

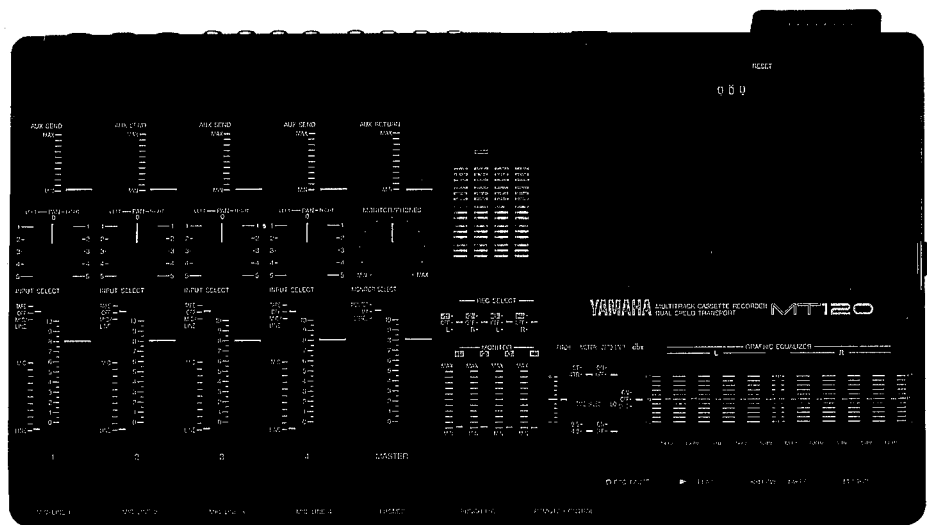
# MULTITRACK CASSETTE RECORDER

# MT120

## SERVICE MANUAL



REMOTE CONTROLLER  
RCM1



MULTITRACK CASSETTE RECORDER MT120

### ■ CONTENTS

|                              |    |
|------------------------------|----|
| SPECIFICATIONS .....         | 2  |
| PANEL LAYOUT .....           | 3  |
| CIRCUIT BOARD LAYOUT .....   | 5  |
| WIRING .....                 | 6  |
| BLOCK DIAGRAM .....          | 8  |
| DISASSEMBLY PROCEDURE .....  | 10 |
| IC BLOCK DIAGRAM .....       | 13 |
| CIRCUIT BOARDS .....         | 14 |
| REMOTE CONTROLLER RCM1 ..... | 21 |
| ADJUSTMENTS .....            | 22 |
| PARTS LIST .....             |    |

## IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

**WARNING:** Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

**IMPORTANT:** The presentation or sale of this manual to any individual or firm does not constitute authorization, certification, recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and changes in specification are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

**WARNING:** Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

**IMPORTANT:** Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

## WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

**DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHAT SO EVER!**

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

## ■ SPECIFICATIONS

### TAPE TRANSPORT

|               |   |
|---------------|---|
| Tape Type     | <i>Chrome (70 microsec. EQ)</i>   |
| Heads         | <i>4-channel Permalloy rec/play head<br/>4-channel ferrite erase head</i> |
| Tape Speed    | <i>4.8 cm/sec., 9.5 cm/sec.</i>   |
| Pitch Control | <i>Approx. <math>\pm 10\%</math></i>                                      |
| Wow & Flutter | <i>Less than 0.12% WRMS</i>   |
| Rewind Time   | <i>Approx. 110 sec., for C-60 tape</i>                                    |
| Motor         | <i>DC servo motor</i>   |

### CONNECTORS

|                   |                    |  |
|-------------------|--------------------|--|
| Input 1 — 4       | Input Impedance    | <i>10 k-ohms</i>                                 |
|                   | Rated Input Level  | <i>-10 dB to -50 dB (fader nominal)</i>          |
|                   | Max. Input Level   | <i>+10 dB (gain control min.)</i>                |
|                   | Min. Input Level   | <i>-56 dB (gain control, fader max.)</i>         |
| AUX RETURN L & R  | Input Impedance    | <i>10 k-ohms</i>                                 |
|                   | Rated Input Level  | <i>-10 dB (AUX RETURN level control nominal)</i> |
|                   | Min. Input Level   | <i>-16 dB (AUX RETURN level control max.)</i>    |
| STEREO OUT L & R  | Output Impedance   | <i>1 k-ohm</i>                                   |
|                   | Load Impedance     | <i>Greater than 10 k-ohms</i>                    |
|                   | Rated Output Level | <i>-10 dB into 50 k-ohms</i>                     |
| PHONES            | Load Impedance     | <i>8 to 40 ohms</i>                              |
|                   | Max. Output Level  | <i>45 mW + 45 mW/40 ohms</i>                     |
| TAPE OUT 1 — 4    | Output Impedance   | <i>1 k-ohm</i>                                   |
|                   | Load Impedance     | <i>Greater than 10 k-ohms</i>                    |
|                   | Rated Output Level | <i>-10 dB into 50 k-ohms</i>                     |
| AUX SEND          | Output Impedance   | <i>1 k-ohm</i>                                   |
|                   | Load Impedance     | <i>Greater than 10 k-ohms</i>                    |
|                   | Rated Output Level | <i>-10 dB into 50 k-ohms</i>                     |
| MONITOR OUT L & R | Output Impedance   | <i>1 k-ohm</i>                                   |
|                   | Load Impedance     | <i>Greater than 10 k-ohms</i>                    |
|                   | Rated Output Level | <i>-10 dB into 50 k-ohms</i>                     |

### ELECTRICAL SPECIFICATIONS

|                             |  |
|-----------------------------|--|
| Frequency Response (NR OUT) | <i>40 Hz to 18 kHz, <math>\pm 3</math> dB at 9.5 cm/sec.<br/>40 Hz to 13 kHz, <math>\pm 3</math> dB at 4.8 cm/sec.</i> |
| S/N ratio (3% THD Level)    | <i>85 dB, dbx ON, IHF-A</i>  |
| Distortion                  | <i>1.0% at 315 Hz, dbx ON, -10 dB Rec. Level</i>   |
| Channel Separation          | <i>Greater than 65 dB at 1 kHz, dbx ON, (B.P.F)</i>  |
| Erasure Ratio               | <i>Greater than 70 dB at 1 kHz, dbx ON</i>   |
| Noise Reduction             | <i>dbx.*</i>   |
| Graphic Equalizer           | <i>100, 400, 1k, 5k, 10kHz (<math>\pm 10</math> dB), Q = 0.7</i>   |

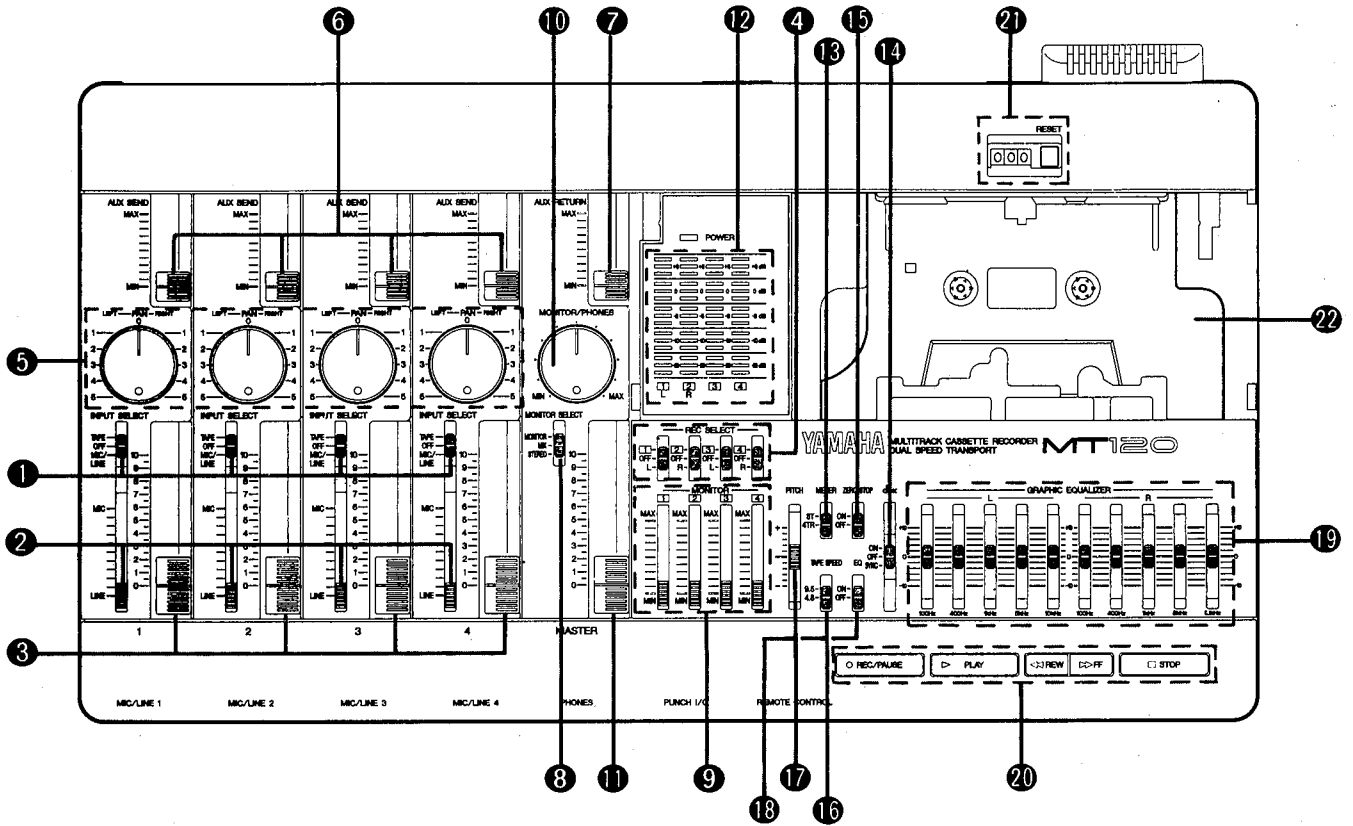
### GENERAL

|                    |   |
|--------------------|---|
| Power Requirements | <i>U.S. &amp; Canadian Models: 120 V AC, 60 Hz<br/>UK Model: 240 V AC, 50 Hz<br/>General Model: 230 V AC, 50 Hz</i> |
| Power Consumption  | <i>16 W</i>   |
| Dimensions (WxHxD) | <i>410 x 80.8 x 237 mm (16-1/8" x 3-3/16" x 9-5/16")</i>  |
| Weight             | <i>2.6 kg (5 lbs 12 oz)</i>   |

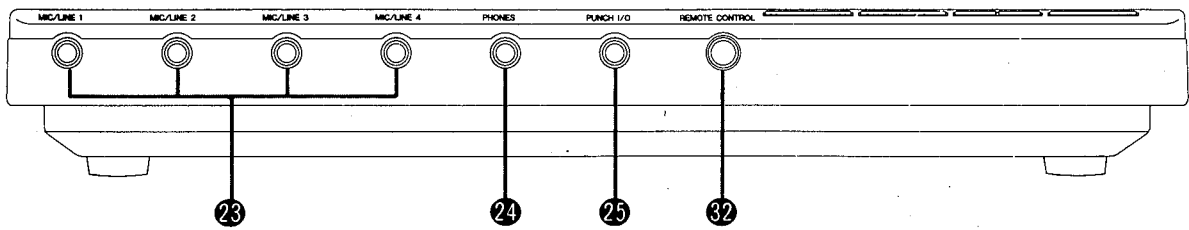
\* *dbx is a trademark of dbx Incorporated.  
0 dB = 0.775 Vr.m.s.*

# PANEL LAYOUT

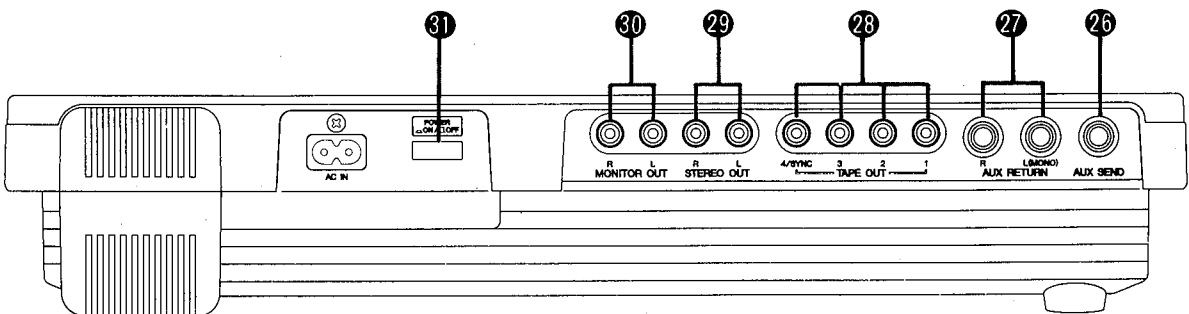
## Control Panel



## Front Panel

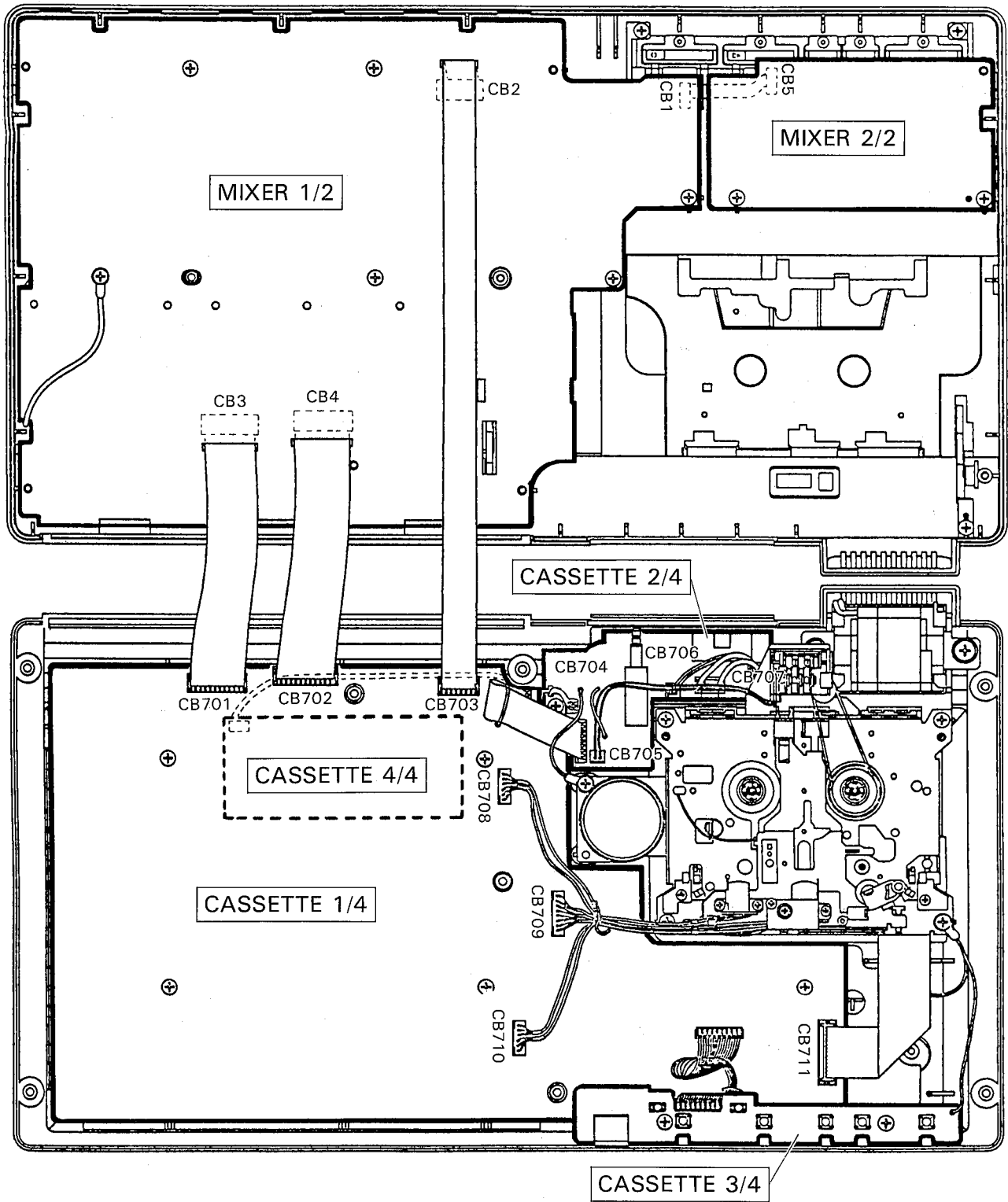


## Rear Panel



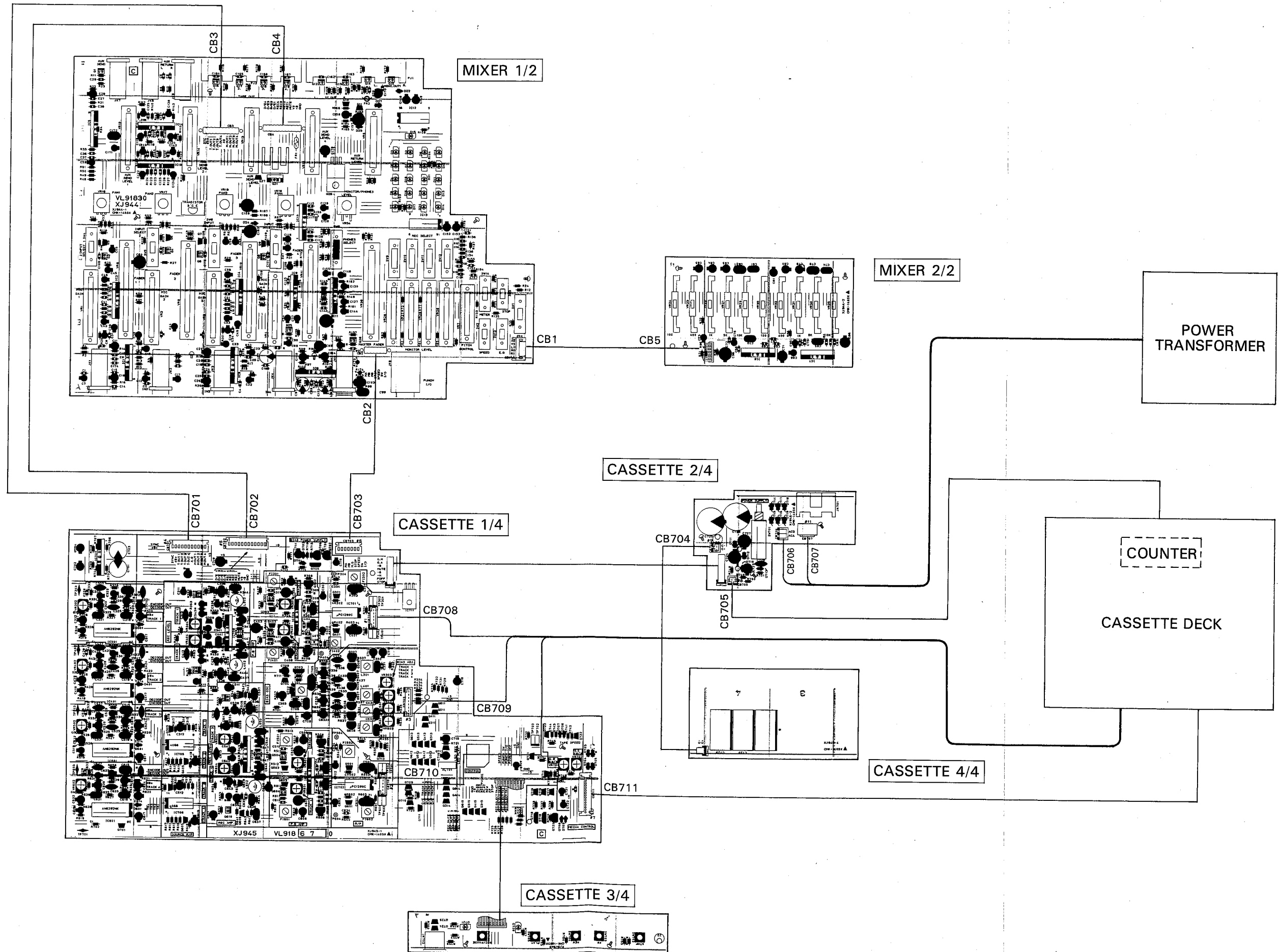
- ① INPUT SELECT Switches  
(TAPE, OFF, MIC/LINE)
- ② MIC/LINE Gain Controls
- ③ Input Faders
- ④ REC SELECT Switches
- ⑤ PAN Controls
- ⑥ AUX SEND Controls
- ⑦ AUX RETURN Control
- ⑧ MONITOR SELECT Switch  
(MONITOR, MIX, STEREO)
- ⑨ MONITOR Controls 1–4
- ⑩ MONITOR/PHONES Control
- ⑪ MASTER Fader
- ⑫ LED Peak Meters
- ⑬ METER Switch
- ⑭ dbx ON/OFF Switch
- ⑮ ZERO STOP Switch
- ⑯ TAPE SPEED Switch
- ⑰ PITCH Control
- ⑱ EQ Switch
- ⑲ Graphic Equalizer
- ⑳ Transport Controls  
(REC/PAUSE Button, REC/PAUSE Indicator,  
PLAY Button, PLAY Indicator, REW (REWIND),  
FF (FAST FORWARD), STOP)
- ㉑ Tape Counter and RESET Button
- ㉒ Cassette Compartment
- ㉓ MIC/LINE Input Jacks 1–4
- ㉔ PHONES Jack
- ㉕ PUNCH I/O Footswitch Jack
- ㉖ AUX SEND Jack
- ㉗ AUX RETURN R and L (MONO) Jacks
- ㉘ TAPE OUT Jacks 1–4
- ㉙ STEREO OUT R and L Jacks
- ㉚ MONITOR OUT R and L Jacks
- ㉛ POWER Switch
- ㉜ REMOTE CONTROL Connector

