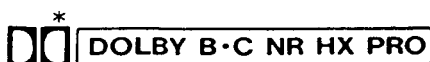


# Service Manual

Dolby NR-Equipped  
Stereo Double Cassette Deck

Cassette Deck  
**RS-X901**



**Color**

(K)... Black Type

**Area**

| Country Code | Area                    | Color |
|--------------|-------------------------|-------|
| (E)          | Continental Europe.     | (K)   |
| (EB)         | Great Britain.          | (K)   |
| (EG)         | F.R. Germany and Italy. | (K)   |

\* HX Pro headroom extension originated by Bang Olufsen and manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY", the double-D symbol, and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

## RS-X911 MECHANISM SERIES (AR300)

## SPECIFICATIONS

### ■ CASSETTE DECK SECTION

|                                                                           |                                   |
|---------------------------------------------------------------------------|-----------------------------------|
| <b>Deck system</b>                                                        | Stereo cassette deck              |
| <b>Track system</b>                                                       | 4-track, 2-channel                |
| <b>Heads</b>                                                              |                                   |
| (tape deck 1) Rec/play                                                    | Permalloy head                    |
| Erasing                                                                   | Double-gap ferrite head           |
| (tape deck 2) Rec/play                                                    | Permalloy head                    |
| Erasing                                                                   | Double-gap ferrite head           |
| <b>Motors</b>                                                             |                                   |
| (tape deck 1) Capstan                                                     | DC servo motor                    |
| (tape deck 2) Capstan                                                     | DC servo motor                    |
| <b>Recording system</b>                                                   | AC bias                           |
| Bias frequency                                                            | 80 kHz                            |
| <b>Erasing system</b>                                                     | AC erase                          |
| <b>Tape speeds</b>                                                        | 4.8 cm/sec. (1 $\frac{7}{8}$ ips) |
| <b>Frequency response</b>                                                 |                                   |
| <b>NORMAL</b>                                                             | 30 Hz~16 kHz                      |
|                                                                           | 40 Hz~15 kHz (DIN)                |
| <b>CrO<sub>2</sub></b>                                                    | 30 Hz~17 kHz                      |
|                                                                           | 40 Hz~16 kHz (DIN)                |
| <b>METAL</b>                                                              | 30 Hz~18 kHz                      |
|                                                                           | 40 Hz~17 kHz (DIN)                |
| <b>S/N</b> (signal level=max recording level, CrO <sub>2</sub> type tape) |                                   |
| <b>Dolby C NR on</b>                                                      | 74 dB (CCIR)                      |
| <b>Dolby B NR on</b>                                                      | 66 dB (CCIR)                      |
| <b>Dolby NR off</b>                                                       | 56 dB (A weighted)                |

**Wow and flutter** 0.07% (WRMS)  
±0.2% (DIN)

**Fast forward and rewind times**  
Approx. 110 seconds with C-60 cassette tape

**Input sensitivity and impedance**  
**LINE IN** 50 mV/47 kΩ

**Output voltage and impedance**  
**LINE OUT** 400 mV/750Ω

### ■ GENERAL

**Power consumption** 19 W

**Power supply**  
  **For Great Britain** AC 50 Hz/±0 Hz, 240 V  
  **For others** AC 50 Hz/±0 Hz, 220 V

**Dimensions (W×H×D)** 360×129×296 mm  
(14 $\frac{3}{16}$ "×5 $\frac{1}{8}$ "×11 $\frac{1}{32}$ ")

**Weight** 4.6 kg (10.1 lb.)

#### Note:

Specifications are subject to change without notice.  
Weight and dimensions are approximate.

# Technics

**Matsushita Electric Trading Co., Ltd.**  
P.O. Box 288, Central Osaka Japan

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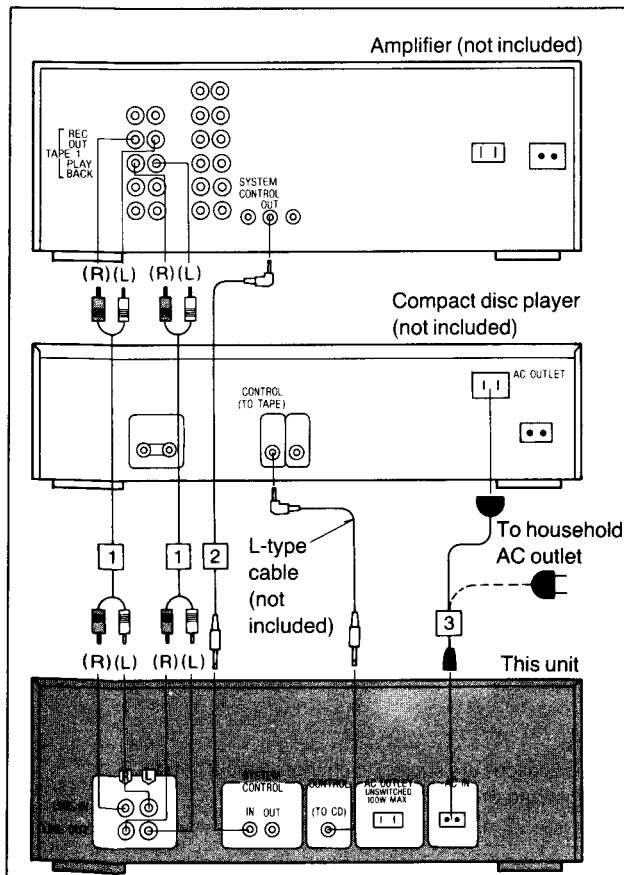
## ACCESSORIES

|                                                  |                                     |                                                                        |
|--------------------------------------------------|-------------------------------------|------------------------------------------------------------------------|
| • Stereo connection cables..... 2<br>(SJP2249-3) | • L-type cable..... 1<br>(SJP2257T) | • AC power supply cord..... 1<br>(SFDAC05E03: (E, EG)<br>SJA188: (EB)) |
|--------------------------------------------------|-------------------------------------|------------------------------------------------------------------------|

## CONNECTIONS

Make connections in the numbered sequence by using the included cables.

- 1 Connect the stereo connection cables.
- 2 Connect the L-type cable.
- 3 Connect the AC power supply cord.



The illustration at the left shows an example of connections made when this unit is combined with a Technics hi-fi component system, and shows only the connections to be made to and from this unit in that combination.

Refer to the illustration together with the instructions provided below.

### “SYSTEM CONTROL IN” terminal

Make a connection from this terminal to the control terminal for a cassette deck on a Technics amplifier.

(For detailed information, refer to the operating instructions of the Technics amplifier.)

### “SYSTEM CONTROL OUT” terminal

Make a connection from this terminal to the control terminal of a Technics graphic equalizer or to the control terminal of a Technics compact disc player. (Expected in the future.)

(For detailed information, refer to the operating instructions of the Technics graphic equalizer or the Technics compact disc player.)

### “CONTROL” terminal

Make a connection from this terminal to the control terminal for a cassette deck on a Technics compact disc player.

(For detailed information, refer to the operating instructions of the Technics compact disc player.)

### AC power supply cord (3)

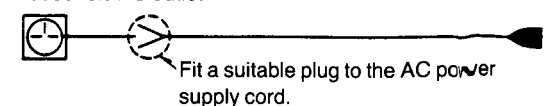
Connect this cord to the AC outlet of a compact disc player or to a household AC outlet.

#### Notes:

- If the cord is to be connected to the household AC outlet, cut off and dispose of the plug and replace with a suitable plug. (Refer to “For United Kingdom” above.)
- The configuration of the AC outlet and AC power supply cord differs according to area.

#### For United Kingdom

Household AC outlet



### “AC OUTLET”

#### “UNSWITCHED” outlet

Power is always available, regardless of power switch. This outlet is only for use with other audio equipment.

Cassette Deck

RS-X901

## DEUTSCH

## MESSUNGEN UND EINSTELL METHODEN

**Meßinstrumente**

- Elektronisches Voltmeter (EVM)
- Oszilloskop
- Digitaler Frequenzmesser
- Audiofrequenz-Oszillator
- Dämpfungswiderstand
- Gleichstrom-Voltmeter
- Widerstand (600Ω)

**Tonkopf-Azimuteinstellung (Deck 1/2)**

1. Spielen Sie auf dem Testband (QZZCFM) den Teil für die Azimuteinstellung (8kHz, -20dB) ab. Drehen Sie die Azimuteinstellschraube so lange, bis die Abgaben des L-K und R-K den Höchstwert erreichen, und die Lissajoscghe wellenfigur sich, wie abgebildet, 0 Grad nähert.

**Anmerkung:**

When L-K und R-K nicht auf demselben Punkt ihren Höchstwert erreichen, stellen Sie beide Kanäle auf den jeweiligen Höchstwert und gleichen dann aus.

2. Nehmen Sie denselben Einstellvorgang in der Wiedergabestellung vor.

**Prüfung des Pegelunterschiedes bei Vorwärts- und Rückwärtsdrehung**

3. Den Abschnitt für Verstärkungseinstellung (315Hz, 0dB) des Prüfbandes (QZZCFM) wiedergeben und sicherstellen, daß der Pegelunterschied bei Vorwärts- und Rückwärtsdrehung kleiner als 1dB ist.
4. Nach der Einstellung Schrauben-Sicherungsmittel an die Azimuth-Einstellschraube geben.

**Bandgeschwindigkeits-einstellung (Deck 1/2)****Normale Geschwindigkeit**

1. Den Wahlschalter für Editier-Bandgeschwindigkeit auf "x1" stellen.
2. Den mittleren Teil des Prüfbandes (QZZCWAT) wiedergeben.
3. Deck 1 = VR902 und Deck 2=VR903 so einstellen, daß

**Hohe Geschwindigkeit**

4. Den Wahlschalter für Editier-Bandgeschwindigkeit auf "x2" stellen und den Prüfmoduspunkt und GND verbinden.
5. Den mittleren Teil des Prüfbandes (QZZCWAT) wiedergeben.
6. Deck 1 = VR901 so einstellen, daß der Ausgang dem Sollwert entspricht.

**Einstellung der Wiedergabeverstärkungsregelung (Deck 1/2)**

1. Spielen Sie auf dem Testband (QZZCFM) den Teil für die Einstellung der Verstärkungsregelung (315Hz, 0dB) ab.
2. Stellen Sie VR3 (L-K) [[VR4 (R-K)]] für Deck 1 und VR5 (L-K) [[VR6 (R-K)]] für Deck 2 so ein, daß die Abgabe den Normwert erfüllt.

**Wiedergabefrequenzgang (Deck 1/2)**

1. Spielen Sie auf dem Testband (QZZCFM) den Teil für den Frequenzgang (315Hz, 12,5kHz~63Hz, -20dB) ab.
2. Achten Sie darauf, daß der Frequenzgang für beide Kanäle (L-K, R-K) in dem in Abb. 6 gezeigten Bereich liegt.

**Löschstromeinstellung (Deck 1/2)**

1. Die leere Metallband-Prüfkassette (QZZCRZ) einsetzen und das Gerät auf Aufnahmepause schalten.
2. Deck 1=VR351 (Deck 2=VR301) so einstellen, daß der Ausgang zwischen Deck 1=TP9 (Deck 2=TP3) und GND dem Sollwert entspricht.

**Gesamtfrequenzgang (Deck 1/2)**

1. Legen Sie das normale Leertestband (QZZCRA) ein und stellen das Gerät auf Aufnahme-/Pause-Betrieb.
2. Geben Sie über einen Lautstärkeregler ein Bezugseingabesignal (1 kHz, -24 dB) ein.
3. Stellen Sie das Signal auf 20 dB und justieren die Frequenz von 50 Hz~10 kHz.
4. Nehmen Sie das Wobbelsignal auf.
5. Geben Sie das aufgenommene Signal wieder und achten darauf, daß dieses sich im Vergleich zur Bezugsfrequenz (1 kHz) in dem in Abb. 8 aufgezeichneten Bereich befindet.
6. Sollte das Signal nicht im Normbereich liegen, justieren Sie Deck 1=VR353 (Deck 2=VR303) (L-K) und Deck 1=VR352 (Deck 2=VR302) (R-K), so daß der Frequenzpegel mit der Norm übereinstimmt.
7. Wiederholen Sie die Schritte 2~6 und verwenden das CrO<sub>2</sub> Band (QZZCRX) und das Metallband (QZZCRZ). Der Frequenzbereich wird auf 12.5 kHz (50 Hz~12.5 kHz) angehoben.
8. Achten Sie darauf, daß sich der Frequenzpegel in dem in Abb. 9 aufgezeigten Bereich befindet.

**Einstellung der Gesamtverstärkungsregelung (Deck 1/2)**

1. Legen Sie das normale Leertestband (QZZCRA) ein und stellen das Gerät auf Aufnahme-/Betrieb.
2. Legen Sie ein Bezugseingabesignal (1 kHz, -24 dB) an. Stellen Sie das Ausgangssignal auf einen Pegel von 0.4 V ein.
3. Nehmen Sie das Eingabesignal auf.
4. Geben Sie das in Schritt 3 oben aufgenommene Signal wieder und achten Sie darauf, daß das Ausgangssignal mit dem Normwert übereinstimmt.
5. Sollte der Wert nicht innerhalb der Norm liegen, justieren Sie Deck 1=VR101 (Deck 2=VR7) (L-K) und Deck 1=VR102 (Deck 2=VR8) (R-K).
6. Wiederholen Sie die Schritte 2~5 von oben so lange, bis das Ausgangssignal im Normbereich liegt.

FRANÇAIS

METHODES DES MEASURES ET REGLAGES

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div><div>Appareils de mesurage</div><div><div><div>• Voltmètre électronique</div><div>• Oscilloscope</div><div>• Compteur de fréquence numérique</div><div>• Oscillateur de fréquence audio</div></div><div><div>• A.T.T. (Atténuateur)</div><div>• Voltmètre à C.C.</div><div>• Résistance (600Ω)</div></div></div></div>                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| <div><div>Reglage Azimutal de la tete (Platine 1/2)</div><div><div>1. Faire jouer la portion du réglage de l'azimuth (8kHz, −20dB) de la bande d'essai (QZZCFM). Ajuster la vis de la mise au point azimutale jusqu'à de que les sorties du canal de gauche et du canal de droite soient maximisées et que la forme d'onde de Lissajous, comme il est illustré, approche de 0 degré.</div><div>Nota:<div>Si le canal de gauche et canal de droite ne sont pas maximisés au même point, régler le point où les niveaux de chaque canal sont maximisés et égaux.</div></div><div>2. Effectuer le même réglage sur le mode d'audition.</div></div></div>                                                                        | <div><div>Vérification de la différence de niveau pour les deux sens de rotation</div><div><div>3. Introduire une bande métal vierge prévue pour les essais (QZZCPZ) et vérifier que la différence de niveau pour les deux sens de rotation est inférieure à 1 dB.</div><div>4. Après cela, mettre une goutte de vernis de blocage sur la vis de réglage de l'azimut.</div></div></div> |
| <div><div>Réglage de la vitesse de défilement Vitesse (Platine 1/2)</div><div><div>normal</div><div><div>1. Placer le sélecteur de vitesse d'édition sur la position "x1".</div><div>2. Lire la partie centrale de la bande d'essai (QZZCWAT).</div><div>3. Régler VR902 pour la platine 1 et VR901 pour la platine 2 de manière que la sortie ait la valeur standard.</div></div><div>Grande vitesse</div><div><div>4. Placer le sélecteur de vitesse d'édition sur la position "x2" et relier le point de test et la masse (GND).</div><div>5. Lire la partie centrale de la bande d'essai (QZZCWAT).</div><div>6. Régler VR901 pour la platine 1 de manière que la sortie ait la valeur standard.</div></div></div></div> |                                                                                                                                                                                                                                                                                                                                                                                         |
| <div><div>Reglage de L'amplification de Lecture (Platine 1/2)</div><div><div>1. Faire jouer la partie réglée de l'amplification (315Hz, 0dB) de la bande d'essai (QZZCFM).</div><div>2. Régler la platine 1: VR3 (canal de gauche) [[VR4 (canal de droite)] et la platine 2: VR5 (canal de gauche) [[VR6 (canal de droite)] de telle sorte que la sortie soit en deçà de la valeur standard.</div></div></div>                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                         |
| <div><div>Reponse en Frequence de la Lecture (Platine 1/2)</div><div><div>1. Faire jouer la partie de la réponse en fréquence (315Hz, 12.5kHz, −63Hz, −20dB) de la bande d'essai (QZZCFM).</div><div>2. S'assurer que la réponse en fréquence soit en deçà de la plage montrée dans la Fig. 6, à la fois pour le canal de gauche et le canal de droite.</div></div></div>                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                         |

Réglage du courant d'effacement (Platine 1/2)

1. Introduire une bande métal vierge prévue pour les essais (QZZCRZ) et régler l'appareil en mode de pause d'enregistrement.

2. Régler Platine 1=VR351 (Platine 2=VR301) de manière que la sortie entre Platine 1=TP9 (Platine 2=TP3) et GND ait la valeur standard.

Reponse en Frequence Totale (Platine 1/2)

1. Introduire la bande d'essai vierge normale (QZZCRA) et régler l'appareil sur le mode d'intermission d'un disque.

2. Appliquer un signal d'entrée de référence (1 kHz, −24 dB) par l'intermédiaire d'un atténuateur.

3. Diminuer le signal de 20dB et régler la fréquence de 50Hz~10kHz.

4. Enregistrer le balayage de fréquence.

5. Faire jouer le signal enregistré et s'assurer qu'il soit en deçà de la plage montrée à la Fig. 8 en comparaison à la fréquence de référence (1 kHz).

6. S'il n'est pas en deçà de la plage standard, régler Platine 1=VR353 (Platine 2=VR303) (canal de gauche) et Platine 1=VR352 (Platine 2=VR302) (canal de droite) de telle sorte que le niveau de fréquence soit en deçà de la plage standard.

7. Répéter les étapes 2~6 ci-dessus en utilisant la bande CrO<sub>2</sub> (QZZCRX) et la bande métallisée (QZZCRX) en augmentant la plage de fréquence à 12.5kHz (50Hz~12.5kHz).

8. S'assurer que le niveau soit en deçà de la plage montrée à la Fig. 9.

Reglage de L'amplification Totale (Platine 1/2)

1. Introduire la bande d'essai vierge normale (QZZCRA) et régler l'appareil sur le mode d'intermission d'un disque.

2. Appliquer un signal d'entrée de référence (1kHz, −24dB). Diminuer la sortie de telle sorte que son niveau devienne de 0.4V.

3. Enregistrer ce signal d'entrée.

4. Faire jouer le signal enregistré à l'étape 3 ci-dessus, et s'assurer que la sortie en deçà de la valeur standard.

5. Si elle n'est pas en deçà de la valeur standard, régler Platine 1=VR101 (Platine 2=VR7) (canal de gauche) et Platine 1=VR102 (Platine 2=VR8) (canal de droite).

6. Répéter les étapes 2~5 ci-dessus jusqu'à ce que la sortie soit en deçà de la valeur standard.

ESPAÑOL

METODOS DE AJUSTE Y MEDIDA

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Instrumento de medición</b> <ul style="list-style-type: none"><li>• EVM (Voltímetro electrónico)</li><li>• Osciloscopio</li><li>• Frecuencímetro digital</li><li>• Oscilador AF</li><li>• ATT (Atenuador)</li><li>• Voltímetro CC</li><li>• Resistor (600Ω)</li></ul>                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Ajuste Azimutal de Cabeza (Platina 1/2)</b> <ol style="list-style-type: none"><li>Reproducir la porción de ajuste azimutal (8kHz, -20dB) de la cinta de prueba (QZZCFM). Variar el tornillo de ajuste azimutal hasta que las salidas del CH-I y CH-D se maximicen y forma de onda de lissajous, como ilustrado, se acerque a grado 0.</li></ol> <p><b>Nota:</b></p> <p>Si CH-I y CH-D no son maximizados en el mismo punto, ajustar al punto donde los niveles de cada canal sean maximizados e igualados.</p> <ol style="list-style-type: none"><li>Efectuar el mismo ajuste en la modalidad de reproducción.</li></ol> | <b>Comprobación de la diferencia de nivel de giro hacia adelante y hacia atrás</b> <ol style="list-style-type: none"><li>Reproduzca la parte del ajuste de ganancia (315Hz, 0dB) de la cinta de prueba (QZZCFM) y luego asegúrese de que la diferencia de nivel de giro hacia adelante y hacia atrás sea menor que 1dB.</li><li>Después del ajuste, aplique pintura de fijación al tornillo de ajuste del azimut.</li></ol> |
| <b>Ajuste de la Velocidad de la Cinta (Platina 1/2)</b> <p><b>Velocidad normal</b></p> <ol style="list-style-type: none"><li>Lleve a "x1" el selector de la velocidad de la cinta de edición.</li><li>Reproduzca la sección central de la cinta de prueba (QZZCWAT).</li><li>Ajuste la platina 1 = <b>VR902</b> y la platina 2 = <b>VR903</b> de modo que la salida quede comprendida dentro de los valores estándares.</li></ol>                                                                                                                                                                                           | <p><b>Alta velocidad</b></p> <ol style="list-style-type: none"><li>Lleve a "x2" el selector de la velocidad de la cinta de edición y conecte GND y el punto de la modalidad de prueba.</li><li>Reproduzca la sección central de la cinta de prueba (QZZCWAT).</li><li>Ajuste la platina 1 = <b>VR901</b> de modo que la salida quede comprendida dentro de los valores estándares.</li></ol>                                |
| <b>Ajuste de Ganancia de Reproduccion (Platina 1/2)</b> <ol style="list-style-type: none"><li>Reproducir la porción ajustada de ganancia (315Hz, 0dB) de la cinta de prueba (QZZCFM).</li><li>Ajustar la Platina 1: <b>VR3</b> (CH-I) [[<b>VR4</b> (CH-D)]] y la Platina 2: <b>VR5</b> (CH-I) [[<b>VR6</b> (CH-D)]] de manera que la salida esté dentro del valor estándar.</li></ol>                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Respuesta de Frecuencia de Reproduccion (Platina 1/2)</b> <ol style="list-style-type: none"><li>Reproducir la parte de respuesta de frecuencia de reproducción (315Hz, 12.5kHz~63Hz, -20dB) de la cinta de prueba (QZZCFM).</li><li>Asegurarse de que la respuesta de frecuencia esté dentro de la gama mostrada en la Fig. 6 para ambos CH-I y CH-D.</li></ol>                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                             |

Ajuste de la Corriente de Borrado (Platina 1/2)

1. Inserte la cinta de prueba metálica en blanco (QZZCRZ) y ponga el aparato en la modalidad de pausa de grabación.
2. Regule Platina 1=**VR351** (Platina 2=**VR301**) de modo que la salida entre Platina 1=**TP9** (Platina 2=**TP3**) y GND esté dentro de los valores estándares.

