

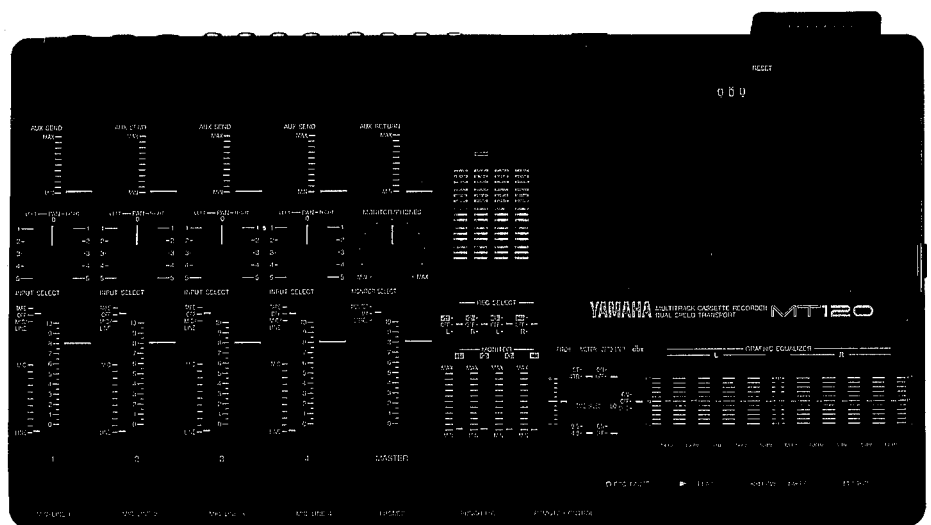
# MULTITRACK CASSETTE RECORDER

# MT120

## SERVICE MANUAL



REMOTE CONTROLLER  
RCM1



MULTITRACK CASSETTE RECORDER MT120

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## 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 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. 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>

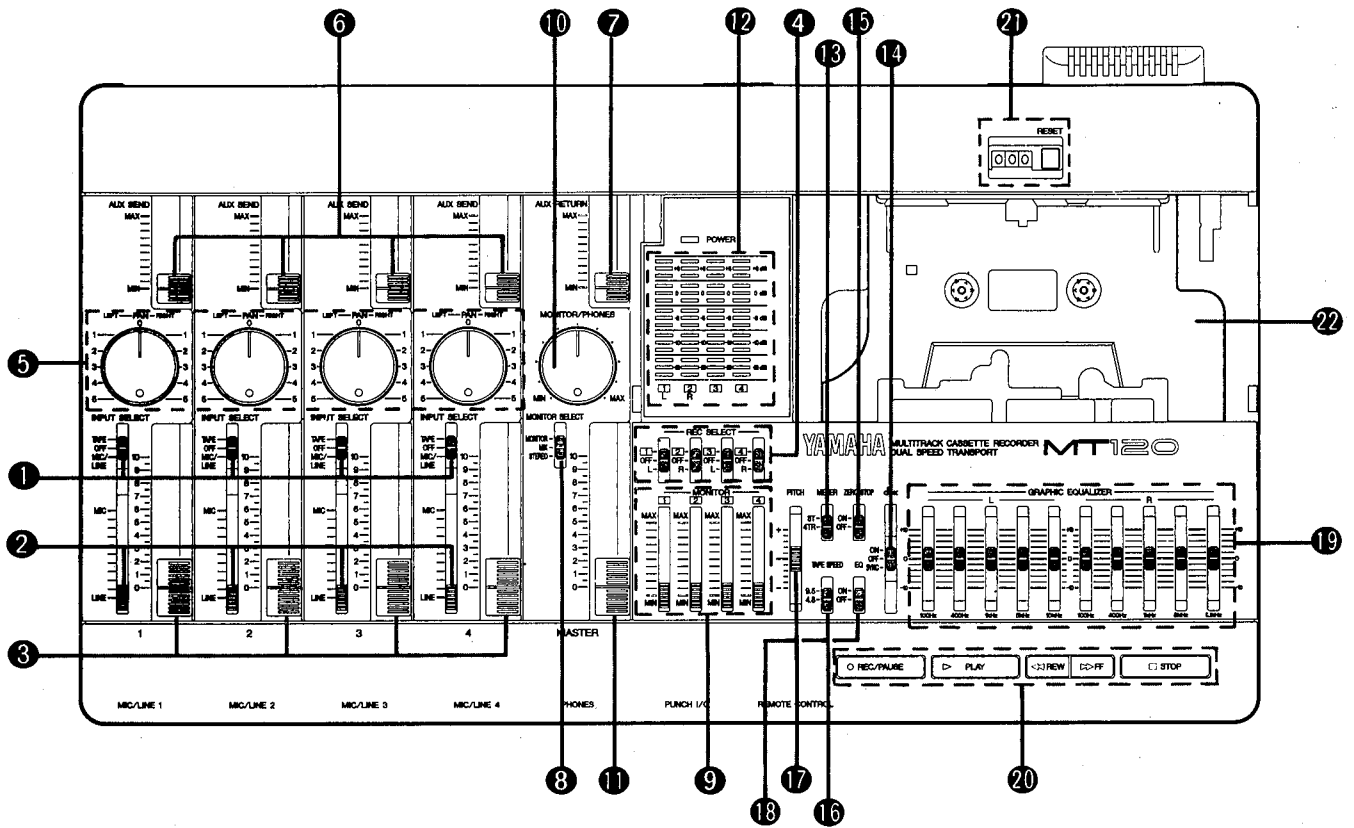
### GENERAL

Power Requirements	<i>U.S. &amp; Canadian Models: 120 V AC, 60 Hz UK Model: 240 V AC, 50 Hz 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>

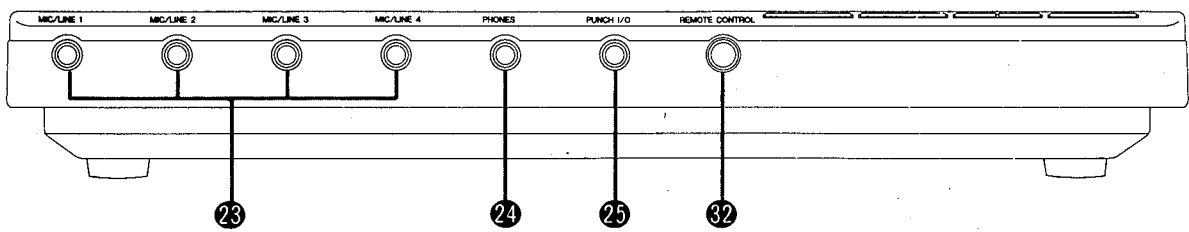
\* dbx is a trademark of dbx Incorporated.  
0 dB = 0.775 Vr.m.s.