# CIRCUIT BOARD LAYOUT

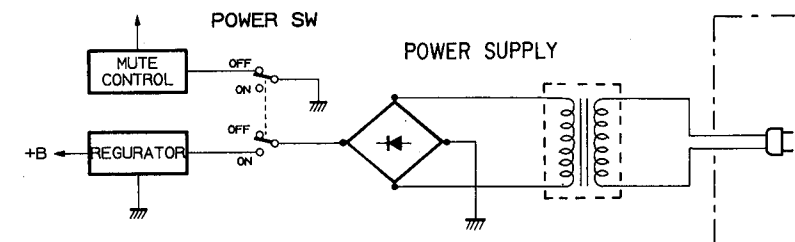
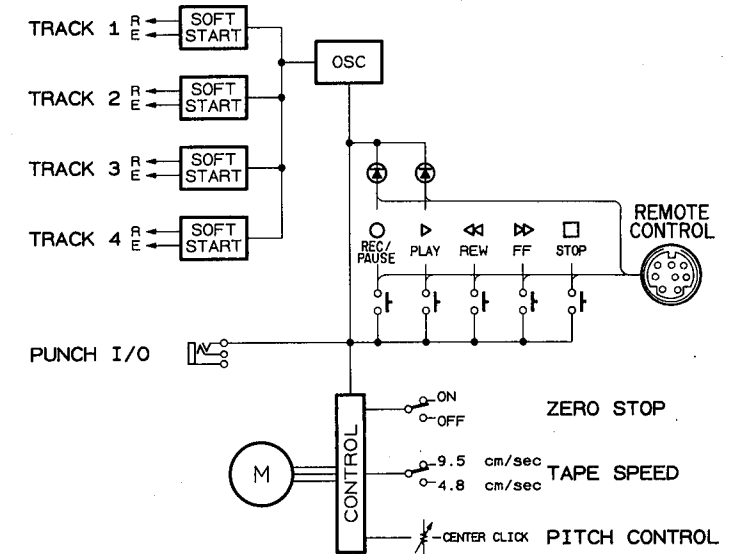
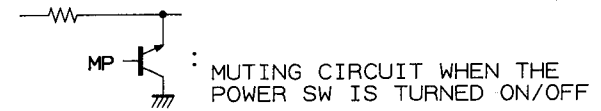
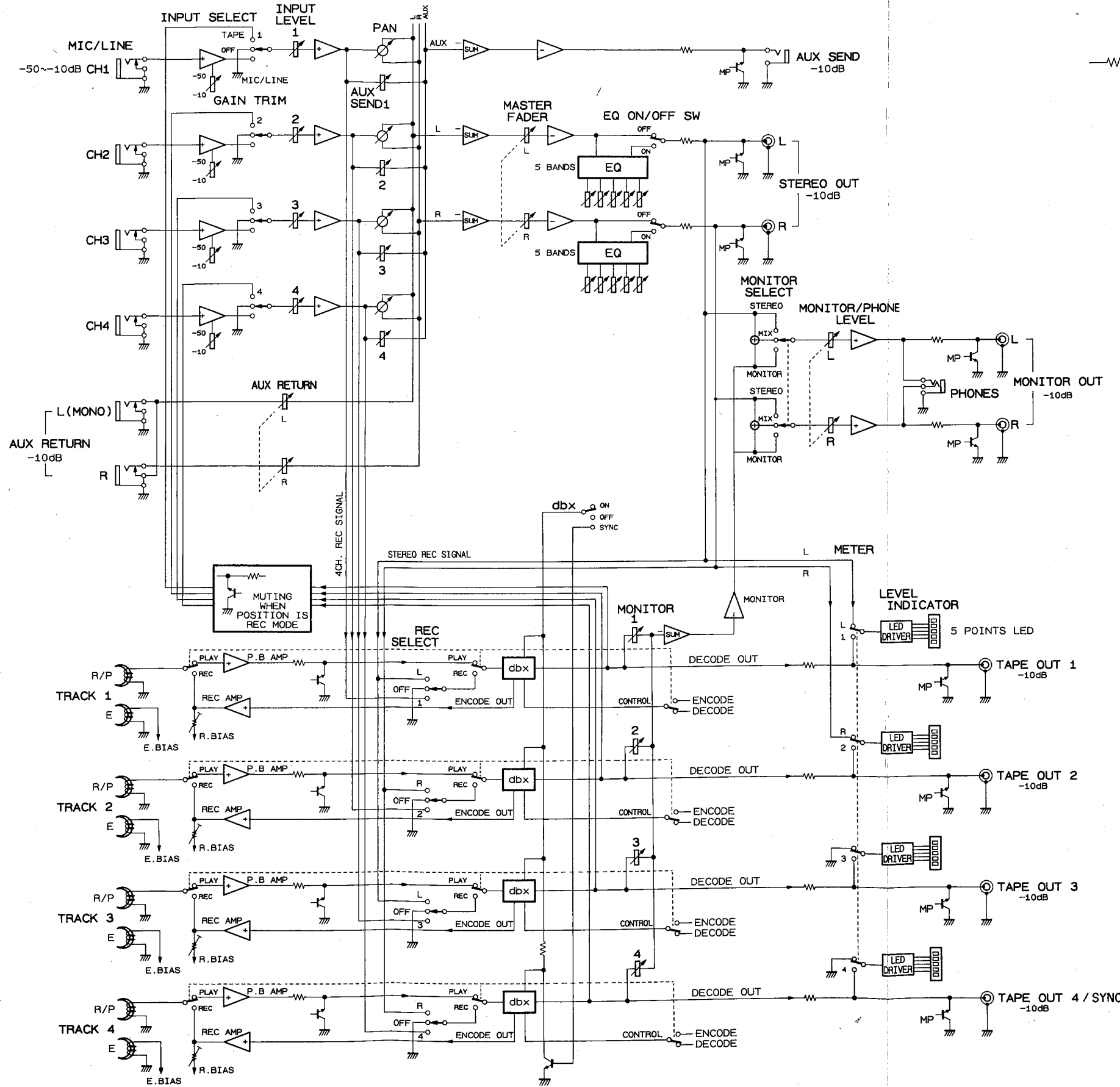


MT120

WIRING



BLOCK DIAGRAM



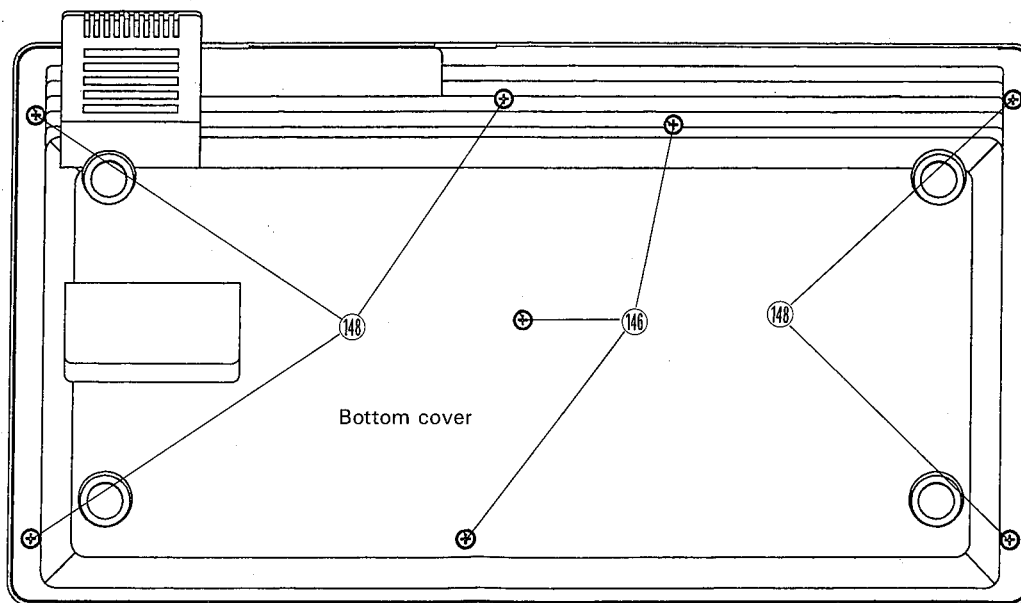


## DISASSEMBLY PROCEDURE

### 1. Bottom Cover Removal

1-1 Remove the three (3) screws marked as (146) in the figure and five (5) screws marked (148), then the bottom cover can be removed. (Fig. 1)

\* The MIXER 1/2 and 2/2 circuit boards are located on the panel unit. The CASSETTE 1/4, 2/4, 3/4 and 4/4 circuit boards, cassette deck and power transformer are located on the bottom cover.

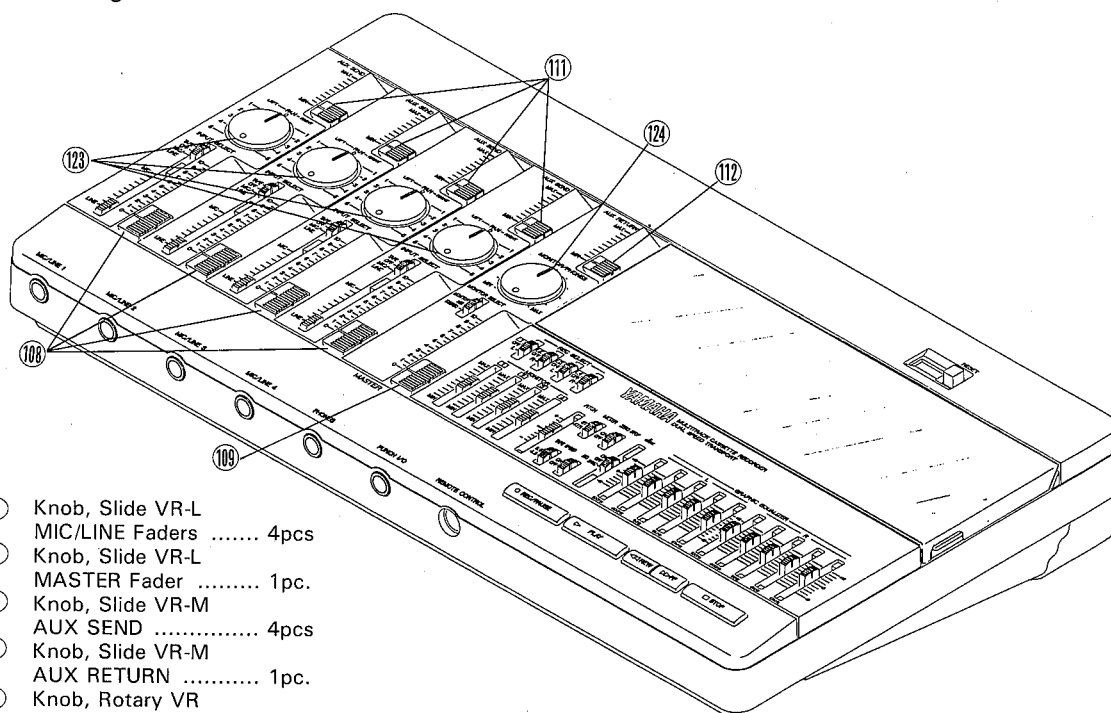


- (146) Bind head tapping screw - p  
3.0 x 40 ..... 3pcs
- (148) Bind head tapping screw - p  
3.0 x 20 ..... 5pcs

(Fig. 1)

### 2. MIXER 1/2 Circuit Board Removal

2-1 Pull out the fifteen (15) knobs marked (108), (109), (111), (112), (123), (124) located on the control panel. (Fig. 2)



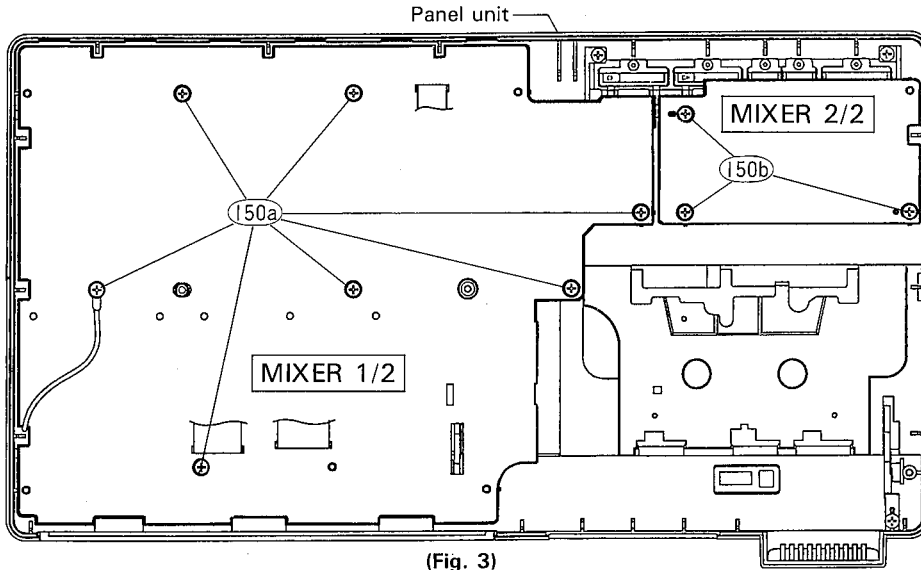
- (108) Knob, Slide VR-L  
MIC/LINE Faders ..... 4pcs
- (109) Knob, Slide VR-L  
MASTER Fader ..... 1pc.
- (111) Knob, Slide VR-M  
AUX SEND ..... 4pcs
- (112) Knob, Slide VR-M  
AUX RETURN ..... 1pc.
- (123) Knob, Rotary VR  
PAN ..... 4pcs
- (124) Knob, Rotary VR  
MONITOR/PHONES ... 1pc.

(Fig. 2)

- 2-2 Remove the bottom cover. (see procedure 1)
- 2-3 Remove the seven (7) screws marked (150a), then the MIXER 1/2 circuit board can be removed with the shield plate and the rear panel. (Fig. 3)
- 2-4 Remove the shield plate and the rear panel from the MIXER 1/2 circuit board.
- \* The shield plate and the rear panel are not parts of the MIXER 1/2 circuit board.

**3. MIXER 2/2 Circuit Board Removal**

- 3-1 Remove the bottom cover. (see procedure 1)
- 3-2 After the three (3) screws marked (150b) have been removed, then the MIXER 2/2 circuit board can be removed. (Fig. 3)



(Fig. 3)

- (150a) Bind head tapping screw - p  
3.0 × 10 ..... 7pcs
- (150b) Bind head tapping screw - p  
3.0 × 10 ..... 3pcs

**4. Cassette Deck Removal**

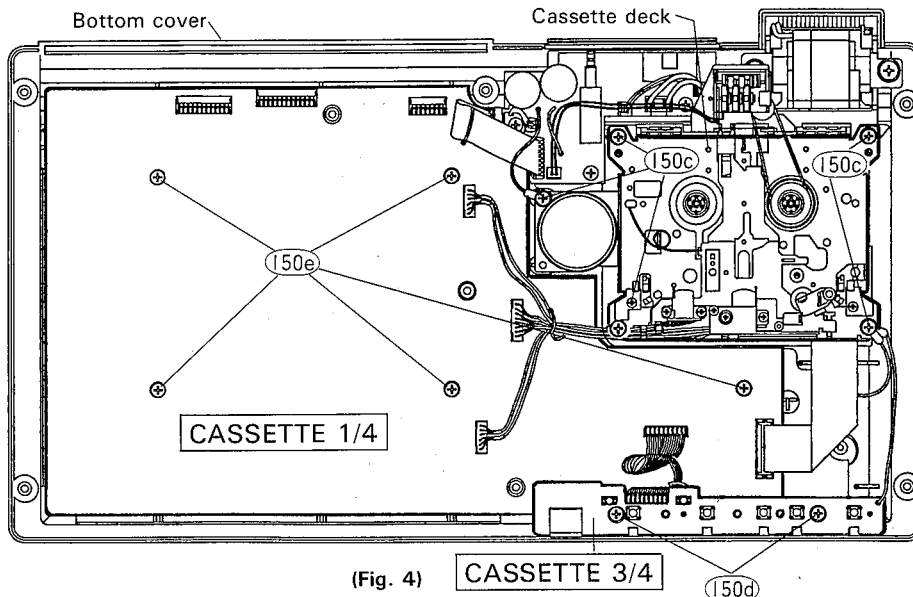
- 4-1 Remove the bottom cover. (see procedure 1)
- 4-2 Remove the five (5) screws marked (150c), the cassette deck can be removed. (Fig. 4)

**5. CASSETTE 3/4 Circuit Board Removal**

- 5-1 Remove the bottom cover. (see procedure 1)
- 5-2 Remove the two (2) screws marked (150d), then the CASSETTE 3/4 circuit board can be removed. (Fig. 4)

**6. CASSETTE 1/4 Circuit Board Removal**

- 6-1 Remove the bottom cover. (see procedure 1)
- 6-2 Remove the CASSETTE 3/4 circuit board. (see procedure 5)
- 6-3 Remove the five (5) screws marked (150e), the CASSETTE 1/4 circuit board can be removed. (Fig. 4)



(Fig. 4)

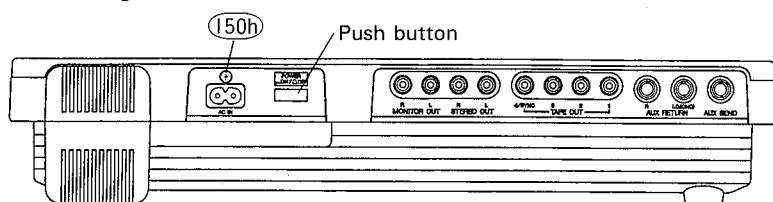
- (150c) Bind head tapping screw - p  
3.0 × 10 ..... 5pcs
- (150d) Bind head tapping screw - p  
3.0 × 10 ..... 2pcs
- (150e) Bind head tapping screw - p  
3.0 × 10 ..... 5pcs

**7. CASSETTE 2/4 Circuit Board Removal**

- 7-1 Remove the bottom cover. (see procedure 1)
- 7-2 Remove the cassette deck. (see procedure 4)
- 7-3 Remove the one screw marked (150h) located on the rear side of the bottom cover. (Fig. 5)
- 7-4 Remove the three (3) screws marked (150f), then the CASSETTE 2/4 circuit board can be removed with the power switch button. (Fig. 6)
- 7-5 The power switch button is not a part of CASSETTE 2/4 circuit board. When you replace the CASSETTE 2/4 circuit board, you should pull it out.

