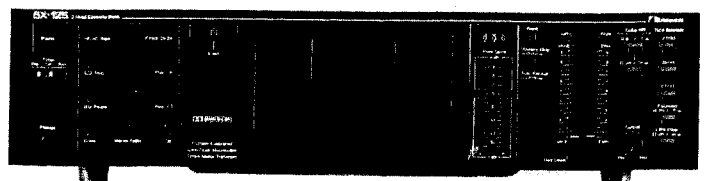




Service Manual

Nakamichi BX-125 BX-125E

2 Head Cassette Deck



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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

| <u>Part No.</u> | <u>Description</u> | <u>Q'ty</u> |
|-----------------|--|-------------|
| OF03855A | Carton Box BX-125 (Silver) | 1 |
| OF03857A | Carton Box BX-125 (Black) | 1 |
| OF03856A | Carton Box BX-125E (Silver) | 1 |
| OF03858A | Carton Box BX-125E (Black) | 1 |
| OF03674C | Packing | 2 |
| OD04517A | Owner's Manual (English) | 1 |
| OD04518A | Owner's Manual (English/German/French) | 1 |
| OD04522A | 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 (OC80048A), 60 μm (OC80038A), or 100 μm (OC80039A)) 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.

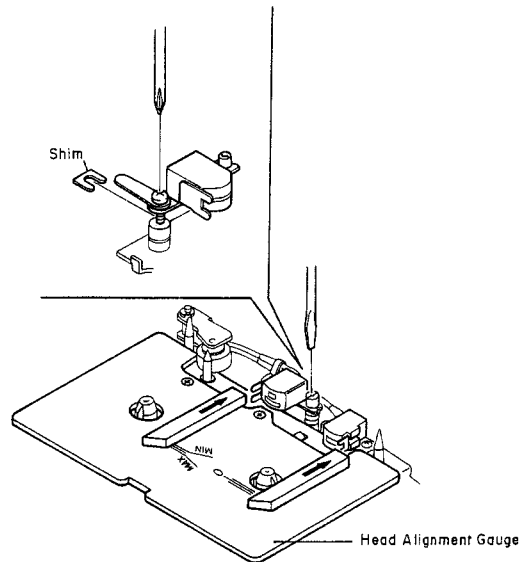


Fig. 3.1

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.

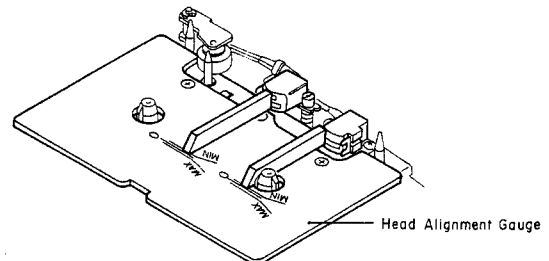


Fig. 3.2

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

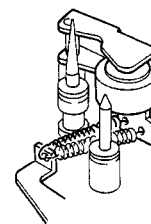


Fig. 3.3

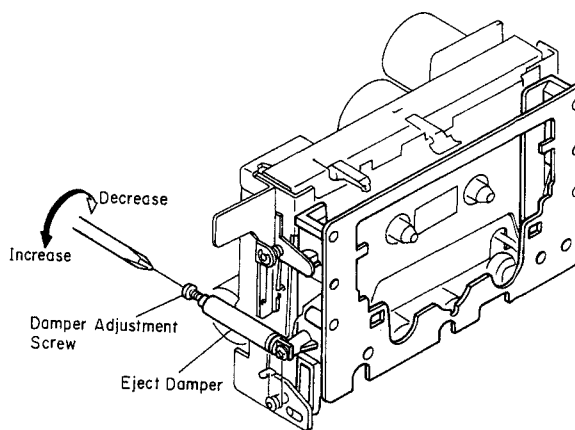


Fig. 3.4

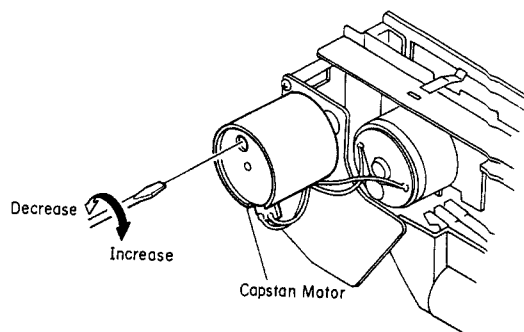


Fig. 3.5

4. PARTS LOCATION FOR ELECTRICAL ADJUSTMENT

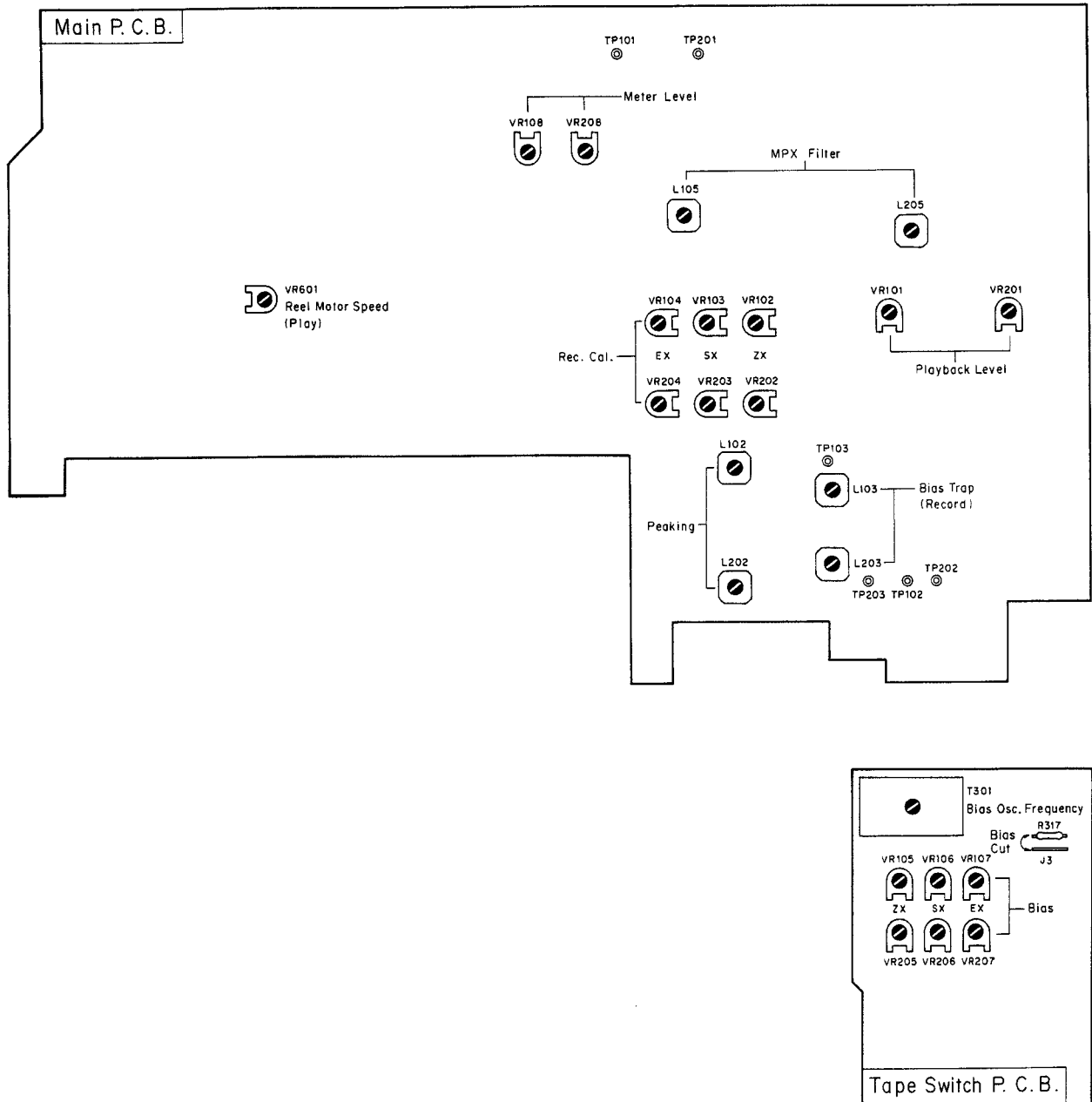


Fig. 4

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 | ADJUSTMENT | REMARKS |
|------|--|--|-------------------------------------|--|--|---|
| 1 | Tape Speed Adjustment | 3 kHz Speed and Wow/Flutter Tape | Frequency Counter to Output Jacks | Playback Eq. - 70 μ s | Tape Speed Adjustment Volume | Adjust the volume incorporated in the capstan motor to obtain 3 kHz $\pm 0.5\%$ 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 μ s Dolby NR - OFF MPX - OFF | Record/Playback Head Azimuth Alignment 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 | <ol style="list-style-type: none"> 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/playback 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. <ul style="list-style-type: none"> 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 | ADJUSTMENT | 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 μ s Dolby NR - OFF MPX - OFF | Tape Switch P.C.B. T301 R318 R350 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 μ s (ZX/SX) 120 μ s (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 | <p>Adjustment should be made in the order of ZX, SX and EX.</p> <ol style="list-style-type: none"> 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 | ADJUSTMENT | 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 μ s (ZX/SX) 120 μ s (EX) Dolby NR - OFF MPX SW - OFF | Main P.C.B. L102 L202 | <ol style="list-style-type: none"> 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 \pm 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).

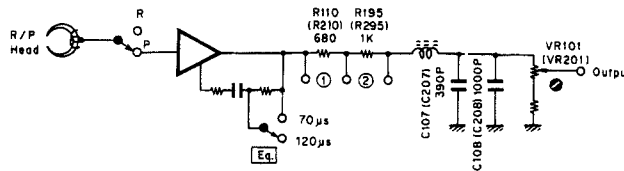


Fig. 5.1

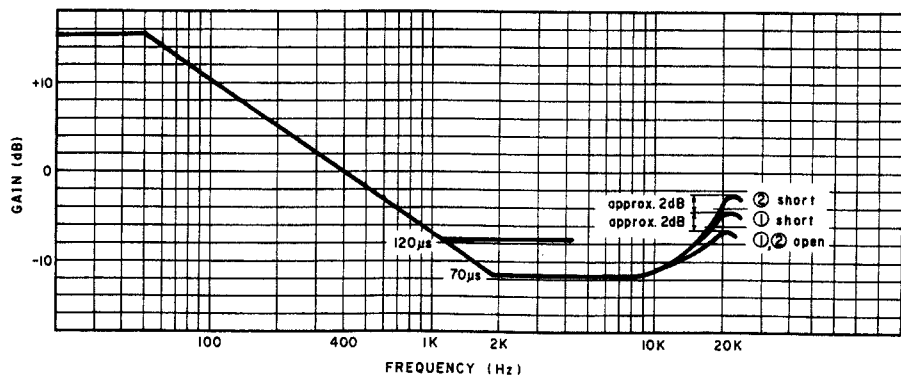


Fig. 5.2

6. MECHANISM ASS'Y AND PARTS LIST

6.1. Synthesis

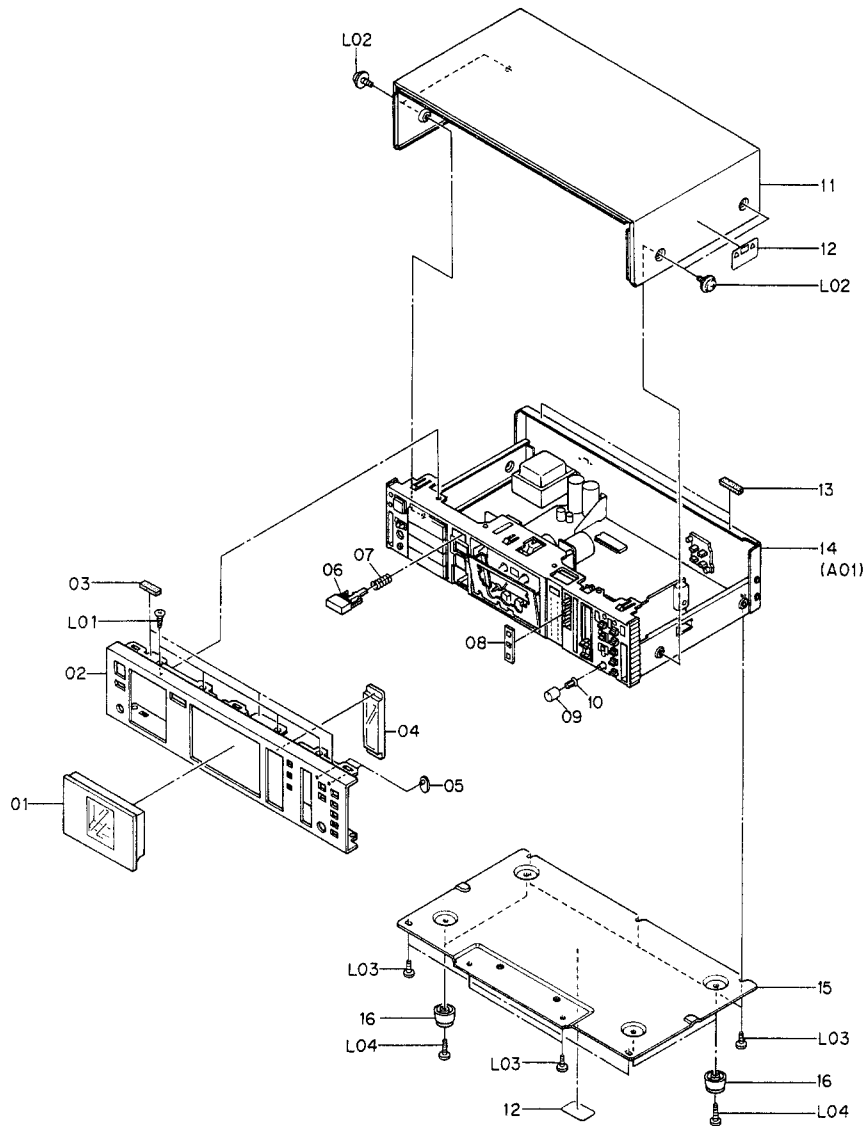


Fig. 6.1

| Schematic Ref. No. | Part No. | Description | Qty | Schematic Ref. No. | Part No. | Description | Qty |
|--------------------|----------|--|-----|--------------------|----------|---|-----|
| | | 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 | OH04582B | Front Panel Ass'y BX-125 | 1 | 02 | OH04584B | Front Panel Ass'y BX-125 | 1 |
| | OH04583B | Front Panel Ass'y BX-125E | 1 | | OH04585B | Front Panel Ass'y BX-125E | 1 |
| 03 | OJ04628A | Top Cover Cushion (Front) | 3 | 03 | OJ04628A | Top Cover Cushion (Front) | 3 |
| 04 | OH04306A | Meter Cover | 1 | 04 | OH04307A | Meter Cover | 1 |
| 05 | OH04240A | LED Lens | 2 | 05 | OH04240A | LED Lens | 2 |
| 06 | HA04571A | Eject Button Ass'y | 1 | 06 | HA04570A | Eject Button Ass'y | 1 |
| 07 | OJ04765A | Spring | 1 | 07 | OJ04765A | Spring | 1 |
| 08 | OH04276A | Counter Escutcheon | 1 | 08 | OH04275A | Counter Escutcheon | 1 |
| 09 | OH04432B | Volume Knob | 1 | 09 | OH04342A | Volume Knob | 1 |
| 10 | OH03737A | Volume Knob Base | 1 | 10 | OH03737A | Volume Knob Base | 1 |
| 11 | OH04155B | Top Cover | 1 | 11 | OH04156B | Top Cover | 1 |
| 12 | OM04377B | Caution Label | 2 | 12 | OM04377B | Caution Label | 2 |
| 13 | OJ04629A | Top Cover Cushion (Back) | 2 | 13 | OJ04629A | Top Cover Cushion (Back) | 2 |
| 14 | — | Synthesis Mechanism Ass'y | 1 | 14 | — | Synthesis Mechanism Ass'y | 1 |
| 15 | OJ04762A | Bottom Cover | 1 | 15 | OJ04762A | Bottom Cover | 1 |
| 16 | OJ03564A | Leg T-H | 4 | 16 | OJ03564A | Leg T-H | 4 |
| L01 | OE03054A | BT 3x8 @ Countersunk | 4 | L01 | OE03054A | BT 3x8 @ Countersunk | 4 |
| L02 | OE03033A | BT 4x8 @ Pan Washer-faced (Nickel) | 4 | L02 | OE03032A | BT 4x8 @ Pan Washer-faced (Black Chromate) | 4 |
| L03 | OE00868A | BT 3x8 @ Binding | 7 | L03 | OE00868A | BT 3x8 @ Binding | 7 |
| L04 | OE00865A | BT 3x10 @ Binding | 4 | L04 | OE00865A | BT 3x10 @ Binding | 4 |

