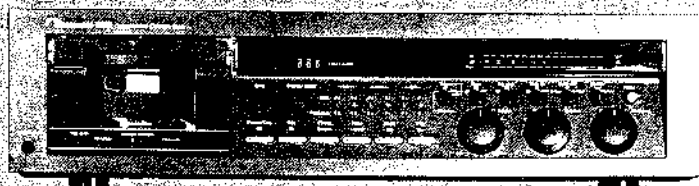




Service Manual

Nakamichi 582Z

Discrete Head Cassette Deck



CONTENTS

1.	General	3
2.	Removal Procedures	4
2. 1.	Acrylic Cassette Compartment Cover	4
2. 2.	Top Cover Ass'y	4
2. 3.	Bottom Cover Ass'y	4
2. 4.	Front Panel Ass'y	5
2. 5.	Mechanism Ass'y	5
2. 6.	Logic P.C.B. Ass'y	6
2. 7.	Dolby NR P.C.B. Ass'y	6
2. 8.	Main P.C.B. Ass'y	6
2. 9.	Power Switch	6
2. 10.	Volume P.C.B. Ass'y	6
2. 11.	Control Button Ass'y	6
2. 12.	Record Cal. P.C.B. Ass'y	6
2. 13.	LED Level Indicator Ass'y and Indicator P.C.B. Ass'y	7
2. 14.	Lamp P.C.B. Ass'y	7
2. 15.	Aluminum Mirror	7
2. 16.	Rear Panel Ass'y	8
2. 17.	Power Transformer	8
2. 18.	Mains P.C.B. Ass'y	8
2. 19.	MPX Filter Switch P.C.B. Ass'y	8
2. 20.	Cassette Case Ass'y	8
2. 21.	Cover Plate	8
2. 22.	Tape Counter Ass'y	8
2. 23.	Capstan Motor Ass'y and Flywheel Ass'y	9
2. 24.	Sub Mechanism Chassis Ass'y	9
2. 25.	Control Motor Ass'y	9
2. 26.	Reel Motor Ass'y	9
2. 27.	Cam Control Volume	9
2. 28.	Reel Hub Ass'y	9
2. 29.	Idler Ass'y	9
2. 30.	Cam Drive Gear and Control Cam	9
2. 31.	Head Mount Base Ass'y	9
2. 32.	Supply Pressure Roller Ass'y	10
2. 33.	Erase Head	10
2. 34.	Take-up Pressure Roller Ass'y	10
2. 35.	Playback Head Ass'y	10
2. 36.	Record Head Ass'y	10
3.	Measurement Instruments	11
4.	Mechanical Adjustments	12
4. 1.	Mechanism Control Cam Adjustment	12
4. 2.	Tape Speed Adjustment	13
4. 3.	Record Head and Playback Head Tilt Adjustment	13
4. 4.	Head Base Stroke Adjustment	15
4. 5.	Tape Guides Adjustment and Erase Head Stroke Adjustment	16
4. 6.	Erase Head Height and Tilt Adjustment	17
4. 7.	Back Tension Adjustment	18
4. 8.	Record Head and Playback Head Height Adjustment and Azimuth Alignment	19
4. 9.	Record Head Stroke Adjustment	20
4. 10.	Tape Travelling Adjustment	21
4. 11.	Flywheel Holder Adjustment	21
4. 12.	Eject Wire Adjustment	22
4. 13.	Control Button Stroke Adjustment	22
4. 14.	Lubrication	22
5.	Parts Location for Electrical Adjustment	23
6.	Electrical Adjustments and Measurements	24

- 6. 1. Adjustments and Measurements Instructions 24
- 6. 2. Frequency Response Adjustment 27
- 6. 3. Dolby NR Circuit Check 29
- 7. Mounting Diagrams and Parts List 31**
 - 7. 1. Control Switch P.C.B. Ass'y 32
 - 7. 2. Volume P.C.B. Ass'y 32
 - 7. 3. Indicator P.C.B. Ass'y 32
 - 7. 4. Lamp P.C.B. Ass'y 32
 - 7. 5. Pin Jack P.C.B. Ass'y 32
 - 7. 6. Shut-off P.C.B. Ass'y 32
 - 7. 7. MPX Filter Switch P.C.B. Ass'y 32
 - 7. 8. Record Cal. P.C.B. Ass'y 32
 - 7. 9. Main P.C.B. Ass'y 33
 - 7. 10. Dolby NR P.C.B. Ass'y 41
 - 7. 11. Logic P.C.B. Ass'y 48
- 8. Mechanism Ass'y and Parts List 53**
 - 8. 1. Synthesis 53
 - 8. 2. Synthesis Mechanism Ass'y 582Z (A01) 54
 - 8. 3. Front Panel Ass'y 582Z (B01) 55
 - 8. 4. Headphone Jack Ass'y (B02) 55
 - 8. 5. Mechanism Ass'y 582Z (B03) 56
 - 8. 6. Chassis Ass'y 582Z (B04) 57
 - 8. 7. LED Indicator Ass'y (C01) 59
 - 8. 8. Lamp House Cover Ass'y (C02) 59
 - 8. 9. Flywheel Holder Ass'y (D01) 59
 - 8. 10. Sub Mechanism Chassis Ass'y (D02) 60
 - 8. 11. Main Mechanism Chassis Ass'y (D03) 62
 - 8. 12. Rear Panel Ass'y (E01) 63
 - 8. 13. Capstan Motor Ass'y (F01) 65
 - 8. 14. Reel Motor Ass'y (G01) 65
 - 8. 15. Control Motor Ass'y (G02) 65
 - 8. 16. Head Mount Base Ass'y (H01) 65
 - 8. 17. Supply Pressure Roller Ass'y (H02) 65
 - 8. 18. Take-up Pressure Roller Ass'y (H03) 65
 - 8. 19. Head Base Ass'y B (H04) 65
 - 8. 20. Cassette Case Holder L Ass'y (H05) 65
 - 8. 21. Cassette Case Holder R Ass'y (H06) 65
 - 8. 22. Auto Shut-off Ass'y (H07) 65
 - 8. 23. Pneumatic Damper Ass'y (H08) 65
 - 8. 24. P-8L Playback Head Ass'y (I01) 67
 - 8. 25. R-8L Record Head Ass'y (I02) 67
- 9. Overall Timing Chart 67**
- 10. Eq. Amp. Frequency Response 68**
 - 10. 1. Playback Frequency Response 68
 - 10. 2. Record Current Frequency Response 68
- 11. Wiring Diagrams 68**
- 12. Block Diagrams 71**
 - 12. 1. Amplifier Section 71
 - 12. 2. Mechanism Control Section 72
- 13. Schematic Diagrams 73**
 - 13. 1. Attention to Servicemen 73
 - 13. 2. IC Block Diagrams 73
 - 13. 3. Amplifier Section 74
 - 13. 4. Mechanism Control Section 77
- 14. Specifications 78**

1. GENERAL

1.1. Control Functions

The Nakamichi 582Z control functions are shown below:

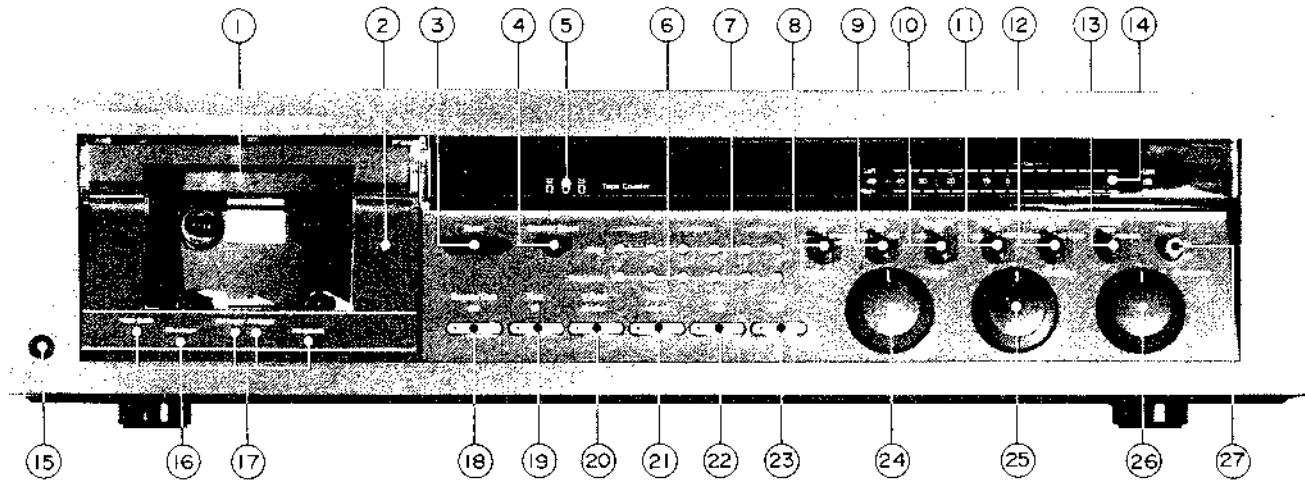


Fig. 1.1 Front View

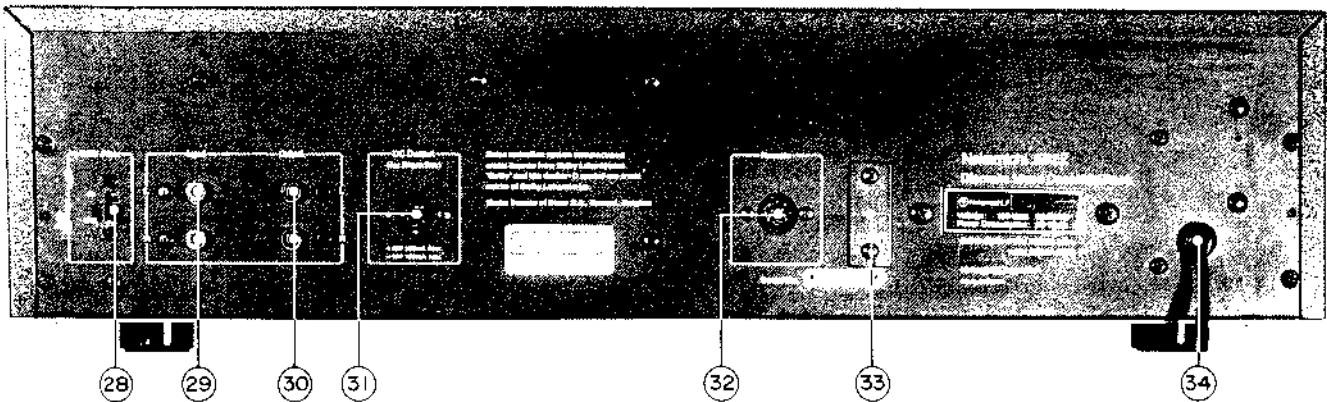


Fig. 1.2 Rear View

- | | |
|--|---------------------------|
| 1. Acrylic Cassette Compartment Cover | 18. Pause/Cue Button |
| 2. Cassette Lid | 19. Record Button |
| 3. Eject Button | 20. Fast-Forward Button |
| 4. Counter Reset Button | 21. Rewind Button |
| 5. Tape Counter | 22. Stop Button |
| 6. Record Calibration Controls | 23. Play Button |
| 7. Bias Adjustment Controls | 24. Output Level Control |
| 8. Tape Start Memory/Timer Switch | 25. Balance Control |
| 9. Tape Switch | 26. Input Level Control |
| 10. Eq. Switch | 27. Power Switch |
| 11. Test Tone Switch | 28. MPX Filter Switch |
| 12. Dolby NR Switch | 29. Input Jacks |
| 13. Monitor Switch | 30. Output Jacks |
| 14. Level Meters | 31. DC Output Jack |
| 15. Headphone Jack | 32. Remote Control Socket |
| 16. Record Head Azimuth Alignment Screw | 33. Voltage Selector |
| 17. Head Height and Azimuth Alignment Screws | 34. Power Cord |

1.2. Voltage Selector

Voltage selector is installed on the rear panel for Other Version of the Nakamichi 582Z. This voltage selector can select either 120 V or 220-240 V at customer's disposal.

1.3. History on Major Modifications

Serial No.:	A12101001 –	A12102102 –	A12102903 –
Dolby NR P.C.B. Ass'y	Playback Dolby NR P.C.B. Ass'y Record Dolby NR P.C.B. Ass'y	Dolby NR P.C.B. Ass'y	
Main P.C.B. Ass'y	Former Type		New Type
Reel Motor Ass'y	Former Type		New Type
Logic P.C.B. Ass'y	Former Type		New Type

2. REMOVAL PROCEDURES

2.1. Acrylic Cassette Compartment Cover

Refer to Figs. 2.1.1 and 2.1.2.

- (1) Push the Eject Button to open the Cassette Case Ass'y.
- (2) Pull out F01 (Acrylic Cassette Compartment Cover) upwardly.

2.3. Bottom Cover Ass'y

Refer to Figs 2.1.1 and 2.1.2.

- (1) Remove F05, then disassemble F06 (Bottom Cover Ass'y).

2.2. Top Cover Ass'y

Refer to Figs. 2.1.1 and 2.1.2.

- (1) Remove F02 and F03, then disassemble F04 (Top Cover Ass'y).

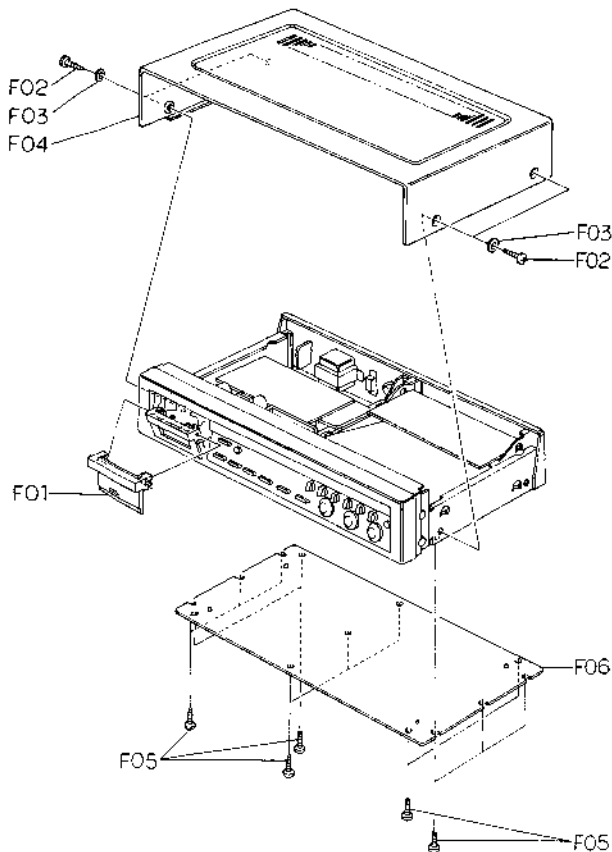


Fig. 2.1.1 Serial No.: A12102102 –

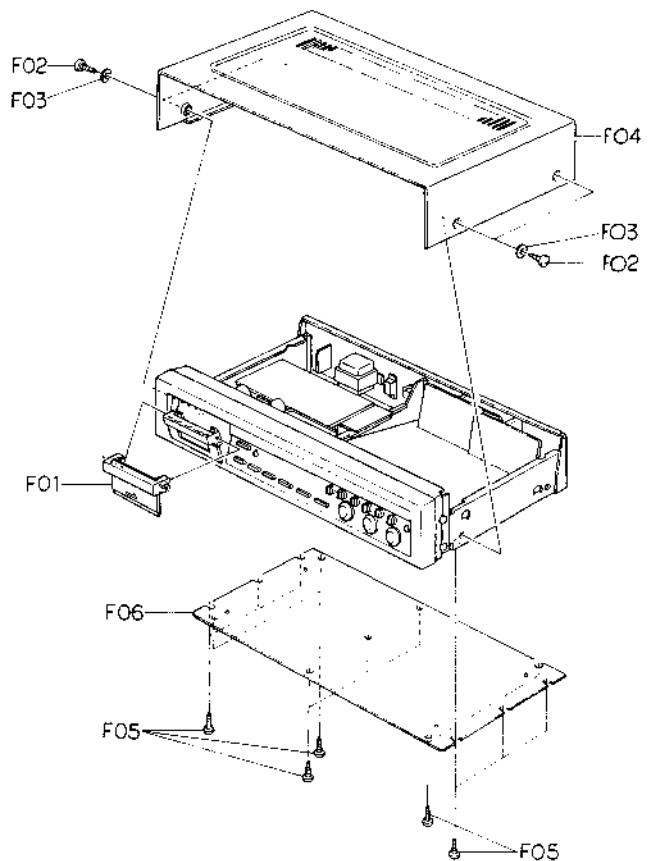


Fig. 2.1.2 Serial Nos.: A12101001 – A12102101

2.4. Front Panel Ass'y

Refer to Figs. 2.2.1 and 2.2.2.

- (1) Refer to Figs. 2.1.1 and 2.1.2. Remove Top Cover Ass'y and Bottom Cover Ass'y referring to items 2.2 and 2.3.
- (2) Remove F01 (Volume Knobs) by pushing with a screwdriver or similar tools from the inside of the N-582Z.
- (3) Remove F02 (Switch Knobs) and F03, then disassem-

ble F04 (Front Panel Ass'y including 2 connectors).

2.5. Mechanism Ass'y

Refer to Figs. 2.2.1 and 2.2.2.

- (1) Remove Front Panel Ass'y referring to item 2.4.
- (2) Remove F05, then disassemble F06 (Headphone Jack Ass'y).
- (3) Remove F07 and F08, then disassemble F09 (Mechanism Ass'y including 4 connectors).

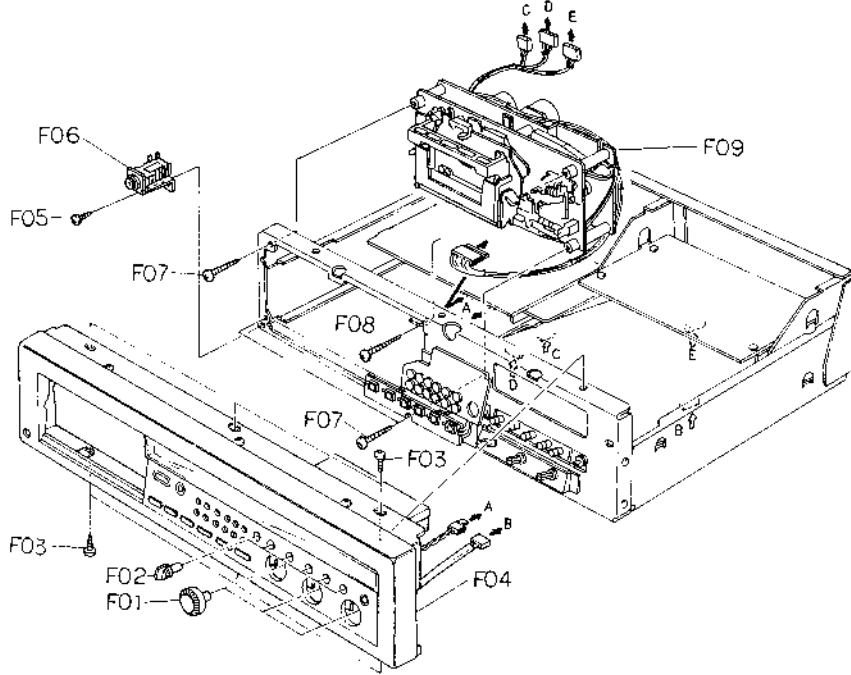


Fig. 2.2.1 Serial No.: A12102102 -

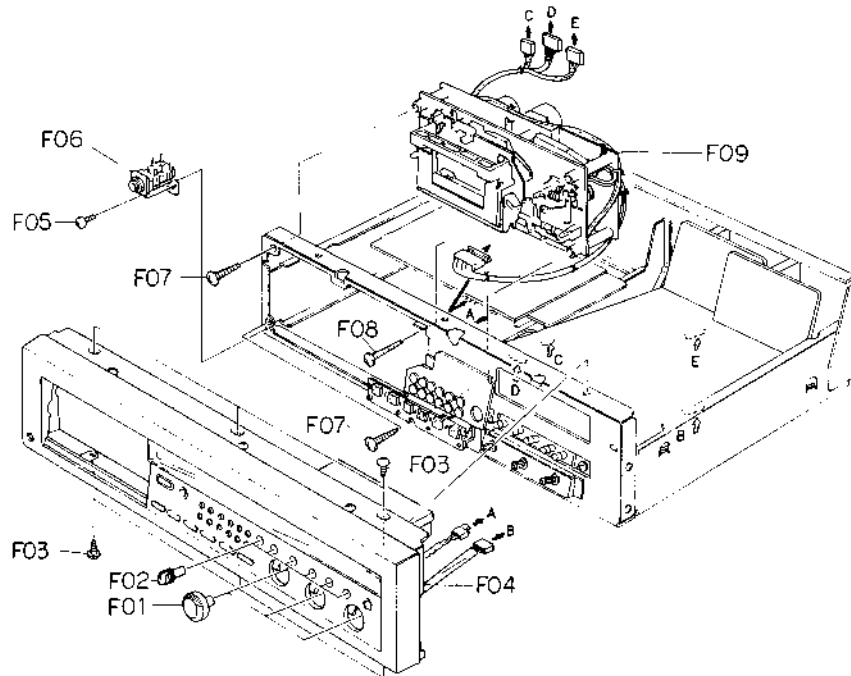


Fig. 2.2.2 Serial Nos.: A12101001 - A12102101

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

2.6.1. Serial No.: A12102102 –

Refer to Fig. 2.3.1.

- (1) Refer to Fig. 2.2.1. Remove Front Panel Ass'y referring to item 2.4.
- (2) Remove the connectors and wires connected by wrapping from F02 (Logic P.C.B. Ass'y).
- (3) Remove F01, then disassemble F02 (Logic P.C.B. Ass'y).

2.6.2. Serial Nos.: A12101001 – A12102101

Refer to Fig. 2.3.2.

- (1) Refer to Fig. 2.2.2. Remove Front Panel Ass'y referring to item 2.4.
- (2) Remove the connectors and wires connected by wrapping from F02 (Logic P.C.B. Ass'y).

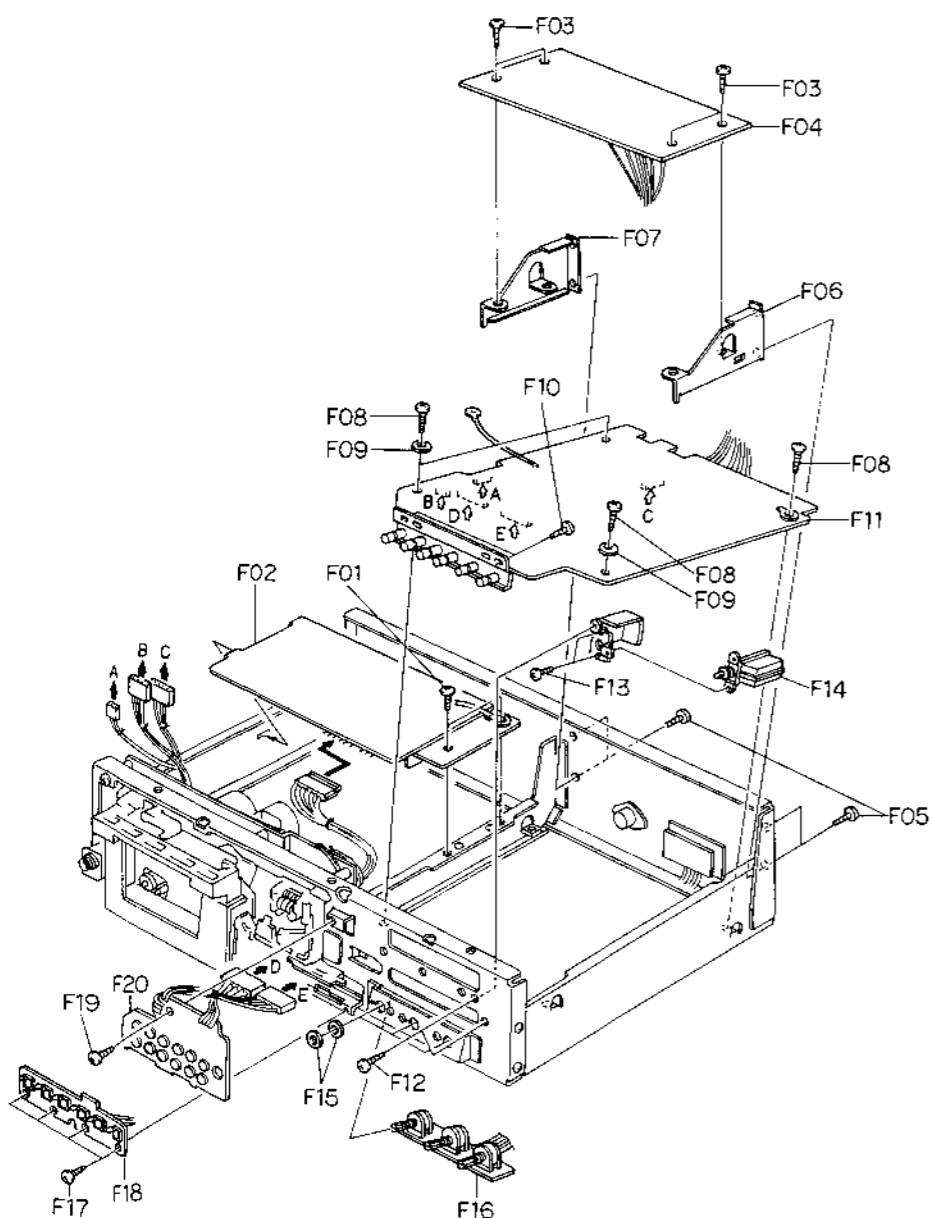


Fig. 2.3.1 Serial No.: A12102102 –

- (3) Remove F01, then disassemble F02 (Logic P.C.B. Ass'y).

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

2.7.1. Serial No.: A12102102 –

Refer to Fig. 2.3.1.

- (1) Refer to Fig. 2.1.1. Remove Front Panel Ass'y referring to item 2.4.
- (2) Remove F03, then disassemble F04 (Dolby NR P.C.B. Ass'y).

2.7.2. Serial Nos.: A12101001 – A12102101

Refer to Fig. 2.3.2.

- (1) Refer to Fig. 2.1.2. Remove Front Panel Ass'y referring to item 2.4.
- (2) Remove F03, then disassemble F04 (Playback Dolby

NR P.C.B. Ass'y).

- (3) Remove F05, then disassemble F06 (Record Dolby NR P.C.B. Ass'y).

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

2.8.1. Serial No.: A12102102 –

Refer to Fig. 2.3.1.

- (1) Refer to Fig. 2.2.1. Remove Front Panel Ass'y referring to item 2.4.
- (2) Remove the flat cable, connectors and wires connected by wrapping from F11 (Main P.C.B. Ass'y).
- (3) Remove F05, F06 (Dolby NR P.C.B. Holder D), F07 (Dolby NR P.C.B. Holder E), F08, F09 and F10, then disassemble F11 (Main P.C.B. Ass'y).

2.8.2. Serial Nos.: A12101001 – A12102101

Refer to Fig. 2.3.2.

- (1) Refer to Fig. 2.2.2. Remove Front Panel Ass'y referring to item 2.4.
- (2) Remove the flat cable, connectors and wires connected by wrapping from F10 (Main P.C.B. Ass'y).
- (3) Remove F07, F08 and F09, then disassemble F10 (Main P.C.B. Ass'y).

2.9. Power Switch

2.9.1. Serial No.: A12102102 –

Refer to Fig. 2.3.1.

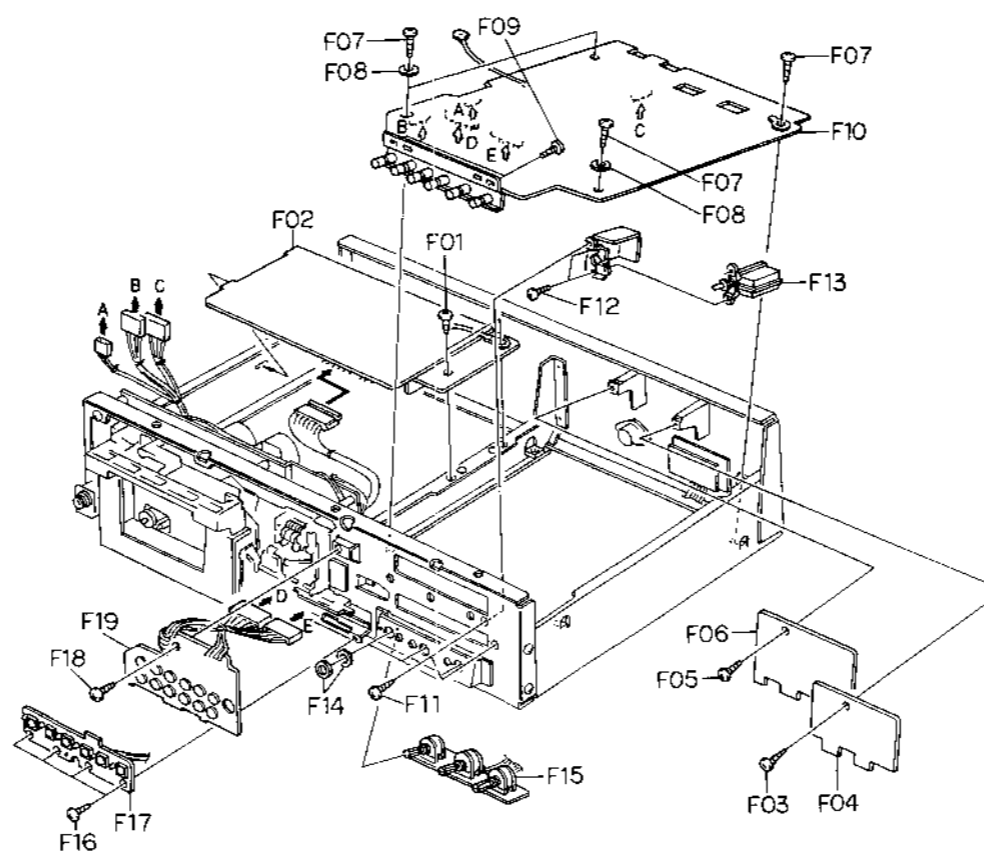


Fig. 2.3.2 Serial Nos.: A12101001 – A12102101

- (1) Remove Main P.C.B. Ass'y referring to item 2.8.1.
- (2) Remove F12 and F13, then disassemble F14 (Power Switch).

2.9.2. Serial Nos.: A12101001 – A12102101

Refer to Fig. 2.3.2.

- (1) Remove Main P.C.B. Ass'y referring to item 2.8.2.
- (2) Remove F11 and F12, then disassemble F13 (Power Switch).

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

2.10.1. Serial No.: A12102102 –

Refer to Fig. 2.3.1.

- (1) Refer to Fig. 2.2.1. Remove Front Panel Ass'y referring to item 2.4.
- (2) Remove F15, then disassemble F16 (Volume P.C.B. Ass'y).

2.10.2. Serial Nos.: A12101001 – A12102101

Refer to Fig. 2.3.2.

- (1) Refer to Fig. 2.2.2. Remove Front Panel Ass'y referring to item 2.4.
- (2) Remove F14, then disassemble F15 (Volume P.C.B. Ass'y).

2.11. Control Button Ass'y

2.11.1. Serial No.: A12102102 –

Refer to Fig. 2.3.1.

- (1) Refer to Fig. 2.2.1. Remove Front Panel Ass'y referring to item 2.4.
- (2) Remove F17, then disassemble F18 (Control Button Ass'y).

2.11.2. Serial Nos.: A12101001 – A12102101

Refer to Fig. 2.3.2.

- (1) Refer to Fig. 2.2.2. Remove Front Panel Ass'y referring to item 2.4.
- (2) Remove F16, then disassemble F17 (Control Button Ass'y).

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

2.12.1. Serial No.: A12102102 –

Refer to Fig. 2.3.1.

- (1) Refer to Fig. 2.2.1. Remove Front Panel Ass'y referring to item 2.4.
- (2) Remove F19, then disassemble F20 (Record Cal. P.C.B. Ass'y).

2.12.2. Serial Nos.: A12101001 – A12102101

Refer to Fig. 2.3.2.

- (1) Refer to Fig. 2.2.2. Remove Front Panel Ass'y referring to item 2.4.
- (2) Remove F18, then disassemble F19 (Record Cal. P.C.B. Ass'y).

2.13. LED Level Indicator Ass'y and Indicator P.C.B. Ass'y

- Refer to Fig. 2.4.
- (1) Refer to Figs. 2.2.1 and 2.2.2. Remove Front Panel Ass'y referring to item 2.4.
 - (2) Remove F01, F02 and F03, then disassemble F04 (LED Level Indicator Ass'y).
 - (3) Remove F05, then disassemble F06 (Shield Cover).
 - (4) Remove F07, then disassemble F08 (Shield Case).
 - (5) Remove F09 and F10, then disassemble F11 (Indicator P.C.B. Ass'y).
 - (6) Remove F12, then disassemble F13 (Indicator P.C.B. Holder).

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

- Refer to Fig. 2.4.
- (1) Remove LED Level Indicator Ass'y referring to item 2.13.
 - (2) Remove F14, then disassemble F15 (Lamp House Cover Ass'y).
 - (3) Remove F16, then disassemble F17 (Lamp P.C.B. Ass'y).

2.15. Aluminum Mirror

- Refer to Fig. 2.4.
- (1) Remove Lamp House Cover Ass'y referring to item 2.14.
 - (2) Remove F18, then disassemble F19 (Aluminum Mirror).

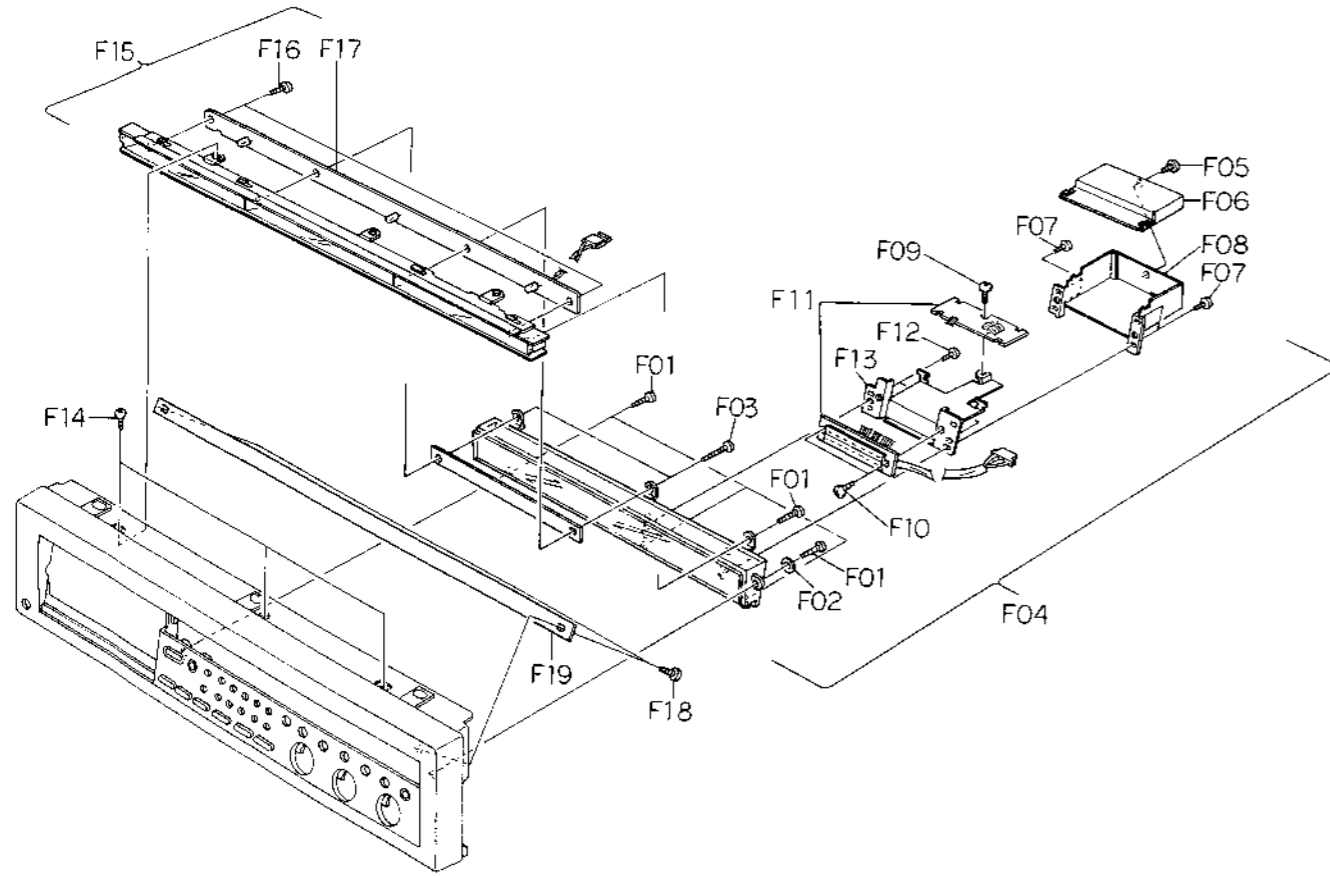


Fig. 2.4

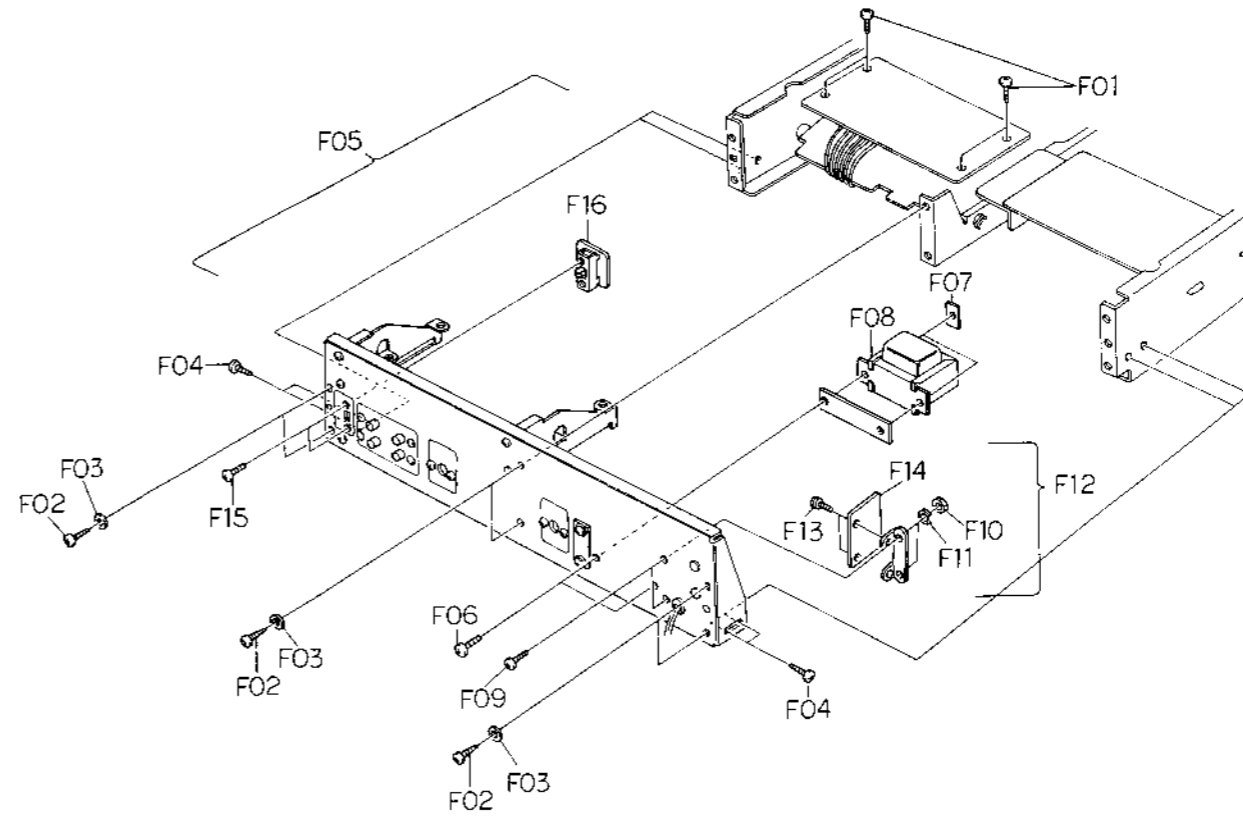


Fig. 2.5.1 Serial No.: A12102102 -

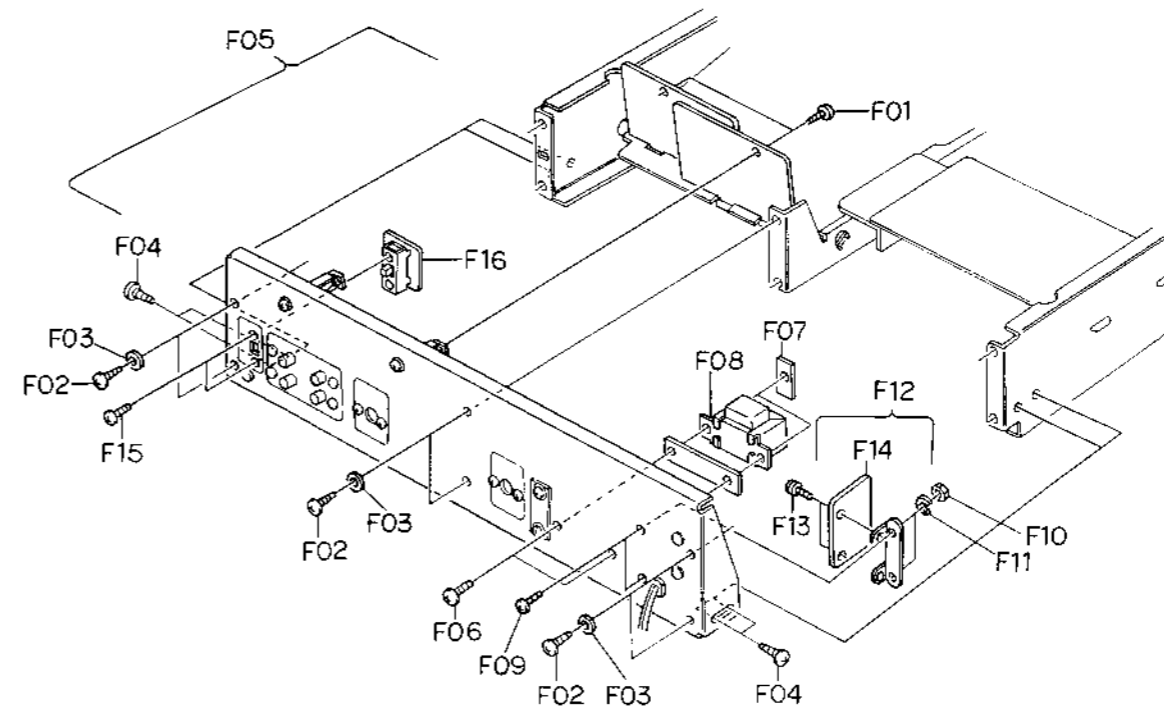


Fig. 2.5.2 Serial Nos.: A12101001 - A12102101

2.16. Rear Panel Ass'y

Refer to Figs. 2.5.1 and 2.5.2.

- (1) Refer to Figs. 2.1.1 and 2.1.2. Remove Top Cover Ass'y and Bottom Cover Ass'y referring to items 2.2 and 2.3.
- (2) Remove F01, F02, F03 and F04, then disassemble F05 (Rear Panel Ass'y).

2.17. Power Transformer

Refer to Figs. 2.5.1 and 2.5.2.

- (1) Refer to Figs. 2.1.1 and 2.1.2. Remove Top Cover Ass'y and Bottom Cover Ass'y referring to items 2.2 and 2.3.
- (2) Remove F06 and F07, then disassemble F08 (Power Transformer).

2.18. Mains P.C.B. Ass'y

Refer to Figs. 2.5.1 and 2.5.2.

- (1) Refer to Figs. 2.1.1 and 2.1.2. Remove Top Cover Ass'y referring to item 2.2.
- (2) Remove F09, F10 and F11, then disassemble F12 (Mains P.C.B. Ass'y).
- (3) Remove F13, then disassemble F14 (Mains P.C.B.).

2.19. MPX Filter Switch P.C.B. Ass'y

Refer to Figs. 2.5.1 and 2.5.2.

- (1) Refer to Figs. 2.1.1 and 2.1.2. Remove Top Cover Ass'y referring to item 2.2.
- (2) Remove F15, then disassemble F16 (MPX Filter Switch P.C.B. Ass'y).

2.20. Cassette Case Ass'y

Refer to Fig. 2.6.

- (1) Refer to Figs. 2.2.1 and 2.2.2. Remove Mechanism Ass'y referring to item 2.5.
- (2) Push the Eject Button to open the Cassette Case Ass'y.
- (3) Remove F01, then disassemble the piston of the Air Damper Ass'y.
- (4) Remove F02 and F03, then disassemble F04 (Cassette Case Ass'y).

2.21. Cover Plate

Refer to Fig. 2.6.

- (1) Refer to Figs. 2.2.1 and 2.2.2. Remove Front Panel Ass'y referring to item 2.4.
- (2) Push the Eject Button to open the Cassette Case Ass'y.
- (3) Remove F05, then disassemble F06 (Cover Plate).

2.22. Tape Counter Ass'y

Refer to Fig. 2.6.

- (1) Refer to Figs. 2.2.1 and 2.2.2. Remove Front Panel Ass'y referring to item 2.4.
- (2) Remove F07, then disassemble F08 (Tape Counter Ass'y).

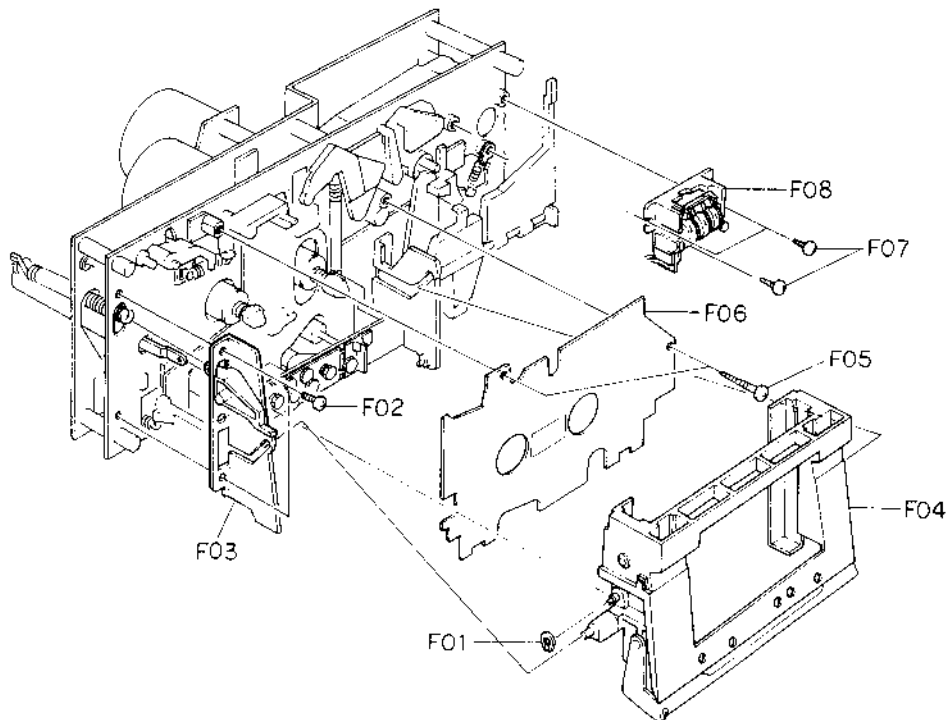


Fig. 2.6

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

Refer to Fig. 2.7.

- (1) Refer to Figs. 2.2.1 and 2.2.2. Remove Mechanism Ass'y referring to item 2.5.
- (2) Remove F01 and F02, then disassemble F03 (Flywheel Holder Ass'y) and F06 (Capstan Belt).
- (3) Remove F04, then disassemble F05 (Capstan Motor Ass'y).
- (4) Remove F07 (Supply Flywheel Ass'y), then disassemble F08 (Take-up Flywheel Ass'y).
- (5) After removing both Flywheel Assemblies, disassemble F09 (Thrust Washer 3.1 mm), F10 (Thrust Washer 2.6 mm), F11 (Flange Thrust Caps) and F12 (Flywheel Thrust Springs).

2.24. Sub Mechanism Chassis Ass'y

Refer to Fig. 2.8.

- (1) Refer to Figs. 2.2.1 and 2.2.2. Remove Mechanism Ass'y referring to item 2.5.
- (2) Remove Flywheel Holder Ass'y and both Flywheel Assemblies referring to above item 2.23.
- (3) Remove F01 and F02, then disassemble F03 (Sub Mechanism Chassis Ass'y).

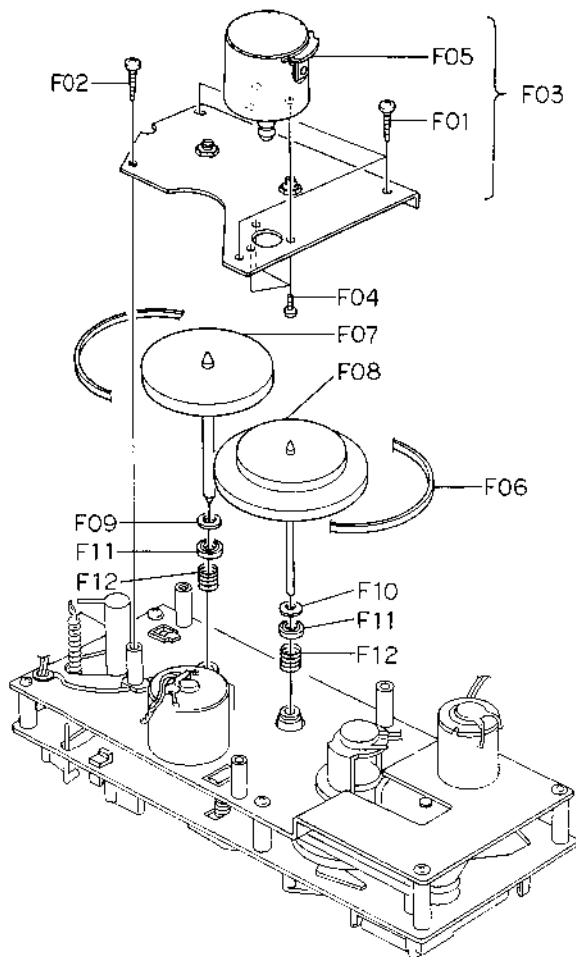


Fig. 2.7

2.25. Control Motor Ass'y

Refer to Fig. 2.8.

- (1) Remove Sub Mechanism Chassis Ass'y referring to item 2.24.
- (2) Remove F04, then disassemble F05 (Control Motor Ass'y).

2.26. Reel Motor Ass'y

Refer to Fig. 2.8.

- (1) Remove Sub Mechanism Chassis Ass'y referring to item 2.24.
- (2) Remove F06, then disassemble F07 (Reel Motor Ass'y).

2.27. Cam Control Volume

Refer to Fig. 2.8.

- (1) Remove Sub Mechanism Chassis Ass'y referring to item 2.24.
- (2) Remove F08, then disassemble F09 (Volume Coupler).
- (3) Remove F10, then disassemble F11 (Cam Control Volume).

