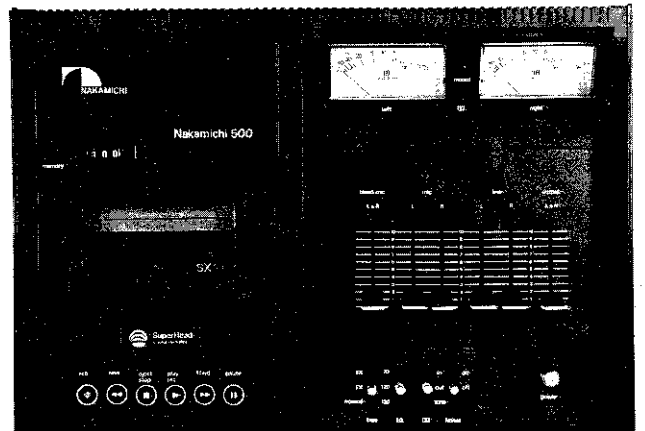
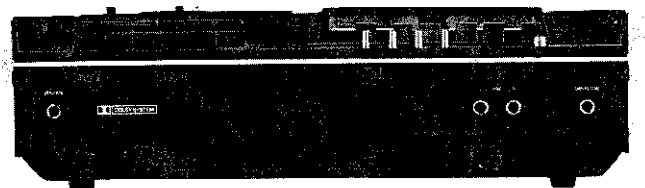




Service Manual

Nakamichi 500

2 Head Cassette System



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1. GENERAL

This is the second issue of the Nakamichi 500 Service Manual and applies to the Models bearing serial Nos. 365741 and greater (for SX tape). Refer to chapter 12 "History on 500" for the Models bearing serial Nos. 365740 and smaller (for CrO2 tape).

2. PRINCIPLE OF OPERATION

2.1. Auto Shut-off Circuit

Refer to Fig. 2.

By pressing one of the push buttons, Play, F.F., and REW, the start switch is turned ON, +13V DC power supply will be delivered to the auto shut-off P.C.B., motor governor, and motor.

During the play, F.F., or REW., the counter pulley linked to the take-up reel turns, and by means of two magnets mounted this pulley, the reed switch repeats ON/OFF operation.

Now, although charged through the resistor R604 (68 K Ω), the shut-off detecting capacitor C602 (47 μ F) is allowed to discharge through the transistor Q601 every time the reed switch repeats the ON/OFF operation. Therefore, the potential of C602 can never exceed the voltage capable of turning Q602 ON.

The normal conditions of elements before the tape reaches its end are given below:

Q601 – ON/Cutoff	Relay – ON
Q602 – Cutoff	C407 – Charging
Q603 – ON	Solenoid – OFF
Q604 – ON	Start Switch – ON

Tape End

When the tape reaches an end, the reed switch stops its ON/OFF operation. C602 continuously charged and when the potential exceeded that of Q602 emitter (about 4V), Q602 is turned ON. As a result, Q603 and Q604 go to OFF, thus the shut-off operation is performed.

The conditions of the elements for shut-off are given below:

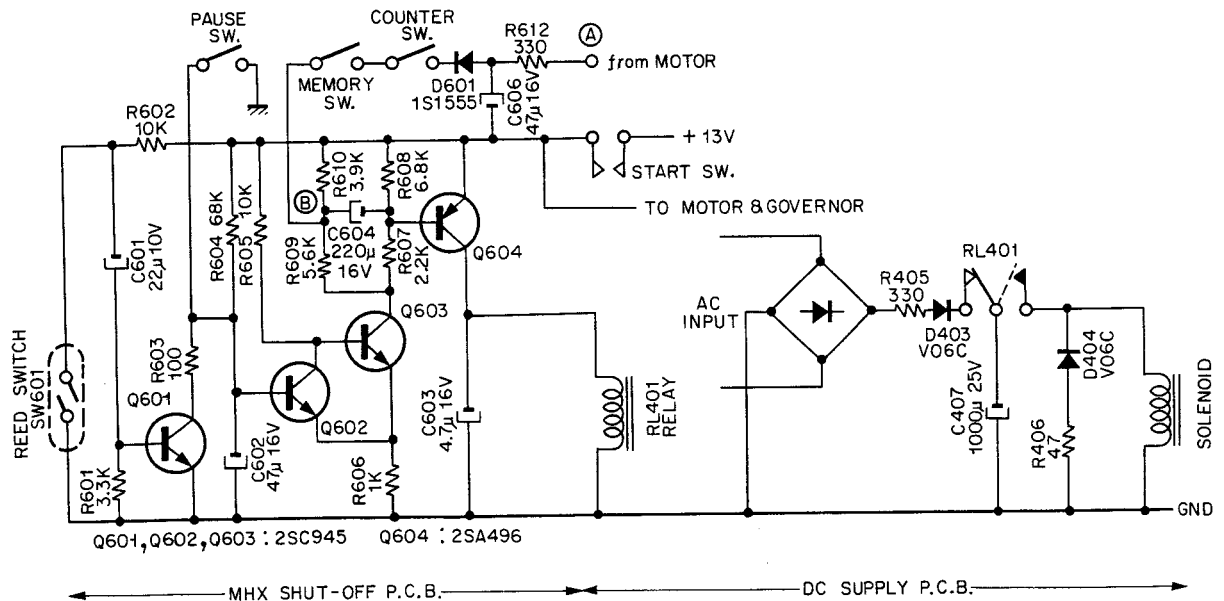
Q601 – Cutoff	Relay – OFF
Q602 – ON	C407 – Starts to discharge and drives the solenoid.
Q603 – Cutoff	Solenoid – ON and releases the start switch and Play, F.F., or REW button.
Q604 – Cutoff	Start SW. – Released and stops the motor.

Memory Rewind

During rewind with the memory switch turned ON, the auto shut-off functions when the counter switch is ON (i.e. the counter reaches "000").

The terminal A conducted to the motor governor circuit carries a potential of about +13V only for the rewind, and at the counter "000", this voltage is impressed on C604 (point B). For this reason, the potential at B changes from about 9V to 13V, and thus a positive differentiated pulse is applied to the Q604 base through the C604, resulting in Q604 cut off.

The cutoff of the Q604 will operate the auto shut-off, and releases the start switch.



3. CABINET DISASSEMBLY INSTRUCTIONS

Refer to Fig. 3.

- (1) Remove control knobs 05 from the Cabinet Top.
- (2) Remove 4 screws from the Cabinet Bottom 04.
- (3) Remove the Cabinet Bottom 04.
- (4) Remove 2 screws from Model Name Plate.
- (5) Pull out the woodframe 02, 03.
- (6) Remove 6 screws from the stud of Plastic Cabinet 06.
- (7) Pull out the Plastic Cabinet 06.
- (8) All Mechanism and Electronics are accessible from outside.
- (9) Disassembly of individual Mechanism and Electronics circuit board is shown on later pages.

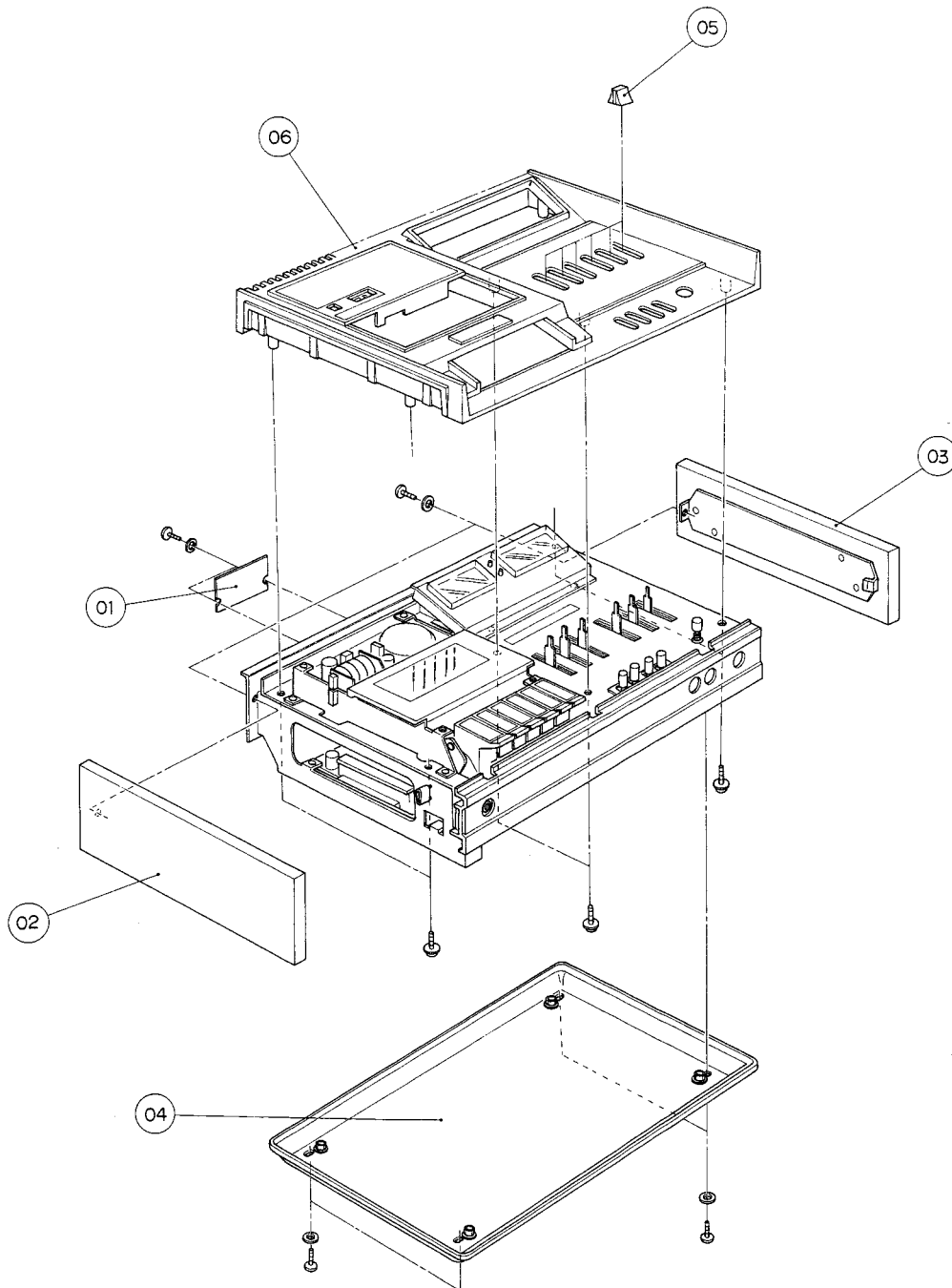


Fig. 3

4. MECHANICAL ADJUSTMENTS

4.1. Take-up Torque and Rewind Torque Adjustment

Refer to Fig. 4.1.

- (1) Remove top and bottom cabinets of the cassette recorder.
- (2) Remove cassette case.
- (3) To adjust torque, move Torque Plate as shown in the figure.
- (4) The Take-up Torque should be 45 ± 10 g-cm.
- (5) The Supply Torque should be 35 to 60g-cm.

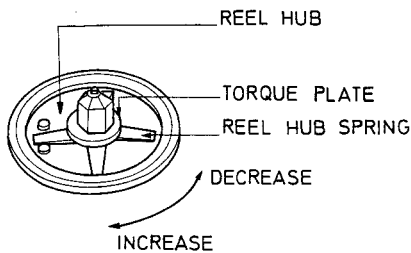


Fig. 4.1

4.2. Record/Playback Head Height Adjustment and Azimuth Alignment

Refer to Fig. 4.2.

- (1) Connect a VTVM to PLAYBACK output jack.
- (2) Load the 1KHz Track Alignment Tape (DA09007A) for adjusting the head height.
- (3) Insert the Tape Guide Adjuster (0D09001A) into each hole of the tape guide beside the head. Adjust the jig for minimizing each output signal of the right and left channels.
- (4) Load the 15KHz Azimuth Tape (DA09004A) for azimuth alignment.
- (5) Adjust the azimuth alignment screw for maximizing each output signal of the right and left channels.

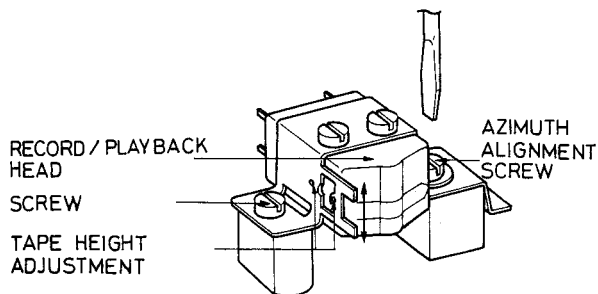


Fig. 4.2

4.3. Tape Speed Adjustment

Refer to Fig. 4.3.

- (1) Connect a frequency counter either to the left or right PLAYBACK output jack.
- (2) Load the 3KHz Speed Wow Flutter Tape (DA09006A) and play it back.
- (3) Adjust the Tape Speed Adjust potentiometer (accessible from the rear apron of the cassette recorder) for an average reading of 3KHz on the frequency counter.

Caution: The above procedures require the use of a frequency counter to accurately set the tape speed. Any other methods used for speed determination may result in an appreciable significant speed error.

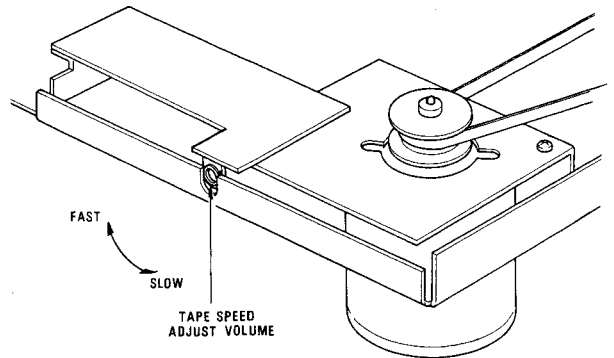


Fig. 4.3

4.4. Automatic Push Button Release Adjustment

Refer to Fig. 4.4

Adjust the location of the solenoid with the screw so that the Push Button key can automatically be released when the tape comes to an end in RECORD mode.

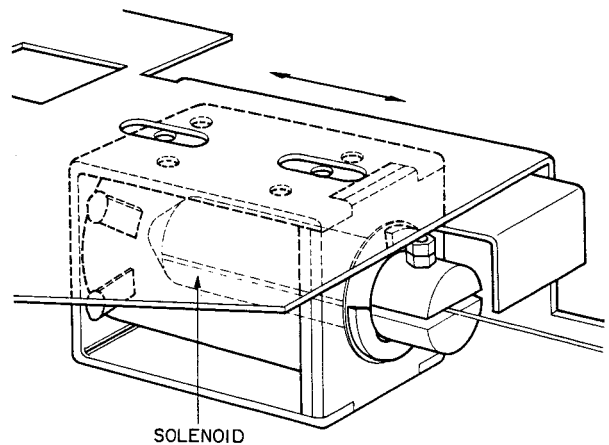


Fig. 4.4

4.5. Belt Travelling Adjustment

Refer to Fig. 4.5.

- (1) Adjust the motor pulley position, then check to insure whether the drive belt is travelling along the correct position and also staying at the correct position, i.e. the center part of the motor pulley and idler pulley without contacting the belt guide at the following modes.
Playback, F.F., REW, F.F. to Stop, REW to Stop

Playback, F.F., REW, F.F. to Stop, REW to Stop

- (2) In case motor pulley is tilting, insert spacers into A, B (when belt slips upward on the motor pulley) or C (when belt slips downward).

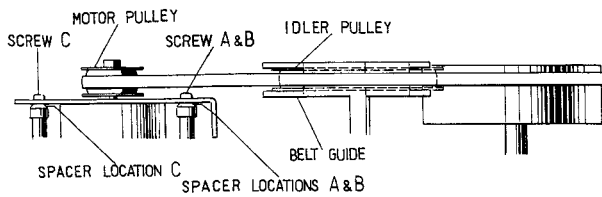


Fig. 4.5

4.6. Flywheel Adjustment

Refer to Fig. 4.6. Adjust the flywheel clearances should be 0.05 to 0.1mm. After adjustment, lock the lock nut.

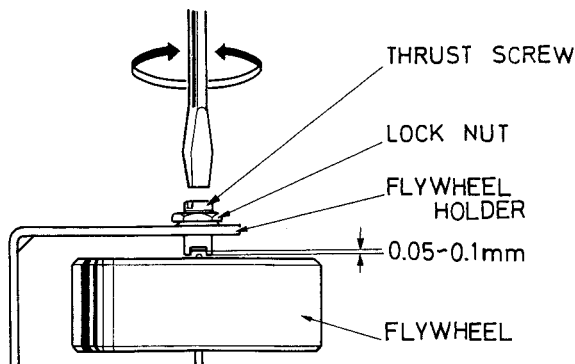


Fig. 4.6

4.7. Lubrication

Refer to Fig. 4.7.

After 500 hours of use apply a few drops of light machine oil (LAUNA No. 40) between capstan and capstan bearing and to the pressure roller.

Note: If oil is applied to the capstan shaft and other drive mechanisms, clean it off with an alcohol-dipped cloth. When flywheel or flywheel holder is replaced apply a few drops of grease to the flywheel holder.

