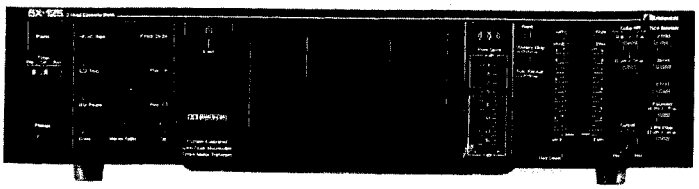
Nakamichi

Service Manual

Nakamichi
BX-125
BX-125E

2 Head Cassette Deck



CONTENTS

1. GENERAL

1.1. Voltage Selector

Voltage selector is installed on the rear panel for Other version of the Nakamichi BX-125.
This voltage selector can select either 120 V or 220-240 V at customer's disposal.

1.2. Packing Materials and Owner's Manual

Part No.	Description	Q'ty
0F03855A	Carton Box BX-125 (Silver)	1
0F03857A	Carton Box BX-125 (Black)	1
0F03856A	Carton Box BX-125E (Silver)	1
0F03858A	Carton Box BX-125E (Black)	1
0F03674C	Packing	2
0D04517A	Owner's Manual (English)	1
0D04518A	Owner's Manual (English/German/French)	1
0D04522A	Owner's Manual (Japanese)	1

1.3. Serial Number

The BX-125/BX-125E has two versions, Silver and Black.
In the service manual, serial numbers of these versions are identified as follows:

Silver version: A322xxxxx
Black version: A323xxxxx

However, the actual serial number on the serial number plate of the BX-125/BX-125E is indicated as A322.3xxxxx.
The serial number begins with A322.301001.

2. TEST TAPES AND GAUGES

(1) 400 Hz Level Tape (DA09005B)
(2) 1 kHz Track Alignment Tape (DA09007B)
(3) 15 kHz Azimuth Tape (DA09004B)
(4) 3 kHz Speed and Wow/Flutter Tape (DA09006C)
(5) 10 kHz PB Frequency Response Tape (DA09003B)
(6) 15 kHz PB Frequency Response Tape (DA09002B)
(7) 20 kHz PB Frequency Response Tape (DA09001B)
(8) Tape Travelling Cassette (DA09027B)
(9) Reference EXII Tape (DA09066B)
(10) Reference SX Tape (DA09025B)
(11) Reference SX-E Tape (DA09086A)
(12) Reference ZX Tape (DA09037B)
(13) Head Alignment Gauge (DA09092A)

3. MECHANICAL ADJUSTMENTS

3.1. Tape Guide Height Check for Record/Playback Head and Erase Head

With use of a Head Alignment Gauge, tape guide height check for the Record/Playback and Erase Heads shall be made, wherein a small block shall be pushed straight down to the base while in use of the Head Alignment Gauge. Refer to Fig. 3.1.

(1) Record/Playback Head Tape Guide Height

(a) Load the base of the Head Alignment Gauge carefully and set the cassette deck in Play mode.
(b) Place the small block of the Head Alignment Gauge on the base.
(c) Slide the small block against the tape guide of the Record/Playback Head, and check to insure that the block is accepted by the tape guide.
(d) If not, loosen the screw and insert a shim (either 30 μm (0C80048A), 60 μm (0C80038A), or 100 μm (0C80039A)) to raise the Record/Playback Head, then tighten and apply a quantity of lock tight paint to the screw.

(2) Erase Head Tape Guide Height

(a) Load the base of the Head Alignment Gauge carefully and set the cassette deck in Play mode.
(b) Place the small block of the Head Alignment Gauge on the base.
(c) Slide the small block against the tape guide of the Erase Head, and check whether the block is accepted by the tape guide.

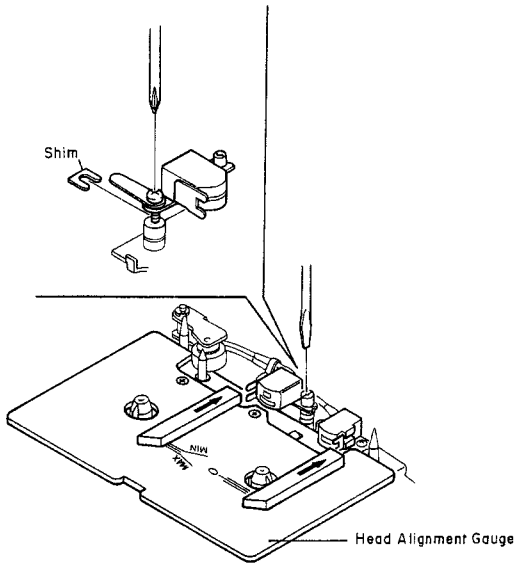


Fig. 3.1

3.2. Head Base Stroke Check

Refer to Fig. 3.2.

(1) Load the base of the Head Alignment Gauge carefully, then push the base toward the Record/Playback Head to eliminate the clearance between the reference pin and the base.
(2) Set the cassette deck in Play mode.
(3) Place the small block of the Head Alignment Gauge on the base.
(4) Contact the small block with the Record/Playback Head surface and the Erase Head surface, and check whether the end of the small block is located within the specified tolerance as shown in Fig. 3.2.

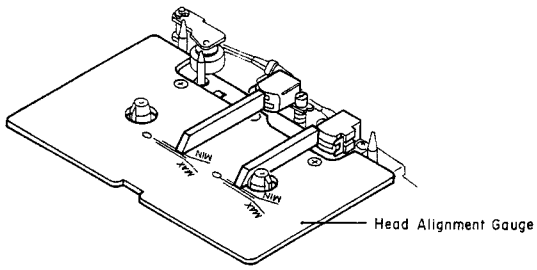


Fig. 3.2

3.3. Record/Playback Azimuth Alignment and Height Check

Refer to Fig. 3.1.

(1) Connect a VTVM to the Output Jacks.
(2) Load a 15 kHz Azimuth Tape and set the cassette deck in Play mode.
(3) Turn the Azimuth Alignment Screw until the outputs of both channels become maximum.
(4) Load a 1 kHz Track Alignment Tape and set the cassette deck in Play mode.
(5) Check to insure that the readings of both channels on the VTVM are below −25 dB.
If not, replacement of the Record/Playback Head will be required.
(6) Apply a quantity of lock tight paint to the Azimuth Alignment Screw.

3.4. Pressure Adjustment of Pressure Roller

Refer to Fig. 3.3.

(1) In Play mode, measure the torque of the Pressure Roller and check whether the torque is in a range of 320 ±50 g-cm.
(2) If torque is out of the range, correct it by changing the installation point of the Pressure Roller Spring.

3.5. Tape Travelling Check

Load a Tape Travelling Cassette and set the cassette deck in Play mode to check the followings:

(1) After more than 2 seconds, the fluctuation of the tape travelling on the Record/Playback Head is small.
(2) Tape is in contact with the head sufficiently.
(3) Tape waving is small on the heads and pressure roller.

3.6. Eject Damper Adjustment

Refer to Fig. 3.4. Load a cassette tape, and with opening the Cassette Case by pressing the Eject button and closing it by hand, adjust the speed of damper action by the Damper Adjustment Screw.

CCW: Damper moves fast.
CW: Damper moves slowly.

3.7. Reel Motor Speed Adjustment in Play Mode

(1) To warm-up the cassette deck, load a C-60 cassette tape and set the cassette deck in Play mode.
(2) After more than four minutes, load a torque meter TW-211 (made by Sony) and set the cassette deck in Play mode.
(3) Adjust VR601 on the Main P.C.B. Ass'y to obtain exactly 50 g-cm on the torque meter.

3.8. Tape Speed Adjustment

Refer to Fig. 3.5.

(1) Connect a frequency counter to the Output Jacks.
(2) Load a 3 kHz Speed and Wow/Flutter Tape and play it back.
(3) Adjust the Tape Speed Adjustment Volume incorporated in the Capstan Motor to obtain 3,000 Hz on the frequency counter.

CCW: Motor drives slowly.
CW: Motor drives fast.

3.9. Lubrication

The tape transport is of a lubrication-free type mechanism. When the following parts are replaced, apply the specified lubricant.

(1) Molykote (R) Grease (X5-6020)
Cam Motor Pulley
Thrust portion on the Capstan Shaft
(2) FLOIL GB-TS-1
Washer between Reel Hub Ass'y and Back Tension Spring
(3) Diamond Oil (EP56)
Reel Hub Shaft
(4) Anderol 456
Capstan Shaft

Note: We suggest that you use the above specified lubricant or equivalent type.
The company dealing in the above lubricant is as follows:
(a) Molykote (R) Grease (X5-6020)
Dowcorning Co., Ltd., 1-15-1 Nishishinbashi, Minato-ku, Tokyo, Japan
(b) FLOIL GB-TS-1
Kanto Chemicals Co., Ltd., 2-7 Kanda Sakuma-cho, Chiyoda-ku, Tokyo, Japan
(c) Diamond Oil (EP-56)
Mitsubishi Oil Co., Ltd., 1-2-4 Toranomon, Minato-ku, Tokyo, Japan
(d) Anderol 456
Toyo Kokusai Oil Co., Ltd., 3-3-5 Hatchobori, Chuo-ku, Tokyo, Japan

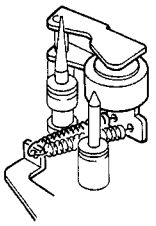


Fig. 3.3

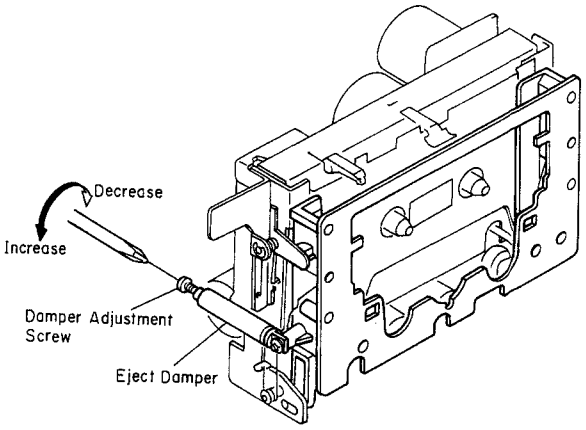


Fig. 3.4

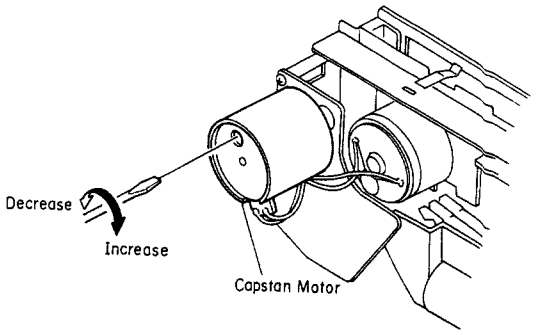


Fig. 3.5

4. PARTS LOCATION FOR ELECTRICAL ADJUSTMENT

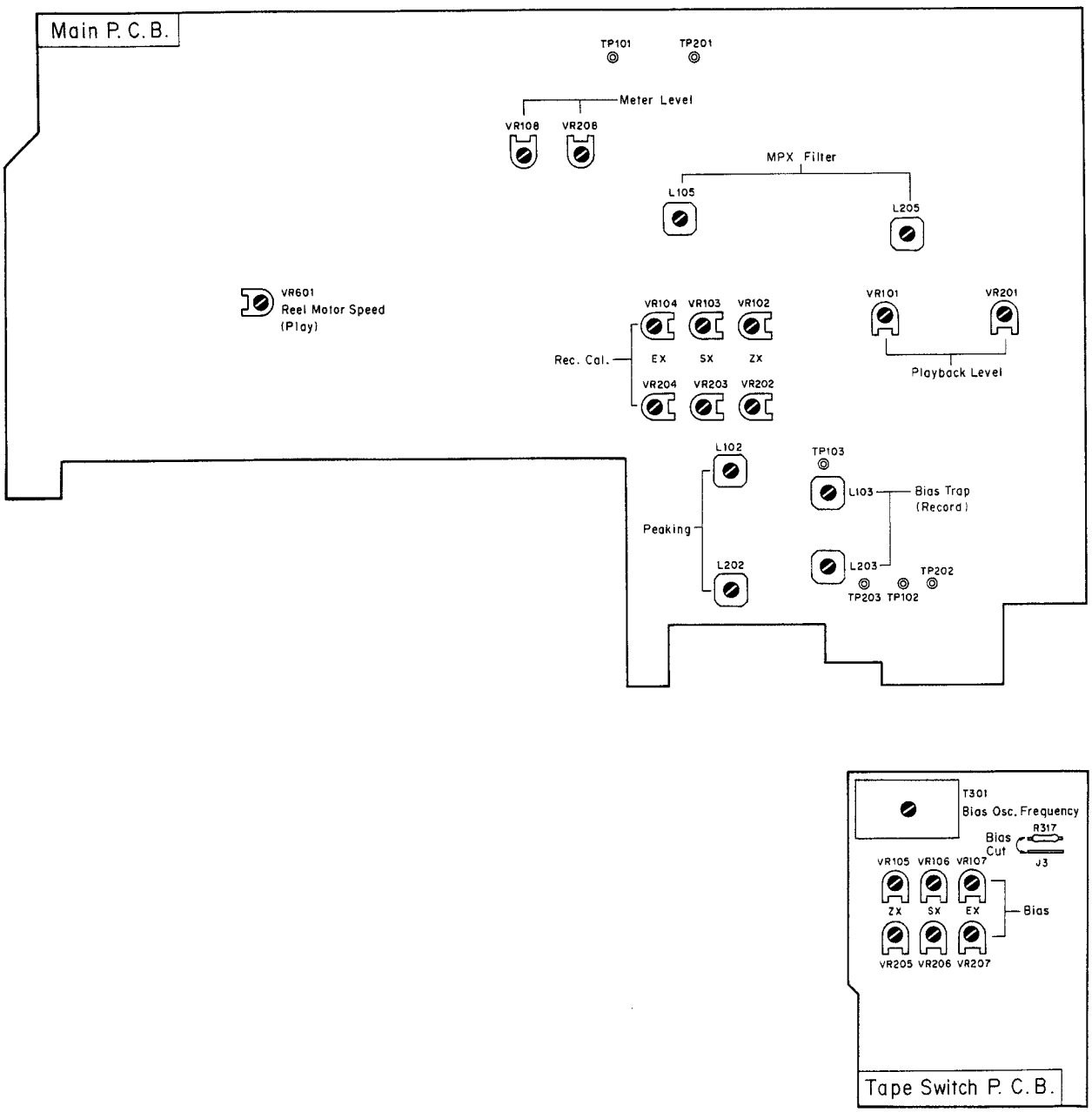


Fig. 4

5. ELECTRICAL ADJUSTMENTS

Note: Electrical adjustment should be performed after mechanical adjustment is completed.

5.1. Adjustment Instructions

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUST-MENT	REMARKS
1	Tape Speed Adjustment	3 kHz Speed and Wow/ Flutter Tape	Frequency Counter to Output Jacks	Playback Eq. - 70 μs	Tape Speed Adjust-ment Volume	Adjust the volume incorporated in the capstan motor to obtain 3 kHz ±0.5% on the frequency counter.
2	Meter Level Calibration	400 Hz to Input Jacks	VTVM to TP101,TP201 on Main P.C.B.	Record, Pause	Main P.C.B. VR108 VR208	1. Feed in 400 Hz and adjust the Input Level controls to obtain 350 mV -0.8 dB on the VTVM. 2. Adjust VR108 (VR208) so that the 0 dB segment of the level meter starts illuminating. 3. Adjust the Input Level controls to obtain 350 mV on the VTVM, then decrease the generator output level by 20 dB. 4. Check to insure that the segment for -20 dB illuminates.
3	MPX Filter Adjustment	19 kHz ±100 Hz to Input Jacks	VTVM to Output Jacks	Record, Pause MPX - OFF/ON	Main P.C.B. L105 L205	1. Set the Output Level control to max. Adjust the Input Level controls to obtain 500 mV (0 dB) on the VTVM. 2. Set the MPX Filter switch to ON and adjust L105 (L205) to obtain minimum reading on the VTVM (minimum reading will be less than -30 dB).
4	Record/ Playback Head Azimuth Alignment	15 kHz Azimuth Tape	VTVM to Output Jacks	Playback Eq. - 70 μs Dolby NR - OFF MPX - OFF	Record/ Playback Head Azimuth Align-ment Screw	Adjust the Record/Playback Head Azimuth Alignment Screw to obtain maximum readings for both channels on the VTVM.
5	Playback Level Calibration	400 Hz Level Tape	VTVM to TP101,TP201 on Main P.C.B.	Same as above	Main P.C.B. VR101 VR201	Adjust VR101 (VR201) to obtain 350 mV on the VTVM.
6	Playback Frequency Response Adjustment	400 Hz Level Tape 10 kHz PB Frequency Response Tape 15 kHz PB Frequency Response Tape 20 kHz PB Frequency Response Tape	VTVM to Output Jacks	Same as above	Main P.C.B. R110 R210 R195 R295	1. Load a 400 Hz level tape and play it back. Adjust the Output Level control to a certain level. 2. Load 10 kHz, 15 kHz and 20 kHz PB frequency response tapes and play them back. Adjust the record/play-back head azimuth to obtain maximum readings for both channels on the VTVM with each tape. Short R110 (R210) or R195 (R295) on the Main P.C.B. Ass'y to obtain the following levels against the level for the 400 Hz level tape. 10 kHz: -20 dB -2 to +2 dB 15 kHz: -20 dB -2 to +3 dB 20 kHz: -20 dB -2 to +4 dB 3. Conduct step 4 "Record/Playback Head Azimuth Alignment".

