NAD SERVICE MANUAL

6240

STEREO CASSETTE DECK

CONTENTS

SPECIFICATION

Tape speed 4.75cm/sec
Wow and flutter (JIS Weighted)
  Playback 0.08%
Pressure roller force . . . . . 300 ~ 500g
Play torque . . . . . 35 ~ 75g/cm
F.F. torque . . . . . 70 ~ 160g/cm
Rew torque . . . . . 70 ~ 160g/cm
F.F. time (C-60) . . . . . 105 sec
Rew time (C-60) . . . . . 105 sec
Input sens. and impedance
  Line 40mV/8.2kΩ
Frequency response
  (Dolby level – 25dB Dolby NR off)
  Normal tape . . . . . 35 ~ 17,000Hz $\pm\frac{2}{3}$dB
  CrO_2 tape . . . . . 35 ~ 18,000Hz $\pm\frac{2}{3}$dB
Signal to noise ratio
  CCIR/ARM weighted 400Hz to Dolby level
  Dolby C Normal 69dB
           CrO_2·METAL 71dB
  Dolby B Normal 60dB
           CrO_2·METAL 61dB
  Dolby off Normal 50dB
           CrO_2·METAL 52dB

Erase effect
  with band pass filter 1kHz
  Input 0VU + 10dB 70dB
Separation
  with band pass filter 1kHz
  Input 1kHz Dolby level 40dB
Cross talk
  with band pass filter 1kHz
  Input 1kHz 0VU + 10dB 70dB
Output level at Dolby level
  (MTT-150 play)
  RCA 505mV
Distortion
  (Normal Tape 1kHz at Dolby Level) 1.0%

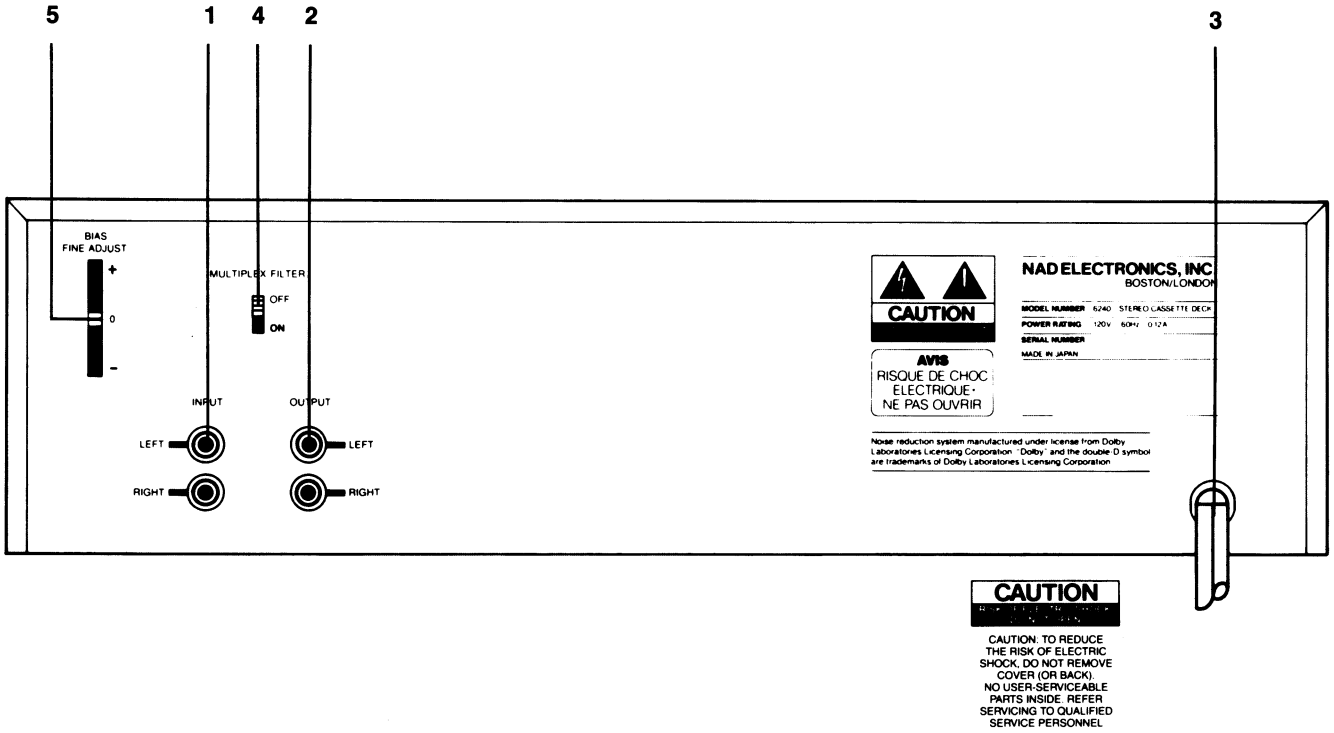
GENERAL

Maximum power consumption 15W
AC power supply 230V/50Hz
  115V/50Hz
  120V/60Hz
Weight and Dimensions (Approx.)
  Net weight 3.8kg
  Dimension (W/H/D) 420/122/223mm
  (w/knobs & feet)

Specifications and design are subject to change without notice.

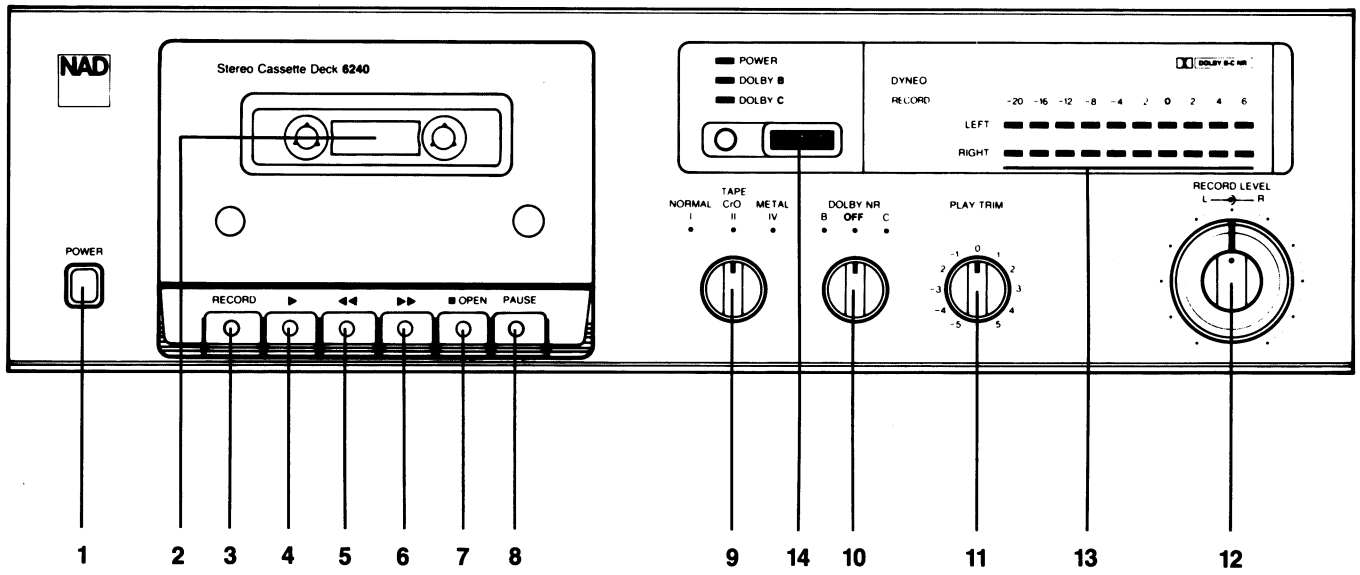
REAR PANEL

1. Input.
2. Output.
3. AC Power Cord.
4. MPX Filter.
5. Bias Fine Adjust.



FRONT PANEL

1. Power.
2. Cassette Compartment.
3. Record.
4. Play.
5. Rewind.
6. Fast Forward.
7. Stop/Open.
8. Pause.
9. Tape Selector.
10. Dolby NR.
11. Play Trim.
12. Recording Level.
13. Recording Level Display.
14. Tape Counter.



ALIGNMENT METHOD

IMPORTANT

The tape path (heads, tape guides, capstan, pinch roller) should be cleaned and degaussed before alignment.

This tape recorder is designed to work well with a variety of tapes, however, maximum performance will be obtained with recommended tapes or similar tape formulations.

Recommended tapes	For North America	For Europe-DIN
Type I	Maxell UDS-I	Maxell UD-I, BASF TP18 no, R723DG
Type II	Maxell XL-II	Maxell XL-II, Teac MTT-5561
Type IV	Maxell MX	Maxell MX, Maxell MX 422

All adjustments done with Dolby NR OFF, MPX filter (on back panel) OFF and BIAS FINE ADJUST (on rear panel) in center position.

DOLBY NR level 200 nWb/m = 245 mV RMS on testpoints MC201-3 (L) and MC201-1 (R) on Dolby NR PCB; approximately 505 mV at line outputs.

1. **TAPE SPEED**
   Connect one output to Wow and Flutter Meter or Frequency Counter, Play speed test tape TEAC MTT-111 = 3000 Hz or TEAC MTT-211 = 3150 Hz and adjust semifixed resistor accessible through hole in motorcasing, for correct reading on Wow and Flutter Meter or Frequency Counter.

   Tolerance: ±1%

2. **AZIMUTH**
   Connect VTVM's and/or Oscilloscope to outputs. Set tape selector to normal and start playing Azimuth tape TEAC MTT-113 or MTT-114. Rotate azimuth screw for maximum output and/or maximum and in phase on Oscilloscope. Reseal adjustment screw with nail polish or similar (do not use glue).

3. **PLAYBACK EQ**
   THIS ADJUSTMENT IS NOT NEEDED UNLESS THE HEAD HAS BEEN REPLACED OR REPAIR HAS BEEN DONE IN HEADAMP CIRCUIT.

   Play level/azimuth tape TEAC MTT-256 and adjust SVR 101 (L) and SVR 102 (R) for identical output at 315/6300 Hz (MTT-255) or 250/6300 Hz (MTT-256).

   Tolerance: ±0.5 dB

4. **PLAYBACK HIGH FREQUENCY EQ**
   THIS ADJUSTMENT SHOULD BE DONE ONLY WHEN HEAD HAS BEEN REPLACED.

   Play frequency response tape TEAC MTT-256 or MTT-256U and check playback level at 14 kHz. Adjust by disconnecting C 103 and/or C 105 (L) and C 104 and/or C 106 (R) if 14 kHz is too high and connecting C 103 and/or C 105 (L) and C 104 and/or C 106 (R) if 14 kHz is too low. Leave same component values in both channels.