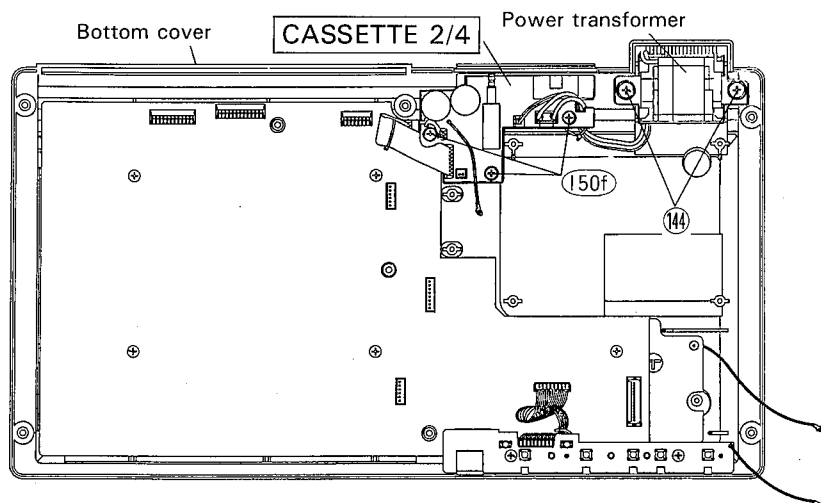
**8. Power Transformer Removal**

- 8-1 Remove the bottom cover. (see procedure 1)
- 8-2 Remove the cassette deck. (see procedure 4)
- 8-3 After the two (2) screws marked (144) have been removed, then the power transformer can be removed. (Fig. 6)



(Fig. 5)

(150h) Bind head tapping screw - p  
3.0 x 10 ..... 1pc.

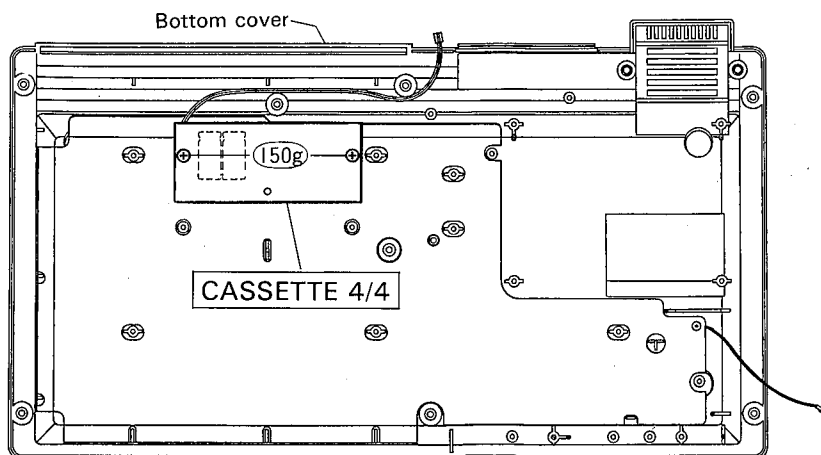


(Fig. 6)

(150f) Bind head tapping screw - p  
3.0 x 10 ..... 3pcs  
(144) Cup screw - p  
4.0 x 10 ..... 2pcs

**9. CASSETTE 4/4 Circuit Board Removal**

- 9-1 Remove the bottom cover. (see procedure 1)
- 9-2 Remove the CASSETTE 3/4 circuit board. (see procedure 5)
- 9-3 Remove the CASSETTE 1/4 circuit board. (see procedure 6)
- 9-4 Remove the two (2) screws marked (150g), the CASSETTE 4/4 circuit board can be removed. (Fig. 7)

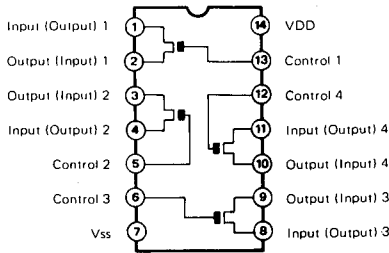


(Fig. 7)

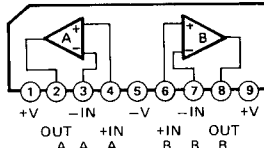
(150g) Bind head tapping screw - p  
3.0 x 10 ..... 2pcs

## IC BLOCK DIAGRAM

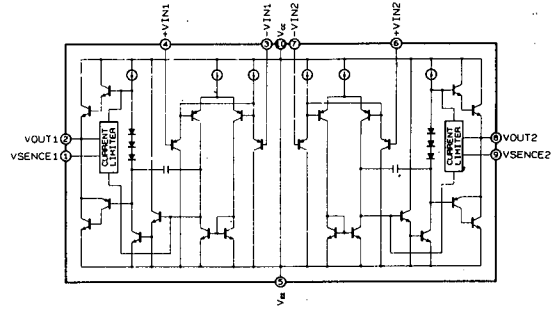
- $\mu$ PD4066BC (IG061600)  
Quad Bilateral Switch



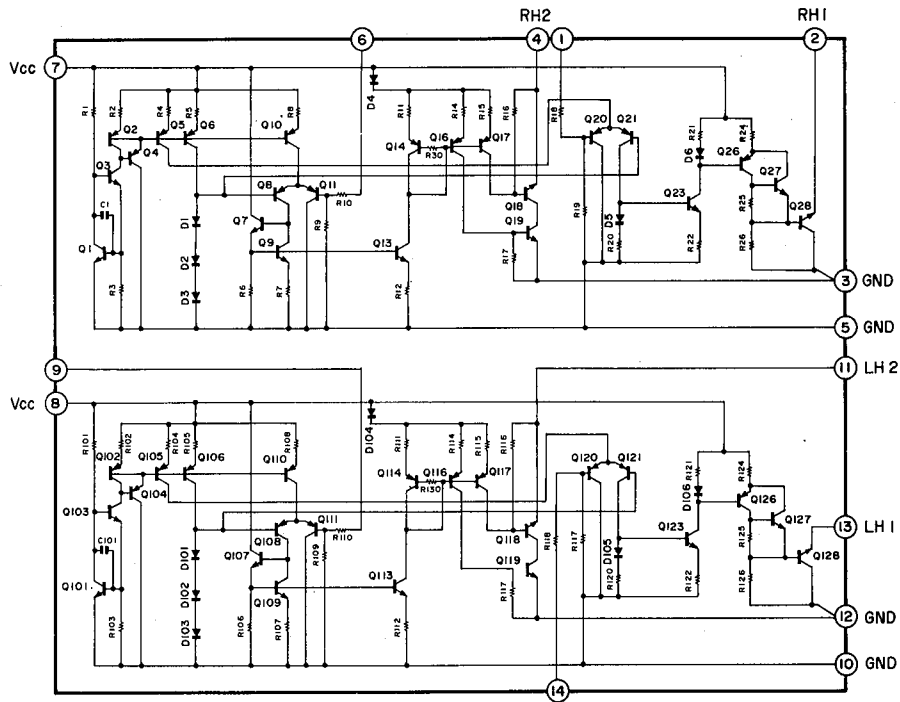
- AN6551 (IG034700)
- NJM2068S (XA956A00)
- LA6462S (XJ636A00)  
Dual Operational Amplifier



- LA6515 (XI250A00)  
Operational Amplifier



- $\mu$ PC1290C (XA508A00)  
PB/REC Head Switch

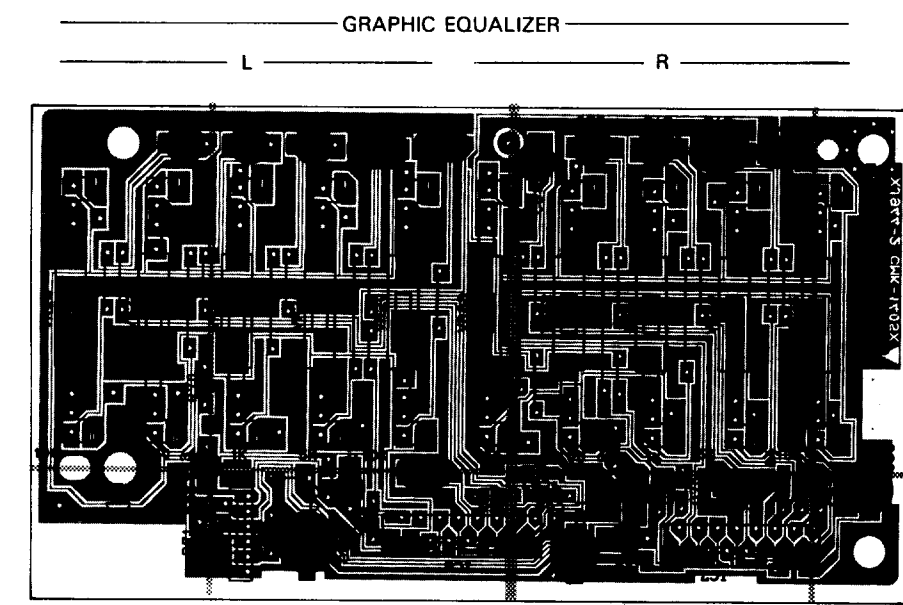
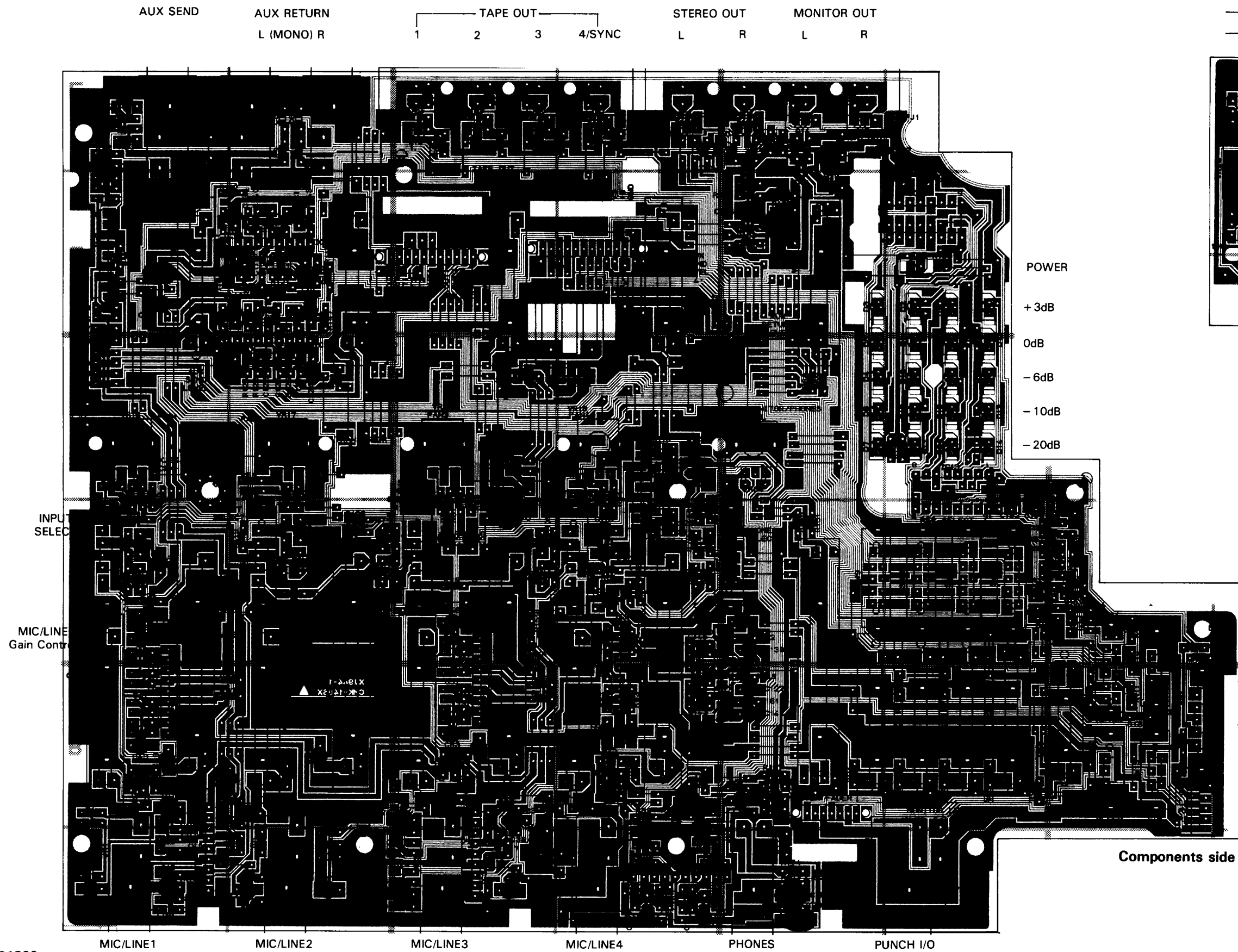


| Pin No. | Symbol | Name           | Pin No. | Symbol | Name           |
|---------|--------|----------------|---------|--------|----------------|
| 1       | INR1   | REC SW control | 8       | VCC2   | +5V            |
| 2       | SWR1   | REC SW         | 9       | INP2   | PB SW control  |
| 3       | GND    | GND            | 10      | GND    | GND            |
| 4       | SWP1   | PB SW          | 11      | SWP2   | PB SW          |
| 5       | GND    | GND            | 12      | GND    | GND            |
| 6       | INP1   | PB SW control  | 13      | SWR2   | REC SW         |
| 7       | VCC1   | +5V            | 14      | INR2   | REC SW control |

**■ CIRCUIT BOARDS**

● MIXER 1/2 Circuit Board

● MIXER 2/2 Circuit Board

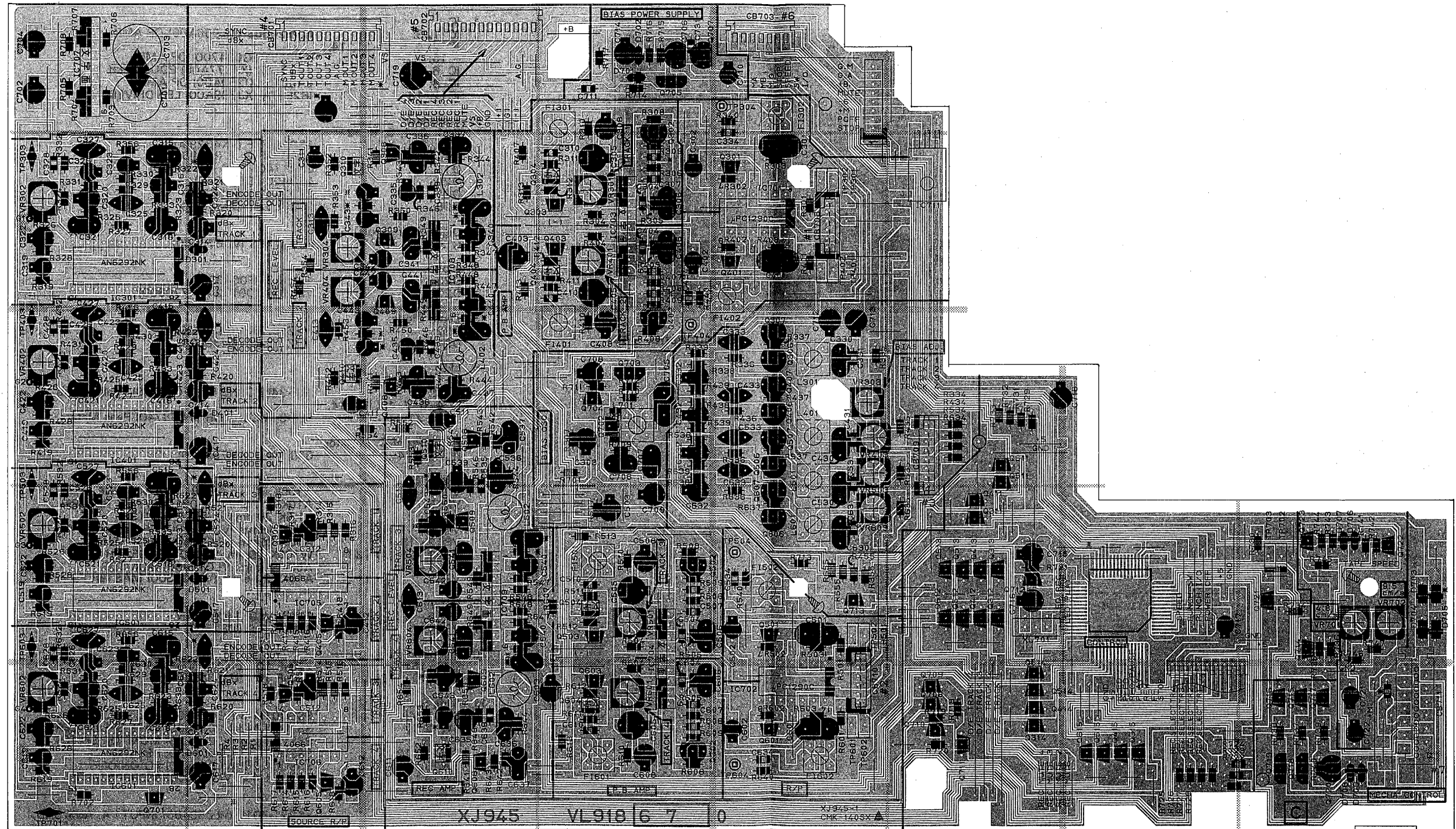


Notes)

|                               |  |
|-------------------------------|--|
| Circuit Board:                | MIXER 1/2 (NX810470) XJ944C0<br>MIXER 2/2 (NX810480) XJ944C0 |
| 1. IC                         |  |
| IC 1, 3:                      | NJM2068S (XA956A00) OP AMP.                                  |
| IC 2, 4, 5, 9~11, 14, 15:     | AN6551 (IG034700) OP AMP.<br>TA7796Z (XJ377A00) EQUALIZER    |
| IC 6, 7:                      | LA6515 (X1250A00) OP AMP.                                    |
| IC 8:                         | IR2E27A (XJ799A00) LED DRIVER                                |
| IC12, 13:                     |  |
| 2. Transistor                 |  |
| Q 1, 2, 4, 6, 8, 12~19, 25:   | 2SD1915 F (VK432900)<br>2SA933S Q, R (IA093320)              |
| Q10:                          | 2SC1740S R, S (IC174020)                                     |
| Q20:                          | 2SD400 (ID040040)  |
| Q21:                          | 2SD2012 (VE759500)   |
| Q28:                          | 2SC3852 (VC938500)   |
| 3. Digital Transistor         |  |
| Q 3, 5, 7, 9:                 | DTA114ES (VD678500)  |
| 4. Diode                      |  |
| D23:                          | 1SS133 (IF004600)  |
| D27:                          | 1SR139-100T32 (VH770800)                                     |
| 5. Zener Diode                |  |
| D22:                          | MTZJ9.1B (VG439200)  |
| D24:                          | MTZJ11A (VG439800)   |
| 6. LED                        |  |
| D 1~3, 5, 8~10, 12, 15:       | SLR-34URC3H3 RE (IF008730) Peak Meters                       |
| D 4, 6, 7, 11, 13, 14, 16~21: | SLR-34MC3H3 GR (IF008740) Peak Meters                        |
| 7. Flame Proof C. Resistor    |  |
| R173, 174:                    | 33Ω 1/4 J (HV754330)   |
| 8. Slide Pot.                 |  |
| VR 1~4:                       | A100K 30mm (VL081100) MIC/LINE 1~4                           |
| VR 5:                         | A10KX2 25mm (VL081000) AUX RETURN                            |
| VR 7:                         | B1.5K 20mm (VL080700) PITCH                                  |
| VR 8~11:                      | A10K 45mm (VL081200) CH Faders 1~4                           |
| VR12~15:                      | A10K 25mm (VL080800) AUX SEND                                |
| VR20~25, 30~33:               | W100K 20mm (VL080600) GRAPHIC EQ.                            |
| VR26~29:                      | A50K 25mm (VL080900) MONITOR                                 |
| VR36:                         | A10KX2 45mm (VL081300) MASTER Fader                          |
| 9. Rotary Pot.                |  |
| VR16~19:                      | 10KB (VL081400) PAN  |
| VR34:                         | 10KA x 2 (VL081500) MONITOR/PHONES                           |
| 10. Electrolytic Cap.         |  |
| C60, 157:                     | 220μF 10V (VE117600)   |
| C97, 101, 107:                | 220μF 16V (UJ638220)   |
| 11. Slide Switch              |  |
| SW 1, 4~7:                    | SSSU01 1-3 (VL079700) dbx, INPUT SEL.                        |
| SW 2, 3:                      | SSSU01 1-2 (VL079600) TAPE SPEED, ZERO STOP                  |
| SW 8:                         | SSSV01 2-3 (VL914200) MONITOR SELECT                         |
| SW 9~12:                      | SSSU01 2-3 (VL079900) REC SELECT                             |
| SW13:                         | SSSU01 2-2 (VL079800) EQ ON/OFF                              |
| SW14:                         | SSSU01 4-2 (VL080000) METER ST/4TR                           |
| 12. Phone Jack                |  |
| JK1~7:                        | YKB21-5011 (VL080400) INPUT1-4, AUX SND, AUX RTN             |
| JK8:                          | YKB21-5076 (VL080500) PUNCH I/O                              |
| JK9:                          | YKB21-5009 (VL080300) PHONES                                 |
| 13. Pin Jack                  |  |
| PJ1, 2:                       | 4P 20-324B0-01 (VL080200) MONITOR OUT, STEREO OUT            |