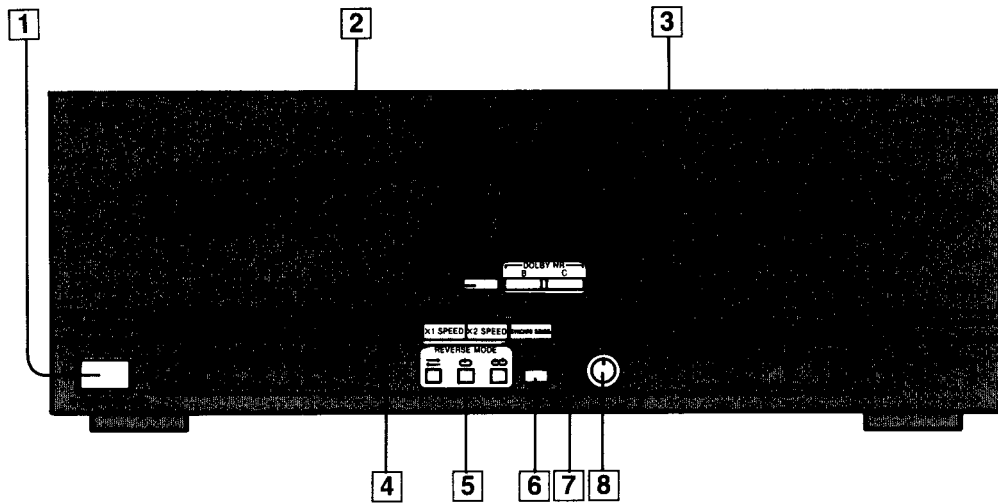
Respuesta de Frecuencia Total (Platina 1/2)

1. Poner una cinta virgen normal (QZZCRA) y poner la unidad en la modalidad de Pausa de Grabación.
2. Aplicar la señal de entrada de referencia (1kHz, -24dB) a través de un atenuador.
3. Atenuar la señal por 20dB y ajustar la frecuencia de 50Hz~10kHz.
4. Grabar el barrido de frecuencia.
5. Reproducir la señal grabada y asegurarse de que esté dentro de la gama mostrada en la Fig. 8 en comparación con la frecuencia de referencia (1kHz).
6. Si no está dentro de la gama de frecuencia, ajustar Platina 1=**VR353** (Platina 2=**VR303**) (CH-I) y Platina 1=**VR352** (Platina 2=**VR302**) (CH-D) de manera que el nivel de frecuencia esté dentro de la gama estándar.
7. Repetir los pasos 2~6 de arriba utilizando la cinta CrO<sub>2</sub> (QZZCRX) y la cinta metálica (QZZCRZ) incrementando la gama de frecuencia a 12.5kHz (50Hz~12.5kHz).
8. Asegurarse de que el nivel esté dentro de la gama mostrada en la Fig. 9.

Ajuste de Ganancia Total (Platina 1/2)

1. Insertar la cinta de prueba en blanco normal (QZZCRA) y poner la unidad en modalidad de pausa de Grabación.
2. Aplicar la señal de entrada de referencia (1kHz, -24dB). Atenuar la salida de manera que su nivel se haga 0.4V.
3. Grabar la señal de entrada.
4. Reproducir la señal grabada en el paso 3 de arriba y asegurarse de que la salida esté dentro del valor estándar.
5. Si no está dentro del valor estándar, ajustar Platina 1=**VR101** (Platina 2=**VR7**) (CH-I) y Platina 1=**VR102** (Platina 2=**VR8**) (CH-D).
6. Repetir el paso 2~5 de arriba hasta que la salida esté dentro del valor estándar.

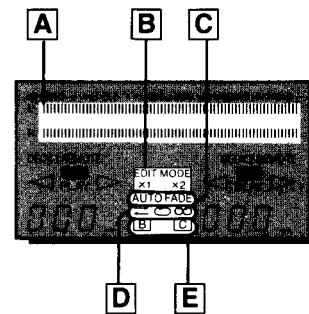
## FRONT PANEL CONTROLS AND FUNCTIONS



### Controls common to both tape decks

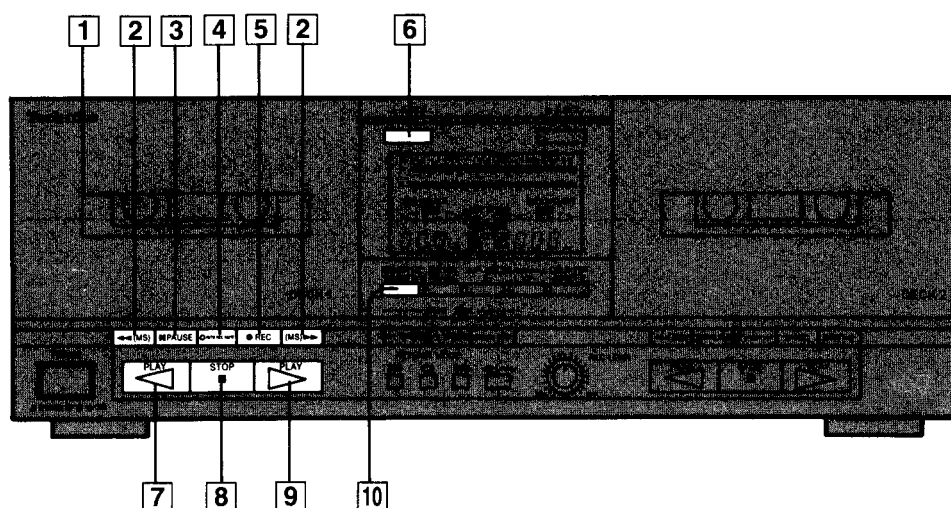
- 1 Power "STANDBY  /ON" switch (POWER/ STANDBY  ON)**  
This switch switches ON and OFF the secondary circuit power only. The unit is in the "standby" condition when this switch is set to the STANDBY  position. Regardless of the switch setting, the primary circuit is always "live" as long as the power cord is connected to an electrical outlet.
- 2 Meter-range selector (METER RANGE)**  
This selector can be used to select the meter-range display of the input level meter.
- 3 Dolby noise-reduction buttons (DOLBY NR)**  
These buttons can be used to reduce the hiss noise that is characteristic of tape. This unit is provided with both the B-type and C-type noise-reduction systems.
- 4 Edit-recording tape-speed buttons (×1 SPEED/×2 SPEED)**  
These buttons can be used to select the recording speed when a tape-to-tape recording is made.
- 5 Reverse-mode selectors (REVERSE MODE)**  
These selectors can be used for selection of the reverse mode (for either playback or recording).
- 6 Auto-fade button (AUTO FADE)**  
This button can be used to provide the fade-in and fade-out features during recording.
- 7 Synchro-start button (SYNCHRO START)**  
This button can be used to start a tape-to-tape recording, simultaneously starting tape deck 1 (the playback deck) and tape deck 2 (the recording deck).
- 8 Recording-level control (REC LEVEL)**  
This control can be used to regulate the recording level of both tape decks.

### Indicators common to both tape decks



- A Input level meter**  
During playback, this meter indicates the level of the recorded sound source.  
During recording, it indicates the level being recorded, adjusted by the recording-level control.
- B Edit-recording tape-speed indicators (EDIT MODE, ×1, ×2)**  
The word "EDIT MODE" and one of these indicators will illuminate to show which of the tape-to-tape recording speeds was selected by pressing one of the edit-recording tape-speed buttons.
- C Auto-fade indicator (AUTO FADE)**  
This indicator illuminates to show that the tape is being recorded in the fade-in or fade-out recording mode.
- D Reverse-mode indicators ( , ,  )**  
One of these indicators illuminates to show which of the reverse modes was selected by a reverse-mode selector.
- E Dolby noise-reduction indicators (B, C)**  
One of these indicators illuminates to show the type of Dolby noise-reduction system selected by pressing one of the Dolby noise-reduction buttons.

Tape deck 1



Tape deck 2

## Controls applicable to tape deck 1 and 2

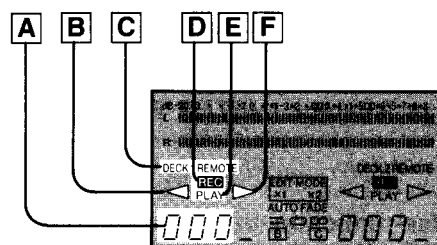
Both tape deck 1 and tape deck 2 have the same controls, indicators, etc., and have the same functions, so the following explanation, although for tape deck 1, is equally applicable to tape deck 2.

- 1 Cassette holder**
- 2 Rewind/fast-forward/search button**  
[◀◀ (MS)/(MS) ▶▶]  
This button can be used to fast-forward or rewind the tape, or to easily search for a tune's beginning quickly.
- 3 Pause button (|| PAUSE)**  
This button can be used to temporarily stop the tape playback or recording of the tape deck.
- 4 Automatic-record-muting button**  
(□ AUTO REC MUTE)  
This button can be used to make a silent interval on the tape being recorded on the tape deck.
- 5 Record button (● REC)**  
This button can be used to change the tape deck to the recording stand-by mode.
- 6 Eject button (▲ EJECT)**  
This button can be used to open the cassette holder.
- 7 Reverse-side playback button (PLAY/◀)**  
This button can be used to start the playback or recording of side "B" of the cassette.  
(The tape will then begin moving in the right-to-left direction.)
- 8 Stop button (STOP/■)**  
This button can be used to stop tape movement.
- 9 Forward-side playback button (PLAY/▶)**  
This button can be used to start the playback or recording of side "A" of the cassette.  
(The tape will then begin moving in the left-to-right direction.)

## 10 Tape counter reset button (COUNTER RESET 1/2)

This button can be used to reset the tape counter indication to "000".

## Indicators applicable to tape deck 1 and 2

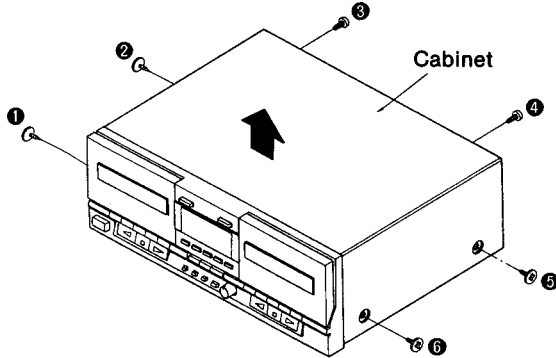
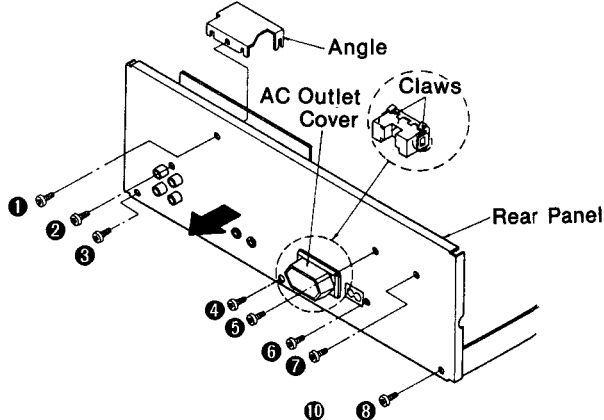
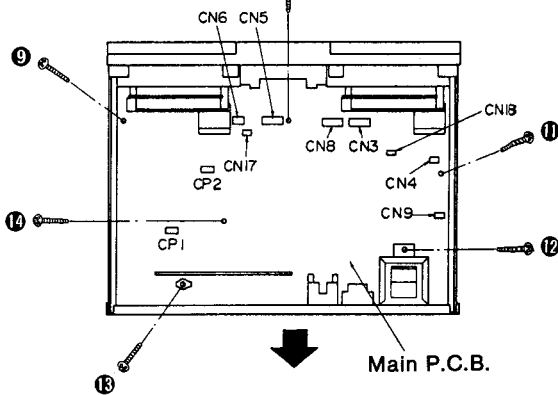
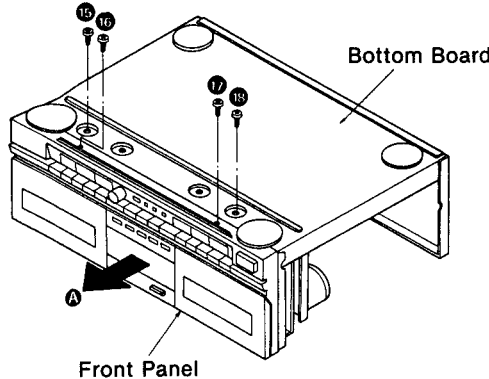
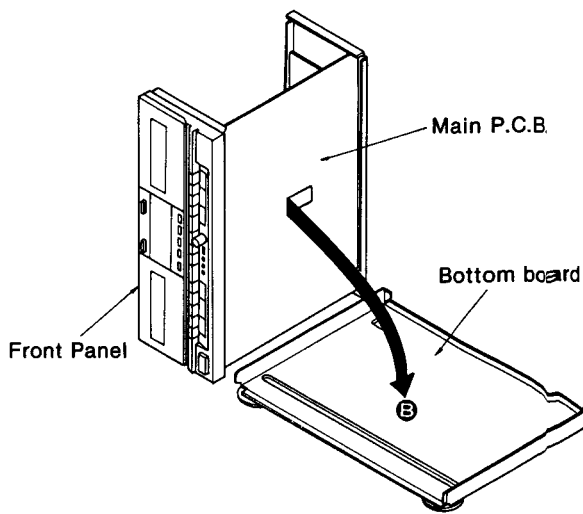


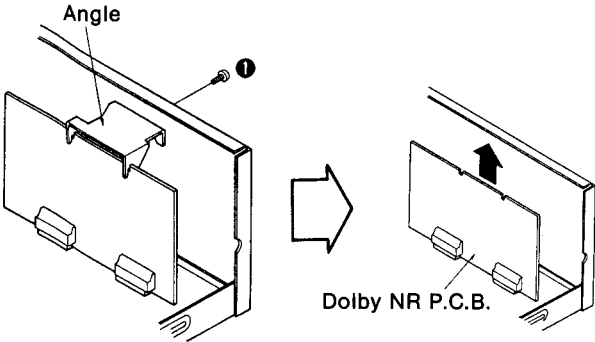
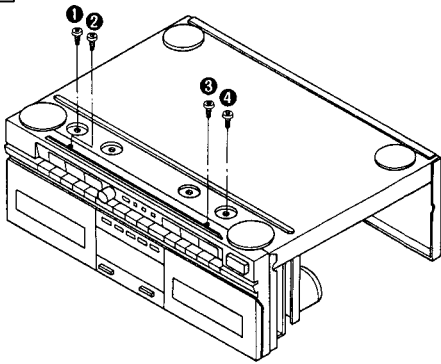
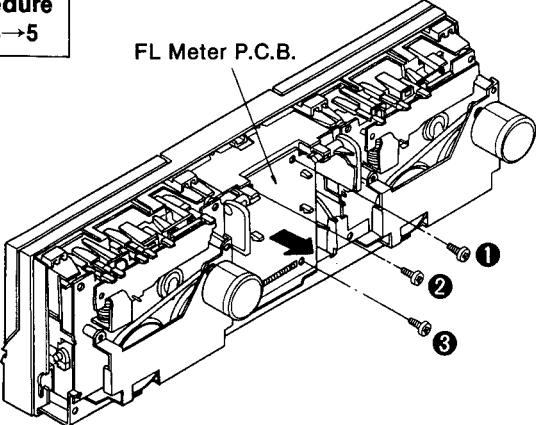
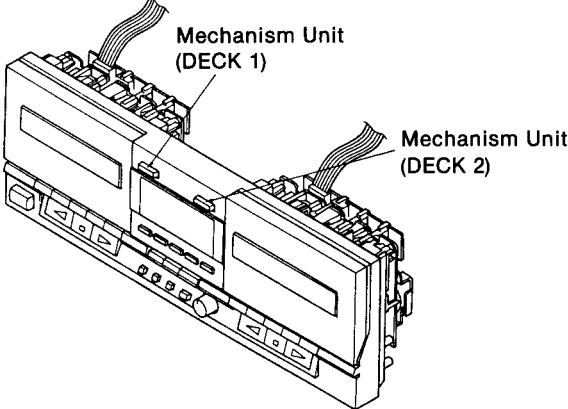
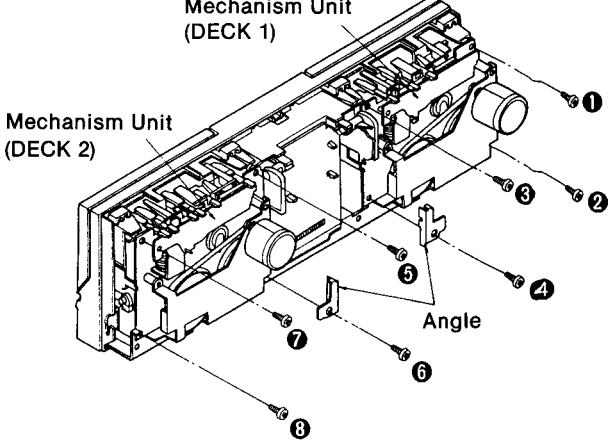
- A Tape counter**  
Indicates the amount of tape movement (separately for tape deck 1 and tape deck 2).
- B Reverse-side indicator (◀)**  
Illuminates during playback or recording to indicate that side "B" of the tape is being used.
- C Remote-control indicator**  
(DECK 1 REMOTE/DECK 2 REMOTE)  
This indicator illuminates to indicate that this tape deck can now be controlled by the remote-control transmitter.
- D Recording indicator (REC)**  
This indicator illuminates to indicate that this tape deck is in the recording stand-by mode, or is recording.
- E Playback indicator (PLAY)**  
When this indicator illuminates steadily, it indicates that this tape deck is in the playback mode or the recording mode. When it flashes continually, this is an indication that this tape deck is in the pause mode or the recording stand-by mode. When it flashes rapidly, this is an indication that this tape deck is in the search mode.
- F Forward-side indicator (▶)**  
Illuminates during playback or recording to indicate that side "A" of the tape is being used.

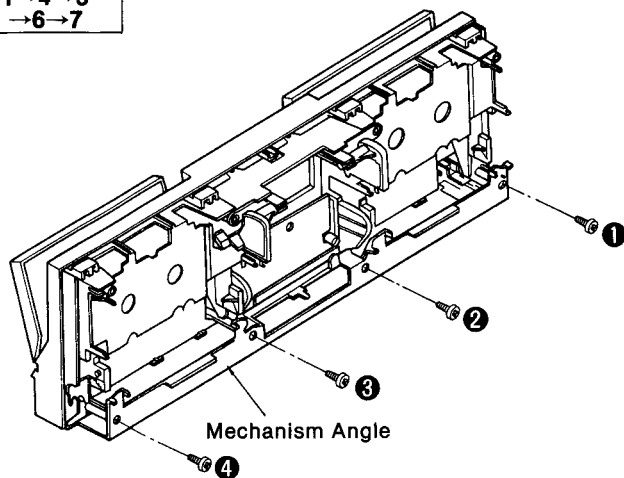
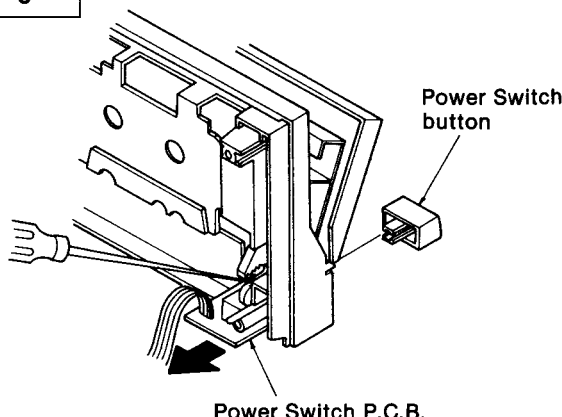
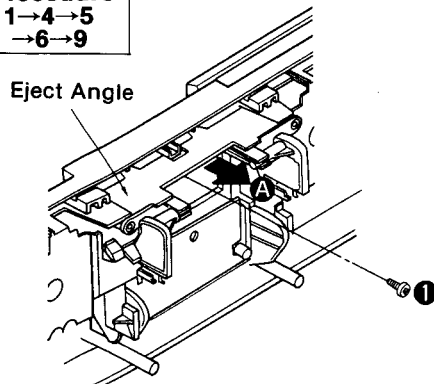
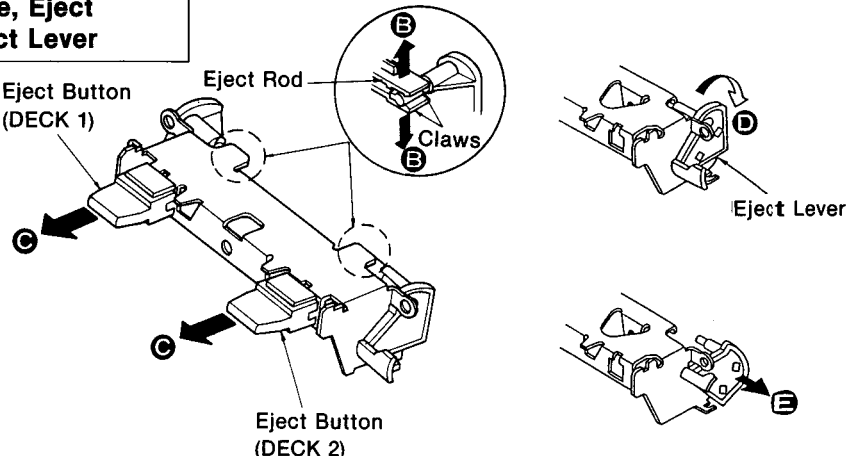
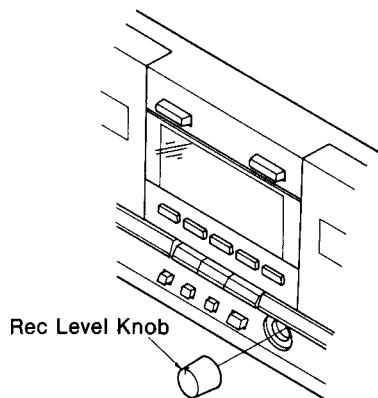
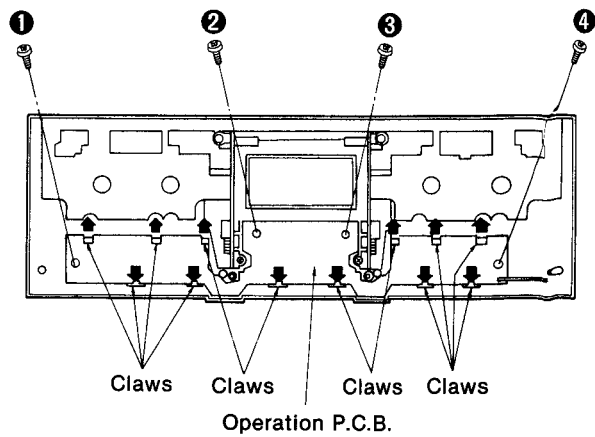
## DISASSEMBLY INSTRUCTIONS

