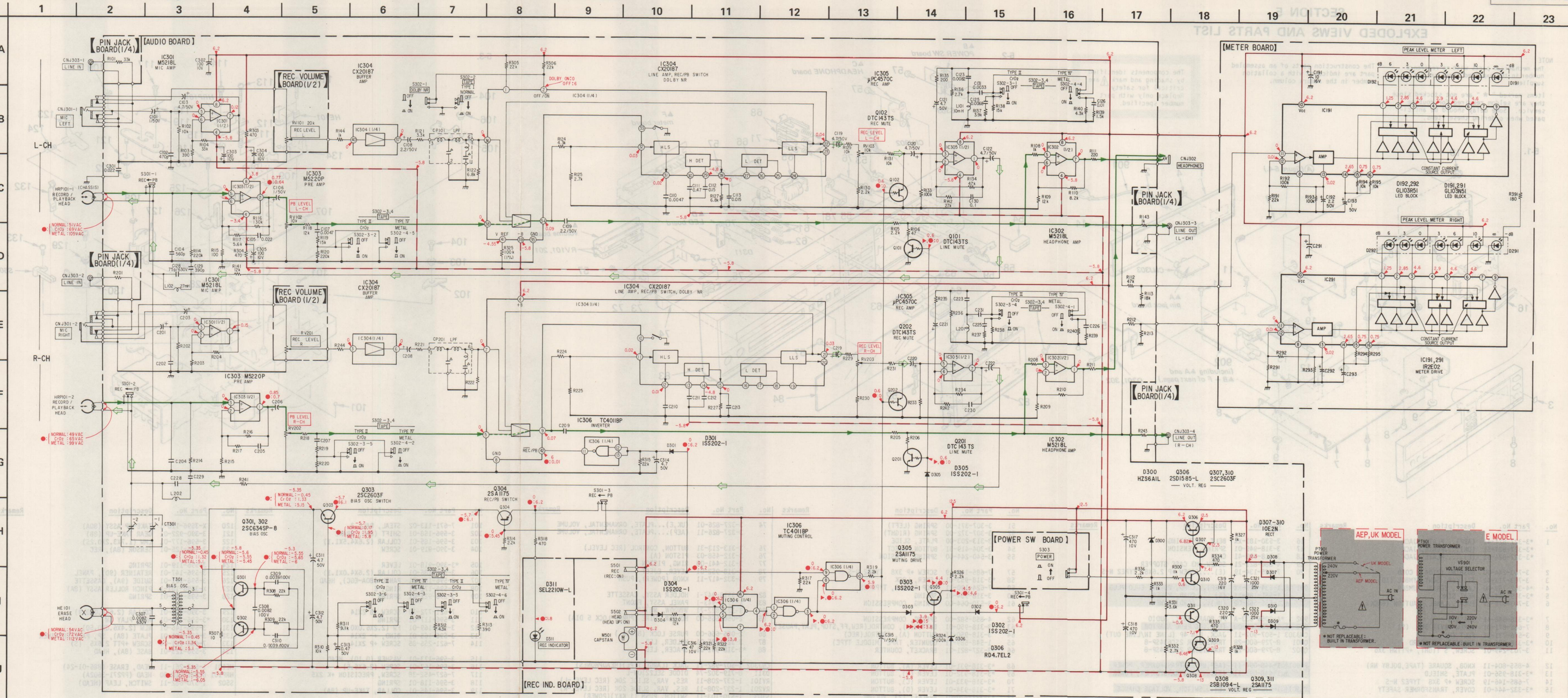
Note: The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

4-1. MOUNTING DIAGRAM — Conductor Side —



SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D191	J-2	Q101	B-7
D192	G-2	Q102	F-9
D291	G-2	Q201	B-6
D292	D-2	Q202	D-8
D300	B-11	Q301	C-11
D301	F-13	Q302	C-12
D302	E-14	Q303	C-10
D303	F-11	Q304	E-13
D304	F-12	Q305	A-6
D305	B-6	Q306	A-10
D306	A-7	Q307	A-10
D307	B-13	Q308	B-10
D308	B-13	Q309	B-10
D309	C-13	Q310	A-10
D310	B-13	Q311	B-11
D311	I-15		
IC191	H-1		
IC291	E-1		
IC301	G-4		
IC302	B-9		
IC303	E-11		
IC304	E-6		
IC305	E-9		
IC306	E-12		