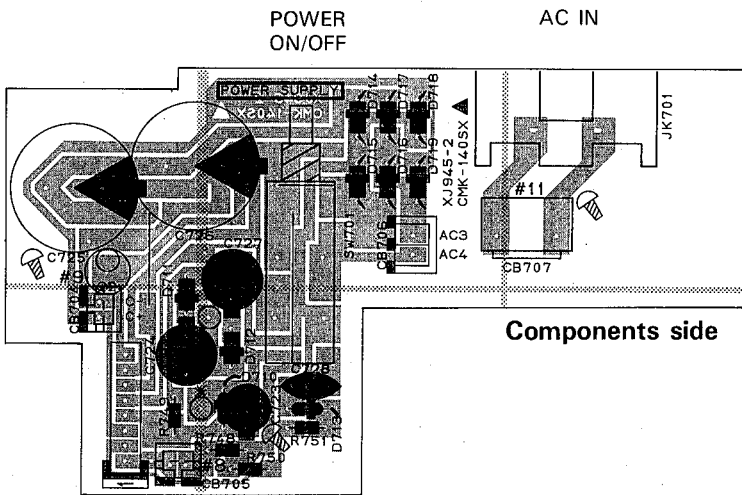
● CASSETTE 1/4 Circuit Board



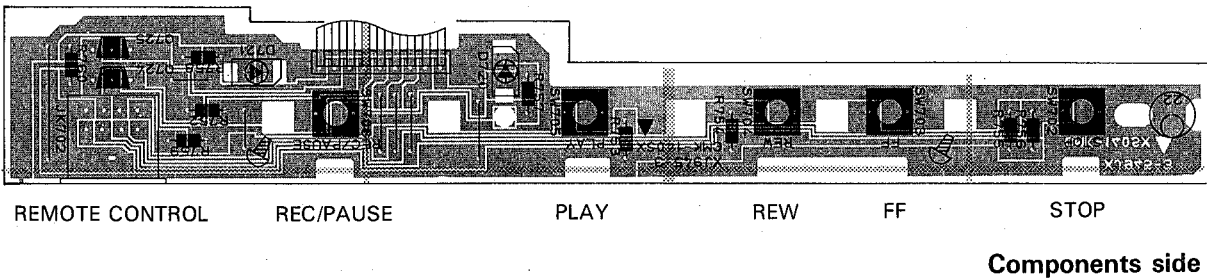
Components side

MT120

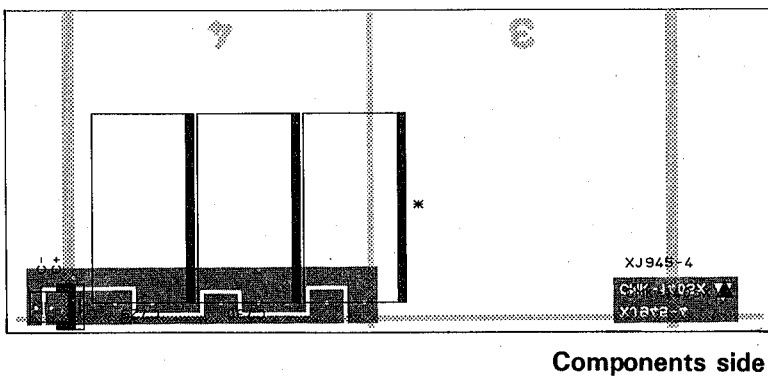
● CASSETTE 2/4 Circuit Board



● CASSETTE 3/4 Circuit Board



● CASSETTE 4/4 Circuit Board



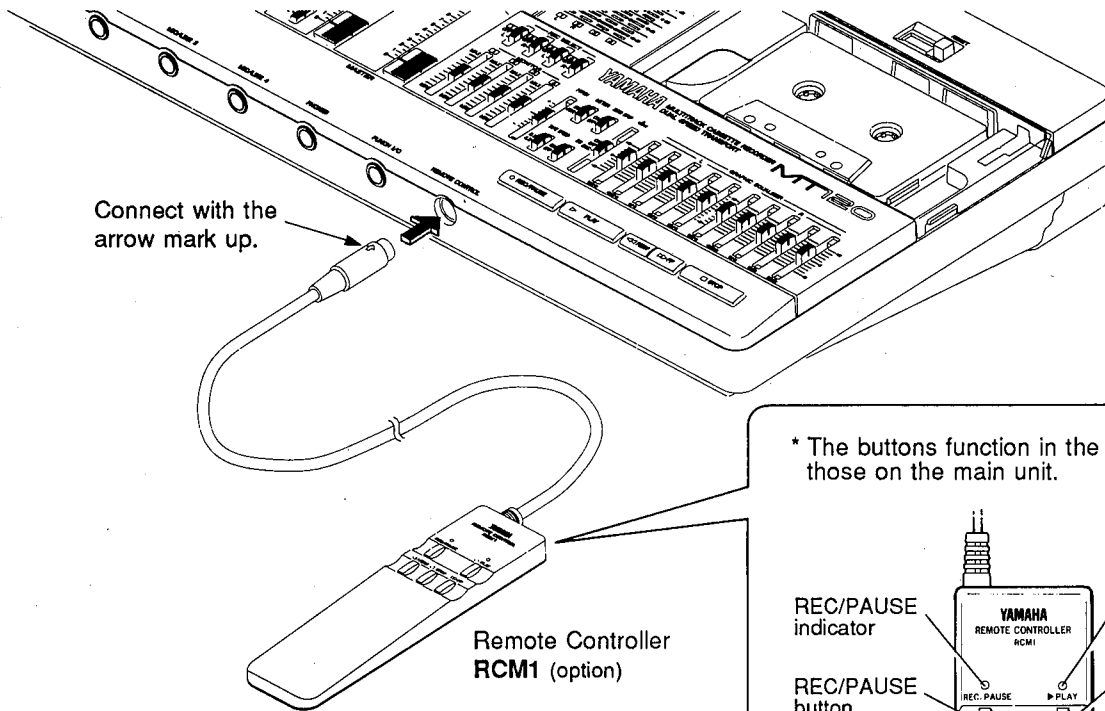
## Notes)

|  |  |  |  |
|--|--|--|--|
| Circuit Board:   | CASSETTE 1/4 (NX810490) XJ945CO                  |  |  |
|  | CASSETTE 2/4 (NX810500) XJ945CO J, B, H          |  |  |
|  | CASSETTE 2/4 (NX810530) XJ945CO U, C, X          |  |  |
|  | CASSETTE 3/4 (NX810510) XJ945CO                  |  |  |
|  | CASSETTE 4/4 (NX810520) XJ945CO                  |  |  |
| 1. IC  |  |  |  |
| IC301, 401, 501, 601:  | AN6292NK (XJ637A00) dbx                          |  |  |
| IC701, 702:  | $\mu$ PC1290C (XA508A00) PB/REC HEAD SW          |  |  |
| IC703, 704:  | LA6462S (XJ636A00) OP AMP. HEAD                  |  |  |
| IC705, 706:  | $\mu$ PD4066BC (IG061600) SWITCH                 |  |  |
| IC708, 709:  | AN6551 (IG034700) OP AMP.                        |  |  |
| IC710:   | LC66506FLP (XJ387B00) CPU MTR                    |  |  |
| IC711:   | AN78N05 (XA507A00) 5V REGULATOR                  |  |  |
| 2. Transistor  |  |  |  |
| Q304, 310, 404, 410,<br>504, 510, 604, 610:  | 2SD1915 F (VK432900)                             |  |  |
| Q306, 406, 506, 606,<br>706, 707:  | 2SC2060 P, Q, R (IC206010)                       |  |  |
| Q307, 407, 507, 607:   | 2SC2060 Q, R (VL929300)                          |  |  |
| Q309, 409, 509, 609,<br>701, 709, 714:   | 2SC1740S R, S (IC174020)                         |  |  |
| Q702:  | 2SC2603 E, F (IC260320)                          |  |  |
| Q703:  | 2SA1674 (VG805300)                               |  |  |
| Q705, 718, 719:  | 2SC4391 (VG805500)                               |  |  |
| Q710, 722, 723:  | 2SA933S Q, R (IA093320)                          |  |  |
| Q720:  | 2SA934 (IA093410)                                |  |  |
| 3. Digital Transistor  |  |  |  |
| Q301, 303, 305, 308,<br>311, 313, 401, 403,<br>405, 408, 411, 413,<br>501, 503, 505, 508,<br>511, 513, 601, 603,<br>605, 608, 611, 613,<br>704, 711, 717, 721: | DTC114ES (VD678700)                              |  |  |
| Q312, 314, 315, 412,<br>414, 415, 512, 514,<br>515, 612, 614, 615,<br>708, 713, 715, 716,<br>724, 725:   | DTA114ES (VD678500)                              |  |  |
| Q712:  | DTC143XS (VD488500)                              |  |  |
| 4. FET   |  |  |  |
| Q302, 402, 502, 602:   | 2SK301 Q (IE102130)                              |  |  |
| 5. Diode   |  |  |  |
| D301, 401, 501, 601,<br>706~709, 713:  | 1SS133 (IF004600)                                |  |  |
| D703~705, 711, 712:  | 1SR139-100T32 (VH770800)                         |  |  |
| D714~719:  | 1SR139-100T62 (VH801600)                         |  |  |
| 6. Zener Diode   |  |  |  |
| D701, 702:   | MTZJ10B (VG439500)                               |  |  |
| D710:  | MTZJ6.8A (VG438200)                              |  |  |
| 7. LED   |  |  |  |
| D720:  | SLR-34MC3H3 GR (IF008740) PLAY                   |  |  |
| D721:  | SLR-34URC3H3 RE (IF008730) REC/PAUSE             |  |  |
| 8. Trimmer Potentiometer   |  |  |  |
| VR301, 401, 501, 601:  | B100 3P RH0638C (VJ692400) PB LEVEL              |  |  |
| VR302, 402, 502, 602:  | B1.5K 3P RH0638 (VJ693100) dbx                   |  |  |
| VR303, 403, 503, 603:  | B100K 3P RH0638 (VJ694200) REC BIAS              |  |  |
| VR304, 404, 504, 604:  | B10K 3P RH0638C (VJ693600) REC LEVEL             |  |  |
| VR701:   | B680 3P RH0638C (VJ692900) TAPE SPEED<br>4.8cm/s |  |  |
| VR702:   | B1.5K 3P RH0638 (VJ693100) TAPE SPEED 9.5cm/s    |  |  |
| 9. Electrolytic Cap.   |  |  |  |
| C305, 405, 505, 605:   | 220 $\mu$ F 6.3V (VG286300)                      |  |  |
| C701, 703:   | 470 $\mu$ F 16V (UH138470)                       |  |  |
| C724, 727:   | 220 $\mu$ F 25V (VG289000)                       |  |  |
| C725, 726:   | 2200 $\mu$ F 25V (VF999100)                      |  |  |
| C729, 730:   | 1000 $\mu$ F 25V (VL843800)                      |  |  |
| 10. Polypropylene Cap.   |  |  |  |
| C301, 401, 501, 601:   | 390pF 100V (UT652390)                            |  |  |
| C705:  | 1500pF 100V (UT653150)                           |  |  |
| 11. Coil   |  |  |  |
| L301, 401, 501, 601:   | 7CDA 80KHz (VL673000) slave                      |  |  |
| L302, 402, 502, 602:   | 2.7mH (GE901560)                                 |  |  |
| L701:  | 7CDA 80KHz (VL672900) master                     |  |  |
| FI301, 302, 401, 402,<br>501, 502, 601, 602:   | 7CBA 80KHz (VL673100) trap                       |  |  |
| 12. Ceramic Resonator  |  |  |  |
| XL701:   | EFO-FC400 4MHz (VB759100)                        |  |  |
| 13. Switch   |  |  |  |
| SW701:   | SPUN1918A (VL080100) POWER ON/OFF                |  |  |
| SW702~706:   | SKHVAA (VG392900) CASSETTE CONTROL               |  |  |
| 14. DIN Jack   |  |  |  |
| JK702:   | 8P CMS (VL105500) REMOTE CONTROL                 |  |  |
| 15. AC Inlet   |  |  |  |
| JK701:   | M1779 (VJ137800) AC IN J, B, H                   |  |  |
| JK701:   | M1770 (VJ137700) AC IN U, C, X                   |  |  |



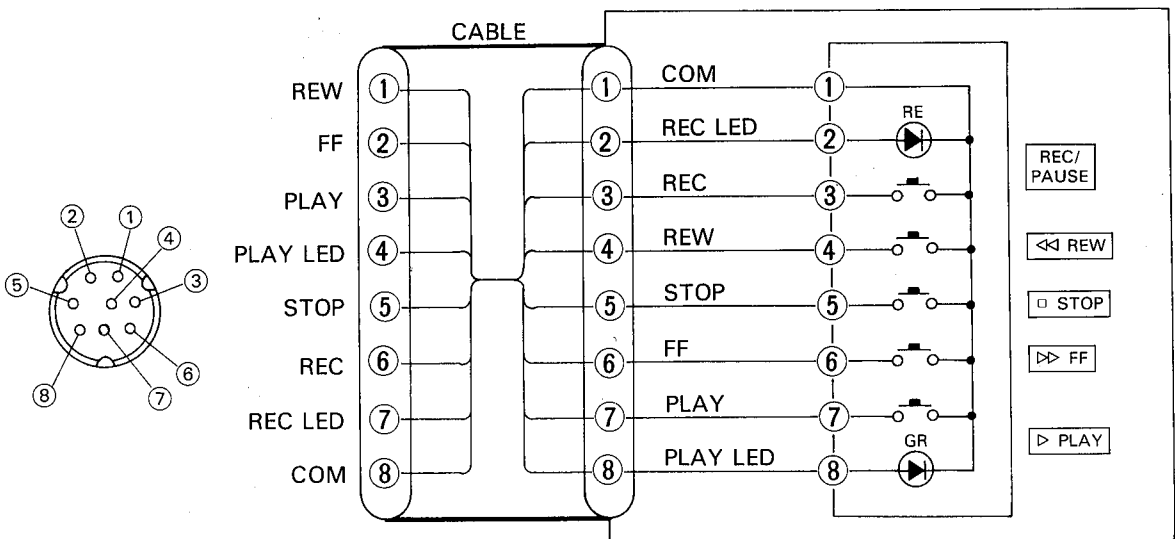
## REMOTE CONTROLLER RCM-1

When the optional Remote Controller RCM1 is connected, tape transport operations (REC/PAUSE, PLAY, REW, FF, STOP) can be performed from a distance.



\* The buttons function in the same way as those on the main unit.

REC/PAUSE indicator  
REC/PAUSE button  
REW button  
PLAY indicator  
PLAY button  
FF button  
STOP button



Notes)

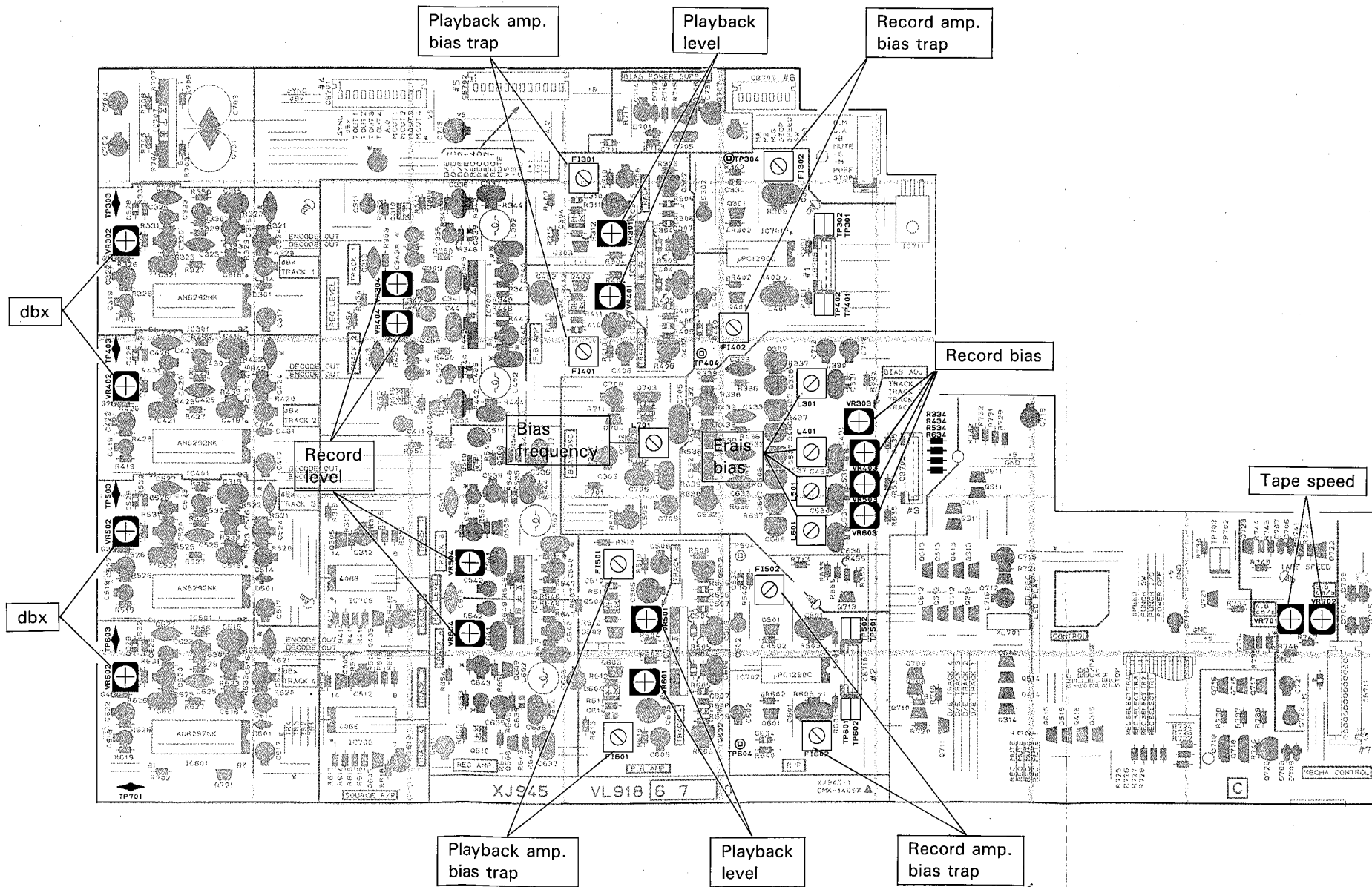
1. LED  
REC/PAUSE: SLP-144B-51 RED  
PLAY: SLP-244B-51 GREEN
2. Tact Switch SKHHAJ (VD968200)