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUST-MENT	REMARKS
7	Bias Oscillation Frequency and Erase Current Adjustment	None	Frequency Counter to CN2-2 on Tape Switch P.C.B. and VTVM across the additional 0.1 ohm resistor	Record, Pause Tape - ZX Eq. - 70 μs Dolby NR - OFF MPX - OFF	Tape Switch P.C.B. T301 R318 R350	1. Connect an additional 0.1 ohm resistor in series to the Erase Head and connect a VTVM across it. 2. Adjust T301 to obtain 105 kHz on the frequency counter. 3. Check the erase current by the VTVM. Erase current will be in a range of 310 mA to 400 mA (typically approx. 350 mA). If erase current is not sufficient, increase it by shorting either R318 or R350. 4. After completion of the erase current adjustment, re-check the bias oscillation frequency. 5. Remove the additional 0.1 ohm resistor.
8	Record Amplifier Equalizer Adjustment	21 kHz (-20 dB) to Input Jacks	VTVM to TP102,TP202 on Main P.C.B.	Same as above	Main P.C.B. L102 L202	1. Short the bias cut points indicated in Fig. 4 with a clip to stop bias oscillation. 2. Adjust L102 (L202) to obtain peak reading at 21 kHz on the VTVM. 3. Remove the clip.
9	Bias Trap Adjustment (Record Amp.)	None (remove input signals)	VTVM to TP103,TP203 on Main P.C.B.	Same as above	Main P.C.B. L103 L203	Adjust L103 (L203) to obtain maximum reading on the VTVM.
10	Record Level Calibration and Recording Bias Current Adjustment	400 Hz (0 dB) and 15 kHz (-20 dB) to Input Jacks	VTVM and Distortion Meter to Output Jacks	Record and Playback Tape - ZX/SX/EX Eq. - 70 μs (ZX/SX) 120 μs (EX) Dolby NR - OFF MPX - OFF	Main P.C.B. (Level) ZX: VR102 VR202 SX: VR103 VR203 EX: VR104 VR204 Tape Switch P.C.B. (Bias) ZX: VR105 VR205 SX: VR106 VR206 EX: VR107 VR207	Adjustment should be made in the order of ZX, SX and EX. 1. Set the Output Level control to max. 2. Set the cassette deck in Record/Pause mode. 3. Feed in 400 Hz and adjust the Input Level controls to obtain 500 mV (0 dB) on the VTVM. 4. Load a reference ZX tape, reference SX/SX-E tape and reference EXII tape. 5. Feed in 400 Hz (0 dB) and record, rewind and play it back. Adjust VR102 (VR202) for ZX tape, VR103 (VR203) for SX/SX-E Tape and VR104 (VR204) for EXII tape so that the played back output levels are 500 mV (0 dB) on the VTVM. 6. Feed in 15 kHz (-20 dB) and record, rewind and play it back. Adjust VR105 (VR205) for ZX tape, VR106 (VR206) for SX/SX-E tape and VR107 (VR207) for EXII tape so that the played back output levels are 50 mV (-20 dB) on the VTVM. 7. Repeat above 5 and 6 two or three times. 8. Feed in 400 Hz (0 dB) and record, rewind and play it back. Check to insure whether the total harmonic distortion is less than 1.0% for ZX and EXII tapes and 1.2% for SX/SX-E tape. If the total harmonic distortion exceeds the specified value, repeat above steps till satisfactory results are obtained.

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUST-MENT	REMARKS
11	Overall Frequency Response Adjustment	400 Hz (0 dB) and 20 Hz to 17 kHz (-20 dB) to Input Jacks	VTVM to Output Jacks	Record and Playback Tape - ZX/SX/EX Eq. - 70 μs (ZX/SX) 120 μs (EX) Dolby NR - OFF MPX SW - OFF	Main P.C.B. L102 L202	1. Set the cassette deck in Record/Pause mode. 2. Feed in 400 Hz and set the Input Level controls to obtain 500 mV (0 dB) on the VTVM. 3. Decrease the generator output control by 20 dB. 4. Feed in 20 Hz to 17 kHz (-20 dB), and record, rewind and play them back, then check to insure whether the output levels are within -20 dB ±4 dB. 5. If above is not sufficient, adjust L102 (L202) to obtain approx. -20 dB on the VTVM, then conduct step 10 "Record Level Calibration and Recording Bias Current Adjustment". 6. If above is not sufficient, precise re-adjustment of step 6 "Playback Frequency Response", replacement of Record/Playback Head or tape travelling check will be required.

5.2. Playback Frequency Response Adjustment

Figs. 5.1 and 5.2 show the playback amp. circuit for adjustment and the playback equalization curve.

This adjustment will be required if playback level is not sufficient when a 20 kHz PB frequency response tape is played back.

The peaking portion of the equalization curve compensates the gap loss of the playback head. Peaking level is varied by the short circuit of R110 (R210) or R195 (R295).

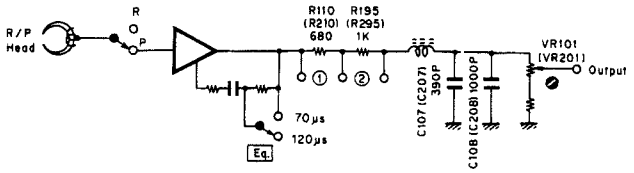


Fig. 5.1

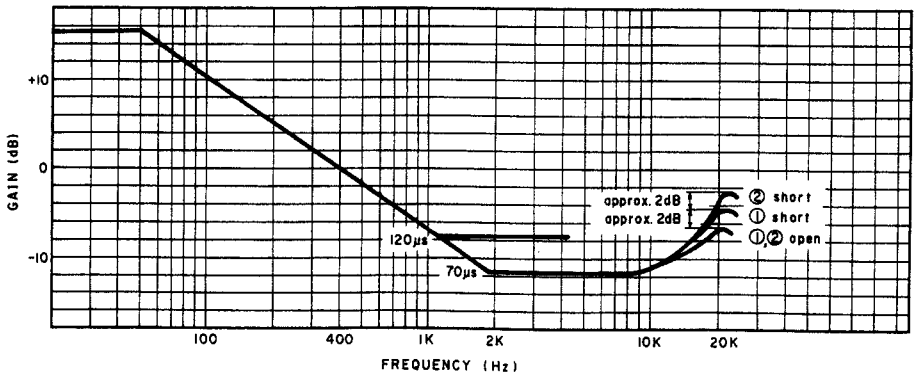


Fig. 5.2

6. MECHANISM ASS'Y AND PARTS LIST

6.1. Synthesis

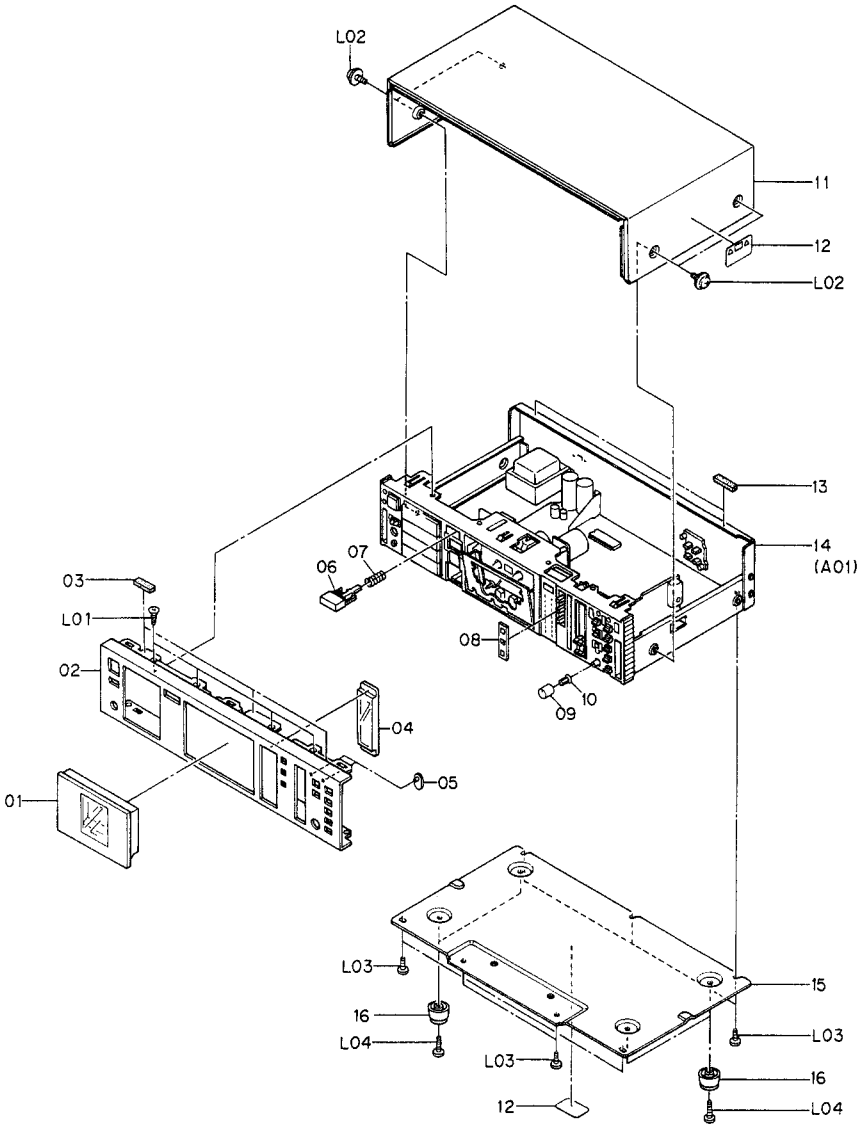


Fig. 6.1

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
		Synthesis Serial No.: A32201001 - (Silver)				Synthesis Serial No.: A32301001 - (Black)	
01	HA04494B	Cassette Case Cover Ass'y	1	01	HA04495B	Cassette Case Cover Ass'y	1
02	0H04582B	Front Panel Ass'y BX-125	1	02	0H04584B	Front Panel Ass'y BX-125	1
	0H04583B	Front Panel Ass'y BX-125E	1		0H04585B	Front Panel Ass'y BX-125E	1
03	0J04628A	Top Cover Cushion (Front)	3	03	0J04628A	Top Cover Cushion (Front)	3
04	0H04306A	Meter Cover	1	04	0H04307A	Meter Cover	1
05	0H04240A	LED Lens	2	05	0H04240A	LED Lens	2
06	HA04571A	Eject Button Ass'y	1	06	HA04570A	Eject Button Ass'y	1
07	0J04765A	Spring	1	07	0J04765A	Spring	1
08	0H04276A	Counter Escutcheon	1	08	0H04275A	Counter Escutcheon	1
09	0H04432B	Volume Knob	1	09	0H04342A	Volume Knob	1
10	0H03737A	Volume Knob Base	1	10	0H03737A	Volume Knob Base	1
11	0H04155B	Top Cover	1	11	0H04156B	Top Cover	1
12	0M04377B	Caution Label	2	12	0M04377B	Caution Label	2
13	0J04629A	Top Cover Cushion (Back)	2	13	0J04629A	Top Cover Cushion (Back)	2
14	—	Synthesis Mechanism Ass'y	1	14	—	Synthesis Mechanism Ass'y	1
15	0J04762A	Bottom Cover	1	15	0J04762A	Bottom Cover	1
16	0J03564A	Leg T-H	4	16	0J03564A	Leg T-H	4
L01	0E03054A	BT 3x8 ⊕ Countersunk	4	L01	0E03054A	BT 3x8 ⊕ Countersunk	4
L02	0E03033A	BT 4x8 ⊕ Pan Washer-faced (Nickel)	4	L02	0E03032A	BT 4x8 ⊕ Pan Washer-faced (Black Chromate)	4
L03	0E00868A	BT 3x8 ⊕ Binding	7	L03	0E00868A	BT 3x8 ⊕ Binding	7
L04	0E00865A	BT 3x10 ⊕ Binding	4	L04	0E00865A	BT 3x10 ⊕ Binding	4

