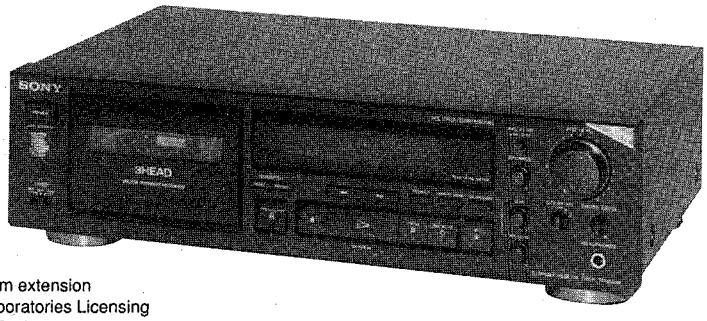
TC-K590

SERVICE MANUAL

Canadian Model
AEP Model
UK Model



* 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.

Model Name Using Similar Mechanism	TC-K570
Tape Transport Mechanism Type	TCM-200V8

SPECIFICATIONS

Recording system	4-track 2-channel stereo
Fast winding time	Approx. 90 sec. (with Sony C-60 cassette)
Bias	AC bias
Heads	Erasing head × 1 (S&F head) Recording head × 1 (SD head) Playback head × 1 (SD head)
Motors	Capstan motor × 1 (DC servo motor) Reel motor × 1 (DC motor) ASIST (mechanical drive) motor × 1 (DC motor)

Signal-to-noise ratio (at peak level)

Cassette (Dolby NR OFF)	Type IV (Sony Metal-S/Select)	Type II (Sony UX-S)	Type I (Sony HF-S)
	60 dB	59 dB	57 dB

Measured at peak level weighted without NR. The S/N is improved by about 15 dB at 500 Hz and by about 20 dB about 1 kHz with Dolby-C NR on, and by 5 dB at 1 kHz and by 10 dB about 5 kHz with Dolby-B NR on.

Harmonic distortion: 0.4% (with Sony Type I, 160 nWb/m 315 Hz, 3rd H.D.)
1.5% (with Sony Type IV, 250 nWb/m 315 Hz, 3rd H.D.)

Frequency response (DOLBY NR OFF)

Type IV cassette (Sony Metal-S/Select)	20 - 20,000 Hz (±3 dB, IEC) 20 - 16,000 Hz [±3 dB (-4dB recording)]
Type II cassette (Sony UX-S)	20 - 18,000 Hz (±3 dB, IEC)
Type I cassette (Sony HF-S)	20 - 17,000 Hz (±3 dB, IEC)

Wow and flutter: ± 0.09% W.Peak (IEC)
0.05% W.RMS (NAB)
± 0.14% W.Peak (DIN)

Inputs

Line inputs (phono jacks)	Sensitivity	0.16 V
	Input impedance	47 k ohms

Outputs

Line outputs (phono jacks)	Rated output level	0.5 V at a load impedance of 47 k ohms
	Load impedance	Over 10 k ohms
Headphones (stereo phone jack)	Output level	0 - 3 mW at a load impedance of 32 ohms

General

Power requirements:
AEP, Germany model :
220 - 230 V AC, (or 240 V AC adjustable by Sony personnel), 50/60 Hz
Canadian model : 120 V AC, 60 Hz
UK model :
240 V AC (or 220 V AC adjustable by Sony personnel), 50/60 Hz

Power consumption: 19 W
Dimensions: Approx. 430 × 123 × 300 mm (w/h/d) (17 × 4⅞ × 11⅞ inches) including projecting parts and controls
Weight: TC-K690: Approx 4.9 kg (10 lbs 13 oz)
TC-K590: Approx 4.7 kg (10 lbs ? oz)

Supplied accessories: Audio connecting cords (2)
Optional accessory: Wireless remote control unit RM-J701

Design and specifications are subject to change without notice.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

MICROFILM

STEREO CASSETTE DECK

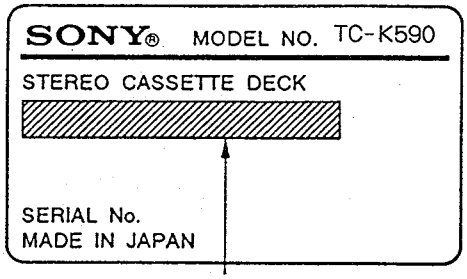
SONY®

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MODEL IDENTIFICATION

– Specification Label –



Canadian model : AC120V 60Hz 19W
UK model : AC240~50/60Hz
AEP, Germany model : AC220-230~50/60Hz

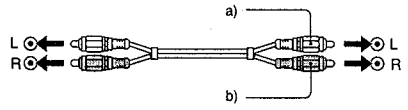
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH 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.

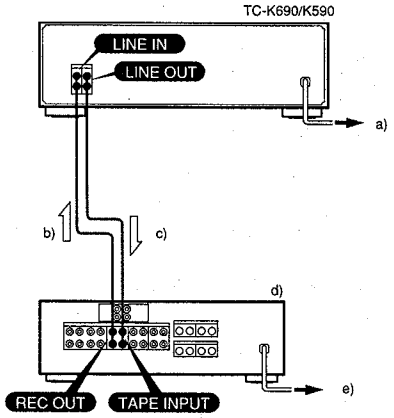
ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

A



B



Hooking Up the System

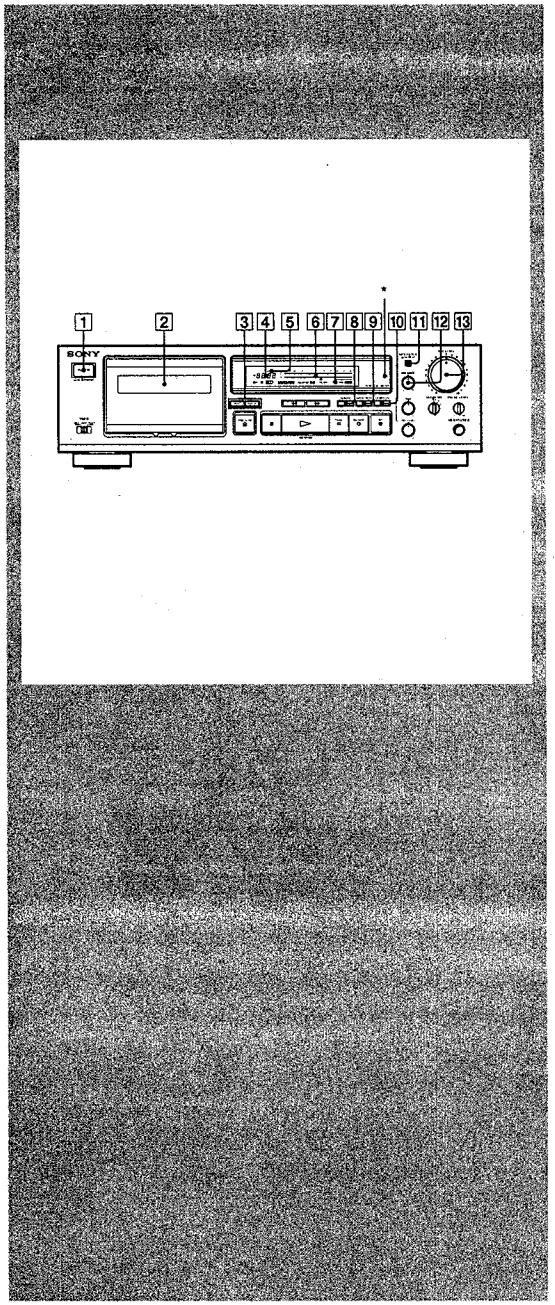
Before You Begin

- Turn off the power to all equipment to be connected before making any connection.
- Note that the red plug of the supplied connecting cord is for right-channel (R) connection and the white plug for left-channel (L) connection.
  See Fig. A .
  a) White
  b) Red
- The connecting cords should be fully inserted into the jacks. A loose connection may cause hum pickup.

Hook-up Example

Fig. B shows how to connect the unit to an amplifier.
a) to an AC outlet
b) for recording
c) for playback
d) Amplifier
e) to a wall outlet

The arrow ⟸ shows the direction of the signal flow.



Identifying the Parts

Front Panel

For details, refer to the page number indicated in parenthesis .

1 POWER switch
2 Cassette holder
3 Counter buttons
  RESET button (26)
  MEMORY button (26, 28)
4 LINEAR COUNTER (26)
5 MEMORY indicator
6 PEAK LEVEL METER (34)
7 TAPE TYPE indicator
8 MONITOR button (36)
9 DISPLAY MODE button (18)
10 CALIBRATION button (42)
11 MPX FILTER button (34)
12 BALANCE control (30)
13 REC (recording) LEVEL control (30, 34)

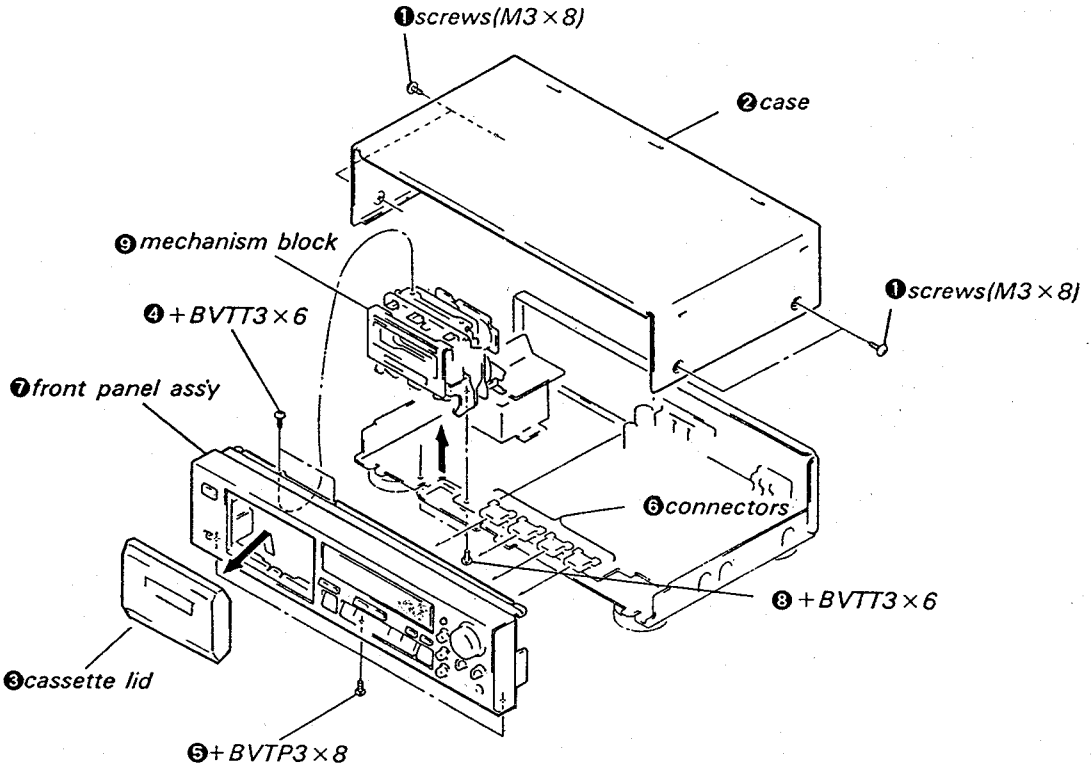
* Remote control sensor
  You can remotely control this cassette deck with:
  — A remote commander that came with a Sony amplifier or receiver if it has the RM mark and cassette deck control capability.
  — An optional Sony remote commander with the RM mark and cassette deck control capability.

(Continued on next page.)

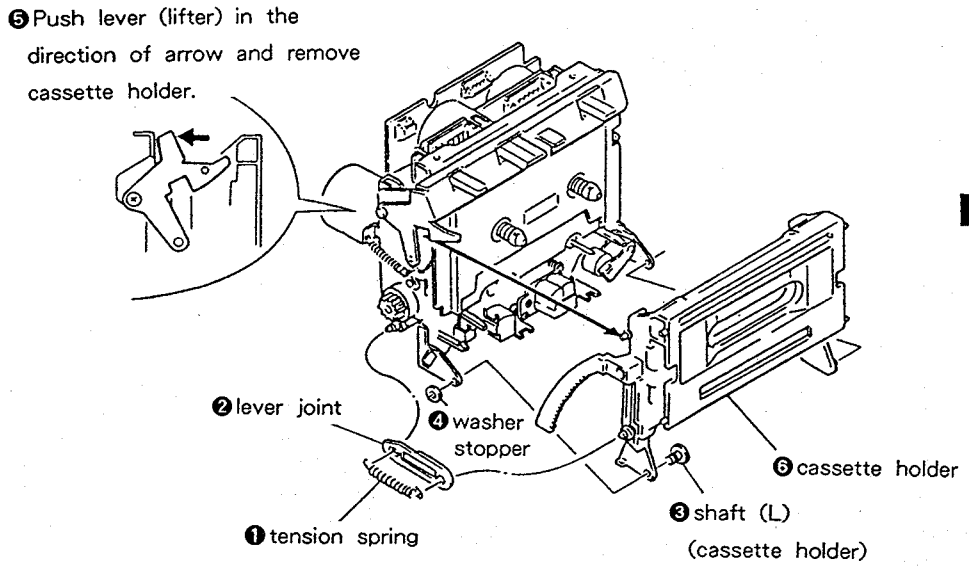
SECTION 2
DISASSEMBLY

NOTE : Follow the disassembly procedure in the numerical order given.

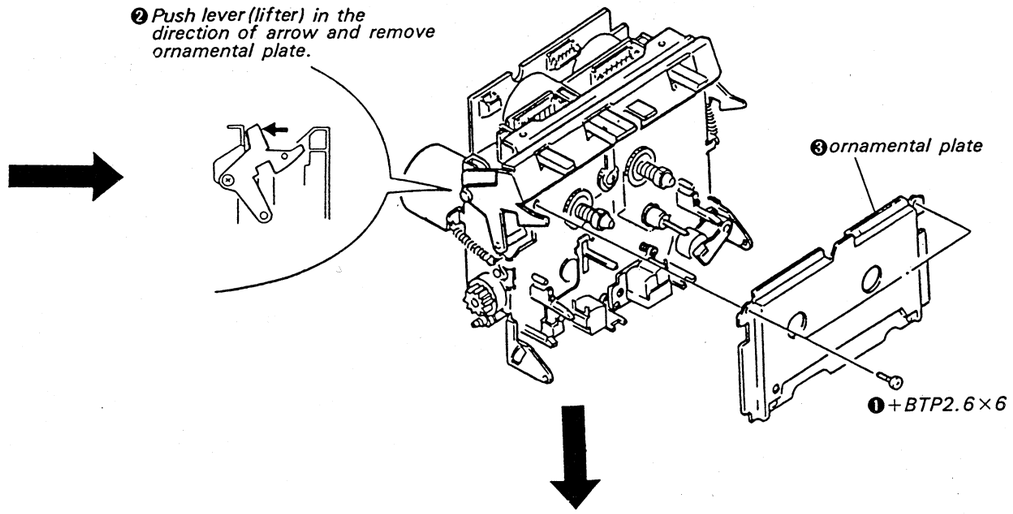
MECHANISM BLOCK



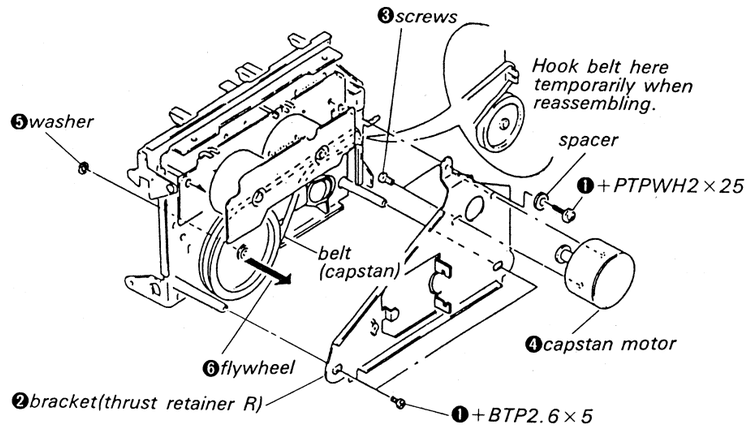
CASSETTE HOLDER



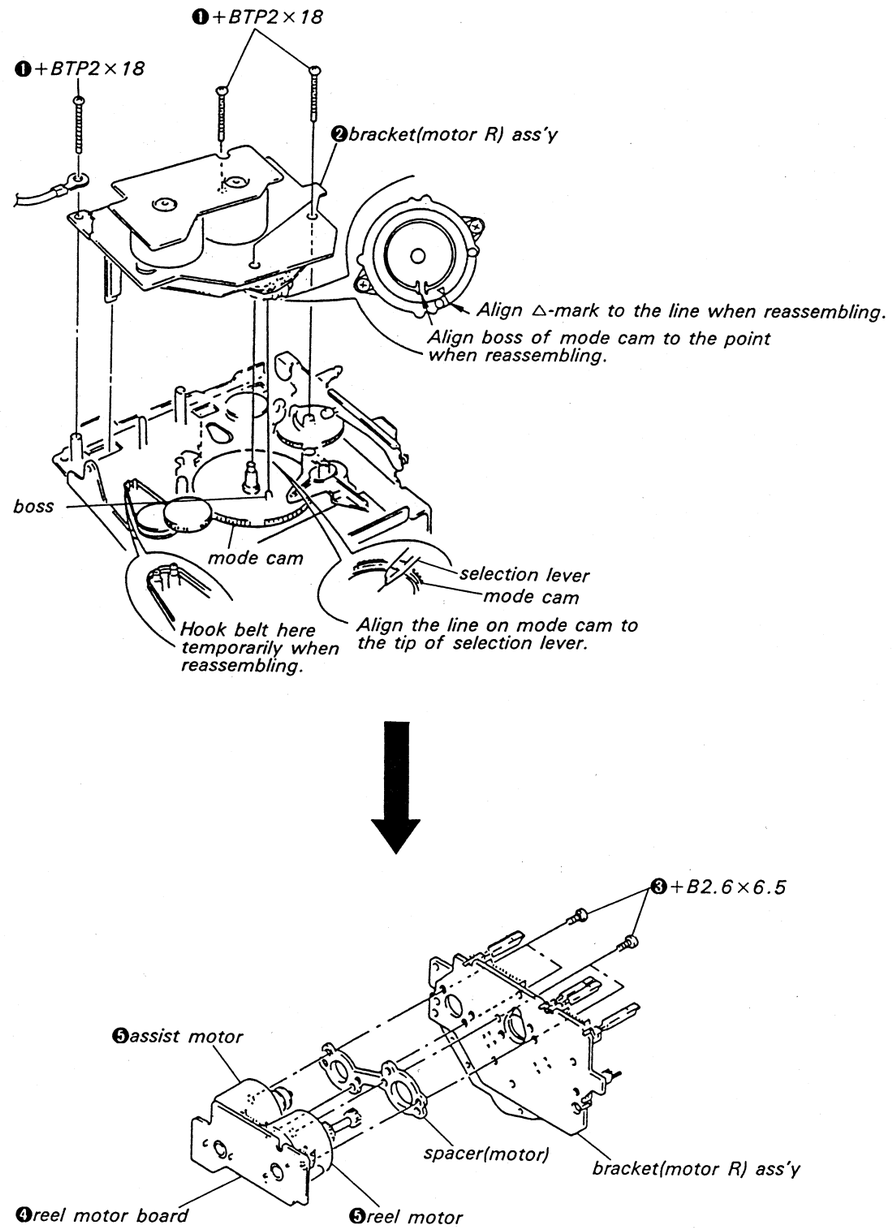
ORNAMENTAL PLATE



CAPSTAN MOTOR / FLYWHEEL



REEL AND ASSIST MOTORS



SECTION 3
PIN DESCRIPTION

•IC701 M50941-728SP(MICRO COMPUTER)

The M50941-728SP function are described below.