6.2. Synthesis Mechanism Ass'y (A01)

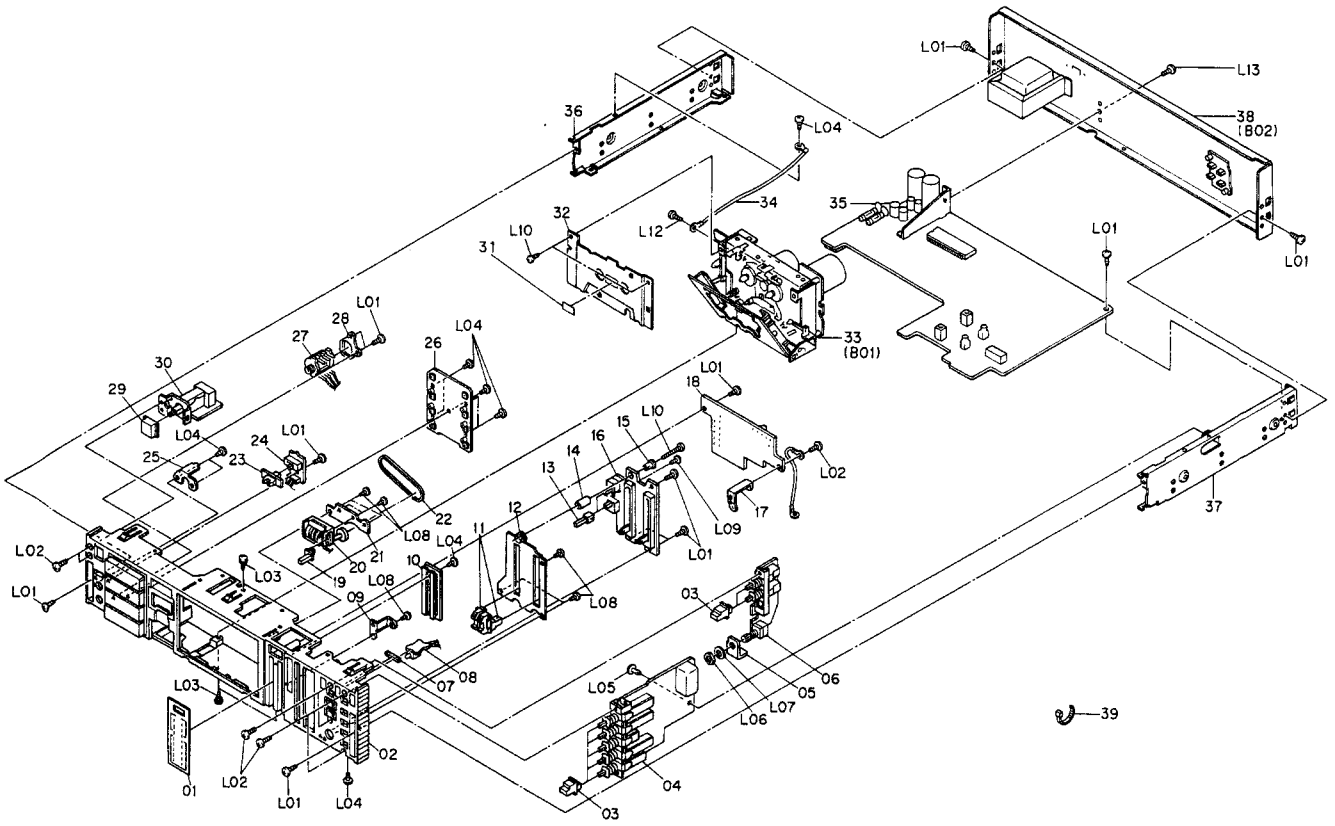


Fig. 6.2

| Schematic Ref. No. | Part No. | Description | Qty | Schematic Ref. No. | Part No. | Description | Qty |
|--------------------|------------|---|-----|--------------------|------------|---|-----|
| A01 | — | Synthesis Mechanism Ass'y Serial No.: A32201001 - (Silver) | 1 | A01 | — | Synthesis Mechanism Ass'y Serial No.: A32301001 - (Black) | 1 |
| 01 | OH04277A | Meter Scale | 1 | 01 | OH04278B | Meter Scale | 1 |
| 02 | HA04794A | Front Chassis Ass'y | 1 | 02 | HA04795A | Front Chassis Ass'y | 1 |
| 03 | OH04288A | Push Switch Button | 7 | 03 | OH04248A | Push Switch Button | 7 |
| 04 | BA05637A | Tape Switch P.C.B. Ass'y | 1 | 04 | BA05637A | Tape Switch P.C.B. Ass'y | 1 |
| 05 | OJ04838A | Holder | 1 | 05 | OJ04838A | Holder | 1 |
| 06 | BA05635A | Dolby NR Switch P.C.B. Ass'y | 1 | 06 | BA05635A | Dolby NR Switch P.C.B. Ass'y | 1 |
| 07 | OJ04984A | Cushion A | 1 | 07 | OJ04984A | Cushion A | 1 |
| 08 | BA05630A | LED P.C.B. Ass'y | 1 | 08 | BA05630A | LED P.C.B. Ass'y | 1 |
| 09 | OJ04767A | Memory Switch Holder | 1 | 09 | OJ04767A | Memory Switch Holder | 1 |
| 10 | BA05089A | Indicator Ass'y | 1 | 10 | BA05089A | Indicator Ass'y | 1 |
| 11 | OH04289A | Slide Volume Knob | 2 | 11 | OH04247B | Slide Volume Knob | 2 |
| 12 | OH04283B | Slide Volume Plate | 1 | 12 | OH04284B | Slide Volume Plate | 2 |
| 13 | OH04272A | Memory Switch Knob | 2 | 13 | OH04271A | Memory Switch Knob | 1 |
| 14 | OJ04703A | Bushing A | 1 | 14 | OJ04703A | Bushing A | 1 |
| 15 | OJ04704A | Bushing B | 1 | 15 | OJ04704A | Bushing B | 1 |
| 16 | BA05639A | Volume P.C.B. Ass'y | 1 | 16 | BA05639A | Volume P.C.B. Ass'y | 1 |
| 17 | OJ04840A | Indicator P.C.B. Holder | 1 | 17 | OJ04840A | Indicator P.C.B. Holder | 1 |
| 18 | BA05638A | Indicator P.C.B. Ass'y | 1 | 18 | BA05638A | Indicator P.C.B. Ass'y | 1 |
| 19 | OH04274A | Counter Knob | 1 | 19 | OH04273A | Counter Knob | 1 |
| 20 | OC08602A | Tape Counter | 1 | 20 | OC08602A | Tape Counter | 1 |
| 21 | OJ04764A | Counter Holder | 1 | 21 | OJ04764A | Counter Holder | 1 |
| 22 | OC08604A | Counter Belt | 1 | 22 | OC08604A | Counter Belt | 1 |
| 23 | OH04309A | Slide Switch Knob | 1 | 23 | OH04242A | Slide Switch Knob | 1 |
| 24 | BA05641A | Timer Switch P.C.B. Ass'y | 1 | 24 | BA05641A | Timer Switch P.C.B. Ass'y | 1 |
| 25 | OJ04843A | Timer Switch P.C.B. Holder | 1 | 25 | OJ04843A | Timer Switch P.C.B. Holder | 1 |
| 26 | BA05640A | Control Switch P.C.B. Ass'y | 1 | 26 | BA05640A | Control Switch P.C.B. Ass'y | 1 |
| 27 | OB08511A | Headphone Jack | 1 | 27 | OB08511A | Headphone Jack | 1 |
| 28 | OJ04611A | Headphone Plate | 1 | 28 | OJ04611A | Headphone Plate | 1 |
| 29 | OH04290A | Power Switch Button | 1 | 29 | OH04243A | Power Switch Button | 1 |
| 30 | BA05230A | Power Switch P.C.B. Ass'y BX-125 (U.S.A. & Canada) | 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 | | 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 | | BA05229A | Power Switch P.C.B. Ass'y BX-125 (Australia & Others) & BX-125E | 1 |
| 31 | OM04196A | Cassette Label (Silver) | 1 | 31 | OM04392A | Cassette Label (Gold) | 1 |
| 32 | OH04154C | Cover Plate | 1 | 32 | OH04154C | Cover Plate | 1 |
| 33 | CA08498A | Mechanism Ass'y | 1 | 33 | CA08498A | Mechanism Ass'y | 1 |
| 34 | BA05131A | Earth Wire | 1 | 34 | BA05131A | Earth Wire | 1 |
| 35 | BA05627A | Main P.C.B. Ass'y BX-125 | 1 | 35 | BA05627A | Main P.C.B. Ass'y BX-125 | 1 |
| | BA02757A-E | Main P.C.B. Ass'y BX-125E | 1 | | BA02757A-E | Main P.C.B. Ass'y BX-125E | 1 |
| 36 | OJ04603F | Side Chassis L | 1 | 36 | OJ04603F | Side Chassis L | 1 |
| 37 | OJ04773D | Side Chassis R | 1 | 37 | OJ04773D | Side Chassis R | 1 |
| 38 | HA04759B | Rear Panel Ass'y BX-125 (U.S.A.) | 1 | 38 | HA04764A | Rear Panel Ass'y BX-125 (U.S.A.) | 1 |
| | HA04791A | Rear Panel Ass'y BX-125 (Japan) | 1 | | HA04792A | Rear Panel Ass'y BX-125 (Japan) | 1 |
| | HA04760A | Rear Panel Ass'y BX-125 (Others) | 1 | | HA04765A | Rear Panel Ass'y BX-125 (Others) | 1 |
| | HA04761A | Rear Panel Ass'y BX-125 (Australia) | 1 | | HA04766A | Rear Panel Ass'y BX-125 (Australia) | 1 |
| | HA04771B | Rear Panel Ass'y BX-125 (Canada) | 1 | | HA04772A | Rear Panel Ass'y BX-125 (Canada) | 1 |
| | HA04758A | Rear Panel Ass'y BX-125E (UK) | 1 | | HA04763A | Rear Panel Ass'y BX-125E (UK) | 1 |
| | HA04762A | Rear Panel Ass'y BX-125E (220V Class 2) | 1 | | HA04767A | Rear Panel Ass'y BX-125E (220V Class 2) | 1 |
| 39 | OB08515A | Insu-Lock | 14 | 39 | OB08515A | Insu-Lock | 14 |
| — | OJ04581A | Counter Cushion | 3 | — | OJ04581A | Counter Cushion | 3 |
| — | OB08525A | Fuse 2A 250V BX-125 (U.S.A., Canada & Others) | 2 | — | OB08525A | Fuse 2A 250V BX-125 (U.S.A., Canada & Others) | 2 |
| — | OB08854A | Fuse 2A BX-125 (Japan) | 2 | — | OB08854A | Fuse 2A BX-125 (Japan) | 2 |
| — | OB08347U | Fuse 1A 250V BX-125 (Australia) & BX-125E | 2 | — | OB08347U | Fuse 1A 250V BX-125 (Australia) & BX-125E | 2 |
| — | OM04131B | Fuse Label 1A BX-125 (Australia) & BX-125E | 1 | — | OM04131B | Fuse Label 1A BX-125 (Australia) & BX-125E | 1 |
| — | OB08349B | Fuse Clip BX-125 (Australia) & BX-125E | 4 | — | OB08349B | Fuse Clip BX-125 (Australia) & BX-125E | 4 |
| L01 | OE00868A | BT 3x8 @ Binding | 15 | L01 | OE00868A | BT 3x8 @ Binding | 15 |
| L02 | OE00766A | M3x8 @ Binding | 7 | L02 | OE00766A | M3x8 @ Binding | 7 |
| L03 | OE03074A | BT 2.6x8 @ Binding with Toothed- Lock Washer | 3 | L03 | OE03074A | BT 2.6x8 @ Binding with Toothed- Lock Washer | 3 |
| L04 | OE00857A | BT 3x6 @ Binding | 10 | L04 | OE00857A | BT 3x6 @ Binding | 10 |
| L05 | OB08583A | Plastic Rivet | 1 | L05 | OB08583A | Plastic Rivet | 1 |
| L06 | — | Nut | (1) | L06 | — | Nut | (1) |
| L07 | — | Washer | (1) | L07 | — | Washer | (1) |
| L08 | OE00859A | BT 2.6x6 @ Binding | 8 | L08 | OE00859A | BT 2.6x6 @ Binding | 8 |
| L09 | OE03070A | M2.6x6 @ Binding | 1 | L09 | OE03070A | M2.6x6 @ Binding | 1 |
| L10 | OE00835A | BT 3x25 @ Pan | 1 | L10 | OE00835A | BT 3x25 @ Pan | 1 |
| L11 | OE00824A | BT 2.6x6 @ Pan (Black Chromate) | 2 | L11 | OE00824A | BT 2.6x6 @ Pan (Black Chromate) | 2 |
| L12 | OE00954A | BT 2.6x8 @ Binding | 1 | L12 | OE00954A | BT 2.6x8 @ Binding | 1 |
| L13 | OE03028A | BT 3x8 @ Binding (Nickel) | 1 | L13 | OE00921A | BT 3x8 @ Binding (Black Chromate) | 1 |

