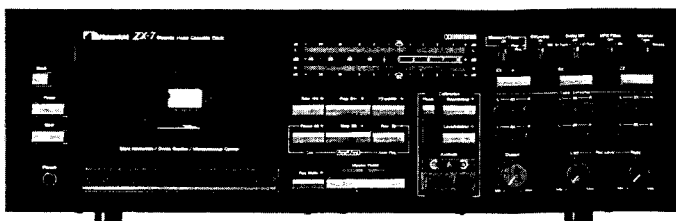




Service Manual

Nakamichi ZX-7

Discrete Head Cassette Deck



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1. GENERAL

1.1. Control Functions

The Nakamichi ZX-7 control functions are shown below:

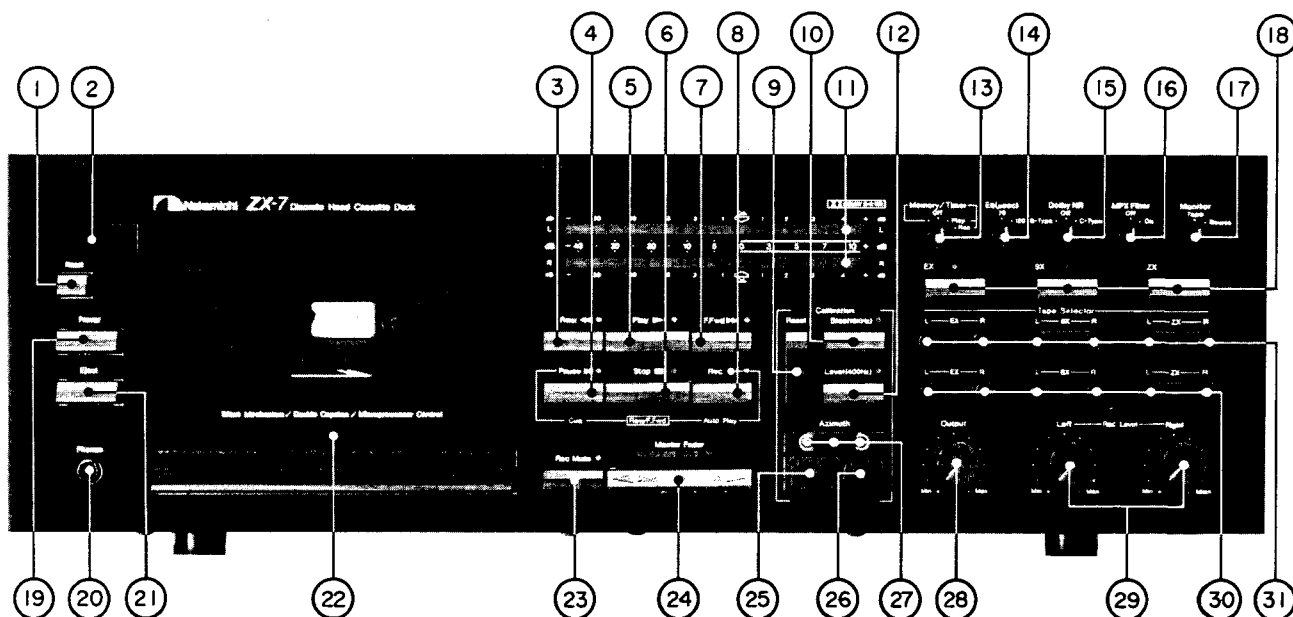


Fig. 1.1 Front View

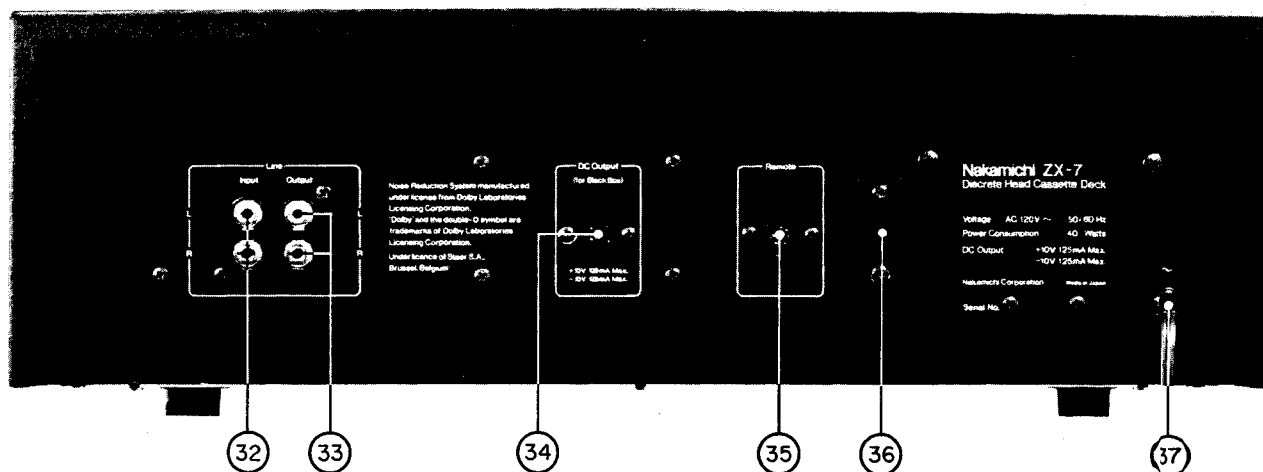


Fig. 1.2 Rear View

- | | | |
|------------------------------------|------------------------------------|--------------------------|
| 1. Counter Reset Button | 14. Eq. Switch | 27. Azimuth Indicators |
| 2. Tape Counter | 15. Dolby NR Switch | 28. Output Level Control |
| 3. Rewind Button | 16. MPX Filter Switch | 29. Input Level Controls |
| 4. Pause Button | 17. Monitor Switch | 30. Sensitivity Controls |
| 5. Play Button | 18. Tape Selector Buttons | 31. Bias Controls |
| 6. Stop Button | 19. Power Switch | 32. Input Jacks |
| 7. Fast-Forward Button | 20. Headphone Jack | 33. Output Jacks |
| 8. Record Button | 21. Eject Button | 34. DC Output Jack |
| 9. Calibration Reset Button | 22. Cassette Holder | 35. Remote Control Jack |
| 10. Bias Calibration Start Button | 23. Rec. Mute Button | 36. Voltage Selector |
| 11. Peak Level Meters | 24. Master Fader Control | 37. Power Cord |
| 12. Level Calibration Start Button | 25. Azimuth Alignment Start Button | |
| 13. Tape Start Memory/Timer Switch | 26. Azimuth Alignment Knob | |

1.2. Voltage Selector

Voltage selector is installed on the rear panel for Other Version of the Nakamichi ZX-7.
This voltage selector can select either 120 V or 220-240 V at customer's disposal.

2. REMOVAL PROCEDURES

2.1. Top Cover Ass'y

Refer to Fig. 2.1.

- (1) Remove F01 and F02, then disassemble F03 (Top Cover Ass'y).

2.2. Bottom Cover Ass'y

Refer to Fig. 2.1.

- (1) Remove F04, then disassemble F05 (Bottom Cover Ass'y).

2.3. Cassette Case Cover Ass'y

Refer to Fig. 2.1.

- (1) Press the Eject Button to open Cassette Case Ass'y.
- (2) Pull out F06 (Cassette Case Cover Ass'y) upwardly.
- (3) Pull out F07 (Cal. Volume Cap).

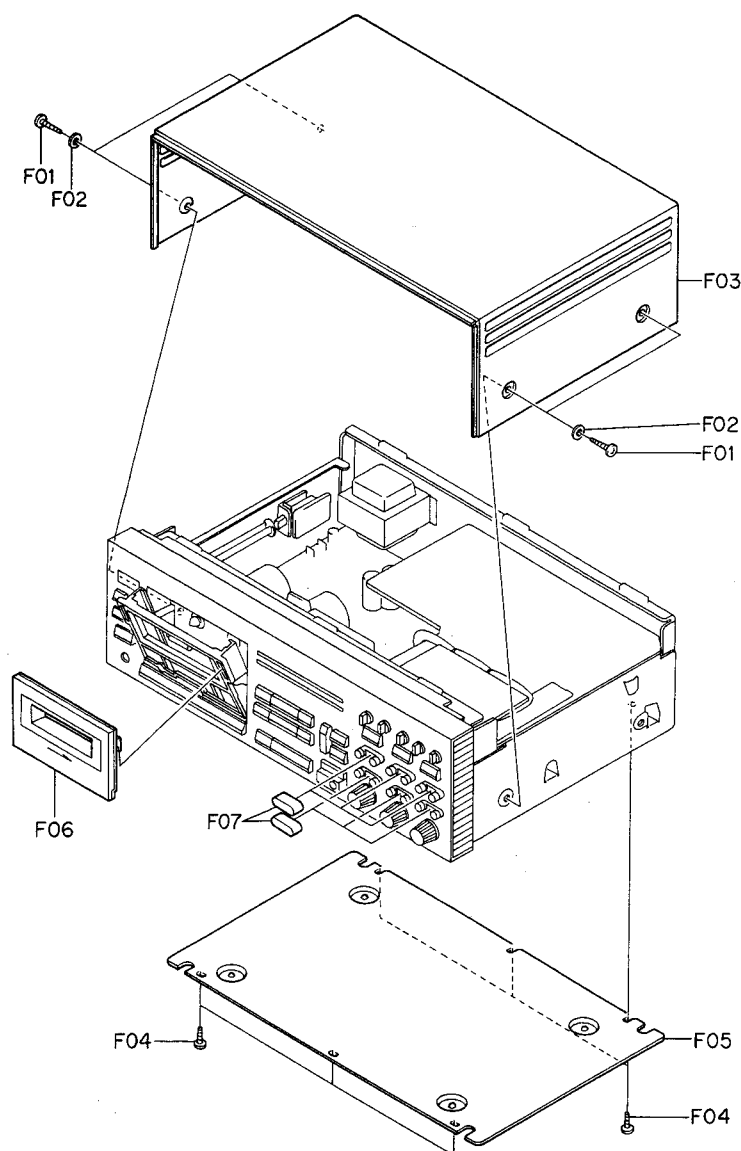
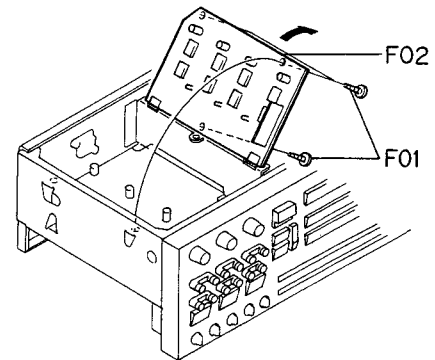


Fig. 2.1

2.4. Front Panel Ass'y

Refer to Fig. 2.2.

- (1) Refer to Fig. 2.1. Remove Top Cover Ass'y and Bottom Cover Ass'y referring to items 2.1 and 2.2.
- (2) Refer to bottom view (A). Remove F01, then turn F02 (Dolby NR P.C.B. Ass'y) over as an arrow head.
- (3) Pull out F03 (Function Switch Knob), F04 (Cal. Volume Knob) and F05 (Volume Knob).
- (4) Remove F06 and F07 (Azimuth Wire), then disassemble F08 (Front Panel Ass'y including 11 connectors).



(A) Bottom View

2.5. Mechanism Ass'y

Refer to Fig. 2.2.

- (1) Remove Front Panel Ass'y referring to item 2.4.
- (2) Remove F09 (Power Switch Joint Bar) by releasing the self-interlocking pin of Power Switch Joint Bar from Power Switch P.C.B. Ass'y.
- (3) Remove F10, F11 and F12, then disassemble F13 (Mechanism Ass'y including 5 connectors).

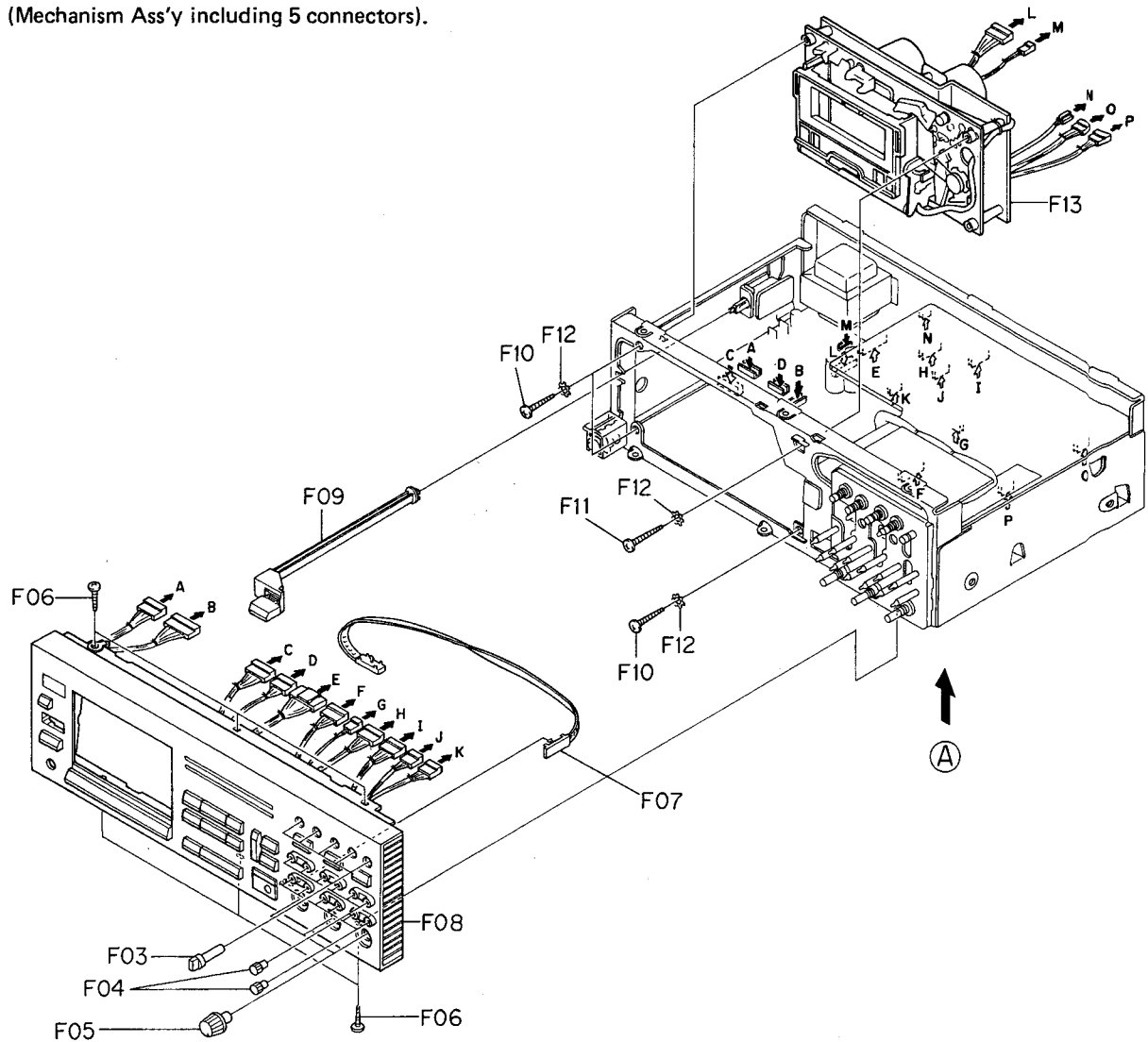


Fig. 2.2

2.6. Logic & Power P.C.B. Ass'y

Refer to Fig. 2.3.

- (1) Refer to Fig. 2.1. Remove Top Cover Ass'y and Bottom Cover Ass'y referring to items 2.1 and 2.2.
- (2) Remove 6 connectors and the wires connected by wrapping from F03 (Logic & Power P.C.B. Ass'y).
- (3) Remove F01 and F02, then disassemble F03 (Logic & Power P.C.B. Ass'y).

2.7. Dolby NR P.C.B. Ass'y

Refer to Fig. 2.3.

- (1) Refer to Fig. 2.1. Remove Top Cover Ass'y and Bottom Cover Ass'y referring to items 2.1 and 2.2.
- (2) Remove the wires connected by wrapping from F05 (Dolby NR P.C.B. Ass'y).
- (3) Remove F04, then disassemble F05 (Dolby NR P.C.B. Ass'y) by releasing the self-interlocking pin of P.C.B. Supporters.

2.8. Azimuth Switch P.C.B. Ass'y

Refer to Fig. 2.3.

- (1) Refer to Fig. 2.2. Remove Front Panel Ass'y referring to item 2.4.

- (2) Remove F06, then disassemble F07 (Azimuth Switch P.C.B. Ass'y).

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

Refer to Fig. 2.3.

- (1) Refer to Fig. 2.2. Remove Front Panel Ass'y referring to item 2.4.
- (2) Remove F08 (Power Switch Joint Bar) by releasing the self-interlocking pin of Power Switch Joint Bar from Power Switch P.C.B. Ass'y.
- (3) Remove F09, then disassemble F10 (Power Switch P.C.B. Ass'y).

2.10. Headphone Jack Ass'y

Refer to Fig. 2.3.

- (1) Refer to Fig. 2.2. Remove Front Panel Ass'y referring to item 2.4.
- (2) Remove F11 and F12, then disassemble F13 (Headphone Jack Ass'y).
- (3) Remove F14 and F15, then disassemble F16 (Headphone Jack).

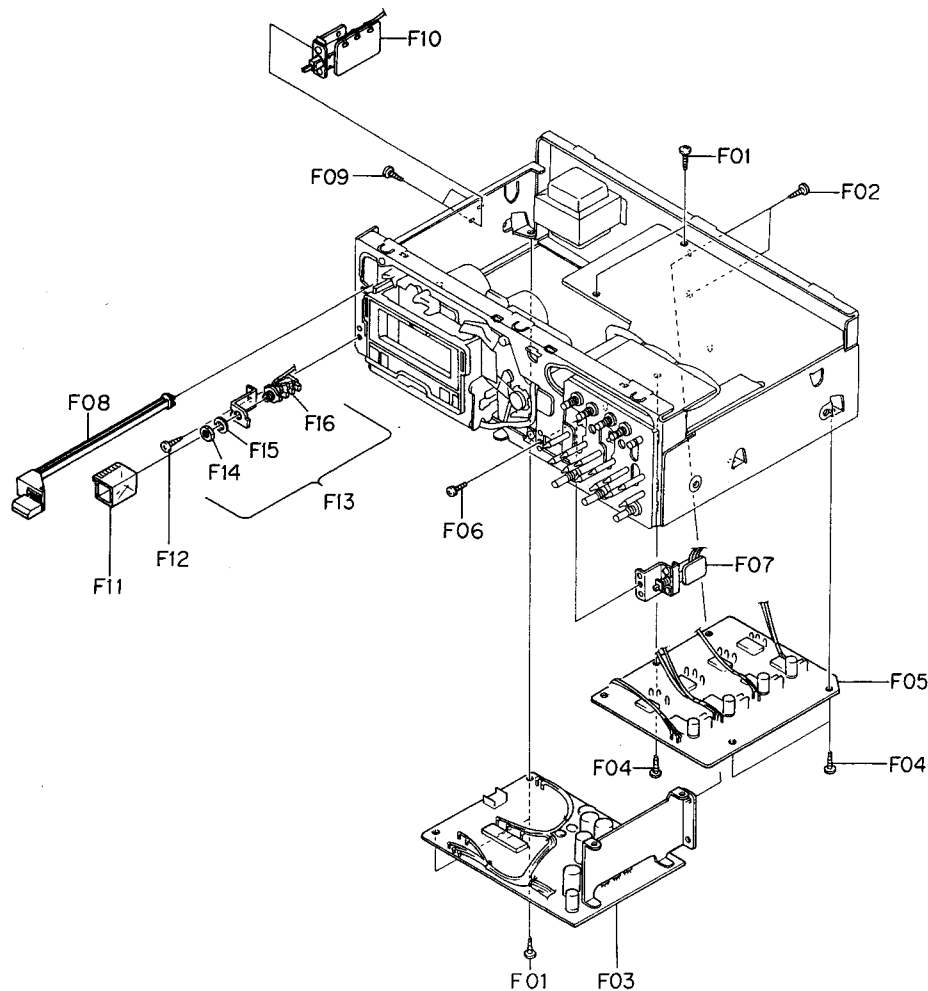


Fig. 2.3

2.11. Record Cal. P.C.B. Ass'y

Refer to Fig. 2.4.

- (1) Refer to Fig. 2.2. Remove Front Panel Ass'y referring to item 2.4.
- (2) Remove F01 and F02, then disconnect F03 (Record Cal. P.C.B. Ass'y including one connector) from F17 (Main P.C.B. Ass'y).

2.12. Sub Chassis Ass'y

Refer to Fig. 2.4.

- (1) Refer to Fig. 2.2. Remove Front Panel Ass'y referring to item 2.4.
- (2) Remove F04, then disassemble F05 (Sub Chassis Ass'y).

2.13. Switch P.C.B. Ass'y and Volume P.C.B. Ass'y

Refer to Fig. 2.4.

- (1) Remove Sub Chassis Ass'y referring to item 2.12.
- (2) Remove F06, F07, F08, F09 and F10, then disassemble F11 (Switch P.C.B. Ass'y).
- (3) Remove F12 and F13, then disassemble F14 (Volume P.C.B. Ass'y).

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

Refer to Fig. 2.4.

- (1) Remove Sub Chassis Ass'y referring to item 2.12.
- (2) Remove F15 and F16, then disassemble F17 (Main P.C.B. Ass'y).

2.15. Record Cal. LED P.C.B. Ass'y, Control Switch P.C.B. Ass'y, Indicator P.C.B. Ass'y, Counter P.C.B. Ass'y and Counter Control P.C.B. Ass'y

Refer to Fig. 2.5.

- (1) Refer to Fig. 2.2. Remove Front Panel Ass'y referring to item 2.4.
- (2) Remove F01, then disassemble F02 (Record Cal. LED P.C.B. Ass'y).
- (3) Remove F03, then disassemble F04 (Shield Case).
- (4) Remove F05 and F06, then disassemble F07 (Indicator P.C.B. Ass'y).
- (5) Remove F08, then disassemble F09 (Control Switch P.C.B. Ass'y).

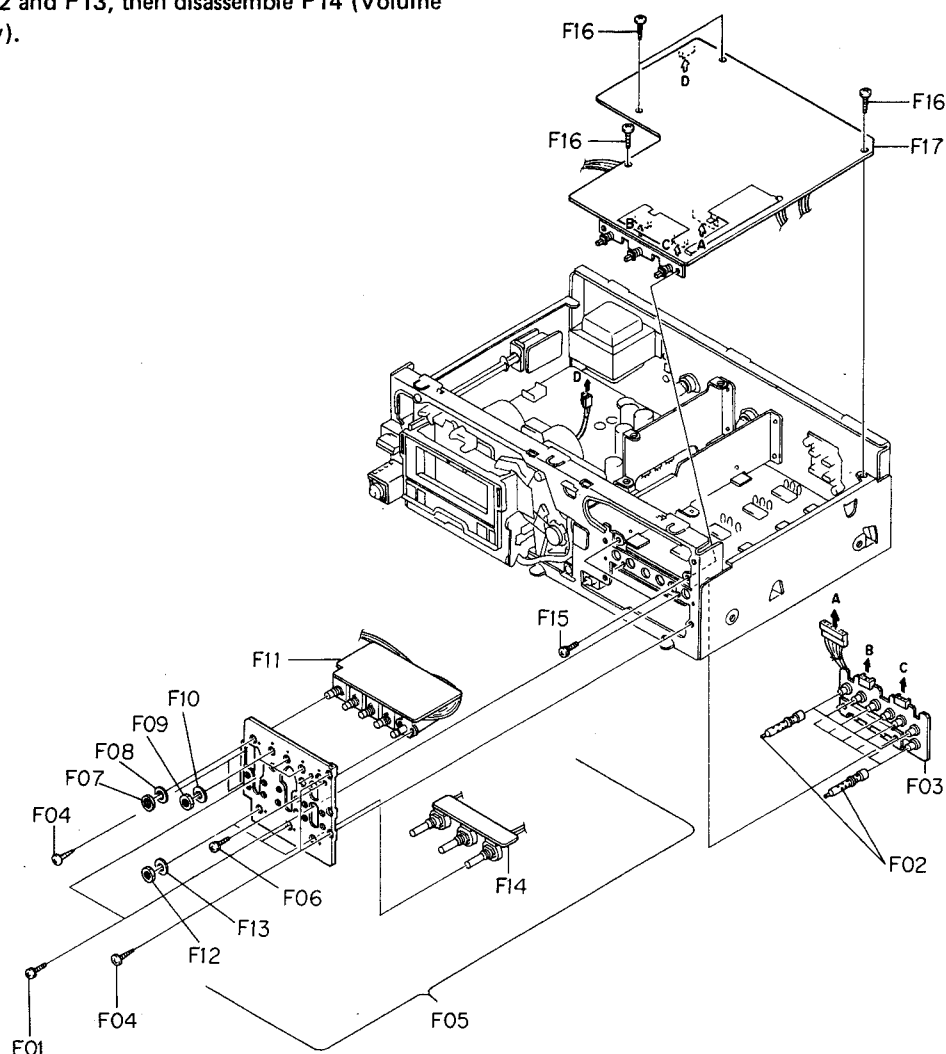


Fig. 2.4

- (6) Remove F10, then disassemble F11 (Shield Case).
- (7) Remove F12 and F13, then disassemble F14 (Counter P.C.B. Ass'y and Counter Control P.C.B. Ass'y).

2.16. Rear Panel Ass'y and Power Transformer

Refer to Fig. 2.6.

- (1) Refer to Fig. 2.1. Remove Top Cover Ass'y and Bottom Cover Ass'y referring to items 2.1 and 2.2.
- (2) Remove F01 and F02, then disassemble F03 (Rear Panel Ass'y).
- (3) Remove F04 and F05, then disassemble F06 (Power Transformer).

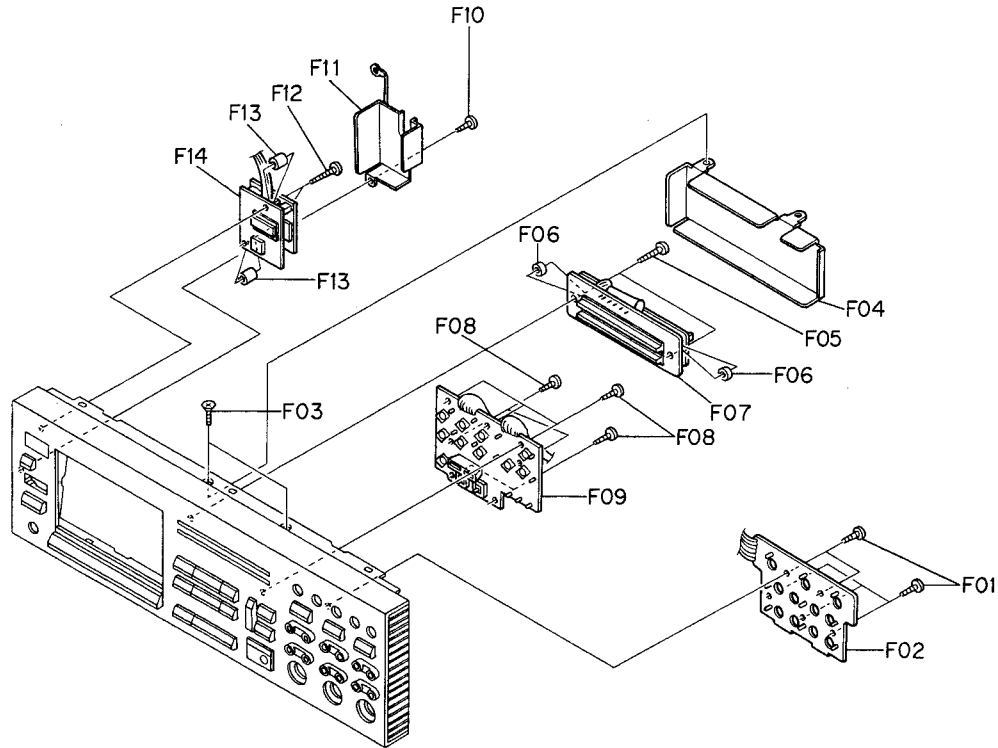


Fig. 2.5

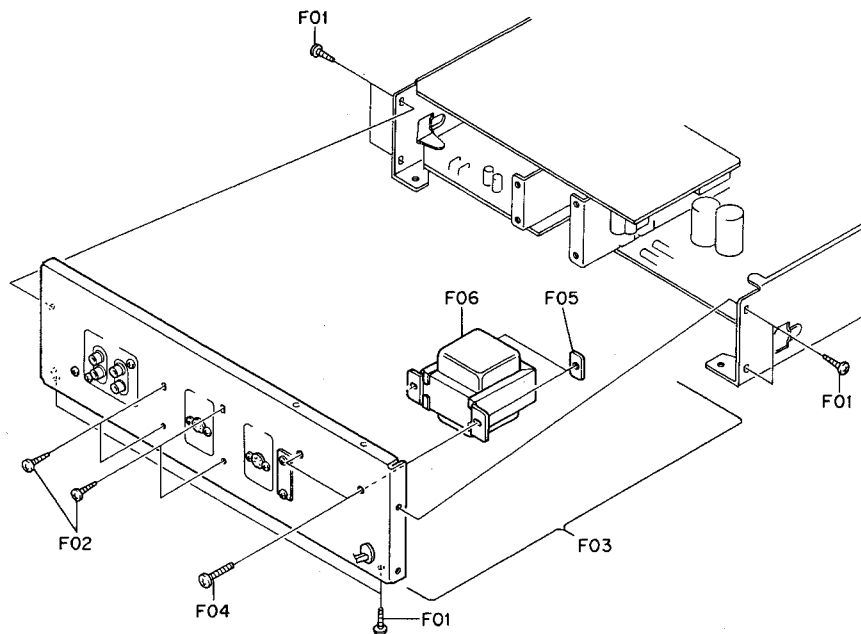


Fig. 2.6

2.17. Cassette Case Plate Ass'y, Cassette Case Ass'y and Cover Plate Ass'y

Refer to Fig. 2.7.

- (1) Refer to Fig. 2.2. Remove Mechanism Ass'y referring to item 2.5.
- (2) Remove F01, then disassemble F02 (Cassette Case Plate Ass'y).
- (3) Remove F03 (Cassette Case Lamp) from Cassette Case Plate, then pull out F04 (Lamp P.C.B.) from F08 (Cassette Case Ass'y).
- (4) Remove F05 and F06, then disassemble F07 (Cassette Case Holder L Ass'y) by releasing the self-interlocking pin of Damper Lock Arm and F08 (Cassette Case Ass'y).
- (5) Remove F09, then disassemble F10 (Cover Plate Ass'y).

2.18. Capstan Motor Ass'y and Flywheel Ass'y

Refer to Fig. 2.8.

- (1) Refer to Fig. 2.2. Remove Mechanism Ass'y referring to item 2.5.
- (2) Remove F01, F02 and F03, then disassemble F04 (Flywheel Holder Ass'y) and F05 (Capstan Belt).
- (3) Remove F06, then disassemble F07 (Capstan Motor Ass'y).
- (4) Remove F08 (Supply Flywheel Ass'y), then disassemble F09 (Take-up Flywheel Ass'y).
- (5) After removing both Flywheel Assemblies, disassemble F10 (Thrust Washer 3mm), F11 (Thrust Washer 2.6mm), F12 (Flange Thrust Cap) and F13 (Flange Thrust Spring).

2.19. Sub Mechanism Chassis Ass'y

Refer to Fig. 2.9.

- (1) Refer to Fig. 2.8. Remove Flywheel Holder Ass'y referring to item 2.18.
- (2) Remove F01, F02 and F03, then disassemble F04 (Sub Mechanism Chassis Ass'y).

2.20. Control Motor Ass'y and Reel Motor Ass'y

Refer to Fig. 2.9.

- (1) Remove Sub Mechanism Chassis Ass'y referring to item 2.19.
- (2) Remove F05, then disassemble F06 (Control Motor Ass'y).
- (3) Remove F07, then disassemble F08 (Reel Motor Ass'y).

2.21. Cam Control Volume

Refer to Fig. 2.9.

- (1) Remove Sub Mechanism Chassis Ass'y referring to item 2.19.
- (2) Remove F09, then disassemble F10 (Volume Coupler).
- (3) Remove F11 and F12, then disassemble F13 (Cam Control Volume).

2.22. Reel Hub Ass'y and Idler Ass'y

Refer to Fig. 2.9.

- (1) Remove Sub Mechanism Chassis Ass'y referring to item 2.19.
- (2) Remove F14 (Reel Hub Head), then disassemble F15 (Reel Hub B Ass'y), F16 (Reel Hub Take-up Ass'y),

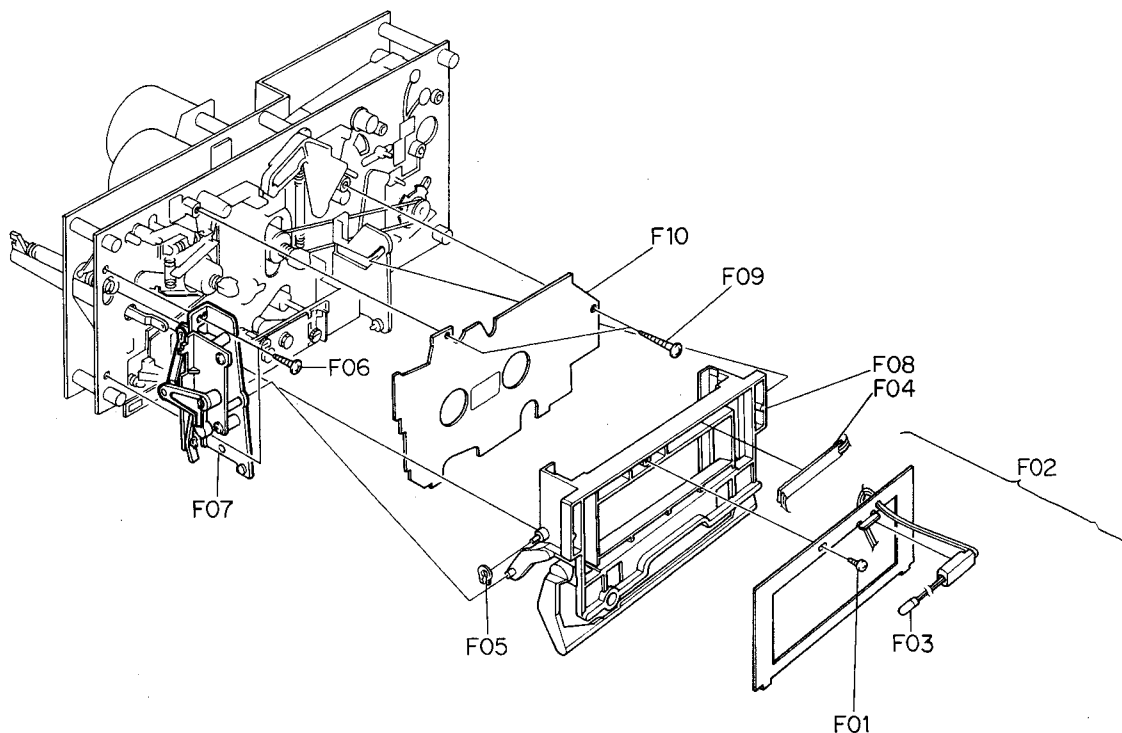


Fig. 2.7

- F17 (Reel Hub Supply Ass'y), F18 (Back Tension Ass'y) and F19 (Back Tension Spring).
 (3) Remove F20, then disassemble F21 (Idler Ass'y).

2.23. Cam Drive Gear and Control Cam

Refer to Fig. 2.9.

- (1) Remove Sub Mechanism Chassis Ass'y referring to

- item 2.19.
 (2) Remove F22, then disassemble F23 (Cam Drive Gear).
 (3) Remove F24, then disassemble F25 (Counter-Load Arm Ass'y).
 (4) Remove F26, then disassemble F27 (Control Cam).

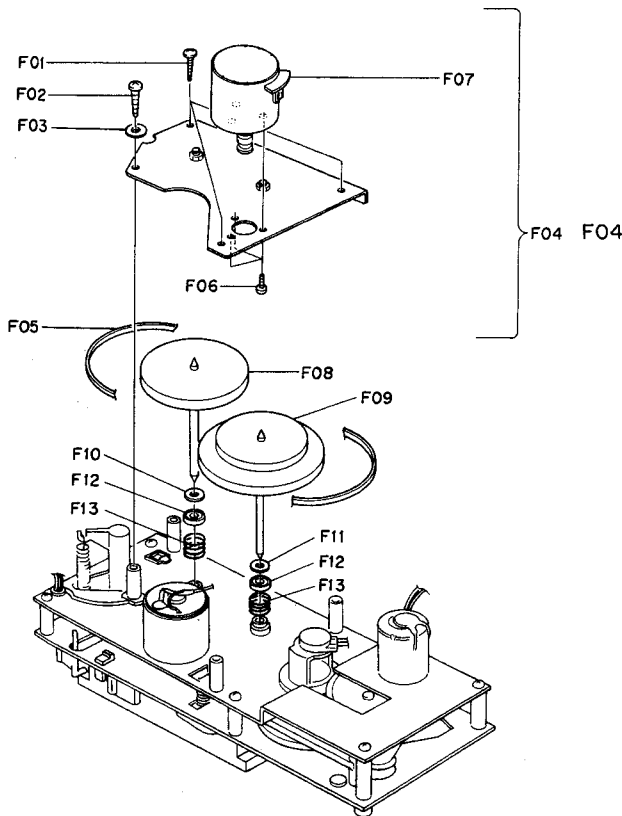


Fig. 2.8

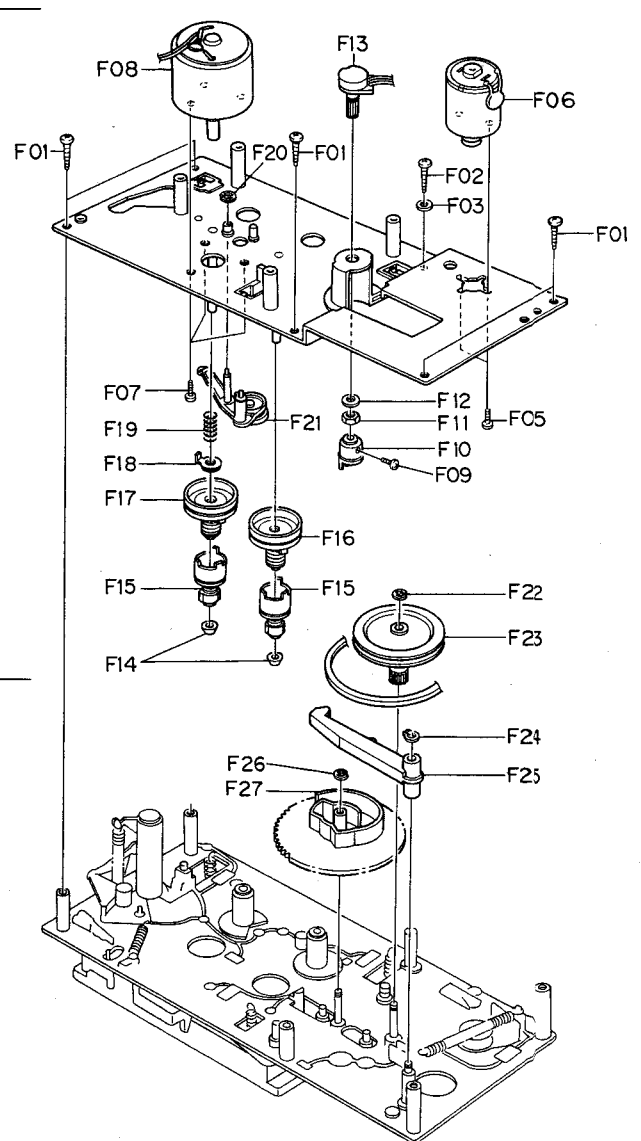


Fig. 2.9

2.24. Head Mount Base Ass'y

Refer to Fig. 2.10.

- (1) Refer to Fig. 2.7. Remove Cassette Case Ass'y referring to item 2.17.
- (2) Remove F01, then disassemble F02 (Head Mount Base Ass'y).

2.25. Erase Head, Pressure Roller and Tape Guide

Refer to Fig. 2.10.

- (1) Remove Head Mount Base Ass'y referring to item 2.24.
- (2) Remove F03, then disassemble F04 (Erase Head).
- (3) Remove F05, then disassemble F06 (Supply Pressure Roller).
- (4) Remove F07, then disassemble F08 (Supply Tape Guide).
- (5) Remove F09, then disassemble F10 (Take-up Pressure Roller).
- (6) Remove F11, then disassemble F12 (Take-up Tape Guide).

2.26. Playback Head Ass'y and Record Head Ass'y

Refer to Fig. 2.10.

- (1) Remove Head Mount Base Ass'y referring to item 2.24.
- (2) Turn F13 by 90° by pushing it, then disassemble F14 (Playback Head Ass'y).
- (3) Turn F15 by 90° by pushing it, then disassemble F16 (Record Head Ass'y) and F17 (RH Azimuth Alignment Plate).

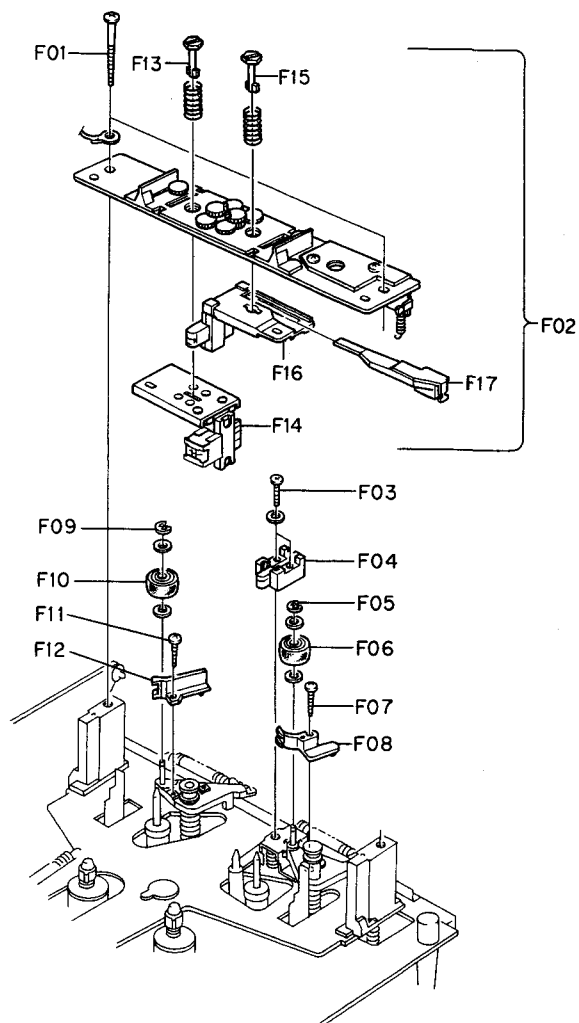


Fig. 2.10

3. MEASUREMENT INSTRUMENTS

- (1) Audio Generator (20 Hz — 200 kHz)
- (2) AC Millivolt Meter (with dB measures)
- (3) Oscilloscope (DC — 5 MHz)
- (4) Distortion Meter
- (5) Speed & Wow/Flutter Meter
- (6) Frequency Counter (DC — 1 MHz)
- (7) Ohm Meter
- (8) DC Volt Meter
- (9) AC Volt Meter
- (10) Torque Gauge (DA09013A)
- (11) 15 kHz Azimuth Tape (DA09004A)
- (12) 3 kHz Speed & Wow/Flutter Tape (DA09006A)
- (13) 1 kHz Track Alignment Tape (DA09007A)
- (14) 400 Hz Level Tape (DA09005A)
- (15) 20 kHz PB Frequency Response Tape (DA09001A)
- (16) 15 kHz PB Frequency Response Tape (DA09002A)
- (17) 10 kHz PB Frequency Response Tape (DA09003A)
- (18) Reference EXII Tape (DA09066A)
- (19) Reference SX Tape (DA09025A)
- (20) Reference ZX Tape (DA09037A)
- (21) Tilt Check Gauge M-9039 (DA09039A)
- (22) EH Tilt Check Gauge M-9040 (DA09040A)
- (23) EH Stroke Check Gauge M-9051 (DA09051A)
- (24) Stroke Check Gauge M-9047 (DA09047B)
- (25) Record Head Mounting Gauge M-9048 (DA09048A)
- (26) Back Tension Gauge (DA09055A)
- (27) Tension Arm Adjustment Cassette (DA09056A)
- (28) Audio Analyzer T-100
(including Distortion, Wow/Flutter, Speed, Oscillator and dB meters)

Note: (10) — (28) are the products of Nakamichi Corporation.

4. MECHANICAL ADJUSTMENTS

4.1. Mechanism Control Cam Adjustment

Before adjustment, disassemble the Front Panel Ass'y, then remove the Cover Plate referring to items 2.4 and 2.17.

(1) Offset Adjustment of Control Motor Driver

- (a) Refer to Figs. 4.1 and 4.2.
Adjust VR602 and VR603 on the Logic & Power P.C.B. Ass'y to locate approximately at the middle of the variable range. Then turn ON the Power switch.
VR602 (for Cam position stop)
VR603 (for Cam position play)
- (b) Press the Stop button to set the ZX-7 in Stop mode.
Adjust VR602 (for stop) so that the "S" mark on the Cam corresponds to the pointer on the mechanism chassis.
- (c) Press the Play button to set the ZX-7 in Playback mode.
(Cam will rotate, and the position marked with "PY" comes to the pointer.) Adjust VR603 (for play) so that the "PY" mark on the Cam corresponds to the pointer.
- (d) Repeat above (b) and (c) 2 — 3 times so that the "S" and "PY" marks on the Cam correspond to the pointer accurately in Stop and Playback modes respectively.
(This adjustment is required because the position adjusted by one volume will be slightly changed when the other volume is adjusted.)
- (e) Set the ZX-7 in F.F., Pause, or Cue mode by pressing each button (press F.F. and Pause buttons to set the ZX-7 in Cue mode) and check to insure that the pointer is in a range of "F", "PS", or "CU" mark respectively.
- (f) If out of the range, precise adjustment for each position according to "(2) Offset Fine Adjustment of Control Motor Driver" will be required.

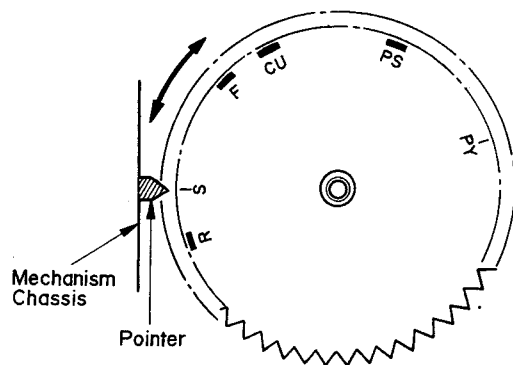


Fig. 4.1

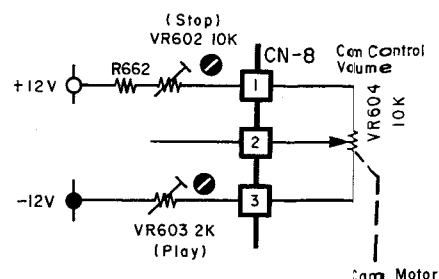


Fig. 4.2

(2) Offset Fine Adjustment of Control Motor Driver

Adjust only if a satisfactory result is not obtained in "(1) Offset Adjustment of Control Motor Driver". This adjustment is made by changing the value of the fixed resistors on the Logic & Power P.C.B. Ass'y.

Note: The value of voltage is typical value.

(a) Observation Point of Reference Voltage

Observe the each voltage at the sliding contact of the Cam Control Volume VR604 (10 k Ω) in Stop, Fast (F.F. or Rew.), Pause and Playback modes.

(b) Reference Voltage

Reference voltage at the sliding contact of VR604 (Cam Control Volume) in each mode is as follows:

Mode	Reference Voltage (Typical Value)
Stop	0 V
Fast (F.F./Rew.)	-2.0 V
Pause	-6.5 V
Play	-9.1 V

2.0 V $\pm$ 0.25 V
2.6 V $\pm$ 0.4 V

(c) Resistors for Adjustment

Mode	Ref. No.	Typical Value
Fast (F.F./Rew.)	R647	22 k Ω
Pause	R649	76.8 k Ω (F)
Play	R648	10 k Ω

(d) Adjustment Procedures

- Set the ZX-7 in Stop mode, then check to insure that the voltage at the sliding contact of VR604 is 0 V ($\pm$ 0.3 V).
- Set the ZX-7 in F.F. mode, then adjust the value of R647 so that the voltage at the sliding contact of VR604 will become lower by 2.0 V ($\pm$ 0.25 V) than in Stop mode.
- Press the Pause button to set the ZX-7 in Pause mode.
Adjust the value of R649 to obtain -6.5 V ($\pm$ 0.4, -0.15 V) at the sliding contact of VR604.
- Set the ZX-7 in Playback mode, then adjust the value of R648 so that the voltage at the sliding contact of VR604 will become lower by 2.6 V ($\pm$ 0.4 V) than in Pause mode.

4.2 Reel Motor Speed Adjustment in Play Mode

Refer to Fig. 4.3.

- Connect a DC voltmeter to TP1 and GND on the Logic & Power P.C.B. Ass'y.
- Without loading a cassette tape, set the ZX-7 in Play mode.
- Adjust VR601 on the Logic & Power P.C.B. Ass'y to obtain -4 V on the DC voltmeter.

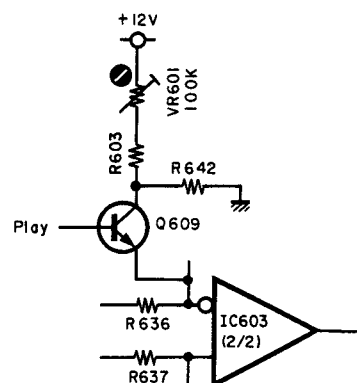


Fig. 4.3

4.3. Record Head and Playback Head Tilt Adjustment

Note: On items 4.3 - 4.9, refer to Fig. 4.4 flow chart. Refer to Figs. 4.5 and 4.6.

- Load a Tilt Check Gauge M-9039 (DA09039A) in the ZX-7.
- Clip the grounding terminal of the Tilt Check Gauge with one end of the cord with clip, and the chassis of the ZX-7 with the other end.
- Remove both of the Height Gears.
- Set the ZX-7 in Play mode. Check to insure whether the Beacons Playback Head "Upper" or "Lower" and Record Head "Upper" or "Lower" are illuminating. In order not to give damages onto the head surfaces, push both of slide knobs of the Gauge to the direction of arrow marks, then return them to the original place to be in contact with record head and playback head surfaces after Play mode is securely locked.
- Check to insure freedom from contact between the Gauge and pad lifter.
- Beacon Playback Head "Lower" will light on when height adjustment screw (P) turned clockwise but Playback Head "Upper" when counterclockwise. Adjust so that both "Upper" and "Lower" will light on even when you move the slide knob to the direction of an arrow mark and then return them to the original place.
- Same procedures will apply to the Beacons Record Head "Upper" and "Lower", except for the height adjustment screw (R).
- Set the ZX-7 in Stop mode and fit both of the serrated Height Gears. Then set the ZX-7 again in Play mode and insure all of the 4 Beacons are illuminating. If not, (3) through (7) will have to be repeated till satisfactory results are obtained.