2.28. Reel Hub Ass'y

Refer to Fig. 2.8.

- (1) Remove Sub Mechanism Chassis Ass'y referring to item 2.24.
- (2) Remove F12 (Reel Hub Heads).
- (3) Remove F13 (Reel Hub B Assemblies).
- (4) Remove F14 (Reel Hub Take-up Ass'y) and F15 (Reel Hub Supply Ass'y).
- (5) Remove F16 (Back Tension Felt) and F17 (Back Tension Spring) from the supply side Reel Hub Ass'y.

2.29. Idler Ass'y

Refer to Fig. 2.8.

- (1) Remove Sub Mechanism Chassis Ass'y referring to item 2.24.
- (2) Remove F18, then disassemble F19 (Idler Ass'y).

2.30. Cam Drive Gear and Cam

Refer to Fig. 2.8.

- (1) Remove Sub Mechanism Chassis Ass'y referring to item 2.24.
- (2) Remove F20, then disassemble F21 (Cam Drive Gear).
- (3) Remove F22, then disassemble F23 (Counter-Load Arm Ass'y).
- (4) Remove F24, then disassemble F25 (Cam).

2.31. Head Mount Base Ass'y

Refer to Fig. 2.9.

- (1) Refer to Fig. 2.6. Remove Cassette Case Ass'y referring to item 2.20.
- (2) Remove F01, then disassemble F02 (Head Mount Base Ass'y).

2.32. Supply Pressure Roller Ass'y

Refer to Fig. 2.9.

- (1) Remove Head Mount Base Ass'y referring to item 2.31.
- (2) Remove F03 and a washer, then disassemble F04 (Supply Pressure Roller Ass'y).

2.33. Erase Head

Refer to Fig. 2.9.

- (1) Remove Head Mount Base Ass'y referring to item 2.31.
- (2) Remove F05, then disassemble F06 (Erase Head).

2.34. Take-up Pressure Roller Ass'y

Refer to Fig. 2.9.

- (1) Remove Head Mount Base Ass'y referring to item 2.31.

- (2) Remove F07 and a washer, then F08 (Take-up Pressure Roller Ass'y).

2.35. Playback Head Ass'y

Refer to Fig. 2.9.

- (1) Remove Head Mount Base Ass'y referring to item 2.31.
- (2) Turn F09 by 90° by pushing it, then disassemble F10 (Playback Head Ass'y).

2.36. Record Head Ass'y

Refer to Fig. 2.9.

- (1) Remove Head Mount Base Ass'y referring to item 2.31.
- (2) Turn F11 by 90° by pushing it, then disassemble F12 (Record Head Ass'y).

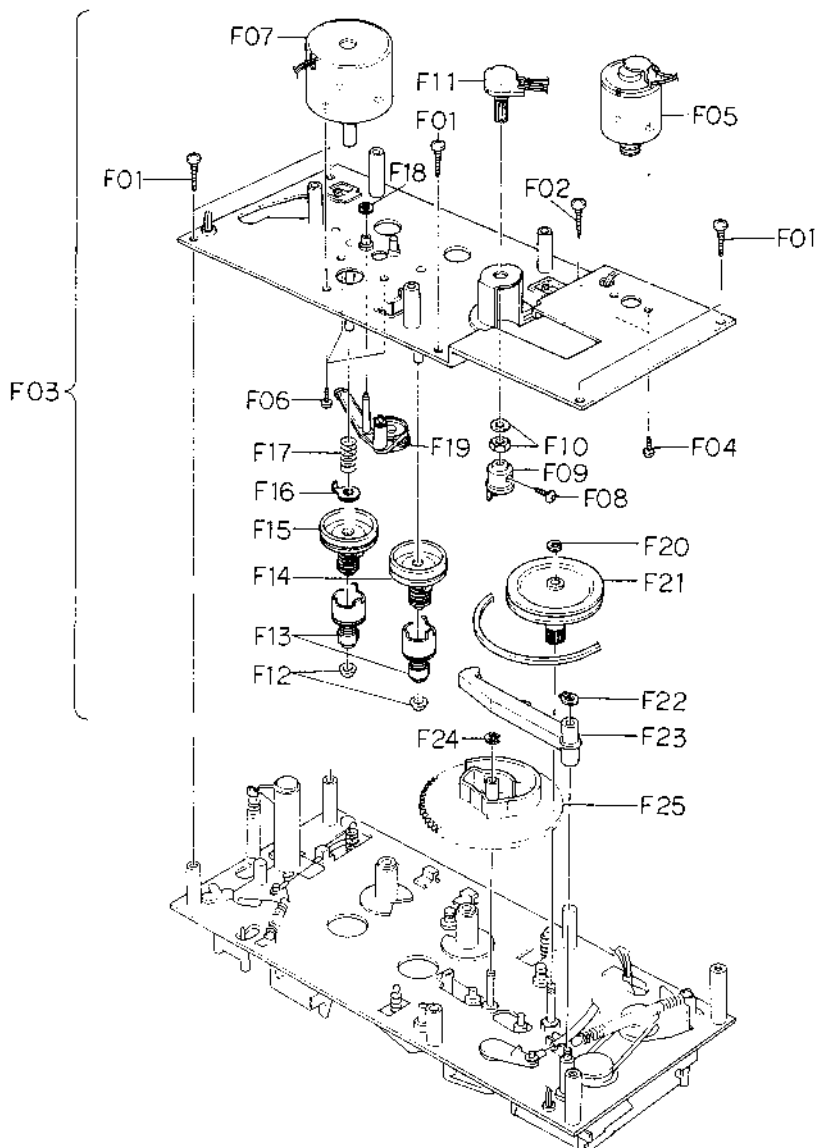


Fig. 2.8

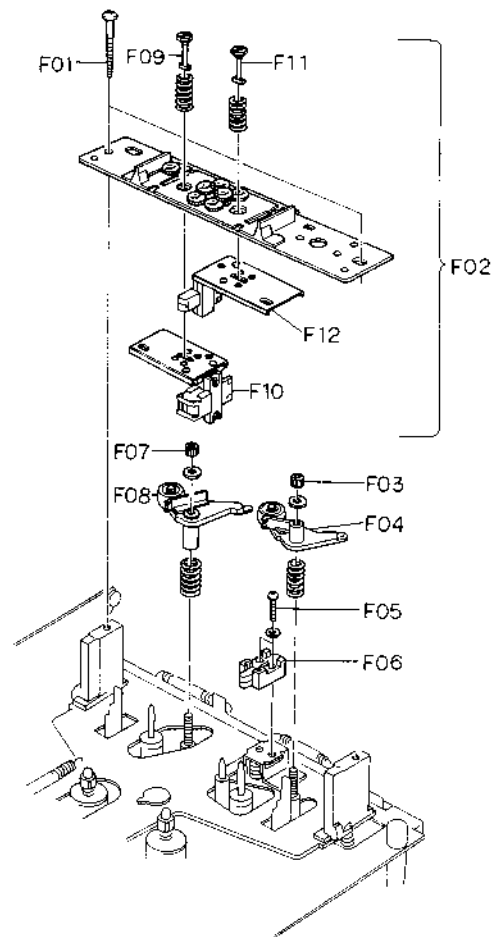


Fig. 2.9



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 – 10 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.

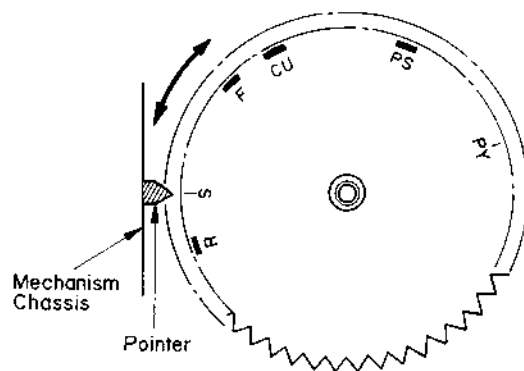


Fig. 4.1

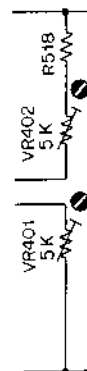


Fig. 4.2

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 2.21.

(1) Offset Adjustment of Control Motor Driver

- (a) Refer to Figs. 4.1 and 4.2.
Adjust VR402 and VR401 on the Logic P.C.B. Ass'y to locate approximately at the middle of the variable range. Then turn ON the Power switch.
VR402 (for Cam position stop)
VR401 (for Cam position play)
- (b) Press the Stop button to set the N-582Z in Stop mode.
Adjust VR402 (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 N-582Z in Playback mode.
(Cam will rotate, and the position marked with "PY" comes to the pointer.)
Adjust VR401 (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 N-582Z in F.F., Pause, Record, or Cue mode by pressing each button (press F.F. and Pause buttons to set the N-582Z in Cue mode) and check to insure that the pointer is in a range of "F", "PS", "R", 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.

(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 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 VR601 (10 kΩ) in Stop, Fast (F.F. or Rewind), Pause, Record and Playback modes.

Note: When Record and Play buttons are pressed to set N-582Z in Record mode, the Cam is first set to the record position in a short period of time then stays at the play position.

Therefore, to keep the Cam at the record position, following procedure is required:
Short the both leads of capacitor C426 (4.7 μF

25 V) on the Logic P.C.B. Ass'y with a jumper wire, then press the Record and Play buttons.

(b) Reference Voltage

Reference voltage at the sliding contact of VR601 (Cam Control Volume) in each mode is as follows:

Mode	Reference Voltage (Typical Value)
Record	4.1 V
Stop	3.0 V
Fast (F.F./Rew.)	1.3 V
Pause	-2.8 V
Play	-5.4 V

1.1 V ± 0.4 V
 -0.2 V
 1.7 V ± 0.25 V
 2.6 V ± 0.4 V

(c) Resistors for Adjustment

Mode	Ref. No.	Typical Value
Stop	R501	9.1 kΩ (F)
Fast (F.F./Rew.)	R507	4.32 kΩ (F)
Pause	R514	287 kΩ (F)
Play	R511	174 kΩ (F)
Record	R499	27 kΩ

(d) Adjustment Procedures

- 1) Press the Stop button to set the N-582Z in Stop mode.
Adjust the value of R501 to obtain 3.0 V (± 0.6 V) at the sliding contact of VR601.
Note: When R501 is adjusted, the reference voltage in Fast (F.F. or Rew.) mode is changed. Therefore, re-check of the reference voltage in Fast (F.F. or Rew.) mode is required.
If the reference voltage is out of the range, re-adjustment of R507 according to next step 2) is necessary.
- 2) Set the N-582Z in F.F. mode, then adjust the value of R507 so that the voltage of VR601 will become lower by 1.7 V (± 0.25 V) than in Stop mode.
- 3) Press the Pause button to set the N-582Z in Pause mode.
Adjust the value of R514 to obtain -2.8 V (± 0.4 , -0.15 V) at the sliding contact of VR601.
- 4) Set the N-582Z in Playback mode, then adjust the value of R511 so that the voltage of VR601 will become lower by 2.6 V (± 0.4 V) than in Pause mode.
- 5) Short the both leads of capacitor C426 with a jumper wire.
Set the N-582Z in Record mode, then adjust the value of R499 so that the voltage of VR601 will become higher by 1.1 V (± 0.4 , -0.2 V) than in Stop mode.

Note: Remove the short of C426 after completion of adjustment.

(3) Cam Timing Adjustment

- (a) Remove the wires from the Control Motor terminals to set the motor open.
- (b) Without loading a cassette tape and with pressing the Record Protecting switch with your finger tip, press the Record and Play buttons to set the N-582Z in Record mode.
- (c) Turn the Cam and bring the "PY" mark toward the pointer by hand.
Reel Motor will rotate before the "PY" mark reaches the pointer.
Adjust the value of R488 so that the voltage at sliding contact of VR601 becomes -3.6 V ($\pm 0.3\text{ V}$) when Reel Motor starts rotation.
- (d) Observe the mute signal at the Q424 collector. Turn the Cam referring to above step (c) and check to insure that the voltage at the sliding contact of VR601 is -3.8 V ($\pm 0.3\text{ V}$) when mute is released (mute signal changes from H to L).
(This voltage is determined by the adjustment of R488 in above step (c).)
- (e) Observe the Rec. signal at the Q421 collector. Turn the Cam referring to above step (c) and adjust the value of R480 to obtain -2.1 V ($\pm 0.4\text{ V}$) at the sliding contact of VR601 when Rec. signal change from H to L (bias oscillation will begin).
- (f) Upon completion of above adjustment, re-connect wires to the motor terminals.

4.2. Tape Speed Adjustment

- (1) Remove the Top Cover.
- (2) Connect a Frequency Counter to the Output Jack.
- (3) Load a 3 kHz Speed Wow/Flutter Tape (DA09006A) and play it back.
- (4) Referring to Fig. 4.3, 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.

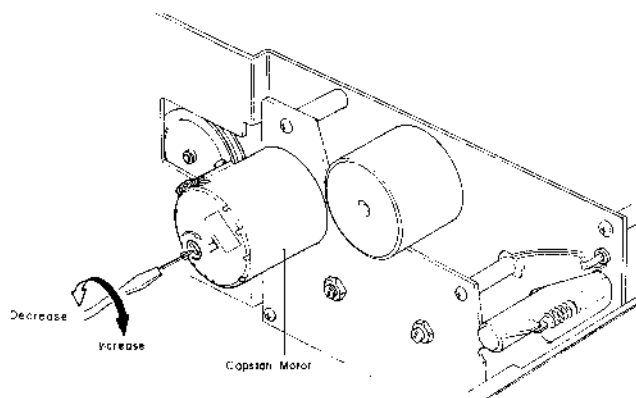


Fig. 4.3

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.

- (1) Load a Tilt Check Gauge M-9039 (DA09039A) in the N-582Z.
- (2) Clip the grounding terminal of the Tilt Check Gauge with one end of the cord with clip, and the chassis of the N-582Z with the other end.
- (3) Remove both of the Height Gears.
- (4) Set the N-582Z 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.
- (5) Check to insure freedom from contact between the Gauge and pad lifter.
- (6) 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 knobs to the direction of arrow marks and then return them to the original place.
- (7) Same procedures will apply to the Beacons Record Head "Upper" and "Lower", except for the height adjustment screw (R).
- (8) Set the N-582Z in Stop mode and fit both of the serrated height gears. Then set the N-582Z 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.

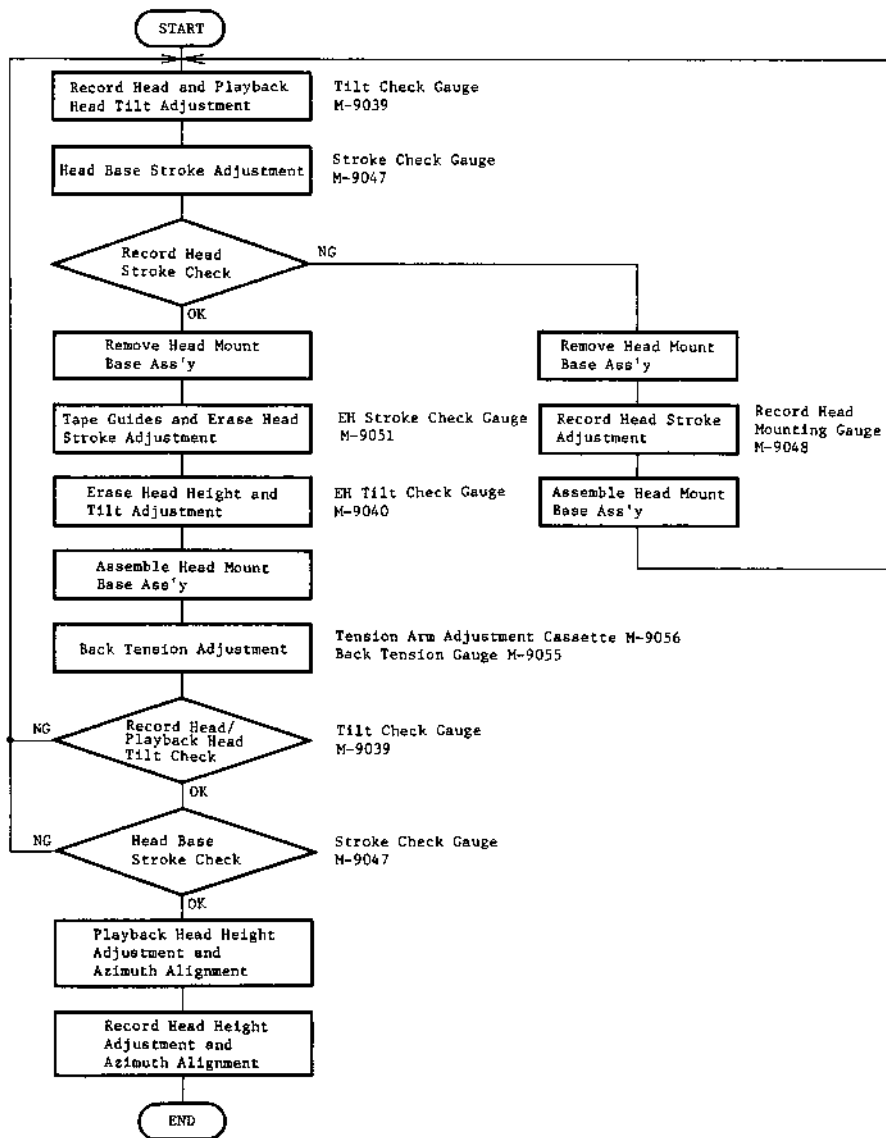


Fig. 4.4

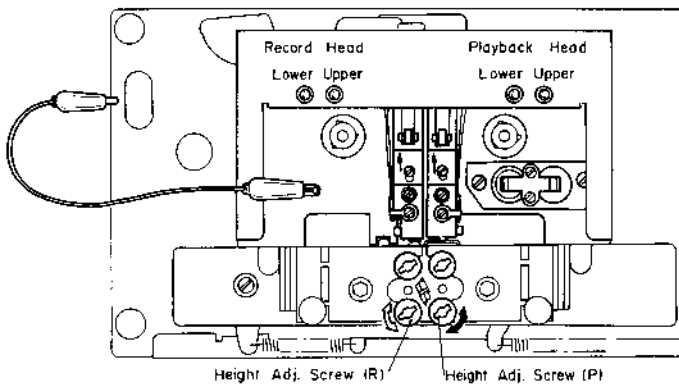


Fig. 4.5

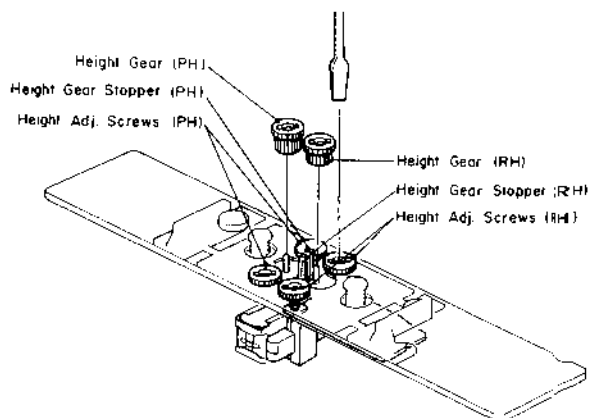


Fig. 4.6

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 N-582Z.
- Move Record Head Indicator and Playback Head Indicator to the direction of arrow mark "A" with your finger tip and then set the N-582Z 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 N-582Z.
- Move Record Head Indicator and Playback Head Indicator to the direction of arrow mark "A" with your finger tip and then set the N-582Z 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 VR403 on the Logic 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.

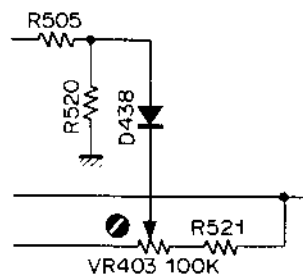


Fig. 4.8

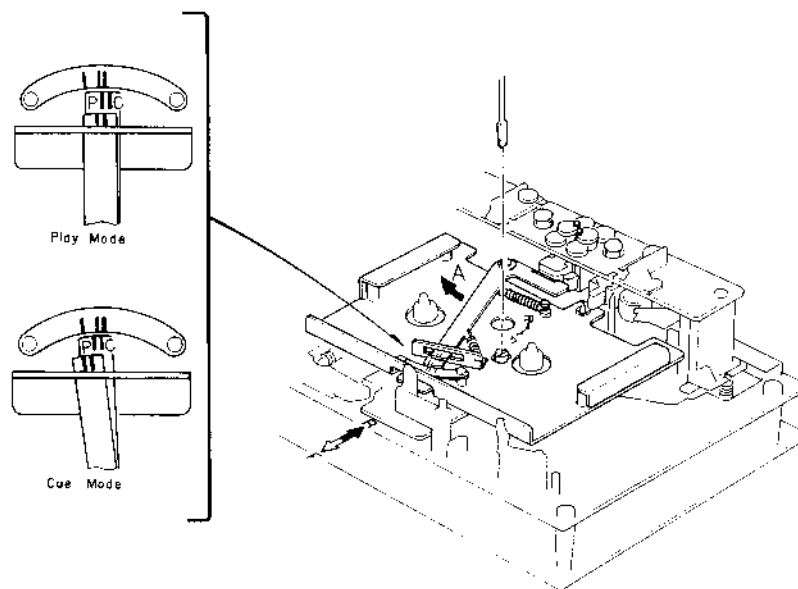


Fig. 4.7

4.5. Tape Guides Adjustment and Erase Head Stroke Adjustment

Remove Head Mount Base Ass'y referring to item 2.31. Refer to Figs. 4.9 and 4.10.

(1) Supply Tape Guide Height Adjustment

- (a) Load an EH Stroke Check Gauge M-9051 (DA-09051A) in the N-582Z.
- (b) Set the N-582Z in Play mode.
- (c) Slide the Supply Tape Guide Check Bar down against the supply tape guide, thus check can be made on supply tape guide height.
- (d) If the supply tape guide is misaligned, the Supply Tape Guide Check Bar will not come into the supply tape guide. If such is noted, turn to adjust the height adjustment nut A till the Supply Tape Guide Check Bar is accepted by the supply tape guide.
- (e) If the above are insured, set the N-582Z in Pause mode, then in Play mode to see whether adjustments are appropriately made. If not, (b) through (e) will have to be repeated till satisfactory results are obtained.

(2) Take-up Tape Guide Height Adjustment

- (a) Load an EH Stroke Check Gauge M-9051 (DA-09051A) in the N-582Z.
- (b) Set the N-582Z in Play mode.
- (c) Slide the Take-up Tape Guide Check Bar down against the take-up tape guide, thus check can be made on take-up tape guide height.
- (d) If the take-up tape guide is misaligned, the Take-up Tape Guide Check Bar will not come into the take-up tape guide. If such is noted, turn to adjust the height adjustment nut C till the Take-up Tape guide Check Bar is accepted by the take-up tape guide.
- (e) If the above are insured, set the N-582Z in Pause mode, then in Play mode to see whether adjustments are appropriately made. If not, (b) through (e) will have to be repeated till satisfactory results are obtained.

(3) Erase Head Stroke Adjustment

- (a) Load an EH Stroke Check Gauge M-9051 (DA-09051A) in the N-582Z.
- (b) Set the N-582Z in Play mode, thus check can be made on erase head stroke through the EH Stroke Indicator.
- (c) 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 B that assemble erase head and erase head plate.
- (d) After completion of adjustment, 2 pcs. of screws shall be locked with lock tight paint.

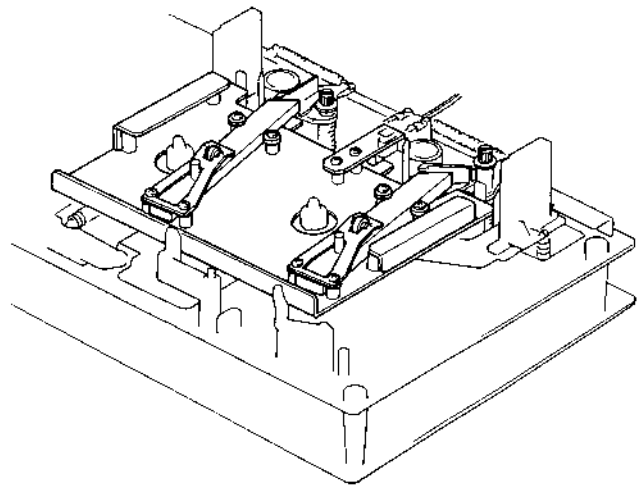


Fig. 4.9

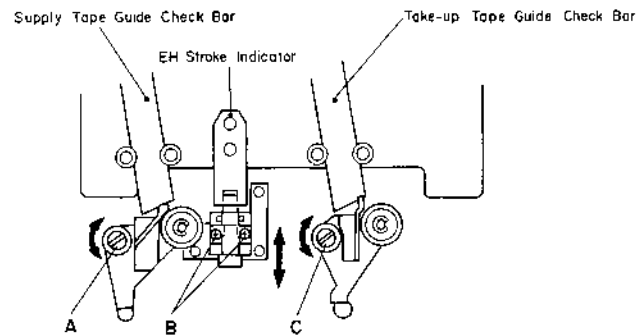


Fig. 4.10

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 2.31.
- (2) Load an EH Tilt Check Gauge M-9040 (DA09040A) in the N-582Z.
- (3) Set the N-582Z 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.

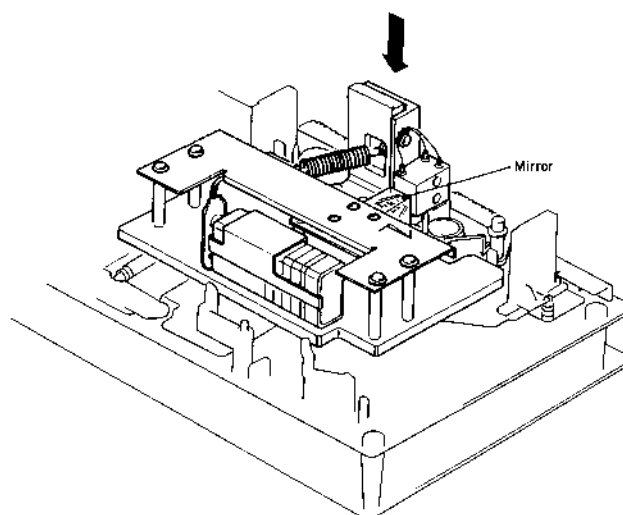


Fig. 4.11

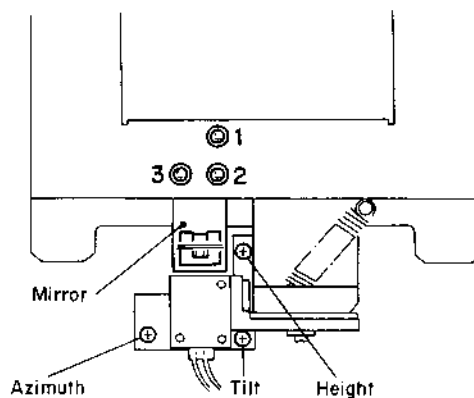


Fig. 4.12

4.7. Back Tension Adjustment

Refer to Figs. 4.13 – 4.16.

- (1) Load a Tension Arm Adjustment Cassette (DA-09056A) in the N-582Z referring to Fig. 4.13.
- (2) Set the N-582Z 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 N-582Z in Stop mode, and remove the Tension Arm Adjustment Cassette (DA09056A), then set the N-582Z 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 N-582Z.

- (6) Set the N-582Z 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.

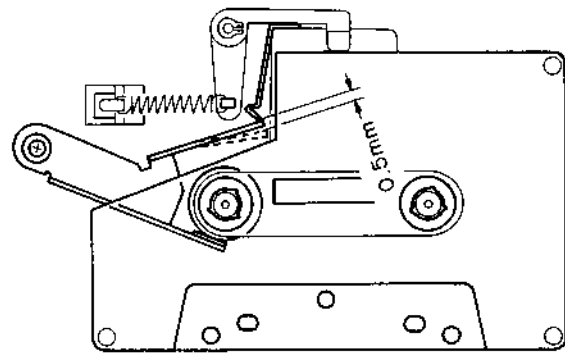


Fig. 4.14

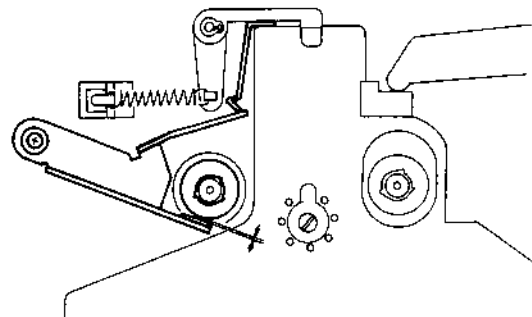


Fig. 4.15

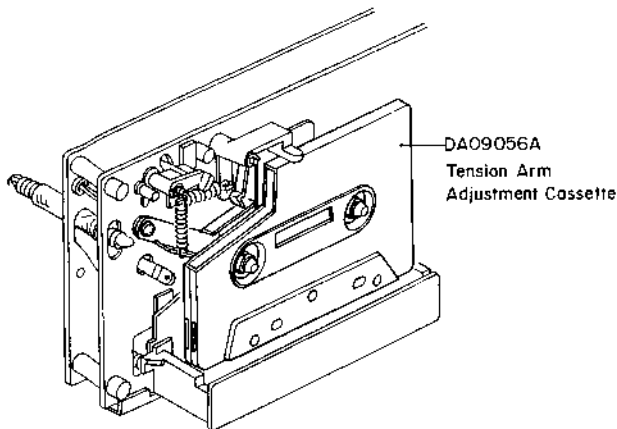


Fig. 4.13

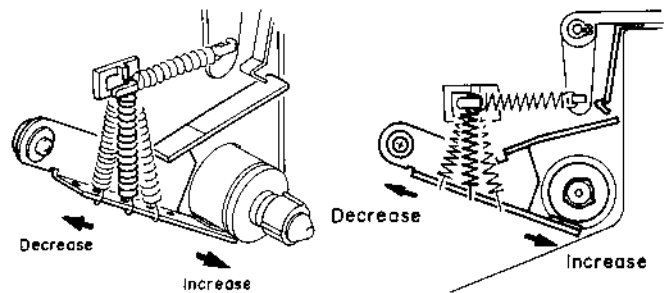


Fig. 4.16

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

Refer to Fig. 4.17.

(1) Playback Head Height Adjustment and Azimuth Alignment

- (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 N-582Z 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 N-582Z in Play mode.
- (e) Turn the PH Azimuth Alignment Screw until the outputs of both channels become maximum.
- (f) Repeat (b) through (e) one or two times to obtain optimum performance.

(2) Record Head Height Adjustment and Azimuth Alignment

- (a) Set the Monitor switch to Tape, then connect a VTVM to the Output Jacks.
- (b) Load a Reference SX Tape (DA09025A). Set the Eq. and Tape switches to 70 μ s and SX, then set the N-582Z in Record and Play mode.
- (c) Set the Tone switch to 400 Hz, then turn the RH Height Gear until the outputs of both channels become maximum.
- (d) Set the Tone switch to 15 kHz, then turn the RH Azimuth Alignment Screw until the outputs of both channels become maximum.

- (e) Repeat (c) and (d) one or two times.
- (f) After completion of the above adjustment, record 400 Hz tone to the same portion of sides A and B of the tape.
- (g) 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. 4.18.

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.

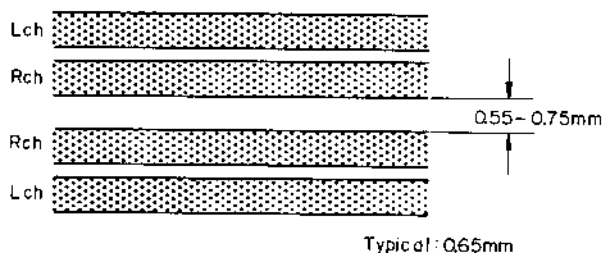


Fig. 4.18

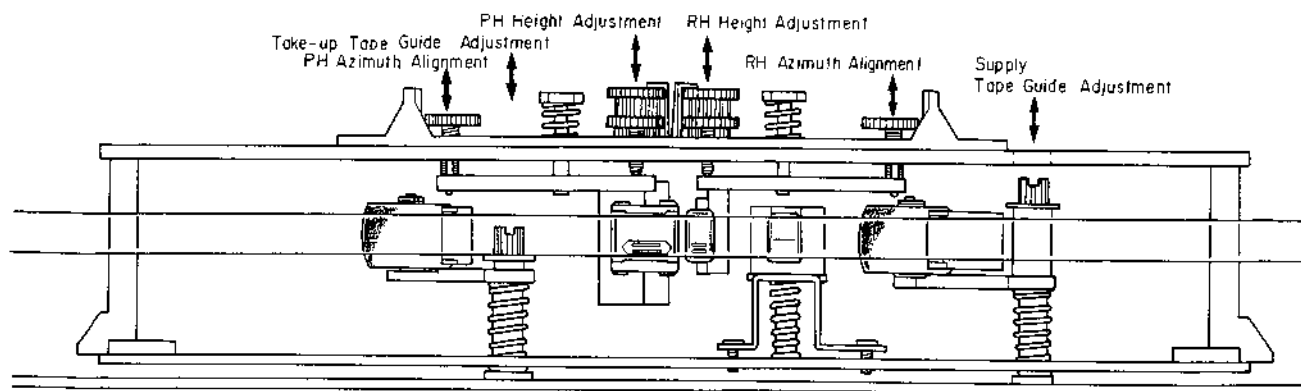


Fig. 4.17

4.9. Record Head Stroke Adjustment

Refer to Figs. 4.19 and 4.20.

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 2.31.
- (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. 4.19, hold the Gauges (3.05 mm and 0.1 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. 4.20, 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.

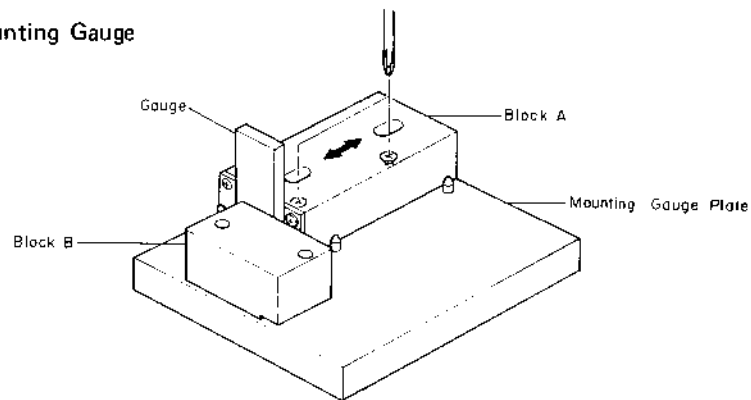
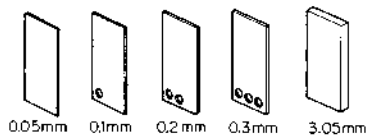


Fig. 4.19

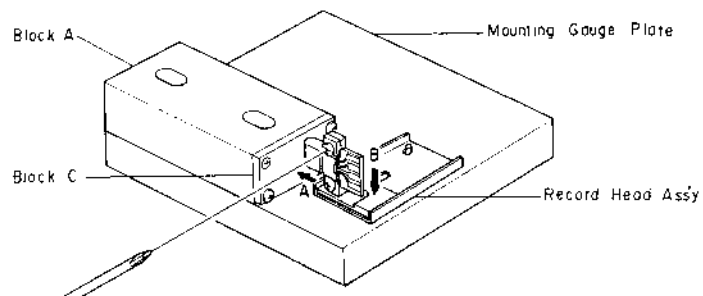


Fig. 4.20

- (b) Loosen the 2 screws fixing the Block A.
- (c) As shown in Fig. 4.19, 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. 4.20, 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.

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. 4.21 (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 N-582Z.
- (2) Release the back-tension (rotate the Supply Reel and feed out some length of tape) and set the N-582Z 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. Tape Guides Adjustment and Erase Head Stroke Adjustment", "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 N-582Z 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.

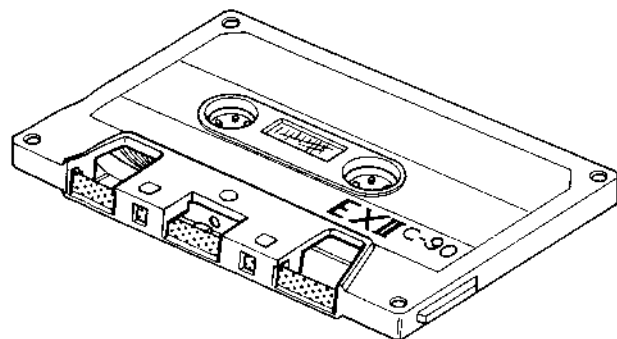


Fig. 4.21

4.11. Flywheel Holder Adjustment

- (1) Refer to Fig. 4.22.

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.

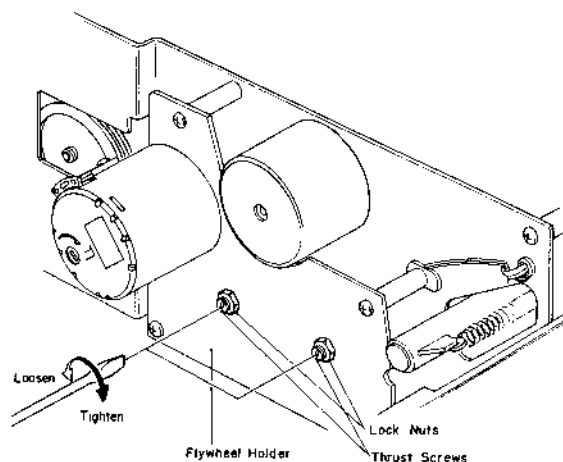


Fig. 4.22

4.12. Eject Wire Adjustment

- (1) Referring to Fig. 4.23, insert a 1.5 mm spacer between the Eject Arm and Eject Stopper by turning the Eject Arm in the illustrated direction, then set the N-582Z in Playback mode.
- (2) With pushing the Eject Arm by hand, loosen the screw and then pull the Eject Wire in the direction of the arrow until it stops as shown in Fig. 4.24.
- (3) Tighten the screw, then apply a quantity of lock tight paint.

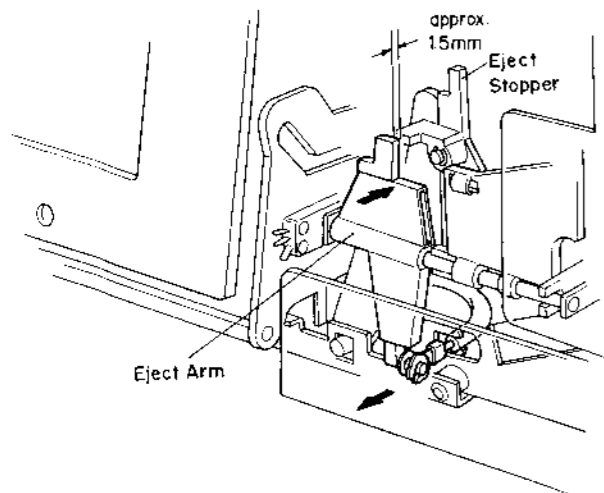


Fig. 4.23

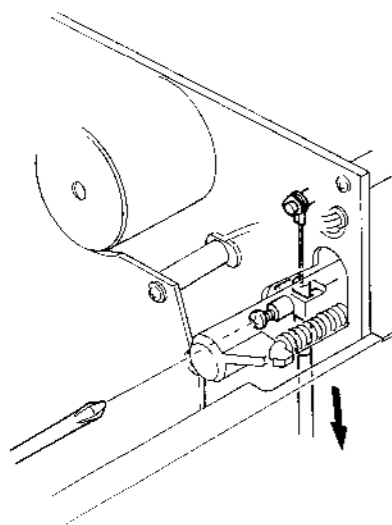


Fig. 4.24

4.13. Control Button Stroke Adjustment

Normal state of push button stroke for Logic Control on the Front Panel is as follows:

- (1) When Front Panel is in place, push the Control Button with a finger tip and see it has an allowance of 0.6 mm. If it does, then push it a little further for another 0.4 mm and see if the switch is ON. This allowance can be adjusted by loosening the screws that assembled Control Button Holder and Front Chassis together. After the adjustment, lock the screws with lock tight paint.
- (2) When performing adjustment, put the Front Panel aside, but for checking, do it with the Panel on.

4.14. Lubrication

N-582Z 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 #3000CST
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

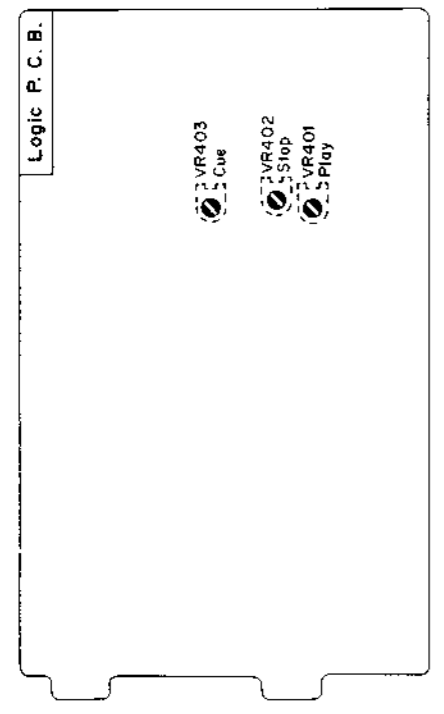
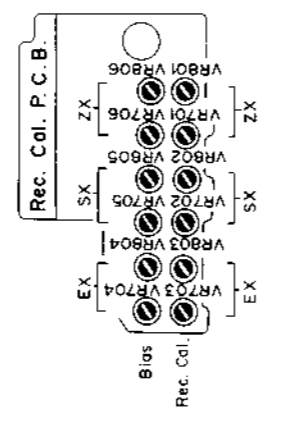
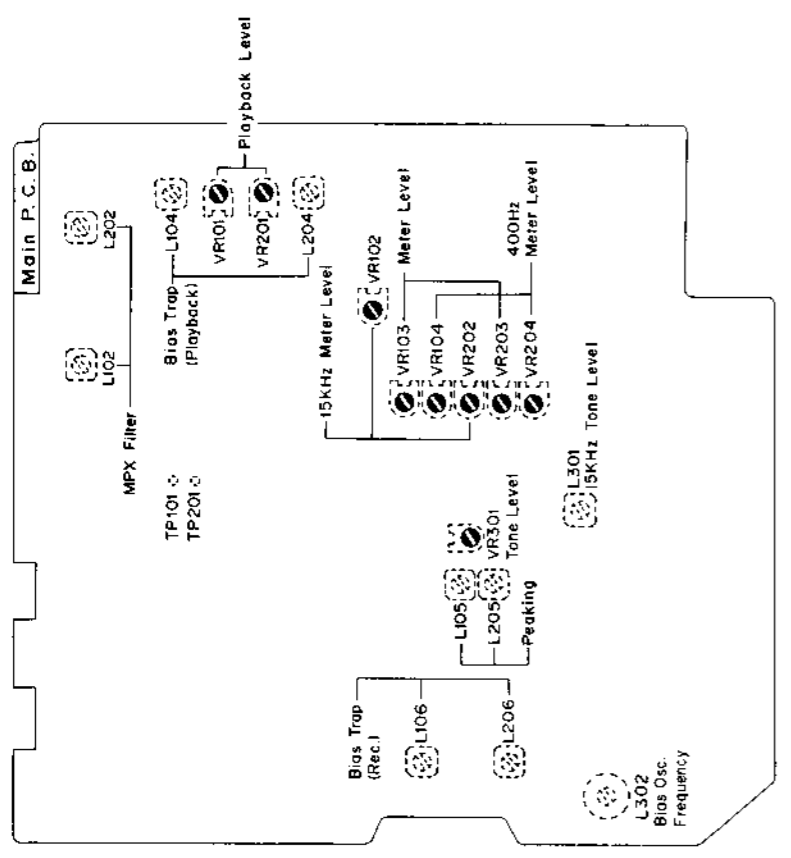


Fig. 5.1 Serial No.: A12102102 -

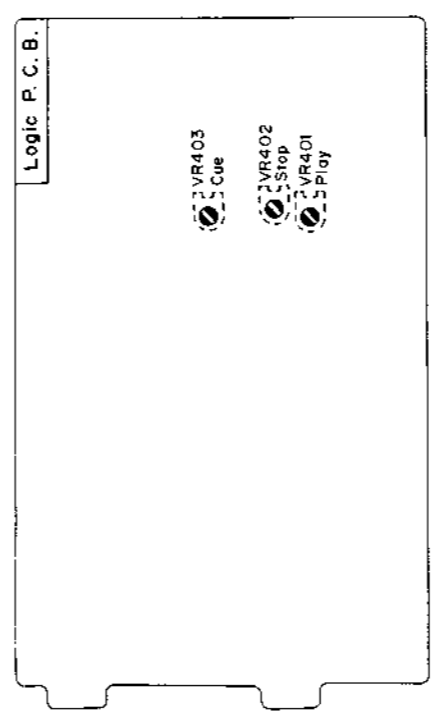
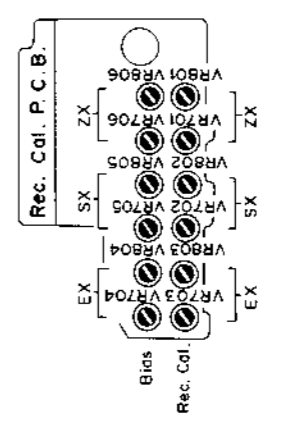
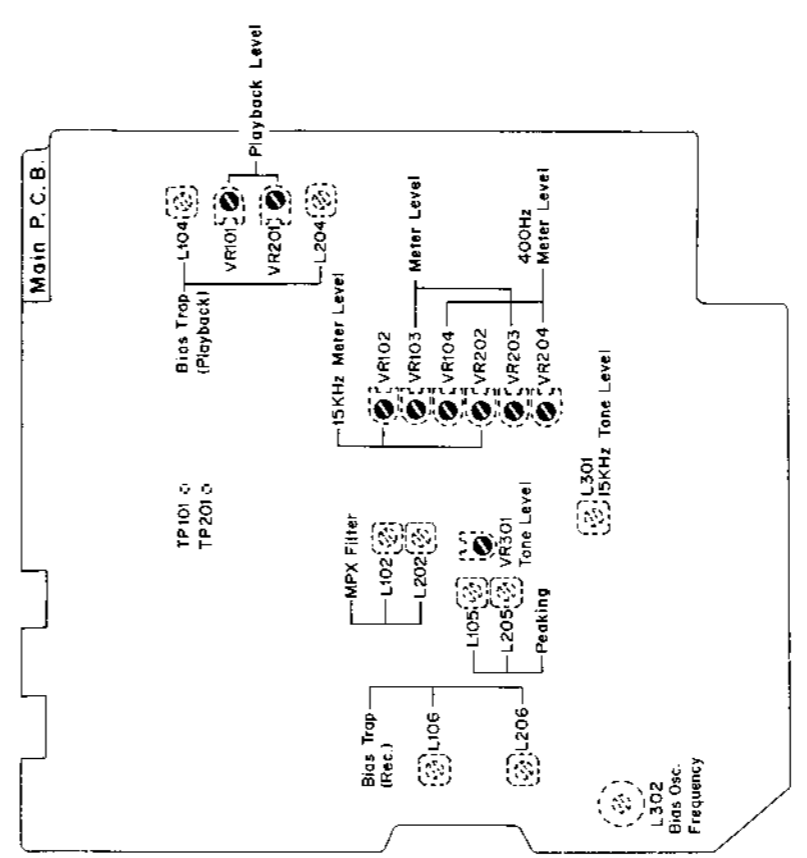


Fig. 5.2 Serial Nos.: A12101001 - A12102101

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 Calibration	Test Tone 400 Hz and 15 kHz	VTVM to TP101, TP201 on the Main P.C.B.	Monitor SW – Source Test Tone SW – 400/15 k	Main P.C.B. VR301 (400 Hz) L301 (15 kHz)	<ol style="list-style-type: none"> Set the Test Tone switch to 400 Hz. Turn the Output level control fully clockwise (maximum position). Adjust VR301 to obtain 90 mV ± 0.2 dB on the VTVM (output will be 1 V (0 dB)). Set the Test Tone switch to 15 kHz. Adjust L301 to obtain 9 mV ± 0.5 dB on the VTVM (output will be -20 dB against the level at 400 Hz).
3	Meter Level Calibration	400 Hz to Input Jacks and Test Tone 400 Hz and 15 kHz	VTVM to TP101, TP201 on the Main P.C.B.	Monitor SW – Source Test Tone SW – OFF/400/15 k	Main P.C.B. VR103, VR203 VR102, VR202 VR104, VR204 VR301 L301	<ol style="list-style-type: none"> Feed in 400 Hz, then adjust the Input Level control and Balance control to obtain 90 mV -1.5 dB on the VTVM. Adjust VR103 (VR203) so that the 0 dB segment of the level meter starts illuminating. Decrease input level by 20 dB, then check to insure that the level meters indicate -20 dB. Set the Test Tone switch to 400 Hz, then adjust VR301 to obtain 90 mV -0.4 dB on the VTVM. Adjust VR102 (VR202) so that the 0 dB segment of the level meter starts illuminating. Set the Test Tone switch to 15 kHz, then adjust L301 to obtain 9 mV -0.4 dB on the VTVM. Adjust VR104 (VR204) so that the 0 dB segment of the level meter starts illuminating. Re-adjust the test tone according to step 2 "Test Tone Calibration".
4	MPX Filter Adjustment	19 kHz ± 100 Hz to Input Jacks	VTVM to Output Jacks	Monitor SW – Source Test Tone SW – OFF MPX Filter SW – IN	Main P.C.B. L102, L202	<ol style="list-style-type: none"> Turn the Output level control fully clockwise (maximum position). Adjust the Input Level control to obtain 1 V on the VTVM. 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 Test Tone SW – OFF Eq. SW – 70 μ s Dolby NR SW – OFF	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.