   Tolerance: +1 dB −0.5 dB

5. **PLAYBACK LEVEL**
   Connect VTVM to testpoints. Play Dolby NR level tape TEAC MTT-150 and adjust SVR 103 (L) and SVR 104 (R) for 245 mV RMS at testpoint MC 201-3 (L) and MC 201-1 (R) on Dolby PCB.

   Tolerance: ±2.5 mV RMS

   Output should be approximately 505 mV RMS.

6. **METER LEVEL**
   Play Dolby NR level tape MTT-150 and adjust SVR 601 (L) and SVR 602 (R) so that 0 dB LED's just turn on.

7. **BIAS TRAP**
   Insert a blank type I tape and engage record and pause mode. Turn record level all the way down and set tape selector to type IV position. Connect VTVM's and/or oscilloscope probe to testpoint MC 303-2 (L) and adjust F 301 for minimum. Connect probe to MC 303-1 and adjust F 302 for minimum.

   Tolerance: Less than 300mV RMS

8. **RECORD LEVEL**
   Set tape selector to type I tape. Connect audio oscillator to line inputs, turn record levels to maximum (clockwise). Adjust audio oscillator frequency to 400 Hz and output so that VTVM's read 30 – 40 mV. (Use a convenient reference point on the VTVM's).

   Reset tape counter to 0 and release pause to start recording. Record for approximately 5 seconds, rewind to 0 on tape counter and play back while observing the VTVM's. The VTVM's should indicate the same level as when the tape was recorded. Adjust SVR 201 (L) and SVR 202 (R) if necessary and repeat the record/play procedure until the readings are the same.

   Tolerance: ±0.5 dB from record level. Less than 0.5 dB difference between channels.

9. **BIAS ADJUST TYPE I TAPE (NORMAL)**
   Set audio generator to 1200 Hz without changing output level. Reset tape counter to 0 and start recording. After 5 seconds change audio generator frequency to 12000 Hz (do not stop the machine or change levels) and continue recording for another 5 seconds. Stop and rewind to 0 on tape counter. Play back while observing VTVM's. There should be no level difference between the 1200 Hz and the 12000 Hz tone when played back. If 12000 Hz is different in level for 1200 Hz, adjust SVR 401 (L) and SVR 402 (R) and repeat the record/play procedure until both frequencies play back at same level.

   Tolerance: ±0.5 dB

   WARNING: Greater tolerance will grossly affect the Dolby NR tracking and especially the Dolby C tracking.

   Record level (step 8) should be checked and if necessary adjusted.

10. PEAKING CIRCUIT TYPE I TAPE (NORMAL)

Adjust audio generator to 17 kHz while maintaining the same output level. Record and play back the 17 kHz tone and adjust SVR 301 (L) and SVR 302 (R) to the same level as the 1200 Hz signal.

Tolerance: ±1 dB

WARNING: If the R/P head is worn, the tape may not have adequate contact with the head, resulting in severe drop outs. A worn head will make this adjustment very difficult or impossible. DO NOT try to adjust the worn R/P head. Leave SVR 301 and SVR 302 in the factory preset condition, or if they have already been adjusted, readjust them to their approximate midposition.

11. FREQUENCY RESPONSE TYPE II TAPE (CrO_2)

Insert a type II tape and set selector to type II position. Adjust audio generator to 1200 Hz and 12000 Hz and repeat process described in step 9 using SVR 403 (L+R) to adjust both channel simultaneously. After 1200 Hz and 12000 Hz are adjusted properly, set audio generator to 18000 Hz and repeat same process as described in step 10 while adjusting SVR 303 (L) and SVR 304 (R) to obtain correct reading.

12. FREQUENCY RESPONSE TYPE IV TAPE (METAL)

Insert a type IV tape and set selector to type IV position. Repeat procedure as in step 9 while adjusting SVR 404 (L+R) for correct 12000 Hz level in both channels. Set audio generator to 18 kHz and repeat process as in step 10 while adjusting SVR 305 (L) and SVR 306 (R) for correct 18 kHz record level.

13. DYNEQ

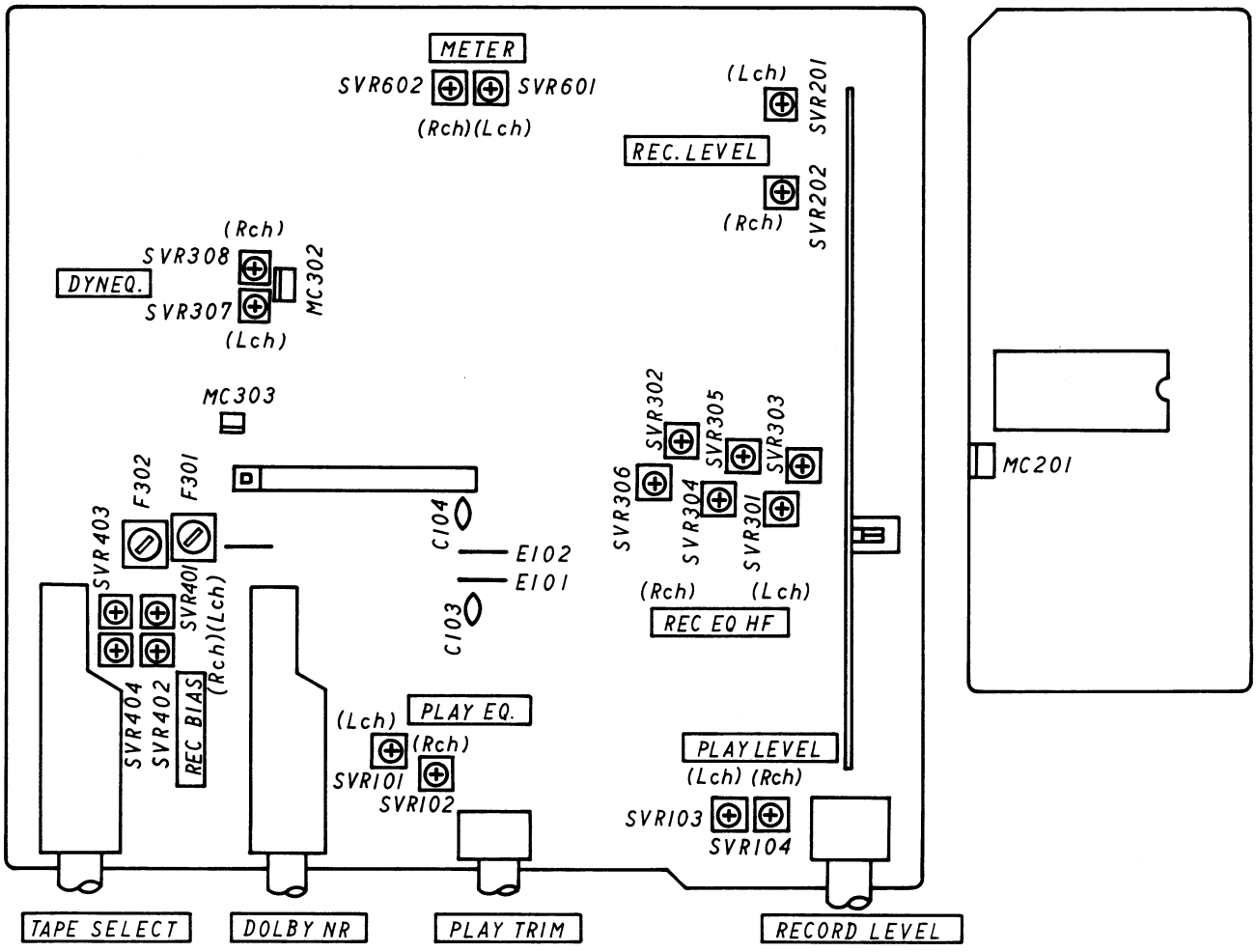
Engage record and pause mode. Adjust audio generator to 10000 Hz and output so that tape recorder output is −5 dB from Dolby NR level (approximately 280 mV RMS). Set tape selector to type I position and connect VTVM probe to test point MC 302-3 (L) (nearest rear panel) and adjust SVR 307 from fully clockwise position until the output on the probe decreases 1 dB.

Connect VTVM probe to test point MC 302-1 (R) (nearest to front panel) and adjust SVR 308 from fully clockwise position until the output probe decreases 1 dB.