SECTION 5

EXPLODED VIEWS AND PARTS LIST

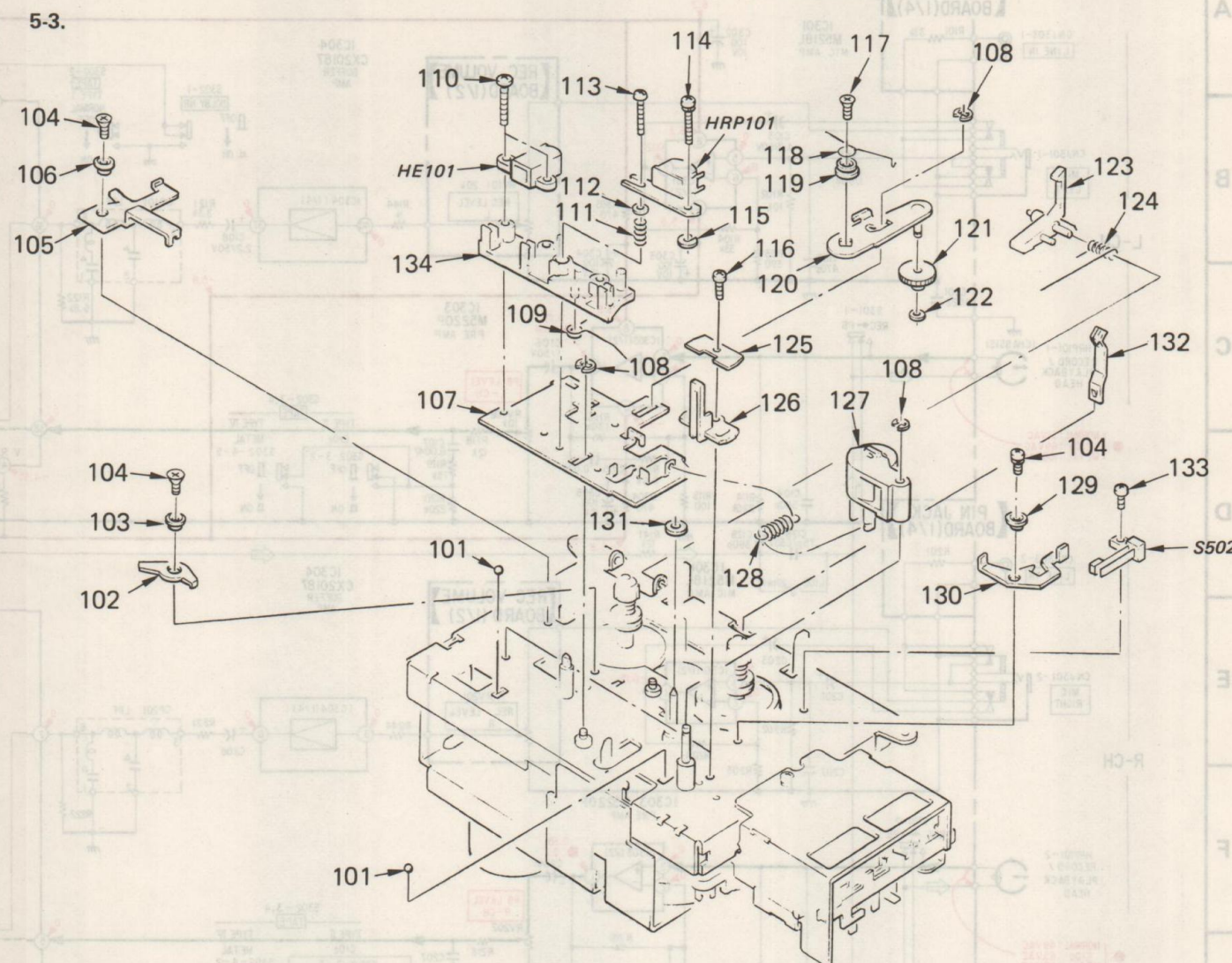
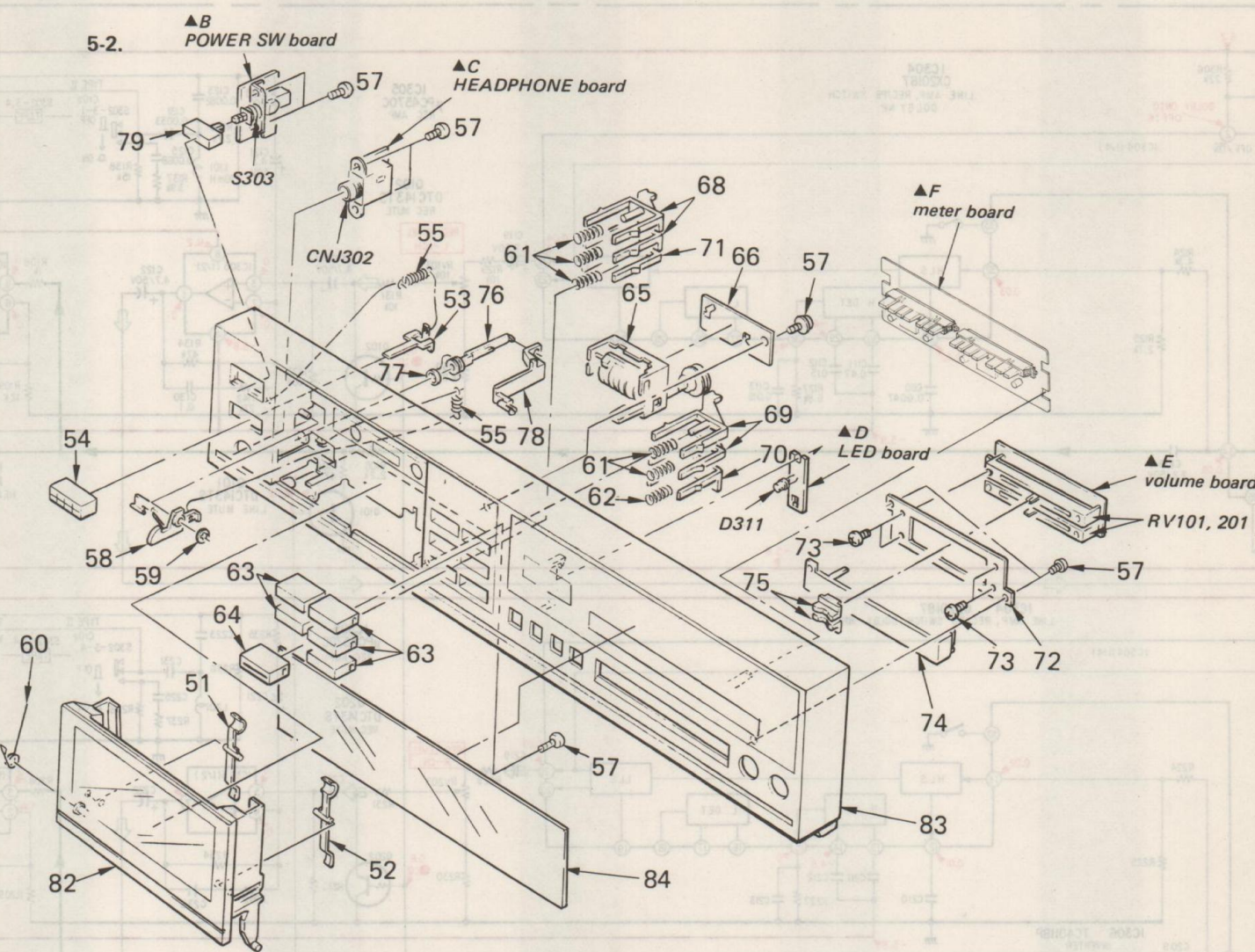
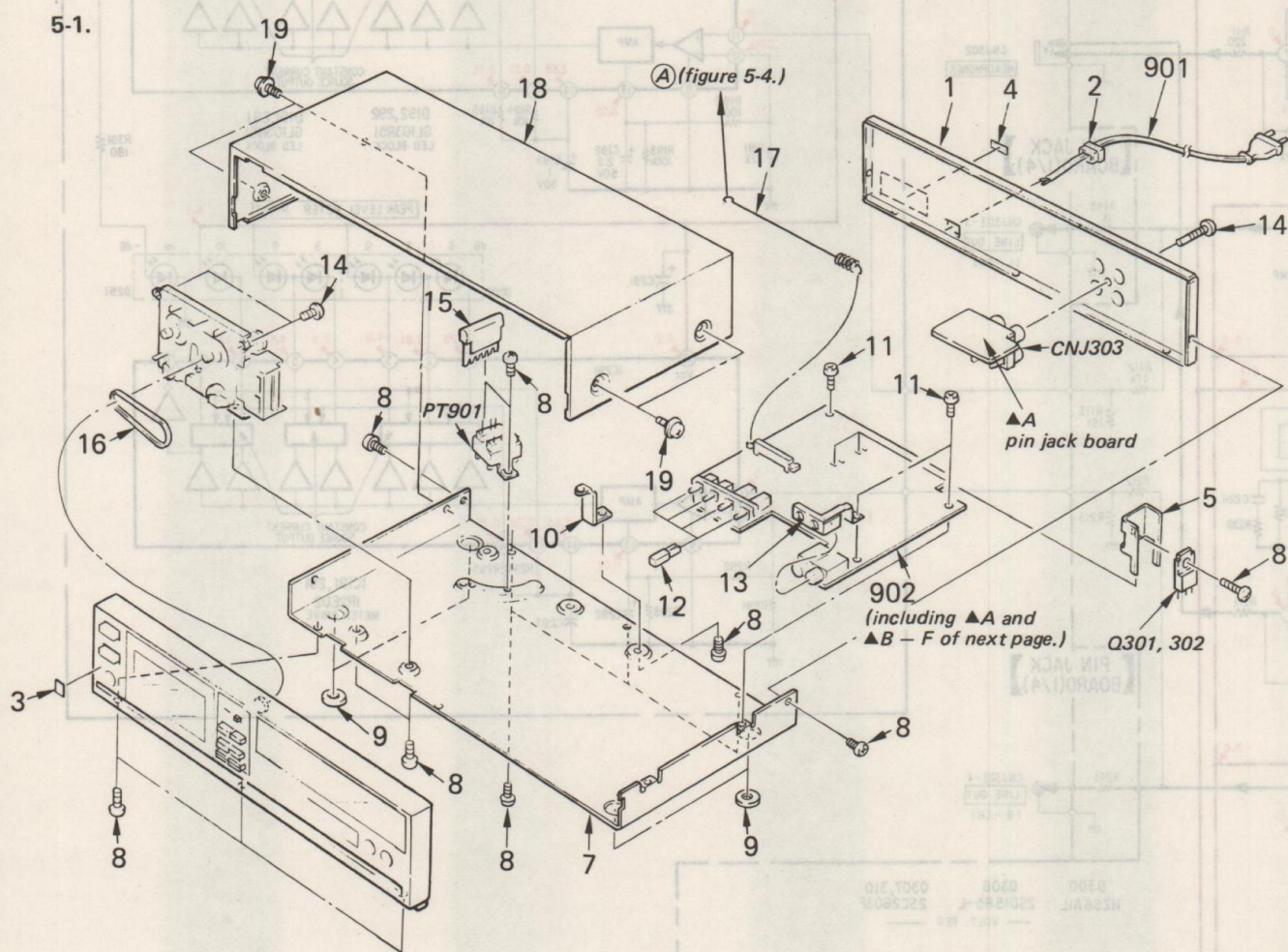
NOTE:

The mechanical parts with no reference number in the exploded views are not supplied.

Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The construction parts of an assembled part are indicated with a collation number in the remark column.

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.



No.	Part No.	Description	Remarks
1	*3-327-824-41	(AEP)...PLATE, JACK	
	*3-327-824-51	(UK)...PLATE, JACK	
	*3-327-824-61	(E)...PLATE, JACK	
2	3-703-244-00	BUSHING (2104), CORD	
3	3-703-713-41	STICKER, SONY SYMBOL (10)	
4	*4-302-759-00	LABEL, SERIAL NUMBER	
5	*3-309-144-31	HEAT SINK	
6	3-703-079-21	(UK)...LABEL, CAUTION (BACK)	
7	*3-318-948-41	CHASSIS	
8	7-685-871-01	SCREW +BVTT 3X6 (S)	
9	3-576-731-11	FELT (H)	
10	*3-318-936-11	BRACKET, PC BOARD	
11	3-703-249-01	SCREW, S TIGHT, +PTTWH 3X6	
12	4-855-804-11	KNOB, SQUARE (TAPE,DOLBY NR)	
13	*3-318-956-01	PLATE, SHIELD	
14	7-685-146-19	SCREW +P 3X8 TYPE2 N-S	
15	*3-332-444-01	COVER, TRANSFORMER SAFETY	

No.	Part No.	Description	Remarks
16	3-530-181-XX	BELT, DETECTING	
17	3-318-949-01	SPRING, TENSION	
18	3-318-998-41	CASE	
19	4-886-821-21	SCREW, M3 CASE STOPPER	
20	7-685-134-19	(E)...SCREW +P 2.6X8 TYPE2 N-S	
901	A .1-534-817-XX	(AEP)...CORD, POWER, EULO PLUG	
	A .1-551-188-XX	(E)...CORD, POWER	
	A .1-556-562-00	(UK)...CORD, POWER	
902	*A-2056-333-A	PC BOARD ASSY, AUDIO	
903	A .1-526-565-00	(E)...AC PLUG ADAPTOR	
CNJ303	1-507-907-11	JACK, PIN 4P (LINE IN/LINE OUT)	
Q301	8-729-600-28	TRANSISTOR 2SC634SP-8	
Q302	8-729-600-28	TRANSISTOR 2SC634SP-8	
PT901	A .1-448-094-11	(AEP,UK)...TRANSFORMER, POWER	
	A .1-448-095-11	(E).....TRANSFORMER, POWER	
VS901	A .1-570-046-21	(E)...SWITCH, VOLTAGE CHANGE	