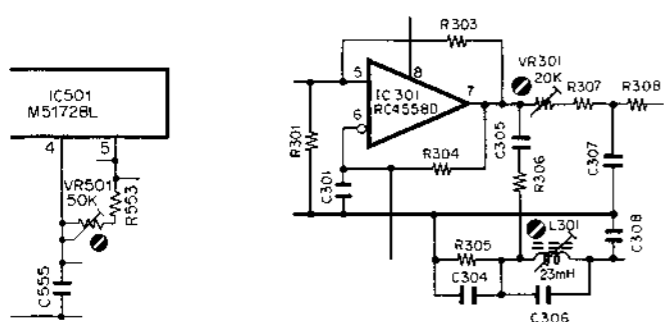


Fig. 6.1
1. Tape Speed

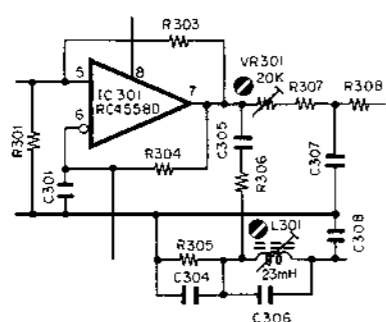


Fig. 6.2
2. Tone Calibration
3. Meter Level

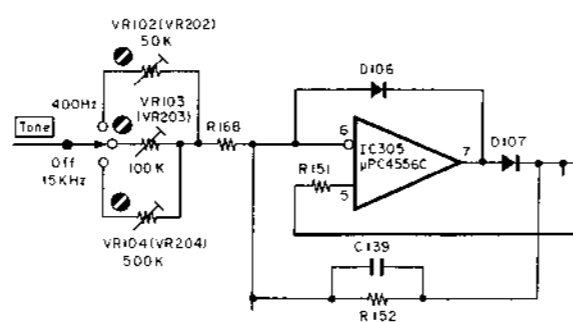


Fig. 6.3.1
3. Meter Level

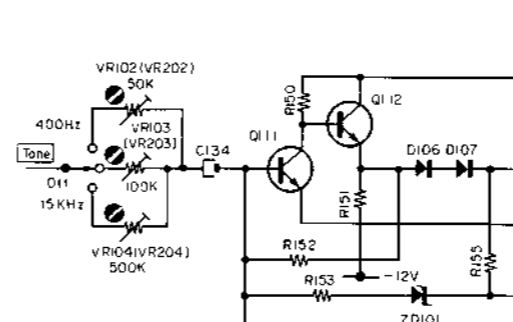


Fig. 6.3.2
3. Meter Level

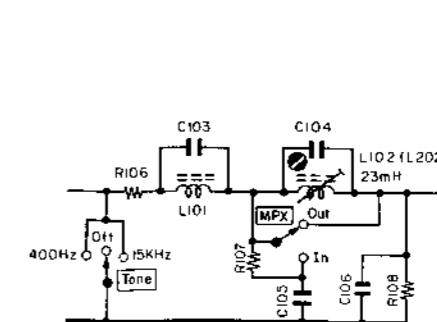


Fig. 6.4
4. MPX Filter

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 Test Tone SW — OFF Eq. SW — 70 μs Dolby NR SW — OFF	Playback Head Azimuth Alignment Screw	Adjust the Playback Head Azimuth Alignment Screw to obtain the 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 Adjustment	400 Hz Level Tape (DA09005A)	VTVM to TP101, TP201 on the Main P.C.B.	Same as above	Main P.C.B. VR101, VR201	Adjust VR101 (VR201) 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 μs Dolby NR SW — OFF	Main P.C.B. R127, R227 R128, R228	<ol style="list-style-type: none"> Load a 400 Hz level tape and play it back. Adjust the Output level control to a certain level (for example 0 dB). 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 R127 (R227) or R128 (R228) 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 Conduct step 6 "Playback Head Azimuth Alignment". If above is not sufficient, refer to "Playback Frequency Response Adjustment" in item 6.2.
9	Bias Oscillation Frequency and Erase Current Adjustment		VTVM and Frequency Counter across the additional 0.1 Ω resistor and Frequency Counter to CN7-1	Record, Pause Monitor SW — Source Tape SW — ZX Eq. SW — 70 μs Dolby NR SW — OFF MPX SW — OUT	Main P.C.B. L302 R319, R320	<ol style="list-style-type: none"> Connect an additional 0.1 Ω resistor in series to the Erase Head, then connect a VTVM across it. Adjust L302 to obtain 105 kHz on the frequency counter. 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 R319 or R320. After completion of the erase current adjustment, re-check the bias oscillation frequency. Remove the additional 0.1 Ω resistor.
10	Record Amplifier Equalizer Adjustment	23 kHz (-20 dB) to Input Jacks	VTVM to CN6-3, CN6-1 on the Main P.C.B.	Same as above	Main P.C.B. L105, L205	<ol style="list-style-type: none"> Remove the bias-cut jumper from the dip side of the Main P.C.B. Ass'y. Adjust L105 (L205) to obtain peak reading at 23 kHz on the VTVM. Re-solder the bias-cut jumper.
11	Bias Trap Adjustment (Record Amp.)	Remove input signals	VTVM to IC303-1, -7 on the Main P.C.B.	Same as above	Main P.C.B. L106, L206	Adjust L106 (L206) to obtain the minimum reading on the VTVM.

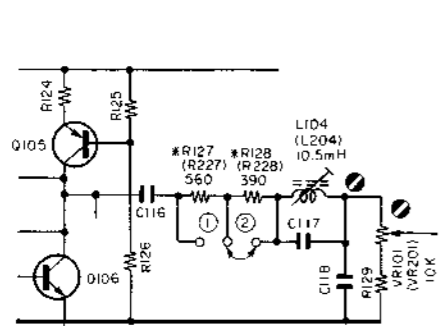


Fig. 6.5

- 7. Playback Level
- 8. Playback Frequency Response
- 12. Bias Trap (Playbck Amp.)

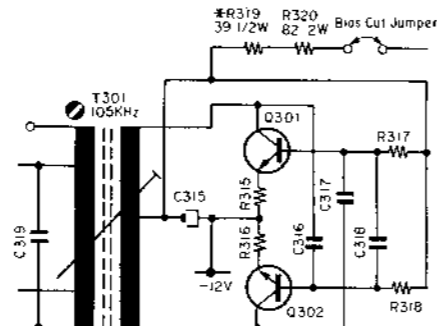


Fig. 6.6

- 9. Bias Oscillation Frequency and Erase Current

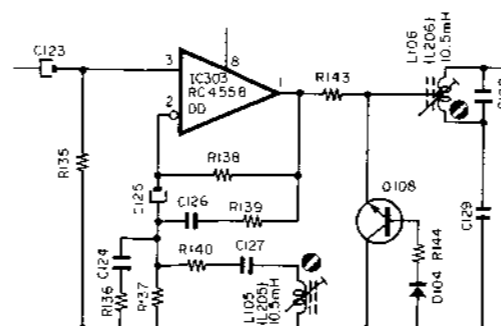


Fig. 6.7

- 10. Record Amplifier Equalizer
- 11. Bias Trap (Record Amp.)
- 15. Overall Frequency Response

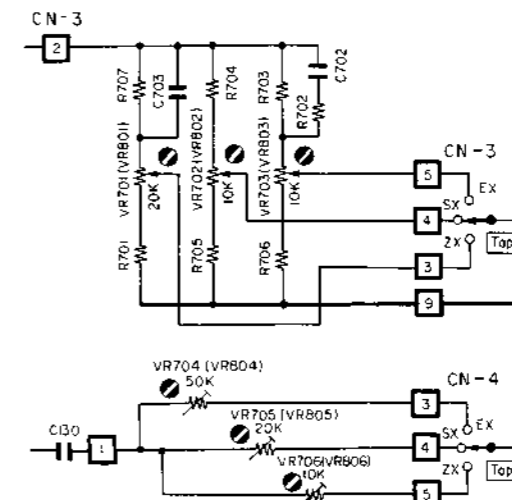


Fig. 6.8

- 13. Record Head Height and Azimuth Alignment
- 14. Record Level Calibration and Recording Bias Current

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
12	Bias Trap Adjustment (Playback Amp.)	Remove input signals	VTVM to L41, R43 on the 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. L104, L204	Adjust L104 (L204) to obtain the minimum reading on the VTVM.
13	Record Head Height Adjustment and Azimuth Alignment	Test Tone 400 Hz and 15 kHz	VTVM to Output Jacks	Record, Playback Monitor SW - Tape Tape SW - SX Eq. SW - 70 μ s Test Tone SW - 400/15 k Dolby NR SW - OFF	RH Height Gear Record Head Azimuth Alignment Screw Rec. Cal. P.C.B. (Level) VR702, VR802 (Bias) VR705, VR805	<ol style="list-style-type: none"> Record Head Height Adjustment: <ol style="list-style-type: none"> Set the Test Tone switch to 400 Hz. Record signals on a reference SX tape (DA09025A), and then play it back. Adjust Rec. Cal. VR702 (VR802) and Bias Cal. VR705 (VR805) to the center position. Adjust the RH Height Gear to obtain maximum reading of both channels on the VTVM. Record Head Azimuth Alignment: <ol style="list-style-type: none"> Set the Test Tone switch to 15 kHz. Record signals on the reference SX tape (DA09025A), and then play it back. Adjust the Record Head Azimuth Alignment Screw to obtain maximum readings of both channels on the VTVM. Repeat 1 and 2 one or two times to obtain optimum performance.
14	Record Level Calibration and Recording Bias Current Adjustment	Test Tone 400 Hz and 15 kHz and 10 kHz and 20 kHz (-20 dB) to Input Jacks	VTVM and Distortion Meter to Output Jacks	Record, Playback Monitor SW - Tape Tape SW - ZX/SX/EX Eq. SW - 70 μ s (ZX/SX) 120 μ s (EX) Test Tone SW - 400/15 k Dolby NR SW - C-Type/OFF/ B-Type MPX SW - OUT	Rec. Cal. P.C.B. (Level) ZX: VR701, VR801 SX: VR702, VR802 EX: VR703, VR803 (Bias) ZX: VR706, VR806 SX: VR705, VR805 EX: VR704, VR804	<p>Adjustment should be made in the order of ZX, SX and EX.</p> <ol style="list-style-type: none"> Load a reference ZX tape (DA09037A), reference SX tape (DA09025A) and reference EXII tape (DA09066A). Set the Dolby NR switch to C-Type. Adjust Rec. Cal. VR701 (VR801) for ZX, VR702 (VR802) for SX and VR703 (VR803) for EXII to the center position. Adjust Bias Cal. VR706 (VR806) for ZX, VR705 (VR805) for SX and VR704 (VR804) for EXII to the center position. Set the Test Tone switch to 15 kHz, then record and play it back. Adjust Bias VR706 (VR806), VR705 (VR805) and VR704 (VR804) to obtain 0 dB on the level meters. Set the Test Tone switch to 400 Hz. Adjust Rec. Cal. VR701 (VR801), VR702 (VR802) and VR703 (VR803) to obtain 0 dB on the level meters. Repeat 4 and 5 as above two or three times to obtain optimum performance. Set the Dolby NR switch to OFF. Feed in 10 kHz (-20 dB) and 20 kHz (-20 dB), then record and play them back. Check to insure that the levels are within -20 dB \pm 3 dB against the levels in Dolby NR C-Type. Set the Dolby NR switch to B-Type. Feed in 10 kHz (-20 dB) and 20 kHz (-20 dB), then record and play them back. Check to insure that the levels are within -20 dB \pm 2 dB against the levels in Dolby NR OFF. Check to insure whether the total harmonic distortion is less than 0.8% for ZX tape and 1.0% for SX and EXII tapes.
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) Test Tone SW - OFF Dolby NR SW - OFF MPX SW - OUT	Main P.C.B. L105, L205	<ol style="list-style-type: none"> Set the Monitor switch to Source. Feed in 400 Hz (0 dB) and adjust the Input Level control 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 if the output levels are within -20 dB \pm 3 dB. If above is not sufficient, adjust L105 (L205) to obtain approx. -20 dB on the VTVM. 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 s Dolby NR SW - OFF		<ol style="list-style-type: none"> Erase a reference ZX tape with bulk eraser. Adjust the Input Level control to obtain 0 dB on the VTVM, and record the signals on the reference tape. Turn the cassette tape the other way round and play it back. Measure the difference between 2 and 3.

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
17	Channel Separation 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 s Dolby NR SW – OFF		1. Erase a reference ZX tape with bulk eraser. 2. Adjust the Input Level control to obtain 0 dB on the VTVM, and turn the Balance control fully clockwise (counterclockwise). 3. Record and Play it back, then measure the R ch (L ch) level.
18	Erasure 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 s Dolby NR SW – OFF		1. Erase a reference ZX tape with bulk eraser. 2. Adjust the Input Level control to obtain 0 dB on the VTVM, and record the signals on the reference tape. 3. Rewind the tape then close the Input Level control. 4. Record and play it back, then measure the difference between 2 and 3.
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 following measurement for both Dolby NR B-Type and C-Type. 1. Feed in 400 Hz and record, and play it back. 2. Adjust the Input Level control to obtain 3% total harmonic distortion in Playback mode. 3. Close the Input Level control, then record. 4. After rewind, play back and check the output level difference between 2 and 3. 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		1. Adjust the Input Level control to obtain 0 dB on the VTVM. 2. Record and play it back. 3. 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.

6.2. Frequency Response Adjustment

6.2.1. Playback Frequency Response Adjustment

Fig. 6.9 is the circuit for adjustment and Fig. 6.10 shows the playback equalization curve.

(1) 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 can be varied by the modification of R120 (R220) and R121 (R221).

Following are the details for the level modifications:

- Approx. +1 dB R121 (R221): 3.0 k
- R120 (R220): 4.3 k
- 0 dB R121 (R221): 3.3 k
- R120 (R220): 4.7 k
- Approx. -1 dB R121 (R221): 3.6 k
- R120 (R220): 5.1 k

(2) 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 R127 (R227) or R128 (R228) as illustrated in Fig. 6.10.

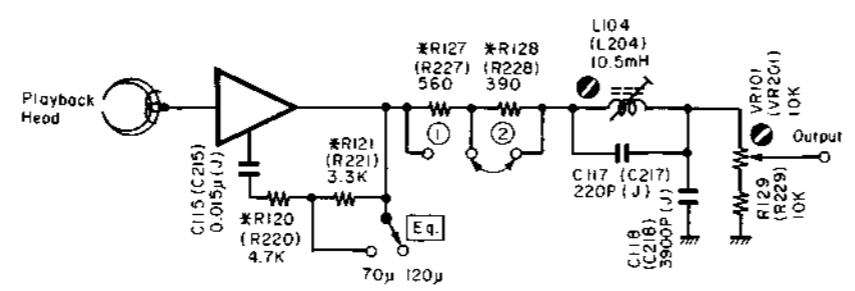


Fig. 6.9 Playback Amp.

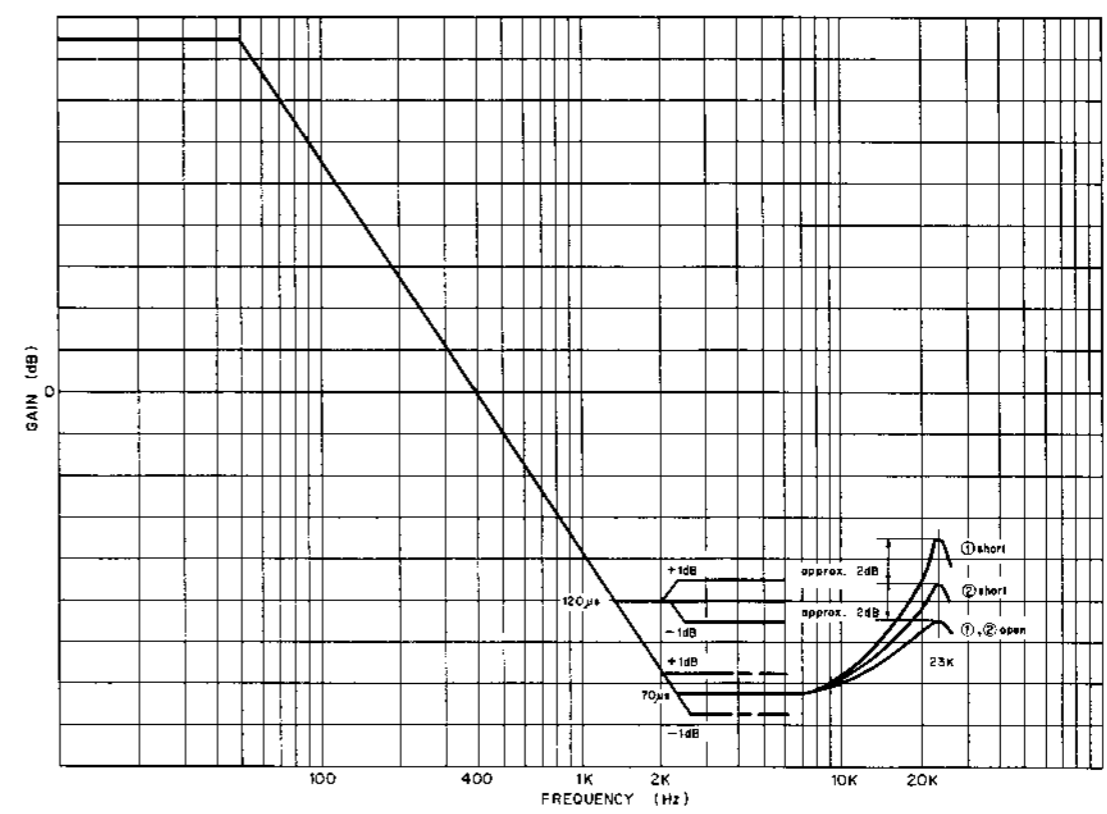


Fig. 6.10 Playback Equalization Curve

6.2.2. 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. 6.11.

(1) For ZX Tape

- (a) Feed in 400 Hz (0 dB), then record and play it back. Adjust bias current by VR706 (VR806) on the Rec. Cal. P.C.B. Ass'y to obtain a 0.8% distortion.
- (b) Feed in 10 kHz and 400 Hz (-20 dB) then record and play it back. Check the difference of the levels between 10 kHz and 400 Hz, and mount an additional capacitor in parallel with C121 (C221) from the dip side of the Main P.C.B. Ass'y depending upon the difference of the levels against 400 Hz.

Refer to Fig. 6.12.

Level Difference	Addition	Total
0 dB	0	680 pF
-1 dB	470 pF	1150 pF
-2 dB	1000 pF	1680 pF

- (c) Feed in 20 kHz (-20 dB), then record and play it back. Adjust record peaking coil L105 (L205) on the Main P.C.B. Ass'y to obtain flat overall frequency response.

(2) For SX Tape

- (a) Feed in 15 kHz and 400 Hz (-20 dB), then record and play it back. Adjust bias current by VR705 (VR805) on the Rec. Cal. P.C.B. Ass'y to obtain flat overall frequency response.
- (b) Feed in 20 kHz and 400 Hz (-20 dB), then record and play it back. Check to insure that the overall frequency response is flat.

(3) For EXII Tape

- (a) Feed in 15 kHz and 400 Hz (-20 dB), then record and play it back. Adjust bias current by VR704 (VR804) on the Rec. Cal. P.C.B. Ass'y to obtain flat overall frequency response.
- (b) Feed in 20 kHz and 400 Hz (-20 dB), then record and play it back. Check to insure that the overall frequency response is flat.

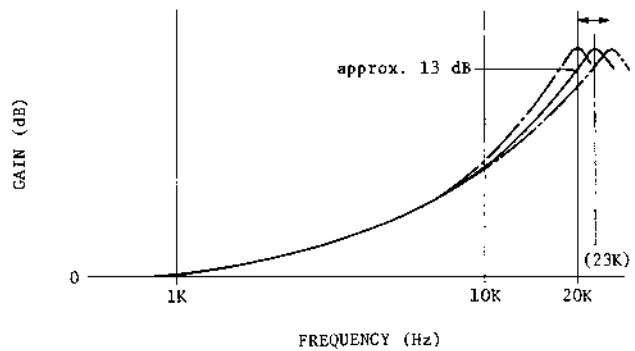


Fig. 6.11 Recording Peaking Curve

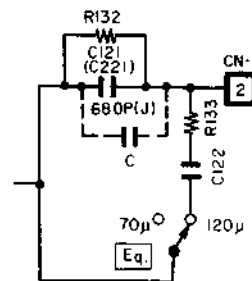


Fig. 6.12

6.3. Dolby NR Circuit Check

Dolby NR circuit incorporates Dolby NR ICs (μ A7300PC) 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. Serial No.: A12102102 –

(1) Dolby NR B-Type Circuit Check

(a) Playback Dolby NR Circuit

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

Output Connection: VTVM to test point TP101 (TP201) on Main P.C.B.

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

- 1) Connect a VTVM to TP101 (TP201) on the Main P.C.B. Ass'y.
- 2) Set the Dolby NR switch to B-Type. Feed in 1.4 kHz to pin No. M (S) and adjust the generator output control to obtain 9 mV on the VTVM.
- 3) Set the Dolby NR switch to OFF. Check to insure that the reading is +3.2 dB \pm 1.5 dB on the VTVM.

(b) Record Dolby NR Circuit

Signal Source: 1.4 kHz to Input Jacks
Output Connection: VTVM to test point TP101 (TP201) on Main P.C.B., and IC102-16 (IC202-16) on Dolby NR P.C.B.

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

- 1) Connect a VTVM to TP101 (TP201) on the Main P.C.B. Ass'y.
- 2) Feed in 1.4 kHz and adjust the Input Level control to obtain 9 mV/2.85 mV on the VTVM.
- 3) Remove the VTVM from TP101 (TP201) and reconnect it to IC102-16 (IC202-16) on the Dolby NR P.C.B. Ass'y.
- 4) Check to insure that the reading at IC102-16 (IC202-16) corresponds to the following with Dolby NR switch OFF and B-Type.

Input Level at TP101 (TP201)	Level at IC102-16 (IC202-16)	
	Dolby NR OFF	Dolby NR B-Type
9 mV	0 dB	+3.2 dB \pm 1.5 dB
2.85 mV	0 dB	+8.2 dB \pm 1.5 dB

(2) Dolby NR C-Type Circuit Check

(a) Playback Dolby NR Circuit

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

Output Connection: VTVM to test point TP101 (TP201) on Main P.C.B.

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

- 1) Connect a VTVM to TP101 (TP201) on the Main P.C.B. Ass'y.
- 2) Set the Dolby NR switch to C-Type. Feed in 1.4 kHz to pin No. M (S) and adjust the generator output control to obtain 9 mV on the VTVM.
- 3) Set the Dolby NR switch to OFF. Check to insure that the reading is +6.5 dB \pm 1.5 dB on the VTVM.

(b) Record Dolby NR Circuit

Signal Source: 1.4 kHz to Input Jacks

Output Connection: VTVM to test point TP101 (TP201) on Main P.C.B., and IC102-16 (IC202-16) on Dolby NR P.C.B.

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

- 1) Connect a VTVM to TP101 (TP201) on the Main P.C.B. Ass'y.
- 2) Feed in 1.4 kHz and adjust the Input Level control to obtain 9 mV/2.85 mV on the VTVM.
- 3) Remove the VTVM from TP101 (TP201) and reconnect it to IC102-16 (IC202-16) on the Dolby NR P.C.B. Ass'y.
- 4) Check to insure that the reading at IC102-16 (IC202-16) corresponds to the following with Dolby NR switch OFF and C-Type.

Input Level at TP101 (TP201)	Level at IC102-16 (IC202-16)	
	Dolby NR OFF	Dolby NR C-Type
9 mV	0 dB	+6.5 dB \pm 1.5 dB
2.85 mV	0 dB	+11.4 dB \pm 1.5 dB

6.3.2. Serial Nos.: A 12101001 – A 12102101

(1) Dolby NR B-Type Circuit Check

(a) Playback Dolby NR Circuit

Signal Source: 1.4 kHz to negative side of C164 (C264) on Playback Dolby NR P.C.B. (positive side is connected to IC152-9 (IC-252-9)).

Output Connection: VTVM to test point TP101 (TP201) on Main P.C.B.

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

- 1) Connect a VTVM to TP101 (TP201) on the Main P.C.B. Ass'y.
- 2) Set the Dolby NR switch to B-Type. Feed in 1.4 kHz and adjust the generator output control to obtain 9 mV on the VTVM.
- 3) Set the Dolby NR switch to OFF. Check to insure that the reading is +3.2 dB ±1.5 dB on the VTVM.

(b) Record Dolby NR Circuit

Signal Source: 1.4 kHz to Input Jacks
Output Connection: VTVM to test point TP101 (TP201) on Main P.C.B., and IC102-16 (IC202-16) on Record Dolby NR P.C.B.

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

- 1) Connect a VTVM to TP101 (TP201) on the Main P.C.B. Ass'y.
- 2) Feed in 1.4 kHz and adjust the Input Level control to obtain 9 mV/2.85 mV on the VTVM.
- 3) Remove the VTVM from TP101 (TP201) and re-connect it to IC102-16 (IC202-16) on the Record Dolby NR P.C.B. Ass'y.
- 4) Check to insure that the reading at IC102-16 (IC202-16) corresponds to the following with Dolby NR switch OFF and B-Type.

Input Level at TP101 (TP201)	Level at IC102-16 (IC202-16)	
	Dolby NR OFF	Dolby NR B-Type
9 mV	0 dB	+3.2 dB ±1.5 dB
2.85 mV	0 dB	+8.2 dB ±1.5 dB

(2) Dolby NR C-Type Circuit Check

(a) Playback Dolby NR Circuit

Signal Source: 1.4 kHz to negative side of C164 (C264) on Playback Dolby NR P.C.B. (positive side is connected to IC152-9 (IC-252-9)).

Output Connection: VTVM to test point TP101 (TP201) on Main P.C.B.

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

- 1) Connect a VTVM to TP101 (TP201) on the Main P.C.B. Ass'y.
- 2) Set the Dolby NR switch to C-Type. Feed in 1.4 kHz and adjust the generator output control to obtain 9 mV on the VTVM.
- 3) Set the Dolby NR switch to OFF. Check to insure that the reading is +6.5 dB ±1.5 dB on the VTVM.

(b) Record Dolby NR Circuit

Signal Source: 1.4 kHz to Input Jacks
Output Connection: VTVM to test point TP101 (TP201) on Main P.C.B., and IC102-16 (IC202-16) on Record Dolby NR P.C.B.

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

- 1) Connect a VTVM to TP101 (TP201) on the Main P.C.B. Ass'y.
- 2) Feed in 1.4 kHz and adjust the Input Level control to obtain 9 mV/2.85 mV on the VTVM.
- 3) Remove the VTVM from TP101 (TP201) and re-connect it to IC102-16 (IC202-16) on the Record Dolby NR P.C.B. Ass'y.
- 4) Check to insure that the reading at IC102-16 (IC202-16) corresponds to the following with Dolby NR switch OFF and C-Type.

Input Level at TP101 (TP201)	Level at IC102-16 (IC202-16)	
	Dolby NR OFF	Dolby NR C-Type
9 mV	0 dB	+6.5 dB ±1.5 dB
2.85 mV	0 dB	+11.4 dB ±1.5 dB

7. MOUNTING DIAGRAMS AND PARTS LIST

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
R605,606 607 PL601,602 603,604 605,606 SW601,602 603,604 605,606	BA03976B	Control Switch P.C.B. Ass'y	Q449 Q450 D470 R603 R604 R605 R606 C453 PL407	BA04070A	Shut-off P.C.B. Ass'y
	0B07798B	Control Switch P.C.B.		0B07839B	Shut-off P.C.B.
	0B09049A	Fail Safe Type Resistor 22 RDF-25S J		0B01872A	Transistor 2SC945 (L)
	0B08552A	Lamp 12V 25mA		0B06228A	Photo Transistor PH104
	0B07254A	Push Switch		0B06181A	Silicon Diode 1SS53
	0B08567B	Lamp Holder (6 pcs.)		0B05671A	Carbon Resistor 2.2M ERD-25T J
VR001 VR002 VR003 FC1	BA04400A	Volume P.C.B. Ass'y	R107,207 C105,205 SW307	BA04402A	MPX Filter Switch P.C.B. Ass'y
	0B07954A	Volume P.C.B.		0B07956A	MPX Filter Switch P.C.B.
	0B07231A	Volume 100K (A) x 2		0B05776A	Carbon Resistor 1M ERD-25T J
	0B07230A	Volume 10K (A) x 2		0B01804A	Mylar Capacitor 3900P 50V J
	0B07366A	Volume 250K (MN)		0B07369A	Slide Switch 22S SSB022
	0B05235A 0J03973B	7P Flat Cable Volume Holder (1 pce.)		VR701,705 801,805 VR702,703 706,802 803,806 VR704,804 R701,702 801,802 R703,803 R704,804 R705,706 805,806 R707,807 C702,802 C703,803 CN3 CN4	BA04401A
0B07928B	Indicator P.C.B.	0B07813D	Record Cal. P.C.B.		
0B06284A	IC MSL9350RS	0B07270A	Semi-fixed Volume 20K		
0B06066A	Transistor 2SD471	0B07256A	Semi-fixed Volume 10K		
0B06013A	Transistor 2SA733	0B07269A	Semi-fixed Volume 50K		
0B06268A	Zener Diode 5.6V RD5.6EB3	0B09263A	Carbon Resistor 12K ERD-25T J		
0B09378A	Fail Safe Type Resistor 22 RSF-1B J	0B01856A	Carbon Resistor 8.2K ERD-25T J		
0B05576A	Carbon Resistor 470 ERD-25T J	0B01887A	Carbon Resistor 5.6K ERD-25T J		
0B01704A	Carbon Resistor 68 ERD-25T J (8 pcs.)	0B01846A	Carbon Resistor 4.7K ERD-25T J		
0B05622A	Carbon Resistor 2.2K ERD-25T J	0B01681A	Carbon Resistor 3.3K ERD-25T J		
0B09263A	Carbon Resistor 12K ERD-25T J	0B05652A	Mylar Capacitor 4700P 50V J		
0B01400A	Electrolytic Capacitor 100 μ 16V	0B05778A	Mylar Capacitor 0.056 μ 50V K		
0B01836A	Electrolytic Capacitor 47 μ 10V	0B08869A	9P-H Connector		
0B01780A	Mylar Capacitor 0.1 μ 50V J	0B08868A	8P-H Connector		
0B05236A	8P Flat Cable				
0B05251A	8P Flat Cable 80mm				
0B05252A	4P Flat Cable 35mm				
0B08848C	7P-H Connector				
0B06291A	Indicator SEL8806N (1 pce.)				
PL001,002 003 CN1	BA03974A	Lamp P.C.B. Ass'y			
	0B07801A	Lamp P.C.B.			
	0B08553A	Lamp 14V 80mA			
FC2	0B08575A	3P-H Connector			
	BA04370A	Pin Jack P.C.B. Ass'y			
	0B07955A	Pin Jack P.C.B.			
	0B05226A	5P Flat Cable			
	0B08709A	Jack Unit (1 pce.)			
	0E00037A	Earth Lug B-5 (1 pce.)			

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

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

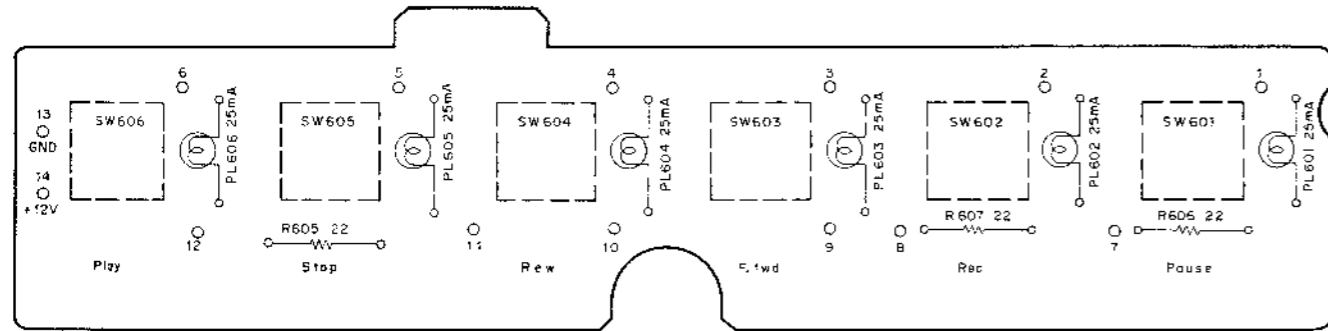


Fig. 7.1

7.5. Pin Jack P.C.B. Ass'y

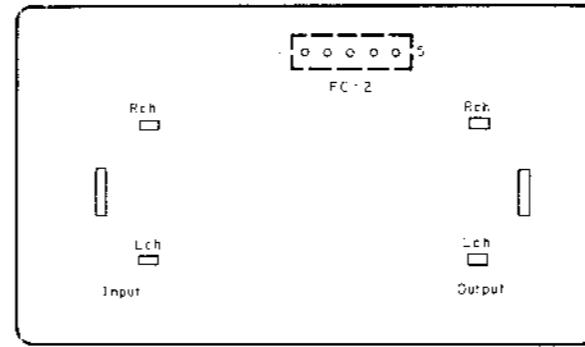


Fig. 7.5

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

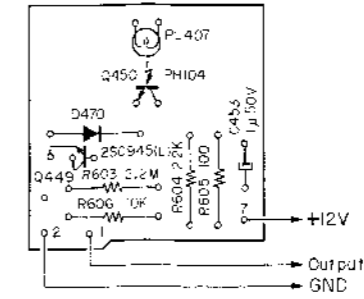


Fig. 7.6

Note: Diode is 1SS53 unless otherwise specified.

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

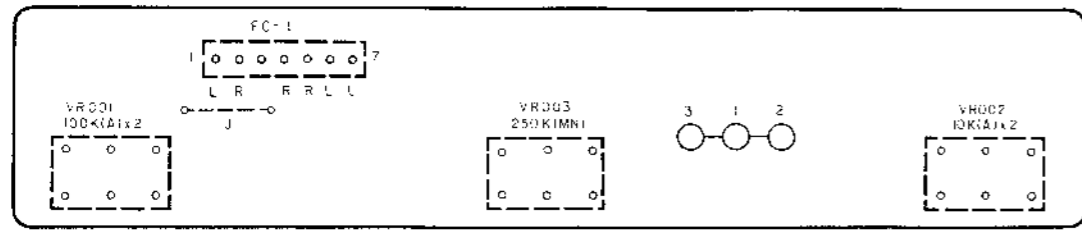


Fig. 7.2

7.7. MPX Filter Switch P.C.B. Ass'y

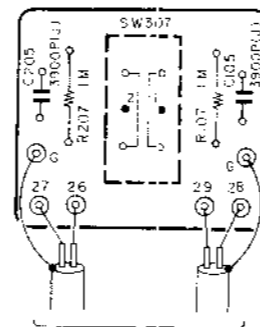


Fig. 7.7

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

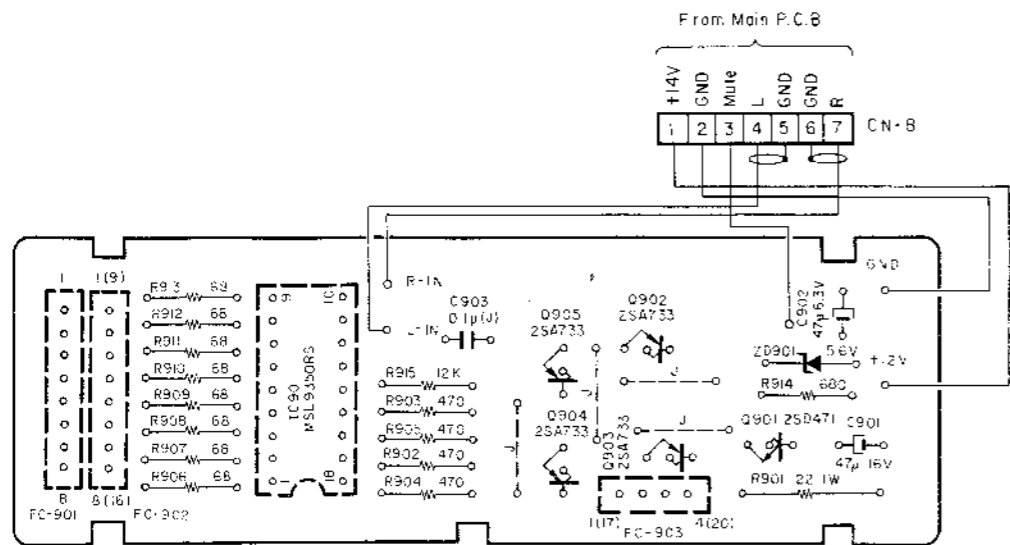


Fig. 7.3

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

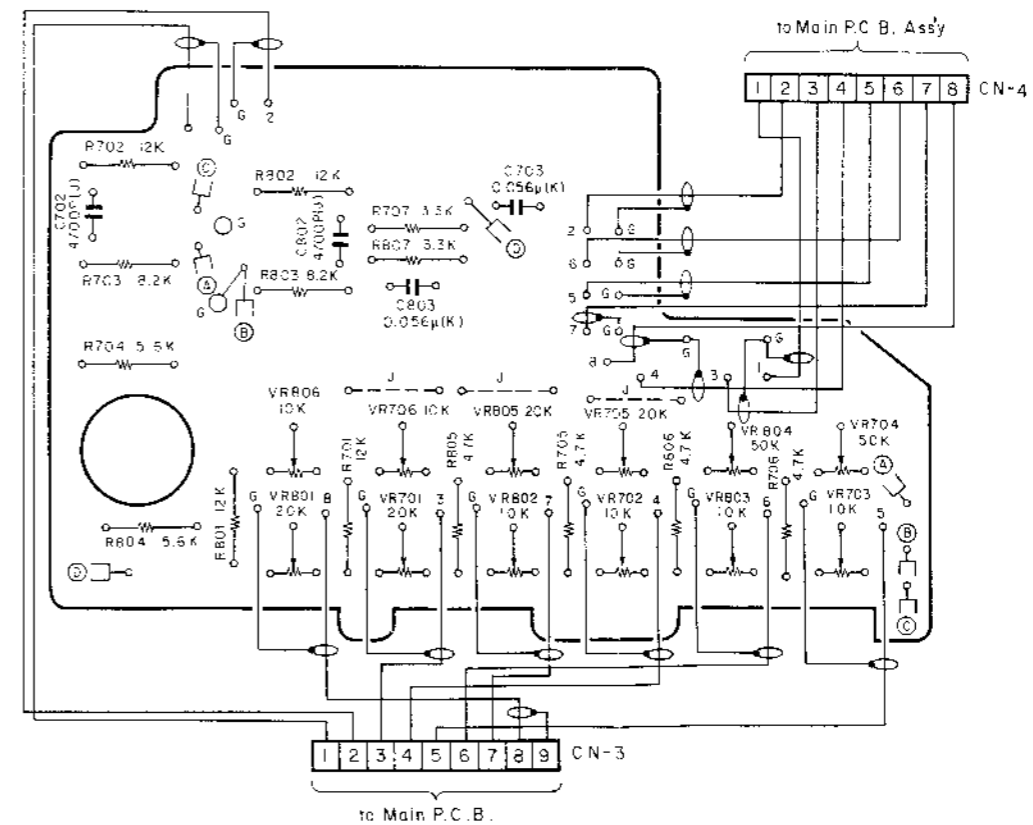


Fig. 7.8

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

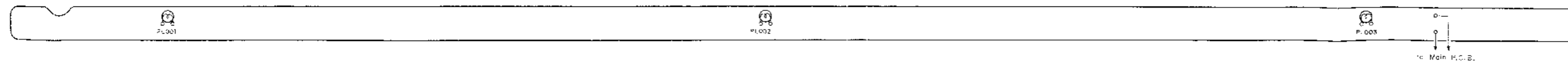


Fig. 7.4

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

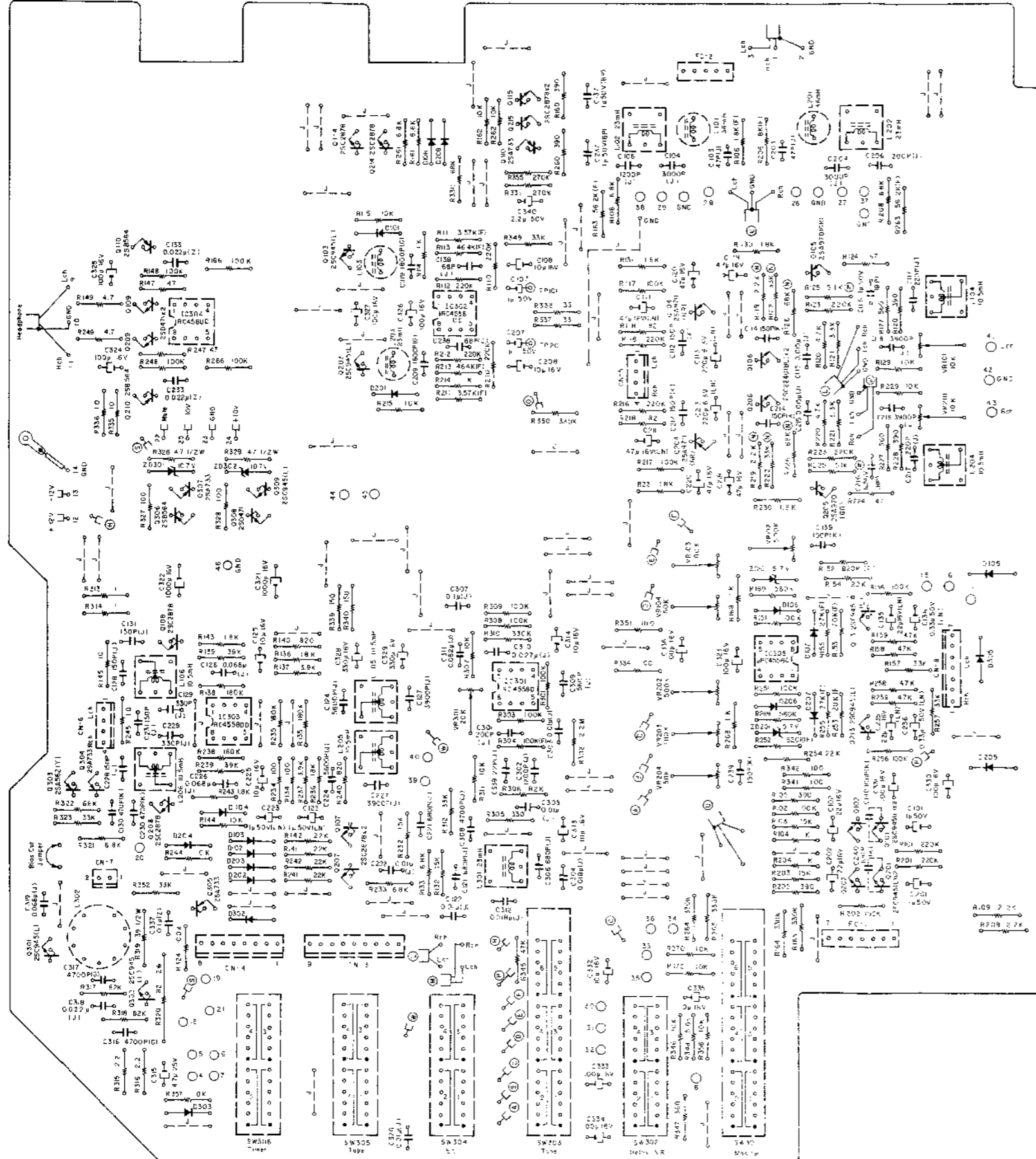


Fig. 7.9.1 Serial No.: A12103654 -

Note: Diodes 1SS53 unless otherwise specified.

Schematic Ref. No.	Part No.	Description
	BA04520A	Main P.C.B. Ass'y Serial No.: A12103654 -
- Bias Osc. -		
Q301,302	0B01872A	Transistor 2SC945 (L)
Q303	0B06202A	Transistor 2SA562 (Y)
L302	0B06613A	Osc. Coil
R145,245	0B05936A	Carbon Resistor 10 ERD-25T J
R315,316	0B09212A	Fail Safe Type Resistor 2.2 RDF-25S J
R317,318	0B05668A	Carbon Resistor 82K ERD-25T J
R319	0B09296A	Fail Safe Type Resistor 39 RSF-1/2B J
R320	0B09295A	Fail Safe Type Resistor 82 RSF-2B J
R321	0B01682A	Carbon Resistor 6.8K ERD-25T J
C130,230	0B09286A	Ceramic Capacitor 470P 50V K
C315	0B01402A	Electrolytic Capacitor 4.7μ 25V
C316,317	0B09191A	PP Capacitor 4700P 100V G
C318	0B09405A	PP Capacitor 0.022μ 100V J
C319	0B09254A	PP Capacitor 0.068μ 100V J
- Rec. Amp. -		
IC303	0B06146A	IC RC4558DD
Q107,108	0B06299A	Transistor 2SC2878
207,208	(0B06070A)	(2SC1636)
Q304	0B06013A	Transistor 2SA733
D102,103	0B06181A	Silicon Diode 1SS53
104,202		
203,204		
302		
L105,106	0B00068A	Trap Coil 10.5mH
205,206		
R134,234	0B01679A	Carbon Resistor 100 ERD-25T J
R135,138	0B05640A	Carbon Resistor 180K ERD-25T J
235,238		
R136,236	0B05560A	Carbon Resistor 18K ERD-25T J
R137,237	0B05675A	Carbon Resistor 3.9K ERD-25T J
R139,239	0B01854A	Carbon Resistor 39K ERD-25T J
R140,240	0B01680A	Carbon Resistor 820 ERD-25T J
R141,142	0B05615A	Carbon Resistor 22K ERD-25T J
241,242		
R143,243	0B05614A	Carbon Resistor 1.8K ERD-25T J
R144,244	0B01888A	Carbon Resistor 10K ERD-25T J
R322	0B05692A	Carbon Resistor 68K ERD-25T J
R323	0B05509A	Carbon Resistor 33K ERD-25T J
R339,340	0B09213A	Fail Safe Type Resistor 150 RDF-25S J
C123,223	0B09223A	Electrolytic Capacitor 1μ 50V (LN)
C124,224	0B05659A	Mylar Capacitor 5600P 50V J
C125,225	0B01412A	Electrolytic Capacitor 10μ 16V
C126,226	0B05682A	Mylar Capacitor 0.068μ 50V J
C127,227	0B01804A	Mylar Capacitor 3900P 50V J
C128,131	0B09246A	Mica Capacitor 150P 50V J
228,231		
C129,229	0B09322A	PP Capacitor 330P 100V J
C328,329	0B01502A	Electrolytic Capacitor 330μ 16V
- PB Eq. Amp. -		
Q104,105	0B06180A	Transistor 2SA970 (GR)
204,205		
Q106,206	0B06142A	Transistor 2SC2240 (BL)
L104,204	0B00068A	Trap Coil 10.5mH
VR101,201	0B07236A	Semi-fixed Volume 10K

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
R116,123 216,223	0B05625A	Carbon Resistor 220K ERD-25T J	R168,268	0B01857A	Carbon Resistor 1K ERD-25T J	C108,208	0B01412A	Electrolytic Capacitor 10μ 16V	CN3	0B08645A	9P-T Post
R117,217	0B01889A	Carbon Resistor 100K ERD-25T J	R169,269	0B05784A	Carbon Resistor 560K ERD-25T J	C109,209	0B09409A	PP Capacitor 1800P 100V G	CN4	0B08644A	8P-T Post
R118,218	0B05631A	Carbon Resistor 82 ERD-25T J	R334,351	0B09215A	Fail Safe Type Resistor 100 RDF-25S J	C121,221	0B09235A	PP Capacitor 680P 100V J	CN5,6	0B08654A	4P-T Post
R119,219	0B09309A	Carbon Resistor 2.2K ERD-25TS J (Noiseless)	C135,235	0B09137A	Electrolytic Capacitor 22μ 16V (LN)	C122,222	0B05681A	Mylar Capacitor 0.01μ 50V J	CN7	0B08656A	2P-T Post
R120,220	0B01846A	Carbon Resistor 4.7K ERD-25T J	C136,236	0B09327A	Electrolytic Capacitor 0.33μ 50V (LN)	320			CN8	0B08643A	7P-T Post
R121,221	0B01681A	Carbon Resistor 3.3K ERD-25T J	C139,239	0B09281A	Ceramic Capacitor 150P 50V K	C137,237	0B09187A	Electrolytic Capacitor 1μ 50V (8P)		0J04450A	Osc. Coil Cap
R122,222	0B09310A	Carbon Resistor 33K ERD-25TS J (Noiseless)	C323,336	0B01400A	Electrolytic Capacitor 100μ 16V	C138,238	0B09393A	Ceramic Capacitor 68P 50V J			
R124,224	0B01706A	Carbon Resistor 47 ERD-25T J				C140,240	0B09282A	Ceramic Capacitor 100P 50V K			
R125,225	0B09388A	Carbon Resistor 5.1K ERD-25TS J (Noiseless)	IC302	0B06146A	IC RC4558DD	C321,322	0B01397A	Electrolytic Capacitor 1000μ 16V			
R126,226	0B09311A	Carbon Resistor 68K ERD-25TS J (Noiseless)	Q101,102	0B01872A	Transistor 2SC945 (L)	C326,327	0B01400A	Electrolytic Capacitor 100μ 16V			
R127,227	0B05575A	Carbon Resistor 560 ERD-25T J	103,201			330,331					
R128,228	0B05691A	Carbon Resistor 390 ERD-25T J	202,203			C337	0B09292A	Ceramic Capacitor 0.1μ 50V Z			
R129,229	0B01888A	Carbon Resistor 10K ERD-25T J	309			C340	0B09372A	Electrolytic Capacitor 2.2μ 50V			
R130,131 230,231	0B05614A	Carbon Resistor 1.8K ERD-25T J	Q114,115	0B06299A	Transistor 2SC2878						
C111,211	0B09218A	Electrolytic Capacitor 47μ 16V (LN)	214,215	(0B06070A)	(2SC1636)	IC301	0B06124B	IC RC4558D			
C112,114 212,214	0B09281A	Ceramic Capacitor 150P 50V K	Q305,307	0B06013A	Transistor 2SA733	L301	0B03563A	19KHz Coil 23mH			
C113,213	0B09151A	Electrolytic Capacitor 220μ 6.3V (LN)	310			VR301	0B09093A	Semi-fixed Volume 20K			
C115,215	0B05557A	Mylar Capacitor 0.015μ 50V J	Q306	0B06069A	Transistor 2SB564	R301,303	0B01889A	Carbon Resistor 100K ERD-25T J			
C116,216	0B09187A	Electrolytic Capacitor 1μ 50V (BP)	Q308	0B06066A	Transistor 2SD471	308,309					
C117,217	0B09247A	Mica Capacitor 220P 50V J	ZD301,302	0B06199A	Zener Diode 10.7V RD11EBB2	R302	0B05671A	Carbon Resistor 2.2M ERD-25T J			
C118,218	0B01804A	Mylar Capacitor 3900P 50V J	D101,108	0B06181A	Silicon Diode 1SS53	R304	0B09305A	Metal Film Resistor 100K SN14K2E F			
C119,120 219,220	0B01403A	Electrolytic Capacitor 47μ 16V	201,208			R305	0B05577A	Carbon Resistor 330 ERD-25T J			
			303			R306	0B05668A	Carbon Resistor 82K ERD-25T J			
			L101,201	0B03919B	Inductor 36mH	R307,311	0B01888A	Carbon Resistor 10K ERD-25T J			
			L102,202	0B03563A	19KHz Coil 23mH	R310	0B05627A	Carbon Resistor 330K ERD-25T J			
			L103,203	0B06676A	Inductor 36mH G	R312	0B05509A	Carbon Resistor 33K ERD-25T J			
			R101,110	0B05625A	Carbon Resistor 220K ERD-25T J	C301	0B09275A	Mica Capacitor 200P 50V J			
			112,201			C302	0B05687A	Mylar Capacitor 1200P 50V J			
			210,212			C303,305	0B05681A	Mylar Capacitor 0.01μ 50V J			
			R102,202	0B01889A	Carbon Resistor 100K ERD-25T J	C304,312	0B05832A	Mylar Capacitor 0.018μ 50V J			
			324			C306	0B09235A	PP Capacitor 680P 100V J			
IC304	0B06217A	IC RC4560D	R103,132	0B01683A	Carbon Resistor 15K ERD-25T J	C307	0B01780A	Mylar Capacitor 0.1μ 50V J			
Q109,209	0B06066A	Transistor 2SD471	203,232			C308	0B05652A	Mylar Capacitor 4700P 50V J			
Q110,210	0B06069A	Transistor 2SB564	R104,114	0B01857A	Carbon Resistor 1K ERD-25T J	C309	0B09323A	PP Capacitor 560P 100V J			
R148,166 248,266	0B01889A	Carbon Resistor 100K ERD-25T J	204,214			C310	0B09045A	Mylar Capacitor 0.027μ 50V J			
R147,247	0B01706A	Carbon Resistor 47 ERD-25T J	R105,160	0B05691A	Carbon Resistor 390 ERD-25T J	C311	0B05685A	Mylar Capacitor 0.082μ 50V J			
R149,249	0B09321A	Fail Safe Type Resistor 4.7 RDF-25S J	205,260			C313,314	0B01412A	Electrolytic Capacitor 10μ 16V			
R335,336	0B09216A	Fail Safe Type Resistor 10 RDF-25S J	R106,206	0B09559A	Metal Film Resistor 1.8K SN14K2E F	C339	0B09279A	Ceramic Capacitor 22P 50V J			
C133,233	0B09291A	Ceramic Capacitor 0.022μ 50V Z	R108,133	0B01682A	Carbon Resistor 6.8K ERD-25T J						
C324,325	0B01400A	Electrolytic Capacitor 100μ 16V	161,208								
			233,261								
			R109,209	0B05622A	Carbon Resistor 2.2K ERD-25T J						
			R111,211	0B09507A	Metal Film Resistor 3.57K SN14K2E F	VR102,202	0B07931D	Main P.C.B.			
			R113,213	0B09450A	Metal Film Resistor 46.4K SN14K2E F	VR103,203	0B09107A	Semi-fixed Volume 500K			
			R115,162	0B01888A	Carbon Resistor 10K ERD-25T J	VR104,204	0B03832A	Semi-fixed Volume 100K			
			215,262			R164,165	0B07228A	Semi-fixed Volume 50K			
			R163,263	0B09595A	Metal Film Resistor 56.2K SN14K2E F	264,265	0B05627A	Carbon Resistor 330K ERD-25T J			
			R313,314	0B09214A	Fail Safe Type Resistor 1 RDF-25S J	350					
			R326,329	0B09243A	Fail Safe Type Resistor 4.7 RSF-1/2B J	R170,270	0B01888A	Carbon Resistor 10K ERD-25T J			
			R327,328	0B09215A	Fail Safe Type Resistor 100 RDF-25S J	346,356					
			341,342			357					
			R330	0B05692A	Carbon Resistor 68K ERD-25T J	R347	0B05575A	Carbon Resistor 560 ERD-25T J			
			R331,355	0B05620A	Carbon Resistor 270K ERD-25T J	R348	0B01887A	Carbon Resistor 5.6K ERD-25T J			
			R337,338	0B09210A	Fail Safe Type Resistor 33 RDF-25S J	R349	0B05509A	Carbon Resistor 33K ERD-25T J			
			R352	0B05509A	Carbon Resistor 33K ERD-25T J	C332,335	0B01674A	Electrolytic Capacitor 10μ 16V			
			C101,107	0B01405A	Electrolytic Capacitor 1μ 50V	C333,334	0B01272A	Electrolytic Capacitor 100μ 16V			
			201,207			SW301	0B07365A	Rotary Switch 62N			
			C102,202	0B01862A	Electrolytic Capacitor 22μ 16V	SW302,305	0B07358A	Rotary Switch 43S			
			C103,203	0B09242A	Mica Capacitor 47P 50V J	SW303	0B07359A	Rotary Switch 63S			
			C104,204	0B09262A	PP Capacitor 3000P 100V J	SW304	0B07356A	Rotary Switch 42N			
			C106,206	0B05687A	Mylar Capacitor 1200P 50V J	SW306	0B07357A	Rotary Switch 44S			

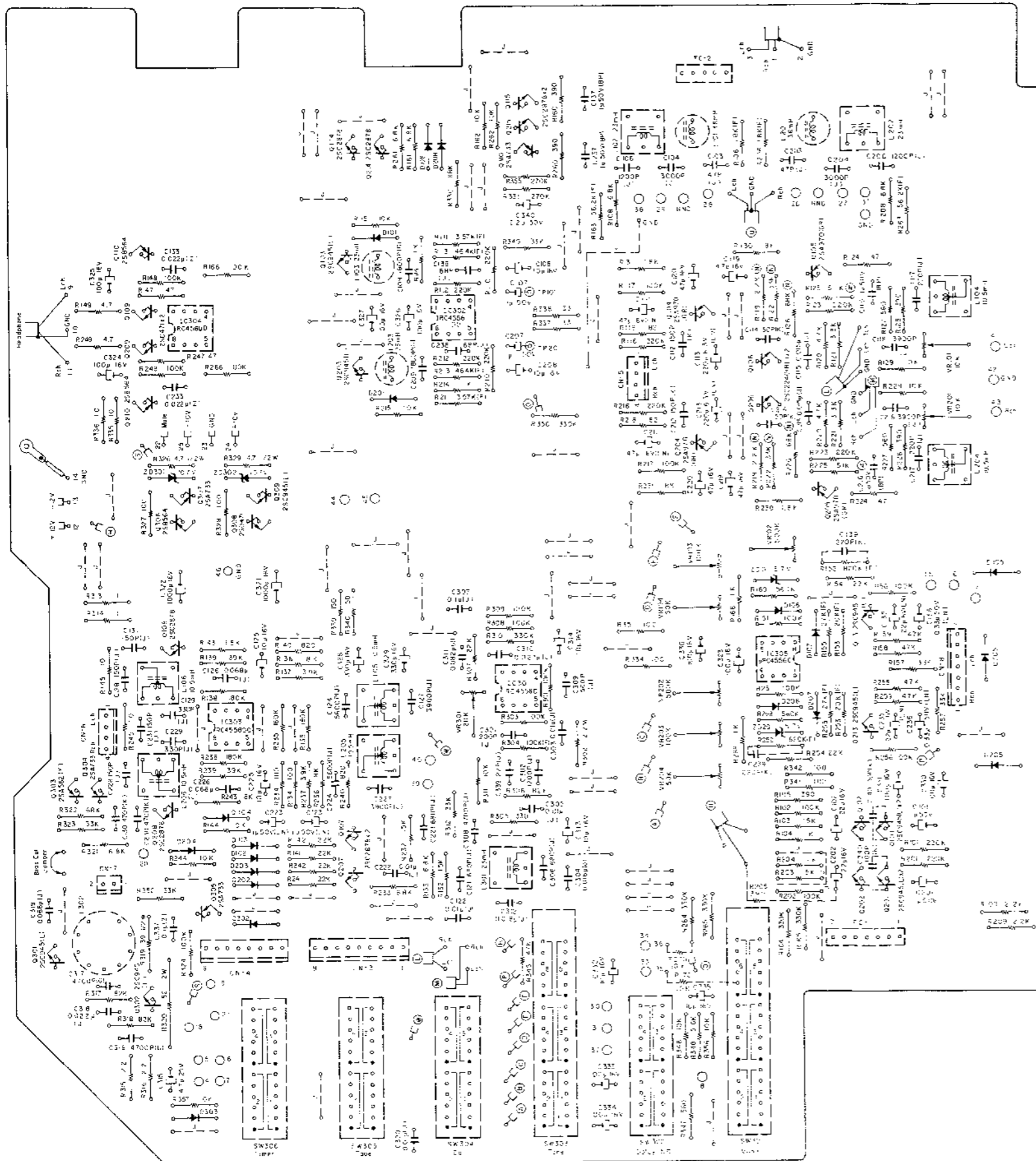


Fig. 7.9.2 Serial Nos.: A12102102 - A12103653 Note: Diode is 1N359 unless otherwise specified.