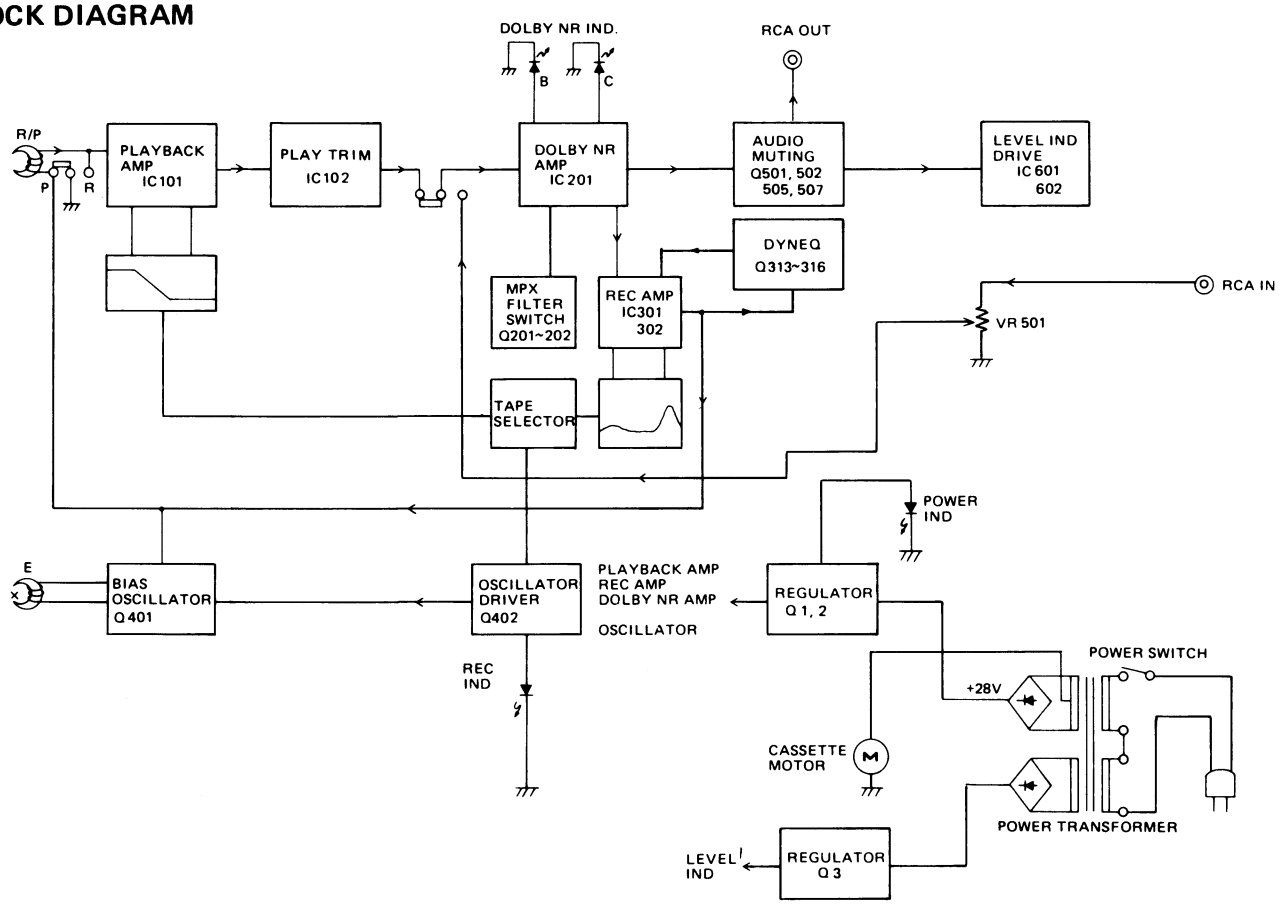
ALIGNMENT COMPONENTS LAYOUT

Main PC Board

Dolby NR Amp PC Board

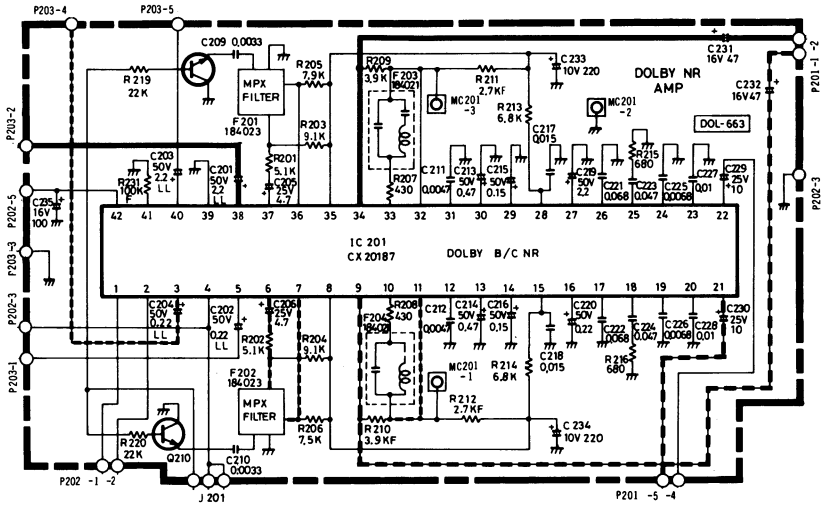


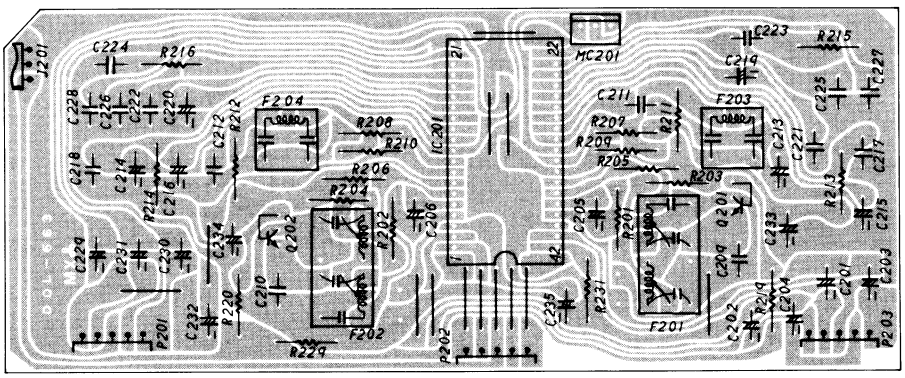
BLOCK DIAGRAM



SCHEMATIC AND PCB LAYOUT (Foil side)

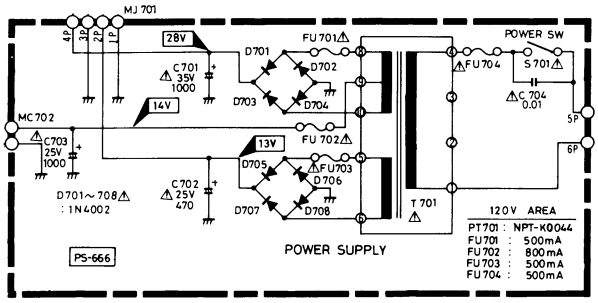
Dolby NR Amp Circuit (DOL-663)





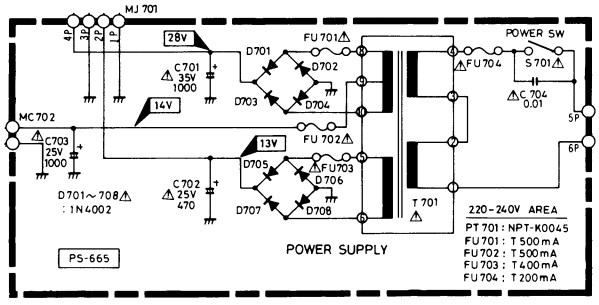
Power Supply Circuit (PS-666)

120V AREA
for CANADA, USA

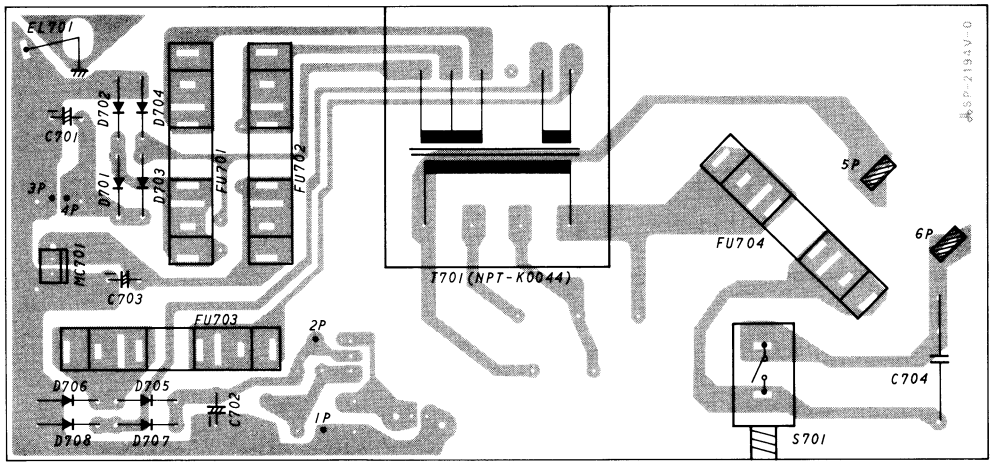


Power Supply Circuit (PS-665)

220~240V AREA
for EUROPE, AUSTRALIA

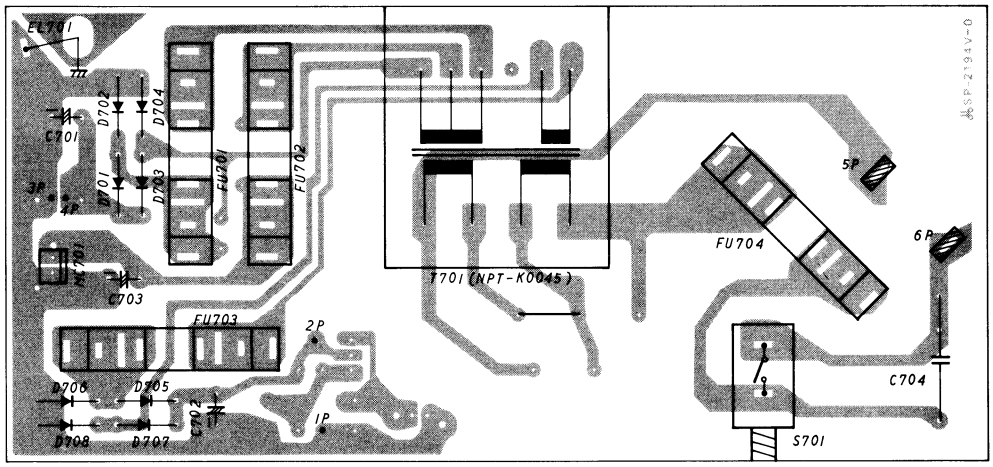


120V AREA
for CANADA, USA



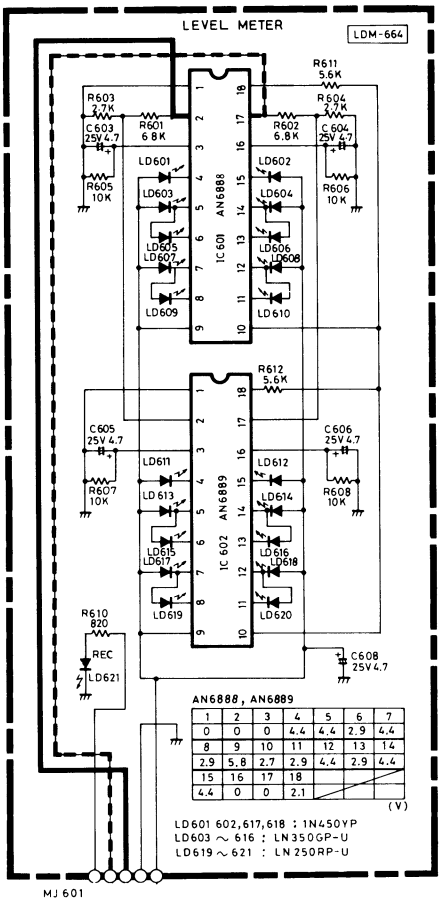
POWER SWITCH

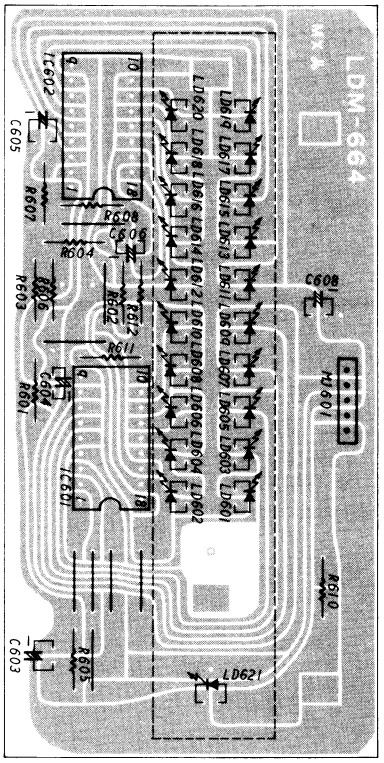
220~240V AREA
for EUROPE, AUSTRALIA



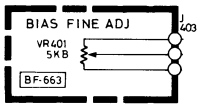
POWER SWITCH

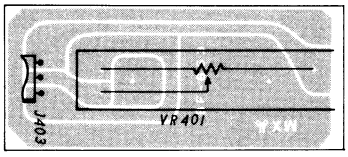
Level Meter Circuit (LDM-664)



