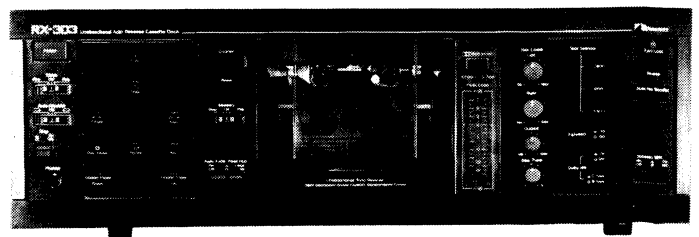




Service Manual

Nakamichi RX-303 RX-303E

Unidirectional Auto Reverse
Cassette Deck



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1. GENERAL

1.1. Voltage Selector

Voltage selector is installed on the rear panel for Other version of the Nakamichi RX-303/RX-303E. This voltage selector can select either 120 V or 220-240 V at customer's disposal.

1.2. Packing Materials and Owner's Manual

<u>Part No.</u>	<u>Description</u>	<u>Q'ty</u>
0F03740A	Outer Carton (U.S.A., Canada, Australia, Others & Japan)	1
0F03744A	Outer Carton (UK & 220V Class 2)	1
0F03774A	Inner Carton (U.S.A., Canada, Australia, Others & Japan)	1
0F03775A	Inner Carton (UK & 220V Class 2)	1
0F03742A	Packing	2
0D04319A	Owner's Manual RX-303 (U.S.A., Canada & Australia)	1
DA03727A	Owner's Manual RX-303/RX-303E (including French statement)	1
0D04320A	Owner's Manual RX-303 (Japan)	1

2. MECHANICAL ADJUSTMENTS

2.1. Preparation for Adjustment

Load a Gauge into the RX-303 as follows:

(1) Removal of the Cassette Case Ass'y and Cover Plate Ass'y
Refer to Fig. 2.1.

- (a) Remove the Front Panel Ass'y.
- (b) Turn the Power switch to ON.

(c) Push the Eject/Load button to slide out the Cassette Compartment.

(d) Remove F01 (Stopper Ring 3 mm), F02 (Mylar Washer) and F03 (Cassette Case Ass'y).

(e) Unfasten two screws F04 and remove F05 (Cover Plate Ass'y).

Note: Do not miss the parts removed.

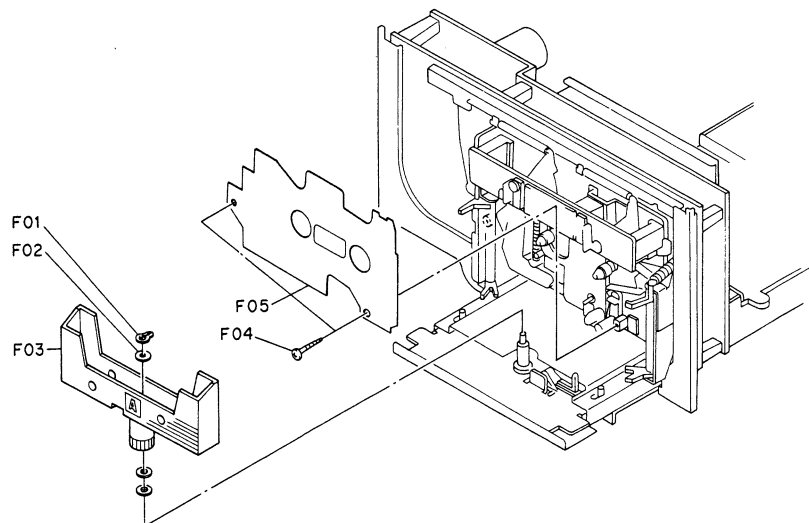


Fig. 2.1

- (2) **How to Load a Gauge**
- (a) Tape the Record Protector switch as shown in Fig. 2.2 to allow easy loading of a Gauge.
- (b) Load a Gauge as follows:
- 1) Place a Gauge instead of a cassette tape.
 - 2) With pushing the Gauge with your fingers, push the Eject/Load button to load the Gauge. The Cassette Compartment automatically slides in and then the Lock Arms (Right & Left) secure the Gauge.

(3) **After Adjustment**

After adjustment, reverse the above steps as follows:

- (a) Push the Eject/Load button to slide out the Cassette Compartment and remove the Gauge.
- (b) Remove the tape of the Record Protector switch.
- (c) Mount the F05 (Cover Plate Ass'y) and F03 (Cassette Case Ass'y).
Note: Mylar washer(s) must be placed on the original places.
- (d) Push the Eject/Load button to slide in the Cassette Compartment.
- (e) Turn the Power switch to OFF.
- (f) Mount the Front Cover.

2.2. Mechanism Control Cam Adjustment

- (1) **Offset Adjustment of Control Motor Driver**
- (a) Refer to Fig. 2.3.
- Adjust VR602 and VR603 on the Logic P.C.B. Ass'y to locate approximately at the middle of the variable range. Then turn ON the Power switch.
- VR602 (for Cam position play)
VR603 (for Cam position stop)
- (b) Press the Stop button to set the cassette deck in Stop mode. Adjust VR603 (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 cassette deck in Playback mode. (Cam will rotate, and the position marked with "PY" comes to the pointer.) Adjust VR602 (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 cassette deck in F.F. or Pause mode by pressing each button.
Check to insure that the pointer is in a range of "F" or "PS" 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.
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 VR608 in Stop, Fast (F.F. or Rew.), Pause and Playback modes.

- (b) **Reference Voltage**
- Reference voltage at the sliding contact of VR608 (Cam Control Volume) in each mode is as follows:

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

} — 2.0 V ± 0.25 V

} — 2.6 V ± 0.4 V

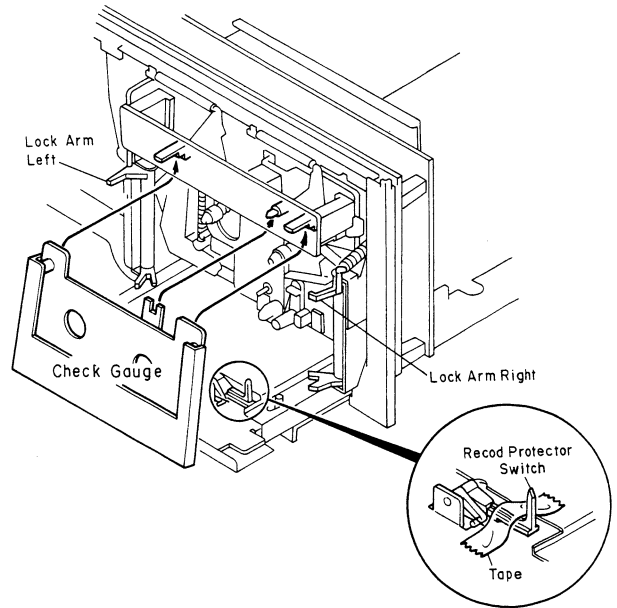


Fig. 2.2

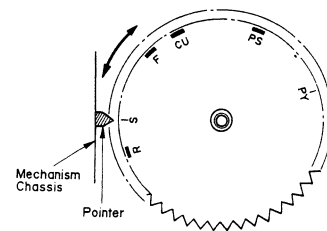


Fig. 2.3

(c) **Resistors for Adjustment**

Mode	Ref. No.	Typical Value
Fast (F.F./Rew.)	R 655	22 kΩ
Pause	R 649	76.8 kΩ (F)
Play	R 653	10 kΩ

- (d) **Adjustment Procedures**
- 1) Set the cassette deck in Stop mode, then check to insure that the voltage at the sliding contact of VR608 is 0 V (±0.3 V).
 - 2) Set the cassette deck in F.F. mode, then adjust the value of R655 so that the voltage at the sliding contact of VR608 will become lower by 2.0 V (±0.25 V) than in Stop mode.
 - 3) Press the Pause button to set the cassette deck in Pause mode. Adjust the value of R649 to obtain -6.5 V (+0.4, -0.15 V) at the sliding contact of VR608.
 - 4) Set the cassette deck in Playback mode, then adjust the value of R653 so that the voltage at the sliding contact of VR608 will become lower by 2.6 V (±0.4 V) than in Pause mode.

2.3. Reel Motor Speed Adjustment in Play mode

- (1) Connect a DC voltmeter to TP602 and GND on the Logic P.C.B. Ass'y.
- (2) Without loading a cassette tape, set the cassette deck in Play mode.
- (3) Adjust VR604 on the Logic P.C.B. Ass'y to obtain -4 V on the DC voltmeter.

2.4. Record/Playback Head Tilt Adjustment

Note: On items 2.4 — 2.9, refer to Fig. 2.4 flow chart. Refer to Figs. 2.5 and 2.6.

- (1) Load a Tilt Check Gauge M-9036 (DA09036B) in the cassette deck.
- (2) Clip the grounding terminal of the Tilt Check Gauge with one end of the cord with clip, and the chassis of the cassette deck with the other end.
- (3) Remove the Height Gear.
- (4) Set the cassette deck in Play mode. Check to insure whether the Beacon "Upper" or "Lower" is illuminating. In order not to give damages onto the record/playback head surface, push the slide knob of the Gauge to the direction of an arrow mark, then return it to the original place to be in contact

- (5) Check to insure freedom from contact between the Gauge and pad lifter.
- (6) Beacon "Lower" will light on when height adjustment screw turned clockwise but "Upper" when counterclockwise. Adjust so that both "Upper" and "Lower" will light on even when you move the slide knob to the direction of an arrow mark and then return it to the original place.
- (7) Set the cassette deck in Stop mode and fit the serrated Height Gear. Then set the cassette deck again in Play mode and insure 2 Beacons "Upper" and "Lower" are illuminating. If not, (3) through (6) will have to be repeated till satisfactory results are obtained.

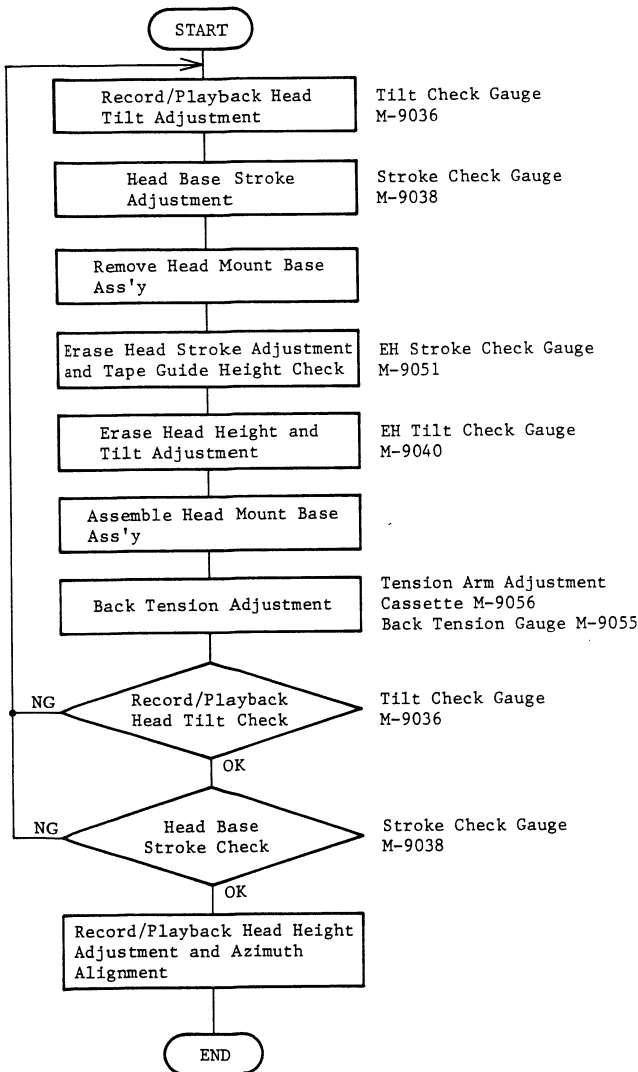


Fig. 2.4

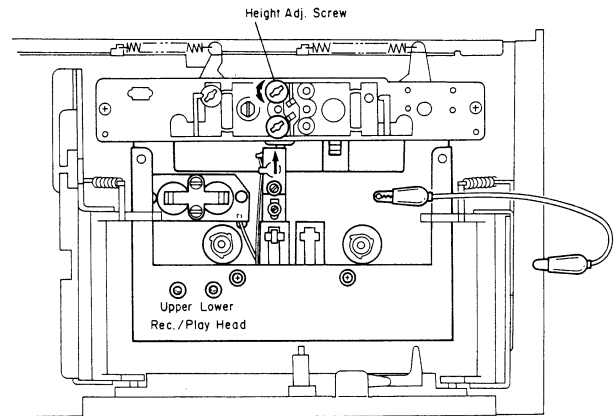


Fig. 2.5

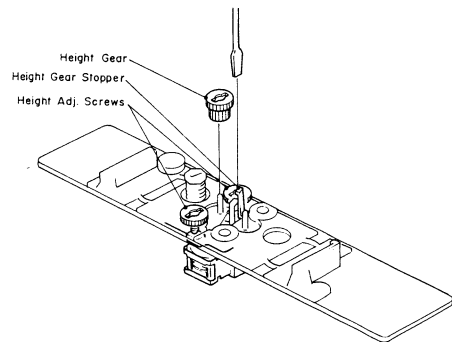


Fig. 2.6

2.5. Head Base Stroke Adjustment

Refer to Fig. 2.7.

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

- (1) Load a Stroke Check Gauge M-9038 (DA09038B) in the cassette deck.
- (2) Set the cassette deck in Play mode.
- (3) Check to insure whether the "P" pointer on the Stroke Indicator locates between 2 lines as marked on the Stroke Check Plate.
- (4) If the record/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).

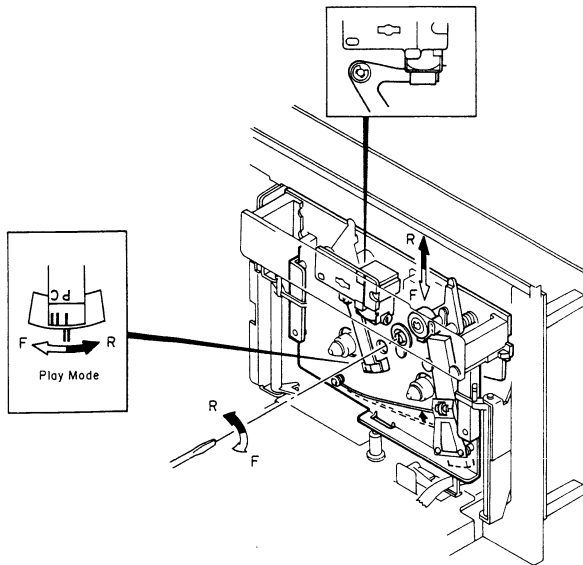


Fig. 2.7

2.6. Erase Head Stroke Adjustment and Tape Guide Height Check

Remove the Head Mount Base Ass'y.
Refer to Figs. 2.8 and 2.9.

(1) Erase Head Stroke Adjustment

- (a) Load an EH Stroke Check Gauge M-9051 (DA09051B) in the cassette deck.
- (b) Set the cassette deck 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 A that assemble erase head and erase head plate.
- (d) After completion of adjustment, 2 pcs. of screws shall be locked with lock tight paint.

(2) Supply Tape Guide Height Check

- (a) Load an EH Stroke Check Gauge M-9051 (DA09051B) in the cassette deck.
- (b) Set the cassette deck in Play mode.
- (c) Slide the Supply Tape Guide Check Bar down against the supply tape guide, and check to insure that the Supply Tape Guide Check Bar is accepted by the supply tape guide.

(3) Take-up Tape Guide Height Check

- (a) Load an EH Stroke Check Gauge M-9051 (DA09051B) in the cassette deck.
- (b) Set the cassette deck in Play mode.
- (c) Slide the Take-up Tape Guide Check Bar down against the take-up tape guide, and check to insure that the Take-up Tape Guide Check Bar is accepted by the take-up tape guide.

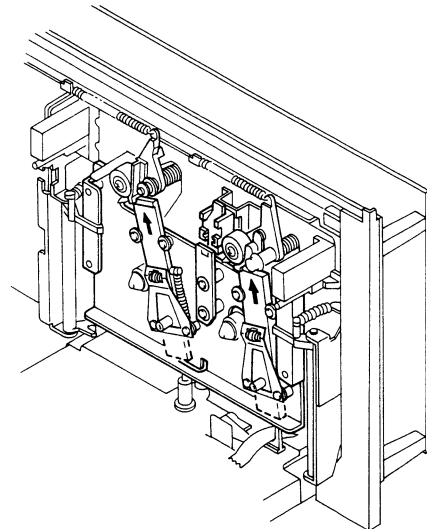


Fig. 2.8

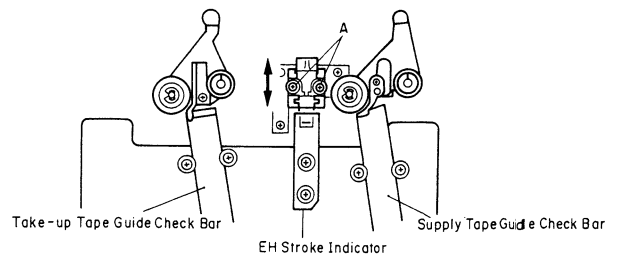


Fig. 2.9

2.7. Erase Head Height and Tilt Adjustment

Refer to Figs. 2.10 and 2.11.

- (1) Remove Head Mount Base Ass'y.
- (2) Load an EH Tilt Check Gauge M-9040 (DA09040B) in the cassette deck.
- (3) Set the cassette deck 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.

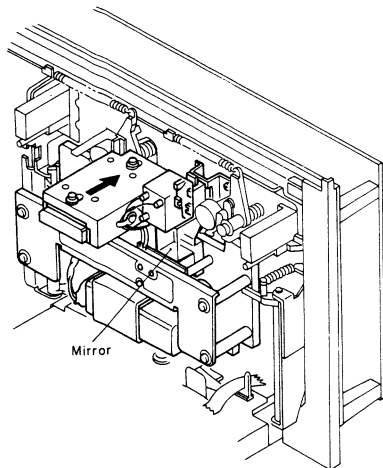


Fig. 2.10

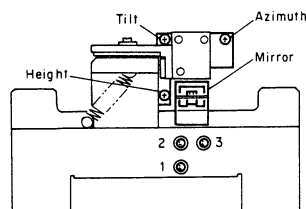


Fig. 2.11

2.8. Back Tension Adjustment

Refer to Figs. 2.12 — 2.14.

- (1) Load a Tension Arm Adjustment Cassette (DA09056B) in the cassette deck referring to Fig. 2.12.
- (2) Set the cassette deck 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. 2.13. Do not bend the top of the Back Tension Arm.
- (4) Load the Back Tension Gauge (DA09055B) in the cassette deck.
- (5) Set the cassette deck in Play mode and read the torque value of Back Tension Gauge. If the value is in a range of 5 g-cm to 9 g-cm, adjustment is not necessary. If not, change the installation point of the Back Tension Spring as shown in Fig. 2.14, and obtain the torque of 6 g-cm to 8 g-cm range.

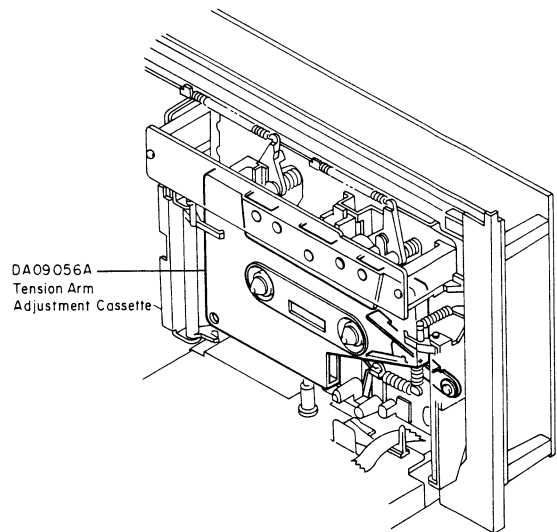


Fig. 2.12

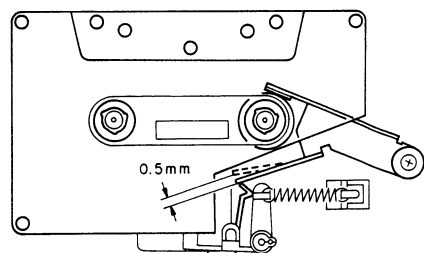


Fig. 2.13

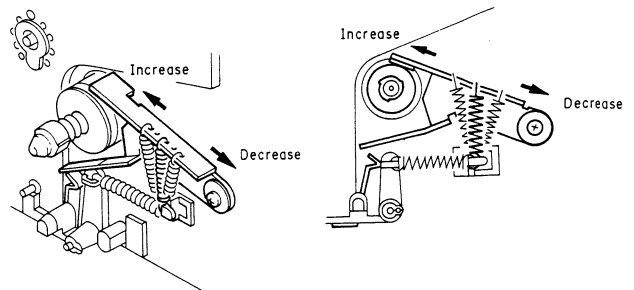


Fig. 2.14

2.9. Record/Playback Head Height Adjustment and Azimuth Alignment

Refer to Fig. 2.15.

- (1) Connect a VTVM to the Output Jacks.
- (2) Load a 1 kHz Track Alignment Tape (DA09007B) in the cassette deck.
- (3) Set the cassette deck in Play mode.
- (4) Turn the Height Gear until the outputs of both channels

become minimum.

- (5) Load a 15 kHz Azimuth Tape (DA09004B) in the cassette deck.
- (6) Set the cassette deck in Play mode.
- (7) Turn the Azimuth Alignment Screw until the outputs of both channels become maximum.
- (8) Repeat (2) through (7) one or two times to obtain optimum performance.

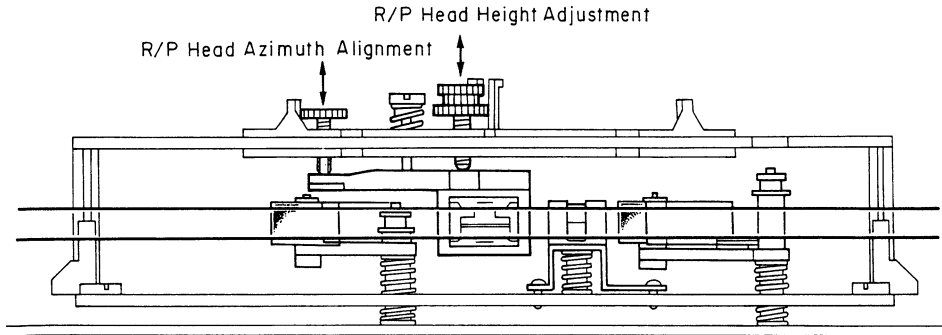


Fig. 2.15

2.10. Tape Travelling Adjustment

Load and playback the Tape Travelling Cassette (DA09071A) and check the following:

- (1) Tape is contact with heads sufficiently.
- (2) Tape waving is small on the heads and pressure rollers.
- (3) Tape is free from waving or slippage from the tape guides.

If either of the above should be noted, adjustment of items 2.4 to 2.9, 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 cassette deck 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.

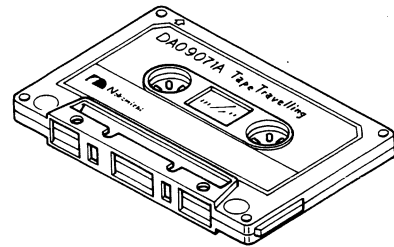


Fig. 2.16

2.11. Flywheel Holder Adjustment

Refer to Fig. 2.17.

- (1) 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 by hand (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.

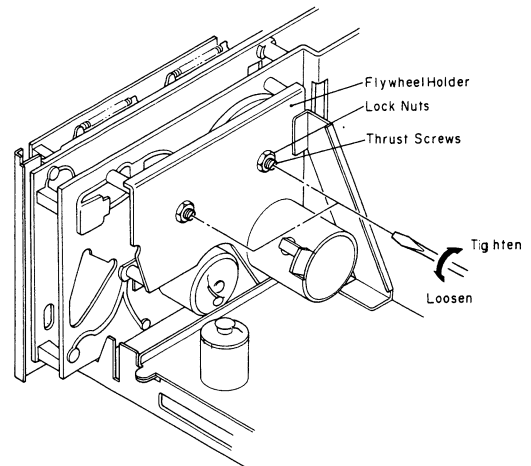


Fig. 2.17

2.12. Tape Speed Adjustment

Refer to Fig. 2.18.

- (1) Remove the Top Cover Ass'y.
- (2) Connect a Frequency Counter to the Output Jack.
- (3) Load a 3 kHz Speed Wow/Flutter Tape (DA09006C) and play it back.
- (4) Adjust the Tape Speed Adjustment Volume (VR501) incorporated in the Capstan Motor to obtain 3,000 Hz on the Frequency counter.

CCW: Motor drives slowly.

CW: Motor drives fast.

2.13. Slide Base Position Adjustment (on the Logic P.C.B. Ass'y)

- (1) Pull out the connector CN604 on the Logic P.C.B. Ass'y.
- (2) Ground TP604 to set the cassette case to its side A.
- (3) Adjust VR607 to obtain a gap of 2 to 4 mm as shown in Fig. 2.19.
- (4) Ground TP603 and TP604 to set the cassette case to its side B.
- (5) Adjust VR606 to obtain a gap of 2 to 4 mm as shown in Fig. 2.19.
- (6) Ground only TP603 to set the cassette case to its eject position.
- (7) Adjust VR605 to the position where the cassette case is about to start rotation.
- (8) Repeat above steps (2) to (7) two or three times.
- (9) Plug CN604 into the original place.

2.14. Lubrication

This 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 Sakuma-cho, Chiyoda-ku, Tokyo 101 Japan.

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

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

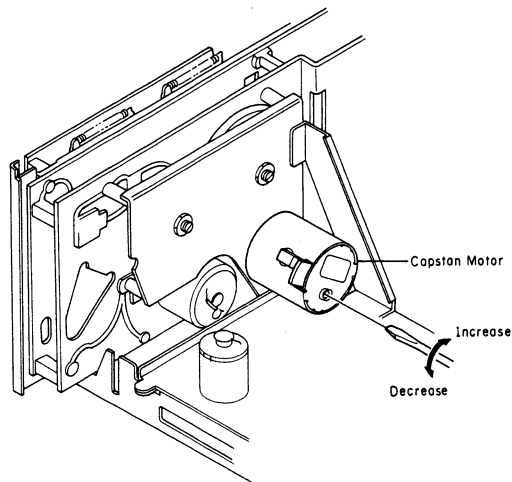


Fig. 2.18

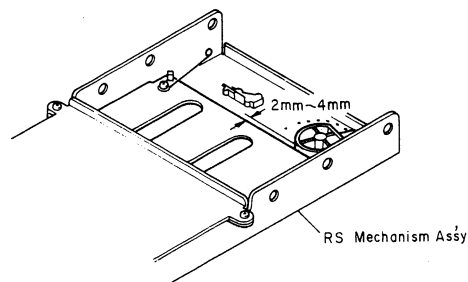


Fig. 2.19

3. PARTS LOCATION FOR ELECTRICAL ADJUSTMENT

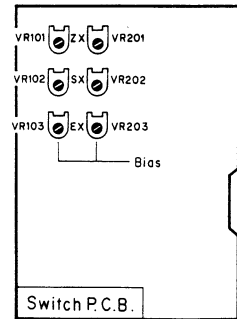
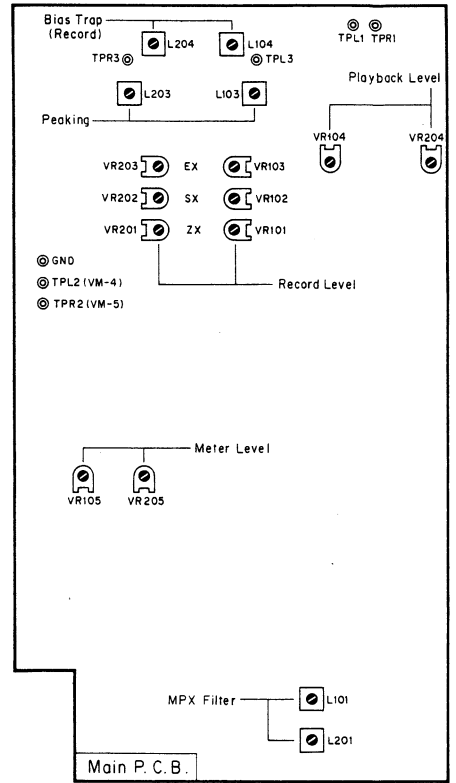
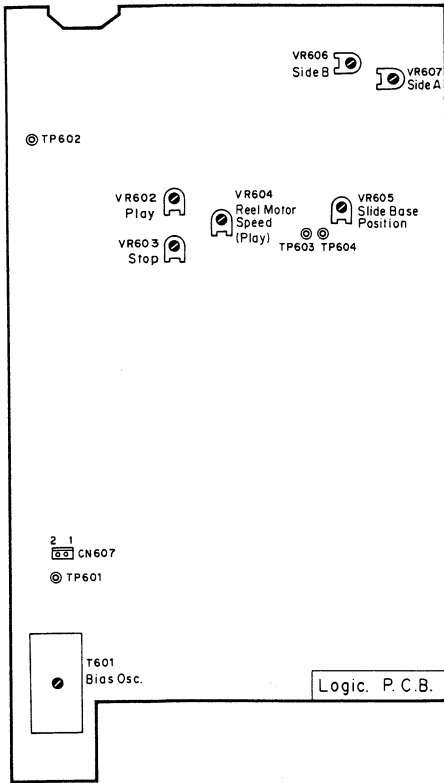


Fig. 3

4. ELECTRICAL ADJUSTMENTS AND MEASUREMENTS

- Notes: 1. Electrical adjustment should be performed after mechanical adjustment is completed.
 2. Before adjustment, set the Bias Tune control on the Front Panel to its mechanical center position.