## PANEL LAYOUT

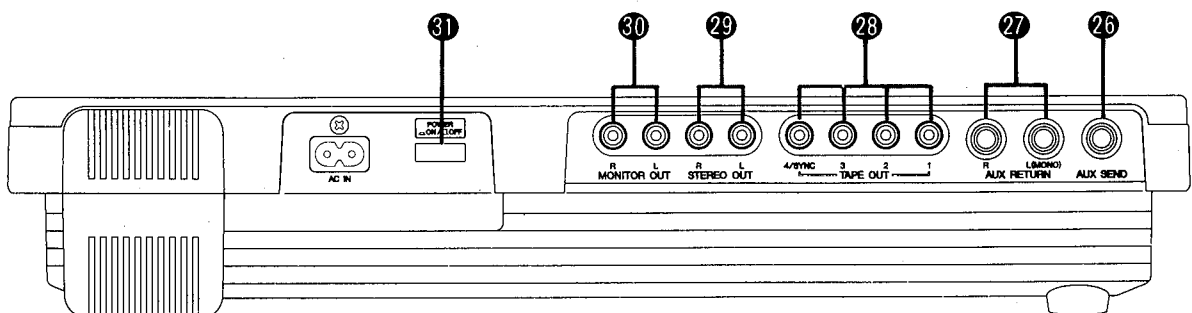
### Control Panel



### Front Panel

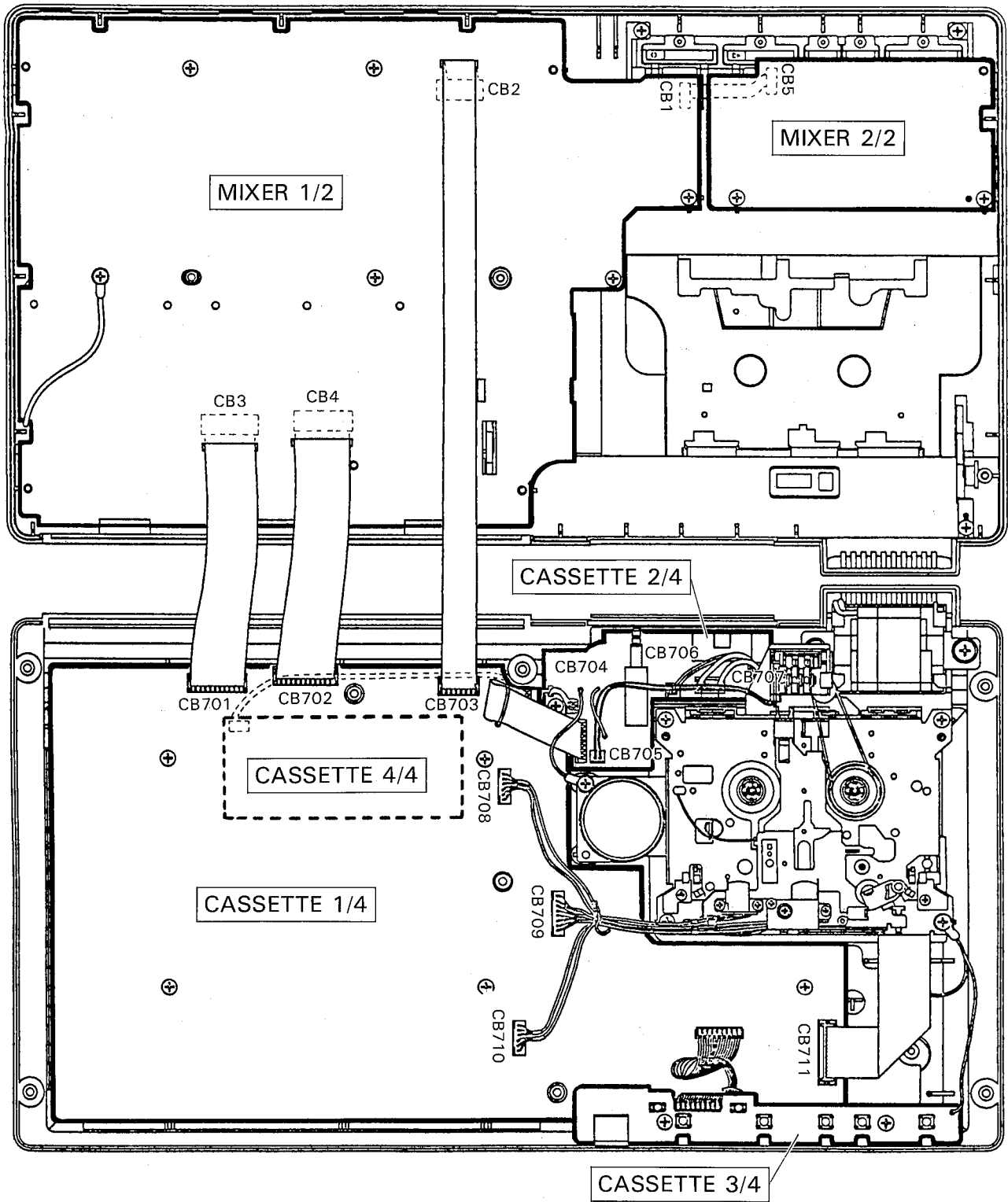


### Rear Panel



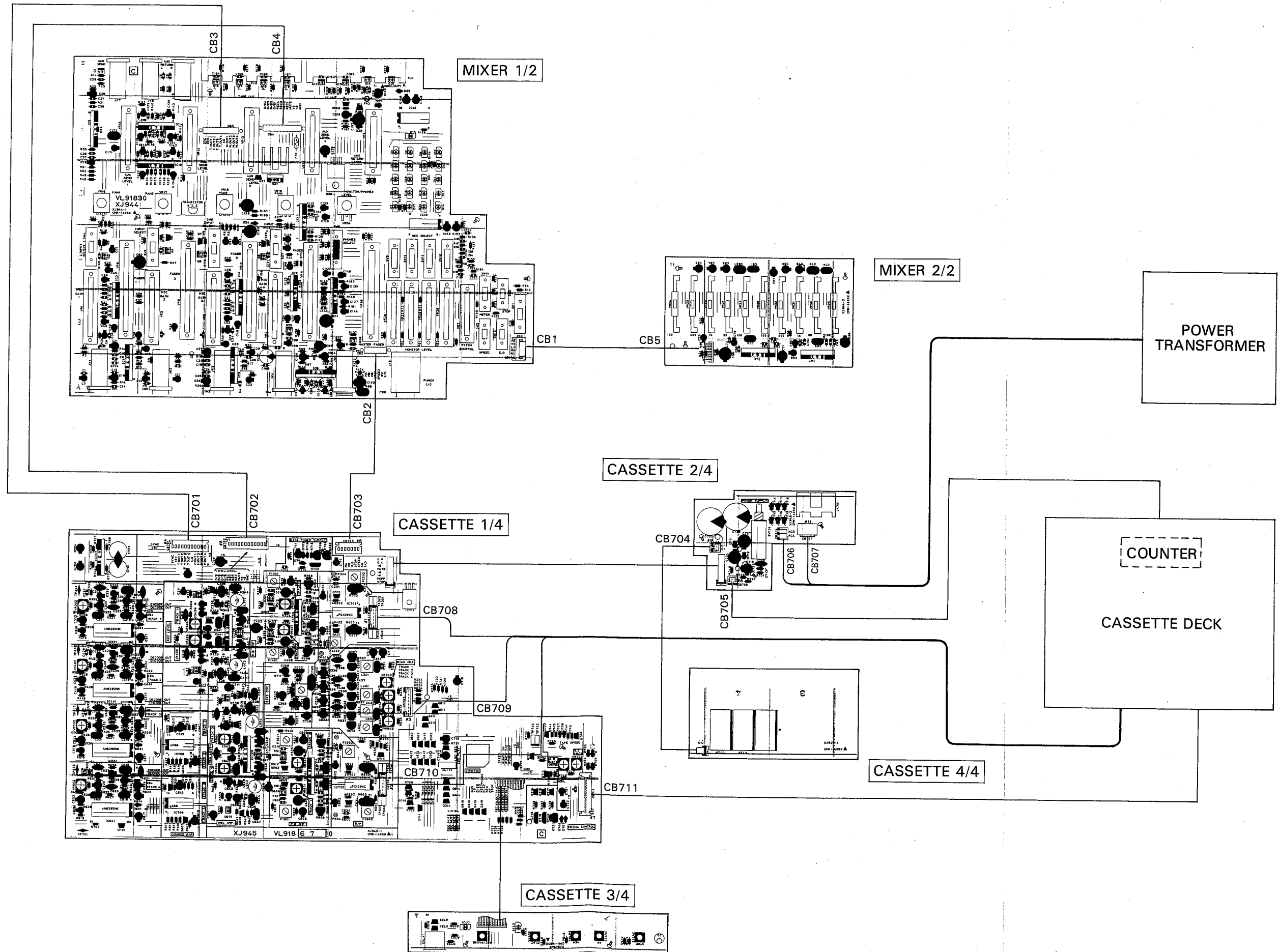
- ① INPUT SELECT Switches  
(TAPE, OFF, MIC/LINE)
- ② MIC/LINE Gain Controls
- ③ Input Faders
- ④ REC SELECT Switches
- ⑤ PAN Controls
- ⑥ AUX SEND Controls
- ⑦ AUX RETURN Control
- ⑧ MONITOR SELECT Switch  
(MONITOR, MIX, STEREO)
- ⑨ MONITOR Controls 1–4
- ⑩ MONITOR/PHONES Control
- ⑪ MASTER Fader
- 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

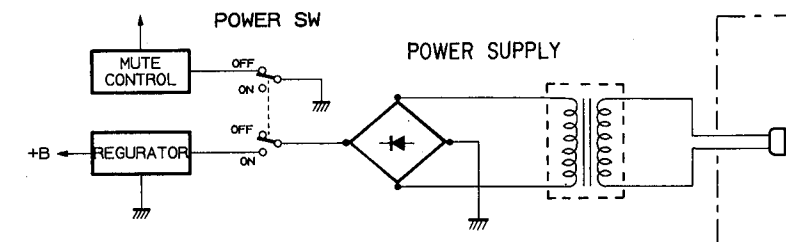
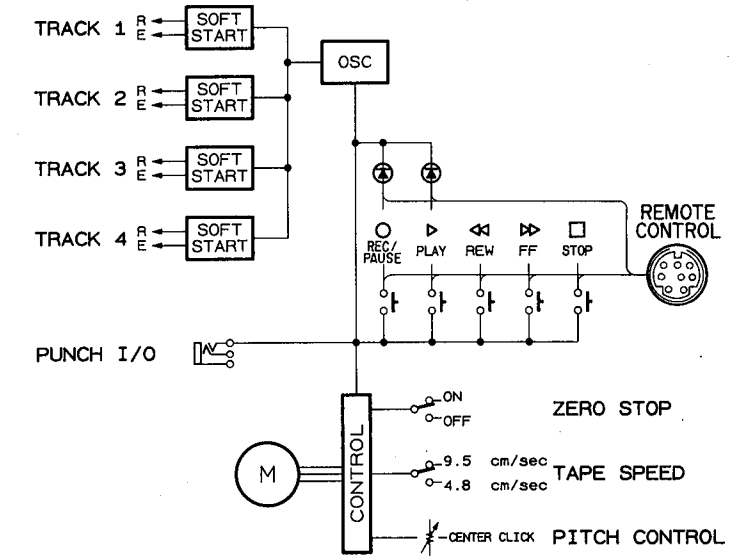
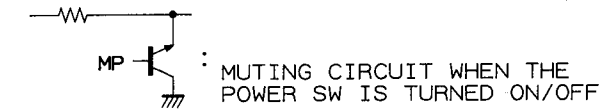
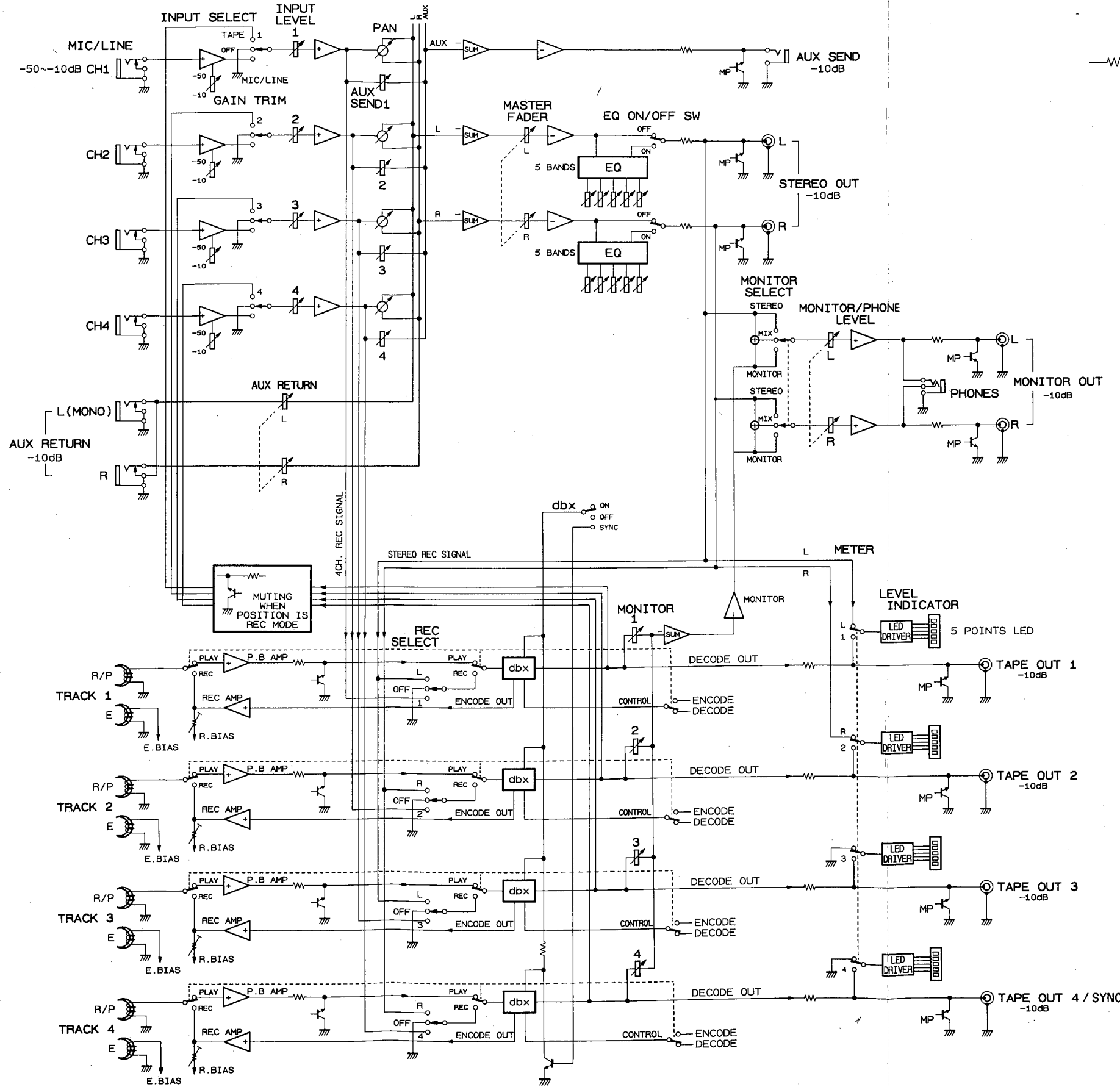


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WIRING



■ BLOCK DIAGRAM



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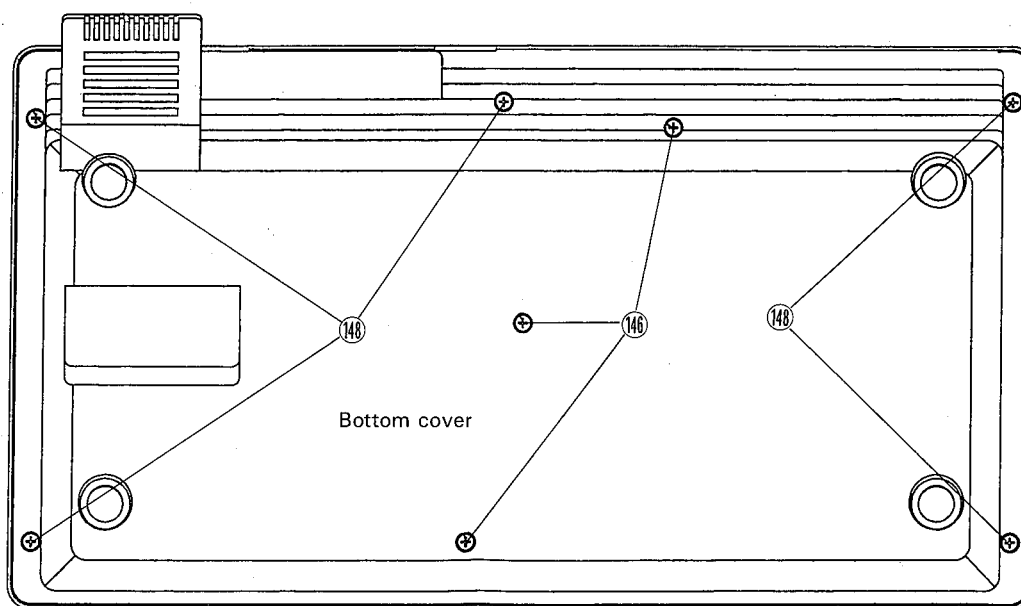


## DISASSEMBLY PROCEDURE

### 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.

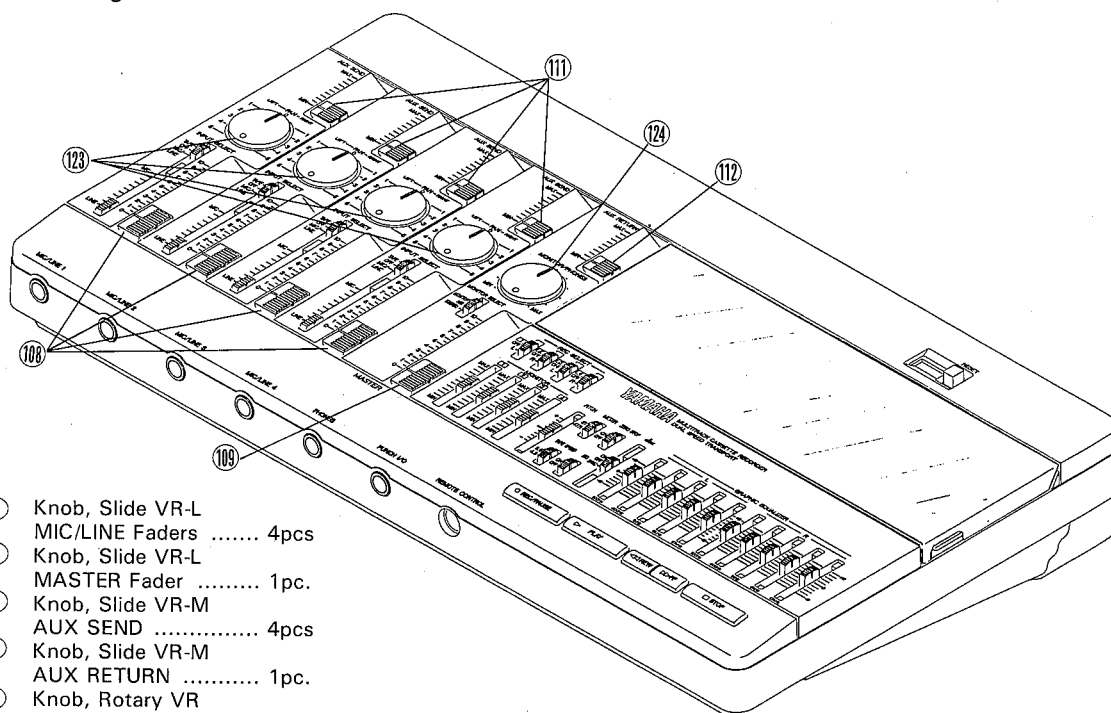


- (146) Bind head tapping screw - p  
3.0 x 40 ..... 3pcs
- (148) Bind head tapping screw - p  
3.0 x 20 ..... 5pcs