Pin No.	Pin Name	I/O	Description
1	V_{REF}	I	Internal A/D port reference voltage input.
2	KEY 7	I	Key input port. 0V = OPEN/CLOSE, 1V = STOP, 2V = REW, 3V = FF, 4V = REC.
3	KEY 6	I	key input port. 0V = PLAY, 1V = PAUSE, 2V = REC MUTE.
4	KEY 5	I	Key input port. 0V = RESET, 1V = MEMORY, 2V = DISPLAY MODE, 3V = MONITOR.
5	METER-L	I	Signal input for level meter-L.
6	METER-R	I	Signal input for level meter-R.
7	TIMER	I	Timer REC/PLAY switch input. 0V = TIMER REC, 1V = TIMER PLAY, 2V = OFF.
8	T.PULSE	I	Take-up reel base sensor input.
9	S.PULSE	I	Supply reel base sensor input.
10	AMS.SIG	I	AMS signal input. No song detected = Low. Song detected = High.
11	BIAS	O	Bias oscillation on and off control.
12	MO3V	O	Motor speed control. STOP/PLAY = Low, FF/REW = High.
13	MO4.5V	O	Motor speed control. STOP/PLAY = High, FF/REW = Low.
14	MO-FWD	O	Reel motor rotates.
15	MO-REV	O	Reel motor rotates in reverse.
16	MO-DOWN	O	Head base DOWN output of the mechanical block.
17	MO-UP	O	Head base UP output of the mechanical block.
18	HALF-SW	I	HALF switch input of the mechanical block.
19	REC-SW	I	REC switch input of the mechanical block.
20	DOOR-SW	I	DOOR switch input of the mechanical block.
21	CLOSE-SW	I	CLOSE switch input of the mechanical block.
22	OPEN-SW	I	OPEN switch input of the mechanical block.
23	POWER-OUT	O	"Low" for power off procedure after POWER switch is turned off.
24	POWER-IN	I	Power(AC) off detection.
25	SIRCS	I	Remote control signal input.
26	V_{SS}	—	GND
27	RESET	I	System reset input.
28	XI	I	Clock input(4.19MHz).
29	XO	O	Clock output.
30	XCI	—	Not used.
31	XCO	—	Not used.
32	V_{SS}	—	GND
33	—	—	Not used.
34	PAT3	I	Rotary encoder input to detect the position of the head base of the mechanical block.
|	|	|	
37	PAT0	I	
38	−25V	—	Power supply for driving the fluorescent indicator tube.
39	FL-p	O	Segment data output for the fluorescent indicator tube FL751.
|	|	|	
54	FL-a	O	
55	FL-G5	O	Common data output for the fluorescent indicator tube FL751.
|	|	|	
59	FL-G1	O	
60	MONITOR	O	Source monitor control. Low = TAPE, High = SOURCE.
61	REC-MUTE	O	REC MUTE control. Low = MUTE.
62	LINE-MUTE	O	LINE MUTE control. Low = MUTE.
63	AV_{CC}	—	Analog power supply(+5V).
64	V_{CC}	—	Power supply(+5V).

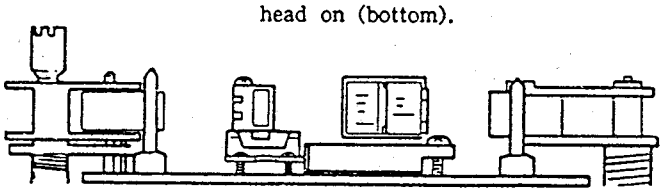
SECTION 4
ADJUSTMENTS

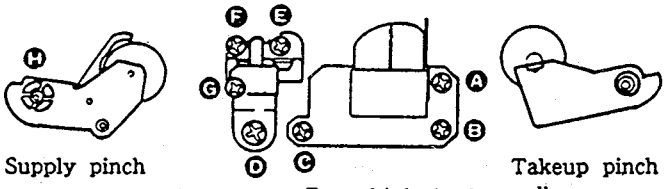
4-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:
   record/playback head — pinch roller
   erase head — rubber belts
   capstan — idler
2. Demagnetize the record/playback head with a head demagnerizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.

Adjustment Position : As seen from the cassette, side (top) and MD as seen head on (bottom).



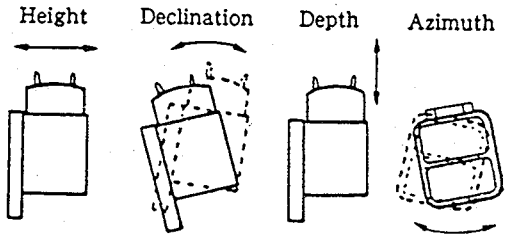


Supply pinch roller — Erasehead — Record/playback head — Takeup pinch roller

Tape Path Adjustment

Note : When using the adjustment methods for other than replacement reasons, please do not tamper unnecessarily with the adjustment screws or the erasehead because either the supply pinch roller guide or the record/playback head will be made the standard tape paths. Moreover, when it is necessary to adjust and replace two or more of any of the heads and/or pinch rollers, replace them one by one, completely taking out the first tape path, and then replacing the second one.

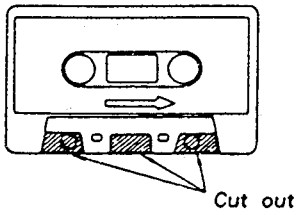
Definition of Terms : The figures are of a record/playback head.



Preparation :

1. Mirror cassette CQ009C 8-909-708-01
   (or CQ012C 8-909-708-02)

   If one does not have this, cut out the sections of a 120-minute cassette shell as indicated below and use that cassette.



2. Phillips screwdriver (medium-size) :
   For the head adjustment screws
   Blade-type screwdriver (large-size) :
   For the supply pinch roller adjustment screws
3. Pen light
4. WS-48B (3 kHz, 0 dB)
5. P-4-A100 (10 kHz, -10 dB)

Adjustment Method :

Supply Pinch Roller

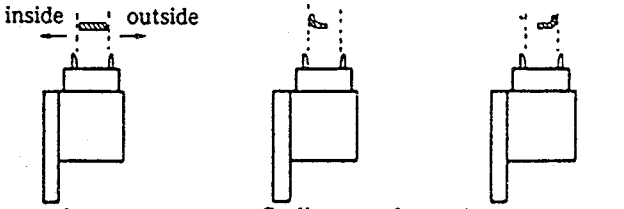
Note : Only perform this adjustment when the supply pinch roller is to be replaced.

1. Insert the mirror cassette and put the unit in record/playback mode.
2. Check to see whether the tape is curling at the record/playback head guide or the pinch roller guide.
   If it is curling, remove the curl by adjusting the ⓕ tape curl adjustment screw. Then, check that the tape is running past the middle of the erasehead.

Record/playback Head

Note : Only perfom this adjustment when the record /playback head is to be replaced.

1. Insert the mirror cassette and put the unit in record/playback mode.
2. **(Height Adjustment)** Check to see if the tape is curling at the tape guide of the head. If it is curling, tighten screws Ⓐ, Ⓑ, and Ⓒ, respectively by the same angle, moving the head so that it remains at the same angle throughout the procedure. If it curls on the bottom side of the mirror cassette (actually the inner side), tighten all the screws equally ; but loosen them if the tape begins to curl on the top side (outer side).



normal (record/playback head as seen from the side of the erasehead.)

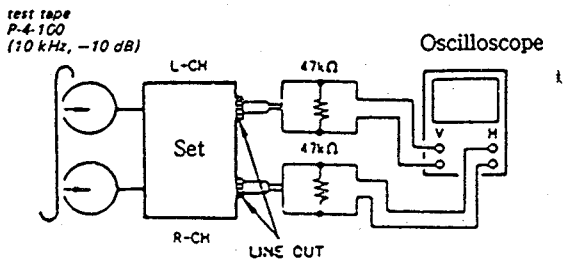
Curling on the inner side. Tighten screws Ⓐ, Ⓑ, and Ⓒ.

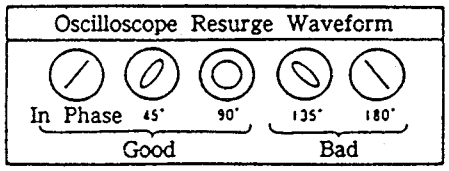
Curling on the outer side. Loosen screws Ⓐ, Ⓑ, and Ⓒ.

3. **(Declination Adjustment)** While in the record/playback position, set the back tension to 0 (wind the supply reel with something thin like a pencil in a counterclockwise direction) and make sure there is no curling or shifting (shifting up/shifting down) at the guide of the record/playback head.

   Because shifting can only occur due to a difference in the width of the tape and that of the tape guides (curling will otherwise occur), it is necessary to pay close attention since it can be easily overlooked.
   When there is a shift, tighten screws Ⓑ and Ⓒ equally and change the declination of the head. If the tape is shifting up, tighten the screws, and if it is shifting down, loosen them.

4. Repeat the adjustments in steps 2 and 3 and fine adjust the height and the declination.
5. **(Preliminary Azimuth Adjustment)**
   After demagnetizing and cleaning the adjustment head, play back WS-48B (3 kHz, 0 dB).
   Turn screw Ⓒ so that the reading on the level meter of the unit or that of the level meter connected to LINE OUT is maximized.
   If the screw is turned at least half a revolution, repeat the adjustments from step 1.
6. **(Tape Path Check)** Connect the oscilloscope to LINE OUT and play back P-4-A100 (10 kHz, -10 dB) to display a resurge waveform. After 20 seconds of record/playback (after the tension within the loop has been increased sufficiently), make sure the variation in the resurge is within ± 90 degrees (within ± 45 degrees is desired).
   If the variation is greater than this, it is because the declination and/or the height adjustment is not perfect. Repeat the adjustments from step 1.





Adjustment Method :

Supply Pinch Roller

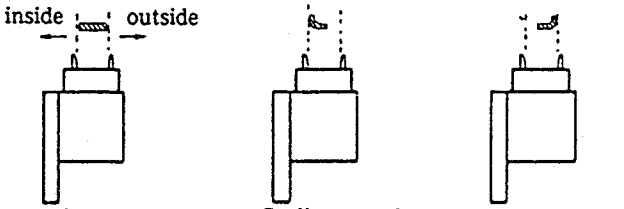
Note : Only perform this adjustment when the supply pinch roller is to be replaced.

1. Insert the mirror cassette and put the unit in record/playback mode.
2. Check to see whether the tape is curling at the record/playback head guide or the pinch roller guide.
   If it is curling, remove the curl by adjusting the ⓓ tape curl adjustment screw. Then, check that the tape is running past the middle of the erasehead.

Record/playback Head

Note : Only perfom this adjustment when the record /playback head is to be replaced.

1. Insert the mirror cassette and put the unit in record/playback mode.
2. **(Height Adjustment)** Check to see if the tape is curling at the tape guide of the head. If it is curling, tighten screws Ⓐ, Ⓑ, and Ⓒ, respectively by the same angle, moving the head so that it remains at the same angle throughout the procedure. If it curls on the bottom side of the mirror cassette (actually the inner side), tighten all the screws equally ; but loosen them if the tape begins to curl on the top side (outer side).



normal (record/playback head as seen from the side of the erasehead.)

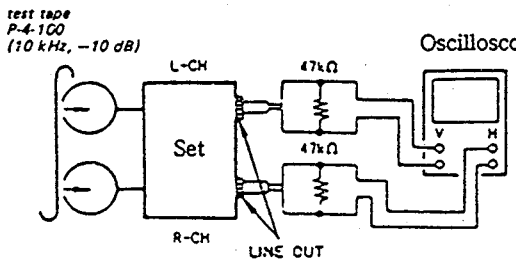
Curling on the inner side. Tighten screws Ⓐ, Ⓑ, and Ⓒ.

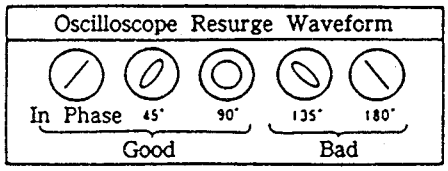
Curling on the outer side. Loosen screws Ⓐ, Ⓑ, and Ⓒ.

3. **(Declination Adjustment)** While in the record/ playback position, set the back tension to 0 (wind the supply reel with something thin like a pencil in a counterclockwise direction) and make sure there is no curling or shifting (shifting up/ shifting down) at the guide of the record/ playback head.

   Because shifting can only occur due to a difference in the width of the tape and that of the tape guides (curling will otherwise occur), it is necessary to pay close attention since it can be easily overlooked.
   When there is a shift, tighten screws Ⓑ and Ⓒ equally and change the declination of the head. If the tape is shifting up, tighten the screws, and if it is shifting down, loosen them.

4. Repeat the adjustments in steps 2 and 3 and fine adjust the height and the declination.
5. **(Preliminary Azimuth Adjustment)**
   After demagnetizing and cleaning the adjustment head, play back WS-48B (3 kHz, 0 dB).
   Turn screw Ⓔ so that the reading on the level meter of the unit or that of the level meter connected to LINE OUT is maximized.
   If the screw is turned at least half a revolution, repeat the adjustments from step 1.
6. **(Tape Path Check)** Connect the oscilloscope to LINE OUT and play back P-4-A100 (10 kHz, -10 dB) to display a resurge waveform. After 20 seconds of record/playback (after the tension within the loop has been increased sufficiently), make sure the variation in the resurge is within ± 90 degrees (within ± 45 degrees is desired).
   If the variation is greater than this, it is because the declination and/or the height adjustment is not perfect. Repeat the adjustments from step 1.

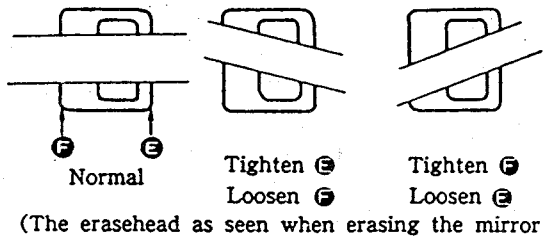




Erasehead

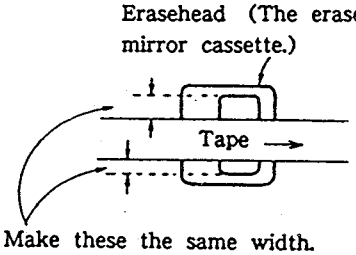
Note : Only perform this adjustment when the erasehead is to be replaced.

1. Insert the mirror cassette and put the unit in record/playback mode.
2. **(Azimuth Adjustment)** Adjust the azimuth of the erasehead by adjusting screws Ⓔ and Ⓕ so that the tape runs as evenly as possible.

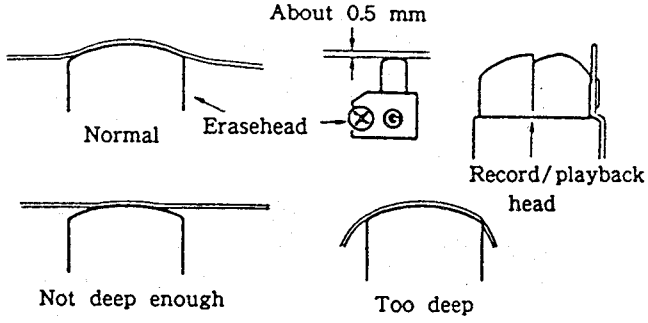


(The erasehead as seen when erasing the mirror cassette.)

3. **(Height adjustment)** Turn screws Ⓓ, Ⓔ, and Ⓕ all by the same angle so that the portions of the erasehead visible at top and bottom are nearly of equal width. If the width at the top is greater, tighten the screws ; if the width at the bottom is greater, loosen the screws.



4. **(Declination Adjustment)** Leaving it in the playback position, put the back tension to 0 and make certain the erasehead part and supply pinch roller guide part do not shift. If there is a shift, turn the screw Ⓓ and change the declination. Looking at it using the mirror cassette, if the tape shifts up, tighten the screw, and if it shifts down, loosen the screw.
5. Repeat the adjustments beginning with step 2 and fine adjust the height and declination. And make sure the tape does not curl up on the pinch roller guide or the guide part of the record/playback head.
6. **(Depth Adjustment)** In order to make the entire head play the tape smoothly, and to make sure the depth of the erasehead is neither too shallow nor too deep, loosen screw Ⓖ a bit.



Check

1. Check to make sure that there are no curls or shifts throughout the whole tape path and that the tape runs smoothly.
2. Reapply the locking compound to the adjusted screws. (The locking compound should only be applied to screw Ⓖ after the azimuth has been adjusted.)

TORQUE MEASUREMENT

Torque	Torque meter	Meter reading
FWD	CQ-102C	28-60 g・cm(0.39-0.83 oz・inch)
FWD Back tension	CQ-102C	7-11 g・cm(0.097-0.15 oz・inch)
FF, REW	CQ-201B	65-90 g・cm(0.9-1.25 oz・inch)

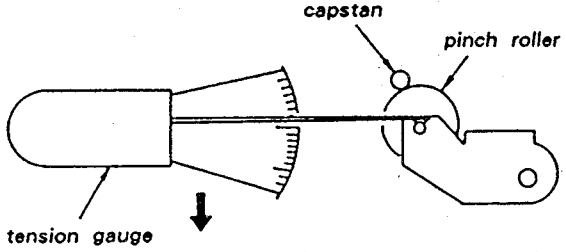
Pinch Roller Pressing Force Measurement

Mode : playback

Hook needle of the tension gauge to the pinch roller shaft and push back pinch roller to detach it from capstan. Then, return it gradually to capstan and read the gauge when the pinch roller begins turnning.

Standard Limits :

Take-up side : 270-350 g(9.5-120 oz)
Supply side : 180-280 g(6.4-9.9 oz)

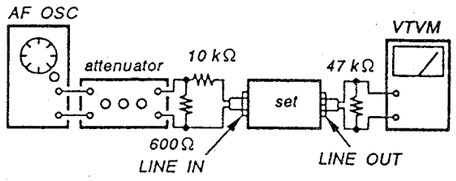


4-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in the service manual. As a rule, adjustments about playback should be performed before those about recording.
The adjustments should be performed before for both L-CH and R-CH.

- Switches and controls shoud be set as follows unless otherwise specified.
  DOLBY NR switch: OFF
  MPX FILTER switch: OFF
  MONITOR switch: Tape
- 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

input terminal	LINE IN
source impedance	10 kΩ
input level	0.5V(– 3.8dB)

Standard Output Level

output terminal	LINE OUT
load impedance	47 kΩ
output level	0.5V(– 3.8dB)

Test Tape

Type	Signal	Used for
P-4-A100	10 kHz, – 10 dB	Azimth Adjustment
P-4-L300	315 Hz, 0 dB	PB Level Adjusumet
WS-48B	3 kHz, 0 dB	Tape Speed Adjustment

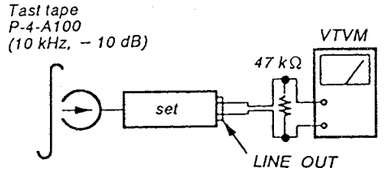
Test Mode

This set will get into test mode by shorting the pins of CNE702 (TEST) on MA I N board before turning the power on.