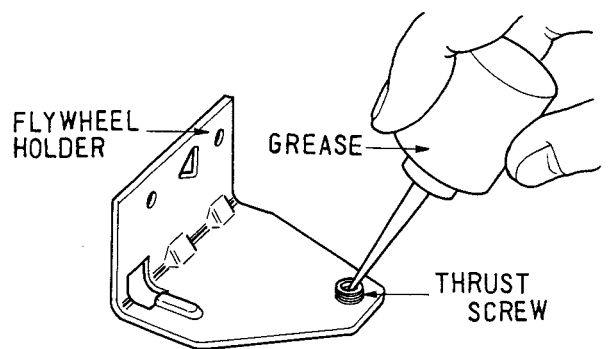
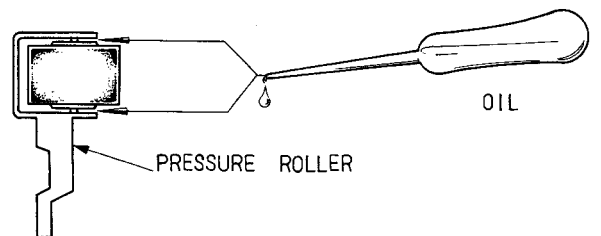
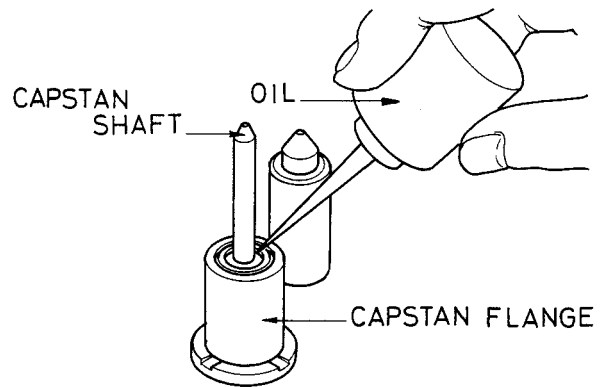


Fig. 4.7

5. ELECTRICAL ADJUSTMENTS

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUST	REMARKS
1	Tape Speed	3KHz Speed & Wow/Flutter Tape (DA09006A)	Wow/Flutter Meter or Frequency Counter to OUTPUT Jack	Playback	Governor Board VR501	Adjust VR501 to obtain 3 KHz
2	Head Azimuth Alignment	15KHz Azimuth Tape (DA09004A)	VTVM to OUTPUT Jack	Playback	Azimuth Alignment Screw	Adjust the Screw to obtain maximum reading on the VTVM
3	Playback Output Level	400Hz Level Tape (DA09005A)	VTVM to Pin 3 & 12 of Connector CN 3 and Chassis Ground	Playback	Main Board VR101 VR201	Adjust the VR101,201 to obtain 580mV on the VTVM
4	Meter Level	400Hz, 0.5V to INPUT Jack	Same as above	Record Pause	Main Board VR102 VR202	1. Adjust VR1,2, Record Level Controls to obtain 580 mV on the VTVM 2. Adjust VR 102, 202 to obtain 0dB on the Level Meters
5	MPX Filter	19 KHz to INPUT Jack	VTVM to OUTPUT Jack	Record Pause	Main Board L102 L202 MPXSW ON	Adjust the Coils to obtain minimum reading on the VTVM
6	Record Amplifier Equalizer	17 KHz to INPUT Jack	VTVM across R102, 202	Record Pause	Main Board L103 L203	Adjust the Coils to obtain peak readings at 17 KHz Note: Stop Bias Oscillation
7	Bias Frequency	105 KHz Generator Signal to Oscilloscope Horizontal Terminal	Bias Oscillator Signal at Erase Head to the Scope Vertical Terminal	Record Pause	Main Board T301	Adjust the Coil until a circle pattern appears on the Oscilloscope
			Coupling Erase Head to Frequency Counter	Record Pause	Main Board T301	Adjust the Coil to obtain 105 KHz on the Frequency Counter
8	Bias Trap		VTVM across Q109, 209 Collector & Ground	Record Pause	Main Board L104 L204	Adjust the Coils to obtain less than 1V on the VTVM
9	Recording Bias Current	400Hz, 0.5V to INPUT Jack	VTVM to OUTPUT Jack	Record & Playback	Volume Sub Board TR702 802 703 803 704 804	1. Adjust VR1, 2, Record Input Level Controls to obtain 0dB on the Level Meters 2. Record the signal on blank tape and palyback 3. Repeating Step 2 adjust VR 702, 802 to obtain maximum output on the VTVM (Normal) 4. Repeating Step 2 adjust VR703, 803 to obtain maximum output on the VTVM (EX) 5. Repeating Step 2 adjust VR704, 804 to obtain maximum output on the VTVM (SX)

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUST	REMARKS
10	Record/ Playback Output Level	400Hz, 0.5V to INPUT Jack	VTVM to OUTPUT Jack	Record & Playback	REC. CAL. Board VR705 805 706 806 707 807	<ol style="list-style-type: none"> 1. Adjust VR1, 2 Record Input Level Controls to obtain 0dB on the Level Meters 2. Record the signal on blank tape and playback it 3. Repeating Step 2, adjust VR705, 805 to obtain 1 volt on the VTVM, or 0dB on the Level Meters (Normal) 4. Repeating Step 2, adjust VR706, 806 to obtain 1 volt on the VTVM, or 0dB on the Level Meters (EX) 5. Repeating Step 2, adjust VR707, 807 to obtain 1 volt on the VTVM, or 0dB on the Level Meters (SX)
11	Limiter Level	1KHz, 0.5V to INPUT Jack	VTVM to OUTPUT Jack	Record Pause	Volume sub Board VR701 VR801	<ol style="list-style-type: none"> 1. Adjust VR 1. 2 Record Level Controls to obtain 0dB on the Level Meter. 2. Set Limiter SW to ON position. 3. Adjust VR701, 801, so that the Output Level may be decreased by 1dB.

DOLBY CIRCUIT ALIGNMENT PROCEDURE

- (1) Turn LAW Control VR101, 201 fully counterclockwise.
- (2) Turn GAIN Controls VR102 and VR202 fully counterclockwise.
- (3) Set Dolby Switch (IN-OUT) to OUT position and ground FET Gate Terminal with a jumper wire.
- (4) Connect an AC VTVM to METERING Terminal 3 for the Right channel or 12 for the Left channel.
- (5) Apply 5KHz signals having a proper level to INPUT Terminal 2 for the Right channel or 13 for the Left channel, so that the VTVM reads 17.5mV in each channel.
- (6) Remove the VTVM from Terminal 3 or 12 and reconnect it to OUTPUT Terminal 6 or 9. Note the output voltage on VTVM.
- (7) Set DOLBY Switch to IN position and adjust GAIN Controls VR102 and 202, so that the VTVM indicates 10dB over the noted voltage in Step (6).
- (8) Set DOLBY Switch to IN position. Note the voltage at OUTPUT Terminal 6 for the Right channel or 9 for the Left channel.
- (9) Remove the jumper wire from the FET Gate Terminal. Adjust the LAW Controls VR101 and VR201, so that the voltage at OUTPUT Terminals 6 and 9 read 2dB below the noted voltage in Step (8).

6. PARTS LOCATION FOR ELECTRICAL ADJUSTMENT

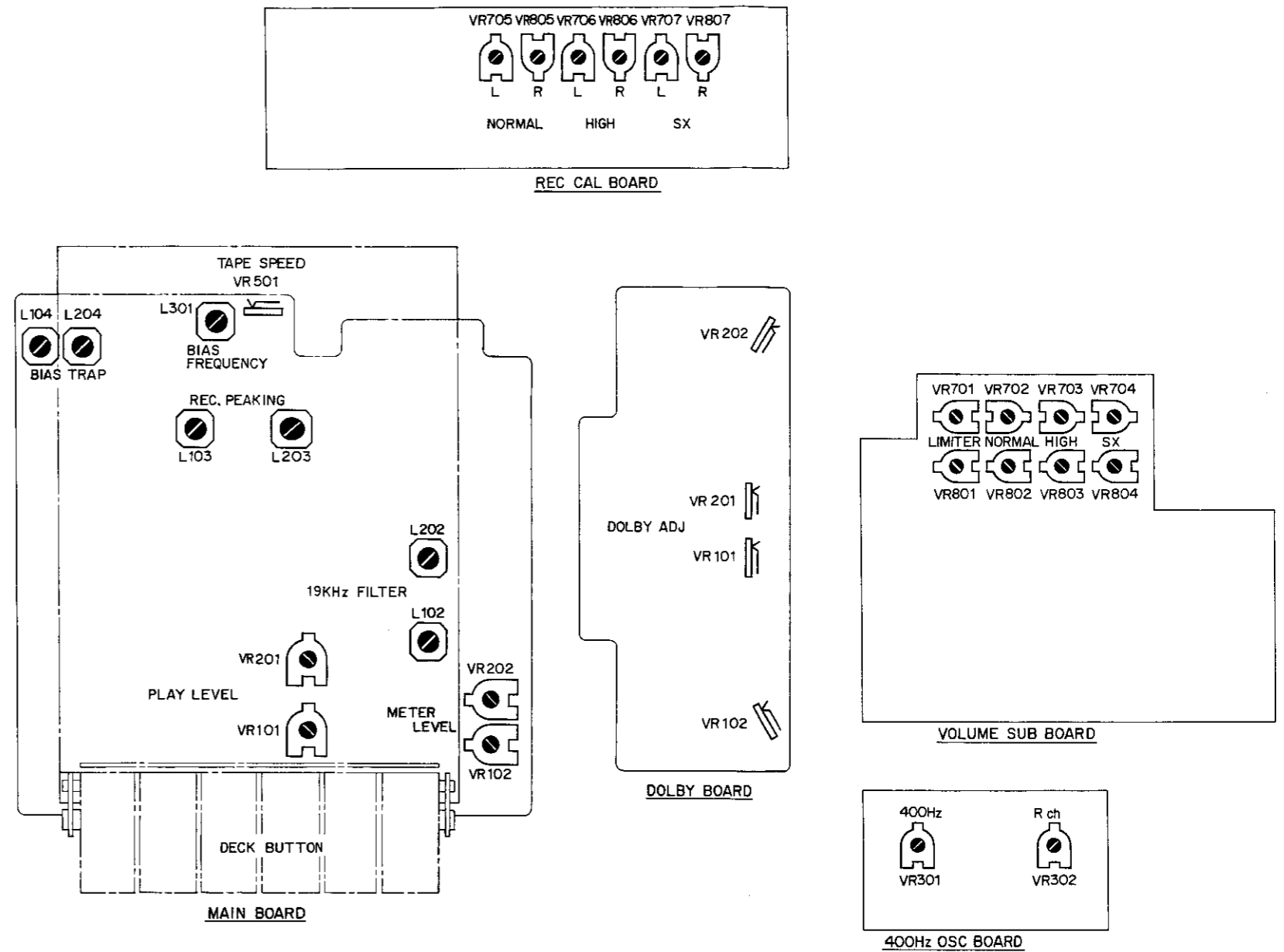


Fig. 6

7. MOUNTING DIAGRAMS AND PARTS LIST

Notes: 1. Mounting diagram shows a dip side view of the printed circuit board.
 2. Diode 1S1555, transistors 2SA733 and 2SC900 are compatible with diode FDH-999, transistors 2SA495 and 2SC732, respectively.

7.1. Main Board Ass'y

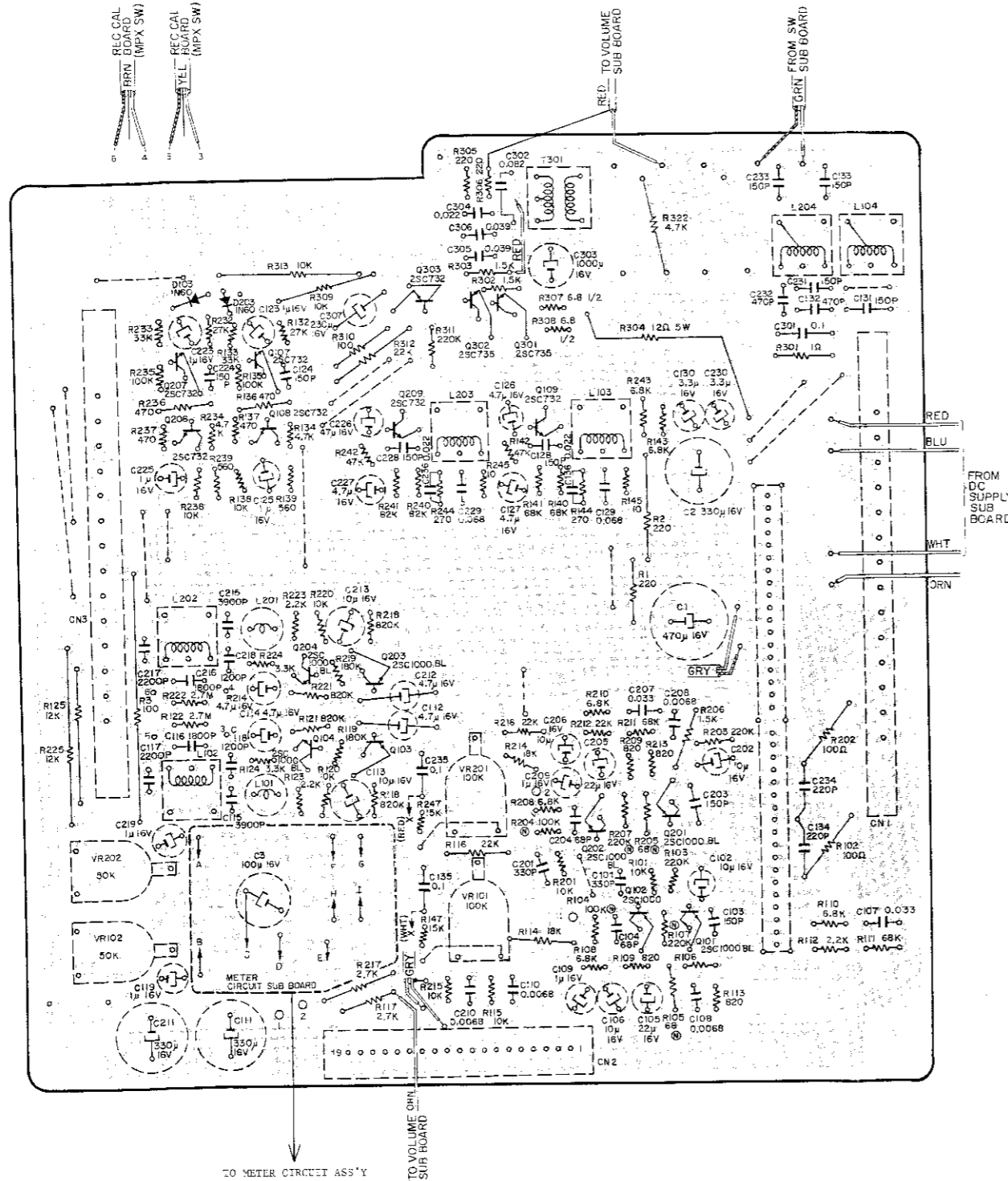


Fig. 7.1

7.2. Meter Circuit Ass'y

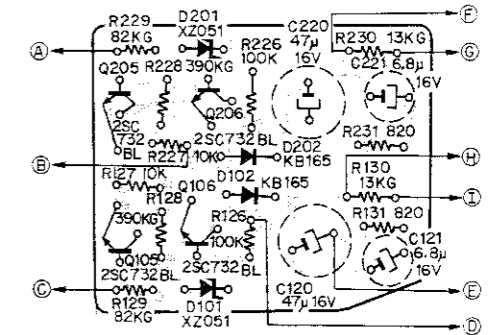


Fig. 7.2

Schematic Ref. No.	Part No.	Description
	BA03682A	Main Board Ass'y (SX) - Pre. AMP -
Q101, 201	0B06003A	Transistor 2SC1000 (BL)
102, 202	0B01833A	Carbon Resistor 10K ELR½, J
115, 215	0B01679A	Carbon Resistor 100 ELR½, J
R102, 202	0B05517A	Carbon Resistor 220K N ELR½, J
107, 207	0B01931A	Carbon Resistor 100K N ELR½, J
R105, 205	0B05683A	Carbon Resistor 68 N ELR½, J
R106, 206	0B05505A	Carbon Resistor 1.5K ELR½, J
R108, 208	0B01877A	Carbon Resistor 6.8K ELR½, J
110, 210	0B05511A	Carbon Resistor 820 ELR½, J
113, 213	0B01902A	Carbon Resistor 68K ELR½, J
R111, 211	0B05566A	Carbon Resistor 2.2K ELR½, J
R114, 214	0B05561A	Carbon Resistor 18K ELR½, J
R116, 216	0B05661A	Carbon Resistor 22K ELR½, J
R117, 217	0B01782A	Carbon Resistor 2.7K ELR½, J
R147, 247	0B05591A	Carbon Resistor 15K ELR½, J
R148, 248	0B1920A	Carbon Resistor 100K ELR½, J
C101, 201	0B01180A	Ceramic Capacitor 330P, 50V, M
C102, 202	0B01412A	Electrolytic Capacitor 10µ 16V
106, 206	0B05599A	Ceramic Capacitor 150P, 50V, M
C103, 203	0B05525A	Ceramic Capacitor 68P, 50V, M
C104, 204	0B01862A	Electrolytic Capacitor 22µ, 16V
C105, 205	0B05531A	Mylar Capacitor 0.033µ, 50V, K
C107, 207	0B05701A	Mylar Capacitor 0.0068µ, 50V, K
110, 210	0B01405A	Electrolytic Capacitor 1µ, 16V
C111, 211	0B01502A	Electrolytic Capacitor 330µ, 16V
C134, 234	0B01289A	Ceramic Capacitor 220P, 50V, M
C135, 235	0B01603A	Mylar Capacitor 0.1µ, 50V, K
VR101, 201	0B01812A	Semi-fixed Volume 100K
		- Buffer AMP -
Q103, 203	0B06003A	Transistor 2SC1000 (BL)
104, 204	0B03919A	Inductor 36mH
L101, 201	0B03857A	19KHz Coil 23mH