(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)



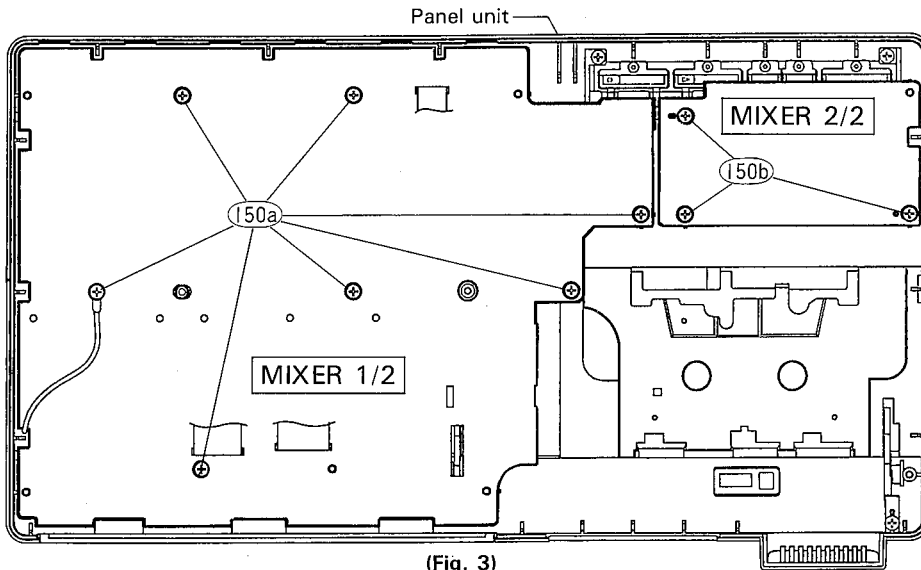
- (108) Knob, Slide VR-L  
MIC/LINE Faders ..... 4pcs
- (109) Knob, Slide VR-L  
MASTER Fader ..... 1pc.
- (111) Knob, Slide VR-M  
AUX SEND ..... 4pcs
- (112) Knob, Slide VR-M  
AUX RETURN ..... 1pc.
- (123) Knob, Rotary VR  
PAN ..... 4pcs
- (124) Knob, Rotary VR  
MONITOR/PHONES ... 1pc.

(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)



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

**4. Cassette Deck Removal**

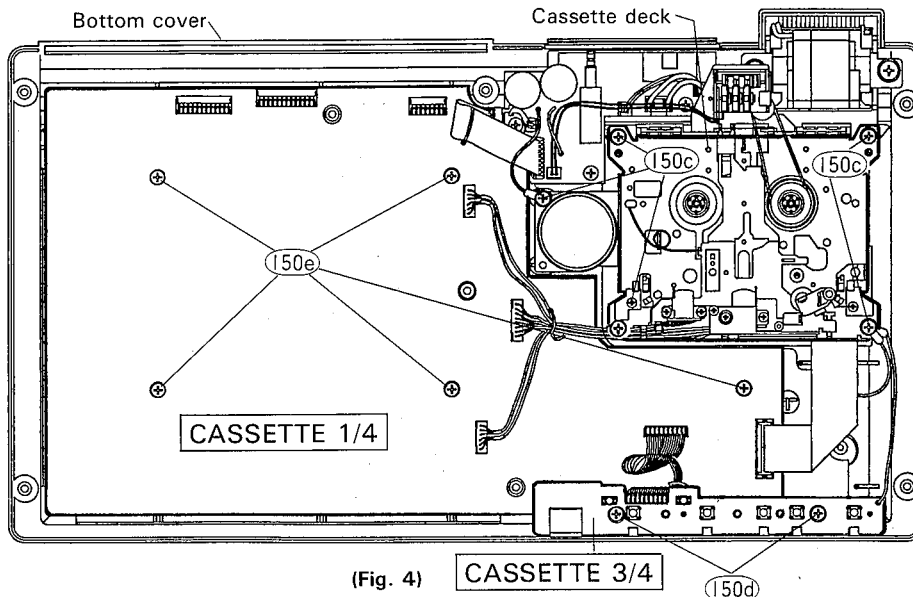
- 4-1 Remove the bottom cover. (see procedure 1)
- 4-2 Remove the five (5) screws marked (150c), the cassette deck can be removed. (Fig. 4)

**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)



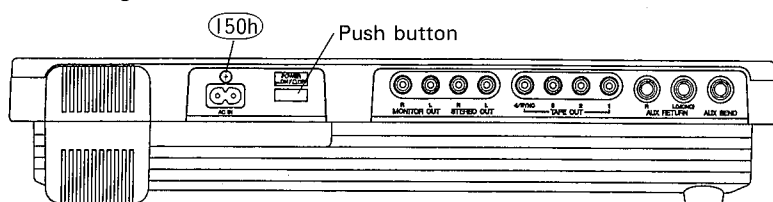
- (150c) Bind head tapping screw - p  
3.0 × 10 ..... 5pcs
- (150d) Bind head tapping screw - p  
3.0 × 10 ..... 2pcs
- (150e) Bind head tapping screw - p  
3.0 × 10 ..... 5pcs

**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.

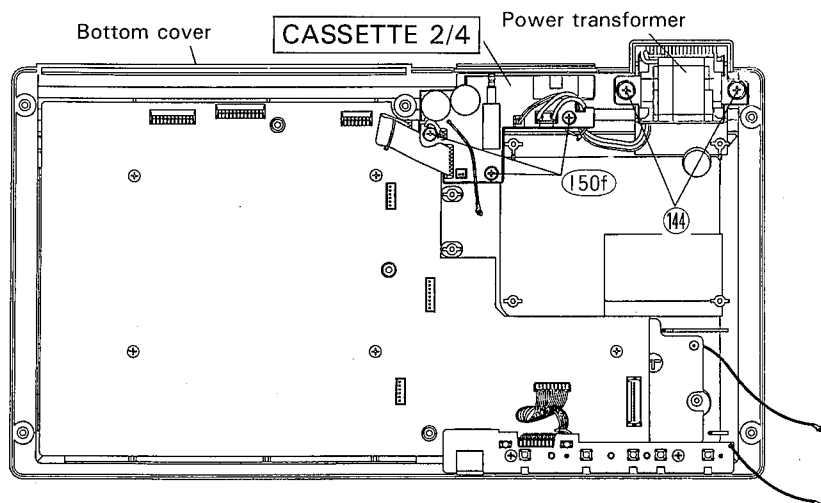
**8. Power Transformer Removal**

- 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.

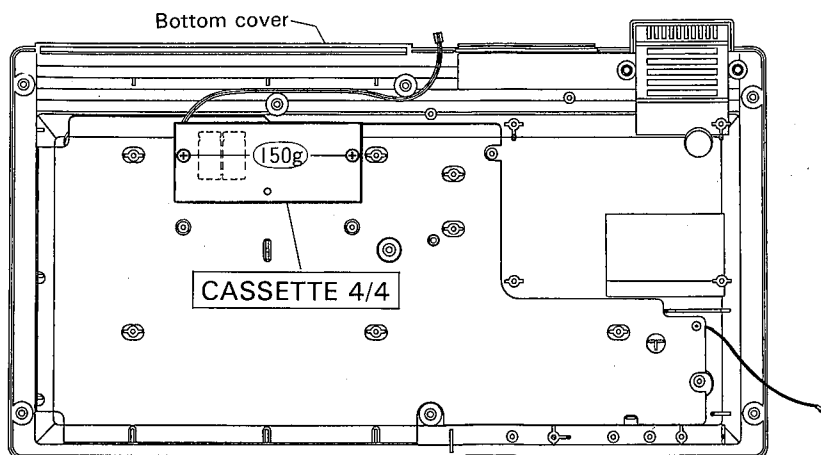


(Fig. 6)

(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)

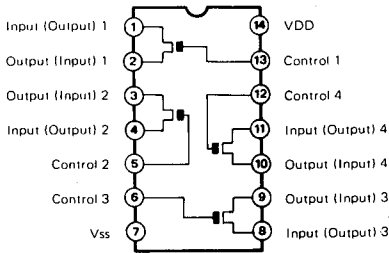


(Fig. 7)

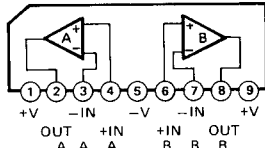
(150g) Bind head tapping screw - p  
3.0 x 10 ..... 2pcs

## IC BLOCK DIAGRAM

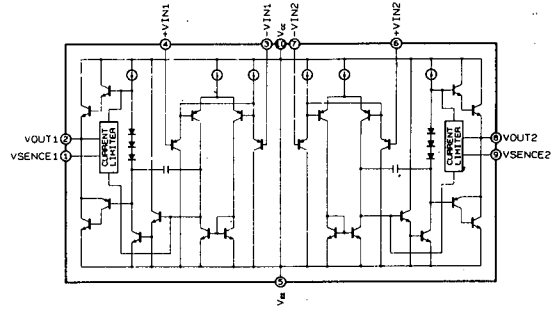
- $\mu$ PD4066BC (IG061600)  
Quad Bilateral Switch



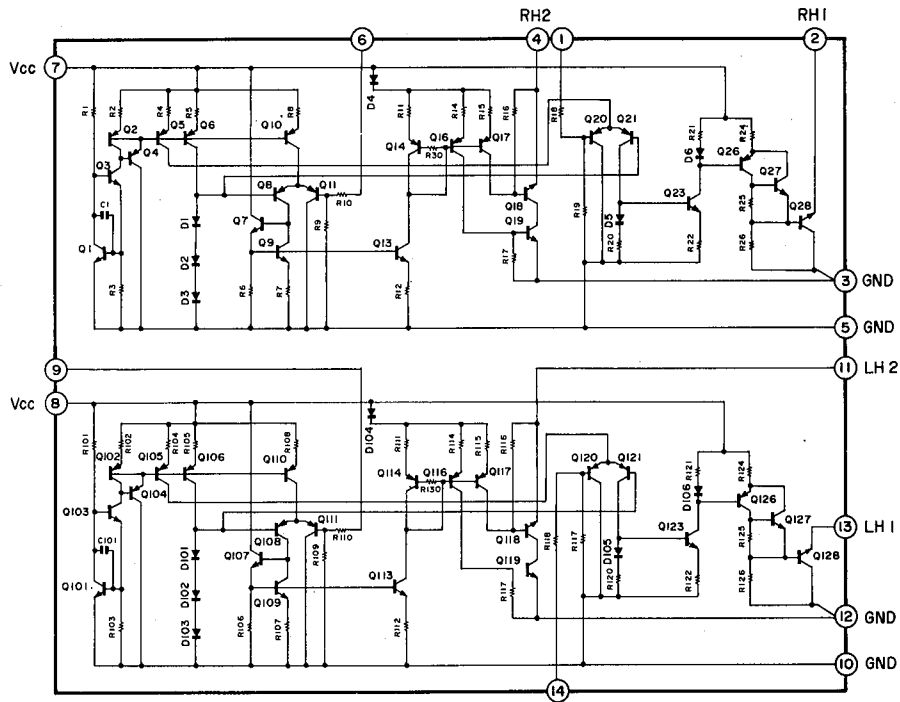
- AN6551 (IG034700)
- NJM2068S (XA956A00)
- LA6462S (XJ636A00)  
Dual Operational Amplifier