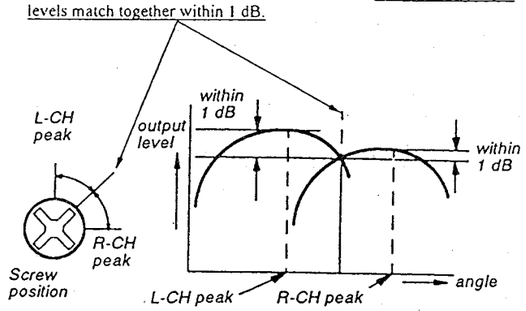
Record/Playback Head Azimuth Adjustment

Porcedure:

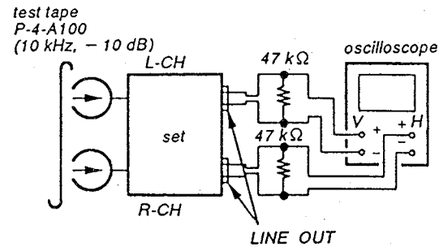
1. Mode: FWD playback

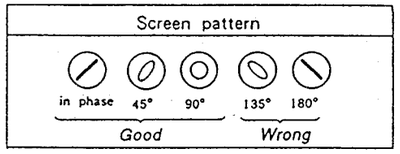


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1 dB.



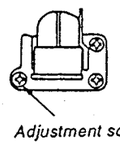
3. Phase Check
   Mode: playback





4. After the adjustment, lock the screws with locking compound.

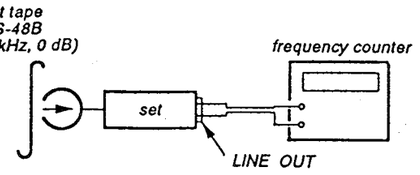
Adjustment Location: Record/Playback head



Tape Speed Adjustment

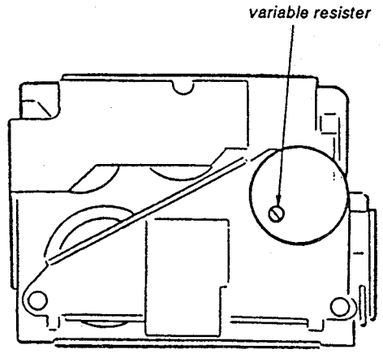
Setting:
Test pin CNE702: short

Procedure:
Mode: playback



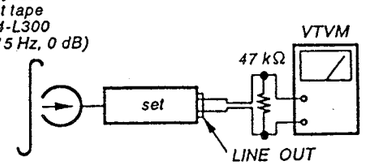
1. Set to FWD playback mode.
2. Adjust motor rear side (variable resister) so that the frequency counter reading becomes 3,000 ± 15 Hz.

Adjustment Location : motor rear side (M1053)



Playback Level Adjustment

Procedure:
Mode: playback



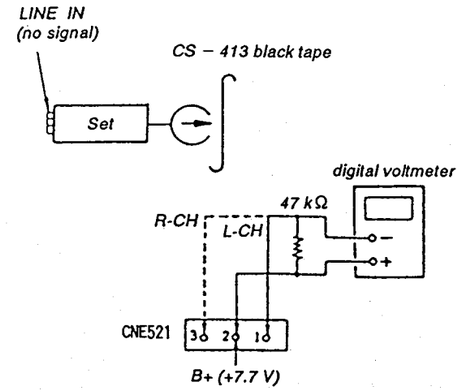
Adjust RV121 (L-ch) and RV221 (R-ch) so that the reading on VTVM meets the adjustment limits below.

Adjustment Limits:
LINE OUT level: – 8.2dB to – 7.2dB (0.301 to 0.338V)
Level difference between channels: less than 0.5 dB
Check that the LINE OUT level does not change even if Playback and Stop operation is repeated several times.

Adjustment Location: MA I N board

Bias Consumption Current Adjustment

Procedure:



1. Set RV181(L- CH) and RV281(R- CH) to mechanical center and turn the set recording mode.
2. Connect digital voltmeter as shown by the following table.
3. Adjust the following transformers for the minimum readings on the digital voltmeter.

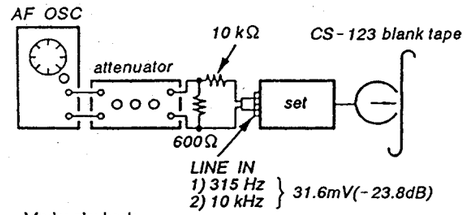
	Mesurement Point	Adjustment Part	Value
L-ch	① and ②, CNE521	T181	not more than 200mV
R-ch	③ and ② CNE521	T281	

Adjsutment Location: MA I N (A) board

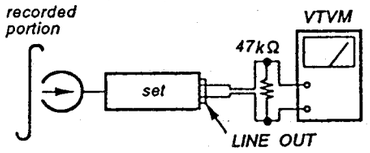
Record Bias Adjustment

Setting:
REC LEVEL control: Standard Record (see page 11)
test pin CNE702: short

Procedure:
1. Mode: record



2. Mode: playback



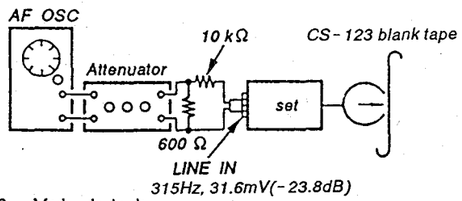
Playback the signal recorded in step 1.
Confirm that the 10 kHz playback output is 0 ± 0.5 dB relative to the 315 Hz output. If necessary, adjust RV181 (L-ch) and RV281 (R-ch) for repeat the steps given above.

Adjustment Location: MAIN BOARD

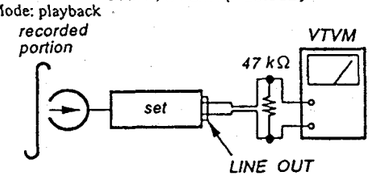
Record Level Adjustment

Setting:
REC LEVEL control: Standard Record (see page 11)
test pin CNE702 : short

Procedure:
1. Mode: record



2. Mode: playback



3. Playback the signal recorded in step 1.
   Confirm that the signal level is within the adjustment limits below. If necessary, adjust RV141 (L-ch) and RV241 (R-ch) repeat the step 1 – 2.

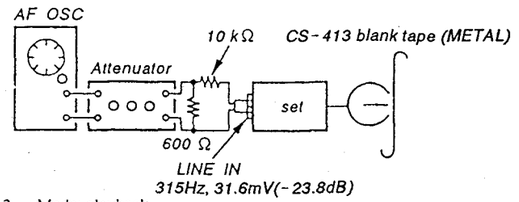
Adjustment Limits: – 23.8dB ± 0.5dB (29 to 33.4mV)

Adjustment Location: MAIN board

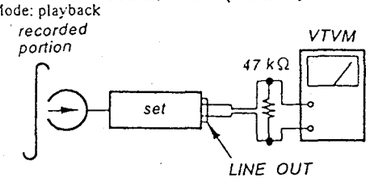
Record EQ (IV) Adjustment

Setting:
REC LEVEL control: Standard Record (See page 11)
test pin CNE702 : short

Procedure:
1. Mode: record



2. Mode: playback



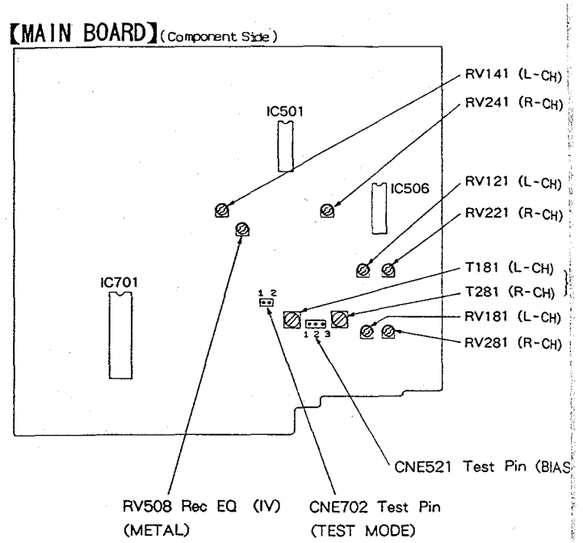
3. Playback the signal recorded in step 1.
   Adjust RV508 so that the R-channel meet the specification.

Adjustment Limits:

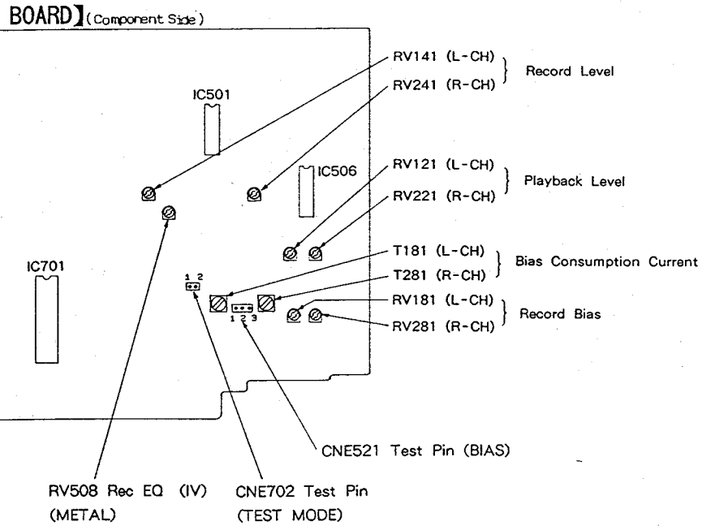
1. 10KHz level difference against 315Hz reference.
   0dB ± 0.5dB

Adjustment Location: MAIN board

Adjustment Location

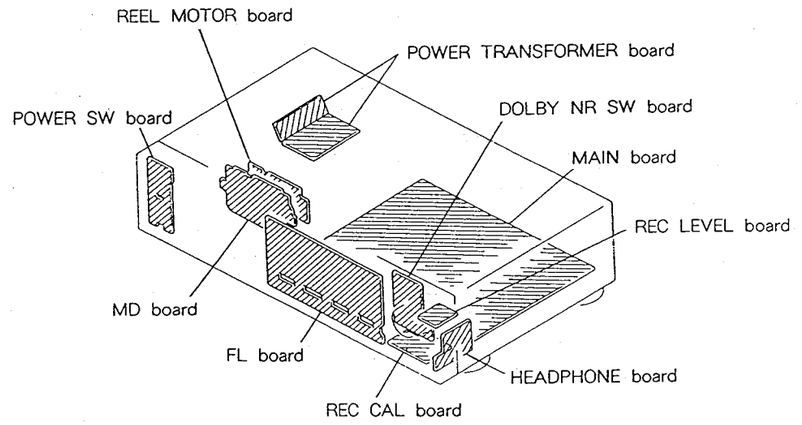


ent Locatlon



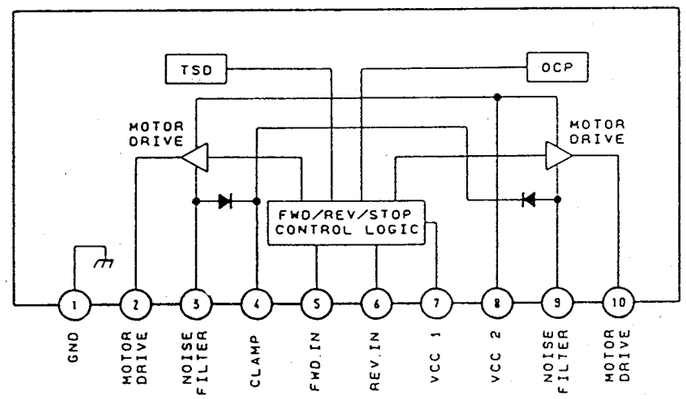
SECTION 5
DIAGRAMS

5-1. CIRCUIT BOARDS LOCATION



5-2. IC BLOCK DIAGRAM

- IC703 BA6219B
- IC704 LB1641



· Semiconductor Location

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D101	D-3	D752	B-17	IC751	B-14	Q708	C-9
D102	E-3	D801	B-4	IC801	C-3	Q709	A-10
D201	E-3	D802	B-4	IC1001	C-23	Q710	C-7
D202	E-3	D803	B-4	IC1002	C-24	Q711	B-10
D501	G-3	D804	B-4			Q712	C-7
D502	F-7	D805	C-3	Q101	I-3	Q713	C-8
D503	F-7	D806	D-3	Q102	G-6	Q714	A-10
D504	F-3	D807	B-5	Q103	I-7	Q715	D-11
D505	F-3	D812	B-5	Q201	H-3	Q716	D-11
D506	F-7	D813	B-5	Q202	H-6	Q717	B-7
D507	F-7	D814	C-5	Q203	J-7	Q718	B-7
D508	F-7	D815	B-5	Q501	F-3	Q719	C-10
D509	J-10	D816	B-3	Q502	F-3	Q720	D-10
D510	G-10	D817	B-3	Q503	G-3	Q721	D-10
D511	G-10	D818	C-5	Q504	I-4	Q722	D-10
D512	D-6	D819	D-5	Q505	D-6	Q723	E-10
D513	E-6	D820	B-5	Q506	J-10	Q724	E-10
D514	E-6	D822	B-5	Q507	J-9	Q725	E-9
D515	E-6	D823	B-4	Q508	G-10	Q726	E-10
D516	F-10	D1051	C-29	Q509	G-11	Q727	D-9
D701	E-8			Q510	G-11	Q729	E-10
D702	E-8	IC501	G-4	Q511	G-10	Q801	C-3
D703	B-7	IC502	I-4	Q512	G-9	Q802	C-3
D704	B-7	IC503	H-7	Q513	F-6	Q803	C-2
D705	A-7	IC504	H-9	Q514	F-6	Q804	D-2
D706	C-9	IC505	J-8	Q515	F-6	Q805	D-5
D707	C-8	IC506	J-6	Q516	E-6	Q806	D-5
D708	D-7	IC507	I-19	Q517	F-11	Q807	B-3
D709	D-7	IC508	D-6	Q701	E-8	Q808	B-2
D712	E-9	IC509	E-3	Q702	D-9	Q809	B-3
D713	E-10	IC510	G-3	Q703	D-8	Q810	C-4
D714	D-10	IC701	B-10	Q704	E-8	Q811	D-4
D715	D-10	IC702	E-9	Q705	B-6		
D718	D-10	IC703	B-6	Q706	B-6		
D751	B-17	IC704	A-6	Q707	C-9		

Note on Schematic Diagram :

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ⊣w∿⊢ : fusible resistor.

Note:	Note:
The components identified by matk ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number sppecified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifie.

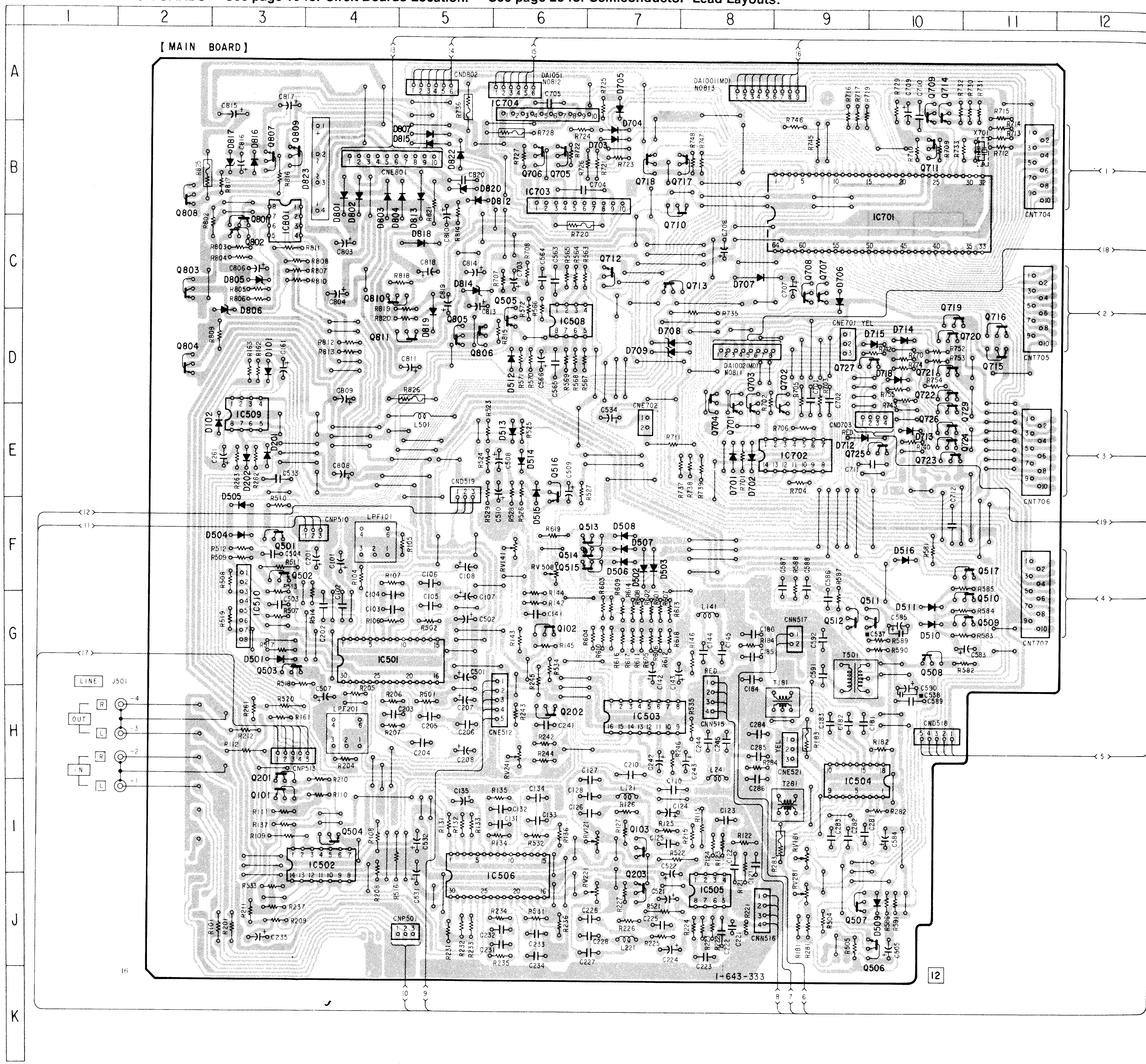
- **B+** : B + Line
- **B−** : B − Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : PB
  ( ) : REC
- Voltages are taken with a VOM (input impedance 10 MΩ).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⊳ : PB
  ⊳⊳ : REC

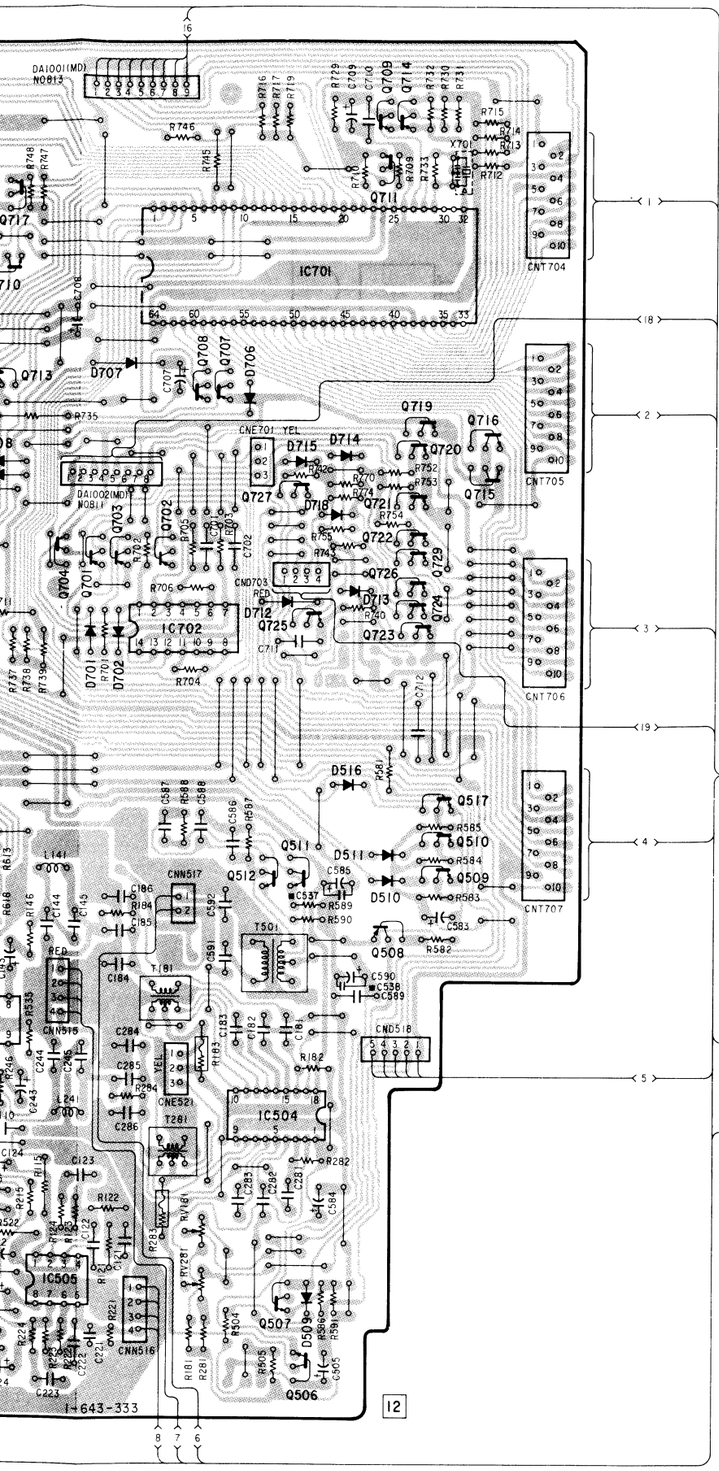
Note on Mounting Diagram :

- ○—— : Parts extracted from the component side.
- ■ : Parts mounted on the conductor side.