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	
R1	0B05608A	Carbon Resistor 220 ELR½, J			– BIAS OSC –	
R118, 218 121, 221	0B05674A	Carbon Resistor 820K ELR½, J	Q301, 302	0B01338A		Transistor 2SC735 (Y)
R119, 219	0B05669A	Carbon Resistor 180K ELR½, J	T301	0B03932A		BIAS, OSC Coil
R120, 220	0B01833A	Carbon Resistor 10K ELR½, J	R301	0B05746A		Carbon Resistor 1 ELR½, J
R122, 222	0B05753A	Carbon Resistor 2.7M ELR½, J	R302, 303	0B05505A		Carbon Resistor 1.5K ELR½, J
R123, 223	0B05566A	Carbon Resistor 2.2K ELR½, J	R304	0B05761A		Cement Resistor 12 5W
R124, 224	0B01793A	Carbon Resistor 3.3K ELR½, J	R305, 306	0B05608A		Carbon Resistor 220 ELR½, J
C1	0B01392A	Electrolytic Capacitor 470µ 16V	R307, 308	0B05696A		Carbon Resistor 6.8 R50, J
C112, 212 114, 214	0B01389A	Electrolytic Capacitor 4.7µ 16V	R322	0B01795A		Carbon Resistor 4.7K ELR½, J
C113, 213	0B01412A	Electrolytic Capacitor 10µ 16V	C301	0B01603A		Mylar Capacitor 0.1µ 50V, K
C115, 215	0B01804A	Mylar Capacitor 3900P, 50V, J	C302	0B01904A	Mylar Capacitor 0.082µ 50V, K	
C116, 216	0B05751A	Mylar Capacitor 1800P, 50V, K	C303	0B01400A	Electrolytic Capacitor 100µ 16V	
C117, 217	0B01802A	Mylar Capacitor 2200P, 16V, J	C304	0B04062A	Mylar Capacitor 0.022µ 50V, K	
C118, 218	0B05750A	Mylar Capacitor 1200P, 16V, K	C305, 306	0B05684A	Mylar Capacitor 0.039µ 50V, K	
		– Meter AMP –	C133, 233	0B05599A	Ceramic Capacitor 150P, 50V, M	
R3	0B01679A	Carbon Resistor 100 R½, J	Q303	0B01910A	Transistor 2SC900 (E)	
R125, 225	0B05771A	Carbon Resistor 12K R½, J	D103, 203	0B01909A	Silicon Diode 1S1555	
C3	0B01400A	Electrolytic Capacitor 100µ 16V	R309	0B01833A	Carbon Resistor 10K ELR½, J	
C119, 219	0B01405A	Electrolytic Capacitor 1µ 16V	R310	0B05558A	Carbon Resistor 100 ELR½, J	
VR102,202	0B01807A	Semi-fixed Volume 50K	R311	0B05596A	Carbon Resistor 220K ELR½, J	
		– Line AMP –	R312	0B05615A	Carbon Resistor 22K R½, J	
Q107, 207 108, 208	0B01910A	Transistor 2SC900 (E)	R313	0B01888A	Carbon Resistor 10K R½, J	
R132, 232	0B05538A	Carbon Resistor 27K ELR½, J	C307	0B01862A	Electrolytic Capacitor 22µ 16V	
R133, 233	0B01879A	Carbon Resistor 33K ELR½, J			– Miscellaneous –	
R134, 234	0B01795A	Carbon Resistor 4.7K ELR½, J	SW1	0B07580D	Main Board	
R135, 235	0B01920A	Carbon Resistor 100K ELR½, J		0B07036A	Record Switch	
R136, 236 137, 237	0B01792A	Carbon Resistor 470 ELR½, J		0B03804F	Record Switch Spring (1 pce.)	
R138, 238	0B01833A	Carbon Resistor 10K ELR½, J		0B03918B	Record Switch Spring Insulator (1 pce.)	
R139, 239	0B05678A	Carbon Resistor 560 ELR½, J		0B08103C	Shield Plate (1 pce.)	
C123, 223 125, 225	0B01405A	Electrolytic Capacitor 1µ 16V		0B01814A	14P Connector (2 pcs.)	
C124, 224	0B05599A	Ceramic Capacitor 150P, 50V, M		0B01797B	19P Connector (1 pce.)	
		– REC. AMP –		0B01800B	Connector Pin (47 pcs.)	
Q109, 209	0B01910A	Transistor 2SC900 (E)		0E00185A	Screw M2x6 Cylinder Head (2 pcs.)	
L103, 203	0B03858A	Peaking Coil 1.14mH		0E00176A	Nut Hex. M2 (2 pcs.)	
L104, 204	0B03859A	Bias Trap Coil 10.5mH		0E00025A	Washer 2mm Steel (2 pcs.)	
R2	0B01933A	Carbon Resistor 220 R½, J	Q105, 205 106, 206	BA03658A	Meter Circuit Ass'y	
R140, 240 141, 241	0B01564A	Carbon Resistor 82K ELR½, J	D101, 201	0B07603B	Meter Sub Board (NR)	
R142, 242	0B05562A	Carbon Resistor 47K ELR½, J	D102, 202	0B01910A	Transistor 2SC900 (E)	
R143, 243	0B01877A	Carbon Resistor 6.8K ELR½, J	R126, 226	0B06058A	Zener Diode YZ-051	
R144, 244	0B05651A	Carbon Resistor 270 ELR½, J	R127, 227	0B06007A	Silicon Diode KB-165	
R145, 245	0B05663A	Carbon Resistor 10 ELR½, J	R128, 228	0B01920A	Carbon Resistor 100K ELR½, J	
C2	0B01502A	Electrolytic Capacitor 330µ 16V	R129, 229	0B01833A	Carbon Resistor 10K ELR½, J	
C126, 226 127, 227	0B01389A	Electrolytic Capacitor 4.7µ 16V	R128, 228	0B05544A	Metal Film Resistor 390K ERO-14 KV, G	
C128, 228 131, 231	0B05599A	Ceramic Capacitor 150P, 50V, M	R130, 230	0B05766A	Metal Film Resistor 82K ERO-25 KV, G	
C129, 229	0B05586A	Mylar Capacitor 0.068µ 50V, K	R131, 231	0B05767A	Metal Film Resistor 13K ERO-25 KV, G	
C130, 230	0B00608A	Electrolytic Capacitor 3.3µ 25V	C120, 220	0B05511A	Carbon Resistor 820 ELR½, J	
C132, 232	0B01716A	Ceramic Capacitor 470P, 50V, M	C121, 221	0B05770A	Electrolytic Capacitor 47µ 16V	
C136, 236	0B04062A	Mylar Capacitor 0.022µ 50V, K		0B05769A	Tantalum Capacitor 6.8µ 16V	

7.3. Dolby Board Ass'y

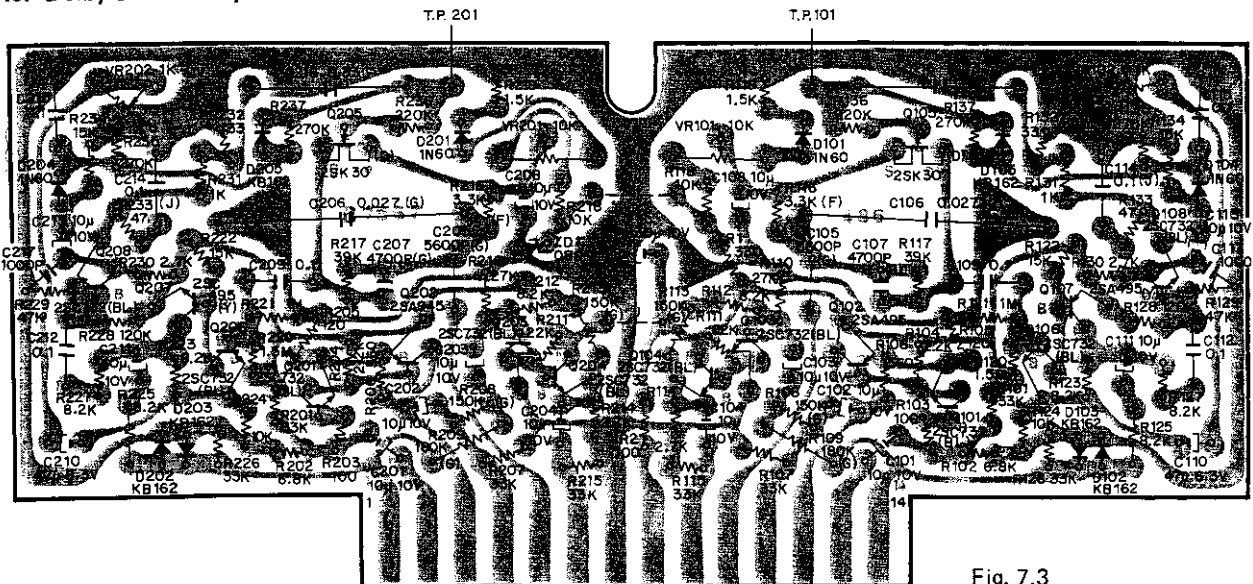


Fig. 7.3

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA03625A	Dolby Board Ass'y	R116, 216	OB01585A	Metal Film Resistor 3.3K ERO-25VK, F
	OB07567C	Dolby PC Board	R117, 217	OB01885A	Carbon Resistor 39K ELR¼, J
Q101, 201	OB01910A	Transistor 2SC900 (E)	R118, 218	OB01833A	Carbon Resistor 10K ELR¼, J
103, 203			124, 224		
104, 204			R119, 219	OB05505A	Carbon Resistor 1.5K ELR¼, J
106, 206			R120, 220	OB05601A	Carbon Resistor 1.5M ELR¼, J
108, 208			R121, 221	OB05564A	Carbon Resistor 1M ELR¼, J
Q102, 202	OB06013A	Transistor 2SA733	R122, 222	OB05591A	Carbon Resistor 15K ELR¼, J
107, 207			134, 234		
Q105, 205	OB06001A	FET 2SK30 (D)	R128, 228	OB05568A	Carbon Resistor 120K ELR¼, J
D101, 201	OB00030A	Germanium Diode 1N60P	R129, 229	OB05562A	Carbon Resistor 47K ELR¼, J
104, 204			R131, 231	OB01781A	Carbon Resistor 1K ELR¼, J
D102, 202	OB01599A	Varistor KB162	R132, 232	OB05567A	Carbon Resistor 33 ELR¼, J
103, 203			R133, 233	OB05569A	Carbon Resistor 47 ELR¼, J
105, 205			R135, 235	OB05600A	Carbon Resistor 270K ELR¼, J
DZ1	OB06004A	Zener Diode 08S	137, 237		
R1	OB01789A	Carbon Resistor 330 ELR¼, J	R136, 236	OB05596A	Carbon Resistor 220K ELR¼, J
R2, 103	OB05558A	Carbon Resistor 100 ELR¼, J	C1	OB01502A	Electrolytic Capacitor 330µ 16V
203			C101, 201	OB00078A	Electrolytic Capacitor 10µ 10V
R101, 201	OB01879A	Carbon Resistor 33K ELR¼, J	102, 202		
107, 207			103, 203		
115, 215			104, 204		
126, 226			108, 208		
R102, 202	OB01877A	Carbon Resistor 6.8K ELR¼, J	111, 211		
R104, 204	OB05566A	Carbon Resistor 2.2K ELR¼, J	113, 213		
R105, 205	OB05570A	Carbon Resistor 120 ELR¼, J	C105, 205	OB01864A	P.P. Capacitor 5600P, 50V, G
R106, 206	OB05678A	Carbon Resistor 560 ELR¼, J	C106, 206	OB01892A	P.P. Capacitor 0.027µ 50V, G
R108, 208	OB01859A	Metal Film Resistor 150K ERO-25VK, G	C107, 207	OB01608A	P.P. Capacitor 4700P, 50V, G
113, 213			C109, 209	OB01603A	Mylar Capacitor 0.1µ, 50V, K
R109, 209	OB01590A	Metal Film Resistor 180K ERO-25VK, G	112, 212		
R110, 210	OB05538A	Carbon Resistor 27K ELR¼, J	115, 215		
R111, 211	OB05661A	Carbon Resistor 22K ELR¼, J	C110, 210	OB01404A	Electrolytic Capacitor 47µ 6.3V
R112, 212	OB01878A	Carbon Resistor 8.2K ELR¼, J	C114, 214	OB01780A	Mylar Capacitor 0.1µ 50V, J
123, 223			C116, 216	OB01602A	Mylar Capacitor 0.33µ 50V, K
125, 225			C117, 217	OB04059A	Mylar Capacitor 0.001µ 50V, K
127, 227			VR101,201	OB01458A	Semi-fixed Volume 10K
R114, 214	OB01782A	Carbon Resistor 2.7K ELR¼, J	VR102,202	OB01428A	Semi-fixed Volume 1K
130, 230			TP101,201	OB03924A	FET Gate Pin

7.4. Rec. Cal. Board Ass'y

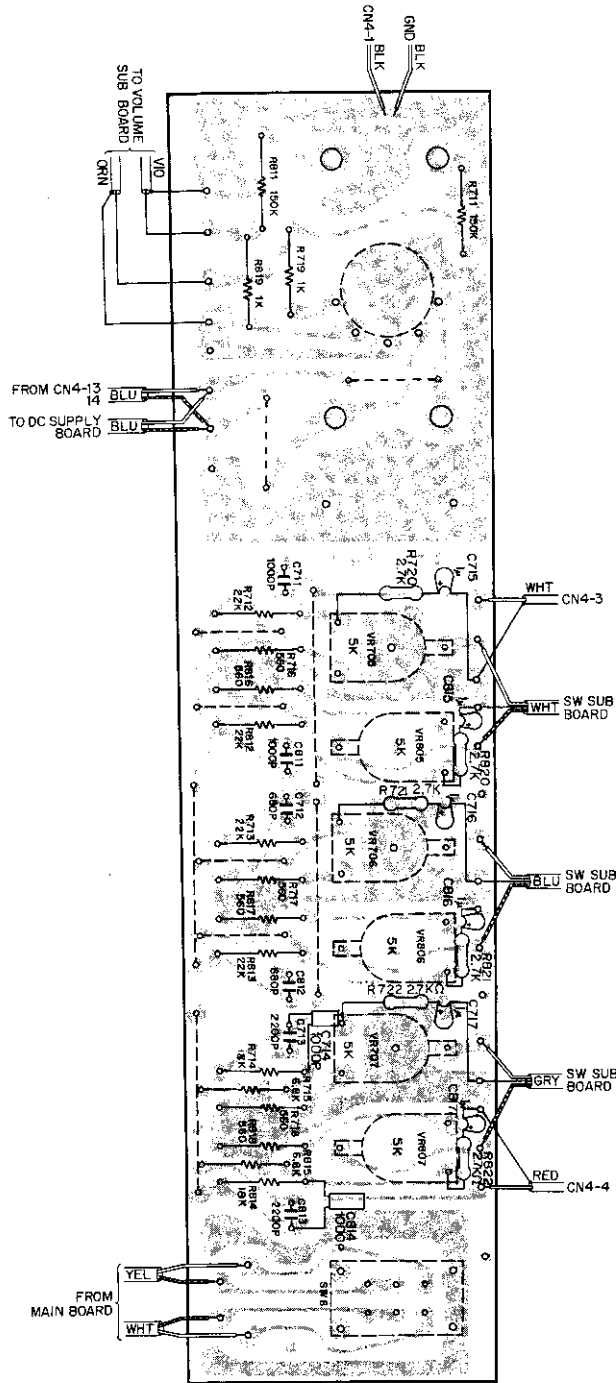


Fig. 7.4

Schematic Ref. No.	Part No.	Description		
	BA03762A	Rec. Cal. Board Ass'y		
	0B07582C	Rec. Cal. Board		
R711, 811	0B05626A	Carbon Resistor	150K	R¼, J
R712, 812	0B05615A	Carbon Resistor	22K	R¼, J
713, 813				
R714, 814	0B05560A	Carbon Resistor	18K	R¼, J
R715, 815	0B01854A	Carbon Resistor	39K	R¼, J
R716, 816	0B05575A	Carbon Resistor	560	R¼, J
717, 817				
718, 818				
R719, 819	0B01857A	Carbon Resistor	1K	R¼, J
R720, 820	0B05629A	Carbon Resistor	2.7K	R¼, J
721, 821				
722, 822				
C711, 811	0B04059A	Mylar Capacitor	0.001µ	50V, K
714, 814				
C712, 812	0B01459A	Mylar Capacitor	680P	50V, M
C713, 813	0B04060A	Mylar Capacitor	2200P	50V, K
C715, 815	0B05638A	Tantalum Capacitor	1µ	35V
716, 816				
717, 817				
VR705,805	0B07070A	Semi-fixed Volume	5K	
706,806				
707,807				
SW6	0B07053A	Filter Switch (SL222B4)		
JA5-9	0B08097A	Jack Unit		

7.5. Volume Sub Board Ass'y

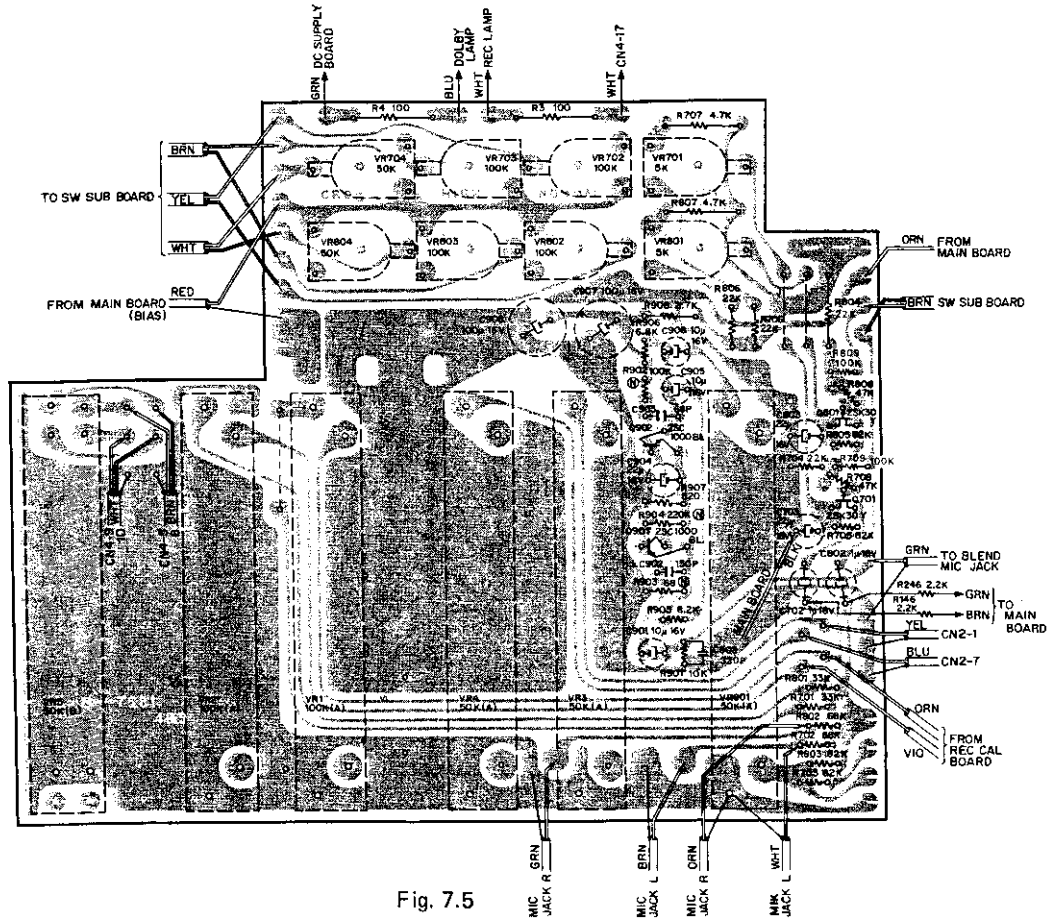


Fig. 7.5

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA03661A	Volume Sub Board Ass'y	C903	OB05525A	Ceramic Capacitor 68P 50V, M
	OB07581A	Volume Sub Board	C904	OB01862A	Electrolytic Capacitor 22μ 16V
VR1, 2	OB07054A	Slide Volume 100K (A)	C907, 908	OB01400A	Electrolytic Capacitor 100μ 16V
VR3, 4	OB07015A	Slide Volume 50K (A)	C909	OB01180A	Ceramic Capacitor 330P 50V, M
901					— Limiter —
VR5	OB07055A	Slide Volume 50K (B)	Q701, 801	OB01600A	FET 2SK30 (Y)
R701, 801	OB01879A	Carbon Resistor 33K ELR¼, J	R704, 804	OB05661A	Carbon Resistor 22K ELR¼, J
R702, 802	OB01902A	Carbon Resistor 100 R¼, J	706, 806		
703, 803			R705, 805	OB01564A	Carbon Resistor 82K ELR¼, J
			R707, 807	OB01846A	Carbon Resistor 4.7K R¼, J
			R708, 808	OB05562A	Carbon Resistor 47K ELR¼, J
			R709, 809	OB01920A	Carbon Resistor 100K ELR¼, J
			C702, 802	OB05638A	Tantalum Capacitor 1μ 35V
			C703, 803	OB01862A	Electrolytic Capacitor 22μ 16V
			VR701,801	OB01805A	Semi-fixed Volume 5K
					— Bias Adj. Volume —
Q901, 902	OB06003A	Transistor 2SC1000 (BL)	VR702,802	OB01812A	Semi-fixed Volume 100K
R901	OB01833A	Carbon Resistor 10K ELR¼, J	703,803		
R902	OB01931A	Carbon Resistor 100K N ELR¼, J	VR704,804	OB01807A	Semi-fixed Volume 50K
R903	OB05683A	Carbon Resistor 68 N ELR¼, J	R146,246	OB05522A	Carbon Resistor 2.2K ERD-25T, J
R904	OB05517A	Carbon Resistor 220K N ELR¼, J	OB04042A	OB04042A	1L 2P Lug Terminal (1 pce.)
R905	OB01878A	Carbon Resistor 8.2K ELR¼, J			
R906	OB01877A	Carbon Resistor 6.8K ELR¼, J			
R907	OB05511A	Carbon Resistor 820 ELR¼, J			
R908	OB01782A	Carbon Resistor 2.7K ELR¼, J			
C901, 905	OB01412A	Electrolytic Capacitor 10μ 16V			
906					
C902	OB05599A	Ceramic Capacitor 150P 50V, M			

