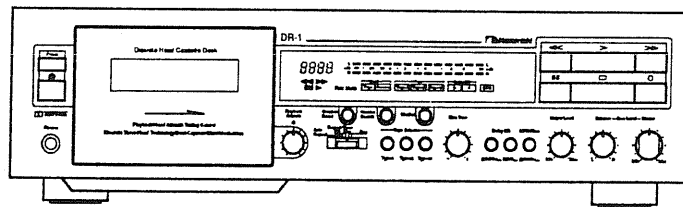


Service Manual

DR-1

Discrete Head Cassette Deck



CONTENTS

1. General	1
2. Test Tapes and Gauges	2
3. Mechanism Ass'y and Parts List	3
3.1. Synthesis	3
3.2. Chassis Ass'y (A01)	4
3.3. Front Chassis Ass'y (B01)	5
3.4. Mechanism Ass'y (B02)	7
4. Mounting Diagrams and Parts List	8
4.1. Bias Volume P.C.B. Ass'y	8
4.2. Input Volume P.C.B. Ass'y	8
4.3. Output Volume P.C.B. Ass'y	8
4.4. Timer Switch P.C.B. Ass'y	8
4.5. Front P.C.B. Ass'y	8
4.6. Power Supply & Logic P.C.B. Ass'y	9
4.7. Main P.C.B. Ass'y	10
5. Schematic Diagrams	14

1. GENERAL

Reference Service Manual

The base Model of DR-1 is Cassette Deck 1. In this Service Manual, identical sections/items are omitted. So, please refer to the Service Manual of Cassette Deck 1 (0Q06137A).

1.1. Product Code

A137

1.2. Destinations

USA, CAN, EP, UK, AUS, SAU, OTR, JPN

Abbreviation


USA — U.S.A.	AUS — Australia
CAN — Canada	SAU — Saudi Arabia
EP — Europe	OTR — Other
UK — United Kingdom	JPN — Japan

1.4. Voltage Selector

The voltage selector is installed on the Rear Panel of the DR-1 (OTR & SAU). The voltage selector can select either 110-127V or 220-240V at customer's disposal.

1.3. Cautions/Warnings

(1) Product Safety Notice

Parts marked with the symbol  in the schematic diagram have critical characteristics.

Use ONLY replacement parts recommended by the manufacturer. It is recommended that the unit be operated from a suitable DC supply or batteries during initial check-out procedures.

(2) Leakage Current Check/Resistance Check

Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamp, or if the resistance from chassis to either side of the power cord is less than 240 k ohms, the unit is defective.

WARNING — DO NOT return the unit to the customer until the problem is located and corrected.

1.5. Package Ass'y and Accessory Ass'y

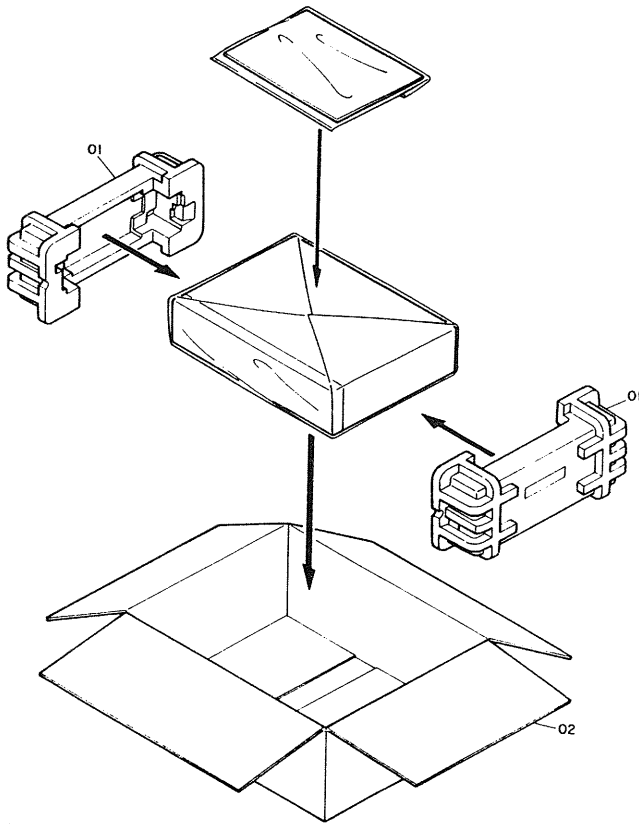


Fig. 1

Schematic Ref. No.	Part No.	Description	Qty
-	-	Package Ass'y	
01	0F04728A	Packing	2
02	0F04716A	Carton Box	1
-	0F04458A	Soft Sheet	1

Schematic Ref. No.	Part No.	Description	Qty
	DA04689A	Accessory Ass'y (USA, CAN)	1
	DA04691A	Accessory Ass'y (EP)	1
	DA04693A	Accessory Ass'y (UK)	1
	DA04690A	Accessory Ass'y (AUS, SAU, OTR)	1
	DA04688A	Accessory Ass'y (JPN)	1
	0D06400B	Owner's Manual (English)	1
	0D06416A	Owner's Manual (French) (USA, CAN, EP, UK)	1
	0D06417A	Owner's Manual (German) (EP, UK)	1
	0D06398A	Owner's Manual (Japanese)	1
	DA04439A	Pin-Plug Cord Ass'y	1

2. TEST TAPES AND GAUGES

- (1) 400 Hz Level Tape (DA09005C)
- (2) 1kHz Track Alignment B Tape (DA09007C)
- (3) 10 kHz PB Frequency Response Tape (DA09003C)
- (4) 15 kHz PB Frequency Response Tape (DA09002C)
- (5) 20 kHz PB Frequency Response Tape (DA09001C)
- (6) 15 kHz Azimuth Tape (DA09004C)
- (7) 3 kHz Speed and Wow/Flutter Tape (DA09006D)
- (8) Tape Travelling Cassette (DA09071A)
- (9) Reference EXII Tape (DA09168A)
- (10) Reference SX Tape (DA09167A)
- (11) Reference ZX Tape (DA09166A)
- (12) EH Tilt Check Gauge S (DA09088A)
- (13) Stroke Check Gauge S (DA09090A)

- (14) Tape Guide Height Check Gauge S (DA09091A)
- (15) Tilt Check Gauge S (DA09039C)
- (16) Torque Gauge FWD (DA09082A)
- (17) Playback Azimuth Centering Pin (0D09066A)

Playback Azimuth
Centering Pin
(0D09066A)



3. MECHANISM ASS'Y AND PARTS LIST

3.1. Synthesis

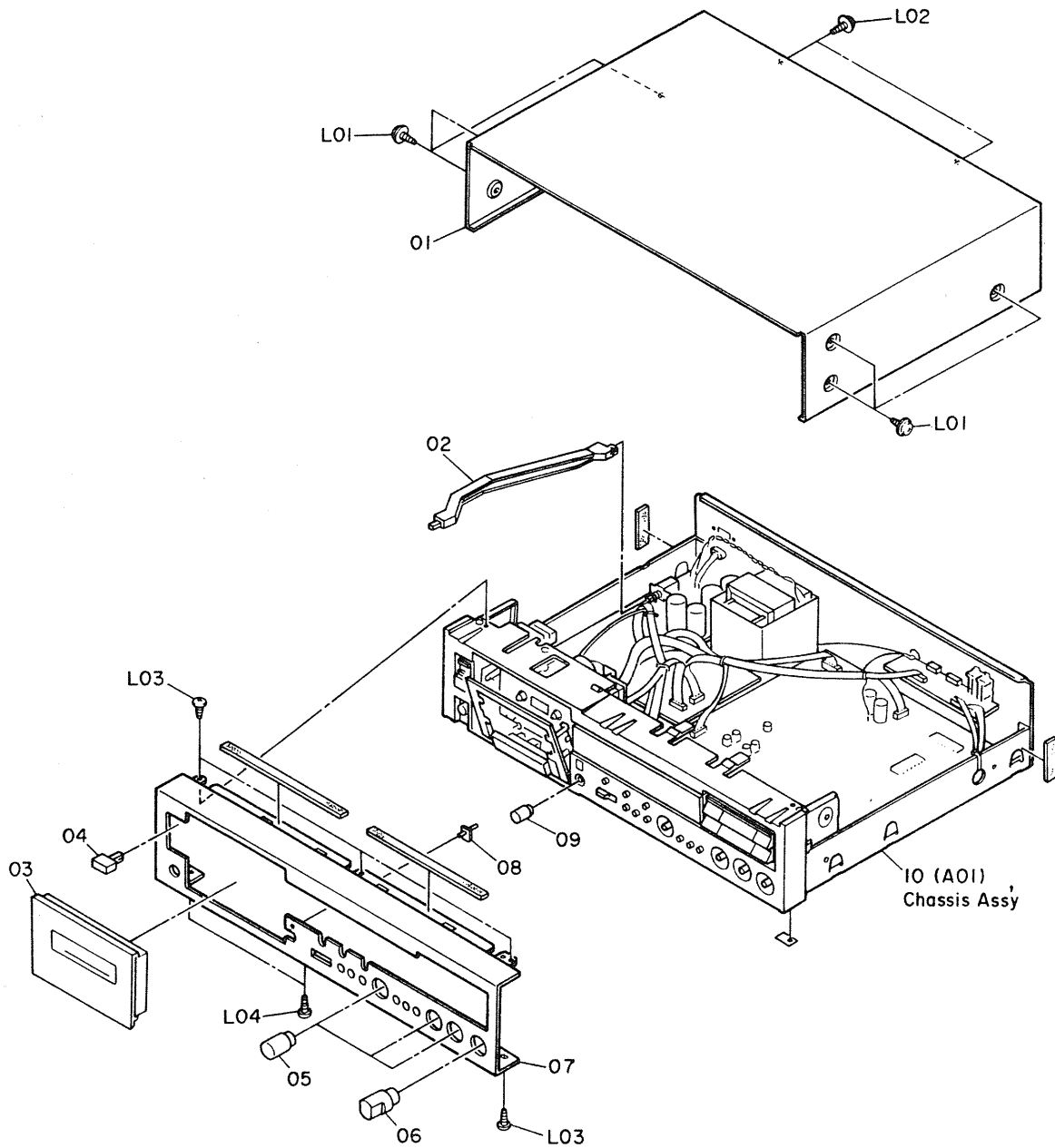


Fig. 3.1

3.1. Synthesis

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
	-	Synthesis					
01	0H06423A	Top Cover	1	L01	0E03032A	BT4x8 + Pan Washer Faced (Black Chromate)	
02	0J07037C	Power Switch Joint	1	L02	0E03632A	BT3x8 + Binding With Washer (Black Chromate)	
03	HA06577A	Cassette Case Cover Ass'y	1	L03	0E00921A	BT3x8 + Binding (Black Chromate)	
04	0H06418A	Power Knob	1	L04	0E03366A	BT3x8 + Binding Projected (Black Chromate)	
05	HA06502A	Volume Knob Ass'y CDR	3				
06	HA06503A	Volume Knob Ass'y DR	1				
07	0H06455C	Front Panel	1				
08	0H05845A	Center Lens	1				
09	HA06501B	Azimuth Knob Ass'y	1				
10	-	Chassis Ass'y	1				