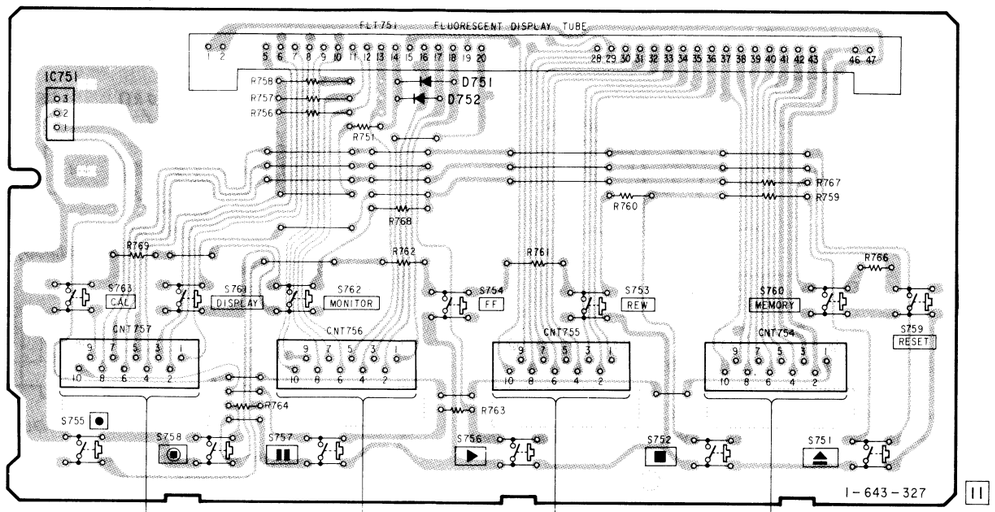
5-3. PRINTED WIRING BOARDS

• See page 15 for Circit Boards Location. • See page 26 for Semiconductor Lead Layouts.

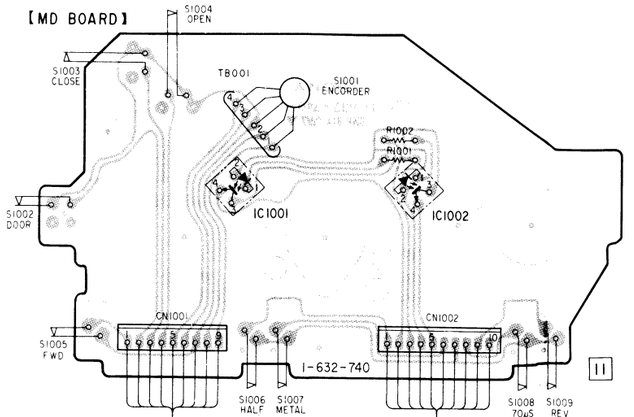




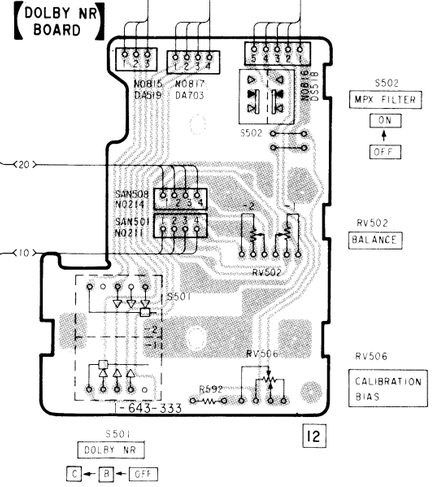
【DISPLAY BOARD】



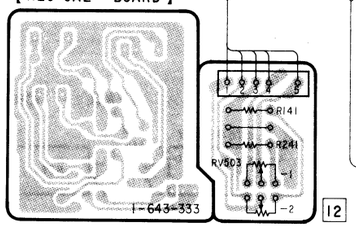
【MD BOARD】



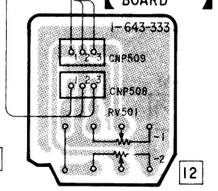
【DOLBY NR BOARD】



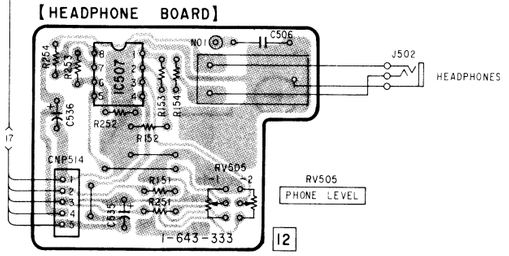
【REC CAL BOARD】



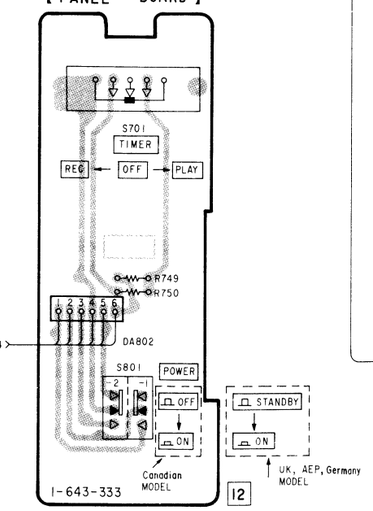
【REC LEVEL BOARD】

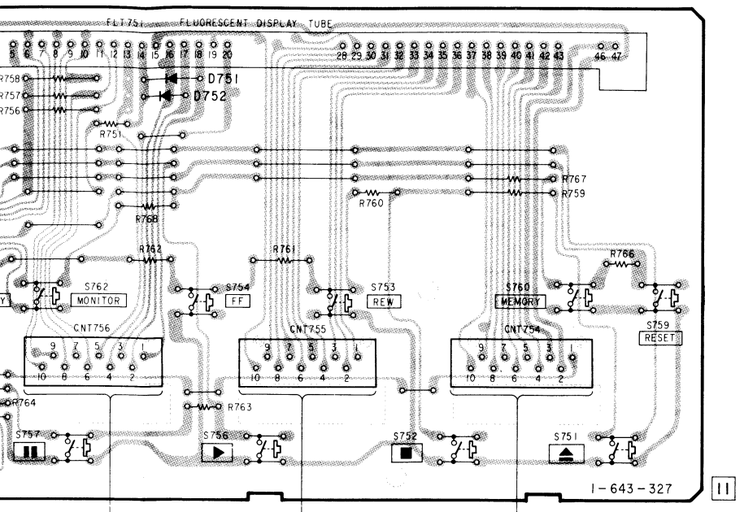


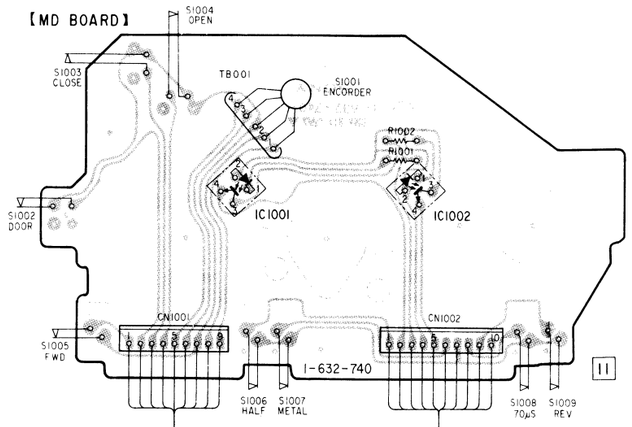
【HEADPHONE BOARD】

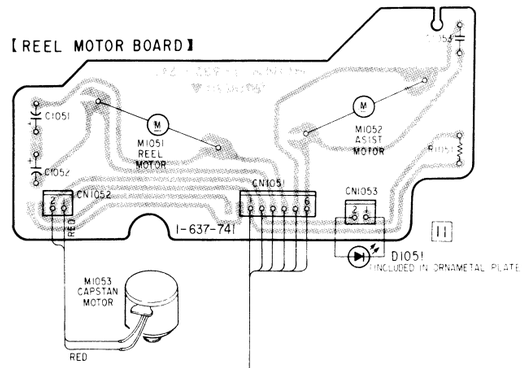


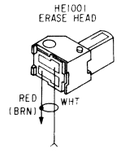
【PANEL BOARD】

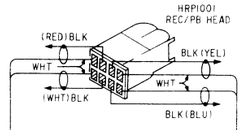


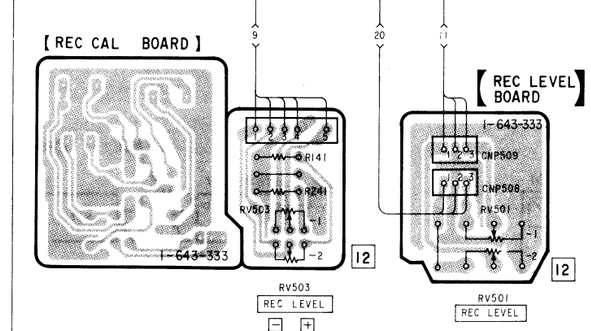

FL751 FLUORESCENT DISPLAY TUBE
D751
D752
R751
R760
R767
R759
R762
R761
R766
S762 MONITOR
S754 FF
S753 REW
S760 MEMORY
S759 RESET
CNT756
CNT755
CNT754
R764
R763
S757
S756
S752
S751
I-643-327
11


【MD BOARD】
S1004 OPEN
S1003 CLOSE
TB001
S1001 ENCORDER
R1002
R1001
IC1001
IC1002
S1002 DOOR
CN1001
CN1002
S1005 FWD
S1006 HALF
S1007 METAL
S1008 70μS
S1009 REV
I-632-740
11

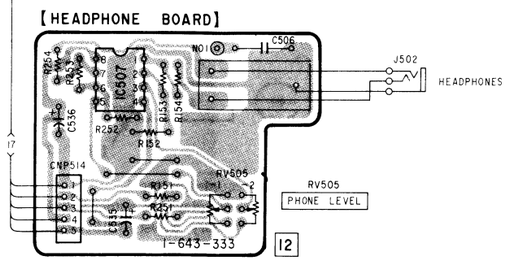

【REEL MOTOR BOARD】
C1051
C1052
M1051 REEL MOTOR
M1052 ASIST MOTOR
CN1052
CN1051
CN1053
I-637-741
11
D1051
(INCLUDED IN ORNAMETAL PLATE)
M1053 CAPSTAN MOTOR
RED

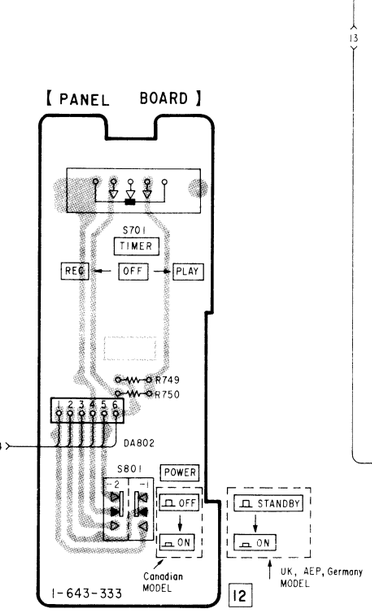

HE1001 ERASE HEAD
RED (BRN)
WHT

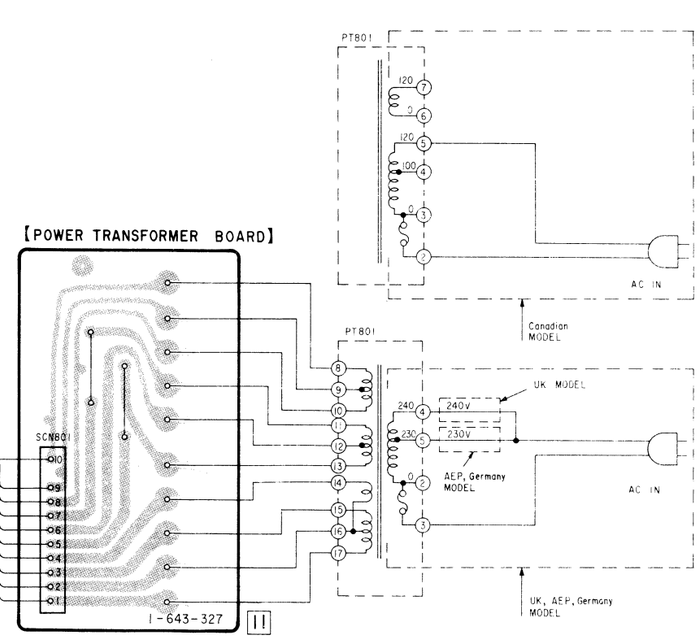

HRP1001 REC/PB HEAD
(RED)BLK
WHT
(WHT)BLK
BLK(YEL)
WHT
BLK(BLU)


【REC CAL BOARD】
I-643-333
R141
R241
RV503
RV503 REC LEVEL
12

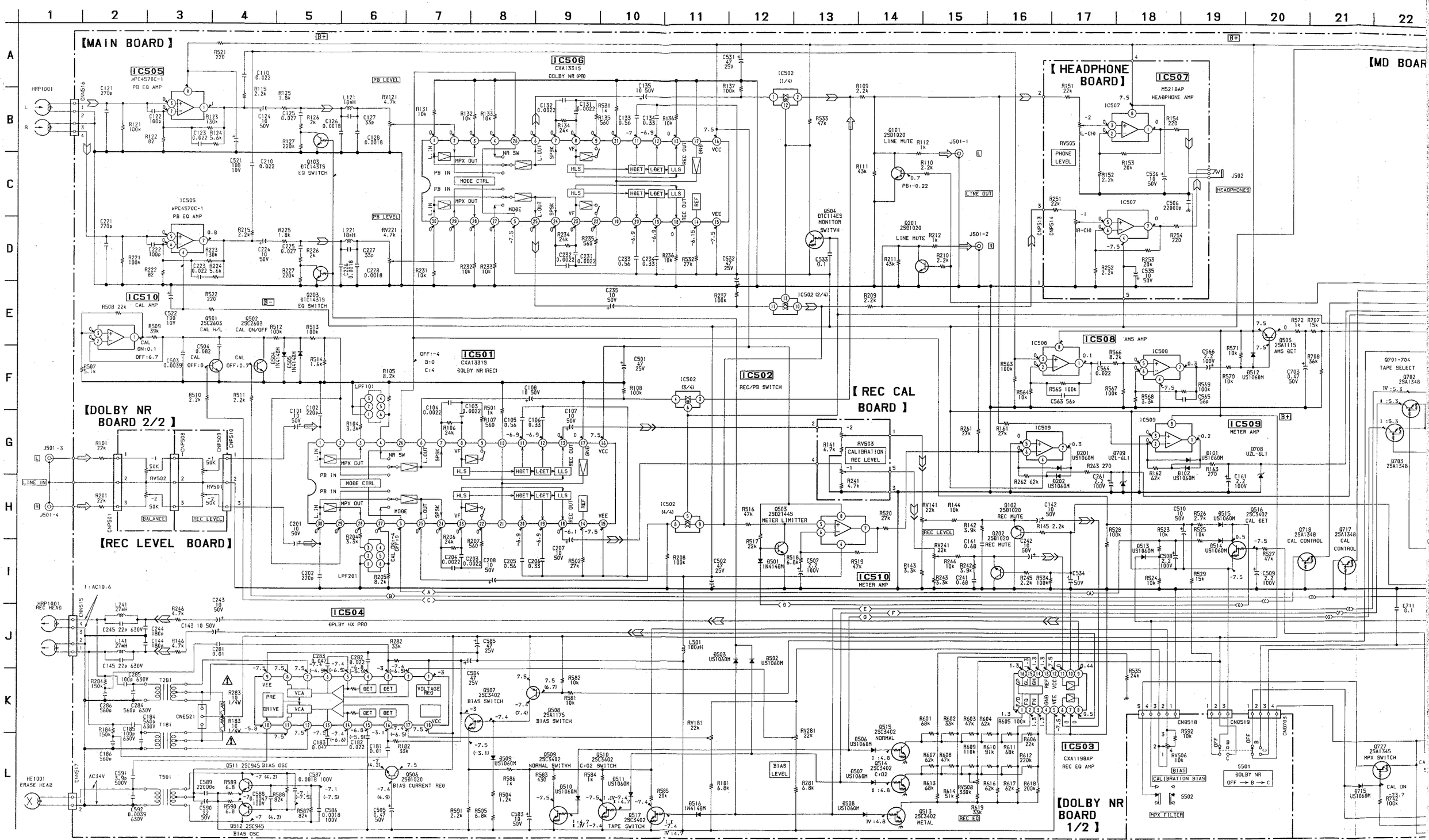
【REC LEVEL BOARD】
I-643-333
CNP509
CNP508
RV501
RV501 REC LEVEL
12


【HEADPHONE BOARD】
C506
C507
C536
R254
R252
R152
R153
R154
J502
HEADPHONES
CNP514
RV505
RV505 PHONE LEVEL
I-643-333
12


【PANEL BOARD】
S701 TIMER
REC
OFF
PLAY
R749
R750
DA802
S801 POWER
OFF
ON
STANDBY
ON
Canadian MODEL
UK, AEP, Germany MODEL
I-643-333
12


【POWER TRANSFORMER BOARD】
SCN801
PT801
120
120
100
AC IN
Canadian MODEL
UK MODEL
240
240V
230
230V
AEP, Germany MODEL
UK, AEP, Germany MODEL
I-643-327
11

5-4. SCHEMATIC DIAGRAM •See page 15 for IC Block Diagram.