7.6. Switch Sub Board Ass'y

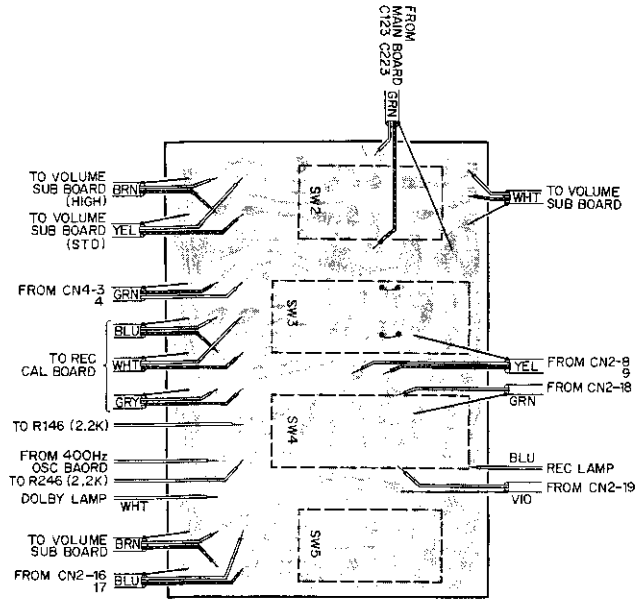


Fig. 7.6

7.7. 400 Hz OSC. Board Ass'y

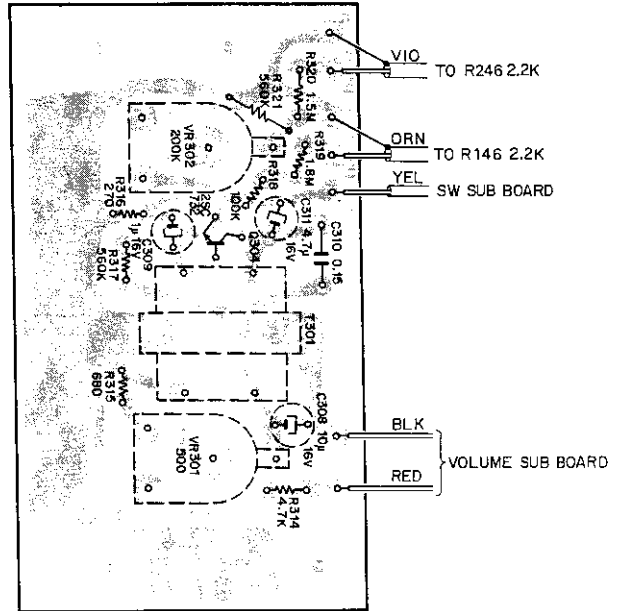


Fig. 7.7

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA03657A	Switch Sub Board Ass'y		BA03659A	400Hz OSC. Board Ass'y
SW2	0B07600B	Switch Sub Board (NR)	Q304	0B01910A	Transistor 2SC900 (E)
SW3, 4	0B07048A	Lever Switch 2-3	T302	0B03879A	Headphone Transformer
SW5	0B07049A	Lever Switch 4-3	R314	0B01795A	Carbon Resistor 4.7K ELR¼, J
	0B07047A	Lever Switch 2-2	R315	0B05559A	Carbon Resistor 680 ELR¼, J
			R316	0B05651A	Carbon Resistor 270 ELR¼, J
			R317, 321	0B05665A	Carbon Resistor 560K ELR¼, J
			R318	0B01920A	Carbon Resistor 100K ELR¼, J
			R319	0B05670A	Carbon Resistor 1.8M ELR¼, J
			R320	0B05601A	Carbon Resistor 1.5M ELR¼, J
			C308	0B01412A	Electrolytic Capacitor 10μ 16V
			C309	0B01405A	Electrolytic Capacitor 1μ 16V
			C310	0B05551A	Mylar Capacitor 0.15μ 50V, K
			C311	0B01389A	Electrolytic Capacitor 4.7μ 16V
			VR301	0B01596A	Semi-fixed Volume 500-ohm
			VR302	0B01597A	Semi-fixed Volume 200K

7.8. MHX Governor B

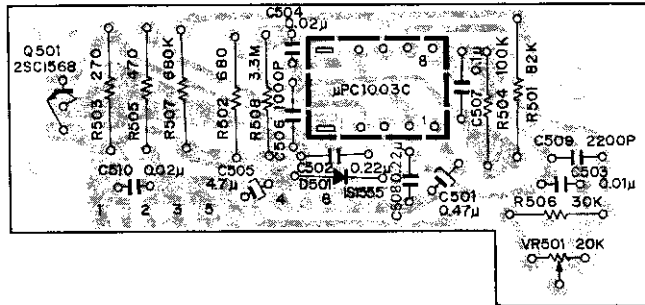


Fig. 7.8

7.9. MHX Shut-off A Ass'y

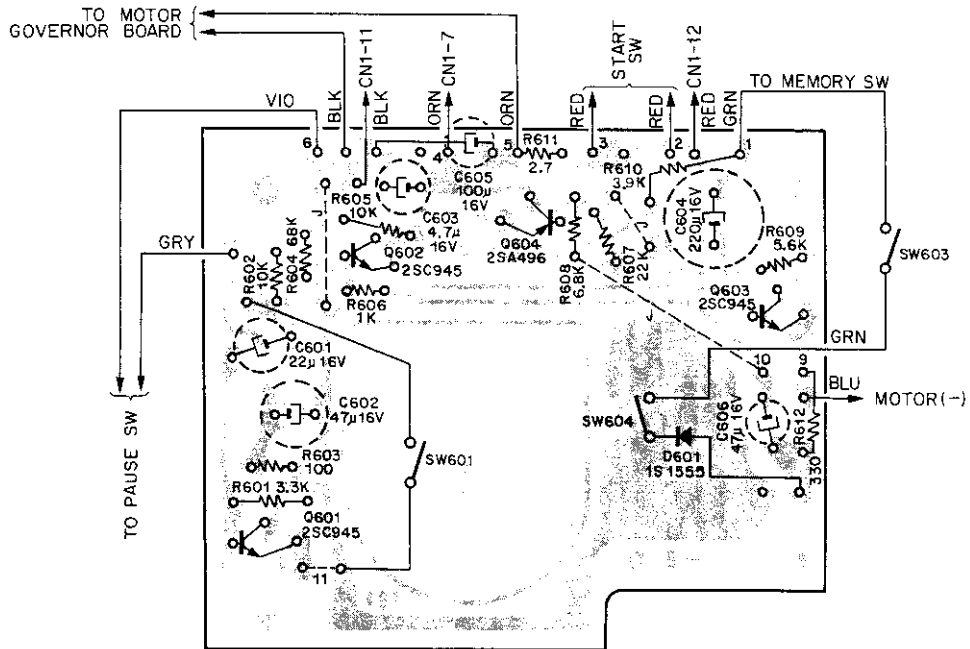


Fig. 7.9

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	0B08204A	MHX Governor B	R604	0B01902A	Carbon Resistor 68K ERD-14V, J
			R606	0B01781A	Carbon Resistor 1K ERD-14V, J
	CA03251A	MHX Shut-off A Ass'y	R607	0B05566A	Carbon Resistor 2.2K ERD-14V, J
			R608	0B01877A	Carbon Resistor 6.8K ERD-14V, J
	0B07586C	Shut-off Board (GM)	R609	0B05673A	Carbon Resistor 5.6K ERD-14V, J
	0B01872A	Transistor 2SC945	R610	0B05664A	Carbon Resistor 3.9K ERD-14V, J
Q601, 602			R611	0B05836A	Carbon Resistor 2.7 ERD-14V, J
603			R612	0B01789A	Carbon Resistor 330 ERD-14V, J
Q604	0B01695A	Transistor 2SA496	C601	0B01862A	Electrolytic Capacitor 22µ 16V
D601	0B01909A	Silicon Diode 1S1555	C602, 606	0B01403A	Electrolytic Capacitor 47µ 16V
R601	0B01793A	Carbon Resistor 3.3K ERD-14V, J	C603	0B01389A	Electrolytic Capacitor 4.7µ 16V
R602, 605	0B01833A	Carbon Resistor 10K ERD-14V, J	C604	0B01398A	Electrolytic Capacitor 220µ 16V
R603	0B05558A	Carbon Resistor 100 ERD-14V, J	C605	0B01400A	Electrolytic Capacitor 100µ 16V

7.10. DC Supply P.C.B. Ass'y

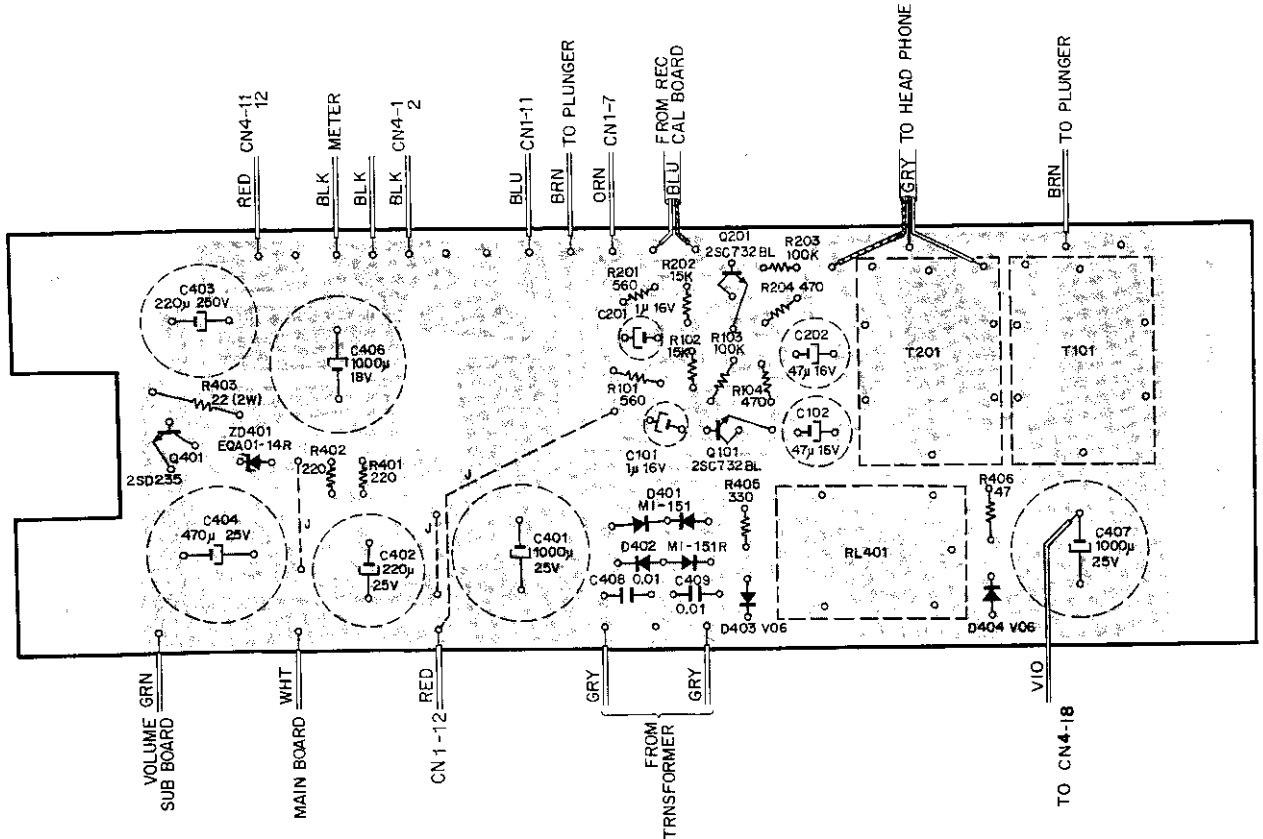


Fig. 7.10

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA03787A	DC Supply P.C.B. Ass'y			– Headphone Circuit –
		– DC Supply Circuit –	Q101, 201	0B01910A	Transistor 25C900 (E)
Q401	0B01823A	Transistor 2SD235	R101, 201	0B05678A	Carbon Resistor 560 ELR¼, J
D401	0B06092U	Silicon Diode MI-151	R102, 202	0B05591A	Carbon Resistor 15K ELR¼, J
D402	0B06093U	Silicon Diode MI-151R	R103, 203	0B01920A	Carbon Resistor 100K ELR¼, J
ZD401	0B06023A	Zener Diode EQA01-14R	R104, 204	0B05572A	Carbon Resistor 470 ELR¼, J
R401, 402	0B05608A	Carbon Resistor 220 ELR¼, J	C101, 201	0B01405A	Electrolytic Capacitor 1µ 16V
R403	0B05757A	Metal Film Resistor 22 2W	C102, 202	0B01403A	Electrolytic Capacitor 47µ 16V
C401	0B01870A	Electrolytic Capacitor 1000µ 25V	T101, 201	0B03879A	Headphone Transformer
C402, 403	0B01391A	Electrolytic Capacitor 220µ 25V		0B07570A	DC Supply Board
C404	0B01401A	Electrolytic Capacitor 470µ 25V		0J03278B	Heat Sink GM (1 pce.)
C406	0B01673A	Electrolytic Capacitor 1000µ 18V		0E00037A	Earth Lug B-5 (1 pce.)
C408, 409	0B01290A	Ceramic Capacitor 0.01µ 50V, M		0E00607A	Screw M3x8 Philips Pan Head (3A) (2 pcs.)
		– Relay Circuit –		0E00608A	Screw M3x10 Philips Pan Head (3A) (1 pce.)
D403, 404	0B01501U	Silicon Diode V06-C		0E00507A	Nut Hex. M3 (3 pcs.)
R405	0B01365A	Carbon Resistor 330 R50, J			
R406	0B05569A	Carbon Resistor 47 ELR¼, J			
C407	0B01870A	Electrolytic Capacitor 1000µ 25V			
RL401	0B07001A	Relay LC1-C			

8. MECHANISM ASS'Y AND PARTS LIST

8.1. Auto Shut-off Ass'y (4)

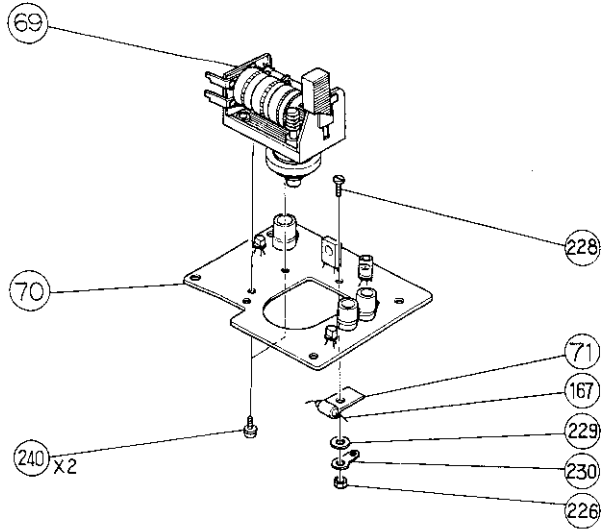


Fig. 8.1

8.2. Head Base B Ass'y (12)

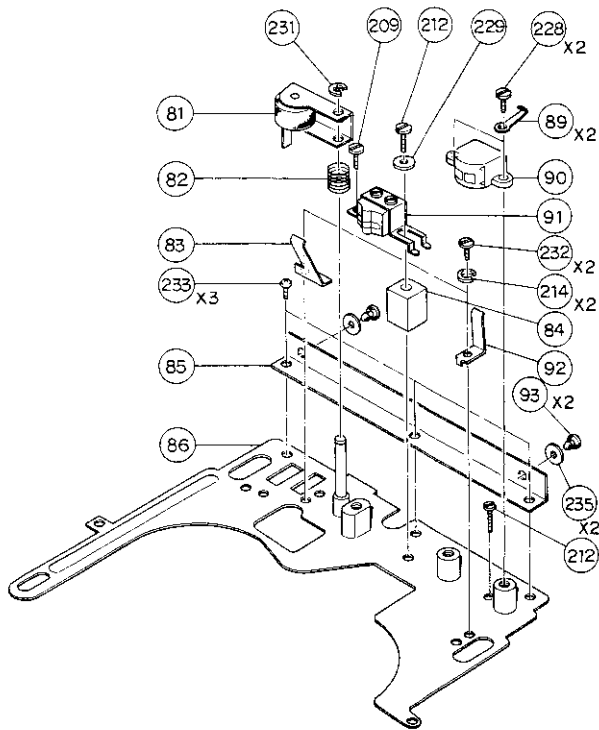


Fig. 8.2

8.3. Mechanism Bracket L Ass'y and Mechanism Bracket R Ass'y (14, 24)

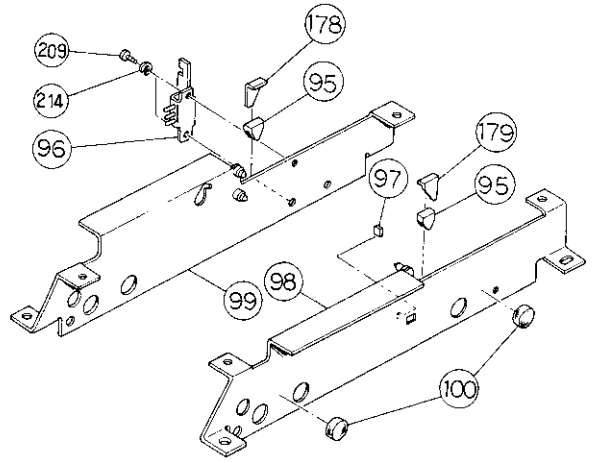


Fig. 8.3

8.4. MHX Motor Ass'y B (55)

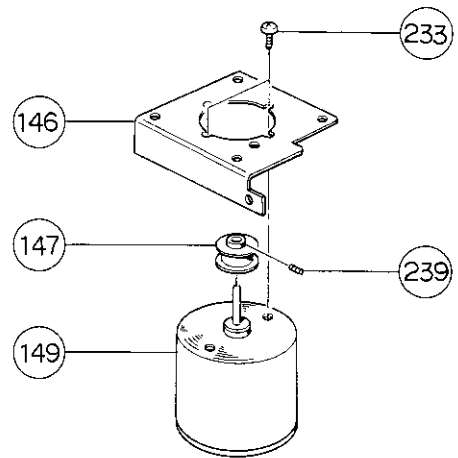


Fig. 8.4

8.5. Flywheel Holder Ass'y (28)

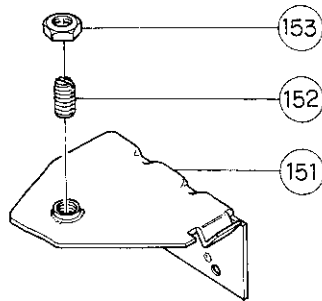


Fig. 8.5

8.6. Motor Cover Ass'y (68)

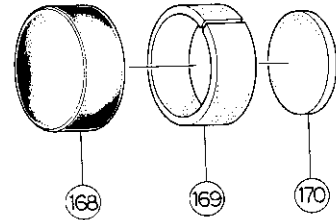


Fig. 8.6

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
4	CA03208B	Auto Shut-off Ass'y	24	CA03172A	Mechanism Bracket R Ass'y
69	CA03242A	Tape Counter	95	0C03790A	Lid Stopper
70	CA03251A	MHX Shut-off A Ass'y	97	0C03764B	Well Stopper Rubber
71	0C03763A	Reed Switch Holder	98	CA03224A	Mechanism Bracket R Sub Ass'y
167	0B03803A	Reed Switch ORD222	100	0B03671A	Board Stopper B
226	0E00176A	Nut Hex. M2	55	CA03253B	MHX Motor Ass'y B
228	0E00185A	Screw M2x6 Cylinder Head	146	0C03976A	Motor Bracket C
229	0E00149A	Washer 2.3mm Steel	147	0C03770B	Motor Pulley JA
230	0E00130A	Earth Lug 2.6mm	149	0C03950A	MHX Motor B
240	0E00612A	Screw M3x6 Philips Pan Head (2A)	233	0E00120A	Screw M2.6x3 Philips Pan Head
			239	0E00224A	Screw M2x3 Cup Point
12	CA03216A	Head Base B Ass'y	28	CA03226B	Flywheel Holder Ass'y C
81	CA03159B	Pressure Roller Ass'y B	151	CA03280A	Flywheel Holder Sub Ass'y C
82	0C03758B	Pressure Roller Spring B	152	CA03281A	Thrust Screw Ass'y
83	0C03691A	Cassette Retainer Spring R	153	0C03857A	Lock Nut
84	0C03588A	Azimuth Adjust Rubber	68	CA03187A	Motor Cover Ass'y
85	0C03692D	Base Angle	168	0C03796A	Motor Cap
86	CA03217A	Head Base C Sub Ass'y	169	0C03794A	Motor Cover A
89	0C03591B	Cord Holder	170	0C03795A	Motor Cover B
90	0C03862B	Erase Head Ass'y (E-50S)			
91	CA03207B	Record/Playback Head (RP-52)			
92	0C03690A	Cassette Retainer Spring L			
93	0C03767A	Base Stopper Rubber			
209	0E00166A	Screw M2x4 Cylinder Head			
212	0E00218A	Screw M2x10 Cylinder Head			
214	0E00025A	Washer 2mm Spring			
228	0E00185A	Screw M2x6 Cylinder Head			
229	0E00149A	Washer 2.3mm Steel			
231	0E00042A	E-Ring 1.5mm			
232	0E00002A	Screw M2x3 Cylinder Head			
233	0E00120A	Screw M2.6x3 Philips Pan Head			
235	0E00030A	Washer 3mm Steel			
14	CA03171A	Mechanism Bracket L Ass'y			
95	0C03790B	Lid Stopper			
96	0B07051A	Memory Switch			
99	CA03223A	Mechanism Bracket L Sub Ass'y			
209	0E00166A	Screw M2x4 Cylinder Head			
214	0E00025A	Washer 2mm Steel			