3.2. Chassis Ass'y (A01)

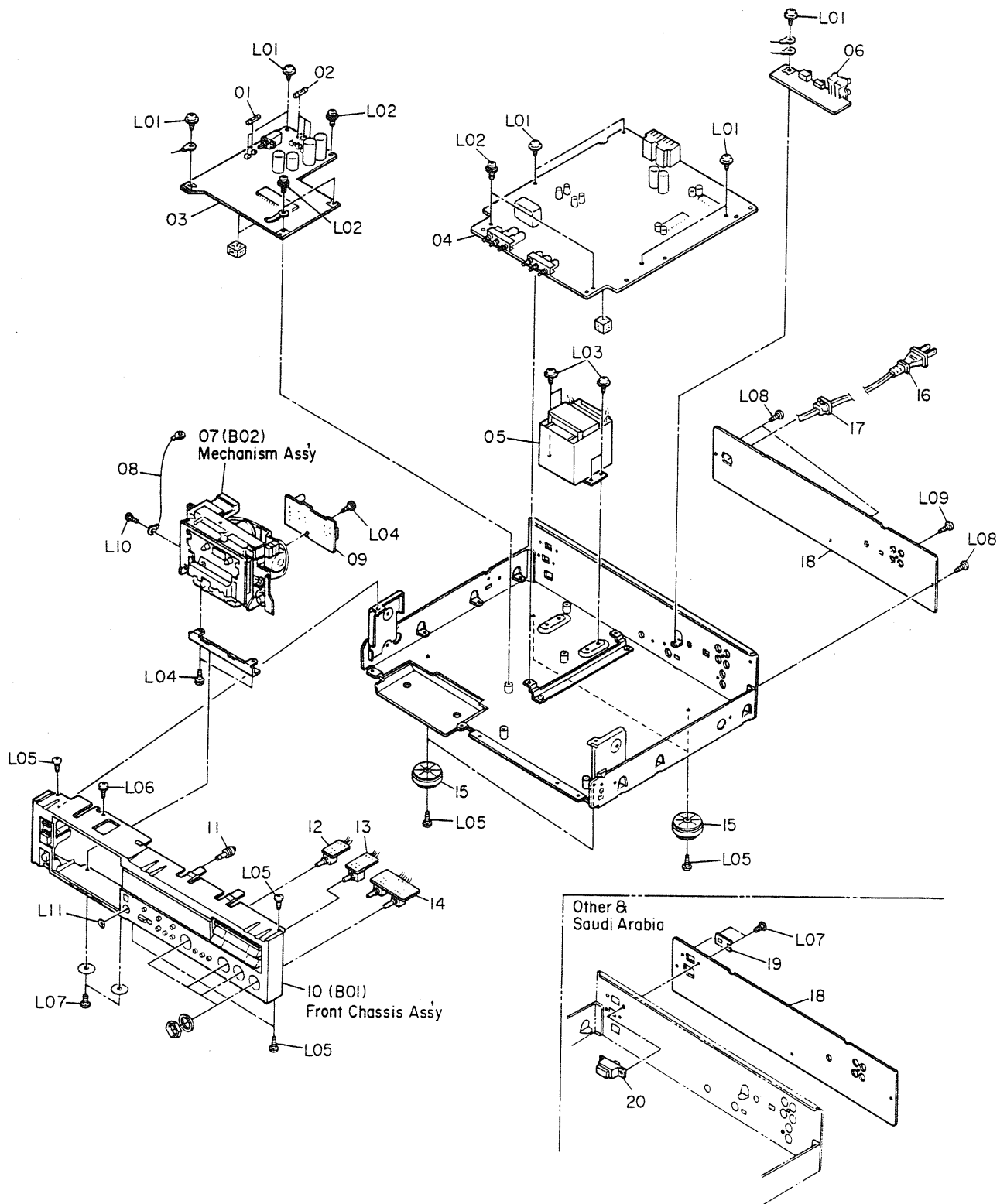


Fig. 3.2

3.3. Front Chassis Ass'y (B01)

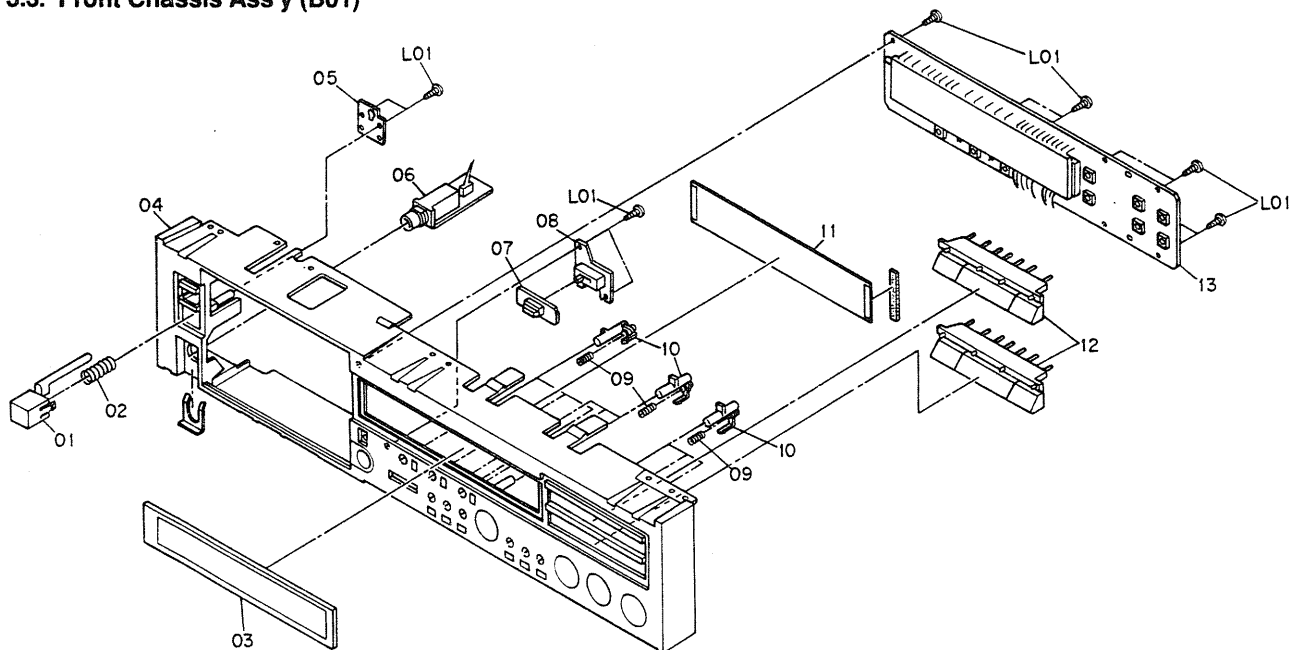


Fig. 3.3

3.2. Chassis Ass'y (A01)

Schematic Ref. No.	Part No.	Description	Q'ty
A01	-	Chassis Ass'y	1
01	0B90493A	Fuse 500mA [F404] (USA, CAN, JPN)	1
	0B08505A	Fuse F500mA [F404] (EP, UK, AUS, OTR, SAU)	1
02	0B90375A	Fuse 1.6A [F401-403] (USA, CAN, JPN)	3
	0B90382A	Fuse T1.25A [F401-403] (EP, UK, AUS, OTR, SAU)	3
03	BA08840A	Power Supply & Logic P.C.B. Ass'y (Except JPN)	1
	BA08843A	Power Supply & Logic P.C.B. Ass'y (JPN)	1
04	BA08832A	Main P.C.B. Ass'y	1
05	0B50183A	Power Transformer 120V (USA, CAN)	1
	0B50182A	Power Transformer 230V (EP)	1
	0B50179A	Power Transformer 240V (UK, AUS)	1
	0B50181A	Power Transformer 115-230V (OTR, SAU)	1
	0B50180A	Power Transformer 100V (JPN)	1
06	BA07985A	Pin Jack P.C.B. Ass'y	1
07	CA09200A	Mechanism Ass'y	1
08	0C86111A	Mechanism GND Ass'y	1
09	BA08477A	Playback Amp. P.C.B. Ass'y	1
10	-	Front Chassis Ass'y	1
11	0J06260A	Azimuth Joint	1
12	BA08836A	Bias Volume P.C.B. Ass'y	1
13	BA08838A	Output Volume P.C.B. Ass'y	1
14	BA08837A	Input Volume P.C.B. Ass'y	1
15	0H06472A	Leg	4
16	0B90205A	Power Cord (USA, CAN)	1
	0B08093U	Power Cord (EP)	1
	0B08348A	Power Cord (UK)	1
	0B05241A	Power Cord (AUS)	1
	0B08533A	Power Cord (OTR, SAU)	1
	0B08219B	Power Cord (JPN)	1
17	0B90280A	Cord Bushing (USA, CAN, EP, UK, AUS)	1
	0B90283A	Cord Bushing (OTR, SAU, JAN)	1
18	0H06523A	Rear Panel (USA, CAN, EP, UK, AUS, JPN)	1

Schematic Ref. No.	Part No.	Description	Q'ty
	0H06524A	Rear Panel (OTR, SAU)	1
19	0M05611A	Voltage Lock Plate (OTR, SAU)	1
20	0B07092U	Voltage Selector (OTR, SAU)	1
L01	0E03157A	BT3x8 + Binding With Washer	
L02	0E00607A	M3x8 + Pan (3A)	
L03	0E03592A	BT4x6 + Binding Washer Faced (Black Chromate)	
L04	0E03435A	M2.6x6 + Binding With Toothed Lock	
L05	0E00921A	BT3x8 + Binding (Black Chromate)	
L06	0E03212A	BT2.6x6 + Binding Toothed Lock	
L07	0E00985A	M3x6 + Binding (Black Chromate)	
L08	0E00860A	BT3x6 + Binding (Black Chromate)	
L09	0E03749A	PT3x8 + Binding (Black Chromate)	
L10	0E03042A	FT2.5x5 + Pan	
L11	0E03772A	Washer 10x5x5	