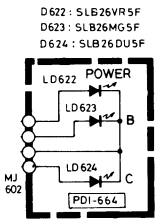


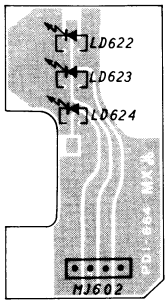
Bias Fine ADJ Circuit (BF-663)



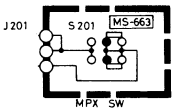


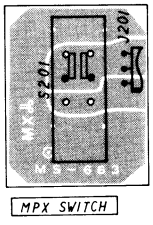
Dolby B, C and Power IND Circuit (PDI-664)



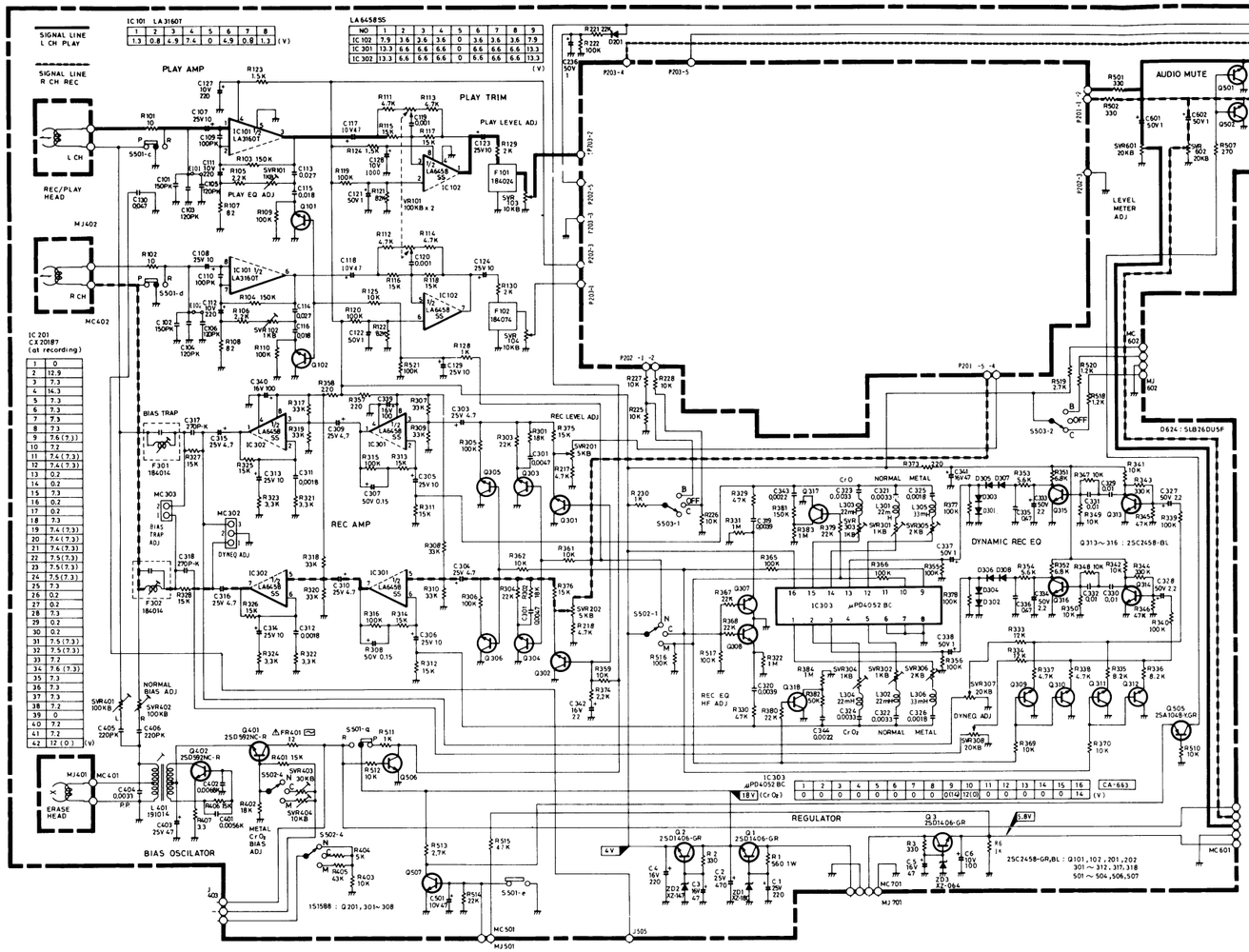


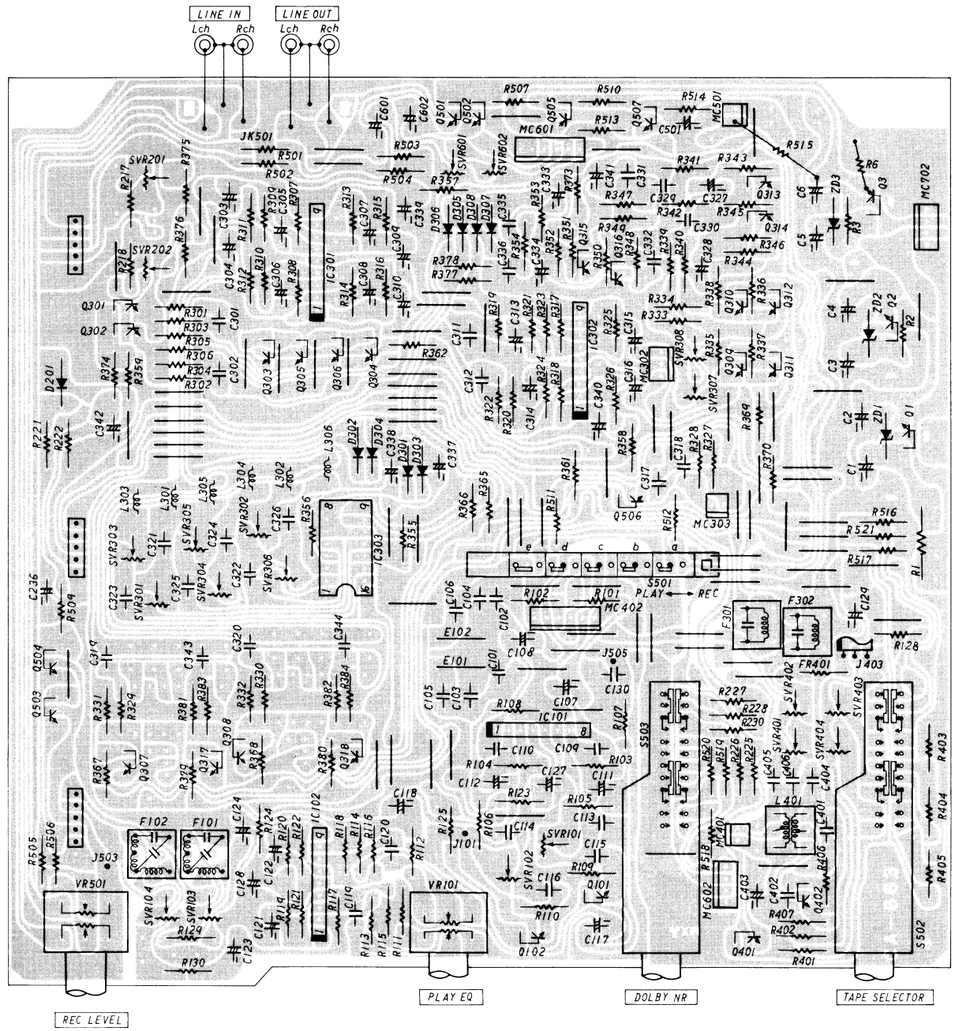
MPX SW Circuit (MS-663)



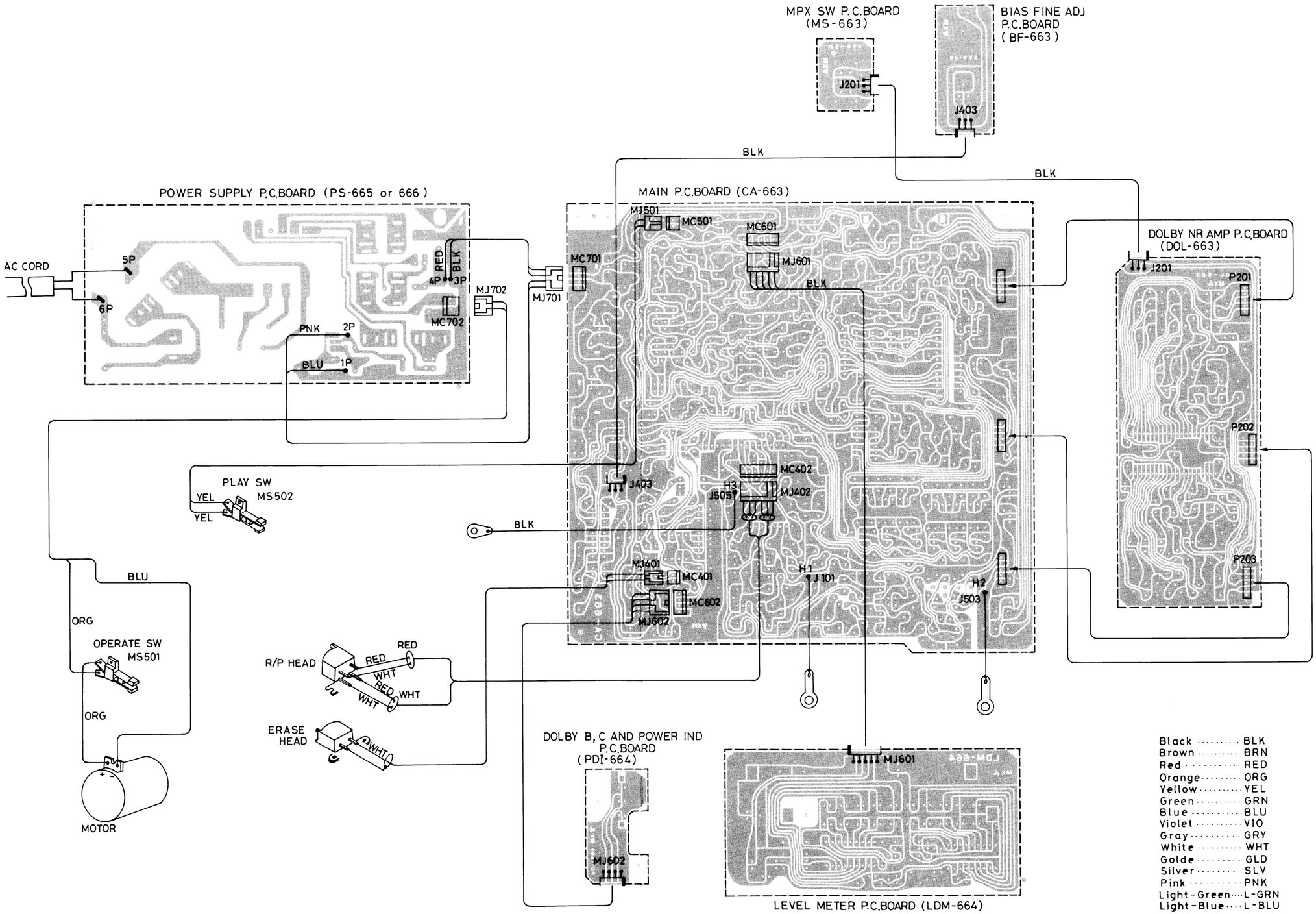


Main Circuit (CA-663)