6.2. Synthesis Mechanism Ass'y (A01)

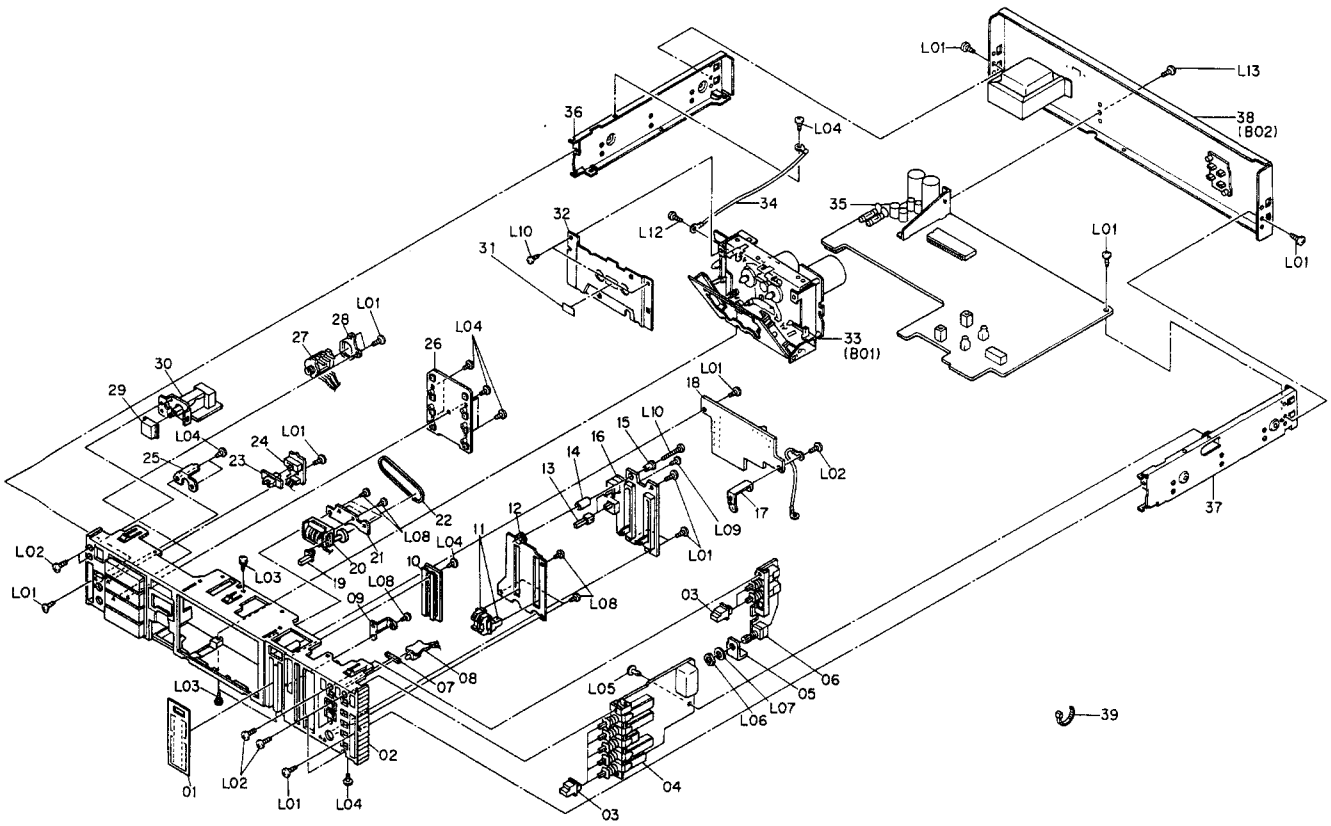


Fig. 6.2

Schematic Ref. No.	Part No.	Description	Q'ty
A01	—	Synthesis Mechanism Ass'y Serial No.: A32201001 - (Silver)	1
01	0H04277A	Meter Scale	1
02	HA04794A	Front Chassis Ass'y	1
03	0H04288A	Push Switch Button	7
04	BA05637A	Tape Switch P.C.B. Ass'y	1
05	0J04838A	Holder	1
06	BA05635A	Dolby NR Switch P.C.B. Ass'y	1
07	0J04984A	Cushion A	1
08	BA05630A	LED P.C.B. Ass'y	1
09	0J04767A	Memory Switch Holder	1
10	BA05089A	Indicator Ass'y	1
11	0H04289A	Slide Volume Knob	2
12	0H04283B	Slide Volume Plate	1
13	0H04272A	Memory Switch Knob	2
14	0J04703A	Bushing A	1
15	0J04704A	Bushing B	1
16	BA05639A	Volume P.C.B. Ass'y	1
17	0J04840A	Indicator P.C.B. Holder	1
18	BA05638A	Indicator P.C.B. Ass'y	1
19	0H04274A	Counter Knob	1
20	0C08602A	Tape Counter	1
21	0J04764A	Counter Holder	1
22	0C08604A	Counter Belt	1
23	0H04309A	Slide Switch Knob	1
24	BA05641A	Timer Switch P.C.B. Ass'y	1
25	0J04843A	Timer Switch P.C.B. Holder	1
26	BA05640A	Control Switch P.C.B. Ass'y	1
27	0B08511A	Headphone Jack	1
28	0J04611A	Headphone Plate	1
29	0H04290A	Power Switch Button	1
30	BA05230A	Power Switch P.C.B. Ass'y BX-125 (U.S.A. & Canada)	1
	BA05231A	Power Switch P.C.B. Ass'y BX-125 (Japan)	1
	BA05229A	Power Switch P.C.B. Ass'y BX-125 (Australia & Others) & BX-125E	1
31	0M04196A	Cassette Label (Silver)	1
32	0H04154C	Cover Plate	1
33	CA08498A	Mechanism Ass'y	1
34	BA05131A	Earth Wire	1
35	BA05627A	Main P.C.B. Ass'y BX-125	1
	BA02757A-E	Main P.C.B. Ass'y BX-125E	1
36	0J04603F	Side Chassis L	1
37	0J04773D	Side Chassis R	1
38	HA04759B	Rear Panel Ass'y BX-125 (U.S.A.)	1
	HA04791A	Rear Panel Ass'y BX-125 (Japan)	1
	HA04760A	Rear Panel Ass'y BX-125 (Others)	1
	HA04761A	Rear Panel Ass'y BX-125 (Australia)	1
	HA04771B	Rear Panel Ass'y BX-125 (Canada)	1
	HA04758A	Rear Panel Ass'y BX-125E (UK)	1
	HA04762A	Rear Panel Ass'y BX-125E (220V Class 2)	1
39	0B08515A	Insu-Lock	14
—	0J04581A	Counter Cushion	3
—	0B08525A	Fuse 2A 250V BX-125 (U.S.A., Canada & Others)	2
	0B08854A	Fuse 2A BX-125 (Japan)	2
—	0B08347U	Fuse T1A 250V BX-125 (Australia) & BX-125E	2
—	0M04131B	Fuse Label T1A BX-125 (Australia) & BX-125E	1
—	0B08349B	Fuse Clip BX-125 (Australia) & BX-125E	4
L01	0E00868A	BT 3x8 ⊕ Binding	15
L02	0E00766A	M3x8 ⊕ Binding	7
L03	0E03074A	BT 2.6x8 ⊕ Binding with Toothed-Lock Washer	3
L04	0E00857A	BT 3x6 ⊖ Binding	10
L05	0B08583A	Plastic Rivet	1
L06	—	Nut	(1)
L07	—	Washer	(1)
L08	0E00859A	BT 2.6x6 ⊕ Binding	8
L09	0E03070A	M2.6x6 ⊕ Binding	1
L10	0E00835A	BT 3x25 ⊕ Pan	1
L11	0E00824A	BT 2.6x6 ⊕ Pan (Black Chromate)	2
L12	0E00954A	BT 2.6x8 ⊕ Binding	1
L13	0E03028A	BT 3x8 ⊕ Binding (Nickel)	1

Schematic Ref. No.	Part No.	Description	Q'ty
A01	—	Synthesis Mechanism Ass'y Serial No.: A32301001 - (Black)	1
01	0H04278B	Meter Scale	1
02	HA04795A	Front Chassis Ass'y	1
03	0H04248A	Push Switch Button	7
04	BA05637A	Tape Switch P.C.B. Ass'y	1
05	0J04838A	Holder	1
06	BA05635A	Dolby NR Switch P.C.B. Ass'y	1
07	0J04984A	Cushion A	1
08	BA05630A	LED P.C.B. Ass'y	1
09	0J04767A	Memory Switch Holder	1
10	BA05089A	Indicator Ass'y	1
11	0H04247B	Slide Volume Knob	2
12	0H04284B	Slide Volume Plate	1
13	0H04271A	Memory Switch Knob	2
14	0J04703A	Bushing A	1
15	0J04704A	Bushing B	1
16	BA05639A	Volume P.C.B. Ass'y	1
17	0J04840A	Indicator P.C.B. Holder	1
18	BA05638A	Indicator P.C.B. Ass'y	1
19	0H04273A	Counter Knob	1
20	0C08602A	Tape Counter	1
21	0J04764A	Counter Holder	1
22	0C08604A	Counter Belt	1
23	0H04242A	Slide Switch Knob	1
24	BA05641A	Timer Switch P.C.B. Ass'y	1
25	0J04843A	Timer Switch P.C.B. Holder	1
26	BA05640A	Control Switch P.C.B. Ass'y	1
27	0B08511A	Headphone Jack	1
28	0J04611A	Headphone Plate	1
29	0H04243A	Power Switch Button	1
30	BA05230A	Power Switch P.C.B. Ass'y BX-125 (U.S.A. & Canada)	1
	BA05231A	Power Switch P.C.B. Ass'y BX-125 (Japan)	1
	BA05229A	Power Switch P.C.B. Ass'y BX-125 (Australia & Others) & BX-125E	1
31	0M04392A	Cassette Label (Gold)	1
32	0H04154C	Cover Plate	1
33	CA08498A	Mechanism Ass'y	1
34	BA05131A	Earth Wire	1
35	BA05627A	Main P.C.B. Ass'y BX-125	1
	BA02757A-E	Main P.C.B. Ass'y BX-125E	1
36	0J04603F	Side Chassis L	1
37	0J04773D	Side Chassis R	1
38	HA04764A	Rear Panel Ass'y BX-125 (U.S.A.)	1
	HA04792A	Rear Panel Ass'y BX-125 (Japan)	1
	HA04765A	Rear Panel Ass'y BX-125 (Others)	1
	HA04766A	Rear Panel Ass'y BX-125 (Australia)	1
	HA04772A	Rear Panel Ass'y BX-125 (Canada)	1
	HA04763A	Rear Panel Ass'y BX-125E (UK)	1
	HA04767A	Rear Panel Ass'y BX-125E (220V Class 2)	1
39	0B08515A	Insu-Lock	14
—	0J04581A	Counter Cushion	3
—	0B08525A	Fuse 2A 250V BX-125 (U.S.A., Canada & Others)	2
	0B08854A	Fuse 2A BX-125 (Japan)	2
—	0B08347U	Fuse 1AT 250V BX-125 (Australia) & BX-125E	2
—	0M04131B	Fuse Label 1AT BX-125 (Australia) & BX-125E	1
—	0B08349B	Fuse Clip BX-125 (Australia) & BX-125E	4
L01	0E00868A	BT 3x8 ⊕ Binding	15
L02	0E00766A	M3x8 ⊕ Binding	7
L03	0E03074A	BT 2.6x8 ⊕ Binding with Toothed-Lock Washer	3
L04	0E00857A	BT 3x6 ⊕ Binding	10
L05	0B08583A	Plastic Rivet	1
L06	—	Nut	(1)
L07	—	Washer	(1)
L08	0E00859A	BT 2.6x6 ⊕ Binding	8
L09	0E03070A	M2.6x6 ⊕ Binding	1
L10	0E00835A	BT 3x25 ⊕ Pan	1
L11	0E00824A	BT 2.6x6 ⊕ Pan (Black Chromate)	2
L12	0E00954A	BT 2.6x8 ⊕ Binding	1
L13	0E00921A	BT 3x8 ⊕ Binding (Black Chromate)	1

6.3. Mechanism Ass'y (B01)

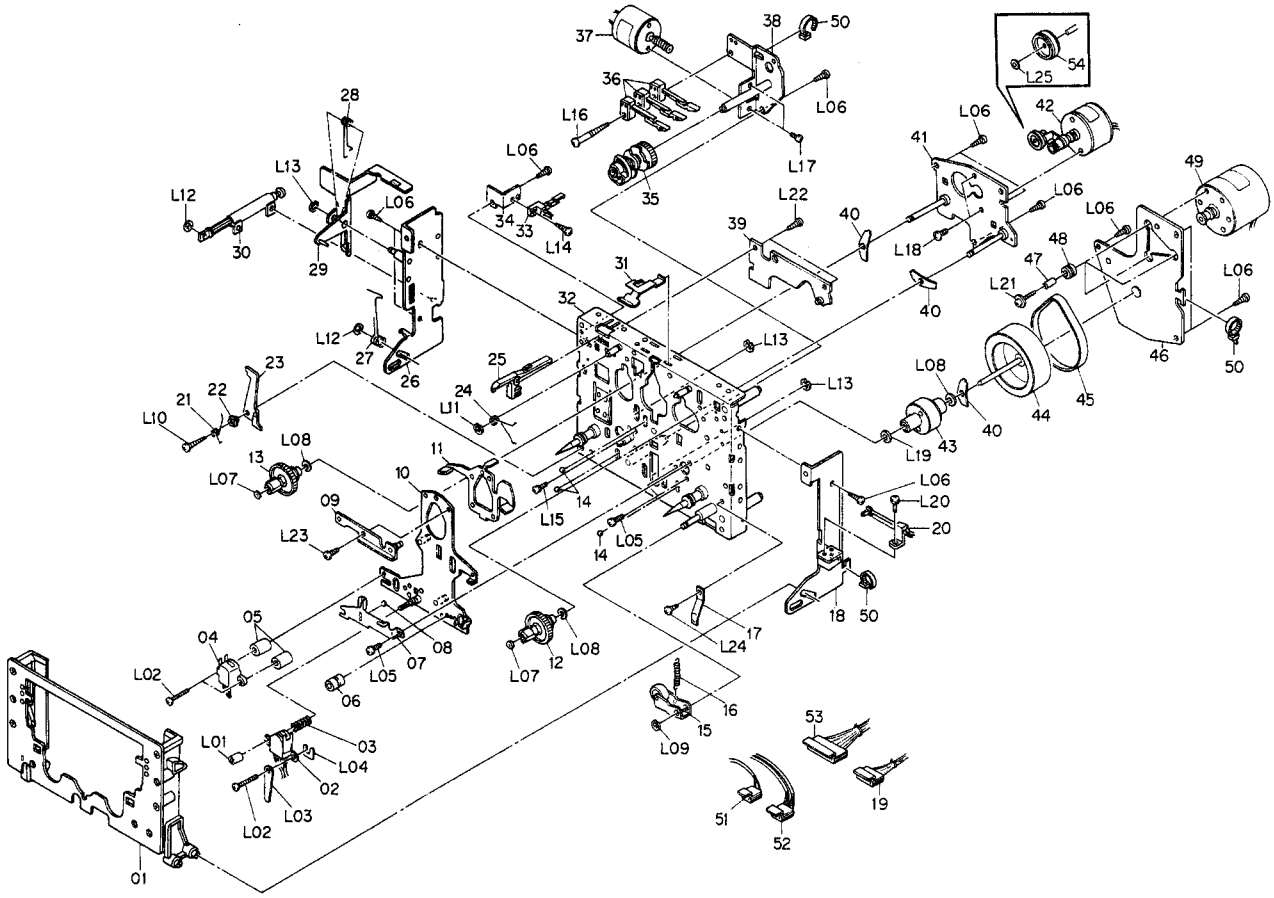
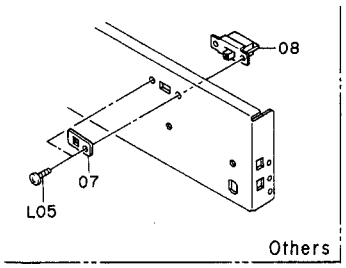


Fig. 6.3

Schematic Ref. No.	Part No.	Description	Q'ty
B01	**CA08498A**	**Mechanism Ass'y** **Serial No.: A322.301001 -**	**1**
01	CA80001A	Cassette Case Ass'y	1
02	0G01371A	Record/Playback Head RP-2G	1
03	0C80001A	Azimuth Adjust Spring	1
04	0G01365A	Erase Head E-2D	1
05	0C80044A	Erase Head Collar	2
06	0C80045A	Record/Playback Head Collar	1
07	0C80003A	Head Base Hold Plate	1
08	0C80004A	Steel Ball 3mm	1
09	0C80005A	Reinforcement Plate	1
10	0C80006A	Head Base	1
11	CA80002A	Brake Ass'y	1
12	CA80003B	Take-up Reel Hub Ass'y	1
13	CA80004B	Supply Reel Hub Ass'y	1
14	0C80007A	Steel Ball 2mm	3
15	CA80005A	Pressure Roller Ass'y	1
16	0C80008A	Pressure Roller Spring	1
17	0C80009A	Cassette Case Spring	1
18	0C80010C	Cassette Case Holder R	1
19	0C80043A	5P-H Connector	1
20	0C80012A	Eject Sensor	1
21	0C80013A	Lock Lever Spring	1
22	0C80014A	Lock Lever Collar	1
23	0C80015B	Lock Lever	1
24	0C80016A	Brake Spring	1
25	0C80017A	Record Protector Lever	1
26	0C80018A	Cassette Case Holder L	1
27	0C80019B	Eject Spring	1
28	0C80020A	Eject Lever Spring	1
29	0C80021A	Eject Lever	1
30	CA80006A	Pneumatic Damper Ass'y	1
31	0C80022B	Cassette Hold Spring	1
32	0C80023A	Mechanism Chassis	1
33	0C80024A	Record Protector	1
34	0C80025A	Record Protector Holder	1
35	0C80026A	Cam	1
36	0C80027A	Mode Switch	3
37	CA80007A	Control Motor Ass'y	1
38	0C80028A	Control Motor Holder	1
39	CA80011A	Shut-off P.C.B. Ass'y	1
40	0C80029A	Back Tension Spring	3
41	0C80030A	Reel Motor Holder	1
42	CA80008B	Reel Motor Ass'y	1
43	0C80031A	Capstan Flange	1
44	0C80033A	Flywheel	1
45	0C80034A	Capstan Belt	1
46	CA80009A	Flywheel Holder Ass'y	1
47	0C80035A	Sleeve	3
48	0C80036A	Floating Rubber	3
49	CA80010A	Capstan Motor Ass'y	1
50	0C80037A	Insu-Lock	3
51	0C80040A	2P-H Connector	1
52	0C80041A	4P-H Connector	1
53	0C80042A	9P-H Connector	1
54	0C80635B	Idler Pulley	1
L01	0C80046A	Azimuth Alignment Screw	1
L02	0E03038A	M2x12 ⊕ Binding	3
L03	0E03053A	Wire Holder	1
L04	0C80048A	Shim 0.03T	(1)
	0C80038A	Shim 0.06T	(1)
	0C80039A	Shim 0.1T	(1)
L05	0E03046A	M2.6x6 ⊕ Pan (2A)	3
L06	0E03042A	FT 2.5x5 ⊕ Pan	13
L07	0E03049A	Washer 1.8mm	2
L08	0E03050A	Washer 3.1mm	3
L09	0E00222A	E-Ring 2mm	1
L10	0E03043A	FT 2.5x10 ⊕ Pan	1
L11	0E00698A	E-Ring 2.5mm	1
L12	0E03052A	Stopper Ring 2.4mm	2
L13	0E00181A	E-Ring 3mm	3
L14	0E03048A	FT 2.6x6 ⊕ Pan	1
L15	0E03036A	M2x4 ⊕ Pan (2A)	1
L16	0E03044A	FT 2.5x20 ⊕ Pan	1
L17	0E00691A	M2x3 ⊕ Pan	2
L18	0E03045A	M2.6x3 ⊕ Binding	2
L19	0E03051A	Washer 2.5mm	1
L20	0E03037A	M2x5 ⊕ Pan (2A)	1
L21	0E03047A	M2.6x9 ⊕ Pan	3
L22	0E03041A	FT 2.5x4 ⊕ Pan	2
L23	0E03040A	FT 2.5x3.5 ⊕ Pan	1
L24	0E03035A	M2x3.2 ⊕ Truss	1
L25	0E03245A	Mylar Washer 1.3x3.3x0.3	1