4.1. Adjustment and Measurement Instructions

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
1	Tape Speed Adjustment	3 kHz Speed and Wow/Flutter Tape (DA09006C)	Frequency Counter to Output Jacks	Playback Eq. SW — 70 μ s	Tape Speed Adjustment Volume	Adjust the volume incorporated in the capstan motor to obtain 3 kHz \pm 0.5% on the frequency counter.
2	Meter Level Calibration	400 Hz to Input Jacks	VTVM to TPL2, TPR2 on Main P.C.B.	Record, Pause	Main P.C.B. VR105, VR205	<ol style="list-style-type: none"> 1. Feed in 400 Hz, then adjust the Input Level controls to obtain 1.0 V -1 dB on the VTVM. 2. Adjust VR105 (VR205) so that the 0 dB segment of the level meter starts illuminating. 3. Adjust the Input Level controls to obtain 1.0 V on the VTVM, then decrease the generator output level by 20 dB. 4. Check to insure that the segment for -20 dB illuminates.
3	MPX Filter Adjustment	19 kHz \pm 100 Hz to Input Jacks	VTVM to Output Jacks	Record, Pause MPX SW — OFF/ON	Main P.C.B. L101, L201	<ol style="list-style-type: none"> 1. Adjust the Input Level controls to obtain 0 dB (1.0 V) on the VTVM. 2. Set the MPX Filter switch to ON, then adjust L101 (L201) to obtain minimum reading on the VTVM (minimum reading will be less than -30 dB).
4	Record/Playback Head Track Alignment	1 kHz Track Alignment Tape (DA09007B)	VTVM to Output Jacks	Playback Eq. SW — 70 μ s Dolby NR SW — OFF MPX SW — OFF	Height Gear	Adjust the Height Gear to obtain minimum readings of both channels on the VTVM.
5	Record/Playback Head Azimuth Alignment	15 kHz Azimuth Tape (DA09004B)	VTVM to Output Jacks	Same as above	Record/Playback Head Azimuth Alignment Screw	Adjust the Record/Playback Head Azimuth Alignment Screw to obtain maximum readings of both channels on the VTVM. Repeat steps 4 and 5 one or two times.
6	Playback Level Calibration	400 Hz Level Tape (DA09005B)	VTVM to TPL2, TPR2 on Main P.C.B.	Same as above	Main P.C.B. VR104, VR204	Adjust VR104 (VR204) to obtain 1.0 V on the VTVM.
7	Playback Frequency Response Adjustment	400 Hz Level Tape (DA09005B) 10 kHz PB Frequency Response Tape (DA09003B) 15 kHz PB Frequency Response Tape (DA09002B) 20 kHz PB Frequency Response Tape (DA09001B)	VTVM to Output Jacks	Playback Eq. SW — 70 μ s Dolby NR SW — OFF MPX SW — OFF	Main P.C.B. R509, R609 R508, R608	<ol style="list-style-type: none"> 1. Load a 400 Hz level tape and play it back. 2. Load 10 kHz, 15 kHz and 20 kHz PB frequency response tapes and adjust the record/playback head azimuth to obtain maximum levels on the VTVM with each tape. 3. Read the maximum levels with each tape and check to insure that the levels against the 400 Hz level tape are within the following ranges. If not, short R509 (R609) or R508 (R608) on the Main P.C.B. Ass'y to obtain satisfactory results. 10 kHz (-20 dB) -2 dB to $+2$ dB 15 kHz (-20 dB) -2 dB to $+3$ dB 20 kHz (-20 dB) -2 dB to $+4$ dB Check to insure that the difference in level between 10 kHz (-20 dB) and 20 kHz (-20 dB) is less than 2 dB. Refer to the "Playback Frequency Response Adjustment" in item 4.2 for the detailed description. 4. Conduct step 5 "Record/Playback Head Azimuth Alignment".
8	Bias Oscillation Frequency and Erase Current Adjustment		Frequency Counter to CN607-1 on Logic P.C.B. and VTVM across the additional 0.1 Ω resistor	Record, Pause Tape SW — ZX Eq. SW — 70 μ s Dolby NR SW — OFF MPX SW — OFF	Logic P.C.B. T601 R961, R960	<ol style="list-style-type: none"> 1. Adjust T601 to obtain 105 kHz on the frequency counter. 2. Connect an additional 0.1 Ω resistor in series to the Erase Head, then connect a VTVM across it. 3. Check the erase current by the VTVM. Erase current will be in a range of 310 mA to 400 mA (typically approx. 350 mA). If erase current is not sufficient, increase it by shorting R961 or R960. 4. After completion of the erase current adjustment, re-check the bias oscillation frequency. 5. Remove the additional 0.1 Ω resistor.
9	Record Amplifier Equalizer Adjustment	21 kHz (-20 dB) to Input Jacks	VTVM to TPL1, TPR1 on Main P.C.B.	Same as above	Main P.C.B. L103, L203	<ol style="list-style-type: none"> 1. Remove the bias-cut jumper on the Logic P.C.B. Ass'y. 2. Adjust L103 (L203) to obtain peak reading at 21 kHz on the VTVM. 3. Re-solder the bias-cut jumper.
10	Bias Trap Adjustment (Record Amp.)	Remove input signals	VTVM to TPL3, TPR3 on Main P.C.B.	Same as above	Main P.C.B. L104, L204	Adjust L104 (L204) to obtain maximum reading on the VTVM.

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
11	Record Level Calibration and Recording Bias Current Adjustment	400 Hz (0 dB), 400 Hz (-20 dB), 10 kHz (-20 dB) and 18 kHz (-20 dB) to Input Jacks	VTVM to TPL2, TPR2 and TPL1, TPR1 on Main P.C.B. and VTVM and Distortion Meter to Output Jacks	Record and Playback Tape SW — ZX/SX/EX Eq. SW — 70 μ s (ZX/SX) 120 μ s (EX) Dolby NR SW — C-Type/B-Type/ OFF MPX SW — OFF	Main P.C.B. (Level) ZX: approx. 1 mA SX: approx. 0.5 mA EXII: approx. 0.3 mA Switch P.C.B. (Bias) ZX: VR101, VR201 SX: VR102, VR202 EX: VR103, VR203	Adjustment should be made in the order of ZX, SX and EX. 1. Set the Dolby NR switch to C-Type. 2. Connect a VTVM to TPL2 (TPR2) on the Main P.C.B. Ass'y. 3. Set the RX-303 in Record/Pause mode. 4. Feed in 400 Hz, then adjust the Input Level controls to obtain 1.0 V (0 dB) on the VTVM. 5. Load a reference ZX tape (DA09037B), reference SX tape (DA09025B) and reference EXII tape (DA09066B). 6. Adjust Record Cal. VR101 (VR201) for ZX, VR102 (VR202) for SX and VR103 (VR203) for EXII to center positions. 7. Connect the VTVM to TPL1 (TPR1) on the Main P.C.B. Ass'y. Adjust Bias VR101 (VR201) for ZX, VR102 (VR202) for SX and VR103 (VR203) for EXII to obtain the following bias current in Record/Pause mode (the VTVM is connected across a 10-ohm resistor). ZX: approx. 1 mA SX: approx. 0.5 mA EXII: approx. 0.3 mA 8. Connect the VTVM to the Output Jacks. 9. Feed in 400 Hz (-20 dB) and 18 kHz (-20 dB), then record, rewind and play them back. Adjust Bias VR101 (VR201) for ZX, VR102 (VR202) for SX and VR103 (VR203) for EXII to obtain the same playback levels at 400 Hz (-20 dB) and 18 kHz (-20 dB) on the VTVM. 10. Feed in 400 Hz (0 dB), then record, rewind and play it back. Adjust Record Cal. VR101 (VR201) for ZX, VR102 (VR202) for SX and VR103 (VR203) for EXII to obtain 0 dB on the VTVM. 11. Repeat above 9 and 10 two or three times to obtain optimum performance. 12. Set the Dolby NR switch to OFF. 13. Feed in 400 Hz (-20 dB), 10 kHz (-20 dB) and 18 kHz (-20 dB), then record, rewind and play them back. Check to insure that the playback levels are within -20 dB \pm 3 dB against the levels in Dolby NR C-Type. 14. Set the Dolby NR switch to B-Type. 15. Feed in 10 kHz (-20 dB) and 18 kHz (-20 dB), then record, rewind and play them back. Check to insure that the levels are within -20 dB \pm 2 dB against the levels in Dolby NR OFF. 16. Check to insure whether the total harmonic distortion is less than 1.0% for ZX and EXII tapes and 1.2% for SX tape. 17. If above is not sufficient, repeat 9 to 16 till satisfactory results are obtained.
12	Overall Frequency Response Adjustment	400 Hz (0 dB) and 20 Hz to 18 kHz (-20 dB) to Input Jacks	VTVM to Output Jacks	Record and Playback Tape SW — ZX/SX/EX Eq. SW — 70 μ s (ZX/SX) 120 μ s (EX) Dolby NR SW — OFF MPX SW — OFF	Main P.C.B. L103, L203	1. Set the RX-303 in Record/Pause mode. 2. Feed in 400 Hz, then set the Input Level controls to obtain 0 dB (1.0 V) on the VTVM. 3. Decrease the generator output control by 20 dB. 4. Feed in 20 Hz to 18 kHz (-20 dB) and record, rewind and play them back, then check to insure whether the output levels are within -20 dB \pm 4 dB. 5. If above is not sufficient, adjust L103 (L203) to obtain approx. -20 dB on the VTVM, then conduct step 11 "Record Level Calibration and Recording Bias Current Adjustment". 6. If above is not sufficient, precise re-adjustment of step 7 "Playback Frequency Response", replacement of Record/Playback Head or check on item 2.10 "Tape Traveling Check" will be required.
13	Crosstalk Measurement	1 kHz to Input Jacks	1 kHz Band Pass Filter and VTVM to Output Jacks	Record and Playback Tape SW — ZX Eq. SW — 70 μ s Dolby NR SW — OFF MPX SW — OFF		1. Erase the tape with bulk eraser. 2. Adjust the Input Level controls to obtain 0 dB on the VTVM, and record the signals on the reference ZX tape (DA09037B). 3. Turn the cassette tape the other way round and play it back. 4. Measure the difference between 2 and 3.

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
14	Channel Separation Measurement	1 kHz to Input Jacks	1 kHz Band Pass Filter and VTVM to Output Jacks	Record and Playback Tape SW — ZX Eq. SW — 70 μ s Dolby NR SW — OFF MPX SW — OFF		<ol style="list-style-type: none"> Erase the tape with bulk eraser. Adjust the Lch (Rch) Input Level control to obtain 0 dB on the VTVM, and set the Rch (Lch) Input Level control to minimum. Record, rewind and play it back, then measure the R ch (L ch) level.
15	Erasure Measurement	100 Hz to Input Jacks	100 Hz Band Pass Filter and VTVM to Output Jacks	Same as above		<ol style="list-style-type: none"> Erase the tape with bulk eraser. Adjust the Input Level controls to obtain 0 dB on the VTVM, and record the signals on the reference ZX tape (DA09037B). Rewind the tape, set the Input Level controls to minimum, and then record again. Rewind the tape, play it back, and then measure the difference between 2 and 3.
16	Signal to Noise Ratio Measurement	400 Hz to Input Jacks	IHF-A Curve, Filter, VTVM and Distortion Meter to Output Jacks	Record and Playback Tape SW — ZX Eq. SW — 70 μ s Dolby NR SW — B-Type/C-Type MPX SW — OFF		<ol style="list-style-type: none"> Set the Dolby NR switch to B-Type/C-Type. Feed in 400 Hz, then record, rewind and play it back. Adjust the Input Level controls to obtain 3% total harmonic distortion in Playback mode. Set the Input Level controls to minimum then record again. After reword, play back and check the output level difference between 3 and 4. <p>Note: The filter of IHF-A curve shall be used in the measurements.</p>
17	Total Harmonic Distortion Measurement	400 Hz to Input Jacks	VTVM and Distortion Meter to Output Jacks	Record and Playback Tape SW — ZX/SX/EX Eq. SW — 70 μ s (ZX/SX) 120 μ s (EX) Dolby NR SW — OFF MPX SW — OFF		<ol style="list-style-type: none"> Adjust the Input Level controls to obtain 0 dB on the VTVM. Record, rewind and play it back. Read the distortion meter and check to insure that the distortion is as follows: EXII 1.0% or less SX 1.2% or less ZX 1.0% or less
18	Wow/Flutter Measurement	3 kHz Speed and Wow/Flutter Tape (DA09006C)	Wow/Flutter Meter to Output Jacks	Playback Eq. SW — 70 μ s		Play back and read the wow/flutter meter.

4.2. Playback Frequency Response Adjustment

Figs. 4.1 and 4.2 show the playback amp. circuit for adjustment and the playback equalization curve.

This adjustment will be required if playback level is not sufficient during playing back a 20 kHz PB frequency response tape. The peaking portion of the equalization curve compensates the gap loss of the playback head. Peaking level is varied by the short circuit of R508 (R608) or R509 (R609).

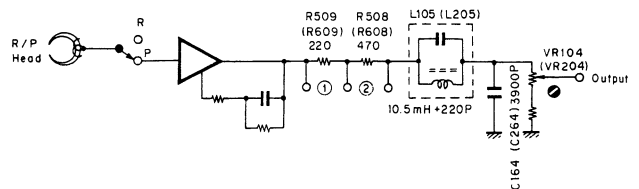


Fig. 4.1

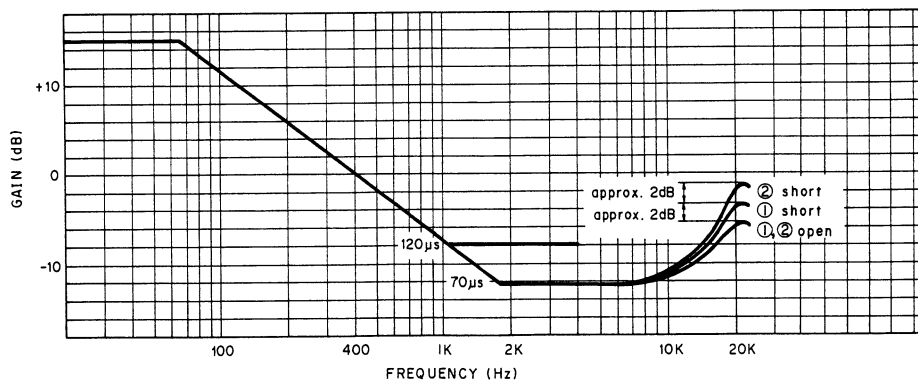


Fig. 4.2

4.3. Dolby NR Circuit Check

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

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

4.3.1. Dolby NR B-Type Circuit Check

(1) Playback Dolby NR Circuit

Signal Source: 1.4 kHz to IC102-9 (IC202-9) on Main P.C.B.
 Output Connection: VTVM to test point TPL2 (TPR2) on Main P.C.B.
 Mode: Stop
 Dolby NR SW — ON (B-Type)/OFF

- (a) Connect a VTVM to TPL2 (TPR2) on the Main P.C.B. Ass'y.
- (b) Set the Dolby NR switch to B-Type.
Feed in 1.4 kHz and adjust the generator output control to obtain 35 mV on the VTVM.
- (c) Set the Dolby NR switch to OFF.
Check to insure that the reading is +3.2 dB \pm 1.5 dB on the VTVM.

(2) Record Dolby NR Circuit

Signal Source: 1.4 kHz to Input Jacks
 Output Connection: VTVM to test point TPL2 (TPR2) and IC102-14 (IC202-14) on the Main P.C.B.
 Mode: Record/Pause
 Dolby NR SW — ON (B-Type)/OFF

- (a) Connect a VTVM to TPL2 (TPR2) on the Main P.C.B. Ass'y.
- (b) Feed in 1.4 kHz and adjust the Input level control to obtain 35 mV/11.1 mV on the VTVM.
- (c) Remove the VTVM from TPL2 (TPR2) and reconnect it to IC102-14 (IC202-14).
- (d) Check to insure that the reading at IC102-14 (IC202-14) corresponds to the following with Dolby NR switch OFF and B-Type.

Input Level at TPL2 (TPR2)	Level at IC102-14 (IC202-14)	
	Dolby NR OFF	Dolby NR B-Type
35 mV	0 dB	+3.2 dB \pm 1.5 dB
11.1 mV	0 dB	+8.2 dB \pm 1.5 dB

4.3.2. Dolby NR C-Type Circuit Check

(1) Playback Dolby NR Circuit

Signal Source: 1.4 kHz to IC102-9 (IC202-9) on Main P.C.B.
 Output Connection: VTVM to test point TPL2 (TPR2) on Main P.C.B.
 Mode: Stop
 Dolby NR SW — ON (C-Type)/OFF

- (a) Connect a VTVM to TPL2 (TPR2) on the Main P.C.B. Ass'y.
- (b) Set the Dolby NR switch to C-Type.
Feed in 1.4 kHz and adjust the generator output control to obtain 35 mV on the VTVM.
- (c) Set the Dolby NR switch to OFF.
Check to insure that the reading is +6.5 dB \pm 1.5 dB on the VTVM.

(2) Record Dolby NR Circuit

Signal Source: 1.4 kHz to Input Jacks
 Output Connection: VTVM to test point TPL2 (TPR2) and IC102-14 (IC202-14) on the Main P.C.B.
 Mode: Record/Pause
 Dolby NR SW — ON (C-Type)/OFF

- (a) Connect a VTVM to TPL2 (TPR2) on the Main P.C.B. Ass'y.
- (b) Feed in 1.4 kHz and adjust the Input level control to obtain 35 mV/11.1 mV on the VTVM.
- (c) Remove the VTVM from TPL2 (TPR2) and reconnect it to IC102-14 (IC202-14).
- (d) Check to insure that the reading at IC102-14 (IC202-14) corresponds to the following with Dolby NR switch OFF and C-Type.

Input Level at TPL2 (TPR2)	Level at IC102-14 (IC202-14)	
	Dolby NR OFF	Dolby NR C-Type
35 mV	0 dB	+6.5 dB \pm 1.5 dB
11.1 mV	0 dB	+11.4 dB \pm 1.5 dB

5. MECHANISM ASS'Y AND PARTS LIST

5.1. Synthesis

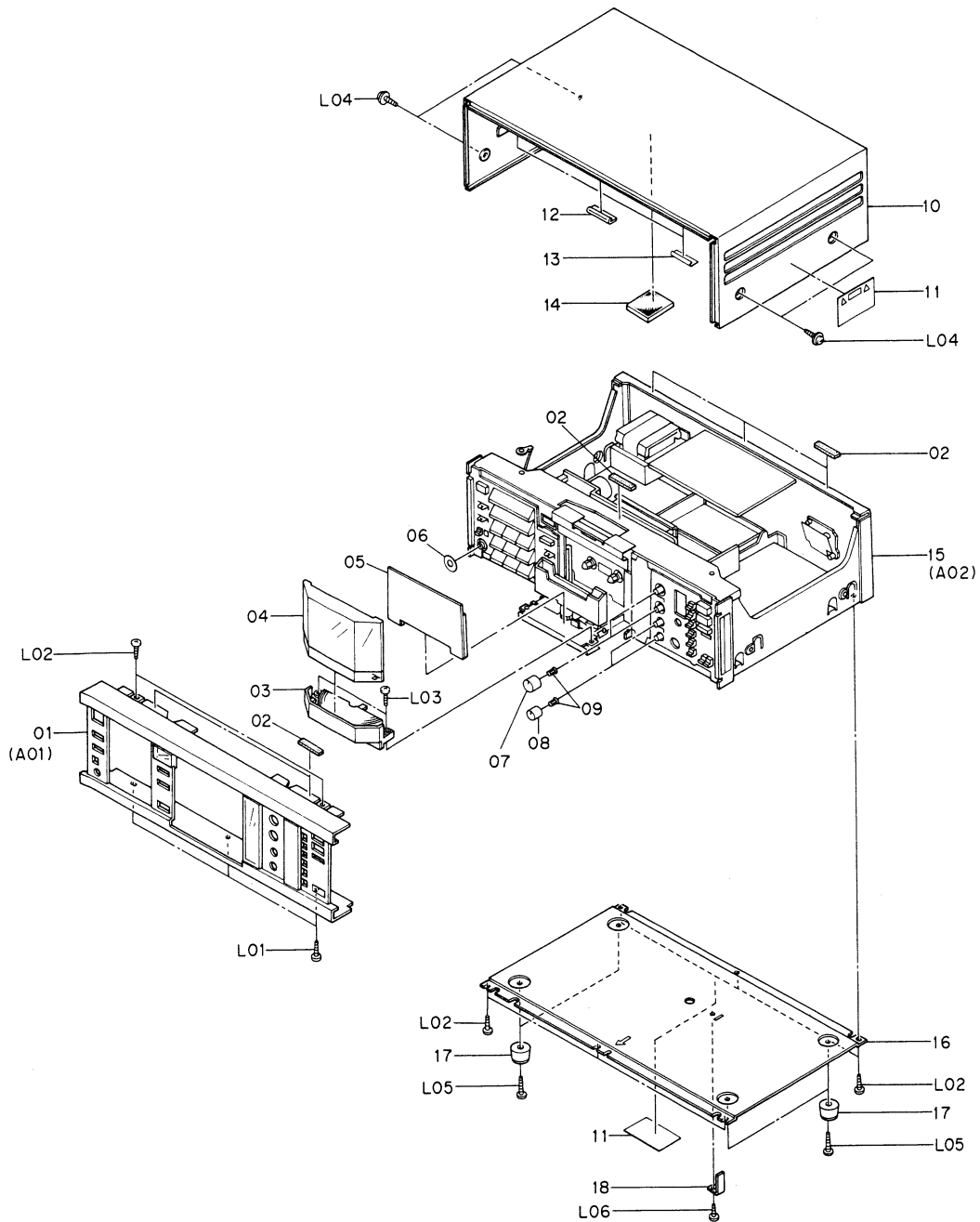


Fig. 5.1

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
		Synthesis		14	0J04753A	Vibration Isolating Rubber	1
				15	—	Chassis Ass'y	1
01	HA04553A	Front Panel Ass'y RX303	1	16	0J04737A	Bottom Cover	1
	HA04565A	Front Panel Ass'y RX303E	1	17	0J03564A	Leg T-H	4
02	0J04550A	Top Cover Cushion	6	18	0C08583C	Slide Locker	1
03	HA04563A	CAT Bottom Ass'y	1	L01	0E00921A	BT 3x8 @ Binding (Black Chromate)	3
04	OH04345A	CAT Window	1	L02	0E00868A	BT 3x8 @ Binding (Chromate)	8
05	DA03735A	Caution Card Ass'y	1	L03	0E00818A	M3x8 @ Binding (Black Chromate)	2
06	0J04815A	Headphone Himelon	1	L04	0E03032A	BT 4x8 @ Pan Washer Faced (Black Chromate)	4
07	OH04343A	Input Volume Knob	2	L05	0E00865A	BT 3x10 @ Binding (Chromate)	4
08	OH04342A	Output Volume Knob	2	L06	0E03144A	BT 3x6 @ Binding (Red Chromate)	1
09	OH03737A	Volume Knob Base	4				
10	OH04349A	Top Cover	1				
11	OM04377A	Caution Label	2				
12	0J04715A	Top Cover Cushion	1				
13	0J04080A	Top Cover Himelon	2				