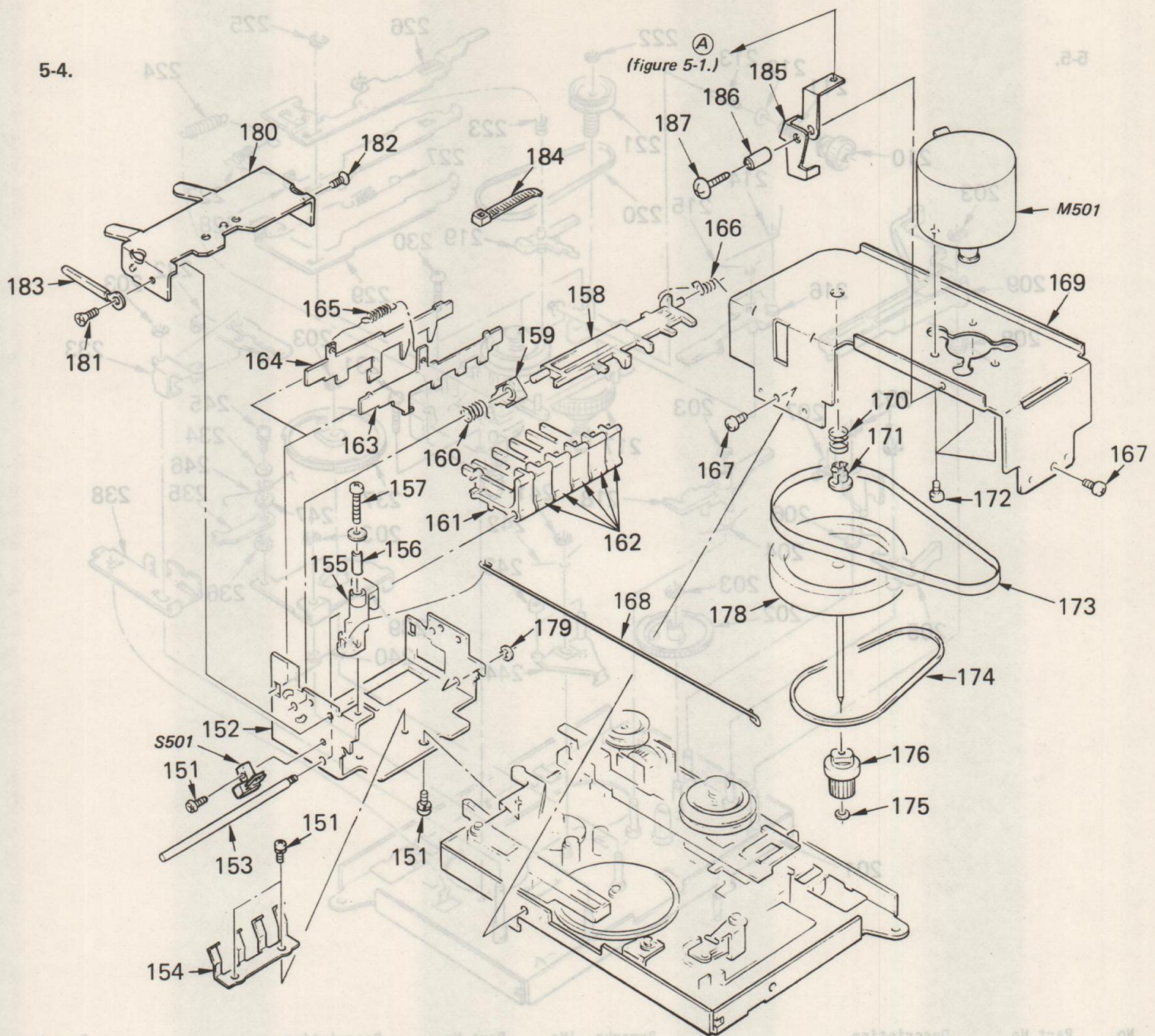
No.	Part No.	Description	Remarks
51	3-307-371-00	SPRING (LEFT)	
52	3-307-372-00	SPRING (RIGHT)	
53	3-313-203-00	PLATE, SLIDE	
54	3-304-419-31	BUTTON, EJECT	
55	3-540-244-00	SPRING, TENSION	
57	7-685-146-19	SCREW +P 3X8 TYPE2 N-S	
58	*3-318-953-01	LEVER, LOCK	
59	7-624-190-11	STOP RING 3, TYPE-CS	
60	3-318-954-01	SPRING	
61	3-570-064-00	SPRING, COMPRESSION	
62	4-858-582-00	SPRING, COMPRESSION	
63	3-318-950-01	BUTTON(A), CONTROL(REW,FF,STOP,PLAY,PAUSE)	
64	7-624-190-11	STOP RING 3, TYPE-CS	
65	1-548-589-11	COUNTER, TAPE (MIDDLE TYPE)	
66	*3-327-821-01	BRACKET, COUNTER	
68	*3-318-931-01	LEVER (A), BUTTON	
69	*3-318-932-01	LEVER (B), BUTTON	
70	*3-318-933-01	LEVER (C), BUTTON	
71	*3-318-934-01	LEVER (D), BUTTON	
72	*3-327-820-01	BRACKET (2), VOLUME	
73	7-621-255-15	SCREW +P 2X3	

No.	Part No.	Description	Remarks
74	3-327-826-01	(UK,E)...PLATE, ORNAMENTAL, VOLUME	
	3-327-826-11	(AEP)...PLATE, ORNAMENTAL, VOLUME	
75	3-313-213-31	BUTTON, CONTROL (REC LEVEL)	
76	3-312-458-03	PISTON (A)	
77	3-312-441-00	RING, PISTON	
78	3-318-952-01	LEVER, EJECT	
79	3-332-417-11	KNOB (POWER), PUSH	
82	X-3318-947-1	HOLDER ASSY, CASSETTE	
83	X-3318-943-1	PANEL ASSY, FRONT	
84	3-327-822-21	WINDOW, METER	
85	2-056-665-00	HOLDER, WIRE (PURCE LOCK 5 DIA)	
86	2-056-666-00	PURSE LOCK (8 DIA.)	
87	3-327-825-01	HOLDER, LED	
88	*3-318-941-01	SPACER, LED	
CNJ302	1-507-982-11	JACK (LARGE TYPE)(HEADPHONES)	
D311	8-719-302-74	DIODE SEL2210W-L	
RV101	1-237-208-11	RES, VAR, SLIDE 20K (REC LEVEL-L)	
RV201	1-237-208-11	RES, VAR, SLIDE 20K (REC LEVEL-R)	
S303	1-570-103-11	SWITCH, PUSH (1 KEY)(POWER)	