6.4. Rear Panel Ass'y (B02)



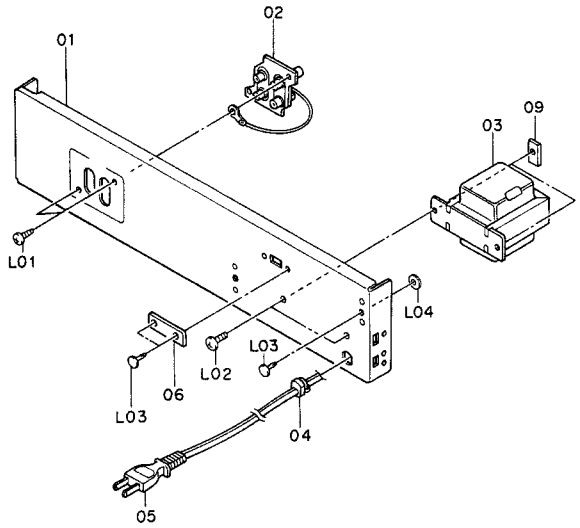


Fig. 6.4

Schematic Ref. No.	Part No.	Description	Q'ty
B02	**HA04759B**	**Rear Panel Ass'y BX-125 (U.S.A.)**	1
	HA04771B	**Rear Panel Ass'y BX-125 (Canada)**	1
	HA04761A	**Rear Panel Ass'y BX-125 (Australia)**	1
	HA04791A	**Rear Panel Ass'y BX-125 (Japan)**	1
	HA04760A	**Rear Panel Ass'y BX-125 (Others)**	1
	HA04758A	**Rear Panel Ass'y BX-125E (UK)**	1
	HA04762A	**Rear Panel Ass'y BX-125E (220V Class 2)** Serial No.: A32201001 - (Silver)	1
01	0H04586A	Rear Panel BX-125	1
	0H04587A	Rear Panel BX-125E	1
02	BA05087A	4P Pin Jack Ass'y (Consists of the followings)	1
	(0B81001A)	(4P Pin Jack)	(1)
	(0E00037A)	(Earth Lug)	(1)
03	0B50040A	Power Transformer BX-125 (U.S.A. & Canada)	1
	0B50009B	Power Transformer BX-125 (Australia) & BX-125E	1
	0B50011B	Power Transformer BX-125 (Japan)	1
	0B50010B	Power Transformer BX-125 (Others)	1
04	0B08037U	Cord Bushing C BX-125 (U.S.A., Australia, Others & Japan) & BX-125E (220V Class 2)	1
	0B08351A	Cord Bushing 4K-4 BX-125 (Canada) & BX-125E (UK)	1

Schematic Ref. No.	Part No.	Description	Q'ty
05	0B08533A	Power Cord BX-125 (U.S.A. & Others)	1
	0B08504A	Power Cord BX-125 (Canada)	1
	0B05241A	Power Cord BX-125 (Australia)	1
	0B08219B	Power Cord BX-125 (Japan)	1
	0B08348A	Power Cord BX-125E (UK)	1
	0B08093U	Power Cord BX-125E (220V Class 2)	1
06	0J04622B	Switch Cover BX-125 (U.S.A., Canada, Australia & Japan) & BX-125E	1
07	0M04407A	Voltage Lock Plate BX-125 (Others)	1
08	0B07092U	Voltage Selector BX-125 (Others)	1
09	0C01162B	Bolt Receptacle Plate BX-125 (U.S.A. & Canada)	2
L01	0E03028A	BT 3x8 ⊕ Binding (Nickel)	2
L02	0E03034A	M4x8 ⊕ Binding (Nickel) BX-125 (U.S.A. & Canada)	2
	0E00897A	ST 4x8 ⊕ Binding (Nickel) BX-125 (Australia, Others & Japan) & BX-125E	2
L03	0B08583A	Plastic Rivet	3
L04	0E00637A	Washer 3.3x7x0.5	1
L05	0E03031A	M3x8 ⊕ Binding (Nickel) BX-125 (Others)	2
B02	**HA04764A**	**Rear Panel Ass'y BX-125 (U.S.A.)**	1
	HA04772A	**Rear Panel Ass'y BX-125 (Canada)**	1
	HA04766A	**Rear Panel Ass'y BX-125 (Australia)**	1
	HA04792A	**Rear Panel Ass'y BX-125 (Japan)**	1
	HA04765A	**Rear Panel Ass'y BX-125 (Others)**	1
	HA04763A	**Rear Panel Ass'y BX-125E (UK)**	1
	HA04767A	**Rear Panel Ass'y BX-125E (220V Class 2)** Serial No.: A32301001 - (Black)	1
01	0H04588A	Rear Panel BX-125	1
	0H04589A	Rear Panel BX-125E	1
02	BA05087A	4P Pin Jack Ass'y (Consists of the followings)	1
	(0B81001A)	(4P Pin Jack)	(1)
	(0E00037A)	(Earth Lug)	(1)
03	0B50040A	Power Transformer BX-125 (U.S.A. & Canada)	1
	0B50009B	Power Transformer BX-125 (Australia) & BX-125E	1
	0B50011B	Power Transformer BX-125 (Japan)	1
	0B50010B	Power Transformer BX-125 (Others)	1
04	0B08037U	Cord Bushing C BX-125 (U.S.A., Australia, Others & Japan) & BX-125E (220V Class 2)	1
	0B08351A	Cord Bushing 4K-4 BX-125 (Canada) & BX-125E (UK)	1
05	0B08533A	Power Cord BX-125 (U.S.A. & Others)	1
	0B08504A	Power Cord BX-125 (Canada)	1
	0B05241A	Power Cord BX-125 (Australia)	1
	0B08219B	Power Cord BX-125 (Japan)	1
	0B08348A	Power Cord BX-125E (UK)	1
	0B08093U	Power Cord BX-125E (220V Class 2)	1
06	0J04601B	Switch Cover BX-125 (U.S.A., Canada, Australia & Japan) & BX-125E	1
07	0M03948A	Voltage Lock Plate BX-125 (Others)	1
08	0B07092U	Voltage Selector BX-125 (Others)	1
09	0C01162B	Bolt Receptacle Plate BX-125 (U.S.A. & Canada)	2
L01	0E00921A	BT 3x8 ⊕ Binding (Black Chromate)	2
L02	0E03034A	M4x8 ⊕ Binding (Black Chromate) BX-125 (U.S.A. & Canada)	2
	0E00907A	ST 4x8 ⊕ Binding (Black Chromate) BX-125 (Australia, Others & Japan) & BX-125E	2
L03	0B08583A	Plastic Rivet	3
L04	0E00637A	Washer 3.3x7x0.5	1
L05	0E00818A	M3x8 ⊕ Binding (Black Chromate) BX-125 (Others)	2

7. MOUNTING DIAGRAMS AND PARTS LIST

Notes: 1. Mounting diagram shows a dip side view of the printed circuit board.
2. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.
3. Following transistors are interchangeable with each other.
   a. 2SA733, 2SA608SP, 2SA1048, 2SA1175
   b. 2SC945, 2SC536SP, 2SC2458, 2SC2785
4. Abbreviation for part name:
   TR — Transistor, SiD — Silicon Diode, ZD — Zener Diode
   RK — Carbon Resistor, RM — Metal Film Resistor, RF — Fail Safe Type Resistor
   CE — Electrolytic Capacitor, CM — Mylar Capacitor, CC — Ceramic Capacitor, CP — PP Capacitor,
   CT — Tantalum Capacitor, CF — Film Capacitor, C — Mica Capacitor

7.1. Power Switch P.C.B. Ass'y

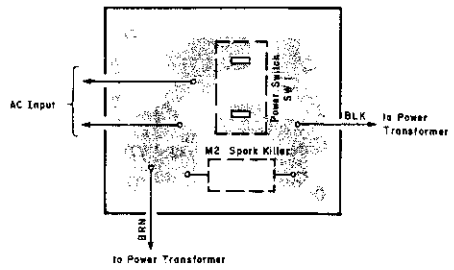


Fig. 7.1

7.2. LED P.C.B. Ass'y

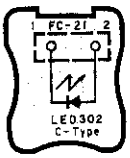


Fig. 7.2

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

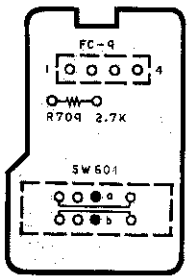


Fig. 7.3

7.4. Shut-off P.C.B. Ass'y

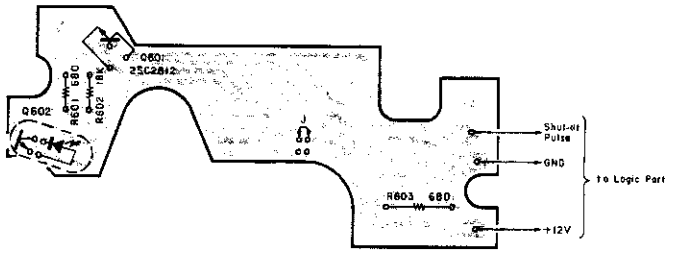


Fig. 7.4

Schematic Ref. No.	Part No.	Description
	BA05626A	Set P.C.B. Ass'y BX-125
	BA05627A	Main P.C.B. Ass'y BX-125
	BA05630A	LED P.C.B. Ass'y
	BA05635A	Dolby NR Switch P.C.B. Ass'y
	BA05637A	Tape Switch P.C.B. Ass'y
	BA05638A	Indicator P.C.B. Ass'y
	BA05639A	Volume P.C.B. Ass'y
	BA05640A	Control Switch P.C.B. Ass'y
	BA05641A	Timer Switch P.C.B. Ass'y
	BA05626A-E	Set P.C.B. Ass'y BX-125E
	BA05627A-E	Main P.C.B. Ass'y BX-125E
	BA05630A	LED P.C.B. Ass'y
	BA05635A	Dolby NR Switch P.C.B. Ass'y
	BA05637A	Tape Switch P.C.B. Ass'y
	BA05638A	Indicator P.C.B. Ass'y
	BA05639A	Volume P.C.B. Ass'y
	BA05640A	Control Switch P.C.B. Ass'y
	BA05641A	Timer Switch P.C.B. Ass'y

Schematic Ref. No.	Part No.	Description
	BA05230A	Power Switch P.C.B. Ass'y BX-125 (U.S.A. & Canada)
	BA05231A	Power Switch P.C.B. Ass'y BX-125 (Japan)
	BA05229A	Power Switch P.C.B. Ass'y BX-125 (Australia & Others) & BX-125E
	0B02573D	Power Switch P.C.B.
SW1	0B70002A	Power Switch
M2	0B08342A	Spark Killer BX-125 (U.S.A. & Canada)
M2	0B08363A	Spark Killer BX-125 (Japan)
M2	0B08445A	Spark Killer BX-125 (Australia & Others) & BX-125E
	0B90059A	Spark Killer Cover BX-125 (Australia & Others) & BX-125E (1)
	0J04763A	Power Switch Holder (1)
	0E00612A	M3x6 ⊕Pan (2A) (2)
	0E00752A	Eyelet 2x3 (2)
	BA05630A	LED P.C.B. Ass'y
	0B60183A	LED P.C.B.
LED302	0B06333A	LED Red TLR124A
	0B81065A	Wire Mate 2P (1)
	0B82116B	Ribbon Cable 2P (1)

Schematic Ref. No.	Part No.	Description
	BA05641A	Timer Switch P.C.B. Ass'y
	0B60189A	Timer Switch P.C.B.
R709	0B09687A	RK 2.7K 1/6W J
SW601	0B07437A	Slide Switch 2-3
FC9	0B81011A	Dip Mate 4P (1)
	CA80011A	Shut-off P.C.B. Ass'y
	0C80047A	Shut-off P.C.B.
Q601	0B06388A	TR 2SC2812
Q602	0B06389A	Photo Reflector NJL5141
R601,603	0B09840A	RK 680 Leadless
R602	0B09841A	RK 18K Leadless

7.5. Dolby NR Switch P.C.B. Ass'y

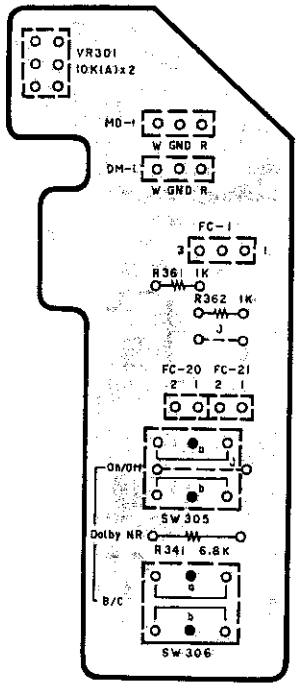


Fig. 7.5

7.6. Volume P.C.B. Ass'y

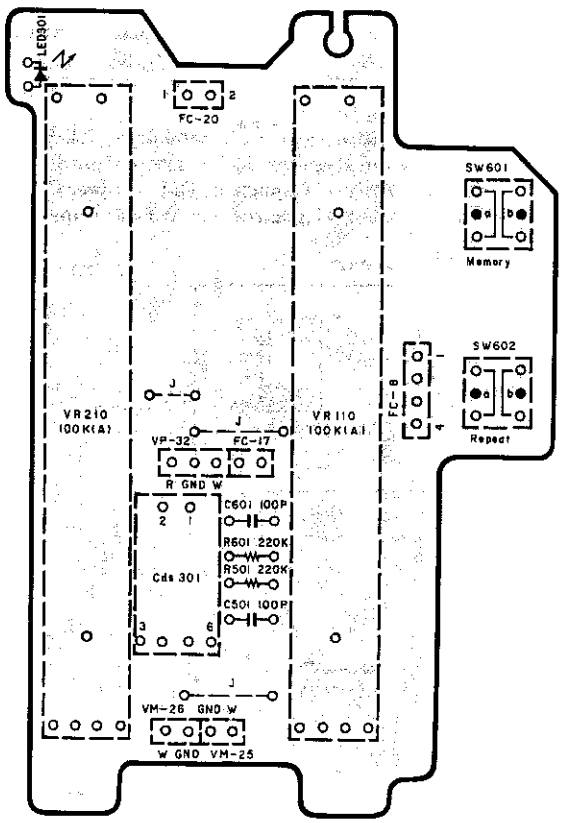


Fig. 7.6

7.7. Control Switch P.C.B. Ass'y

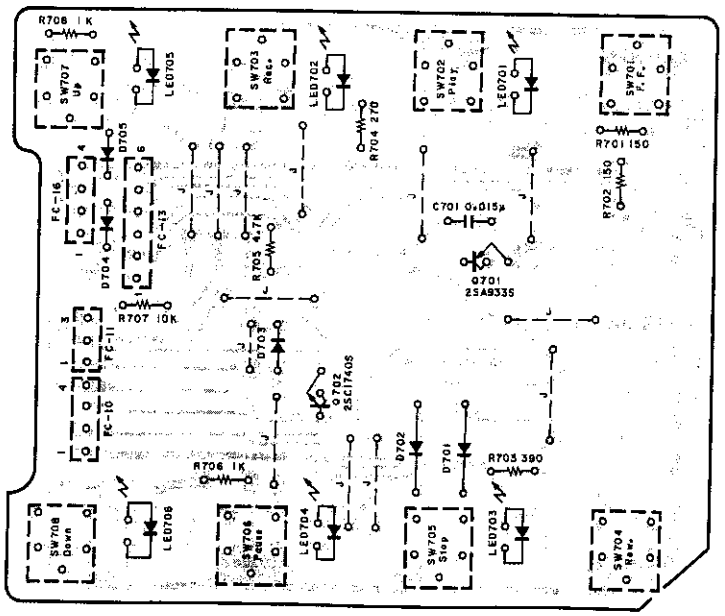


Fig. 7.7

Schematic Ref. No.	Part No.	Description
	BA05635A	**Dolby NR Switch P.C.B. Ass'y**
	0B60187A	Dolby NR Switch P.C.B.
VR301	0B30036A	VR 10K (A)x2
R341	0B01682A	RK 6.8K 1/4W J
R361,362	0B09677A	RK 1K 1/6W J
SW305/306	0B70027A	Push Switch 2-Key
FC1,MD1 DM1	0B81010A	Dip Mate 3P (3)
FC20/21	0B02349A	JP Connector 4P (1)
	BA05639A	**Volume P.C.B. Ass'y**
	0B60186A	Volume P.C.B.
LED301	0B06333A	LED Red TLR124A
Cds301	0B06325B	Photocoupler MCD7214F
VR110,210	0B31002A	Slide VR 100K (A)
R501,601	0B09733A	RK 220K 1/6W J
C501,601	0B09282A	CC 100P 50V K
SW601,602	0B07462A	Push Switch
FC8 VM25/26	0B81011A	Dip Mate 4P (2)
FC17/VP32	0B81012A	Dip Mate 5P (1)
FC20	0B81002A	Dip Mate 2P (1)
	BA05640A	**Control Switch P.C.B. Ass'y**
	0B60188A	Control Switch P.C.B.
Q701	0B10026A	TR 2SA933S (Q,R,S)
Q702	0B10039A	TR 2SC1740S (S,E)
LED701 703,704	0B06334A	LED Green TLG124A
LED702 705,706	0B06333A	LED Red TLR124A
D701,702	0B06181A	SiD 1SS53
D703,704 705	0B06398A	SiD 1SS176
R701,702	0B09657A	RK 150 1/6W J
R703	0B09667A	RK 390 1/6W J
R704	0B09663A	RK 270 1/6W J
R705	0B09693A	RK 4.7K 1/6W J
R706,708	0B09677A	RK 1K 1/6W J
R707	0B09701A	RK 10K 1/6W J
C701	0B05557A	CM 0.015μ 50V J
SW701-708	0B70004A	Touch Switch 4.3mm
	0J04744A	LED Reflector (6)
	BA05637A	**Tape Switch P.C.B. Ass'y**
	0B60184A	Tape Switch P.C.B.
Q304	0B06069A	TR 2SB564 (L,M)
VR105,107 205,207	0B32010A	Semi-fixed VR 47K
VR106,206	0B32009A	Semi-fixed VR 22K
R138,238	0B09653A	RK 100 1/6W J
R139,239 351,352 353	0B09695A	RK 5.6K 1/6W J
R140,240	0B09707A	RK 18K 1/6W J
R197,297	0B09705A	RK 15K 1/6W J
R317	0B09263A	RK 12K 1/4W J
R318	0B09831A	RF 22 1W J
R350	0B09837A	RF 10 1W J
C118,218	0B09283A	CC 220P 50V K
C306	0B09828A	CP 8200P 100V J
C308	0B01403A	CE 47μ 16V
C327	0B41229A	CP 1500P 100V J
C330,331 332	0B05796A	CM 0.047μ 50V J
C333,334	0B09187A	CE 1μ 16V (BP)
CN2	0B81051A	2P-S Post (1)
FC2	0B81011A	Dip Mate 4P (2)
SM27/28 FC5	0B81012A	Dip Mate 5P (1)
SM29	0B81010A	Dip Mate 3P (1)
	0B06688C	Bias Osc. Unit (1)
	0B70005A	Push Switch 5-Key (1)
	0J04768B	Earth Plate A (1)