8.7. Transport Mechanism 1

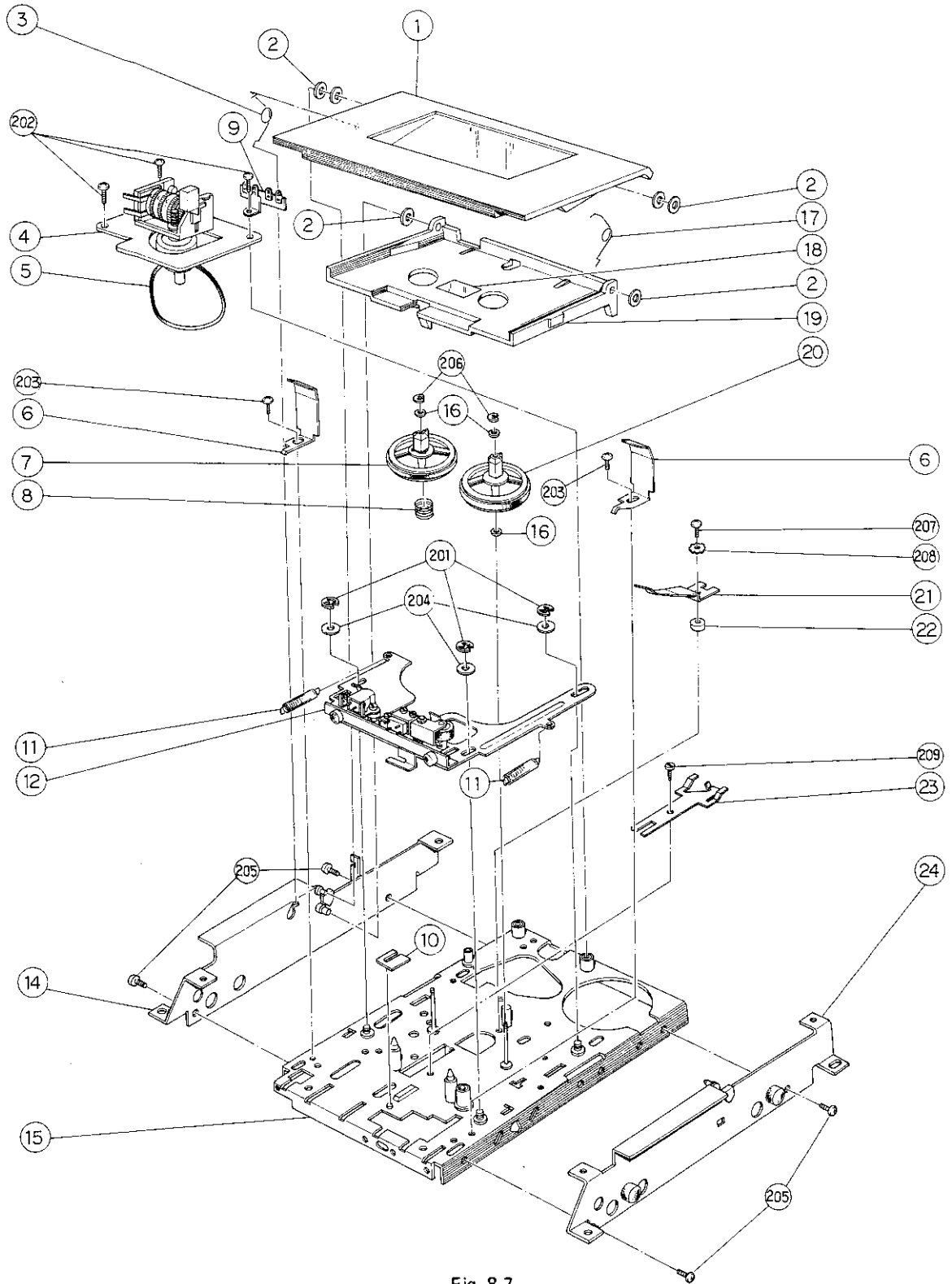


Fig. 8.7

Schematic Ref. No.	Part No.	Description
1	0C03736C	Cassette Lid
2	0E00254A	Washer 3.1mm Plastics
3	0C03759D	Lid Spring Left
4	CA03208B	Auto Shut-off Ass'y
5	0C03651A	Counter Belt E
6	0C03975A	Cassette Guide C
7	CA03192A	Reel Hub Ass'y (Supply)
8	0C03612C	Back Tension Spring
9	0B01908A	1L 3P Terminal
10	0C03863A	Head Base Spacer
11	0C03694B	Base Return Spring
12	CA03216A	Head Base B Ass'y
14	CA03171A	Mechanism Bracket L Ass'y
15	CA03229C	Mechanism Chassis Ass'y C
16	0C03613A	Washer 1.6mm Plastics
17	0C03760D	Lid Spring Right
18	0M03167A	Silver Seal B
19	0C03699K	Cassette Well
20	CA03193A	Reel Hub Ass'y (Take-up)
21	0C03973A	Cassette Well Spring D
22	0C03706A	Cassette Well Spring Stud
23	CA03140A	Brake Ass'y
24	CA03172A	Mechanism Bracket R Ass'y
201	0E00181A	E-Ring 3mm
202	0E00219A	Screw M2.6x5 Philips Pan Head
203	0E00226A	Screw M2.6x4 Philips Pan Head
204	0C06243A	Washer W4-8-0.2F
205	0E00502A	Screw M3x5 Philips Pan Head
206	0E00165A	E-Ring 1.2mm
207	0E00231A	Screw M2.6x8 (7.7) Philips Pan Head
208	0E00233A	Washer 2.6mm Toothed Lock
209	0E00166A	Screw M2x4 Cylinder Head
	0T04025A	Ceramic Capacitor 1000P (2 pcs.)

8.8. Transport Mechanism 2

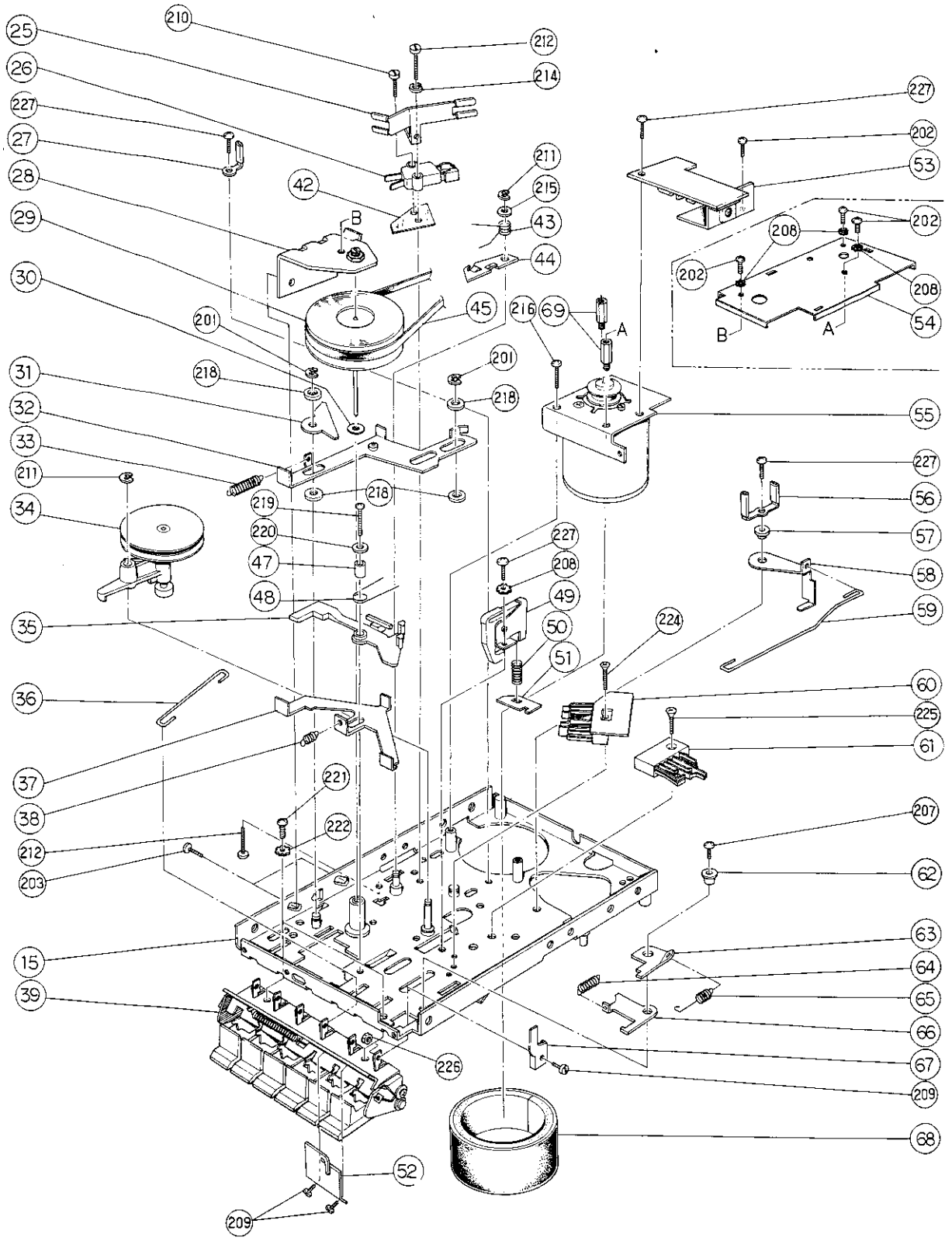


Fig. 8.8

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
			39	CA03230A	Deck Button Ass'y
25	0C03799E	Belt Guide			
26	0C03743A	Pause Switch			
27	0C03591B	Cord Holder		0C03609A	Lock Spring A
28	CA03226B	Flywheel Holder Ass'y C		0C03677A	Lock Plate Stopper
29	CA03225B	Flywheel B Ass'y		0C03560A	Button Shaft
30	0C03174A	Washer 2.1mm Plastics		0C03861A	Button Cam B
31	0C03746C	Pause Bar		0C03752E	Deck Button SS
32	CA03167A	Slide Plate Ass'y		0C03558C	Cam Spring
33	0C03748A	Slide Plate Spring		0C03554E	Button Bracket
34	CA03301B	Idler Pulley Ass'y		0C03555D	Button Cam
35	0C03646B	FRP Lever B		0C03735D	Cam Spring B
36	0C03553B	Eject Linkage Wire		CA03168A	Lock Plate Ass'y
37	0C03647B	See-Saw Arm		0C03783A	Stud B
38	0C03649A	See-Saw Arm Spring		0E00166A	Screw M2x4 Cylinder Head
39	CA03230A	Button Bracket Ass'y B		0E00181A	E-Ring 3mm
42	0C03800A	Pause Switch Mylar		0E00184A	Screw M2.6x6 Flat Head
43	0C03747A	Lock Lever Spring		0E00030A	Washer 3mm Steel
44	0C03084A	Pause Lock Lever			
45	0C03668B	Driving Belt			
47	0C03648A	See-Saw Arm Pipe			
48	0C03650B	Lever Spring			
49	CA03118A	Eject Arm Ass'y			
50	0C03873B	Eject Spring			
51	0C03644C	Spring Stopper			
52	0C03823C	Solenoid Connection Plate C			
53	0B08204A	MHX Governor B			
54	0C03970B	Shield Cover			
55	CA03253B	MHX Motor Ass'y B			
56	0B03067A	Bind Holder			
57	0C03546A	Record Lock Shaft			
58	0C03703B	Record Sensor B			
59	0C03704A	Record Sensor Linkage B			
60	CA03231A	Start Switch Ass'y C			
61	CA03141A	Mute Switch Ass'y			
62	0C03775C	Base Cam Shaft			
63	0C03652C	Record Lock B			
64	0C03774A	Base Cam Spring			
65	0C03791A	Record Lock Spring B			
66	0C03773C	Base Cam			
67	0C03727B	Record Cam Link			
68	CA03187A	Motor Cover Ass'y			
69	0C03971B	Shield Cover Stud			
210	0E00004A	Screw M2x8 Cylinder Head			
211	0E00222A	E-Ring 2mm			
212	0E00218A	Screw M2x10 Cylinder Head			
214	0E00025A	Washer 2mm Spring			
215	0E00253A	Washer 3.3mm Steel			
216	0E00220A	Screw M2.6x8 Philips Pan Head			
217	0E00181A	E-Ring 3mm			
218	0E00031A	Washer 4mm Steel			
219	0E00229A	Screw M2.6x10 Philips Pan Head			
220	0E00142A	Washer 2.6mm Steel			
221	0E00509A	Screw M3x6 Philips Pan Head			
222	0E00172A	Washer 3mm Toothed Lock			
224	0E00223A	Screw M2x10 Flat Head			
225	0E00008A	Screw M2.6x8 Flat Head			
226	0E00176A	Nut Hex. M2			
227	0E00228A	Screw M2.6x6 Philips Pan Head (FT)			

8.9. Cabinet

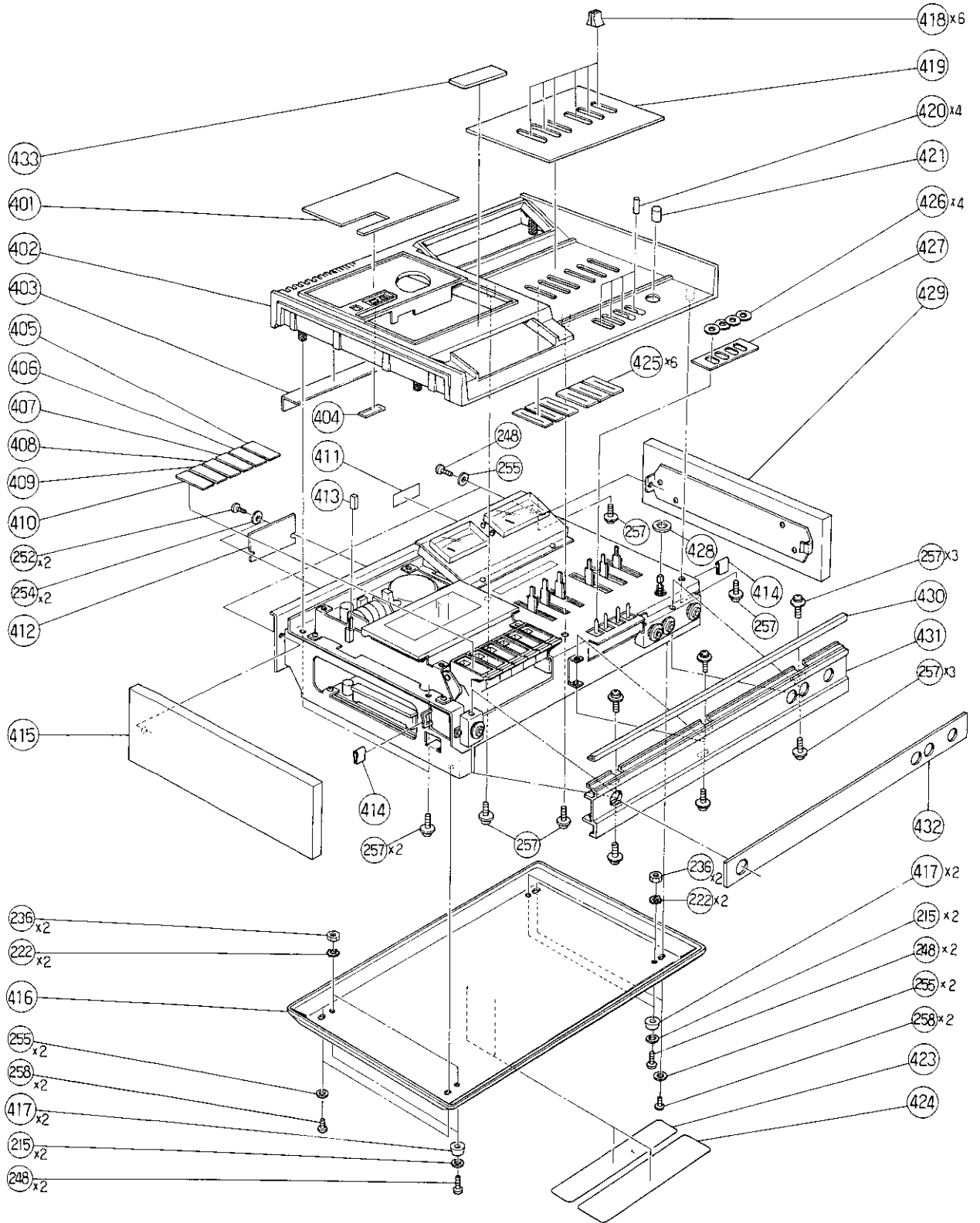


Fig. 8.9

Schematic Ref. No.	Part No.	Description
	HA03724A	Top Cover Ass'y
401	0M03852A	Counter Panel (N-500)
402	HA03685B	Top Cover Sub Ass'y
403	0A03197A	Top Cover Himelon
404	0H03099A	Counter Lens V
419	0M03489B	Control Name Plate (N-500)
425	0H03294A	Volume Shade
433	0M03840B	SH Badge
	HA03591A	Bottom Cover Ass'y
416	0A03071A	Bottom Cover
417	0A00518D	Rubber Foot
423	0M03330A	Dolby Label
424	0M03339A	Caution Label
215	0E00253A	Washer 3mm Steel
222	0E00172A	Washer 3mm Toothed Lock
236	0E00507A	Nut Hex. M3
248	0E00588A	Screw M3x8 Philips Pan Head (Bronze)
	HA03596A	Front Pannel Ass'y
430	0A03193B	Sash GM
431	0H03348B	Front Panel (N-500)
432	0M03490B	Front Name Plate (N-500)
405	0M03568A	Pause Name Plate
406	0M03567A	FF Name Plate
407	0M03566A	PLAY Name Plate
408	0M03565A	STOP Name Plate
409	0M03564A	REW Name Plate
410	0M03563A	REC Name Plate
412	0M03851A	Model Name Plate (N-500)
413	0H03324B	Memory Switch Button
414	0A03032B	Side Plate Spring
415	HA03025A	Side Plate L Ass'y
418	0H03196B	Slide Volume Knob
420	0H03310B	Switch Cap
421	0H03248C	Switch Button
426	0H03338A	Switch Shade B
427	0H03337A	Switch Shade A
428	0H03313B	Switch Shade
429	HA03024A	Side Plate R Ass'y
248	0E00588A	Screw M3x8 Philips Pan Head
252	0E00592A	Screw M2.6x4 Philips Pan Head
254	0E00651A	Washer 2.6mm Plastics
255	0E00157A	Washer 3mm Plastics
257	0E00607A	Screw M3x8 Philips Pan Head (3A)
258	0E00593A	Screw M3x6 Philips Pan Head