6.3. Mechanism Assy (B01)

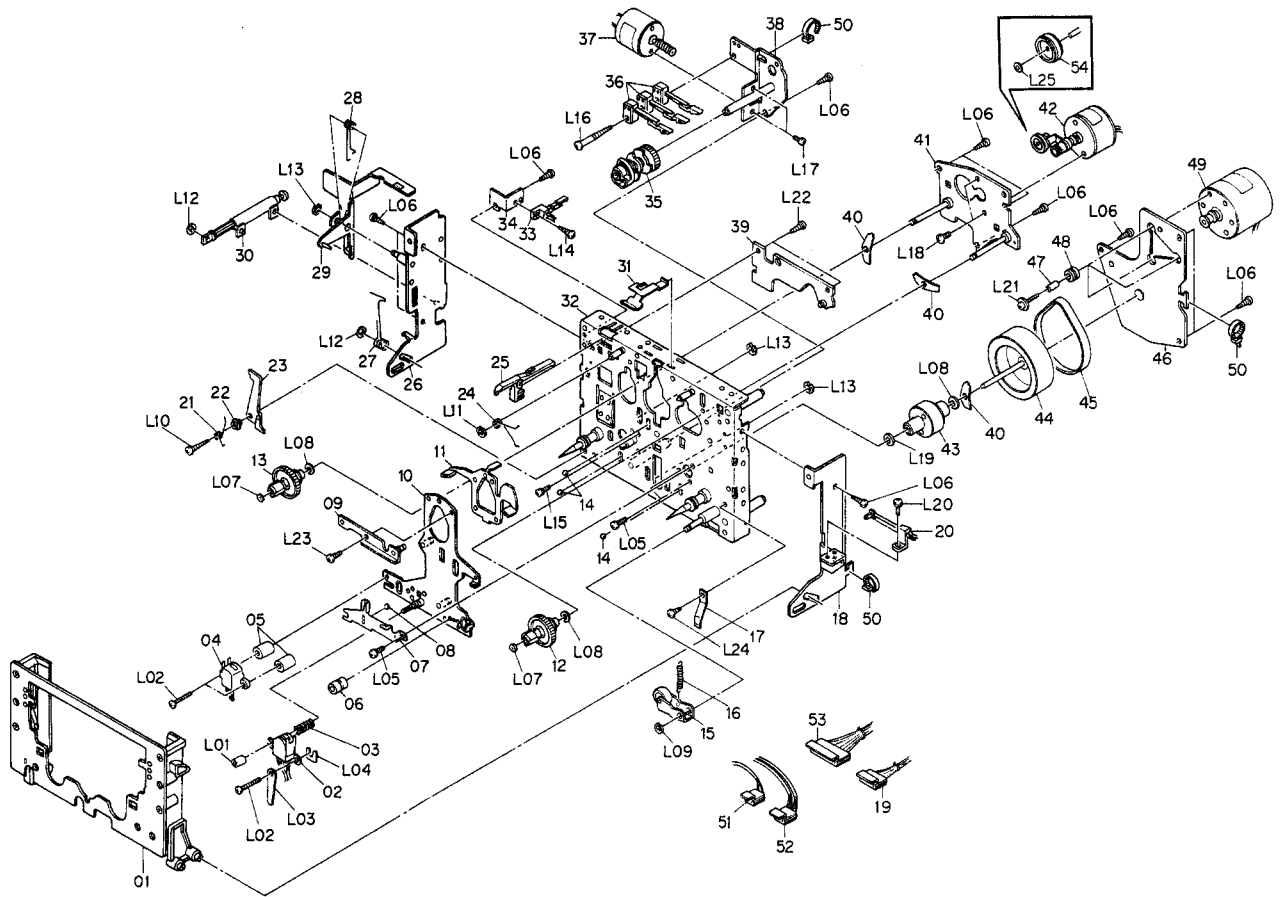


Fig. 6.3

| 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 | OG01371A | Record/Playback Head RP-2G | 1 |
| 03 | OC80001A | Azimuth Adjust Spring | 1 |
| 04 | OG01365A | Erase Head E-2D | 1 |
| 05 | OC80044A | Erase Head Collar | 2 |
| 06 | OC80045A | Record/Playback Head Collar | 1 |
| 07 | OC80003A | Head Base Hold Plate | 1 |
| 08 | OC80004A | Steel Ball 3mm | 1 |
| 09 | OC80005A | Reinforcement Plate | 1 |
| 10 | OC80006A | 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 | OC80007A | Steel Ball 2mm | 3 |
| 15 | CA80005A | Pressure Roller Ass'y | 1 |
| 16 | OC80008A | Pressure Roller Spring | 1 |
| 17 | OC80009A | Cassette Case Spring | 1 |
| 18 | OC80010C | Cassette Case Holder R | 1 |
| 19 | OC80043A | 5P-H Connector | 1 |
| 20 | OC80012A | Eject Sensor | 1 |
| 21 | OC80013A | Lock Lever Spring | 1 |
| 22 | OC80014A | Lock Lever Collar | 1 |
| 23 | OC80015B | Lock Lever | 1 |
| 24 | OC80016A | Brake Spring | 1 |
| 25 | OC80017A | Record Protector Lever | 1 |
| 26 | OC80018A | Cassette Case Holder L | 1 |
| 27 | OC80019B | Eject Spring | 1 |
| 28 | OC80020A | Eject Lever Spring | 1 |
| 29 | OC80021A | Eject Lever | 1 |
| 30 | CA80006A | Pneumatic Damper Ass'y | 1 |
| 31 | OC80022B | Cassette Hold Spring | 1 |
| 32 | OC80023A | Mechanism Chassis | 1 |
| 33 | OC80024A | Record Protector | 1 |
| 34 | OC80025A | Record Protector Holder | 1 |
| 35 | OC80026A | Cam | 1 |
| 36 | OC80027A | Mode Switch | 3 |
| 37 | CA80007A | Control Motor Ass'y | 1 |
| 38 | OC80028A | Control Motor Holder | 1 |
| 39 | CA80011A | Shut-off P.C.B. Ass'y | 1 |
| 40 | OC80029A | Back Tension Spring | 3 |
| 41 | OC80030A | Reel Motor Holder | 1 |
| 42 | CA80008B | Reel Motor Ass'y | 1 |
| 43 | OC80031A | Capstan Flange | 1 |
| 44 | OC80033A | Flywheel | 1 |
| 45 | OC80034A | Capstan Belt | 1 |
| 46 | CA80009A | Flywheel Holder Ass'y | 1 |
| 47 | OC80035A | Sleeve | 3 |
| 48 | OC80036A | Floating Rubber | 3 |
| 49 | CA80010A | Capstan Motor Ass'y | 1 |
| 50 | OC80037A | Insu-Lock | 3 |
| 51 | OC80040A | 2P-H Connector | 1 |
| 52 | OC80041A | 4P-H Connector | 1 |
| 53 | OC80042A | 9P-H Connector | 1 |
| 54 | OC80635B | Idler Pulley | 1 |
| L01 | OC80046A | Azimuth Alignment Screw | 1 |
| L02 | OE03038A | M2x12 @ Binding | 3 |
| L03 | OE03053A | Wire Holder | 1 |
| L04 | OC80048A | Shim 0.03T | (1) |
| | OC80038A | Shim 0.06T | (1) |
| | OC80039A | Shim 0.1T | (1) |
| L05 | OE03046A | M2.6x6 @ Pan (2A) | 3 |
| L06 | OE03042A | FT 2.5x5 @ Pan | 13 |
| L07 | OE03049A | Washer 1.8mm | 2 |
| L08 | OE03050A | Washer 3.1mm | 3 |
| L09 | OE00222A | E-Ring 2mm | 1 |
| L10 | OE03043A | FT 2.5x10 @ Pan | 1 |
| L11 | OE00698A | E-Ring 2.5mm | 1 |
| L12 | OE03052A | Stopper Ring 2.4mm | 2 |
| L13 | OE00181A | E-Ring 3mm | 3 |
| L14 | OE03048A | FT 2.6x6 @ Pan | 1 |
| L15 | OE03036A | M2x4 @ Pan (2A) | 1 |
| L16 | OE03044A | FT 2.5x20 @ Pan | 1 |
| L17 | OE00691A | M2x3 @ Pan | 2 |
| L18 | OE03045A | M2.6x3 @ Binding | 2 |
| L19 | OE03051A | Washer 2.5mm | 1 |
| L20 | OE03037A | M2x5 @ Pan (2A) | 1 |
| L21 | OE03047A | M2.6x9 @ Pan | 3 |
| L22 | OE03041A | FT 2.5x4 @ Pan | 2 |
| L23 | OE03040A | FT 2.5x3.5 @ Pan | 1 |
| L24 | OE03035A | M2x3.2 @ Truss | 1 |
| L25 | OE03245A | Mylar Washer 1.3x3.3x0.3 | 1 |

6.4. Rear Panel Ass'y (B02)

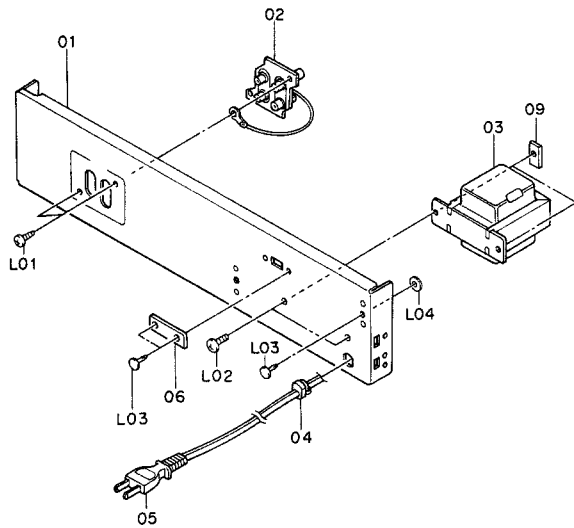
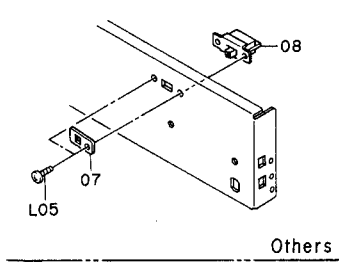


Fig. 6.4

| 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 | OH04586A | Rear Panel BX-125 | 1 |
| | OH04587A | Rear Panel BX-125E | 1 |
| 02 | BA05087A | 4P Pin Jack Ass'y (Consists of the followings) | 1 |
| | (OB81001A) (OE00037A) | (4P Pin Jack) (Earth Lug) | (1) (1) |
| 03 | OB50040A | Power Transformer BX-125 (U.S.A. & Canada) | 1 |
| | OB50009B | Power Transformer BX-125 (Australia) & BX-125E | 1 |
| | OB50011B | Power Transformer BX-125 (Japan) | 1 |
| | OB50010B | Power Transformer BX-125 (Others) | 1 |
| 04 | OB08037U | Cord Bushing C BX-125 (U.S.A., Australia, Others & Japan) & BX-125E (220V Class 2) | 1 |
| | OB08351A | Cord Bushing 4K-4 BX-125 (Canada) & BX-125E (UK) | 1 |

| Schematic Ref. No. | Part No. | Description | Q'ty | |
|--------------------------|----------|--|---|---|
| 05 | OB08533A | Power Cord BX-125 (U.S.A. & Others) | 1 | |
| | OB08504A | Power Cord BX-125 (Canada) | 1 | |
| | OB05241A | Power Cord BX-125 (Australia) | 1 | |
| | OB08219B | Power Cord BX-125 (Japan) | 1 | |
| | OB08348A | Power Cord BX-125E (UK) | 1 | |
| | OB08093U | Power Cord BX-125E (220V Class 2) | 1 | |
| | 06 | 0J04622B | Switch Cover BX-125 (U.S.A., Canada, Australia & Japan) & BX-125E | 1 |
| | | 0M04407A | Voltage Lock Plate BX-125 (Others) | 1 |
| | 08 | OB07092U | Voltage Selector BX-125 (Others) | 1 |
| | 09 | 0C01162B | Bolt Receptacle Plate BX-125 (U.S.A. & Canada) | 2 |
| L01 | | OE03028A | BT 3x8 @ Binding (Nickel) | 2 |
| L02 | OE03034A | M4x8 @ Binding (Nickel) | 2 | |
| | OE00897A | ST 4x8 @ Binding (Nickel) | 2 | |
| | L03 | OB08583A | Plastic Rivet | 3 |
| L04 | OE00637A | Washer 3.3x7x0.5 | 1 | |
| L05 | OE03031A | M3x8 @ Binding (Nickel) | 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 | OH04588A | Rear Panel BX-125 | 1 |
| | | OH04589A | Rear Panel BX-125E | 1 |
| | 02 | BA05087A | 4P Pin Jack Ass'y (Consists of the followings) | 1 |
| (OB81001A) (OE00037A) | | (4P Pin Jack) (Earth Lug) | (1) (1) | |
| 03 | OB50040A | Power Transformer BX-125 (U.S.A. & Canada) | 1 | |
| | OB50009B | Power Transformer BX-125 (Australia) & BX-125E | 1 | |
| | OB50011B | Power Transformer BX-125 (Japan) | 1 | |
| | OB50010B | Power Transformer BX-125 (Others) | 1 | |
| 04 | OB08037U | Cord Bushing C BX-125 (U.S.A., Australia, Others & Japan) & BX-125E (220V Class 2) | 1 | |
| | OB08351A | Cord Bushing 4K-4 BX-125 (Canada) & BX-125E (UK) | 1 | |
| 05 | OB08533A | Power Cord BX-125 (U.S.A. & Others) | 1 | |
| | OB08504A | Power Cord BX-125 (Canada) | 1 | |
| | OB05241A | Power Cord BX-125 (Australia) | 1 | |
| | OB08219B | Power Cord BX-125 (Japan) | 1 | |
| | OB08348A | Power Cord BX-125E (UK) | 1 | |
| | OB08093U | Power Cord BX-125E (220V Class 2) | 1 | |
| | 06 | 0J04601B | Switch Cover BX-125 (U.S.A., Canada, Australia & Japan) & BX-125E | 1 |
| | | 0M03948A | Voltage Lock Plate BX-125 (Others) | 1 |
| | 08 | OB07092U | Voltage Selector BX-125 (Others) | 1 |
| | 09 | 0C01162B | Bolt Receptacle Plate BX-125 (U.S.A. & Canada) | 2 |
| L01 | | OE00921A | BT 3x8 @ Binding (Black Chromate) | 2 |
| L02 | OE03034A | M4x8 @ Binding (Black Chromate) | 2 | |
| | OE00907A | ST 4x8 @ Binding (Black Chromate) | 2 | |
| L03 | OB08583A | Plastic Rivet | 3 | |
| | L04 | OE00637A | Washer 3.3x7x0.5 | 1 |
| | L05 | OE00818A | M3x8 @ Binding (Black Chromate) | 2 |
| | | BX-125 (Others) | | |