Schematic Ref. No.	Part No.	Description
	BA04520A	Main P.C.B. Ass'y Serial Nos.: A12102102 - A12103653
	-- Bias Osc. --	
Q301,302	0B01872A	Transistor 2SC945 (L)
Q303	0B06202A	Transistor 2SA562 (Y)
L302	0B06613A	Osc. Coil
R145,245	0B05936A	Carbon Resistor 10 ERD-25T J
R315,316	0B09212A	Fail Safe Type Resistor 2.2 RDF-25S J
R317,318	0B05668A	Carbon Resistor 82K ERD-25T J
R319	0B09296A	Fail Safe Type Resistor 39 RSF-1/2B J
R320	0B09295A	Fail Safe Type Resistor 82 RSF-2B J
R321	0B01682A	Carbon Resistor 6.8K ERD-25T J
C130,230	0B09286A	Ceramic Capacitor 470P 50V K
C315	0B01402A	Electrolytic Capacitor 4.7μ 25V
C316,317	0B09191A	PP Capacitor 4700P 100V G
C318	0B09405A	PP Capacitor 0.022μ 100V J
C319	0B09254A	PP Capacitor 0.068μ 100V J
	-- Rec. Amp. --	
IC303	0B06146A	IC RC4558DD
Q107,108	0B06299A	Transistor 2SC2878
207,208	(0B06070A)	(2SC1636)
Q304	0B06013A	Transistor 2SA733
D102,103	0B06181A	Silicon Diode 1SS53
104,202		
203,204		
302		
L105,106	0B00068A	Trap Coil 10.5mH
205,206		
R134,234	0B01679A	Carbon Resistor 100 ERD-25T J
R135,138	0B05640A	Carbon Resistor 180K ERD-25T J
235,238		
R136,236	0B05560A	Carbon Resistor 18K ERD-25T J
R137,237	0B05675A	Carbon Resistor 3.9K ERD-25T J
R139,239	0B01854A	Carbon Resistor 39K ERD-25T J
R140,240	0B01680A	Carbon Resistor 820 ERD-25T J
R141,142	0B05615A	Carbon Resistor 22K ERD-25T J
241,242		
R143,243	0B05614A	Carbon Resistor 1.8K ERD-25T J
R144,244	0B01888A	Carbon Resistor 10K ERD-25T J
R322	0B05692A	Carbon Resistor 68K ERD-25T J
R323	0B05509A	Carbon Resistor 33K ERD-25T J
R339,340	0B09213A	Fail Safe Type Resistor 150 RDF-25S J
C123,223	0B09223A	Electrolytic Capacitor 1μ 50V (LN)
C124,224	0B05659A	Mylar Capacitor 5600P 50V J
C125,225	0B01412A	Electrolytic Capacitor 10μ 16V
C126,226	0B05682A	Mylar Capacitor 0.068μ 50V J
C127,227	0B01804A	Mylar Capacitor 3900P 50V J
C128,131	0B09246A	Mica Capacitor 150P 50V J
228,231		
C129,229	0B09322A	PP Capacitor 330P 100V J
C328,329	0B01502A	Electrolytic Capacitor 330μ 16V
	-- PB Eq. Amp. --	
Q104,105	0B06180A	Transistor 2SA970 (GR)
204,205		
Q106,206	0B06142A	Transistor 2SC2240 (BL)
L104,204	0B00068A	Trap Coil 10.5mH
VR101,201	0B07236A	Semi-fixed Volume 10K

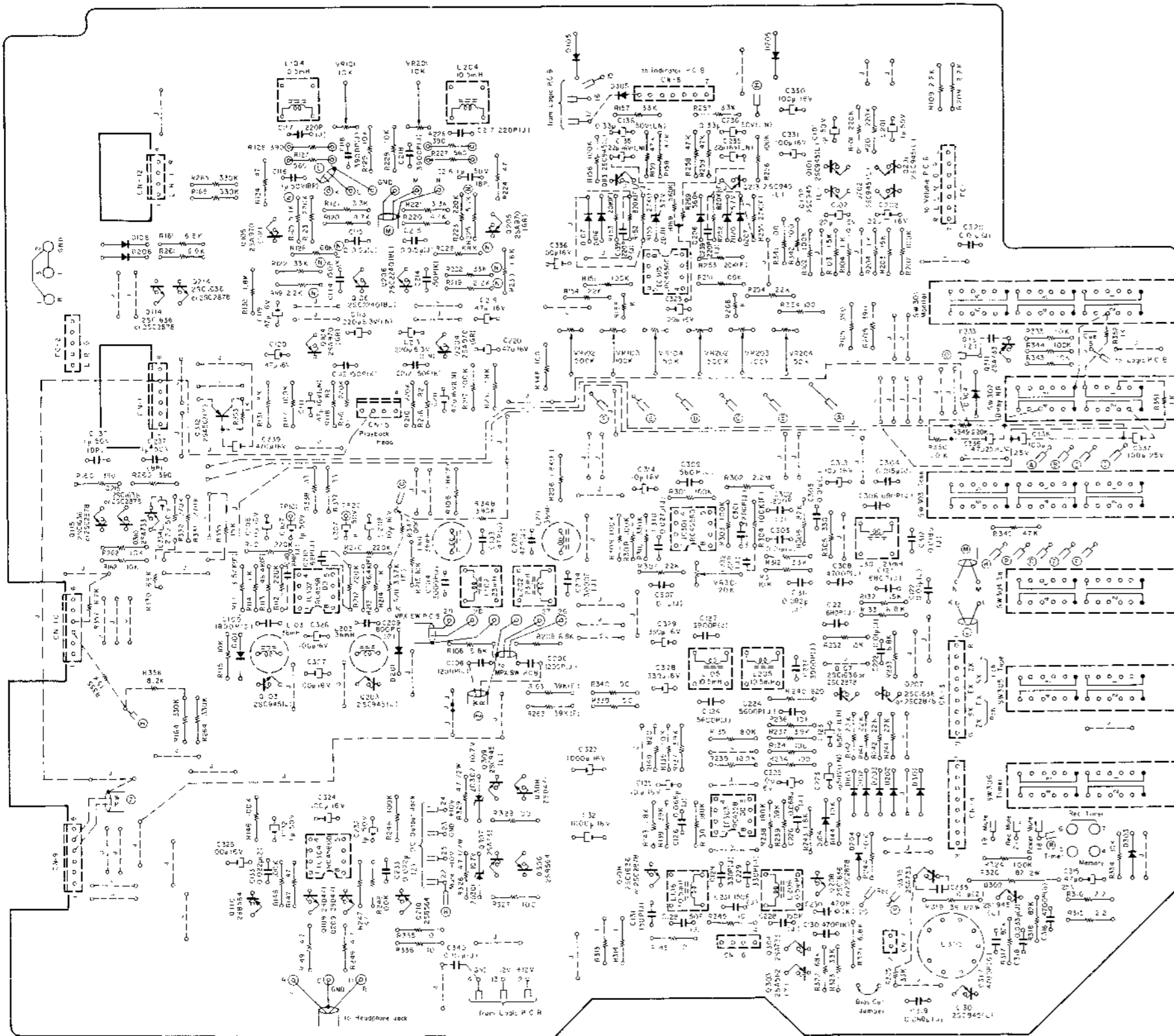


Fig. 7.9.3 Serial Nos.: A12101501 – A12102101

Note: Diode is 1SS53 unless otherwise specified.

Schematic Ref. No.	Part No.	Description
	BA04367A	Main P.C.B. Ass'y Serial Nos.: A12101501 – A12102101
	- Bias Osc. -	
Q301,302	0B01872A	Transistor 2SC945 (L)
Q303	0B06202A	Transistor 2SA562 (Y)
L302	0B06613A	Osc. Coil
R145,245	0B05936A	Carbon Resistor 10 ERD-25T J
R315,316	0B09212A	Fail Safe Type Resistor 2.2 RDF-25S J
R317,318	0B05668A	Carbon Resistor 82K ERD-25T J
R319	0B09296A	Fail Safe Type Resistor 39 RSF-1/2B J
R320	0B09295A	Fail Safe Type Resistor 82 RSF-2B J
R321	0B01682A	Carbon Resistor 6.8K ERD-25T J
C130,230	0B09286A	Ceramic Capacitor 470P 50V K
C315	0B01402A	Electrolytic Capacitor 4.7μ 25V
C316,317	0B09191A	PP Capacitor 4700P 100V G
C318	0B05583A	PP Capacitor 0.033μ 100V J
C319	0B09254A	PP Capacitor 0.068μ 100V J
	- Rec. Amp. -	
IC303	0B06146A	IC RC4558DD
Q107,108	0B06299A	Transistor 2SC2878
207,208	(0B06070A)	(2SC1636)
Q304	0B06013A	Transistor 2SA733
D102,103	0B06181A	Silicon Diode 1SS53
104,202		
203,204		
302		
L105,106	0B00068A	Trap Coil 10.5mH
205,206		
R134,234	0B01679A	Carbon Resistor 100 ERD-25T J
R135,138	0B05640A	Carbon Resistor 180K ERD-25T J
235,238		
R136,144	0B05560A	Carbon Resistor 18K ERD-25T J
236,244		
R137,237	0B05675A	Carbon Resistor 3.9K ERD-25T J
R139,239	0B01854A	Carbon Resistor 39K ERD-25T J
R140,240	0B01680A	Carbon Resistor 820 ERD-25T J
R141,142	0B05615A	Carbon Resistor 22K ERD-25T J
241,242		
R143,243	0B05614A	Carbon Resistor 1.8K ERD-25T J
R322	0B05692A	Carbon Resistor 68K ERD-25T J
R323	0B05509A	Carbon Resistor 33K ERD-25T J
R339,340	0B09213A	Fail Safe Type Resistor 150 RDF-25S J
C123,223	0B09223A	Electrolytic Capacitor 1μ 50V (LN)
C124,224	0B05659A	Mylar Capacitor 5600P 50V J
C125,225	0B01412A	Electrolytic Capacitor 10μ 16V
C126,226	0B05682A	Mylar Capacitor 0.068μ 50V J
C127,227	0B01804A	Mylar Capacitor 3900P 50V J
C128,131	0B09246A	Mica Capacitor 150P 50V J
228,231		
C129,229	0B09322A	PP Capacitor 330P 100V J
C328,329	0B01502A	Electrolytic Capacitor 330μ 16V
	- PB Eq. Amp. -	
Q104,105	0B06180A	Transistor 2SA970 (GR)
204,205		
Q106,206	0B06142A	Transistor 2SC2240 (BL)
L104,204	0B00068A	Trap Coil 10.5mH
VR101,201	0B07236A	Semi-fixed Volume 10K

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
R116,123 216,223	0B05625A	Carbon Resistor 220K ERD-25T J	R168,268	0B01857A	Carbon Resistor 1K ERD-25T J	C108,208	0B01412A	Electrolytic Capacitor 10μ 16V	C337,338	0B01272A	Electrolytic Capacitor 100μ 25V
R117,217	0B01889A	Carbon Resistor 100K ERD-25T J	R169,269	0B05784A	Carbon Resistor 560K ERD-25T J	C109,209	0B09409A	PP Capacitor 1800P 50V G	C339	0B01392A	Electrolytic Capacitor 470μ 16V
R118,218	0B05631A	Carbon Resistor 82 ERD-25T J	R334,351	0B09215A	Fail Safe Type Resistor 100 RDF-25S J	C110,210	0B09393A	Ceramic Capacitor 68P 50V J	C340	0B05681A	Mylar Capacitor 0.01μ 50V J
R119,219	0B09309A	Carbon Resistor 2.2K ERD-25TS J (Noiseless)	C135,235	0B09137A	Electrolytic Capacitor 22μ 16V (LN)	C121,221	0B09235A	Mylar Capacitor 680P 50V J	SW301	0B07365A	Rotary Switch 62N
R120,220	0B01846A	Carbon Resistor 4.7K ERD-25T J	C136,236	0B09327A	Electrolytic Capacitor 0.33μ 50V (LN)	C122,222	0B05681A	Mylar Capacitor 0.01μ 50V J	SW302,305	0B07358A	Rotary Switch 43S
R121,221	0B01681A	Carbon Resistor 3.3K ERD-25T J	C139,239	0B09283A	Ceramic Capacitor 220P 50V K	320			SW303	0B07359A	Rotary Switch 63S
R122,222	0B09310A	Carbon Resistor 33K ERD-25TS J (Noiseless)	C323,336	0B01400A	Electrolytic Capacitor 100μ 16V	C137,237	0B09187A	Electrolytic Capacitor 1μ 50V (BP)	SW304	0B07356A	Rotary Switch 42N
R124,224	0B01706A	Carbon Resistor 47 ERD-25T J				C321,322	0B01397A	Electrolytic Capacitor 1000μ 16V	SW306	0B07357A	Rotary Switch 44S
R125,225	0B09388A	Carbon Resistor 5.1K ERD-25TS J (Noiseless)				C326,327	0B01400A	Electrolytic Capacitor 100μ 16V	CN3	0B08645A	9P-T Post
R126,226	0B09311A	Carbon Resistor 68K ERD-25TS J (Noiseless)				330,331			CN4	0B08644A	8P-T Post
R127,227	0B05575A	Carbon Resistor 560 ERD-25T J	IC302	0B06146A	IC RC4558DD	C334	0B09372A	Electrolytic Capacitor 2.2μ 50V	CN5,6	0B08654A	4P-T Post
R128,228	0B05691A	Carbon Resistor 390 ERD-25T J	Q101,102	0B01872A	Transistor 2SC945 (L)	C335	0B09292A	Ceramic Capacitor 0.1μ 50V Z	CN7	0B08666A	2P-T Post
R129,229	0B01888A	Carbon Resistor 10K ERD-25T J	103,201						CN8	0B08643A	7P-T Post
R130,131 230,231	0B05614A	Carbon Resistor 1.8K ERD-25T J	202,203 309						CN9,10,11	0B08442A	6P-B Post
C111,211	0B09218A	Electrolytic Capacitor 47μ 16V (LN)	Q114,115	0B06299A	Transistor 2SC2878	IC301	0B06124B	IC RC4558D	CN12	0B08804A	4P-B Post
C112,114 212,214	0B09281A	Ceramic Capacitor 150P 50V K	214,215	(0B06070A)	(2SC1636)	L301	0B03563A	19KHz Coil 23mH		0J04417A	Osc. Coil Shield Plate (1 pce.)
C113,213	0B09151A	Electrolytic Capacitor 220μ 6.3V (LN)	Q305,307 310	0B06013A	Transistor 2SA733	VR301	0B09093A	Semi-fixed Volume 20K			
C115,215	0B05557A	Mylar Capacitor 0.015μ 50V J	Q306	0B06069A	Transistor 2SB564	R301,303 308,309	0B01889A	Carbon Resistor 100K ERD-25T J			
C116,216	0B09187A	Electrolytic Capacitor 1μ 50V (BP)	Q308	0B06066A	Transistor 2SD471	R302	0B05671A	Carbon Resistor 2.2M ERD-25T J			
C117,217	0B09247A	Mica Capacitor 220P 50V J	ZD301,302	0B06199A	Zener Diode 10.7V RD11EBB2	R304	0B09305A	Metal Film Resistor 100K SN14K2E F			
C118,218	0B01804A	Mylar Capacitor 3900P 50V J	D101,108	0B06181A	Silicon Diode 1SS53	R305	0B05577A	Carbon Resistor 330 ERD-25T J			
C119,120 219,220	0B01403A	Electrolytic Capacitor 47μ 16V	201,208 303			R306	0B05668A	Carbon Resistor 82K ERD-25T J			
			L101,103	0B03919B	Inductor 36mH	R307	0B05615A	Carbon Resistor 22K ERD-25T J			
			201,203			R310	0B05627A	Carbon Resistor 330K ERD-25T J			
			L102,202	0B03563A	19KHz Coil 23mH	R311	0B01888A	Carbon Resistor 10K ERD-25T J			
			R101,110	0B05625A	Carbon Resistor 220K ERD-25T J	R312	0B05509A	Carbon Resistor 33K ERD-25T J			
			112,201			C301	0B09275A	Mica Capacitor 200P 50V J			
			210,212			C302	0B05687A	Mylar Capacitor 1200P 50V J			
			R102,202	0B01889A	Carbon Resistor 100K ERD-25T J	C303,305	0B05681A	Mylar Capacitor 0.01μ 50V J			
			324			C304,312	0B05832A	Mylar Capacitor 0.018μ 50V J			
IC304	0B06217A	IC RC4560D	R103,132	0B01683A	Carbon Resistor 15K ERD-25T J	C306	0B09235A	PP Capacitor 680P 100V J			
Q109,209	0B06066A	Transistor 2SD471	203,232			C307	0B01780A	Mylar Capacitor 0.1μ 50V J			
Q110,210	0B06069A	Transistor 2SB564	R104,114	0B01857A	Carbon Resistor 1K ERD-25T J	C308	0B05652A	Mylar Capacitor 4700P 50V J			
R146,148 246,248	0B01889A	Carbon Resistor 100K ERD-25T J	R104,114 204,214			C309	0B09323A	PP Capacitor 560P 100V J			
R147,247	0B01706A	Carbon Resistor 47 ERD-25T J	R105,160	0B05691A	Carbon Resistor 390 ERD-25T J	C310	0B09045A	Mylar Capacitor 0.027μ 50V J			
R149,249	0B09321A	Fail Safe Type Resistor 4.7 RDF-25S J	205,260			C311	0B05685A	Mylar Capacitor 0.082μ 50V J			
R335,336	0B09216A	Fail Safe Type Resistor 10 RDF-25S J	R106,206	0B09559A	Metal Film Resistor 1.8K SN14K2E F	C313,314	0B01412A	Electrolytic Capacitor 10μ 16V			
C132,232	0B01405A	Electrolytic Capacitor 1μ 50V	R108,133	0B01682A	Carbon Resistor 6.8K ERD-25T J	C332	0B09279A	Ceramic Capacitor 22P 50V J			
C133,233	0B09291A	Ceramic Capacitor 0.022μ 50V Z	161,208								
C324,325	0B01400A	Electrolytic Capacitor 100μ 16V	233,261								
			R109,209	0B05622A	Carbon Resistor 2.2K ERD-25T J						
			R111,211	0B09507A	Metal Film Resistor 3.57K SN14K2E F						
			R113,213	0B09450A	Metal Film Resistor 46.4K SN14K2E F						
			R115,162	0B01888A	Carbon Resistor 10K ERD-25T J						
			215,262								
IC305	0B06216A	IC μPC4556C	R163,263	0B09560A	Metal Film Resistor 39K SN14K2E F	Q311	0B07931B	Main P.C.B.			
Q113,213	0B01872A	Transistor 2SC945 (L)	R313,314	0B09214A	Fail Safe Type Resistor 1 RDF-25S J	Q312	0B06013A	Transistor 2SA733			
ZD101,201	0B06304A	Zener Diode 5.7V XZ057	R325	0B05509A	Carbon Resistor 33K ERD-25T J	D303,304	0B06202A	Transistor 2SA562 (Y)			
D105,106 107,205 206,207 305	0B06181A	Silicon Diode 1SS53	R326,329	0B09243A	Fail Safe Type Resistor 4.7 RSF-1/2B J	VR102,202	0B06181A	Silicon Diode 1SS53			
R151,156 251,256	0B01889A	Carbon Resistor 100K ERD-25T J	R327,328	0B09215A	Fail Safe Type Resistor 100 RDF-25S J	VR103,203	0B09107A	Semi-fixed Volume 500K			
R152,252	0B09197A	Metal Film Resistor 820K SN14K2E F	341,342			VR104,204	0B03832A	Semi-fixed Volume 100K			
R153,253	0B09439A	Metal Film Resistor 20K SN14K2E F	R330	0B05692A	Carbon Resistor 68K ERD-25T J	R164,165 264,265	0B07228A	Semi-fixed Volume 50K			
R154,254	0B05615A	Carbon Resistor 22K ERD-25T J	R331,332	0B05620A	Carbon Resistor 270K ERD-25T J	R333,334	0B05627A	Carbon Resistor 330K ERD-25T J			
R155,255	0B09444A	Metal Film Resistor 27K SN14K2E F	R337,338	0B09210A	Fail Safe Type Resistor 33 RDF-25S J	R344,347	0B01888A	Carbon Resistor 10K ERD-25T J			
R157,257	0B05509A	Carbon Resistor 33K ERD-25T J	C101,107	0B01405A	Electrolytic Capacitor 1μ 50V	R348	0B01889A	Carbon Resistor 100K ERD-25T J			
R158,159 258,259 345	0B05641A	Carbon Resistor 47K ERD-25T J	201,207			R349	0B05676A	Carbon Resistor 390K ERD-25T J			
			C102,202	0B01862A	Electrolytic Capacitor 22μ 16V	R351,352 353	0B05625A	Carbon Resistor 220K ERD-25T J			
			C103,203	0B09242A	Mica Capacitor 47P 50V J	R354,355	0B01857A	Carbon Resistor 1K ERD-25T J			
			C104,204	0B09262A	PP Capacitor 3000P 100V J	R356,357					
			C106,206	0B05687A	Mylar Capacitor 1200P 50V J	C333					
						C336	0B09333A	Electrolytic Capacitor 4.7μ 25V (LN)			

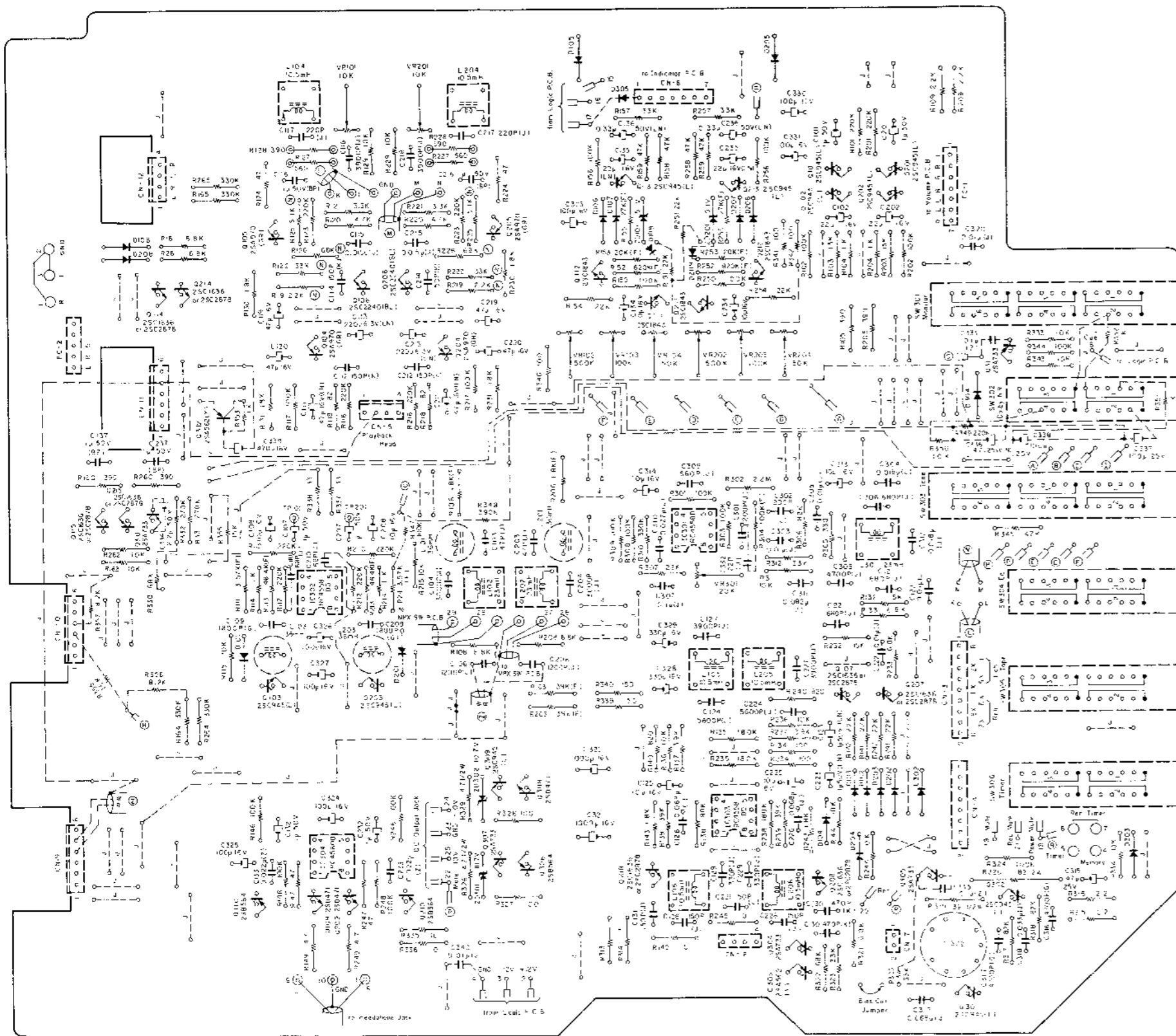


Fig. 7.9.4 Serial Nos.: A12101001 - A12101500

Note: Diode is 1SS53 unless otherwise specified.

Schematic Ref. No.	Part No.	Description
	BA04367A	Main P.C.B. Ass'y Serial Nos.: A12101001 - A12101500
	- Bias Osc. -	
Q301,302	0B01872A	Transistor 2SC945 (L)
Q303	0B06202A	Transistor 2SA562 (Y)
L302	0B06613A	Osc. Coil
R145,245	0B05936A	Carbon Resistor 10 ERD-25T J
R315,316	0B09212A	Fail Safe Type Resistor 2.2 RDF-25S J
R317,318	0B05668A	Carbon Resistor 82K ERD-25T J
R319	0B09296A	Fail Safe Type Resistor 39 RSF-1/2B J
R320	0B09295A	Fail Safe Type Resistor 82 RSF-2B J
R321	0B01682A	Carbon Resistor 6.8K ERD-25T J
C130,230	0B09286A	Ceramic Capacitor 470P 50V K
C315	0B01402A	Electrolytic Capacitor 4.7μ 25V
C316,317	0B09191A	PP Capacitor 4700P 100V G
C318	0B05583A	PP Capacitor 0.033μ 100V J
C319	0B09254A	PP Capacitor 0.068μ 100V J
	- Rec. Amp. -	
IC303	0B06146A	IC RC4558DD
Q107,108	0B06299A	Transistor 2SC2878
207,208	(0B06070A)	(2SC1636)
Q304	0B06013A	Transistor 2SA733
D102,103	0B06181A	Silicon Diode 1SS53
104,202		
203,204		
302		
L105,106	0B00068A	Trap Coil 10.5mH
205,206		
R134,234	0B01679A	Carbon Resistor 100 ERD-25T J
R135,138	0B05640A	Carbon Resistor 180K ERD-25T J
235,238		
R136,144	0B05560A	Carbon Resistor 18K ERD-25T J
236,244		
R137,237	0B05675A	Carbon Resistor 3.9K ERD-25T J
R139,239	0B01854A	Carbon Resistor 39K ERD-25T J
R140,240	0B01680A	Carbon Resistor 820 ERD-25T J
R141,142	0B05615A	Carbon Resistor 22K ERD-25T J
241,242		
R143,243	0B05614A	Carbon Resistor 1.8K ERD-25T J
R322	0B05692A	Carbon Resistor 68K ERD-25T J
R323	0B05509A	Carbon Resistor 33K ERD-25T J
R339,340	0B09213A	Fail Safe Type Resistor 150 RDF-25S J
C123,223	0B09223A	Electrolytic Capacitor 1μ 50V (LN)
C124,224	0B05659A	Mylar Capacitor 5600P 50V J
C125,225	0B01412A	Electrolytic Capacitor 10μ 16V
C126,226	0B05682A	Mylar Capacitor 0.068μ 50V J
C127,227	0B01804A	Mylar Capacitor 3900P 50V J
C128,131	0B09246A	Mica Capacitor 150P 50V J
228,231		
C129,229	0B09322A	PP Capacitor 330P 100V J
C328,329	0B01502A	Electrolytic Capacitor 330μ 16V
	- PB Eq. Amp. -	
Q104,105	0B06180A	Transistor 2SA970 (GR)
204,205		
Q106,206	0B06142A	Transistor 2SC2240 (BL)
L104,204	0B00068A	Trap Coil 10.5mH
VR101,201	0B07236A	Semi-fixed Volume 10K

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

7.10.1. Dolby NR P.C.B. Ass'y (Serial No.: A12102102 -)

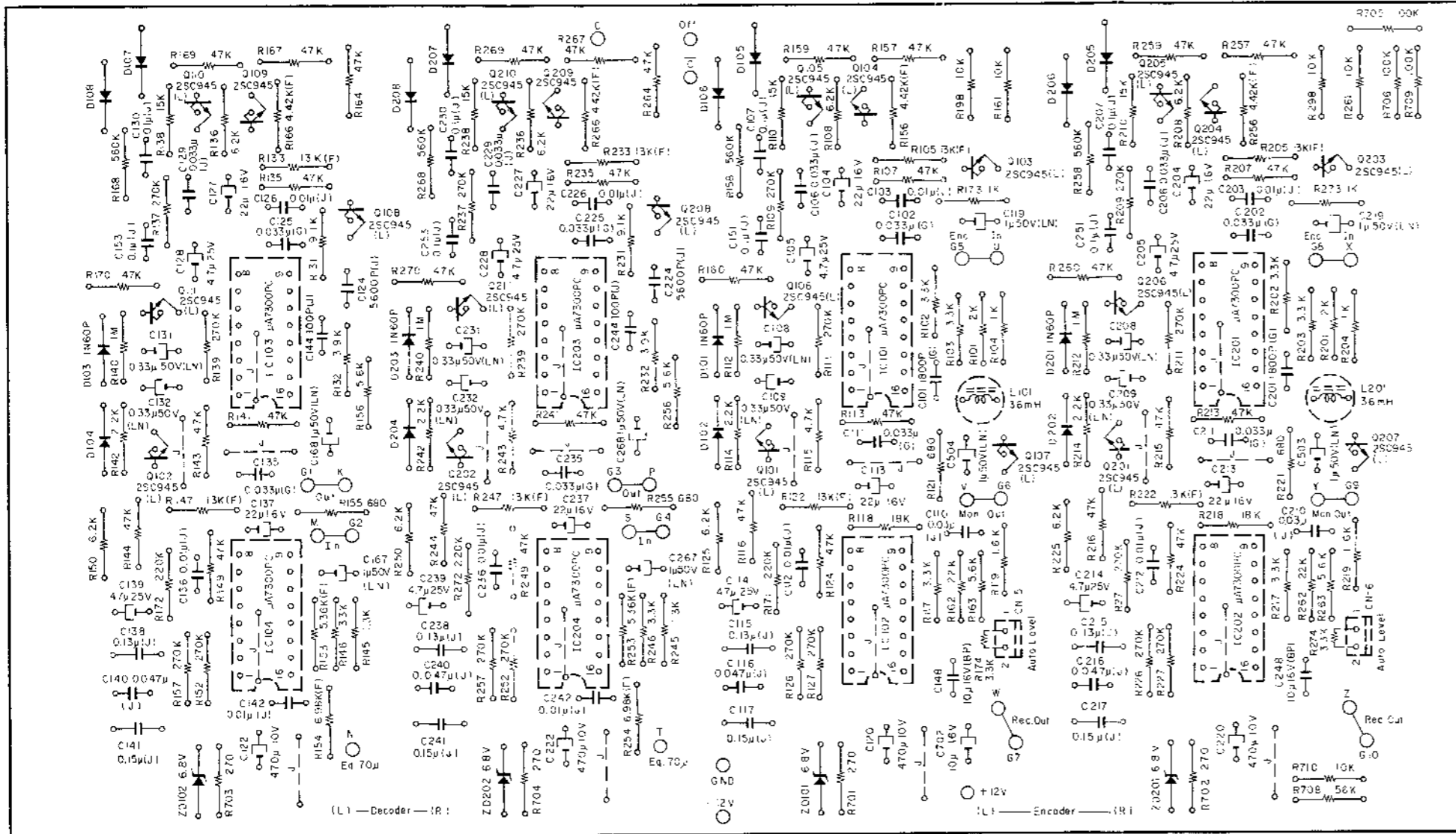


Fig. 7.10.1 Serial No.: A12102102 -

Schematic Ref. No.	Part No.	Description
	BA04518A	Dolby NR P.C.B. Ass'y Serial No.: A12102102 -
	- BC PB Dolby NR -	
IC103,104 203,204	0B06200A	IC μ A7300PC
Q102,108 109,110 111,202 208,209 210,211	0B01872A	Transistor 2SC945 (L)
ZD102,202	0B06315A	Zener Diode 6.8V YZ068
D103,203	0B00030A	Germanium Diode 1N60P
D104,107 108,204 207,208	0B06181A	Silicon Diode 1SS53
R131,231	0B09226A	Carbon Resistor 9.1K ERD-25T J
R132,232	0B05675A	Carbon Resistor 3.9K ERD-25T J
R133,147 233,247	0B09557A	Metal Film Resistor 13K SN14K2E F
R135,141 144,149 164,167 169,170 235,241 244,249 264,267 269,270	0B05641A	Carbon Resistor 47K ERD-25T J
R136,150 236,250	0B09271A	Carbon Resistor 6.2K ERD-25T J
R137,139 152,157 237,239 252,257	0B05620A	Carbon Resistor 270K ERD-25T J
R138,238	0B01683A	Carbon Resistor 15K ERD-25T J
R140,240	0B05776A	Carbon Resistor 1M ERD-25T J
R142,242	0B05622A	Carbon Resistor 2.2K ERD-25T J
R143,243	0B01846A	Carbon Resistor 4.7K ERD-25T J
R145,245	0B09074A	Carbon Resistor 1.3K ERD-25T J
R146,174 246,274	0B01681A	Carbon Resistor 3.3K ERD-25T J
R153,253	0B09426A	Metal Film Resistor 5.36K SN14K2E F
R154,254	0B09604A	Metal Film Resistor 6.98K SN14K2E F
R155,255	0B05794A	Carbon Resistor 680 ERD-25T J
R156,256	0B01887A	Carbon Resistor 5.6K ERD-25T J
R166,266	0B09558A	Metal Film Resistor 4.42K SN14K2E F
R168,268	0B05784A	Carbon Resistor 560K ERD-25T J
R172,272	0B05625A	Carbon Resistor 220K ERD-25T J
R703,704	0B05645A	Carbon Resistor 270 ERD-25T J
C122,222	0B05884A	Electrolytic Capacitor 470 μ 10V
C124,224	0B05659A	Mylar Capacitor 5600P 50V J
C125,135 225,235	0B09240A	PP Capacitor 0.033 μ 100V G
C126,136 142,226 236,242	0B05681A	Mylar Capacitor 0.01 μ 50V J
C127,137 227,237	0B01862A	Electrolytic Capacitor 22 μ 16V
C128,139 228,239	0B01402A	Electrolytic Capacitor 4.7 μ 25V
C129,229	0B05583A	Mylar Capacitor 0.033 μ 50V J
C130,153 230,253	0B01780A	Mylar Capacitor 0.1 μ 50V J

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
C131,132 231,232	0B09567A	Electrolytic Capacitor 0.33 μ 50V (LN)	R705,706 709	0B01889A	Carbon Resistor 100K ERD-25T J
C138,238	0B09566A	Mylar Capacitor 0.13 μ 50V J	R708	0B05508A	Carbon Resistor 56K ERD-25T J
C140,240	0B05796A	Mylar Capacitor 0.047 μ 50V J	C101,201	0B09409A	PP Capacitor 1800P 100V G
C141,241	0B05914A	Mylar Capacitor 0.15 μ 50V J	C102,111	0B09240A	PP Capacitor 0.033 μ 100V G
C144,244	0B09282A	Ceramic Capacitor 100P 50V K	202,211		
C167,168 267,268	0B09223A	Electrolytic Capacitor 1 μ 50V (LN)	C103,112 203,212	0B05681A	Mylar Capacitor 0.01 μ 50V J
	0B08714A	IC Socket 16P (4 pcs.)	C104,113 204,213	0B01862A	Electrolytic Capacitor 22 μ 16V
	- BC Rec. Dolby NR -		C105,114 205,214	0B01402A	Electrolytic Capacitor 4.7 μ 25V
IC101,102 201,202	0B06200A	IC μ A7300PC	C106,206	0B05583A	Mylar Capacitor 0.033 μ 50V J
Q101,103 104,105 106,107 201,203 204,205 206,207	0B01872A	Transistor 2SC945 (L)	C107,151 207,251	0B01780A	Mylar Capacitor 0.1 μ 50V J
ZD101,201	0B06315A	Zener Diode 6.8V YZ068	C108,109 208,209	0B09567A	Electrolytic Capacitor 0.33 μ 50V (LN)
D101,201	0B00030A	Germanium Diode 1N60P	C110,210	0B09594A	Mylar Capacitor 0.03 μ 50V J
D102,105 106,202 205,206	0B06181A	Silicon Diode 1SS53	C115,215	0B09566A	Mylar Capacitor 0.13 μ 50V J
L101,201	0B03919A	Inductor 36mH	C116,216	0B05796A	Mylar Capacitor 0.047 μ 50V J
R101,201	0B09301A	Carbon Resistor 2K ERD-25T J	C117,217	0B05914A	Mylar Capacitor 0.15 μ 50V J
R102,103 117,202 203,217	0B01681A	Carbon Resistor 3.3K ERD-25T J	C119,219 503,504	0B09223A	Electrolytic Capacitor 1 μ 50V (LN)
R104,173 204,273	0B01857A	Carbon Resistor 1K ERD-25T J	C120,220	0B05884A	Electrolytic Capacitor 470 μ 10V
R105,122 205,222	0B09557A	Metal Film Resistor 13K SN14K2E F	C148,248 C702	0B09163A	Electrolytic Capacitor 10 μ 16V (BP)
R107,113 116,124 157,159 160,207 213,216 224,257 259,260	0B05641A	Carbon Resistor 47K ERD-25T J		0B01412A	Electrolytic Capacitor 10 μ 16V
R108,125 208,225	0B09271A	Carbon Resistor 6.2K ERD-25T J		0B08714A	IC Socket 16P (4 pcs.)
R109,111 126,127 209,211 226,227	0B05620A	Carbon Resistor 270K ERD-25T J		- Miscellaneous -	
R110,210	0B01683A	Carbon Resistor 15K ERD-25T J		0B07986B	Dolby NR P.C.B.
R112,212	0B05776A	Carbon Resistor 1M ERD-25T J			
R114,214	0B05622A	Carbon Resistor 2.2K ERD-25T J			
R115,215	0B01846A	Carbon Resistor 4.7K ERD-25T J			
R118,218	0B05560A	Carbon Resistor 18K ERD-25T J			
R119,219	0B09565A	Carbon Resistor 1.6K ERD-25T J			
R121,221	0B05794A	Carbon Resistor 680 ERD-25T J			
R156,256	0B09558A	Metal Film Resistor 4.42K SN14K2E F			
R158,258	0B05784A	Carbon Resistor 560K ERD-25T J			
R161,198 261,298 710	0B01888A	Carbon Resistor 10K ERD-25T J			
R162,262	0B05615A	Carbon Resistor 22K ERD-25T J			
R163,263	0B01887A	Carbon Resistor 5.6K ERD-25T J			
R171,271	0B05625A	Carbon Resistor 220K ERD-25T J			
R701,702	0B05645A	Carbon Resistor 270 ERD-25T J			

7.10.2.1. Playback Dolby NR P.C.B. Ass'y (Serial Nos.: A12101001 – A12102101)

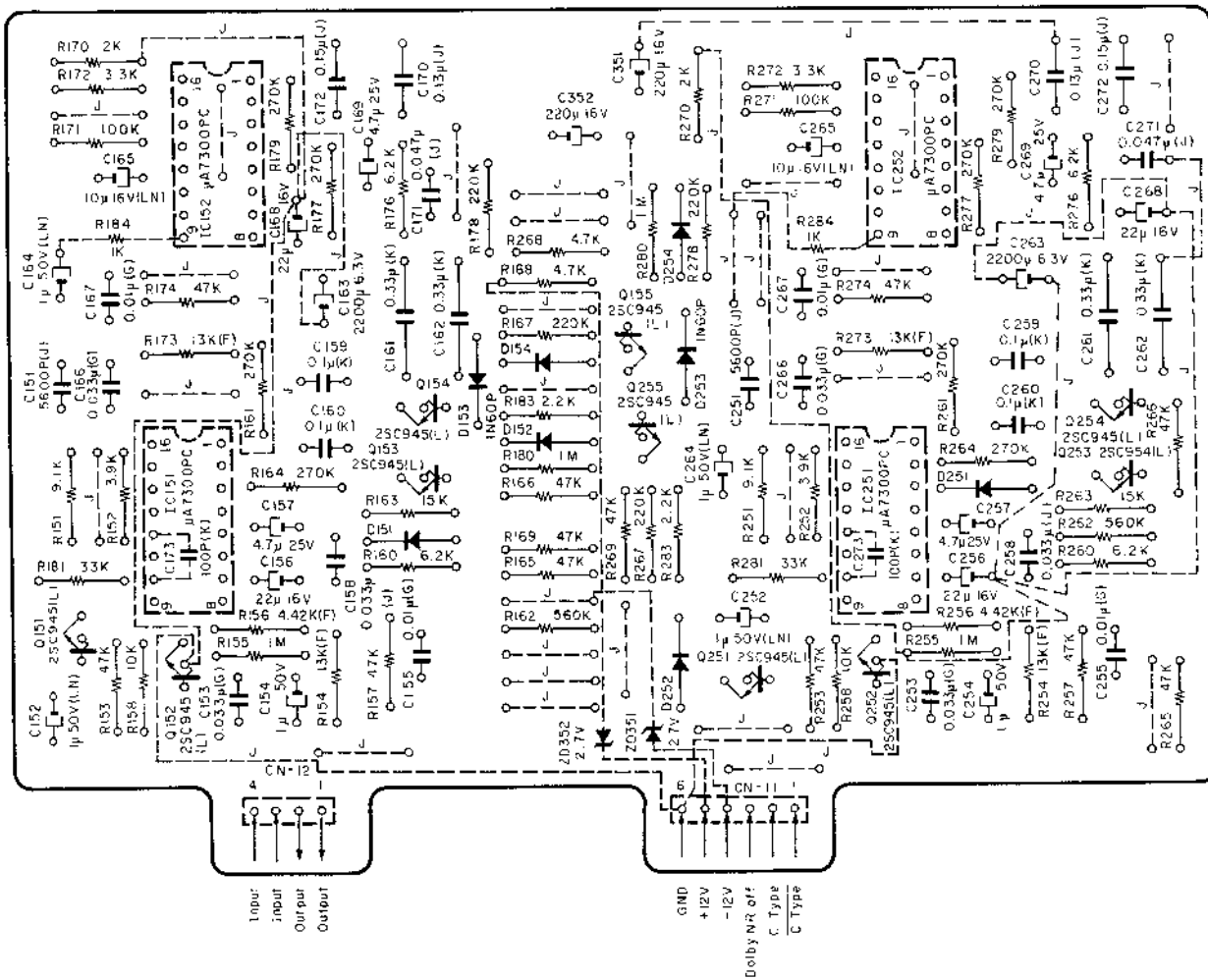


Fig. 7.10.2.1 Serial Nos.: A12101001 – A12102101

Note: Diode is 1SS53 unless otherwise specified.

