

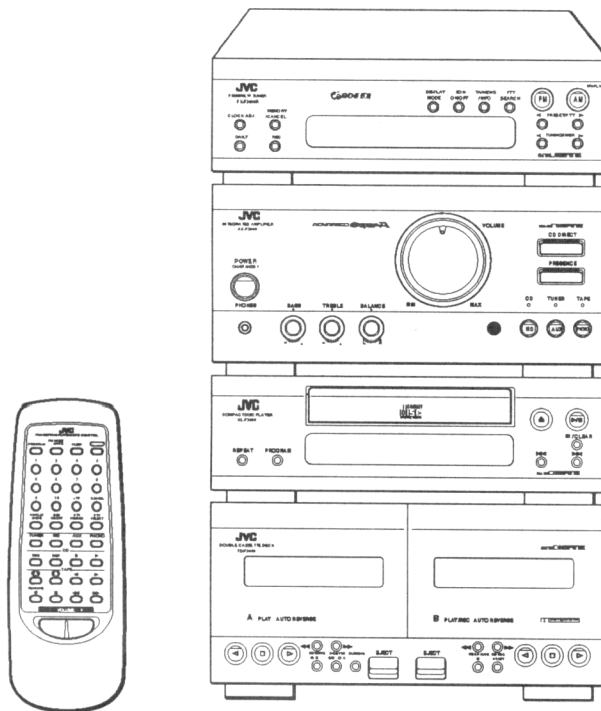
JVC

SERVICE MANUAL

COMPACT COMPONENT SYSTEM

TD-F3000

DOUBLE CASSETTE DECK



Area Suffix	
BS	the U.K.
C	Canada
EF	Continental Europe Except Germany & Italy
EN	Nordic Countries
G	Germany
J	the U.S.A
UB	Hong Kong
US	Singapore
UT	Taiwan
U	Universal Except All of Above

Contents

Parts List

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Safety Precautions

1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (Δ) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage current check (Electrical shock hazard testing)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).

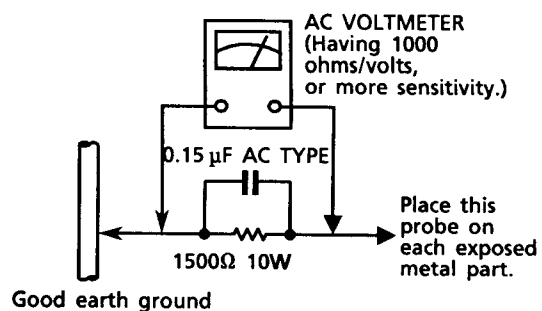
- Alternate check method

Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500 Ω 10 W resistor paralleled by a 0.15 μ F AC-type capacitor between an exposed metal part and a known good earth ground.

Measure the AC voltage across the resistor with the AC voltmeter.

Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor.

Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

TD-F3000

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Description of Major LSIs

■ HD614081SE39 (IC203) : Deck controller

Terminal Layout

NR LED	1	64	A.FWD. LED
NR LED(C)	2	63	A. REV. LED
A SPEED UP	3	62	B FWD. LED
B SPEED UP	4	61	B. REV. LED
MUSIC IN	5	60	REC LED
B.FWD.REEL MOTOR	6	59	REV. MODE
B.REV.REEL MOTOR	7	58	BIAS
B REV CAM MOTOR	8	57	NR OFF
B FWD CAM MOTOR	9	56	REC MUTE
A CAM SW-2	10	55	DCS IN
A CAM SW-1	11	54	DCS OUT
A CAM SW-0	12	53	GND
A PULSE IN	13	52	4.19MHzOSC IN
B CAM SW-2	14	51	4.19MHzOSC IN
B CAM SW-1	15	50	TO VCC
B CAM SW-0	16	49	RESET IN
B PULSE IN	17	48	KEY&SW IN-4
POWER OFF IN	18	47	KEY&SW IN-3
GND	19	46	KEY&SW IN-2
A FWD REEL MOTOR	20	45	KEY&SW IN-1
A REV REEL MOTOR	21	44	KEY OUT-4
A REV CAM MOTOR	22	43	KEY OUT-3
A FWD CAM MOTOR	23	42	KEY OUT-2
NR REC	24	41	KEY OUT-1
A MUTE	25	40	SWOUT-2
B MUTE	26	39	SWOUT-1
PLAY MUTE	27	38	HI-SPEED DUBBING
CAP.MOTOR ON	28	37	H.S.CrO2
REC	29	36	H.S. ME
FADE CTRL.	30	35	H.S.NORM.
BEQ	31	34	CrO2
+5V	32	33	METAL

Key matrix

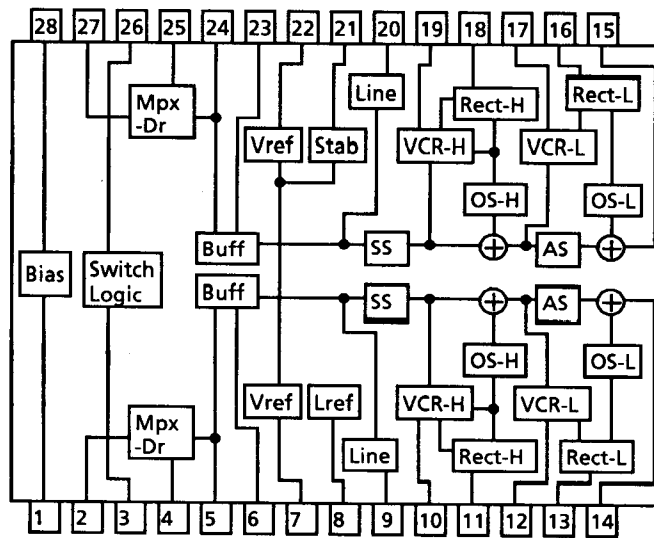
	KEY&SW-1 (PIN45)	KEY&SW-2 (PIN46)	KEY&SW-3 (PIN47)	KEY&SW-4 (PIN48)
KEY OUT 1 (PIN41)	A ◀ (S300)	A ◀◀ (S301)	A ▶▶ (S302)	A ▶ (S303)
KEY OUT 2 (PIN42)	B ◀ (S310)	B ◀◀ (S311)	B ▶▶ (S312)	B ▶ (S313)
KEY OUT 3 (PIN43)	A ■ (S320)	B ■ (S321)	REC PAUSE (S322)	—
KEY OUT 4 (PIN44)	A▶▶B (S330)	DOLBY (S331)	REV. MODE (S332)	CD REC (S333)
SW OUT 1 (PIN39)	—	B CrO2	METAL	—
SW OUT 2 (PIN40)	B PACK	REV REC	FWD REC	A PACK

Terminal Description

Pin NO.	Symbol	I/O	Function	Pin NO.	Symbol	I/O	Function
1	NR LED	O	Dolby B indicator signal output	33	METAL	O	Metal tape , normal speed record
2	NR LED(C)	O	Dolby C indicator signal output	34	CrO ₂	O	CrO ₂ tape , normal speed record
3	A S UP	O	Reel speed up control (Deck A)	35	HS NORM	O	Not used
4	B S UP	O	Reel speed up control (Deck B)	36	HS METAL	O	Metal tape , high speed record
5	MUSIC IN	I	Music scan signal input	37	HS CrO2	O	CrO2 tape , high speed record
6	B F RM	O	Reel control signal for forward (Deck B)	38	HI DUB	O	Not used
7	B R RM	O	Reel control signal for reverse (Deck B)	39	SW O1	O	Keymatrix output for leaf switch
8	B R CM	O	Cam control signal for reverse (Deck B)	40	SW O2	O	Keymatrix output for leaf switch
9	B F CM	O	Cam control signal for forward (Deck B)	41	KEY O1	O	Key matrix output
10	A CSW2	I	Cam data input	42	KEY O2	O	Key matrix output
11	A CSW1	I	Cam data input	43	KEY O3	O	Key matrix output
12	A CSW0	I	Cam data input	44	KEY O4	O	Key matrix output
13	A.PULS IN	I	Reel pulse input from deck A	45	KEY/SW I1	I	Key matrix input
14	B CSW2	I	Cam data input	46	KEY/SW I2	I	Key matrix input
15	B CSW1	I	Cam data input	47	KEY/SW I3	I	Key matrix input
16	B CSW0	I	Cam data input	48	KEY/SW I4	I	Key matrix input
17	B.PULSE IN	I	Reel pulse input from deck B	49	RESET	I	Reset input
18	P.CONT	I	Inhibit input from system controller	50	TO VCC	--	Connected to VCC
19	GND	--	GND	51	OSC	--	Oscillation terminal
20	A F RM	O	Reel control signal for forward (Deck A)	52	OSC	--	Oscillation terminal
21	A R RM	O	Reel control signal for reverse (Deck A)	53	GND	--	GND
22	A R CM	O	Cam control signal for reverse (Deck A)	54	DCS OUT	O	Compulink output
23	A F CM	O	Cam control signal for forward (Deck A)	55	DCS IN	I	Compulink input
24	NR REC	O	It is "H" when recording with NR on	56	REC MUTE	O	Recording mute control
25	A MUTE	O	It is "H" when deck A is not playing	57	NR OFF	O	NR on/off control
26	B MUTE	O	It is "H" when deck B is not playing	58	BIAS	O	Bias on/off control
27	PLAY MU	O	Deck mute	59	REV MODE	O	Indication control for reverse mode
28	CAP CONT	O	Capstan on/off control	60	REC LED	O	Indication control for record
29	REC	O	It is "H" when recording	61	BREV LED	O	Indication control for reverse playback
30	FADE CON	O	It is "H" when recording with fade	62	BFWD LED	O	Indication control for forward playback
31	BEQ	O	It is "L" when CrO2 tape is in deck B	63	AREV LED	O	Indication control for reverse playback
32	+5V	--	Power supply	64	AFWD LED	O	Indication control for forward playback

■ AN7374K (IC201) : Dolby IC

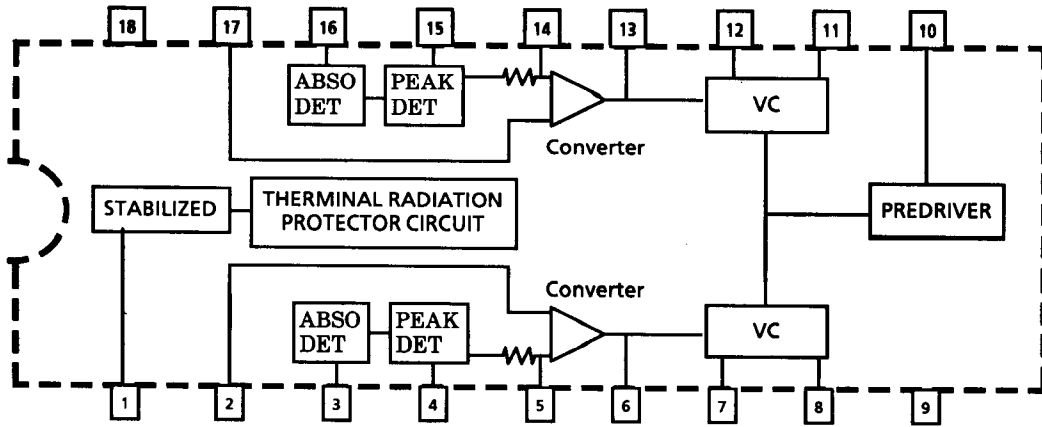
1. Block Diagram



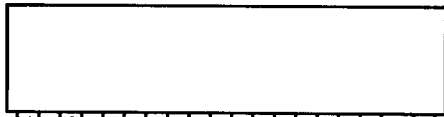
2. Pin function

Pin No	Symbol	Function	Pin No	Symbol	Function
1	GND	GND	15	REC OUT-L	Ch. B REC-OUT
2	REC IN-R	Ch. A REC-IN	16		Ch. B LLS control signal rectifier
3	OFF/B/C	C-type/B-type/OFF NR switch	17		Ch. B LLS control resistance
4	PB IN-R	Ch. A PB-IN	18		Ch. B HLS control signal rectifier
5		Ch. A MPX filter sriver output	19		Ch. B HLS control resistance
6		Ch. A Processor input	20	PB OUT-L	Ch. B LINE -OUT
7		Ch. A reference voltage output	21		Reference voltage input
8		Reference curent generator	22		Ch. B reference voltage output
9	PB OUT-R	Ch. A LINE -OUT	23		Ch. B Processor input
10		Ch. A HLS control resistance	24		Ch. B MPX filter sriver output
11		Ch. A HLS control signal rectifier	25	PB IN-L	Ch. B PB-IN
12		Ch. A LLS control resistance	26	PB/REC	PB/REC/PBmpx Mode switch
13		Ch. A LLS control signal rectifier	27	REC IN-L	Ch. B REC-IN
14	REC OUT-R	Ch. A REC-OUT	28	Vcc	Vcc

■ μ PC1297CA (IC341) : Dolby HX PRO System IC



■ LB1641 (IC204~207) : DC Motor Driver

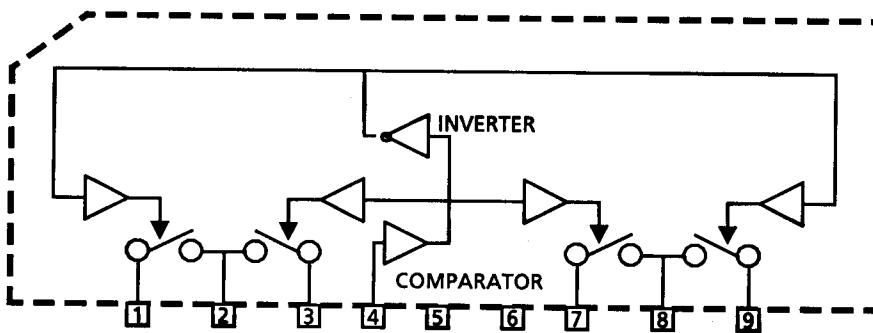


1 GND 2 P1 3 IN1 4 VCC1 5 P2
 6 OUT1 7 VZ 8 IN2 9 VCC2 10 OUT2

Input		Output		Mode
IN1	IN2	OUT1	OUT2	
0	0	0	0	Brake
1	0	1	0	CLOCKWISE
0	1	0	1	COUNTER-CLOCKWISE
1	1	0	0	Brake