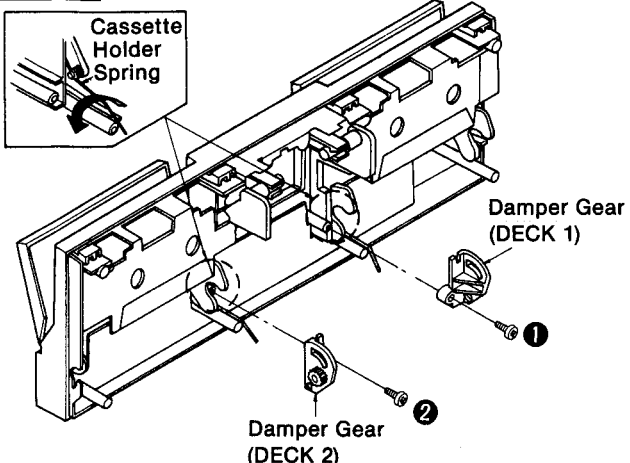
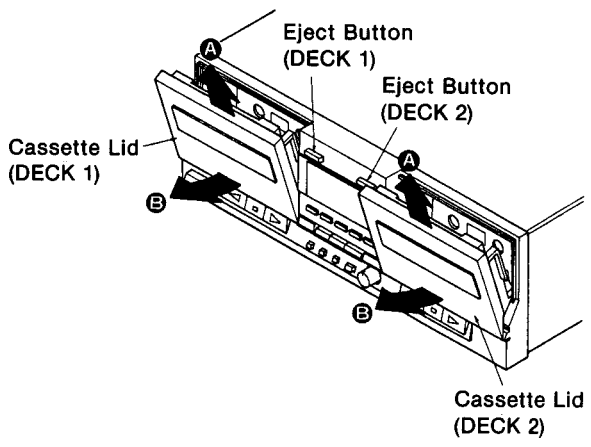
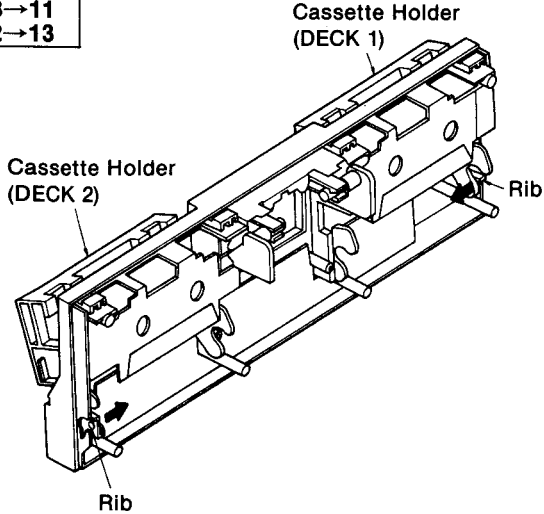
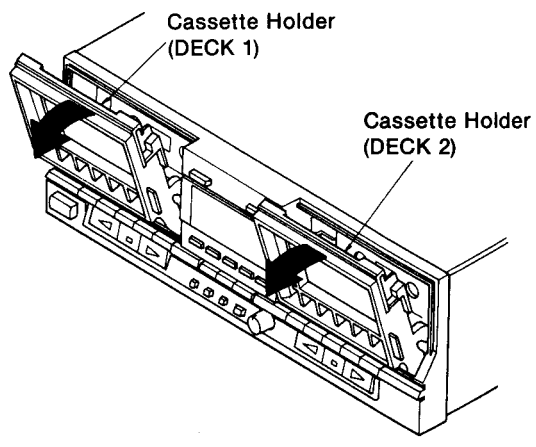
### "ATTENTION SERVICER"

Some chassis components may have sharp edges. Be careful when disassembling and servicing.

| Ref. No.<br>1  | Removal of the Cabinet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Ref. No.<br>2    | Removal of the Main P.C.B.                                                                                                                                                                                                                                                                                                 |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Procedure<br>1 |  <p>• Remove the 6 screws (①～⑥).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Procedure<br>1→2 | <ol style="list-style-type: none"> <li>1. Remove the 8 screws (①～⑧).</li> <li>2. Release the 2 claws of the AC outlet cover.</li> <li>3. Remove the angle.</li> <li>4. Remove the rear panel in the direction of the arrow.</li> </ol>  |
|                | <ol style="list-style-type: none"> <li>5. Remove the 6 screws (⑨～⑭).</li> <li>6. Remove the 4 connectors (CP1, CP2, CN17, CN18).</li> <li>7. Remove the 6 flat cables (CN3, CN4, CN5, CN6, CN8, CN9).</li> <li>8. Remove the main P.C.B. in the direction of the arrow.</li> </ol> <p><b>How to remove the flat cable</b></p> <p>• Pull out the flat cable while pressing the connector.</p> <ol style="list-style-type: none"> <li>1. Lift the connector.</li> <li>2. Pull out the flat cable.</li> </ol>  |                  |  <ol style="list-style-type: none"> <li>3. Remove the bottom board in the direction of the arrow ③.</li> <li>4. Reinstall the front panel to the main P.C.B.</li> </ol>                                                                |
|                | <p><b>How to check the main P.C.B.</b></p> <p>• When checking the soldered surfaces of main P.C.B. and replacing the parts, do as show.</p> <ol style="list-style-type: none"> <li>1. Remove the 14 screws (①, ④, ⑧～⑬).</li> <li>2. Remove the front panel in the direction of the arrow ①.</li> </ol>                                                                                                                                                                                                      |                  |                                                                                                                                                                                                                                        |

|                    |                                                                                                                                                                                             |                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                      |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ref. No.<br>3      | Removal of the Dolby NR P.C.B.                                                                                                                                                              | Ref. No.<br>4                                                                                                                                                                               | Removal of the Front Panel                                                                                                                                                                                                                                                                                           |
| Procedure<br>1→3   |  <p>1. Remove the 1 screw (❶).</p> <p>2. Remove the Dolby NR P.C.B. in the direction of the arrow.</p>     | Procedure<br>1→4                                                                                                                                                                            |  <p>1. Remove the 4 screws (❶~❹).</p> <p>2. Remove the 4 connectors (CP1, CP2, CN17, CN18).</p> <p>3. Remove the 6 flat cables (CN3, CN4, CN5, CN6, CN8, CN9).</p> <p>4. Remove the front panel in the direction of the arrow.</p> |
| Ref. No.<br>5      | Removal of the FL Meter P.C.B.                                                                                                                                                              |                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                      |
| Procedure<br>1→4→5 |  <p>1. Remove the 3 screws (❶~❸).</p> <p>2. Remove the FL meter P.C.B. in the direction of the arrow.</p> |                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                      |
| Ref. No.<br>6      | Removal of the Mechanism Units                                                                                                                                                              |                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                      |
| Procedure<br>1→4→6 | <p>■ Mechanism unit (DECK 1)</p> <p>1. Push the eject button.</p> <p>2. Remove the 4 screws (❶~❹).</p>   | <p>■ Mechanism unit (DECK 2)</p> <p>1. Push the eject button.</p> <p>2. Remove the 4 screws (❺~❽).</p>  |                                                                                                                                                                                                                                                                                                                      |

|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                                           |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------|
| <b>Ref. No.</b><br>7              | <b>Removal of the Mechanism Angle</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Ref. No.</b><br>8 | <b>Removal of the Power Switch P.C.B.</b> |
| <b>Procedure</b><br>1→4→5<br>→6→7 | <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;">  <p>• Remove the 4 screws (①~④).</p> </div> <div style="width: 48%;">  <p>Power Switch button</p> <p>Power Switch P.C.B.</p> <ol style="list-style-type: none"> <li>1. Remove the power switch button by pushing it from behind the front panel.</li> <li>2. Remove the power switch P.C.B. in the direction of the arrow.</li> </ol> </div> </div>                                                                                                                                                                                                                                                                                                    |                      |                                           |
| <b>Ref. No.</b><br>9              | <b>Removal of the Eject Angle, Eject Button, Eject Rod and Eject Lever</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |                                           |
| <b>Procedure</b><br>1→4→5<br>→6→9 | <div style="display: flex; justify-content: space-between;"> <div style="width: 24%;">  <p>Eject Angle</p> <ol style="list-style-type: none"> <li>1. Remove the 1 screw (①).</li> <li>2. Pull out the eject angle in the direction of the arrow A.</li> </ol> </div> <div style="width: 48%;">  <p>Eject Button (DECK 1)</p> <p>Eject Rod</p> <p>Claws</p> <p>Eject Lever</p> <p>Eject Button (DECK 2)</p> <ol style="list-style-type: none"> <li>3. Pull out the claw of the eject rod in the direction of the arrow B, remove the eject buttons and the eject rod in the arrow C.</li> <li>4. Turn the eject lever in the direction of the arrow D, and remove the eject lever in the direction of the arrow E.</li> </ol> </div> </div> |                      |                                           |
| <b>Ref. No.</b><br>10             | <b>Removal of the Operation P.C.B.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                      |                                           |
| <b>Procedure</b><br>7→8→10        | <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;">  <p>Rec Level Knob</p> <ol style="list-style-type: none"> <li>1. Pull out the rec level knob.</li> </ol> </div> <div style="width: 48%;">  <p>Claws</p> <p>Claws</p> <p>Claws</p> <p>Claws</p> <p>Operation P.C.B.</p> <ol style="list-style-type: none"> <li>2. Remove the 4 screws (①~④).</li> <li>3. Release the 12 claws.</li> </ol> </div> </div>                                                                                                                                                                                                                                                                                             |                      |                                           |

| Ref. No.<br>11                | Removal of the Damper Gear and<br>Cassette Holder Spring                                                                                                                                                                                                                            | Ref. No.<br>12  | Removal of the Cassette Lid                                                                                                                                                                                                                                                          |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Procedure<br>7→8→11           |  <ol style="list-style-type: none"> <li>1. Remove the 2 screws (①, ②).</li> <li>2. Remove the damper gear.</li> <li>3. Remove the cassette holder spring in the direction of the arrow.</li> </ol> | Procedure<br>12 |  <ol style="list-style-type: none"> <li>1. Push the eject button.</li> <li>2. Pull out the cassette lid in the direction of the arrow ① and then remove it in the direction of arrow ②.</li> </ol> |
| Ref. No.<br>13                | Removal of the Cassette Holder                                                                                                                                                                                                                                                      |                 |                                                                                                                                                                                                                                                                                      |
| Procedure<br>7→8→11<br>→12→13 |  <ol style="list-style-type: none"> <li>1. Remove the rib in the direction of the arrow.</li> </ol>                                                                                              |                 |  <ol style="list-style-type: none"> <li>2. Remove the cassette holder in the direction of the arrow.</li> </ol>                                                                                  |

## MEASUREMENT AND ADJUSTMENT METHODES

### Measurement Condition

- Rec. level control; Maximum
- Reverse-mode selector switch;  $\rightleftarrows$
- Edit-recording tape-speed selector; X1
- Dolby NR switch; Off

- Make sure heads are clean
- Make sure capstan and pressure roller are clean
- Judgeable room temperature  $20 \pm 5^\circ\text{C}$  ( $68 \pm 9^\circ\text{F}$ )

### Measuring Instrument

- EVM (Electronic Voltmeter)
- Oscilloscope
- Digital frequency counter
- AF oscillator

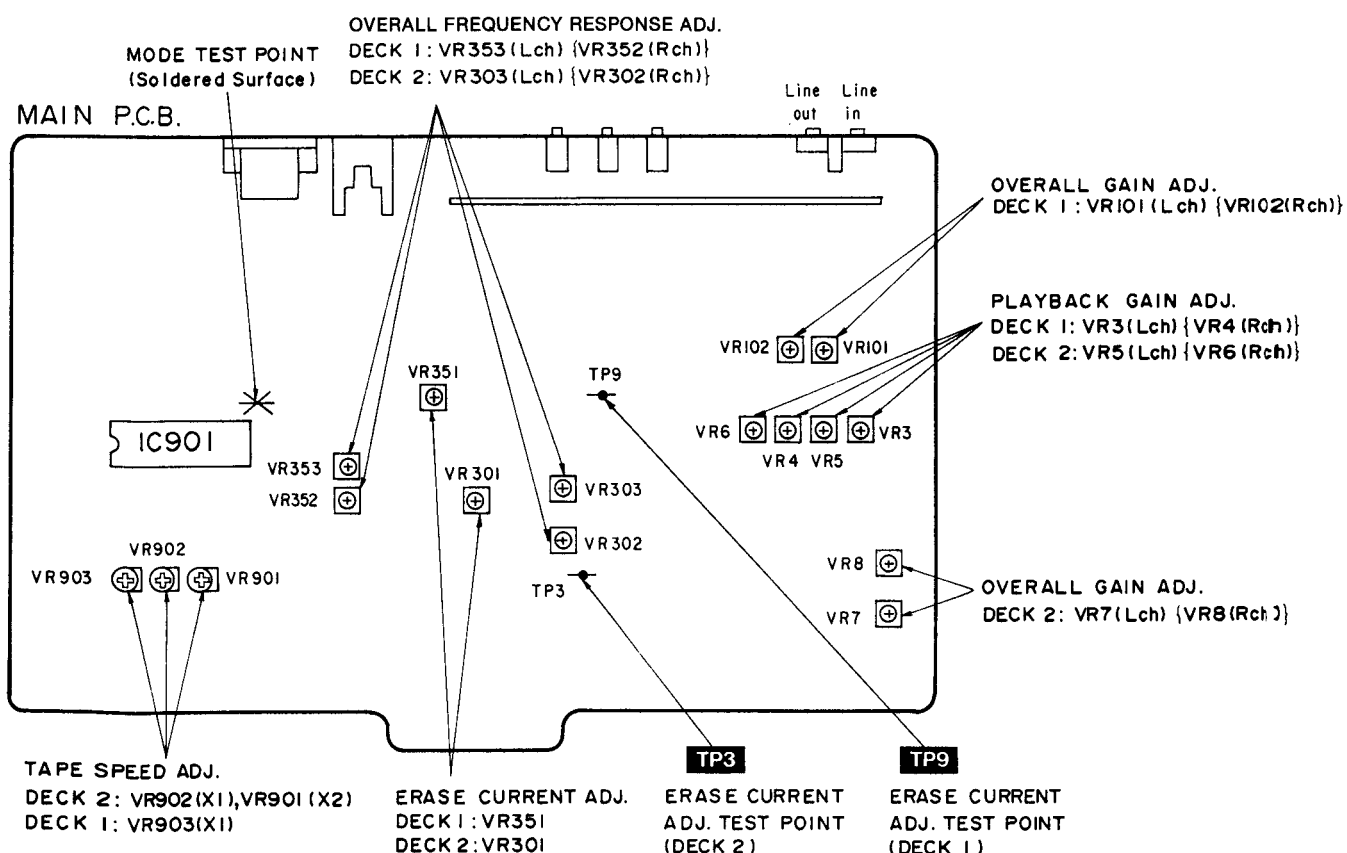
- ATT (Attenuator)
- DC voltmeter
- Resistor (600 $\Omega$ )

### Test tape

- Head azimuth adjustment (8kHz, -20dB); QZZCFM
- Tape speed adjustment (3kHz, -10dB); QZZCWAT
- Playback frequency response (315Hz, 12.5kHz, 10kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz, 63Hz, -20dB); QZZCFM

- Playback gain adjustment (315Hz, 0dB); QZZCFM
- Overall frequency response, Overall gain adjustment  
Normal reference blank tape; QZZCRA  
CrO<sub>2</sub> reference blank tape; QZZCRX  
Metal reference blank tape; QZZCRZ

## Adjustment Points

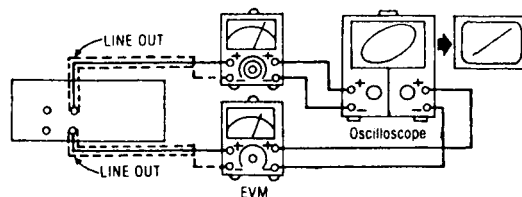
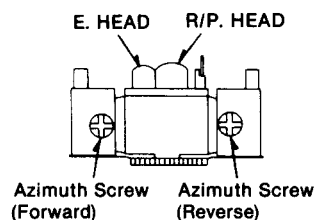


**HEAD AZIMUTH ADJUSTMENT (DECK 1/2)**

1. Playback the azimuth adjustment portion (8kHz, -20dB) of the test tape (QZZCFM). Vary the azimuth adjusting screw until the outputs of the L-CH and R-CH are maximized and the lissajous waveform, as illustrated, approaches 0 degrees.

**Note:** If L-CH and R-CH are not maximized at the same point, adjust to the point where the levels of each channel are maximized and equal.

2. Perform the same adjustment in the play mode.
3. After the adjustment, apply screwlock to the azimuth adjusting screw.

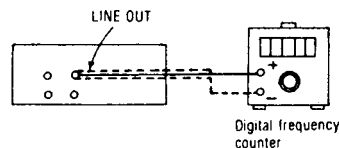
**Fig. 1****Fig. 2****TAPE SPEED ADJUSTMENT (DECK 1/2)****Normal speed**

1. Shift the edit-recording tape-speed selector to "X1".
2. Playback the middle portion of the test tape (QZZCWAT).
3. Adjust Deck 1=VR902 and Deck 2=VR903 so that the output is within the standard value.

**High speed**

4. Shift the edit-recording tape speed switch to "X2".
5. Playback the middle portion of the test tape (QZZCWAT).
6. Adjust Deck 1=VR901 so that the output is within the standard value.

**Note:** The Normal speed adjustment must be done before the High speed adjustment.

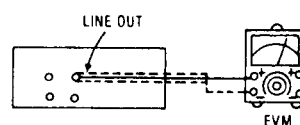
**Fig. 3**

**Standard value: 3000 ± 15 Hz (Normal), 6000 ± 600 Hz (High)**

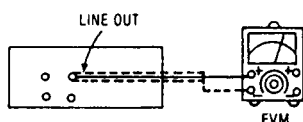
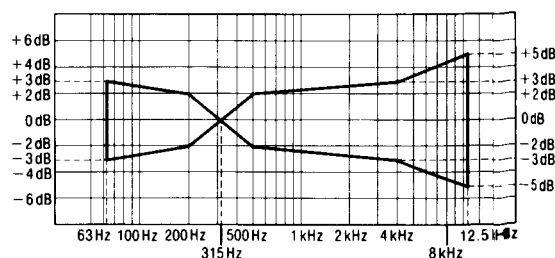
**PLAYBACK GAIN ADJUSTMENT (DECK 1/2)**

1. Playback the gain adjusted portion (315Hz, 0dB) of the test tape (QZZCFM).
2. Adjust Deck 1=VR3 (L-CH) [[VR4 (R-CH)]] and Deck 2=VR5 (L-CH) [[VR6 (R-CH)]] so that the output is within the standard value.

**Standard value: 0.4V ± 0.5dB**

**Fig. 4****PLAYBACK FREQUENCY RESPONSE (DECK 1/2)**

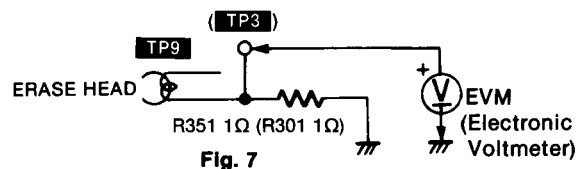
1. Playback the frequency response portion (315Hz, 12.5kHz~63Hz, -20dB) of the test tape (QZZCFM).
2. Assure that the frequency response is within the range shown in Fig. 6 for both L-CH and R-CH.

**Fig. 5****Fig. 6**

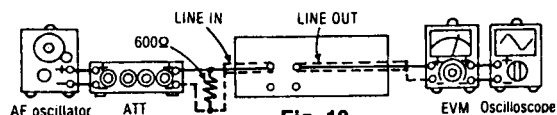
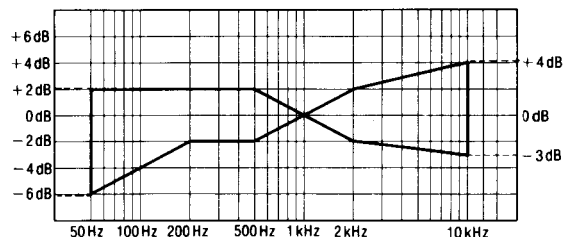
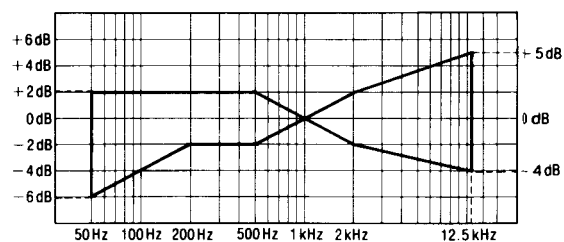
**ERASE CURRENT ADJUSTMENT (DECK 1/2)**

1. Insert the Metal blank test tape (QZZCRZ) and set the unit to the Record Pause mode.
2. Adjust Deck 1=VR351 (Deck 2=VR301) so that the output between Deck 1=TP9 (Deck 2=TP3) and GND is within the standard value.