8.10. Chassis

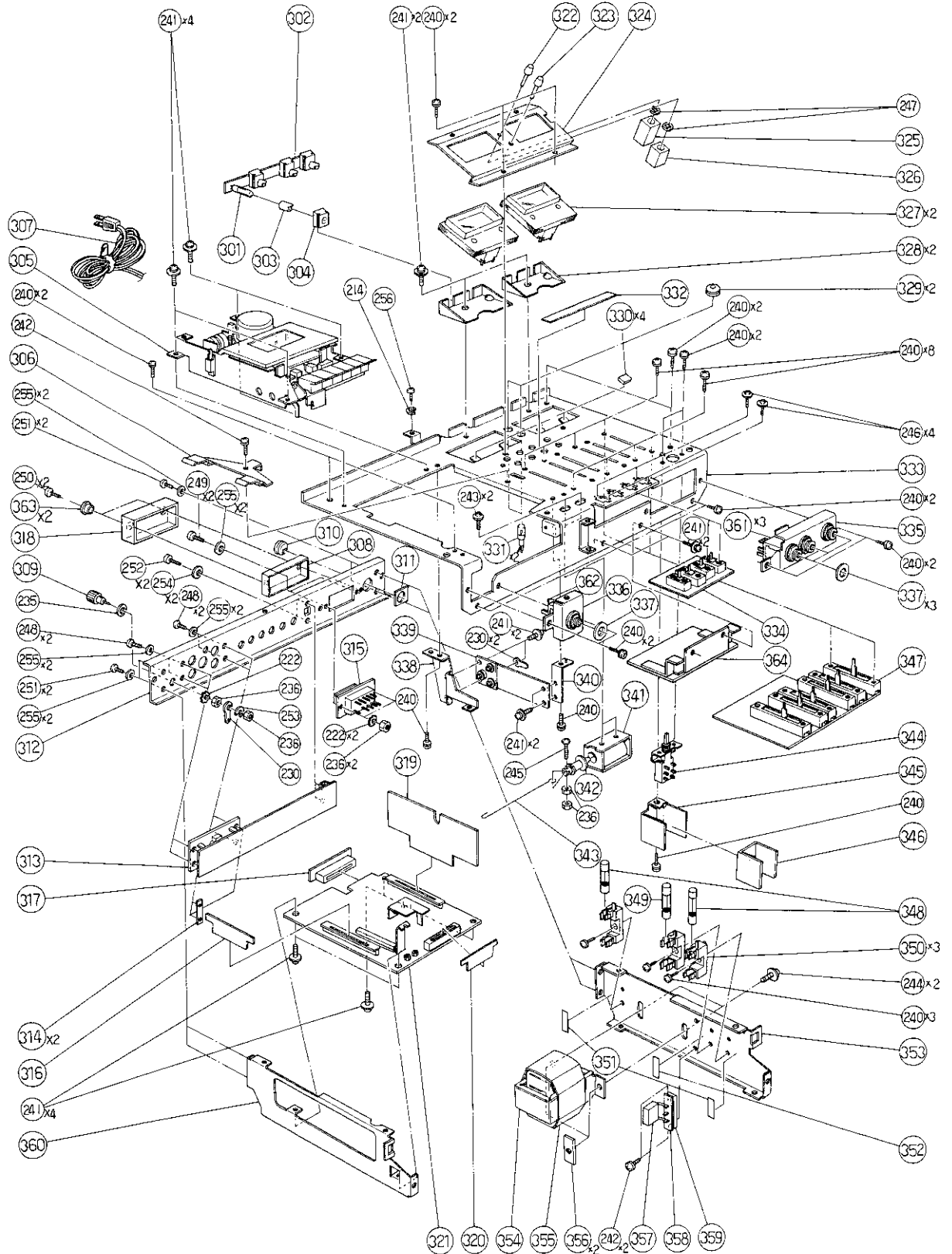


Fig. 8.10

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
301	0B08101A	Meter Lamp 6.3V, 0.2A	364	BA03659A	400Hz OSC Board Ass'y
302	0B07599U	Lamp PC Board	365	0J03327A	Blue Filter
303	0J03373B	Lamp Shield B		0B04042A	3P Lug Terminal
304	0J03374A	Meter Lamp Hold B		0B05566A	Carbon Resistor 2.2K ELR $\frac{1}{4}$, J
305	CA03228A	Mechanism Ass'y	R146, 246	0B05698A	Carbon Resistor 1.5K R $\frac{1}{4}$, J
306	0B03843A	Dolby PC Board Holder	R721, 821		
307	0B08350A	Power Cord	909		
308	0H03335A	Voltage Selector Socket Cover	C718, 818	0T04027A	Ceramic Capacitor 680P, 50V, M
309	0B03920B	Ground Terminal	910		
310	0B08037U	Cord Bushing C	214	0E00025A	Washer 2mm Spring
311	0A03154B	Cord Spacer	222	0E00172A	Washer 3mm Toothed Lock
312	0J03472B	Rear Panel (N-500)	230	0E00037A	Earth Lug B-5
313	BA03762A	Record CAL. Board Ass'y	235	0E00030A	Washer 3mm Steel
314	0J03277A	Metal Seat Nut	236	0E00507A	Nut Hex. M3
315	0B03877B	Voltage Selector Socket	240	0E00612A	Screw M3x6 Philips Pan Head (2A)
316	0B01651B	14P Plug Board	241	0E00606A	Screw M3x6 Philips Pan Head (3A)
317	BA03694A	19P Sub Board Ass'y	242	0E00510A	Screw M3x8 Philips Pan Head (2A)
318	0H03334B	Voltage Selector Socket Acrylic Cover	243	0E00618A	Screw M3x4 (Triple) Philips Pan Head
319	BA03625A	Dolby Board Ass'y	244	0E00643A	Screw M4x8 Philips Pan Head (3A)
320	0B07629A	19P Plug Board	245	0E00514A	Screw M3x15 Philips Pan Head
321	BA03682A	Main Board Ass'y	246	0E00259A	Screw M2.6x4 (Triple) Philips Pan Head
322	0H03141B	Lamp Cover CN1 (Red)	247	0E00252A	Washer 3mm CS type
323	0H03142B	Lamp Cover CN2 (Green)	248	0E00588A	Screw M3x8 Philips Pan Head
324	0H03345A	Meter Holder (N-500)	249	0E00590A	Screw M3x12 Philips Pan Head
325	0J03321A	Light Intercepting Pipe GA	251	0E00589A	Screw M3x6 Philips Pan Head
326	0J03322A	Light Intercepting Pipe GB	252	0E00592A	Screw M2.6x4 Philips Pan Head
327	0B08111A	Level Meter	253	0E00581A	Washer 3mm Spring
328	0J03315B	Reflecting Plate	254	0E00651A	Washer 2.6mm Plastic
329	0B01431A	Rubber Bush	255	0E00157A	Washer 3mm Plastic
330	0B03939A	Meter Cushion	256	0E00124A	Screw M2x4 Philips Pan Head
331	0B03884A	Pilot Lamp 12V, 25mA	257	0E00591A	Screw M3x20 Philips Pan Head
332	0M03662A	Adj. Indicator Lavel			
333	JA03254A	Main Chassis Ass'y			
334	BA03657A	Switch Sub Board Ass'y			
335	0J03261B	Jack Holder			
336	0J03264B	Headphone Holder			
337	0J03236B	Jack Cover			
338	0J03267D	Main PC Board Holder			
339	BA03787A	D.C. Supply Board Ass'y			
340	0J03340B	D.C. Supply Board Holder			
341	0B08092A	Solenoid			
342	0B08099A	Solenoid Mylar			
343	0J03273C	Solenoid Connection Plate			
344	0B03771A	Power Switch			
345	0J03263C	Power Switch Cover			
346	0B08110B	Shield Plate			
347	BA03661A	Volume Sub Board Ass'y			
348	0B08100U	Fuse 250V, 2A			
349	0B08098U	Fuse 250V, 315mA			
350	0B08048U	Fuse Holder			
351	0M03448A	Fuse Label 2A			
352	0M03449A	Fuse Label 315mA			
353	0J03255E	Chassis Right			
354	0B06520U	Power Trans			
355	0J03051A	Trans Shield Plate			
356	0C01162B	Metal Seat Nut			
357	0B03873U	Spark Killer			
358	0B08030U	3P Terminal Insulator			
359	0B08024U	3P Terminal Strip			
360	0J03256C	Chassis Left			
361	0B03881A	Mic Jack			
362	0B03882A	Headphone Jack			
363	0H03366A	Washer for Voltage Selector Cover			