- LA6515 (XI250A00)  
Operational Amplifier



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

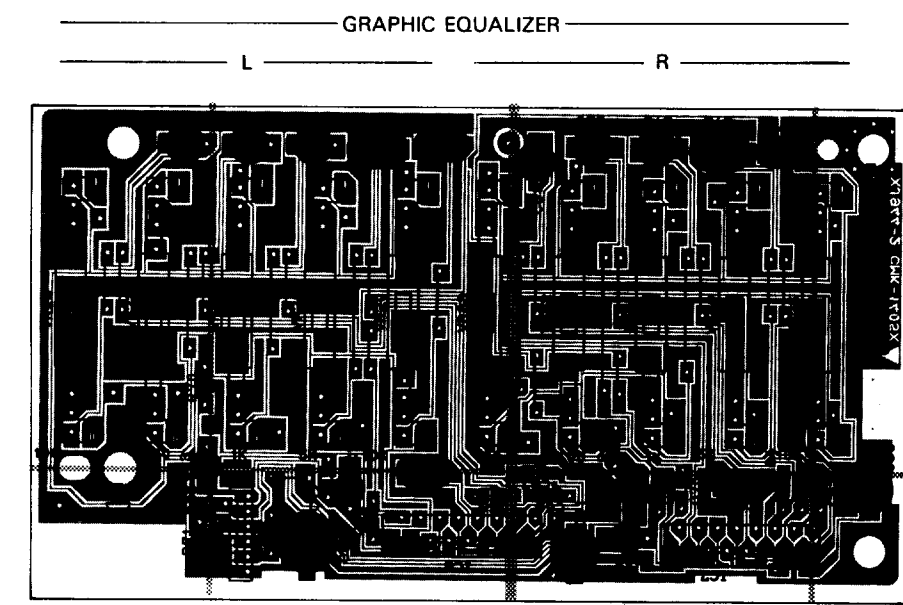
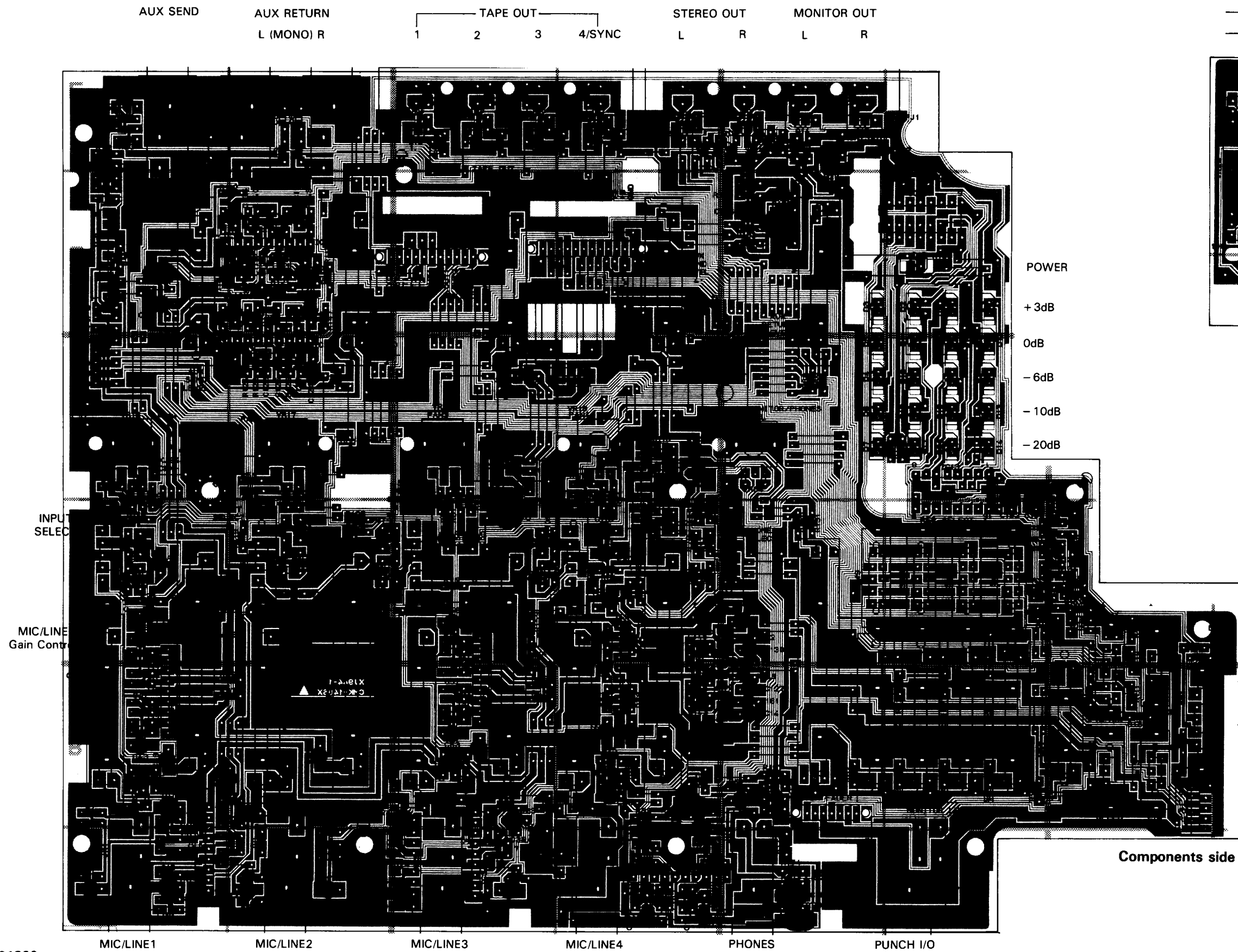


Pin No.	Symbol	Name	Pin No.	Symbol	Name
1	INR1	REC SW control	8	VCC2	+5V
2	SWR1	REC SW	9	INP2	PB SW control
3	GND	GND	10	GND	GND
4	SWP1	PB SW	11	SWP2	PB SW
5	GND	GND	12	GND	GND
6	INP1	PB SW control	13	SWR2	REC SW
7	VCC1	+5V	14	INR2	REC SW control

**■ CIRCUIT BOARDS**

● MIXER 1/2 Circuit Board

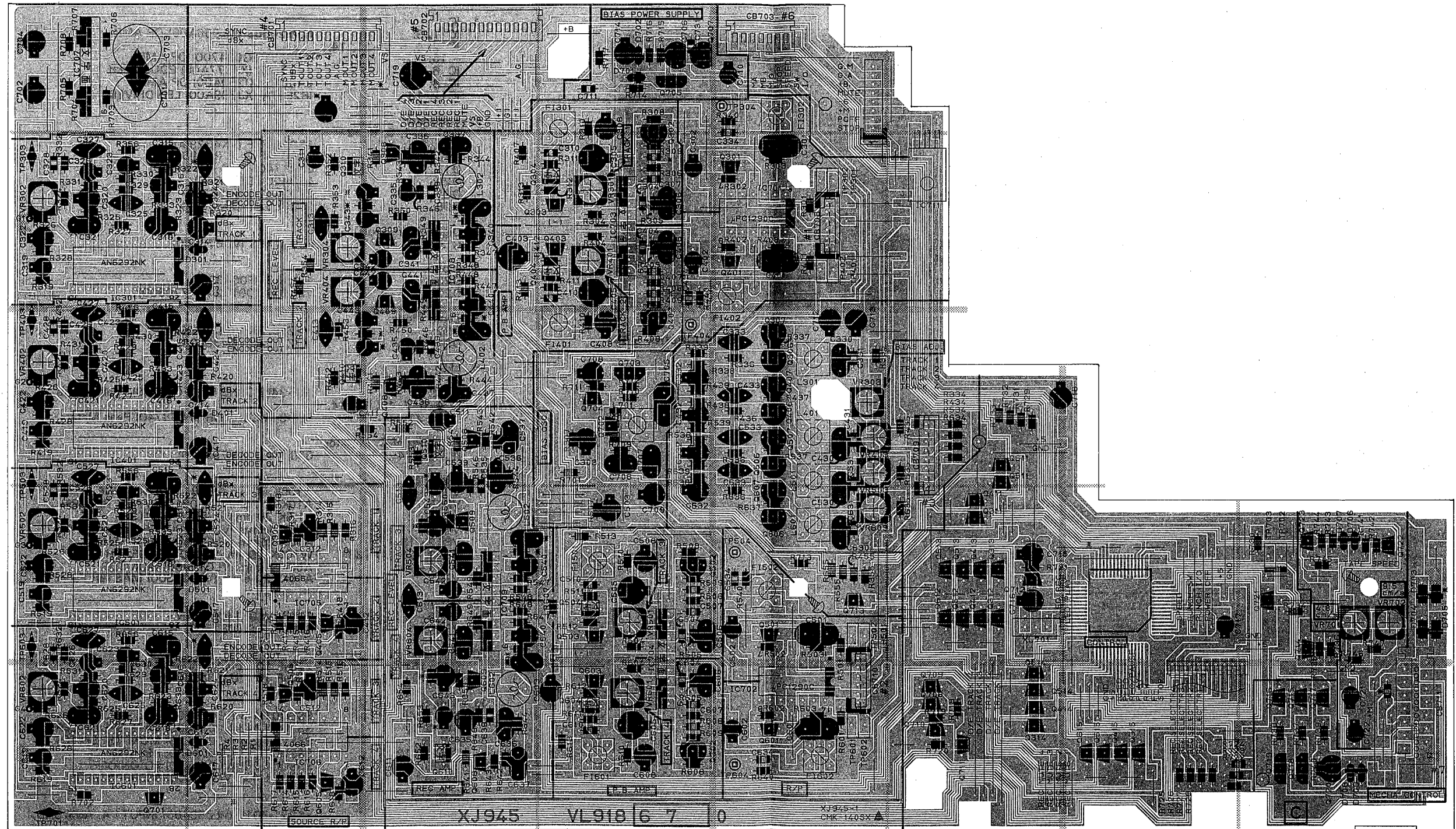
● MIXER 2/2 Circuit Board



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            |

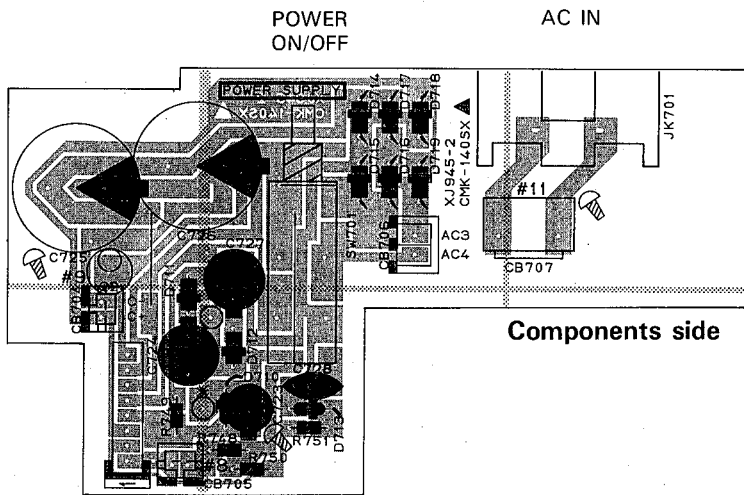
● CASSETTE 1/4 Circuit Board



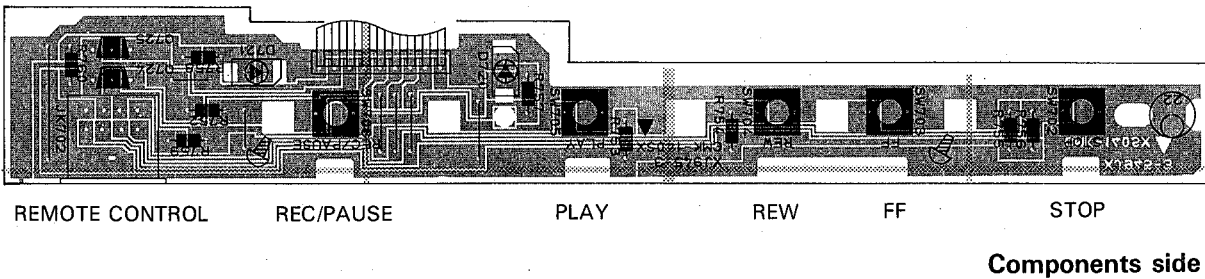
Components side

MT120

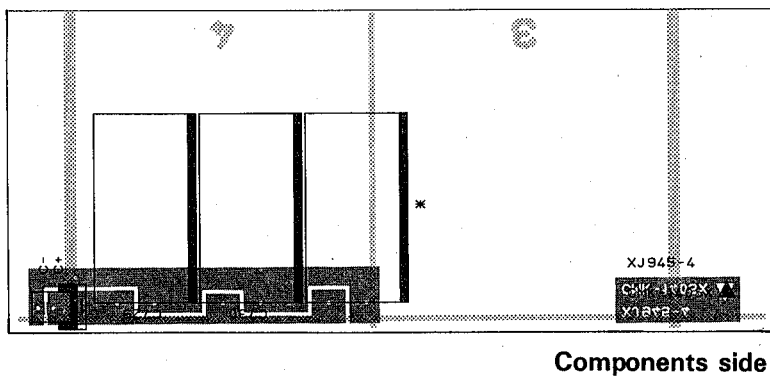
● CASSETTE 2/4 Circuit Board



● CASSETTE 3/4 Circuit Board



● CASSETTE 4/4 Circuit Board



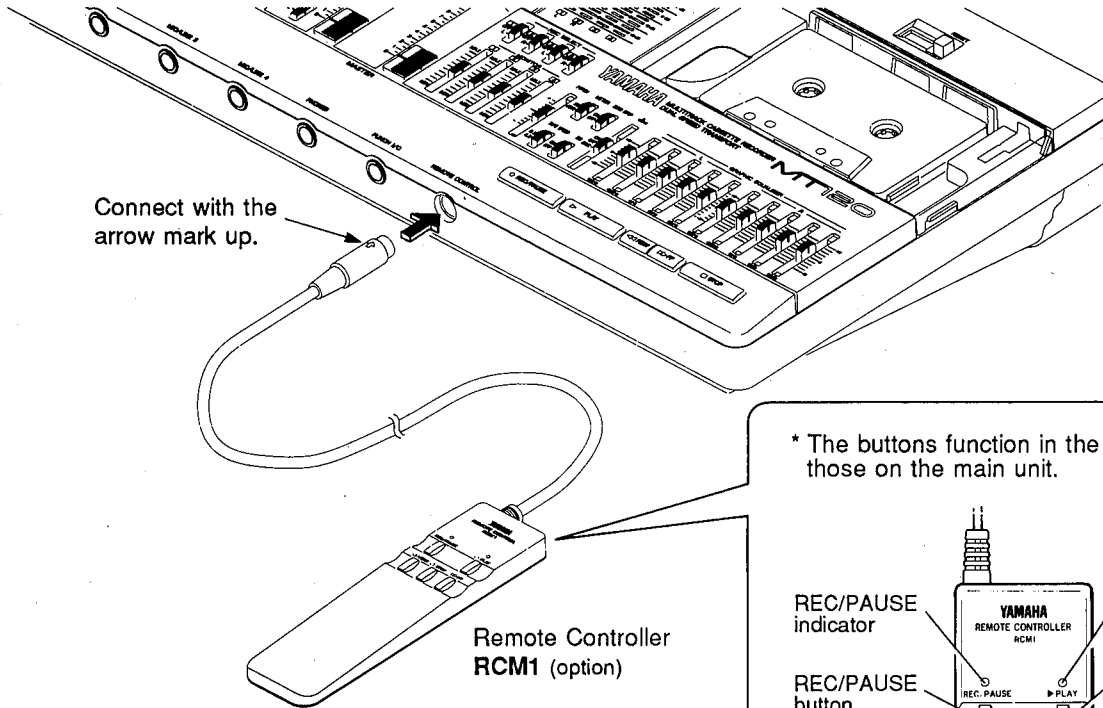
## Notes)