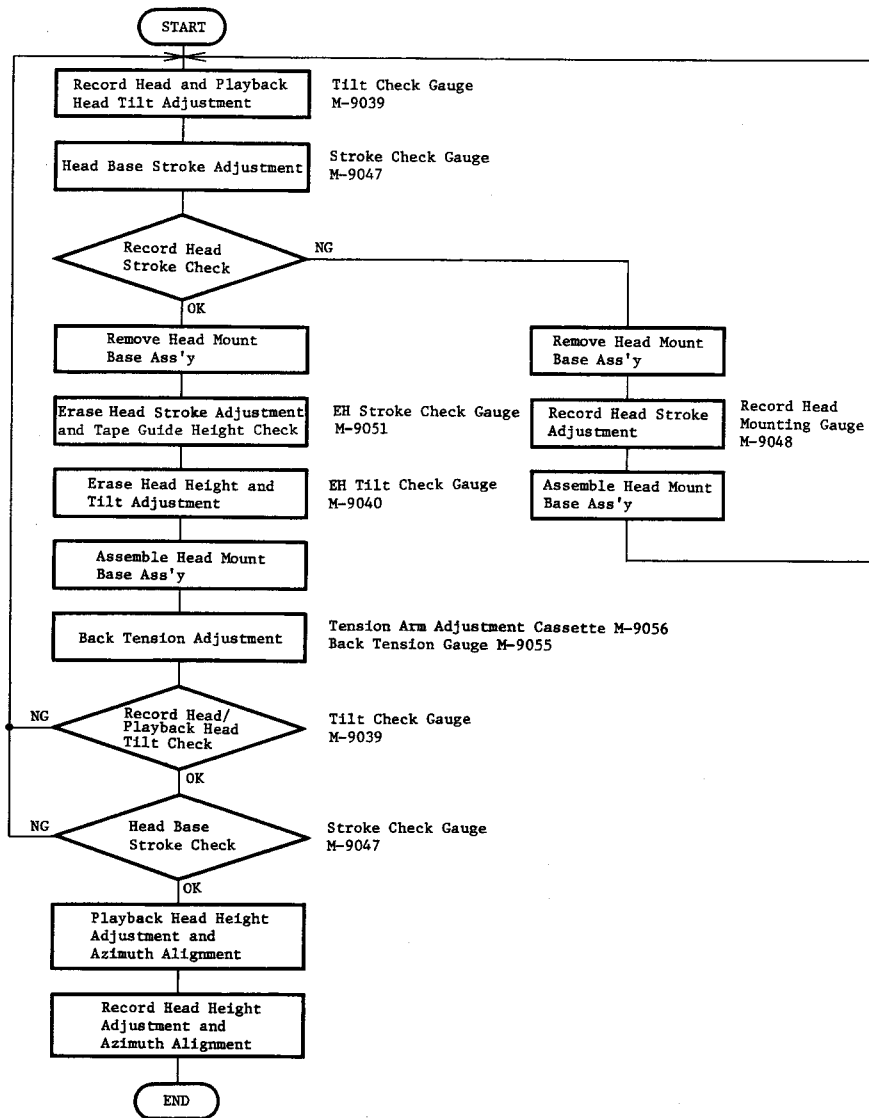


Fig. 4.4

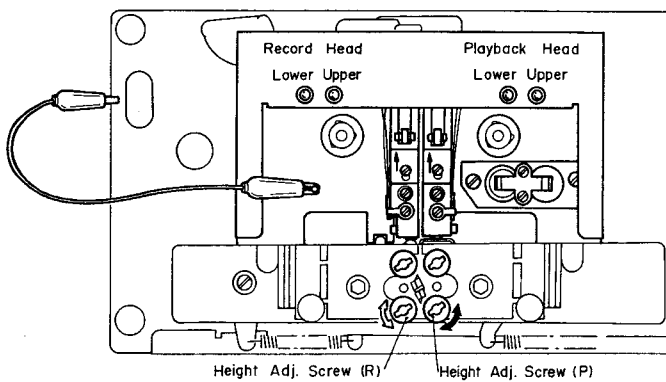


Fig. 4.5

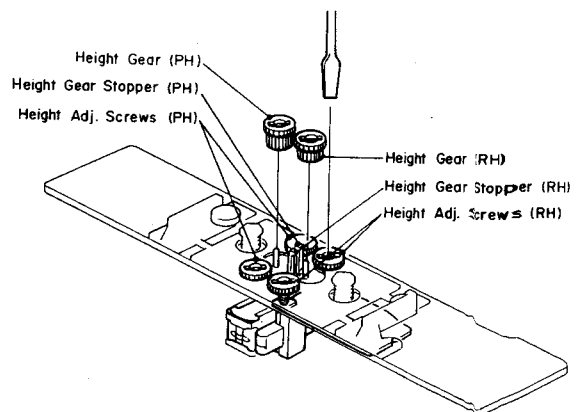


Fig. 4.6

4.4. Head Base Stroke Adjustment

Note: Before you conduct this adjustment, adjust with a "Tilt Check Gauge" to insure freedom from tilt on the playback head and record head.

(1) Head Base Stroke Adjustment in Play Mode

Refer to Fig. 4.7.

- Load a Stroke Check Gauge M-9047 (DA09047B) in the ZX-7.
- Move Record Head Indicator and Playback Head Indicator to the direction of arrow mark "A" with your finger tip and then set the ZX-7 in Play mode. Then slowly release the Indicators and insure whether each of the Indicators is in contact with record and playback heads.
- Check to insure whether the "P" pointer on the Playback Head Indicator locates between the 2 lines on the Indicator Plate.
- If the playback head stroke is noted to be misaligned, adjustment can be made by moving the stroke adjuster assembled in the head base assembly (either forwardly or backwardly).
- Check to insure whether the "P" pointer on the Playback Head Indicator locates between the 2 lines on the Record Head Indicator, thus check can be made on record head stroke.
- If the record head stroke is noted to be misaligned, adjustment can be made with a Record Head Mounting Gauge M-9048 (DA09048A).

(2) Head Base Stroke Adjustment in Cue Mode

Refer to Figs. 4.7 and 4.8.

- Load a Stroke Check Gauge M-9047 (DA09047B) in the ZX-7.
- Move Record Head Indicator and Playback Head Indicator to the direction of arrow mark "A" with your finger tip and then set the ZX-7 in Cue (F.F. and Pause) mode. Then slowly release the Indicators and insure whether each of the Indicators is in contact with record and playback heads.
- Check to insure whether the "C" pointer on the Playback Head Indicator locates between the 2 lines on the Indicator Plate.
- If the playback head stroke is noted to be misaligned, adjust VR610 on the Logic & Power P.C.B. Ass'y till satisfactory results are obtained.
- After completion of the Head Base Stroke Adjustment, check to insure accuracy of the Head Base Stroke Adjustment in Play mode. If the above are inaccurate, items (1) and (2) will have to be repeated till satisfactory results are obtained.

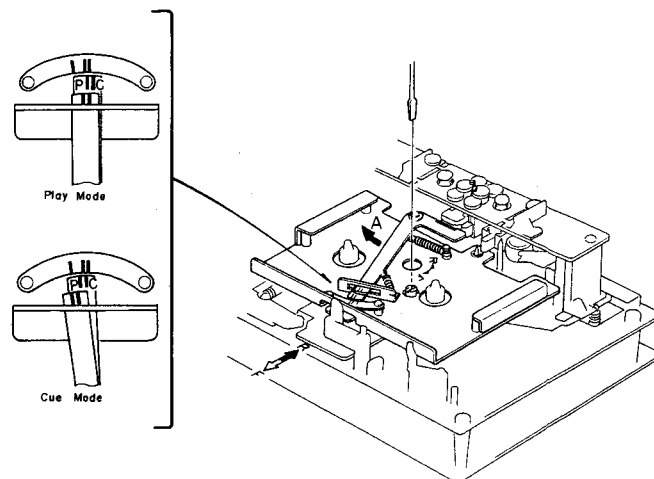


Fig. 4.7

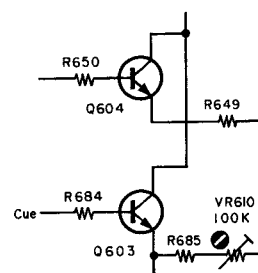


Fig. 4.8

4.5. Erase Head Stroke Adjustment and Tape Guide Height Check

Remove Head Mount Base Ass'y referring to item 2.24. Refer to Figs. 4.9 and 4.10.

(1) Erase Head Stroke Adjustment

- Load an EH Stroke Check Gauge M-9051 (DA09051A) in the ZX-7.
- Set the ZX-7 in Play mode, thus check can be made on erase head stroke through the EH Stroke Indicator.
- Check to insure whether the erase head surface is aligned with red line on the EH Stroke Indicator. If not, adjust the erase head stroke by loosening 2 screws A that assemble erase head and erase head plate.
- After completion of adjustment, 2 pcs. of screws shall be locked with lock tight paint.

(2) Supply Tape Guide Height Check

- Load an EH Stroke Check Gauge M-9051 (DA09051A) in the ZX-7.
- Set the ZX-7 in Play mode.
- Slide the Supply Tape Guide Check Bar down against the supply tape guide, and check to insure that the Supply Tape Guide Check Bar is accepted by the supply tape guide.

(3) Take-up Tape Guide Height Check

- (a) Load an EH Stroke Check Gauge M-9051 (DA0-9051A) in the ZX-7.
- (b) Set the ZX-7 in Play mode.
- (c) Slide the Take-up Tape Guide Check Bar down against the take-up tape guide, and check to insure that the Take-up Tape Guide Check Bar is accepted by the take-up tape guide.

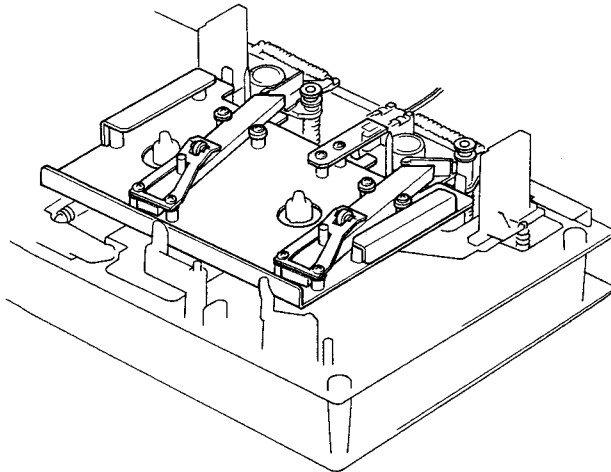


Fig. 4.9

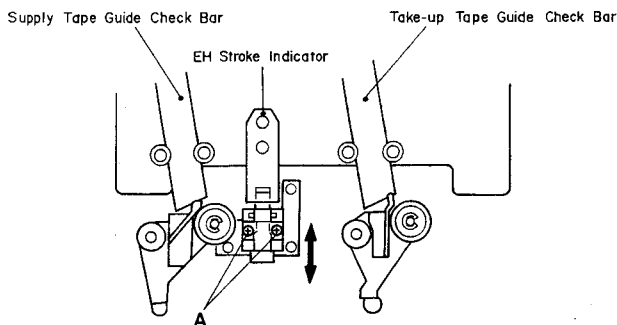


Fig. 4.10

4.6. Erase Head Height and Tilt Adjustment

Refer to Figs. 4.11 and 4.12.

- (1) Remove Head Mount Base Ass'y referring to item 2.23.
- (2) Load an EH Tilt Check Gauge M-9040 (DA09040A) in the ZX-7.
- (3) Set the ZX-7 in Stop mode.
- (4) Check to insure whether one of the 3 Beacons is illuminating. Look down the mirror as shown by an arrow mark and slowly turn the Screw "Height" counterclockwise (or clockwise) so that the two horizontal lines on the mirror will become superposed on the line (in different color) of the erase head, and check to insure whether Beacon "1" is illuminating.
- (5) Turn Screw "Tilt" counterclockwise (or clockwise) to light on Beacon "2". Excessive turning will cause

the Beacon "1" to light off. Adjustments of Screw "Tilt" will therefore be conducted till both of the Beacons "1" and "2" illuminate.

- (6) Turn Screw "Azimuth" counterclockwise (or clockwise) to light on Beacon "3". Excessive turning will cause either Beacon "1" or "2" to light off, and therefore adjust Screw "Azimuth" until all of the 3 Beacons "1", "2" and "3" illuminate.
- (7) Check to insure whether the horizontal line on the mirror corresponds to that on the erase head. If not, (4) through (7) will have to be repeated till satisfactory results are obtained.
- (8) After completion of adjustment, 3 pcs. of screws shall be locked with lock tight paint.

Note: Before use of this gauge, check to insure freedom from dust or dirt, or overflow in the groove of the erase head surface.

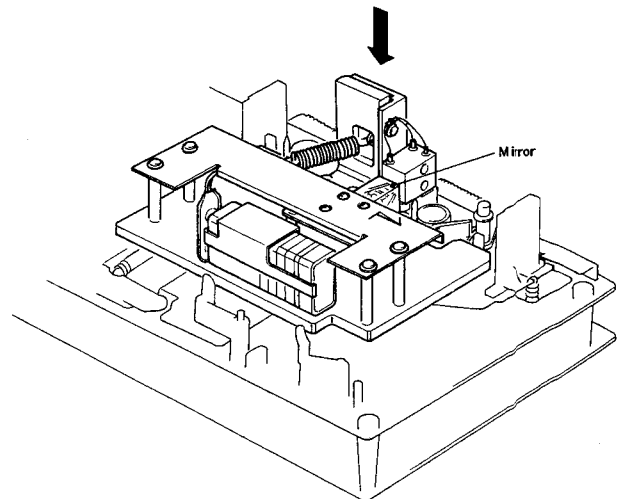


Fig. 4.11

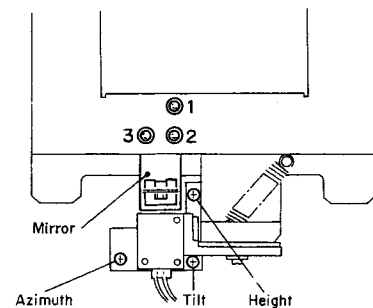


Fig. 4.12

4.7. Back Tension Adjustment

Refer to Figs. 4.13 – 4.16.

- (1) Load a Tension Arm Adjustment Cassette (DA09056A) in the ZX-7 referring to Fig. 4.13.
- (2) Set the ZX-7 in Play mode.
- (3) Bend the Back Tension Arm with pliers so that the gap between the Cassette Holding Spring assembled on the Head Base Ass'y and the Back Tension Arm becomes 0.5 mm as shown in Fig. 4.14. Do not bend the top of the Back Tension Arm.
- (4) Set the ZX-7 in Stop mode, and remove the Tension Arm Adjustment Cassette (DA09056A), then set the ZX-7 in Cue mode.

In Cue mode, check to insure that the gap is found between the Supply Reel Hub B Ass'y and the Felt of Back Tension Ass'y as shown in Fig. 4.15.

- (5) Load the Back Tension Gauge (DA09055A) in the ZX-7.
- (6) Set the ZX-7 in Play mode and read the torque value of Back Tension Gauge.

If the value is in a range of 6 g-cm to 10 g-cm, adjustment is not necessary. If not, change the installation point of the Back Tension Spring as shown in Fig. 4.16, and obtain the torque of 7 g-cm to 9 g-cm range.

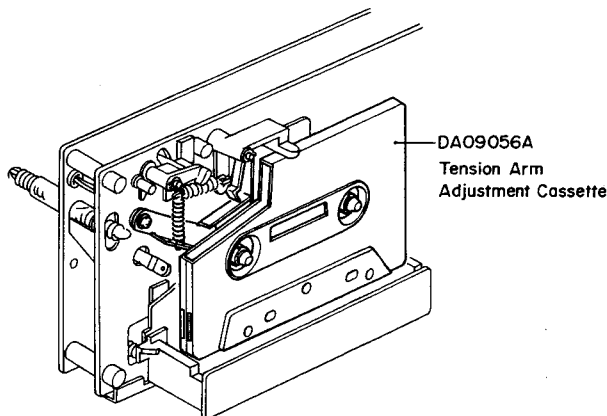


Fig. 4.13

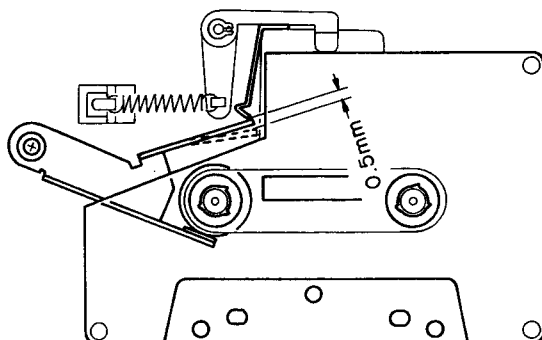


Fig. 4.14

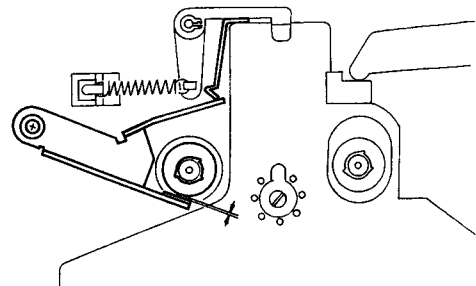


Fig. 4.15

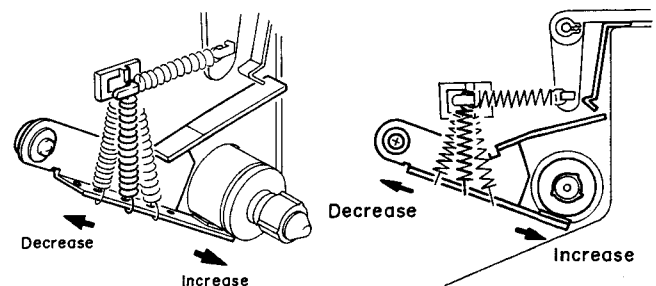


Fig. 4.16

4.8. Playback Head and Record Head Height Adjustment and Azimuth Alignment

(1) Playback Head Height Adjustment and Azimuth Alignment

Refer to Fig. 4.17.

- (a) Set the Monitor switch to Tape, then connect a VTVM to the Output Jacks.
- (b) Load a 1 kHz Track Alignment Tape (DA09007A), then set the ZX-7 in Play mode.
- (c) Turn the PH Height Gear until the outputs of both channels become minimum.
- (d) Load a 15 kHz Azimuth Tape (DA09004A), then set the ZX-7 in Play mode.
- (e) Turn the PH Azimuth Alignment Screw until the outputs of both channels become maximum.
- (f) Repeat above steps (b) through (e) one or two times to obtain optimum performance.

(2) Record Head Height Adjustment and Azimuth Alignment

Refer to Figs. 4.17 – 4.20.

- (a) Set the ZX-7 in Stop mode.
- (b) Press the Azimuth Alignment Start button to ON.
- (c) Adjust the Azimuth Alignment Knob so that the Slide Lever of the Azimuth Alignment Wire is located at the center of the slit of the Azimuth Alignment Wire as shown in Fig. 4.18.
- (d) Press the Azimuth Alignment Start button to OFF.
- (e) Set the Monitor switch to Tape, Eq. switch to 70μs and Tape Selector button to SX.
- (f) Load a reference SX tape (DA09025A) and connect a VTVM to Output Jacks.

- (g) Press the Record and Play buttons, then press the Level Calibration Start button to oscillate 400 Hz. Turn the RH Height Gear until the outputs of both channels become maximum.
- (h) Press the Bias Calibration Start button to oscillate 15 kHz, then turn the RH Azimuth Alignment Screw until the outputs of both channels become maximum.
- (i) Repeat (g) and (h) one or two times to obtain optimum performance.
- (j) Press the Record and Play buttons, then press the Azimuth Alignment Start button to ON. Adjust VR304 on the Main P.C.B. Ass'y so that the red indicator in the middle of the Azimuth Indicator is lit up.
Note: Use the same side of the tape as used in the above steps.
- (k) After completion of the above adjustment, press the

Record and Play buttons, then press the Level Calibration Start button to oscillate 400 Hz. Record 400 Hz tone to the same portion of both sides A and B of the tape.

- (l) Immerse the recorded tape in a magnetized developing solution. In turn, check to insure that the recording head tracks across the center are separated with a distance of 0.55 to 0.75 mm (typically 0.65 mm) as illustrated in Fig. 4.20.

Note: Liquid for tape magnetized development solution

"MAGNA-SEE SOUND CRAFT a product of CBS RECORDS a division of Columbia Broadcasting System, Inc., Danbury, Conn. 06810 U.S.A., or equivalent".

After development, clean the tape otherwise pressure rollers and heads will become dirty.

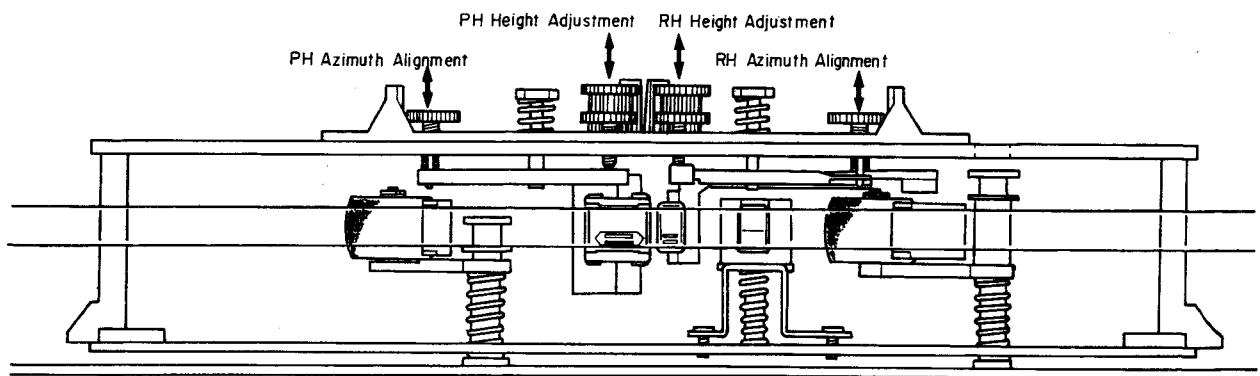


Fig. 4.17

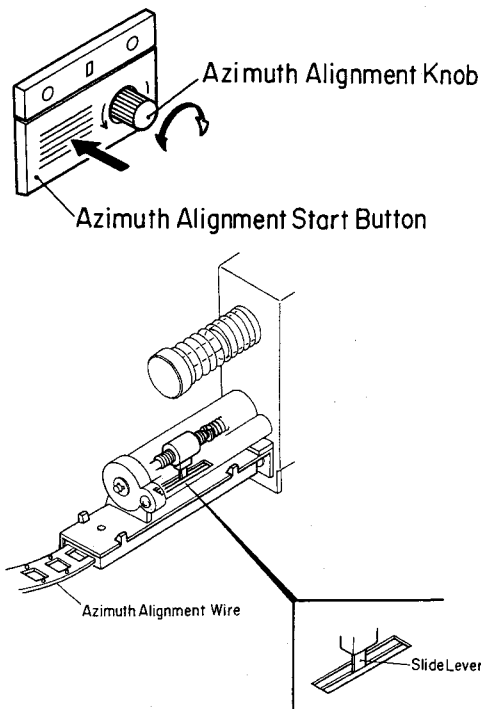


Fig. 4.18

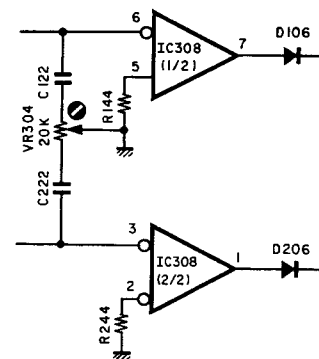


Fig. 4.19

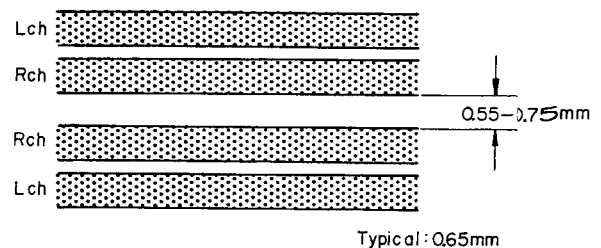


Fig. 4.20

4.9. Record Head Stroke Adjustment

Refer to Figs. 4.21 and 4.22.

Note: This adjustment will be required only to insure freedom from misalignment of the record head stroke in the record head stroke check mode.

- (1) Check the accuracy of the record head stroke.
- (2) Remove Head Mount Base Ass'y referring to item 2.23.
- (3) Remove the record head assembly.
- (4) Adjustment of Record Head Mounting Gauge M-9048 (DA09048A)
 - (a) Mount the Block B onto the Mounting Gauge Plate.
 - (b) Loosen the 2 screws fixing the Block A.
 - (c) As shown in Fig. 4.21, hold the Gauges (3.05 mm and either one of 0.05, 0.15, 0.2, 0.25, 0.3 or 0.35 mm thickness) between the Block A and Block B, and fix the Block A with screws, pushing the Block A to the 2 guide pins.
- (5) Remove the Block B from the Mounting Gauge Plate.
- (6) As shown in Fig. 4.22, mount the R-8L record head assembly onto the Mounting Gauge Plate, then check the location of the R-8L record head surface. (If record head contacts to the Block C, loosen 2 pcs. of screws that assemble record head and record head plate, then place the R-8L record head assembly onto the Plate.)
- (7) Remove the R-8L record head assembly from the Mounting Gauge Plate.
- (8) Readjustment of Record Head Mounting Gauge M-9048 (DA09048A)
 - (a) Mount the Block B onto the Mounting Gauge Plate.
- (b) Loosen the 2 screws fixing the Block A.
- (c) As shown in Fig. 4.21, hold the Gauges (3.05 mm and either one of 0.05, 0.15, 0.2, 0.25, 0.3 or 0.35 mm thickness) between the Block A and Block B, and fix the Block A with screws, pushing the Block A to the 2 guide pins.
- (9) Remove the Block B from the Mounting Gauge Plate.
- (10) Mount the R-8L record head assembly onto the Mounting Gauge Plate.
- (11) As shown in Fig. 4.22, loosen 2 pcs. of screws that assemble record head and record head plate. As the location of the Block A is secured by the item (8)-(c), push the record head to the directions A and B, then tighten 2 pcs. of screws.
- (12) Check to insure freedom from gap between the Block C and record head surface, then tighten the 2 pcs. of screws on the record head assembly with lock tight paint.
- (13) Remove the R-8L record head assembly from the Mounting Gauge Plate.
- (14) Assemble the record head assembly to the head mount base assembly.
- (15) Assemble the head mount base assembly to the mechanism assembly.
- (16) Check the record head stroke.

If the above are inaccurate, items (1) through (16) will have to be repeated till satisfactory results are obtained.

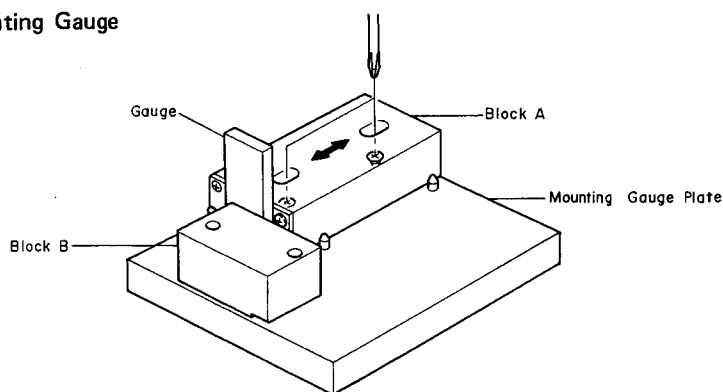
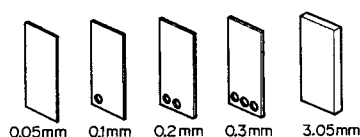


Fig. 4.21

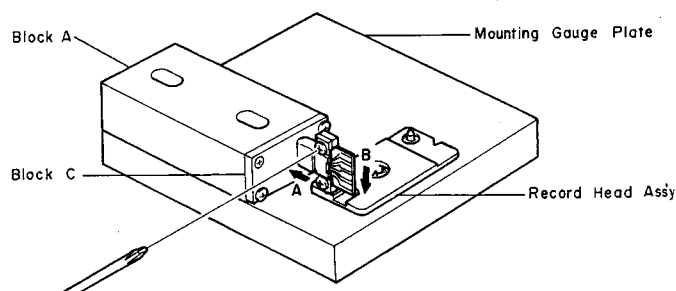


Fig. 4.22

4.10. Tape Travelling Adjustment

The adjustment shall be made with a modified version of the current type EXII C-90 as shown in Fig. 4.23 (error will be made if a current type Tape Travelling Cassette (DA09011A) should be used for this purpose).

While modifying an EXII C-90, the tape guides in the cassette housing shall be kept protected to avoid tilt. Check shall be made in the following procedures:

- (1) An EXII C-90 tape thus modified shall be loaded onto the ZX-7.
- (2) Release the back-tension (rotate the Supply Reel and feed out some length of tape) and set the ZX-7 in Play mode.
- (3) In this juncture, check to insure whether the tape is free from waving or slippage from the tape guide.
- (4) When the modified EXII C-90 is played back, check to insure whether the tape is freedom from waving from head surface or at pressure rollers.
- (5) If either of waving or slippage from the tape guide should be noted, adjustments of "4.3. Record Head and Playback Head Tilt Adjustment", "4.4. Head Base Stroke Adjustment", "4.5. Erase Head Stroke Adjustment and Tape Guide Height Check", "4.6. Erase Head Height and Tilt Adjustment", "4.7. Back Tension Adjustment", "4.8. Playback Head and Record Head Height Adjustment and Azimuth Alignment", "4.9. Record Head Stroke Adjustment", etc. will be required.

As a case may be, the said waving or slippage may have been caused from defective supply Pressure Roller Ass'y or Take-up Pressure Roller Ass'y without parallel contact with capstans. If such are noted, the Pressure Roller Assemblies will have to be replaced.

Further, excessively weak take-up torque or strong take-up torque may cause defective tape travelling.

The ZX-7 is intended to be an adjustment-free model, however if the similar matters as above should be noted, please replace the Reel Hub Ass'y to obtain appropriate take-up torque.

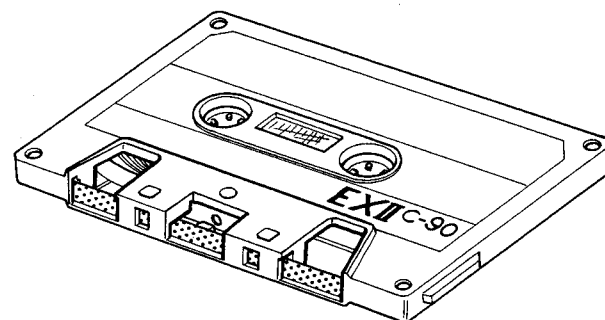


Fig. 4.23

4.11. Flywheel Holder Adjustment

- (1) Refer to Fig. 4.24.

Tighten the Thrust Screws until the gap between the Flywheel Assemblies and Thrust Screws becomes minimized when both of the Capstan Shafts are moved backwardly and forwardly (the Thrust Springs between the Capstan Flanges and Flywheel Thrust Caps are in a flat state).

Excessive tightening of the Thrust Screws however will give damages on the Flywheel Assemblies, to which careful attention is invited.

- (2) Return the Thrust Screws by 1/2 turn.
- (3) Fixing the Thrust Screws with a screwdriver, lock the Lock Nut.
- (4) Apply a quantity of lock tight paint to the Thrust Screws.

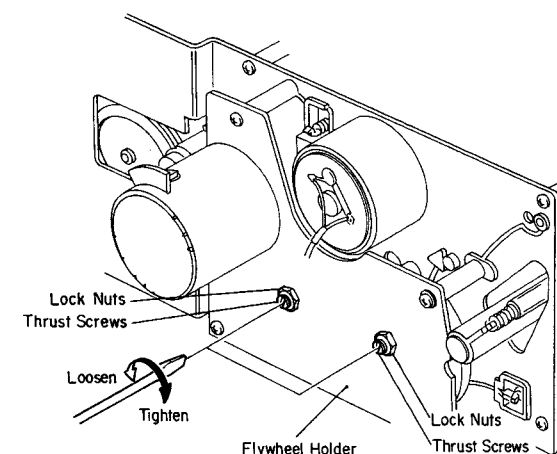


Fig. 4.24

4.12. Tape Speed Adjustment

Refer to Fig. 4.25.

- (1) Remove the Top Cover Ass'y referring to item 2.1.
- (2) Connect a Frequency Counter to the Output Jack.
- (3) Load a 3 kHz Speed Wow/Flutter Tape (DA09006A) and play it back.
- (4) Adjust the Tape Speed Adjustment Volume (VR501) incorporated in the Capstan Motor to obtain 3,000 Hz on the Frequency counter.

CCW: Motor drives slowly.

CW: Motor drives fast.

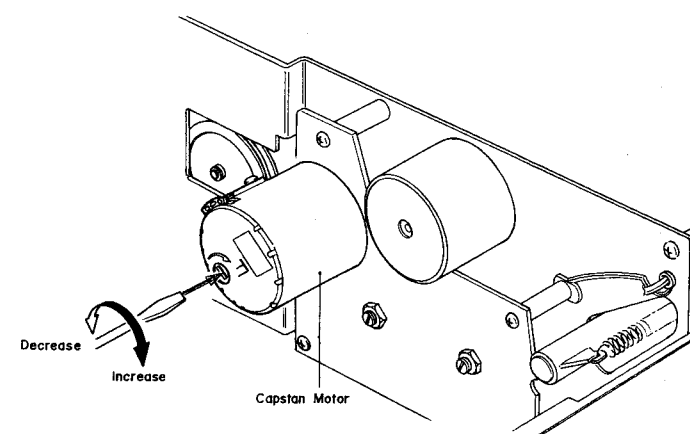


Fig. 4.25

4.13. Lubrication

ZX-7 is a lubrication-free cassette deck except when parts are replaced. Apply the following lubricant for each replaced part:

- (1) LAUNA #100
Capstan Shaft
Pressure Roller Shaft
Thrust Cap
- (2) FLOIL GB-TS-1
Reel Hub Shaft
Thrust portion on the Capstan Shaft
FLOIL GB-TS-1, made by Kanto Chemicals Co., Ltd. in Japan.
We suggest that you use the above or equivalent type. If unavailable please contact Kanto Chemicals Co., Ltd., 2-7 Kanda Suda-cho Chiyoda-ku, Tokyo 101 Japan.

- (3) Silicon Oil #3000 CST
Air Damper Piston

Note: Excessive lubrication may cause defective damper action as the 0.2 ϕ hole at the end of the cylinder may be filled with oil.

5. PARTS LOCATION FOR ELECTRICAL ADJUSTMENT

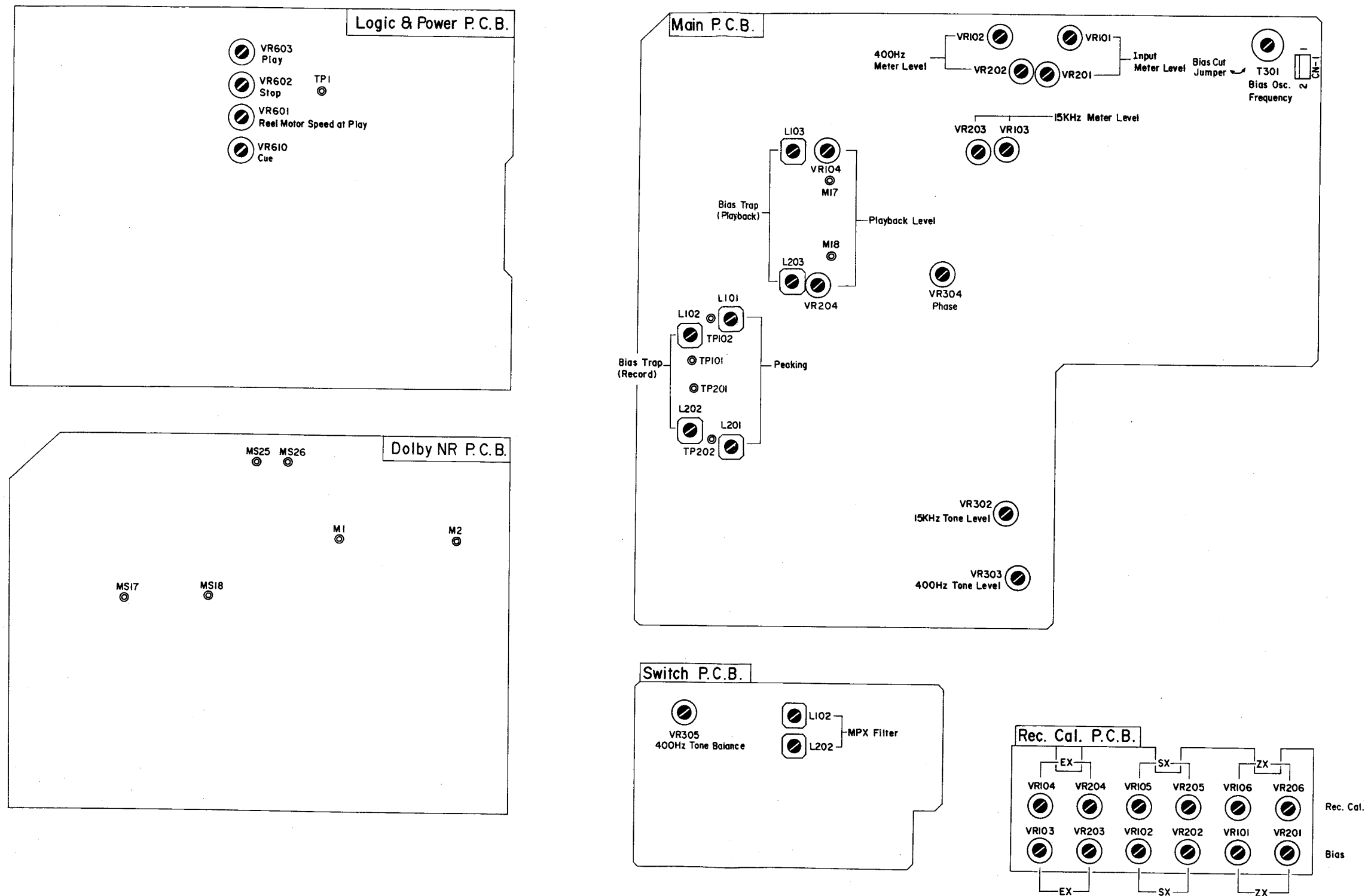


Fig. 5

6. ELECTRICAL ADJUSTMENTS AND MEASUREMENTS

6.1. Adjustment and Measurement Instructions

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

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
1	Tape Speed Adjustment	3 kHz Speed and Wow/Flutter Tape (DA09006A)	Frequency Counter to Output Jacks	Playback	Capstan Motor Governor P.C.B. VR501	Adjust VR501 to obtain 3 kHz $\pm 0.5\%$. (VR501 is incorporated in the Capstan Motor.)
2	Tone Level Calibration	Tone 400 Hz and 15 kHz	VTVM to MS25, MS26 on Dolby NR P.C.B. and Output Jacks	Tone — 400 Hz/15 kHz Monitor SW — Source	Main P.C.B. VR303 (for 400 Hz) VR302 (for 15 kHz) Switch P.C.B. VR305 (400 Hz Balance)	1. Press the Level Calibration Start button to oscillate 400 Hz. 2. Adjust VR303 to obtain 90 mV on the VTVM at MS26 (R ch). 3. Adjust VR305 to obtain the same level as R ch on the VTVM at MS25. 4. Measure the reading on the VTVM at the Output Jacks. 5. Press the Bias Calibration Start button to oscillate 15 kHz. 6. Adjust VR302 to obtain 20 dB lower level than in 4 on the VTVM at the Output Jacks. 7. Press the Calibration Reset button to stop the tone oscillation.
3	Meter Level Calibration	400 Hz to Input Jacks and Tone 400 Hz and 15 kHz	VTVM to MS25, MS26 on Dolby NR P.C.B.	Tone — OFF/400 Hz/15 kHz Monitor SW — Source	Main P.C.B. VR101, VR201 VR102, VR202 VR103, VR203 VR303 (for 400 Hz) VR302 (for 15 kHz)	1. Feed in 400 Hz, then adjust the Input Level controls to obtain 90 mV -1.3 dB on the VTVM. 2. Adjust VR101 (VR201) so that the 0 dB segment of the level meter starts illuminating. 3. Press the Level Calibration Start button to oscillate 400 Hz, then adjust VR303 to obtain 90 mV -0.5 dB on the VTVM. 4. Adjust VR102 (VR202) so that the 0 dB segment of the level meter starts illuminating. 5. Press the Bias Calibration Start button to oscillate 15 kHz, then adjust VR302 to obtain 9 mV -0.5 dB on the VTVM. 6. Adjust VR103 (VR203) so that the 0 dB segment of the level meter starts illuminating. 7. Press the Calibration Reset button. 8. Re-adjust the tone level according to step 2 "Tone Level Calibration".
4	MPX Filter Adjustment	19 kHz ± 100 Hz to Input Jacks	VTVM to Output Jacks	Monitor SW — Source Dolby NR SW — OFF MPX Filter SW — IN	Switch P.C.B. L102, L202	1. Turn the Output level control fully clockwise (maximum position). 2. Adjust the Input Level controls to obtain 1 V on the VTVM. 3. Set the MPX Filter switch to IN, then adjust L102 (L202) to obtain the minimum reading on the VTVM (the minimum reading will be less than -30 dB).
5	Playback Head Track Alignment	1 kHz Track Alignment Tape (DA09007A)	VTVM to Output Jacks	Playback Monitor SW — Tape Eq. SW — 70 μ s Dolby NR SW — OFF MPX Filter SW — OUT	PH Height Gear	Adjust the PH Height Gear to obtain minimum readings of both channels on the VTVM. Refer to "Playback Head Height Adjustment and Azimuth Alignment" in item 4.8.

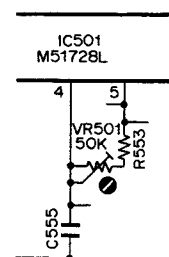


Fig. 6.1
1. Tape Speed

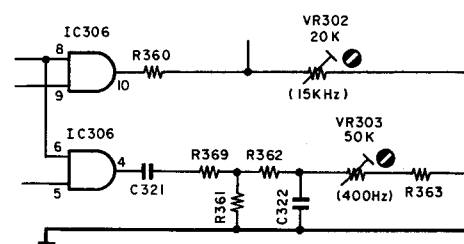
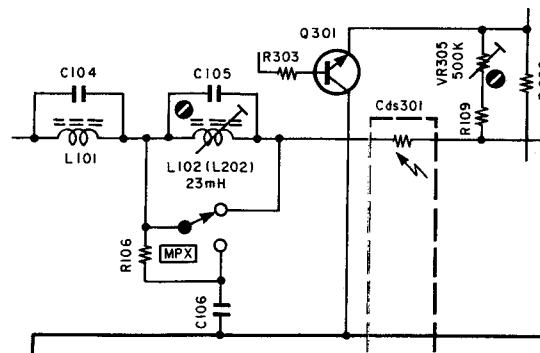


Fig. 6.2
2. Tone Level
3. Meter Level



STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
6	Playback Head Azimuth Alignment	15 kHz Azimuth Tape (DA09004A)	VTVM to Output Jacks	Playback Monitor SW — Tape Eq. SW — 70 μ s Dolby NR SW — OFF MPX Filter SW — OUT	Playback Head Azimuth Alignment Screw	Adjust the Playback Head Azimuth Alignment Screw to obtain maximum readings of both channels on the VTVM. Refer to "Playback Head Height Adjustment and Azimuth Alignment" in item 4.8. Note: Repeat steps 5 and 6 one or two times to obtain optimum performance.
7	Playback Level Calibration	400 Hz Level Tape (DA09005A)	VTVM to MS25, MS26 on Dolby NR P.C.B.	Same as above	Main P.C.B. VR104, VR204	Adjust VR104 (VR204) to obtain 90 mV on the VTVM.
8	Playback Frequency Response Adjustment	400 Hz Level Tape (DA09005A) 10 kHz PB Frequency Response Tape (DA09003A) 15 kHz PB Frequency Response Tape (DA09002A) 20 kHz PB Frequency Response Tape (DA09001A)	VTVM to Output Jacks	Playback Monitor SW — Tape Tape SW — SX Eq. SW — 70 μ s Dolby NR SW — OFF MPX Filter SW — OUT	Main P.C.B. R155, R255 R156, R256	1. Load a 400 Hz level tape and play it back. Adjust the Output level control to a certain level (0 dB for example). 2. Load 10 kHz, 15 kHz and 20 kHz PB frequency response tapes and adjust the playback head azimuth to obtain maximum levels on the VTVM with each tape. Short R155 (R255) or R156 (R256) to obtain the following levels against the level for the 400 Hz level tape. 10 kHz: -20 dB -1 dB to +2 dB 15 kHz: -20 dB -1 dB to +3 dB 20 kHz: -20 dB -1 dB to +4 dB 3. Conduct step 6 "Playback Head Azimuth Alignment". 4. If above is not sufficient, refer to "Playback Frequency Response Adjustment" in item 6.2.
9	Bias Oscillation Frequency and Erase Current Adjustment		VTVM across the additional 0.1 Ω resistor and Frequency Counter to CN1-1 on Main P.C.B.	Record, Pause Monitor SW — Source Tape SW — ZX Eq. SW — 70 μ s Dolby NR SW — OFF MPX Filter SW — OUT	Main P.C.B. T301 R309, R310	1. Connect an additional 0.1 Ω resistor in series to the Erase Head, then 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 R309 or R310. 4. After completion of the erase current adjustment, re-check the bias oscillation frequency. 5. Remove the additional 0.1 Ω resistor.
10	Record Amplifier Equalizer Adjustment	23 kHz (-20 dB) to Input Jacks	VTVM to TP101, TP201 on Main P.C.B.	Same as above	Main P.C.B. L101, L201	1. Remove the bias-cut-jumper from the dip side of the Main P.C.B. Ass'y. 2. Adjust L101 (L201) to obtain peak reading at 23 kHz on the VTVM. 3. Re-solder the bias-cut-jumper.
11	Bias Trap Adjustment (Record Amp.)	Remove input signals	VTVM to TP102, TP202 on Main P.C.B.	Same as above	Main P.C.B. L102, L202	Adjust L102 (L202) to obtain minimum reading on the VTVM.

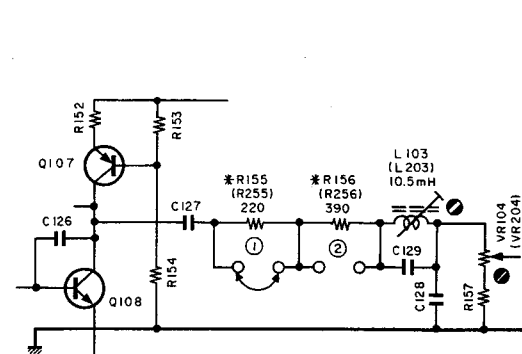


Fig. 6.5
7. Playback Level
8. Playback Frequency Response
12. Bias Trap (Playback Amp.)

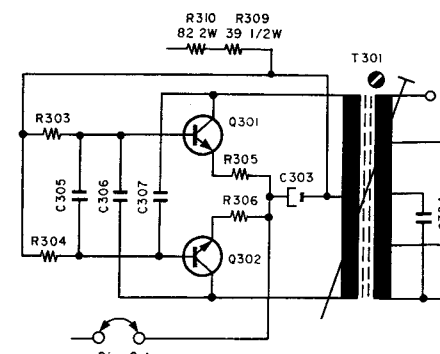


Fig. 6.6
9. Bias Oscillation Frequency and Erase Current

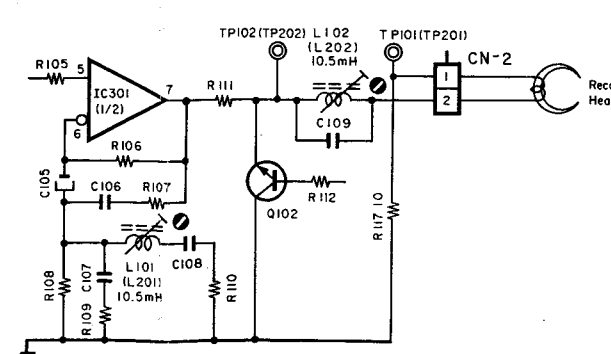
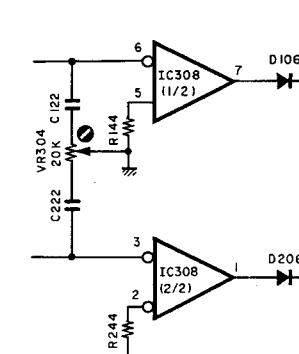


Fig. 6.7
10. Record Amp. Equalizer
11. Bias Trap (Record Amp.)



STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
12	Bias Trap Adjustment (Playback Amp.)	Remove input signals	VTVM to M17, M18 on Main P.C.B.	Record, Pause Monitor SW — Tape Tape SW — ZX Eq. SW — 70 μ s Dolby NR SW — OFF	Main P.C.B. L103, L203	Adjust L103 (L203) to obtain minimum reading on the VTVM.
13	Record Head Height Adjustment and Azimuth Alignment	Tone 400 Hz and 15 kHz	VTVM to Output Jacks	Record, Playback Monitor SW — Tape Tape SW — SX Eq. SW — 70 μ s Dolby NR SW — OFF	RH Height Gear Record Head Azimuth Alignment Screw Rec. Cal. P.C.B. (Level) VR105, VR205 (Bias Current) VR102, VR202 Main P.C.B. VR304 (Phase)	- In Stop mode, press the Azimuth Alignment Start button to ON. Then adjust the Azimuth Alignment knob so that the Slide Lever of the Azimuth Alignment Wire is located at the center of the slit of the Azimuth Alignment Wire as shown in Fig. 4.18. After above adjustment, press the Azimuth Alignment Start button to OFF. - Record Head Height Adjustment: - Load a reference SX tape (DA09025A), then press the Record and Play buttons. - Press the Level Calibration Start button to oscillate 400 Hz. - Adjust Sensitivity Control VR105 (VR205) and Bias Control VR102 (VR202) to the center position. - Adjust the RH Height Gear to obtain maximum readings of both channels on the VTVM. - Record Head Azimuth Alignment: - Load a reference SX tape (DA09025A), then press the Record and Play buttons. - Press the Bias Calibration Start button to oscillate 15 kHz. - Adjust the record Head Azimuth Alignment Screw to obtain maximum readings of both channels on the VTVM. - Repeat 2 and 3 one or two times to obtain optimum performance. - Azimuth Phase Adjustment: - Press the Record and Play buttons. - Press the Azimuth Alignment Start button to ON, then adjust VR304 on the Main P.C.B. Ass'y so that the red indicator in the middle of the Azimuth Indicator is lit up.
14	Record Level Calibra- tion and Recording Bias Current Adjustment	Tone 400 Hz and 15 kHz and 10 kHz/20 kHz (—20 dB) to Input Jacks	VTVM and Distortion Meter to Output Jacks	Record, Playback Tone — 400 Hz/15 kHz Monitor SW — Tape Tape SW — ZX/SX/EX Eq. SW — 70 μ s (ZX/SX) 120 μ s (EX) Dolby NR SW — C-Type/B-Type/ OFF MPX Filter SW — OUT	Rec. Cal. P.C.B. (Level) ZX: VR106, VR206 SX: VR105, VR205 EX: VR104, VR204 (Bias) ZX: VR101, VR201 SX: VR102, VR202 EX: VR103, VR203	Adjustment should be made in the order of ZX, SX and EX. - Set the Dolby NR switch to C-Type. - Load a reference ZX tape (DA09037A), reference SX tape (DA09025A) and reference EXII tape (DA09066A). - Adjust Sensitivity Controls VR106 (VR206) for ZX, VR105 (VR205) for SX and VR104 (VR204) for EXII to the maximum position. - Adjust Bias Controls VR101 (VR201) for ZX, VR102 (VR202) for SX and VR103 (VR203) for EXII to the maximum position. - Press the Record and Play buttons, then press the Azimuth Alignment Start button to ON. Turn the Azimuth Alignment Knob so that the red indicator in the middle of the Azimuth Indicator is lit up. After above adjustment, press the Azimuth Alignment Start button to OFF. - Press the Record and Play buttons, then press the Level Calibration Start button to oscillate 400 Hz. - Adjust Sensitivity Controls VR106 (VR206), VR105 (VR205) and VR104 (VR204) to obtain 0 dB on the level meters. - Press the Bias Calibration Start button to oscillate 15 kHz. - Adjust Bias Controls VR101 (VR201), VR102 (VR202) and VR103 (VR203) to obtain 0 dB on the level meters. - Repeat 6 to 9 as above two or three times to obtain optimum performance. - Set the Dolby NR switch to B-Type/OFF. - Feed in 10 kHz (—20 dB) and 20 kHz (—20 dB), then record and play it back. Check to insure that the levels are within —20 dB $\pm$ 2 dB against the levels in Dolby NR C-Type. - Check to insure whether the total harmonic distortion is less than 0.8% for ZX tape and 1.0% for SX and EXII tapes.