9. BLOCK DIAGRAM

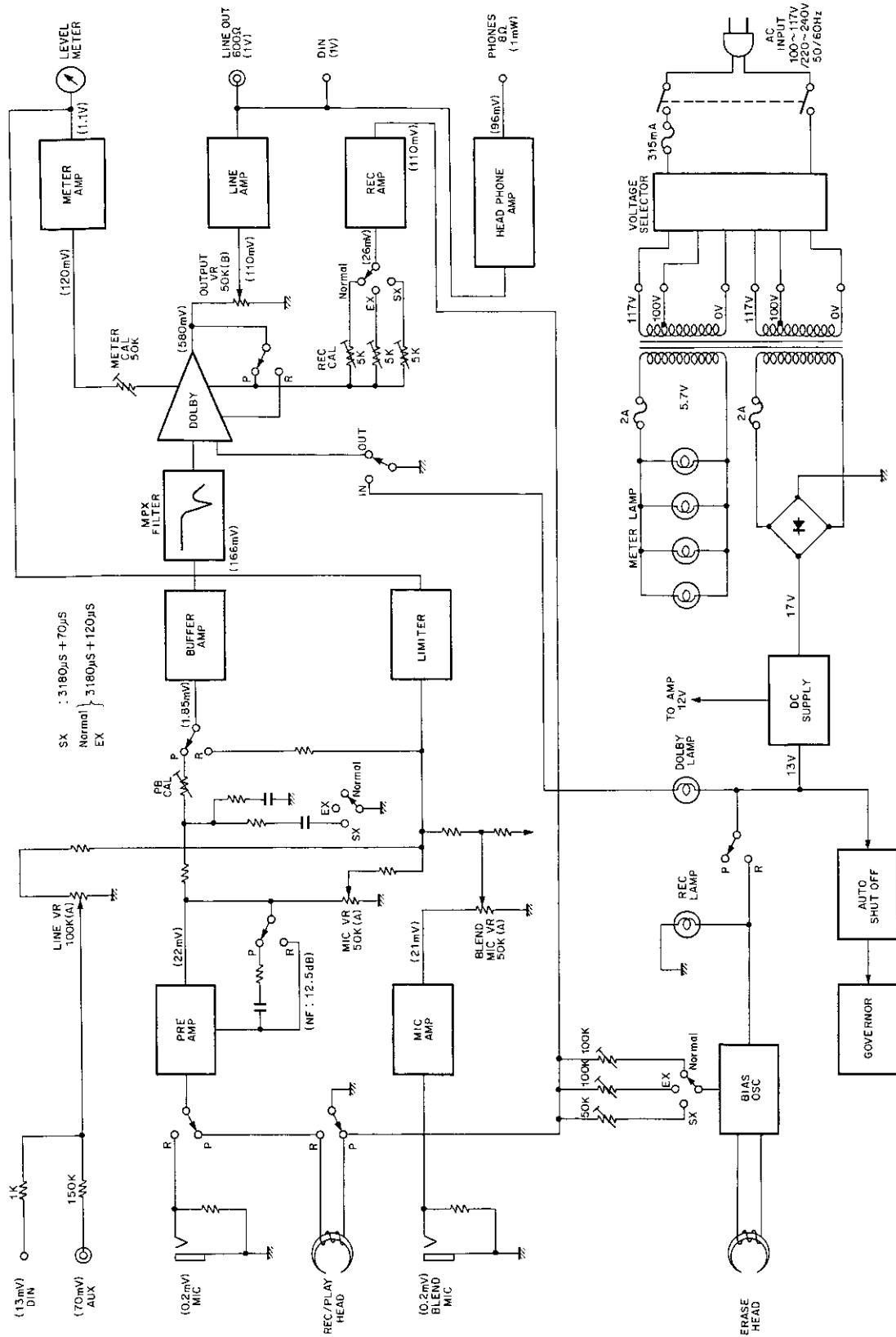


Fig. 9

10. SCHEMATIC DIAGRAMS

10.1. Amplifier

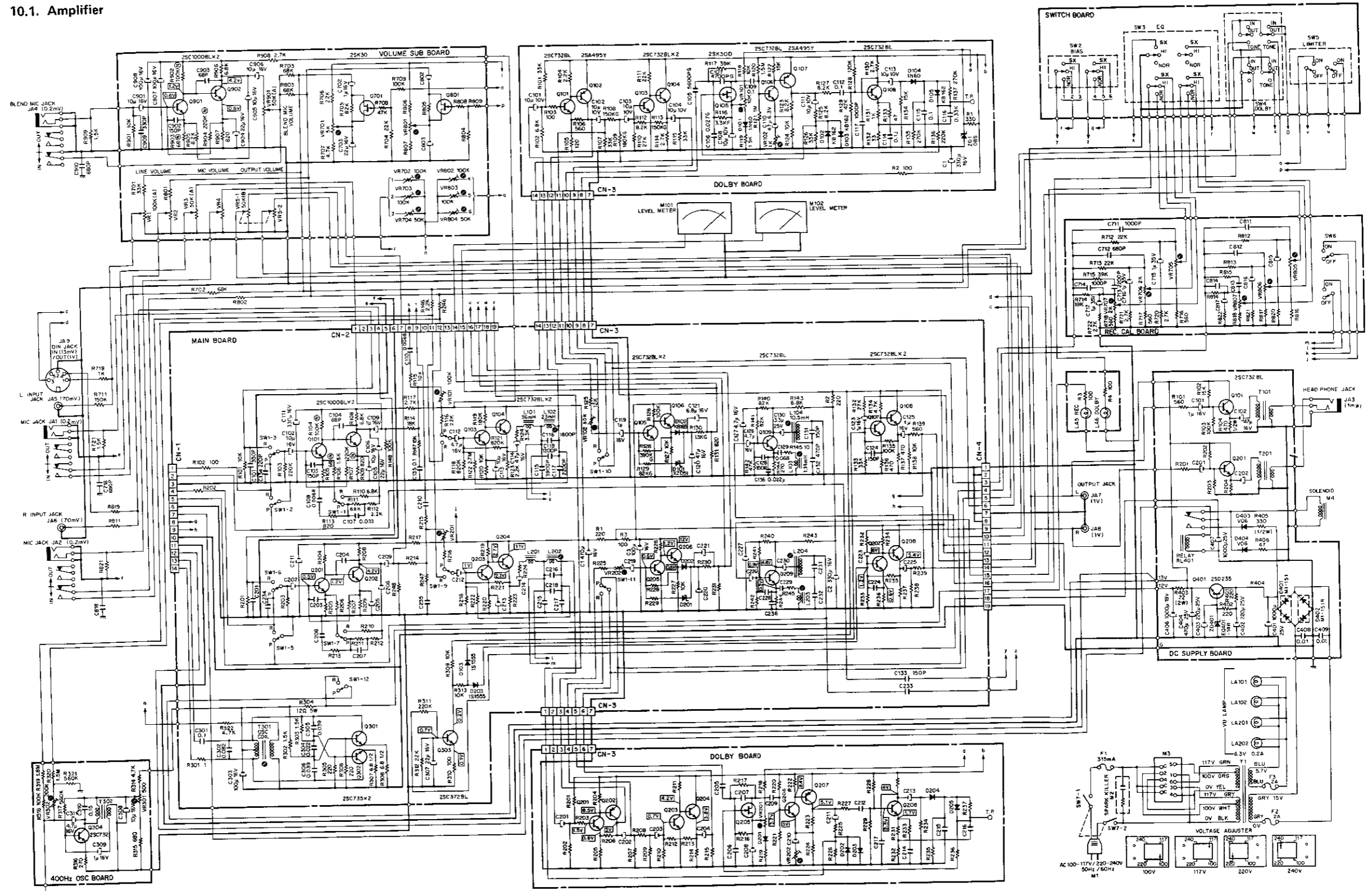


Fig. 10.1

10.2. Mechanism

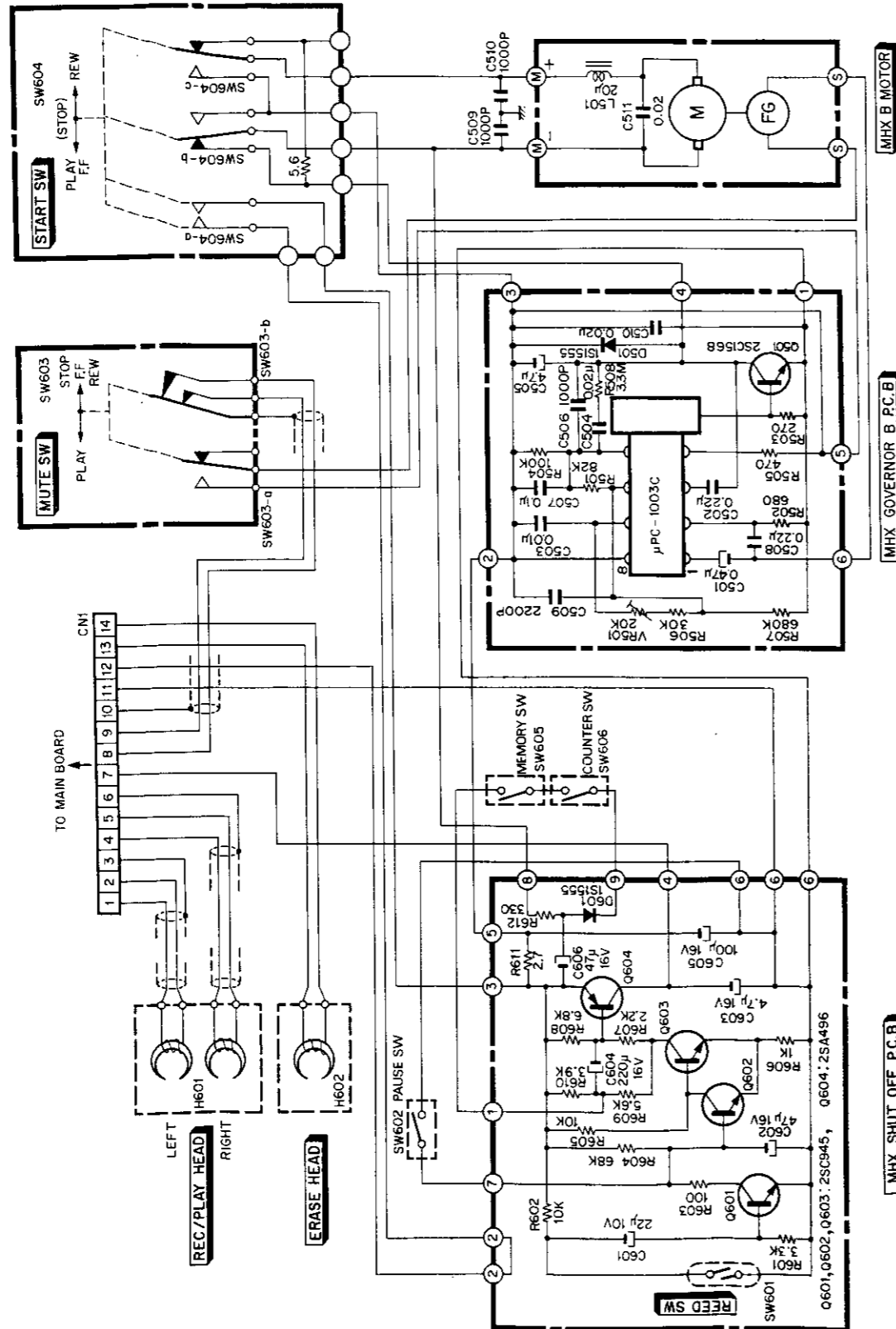


Fig. 10.2

11. SPECIFICATIONS

Power Supply	100, 117, 220, 240V 50/60Hz
Power-Consumption	40W Max.
Tape-Speed	1-7/8 ips.
Wow & Flutter	0.13% WTD peak
Frequency Response	40Hz - 17KHz±3dB (SX or EXII tape) 40Hz - 15KHz±3dB (Low noise tape)
Signal to Noise Ratio	Better than 63dB (Dolby NR In, Wrms CCITT 400Hz 3% Distortion)
Total Harmonic Distortion	Less than 1.5% (at 400Hz, 0dB SX or EXII tape)
Erasure	Better than 60dB (at 1KHz 0dB Saturation Level)
Channel Separation	Better than 35dB (at 1KHz 0dB)
Cross Talk	Better than 60dB (at 1KHz 0dB)
Bias Frequency	105KHz
Input:	
Mic	0.2mV 10 Kohm
Blend Mic	0.2mV 10 Kohm
Line	70mV 150 kohm
DIN	13mV 25 Kohm
Output:	
Line	1.0V (Max.) Variable
Headphones	1mW 8 ohm (0dB)
Dimensions (Approx)	15"(W) x 4-1/2"(H) x 10"(D)
Weight (Approx)	15-1/2 lbs.

- Specifications and appearance design are subject to change for further improvement without notice.
- Dolby system under license from Dolby Laboratories Inc.
- The word "DOLBY" and the Double-D-Symbol are trademarks of Dolby Laboratories Inc.

12. HISTORY ON 500

12.1. Major Modifications

(1) Tape and Time Constants

S/N 365741	
Tape: EX, NORMAL, CrO2 Time Constants: EX, NORMAL: 1590 μ s + 120 μ s CrO2: 3180 μ s + 70 μ s	Tape: EX, NORMAL, SX Time Constants: EX, NORMAL: 3180 μ s + 120 μ s SX: 3180 μ s + 70 μ s

(2) Motor and Motor Governor

S/N 358441	S/N 361541	S/N 370141	
JA Motor and Governor	NE Motor and Governor	MHX Motor and Governor	MHXB Motor and Governor

12.2. Modification (details)

Following shows the revised history of each P.C.B., mounting diagrams and schematic Diagrams:

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

- (1) S/N -365740 (for CrO2 tape)
Part No.: BA-3682
See Fig. 12.1.
- (2) S/N 365741 - (for SX tape)
Latest one (including following minor modifications):
 - (a) Mic. Amp. Input Impedance
Resistors R101 and 201 have been changed from 3.3K to 10K.
 - (b) Bias Oscillation Level
R304 has been changed from 22 Ω 5W to 12 Ω 5W and R322 4.7K has been added.

12.2.2. Dolby Board Ass'y

Stays the same.

12.2.3. Rec. Cal. Board Ass'y

- (1) S/N -365740 (for CrO2 tape)
Part No.: BA-3660
See Fig. 12.2.
- (2) S/N 365741- (for SX tape)
Latest one

12.2.4. Volume Sub Board Ass'y

Part No.: BA-3661
BLEND Mic. input impedance has been modified by changing R901 from 3.3K to 10K.
The latest one is interchangeable with previous one.

12.2.5. 400Hz OSC. Board Ass'y

Part No.: BA-3659
See Fig. 12.3.
R320 has been changed from 1.8M to 1.5M and R321 (560K) has been added.
The latest one is interchangeable with previous one.

12.2.6. Motor Governor

- (1) S/N -358440 (for JA Motor)
Part No.: CA-3164 (Motor Governor Ass'y JA)
See Fig. 12.4.
- (2) S/N 358441-361540 (for NE Motor)
Part No.: CA-3235 (NE Governor P.C.B. Ass'y)
See Fig. 12.5.
- (3) S/N 361541-370140 (for MHX Motor)
Part No.: CA03250A (MHX Governor)
See Fig. 12.6.
- (4) S/N 370141- (for MHXB Motor)
Latest one (MHX Governor B)
Interchangeable with MHX Governor.

12.2.7. Auto Shut-off Board

- (1) S/N -361540 (for JA and NE Motor)
Part No.: CA-3208
See Fig. 12.7.
- (2) S/N 361541-370140 (for MHX Motor)
Part No.: CA03251A
Same as the latest one except R641 (R641 is 4.7K instead of 3.9K).
- (3) S/N 370141- (for MHXB Motor)
Latest one

12.2.8. DC Power Supply Board

- (1) S/N –358440 (for JA Motor Ass'y)
Part No.: BA-3634
See Fig. 12.8.
- (2) S/N 358441-361540 (for NE Motor Ass'y)
Part No.: BA-3634
Connection of the RED signal wire (CN1-12) on the board has been changed from 15V DC to 13V DC.
- (3) S/N 361541-370140 (for MHX Motor)
Part No.: BA03634B
Connection of the RED signal wire (CN1-12) on the board has been changed from 13V DC to 15V DC.
R404 22 Ω 5W has been changed to 33 Ω 3W.
- (4) S/N 370141– (for MHXB Motor)
Latest one
Connection of the RED signal wire (CN1-12) on the board has been changed from 15V DC to 13V DC.
R404 (33 Ω 3W) and C405 (1000 μ F 25V) have been removed.

12.2.9. Schematic Diagram (Mechanism)

- (1) S/N –358440 (for JA Motor)
See Fig. 12.9.
- (2) S/N 358441-361540 (for NE Motor)
See Fig. 12.10.
- (3) S/N 361541-370140 (for MHX Motor)
See Fig. 12.11.
- (4) S/N 370141– (for MHXB Motor)
Latest one

12.2.10. Schematic Diagram (Amplifier)

- (1) S/N –365740 (for Cr02 Tape)
See Fig. 12.12.
- (2) S/N 365741– (for SX Tape)
Latest one

Note: For the minor modifications of each circuit, refer to the above items.

Main P.C.B. Ass'y

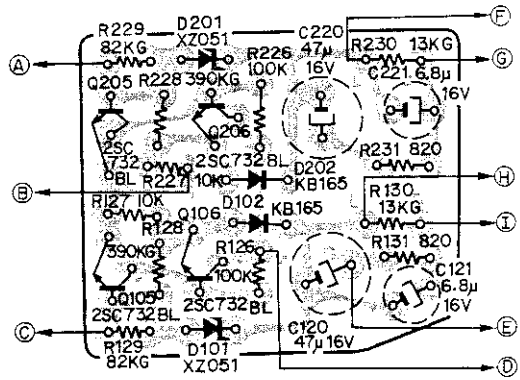
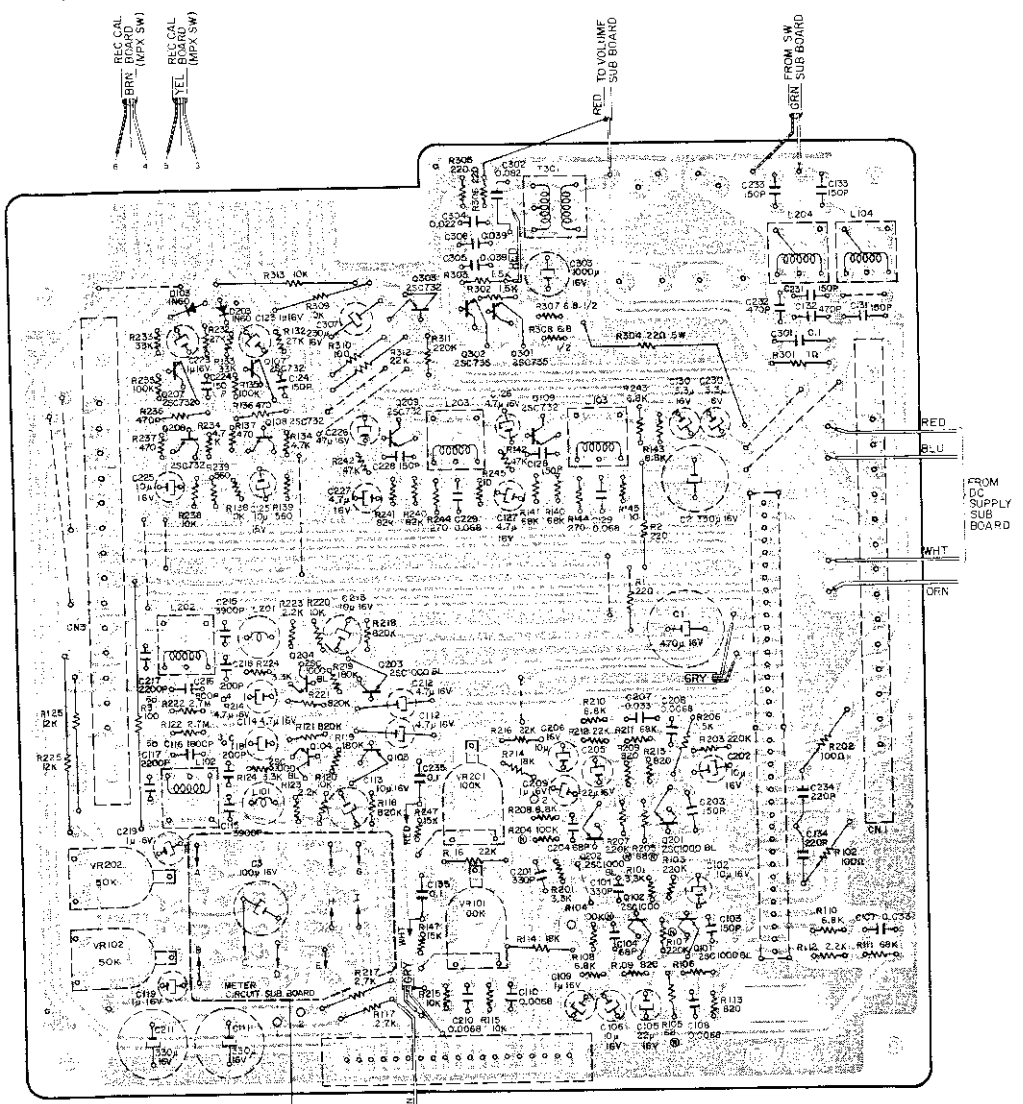


Fig. 12.1 S/N - 365740 (for CrO2 tape)

Rec. Cal Board Ass'y

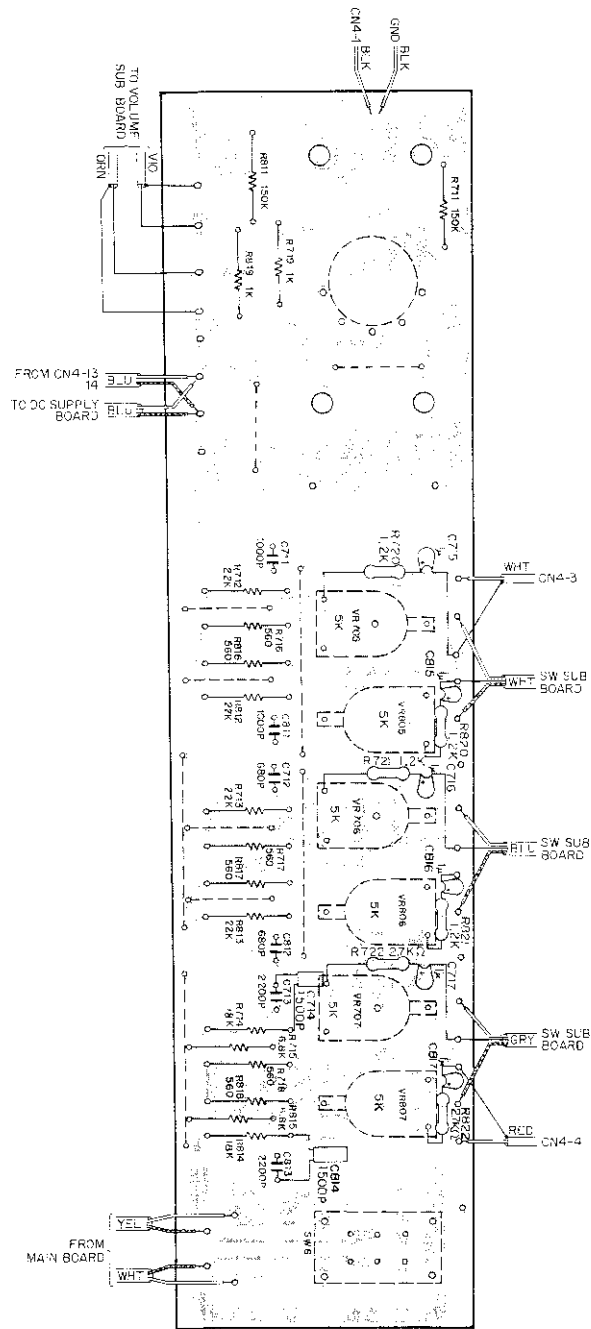


Fig. 12.2 S/N - 365740 (for CrO2 tape)

400Hz OSC. Board Ass'y

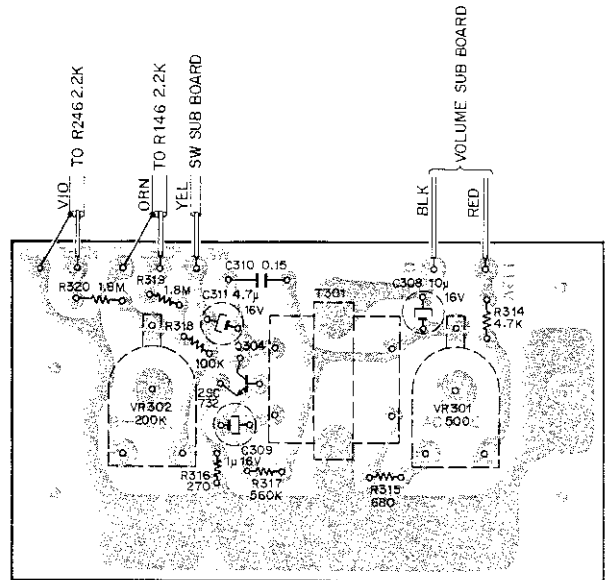


Fig. 12.3

Motor Governor

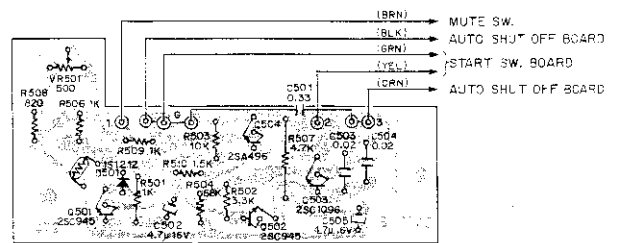


Fig. 12.4 S/N - 358440 (for JA Motor)

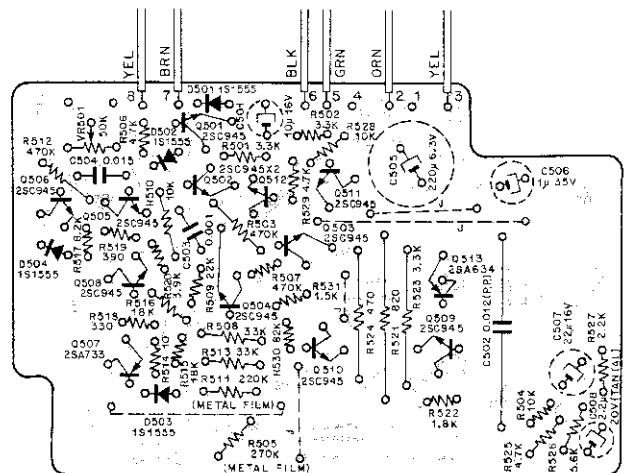


Fig. 12.5 S/N 348441-361540 (for NE Motor)

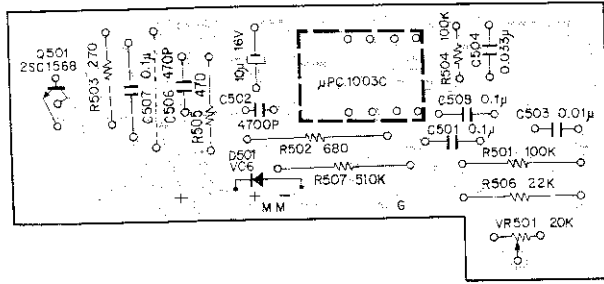


Fig. 12.6 S/N 361541-370140 (for MHX Motor)