∞ : Hi impedance

■ μ PC1330 HA (IC304) : HEAD SWITCH

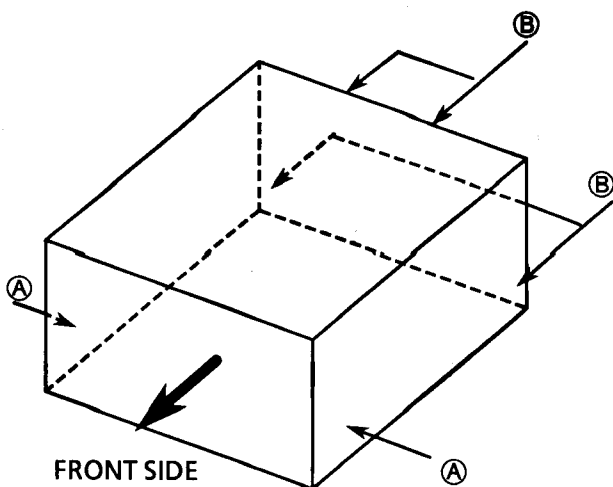


4pin	
PB	L
REC	H

Disassembly Procedures

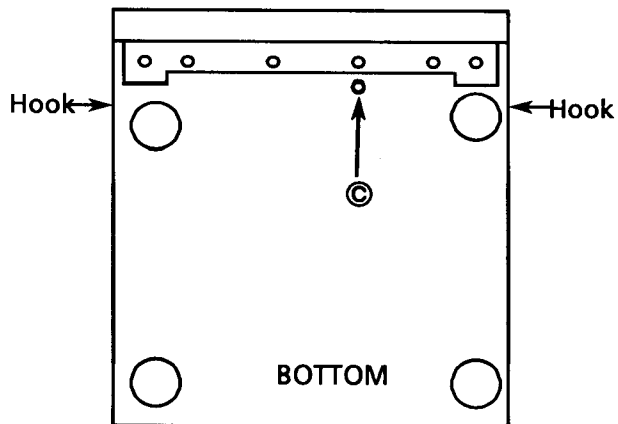
(1) Removing the top cover

1. Remove 6 screws **(A)** and **(B)** fastening the rear and sides of the top cover to remove the cover.



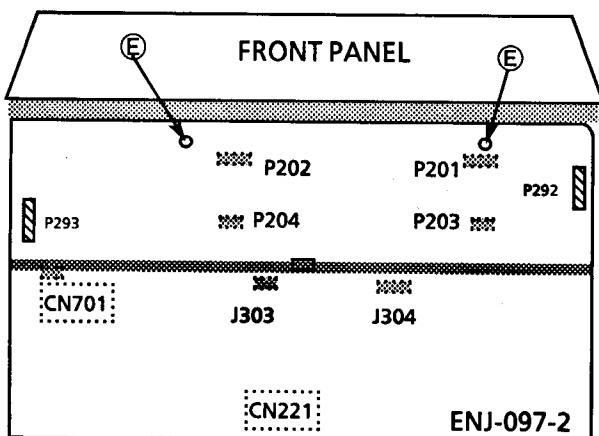
(2) Removing the Front panel assembly with same P.C.Bard

1. Remove the top cover.
3. Disconnect the connectors CN221.
4. Remove a screw **(C)** and 2 hooks fastening the assembly with chassis to remove the assembly.



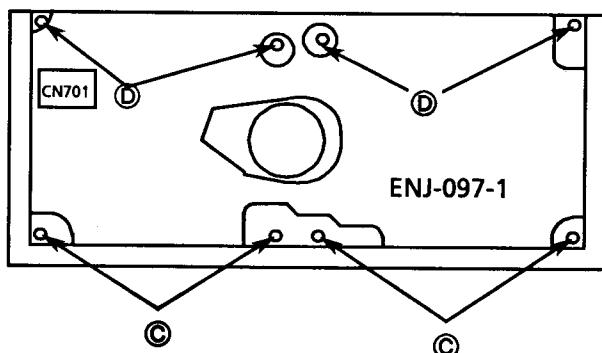
(3) Removing the Deck control circuit board (ENJ-097-2)

1. Remove the top cover.
2. Remove the 2 screws **(E)** fixing the circuit board.
3. Disconnect the connectors P292,293 and CN701.



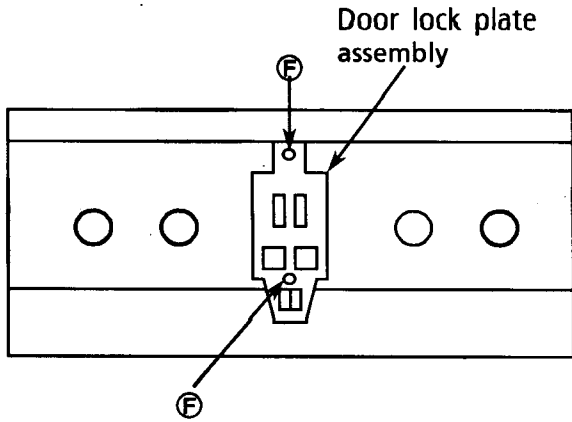
(4) Removing the mechanism assembly (ENJ-097-1)

1. Remove the top cover, frontpanel assembly and deck control circuit board.
2. Remove 8 screws **(C)** and **(D)** fastening mechanism assembly

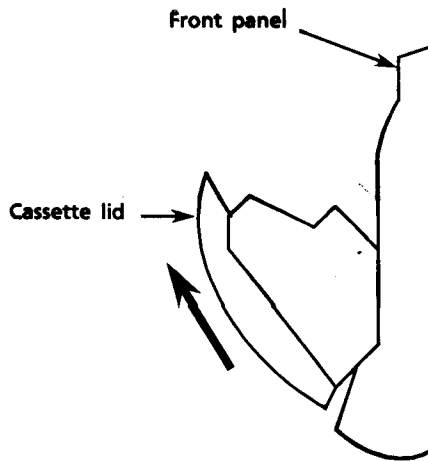


- (A)** .. SD5G3008N **(B)** ... GBSG3008CC **(C)** ... SBST3006Z **(D)** ... SBSF3008Z
(E) .. SDST2604Z

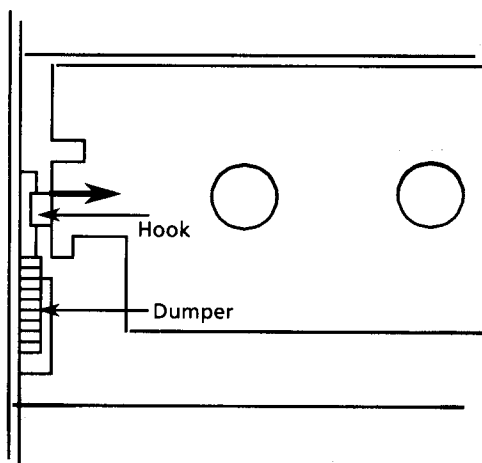
- (5) Removing the door lock plate assembly
1. Remove the mechanism assembly.
 2. Remove the 2 screws (F) fixing the assembly.
 3. Open the cassette doors to remove the assembly.



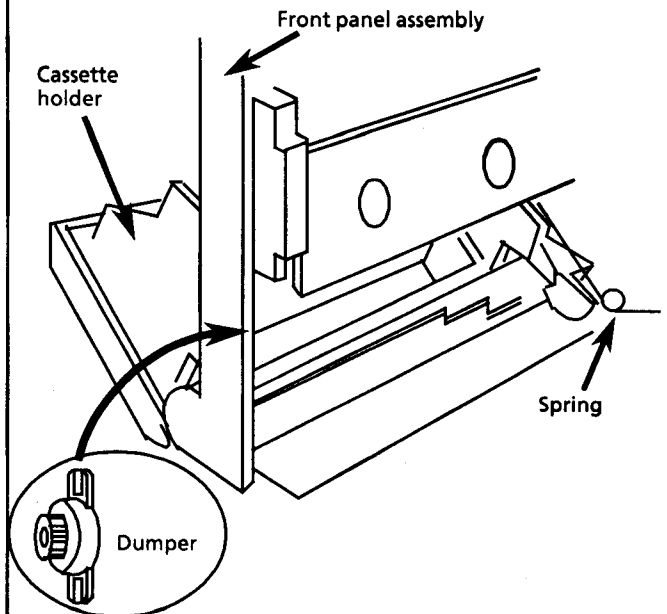
- (6) Removing the cassette lids
1. Push the eject button to open the cassette doors.
 2. Slide the lids up to remove them.



- (7) Removing the dumpers
1. Remove the mechanism assembly.
 2. Press the hook and release it to remove the dumper. (See an arrow)

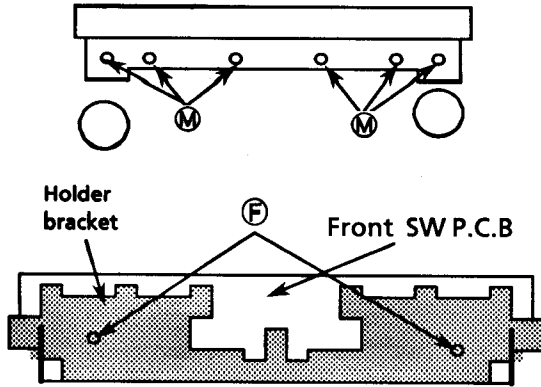


- (8) Removing the Cassette holder
1. Remove the mechanism assembly.
 2. Open the cassette door.
 3. Remove the spring.
 4. Remove the cassette holder.

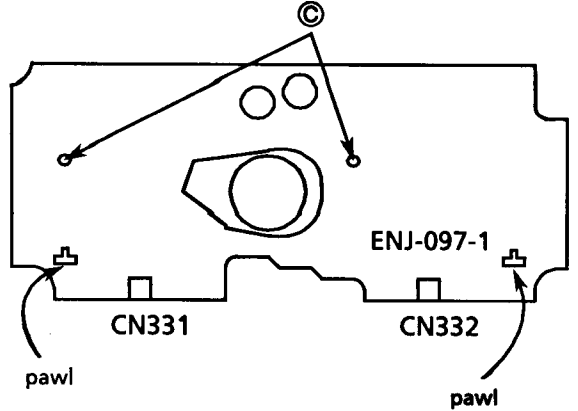


(F) .. SDSF2608Z

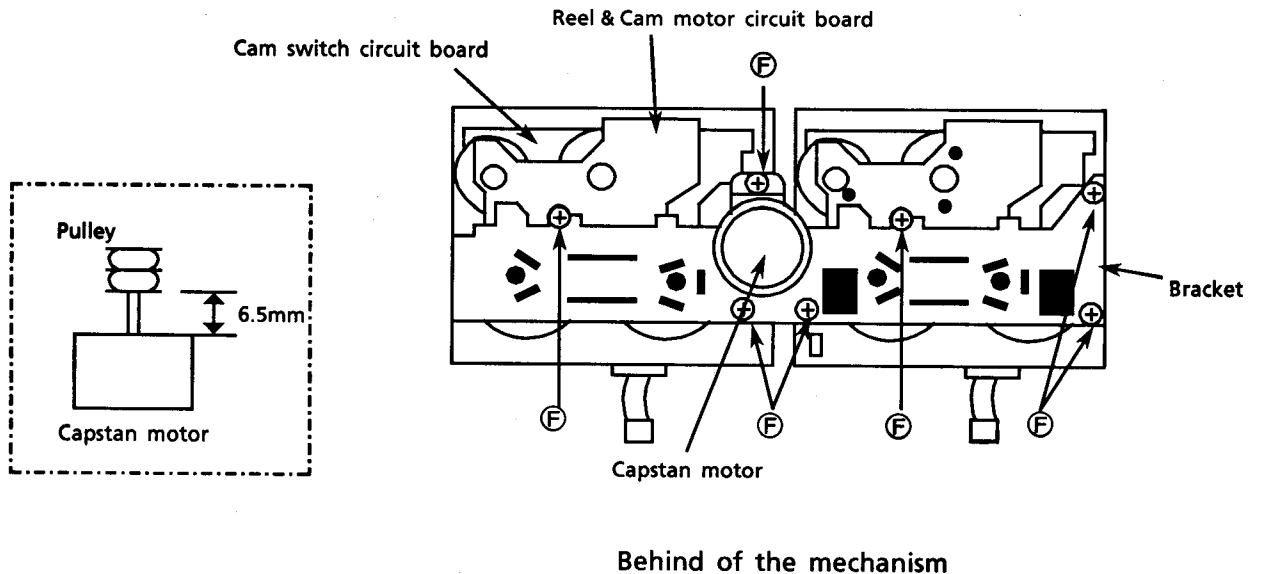
- (9) Removing the Front SW circuit board (ENJ-097-3)
1. Remove the mechanism assembly and cassette holder.
 2. Remove the 6 screws (M) to remove the holder bracket fixing the SW circuit board.
 3. Remove 2 screws (F) to remove the circuit board.



- (10) Removing the deck audio circuit board (ENJ-097-1)
1. Remove the front panel assembly and Deck control circuit board (ENJ-097-2).
 2. Disconnect CN331 and CN332.
 3. Remove the 2 screws (C) to remove the circuit board. (Pay attention to the pawls.)



- (11) Removing the capstan motor
1. Remove the deck audio circuit board.
 2. Remove the 7 screws (F) fixing the bracket.
 3. Release the hooks holding the bracket to remove the bracket with the capstan motor.
 4. Remove the 2 screws fixing the motor to remove it.



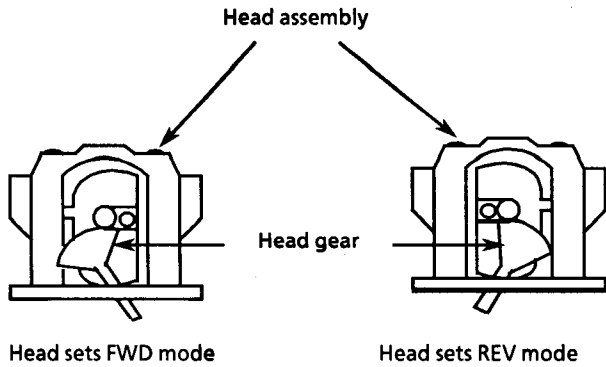
© .. SBST3006Z

(F) ... SDSF2608Z

(M) ... SDST3008CC

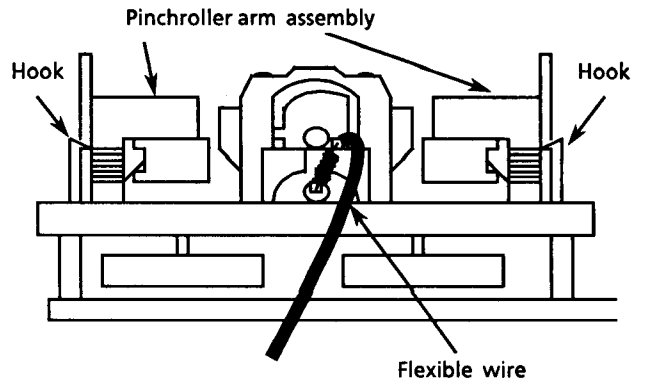
(12) Installing the head assembly

The direction of the head is changed with the head gear. When servicing, install the head gear according to the direction of the head.



(13) Removing the pinchroller arm assembly

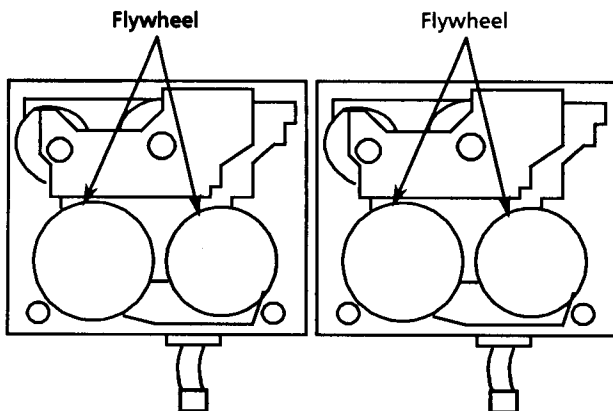
1. Remove the mechanism assembly.
2. Release the hook holding the assembly to remove it.