**Standard value:  $190 \pm 5 \text{ mA (Metal)}$ ...EVM Reading:  $190 \pm 5 \text{ mV}$**

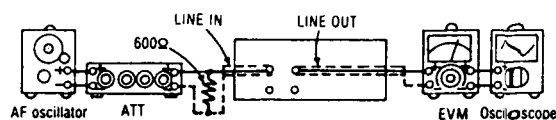
**OVERALL FREQUENCY RESPONSE (DECK 1/2)**

1. Insert the Normal blank test tape (QZZCRA) and set the unit to the Record Pause mode.
2. Apply a reference input signal (1 kHz, -24 dB) through an attenuator.
3. Attenuate the signal by 20 dB and adjust the frequency from 50 Hz ~ 10 kHz.
4. Record the frequency sweep.
5. Playback the recorded signal and assure that it is within the range shown in Fig. 8 in comparison to the reference frequency (1 kHz).
6. If it is not within the standard range, adjust Deck 1=VR353 (Deck 2=VR303) (L-CH) and Deck 1=VR352 (Deck 2=VR302) (R-CH) so that the frequency level is within the standard range.
  - Level up in high frequency range .....Increase the bias current.
  - Level down in high frequency range ...Decrease the bias current.
7. Repeat steps 2~6 above using the CrO<sub>2</sub> tape (QZZCRX) and the Metal tape (QZZCRZ) increasing the frequency range to 12.5 kHz (50 Hz ~ 12.5 kHz).
8. Assure that the level is within the range shown in Fig. 9.

**Normal Overall frequency response chart (NR OUT)****Fig. 8****CrO<sub>2</sub> Metal Overall frequency response chart (NR OUT)****Fig. 9****OVERALL GAIN ADJUSTMENT (DECK 1/2)**

1. Insert the Normal blank test tape (QZZCRA) and set the unit to the Record pause mode.
2. Apply a reference input signal (1 kHz, -24 dB). Attenuate the output so that its level becomes 0.4 V.
3. Record this input signal.
4. Playback the signal recorded in step 3 above, and assure that the output is within the standard value.
5. If it is not within the standard value, adjust Deck 1=VR101 (Deck 2=VR7) (L-CH) and Deck 1=VR102 (Deck 2=VR8) (R-CH).
6. Repeat the step 2~5 above until the output is within the standard value.

**Standard value:  $0.4 \text{ V} \pm 0.5 \text{ dB}$**



## ■ TERMINAL FUNCTION OF IC'S

• IC901 (M50963-227SP): MICROCOMPUTER (This microcomputer is used for mechanical operation.)

| Pin No. | Mark                   | I/O Division | Function                                                       | Pin No. | Mark                    | I/O Division | Function                                                                    |
|---------|------------------------|--------------|----------------------------------------------------------------|---------|-------------------------|--------------|-----------------------------------------------------------------------------|
| 1       | V <sub>CC</sub>        | I            | Power supply terminal                                          | 24      | DATA IN (P3 (1))        | I            | Bus data signal                                                             |
| 2       | AV <sub>SS</sub> (GND) | —            | GND terminal                                                   | 25      | DATA OUT (P3 (0))       | O            |                                                                             |
| 3       | V <sub>REF</sub>       | I            | Reference voltage terminal                                     | 26      | POF IN (INT1)           | I            | "AC POWER OFF" det. terminal                                                |
| 4       | D-A                    | —            | Not used, open                                                 | 27      | CNV <sub>SS</sub> (GND) | —            | GND terminal                                                                |
| 5       | PWM                    | O            | Pulse width modulated signal                                   | 28      | RESET                   | I            | Reset signal ("L" = RESET)                                                  |
| 6       | P6 (3)                 | —            | Not used, open                                                 | 29      | X <sub>IN</sub>         | I            | Clock OSC terminal                                                          |
| 7       | RMT1 (P6 (2))          | O            | Rec. mute signal of deck 1 (Mute "ON" = "H", Mute "OFF" = "L") | 30      | X <sub>OUT</sub>        | O            |                                                                             |
| 8       | RMT2 (P6 (1))          | O            | Rec. mute signal of deck 2 (Mute "ON" = "H", Mute "OFF" = "L") | 31      | φ                       | —            | Not used, open                                                              |
| 9       | DMT (P6 (0))           | O            | Line out mute signal (Mute "ON" = "H", Mute "OFF" = "L")       | 32      | V <sub>SS</sub> (GND)   | —            | GND terminal                                                                |
| 10      | VR IN (AN (7))         | I            | Variable voltage level signal of rec. level volume             | 33      | TEST (P5 (7))           | —            | Test terminal (Normal = "H")                                                |
| 11      | RLV (AN (6))           | I            | Peak voltage terminal of rec. signal<br>Not used, open         | 34      | PW IN (P5 (6))          | I            | Power switch signal ("ON": "L", "OFF": "H")                                 |
| 12      | KEY2 (AN (5))          | I            | Operation key switches terminal                                | 35      | REEL2 (P5 (5))          | I            | Reel rotation pulse signal of deck 2<br>"ON": "L", "OFF": "H"               |
| 13      | KEY1 (AN (4))          | I            |                                                                | 36      | REEL1 (P5 (4))          | I            |                                                                             |
| 14      | QUICK2 (AN (3))        | I            | Leader tape det. signal of deck 2                              | 37      | R. INH2 (P5 (3))        | I            | Reverse rec. inh. switch select terminal of deck 2<br>"ON": "L", "OFF": "H" |
| 15      | QUICK1 (AN (2))        | I            | Leader tape det. signal of deck 1                              | 38      | F. INH2 (P5 (2))        | I            | Forward rec. inh. switch select terminal of deck 2<br>"ON": "L", "OFF": "H" |
| 16      | ARM2 (P4 (1))          | I            | "AUTO REC MUTE" key switch signal of deck 2                    | 39      | MODE2 (P5 (1))          | I            | Mechanism mode switch select terminal of deck 2<br>"ON": "L", "OFF": "H"    |
| 17      | ARM1 (P4 (0))          | I            | "AUTO REC MUTE" key switch signal of deck 1                    | 40      | HALF2 (P5 (0))          | I            | Cassette half detection switch terminal of deck 2<br>"ON": "L", "OFF": "H"  |
| 18      | REC2 (P3 (7))          | O            | Rec. mode signal of deck 2                                     | 41      | MPX (P1 (7))            | O            | MPX filter "ON/OFF" select signal ("ON": "H", "OFF": "L")                   |
| 19      | REC1 (P3 (6))          | O            | Rec. mode signal of deck 1                                     | 42      | T2 (P1 (6))             | O            | Playback amp. select signal (Deck 2-P.B.: "L", Others: "H")                 |
| 20      | SYNCHRO REC (P3 (5))   | I            | CD synchro rec. signal                                         | 43      | X2 (P1 (5))             | O            | Playback equalizer select signal with tape edit of deck 1                   |
| 21      | REC ENABLE (P3 (4))    | O            | Rec. "STAND BY" signal                                         | 44      | P1 (4)                  | —            | Not used, open                                                              |
| 22      | CLK IN (P3 (3))        | I            | Bus clock signal                                               | 45      | P1 (3)                  | —            | Not used, open                                                              |
| 23      | CLK OUT (P3 (2))       | O            |                                                                | 46      | C (P1 (2))              | O            | Dolby NR C "ON/OFF" select signal ("ON": "L", "OFF": "H")                   |

| Pin No. | Mark                               | I/O Division | Function                                                                   |
|---------|------------------------------------|--------------|----------------------------------------------------------------------------|
| 47      | $\overline{B}$<br>(P1 (1))         | O            | Dolby NR B "ON/OFF" select signal ("ON": "L", "OFF": "H")                  |
| 48      | $\overline{ENC}$<br>(P1 (0))       | O            | Encode/decode select signal of dolby NR circuit                            |
| 49      | P0 (7)                             | —            | Not used, open                                                             |
| 50      | POF OUT<br>(P0 (6))                | O            | "ON/OFF" select signal of power supply circuit ("ON": "L", "OFF": "H")     |
| 51      | $\overline{SDATA}$<br>(P0 (5))     | O            | Serial data signal to FL display                                           |
| 52      | $\overline{AUTO FADE}$<br>(P0 (4)) | O            | "ON/OFF" select signal of "AUTO FADE" display ("ON": "L", "OFF": "H")      |
| 53      | P0 (3)                             | —            | Not used, open                                                             |
| 54      | MSP<br>(P0 (2))                    | I            | Music select det. signal ("H": NO SIGNAL, "L": ON SIGNAL)                  |
| 55      | R. INH1<br>(P0 (1))                | I            | Reverse rec. inh. switch select terminal of deck 1 ("ON": "L", "OFF": "H") |
| 56      | F. INH1<br>(P0 (0))                | I            | Forward rec. inh. switch select terminal of deck 1 ("ON": "L", "OFF": "H") |

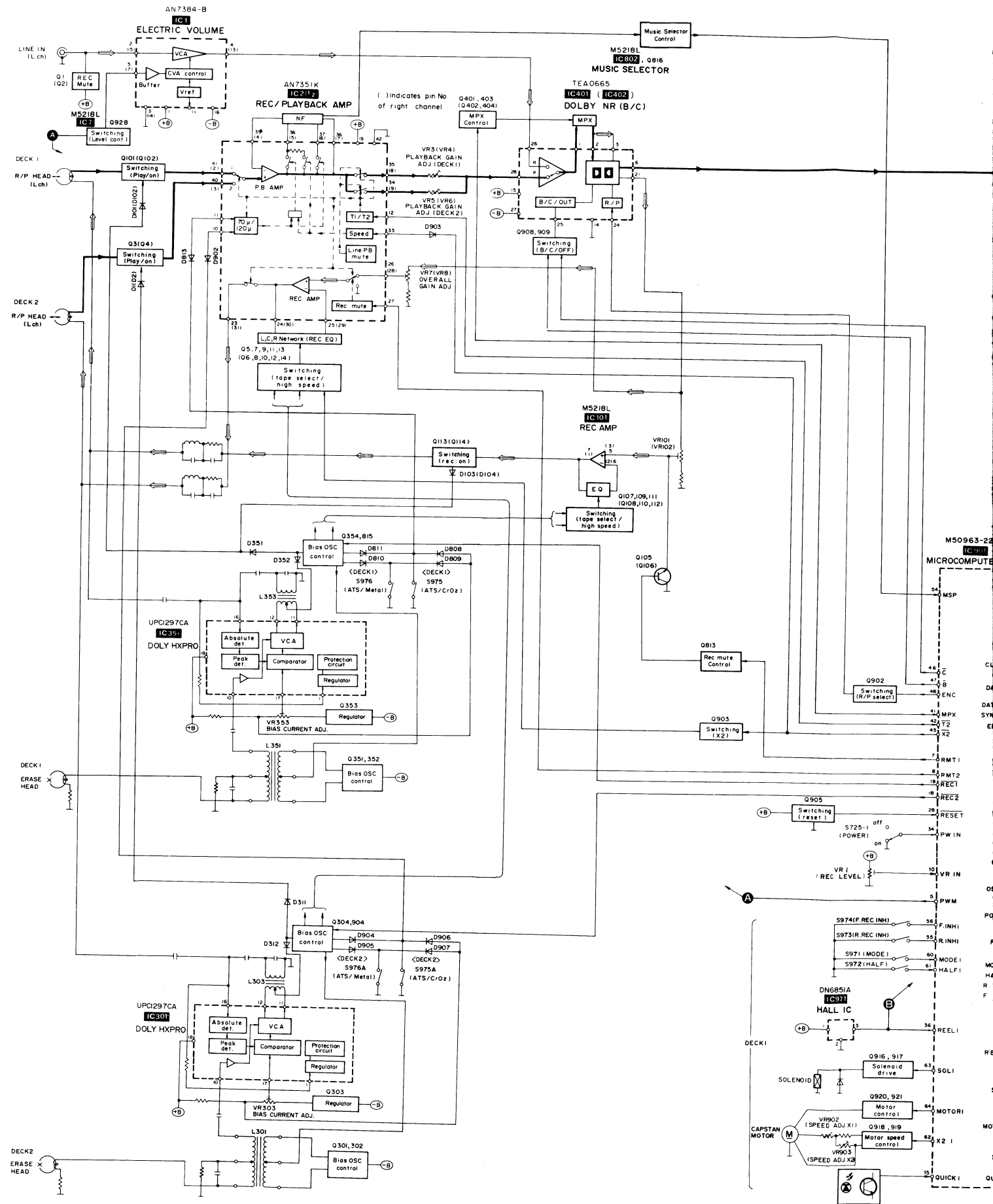
| Pin No. | Mark               | I/O Division | Function                                                                   |
|---------|--------------------|--------------|----------------------------------------------------------------------------|
| 57      | X2 2<br>(P2 (7))   | O            | Mechanism motor speed select signal of deck 2 ("X1": "H", "X2": "L")       |
| 58      | SOL2<br>(P2 (6))   | O            | Mechanism plunger "ON/OFF" select signal of deck 2 ("ON": "H", "OFF": "L") |
| 59      | MOTOR2<br>(P2 (5)) | O            | Mechanism motor "ON/OFF" select signal of deck 2 ("ON": "H", "OFF": "L")   |
| 60      | MODE1<br>(P2 (4))  | I            | Mechanism mode "ON/OFF" select signal of deck 1 ("ON": "L", "OFF": "H")    |
| 61      | HALF1<br>(P2 (3))  | I            | Cassette half detection switch terminal of deck 1 ("ON": "L", "OFF": "H")  |
| 62      | X2 1<br>(P2 (2))   | O            | Mechanism motor speed select signal of deck 1 ("X1" 1: "H", "X2": "L")     |
| 63      | SOL1<br>(P2 (1))   | O            | Mechanism plunger "ON/OFF" select signal of deck 1 ("ON": "H", "OFF": "L") |
| 64      | MOTOR1<br>(P2 (0)) | O            | Mechanism motor "ON/OFF" select signal of deck 1 ("ON": "H", "OFF": "L")   |

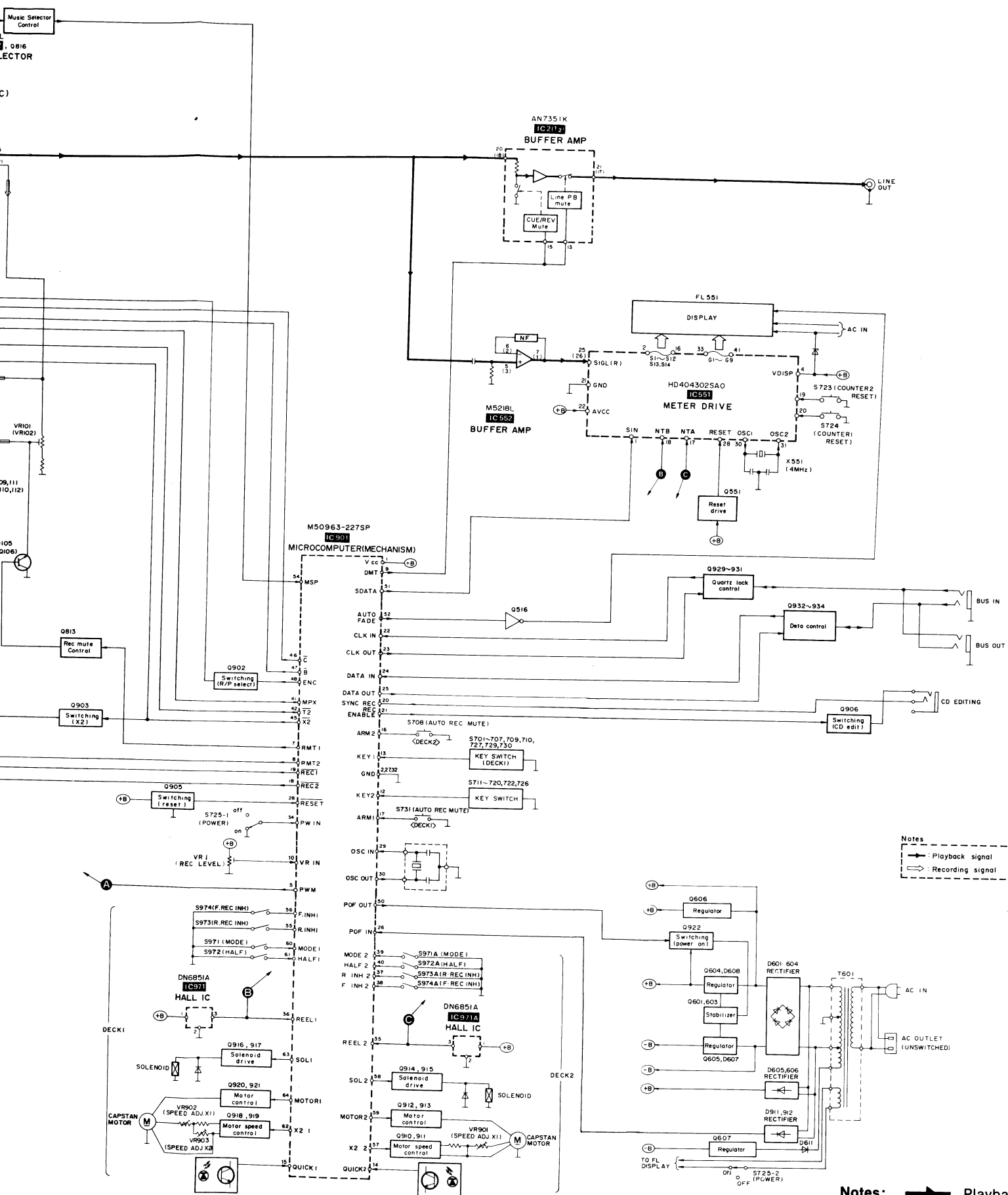
• IC551 (HD404302SA02): MICROCOMPUTER (This microcomputer is used for FL meter operation.)

| Pin No.           | Mark      | I/O Division | Function                                      |
|-------------------|-----------|--------------|-----------------------------------------------|
| 1                 | SIN       | I            | Serial data signal                            |
| 2<br>3<br>5<br>16 | S1<br>S13 | O            | Segment signal for FL display                 |
| 4                 | V disp    | I            | Pull down power supply terminal ( $-V_{CC}$ ) |
| 17                | CP2       | I            | Peel pulse signal of deck 2                   |
| 18                | CP1       | I            | Peel pulse signal of deck 2                   |
| 19                | CRST2     | I            | Tape counter reset terminal of deck 2         |
| 20                | CRST1     | I            | Tape counter reset terminal of deck 1         |
| 21                | GND       | —            | GND terminal                                  |
| 22                | AVCC      | I            | Power supply terminal                         |

| Pin No.  | Mark              | I/O Division | Function                      |
|----------|-------------------|--------------|-------------------------------|
| 23       | —                 | —            | —                             |
| 24       | VRIN              | I            | Rec level control signal      |
| 25       | SIGL              | I            | Lch level signal              |
| 26       | SIGR              | I            | Rch level signal              |
| 27       | AVSS              | —            | GND terminal                  |
| 28       | RESET             | I            | Reset terminal ("RESET": "H") |
| 29       | $\overline{TEST}$ | I            | Test terminal                 |
| 30       | OSC1              | O            | Clock OSC terminal (4MHz)     |
| 31       | OSC2              | I            | Clock OSC terminal (4MHz)     |
| 32       | VCC               | I            | Power supply terminal         |
| 33<br>41 | G1<br>G9          | O            | Grid signal for FL display    |
| 42       | PWM               | —            | Not used, open                |