5.2. Front Panel Ass'y (A01)

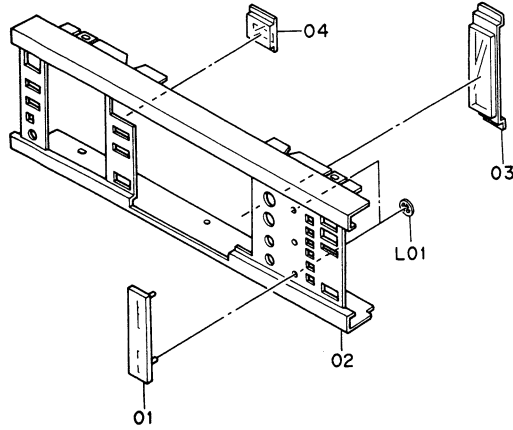


Fig. 5.2

5.3. Chassis Ass'y (A02)

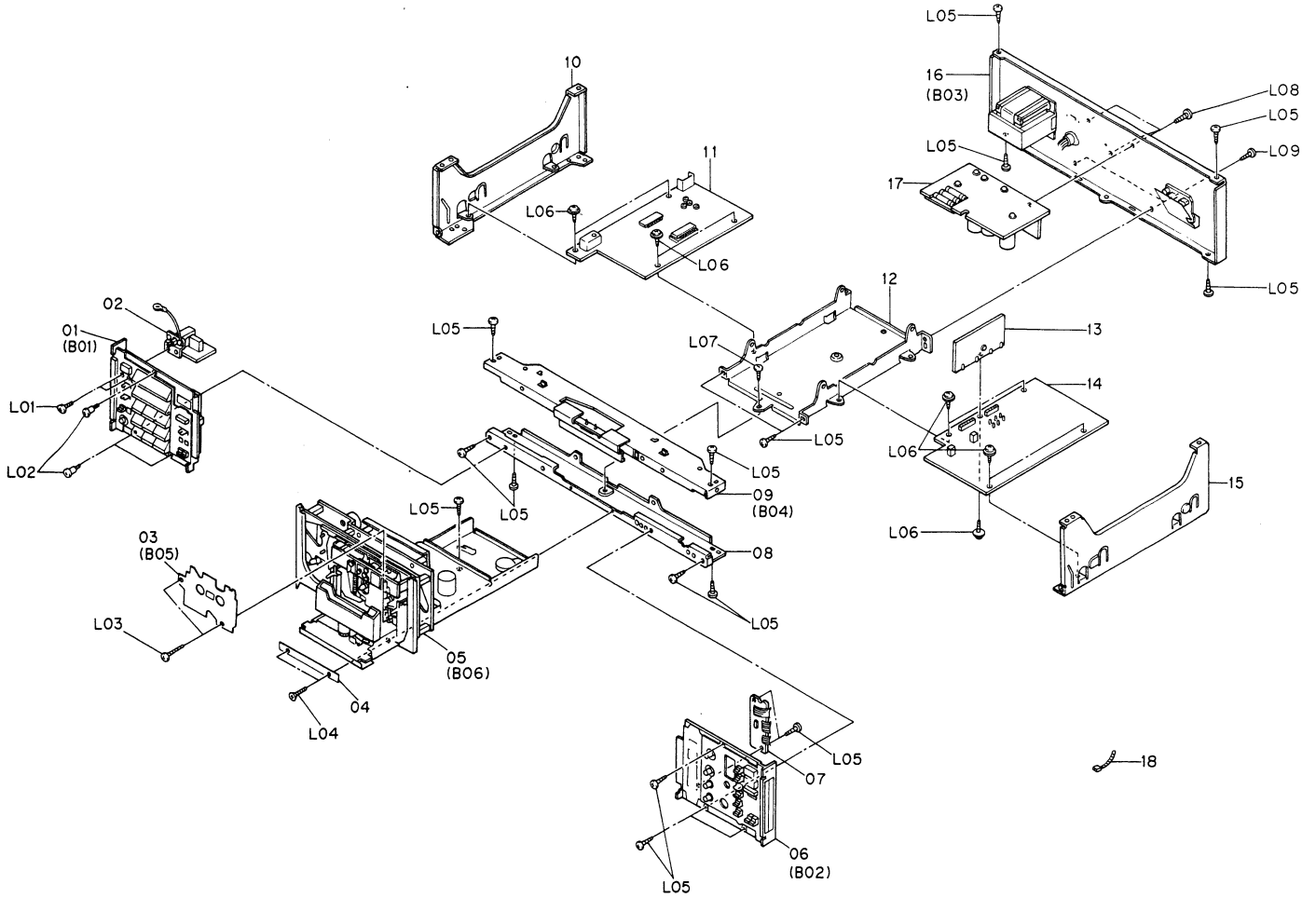


Fig. 5.3

5.4. Front Panel Escutcheon L Ass'y (B01)

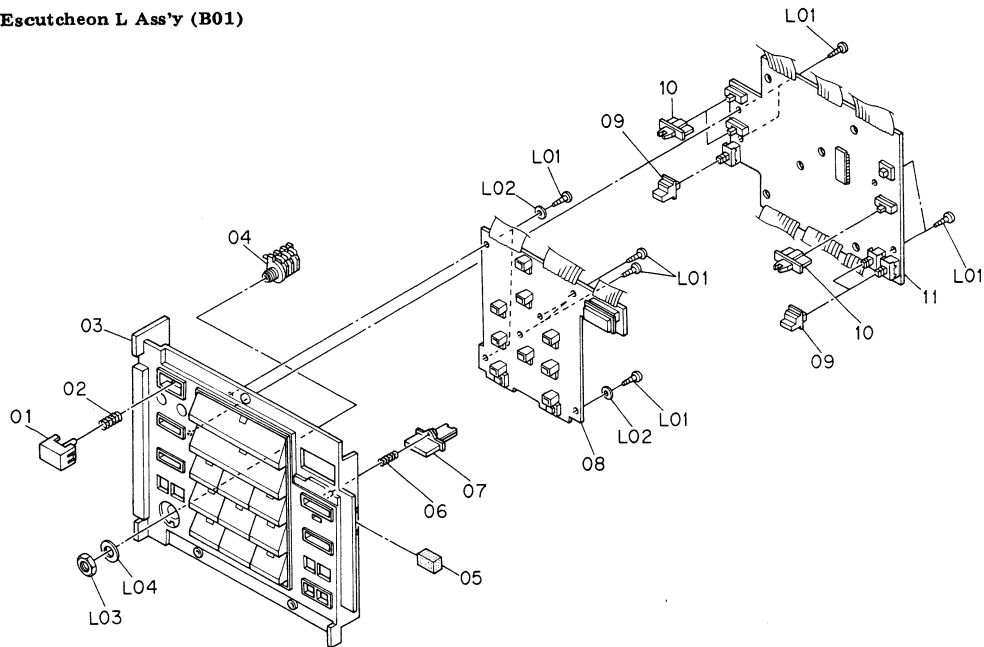


Fig. 5.4

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty	
A01	HA04553A HA04565A	Front Panel Ass'y RX303 Front Panel Ass'y RX303E Serial No.: A80301001 -	1 1	—	OB08686A OB08961A OB08347U	Fuse 1A (RX303 (Japan)) Fuse 2.5A (RX303 (Japan)) Fuse 1AT (RX303 (Australia) & RX303E)	1 2 2	
01	OH04335A	Dressing Plate	1	—	OB08457A	Fuse 500mAT (RX303 (Australia) & RX303E)	1	
02	OH04331A OH04354A	Front Panel RX303 Front Panel RX303E	1 1	—	OM04190A	Fuse Label 1A 250V (RX303 (U.S.A., Canada, Others & Japan))	1	
03	OH04334A	Meter Cover	1	—	OM04409A	Fuse Label 2.5A 250V (RX303 (U.S.A., Canada & Others))	2	
04	OH04333A	Counter Lens	1	—	OM04096C	Fuse Label 500mAT (RX303 (Australia) & RX303E)	1	
—	OJ04627A	Adhesive Tape for Meter IC	2	—	OM04191A	Fuse Label 1AT 250V (RX303 (Australia) & RX303E)	2	
—	OJ04745B	Adhesive Tape for Meter Cover	4	—	OB08349B	Fuse Clip (RX505 (Australia) & RX505E)	6	
L01	OE00132A	CS-Ring 4mm	2	—	OM04343A	Fuse Caution (RX303 (U.S.A. & Canada))	1	
A02	—	Chassis Ass'y RX303 Chassis Ass'y RX303E	1 1	—	L01	OE00607A	M3x8 @ Pan (3A)	2
01	HA04554A	Front Panel Escutcheon L Ass'y	1	L02	OE03135B	M3x8 @ Binding (Half threaded)	3	
02	BA05188A	Power Switch P.C.B. Ass'y (RX303 (U.S.A. & Canada))	1	L03	OE00950A	BT 3x14 @ Pan (Black Chromate)	2	
—	BA05150A	Power Switch P.C.B. Ass'y (RX303 (Japan))	1	L04	OE03115A	BT 3x8 @ Countersunk (Black Chromate)	2	
—	BA05189A	Power Switch P.C.B. Ass'y (RX303 (Others & Australia) & RX303E)	1	L05	OE00868A	BT 3x8 @ Binding (Chromate)	18	
03	CA08507A	Cover Plate Ass'y	1	L06	OE03157A	BT 3x8 @ Binding Washer-faced (Chromate)	8	
04	OJ04757A	CAT Mechanism Himelon	1	L07	OE00857A	BT 3x6 @ Binding (Chromate)	1	
05	CA08500A	Synthesis Mechanism Ass'y	1	L08	OE00915A	BT 4x8 @ Binding (Black Chromate)	3	
06	HA04555A	Front Panel Escutcheon R Ass'y	1	L09	OE00921A	BT 3x8 @ Binding (Black Chromate)	2	
07	BA05142A	Indicator P.C.B. Ass'y	1	B01	HA04554A	Front Panel Escutcheon L Ass'y Serial No.: A80301001 -	1	
08	OJ04732D	Bottom Angle	1	01	OH04327A	Power Switch Button	1	
09	HA04558A	Upper Angle Ass'y	1	02	OJ04794A	Spring for Power Switch	1	
10	OJ04750A	Side Chassis L	1	03	HA04556A	Front Panel Escutcheon L Sub Ass'y	1	
11	BA05146A	Logic P.C.B. Ass'y	1	04	OB08511A	Headphone Jack	1	
12	OJ04749A	Center Chassis Ass'y	1	05	OC08611A	Cushion B	1	
13	BA05144A	I/O P.C.B. Ass'y	1	06	OJ04640A	Spring for Reset Switch	1	
14	BA05139A	Main P.C.B. Ass'y	1	07	OH04328A	Reset Button	1	
15	OJ04751A	Side Chassis R	1	08	BA05148A	Control P.C.B. A Ass'y	1	
16	HA04533A	Rear Panel Ass'y RX303 (U.S.A. & Canada)	1	09	OH04337A	Push Switch Button	3	
—	HA04534A	Rear Panel Ass'y RX303 (Japan)	1	10	OH04330A	Slide Switch Knob	3	
—	HA04535A	Rear Panel Ass'y RX303 (Others)	1	11	BA05149A	Control P.C.B. B Ass'y	1	
—	HA04536A	Rear Panel Ass'y RX303 (Australia)	1	L01	OE00868A	BT 3x8 @ Binding (Chromate)	10	
—	HA04537A	Rear Panel Ass'y RX303E (220V Class 2)	1	L02	OE00157A	Plastic Washer 3mm	3	
—	HA04532A	Rear Panel Ass'y RX303E (UK)	1	L03	—	Headphone Jack Nut	(1)	
17	BA05147A	DC Power Supply P.C.B. Ass'y	1	L04	—	Headphone Washer	(1)	
18	OB08515A	Insu-Lock	16					
—	OJ04816A	CAT Mechanism Cushion	1					
—	OB08374A	Fuse 1A (RX303 (U.S.A., Canada & Others))	1					
—	OB08962A	Fuse 2.5A (RX303 (U.S.A., Canada & Others))	2					

5.5. Front Panel Escutcheon R Ass'y (B02)

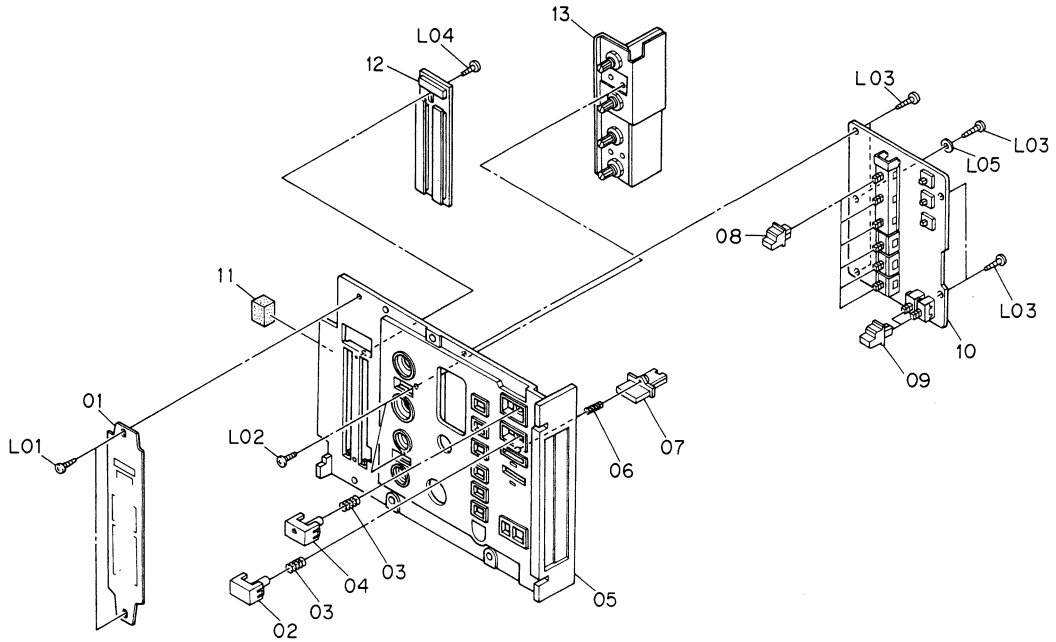


Fig. 5.5

5.6. Rear Panel Ass'y (B03)

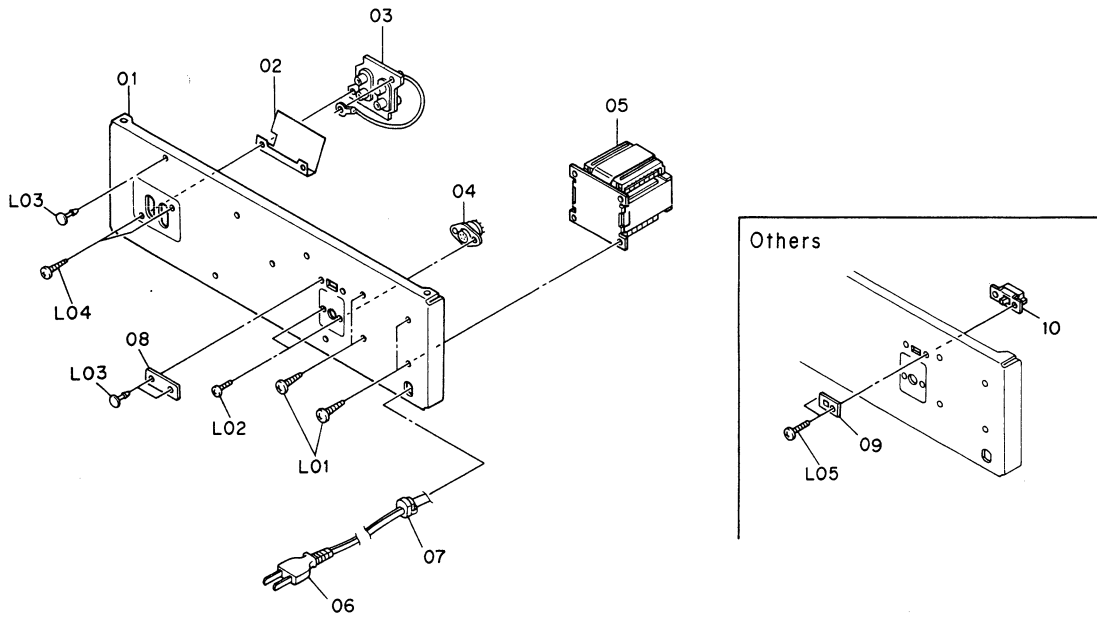


Fig. 5.6

Schematic Ref. No.	Part No.	Description	Qty
B02	HA04555A	Front Panel Escutcheon R Ass'y Serial No.: A80301001 -	1
01	OH04341A	Meter Scale	1
02	OH04340A	Reverse Button	1
03	OJ04794A	Spring for Eject Switch	2
04	OH04339A	Eject Button	1
05	OH04336A	Front Panel Escutcheon R	1
06	OJ04640A	Spring for A.R.S. Switch	1
07	OH04328A	A.R.S. Button	1
08	OH04370A	Selector Button	6
09	OH04337A	Push Switch Button	2
10	BA05140A	Switch P.C.B. Ass'y	1
11	OC08611A	Cushion B	1
12	BA05214A	Indicator P.C.B. Ass'y & Display Unit	1
13	BA05141A	Volume P.C.B. Ass'y	1
L01	OE00873A	BT 2.6x5 ⊕ Binding (Chromate)	2
L02	OE00896A	M3x6 ⊕ Binding (Chromate)	2
L03	OE00868A	BT 3x8 ⊕ Binding (Chromate)	5
L04	OE00857A	BT 3x6 ⊕ Binding (Chromate)	1
L05	OE00157A	Plastic Washer 3mm	1
B03	HA04533A	Rear Panel Ass'y RX303 (U.S.A. & Canada)	1
	HA04534A	Rear Panel Ass'y RX303 (Japan)	1
	HA04535A	Rear Panel Ass'y RX303 (Others)	1
	HA04536A	Rear Panel Ass'y RX303 (Australia)	1
	HA04532A	Rear Panel Ass'y RX303E (UK)	1
	HA04537A	Rear Panel Ass'y RX303E (220V Class 2) Serial No.: A80301001 -	1
01	OH04254E	Rear Panel RX303	1
	OH04356C	Rear Panel RX303E	1
02	OJ04806A	Shield Cover	1
03	OB81001A	4P Pin Jack	1
04	BA05198A	8P DIN Socket Ass'y (Consisting of followings)	1
	(OB08584A)	8P DIN Socket	(1)
	(OB08752A)	8P-H Connector	(1)
05	OB50019A	Power Transformer 120V (RX303 (U.S.A. & Canada))	1
	OB50018A	Power Transformer 100V (RX303 (Japan))	1
	OB50021A	Power Transformer 115V/230V (RX303 (Others))	1
	OB50020A	Power Transformer 220V/240V (RX303 (Australia) & RX303E)	1
06	OB08533A	Power Cord (RX303 (U.S.A., Canada & Others))	1
	OB08219B	Power Cord (RX303 (Japan))	1
	OB05241A	Power Cord (RX303 (Australia))	1
	OB08093U	Power Cord (RX303E (220V Class 2))	1
	OB08348A	Power Cord (RX303E (UK))	1
07	OB08037U	Cord Bushing C (RX303 & RX303E (220V Class 2))	1
	OB08351A	Cord Bushing 4K-4 (RX303E (UK))	1
08	OJ04601B	Switch Cover (RX303 (U.S.A., Canada, Japan & Australia) & RX303E)	1
09	OM03948A	Voltage Lock Plate D (RX303 (Others))	1
10	OB07092U	Voltage Selector Switch (RX303 (Others))	1
-	OF01071A	Free-up Belt (RX303 (Australia) & RX303E)	1
L01	OE00915A	BT 4x8 ⊕ Binding (Black Chromate)	4
L02	OE03072A	M2.6x6 ⊕ Binding (Black Chromate)	2
L03	OB08583A	Plastic Rivet (RX303 (U.S.A., Canada, Japan & Australia) & RX303E)	2
L04	OE00921A	BT 3x8 ⊕ Binding (Black Chromate)	2
L05	OE00818A	M3x8 ⊕ Binding (Black Chromate) (RX303 (Others))	2

5.7. Upper Angle Ass'y (B04)

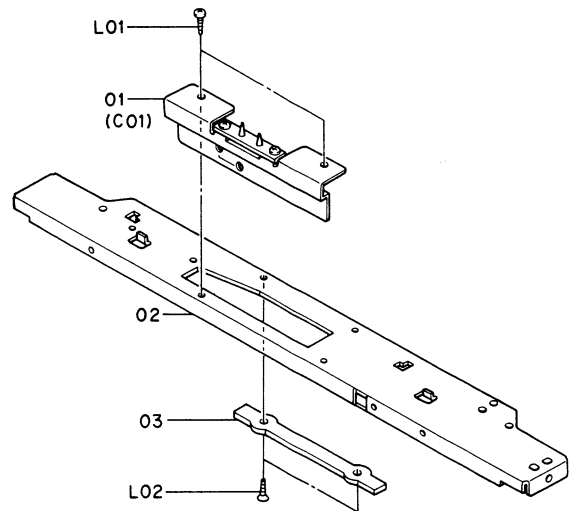


Fig. 5.7

5.8. Cover Plate Ass'y (B05)

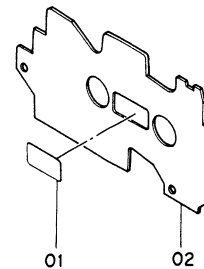


Fig. 5.8

Schematic Ref. No.	Part No.	Description	Qty
B04	HA04558A	Upper Angle Ass'y Serial No.: A80301001 -	1
01	HA04557A	Lid Cover Ass'y	1
02	OJ04788B	Upper Angle	1
03	OJ04808A	Holder Plate	1
L01	OE00868A	BT 3x8 ⊕ Binding (Chromate)	2
L02	OE03073A	BT 3x6 ⊕ Countersunk (Black Chromate)	2
B05	CA08507A	Cover Plate Ass'y Serial No.: A80301001 -	1
01	OM04392A	Cassette Label (Gold)	1
02	OC08553A	Cover Plate	1

5.9. Synthesis Mechanism Ass'y (B06)

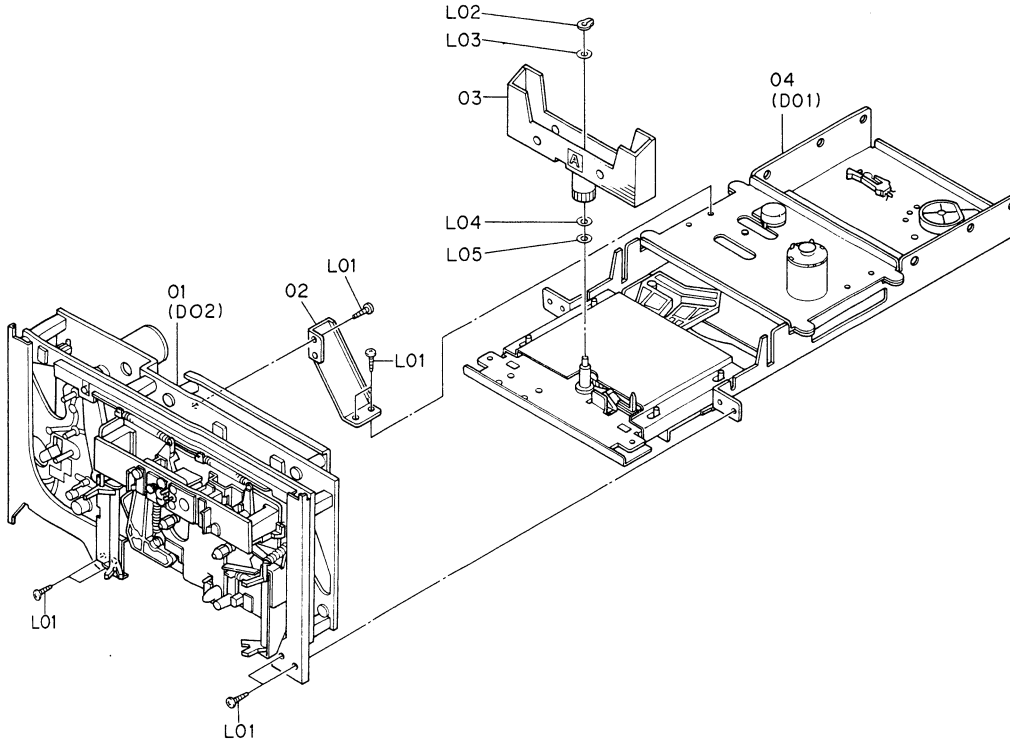


Fig. 5.9

5.10. Lid Cover Ass'y (C01)

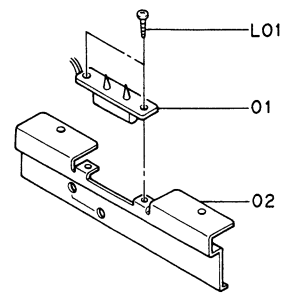


Fig. 5.10

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
B06	CA08500A	Synthesis Mechanism Ass'y Serial No.: A80301001 -	1	D02	CA08503A	Mechanism Ass'y RX303 Serial No.: A80301001 -	1
01	CA08503A	Mechanism Ass'y RX303	1	01	OC08563B	Mechanism Holder L	1
02	OC08597A	Rear Holder	1	02	OC08564B	Mechanism Holder R	1
03	CA08511A	Cassette Case Ass'y	1	03	CA08504A	Sub Mechanism Ass'y	1
04	CA08508A	RN Mechanism Ass'y	1	L01	OE03060A	BT 4x16 ⊕ Binding (Toothed Lock Washer faced)	1
L01	OE00857A	BT 3x6 ⊕ Binding (Chromate)	7	L02	OE03059A	BT 4x15 ⊕ Binding (Toothed Lock Washer faced)	3
L02	OE00837A	Stopper Ring 3mm	1				
L03	OE00254A	Mylar Washer 3.1x7x0.2	1	E01	CA08526A	Motor Holder Ass'y Serial No.: A80301001 -	1
L04	OC08347A	Mylar Washer 3.1mm (0.25t)	1	01	OC08527A	PM Gear	1
L05	OC08594A	Mylar Washer 3x0.5	1	02	OC08565B	Motor Holder	1
-	OE03163A	Mylar Washer 3x0.13	1	03	CA08527A	Drive Motor Ass'y	1
				04	OB07240A	Volume 10K (B)	1
C01	HA04557A	Lid Cover Ass'y Serial No.: A80301001 -	1	05	OB82201A	5P-H Connector	1
01	BA05143A	Lid Lamp P.C.B. Ass'y	1	L01	OE00993A	Stopper Ring 6mm	1
02	OH04348A	Lamp Cover	1	L02	-	Volume Nut	(1)
L01	OE03070A	M2.6x6 ⊕ Binding (Chromate)	2	L03	-	Volume Washer	(1)
				L04	OE00120A	M2.6x3 ⊕ Pan (Chromate)	2
D01	CA08508A	RN Mechanism Ass'y Serial No.: A80301001 -	1				
01	CA08526A	Motor Holder Ass'y	1				
02	OC08615A	Slide Cover B	1				
03	OC08099B	Cam Motor Belt	1				
04	OC08525A	SD Pulley	1				
05	CA08509A	Slide Chassis Ass'y	1				
06	OC08133A	Skeleton Switch	1				
07	OB82203A	2P-H Connector	1				
08	CA08488A	Main Chassis Ass'y	1				
L01	OE00868A	BT 3x8 ⊕ Binding (Chromate)	4				
L02	OE03022A	BT 2x4 ⊕ Binding (Black Chromate)	2				
L03	OE00222A	E-Ring 2mm	1				
L04	OC08594A	Mylar Washer 3x0.5	1				
L05	OE00181A	E-Ring 3mm	4				
L06	OC08593A	Mylar Washer 4x0.5	8				
L07	OE00840A	BT 2x8 ⊕ Pan (Chromate)	2				