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA04403A	Playback Dolby NR P.C.B. Ass'y Serial Nos.: A12101001 - A12102101	C161,162 261,262	OB09399A	Mylar Capacitor 0.33μ 100V K
IC151,152	OB07957A	Playback Dolby NR P.C.B.	C163,263	OB09257A	Electrolytic Capacitor 2200μ 6.3V
251,252	OB06200A	IC μA7300PC	C165,265	OB09148A	Electrolytic Capacitor 10μ 16V (LN)
Q151,152	OB01872A	Transistor 2SC945 (L)	C170,270	OB09566A	Mylar Capacitor 0.13μ 50V J
153,154			C171,271	OB05796A	Mylar Capacitor 0.047μ 50V J
155,251			C172,272	OB05914A	Mylar Capacitor 0.15μ 50V J
252,253			C173,273	OB09282A	Ceramic Capacitor 100P 50V K
254,255			C351,352	OB01398A	Electrolytic Capacitor 220μ 16V
ZD351,352	OB06191A	Zener Diode 2.7V 2.7EB	CN11	OB08728A	6P-S Connector
D151,152	OB01909A	Silicon Diode 1S1555	CN12	OB08801A	4P-S Connector
154,251				OB08714A	IC Socket 16P (4 pcs.)
252,254					
D153,253	OB00030A	Germanium Diode 1N60P			
R151,251	OB05694A	Carbon Resistor 9.1K ERD-25T J			
R152,252	OB05675A	Carbon Resistor 3.9K ERD-25T J			
R153,157	OB05641A	Carbon Resistor 47K ERD-25T J			
165,166					
169,174					
253,257					
265,266					
269,274					
R154,173	OB09557A	Metal Film Resistor 13K SN14K2E F			
254,273					
R155,180	OB05776A	Carbon Resistor 1M ERD-25T J			
255,280					
R156,256	OB09558A	Metal Film Resistor 4.42K SN14K2E F			
R158,258	OB01888A	Carbon Resistor 10K ERD-25T J			
R160,176	OB09271A	Carbon Resistor 6.2K ERD-25T J			
260,276					
R161,164	OB05620A	Carbon Resistor 270K ERD-25T J			
177,179					
261,264					
277,279					
R162,262	OB05784A	Carbon Resistor 560K ERD-25T J			
R163,263	OB01683A	Carbon Resistor 15K ERD-25T J			
R167,178	OB05625A	Carbon Resistor 220K ERD-25T J			
267,278					
R168,268	OB01846A	Carbon Resistor 4.7K ERD-25T J			
R170,270	OB09301A	Carbon Resistor 2K ERD-25T J			
R171,271	OB01889A	Carbon Resistor 100K ERD-25T J			
R172,272	OB01681A	Carbon Resistor 3.3K ERD-25T J			
R181,281	OB05509A	Carbon Resistor 33K ERD-25T J			
R183,283	OB05622A	Carbon Resistor 2.2K ERD-25T J			
R184,284	OB01857A	Carbon Resistor 1K ERD-25T J			
C151,251	OB05659A	Mylar Capacitor 5600P 50V J			
C152,164	OB09223A	Electrolytic Capacitor 1μ 50V (LN)			
252,264					
C153,166	OB09240A	PP Capacitor 0.033μ 100V G			
253,266					
C154,254	OB01405A	Electrolytic Capacitor 1μ 50V			
C155,167	OB09312A	PP Capacitor 0.01μ 100V G			
255,267					
C156,168	OB01862A	Electrolytic Capacitor 22μ 16V			
256,268					
C157,169	OB01402A	Electrolytic Capacitor 4.7μ 25V			
257,269					
C158,258	OB05583A	Mylar Capacitor 0.033μ 50V J			
C159,160	OB01603A	Mylar Capacitor 0.1μ 50V K			
259,260					

7.10.2.2. Record Dolby NR P.C.B. Ass'y (Serial Nos.: A12101001 – A12102101)

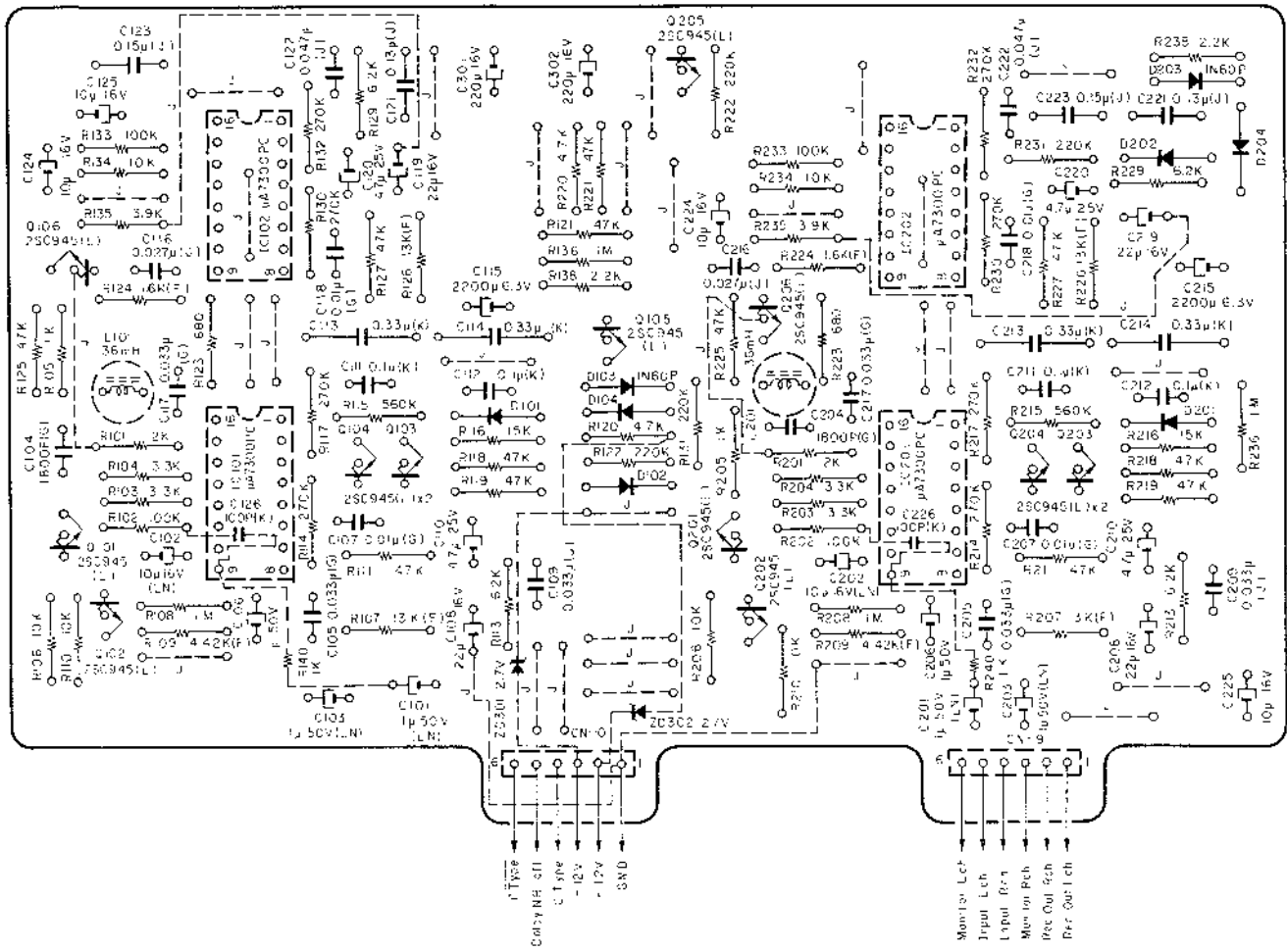


Fig. 7.10.2.2 Serial Nos.: A12101001 – A12102101

Note: Diode is 1SS53 unless otherwise specified.

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA04404A	Record Dolby NR P.C.B. Ass'y Serial Nos.: A12101001 - A12102101	C110,120 210,220	0B01402A	Electrolytic Capacitor 4.7 μ 25V
IC101,102 201,202	0B07958A	Record Dolby NR P.C.B.	C111,112 211,212	0B01603A	Mylar Capacitor 0.1 μ 50V K
Q101,106 201,206	0B06200A	IC μ A7300PC	C113,114 213,214	0B09399A	Mylar Capacitor 0.33 μ 100V K
ZD301,302	0B01872A	Transistor 2SC945 (L) (12 pcs.)	C115,215 C116,216	0B09257A	Electrolytic Capacitor 2200 μ 6.3V
D101,102 104,201 202,204	0B06191A	Zener Diode 2.7V 2.7EB	C121,221 C122,222	0B09045A	Mylar Capacitor 0.027 μ 50V J
D103,203	0B01909A	Silicon Diode 1S1555	C123,223 C124,125 224,225	0B09566A	Mylar Capacitor 0.13 μ 50V J
L101,201	0B00030A	Germanium Diode 1N60P	C301,302 CN9,10	0B05796A	Mylar Capacitor 0.047 μ 50V J
R101,201	0B03919B	Inductor 36mH		0B05914A	Mylar Capacitor 0.15 μ 50V J
R102,133 202,233	0B01889A	Carbon Resistor 100K ERD-25T J		0B01412A	Electrolytic Capacitor 10 μ 16V
R103,104 203,204	0B01681A	Carbon Resistor 3.3K ERD-25T J		0B09282A	Ceramic Capacitor 100P 50V K
R105,140 205,240	0B01857A	Carbon Resistor 1K ERD-25T J		0B01398A	Electrolytic Capacitor 220 μ 16V
R106,110 134,206 210,234	0B01888A	Carbon Resistor 10K ERD-25T J		0B08728A	6P-S Connector
R107,126 207,226	0B09557A	Metal Film Resistor 13K SN14K2E F		0B08714A	IC Socket 16P (4 pcs.)
R108,136 208,236	0B05776A	Carbon Resistor 1M ERD-25T J			
R109,209	0B09558A	Metal Film Resistor 4.42K SN14K2E F			
R111,118 119,121 125,127 211,218 219,221 225,227	0B05641A	Carbon Resistor 47K ERD-25T J			
R113,129 213,229	0B09271A	Carbon Resistor 6.2K ERD-25T J			
R114,117 130,132 214,217 230,232	0B05620A	Carbon Resistor 270K ERD-25T J			
R115,215	0B05784A	Carbon Resistor 560K ERD-25T J			
R116,216	0B01683A	Carbon Resistor 15K ERD-25T J			
R120,220	0B01846A	Carbon Resistor 4.7K ERD-25T J			
R122,131 222,231	0B05625A	Carbon Resistor 220K ERD-25T J			
R123,223	0B05794A	Carbon Resistor 680 ERD-25T J			
R124,224	0B09565A	Metal Film Resistor 1.6K SN14K2E F			
R135,235	0B05675A	Carbon Resistor 3.9K ERD-25T J			
R138,238	0B05622A	Carbon Resistor 2.2K ERD-25T J			
C101,103 201,203	0B09223A	Electrolytic Capacitor 1 μ 50V (LN)			
C102,202	0B09148A	Electrolytic Capacitor 10 μ 16V (LN)			
C104,204	0B09409A	PP Capacitor 1800P 100V G			
C105,117 205,217	0B09240A	PP Capacitor 0.033 μ 100V G			
C106,206	0B01405A	Electrolytic Capacitor 1 μ 50V			
C107,118 207,218	0B09312A	PP Capacitor 0.01 μ 100V G			
C108,119 208,219	0B01862A	Electrolytic Capacitor 22 μ 16V			
C109,209	0B05583A	Mylar Capacitor 0.033 μ 50V J			

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA04509A	Logic P.C.B. Ass'y (U.S.A., Canada, Japan & Others)	R409,410	OB05776A	Carbon Resistor 1M ERD-25T J
	BA04514A	Logic P.C.B. Ass'y (220V Class 2, UK & Australia) Serial No.: A12103654 -	431,432		
			453	OB01682A	Carbon Resistor 6.8K ERD-25T J
			R419,464		
			497	OB05671A	Carbon Resistor 2.2M ERD-25T J
	OB07841E	Logic P.C.B.	R420,421		
IC401-403	OB06178A	IC μ PD4011BC (3 pcs.)	461,466		
IC404	OB06143A	IC μ PD4001BC	500		
IC405	OB06124B	IC RC4558D	R422	OB05698A	Carbon Resistor 1.5K ERD-25T J
IC406	OB06192A	Regulator +12V μ A7812PC	R434,475	OB05509A	Carbon Resistor 33K ERD-25T J
IC407	OB06193A	Regulator -12V μ A7912PC	522		
Q401,402	OB01872A	Transistor 2SC945 (L)	R435,480	OB09263A	Carbon Resistor 12K ERD-25T J
404		(20 pcs.)	R436,445	OB05615A	Carbon Resistor 22K ERD-25T J
408-418			447,448		
421,422			450,452		
425,428			454,457		
429,430			459,527		
Q403,405	OB06013A	Transistor 2SA733	R456	OB01684A	Carbon Resistor 470K ERD-25T J
406,407			R465,525	OB01857A	Carbon Resistor 1K ERD-25T J
423,424			R467	OB09320A	Carbon Resistor 820K ERD-25T J
427			R468	OB01887A	Carbon Resistor 5.6K ERD-25T J
Q419,431	OB06020A	Transistor 2SC1096	R470,485	OB05508A	Carbon Resistor 56K ERD-25T J
Q420,432	OB06012A	Transistor 2SA634	R471	OB05692A	Carbon Resistor 68K ERD-25T J
Q426	OB06155A	Transistor 2SA733 (P)	R473	OB09580A	Fail Safe Type Resistor 2.4 RDF-25S J
D401	OB06183A	Diode Bridge RB-151	R474,499	OB05743A	Carbon Resistor 27K ERD-25T J
D402-432	OB06181A	Silicon Diode 1SS53 (38 pcs.)	R476,477	OB01856A	Carbon Resistor 8.2K ERD-25T J
434,435			R488	OB09301A	Carbon Resistor 2K ERD-25T J
437-440			R489	OB01681A	Carbon Resistor 3.3K ERD-25T J
444			R498	OB05626A	Carbon Resistor 150K ERD-25T J
D436,441	OB01909A	Silicon Diode 1S1555	R501	OB09328A	Metal Film Resistor 9.1K SN14K2E F
442,443			R503	OB09340A	Metal Film Resistor 15K SN14K2E F
VR401,402	OB03831A	Semi-fixed Volume 5K	R505	OB05625A	Carbon Resistor 220K ERD-25T J
VR403	OB03832A	Semi-fixed Volume 100K	R507	OB09365A	Metal Film Resistor 4.32K SN14K2E F
R401,405	OB01889A	Carbon Resistor 100K ERD-25T J	R511	OB09367A	Metal Film Resistor 174K SN14K2E F
463,469			R514	OB09366A	Metal Film Resistor 287K SN14K2E F
472,502			R518	OB05794A	Carbon Resistor 680 ERD-25T J
504,517			R520	OB05680A	Carbon Resistor 1.8M ERD-25T J
524			R521	OB05640A	Carbon Resistor 180K ERD-25T J
R402	OB05560A	Carbon Resistor 18K ERD-25T J	R523	OB09049A	Fail Safe Type Resistor 22 RDF-25S J
R403,481	OB01854A	Carbon Resistor 39K ERD-25T J	C401,402	OB09148A	Electrolytic Capacitor 10 μ 16V (LN)
486,491			C403	OB09374A	Electrolytic Capacitor 6800 μ 25V
492			C404	OB05654A	Electrolytic Capacitor 2200 μ 25V
R404	OB05627A	Carbon Resistor 330K ERD-25T J (46 pcs.)	C405,406	OB01406A	Electrolytic Capacitor 2200 μ 16V
411-418			407		
423-430			C408	OB01502A	Electrolytic Capacitor 330 μ 16V
433			C409	OB05513A	Mylar Capacitor 0.033 μ 50V
437-444			C410,411	OB05556A	Mylar Capacitor 4700P 50V
446,449			413,414		
451,458			418		
460,478			C412	OB09171A	Mylar Capacitor 0.15 μ 50V
479,482			C415	OB09166A	Mylar Capacitor 3300P 50V
484,487			C416	OB00093A	Mylar Capacitor 0.1 μ 50V
490,493			C417	OB01405A	Electrolytic Capacitor 1 μ 50V
494,495			C420	OB01412A	Electrolytic Capacitor 10 μ 16V
506,508			C421,427	OB01676A	Mylar Capacitor 0.056 μ 50V
509,510			C422	OB09223A	Electrolytic Capacitor 1 μ 50V (LN)
513,516			C423,424	OB09147A	Electrolytic Capacitor 3.3 μ 50V (LN)
R406,455	OB01888A	Carbon Resistor 10K ERD-25T J	C425	OB09277A	Ceramic Capacitor 10P 50V J
462,483			C426	OB01402A	Electrolytic Capacitor 4.7 μ 25V
496			C428	OB09333A	Electrolytic Capacitor 4.7 μ 25V (LN)
R407	OB09575A	Fail Safe Type Resistor 27 RSF-2B J	CN1	OB08184A	3P-S Post
R408	OB05940A	Fail Safe Type Resistor 5.6 ERD-14F J	CN2	OB08579A	15P-S Post
				OB08568B	Heat Sink (1 pce.)

Schematic Ref. No.	Part No.	Description
	0B08603A	Transistor Mica TO-220 (1 pce.)
	0B08604A	Transistor Bushing TO-220 (1 pce.)
	0E00607A	Screw M3x8 Philips Pan Head (2 pcs.)
	0E00507A	Nut Hex, M3 (2 pcs.)
	0E00857A	BT Screw M3x6 Philips Binding Head (2 pcs.)
	0E00037A	Earth Lug B-5 (1 pce.)
*	0B08349A	Fuse Clip (4 pcs.)
*	0B08347U	Fuse T 1A 250V (2 pcs.)
*	0M04131B	Fuse Label T 1A (1 pce.)
	*: Included only in Logic P.C.B. Ass'y (BA04514A).	

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

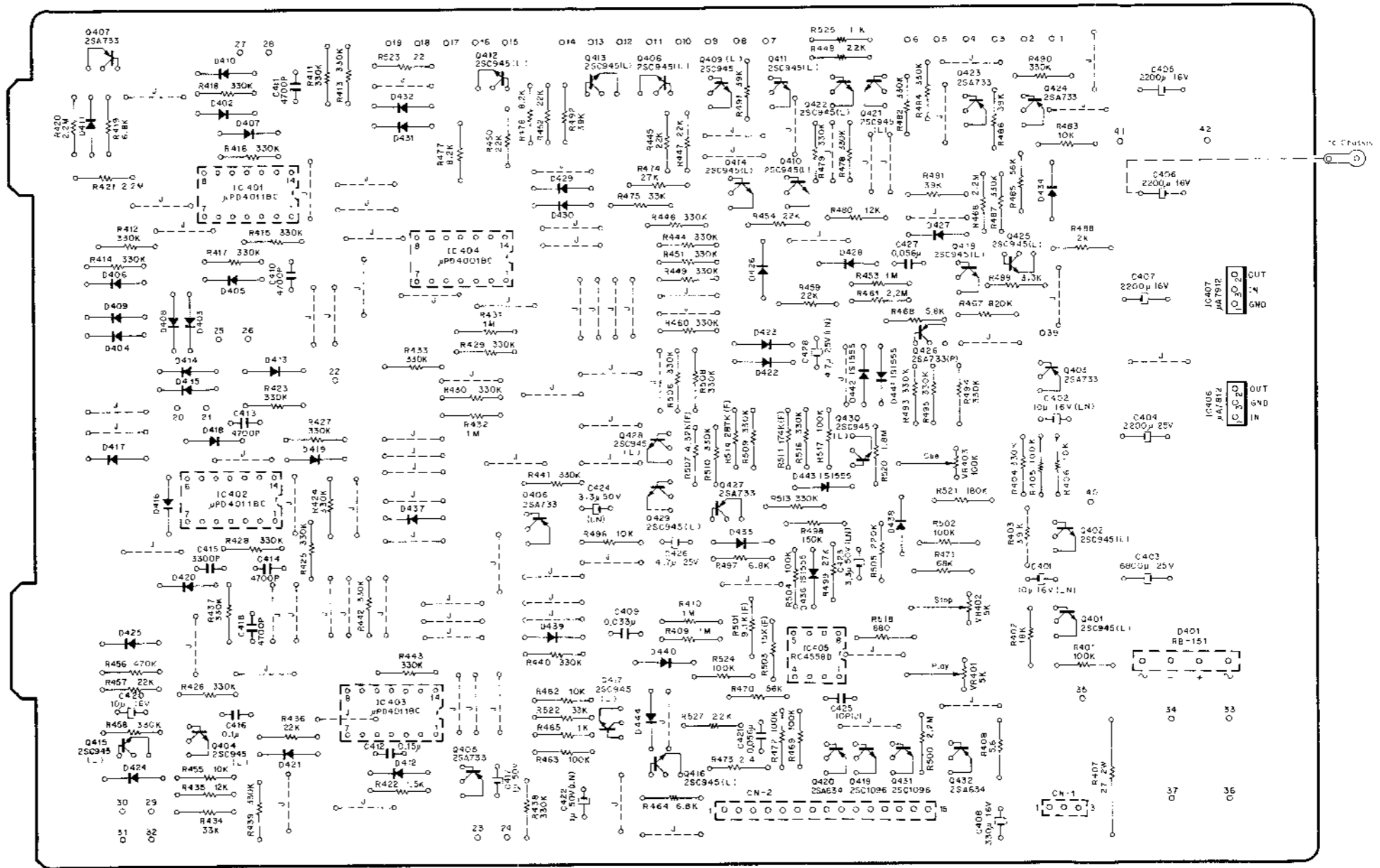


Fig. 7.11.1 Serial No.: A12103654 -

Note: Diode is 1SS53 unless otherwise specified.

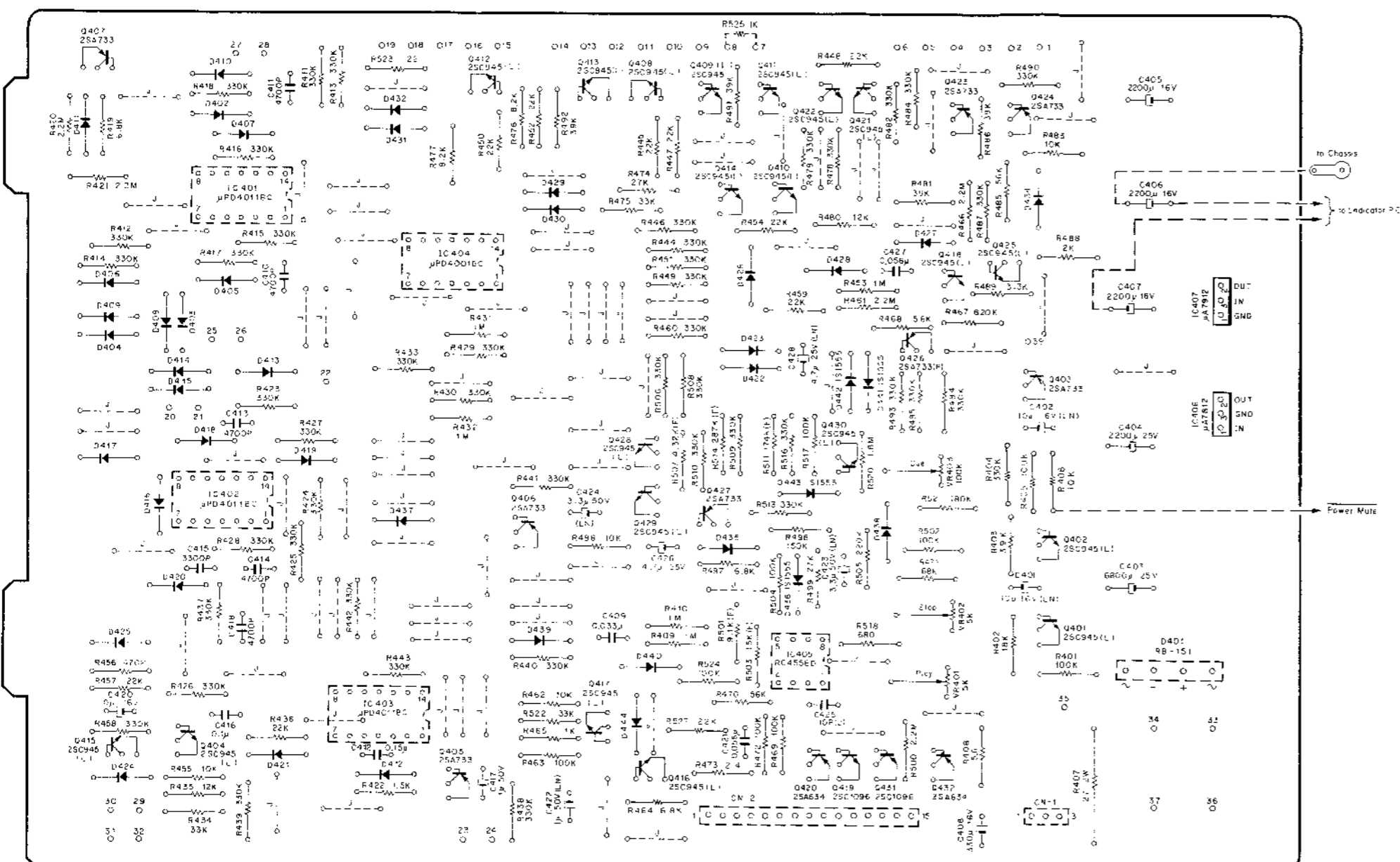


Fig. 7.11.2 Serial Nos.: A12102903 – A12103653

Note: Diode is 1SS53 unless otherwise specified.

Schematic Ref. No.	Part No.	Description
	BA04509A	Logic P.C.B. Ass'y (U.S.A., Canada, Japan & Others)
	BA04514A	Logic P.C.B. Ass'y (220V Class 2, UK & Australia)
		Serial Nos.: A12102903 – A12103653
IC401-403	0B07841D	Logic P.C.B.
IC404	0B06178A	IC μPD4011BC (3 pcs.)
IC405	0B06143A	IC μPD4001BC
IC406	0B06124B	IC RC4558D
IC407	0B06192A	Regulator +12V μA7812PC
Q401,402	0B06193A	Regulator -12V μA7912PC
404	0B01872A	Transistor 2SC945 (L)
408-418		(20 pcs.)
421,422		
425,428		
429,430		
Q403,405	0B06013A	Transistor 2SA733
406,407		
423,424		
427		
Q419,431	0B06020A	Transistor 2SC1096
Q420,432	0B06012A	Transistor 2SA634
Q426	0B06155A	Transistor 2SA733 (P)
D401	0B06183A	Diode Bridge RB-151
D402-432	0B06181A	Silicon Diode 1SS53 (38 pcs.)
434,435		
437-440		
444		
D436,441	0B01909A	Silicon Diode 1S1555
442,443		
VR401,402	0B03831A	Semi-fixed Volume 5K
VR403	0B03832A	Semi-fixed Volume 100K
R401,405	0B01889A	Carbon Resistor 100K ERD-25T J
463,469		
472,502		
504,517		
524		
R402	0B05560A	Carbon Resistor 18K ERD-25T J
R403,481	0B01854A	Carbon Resistor 39K ERD-25T J
486,491		
492		
R404	0B05627A	Carbon Resistor 330K ERD-25T J
411-418		(46 pcs.)
423-430		
433		
437-444		
446,449		
451,458		
460,478		
479,482		
484,487		
490,493		
494,495		
506,508		
509,510		
513,516		
R406,455	0B01888A	Carbon Resistor 10K ERD-25T J
462,483		
496		
R407	0B08575A	Fail Safe Type Resistor 27 RSF-2B J
R408	0B05940A	Fail Safe Type Resistor 5.6 ERD-14F J

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
R409,410 431,432 453	0B05776A	Carbon Resistor 1M ERD-25T J		0B08603A	Transistor Mica TO-220 (1 pce.)
R419,464 497	0B01682A	Carbon Resistor 6.8K ERD-25T J		0B08604A	Transistor Bushing TO-220 (1 pce.)
R420,421 461,466 500	0B05671A	Carbon Resistor 2.2M ERD-25T J		0E00607A	Screw M3x8 Philips Pan Head (2 pcs.)
R422	0B05698A	Carbon Resistor 1.5K ERD-25T J		0E00507A	Nut Hex. M3 (2 pcs.)
R434,475 522	0B05509A	Carbon Resistor 33K ERD-25T J		0E00857A	BT Screw M3x6 Philips Binding Head (2 pcs.)
R435,480	0B09263A	Carbon Resistor 12K ERD-25T J		0E00037A	Earth Lug B-5 (1 pce.)
R436,445 447,448 450,452 454,457 459,527	0B05615A	Carbon Resistor 22K ERD-25T J		0B08349A	Fuse Clip (4 pcs.)
R456	0B01684A	Carbon Resistor 470K ERD-25T J	*	0B08347U	Fuse T 1A 250V (2 pcs.)
R465,525	0B01857A	Carbon Resistor 1K ERD-25T J	*	0M04131B	Fuse Label T 1A (1 pce.)
R467	0B09320A	Carbon Resistor 820K ERD-25T J			
R468	0B01887A	Carbon Resistor 5.6K ERD-25T J			
R470,485	0B05508A	Carbon Resistor 56K ERD-25T J			
R471	0B05692A	Carbon Resistor 68K ERD-25T J			
R473	0B09580A	Fail Safe Type Resistor 2.4 RDF-25S J			
R474,499	0B05743A	Carbon Resistor 27K ERD-25T J			
R476,477	0B01856A	Carbon Resistor 8.2K ERD-25T J			
R488	0B09301A	Carbon Resistor 2K ERD-25T J			
R489	0B01681A	Carbon Resistor 3.3K ERD-25T J			
R498	0B05626A	Carbon Resistor 150K ERD-25T J			
R501	0B09328A	Metal Film Resistor 9.1K SN14K2E F			
R503	0B09340A	Metal Film Resistor 15K SN14K2E F			
R505	0B05625A	Carbon Resistor 220K ERD-25T J			
R507	0B09365A	Metal Film Resistor 4.32K SN14K2E F			
R511	0B09367A	Metal Film Resistor 174K SN14K2E F			
R514	0B09366A	Metal Film Resistor 287K SN14K2E F			
R518	0B05794A	Carbon Resistor 680 ERD-25T J			
R520	0B05680A	Carbon Resistor 1.8M ERD-25T J			
R521	0B05640A	Carbon Resistor 180K ERD-25T J			
R523	0B09049A	Fail Safe Type Resistor 22 RDF-25S J			
C401,402	0B09148A	Electrolytic Capacitor 10 μ 16V (LN)			
C403	0B09374A	Electrolytic Capacitor 6800 μ 25V			
C404	0B05654A	Electrolytic Capacitor 2200 μ 25V			
C405,406 407	0B01406A	Electrolytic Capacitor 2200 μ 16V			
C408	0B01502A	Electrolytic Capacitor 330 μ 16V			
C409	0B05513A	Mylar Capacitor 0.033 μ 50V			
C410,411 413,414 418	0B05556A	Mylar Capacitor 4700P 50V			
C412	0B09171A	Mylar Capacitor 0.15 μ 50V			
C415	0B09166A	Mylar Capacitor 3300P 50V			
C416	0B00093A	Mylar Capacitor 0.1 μ 50V			
C417	0B01405A	Electrolytic Capacitor 1 μ 50V			
C420	0B01412A	Electrolytic Capacitor 10 μ 16V			
C421,427	0B01676A	Mylar Capacitor 0.056 μ 50V			
C422	0B09223A	Electrolytic Capacitor 1 μ 50V (LN)			
C423,424	0B09147A	Electrolytic Capacitor 3.3 μ 50V (LN)			
C425	0B09277A	Ceramic Capacitor 10P 50V J			
C426	0B01402A	Electrolytic Capacitor 4.7 μ 25V			
C428	0B09333A	Electrolytic Capacitor 4.7 μ 25V (LN)			
CN1	0B08184A	3P-S Post			
CN2	0B08579A	15P-S Post			
	0B08568B	Heat Sink (1 pce.)			

*: Included only in Logic P.C.B. Ass'y (BA04514A).

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA04434A	Logic P.C.B. Ass'y (U.S.A., Canada, Japan & Others)	R409,410	OB05776A	Carbon Resistor 1M ERD-25T J
	BA04435A	Logic P.C.B. Ass'y (220V Class 2, UK & Australia) Serial Nos.: A12101001 - A12102902	431,432 453		
	OB07841D	Logic P.C.B.	R419,464	OB01682A	Carbon Resistor 6.8K ERD-25T J
IC401-403	OB06178A	IC μ PD4011BC (3 pcs.)	R420,421	OB05671A	Carbon Resistor 2.2M ERD-25T J
IC404	OB06143A	IC μ PD4001BC	461,466		
IC405	OB06124B	IC RC4558D	500	OB05698A	Carbon Resistor 1.5K ERD-25T J
IC406	OB06192A	Regulator +12V μ A7812PC	R422	OB05509A	Carbon Resistor 33K ERD-25T J
IC407	OB06193A	Regulator -12V μ A7912PC	R434,475		
Q401,402	OB01872A	Transistor 2SC945 (L)	522	OB09263A	Carbon Resistor 12K ERD-25T J
404		(20 pcs.)	R435,480	OB05615A	Carbon Resistor 22K ERD-25T J
408-418			R436,445		
421,422			447,448		
425,428			450,452		
429,430			454,457		
Q403,405	OB06013A	Transistor 2SA733	459		
406,407			R456	OB01684A	Carbon Resistor 470K ERD-25T J
423,424			R465,525	OB01857A	Carbon Resistor 1K ERD-25T J
427			R467	OB09320A	Carbon Resistor 820K ERD-25T J
Q419,431	OB06020A	Transistor 2SC1096	R468	OB01887A	Carbon Resistor 5.6K ERD-25T J
Q420,432	OB06012A	Transistor 2SA634	OB05508A	Carbon Resistor 56K ERD-25T J	
Q426	OB06155A	Transistor 2SA733 (P)	R470,485	OB05692A	Carbon Resistor 68K ERD-25T J
D401	OB06183A	Diode Bridge RB-151	R471	OB09381A	Fail Safe Type Resistor 2 RDF-25S J
D402-432	OB06181A	Silicon Diode 1SS53 (38 pcs.)	R473	OB05743A	Carbon Resistor 27K ERD-25T J
434,435			R474,499	OB01856A	Carbon Resistor 8.2K ERD-25T J
437-440			R476,477	OB09301A	Carbon Resistor 2K ERD-25T J
444			R488	OB01681A	Carbon Resistor 3.3K ERD-25T J
D436,441	OB01909A	Silicon Diode 1S1555	R489	OB05626A	Carbon Resistor 150K ERD-25T J
442,443			R498	OB09328A	Metal Film Resistor 9.1K SN14K2E F
VR401,402	OB03831A	Semi-fixed Volume 5K	R501	OB09340A	Metal Film Resistor 15K SN14K2E F
VR403	OB03832A	Semi-fixed Volume 100K	R503	OB05625A	Carbon Resistor 220K ERD-25T J
R401,405	OB01889A	Carbon Resistor 100K ERD-25T J	R505	OB09365A	Metal Film Resistor 4.32K SN14K2E F
463,469			R507	OB09367A	Metal Film Resistor 174K SN14K2E F
472,502			R511	OB09366A	Metal Film Resistor 287K SN14K2E F
504,517			R514	OB05794A	Carbon Resistor 680 ERD-25T J
524			R518	OB05680A	Carbon Resistor 1.8M ERD-25T J
R402	OB05560A	Carbon Resistor 18K ERD-25T J	R520	OB05640A	Carbon Resistor 180K ERD-25T J
R403,481	OB01854A	Carbon Resistor 39K ERD-25T J	R521	OB09049A	Fail Safe Type Resistor 22 RDF-25S J
486,491			R523	OB09148A	Electrolytic Capacitor 10 μ 16V (LN)
492			C401,402	OB09374A	Electrolytic Capacitor 6800 μ 25V
R404	OB05627A	Carbon Resistor 330K ERD-25T J	C403	OB05654A	Electrolytic Capacitor 2200 μ 25V
411-418		(46 pcs.)	C404	OB01406A	Electrolytic Capacitor 2200 μ 16V
423-430			C405,406		
433			407		
437-444			C408	OB01502A	Electrolytic Capacitor 330 μ 16V
446,449			C409	OB05513A	Mylar Capacitor 0.033 μ 50V
451,458			C410,411	OB05556A	Mylar Capacitor 4700P 50V
460,478			413,414		
479,482			418		
484,487			C412	OB09171A	Mylar Capacitor 0.15 μ 50V
490,493			C415	OB09166A	Mylar Capacitor 3300P 50V
494,495			C416	OB00093A	Mylar Capacitor 0.1 μ 50V
506,508			C417	OB01405A	Electrolytic Capacitor 1 μ 50V
509,510			C420	OB01412A	Electrolytic Capacitor 10 μ 16V
513,516			C421,427	OB01676A	Mylar Capacitor 0.056 μ 50V
R406,455	OB01888A	Carbon Resistor 10K ERD-25T J	C422	OB09223A	Electrolytic Capacitor 1 μ 50V (LN)
462,483			C423,424	OB09147A	Electrolytic Capacitor 3.3 μ 50V (LN)
496			C425	OB09277A	Ceramic Capacitor 10P 50V J
R407	OB09575A	Fail Safe Type Resistor 27 RSF-2B J	C426	OB01402A	Electrolytic Capacitor 4.7 μ 25V
R408	OB05940A	Fail Safe Type Resistor 5.6 ERD-14F J	C428	OB09333A	Electrolytic Capacitor 4.7 μ 25V (LN)
			CN1	OB08184A	3P-S Post
			CN2	OB08579A	15P-S Post
				OB08568B	Heat Sink (1 pce.)

Schematic Ref. No.	Part No.	Description
	OB08603A	Transistor Mica TO-220 (1 pce.)
	OB08604A	Transistor Bushing TO-220 (1 pce.)
	OE00607A	Screw M3x8 Philips Pan Head (2 pcs.)
	OE00507A	Nut Hex. M3 (2 pcs.)
	OE00857A	BT Screw M3x6 Philips Binding Head (2 pcs.)
	OE00037A	Earth Lug B-5 (1 pce.)
*	OB08349A	Fuse Clip (4 pcs.)
*	OB08347U	Fuse T 1A 250V (2 pcs.)
*	OM04131B	Fuse Label T 1A (1 pce.)
	* Included only in Logic P.C.B. Ass'y (BA04435A).	

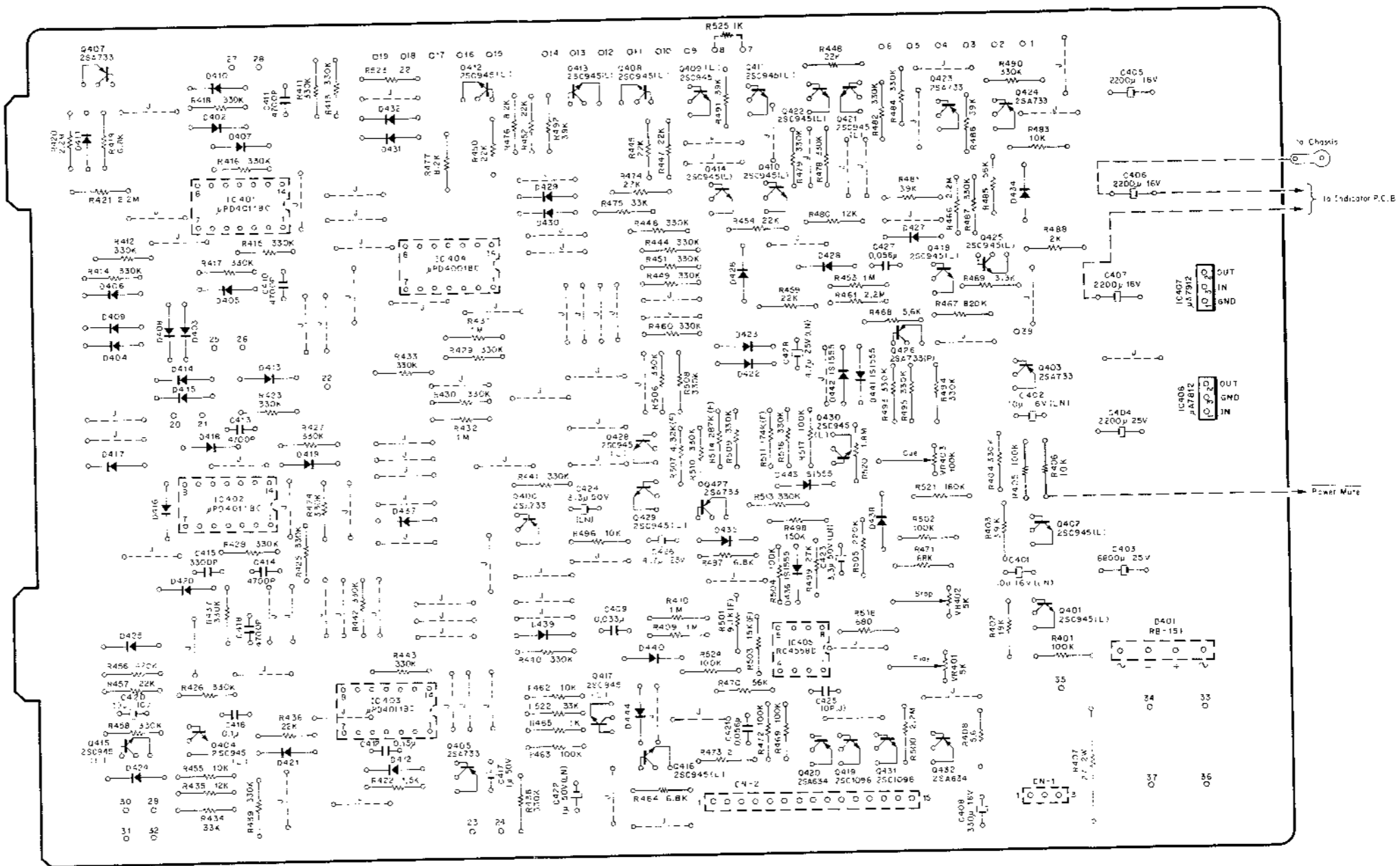


Fig. 7.11.3 Serial Nos.: A12101001 – A12102902

Note: Diode is 1SS53 unless otherwise specified.

8. MECHANISM ASS'Y AND PARTS LIST

8.1. Synthesis

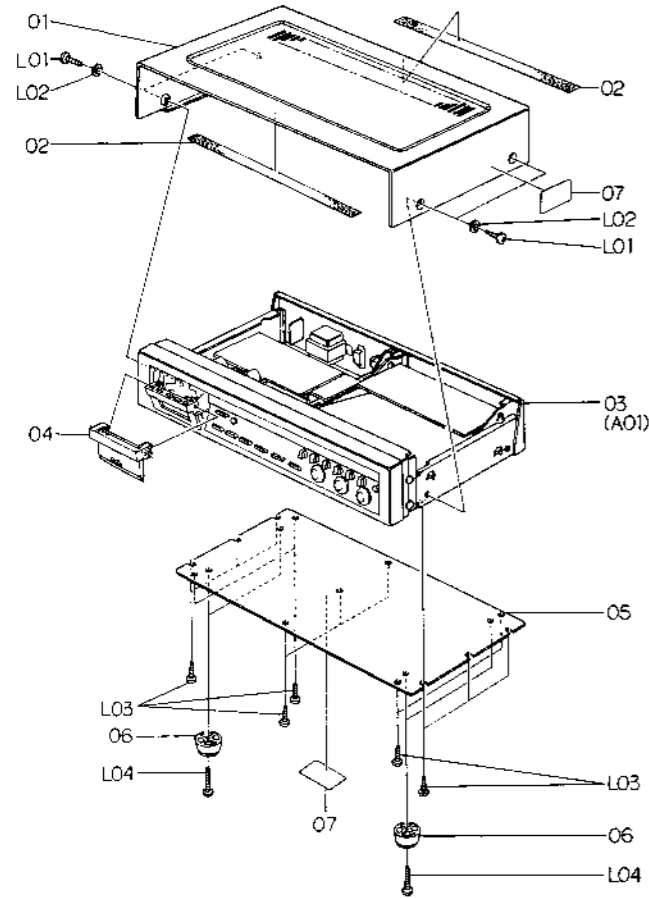


Fig. 8.1.1 Serial No.: A12102102 -

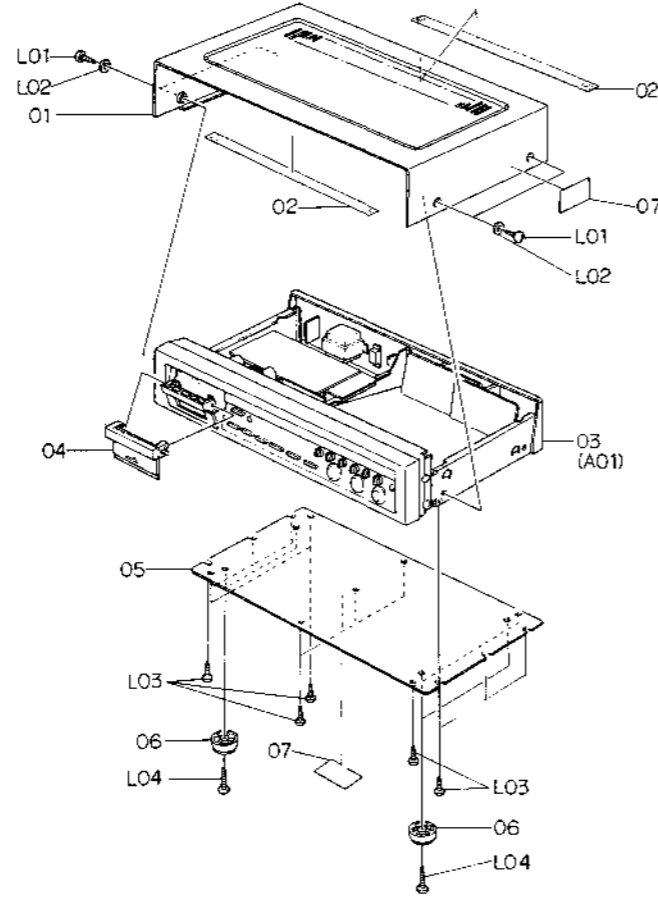


Fig. 8.1.2 Serial Nos.: A12101001 - A12102101

Schematic Ref. No.	Part No.	Description	Q'ty
		Synthesis Serial No.: A12102903 -	
01	0H03681C	Top Cover	1
02	0H03580B	Top Cover Himelon	2
03	JA03826B	Synthesis Mechanism Ass'y 582Z (U.S.A. & Canada)	1
	JA03827B	Synthesis Mechanism Ass'y 582Z (Japan)	1
	JA03830B	Synthesis Mechanism Ass'y 582Z (220V Class 2)	1
	JA03825B	Synthesis Mechanism Ass'y 582Z (UK)	1
	JA03829B	Synthesis Mechanism Ass'y 582Z (Australia)	1
	JA03828B	Synthesis Mechanism Ass'y 582Z (Others)	1
04	0H03689B	Acrylic Cassette Compartment Cover	1
05	0J03972B	Bottom Cover	1
06	0J03825A	Leg S	4
07	OM04101B	Caution Label	2
L01	0E00858A	BT Screw M4x6 Philips Binding Head (Black Chromate)	4
L02	0E00736A	Washer 4mm (Black Chromate)	4
L03	0E00857A	BT Screw M3x6 Philips Binding Head	13
L04	0E00852A	BT Screw M4x12 Philips Binding Head	4
		Synthesis Serial Nos.: A12101001 - A12102902	
01	0H03681C	Top Cover	1
02	0H03580B	Top Cover Himelon	2
03	JA03826A	Synthesis Mechanism Ass'y 582Z (U.S.A. & Canada)	1
	JA03827A	Synthesis Mechanism Ass'y 582Z (Japan)	1
	JA03830A	Synthesis Mechanism Ass'y 582Z (220V Class 2)	1
	JA03825A	Synthesis Mechanism Ass'y 582Z (UK)	1
	JA03829A	Synthesis Mechanism Ass'y 582Z (Australia)	1
	JA03828A	Synthesis Mechanism Ass'y 582Z (Others)	1
04	0H03689B	Acrylic Cassette Compartment Cover	1
05	0J03972B	Bottom Cover	1
06	0J03825A	Leg S	4
07	OM04101B	Caution Label	2
L01	0E00858A	BT Screw M4x6 Philips Binding Head (Black Chromate)	4
L02	0E00736A	Washer 4mm (Black Chromate)	4
L03	0E00857A	BT Screw M3x6 Philips Binding Head	13
L04	0E00852A	BT Screw M4x12 Philips Binding Head	4