3.3. Front Chassis Ass'y (B01)

Schematic Ref. No.	Part No.	Description	Q'ty
B01	-	Front Chassis Ass'y	1
01	0H06432B	Eject Knob	1
02	0J07048B	Eject Knob Spring	1
03	HA06566D	Display Lens Ass'y	1
04	0H06430B	Front Chassis	1
05	0J07077A	Eject Holder	1
06	BA07986A	Headphone P.C.B. Ass'y	1
07	0H06436B	Slide Knob	1
08	BA08841A	Timer Switch P.C.B. Ass'y	1
09	0J06253A	Push Knob Spring	9
10	0H06447B	Push Knob	9
11	HA06569C	Filter DR Ass'y	1
12	0H06426B	Control Knob 3CD	2
13	BA08846A	Front P.C.B. Ass'y	1
L01	0E00868A	BT3x8 + Binding	

3.4. Mechanism Ass'y (B02)

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
B02	CA09200A	Mechanism Ass'y	1	73	0C82699A	Supply Flywheel	1
01	0C85309A	Eject Arm	1	74	0C82698A	Take-up Flywheel	1
02	0C85310A	Eject Arm Spring	1	75	0C82702A	Capstan Belt	1
03	CA80006A	Pneumatic Damper Ass'y	1	76	0C82718A	Thrust Plate	2
04	0C82720A	Eject Lever Spring	1	77	0C82726A	Floating Rubber	3
05	0C85414A	Eject Lever	1	78	CA81988A	Capstan Motor Ass'y	1
06	0C85301A	Cassette Case Holder L	1	79	0C85320A	Flywheel Holder	1
07	0C80019B	Eject Spring	1	80	0C81417A	Cam Gear B	1
08	0C80620A	Back Tension Arm Pulley	1	81	0C81418A	Control Motor Holder	1
09	0C80621A	Back Tension Arm Belt	1	82	0C81416A	Thrust Spring B	1
10	0C80617A	Back Tension Arm Spring	1	83	0C80027A	Mode Switch	3
11	0C80618A	Back Tension Arm Collar	1	84	0C81415A	Warm Thrust Bush	1
12	0C80619A	Back Tension Arm	1	85	CA81646A	Control Motor Ass'y 30	1
13	0C85425A	Lock Lever Spring	1	86	0C85319A	Azimuth Arm Spring B	1
14	0C85426A	Lock Lever Collar	1	87	CA81670A	Azimuth Arm B Sub Ass'y	1
15	0C85427A	Lock Lever	1	88	CA81669A	Azimuth Plate Sub Ass'y	1
16	CA80726A	Supply Reel Hub Ass'y	1	89	0C85314A	Azimuth Cam Gear	1
17	0C80612A	Spring Holder	2	90	0C85315A	Cassette Case Spring	1
18	0C80614A	Supply Reel Hub Spring	1	91	0C85316A	Cassette Case Spring Collar	1
19	0C81421A	Supply Pressure Roller Arm Adjustment Nut	1	92	CA81667A	Azimuth Chassis Sub Ass'y	1
20	CA80366A	Supply Pressure Roller Arm Ass'y	1	93	0C85318A	Azimuth Cam Spring	1
21	0C81420A	Supply Pressure Roller Arm Spring	1	94	0C85317A	Azimuth Cam Switch	1
22	0C81422A	Supply Pressure Roller Arm Track Spring	1	95	CA81671A	Azimuth 2P Connector Ass'y	1
23	0H04415C	Head Mount Cover	1	96	0C80012A	Sensor Switch	1
24	CA80200B	Cassette Case Ass'y	1	97	CA81673A	5P Connector Ass'y	1
25	CA81949A	Cover Plate Ass'y	1	98	CA81672A	9P Connector Ass'y	1
26	0C08762A	Head Height Adjustment Gear	2	L01	0E00698A	E-Ring 2.5mm	1
27	0C08761A	Head Height Adjustment Screw	4	L02	0E00181A	E-Ring 3mm	1
28	0C08763A	Azimuth Alignment Screw	1	L03	0E00222A	E-Ring 2mm	1
29	0C85424A	Head Mount Plate	1	L04	0E00042A	E-Ring 1.5mm	1
30	CA08659C	R-3L Record Head Ass'y	1	L05	0E00165A	E-Ring 1.2mm	1
31	0C08776A	Head Plate Spring L	1	L06	0E03052A	CS Stopper 2.4mm	1
32	CA81676A	RH 4P Connector Ass'y	1	L07	0E03042A	FT2.5x 5 + Pan	1
33	0C08026D	PB Head Azimuth Alignment Screw	1	L08	0E03667A	FT2.5x8 + Pan	1
34	0C81391A	PB Head Azimuth Alignment Screw Stopper	1	L09	0E03202A	M2.6x3 + Binding (Black Chromate)	1
35	0C85313A	PB Head Azimuth Arm Shaft A	1	L10	0E03437A	FT2.5x3.5 + Pan (Black Chromate)	1
36	0C85312A	PB Head Azimuth Arm A	1	L11	0E03654A	M2x4 + Pan (3A)	1
37	CA08755B	P2H-3L Playback Head Ass'y	1	L12	0E03018A	M2x5 + Pan	1
38	0C08775A	Head Plate Spring R	1	L13	0E03232A	M1.7x7 + Pan	1
39	CA81675A	PH 4P Connector Ass'y	1	L14	0E03222A	Washer 1.8x3.8x0.3	1
40	CA81674A	EH 2P Connector Ass'y	1	L15	0E03655A	M2x5 + Pan (2A)	1
41	GA02201A	E-4F Erase Head	1	L16	0E03234A	M2x3 + Pan	1
42	0C08768A	E.H. Hold Plate	1	L17	0E03228A	FT3x4 + Pan	1
43	0C08889A	E.H. Hold Plate Tapering Spring	2	L18	0E03236A	M2x5 + Pan (2A)	1
44	0C08886A	E.H. Hold Plate Spring	1	L19	0E03231A	M2x30 + Pan	1
45	0C82710A	Head Base Hold Plate	1	L20	0E03041A	FT2.5x4 + Pan	1
46	0C80004A	Steel Ball 3mm	1	L21	0E03233A	Washer 2.6x8x1	1
47	0C08771A	Tape Guide Plate	1	L22	0E03230A	ST2.6x12 + Pan	1
48	CA80365A	Head Base Sub Ass'y	1	L23	0E03045A	M2.6x3 + Binding	1
49	0C80007A	Steel Ball 2mm	3	L24	0E03226A	Washer 2.1x4.5x0.1	1
50	CA80725A	Take-up Reel Hub Ass'y	1	L25	0C82725A	M2.6x9 Washer Faced	1
51	0C80613A	Take-up Reel Hub Spring	1	L26	0E00691A	M2x3 + Pan	1
52	CA80368A	Take-up Pressure Roller Arm Ass'y	1	L27	0E03044A	FT2.5x20 + Pan	1
53	0C81423A	Take-up Pressure Roller Arm Spring	1	L28	0E03220A	ST3x5 + Countersunk	1
54	0C85429A	Switch Hold Plate	1	L29	0E03666A	ST3.5x6 + Pan	1
55	0C80623A	Switch Plate	2	L30	0E03035A	M2x3.2 + Truss	1
56	0C85585A	Switch Collar A	2	L31	0E03235A	Washer 2x5x0.25	1
57	0C80626A	Leaf Switch	1	L32	0E03225A	Washer 1.8x3.8x0.5	1
58	0C85586A	Switch Collar B	2	L33	0E03194A	Washer 2.1mm	1
59	0C80017B	Record Protector Lever	1	L34	0C85423A	S. Thrust Spring Washer	1
60	0C80022B	Cassette Hold Spring	1	L35	0E03049A	Washer 1.8x3.2x0.5	1
61	CA80736A	Mechanism Chassis Ass'y	1	L36	0C08774A	Plate Washer L	1
62	CA80011B	Shut-off P.C.B. Ass'y	1	L37	0C08773A	Plate Washer R	1
63	CA80204A	Brake Ass'y	1	L38	0E03227A	Washer 2.7x5x0.5	1
64	0C80628A	Brake Spring B	1	L39	0E03237A	Nut Hex. M2.6	1
65	0C80630A	Brake Arm Collar	1	L40	0E00694A	Nut M2	1
66	0C80629A	Brake Arm	1	L41	0C82716A	Capstan Washer S	1
67	0C82724A	Reel Motor Holder	1	L42	0C82717A	Capstan Washer T	1
68	CA81699B	Reel Motor Ass'y	1	L43	0E00912A	Washer FT25 2.6x4.7x0.25	1
69	0C83380A	Idle Gear	1	L44	0E03509A	Washer 1.3x3.4x0.5	1
70	0C82701A	Supply Capstan Flange	1	L45	0E03653A	Washer 1.6x4x0.25	1
71	0C82700A	Take-up Capstan Flange	1	L46	0E03508A	Washer 1.7x6x0.25	1
72	0C80428A	Hold Spring	2	L47	0E03180A	Washer 2.6mm	1
				L48	0E03703A	Washer 1.6x5.5x0.25	1