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
15	Overall Frequency Response Adjustment	400 Hz (0 dB) and 20 Hz to 20 kHz (−20 dB) to Input Jacks	VTVM to Output Jacks	Record, Playback Monitor SW — Source/Tape Tape SW — ZX/SX/EX Eq. SW — 70 μ s (ZX/SX) 120 μ s (EX) Dolby NR SW — OFF MPX Filter SW — OUT	Main P.C.B. L101, L201	- Perform the Azimuth Alignment operation as follows: - Press the Record and Play buttons. - Press the Azimuth Alignment Start button to ON. - Turn the Azimuth Alignment Knob so that the red indicator in the middle of the Azimuth Indicator is lit up. - After above adjustment, press the Azimuth Alignment Start button to OFF. - Set the Monitor switch to Source. - Feed in 400 Hz (0 dB) and adjust the Input Level controls to obtain 0 dB on the level meters. - Switch the Generator output level to −20 dB. - Set the Monitor switch to Tape, then record and play it back. - Feed in 20 Hz to 20 kHz (−20 dB), and check to insure whether the output levels are within −20 dB $\pm$ 3 dB. - If above is not sufficient, adjust L101 (L201) to obtain approx. −20 dB on the VTVM at 20 kHz. - Conduct step 14 "Record Level Calibration and Recording Bias Current Adjustment". - If above is not sufficient, precise re-adjustment of step 8 "Playback Frequency Response", replacement of Playback Head or Record Head, check on item 4.10 "Tape Travelling Adjustment" or frequency response adjustment according to item 6.2 will be required.
16	Crosstalk Measurement	1 kHz to Input Jacks	1 kHz Band Pass Filter and VTVM to Output Jacks	Record and Playback Monitor SW — Tape Tape SW — ZX Eq. SW — 70 μ Dolby NR SW — OFF		- Perform the Azimuth Alignment operation referring to step 15-1. - Erase a reference ZX tape with bulk eraser. - Adjust the Input Level controls to obtain 0 dB on the level meters, and record the signals on the reference tape. - Turn the cassette tape the other way round and play it back. - Measure the difference between 3 and 4.
17	Channel Separation Measurement	1 kHz to Input Jacks	Same as above	Same as above		- Perform the Azimuth Alignment operation referring to step 15-1. - Erase a reference ZX tape with bulk eraser. - Adjust the L ch (R ch) Input Level control to obtain 0 dB on the level meters, and close the R ch (L ch) Input Level control. - Record and play it back, then measure the R ch (L ch) level.
18	Erasure Measurement	1 kHz to Input Jacks	Same as above	Same as above		- Perform the Azimuth Alignment operation referring to step 15-1. - Erase a reference ZX tape with bulk eraser. - Adjust the Input Level controls to obtain 0 dB on the level meters, and record the signals on the reference tape. - Rewind the tape then close the Input Level controls. - Record and play it back, then measure the difference between 3 and 4.
19	Signal to Noise Ratio Measurement	400 Hz to Input Jacks	VTVM and Distortion Meter to Output Jacks	Record and Playback Monitor SW — Tape Tape SW — ZX Eq. SW — 70 μ s Dolby NR SW — B-Type/C-Type		- Perform the Azimuth Alignment operation referring to step 15-1. - Feed in 400 Hz and record and play it back. - Adjust the Input Level controls to obtain 3% total harmonic distortion in Playback mode. - Close the Input Level controls, then record. - After reword, play back and check the output level difference between 3 and 4. Note: The filter of IHF-A curve shall be used in the measurements.
20	Total Harmonic Distortion Measurement	400 Hz to Input Jacks	Distortion Meter to Output Jacks	Record and Playback Monitor SW — Tape Tape SW — ZX/SX/EX Eq. SW — 70 μ s (ZX/SX) 120 μ s (EX) Dolby NR SW — OFF		- Perform the Azimuth Alignment operation referring to step 15-1. - Adjust the Input Level controls to obtain 0 dB on the level meters. - Record and play it back. - Read the distortion meter and check to insure that the distortion is less than 0.8% for ZX tape and 1.0% for SX and EXII tapes.
21	Wow/Flutter Measurement	3 kHz Speed and Wow/Flutter Tape (DA09006A)	Wow/Flutter Meter to Output Jacks	Playback Monitor SW — Tape Eq. SW — 70 μ s		Play back and read the wow/flutter meter.

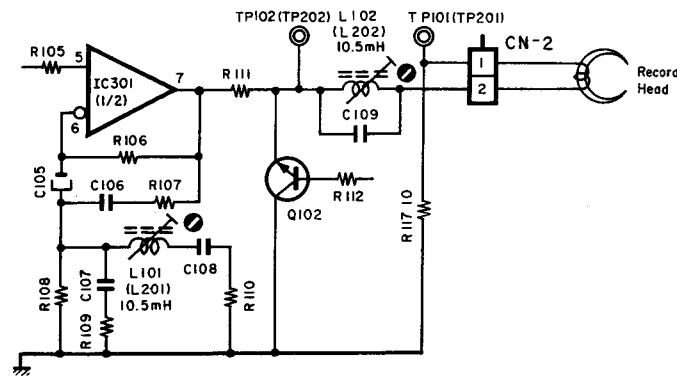


Fig. 6.10

15. Overall Frequency Response

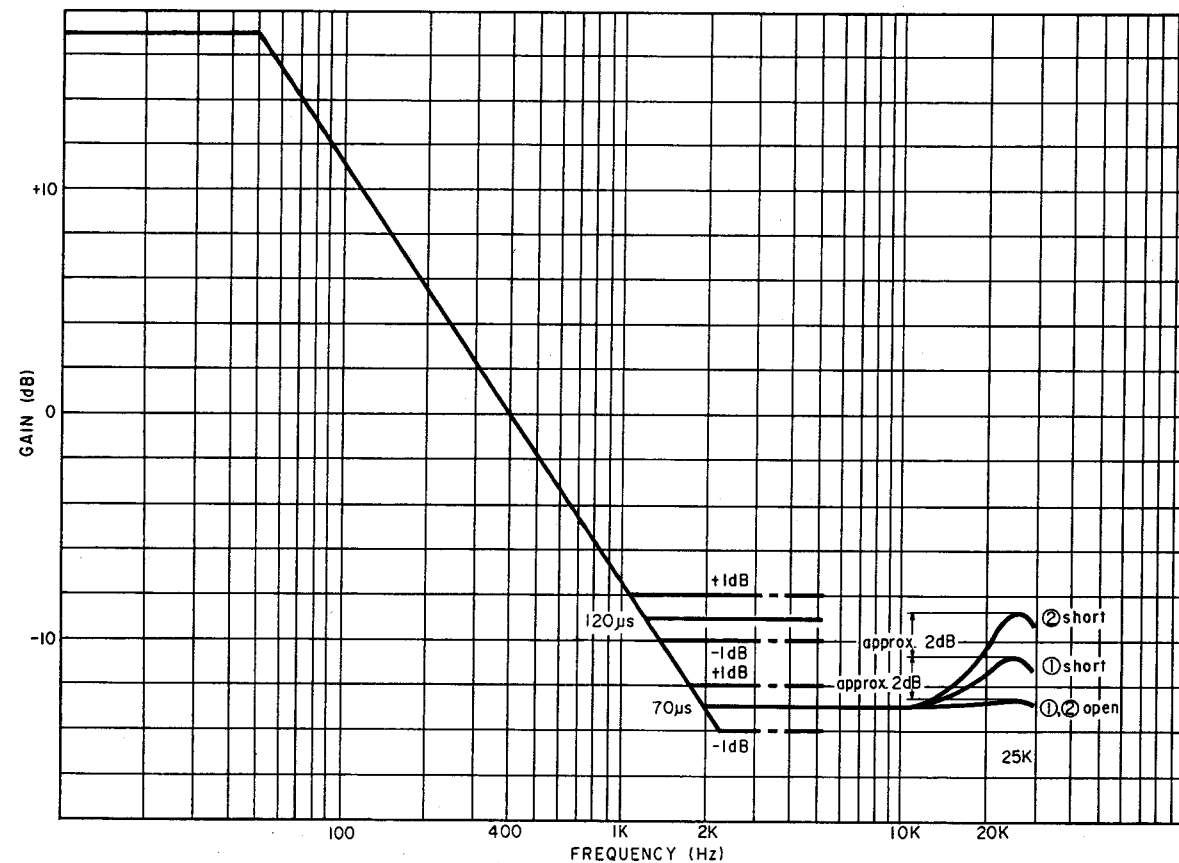


Fig. 6.11 Playback Equalization Curve

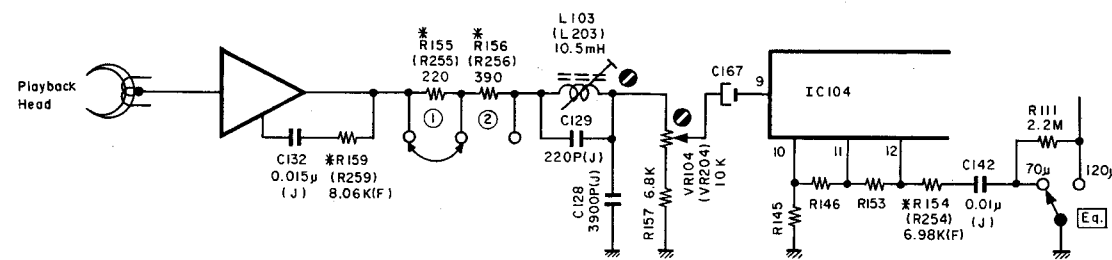


Fig. 6.12 Playback Eq. Amp.

6.2. Frequency Response Adjustment

(1) Playback Frequency Response Adjustment

Refer to Figs. 6.11 and Fig. 6.12.

(a) Level Adjustment (for middle frequency response)

This adjustment will be required if playback level is not sufficient when 10 kHz PB frequency response tape is played back as referred to step 8 in 6.1 "Adjustment and Measurement Instructions".

Playback equalization level is varied by the modification of R159 (R259) on the Main P.C.B. Ass'y and R154 (R254) on the Dolby NR P.C.B. Ass'y.

Following are the details for level modifications:

Approx. +1 dB	 R159 (R259): 8.66K
	R154 (R254): 6.49K
0 dB	 R159 (R259): 8.06K
	R154 (R254): 6.98K
Approx. -1 dB	 R159 (R259): 7.32K
	R154 (R254): 7.87K

(b) Peaking Adjustment (for high frequency response)

This adjustment will be required if playback level is not sufficient when 20 kHz PB frequency response tape is played back as referred to step 8 in 6.1 "Adjustment and Measurement Instructions".

Peaking portion compensates the gap loss of the playback head.

Peaking level is varied by the short circuit of R155 (R255) or R156 (R256) on the Main P.C.B. Ass'y as illustrated in Fig. 6.11.

(2) Record Current Frequency Response Adjustment

Record eq. peaking is adjusted for compensating the overall frequency response when playback frequency response is completed.

Normally however, peaking frequency is pre-adjusted to approx. 23 kHz in Record mode. Refer to Fig. 6.13.

(a) For ZX Tape

1) Feed in 400 Hz (0 dB), then record and play it back. Adjust bias current by VR106 (VR206) on the Record Cal. P.C.B. Ass'y to obtain a 0.8% distortion.

2) Feed in 10 kHz and 400 Hz (-20 dB), then record and play them back.

Check the difference of the levels between 10 kHz and 400 Hz, and mount an additional capacitor in parallel with C101 (C201) on the Main P.C.B. Ass'y from the dip side of the printed circuit board depending upon the difference of the levels against 400 Hz. Refer to Fig. 6.14.

Level Difference	Addition	Total
0 dB	0	1000 pF
-1 dB	330 pF	1330 pF
-2 dB	680 pF	1680 pF

3) Feed in 22 kHz (-20 dB), then record and play it back.

Adjust record peaking coil L101 (L201) to obtain flat overall frequency response.

(b) For SX Tape

1) Feed in 15 kHz and 400 Hz (-20 dB), then record and play them back.

Adjust bias current by VR105 (VR205) on the Record Cal. P.C.B. Ass'y to obtain flat overall frequency response.

2) Feed in 20 kHz and 400 Hz (-20 dB), then record and play them back.

And check to insure that the overall frequency response is flat.

(c) For EXII Tape

1) Feed in 15 kHz and 400 Hz (-20 dB), then record and play them back.

Adjust bias current by VR104 (VR204) on the Record Cal. P.C.B. Ass'y to obtain flat overall frequency response.

2) Feed in 20 kHz and 400 Hz (-20 dB), then record and play them back.

And check to insure that the overall frequency response is flat.

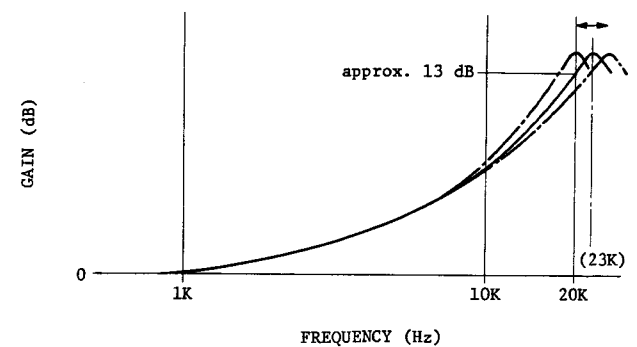


Fig. 6.13

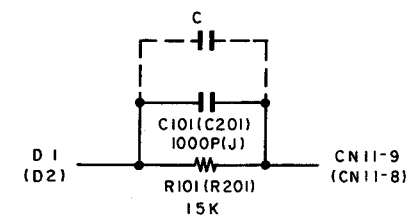


Fig. 6.14

6.3. Dolby NR Circuit Check

Dolby NR circuit incorporates Dolby NR ICs which have no adjustment point.

Perform the following checks and make sure that the IC operates accurately, i.e., accuracy of frequency response through IC.

6.3.1. Dolby NR B-Type Circuit Check

(1) Playback Dolby NR Circuit

Signal Source: 1.4 kHz to pin No. M17 (M18) on Dolby NR P.C.B.

Output Connection: VTVM to MS25 (MS26) on the Dolby NR P.C.B.

Mode: Stop
Monitor SW – Tape
Dolby NR SW – B-Type/OFF

- Connect a VTVM to MS25 (MS26) on the Dolby NR P.C.B. Ass'y.
- Set the Dolby NR switch to B-Type.
Feed in 1.4 kHz to pin No. M17 (M18) and adjust the generator output control to obtain 9 mV on the VTVM.
- Set the Dolby NR switch to OFF.
Check to insure that the reading is $+3.2 \text{ dB} \pm 1.5 \text{ dB}$ on the VTVM.

(2) Record Dolby NR Circuit

Signal Source: 1.4 kHz to Input Jacks
Output Connection: VTVM to MS25 (MS26) and M1 (M2) on the Dolby NR P.C.B.

Mode: Stop
Monitor SW – Source
Dolby NR SW – B-Type/OFF

- Connect a VTVM to MS25 (MS26) on the Dolby NR P.C.B. Ass'y.
- Feed in 1.4 kHz and adjust the Input Level controls to obtain 9 mV/2.85 mV on the VTVM.
- Remove the VTVM from MS25 (MS26) and reconnect it to M1 (M2) on the Dolby NR P.C.B. Ass'y.
- Check to insure that the reading at M1 (M2) corresponds to the following with Dolby NR switch OFF and B-Type.

Input Level at MS25, MS26	Level at M1 (IC102-16), M2 (IC202-16)	
	Dolby NR OFF	Dolby NR B-Type
9 mV	0 dB	$+3.2 \text{ dB} \pm 1.5 \text{ dB}$
2.85 mV	0 dB	$+8.2 \text{ dB} \pm 1.5 \text{ dB}$

6.3.2. Dolby NR C-Type Circuit Check

(1) Playback Dolby NR Circuit

Signal Source: 1.4 kHz to pin No. M17 (M18) on Dolby NR P.C.B.

Output Connection: VTVM to MS25 (MS26) on the Dolby NR P.C.B.

Mode: Stop
Monitor SW – Tape
Dolby NR SW – C-Type/OFF

- Connect a VTVM to MS25 (MS26) on the Dolby NR P.C.B. Ass'y.
- Set the Dolby NR switch to C-Type.
Feed in 1.4 kHz to pin No. M17 (M18) and adjust the generator output control to obtain 9 mV on the VTVM.
- Set the Dolby NR switch to OFF.
Check to insure that the reading is $+6.5 \text{ dB} \pm 1.5 \text{ dB}$ on the VTVM.

(2) Record Dolby NR Circuit

Signal Source: 1.4 kHz to Input Jacks
Output Connection: VTVM to MS25 (MS26) and M1 (M2) on the Dolby NR P.C.B.

Mode: Stop
Monitor SW – Source
Dolby NR SW – C-Type/OFF

- Connect a VTVM to MS25 (MS26) on the Dolby NR P.C.B. Ass'y.
- Feed in 1.4 kHz and adjust the Input Level controls to obtain 9 mV/2.85 mV on the VTVM.
- Remove the VTVM from MS25 (MS26) and reconnect it to M1 (M2) on the Dolby NR P.C.B. Ass'y.
- Check to insure that the reading at M1 (M2) corresponds to the following with Dolby NR switch OFF and C-Type.

Input Level at MS25, MS26	Level at M1 (IC102-16), M2 (IC202-16)	
	Dolby NR OFF	Dolby NR C-Type
9 mV	0 dB	$+6.5 \text{ dB} \pm 1.5 \text{ dB}$
2.85 mV	0 dB	$+11.4 \text{ dB} \pm 1.5 \text{ dB}$

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
SW1 SW1 SW1 M2 M2 M2	BA04618A	Power Switch P.C.B. Ass'y (U.S.A. & Canada)	IC601 X601 R612 C601,602 C603 CN14 CN16 FC601 FC602	BA04642A	Counter Control P.C.B. Ass'y
	BA04594A	Power Switch P.C.B. Ass'y (Japan)		OB02514A	Counter Control P.C.B.
	BA04620A	Power Switch P.C.B. Ass'y (UK, Australia, 220V Class 2 & Others)		OB06320A	IC LM6402A-048
	OB08956C	Power Switch P.C.B.		OB08908A	Crystal 400 kHz KBR400BT
	OB07407A	Power Switch (U.S.A. & Canada)		OB09749A	Carbon Resistor 1M ERD-16T J
	OB07406A	Power Switch (Japan)		OB05879A	Ceramic Capacitor 220P 50V K
	OB07408A	Power Switch (UK, Australia, 220V Class 2 & Others)		OB01836A	Electrolytic Capacitor 47μ 10V
	OB08342A	Spark Killer (U.S.A. & Canada)		OB08939A	7P-H Connector 300mm
	OB08363A	Spark Killer (Japan)		OB08940A	11P-H Connector 300mm
	OB08955A	Spark Killer (UK, Australia, 220V Class 2 & Others)		OB05265A	7P Flat Cable 20mm
	OE00622A	Screw M3x5 Philips Pan Head (2A) (2 pcs.)	Q405 R604 R605 PL407 CN13	OB05262A	6P Flat Cable 20mm
	OE00752A	Eyelet 2x3 (2 pcs.)		OM04223A	Label CN-16 (1 pce.)
	OJ04475A	Power Switch Holder (1 pce.)		OM04231A	Label CN-14 (1 pce.)
	OJ04555A	Power Switch Insulator (1 pce.)		BA04551A	Shut-off P.C.B. Ass'y
	BA04547A	Azimuth Switch P.C.B. Ass'y		OB07839B	Shut-off P.C.B.
	OB02511A	Azimuth Switch P.C.B.		OB06228A	Photo Transistor PH104
	OB07394A	Push Switch (1 pce.)		OB05615A	Carbon Resistor 22K ERD-25T J
	OE00622A	Screw M3x5 Philips Pan Head (2A) (1 pce.)		OB09215A	Fail Safe Type Resistor 100 RDF-25S J
LED601-609 CN10	OJ04473A	Adjustment Switch Holder (1 pce.)		OB08552A	Lamp 12V 25mA
	BA04545A	Record Cal. LED P.C.B. Ass'y		OB08943A	9P-H Connector
	OB02509A	Record Cal. LED P.C.B.		OM04230A	Label CN-13 (1 pce.)
	OB06333A	LED Red TLR124A (9 pcs.)	IC901 Q901 Q902,903 904,905 D901-903 R902,903 904,905 R906-913 R914,915 R916 R917,919 R918 R920 C903 C904 F901 CN6	BA04543A	Indicator P.C.B. Ass'y
VR001,002 VR003	OB08923A	6P-H Connector 410mm		OB02505B	Indicator P.C.B.
	OM04227A	Label CN-10 (1 pce.)		OB06284A	IC MSL9350RS
	BA04546A	Volume P.C.B. Ass'y		OB06066A	Transistor 2SD471
	OB02510A	Volume P.C.B.		OB06202A	Transistor 2SA562 (Y)
Q601,602 603,604 R601,602 603,604 R605-611	OB07202A	Volume 100K (A)		OB01909A	Silicon Diode 1S1555 (3 pcs.)
	OB07204A	Volume 10K (A) x 2		OB05576A	Carbon Resistor 470 ERD-25T J
	BA04548A	Counter P.C.B. Ass'y		OB01704A	Carbon Resistor 68 ERD-25T J (8 pcs.)
	OB02513B	Counter P.C.B.		OB05784A	Carbon Resistor 560K ERD-25T J
LED601 SW601	OB06319A	Transistor 2SA608SP		OB09378A	Fail Safe Type Resistor 22 RSF-1B J
	OB05629A	Carbon Resistor 2.7K ERD-25T J		OB09754A	Carbon Resistor 330 ERD-25T J
	OB01933A	Carbon Resistor 220 ERD-25T J (7 pcs.)		OB05575A	Carbon Resistor 560 ERD-25T J
	OB06326A	Counter LED		OB09263A	Carbon Resistor 12K ERD-25T J
	OB07219A	Switch AKC8S		OB05814A	Mylar Capacitor 8200P 50V J
				OB01836A	Electrolytic Capacitor 47μ 10V
				OB08715A	Thermal Fuse 129
				OB08924B	6P-H Connector 400mm
				OB05236A	8P Flat Cable (1 pce.)
				OB05264A	Flat Cable 110mm (1 pce.)
				OB06336A	Meter Display (1 pce.)
				OM04334A	Label CN-6 (1 pce.)

7. MOUNTING DIAGRAMS AND PARTS LIST

Note: Mounting diagram shows a dip side view of the printed circuit board.

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

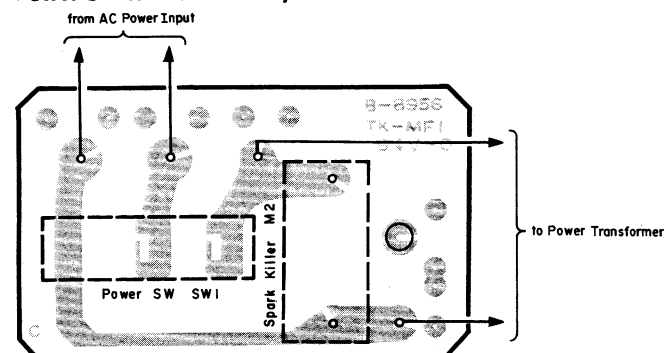


Fig. 7.1

7.2. Azimuth Switch P.C.B. Ass'y

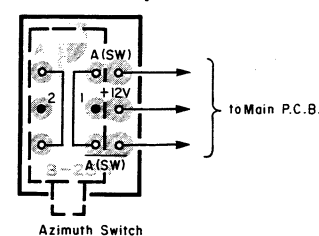


Fig. 7.2

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

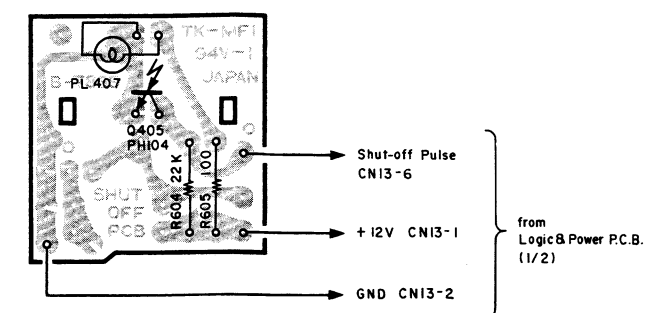


Fig. 7.7

Note: Diode is 1SS53, 1S953, or 1S1555 unless otherwise specified.

7.3. Record Cal. LED P.C.B. Ass'y

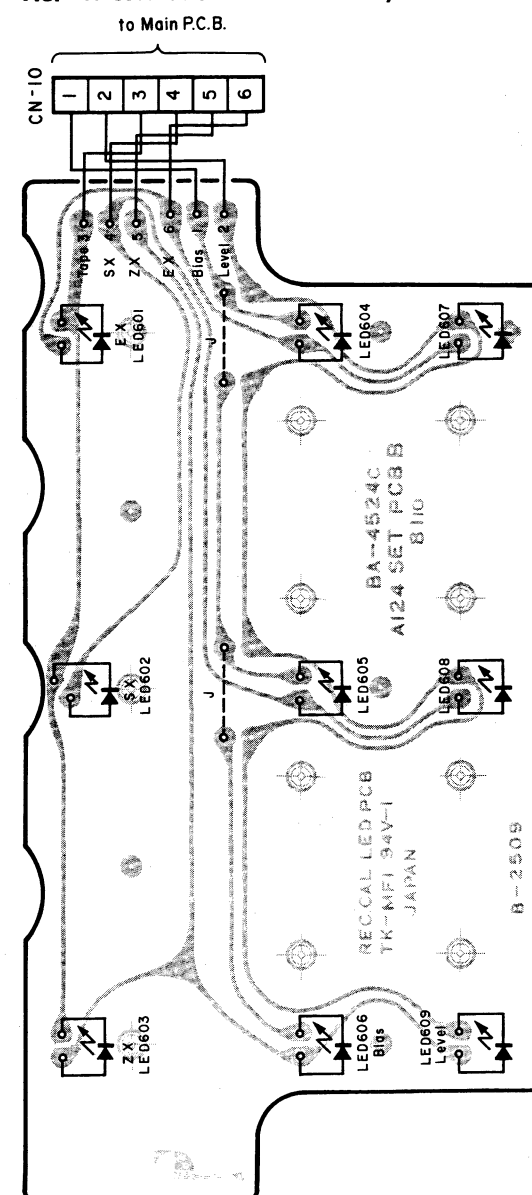


Fig. 7.3

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

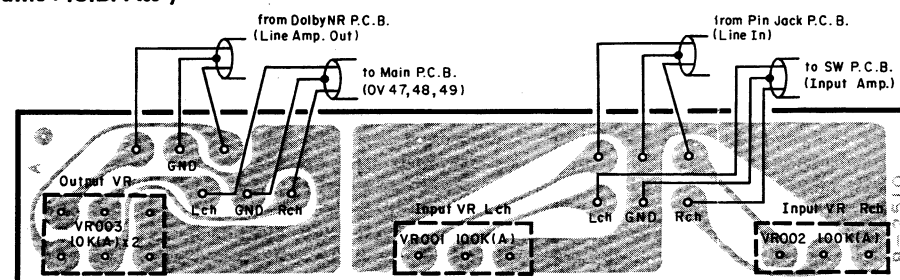


Fig. 7.4

7.5. Counter P.C.B. Ass'y

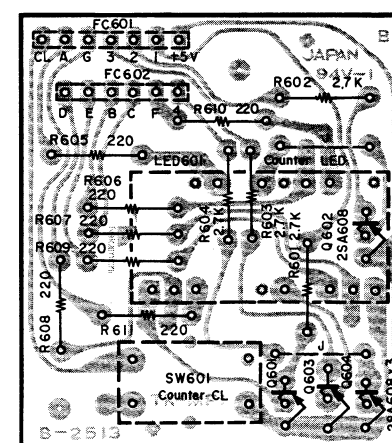


Fig. 7.5

7.6. Counter Control P.C.B. Ass'y

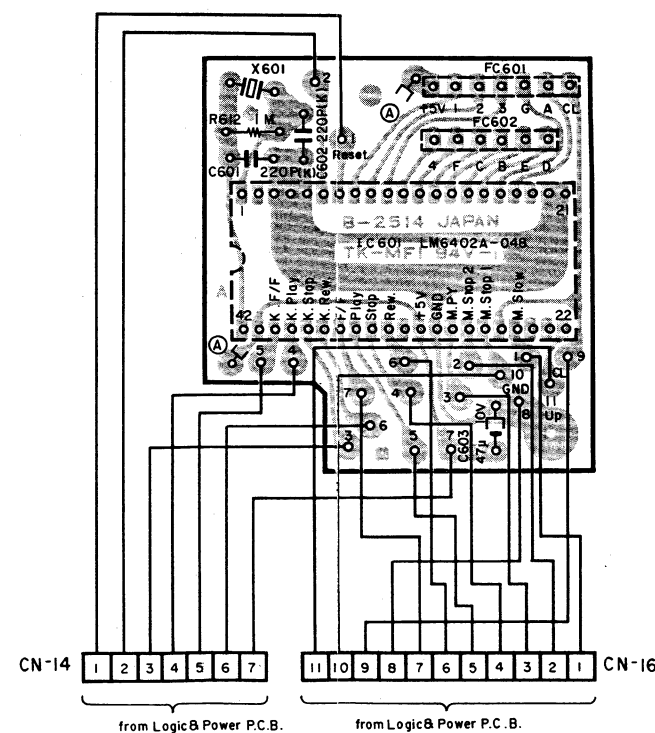


Fig. 7.6

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

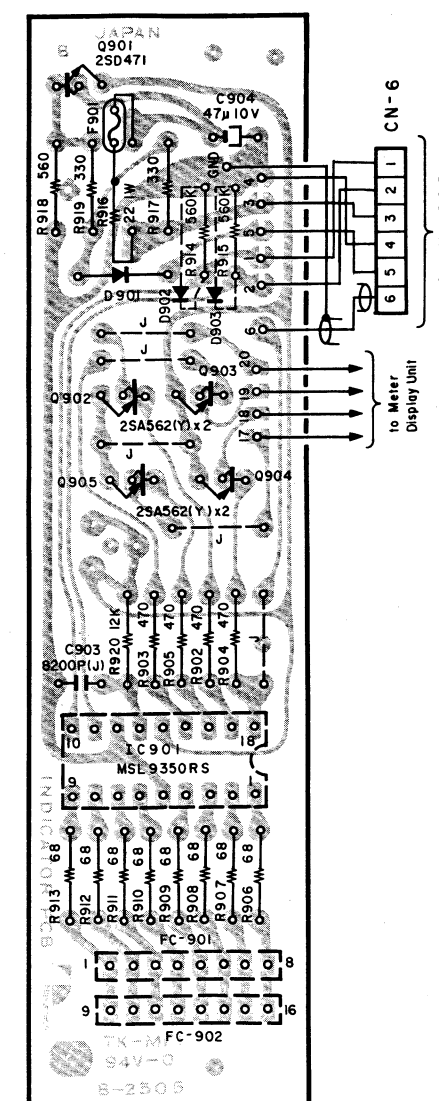


Fig. 7.8

Note: Diode is 1SS53, 1S953, or 1S1555 unless otherwise specified.

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

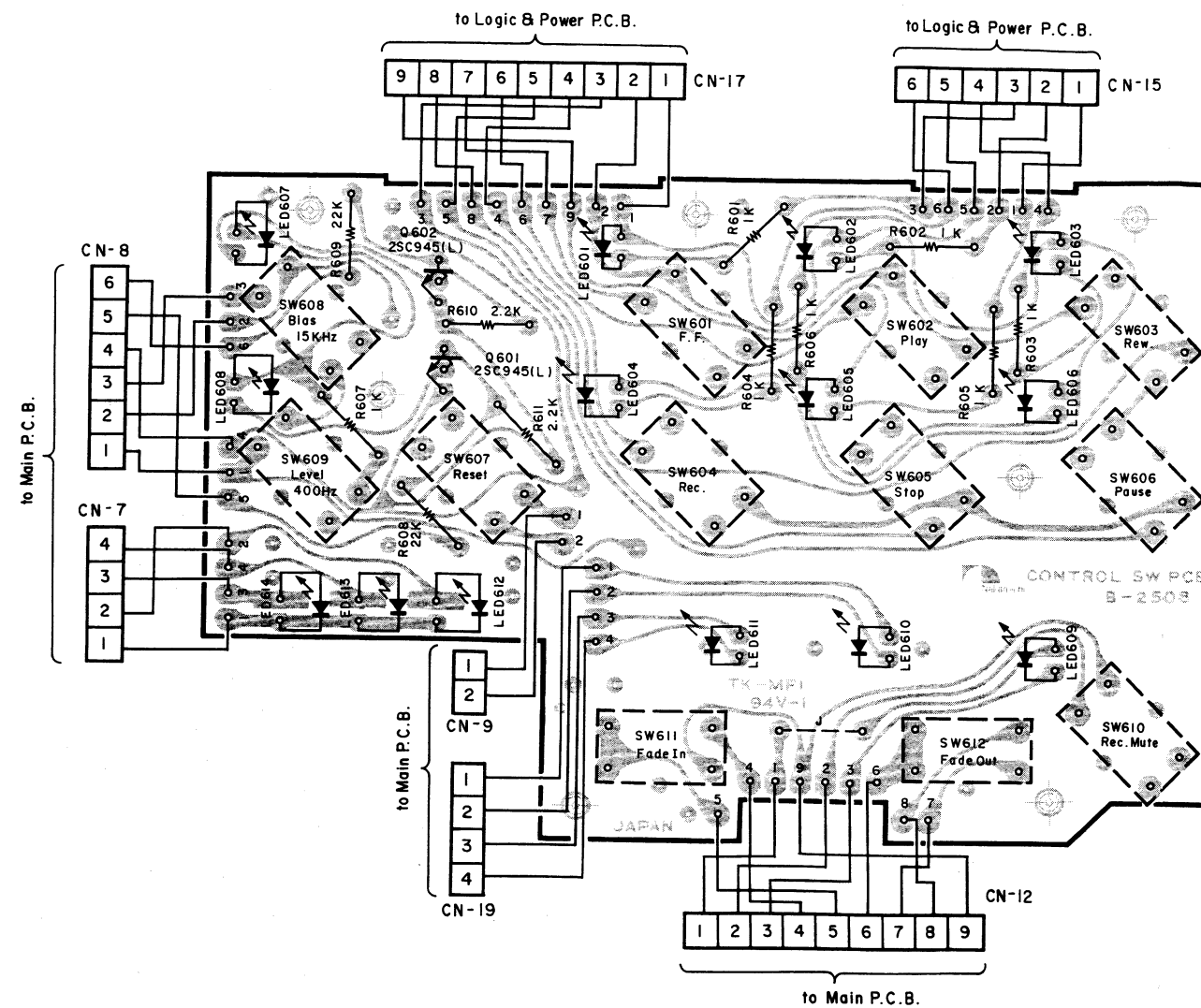


Fig. 7.9

7.10. Record Cal. P.C.B. Ass'y

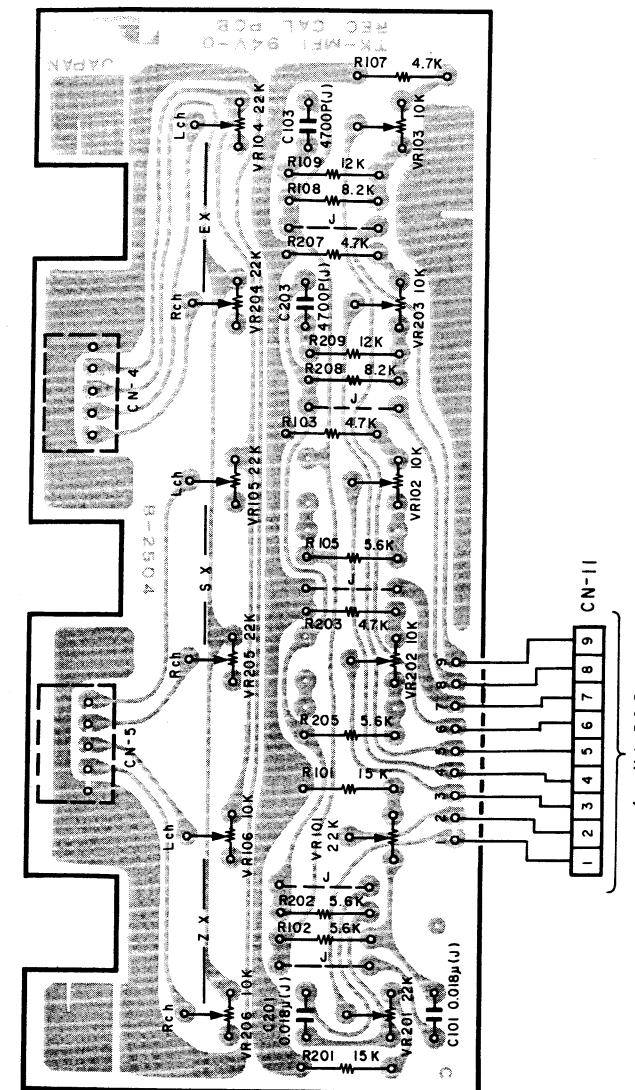


Fig. 7.10

Schematic Ref. No.	Part No.	Description
	BA04544A	Control Switch P.C.B. Ass'y
Q601,602	0B02508C	Control Switch P.C.B.
LED601	0B01872A	Transistor 2SC945 (L)
602,603	0B06334A	LED Green TLG124A
605,606		
612,614		
LED604	0B06333A	LED Red TLR124A
607,608		
609,613		
LED610	0B06327A	LED
611		
R601-607	0B01857A	Carbon Resistor 1K ERD-25T J (7 pcs.)
R608,609	0B05615A	Carbon Resistor 22K ERD-25T J
R610,611	0B05622A	Carbon Resistor 2.2K ERD-25T J
SW601-610	0B07219A	Switch AKC8S (10 pcs.)
SW611,612	0B07396A	Double Action Switch KHF10901
CN7	0B08926A	4P-H Connector 340mm
CN8	0B08922A	6P-H Connector 350mm
CN9	0B08936A	2P-H Connector 430mm
CN12	0B08937A	9P-H Connector 470mm
CN15	0B08938A	6P-H Connector 450mm
CN17	0B08919A	9P-H Connector 450mm
CN19	0B08935A	4P-H Connector 350mm
	0E00857A	BT Screw M3x6 Philips Binding Head (1 pce.)
	0J04534B	Fader House (1 pce.)
	0M04222A	Label CN-15 (1 pce.)
	0M04224A	Label CN-17 (1 pce.)
	0M04225A	Label CN-19 (1 pce.)
	0M04229A	Label CN-12 (1 pce.)
	0M04335A	Label CN-7 (1 pce.)
	0M04336A	Label CN-8 (1 pce.)
	BA04542A	Record Cal. P.C.B. Ass'y
VR101,104	0B02504C	Record Cal. P.C.B.
105,201	0B07277A	Semi-fixed Volume 22K
204,205		
VR102,103	0B07404A	Semi-fixed Volume 10K
106,202		
203,206		
R101,201	0B01683A	Carbon Resistor 15K ERD-25T J
R102,105	0B01887A	Carbon Resistor 5.6K ERD-25T J
202,205		
R103,107	0B01846A	Carbon Resistor 4.7K ERD-25T J
203,207		
R108,208	0B01856A	Carbon Resistor 8.2K ERD-25T J
R109,209	0B09263A	Carbon Resistor 12K ERD-25T J
C101,201	0B05832A	Mylar Capacitor 0.018μ 50V J
C103,203	0B05652A	Mylar Capacitor 4700P 50V J
CN4,5	0B08727A	5P-S Connector
CN11	0B08920A	9P-H Connector 80mm
	0E00612A	Screw M3x6 Philips Pan Head (2A) (2 pcs.)
	0J04481B	Shield Case C (1 pce.)
	0M04228A	Label CN-11 (1 pce.)
	0J04483A	Record Cal. P.C.B. Holder (1 pce.)

7.11. Switch P.C.B. Ass'y

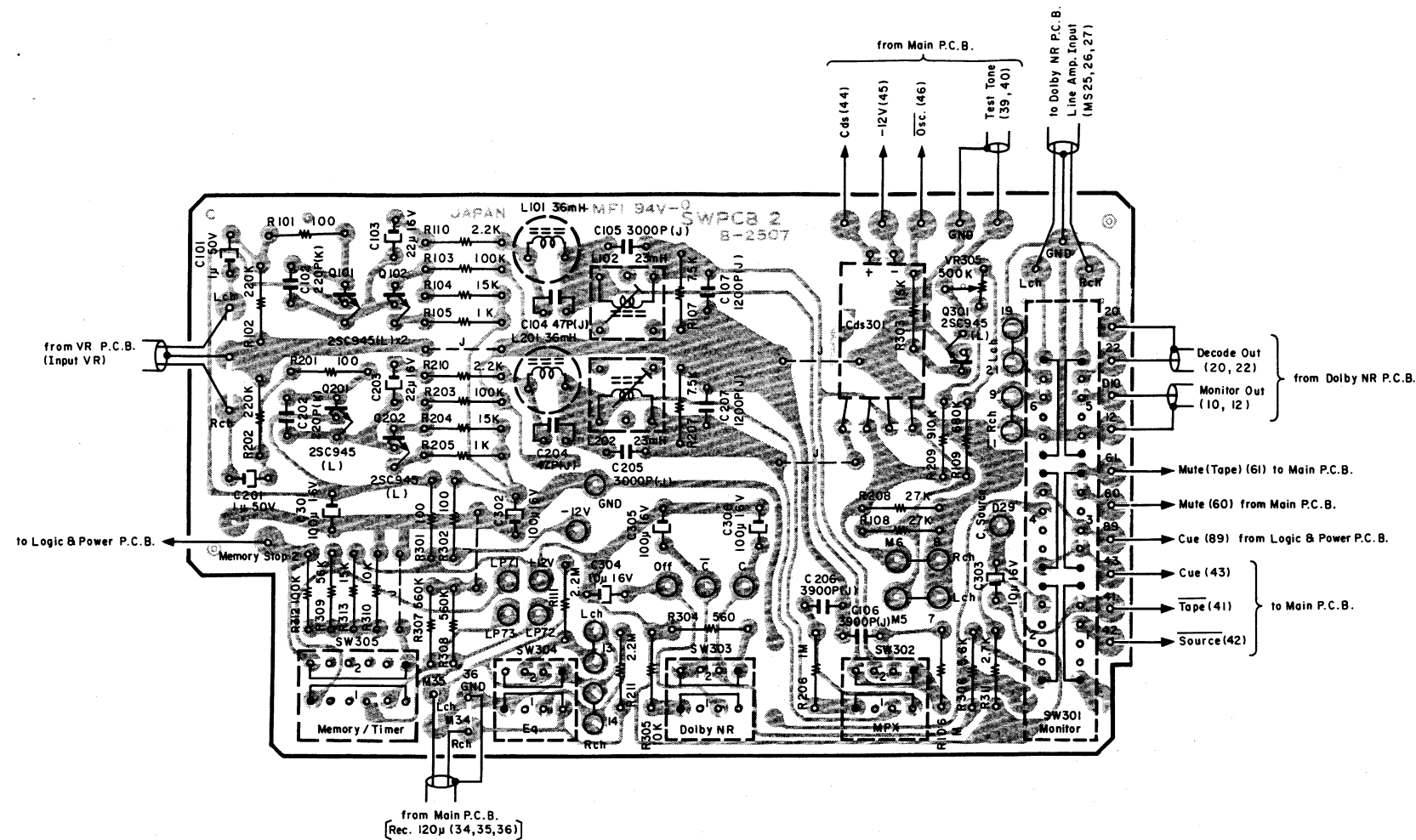


Fig. 7.11

Schematic Ref. No.	Part No.	Description
	BA04554A	Switch P.C.B. Ass'y
	0B02507C	Switch P.C.B.
Q101,102 201,202 301	0B01872A	Transistor 2SC945 (L)
Cds301	0B06325B	Photo Coupler MCD7214F
L101,201	0B03919B	Inductor 36mH
L102,202	0B03563A	19KHz Coil 23mH
VR305	0B07330A	Semi-fixed Volume 500K
R101,201	0B01679A	Carbon Resistor 100 ERD-25T J
R102,202	0B05625A	Carbon Resistor 220K ERD-25T J
R103,203 312	0B01889A	Carbon Resistor 100K ERD-25T J
R104,204 303,313	0B01683A	Carbon Resistor 15K ERD-25T J
R105,205	0B01857A	Carbon Resistor 1K ERD-25T J
R106,206	0B05776A	Carbon Resistor 1M ERD-25T J
R107,207	0B09183A	Carbon Resistor 7.5K ERD-25T J
R108,208	0B05743A	Carbon Resistor 27K ERD-25T J
R109	0B05868A	Carbon Resistor 680K ERD-25T J
R110,210	0B05622A	Carbon Resistor 2.2K ERD-25T J
R111,211	0B05671A	Carbon Resistor 2.2M ERD-25T J
R209	0B05960A	Carbon Resistor 910K ERD-25T J
R301,302	0B09215A	Fail Safe Type Resistor 100 RDF-25S J
R304	0B05575A	Carbon Resistor 560 ERD-25T J
R305,310	0B01888A	Carbon Resistor 10K ERD-25T J
R306	0B01887A	Carbon Resistor 5.6K ERD-25T J
R307,308	0B05784A	Carbon Resistor 560K ERD-25T J
R309	0B05508A	Carbon Resistor 56K ERD-25T J
R311	0B05629A	Carbon Resistor 2.7K ERD-25T J
C101,201	0B01405A	Electrolytic Capacitor 1μ 50V
C102,202	0B09283A	Ceramic Capacitor 220P 50V K
C103,203	0B01862A	Electrolytic Capacitor 22μ 16V
C104,204	0B09242A	Mica Capacitor 47P 50V J
C105,205	0B09262A	PP Capacitor 3000P 100V J
C106,206	0B01804A	Mylar Capacitor 3900P 50V J
C107,207	0B05687A	Mylar Capacitor 1200P 50V J
C301,302 305,306	0B01400A	Electrolytic Capacitor 100μ 16V
C303,304	0B01412A	Electrolytic Capacitor 10μ 16V
SW301	0B07393A	Rotary Switch 6-2NS
SW302,304	0B07392A	Rotary Switch 2-2S
SW303	0B07350A	Rotary Switch 2-3
SW305	0B07391A	Rotary Switch 2-4NS

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
C131,132 231,232 C138,238 C140,240 C141,241 C144,244 C167,168 267,268	OB09567A OB09566A OB05796A OB05914A OB09282A OB09494A OB08714A OE00037A	Electrolytic Capacitor 0.33 μ 50V (LN) K Mylar Capacitor 0.13 μ 50V J Mylar Capacitor 0.047 μ 50V J Mylar Capacitor 0.15 μ 50V J Ceramic Capacitor 100P 50V K Electrolytic Capacitor 1 μ 50V (LN) IC Socket 16P (4 pcs.) Earth Lug B-5 (1 pcs.)	R171,271 R701,702 C101,201 C102,111 202,211 C103,112 203,212 C104,113 204,213 C105,114 205,214 C106,206 C107,151 207,251 C108,109 208,209 C110,210 C115,215 C116,216 C117,217 C119,219 503,504 C120,220 C148,248	OB05625A OB05795A OB09409A OB09240A OB05681A OB01862A OB01389A OB05583A OB01603A OB09567A OB09594A OB09566A OB05796A OB05914A OB09223A OB01392A OB09163A OB08714A	Carbon Resistor 220K ERD-25T J Carbon Resistor 150 ERD-25T J PP Capacitor 1800P 100V G PP Capacitor 0.033 μ 100V G Mylar Capacitor 0.01 μ 50V J Electrolytic Capacitor 22 μ 16V Electrolytic Capacitor 4.7 μ 16V Mylar Capacitor 0.033 μ 50V J Mylar Capacitor 0.1 μ 50V K Electrolytic Capacitor 0.33 μ 50V (LN) K Mylar Capacitor 0.03 μ 50V J Mylar Capacitor 0.13 μ 50V J Mylar Capacitor 0.047 μ 50V J Mylar Capacitor 0.15 μ 50V J Electrolytic Capacitor 1 μ 50V (LN) Electrolytic Capacitor 470 μ 16V Electrolytic Capacitor 10 μ 16V (BP) IC Socket 16P (4 pcs.)
— Rec. Dolby NR —					
IC101,102 201,202 Q101,103 104,105 106,107 201,203 204,205 206,207 ZD101,201 D101,105 106,201 205,206 D102,202 L101,201 R101,201 R102,202 R103,117 203,217 R104,173 204,273 R105,122 205,222 R106,107 113,116 124,157 159,206 207,213 216,224 257,259 R108,125 208,225 R109,111 126,127 209,211 226,227 R110,210 R112,212 706,708 R114,214 R115,215 R119,219 R121,221 R156,256 R158,258 R161,198 261,298 705,707 R162,262 R163,263	OB06200A OB01872A OB06315A OB01909A OB00030A OB06676A OB09201A OB09356A OB01681A OB01857A OB09557A OB05641A OB09271A OB05620A OB05591A OB05776A OB05622A OB01846A OB09565A OB05794A OB09558A OB05784A OB01888A OB05743A OB05694A	IC μ A7300PC Transistor 2SC945 (L) Zener Diode 6.8V XZ068 Silicon Diode 1S1555 Germanium Diode 1N60P Inductor 36mH G Metal Film Resistor 2.2K SN14K2E F Metal Film Resistor 4.7K SN14K2E F Carbon Resistor 3.3K ERD-25T J Carbon Resistor 1K ERD-25T J Metal Film Resistor 13K SN14K2E F Carbon Resistor 47K ERD-25T J Carbon Resistor 6.2K ERD-25T J Carbon Resistor 270K ERD-25T J Carbon Resistor 15K ERD-25T J Carbon Resistor 1M ERD-25T J Carbon Resistor 2.2K ERD-25T J Carbon Resistor 4.7K ERD-25T J Carbon Resistor 1.6K ERD-25T J Carbon Resistor 680 ERD-25T J Metal Film Resistor 4.42K SN14K2E F Carbon Resistor 560K ERD-25T J Carbon Resistor 10K ERD-25T J Carbon Resistor 27K ERD-25T J Carbon Resistor 9.1K ERD-25T J	IC301 Q120,220 L110,210 R180,184 280,284 R181,182 281,282 R183,283 R185,285 R186,286 710 R387,709 712,713 R388 R711 C180,280 C181,183 281,283 702 C182,282	OB06287A OB01872A OB06676A OB01857A OB05625A OB09582A OB09507A OB01888A OB01889A OB05784A OB05508A OB09223A OB01412A OB09409A OB07992C	IC TA75558P-R Transistor 2SC945 (L) Inductor 36mH G Carbon Resistor 1K ERD-25T J Carbon Resistor 220K ERD-25T J Metal Film Resistor 43.2K SN14K2E F Metal Film Resistor 3.57K SN14K2E F Carbon Resistor 10K ERD-25T J Carbon Resistor 100K ERD-25T J Carbon Resistor 560K ERD-25T J Carbon Resistor 56K ERD-25T J Electrolytic Capacitor 1 μ 50V (LN) Electrolytic Capacitor 10 μ 16V PP Capacitor 1800P 100V G Dolby NR P.C.B.
— Line Amp. —					
— Miscellaneous —					