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, 504, 510, 604, 610:	2SD1915 F (VK432900)		
Q306, 406, 506, 606, 706, 707:	2SC2060 P, Q, R (IC206010)		
Q307, 407, 507, 607:	2SC2060 Q, 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 (VG805500)		
Q710, 722, 723:	2SA933S Q, R (IA093320)		
Q720:	2SA934 (IA093410)		
3. 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)		
4. FET			
Q302, 402, 502, 602:	2SK301 Q (IE102130)		
5. Diode			
D301, 401, 501, 601, 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 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, 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		

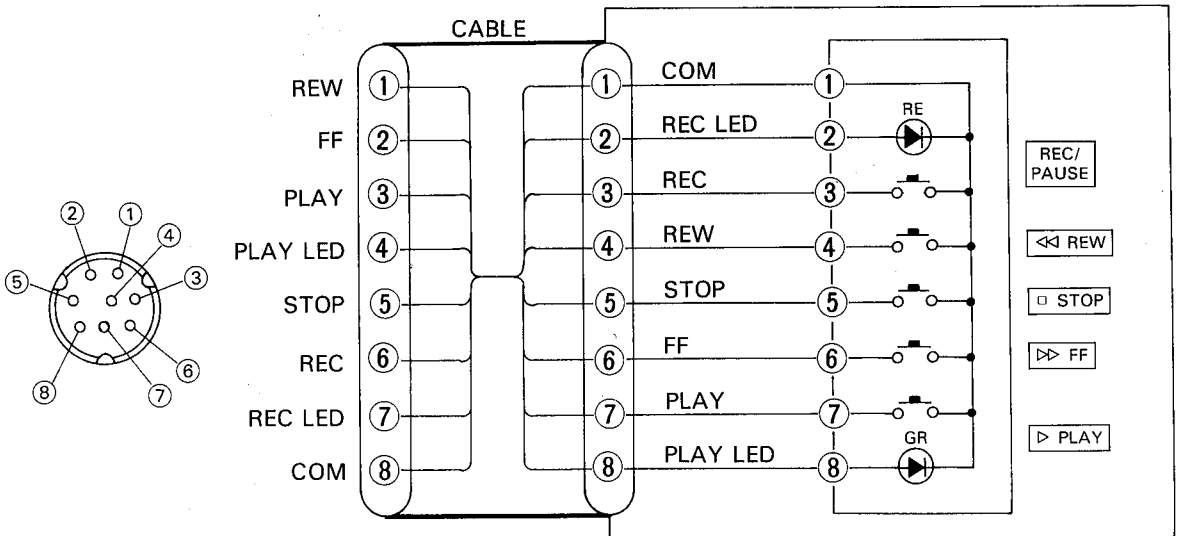
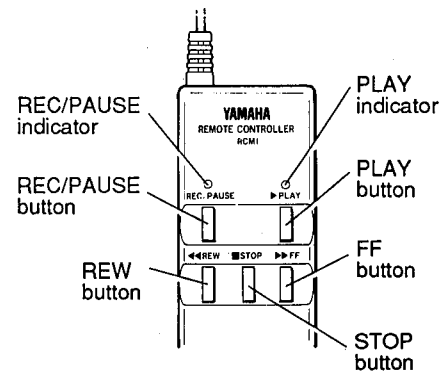


## REMOTE CONTROLLER RCM-1

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.



Notes)

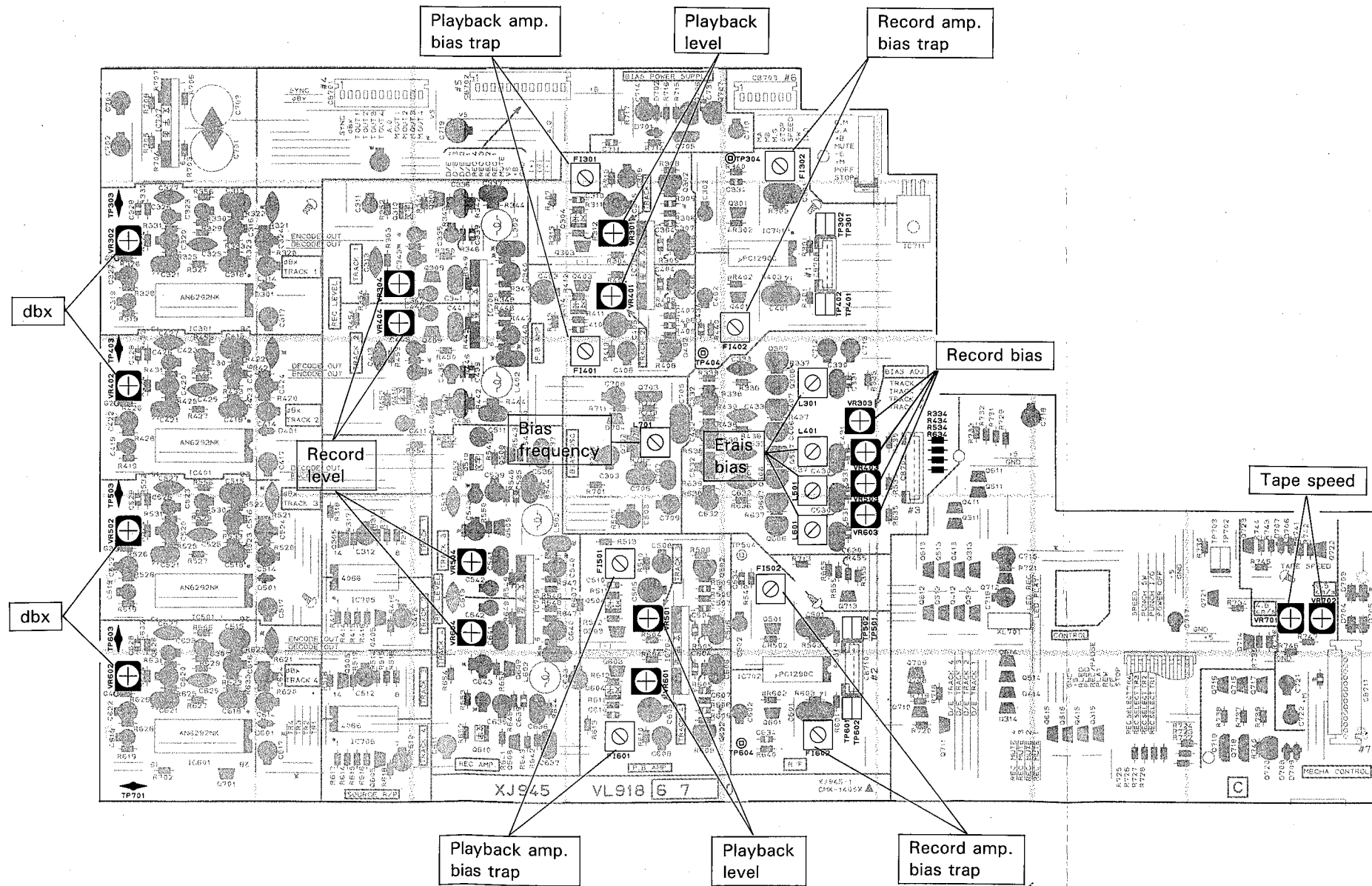
- 1. LED  
REC/PAUSE: SLP-144B-51 RED  
PLAY: SLP-244B-51 GREEN
- 2. Tact Switch SKHHAJ (VD968200)

## ■ ADJUSTMENTS

Adjustment	Measurement condition	Adjustment part	Rating
dbx	Connect the DC milival at the test points shown below: channel 1: TP303 - G1 channel 2: TP403 - G2 channel 3: TP503 - G3 channel 4: TP603 - G4	VR302 (channel 1) VR402 (channel 2) VR502 (channel 3) VR602 (channel 4)	Adjust VRs to obtain the DC voltage of $18.4 \pm 0.4$ mV at each test point.
Azimuth-1	Test tape (10kHz): TEAC MTT-114N (TX911680) 10kHz, -10dB Monitor the tape output 1 using an oscilloscope.	REC/PLAY head azimuth 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 ABEX TCW-211 (TX911550) 1.5kHz, MULTIPLE SPEED Monitor the tape output 1 using a wow/flutter meter. Set the pitch control at center.	VR701 (4.8cm/s) 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 $6000 \pm 60$ 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 $3000 \pm 30$ Hz.
Playback level	Test tape (315Hz, 160nW/b): ABEX TCC-121 (TX911840) 160nW/b, +4dB, 315Hz Monitor the tape outputs 1, 2, 3 and 4 using an oscilloscope.	VR301 (tape out 1) VR401 (tape out 2) VR501 (tape out 3) VR601 (tape out 4)	Play the test tape and adjust VRs to obtain $-10 \pm 0.5$ dBm at each output.
Erase bias	Turn the REC SELECT to 1, 2, 3 and 4. Connect an oscilloscope to test points shown below. channel 1: both ends of the resistor R334 (1 ohm). channel 2: both ends of the resistor R434 (1 ohm). channel 3: both ends of the resistor R534 (1 ohm). channel 4: both ends of the resistor R634 (1 ohm).	L301 (channel 1) L401 (channel 2) L501 (channel 3) 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 $80 \pm 1$ kHz.
Record amplifier bias trap	Turn the REC SELECT to 1, 2, 3 and 4. Connect an oscilloscope at the test points shown below. channel 1: TP304 channel 2: TP404 channel 3: TP504 channel 4: TP604 GND: TP701	FI302 (channel 1) FI402 (channel 2) FI502 (channel 3) 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) FI401 (channel 2) FI501 (channel 3) 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. 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. Monitor the tape outputs 1-4.	VR304 (channel 1) VR404 (channel 2) VR504 (channel 3) VR604 (channel 4)	In REC/PAUSE mode, adjust VRs to obtain $-30$ 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) VR403 (channel 2) VR503 (channel 3) 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 (After assembling)	Test tape (10kHz): TEAC MTT-114N (TX911680) 10kHz, -10dB 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



# MULTITRACK CASSETTE RECORDER

# MT120

# PARTS LIST

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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		J.B.H
	NX810530	Circuit Board	CASSETTE 2/4		U.C.X
	NX810510	Circuit Board	CASSETTE 3/4		
	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		01
	IC174020	Transistor	2SC1740S R,S		01
	ID040040	Transistor	2SD400		01
	VK432900	Transistor	2SD1915 F		01
	VE759500	Transistor	2SD2012		01
	VC938500	Transistor	2SC3852		02
	VD678500	Digital Transistor	DTA114ES		03
	IF004600	Diode	1SS133		01
	VH770800	Diode	1SR139-100T32		01
	VG439200	Zener Diode	MTZJ9.1B		01
	VG439800	Zener Diode	MTZJ11A		01
	IF008730	LED	SLR-34URC3H3 RE	Peak Meters	02
	IF008740	LED	SLR-34MC3H3 GR	Peak Meters	01
	HV754330	Flame Proof C. Resistor	33Ω 1/4 J		01
	VL080600	Slide Pot.	W100K 20mm		02
	VL080700	Slide Pot.	B1.5K 20mm		03
	VL080800	Slide Pot.	A10K 25mm		03
	VL080900	Slide Pot.	A20K 25mm		03
	VL081100	Slide Pot.	A100K 30mm		03
	VL081200	Slide Pot.	A10K 45mm		03
	VL081000	Slide Pot.	10KAX2 45mm		03
	VL081300	Slide Pot.	10KAX2 45mm		03
	VL081400	Rotary Pot.	B10K		01
	VL081500	Rotary Pot.	A10KX2		03
	UJ638220	Electrolytic Cap.	220uF 16V		01
	VE117600	Electrolytic Cap.	220uF 10V		01
	VL079600	Slide Switch	SSSU01 1-2		01
	VL079700	Slide Switch	SSSU01 1-3		02
	VL079800	Slide Switch	SSSH01 2-2		02
	VL079900	Slide Switch	SSSU01 2-3		02
	VL080000	Slide Switch	SSSU01 4-2		02
	VL914200	Slide Switch	SSSV01 2-3		02
	VL080400	Phone Jack	YKB21-5011		01
	VL080300	Phone Jack	YKB21-5009		01
	VL080500	Phone Jack	YKB21-5076		02
	VL080200	Pin Jack	4P 20-324B0-01		02
	VB966900	Pin	IMSA-6024		01
	VL415400	Reflector, LED		Peak Meter	04
	--	Heat Sink		1pc.	
	EG330050	Bind Head Screw	3.0X8 FCM3BL		1pc.
	--	Circuit Board	CASSETTE		
	IG034700	IC	ANG551	OP AMP.	03
	XJ636A00	IC	LA6462S	OP AMP. HEAD	02
	XJ637A00	IC	AN6292NK		07
	XA507A00	IC	AN78N05	REGULATOR +5V	02
	IG061600	IC	uPD4066BC	SWITCH	04
	XA508A00	IC	uPC1290C	PB/REC HEAD SW	04
	XJ387B00	IC	LC66506FLP	CPU MTR	
	IA093320	Transistor	2SA933S Q,R		01
	IA093410	Transistor	2SA934		01
	VG805300	Transistor	2SA1674		01
	IC174020	Transistor	2SC1740S R,S		01
	IC260320	Transistor	2SC2603 E,F		01
	IC206010	Transistor	2SC2060 P,Q,R		01
	VG805500	Transistor	2SC4391		01
	VL929300	Transistor	2SC2060 Q,R		01
	VK432900	Transistor	2SD1915 F		01
	VD678500	Digital Transistor	DTA114ES		03
	VD678700	Digital Transistor	DTC114XS		03
	VD488500	Digital Transistor	DTC143XS		03
	IE102130	FET	2SK301 Q		01
	IF004600	Diode	1SS133		01