## ■ ADJUSTMENTS

| Adjustment                   | Measurement condition   | Adjustment part  | Rating  |
|------------------------------|---|--|---|
| dbx                          | Connect the DC milival at the test points shown below:<br>channel 1: TP303 - G1<br>channel 2: TP403 - G2<br>channel 3: TP503 - G3<br>channel 4: TP603 - G4  | VR302 (channel 1)<br>VR402 (channel 2)<br>VR502 (channel 3)<br>VR602 (channel 4)     | Adjust VRs to obtain the DC voltage of $18.4 \pm 0.4\text{mV}$ at each test point.  |
| Azimuth-1                    | Test tape (10kHz): TEAC MTT-114N (TX911680) 10kHz, -10dB<br>Monitor the tape output 1 using an oscilloscope.  | REC/PLAY head azimuth<br>adjustment screw  | Play the test tape and adjust the screw to obtain the maximum output level. After adjustment make sure to apply screw lock paint.   |
| Tape Speed                   | Test tape (3kHz): ABEX TCC-112 (TX911820) 3kHz, -10dB<br>ABEX TCW-211 (TX911550) 1.5kHz, MULTIPLE<br>SPEED<br>Monitor the tape output 1 using a wow/flutter meter.<br>Set the pitch control at center.  | VR701 (4.8cm/s)<br>VR702 (9.5cm/s)   | Turn the tape speed switch to 9.5cm/s and play the test tape, and then adjust VR702 to obtain a wow/flutter meter reading of $6000 \pm 60\text{Hz}$ . Turn the tape speed switch to 4.8cm/s and play the test tape, and then adjust VR701 to obtain a wow/flutter meter reading of $3000 \pm 30\text{Hz}$ . |
| Playback level               | Test tape (315Hz, 160nW/b): ABEX TCC-121 (TX911840) 160nW/b,<br>+4dB, 315Hz<br>Monitor the tape outputs 1, 2, 3 and 4 using an oscilloscope.  | VR301 (tape out 1)<br>VR401 (tape out 2)<br>VR501 (tape out 3)<br>VR601 (tape out 4) | Play the test tape and adjust VRs to obtain $-10 \pm 0.5\text{dBm}$ at each output.   |
| Erase bias                   | Turn the REC SELECT to 1, 2, 3 and 4. Connect an oscilloscope to test points shown below.<br>channel 1: both ends of the resistor R334 (1 ohm).<br>channel 2: both ends of the resistor R434 (1 ohm).<br>channel 3: both ends of the resistor R534 (1 ohm).<br>channel 4: both ends of the resistor R634 (1 ohm). | L301 (channel 1)<br>L401 (channel 2)<br>L501 (channel 3)<br>L601 (channel 4)         | In REC/PLAY mode, adjust coils to obtain the maximum AC voltage level at each test point. And then adjust L701 to obtain the bias frequency of $80 \pm 1\text{kHz}$ .   |
| Record amplifier bias trap   | Turn the REC SELECT to 1, 2, 3 and 4. Connect an oscilloscope at the test points shown below.<br>channel 1: TP304<br>channel 2: TP404<br>channel 3: TP504<br>channel 4: TP604<br>GND: TP701   | FI302 (channel 1)<br>FI402 (channel 2)<br>FI502 (channel 3)<br>FI602 (channel 4)     | In REC/PLAY mode, adjust coils to obtain the minimum AC voltage level at each test point.   |
| Playback amplifier bias trap | Turn the REC SELECT to 1, 2, 3 and 4. Connect an oscilloscope at the tape outputs 1-4.  | FI301 (channel 1)<br>FI401 (channel 2)<br>FI501 (channel 3)<br>FI601 (channel 4)     | In REC/PLAY mode, turn off the REC SELECT switch of the channel for which you try to check, and adjust the coil to obtain the minimum AC voltage output.  |
| Record level                 | Apply a 1kHz, -10dB signal to the line inputs 1-4. Set the INPUT SELECT switches at MIC/LINE.<br>Turn the REC SELECT to 1, 2, 3 and 4. Slide the gain trim fader to LINE position. Turn the TAPE SPEED switch to 9.5.<br>Monitor the tape outputs 1-4.  | VR304 (channel 1)<br>VR404 (channel 2)<br>VR504 (channel 3)<br>VR604 (channel 4)     | In REC/PAUSE mode, adjust VRs to obtain $-30\text{dBm}$ at each output. Record and playback the tape. (Reference tape: TDK AC-513 (TX911750) CRO <sub>2</sub> )   |

| Adjustment                      | Measurement condition  | Adjustment part  | Rating  |
|---------------------------------|--|--|---|
| Record bias                     | Apply signals to the line inputs 1-4. Turn the INPUT SELECT to MIC/LINE. Slide the gain trim fader to LINE position. Turn the TAPE SPEED switch to 4.8 or 9.5. Monitor the tape outputs 1-4. | VR303 (channel 1)<br>VR403 (channel 2)<br>VR503 (channel 3)<br>VR603 (channel 4) | In REC/PLAY mode, adjust VRs to obtain -30dBm at each output. Record and playback the tape. (Reference tape: TDK AC-513 (TX911750) CRO <sub>2</sub> )   |
| Azimuth-2<br>(After assembling) | Test tape (10kHz): TEAC MTT-114N (TX911680) 10kHz, -10dB<br>Monitor the tape outputs 1-4 using an oscilloscope.  | REC/PLAY head azimuth adjustment screw   | Play the test tape and adjust the screw to obtain the same maximum output level in four channels. After adjustment make sure to apply screw lock paint. |

• Cassette 1/4 circuit board



MT120

# MULTITRACK CASSETTE RECORDER

# MT120

# PARTS LIST

## ■ CONTENTS

|  |   |
|--|---|
| ELECTRICAL PARTS.....                      | 1 |
| OVERALL ASSEMBLY (Black-colored).....      | 3 |
| OVERALL ASSEMBLY (Light Gray-colored)..... | 5 |
| PANEL ASSEMBLY.....                        | 7 |
| CASSETTE DECK.....                         | 8 |

Note) DESTINATION ABBREVIATIONS

|                          |                      |
|--------------------------|----------------------|
| J : Japanese model       | A : Australian model |
| U : U.S. model           | E : European model   |
| C : Canadian model       | D : German model     |
| X : General model        | B : British model    |
| M : South African model  | I : Indonesian model |
| H : North European model |                      |

**ELECTRICAL PARTS**

| Ref. No. | Part No. | Description             | 部 品 名           | Remarks    | ランク               |
|----------|----------|-------------------------|-----------------|------------|-------------------|
|          | --       | Circuit Board           | MIXER           | MT120      |                   |
|          | NX810470 | Circuit Board           | MIXER 1/2       |            |                   |
|          | NX810480 | Circuit Board           | MIXER 2/2       |            |                   |
|          | --       | Circuit Board           | CASSETTE        |            |                   |
|          | NX810490 | Circuit Board           | CASSETTE 1/4    |            |                   |
|          | NX810500 | Circuit Board           | CASSETTE 2/4    |            |                   |
|          | NX810530 | Circuit Board           | CASSETTE 2/4    |            | J.B.H             |
|          | NX810510 | Circuit Board           | CASSETTE 3/4    |            | U.C.X             |
|          | NX810520 | Circuit Board           | CASSETTE 4/4    |            |                   |
|          | --       | Circuit Board           | MIXER           |            |                   |
|          | IG034700 | IC                      | ANG551          | OP AMP.    | 03                |
|          | XA956A00 | IC                      | NJM2068S        | OP AMP.    | 01                |
|          | XI250A00 | IC                      | LA6515          | OP AMP.    | 03                |
|          | XJ377A00 | IC                      | TA7796Z         | EQUALIZER  | 03                |
|          | XJ799A00 | IC                      | IR2E27A         | LED DRIVER | 03                |
|          | IA093320 | Transistor              | 2SA933S Q,R     | トランジスタ     | 01                |
|          | IC174020 | Transistor              | 2SC1740S R,S    | トランジスタ     | 01                |
|          | ID040040 | Transistor              | 2SD400          | トランジスタ     | 01                |
|          | VK432900 | Transistor              | 2SD1915 F       | トランジスタ     | 01                |
|          | VE759500 | Transistor              | 2SD2012         | トランジスタ     | 01                |
|          | VC938500 | Transistor              | 2SC3852         | トランジスタ     | 02                |
|          | VD678500 | Digital Transistor      | DTA114ES        | デジタルトランジスタ | 03                |
|          | IF004600 | Diode                   | 1SS133          | ダイオード      | 01                |
|          | VH770800 | Diode                   | 1SR139-100T32   | ダイオード      | 01                |
|          | VG439200 | Zener Diode             | MTZJ9.1B        | ツェナーダイオード  | 01                |
|          | VG439800 | Zener Diode             | MTZJ11A         | ツェナーダイオード  | 01                |
|          | IF008730 | LED                     | SLR-34URC3H3 RE | LED        | Peak Meters       |
|          | IF008740 | LED                     | SLR-34MC3H3 GR  | LED        | Peak Meters       |
|          | HV754330 | Flame Proof C. Resistor | 33Ω 1/4 J       | 不燃化カーボン抵抗  | 01                |
|          | VL080600 | Slide Pot.              | W100K 20mm      | スライドボリューム  | 02                |
|          | VL080700 | Slide Pot.              | B1.5K 20mm      | スライドボリューム  | 03                |
|          | VL080800 | Slide Pot.              | A10K 25mm       | スライドボリューム  | 03                |
|          | VL080900 | Slide Pot.              | A20K 25mm       | スライドボリューム  | 03                |
|          | VL081100 | Slide Pot.              | A100K 30mm      | スライドボリューム  | 03                |
|          | VL081200 | Slide Pot.              | A10K 45mm       | スライドボリューム  | 03                |
|          | VL081000 | Slide Pot.              | 10KAX2 45mm     | スライドボリューム  | 03                |
|          | VL081300 | Slide Pot.              | 10KAX2 45mm     | スライドボリューム  | 03                |
|          | VL081400 | Rotary Pot.             | B10K            | ロータリーボリューム | 01                |
|          | VL081500 | Rotary Pot.             | A10KX2          | ロータリーボリューム | 03                |
|          | UJ638220 | Electrolytic Cap.       | 220uF 16V       | ケミコン       | 01                |
|          | VE117600 | Electrolytic Cap.       | 220uF 10V       | ケミコン       | 01                |
|          | VL079600 | Slide Switch            | SSSU01 1-2      | スライドスイッチ   | 01                |
|          | VL079700 | Slide Switch            | SSSU01 1-3      | スライドスイッチ   | 02                |
|          | VL079800 | Slide Switch            | SSSH01 2-2      | スライドスイッチ   | 02                |
|          | VL079900 | Slide Switch            | SSSU01 2-3      | スライドスイッチ   | 02                |
|          | VL080000 | Slide Switch            | SSSU01 4-2      | スライドスイッチ   | 02                |
|          | VL914200 | Slide Switch            | SSSV01 2-3      | スライドスイッチ   | 02                |
|          | VL080400 | Phone Jack              | YKB21-5011      | ホーンジャック    | 01                |
|          | VL080300 | Phone Jack              | YKB21-5009      | ホーンジャック    | 01                |
|          | VL080500 | Phone Jack              | YKB21-5076      | ホーンジャック    | 02                |
|          | VL080200 | Pin Jack                | 4P 20-324B0-01  | ピンジャック     | 02                |
|          | VB966900 | Pin                     | IMSA-6024       | スタイルクビン    | 01                |
|          | VL415400 | Reflector, LED          |                 | リフレクター     | 04                |
|          | --       | Heat Sink               |                 | 放熱器        | 1pc.              |
|          | EG330050 | Bind Head Screw         | 3.0X8 FCM3BL    | + バインド小ネジ  | 1pc.              |
|          | --       | Circuit Board           | CASSETTE        | カセットシート    |                   |
|          | IG034700 | IC                      | ANG551          | IC         | OP AMP. 03        |
|          | XJ636A00 | IC                      | LA6462S         | IC         | OP AMP. HEAD 02   |
|          | XJ637A00 | IC                      | AN6292NK        | IC         | dbx 07            |
|          | XA507A00 | IC                      | AN78N05         | IC         | REGULATOR +5V 02  |
|          | IG061600 | IC                      | uPD4066BC       | IC         | SWITCH 04         |
|          | XA508A00 | IC                      | uPC1290C        | IC         | PB/REC HEAD SW 04 |
|          | XJ387B00 | IC                      | LC66506FLP      | IC         | CPU MTR           |
|          | IA093320 | Transistor              | 2SA933S Q,R     | トランジスタ     | 01                |
|          | IA093410 | Transistor              | 2SA934          | トランジスタ     | 01                |
|          | VG805300 | Transistor              | 2SA1674         | トランジスタ     | 01                |
|          | IC174020 | Transistor              | 2SC1740S R,S    | トランジスタ     | 01                |
|          | IC260320 | Transistor              | 2SC2603 E,F     | トランジスタ     | 01                |
|          | IC206010 | Transistor              | 2SC2060 P,Q,R   | トランジスタ     | 01                |
|          | VG805500 | Transistor              | 2SC4391         | トランジスタ     | 01                |
|          | VL929300 | Transistor              | 2SC2060 Q,R     | トランジスタ     | 01                |
|          | VK432900 | Transistor              | 2SD1915 F       | トランジスタ     | 01                |
|          | VD678500 | Digital Transistor      | DTA114ES        | デジタルトランジスタ | 03                |
|          | VD678700 | Digital Transistor      | DTC114ES        | デジタルトランジスタ | 03                |
|          | VD488500 | Digital Transistor      | DTC143XS        | デジタルトランジスタ | 03                |
|          | IE102130 | FET                     | 2SK301 Q        | FET        | 01                |
|          | IF004600 | Diode                   | 1SS133          | ダイオード      | 01                |

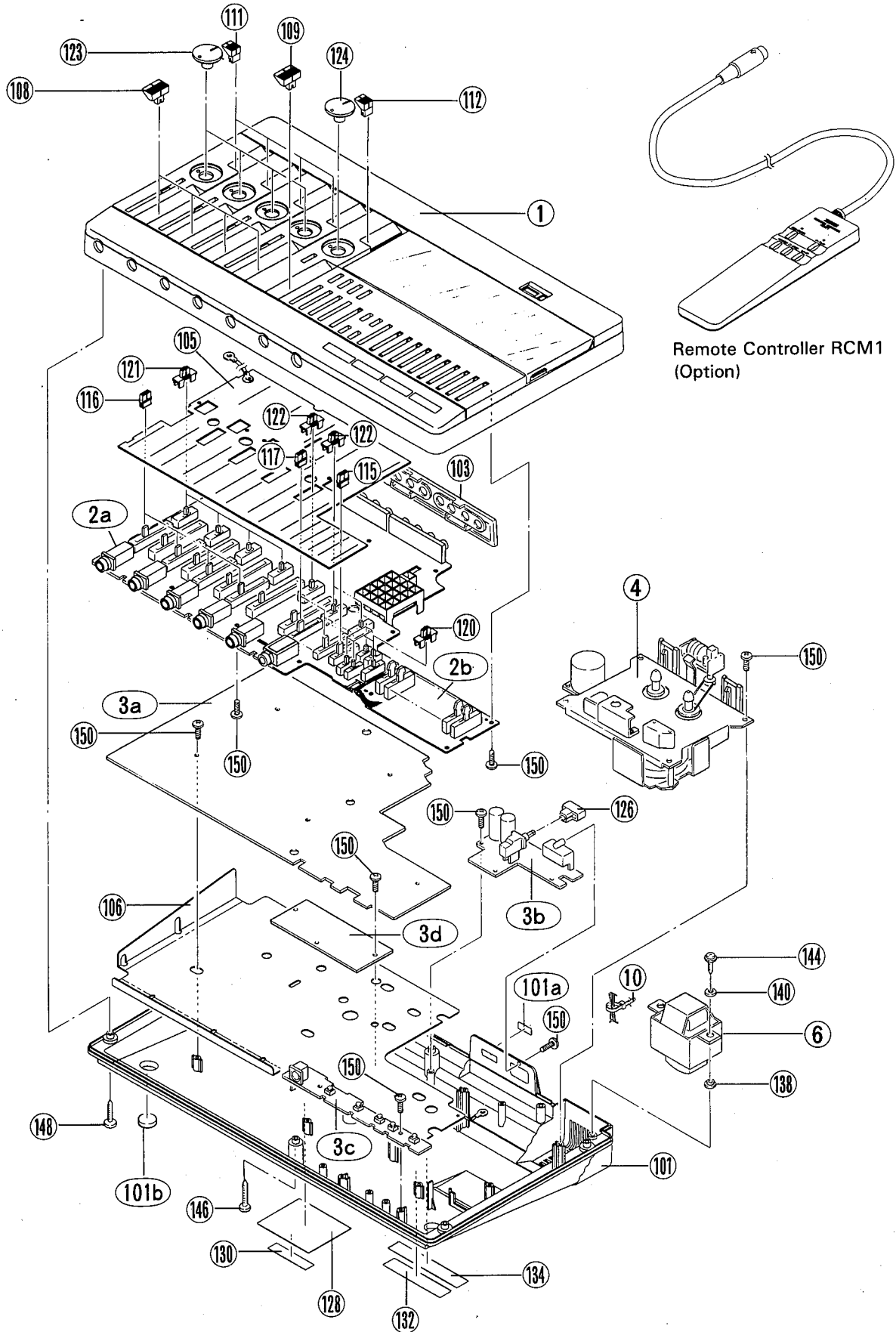
MT120

\*New Parts (新規部品)