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA04575A	Dolby NR P.C.B. Ass'y (U.S.A. & Canada) Serial Nos.: A12401001 — A12402300	C131,132 231,232 C138,238 C140,240 C141,241 C144,244 C167,168 267,268	OB09567A OB09566A OB05796A OB05914A OB09282A OB09494A	Electrolytic Capacitor 0.33μ 50V (LN) K Mylar Capacitor 0.13μ 50V J Mylar Capacitor 0.047μ 50V J Mylar Capacitor 0.15μ 50V J Ceramic Capacitor 100P 50V K Electrolytic Capacitor 1μ 50V (LN)
	— PB Dolby NR —			OB08714A 0E00037A	IC Socket 16P (4 pcs.) Earth Lug B-5 (1 pce.)
IC103,104 203,204 Q102,108 109,110 111,202 208,209 210,211 D103,203 D104,107 108,204 207,208 R131,231 R132,232 R133,147 233,247 R135,141 144,149 164,167 169,170 235,241 244,249 264,267 269,270 R136,150 236,250 R137,139 152,157 237,239 252,257 R138,238 R140,175 240,275 R142,242 R143,243 R145,245 R146,246 R153,253 R154,254 R166,266 R168,268 R172,272 R717,817 C122,222 C124,224 C125,135 225,235 C126,136 142,226 236,242 C127,137 227,237 C128,139 228,239 C129,229 C130,153 230,253	OB06200A OB01872A OB00030A OB01909A OB05694A OB05675A OB09557A OB05641A OB09271A OB05620A OB05591A OB05776A OB05622A OB01846A OB09565A OB01681A OB09426A OB09604A OB09558A OB05784A OB05625A OB01857A OB01392A OB05659A OB09240A OB05681A OB01862A OB01389A OB05583A OB01603A	IC μA7300PC Transistor 2SC945 (L) Germanium Diode 1N60P Silicon Diode 1S1555 Carbon Resistor 9.1K ERD-25T J Carbon Resistor 3.9K ERD-25T J Metal Film Resistor 13K SN14K2E F Carbon Resistor 47K ERD-25T J Carbon Resistor 6.2K ERD-25T J Carbon Resistor 270K ERD-25T J Carbon Resistor 15K ERD-25T J Carbon Resistor 1M ERD-25T J Carbon Resistor 2.2K ERD-25T J Carbon Resistor 4.7K ERD-25T J Carbon Resistor 1.6K ERD-25T J Carbon Resistor 3.3K ERD-25T J Metal Film Resistor 5.36K SN14K2E F Metal Film Resistor 6.98K SN14K2E F Metal Film Resistor 4.42K SN14K2E F Carbon Resistor 560K ERD-25T J Carbon Resistor 220K ERD-25T J Carbon Resistor 1K ERD-25T J Electrolytic Capacitor 470μ 16V Mylar Capacitor 5600P 50V J PP Capacitor 0.033μ 100V G Mylar Capacitor 0.01μ 50V J Electrolytic Capacitor 22μ 16V Electrolytic Capacitor 4.7μ 16V Mylar Capacitor 0.033μ 50V J Mylar Capacitor 0.1μ 50V K	IC101,102 201,202 Q101,103 104,105 106,107 201,203 204,205 206,207 ZD101,201 D101,105 106,201 205,206 D102,202 L101,201 R101,201 R102,202 R103,117 203,217 R104,173 204,273 R105,122 205,222 R106,107 113,116 124,157 159,206 207,213 216,224 257,259 R108,125 208,225 R109,111 126,127 209,211 226,227 R110,210 R112,212 706,708 R114,214 R115,215 R119,219 R121,221 R156,256 R158,258 R161,198 261,298 705,707 R162,262 R163,263	OB06200A OB01872A OB06315A OB01909A OB00030A OB06676A OB09201A OB09356A OB01681A OB01857A OB09557A OB05641A OB09271A OB05620A OB05591A OB05776A OB05622A OB01846A OB09565A OB05794A OB09558A OB05784A OB01888A OB05743A OB05694A	IC μA7300PC Transistor 2SC945 (L) Zener Diode 6.8V XZ068 Silicon Diode 1S1555 Germanium Diode 1N60P Inductor 36mHG Metal Film Resistor 2.2K SN14K2E F Metal Film Resistor 4.7K SN14K2E F Carbon Resistor 3.3K ERD-25T J Carbon Resistor 1K ERD-25T J Metal Film Resistor 13K SN14K2E F Carbon Resistor 47K ERD-25T J Carbon Resistor 15K ERD-25T J Carbon Resistor 1M ERD-25T J Carbon Resistor 2.2K ERD-25T J Carbon Resistor 4.7K ERD-25T J Carbon Resistor 1.6K ERD-25T J Carbon Resistor 680 ERD-25T J Metal Film Resistor 4.42K SN14K2E F Carbon Resistor 560K ERD-25T J Carbon Resistor 10K ERD-25T J Carbon Resistor 27K ERD-25T J Carbon Resistor 9.1K ERD-25T J

Schematic Ref. No.	Part No.	Description
R171,271	OB05625A	Carbon Resistor 220K ERD-25T J
R701,702	OB05795A	Carbon Resistor 150 ERD-25T J
C101,201	OB09409A	PP Capacitor 1800P 100V G
C102,111	OB09240A	PP Capacitor 0.033μ 100V G
202,211		
C103,112	OB05681A	Mylar Capacitor 0.01μ 50V J
C104,113	OB01862A	Electrolytic Capacitor 22μ 16V
204,213		
C105,114	OB01389A	Electrolytic Capacitor 4.7μ 16V
205,214		
C106,206	OB05583A	Mylar Capacitor 0.033μ 50V J
C107,151	OB01603A	Mylar Capacitor 0.1μ 50V K
207,251		
C108,109	OB09567A	Electrolytic Capacitor 0.33μ 50V (LN) K
208,209		
C110,210	OB09594A	Mylar Capacitor 0.03μ 50V J
C115,215	OB09566A	Mylar Capacitor 0.13μ 50V J
C116,216	OB05796A	Mylar Capacitor 0.047μ 50V J
C117,217	OB05914A	Mylar Capacitor 0.15μ 50V J
C119,219	OB09223A	Electrolytic Capacitor 1μ 50V (LN)
503,504		
C120,220	OB01392A	Electrolytic Capacitor 470μ 16V
C148,248	OB09163A	Electrolytic Capacitor 10μ 16V (BP)
	OB08714A	IC Socket 16P (4 pcs.)
— Line Amp. —		
IC301	OB06287A	IC TA75558P-R
Q120,220	OB01872A	Transistor 2SC945 (L)
L110,210	OB06676A	Inductor 36mH G
R180,184	OB01857A	Carbon Resistor 1K ERD-25T J
280,284		
R181,182	OB05625A	Carbon Resistor 220K ERD-25T J
281,282		
R183,283	OB09582A	Metal Film Resistor 43.2K SN14K2E F
R185,285	OB09507A	Metal Film Resistor 3.57K SN14K2E F
R186,286	OB01888A	Carbon Resistor 10K ERD-25T J
710		
R387,709	OB01889A	Carbon Resistor 100K ERD-25T J
712,713		
R388	OB05784A	Carbon Resistor 560K ERD-25T J
R711	OB05508A	Carbon Resistor 56K ERD-25T J
C180,280	OB09223A	Electrolytic Capacitor 1μ 50V (LN)
C181,183	OB01412A	Electrolytic Capacitor 10μ 16V
281,283		
702		
C182,282	OB09409A	PP Capacitor 1800P 100V G
— Miscellaneous —		
	OB07992A	Dolby NR P.C.B.

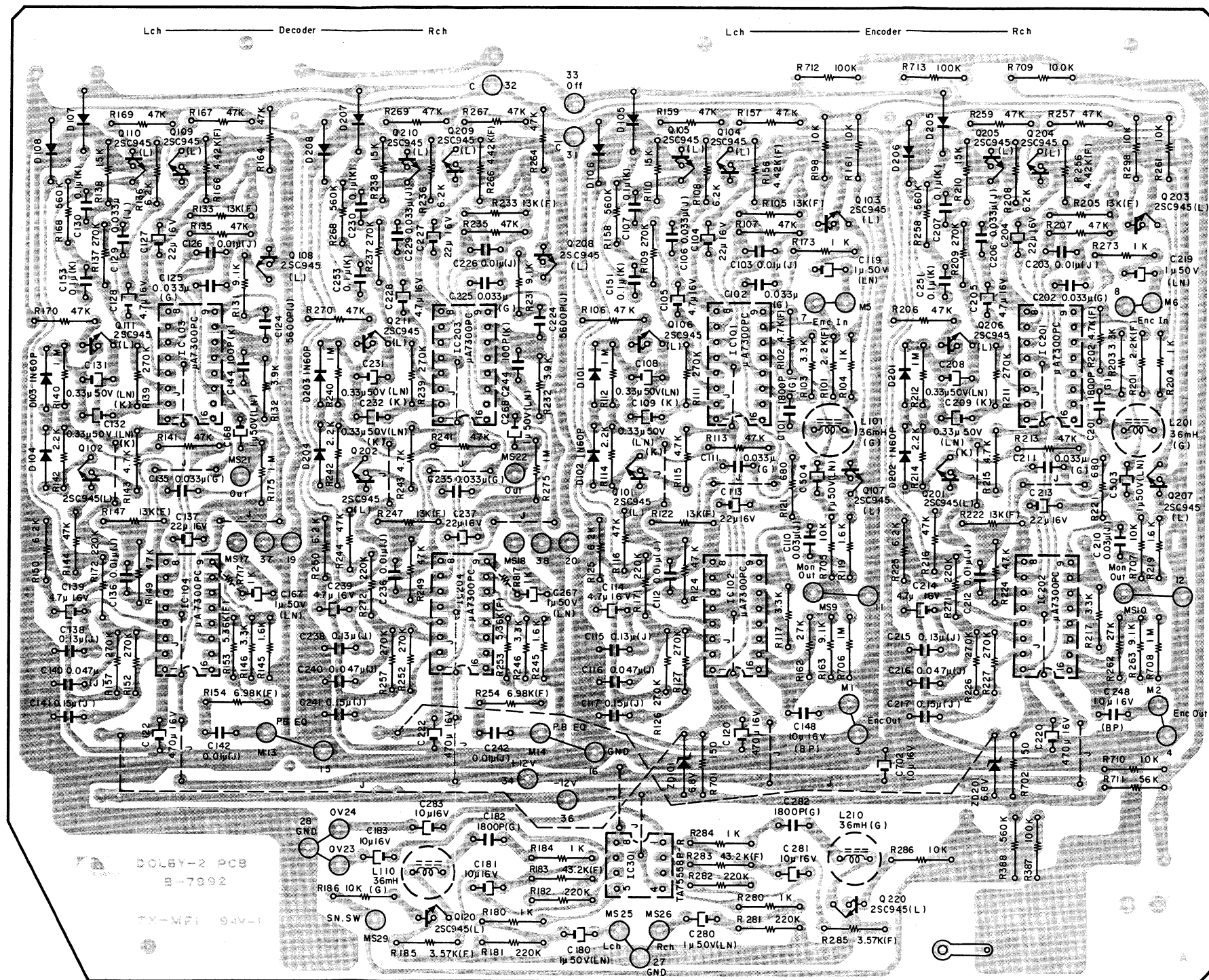


Fig. 7.12.1.2 Serial Nos.: A12401001 – A12402300

Note: Diode is 1SS53, 1S953, or 1S1555 unless otherwise specified.

7.12.2. Dolby NR P.C.B. Ass'y (UK, Australia, 220V Class 2, Others & Japan)

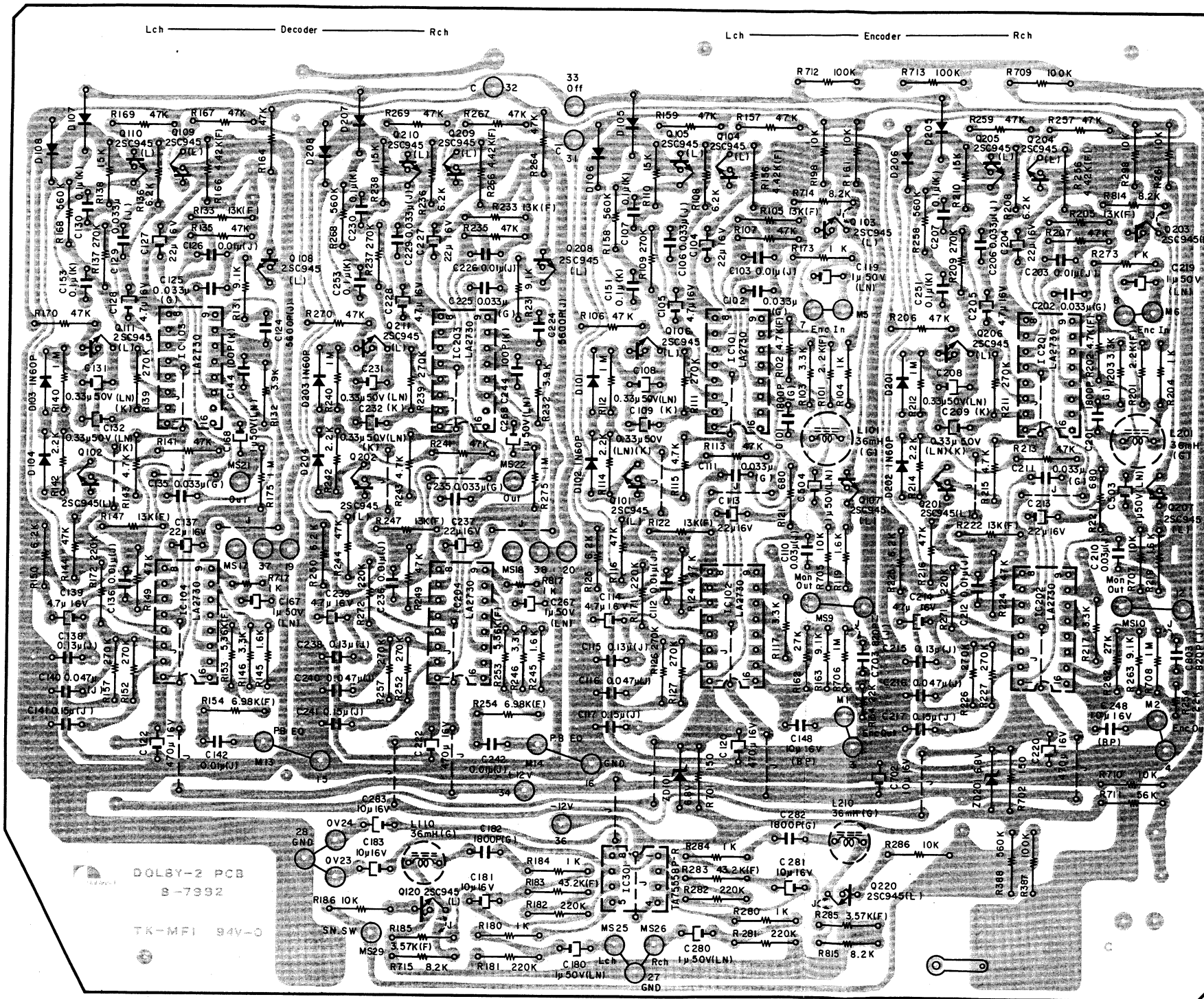


Fig. 7.12.2.1 Serial No.: A12402301 -

Schematic Ref. No.	Part No.	Description
	BA04646A	Dolby NR P.C.B. Ass'y (UK, Australia, 220V Class 2, Others & Japan) Serial No.: A12402301 -
	- PB Dolby NR -	
IC103,104	OB06338A	IC LA2730
Q102,108	OB01872A	Transistor 2SC945 (L)
109,110		
111,202		
208,209		
210,211		
D103,203	OB00030A	Germanium Diode 1N60P
D104,107	OB01909A	Silicon Diode 1S1555
108,204		
207,208		
R131,231	OB05694A	Carbon Resistor 9.1K ERD-25T J
R132,232	OB05675A	Carbon Resistor 3.9K ERD-25T J
R133,147	OB09557A	Metal Film Resistor 13K SN14K2E F
233,247		
R135,141	OB05641A	Carbon Resistor 47K ERD-25T J
144,149		
164,167		
169,170		
235,241		
244,249		
264,267		
269,270		
R136,150	OB09271A	Carbon Resistor 6.2K ERD-25T J
236,250		
R137,139	OB05620A	Carbon Resistor 270K ERD-25T J
152,157		
237,239		
252,257		
R138,238	OB05591A	Carbon Resistor 15K ERD-25T J
R140,175	OB05776A	Carbon Resistor 1M ERD-25T J
240,275		
R142,242	OB05622A	Carbon Resistor 2.2K ERD-25T J
R143,243	OB01846A	Carbon Resistor 4.7K ERD-25T J
R145,245	OB09565A	Carbon Resistor 1.6K ERD-25T J
R146,246	OB01681A	Carbon Resistor 3.3K ERD-25T J
R153,253	OB09426A	Metal Film Resistor 5.36K SN14K2E F
R154,254	OB09604A	Metal Film Resistor 6.98K SN14K2E F
R166,266	OB09558A	Metal Film Resistor 4.42K SN14K2E F
R168,268	OB05784A	Carbon Resistor 560K ERD-25T J
R172,272	OB05625A	Carbon Resistor 220K ERD-25T J
R717,817	OB01857A	Carbon Resistor 1K ERD-25T J
C122,222	OB01392A	Electrolytic Capacitor 470μ 16V
C124,224	OB05659A	Mylar Capacitor 5600P 50V J
C125,135	OB09240A	PP Capacitor 0.033μ 100V G
225,235		
C126,136	OB05681A	Mylar Capacitor 0.01μ 50V J
142,226		
236,242		
C127,137	OB01862A	Electrolytic Capacitor 22μ 16V
227,237		
C128,139	OB01389A	Electrolytic Capacitor 4.7μ 16V
228,239		
C129,229	OB05583A	Mylar Capacitor 0.033μ 50V J
C130,153	OB01603A	Mylar Capacitor 0.1μ 50V K
230,253		

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
C131,132 231,232	OB09567A	Electrolytic Capacitor 0.33 μ 50V (LN) K	R163,263	OB05694A	Carbon Resistor 9.1K ERD-25T J
C138,238	OB09566A	Mylar Capacitor 0.13 μ 50V J	R171,271	OB05625A	Carbon Resistor 220K ERD-25T J
C140,240	OB05796A	Mylar Capacitor 0.047 μ 50V J	R701,702	OB09213A	Fail Safe Type Resistor 150 RDF-25S J
C141,241	OB05914A	Mylar Capacitor 0.15 μ 50V J	R714,814	OB01856A	Carbon Resistor 8.2K ERD-25T J
C144,244	OB09282A	Ceramic Capacitor 100P 50V K	C101,201	OB09409A	PP Capacitor 1800P 100V G
C167,168 267,268	OB09494A	Electrolytic Capacitor 1 μ 50V (LN)	C102,111 202,211	OB09240A	PP Capacitor 0.033 μ 100V G
	OB08714A	IC Socket 16P (4 pcs.)	C103,112	OB05681A	Mylar Capacitor 0.01 μ 50V J
	OE00037A	Earth Lug B-5 (1 pce.)	203,212		
	— Rec. Dolby NR —		C104,113 204,213	OB01862A	Electrolytic Capacitor 22 μ 16V
IC101,102 201,202	OB06338A	IC LA2730	C105,114 205,214	OB01389A	Electrolytic Capacitor 4.7 μ 16V
Q101,103 104,105 106,107 201,203 204,205 206,207	OB01872A	Transistor 2SC945 (L)	C106,206	OB05583A	Mylar Capacitor 0.033 μ 50V J
ZD101,201	OB06315A	Zener Diode 6.8V XZ068	C107,151 207,251	OB01603A	Mylar Capacitor 0.1 μ 50V K
D101,105 106,201 205,206	OB01909A	Silicon Diode 1S1555	C108,109 208,209	OB09567A	Electrolytic Capacitor 0.33 μ 50V (LN) K
D102,202	OB00030A	Germanium Diode 1N60P	C110,210	OB09594A	Mylar Capacitor 0.03 μ 50V J
L101,201	OB06676A	Inductor 36mH G	C115,215	OB09566A	Mylar Capacitor 0.13 μ 50V J
R101,201	OB09201A	Metal Film Resistor 2.2K SN14K2E F	C116,216	OB05796A	Mylar Capacitor 0.047 μ 50V J
R102,202	OB09356A	Metal Film Resistor 4.7K SN14K2E F	C117,217	OB05914A	Mylar Capacitor 0.15 μ 50V J
R103,117 203,217	OB01681A	Carbon Resistor 3.3K ERD-25T J	C119,219 503,504	OB09223A	Electrolytic Capacitor 1 μ 50V (LN)
R104,173 204,273	OB01857A	Carbon Resistor 1K ERD-25T J	C120,220	OB01392A	Electrolytic Capacitor 470 μ 16V
R105,122 205,222	OB09557A	Metal Film Resistor 13K SN14K2E F	C148,248	OB09163A	Electrolytic Capacitor 10 μ 16V (BP)
R106,107 113,116 124,157 159,206 207,213 216,224 257,259	OB05641A	Carbon Resistor 47K ERD-25T J	C703,803	OB09783A	PP Capacitor 820P 100V J
R108,125 208,225	OB09271A	Carbon Resistor 6.2K ERD-25T J		OB08714A	IC Socket 16P (4 pcs.)
R109,111 126,127 209,211 226,227	OB05620A	Carbon Resistor 270K ERD-25T J	— Line Amp. —		
R110,210 R112,212 706,708	OB05591A	Carbon Resistor 15K ERD-25T J	IC301	OB06287A	IC TA75558P-R
R114,214	OB05622A	Carbon Resistor 2.2K ERD-25T J	Q120,220	OB01872A	Transistor 2SC945 (L)
R115,215	OB01846A	Carbon Resistor 4.7K ERD-25T J	L110,210	OB06676A	Inductor 36mH G
R119,219	OB09565A	Carbon Resistor 1.6K ERD-25T J	R180,184 280,284	OB01857A	Carbon Resistor 1K ERD-25T J
R121,221	OB05794A	Carbon Resistor 680 ERD-25T J	R181,182 281,282	OB05625A	Carbon Resistor 220K ERD-25T J
R154,254	OB05615A	Carbon Resistor 22K ERD-25T J	R183,283	OB09582A	Metal Film Resistor 43.2K SN14K2E F
R156,256	OB09558A	Metal Film Resistor 4.42K SN14K2E F	R185,285	OB09507A	Metal Film Resistor 3.57K SN14K2E F
R158,258	OB05784A	Carbon Resistor 560K ERD-25T J	R186,286 710	OB01888A	Carbon Resistor 10K ERD-25T J
R161,198 261,298 705,707	OB01888A	Carbon Resistor 10K ERD-25T J	R387,709 712,713	OB01889A	Carbon Resistor 100K ERD-25T J
R162,262	OB05743A	Carbon Resistor 27K ERD-25T J	R388	OB05784A	Carbon Resistor 560K ERD-25T J
			R711	OB05508A	Carbon Resistor 56K ERD-25T J
			R715,815	OB01856A	Carbon Resistor 8.2K ERD-25T J
			C180,280	OB09223A	Electrolytic Capacitor 1 μ 50V (LN)
			C181,183 281,283 702	OB01412A	Electrolytic Capacitor 10 μ 16V
			C182,282	OB09409A	PP Capacitor 1800P 100V G
			— Miscellaneous —		
			OB07992C	Dolby NR P.C.B.	

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA04646A	Dolby NR P.C.B. Ass'y (UK, Australia, 220V Class 2, Others & Japan) Serial Nos.: A12401001 – A12402300	C131,132 231,232 C138,238 C140,240 C141,241 C144,244 C167,168 267,268	OB09567A	Electrolytic Capacitor 0.33 μ 50V (LN) K
	– PB Dolby NR –			OB09566A	Mylar Capacitor 0.13 μ 50V J
IC*33,104 203,204	OB06338A	IC LA2730		OB05796A	Mylar Capacitor 0.047 μ 50V J
Q102,108 109,110 111,202 208,209 210,211	OB01872A	Transistor 2SC945 (L)		OB05914A	Mylar Capacitor 0.15 μ 50V J
D103,203	OB00030A	Germanium Diode 1N60P		OB09282A	Ceramic Capacitor 100P 50V K
D104,107 108,204 207,208	OB01909A	Silicon Diode 1S1555		OB09494A	Electrolytic Capacitor 1 μ 50V (LN)
R131,231	OB05694A	Carbon Resistor 9.1K ERD-25T J		OB08714A	IC Socket 16P (4 pcs.)
R132,232	OB05675A	Carbon Resistor 3.9K ERD-25T J		0E00037A	Earth Lug B-5 (1 pce.)
R133,147 233,247	OB09557A	Metal Film Resistor 13K SN14K2E F		– Rec. Dolby NR –	
R135,141 144,149 164,167 169,170 235,241 244,249 264,267 269,270	OB05641A	Carbon Resistor 47K ERD-25T J	IC101,102 201,202	OB06338A	IC LA2730
R136,150 236,250	OB09271A	Carbon Resistor 6.2K ERD-25T J	Q101,103 104,105 106,107 201,203 204,205 206,207	OB01872A	Transistor 2SC945 (L)
R137,139 152,157 237,239 252,257	OB05620A	Carbon Resistor 270K ERD-25T J	ZD101,201 D101,105 106,201 205,206	OB06315A	Zener Diode 6.8V XZ068
R138,238 R140,175 240,275	OB05591A	Carbon Resistor 15K ERD-25T J	D102,202 L101,201 R101,201 R102,202 R103,117 203,217	OB01909A	Silicon Diode 1S1555
R142,242	OB05776A	Carbon Resistor 1M ERD-25T J	R104,173 204,273	OB00030A	Germanium Diode 1N60P
R143,243	OB05622A	Carbon Resistor 2.2K ERD-25T J	R105,122 205,222	OB06676A	Inductor 36mH G
R145,245	OB01846A	Carbon Resistor 4.7K ERD-25T J	R106,107 113,116 124,157 159,206 207,213 216,224 257,259	OB09201A	Metal Film Resistor 2.2K SN14K2E F
R146,246	OB09565A	Carbon Resistor 1.6K ERD-25T J	R108,125 208,225	OB09356A	Metal Film Resistor 4.7K SN14K2E F
R153,253	OB01681A	Carbon Resistor 3.3K ERD-25T J	R109,111 126,127 209,211 226,227	OB01681A	Carbon Resistor 3.3K ERD-25T J
R154,254	OB09426A	Metal Film Resistor 5.36K SN14K2E F	R110,210 R112,212 706,708	OB09271A	Carbon Resistor 6.2K ERD-25T J
R166,266	OB09604A	Metal Film Resistor 6.98K SN14K2E F	R114,214 R115,215 R119,219 R121,221 R154,254 R156,256 R158,258 R161,198 261,298 705,707 R162,262	OB05620A	Carbon Resistor 270K ERD-25T J
R168,268	OB09558A	Metal Film Resistor 4.42K SN14K2E F		OB05591A	Carbon Resistor 15K ERD-25T J
R172,272	OB05784A	Carbon Resistor 560K ERD-25T J		OB05776A	Carbon Resistor 1M ERD-25T J
R177,817	OB05625A	Carbon Resistor 220K ERD-25T J		OB05622A	Carbon Resistor 2.2K ERD-25T J
C122,222	OB01857A	Carbon Resistor 1K ERD-25T J		OB01846A	Carbon Resistor 4.7K ERD-25T J
C124,224	OB01392A	Electrolytic Capacitor 470 μ 16V		OB09565A	Carbon Resistor 1.6K ERD-25T J
C125,135 225,235	OB05659A	Mylar Capacitor 5600P 50V J		OB05794A	Carbon Resistor 680 ERD-25T J
C126,136 142,226 236,242	OB09240A	PP Capacitor 0.033 μ 100V G		OB05615A	Carbon Resistor 22K ERD-25T J
C127,137 227,237	OB05681A	Mylar Capacitor 0.01 μ 50V J		OB09558A	Metal Film Resistor 4.42K SN14K2E F
C128,139 228,239	OB01862A	Electrolytic Capacitor 22 μ 16V		OB05784A	Carbon Resistor 560K ERD-25T J
C129,229	OB01389A	Electrolytic Capacitor 4.7 μ 16V		OB01888A	Carbon Resistor 10K ERD-25T J
C130,153 230,253	OB05583A	Mylar Capacitor 0.033 μ 50V J			
	OB01603A	Mylar Capacitor 0.1 μ 50V K			
				OB05743A	Carbon Resistor 27K ERD-25T J

Schematic Ref. No.	Part No.	Description
R163,263	OB05694A	Carbon Resistor 9.1K ERD-25T J
R171,271	OB05625A	Carbon Resistor 220K ERD-25T J
R701,702	OB09213A	Fail Safe Type Resistor 150 RDF-25S J
R714,814	OB01856A	Carbon Resistor 8.2K ERD-25T J
C101,201	OB09409A	PP Capacitor 1800P 100V G
C102,111	OB09240A	PP Capacitor 0.033μ 100V G
202,211		
C103,112	OB05681A	Mylar Capacitor 0.01μ 50V J
203,212		
C104,113	OB01862A	Electrolytic Capacitor 22μ 16V
204,213		
C105,114	OB01389A	Electrolytic Capacitor 4.7μ 16V
205,214		
C106,206	OB05583A	Mylar Capacitor 0.033μ 50V J
C107,151	OB01603A	Mylar Capacitor 0.1μ 50V K
207,251		
C108,109	OB09567A	Electrolytic Capacitor 0.33μ 50V (LN) K
208,209		
C110,210	OB09594A	Mylar Capacitor 0.03μ 50V J
C115,215	OB09566A	Mylar Capacitor 0.13μ 50V J
C116,216	OB05796A	Mylar Capacitor 0.047μ 50V J
C117,217	OB05914A	Mylar Capacitor 0.15μ 50V J
C119,219	OB09223A	Electrolytic Capacitor 1μ 50V (LN)
503,504		
C120,220	OB01392A	Electrolytic Capacitor 470μ 16V
C148,248	OB09163A	Electrolytic Capacitor 10μ 16V (BP)
C703,803	OB09783A	PP Capacitor 820P 100V J
	OB08714A	IC Socket 16P (4 pcs.)
— Line Amp. —		
IC301	OB06287A	IC TA75558P-R
Q120,220	OB01872A	Transistor 2SC945 (L)
L110,210	OB06676A	Inductor 36mH G
R180,184	OB01857A	Carbon Resistor 1K ERD-25T J
280,284		
R181,182	OB05625A	Carbon Resistor 220K ERD-25T J
281,282		
R183,283	OB09582A	Metal Film Resistor 43.2K SN14K2E F
R185,285	OB09507A	Metal Film Resistor 3.57K SN14K2E F
R186,286	OB01888A	Carbon Resistor 10K ERD-25T J
710		
R387,709	OB01889A	Carbon Resistor 100K ERD-25T J
712,713		
R388	OB05784A	Carbon Resistor 560K ERD-25T J
R711	OB05508A	Carbon Resistor 56K ERD-25T J
R715,815	OB01856A	Carbon Resistor 8.2K ERD-25T J
C180,280	OB09223A	Electrolytic Capacitor 1μ 50V (LN)
C181,183	OB01412A	Electrolytic Capacitor 10μ 16V
281,283		
702		
C182,282	OB09409A	PP Capacitor 1800P 100V G
— Miscellaneous —		
OB07992A		Dolby NR P.C.B.

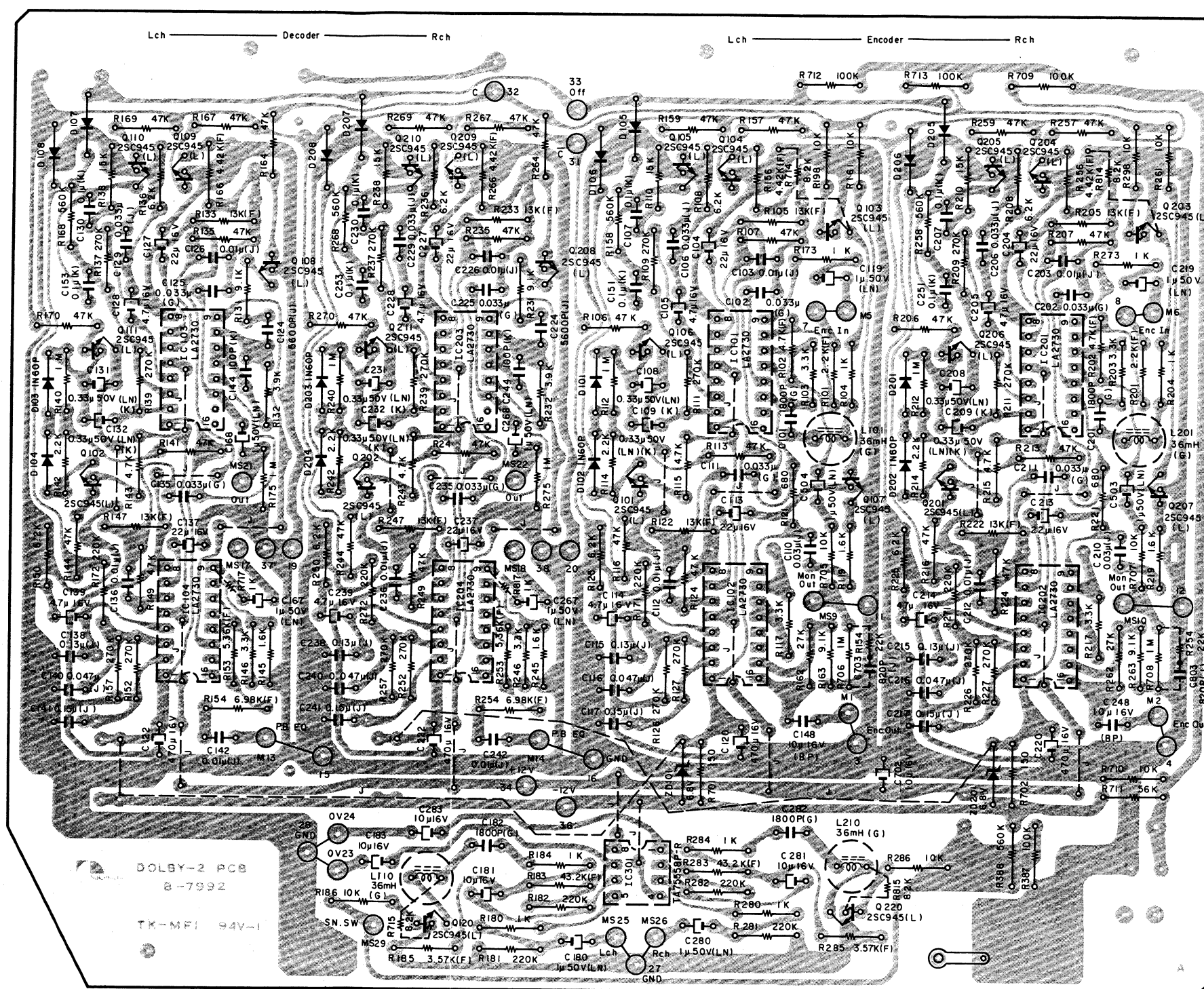


Fig. 7.12.2.2 Serial Nos.: A12401001 – A12402300

Note: Diode is 1S553, 1S953, or 1S1555 unless otherwise specified.

7.13. Logic & Power P.C.B. Ass'y

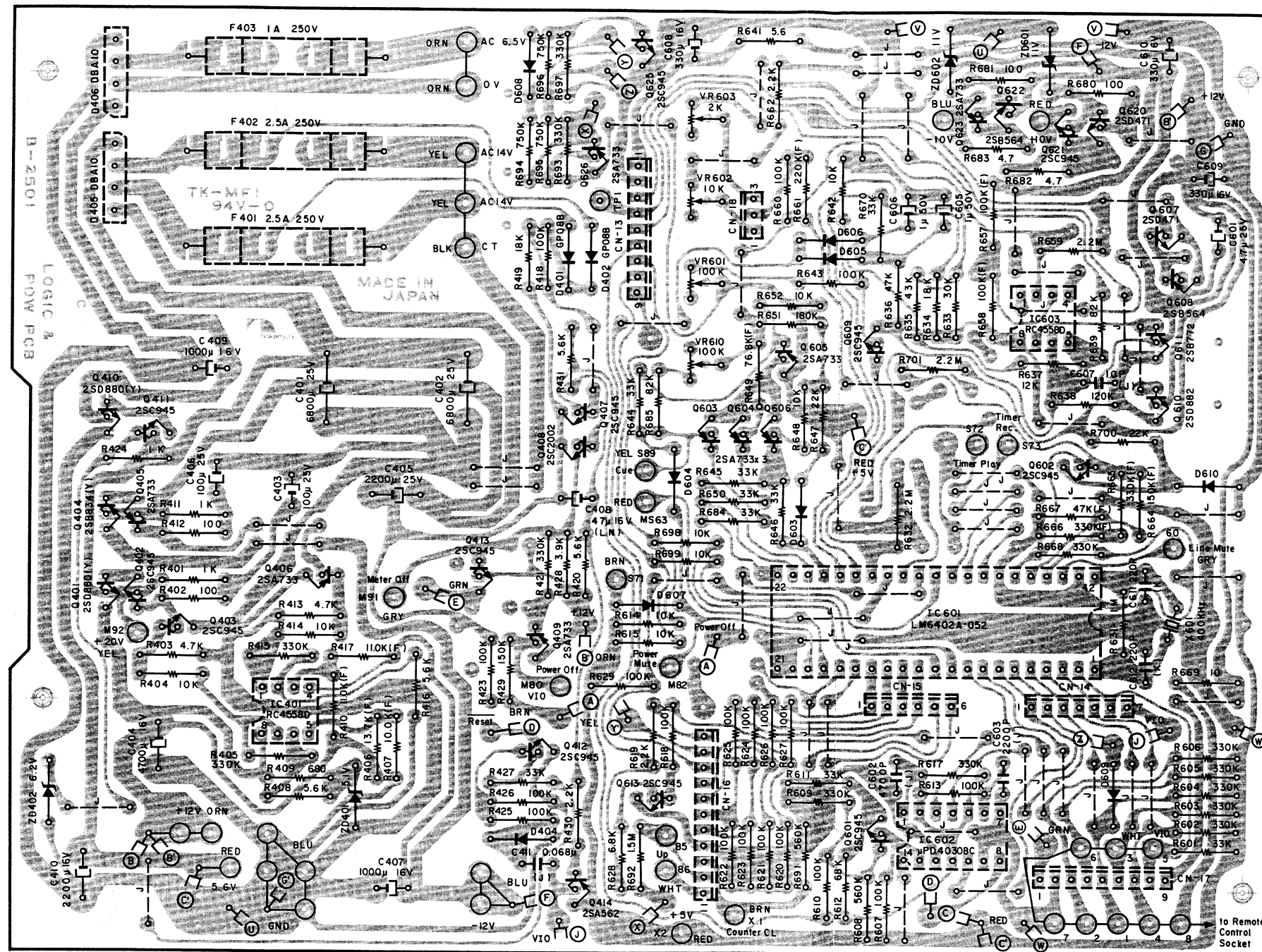


Fig. 7.13.1 Serial No.: A12402301 -

Note: Diode is 1SS53, 1S953, or 1S1555 unless otherwise specified.

Schematic Ref. No.	Part No.	Description	
	BA04622A	Logic & Power P.C.B. Ass'y (U.S.A., Canada & Others)	
	BA04621A	Logic & Power P.C.B. Ass'y (Japan)	
	BA04623A	Logic & Power P.C.B. Ass'y (UK, Australia & 220V Class 2)	
		Serial No.: A12402301 -	
		- DC Supply -	
IC401	OB06124B	IC	RC4558D
Q402,403	OB06100A	Transistor	2SC945 (A)
407,411			
412,413			
Q405,406	OB06013A	Transistor	2SA733
409			
Q408	OB06322A	Transistor	2SC2002
Q414	OB01426A	Transistor	2SA562
ZD401	OB06058A	Zener Diode 5.1V	YZ051
ZD402	OB06314A	Zener Diode 6.2V	YZ062
D401,402	OB06109A	Silicon Diode	GP08B
D404	OB01909A	Silicon Diode	1S1555
D405,406	OB06282A	Diode Bridge	DBA10
R401,411	OB01857A	Carbon Resistor	1K ERD-25T J
424			
R402,412	OB01679A	Carbon Resistor	100 ERD-25T J
R403,413	OB01846A	Carbon Resistor	4.7K ERD-25T J
R404,414	OB01888A	Carbon Resistor	10K ERD-25T J
R405,415	OB05627A	Carbon Resistor	330K ERD-25T J
421			
R406	OB09528A	Metal Film Resistor	13.7K SN14K2E F
R407	OB09203A	Metal Film Resistor	10K SN14K2E F
R408,416	OB01887A	Carbon Resistor	5.6K ERD-25T J
420,431			
R409	OB05794A	Carbon Resistor	680 ERD-25T J
R410,417	OB09128A	Metal Film Resistor	11K SN14K2E F
R418,423	OB01889A	Carbon Resistor	100K ERD-25T J
425,426			
R419	OB05560A	Carbon Resistor	18K ERD-25T J
R427	OB05509A	Carbon Resistor	33K ERD-25T J
R428	OB05675A	Carbon Resistor	3.9K ERD-25T J
R429	OB05626A	Carbon Resistor	150K ERD-25T J
R430	OB05622A	Carbon Resistor	2.2K ERD-25T J
C401,402	OB09374A	Electrolytic Capacitor	6800µ 25V
C403,406	OB01272A	Electrolytic Capacitor	100µ 25V
C404	OB09377A	Electrolytic Capacitor	4700µ 16V
C405	OB05654A	Electrolytic Capacitor	2200µ 25V
C407,409	OB01397A	Electrolytic Capacitor	1000µ 16V
C408	OB09218A	Electrolytic Capacitor	47µ 16V (LN)
C410	OB01406A	Electrolytic Capacitor	2200µ 16V
C411	OB05682A	Mylar Capacitor	0.068µ 50V J
		- Logic -	
IC601	OB06324A	IC	LM6402A-052
IC602	OB06317A	IC	µPD4030BC
IC603	OB06124B	IC	RC4558D
Q601,602	OB06100A	Transistor	2SC945 (A)
609,613			
621,625			
Q603,604	OB06013A	Transistor	2SA733
605,606			
623,626			
Q607,620	OB06066A	Transistor	2SD471

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
Q608,622	0B06069A	Transistor 2SB564	CN13,17	0B08645A	9P-T Post
Q610	0B06316A	Transistor 2SD882	CN14	0B08643A	7P-T Post
Q611	0B06303A	Transistor 2SB772	CN15	0B08642A	6P-T Post
ZD601,602	0B06231A	Zener Diode 11V RD11EB2	CN16	0B08655A	11P-T Post
D603-610	0B01909A	Silicon Diode 1S1555 (8 pcs.)	CN18	0B08653A	3P-T Post
X601	0B08908A	Crystal 400KHz KBR400BT		0B08964A	Transistor Mica TO-126 (2 pcs.)
VR601,610	0B07257A	Semi-fixed Volume 100K		0E00507A	Nut Hex. M3 (2 pcs.)
VR602	0B07256A	Semi-fixed Volume 10K		0E00624A	Screw M3x10 Philips Pan Head (2A) (2 pcs.)
VR603	0B07329A	Semi-fixed Volume 2K			
R601,611	0B05509A	Carbon Resistor 33K ERD-25T J		0J04485A	Heat Sink B (1 pce.)
644,645				0M04222A	Label CN-15 (1 pce.)
646,650				0M04223A	Label CN-16 (1 pce.)
670,684				0M04224A	Label CN-17 (1 pce.)
R602-606	0B05627A	Carbon Resistor 330K ERD-25T J (10 pcs.)		0M04230A	Label CN-13 (1 pce.)
609,617				0M04231A	Label CN-14 (1 pce.)
668,693					
697					
R607,610	0B01889A	Carbon Resistor 100K ERD-25T J (15 pcs.)			
613,618					
620-627					
629,643					
660					
R608,691	0B05784A	Carbon Resistor 560K ERD-25T J	F401,402	0B02501C	Logic & Power P.C.B.
R612	0B05692A	Carbon Resistor 68K ERD-25T J	F401,402	0B08962A	Fuse 2.5A 250V (U.S.A., Canada & Others)
R614,615	0B01888A	Carbon Resistor 10K ERD-25T J	F401,402	0B08961A	Fuse 2.5A 250V (Japan)
642,648			F401,402	0B08347U	Fuse T1A 250V (UK, Australia & 220V Class 2)
652,698			F403	0B08374A	Fuse 1A 250V (U.S.A., Canada & Others)
699			F403	0B08686A	Fuse 1A 250V (Japan)
R619,662	0B05622A	Carbon Resistor 2.2K ERD-25T J	F403	0B08960A	Fuse T500mA 250V (UK, Australia & 220V Class 2)
R628	0B01682A	Carbon Resistor 6.8K ERD-25T J		0E00857A	BT Screw M3x6 Philips Binding Head (2 pcs.)
R631	0B05776A	Carbon Resistor 1M ERD-25T J		0B08349A	Fuse Clip (UK, Australia & 220V Class 2) (6 pcs.)
R632,659	0B05671A	Carbon Resistor 2.2M ERD-25T J		0M04096C	Fuse Label T500mA (1 pce.) (UK, Australia & 220V Class 2)
701				0M03782A	Fuse Label 1A 250V (1 pce.) (U.S.A., Canada, Others & Japan)
R633	0B09075A	Carbon Resistor 30K ERD-25T J		0M04191A	Fuse Label T1A 250V (2 pcs.) (UK, Australia & 220V Class 2)
R634	0B05560A	Carbon Resistor 18K ERD-25T J			
R635	0B09750A	Carbon Resistor 43K ERD-25T J		0B06255A	Transistor 2SD880 (Y)
R636	0B05641A	Carbon Resistor 47K ERD-25T J		0B06256A	Transistor 2SB834 (Y, GR)
R637	0B09263A	Carbon Resistor 12K ERD-25T J		0B08601A	Transistor Mica TO-220 (3 pcs.)
R638	0B05621A	Carbon Resistor 120K ERD-25T J		0B08602A	Transistor Bushing TO-220 (3 pcs.)
R639,685	0B05668A	Carbon Resistor 82K ERD-25T J	Q401,410	0E00037A	Earth Lug B-5 (1 pce.)
R641	0B09217A	Fail Safe Type Resistor 5.6 RDF-25S J	Q404	0E00172A	Washer 3mm Toothed Lock (1 pce.)
R647,700	0B05615A	Carbon Resistor 22K ERD-25T J		0E00507A	Nut Hex. M3 (3 pcs.)
R649	0B09751A	Metal Film Resistor 76.8K SN14K2E F		0E00608A	Screw M3x10 Philips Pan Head (3A) (3 pcs.)
R651	0B05640A	Carbon Resistor 180K ERD-25T J		0E00857A	BT Screw M3x6 Philips Binding Head (1 pce.)
R657,658	0B09269A	Metal Film Resistor 100K SN14K2E F		0J04484B	Heat Sink (1 pce.)
R661	0B09472A	Metal Film Resistor 220K SN14K2E F			
R664	0B09300A	Metal Film Resistor 150K SN14K2E F			
R665,666	0B09756A	Metal Film Resistor 330K SN14K2E F			
R667	0B09451A	Metal Film Resistor 47K SN14K2E F			
R669	0B09216A	Fail Safe Type Resistor 10 RDF-25S J			
R680,681	0B09215A	Fail Safe Type Resistor 100 RDF-25S J			
R682,683	0B09321A	Fail Safe Type Resistor 4.7 RDF-25S J			
R692	0B09380A	Carbon Resistor 1.5M ERD-25T J			
R694,695	0B09755A	Carbon Resistor 750K ERD-25T J			
696					
C601	0B01402A	Electrolytic Capacitor 4.7μ 25V			
C602	0B05652A	Mylar Capacitor 4700P 50V J			
C603	0B01802A	Mylar Capacitor 2200P 50V J			
C605,606	0B01405A	Electrolytic Capacitor 1μ 50V			
C607	0B09277A	Ceramic Capacitor 10P 50V J			
C608,609	0B01502A	Electrolytic Capacitor 330μ 16V			
610					
C611,612	0B09283A	Ceramic Capacitor 220P 50V K			

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Schematic Ref. No.	Part No.	Description
CN13,17	0B08645A	9P-T Post
CN14	0B08643A	7P-T Post
CN15	0B08642A	6P-T Post
CN16	0B08655A	11P-T Post
CN18	0B08653A	3P-T Post
	0B08964A	Transistor Mica TO-126 (2 pcs.)
	0E00507A	Nut Hex. M3 (2 pcs.)
	0E00624A	Screw M3x10 Philips Pan Head (2A) (2 pcs.)
	0J04485A	Heat Sink B (1 pce.)
	0M04222A	Label CN-15 (1 pce.)
	0M04223A	Label CN-16 (1 pce.)
	0M04224A	Label CN-17 (1 pce.)
	0M04230A	Label CN-13 (1 pce.)
	0M04231A	Label CN-14 (1 pce.)
	- Miscellaneous -	
	0B02501A	Logic & Power P.C.B.
F401,402	0B08962A	Fuse 2.5A 250V (U.S.A., Canada & Others)
F401,402	0B08961A	Fuse 2.5A 250V (Japan)
F401,402	0B08347U	Fuse T1A 250V (UK, Australia & 220V Class 2)
F403	0B08374A	Fuse 1A 250V (U.S.A., Canada & Others)
F403	0B08686A	Fuse 1A 250V (Japan)
F403	0B08960A	Fuse T500mA 250V (UK, Australia & 220V Class 2)
	0E00857A	BT Screw M3x6 Philips Binding Head (2 pcs.)
	0B08349A	Fuse Clip (UK, Australia & 220V Class 2) (6 pcs.)
	0M04096C	Fuse Label T500mA (UK, Australia & 220V Class 2) (1 pce.)
	0M03782A	Fuse Label 1A 250V (U.S.A., Canada, Others & Japan) (1 pce.)
	0M04191A	Fuse Label T1A 250V (UK, Australia & 220V Class 2) (2 pcs.)
Q401,410	0B06255A	Transistor 2SD880 (Y)
Q404	0B06256A	Transistor 2SB834 (Y, GR)
	0B08601A	Transistor Mica TO-220 (3 pcs.)
	0B08602A	Transistor Bushing TO-220 (3 pcs.)
	0E00037A	Earth Lug B-5 (1 pce.)
	0E00172A	Washer 3mm Toothed Lock (1 pce.)
	0E00507A	Nut Hex. M3 (3 pcs.)
	0E00608A	Screw M3x10 Philips Pan Head (3A) (3 pcs.)
	0E00857A	BT Screw M3x6 Philips Binding Head (1 pce.)
	0J04484B	Heat Sink (1 pce.)