8.2. Synthesis Mechanism Ass'y 582Z (A01)

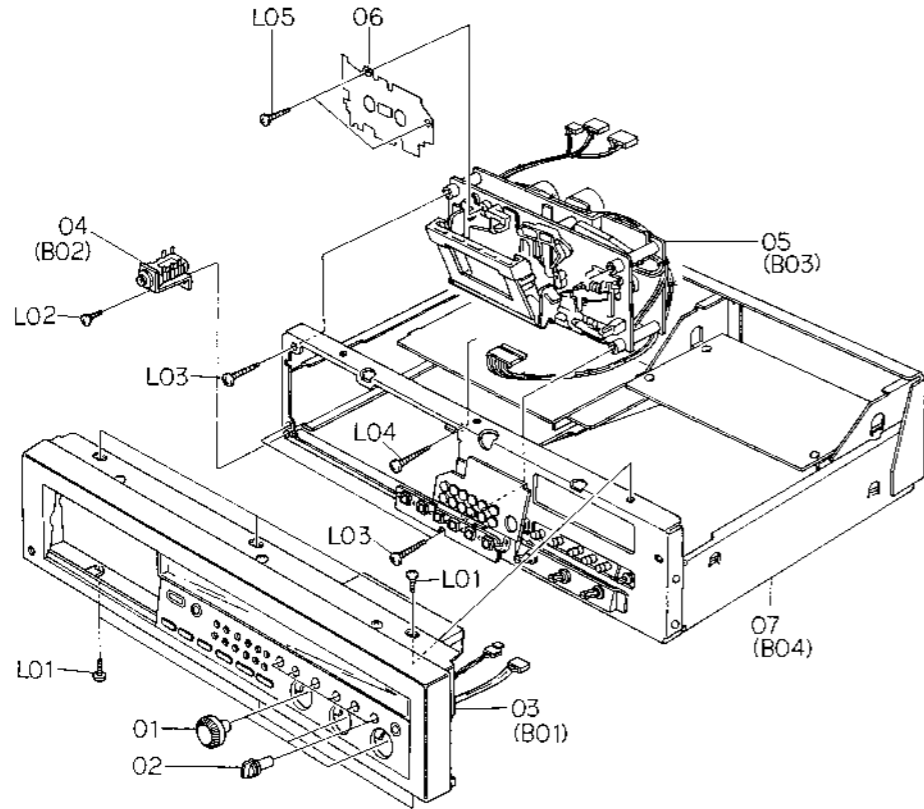


Fig. 8.2.1 Serial No.: A12102102 -

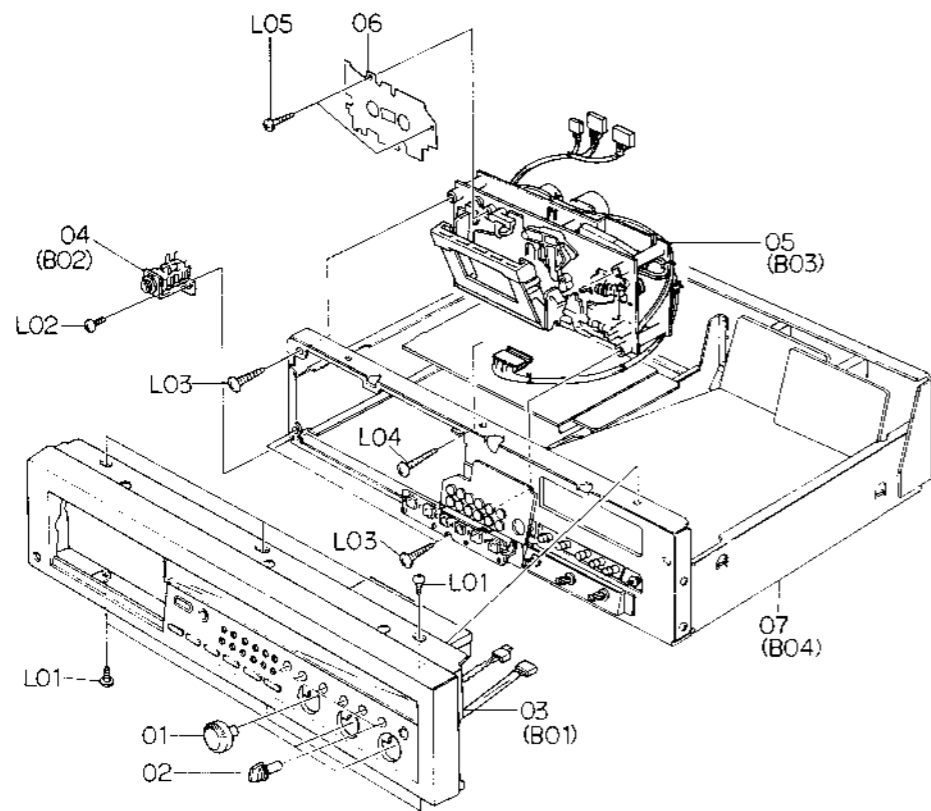


Fig. 8.2.2 Serial Nos.: A12101001 - A12102101

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty	
A01	JA03826B	Synthesis Mechanism Ass'y 582Z (U.S.A. & Canada)	1	L01	JA03818B	Chassis Ass'y 582Z (220V Class 2)	1	
	JA03827B	Synthesis Mechanism Ass'y 582Z (Japan)	1		JA03813B	Chassis Ass'y 582Z (UK)	1	
	JA03830B	Synthesis Mechanism Ass'y 582Z (220V Class 2)	1		JA03817B	Chassis Ass'y 582Z (Australia)	1	
	JA03825B	Synthesis Mechanism Ass'y 582Z (UK)	1		JA03816B	Chassis Ass'y 582Z (Others)	1	
	JA03829B	Synthesis Mechanism Ass'y 582Z (Australia)	1		0E00877A	ST Screw M3x5 Philips Binding Head	6	
	JA03828B	Synthesis Mechanism Ass'y 582Z (Others)	1		L02	0E00857A	BT Screw M3x6 Philips Binding Head	1
		Serial No.: A12102903 -			L03	0E00867A	BT Screw M4x15 Philips Binding Head	3
01	0H03706A	Volume Knob	3	L04	0E00878A	BT Screw M4x20 Philips Binding Head	1	
02	0H03712C	Switch Knob	6	L05	0E00832A	BT Screw M3x14 Philips Binding Head	2	
03	HA04119A	Front Panel Ass'y 582Z	1					
04	JA03390A	Headphone Jack Ass'y	1					
05	CA08316A	Mechanism Ass'y 582Z	1					
06	CA08259A	Cover Plate Ass'y	1					
07	JA03814C	Chassis Ass'y 582Z (U.S.A. & Canada)	1					
	JA03815C	Chassis Ass'y 582Z (Japan)	1					
	JA03818C	Chassis Ass'y 582Z (220V Class 2)	1					
	JA03813C	Chassis Ass'y 582Z (UK)	1					
	JA03817C	Chassis Ass'y 582Z (Australia)	1					
	JA03816C	Chassis Ass'y 582Z (Others)	1					
L01	0E00877A	ST Screw M3x5 Philips Binding Head	6					
L02	0E00857A	BT Screw M3x6 Philips Binding Head	1					
L03	0E00944A	BT Screw M4x15 Philips Binding Head (Black Chromate)	3					
L04	0E00924A	BT Screw M4x16 Philips Binding Head	1					
L05	0E00832A	BT Screw M3x14 Philips Binding Head (Black Chromate)	2					
A01	JA03826A	Synthesis Mechanism Ass'y 582Z (U.S.A. & Canada)	1					
	JA03827A	Synthesis Mechanism Ass'y 582Z (Japan)	1					
	JA03830A	Synthesis Mechanism Ass'y 582Z (220V Class 2)	1					
	JA03825A	Synthesis Mechanism Ass'y 582Z (UK)	1					
	JA03829A	Synthesis Mechanism Ass'y 582Z (Australia)	1					
	JA03828A	Synthesis Mechanism Ass'y 582Z (Others)	1					
		Serial Nos.: A12101001 - A12102902						
01	0H03706A	Volume Knob	3					
02	0H03712C	Switch Knob	6					
03	HA04119A	Front Panel Ass'y 582Z	1					
04	JA03390A	Headphone Jack Ass'y	1					
05	CA08273A	Mechanism Ass'y 582Z	1					
06	CA08259A	Cover Plate Ass'y	1					
07	JA03814B	Chassis Ass'y 582Z (U.S.A. & Canada)	1					
	JA03815B	Chassis Ass'y 582Z (Japan)	1					

8.3. Front Panel Ass'y 582Z (B01)

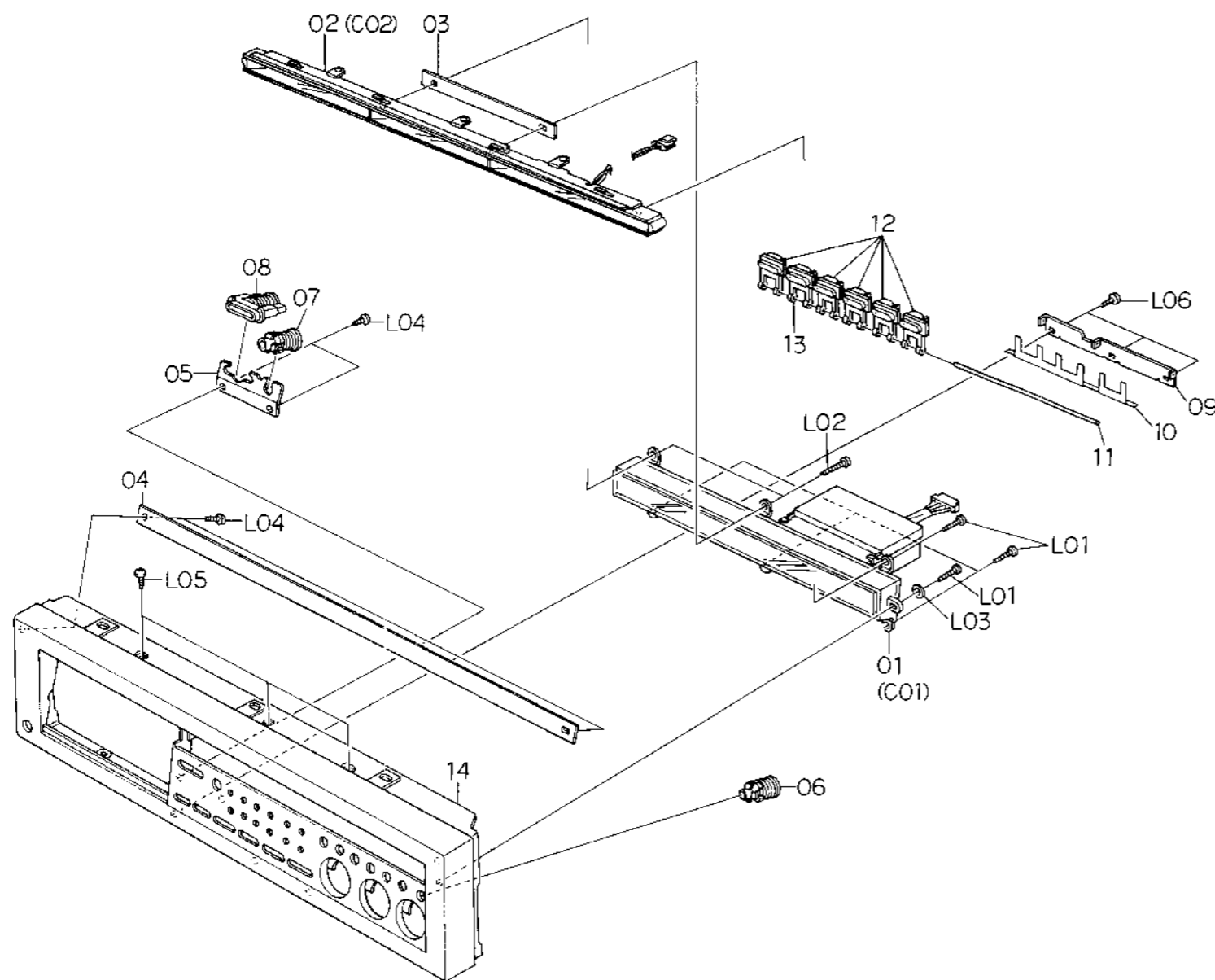


Fig. 8.3

8.4. Headphone Jack Ass'y (B02)

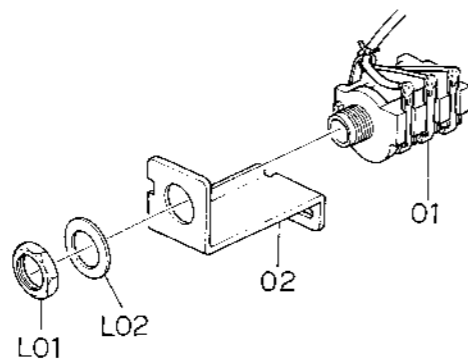


Fig. 8.4

Schematic Ref. No.	Part No.	Description	Q'ty
B01	HA04119A	Front Panel Ass'y 582Z Serial No.: A12101001 -	1
01	HA04120A	LED Indicator Ass'y	1
02	HA03777A	Lamp House Cover Ass'y	1
03	0B08778A	Lamp P.C.B. Cover	1
04	0H03697A	Aluminum Mirror	1
05	0J03979B	Flange Holder	1
06	HA03803A	Push Button Ass'y A	1
07	HA03805A	Push Button Ass'y C	1
08	HA03806A	Counter Reset Button Ass'y	1
09	0J03965C	Control Button Shaft Holder	1
10	0J03986B	Control Button Spring	1
11	0J03966A	Control Button Shaft	1
12	HA03811A	Control Button B Ass'y	5
13	HA03810A	Control Button A Ass'y	1
14	HA04136A	Front Panel Sub Ass'y	1
L01	0E00793A	BT Screw M2x6 Philips Pan Head	5
L02	0E00840A	BT Screw M2x8 Philips Pan Head	1
L03	0E00100A	Washer 2mm	1
L04	0E00873A	BT Screw M2.6x5 Philips Binding Head	3
L05	0E00841A	BT Screw M2x4 Philips Pan Head	3
L06	0E00794A	BT Screw M2x5 Philips Pan Head	3
B02	JA03390A	Headphone Jack Ass'y Serial No.: A12101001 -	1
01	0B08511A	Headphone Jack	1
02	0J03975A	Jack Holder	1
L01	-	Jack Nut	(1)
L02	-	Jack Washer	(1)

8.5. Mechanism Ass'y 582Z (B03)

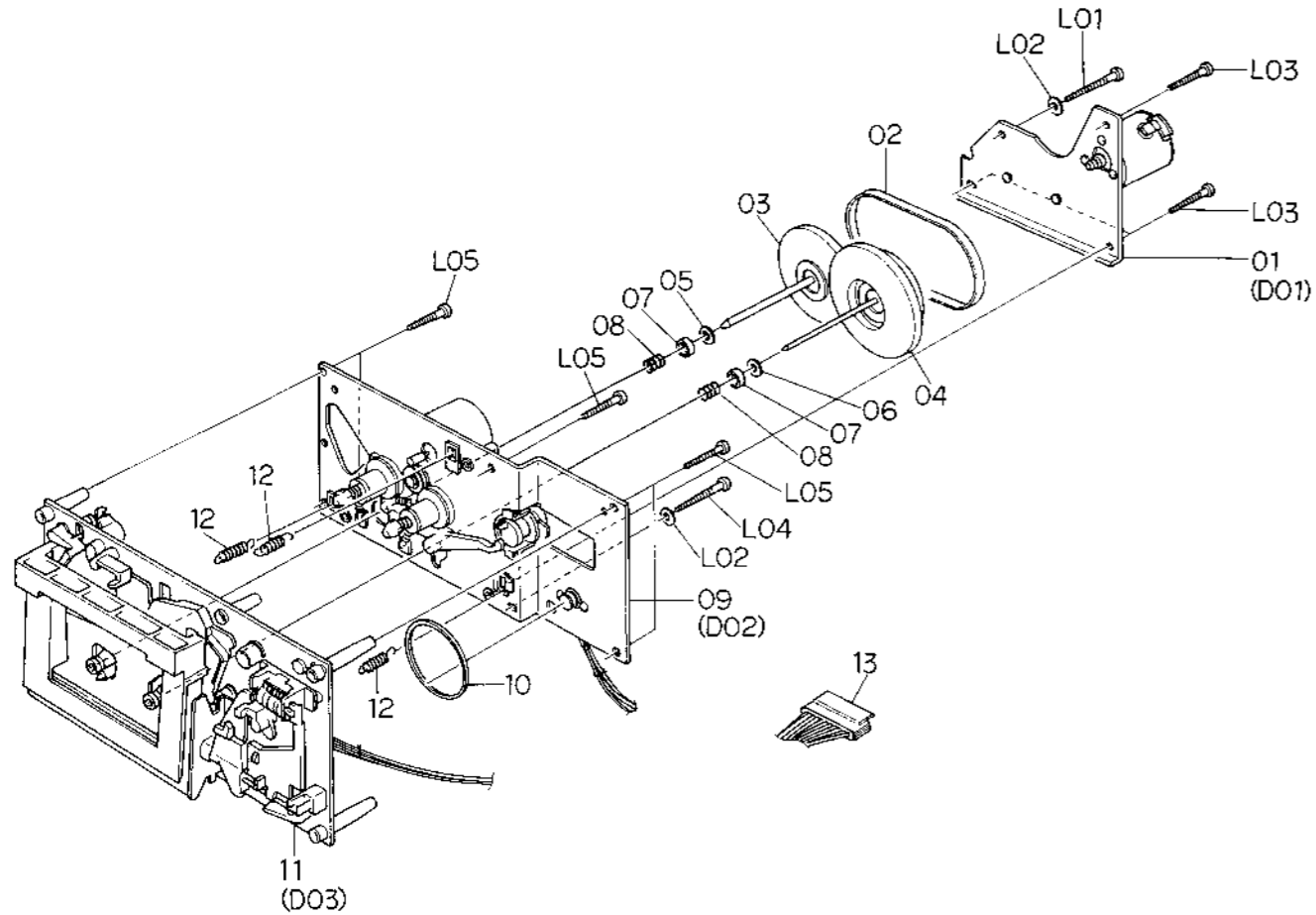


Fig. 8.5

Schematic Ref. No.	Part No.	Description	Q'ty
B03	CA08316A	Mechanism Ass'y 582Z Serial No.: A12102903 -	1
01	CA08017B	Flywheel Holder Ass'y	1
02	OC08096C	Capstan Belt	1
03	CA08173A	Supply Flywheel Ass'y	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	CA08318A	Sub Mechanism Chassis Ass'y	1
10	OC08099B	Control Motor Belt	1
11	CA08275A	Main Mechanism Chassis Ass'y	1
12	OC08175A	Head Base L Spring	3
13	OB08578D	15P-H Connector	1
-	OB08515A	Insu-Lock	8
L01	OE00834A	BT Screw M3x30 Philips Pan Head	1
L02	OE00178A	Washer 3mm	2
L03	OE00833A	BT Screw M3x20 Philips Pan Head	3
L04	OE00835A	BT Screw M3x25 Philips Pan Head	1
L05	OE00883A	BT Screw M3x18 Philips Pan Head	5
B03	CA08273A	Mechanism Ass'y 582Z Serial No.: A12101001 - A12102902	1
01	CA08017B	Flywheel Holder Ass'y	1
02	OC08096C	Capstan Belt	1
03	CA08173A	Supply Flywheel Ass'y	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	CA08201A	Sub Mechanism Chassis Ass'y	1
10	OC08099B	Control Motor Belt	1
11	CA08275A	Main Mechanism Chassis Ass'y	1
12	OC08175A	Head Base L Spring	3
13	OB08578D	15P-H Connector	1
-	OB08515A	Insu-Lock	8
L01	OE00834A	BT Screw M3x30 Philips Pan Head	1
L02	OE00178A	Washer 3mm	2
L03	OE00833A	BT Screw M3x20 Philips Pan Head	3
L04	OE00835A	BT Screw M3x25 Philips Pan Head	1
L05	OE00883A	BT Screw M3x18 Philips Pan Head	5

8.6. Chassis Ass'y 582Z (B04)

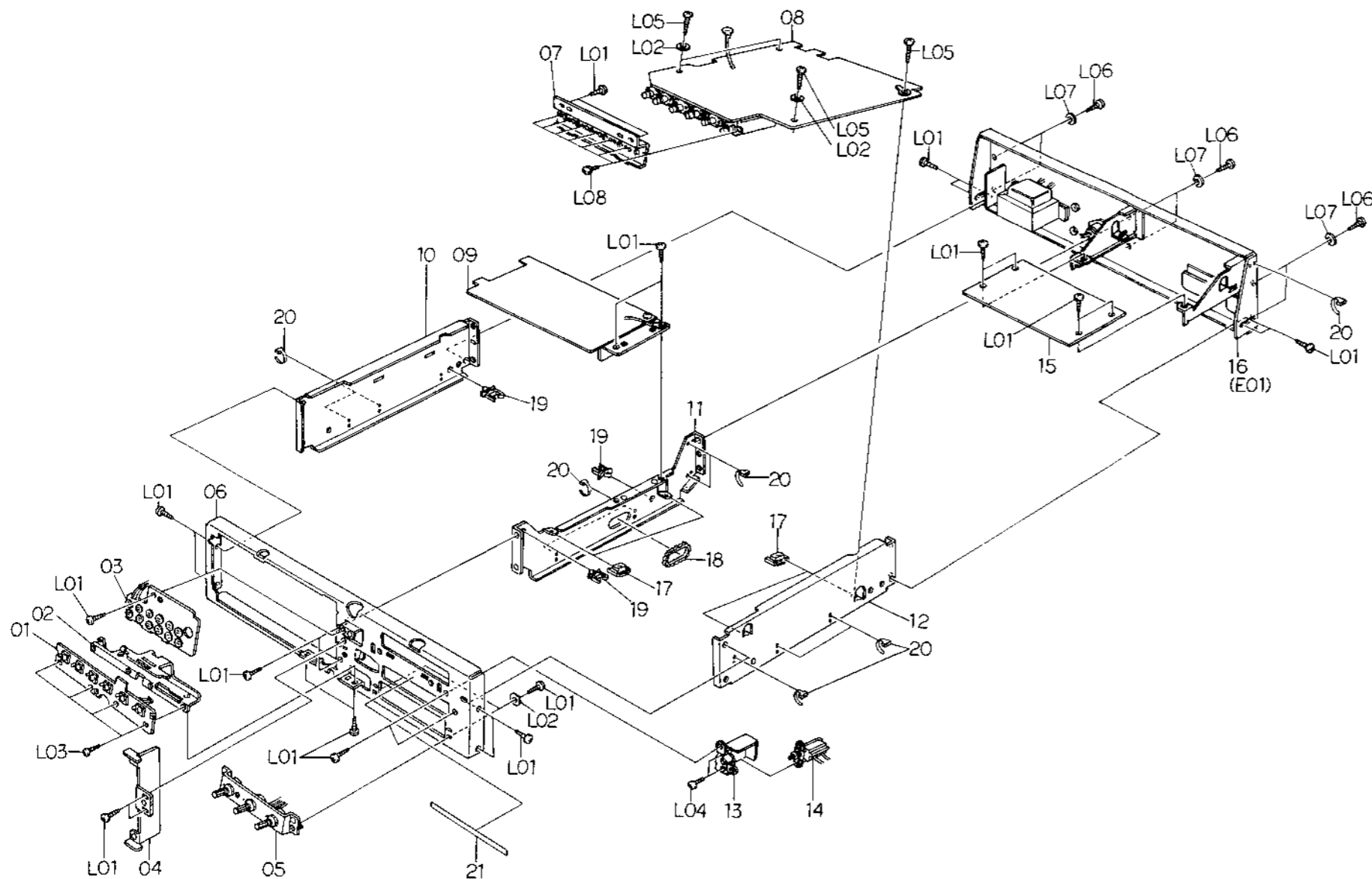


Fig. 8.6.1 Serial No.: A12102102 -

Schematic Ref. No.	Part No.	Description	Q'ty
B04	JA03814C	Chassis Ass'y 582Z (U.S.A. & Canada)	1
	JA03815C	Chassis Ass'y 582Z (Japan)	1
	JA03818C	Chassis Ass'y 582Z (220V Class 2)	1
	JA03813C	Chassis Ass'y 582Z (UK)	1
	JA03817C	Chassis Ass'y 582Z (Australia)	1
	JA03816C	Chassis Ass'y 582Z (Others)	1
		Serial No.: A12102903 -	
01	BA03976A	Control Switch P.C.B. Ass'y	1
02	0J03976B	Control Switch Holder	1
03	BA04401A	Record Cal. P.C.B. Ass'y	1
04	0J04135C	Mechanism Bracket	1
05	BA04400A	Volume P.C.B. Ass'y	1
06	0J04305A	Front Chassis	1
07	0J04009D	Switch Holder	1
08	BA04520A	Main P.C.B. Ass'y	1
09	BA04509A	Logic P.C.B. Ass'y (U.S.A., Canada, Japan & Others)	1
	BA04514A	Logic P.C.B. Ass'y (220V Class 2, UK & Australia)	1
10	0J03969C	Side Chassis L	1
11	0J03970D	Center Chassis	1
12	0J03968D	Side Chassis R	1
13	0J04014A	Power Switch Holder	1
14	0B07253A	Power Switch (U.S.A., Canada & Others)	1
	0B07252A	Power Switch (220V Class 2, UK & Australia)	1
	0B07271A	Power Switch (Japan)	1
15	BA04518A	Dolby NR P.C.B. Ass'y	1
16	HA04205A	Rear Panel Ass'y (U.S.A. & Canada)	1
	HA04206A	Rear Panel Ass'y (Japan)	1
	HA04209A	Rear Panel Ass'y (220V Class 2)	1
	HA04204A	Rear Panel Ass'y (UK)	1
	HA04208A	Rear Panel Ass'y (Australia)	1
	HA04207A	Rear Panel Ass'y (Others)	1
17	0J04013C	P.C.B. Spacer	4
18	0B08590A	Free Bushing 80mm	1
19	0B08580A	Wire Holder 161	3
20	0B08515A	Insu-Lock	23
21	0M04052B	Switch Label	1
L01	0E00857A	BT Screw M3x6 Philips Binding Head	27
L02	0E00637A	Washer 3.3mm	6
L03	0E00859A	BT Screw M2.6x6 Philips Binding Head	4
L04	0E00502A	Screw M3x5 Philips Pan Head	2
L05	0E00865A	BT Screw M3x10 Philips Binding Head	4
L06	0E00860A	BT Screw M3x6 Philips Binding Head (Black Chromate)	6
L07	0E00157A	Washer 3mm (Black Plastics)	6
L08	0E00622A	Screw M3x5 Philips Pan Head (2A)	7

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
B04	JA03814B	Chassis Ass'y 582Z (U.S.A. & Canada)	1	B04	JA03814A	Chassis Ass'y 582Z (U.S.A. & Canada)	1
	JA03815B	Chassis Ass'y 582Z (Japan)	1		JA03815A	Chassis Ass'y 582Z (Japan)	1
	JA03818B	Chassis Ass'y 582Z (220V Class 2)	1		JA03818A	Chassis Ass'y 582Z (220V Class 2)	1
	JA03813B	Chassis Ass'y 582Z (UK)	1		JA03813A	Chassis Ass'y 582Z (UK)	1
	JA03817B	Chassis Ass'y 582Z (Australia)	1		JA03817A	Chassis Ass'y 582Z (Australia)	1
	JA03816B	Chassis Ass'y 582Z (Others)	1		JA03816A	Chassis Ass'y 582Z (Others)	1
	Serial Nos.: A12102102 - A12102902				Serial Nos.: A12101001 - A12102101		
01	BA03976A	Control Switch P.C.B. Ass'y	1	01	BA03976A	Control Switch P.C.B. Ass'y	1
02	OJ03976B	Control Switch Holder	1	02	OJ03976B	Control Switch Holder	1
03	BA04401A	Record Cal. P.C.B. Ass'y	1	03	BA04401A	Record Cal. P.C.B. Ass'y	1
04	OJ04135C	Mechanism Bracket	1	04	OJ04135C	Mechanism Bracket	1
05	BA04400A	Volume P.C.B. Ass'y	1	05	BA04400A	Volume P.C.B. Ass'y	1
06	OJ04305A	Front Chassis	1	06	OJ04305A	Front Chassis	1
07	OJ04009D	Switch Holder	1	07	OJ04009D	Switch Holder	1
08	BA04520A	Main P.C.B. Ass'y	1	08	BA04367A	Main P.C.B. Ass'y	1
09	BA04434A	Logic P.C.B. Ass'y (U.S.A., Canada, Japan & Others)	1	09	BA04434A	Logic P.C.B. Ass'y (U.S.A., Canada, Japan & Others)	1
	BA04435A	Logic P.C.B. Ass'y (220V Class 2, UK & Australia)	1		BA04435A	Logic P.C.B. Ass'y (220V Class 2, UK & Australia)	1
10	OJ03969C	Side Chassis L	1	10	OJ03969C	Side Chassis L	1
11	OJ03970D	Center Chassis	1	11	OJ03970D	Center Chassis	1
12	OJ03968D	Side Chassis R	1	12	OJ03968D	Side Chassis R	1
13	OJ04014A	Power Switch Holder	1	13	OJ04014A	Power Switch Holder	1
14	OB07253A	Power Switch (U.S.A., Canada & Others)	1	14	OB07253A	Power Switch (U.S.A., Canada & Others)	1
	OB07252A	Power Switch (220V Class 2, UK & Australia)	1		OB07252A	Power Switch (220V Class 2, UK & Australia)	1
	OB07271A	Power Switch (Japan)	1		OB07271A	Power Switch (Japan)	1
15	BA04518A	Dolby NR P.C.B. Ass'y	1	15	BA04403A	Playback Dolby NR P.C.B. Ass'y	1
16	HA04205A	Rear Panel Ass'y (U.S.A. & Canada)	1	16	BA04404A	Record Dolby NR P.C.B. Ass'y	1
	HA04206A	Rear Panel Ass'y (Japan)	1	17	HA04130A	Rear Panel Ass'y (U.S.A. & Canada)	1
	HA04209A	Rear Panel Ass'y (220V Class 2)	1		HA04131A	Rear Panel Ass'y (Japan)	1
	HA04204A	Rear Panel Ass'y (UK)	1		HA04134A	Rear Panel Ass'y (220V Class 2)	1
	HA04208A	Rear Panel Ass'y (Australia)	1		HA04129A	Rear Panel Ass'y (UK)	1
	HA04207A	Rear Panel Ass'y (Others)	1		HA04133A	Rear Panel Ass'y (Australia)	1
	OJ04013C	P.C.B. Spacer	4		HA04132A	Rear Panel Ass'y (Others)	1
18	OB08590A	Free Bushing 80mm	1	18	OJ04013C	P.C.B. Spacer	4
19	OB08580A	Wire Holder 16t	3	19	OB08590A	Free Bushing 80mm	1
20	OB08515A	Insu-Lock	23	20	OB08580A	Wire Holder 16t	3
21	OM04052B	Switch Label	1	21	OB08515A	Insu-Lock	23
L01	OE00857A	BT Screw M3x6 Philips Binding Head	27	22	OM04052B	Switch Label	1
L02	OE00637A	Washer 3.3mm	6	L01	OE00857A	BT Screw M3x6 Philips Binding Head	27
L03	OE00859A	BT Screw M2.6x6 Philips Binding Head	4	L02	OE00637A	Washer 3.3mm	6
L04	OE00502A	Screw M3x5 Philips Pan Head	2	L03	OE00859A	BT Screw M2.6x6 Philips Binding Head	4
L05	OE00865A	BT Screw M3x10 Philips Binding Head	4	L04	OE00502A	Screw M3x5 Philips Pan Head	2
L06	OE00860A	BT Screw M3x6 Philips Binding Head (Black Chromate)	6	L05	OE00865A	BT Screw M3x10 Philips Binding Head	4
L07	OE00157A	Washer 3mm (Black Plastics)	6	L06	OE00860A	BT Screw M3x6 Philips Binding Head (Black Chromate)	6
L08	OE00622A	Screw M3x5 Philips Pan Head (2A)	7	L07	OE00157A	Washer 3mm (Black Plastics)	6
				L08	OE00622A	Screw M3x5 Philips Pan Head (2A)	7

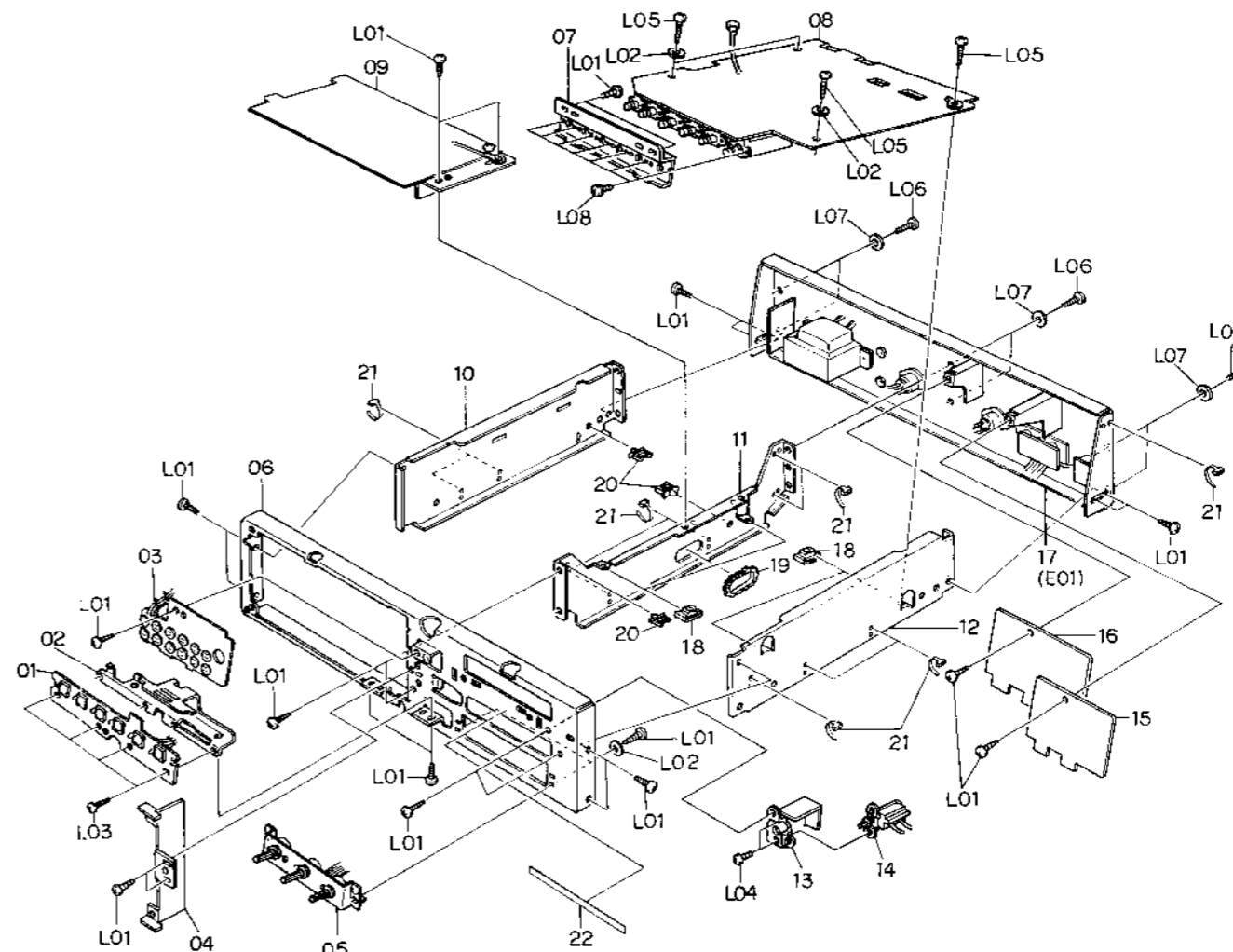


Fig. 8.6.2 Serial Nos.: A12101001 - A12102101

8.7. LED Indicator Ass'y (C01)

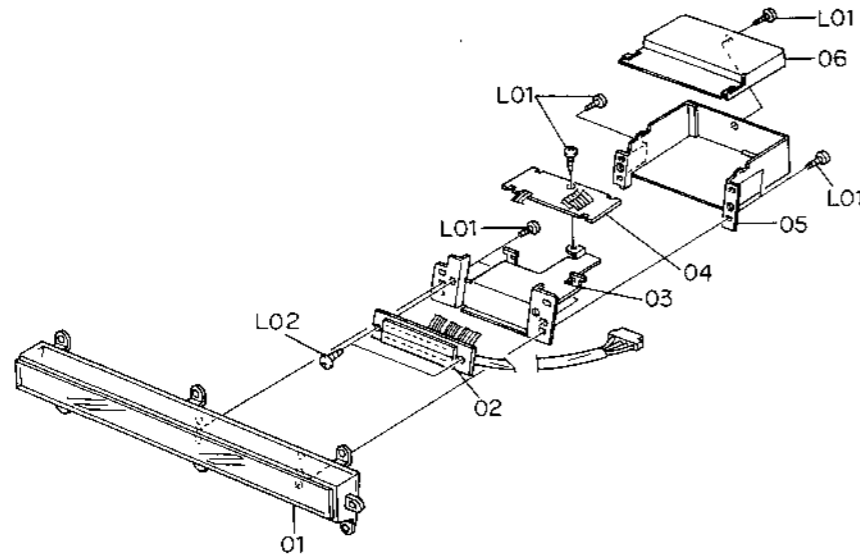


Fig. 8.7

8.8. Lamp House Cover Ass'y (C02)

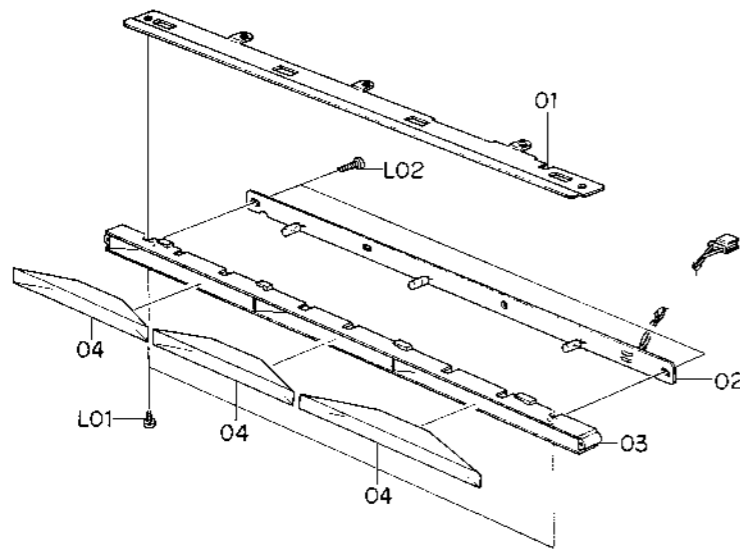


Fig. 8.8

8.9. Flywheel Holder Ass'y (D01)

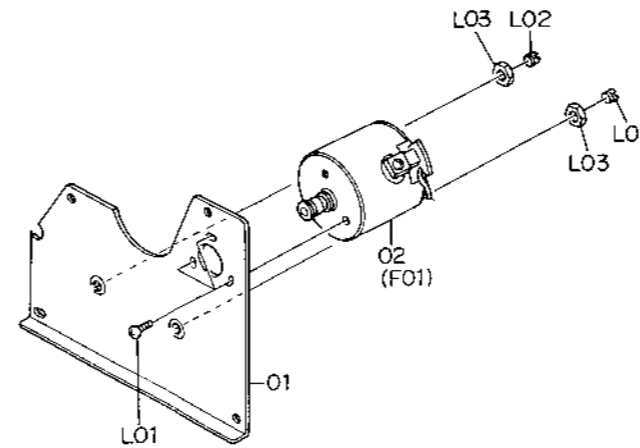


Fig. 8.9

Schematic Ref. No.	Part No.	Description	Q'ty
C01	HA04120A	LED Indicator Ass'y Serial No.: A12101001 -	1
01	HA04122A	LED Indicator Base Ass'y	1
02	0H03988A	Indicator Filter	1
03	0J04304A	LED Indicator Hold Plate	1
04	BA04312A	Indicator P.C.B. Ass'y	1
05	0J04302A	Shield Case	1
06	0J04303A	Shield Cover	1
L01	0E00841A	BT Screw M2x4 Philips Pan Head	7
L02	0E00854A	BT Screw M2.6x4 Philips Pan Head (Chromate)	2
C02	HA03777A	Lamp House Cover Ass'y Serial No.: A12101001 -	1
01	0J03977B	Lamp House Cover Holder	1
02	BA03974A	Lamp P.C.B. Ass'y	1
03	0H03673A	Lamp House Cover	1
04	0H03674D	Lamp House	3
L01	0E00853A	BT Screw M2x3 Philips Pan Head	2
L02	0E00793A	BT Screw M2x6 Philips Binding Head	2
D01	CA08017B	Flywheel Holder Ass'y Serial No.: A12101001 -	1
01	0C08013I	Flywheel Holder	1
02	CA08106B	Capstan Motor Ass'y	1
L01	0E00226A	Screw M2.6x4 Philips Pan Head	3
L02	0C08068C	Thrust Screw	2
L03	0C03857A	Lock Nut	2

Schematic Ref. No.	Part No.	Description	Q'ty
D02	CA08318A	Sub Mechanism Chassis Ass'y Serial No.: A12102903 -	1
01	0C08039B	Reel Hub Head	2
02	CA08038B	Reel Hub B Ass'y	2
03	CA08037A	Reel Hub Take-up Ass'y	1
04	CA08064A	Reel Hub Supply Ass'y	1
05	CA08039A	Back Tension Ass'y	1
06	0C08269A	Back Tension Spring	1
07	CA08193A	Idler Ass'y	1
08	CA08042A	Brake Arm Ass'y	2
09	0C08030C	Brake Drive Arm	1
10	0C08129A	Brake Arm Spring	1
11	0C08128A	Brake Drive Arm Spring	1
12	CA08242A	Reel Motor Ass'y	1
13	CA08034A	Control Motor Ass'y	1
14	0C08053B	Volume Coupler	1
15	0B07240A	Volume Control 10K (B)	1
16	CA08194A	Sub Chassis Ass'y	1
L01	0E00698A	E-Ring 2.5mm	1
L02	0E00837A	Stopper Ring 3mm	2
L03	0E00838A	Stopper Ring 4mm	1
L04	0E00859A	BT Screw M2.6x6 Philips Binding Head	1
L05	0E00226A	Screw M2.6x4 Philips Pan Head	5
L06	-	Volume Nut	(1)
L07	-	Volume Washer	(1)
D02	CA08201A	Sub Mechanism Chassis Ass'y Serial Nos.: A12101001 - A12102902	1
01	0C08039B	Reel Hub Head	2
02	CA08038B	Reel Hub B Ass'y	2
03	CA08037A	Reel Hub Take-up Ass'y	1
04	CA08064A	Reel Hub Supply Ass'y	1
05	CA08039A	Back Tension Ass'y	1
06	0C08269A	Back Tension Spring	1
07	CA08193A	Idler Ass'y	1
08	CA08042A	Brake Arm Ass'y	2
09	0C08030C	Brake Drive Arm	1
10	0C08129A	Brake Arm Spring	1
11	0C08128A	Brake Drive Arm Spring	1
12	0B09091A	Ceramic Capacitor 0.01μ 50V	2
13	CA08117B	Reel Motor Ass'y	1
14	CA08034A	Control Motor Ass'y	1
15	0C08053B	Volume Coupler	1
16	0B07240A	Volume Control 10K (B)	1
17	CA08194A	Sub Chassis Ass'y	1
L01	0E00698A	E-Ring 2.5mm	1
L02	0E00837A	Stopper Ring 3mm	2
L03	0E00838A	Stopper Ring 4mm	1
L04	0E00859A	BT Screw M2.6x6 Philips Binding Head	1
L05	0E00226A	Screw M2.6x4 Philips Pan Head	5
L06	0E00843A	BT Screw M2.6x4 Philips Pan Head	1
L07	0E00037A	Earth Lug B-5	1
L08	-	Volume Nut	(1)
L09	-	Volume Washer	(1)

8.10. Sub Mechanism Chassis Ass'y (D02)

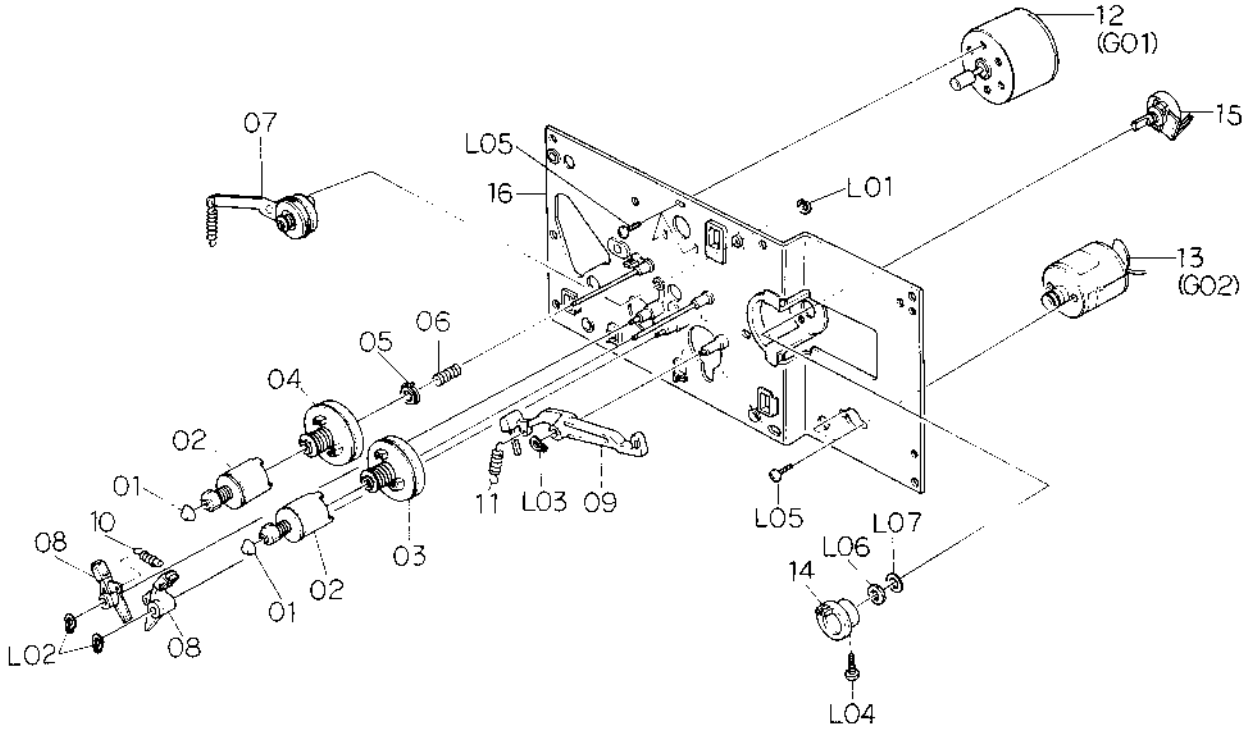


Fig. 8.10.1 Serial No.: A12102903 -

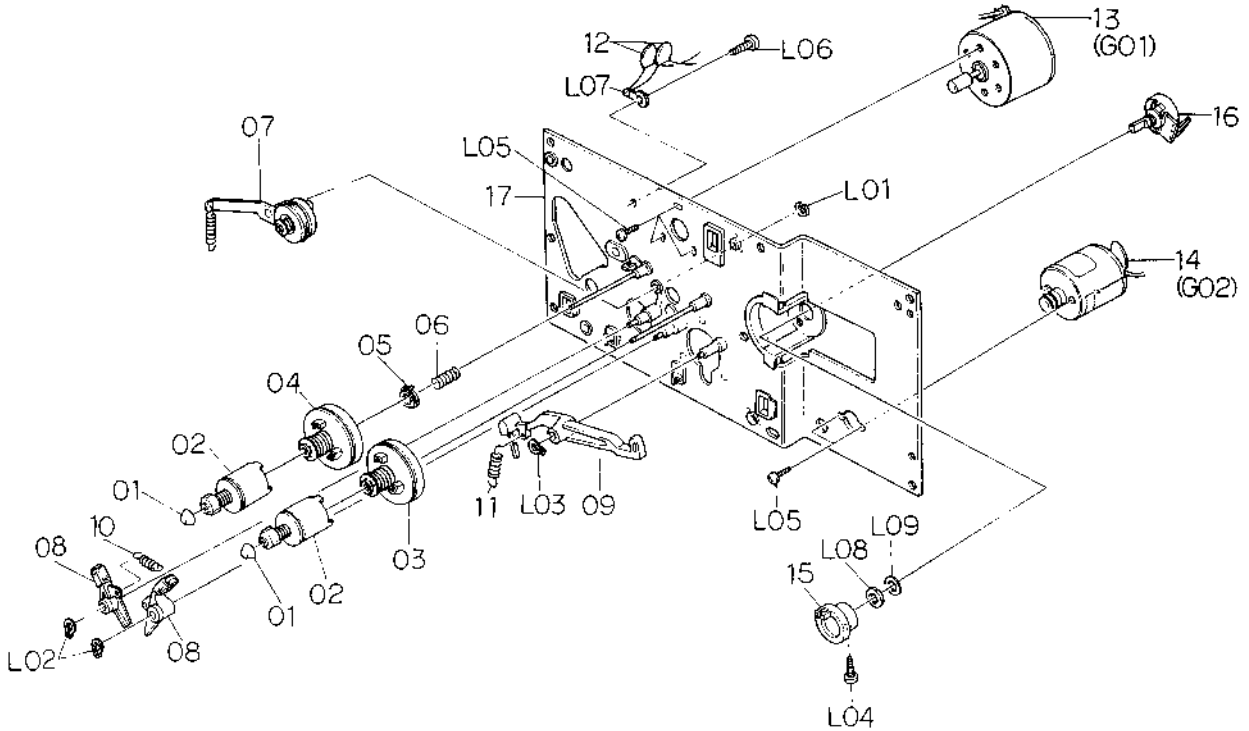


Fig. 8.10.2 Serial Nos.: A12101001 - A12102902

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
D03	CA08275A	Main Mechanism Chassis Ass'y Serial No.: A12101001 —	1	L11	0E00838A	Stopper Ring 4mm	3
				L12	0E00846A	BT Screw M3x8 Philips Pan Head	3
				L13	0E00895A	Earth Lug 3mm	2
				L14	0E00859A	BT Screw M2.6x6 Philips Binding Head	1
01	CA08048A	Cassette Case Holder L Ass'y	1				
02	CA08022A	Cassette Case Holder R Ass'y	1	L15	0C08255A	Washer 2.6mm	1
03	CA08055A	Cassette Case Ass'y	1				
04	CA08298A	Head Mount Base Ass'y	1				
05	0C08121A	Supply Pressure Roller Spring	1				
06	0C08250A	Supply Pressure Roller Spring B	1				
07	CA08053B	Supply Pressure Roller Ass'y	1				
08	CA08122B	Supply Pressure Roller Thrust Spring	1				
09	CA08079B	Take-up Pressure Roller Ass'y	1				
10	0C08183B	Take-up Pressure Roller Thrust Spring	1				
11	0C08182A	Pressure Roller Drive Bar B	1				
12	CA08297A	Head Base Ass'y B	1				
13	0C08086B	Head Base Roller	3				
14	0C08050B	Record Sensor	1				
15	0C08051E	Cassette Hold Arm	1				
16	0C08120A	Cassette Hold Arm Spring	1				
17	CA08196A	Back Tension Ass'y	1				
18	0C08254A	Back Tension Arm Collar	1				
19	CA08027A	Head Base Drive Arm Ass'y	1				
20	0C08143C	Head Base Drive Arm Spring	1				
21	CA08026A	Pressure Roller Drive Arm Ass'y	1				
22	0C08071C	Counter Reset Arm	1				
23	0C08124B	Eject Linkage Wire	1				
24	0C08057E	Eject Arm	1				
25	0C08078B	Arm Shaft	1				
26	CA08237A	Auto Shut-off Ass'y	1				
27	0C08097C	Counter Belt A	1				
28	CA08020A	Counter Ass'y	1				
29	0C08098B	Counter Belt B	1				
30	0C08067C	Eject Stopper	1				
31	0C08134C	Eject Stopper Spring	1				
32	0C08119A	Record Protector	1				
33	0C08194C	Damper Lock Arm	1				
34	0C08153A	Damper Arm Spring Tube	1				
35	0C08125A	Damper Arm Spring	1				
36	0C08151A	Lid Arm Spring Tube	1				
37	0C08114A	Lid Arm Spring	1				
38	CA08030A	Pneumatic Damper Ass'y	1				
39	CA08023A	Supply Capstan Flange Ass'y	1				
40	CA08024A	Take-up Capstan Flange Ass'y	1				
41	0C08186A	Cam Drive Gear	1				
42	0C08029H	Control Cam	1				
43	0C08117A	Counter-Load Arm Spring	1				
44	0C08152A	Counter-Load Arm Spring Tube	1				
45	CA08028A	Counter-Load Arm Ass'y	1				
46	CA08183A	Main Chassis Ass'y	1				
L01	0E00837A	Stopper Ring 3mm	13				
L02	0E00834A	BT Screw M3x30 Philips Pan Head	2				
L03	0E00831A	BT Screw M3x10 Philips Pan Head	4				
L04	0E00254A	Washer 3.1mm (Plastics)	2				
L05	0E00222A	E-Ring 2mm	2				
L06	0E00839A	Stopper Ring 2.5mm	1				
L07	0E00876A	BT Screw M2.6x8 Philips Pan Head	11				
L08	0C08060B	Height Adjustment Nut	2				
L09	0E00142A	Washer 2.6mm	2				
L10	0E00879A	BT Screw M2x15 Philips Pan Head	1				