No.	Part No.	Description	Remarks
101	7-671-113-02	STEAL, BALL 3	
102	3-596-158-01	SHIFT (8A), BRAKE	
103	3-596-185-01	COLLAR (2.6X4.5X1.1)	
104	3-390-919-01	SCREW	
105	*3-390-918-01	LEVER	
106	3-596-186-01	COLLAR (2.6X4.0X1.1)	
107	3-596-181-01	PANEL (80A-EGC), HEAD	
108	3-596-172-01	RING, E	
109	3-390-921-01	SPRING	
110	7-621-772-70	SCREW +B 2X14	
111	3-596-117-01	SPRING	
112	3-596-146-01	FW (2.2X6.0X0.4)	
113	3-596-165-01	BIND, +- 2X14	
114	7-621-255-85	SCREW +P 2X14	
115	3-596-173-01	WASHER (0.10), HEAD	
116	3-596-167-01	SCREW (2.6X6.5)	
117	7-627-452-38	SCREW, PRECISION +K 2X5	
118	3-596-118-01	SPRING	
119	3-596-145-01	COLLAR, TAKE-UP (8A)	

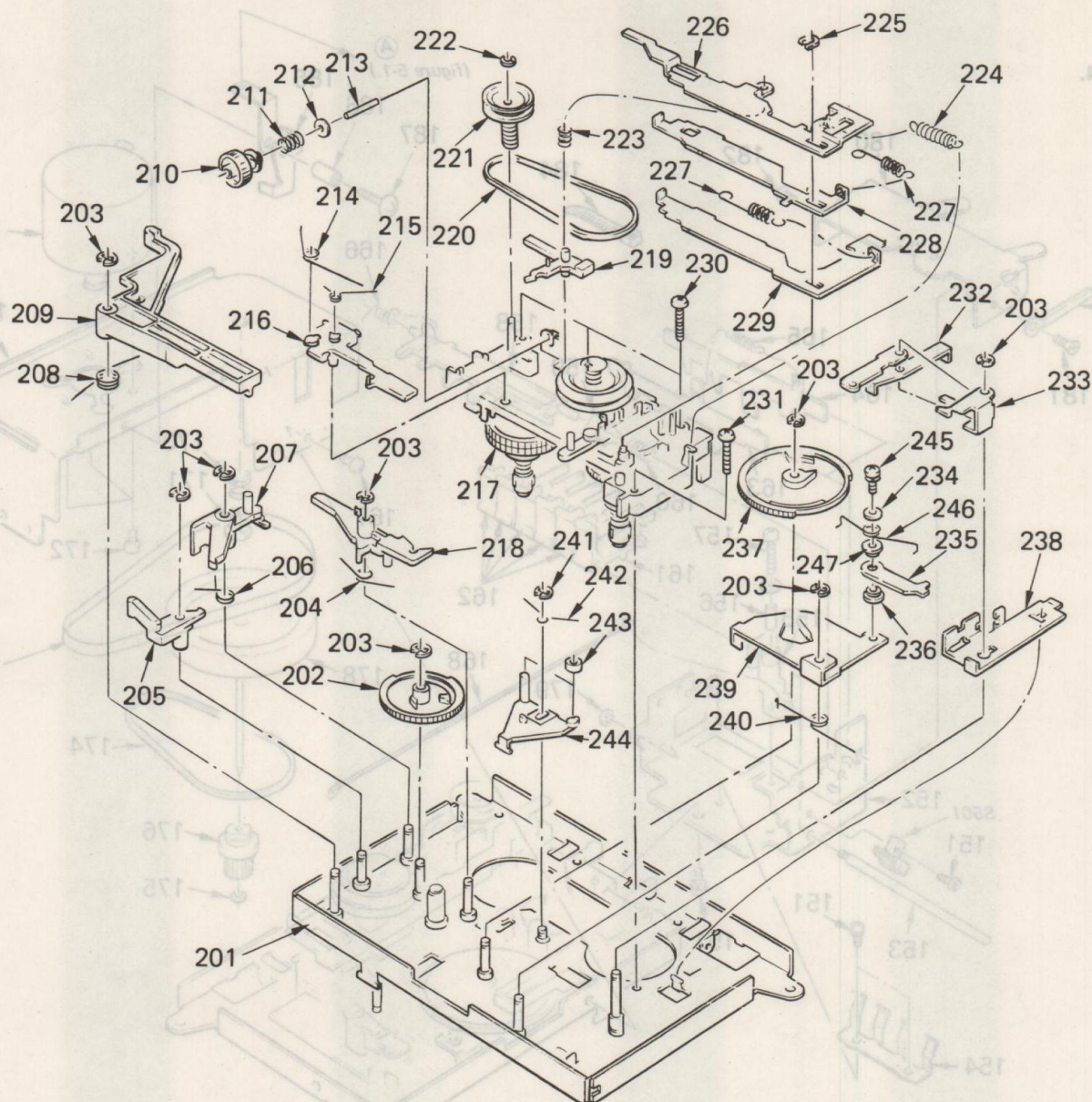
No.	Part No.	Description	Remarks
120	X-3596-110-1	TAKE-UP ASSY (80A)	
121	3-390-922-01	GEAR TAKE-UP (8B)	
122	3-596-177-01	LMW (1.7X3.2X0.25)	
123	3-596-125-01	SENSOR (8A), REC	
124	3-596-119-01	SPRING	
125	3-596-147-01	RETAINER (9D), PANEL	
126	3-596-121-01	GUIDE (9A), CASSETTE	
127	X-3596-101-1	PINCH ROLLER ASSY (8A)	
128	3-596-103-01	SPRING	
129	3-390-920-01	COLLAR (2.6X4.0X0.9)	
130	*3-596-179-01	ARM, PLAY SW	
131	3-596-146-01	NLW (2.4X6.0X0.50)	
132	3-596-151-01	PLATE (8A), SP, PACK RETAINER	
133	7-685-791-04	SCREW +PTT 2.6X5 (S)	
134	3-596-123-01	BASE (8A), HEAD	
HE101	1-543-261-11	HEAD, ERASE (886-01-24)	
HRP101	8-825-510-30	HEAD (PP271-3602A)	
S502	1-570-682-11	SWITCH, LEAF (HEAD)	

5-4.