Bottom view of the mechanism

(14) Removing the Flywheels

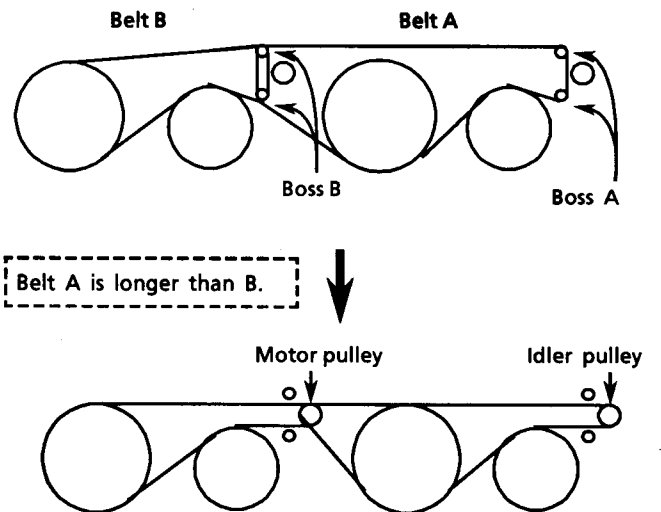
1. Remove the deck audio circuit board.
2. Remove the 7 screws $\text{\textcircled{E}}$ and release the hooks holding the bracket to remove the bracket with the capstan motor.
3. Remove the flywheel.



Behind of the mechanism

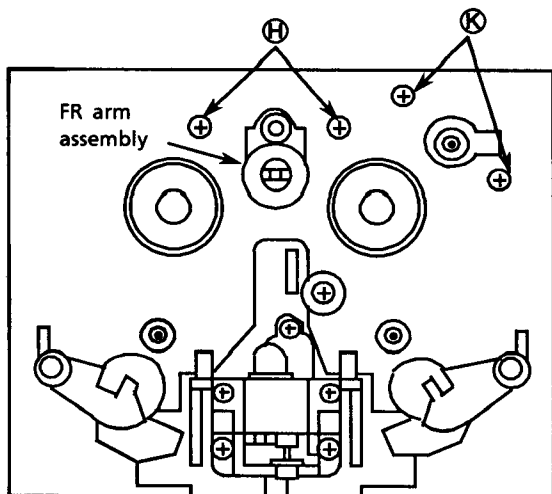
(15) How to install the belts

1. Install the belts as shown in the figure below.
When putting the belts, put the belt B first.
2. Install the bracket with the capstan motor to put the belts on the pulleys.



(16) Removing the reel & cam motor

1. Remove the flywheel.
2. Remove the screws **Ⓚ** and **Ⓜ** fixing the motors to remove the reel & cam motor circuit board.
3. Unsolder the motors to remove them.

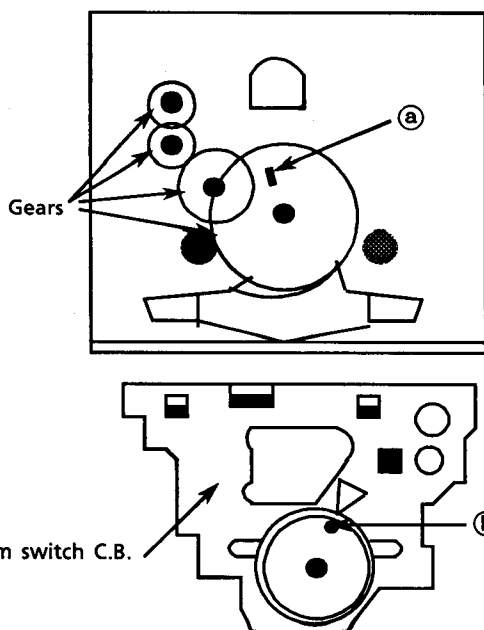


Front view of the mechanism

(17) Removing the cam switch circuit board

1. Remove the flywheel.
2. Remove the reel & cam motor circuit board.
3. Release the hook holding the cam switch circuit board and remove the screw to remove it.

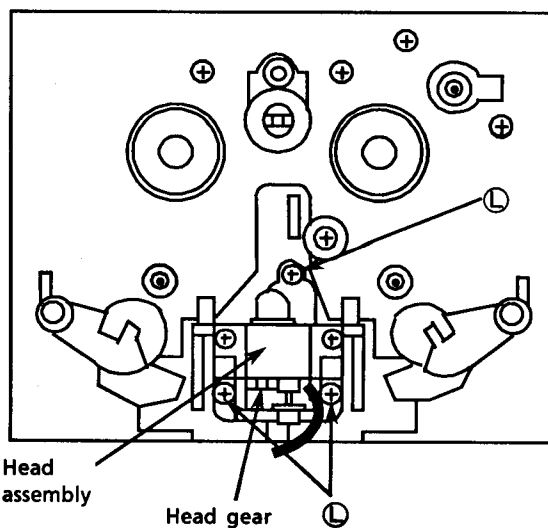
※ When installing the cam switch circuit board, assemble the circuit board so that the part **ⓐ** meets part **ⓑ**.



Cam switch C.B.

(18) Removing the head assembly

1. Remove the mechanism assembly. (Refer to Item 8)
2. Disconnect the connector CN331 or CN332 on the deck audio circuit board.
3. Remove the 3 screws **Ⓛ** fixing the head assembly to remove it.



Front view of the mechanism

Ⓜ VKZ4705-001

Ⓚ VKZ4705-002

Ⓛ SDST2004Z

Adjustment Procedures (Cassette Deck)

1. Measuring instruments

Audio frequency signal generator (0dbs output at the 600 ohm output terminal from 50Hz to 20KHz)

Electronic voltmeter

Frequency counter

Wow & Flutter meter

Distortion Meter with band pass filter

Attenuator (600 ohm impedance)

A resistor with 600Ω

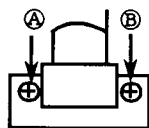
Standard Tape

0dBs = 0.775V

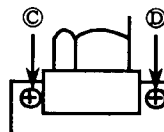
Tape No.	Frequency	Level (Wow & Fkutter)	Purpose
VTT-703L	10kHz	-10dBs	Head azimuth , Frequency Response
VTT-712	3000Hz	0dBs 0.025%WRMS	Tape Speed , Wow & Flutter
VTT-724	1kHz	-4dBs	Standard Level
TMT-6447	—	—	Blunk Skip
TMT-6247 , TMT-6237	—	—	Music Scan
TMT-7046	—	—	Recording standard Normal : UR
AC-712	—	—	Recording standard METAL : MA
AC-513	—	—	Recording standard CrO ₂ : SA
TW-2111, TW-2121	—	—	Forward / reverse play torque measuring
TW-2231	—	—	Feed forward / rewind torque measuring
C-120 Tape	—	—	Confirming the tape running

2. Adjustment and repairing the mechanism

Item	Adjustment method	Standard value	Remarks
Head azimuth	<p>Deck A</p> <ol style="list-style-type: none"> 1. Connect an electronic voltmeter to the DOLBY TP (figure 3) to playback VTT-703L. 2. Adjust screw ① so that the indication of the voltmeter becomes maximum when PLAY (▶) is pressed. 3. Adjust screw ② so that the indication of the voltmeter becomes maximum when PLAY (◀) is pressed. <p>Deck B</p> <ol style="list-style-type: none"> 4. Adjust screw ③ so that the indication of the voltmeter becomes maximum when PLAY (▶) is pressed. 5. Adjust screw ④ so that the indication of the voltmeter becomes maximum when PLAY (◀) is pressed. 6. After making the adjustment, apply screw lock to prevent screws ①, ②, ③ and ④ coming loose. 	Maximum	<ol style="list-style-type: none"> 1. Refer to figure 1. 2. When the specified characteristic cannot be obtained because of head wear, excessive magnetization, etc., replace the head assembly and adjust the head azimuth. Also, perform the electric adjustment. 3. When there is the difference of more than 3 ~ 4 dB between left and right output levels, replace the head assembly to avoid complaints.
Playback torque	1. Measure the torque in the playback mode by the torqu meter.	26 ~ 62 g-cm	When the standard torque cannot be obtained, replace the FR arm assembly or motor.
Fast forward torque	1. Measure the torque in the fast forward mode by the torqu meter.	80 ~ 170 g-cm	When the standard torque cannot be obtained, replace the FR arm assembly or motor.
Rewind torque	1. Measure the torque in the rewind mode by the torqu meter.	80 ~ 170 g-cm	When the standard torque cannot be obtained, replace the FR arm assembly or motor.
Wow & flutter	<ol style="list-style-type: none"> 1. Connect the wow & flutter meter to the DOLBY TP (figure 3) and play back VTT-712. 2. Its reading should be within 0.2% (WTD). 	—	As a complaint may occur if the wow & flutter fluctuates by 0.1% even though it is allowed in the standard, repairing is required.



Deck A



Deck B

Figure 1

3. Electrical Adjustments (Make the following adjustments after adjusting the head azimuth.)

In principle, the adjustments should be made in the following sequence.

Set the NR switch to OFF and the BEAT CUT switch to "1".

Adjustments marked with an asterisk (*) should always be made after the head is replaced

0dBs = 0.775V.

Item	Adjustment Method	Adjustment Location	Standard Value	Remarks
Tape Speed	1. Connect a frequency counter to the DOLBY TP (figure 3) and play back VTT-712. 2. Normal speed Adjustment 1) Mechanism B Play back deck B to adjust the semi-fixed resistor VR201 on ENJ-086-2. 2) Mechanism A Play back deck A to confirm that the difference between deck A and deck B is within $\pm 51\text{Hz}$.	VR201 Check	3,000 Hz $\pm 10\text{Hz}$	1) Adjust the normal speed first, and perform the high speed adjustment.
* Standard level (Playback Level)	1. Connect an electronic voltmeter to the DOLBY TP (figure 3). Play back VTT-724 (1 kHz : -4dBs) to adjust the semi-fixed resistors.	Deck A L: VR301 R: VR302 Deck B L: VR303 R: VR304	-5.5dBs (411mV) $\pm 1\text{dB}$	1) The playback level varies when the head is replaced so should be adjusted. Use an electronic voltmeter with an impedance of 100 k Ω or more.
* Playback Frequency Response	1. Connect an electronic voltmeter to the DOLBY TP (figure 3). 2. Play VTT-703L (10kHz : -10dBs) and adjust semi-fixed resistors to obtain the standard values.	Deck A L: VR305 R: VR306 Deck B L: VR307 R: VR308	-11.5dBs (206mV) $\pm 3\text{dB}$	—
* Recording Bias Frequency	1. Connect a frequency counter to the BIAS TP (figure 3), and perform a recording to adjust bias frequency.	L301	100 kHz $\pm 6\text{ kHz}$	Set the BEAT CUT SWITCH to "1".
* Record / Play Frequency Response (Bias current)	1. Supply 1kHz and 12.5kHz with 30mV signals to AUX (AX-F3000) terminals respectively to record them. 2. Connect an electronic voltmeter to the DOLBY TP (figure 3) to confirm the recorded values. 3. If the values are not satisfied, adjust the semi-fixed resistors and record the signal again to confirm the recorded values.	L: VR513 R: VR514	$0 \pm 2\text{ dB}$ for 12.5 kHz with 1 kHz as the standard.	Refer to figure 2 below. 1) The recording and playback frequency response of a cassette deck are adjusted by adjusting the bias. 2) Perform the adjustment with normal tape and confirm that the values are within the range for metal tape.
* Adjustment HX PRO	1. Connect an electronic voltmeter to the R504(L), R503(R) at either end, and record the no signal Metal tape. 2. Adjust to the last values.	L501(L) L502(R)		

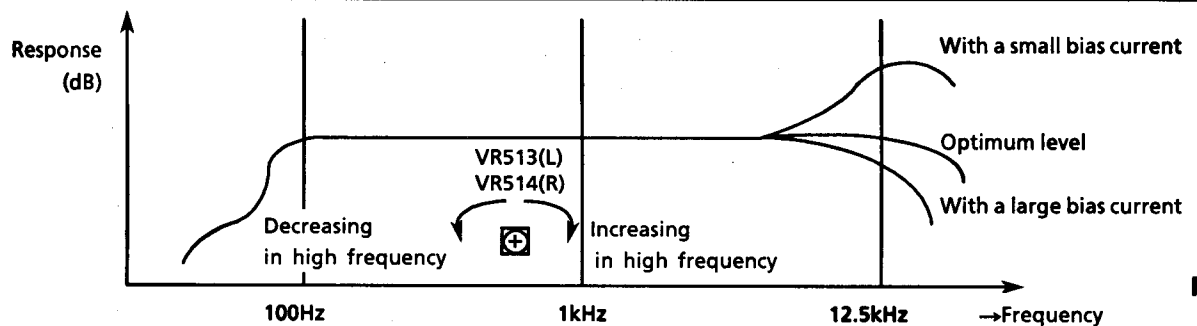


Figure 2

Item	Adjustment Method	Adjustment Location	Standard Value	Remarks
* Record / Playback Sensitivity	1. Input a 1 kHz (-8.2dBs: 300mV) signal to PHONO / VCR terminals and record it on the left and right channels . 2. Connect an electronic voltmeter to the DOLBY TP (figure 3) to confirm the values . 3. If the values are not satisfied , adjust the semi-fixed resistors and record the signals again to confirm the values.	L : VR311 R : VR312	-5.5dBs (411mV)	Adjust with normal tape and make sure that the left / right level difference is 1.0dB or less
* Erase ratio check	1. Record a music source using metal tape. 2. Rewind and erase the recorded section. 3. Comfirm nothing can be heard.	-	-	-
Auto-stop check	Make sure to operate AUTO STOP at the end of tape running and not to operate on the way of the playing.	-	-	-
Music Scan	1. Make sure not to work the music scanning operation at the start of tape wind using TMT-6237. 2. Make sure to work the music scanning operation at the end of tape wind using TMT-6247.	-	-	-