【HEADPHONE BOARD】

IC507 M5218AP HEADPHONE AMP

【MD BOARD】

IC703 REEL MOTOR DRIVE

IC704 ASSIST MOTOR DRIVE

【REEL MOTOR BOARD】

IC508 AMS AMP

IC509 METER AMP

IC503 CXA1198AP REC EQ AMP

【DOLBY NR BOARD 1/2】

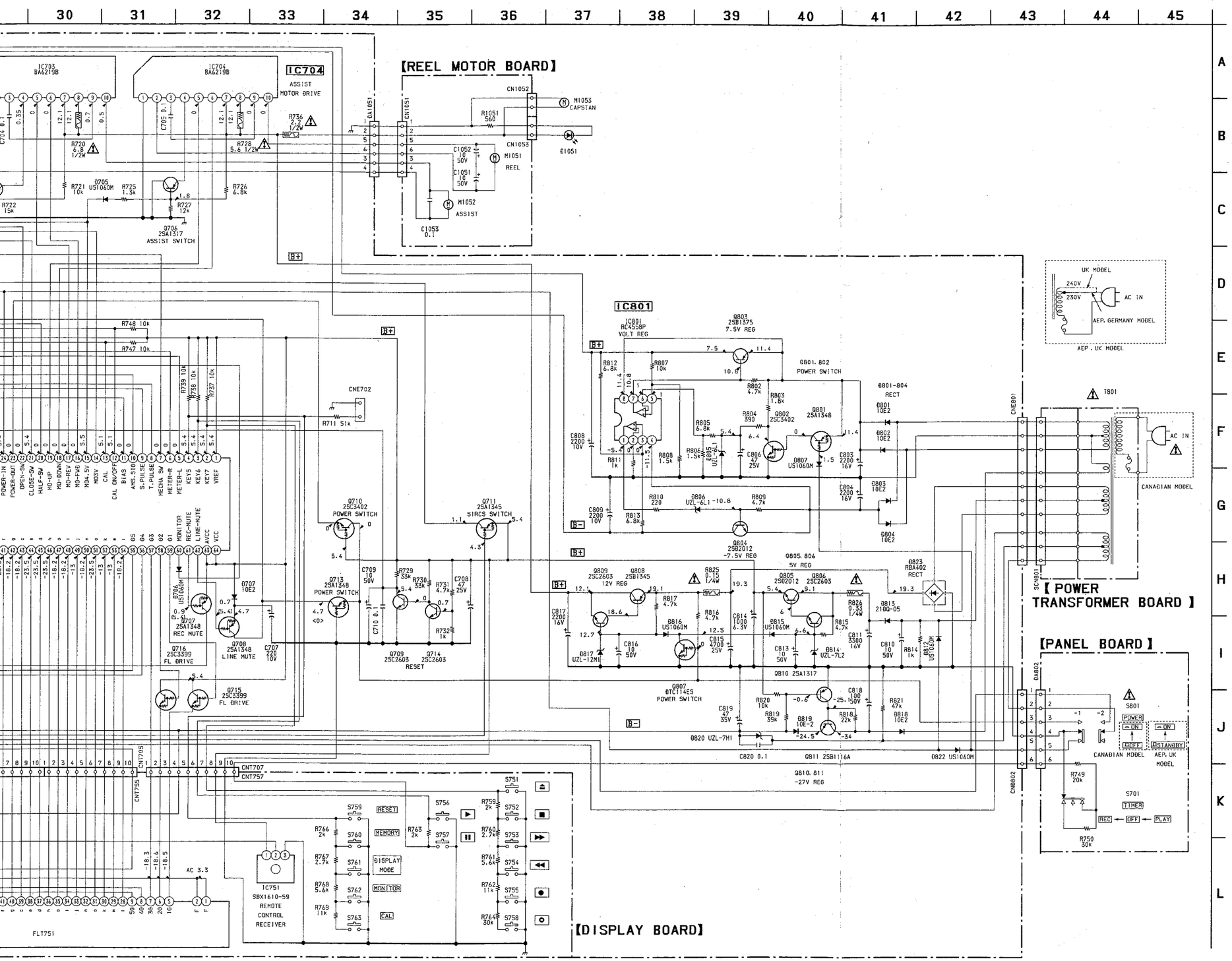
IC702 MC14069BCP SHAPERTYPE SWITCH

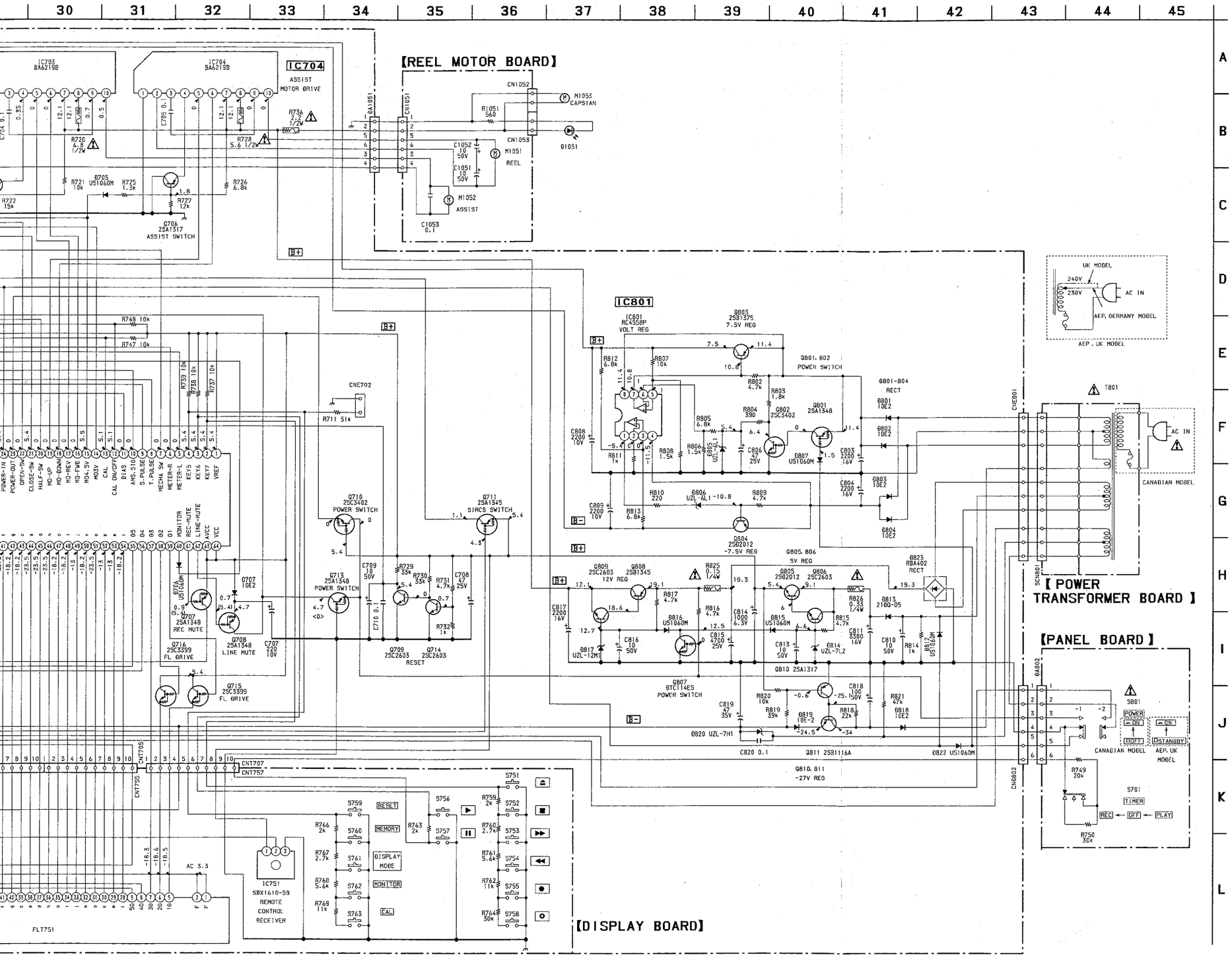
IC701 M50941 SYSTEM CONTROL

IC801 RC4558P VOLT REG

IC751 SBX1610-59 REMOTE CONTROL RECEIVER

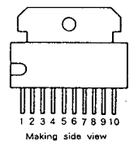
【DISPLAY BOARD】


【REEL MOTOR BOARD】
IC704
ASSIST MOTOR DRIVE
IC703 BA6219B
IC704 BA6219B
CN1052
CN1053
M1054 CAPSTAN
M1051 REEL
M1052 ASSIST
D1051
R1051 560
C1052 10 50V
C1051 10 50V
C1053 0.1
R736 2.2 1/2W
R720 6.8 1/2W
R728 5.6 1/2W
R721 10k
R722 15k
R725 1.5k
R726 6.8k
R727 12k
D705 US1060M
Q706 2SA1317 ASSIST SWITCH
IC801
IC801 RC4558P VOLT REG
Q803 2SB1375 7.5V REG
Q801, 802 POWER SWITCH
Q801-804 RECT
D801 10E2
D802 10E2
D803 10E2
D804 10E2
Q802 2SC3402
Q801 2SA1348
Q807 US1060M
Q804 2SD2012 -7.5V REG
Q805, 806 5V REG
Q809 2SC2603 12V REG
Q808 2SB1345
Q805 2SD2012
Q806 2SC2603
Q813 2100-05
Q810 2SA1317
Q807 DTC114ES POWER SWITCH
Q811 2SB1116A
Q820 UZL-7H1
Q810, 811 -27V REG
D822 US1060M
D823 RBA402 RECT
TB01
AC IN
CANADIAN MODEL
UK MODEL
240V
230V
AC IN
AEP, GERMANY MODEL
AEP, UK MODEL
CNE801
CNB801
【POWER TRANSFORMER BOARD】
【PANEL BOARD】
CNB802
S801
POWER
ON
OFF
STANDBY
CANADIAN MODEL
AEP, UK MODEL
S701
TIMER
REC
OFF
PLAY
R749 20k
R750 30k
CNE702
R711 51k
Q710 2SC3402 POWER SWITCH
Q711 2SA1345 SIRCS SWITCH
Q713 2SA1348 POWER SWITCH
Q709 2SC2603 RESET
Q714 2SC2603
Q707 2SA1348 REC MUTE
Q708 2SA1348 LINE MUTE
Q716 2SC3399 FL DRIVE
Q715 2SC3399 FL DRIVE
D704 US1060M
D707 10E2
R748 10k
R747 10k
R739 10k
R738 10k
R737 10k
C709 10 50V
C710 0.1
C708 47 25V
R729 33k
R730 33k
R731 4.7k
R732 1k
CN707
CN757
CN705
CN755
IC751
SBX1610-59 REMOTE CONTROL RECEIVER
FL751
【DISPLAY BOARD】
S751
S752
S753
S754
S755
S756
S757
S758
S759 RESET
S760 MEMORY
S761 DISPLAY MODE
S762 MONITOR
S763 CAL
R759 2k
R760 2.7k
R761 5.6k
R762 11k
R764 30k
R766 2k
R763 2k
R767 2.7k
R769 5.6k
R769 11k
AC 3.3


【REEL MOTOR BOARD】
IC704
ASSIST MOTOR DRIVE
IC703 BA6219B
IC704 BA6219B
CN1051
CN1052
CN1053
M1053 CAPSTAN
M1051 REEL
M1052 ASSIST
D1051
R1051 560
C1052 10 50V
C1051 10 50V
C1053 0.1
R720 6.8 1/2W
R728 5.6 1/2W
R736 2.2 1/2W
R721 10k
R722 15k
R725 1.5k
R726 6.8k
R727 12k
D705 US1060M
Q706 2SA1317 ASSIST SWITCH
IC801
IC801 RC4558P VOLT REG
Q803 2SB1375 7.5V REG
Q801, 802 POWER SWITCH
Q801-804 RECT
D801 10E2
D802 10E2
D803 10E2
D804 10E2
Q804 2SD2012 -7.5V REG
Q805, 806 5V REG
Q809 2SC2603 12V REG
Q808 2SB1345
Q805 2SD2012
Q806 2SC2603
D813 2100-05
D825 RBA402 RECT
Q807 DTC114ES POWER SWITCH
Q810 2SA1317
Q811 2SB1116A
Q810, 811 -27V REG
D820 UZL-7H1
D822 US1060M
C820 0.1
UK MODEL
240V
230V
AC IN
AEP, GERMANY MODEL
AEP, UK MODEL
T801
CANADIAN MODEL
【POWER TRANSFORMER BOARD】
【PANEL BOARD】
S801
POWER
ON
OFF
STANDBY
CANADIAN MODEL
AEP, UK MODEL
S701
TIMER
REC
OFF
PLAY
R749 20k
R750 30k
CN802
CNE801
SCN801
CNE702
R711 51k
R748 10k
R747 10k
R739 10k
R738 10k
R737 10k
Q710 2SC3402 POWER SWITCH
Q711 2SA1345 SIRCS SWITCH
Q713 2SA1348 POWER SWITCH
Q707 2SA1348 REC MUTE
Q708 2SA1348 LINE MUTE
Q716 2SC3399 FL DRIVE
Q715 2SC3399 FL DRIVE
Q709 2SC2603 RESET
Q714 2SC2603 RESET
D707 10E2
D704 US1060M
C707 220 10V
C709 10 50V
C710 0.1
C708 47 25V
R729 33k
R730 33k
R731 4.7k
R732 1k
CN705
CN707
CN757
IC751 SBX1610-59 REMOTE CONTROL RECEIVER
FL751
AC 3.3
【DISPLAY BOARD】
S751
S752
S753
S754
S755
S756
S757
S758
S759 RESET
S760 MEMORY
S761 DISPLAY MODE
S762 MONITOR
S763 CAL
R763 2k
R764 30k
R766 2k
R767 2.7k
R768 5.6k
R769 11k
R759 2k
R760 2.7k
R761 5.6k
R762 11k
POWER-IN
POWER-OUT
OPEN-SW
CLOSE-SW
HALF-SW
MD-UP
MD-DOWN
MD-REV
MD-FWD
MD4.5V
MD3V
CAL
CAL ON/OFF
BIAS
AMS.SIG
S.PULSE
T.PULSE
MECHA SW
METER-R
METER-L
KEY5
KEY6
KEY7
VREF
MONITOR
REC-MUTE
LINE-MUTE
AVCC
VCC

5-5. SEMICONDUCTOR LEAD LAYOUTS

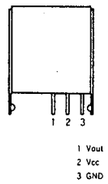
BA6219B
LB1641



M5218AL



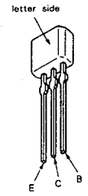
SBX1610-59



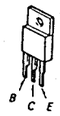
DTA114ES
DTA144ES
DTC114ES
DTC143TS
2SA1317-STU
2SC2603-EF
2SD2144S



DTC144ES
2SA1175-HFE



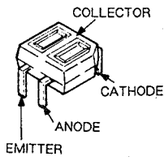
2SB1094-LK
2SD2012



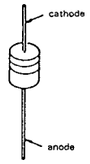
2SB1116A-L
2SC945-P



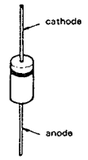
GP2S22B



HZS6A1L
UZL-7L2



1N4148M
10E2N
21DQ05



SECTION 6
EXPLODED VIEWS

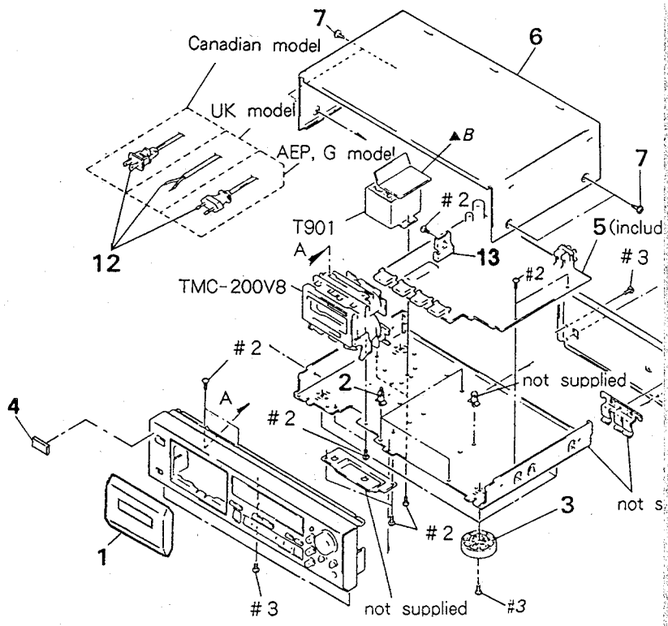
NOTE:
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)...(RED)
  ↑ ↑
  Parts color Cabinet's color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.
- G : Germany model

The co
mark ⚠
⚠ are cr
Replace
specifiec

Les co
une ma
pour la s
Ne les
pièce po

6-1. CHASSIS SECTION

▲B : POWER TRANSFORMER board
■B-F : See next page



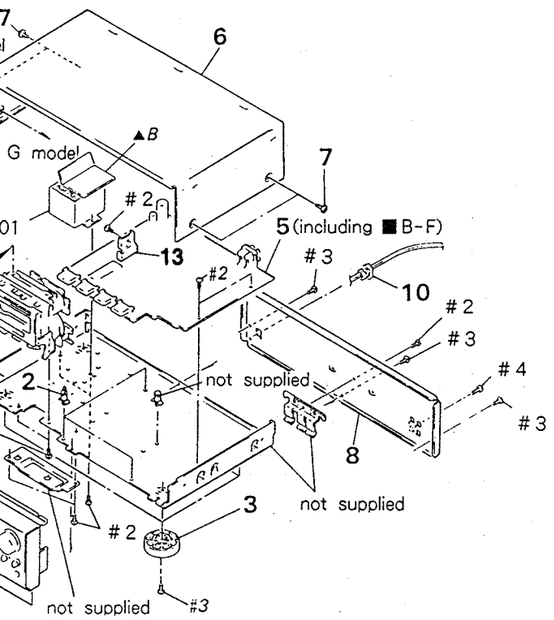
Ref. No.	Part No.	Description	Remarks
1	X-3363-221-1	LID (A) ASSY, CASSETTE (Canadian)	
1	X-3365-067-2	LID ASSY, CASSETTE (AEP, UK, Germany)	
* 2	3-346-265-11	HOLDER, PC BOARD	
3	4-943-148-32	FOOT (F58175SW) (Canadian)	
3	4-943-148-42	FOOT (AEP, UK, Germany)	
4	4-908-848-01	EMBLEM, SONY	
* 5	A-2006-757-A	MAIN BOARD, COMPLETE	
6	3-332-578-61	CASE	
7	3-704-366-01	SCREW (CASE) (M3X8)	
* 8	3-375-667-01	PANEL, BACK (AEP, Germany)	
* 8	3-375-667-11	PANEL, BACK (AEP)	
* 8	3-375-667-21	PANEL, BACK (UK)	
* 8	3-375-667-31	PANEL, BACK (Canadi	
* 10	3-703-244-00	BUSHING (2104), COR	
* 10	3-703-571-11	BUSHING (S) (4516),	
⚠12	1-555-795-00	CORD, POWER, EULO P	
⚠12	1-556-035-00	CORD, POWER (UK)	
⚠12	1-558-945-11	CORD, POWER (POLAR.	
* 13	3-356-925-01	HEAT SINK	
⚠T901	1-450-100-11	TRANSFORMER, POWER	
⚠T901	1-450-399-11	TRANSFORMER, POWER	