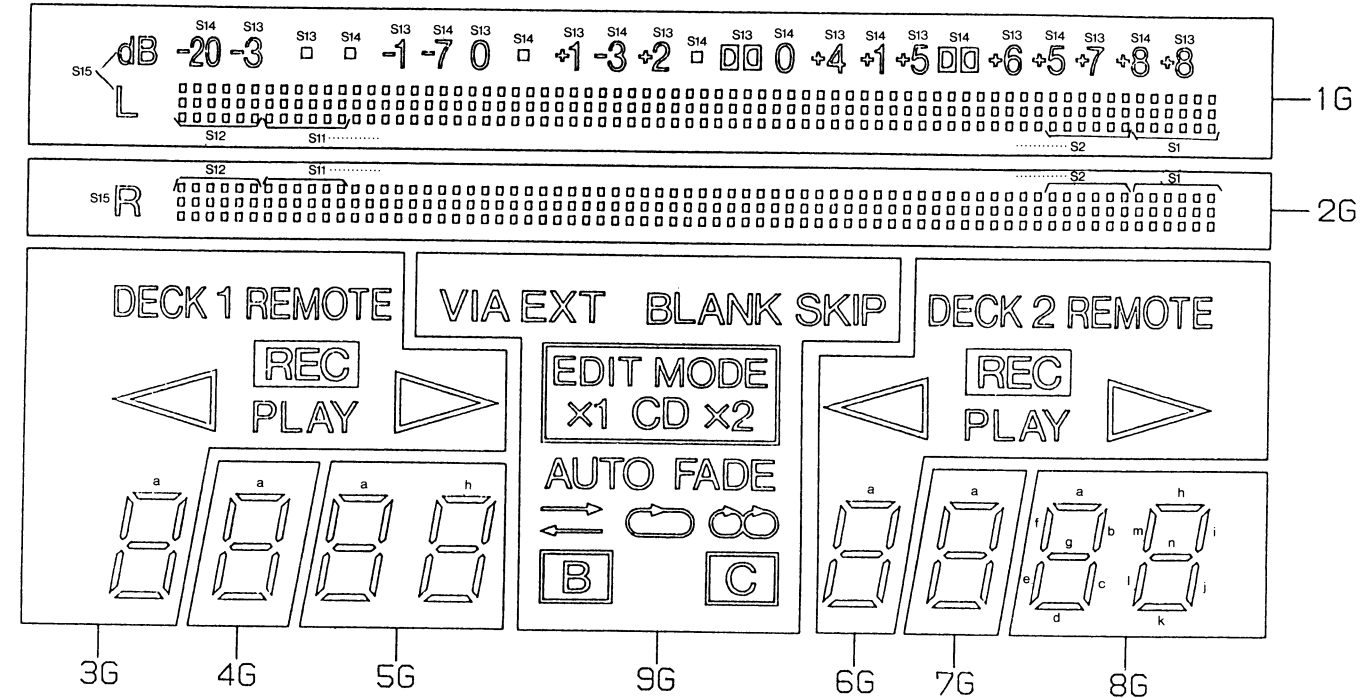
## BLOCK DIAGRAM





## INTERNAL CONNECTION OF FL

### • Grid connection diagram



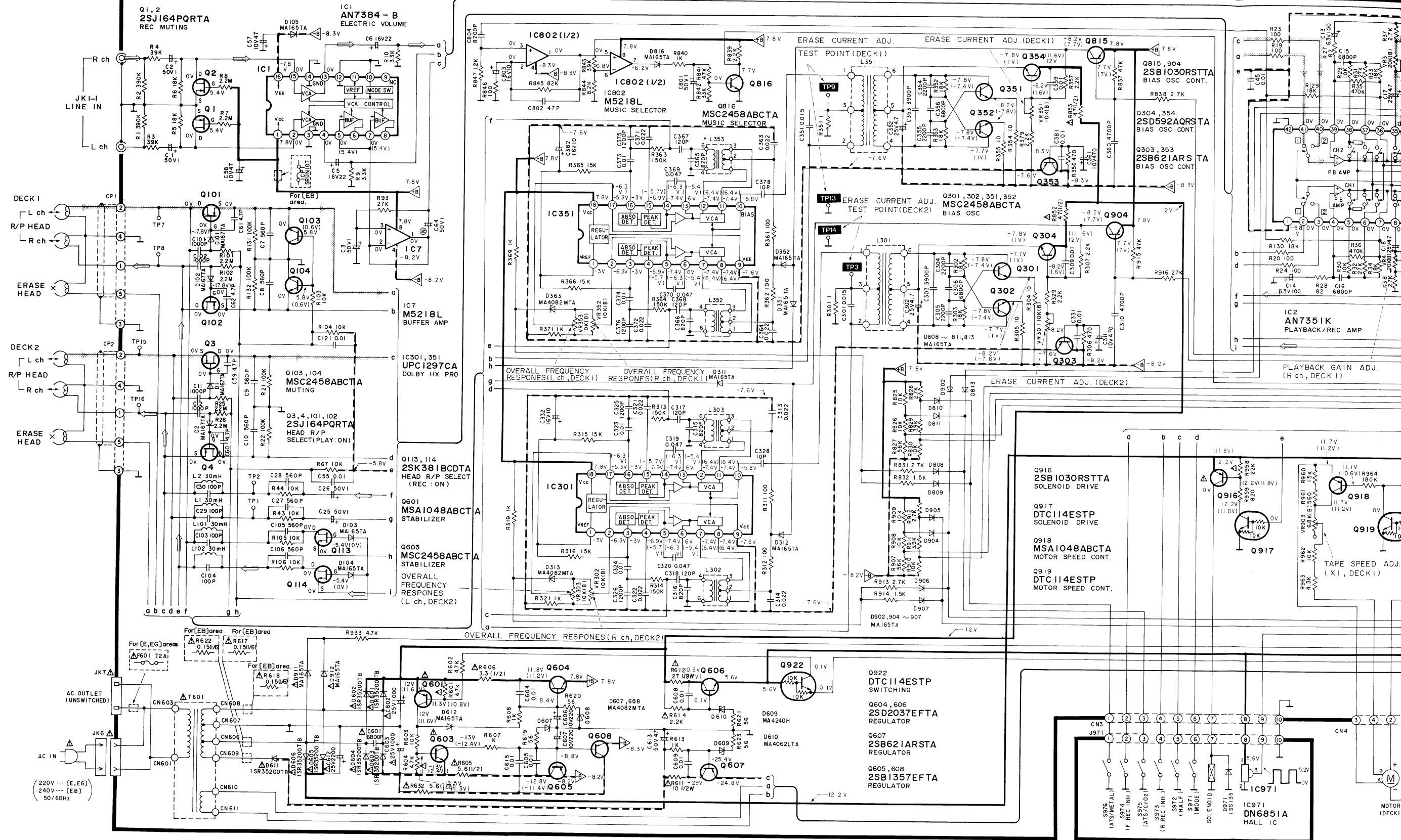
### • Anode connection table

|     | 9G         | 8G | 7G | 6G            | 5G | 4G | 3G            | 2G   | 1G   |
|-----|------------|----|----|---------------|----|----|---------------|------|------|
| S1  | →          | n  | -  | ▷             | n  | -  | ▷             | Grid | Grid |
| S2  | →          | j  | -  | play          | j  | -  | play          | Grid | Grid |
| S3  | ↔          | ℓ  | -  | ◁             | ℓ  | -  | ◁             | Grid | Grid |
| S4  | EDIT MODE  | k  | -  | DECK 2 REMOTE | k  | -  | DECK 1 REMOTE | Grid | Grid |
| S5  | CD         | h  | -  | REC           | h  | -  | REC           | Grid | Grid |
| S6  | x2         | a  | a  | a             | a  | a  | a             | Grid | Grid |
| S7  | x1         | b  | b  | b             | b  | b  | b             | Grid | Grid |
| S8  | -          | f  | f  | f             | f  | f  | f             | Grid | Grid |
| S9  | B          | g  | g  | g             | g  | g  | g             | Grid | Grid |
| S10 | C          | c  | c  | c             | c  | c  | c             | Grid | Grid |
| S11 | VIA EXT    | e  | e  | e             | e  | e  | e             | Grid | Grid |
| S12 | BLANK SKIP | d  | d  | d             | d  | d  | d             | Grid | Grid |
| S13 | -          | i  | -  | -             | i  | -  | -             | -    | S13  |
| S14 | -          | m  | -  | -             | m  | -  | -             | -    | S14  |
| S15 | -          | -  | -  | -             | -  | -  | -             | R    | dB   |
| S16 | AUTO FADE  | -  | -  | -             | -  | -  | -             | -    | L    |

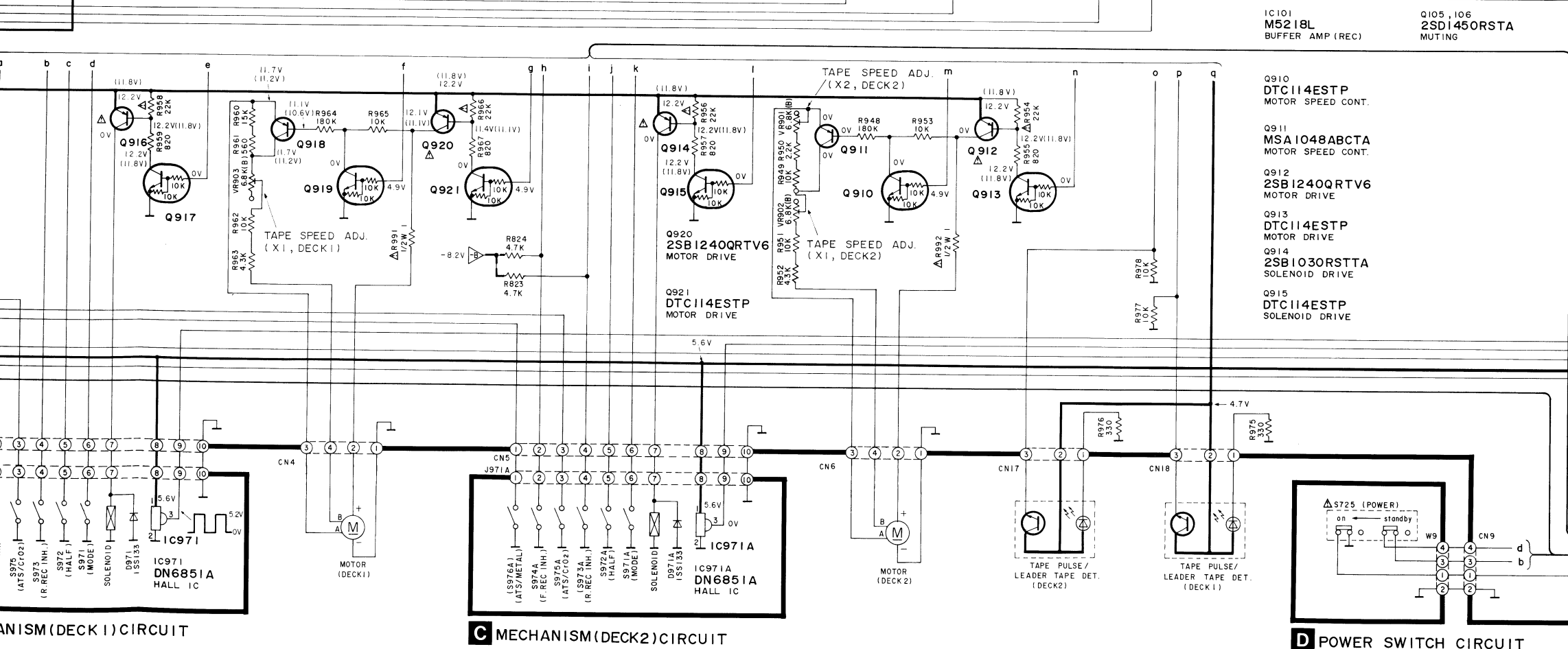
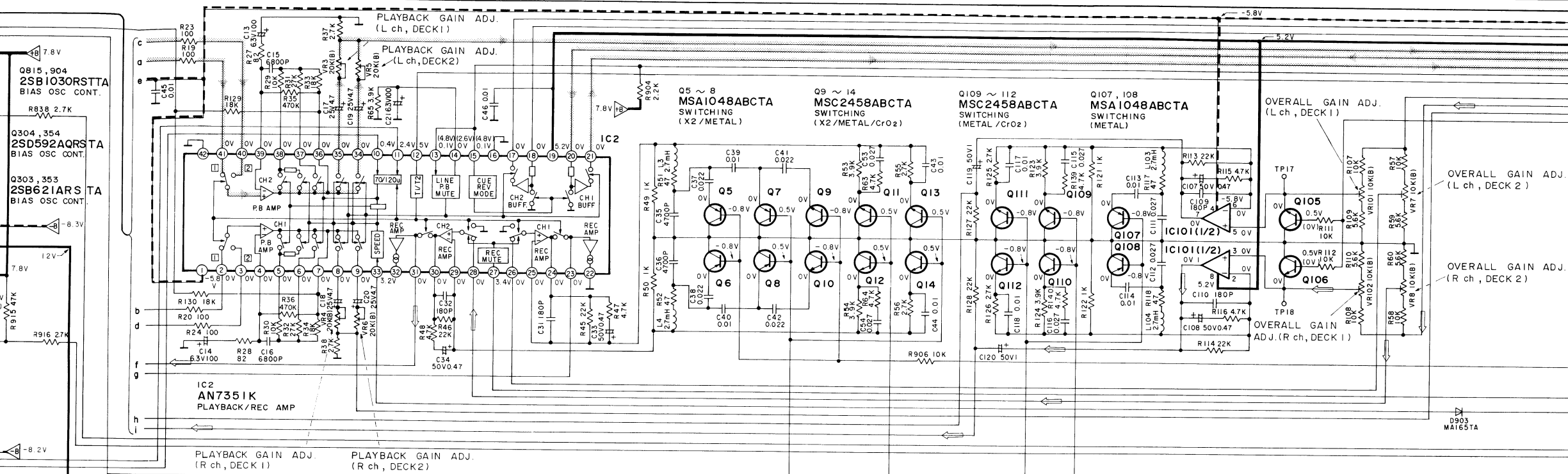
### • Pin connection

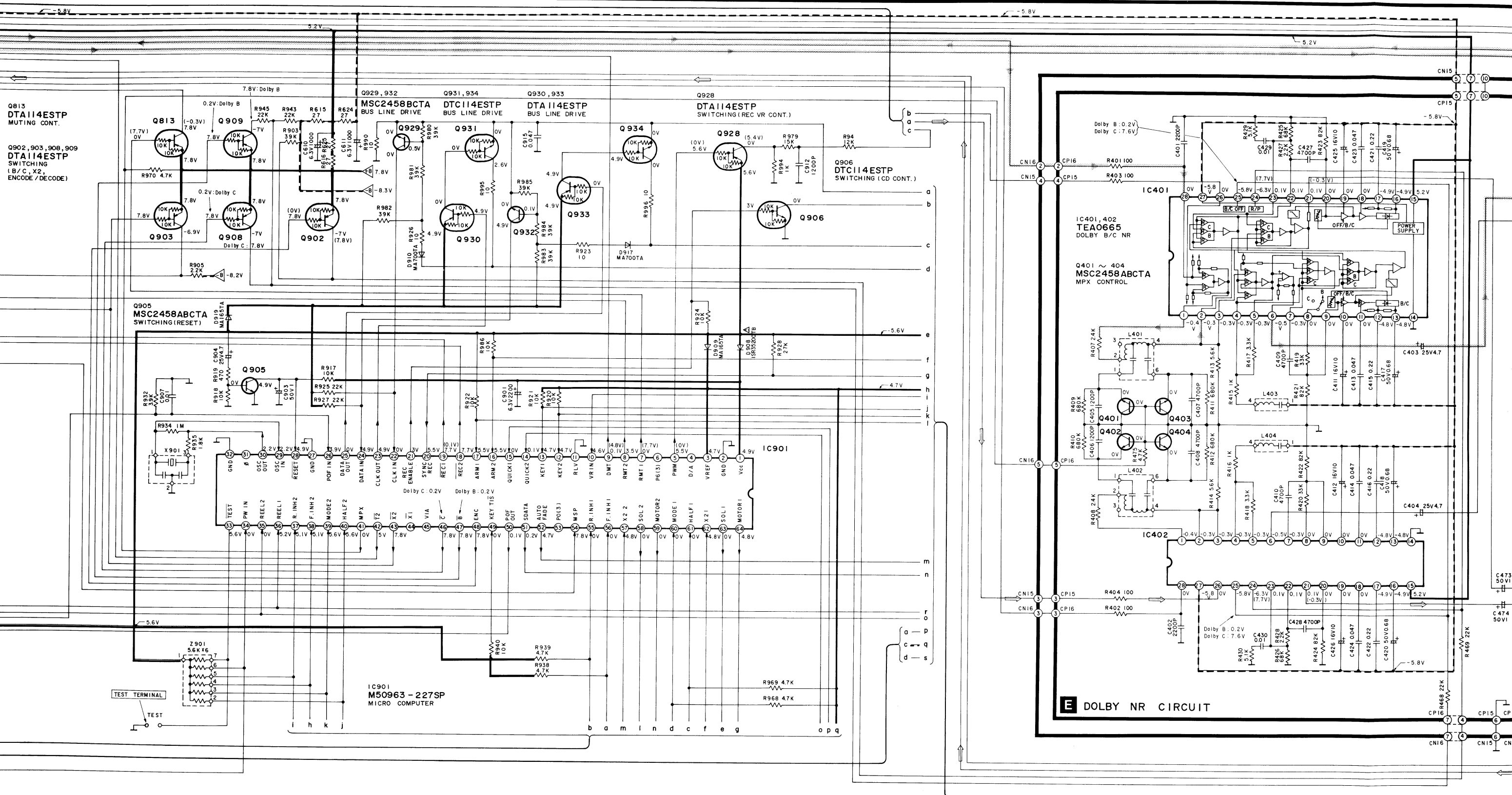
| PIN NO.    | 34     | 33     | 32     | 31     | 30      | 29      | 28      | 27      | 26     | 25     | 24     | 23     | 22     | 21     | 20     | 19     | 18     | 17      | 16      | 15      | 14     | 13     | 12     | 11     | 10     | 9      | 8      | 7      | 6      | 5      | 4      | 3      | 2      | 1      |
|------------|--------|--------|--------|--------|---------|---------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| CONNECTION | F<br>2 | F<br>2 | N<br>P | N<br>P | S<br>15 | S<br>12 | S<br>11 | S<br>10 | S<br>9 | S<br>8 | S<br>7 | S<br>6 | S<br>5 | S<br>4 | S<br>3 | S<br>2 | S<br>1 | S<br>16 | S<br>14 | S<br>13 | N<br>C | 9<br>G | 5<br>G | 4<br>G | 3<br>G | 8<br>G | 7<br>G | 6<br>G | 2<br>G | 1<br>G | N<br>P | N<br>P | F<br>1 | F<br>1 |