3.4. Mechanism Ass'y (B02)

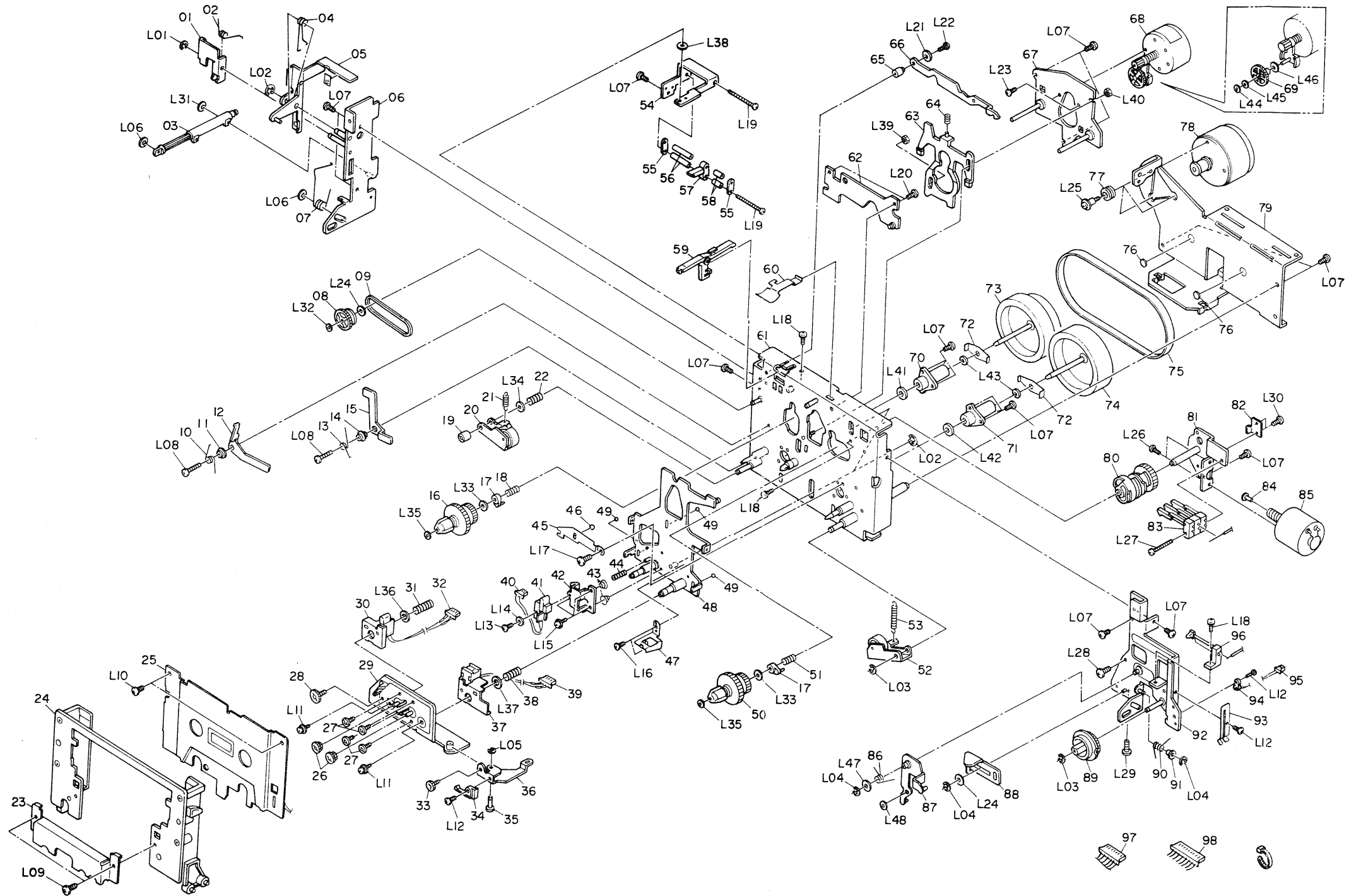


Fig. 3.4

4. MOUNTING DIAGRAMS AND PARTS LIST

4.1. Bias Volume P.C.B. Ass'y

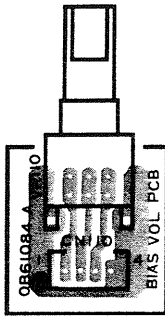


Fig. 4.1

4.2. Input Volume P.C.B. Ass'y

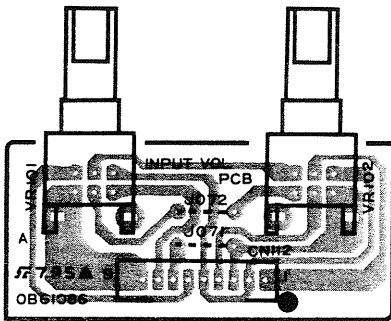


Fig. 4.2

4.3. Output Volume P.C.B. Ass'y

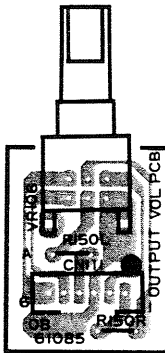


Fig. 4.3

4.4. Timer Switch P.C.B. Ass'y

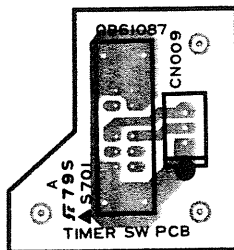


Fig. 4.4

4.5. Front P.C.B. Ass'y

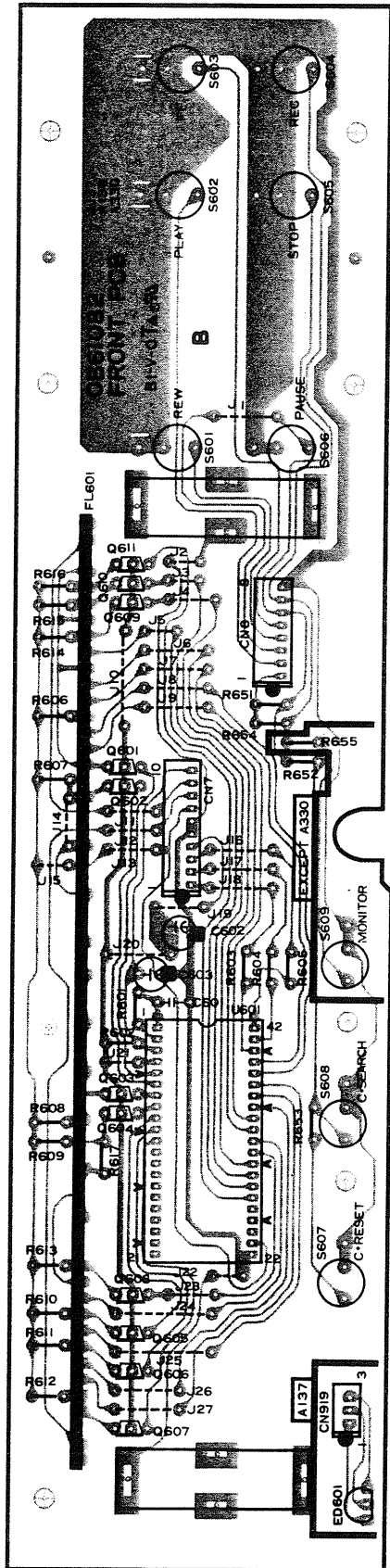


Fig. 4.5

4.6. Power Supply & Logic P.C.B. Ass'y

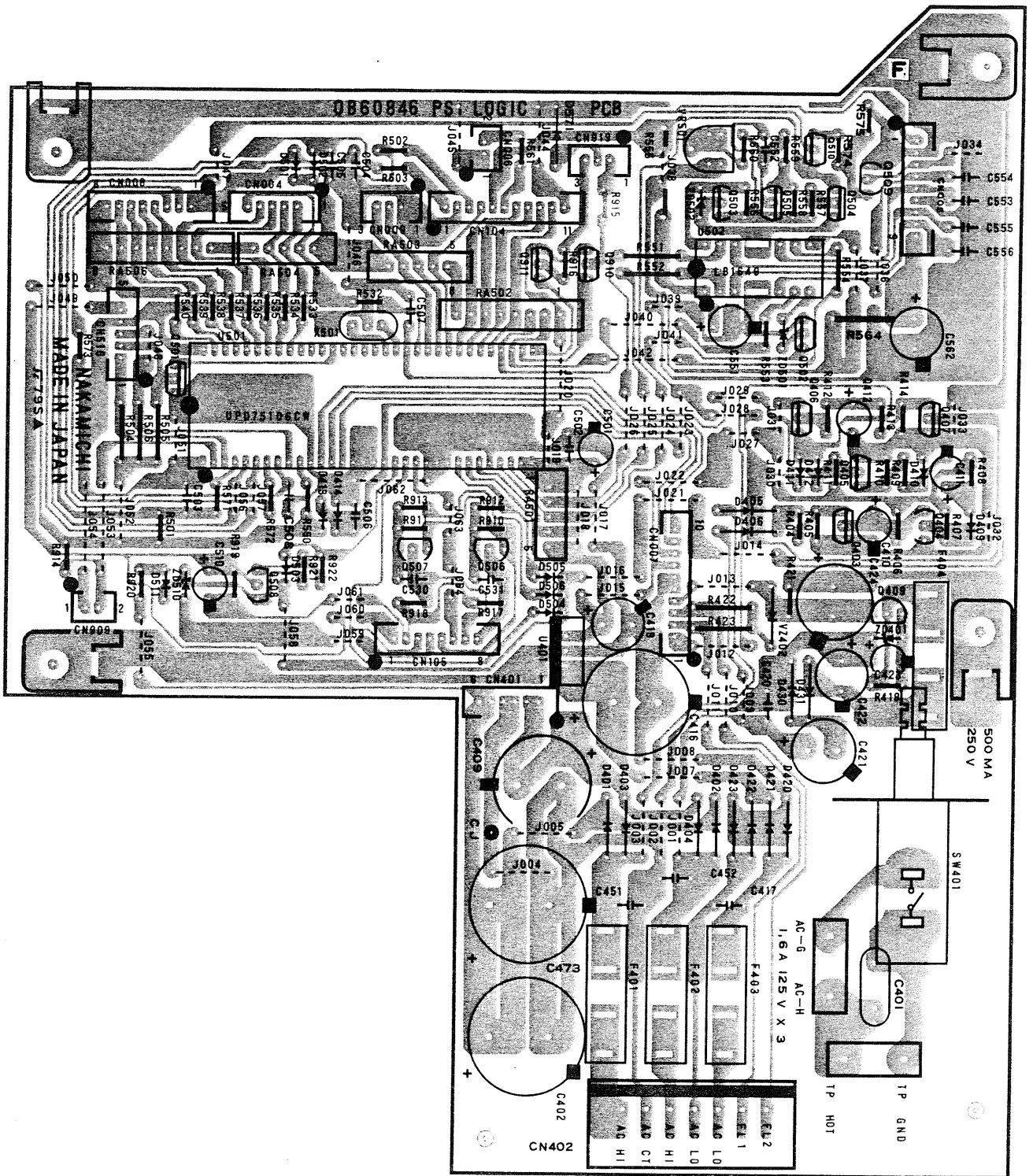


Fig. 4.6

4.7. Main P.C.B. Ass'y

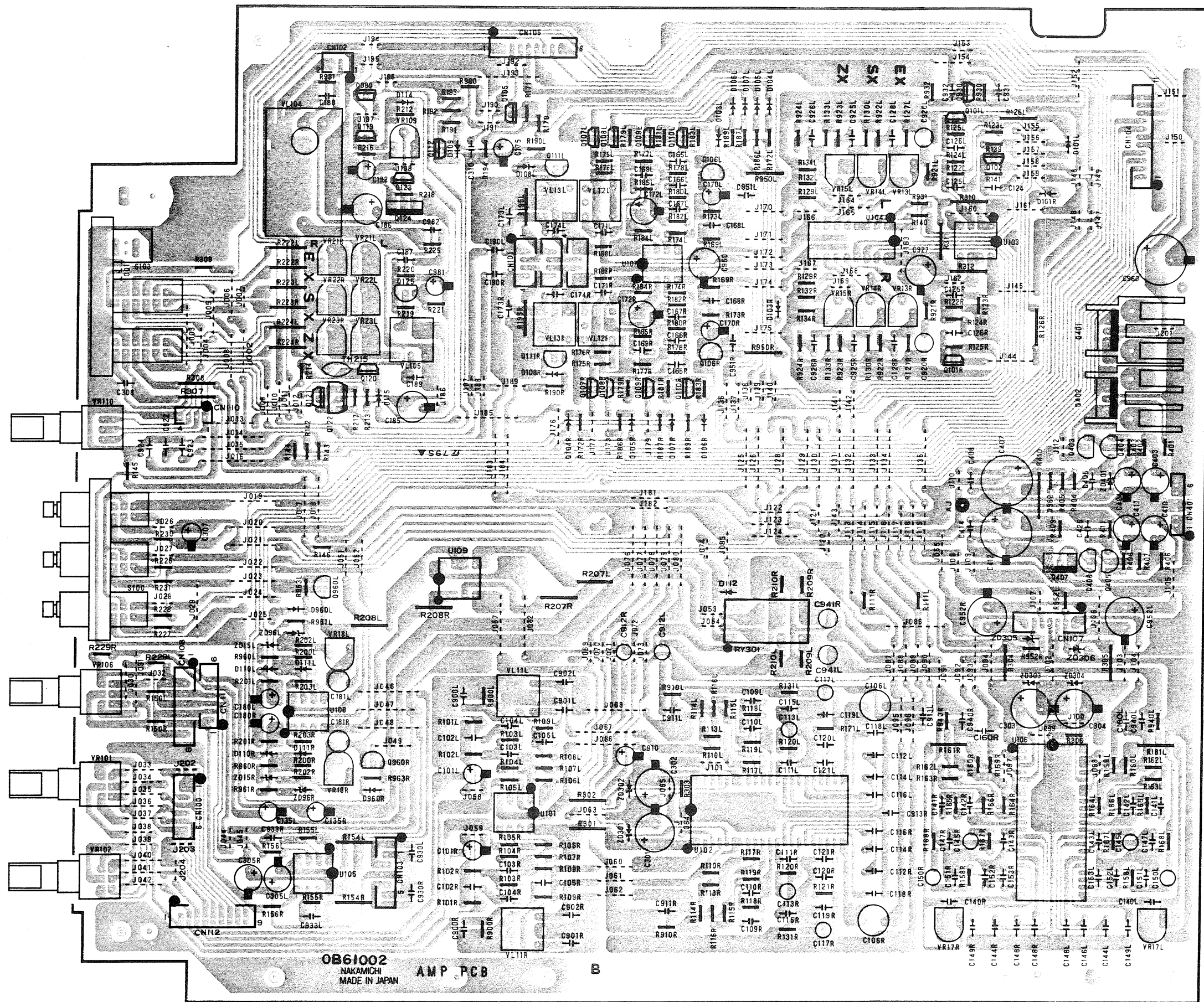


Fig. 4.7

NOTES: 1. Abbreviations

TR – Transistor, SID – Silicon Diode, ZD – Zener Diode, Varicap – Variable Capacitance Diode
 RK – Carbon Resistor, RM – Metal Film Resistor, RF – Fail Safe Type Resistor, RC – Cement Resistor
 CE – Electrolytic Capacitor, CML – Mylar Capacitor, CC – Ceramic Capacitor, CPP – PP Capacitor,
 CMM – Metalized Mylar Capacitor, CSP – Polystyrene Capacitor, C – Mica Capacitor,
 CT – Tantalum Capacitor

2. Description of capacitor: 10 16V = 10µ 16V

4.1. Bias Volume P.C.B. Ass'y

Schematic Ref. No.	Part No.	Description
	BA08836A	Bias Volume P.C.B. Ass'y
	0B61084A	Bias Volume P.C.B.
VR110	0B30159A	VR 10Kx2
CN110	0B85202A	4P Connector Ass'y

4.2. Input Volume P.C.B. Ass'y

Schematic Ref. No.	Part No.	Description
	BA08837A	Input Volume P.C.B. Ass'y
	0B61086A	Input Volume P.C.B.
VR101	0B30156A	VR 100KMN C.C
VR102	0B30157A	VR 100Kx2
CN112	0B85203A	9P Connector Ass'y

4.3. Output Volume P.C.B. Ass'y

Schematic Ref. No.	Part No.	Description
	BA08838A	Output Volume P.C.B. Ass'y
	0B61085A	Output Volume P.C.B.
VR106	0B30160A	VR 10Kx2
R150L,R	0B25661A	RM 2.2K 1/4W F
CN111	0B85204A	6P Connector Ass'y

4.4. Timer Switch P.C.B. Ass'y

Schematic Ref. No.	Part No.	Description
	BA08841A	Timer Switch P.C.B. Ass'y
	0B61087A	Timer Switch P.C.B.
S701	0B70175A	Slide Switch 2-4
CN009	0B83936A	3P H-Connector Ass'y

4.5. Front P.C.B. Ass'y

Schematic Ref. No.	Part No.	Description
	BA08846A	Front P.C.B. Ass'y
	0B61082B	Front P.C.B.
U601	0B11860A	IC MSC7112-01
Q601,602	0B10030A	TR 2SC1740S (S)
Q603,604	0B10030A	TR 2SC1740S (S)
Q605,606	0B10030A	TR 2SC1740S (S)
Q607,608	0B10030A	TR 2SC1740S (S)
Q609,610	0B10030A	TR 2SC1740S (S)
Q611	0B10030A	TR 2SC1740S (S)
ED601	0B12709A	LED TL5G126
R601	0B09713A	RK 33K 1/6W J

Schematic Ref. No.	Part No.	Description
R602	0B09701A	RK 10K 1/6W J
R603,604	0B09677A	RK 1K 1/6W J
R605	0B09677A	RK 1K 1/6W J
R606,607	0B09717A	RK 47K 1/6W J
R608,609	0B09717A	RK 47K 1/6W J
R610,611	0B09717A	RK 47K 1/6W J
R612,613	0B09717A	RK 47K 1/6W J
R614,615	0B09717A	RK 47K 1/6W J
R616	0B09717A	RK 47K 1/6W J
R617	0B09629A	RK 10 1/6W J
R651	0B09701A	RK 10K 1/6W J
R652	0B09693A	RK 4.7K 1/6W J
R653	0B09705A	RK 15K 1/6W J
R654	0B09701A	RK 10K 1/6W J
R655	0B09693A	RK 4.7K 1/6W J