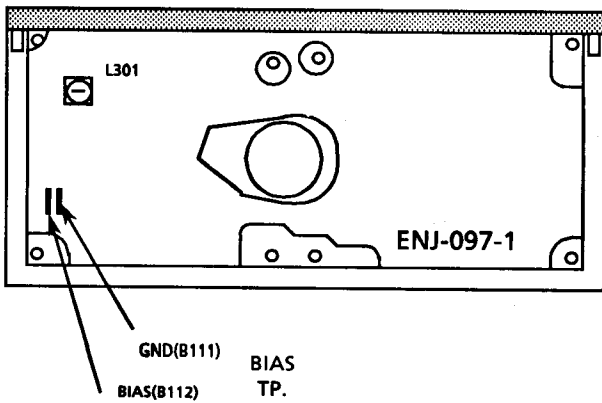


FIG.3

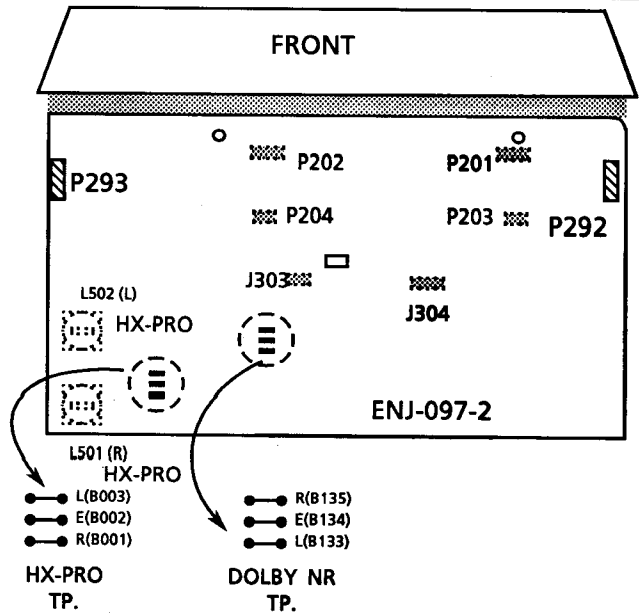


FIG.4

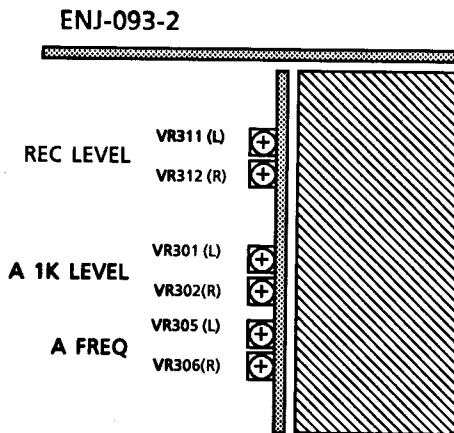


FIG.5 LEFT SIDE

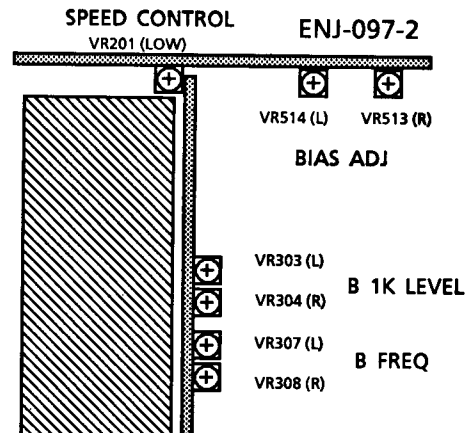
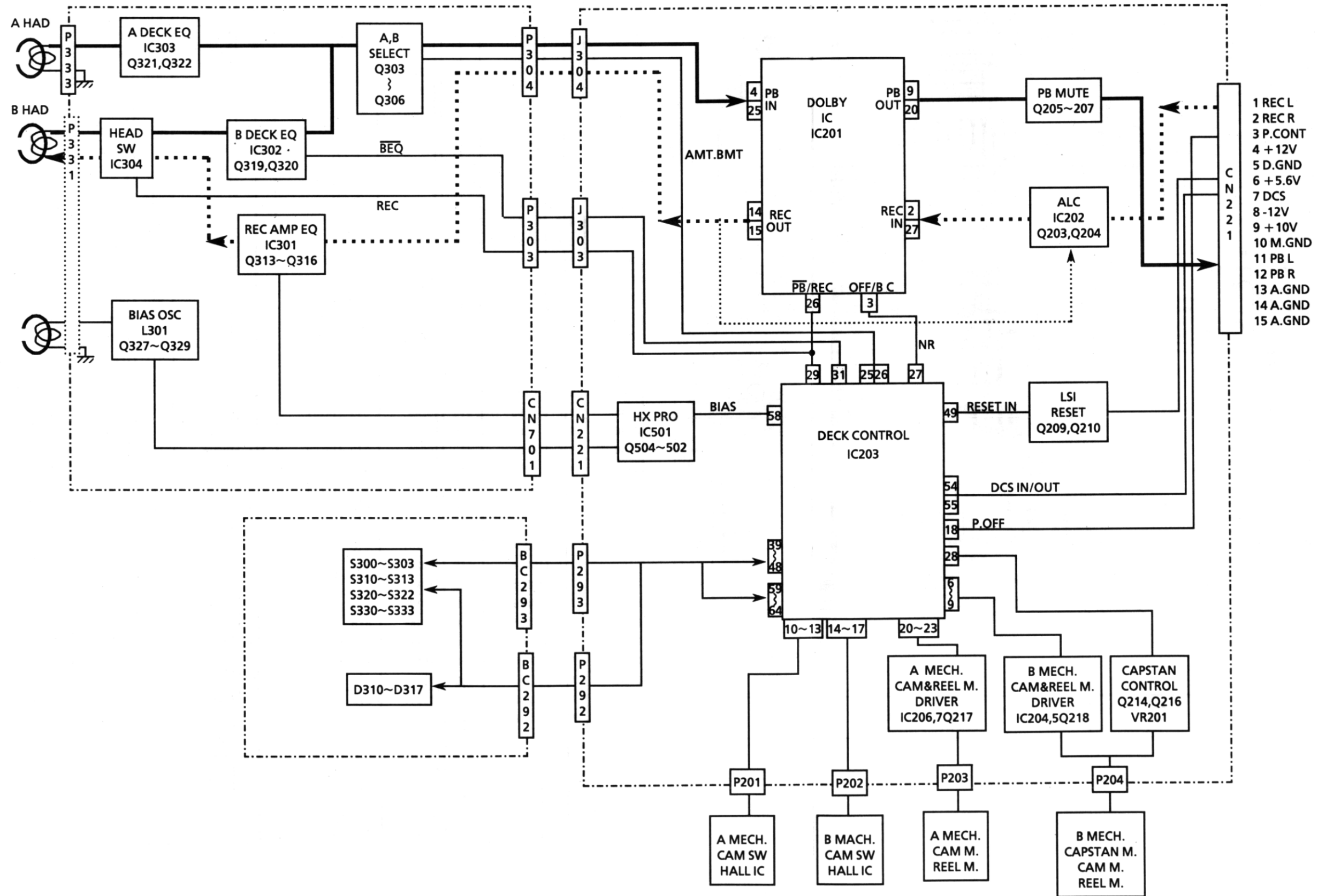
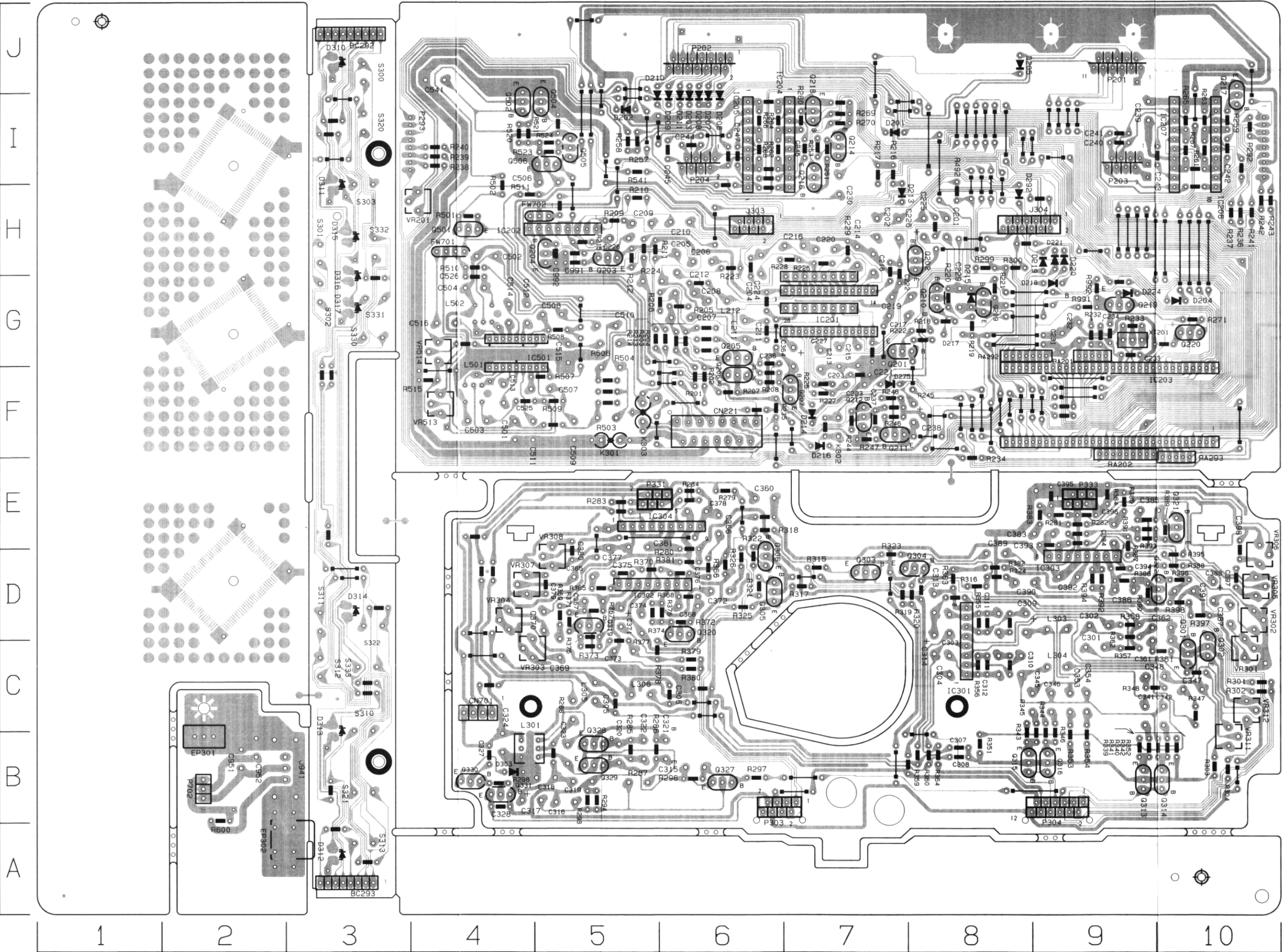


FIG.6 RIGHT SIDE

Block Diagram



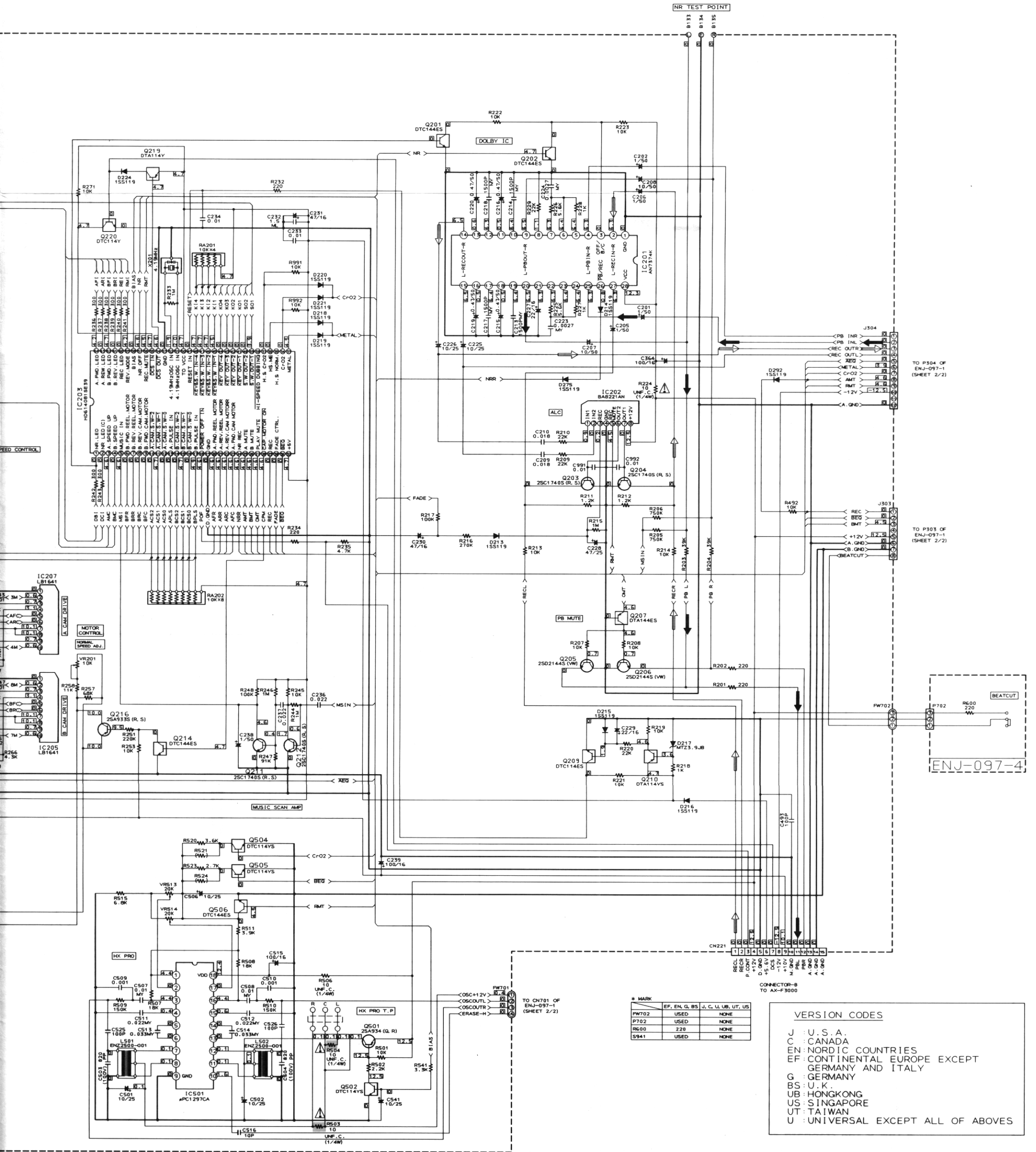


J
I
H
G
F
E
D
C
B
A

1 2 3 4 5 6 7 8 9 10

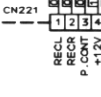
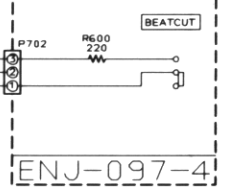
Location List (ENJ097)