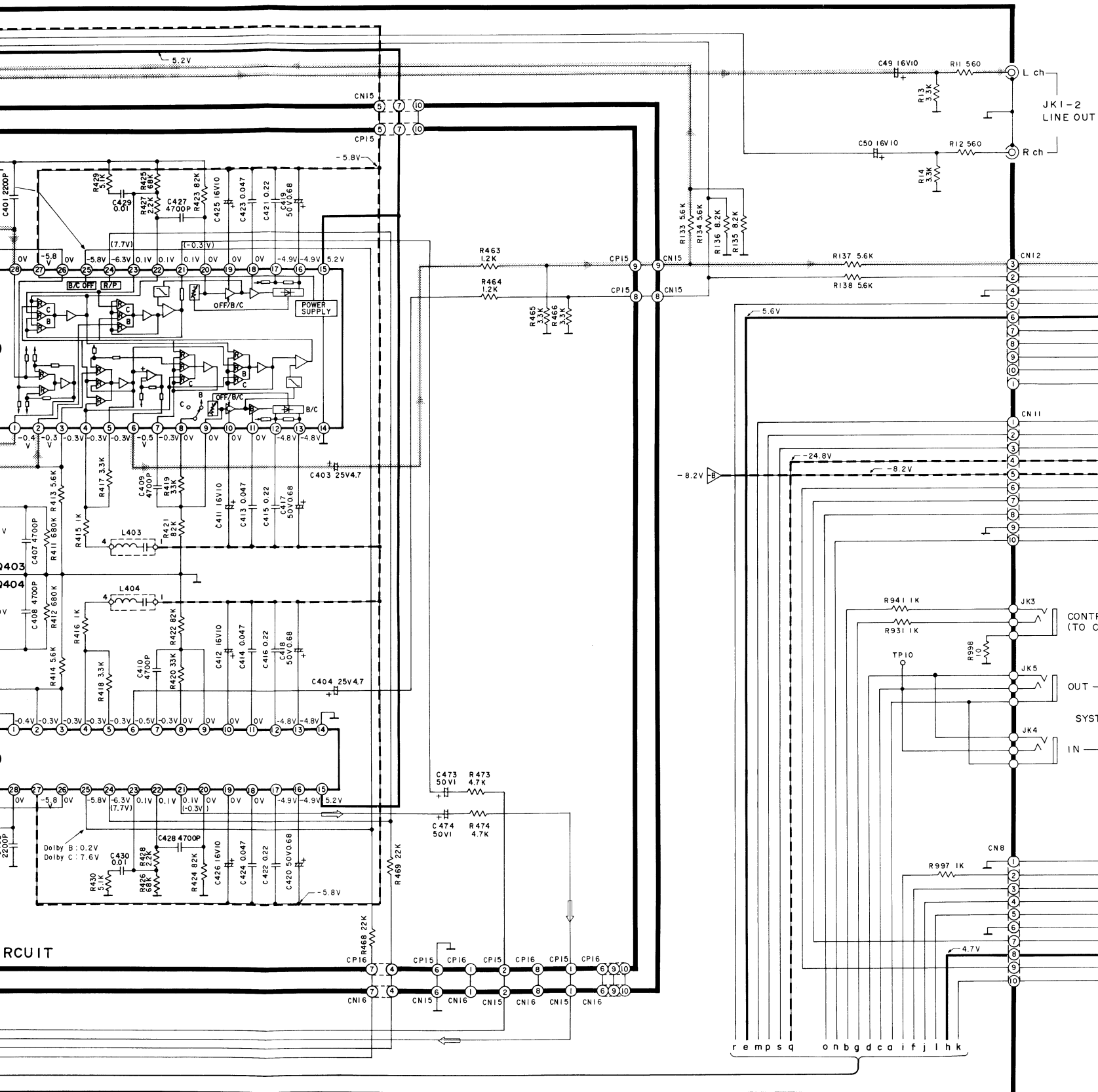
## A MAIN CIRCUIT



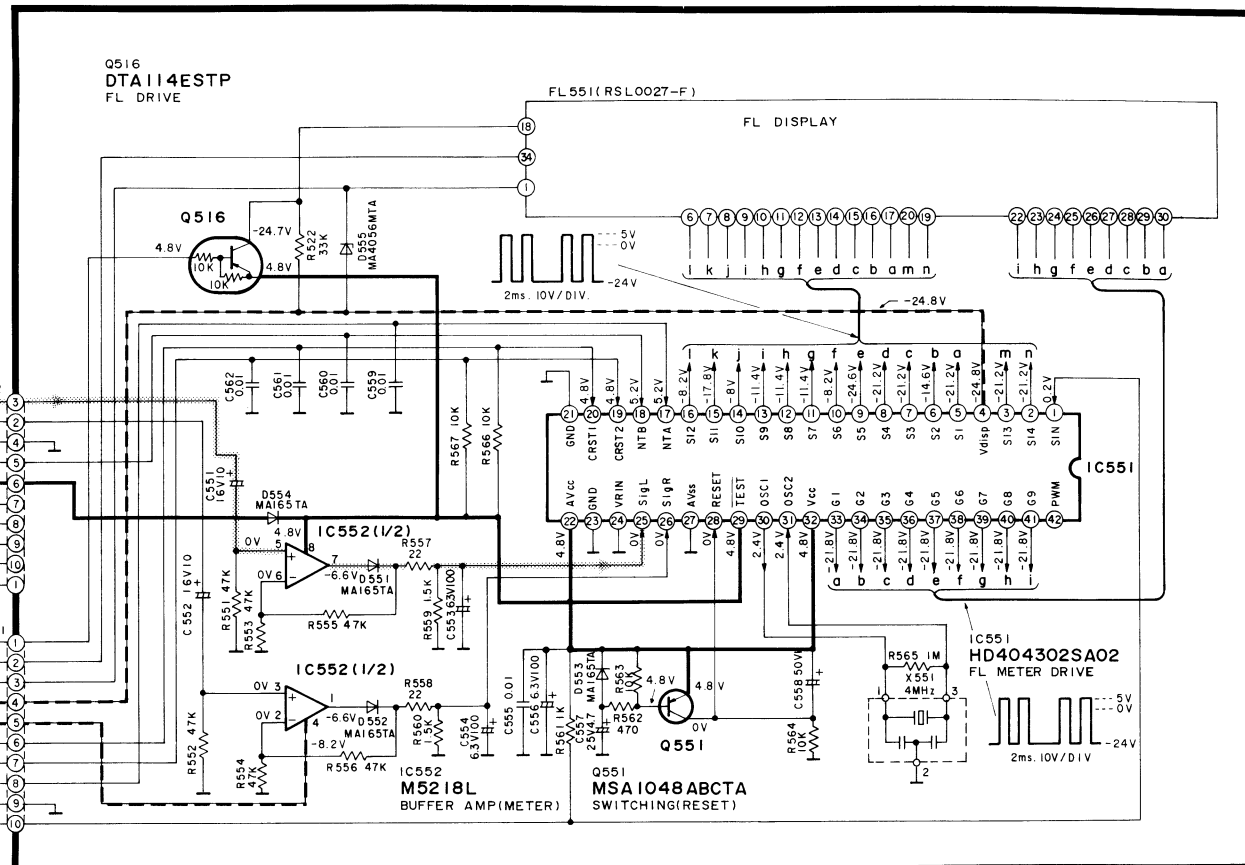
## B MECHANISM (DECK I) CIRCUIT



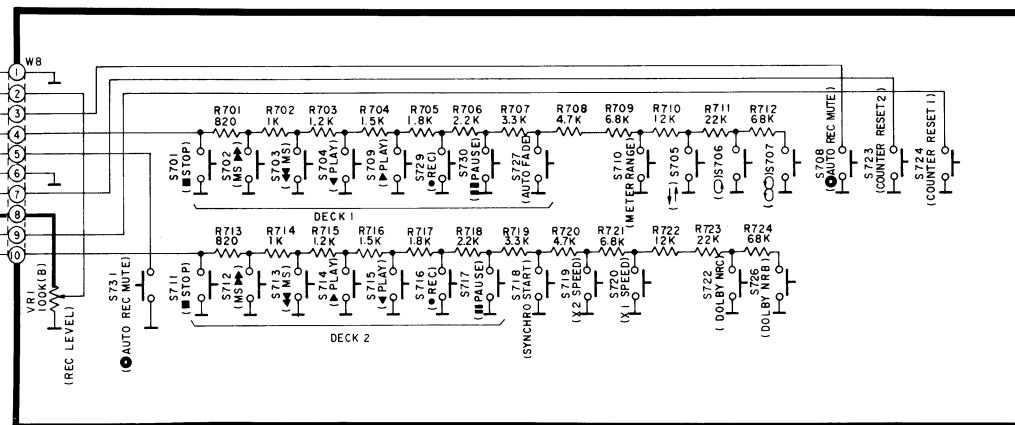




## F FL METER CIRCUIT



## OPERATION CIRCUIT



## SCHEMATIC DIAGRAM (Parts list on pages 30~32, 42~44.)

(This schematic diagram may be modified at any time with development of new technology.)

### Notes:

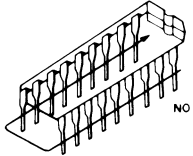
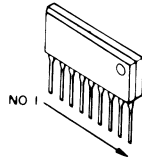
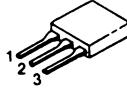
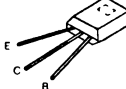
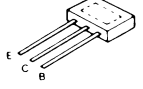
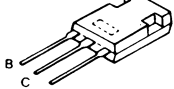
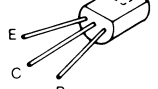
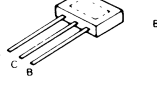
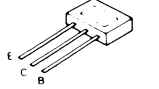
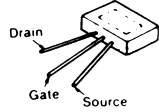
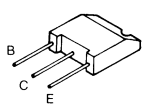
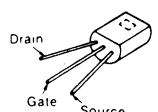
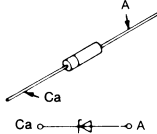
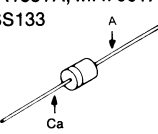
- S701: Stop switch in "off" position. (DECK 1)
- S702: F.F. switch in "off" position. (DECK 1)
- S703: Rew. switch in "off" position. (DECK 1)
- S704: Forward-side playback switch in "off" position. (DECK 1)
- S705: Reverse mode switch (↔) in "off" position.
- S706: Reverse mode switch (⊂) in "off" position.
- S707: Reverse mode switch (∞) in "off" position.
- S708: Auto rec. mute switch in "off" position. (DECK 2)
- S709: Reverse-side playback switch in "off" position. (DECK 1)
- S710: Meter-range selector switch in "off" position.
- S711: Stop switch in "off" position. (DECK 2)
- S712: F.F. switch in "off" position. (DECK 2)
- S713: Rew. switch in "off" position. (DECK 2)
- S714: Forward-side playback switch in "off" position. (DECK 2)
- S715: Reverse-side playback switch in "off" position. (DECK 2)
- S716: Record switch in "off" position. (DECK 2)
- S717: Pause switch in "off" position. (DECK 2)
- S718: Synchro-start switch in "off" position.
- S719: Editing tape speed selector (X2) in "off" position.
- S720: Editing tape speed selector (X1) in "off" position.
- S722: Dolby NR C switch in "off" position.
- S723: Tape counter reset 2 switch in "off" position.
- S724: Tape counter reset 1 switch in "off" position.
- S725: Power switch in "on" position.
- S726: Dolby NR B switch in "off" position.
- S727: Auto-fade switch in "off" position.
- S729: Record switch in "off" position. (DECK 1)
- S730: Pause switch in "off" position. (DECK 1)
- S731: Auto rec. mute switch in "off" position. (DECK 1)
- S971A: Mode switch in "off" position. (DECK 1)
- S972A: Cassette half detection switch in "off" position. (DECK 1)
- S973A: Reverse rec. inhibit switch in "off" position. (DECK 1)
- S974A: Forward rec. inhibit switch in "off" position. (DECK 1)
- S975A: ATS (CrO<sub>2</sub>) switch in "off" position. (DECK 1)
- S976A: ATS (Metal) switch in "off" position. (DECK 1)
- S971: Mode switch in "off" position. (DECK 2)
- S972: Cassette half detection switch in "off" position. (DECK 2)
- S973: Reverse rec. inhibit switch in "off" position. (DECK 2)
- S974: Forward rec. inhibit switch in "off" position. (DECK 2)
- S975: ATS (CrO<sub>2</sub>) switch in "off" position. (DECK 2)
- S976: ATS (Metal) switch in "off" position. (DECK 2)
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.  
1K=1,000 (Ω), 1M=1,000k (Ω)
- Capacity are in micro-farads (μF) unless specified otherwise.
- All voltage values shown in circuitry are under no signal condition and playback mode with volume control at minimum position otherwise specified.  
( ).....Voltage values at record mode.  
For measurement us EVM.
- Important safety notice  
Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
- ( ————< + B ———— ) indicates +B (bias).
- ( ————< - B ———— ) indicates -B (bias).
- ( ————> ) indicates the flow of the playback signal.
- ( ————> ) indicates the flow of the record signal.

### \* Caution !

IC and LSI are sensitive to static electricity. Secondary trouble can be prevented by taking care during repair.

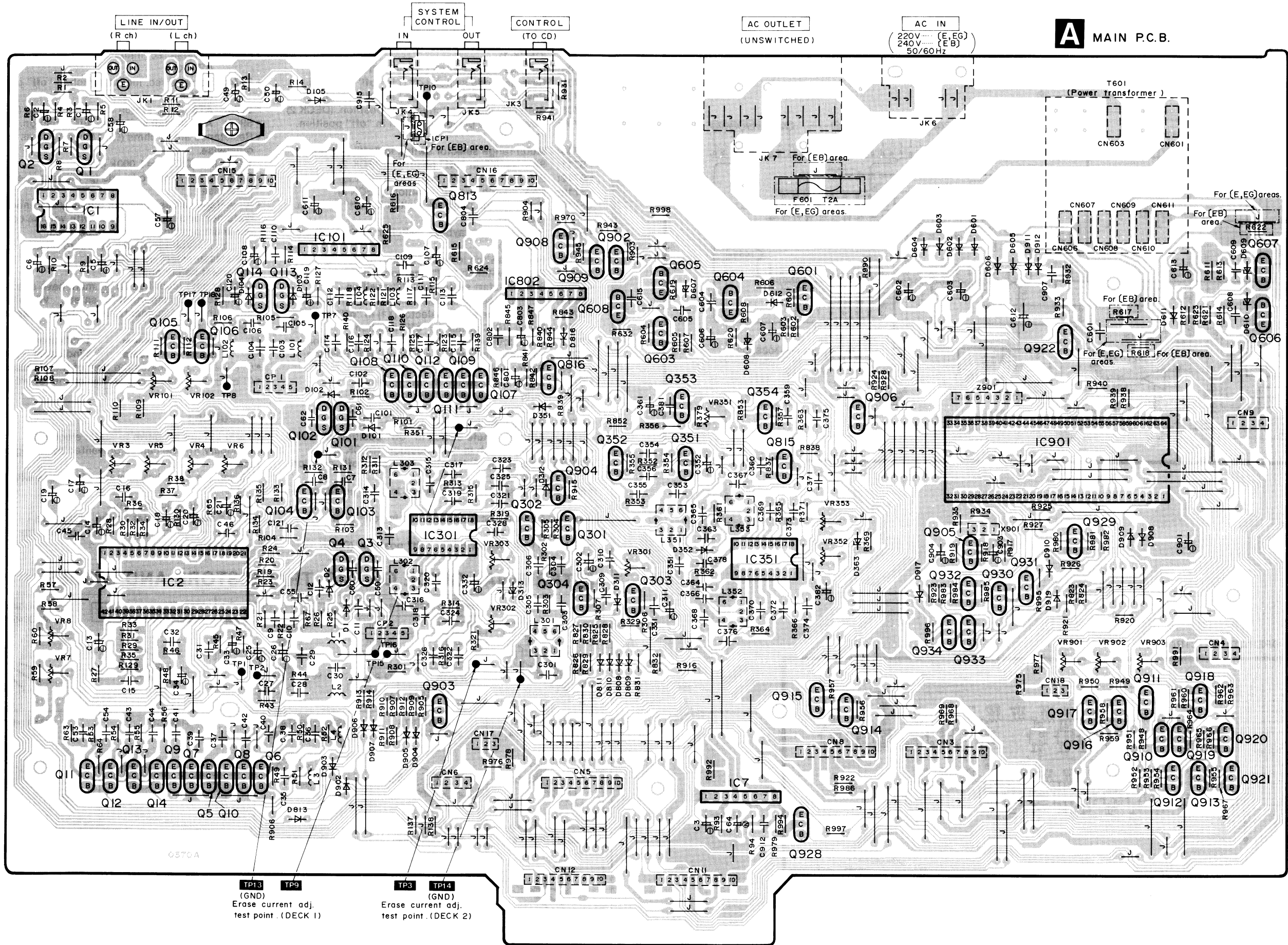
- \* Cover the parts boxes made of plastics with aluminum foil.
- \* Ground the soldering iron.
- \* Put a conductive mat on the work table.
- \* Do not touch the legs of IC or LSI with the fingers directly.

## TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

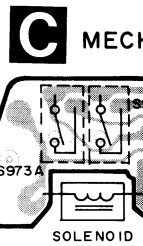
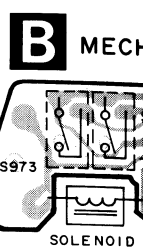
|                                                                                                                                                    |                                                                                                                                                                                                                                                                              |                                                                                                                                                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                    |                                                    |                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                         |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------|--------|--------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------|--------|-------|----------------------------------------------------------------------------------------------------------------------------------------------|---------|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
|                                                                 | <table><tr><td>M50963-227SP</td><td>64 Pin</td></tr><tr><td>AN7384-B</td><td>16 Pin</td></tr><tr><td>TEA0665</td><td>28 Pin</td></tr><tr><td>UPC1297CA</td><td>18 Pin</td></tr><tr><td>AN7351K</td><td>42 Pin</td></tr><tr><td>HD404302SA02</td><td>42 Pin</td></tr></table> | M50963-227SP                                                                                                                                      | 64 Pin                                                                                                                                                                                                                                                            | AN7384-B                                                                                                                                           | 16 Pin                                             | TEA0665                                                                                                                                                                                                                                                         | 28 Pin     | UPC1297CA                                                                                                                                                                                                               | 18 Pin     | AN7351K | 42 Pin | HD404302SA02 | 42 Pin | <table><tr><td>M5218L</td><td>8 Pin</td></tr></table>  | M5218L | 8 Pin | <table><tr><td>DN6851A</td><td>3 Pin</td></tr></table>  | DN6851A | 3 Pin | <table><tr><td>MSA1048ABCTA,<br/>MSC2458ABCTA</td></tr></table>  | MSA1048ABCTA,<br>MSC2458ABCTA |
| M50963-227SP                                                                                                                                       | 64 Pin                                                                                                                                                                                                                                                                       |                                                                                                                                                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                    |                                                    |                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                         |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
| AN7384-B                                                                                                                                           | 16 Pin                                                                                                                                                                                                                                                                       |                                                                                                                                                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                    |                                                    |                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                         |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
| TEA0665                                                                                                                                            | 28 Pin                                                                                                                                                                                                                                                                       |                                                                                                                                                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                    |                                                    |                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                         |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
| UPC1297CA                                                                                                                                          | 18 Pin                                                                                                                                                                                                                                                                       |                                                                                                                                                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                    |                                                    |                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                         |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
| AN7351K                                                                                                                                            | 42 Pin                                                                                                                                                                                                                                                                       |                                                                                                                                                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                    |                                                    |                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                         |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
| HD404302SA02                                                                                                                                       | 42 Pin                                                                                                                                                                                                                                                                       |                                                                                                                                                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                    |                                                    |                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                         |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
| M5218L                                                                                                                                             | 8 Pin                                                                                                                                                                                                                                                                        |                                                                                                                                                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                    |                                                    |                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                         |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
| DN6851A                                                                                                                                            | 3 Pin                                                                                                                                                                                                                                                                        |                                                                                                                                                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                    |                                                    |                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                         |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
| MSA1048ABCTA,<br>MSC2458ABCTA                                                                                                                      |                                                                                                                                                                                                                                                                              |                                                                                                                                                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                    |                                                    |                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                         |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
| <table><tr><td>2SD1450RSTA,<br/>2SB1030RSTTA</td></tr></table>  | 2SD1450RSTA,<br>2SB1030RSTTA                                                                                                                                                                                                                                                 | <table><tr><td>2SB1357EFTA,<br/>2SD2037EFTA</td></tr></table>  | 2SB1357EFTA,<br>2SD2037EFTA                                                                                                                                                                                                                                       | <table><tr><td>2SB621ARSTA,<br/>2SD592AQRSTA</td></tr></table>  | 2SB621ARSTA,<br>2SD592AQRSTA                       | <table><tr><td>DTC114ESTP</td></tr></table>                                            | DTC114ESTP | <table><tr><td>DTA114ESTP</td></tr></table>   | DTA114ESTP |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
| 2SD1450RSTA,<br>2SB1030RSTTA                                                                                                                       |                                                                                                                                                                                                                                                                              |                                                                                                                                                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                    |                                                    |                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                         |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
| 2SB1357EFTA,<br>2SD2037EFTA                                                                                                                        |                                                                                                                                                                                                                                                                              |                                                                                                                                                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                    |                                                    |                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                         |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
| 2SB621ARSTA,<br>2SD592AQRSTA                                                                                                                       |                                                                                                                                                                                                                                                                              |                                                                                                                                                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                    |                                                    |                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                         |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
| DTC114ESTP                                                                                                                                         |                                                                                                                                                                                                                                                                              |                                                                                                                                                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                    |                                                    |                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                         |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
| DTA114ESTP                                                                                                                                         |                                                                                                                                                                                                                                                                              |                                                                                                                                                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                    |                                                    |                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                         |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
| <table><tr><td>2SJ164PQRTA</td></tr></table>                    | 2SJ164PQRTA                                                                                                                                                                                                                                                                  | <table><tr><td>2SB1240QRTV6</td></tr></table>                  | 2SB1240QRTV6                                                                                                                                                                                                                                                      | <table><tr><td>2SK381BCDTA</td></tr></table>                    | 2SK381BCDTA                                        | <table><tr><td>MA4062LTA,,<br/>MA4240H<br/>MA4082MTA,<br/>MA4056MTA</td></tr></table>   |            | MA4062LTA,,<br>MA4240H<br>MA4082MTA,<br>MA4056MTA                                                                                                                                                                       |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
| 2SJ164PQRTA                                                                                                                                        |                                                                                                                                                                                                                                                                              |                                                                                                                                                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                    |                                                    |                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                         |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
| 2SB1240QRTV6                                                                                                                                       |                                                                                                                                                                                                                                                                              |                                                                                                                                                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                    |                                                    |                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                         |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
| 2SK381BCDTA                                                                                                                                        |                                                                                                                                                                                                                                                                              |                                                                                                                                                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                    |                                                    |                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                         |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
| MA4062LTA,,<br>MA4240H<br>MA4082MTA,<br>MA4056MTA                                                                                                  |                                                                                                                                                                                                                                                                              |                                                                                                                                                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                    |                                                    |                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                         |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
|                                                                                                                                                    |                                                                                                                                                                                                                                                                              |                                                                                                                                                   | <table><tr><td>MA167TA, 1SR35200TB,<br/>MA165TA, MA700TA<br/>1SS133</td></tr></table>   |                                                                                                                                                    | MA167TA, 1SR35200TB,<br>MA165TA, MA700TA<br>1SS133 |                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                         |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |
| MA167TA, 1SR35200TB,<br>MA165TA, MA700TA<br>1SS133                                                                                                 |                                                                                                                                                                                                                                                                              |                                                                                                                                                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                    |                                                    |                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                         |            |         |        |              |        |                                                                                                                                           |        |       |                                                                                                                                              |         |       |                                                                                                                                                       |                               |

PRINTED CIRCUIT BOARDS

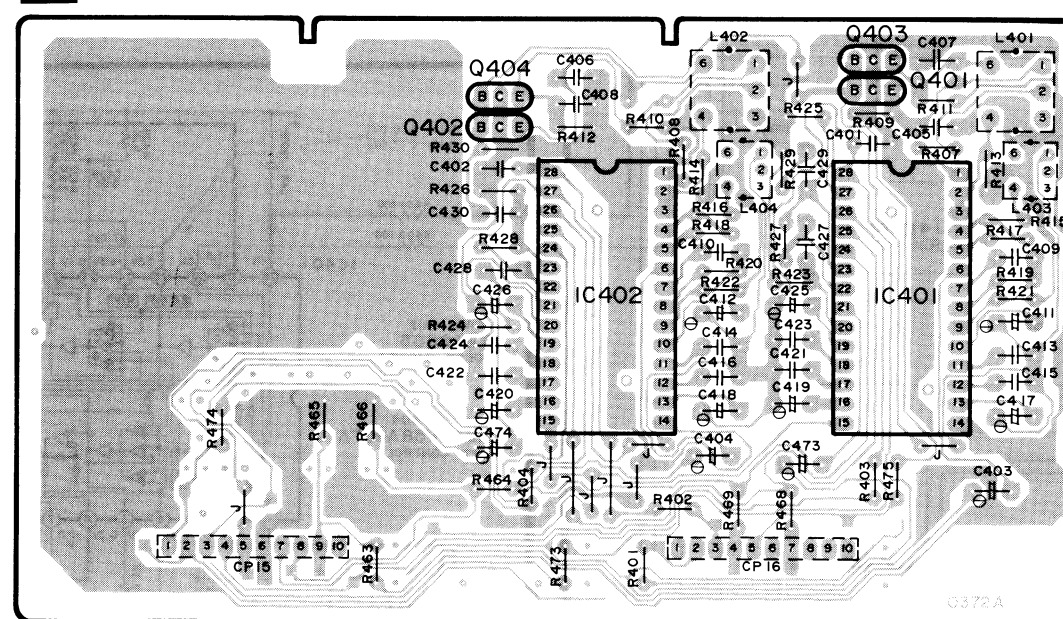
A  
B  
C  
D  
E  
F  
G



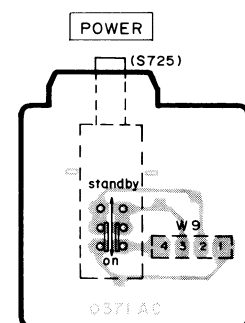
TP13 (GND) Erase current adj. test point. (DECK 1)  
TP9 (GND) Erase current adj. test point. (DECK 2)  
TP3 (GND)  
TP14 (GND)