\*New Parts (新規部品)

ランク : Japan only

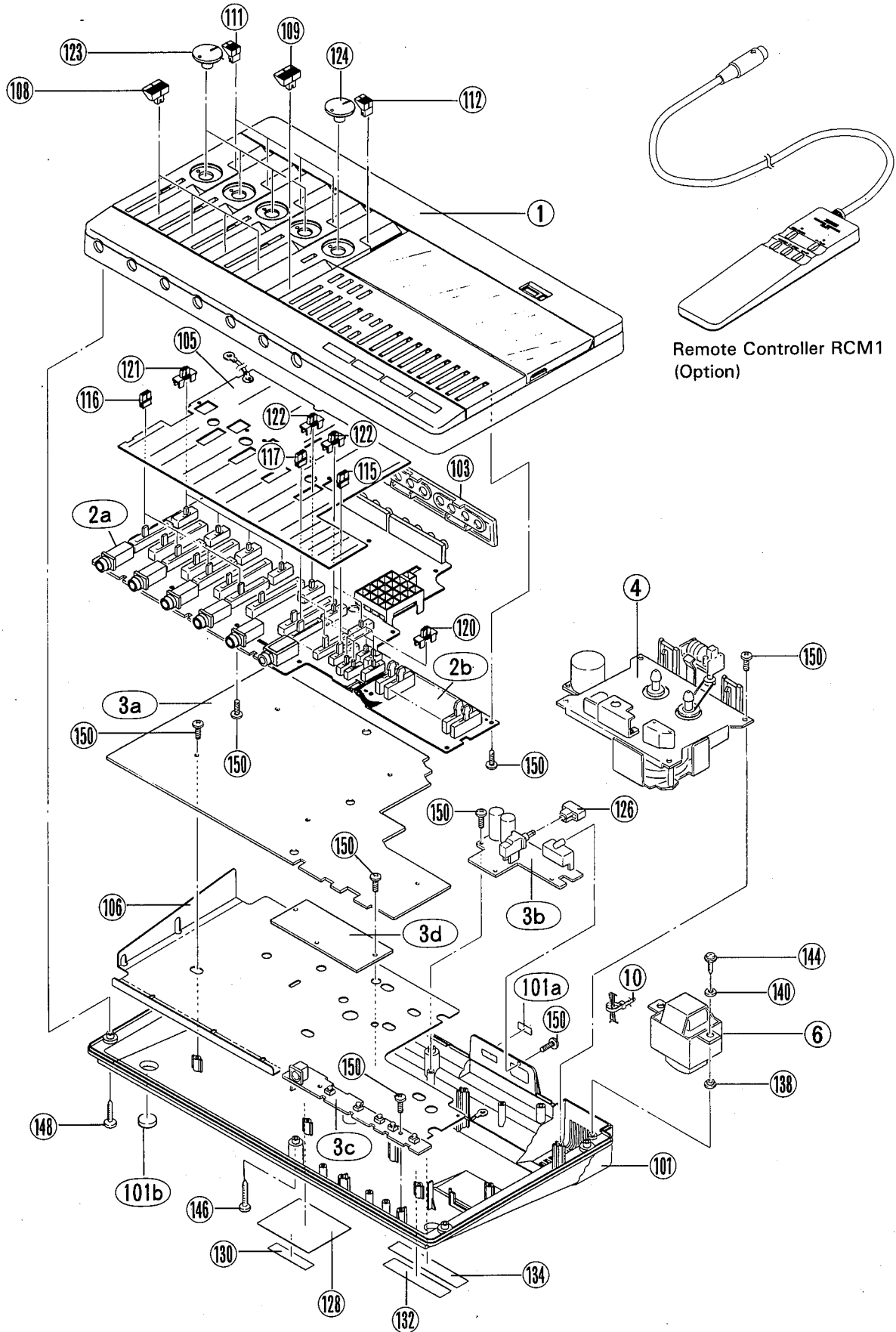
Ref. No.	Part No.	Description	部品名	Remarks	ランク
	VH770800	Diode	1SR139-100T32	ダイオード	01
	VH801600	Diode	1SR139-100T62	ダイオード	01
	VG438200	Zener Diode	MTZJ6.8A	ツェナーダイオード	01
	VG439500	Zener Diode	MTZJ10B	ツェナーダイオード	01
	IF008730	LED	SLR-34URC3H3 RE	LED	REC/PAUSE
	IF008740	LED	SLR-34MC3H3 GR	LED	PLAY
*	VJ692400	Trimmer Potentiometer	B100 3P RH0638C	半固定ボリューム	PB level
*	VJ692900	Trimmer Potentiometer	B680 3P RH0638C	半固定ボリューム	Tape speed-4.8
*	VJ693100	Trimmer Potentiometer	B1.5K 3P RH0638	半固定ボリューム	dbx, speed-9.5
*	VJ693600	Trimmer Potentiometer	B10K 3P RH0638C	半固定ボリューム	REC level
*	VJ694200	Trimmer Potentiometer	B100K 3P RH0638	半固定ボリューム	REC bias
	UH138470	Electrolytic Cap.	470uF 16V	ケミコン	01
	VG286300	Electrolytic Cap.	220uF 6.3V	ケミコン	01
	VG289000	Electrolytic Cap.	220uF 25V	ケミコン	01
	VF999100	Electrolytic Cap.	2200uF 25V	ケミコン	03
**	VL843800	Electrolytic Cap.	1000uF 25V	ケミコン	02
**	UT652390	Polypropylene Cap.	390pF 100V	ポリプロコン	01
**	UT653150	Polypropylene Cap.	1500pF 100V	ポリプロコン	01
**	GF901560	Coil	2.7mH	コイル	01
**	VL672900	Coil	7CDA 80KHz	コイル	master
**	VL673000	Coil	7CDA 80KHz	コイル	slave
**	VL673100	Coil	7CBA 80KHz	コイル	trap
**	VB759100	Ceramic Resonator	EFO-FC400 4MHz	セラミック振動子	03
**	VG392900	Tact Switch	SKHVAA	タクトスイッチ	Cassette 5pcs
**	VL080100	Push Switch	SPUN1918A	プッシュスイッチ	POWER ON/OFF
**	VL105500	DIN Jack	8P CMS 5008	DINジャック	REMOTE CONTROL
**	VJ137800	AC Inlet	M1779	ACインレット	J,B,H
**	VJ137700	AC Inlet	M1770	ACインレット	U,C,X
**	VB966900	Pin	1MSA-6024	スタイルピン	4pcs
**	XJ813A00	Power Transformer		電源トランス	U,C,X
**	XJ814A00	Power Transformer		電源トランス	B
**	XJ815A00	Power Transformer		電源トランス	H
	VC142600	AC Cord	10A 2.0m	電源コード	U,C,X
	NG002140	AC Cord	2.5A 1.8m	電源コード	B
	NG002150	AC Cord	2.5A 1.8m	電源コード	H
**	VL721300	Cassette Deck		カセットメカユニット	36
**	GF000460	Erase Head		消去ヘッド	18
**	GF000470	Rec/Playback Head		録再ヘッド	19

\*New Parts (新規部品)

ランク : Japan only

MT120

# OVERALL ASSEMBLY (Black-colored)



MT120

Ref. No.	Part No.	Description	部品名	Remarks	ランク
1	VL918000	< OVERALL ASSEMBLY > 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 > 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 > Remote Controller	RCM-1		

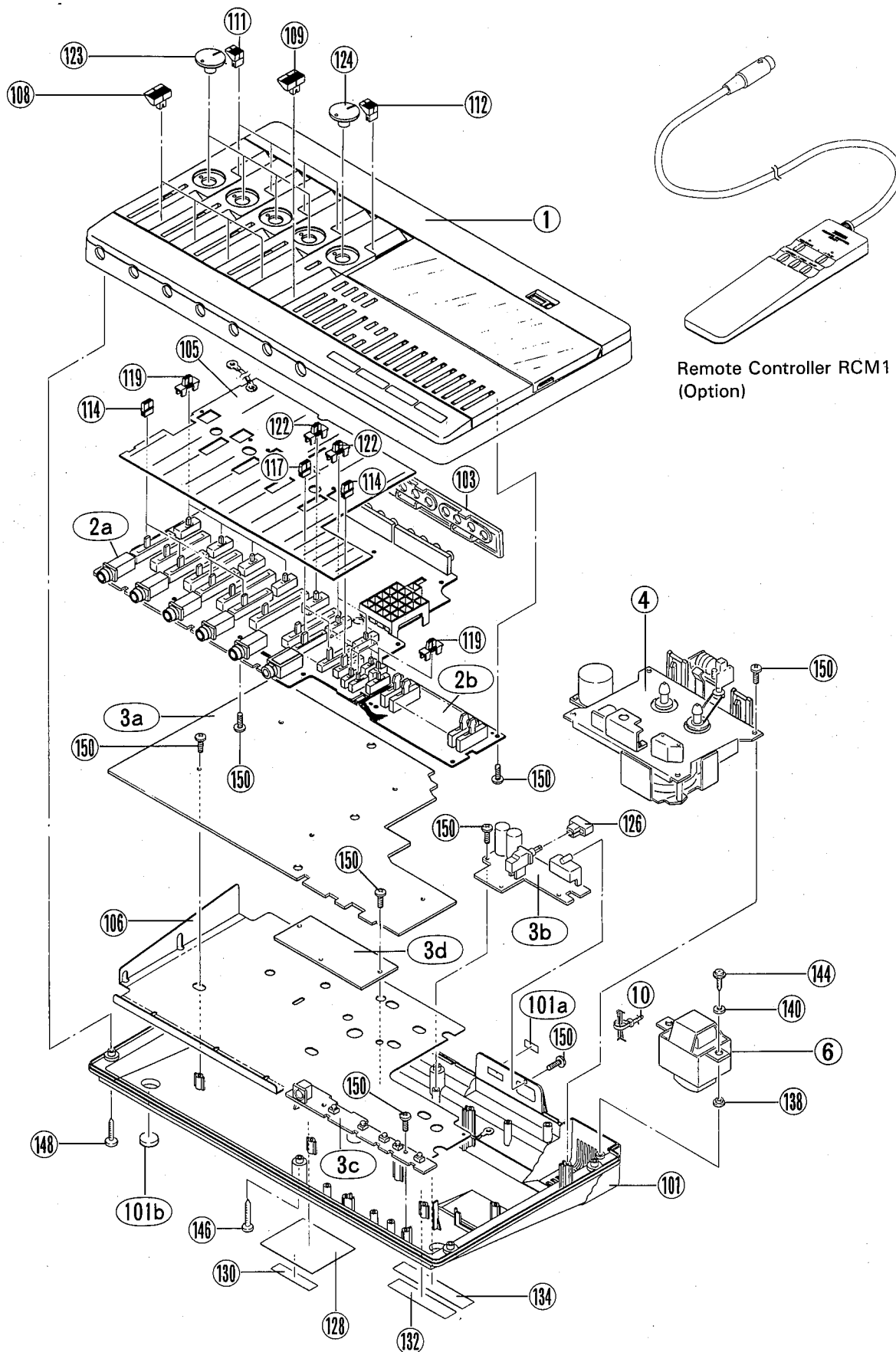
\*New Parts (新規部品)