ランク : Japan only



# OVERALL ASSEMBLY (Black-colored)



MT120

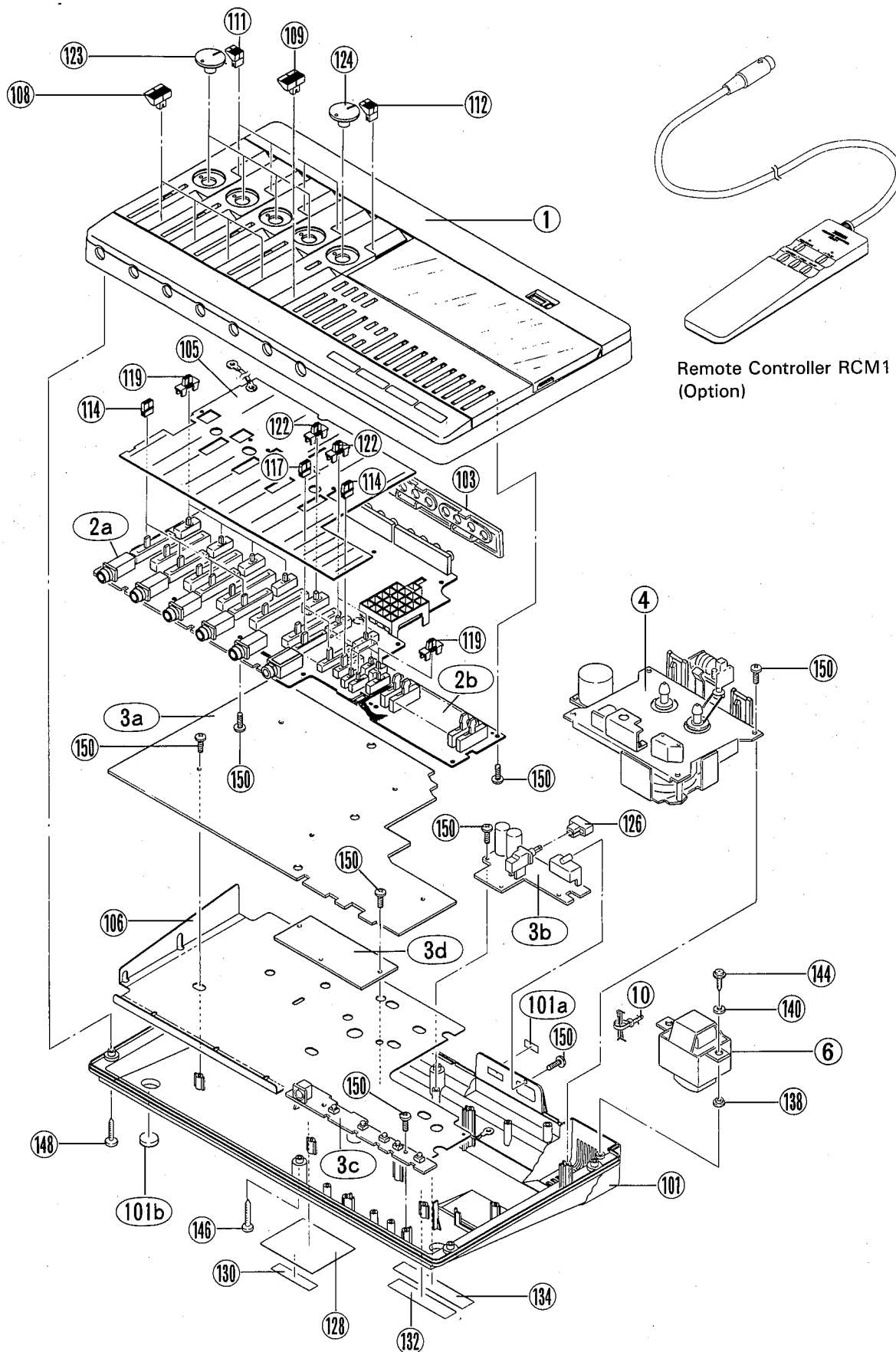
| Ref. No. | Part No. | Description                        | 部品名           | Remarks          | ランク |
|----------|----------|------------------------------------|---------------|------------------|-----|
| 1        | VL918000 | < OVERALL ASSEMBLY ><br>Panel Unit | MT120         | Black            |     |
| 2        | --       | Circuit Board                      | MIXER         | BL               |     |
| 2a       | NX810470 | Circuit Board                      | MIXER 1/2     |                  |     |
| 2b       | NX810480 | Circuit Board                      | MIXER 2/2     |                  |     |
| 3        |          | Circuit Board                      | CASSETTE      |                  |     |
| 3a       | NX810490 | Circuit Board                      | CASSETTE 1/4  |                  |     |
| 3b       | NX810500 | Circuit Board                      | CASSETTE 2/4  | J. B. H.         |     |
| 3b       | NX810530 | Circuit Board                      | CASSETTE 2/4  | U. C. X          |     |
| 3c       | NX810510 | Circuit Board                      | CASSETTE 3/4  |                  |     |
| 3d       | NX810520 | Circuit Board                      | CASSETTE 4/4  |                  |     |
| 4        | VL721300 | Cassette Deck                      |               |                  | 36  |
| 4a       | GF000460 | Erase Head                         |               |                  | 18  |
| 4b       | GF000470 | Rec/Playback Head                  |               |                  | 09  |
| 6        | XJ813A00 | Power Transformer                  |               | U. C. X          | 19  |
| 6        | XJ814A00 | Power Transformer                  |               | B                | 09  |
| 6        | XJ815A00 | Power Transformer                  |               | H                | 09  |
| 10       | CB069250 | Cord Clamper                       |               | 1pc.             | 01  |
| 101      | VL645600 | Bottom Cover Assembly              | BK-1          |                  | 12  |
| 101a     | --       | Plate, Power                       | BL (VL64580)  | POWER ON/OFF     |     |
| 101b     | VL415900 | Foot                               |               | 4pcs             | 03  |
| 103      | VL414600 | Rear Panel                         | BL            |                  | 07  |
| 105      | VL737300 | Shield Plate                       |               | Mixer Ass'y      | 09  |
| 106      | VL737400 | Shield Plate                       |               | Bottom Ass'y     |     |
| 108      | VL449100 | Knob, Slide VR-L                   | GY-GY         | CH Faders (4)    | 03  |
| 109      | VL449200 | Knob, Slide VR-L                   | GY-RE         | MASTER Fader (1) | 03  |
| 111      | VL449500 | Knob, Slide VR-M                   | GY-GY         | AUX SEND (4)     | 03  |
| 112      | VL449600 | Knob, Slide VR-M                   | GY-RE         | AUX RETURN (1)   | 03  |
| 115      | VL449900 | Knob, Slide VR-S                   | GY-YE         | PITCH (1)        | 03  |
| 116      | VL450000 | Knob, Slide VR-S                   | GY-GY         | MIC/LINE (4)     | 03  |
| 117      | VL450100 | Knob, Slide VR-S                   | GY-RE         | MONITOR (4)      | 03  |
| 120      | VL450400 | Knob, Slide SW                     | GY-YE         | METER, ZERO STOP | 03  |
| 121      | VL450500 | Knob, Slide SW                     | GY-GY         | INPUT SEL. (4)   | 03  |
| 122      | VL450600 | Knob, Slide SW                     | GY-RE         | MON./REC SEL.    | 03  |
| 123      | VM608200 | Knob, Rotary VR                    | GY-GY         | PAN (4)          | 05  |
| 124      | VM608400 | Knob, Rotary VR                    | GY-RE         | MONITOR/PHONES   |     |
| 126      | VL415300 | Push Button                        |               | POWER (1)        | 03  |
| 128      | --       | Label                              | Model name    |                  |     |
| 130      | --       | Label                              | Serial Number |                  |     |
| 132      | --       | Label                              | Caution       | U. C. B. X       |     |
| 134      | --       | Label                              | Fcc           |                  |     |
| 138      | VL908100 | Spacer                             |               | U. C. X          |     |
| 140      | VL908300 | Washer                             |               | 2pcs             | 03  |
| 144      | VL965800 | Cup Screw-P                        |               | 2pcs             |     |
| 146      | VL953800 | Bind Head Tapping Screw-P          | 4.0X10 FCM3BL | 2pcs             |     |
| 148      | EP630640 | Bind Head Tapping Screw-P          | 3.0X40 FCM3BL | 3pcs             |     |
| 150      | EP630240 | Bind Head Tapping Screw-P          | 3.0X20 FCM3BL | 5pcs             | 01  |
|          |          |                                    | 3.0X10 FCM3BL | 28pcs            | 01  |
|          | VC142600 | < ACCESSORY ><br>AC Cord           | 10A 2.0m      | U. C. X          | 04  |
|          | MG002140 | AC Cord                            | 2.5A 1.8m     | B                | 04  |
|          | MG002150 | AC Cord                            | 2.5A 1.8m     | H                | 05  |
|          | VM841700 | < OPTION ><br>Remote Controller    | RCM-1         |                  |     |

\*New Parts (新規部品)

ランク: Japan only



# OVERALL ASSEMBLY (Light Gray-colored)



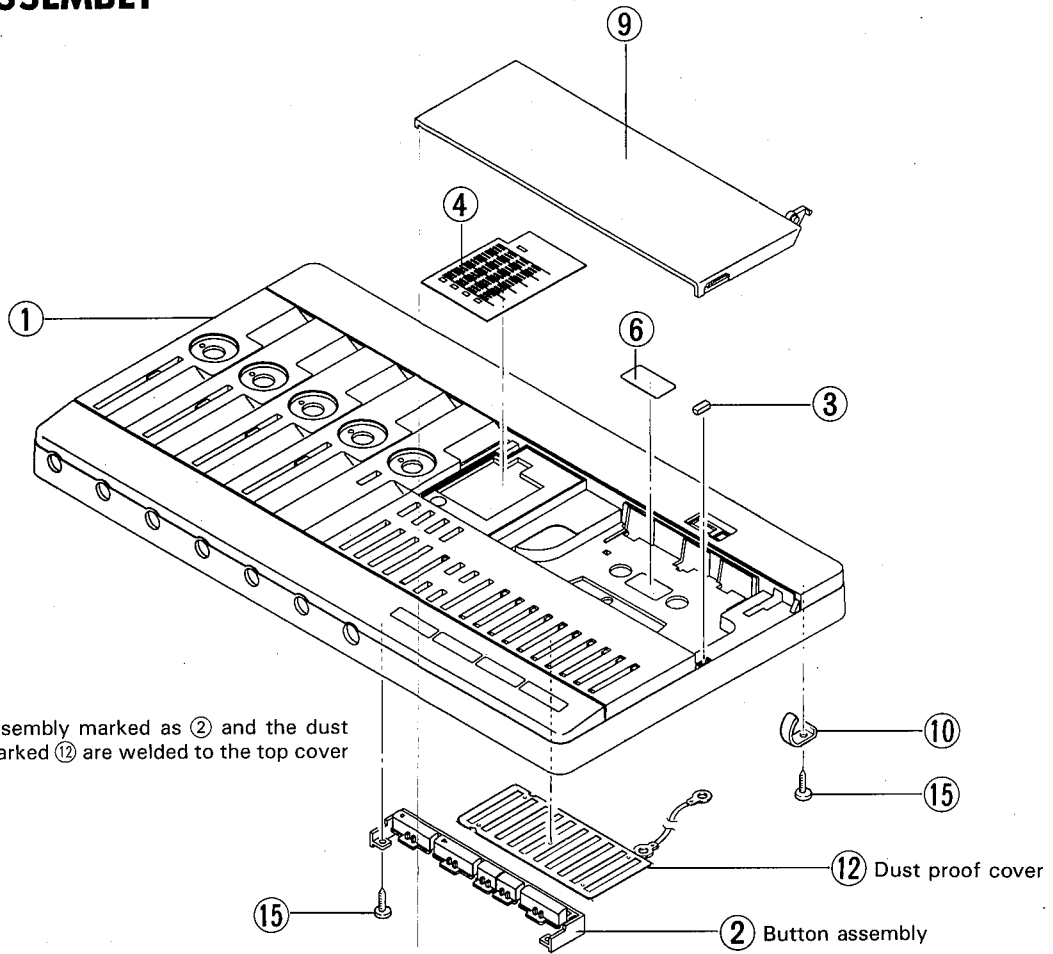
MT120

| Ref. No. | Part No. | Description                        | 部品名           | Remarks          | ランク     |
|----------|----------|------------------------------------|---------------|------------------|---------|
| 1        | VL918200 | < OVERALL ASSEMBLY ><br>Panel Unit | MT120         | Light Gray       |         |
| 2        | --       | Circuit Board                      | MIXER         | LG               |         |
| 2a       | NX810470 | Circuit Board                      | MIXER 1/2     |                  |         |
| 2b       | NX810480 | Circuit Board                      | MIXER 2/2     |                  |         |
| 3        | --       | Circuit Board                      | CASSETE       |                  |         |
| 3a       | NX810490 | Circuit Board                      | CASSETE 1/4   |                  |         |
| 3b       | NX810500 | Circuit Board                      | CASSETE 2/4   | J, B, H          |         |
| 3b       | NX810530 | Circuit Board                      | CASSETE 2/4   | U, C, X          |         |
| 3c       | NX810510 | Circuit Board                      | CASSETE 3/4   |                  |         |
| 3d       | NX810520 | Circuit Board                      | CASSETE 4/4   |                  |         |
| 4        | VL721300 | Cassette Deck                      | メカユニット        |                  | 36      |
| 4a       | GF000460 | Erase Head                         | 消去ヘッド         |                  | 18      |
| 4b       | GF000470 | Rec/Playback Head                  | 録音再生ヘッド       |                  | 19      |
| 6        | XJ813A00 | Power Transformer                  | 電源トランス        | U, C, X          | 09      |
| 6        | XJ814A00 | Power Transformer                  | 電源トランス        | B                | 09      |
| 6        | XJ815A00 | Power Transformer                  | 電源トランス        | H                | 09      |
| 10       | CB069250 | Cord Clamper                       | 電源線止め         | 1pc.             | 01      |
| 101      | VL645500 | Bottom Cover Assembly              | ボトムカバー Ass'y  |                  | 12      |
| 101a     | --       | Plate, Power                       | プレート          | POWER ON/OFF     |         |
| 101b     | VL415900 | Foot                               | スベリ座          | 4pcs             | 03      |
| 103      | VL414500 | Rear Panel                         | リアパネル         |                  | 07      |
| 105      | VL737300 | Shield Plate                       | シールドプレート      | Mixer Ass'y      | 09      |
| 106      | VL737400 | Shield Plate                       | シールドプレート      | Bottom Ass'y     |         |
| 108      | VL448900 | Knob, Slide VR-L                   | スライドラック       | CH Faders (4)    | 03      |
| 109      | VL449000 | Knob, Slide VR-L                   | スライドラック       | MASTER Fader (1) | 03      |
| 111      | VL449300 | Knob, Slide VR-M                   | スライドラック       | AUX SEND (4)     | 03      |
| 112      | VL449400 | Knob, Slide VR-M                   | スライドラック       | AUX RETURN (1)   | 03      |
| 114      | VL449700 | Knob, Slide VR-S                   | スライドラック       | MIC/LINE PITCH   | 03      |
| 117      | VL449800 | Knob, Slide VR-S                   | スライドラック       | MONITOR (4)      | 03      |
| 119      | VL450200 | Knob, Slide SW                     | スライドラック       | INPUT SEL. (9)   | 03      |
| 122      | VL450300 | Knob, Slide SW                     | スライドラック       | MON./REC SEL (5) | 03      |
| 123      | VM608100 | Knob, Rotary VR                    | ロータリー         | PAN (4)          | 05      |
| 124      | VM608300 | Knob, Rotary VR                    | ロータリー         | MONITOR/PHONES   |         |
| 126      | VL415200 | Push Button                        | プッシュボタン       | POWER (1)        | 03      |
| 128      | --       | Label                              | ラベル           |                  |         |
| 130      | --       | Label                              | ラベル           |                  |         |
| 132      | --       | Label                              | ラベル           | U, C, B, X       |         |
| 134      | --       | Label                              | ラベル           | U, C, X          |         |
| 138      | VL908100 | Spacer                             | スペーサー         | 2pcs             | 03      |
| 140      | VL908300 | Washer                             | ワッシャー         | 2pcs             | 03      |
| 144      | VL965800 | Cup Screw-P                        | カップスクリュー Pタイト | 2pcs             |         |
| 146      | VL953800 | Bind Head Tapping Screw-P          | + バインド P タイト  | 3pcs             |         |
| 148      | EP630640 | Bind Head Tapping Screw-P          | + バインド P タイト  | 5pcs             | 01      |
| 150      | EP630240 | Bind Head Tapping Screw-P          | + バインド P タイト  | 28pcs            | 01      |
|          | VC142600 | < ACCESSORY ><br>AC Cord           | 10A 2.0m      | 電源コード            | U, C, X |
|          | MG002140 | AC Cord                            | 2.5A 1.8m     | 電源コード            | B       |
|          | MG002150 | AC Cord                            | 2.5A 1.8m     | 電源コード            | H       |
|          | VM841700 | < OPTION ><br>Remote Controller    | RCM-1         | リモートコントローラ       |         |

\*New Parts (新規部品)

ランク : Japan only

■ PANEL ASSEMBLY



\* The button assembly marked as ② and the dust proof cover marked ⑫ are welded to the top cover marked ①.

| Ref. No. | Part No. | Description                 |               | 部品名                   | Remarks            | ランク |
|----------|----------|-----------------------------|---------------|-----------------------|--------------------|-----|
| 1        | VL918000 | < PANEL UNIT ><br>Top Cover | MT120         | < パネルユニット ><br>トップカバー | Black<br>(VL85150) |     |
| 2        | --       | Button Assembly             | BL            | ボタン Ass'y             | (VL64540)          |     |
| 3        | VL416200 | Damper, Rid A               |               | ダンパー / リッド A          | 2pcs               | 03  |
| 4        | VL415800 | Sheet, Meter                | BL            | シート / メーター            | Peak Meter 1pc.    | 05  |
| 6        | VL416500 | Sheet, Remain               | 1pc.          | シート / リメイン            |                    | 03  |
| 9        | VL414700 | Rid                         |               | カセット扉                 |                    | 07  |
| 10       | VL416400 | Spring, Rid                 |               | バネ                    | 1pc.               | 05  |
| 12       | --       | Dust Proof Cover, EQ        |               | ブラインドシート E Q          | (VM52890)          |     |
| 15       | EP600910 | Bind Head Tapping Screw-P   | 3.0X10 FCM3BL | + バインド P タイ           | 3pcs               | 01  |

\*New Parts (新規部品)

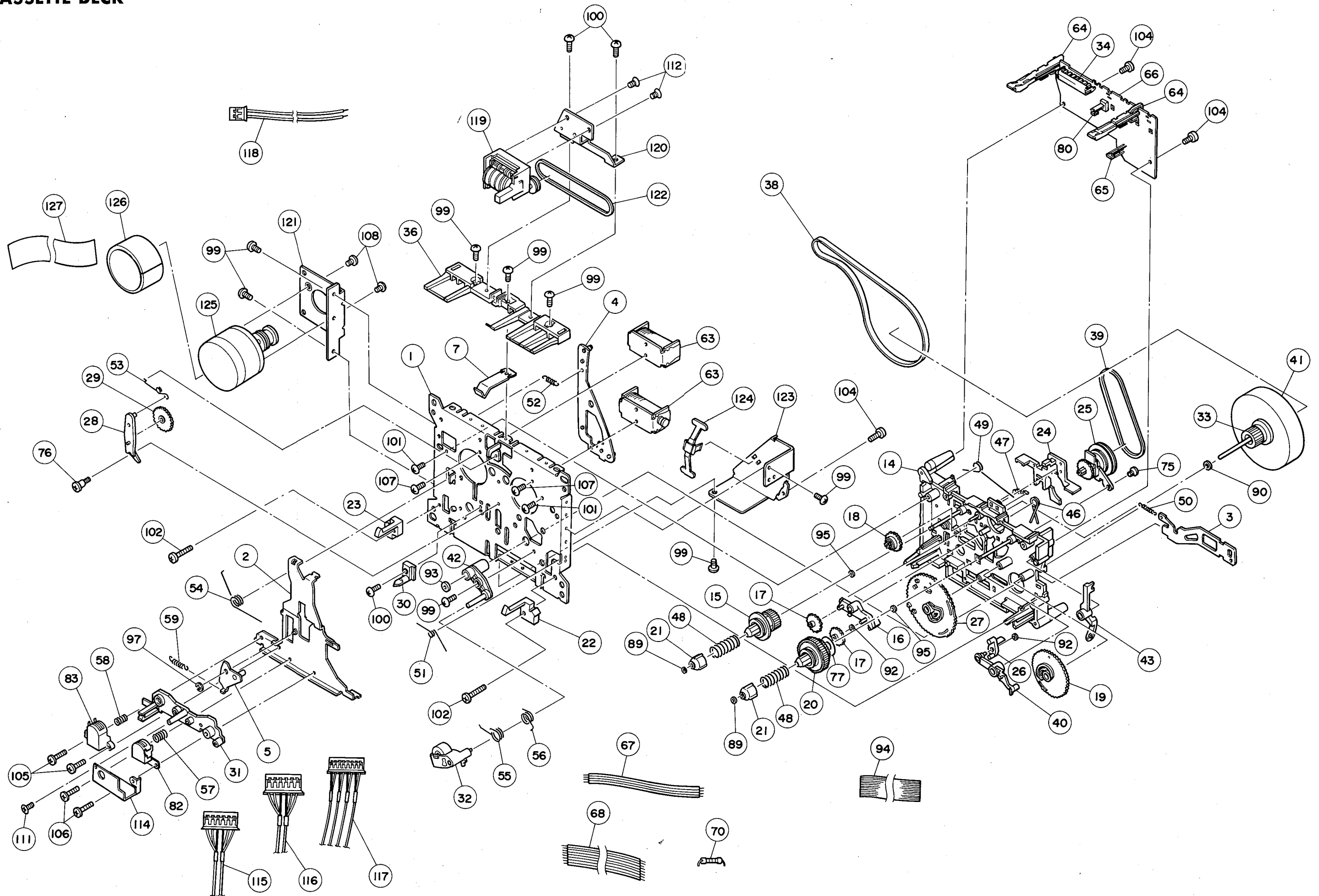
ランク : Japan only

| Ref. No. | Part No. | Description                 |               | 部品名                   | Remarks                 | ランク |
|----------|----------|-----------------------------|---------------|-----------------------|-------------------------|-----|
| 1        | VL918200 | < PANEL UNIT ><br>Top Cover | MT120         | < パネルユニット ><br>トップカバー | Light Gray<br>(VL41420) |     |
| 2        | --       | Button Assembly             | I.G           | ボタン Ass'y             | (VL64530)               |     |
| 3        | VL416200 | Damper, Rid A               |               | ダンパー / リッド A          | 2pcs                    | 03  |
| 4        | VL415700 | Sheet, Meter                | I.G           | シート / メーター            | Peak Meter 1pc.         | 05  |
| 9        | VL414700 | Rid                         |               | カセット扉                 |                         | 07  |
| 10       | VL416400 | Spring, Rid                 |               | バネ                    | 1pc.                    | 05  |
| 12       | --       | Dust Proof Cover, EQ        |               | ブラインドシート E Q          | (VM52890)               |     |
| 15       | EP600910 | Bind Head Tapping Screw-P   | 3.0X10 FCM3BL | + バインド P タイ           | 3pcs                    | 01  |