8.11. Main Mechanism Chassis Ass'y (D03)

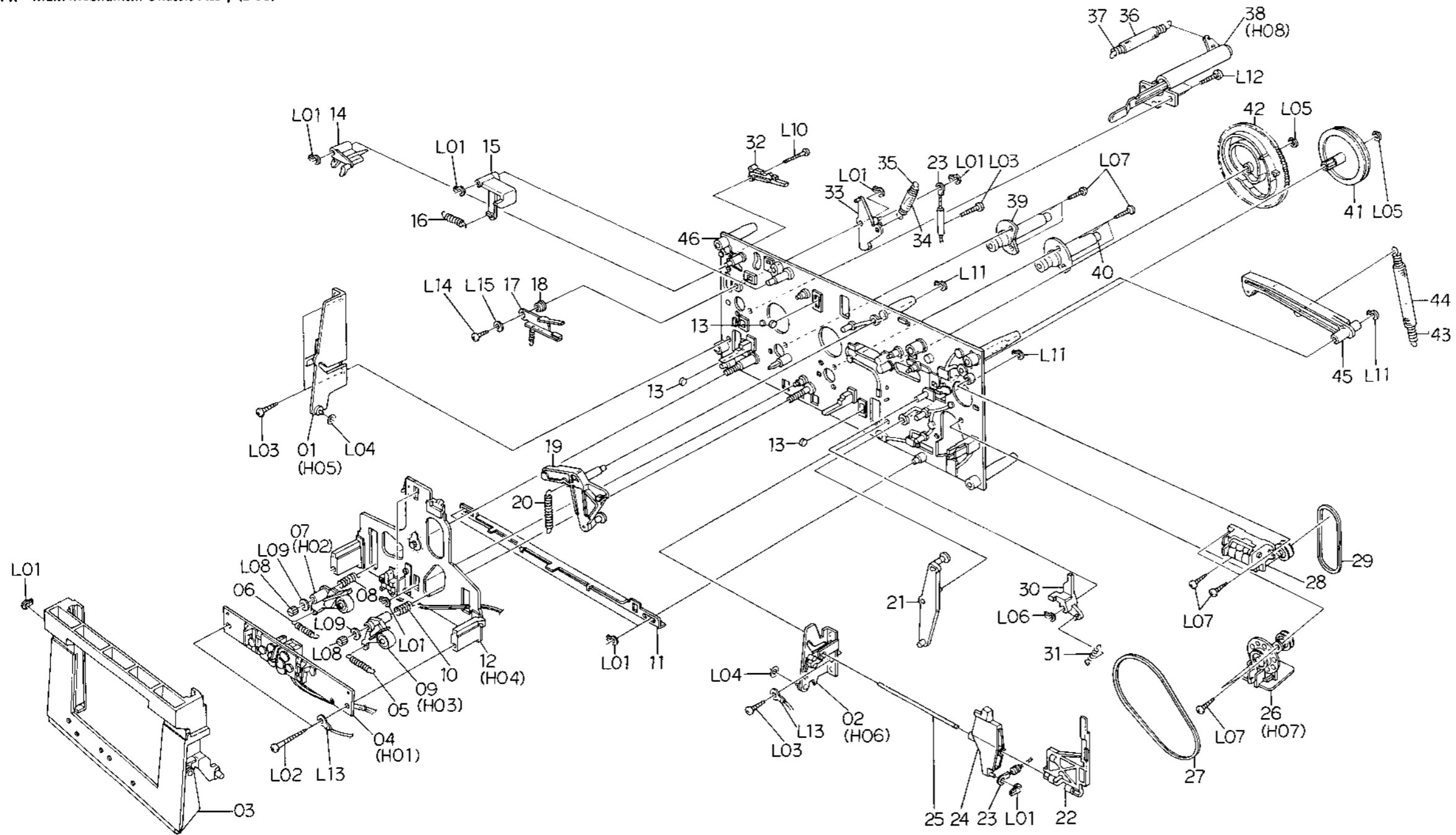


Fig. 8.11

8.12. Rear Panel Ass'y (E01)

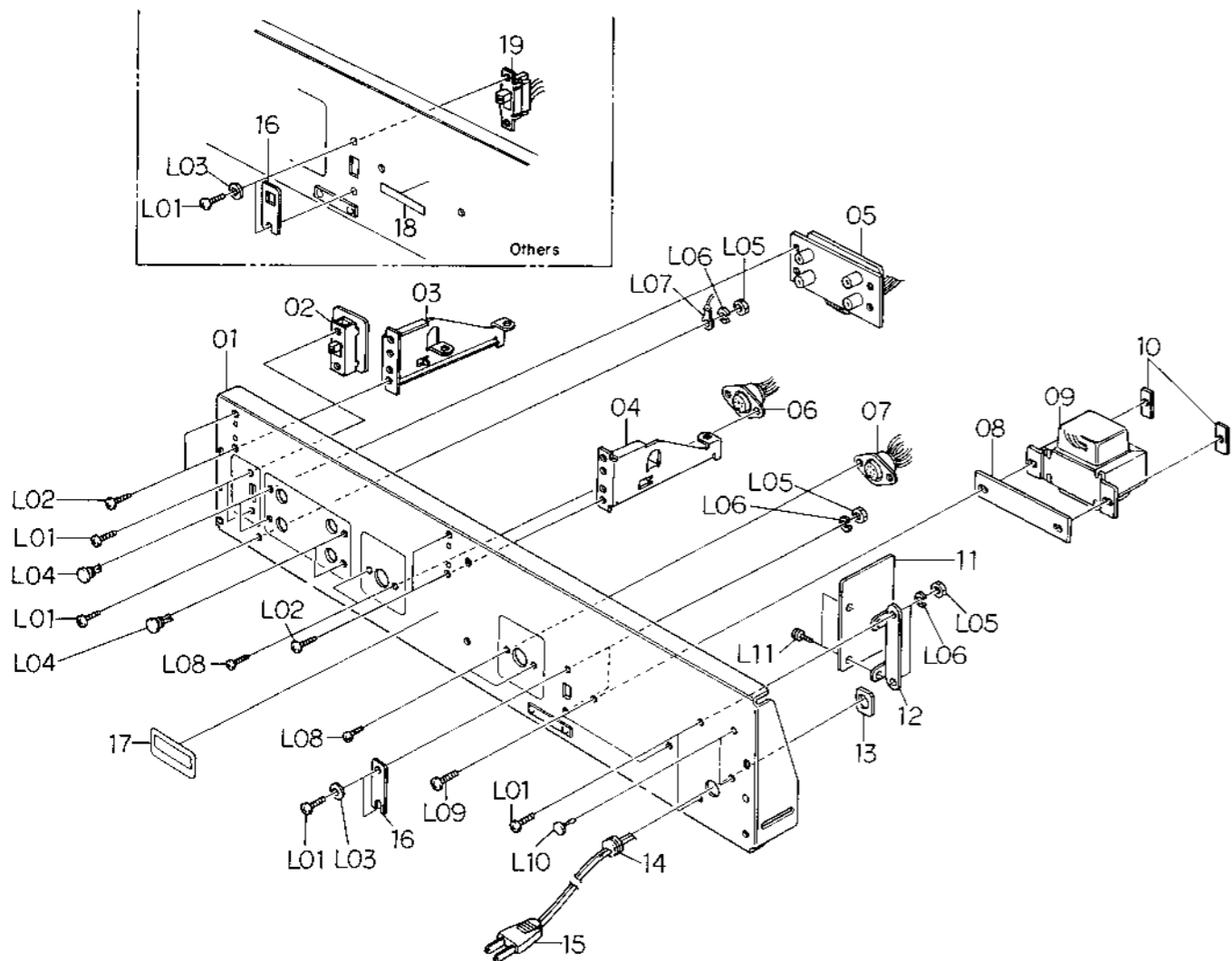


Fig. 8.12.1 Serial No.: A12102102 -

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
E01	HA04205A	Rear Panel Ass'y (U.S.A. & Canada)	1	-	OM04218A	Serial Number Plate	1
	HA04206A	Rear Panel Ass'y (Japan)	1	-	OM04270A	Rating Label (Japan)	1
	HA04209A	Rear Panel Ass'y (220V Class 2)	1	-	OM04185A	FSZ Mark Label (220V Class 2)	1
	HA04204A	Rear Panel Ass'y (UK)	1	-	OM04263A	EP Label (220V Class 2)	1
	HA04208A	Rear Panel Ass'y (Australia)	1	-	OM03844B	BS Code Label (UK)	1
	HA04207A	Rear Panel Ass'y (Others)	1	-	OF01071A	Free-up Belt (220V Class 2, UK & Australia)	1
		Serial No.: A12102102 -		L01	OE00594A	Screw M3x8 Philips Binding Head (Bronze)	5
01	0H03994A	Rear Panel	1	L02	OE00825A	BT Screw M2.6x8 Philips Binding Head (Black Chromate)	4
02	BA04402A	MPX Filter Switch P.C.B. Ass'y	1	L03	OE00945A	Screw M2.6x4 Philips Binding Head (Black Chromate)	2
03	OJ04431B	Dolby NR P.C.B. Holder D	1	L04	0B08720A	Plastic Rivet	4
04	OJ04432B	Dolby NR P.C.B. Holder E	1	*L05	OE00507A	Nut Hex. M3	5
05	BA04370A	Pin Jack P.C.B. Ass'y	1	*L06	OE00581A	Washer 3mm Spring	5
06	0B08355A	4P DIN Socket	1	L07	OE00037A	Earth Lug B-5	1
07	0B08584A	8P DIN Socket	1	L08	OE00714A	Screw M2.6x6 Philips Binding Head (Bronze)	4
08	OJ04016A	Transformer Plate	1	L09	OE00756A	Screw M4x8 Philips Binding Head (Bronze)	2
09	0B06648B	Power Transformer (U.S.A. & Canada)	1	L10	0B08583A	Plastic Clip	2
	0B06649A	Power Transformer (Japan)	1	L11	OE00622A	Screw M3x5 Philips Pan Head (2A)	2
	0B06651A	Power Transformer (220V Class 2, UK & Australia)	1	-	OJ03644A	Chovert Rivet	2
	0B06650A	Power Transformer (Others)	1				
10	OC01162B	Bolt Receptacle Plate	2				
11	0B07874A	Mains P.C.B.	1				
12	OJ03893A	Terminal P.C.B. Holder B	1				
13	0A03154B	Cord Spacer	1				
14	0B08037U	Cord Bushing C (U.S.A., Canada, Japan, 220V Class 2, Australia & Others)	1				
	0B08351A	Cord Bushing 4K-4 (UK)	1				
15	0B08533A	Power Cord (U.S.A., Canada & Others)	1				
	0B08219B	Power Cord (Japan)	1				
	0B08093U	Power Cord (220V Class 2)	1				
	0B08348A	Power Cord (UK)	1				
	0B05241A	Power Cord (Australia)	1				
16	OJ03663C	Switch Cover (U.S.A., Canada, Japan, 220V Class 2, UK & Australia)	1				
	OM03946A	Voltage Selector Lock Plate C (Others)	1				
17	OM03458B	Pass Label	1				
18	OM03796A	Voltage Label 220V (220V Class 2)	1				
	OM03797A	Voltage Label 240V (UK & Australia)	1				
	OM04293A	Voltage Label 120V/220-240V (Others)	1				
19	0B07092U	Voltage Selector (Others)	1				
-	0B08342A	Spark Killer (U.S.A. & Canada)	1				
	0B08363A	Spark Killer (Japan)	1				
	0B08445A	Spark Killer (220V Class 2)	2				
	0B08240U	Spark Killer (UK, Australia & Others)	1				
-	0B08344A	Fuse T200mA (220V Class 2, UK & Australia)	1				
*-	0B08349A	Fuse Clip (220V Class 2, UK & Australia)	2				
-	OM04172A	Fuse Label T200mA (220V Class 2, UK & Australia)	1				
-	OM03905A	UL Label AUDIO (U.S.A. & Canada)	1				

*: Depends on the Versions.

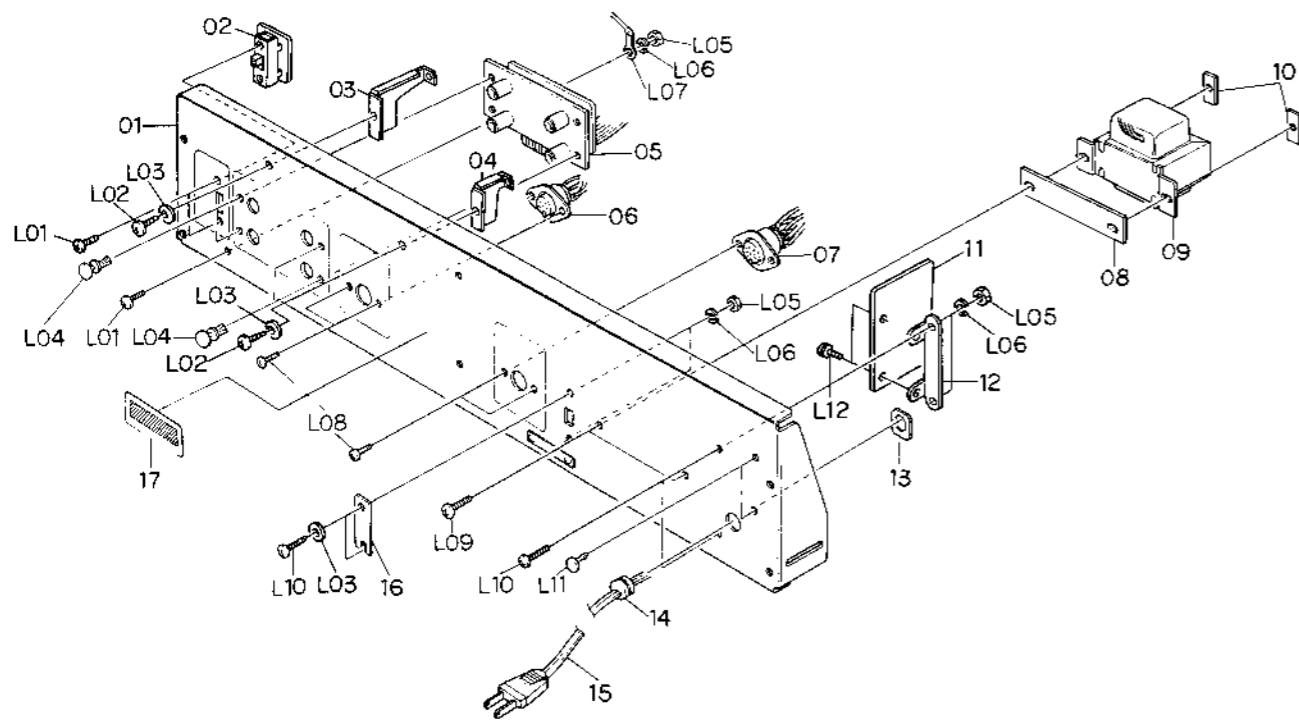
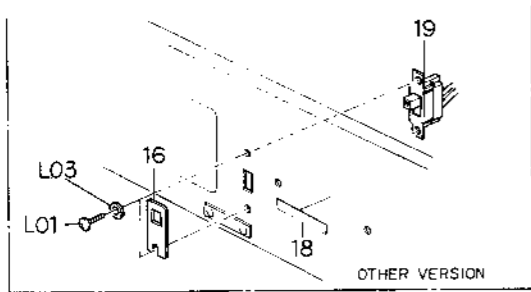


Fig. B.12.2 Serial Nos.: A12101001 - A12102101

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
E01	HA04130A	Rear Panel Ass'y (U.S.A. & Canada)	1	-	0M04218A	Serial Number Plate	1
	HA04131A	Rear Panel Ass'y (Japan)	1	-	0M04270A	Rating Label (Japan)	1
	HA04134A	Rear Panel Ass'y (220V Class 2)	1	-	0M04185A	FSZ Mark Label (220V Class 2)	1
	HA04129A	Rear Panel Ass'y (UK)	1	-	0M04263A	EP Label (220V Class 2)	1
	HA04133A	Rear Panel Ass'y (Australia)	1	-	0M03844B	BS Code Label (UK)	1
	HA04132A	Rear Panel Ass'y (Others)	1	-	0F01071A	Free-up Belt (220V Class 2, UK & Australia)	1
			Serial Nos.: A12101001 - A12102101		L01	0E00593A	Screw M3x6 Philips Binding Head (Bronze)
01	0H03994A	Rear Panel	1	L02	0E00825A	BT Screw M2.6x8 Philips Binding Head (Black Chromate)	4
02	BA04402A	MPX Filter Switch P.C.B. Ass'y	1	L03	0E00945A	Screw M2.6x4 Philips Binding Head (Black Chromate)	2
03	0J04347A	Dolby NR P.C.B. Holder D	1	L04	0B08720A	Plastic Rivet	4
04	0J04348A	Dolby NR P.C.B. Holder E	1	*L05	0E00507A	Nut Hex. M3	5
05	BA04370A	Pin Jack P.C.B. Ass'y	1	L06	0E00037A	Earth Lug B-5	1
06	0B08355A	4P DIN Socket	1	*L07	0E00581A	Washer 3mm Spring	5
07	0B08584A	8P DIN Socket	1	L08	0E00714A	Screw M2.6x6 Philips Binding Head (Bronze)	4
08	0J04016A	Transformer Plate	1	L09	0E00756A	Screw M4x8 Philips Binding Head (Bronze)	2
09	0B06648B	Power Transformer (U.S.A. & Canada)	1	L10	0E00701A	Screw M3x10 Philips Binding Head (Bronze)	2
	0B06610A	Power Transformer (Japan)	1	L11	0B08583A	Plastic Clip	2
	0B06612A	Power Transformer (220V Class 2, UK & Australia)	1	L12	0E00622A	Screw M3x5 Philips Pan Head (2A)	2
	0B06611B	Power Transformer (Others)	1	-	0J03644A	Chovert Rivet	2
10	0C01162B	Bolt Receptacle Plate	2				
11	0B07874A	Mains P.C.B.	1				
12	0J03893A	Terminal P.C.B. Holder B	1				
13	0A03154B	Cord Spacer	1				
14	0B08037U	Cord Bushing C (U.S.A., Canada, Japan, 220V Class 2, Australia & Others)	1				
	0B08351A	Cord Bushing 4K-4 (UK)	1				
15	0B08533A	Power Cord (U.S.A., Canada & Others)	1				
	0B08219B	Power Cord (Japan)	1				
	0B08093U	Power Cord (220V Class 2)	1				
	0B08348A	Power Cord (UK)	1				
	0B08666A	Power Cord (Australia)	1				
16	0J03663C	Switch Cover (U.S.A., Canada, Japan, 220V Class 2, UK & Australia)	1				
	0M03946A	Voltage Selector Lock Plate C (Others)	1				
17	0M03458B	Pass Label	1				
18	0M03796A	Voltage Label 220V (220V Class 2)	1				
	0M03797A	Voltage Label 240V (UK & Australia)	1				
	0M03955A	Voltage Label 120V/220-240V (Others)	1				
19	0B07092U	Voltage Selector (Others)	1				
-	0B08342A	Spark Killer (U.S.A. & Canada)	1				
	0B08363A	Spark Killer (Japan)	1				
	0B08445A	Spark Killer (220V Class 2)	2				
	0B08240U	Spark Killer (UK, Australia & Others)	1				
-	0B08344A	Fuse T200mA (220V Class 2, UK & Australia)	1				
*-	0B08349A	Fuse Clip (220V Class 2, UK & Australia)	2				
-	0M04172A	Fuse Label T200mA (220V Class 2, UK & Australia)	1				
-	0M03905A	UL Label AUDIO (U.S.A. & Canada)	1				

*: Depends on the Versions.

8.13. Capstan Motor Ass'y (F01)

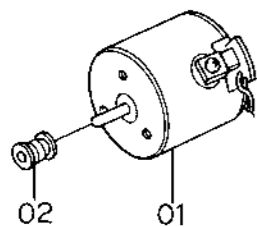


Fig. 8.13

8.14. Reel Motor Ass'y (G01)

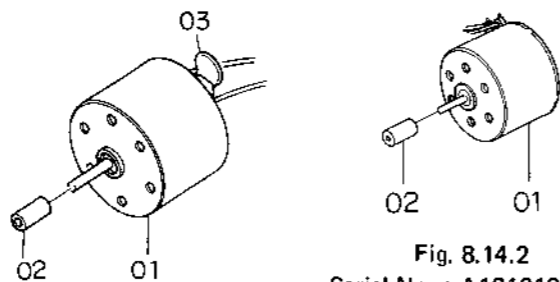


Fig. 8.14.1
Serial No.: A12102903 -

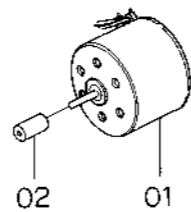


Fig. 8.14.2
Serial Nos.: A12101001 -
A12102902

8.15. Control Motor Ass'y (G02)

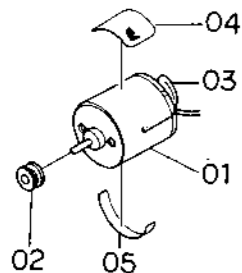


Fig. 8.15

8.16. Head Mount Base Ass'y (H01)

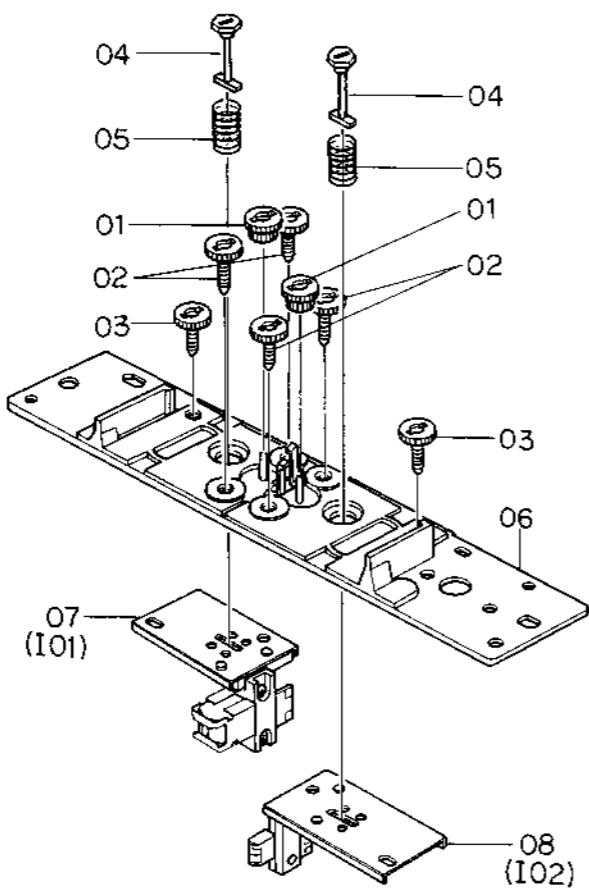


Fig. 8.16

8.17. Supply Pressure Roller Ass'y (H02)

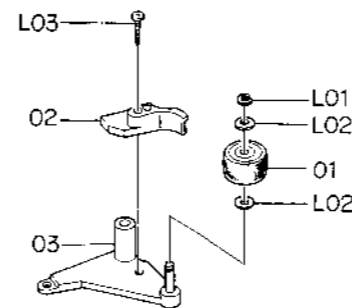


Fig. 8.17

8.18. Take-up Pressure Roller Ass'y (H03)

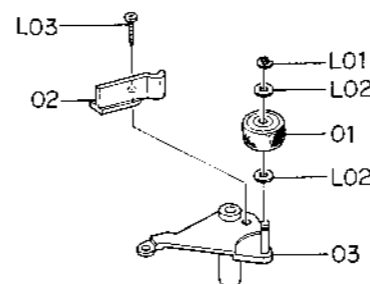


Fig. 8.18

8.19. Head Base Ass'y B (H04)

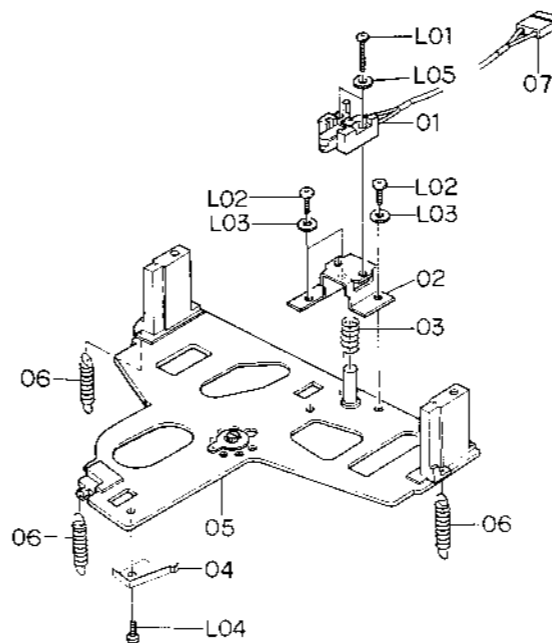


Fig. 8.19

8.20. Cassette Case Holder L Ass'y (H05)

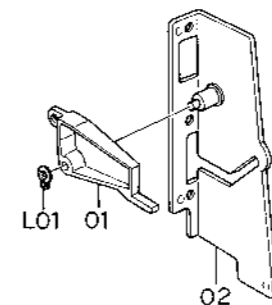


Fig. 8.20

8.21. Cassette Case Holder R Ass'y (H06)

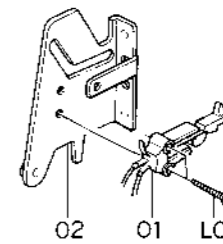


Fig. 8.21

8.22. Auto Shut-off Ass'y (H07)

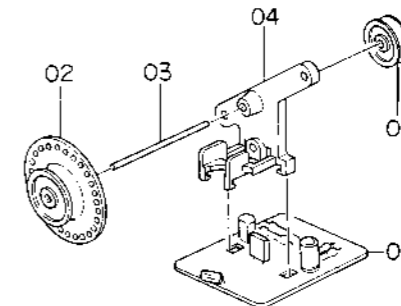


Fig. 8.22

8.23. Pneumatic Damper Ass'y (H08)

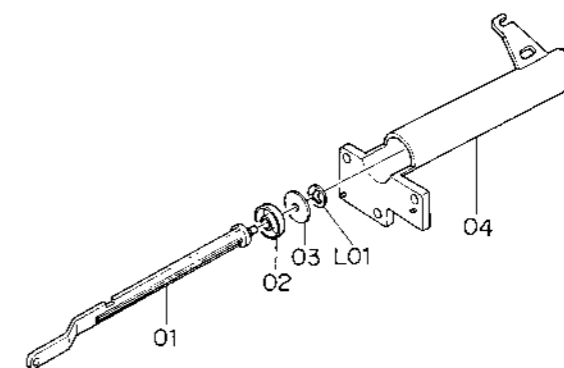


Fig. 8.23

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
F01	CA08106B	Capstan Motor Ass'y Serial No.: A12101001 -	1	L01	0E00042A	E-Ring 1.5mm	1
				L02	0C08024A	Washer 2mm	2
				L03	0E00788A	BT Screw M2x8 Philips Pan Head	1
01	0C08135A	Capstan Motor	1	H04	CA08297A	Head Base Ass'y B Serial No.: A12101001 -	1
02	0C08079G	Capstan Motor Pulley	1				
G01	CA08242A	Reel Motor Ass'y Serial No.: A12102903 -	1	01	GA02017A	Erase Head E-8L	1
				02	0C08158D	EH Hold Plate	1
				03	0C08166A	EH Hold Plate Spring	1
01	0C08272A	Reel Motor	1	04	0C08174D	Cassette Hold Spring	1
02	0C08063F	Reel Motor Pulley	1	05	CA08003Q	Head Base Ass'y	1
03	0B09290A	Ceramic Capacitor 0.01 μ 50V Z	1	06	0B08870A	3P-H Connector	1
				L01	0E00951A	Screw M1.7x7 Philips Pan Head (Black Chromate)	2
G01	CA08117B	Reel Motor Ass'y Serial Nos.: A12101001 - A12102902	1	L02	0E00909A	Screw M2x6 Philips Pan Head (Black Chromate)	3
				01	0C08218A	Reel Motor	1
				L03	0E00117A	Washer 2mm	3
02	0C08063F	Reel Motor Pulley	1	L04	0E00853A	BT Screw M2x3 Philips Pan Head	1
				L05	0E00952A	Washer 1.7mm	2
G02	CA08034A	Control Motor Ass'y Serial No.: A12101001 -	1	H05	CA08048A	Cassette Case Holder L Ass'y Serial No.: A12101001 -	1
				02	0C08064A	Control Motor Pulley	1
03	0B09292A	Ceramic Capacitor 0.1 μ 50V Z	1	L01	0E00837A	Stopper Ring 3mm	1
04	0M03985A	Control Motor Label	1	H06	CA08022A	Cassette Case Holder R Ass'y Serial No.: A12101001 -	1
05	0M03988A	Motor Seal B	1				
H01	CA08298A	Head Mount Base Ass'y Serial No.: A12101001 -	1	01	0C08133A	Eject Sensor	1
				02	0C08027F	Head Height Adjustment Screw	4
				L01	0E00840A	BT Screw M2x8 Philips Pan Head	2
03	0C08026D	Azimuth Alignment Screw	2	H07	CA08237A	Auto Shut-off Ass'y Serial No.: A12101001 -	1
04	0C08161B	Spring Stopper	2				
05	0C08187B	Head Plate Spring	2	01	0C08206B	Shut-off Pulley B	1
06	CA08083C	Head Mount Base Sub Ass'y	1	02	0C08047A	Shut-off Pulley A	1
07	CA08295A	P-8L Playback Head Ass'y	1	03	0C08088B	Shut-off Pulley Shaft	1
08	CA08296A	R-8L Record Head Ass'y	1	04	0C08207B	Shut-off Pulley Holder	1
H02	CA08053B	Supply Pressure Roller Ass'y Serial No.: A12101001 -	1	05	BA04070A	Shut-off P.C.B. Ass'y	1
				01	0C08164G	Pressure Roller	1
				H08	CA08030A	Pneumatic Damper Ass'y Serial No.: A12101001 -	1
02	0C08189C	Supply Tape Guide	1				
03	CA08061A	Supply Pressure Roller Arm Ass'y	1	01	0C08058C	Damper Piston	1
L01	0E00042A	E-Ring 1.5mm	1	02	0C08102B	Damper Ring	1
L02	0C08024A	Washer 2mm	2	03	0C08010C	Damper Plate	1
L03	0E00788A	BT Screw M2x8 Philips Pan Head	1	04	0C08059E	Sylinder	1
				L01	0E00874A	Stopper Ring CS 2mm	1
H03	CA08079B	Take-up Pressure Roller Ass'y Serial No.: A12101001 -	1	01	0C08164G	Pressure Roller	1
				02	0C08181C	Take-up Tape Guide	1
				03	CA08073B	Take-up Pressure Roller Arm Ass'y	1

8.24. P-8L Playback Head Ass'y (I01)

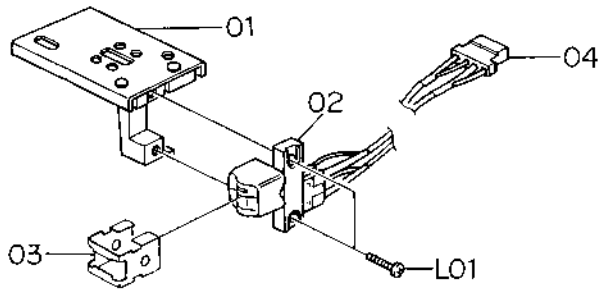


Fig. 8.24

8.25. R-8L Record Head Ass'y (I02)

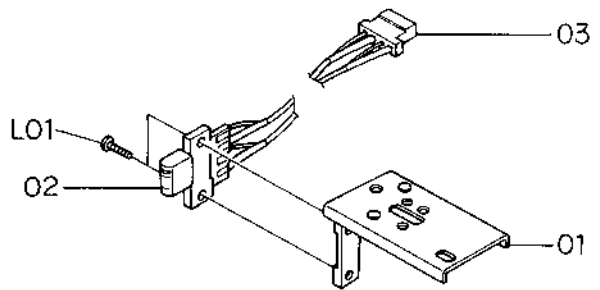


Fig. 8.25

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
I01	CA08295A	P-8L Playback Head Ass'y Serial No.: A12101001 -	1	I02	CA08296A	R-8L Record Head Ass'y Serial No.: A12101001 -	1
01	CA08307A	Head Plate Ass'y	1	01	CA08308B	Head Plate Ass'y	1
02	GA02034A	P-8L Playback Head	1	02	GA01050A	R-8L Record Head	1
03	0C08169D	Pad Lifter 54	1	03	0808768A	4P-H Connector B	1
04	0B08767A	4P-H Connector	1	L01	0E00887A	Screw M1.7x4 Philips Pan Head	2
L01	0E00886A	Screw M1.7x6.5 Philips Pan Head	2				

9. OVERALL TIMING CHART

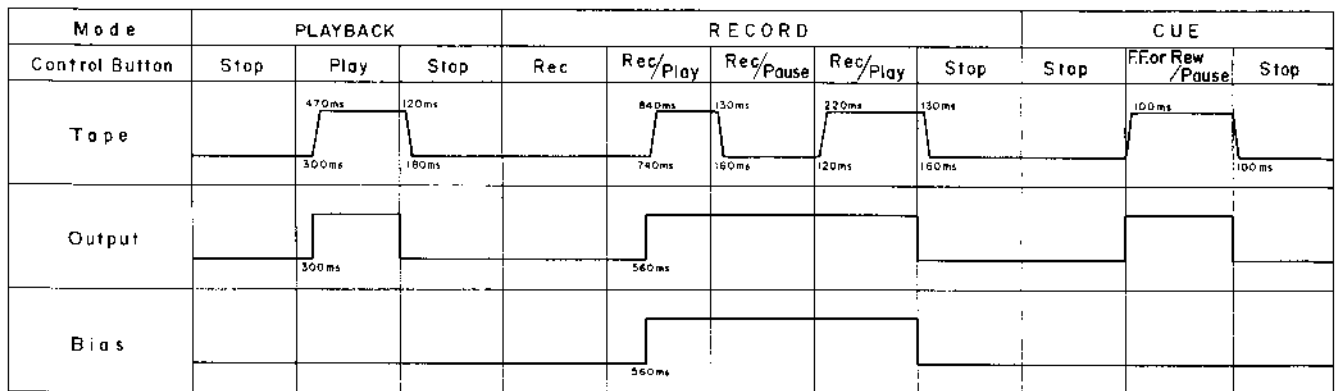


Fig. 9

10. EQ. AMP. FREQUENCY RESPONSE

10.1. Playback Frequency Response

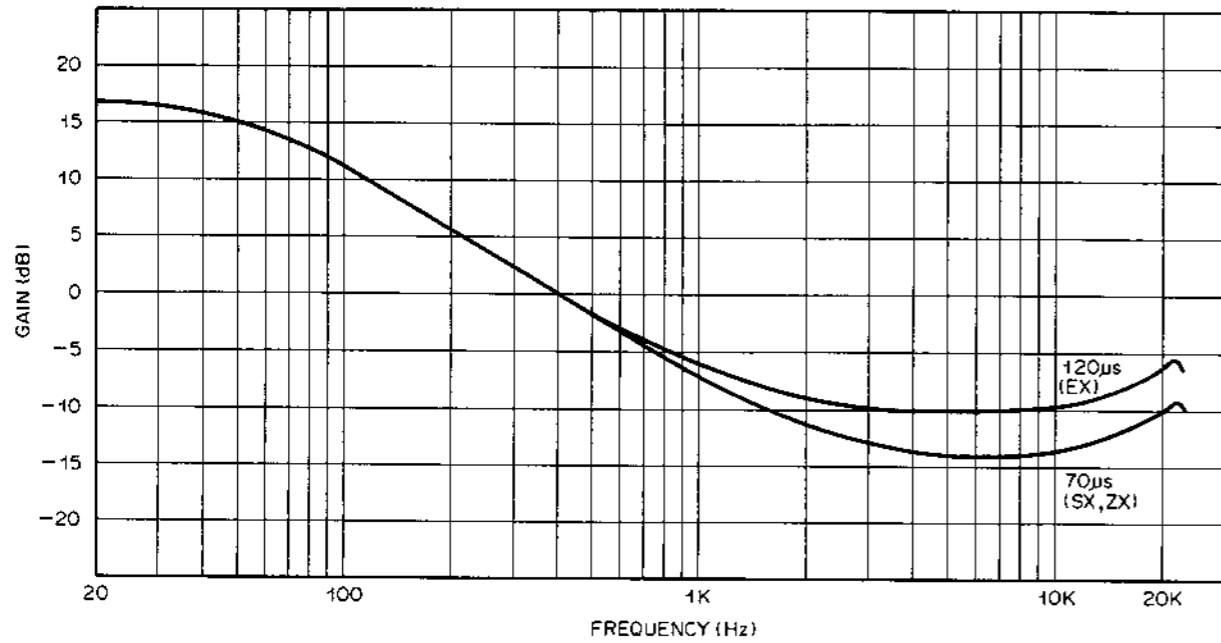


Fig. 10.1

10.2. Record Current Frequency Response

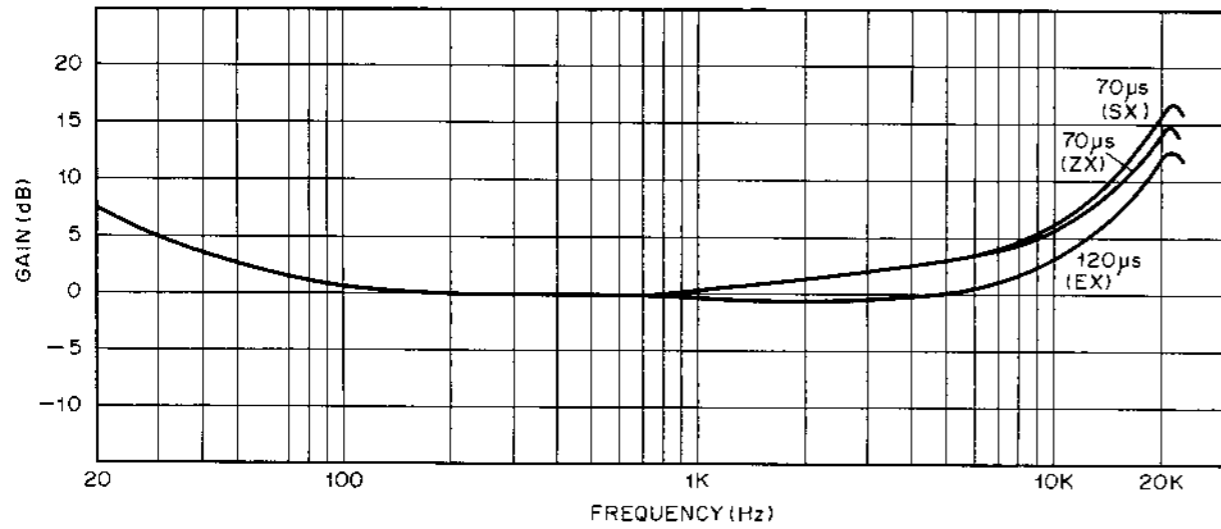


Fig. 10.2

11. WIRING DIAGRAMS

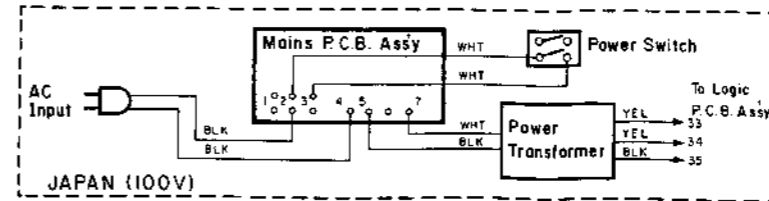
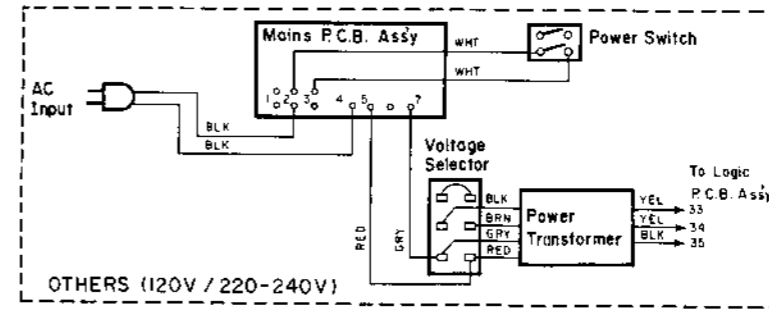
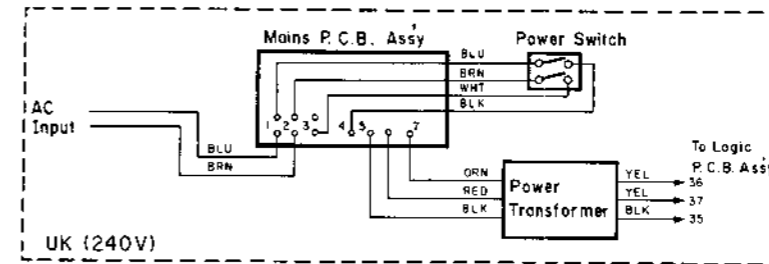
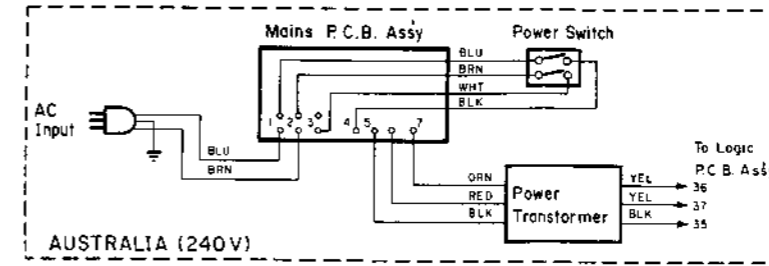
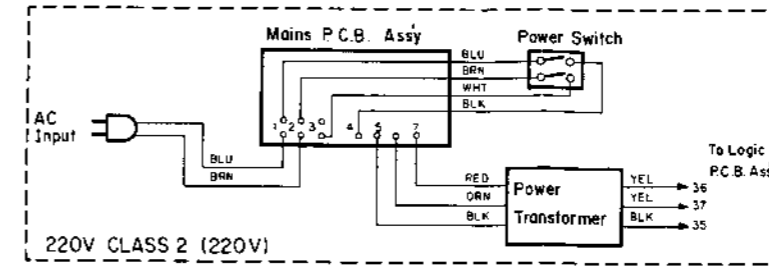


Fig. 11.1

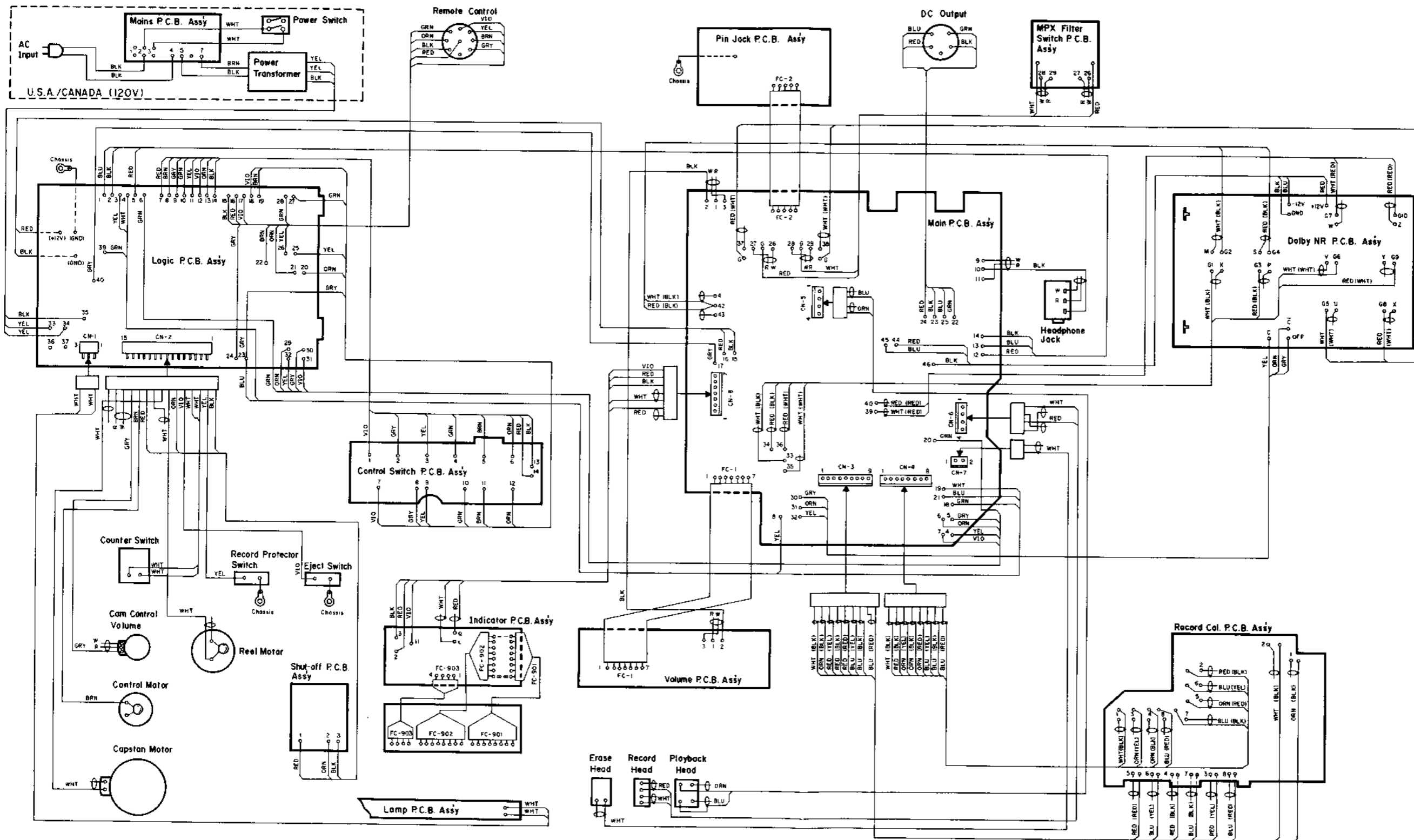
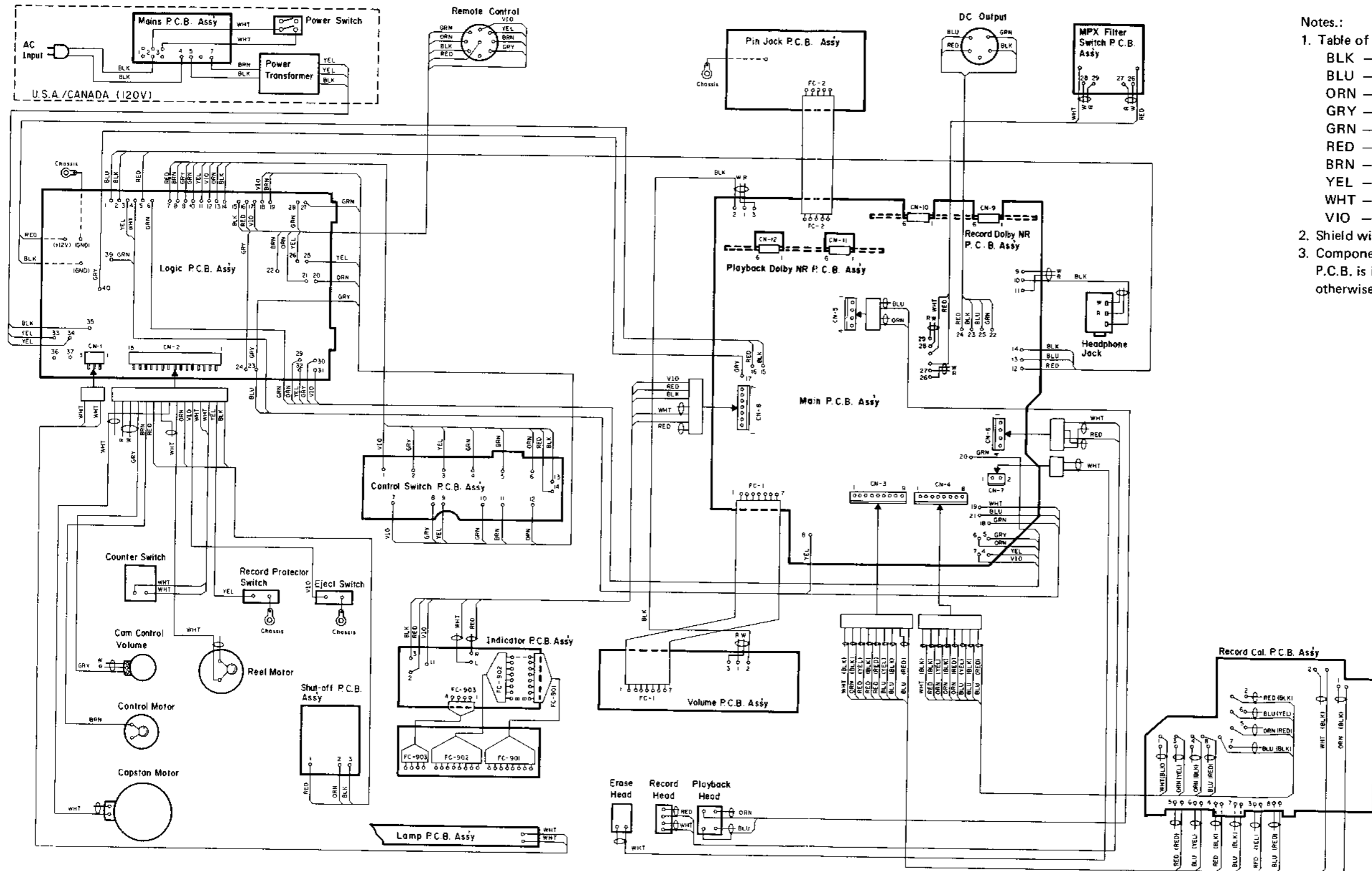


Fig. 11.2.1 Serial No.: A12102102 -



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

Fig. 11.2.2 Serial Nos.: A12101001 – A12102101

12. BLOCK DIAGRAMS

12.1. Amplifier Section

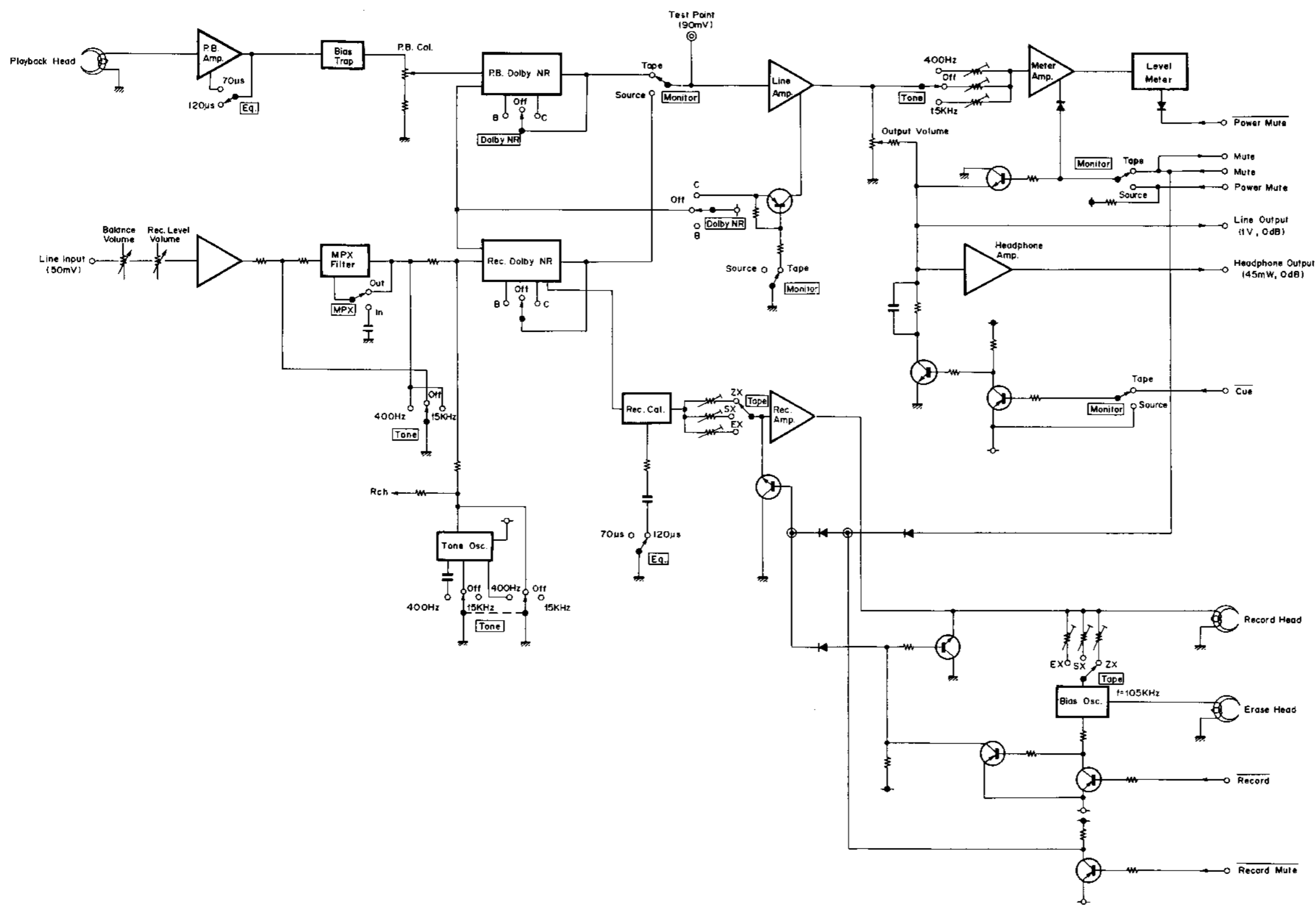


Fig. 12.1

12.2. Mechanism Control Section

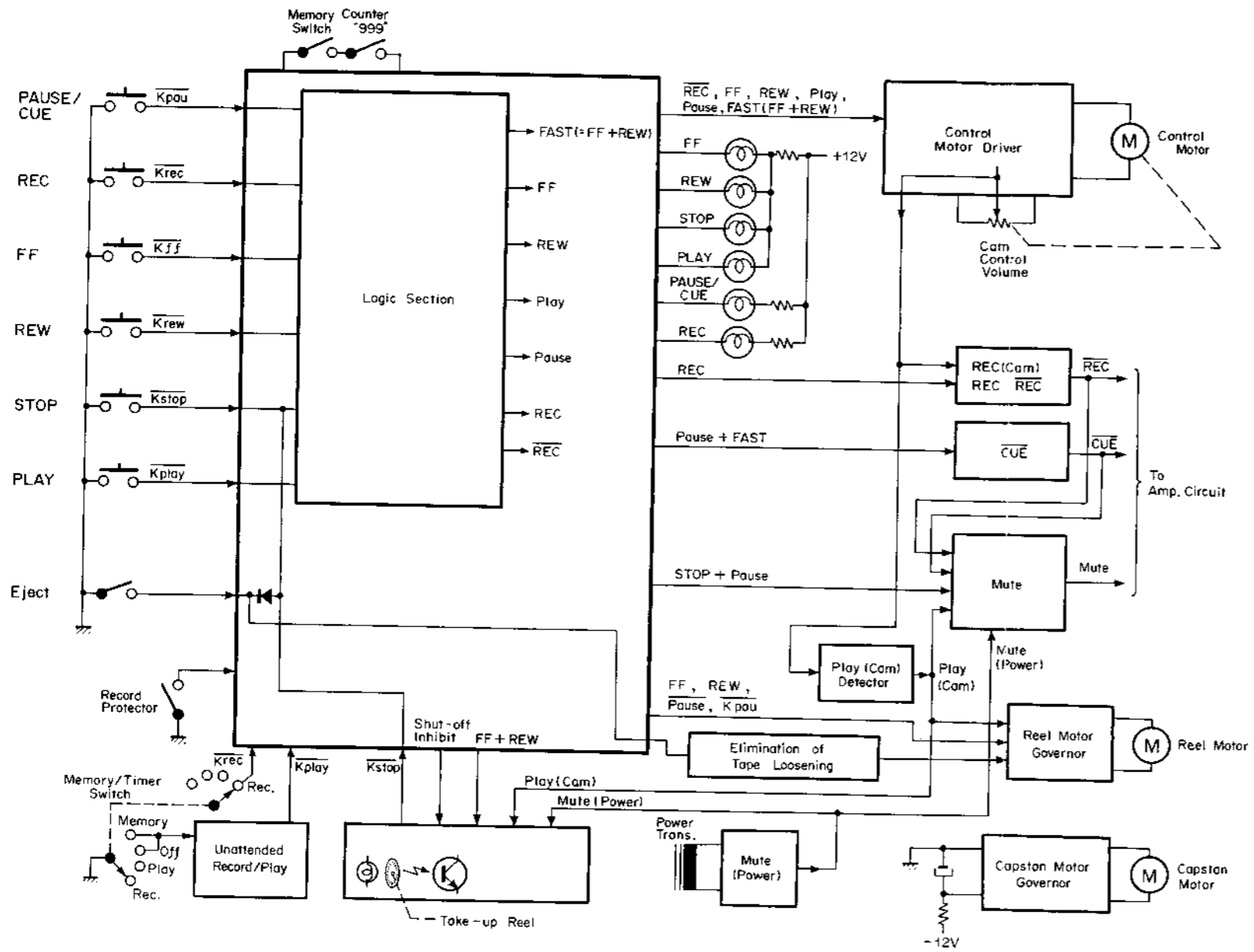


Fig. 12.2

13. SCHEMATIC DIAGRAMS

13.1. 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
- Power Switch: SW1

(b) Mains P.C.B. Ass'y

- Spark Killer
- Fuse: T200mA (220V Class 2, UK & Australia)

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

- Fuse: T1A - 2 pcs. (220V Class 2, UK & Australia)
- Regulator ICs: IC406, 407
- Diode Bridge: D401
- Power Transistors: Q419, 420, 431, 432
- Fail Safe Type Resistors: R407, 408, 473, 523

(d) Control Switch P.C.B. Ass'y

- Fail Safe Type Resistors: R605, 606, 607
- Lamps: PL601-606

(e) Lamp P.C.B. Ass'y

- Lamps: PL001-003

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

- Fail Safe Type Resistor: R605
- Lamp: PL407

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

- Power Transistor: Q901
- Fail Safe Type Resistor: R901

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

- 1) Serial No.: A12101501 -
Power Transistors: Q109, 110, 209, 210, 306, 308
Fail Safe Type Resistors: R149, 249, 313, 314, 315, 316, 319, 320, 326, 327, 328, 329, 334, 335, 336, 337, 338, 339, 340, 341, 342, 351
- 2) Serial Nos.: A12101001 - A12101500
Power Transistors: Q109, 110, 209, 210, 306, 308
Fail Safe Type Resistors: R149, 249, 313, 314, 315, 316, 319, 320, 326, 327, 328, 329, 335, 336, 337, 338, 339, 340, 341, 342, 346

(2) Insulation Check

Before returning the repaired N-582Z 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.