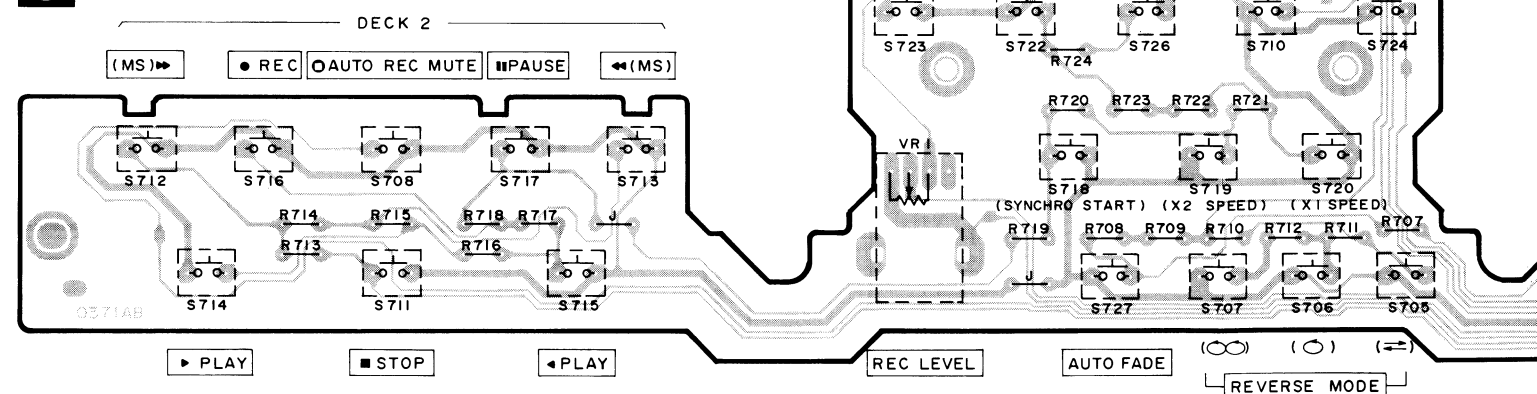
**DOLBY NR P.C.B.**



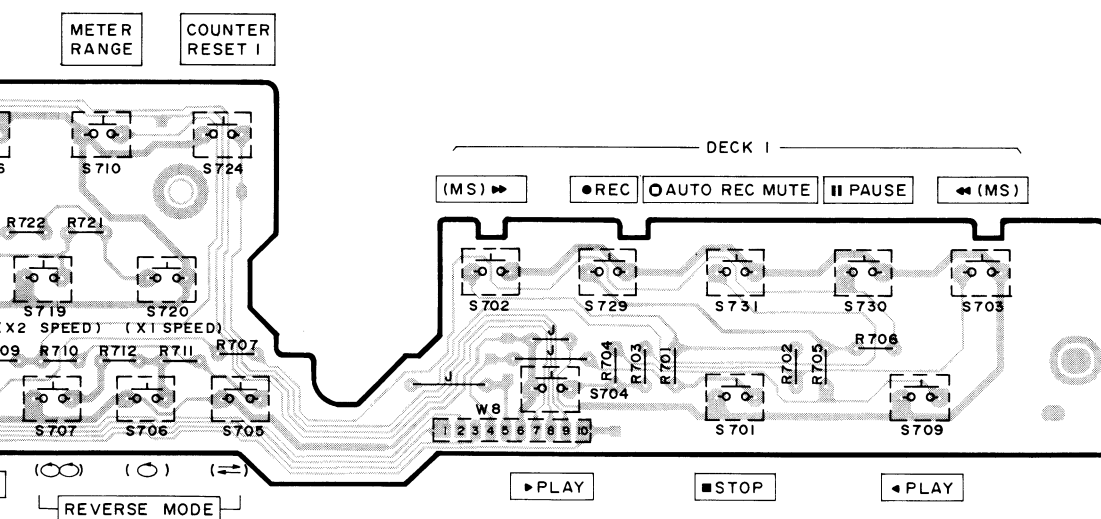
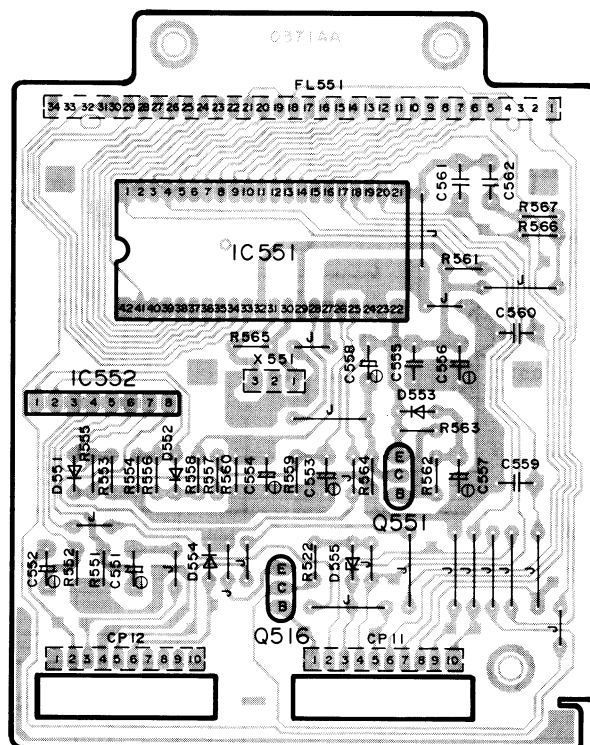
**D** POWER SWITCH P.C.B.



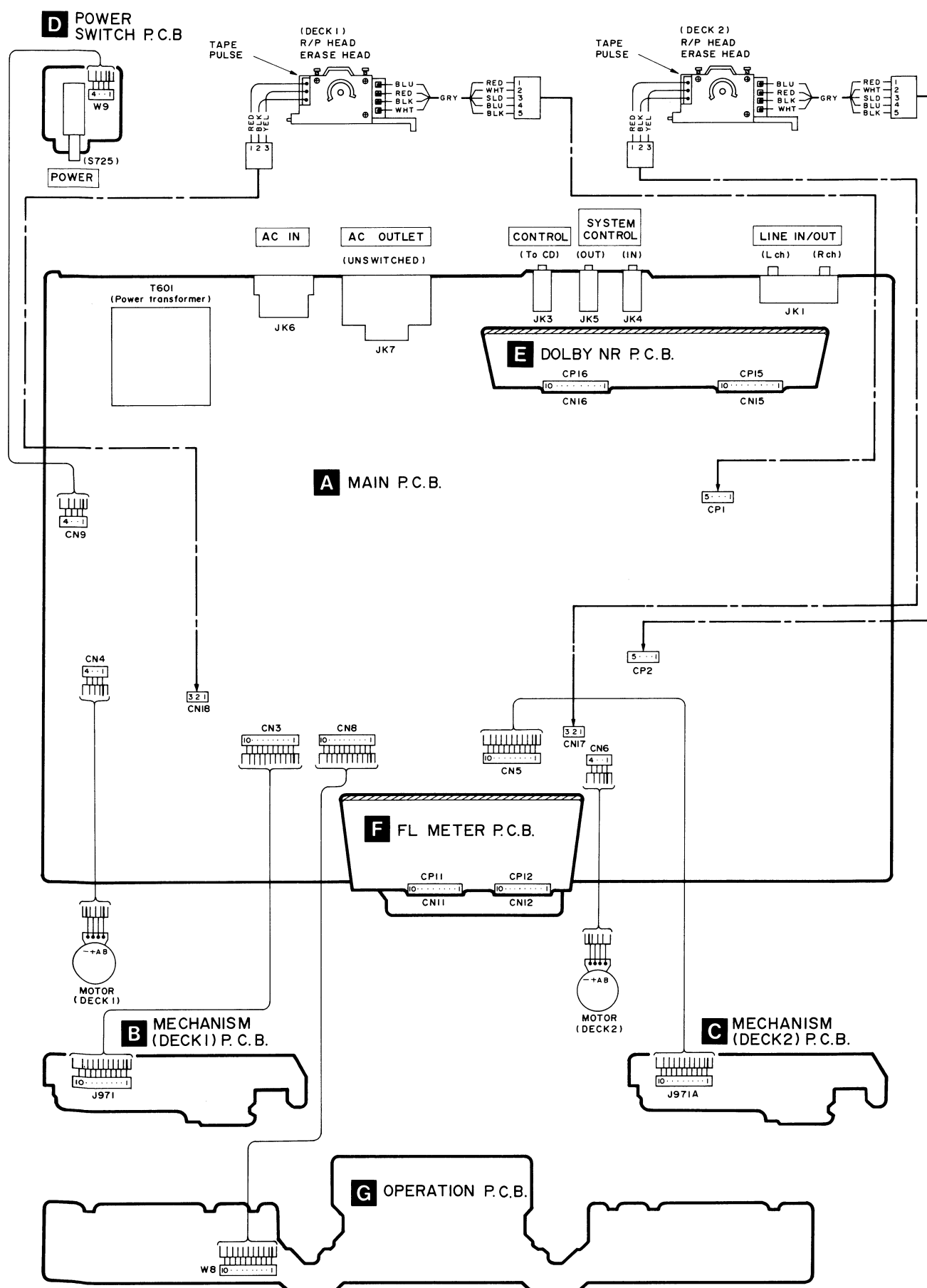
**G** OPERATION P.C.B.



# **F** FL METER P.C.B.



# WIRING CONNECTION DIAGRAM



## REPLACEMENT PARTS LIST

Notes : \* Important safety notice:

Components identified by  $\triangle$  mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

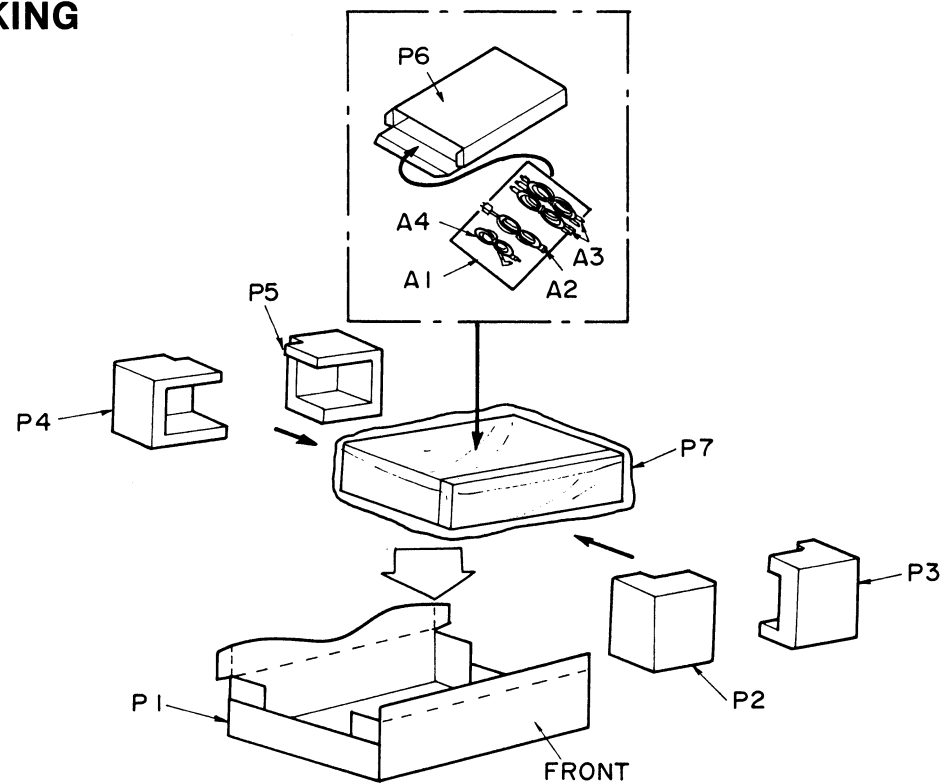
\* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.) Parts without these indications can be used for all areas.

| Ref. No.   | Part No.     | Part Name & Description   | Remarks     | Ref. No.  | Part No.     | Part Name & Description | Remarks     |
|------------|--------------|---------------------------|-------------|-----------|--------------|-------------------------|-------------|
|            |              | INTEGRATED CIRCUIT(S)     |             | Q902, 903 | DTA114ESTP   | TRANSISTOR              |             |
|            |              |                           |             | Q904      | 2SB1030RSTTA | TRANSISTOR              |             |
|            |              |                           |             | Q905      | MSC2458ABCTA | TRANSISTOR              |             |
| IC1        | AN7384-B     | ELECTRIC VOLUME           |             | Q906      | DTC114ESTP   | TRANSISTOR              |             |
| IC2        | AN7351K      | PLAYBACK/REC AMP          |             | Q908, 909 | DTA114ESTP   | TRANSISTOR              |             |
| IC7        | M5218L       | REC LEVEL CONTROL (DECK2) |             | Q910      | DTC114ESTP   | TRANSISTOR              |             |
| IC101      | M5218L       | REC LEVEL CONTROL (DECK1) |             | Q911      | MSA1048ABCTA | TRANSISTOR              |             |
| IC301      | UPC1297CA    | DOLBY HX PRO (DECK2)      |             | Q912      | 2SB1240QRTV6 | TRANSISTOR              | $\triangle$ |
| IC351      | UPC1297CA    | DOLBY HX PRO (DECK1)      |             | Q913      | DTC114ESTP   | TRANSISTOR              |             |
| IC401, 402 | TEA0665      | DOLBY B/C NR              |             | Q914      | 2SB1030RSTTA | TRANSISTOR              | $\triangle$ |
| IC551      | HD404302SA02 | MICROCOMPUTER; FL METER   |             | Q915      | DTC114ESTP   | TRANSISTOR              |             |
| IC552      | M5218L       | BUFFER AMP                |             | Q916      | 2SB1030RSTTA | TRANSISTOR              | $\triangle$ |
| IC802      | M5218L       | MUSIC SELECTOR AMP        |             | Q917      | DTC114ESTP   | TRANSISTOR              |             |
| IC901      | M50963-227SP | MICROCOMPUTER; MECHANICAL |             | Q918      | MSA1048ABCTA | TRANSISTOR              |             |
| IC971A     | DN6851A      | HALL                      |             | Q919      | DTC114ESTP   | TRANSISTOR              |             |
| IC971      | DN6851A      | HALL                      |             | Q920      | 2SB1240QRTV6 | TRANSISTOR              | $\triangle$ |
|            |              | TRANSISTOR(S)             |             | Q921, 922 | DTC114ESTP   | TRANSISTOR              |             |
|            |              |                           |             | Q928      | DTA114ESTP   | TRANSISTOR              |             |
|            |              |                           |             | Q929      | MSC2458ABCTA | TRANSISTOR              |             |
| Q1-4       | 2SJ164PQRTA  | TRANSISTOR                |             | Q930      | DTA114ESTP   | TRANSISTOR              |             |
| Q5-8       | MSA1048ABCTA | TRANSISTOR                |             | Q931      | DTC114ESTP   | TRANSISTOR              |             |
| Q9-14      | MSC2458ABCTA | TRANSISTOR                |             | Q932      | MSC2458ABCTA | TRANSISTOR              |             |
| Q101, 102  | 2SJ164PQRTA  | TRANSISTOR                |             | Q933      | DTA114ESTP   | TRANSISTOR              |             |
| Q103, 104  | MSC2458ABCTA | TRANSISTOR                |             | Q934      | DTC114ESTP   | TRANSISTOR              |             |
| Q105, 106  | 2SD1450RSTA  | TRANSISTOR                |             |           |              | DIODE (S)               |             |
| Q107, 108  | MSA1048ABCTA | TRANSISTOR                |             |           |              |                         |             |
| Q109-112   | MSC2458ABCTA | TRANSISTOR                |             |           |              |                         |             |
| Q113, 114  | 2SK381BCDTA  | TRANSISTOR                |             | D1, 2     | MA167TA      | DIODE                   |             |
| Q301, 302  | MSC2458ABCTA | TRANSISTOR                |             | D101, 102 | MA167TA      | DIODE                   |             |
| Q303       | 2SB621ARSTA  | TRANSISTOR                |             | D103-105  | MA165TA      | DIODE                   |             |
| Q304       | 2SD592AQRSTA | TRANSISTOR                |             | D311, 312 | MA165TA      | DIODE                   |             |
| Q351, 352  | MSC2458ABCTA | TRANSISTOR                |             | D313      | MA4082MTA    | DIODE                   |             |
| Q353       | 2SB621ARSTA  | TRANSISTOR                |             | D351, 352 | MA165TA      | DIODE                   |             |
| Q354       | 2SD592AQRSTA | TRANSISTOR                |             | D363      | MA4082MTA    | DIODE                   |             |
| Q401-404   | MSC2458ABCTA | TRANSISTOR                |             | D551-554  | MA165TA      | DIODE                   |             |
| Q516       | DTA114ESTP   | TRANSISTOR                |             | D555      | MA4056MTA    | DIODE                   |             |
| Q551       | MSA1048ABCTA | TRANSISTOR                |             | D601-606  | 1SR35200TB   | DIODE                   | $\triangle$ |
| Q601       | MSA1048ABCTA | TRANSISTOR                | $\triangle$ | D607, 608 | MA4082MTA    | DIODE                   |             |
| Q603       | MSC2458ABCTA | TRANSISTOR                | $\triangle$ | D609      | MA4240H      | DIODE                   |             |
| Q604       | 2SD2037EFTA  | TRANSISTOR                |             | D610      | MA4062LTA    | DIODE                   |             |
| Q605       | 2SB1357EFTA  | TRANSISTOR                |             | D611      | 1SR35200TB   | DIODE                   | $\triangle$ |
| Q606       | 2SD2037EFTA  | TRANSISTOR                |             | D612      | MA165TA      | DIODE                   |             |
| Q607       | 2SB621ARSTA  | TRANSISTOR                |             | D808-811  | MA165TA      | DIODE                   |             |
| Q608       | 2SB1357EFTA  | TRANSISTOR                |             | D813      | MA165TA      | DIODE                   |             |
| Q813       | DTA114ESTP   | TRANSISTOR                |             | D816      | MA165TA      | DIODE                   |             |
| Q815       | 2SB1030RSTTA | TRANSISTOR                |             | D902-907  | MA165TA      | DIODE                   |             |
| Q816       | MSC2458ABCTA | TRANSISTOR                |             | D908      | 1SR35200TB   | DIODE                   | $\triangle$ |