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

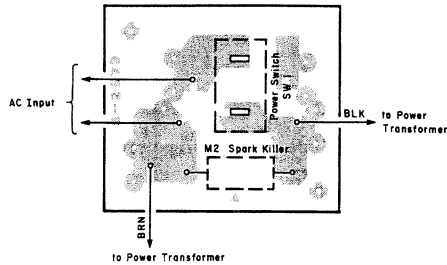


Fig. 7.1

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

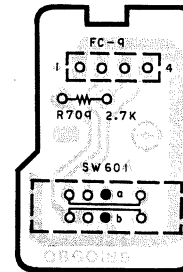


Fig. 7.3

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

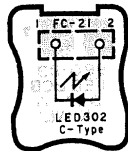


Fig. 7.2

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

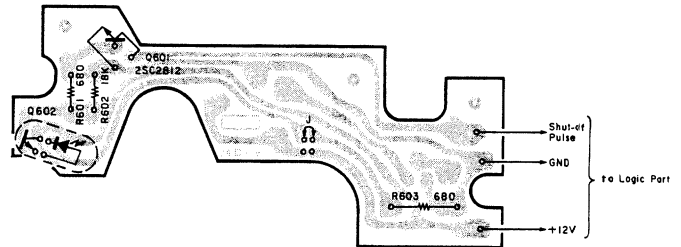


Fig. 7.4

| Schematic Ref. No. | Part No. | Description | Schematic Ref. No. | Part No. | Description | Schematic Ref. No. | Part No. | Description |
|--------------------|------------|------------------------------|--------------------|----------|---|--------------------|----------|------------------------------------|
| | BA05626A | Set P.C.B. Ass'y BX-125 | | BA05230A | Power Switch P.C.B. Ass'y BX-125 (U.S.A. & Canada) | | BA05641A | Timer Switch P.C.B. Ass'y |
| | BA05627A | Main P.C.B. Ass'y BX-125 | | BA05231A | Power Switch P.C.B. Ass'y BX-125 (Japan) | R709 | OB60189A | Timer Switch P.C.B. RK 2.7K 1/6W J |
| | BA05630A | LED P.C.B. Ass'y | | BA05229A | Power Switch P.C.B. Ass'y BX-125 (Australia & Others) & BX-125E | SW601 | OB09687A | Slide Switch 2-3 |
| | BA05635A | Dolby NR Switch P.C.B. Ass'y | | | | FC9 | OB07437A | Slide Switch 2-3 |
| | BA05637A | Tape Switch P.C.B. Ass'y | | | | | OB81011A | Dip Mate 4P (1) |
| | BA05638A | Indicator P.C.B. Ass'y | | | | | CA80011A | Shut-off P.C.B. Ass'y |
| | BA05639A | Volume P.C.B. Ass'y | SW1 | OB02573D | Power Switch P.C.B. | Q601 | OC80047A | Shut-off P.C.B. TR 2SC2812 |
| | BA05640A | Control Switch P.C.B. Ass'y | M2 | OB70002A | Power Switch | Q602 | OB06388A | Photo Reflector NJL5141 |
| | BA05641A | Timer Switch P.C.B. Ass'y | M2 | OB08342A | Spark Killer BX-125 (U.S.A. & Canada) | R601,603 | OB09840A | RK 680 Leadless |
| | | | M2 | OB08363A | Spark Killer BX-125 (Japan) | R602 | OB09841A | RK 18K Leadless |
| | | | | OB08445A | Spark Killer BX-125 (Australia & Others) & BX-125E | | | |
| | BA05626A-E | Set P.C.B. Ass'y BX-125E | | OB90059A | Spark Killer Cover BX-125 (Australia & Others) & BX-125E (1) | | | |
| | BA05627A-E | Main P.C.B. Ass'y BX-125E | | | | | | |
| | BA05630A | LED P.C.B. Ass'y | | OJ04763A | Power Switch Holder (1) | | | |
| | BA05635A | Dolby NR Switch P.C.B. Ass'y | | OE00612A | M3x6 @ Pan (2A) (2) | | | |
| | BA05637A | Tape Switch P.C.B. Ass'y | | OE00752A | Eyelet 2x3 (2) | | | |
| | BA05638A | Indicator P.C.B. Ass'y | | BA05630A | LED P.C.B. Ass'y | | | |
| | BA05639A | Volume P.C.B. Ass'y | | OB60183A | LED P.C.B. | | | |
| | BA05640A | Control Switch P.C.B. Ass'y | LED302 | OB06333A | LED Red TLR124A | | | |
| | BA05641A | Timer Switch P.C.B. Ass'y | | OB81065A | Wire Mate 2P (1) | | | |
| | | | | OB82116B | Ribbon Cable 2P(1) | | | |

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

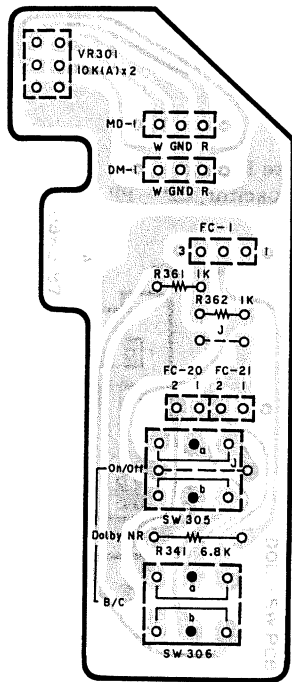


Fig. 7.5

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

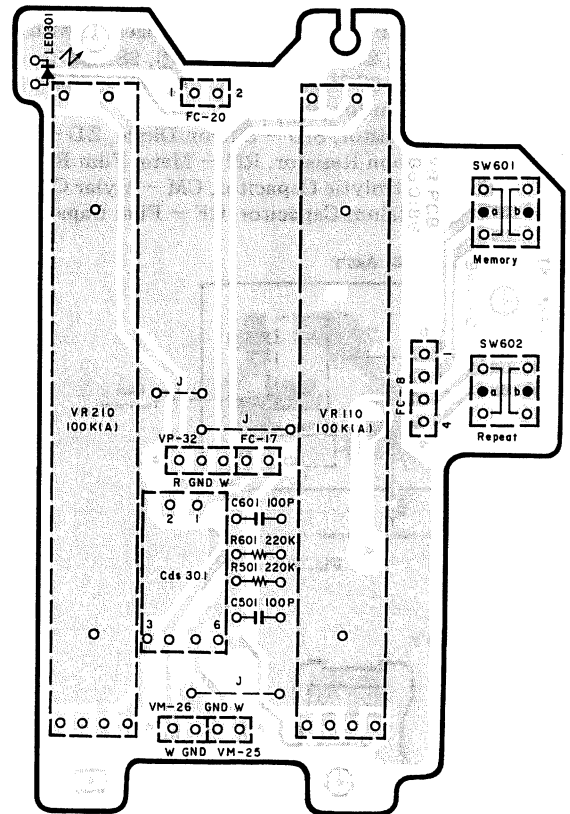


Fig. 7.6

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

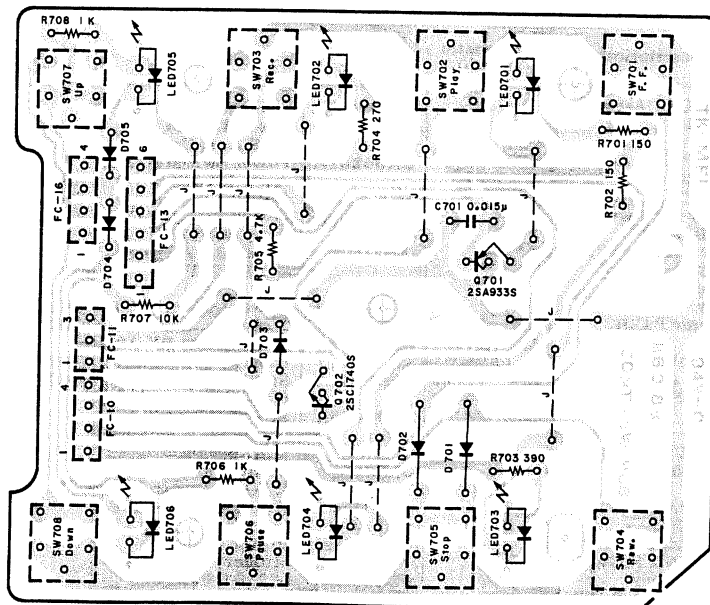


Fig. 7.7

| Schematic Ref. No. | Part No. | Description | Schematic Ref. No. | Part No. | Description |
|--------------------|----------|------------------------------|--------------------|----------|------------------------|
| | BA05635A | Dolby NR Switch P.C.B. Ass'y | | BA05638A | Indicator P.C.B. Ass'y |
| | OB60187A | Dolby NR Switch P.C.B. | | OB60185A | Indicator P.C.B. |
| VR301 | OB30036A | VR 10K (A)x2 | IC301 | OB06369A | IC TA7612AP |
| R341 | OB01682A | RK 6.8K 1/4W J | IC701 | OB11031A | IC TL092 |
| R361,362 | OB09677A | RK 1K 1/6W J | Q704 | OB06013A | TR 2SA733 (P,Q) |
| SW305/306 | OB70027A | Push Switch 2-Key | ZD701,702 | OB06191A | ZD 2.7V RD2.7E |
| FC1,MD1 | OB81010A | Dip Mate 3P (3) | D301,302 | OB06181A | SiD 1SS53 |
| DM1 | | | D703-706 | OB06398A | SiD 1SS176 (4) |
| FC20/21 | OB02349A | JP Connector 4P (1) | R301 | OB01888A | RK 10K 1/4W J |
| | BA05639A | Volume P.C.B. Ass'y | R302 | OB01887A | RK 5.6K 1/4W J |
| | OB60186A | Volume P.C.B. | R303 | OB01857A | RK 1K 1/4W J |
| LED301 | OB06333A | LED Red TLR124A | R304 | OB09797A | RK 120 1/4W J |
| Cds301 | OB06325B | Photocoupler MCD7214F | R305-314 | OB09681A | RK 1.5K 1/6W J (10) |
| | | | R701 | OB09677A | RK 1K 1/6W J |
| VR110,210 | OB31002A | Slide VR 100K (A) | R702,703 | OB09725A | RK 100K 1/6W J |
| R501,601 | OB09733A | RK 220K 1/6W J | 704,709 | | |
| C501,601 | OB09282A | CC 100P 50V K | 711,715 | | |
| SW601,602 | OB07462A | Push Switch | R705 | OB09709A | RK 22K 1/6W J |
| FC8 | OB81011A | Dip Mate 4P (2) | R706 | OB09685A | RK 2.2K 1/6W J |
| VM25/26 | | | R707 | OB09701A | RK 10K 1/6W J |
| FC17/VP32 | OB81012A | Dip Mate 5P (1) | R712 | OB09749A | RK 1M 1/6W J |
| FC20 | OB81002A | Dip Mate 2P (1) | R713,714 | OB09737A | RK 330K 1/6W J |
| | | | R716 | OB09717A | RK 47K 1/6W J |
| | BA05640A | Control Switch P.C.B. Ass'y | R717 | OB09713A | RK 33K 1/6W J |
| | OB60188A | Control Switch P.C.B. | C301 | OB09281A | CC 150P 50V K |
| Q701 | OB10026A | TR 2SA933S (Q,R,S) | C701 | OB09868A | CF 0.1μ 50V J |
| Q702 | OB10039A | TR 2SC1740S (S,E) | C702 | OB09163A | CE 10μ 16V (BP) |
| LED701 | OB06334A | LED Green TLG124A | FC3/12 | OB81012A | Dip Mate 5P (1) |
| 703,704 | | | FC6/17,16 | OB81011A | Dip Mate 4P (2) |
| LED702 | OB06333A | LED Red TLR124A | FC18/19 | OB02356A | JP Connector 12P (1) |
| 705,706 | | | | | |
| D701,702 | OB06181A | SiD 1SS53 | | | |
| D703,704 | OB06398A | SiD 1SS176 | | | |
| 705 | | | | | |
| R701,702 | OB09657A | RK 150 1/6W J | | | |
| R703 | OB09667A | RK 390 1/6W J | | | |
| R704 | OB09663A | RK 270 1/6W J | | | |
| R705 | OB09693A | RK 4.7K 1/6W J | | | |
| R706,708 | OB09677A | RK 1K 1/6W J | | | |
| R707 | OB09701A | RK 10K 1/6W J | | | |
| C701 | OB05557A | CM 0.015μ 50V J | | | |
| SW701-708 | OB70004A | Touch Switch 4.3mm | | | |
| | OJ04744A | LED Reflector (6) | | | |
| | BA05637A | Tape Switch P.C.B. Ass'y | | | |
| | OB60184A | Tape Switch P.C.B. | | | |
| Q304 | OB06069A | TR 2SB564 (L,M) | | | |
| VR105,107 | OB32010A | Semi-fixed VR 47K | | | |
| 205,207 | | | | | |
| VR106,206 | OB32009A | Semi-fixed VR 22K | | | |
| R138,238 | OB09653A | RK 100 1/6W J | | | |
| R139,239 | OB09695A | RK 5.6K 1/6W J | | | |
| 351,352 | | | | | |
| 353 | | | | | |
| R140,240 | OB09707A | RK 18K 1/6W J | | | |
| R197,297 | OB09705A | RK 15K 1/6W J | | | |
| R317 | OB09263A | RK 12K 1/4W J | | | |
| R318 | OB09831A | RF 22 1W J | | | |
| R350 | OB09837A | RF 10 1W J | | | |
| C118,218 | OB09283A | CC 220P 50V K | | | |
| C306 | OB09828A | CP 8200P 100V J | | | |
| C308 | OB01403A | CE 47μ 16V | | | |
| C327 | OB41229A | CP 1500P 100V J | | | |
| C330,331 | OB05796A | CM 0.047μ 50V J | | | |
| 332 | | | | | |
| C333,334 | OB09187A | CE 1μ 16V (BP) | | | |
| CN2 | OB81051A | 2P-S Post (1) | | | |
| FC2 | OB81011A | Dip Mate 4P (2) | | | |
| SM27/28 | | | | | |
| FC5 | OB81012A | Dip Mate 5P (1) | | | |
| SM29 | OB81010A | Dip Mate 3P (1) | | | |
| | OB06688C | Bias Osc. Unit (1) | | | |
| | OB70005A | Push Switch 5-Key (1) | | | |
| | OJ04768B | Earth Plate A (1) | | | |