SECTION 6
EXPLODED VIEWS

d "*" are not stocked
are seldom required for
ice. Some delay should
ed when ordering these

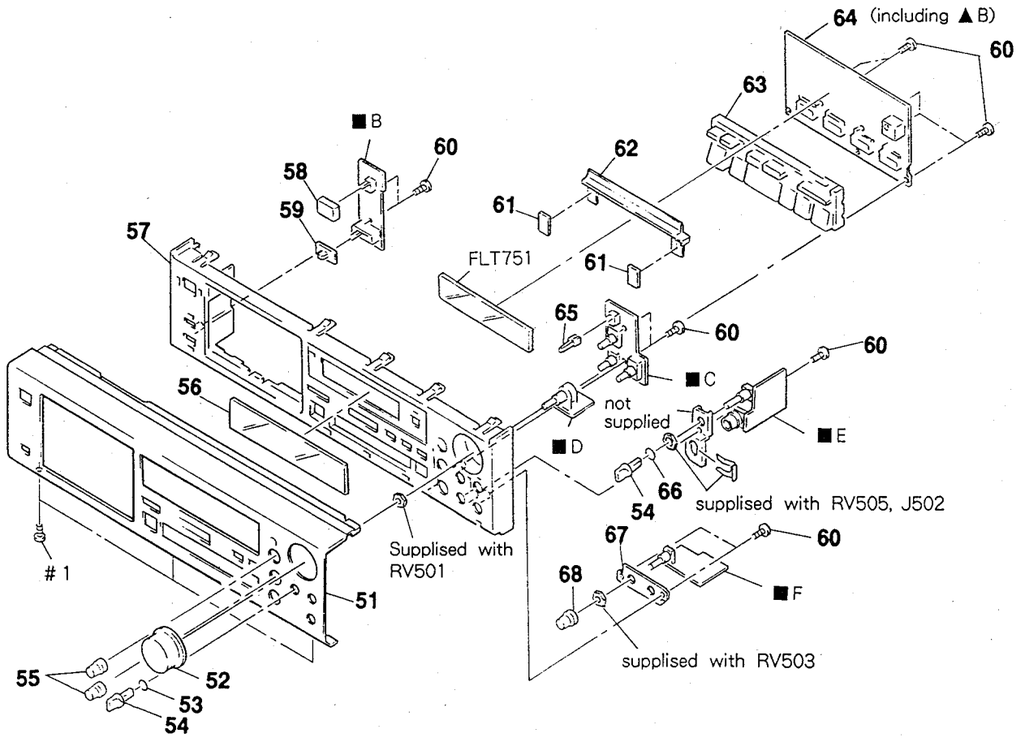
al parts with no reference
the exploded views are
.
* mark) list is given in
this parts list.
y model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spéci-fie.



6-2. FRONT PANEL SECTION

■ B : PANEL board
■ C : DOLBY NR board
■ D : REC LEVEL board
■ E : HEADPHONE board
■ F : REC CAL board

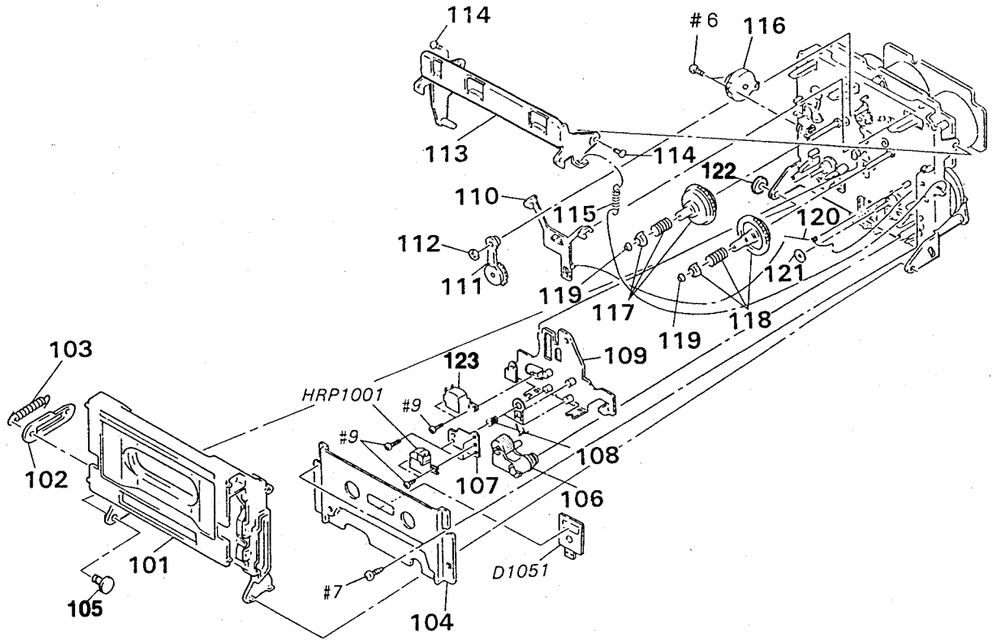


Ref. No.	Part No.	Description	Remarks
* 8	3-375-667-11	PANEL, BACK (AEP)	
* 8	3-375-667-21	PANEL, BACK (UK)	
* 8	3-375-667-31	PANEL, BACK (Canadian)	
* 10	3-703-244-00	BUSHING (2104), CORD (AEP, UK, Germany)	
* 10	3-703-571-11	BUSHING (S) (4516), CORD (Canadian)	
⚠12	1-555-795-00	CORD, POWER, EULO PLUG (AEP, Germany)	
⚠12	1-556-035-00	CORD, POWER (UK)	
⚠12	1-558-945-11	CORD, POWER (POLAR. SPT-1) (Canadian)	
* 13	3-356-925-01	HEAT SINK	
⚠T901	1-450-100-11	TRANSFORMER, POWER (Canadian)	
⚠T901	1-450-399-11	TRANSFORMER, POWER (AEP, UK, Germany)	

Ref. No.	Part No.	Description	Remarks
51	3-379-229-21	PANEL, FRONT (AEP, UK, Germany)	
51	3-379-229-31	PANEL, FRONT (Canadian)	
52	3-367-438-11	KNOB (REC)	
53	3-370-186-01	SPRING (SWPA), RING	
54	3-350-495-01	KNOB (VOL)	
55	3-367-431-01	KNOB (BAL)	
56	3-367-433-11	WINDOW (METER) (Canadian)	
56	3-378-144-11	WINDOW (METER) (AEP, UK, Germany)	
57	3-367-440-01	PANEL (BASE)	
58	4-922-921-01	BUTTON (POWER)	

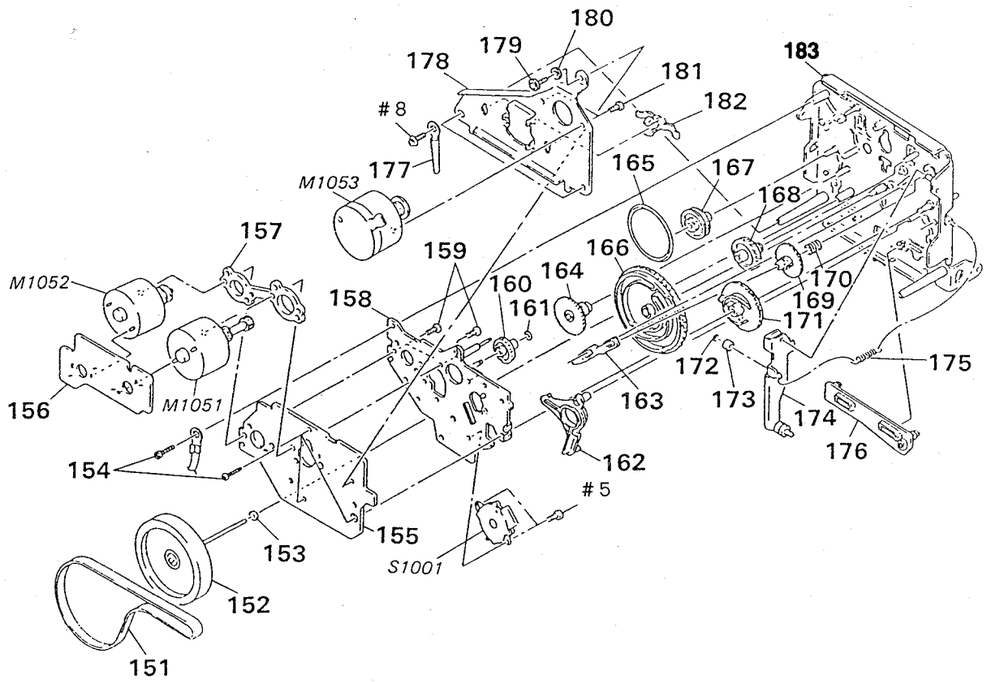
Ref. No.	Part No.	Description	Remarks
59	4-931-421-11	KNOB (T & S)	
60	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
61	9-911-844-XX	CUSHION	
* 62	4-932-502-01	HOLDER, FL TUBE	
63	3-368-281-31	BUTTON (B)	
* 64	1-643-327-11	DISPLAY BOARD	
65	3-350-473-01	BUTTON (MPX)	
66	3-356-957-01	SPRING	
* 67	3-368-280-01	BRACKET (C)	
68	3-370-003-01	KNOB (BAL)	
FLT751	1-519-710-11	INDICATOR TUBE, FLUORESCENT	

6-3. MECHANISM SECTION 1 (TCM-200V8)



Ref. No.	Part No.	Description	Remarks
101	X-3364-799-1	HOLDER (CD) (2) ASSY, CASSETTE	
* 102	3-356-717-01	LEVER (JOINT)	
103	3-356-626-01	SPRING, TENSION	
104	X-3356-613-1	PLATE ASSY, ORNAMENTAL	
105	3-378-341-01	SHAFT (L) (CASSETTE HOLDER)	
106	X-3356-649-1	LEVER (PINCH LEVER T) ASSY	
* 107	3-356-742-01	BRACKET (GUIDE R)	
108	3-356-659-01	SPRING (RPH), COMPRESSION	
109	X-3356-648-1	SLIDER (HEAD CHASSIS V2) ASSY	
110	3-356-614-01	SLIDER (BRAKE)	
111	X-3356-641-1	LEVER (FR2) ASSY	
112	3-669-465-11	WASHER (1.5), STOPPER	
* 113	X-3356-608-1	LEVER (LIFTER) ASSY	
114	3-356-601-11	SCREW, STEP	
115	3-356-625-01	SPRING, TENSION	
116	3-712-786-01	DAMPER, OIL	
117	X-3356-628-1	GEAR (S) ASSY	
118	X-3356-627-1	GEAR (T) ASSY	
119	3-362-308-01	CAP (REEL)	
D1051	8-719-980-85	DIODE SLF325C	
120	3-356-619-01	SPRING (B), TORSION	
121	3-356-713-01	WASHER	
122	3-558-708-21	WASHER, STOPPER	
123	1-543-673-11	HEAD, MAGNETIC(ERASE)	
HRP1001	1-543-673-11	HEAD, MAGNETIC(RECORD/PLAYBACK)	

6-4. MECHANISM SECTION 2 (TCM-200V8)



Ref. No.	Part No.	Description	Remarks
151	3-356-744-01	BELT (CAPSTAN V)	
152	X-3356-642-1	FLYWHEEL (R FWD) ASSY	
153	3-356-705-01	WASHER (CAPSTAN)	
154	3-355-801-01	SCREW (BTP 2X18)	
* 155	1-632-740-11	MD BOARD	
* 156	1-632-741-11	REAL MOTOR BOARD	
* 157	3-356-628-01	SPACER (MOTOR)	
* 158	X-3356-602-1	BRACKET (MOTOR R) ASSY	
159	3-363-804-01	SCREW (+P 2.6X6.5)	
160	3-356-702-01	GEAR (COMMUNICATION B)	
161	3-669-465-00	WASHER (1.5), STOPPER	
162	3-356-613-01	LEVER (MODE)	
163	3-356-617-01	LEVER (SELECTION)	
164	3-356-606-01	GEAR (MODE)	
165	3-356-603-01	BELT (MODE)	
166	3-356-747-01	GEAR (MODE CAM C)	
167	3-356-607-01	PULLEY (MODE)	
168	3-356-703-01	GEAR (COMMUNICATION C)	
169	3-356-609-01	GEAR (LOADING)	
170	3-356-605-01	SPRING, COMPRESSION	
171	3-356-616-01	GEAR (LOADING CAM)	
172	3-558-708-11	WASHER, STOPPER	
173	3-356-630-01	ROLLER (LOADING)	
* 174	X-3356-606-1	LEVER (LOADING) ASSY	
175	3-376-854-01	SPRING, TENSION	
176	3-356-653-01	SLIDER (PAUSE)	
177	3-703-150-11	STOPPER, WIRING	
* 178	3-356-629-01	BRACKET (THRUST RETAINER R)	
179	3-356-707-01	SCREW (+PTPWH 2X25)	
* 180	3-356-718-01	SPACER (THRUST RETAINER R)	
181	4-885-599-00	SCREW, FITTING, REINFORCEMENT	
182	3-575-321-00	RETAINER, THRUST, CAPSTAN	
183	X-3356-644-1	CHASSIS COMPLETE ASSY, MECH	
M1051	X-3356-638-1	MOTOR (REEL R) ASSY	
M1052	X-3356-604-1	MOTOR (ASSIST) ASSY	
M1053	X-3356-646-1	MOTOR (CAPSTAN V1) ASSY	
S1001	1-466-238-11	ENCODER, ROTARY	

SECTION 7
ELECTRICAL PARTS LIST

DISPLAY | MD

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spéci-fie.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- −XX, −X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS :
  uF : μF
- RESISTORS
  All resistors are in ohms.
  METAL : metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- COILS
  uH : μH
- SEMICONDUCTORS
  In each case, u : μ, for example :
  uA... : μA... , uPA... , μPA... ,
  uPB... , μPB... , uPC... , μPC... ,
  uPD..., μPD...

Ref. No.	Part No.	Description	Remarks
*	1-643-327-11	DIPLAY BOARD	
		**********	
	9-911-844-XX	CUSHION	
*	4-932-502-01	HOLDER, FL TUBE	
		< CONNECTOR >	
* CNT754	1-580-782-11	CONNECTOR, BOARD TO BOARD	
* CNT755	1-580-782-11	CONNECTOR, BOARD TO BOARD	
* CNT756	1-580-782-11	CONNECTOR, BOARD TO BOARD	
* CNT757	1-580-782-11	CONNECTOR, BOARD TO BOARD	
		< DIODE >	
D751	8-719-987-63	DIODE 1N4148M	
D752	8-719-987-63	DIODE 1N4148M	
		< FILTER >	
FLT751	1-519-710-11	INDICATOR TUBE, FLUORESCENT	
		< IC >	
IC751	8-741-100-48	IC SBX1610-59	
		< RESISTOR >	
R751	1-249-441-11	CARBON 100K 5% 1/4W	
R756	1-249-441-11	CARBON 100K 5% 1/4W	
R757	1-249-441-11	CARBON 100K 5% 1/4W	
R758	1-249-441-11	CARBON 100K 5% 1/4W	
R759	1-247-838-00	CARBON 2K 5% 1/4W	
R760	1-249-422-11	CARBON 2.7K 5% 1/4W	
R761	1-249-426-11	CARBON 5.6K 5% 1/4W	
R762	1-247-856-00	CARBON 11K 5% 1/4W	
R763	1-247-838-00	CARBON 2K 5% 1/4W	
R764	1-247-866-11	CARBON 30K 5% 1/4W	
R766	1-247-838-00	CARBON 2K 5% 1/4W	
R767	1-249-422-11	CARBON 2.7K 5% 1/4W	
R768	1-249-426-11	CARBON 5.6K 5% 1/4W	
R769	1-247-856-00	CARBON 11K 5% 1/4W	

Ref. No.	Part No.	Description	Remarks
		< SWITCH >	
S751	1-554-303-21	SWITCH, TACTILE (▲)	
S752	1-554-303-21	SWITCH, TACTILE (■)	
S753	1-554-303-21	SWITCH, TACTILE (▶▶)	
S754	1-554-303-21	SWITCH, TACTILE (◀◀)	
S755	1-554-303-21	SWITCH, TACTILE (●)	
S756	1-554-303-21	SWITCH, TACTILE (▶)	
S757	1-554-303-21	SWITCH, TACTILE (▮▮)	
S758	1-554-303-21	SWITCH, TACTILE (○)	
S759	1-554-303-21	SWITCH, TACTILE (RESET)	
S760	1-554-303-21	SWITCH, TACTILE (MEMORY)	
S761	1-554-303-21	SWITCH, TACTILE (DISPLAY MODE)	
S762	1-554-303-21	SWITCH, TACTILE (MONITOR)	
S763	1-554-303-21	SWITCH, TACTILE (CAL)	
**********			
*	1-632-740-11	MD BOARD	
		********	
	3-356-631-01	HOLDER (SENSOR)	
		< CONNECTOR >	
CN1001	1-506-615-11	PIN, CONNECTOR 9P	
CN1002	1-564-501-11	PIN, CONNECTOR 8P	
		< IC >	
IC1001	8-749-920-97	DI ODE GP2S22B	
IC1002	8-749-920-97	DI ODE GP2S22B	
		< RESISTOR >	
R1001	1-249-408-11	CARBON 180 5% 1/4W	
R1002	1-249-408-11	CARBON 180 5% 1/4W	
		< SWITCH >	
S1002	1-570-953-11	SWITCH, PUSH (1 KEY)	
S1003	1-571-958-11	SWITCH, PUSH (1 KEY)	
S1004	1-572-126-11	SWITCH, PUSH (1 KEY)	
S1005	1-572-125-11	SWITCH, LEAF	
S1006	1-572-202-11	SWITCH, LEAF	