5.11. RN Mechanism Ass'y (D01)

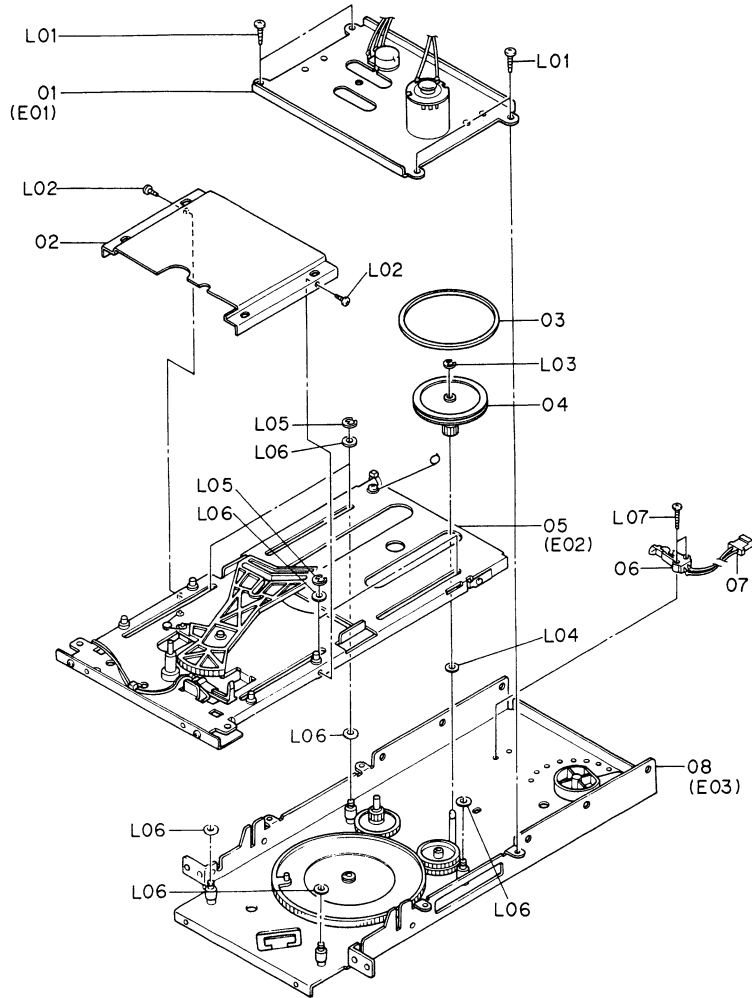


Fig. 5.11

5.12. Mechanism Ass'y RX303 (D02)

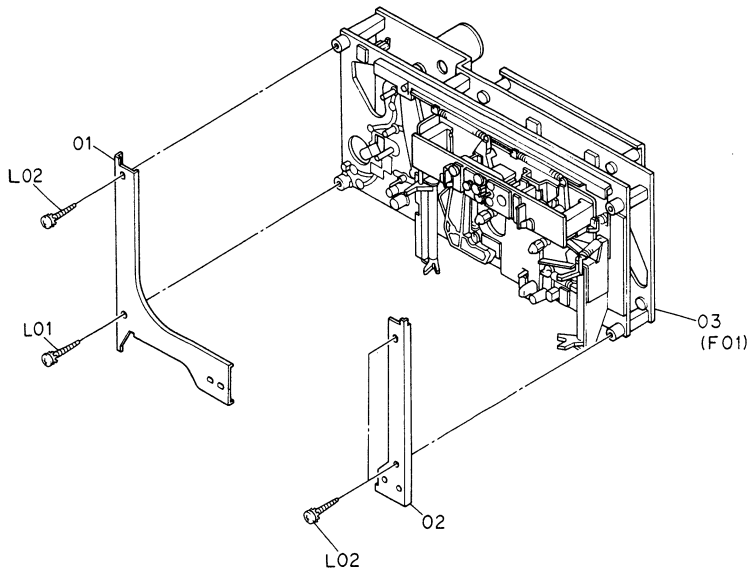


Fig. 5.12

5.13. Motor Holder Ass'y (E01)

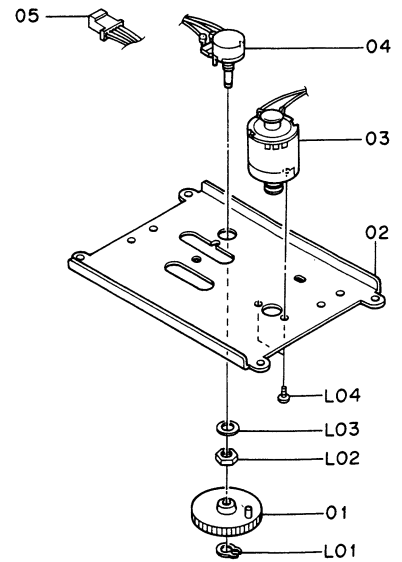


Fig. 5.13

5.14. Slide Chassis Ass'y (E02)

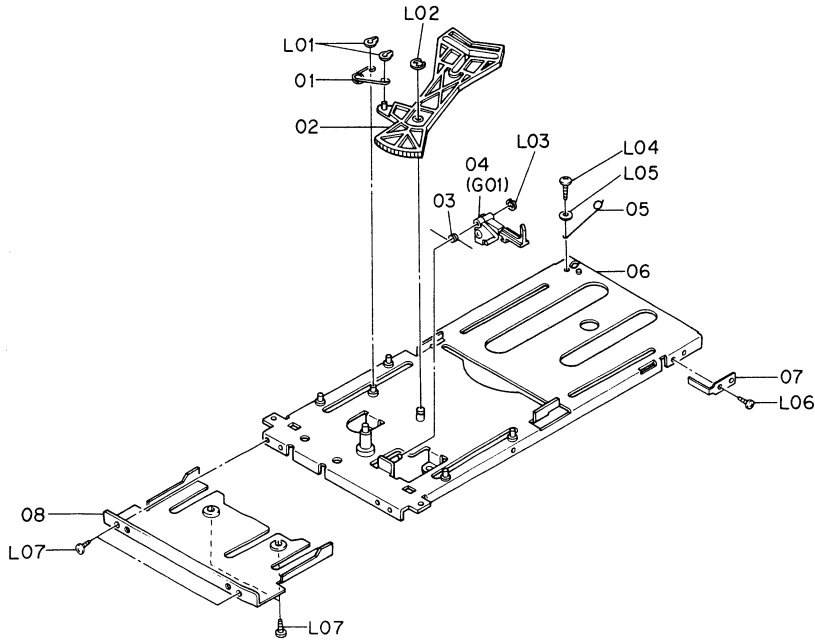


Fig. 5.14

5.15. Main Chassis Ass'y (E03)

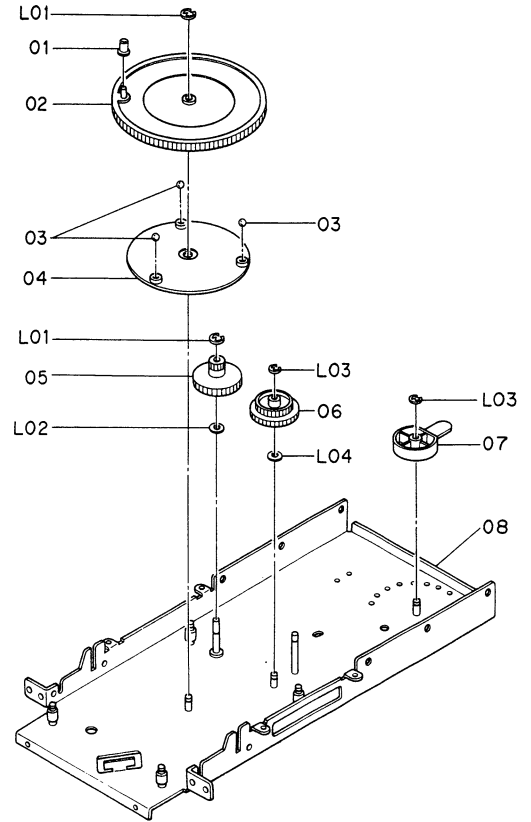


Fig. 5.15

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
E02	CA08509A	Slide Chassis Ass'y Serial No.: A80301001 -	1	F01	CA08504A	Sub Mechanism Ass'y Serial No.: A80301001 -	1
01	OC08548A	R Arm Spring	1	01	CA08017B	Flywheel Holder Ass'y	1
02	OC08529A	R Arm	1	02	OC08096C	Capstan Belt	1
03	OC08547A	Record Protector Switch Spring	1	03	CA08534A	Supply Flywheel Ass'y	1
04	CA08510A	Record Protector Switch Ass'y	1	04	OC08021B	Thrust Washer 3.1mm	1
05	OC08596A	WH Rod	1	05	CA08533A	Take-up Flywheel Ass'y	1
06	CA08475D	Slide Chassis Sub Ass'y	1	06	OC08020B	Thrust Washer 2.6mm	1
07	OC08598A	SS Plate	1	07	OC08243A	Flange Thrust Cap	2
08	OC08552A	Under Cover	1	08	OC08244A	Flange Thrust Spring	2
L01	OE00837A	Stopper Ring 3mm	2	09	CA08513A	Sub Mechanism Chassis Ass'y	1
L02	OE00181A	E-Ring 3mm	1	10	OC08099B	Control Motor Belt	1
L03	OE00042A	E-Ring 1.5mm	1	11	CA08512B	Main Mechanism Chassis Ass'y	1
L04	OE00857A	BT 3x6 @ Binding (Chromate)	1	12	CA08505A	Lock Arm L Ass'y	1
L05	OE00637A	Washer 3.3x7x0.5	1	13	CA08506A	Lock Arm R Ass'y	1
L06	OE03022A	BT 2x4 @ Binding (Black Chromate)	1	14	0B82199A	6P-H Connector	1
L07	OE03133A	BT 2.6x4 @ Binding (Black Chromate)	4	15	0B82204A	3P-H Connector	1
				16	0B08515A	Insu-Lock	10
				17	OC08620A	Head Height Adjustment Gear	2
E03	CA08488A	Main Chassis Ass'y Serial No.: A80301001 -	1	L01	OE00833A	BT 3x20 @ Pan (Chromate)	3
01	OC08584A	Collar	1	L02	OE00834A	BT 3x30 @ Pan (Chromate)	1
02	OC08523A	Main Gear	1	L03	OE00178A	Washer 3.3x8x0.5	2
03	OC08550A	Ball 4mm	3	L04	OE00835A	BT 3x25 @ Pan (Chromate)	1
04	OC08528A	Retainer	1	L05	OE00883A	BT 3x18 @ Pan (Chromate)	5
05	OC08526A	PMD Gear	1	L06	OE00846A	BT 3x8 @ Pan (Chromate)	3
06	OC08524A	SD Gear	1				
07	OC08543A	SS Cam	1				
08	CA08474C	Main Chassis Sub Ass'y	1				
L01	OE00181A	E-Ring 3mm	2				
L02	OC08593A	Mylar Washer 4x0.5	1				
L03	OE00222A	E-Ring 2mm	2				
L04	OC08594A	Mylar Washer 3x0.5	1				

5.16. Sub Mechanism Ass'y (F01)

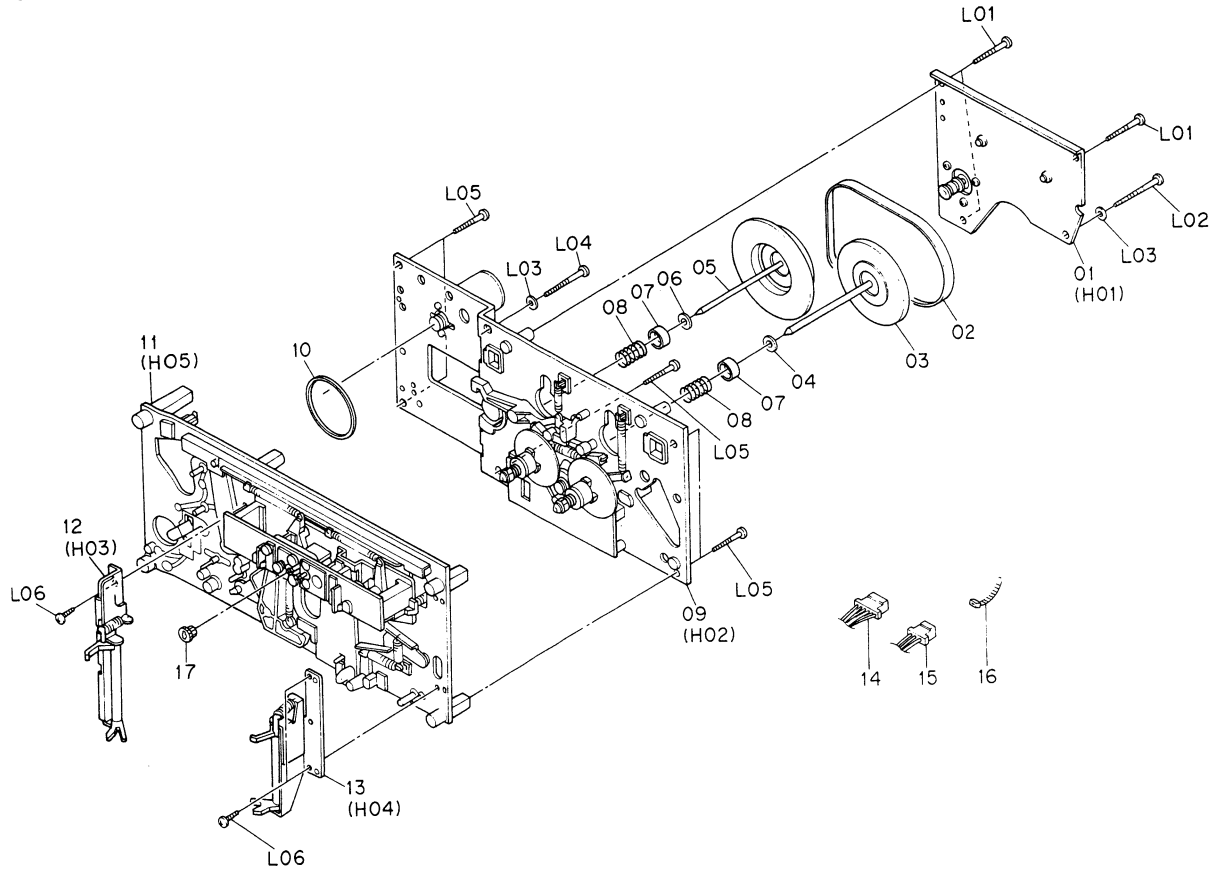


Fig. 5.16

5.17. Record Protector Switch Ass'y (G01)

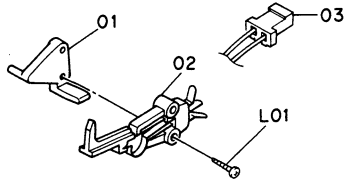


Fig. 5.17

5.18. Flywheel Holder Ass'y (H01)

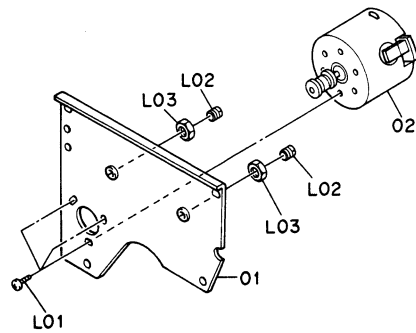


Fig. 5.18

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
G01	CA08510A	Record Protector Switch Ass'y Serial No.: A80301001 -	1	H01	CA08017B	Flywheel Holder Ass'y Serial No.: A80301001 -	1
01	0C08539A	Record Protector Switch Arm	1	01	0C08013I	Flywheel Holder	1
02	0C08540B	Skeleton Switch	1	02	CA08106B	Capstan Motor Ass'y	1
03	0B82075B	2P-H Connector	1	L01	0E00226A	M2.6x4 @ Pan (Chromate)	3
L01	0E00840A	BT 2x8 @ Pan (Chromate)	1	L02	0C08068C	Thrust Screw	2
				L03	0C03857A	Lock Nut	2

5.19. Sub Mechanism Chassis Ass'y (H02)

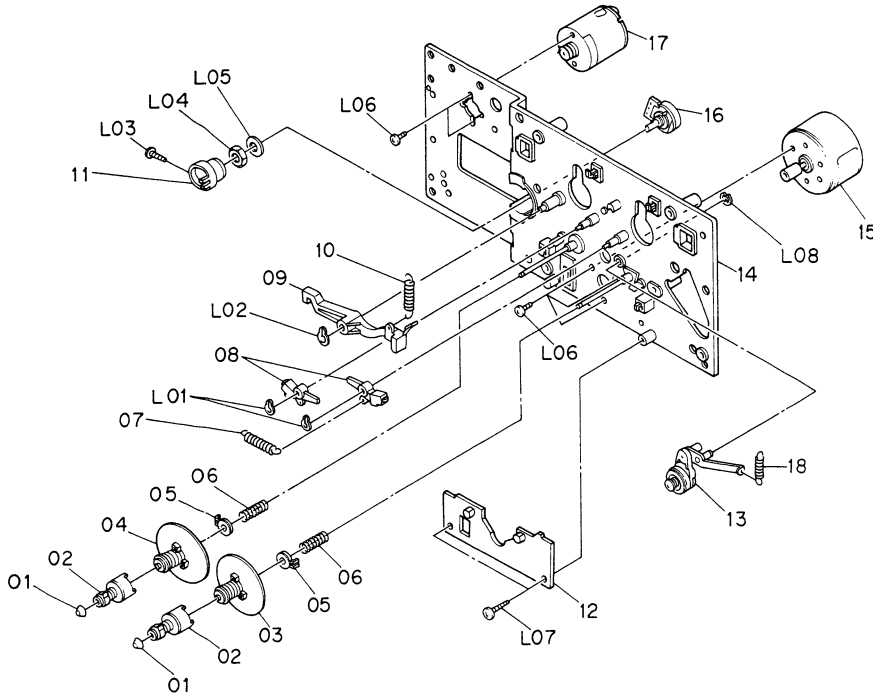


Fig. 5.19

5.20. Lock Arm L Ass'y (H03)

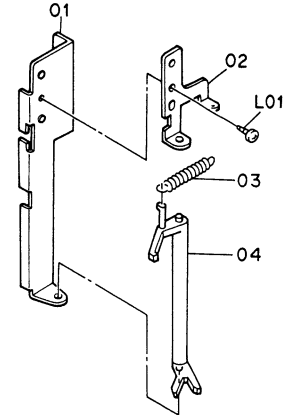


Fig. 5.20

5.21. Lock Arm R Ass'y (H04)

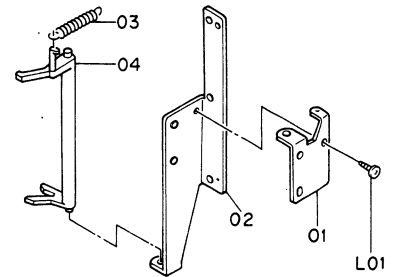


Fig. 5.21

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
H02	CA08513A	Sub Mechanism Chassis Ass'y Serial No.: A80301001 -	1	H04	CA08506A	Lock Arm R Ass'y Serial No.: A80301001 -	1
01	OC08039B	Reel Hub Head	2	01	OC08558A	Lock Arm Holder Right B	1
02	CA08038B	Reel Hub Pulley B Ass'y	2	02	OC08557A	Lock Arm Holder Right A	1
03	CA08515A	Reel Hub Supply Ass'y	1	03	OC08546A	Lock Arm Spring	1
04	CA08514A	Reel Hub Take-up Ass'y	1	04	OC08614A	Lock Arm Right	1
05	CA08039A	Back Tension Ass'y	2	—	OC08599A	Cushion	1
06	OC08610A	Back Tension Spring D	2	L01	0E00941A	BT 3x5 @ Binding (Black Chromate)	1
07	OC08129B	Brake Arm Spring	1	H05	CA08512B	Main Mechanism Chassis Ass'y Serial No.: A80301001 -	1
08	CA08042A	Brake Arm Ass'y	2	01	CA08517A	Head Mount Base Ass'y	1
09	OC08030C	Brake Drive Arm	1	02	OC08313A	Pressure Roller Arm Bushing	2
10	OC08128A	Brake Drive Arm Spring	1	03	CA08464A	Supply Pressure Roller Ass'y	1
11	OC08053B	Volume Coupler	1	04	OC08121A	Supply Pressure Roller Spring	1
12	BA05199A	TS Pulse P.C.B. Ass'y	1	05	OC08122C	Supply Pressure Roller Thrust Spring	1
13	CA08193A	Idler Arm Ass'y	1	06	CA08465A	Take-up Pressure Roller Ass'y	1
14	CA08194A	Sub Chassis Ass'y B	1	07	OC08250A	Supply Pressure Roller Spring B	1
15	CA08242A	Reel Motor Ass'y	1	08	OC08183B	Take-up Pressure Roller Thrust Spring	1
16	OB07240A	Volume 10K (B)	1	09	CA08530A	Head Base Ass'y	1
17	CA08527A	Control Motor Ass'y	1	10	OC08086B	Head Base Roller	3
18	OC08266A	Idler Arm Spring B	1	11	OC08182A	Pressure Roller Drive Bar B	1
L01	0E00837A	Stopper Ring 3mm	2	12	CA08027A	Head Base Drive Arm Ass'y	1
L02	0E00838A	Stopper Ring 4mm	1	13	GA02103A	EOK Erase Head	1
L03	0E00859A	BT 2.6x6 @ Binding (Chromate)	1	14	CA08026A	Pressure Roller Drive Arm Ass'y	1
L04	—	Volume Nut	(1)	15	OC08544B	Cassette Hold Arm	1
L05	—	Volume Washer	(1)	16	OC08120A	Cassette Hold Arm Spring	1
L06	0E00226A	M2.6x4 @ Pan (Chromate)	5	17	CA08196A	Back Tension Arm Ass'y	1
L07	0E00831A	BT 3x10 @ Pan (Chromate)	2	18	OC08254A	Back Tension Arm Collar	1
L08	0E00698A	E-Ring 2.5mm	1	19	CA08347A	Main Chassis Ass'y	1
H03	CA08505A	Lock Arm L Ass'y Serial No.: A80301001 -	1	20	OC08028A	Counter-Load Arm Ass'y	1
01	OC08555B	Lock Arm Holder Left A	1	21	OC08371A	Back Tension Arm Spring	1
02	OC08556A	Lock Arm Holder Left B	1	22	OC08152A	Counter-Load Arm Spring Tube	1
03	OC08546A	Lock Arm Spring	1	23	OC08029H	Control Cam	1
04	OC08613A	Lock Arm Left	1	24	OC08186A	Cam Drive Gear	1
—	OC08599A	Cushion	1				
L01	0E00941A	BT 3x5 @ Binding (Black Chromate)	1				

5.22. Main Mechanism Chassis Ass'y (H05)

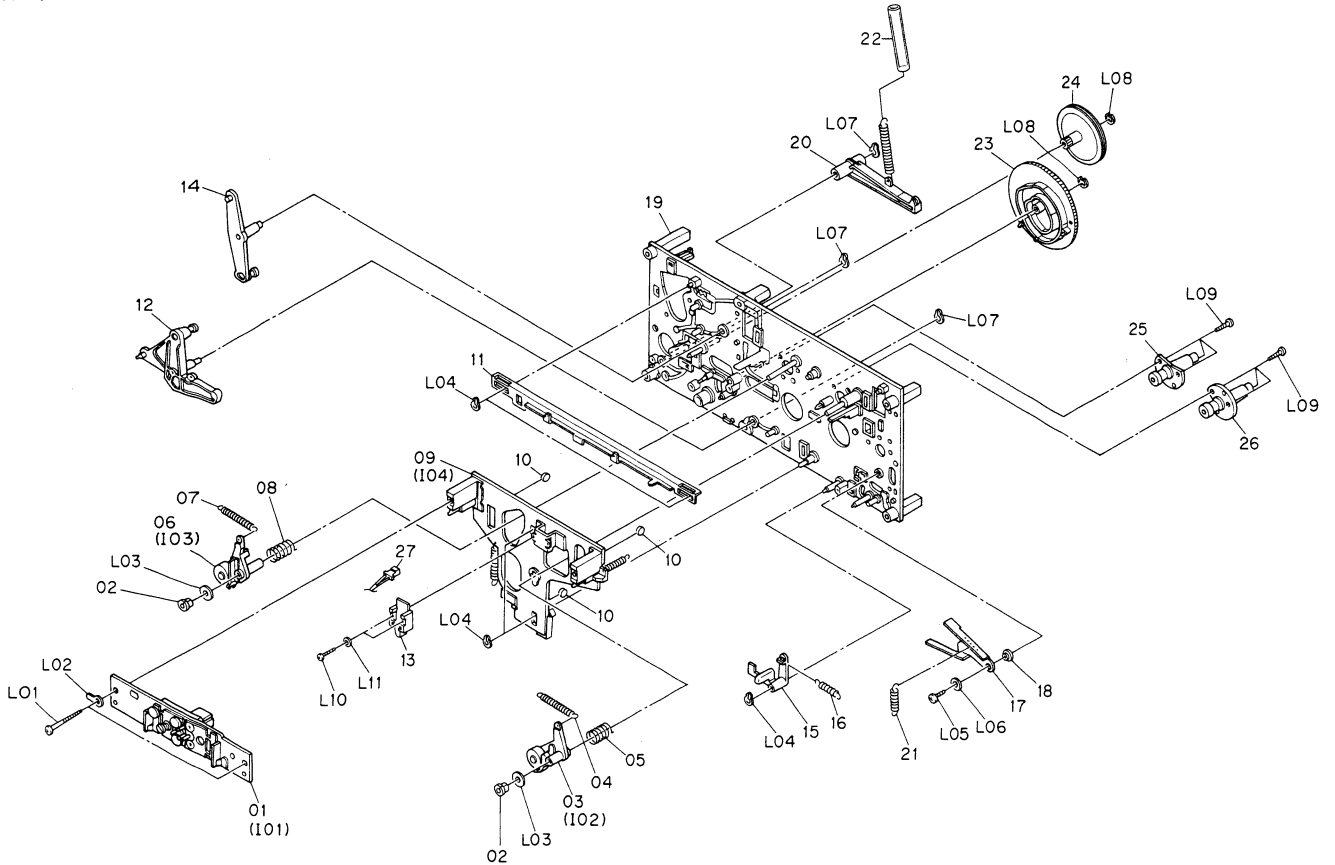


Fig. 5.22

Schematic Ref. No.	Part No.	Description	Q'ty
25	CA08024A	Capstan Flange ϕ 2.5 Ass'y	1
26	CA08023A	Capstan Flange ϕ 3.0 Ass'y	1
27	0B82166B	2P-H Connector	1
L01	0E00834A	BT 3x30 ϕ Pan (Chromate)	2
L02	0E00895A	Earth Lug 3mm	1
L03	0E00178A	Washer 3.3x8x0.5	2
L04	0E00837A	Stopper Ring 3mm	5
L05	0E00859A	BT 2.6x6 ϕ Binding (Chromate)	1
L06	0C08255A	Washer 2.6mm	1
L07	0E00838A	Stopper Ring 4mm	3
L08	0E00222A	E-Ring 2mm	2
L09	0E00876A	BT 2.6x8 ϕ Pan (Chromate)	6
L10	0E00951A	M1.7x7 ϕ Pan (Black Chromate)	2
L11	0E00952A	Washer 1.7mm	2
I01	CA08517A	Head Mount Base Ass'y Serial No.: A80301001 -	1
01	0C08621A	Head Height Adjustment Screw	2
02	0C08161B	Spring Stopper	1
03	0C08131C	Head Plate Spring	1
04	0C08619A	Azimuth Alignment Screw	1
05	CA08528A	Head Mount Base Sub Ass'y	1
06	CA08518A	RP-3I Record/Playback Head Ass'y	1

5.23. Head Mount Base Ass'y (I01)

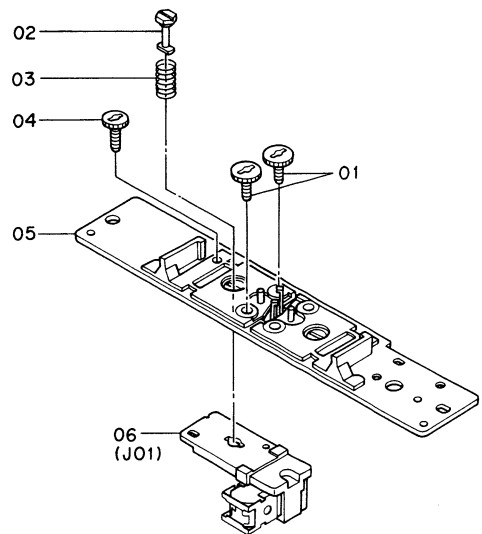


Fig. 5.23

5.24. Supply Pressure Roller Ass'y (I02)

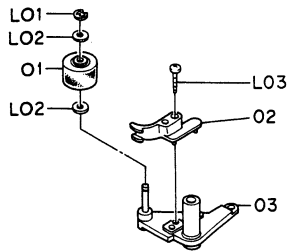


Fig. 5.24

5.25. Take-up Pressure Roller Ass'y (I03)

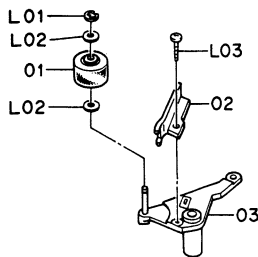


Fig. 5.25

5.26. Head Base Ass'y (I04)

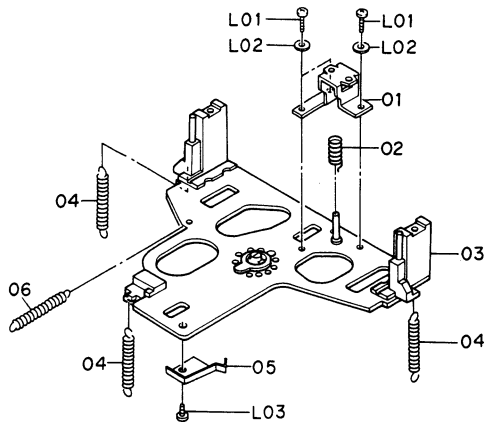


Fig. 5.26

5.27. RP-3I Record/Playback Head Ass'y (J01)

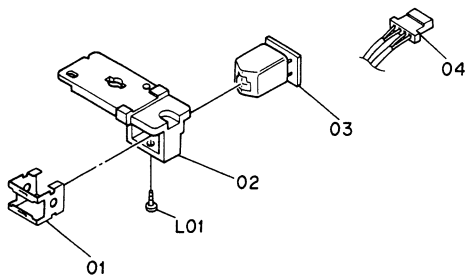


Fig. 5.27

Schematic Ref. No.	Part No.	Description	Q'ty
I02	CA08464A	Supply Pressure Roller Ass'y Serial No.: A80301001 -	1
01	OC08514A	Pressure Roller	1
02	OC08189C	Supply Tape Guide	1
03	CA08061A	Supply Pressure Roller Arm Sub Ass'y	1
L01	OE00042A	E-Ring 1.5mm	1
L02	OC08024A	Washer 2mm	2
L03	OE00788A	BT 2x8 @Pan (Black Chromate)	1
I03	CA08465A	Take-up Pressure Roller Ass'y Serial No.: A80301001 -	1
01	OC08514A	Pressure Roller	1
02	OC08181C	Take-up Tape Guide	1
03	CA08073B	Take-up Pressure Roller Arm Sub Ass'y	1
L01	OE00042A	E-Ring 1.5mm	1
L02	OC08024A	Washer 2mm	2
L03	OE00788A	BT 2x8 @Pan (Black Chromate)	1
I04	CA08530A	Head Base Ass'y Serial No.: A80301001 -	1
01	OC08158D	Erase Head Hold Plate	1
02	OC08166A	Erase Head Hold Plate Spring	1
03	CA08003R	Head Base Ass'y	1
04	OC08175A	Head Base L Spring	3
05	OC08622A	Cassette Hold Spring	1
06	OC08143C	Head Base Drive Arm Spring	1
L01	OE00909A	M2x6 @Pan (Black Chromate)	3
L02	OE00117A	Washer 2x4.3x0.4	3
L03	OE00853A	BT 2x3 @Pan (Chromate)	1
J01	CA08518A	RP-3I Record/Playback Head Ass'y Serial No.: A80301001 -	1
01	OC08607A	Pad Lifter 3I	1
02	OC08606A	Head Plate 3I	1
03	OG01385A	RP-3I Record/Playback Head	1
04	OB82194C	4P-H Connector	1
L01	OE00887A	M1.7x4 @Pan (Black Chromate)	1

6. MOUNTING DIAGRAMS AND PARTS LIST

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

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

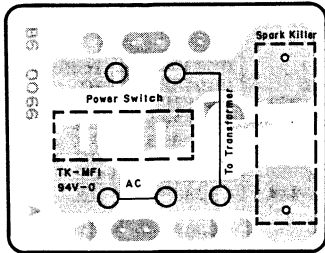


Fig. 6.1

6.3. Lid Lamp P.C.B. Ass'y
 Mounting diagram is omitted.

6.4. TS Pulse P.C.B. Ass'y

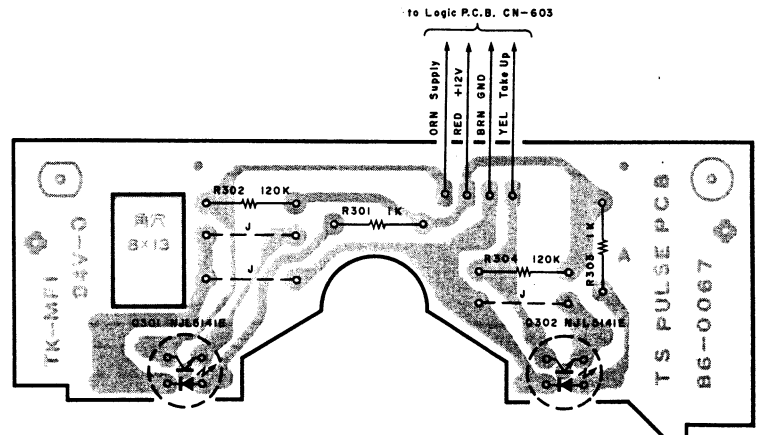


Fig. 6.3

6.2. Fuse P.C.B. Ass'y

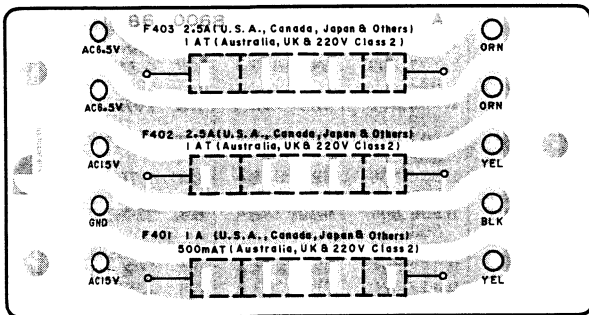


Fig. 6.2

Note: Fuse P.C.B. (0B60068A) is included in DC Power Supply P.C.B. Ass'y. Fuses are included in synthesis mechanism parts list.