ランク : Japan only

MT120



# OVERALL ASSEMBLY (Light Gray-colored)



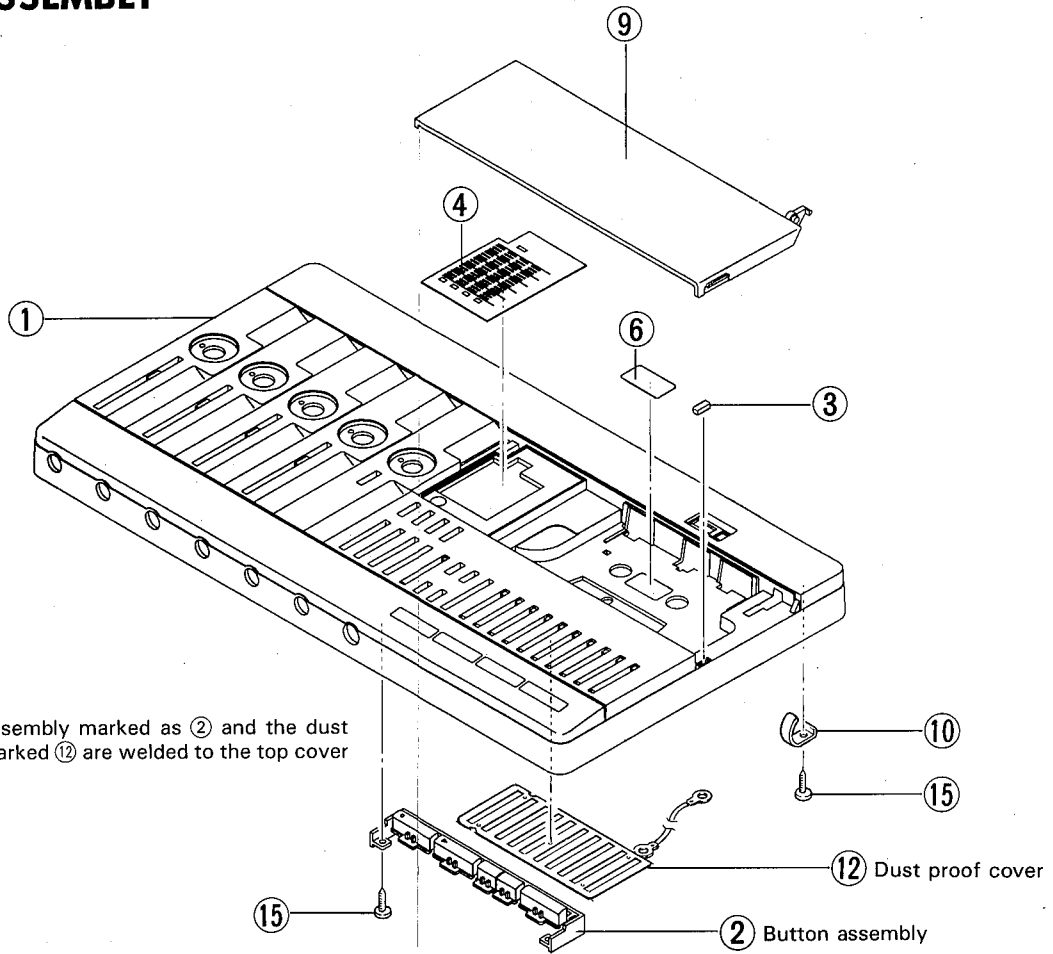
MT120

Ref. No.	Part No.	Description	部品名	Remarks	ランク
1	VL918200	< OVERALL ASSEMBLY > Panel Unit	MT120	Light Gray LG	
2	--	Circuit Board	MIXER		
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	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	スライドラックつまみ	CH Faders (4)	03
109	VL449000	Knob, Slide VR-L	スライドラックつまみ	MASTER Fader (1)	03
111	VL449300	Knob, Slide VR-M	スライドラックつまみ	AUX SEND (4)	03
112	VL449400	Knob, Slide VR-M	スライドラックつまみ	AUX RETURN (1)	03
114	VL449700	Knob, Slide VR-S	スライドラックつまみ	MIC/LINE PITCH	03
117	VL449800	Knob, Slide VR-S	スライドラックつまみ	MONITOR (4)	03
119	VL450200	Knob, Slide SW	スライドラックつまみ	INPUT SEL. (9)	03
122	VL450300	Knob, Slide SW	スライドラックつまみ	MON./REC SEL (5)	03
123	VM608100	Knob, Rotary VR	ロータリーつまみ	PAN (4)	05
124	VM608300	Knob, Rotary VR	ロータリーつまみ	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 > 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 > 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 > Top Cover	MT120	< パネルユニット > トップカバー	Black (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)

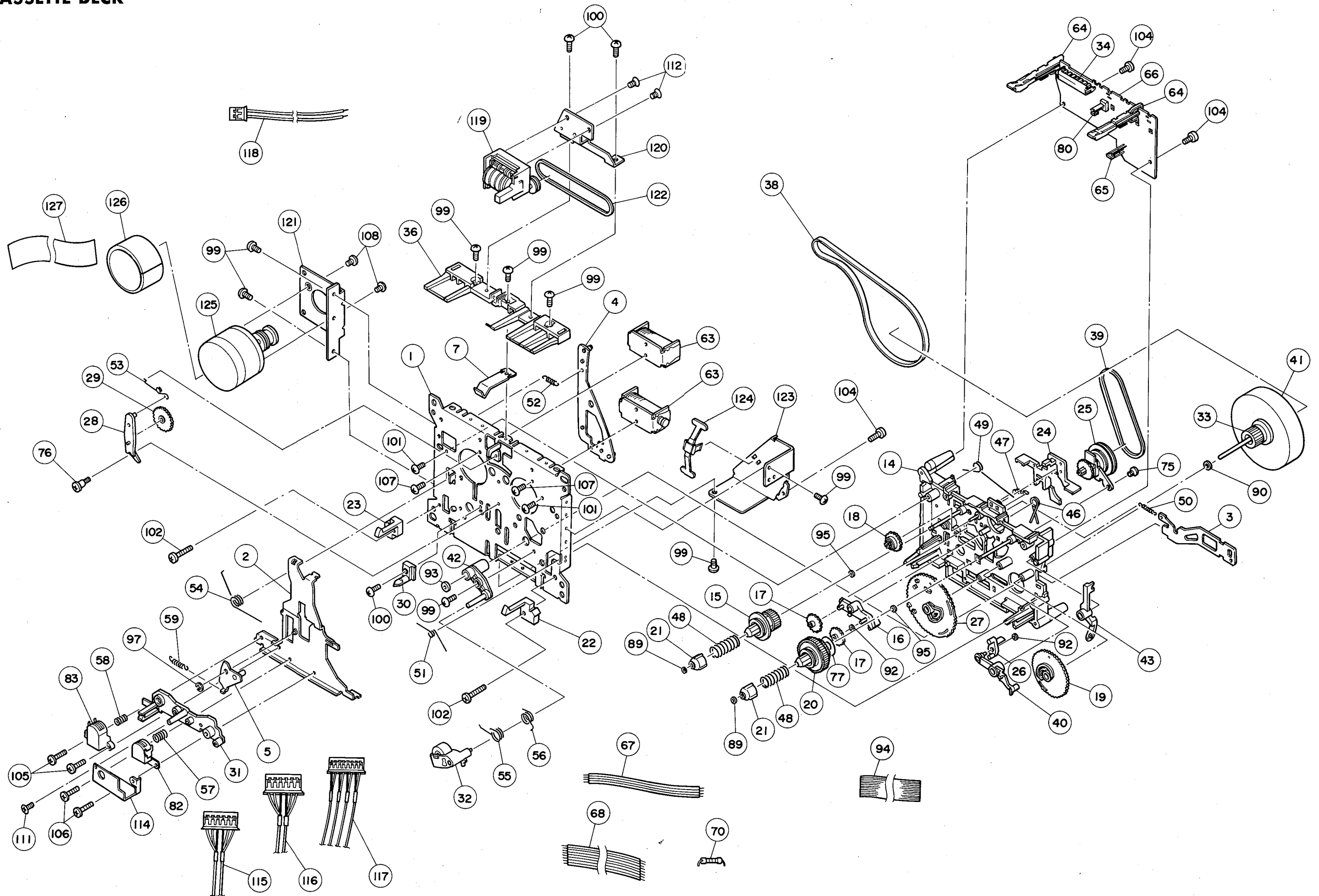
ランク : Japan only

Ref. No.	Part No.	Description		部品名	Remarks	ランク
1	VL918200	< PANEL UNIT > Top Cover	MT120	< パネルユニット > トップカバー	Light Gray (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

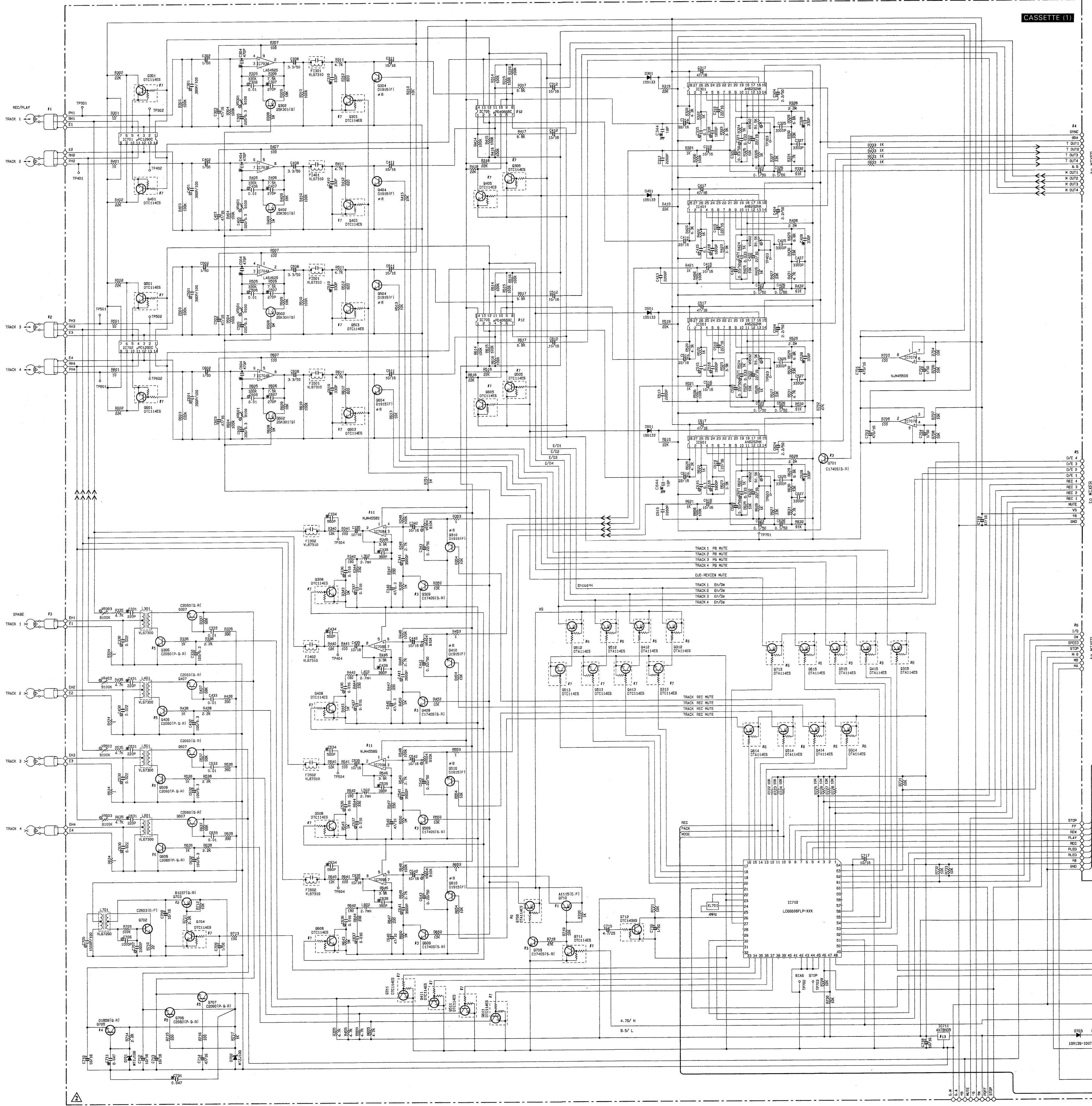
Ref. No.	Part No.	Description	部品名	Remarks	ランク
	VL721300	< CASSETTE DECK >	< カセットメカユニット >		36
1	AX809950	Chassis	シャーシ	PB1055	
2	NX810600	Head Chassis Assembly (C)	ヘッドシャーシ Ass'y	PD1050	
3	AX809990	F/R Lever	F/Rレバー	PD1059	
4	NX810610	TR Arm (P) Assembly	TRアーム Ass'y	PD1063	
5	NX810620	Shift Arm (B) Assembly	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

Ref. No.	Part No.	Description		部品名	Remarks	ランク
* 114	CX812170	Shield Plate (H)	(H)	シールドプレート	PDS9169	
* 115	MX801260	Head Wire Assembly	6P	ヘッドワイヤー A ss'y	PD9206	
* 116	MX801270	Head Wire Assembly	6P	ヘッドワイヤー A ss'y	PD9207	
* 117	MX801280	Head Wire Assembly	8P	ヘッドワイヤー A ss'y	PD9208	
* 118	MX801290	Wire Assembly	2P	ワイヤー A ss'y	PD9212	
* 119	PX800090	Counter	MK394S-008	カウンター	93073036	
* 120	BX800580	Counter BKT		カウンター BKT	PDS1125	
* 121	AX810140	Motor BKT (H)	(H)	モーター BKT	PDS1127	
* 122	CX812020	Counter Belt		カウンターベルト	KD4018	
* 123	AX809970	Flywheel BKT		フライホイール BKT	PCS1128	
* 124	CX812180	Capstan Spacer		キャプスタンスパーサ	RD3324	
* 125	NX810680	Motor Assembly		モーター A ss'y	PD9213	
* 126	BX800590	Shield Core		モールドコア	90300009	
* 127	CX812010	UL Tape	18.0X150	ULテープ	96901018	

\*New Parts (新規部品)



NOTICE  
 [J].....Japanese model  
 [U].....U.S.A model  
 [C].....Canadian 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