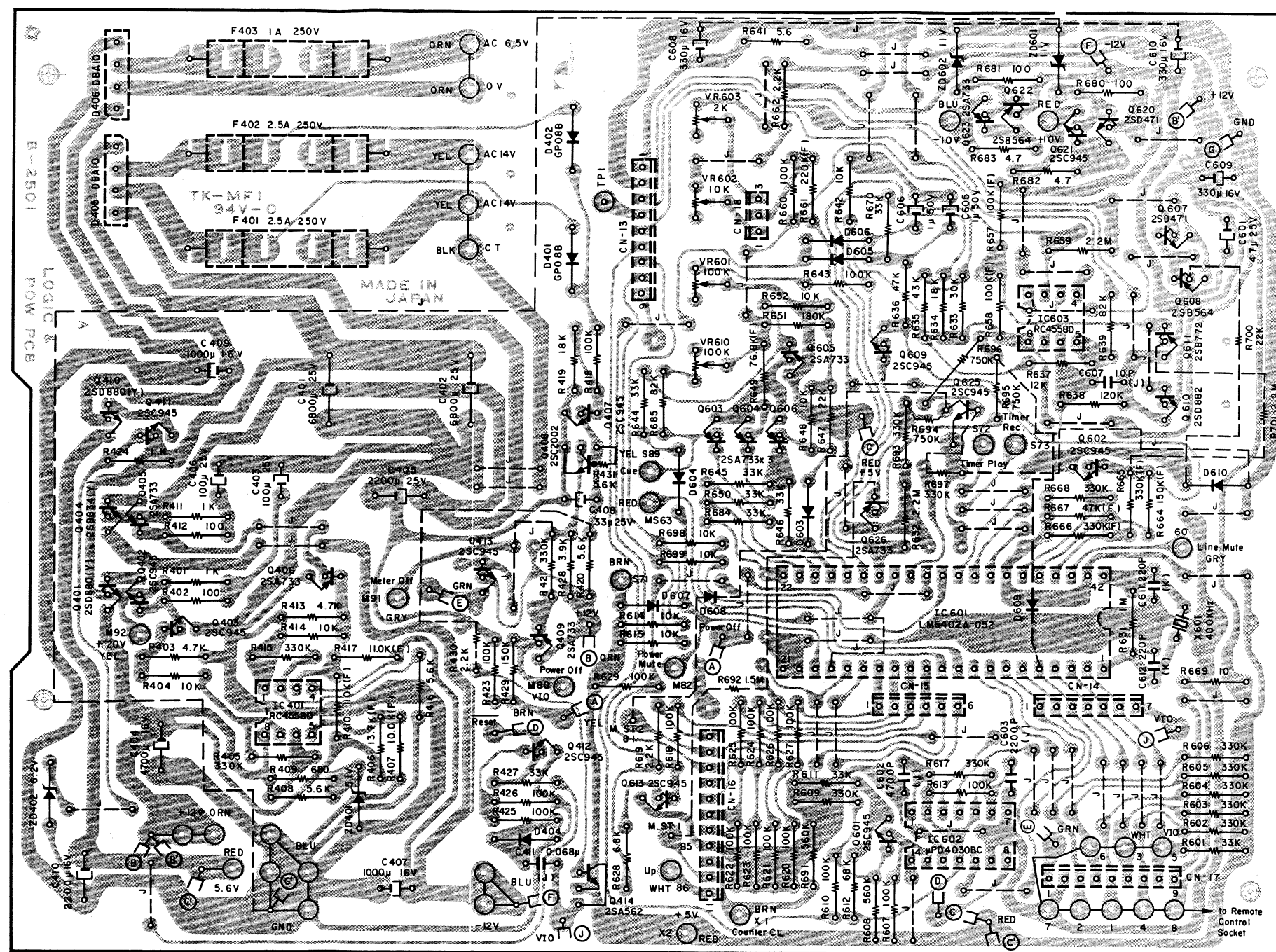


Fig. 7.13.2 Serial Nos.: A12401001 – A12402300

Note: Diode is 1SS53, 1S953, or 1S1555 unless otherwise specified.

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

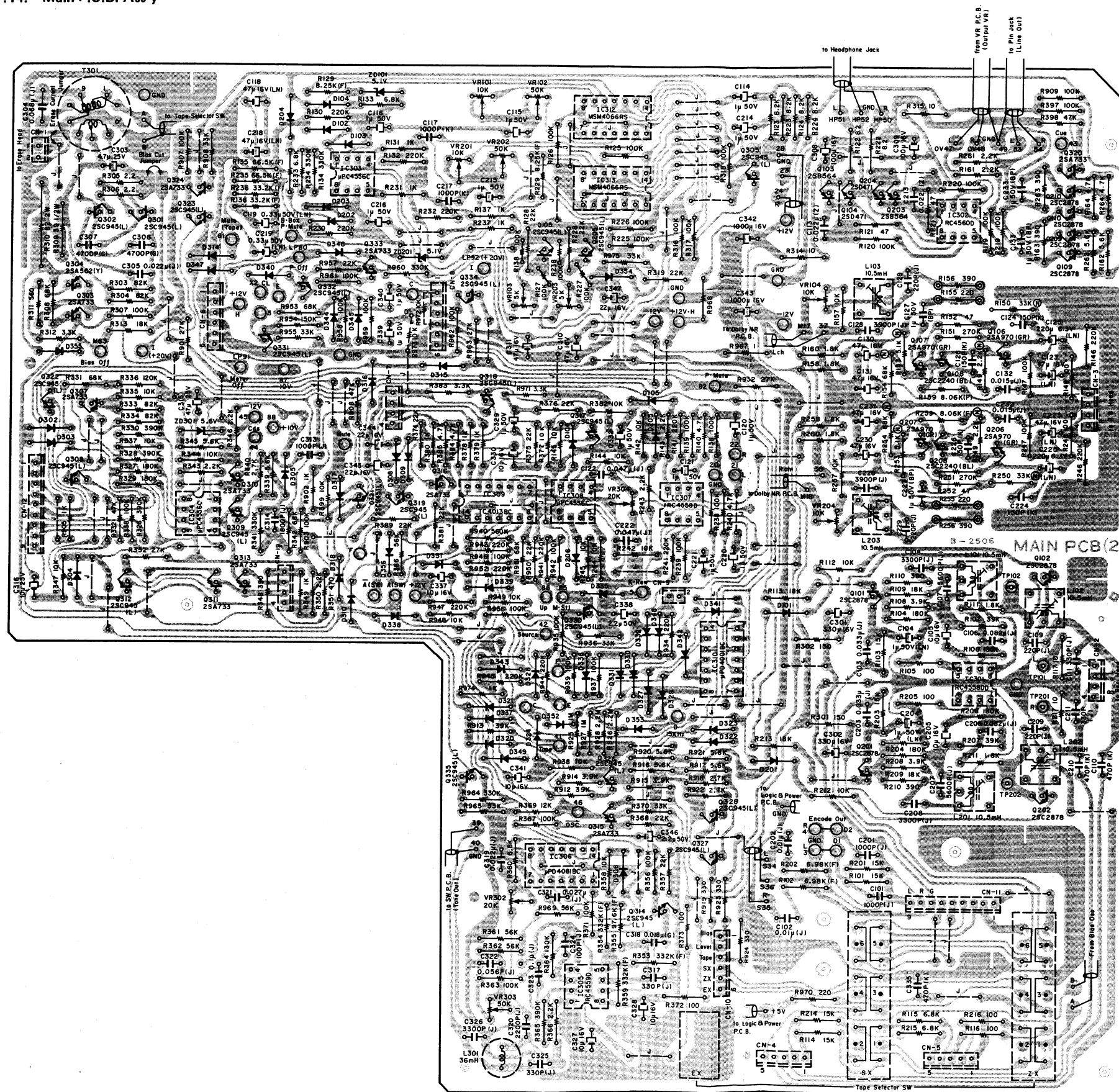


Fig. 7.14.1 Serial No.: A12404901 -

Note: Diode is 1SS53, 1S953, or 1S1555 unless otherwise specified.

Schematic Ref. No.	Part No.	Description	
	BA04535A	Main P.C.B. Ass'y Serial No.: A12404901 -	
		- PB Eq. Amp. -	
Q106,107 206,207	OB06180A	Transistor	2SA970 (GR)
Q108,208	OB06142A	Transistor	2SC2240 (BL)
L103,203	OB00068A	Trap Coil	10.5mH
VR104,204	OB07233A	Semi-fixed Volume	10K
R146,246	OB05625A	Carbon Resistor	220K ERD-25T J
R147,247	OB01889A	Carbon Resistor	100K ERD-25T J
R148,248	OB01679A	Carbon Resistor	100 ERD-25T J
R149,249	OB09309A	Carbon Resistor	2.2K ERD-25TS J (Noiseless)
R150,250	OB09310A	Carbon Resistor	33K ERD-25TS J (Noiseless)
R151,251	OB05620A	Carbon Resistor	270K ERD-25T J
R152,252	OB01706A	Carbon Resistor	47 ERD-25T J
R153,253	OB09388A	Carbon Resistor	5.1K ERD-25TS J (Noiseless)
R154,254	OB09311A	Carbon Resistor	68K ERD-25TS J (Noiseless)
R155,255	OB01933A	Carbon Resistor	220 ERD-25T J
R156,256	OB05691A	Carbon Resistor	390 ERD-25T J
R157,257	OB01888A	Carbon Resistor	10K ERD-25T J
R158,160 258,260	OB05614A	Carbon Resistor	1.8K ERD-25T J
R159,259	OB09431A	Metal Film Resistor	8.06K SN14K2E F
C123,223	OB09218A	Electrolytic Capacitor	47μ 16V (LN)
C124,126 224,226	OB09281A	Ceramic Capacitor	150P 50V K
C125,225	OB09151A	Electrolytic Capacitor	220μ 6.3V (LN)
C127,227	OB09187A	Electrolytic Capacitor	1μ 50V (BP)
C128,228	OB01804A	Mylar Capacitor	3900P 50V J
C129,229	OB09247A	Mica Capacitor	220P 50V J
C130,131 230,231	OB01403A	Electrolytic Capacitor	47μ 16V
C132,232	OB05557A	Mylar Capacitor	0.015μ 50V J
		- Rec. Amp. -	
IC301	OB06146A	IC	RC4558DD
Q101,102 201,202	OB06299A	Transistor	2SC2878
D101,201	OB06181A	Silicon Diode	1SS53
L101,102 201,202	OB00068A	Trap Coil	10.5mH
R101,103 201,203	OB01683A	Carbon Resistor	15K ERD-25T J
R102,202	OB09604A	Metal Film Resistor	6.98K SN14 K2E F
R104,106 204,206	OB05640A	Carbon Resistor	180K ERD-25T J
R105,116 205,216	OB01679A	Carbon Resistor	100 ERD-25T J
R107,207	OB01854A	Carbon Resistor	39K ERD-25T J
R108,208	OB05675A	Carbon Resistor	3.9K ERD-25T J
R109,113 209,213	OB05560A	Carbon Resistor	18K ERD-25T J
R110,210	OB05691A	Carbon Resistor	390 ERD-25T J
R111,211	OB05614A	Carbon Resistor	1.8K ERD-25T J
R112,212	OB01888A	Carbon Resistor	10K ERD-25T J
R114,214	OB01683A	Carbon Resistor	15K ERD-25T J

	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
RD-25T J	R128,228	0B05615A	Carbon Resistor 22K ERD-25T J	C320	0B01802A	Mylar Capacitor 2200P 50V J	C120,121	0B01405A	Electrolytic Capacitor 1μ 50V	R397,903	0B01889A	Carbon Resistor 100K ERD-25T J
RD-25T J	319			C321	0B09045A	Mylar Capacitor 0.027μ 50V J	220,221			907,909		
RDF-25S J	R129,229	0B09432A	Metal Film Resistor 8.25K SN14K2E F	C322	0B05813A	Mylar Capacitor 0.056μ 50V J	329,332			962		
RD-25T J	R130,132	0B05625A	Carbon Resistor 220K ERD-25T J	C323	0B01780A	Mylar Capacitor 0.1μ 50V J	C122,222	0B05796A	Mylar Capacitor 0.047μ 50V J	R398,906	0B05641A	Carbon Resistor 47K ERD-25T J
P 50V J	230,232			C324	0B09302A	Mica Capacitor 100P 100V J	C330,337	0B01412A	Electrolytic Capacitor 10μ 16V	R399,972	0B01888A	Carbon Resistor 10K ERD-25T J
μ 50V J	R131,137	0B01857A	Carbon Resistor 1K ERD-25T J	C326	0B01914A	Mylar Capacitor 3300P 50V J	341			973		
3μ 50V J	231,237			C327,328	0B01412A	Electrolytic Capacitor 10μ 16V	C338,346	0B09372A	Electrolytic Capacitor 2.2μ 50V	R901,932	0B05743A	Carbon Resistor 27K ERD-25T J
50V (LN)	R133,233	0B01682A	Carbon Resistor 6.8K ERD-25T J				C344,345	0B01862A	Electrolytic Capacitor 22μ 16V	R902	0B01857A	Carbon Resistor 1K ERD-25T J
16V	R134,234	0B05627A	Carbon Resistor 330K ERD-25T J							R908	0B05509A	Carbon Resistor 33K ERD-25T J
μ 50V J	R135,235	0B09510A	Metal Film Resistor 66.5K SN14K2E F							R912,913	0B01854A	Carbon Resistor 39K ERD-25T J
P 50V J	R136,236	0B09446A	Metal Film Resistor 33.2K SN14K2E F							R914,915	0B05675A	Carbon Resistor 3.9K ERD-25T J
P 50V J	R975	0B05509A	Carbon Resistor 33K ERD-25T J							R918,922	0B05629A	Carbon Resistor 2.7K ERD-25T J
50V J	C114,115	0B01405A	Electrolytic Capacitor 1μ 50V							R919,923	0B05577A	Carbon Resistor 330 ERD-25T J
50V K	116,214									924		
100V J	215,216									R925,927	0B05776A	Carbon Resistor 1M ERD-25T J
16V	C117,217	0B09288A	Ceramic Capacitor 1000P 50V K							R926,928	0B05671A	Carbon Resistor 2.2M ERD-25T J
	C118,218	0B09218A	Electrolytic Capacitor 47μ 16V (LN)							R967,968	0B09214A	Fail Safe Type Resistor 1 RDF-25S J
	C119,219	0B09385A	Electrolytic Capacitor 0.33μ 50V (LN)							C133,233	0B09187A	Electrolytic Capacitor 1μ 50V (BP)
	C310,311	0B01403A	Electrolytic Capacitor 47μ 16V							C335	0B09286A	Ceramic Capacitor 470P 50V K
(L)	C347	0B01862A	Electrolytic Capacitor 22μ 16V							C339,340	0B01405A	Electrolytic Capacitor 1μ 50V
(Y)										C342,343	0B01397A	Electrolytic Capacitor 1000μ 16V
										CN1,9	0B08656A	2P-T Post
										CN2,3,7	0B08654A	4P-T Post
										19		
RD-25T J	IC302	0B06217A	IC RC4560D							CN4,5	0B08183A	5P-T Post
RDF-25S J	Q103,203	0B06069A	Transistor 2SB564							CN6,8,10	0B08642A	6P-T Post
RD-25T J	Q104,204	0B06066A	Transistor 2SD471							CN11,12	0B08645A	9P-T Post
RD-25T J	R119,120	0B01889A	Carbon Resistor 100K ERD-25T								0B07395A	Push Switch 6-6-OSUF34 (1 pce.)
ISF-1/2B J	R121,221	0B01706A	Carbon Resistor 47 ERD-25T J								OE00507A	Nut Hex. M3 (2 pcs.)
ISF-2B J	R122,222	0B09331A	Fail Safe Type Resistor 8.2 RDF-25S J								OE00510A	Screw M3x8 Philips Pan Head (2A)
RD-25T J	R134,315	0B09216A	Fail Safe Type Resistor 10 RDF-25S J									
RD-25T J	C113,213	0B09291A	Ceramic Capacitor 0.022μ 50V Z									
RD-25T J	C308,309	0B01400A	Electrolytic Capacitor 100μ 16V									

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
	BA04535A	Main P.C.B. Ass'y Serial Nos.: A12403401 — A12404900	R115,215	OB01682A	Carbon Resistor 6.8K ERD-25T J	R128,228	OB05615A	Carbon Resistor 22K ERD-25T J	C320	OB01802A	Mylar Capacitor 2200P 50V J	C120,121	OB01405A	Electro
			R117,217	OB05936A	Carbon Resistor 10 ERD-25T J	319			C321	OB09045A	Mylar Capacitor 0.027μ 50V J	220,221		
			R301,302	OB09213A	Fail Safe Type Resistor 150 RDF-25S J	R129,229	OB09432A	Metal Film Resistor 8.25K SN14K2E F	C322	OB05813A	Mylar Capacitor 0.056μ 50V J	329,332	OB05796A	Mylar
	— PB Eq. Amp. —		R970	OB01933A	Carbon Resistor 220 ERD-25T J	R130,132	OB05625A	Carbon Resistor 220K ERD-25T J	C323	OB01780A	Mylar Capacitor 0.1μ 50V J	C122,222	OB01412A	Electro
Q106,107	OB06180A	Transistor 2SA970 (GR)	C101,201	OB05550A	Mylar Capacitor 1000P 50V J	230,232			C324	OB09302A	Mica Capacitor 100P 100V J	C330,337		
206,207			C102,202	OB05681A	Mylar Capacitor 0.01μ 50V J	R131,137	OB01857A	Carbon Resistor 1K ERD-25T J	C326	OB01914A	Mylar Capacitor 3300P 50V J	341	OB09372A	Electro
Q108,208	OB06142A	Transistor 2SC2240 (BL)	C103,203	OB05583A	Mylar Capacitor 0.033μ 50V J	231,237			C327,328	OB01412A	Electrolytic Capacitor 10μ 16V	C338,346	OB01862A	Electro
L103,203	OB00068A	Trap Coil 10.5mH	C104,204	OB09223A	Electrolytic Capacitor 1μ 50V (LN)	R133,233						C344,345		
VR104,204	OB07233A	Semi-fixed Volume 10K	C105,205	OB01412A	Electrolytic Capacitor 10μ 16V	R134,234								
R146,246	OB05625A	Carbon Resistor 220K ERD-25T J	C106,206	OB05685A	Mylar Capacitor 0.082μ 50V J	R135,235								
R147,247	OB01889A	Carbon Resistor 100K ERD-25T J	C107,207	OB05659A	Mylar Capacitor 5600P 50V J	R136,236			IC307	OB06124B	IC RC4558D	IC304	OB06216A	IC
R148,248	OB01679A	Carbon Resistor 100 ERD-25T J	C108,208	OB01914A	Mylar Capacitor 3300P 50V J	R975	OB09446A	Metal Film Resistor 33.2K SN14K2E F	IC308	OB06216A	IC μPC4556C	Q307,310	OB06013A	Transi
R149,249	OB09309A	Carbon Resistor 2.2K ERD-25TS J	C109,209	OB09247A	Mica Capacitor 220P 50V J	C114,115	OB05509A	Carbon Resistor 33K ERD-25T J	IC309	OB06213A	IC TC4013BP	311,313		
			C110,210	OB09286A	Ceramic Capacitor 470P 50V K	116,214	OB01405A	Electrolytic Capacitor 1μ 50V	Q316,333	OB06013A	Transistor 2SA733	Q308,309	OB01872A	Transi
R150,250	OB09310A	Carbon Resistor 33K ERD-25TS J	C111,211	OB09322A	PP Capacitor 330P 100V J	215,216			Q317,318	OB01872A	Transistor 2SC945 (L)	312		
			C301,302	OB01502A	Electrolytic Capacitor 330μ 16V	C117,217	OB09288A	Ceramic Capacitor 1000P 50V K	319,330			ZD301	OB06290A	Zener
						C118,218	OB09218A	Electrolytic Capacitor 47μ 16V (LN)	331,332			D302,303	OB06181A	Silicor
R151,251	OB05620A	Carbon Resistor 270K ERD-25T J				C119,219	OB09385A	Electrolytic Capacitor 0.33μ 50V (LN)	334,335			304,305		
R152,252	OB01706A	Carbon Resistor 47 ERD-25T J				C310,311	OB01403A	Electrolytic Capacitor 47μ 16V	D105,106	OB06181A	Silicon Diode 1SS53 (26 pcs.)	R326,328	OB05676A	Carbo
R153,253	OB09388A	Carbon Resistor 5.1K ERD-25TS J				C347	OB01862A	Electrolytic Capacitor 22μ 16V	205,206			330		
			Q301,302	OB01872A	Transistor 2SC945 (L)				308,309			R327,329	OB05640A	Carbo
			Q303	OB06013A	Transistor 2SA733				310			R331,342	OB05692A	Carbo
			Q304	OB06202A	Transistor 2SA562 (Y)				335-349			R332	OB05641A	Carbo
R154,254	OB09311A	Carbon Resistor 68K ERD-25TS J	D355	OB06181A	Silicon Diode 1SS53				351,352			R333,334	OB05668A	Carbo
			T301	OB06613A	Osc. Coil	IC302	OB06217A	IC RC4560D	353,356			R335,337	OB01888A	Carbo
R155,255	OB01933A	Carbon Resistor 220 ERD-25T J	R303,304	OB05668A	Carbon Resistor 82K ERD-25T J	Q103,203	OB06069A	Transistor 2SB564	VR304	OB07270A	Semi-fixed Volume 20K	344,347		
R156,256	OB05691A	Carbon Resistor 390 ERD-25T J	R305,306	OB09212A	Fail Safe Type Resistor 2.2 RDF-25S J	Q104,204	OB06066A	Transistor 2SD471	R138,139	OB01889A	Carbon Resistor 100K ERD-25T J	R336	OB05621A	Carbo
R157,257	OB01888A	Carbon Resistor 10K ERD-25T J	R307	OB01889A	Carbon Resistor 100K ERD-25T J	R119,120	OB01889A	Carbon Resistor 100K ERD-25T	238,239			R338	OB01889A	Carbo
R158,160	OB05614A	Carbon Resistor 1.8K ERD-25T J	R308	OB05692A	Carbon Resistor 68K ERD-25T J	219,220			935,937			R339,345	OB01887A	Carbo
258,260			R309	OB09296A	Fail Safe Type Resistor 39 RSF-1/2B J	R121,221	OB01706A	Carbon Resistor 47 ERD-25T J	939,942			R340	OB05629A	Carbo
R159,259	OB09431A	Metal Film Resistor 8.06K SN14K2E F	R310	OB09295A	Fail Safe Type Resistor 82 RSF-2B J	R122,222	OB09331A	Fail Safe Type Resistor 8.2 RDF-25S J	946,956			R341	OB05627A	Carbo
C123,223	OB09218A	Electrolytic Capacitor 47μ 16V (LN)	R311	OB05575A	Carbon Resistor 560 ERD-25T J	R114,315	OB09216A	Fail Safe Type Resistor 10 RDF-25S J	958,959			R343,346	OB05622A	Carbo
C124,126	OB09281A	Ceramic Capacitor 150P 50V K	R312	OB01681A	Carbon Resistor 3.3K ERD-25T J	C313,213	OB09291A	Ceramic Capacitor 0.022μ 50V Z	961			350		
C125,225	OB09151A	Electrolytic Capacitor 220μ 6.3V (LN)	R313	OB05560A	Carbon Resistor 18K ERD-25T J	C308,309	OB01400A	Electrolytic Capacitor 100μ 16V	R140,240	OB01846A	Carbon Resistor 4.7K ERD-25T J	R348	OB05691A	Carbo
C127,227	OB09187A	Electrolytic Capacitor 1μ 50V (BP)	R905	OB01857A	Carbon Resistor 1K ERD-25T J				384,385			R349	OB01857A	Carbo
C128,228	OB01804A	Mylar Capacitor 3900P 50V J	C303	OB01402A	Electrolytic Capacitor 4.7μ 25V				R141,241	OB05625A	Carbon Resistor 220K ERD-25T J	R351	OB05576A	Carbo
C129,229	OB09247A	Mica Capacitor 220P 50V J	C304	OB09254A	PP Capacitor 0.068μ 100V J	IC305	OB06127A	IC RC4559D	934,941			R352	OB05743A	Carbo
C130,131	OB01403A	Electrolytic Capacitor 47μ 16V	C305	OB09405A	PP Capacitor 0.022μ 100V J	IC306	OB06219A	IC μPD4081BC	943,944			C313	OB05550A	Mylar
230,231			C306,307	OB09191A	PP Capacitor 4700P 100V G	Q314	OB01872A	Transistor 2SC945 (L)	945,947			C314	OB01913A	Mylar
C132,232	OB05557A	Mylar Capacitor 0.015μ 50V J		OB04450A	Osc. Coil Cap (1 pce.)	Q315	OB06013A	Transistor 2SA733	952			C315	OB01409A	Elect
						D306	OB06181A	Silicon Diode 1SS53	R142,144	OB01888A	Carbon Resistor 10K ERD-25T J	C316	OB01674A	Elect
						L301	OB03919B	Inductor 36mH	145,242					
IC301	OB06146A	IC RC4558DD	IC303	OB06216A	IC μPC4556C	VR302	OB07270A	Semi-fixed Volume 20K	244,245					
Q101,102	OB06299A	Transistor 2SC2878	IC312,313	OB06280A	IC MSM4066RS	VR303	OB07269A	Semi-fixed Volume 50K	377,382					
201,202			Q105,205	OB01872A	Transistor 2SC945 (L)	R353,354	OB09315A	Metal Film Resistor 332K SN14K2E F	938,948					
D101,201	OB06181A	Silicon Diode 1SS53	305			359			949					
L101,102	OB00068A	Trap Coil 10.5mH	ZD101,201	OB06058A	Zener Diode 5.1V YZ051	R355	OB09583A	Metal Film Resistor 97.6K SN14K2E F	R143,243	OB05622A	Carbon Resistor 2.2K ERD-25T J	IC310	OB02506C	Main
201,202			D102,103	OB06181A	Silicon Diode 1SS53	R356,363	OB01889A	Carbon Resistor 100K ERD-25T J	R374,375	OB05615A	Carbon Resistor 22K ERD-25T J	Q109,110	OB06143A	IC
R101,103	OB01683A	Carbon Resistor 15K ERD-25T J	104,202			367,371			376,381			209,210	OB06299A	Trans
201,203			203,204			R357,368			389,950			Q320,324	OB06013A	Trans
R102,202	OB09604A	Metal Film Resistor 6.98K SN14K2E F	354			R358	OB05615A	Carbon Resistor 22K ERD-25T J	957			Q321,322	OB01872A	Trans
R104,106	OB05640A	Carbon Resistor 180K ERD-25T J	VR101,201	OB07256A	Semi-fixed Volume 10K	R360	OB01888A	Carbon Resistor 10K ERD-25T J	R378,379	OB01857A	Carbon Resistor 1K ERD-25T J	323,326		
204,206			VR102,202	OB07269A	Semi-fixed Volume 50K	R361,362	OB01682A	Carbon Resistor 6.8K ERD-25T J	380,974			327,328		
R105,116	OB01679A	Carbon Resistor 100 ERD-25T J	VR103,203	OB07341A	Semi-fixed Volume 5K	969	OB05508A	Carbon Resistor 56K ERD-25T J	R383,971			D314-318	OB06181A	Silicc
205,216			R123,124	OB01856A	Carbon Resistor 8.2K ERD-25T J	R364	OB09527A	Carbon Resistor 130K ERD-25T J	R386	OB01681A	Carbon Resistor 3.3K ERD-25T J	320-324		
R107,207	OB01854A	Carbon Resistor 39K ERD-25T J	223,224			R365	OB05676A	Carbon Resistor 390K ERD-25T J	R936,955	OB05508A	Carbon Resistor 56K ERD-25T J	327-332		
R108,208	OB05675A	Carbon Resistor 3.9K ERD-25T J	R125,126	OB01889A	Carbon Resistor 100K ERD-25T J	R366	OB05622A	Carbon Resistor 2.2K ERD-25T J	965			R161,261	OB05622A	Carb
R109,113	OB05560A	Carbon Resistor 18K ERD-25T J	127,138			R369	OB09346A	Carbon Resistor 12K ERD-25T J	R940	OB05784A	Carbon Resistor 560K ERD-25T J	R162,262	OB01887A	Carb
209,213			225,226			R370	OB05509A	Carbon Resistor 33K ERD-25T J	R951,953	OB09311A	Carbon Resistor 68K ERD-25T J	916,917		
R110,210	OB05691A	Carbon Resistor 390 ERD-25T J	227,238			R372,373	OB09215A	Fail Safe Type Resistor 100 RDF-25S J	R954	OB05626A	Carbon Resistor 150K ERD-25T J	920,921		
R111,211	OB05614A	Carbon Resistor 1.8K ERD-25T J	316,317			C317,325	OB09545A	Mica Capacitor 330P 50V J	R960,964	OB05627A	Carbon Resistor 330K ERD-25T J	R163,263	OB05691A	Carb
R112,212	OB01888A	Carbon Resistor 10K ERD-25T J	318			C318	OB09538A	PP Capacitor 0.018μ 100V G	R963	OB05743A	Carbon Resistor 27K ERD-25T J	R164,264	OB01846A	Carb
R114,214	OB01683A	Carbon Resistor 15K ERD-25T J				C319	OB05582A	Mylar Capacitor 0.022μ 50V J						

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
C.B. Ass'y Nos.: A12403401 — A12404900	R115,215 R117,217 R301,302 R970 C101,201 C102,202 C103,203 C104,204 C105,205 C106,206 C107,207 C108,208 C109,209 C110,210 C111,211 C301,302	OB01682A OB05936A OB09213A OB01933A OB05550A OB05681A OB05583A OB09223A OB01412A OB05685A OB05659A OB01914A OB09247A OB09286A OB09322A OB01502A	Carbon Resistor 6.8K ERD-25T J Carbon Resistor 10 ERD-25T J Fail Safe Type Resistor 150 RDF-25S J Carbon Resistor 220 ERD-25T J Mylar Capacitor 1000P 50V J Mylar Capacitor 0.01μ 50V J Mylar Capacitor 0.033μ 50V J Electrolytic Capacitor 1μ 50V (LN) Electrolytic Capacitor 10μ 16V Mylar Capacitor 0.082μ 50V J Mylar Capacitor 5600P 50V J Mylar Capacitor 3300P 50V J Mica Capacitor 220P 50V J Ceramic Capacitor 470P 50V K PP Capacitor 330P 100V J Electrolytic Capacitor 330μ 16V	R128,228 319 R129,229 R130,132 230,232 R131,137 231,237 R133,233 R134,234 R135,235 R136,236 R975 C114,115 116,214 215,216 C117,217 C118,218 C119,219 C310,311 C347	OB05615A OB09432A OB05625A OB01857A OB01682A OB05627A OB09510A OB09446A OB05509A OB01405A OB09288A OB09218A OB09385A OB01403A OB01862A	Carbon Resistor 22K ERD-25T J Metal Film Resistor 8.25K SN14K2E F Carbon Resistor 220K ERD-25T J Carbon Resistor 1K ERD-25T J Carbon Resistor 6.8K ERD-25T J Carbon Resistor 330K ERD-25T J Metal Film Resistor 66.5K SN14K2E F Metal Film Resistor 33.2K SN14K2E F Carbon Resistor 33K ERD-25T J Electrolytic Capacitor 1μ 50V Ceramic Capacitor 1000P 50V K Electrolytic Capacitor 47μ 16V (LN) Electrolytic Capacitor 0.33μ 50V (LN) Electrolytic Capacitor 47μ 16V Electrolytic Capacitor 22μ 16V	C320 C321 C322 C323 C324 C326 C327,328 IC307 IC308 IC309 Q316,333 Q317,318 319,330 331,332 334,335 D105,106 205,206 308,309 310 335-349 351,352 353,356 VR304 R138,139 238,239 935,937 939,942 946,956 958,959 961 R140,240 384,385 R141,241 934,941 943,944 945,947 952 R142,144 145,242 244,245 377,382 938,948 949 R143,243 R374,375 376,381 389,950 957 R378,379 380,974 R383,971 R386 R936,955 965 R940 R951,953 R954 R960,964 R963	OB01802A OB09045A OB05813A OB01780A OB09302A OB01914A OB01412A — Azimuth — OB06124B OB06216A OB06213A OB06013A OB01872A OB06181A OB07270A OB01889A OB01846A OB05625A OB01888A OB05622A OB05615A OB01857A OB01681A OB05508A OB05509A OB05784A OB09311A OB05626A OB05627A OB05743A	Mylar Capacitor 2200P 50V J Mylar Capacitor 0.027μ 50V J Mylar Capacitor 0.056μ 50V J Mylar Capacitor 0.1μ 50V J Mica Capacitor 100P 100V J Mylar Capacitor 3300P 50V J Electrolytic Capacitor 10μ 16V IC RC4558D IC μPC4556C IC TC4013BP Transistor 2SA733 Transistor 2SC945 (L) Silicon Diode 1SS53 (26 pcs.) Semi-fixed Volume 20K Carbon Resistor 100K ERD-25T J Carbon Resistor 4.7K ERD-25T J Carbon Resistor 220K ERD-25T J Carbon Resistor 10K ERD-25T J Carbon Resistor 2.2K ERD-25T J Carbon Resistor 22K ERD-25T J Carbon Resistor 1K ERD-25T J Carbon Resistor 3.3K ERD-25T J Carbon Resistor 56K ERD-25T J Carbon Resistor 130K ERD-25T J Carbon Resistor 390K ERD-25T J Carbon Resistor 2.2K ERD-25T J Carbon Resistor 12K ERD-25T J Carbon Resistor 33K ERD-25T J Carbon Resistor 560K ERD-25T J Carbon Resistor 68K ERD-25T J Carbon Resistor 150K ERD-25T J Carbon Resistor 330K ERD-25T J Carbon Resistor 27K ERD-25T J	C120,121 220,221 329,332 C122,222 C330,337 341 C338,346 C344,345 IC304 Q307,310 311,313 Q308,309 312 ZD301 D302,303 304,305 R326,328 330 R327,329 R331,342 R332 R333,334 R335,337 344,347 R336 R338 R339,345 R340 R341 R343,346 350 R348 R349 R351 R352 C313 C314 C315 C316 IC310 Q109,110 209,210 Q320,324 Q321,322 323,326 327,328 D314-318 320-324 327-332 R161,261 R162,262 916,917 920,921 R163,263 R164,264	OB01405A OB05796A OB01412A OB09372A OB01862A — Fader — OB06216A OB06013A OB01872A OB06290A OB06181A OB05676A OB05640A OB05692A OB05641A OB05668A OB01888A OB05621A OB01889A OB01887A OB05629A OB05627A OB05622A OB05691A OB01857A OB05576A OB05743A OB05550A OB01913A OB01409A OB01674A OB02506C OB06143A OB06299A OB06013A OB01872A OB06181A OB05622A OB01887A OB05691A OB01846A	Electrolytic Capacitor 1μ 50V Mylar Capacitor 0.047μ 50V J Electrolytic Capacitor 10μ 16V Electrolytic Capacitor 2.2μ 50V Electrolytic Capacitor 22μ 16V IC μPC4556C Transistor 2SA733 Transistor 2SC945 (L) Zener Diode 5.6V RD5.6EB2 Silicon Diode 1SS53 Carbon Resistor 390K ERD-25T J Carbon Resistor 180K ERD-25T J Carbon Resistor 68K ERD-25T J Carbon Resistor 47K ERD-25T J Carbon Resistor 82K ERD-25T J Carbon Resistor 10K ERD-25T J Carbon Resistor 120K ERD-25T J Carbon Resistor 100K ERD-25T J Carbon Resistor 5.6K ERD-25T J Carbon Resistor 2.7K ERD-25T J Carbon Resistor 330K ERD-25T J Carbon Resistor 2.2K ERD-25T J Carbon Resistor 390 ERD-25T J Carbon Resistor 1K ERD-25T J Carbon Resistor 470 ERD-25T J Carbon Resistor 27K ERD-25T J Mylar Capacitor 1000P 50V J Mylar Capacitor 1800P 50V J Electrolytic Capacitor 47μ 25V Electrolytic Capacitor 10μ 25V Main P.C.B. IC μPD4001BC Transistor 2SC2878 Transistor 2SA733 Transistor 2SC945 (L) Silicon Diode 1SS53 (16 pcs.) Carbon Resistor 2.2K ERD-25T J Carbon Resistor 5.6K ERD-25T J Carbon Resistor 390 ERD-25T J Carbon Resistor 4.7K ERD-25T J
Resistor 2SA970 (GR)												
Resistor 2SC2240 (BL)												
Oil 10.5mH												
Fixed Volume 10K												
Resistor 220K ERD-25T J												
Resistor 100K ERD-25T J												
Resistor 100 ERD-25T J												
Resistor 2.2K ERD-25T J												
Resistor 33K ERD-25T J												
Resistor 270K ERD-25T J												
Resistor 47 ERD-25T J												
Resistor 5.1K ERD-25T J												
Resistor 68K ERD-25T J												
Resistor 220 ERD-25T J												
Resistor 390 ERD-25T J												
Resistor 10K ERD-25T J												
Resistor 1.8K ERD-25T J												
Film Resistor 8.06K SN14K2E F												
ytic Capacitor 47μ 16V (LN)												
Capacitor 150P 50V K												
ytic Capacitor 220μ 6.3V (LN)												
ytic Capacitor 1μ 50V (BP)												
apacitor 3900P 50V J												
apacitor 220P 50V J												
ytic Capacitor 47μ 16V												
apacitor 0.015μ 50V J												
RC4558DD												
2SC2878												
Diode 1SS53												
il 10.5mH												
Resistor 15K ERD-25T J												
lm Resistor 6.98K SN14K2E F												
Resistor 180K ERD-25T J												
Resistor 100 ERD-25T J												
Resistor 39K ERD-25T J												
Resistor 3.9K ERD-25T J												
Resistor 18K ERD-25T J												
Resistor 390 ERD-25T J												
Resistor 1.8K ERD-25T J												
Resistor 10K ERD-25T J												
Resistor 15K ERD-25T J												

Schematic Ref. No.	Part No.	Description	
R397,903 907,909 962	0B01889A	Carbon Resistor	100K ERD-25T J
R398,906	0B05641A	Carbon Resistor	47K ERD-25T J
R399,972 973	0B01888A	Carbon Resistor	10K ERD-25T J
R901,932	0B05743A	Carbon Resistor	27K ERD-25T J
R902	0B01857A	Carbon Resistor	1K ERD-25T J
R908	0B05509A	Carbon Resistor	33K ERD-25T J
R912,913	0B01854A	Carbon Resistor	39K ERD-25T J
R914,915	0B05675A	Carbon Resistor	3.9K ERD-25T J
R918,922	0B05629A	Carbon Resistor	2.7K ERD-25T J
R919,923 924	0B05577A	Carbon Resistor	330 ERD-25T J
R925,927	0B05776A	Carbon Resistor	1M ERD-25T J
R926,928	0B05671A	Carbon Resistor	2.2M ERD-25T J
R967,968	0B09214A	Fail Safe Type Resistor	1 RDF-25S J
C133,233	0B09187A	Electrolytic Capacitor	1μ 50V (BP)
C335	0B09286A	Ceramic Capacitor	470P 50V K
C339,340	0B01405A	Electrolytic Capacitor	1μ 50V
C342,343	0B01397A	Electrolytic Capacitor	1000μ 16V
CN1,9	0B08656A	2P-T Post	
CN2,3,7 19	0B08654A	4P-T Post	
CN4,5	0B08183A	5P-T Post	
CN6,8,10	0B08642A	6P-T Post	
CN11,12	0B08645A	9P-T Post	
	0B07395A	Push Switch 6-6-0SUF34	(1 pce.)
	0E00507A	Nut Hex. M3	(2 pcs.)
	0E00510A	Screw M3x8 Philips Pan Head	(2A)
			(2 pcs.)
	0J04479A	Shield Case A	(1 pce.)
	0J04480A	Shield Case B	(1 pce.)
	0M04221A	Label CN-3	(1 pce.)
	0M04225A	Label CN-19	(1 pce.)
	0M04227A	Label CN-10	(1 pce.)
	0M04228A	Label CN-11	(1 pce.)
	0M04229A	Label CN-12	(1 pce.)
	0M04334A	Label CN-6	(1 pce.)
	0M04335A	Label CN-7	(1 pce.)
	0M04336A	Label CN-8	(1 pce.)

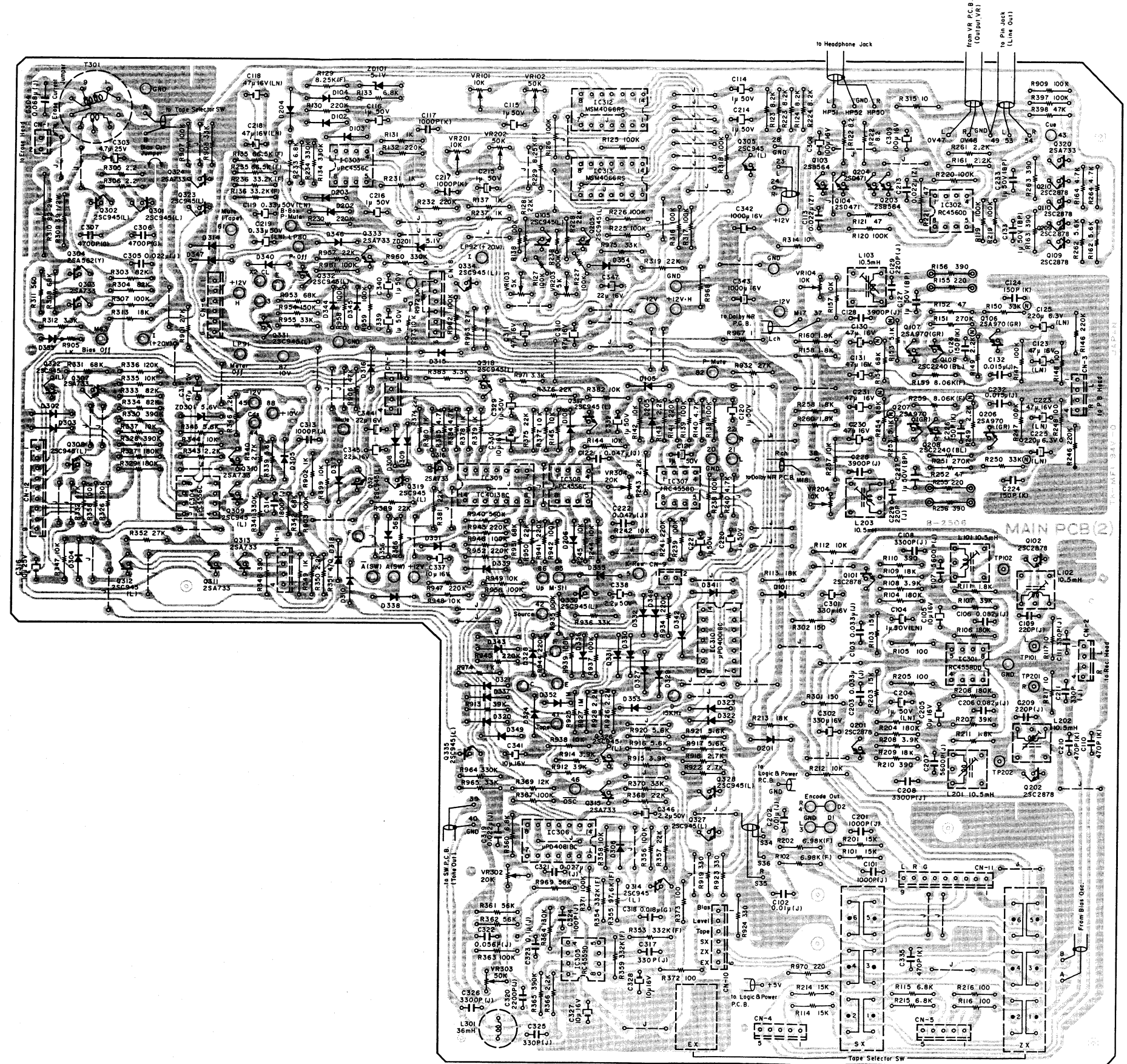


Fig. 7.14.2 Serial Nos.: A12403401 - A12404900 Note: Diode is 1S553, 1S953, or 1S1555 unless otherwise specified.

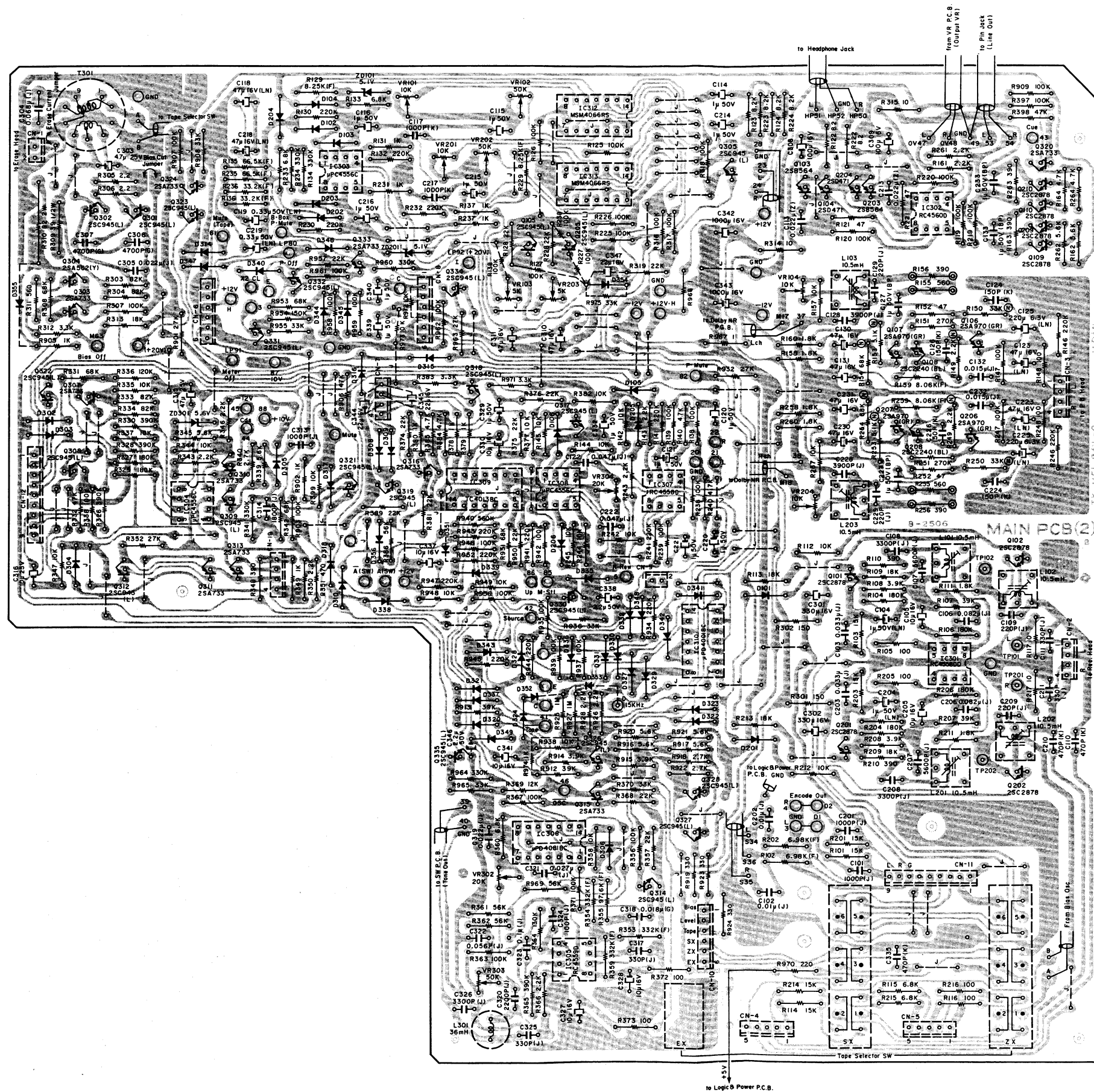


Fig. 7.14.3 Serial Nos.: A12401001 – A12403400 Note: Diode is 1SS53, 1S953, or 1S1555 unless otherwise specified.