Symbol	X	Y	Symbol	X	Y	Symbol	X	Y	Symbol	X	Y	Symbol	X	Y	Symbol	X	Y
C101	7	J	C161	7	I	C214	4	C	J201	3	E	R165	7	C	R217	4	C
C101	7	E	C161	7	E	C214	4	G	J201	3	I	R165	7	G	R217	4	G
C102	7	E	C162	7	H	C221	3	E	J202	3	C	R166	7	G	R218	4	C
C102	7	I	C162	7	D	C221	3	I	J202	3	H	R166	7	C	R218	4	G
C103	8	I	C163	7	C	C222	3	E	J203	3	B	R167	7	H	R221	4	E
C103	8	E	C163	7	G	C222	3	I	J203	3	G	R167	7	D	R221	4	J
C104	8	I	C171	9	H	C223	3	D	R101	8	I	R168	7	C	R222	4	E
C104	8	E	C171	9	C	C223	3	H	R101	8	E	R168	7	H	R222	4	I
C105	8	I	C172	9	C	C224	3	G	R102	8	I	R171	9	C	R223	4	E
C105	8	E	C172	9	G	C224	3	B	R102	8	E	R171	9	H	R223	4	I
C106	8	I	C173	10	H	C231	6	G	R105	8	I	R172	9	C	R224	4	D
C106	8	E	C173	10	G	C231	6	G	R105	8	E	R172	9	G	R224	4	I
C107	7	I	C174	10	G	C232	6	C	R106	8	I	R173	9	C	R225	4	D
C107	7	E	C174	10	C	C232	6	G	R106	8	E	R173	9	H	R225	4	H
C111	8	E	C175	9	H	C233	6	C	R121	8	I	R174	9	C	R226	4	H
C111	8	J	C175	9	D	C233	6	G	R121	8	E	R174	9	G	R226	4	C
C112	8	I	C176	9	G	C234	6	C	R122	8	I	R177	9	C	R227	4	B
C112	8	E	C176	9	C	C234	6	G	R122	8	E	R177	9	H	R227	4	G
C121	8	I	C177	9	I	C235	6	G	R131	9	I	R178	9	G	R228	4	F
C121	8	E	C177	9	D	C235	6	B	R131	9	E	R178	9	C	R228	4	B
C122	8	I	C178	10	D	C236	6	G	R132	9	I	R179	10	I	R231	6	C
C122	8	E	C178	10	I	C236	6	B	R132	9	E	R179	10	E	R231	6	H
C131	9	I	C179	10	I	C241	5	D	R133	9	E	R180	10	I	R232	6	H
C131	9	E	C179	10	D	C241	5	H	R133	9	I	R180	10	E	R232	6	C
C132	9	I	C180	10	D	C242	5	D	R134	9	E	R191	8	B	R233	6	C
C132	9	E	C180	10	I	C242	5	H	R134	9	I	R191	8	G	R233	6	G
C133	9	E	C191	8	G	C243	5	H	R141	9	I	R192	8	B	R234	6	G
C133	9	I	C191	8	C	C243	5	D	R141	9	E	R192	8	F	R234	6	C
C134	9	I	C192	8	H	C244	5	H	R142	9	I	R195	9	G	R235	6	F
C134	9	E	C192	8	C	C244	5	D	R142	9	E	R195	9	C	R235	6	B
C141	9	E	C193	8	C	C245	6	I	R145	10	E	R201	4	I	R236	6	F
C141	9	I	C193	8	G	C245	6	D	R145	10	I	R201	4	E	R236	6	B
C142	9	I	C194	8	H	C247	5	G	R146	10	I	R202	4	I	R241	5	G
C142	9	E	C194	8	C	C247	5	B	R146	10	E	R202	4	E	R241	5	B
C145	9	I	C195	9	D	C248	5	C	R151	7	D	R203	4	D	R242	5	G
C145	9	E	C195	9	H	C248	5	G	R151	7	I	R203	4	I	R242	5	B
C146	9	I	C201	4	E	C249	5	G	R152	7	D	R204	4	D	R245	6	I
C146	9	E	C201	4	J	C249	5	B	R152	7	I	R204	4	I	R245	6	D
C147	9	E	C202	4	E	C250	5	C	R153	7	H	R205	4	C	R247	5	G
C147	9	I	C202	4	I	C250	5	G	R153	7	D	R205	4	H	R247	5	B
C148	9	I	C203	4	E	CN101	8	B	R154	7	H	R206	4	C	R248	5	B
C148	9	E	C203	4	I	CN101	8	F	R154	7	D	R206	4	H	R248	5	G
C151	7	E	C204	4	I	CN201	5	B	R155	7	G	R207	4	F	R683	10	J
C151	7	I	C204	4	D	CN201	5	F	R155	7	C	R207	4	B	R683	3	F
C152	7	I	C205	4	D	IC101	8	I	R156	7	C	R208	4	F	R683	3	J
C152	7	D	C205	4	H	IC101	8	E	R156	7	G	R208	4	B	R683	3	
C153	7	H	C206	4	H	IC151	8	H	R157	7	C	R211	4	H	R683	10	
C153	7	D	C206	4	C	IC151	8	C	R157	7	H	R211	4	D	R683	4	A
C154	7	H	C207	4	B	IC171	10	D	R158	7	C	R212	4	D	R683	10	J
C154	7	D	C207	4	G	IC171	10	H	R158	7	H	R212	4	H	R683	3	A
C155	7	C	C208	4	F	IC231	5	D	R161	7	E	R213	4	G	R683	10	A
C155	7	G	C208	4	B	IC231	5	I	R161	7	I	R213	4	C	R683	10	F
C156	7	G	C211	4	H	IC232	6	G	R162	7	I	R214	4	C			
C156	7	C	C211	4	D	IC232	6	C	R162	7	D	R214	4	G			
C157	7	H	C212	4	D	J101	7	E	R163	7	I	R215	4	H			
C157	7	C	C212	4	H	J101	7	I	R163	7	D	R215	4	D			
C158	7	H	C213	4	C	J102	7	D	R164	7	H	R216	4	D			
C158	7	C	C213	4	G	J102	7	H	R164	7	D	R216	4	H			



TO P504 OF ENJ-097-1 (SHEET 2/2)

TO P503 OF ENJ-097-1 (SHEET 2/2)



* MARK

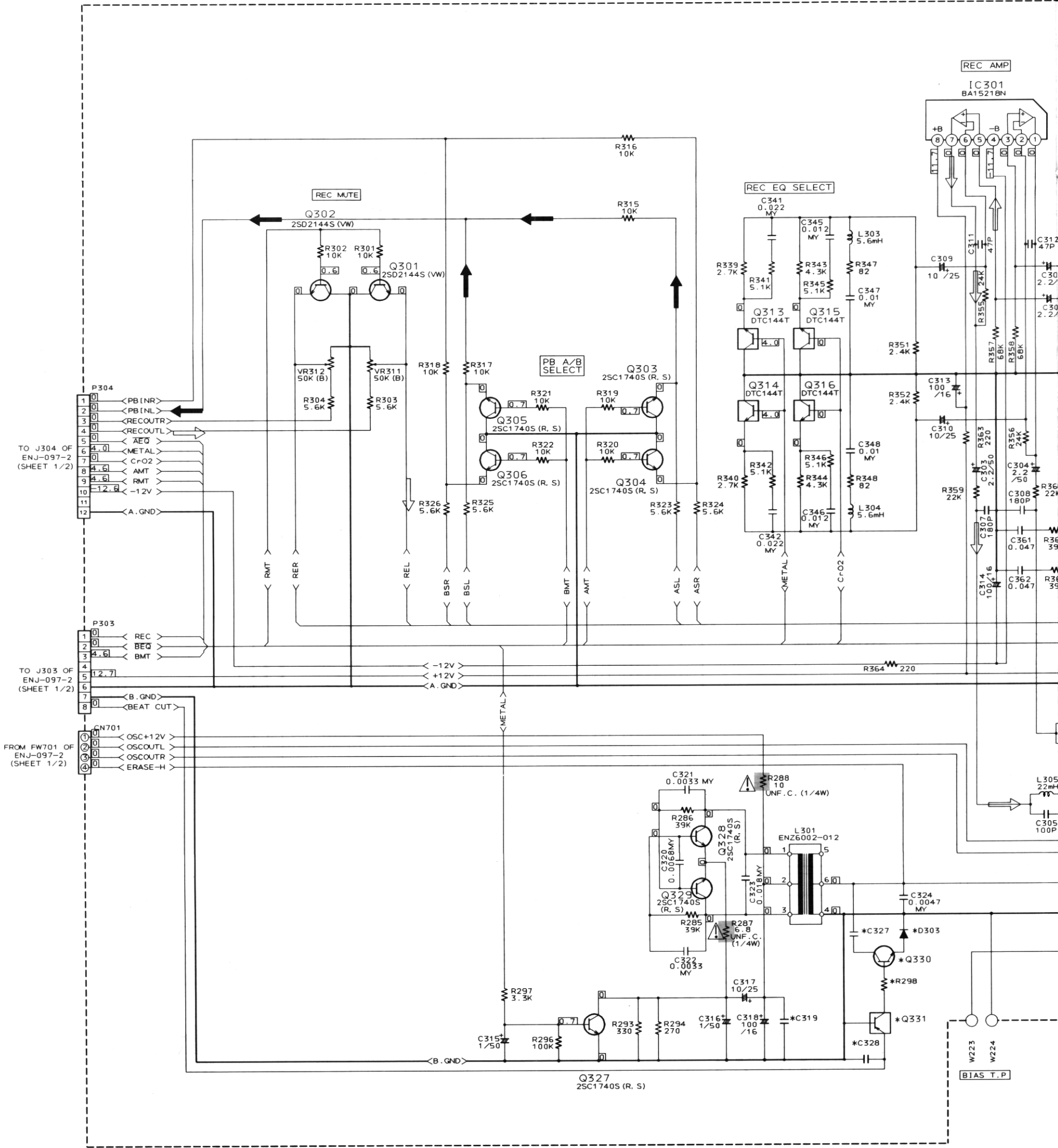
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PW702		USED	NONE
P702		USED	NONE
RE50		USED	NONE
SR41		USED	NONE

VERSION CODES

J	: U.S.A.
C	: CANADA
EN	: NORDIC COUNTRIES
EF	: CONTINENTAL EUROPE EXCEPT GERMANY AND ITALY
G	: GERMANY
BS	: U.K.
UB	: HONGKONG
US	: SINGAPORE
UT	: TAIWAN
U	: UNIVERSAL EXCEPT ALL OF ABOVE

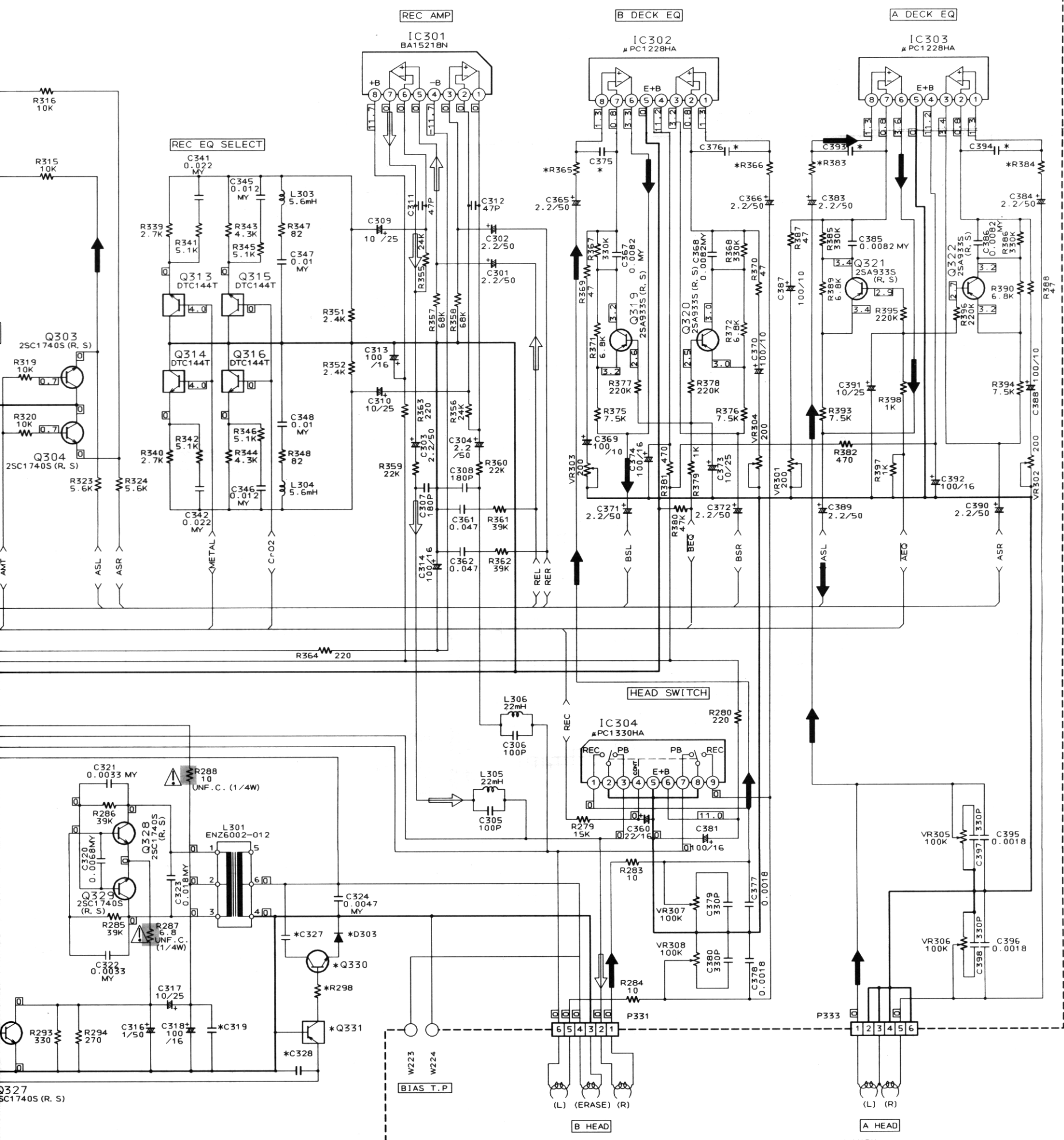
1 2 3 4 5 6 7 8 9 10 11 12

■ Play & Recoding Amplifier Section



- Notes:
1. indicates Main signal path.
 2. indicates Rec. signal path.
 3. When replacing the parts in the darkened are () and those marked with , be sure to use the designated parts to ensure safety.
 4. This is the standard circuit diagram. The design and contents are subject to change without notice.

ENJ-097-1



* MARK

	EF, EN, G, BS	J, C, U, UB, US, UT
C327	470P	NONE
C328	0.022	NONE
C319	0.022	NONE
R298	560	NONE
R365, 366	47	SHORT
R383, 384	47	SHORT
Q330	2SC945A	NONE
Q331	DTA144E	NONE
D303	1SS119	NONE
C393, 394	470P	100P
C375, 376	470P	100P

PARTS LIST

< TD-F3000 >

* All printed circuit boards and its assemblies are not available as service parts.