Schematic Ref. No.	Part No.	Description
	BA05638A	**Indicator P.C.B Ass'y**
	0B60185A	Indicator P.C.B.
IC301	0B06369A	IC TA7612AP
IC701	0B11031A	IC TL092
Q704	0B06013A	TR 2SA733 (P,Q)
ZD701,702	0B06191A	ZD 2.7V RD2.7E
D301,302	0B06181A	SiD 1SS53
D703-706	0B06398A	SiD 1SS176 (4)
R301	0B01888A	RK 10K 1/4W J
R302	0B01887A	RK 5.6K 1/4W J
R303	0B01857A	RK 1K 1/4W J
R304	0B09797A	RK 120 1/4W J
R305-314	0B09681A	RK 1.5K 1/6W J (10)
R701	0B09677A	RK 1K 1/6W J
R702,703 704,709 711,715	0B09725A	RK 100K 1/6W J
R705	0B09709A	RK 22K 1/6W J
R706	0B09685A	RK 2.2K 1/6W J
R707	0B09701A	RK 10K 1/6W J
R712	0B09749A	RK 1M 1/6W J
R713,714	0B09737A	RK 330K 1/6W J
R716	0B09717A	RK 47K 1/6W J
R717	0B09713A	RK 33K 1/6W J
C301	0B09281A	CC 150P 50V K
C701	0B09868A	CF 0.1μ 50V J
C702	0B09163A	CE 10μ 16V (BP)
FC3/12	0B81012A	Dip Mate 5P (1)
FC6/17,16	0B81011A	Dip Mate 4P (2)
FC18/19	0B02356A	JP Connector 12P (1)

7.8. Tape Switch P.C.B. Ass'y

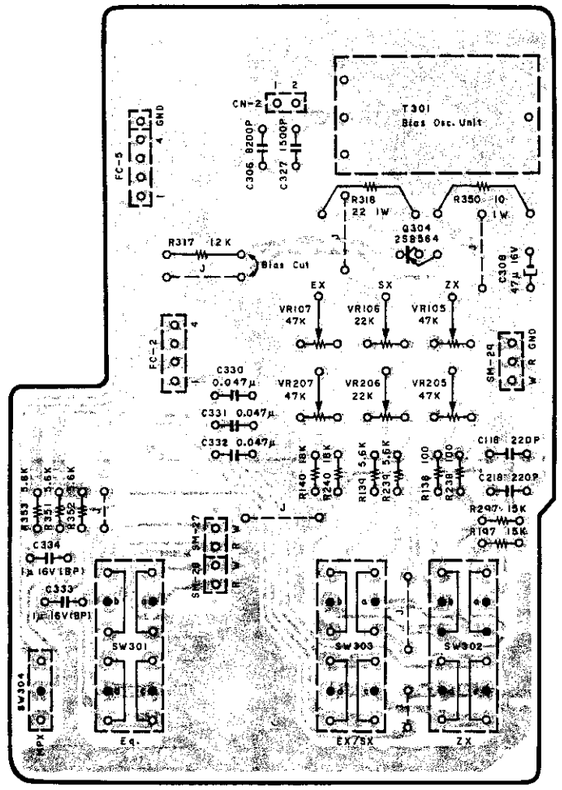


Fig. 7.8

7.9. Indicator P.C.B. Ass'y

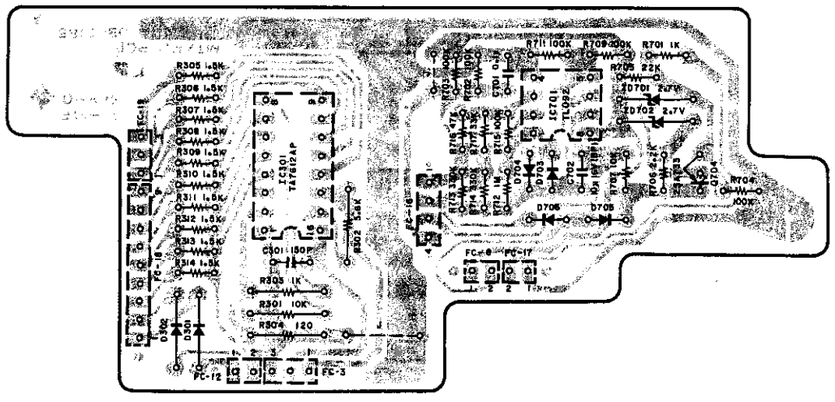


Fig. 7.9

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

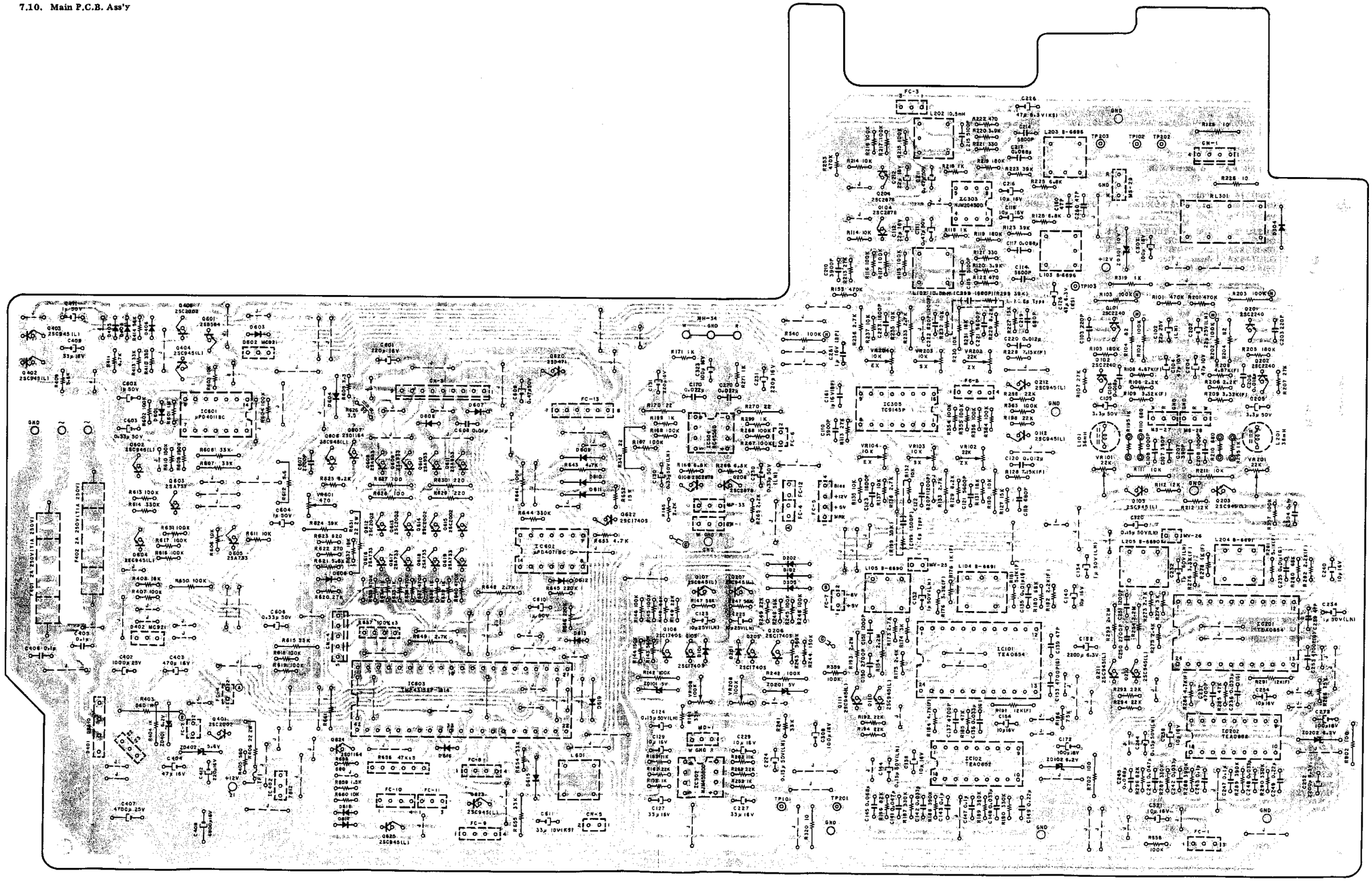


Fig. 7.10

Schematic Ref. No.	Part No.	Description
	BA05627A	Main P.C.B. Ass'y
	— PB Eq. Amp. —	
Q101,102	0B06142A	TR 2SC2240 (BL)
201,202		
Q103,203	0B01872A	TR 2SC945L (P,Q)
ZD301	0B12168A	ZD 10V RD10TS-T1B2
D304	0B01909A	SiD 1S1555
L101,201	0B03919C	Inductor 36mH
VR101,201	0B32009A	Semi-fixed VR 22K
R101,201	0B09741A	RK 470K 1/6W J
R102,103	0B09330A	RK 100K 1/4W J (Noiseless)
202,203		
R104,204	0B05631A	RK 82 1/4W J
R105,205	0B09731A	RK 180K 1/6W J
R106,206	0B09685A	RK 2.2K 1/6W J
R107,207	0B09711A	RK 27K 1/6W J
R108,208	0B22307A	RM 4.87K 1/6W F
R109,209	0B22287A	RM 3.32K 1/6W F
R110,210	0B09673A	RK 680 1/6W J
R111,211	0B01888A	RK 10K 1/4W J
R112,212	0B09703A	RK 12K 1/6W J
R195,295	0B09677A	RK 1K 1/6W J
R319	0B01857A	RK 1K 1/4W J
R357	0B09725A	RK 100K 1/6W J
C102,202	0B09137A	CE 22μ 25V (LN)
C103,203	0B09283A	CC 220P 50V K
C104,204	0B01403A	CE 47μ 16V
C105,205	0B01863A	CE 3.3μ 50V
C106,206	0B05832A	CM 0.018μ 50V J
C107,207	0B41002A	CP 390P 100V J
C108,208	0B05550A	CM 1000P 50V J
C304	0B09868A	CF 0.1μ 50V J
C307	0B01400A	CE 100μ 16V
RL301	0B90011A	DS Relay
CN1	0B02242A	4P-T Post
	— Rec. Eq. Amp. —	
IC303	0B06387A	IC NJM2043DD
Q104,204	0B06299A	TR 2SC2878
L102,202	0B00068A	Trap Coil 10.5mH
L103,203	0B06696A	L-C Block
R113,213	0B09711A	RK 27K 1/6W J
R114,214	0B09701A	RK 10K 1/6W J
R115,116	0B09725A	RK 100K 1/6W J
117,215		
216,217		
R118,218	0B09677A	RK 1K 1/6W J
R119,219	0B09731A	RK 180K 1/6W J
R120,220	0B09691A	RK 3.9K 1/6W J
R121,221	0B09665A	RK 330 1/6W J
R122,222	0B09669A	RK 470 1/6W J
R123,223	0B09715A	RK 39K 1/6W J
R125,225	0B09697A	RK 6.8K 1/6W J
R126,226	0B05936A	RK 10 1/4W J
R153,253	0B09741A	RK 470K 1/6W J
C110,210	0B01804A	CM 3900P 50V J
C111,211	0B40178A	CE 0.47μ 50V
C112,212	0B01862A	CE 22μ 16V
C114,214	0B05659A	CM 5600P 50V J
C115,215	0B41186A	CM 5100P 50V J
C116,216	0B01412A	CE 10μ 16V
C117,217	0B09866A	CF 0.068μ 50V J
C126,226	0B09815A	CE 47μ 6.3V (KS)
C160,260	0B09280A	CC 47P 50V J
C161,261	0B09187A	CE 1μ 16V (BP)
	— Rec. Level —	
IC305	0B11027A	IC TC9145P
Q112,212	0B01872A	TR 2SC945L (P,Q)
VR102,202	0B32009A	Semi-fixed VR 22K
VR103,104	0B32008A	Semi-fixed VR 10K
203,204		
R127,227	0B09705A	RK 15K 1/6W J
R128,228	0B22327A	RM 7.15K 1/6W F
R129,229	0B09699A	RK 8.2K 1/6W J
R130,230	0B01888A	RK 10K 1/4W J
R131,231	0B09707A	RK 18K 1/6W J
R132,135	0B09701A	RK 10K 1/6W J
137,232		
235,237		
R133,136	0B05629A	RK 2.7K 1/4W J
233,236		
R134,234	0B09677A	RK 1K 1/6W J
R198,298	0B09709A	RK 22K 1/6W J

Schematic Ref. No.	Part No.	Description
R354,355	0B09725A	RK 100K 1/6W J
356,363		
364		
C119,219	0B05571A	CM 680P 50V J
C120,220	0B05843A	CM 0.012μ 50V J
C121,221	0B05659A	CM 5600P 50V J
C122,222	0B09993A	CM 820P 50V J
C123,223	0B01913A	CM 1800P 50V J
	— Dolby NR —	
IC101,201	0B06383A	IC TEA0654
IC102,202	0B06382A	IC TEA0652
Q110,111	0B10025A	TR 2SC945L (P,K)
210,211		
ZD102,202	0B06167A	ZD 6.2V RD6.2EB3
L104,204	0B06691A	L-C Block Yellow
L105,205	0B06690A	L-C Block Blue
R154,193	0B05671A	RK 2.2M 1/4W J
254,293		
R173,273	0B09687A	RK 2.7K 1/6W J
R174,274	0B09688A	RK 3K 1/6W J
R175,275	0B09686A	RK 2.4K 1/6W J
R176,276	0B22286A	RM 3.3K 1/6W F
R178,278	0B22229A	RM 1K 1/6W F
R180,280	0B09721A	RK 68K 1/6W J
R181,281	0B22309A	RM 5.1K 1/6W F
R182,282	0B22265A	RM 2.2K 1/6W F
R184,284	0B22305A	RM 4.7K 1/6W F
R185,285	0B09717A	RK 47K 1/6W J
R186,286	0B09722A	RK 75K 1/6W J
R187,190	0B09737A	RK 330K 1/6W J
287,290		
R188,189	0B09739A	RK 390K 1/6W J
288,289		
R191,291	0B09796A	RM 12K 1/4W F
R192,194	0B09709A	RK 22K 1/6W J
292,294		
R196,296	0B09723A	RK 82K 1/6W J
R340	0B09330A	RK 100K 1/4W J (Noiseless)
R358,359	0B09725A	RK 100K 1/6W J
R702,802	0B01679A	RK 100 1/4W J
C132,134	0B09494A	CE 1μ 50V (LN)
232,234		
C135,235	0B09312A	CP 0.01μ 100V G
C136,236	0B09240A	CP 0.033μ 100V G
C137,237	0B05652A	CM 4700P 50V J
C138,140	0B01412A	CE 10μ 16V
154,238		
240,254		
321		
C139,239	0B09280A	CC 47P 50V J
C141,241	0B09864A	CF 0.047μ 50V J
C142,148	0B09862A	CF 0.033μ 50V J
242,248		
C143,147	0B09868A	CF 0.1μ 50V J
243,247		
C144,244	0B09570A	CE 0.15μ 50V (LN)
320		
C145,245	0B09866A	CF 0.068μ 50V J
C149,249	0B09872A	CF 0.22μ 50V J
C150,250	0B09189A	CM 2700P 50V J
C151,251	0B05687A	CM 1200P 50V J
C152,252	0B40054A	CE 2200μ 6.3V
C153,253	0B09191A	CP 4700P 100V G
C172,272	0B01400A	CE 100μ 16V
	— Line Amp. —	
IC302	0B06146A	IC NJM4558DD
R152,252	0B09677A	RK 1K 1/6W J
R162,262	0B09709A	RK 22K 1/6W J
R163,263	0B09702A	RK 11K 1/6W J
C127,227	0B40076A	CE 33μ 16V
C129,229	0B01412A	CE 10μ 16V
	— Meter Amp. —	
Q105,106	0B10039A	TR 2SC1740S (S,E)
205,206		
Q107,207	0B01872A	TR 2SC945L (P,Q)
ZD101,201	0B12101A	ZD 5V 5C-1
D101,201	0B06398A	SiD 1SS176
D102,202	0B06181A	SiD 1SS53
305		
VR108,208	0B32011A	Semi-fixed VR 100K