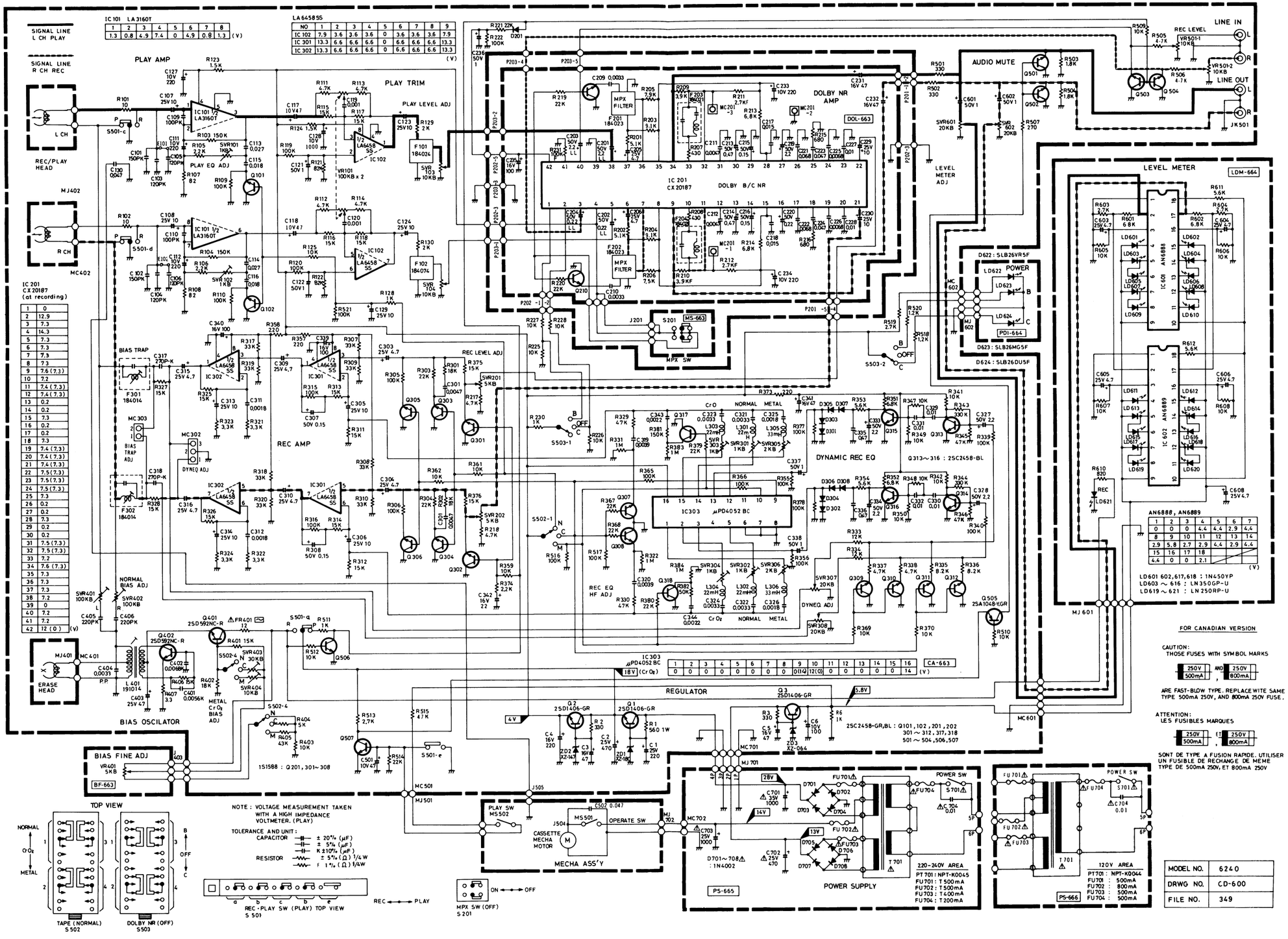


WIRING DIAGRAM (Component side)



Black	BLK
Brown	BRN
Red	RED
Orange	ORG
Yellow	YEL
Green	GRN
Blue	BLU
Violet	VIO
Gray	GRY
White	WHT
Golde	GLD
Silver	SLV
Pink	PNK
Light-Green	L-GRN
Light-Blue	L-BLU

SCHEMATIC DIAGRAM



IC 101 LA3160T								
1	2	3	4	5	6	7	8	
1.3	0.8	4.9	7.4	0	4.9	0.8	1.3	(V)

LA6458SS										
NO	1	2	3	4	5	6	7	8	9	
IC 102	7.9	3.6	3.6	3.6	0	3.6	3.6	3.6	7.9	
IC 301	13.3	6.6	6.6	6.6	0	6.6	6.6	6.6	13.3	
IC 302	13.3	6.6	6.6	6.6	0	6.6	6.6	6.6	13.3	(V)

IC 201 CX 20187 (at recording)	
1	0
2	12.9
3	7.3
4	14.3
5	7.3
6	7.3
7	7.3
8	7.3
9	7.6 (7.3)
10	7.2
11	7.4 (7.3)
12	7.4 (7.3)
13	0.2
14	0.2
15	7.3
16	0.2
17	0.2
18	7.3
19	7.4 (7.3)
20	7.4 (7.3)
21	7.4 (7.3)
22	7.5 (7.3)
23	7.5 (7.3)
24	7.5 (7.3)
25	7.3
26	0.2
27	0.2
28	7.3
29	0.2
30	0.2
31	7.5 (7.3)
32	7.5 (7.3)
33	7.2
34	7.6 (7.3)
35	7.3
36	7.3
37	7.3
38	7.2
39	0
40	7.2
41	7.2
42	12 (0) (V)

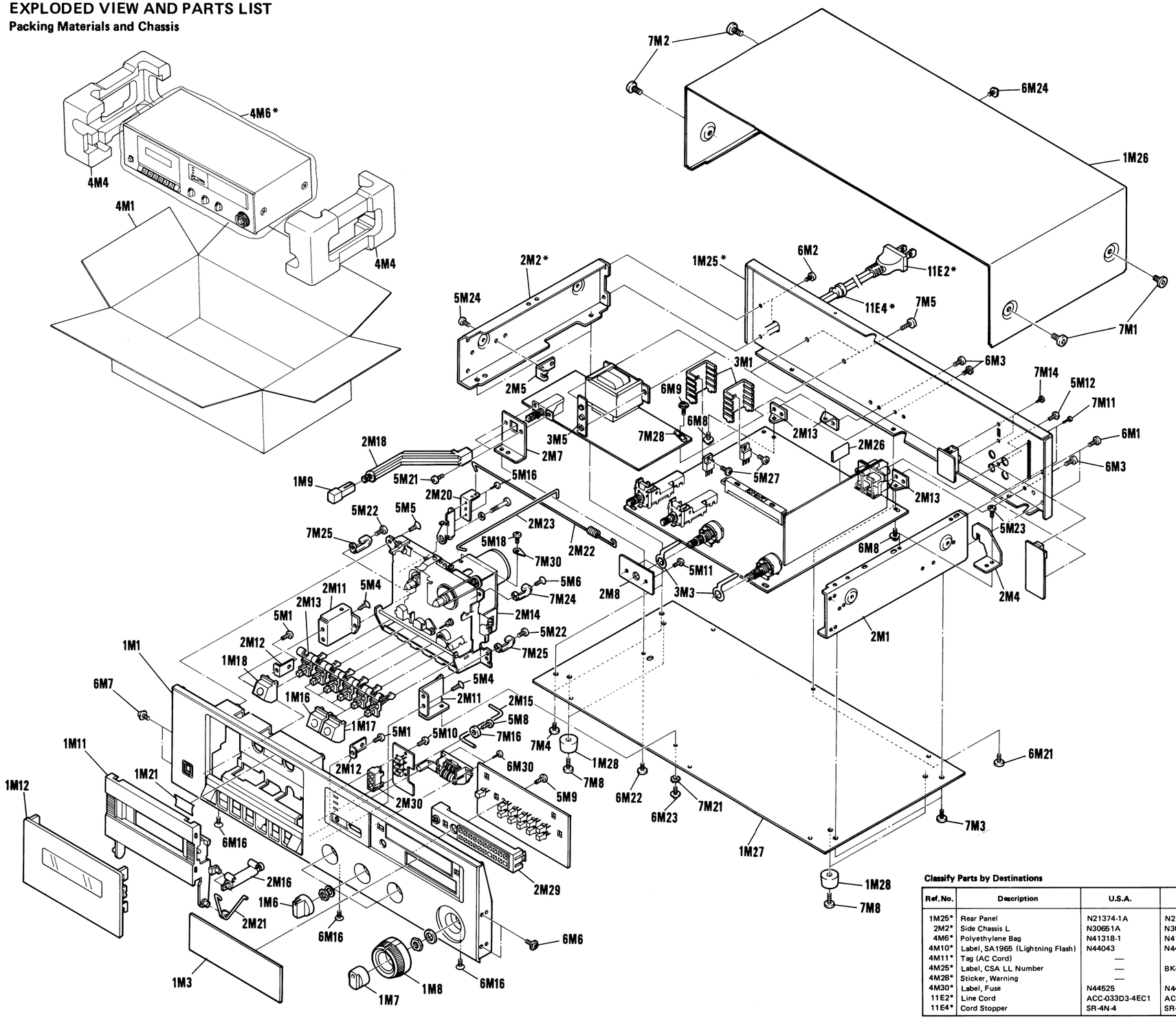
IC 303 μPD4052 BC (18V) (Cr O2)																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
0	0	0	0	0	0	0	0	(0) (4) (12) (0)	0	0	0	0	14		CA-663	