The Marks for Designated Areas

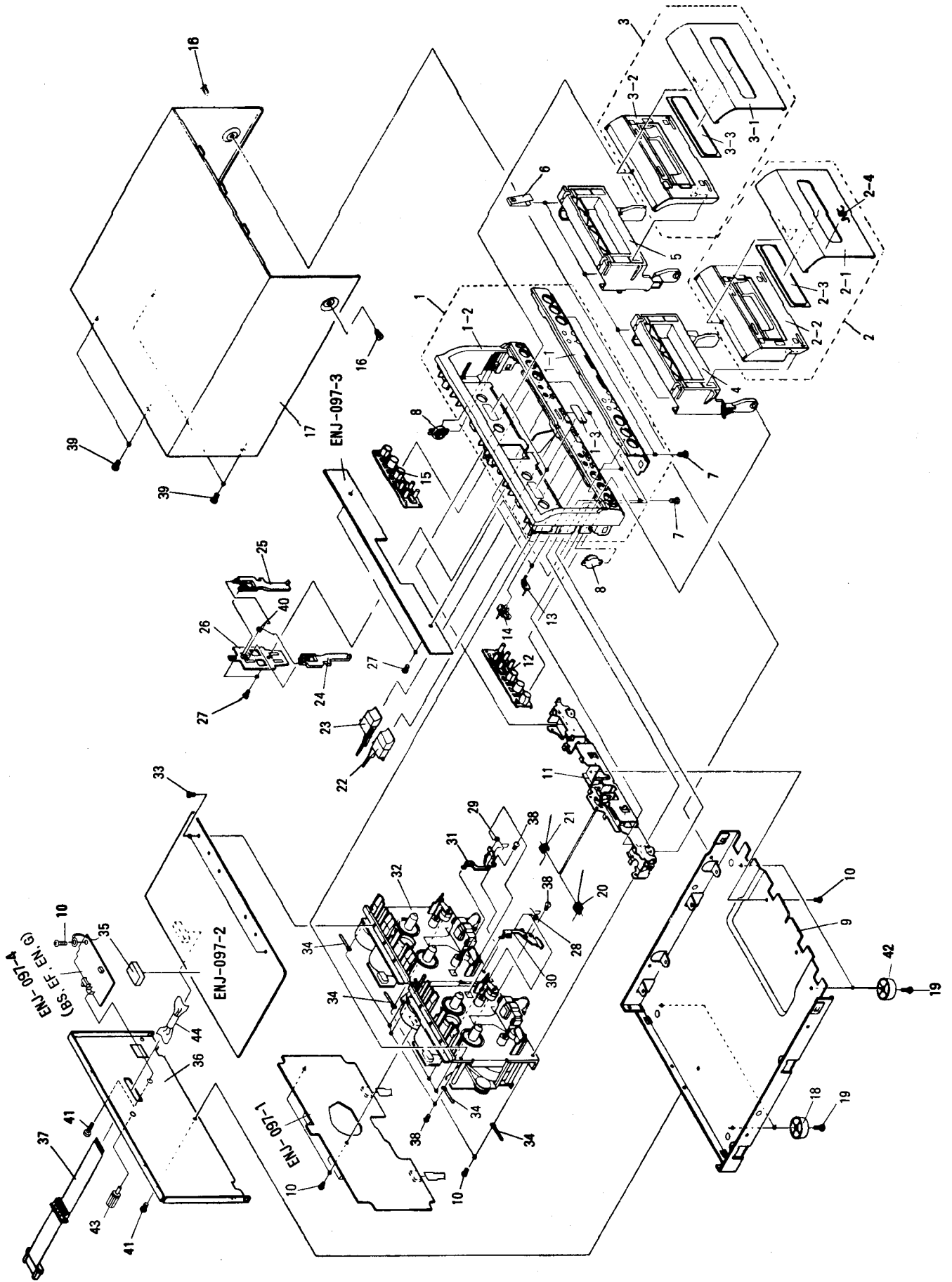
BS . . . the U.K.	C . . . Canada	EF . . . Continental Europe	EN . . . Scandinavia
G . . . Germany	J . . . the U.S.A.	UB . . . Hong Kong	U . . . Universal Type
US . . . Singapore	UT . . . Taiwan	No marks indicates all areas.	

- Contents -

General Exploded View and Parts List	8-2
Cassette Mechanism Ass'y and Parts List	8-4
■ Grease Point	8-4
Electrical Parts List	8-6
(ENJ-097)	8-6

General Exploded View and Parts List

Block No. **M5MM**



■ Parts List

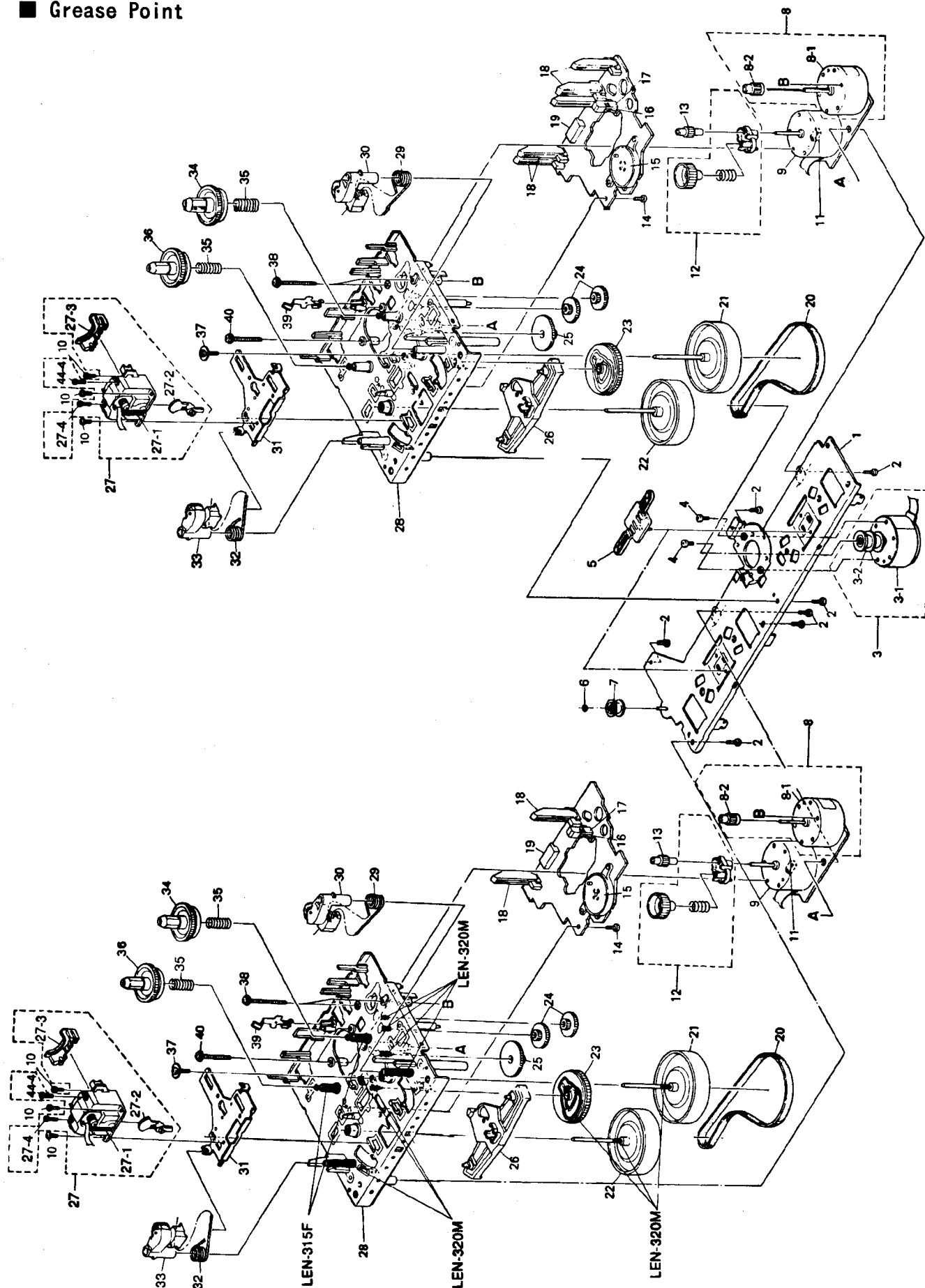
Block No. **M5M**

△	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	FFP-TDF3000E (S)	FRONT PANEL ASSY	1		
	1-1	E208709-003	FRONT PANEL	1		
	1-2	E103091-002ST	FRONT BASE	1		
	1-3	E69777-003	REFLECTION PLATE	2		
	2	E309621-002SA	CASSETTE LID ASSY	1		
	2-1	E309621-002	CASSETTE LID	1		
	2-2	E208720-002ST	LID BASE	1		
	2-3	E309625-001	CASSETTE LENS	1		
	2-4	E408971-221	JVC MARK	1		
	3	E309623-002SA	CASSETTE LID ASSY	1		
	3-1	E309623-002	CASSETTE LID	1		
	3-2	E208721-002ST	LID BASE	1		
	3-3	E309625-001	CASSETTE LENS	1		
	4	E207972-005SS	CASSETTE HOLDER	1		
	5	E207973-005SS	CASSETTE HOLDER	1		
	6	E406713-001	CASSETE SPRING	4		
	7	SDST3008CC	SCREW	6		
	8	E304434-005	DAMPER ASSY	2		
	9	E103092-002	CHASSIS BASE	1		
	10	SBST3006Z	TAPPING SCREW	8		
	11	E208717-001	HOLDER BKT	1		
	12	E208711-003SS	PUSH BUTTON ASSY	1		
	13	E408911-001	INDICATOR	2	REC	
	14	E408910-001	INDICATOR	1	REV.	
	15	E208714-003SS	PUSH BUTTON ASSY	1		
	16	SDSG3008N	TAPPING SCREW	2		
	17	E208174-010 (S)	METAL COVER	1		
	18	E75281-010	FOOT	2		
	19	SBST3010Z	TAPPING SCREW	4		
	20	FSKW4002-001	HOLDER SPRING	1		
	21	FSKW4003-001	HOLDER SPRING	1		
	22	E309619-003SS	EJECT BUTTON	1		
	23	E309620-003SS	EJECT BUTTON	1		
	24	E308681-002SS	EJECT LEVER	1		
	25	E308682-002SS	EJECT LEVER	1		
	26	E308683-002	EJECT GUIDE	1		
	27	SDSF2608Z	SCREW	4		
	28	E407801-002	SPRING	1		
	29	E407802-002	SPRING	1		
	30	E407799-001	EJECT BRACKET	1		
	31	E407800-001	EJECT BRACKET	1		
	32	-----	CASSETTE MECHANISM ASSY	1	See page 8-4	
	33	SDST2604Z	SCREW	2		
	34	PU49485-3	CORD CLAMP	4		
	35	E306805-056	SPACER	1		
	36	E208718-002	REAR PANEL	1		J
		E208718-003	REAR PANEL	1		C
		E208718-005	REAR PANEL	1		U UB US UT
		E208718-006	REAR PANEL	1		BS EF EN G
	37	EWP907-020	FLAT WIRE ASSY	1		
	38	SBSF3008Z	TAPPING SCREW	6		
	39	GBSG3008CC	TAPPING SCREW	4		
	40	E407798-002	SPRING	1		
	41	E73273-003	SPECIAL SCREW	1		BS EF EN G
	42	E75281-009	FOOT	2		
	43	E409257-001	EARTH TERMINAL	1		BS EF EN G
	44	ENZ8104-005	NOISE FILTER	1		BS EF EN G
	-	E61029-005	NUMBER LABEL	1		

Cassette Mechanism Ass'y and Parts List

Block No. **MGM**

■ Grease Point



■ Parts List (Cassette Mechanism Ass'y)

Block No. M6MM

△	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	VKM3775-00A	FM. BKT. ASS'Y	1		
	2	SPSP2603Z	WOOD SCREW	2		
	3	MS15U2LWA-SA1	DC MOTOR	1	CAPSTAN MOTOR ASSY	
	3-1	MS1-5U2LWA	DC MOTOR	1	CAPSTAN MOTOR	
	3-2	VKR4632-003MM	MOTOR PULLEY	1		
	4	SBSF2608Z	TAPPING SCREW	7		
	5	VKS5327-005MM	LOCK PLATE	2		
	6	WDL163525-4	WASHER	1		
	7	VKR4631-005MM	IDLER PULLEY	1		
	8	MSN5D257A-SA1	DC MOTOR	2	CAM MOTOR ASSY	
	8-1	MSN-5D257A	DC MOTOR	2	CAM MOTOR	
	8-2	VKS5433-001	ACTUATER MOTOR GEAR	2		
	9	MMN-6F4RA38	DC MOTOR	2	REEL MOTOR	
	10	SDSR2004Z	SCREW	6		
	11	VMC0234-R08	CONNECT TERMINAL	2	8PIN	
	12	VKS5430-00CMM	F. F./REW. ARM	2		
	13	VKS5432-001	REEL MOTOR GEAR	2		
	14	SDST2612Z	SCREW	2		
	15	VKS3616-00A	CAM SWITCH	2		
	16	DN6851-HI	I. C (M)	2		
	17	VKS3630-001MM	I. C. PROTECTOR	2		
	18	MXS00220MVLO	CASSETTE SWITCH	7		
	19	VMC0234-R11	CONNECT TERMINAL	1	A MECHA. 11PIN	
		VMC0234-R14	CONNECT TERMINAL	1	B MECHA. 14PIN	
	20	VKB3001-064	DRIVE BELT	1	A MECHA.	
		VKB3001-065	DRIVE BELT	1	B MECHA.	
	21	VKF3184-00H	FLYWHEEL ASS'Y	2	RIGHT	
	22	VKF3186-00H	FLYWHEEL ASS'Y	2	LEFT	
	23	VKS2224-002	CONTROL CAM	2		
	24	VKS5454-001	ACTUATER GEAR	4		
	25	VKS5455-001	ACTUATER GEAR	2		
	26	VKS3627-002	PINCH ROLLER LEVER	2		
	27	VKS3626-00F	H. MOUNT ASS'Y	1	A MECHA.	
		VKS3629-00F	H. MOUNT ASS'Y	1	B MECHA.	
	27-1	VKW5126-001	HEAD SPRING	2		
	27-2	VKS3614-001	TURN OVER GEAR	2		
	27-3	VKS3654-001	HEAD MT. COVER	2		
	27-4	VKZ4629-003	SCREW	4		
	28	VKS1134-00B	CHASSIS BASE	2		
	29	VKW5045-003	PINCH ROLLER SPRING	2	RIGHT	
	30	VKP4227-00B	PINCH ROLLER	2	RIGHT	
	31	VKM3632-001	HEAD BASE	2		
	32	VKW5046-003	PINCH ROLLER SPRING	2	LEFT	
	33	VKP4229-00B	PINCH ROLLER	2	LEFT	
	34	VKS5428-00B	REEL DISK	2		
	35	VKW5043-001	TENSION SPRING	4		
	36	VKS3617-002	REEL DISK	2		
	37	VKZ4708-001	SPECIAL SCREW	2		
	38	VKZ4705-002	SCREW	4		
	39	VKY4670-001	CASSETTE SPRING	2		
	40	VKZ4705-001	SCREW	4		

■ Electrical Parts List (ENJ-097)