Schematic Ref. No.	Part No.	Description	
	BA04535A	Main P.C.B. Ass'y Serial Nos.: A12401001 — A12403400	
	— PB Eq. Amp. —		
Q106,107 206,207	0B06180A	Transistor	2SA970 (GR)
Q108,208	0B06142A	Transistor	2SC2240 (BL)
L103,203	0B00068A	Trap Coil	10.5mH
VR104,204	0B07233A	Semi-fixed Volume	10K
R146,246	0B05625A	Carbon Resistor	220K ERD-25T J
R147,247	0B01889A	Carbon Resistor	100K ERD-25T J
R148,248	0B01679A	Carbon Resistor	100 ERD-25T J
R149,249	0B09309A	Carbon Resistor (Noiseless)	2.2K ERD-25TS J
R150,250	0B09310A	Carbon Resistor (Noiseless)	33K ERD-25TS J
R151,251	0B05620A	Carbon Resistor	270K ERD-25T J
R152,252	0B01706A	Carbon Resistor	47 ERD-25T J
R153,253	0B09388A	Carbon Resistor (Noiseless)	5.1K ERD-25TS J
R154,254	0B09311A	Carbon Resistor (Noiseless)	68K ERD-25TS J
R155,255	0B05575A	Carbon Resistor	560 ERD-25T J
R156,256	0B05691A	Carbon Resistor	390 ERD-25T J
R157,257	0B01888A	Carbon Resistor	10K ERD-25T J
R158,160 258,260	0B05614A	Carbon Resistor	1.8K ERD-25T J
R159,259	0B09431A	Metal Film Resistor	8.06K SN14K2E F
C123,223	0B09218A	Electrolytic Capacitor	47μ 16V (LN)
C124,126 224,226	0B09281A	Ceramic Capacitor	150P 50V K
C125,225	0B09151A	Electrolytic Capacitor	220μ 6.3V (LN)
C127,227	0B09187A	Electrolytic Capacitor	1μ 50V (BP)
C128,228	0B01804A	Mylar Capacitor	3900P 50V J
C129,229	0B09247A	Mica Capacitor	220P 50V J
C130,131 230,231	0B01403A	Electrolytic Capacitor	47μ 16V
C132,232	0B05557A	Mylar Capacitor	0.015μ 50V J
	— Rec. Amp. —		
IC301	0B06146A	IC	RC4558DD
Q101,102 201,202	0B06299A	Transistor	2SC2878
D101,201	0B06181A	Silicon Diode	1SS53
L101,102 201,202	0B00068A	Trap Coil	10.5mH
R101,103 201,203	0B01683A	Carbon Resistor	15K ERD-25T J
R102,202	0B09604A	Metal Film Resistor	6.98K SN14K2E F
R104,106 204,206	0B05640A	Carbon Resistor	180K ERD-25T J
R105,116 205,216	0B01679A	Carbon Resistor	100 ERD-25T J
R107,207	0B01854A	Carbon Resistor	39K ERD-25T J
R108,208	0B05675A	Carbon Resistor	3.9K ERD-25T J
R109,113 209,213	0B05560A	Carbon Resistor	18K ERD-25T J
R110,210	0B05691A	Carbon Resistor	390 ERD-25T J
R111,211	0B05614A	Carbon Resistor	1.8K ERD-25T J
R112,212	0B01888A	Carbon Resistor	10K ERD-25T J
R114,214	0B01683A	Carbon Resistor	15K ERD-25T J

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
Resistor 6.8K ERD-25T J	R128,228	OB05615A	Carbon Resistor 22K ERD-25T J	C320	OB01802A	Mylar Capacitor 2200P 50V J	C120,121	OB01405A	Electrolytic Capacitor 1μ 50V	R397,903	OB01889A	Carbon Resistor 100K ERD-25T J
Resistor 10 ERD-25T J	319			C321	OB09045A	Mylar Capacitor 0.027μ 50V J	220,221			907,909		
Life Type Resistor 150 RDF-25S J	R129,229	OB09432A	Metal Film Resistor 8.25K SN14K2E F	C322	OB05813A	Mylar Capacitor 0.056μ 50V J	329,332			962		
Resistor 220 ERD-25T J	R130,132	OB05625A	Carbon Resistor 220K ERD-25T J	C323	OB01780A	Mylar Capacitor 0.1μ 50V J	C122,222	OB05796A	Mylar Capacitor 0.047μ 50V J	R398,906	OB05641A	Carbon Resistor 47K ERD-25T J
Capacitor 1000P 50V J	230,232			C324	OB09302A	Mica Capacitor 100P 100V J	C330,337	OB01412A	Electrolytic Capacitor 10μ 16V	R399,972	OB01888A	Carbon Resistor 10K ERD-25T J
Capacitor 0.01μ 50V J	R131,137	OB01857A	Carbon Resistor 1K ERD-25T J	C326	OB01914A	Mylar Capacitor 3300P 50V J	341			973		
Capacitor 0.033μ 50V J	231,237			C327,328	OB01412A	Electrolytic Capacitor 10μ 16V	C338,346	OB09372A	Electrolytic Capacitor 2.2μ 50V	R901,932	OB05743A	Carbon Resistor 27K ERD-25T J
lytic Capacitor 1μ 50V (LN)	R133,233	OB01682A	Carbon Resistor 6.8K ERD-25T J				C344,345	OB01862A	Electrolytic Capacitor 22μ 16V	R902	OB01857A	Carbon Resistor 1K ERD-25T J
lytic Capacitor 10μ 16V	R134,234	OB05627A	Carbon Resistor 330K ERD-25T J							R908	OB05509A	Carbon Resistor 33K ERD-25T J
Capacitor 0.082μ 50V J	R135,235	OB09510A	Metal Film Resistor 66.5K SN14K2E F							R912,913	OB01854A	Carbon Resistor 39K ERD-25T J
Capacitor 5600P 50V J	R136,236	OB09446A	Metal Film Resistor 33.2K SN14K2E F							R914,915	OB05675A	Carbon Resistor 3.9K ERD-25T J
Capacitor 3300P 50V J	R975	OB05509A	Carbon Resistor 33K ERD-25T J	IC307	OB06124B	IC RC4558D				R918,922	OB05629A	Carbon Resistor 2.7K ERD-25T J
Capacitor 220P 50V J	C114,115	OB01405A	Electrolytic Capacitor 1μ 50V	IC308	OB06216A	IC μPC4556C	IC304	OB06216A	IC μPC4556C	R919,923	OB05577A	Carbon Resistor 330 ERD-25T J
ic Capacitor 470P 50V K	116,214			IC309	OB06213A	IC TC4013BP	Q307,310	OB06013A	Transistor 2SA733	924		
Capacitor 330P 100V J	215,216			Q316,333	OB06013A	Transistor 2SA733	311,313			R925,927	OB05776A	Carbon Resistor 1M ERD-25T J
lytic Capacitor 330μ 16V	C117,217	OB09288A	Ceramic Capacitor 1000P 50V K	Q317,318	OB01872A	Transistor 2SC945 (L)	Q308,309	OB01872A	Transistor 2SC945 (L)	R926,928	OB05671A	Carbon Resistor 2.2M ERD-25T J
	C118,218	OB09218A	Electrolytic Capacitor 47μ 16V (LN)	319,330			312			R967,968	OB09214A	Fail Safe Type Resistor 1 RDF-25S J
	C119,219	OB09385A	Electrolytic Capacitor 0.33μ 50V (LN)	331,332			ZD301	OB06290A	Zener Diode 5.6V RD5.6EB2	C133,233	OB09187A	Electrolytic Capacitor 1μ 50V (BP)
	C310,311	OB01403A	Electrolytic Capacitor 47μ 16V	334,335			D302,303	OB06181A	Silicon Diode 1SS53	C335	OB09286A	Ceramic Capacitor 470P 50V K
	C347	OB01862A	Electrolytic Capacitor 22μ 16V	D105,106	OB06181A	Silicon Diode 1SS53 (26 pcs.)	304,305			C339,340	OB01405A	Electrolytic Capacitor 1μ 50V
stor 2SC945 (L)				308,309			R326,328	OB05676A	Carbon Resistor 390K ERD-25T J	C342,343	OB01397A	Electrolytic Capacitor 1000μ 16V
stor 2SA733				310			330			CN1,9	OB08656A	2P-T Post
stor 2SA562 (Y)				335-349			R327,329	OB05640A	Carbon Resistor 180K ERD-25T J	CN2,3,7	OB08654A	4P-T Post
Diode 1SS53				351,352			R331,342	OB05692A	Carbon Resistor 68K ERD-25T J	19		
oil				353,356			R332	OB05641A	Carbon Resistor 47K ERD-25T J	CN4,5	OB08183A	5P-T Post
Resistor 82K ERD-25T J	IC302	OB06217A	IC RC4560D	VR304	OB07270A	Semi-fixed Volume 20K	R333,334	OB05668A	Carbon Resistor 82K ERD-25T J	CN6,8,10	OB08642A	6P-T Post
Life Type Resistor 2.2 RDF-25S J	Q103,203	OB06069A	Transistor 2SB564	R138,139	OB01889A	Carbon Resistor 100K ERD-25T J	R335,337	OB01888A	Carbon Resistor 10K ERD-25T J	CN11,12	OB08645A	9P-T Post
Resistor 100K ERD-25T J	Q104,204	OB06066A	Transistor 2SD471	238,239			344,347				OB07395A	Push Switch 6-6-0SUF34 (1 pce.)
Resistor 68K ERD-25T J	R119,120	OB01889A	Carbon Resistor 100K ERD-25T	935,937							OE00507A	Nut Hex. M3 (2 pcs.)
Life Type Resistor 39 RSF-1/2B J	219,220			939,942							OE00510A	Screw M3x8 Philips Pan Head (2A)
Life Type Resistor 82 RSF-2B J	R121,221	OB01706A	Carbon Resistor 47 ERD-25T J	946,956								
Life Type Resistor 560 ERD-25T J	R122,222	OB09331A	Fail Safe Type Resistor 8.2 RDF-25S J	958,959								
Resistor 3.3K ERD-25T J	R314,315	OB09216A	Fail Safe Type Resistor 10 RDF-25S J	961								
Resistor 18K ERD-25T J	C113,213	OB09291A	Ceramic Capacitor 0.022μ 50V Z	R140,240	OB01846A	Carbon Resistor 4.7K ERD-25T J	R336	OB05621A	Carbon Resistor 120K ERD-25T J		OJ04479A	Shield Case A (1 pce.)
Resistor 1K ERD-25T J	C308,309	OB01400A	Electrolytic Capacitor 100μ 16V	384,385			R338	OB01889A	Carbon Resistor 100K ERD-25T J		OJ04480A	Shield Case B (1 pce.)
lytic Capacitor 4.7μ 25V				R141,241	OB05625A	Carbon Resistor 220K ERD-25T J	R339,345	OB01887A	Carbon Resistor 5.6K ERD-25T J		OM04221A	Label CN-3 (1 pce.)
Capacitor 0.068μ 100V J				934,941			R340	OB05629A	Carbon Resistor 2.7K ERD-25T J		OM04225A	Label CN-19 (1 pce.)
Capacitor 0.022μ 100V J	IC305	OB06127A	IC RC4559D	943,944			R341	OB05627A	Carbon Resistor 330K ERD-25T J		OM04227A	Label CN-10 (1 pce.)
Capacitor 4700P 100V G	IC306	OB06219A	IC μPD4081BC	945,947			R343,346	OB05622A	Carbon Resistor 2.2K ERD-25T J		OM04228A	Label CN-11 (1 pce.)
oil Cap (1 pce.)	Q314	OB01872A	Transistor 2SC945 (L)	952			350				OM04229A	Label CN-12 (1 pce.)
	Q315	OB06013A	Transistor 2SA733	R142,144	OB01888A	Carbon Resistor 10K ERD-25T J	R348	OB05691A	Carbon Resistor 390 ERD-25T J		OM04334A	Label CN-6 (1 pce.)
	D306	OB06181A	Silicon Diode 1SS53	145,242			R349	OB01857A	Carbon Resistor 1K ERD-25T J		OM04335A	Label CN-7 (1 pce.)
	L301	OB03919B	Inductor 36mH	244,245			R351	OB05576A	Carbon Resistor 470 ERD-25T J		OM04336A	Label CN-8 (1 pce.)
	VR302	OB07270A	Semi-fixed Volume 20K	377,382			R352	OB05743A	Carbon Resistor 27K ERD-25T J			
	VR303	OB07269A	Semi-fixed Volume 50K	938,948			C313	OB05550A	Mylar Capacitor 1000P 50V J			
	R353,354	OB09315A	Metal Film Resistor 332K SN14K2E F	949			C314	OB01913A	Mylar Capacitor 1800P 50V J			
	359			R143,243	OB05622A	Carbon Resistor 2.2K ERD-25T J	C315	OB01409A	Electrolytic Capacitor 47μ 25V			
Diode 5.1V YZ051	R355	OB09583A	Metal Film Resistor 97.6K SN14K2E F	R374,375	OB05615A	Carbon Resistor 22K ERD-25T J	C316	OB01674A	Electrolytic Capacitor 10μ 25V			
Diode 1SS53	R356,363	OB01889A	Carbon Resistor 100K ERD-25T J	376,381								
	367,371			389,950								
	R357,368	OB05615A	Carbon Resistor 22K ERD-25T J	957								
	R358	OB01888A	Carbon Resistor 10K ERD-25T J	R378,379	OB01857A	Carbon Resistor 1K ERD-25T J	Q320,324	OB06013A	Transistor 2SA733			
ixed Volume 10K	R360	OB01682A	Carbon Resistor 6.8K ERD-25T J	380,974			Q321,322	OB01872A	Transistor 2SC945 (L)			
ixed Volume 50K	R361,362	OB05508A	Carbon Resistor 56K ERD-25T J	R383,971	OB01681A	Carbon Resistor 3.3K ERD-25T J	323,326					
ixed Volume 5K	969			R386	OB05508A	Carbon Resistor 56K ERD-25T J	327,328					
Resistor 8.2K ERD-25T J	R364	OB09527A	Carbon Resistor 130K ERD-25T J	R936,955	OB05509A	Carbon Resistor 33K ERD-25T J	D314-318	OB06181A	Silicon Diode 1SS53 (16 pcs.)			
	R365	OB05676A	Carbon Resistor 390K ERD-25T J	965			320-324					
Resistor 100K ERD-25T J	R366	OB05622A	Carbon Resistor 2.2K ERD-25T J	R940	OB05784A	Carbon Resistor 560K ERD-25T J	327-332					
	R369	OB09346A	Carbon Resistor 12K ERD-25T J	R951,953	OB09311A	Carbon Resistor 68K ERD-25T J	R161,261	OB05622A	Carbon Resistor 2.2K ERD-25T J			
	R370	OB05509A	Carbon Resistor 33K ERD-25T J	R954	OB05626A	Carbon Resistor 150K ERD-25T J	R162,262	OB01887A	Carbon Resistor 5.6K ERD-25T J			
	R372,373	OB09215A	Fail Safe Type Resistor 100 RDF-25S J	R960,964	OB05627A	Carbon Resistor 330K ERD-25T J	916,917					
	C317,325	OB09545A	Mica Capacitor 330P 50V J	R963	OB05743A	Carbon Resistor 27K ERD-25T J	920,921					
	C318	OB09538A	PP Capacitor 0.018μ 100V G				R163,263	OB05691A	Carbon Resistor 390 ERD-25T J			
	C319	OB05582A	Mylar Capacitor 0.022μ 50V J				R164,264	OB01846A	Carbon Resistor 4.7K ERD-25T J			

8. MECHANISM ASS'Y AND PARTS LIST

8.1. Synthesis

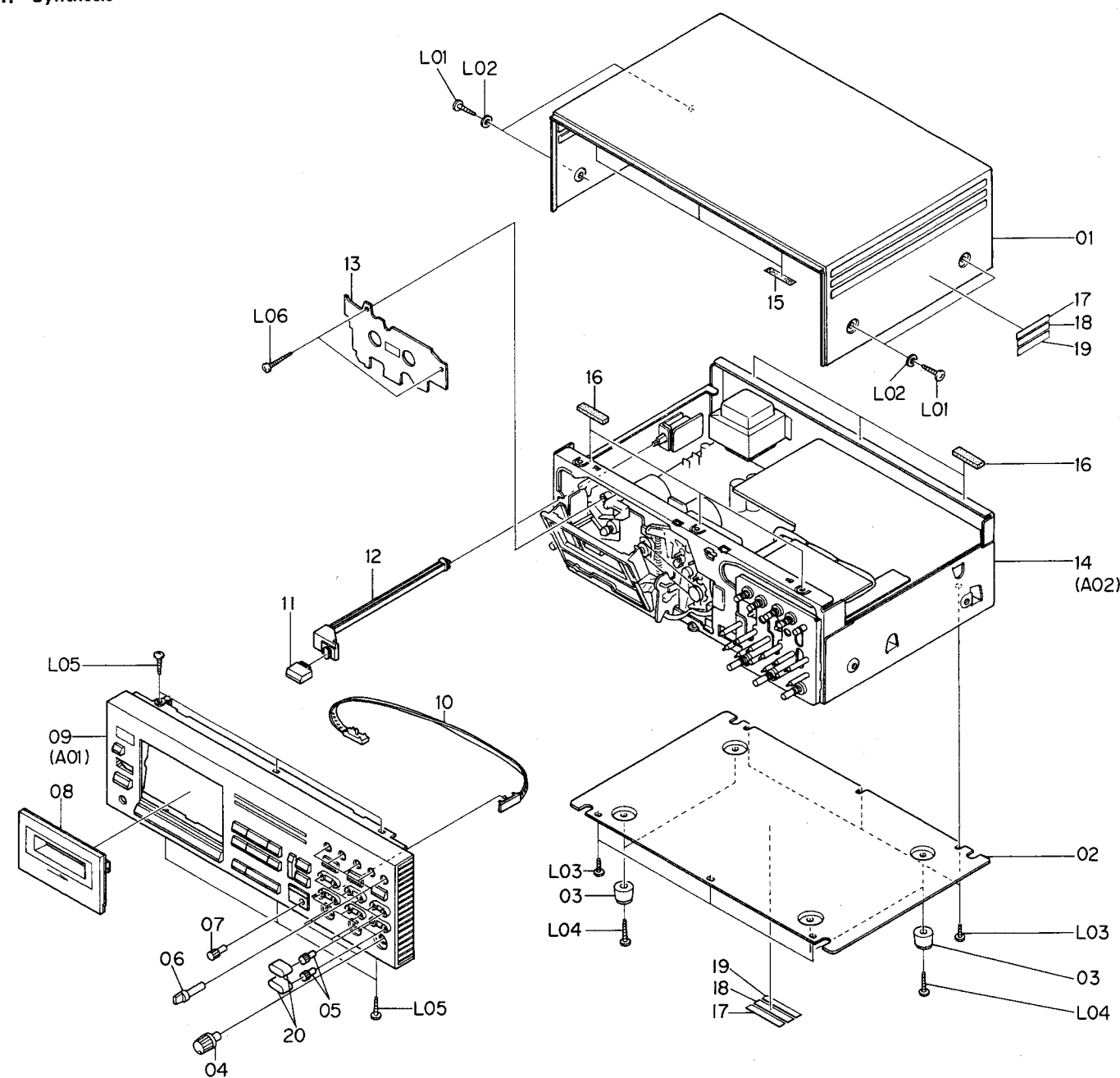


Fig. 8.1

8.2. Front Panel Ass'y (A01)

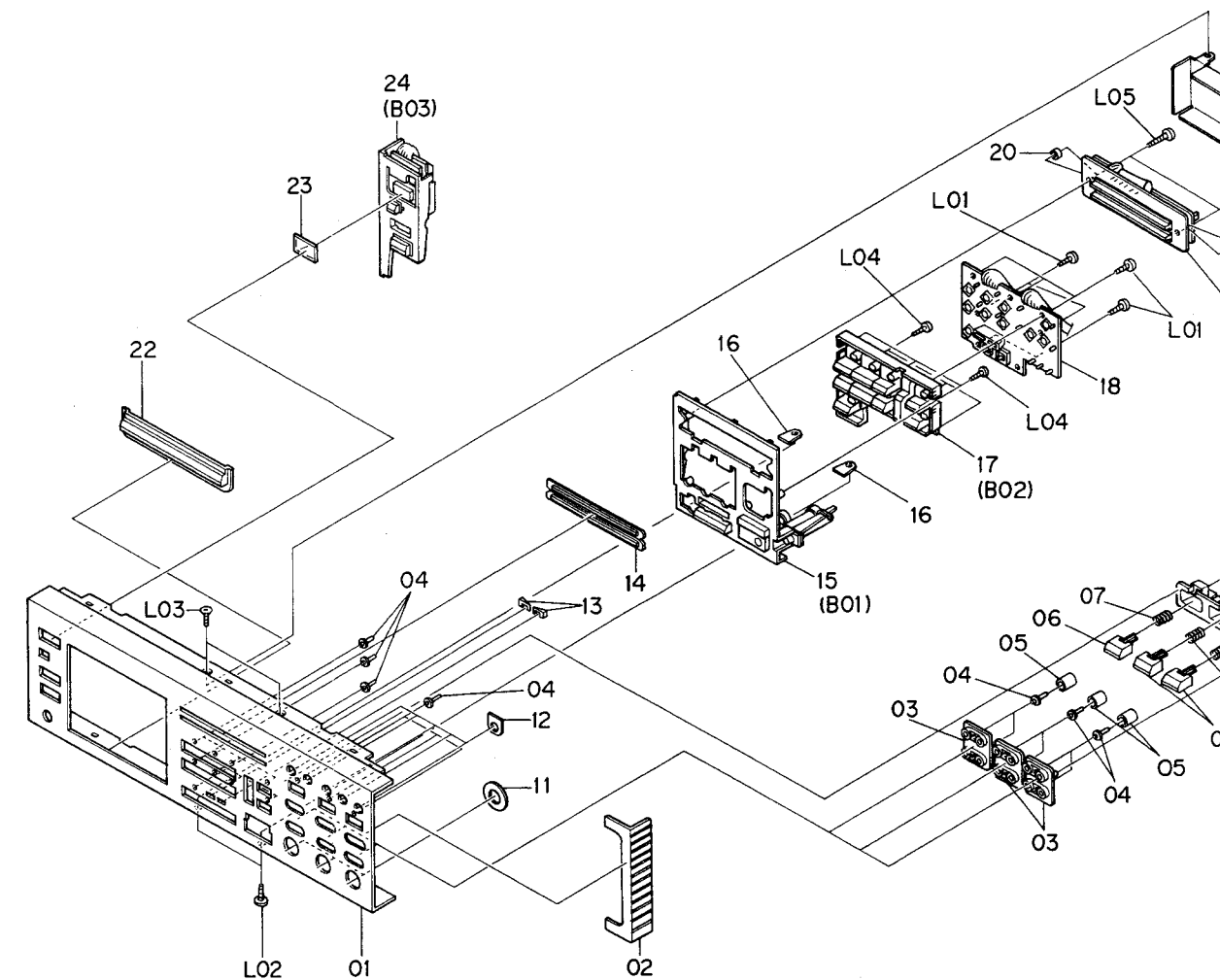


Fig. 8.2

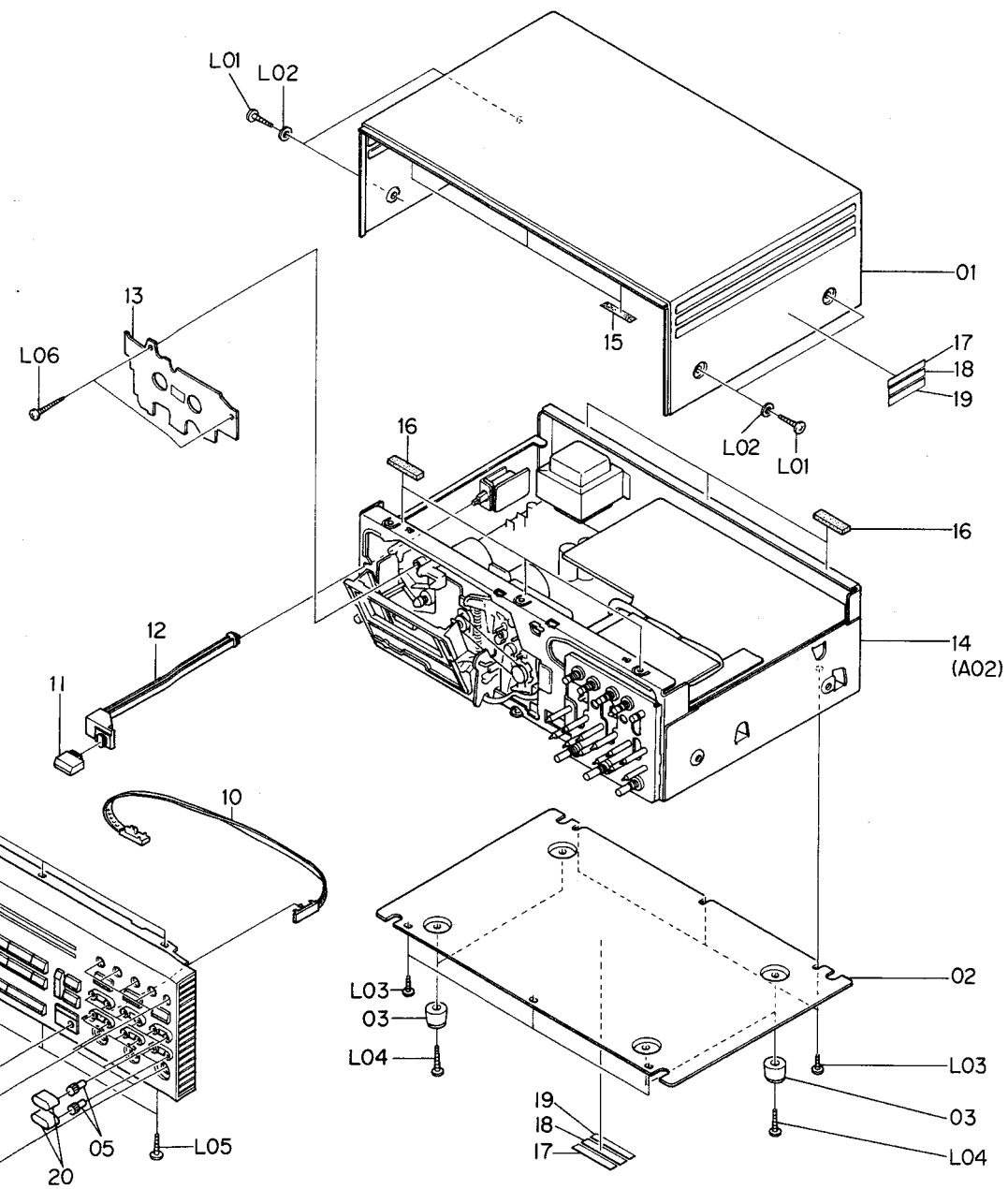


Fig. 8.1

8.2. Front Panel Ass'y (A01)

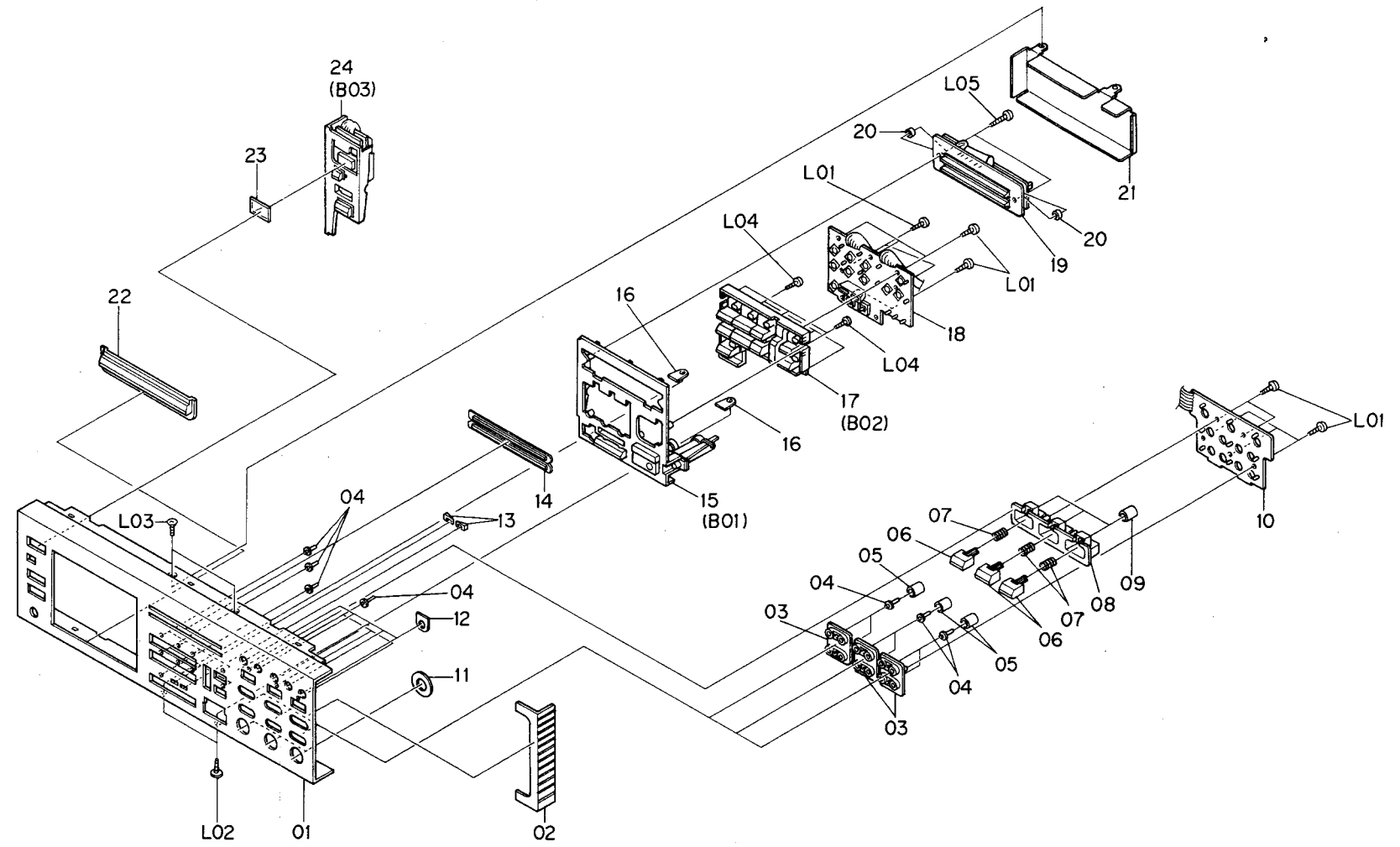


Fig. 8.2

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
	HA04210A	Synthesis (Japan)	1	A01	HA04216A	Front Panel Ass'y	1
	HA04211A	Synthesis (U.S.A. & Canada)	1			Serial No.:	
	HA04212A	Synthesis (220V Class 2)	1			A12401001 —	
	HA04213A	Synthesis (UK)	1				
	HA04214A	Synthesis (Australia)	1	01	0H04020B	Front Panel	1
	HA04215A	Synthesis (Others)	1	02	0H04001B	Side Cover	1
		Serial No.:		03	0H04056A	Cal. Volume Flange	3
		A12401001 —		04	0H03999A	LED Lens	18
01	0H04010A	Top Cover	1	05	0J04496A	Cal. Volume Reflector	6
02	0J04477A	Bottom Cover	1	06	0H04021B	Selector Knob	3
03	0J03564A	Leg T-H	4	07	0J04497A	Selector Spring	3
04	0H04028A	Control Volume Knob	3	08	0H04055A	Selector Flange	1
05	0H04027A	Calibration Volume Knob	12	09	0J04541A	Selector Reflector	3
06	0H04025B	Function Knob	5	10	BA04545A	Record Cal. LED P.C.B. Ass'y	1
07	0H04058A	Azimuth Alignment Knob	1	11	0H04002A	Volume Flange	3
08	HA04229A	Cassette Case Ass'y	1	12	0H04029A	Function Flange	5
09	HA04216A	Front Panel Ass'y	1	13	0H04031A	Fader Lens	2
10	0C08311A	Azimuth Wire	1	14	0H04000A	Meter Cover	1
11	0H04014A	Power Switch Knob	1	15	HA04230A	Front Escutcheon A Ass'y	1
12	0J04490B	Power Switch Joint	1	16	0J04486A	Panel Holder	2
13	0C08019I	Cover Plate	1	17	HA04226A	Control House Ass'y	1
14	JA03883A	Synthesis Mechanism Ass'y	1	18	BA04544A	Control Switch P.C.B. Ass'y	1
		(Japan)		19	BA04543A	Indicator P.C.B. Ass'y	1
	JA03884A	Synthesis Mechanism Ass'y	1	20	0J04454A	Indicator P.C.B. Stud	2
		(U.S.A. & Canada)	1	21	0J04458A	Meter Shield Case	1
	JA03885A	Synthesis Mechanism Ass'y	1	22	0H04023B	Cover Escutcheon	1
		(220V Class 2)		23	0H04030A	Counter Lens	1
	JA03886A	Synthesis Mechanism Ass'y	1	24	HA04225A	Front Escutcheon B Ass'y	1
		(UK)		L01	0E00862A	BT Screw M3x6 Philips Pan Head	12
	JA03887A	Synthesis Mechanism Ass'y	1	L02	0E00593A	Screw M3x6 Philips Binding Head	2
		(Australia)				(Bronze)	
	JA03888A	Synthesis Mechanism Ass'y	1	L03	0E00505A	Screw M3x6 Philips Countersunk	2
		(Others)		L04	0E00859A	BT Screw M2.6x6 Philips Binding Head	6
15	0J04080A	Top Cover Himelon	3	L05	0E00831A	BT Screw M3x10 Philips Pan Head	2
16	0J04550A	Top Cover Cushion	6				
17	0M03883B	Lamp Caution Label	1				
		(U.S.A. & Canada)					
18	0M03800A	Caution Label H	1				
		(U.S.A. & Canada)					
19	0M04314A	UL Caution Label	1				
		(U.S.A. & Canada)	1				
	0M04101B	Caution Label (UK, 220V Class 2, Australia, Japan & Others)	1				
L01	0E00915A	BT Screw M4x8 Philips Binding Head (Black Chromate)	4				
L02	0E00736A	Washer 4mm	4				
L03	0E00857A	BT Screw M3x6 Philips Binding Head	9				
L04	0E00865A	BT Screw M3x10 Philips Binding Head	4				
L05	0E00921A	BT Screw M3x8 Philips Binding Head (Black Chromate)	6				
L06	0E00950A	BT Screw M3x14 Philips Pan Head (Black Chromate)	2				

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
A02	JA03883A	Chassis Ass'y (Japan)	1	L05	0E00612A	BT Screw M3x6 Philips Pan Head (2A)	5
	JA03884A	Chassis Ass'y (U.S.A. & Canada)	1	L06	0E00962A	BT Screw M2x6 Philips Binding Head (Black Chromate)	1
	JA03885A	Chassis Ass'y (220V Class 2)	1				
	JA03886A	Chassis Ass'y (UK)	1	L07	0E00860A	BT Screw M3x6 Philips Binding Head (Black Chromate)	4
	JA03887A	Chassis Ass'y (Australia)	1				
	JA03888A	Chassis Ass'y (Others)	1	L08	—	Switch Nut A	(6)
		Serial No.: A12401001 —		L09	—	Switch Washer A	(6)
01	JA03893A	Headphone Holder Ass'y	1	L10	—	Switch Nut B	(1)
02	QJ04135C	Mechanism Bracket	1	L11	—	Switch Washer B	(1)
03	QJ04478A	Sub Chassis	1				
04	BA04546A	Volume P.C.B. Ass'y	1				
05	BA04554A	Switch P.C.B. Ass'y	1				
06	QJ04476B	Front Chassis	1				
07	BA04547A	Azimuth Switch P.C.B. Ass'y	1				
08	QJ04502B	Cal. Volume Joint	12				
09	BA04542A	Record Cal. P.C.B. Ass'y	1				
10	0B02228B	Cassette Case Lamp	1				
11	QJ04506A	Lamp Holder	1				
12	QJ04469A	Cassette Case Plate	1				
13	CA08344A	Mechanism Ass'y ZX-7	1				
14	BA04618A	Power Switch P.C.B. Ass'y (U.S.A. & Canada)	1				
	BA04620A	Power Switch P.C.B. Ass'y (UK, 220V Class 2, Australia & Others)	1				
	BA04594A	Power Switch P.C.B. Ass'y (Japan)	1				
15	BA04535A	Main P.C.B. Ass'y	1				
16	QJ04470A	Side Chassis L	1				
17	QJ04472A	Center Chassis	1				
18	QJ04471A	Side Chassis R	1				
19	BA04575A	Dolby NR P.C.B. Ass'y (U.S.A. & Canada)	1				
	BA04646A	Dolby NR P.C.B. Ass'y (UK, 220V Class 2, Australia, Japan & Others)	1				
20	0B08771A	Hinge	2				
21	BA04621A	Logic & Power P.C.B. Ass'y (Japan)	1				
	BA04622A	Logic & Power P.C.B. Ass'y (U.S.A., Canada & Others)	1				
	BA04623A	Logic & Power P.C.B. Ass'y (UK, 220V Class 2 & Australia)	1				
22	HA04219A	Rear Panel Ass'y (Japan)	1				
	HA04220A	Rear Panel Ass'y (U.S.A. & Canada)	1				
	HA04221A	Rear Panel Ass'y (220V Class 2)	1				
	HA04222A	Rear Panel Ass'y (UK)	1				
	HA04223A	Rear Panel Ass'y (Australia)	1				
	HA04224A	Rear Panel Ass'y (Others)	1				
23	QJ04537B	Free Bushing 180mm	1				
24	QJ04543A	Free Bushing 60mm	1				
25	QJ04540A	Free Bushing 28mm	1				
26	0B08515A	Insh-Lock	30				
27	0B02542A	Cassette Case Lamp P.C.B.	1				
28	QJ04561A	Headphone Jack Cover	1				
L01	0E00857A	BT Screw M3x6 Philips Binding Head	31				
L02	0E00944A	BT Screw M4X15 Philips Binding Head (Black Chromate)	3				
L03	0E00924A	BT Screw M4x16 Philips Binding Head (Chromate)	1				
L04	0E00078A	Washer 4mm Toothed Lock	4				

8.3. Chassis Ass'y (A02)

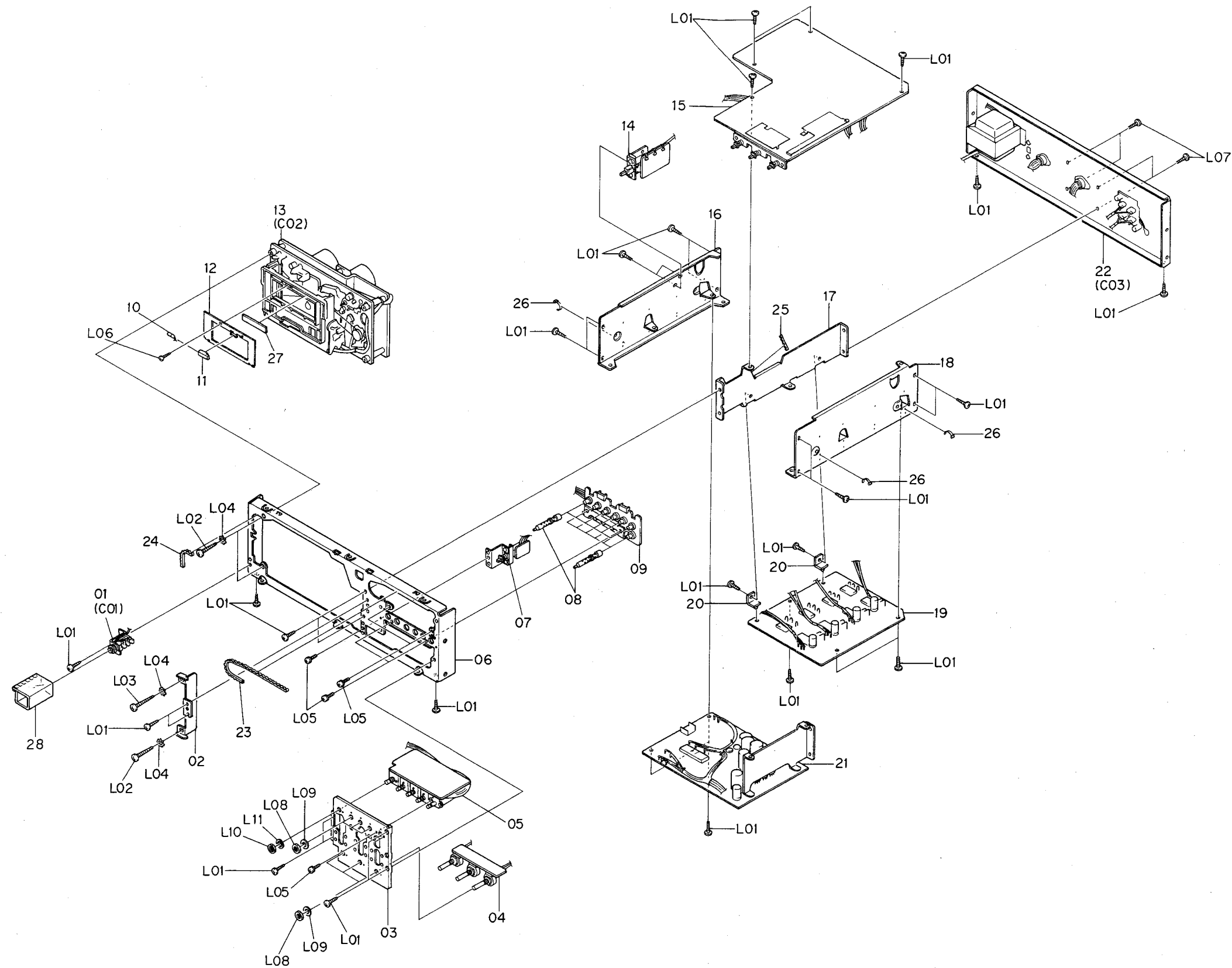


Fig. 8.3

8.4. Front Escutcheon A Ass'y (B01)

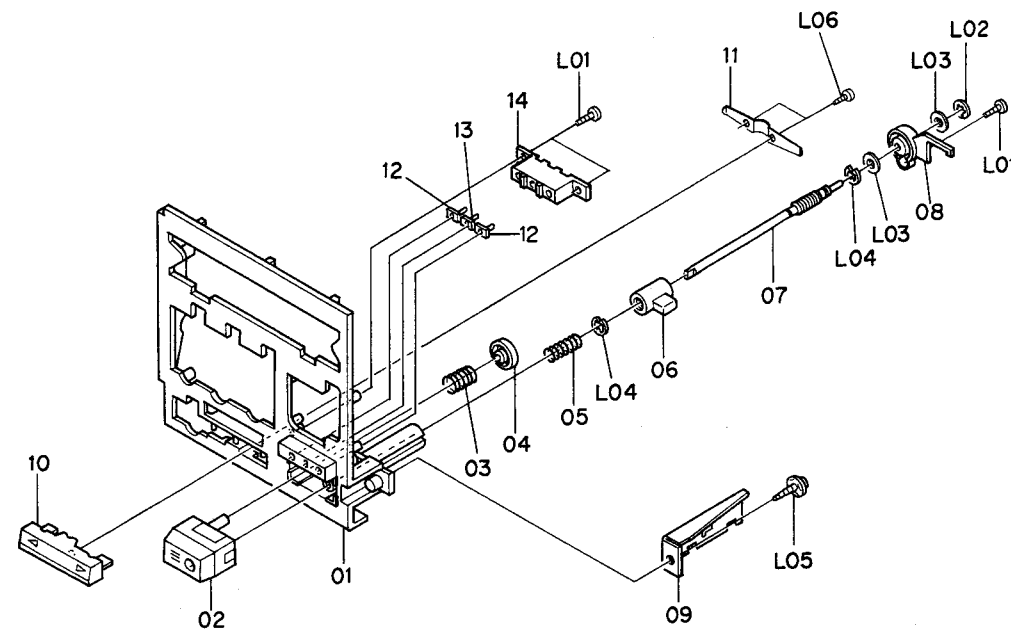


Fig. 8.4

8.5. Control House Ass'y (B02)

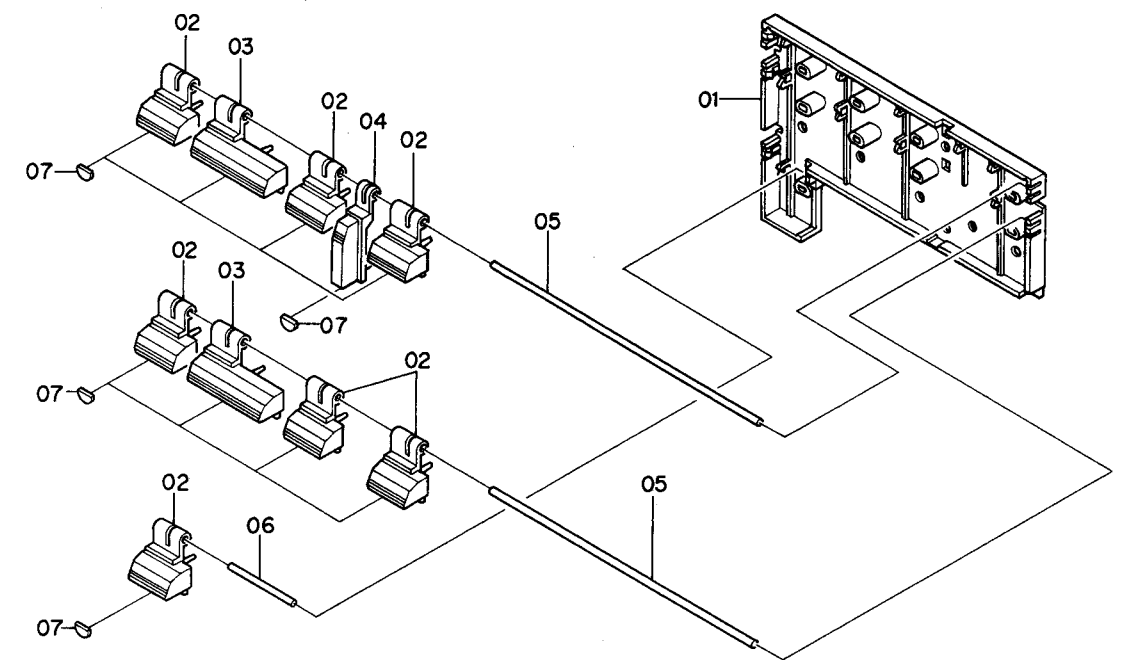


Fig. 8.5

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
B01	HA04230A	Front Escutcheon A Ass'y Serial No.: A12401001 —	1	05	QJ04493A	Shaft A	2
01	0H04003B	Front Escutcheon A	1	06	QJ04494A	Shaft B	1
02	HA04232A	Adjustment Cover Ass'y	1	07	QJ04495A	Control Cushion	10
03	QJ04459A	Adjustment Knob Spring	1	B03	HA04225A	Front Escutcheon B Ass'y Serial No.: A12401001 —	1
04	QJ04460B	Adjustment Flange Stopper	1	01	0H04012B	Front Escutcheon B	1
05	QJ04464A	Adjustment Bar Spring	1	02	0H04015A	Eject Knob	1
06	QJ04462B	Adjustment Slide Joint	1	03	QJ04488A	Eject Spring	1
07	QJ04463A	Adjustment Rod	1	04	QJ04554B	Eject Cushion	1
08	QJ04461B	Adjustment Rod Stopper	1	05	QJ04487B	Eject Stopper	1
09	QJ04465A	Adjustment Wire Holder	1	06	0H04013A	Reset Switch Knob	1
10	0H04004B	Fader Knob	1	07	QJ04489B	Reset Cushion	2
11	QJ04467B	Fader Spring	1	08	BA04548A	Counter P.C.B. Ass'y	1
12	0H04005A	Adjustment Lens A	2	09	BA04642A	Counter Control P.C.B. Ass'y	1
13	0H04006A	Adjustment Lens B	1	10	QJ04491A	Counter P.C.B. Stud	2
14	QJ04466A	Adjustment Lamp House	1	11	QJ04492B	Counter Shield Case	1
L01	0E00961A	BT Screw M2x5 Philips Binding Head (Chromate)	3	12	QJ04327A	Counter Himelon	1
L02	0E00874A	Stopper Ring CS 2mm	1	13	QJ04563B	Counter P.C.B. Insulator	1
L03	QJ04061A	Washer FT20	2	L01	0E00862A	BT Screw M3x6 Philips Pan Head	1
L04	0E00222A	E-Ring 2mm	2	L02	0E00883A	BT Screw M3x18 Philips Pan Head	2
L05	0E00920A	Screw M3x6 Philips Pan Head Polywave	1	L03	0E00037A	Earth Lug B-5	1
L06	0E00853A	BT Screw M2x3 Philips Pan Head	2	C01	JA03893A	Headphone Holder Ass'y Serial No.: A12401001 —	1
B02	HA04226A	Control House Ass'y Serial No.: A12401001 —	1	01	0B08511A	Headphone Jack	1
01	0H04016A	Control House	1	02	QJ04474A	Headphone Jack Holder	1
02	0H04017B	Control Knob A	7	L01	—	Headphone Jack Washer	(1)
03	0H04018B	Control Knob B	2	L02	—	Headphone Jack Nut	(1)
04	0H04019B	Control Knob C	1				

8.6. Front Escutcheon B Ass'y (B03)

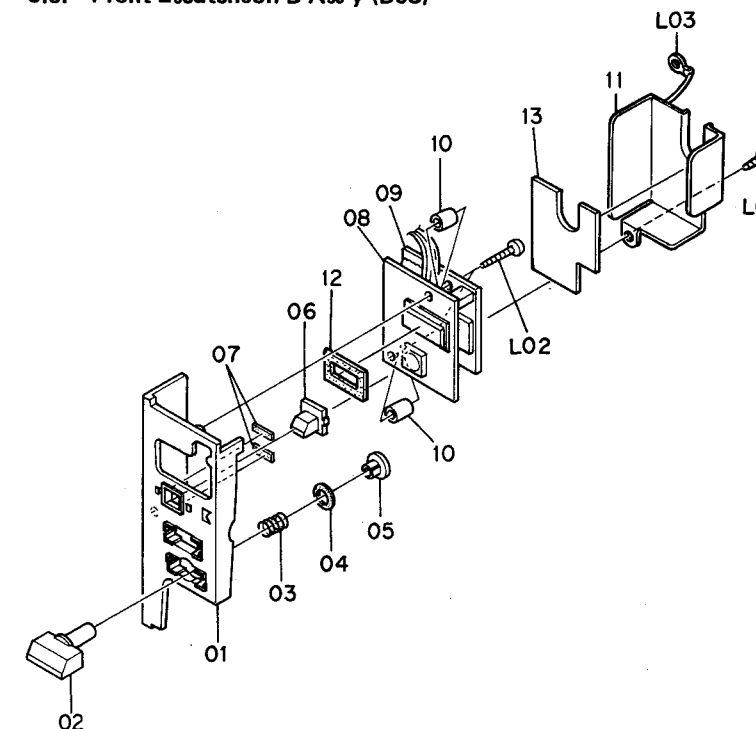


Fig. 8.6

8.7. Headphone Holder Ass'y (C01)

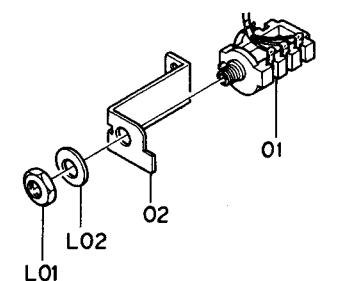


Fig. 8.7

8.8. Mechanism Ass'y ZX-7 (C02)

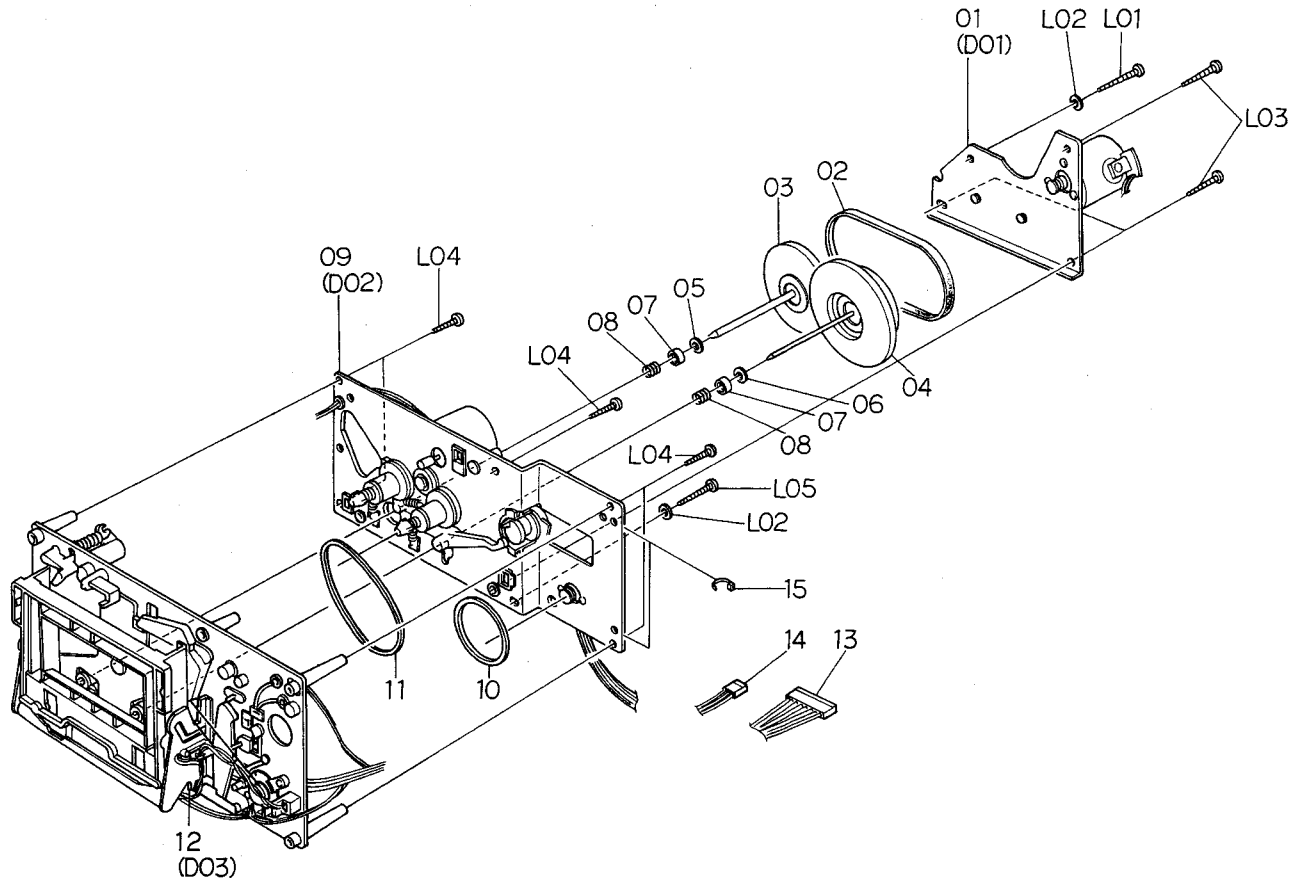


Fig. 8.8

Schematic Ref. No.	Part No.	Description	Q'ty
C02	CA08344A	Mechanism Ass'y ZX-7 Serial No.: A12401001 —	1
01	CA08017B	Flywheel Holder Ass'y	1
02	OC08096C	Capstan Belt	1
03	CA08173A	Supply Flywheel Ass'y D	1
04	CA08015A	Take-up Flywheel Ass'y	1
05	OC08021B	Thrust Washer 3.1mm	1
06	OC08020B	Thrust Washer 2.6mm	1
07	OC08243A	Flange Thrust Cap	2
08	OC08244A	Flange Thrust Spring	2
09	CA08343A	Sub Mechanism Chassis Ass'y	1
10	OC08099B	Control Motor Belt	1
11	OC08098B	Counter Belt B	1
12	CA08342A	Main Mechanism Chassis Ass'y	1
13	OB08943A	9P-H Connector	1
14	OB08672A	3P-H Connector	1
15	OB08515A	Insh-Lock	10
—	OM04326A	Mechanism Serial No. Seal	1
L01	OE00834A	BT Screw M3x30 Philips Pan Head	1
L02	OE00178A	Washer 3mm	2
L03	OE00833A	BT Screw M3x20 Philips Pan Head	3
L04	OE00883A	BT Screw M3x18 Philips Pan Head	5
L05	OE00835A	BT Screw M3x25 Philips Pan Head	1