13.2. IC Block Diagrams

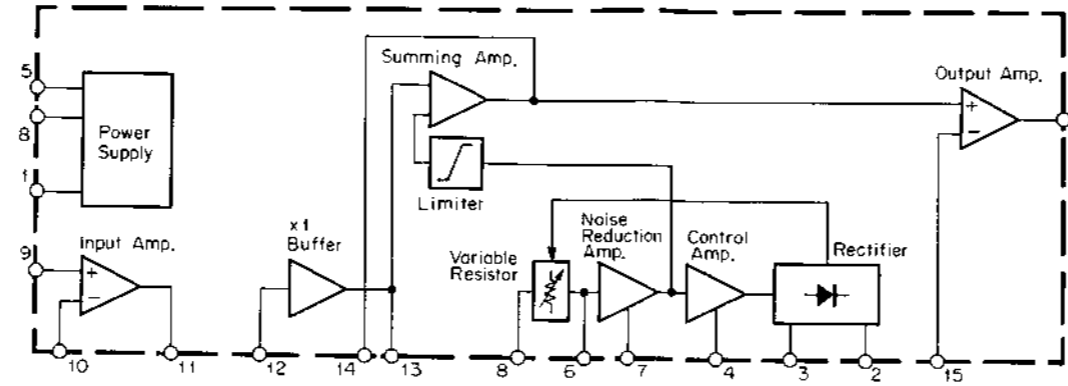


Fig. 13.1 DoTby NR IC μ A7300PC

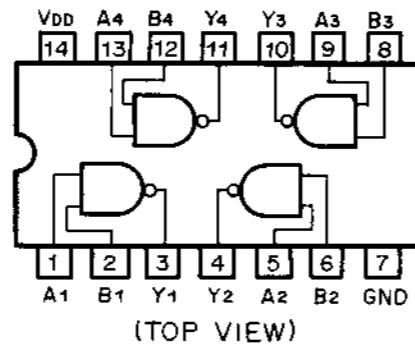


Fig. 13.2 NAND Gate C-MOS IC μ PD4011BC

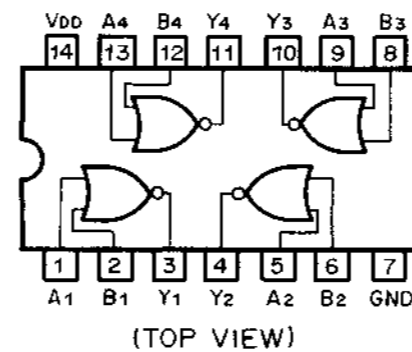


Fig. 13.3 NOR Gate C-MOS IC μ PD4001BC

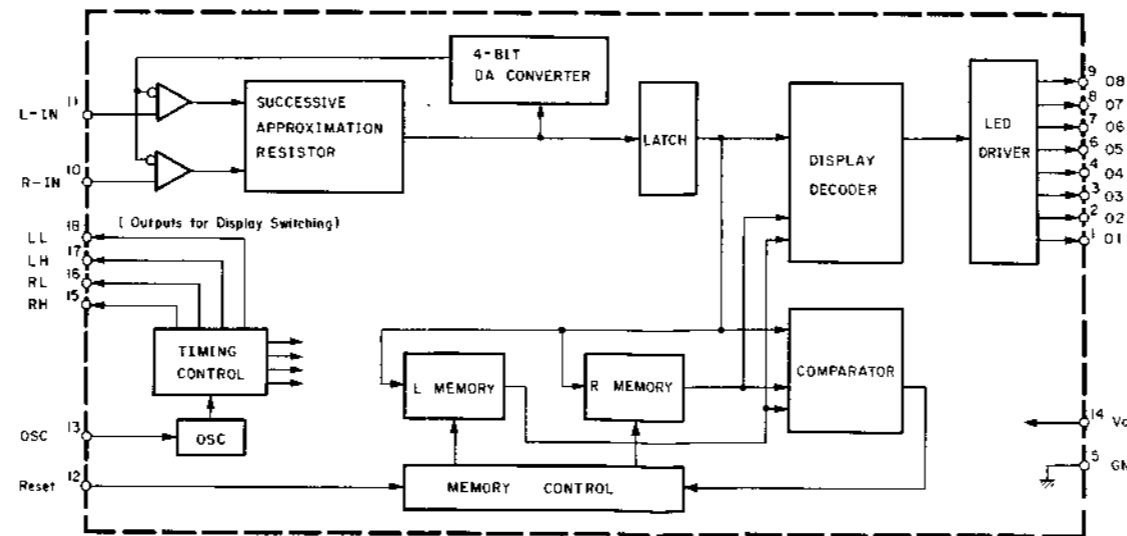


Fig. 13.4 Level Meter Control IC MSL9350RS

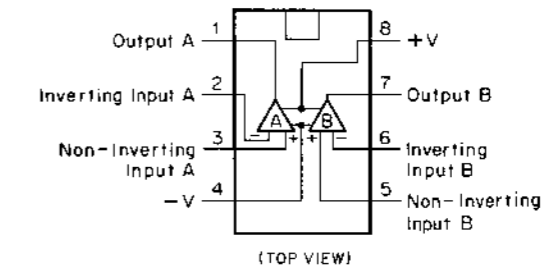


Fig. 13.5 Operational Amp. IC 4558, 4560, 4556

13.3. Amplifier Section

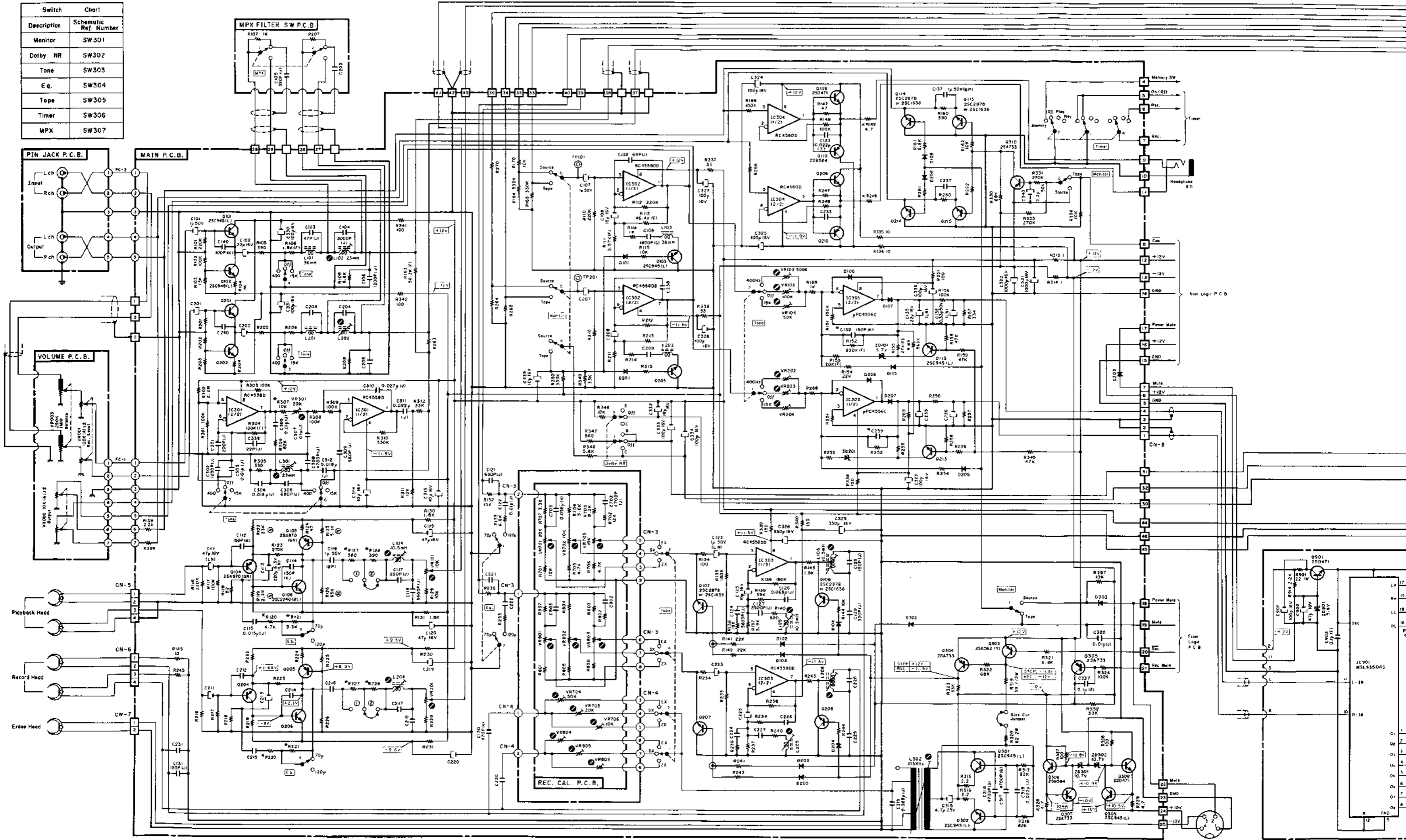


Fig. 13.6.1 Serial No.: A12102102 -

Notes: 1. Diode is 1S553, 1S953, or 1S1555 unless otherwise specified.
2. Resistor and capacitor marked with * show typical value.

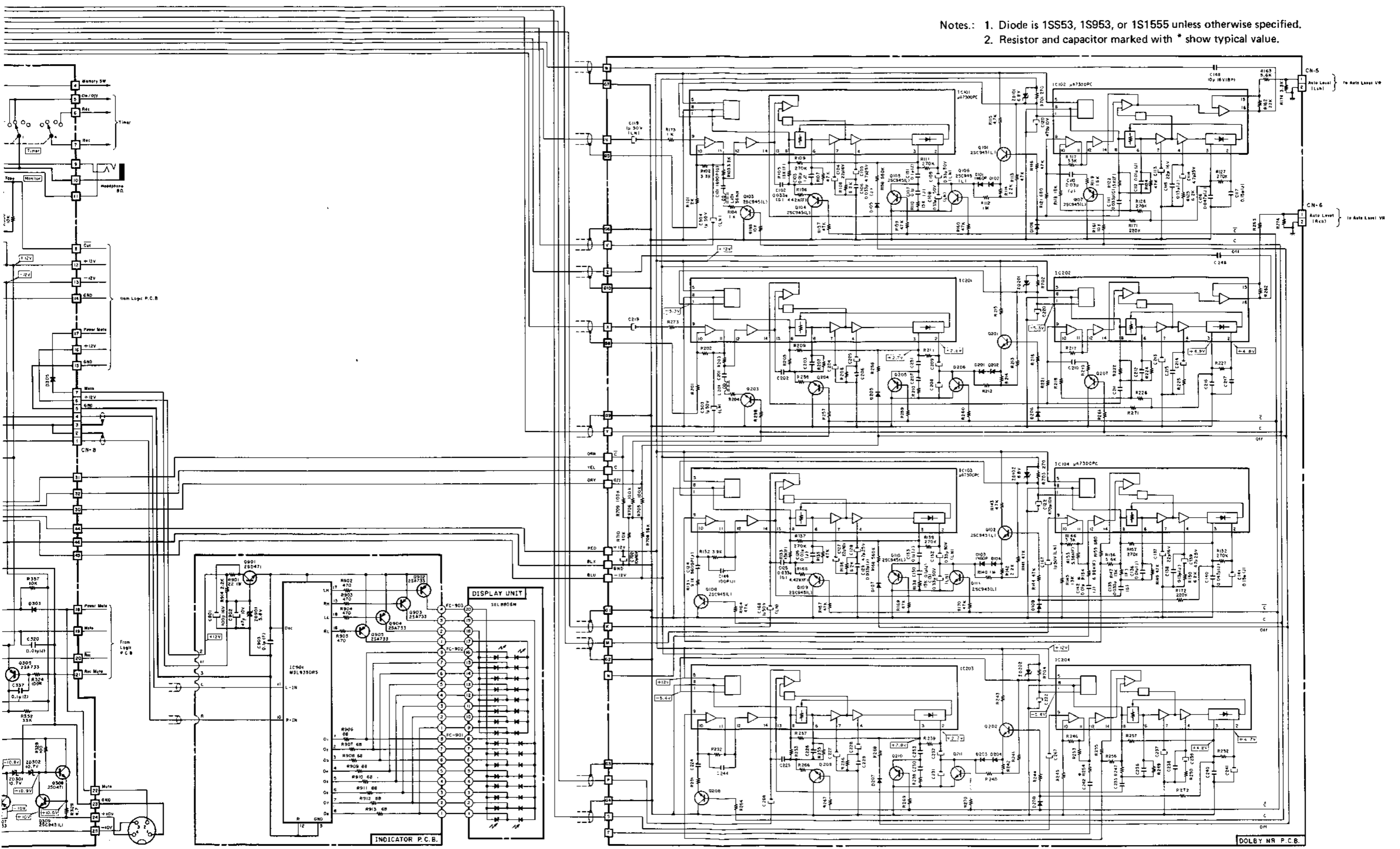


Fig. 13.6.1 Serial No.: A12102102 -

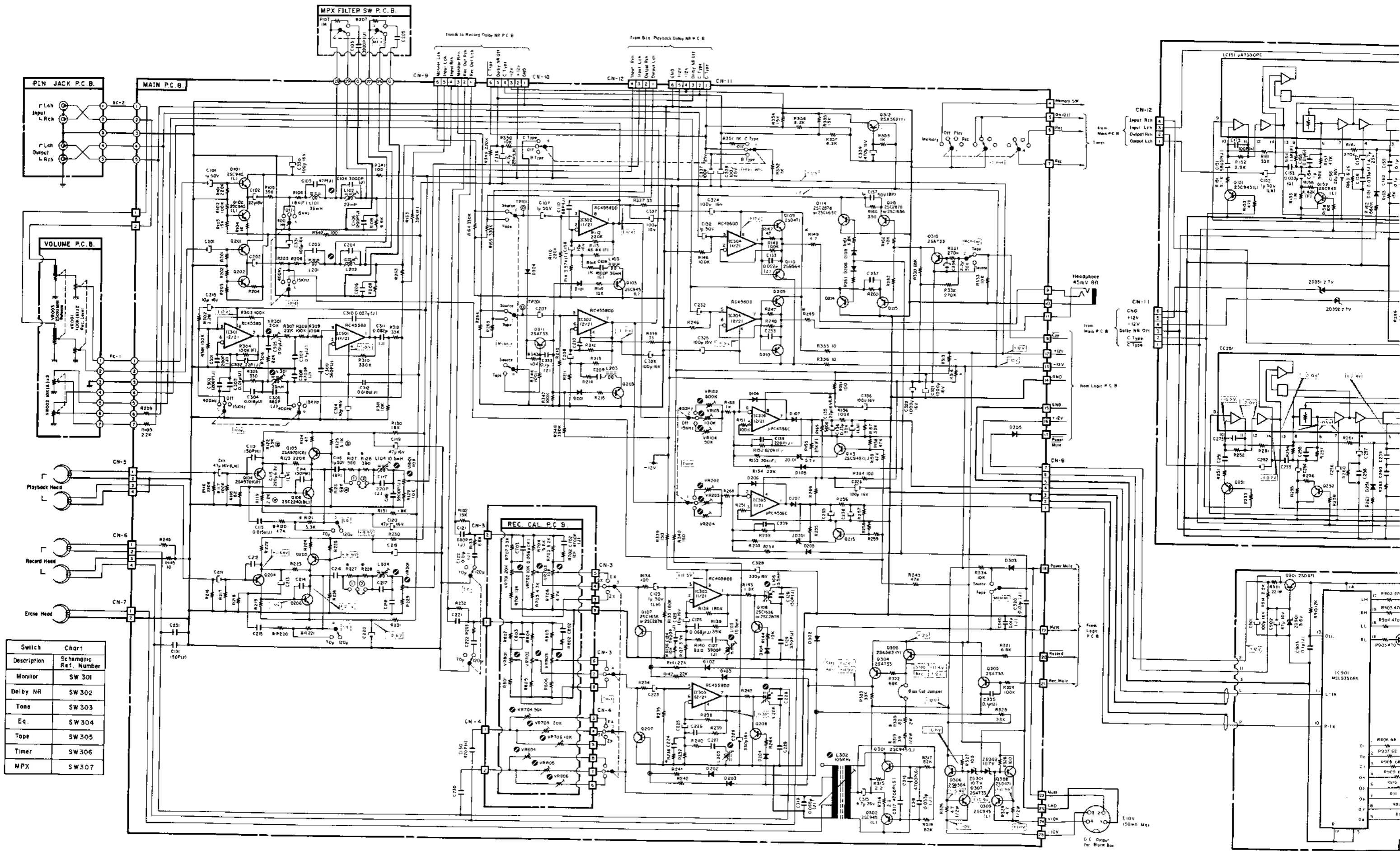
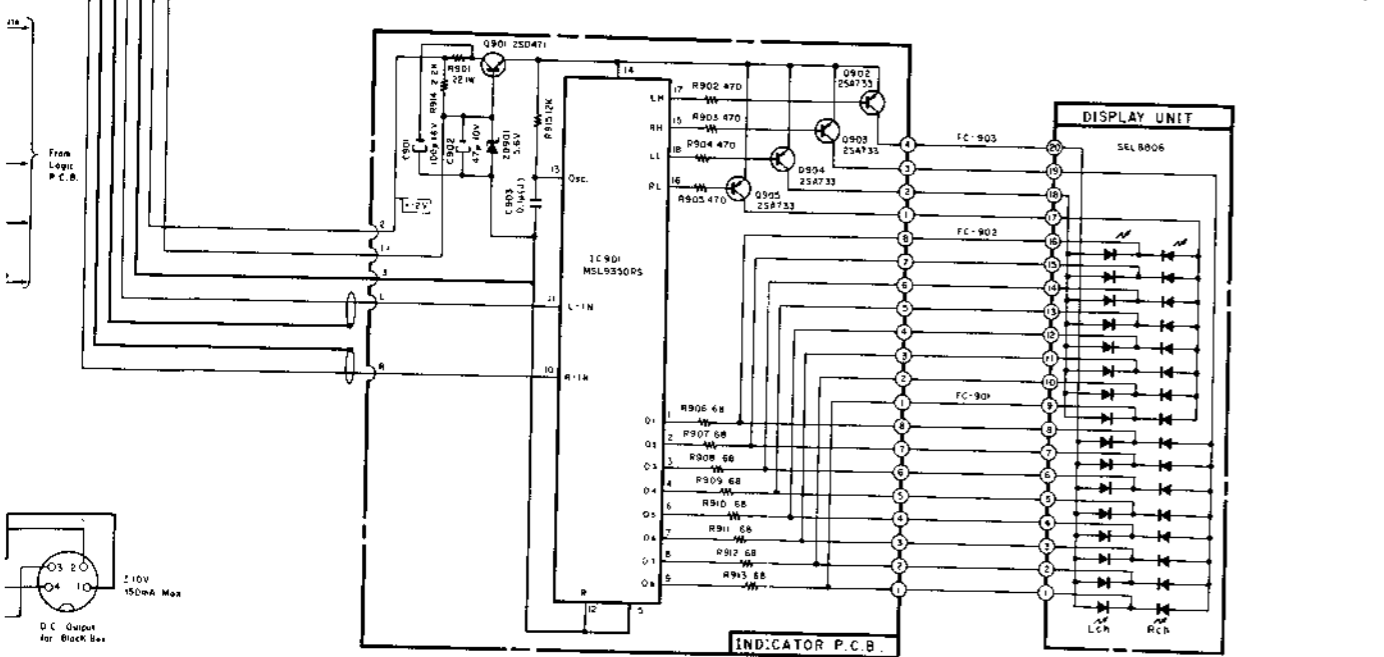
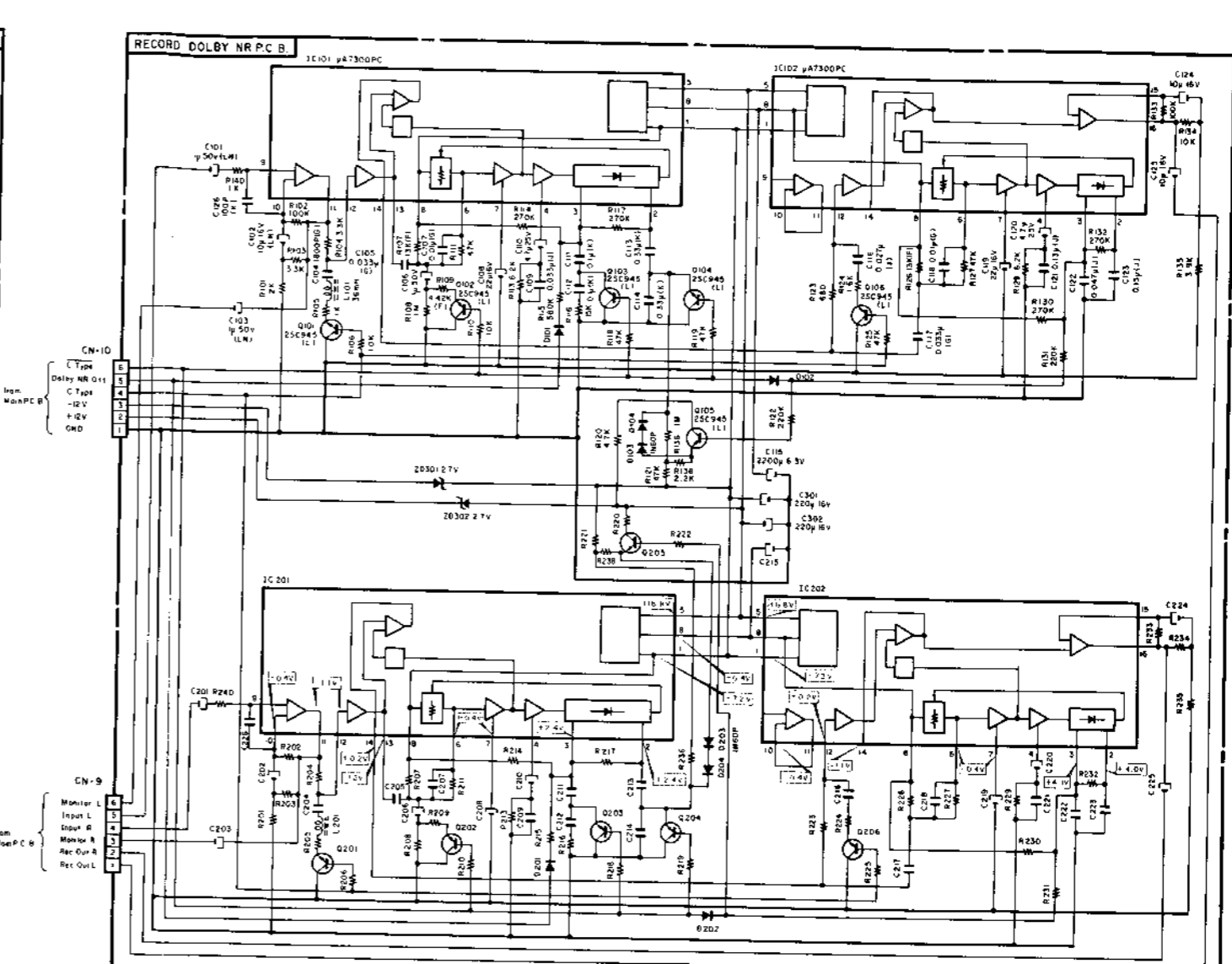
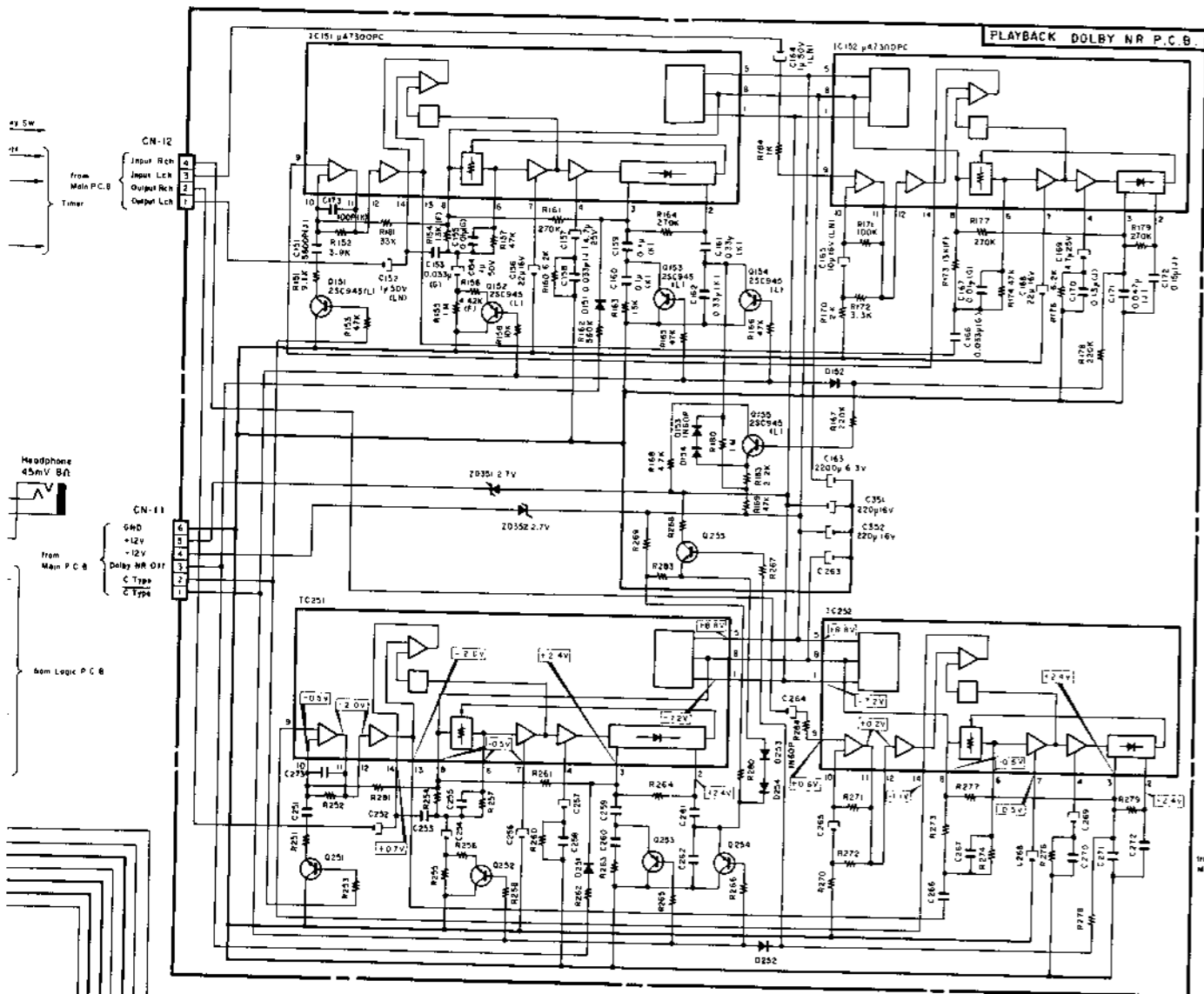


Fig. 13.6.2 Serial Nos.: A12101501 - A12102101



Notes.: 1. Diode is 1S553, 1S953, or 1S1555 unless otherwise specified.
 2. Resistor and capacitor marked with * show typical value.

g. 13.6.2 Serial Nos.: A12101501 – A12102101

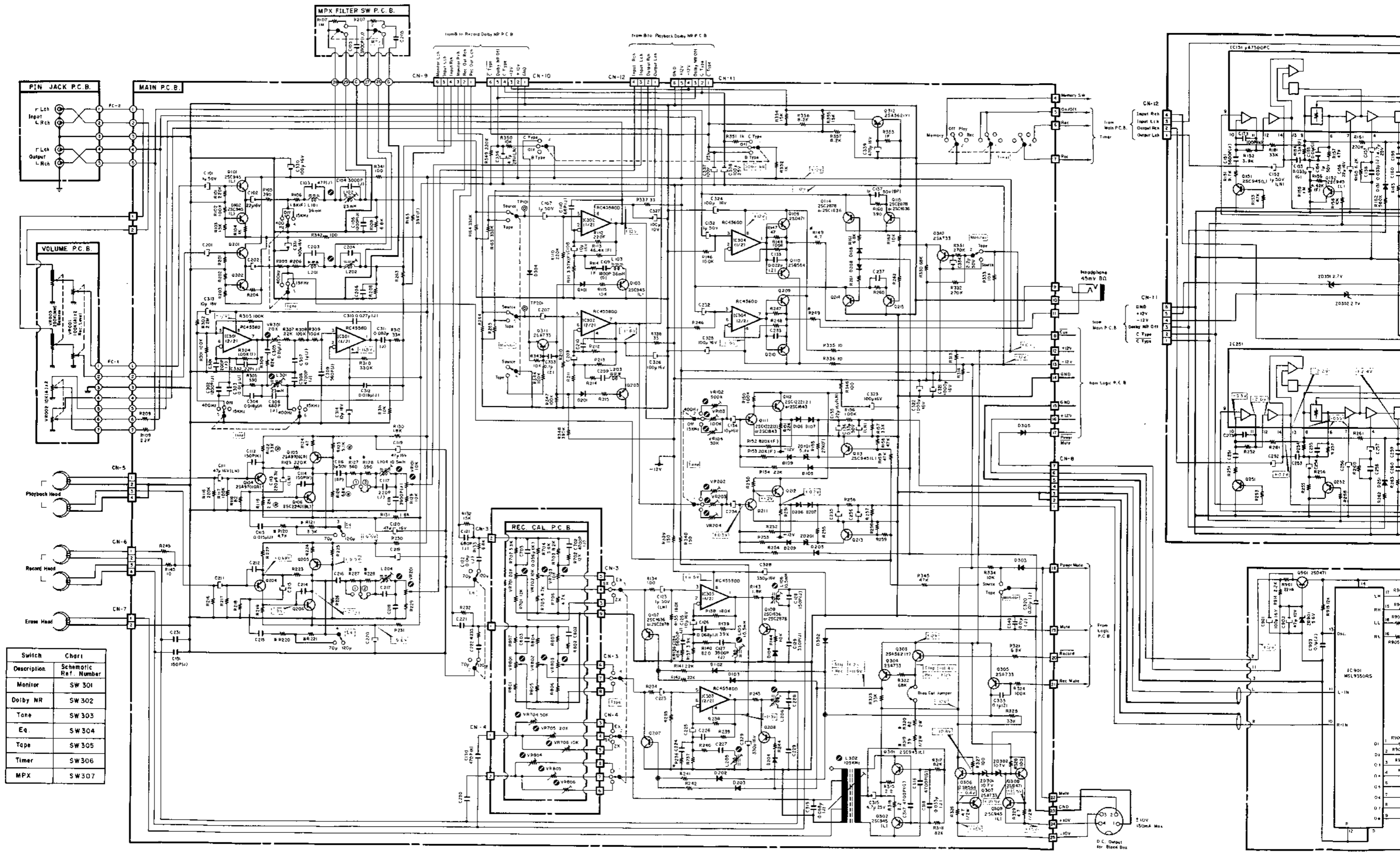
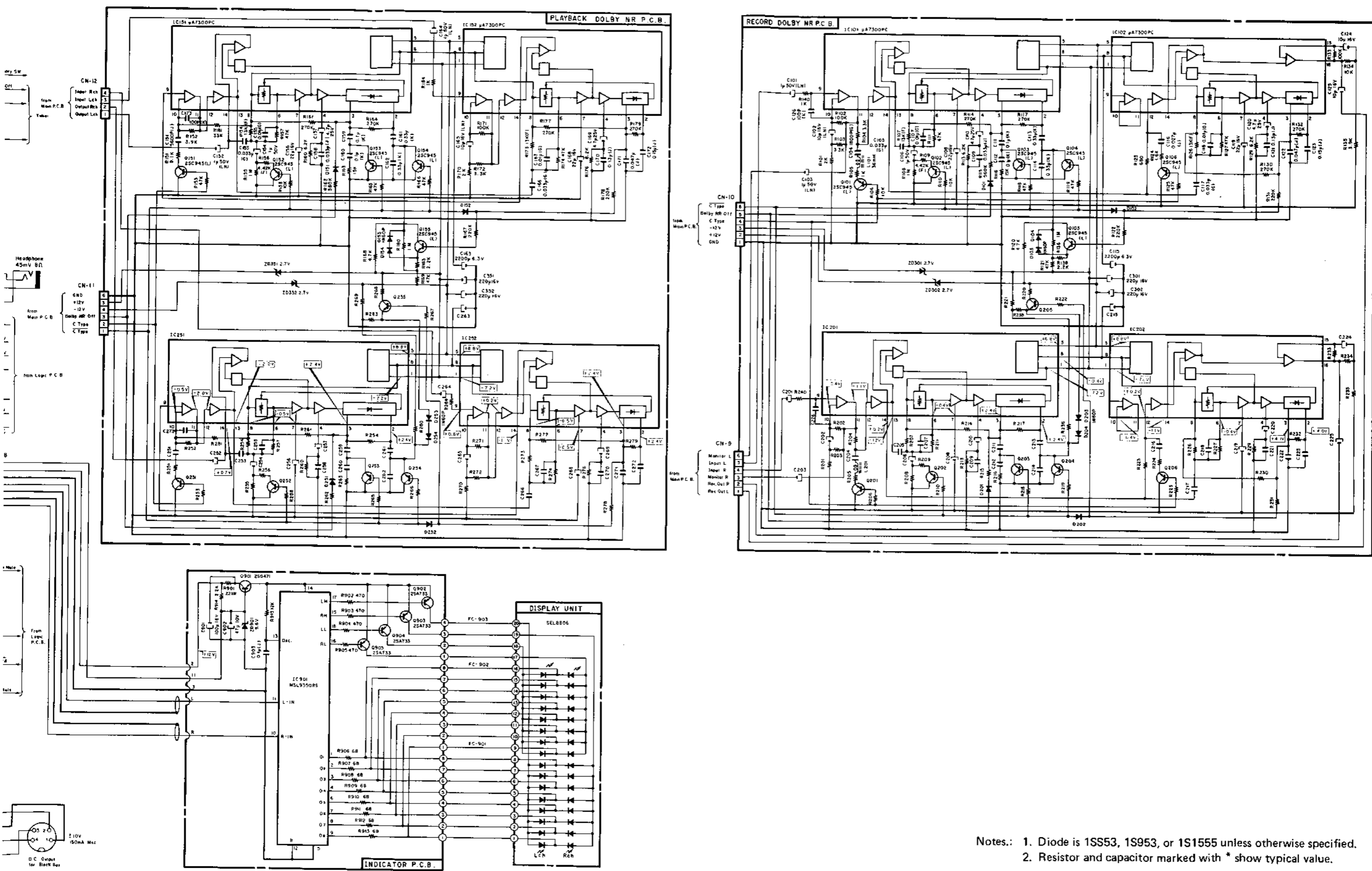


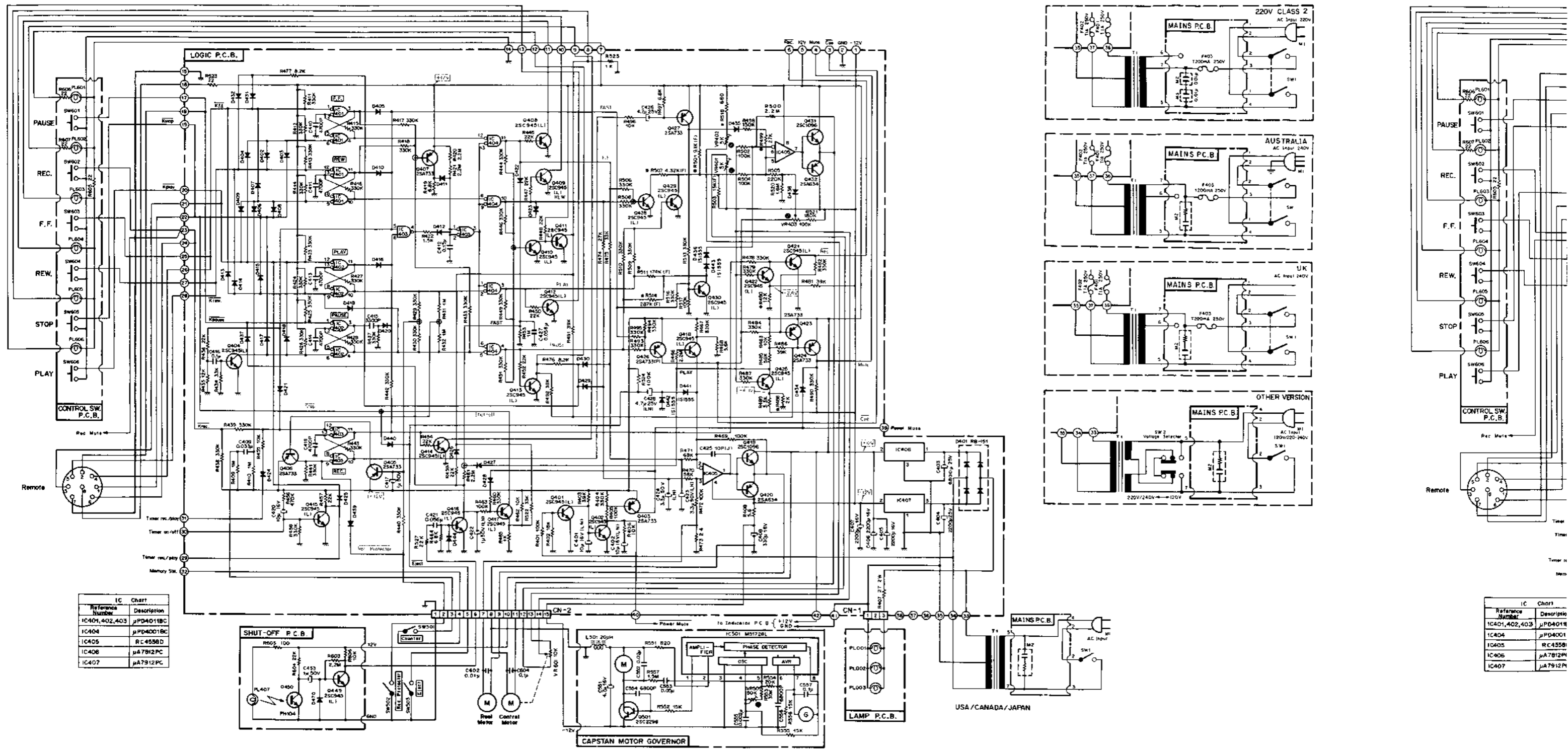
Fig. 13.6.3 Serial Nos.: A12101001 - A12101500



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

Fig. 13.6.3 Serial Nos.: A12101001 - A12101500

13.4. Mechanism Control Section



Reference Number	Description
IC401, 402, 403	μPD4011BC
IC404	μPD4001BC
IC405	RC4558D
IC406	μA7812PC
IC407	μA7912PC

Reference Number	Description
IC401, 402, 403	μPD4011R
IC404	μPD4001R
IC405	RC4558R
IC406	μA7812PR
IC407	μA7912PR

Fig. 13.7.1 Serial No.: A12102903 -

Notes: 1. Diode is 1S553, 1S953, or 1S1555 unless otherwise specified.
 2. Resistor and capacitor marked with * show typical value.

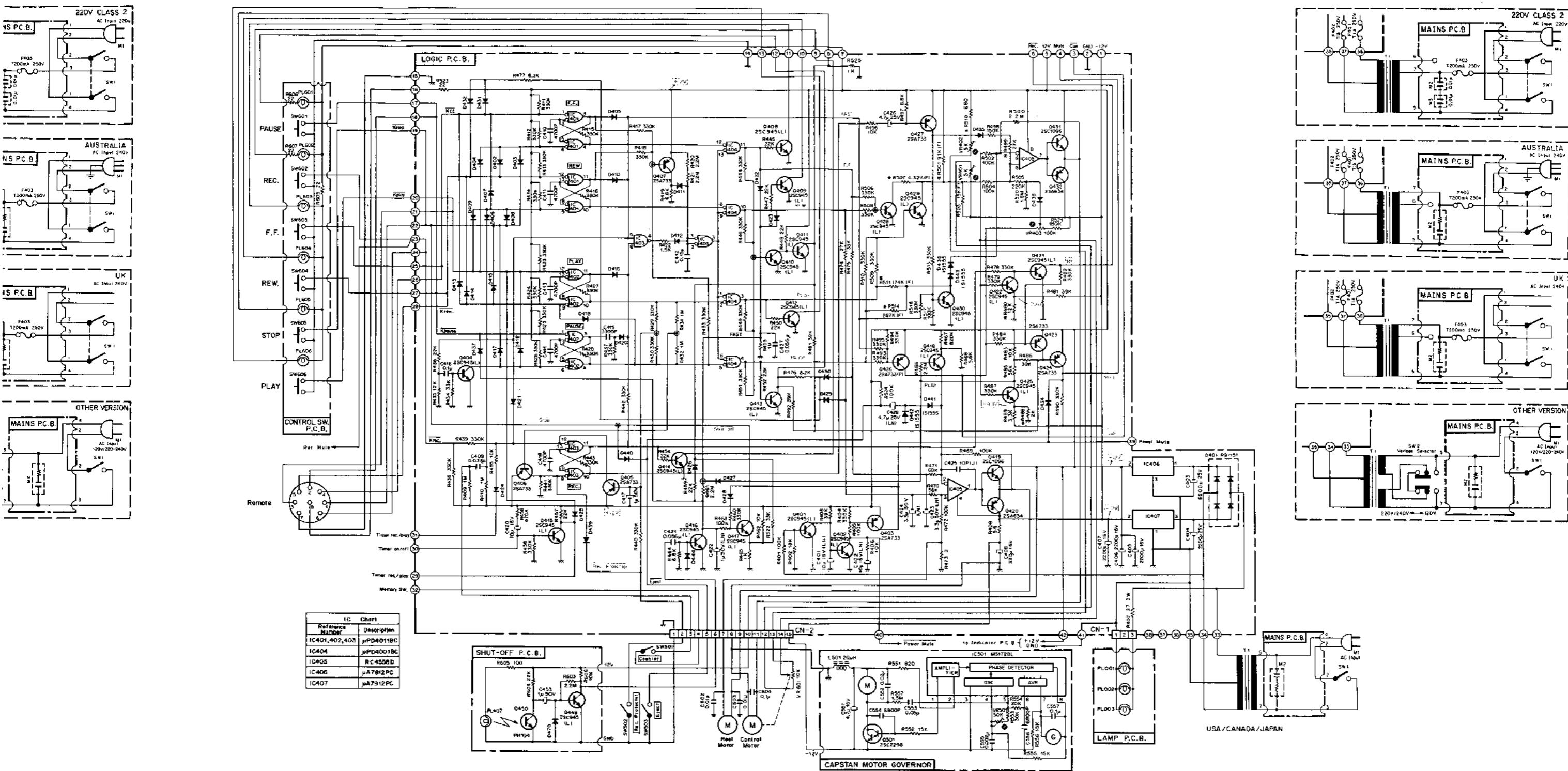


Fig. 13.7.2 Serial Nos.: A12101001 - A12102902

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

14. SPECIFICATIONS

Power Source	100, 120, 120/220-240, 220 or 240 V AC; 50/60 Hz (According to country of sale)
Power Consumption	30 W max.
Tape Speed	1-7/8 ips (4.8 cm/sec) $\pm 0.5\%$
Wow and Flutter	Less than 0.1% WTD Peak, 0.05% WTD rms
Frequency Response	20–20,000 Hz ± 3 dB (–20 dB Rec. Level)
Signal to Noise Ratio	C-Type NR on (70 μs, ZX Tape) (Dolby NR In, 70 μ s) Better than 72 dB at 400 Hz, 3% THD, IHF A-wtd rms B-Type NR on (70 μs, ZX Tape) Better than 66 dB at 400 Hz, 3% THD, IHF A-wtd rms
Total Harmonic Distortion	Less than 0.8% at 400 Hz, 0 dB (ZX Tape) Less than 1.0% at 400 Hz, 0 dB (SX, EXII Tapes)
Erasure	Better than 60 dB below saturation level at 1 kHz
Separation	Better than 37 dB at 1 kHz, 0 dB
Crosstalk	Better than 60 dB at 1 kHz, 0 dB
Bias Frequency	105 kHz
Input	50 mV, 50 k ohms
Output Level	1 V (400 Hz, 0 dB, Output Level at max.) 2.2 k ohms
Headphone	45 mW
DC Output Jack	± 10 V 125 mA max.
Dimensions	500 (W) x 130 (H) x 350 (D) mm 19-11/16 (W) x 5-1/8 (H) x 13-25/32 (D) inches
Approximate Weight	8.3 kg, 18 lb. 5 oz

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