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
151	7-621-770-87	SCREW +B 2.6X5		170	3-596-101-01	RETAINER (SP)(9A), CAPSTAN	
152	*3-390-901-01	FRAME (80A-EGC), PUSH BUTTON		171	3-596-122-01	RETAINER (9A), CAPSTAN	
153	*3-390-915-01	SHAFT, LEVER KEY (8B)		172	3-596-166-01	SCREW (2.6X2.5)	
154	3-390-913-01	SP PLATE, LEVER KEY (8C)		173	3-596-184-01	BELT (60X4.5X0.5-68C), FLAT	
155	3-390-906-01	LEVER, REC CONTROL (8A)		174	3-596-183-01	BELT (1.3X50-68C), SQUARE	
156	3-390-914-01	COLLAR, REC CONTROL (8A)		175	3-596-171-01	PSW (2.6X4.7X0.25)	
157	3-596-168-01	BIND 2.6X12		176	3-596-133-01	GEAR, CAPSTAN (8A)	
158	3-390-905-01	PLATE (8A), FUNCTION		178	X-3596-105-1	FLYWHEEL ASSY	
159	3-390-904-01	CAM (8A), PAUSE		179	7-624-104-04	STOP RING 2.0, TYPE -E	
160	3-390-910-01	CAM (8B), SP PAUSE		180	3-390-924-01	BRACKET, AMS (8RA)	
161	3-390-907-01	LEVER, PAUSE KEY (8A)		181	3-390-919-01	SCREW	
162	3-390-908-01	LEVER, KEY (8C)		182	7-621-559-20	SCREW +K 2.6X4	
163	*3-390-903-01	ARM		183	*3-596-198-01	CLIP	
164	*3-390-902-01	ARM		184	*3-683-631-01	CLAMP	
165	3-390-912-01	SP		185	*3-318-935-01	LEVER, REC	
166	3-390-911-01	PLATE (8B), FUNCTION, SP		186	*3-318-942-01	SPACER, REC LEVER	
167	7-685-791-04	SCREW +PTT 2.6X5 (S)		187	7-685-873-01	SCREW +BVTT 3X10 (S)	
168	3-390-909-01	REC, JOINT (8A)		M501	Y-3596-112-1	MOTOR ASSY	
169	*3-596-189-01	RETAINER, FLYWHEEL (80A-EGC)		S501	1-570-683-11	SWITCH, LEAF (REC)	

5-5.



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
201	*X-3596-111-1	RIVETING ASSY (80A), CHASSIS		225	7-624-193-09	STOP RING (2.5) GRIP	
202	3-596-136-01	GEAR, RF DRIVE (8B)		226	*3-596-153-01	LEVER, AUTO (8A)	
203	3-596-172-01	RING, E		227	3-596-111-01	SPRING	
204	3-596-105-01	SPRING		228	*3-596-156-01	LEVER, REW (8B)	
205	3-596-128-01	LEVER, PAUSE TRIGGER (8A)		229	*3-596-155-01	LEVER, FF (8B)	
206	3-596-106-01	SPRING		230	3-596-168-01	BIND 2.6X12	
207	3-596-182-01	LEVER, RF TRIGGER (8A)		231	7-621-259-65	SCREW +P 2.6X10	
208	3-596-107-01	SPRING		232	*3-596-149-01	ARM, RP SWITCH (8A)	
209	3-390-923-01	LEVER, RP TRIGGER (8A)		233	*3-596-150-01	ARM, RP SHIFT (8A)	
210	X-3596-102-1	WORM ASSY (8RA), AUTO, GEAR		234	3-596-170-01	FW (2.8X7.5X0.5)	
211	3-596-115-01	SPRING		235	*3-596-154-01	LEVER, RP SELECT (8B)	
212	3-596-176-01	PSW (2.0X8.0X0.25)		236	3-596-143-01	COLLAR, RP SELECT (8A)	
213	3-596-144-01	SHAFT		237	3-596-137-01	GEAR, DRIVE (8B)	
214	3-596-110-01	SPRING		238	*3-596-188-01	LEVER, REC (80A)	
215	3-596-109-01	SPRING		239	*3-596-190-01	ARM, PLAY (80A-EGC)	
216	3-596-132-01	ARM, CANCEL (8A)		240	3-390-916-01	SP, ARM PLAY (80A)	
217	X-3596-109-1	BASE ASSY (80A), REEL TABLE		241	7-624-104-04	STOP RING 2.0, TYPE -E	
218	3-596-127-01	LEVER, RETURN (8A)		242	3-596-104-01	SPRING	
219	3-596-131-01	ARM, AUTO (8A)		243	3-596-135-01	RUBBER, BRAKE	
220	3-596-180-01	BELT (1.0X40-60C), SQUARE		244	3-596-126-01	ARM, BRAKE (8A)	
221	3-596-138-01	GEAR, RELAY PULLEY (8RA)		245	7-685-791-04	SCREW +PTT 2.6X5 (S)	
222	3-701-436-11	WASHER, 1.6		246	3-596-196-01	SELECT (80A), SP-PR	
223	3-596-114-01	SPRING		247	3-596-197-01	SELECT, COLLAR RP (80A)	
224	3-596-112-01	SPRING					

SECTION 6

ELECTRICAL PARTS LIST

NOTE:

Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

MF:μF, PF:μpF.

RESISTORS

All resistors are in ohms.

F: nonflammable

COILS

MMH: mH, UH: μH

SEMICONDUCTORS

In each case, U: μ, for example:

UA....: μA..., UPA....: μPA..., UPC....: μPC,

UPD....: μPD...