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty	
C03	HA04220A	Rear Panel Ass'y (U.S.A. & Canada)	1	D01	CA08017B	Flywheel Holder Ass'y Serial No.: A12401001 —	1	
	HA04219A	Rear Panel Ass'y (Japan)	1					
	HA04224A	Rear Panel Ass'y (Others)	1					
	HA04222A	Rear Panel Ass'y (UK)	1		01	0C080131	Flywheel Holder	1
	HA04221A	Rear Panel Ass'y (220V Class 2)	1		02	CA08106B	Capstan Motor Ass'y	1
	HA04223A	Rear Panel Ass'y (Australia) Serial No.: A12401001 —	1		L01	0E00226A	Screw M2.6x4 Philips Pan Head	3
				L02	0C08068C	Thrust Screw	2	
				L03	0C03857A	Lock Nut	2	
01	0H04009B	Rear Panel	1	D02	CA08343A	Sub Mechanism Chassis Ass'y Serial No.: A12401001 —	1	
02	BA04624A	Pin Jack P.C.B. Ass'y	1					
03	BA04595A	4P DIN Socket Ass'y	1					
04	BA04596A	8P DIN Socket Ass'y	1					
05	0B06669A	Power Transformer (U.S.A. & Canada)	1		01	0C08039B	Reel Hub Head	2
					02	CA08038B	Reel Hub B Supply Ass'y	2
	0B06668A	Power Transformer (Japan)	1		03	CA08037A	Reel Hub Take-up Ass'y	1
	0B06670A	Power Transformer (Others)	1		04	CA08064A	Reel Hub Supply Ass'y	1
	0B06671A	Power Transformer (UK, Australia & 220V Class 2)	1		05	CA08039A	Back Tension Ass'y	1
					06	0C08269A	Back Tension Spring C	1
06	0C01162B	Bolt Receptacle Plate	2		07	CA08193A	Idler Ass'y	1
07	0B08037U	Cord Bushing C (U.S.A., Canada, Japan, 220V Class 2, Australia & Others)	1		08	CA08042A	Brake Ass'y	2
					09	0C08030C	Brake Drive Arm	1
	0B08351A	Cord Bushing 4K-4 (UK)	1		10	0C08129A	Brake Arm Spring	1
08	0B08533A	Power Cord (U.S.A., Canada & Others)	1		11	0C08128A	Brake Drive Arm Spring	1
					12	CA08242A	Reel Motor Ass'y	1
	0B08219B	Power Cord (Japan)	1		13	CA08034A	Control Motor Ass'y	1
	0B08348A	Power Cord (UK)	1		14	0C08053B	Volume Coupler	1
	0B08093U	Power Cord (220V Class 2)	1		15	0B07240A	Volume Control 10K (B)	1
	0B05241A	Power Cord (Australia)	1		16	CA08194A	Sub Chassis Ass'y	1
09	0J03663C	Switch Cover (U.S.A., Canada, Japan, 220V Class 2, UK & Australia)	1		L01	0E00698A	E-Ring 2.5mm	1
					L02	0E00837A	Stopper Ring 3mm	2
					L03	0E00838A	Stopper Ring 4mm	1
	0M03946A	Voltage Selector Lock Plate C (Others)	1		L04	0E00859A	BT Screw M2.6x6 Philips Binding Head	1
					L05	0E00226A	Screw M2.6x4 Philips Pan Head	5
10	0M03551B	Pass Label	1		L06	—	Volume Nut	(1)
11	0M03797A	Voltage Label 240V (UK & Australia)	1		L07	—	Volume Washer	(1)
	0M03796A	Voltage Label 220V (220V Class 2)	1					
	0M04293A	Voltage Label 120V/220V-240V (Others)	1					
12	0B07092U	Voltage Selector (Others)	1					
L01	0E00921A	BT Screw M3x8 Philips Binding Head (Black Chromate)	2					
L02	0E00594A	Screw M3x8 Philips Binding Head (Bronze)	3					
L03	0E00172A	Washer 3mm Toothed Lock	1					
L04	0E00507A	Nut Hex. M3	3					
L05	0E00714A	Screw M2.6x6 Philips Binding Head (Bronze)	4					
L06	0E00953A	Screw M4x10 Philips Binding Head (Black Chromate)	2					
—	0J03644A	Chobert Rivet	2					
—	0M04316A	Serial Number Plate	1					
—	0F01071A	Free-up Belt	1					

8.9. Rear Panel Ass'y (C03)

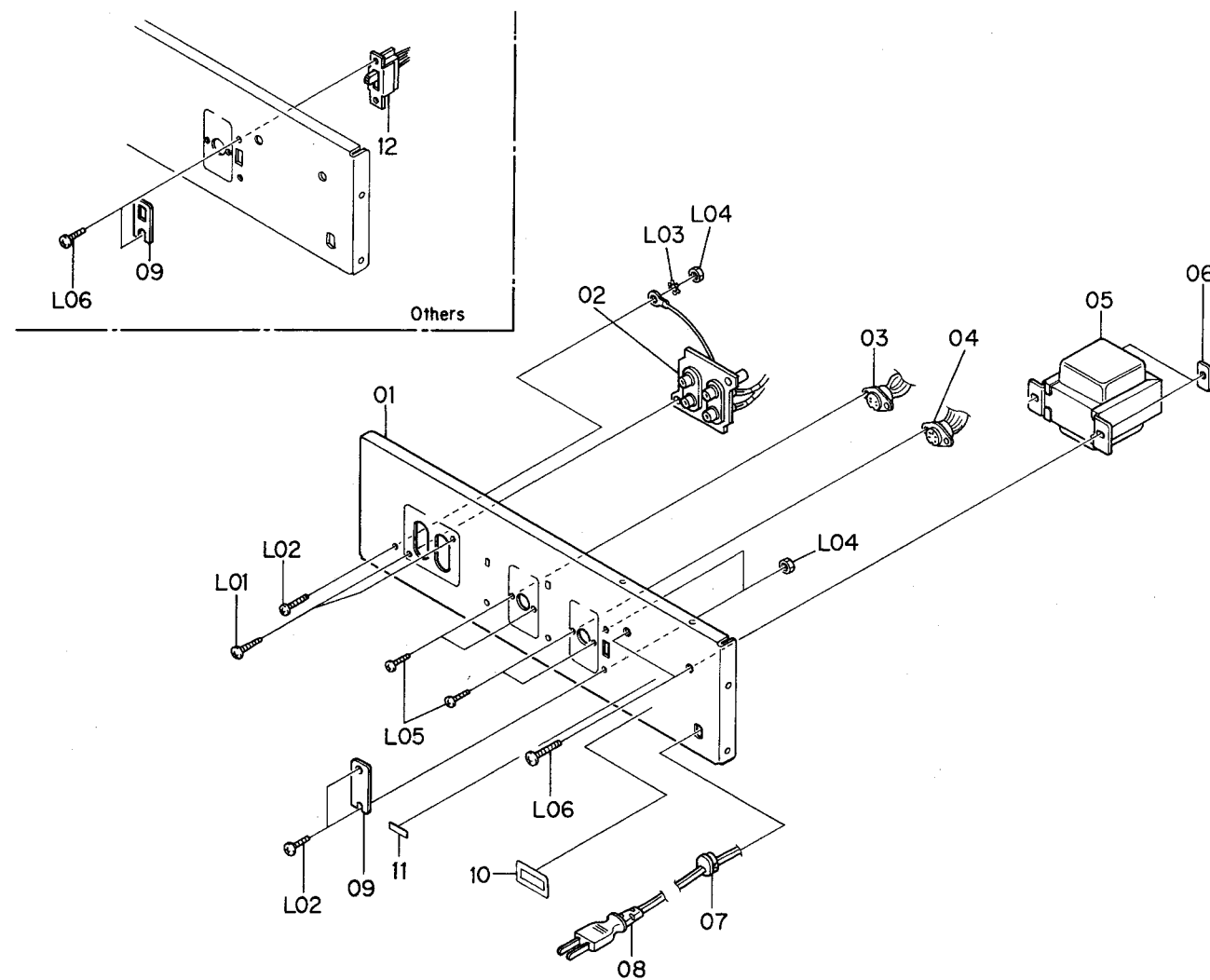


Fig. 8.9

8.10. Flywheel Holder Ass'y (D01)

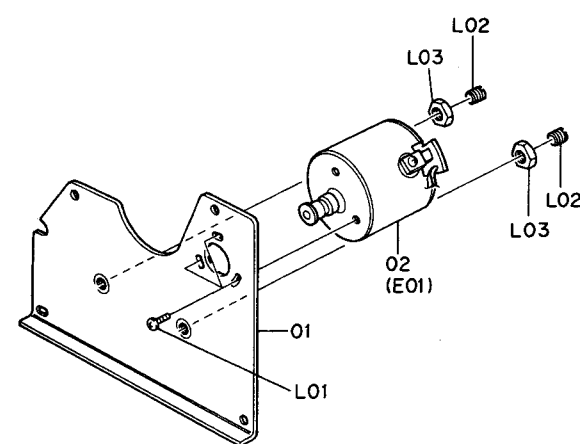


Fig. 8.10

8.11. Sub Mechanism Chassis Ass'y (D02)

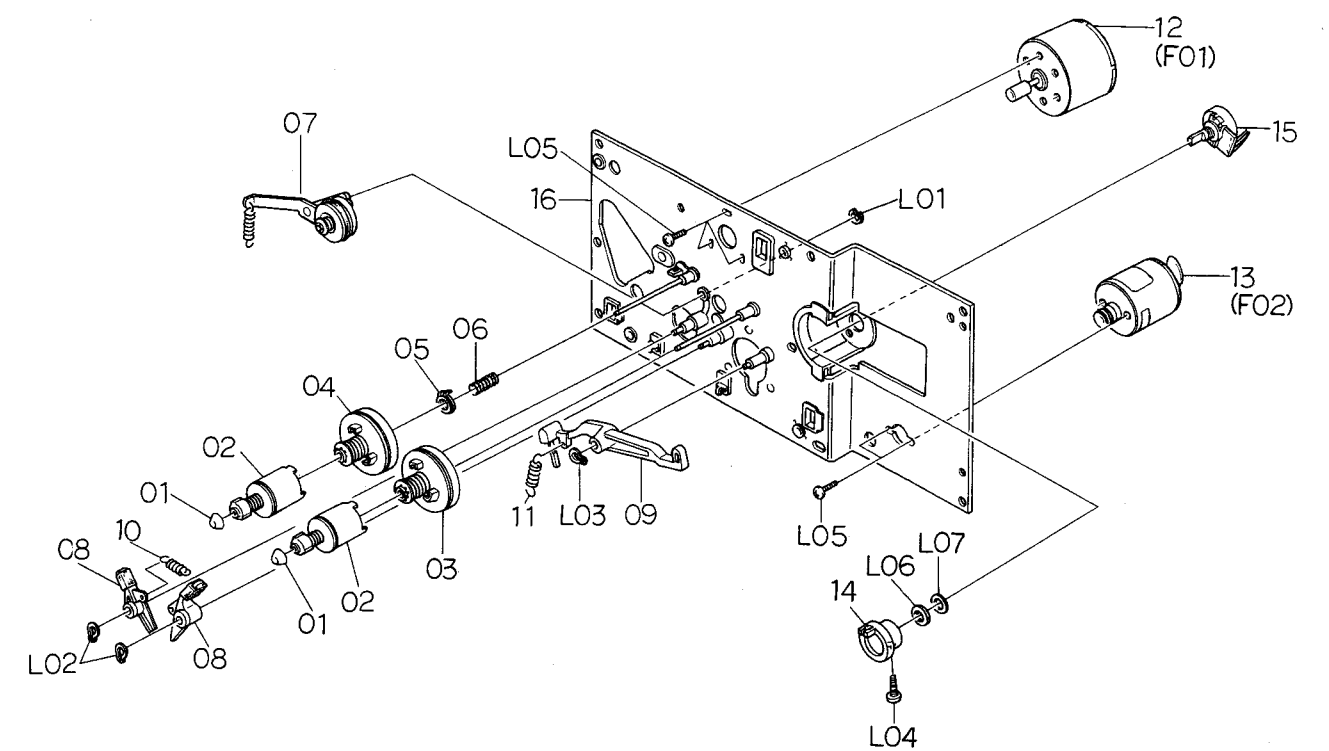


Fig. 8.11

Schematic Ref. No.	Part No.	Description	Q'ty
D03	CA08342A	Main Mechanism Chassis Ass'y Serial No.: A12401001 —	1
01	CA08350A	Cassette Case Holder L Ass'y	1
02	0C08151A	Lid Arm Spring Tube	1
03	CA08022A	Cassette Case Holder R Ass'y	1
04	CA08349A	Cassette Case Ass'y	1
05	CA08345A	Head Mount Base Ass'y	1
06	0C08121A	Supply Pressure Roller Spring	1
07	0C08250A	Supply Pressure Roller Spring B	1
08	0C08313A	Pressure Roller Arm Bushing	2
09	CA08053B	Supply Pressure Roller Ass'y	1
10	0C08122B	Supply Pressure Roller Thrust Spring	1
11	CA08079B	Take-up Pressure Roller Ass'y	1
12	0C08183B	Take-up Pressure Roller Thrust Spring	1
13	CA08339A	Head Base Ass'y	1
14	0C08182A	Pressure Roller Drive Bar B	1
15	0C08086B	Head Base Roller	1
16	0C08050B	Record Sensor	1
17	0C08051E	Cassette Hold Arm	1
18	0C08120A	Cassette Hold Arm Spring	1
19	CA08196A	Back Tension Ass'y	1
20	0C08254A	Back Tension Arm Collar	1
21	CA08027A	Head Base Drive Arm Ass'y	1
22	0C08143C	Head Base Drive Arm Spring	1
23	CA08026A	Pressure Roller Drive Arm Ass'y	1
24	CA08351A	Auto Shut-off Ass'y	1
25	0C08119A	Record Protector	1
26	0C08194C	Damper Lock Arm	1
27	0C08153A	Damper Lock Arm Spring Tube	1
28	0C08116A	Record Arm Spring	1
29	CA08030A	Pneumatic Damper Ass'y	1
30	CA08023A	Supply Capstan Flange Ass'y	1
31	CA08024A	Take-up Capstan Flange Ass'y	1
32	0C08186A	Cam Drive Gear	1
33	0C08029H	Control Cam	1
34	0C08117A	Counter-Load Arm Spring	1
35	0C08152A	Counter-Load Arm Spring Tube	1
36	CA08028A	Counter-Load Arm Ass'y	1
37	CA08347A	Main Chassis Ass'y	1
L01	0E00837A	Stopper Ring 3mm	9
L02	0E00834A	BT Screw M3x30 Philips Pan Head	2
L03	0E00831A	BT Screw M3x10 Philips Pan Head	3
L04	0E00254A	Washer 3.1mm	2
L05	0E00222A	E-Ring 2mm	2
L06	0E00876A	BT Screw M2.6x8 Philips Pan Head	8
L07	0E00178A	Washer 3mm	2
L08	0E00879A	BT Screw M2x15 Philips Pan Head	1
L09	0E00838A	Stopper Ring 4mm	3
L10	0E00846A	BT Screw M3x8 Philips Pan Head	3
L11	0E00895A	Earth Lug 3mm	2
L12	0E00859A	BT Screw M2.6x6 Philips Binding Head	1
L13	0C08255A	Washer 2.6mm	1

8.12. Main Mechanism Chassis Ass'y (D03)

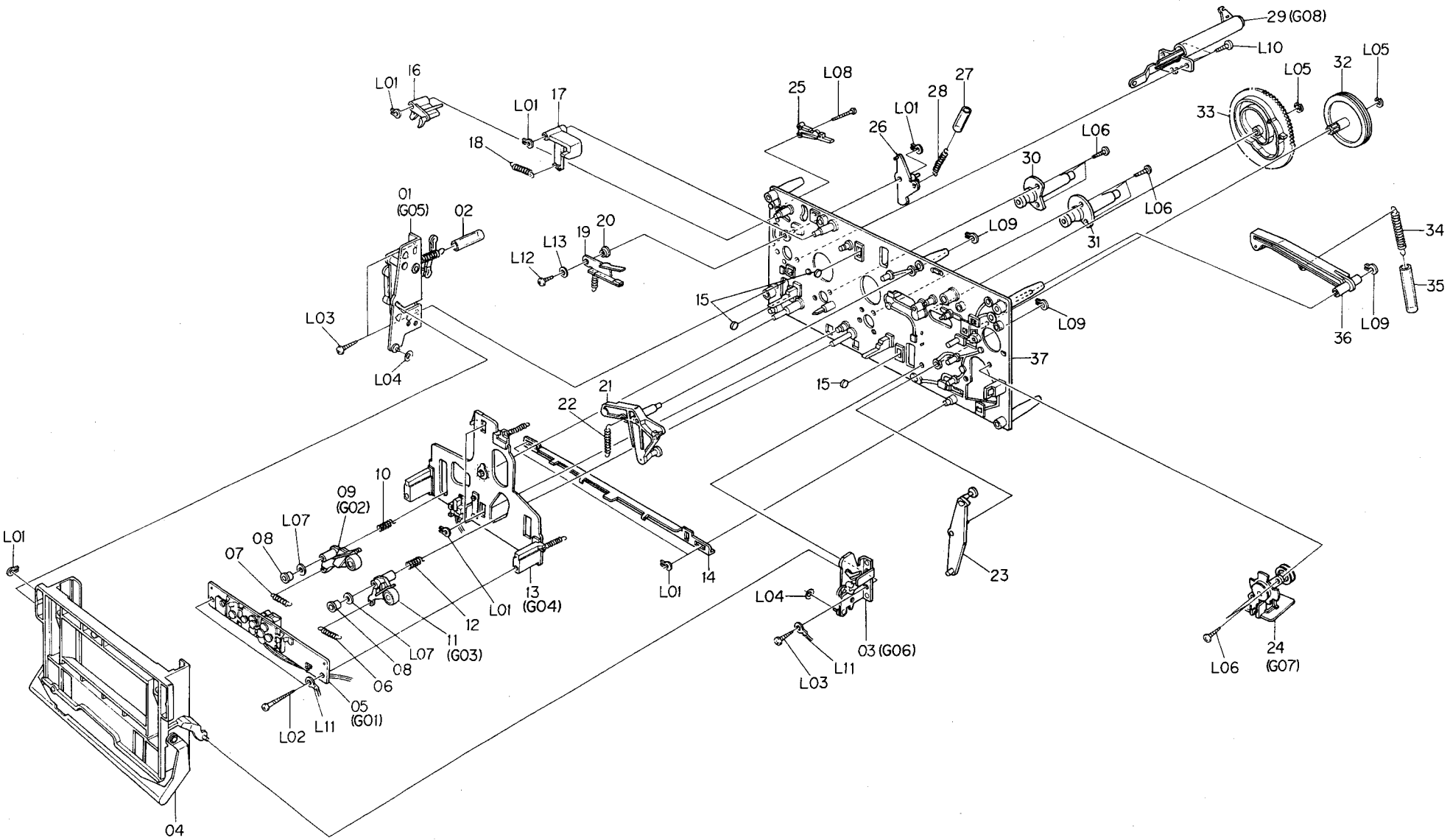


Fig. 8.12

8.13. Capstan Motor Ass'y (E01)

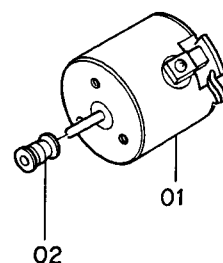


Fig. 8.13

8.14. Reel Motor Ass'y (F01)

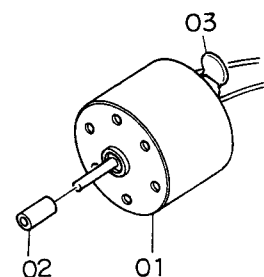


Fig. 8.14

8.15. Control Motor Ass'y (F02)

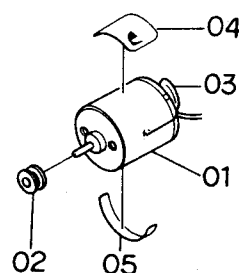


Fig. 8.15

8.16. Head Mount Base Ass'y (G01)

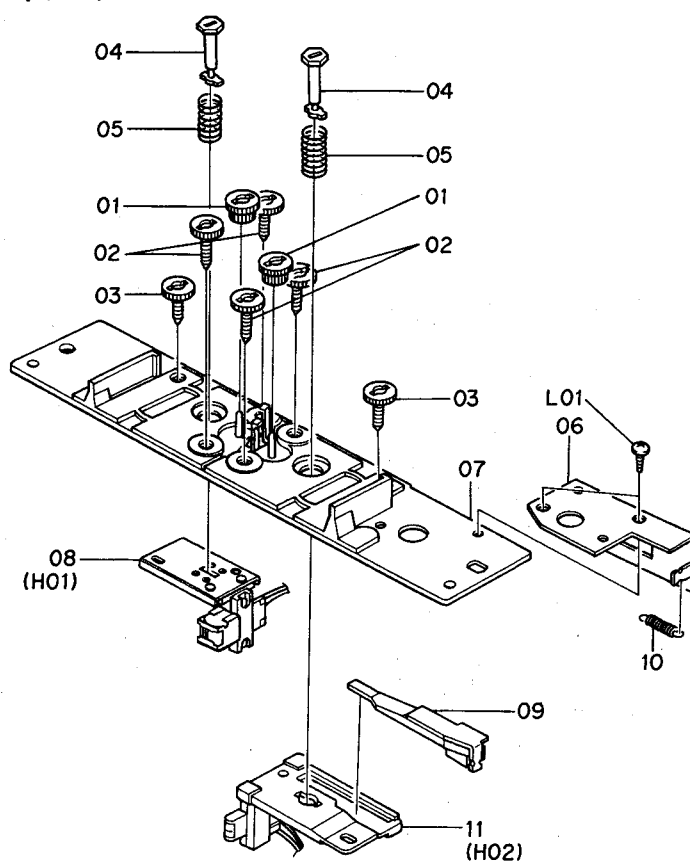


Fig. 8.16

8.17. Supply Pressure Roller Ass'y (G02)

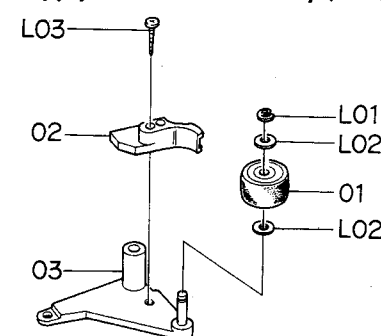


Fig. 8.17

8.18. Take-up Pressure Roller Ass'y (G03)

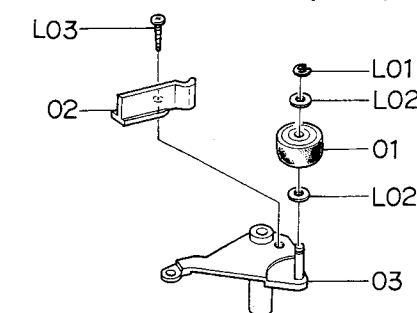


Fig. 8.18

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
E01	CA08106B	Capstan Motor Ass'y Serial No.: A12401001 —	1	G02	CA08053B	Supply Pressure Roller Ass'y Serial No.: A12401001 —	1
01	OC08135A	Capstan Motor	1	01	OC08164G	Pressure Roller	1
02	OC08079G	Capstan Motor Pulley	1	02	OC08189C	Supply Tape Guide	1
F01	CA08242A	Reel Motor Ass'y Serial No.: A12401001 —	1	03	CA08061A	Supply Pressure Roller Arm Ass'y	1
01	OC08272A	Reel Motor	1	L01	OE00042A	E-Ring 1.5mm	1
02	OC08063F	Reel Motor Pulley	1	L02	OC08024A	Washer 2mm	2
03	OB09290A	Ceramic Capacitor 0.01μ 50V Z	1	L03	OE00788A	BT Screw M2x8 Philips Pan Head (Black Chromate)	1
F02	CA08034A	Control Motor Ass'y Serial No.: A12401001 —	1	G03	CA08079B	Take-up Pressure Roller Ass'y Serial No.: A12401001 —	1
01	OC08137A	Control Motor	1	01	OC08164G	Pressure Roller	1
02	OC08064A	Control Motor Pulley	1	02	OC08181C	Take-up Tape Guide	1
03	OB09292A	Ceramic Capacitor 0.1μ 50V Z	1	03	CA08073B	Take-up Pressure Roller Arm Ass'y	1
04	OM03985A	Control Motor Label	1	L01	OE00042A	E-Ring 1.5mm	1
05	OM03988A	Motor Seal B	1	L02	OC08024A	Washer 2mm	2
G01	CA08345A	Head Mount Base Ass'y Serial No.: A12401001 —	1	L03	OE00788A	BT Screw M2x8 Philips Pan Head (Black Chromate)	1
01	OC08028C	Head Height Adjustment Gear	2				
02	OC08027F	Head Height Adjustment Screw	4				
03	OC08026D	Azimuth Alignment Screw	2				
04	OC08161B	Spring Stopper	2				
05	OC08187B	Head Plate Spring	2				
06	OC08315A	Azimuth Alignment Wire Hold Plate	1				
07	CA08083C	Head Mount Base Sub Ass'y	1				
08	CA08341A	P-8L Playback Head Ass'y	1				
09	OC08316A	Azimuth Alignment Plate	1				
10	OC08317A	Azimuth Spring	1				
11	CA08340A	R-8L Record Head Ass'y	1				
L01	OE00917A	BT Screw M2.6x5 Philips Pan Head	2				

8.19. Head Base Ass'y (G04)

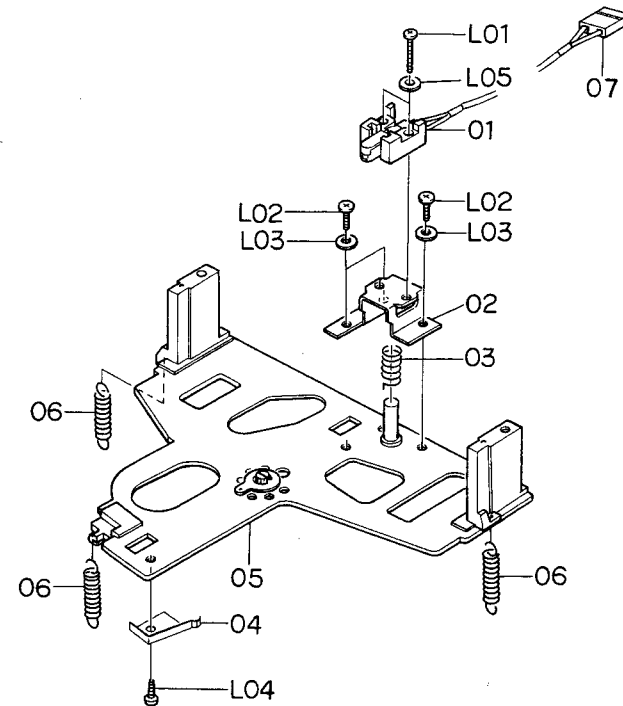


Fig. 8.19

8.20. Cassette Case Holder L Ass'y (G05)

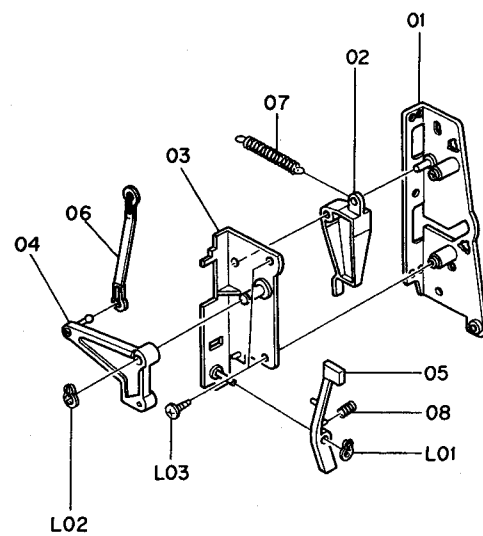


Fig. 8.20

8.21. Cassette Case Holder R Ass'y (G06)

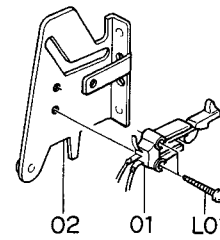


Fig. 8.21

8.22. Auto Shut-off Ass'y (G07)

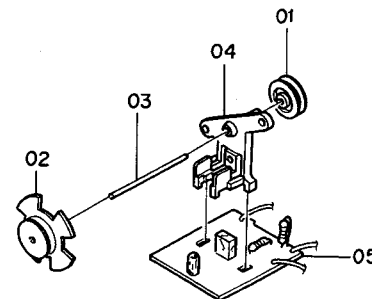


Fig. 8.22

8.23. Pneumatic Damper Ass'y (G08)

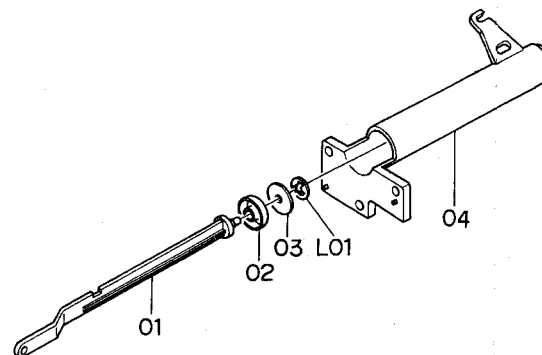


Fig. 8.23

8.24. P-8L Playback Head Ass'y (H01)

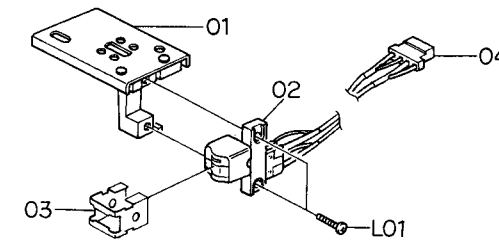


Fig. 8.24

8.25. R-8L Record Head Ass'y (H02)

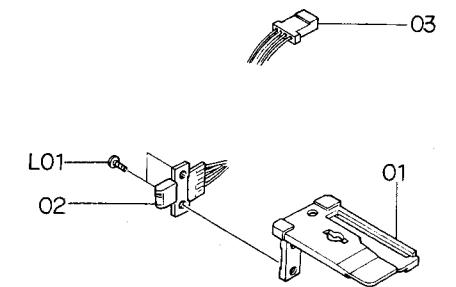


Fig. 8.25

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
G04	CA08339A	Head Base Ass'y Serial No.: A12401001 —	1	G07	CA08351A	Auto Shut-off Ass'y Serial No.: A12401001 —	1
01	GA02103A	E0K Erase Head	1	01	OC08047A	Shut-off Pulley A	2
02	OC08158D	Erase Head Hold Plate	1	02	OC08309A	Shut-off Pulley B	1
03	OC08166A	Erase Head Hold Plate Spring	1	03	OC08088B	Shut-off Pulley Shaft	1
04	OC08174D	Cassette Hold Spring	1	04	OC08207B	Shut-off Pulley Holder	1
05	CA08003Q	Head Base Ass'y	1	05	BA04551A	Shut-off P.C.B. Ass'y	1
06	OC08175A	Head Base L Spring	3				
07	OB08944A	2P-H Connector	1	G08	CA08030A	Pneumatic Damper Ass'y Serial No.: A12401001 —	1
L01	OE00951A	Screw M1.7x7 Philips Pan Head (Black Chromate)	2	01	OC08058C	Damper Piston	1
L02	OE00909A	Screw M2x6 Philips Pan Head	3	02	OC08102C	Damper Ring	1
L03	OE00117A	Washer 2mm	3	03	OC08010C	Damper Plate	1
L04	OE00853A	BT Screw M2x3 Philips Pan Head	1	04	OC08059D	Sylinder	1
L05	OE00952A	Washer 1.7mm	2	L01	OE00874A	Stopper Ring CS 2mm	1
G05	CA08350A	Cassette Case Holder L Ass'y Serial No.: A12401001 —	1	H01	CA08341A	P-8L Playback Head Ass'y Serial No.: A12401001 —	1
01	CA08326A	Cassette Case Holder L Sub Ass'y	1	01	CA08307A	Playback Head Plate Ass'y	1
02	OC08073C	Lid Arm A	1	02	GA02034A	P-8LH Playback Head	1
03	OC08306A	Eject Arm Holder	1	03	OC08169D	Pad Lifter 54	1
04	OC08307A	Eject Arm A	1	04	OB08946A	4P-H Connector	1
05	OC08197C	Eject Arm B	1	L01	OE00886A	Screw M1.7x6.5 Philips Pan Head	2
06	OC08199B	Eject Arm Joint	1				
07	OC08114A	Lid Arm Spring	1	H02	CA08340A	R-8L Record Head Ass'y Serial No.: A12401001 —	1
08	OC08211C	Eject Arm Spring	1	01	OC08234B	Record Head Plate	1
L01	OE00837A	Stopper Ring 3mm	1	02	GA01050A	R-8LH Record Head	1
L02	OE00838A	Stopper Ring 4mm	1	03	OB08945A	4P-H Connector	1
L03	OE00865A	BT Screw M3x10 Philips Binding Head	2	L01	OE00887A	Screw M1.7x4 Philips Pan Head	2
G06	CA08022A	Cassette Case Holder R Ass'y Serial No.: A12401001 —	1				
01	OC08133A	Eject Sensor	1				
02	CA08044A	Cassette Case Holder R Sub Ass'y	1				
L01	OE00840A	BT Screw M2x8 Philips Pan Head	2				