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

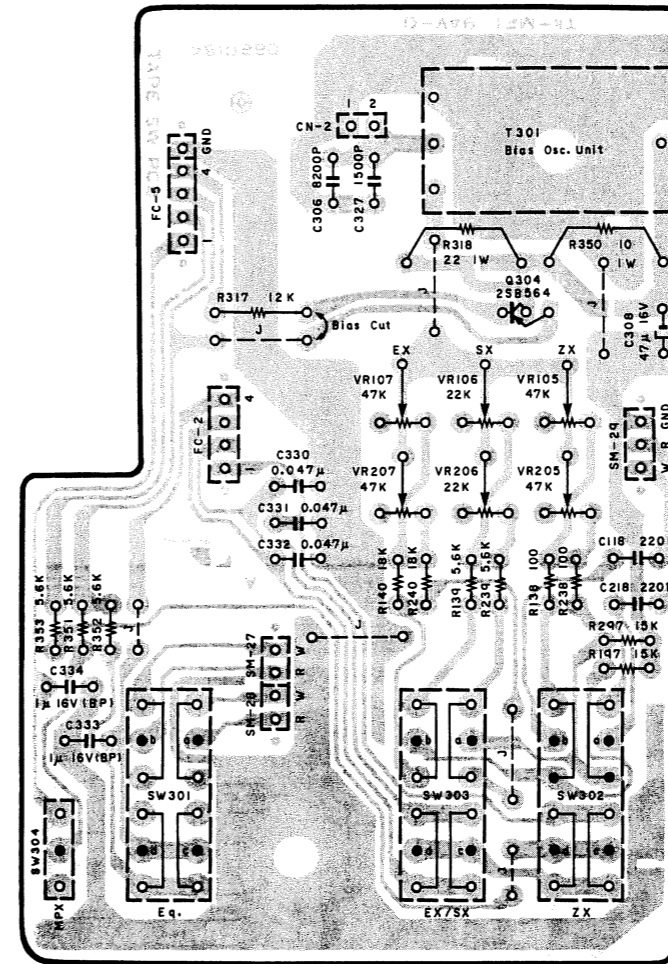


Fig. 7.8

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

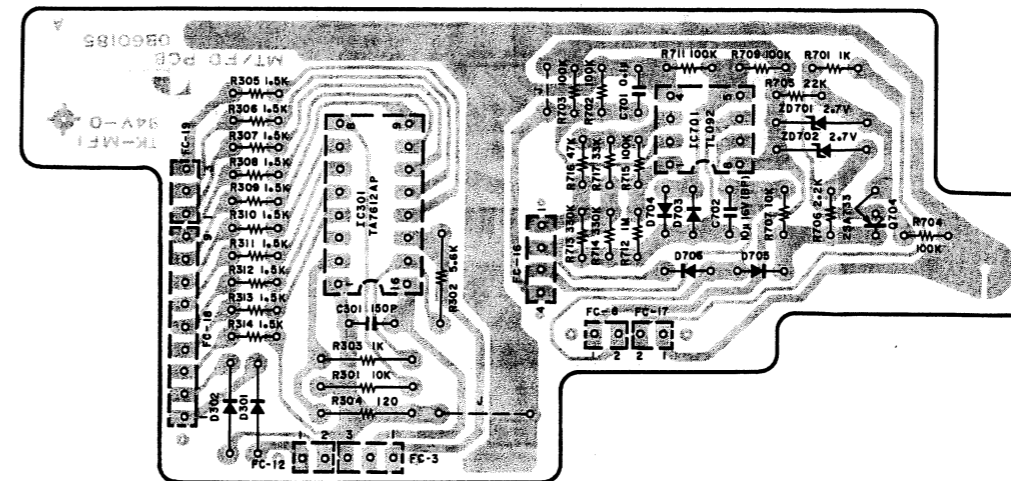


Fig. 7.9

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

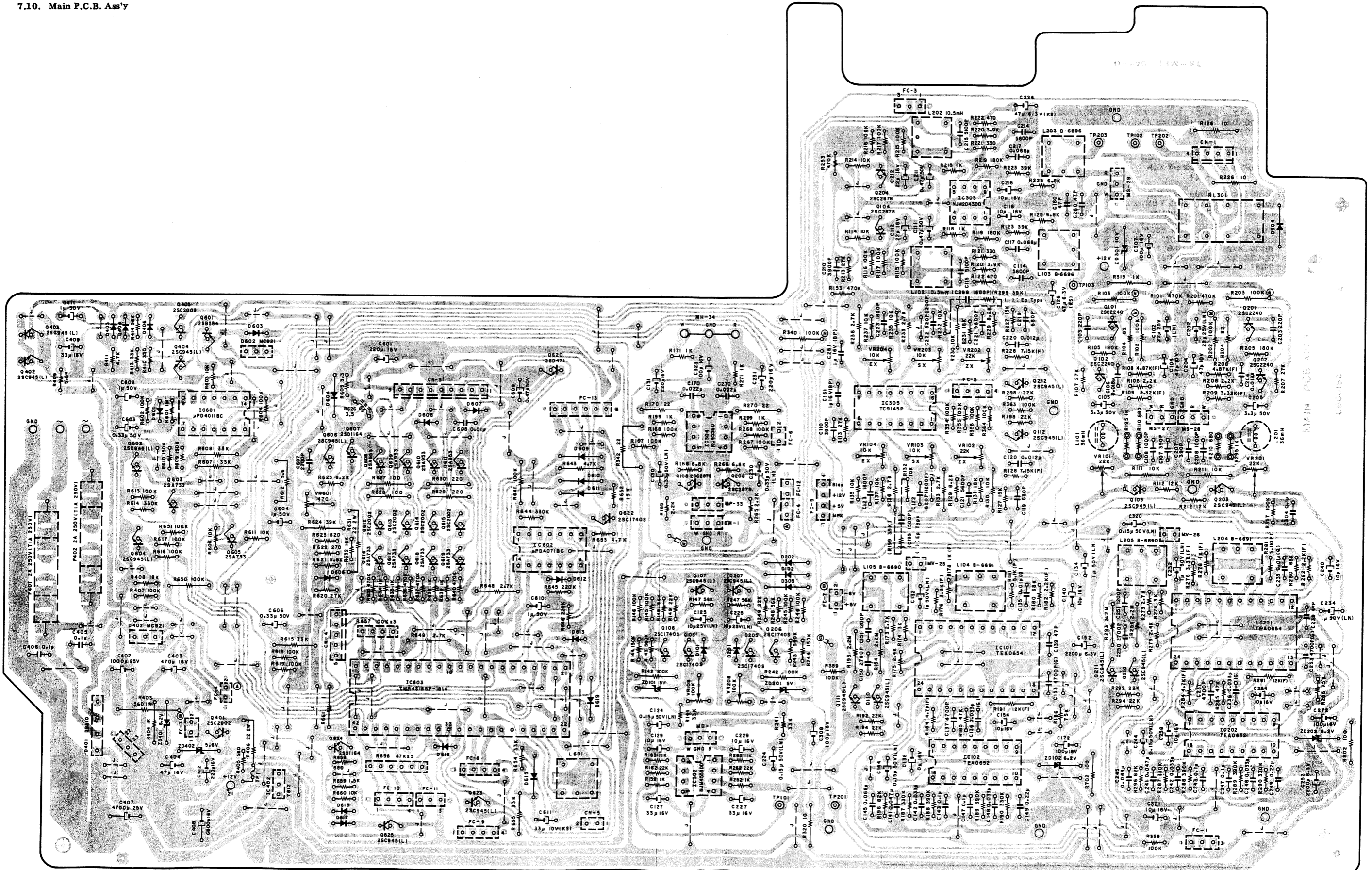


Fig. 7.10

| Schematic Ref. No. | Part No. | Description | Schematic Ref. No. | Part No. | Description | Schematic Ref. No. | Part No. | Description | Schematic Ref. No. | Part No. | Description | Schematic Ref. No. | Part No. | Description | |
|---|---|---|--|--|--|--|---|---|---|--|--|--|--|-------------|---|
| Q101,102 201,202 Q103,203 ZD301 | BA05627A | Main P.C.B. Ass'y - PB Eq. Amp. - | R354,355 356,363 364 | OB09725A | RK 100K 1/6W J | R141,241 R142,242 R143,243 | OB09713A OB01889A OB09743A OB09729A OB09725A | RK 33K 1/6W J RK 100K 1/4W J RK 560K 1/6W J RK 150K 1/6W J RK 100K 1/6W J | R634,635 638,639 R641,650 R643 R645,646 R648,649 R652 R653 R654,655 R656 R657 R658 R659 R661 C601 C602,604 610 C603,606 C607 C608 C609 C611 CN3 CN4 CN5 | OB09677A | RK 1K 1/6W J | OB01889A OB01846A OB09733A OB05629A OB09705A OB09693A OB09713A OB09803A OB09824A OB09673A OB09681A OB24023A OB01398A OB01405A | RK 100K 1/4W J RK 4.7K 1/4W J RK 220K 1/6W J RK 2.7K 1/4W J RK 15K 1/6W J RK 4.7K 1/6W J RK 33K 1/6W J R-Network 47Kx5 R-Network 100Kx3 RK 680 1/6W J RK 1.5K 1/6W J R Fuse 1 CE 220μ 16V CE 1μ 50V | 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 - |
| D304 L101,201 VR101,201 R101,201 R102,103 R102,203 R104,204 R105,205 R106,206 R107,207 R108,208 R109,209 R110,210 R111,211 R112,212 R195,295 R319 R357 C102,202 C103,203 C104,204 C105,205 C106,206 C107,207 C108,208 C304 C307 RL301 CN1 | OB01909A OB03919C OB32009A OB09741A OB099330A OB05631A OB09731A OB09685A OB09711A OB22307A OB22287A OB09673A OB01888A OB09703A OB09677A OB01857A OB09725A OB09137A OB09283A OB01403A OB01863A OB05832A OB41002A OB05550A OB09868A OB01400A OB90011A OB02242A | SID 1S1555 Inductor 36mH Semi-fixed VR 22K RK 470K 1/6W J RK 100K 1/4W J (Noiseless) RD10TS-T1B2 RK 82 1/4W J RK 180K 1/6W J RK 2.2K 1/6W J RK 27K 1/6W J RM 4.87K 1/6W F RM 3.32K 1/6W F RK 680 1/6W J RK 10K 1/4W J RK 12K 1/6W J RK 1K 1/6W J RK 1K 1/4W J RK 100K 1/6W J CE 22μ 25V (LN) CC 220P 50V K CE 47μ 16V CE 3.3μ 50V CM 0.018μ 50V J CP 390P 100V J CM 1000P 50V J CF 0.1μ 50V J CE 100μ 16V DS Relay 4P-T Post | IC101,201 IC102,202 Q110,111 210,211 ZD102,202 L104,204 L105,205 R154,193 254,293 R173,273 R174,274 R175,275 R176,276 R178,278 R180,280 R181,281 R182,282 R184,284 R185,285 R186,286 R187,190 287,290 R188,189 288,289 R191,291 R192,194 292,294 R196,296 R340 | OB06383A OB06382A OB10025A OB06167A OB06691A OB06690A OB05671A OB09687A OB09688A OB09686A OB22286A OB22229A OB09721A OB22309A OB22265A OB22305A OB09717A OB09722A OB09737A OB09739A OB09796A OB09709A OB09723A OB09330A OB09725A OB01679A OB09494A OB09312A OB09240A OB05652A OB01412A OB09280A OB09864A OB09862A OB09868A OB09570A OB09866A OB09872A OB09189A OB05687A OB40054A OB09191A OB01400A OB06146A OB09677A OB09709A OB09702A OB40076A OB01412A OB10039A OB01872A OB12101A OB06398A OB06181A OB32011A | IC TEA0654 IC TEA0652 TR 2SC945L (P.K.) ZD 6.2V RD6.2EB3 L-C Block Yellow L-C Block Blue RK 2.2M 1/4W J RK 2.7K 1/6W J RK 3K 1/6W J RK 2.4K 1/6W J RM 3.3K 1/6W F RM 1K 1/6W F RK 68K 1/6W J RM 5.1K 1/6W F RM 2.2K 1/6W F RM 4.7K 1/6W F RK 47K 1/6W J RK 75K 1/6W J RK 330K 1/6W J RM 12K 1/4W F RK 22K 1/6W J RK 100K 1/6W J RK 100 1/4W J CE 1μ 50V (LN) CP 0.01μ 100V G CP 0.033μ 100V G CM 4700P 50V J CE 10μ 16V CC 47P 50V J CF 0.047μ 50V J CF 0.033μ 50V J CF 0.1μ 50V J CM 3900P 50V J CE 0.47μ 50V CE 22μ 16V CM 5600P 50V J CM 5100P 50V J CE 10μ 16V CF 0.068μ 50V J CE 47μ 6.3V (KS) CC 47P 50V J CE 1μ 16V (BP) IC NJM4558DD RK 1K 1/6W J RK 22K 1/6W J RK 11K 1/6W J CE 33μ 16V CE 10μ 16V IC NJM4558DD RK 1K 1/6W J RK 22K 1/6W J RK 11K 1/6W J CE 33μ 16V CE 10μ 16V IC NJM4558DD RK 1K 1/6W J RK 22K 1/6W J RK 11K 1/6W J CE 33μ 16V CE 10μ 16V TR 2SC1740S (S,E) TR 2SC945L (P,Q) ZD 5V 5C-1 SID 1SS176 SID 1SS53 Semi-fixed VR 100K | Q601 Q602,604 Q606,623 625 Q603,605 616,617 618,619 Q607,624 Q608,609 610,611 Q612,613 614,615 Q620 Q622 D601,603 606,607 608,612 613,616 617,618 D602 D604,609 610,611 615,619 L601 VR601 R601 R602,604 613,616 617,618 619,651 R603,606 611,660 R605 R607,608 615 R609,610 R612 R614,644 R620 R621 R622 R623 R624 R625 R626 R627,628 R629,630 R631 R632 R633,636 637,640 | OB06370A OB06299A OB09685A OB09697A OB09725A OB05579A OB09677A OB09049A OB09327A OB01398A OB09291A OB01400A OB06178A OB06214A OB11020A OB06069A OB01872A OB06013A OB10021A OB06372A OB06322A OB06066A OB10034A OB06398A OB12100A Double SID MC921 OB06181A OB06689A L-C Block OB32007A Semi-fixed VR 470 OB09749A RK 1M 1/6W J OB09725A RK 100K 1/6W J OB09701A RK 10K 1/6W J OB09617A RK 3.3 1/6W J OB05509A RK 33K 1/4W J OB09729A RK 150K 1/6W J OB09217A RF 5.6 1/4W J OB09737A RK 330K 1/6W J OB09711A RK 27K 1/6W J OB09695A RK 5.6K 1/6W J OB09663A RK 270 1/6W J OB09672A RK 620 1/6W J OB01854A RK 39K 1/4W J OB09699A RK 8.2K 1/6W J OB06706A R Coil 3.5 OB01679A RK 100 1/4W J OB01933A RK 220 1/4W J OB24007A RF 22 2W J OB09707A RK 18K 1/6W J OB09741A RK 470K 1/6W J | IC304 Q108,208 R165,265 R166,266 R167,168 267,268 R170,270 R171,199 271,299 R342 C130,230 C131,231 C170,270 C323 IC μPD4011BC IC μPD4071BC IC TMP4315BP-1814 D403,404 406 R403 R404 R405 R406 R407 R408 R409 R410 R411 R413 R414 C402 C403 C404 C405,406 C407 C408 C409 C411 C412 TF1 IC NJM7812 TR 2SC2002 (K,L) TR 2SC945L (P,Q) ZD 6.2V RD6.2EB3 ZD 5.6V RD5.6EB2 Diode Bridge DBA10 Double SID MC921 SID 1SS176 RF 560 1W J RK 1K 1/4W J RK 560 1/6W J RF 22 2W J RK 100K 1/6W J RK 18K 1/6W J RK 5.6K 1/6W J RK 330 1/6W J RK 4.7K 1/6W J RK 33K 1/6W J RK 56K 1/6W J CE 1000μ 25V CE 470μ 16V OB01403A CE 47μ 16V OB09292A CC 0.1μ 50V Z CE 4700μ 25V CE 6800μ 16V CE 33μ 16V CE 1μ 50V CE 220μ 16V Thermal Fuse 129 Heat Sink (1) Nut Hex. M3 (1) M3x6 @ Pan (2A) (1) BT 3x6 @ Binding (2) | IC305 Q112,212 VR102,202 VR103,104 203,204 R127,227 R128,228 R129,229 R130,230 R131,231 R132,135 137,232 235,237 R133,136 233,236 R134,234 R198,298 | OB11027A IC TC9145P TR 2SC945L (P,Q) Semi-fixed VR 22K Semi-fixed VR 10K RK 15K 1/6W J RM 7.15K 1/6W F RK 8.2K 1/6W J RK 10K 1/4W J RK 18K 1/6W J RK 10K 1/6W J RK 2.7K 1/4W J RK 1K 1/6W J RK 22K 1/6W J | OB11027A IC TC9145P TR 2SC945L (P,Q) Semi-fixed VR 22K Semi-fixed VR 10K RK 15K 1/6W J RM 7.15K 1/6W F RK 8.2K 1/6W J RK 10K 1/4W J RK 18K 1/6W J RK 10K 1/6W J RK 2.7K 1/4W J RK 1K 1/6W J RK 22K 1/6W J | OB11027A IC TC9145P TR 2SC945L (P,Q) Semi-fixed VR 22K Semi-fixed VR 10K RK 15K 1/6W J RM 7.15K 1/6W F RK 8.2K 1/6W J RK 10K 1/4W J RK 18K 1/6W J RK 10K 1/6W J RK 2.7K 1/4W J RK 1K 1/6W J RK 22K 1/6W J | | | |