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
901	★A.1-534-817-XX	(AEP)...CORD, POWER, EULO PLUG
	★A.1-551-188-XX	(E)...CORD, POWER
	★A.1-556-562-00	(UK)...CORD, POWER
902	★A-2056-333-A	PC BOARD ASSY, AUDIO
903	★A.1-526-565-00	(E)...AC PLUG ADAPTOR
C101	1-124-903-00	ELECT 1MF 20% 50V
C102	1-162-290-31	CERAMIC 470PF 10% 50V
C103	1-124-927-11	ELECT 4.7MF 20% 100V
C104	1-162-107-00	CERAMIC 560PF 10% 50V
C105	1-136-157-00	FILM 0.022MF 5% 50V
C106	1-123-380-00	ELECT 1MF 20% 100V
C107	1-162-112-00	CERAMIC 0.0047MF 30% 25V
C108	1-124-904-00	ELECT 2.2MF 20% 50V
C109	1-124-183-00	ELECT 2.2MF 20% 50V
C110	1-110-203-00	MYLAR 0.0047MF 5% 50V
C111	1-136-173-00	FILM 0.47MF 5% 50V
C112	1-136-167-00	FILM 0.15MF 5% 50V
C113	1-136-155-00	FILM 0.015MF 5% 50V
C119	1-124-927-11	ELECT 4.7MF 20% 100V
C120	1-124-927-11	ELECT 4.7MF 20% 100V
C121	1-124-927-11	ELECT 4.7MF 20% 100V
C122	1-124-927-11	ELECT 4.7MF 20% 100V
C123	1-110-206-00	MYLAR 0.0082MF 5% 50V
C125	1-110-205-00	MYLAR 0.0068MF 5% 50V
C126	1-136-153-00	FILM 0.01MF 5% 50V
C128	1-136-273-91	FILM 75PF 5% 630V
C129	1-162-105-00	CERAMIC 390PF 10% 50V
C130	1-136-165-00	FILM 0.1MF 5% 50V
C131	1-110-201-00	MYLAR 0.0033MF 5% 50V
C191	1-123-617-00	ELECT 10MF 20% 16V
C192	1-123-612-00	ELECT 2.2MF 20% 50V
C193	1-123-611-00	ELECT 1MF 20% 50V
C301	1-161-494-00	CERAMIC 0.022MF 30% 25V
C302	1-124-443-00	ELECT 100MF 20% 10V
C303	1-124-443-00	ELECT 100MF 20% 10V
C304	1-124-443-00	ELECT 100MF 20% 10V
C305	1-124-443-00	ELECT 100MF 20% 10V
C307	1-129-713-00	FILM 0.0082MF 10% 630V
C308	1-130-295-00	FILM 0.0082MF 5% 100V
C309	1-130-287-00	FILM 0.0039MF 5% 100V
C310	1-130-287-00	FILM 0.0039MF 5% 100V
C311	1-123-369-00	ELECT 4.7MF 20% 63V
C312	1-123-369-00	ELECT 4.7MF 20% 63V
C313	1-124-902-00	ELECT 0.47MF 20% 50V
C314	1-124-927-11	ELECT 4.7MF 20% 100V
C315	1-124-903-00	ELECT 1MF 20% 50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description
C316	1-124-892-11	ELECT 47MF 20% 10V
C317	1-124-472-11	ELECT 470MF 20% 10V
C318	1-124-472-11	ELECT 470MF 20% 10V
C319	1-123-321-00	ELECT 220MF 20% 16V
C320	1-123-321-00	ELECT 220MF 20% 16V
C321	1-124-557-11	ELECT 1000MF 20% 25V
C322	1-124-557-11	ELECT 1000MF 20% 25V
CNJ301	1-507-797-21	JACK, LARGE TYPE (MIC)
CNJ302	1-507-982-11	JACK (LARGE TYPE)(HEADPHONES)
CNJ303	1-507-907-11	JACK, PIN 4P (LINE IN/LINE OUT)
CNP301	★1-564-505-11	PLUG, CONNECTOR 2P
CNP302	★1-564-509-11	PLUG, CONNECTOR 6P
CNP303	★1-564-509-11	PLUG, CONNECTOR 6P
CP101	1-231-388-00	FILTER, LOW PASS
CP201	1-231-388-00	FILTER, LOW PASS
CT301	1-141-225-00	CAP, TUNING, TRIMMER
D191	1-806-967-11	DIODE (LED BLOCK) 4 GANG
D192	1-806-968-11	DIODE (LED BLOCK) 3 GANG
D291	1-806-967-11	DIODE (LED BLOCK) 4 GANG
D292	1-806-968-11	DIODE (LED BLOCK) 3 GANG
D300	8-719-910-61	DIODE HZS6A1L
D301	8-719-107-94	DIODE 1SS202-1
D302	8-719-107-94	DIODE 1SS202-1
D303	8-719-107-94	DIODE 1SS202-1
D304	8-719-107-94	DIODE 1SS202-1
D305	8-719-107-94	DIODE 1SS202-1
D306	8-719-101-47	DIODE RD4.7E-L2
D307	8-719-200-77	DIODE 10E2N
D308	8-719-200-77	DIODE 10E2N
D309	8-719-200-77	DIODE 10E2N
D310	8-719-200-77	DIODE 10E2N
D311	8-719-302-74	DIODE SEL2210W-L
HE101	1-543-261-11	HEAD, ERASE (886-01-24)
HRP101	8-825-510-30	HEAD (PP271-3602A)
IC191	8-759-912-79	IC IR2E02
IC291	8-759-912-79	IC IR2E02
IC301	8-759-600-02	IC M5218L
IC302	8-759-600-02	IC M5218L
IC303	8-759-602-01	IC M5220P
IC304	8-752-018-70	IC CX20187
IC305	8-759-106-41	IC UPC4570C
IC306	8-759-240-11	IC TC4011BP
L101	1-408-924-00	MICRO INDUCTOR 10MMH
L102	1-408-929-00	MICRO INDUCTOR 27MMH
L201	1-408-924-00	MICRO INDUCTOR 10MMH
L202	1-408-929-00	MICRO INDUCTOR 27MMH