9. OVERALL TIMING CHART

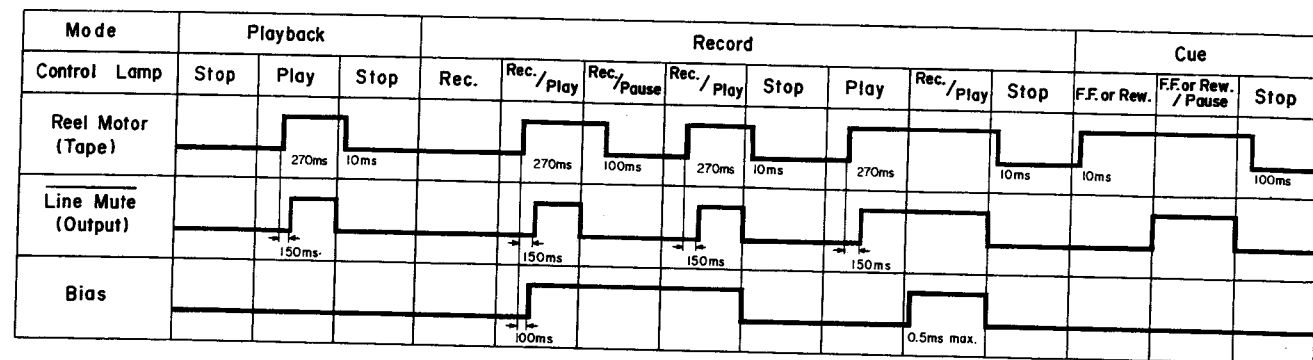


Fig. 9

10. EQ. AMP. FREQUENCY RESPONSE

10.1. Playback Frequency Response

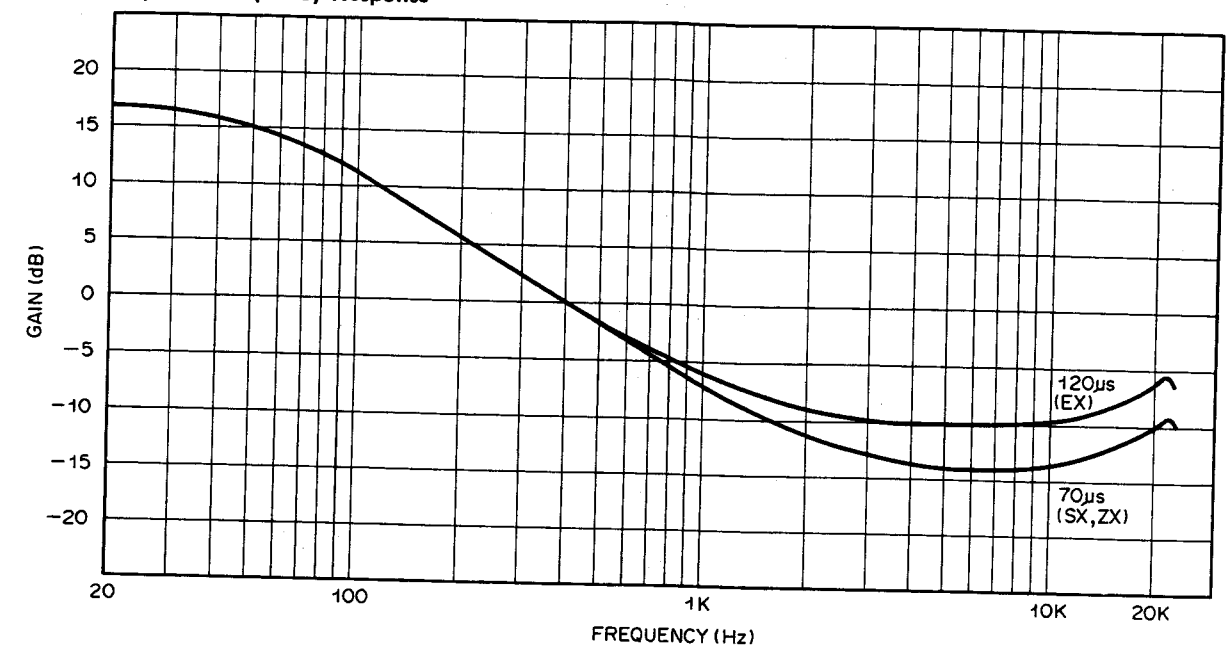


Fig. 10.1

10.2. Record Current Frequency Response

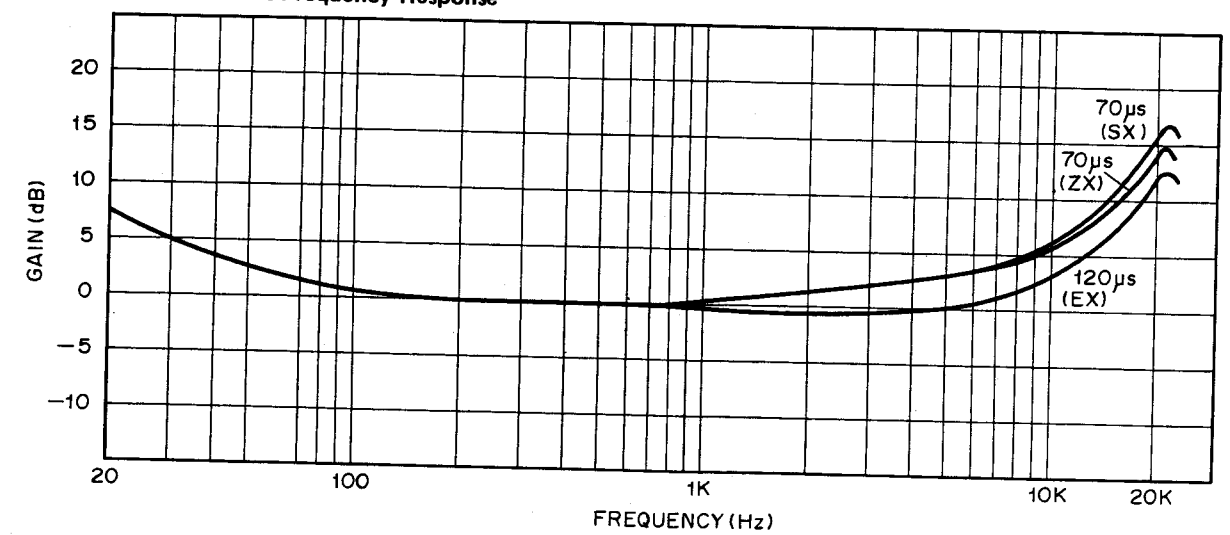


Fig. 10.2

11. BLOCK DIAGRAMS

11.1. Amplifier Section

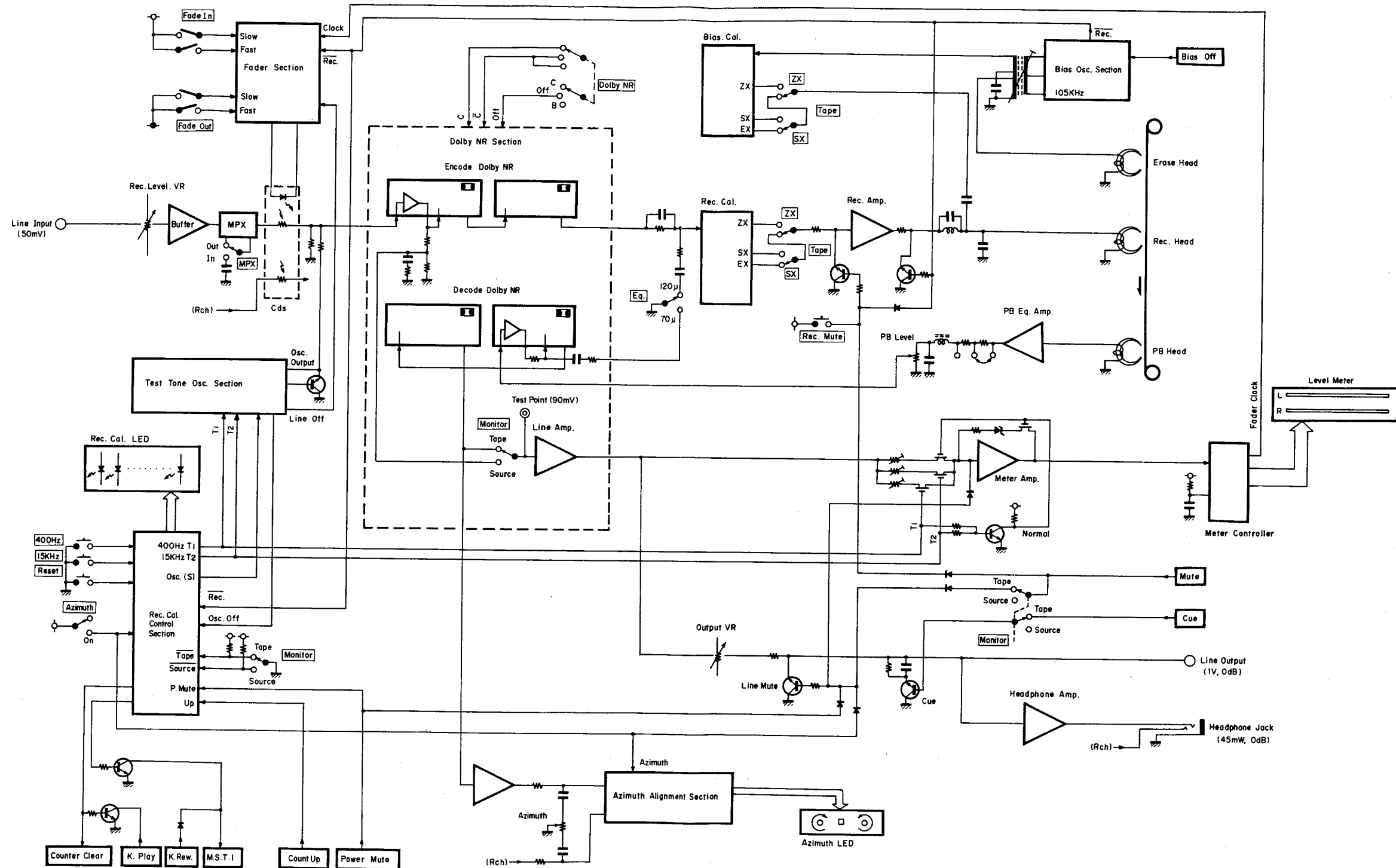


Fig. 11.1

11.2. Mechanism Control Section

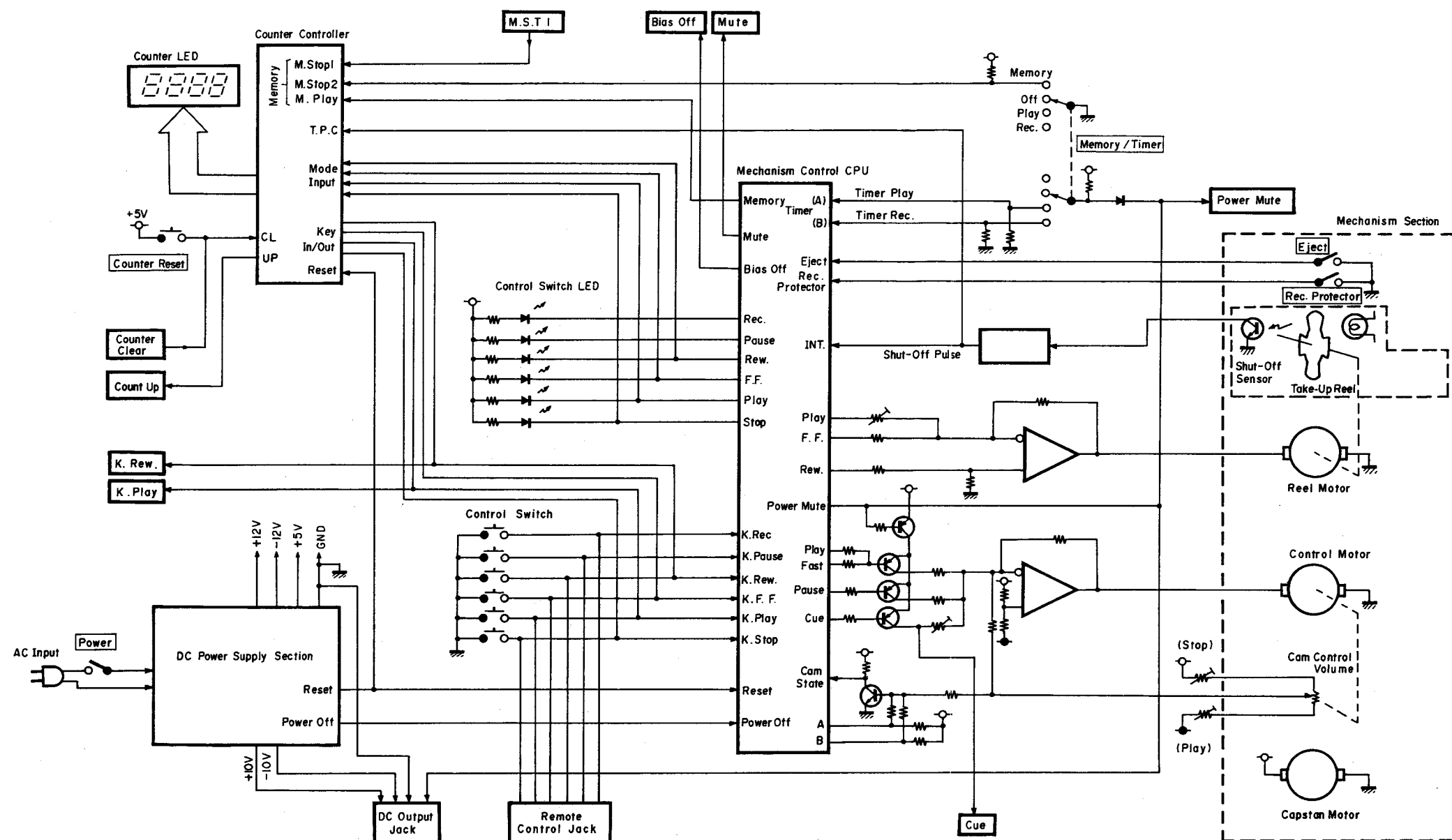


Fig. 11.2

12. WIRING DIAGRAM

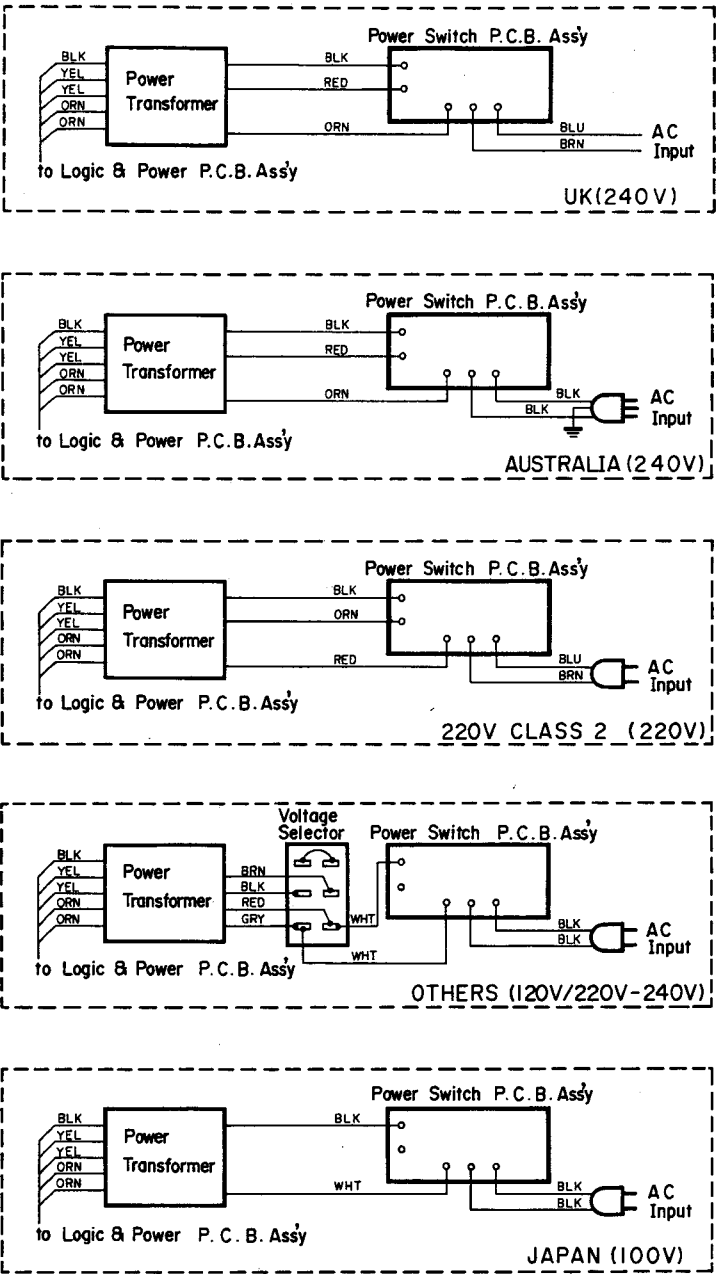


Fig. 12.1

Notes: 1. Table of wire colors

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

2. Wire tube color is shown in ().

3. Component side view of the P.C.B. is illustrated unless otherwise specified.

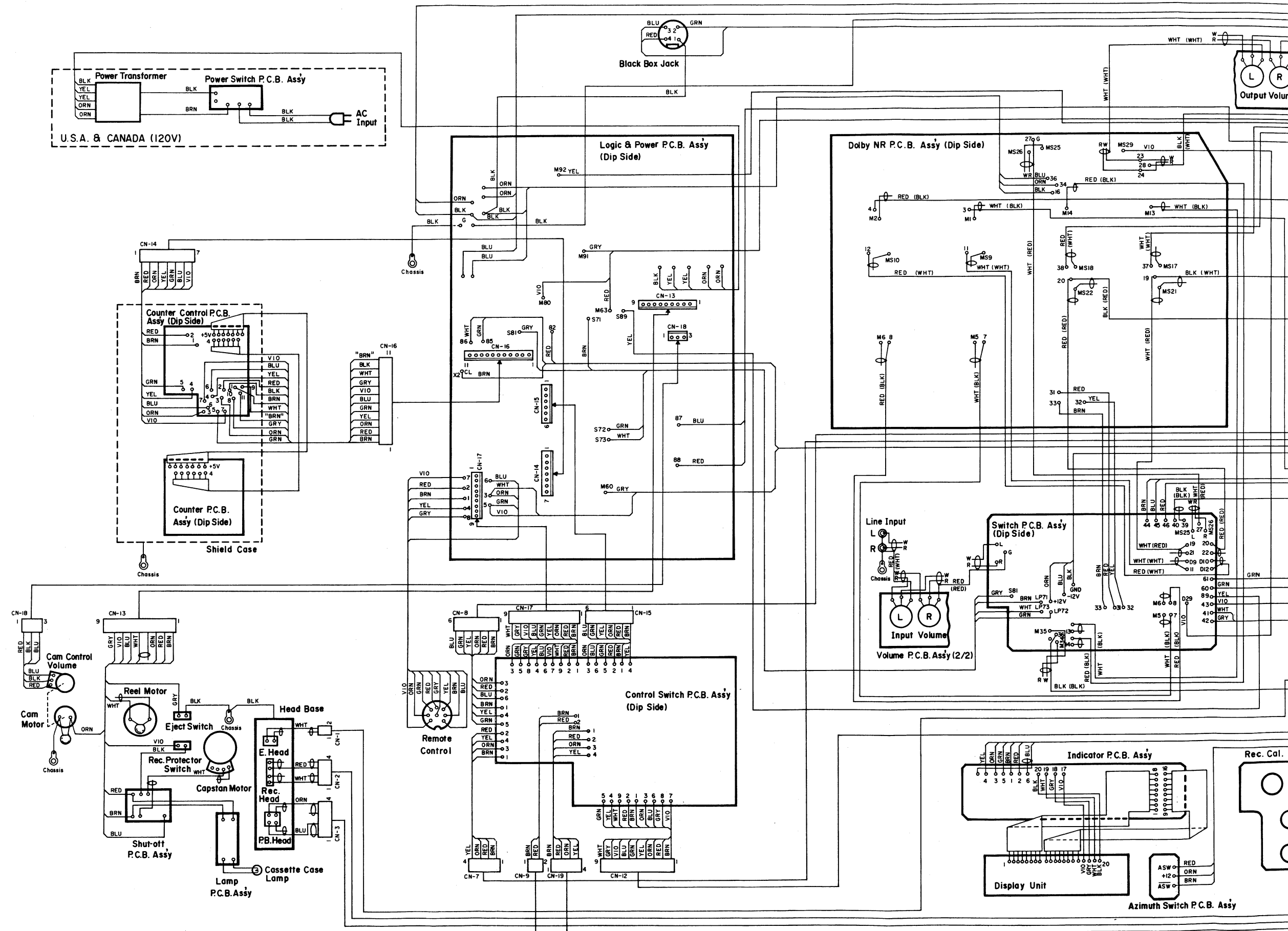


Fig. 12.2

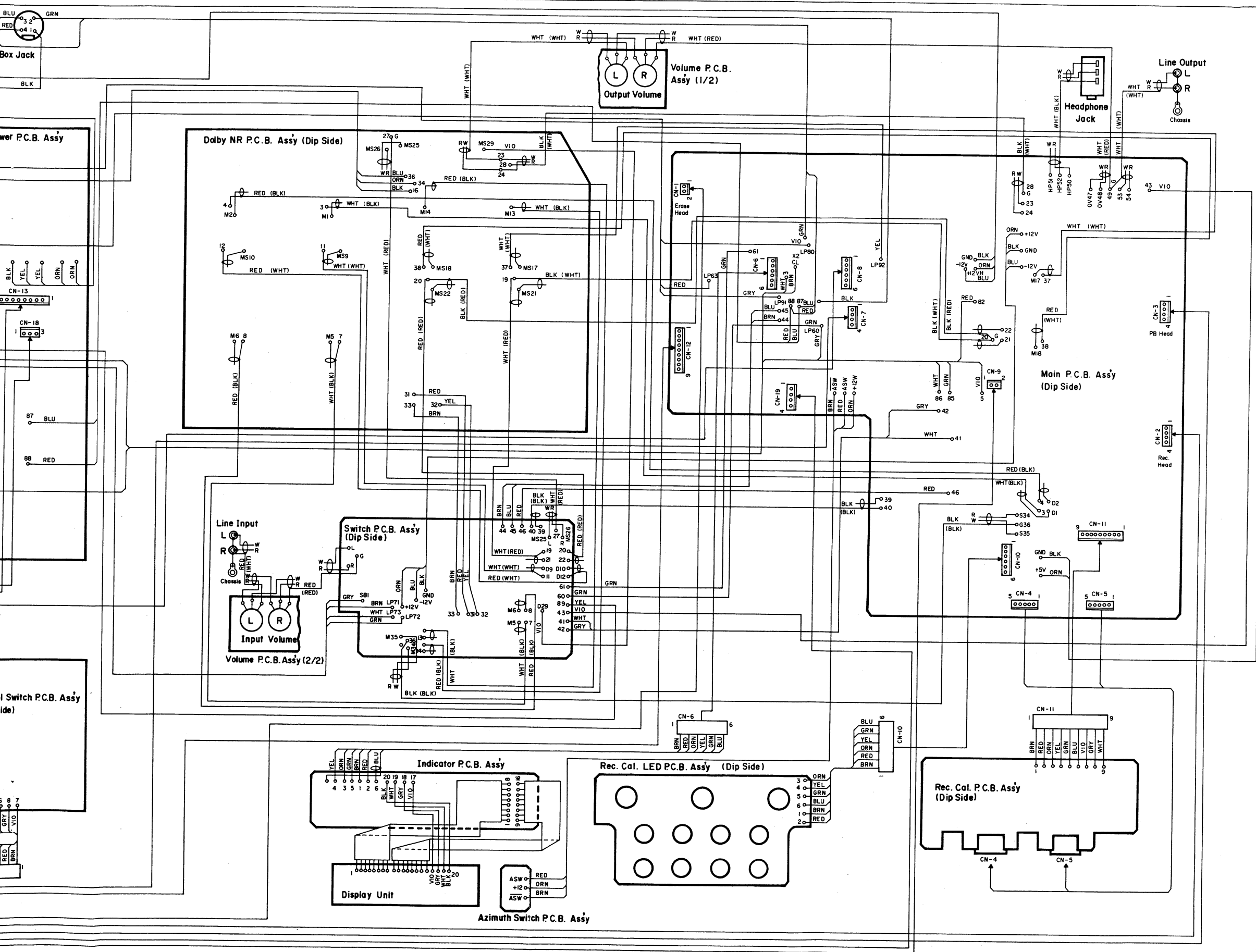
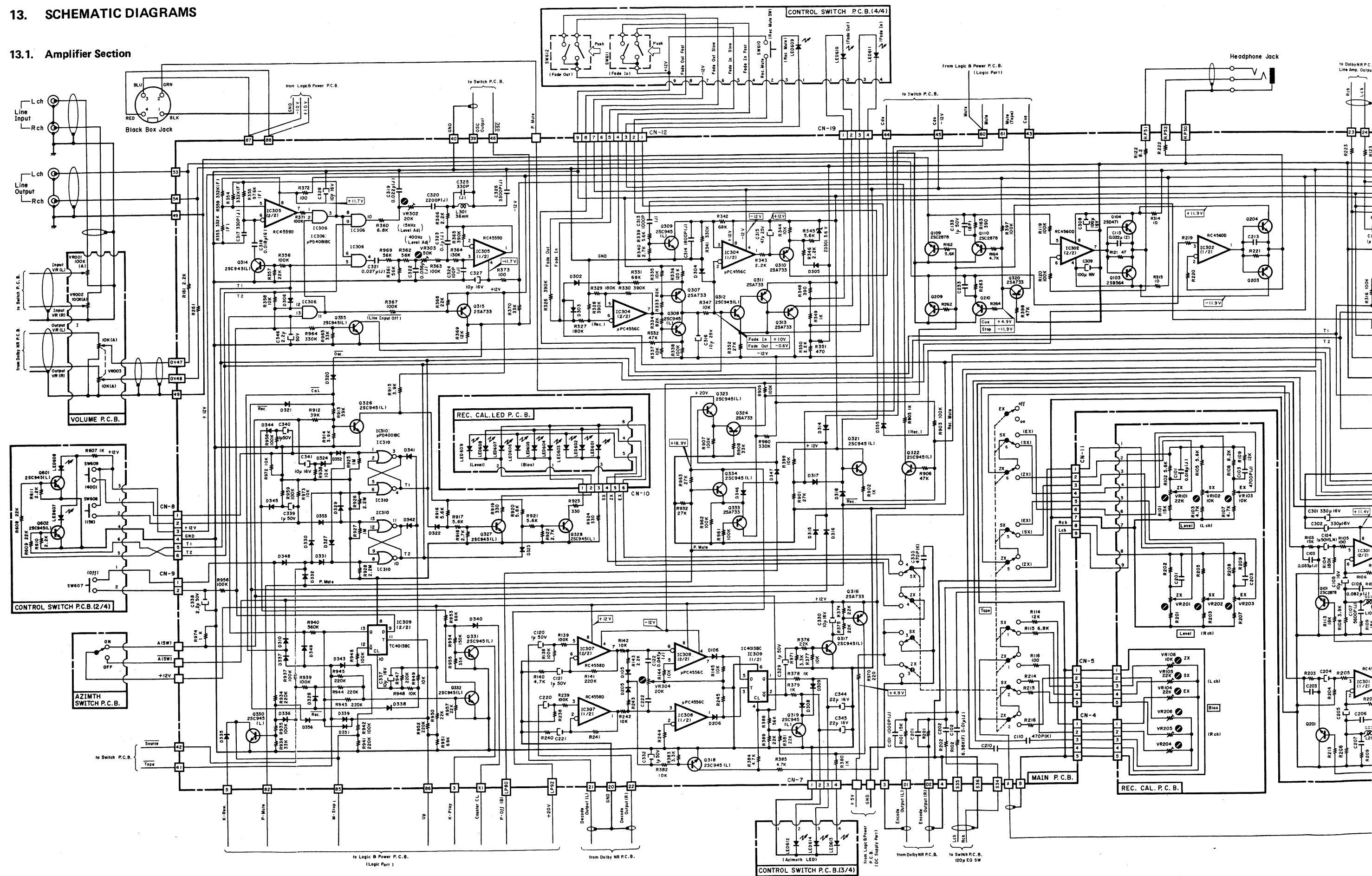


Fig. 12/2

13. SCHEMATIC DIAGRAMS

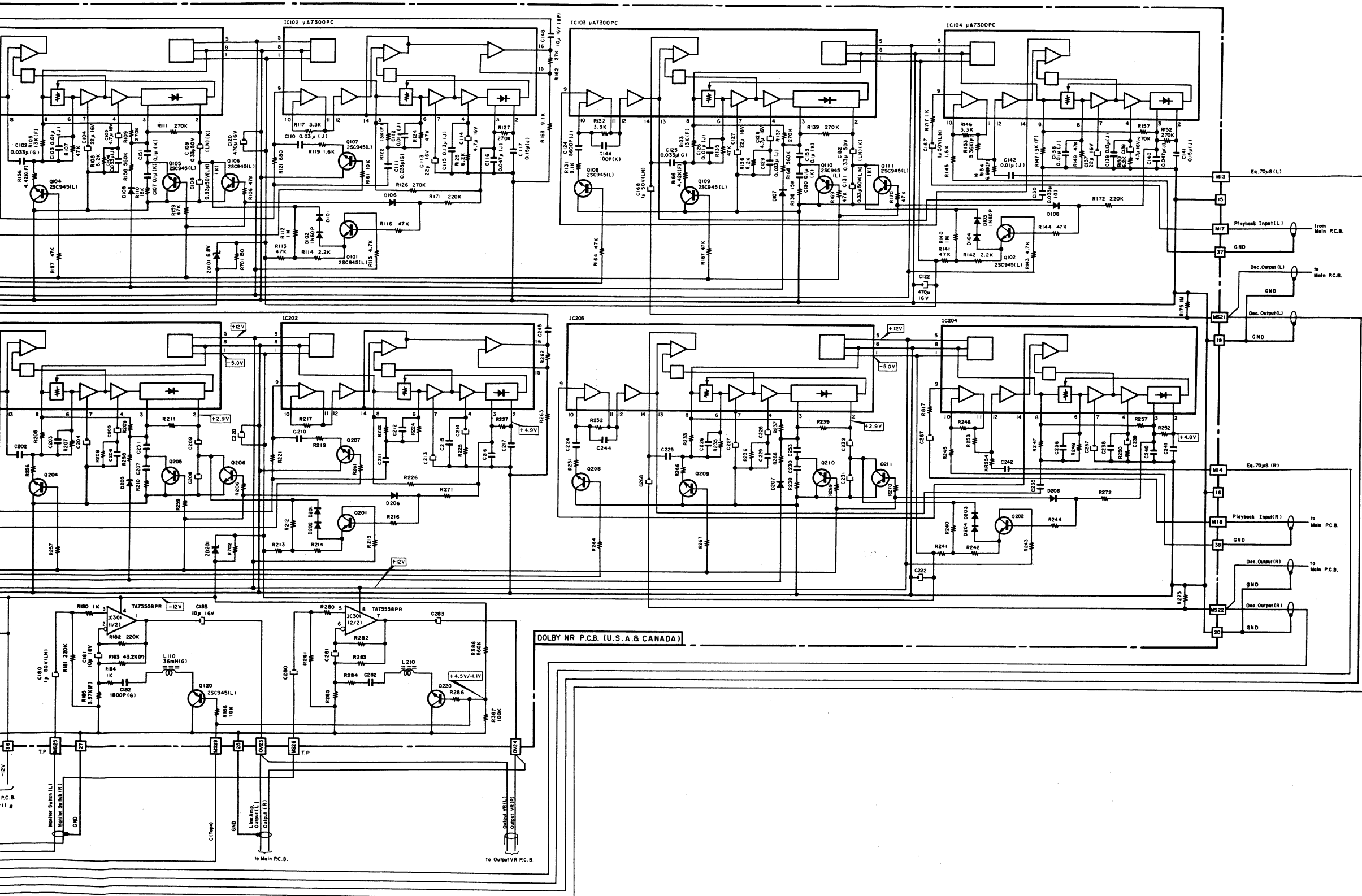
13.1. Amplifier Section



13.2.1. Dolby NR Section (U.S.A. & Canada)



- Notes: 1. Diode is 1SS53, 1S953, or 1S1555 unless otherwise specified.
2. Resistor and capacitor marked with * show typical value.



13.2.2. Dolby NR Section (UK, Australia, 220V Class 2, Others & Japan)

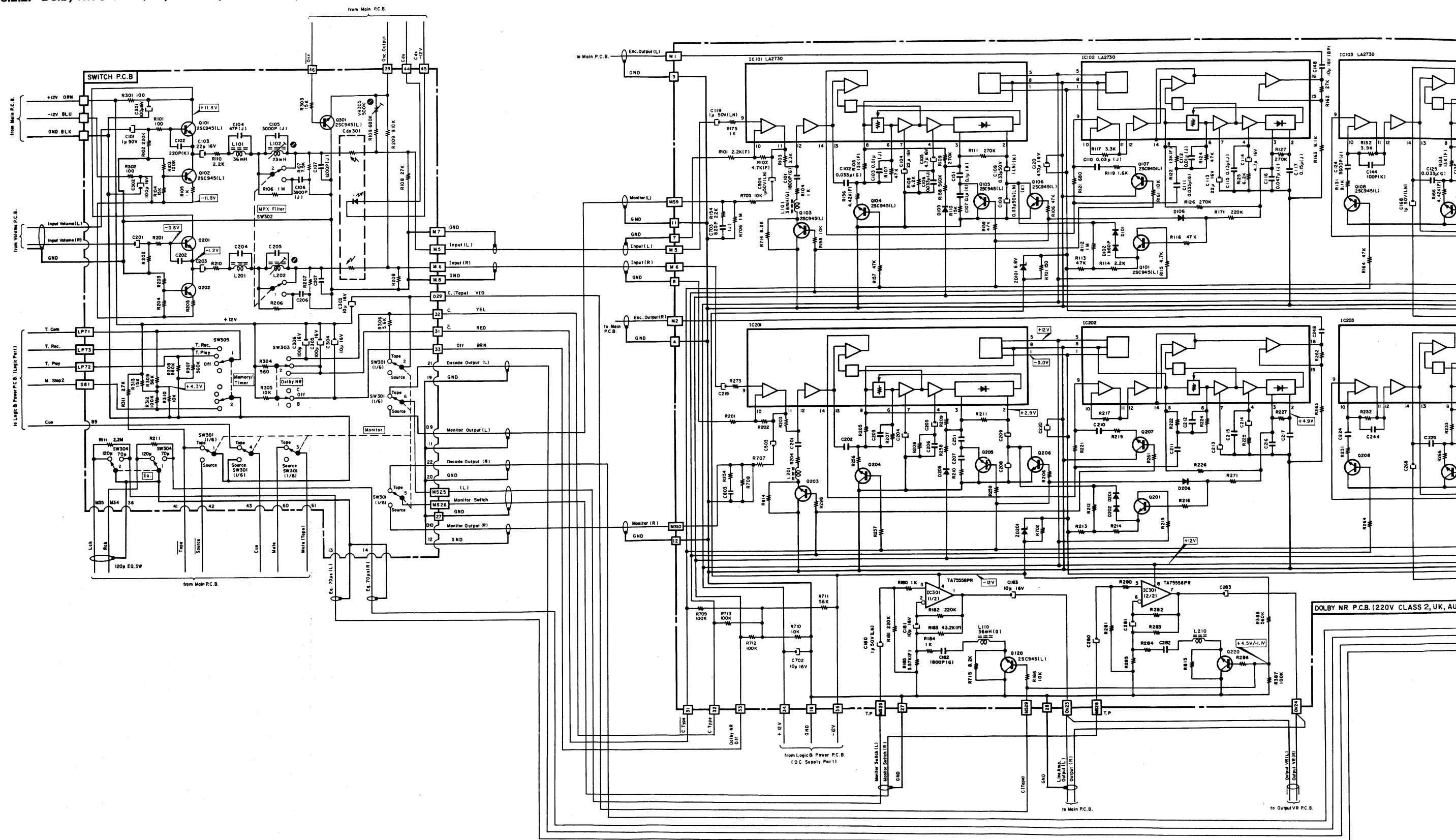


Fig. 13.2.2 UK, Australia, 220V Class 2, Others & Japan

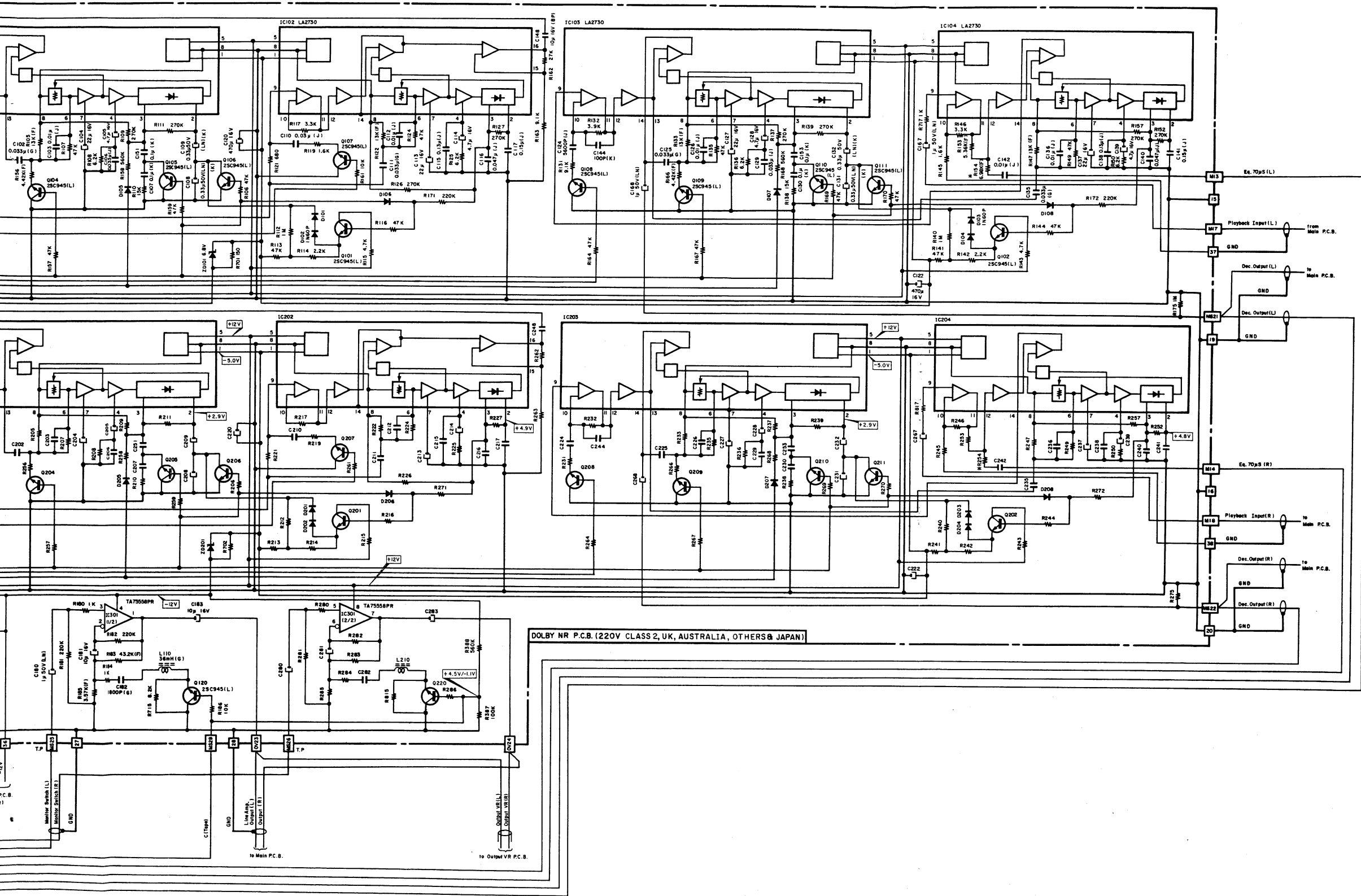


Fig. 13.2.2 UK, Australia, 220V Class 2, Others & Japan

- Notes: 1. Diode is 1SS53, 1S953, or 1S1555 unless otherwise specified.
2. Resistor and capacitor marked with * show typical value.

13.3. Mechanism Control Section

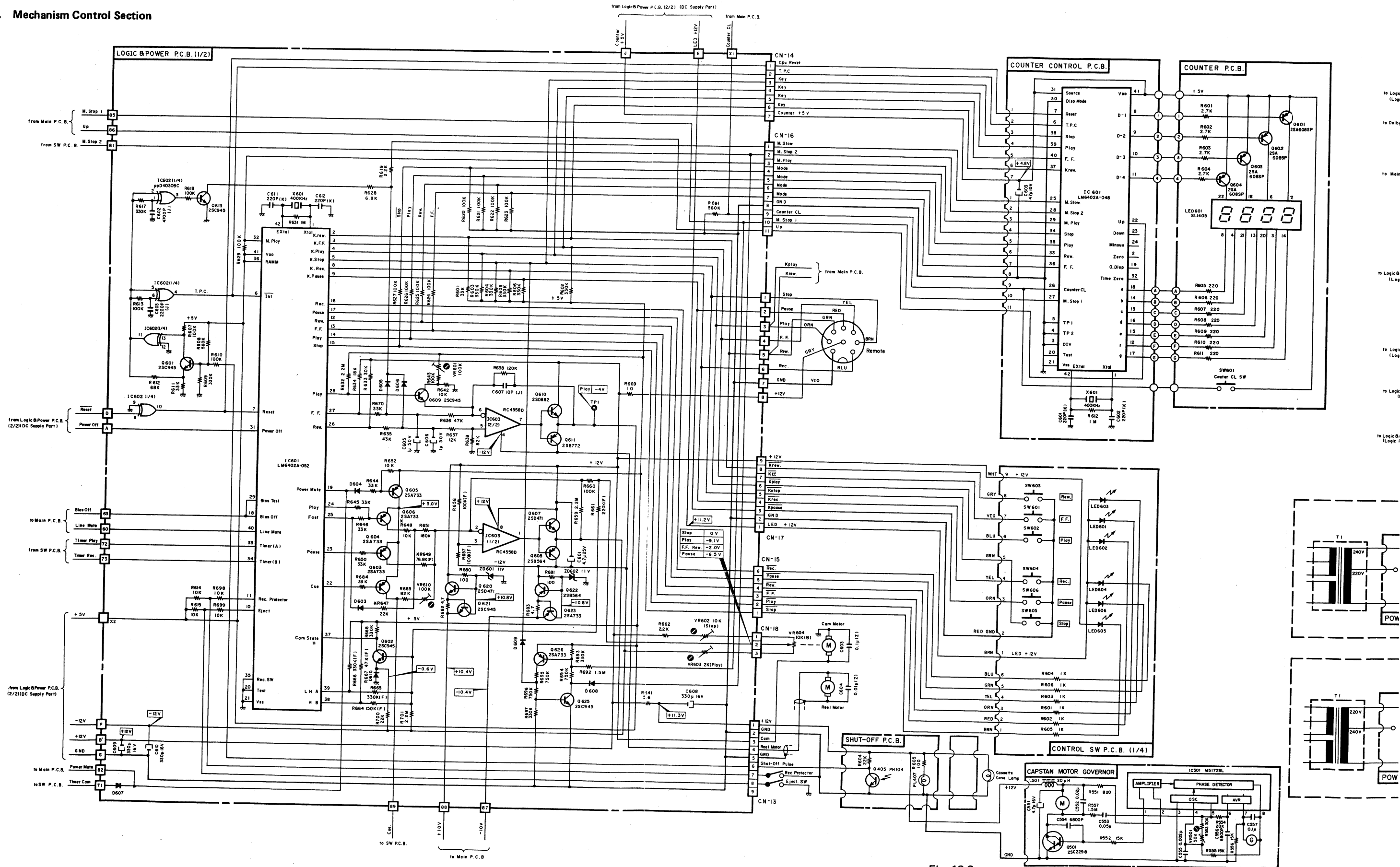


Fig. 13.3

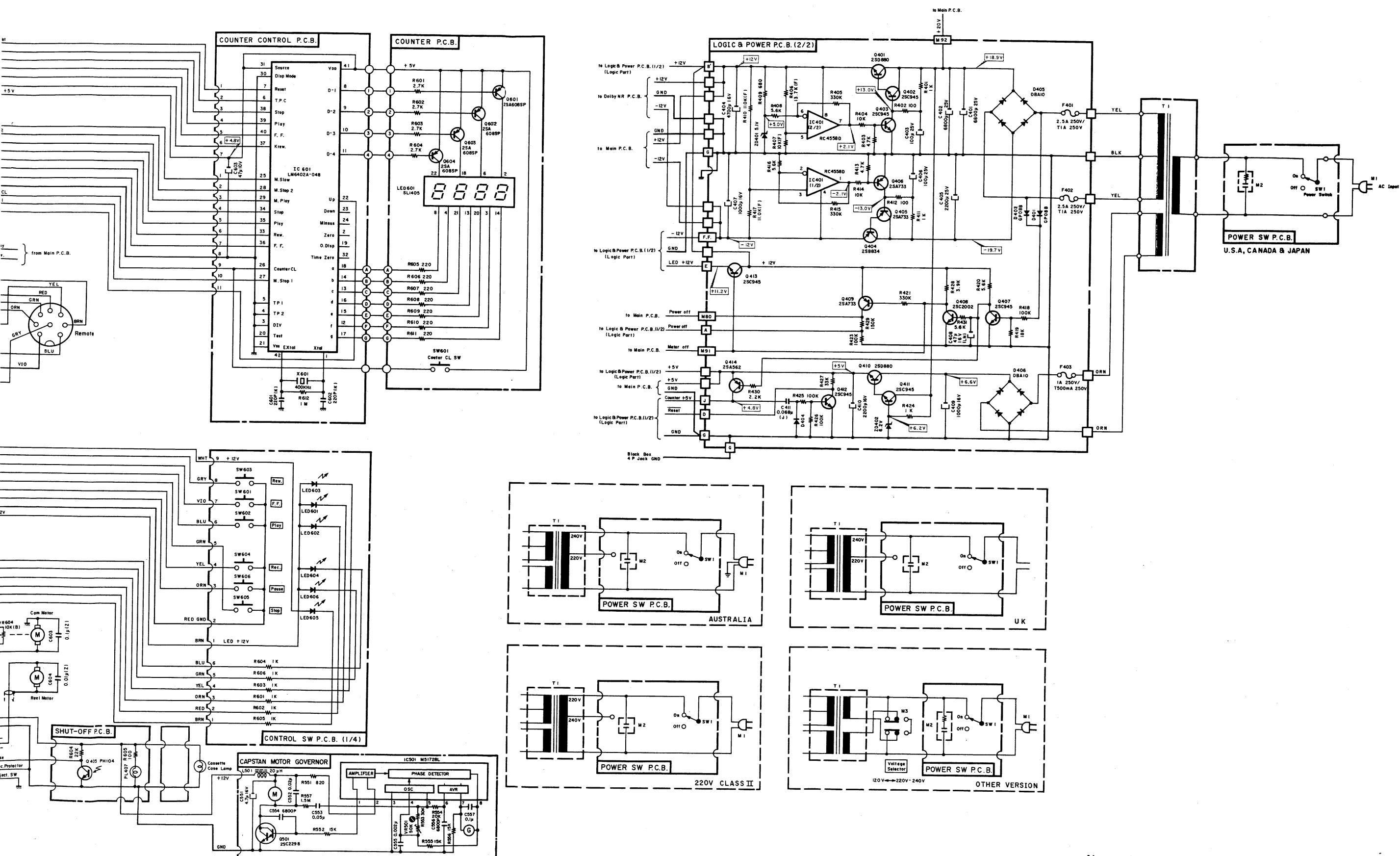


Fig. 13.3

- Notes: 1. Diode is 1SS53, 1S953, or 1S1555 unless otherwise specified.
2. Resistor and capacitor marked with * show typical value.

13.4. Attention to Servicemen

(1) Parts Replacement

Following parts shall be replaced with the specified ones.
Refer to the parts list.

(a) Power Supply Circuit

Power Cord
Power Transformer: T1

(b) Power Switch P.C.B. Ass'y

Power Switch: SW1
Spark Killer: M2

(c) Logic & Power P.C.B. Ass'y

Fuses: F401, 402, 403
Power Transistors: Q401, 404, 408, 410, 414, 607,
608, 610, 611, 620, 622
Diode Bridges: D405, 406
Fail Safe Type Resistors: R641, 669, 680, 681, 682,
683

(d) Main P.C.B. Ass'y

Power Transistors: Q103, 104, 203, 204, 304
Fail Safe Type Resistors: R122, 222, 301, 302, 305,
306, 309, 310, 314, 315, 372, 373, 967, 968

(e) Dolby NR P.C.B. Ass'y

Fail Safe Type Resistors: R701, 702

(f) Shut-off P.C.B. Ass'y

Fail Safe Type Resistor: R605
Lamp: PL407

(g) Indicator P.C.B. Ass'y

Power Transistors: Q901, 902, 903, 904, 905
Fail Safe Type Resistor: R916
Thermal Fuse: F901

(h) Switch P.C.B. Ass'y

Fail Safe Type Resistors: R301, 302

(i) Cassette Case Lamp

(2) Insulation Check

Before returning the repaired ZX-7 to a customer, check to insure that the exposed part is accurately insulated from the AC line by measuring the leakage current or the insulation resistance between them.

13.5. IC Block Diagrams

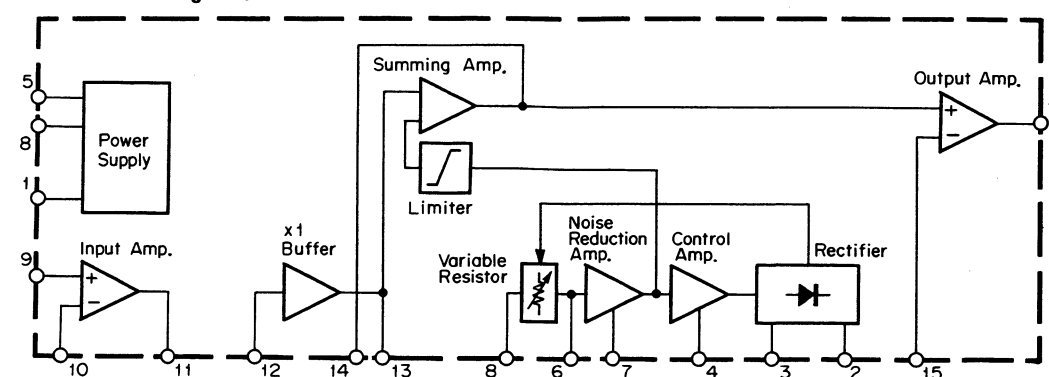


Fig. 13.4 Dolby NR IC μ A7300PC, LA2730

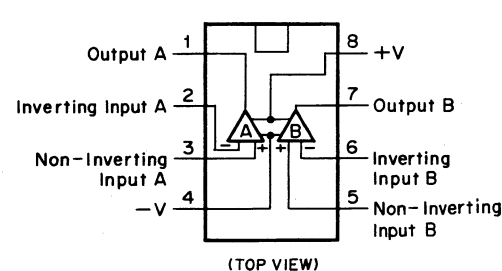


Fig. 13.5 Operational Amp. IC RC4558D, RC4558DD, μ PC4556C, RC4560D, RC4559D, TA75558P-R

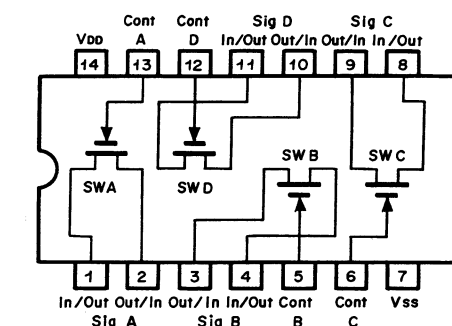


Fig. 13.6 Bilateral Switch C-MOS IC MSM4066RS

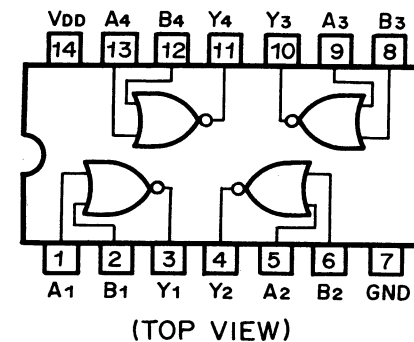


Fig. 13.7 NOR Gate C-MOS IC μ PD4001BC

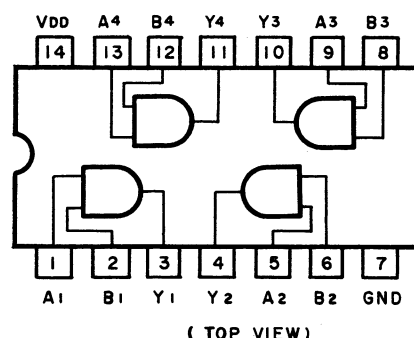


Fig. 13.8 AND Gate C-MOS IC μ PD4081BC

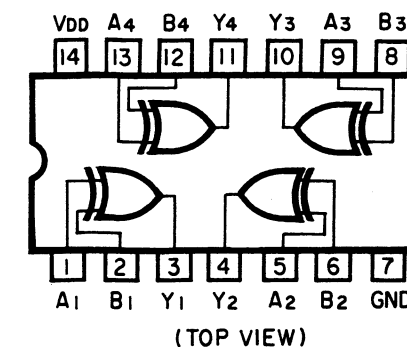


Fig. 13.9 Exclusive OR Gate C-MOS IC μ PD4030BC

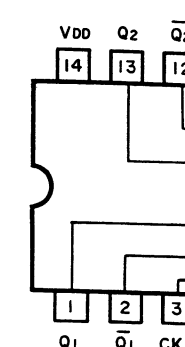


Fig. 13.10 D-Type Flip-Flop C-MOS IC μ PD4013BC

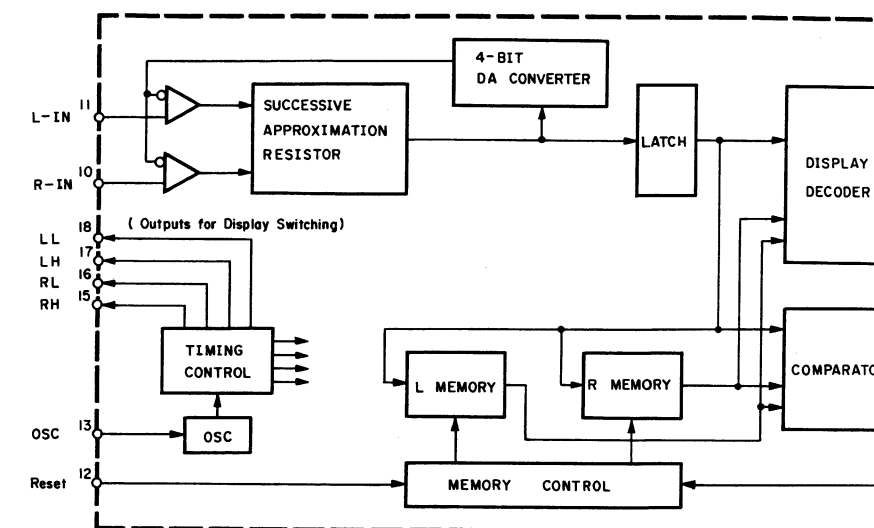


Fig. 13.11 Level Meter Control IC MSL9350RS

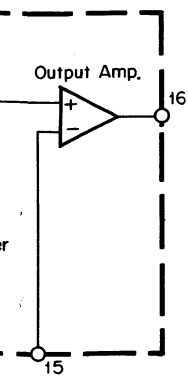


Fig. 13.9 Exclusive OR Gate C-MOS IC μPD4030BC

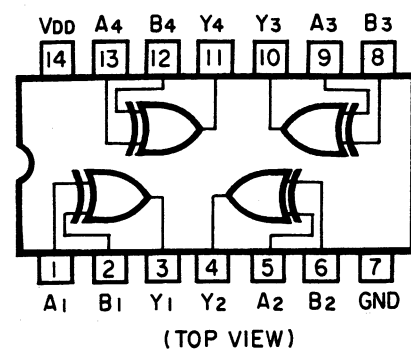
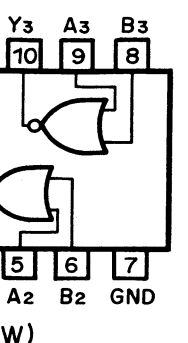
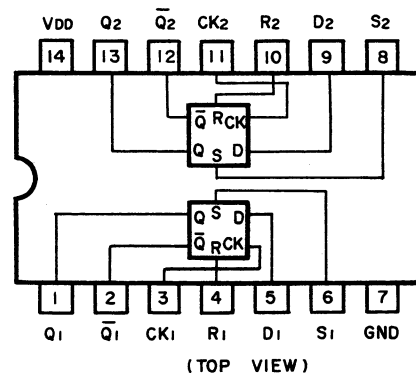
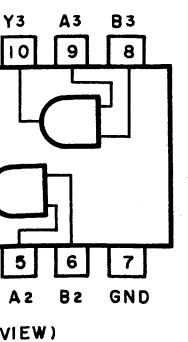


Fig. 13.10 D-Type Flip-Flop C-MOS IC TC4013BP



OS IC μPD4001BC



OS IC μPD4081BC

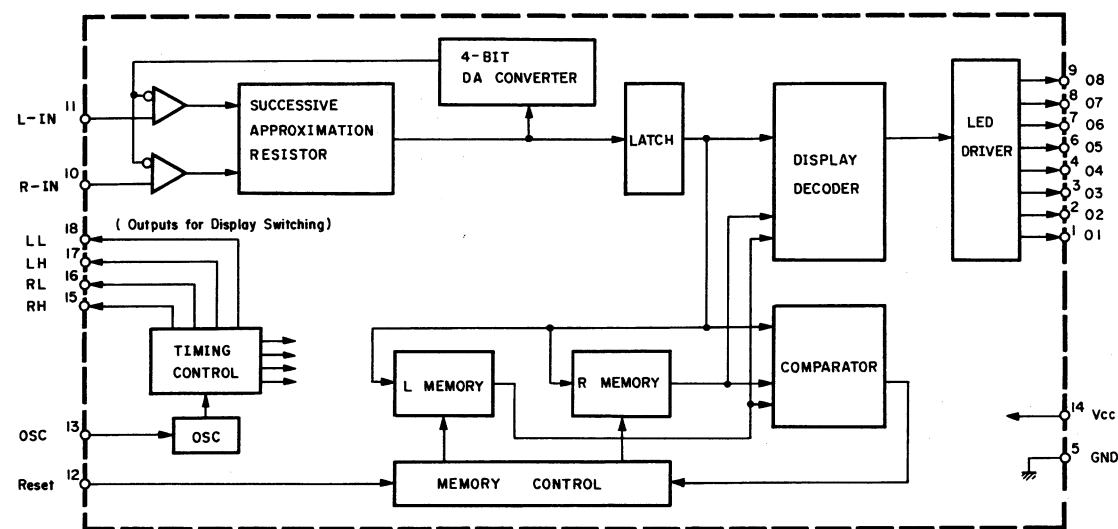


Fig. 13.11 Level Meter Control IC MSL9350RS

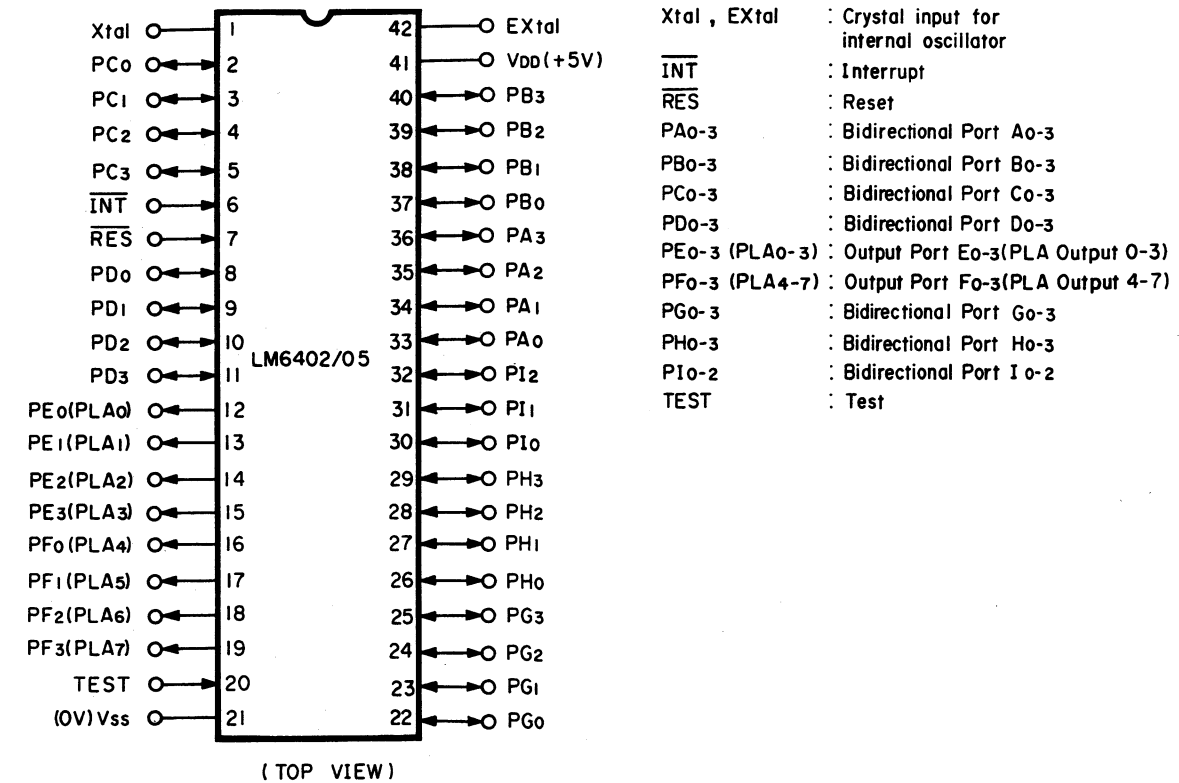
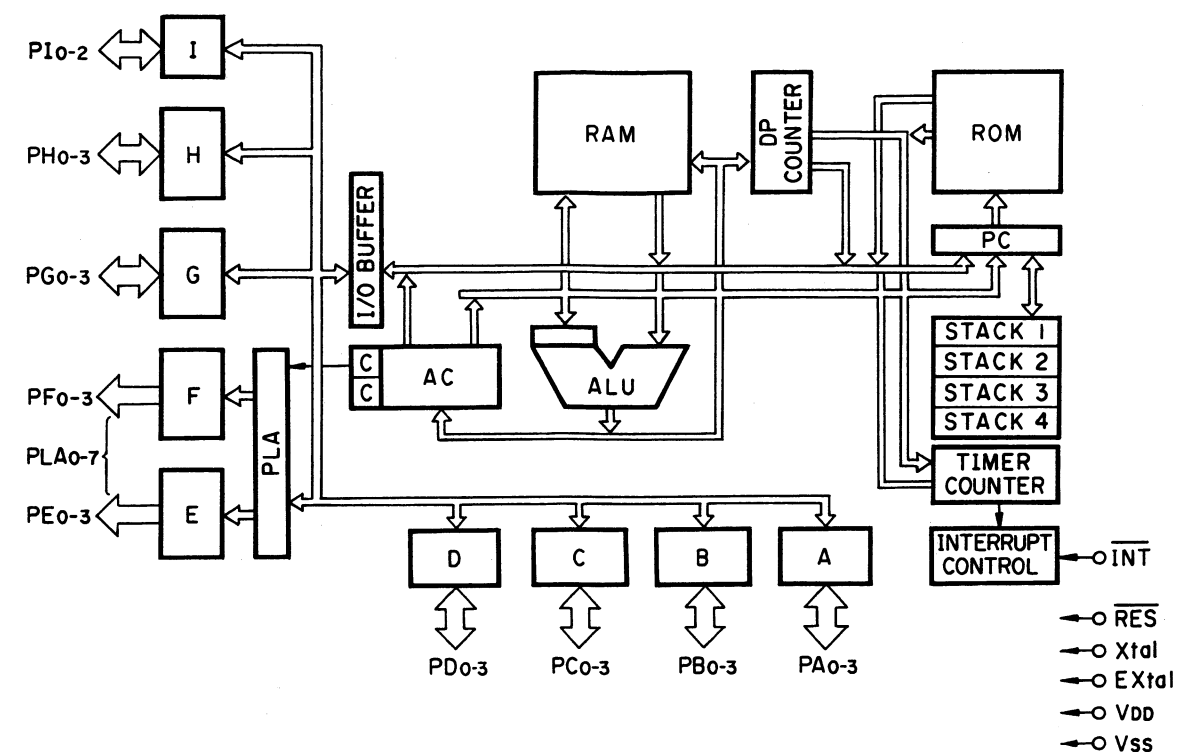


Fig. 13.12 4-Bit Micro-processor LM6402A-052/048

14. SPECIFICATIONS

Track Configuration	4 Tracks/2-Channel Stereo
Heads	3 (Erase Head x 1, Record Head x 1, Playback Head x 1)
Motors (Tape Transport)	PLL 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	40 W max.
Tape Speed	1-7/8 ips (4.8 cm/sec) $\pm 0.5\%$
Wow and Flutter	Less than 0.08% Wtd peak Less than 0.04% Wtd rms
Frequency Response	20 Hz–21,000 Hz ± 3 dB (recording level –20 dB, ZX Tape) 20 Hz–20,000 Hz ± 3 dB (recording level –20 dB, SX, EXII Tape)
Signal to Noise Ratio	Dolby C-Type NR on <70 μ s, ZX Tape> Better than 72 dB (400 Hz, 3% THD, IHF A-Wtd rms) Dolby B-Type NR on <70 μ s, ZX Tape> Better than 66 dB (400 Hz, 3% THD, IHF A-Wtd rms)
Total Harmonic Distortion	Less than 0.8% (400 Hz, 0 dB, ZX Tape) Less than 1.0% (400 Hz, 0 dB, SX, EXII Tape)
Erase	Better than 60 dB (100 Hz, 0 dB)
Separation	Better than 37 dB (1 kHz, 0 dB)
Crosstalk	Better than 60 dB (1 kHz, 0 dB)
Bias Frequency	105 kHz
Input (Line)	50 mV, 70 k ohms
Output (Line)	1 V (400 Hz, 0 dB, Output Level Control at max.), 2.2 k ohms
(Headphones)	45 mW (400 Hz, 0 dB, Output Level Control at max.), 8-ohm load
BlackBox Series DC Output	± 10 V, 125 mA max.
Dimensions	450 (W) x 135 (H) x 300 (D) millimeters 17-3/4 (W) x 5-5/16 (H) x 11-13/16 (D) inches
Approximate Weight	9.5 kg 21 lb.

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