AN6888, AN6889							
1	2	3	4	5	6	7	
0	0	0	4.4	4.4	2.9	4.4	
8	9	10	11	12	13	14	
2.9	5.8	2.7	2.9	4.4	2.9	4.4	
15	16	17	18				
4.4	0	0	2.1				(V)

MODEL NO.	6240
DRWG NO.	CD-600
FILE NO.	349

EXPLODED VIEW AND PARTS LIST

Packing Materials and Chassis

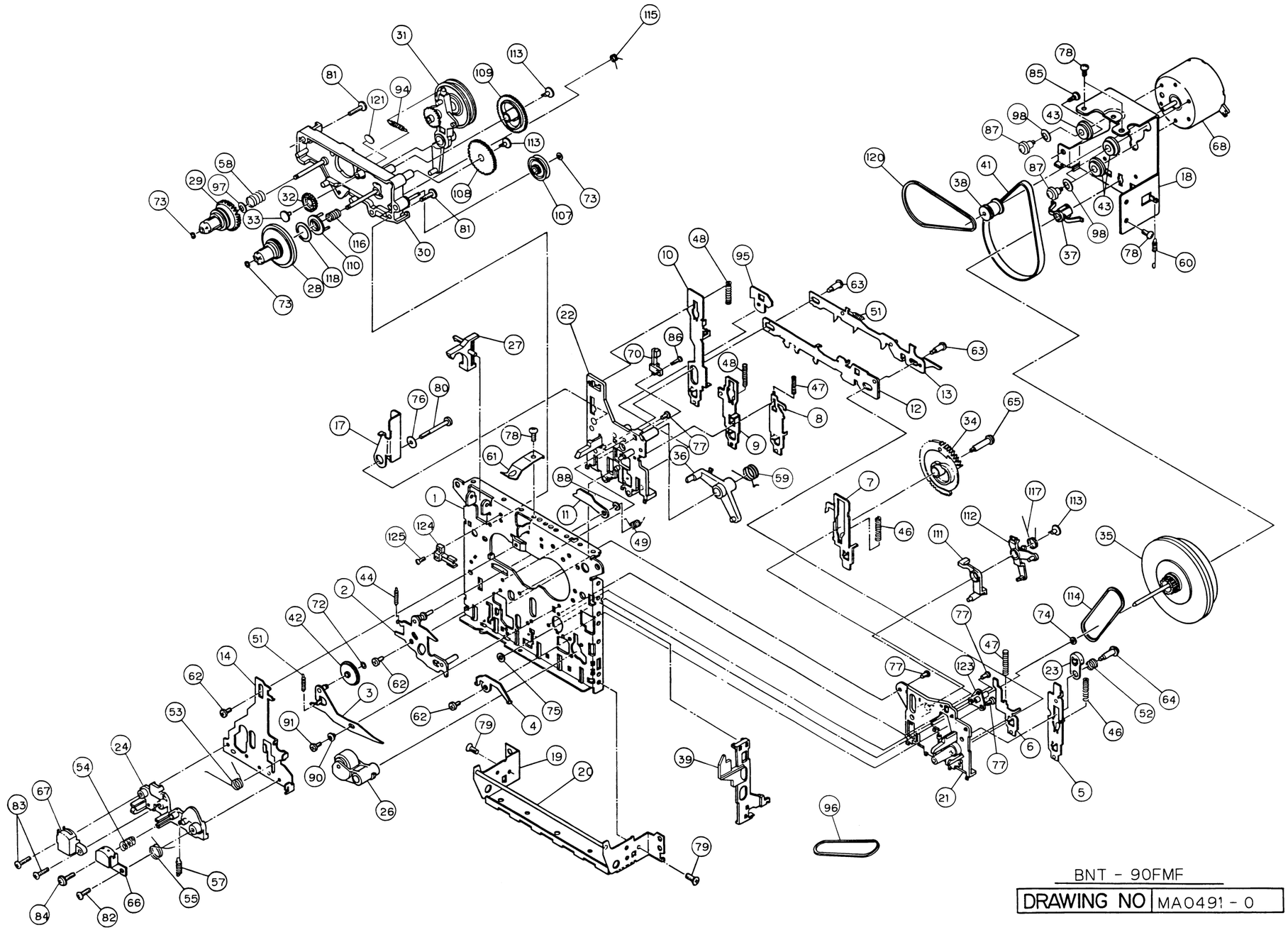


Ref. No.	Part No.	Description
1M1	BK1004	Front Panel
1M3	N44650B	Front Glass
1M6	62-2317-0-0	Control Knob
1M7	62-2318-0-0	Knob (Potentiometer)
1M8	62-2319-0-0	Knob (Potentiometer)
1M9	N44642-GRN	Push Button
1M11	N21024A-BK	Cassette Case
1M12	BK2006-2	Cassette Glass
1M16	BK4040-BK	Cassette Button (Black)
1M17	BK4040-GY	Cassette Button (Gray)
1M18	BK4040-R	Cassette Button (Red)
1M21	SN-241186-1	Cassette Mirror
1M25*		Rear Panel
1M26	BK2011	Cabinet
1M27	BK2013A	Bottom Board
1M28	NO.7104	Foot
2M1	N30627B	Side Chassis R
2M2*		Side Chassis L
2M4	N44639	Fittings (P.C.B.)
2M5	N42842	Shaft Guide
2M7	BK4056	Fittings (Switch)
2M8	BK4057	Fittings (Potentiometer)
2M9	N42635	Fittings (P.C.B.)
2M11	BK4067	Cassette Case Holder
2M12	BK4044	Mecha Holder
2M13	N30742B	Cassette Button Base
2M14	BK4055	Eject Lever
2M15	BK4063	Damper Pin
2M16	K-105-1	Air-Damper
2M18	N42470B	Switch Shaft
2M20	BK4061	Rec Holder
2M21	BK4062	Eject Spring
2M22	N44651	Rec Spring
2M23	BK4065	Rear Spring
2M26	N44652	Insulation Fiber
2M29	BK3012	Led Holder A
2M30	BK4054	Led Holder B
3M1	SH-1230	Heat Sink
3M3	N41622A	Lug (Tuning)
3M5	N42722	Fittings (P.T.)
3M30	N40848G	Shaft Tape
4M1	N21369	Shipping Carton
4M2	N21370	Shipping Carton
4M4	BK2014	Packing Pad
4M6*		Polyethylene Bag
4M7	N40487	Polyethylene Bag (Accessories)
4M9	SL.1024	Label, Serial No.
4M11*		Tag (AC Cord)
4M15	OM-600	Instruction Manual
4M20	BK4095	Protection Sheet (Cassette)
4M25*		Label, CSA LL Number
4M28*		Sticker, Warning
4M30*		Label, Fuse
5M1	TPM+30X06-Y	Tap Screw P, Round Head, Y
5M4~6	TPS+30X08-B	Tap Screw P, Flat Head, B
5M8~12	TPM+30X08-B	Tap Screw P, Round Head, B
5M16	TSB+20X05-Y	Tap Screw S, Bind Head, Y
5M18	TSB+26X05-Y	Tap Screw S, Bind Head, Y
5M21~24	TSB+30X06-Y	Tap Screw S, Bind Head, Y
5M27	TSB+30X08-Y	Tap Screw S, Bind Head, Y
6M1~3	TSB+30X06-B	Tap Screw S, Bind Head, B
6M6~9	TSC+30X08-Y	Tap Screw S, Washer Faced, Y
6M16	TSS+30X08-B	Tap Screw S, Flat Head, B
6M21~24	TSC+30X06-B	Tap Screw S, Washer Faced, B
6M30	TBB+26X08-Y	Tap Screw B, Bind Head, Y
7M1~5	TCB+40X08-B	Tap Screw C, Bind Head, B
7M8	TSP+40X10-Y	Tap Screw S, Pan Head, Y
7M11	SSP0+20X025-3B	Screw, Pan Head, B
7M14	SSP0+26X03-3B	Screw, Pan Head, B
7M16	2AWX1230-08-Y	Plain Washer, Y
7M21	2TWX30	Toothed Washer (B)
7M24, 25	VJR-3	Snake Lug
7M28	59BS1692	GND Lug
7M30	2AE-03	Lug
11E2*		Line Cord
11E4*		Cord Stopper
11E6	PC-046	Rca Pin Cord Ass'y
11E11	BNT-90FMF	Cassette Mechanism
11E15	MD4030-0	Counter Belt
11E17	SG10-105B1-839	Counter

Classify Parts by Destinations

Ref.No.	Description	U.S.A.	CANADA	U.K.	AUSTRALIA/N.Z.	SCANDINAVIA	W. GERMANY
1M25*	Rear Panel	N21374-1A	N21374-1A	N21374-2A	N21374-2A	N21374-3A	N21374-3A
2M2*	Side Chassis L	N30651A	N30651A	N30651A-1	N30651A-1	N30651A-1	N30651A-1
4M6*	Polyethylene Bag	N41318-1	N41318-1	N44660	N41318-1	N41318-1	N41318-1
4M10*	Label, SA1965 (Lightning Flash)	N44043	N44043	—	—	—	—
4M11*	Tag (AC Cord)	—	—	N41117	—	—	—
4M25*	Label, CSA LL Number	—	BK4066	—	—	—	—
4M28*	Sticker, Warning	—	—	N41994	—	—	—
4M30*	Label, Fuse	N44525	N44525	—	—	—	—
11E2*	Line Cord	ACC-033D3-4EC1	ACC-033D3-4EC1	ACC-013D3-4EC4	ACC-030D3-4EC1	ACC-005D3-4EC1	ACC-005D3-4EC1
11E4*	Cord Stopper	SR-4N-4	SR-4N-4	SR-5N-4	SR-4N-4	SR-4N-4	SR-4N-4