Auto Shut-off Board

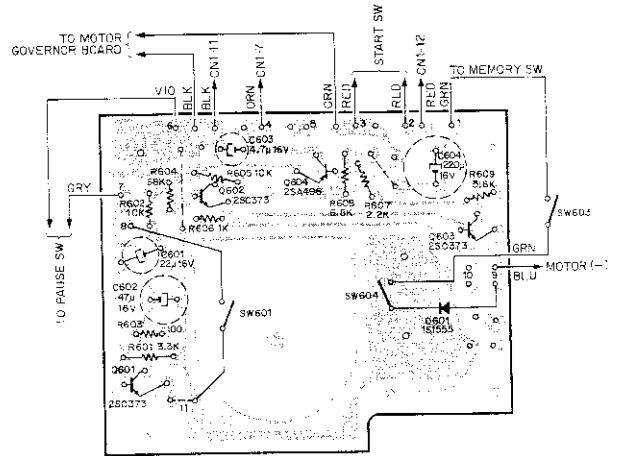


Fig. 12.7 S/N -361540 (for JA and NE Motor)

DC Power Supply Board

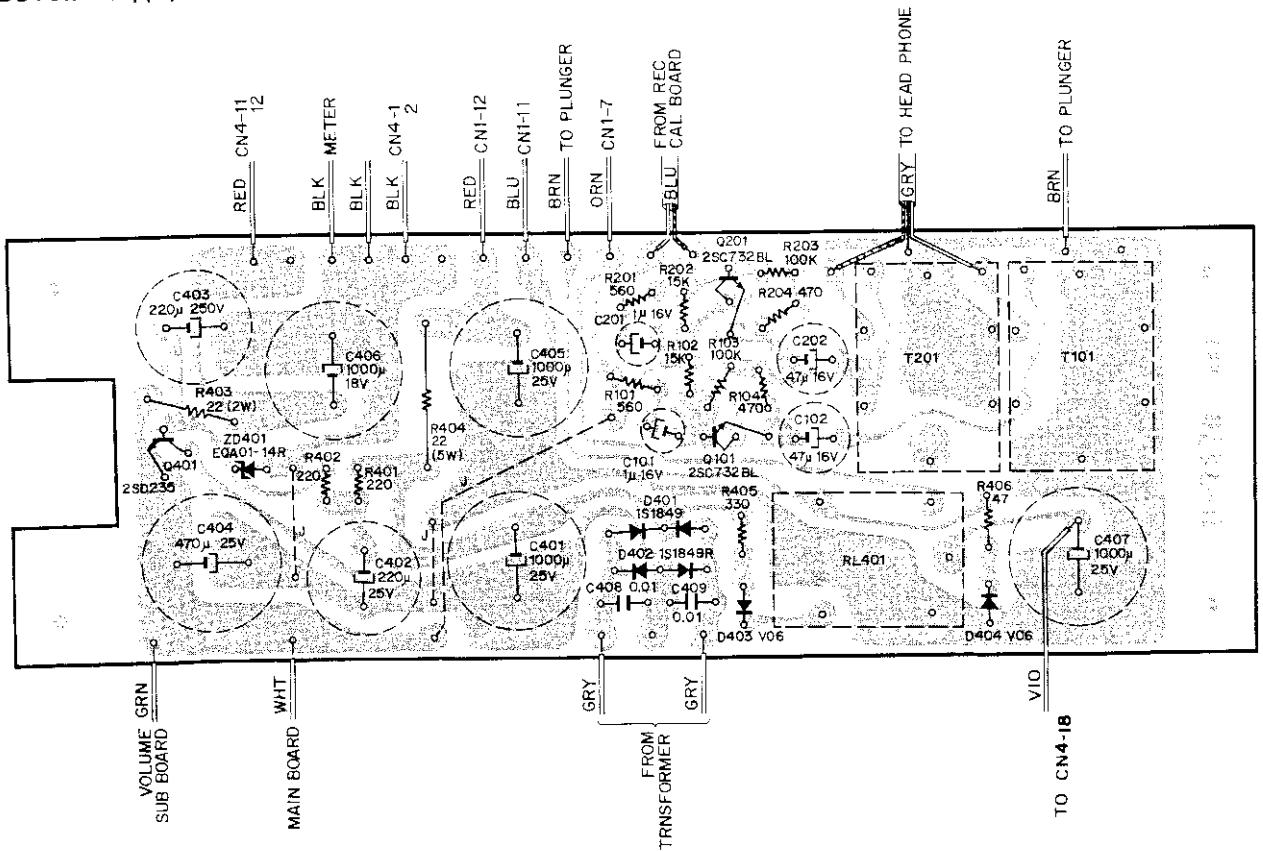


Fig. 12.8 S/N -358440 (for JA Motor)

Schematic Diagram (Mechanism)

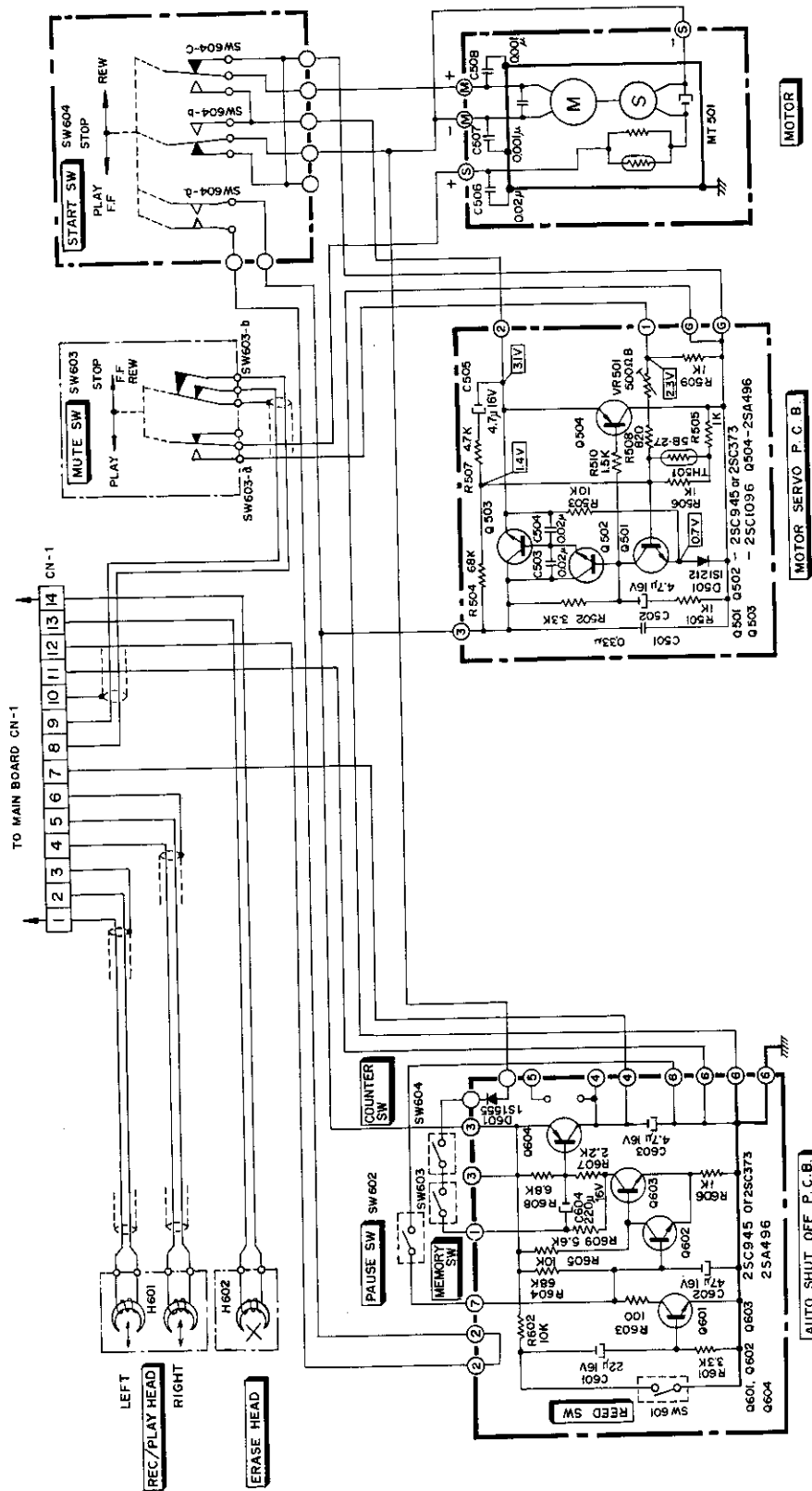


Fig. 12.9 S/N - 358440 (for JA Motor)

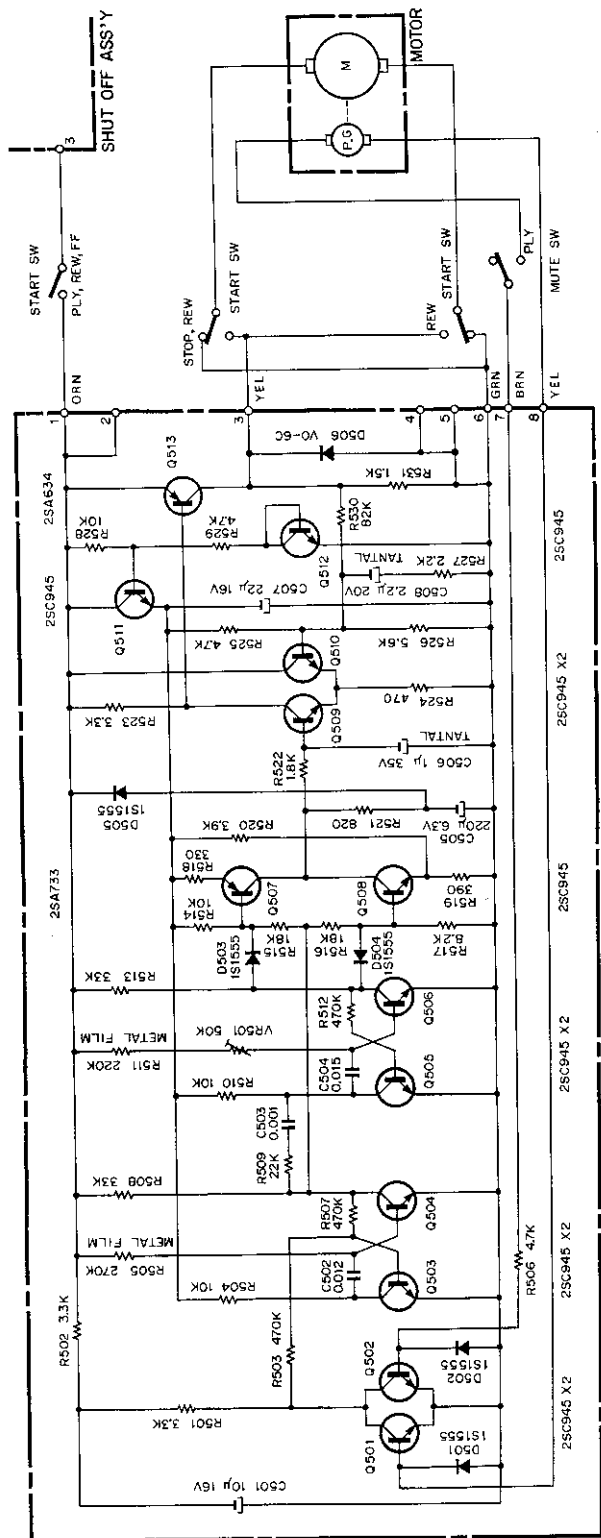


Fig. 12.10 S/N 358441-361540 (for NE Motor)

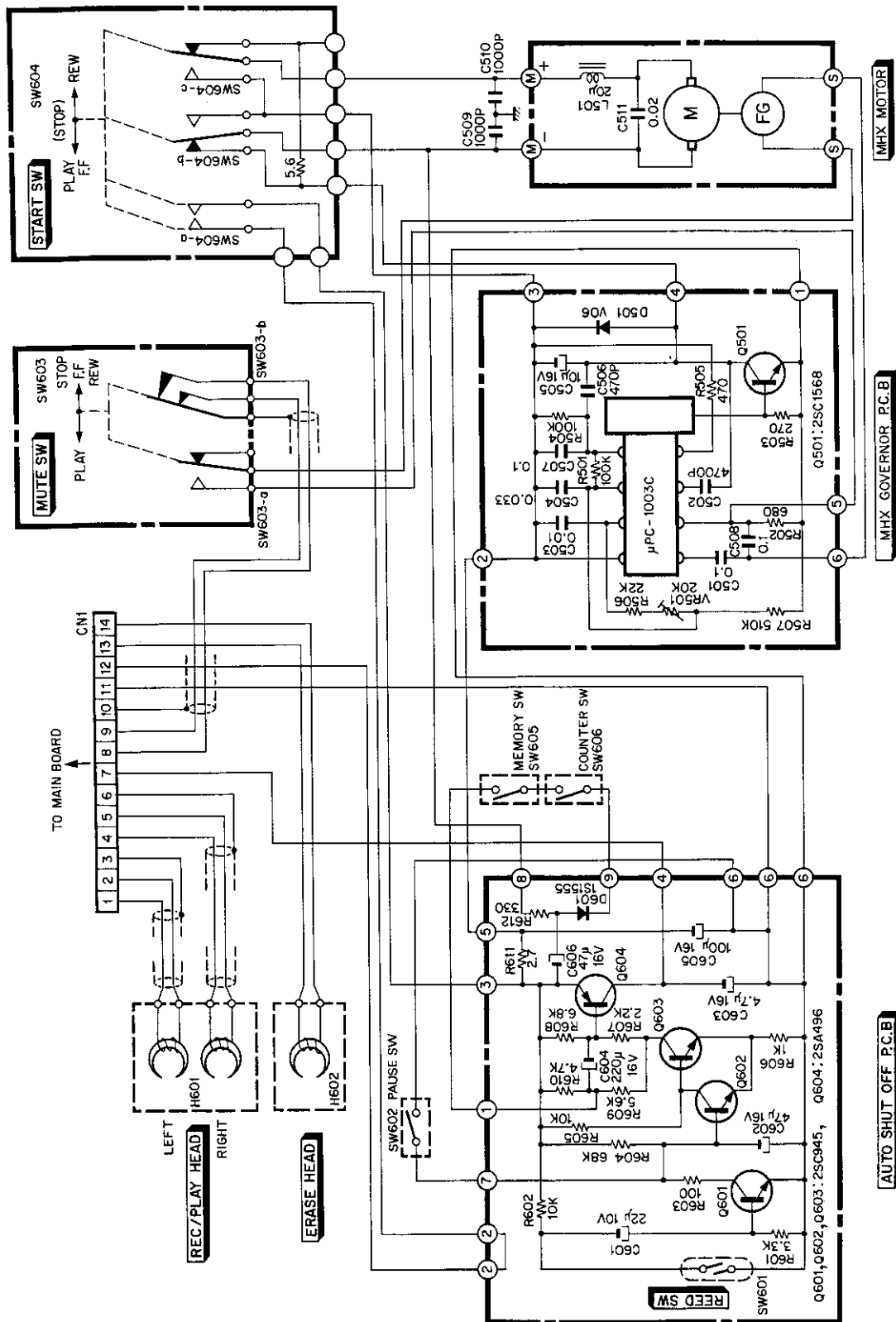


Fig. 12.11 S/N 361541-370140 (for MHX Motor)

Schematic Diagram (Amplifier)

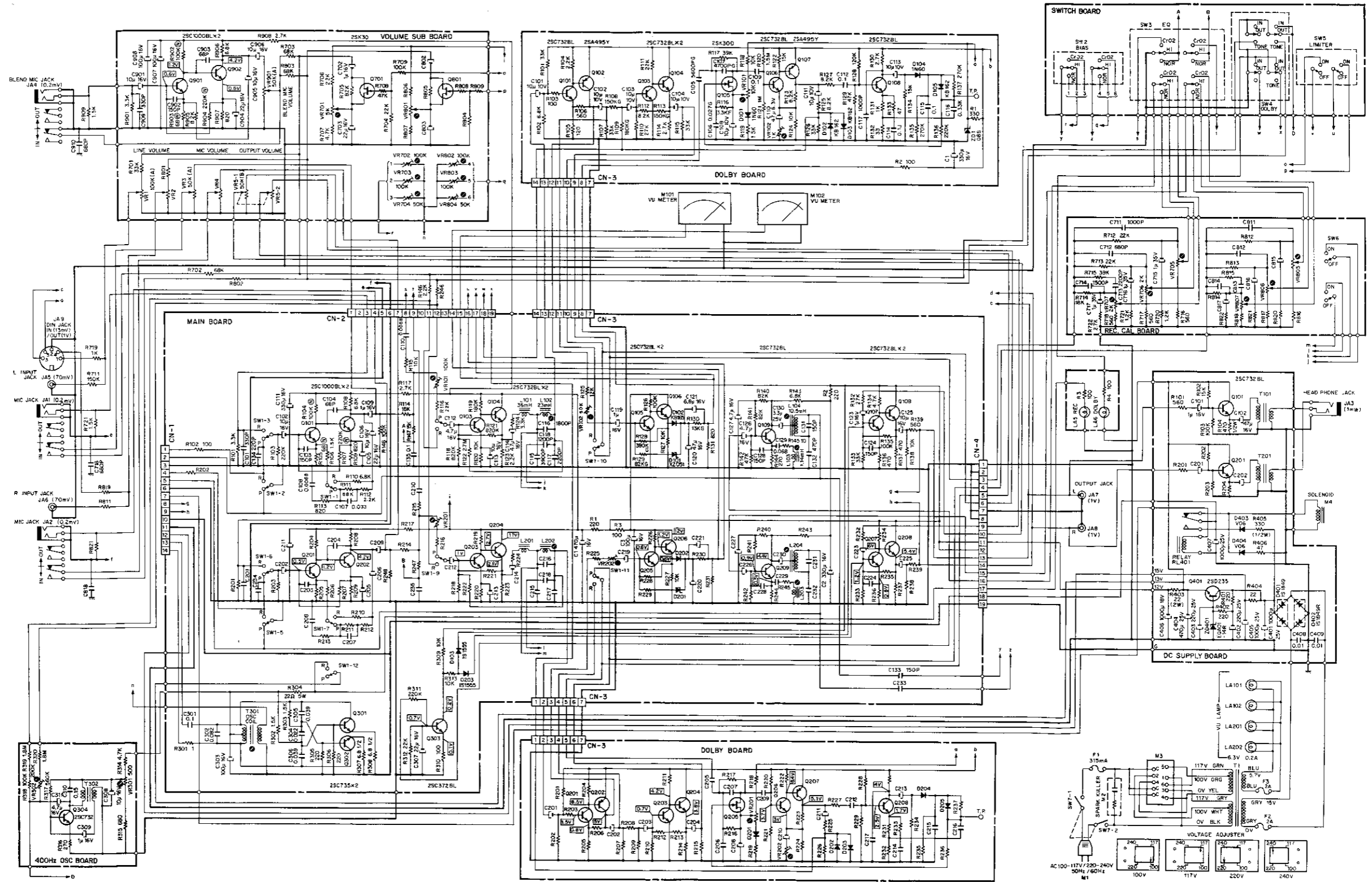


Fig. 12.12 S/N -365740 (for CrO2 tape)