△	Item	Parts Number	Description	Area
		I. C. S		
	IC201	AN7374K	I. C (MONO-ANALOG)	
	IC202	BA8221AN	I. C (MONO-ANALOG)	
	IC203	HD614081SE39	I. C (MICRO-COMPUTER)	
	IC204	LB1641	I. C (DIGI-OTHER)	
	IC205	LB1641	I. C (DIGI-OTHER)	
	IC206	LB1641	I. C (DIGI-OTHER)	
	IC207	LB1641	I. C (DIGI-OTHER)	
	IC301	BA15218N	I. C (MONO-ANALOG)	
	IC302	UPC1228HA	I. C (MONO-ANALOG)	
	IC303	UPC1228HA	I. C (MONO-ANALOG)	
	IC304	UPC1330HA	I. C (MONO-ANALOG)	
	IC501	UPC1297CA	I. C (MONO-ANALOG)	
		DIODES		
	D201	1SS119	SI. DIODE	
	D202	1SS119	SI. DIODE	
	D203	1SS119	SI. DIODE	
	D204	1SS119	SI. DIODE	
	D205	1SS119	SI. DIODE	
	D206	1SS119	SI. DIODE	
	D207	1SS119	SI. DIODE	
	D208	1SS119	SI. DIODE	
	D209	1SS119	SI. DIODE	
	D210	1SS119	SI. DIODE	
	D211	1SS119	SI. DIODE	
	D213	1SS119	SI. DIODE	
	D214	1SS119	SI. DIODE	
	D215	1SS119	SI. DIODE	
	D216	1SS119	SI. DIODE	
	D217	MTZ3.9JB	ZENER DIODE	
	D218	1SS119	SI. DIODE	
	D219	1SS119	SI. DIODE	
	D220	1SS119	SI. DIODE	
	D221	1SS119	SI. DIODE	
	D224	1SS119	SI. DIODE	
	D275	1SS119	SI. DIODE	
	D292	1SS119	SI. DIODE	
	D303	1SS119	SI. DIODE	BS EF EN G
	D310	SLR-342MCA47	L. E. D.	
	D311	SLR-342MCA47	L. E. D.	
	D312	SLR-342MCA47	L. E. D.	
	D313	SLR-342MCA47	L. E. D.	
	D314	SLR-342VC3F	L. E. D.	
	D315	SLR-342VC3F	L. E. D.	
	D316	SLR-342VC3F	L. E. D.	
	D317	SLR-342VC3F	L. E. D.	
		TRANSISTORS		
	Q201	DTC144ES	DIGITAL TRANSISTOR	
	Q202	DTC144ES	DIGITAL TRANSISTOR	
	Q203	2SC1740S (R, S)	SI. TRANSISTOR	
	Q204	2SC1740S (R, S)	SI. TRANSISTOR	
	Q205	2SD2144S (VW)	SI. TRANSISTOR	
	Q206	2SD2144S (VW)	SI. TRANSISTOR	
	Q207	DTA144ES	DIGITAL TRANSISTOR	
	Q209	DTC114ES	DIGITAL TRANSISTOR	
	Q210	DTA114YS	DIGITAL TRANSISTOR	
	Q211	2SC1740S (R, S)	SI. TRANSISTOR	
	Q212	2SC1740S (R, S)	SI. TRANSISTOR	
	Q214	DTC144ES	DIGITAL TRANSISTOR	
	Q216	2SA933AS		
	Q217	DTC144ES	DIGITAL TRANSISTOR	
	Q218	DTC144ES	DIGITAL TRANSISTOR	
	Q219	DTA114YS	DIGITAL TRANSISTOR	
	Q220	DTC114YS	DIGITAL TRANSISTOR	
	Q301	2SD2144S (VW)	SI. TRANSISTOR	
	Q302	2SD2144S (VW)	SI. TRANSISTOR	
	Q303	2SC1740S (R, S)	SI. TRANSISTOR	

△	Item	Parts Number	Description	Area
	Q304	2SC1740S (R, S)	SI. TRANSISTOR	
	Q305	2SC1740S (R, S)	SI. TRANSISTOR	
	Q306	2SC1740S (R, S)	SI. TRANSISTOR	
	Q313	DTC144TS	DIGITAL TRANSISTOR	
	Q314	DTC144TS	DIGITAL TRANSISTOR	
	Q315	DTC144TS	DIGITAL TRANSISTOR	
	Q316	DTC144TS	DIGITAL TRANSISTOR	
	Q319	2SA933AS	SI. TRANSISTOR	
	Q320	2SA933AS	SI. TRANSISTOR	
	Q321	2SA933AS	SI. TRANSISTOR	
	Q322	2SA933AS	SI. TRANSISTOR	
	Q327	2SC1740S (R, S)	SI. TRANSISTOR	
	Q328	2SC1740S (R, S)	SI. TRANSISTOR	
	Q329	2SC1740S (R, S)	SI. TRANSISTOR	
	Q330	2SC945A	SI. TRANSISTOR	BS EF EN G
	Q331	DTA144ES	DIGITAL TRANSISTOR	BS EF EN G
	Q501	2SA934 (Q, R)	SI. TRANSISTOR	
	Q502	DTC114YS	DIGITAL TRANSISTOR	
	Q504	DTC114YS	DIGITAL TRANSISTOR	
	Q505	DTC114YS	DIGITAL TRANSISTOR	
	Q506	DTC144ES	DIGITAL TRANSISTOR	
		CAPACITORS		
	C201	QEK51HM-105G	1MF 50V AL. E. CAP.	
	C202	QEK51HM-105G	1MF 50V AL. E. CAP.	
	C203	QCBB1HK-101Y	100PF 50V CER. CAP.	BS EF EN G
	C204	QCBB1HK-101Y	100PF 50V CER. CAP.	BS EF EN G
	C205	QEK51HM-105G	1MF 50V AL. E. CAP.	
	C206	QEK51HM-105G	1MF 50V AL. E. CAP.	
	C207	QETB1HM-106	10MF 50V E. CAP.	
	C208	QETB1HM-106	10MF 50V E. CAP.	
	C209	QFLB1HJ-183	0.018MF 50V MYLAR CAP.	
	C210	QFLB1HJ-183	0.018MF 50V MYLAR CAP.	
	C213	QFLB1HJ-152	1500PF 50V MYLAR CAP.	
	C214	QFLB1HJ-152	1500PF 50V MYLAR CAP.	
	C215	QEK51HM-474G	0.47MF 50V AL. E. CAP.	
	C216	QEK51HM-474G	0.47MF 50V AL. E. CAP.	
	C217	QFLB1HJ-152	1500PF 50V MYLAR CAP.	
	C218	QFLB1HJ-152	1500PF 50V MYLAR CAP.	
	C219	QEK51HM-474G	0.47MF 50V AL. E. CAP.	
	C220	QEK51HM-474G	0.47MF 50V AL. E. CAP.	
	C221	QCBB1HK-101Y	100PF 50V CER. CAP.	BS EF EN G
	C222	QCBB1HK-101Y	100PF 50V CER. CAP.	BS EF EN G
	C223	QFLB1HJ-272	2700PF 50V MYLAR CAP.	
	C224	QFLB1HJ-272	2700PF 50V MYLAR CAP.	
	C225	QETB1EM-106	10MF 25V AL. E. CAP.	
	C226	QETB1EM-106	10MF 25V AL. E. CAP.	
	C227	QETB1CM-226	22MF 16V E. CAP.	
	C228	QETB1EM-476	47MF 25V AL. E. CAP.	
	C229	QETB1CM-226	22MF 16V E. CAP.	
	C231	QETB1CM-476	47MF 16V AL. E. CAP.	
	C232	QCZ0205-155	1.5MF 25V C. CAP.	
	C233	QCVB1CM-103Y	0.01MF 16V CER. CAP.	
	C234	QCVB1CM-103Y	0.01MF 16V CER. CAP.	
	C236	QCHB1EZ-223	0.022MF 25V CER. CAP.	
	C237	QCHB1EZ-223	0.022MF 25V CER. CAP.	
	C238	QETB1HM-105	1MF 50V AL. E. CAP.	
	C239	QETB1CM-107	100MF 16V AL. E. CAP.	
	C240	QCHB1EZ-223	0.022MF 25V CER. CAP.	
	C241	QCHB1EZ-223	0.022MF 25V CER. CAP.	
	C242	QCVB1CM-103Y	0.01MF 16V CER. CAP.	
	C243	QCVB1CM-103Y	0.01MF 16V CER. CAP.	
	C244	QCHB1EZ-223	0.022MF 25V CER. CAP.	
	C245	QCHB1EZ-223	0.022MF 25V CER. CAP.	
	C246	QCVB1CM-103Y	0.01MF 16V CER. CAP.	
	C247	QCVB1CM-103Y	0.01MF 16V CER. CAP.	
	C301	QETB1HM-225	2.2MF 50V AL. E. CAP.	
	C302	QETB1HM-225	2.2MF 50V AL. E. CAP.	

■ Electrical Parts List (ENJ-097)

△	Item	Parts Number	Description	Area
	C303	QEK51HM-225G	2.2MF 50V AL E. CAP.	
	C304	QEK51HM-225G	2.2MF 50V AL E. CAP.	
	C305	QCBB1HK-101Y	100PF 50V CER. CAP.	
	C306	QCBB1HK-101Y	100PF 50V CER. CAP.	
	C307	QCBB1HK-181Y	180PF 50V CER. CAP.	
	C308	QCBB1HK-181Y	180PF 50V CER. CAP.	
	C309	QETB1EM-106	10MF 25V AL E. CAP.	
	C310	QETB1EM-106	10MF 25V AL E. CAP.	
	C311	QCSB1HJ-470	47PF 50V CER. CAP.	
	C312	QCSB1HJ-470	47PF 50V CER. CAP.	
	C313	QETB1CM-107	100MF 16V AL E. CAP.	
	C314	QETB1CM-107	100MF 16V AL E. CAP.	
	C315	QEK51HM-105G	1MF 50V AL E. CAP.	
	C316	QEK51HM-105G	1MF 50V AL E. CAP.	
	C317	QEK51EM-106	10MF 25V AL E. CAP.	
	C318	QETB1CM-107	100MF 16V AL E. CAP.	
	C319	QCF21HP-223A	0.022MF 50V CER. CAP.	BS EF EN G
	C320	QFLB1HJ-882	6800PF 50V MYLAR CAP.	
	C321	QFLB1HJ-332	3300PF 50V MYLAR CAP.	
	C322	QFLB1HJ-332	3300PF 50V MYLAR CAP.	
	C323	QFLB1HJ-183	0.018MF 50V MYLAR CAP.	
	C324	QFP31HG-472	4700PF 50V POLYPROPY. FI	
	C327	QCBB1HK-471Y	470PF 50V CER. CAP.	BS EF EN G
	C328	QCHB1EZ-223	0.022MF 25V CER. CAP.	BS EF EN G
	C341	QFLB1HJ-223	0.022MF 50V MYLAR CAP.	
	C342	QFLB1HJ-223	0.022MF 50V MYLAR CAP.	
	C345	QFLB1HJ-123	0.012MF 50V MYLAR CAP.	
	C346	QFLB1HJ-123	0.012MF 50V MYLAR CAP.	
	C347	QFLB1HJ-103	0.01MF 50V MYLAR CAP.	
	C348	QFLB1HJ-103	0.01MF 50V MYLAR CAP.	
	C360	QETB1CM-226	22MF 16V E. CAP.	
	C361	QCF21HP-473A	0.047MF 50V CER. CAP.	
	C362	QCF21HP-473A	0.047MF 50V CER. CAP.	
	C364	QETB1CM-107	100MF 16V AL E. CAP.	
	C365	QETB1HM-225	2.2MF 50V AL E. CAP.	
	C366	QETB1HM-225	2.2MF 50V AL E. CAP.	
	C367	QFLB1HJ-822	8200PF 50V MYLAR CAP.	
	C368	QFLB1HJ-822	8200PF 50V MYLAR CAP.	
	C369	QETB1AM-107	100MF 10V AL E. CAP.	
	C370	QETB1AM-107	100MF 10V AL E. CAP.	
	C371	QEK51HM-225G	2.2MF 50V AL E. CAP.	
	C372	QEK51HM-225G	2.2MF 50V AL E. CAP.	
	C373	QETB1EM-106	10MF 25V AL E. CAP.	
	C374	QETB1CM-107	100MF 16V AL E. CAP.	
	C375	QCBB1HK-101Y	100PF 50V CER. CAP.	C J U UB US UT
		QCBB1HK-471Y	470PF 50V CER. CAP.	BS EF EN G
	C376	QCBB1HK-101Y	100PF 50V CER. CAP.	C J U UB US UT
		QCBB1HK-471Y	470PF 50V CER. CAP.	BS EF EN G
	C377	QCY31HK-1822	1800PF 50V CER. CAP.	
	C378	QCY31HK-1822	1800PF 50V CER. CAP.	
	C379	QCBB1HK-331Y	330PF 50V CER. CAP.	
	C380	QCBB1HK-331Y	330PF 50V CER. CAP.	
	C381	QETB1CM-107	100MF 16V AL E. CAP.	
	C383	QETB1HM-225	2.2MF 50V AL E. CAP.	
	C384	QETB1HM-225	2.2MF 50V AL E. CAP.	
	C385	QFLB1HJ-822	8200PF 50V MYLAR CAP.	
	C386	QFLB1HJ-822	8200PF 50V MYLAR CAP.	
	C387	QETB1AM-107	100MF 10V AL E. CAP.	
	C388	QETB1AM-107	100MF 10V AL E. CAP.	
	C389	QETB1HM-225	2.2MF 50V AL E. CAP.	
	C390	QETB1HM-225	2.2MF 50V AL E. CAP.	
	C391	QETB1EM-106	10MF 25V AL E. CAP.	
	C392	QETB1CM-107	100MF 16V AL E. CAP.	
	C393	QCBB1HK-101Y	100PF 50V CER. CAP.	C J U UB US UT
		QCBB1HK-471Y	470PF 50V CER. CAP.	BS EF EN G
	C394	QCBB1HK-101Y	100PF 50V CER. CAP.	C J U UB US UT
		QCBB1HK-471Y	470PF 50V CER. CAP.	BS EF EN G