C601	0B41681A	CC 100P 50V J
C602	0B40980A	CE 100 6.3V
C603	0B40173A	CE 1 50V
S601,602	0B70214A	Tact Switch
S603,604	0B70214A	Tact Switch
S605,606	0B70214A	Tact Switch
S607,608	0B70214A	Tact Switch
S609	0B70214A	Tact Switch
CN7	0B85205A	10P H-Connector Ass'y
CN8	0B85206A	8P H-Connector Ass'y
CN919	0B83937A	3P H-Connector Ass'y 250
FL601	0B90461A	FL Display FIP13BW7Y
	0J07086A	FL Cushion DR
	0J06238A	FL Stopper

4.6. Power Supply & Logic P.C.B. Ass'y

Schematic Ref. No.	Part No.	Description
	BA08840A	Power Supply & Logic P.C.B. Ass'y (Except JPN)
	BA08843A	Power Supply & Logic P.C.B. Ass'y (JPN)
— Power Supply —		
U401	0B11753A	IC NJM7805FA
Q403,404	0B10033A	TR 2SC1740S (S)
Q405	0B10033A	TR 2SC1740S (S)
Q406	0B10058A	TR DTA114ES
Q407	0B10033A	TR 2SC1740S (S)
Q409	0B10015A	TR 2SA1020
ZD401	0B12708A	ZD 24V MA4240N-H
ZD402	0B12707A	ZD 4.7V MA4047N
D401,402	0B12365A	SiD 1SR35-100A
D403,404	0B12365A	SiD 1SR35-100A
D405,406	0B12365A	SiD 1SR35-100A
D409,410	0B06398A	SiD 1SS176
D411,412	0B06398A	SiD 1SS176
D420,421	0B12365A	SiD 1SR35-100A
D422,423	0B12365A	SiD 1SR35-100A
D430,431	0B12365A	SiD 1SR35-100A
R404	0B09709A	RK 22K 1/6W J
R405	0B09703A	RK 12K 1/6W J
R406	0B09701A	RK 10K 1/6W J

Schematic Ref. No.	Part No.	Description
R407,408	0B09693A	RK 4.7K 1/6W J
R409	0B09719A	RK 56K 1/6W J
R410	0B09713A	RK 33K 1/6W J
R411,412	0B09693A	RK 4.7K 1/6W J
R413	0B09719A	RK 56K 1/6W J
R414	0B09713A	RK 33K 1/6W J
R419	0B09685A	RK 2.2K 1/6W J
R421	0B09701A	RK 10K 1/6W J
R422,423	0B09653A	RK 100 1/6W J
C401	0B41825A	CC 4700P AC400V (Except JPN)
	0B41826A	CC 4700P AC250 (JPN)
C402	0B40801A	CE 6800 25V
C409	0B40363A	CE 2200 25V
C410	0B40630A	CE 22 10V (LN)
C411,412	0B40255A	CE 1 50V (LN)
C416	0B40362A	CE 6800 16V
C417	0B41298A	CML 0.1 50V J
C419	0B40067A	CE 470 10V
C420	0B41298A	CML 0.1 50V J
C421	0B40798A	CE 330 35V
C422	0B40120A	CE 100 50V
C423	0B40100A	CE 10 35V
C424	0B40802A	CE 1000 35V
C451,452	0B41298A	CML 0.1 50V J
C473	0B40801A	CE 6800 25V
S401	0B71012A	Power Switch 1P TV-4
CN401	0B81463A	6P T-Post
CN402	0B81574A	7P T-Post
	0B08349B	Fuse Clip (8)
	0E06668A	Earth Lug for P.C.B. (4)
	0B84275A	Wrapping Terminal 1P (2)

— Motor Driver —

U502	0B11368A	IC LB1649
Q502	0B10062A	TR DTC144ES
Q503	0B10029A	TR 2SA933S (S)
Q504	0B10062A	TR DTC144ES
Q505	0B10033A	TR 2SC1740S (S)
Q509	0B06066A	TR 2SD471
Q510	0B10368A	TR DTC144TS
ZD501	0B12153A	ZD 6.2V RD6.2B2
ZD502	0B12288A	ZD 5.1V MTZ5.1B
D413,414	0B06398A	SiD 1SS176
D503,504	0B06398A	SiD 1SS176
D505,506	0B06398A	SiD 1SS176
VR501	0B32192A	Semi VR 5K
R551,552	0B01857A	RK 1K 1/4W J
R553,554	0B09677A	RK 1K 1/6W J
R555	0B24361A	Fuse Resistor 27 1W
R556	0B09701A	RK 10K 1/6W J
R557	0B09681A	RK 1.5K 1/6W J
R558	0B09695A	RK 5.6K 1/6W J
R559	0B09717A	RK 47K 1/6W J
R560	0B09677A	RK 1K 1/6W J
R561	0B09669A	RK 470 1/6W J
R564	0B09217A	RF 5.6 1/4W J
R574	0B09684A	RK 2K 1/6W J
R575	0B09725A	RK 100K 1/6W J
C551	0B40078A	CE 100 16V
C552	0B41286A	CML 0.01 50V J