Schematic Ref. No.	Part No.	Description
R141,241	0B09713A	RK 33K 1/6W J
R142,242	0B01889A	RK 100K 1/4W J
R143,243	0B09743A	RK 560K 1/6W J
R144,244	0B09729A	RK 150K 1/6W J
R145,146	0B09725A	RK 100K 1/6W J
245,246		
0B09719A	RK 56K 1/6W J	
247,248		
R149,249	0B09709A	RK 22K 1/6W J
R320	0B09216A	RF 10 1/4W J
C124,224	0B09570A	CE 0.15μ 50V (LN)
C125,225	0B09148A	CE 10μ 25V (LN)
C308	0B01400A	CE 100μ16V
	— Headphone Amp. —	
IC304	0B06370A	IC 4556D
Q108,208	0B06299A	TR 2SC2878
R165,265	0B09685A	RK 2.2K 1/6W J
R166,266	0B09697A	RK 6.8K 1/6W J
R167,168	0B09725A	RK 100K 1/6W J
267,268		
R170,270	0B05579A	RK 22 1/4W J
R171,199	0B09677A	RK 1K 1/6W J
271,299		
R342	0B09049A	RF 22 1/4W J
C130,230	0B09327A	CE 0.33μ 50V (LN)
C131,231	0B01398A	CE 220μ 16V
C170,270	0B09291A	CC 0.022μ 50V Z
C323	0B01400A	CE 100μ 16V
	— Logic —	
IC601	0B06178A	IC μPD4011BC
IC602	0B06214A	IC μPD4071BC
IC603	0B11020A	IC TMP4315BP-1814
Q601	0B06069A	TR 2SB564 (L,M)
Q602,604	0B01872A	TR 2SC945L (P,Q)
606,623		
625		
Q603,605	0B06013A	TR 2SA733 (P,Q)
616,617		
618,619		
Q607,624	0B10021A	TR 2SD1164 (K,L)
Q608,609	0B06372A	TR 2SA953 (K,L)
610,611		
Q612,613	0B06322A	TR 2SC2002 (K,L)
614,615		
Q620	0B06066A	TR 2SD471 (L,M)
Q622	0B10034A	TR 2SC1740S (E)
D601,603	0B06398A	SiD 1SS176
606,607		
608,612		
613,616		
617,618		
D602	0B12100A	Double SiD MC921
D604,609	0B06181A	SiD 1SS53
610,611		
615,619		
L601	0B06689A	L-C Block
VR601	0B32007A	Semi-fixed VR 470
R601	0B09749A	RK 1M 1/6W J
R602,604	0B09725A	RK 100K 1/6W J
613,616		
617,618		
619,651		
R603,606	0B09701A	RK 10K 1/6W J
611,660		
R605	0B09617A	RK 3.3 1/6W J
R607,608	0B05509A	RK 33K 1/4W J
615		
R609,610	0B09729A	RK 150K 1/6W J
R612	0B09217A	RF 5.6 1/4W J
R614,644	0B09737A	RK 330K 1/6W J
R620	0B09711A	RK 27K 1/6W J
R621	0B09695A	RK 5.6K 1/6W J
R622	0B09663A	RK 270 1/6W J
R623	0B09672A	RK 620 1/6W J
R624	0B01854A	RK 39K 1/4W J
R625	0B09699A	RK 8.2K 1/6W J
R626	0B06706A	R Coil 3.5
R627,628	0B01679A	RK 100 1/4W J
R629,630	0B01933A	RK 220 1/4W J
R631	0B24007A	RF 22 2W J
R632	0B09707A	RK 18K 1/6W J
R633,636	0B09741A	RK 470K 1/6W J
637,640		

Schematic Ref. No.	Part No.	Description
R634,635	0B09677A	RK 1K 1/6W J
638,639		
R641,650	0B01889A	RK 100K 1/4W J
R643	0B01846A	RK 4.7K 1/4W J
R645,646	0B09733A	RK 220K 1/6W J
R648,649	0B05629A	RK 2.7K 1/4W J
R652	0B09705A	RK 15K 1/6W J
R653	0B09693A	RK 4.7K 1/6W J
R654,655	0B09713A	RK 33K 1/6W J
R656	0B09803A	R-Network 47Kx5
R657	0B09824A	R-Network 100Kx3
R658	0B09673A	RK 680 1/6W J
R659	0B09681A	RK 1.5K 1/6W J
R661	0B24023A	R Fuse 1
C601	0B01398A	CE 220μ 16V
C602,604	0B01405A	CE 1μ 50V
610		
C603,606	0B40024A	CE 0.33μ 50V
C607	0B01802A	CM 2200P 50V J
C608	0B09290A	CC 0.01μ 50V Z
C609	0B40178A	CE 0.47μ 50V
C611	0B09817A	CE 33μ 10V (KS)
CN3	0B02245A	9P-T Post
CN4	0B02243A	5P-T Post
CN5	0B81118A	2P-T Post
	— DC Supply —	
IC402	0B06380A	IC NJM7812
Q401,405	0B06322A	TR 2SC2002 (K,L)
Q402,403	0B01872A	TR 2SC945L (P,Q)
404		
ZD401	0B06167A	ZD 6.2V RD6.2EB3
ZD402	0B06290A	ZD 5.6V RD5.6EB2
D401	0B06282A	Diode Bridge DBA10
D402	0B12100A	Double SiD MC921
D403,404	0B06398A	SiD 1SS176
406		
R403	0B24006A	RF 560 1W J
R404	0B01857A	RK 1K 1/4W J
R405	0B09671A	RK 560 1/6W J
R406	0B24007A	RF 22 2W J
R407	0B09725A	RK 100K 1/6W J
R408	0B09707A	RK 18K 1/6W J
R409	0B09695A	RK 5.6K 1/6W J
R410	0B09665A	RK 330 1/6W J
R411	0B09693A	RK 4.7K 1/6W J
R413	0B09713A	RK 33K 1/6W J
R414	0B09719A	RK 56K 1/6W J
C402	0B40095A	CE 1000μ 25V
C403	0B01392A	CE 470μ 16V
C404	0B01403A	CE 47μ 16V
C405,406	0B09292A	CC 0.1μ 50V Z
C407	0B09799A	CE 4700μ 25V
C408	0B09798A	CE 6800μ 16V
C409	0B40076A	CE 33μ 16V
C411	0B01405A	CE 1μ 50V
C412	0B01398A	CE 220μ 16V
TF1	0B08715A	Thermal Fuse 129
	0B08676B	Heat Sink (1)
	0E00507A	Nut Hex. M3 (1)
	0E00612A	M3x6 ⊕ Pan (2A) (1)
	0E00857A	BT 3x6 ⊕ Binding (2)
	— Miscellaneous —	
	0B60182A	Main P.C.B.
	0B81002A	Dip Mate 2P (7)
	0B81010A	Dip Mate 3P (6)
	0B81011A	Dip Mate 4P (5)
	0B81013A	Dip Mate 6P (2)
	0B81014A	Dip Mate 7P (1)

Schematic Ref. No.	Part No.	Description
	BA05627A-E	Main P.C.B. Ass'y BX-125E
		Contents of the list is the same as for BX-125 except the following section.
	— Rec. Level —	
IC305	0B11027A	IC TC9145P
Q112,212	0B01872A	TR 2SC945L (P,Q)
VR102,202	0B32009A	Semi-fixed VR 22K
VR103,104	0B32008A	Semi-fixed VR 10K
203,204		
R127,227	0B09705A	RK 15K 1/6W J
R128,228	0B22327A	RM 7.15K 1/6W F
R129,229	0B09699A	RK 8.2K 1/6W J
R130,230	0B01888A	RK 10K 1/4W J
R131,231	0B09707A	RK 18K 1/6W J
R132,135	0B09701A	RK 10K 1/6W J
137,232		
235,237		
R133,136	0B05629A	RK 2.7K 1/4W J
233,236		
R198,298	0B09709A	RK 22K 1/6W J
R199,299	0B09715A	RK 39K 1/6W J
R354,355	0B09725A	RK 100K 1/6W J
356,363		
364		
C119,219	0B05571A	CM 680P 50V J
C120,220	0B05843A	CM 0.012μ 50V J
C121,221	0B05659A	CM 5600P 50V J
C122,222	0B05687A	CM 1200P 50V J
C123,223	0B01913A	CM 1800P 50V J
C199,299	0B05653A	CM 1500P 50V J

8. SCHEMATIC DIAGRAM

8.1. IC Block Diagrams

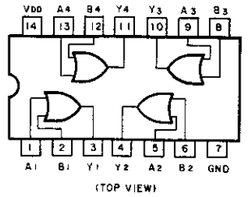


Fig. 8.1.1 OR Gate C-MOS IC μPD4071BC

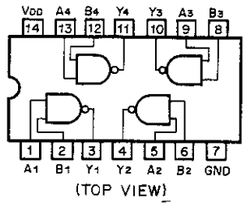


Fig. 8.1.2 NAND Gate C-MOS IC μPD4011BC

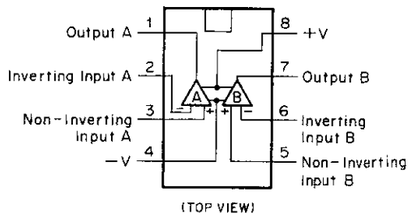


Fig. 8.1.3 Operational Amp. IC 4556D, NJM4558DD, NJM2043DD, TL092

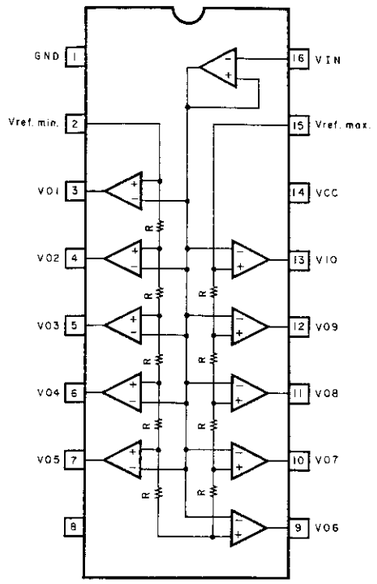


Fig. 8.1.4 Level Meter Driver TA7612AP

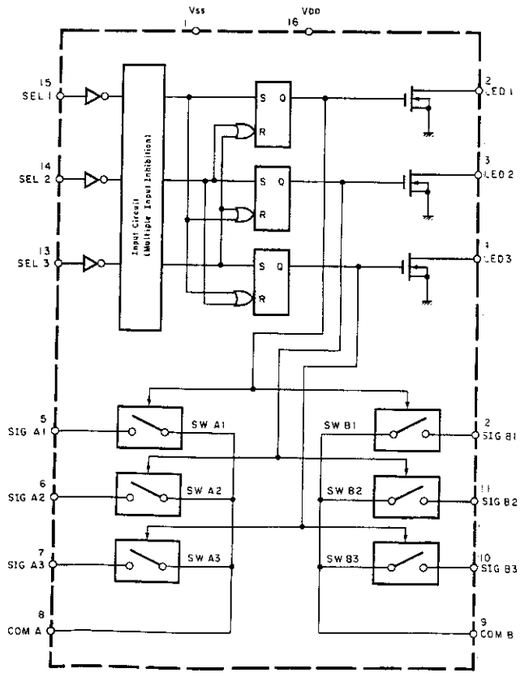
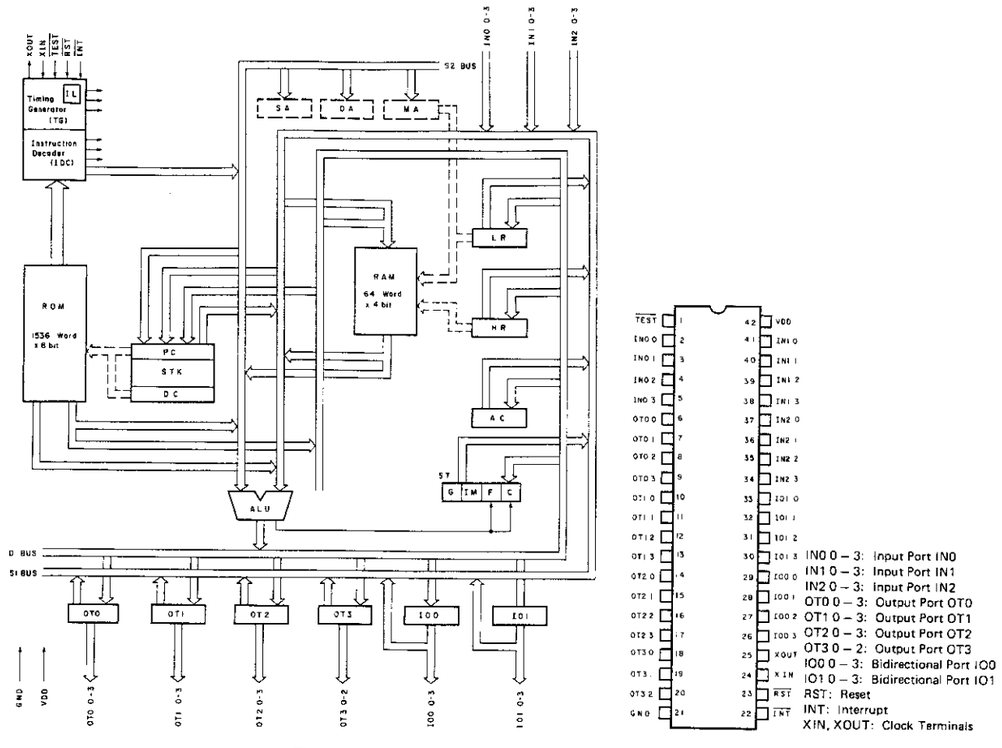


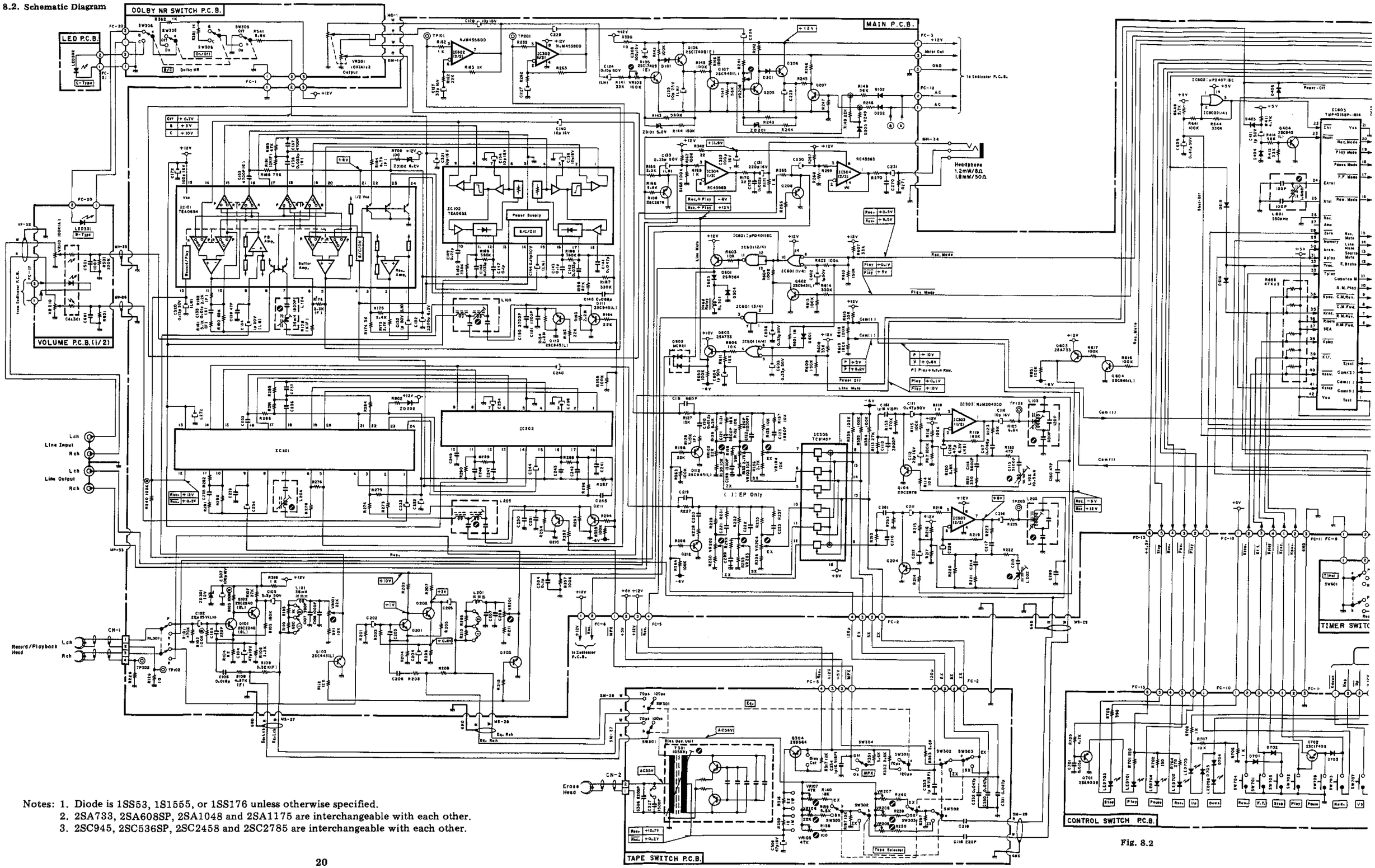
Fig. 8.1.5 Analog Switch Selector TC9145P



IN0 0 – 3: Input Port IN0
IN1 0 – 3: Input Port IN1
IN2 0 – 3: Input Port IN2
OT0 0 – 3: Output Port OT0
OT1 0 – 3: Output Port OT1
OT2 0 – 3: Output Port OT2
OT3 0 – 2: Output Port OT3
IO0 0 – 3: Bidirectional Port IO0
IO1 0 – 3: Bidirectional Port IO1
RST: Reset
INT: Interrupt
XIN, XOUT: Clock Terminals

Fig. 8.1.6 4-Bit Micro-processor TMP4315BP-1814

8.2. Schematic Diagram



Notes: 1. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.
2. 2SA733, 2SA608SP, 2SA1048 and 2SA1175 are interchangeable with each other.
3. 2SC945, 2SC536SP, 2SC2458 and 2SC2785 are interchangeable with each other.