8. SCHEMATIC DIAGRAM

8.1. IC Block Diagrams

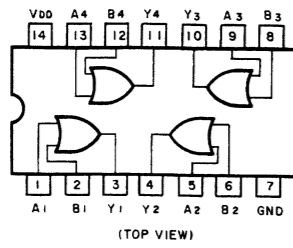


Fig. 8.1.1 OR Gate C-MOS IC μ PD4071BC

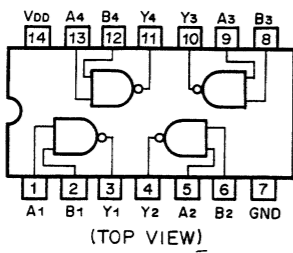


Fig. 8.1.2 NAND Gate C-MOS IC μ PD4011BC

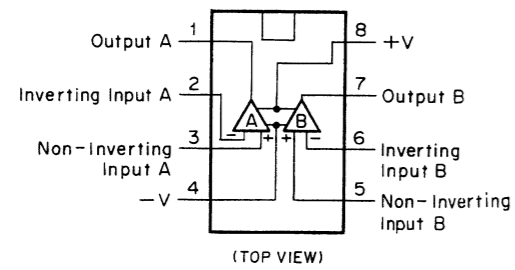


Fig. 8.1.3 Operational Amp. IC 4556D, NJM4558DD, NJM2043DD, TL092

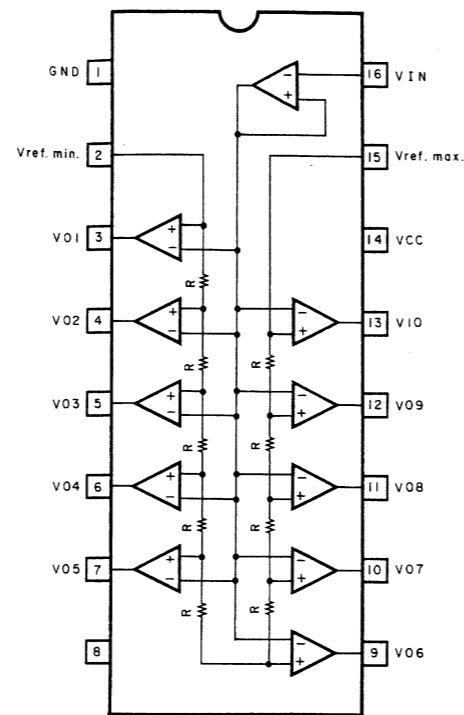


Fig. 8.1.4 Level Meter Driver TA7612AP

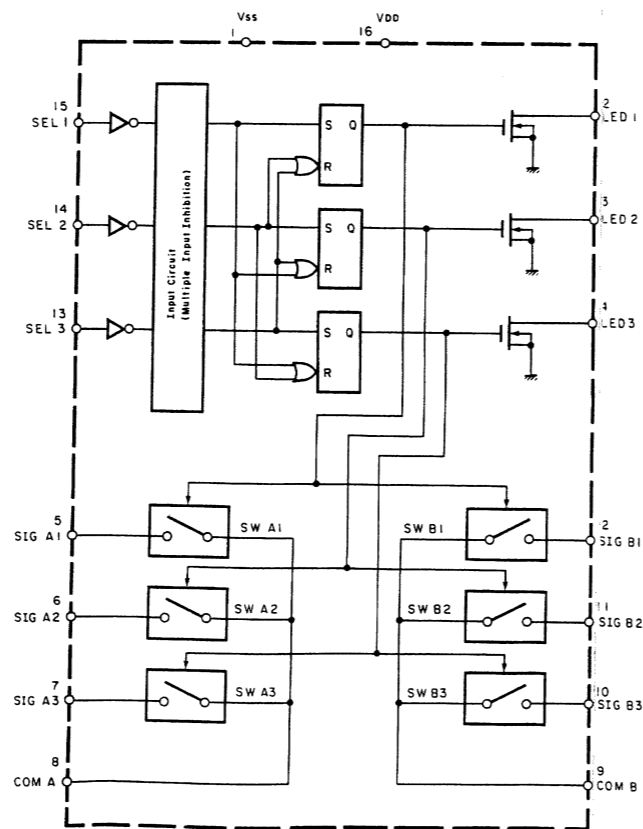


Fig. 8.1.5 Analog Switch Selector TC9145P

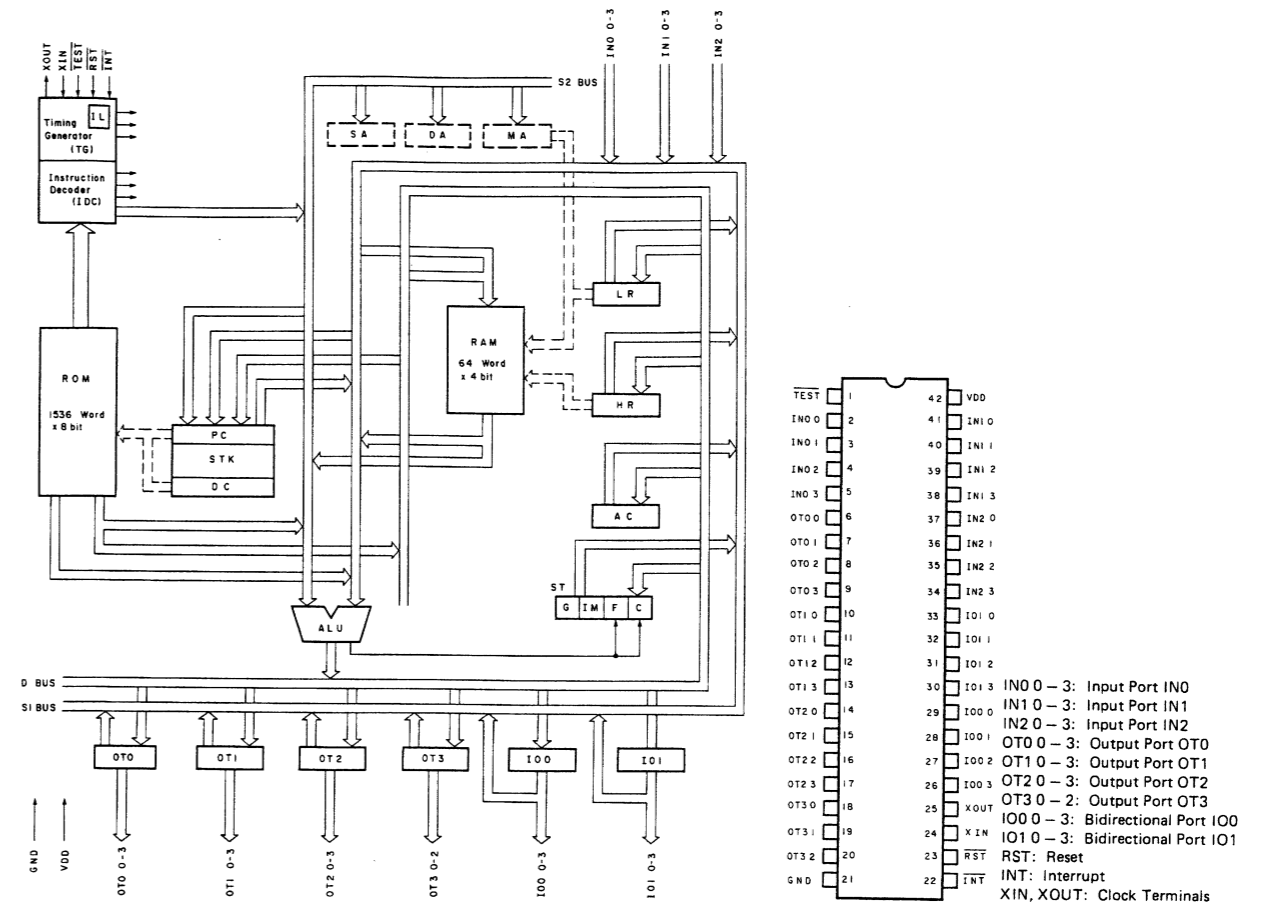
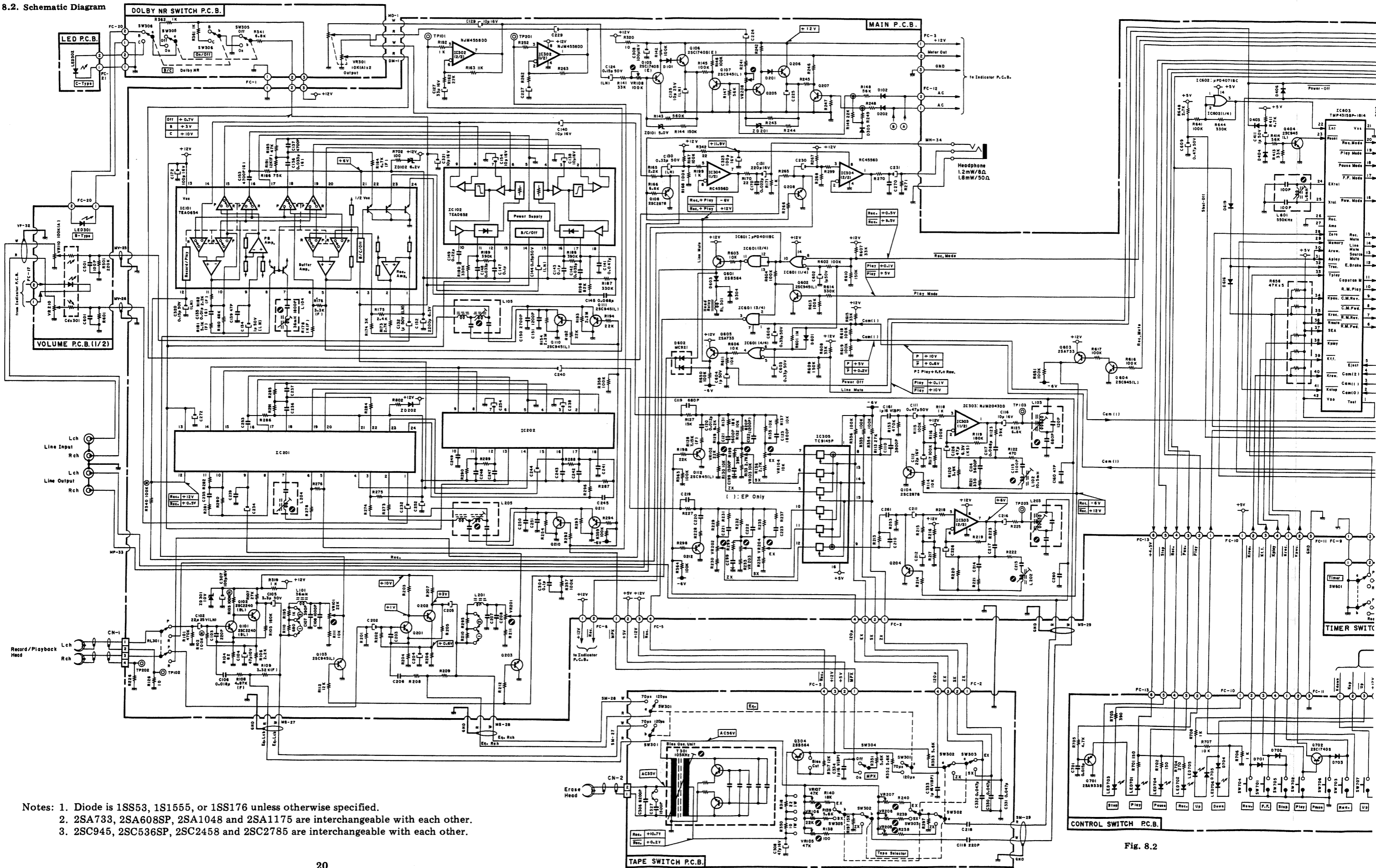


Fig. 8.1.6 4-Bit Micro-processor TMP4315BP-1814

8.2. Schematic Diagram

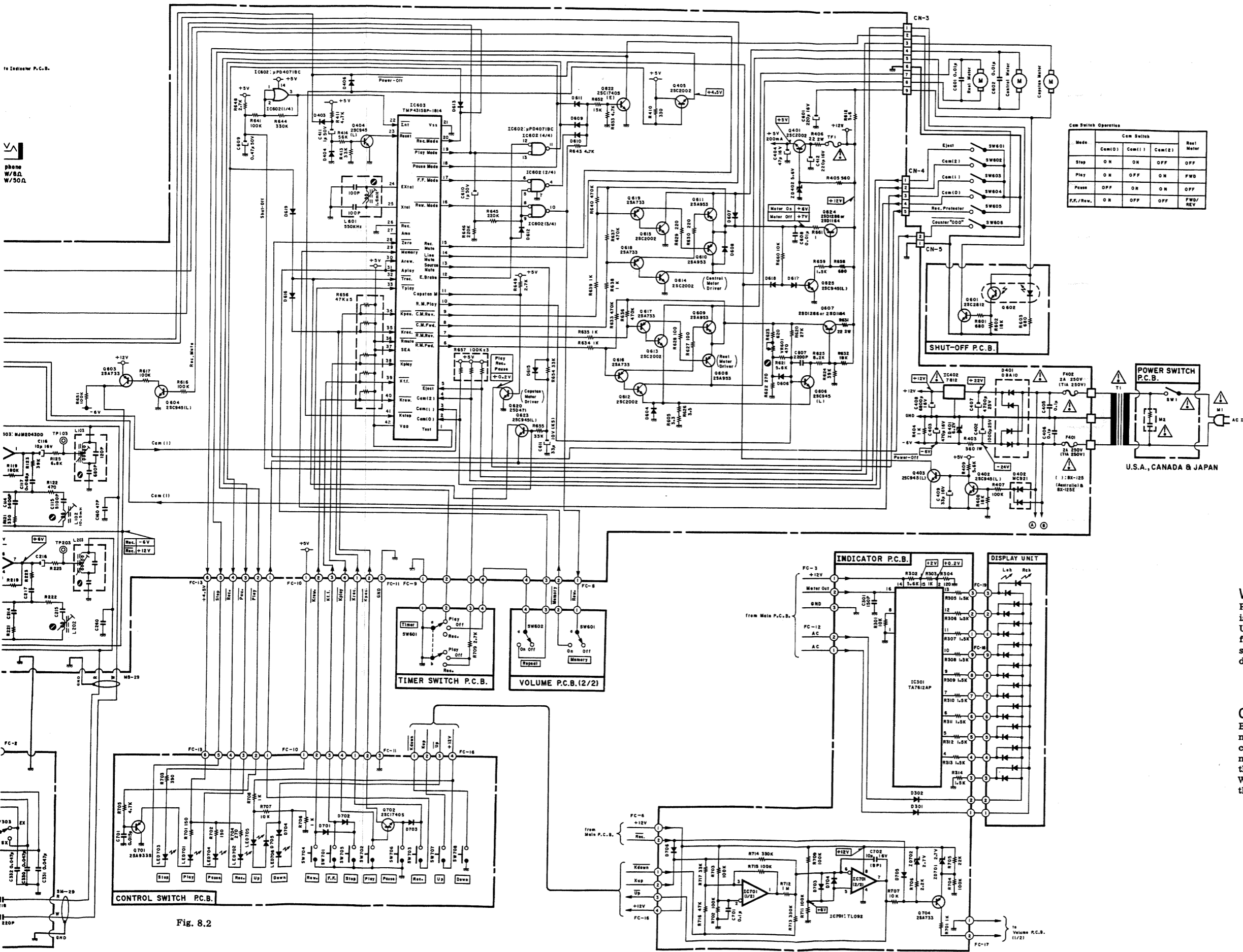


- Notes: 1. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.
 2. 2SA733, 2SA608SP, 2SA1048 and 2SA1175 are interchangeable with each other.
 3. 2SC945, 2SC536SP, 2SC2458 and 2SC2785 are interchangeable with each other.