Ref. No.	Part No.	Description			Remarks
S1007	1-572-125-11	SWITCH, LEAF			
S1008	1-572-125-11	SWITCH, LEAF			
		< TERMINAL >			
* TB1001	1-694-018-11	TERMINAL (5P)			
**********					
*	A-2006-757-A	MAIN BOARD, COMPLETE			
		**********			
*	1-562-327-00	SOCKET, CONNECTOR 3P			
*	1-690-880-31	READ (WITH CONNECTOR)			
*	3-356-925-01	HEAT SINK			
	7-682-547-04	SCREW +BVTT 3X6 (S)			
		< CAPACITOR >			
C101	1-126-059-11	ELECT	10uF	20%	50V
C102	1-162-286-31	CERAMIC	220PF	10%	50V
C103	1-130-475-00	MYLAR	0.0022uF	5%	50V
C104	1-130-475-00	MYLAR	0.0022uF	5%	50V
C105	1-136-174-00	FILM	0.56uF	5%	50V
C106	1-136-171-00	FILM	0.33uF	5%	50V
C107	1-126-059-11	ELECT	10uF	20%	50V
C108	1-124-657-00	ELECT	10uF	20%	50V
C110	1-161-494-00	CERAMIC	0.022uF		25V
C121	1-110-340-11	MYLAR	270PF	5%	50V
C122	1-162-282-31	CERAMIC	100PF	10%	50V
C123	1-130-487-00	MYLAR	0.022uF	5%	50V
C124	1-124-657-00	ELECT	10uF	20%	50V
C125	1-130-488-00	MYLAR	0.027uF	5%	50V
C126	1-130-474-00	MYLAR	0.0018uF	5%	50V
C127	1-102-518-11	CERAMIC	33PF	5%	50V
C128	1-130-474-00	MYLAR	0.0018uF	5%	50V
C131	1-130-475-00	MYLAR	0.0022uF	5%	50V
C132	1-130-475-00	MYLAR	0.0022uF	5%	50V
C133	1-136-174-00	FILM	0.56uF	5%	50V
C134	1-136-171-00	FILM	0.33uF	5%	50V
C135	1-124-657-00	ELECT	10uF	20%	50V
C141	1-136-175-00	FILM	0.68uF	5%	50V
C142	1-126-059-11	ELECT	10uF	20%	50V
C143	1-126-059-11	ELECT	10uF	20%	50V
C144	1-110-338-51	MYLAR	180PF	5%	50V
C145	1-136-935-11	FILM	22PF	5%	630V
C161	1-124-925-11	ELECT	2.2uF	20%	100V
C181	1-136-153-00	FILM	0.01uF	5%	50V
C182	1-136-157-00	FILM	0.022uF	5%	50V
C183	1-136-161-00	FILM	0.047uF	5%	50V
C184	1-136-803-11	FILM	560PF	5%	630V
C185	1-136-433-11	FILM	100PF	5%	630V
C186	1-130-468-00	MYLAR	560PF	5%	50V
C201	1-126-059-11	ELECT	10uF	20%	50V
C202	1-162-286-31	CERAMIC	220PF	10%	50V
C203	1-130-475-00	MYLAR	0.0022uF	5%	50V
C204	1-130-475-00	MYLAR	0.0022uF	5%	50V
C205	1-136-174-00	FILM	0.56uF	5%	50V
C206	1-136-171-00	FILM	0.33uF	5%	50V
C207	1-126-059-11	ELECT	10uF	20%	50V
C208	1-124-657-00	ELECT	10uF	20%	50V
C210	1-161-494-00	CERAMIC	0.022uF		25V
C221	1-110-340-11	MYLAR	270PF	5%	50V
C222	1-162-282-31	CERAMIC	100PF	10%	50V
C223	1-130-487-00	MYLAR	0.022uF	5%	50V
C224	1-124-657-00	ELECT	10uF	20%	50V
C225	1-130-488-00	MYLAR	0.027uF	5%	50V
C226	1-130-474-00	MYLAR	0.0018uF	5%	50V
C227	1-102-518-11	CERAMIC	33PF	5%	50V
C228	1-130-474-00	MYLAR	0.0018uF	5%	50V
C231	1-130-475-00	MYLAR	0.0022uF	5%	50V
C232	1-130-475-00	MYLAR	0.0022uF	5%	50V
C233	1-136-174-00	FILM	0.56uF	5%	50V
C234	1-136-171-00	FILM	0.33uF	5%	50V
C235	1-124-657-00	ELECT	10uF	20%	50V
C241	1-136-175-00	FILM	0.68uF	5%	50V
C242	1-126-059-11	ELECT	10uF	20%	50V
C243	1-126-059-11	ELECT	10uF	20%	50V
C244	1-110-338-51	MYLAR	180PF	5%	50V
C245	1-136-935-11	FILM	22PF	5%	630V
C261	1-124-925-11	ELECT	2.2uF	20%	100V
C281	1-136-153-00	FILM	0.01uF	5%	50V
C282	1-136-157-00	FILM	0.022uF	5%	50V
C283	1-136-161-00	FILM	0.047uF	5%	50V
C284	1-136-803-11	FILM	560PF	5%	630V
C285	1-136-433-11	FILM	100PF	5%	630V
C286	1-130-468-00	MYLAR	560PF	5%	50V
C501	1-126-022-11	ELECT	47uF	20%	25V
C502	1-126-022-11	ELECT	47uF	20%	25V
C503	1-130-478-00	MYLAR	0.0039uF	5%	50V
C504	1-136-164-00	FILM	0.082uF	5%	50V
C505	1-124-902-00	ELECT	0.47uF	20%	50V
C506	1-161-494-00	CERAMIC	0.022uF		25V
C507	1-124-925-11	ELECT	2.2uF	20%	100V
C508	1-124-925-11	ELECT	2.2uF	20%	100V
C509	1-124-925-11	ELECT	2.2uF	20%	100V
C510	1-124-907-11	ELECT	10uF	20%	50V
C521	1-124-994-11	ELECT	100uF	20%	10V
C522	1-124-994-11	ELECT	100uF	20%	10V
C531	1-126-022-11	ELECT	47uF	20%	25V
C532	1-126-022-11	ELECT	47uF	20%	25V
C533	1-164-159-11	CERAMIC	0.1uF		50V
C534	1-124-903-11	ELECT	1uF	20%	50V
C535	1-124-907-11	ELECT	10uF	20%	50V

Ref. No.	Part No.	Description			Remarks
C536	1-124-907-11	ELECT	10uF	20%	50V
C563	1-162-217-31	CERAMIC	56PF	5%	50V
C564	1-136-157-00	FILM	0.022uF	5%	50V
C565	1-162-217-31	CERAMIC	56PF	5%	50V
C566	1-124-925-11	ELECT	2.2uF	20%	100V
C583	1-124-907-11	ELECT	10uF	20%	50V
C584	1-124-477-11	ELECT	47uF	20%	25V
C585	1-124-477-11	ELECT	47uF	20%	25V
C586	1-136-253-11	FILM	0.0018uF	5%	100V
C587	1-136-253-11	FILM	0.0018uF	5%	100V
C588	1-136-233-11	FILM	0.0047uF	5%	100V
C589	1-161-494-00	CERAMIC	0.022uF		25V
C590	1-126-233-11	ELECT	22uF	20%	50V
C591	1-107-045-00	MICA	3.9PF		500V
C592	1-136-558-11	FILM	0.0039uF	5%	630V
C701	1-162-294-31	CERAMIC	0.001uF	10%	50V
C702	1-162-294-31	CERAMIC	0.001uF	10%	50V
C703	1-124-902-00	ELECT	0.47uF	20%	50V
C704	1-164-159-11	CERAMIC	0.1uF		50V
C705	1-164-159-11	CERAMIC	0.1uF		50V
C707	1-126-923-11	ELECT	220uF	20%	10V
C708	1-124-477-11	ELECT	47uF	20%	25V
C709	1-124-907-11	ELECT	10uF	20%	50V
C710	1-164-159-11	CERAMIC	0.1uF		50V
C711	1-164-159-11	CERAMIC	0.1uF		50V
C712	1-164-159-11	CERAMIC	0.1uF		50V
C803	1-124-556-11	ELECT	2200uF	20%	16V
C804	1-124-556-11	ELECT	2200uF	20%	16V
C806	1-124-477-11	ELECT	47uF	20%	25V
C808	1-124-999-11	ELECT	2200uF	20%	10V
C809	1-124-999-11	ELECT	2200uF	20%	10V
C810	1-124-907-11	ELECT	10uF	20%	50V
C811	1-126-936-11	ELECT	3300uF	20%	16V
C813	1-124-907-11	ELECT	10uF	20%	50V
C814	1-126-916-11	ELECT	1000uF	20%	6.3V
C815	1-124-564-11	ELECT	4700uF	20%	25V
C816	1-124-907-11	ELECT	10uF	20%	50V
C817	1-126-768-11	ELECT	2200uF	20%	16V
C818	1-124-122-11	ELECT	100uF	20%	50V
C819	1-126-947-11	ELECT	47uF	20%	35V
C820	1-164-159-11	CERAMIC	0.1uF		50V

< CONNECTOR >

Ref. No.	Part No.	Description	Remarks
* CND518	1-564-339-00	PIN, CONNECTOR 5P	
* CND519	1-564-337-61	PIN, CONNECTOR 3P	
* CND703	1-564-338-71	PIN, CONNECTOR 4P	
* CND802	1-564-340-00	PIN, CONNECTOR 6P	
* CNE512	1-564-508-11	PLUG, CONNECTOR 5P	
* CNE521	1-564-506-11	PLUG, CONNECTOR 3P	
* CNE701	1-564-506-11	PLUG, CONNECTOR 3P	
* CNE702	1-564-505-11	PLUG, CONNECTOR 2P	
* CNE801	1-564-513-11	PLUG, CONNECTOR 10P	
* CNN515	1-560-062-00	PIN, CONNECTOR 4P	
* CNN516	1-560-062-00	PIN, CONNECTOR 4P	
* CNN517	1-560-060-00	PIN, CONNECTOR 2P	
* CNP501	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P	
* CNP508	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P	
* CNP509	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P	
* CNP510	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P	
* CNP513	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P	
* CNP514	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P	
* CNT704	1-580-784-11	CONNECTOR, BOARD TO BOARD	
* CNT705	1-580-784-11	CONNECTOR, BOARD TO BOARD	
* CNT706	1-580-784-11	CONNECTOR, BOARD TO BOARD	
* CNT707	1-580-784-11	CONNECTOR, BOARD TO BOARD	

< DIODE >

D101	8-719-987-63	DIODE	1N4148M
D102	8-719-987-63	DIODE	1N4148M
D201	8-719-987-63	DIODE	1N4148M
D202	8-719-987-63	DIODE	1N4148M
D501	8-719-987-63	DIODE	1N4148M
D502	8-719-987-63	DIODE	1N4148M
D503	8-719-987-63	DIODE	1N4148M
D504	8-719-987-63	DIODE	1N4148M
D505	8-719-987-63	DIODE	1N4148M
D506	8-719-987-63	DIODE	1N4148M
D507	8-719-987-63	DIODE	1N4148M
D508	8-719-987-63	DIODE	1N4148M
D509	8-719-987-63	DIODE	1N4148M
D510	8-719-987-63	DIODE	1N4148M
D511	8-719-987-63	DIODE	1N4148M
D512	8-719-987-63	DIODE	1N4148M
D513	8-719-987-63	DIODE	1N4148M
D514	8-719-987-63	DIODE	1N4148M
D515	8-719-987-63	DIODE	1N4148M
D516	8-719-987-63	DIODE	1N4148M
D701	8-719-987-63	DIODE	1N4148M
D702	8-719-987-63	DIODE	1N4148M
D703	8-719-987-63	DIODE	1N4148M
D704	8-719-987-63	DIODE	1N4148M
D705	8-719-987-63	DIODE	1N4148M
D706	8-719-987-63	DIODE	1N4148M
D707	8-719-200-77	DIODE	10E2N
D708	8-719-933-33	DIODE	HZS6A1L
D709	8-719-933-33	DIODE	HZS6A1L
D712	8-719-987-63	DIODE	1N4148M

Ref. No.	Part No.	Description	Remarks
D713	8-719-987-63	DIODE 1N4148M	
D714	8-719-987-63	DIODE 1N4148M	
D715	8-719-987-63	DIODE 1N4148M	
D718	8-719-987-63	DIODE 1N4148M	
D801	8-719-200-77	DIODE 10E2N	
D802	8-719-200-77	DIODE 10E2N	
D803	8-719-200-77	DIODE 10E2N	
D804	8-719-200-77	DIODE 10E2N	
D805	8-719-933-33	DIODE HZS6A1L	
D806	8-719-933-33	DIODE HZS6A1L	
D807	8-719-987-63	DIODE 1N4148M	
D812	8-719-987-63	DIODE 1N4148M	
D813	8-719-200-31	DIODE 21DQ05	
D814	8-719-000-78	DIODE UZL-7L2	
D815	8-719-987-63	DIODE 1N4148M	
D816	8-719-987-63	DIODE 1N4148M	
D817	8-719-001-70	DIODE UZL-12M1	
D818	8-719-200-77	DIODE 10E2N	
D819	8-719-200-77	DIODE 10E2N	
D820	8-719-000-93	DIODE UZL-7H1	
D822	8-719-987-63	DIODE 1N4148M	
D823	8-719-312-09	DIODE RBA-402	
		< IC >	
IC501	8-752-059-55	IC CXA1331S	
IC502	8-759-000-49	IC MC14066BCP	
IC503	8-752-060-64	IC CXA1198AP	
IC504	8-759-106-56	IC uPC1297CA	
IC505	8-759-111-44	IC uPC4570C-1	
IC506	8-752-059-55	IC CXA1331S	
IC507	8-759-634-51	IC M5218AP	
IC508	8-759-945-58	IC RC4558P	
IC509	8-759-945-58	IC RC4558P	
IC510	8-759-634-50	IC M5218AL	
IC701	8-759-060-83	IC M50941-728SP	
IC702	8-759-240-69	IC TC4069UBP	
IC703	8-759-973-95	IC BA6219B	
IC704	8-759-822-09	IC LB1641	
IC801	8-759-945-58	IC RC4558P	
		< JACK >	
J501	1-565-258-11	JACK, PIN 4P (LINE OUT)	
J502	1-507-796-71	JACK (HEADPHONES)	
		< COIL >	
L121	1-410-778-11	INDUCTOR 18mH	
L141	1-410-780-11	INDUCTOR 27mH	
L221	1-410-778-11	INDUCTOR 18mH	
L241	1-410-780-11	INDUCTOR 27mH	
L501	1-408-080-00	INDUCTOR 100uH	

Ref. No.	Part No.	Description	Remarks
		< FILTER >	
LPF101	1-236-147-11	FILTER, LOW PASS	
LPF201	1-236-147-11	FILTER, LOW PASS	
		< TRANSISTOR >	
Q101	8-729-142-25	TRANSISTOR 2SD1020-HFE	
Q102	8-729-142-25	TRANSISTOR 2SD1020-HFE	
Q103	8-729-900-74	TRANSISTOR DTC143TS	
Q201	8-729-142-25	TRANSISTOR 2SD1020-HFE	
Q202	8-729-142-25	TRANSISTOR 2SD1020-HFE	
Q203	8-729-900-74	TRANSISTOR DTC143TS	
Q501	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q502	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q503	8-729-922-37	TRANSISTOR 2SD2144S	
Q504	8-729-900-80	TRANSISTOR DTC114ES	
Q505	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q506	8-729-142-25	TRANSISTOR 2SD1020-HFE	
Q507	8-729-900-80	TRANSISTOR DTC114ES	
Q508	8-729-821-04	TRANSISTOR 2SA1317-STU	
Q509	8-729-900-80	TRANSISTOR DTC114ES	
Q510	8-729-900-80	TRANSISTOR DTC114ES	
Q511	8-729-194-57	TRANSISTOR 2SC945-P	
Q512	8-729-194-57	TRANSISTOR 2SC945-P	
Q513	8-729-900-80	TRANSISTOR DTC114ES	
Q514	8-729-900-80	TRANSISTOR DTC114ES	
Q515	8-729-900-80	TRANSISTOR DTC114ES	
Q516	8-729-900-80	TRANSISTOR DTC114ES	
Q517	8-729-900-80	TRANSISTOR DTC114ES	
Q701	8-729-900-61	TRANSISTOR DTA114ES	
Q702	8-729-900-61	TRANSISTOR DTA114ES	
Q703	8-729-900-61	TRANSISTOR DTA114ES	
Q704	8-729-900-61	TRANSISTOR DTA114ES	
Q705	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q706	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q707	8-729-900-61	TRANSISTOR DTA114ES	
Q708	8-729-900-61	TRANSISTOR DTA114ES	
Q709	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q710	8-729-900-80	TRANSISTOR DTC114ES	
Q711	8-729-900-65	TRANSISTOR DTA144ES	
Q712	8-729-900-80	TRANSISTOR DTC114ES	
Q713	8-729-900-65	TRANSISTOR DTA144ES	
Q714	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q715	8-729-900-89	TRANSISTOR DTC144ES	
Q716	8-729-900-89	TRANSISTOR DTC144ES	
Q717	8-729-900-61	TRANSISTOR DTA114ES	
Q718	8-729-900-61	TRANSISTOR DTA114ES	
Q719	8-729-900-61	TRANSISTOR DTA114ES	
Q720	8-729-900-61	TRANSISTOR DTA114ES	
Q721	8-729-900-61	TRANSISTOR DTA114ES	
Q722	8-729-900-61	TRANSISTOR DTA114ES	

Ref. No.	Part No.	Description	Remarks
Q723	8-729-900-65	TRANSISTOR DTA144ES	
Q724	8-729-900-65	TRANSISTOR DTA144ES	
Q725	8-729-900-80	TRANSISTOR DTC114ES	
Q726	8-729-900-65	TRANSISTOR DTA144ES	
Q727	8-729-900-65	TRANSISTOR DTA144ES	
Q729	8-729-900-61	TRANSISTOR DTA114ES	
Q801	8-729-900-61	TRANSISTOR DTA114ES	
Q802	8-729-900-80	TRANSISTOR DTC114ES	
Q803	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q804	8-729-209-15	TRANSISTOR 2SD2012	
Q805	8-729-209-15	TRANSISTOR 2SD2012	
Q806	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q807	8-729-900-80	TRANSISTOR DTC114ES	
Q808	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q809	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q810	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q811	8-729-140-04	TRANSISTOR 2SB1116A-L	
		< RESISTOR >	
R101	1-259-460-11	CARBON 22K 5% 1/6W	
R104	1-259-440-11	CARBON 3.3K 5% 1/6W	
R105	1-259-450-11	CARBON 8.2K 5% 1/6W	
R106	1-259-461-11	CARBON 24K 5% 1/6W	
R107	1-259-422-11	CARBON 560 5% 1/6W	
R108	1-259-476-11	CARBON 100K 5% 1/6W	
R109	1-259-436-11	CARBON 2.2K 5% 1/6W	
R110	1-249-421-11	CARBON 2.2K 5% 1/4W	
R111	1-259-467-11	CARBON 43K 5% 1/6W	
R112	1-259-428-11	CARBON 1K 5% 1/6W	
R115	1-249-421-11	CARBON 2.2K 5% 1/4W	
R121	1-259-476-11	CARBON 100K 5% 1/6W	
R122	1-259-402-11	CARBON 82 5% 1/6W	
R123	1-259-479-11	CARBON 130K 5% 1/6W	
R124	1-259-446-11	CARBON 5.6K 5% 1/6W	
R125	1-259-434-11	CARBON 1.8K 5% 1/6W	
R126	1-259-435-11	CARBON 2K 5% 1/6W	
R127	1-259-484-11	CARBON 220K 5% 1/6W	
R131	1-249-429-11	CARBON 10K 5% 1/4W	
R132	1-249-429-11	CARBON 10K 5% 1/4W	
R133	1-249-429-11	CARBON 10K 5% 1/4W	
R134	1-259-461-11	CARBON 24K 5% 1/6W	
R135	1-259-422-11	CARBON 560 5% 1/6W	
R136	1-259-452-11	CARBON 10K 5% 1/6W	
R137	1-259-476-11	CARBON 100K 5% 1/6W	
R141	1-259-444-11	CARBON 4.7K 5% 1/6W	
R142	1-259-442-11	CARBON 3.9K 5% 1/6W	
R143	1-259-440-11	CARBON 3.3K 5% 1/6W	
R144	1-259-452-11	CARBON 10K 5% 1/6W	
R145	1-249-421-11	CARBON 2.2K 5% 1/4W	