Fig. 8.2

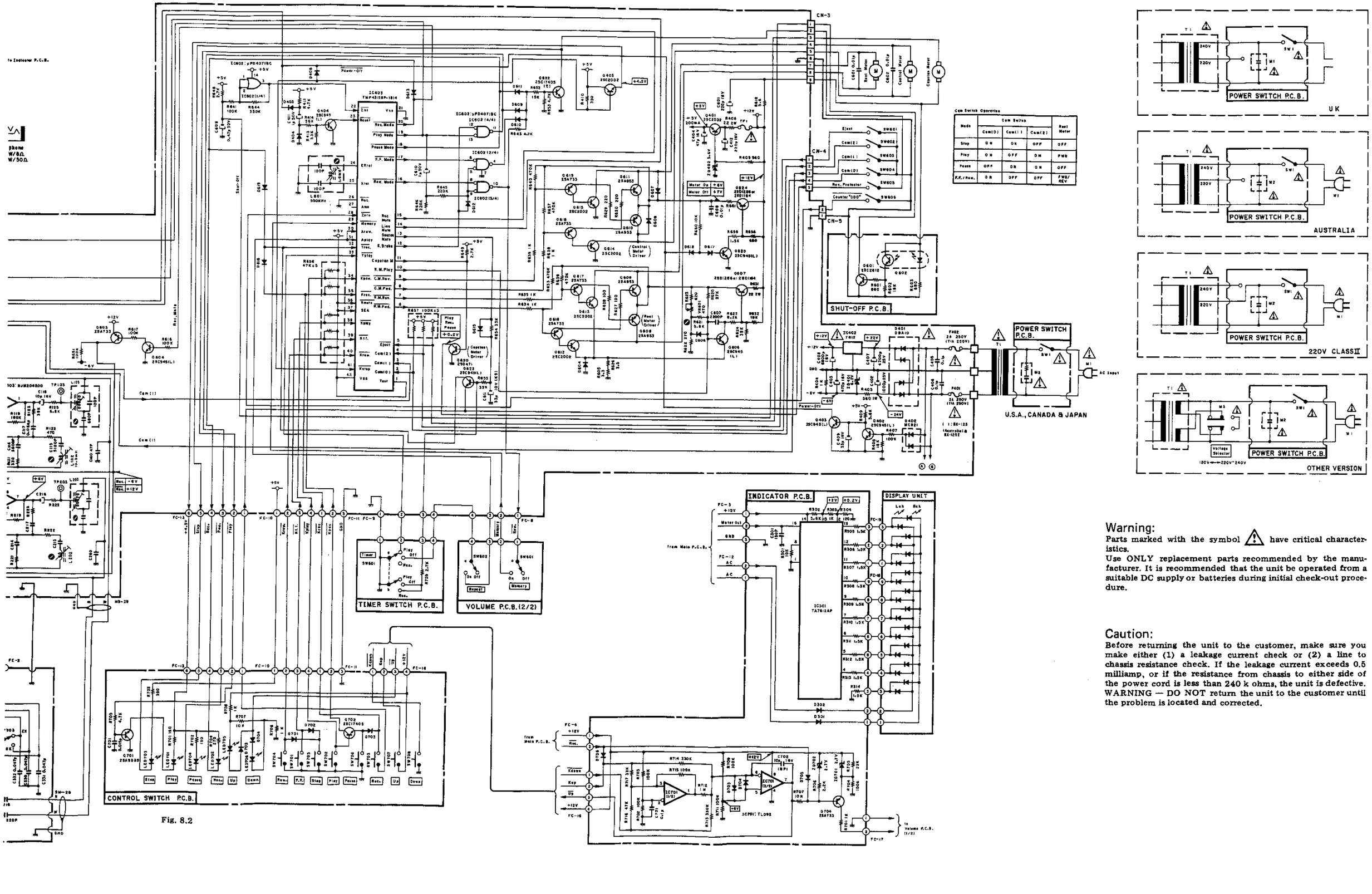


Fig. 8.2

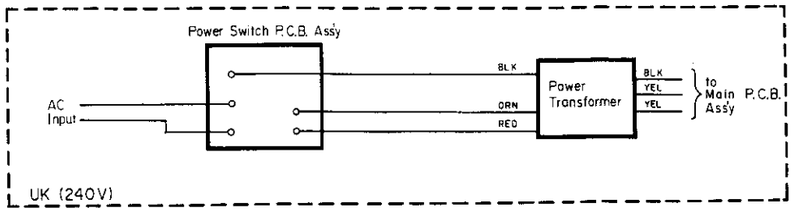
Warning:

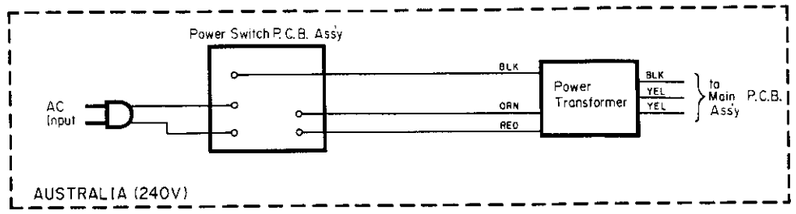
Parts marked with the symbol ⚠ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer. It is recommended that the unit be operated from a suitable DC supply or batteries during initial check-out procedure.

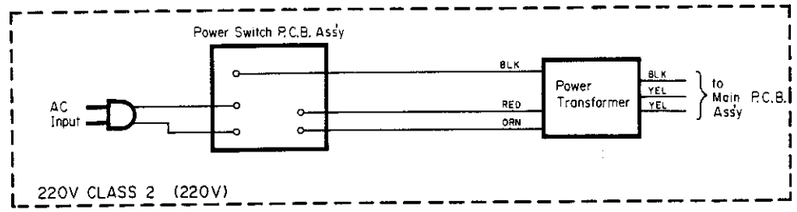
Caution:

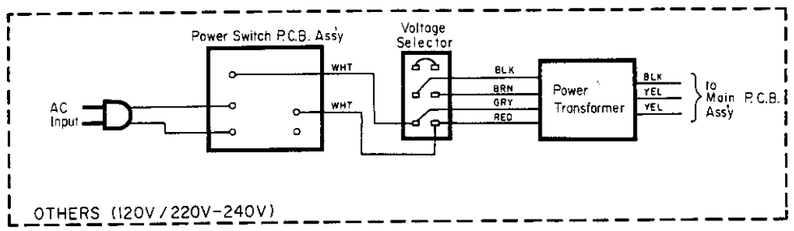
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamp, or if the resistance from chassis to either side of the power cord is less than 240 k ohms, the unit is defective. WARNING — DO NOT return the unit to the customer until the problem is located and corrected.

9. WIRING DIAGRAM









Notes: 1 Table of wire colors

BRN — Brown	BLU — Blue
RED — Red	VIO — Violet
ORN — Orange	GRY — Gray
YEL — Yellow	WHT — White
GRN — Green	BLK — Black

2. Component side view of the P.C.B. is illustrated unless otherwise specified.
3. Wire tube color is shown in ( ).

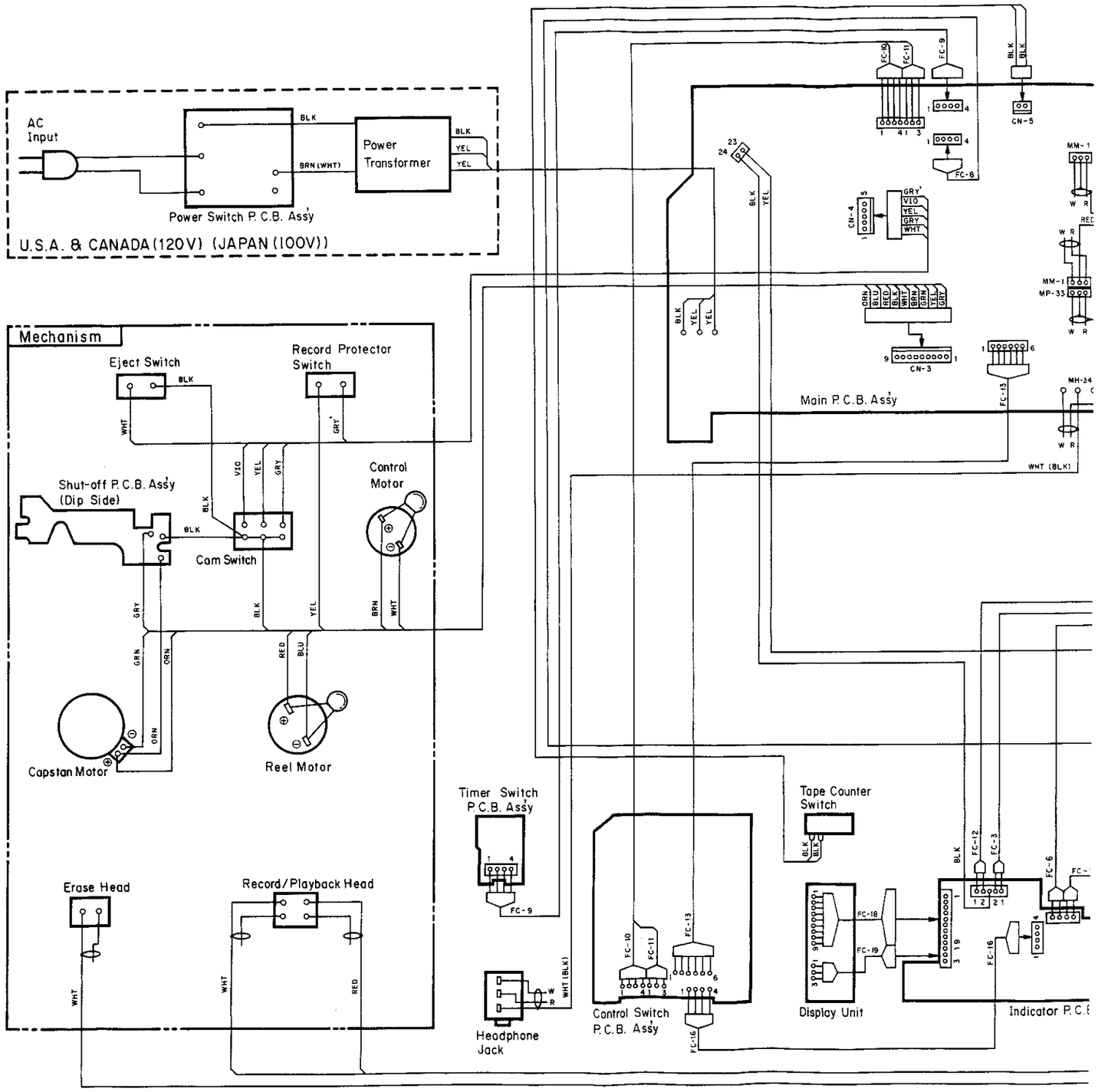


Fig. 9

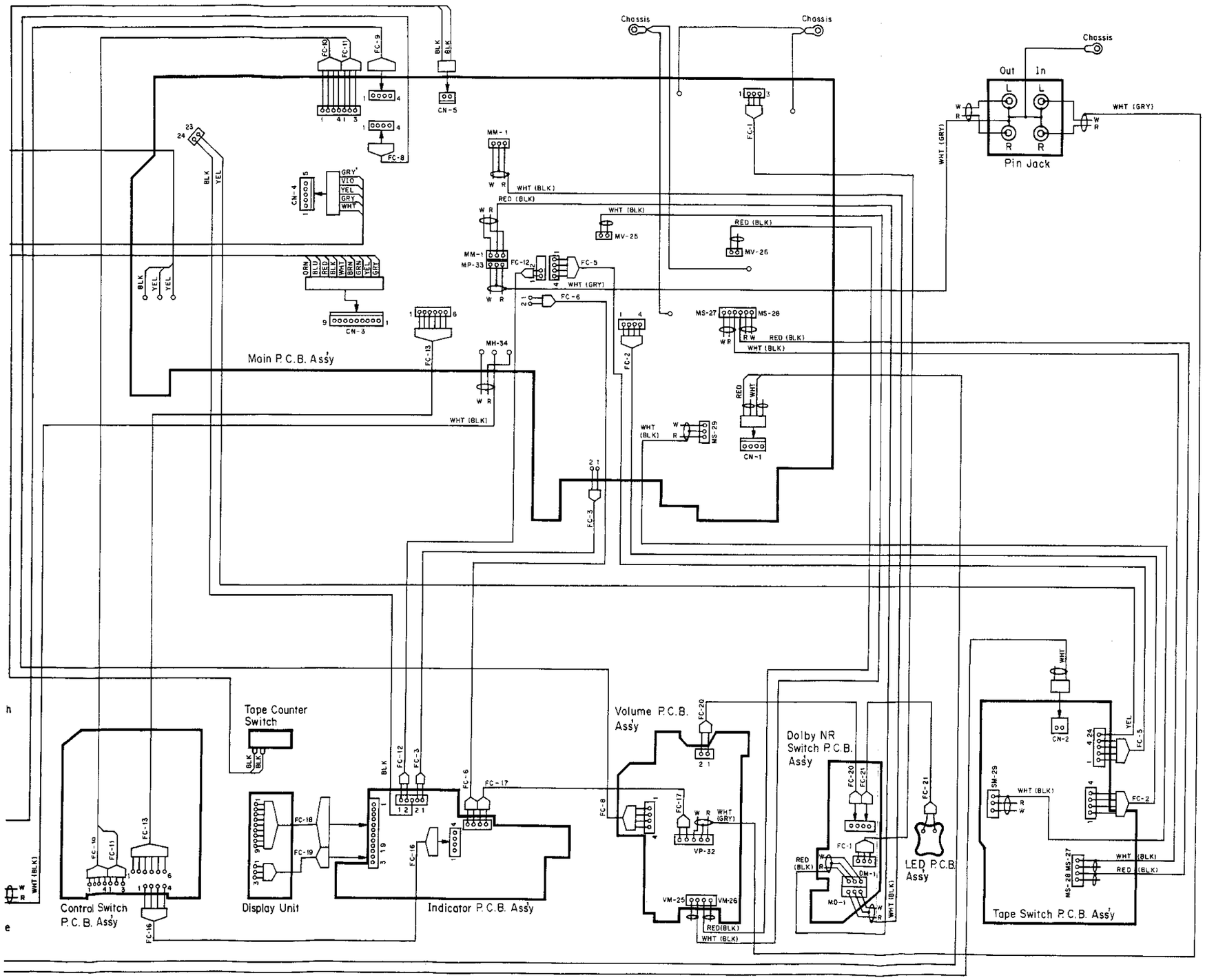

Chassis
Chassis
Chassis
Out
In
Pin Jack
WHT (GRY)
Main P.C.B. Assy
Tape Counter Switch
Control Switch P.C.B. Assy
Display Unit
Indicator P.C.B. Assy
Volume P.C.B. Assy
Dolby NR Switch P.C.B. Assy
LED P.C.B. Assy
Tape Switch P.C.B. Assy
WHT (BLK)
RED (BLK)
WHT (GRY)