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
SW1	BA05188A	Power Switch P.C.B. Ass'y (RX303 (U.S.A. & Canada))	PL601 CN610	0B08359A	Spark Killer Cover (RX303 (Others & Australia) & RX303E) (1)	Q301,302 R301,303 R302,304	BA05199A	TS Pulse P.C.B. Ass'y
	BA05150A	Power Switch P.C.B. Ass'y (RX303 (Japan))		0J04789A	Power Switch Holder (1)		0B60067A	TS Pulse P.C.B. Photo Reflector NJL 5141E
	BA05189A	Power Switch P.C.B. Ass'y (RX303 (Others & Australia) & RX303E)		0E00612A	M3x6 ⊕ Pan (2A) (2)		0B01857A	RK 1K 1/4W J
	0B60066A	Power Switch P.C.B.		0E00752A	Eyelet 2x3 (2)		0B05621A	RK 120K 1/4W J
	0B70002A	Power Switch		BA05143A	Lid Lamp P.C.B. Ass'y		0B82202A	4P-H Connector (1)
	0B08342A	Spark Killer (RX303 (U.S.A. & Canada)) (1)		0B60055A	Lid Lamp P.C.B.			
	0B08363A	Spark Killer (RX303 (Japan)) (1)		0B90010A	Lamp 12V 70 mA			
	0B08445A	Spark Killer (RX303 (Others & Australia) & RX303E) (1)		0B82205A	2P-H Connector			
				0J04738A	Lamp Holder (1)			

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

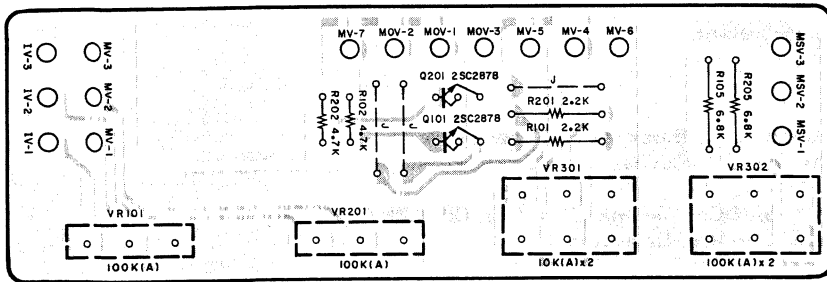
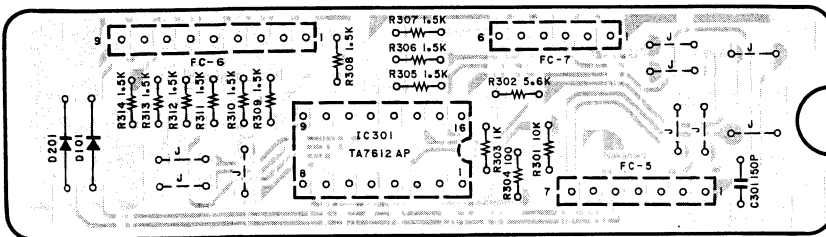


Fig. 6.4

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



6.8. Control P.C.B. A Ass'y

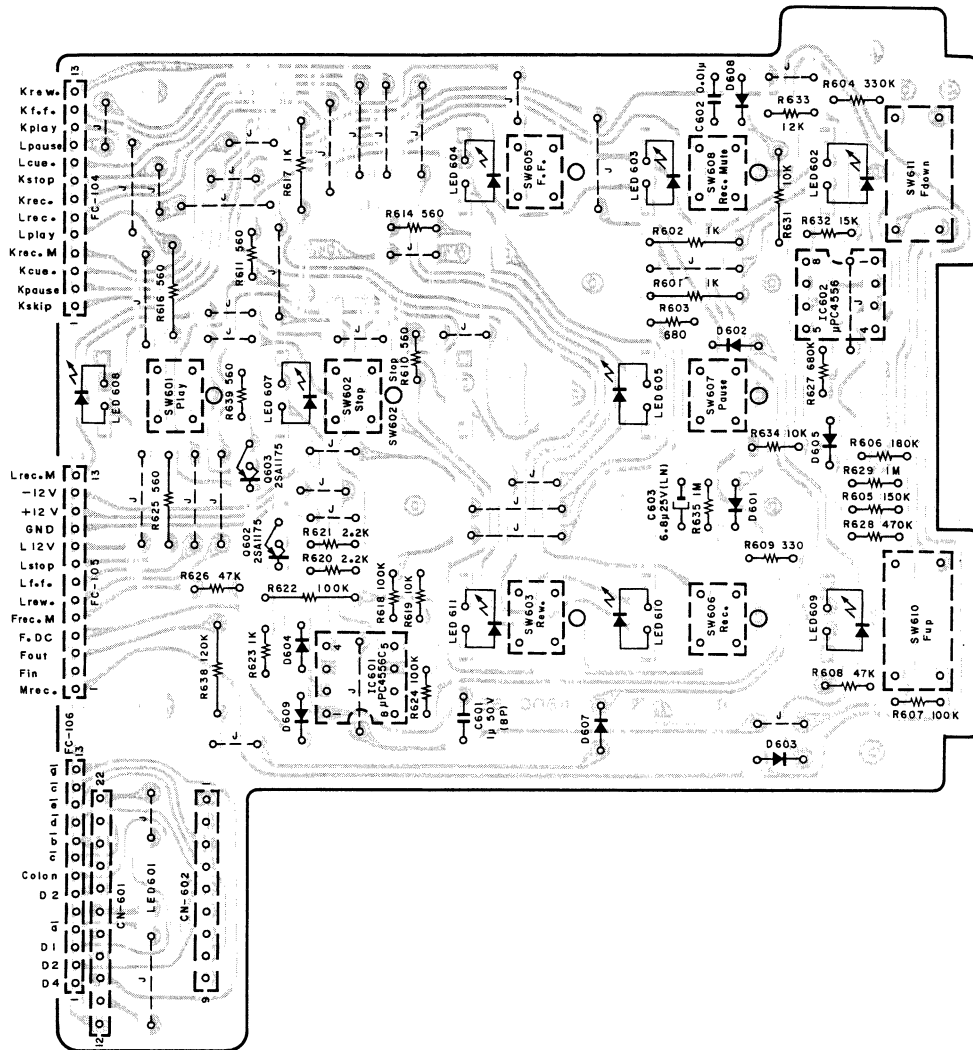


Fig. 6.7

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA05148A	Control P.C.B. A Ass'y	R610,611	OB09671A	RK 560 1/6W J
			614,639		
			R616,625	OB05575A	RK 560 1/4W J
			R619,634	OB09701A	RK 10K 1/6W J
IC601,602	OB60064B	Control P.C.B. A	R620,621	OB09685A	RK 2.2K 1/6W J
Q602,603	OB06216A	IC μ PC4556C	R622	OB01889A	RK 100K 1/4W J
LED601	OB06455A	TR 2SA1175	R623	OB09677A	RK 1K 1/6W J
LED602	OB06326A	Counter LED	R627	OB09745A	RK 680K 1/6W J
603,609	OB06333A	LED TLR124A RED	R628	OB09741A	RK 470K 1/6W J
610			R629,635	OB09749A	RK 1M 1/6W J
LED604	OB06334A	LED TLG124A GRN	R631	OB01888A	RK 10K 1/4W J
605,607			R632	OB09705A	RK 15K 1/6W J
608,611			R633	OB09703A	RK 12K 1/6W J
D601,602	OB06398A	SiD 1SS176	R638	OB05621A	RK 120K 1/4W J
603,604			C601	OB09187A	CE 1 μ 50V (BP)
605,607			C602	OB05681A	CM 0.01 μ 50V J
608,609			C603	OB40183A	CE 6.8 μ 25V K (LN)
R601,602	OB01857A	RK 1K 1/4W J	SW601,602	OB70004A	Touch Switch 4.3mm
617			603,605		
R603	OB09673A	RK 680 1/6W J	606,607		
R604	OB09737A	RK 330K 1/6W J	608		
R605	OB09729A	RK 150K 1/6W J	SW610,611	OB70013A	Tact Switch
R606	OB09731A	RK 180K 1/6W J	CN601	OB81017A	IC Socket 11P
R607,618	OB09725A	RK 100K 1/6W J	CN602	OB81016A	IC Socket 9P
624				0J04797A	LED House (9)
R608,626	OB09717A	RK 47K 1/6W J			
R609	OB09665A	RK 330 1/6W J			

6.9. Control P.C.B. B Ass'y

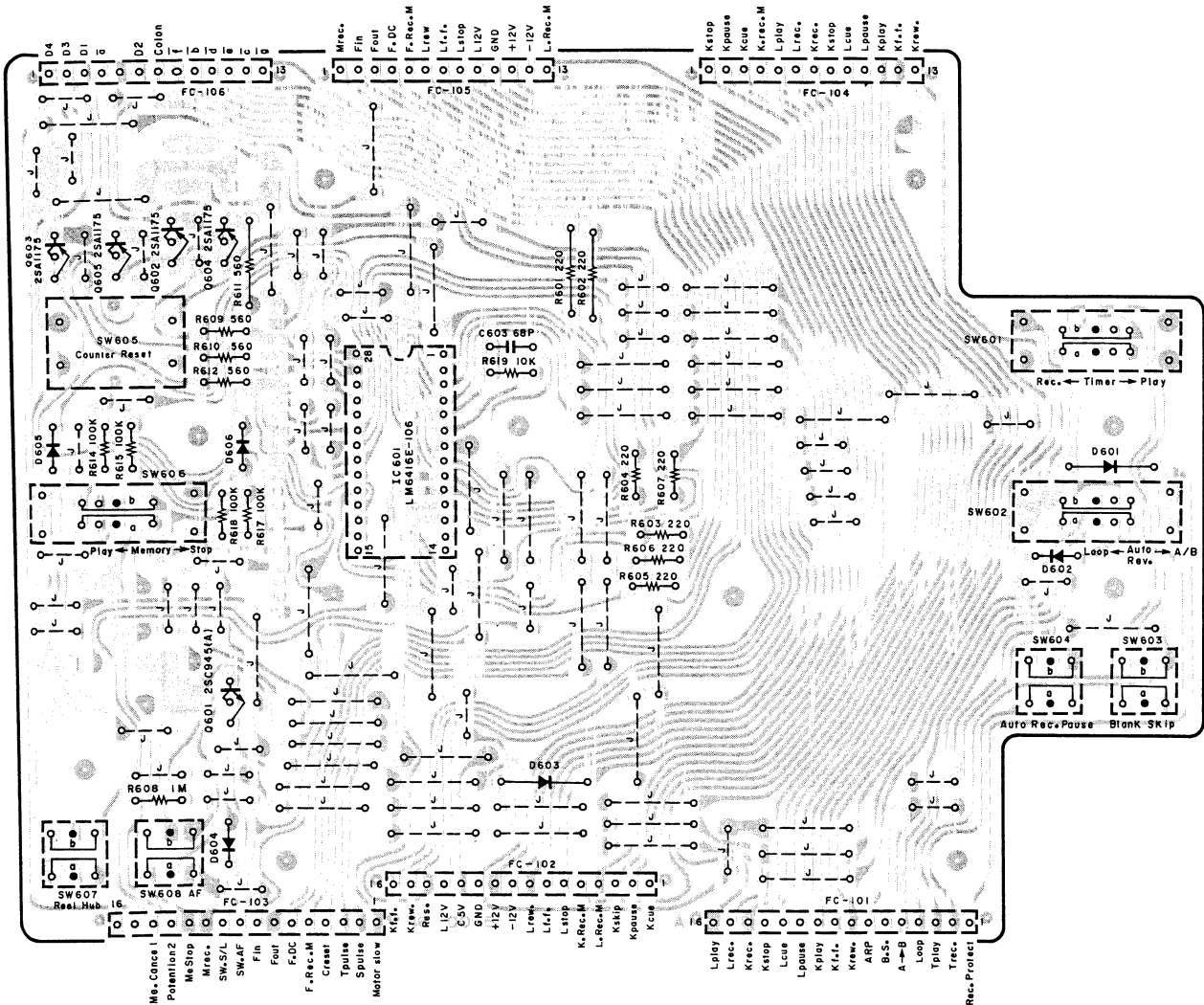


Fig. 6.8

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA05149A	Control P.C.B. B Ass'y	SW603,607	OB70014A	Push Switch
	OB60065A	Control P.C.B. B	608	OB07459A	Tact Switch
IC601	OB06368A	IC LM6416E-106	SW605	OB82197A	Flat Cable 16P
Q601	OB06100A	TR 2SC945A (K,P,Q)	FC101,102		
			103	OB82198A	Flat Cable 13P
Q602,603	OB06455A	TR 2SA1175	FC104,105		
604,605			106		
D601,603	OB06181A	SiD 1SS53		OJ04809A	P.C.B. Himelton (1)
D602,604	OB06398A	SiD 1SS176			
605,606					
R601,602	OB01933A	RK 220 1/4W J			
R603,604	OB09661A	RK 220 1/6W J			
605,606					
607					
R608	OB09749A	RK 1M 1/6W J			
R609,610	OB09671A	RK 560 1/6W J			
612					
R611	OB05575A	RK 560 1/4W J			
R614,615	OB09725A	RK 100K 1/6W J			
617,618					
R619	OB09701A	RK 10K 1/6W J			
C603	OB09393A	CC 68P 50V J			
SW601,602	OB07437A	Slide Switch 2-3			
606					

6.10. DC Power Supply P.C.B. Ass'y

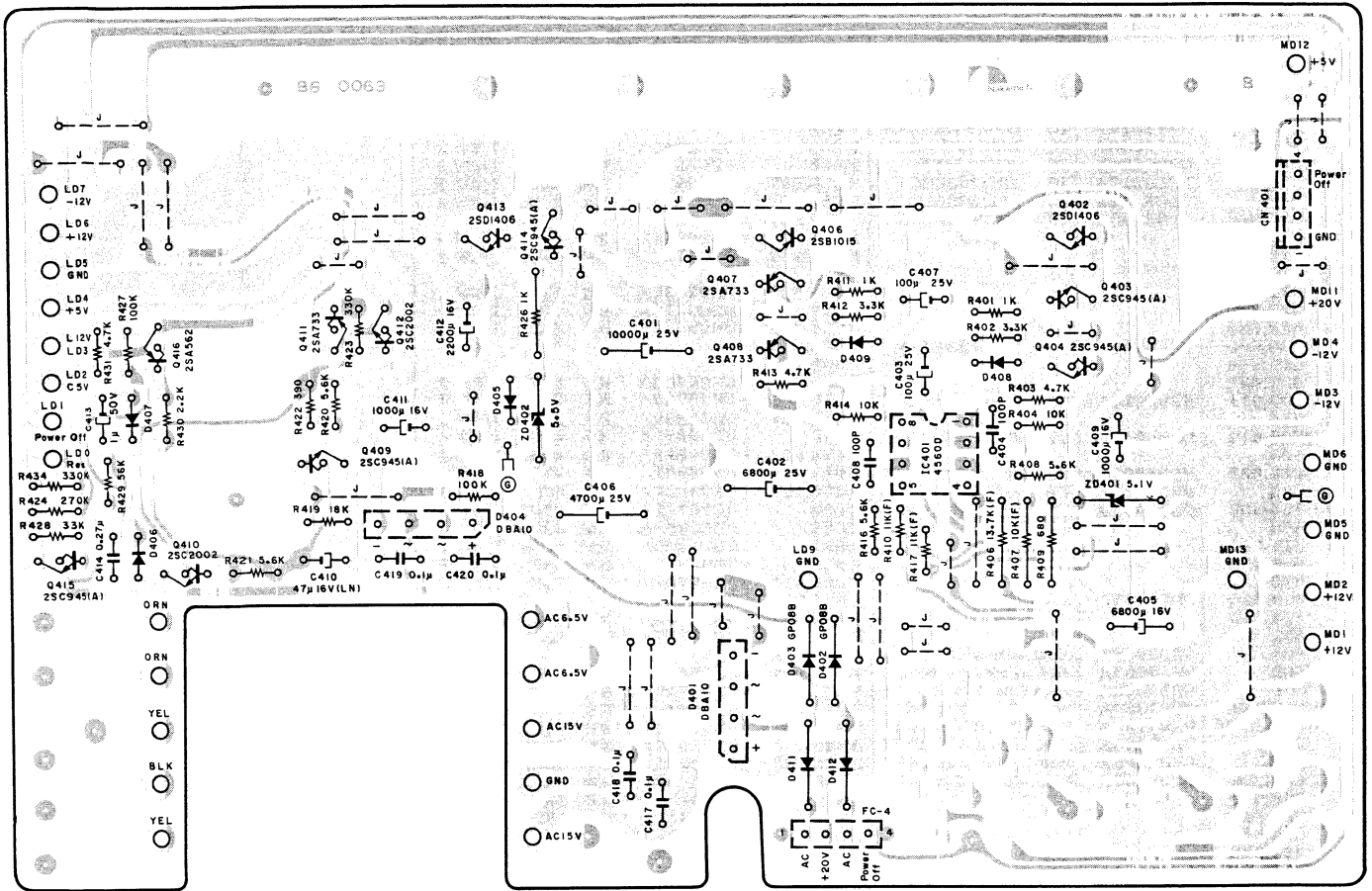


Fig. 6.9

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA05147A	DC Power Supply P.C.B. Ass'y	R418,427	OB09725A	RK 100K 1/6W J		0E00608A	M3x10 @ Pan (3A) (Black Chromate) (3)
	OB60063B	DC Power Supply P.C.B.	R419	OB09707A	RK 18K 1/6W J			
IC401	OB06217A	IC 4560D	R422	OB09667A	RK 390 1/6W J			
Q402,413	OB06452A	TR 2SD1406	R423,434	OB09737A	RK 330K 1/6W J			
Q403,404	OB06100A	TR 2SC945A (K,P,Q)	R424	OB09735A	RK 270K 1/6W J			
409,414			R426	OB01857A	RK 1K 1/4W J			
415			R428	OB09713A	RK 33K 1/6W J			
Q406	OB06451A	TR 2SB1015 (Y)	R429	OB09719A	RK 56K 1/6W J			
Q407,408	OB06013A	TR 2SA733 (P,Q)	R430	OB09685A	RK 2.2K 1/6W J			
411			C401	OB40179A	CE 10000µ 25V			
Q410,412	OB06322A	TR 2SC2002 (K,L)	C402	OB09374A	CE 6800µ 25V			
Q416	OB01426A	TR 2SA562 (O,Y)	C403,407	OB01272A	CE 100µ 25V			
ZD401	OB12002A	ZD 5.1V RD5.1JB2T	C404,408	OB41071A	CC 100P 50V J			
ZD402	OB06290A	ZD 5.5V RD5.6EB2	C405	OB09798A	CE 6800µ 16V			
D401,404	OB06282A	Diode Bridge DBA10	C406	OB09799A	CE 4700µ 25V			
D402,403	OB06109A	SID GP08B	C409,411	OB01397A	CE 1000µ 16V			
D405,406	OB06398A	SID 1SS176	C410	OB09218A	CE 47µ 16V (LN)			
407,408			C412	OB40180A	CE 2200µ 16V			
409			C413	OB01405A	CE 1µ 50V			
D411,412	OB06181A	SID 1SS53	C414	OB09873A	CF 0.27µ 50V J			
R401,411	OB09677A	RK 1K 1/6W J	C417,418	OB09292A	CC 0.1µ 50V Z			
R402,412	OB09689A	RK 3.3K 1/6W J		OB81011A	Dip Mate 4P			
R403,413	OB09693A	RK 4.7K 1/6W J		OB82177A	4P Flat Cable			
431				OB60068A	Fuse P.C.B. (1)			
R404,414	OB09701A	RK 10K 1/6W J		OB08759E	Heat Sink (1)			
R406	OB09523A	RM 13.7K 1/4W F		OB90005A	Insu-Lock (1)			
R407	OB09203A	RM 10K 1/4W F		OE00037A	Earth Lug B-5 (1)			
R408,416	OB09695A	RK 5.6K 1/6W J		OE00507A	Nut Hex. M3 (Chromate) (3)			
420,421				OE00607A	M3x8 @ Pan (3A) (3)			
R409	OB05794A	RK 680 1/4W J		OE00754A	M3x8 @ Pan (1)			
R410,417	OB22347A	RM 11K 1/4W F						

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA05146A	Logic P.C.B. Ass'y	R649	OB22444A	RM 76.8K 1/6W F
			R650	OB05509A	RK 33K 1/4W J
			R651,652	OB09713A	RK 33K 1/6W J
	OB60062B	Logic P.C.B.	665,688		
IC601	OB11019A	IC LM6402G-261	696	OB09731A	RK 180K 1/6W J
IC602	OB11025A	IC LM6402G-282	R654	OB05615A	RK 22K 1/4W J
IC603	OB11040A	IC LM6417E-338	R655	OB09927A	RM 100K 1/6W F
IC604,607	OB06124B	IC NJM4558D	R656,657	OB05671A	RK 2.2M 1/4W J
IC605	OB06317A	IC μ PD4030BC	R659,663		
IC606	OB06143A	IC μ PD4001BC	684,933		
Q603,610	OB06100A	TR 2SC945A (K,P,Q)	R660	OB09214A	RF 1 1/4W J
614,615			R662,932	OB09733A	RK 220K 1/6W J
616,617			952		
618,620			R664,936	OB09727A	RK 120K 1/6W J
621,626			R666	OB09716A	RK 43K 1/6W J
627,629			R667,675	OB09685A	RK 2.2K 1/6W J
630,633			926,928		
Q604,606	OB06013A	TR 2SA733 (P,Q)	939		
607,619			R669	OB09703A	RK 12K 1/6W J
622,631			R670	OB09723A	RK 82K 1/6W J
Q608,611	OB06316A	TR 2SD882 (P,Q)	R671,921	OB01889A	RK 100K 1/4W J
624			R672	OB09697A	RK 6.8K 1/6W J
Q609,612	OB06303A	TR 2SB772 (P,Q)	R673,951	OB09693A	RK 4.7K 1/6W J
625			R674	OB09661A	RK 220 1/6W J
Q613,632	OB06202A	TR 2SA562TM (Y)	R676,963	OB09321A	RF 4.7 1/4W J
Q623	OB06129A	FET 2SK117	R680	OB09741A	RK 470K 1/6W J
D604-606	OB06398A	SID 1SS176 (21)	R681	OB22493A	RM 220K 1/6W F
608			R682	OB09300A	RM 150K 1/4W F
611-613			R683	OB09315A	RM 332K 1/4W F
616-620			R685,911	OB09709A	RK 22K 1/6W J
623-631			927,929		
D609,610	OB06181A	SiD 1SS53	R690,693	OB09745A	RK 680K 1/6W J
614,615			R691,694	OB09747A	RK 820K 1/6W J
621			937,938		
X601	OB08908A	Xtal 400 kHz	R908,954	OB09695A	RK 5.6K 1/6W J
X602	OB90009A	Xtal 4.1943 MHz	R912	OB09719A	RK 56K 1/6W J
T601	OB51048A	Bias Osc. Block	R917	OB09749A	RK 1M 1/6W J
VR602,607	OB07329A	Semi-fixed VR 2K	R930	OB09726A	RK 110K 1/6W J
VR603,606	OB07256A	Semi-fixed VR 10K	R945	OB22506A	RM 280K 1/6W F
VR604	OB07405A	Semi-fixed VR 200K	R946,947	OB22531A	RM 453K 1/6W F
VR605	OB07269A	Semi-fixed VR 50K	R948	OB22470A	RM 133K 1/6W F
R607,608	OB09737A	RK 330K 1/6W J	R955	OB09677A	RK 1K 1/6W J
609,610			R956	OB09671A	RK 560 1/6W J
611,612			R960	OB09831A	RF 22 1W J
613,627			R961	OB09936A	RF 10 1/2W J
628,640			R962	OB01857A	RK 1K 1/4W J
641,686			R964	OB09705A	RK 15K 1/6W J
689,692			C603,621	OB01412A	CE 10 μ 16V
910			622		
R614,615	OB09749A	RK 1M 1/6W J	C605	OB05557A	CM 0.015 μ 50V J
629,697			C606,607	OB05652A	CM 4700P 50V J
698,901			617		
902,931			C608,609	OB09283A	CC 220P 50V K
942,944			C610,611	OB01402A	CE 4.7 μ 25V
R616,621	OB05776A	RK 1M 1/4W J	C612	OB01502A	CE 330 μ 16V
R617,619	OB09701A	RK 10K 1/6W J	C613,623	OB09277A	CC 10P 50V J
622,635			C614,615	OB01405A	CE 1 μ 50V
653,679			C616	OB09372A	CE 2.2 μ 50V
909,914			C619	OB09279A	CC 22P 50V K
918,920			C620	OB41187A	CC 39P 50V K
959			C624	OB41188A	CP 6200P 100V G
R618,620	OB09725A	RK 100K 1/6W J	C625	OB01400A	CE 100 μ 16V
637,638			C626	OB09187A	CE 1 μ 50V (BP)
639,658			C628	OB09292A	CC 0.1 μ 50V Z
687,695			CN601	OB08653A	3P-T Post
903,904			CN602	OB08642A	6P-T Post
905,906			CN603	OB08654A	4P-T Post
913,915			CN604	OB81023A	2P-T Post
916,922			CN605,607	OB08656A	2P-T Post
923,941			CN606	OB08724A	5P-T Post
943,953			CN608	OB02356A	JP Connector 12P
965			CN609	OB08644A	8P-T Post
R623,677	OB01888A	RK 10K 1/4W J	CN610	OB02280A	2P-T Post
940				OB81086A	Wire Mate 3P (6)
R624,625	OB05627A	RK 330K 1/4W J		OB08964A	TR Mica TO-126 (2)
907				OE00507A	Nut Hex. M3 (Chromate) (2)
R626,668	OB09717A	RK 47K 1/6W J		OE00521A	M3x8 \oplus Pan (Black Chromate) (2)
R630,934	OB09711A	RK 27K 1/6W J			
935				OJ04485A	Heat Sink B (1)
R631,632	OB05743A	RK 27K 1/4W J			
R633	OB09712A	RK 30K 1/6W J			
R634,958	OB09707A	RK 18K 1/6W J			
R636,646	OB09689A	RK 3.3K 1/6W J			
678,957					
R642	OB22420A	RM 47.5K 1/6W F			
R643	OB22515A	RM 332K 1/6W F			
R644	OB01887A	RK 5.6K 1/4W J			
R645,661	OB09699A	RK 8.2K 1/6W J			