Cassette Mechanism



BNT - 90FMF

DRAWING NO | MA0491 - 0

Ref. No.	Part No.	Description
1	MA1141	Chassis
2	MD1242	Shift Arm Ass'y
3	MD1173	Idler Arm (HT) Ass'y
4	MD1004	Pause Arm
5	MD1165	Pause Lever (B) Ass'y
6	MD1233	Stop Lever
7	MD1234	FF Lever (B)
8	MD1235	Rew Lever (B)
9	MD1236	Play Lever (B)
10	MD1238	Rec Lever (C)
11	MDS1108	Rec Lever (BH)
12	MC1140	Lock Cam (A)
13	MD1045	Lock Cam (B) Ass'y
14	MC1287	Head Chassis
15		
16		
17	MD1292	Rec Arm
18	MC1062	Motor Holder
19	MC1131	Button Holder (B)
20	MD2037	Button Shaft
21	MB3189	Lever Holder (A)
22	MB3190	Lever Holder (B)
23	MC3014	Pause Cam
24	MC3019	Head Base
25		
26	MD3072	P Roller Arm Ass'y
27	MC3021	Rec Sensor
28	MD3153	T Reel Ass'y
29	MD3154	S Reel Ass'y
30	MC3156	Reel Base Ass'y (B)
31	MD3036	Clutch Arm Ass'y
32	MD3015	FF Gear
33	KD3052	Bush
34	MC3083	Gear (C)
35	MD3061	Flywheel Ass'y (I)
36	MC3086	Lock Arm (H)
37	LC3014	Capstan Holder
38	MD2041	Motor Pulley
39	BK4055	Eject Lever
40		
41	MD4006	Drive Belt
42	MD4001	Play Idler
43	MD4002	Motor Cushion
44	MD6055	Shift Arm Spring
45		
46	MD6038	FF Lever Spring
47	MD6005	Rew Lever Spring
48	MD6003	Lever Spring
49	MD6019	Rec Lever Spring (B)
50		
51	MD6006	Cam Spring
52	MD6007	Pause Cam Spring
53	MD6010	Head Chassis Spring
54	KD6009	Head Spring
55	MD6060	P Roller Spring
56		
57	MD6001	Head Chassis Return Spring
58	MD6102	Back Tension Spring
59	MD6050	Lock Arm Spring
60	MD6040	Eject Lever Spring
61	MDS1097	Pack Spring
62	MD8002	Screw (A)
63	MD8003	Screw (B)
64	MD8004	Screw (C)
65	MD8005	Screw (D)
66	HAJCH4544A	Rec/Play Head
67	HAJAB3054A	Erase Head
68	MMI6S2LK	DC Motor, Electronic Governor
69		
70	94019051	Leaf Switch, LSA-1119G
71		
72	8342112002	Polyslider W. (1.2 x 3.5 x 0.25t)
73	8342117009	Polyslider W. (1.7 x 3.5 x 0.25t)
74	8342121030	Polyslider W. (2.1 x 5.0 x 0.25t)
75	8340319002	Oil Stop W. (1.9 x 5.0 x 0.5t)
76	8233029764	Plain Washer (L), 2.6
77	8213112004	Tap Tite Screw, 2 x 4
78	8213112604	Tap Tite Screw, 2.6 x 4
79	8211312605	Flat Tap Tite Screw, 2.6 x 5
80	8213112622	Tap Tite Screw, 2.6 x 22
81	8213512608	Bind Tap Tite Screw, 2.6 x 8
82	8215512008	Binding Screw, 2 x 8
83	8215512085	Binding Screw, 2 x 8.5
84	8215812009	Washer Head Screw, 2 x 9
85	8214152606	Tapping Screw, 2.6 x 6
86	8214112605	Tapping Screw, 2.6 x 5
87	SD8511	Motor Screw
88	8220002004	E Ring, 2
89		
90	MD2033	Collar
91	8213112005	Tap Tite Screw, 2 x 5
92		
93		
94	MD6035	Clutch Arm Spring
95	MD1061	Inter Lock Arm
96	MD4030	Counter Belt
97	8346240007	Reel Washer MDB038
98	MD1270	Washer (B)
99		
100		
101		
102		
103		
104		
105		
106		
107	MD3066	Auto Pulley
108	MD3065	Auto Gear
109	MD3044	Auto Cam Gear
110	MD3130	Auto Clutch
111	MD3043	Auto Arm (B)
112	MD3042	Auto Lock Arm
113	MD3047	Bush
114	MD4003	Auto Belt
115	MD6062	Auto Sensor Spring
116	MD6088	Auto Clutch Spring
117	MD6017	Auto Lock Arm Spring
118	8356709511	Auto Clutch Felt MD8009
119		
120	MD4008	FR Belt
121	8342356001	Lumiler Washer 5.6 x 0.18t
122		
123	MD5002	Housing Ass'y
124	94019010	Leaf Switch, LSA-1120YN
125	8213112006	Tap Tite Screw, 2 x 6

Electrical Parts List

A, USA
A1, CANADA
B, U.K.
B1, AUSTRALIA/N.Z.
C, SCANDINAVIA
C1, W. GERMANY

Ref. No.	Part No.	Description
	PC BOARDS	
	BF-663	Printed Circuit Board
	CA-663	Printed Circuit Board
	DOL-663	Printed Circuit Board
	LDM-664	Printed Circuit Board
	MS-663	Printed Circuit Board
	PDI-664	Printed Circuit Board
	PS-665	Printed Circuit Board [B, B1, C, C1]
	PS-666	Printed Circuit Board [A, A1]
	SEMICONDUCTORS	
D201	1S1588	Diode
D301~308	1S1588	Diode
D701~708	1N4002	Diode
Q001~003	2SD1406-GR	Transistor
Q101, 102	2SC2458-GRBL	Transistor
Q201, 202	2SC2458-GRBL	Transistor
Q301~312	2SC2458-GRBL	Transistor
Q313~316	2SC2458-BL	Transistor
Q317, 318	2SC2458-GRBL	Transistor
Q401, 402	2SD592NC-R	Transistor
Q501~504	2SC2458-GRBL	Transistor
Q505	2SA1048-Y, GR	Transistor
Q506, 507	2SC2458-GRBL	Transistor
IC101	LA3160T	IC
IC102	LA6458SS	IC
IC201	CX20187	IC
IC301, 302	LA6458SS	IC
IC303	UPD4052BC	IC
IC601	AN6888	IC
IC602	AN6889	IC
LD601, 602	LN450YP	LED
LD603~616	LN350GP-U	LED
LD617, 618	LN450YP	LED
LD619~621	LN250RP-U	LED
LD622	SLB26VR5F	LED
LD623	SLB26MG5F	LED
LD624	SLB26DU5F	LED
ZD001	ZD50-180	Zener Diode, 1/2W, 18.0V
ZD002	ZD50-147	Zener Diode, 1/2W, 14.7V
ZD003	ZD50-064	Zener Diode, 1/2W, 6.4V
	CAPACITORS	

Capacitors description

- Electrolytic Capacitor

NS	-16	TW	221	M

Tolerance (%);
Value (μF);
Voltage (V);

M = ±20
R22 = 0.22, 100 = 10, 1R0 = 1.0, 221 = 220, 3R3 = 3.3,
102 = 1000, –16 = 16, 6R3 = 6.3

- Mylar Capacitor

MY	-50V	S	223	M

Tolerance (%);
Value (pF);
Voltage (V);

J = 5, K = 10, M = 20
122 = 1200, 104 = 100000 = 0.1 (μF), 223 = 22000
–50 = 50

- Ceramic Capacitor

HE	90	SJ	YF	223	Z

Tolerance (%);
Valu (pF);
Voltage (V);

D = ±0.5pF, J = ±5 (%), K = ±10 (%), Z = $^{+80}_{-20}$ (%)
050 = 5, 102 = 1000, 560 = 56, 223 = 22000, 821 = 820
HC = 25, HE = 50, HK = 250, HM = 500, H = 100

C001	NS-25TW221M	Electrolytic Capacitor
C002	NS-25TW471M	Electrolytic Capacitor
C003	NS-16TW470M	Electrolytic Capacitor
C004	NS-16TW221M	Electrolytic Capacitor
C005	NS-16TW470M	Electrolytic Capacitor
C006	NS-10TW101M	Electrolytic Capacitor
C101, 102	HE40SJYB151K	Ceramic Capacitor
C103~106	HE40SJYB121K	Ceramic Capacitor
C107, 108	NS-25TW100M	Electrolytic Capacitor
C109, 110	HE40SJYB101K	Ceramic Capacitor
C111, 112	NS-10TW221M	Electrolytic Capacitor
C113, 114	MY-50VS273J	Mylar Capacitor
C115, 116	MY-50VS183J	Mylar Capacitor
C117, 118	NS-10TW470M	Electrolytic Capacitor
C119, 120	MY-50VS102J	Mylar Capacitor
C121, 122	NS-50TW1R0M	Electrolytic Capacitor
C123, 124	NS-25TW100M	Electrolytic Capacitor
C127	NS-10TW221M	Electrolytic Capacitor
C128	NS-10TW102M	Electrolytic Capacitor
C129	NS-25TW100M	Electrolytic Capacitor
C130	HC10SJZF473Z	Ceramic Capacitor
C201~204	LL-50TW2R2M	Low Leak. Electrolytic Cap.
C205, 206	NS-25TW4R7M	Electrolytic Capacitor
C209, 210	MY-50VS332J	Mylar Capacitor
C211, 212	MY-50VS472J	Mylar Capacitor
C213, 214	NS-50TWR47M	Electrolytic Capacitor
C215, 216	NS-50TWR15M	Electrolytic Capacitor
C217, 218	MY-50VS153J	Mylar Capacitor
C219, 220	NS-50TWR22M	Electrolytic Capacitor
C221, 222	MY-50VS683J	Mylar Capacitor
C223, 224	MY-50VS473J	Mylar Capacitor
C225, 226	MY-50VS682J	Mylar Capacitor
C227, 228	MY-50VS103J	Mylar Capacitor
C229, 230	NS-25TW100M	Electrolytic Capacitor
C231, 232	NS-16TW470M	Electrolytic Capacitor
C232	NS-16TW470M	Electrolytic Capacitor
C233, 234	NS-10TW221M	Electrolytic Capacitor
C235	NS-16TW101M	Electrolytic Capacitor
C236	S5-50TW1R0M	Electrolytic Capacitor
C301, 302	MY-50VS472J	Mylar Capacitor
C303, 304	NS-25TW4R7M	Electrolytic Capacitor
C305, 306	NS-25TW100M	Electrolytic Capacitor
C307, 308	NS-50TWR15M	Electrolytic Capacitor
C309, 310	NS-25TW4R7M	Electrolytic Capacitor
C311, 312	MY-50VS182J	Mylar Capacitor
C313, 314	NS-25TW100M	Electrolytic Capacitor
C315, 316	NS-25TW4R7M	Electrolytic Capacitor
C317, 318	HE40SJYB271K	Ceramic Capacitor
C319, 320	MY-50VS392J	Mylar Capacitor
C321~324	MY-50VS332J	Mylar Capacitor
C325, 326	MY-50VS182J	Mylar Capacitor
C327, 328	NS-50TW2R2M	Electrolytic Capacitor
C329~332	MY-50VS103J	Mylar Capacitor
C333, 334	NS-50TW2R2M	Electrolytic Capacitor
C335, 336	63MMW474-KF	Mylar Capacitor
C337, 338	NS-50TW1R0M	Electrolytic Capacitor
C339, 340	NS-16TW101M	Electrolytic Capacitor
C341	NS-16TW470M	Electrolytic Capacitor
C342	NS-16TW220M	Electrolytic Capacitor
C343, 344	MY-50VS222J	Mylar Capacitor
C401	MY-50VS562K	Mylar Capacitor
C402	MY-50VS682K	Mylar Capacitor
C403	NS-25TW470M	Electrolytic Capacitor
C404	APSV100V332J	Polyester Film Capacitor
C405, 406	HE40SJYB221K	Ceramic Capacitor
C501	NS-10TW470M	Electrolytic Capacitor
C502	HC10SJZF473Z	Ceramic Capacitor
C601, 602	NS-50TW1R0M	Electrolytic Capacitor
C603~608	S5-25TW4R7M	Electrolytic Capacitor
⚠C701	NS-35TW102M	Electrolytic Capacitor
⚠C702	NS-25TW471M	Electrolytic Capacitor
⚠C703	NS-25TW102M	Electrolytic Capacitor
⚠C704	ECQU1A103MH	Metallized Film Capacitor [A, A1]
⚠C704	ECQU2A103MF	Metallized Film Capacitor [B, B1, C, C1]