Fig. 9

10. BLOCK DIAGRAMS

10.1. Amplifier Section

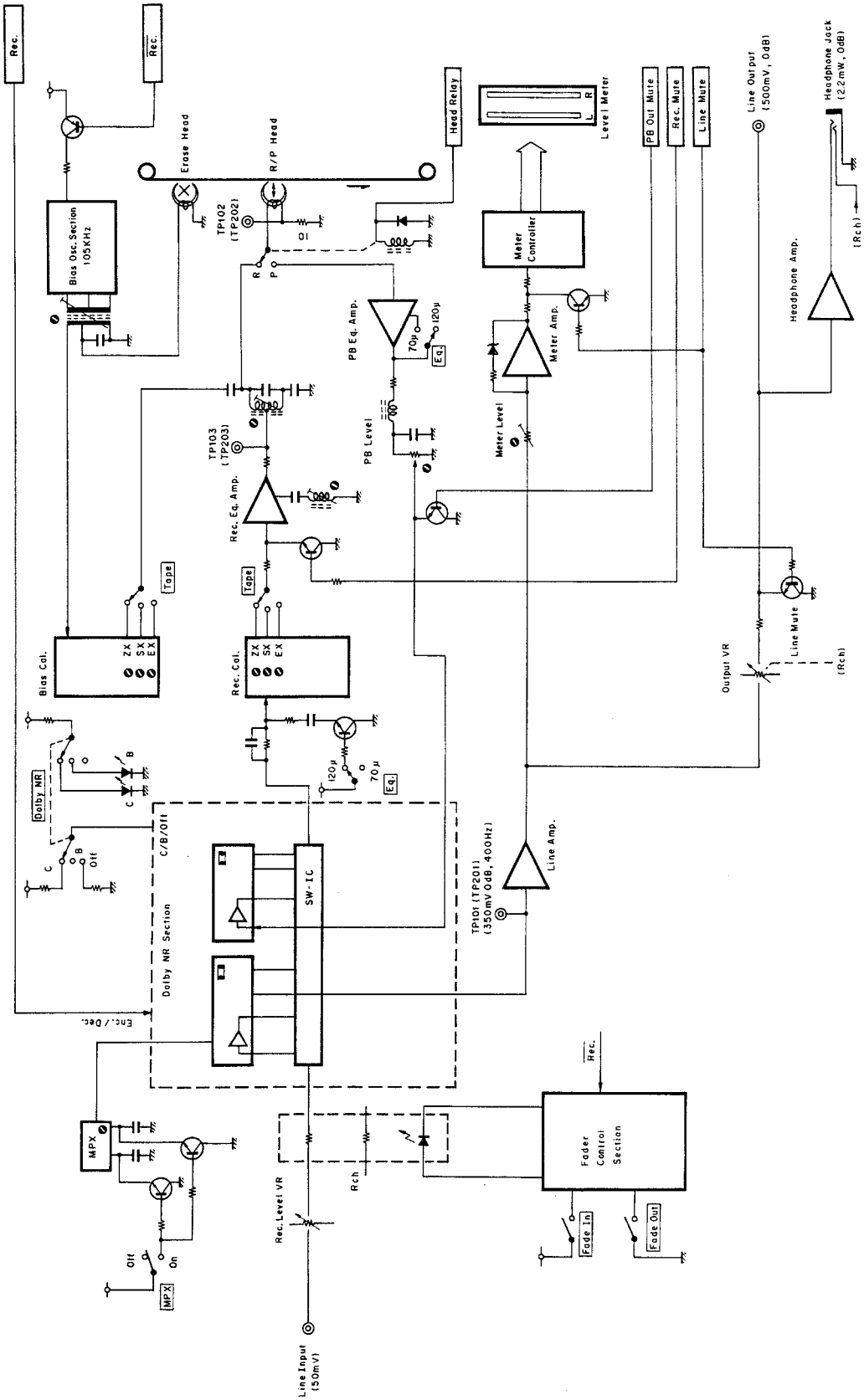


Fig. 10.1

10.2. Mechanism Control Section

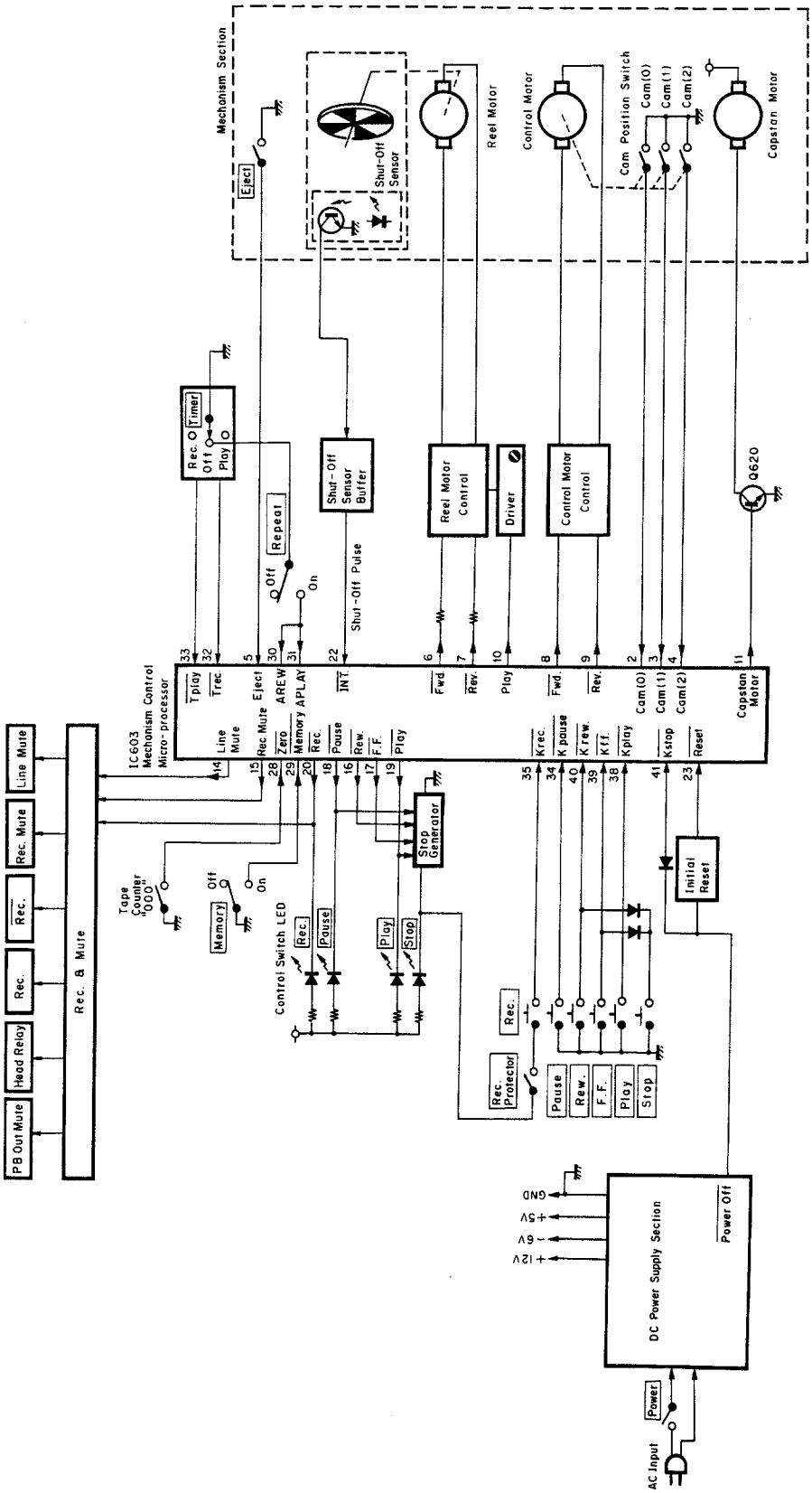


Fig. 10.2

11. TIMING CHART AND EQ. AMP. FREQUENCY RESPONSE

11.1. Timing Chart
(1) Overall Timing Chart

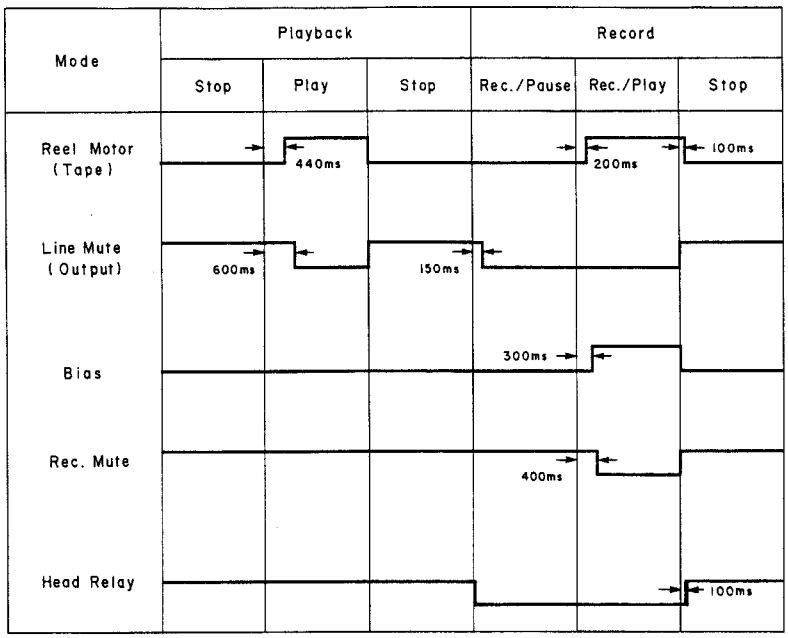


Fig. 11.1.1

(2) Mechanism Control Timing Chart

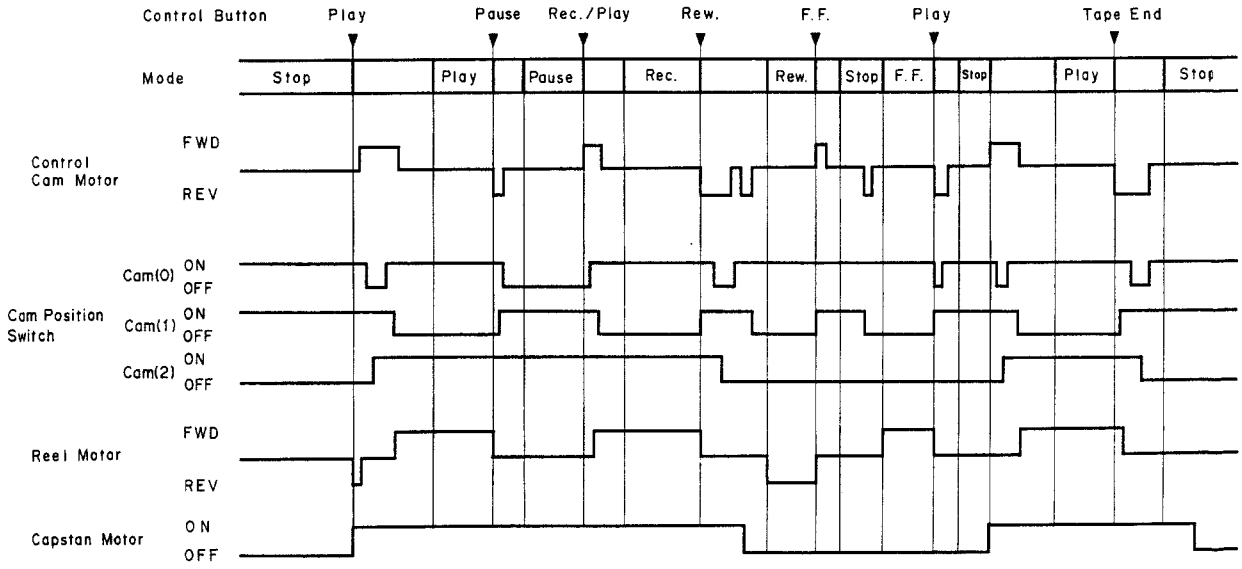


Fig. 11.1.2

11.2. Eq. Amp. Frequency Response
(1) Playback Frequency Response

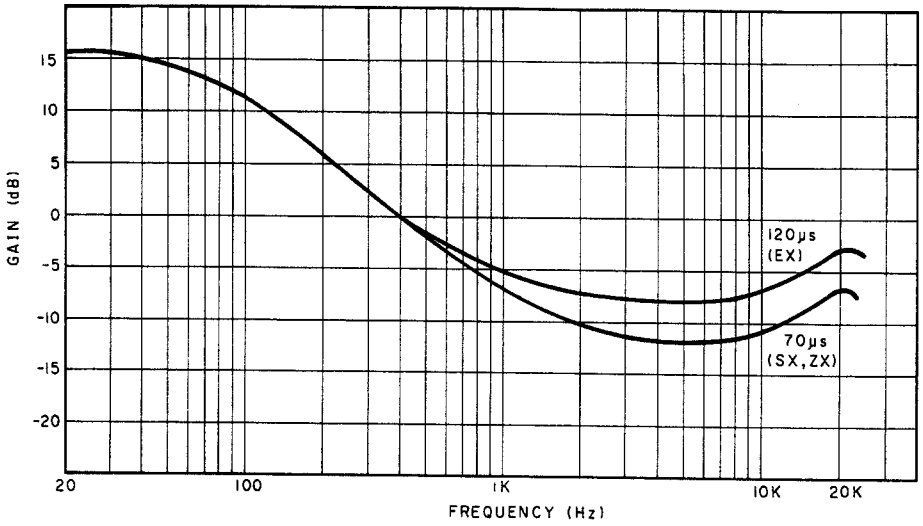


Fig. 11.2.1

(2) Record Current Frequency Response

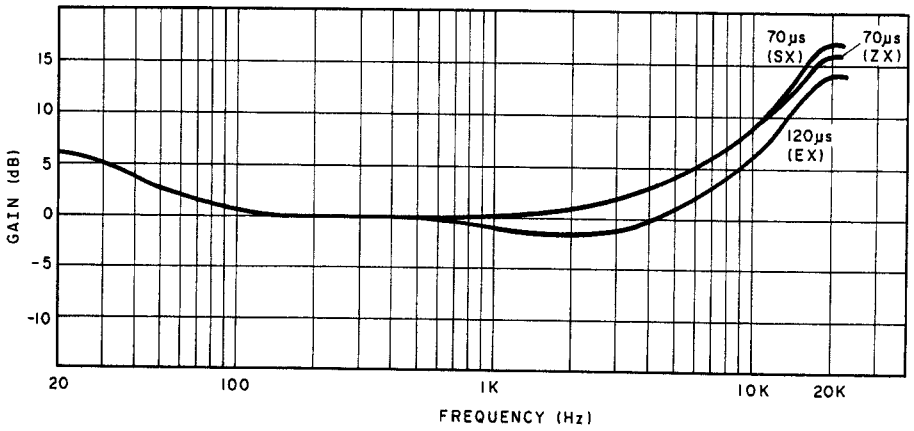


Fig. 11.2.2

12. SPECIFICATIONS

Track Configuration	4 Tracks/2-Channel Stereo
Heads	2 (Erase Head x 1, Record/Playback Head x 1)
Motors (Tape Transport)	DC Servo Motor (Capstan Drive) x 1 DC Motor (Reel Drive) x 1
Power Source	100, 120, 120/220-240, 220 or 240 V AC; 50/60 Hz (According to country of sale)
Power Consumption	23 W max.
Tape Speed	1-7/8 ips. (4.8 cm/sec.) ±0.5%
Wow and Flutter	Less than ±0.11% WTD Peak Less than 0.06% WTD RMS
Frequency Response	20 Hz—20,000 Hz (recording level —20 dB)
Signal to Noise Ratio	**Dolby C-Type NR on** <70 μs, ZX tape> Better than 68 dB (400 Hz, 3% THD, IHF A-WTD RMS) **Dolby B-Type NR on** <70 μs, ZX Tape> Better than 62 dB (400 Hz, 3% THD, IHF A-WTD RMS)
Total Harmonic Distortion	Less than 1.0% (400 Hz, 0 dB, ZX, EXII tape) Less than 1.2% (400 Hz, 0 dB, SX tape)
Erasure	Better than 60 dB (100 Hz, 10 dB)
Separation	Better than 36 dB (1 kHz, 0 dB)
Crosstalk	Better than 60 dB (1 kHz, 0 dB)
Bias Frequency	105 kHz
Input (Line)	50 mV, 30 kΩ
Output (Line)	0.5 V (400 Hz, 0 dB, output level control at max.) 2.2 kΩ
(Headphones)	2.2 mW (400 Hz, 0 dB, output level control at max.) 8 Ω load
Fast-Winding Time	Approx. 85 seconds (with C-60 cassette)
Dimensions	430 (W) x 100 (H) x 250 (D) millimeters 16-15/16 (W) x 3-15/16 (H) x 9-7/8 (D) inches
Approximate Weight	5 kg 11 lb.

- Specifications and appearance design are subject to change for further improvement without notice.
- Noise Reduction System manufactured under license from Dolby Laboratories Licensing Corporation.
- The word "DOLBY" and the Double-D-Symbol are trademarks of Dolby Laboratories Licensing Corporation.

Service Manual

Nakamichi BX-125,BX-125E

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O-850410A Printed in Japan