Schematic Ref. No.	Part No.	Description
C553,554	0B41298A	CML 0.1 50V J
C555,556	0B41298A	CML 0.1 50V J
C562	0B40079A	CE 220 16V
CN005	0B84084A	9P T-Post
CN006	0B84278A	2P T-Post

— MPU —

U501	0B11884A	IC uPD75106CW
Q501	0B10068A	TR DTC114ES
Q506,507	0B10029A	TR 2SA933S (S)
Q508	0B10029A	TR 2SA933S (S)
Q910,911	0B10053A	TR DTA144ES
ZD510	0B12695A	ZD 10V MA4100(N)
D501,502	0B06398A	SID 1SS176
D511	0B06398A	SID 1SS176
D571	0B12634A	Varistor 02YS
X501	0B92045A	Crystal 4.0MHZ
RA501	0B21101A	R Network 10Kx3
RA502	0B21102A	R Network 10Kx6
RA503	0B21101A	R Network 10Kx3
RA504	0B21101A	R Network 10Kx3
RA506	0B21102A	R Network 10Kx6
R501	0B09689A	RK 3.3K 1/6W J
R502,503	0B09701A	RK 10K 1/6W J
R504,505	0B09701A	RK 10K 1/6W J
R506	0B09701A	RK 10K 1/6W J
R532,533	0B09677A	RK 1K 1/6W J
R534,535	0B09677A	RK 1K 1/6W J
R536,537	0B09677A	RK 1K 1/6W J
R538,539	0B09677A	RK 1K 1/6W J
R540	0B09677A	RK 1K 1/6W J
R550	0B09701A	RK 10K 1/6W J
R571	0B09677A	RK 1K 1/6W J
R572,573	0B09701A	RK 10K 1/6W J
R910,911	0B09709A	RK 22K 1/6W J
R912,913	0B09725A	RK 100K 1/6W J
R914	0B09701A	RK 10K 1/6W J
R915,916	0B09661A	RK 220 1/6W J
R917,918	0B09725A	RK 100K 1/6W J
R919	0B09721A	RK 68K 1/6W J
R920	0B09669A	RK 470 1/6W J
R921	0B09725A	RK 100K 1/6W J
R922	0B09701A	RK 10K 1/6W J
C501	0B40077A	CE 47 16V
C502	0B41298A	CML 0.1 50V J
C503	0B41302A	CML 0.22 50V J
C504,505	0B41286A	CML 0.01 50V J
C506,507	0B41274A	CML 1000P 50V J
C508	0B41944A	CC 1000P 50V K
C510	0B40756A	CE 1 50V (LN)
C530,531	0B41290A	CML 0.022 50V J
CN004	0B81462A	5P T-Post
CN007	0B84302A	10P T-Post
CN008	0B84296A	8P T-Post
CN009	0B84281A	3P T-Post
CN104	0B84305A	11P T-Post
CN105	0B81465A	8P T-Post
CN516	0B84286A	5P T-Post
CN909	0B81459A	2P T-Post
CN919	0B81460A	3P T-Post

— Miscellaneous —

0B60846F Power Supply & Logic P.C.B.

4.7. Main P.C.B. Ass'y

Schematic Ref. No.	Part No.	Description
	BA08832A	Main P.C.B. Ass'y

— Input Amp. —

U101	0B06146A	IC NJM4558DD
VL11L,R	0B51373A	MPX Filter
R101L,R	0B09749A	RK 1M 1/6W J
R102L,R	0B09717A	RK 47K 1/6W J
R103L,R	0B09717A	RK 47K 1/6W J
R104L,R	0B09709A	RK 22K 1/6W J
R105L,R	0B09677A	RK 1K 1/6W J
R106L,R	0B09677A	RK 1K 1/6W J
R107L,R	0B25236A	RM 2.67K 1/4W F
R108L,R	0B25236A	RM 2.67K 1/4W F
R109L,R	0B25267A	RM 5.62K 1/4W F
R900L,R	0B09725A	RK 100K 1/6W J
C101L,R	0B40778A	CE 10 25V
C102L,R	0B41976A	CC 33P 50V J
C103L,R	0B41978A	CC 68P 50V J
C104L,R	0B41976A	CC 33P 50V J
C105L,R	0B01802A	CML 2200P 50V J
C900L,R	0B09989A	CC 120P 50V J
C901L,R	0B09189A	CML 2700P 50V J
C902L,R	0B01804A	CML 3900P 50V J
CN112	0B84084A	9P T-Post

— Encoder —

U102	0B11363A	IC CX20188
ZD301,302	0B12695A	ZD 10V MA4100(N)
R110L,R	0B25267A	RM 5.62K 1/4W F
R113L,R	0B25195A	RM 1K 1/4W F
R114L,R	0B25304A	RM 13.7K 1/4W F
R115L,R	0B25251A	RM 3.83K 1/4W F
R116L,R	0B25244A	RM 3.24K 1/4W F
R117L,R	0B09749A	RK 1M 1/6W J
R118L,R	0B25171A	RM 562 1/4W F
R119L,R	0B25324A	RM 22.1K 1/4W F
R120L,R	0B09698A	RK 7.5K 1/6W J
R121L,R	0B09673A	RK 680 1/6W J
R131L,R	0B09700A	RK 9.1K 1/6W J
R301,302	0B09508A	RF 56 1/4W J
R303	0B25398A	RM 130K 1/4W F
R910L,R	0B25099A	RM 100 1/4W F
C106L,R	0B40474A	CE 47 16V (BP)
C109L,R	0B41133A	CPP 2200P 100V G
C110L,R	0B41133A	CPP 2200P 100V G
C111L,R	0B41139A	CPP 3900P 100V G
C112L,R	0B41306A	CML 0.47 50V J
C113L,R	0B40817A	CE 1 50V (BP)
C114L,R	0B41300A	CML 0.15 50V J
C115L,R	0B41288A	CML 0.015 50V J
C116L,R	0B41302A	CML 0.22 50V J
C117L,R	0B40817A	CE 1 50V (BP)
C118L,R	0B41296A	CML 0.068 50V J
C119L,R	0B41295A	CML 0.056 50V J
C120L,R	0B41143A	CPP 5600P 100V G
C121L,R	0B05681A	CML 0.01 50V J
C301,302	0B40608A	CE 470 16V
C910	0B40778A	CE 10 25V
C911L,R	0B09989A	CC 120P 50V J
C913L,R	0B09989A	CC 120P 50V J

— Rec. Eq. Amp. —

U103	0B06146A	IC NJM4558DD
U104	0B11027A	IC TC9145P
Q101L,R	0B10033A	TR 2SC1740S (S)
Q102	0B10029A	TR 2SA933S (S)
Q930	0B10029A	TR 2SA933S (S)
D101L,R	0B06398A	SID 1SS176
VR13L,R	0B32193A	Semi VR 10K
VR14L,R	0B32193A	Semi VR 10K

Schematic Ref. No.	Part No.	Description
VR15L,R	0B32194A	Semi VR 20K
R111L,R	0B09733A	RK 220K 1/6W J
R122L,R	0B09705A	RK 15K 1/6W J
R123L,R	0B09703A	RK 12K 1/6W J
R124L,R	0B25276A	RM 6.98K 1/4W F
R125L,R	0B09749A	RK 1M 1/6W J
R126L,R	0B09701A	RK 10K 1/6W J
R127L,R	0B09701A	RK 10K 1/6W J
R129L,R	0B09693A	RK 4.7K 1/6W J
R130L,R	0B09697A	RK 6.8K 1/6W J
R132L,R	0B09689A	RK 3.3K 1/6W J
R133L,R	0B09701A	RK 10K 1/6W J
R134L,R	0B09701A	RK 10K 1/6W J
R139	0B09717A	RK 47K 1/6W J
R140,141	0B09725A	RK 100K 1/6W J
R142,143	0B09733A	RK 220K 1/6W J
R144	0B09733A	RK 220K 1/6W J
R145,146	0B09693A	RK 4.7K 1/6W J
R310	0B09693A	RK 4.7K 1/6W J
R311	0B09701A	RK 10K 1/6W J
R312	0B09693A	RK 4.7K 1/6W J
R921L,R	0B09705A	RK 15K 1/6W J
R922L,R	0B09694A	RK 5.1K 1/6W J
R923L,R	0B09701A	RK 10K 1/6W J
R924L,R	0B09701A	RK 10K 1/6W J
R930,931	0B09725A	RK 100K 1/6W J
R932	0B09717A	RK 47K 1/6W J
C124	0B41971A	CC 0.1 50V Z
C125L,R	0B09993A	CML 820P 50V J
C126L,R	0B05681A	CML 0.01 50V J
C128L,R	0B09045A	CML 0.027 50V J
C920L,R	0B40474A	CE 47 16V (BP)
C922,923	0B41971A	CC 0.1 50V Z
C924	0B41971A	CC 0.1 50V Z
C925L,R	0B09045A	CPP 0.027 50V J
C926L,R	0B05659A	CML 5600P 50V J
C927	0B40799A	CE 100 35V
C931,932	0B41971A	CML 0.1 50V Z

— Rec. Amp. —

U107	0B06387A	IC NJM2043DD
Q105	0B10053A	TR DTA144ES
Q106L,R	0B06299A	TR 2SC2878
Q107L,R	0B10033A	TR 2SC1740S (S)
Q108L,R	0B10033A	TR 2SC1740S (S)
Q109L,R	0B10033A	TR 2SC1740S (S)
Q110L,R	0B10033A	TR 2SC1740S (S)
Q111L,R	0B06299A	TR 2SC2878
Q112	0B10029A	TR 2SA933S (S)
D103L,R	0B06398A	SID 1SS176
D104L,R	0B06398A	SID 1SS176
D105L,R	0B06398A	SID 1SS176
D106L,R	0B06398A	SID 1SS176
D107L,R	0B06398A	SID 1SS176
D108L,R	0B06398A	SID 1SS176
D109	0B06398A	SID 1SS176
VL12L,R	0B51374A	Coil 15.8mH
VL13L,R	0B51370A	Trap Coil 1.05mH
R169L,R	0B09711A	RK 27K 1/6W J
R170	0B09701A	RK 10K 1/6W J
R171	0B09725A	RK 100K 1/6W J
R172L,R	0B09709A	RK 22K 1/6W J
R173L,R	0B09733A	RK 220K 1/6W J
R174L,R	0B25195A	RM 1K 1/4W F
R175L,R	0B09685A	RK 2.2K 1/6W J
R176L,R	0B09677A	RK 1K 1/6W J
R177L,R	0B25252A	RM 3.92K 1/4W F
R178L,R	0B09694A	RK 5.1K 1/6W J
R179L,R	0B09741A	RK 470K 1/6W J
R180L,R	0B09693A	RK 4.7K 1/6W J
R181L,R	0B09741A	RK 470K 1/6W J
R182L,R	0B09695A	RK 5.6K 1/6W J
R183L,R	0B09741A	RK 470K 1/6W J
R184L,R	0B09733A	RK 220K 1/6W J