\*New Parts (新規部品)

ランク : Japan only

CASSETTE DECK



MT120

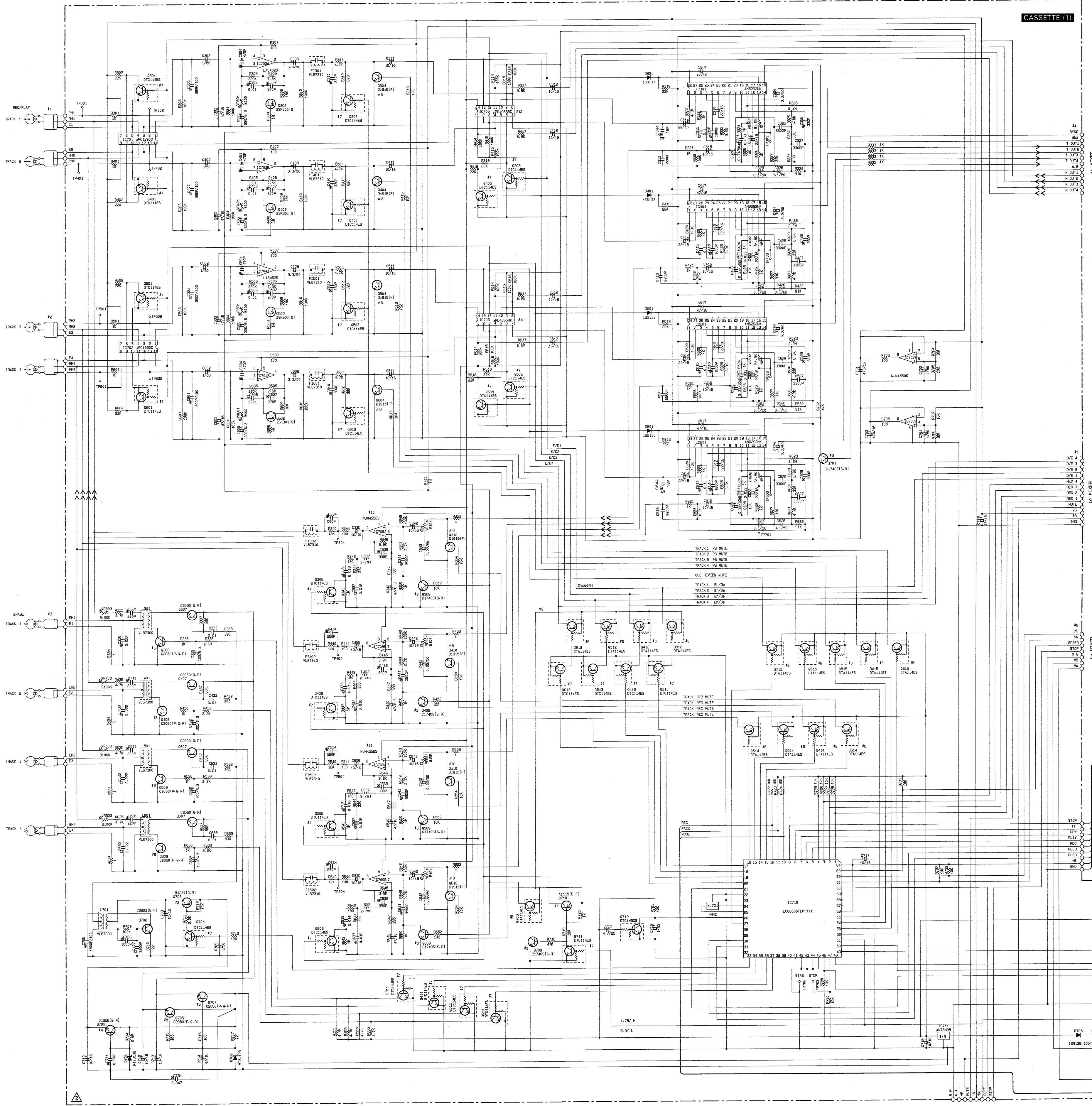
| Ref. No. | Part No. | Description               | 部品名             | Remarks    | ランク |
|----------|----------|---------------------------|-----------------|------------|-----|
|          | VL721300 | < CASSETTE DECK >         | < カセットメカユニット >  |            | 36  |
| 1        | AX809950 | Chassis                   | シャーシ            | PB1055     |     |
| 2        | NX810600 | Head Chassis Assembly (C) | ヘッドシャーシ Ass'y   | PD1050     |     |
| 3        | AX809990 | F/R Lever                 | F/Rレバー          | PD1059     |     |
| 4        | NX810610 | TR Arm (P) Assembly       | TRアーム Ass'y     | PD1063     |     |
| 5        | NX810620 | Shift Arm (B) Assembly    | シフトアーム Ass'y    | PD1130     |     |
| 7        | AX810160 | Pack Spring               | スプリング           | PDS1030    |     |
| 14       | NX810690 | Mecha Base (C) Assembly   | メカベース Ass'y     | PC3100     |     |
| 15       | NX810700 | S Reel Assembly           | Sリール Ass'y      | PD3066     |     |
| 16       | NX810640 | FR Arm Assembly           | FRアーム Ass'y     | PD3043     |     |
| 17       | CX812070 | FR Gear                   | F Rギア           | PD3013     |     |
| 18       | CX812080 | Rew Gear                  | R E Wギア         | PD3025     |     |
| 19       | CX812030 | F/R Cam Gear              | F/Rカムギア         | PB3014     |     |
| 20       | NX810710 | Reel Assembly (B)         | リール Ass'y       | PD3087     |     |
| 21       | CX812190 | Reel Cap (C)              | リールキャップ         | PC3108     |     |
| 22       | CX812160 | Tape Guide (HR)           | テープガイド          | PDS3138    |     |
| 23       | CX812150 | Tape Guide (HL)           | テープガイド          | PDS3137    |     |
| 24       | AX809960 | Brake Arm (B)             | ブレーキアーム         | PC3075     |     |
| 25       | NX810650 | Clutch (B) Assembly       | クラッチ Ass'y      | PD3078     |     |
| 26       | CX812200 | Select Arm (B)            | セレクトアーム         | PD3060     |     |
| 27       | CX812040 | PL Cam Gear (B)           | PLカムギア          | PB3077     |     |
| 28       | CX812090 | Play Gear Arm             | プレイギアアーム        | PD3026     |     |
| 29       | CX812100 | Play Gear                 | プレイギア           | PD3027     |     |
| 30       | CX812060 | Cassette Guide            | カセットガイド         | PD3006     |     |
| 31       | AX809980 | Head Base (H)             | ヘッドベース          | PCS3139    |     |
| 32       | NX810630 | P Roller (R) Assembly     | Pローラ Ass'y      | PD3041     |     |
| 33       | AX810000 | Flywheel Gear (B)         | フライホイールギア       | PD3053     |     |
| 34       | CX812050 | Cable Holder              | ケーブルホルダー        | PC3080     |     |
| 36       | KX803060 | SW Protector              | SWプロテクター        | PC3038     |     |
| 38       | CX812120 | Drive Belt (YH)           | ドライブベルト         | PD4028     |     |
| 39       | CX812110 | Clutch Belt (YH)          | クラッチベルト         | PD4027     |     |
| 40       | NX810660 | F/R Shift Arm Assembly    | F/Rシフトアーム Ass'y | PD5008     |     |
| 41       | AX810020 | Flywheel (H)              | フライホイール         | PD5027     |     |
| 42       | CX812130 | Housing (R)               | ハウジング           | PD5002     |     |
| 43       | AX810010 | Trigger Arm F/R (B)       | トリガーアーム F/R     | PD5004     |     |
| 46       | AX810110 | FR Arm (G) Spring         | F Rアームスプリング     | PD6048     |     |
| 47       | AX810070 | FR Arm (B) Spring         | F Rアームスプリング     | PD6019     |     |
| 48       | AX810170 | Reel Spring (F)           | リールスプリング        | PD6045     |     |
| 49       | AX810060 | Brake Spring              | ブレーキスプリング       | PD6017     |     |
| 50       | AX810090 | FR Lever Spring (C)       | F Rレバースプリング     | PD6032     |     |
| 51       | AX810040 | FR Shift Spring           | F Rシフトスプリング     | PD6006     |     |
| 52       | AX810080 | PL Trigger Spring (B)     | PLトリガースプリング     | PD6030     |     |
| 53       | AX810030 | Play Arm Spring           | プレイアームスプリング     | PD6005     |     |
| 54       | AX810100 | Head Chassis Spring (B)   | ヘッドシャーシスプリング    | PD6037     |     |
| 55       | AX810120 | P Roller (B) Spring       | Pローラスプリング       | PD6052     |     |
| 56       | AX810050 | P Roller Arm (RB) Spring  | Pローラアームスプリング    | PD6012     |     |
| 57       | AX809940 | Head Spring               | ヘッドスプリング        | KD8009     |     |
| 58       | AX809930 | Head Spring               | ヘッドスプリング        | G46084     |     |
| 59       | AX810180 | Shift Arm Spring (E)      | シフトアームスプリング     | PD6039     |     |
| 63       | NX810670 | Solenoid Assembly (B)     | ソレノイド Ass'y     | PD9106     |     |
| 64       | KX803070 | Rec Switch                | R E Cスイッチ       | PD9035     |     |
| 65       | IX806270 | Photo Reflector           | フォトフレクター        | PD9058     |     |
| 66       | NX810590 | Mecha P.C.B. (VA)         | メカシート           | PC9081     |     |
| 67       | MX801250 | Motor Wire (H)            | モーターワイヤー        | PD9199     |     |
| 68       | MX801240 | Flat Ribbon Wire          | フラットリボンワイヤ      | PD9049     |     |
| 70       | HX806410 | Carbon Resistor           | カーボン抵抗          | PD9064     |     |
| 75       | AX810150 | Screw (F)                 | ネジ              | UD8010     |     |
| 76       | AX810130 | Screw (PL)                | ネジ              | PD8009     |     |
| 77       | CX812140 | Reflect Seal              | リフレクトシール        | PD8005     |     |
| 80       | KX803050 | Leaf Switch               | リーフスイッチ         | 94019075   |     |
| 82       | GX803130 | RP Head                   | 録再ヘッド           | 92999360   |     |
| 83       | GX803140 | E Head                    | 消去ヘッド           | 92999180   |     |
| 89       | --       | Polyslider Washer         | ポリスライダ-ワッシャー    | 8341116029 |     |
| 90       | --       | Polyslider Washer         | ポリスライダ-ワッシャー    | 8342126077 |     |
| 92       | --       | Polyslider Washer         | ポリスライダ-ワッシャー    | 8342117009 |     |
| 93       | --       | Nylon Washer              | ナイロンワッシャー       | 8340424004 |     |
| 94       | CX812000 | Filament Tape             | フィラメントテープ       | 96901016   |     |
| 95       | --       | Tefron Washer             | テフロンワッシャー       | 8340502105 |     |
| 97       | --       | E Ring                    | Eリング            | 8220002504 |     |
| 99       | --       | Tap Tite Screw            | タップタイトネジ        | 8213112004 |     |
| 100      | --       | Tap Tite Screw            | タップタイトネジ        | 8213112005 |     |
| 101      | --       | Tapping Screw             | タッピングネジ         | 8214112008 |     |
| 102      | --       | Bind Tapping Screw        | バインドタッピングネジ     | 8214512012 |     |
| 104      | --       | Bind Tapping Screw        | バインドタッピングネジ     | 8114512008 |     |
| 105      | --       | Binding Screw             | バインドネジ          | 8215512010 |     |
| 106      | --       | Binding Screw             | バインドネジ          | 8215512009 |     |
| 107      | --       | Pan Screw                 | ナベネジ            | 8215112003 |     |
| 108      | --       | Pan Screw                 | ナベネジ            | 8215112603 |     |
| 112      | --       | Flat Tapping Screw        | 皿タッピングネジ        | 8214312606 |     |

\*New Parts (新規部品)

ランク : Japan only







NOTICE  
 [J].....Japanese model  
 [U].....U.S.A model  
 [C].....Canada model  
 [E].....English model  
 [G].....European model

CAPACITOR

| REMARKS | PARTS NAME                       | # |
|---------|----------------------------------|---|
| NO MARK | ELECTROLYTIC CAPACITOR           |   |
| ○       | NON POLAR CAPACITOR              |   |
| ●       | AXIAL LEAD CERAMIC CAPACITOR     |   |
| ○       | POLYESTER FILM CAPACITOR         |   |
| ○       | POLYPROPYLENE FILM CAPACITOR     |   |
| ○       | MICA CAPACITOR                   |   |
| ○       | POLYPROPYLENE FILM CAPACITOR     |   |
| ○       | SEMICONDUCTIVE CERAMIC CAPACITOR |   |

RESISTOR

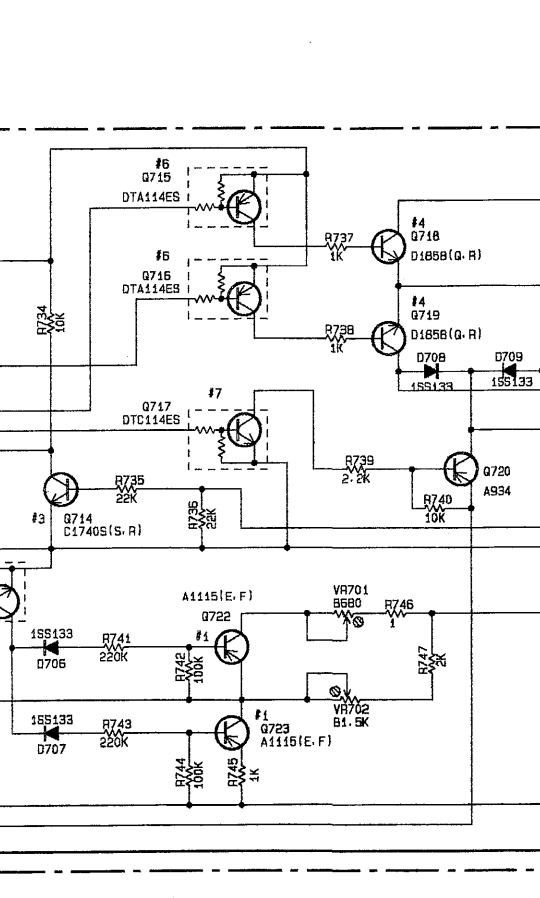
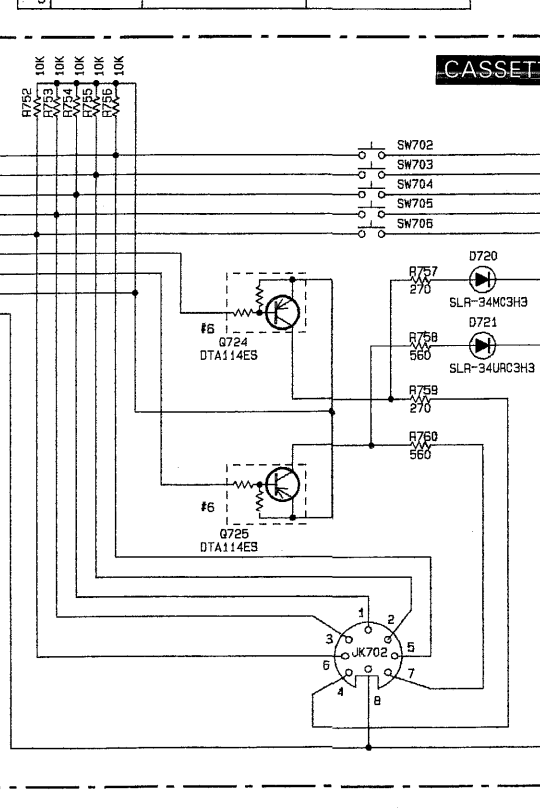
| REMARKS | PARTS NAME                      | # |
|---------|---------------------------------|---|
| NO MARK | CARBON FILM RESISTOR (1/4W)     |   |
| ○       | CARBON FILM RESISTOR (1/2W)     |   |
| △       | METAL OXIDE FILM RESISTOR       |   |
| △       | METAL FILM RESISTOR             |   |
| △       | METAL PLATE FILM RESISTOR       |   |
| △       | FINE PITCH CARBON FILM RESISTOR |   |
| △       | CEMENT THICK FILM RESISTOR      |   |
| ○       | SEMI VARIABLE RESISTOR          |   |
| ○       | CHIP RESISTOR                   |   |

Interchangeable Parts at Manufacture-Stage

| Mark | Reference Parts Number   | Parts Name       |
|------|--------------------------|------------------|
| F1   | 0710-720-723             | 2SA938(S)-R      |
|      |                          | 2SA115(E)-F      |
|      |                          | 2SA130A(S)-R-SI  |
| F2   | 0703                     | 2SA1674          |
|      |                          | 28B1237(S)-R     |
| F3   | 0309-409-509-609         | 2SC1748(S)-R     |
|      | 701-709-714              | 2SC2603(E)-F     |
|      |                          | 2SC3311A(S)-R-SI |
| F4   | 0705-718-719             | 2SC4391          |
|      |                          | 2SD1858(S)-R     |
| F5   | 0306-406-506-606-706     | 2SC2050(P)-R     |
|      | 707                      | 2SD400           |
| F6   | 0312-314-315-412-414-415 | DTA114ES         |
|      | 512-514-515-612-614-615  | UN4111           |
|      | 708-713-715-716-724-725  | UN4111           |
| F7   | 0301-303-305-306-311-313 | DTA114ES         |
|      | 401-403-405-408-451-413  | UN4211           |
|      | 501-503-505-508-511-513  | DTA114ES         |
|      | 601-603-605-608-611-613  | DTA114ES         |
|      | 704-711-717-721          | DTA114ES         |
| F8   | 0304-310-404-410-504     | 2SD1915(F)       |
|      | 510-604-610              | 2SC2878(A, B)    |