ELECTRICAL PARTS

Ref.No.	Part No.	Description
M501	X-3596-112-1	MOTOR ASSY
PT901A	1-448-094-11	(AEP,UK)...TRANSFORMER, POWER
PT901A	1-448-095-11	(E).....TRANSFORMER, POWER
Q101	8-729-900-74	TRANSISTOR DTC143TS
Q102	8-729-900-74	TRANSISTOR DTC143TS
Q201	8-729-900-74	TRANSISTOR DTC143TS
Q202	8-729-900-74	TRANSISTOR DTC143TS
Q301	8-729-600-28	TRANSISTOR 2SC634SP-8
Q302	8-729-600-28	TRANSISTOR 2SC634SP-8
Q303	8-729-606-33	TRANSISTOR 2SC2603-F
Q304	8-729-117-54	TRANSISTOR 2SA1175
Q305	8-729-117-54	TRANSISTOR 2SA1175
Q306	8-729-107-25	TRANSISTOR 2SD1585-L
Q307	8-729-606-33	TRANSISTOR 2SC2603-F
Q308	8-729-111-67	TRANSISTOR 2SB1094-L
Q309	8-729-117-54	TRANSISTOR 2SA1175
Q310	8-729-606-33	TRANSISTOR 2SC2603-F
Q311	8-729-117-54	TRANSISTOR 2SA1175
R101	1-247-167-00	CARBON 33K 5% 1/4W
R102	1-249-429-11	CARBON 10K 5% 1/6W
R103	1-247-821-00	CARBON 390 5% 1/6W
R104	1-249-435-11	CARBON 33K 5% 1/6W
R105	1-249-421-11	CARBON 2.2K 5% 1/6W
R106	1-247-799-00	CARBON 47 5% 1/6W
R108	1-247-831-00	CARBON 1K 5% 1/6W
R109	1-247-857-00	CARBON 12K 5% 1/6W
R110	1-247-853-00	CARBON 8.2K 5% 1/6W
R111	1-247-815-00	CARBON 220 5% 1/6W
R112	1-249-437-11	CARBON 47K 5% 1/6W
R113	1-249-432-11	CARBON 18K 5% 1/6W
R114	1-247-887-00	CARBON 220K 5% 1/6W
R115	1-249-405-11	CARBON 100 5% 1/6W
R116	1-247-882-00	CARBON 130K 5% 1/6W
R117	1-247-849-00	CARBON 5.6K 5% 1/6W
R118	1-247-857-00	CARBON 12K 5% 1/6W
R119	1-247-859-00	CARBON 15K 5% 1/6W
R120	1-247-887-00	CARBON 220K 5% 1/6W
R121	1-247-719-11	CARBON 3.3K 5% 1/4W
R122	1-247-151-00	CARBON 6.8K 5% 1/4W
R124	1-246-488-00	CARBON 4.3K 5% 1/4W
R125	1-247-718-11	CARBON 2.7K 5% 1/4W
R127	1-247-851-00	CARBON 6.8K 5% 1/6W
R129	1-249-429-11	CARBON 10K 5% 1/6W
R130	1-249-421-11	CARBON 2.2K 5% 1/6W
R131	1-249-429-11	CARBON 10K 5% 1/6W
R133	1-249-441-11	CARBON 100K 5% 1/6W
R134	1-249-437-11	CARBON 47K 5% 1/6W
R135	1-247-114-00	CARBON 200 5% 1/4W
R136	1-247-841-00	CARBON 2.7K 5% 1/6W
R137	1-247-845-00	CARBON 3.9K 5% 1/6W
R138	1-247-859-00	CARBON 15K 5% 1/6W
R139	1-249-419-11	CARBON 1.5K 5% 1/6W
R140	1-247-846-00	CARBON 4.3K 5% 1/6W
R141	1-249-459-11	CARBON 12K 5% 1/4W
R142	1-249-434-11	CARBON 27K 5% 1/6W
R143	1-247-713-11	CARBON 1K 5% 1/4W
R144	1-247-713-11	CARBON 1K 5% 1/4W
R191	1-249-433-11	CARBON 22K 5% 1/6W
R192	1-249-441-11	CARBON 100K 5% 1/6W

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
R193	1-249-441-11	CARBON 100K 5% 1/6W
R194	1-249-429-11	CARBON 10K 5% 1/6W
R195	1-249-429-11	CARBON 10K 5% 1/6W
R300	1-247-713-11	CARBON 1K 5% 1/4W
R303	1-247-708-11	CARBON 470 5% 1/4W
R304	1-247-708-11	CARBON 470 5% 1/4W
R305	1-249-433-11	CARBON 22K 5% 1/6W
R306	1-249-433-11	CARBON 22K 5% 1/6W
R307	1-247-688-11	CARBON 10 5% 1/4W
R308	1-249-433-11	CARBON 22K 5% 1/6W
R309	1-249-433-11	CARBON 22K 5% 1/6W
R310	1-249-429-11	CARBON 10K 5% 1/6W
R311	1-247-854-00	CARBON 9.1K 5% 1/6W
R312	1-247-846-00	CARBON 4.3K 5% 1/6W
R313	1-247-821-00	CARBON 390 5% 1/6W
R314	1-249-421-11	CARBON 2.2K 5% 1/6W
R315	1-249-433-11	CARBON 22K 5% 1/6W
R317	1-249-433-11	CARBON 22K 5% 1/6W
R318	1-247-708-11	CARBON 470 5% 1/4W
R319	1-249-421-11	CARBON 2.2K 5% 1/6W
R320	1-247-857-00	CARBON 12K 5% 1/6W
R321	1-249-433-11	CARBON 22K 5% 1/6W
R322	1-249-433-11	CARBON 22K 5% 1/6W
R324	1-249-441-11	CARBON 100K 5% 1/6W
R325	1-215-469-00	METAL 100K 1% 1/6W
R326	1-247-717-11	CARBON 2.2K 5% 1/4W
R327	1-247-713-11	CARBON 1K 5% 1/4W
R328	1-247-713-11	CARBON 1K 5% 1/4W
R331	1-246-486-00	CARBON 3.6K 5% 1/4W
R332	1-247-718-11	CARBON 2.7K 5% 1/4W
R333	1-247-713-11	CARBON 1K 5% 1/4W
R334	1-247-708-11	CARBON 470 5% 1/4W
R335	1-247-708-11	CARBON 470 5% 1/4W
R336	1-247-717-11	CARBON 2.2K 5% 1/4W
R391	1-247-703-11	CARBON 180 5% 1/4W
RV101	1-237-208-11	RES, VAR, SLIDE 20K (REC LEVEL-L)
RV102	1-228-994-00	RES, ADJ, CARBON 10K
RV103	1-228-994-00	RES, ADJ, CARBON 10K
RV201	1-237-208-11	RES, VAR, SLIDE 20K (REC LEVEL-R)
RV202	1-228-994-00	RES, ADJ, CARBON 10K
RV203	1-228-994-00	RES, ADJ, CARBON 10K
S301	1-554-033-00	SWITCH, SLIDE (REC/PB)
S302	1-570-528-11	SWITCH, PUSH (4 KEY)(DOLBY NR,TAPE)
S303	1-570-103-11	SWITCH, PUSH (1 KEY)(POWER)
S501	1-570-683-11	SWITCH, LEAF (REC)
S502	1-570-682-11	SWITCH, LEAF (HEAD)
T301	1-433-303-11	TRANSFORMER, BIAS OSCILLATION

VS901A 1-570-046-21 (E)...SWITCH, VOLTAGE CHANGE

ACCESSORY & PACKING MATERIAL

Part No.	Description
1-551-734-11	CORD, CONNECTION (RK-74A)
3-318-957-31	INDIVIDUAL CARTON
3-318-958-01	CUSHION (LEFT), LOWER
3-318-959-01	CUSHION (RIGHT), LOWER
3-318-960-01	CUSHION (LEFT), UPPER
3-318-961-01	CUSHION (RIGHT), UPPER
3-701-630-00	BAG, POLYETHYLENE (FOR INSTRUCTION MANUAL)
3-765-233-11	MANUAL, INSTRUCTION
3-765-233-41	(AEP)....MANUAL, INSTRUCTION
4-876-352-00	SHEET, PROTECTION (FOR SET)

English

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