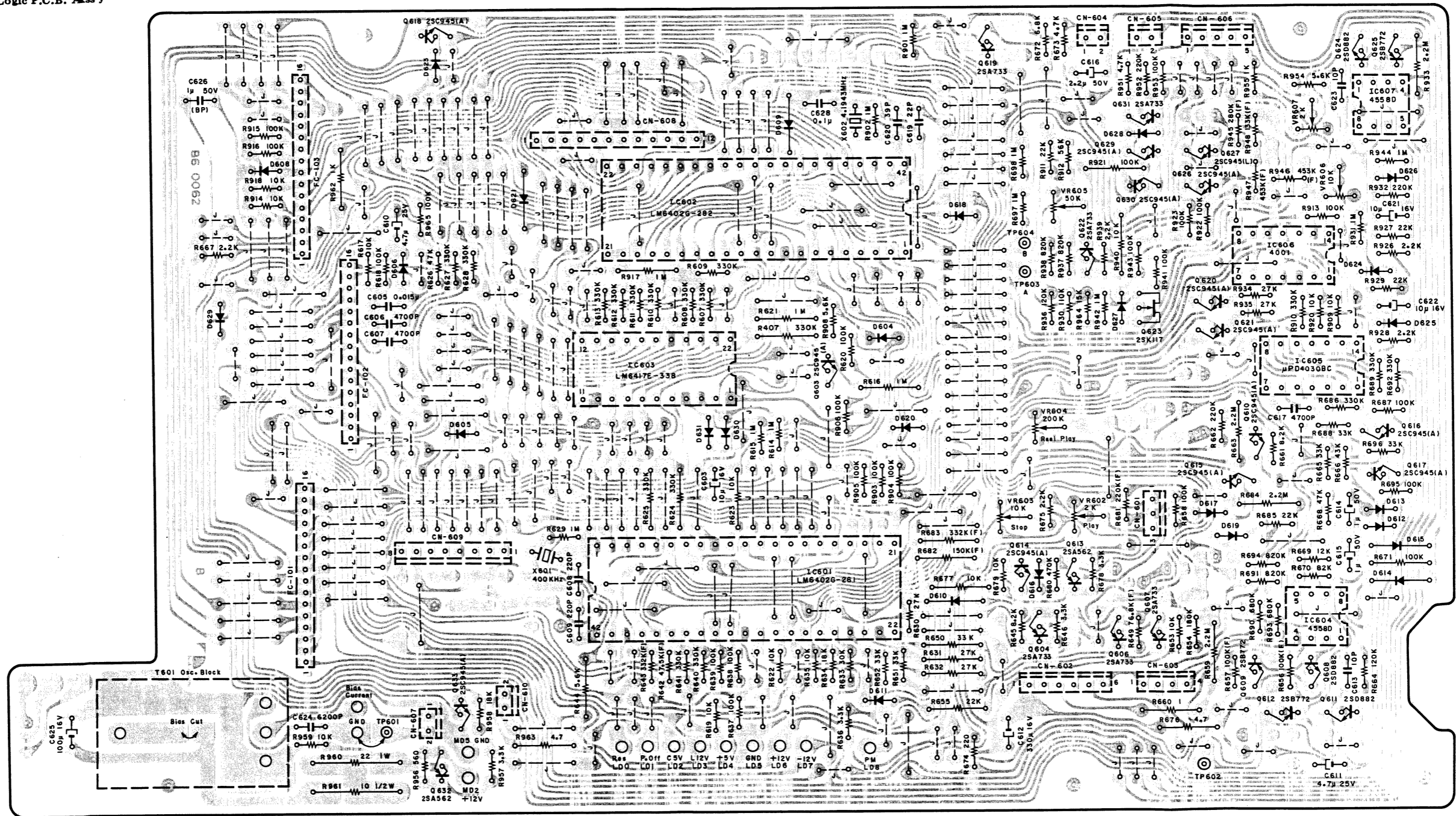


Fig. 6.10

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA05139A	Main P.C.B. Ass'y		- Dolby NR -		R103,203 R104,204 306	OB22275A OB09725A	RM 2.67K 1/6W F RK 100K 1/6W J
	- PB Eq. Amp. -		IC101,201 IC102,202 IC103,203 Q112,113 114,212 213,214 ZD101,102 201,202	OB06382A OB06383A OB06457A OB01872A	IC TEA0652 IC TEA0654 IC NJM072 TR 2SC945L (P,Q)	R105,205 R106,206 301,302 R107,108 207,208 R109,110 209,210 308	OB09705A OB09677A OB09749A OB09701A	RK 15K 1/6W J RK 1K 1/6W J RK 1M 1/6W J RK 10K 1/6W J
IC302 IC307 Q131,231 Q132,232 Q180,280 ZD305 D315,316 317,318 VR104,204 L105,205 R315,510 610 R320 R391,503 603 R501,601 R502,602 R504,604 R505,605 R506,606 R507,607 R508,608 R509,609 R511,611 R512,612 R581,681 C161,261 C163,263 C164,264 C165,265 C166,266 C302 RL301 CN3	OB06146A OB11005A OB06376A OB01872A OB06299A OB06418A OB06398A OB32008A OB06717A OB09677A OB09709A OB09725A OB22553A OB22162A OB09768A OB22353A OB22512A OB22548A OB09661A OB09669A OB09707A OB09629A OB09693A OB05583A OB09591A OB01804A OB09933A OB09163A OB01400A OB07426A OB08654A	IC NJM4558DD IC NJM072DE FET 2SK170 (G,R) TR 2SC945L (P,Q) TR 2SC2878 ZD 8.2V RD8.2JB2 SID 1SS176 Semi-fixed VR 10K Trap Unit RK 1K 1/6W J RK 22K 1/6W J RK 100K 1/6W J RM 80.6 1/4W F RM 270 1/6W F RM 3.92K 1/4W F RM 12.4K 1/6W F RM 316K 1/6W F RM 4.7M 1/4W J RK 220 1/6W J RK 470 1/6W J RK 18K 1/6W J RK 10 1/4W J RK 4.7K 1/6W J CM 0.033μ 50V J CP 0.01μ 100V J CM 3900P 50V J CE 2.2μ 50V (LN) CE 10μ 16V (BP) CE 100μ 16V HB Relay 4P-T Post	D101 D201 L102,202 R121,122 124,138 141,221 222,224 238,241 R123,223 R125,225 R126,226 R127,227 R128,228 R129,229 R130,230 R131,231 R132,232 R133,233 R134,234 R135,235 R136,236 R137,237 R139,140 239,240 R142,242 R143,146 243,246 R144,149 249 R145,245 R147,247 R148,244 248 R150,151 250,251 C111,112 211,212 C113,213 C114,131 214,231 C115,215 C116,216 C117,217 C118,218 C119,219 C120,123 220,223 C121,122 135,190 221,222 235,290 C124,224 C125,225 C126,127 226,227 C128,129 228,229 C130,230 C132,232 C196,296	OB06382A OB06181A OB06691A OB09737A OB09727A OB09347A OB22317A OB09929A OB22286A OB22229A OB09721A OB22309A OB22265A OB09562A OB09717A OB22351A OB09693A OB09723A OB09739A OB09703A OB22326A OB01888A OB09749A OB22312A OB09701A OB24022A OB05813A OB05685A OB09312A OB09191A OB09240A OB09852A OB09866A OB09864A OB09862A OB09868A OB09872A OB09870A OB01412A OB01400A OB09235A OB09591A OB09816A OB11004A OB22308A OB09733A OB09731A OB22342A OB09814A OB09815A OB01872A OB06013A OB06230A OB06290A OB12112A OB06398A OB06690A OB09733A OB09653A	IC NJM2043DD TR 2SC2878 SID 1SS176 L-C Block Trap Coil 10.5mH RK 560 1/6W J RM 3.92K 1/6W F RK 180K 1/6W J RK 15K 1/6W J RK 1.5K 1/6W J RK 1K 1/6W J RM 39.2K 1/6W F RM 10K 1/6W F RK 18K 1/6W J RK 10K 1/6W J RK 470K 1/6W J CM 3300P 50V J CM 0.033μ 50V J CE 1μ 50V (LN) CE 47μ 6.3V (LN) CM 0.068μ 50V J CP 680P 100V J C 120P 50V J C 100P 50V J CE 33μ 25V CM 2200P 50V J IC TC9145P Semi-fixed VR 22K Semi-fixed VR 10K RK 8.2K 1/6W J RK 10K 1/6W J RK 12K 1/6W J RK 4.7K 1/6W J RK 15K 1/6W J RK 2.7K 1/6W J CE 10μ 16V (LN) CM 5600P 50V J CM 1500P 50V J CM 3300P 50V J IC NJM2041DD RM 4.99K 1/6W F RK 220K 1/6W J RK 180K 1/6W J RM 9.76K 1/6W F CE 1μ 50V (LN) CE 47μ 6.3V (LN) TR 2SC945L (P,Q) TR 2SA733 (P,Q) ZD 5.1V RD5.1EB2 ZD 5.6V RD5.6EB2 ZD 2.7V RD2.7E SID 1SS176 L-C Block BLU RK 220K 1/6W J RK 100 1/6W J	R103,203 R104,204 306 R105,205 R106,206 301,302 R107,108 207,208 R109,110 209,210 308 R111,211 R112,212 R303,304 R305 R307 C101,201 C102,202 C103,203 C104,204 C105,205 C301 C302 Cds301 IC304 Q141,241 Q142,242 R551,552 651,652 R553,653 R554,654 C191,291 C192,292 C321,322 Q135,136 235,236 Q137,237 ZD105,205 D105,106 205,206 305 VR105,205 R531,532 535,536 631,632 635,636 R533,633 R534,634 R537,539 637,639 R538,638 C181,281 C182,282 IC303 ZD380 D310,370 R321,327 328,329 R324 R325 R326 R330 R331 R371,390 C311 C312 C314 C315 C370 C331,332 FC1,3 FC2,12 FC5 FC9 CN10 CN11	OB09529A OB05743A OB09685A OB09689A OB09693A OB09814A OB09247A OB09932A OB09845A OB09849A OB40078A OB01400A OB06325B OB06217A OB06429A OB10015A OB09725A OB09384A OB09536A OB09868A OB09322A OB40012A OB06456A OB01872A OB06230A OB06398A OB32026A OB09725A OB09747A OB09723A OB09719A OB09709A OB09868A OB09148A OB06124B OB06230A OB06398A OB09733A OB09687A OB09683A OB09667A OB09725A OB09681A OB09687A OB09223A OB09333A OB09854A OB09277A OB40184A OB60050B OB40180A OB81086A OB81088A OB81090A OB81011A OB81114A OB81113A	RM 6.8K 1/4W F RK 27K 1/4W J RK 2.2K 1/6W J RK 3.3K 1/6W J RK 4.7K 1/6W J CE 1μ 50V (LN) C 220P 50V J CE 22μ 16V (LN) CF 1200P 50V J CF 2700P 50V J CE 100μ 16V CE 100μ 16V Photocoupler MCD7214F IC NJM4560D TR 2SC2655 (Y) TR 2SA1020 (O,Y) RK 100K 1/6W J RF 27 1/6W J RF 18 1/2W J CF 0.1μ 50V J CP 330P 100V J CE 47μ 16V TR 2SC2785 TR 2SC945L (P,Q) ZD 5.1V RD5.1EB2 SID 1SS176 Semi-fixed VR 220K RK 100K 1/6W J RK 820K 1/6W J RK 82K 1/6W J RK 56K 1/6W J RK 22K 1/6W J CF 0.1μ 50V J CE 10μ 25V (LN) IC NJM4558D ZD 5.1V RD5.1EB2 SID 1SS176 RK 220K 1/6W J RK 2.7K 1/6W J RK 1.8K 1/6W J RK 390 1/6W J RK 100K 1/6W J RK 1.5K 1/6W J RK 22K 1/6W J CE 1μ 50V (LN) CE 4.7μ 50V (LN) CF 6800P 50V J CE 10P 50V K CE 10μ 16V (BP) Main P.C.B. CE 2200μ 16V Wire Mate 3P Wire Mate 5P Wire Mate 7P Dip Mate 4P 10P-T Post 9P-T Post
IC306 Q121,122 221,222 D102,202 L103,203 L104,204 R170,270 R171,271 R172,177 272,277 R173,273 R174,274 R175,275 R176,276 R178,278 R179,279 R180,280 R181,281 C145,245 C146,246 C147,149 247,249 C150,250 C151,251 C152,252 C153,253 C154,254 C350,351 C580,680	OB06387A OB06299A OB06398A OB51046A OB00068A OB09671A OB22296A OB09731A OB09705A OB09681A OB09677A OB22410A OB22343A OB09707A OB09701A OB09741A OB01914A OB05583A OB09814A OB09815A OB05682A OB09235A OB09486A OB09302A OB09251A OB01802A	IC NJM2043DD TR 2SC2878 SID 1SS176 L-C Block Trap Coil 10.5mH RK 560 1/6W J RM 3.92K 1/6W F RK 180K 1/6W J RK 15K 1/6W J RK 1.5K 1/6W J RK 1K 1/6W J RM 39.2K 1/6W F RM 10K 1/6W F RK 18K 1/6W J RK 10K 1/6W J RK 470K 1/6W J CM 3300P 50V J CM 0.033μ 50V J CE 1μ 50V (LN) CE 47μ 6.3V (LN) CM 0.068μ 50V J CP 680P 100V J C 120P 50V J C 100P 50V J CE 33μ 25V CM 2200P 50V J	IC305 R521,621 R522,622 R523,623 R524,624 C171,271 C172,272 Q101-104 201-204 Q301 ZD301 ZD302 ZD303 D302,303 L101,201 R101,201 R102,202 309	OB11004A OB22308A OB09733A OB09731A OB22342A OB09814A OB09815A OB01872A OB06013A OB06230A OB06290A OB12112A OB06398A OB06690A OB09733A OB09653A	IC NJM2041DD RM 4.99K 1/6W F RK 220K 1/6W J RK 180K 1/6W J RM 9.76K 1/6W F CE 1μ 50V (LN) CE 47μ 6.3V (LN) TR 2SC945L (P,Q) TR 2SA733 (P,Q) ZD 5.1V RD5.1EB2 ZD 5.6V RD5.6EB2 ZD 2.7V RD2.7E SID 1SS176 L-C Block BLU RK 220K 1/6W J RK 100 1/6W J	R324 R325 R326 R330 R331 R371,390 C311 C312 C314 C315 C370 C331,332 FC1,3 FC2,12 FC5 FC9 CN10 CN11	OB09687A OB09683A OB09667A OB09725A OB09681A OB09687A OB09223A OB09333A OB09854A OB09277A OB40184A OB60050B OB40180A OB81086A OB81088A OB81090A OB81011A OB81114A OB81113A	RM 2.7K 1/6W J RK 1.8K 1/6W J RK 390 1/6W J RK 100K 1/6W J RK 1.5K 1/6W J RK 22K 1/6W J CE 1μ 50V (LN) CE 4.7μ 50V (LN) CF 6800P 50V J CE 10P 50V K CE 10μ 16V (BP) Main P.C.B. CE 2200μ 16V Wire Mate 3P Wire Mate 5P Wire Mate 7P Dip Mate 4P 10P-T Post 9P-T Post
IC301 VR101,201 VR102,103 202,203 R161,261 R163,263 312 R165,265 R167,267 310,311 R168,268 R169,269 C141,241 C142,242 C143,243 C144,244	OB11027A OB32009A OB32008A OB09699A OB09701A OB09703A OB09693A OB09705A OB09687A OB09816A OB05659A OB05653A OB01914A	IC TC9145P Semi-fixed VR 22K Semi-fixed VR 10K RK 8.2K 1/6W J RK 10K 1/6W J RK 12K 1/6W J RK 4.7K 1/6W J RK 15K 1/6W J RK 2.7K 1/6W J CE 10μ 16V (LN) CM 5600P 50V J CM 1500P 50V J CM 3300P 50V J	IC305 R521,621 R522,622 R523,623 R524,624 C171,271 C172,272 Q101-104 201-204 Q301 ZD301 ZD302 ZD303 D302,303 L101,201 R101,201 R102,202 309	OB11004A OB22308A OB09733A OB09731A OB22342A OB09814A OB09815A OB01872A OB06013A OB06230A OB06290A OB12112A OB06398A OB06690A OB09733A OB09653A	IC NJM2041DD RM 4.99K 1/6W F RK 220K 1/6W J RK 180K 1/6W J RM 9.76K 1/6W F CE 1μ 50V (LN) CE 47μ 6.3V (LN) TR 2SC945L (P,Q) TR 2SA733 (P,Q) ZD 5.1V RD5.1EB2 ZD 5.6V RD5.6EB2 ZD 2.7V RD2.7E SID 1SS176 L-C Block BLU RK 220K 1/6W J RK 100 1/6W J	R324 R325 R326 R330 R331 R371,390 C311 C312 C314 C315 C370 C331,332 FC1,3 FC2,12 FC5 FC9 CN10 CN11	OB09687A OB09683A OB09667A OB09725A OB09681A OB09687A OB09223A OB09333A OB09854A OB09277A OB40184A OB60050B OB40180A OB81086A OB81088A OB81090A OB81011A OB81114A OB81113A	RM 2.7K 1/6W J RK 1.8K 1/6W J RK 390 1/6W J RK 100K 1/6W J RK 1.5K 1/6W J RK 22K 1/6W J CE 1μ 50V (LN) CE 4.7μ 50V (LN) CF 6800P 50V J CE 10P 50V K CE 10μ 16V (BP) Main P.C.B. CE 2200μ 16V Wire Mate 3P Wire Mate 5P Wire Mate 7P Dip Mate 4P 10P-T Post 9P-T Post
	- Rec. Eq. Amp. -			- Line Amp. -				
	- Rec. Level -			- Line Input -				

6.13. I/O P.C.B. Ass'y

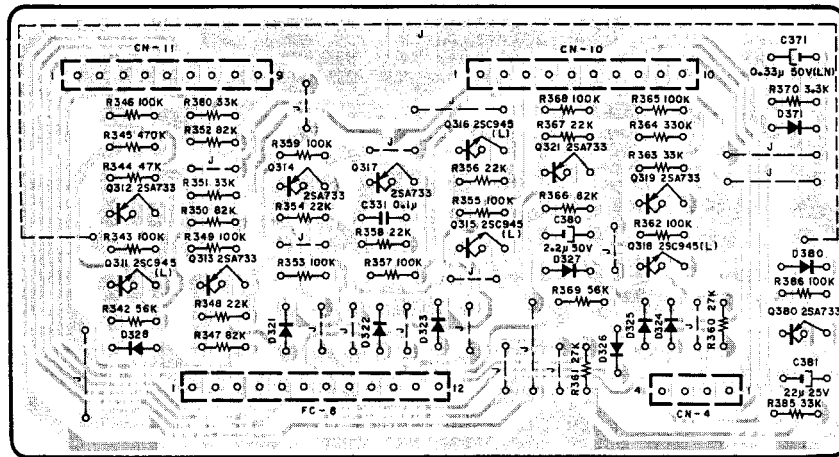


Fig. 6.12

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA05144A	I/O P.C.B. Ass'y	R351,363 380,385	OB09713A	RK 33K 1/6W J
	OB60051A	I/O P.C.B.	R352	OB09699A	RK 8.2K 1/6W J
Q311,315 316,318	OB01872A	TR 2SC945L (P,Q)	R360	OB09711A	RK 27K 1/6W J
Q312,313 314,317	OB06013A	TR 2SA733 (P,Q)	R361	OB05743A	RK 27K 1/4W J
319,321 380			R364	OB09737A	RK 330K 1/6W J
D321-328	OB06398A	SID 1SS176 (10)	R370	OB09689A	RK 3.3K 1/6W J
371,380			C331	OB09868A	CF 0.1μ 50V J
R342,369	OB09719A	RK 56K 1/6W J	C371	OB09327A	CE 0.33μ 50V (LN)
R343,346	OB09725A	RK 100K 1/6W J	C380	OB09372A	CE 2.2μ 50V
349,353			C381	OB01527A	CE 22μ 25V
355,357			CN4	OB81087A	Wire Mate 4P
359,362			CN10	OB81109A	10P-S Post
365,368 386			CN11	OB81108A	9P-S Post
R344	OB09717A	RK 47K 1/6W J	FC8	OB82178A	12P Flat Cable
R345	OB09741A	RK 470K 1/6W J		OE00868A	BT 3x8 ⊕ Binding (Chromate) (1)
R347,350 366	OB09723A	RK 82K 1/6W J		OJ04790A	P.C.B. Holder (1)
R348,354 356,358 367	OB09709A	RK 22K 1/6W J			

7. SCHEMATIC DIAGRAMS

7.1. Attention to Servicemen

(1) Caution

- (a) If a part is in need of removing (or replacing) for service, it should be remounted (or replaced with specified parts) by the same methods as before after servicing.
- (b) The appliance should be used only specified parts for preventing a risk of fire and electric shock and maintaining the characteristics.
- (c) Before returning the repaired appliance to a customer, check to insure that the exposed part is accurately insulated from the Power Supply by measuring the leakage current or the insulation resistance between them.

(2) Parts Replacement

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

- (a) Power Supply Circuit
Power Cord
Power Transformer: T1
- (b) Power Switch P.C.B. Ass'y
Power Switch: SW1
Spark Killer: M2
- (c) Fuse P.C.B. Ass'y
Fuses: F401, 402, 403
- (d) DC Power Supply P.C.B. Ass'y
Transistors: Q402, 406, 413, 416
Diode Bridges: D401, 404
- (e) Logic P.C.B. Ass'y
Transistors: Q608, 609, 611, 612, 624, 625
Fail Safe Type Resistors: R660, 676, 960, 961, 963
- (f) Main P.C.B. Ass'y
Fail Safe Type Resistors: R150, 151, 250, 251, 553, 554, 653, 654

7.2. IC Block Diagrams

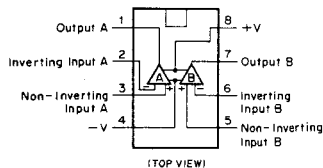


Fig. 7.2.1 Operational Amp. IC 4558D, 4558DD, 4560D, 2041DD, 2043DD, 072, 072DE

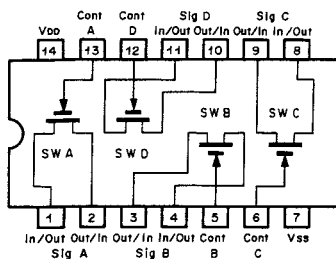


Fig. 7.2.2 Bilateral Switch C-MOS IC μ PC4556C

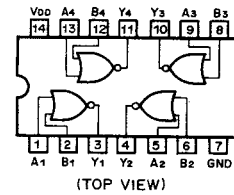


Fig. 7.2.3 NOR Gate C-MOS IC μ PD4001BC

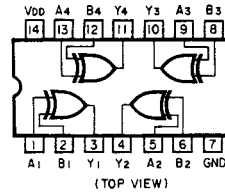


Fig. 7.2.4 Exclusive OR Gate C-MOS IC μ PD4030BC

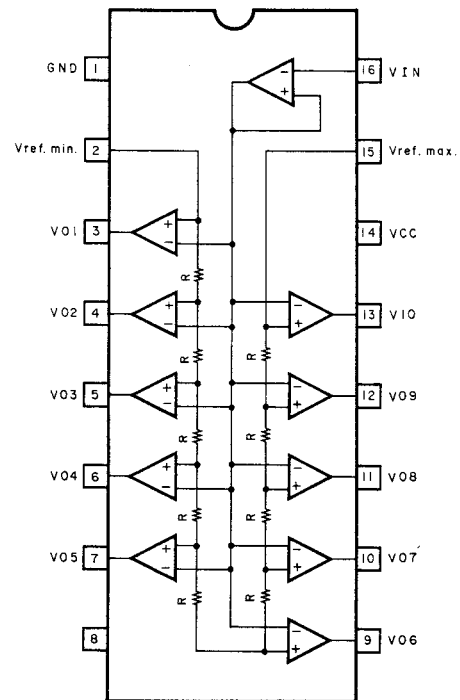


Fig. 7.2.5 Level Meter Driver TA 7612AP

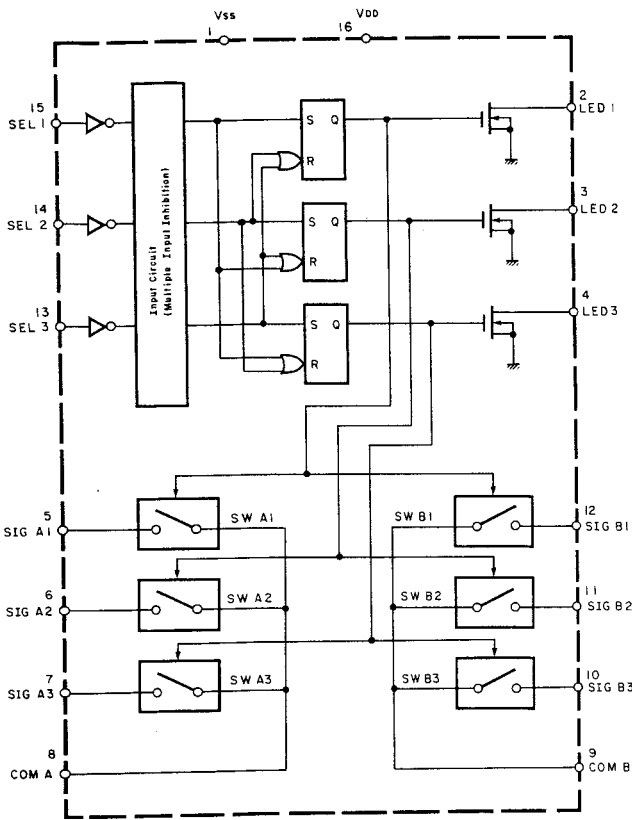


Fig. 7.2.6 Analog Switch Selector TC9145P

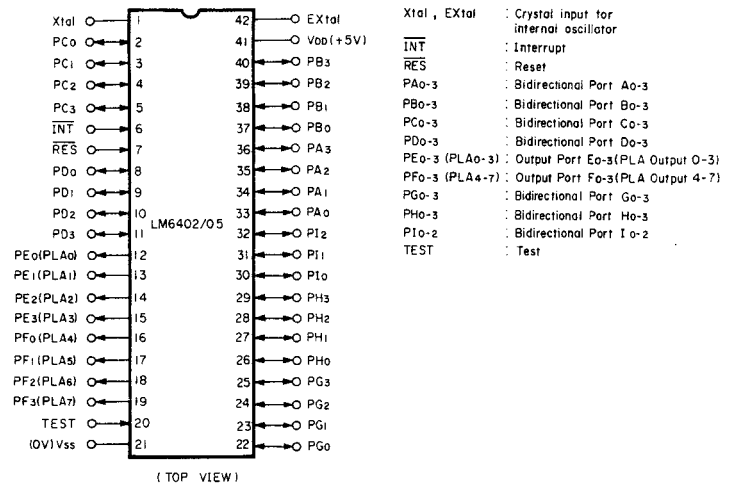
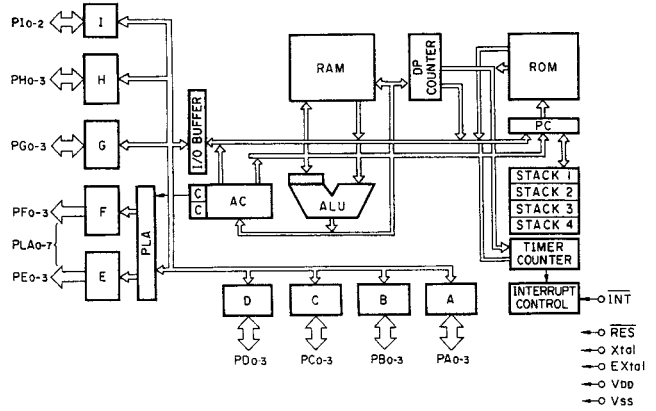


Fig. 7.2.8 4-Bit Micro-processor LM6402G

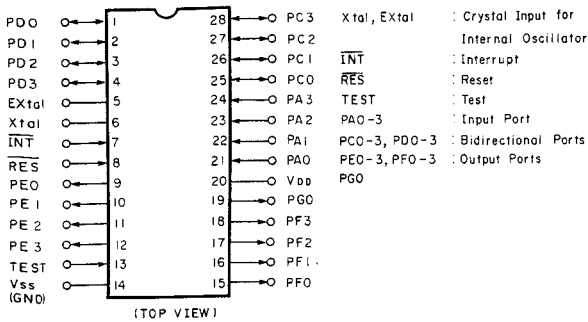
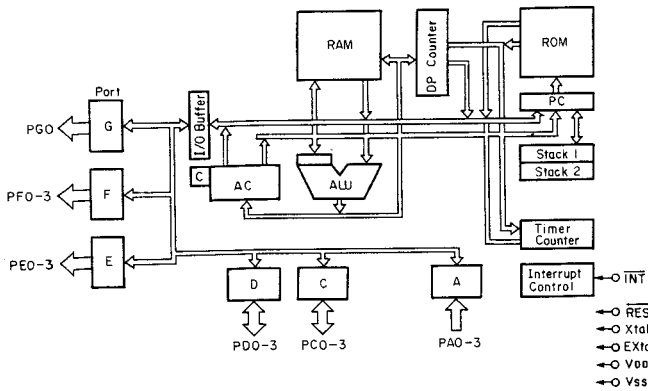


Fig. 7.2.7 4-Bit Micro-processor LM6416E-106

7. SCHEMATIC DIAGRAMS

7.1. Attention to Servicemen

(1) Caution

- If a part is in need of removing (or replacing) for service, it should be remounted (or replaced with specified parts) by the same methods as before after servicing.
- The appliance should be used only specified parts for preventing a risk of fire and electric shock and maintaining the characteristics.
- Before returning the repaired appliance to a customer, check to insure that the exposed part is accurately insulated from the Power Supply by measuring the leakage current or the insulation resistance between them.