Ref. No.	Part No.	Description	Remarks
R146	1-259-444-11	CARBON 4.7K 5% 1/6W	
R151	1-249-433-11	CARBON 22K 5% 1/4W	
R152	1-249-421-11	CARBON 2.2K 5% 1/4W	
R153	1-247-862-11	CARBON 20K 5% 1/4W	
R154	1-249-409-11	CARBON 220 5% 1/4W	
R161	1-249-434-11	CARBON 27K 5% 1/4W	
R162	1-247-874-11	CARBON 62K 5% 1/4W	
R163	1-249-410-11	CARBON 270 5% 1/4W	
R181	1-249-427-11	CARBON 6.8K 5% 1/4W	
R182	1-249-435-11	CARBON 33K 5% 1/4W	
⚠R183	1-219-153-11	FUSEBLE 10 5% 1/4W	F
R184	1-247-883-00	CARBON 150K 5% 1/4W	
R201	1-259-460-11	CARBON 22K 5% 1/6W	
R204	1-259-440-11	CARBON 3.3K 5% 1/6W	
R205	1-259-450-11	CARBON 8.2K 5% 1/6W	
R206	1-259-461-11	CARBON 24K 5% 1/6W	
R207	1-259-422-11	CARBON 560 5% 1/6W	
R208	1-259-476-11	CARBON 100K 5% 1/6W	
R209	1-259-436-11	CARBON 2.2K 5% 1/6W	
R210	1-249-421-11	CARBON 2.2K 5% 1/4W	
R211	1-259-467-11	CARBON 43K 5% 1/6W	
R212	1-259-428-11	CARBON 1K 5% 1/6W	
R215	1-249-421-11	CARBON 2.2K 5% 1/4W	
R221	1-259-476-11	CARBON 100K 5% 1/6W	
R222	1-259-402-11	CARBON 82 5% 1/6W	
R223	1-259-479-11	CARBON 130K 5% 1/6W	
R224	1-259-446-11	CARBON 5.6K 5% 1/6W	
R225	1-259-434-11	CARBON 1.8K 5% 1/6W	
R226	1-259-435-11	CARBON 2K 5% 1/6W	
R227	1-259-484-11	CARBON 220K 5% 1/6W	
R231	1-249-429-11	CARBON 10K 5% 1/4W	
R232	1-249-429-11	CARBON 10K 5% 1/4W	
R233	1-249-429-11	CARBON 10K 5% 1/4W	
R234	1-259-461-11	CARBON 24K 5% 1/6W	
R235	1-259-422-11	CARBON 560 5% 1/6W	
R236	1-259-452-11	CARBON 10K 5% 1/6W	
R237	1-259-476-11	CARBON 100K 5% 1/6W	
R241	1-259-444-11	CARBON 4.7K 5% 1/6W	
R242	1-259-442-11	CARBON 3.9K 5% 1/6W	
R243	1-259-440-11	CARBON 3.3K 5% 1/6W	
R244	1-259-452-11	CARBON 10K 5% 1/6W	
R245	1-249-421-11	CARBON 2.2K 5% 1/4W	
R246	1-259-444-11	CARBON 4.7K 5% 1/6W	
R251	1-249-433-11	CARBON 22K 5% 1/4W	
R252	1-249-421-11	CARBON 2.2K 5% 1/4W	
R253	1-247-862-11	CARBON 20K 5% 1/4W	
R254	1-249-409-11	CARBON 220 5% 1/4W	
R261	1-249-434-11	CARBON 27K 5% 1/4W	
R262	1-247-874-11	CARBON 62K 5% 1/4W	
R263	1-249-410-11	CARBON 270 5% 1/4W	

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Replace only with part number specified.

Note:
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Ref. No.	Part No.	Description			Remarks
R281	1-249-427-11	CARBON	6.8K	5% 1/4W	
R282	1-249-435-11	CARBON	33K	5% 1/4W	
⚠R283	1-219-153-11	FUSEBLE	10	5% 1/4W	F
R284	1-247-883-00	CARBON	150K	5% 1/4W	
R501	1-259-428-11	CARBON	1K	5% 1/6W	
R502	1-215-455-00	METAL	27K	1% 1/6W	
R504	1-249-418-11	CARBON	1.2K	5% 1/4W	
R505	1-249-427-11	CARBON	6.8K	5% 1/4W	
R507	1-247-848-11	CARBON	5.1K	5% 1/4W	
R508	1-249-433-11	CARBON	22K	5% 1/4W	
R509	1-249-436-11	CARBON	39K	5% 1/4W	
R510	1-249-421-11	CARBON	2.2K	5% 1/4W	
R511	1-249-421-11	CARBON	2.2K	5% 1/4W	
R512	1-249-441-11	CARBON	100K	5% 1/4W	
R513	1-249-441-11	CARBON	100K	5% 1/4W	
R514	1-247-836-11	CARBON	1.6K	5% 1/4W	
R516	1-249-437-11	CARBON	47K	5% 1/4W	
R517	1-249-433-11	CARBON	22K	5% 1/4W	
R518	1-249-427-11	CARBON	6.8K	5% 1/4W	
R519	1-249-437-11	CARBON	47K	5% 1/4W	
R520	1-249-434-11	CARBON	27K	5% 1/4W	
R521	1-247-704-11	CARBON	220	5% 1/4W	
R522	1-247-704-11	CARBON	220	5% 1/4W	
R523	1-249-429-11	CARBON	10K	5% 1/4W	
R524	1-249-429-11	CARBON	10K	5% 1/4W	
R525	1-249-429-11	CARBON	10K	5% 1/4W	
R526	1-249-422-11	CARBON	2.7K	5% 1/4W	
R527	1-249-437-11	CARBON	47K	5% 1/4W	
R528	1-249-441-11	CARBON	100K	5% 1/4W	
R529	1-249-431-11	CARBON	15K	5% 1/4W	
R531	1-259-428-11	CARBON	1K	5% 1/6W	
R532	1-215-455-00	METAL	27K	1% 1/6W	
R533	1-249-437-11	CARBON	47K	5% 1/4W	
R534	1-249-441-11	CARBON	100K	5% 1/4W	
R535	1-215-454-00	METAL	24K	1% 1/6W	
R563	1-249-441-11	CARBON	100K	5% 1/4W	
R564	1-249-429-11	CARBON	10K	5% 1/4W	
R565	1-249-441-11	CARBON	100K	5% 1/4W	
R566	1-249-428-11	CARBON	8.2K	5% 1/4W	
R567	1-249-441-11	CARBON	100K	5% 1/4W	
R568	1-249-423-11	CARBON	3.3K	5% 1/4W	
R569	1-249-441-11	CARBON	100K	5% 1/4W	
R570	1-249-429-11	CARBON	10K	5% 1/4W	
R571	1-249-429-11	CARBON	10K	5% 1/4W	
R572	1-249-417-11	CARBON	1K	5% 1/4W	
R581	1-249-429-11	CARBON	10K	5% 1/4W	
R582	1-249-429-11	CARBON	10K	5% 1/4W	
R583	1-247-822-11	CARBON	430	5% 1/4W	
R584	1-249-417-11	CARBON	1K	5% 1/4W	
R585	1-247-862-11	CARBON	20K	5% 1/4W	

Ref. No.	Part No.	Description			Remarks
R586	1-249-417-11	CARBON	1K	5% 1/4W	
R587	1-249-440-11	CARBON	82K	5% 1/4W	
R588	1-249-440-11	CARBON	82K	5% 1/4W	
R589	1-249-390-11	CARBON	5.6	5% 1/6W	
R590	1-249-390-11	CARBON	5.6	5% 1/6W	
R591	1-249-421-11	CARBON	2.2K	5% 1/4W	
R592	1-249-429-11	CARBON	10K	5% 1/4W	
R601	1-249-439-11	CARBON	68K	5% 1/4W	
R602	1-249-435-11	CARBON	33K	5% 1/4W	
R603	1-249-437-11	CARBON	47K	5% 1/4W	
R604	1-247-874-11	CARBON	62K	5% 1/4W	
R605	1-249-441-11	CARBON	100K	5% 1/4W	
R606	1-249-433-11	CARBON	22K	5% 1/4W	
R607	1-247-874-11	CARBON	62K	5% 1/4W	
R608	1-249-437-11	CARBON	47K	5% 1/4W	
R609	1-247-880-11	CARBON	110K	5% 1/4W	
R610	1-247-878-00	CARBON	91K	5% 1/4W	
R611	1-249-439-11	CARBON	68K	5% 1/4W	
R612	1-247-887-00	CARBON	220K	5% 1/4W	
R613	1-249-439-11	CARBON	68K	5% 1/4W	
R614	1-247-872-11	CARBON	51K	5% 1/4W	
R616	1-247-874-11	CARBON	62K	5% 1/4W	
R617	1-247-874-11	CARBON	62K	5% 1/4W	
R618	1-247-886-11	CARBON	200K	5% 1/4W	
R619	1-249-435-11	CARBON	33K	5% 1/4W	
R701	1-247-887-00	CARBON	220K	5% 1/4W	
R702	1-247-887-00	CARBON	220K	5% 1/4W	
R703	1-249-436-11	CARBON	39K	5% 1/4W	
R704	1-247-887-00	CARBON	220K	5% 1/4W	
R705	1-249-436-11	CARBON	39K	5% 1/4W	
R706	1-247-887-00	CARBON	220K	5% 1/4W	
R707	1-249-431-11	CARBON	15K	5% 1/4W	
R708	1-247-868-11	CARBON	36K	5% 1/4W	
R709	1-249-435-11	CARBON	33K	5% 1/4W	
R710	1-249-435-11	CARBON	33K	5% 1/4W	
R711	1-247-872-11	CARBON	51K	5% 1/4W	
R712	1-249-435-11	CARBON	33K	5% 1/4W	
R713	1-249-435-11	CARBON	33K	5% 1/4W	
R714	1-249-435-11	CARBON	33K	5% 1/4W	
R715	1-249-435-11	CARBON	33K	5% 1/4W	
R716	1-249-435-11	CARBON	33K	5% 1/4W	
R717	1-249-435-11	CARBON	33K	5% 1/4W	
R719	1-249-429-11	CARBON	10K	5% 1/4W	
⚠R720	1-212-954-11	FUSEBLE	6.8	5% 1/2W	F
R721	1-249-429-11	CARBON	10K	5% 1/4W	
R722	1-249-431-11	CARBON	15K	5% 1/4W	
R723	1-247-834-11	CARBON	1.3K	5% 1/4W	
R724	1-249-424-11	CARBON	3.9K	5% 1/4W	
R725	1-247-834-11	CARBON	1.3K	5% 1/4W	
R726	1-249-427-11	CARBON	6.8K	5% 1/4W	

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Ref. No.	Part No.	Description				Remarks
R727	1-249-430-11	CARBON	12K	5%	1/4W	
⚠R728	1-212-952-00	FUSEBLE	5.6	5%	1/2W	F
R729	1-249-435-11	CARBON	33K	5%	1/4W	
R730	1-249-435-11	CARBON	33K	5%	1/4W	
R731	1-249-425-11	CARBON	4.7K	5%	1/4W	
R732	1-249-417-11	CARBON	1K	5%	1/4W	
R733	1-247-903-00	CARBON	1M	5%	1/4W	
R735	1-249-421-11	CARBON	2.2K	5%	1/4W	
⚠R736	1-212-942-00	FUSEBLE	2.2	5%	1/2W	F
R737	1-249-429-11	CARBON	10K	5%	1/4W	
R738	1-249-429-11	CARBON	10K	5%	1/4W	
R739	1-249-429-11	CARBON	10K	5%	1/4W	
R740	1-249-425-11	CARBON	4.7K	5%	1/4W	
R742	1-249-441-11	CARBON	100K	5%	1/4W	
R743	1-249-441-11	CARBON	100K	5%	1/4W	
R744	1-249-441-11	CARBON	100K	5%	1/4W	
R745	1-249-432-11	CARBON	18K	5%	1/4W	
R746	1-249-429-11	CARBON	10K	5%	1/4W	
R747	1-249-429-11	CARBON	10K	5%	1/4W	
R748	1-249-429-11	CARBON	10K	5%	1/4W	
R749	1-247-862-11	CARBON	20K	5%	1/4W	
R750	1-247-866-11	CARBON	30K	5%	1/4W	
R752	1-249-441-11	CARBON	100K	5%	1/4W	
R753	1-249-441-11	CARBON	100K	5%	1/4W	
R754	1-249-441-11	CARBON	100K	5%	1/4W	
R755	1-249-441-11	CARBON	100K	5%	1/4W	
R770	1-249-441-11	CARBON	100K	5%	1/4W	
R802	1-249-425-11	CARBON	4.7K	5%	1/4W	
R803	1-249-420-11	CARBON	1.8K	5%	1/4W	
R804	1-249-412-11	CARBON	390	5%	1/4W	
R805	1-249-427-11	CARBON	6.8K	5%	1/4W	
R806	1-249-419-11	CARBON	1.5K	5%	1/4W	
R807	1-259-452-11	CARBON	10K	5%	1/6W	
R808	1-259-432-11	CARBON	1.5K	5%	1/6W	
R809	1-249-425-11	CARBON	4.7K	5%	1/4W	
R810	1-249-409-11	CARBON	220	5%	1/4W	
R811	1-259-428-11	CARBON	1K	5%	1/6W	
R812	1-259-448-11	CARBON	6.8K	5%	1/6W	
R813	1-259-448-11	CARBON	6.8K	5%	1/6W	
R814	1-249-417-11	CARBON	1K	5%	1/4W	
R815	1-249-425-11	CARBON	4.7K	5%	1/4W	
R816	1-249-425-11	CARBON	4.7K	5%	1/4W	
R817	1-249-425-11	CARBON	4.7K	5%	1/4W	
R818	1-249-433-11	CARBON	22K	5%	1/4W	
R819	1-249-436-11	CARBON	39K	5%	1/4W	
R820	1-249-429-11	CARBON	10K	5%	1/4W	
R821	1-249-437-11	CARBON	47K	5%	1/4W	
⚠R825	1-219-135-11	FUSEBLE	0.15	10%	1/4W	
⚠R826	1-219-137-11	FUSEBLE	0.33	10%	1/4W	

Ref. No.	Part No.	Description				Remarks
		< VARIABLE RESISTOR >				
RV121	1-238-015-11	RES, ADJ, CARBON 4.7K				
RV141	1-238-017-11	RES, ADJ, CARBON 22K				
RV181	1-238-017-11	RES, ADJ, CARBON 22K				
RV221	1-238-015-11	RES, ADJ, CARBON 4.7K				
RV241	1-238-017-11	RES, ADJ, CARBON 22K				
RV281	1-238-017-11	RES, ADJ, CARBON 22K				
RV501	1-241-403-11	RES, VAR, CARBON 50K/50K (REC LEVEL)				
RV502	1-238-904-11	RES, VAR, CARBON 50K/50K (BALANCE)				
RV503	1-241-404-11	RES, VAR, CARBON 5K/5K (CALIBRATION REC LEVEL)				
RV505	1-238-085-11	REA, VAR, CARBON 20K/20K (PHONE LEVEL)				
RV506	1-241-747-11	RES, VAR, CARBON 10K (CALIBRATION BIAS)				
RV508	1-238-022-51	RES, ADJ, CARBON 330K				
		< SWITCH >				
S501	1-572-154-11	SWITCH, ROTARY (DOLBY NR)				
S502	1-554-118-00	SWITCH, PUSH (1 KEY)(MPX FILTER)				
S701	1-571-520-11	SWITCH, SLIDE (TIMER)				
S801	1-554-118-00	SWITCH, PUSH (1 KEY)(POWER)				
		< TRANSFORMER >				
T181	1-433-344-11	TRANSFORMER, BIAS OSCILLATION				
T281	1-433-344-11	TRANSFORMER, BIAS OSCILLATION				
T501	1-433-343-11	TRANSFORMER, BIAS OSCILLATION				
		< VIBRATOR >				
X701	1-577-359-21	VIBRATOR, CERAMIC 4.19MHz				
**********						
*	1-632-741-11	REEL MOTOR BOARD				
		**********				
		< CAPACITOR >				
C1051	1-124-907-11	ELECT	10uF	20%	50V	
C1052	1-124-907-11	ELECT	10uF	20%	50V	
C1053	1-164-159-11	CERAMIC	0.1uF		50V	
		< CONNECTOR >				
* CN1051	1-564-499-11	PIN, CONNECTOR 6P				
* CN1052	1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P				
* CN1053	1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P				
		< RESISTOR >				
R1051	1-249-414-11	CARBON	560	5%	1/4W	
**********						

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remarks
		MISCELLANEOUS	
		*************	
⚠12	1-555-795-00	CORD, POWER, EULO PLUG (AEP, Germany)	
⚠12	1-556-035-00	CORD, POWER (UK)	
⚠12	1-558-945-11	CORD, POWER (POLAR. SPT-1) (Canadian)	
D1051	8-719-980-85	DIODE SLF325C	
HRP1001	1-543-733-11	HEAD, MAGNETIC (RECORD/PLAYBACK)	
M1051	X-3356-638-1	MOTOR (REEL R) ASSY	
M1052	X-3356-604-1	MOTOR (ASSIST) ASSY	
M1053	X-3356-646-1	MOTOR (CAPSTAN V1) ASSY	
S1001	1-466-238-11	ENCODER, ROTARY	
⚠T901	1-450-100-11	TRANSFORMER, POWER (Canadian)	
⚠T901	1-450-399-11	TRANSFORMER, POWER (AEP, UK, Germany)	
**********			
		ACCESSORIES & PACKING MATERIALS	
		********************************	
	1-558-271-11	CORD, CONNECTION	
	1-558-271-11	CORD, CONNECTION	
*	3-350-830-01	CUSHION	
*	3-376-443-51	INDIVIDUAL CARTON	
	3-755-084-11	MANUAL, INSTRUCTION (ENGLISH/FRENCH /SPANISH/PORTUGUESE) (Canadina, AEP, UK)	
	3-755-084-41	MANUAL, INSTRUCTION (GERMAN/SWEDISH /DUTCH/ITALIAN) (AEP)	
	3-755-084-51	MANUAL, INSTRUCTION (GERMAN) (Germany)	
**********			

Ref. No.	Part No.	Description	Remarks
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#2	7-682-547-04	SCREW +BVTT 3X6 (S)	
#3	7-682-548-09	SCREW +BVTT 3X8 (S)	
#4	7-621-849-00	SCREW (BV/RING)	
#5	7-621-255-35	SCREW +BVTT 2X5 (S)	
#6	7-621-255-20	SCREW +BVTT 2X4 (S)	
#7	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
#8	7-685-132-19	SCREW +BTP 2.6X5 TYPE2 N-S	
#9	7-621-772-20	SCREW +B 2X5	

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

9-957-035-11

Sony Corporation
Audio Group

English
92E1663-1
Printed in Japan
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Published by Customer Relations and Service Group