Fig. 8.2

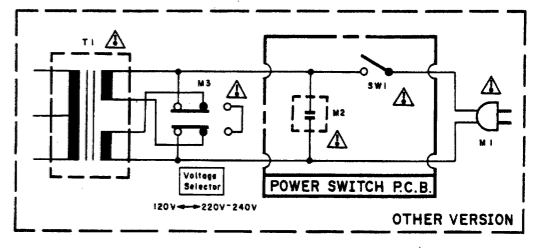
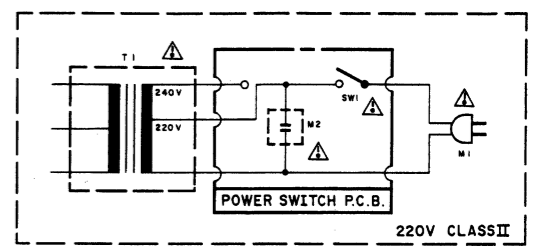
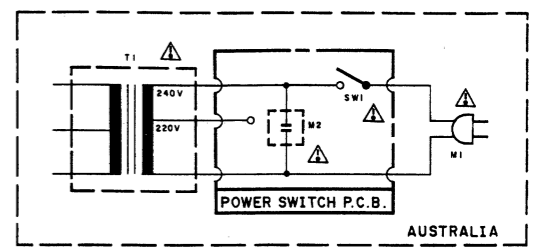
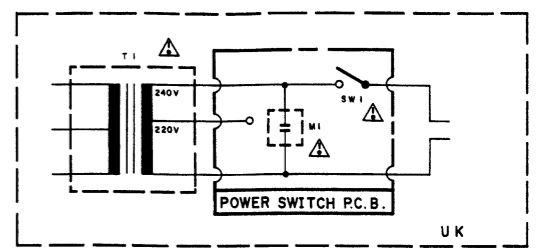
To Location P.C.B.

phone
W/8Ω
W/50Ω



Com Switch Operates

| Mode | Com(1) | Com(1) | Com(2) | Reel Meter |
|-----------|--------|--------|--------|------------|
| Stop | ON | ON | OFF | OFF |
| Play | ON | OFF | ON | FWD |
| Pause | OFF | ON | OFF | OFF |
| F.F./Rev. | ON | OFF | OFF | FWD/REV |

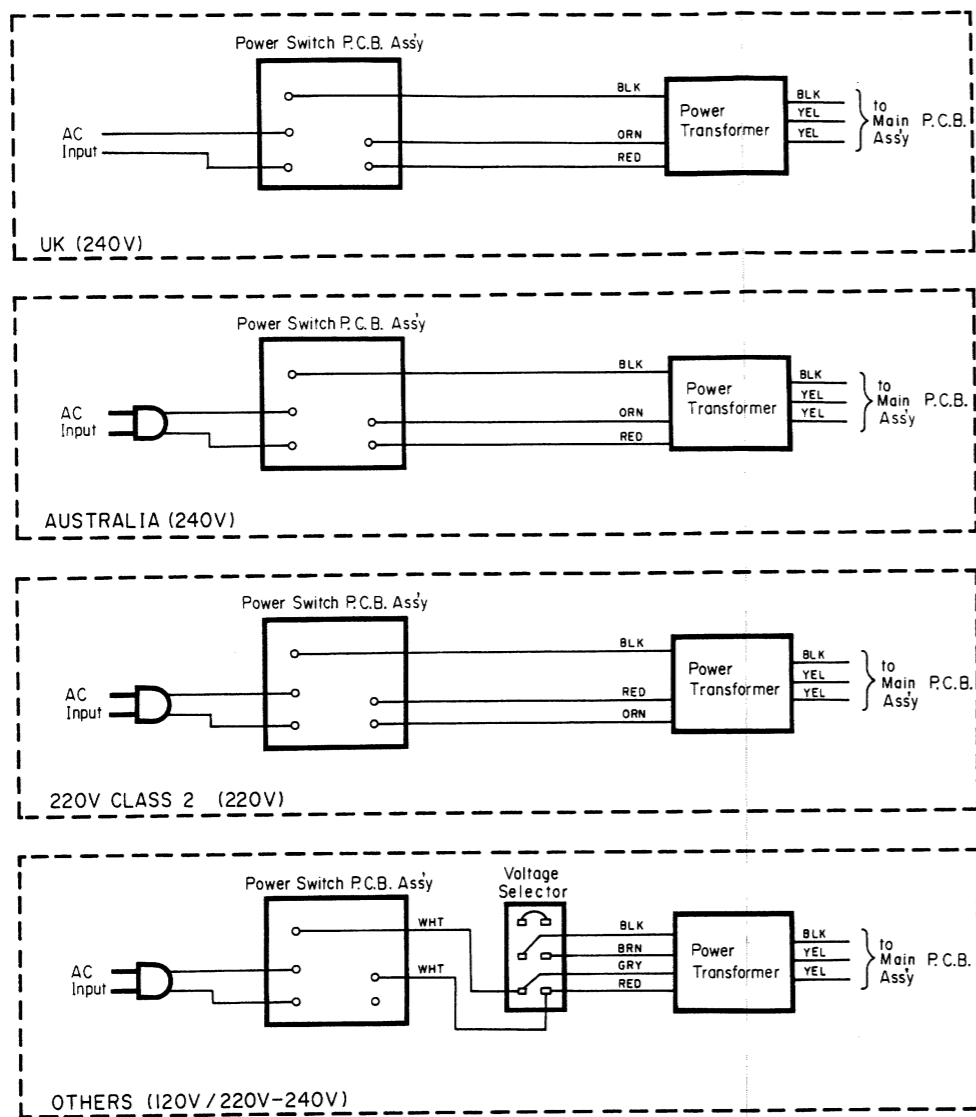


Warning:
Parts marked with the symbol ⚠ have critical characteristics. Use ONLY replacement parts recommended by the manufacturer. It is recommended that the unit be operated from a suitable DC supply or batteries during initial check-out procedure.

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.

Fig. 8.2

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 ().