(2) Parts Replacement

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

- Power Supply Circuit
Power Cord
Power Transformer: T1
- Power Switch P.C.B. Ass'y
Power Switch: SW1
Spark Killer: M2
- Fuse P.C.B. Ass'y
Fuses: F401, 402, 403
- DC Power Supply P.C.B. Ass'y
Transistors: Q402, 406, 413, 416
Diode Bridges: D401, 404
- Logic P.C.B. Ass'y
Transistors: Q608, 609, 611, 612, 624, 625
Fail Safe Type Resistors: R660, 676, 960, 961, 963
- Main P.C.B. Ass'y
Fail Safe Type Resistors: R150, 151, 250, 251, 553, 554, 653, 654

7.2. IC Block Diagrams

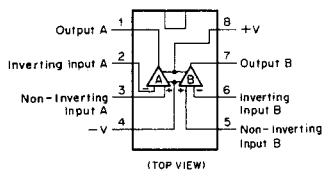


Fig. 7.2.1 Operational Amp. IC 4558D, 4558DD, 4560D, 2041DD, 2043DD, 072, 072DE

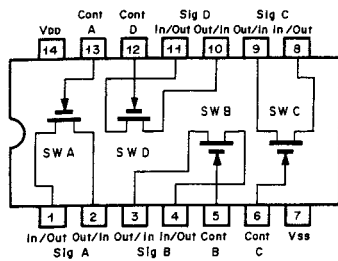


Fig. 7.2.2 Bilateral Switch C-MOS IC μ PC4556C

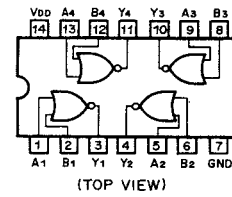


Fig. 7.2.3 NOR Gate C-MOS IC μ PD4001BC

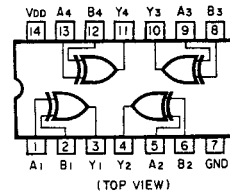


Fig. 7.2.4 Exclusive OR Gate C-MOS IC μ PD4030BC

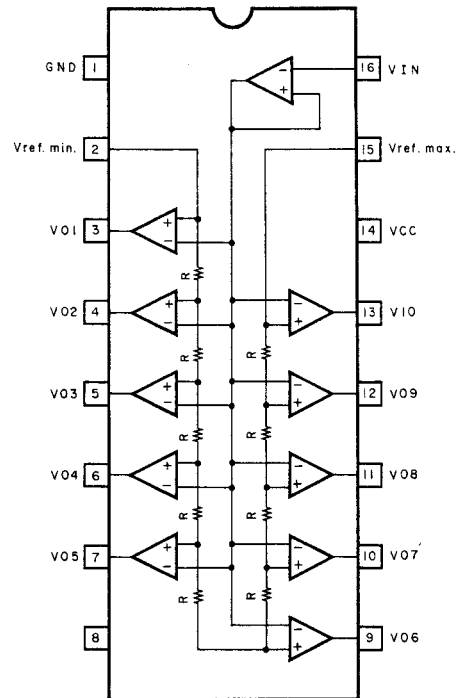


Fig. 7.2.5 Level Meter Driver TA7612AP

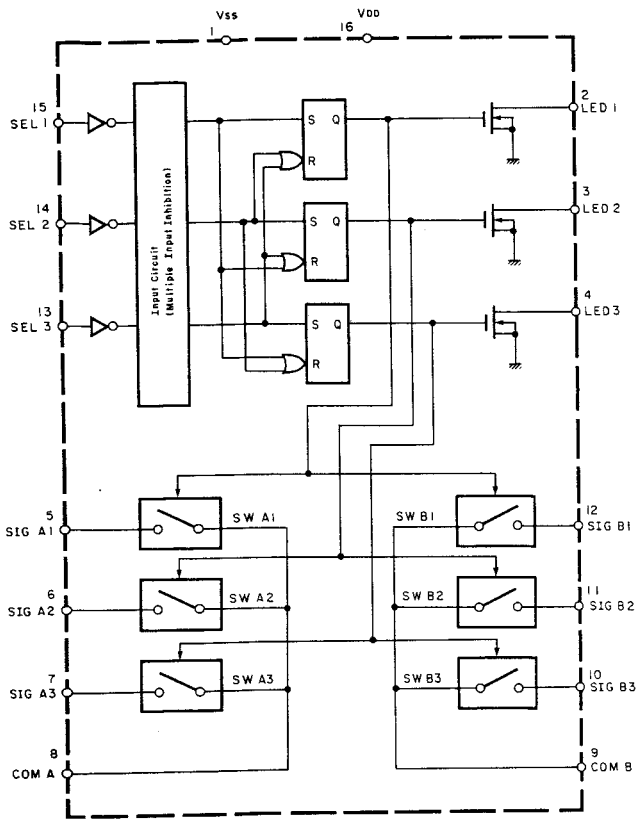
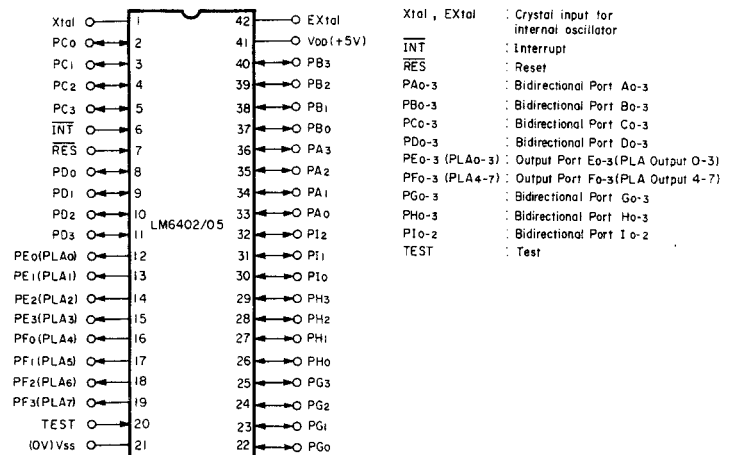
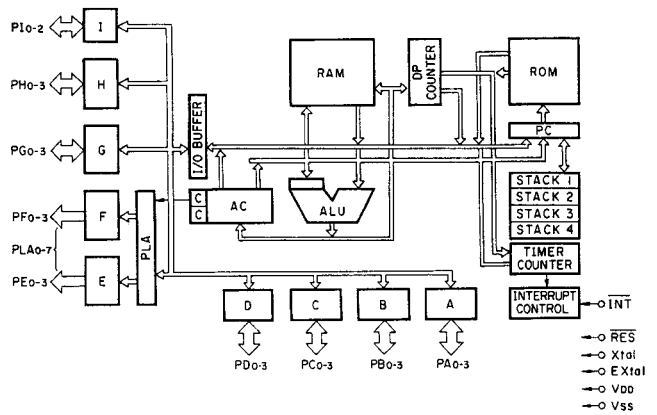


Fig. 7.2.6 Analog Switch Selector TC9145P



(TOP VIEW)

Fig. 7.2.8 4-Bit Micro-processor LM6402G

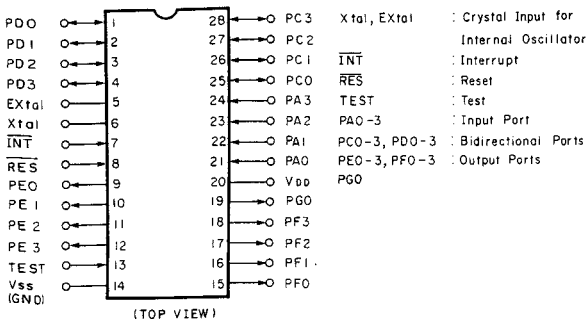
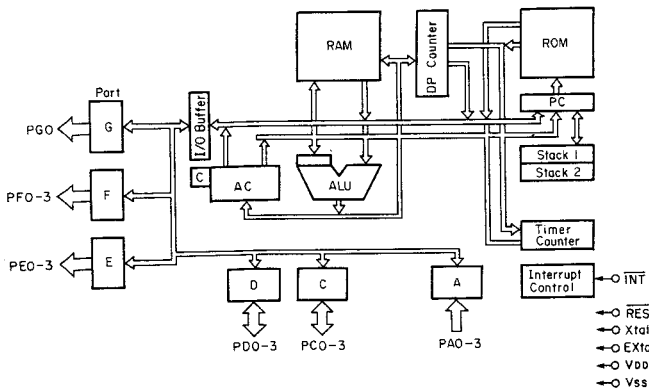


Fig. 7.2.7 4-Bit Micro-processor LM6416E-106

7. SCHEMATIC DIAGRAMS

7.1. Attention to Servicemen

(1) Caution

- (a) If a part is in need of removing (or replacing) for service, it should be remounted (or replaced with specified parts) by the same methods as before after servicing.
- (b) The appliance should be used only specified parts for preventing a risk of fire and electric shock and maintaining the characteristics.
- (c) Before returning the repaired appliance to a customer, check to insure that the exposed part is accurately insulated from the Power Supply by measuring the leakage current or the insulation resistance between them.

(2) Parts Replacement

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

- (a) Power Supply Circuit
 - Power Cord
 - Power Transformer: T1
- (b) Power Switch P.C.B. Ass'y
 - Power Switch: SW1
 - Spark Killer: M2
- (c) Fuse P.C.B. Ass'y
 - Fuses: F401, 402, 403
- (d) DC Power Supply P.C.B. Ass'y
 - Transistors: Q402, 406, 413, 416
 - Diode Bridges: D401, 404
- (e) Logic P.C.B. Ass'y
 - Transistors: Q608, 609, 611, 612, 624, 625
 - Fail Safe Type Resistors: R660, 676, 960, 961, 963
- (f) Main P.C.B. Ass'y
 - Fail Safe Type Resistors: R150, 151, 250, 251, 553, 554, 653, 654

7.2. IC Block Diagrams

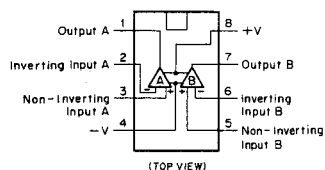


Fig. 7.2.1 Operational Amp. IC 4558D, 4558DD, 4560D, 2041DD, 2043DD, 072, 072DE

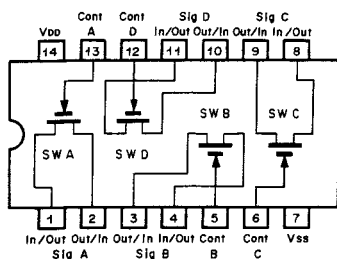


Fig. 7.2.2 Bilateral Switch C-MOS IC μ PC4556C

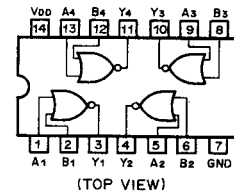


Fig. 7.2.3 NOR Gate C-MOS IC μ PD4001BC

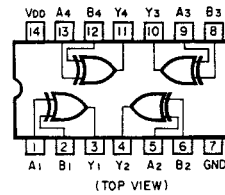


Fig. 7.2.4 Exclusive OR Gate C-MOS IC μ PD4030BC

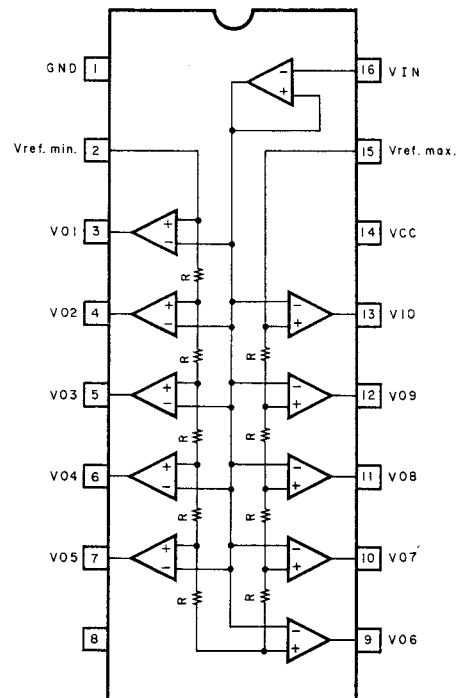


Fig. 7.2.5 Level Meter Driver TA7612AP

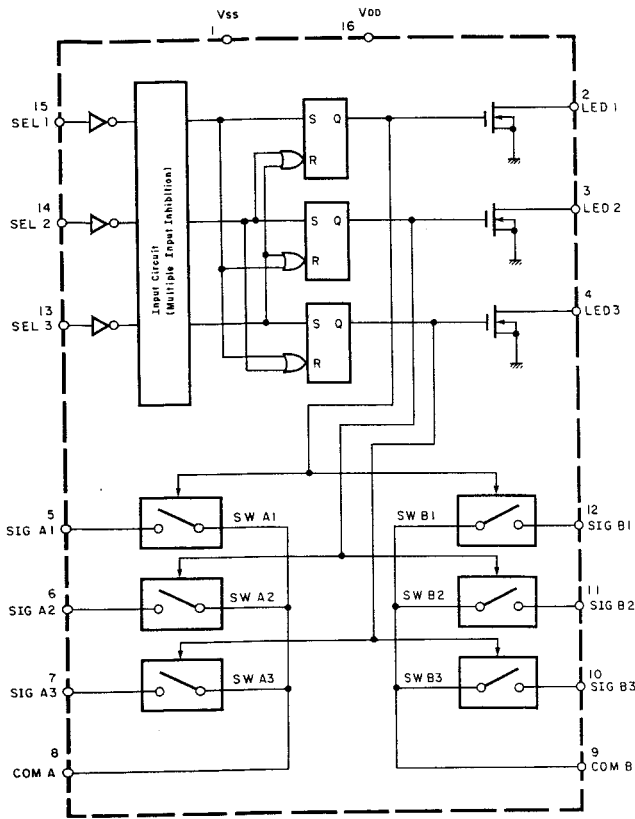


Fig. 7.2.6 Analog Switch Selector TC9145P

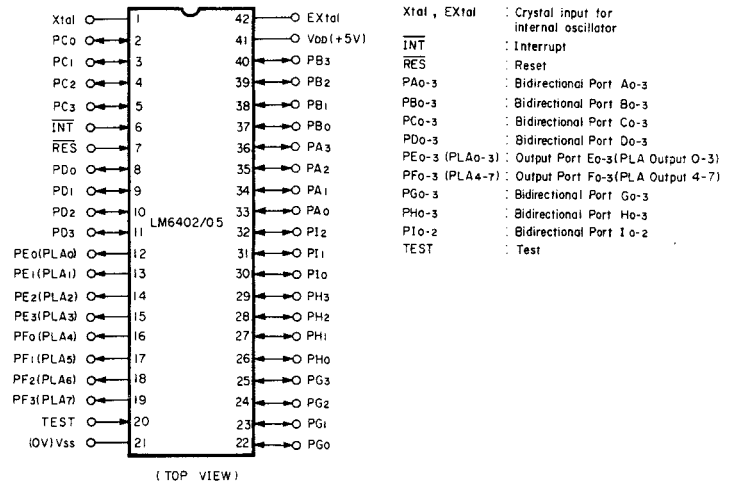
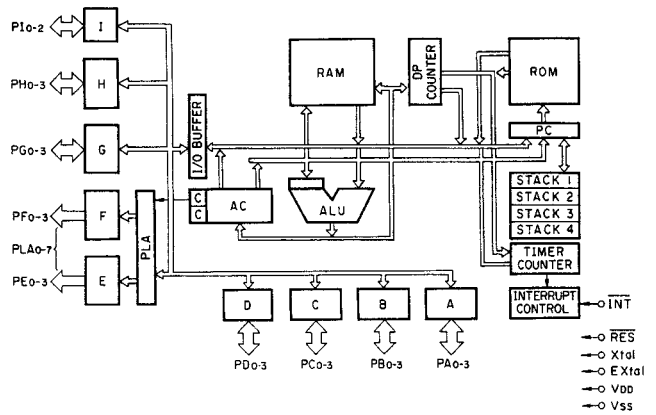


Fig. 7.2.8 4-Bit Micro-processor LM6402G

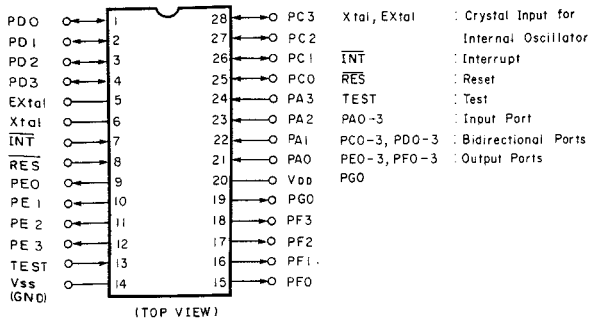
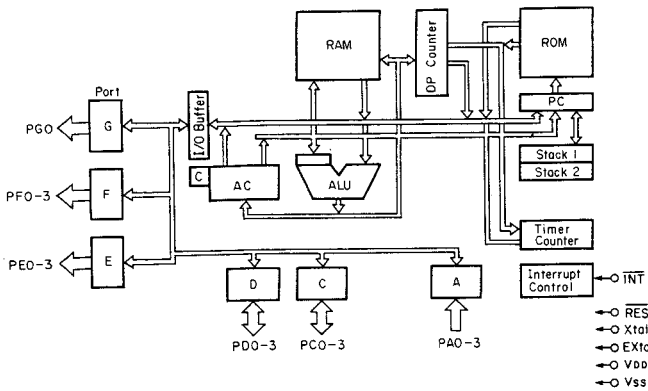


Fig. 7.2.7 4-Bit Micro-processor LM6416E-106

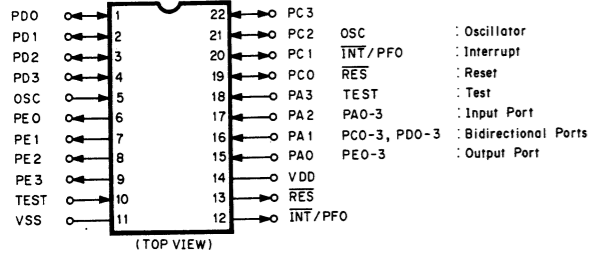
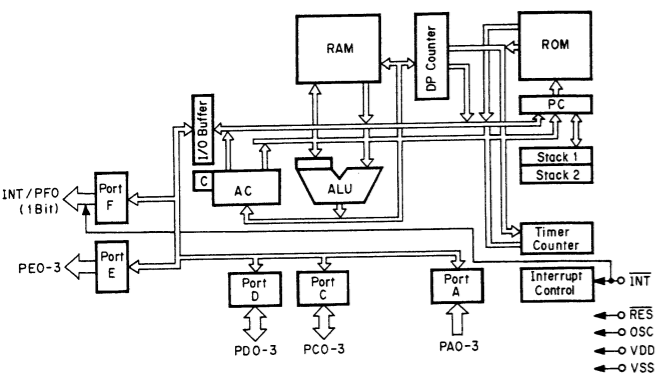
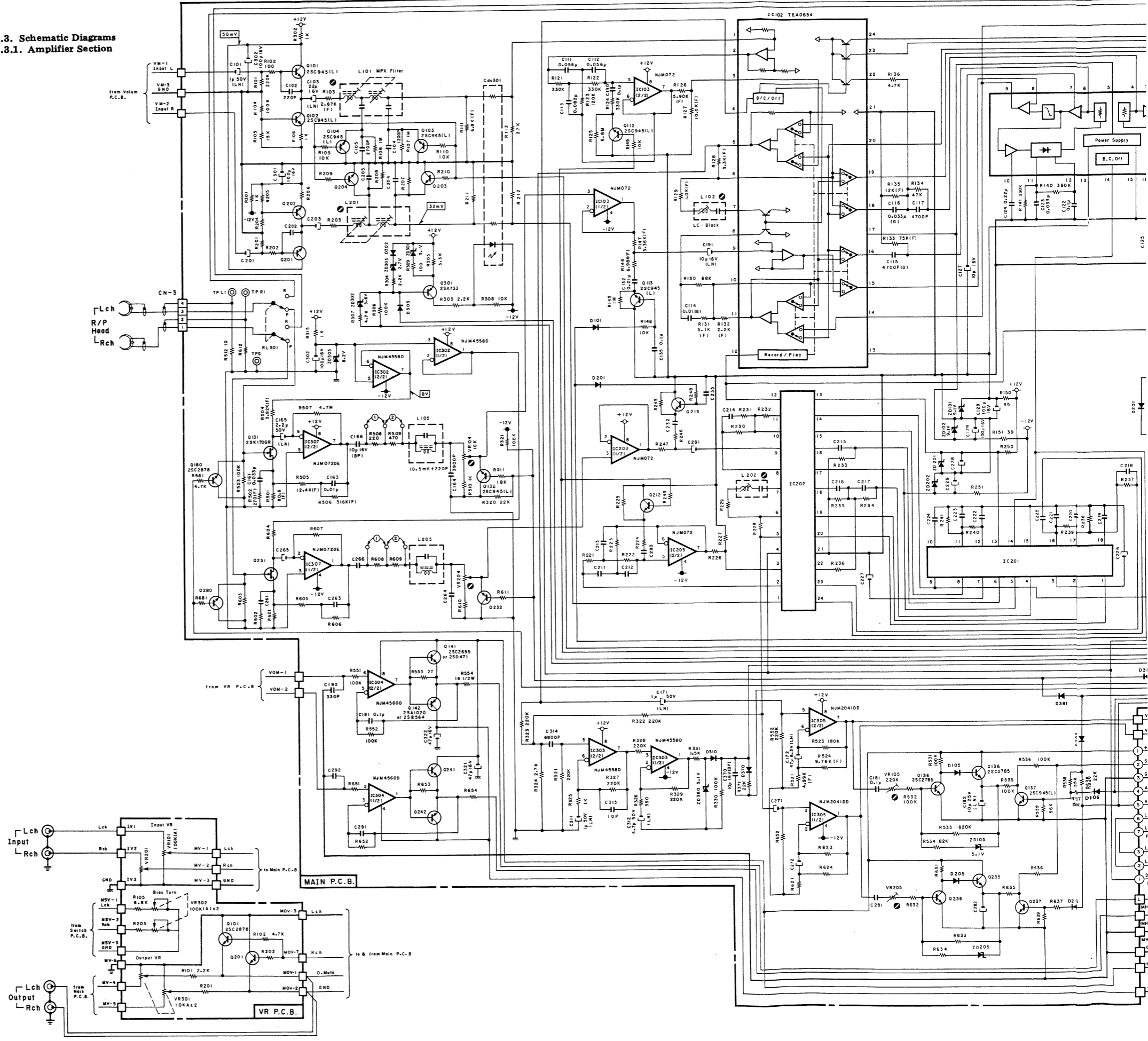
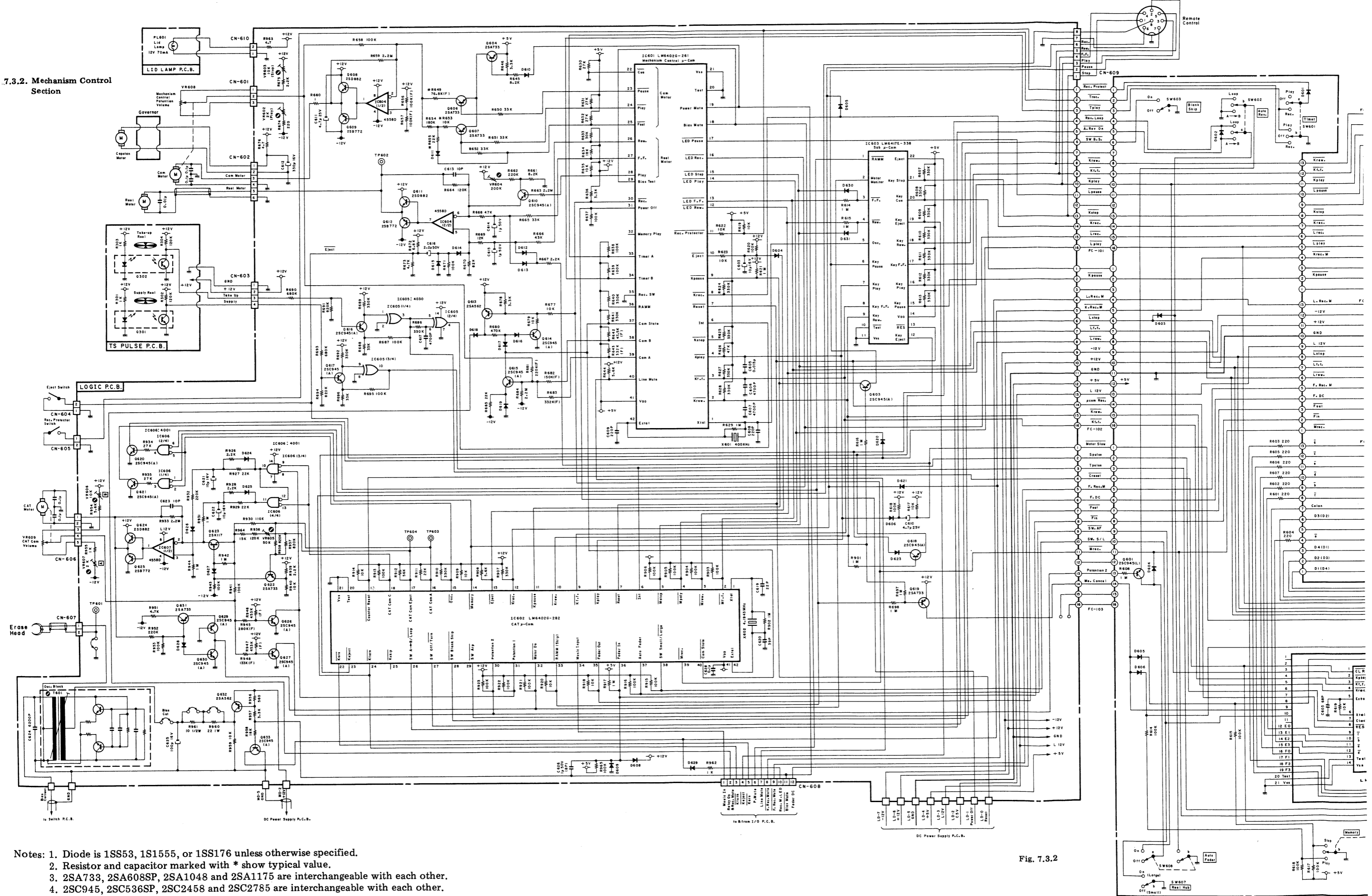


Fig. 7.2.9 4-Bit Micro-processor LM6417E-338

7.3. Schematic Diagrams
7.3.1. Amplifier Section



7.3.2. Mechanism Control Section



- Notes:
1. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.
 2. Resistor and capacitor marked with * show typical value.
 3. 2SA733, 2SA608SP, 2SA1048 and 2SA1175 are interchangeable with each other.
 4. 2SC945, 2SC536SP, 2SC2458 and 2SC2785 are interchangeable with each other.