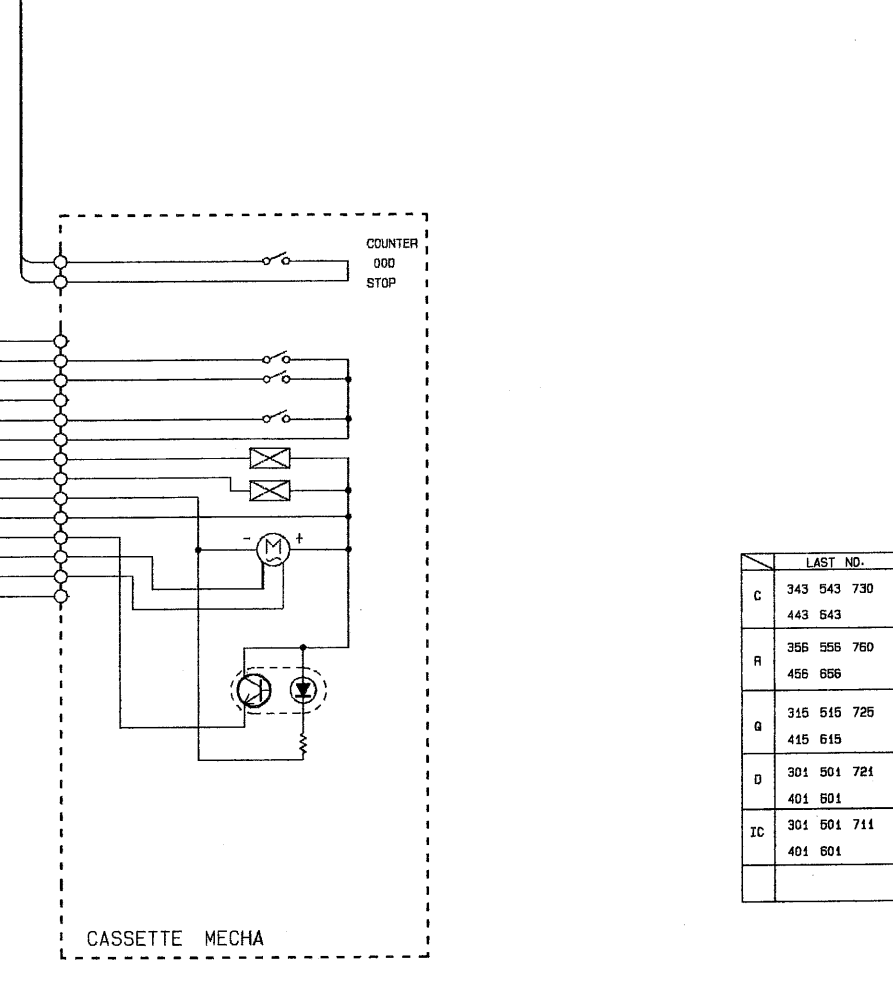
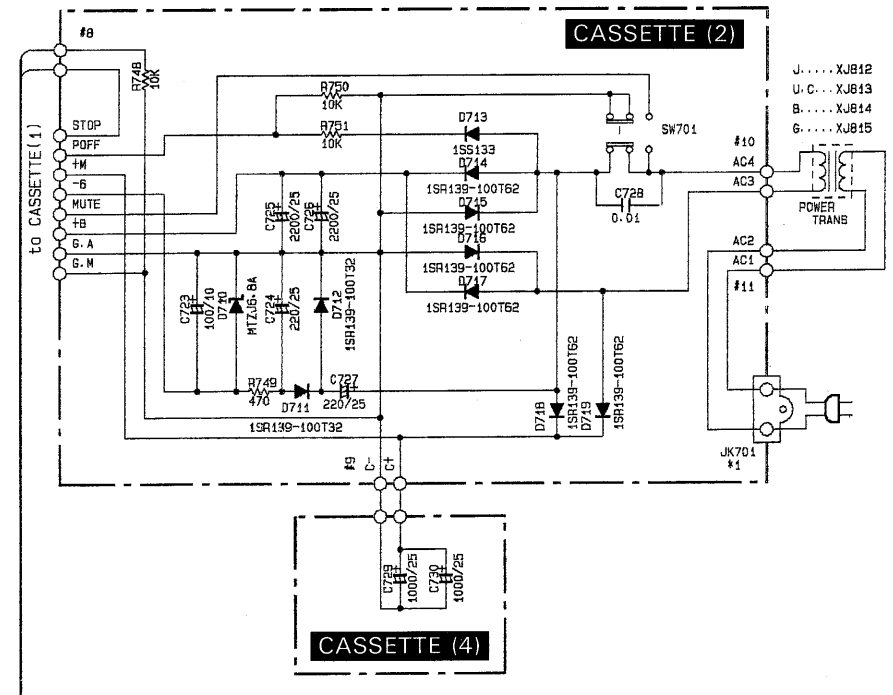
Interchangeable Parts at Manufacture-Stage

| Mark | Reference Parts Number | Parts Name         |
|------|------------------------|--------------------|
| F11  | IC708-709              | AN6501             |
|      |                        | NM4928S            |
|      |                        | BA715              |
| F12  | IC705-706              | JPD4066BC          |
|      |                        | LC4066B            |
|      |                        | MA066B             |
|      |                        | MN4066B            |
|      |                        | BL4066B MC14066BCP |
| F13  | IC711                  | AN78M05            |
|      |                        | L78M05             |



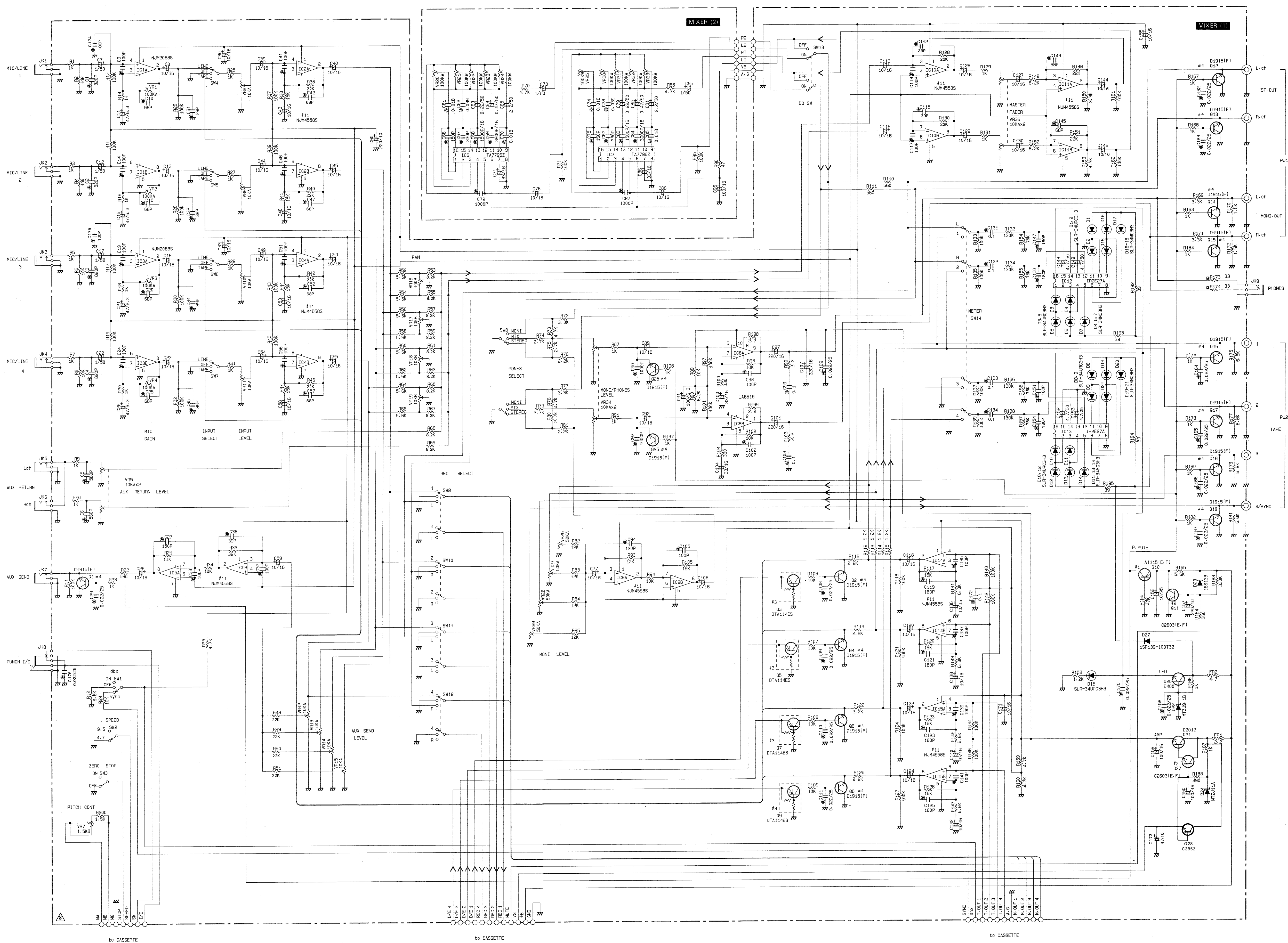
Notes)

- Circuit Board:
- CASSETTE 1/4 (NX810490) XJ845C0
  - CASSETTE 2/4 (NX810500) XJ845C0 J, B, H
  - CASSETTE 2/4 (NX810530) XJ845C0 U, C, X
  - CASSETTE 3/4 (NX810510) XJ845C0
  - CASSETTE 4/4 (NX810520) XJ845C0
- IC
    - IC301, 401, 501, 601: AN6282NK (XJ637A00) dbx
    - IC701, 702: JPC1230C (XA508A00) PB/REC HEAD SW
    - IC703, 704: LA6462S (XJ636A00) OP AMP. HEAD
    - IC705, 706: JPD4066BC (IG061600) SWITCH
    - IC708, 709: AN6501 (GG04700) OP AMP.
    - IC710: LC66506PLP (XJ387B00) CPU MTR
    - IC711: AN78M05 (XA507A00) SV REGULATOR
  - Transistor
    - Q304, 310, 404, 410, 504, 610, 604, 610: 2SD1915 F (VK432800)
    - Q306, 406, 506, 606, 706, 707: 2SC2060 P, Q, R (IC206010)
    - Q307, 407, 507, 607: 2SC2060 O, R (VL929300)
    - Q309, 409, 509, 609, 701, 709, 714: 2SC1740S R, S (IC174020)
    - Q702: 2SC2603 E, F (IC260320)
    - Q703: 2SA1674 (VG805300)
    - Q705, 718, 719: 2SC4391 (VG805600)
    - Q710, 722, 723: 2SA938 O, R (IA093320)
    - Q720: 2SA934 (IA093410)
  - Digital Transistor
    - Q301, 303, 305, 308, 311, 313, 401, 403, 405, 408, 411, 413, 501, 503, 505, 508, 511, 513, 601, 603, 605, 608, 611, 613, 704, 711, 717, 721: DTC114ES (VD678700)
    - Q312, 314, 315, 412, 414, 415, 512, 514, 515, 612, 614, 615, 708, 713, 715, 716, 724, 725: DTA114ES (VD678500)
    - Q712: DTC143XS (VD488500)
  - FET
    - Q302, 402, 502, 602: 2SK301 Q (IE102130)
  - Diode
    - D301, 401, 501, 601, 706 - 709, 713: 1SS133 (IF004600)
    - D703 - 705, 711, 712: 1SR139-100T32 (VH770800)
    - D714 - 719: 1SR139-100T62 (VH801600)
  - Zener Diode
    - D701, 702: MTZJ10B (VG439500)
    - D710: MTZJ6.8A (VG438200)
  - LED
    - D720: SLR-34MC3H3 GR (IF008740) PLAY
    - D721: SLR-34URC3H3 RE (IF008730) REC/PAUSE
  - Trimmer Potentiometer
    - VR301, 401, 501, 601: B10Q 3P RH0638C (VJ692400) PB LEVEL
    - VR302, 402, 502, 602: B1K 3P RH0638 (VJ693100) dbx
    - VR303, 403, 503, 603: B10QK 3P RH0638 (VJ694200) REC BIAS
    - VR304, 404, 504, 604: B10QK 3P RH0638C (VJ693800) REC LEVEL
    - VR701: B680 3P RH0638C (VJ692900) TAPE SPEED
    - VR702: B1.0K 3P RH0638 (VJ693100) TAPE SPEED 9.5cm/s
  - Electrolytic Cap.
    - C305, 405, 505, 605: 220µF 6.3V (UG286300)
    - C701, 703: 470µF 16V (UH138470)
    - C724, 727: 2200µF 25V (VG289000)
    - C725, 726: 2200µF 25V (VF899100)
    - C729, 730: 1000µF 25V (VL843800)
  - Polypropylene Cap.
    - C301, 401, 501, 601: 390pF 100V (UT652300)
    - C705: 1500pF 100V (UT653150)
  - Coil
    - L301, 401, 501, 601: 7CDA 80KHz (VL673000) slave
    - L302, 402, 502, 602: 2.7mH (GE901500)
    - L701: 7CDA 80KHz (VL672900) master
    - F101, 302, 401, 402, 501, 502, 601, 602: 7CBA 80KHz (VL673100) trap
  - Ceramic Resonator
    - XL701: EFO-FC400 4MHz (VB758100)
  - Switch
    - SW701: SPUN1918A (VL080100) POWER ON/OFF
    - SW702 - 706: SKHVAA (VG392900) CASSETTE CONTROL
  - DIN Jack
    - JK702: 8P CMS (VL105500) REMOTE CONTROL
  - AC Inlet
    - JK701: M1779 (VJ137800) AC IN J, B, H
    - JK701: M1770 (VJ137700) AC IN U, C, X



| Label No. |
|-----------|
| 1         |
| 2         |
| 3         |
| 4         |
| 5         |
| 6         |
| 7         |
| 8         |
| 9         |
| 10        |
| 11        |
| 12        |





- Notes:
- Circuit Board: MIXER 1/2 (NX810470) XJ944C0  
MIXER 2/2 (NX810480) XJ944C0
- IC 1, 3, 15: NJM2068S (KA956A00) OP AMP.  
IC 6, 7: AN6551 (IG034700) OP AMP.  
IC 8: TA7962 (XJ377A00) EQUALIZER  
IC 12, 13: LA6515 (XJ250A00) OP AMP.  
IC12, 13: IR2E27A (XJ799A00) LED DRIVER
  - Transistor Q 1, 2, 4, 6, 8, 12-19, 26: 2SD1915F (VK432900)  
Q 10: 2SA933S Q, R (IA093320)  
Q11, 27: 2SC1740S R, S (IC174020)  
Q20: 2SD400 (ID040040)  
Q21: 2SD2012 (VE759500)  
Q28: 2SC3852 (VC938500)
  - Digital Transistor Q 3, 5, 7, 9: DTA114ES (VD678500)
  - Diode D23: 1SS133 (IF004600)  
D27: 1SR139-100T32 (VH770800)
  - Zener Diode D22: MTZJ9.1B (VG439200)  
D24: MTZJ11A (VG439800)
  - LED D 1-3, 5, 8-10, 12, 15: SLR-34URC3H RE (IF008730) Peak Meters  
D 4, 6, 7, 11, 13, 14, 16-21: SLR-34MC3H GR (IF008740) Peak Meters
  - Flame Proof C. Resistor R173, 174: 330 1/4 J (HV754300)
  - Slide Pot. VR 1-4: A100K 30mm (VL081100) MIC/LINE 1-4  
VR 5: A10Kx2 25mm (VL081000) AUX RETURN  
VR 7: B1.5K 20mm (VL080700) PITCH  
VR 8-11: A10K 45mm (VL081200) CH Faders 1-4  
VR12-15: A10K 25mm (VL080500) AUX SEND  
VR20-25, 30-33: VT100K 20mm (VL080600) GRAPHIC EQ.  
VR26-29: A50K 25mm (VL080900) MONITOR  
VR36: A10Kx2 45mm (VL081300) MASTER Fader
  - Rotary Pot. VR16-19: 10KΩ (VL081400) PAN  
VR34: 10KΩ x 2 (VL081500) MONITOR/PHONES
  - Electrolytic Cap. C60, 157: 220µF 10V (VE117800)  
C97, 101, 107: 220µF 16V (UJ638220)
  - Slide Switch SW 1, 4-7: SSSU01 1-3 (VL079700) dbx. INPUT SEL  
SW 2, 3: SSSU01 2-3 (VL914200) MONITOR SELECT  
SW 9-12: SSSU01 2-2 (VL078900) REC SELECT  
SW13: SSSU01 2-2 (VL078900) EQ ON/OFF  
SW14: SSSU01 4-2 (VL080000) METER ST/4TR
  - Phone Jack JK1-7: YKB21-5011 (VL080400) INPUT1-4, AUX SND, AUX RTN  
JK8: YKB21-5076 (VL080500) PUNCH I/O  
JK9: YKB21-5009 (VL080300) PHONES
  - Pin Jack PJ1, 2: 4P 20-32480-01 (VL080200) MONITOR OUT, STEREO OUT

| LAST NO. |
|----------|
| C 175    |
| R 200    |
| Q 28     |
| D 27     |
| IC 15    |

| REMARKS | PARTS NAME                       |
|---------|----------------------------------|
| NO MARK | ELECTROLYTIC CAPACITOR           |
| ⊗       | TANTALUM CAPACITOR               |
| NO MARK | CERAMIC CAPACITOR                |
| ⊙       | AXIAL LEAD CERAMIC CAPACITOR     |
| ⊖       | POLYESTER FILM CAPACITOR         |
| ⊕       | POLYSTYRENE FILM CAPACITOR       |
| ⊘       | MICA CAPACITOR                   |
| ⊙       | POLYPROPYLENE FILM CAPACITOR     |
| ⊖       | SEMICONDUCTIVE CERAMIC CAPACITOR |

| REMARKS | PARTS NAME                      |
|---------|---------------------------------|
| NO MARK | CARBON FILM RESISTOR (1/4W)     |
| ⊗       | CARBON FILM RESISTOR (1/2W)     |
| ⊖       | METAL OXIDE FILM RESISTOR       |
| ⊕       | METAL FILM RESISTOR             |
| ⊖       | METAL PLATE RESISTOR            |
| ⊕       | FIRE PROOF CARBON FILM RESISTOR |
| ⊖       | CEMENT MOLDED RESISTOR          |
| ⊕       | SEMI VARIABLE RESISTOR          |
| ⊖       | CHIP RESISTOR                   |

NOTICE

(J)..... Japanese model  
(U)..... U.S.A. model  
(C)..... Canadian model  
(A)..... Australian model  
(G)..... European model  
(B)..... British model  
(R)..... General model  
(P)..... PP model

| Mark | Reference Parts Number | Parts Name                                       |
|------|------------------------|--|
| F1   | Q10                    | 2SA9235(G-R)<br>2SA1115(E-F)<br>2SA1309A(D-R-S)  |
| F2   | Q11-27                 | 2SC1740S(R-S)<br>2SC2603(E-F)<br>2SC3311A(G-R-S) |

|    |                               |                             |
|----|-------------------------------|-----------------------------|
| F3 | Q3-5, 7-9                     | DTA114ES<br>UN4111          |
| F4 | Q1, 2, 4, 6, 8, 12-19, 26, 28 | 2SD1915(F)<br>2SC2878(A, B) |

|     |                        |                             |
|-----|------------------------|-----------------------------|
| F11 | IC2-4, 5, 9-11, 14, 15 | AN6551<br>NJM4558S<br>BA715 |
| F12 |                        |                             |