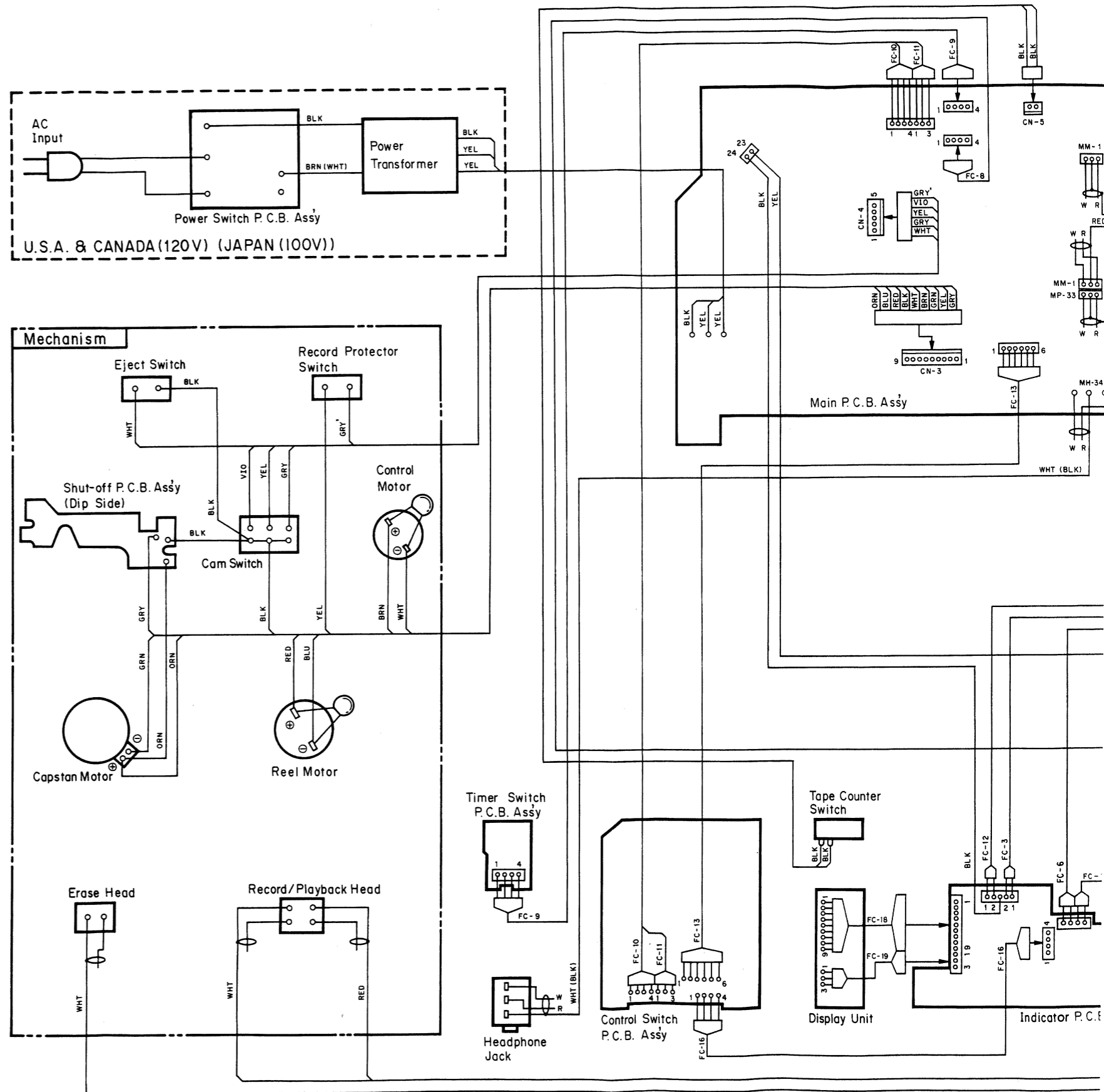


Fig. 9

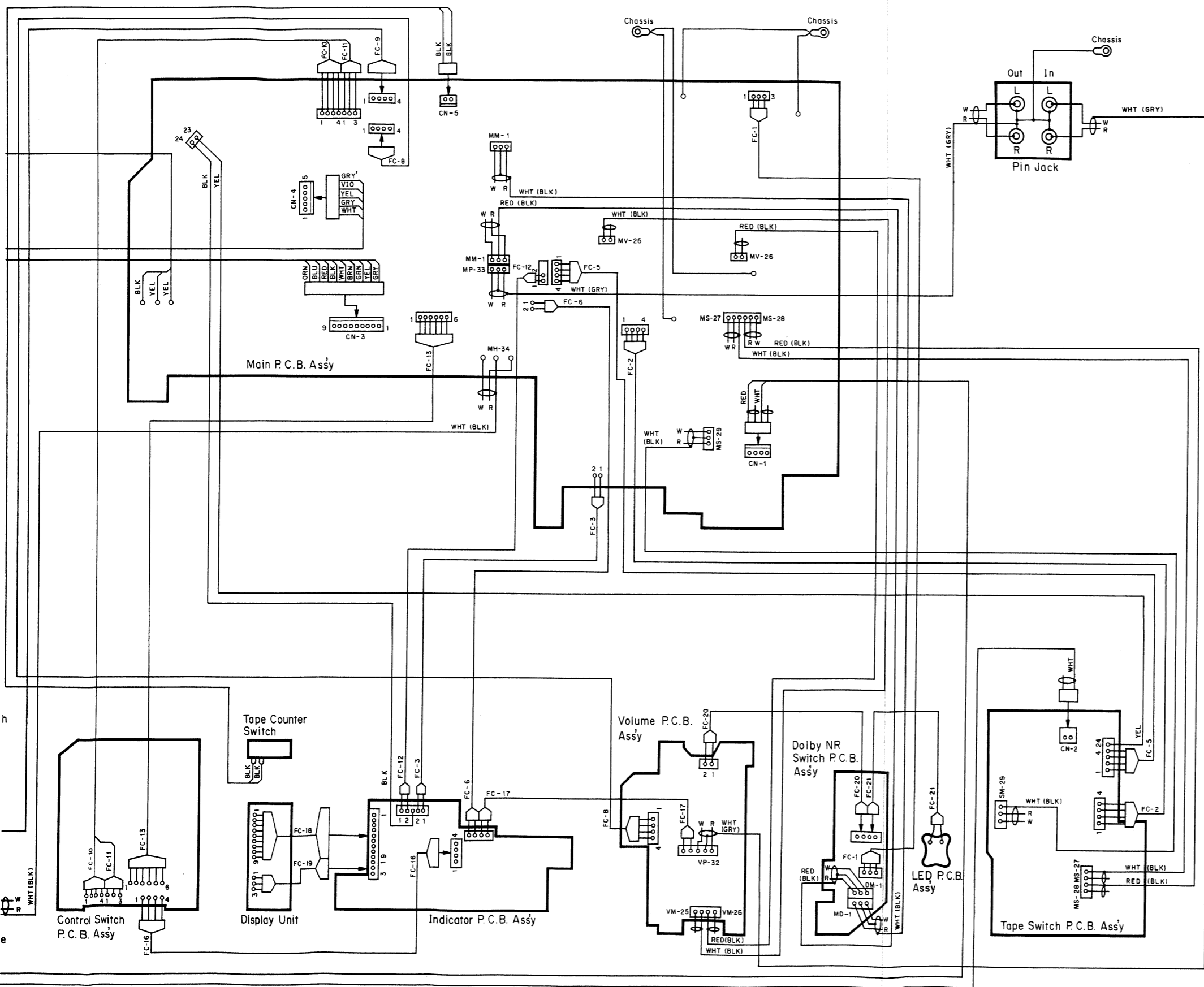


Fig. 9

10. BLOCK DIAGRAMS

10.1. Amplifier Section

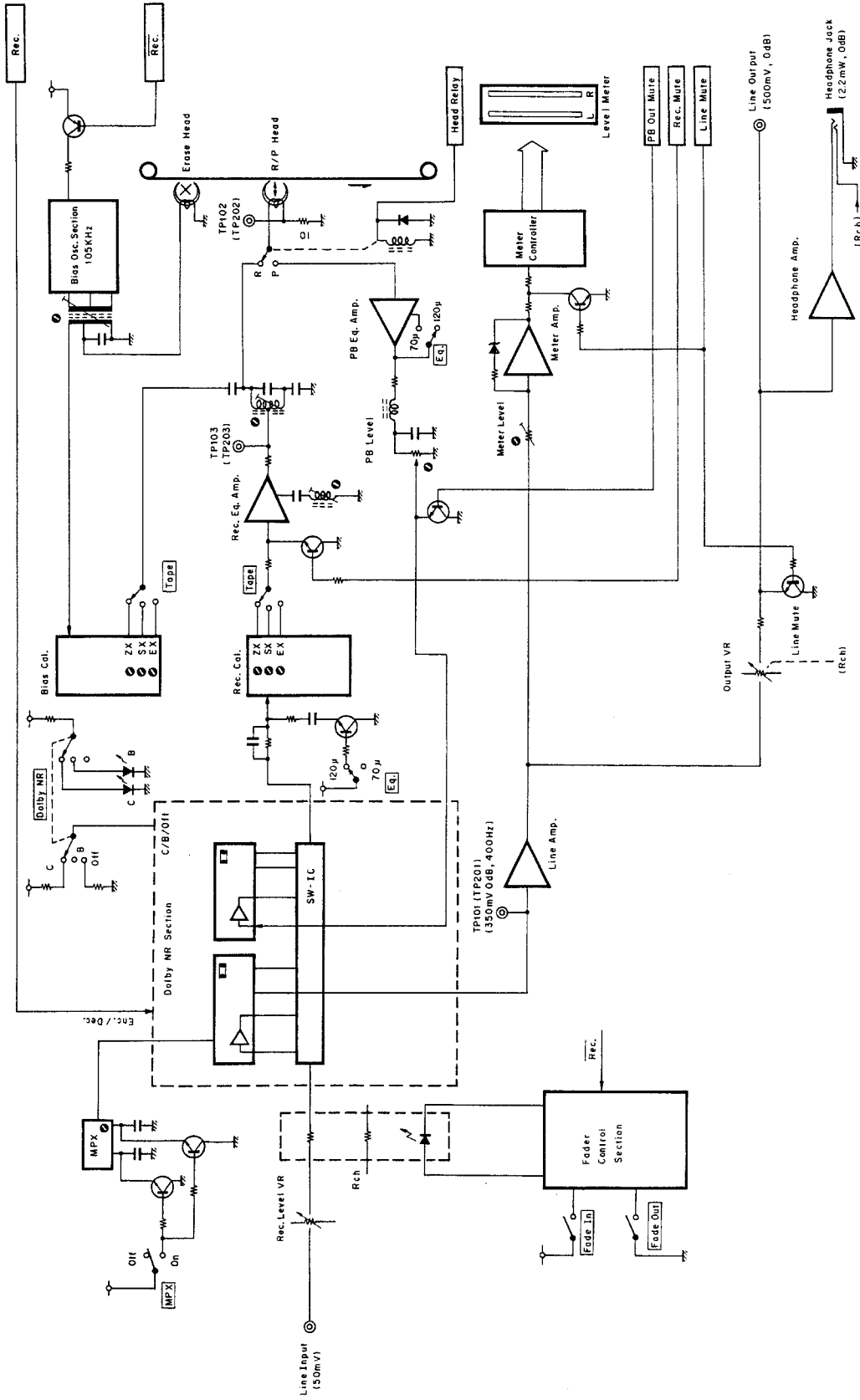


Fig. 10.1

10.2. Mechanism Control Section

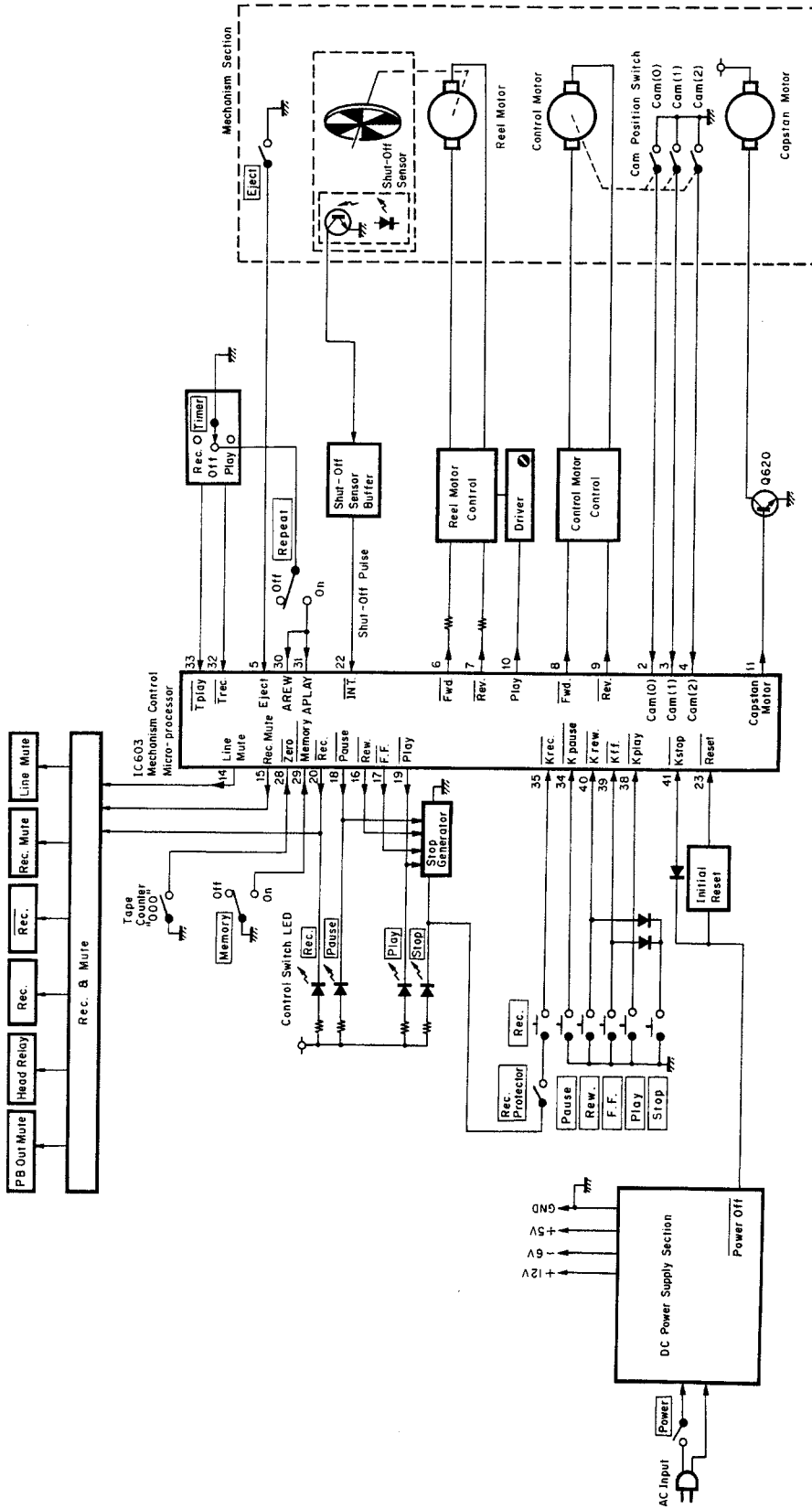


Fig. 10.2

11. TIMING CHART AND EQ. AMP. FREQUENCY RESPONSE

11.1. Timing Chart

(1) Overall Timing Chart

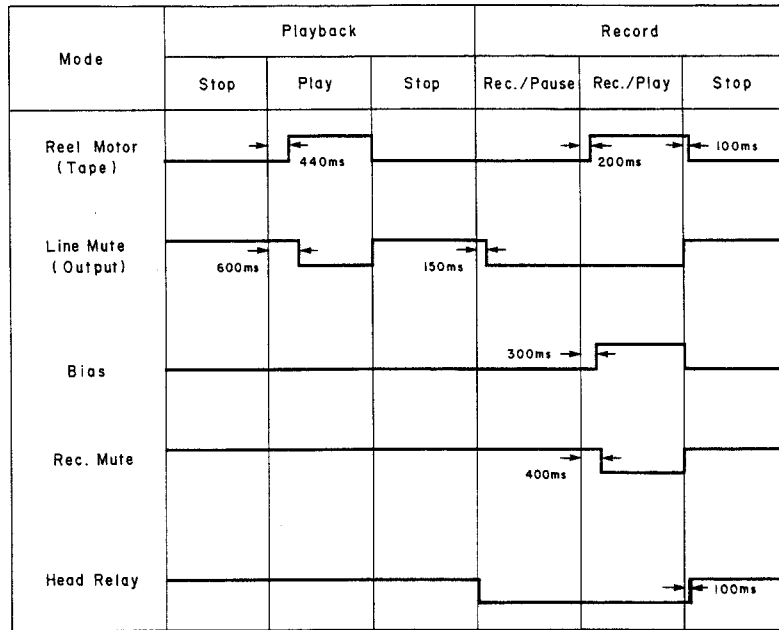


Fig. 11.1.1

(2) Mechanism Control Timing Chart

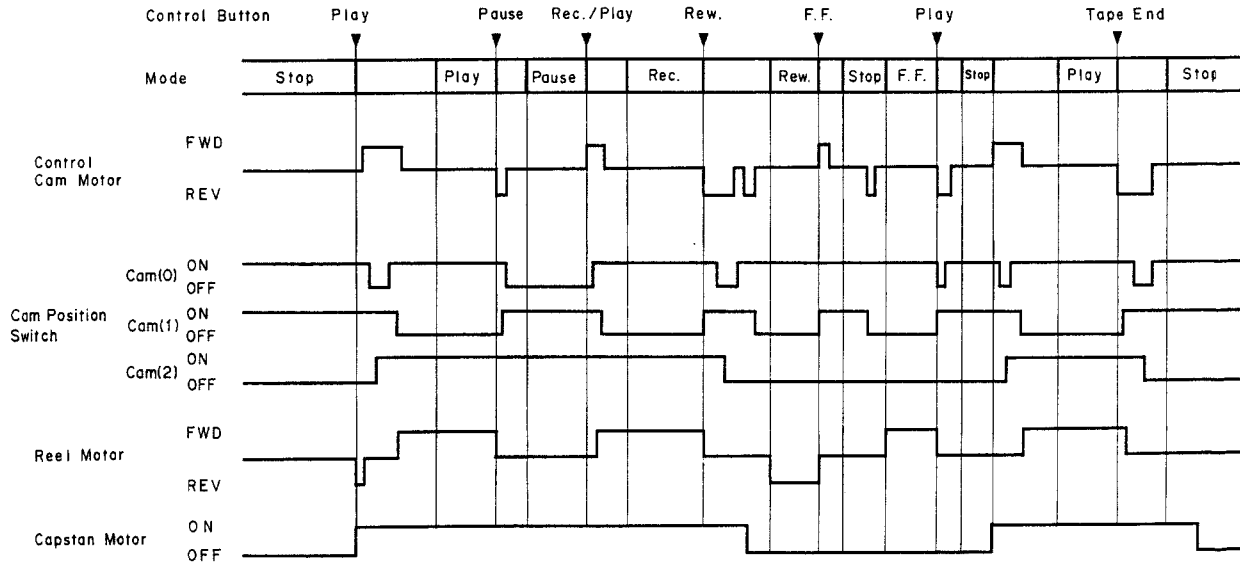


Fig. 11.1.2

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

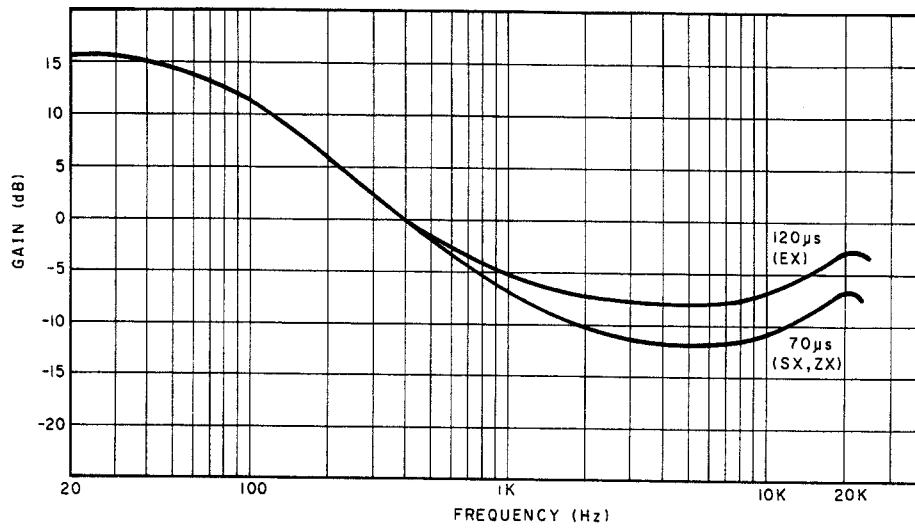


Fig. 11.2.1

(2) Record Current Frequency Response

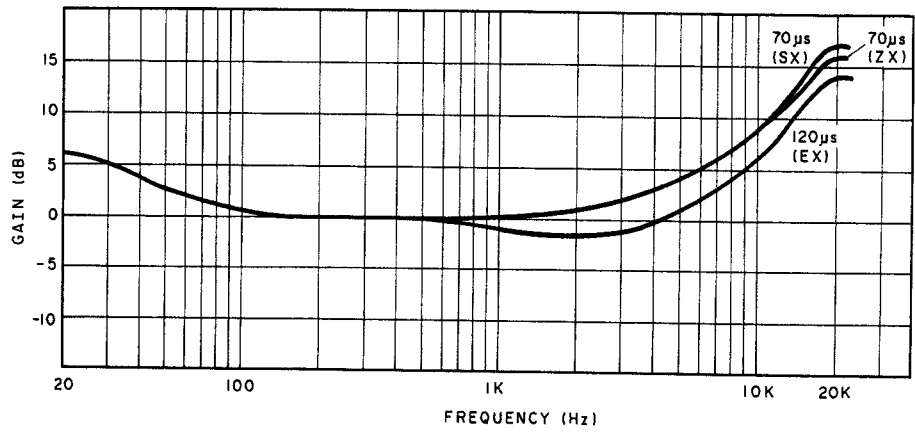


Fig. 11.2.2

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.) $\pm 0.5\%$ |
| Wow and Flutter | Less than $\pm 0.11\%$ 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 $<70 \mu\text{s}, \text{ZX tape}>$ Better than 68 dB (400 Hz, 3% THD, IHF A-WTD RMS) Dolby B-Type NR on $<70 \mu\text{s}, \text{ZX Tape}>$ 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 k Ω |
| Output (Line) | 0.5 V (400 Hz, 0 dB, output level control at max.) 2.2 k Ω |
| (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

Nakamichi Corporation

Tokyo Office
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