△	Item	Parts Number	Description	Area
	C395	QCXB1CM-182Y	1800PF 16V CER. CAP.	
	C396	QCXB1CM-182Y	1800PF 16V CER. CAP.	
	C397	QCBB1HK-331Y	330PF 50V CER. CAP.	
	C398	QCBB1HK-331Y	330PF 50V CER. CAP.	
	C501	QETB1EM-106	10MF 25V AL E. CAP.	
	C502	QETB1EM-106	10MF 25V AL E. CAP.	
	C503	QFP81HG-821	820PF 50V POLYPROPY. FI	
	C504	QFP81HG-821	820PF 50V POLYPROPY. FI	
	C506	QETB1EM-106	10MF 25V AL E. CAP.	
	C507	QFLB1HJ-103	0.01MF 50V MYLAR CAP.	
	C508	QFLB1HJ-103	0.01MF 50V MYLAR CAP.	
	C509	QCF31HP-102Z	1000PF 50V CER. CAP.	
	C510	QCF31HP-102Z	1000PF 50V CER. CAP.	
	C511	QFLB1HJ-223	0.022MF 50V MYLAR CAP.	
	C512	QFLB1HJ-223	0.022MF 50V MYLAR CAP.	
	C513	QFLB1HJ-333	0.033MF 50V MYLAR CAP.	
	C514	QFLB1HJ-333	0.033MF 50V MYLAR CAP.	
	C515	QETB1CM-107	100MF 16V AL E. CAP.	
	C516	QCS21HJ-100	10PF 50V CER. CAP.	
	C525	QCBB1HK-101Y	100PF 50V CER. CAP.	
	C526	QCBB1HK-101Y	100PF 50V CER. CAP.	
	C541	QETB1EM-106	10MF 25V AL E. CAP.	
	C991	QCVB1CM-103Y	0.01MF 16V CER. CAP.	
	C992	QCVB1CM-103Y	0.01MF 16V CER. CAP.	
		RESISTORS		
	R201	QRD161J-221	220 1/6W CARBON RES.	
	R202	QRD161J-221	220 1/6W CARBON RES.	
	R203	QRD161J-393	39K 1/6W CARBON RES.	
	R204	QRD161J-393	39K 1/6W CARBON RES.	
	R205	QRD161J-754	750K 1/6W CARBON RES.	
	R206	QRD161J-754	750K 1/6W CARBON RES.	
	R207	QRD161J-103	10K 1/6W CARBON RES.	
	R208	QRD161J-103	10K 1/6W CARBON RES.	
	R209	QRD167J-223	22K 1/6W CARBON RES.	
	R210	QRD167J-223	22K 1/6W CARBON RES.	
	R211	QRD161J-122	1.2K 1/6W CARBON RES.	
	R212	QRD161J-122	1.2K 1/6W CARBON RES.	
	R213	QRD161J-103	10K 1/6W CARBON RES.	
	R214	QRD161J-103	10K 1/6W CARBON RES.	
	R215	QRD161J-105	1M 1/6W CARBON RES.	
	R216	QRD161J-274	270K 1/6W CARBON RES.	
	R217	QRD161J-104	100K 1/6W CARBON RES.	
	R218	QRD161J-102	1K 1/6W CARBON RES.	
	R219	QRD161J-103	10K 1/6W CARBON RES.	
	R220	QRD167J-223	22K 1/6W CARBON RES.	
	R221	QRD161J-103	10K 1/6W CARBON RES.	
	R222	QRD161J-103	10K 1/6W CARBON RES.	
	R223	QRD161J-103	10K 1/6W CARBON RES.	
△	R224	QRD14CJ-100SX	10 1/4W UNF. CARBON R	
	R225	QRD167J-562	5.6K 1/6W CARBON RES.	
	R226	QRD167J-562	5.6K 1/6W CARBON RES.	
	R227	QRD161J-102	1K 1/6W CARBON RES.	
	R228	QRD161J-102	1K 1/6W CARBON RES.	
	R229	QRD167J-223	22K 1/6W CARBON RES.	
	R232	QRD161J-221	220 1/6W CARBON RES.	
	R233	QRD161J-105	1M 1/6W CARBON RES.	
	R234	QRD161J-221	220 1/6W CARBON RES.	
	R235	QRD161J-472	4.7K 1/6W CARBON RES.	
	R236	QRD161J-301	300 1/6W CARBON RES.	
	R237	QRD161J-301	300 1/6W CARBON RES.	
	R238	QRD161J-301	300 1/6W CARBON RES.	
	R239	QRD161J-301	300 1/6W CARBON RES.	
	R240	QRD161J-301	300 1/6W CARBON RES.	
	R241	QRD161J-301	300 1/6W CARBON RES.	
	R242	QRD161J-301	300 1/6W CARBON RES.	
	R243	QRD161J-301	300 1/6W CARBON RES.	
	R244	QRD161J-105	1M 1/6W CARBON RES.	

■ Electrical Parts List (ENJ-097)

△	Item	Parts Number	Description	Area
	R245	QRD161J-103	10K 1/6W CARBON RES.	
	R246	QRD161J-105	1M 1/6W CARBON RES.	
	R247	QRD161J-913	91K 1/6W CARBON RES.	
	R248	QRD161J-104	100K 1/6W CARBON RES.	
	R251	QRD161J-224	220K 1/6W CARBON RES.	
	R253	QRD161J-103	10K 1/6W CARBON RES.	
	R257	QRD161J-683	68K 1/6W CARBON RES.	
	R258	QRD167J-113	11K 1/6W CARBON RES.	
	R259	QRD167J-822	8.2K 1/6W CARBON RES.	
	R260	QRD167J-822	8.2K 1/6W CARBON RES.	
	R261	QRD161J-913	91K 1/6W CARBON RES.	
	R262	QRD161J-913	91K 1/6W CARBON RES.	
	R263	QRD161J-163	16K 1/6W CARBON RES.	
	R264	QRD161J-163	16K 1/6W CARBON RES.	
	R265	QRD161J-432	4.3K 1/6W CARBON RES.	
	R266	QRD161J-432	4.3K 1/6W CARBON RES.	
	R267	QRD161J-103	10K 1/6W CARBON RES.	
	R268	QRD161J-103	10K 1/6W CARBON RES.	
	R269	QRD161J-222	2.2K 1/6W CARBON RES.	
	R270	QRD161J-222	2.2K 1/6W CARBON RES.	
	R271	QRD161J-103	10K 1/6W CARBON RES.	
	R279	QRD167J-153	15K 1/6W CARBON RES.	
	R280	QRD161J-221	220 1/6W CARBON RES.	
	R283	QRD161J-100	10 1/6W CARBON RES.	
	R284	QRD161J-100	10 1/6W CARBON RES.	
	R285	QRD161J-393	39K 1/6W CARBON RES.	
	R286	QRD161J-393	39K 1/6W CARBON RES.	
	R287	QRD14CJ-6R8SX	6.8 1/4W UNF. CARBON R	
△	R288	QRD14CJ-100SX	10 1/4W UNF. CARBON R	
	R293	QRD161J-331	330 1/6W CARBON RES.	
	R294	QRD161J-271	270 1/6W CARBON RES.	
	R296	QRD161J-104	100K 1/6W CARBON RES.	
	R297	QRD167J-332	3.3K 1/6W CARBON RES.	
	R298	QRD161J-561	560 1/6W CARBON RES.	BS EF EN G
	R301	QRD161J-103	10K 1/6W CARBON RES.	
	R302	QRD161J-103	10K 1/6W CARBON RES.	
	R303	QRD167J-562	5.6K 1/6W CARBON RES.	
	R304	QRD167J-562	5.6K 1/6W CARBON RES.	
	R315	QRD161J-103	10K 1/6W CARBON RES.	
	R316	QRD161J-103	10K 1/6W CARBON RES.	
	R317	QRD161J-103	10K 1/6W CARBON RES.	
	R318	QRD161J-103	10K 1/6W CARBON RES.	
	R319	QRD161J-103	10K 1/6W CARBON RES.	
	R320	QRD161J-103	10K 1/6W CARBON RES.	
	R321	QRD161J-103	10K 1/6W CARBON RES.	
	R322	QRD161J-103	10K 1/6W CARBON RES.	
	R323	QRD167J-562	5.6K 1/6W CARBON RES.	
	R324	QRD167J-562	5.6K 1/6W CARBON RES.	
	R325	QRD167J-562	5.6K 1/6W CARBON RES.	
	R326	QRD167J-562	5.6K 1/6W CARBON RES.	
	R339	QRD167J-272	2.7K 1/6W CARBON RES.	
	R340	QRD167J-272	2.7K 1/6W CARBON RES.	
	R341	QRD161J-512	5.1K 1/6W CARBON RES.	
	R342	QRD161J-512	5.1K 1/6W CARBON RES.	
	R343	QRD161J-432	4.3K 1/6W CARBON RES.	
	R344	QRD161J-432	4.3K 1/6W CARBON RES.	
	R345	QRD161J-512	5.1K 1/6W CARBON RES.	
	R346	QRD161J-512	5.1K 1/6W CARBON RES.	
	R347	QRD161J-820	82 1/6W CARBON RES.	
	R348	QRD161J-820	82 1/6W CARBON RES.	
	R351	QRD161J-242	2.4K 1/6W CARBON RES.	
	R352	QRD161J-242	2.4K 1/6W CARBON RES.	
	R355	QRD161J-243	24K 1/6W CARBON RES.	
	R356	QRD161J-243	24K 1/6W CARBON RES.	
	R357	QRD161J-683	68K 1/6W CARBON RES.	
	R358	QRD161J-683	68K 1/6W CARBON RES.	
	R359	QRD167J-223	22K 1/6W CARBON RES.	

△	Item	Parts Number	Description	Area
	R360	QRD167J-223	22K 1/6W CARBON RES.	
	R361	QRD161J-393	39K 1/6W CARBON RES.	
	R362	QRD161J-393	39K 1/6W CARBON RES.	
	R363	QRD161J-221	220 1/6W CARBON RES.	
	R364	QRD161J-221	220 1/6W CARBON RES.	
	R365	QRD161J-470	47 1/6W CARBON RES.	BS EF EN G
	R366	QRD161J-470	47 1/6W CARBON RES.	BS EF EN G
	R367	QRD167J-334	330K 1/6W CARBON RES.	
	R368	QRD167J-334	330K 1/6W CARBON RES.	
	R369	QRD161J-470	47 1/6W CARBON RES.	
	R370	QRD161J-470	47 1/6W CARBON RES.	
	R371	QRD167J-682	6.8K 1/6W CARBON RES.	
	R372	QRD167J-682	6.8K 1/6W CARBON RES.	
	R375	QRD161J-752	7.5K 1/6W CARBON RES.	
	R376	QRD161J-752	7.5K 1/6W CARBON RES.	
	R377	QRD161J-224	220K 1/6W CARBON RES.	
	R378	QRD161J-224	220K 1/6W CARBON RES.	
	R379	QRD161J-102	1K 1/6W CARBON RES.	
	R380	QRD161J-473	47K 1/6W CARBON RES.	
	R381	QRD161J-471	470 1/6W CARBON RES.	
	R382	QRD161J-471	470 1/6W CARBON RES.	
	R383	QRD161J-470	47 1/6W CARBON RES.	BS EF EN G
	R384	QRD161J-470	47 1/6W CARBON RES.	BS EF EN G
	R385	QRD167J-334	330K 1/6W CARBON RES.	
	R386	QRD167J-334	330K 1/6W CARBON RES.	
	R387	QRD161J-470	47 1/6W CARBON RES.	
	R388	QRD161J-470	47 1/6W CARBON RES.	
	R389	QRD167J-682	6.8K 1/6W CARBON RES.	
	R390	QRD167J-682	6.8K 1/6W CARBON RES.	
	R393	QRD161J-752	7.5K 1/6W CARBON RES.	
	R394	QRD161J-752	7.5K 1/6W CARBON RES.	
	R395	QRD161J-224	220K 1/6W CARBON RES.	
	R396	QRD161J-224	220K 1/6W CARBON RES.	
	R397	QRD161J-102	1K 1/6W CARBON RES.	
	R398	QRD161J-102	1K 1/6W CARBON RES.	
	R492	QRD161J-103	10K 1/6W CARBON RES.	
	R501	QRD161J-103	10K 1/6W CARBON RES.	
	R502	QRD161J-222	2.2K 1/6W CARBON RES.	
△	R503	QRD14CJ-100SX	10 1/4W UNF. CARBON R	
△	R504	QRD14CJ-100SX	10 1/4W UNF. CARBON R	
△	R506	QRD14CJ-100SX	10 1/4W UNF. CARBON R	
	R507	QRD161J-183	18K 1/6W CARBON RES.	
	R508	QRD161J-183	18K 1/6W CARBON RES.	
	R509	QRD167J-154	150K 1/6W CARBON RES.	
	R510	QRD167J-154	150K 1/6W CARBON RES.	
	R511	QRD161J-392	3.9K 1/6W CARBON RES.	
	R515	QRD167J-682	6.8K 1/6W CARBON RES.	
	R520	QRD161J-362	3.6K 1/6W CARBON RES.	
	R523	QRD167J-272	2.7K 1/6W CARBON RES.	
	R541	QRD167J-332	3.3K 1/6W CARBON RES.	
	R600	QRD161J-221	220 1/6W CARBON RES.	BS EF EN G
	R991	QRD161J-103	10K 1/6W CARBON RES.	
	R992	QRD161J-103	10K 1/6W CARBON RES.	
	RA201	QRB049J-103	10K 1/10WRES.	
	RA202	QRB089J-103	10K 1/10WNETWORK RES.	
	VR201	QVPA603-103A	10K TRIMMER RES.	
	VR301	QVPA603-201AZ	200 VARIABLE RE	
	VR302	QVPA603-201AZ	200 VARIABLE RE	
	VR303	QVPA603-201AZ	200 VARIABLE RE	
	VR304	QVPA603-201AZ	200 VARIABLE RE	
	VR305	QVPA603-104A	100K TRIMMER RES.	
	VR306	QVPA603-104A	100K TRIMMER RES.	
	VR307	QVPA603-104A	100K TRIMMER RES.	
	VR308	QVPA603-104A	100K TRIMMER RES.	
	VR311	QVPA603-503A	50K VARIABLE RE	
	VR312	QVPA603-503A	50K VARIABLE RE	
	VR513	QVPA603-203M	20K TRIMMER RES.	

■ Electrical Parts List (ENJ-097)

△	Item	Parts Number	Description	Area
	VR514	QVPA603-203M	20K TRIMMER RES.	
		OTHERS		
		EMW10584-102	PRINTED BOARD	
	J303	VMC0314-S08	CONNECT TERMINAL	
	J304	VMC0314-S12	CONNECT TERMINAL	
	K303	ENZ8101-007	INDUCTOR	BS EF EN G
	L301	ENZ6002-012	OSCILLATOR COIL	
	L303	EQL2106-562	INDUCTOR	
	L304	EQL2106-562	INDUCTOR	
	L305	EQL2106-223	INDUCTOR	
	L306	EQL2106-223	INDUCTOR	
	L501	ENZ2500-001	OSCILLATOR COIL	
	L502	ENZ2500-001	OSCILLATOR COIL	
	P201	VMC0234-P11	CONNECT TERMINAL	
	P202	VMC0234-P14	CONNECT TERMINAL	
	P203	VMC0234-P08	CONNECT TERMINAL	
	P204	VMC0234-P08	CONNECT TERMINAL	
	P292	EMV5142-909	CONNECT TERMINAL	
	P293	EMV5142-908	CONNECT TERMINAL	
	P303	EMV5132-008R	CONNECT TERMINAL	
	P304	EMV5132-012R	CONNECT TERMINAL	
	P331	EMV7155-106R	CONNECT TERMINAL	
	P333	EMV7155-106R	CONNECT TERMINAL	
	P702	EMV7145-003Z	SOCKET ASSY	BS EF EN G
	S300	ESP0001-023M	TACT SWITCH	
	S301	ESP0001-023M	TACT SWITCH	
	S302	ESP0001-023M	TACT SWITCH	
	S303	ESP0001-023M	TACT SWITCH	
	S310	ESP0001-023M	TACT SWITCH	
	S311	ESP0001-023M	TACT SWITCH	
	S312	ESP0001-023M	TACT SWITCH	
	S313	ESP0001-023M	TACT SWITCH	
	S320	ESP0001-023M	TACT SWITCH	
	S321	ESP0001-023M	TACT SWITCH	
	S322	ESP0001-023M	TACT SWITCH	
	S330	ESP0001-023M	TACT SWITCH	
	S331	ESP0001-023M	TACT SWITCH	
	S332	ESP0001-023M	TACT SWITCH	
	S333	ESP0001-023M	TACT SWITCH	
	S941	QSS7A12-E01	SLIDE SWITCH	BS EF EN G
	BC292	EWS329-A920	SOCKET WIRE ASSY	
	BC293	EWS328-A920	SOCKET WIRE ASSY	
	CN221	EMV7141-015	PIN CONNECTOR	
	CN701	EMV7145-004Z	SOCKET ASSY	
	EP302	E70225-003SS	EARTH PLATE	BS EF EN G
	FW701	EWR34D-08LS	FLAT WIRE ASSY	
	FW702	EWR33D-20LS	FLAT WIRE ASSY	BS EF EN G
	TW010	EWT015-002	TERMINAL WIRE	
	XT201	ECX0004-194KM	CERAMIC RESONATOR	