Schematic Ref. No.	Part No.	Description
R185L,R	0B25365A	RM 59.0K 1/4W F
R186L,R	0B09709A	RK 22K 1/6W J
R187L,R	0B09709A	RK 22K 1/6W J
R188L,R	0B22644A	RM 1.54K 1/4W F
R189L,R	0B09709A	RK 22K 1/6W J
R190L,R	0B09695A	RK 5.6K 1/6W J
R191	0B09717A	RK 47K 1/6W J
R192	0B09701A	RK 10K 1/6W J
R193	0B09721A	RK 68K 1/6W J
R194	0B09701A	RK 10K 1/6W J
R195L,R	0B09629A	RK 10 1/6W J
R950L,R	0B09701A	RK 10K 1/6W J
C165L,R	0B41133A	CPP 2200P 100V G
C166L,R	0B41278A	CML 2200P 50V J
C167L,R	0B05582A	CML 0.022 50V J
C168L,R	0B09045A	CML 0.027 50V J
C169L,R	0B05682A	CML 0.068 50V J
C170L,R	0B40557A	CE 1 50V
C171L,R	0B01914A	CML 3300P 50V J
C172L,R	0B40559A	CE 47 16V
C173L,R	0B09322A	CPP 330P 100V J
C174L,R	0B09834A	CPP 2200P 100V J
C175	0B40778A	CE 10 25V
C310	0B05550A	CML 1000P 50V J
C950	0B40798A	CE 330 35V
C951L,R	0B05550A	CML 1000P 50V J
CN101	0B81461A	4P T-Post

— Decoder —

U106	0B11363A	IC CX20188
ZD303,304	0B12695A	ZD 10V MA4100(N)
VR17L,R	0B32192A	Semi VR 5K
R158L,R	0B09673A	RK 680 1/6W J
R159L,R	0B09725A	RK 100K 1/6W J
R160L,R	0B25195A	RM 1K 1/4W F
R161L,R	0B09420A	RM 2.2K 1/4W F
R162L,R	0B25244A	RM 3.24K 1/4W F
R163L,R	0B25251A	RM 3.83K 1/4W F
R164L,R	0B09749A	RK 1M 1/6W J
R165L,R	0B25171A	RM 562 1/4W F
R166L,R	0B25324A	RM 22.1K 1/4W F
R167L,R	0B09698A	RK 7.5K 1/6W J
R168L,R	0B09700A	RK 9.1K 1/6W J
R304,305	0B09508A	RF 56 1/4W J
R306	0B25398A	RM 130K 1/4W F
R940L,R	0B25099A	RM 100 1/4W F
C140L,R	0B09989A	CC 120P 50V J
C141L,R	0B41133A	CPP 2200P 100V G
C142L,R	0B41133A	CPP 2200P 100V G
C143L,R	0B41139A	CPP 3900P 100V G
C144L,R	0B41306A	CML 0.47 50V J
C145L,R	0B40817A	CE 1 50V (BP)
C146L,R	0B41300A	CML 0.15 50V J
C147L,R	0B41288A	CML 0.015 50V J
C148L,R	0B41302A	CML 0.22 50V J
C149L,R	0B41296A	CML 0.068 50V J
C150L,R	0B40817A	CE 1 50V (BP)
C151L,R	0B41295A	CML 0.056 50V J
C152L,R	0B41143A	CPP 5600P 100V G
C153L,R	0B05681A	CML 0.01 50V J
C160L,R	0B41201A	CPP 100P 100V J
C303,304	0B40608A	CE 470 16V
C940L,R	0B09989A	CC 120P 50V J

— Headphone Amp. —

U105	0B11365A	IC M5216
R154L,R	0B09216A	RF 10 1/4W J
R155L,R	0B09717A	RK 47K 1/6W J
R156L,R	0B09717A	RK 47K 1/6W J
C135L,R	0B40778A	CE 10 25V
C305L,R	0B40800A	CE 100 25V
C930L,R	0B01804A	CML 3900P 100V J
C933L,R	0B41978A	CC 68P 50V J

Schematic Ref. No.	Part No.	Description
CN103	0B81637A	5P T-Post
CN111	0B81463A	6P T-Post
— Power Supply —		
Q401,402	0B06452A	TR 2SD1406
Q403,404	0B06142A	TR 2SC2240
Q405,406	0B10050A	TR 2SA970
Q407	0B06451A	TR 2SB1015
ZD401	0B12705A	ZD 5.1V MA4051N
R401,402	0B09685A	RK 2.2K 1/6W J
R403	0B09677A	RK 1K 1/6W J
R404	0B25667A	RM 3.9K 1/4W F
R405	0B25669A	RM 4.7K 1/4W F
R406,407	0B09685A	RK 2.2K 1/6W J
R408	0B09677A	RK 1K 1/6W J
R409	0B22570A	RM 12K 1/4W F
R410	0B25308A	RM 15K 1/4W F
R411	0B09669A	RK 470 1/6W J
R962	0B09682A	RK 1.6K 1/6W J
C403,404	0B40800A	CE 100 25V
C405	0B41971A	CC 0.1 50V Z
C407	0B40705A	CE 3300 16V
C408	0B41971A	CC 0.1 50V Z
C410,411	0B40800A	CE 100 25V
C412	0B40361A	CE 2200 16V
C414	0B41971A	CC 0.1 50V Z
C425	0B41971A	CC 0.1 50V Z
	0B90448A	Heat Sink

— Tape/Source Switch —

U109	0B06124B	IC NJM4558D
D112	0B06398A	SID 1SS176
R207L,R	0B09725A	RK 100K 1/6W J
R208L,R	0B09677A	RK 1K 1/6W J
R209L,R	0B09701A	RK 10K 1/6W J
R210L,R	0B09701A	RK 10K 1/6W J
C912L,R	0B40610A	CE 10 25V (BP)
C941L,R	0B40610A	CE 10 25V (BP)
RY301	0B90279A	DS Relay 24V

— Bias Osc. —

Q119	0B10055A	TR DTA124ES
Q120	0B10070A	TR DTC143ES
Q121	0B10033A	TR 2SC1740S (S)
Q122	0B06069A	TR 2SB564
Q123	0B10033A	TR 2SC1740S (S)
Q124	0B06451A	TR 2SB1015
Q125	0B10222A	TR 2SC2705 (Y)
Q980	0B10053A	TR DTA144ES
ZD305,306	0B12695A	ZD 10V MA4100(N)
D114,115	0B06398A	SID 1SS176
VL104	0B51047A	BIAS OSC
VL105	0B51372A	OSC Tune
VR109	0B32192A	Semi VR 5K
R212,213	0B09665A	RK 330 1/6W J
R214	0B09701A	RK 10K 1/6W J
R216	0B09703A	RK 12K 1/6W J
R217	0B09653A	RK 100 1/6W J
R218	0B09701A	RK 10K 1/6W J
R219	0B09725A	RK 100K 1/6W J
R220	0B09701A	RK 10K 1/6W J
R221	0B09617A	RK 3.3 1/6W J
R225	0B09701A	RK 10K 1/6W J
R952L,R	0B09648A	RK 62 1/6W J
R980	0B09717A	RK 47K 1/6W J
R981	0B09693A	RK 4.7K 1/6W J
C185,186	0B40800A	CE 100 25V
C187	0B09993A	CML 820P 50V J
C188	0B41255A	CPP 0.018 100V J
C189	0B41261A	CPP 0.033 100V J
C192	0B40778A	CE 10 25V
C952L,R	0B40608A	CE 470 16V

Schematic Ref. No.	Part No.	Description
C981	0B40115A	CE 4.7 50V
C982	0B09270A	CPP 470P 160V J
TH215	0B19006A	Thermistor 3.3K
CN102	0B81459A	2P T-Post (WHT)
CN110	0B81461A	4P T-Post (WHT)

— Bias Adj. —

VR21L,R	0B32195A	Semi VR 50K
VR22L,R	0B32194A	Semi VR 20K
VR23L,R	0B32193A	Semi VR 10K
R222L,R	0B09705A	RK 15K 1/6W J
R223L,R	0B09697A	RK 6.8K 1/6W J
R224L,R	0B09653A	RK 100 1/6W J

— Meter Amp. —

U108	0B06124B	IC NJM4558D
Q960L,R	0B06299A	TR 2SC2878
ZD15L,R	0B12714A	ZD 3.3V
		RD3.3ESB1
ZD96L,R	0B12289A	ZD 5.1V MTZ 5.1C
D110L,R	0B06398A	SID 1SS176
D111L,R	0B06398A	SID 1SS176
D960L,R	0B06398A	SID 1SS176
VR18L,R	0B32192A	Semi VR 5K
R200L,R	0B09749A	RK 1M 1/6W J
R201L,R	0B09741A	RK 470K 1/6W J
R202L,R	0B09677A	RK 1K 1/6W J
R203L,R	0B09677A	RK 1K 1/6W J
R960L,R	0B09696A	RK 6.2K 1/6W J
R961L,R	0B09682A	RK 1.6K 1/6W J
R963L,R	0B09701A	RK 10K 1/6W J
C180L,R	0B40257A	CE 3.3 50V (LN)
C181L,R	0B40817A	CE 1 50V (BP)
C960	0B40608A	CE 470 16V