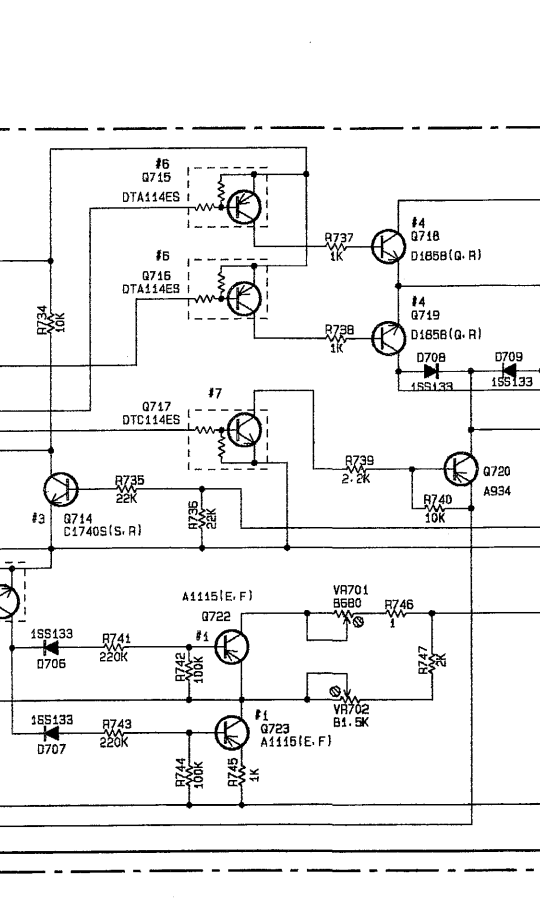
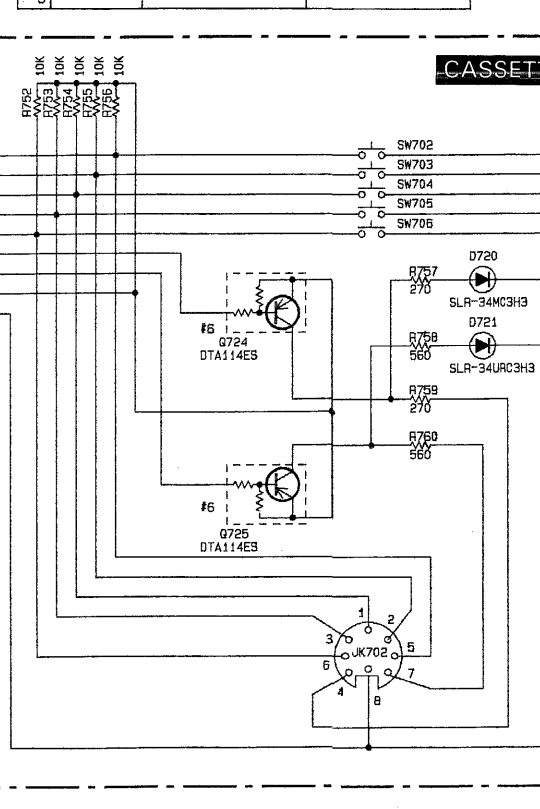
REMARKS	PARTS NAME	#
NO MARK	CARBON FILM RESISTOR (1/4W)	
○	CARBON FILM RESISTOR (1/2W)	
△	METAL OXIDE FILM RESISTOR	
△	METAL FILM RESISTOR	
△	METAL PLATE FILM RESISTOR	
△	FINE PITCH CARBON FILM RESISTOR	
△	CEMENT MOUNTED RESISTOR	
○	SEMI VARIABLE RESISTOR	
○	CHIP RESISTOR	

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	UN4211
	601-603-605-608-611-613	UN4211
	704-711-717-721	UN4211
F8	0304-310-404-410-504	2SD1915(F)
	510-604-610	2SC2878(A)-B

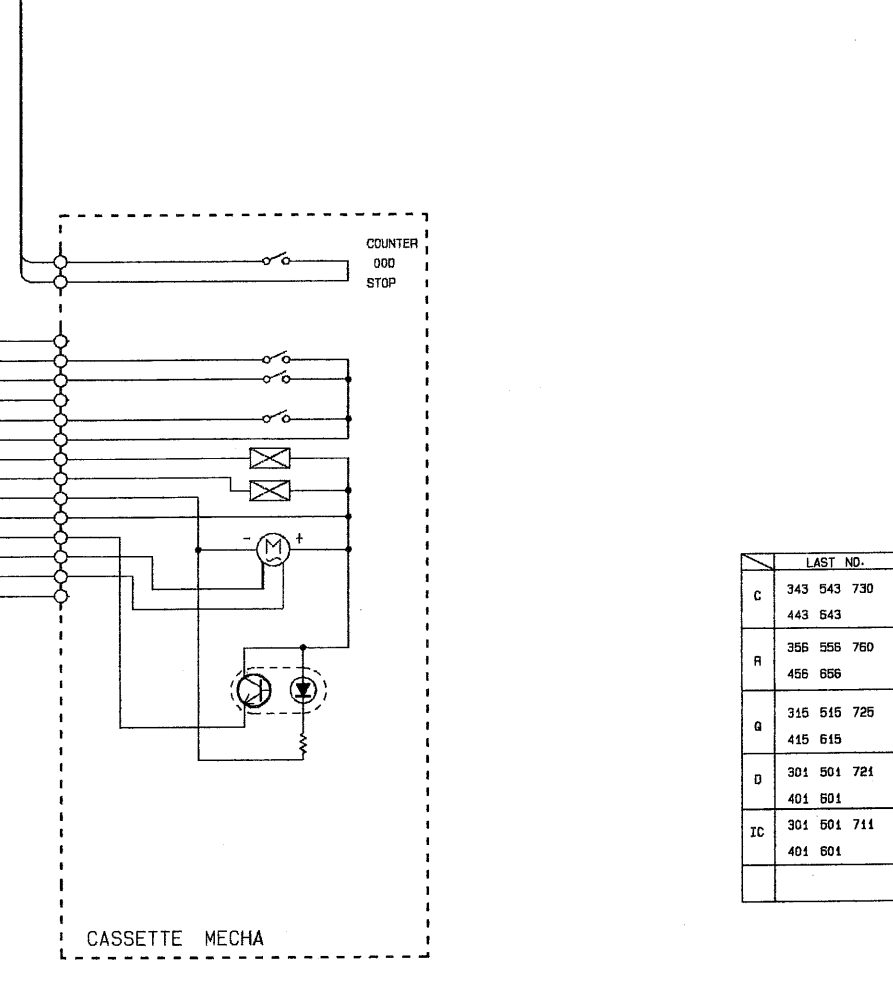
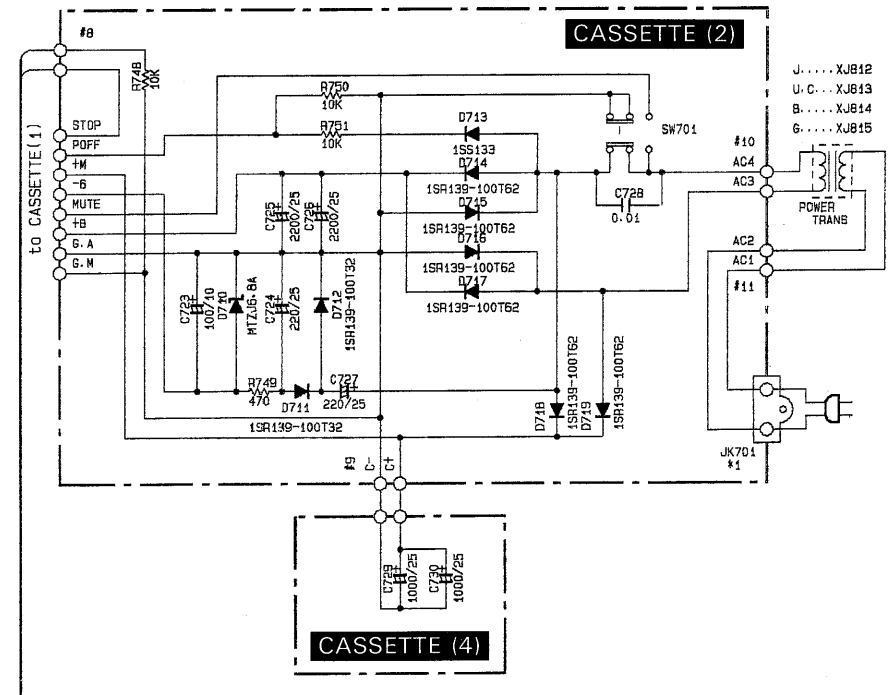
Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
F11	IC708-709	AN6501
		NM4928S
		BA715
F12	IC705-706	JPC4066BC
		LC4066B
		MA066B
		MN4066B
		BL4066B MC14066BCP
F13	IC711	AN78M05
		L78M05



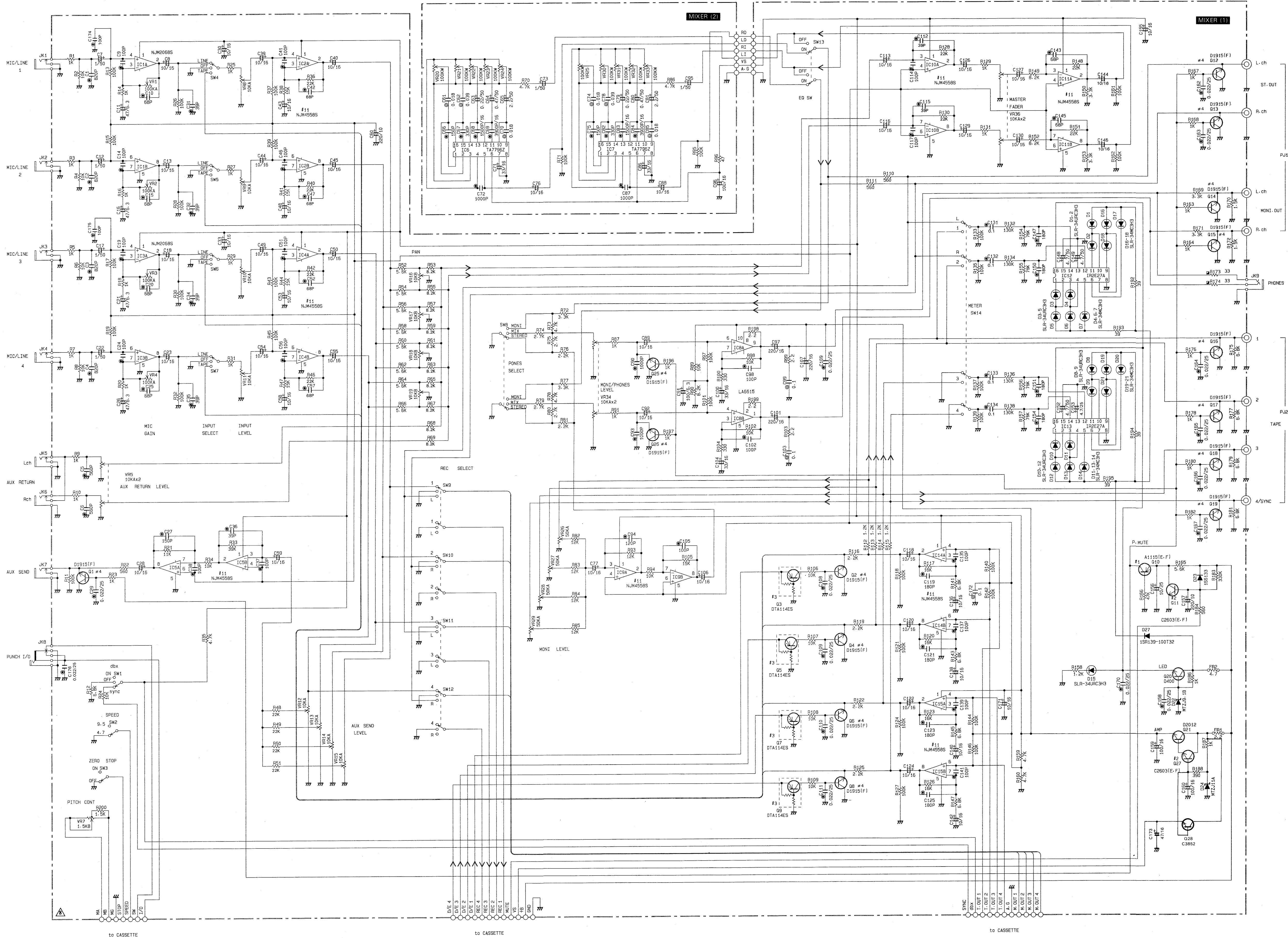
Notes)

- 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: AN6292NK (XJ637A00) dbx
    - IC701, 702: JPC1230C (XA508A00) PB/REC HEAD SW
    - IC703, 704: LA6462S (XJ636A00) OP AMP. HEAD
    - IC705, 706: JPC4066BC (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: MTZJ108 (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: B1.5K 3P RH0638 (VJ693100) dbx
    - VR303, 403, 503, 603: B10QK 3P RH0638 (VJ694200) REC BIAS
    - VR304, 404, 504, 604: B10K 3P RH0638C (VJ693800) REC LEVEL
    - VR701: B680 3P RH0638C (VJ692900) TAPE SPEED
    - VR702: B1.5K 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 (VB759100)
  - 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.

C	343	343	730
D	443	543	
E	138	538	700
F	438	538	
G	135	535	705
H	435	535	
I	301	501	701
J	401	501	
K	301	501	711
L	401	501	



- Notes
- Circuit Board: MIXER 1/2 (NX810470) XJ944C0  
MIXER 2/2 (NX810480) XJ944C0
- IC 1, 3: NJM2068S (KA956A00) OP AMP.  
IC 4, 5, 9-11, 14: AN6551 (IG034700) OP AMP.  
IC 6, 7: TA7962 (XJ377A00) EQUALIZER  
IC 8: LA6515 (XJ250A00) OP AMP.  
IC12, 13: IR2E27A (XJ799A00) LED DRIVER
  - Transistor Q 1, 2, 4, 6, 8, 12-19, 25: 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) 2SA1115(E-F) 2SA1309A(D-R-S)
F2	Q11-27	2SC1740S(R-S) 2SC2603(E-F) 2SC3311A(D-R-S)

F3	Q3-5, 7-9	DTA114ES UN4111
F4	Q1, 2, 4, 6, 8, 12-19, 25, 26	2SD1915(F) 2SC2878(A, B)

F11	IC2-4, 5, 9-11, 14, 15	AN6551 NJM4558S BA715
F12		