Fig. 7.3.2

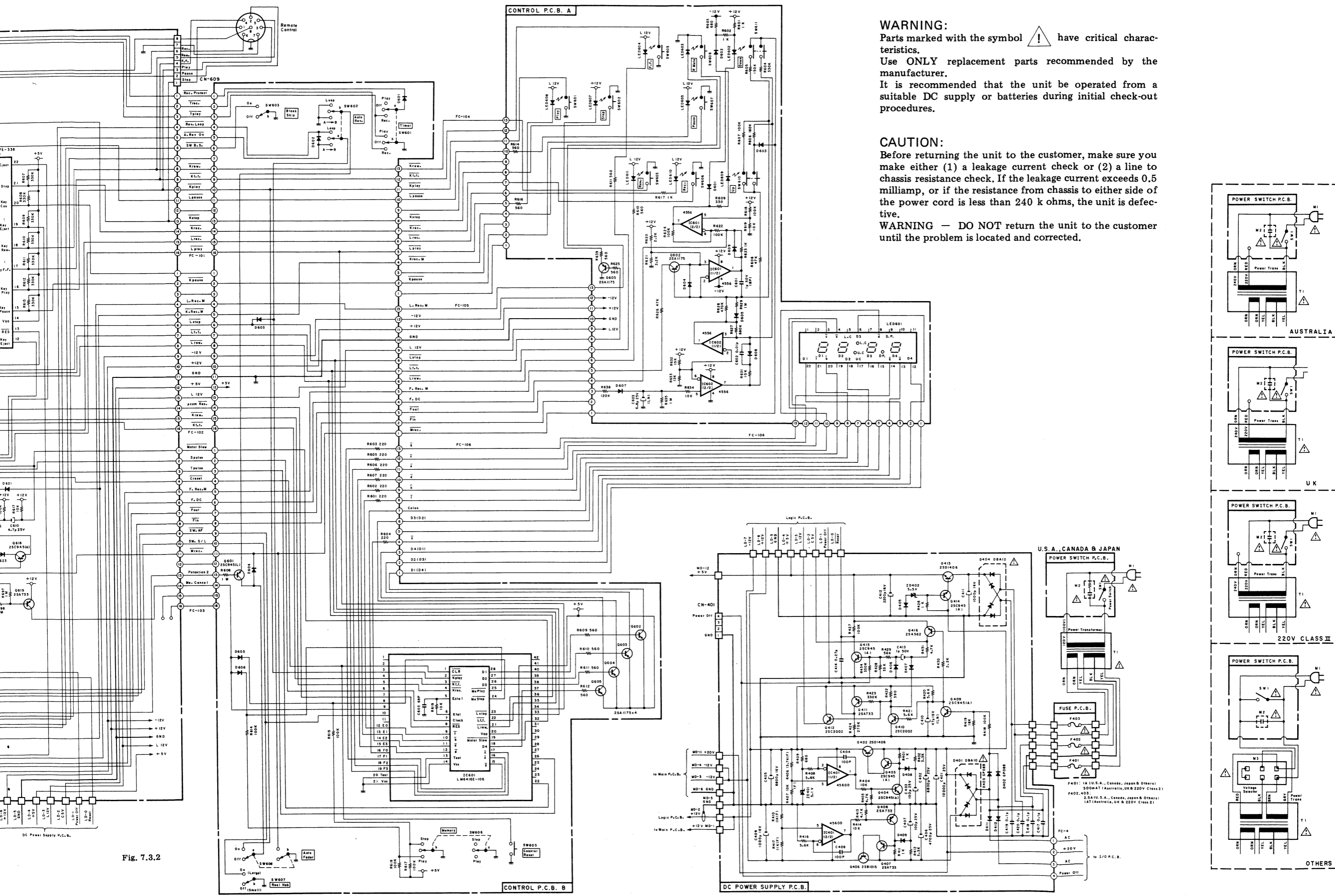

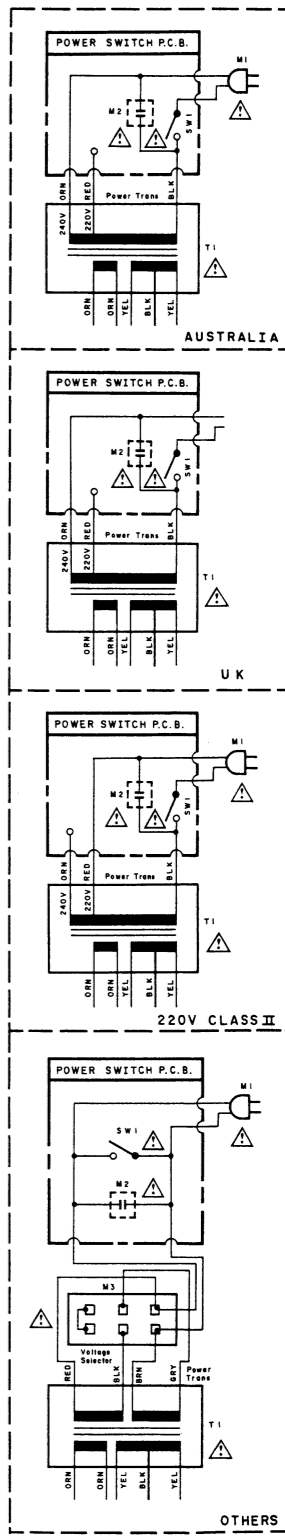


Fig. 7.3.2

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

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



8. TIMING CHART AND EQ. AMP. FREQUENCY RESPONSE

8.1. Timing Chart

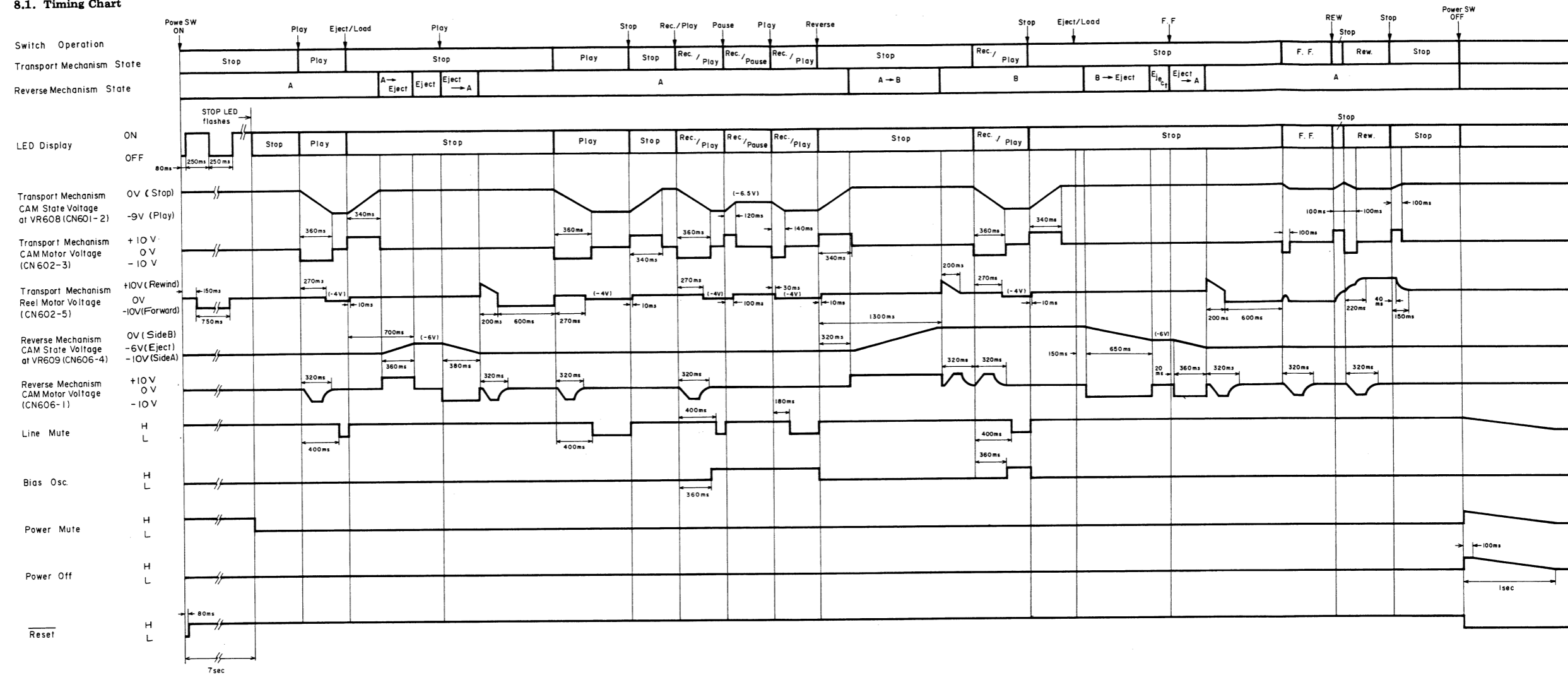


Fig. 8.1

8.2. Eq. Amp. Frequency Response

(1) Playback Frequency Response

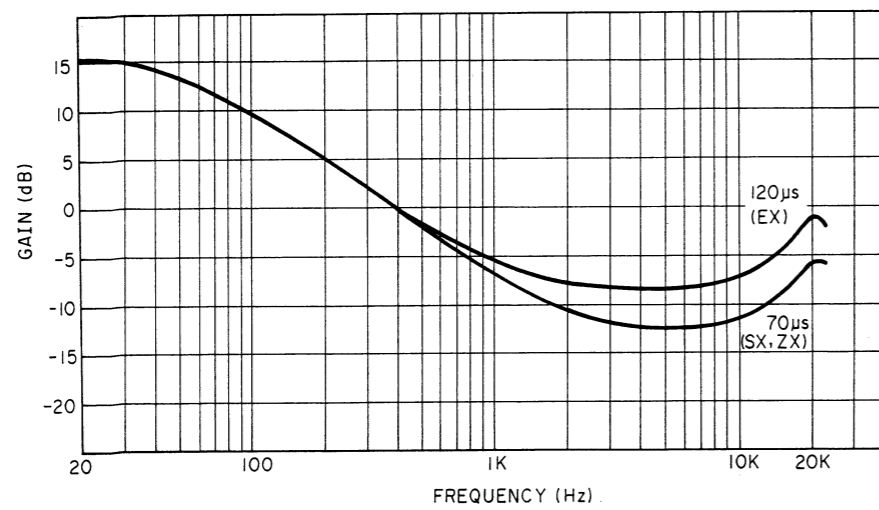


Fig. 8.2.1

(2) Record Current Frequency Response

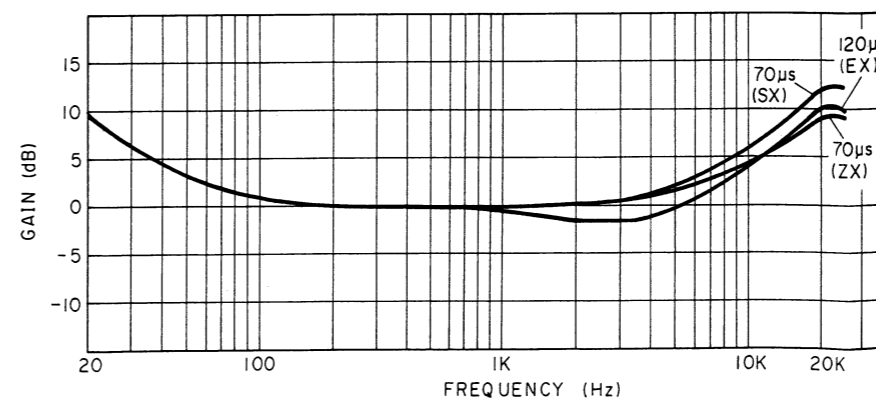


Fig. 8.2.2

9. WIRING DIAGRAM

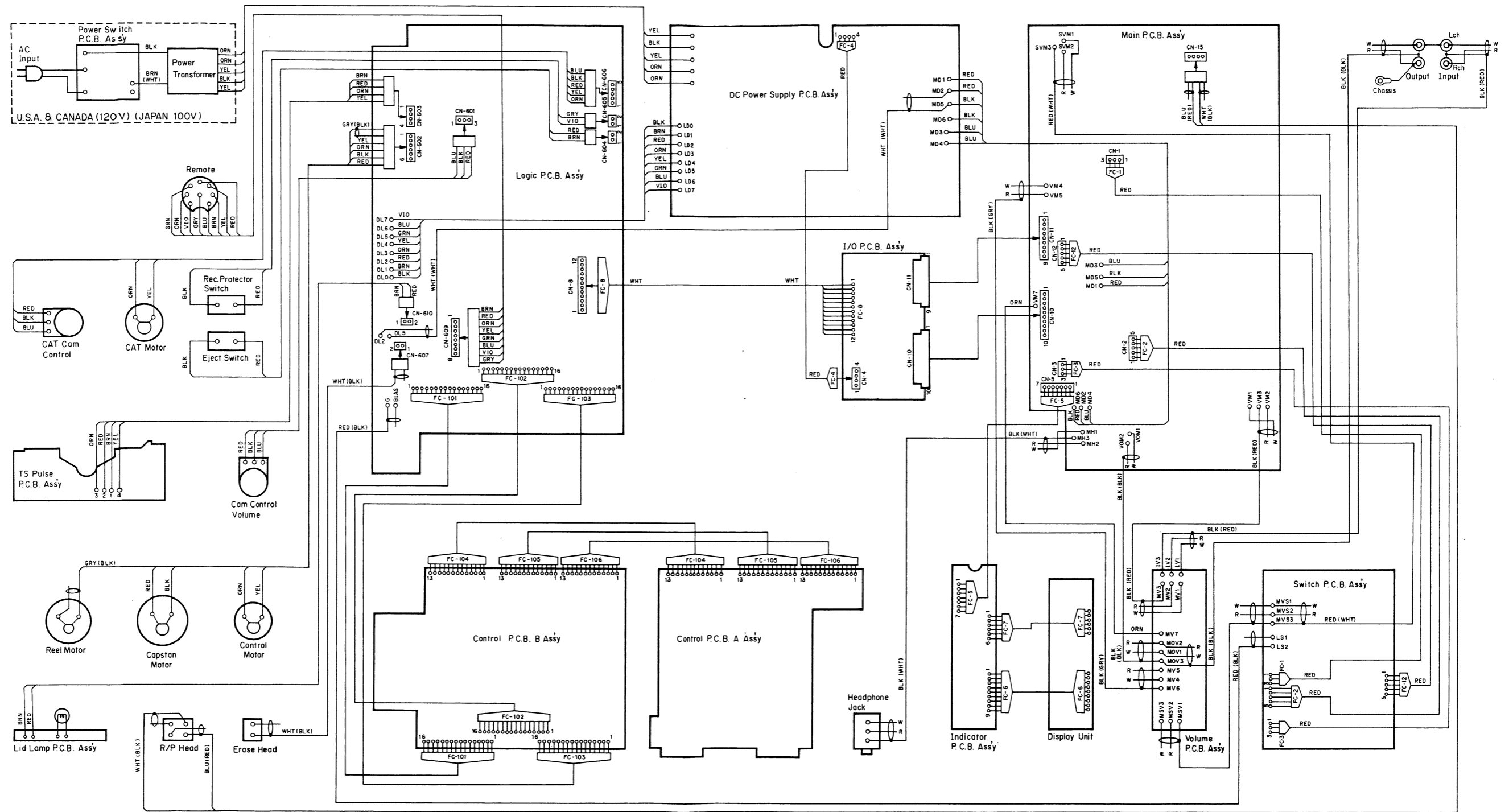


Fig. 9.1

Notes: 1 Table of wire colors

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

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

10. BLOCK DIAGRAMS

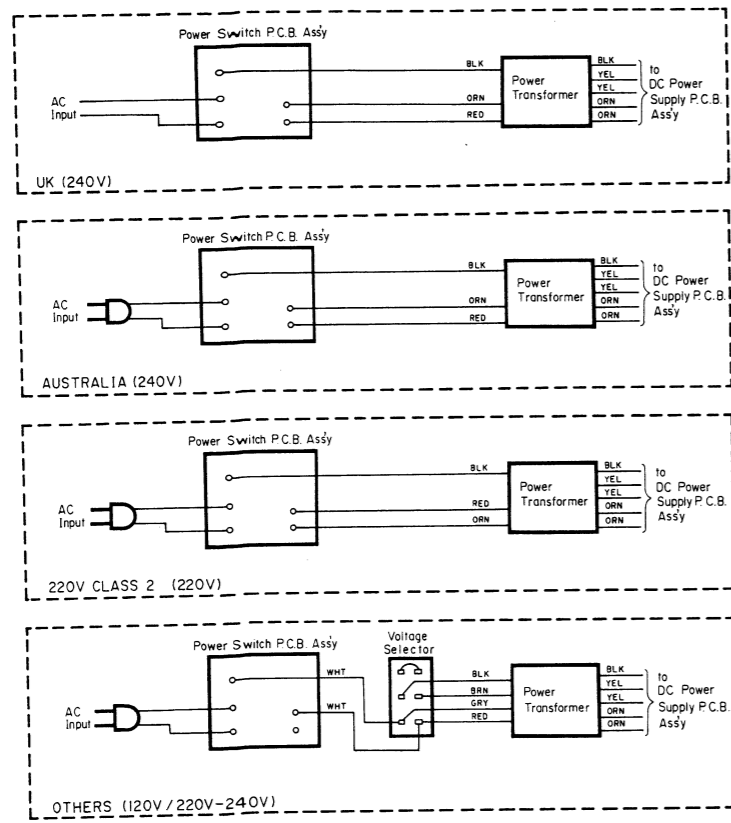


Fig. 9.2

10.1. Amplifier Section

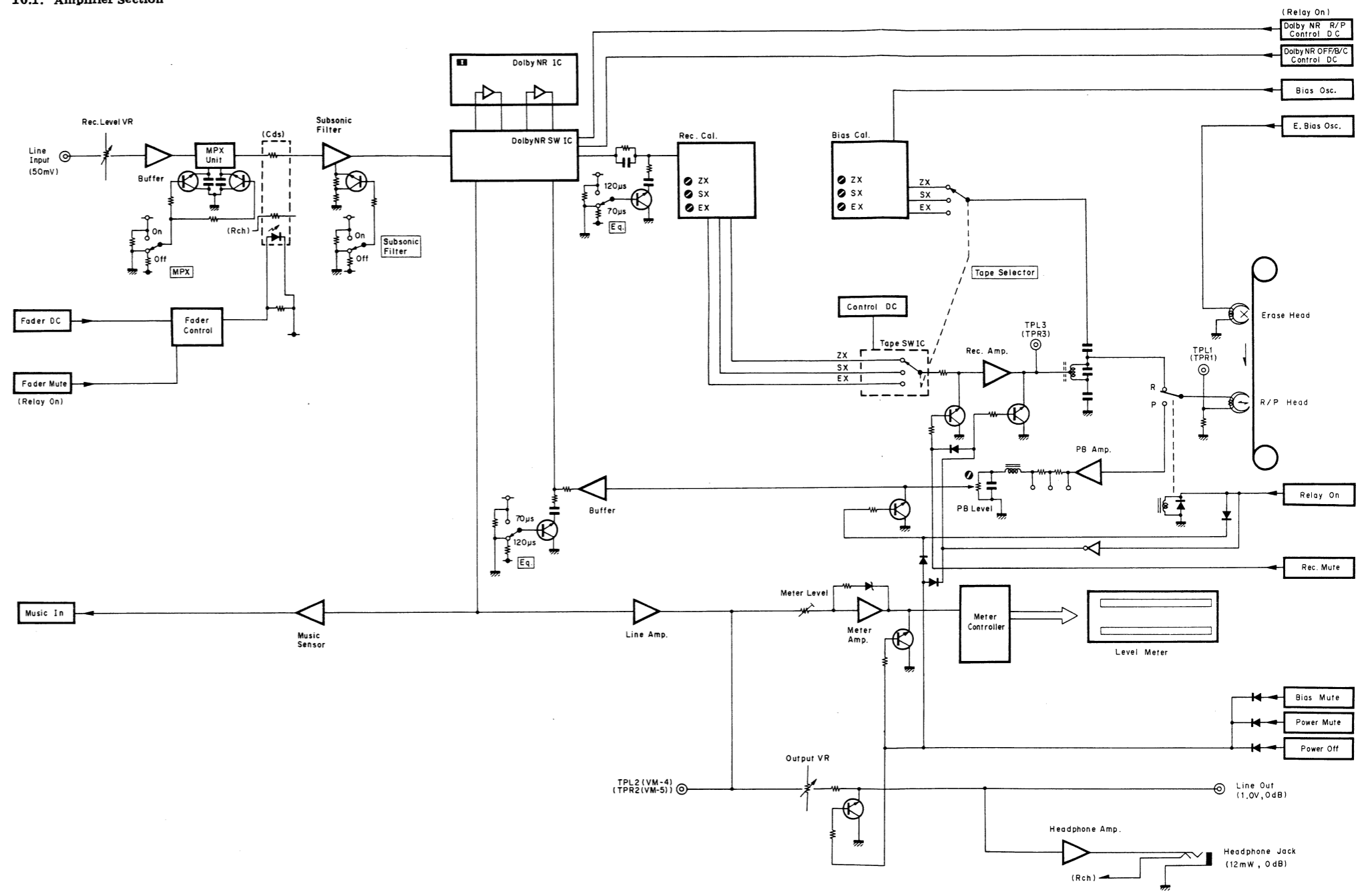


Fig. 10.1

10. BLOCK DIAGRAMS

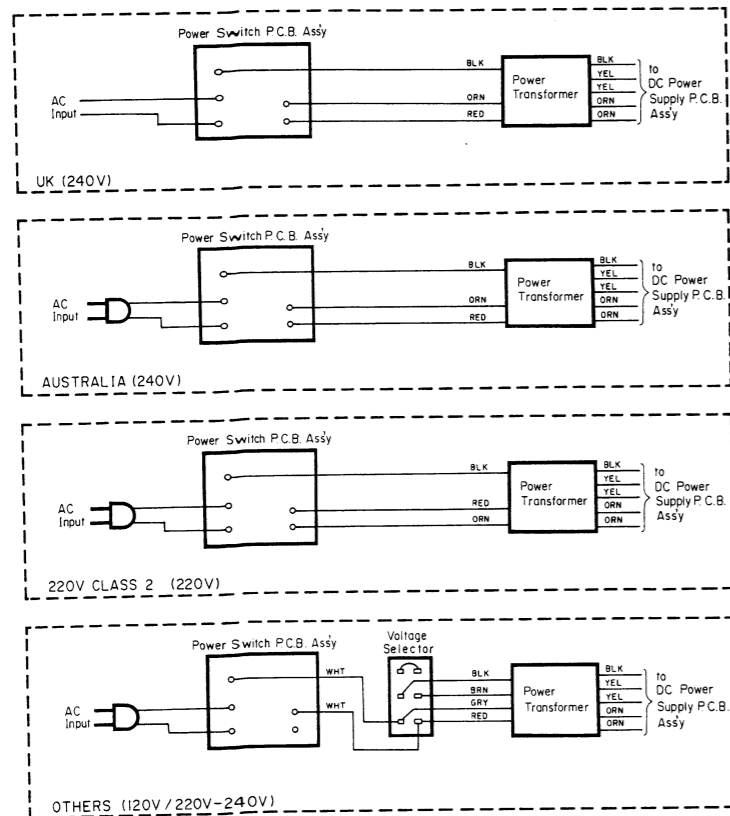


Fig. 9.2

10.1. Amplifier Section

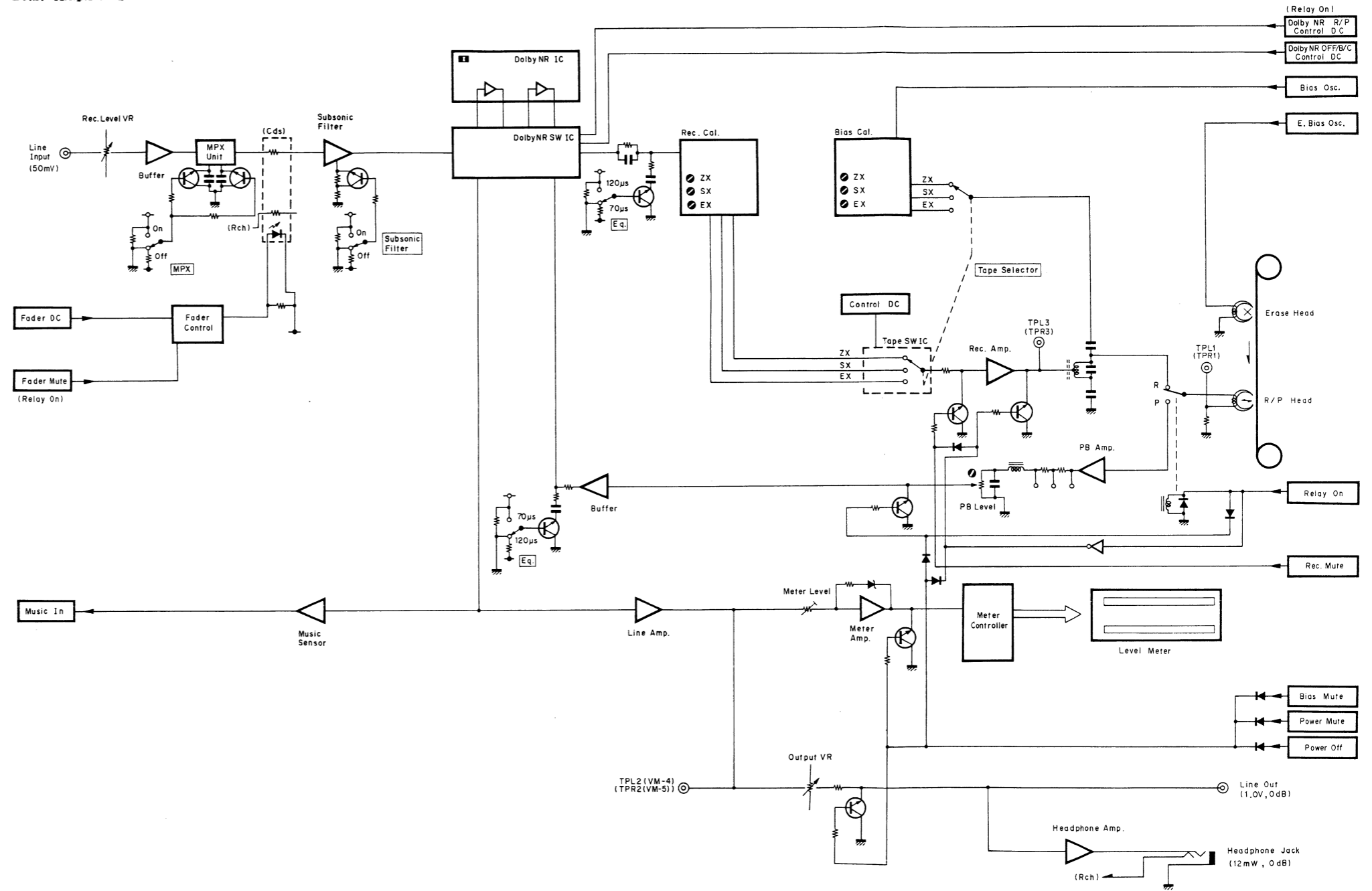


Fig. 10.1

10.2. Mechanism Control Section

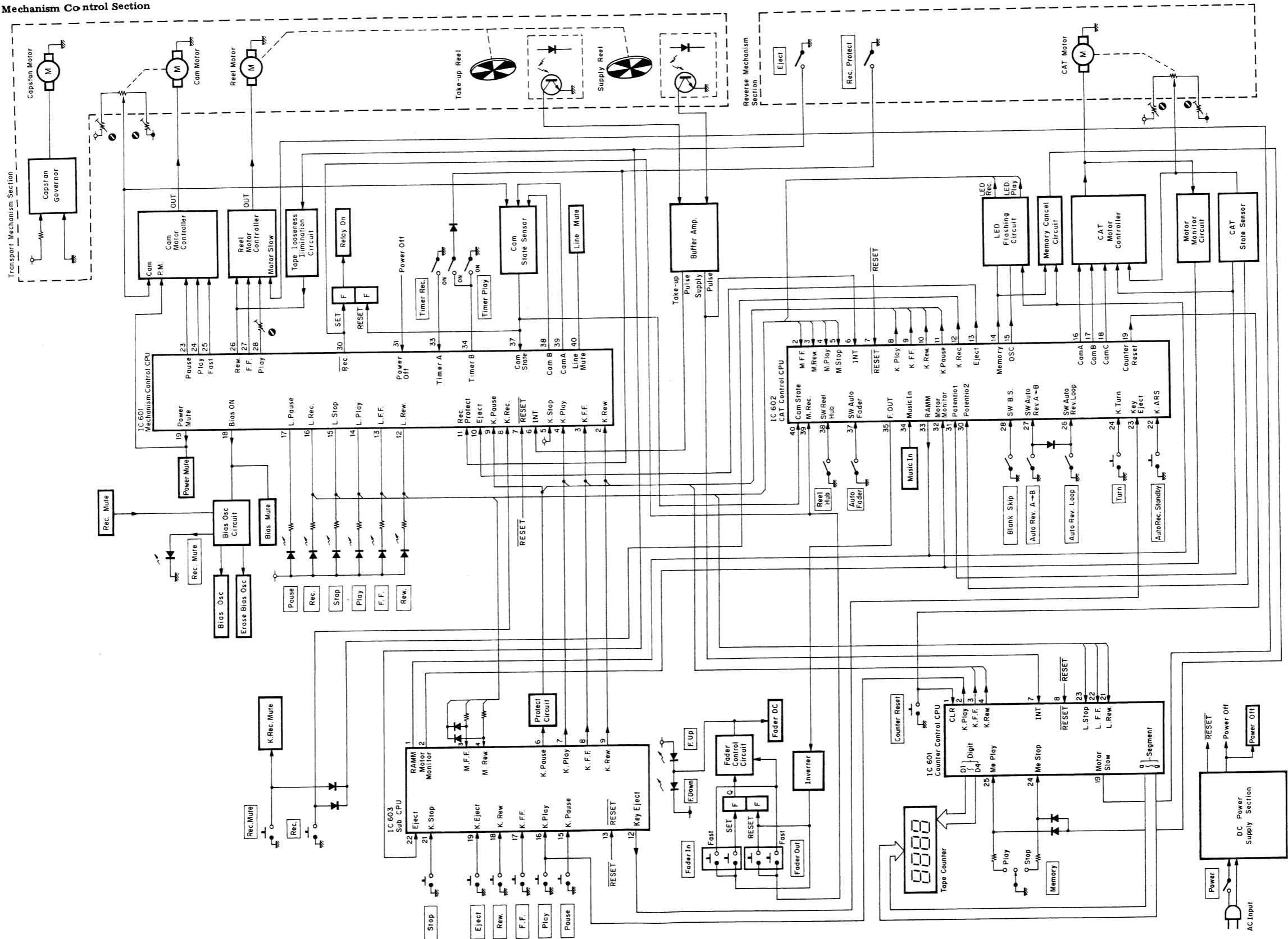


Fig. 10.2

11. SPECIFICATIONS

Track Configuration	4 Tracks/2-Channel Stereo (auto-reverse recording and playback)
Heads	2 (Erase Head x 1, Record/Playback Head x 1)
Motors (Tape Transport)	PLL Servo Motor (Capstan Drive) x 1 DC Motor (Reel Drive) x 1
Power Source	100, 120, 120/220-240, 220 or 240 V AC; 50/60 Hz (According to country of sale)
Power Consumption	33 W max.
Tape Speed	1-7/8 ips. (4.8 cm/sec.)
Wow and Flutter	Less than 0.04% WTD RMS Less than 0.08% WTD Peak
Frequency Response	20 – 20,000 Hz (recording level –20 dB)
Signal to Noise Ratio	Dolby C-Type NR on <70 μ s, ZX tape> Better than 68 dB (400 Hz, 3% THD, IHF A-WTD RMS) Dolby B-Type NR on <70 μ s, ZX tape> Better than 62 dB (400 Hz, 3% THD, IHF A-WTD RMS)
Total Harmonic Distortion	Less than 1.0% (400 Hz, 0 dB, ZX, EXII tape) Less than 1.2% (400 Hz, 0 dB, SX tape)
Erasure	Better than 60 dB (100 Hz, 0 dB)
Separation	Better than 36 dB (1 kHz, 0 dB)
Crosstalk	Better than 60 dB (1 kHz, 0 dB)
Bias Frequency	105 kHz
Input (Line)	50 mV/70 k Ω
Output (Line)	1.0 V (400 Hz, 0 dB, output level control at max.) 2.2 k Ω
(Headphones)	12 mW (400 Hz, 0 dB, output level control at max.) 8 Ω load
Fast-Winding Time	Approx. 60 seconds (with C-60 cassette)
Dimensions	450 (W) x 144 (H) x 300 (D) millimeters 17-3/4 (W) x 5-11/16 (H) x 11-13/16 (D) inches
Approximate Weight	10 kg 22 lb. 1 oz.

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