A, USA
A1, CANADA
B, U.K.
B1, AUSTRALIA/N.Z.
C, SCANDINAVIA
C1, W. GERMANY

Ref. No.	Part No.	Description
	RESISTORS	
	Resistors description • Fixed Resistors KA | 25S | T | 473 | J | -LP Tolerance (%); Value (Ω); Wattage (W); Type; D = ±0.5, F = ±1, G = ±2, J = ±5 2R2 = 2.2, 682 = 6.8k, 125 = 1.2M, 470 = 47, 473 = 47k 221 = 220, 394 = 390k 25S = 1/4, 50S or 50X = 1/2, –2W = 2 KA = Carbon, FR = Flame Proof, SA = Metal Oxide, RF = Fusible, MF = Metal Film	
R001	SA-1WT561J	Metal Oxide Resistor
R002, 003	KA25ST331J	Carbon Resistor
R006	KA25ST102J	Carbon Resistor
R101, 102	KA25ST100J	Carbon Resistor
R103, 104	KA25ST154J	Carbon Resistor
R105, 106	KA25ST222J	Carbon Resistor
R107, 108	KA25ST820J	Carbon Resistor
R109, 110	KA25ST104J	Carbon Resistor
R111~114	KA25ST472J	Carbon Resistor
R115~118	KA25ST153J	Carbon Resistor
R119, 120	KA25ST104J	Carbon Resistor
R121, 122	KA25ST823J	Carbon Resistor
R123, 124	KA25ST152J	Carbon Resistor
R125	KA25ST103J	Carbon Resistor
R128	KA25ST102J	Carbon Resistor
R129, 130	KA25ST202J	Carbon Resistor
R201, 202	KA25ST512J	Carbon Resistor
R203, 204	KA25ST912J	Carbon Resistor
R205, 206	KA25ST752J	Carbon Resistor
R207, 208	KA25ST431J	Carbon Resistor
R209, 210	MF25ST392F	Metal Film Resistor
R211, 212	MF25ST272F	Metal Film Resistor
R213, 214	KA25ST682J	Carbon Resistor
R215, 216	KA25ST681J	Carbon Resistor
R217, 218	KA25ST472J	Carbon Resistor
R219~221	KA25ST223J	Carbon Resistor
R222	KA25ST104J	Carbon Resistor
R225~228	KA25ST103J	Carbon Resistor
R229	KA25ST104J	Carbon Resistor
R230	KA25ST102J	Carbon Resistor
R231	MF25ST104F	Metal Film Resistor
R301, 302	KA25ST183J	Carbon Resistor
R303, 304	KA25ST223J	Carbon Resistor
R305, 306	KA25ST104J	Carbon Resistor
R307~310	KA25ST333J	Carbon Resistor
R311~314	KA25ST153J	Carbon Resistor
R315, 316	KA25ST104J	Carbon Resistor
R317~320	KA25ST333J	Carbon Resistor
R321~324	KA25ST332J	Carbon Resistor
R325~328	KA25ST153J	Carbon Resistor
R329, 330	KA25ST473J	Carbon Resistor
R331, 332	KA25ST105J	Carbon Resistor
R333, 334	KA25ST123J	Carbon Resistor
R335, 336	KA25ST822J	Carbon Resistor
R337, 338	KA25ST472J	Carbon Resistor
R339, 340	KA25ST104J	Carbon Resistor
R341, 342	KA25ST103J	Carbon Resistor
R343, 344	KA25ST334J	Carbon Resistor
R345, 346	KA25ST473J	Carbon Resistor
R347~350	KA25ST103J	Carbon Resistor
R351, 352	KA25ST682J	Carbon Resistor
R353, 354	KA25ST562J	Carbon Resistor
R355, 356	KA25ST104J	Carbon Resistor
R357, 358	KA25ST221J	Carbon Resistor
R359	KA25ST103J	Carbon Resistor
R361, 362	KA25ST103J	Carbon Resistor
R365, 366	KA25ST104J	Carbon Resistor
R367, 368	KA25ST223J	Carbon Resistor
R369, 370	KA25ST103J	Carbon Resistor
R373	KA25ST221J	Carbon Resistor
R374	KA25ST222J	Carbon Resistor
R375, 376	KA25ST153J	Carbon Resistor
R377, 378	KA25ST104J	Carbon Resistor
R379, 380	KA25ST223J	Carbon Resistor
R381, 382	KA25ST154J	Carbon Resistor
R383, 384	KA25ST105J	Carbon Resistor
R401	KA25ST153J	Carbon Resistor
R402	KA25ST183J	Carbon Resistor
R403	KA25ST103J	Carbon Resistor
R404	KA25ST153J	Carbon Resistor
R405	KA25ST433J	Carbon Resistor
R406	KA25ST153J	Carbon Resistor
R407	KA25ST3R3J	Carbon Resistor
R501, 502	KA25ST331J	Carbon Resistor
R503, 504	KA25ST182J	Carbon Resistor
R505, 506	KA25ST472J	Carbon Resistor
R507	KA25ST271J	Carbon Resistor
R509, 510	KA25ST103J	Carbon Resistor
R511	KA25ST102J	Carbon Resistor
R512	KA25ST103J	Carbon Resistor
R513	KA25ST272J	Carbon Resistor
R514	KA25ST223J	Carbon Resistor
R515	KA25ST473J	Carbon Resistor
R516, 517	KA25ST104J	Carbon Resistor
R518	KA25ST122J	Carbon Resistor
R519	KA25ST272J	Carbon Resistor
R520	KA25ST122J	Carbon Resistor
R521	KA25ST104J	Carbon Resistor
R601, 602	KA25ST682J	Carbon Resistor
R603, 604	KA25ST272J	Carbon Resistor
R605~608	KA25ST103J	Carbon Resistor
R610	KA25ST821J	Carbon Resistor
R611, 612	KA25ST562J	Carbon Resistor
⚠FR401	RF25SK120J	Fusible Resistor
VR101	EWGG1A300B15	Rotary Potentiometer
VR401	VSL30-502B11Z1	Slide Potentiometer
VR501	EWJ-S1AW19A14	Rotary Potentiometer
SVR101, 102	SVR-06T3B102	Semi-Variable
SVR103, 104	SVR-06T3B103	Semi-Variable
SVR201, 202	SVR-06T3B502	Semi-Variable
SVR301~304	SVR-06T3B102	Semi-Variable
SVR305, 306	SVR-06T3B202	Semi-Variable
SVR307, 308	SVR-06T3B203	Semi-Variable
SVR401, 402	SVR-06T3B104	Semi-Variable
SVR403	SVR-06T3B303	Semi-Variable
SVR404	SVR-06T3B103	Semi-Variable
SVR601, 602	SVR-06T3B203	Semi-Variable
	COILS	
F101, 102	184024	Filter Block
F201, 202	184023	Filter Block
F203, 204	184021	Filter Block
F301, 302	184014	Filter Block
L301~304	RC875-223J	Inductor
L305, 306	RC875-333J	Inductor
L401	191014	Osc Coil
⚠T701	NPT-K0044	Power Transformer [A, A1]
⚠T701	NPT-K0045	Power Transfomer [B, B1, C, C1]
	SWITCHES	
S201	SW-5222174	Slide Switch
S501	ESD80640	Slide Switch
S502, 503	ESR-M143K15C	Rotary Slide Switch
⚠S701	ESB8215V	Power Switch
	MISCELLANEOUS	
E101	IPS-1065	Jump Wire

A, USA B, U.K C, SCANDINAVIA
A1, CANADA B1, AUSTRALIA/N.Z. C1, W. GERMANY

Ref. No.	Part No.	Description
E102	IPS-1065	Jump Wire
E401	IPS-1065	Jump Wire
P201	IMSA-1068-05L	Mini Terminal Plate
P202	IMSA-1068-05D	Mini Terminal Plate
P203	IMSA-1068-05L	Mini Terminal Plate
⚠FU701	FU-5250145T	Fuse [A]
⚠FU701	FU-6250145T	Fuse [A1]
⚠FU701	FU-525017T	Fuse [B, B1, C, C1]
⚠FU702	FU-528014T	Fuse [A]
⚠FU702	FU-628014T	Fuse [A1]
⚠FU702	FU-525017T	Fuse [B, B1, C, C1]
⚠FU703	FU-525014T	Fuse [A]
⚠FU703	FU-625014T	Fuse [A1]
⚠FU703	FU-524017T	Fuse [B, B1, C, C1]
⚠FU704	FU-525014T	Fuse [A]
⚠FU704	FU-625014T	Fuse [A1]
⚠FU704	FU-522017T	Fuse [B, B1, C, C1]
JK501	YKC21-0018A	Rca Jack 4P
MC201	171825-3	Micro Plug
MC302	171825-3	Micro Plug
MC303	171825-2	Micro Plug
MC401	171825-2	Micro Plug
MC402	171825-6	Micro Plug
MC501	171825-2	Micro Plug
MC601	171825-5	Micro Plug
MC602	171825-4	Micro Plug
MC701	171825-2	Micro Plug
MC702	171825-4	Micro Plug
MJ401	MC02-491	Micro Socket Ass'y
MJ402	MC06-494	Micro Socket Ass'y
MJ501	MC02-490	Micro Socket Ass'y
MJ601	MC05-493	Micro Socket Ass'y
MJ602	MC04-492	Micro Socket Ass'y
MJ701	MC04-498	Micro Socket Ass'y
MJ702	MC02-489	Micro Socket Ass'y
4E20	5E-T05	Jump Wire
9E29	5E-T05	Jump Wire
10E13	BK-1	Cord Clamp
10E14	NO.5167	Cord Clamp
12E10	IPS-1041-4	Jump Wire
13E11	23165102-BB-C	Fuse Holder [A, B, B1, C, C1]
13E11	S-N5051	Fuse Holder [A1]
13E20	59BS1692	GND Lug
13E21	59BS4795	GND Lug
13E23	IPS-1041-4	Jump Wire

SERVICE MANUAL

6240

STEREO CASSETTE DECK

NAD ELECTRONICS

BOSTON/LONDON

SM-600 8605