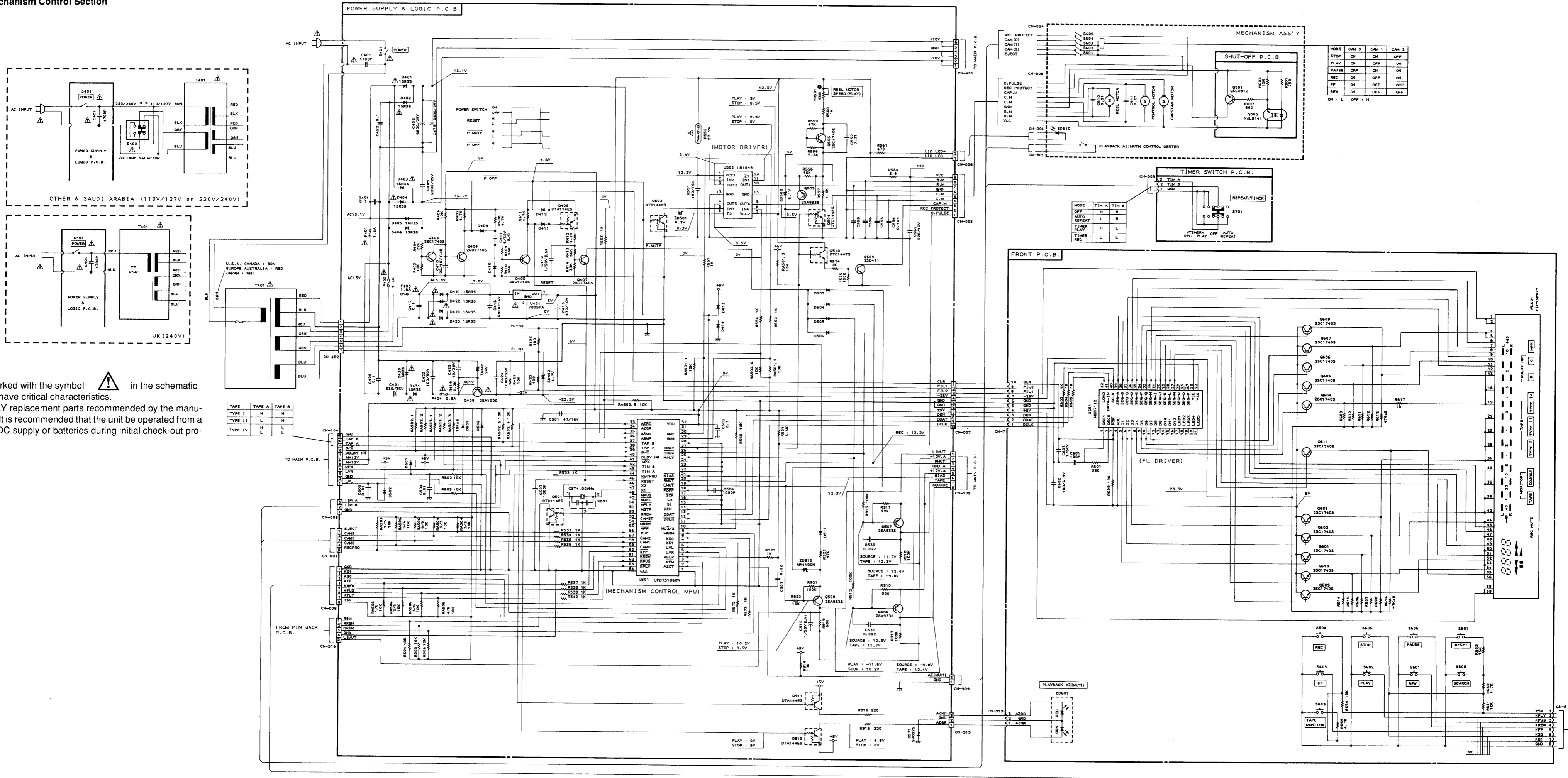
— Push Switch —

R226	0B09701A	RK 10K 1/6W J
R227	0B09685A	RK 2.2K 1/6W J
R228	0B09709A	RK 22K 1/6W J
R230,231	0B09701A	RK 10K 1/6W J
R307	0B09711A	RK 27K 1/6W J
R308,309	0B09725A	RK 100K 1/6W J
C190L,R	0B09270A	CPP 470P 100V J
C307	0B40559A	CE 47 16V
C308	0B41971A	CML 0.1 50V Z
S100-102	0B70177A	Push Switch
		MPX-DOL (1)
S103-105	0B70176A	Push Switch
		Tape (1)

— Miscellaneous —

	0B61002B	Main P.C.B.
CN100	0B83926A	6P H Connector
		Ass'y 330
CN104	0B83932A	11P H Connector
		Ass'y 250
CN105	0B83931B	8P H Connector
		Ass'y 150
CN107	0B83928A	7P H Connector
		Ass'y 410
CN108	0B83925A	6P H Connector
		Ass'y 360
CN401	0B83930B	6P H Connector
		Ass'y 300

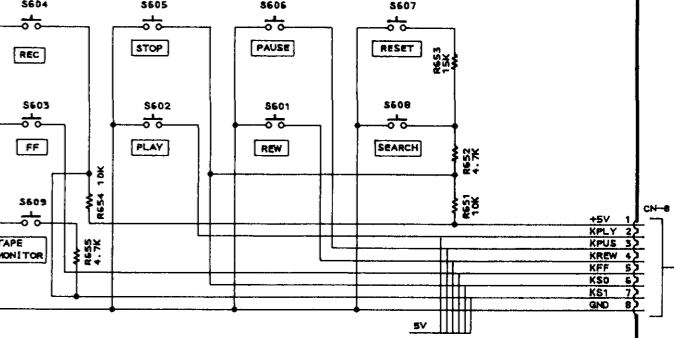
(2) Mechanism Control Section



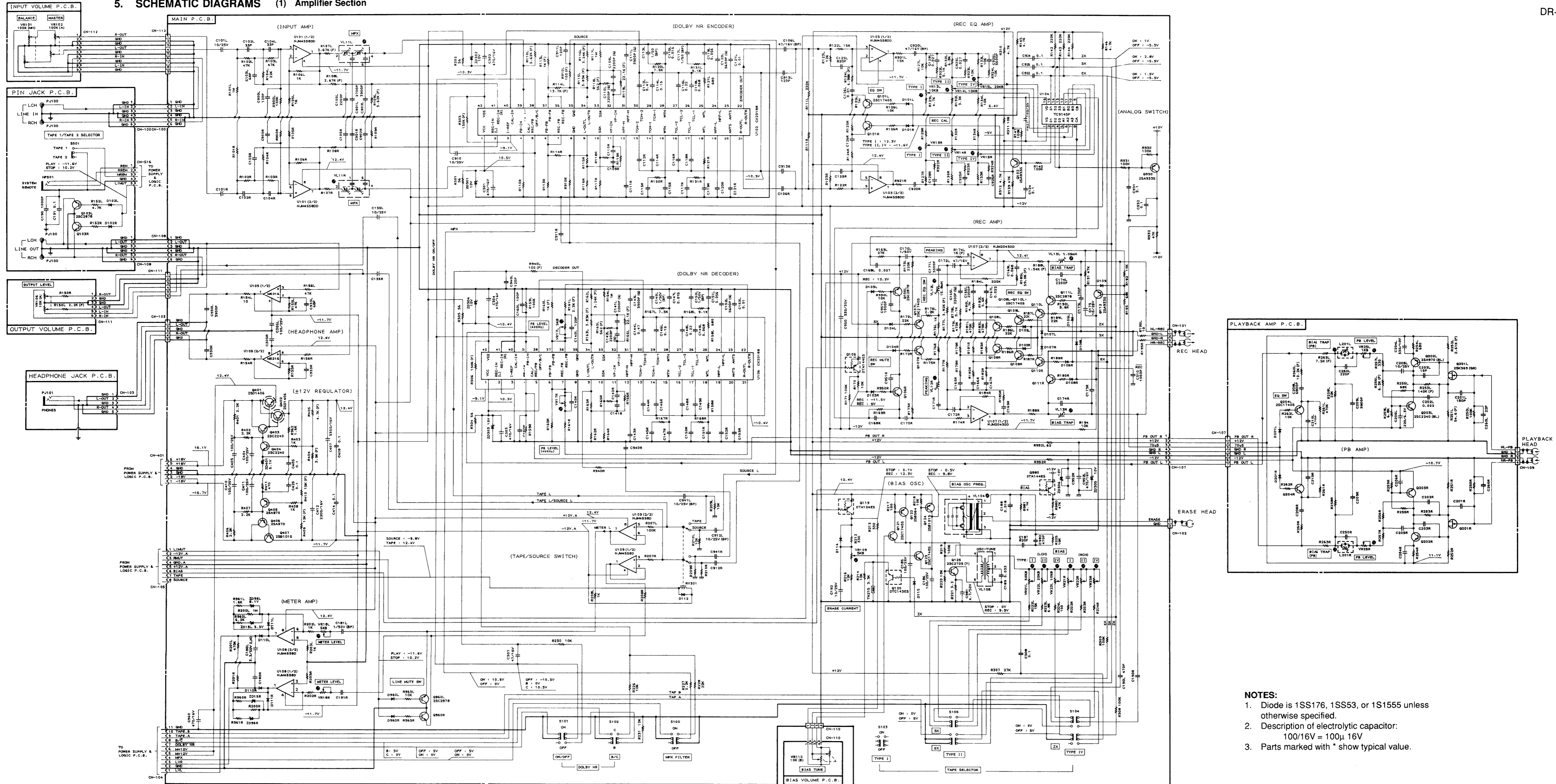
MODE	CAM 0	CAM 1	CAM 2
STOP	ON	ON	OFF
PLAY	ON	OFF	ON
PAUSE	OFF	ON	ON
REC	ON	OFF	OFF
FF	ON	OFF	OFF
REW	ON	OFF	OFF

ON - L OFF - H


MODE	TIM A	TIM B
OFF	H	H
AUTO REPEAT	L	H
TIMER PLAY	H	L
TIMER REC	L	L



5. SCHEMATIC DIAGRAMS (1) Amplifier Section



- NOTES:**
1. Diode is 1SS176, 1SS53, or 1S1555 unless otherwise specified.
 2. Description of electrolytic capacitor: 100/16V = 100µ 16V
 3. Parts marked with * show typical value.

- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
- "DOLBY" and the double-D-symbol  are trademarks of Dolby Laboratories Licensing Corporation.

Nakamichi Corporation	1-153 Suzukicho, Kodaira, Tokyo 187 Phone: (0423) 42-1115
Nakamichi America Corporation	19701 South Vermont Ave., Torrance, CA 90502 Phone: (310) 538-8150
Nakamichi Canada	276 South West, Marine Drive, Vancouver, B.C. V5X 2R4 Phone: (604) 324-7535
Nakamichi Australia	Unit 12 620-632 Botany Road, Alexandria, N.S.W. 2015 Phone: (02) 667-0811
Nakamichi GmbH	Praunheimer Landstraße 32 6000 Frankfurt Main 90 Phone: (069) 7682021 (Office), 7682025 (Service)