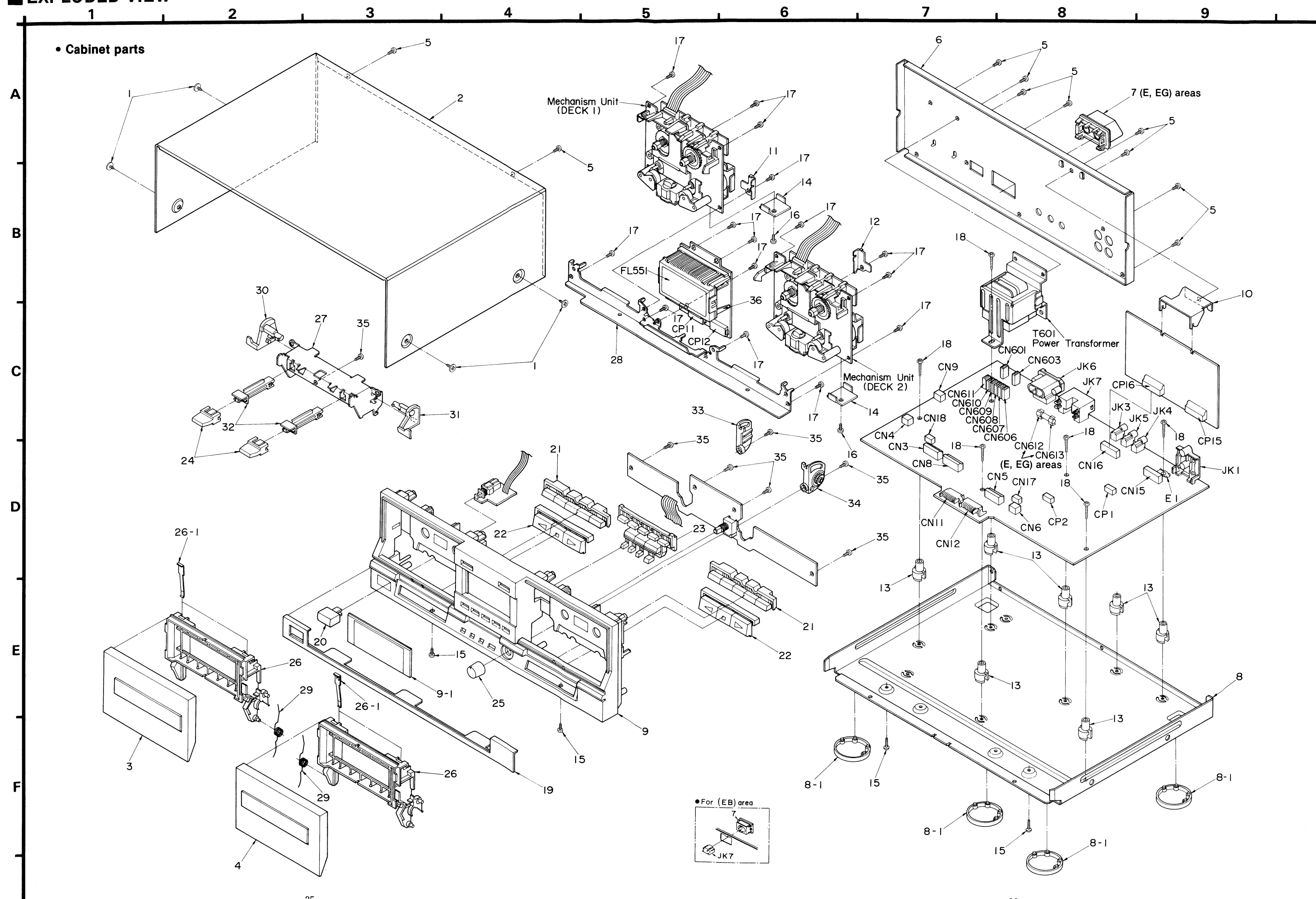
| Ref. No.   | Part No.     | Part Name & Description    | Remarks   | Ref. No. | Part No.   | Part Name & Description      | Remarks   |
|------------|--------------|----------------------------|-----------|----------|------------|------------------------------|-----------|
| D909       | MA165TA      | DIODE                      |           |          |            |                              |           |
| D910       | MA700TA      | DIODE                      |           | FL551    | RSL0027-F  | DISPLAY TUBE                 |           |
| D911, 912  | MA165TA      | DIODE                      | △         |          |            | FUSE (S)                     |           |
| D917       | MA700TA      | DIODE                      |           |          |            |                              |           |
| D919       | MA165TA      | DIODE                      |           |          |            |                              |           |
| D971A      | 1SS133       | DIODE                      |           | F601     | XBA2C20TB0 | FUSE                         | (E, EG) △ |
| D971       | 1SS133       | DIODE                      |           |          |            | SWITCH (ES)                  |           |
|            |              | I. C. PROTECTOR (S)        |           |          |            |                              |           |
| ICP1       | SRUN10T      | I. C. PROTECTOR            | (EB)      | S701     | EVQ21405R  | STOP (DECK1)                 |           |
|            |              | VARIABLE RESISTOR (S)      |           | S702     | EVQ21405R  | F. F. (DECK1)                |           |
|            |              |                            |           | S703     | EVQ21405R  | REW. (DECK1)                 |           |
|            |              |                            |           | S704     | EVQ21405R  | F. PLAYBACK (DECK1)          |           |
| VR1        | EVJ02FF01B15 | REC LEVEL CONTROL          |           | S705-707 | EVQ21405R  | REVERSE MODE                 |           |
| VR3-6      | EVNDXAA00B24 | PLAYBACK GAIN ADJ.         |           | S708     | EVQ21405R  | AUTO REC MUTE (DECK2)        |           |
| VR7, 8     | EVNDXAA00B14 | OVERALL GAIN ADJ. (DECK2)  |           | S709     | EVQ21405R  | R. PLAYBACK (DECK1)          |           |
| VR101, 102 | EVNDXAA00B14 | OVERALL GAIN ADJ. (DECK1)  |           | S710     | EVQ21405R  | METER RANGE                  |           |
| VR301      | EVNDXAA00B14 | ERASE CURRENT ADJ. (DECK2) |           | S711     | EVQ21405R  | STOP (DECK2)                 |           |
| VR302, 303 | EVNDXAA00B14 | OVERALL FREQ. ADJ. (DECK2) |           | S712     | EVQ21405R  | F. F. (DECK2)                |           |
| VR351      | EVNDXAA00B14 | ERASE CURRENT ADJ. (DECK1) |           | S713     | EVQ21405R  | REW. (DECK2)                 |           |
| VR352, 353 | EVNDXAA00B14 | OVERALL FREQ. ADJ. (DECK1) |           | S714     | EVQ21405R  | F. PLAYBACK (DECK2)          |           |
| VR901-903  | EVNDXAA00BS3 | TAPE SPEED ADJ.            |           | S715     | EVQ21405R  | R. PLAYBACK (DECK2)          |           |
|            |              | COMPONENT COMBINATION (S)  |           | S716     | EVQ21405R  | REC (DECK2)                  |           |
|            |              |                            |           | S717     | EVQ21405R  | PAUSE (DECK2)                |           |
| Z901       | EXBF7E562JYV | COMPONENT COMBINATION      |           | S718     | EVQ21405R  | SYNCHRO START                |           |
|            |              | COIL (S)                   |           | S719     | EVQ21405R  | TAPE EDIT SPEED (X2)         |           |
|            |              |                            |           | S720     | EVQ21405R  | TAPE EDIT SPEED (X1)         |           |
|            |              |                            |           | S722     | EVQ21405R  | DOLBY C NR                   |           |
|            |              |                            |           | S723     | EVQ21405R  | COUNTER RESET 2              |           |
|            |              |                            |           | S724     | EVQ21405R  | COUNTER RESET 1              |           |
| L1, 2      | SLQX303-1KT  | COIL                       |           | S725     | SSH1159    | POWER                        | △         |
| L3, 4      | SLQX272-1YT  | COIL                       |           | S726     | EVQ21405R  | DOLBY B NR                   |           |
| L101, 102  | SLQX303-1KT  | COIL                       |           | S727     | EVQ21405R  | AUTO FADE                    |           |
| L103, 104  | SLQX272-1YT  | COIL                       |           | S729     | EVQ21405R  | REC (DECK1)                  |           |
| L301       | SL09B4-K     | COIL                       |           | S730     | EVQ21405R  | PAUSE (DECK1)                |           |
| L302, 303  | SL09B1-K     | COIL                       |           | S731     | EVQ21405R  | AUTO REC MUTE (DECK1)        |           |
| L351       | SL09B4-K     | COIL                       |           | S971A    | RSH1A89Z   | MODE (DECK1)                 |           |
| L352, 353  | SL09B1-K     | COIL                       |           | S972A    | RSH1A90Z   | HALF (DECK1)                 |           |
| L401, 402  | QLM9210K     | COIL                       |           | S973A    | RSH1A90Z   | R. REC INH. (DECK1)          |           |
| L403, 404  | SLM1B8-K     | COIL                       |           | S974A    | RSH1A90Z   | F. REC INH. (DECK1)          |           |
|            |              | TRANSFORMER (S)            |           | S975A    | RSH1A90Z   | ATS (DECK1)                  |           |
|            |              |                            |           | S976A    | RSH1A90Z   | ATS (DECK1)                  |           |
| T601       | RTP1K4B005-V | POWER TRANSFORMER          | (EB) △    | S971     | RSH1A89Z   | MODE (DECK2)                 |           |
| T601       | RTP1K4E005-V | POWER TRANSFORMER          | (E, EG) △ | S972     | RSH1A90Z   | HALF (DECK2)                 |           |
|            |              | OSCILLATOR (S)             |           | S973     | RSH1A90Z   | R. REC INH. (DECK2)          |           |
|            |              |                            |           | S974     | RSH1A90Z   | F. REC INH. (DECK2)          |           |
|            |              |                            |           | S975     | RSH1A90Z   | ATS (DECK2)                  |           |
|            |              |                            |           | S976     | RSH1A90Z   | ATS (DECK2)                  |           |
| X551       | EF0GC4004T4  | CERAMIC FILTER             |           |          |            | CONNECTOR (S) AND SOCKET (S) |           |
| X901       | EF0GC4004T4  | CERAMIC FILTER             |           |          |            |                              |           |
|            |              | DISPLAY TUBE               |           | CN3      | SJSD1005   | CONNECTOR (10P)              |           |

| Ref. No.   | Part No.     | Part Name & Description | Remarks   |  |  |  |  |
|------------|--------------|-------------------------|-----------|--|--|--|--|
| CN4        | RJS1A1704    | CONNECTOR (4P)          |           |  |  |  |  |
| CN5        | SJSD1005     | CONNECTOR (10P)         |           |  |  |  |  |
| CN6        | RJS1A1704    | CONNECTOR (4P)          |           |  |  |  |  |
| CN8        | SJSD1005     | CONNECTOR (10P)         |           |  |  |  |  |
| CN9        | RJS1A1704    | CONNECTOR (4P)          |           |  |  |  |  |
| CN11, 12   | RJU003K010M1 | SOCKET (10P)            |           |  |  |  |  |
| CN15, 16   | SJS51078JQ   | SOCKET (10P)            |           |  |  |  |  |
| CN17, 18   | SJTD313      | CONNECTOR (3P)          |           |  |  |  |  |
| CN601      | RJS1A1101    | SOCKET (1P)             |           |  |  |  |  |
| CN603      | RJS1A1101    | SOCKET (1P)             |           |  |  |  |  |
| CN606-611  | RJS1A1101    | SOCKET (1P)             |           |  |  |  |  |
| CN612, 613 | EYF52BC      | FUSE HOLDER             | (E, EG)   |  |  |  |  |
| CP1, 2     | SJTD513      | CONNECTOR (5P)          |           |  |  |  |  |
| CP11, 12   | RJT003K010M1 | CONNECTOR (10P)         |           |  |  |  |  |
| CP15, 16   | SJT31045JQ   | CONNECTOR (10P)         |           |  |  |  |  |
|            |              | GND PART (S)            |           |  |  |  |  |
| E1         | SNE1004-1    | GND PLATE               |           |  |  |  |  |
|            |              | JACK (S)                |           |  |  |  |  |
| JK1        | SJF3069-2N   | TERMINAL BOARD          |           |  |  |  |  |
| JK3-5      | RJJ33T01     | M3 JACK                 |           |  |  |  |  |
| JK6        | SJS9236      | AC INLET                | △         |  |  |  |  |
| JK7        | RJS1A4802-B  | AC OUTLET               | (EB) △    |  |  |  |  |
| JK7        | RJS1A4902-B  | AC OUTLET               | (E, EG) △ |  |  |  |  |

## PACKING



EXPLODED VIEW



## REPLACEMENT PARTS LIST

Notes : \* Important safety notice:

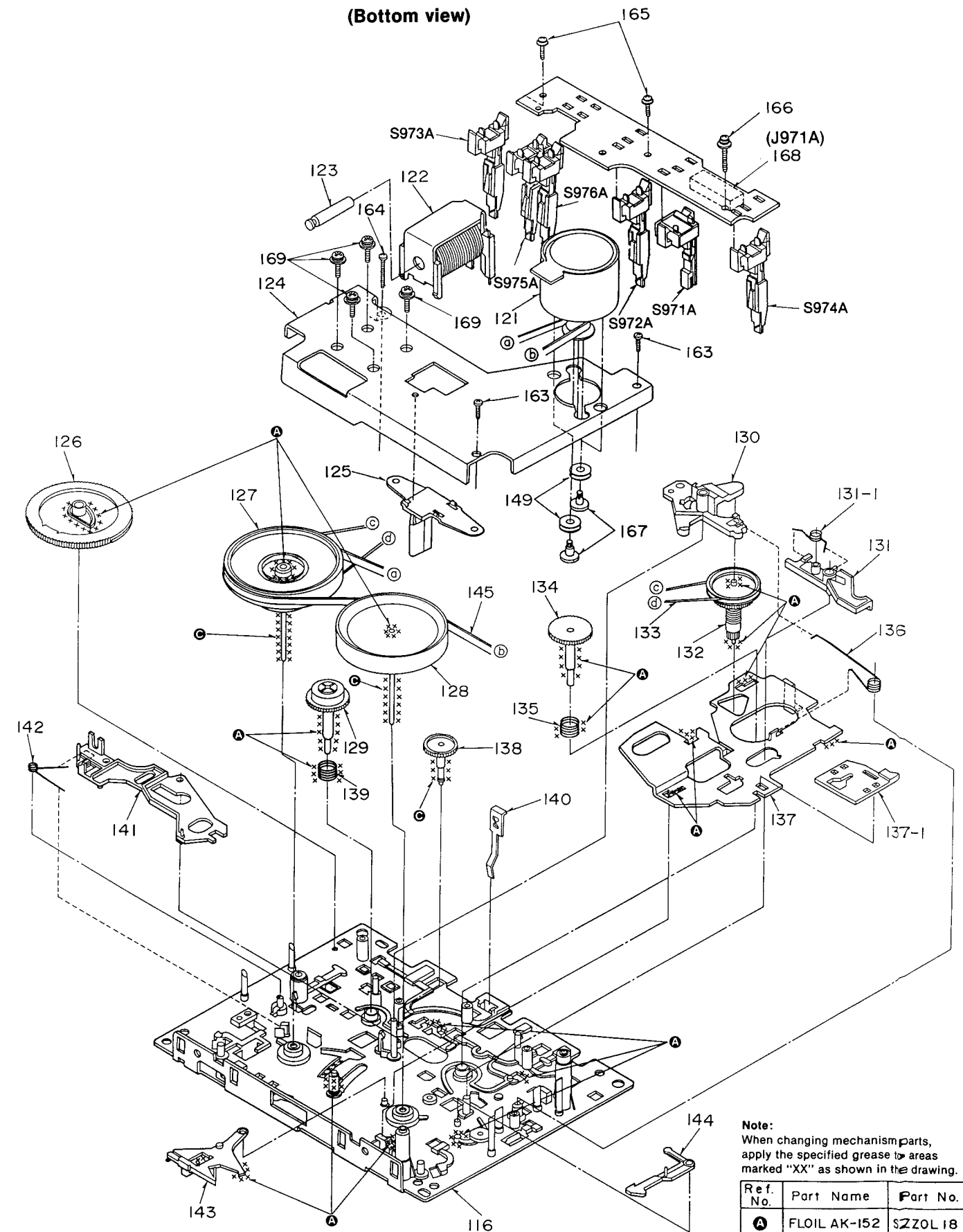
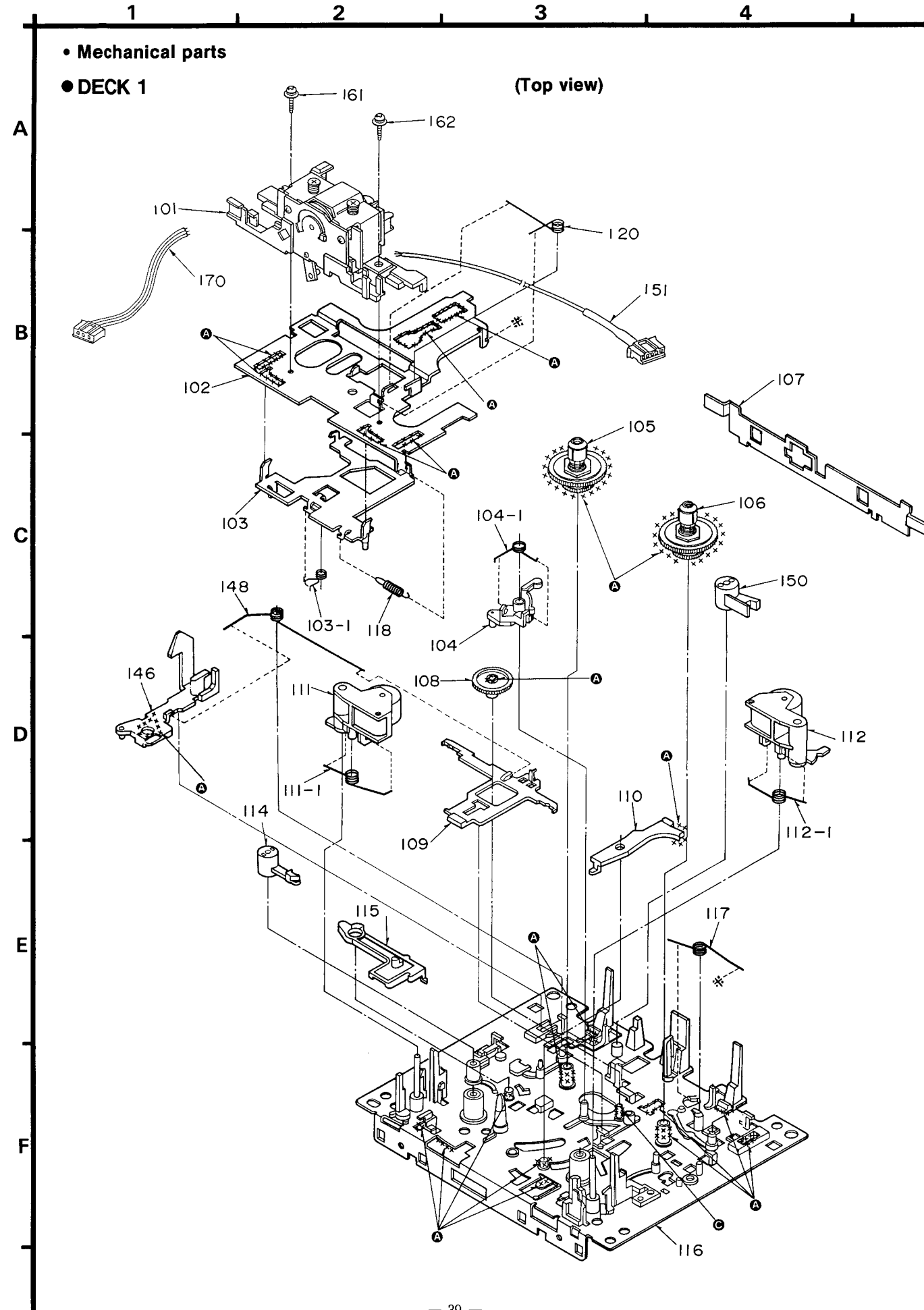
Components identified by  $\triangle$  mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

\* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.) Parts without these indications can be used for all areas.

| Ref. No. | Part No.     | Part Name & Description | Remarks | Ref. No. | Part No.     | Part Name & Description | Remarks             |
|----------|--------------|-------------------------|---------|----------|--------------|-------------------------|---------------------|
|          |              | CABINET AND CHASSIS     |         |          |              |                         |                     |
| 1        | RHD30007     | SCREW                   |         | P1       | RPG0465      | CARTON BOX              |                     |
| 2        | RKM0024-2K   | CABINET                 |         | P2       | RPN0383A     | PAD (A)                 |                     |
| 3        | RYF0077-K    | CASSETTE LID (DECK1)    |         | P3       | RPN0383B     | PAD (B)                 |                     |
| 4        | RYF0078-K    | CASSETTE LID (DECK2)    |         | P4       | RPN0383C     | PAD (C)                 |                     |
| 5        | XTBS3+8JFZ1  | SCREW                   |         | P5       | RPN0383D     | PAD (D)                 |                     |
| 6        | RGR0014D-A   | REAR PANEL              | (EB)    | P6       | SPSD152      | ACCESSORIES BOX         |                     |
| 6        | RGR0014E-A   | REAR PANEL              | (E)     | P7       | SPP756       | PROTECTION COVER        |                     |
| 6        | RGR0014E-E   | REAR PANEL              | (EG)    |          |              | ACCESSORIES             |                     |
| 7        | RJS1A4802-A  | AC OUTLET COVER         | (EB)    | A1       | RQF0544      | INSTRUCTION MANUAL UNIT | (EB)                |
| 7        | RJS1A4902-A  | AC OUTLET COVER         | (E, EG) | A1       | RQF0545      | INSTRUCTION MANUAL UNIT | (E)                 |
| 8        | RFKJSX301E-K | BOTTOM BOARD ASS'Y      |         | A1       | RQF0546      | INSTRUCTION MANUAL UNIT | (EG)                |
| 8-1      | RKA0011      | FOOT                    |         | A1-1     | RFKSSX901E-K | INSTRUCTION MANUAL      | (E)                 |
| 9        | RFKNSX901E-K | FRONT GRILLE ASS'Y      |         | A1-1     | RQT0434-B    | INSTRUCTION MANUAL      | (EB)                |
| 9-1      | RKW0103      | TRANSPARENT PLATE       |         | A1-1     | RQT0435-D    | INSTRUCTION MANUAL      | (EG)                |
| 10       | RMA0100      | ANGLE                   |         | A1-2     | RQA0013      | WARRANTY CARD           |                     |
| 11       | RMA0113      | DAMPER ANGLE (L)        |         | A1-3     | RQCB0169     | SERVICENTER LIST        |                     |
| 12       | RMA0114      | DAMPER ANGLE (R)        |         | A2       | SFDAC05E03   | POWER CORD              | (E, EG) $\triangle$ |
| 13       | SHE187-2     | HOLDER                  |         | A2       | SJA188       | POWER CORD              | (EB) $\triangle$    |
| 14       | SMNM17       | BRACKET                 |         | A3       | SJP2249-3    | STEREO CONNECTION CABLE |                     |
| 15       | XTBS3+10JFZ1 | SCREW                   |         | A4       | SJP2257T     | L-TYPE CABLE            |                     |
| 16       | XTB26+4FFZ   | SCREW                   |         |          |              |                         |                     |
| 17       | XTB3+10JFZ   | SCREW                   |         |          |              |                         |                     |
| 18       | XTB3+20JFZ   | SCREW                   |         |          |              |                         |                     |
| 19       | RG00043      | FRONT PANEL             |         |          |              |                         |                     |
| 20       | RGU0030      | BUTTON, POWER           |         |          |              |                         |                     |
| 21       | RGU0384A     | BUTTON, OPERATION       |         |          |              |                         |                     |
| 22       | RGU0384B     | BUTTON, OPERATION       |         |          |              |                         |                     |
| 23       | RGU0386      | BUTTON, COUNTER         |         |          |              |                         |                     |
| 24       | RGU0387      | BUTTON, EJECT           |         |          |              |                         |                     |
| 25       | RGW0080      | KNOB, REC VOLUME        |         |          |              |                         |                     |
| 26       | RKF0020A-3   | CASSETTE HOLDER         |         |          |              |                         |                     |
| 26-1     | QBP2006A     | SPRING, TAPE PRESSURE   |         |          |              |                         |                     |
| 27       | RMA0158      | EJECT ANGLE             |         |          |              |                         |                     |
| 28       | RMA0159-1    | MECHANISM ANGLE         |         |          |              |                         |                     |
| 29       | RME0026      | SPRING                  |         |          |              |                         |                     |
| 30       | RML0041      | EJECT LEVER (L)         |         |          |              |                         |                     |
| 31       | RML0042      | EJECT LEVER (R)         |         |          |              |                         |                     |
| 32       | RMM0041      | EJECT ROD               |         |          |              |                         |                     |
| 33       | RMR0153      | DAMPER GEAR ASS'Y (L)   |         |          |              |                         |                     |
| 34       | RMR0154      | DAMPER GEAR ASS'Y (R)   |         |          |              |                         |                     |
| 35       | XTBS26+8J    | SCREW                   |         |          |              |                         |                     |
| 36       | RMN0049      | FL HOLDER               |         |          |              |                         |                     |
|          |              | PACKING MATERIAL        |         |          |              |                         |                     |

| Ref. No. | Part No.  | Part Name & Description    | Remarks | Ref. No. | Part No.  | Part Name & Description | Remarks |
|----------|-----------|----------------------------|---------|----------|-----------|-------------------------|---------|
|          |           | MECHANISM PARTS LIST       |         | 145      | RDV108ZA  | CAPSTAN BELT            |         |
|          |           |                            |         | 146      | RUB507ZC  | EJECT ROD (L)           |         |
|          |           |                            |         | 148      | RJW144ZA  | SPRING                  |         |
| DECK1    |           |                            |         | 149      | RHG3032Z  | RUBBER CUSHION          |         |
| 101      | RXQ0008   | HEAD BLOCK (REC./PLAYBACK) |         | 150      | RNL180ZA  | DAMPER ARM              |         |
| 102      | RUA793Z   | HEAD BASE                  |         | 151      | REX0133   | LEAD WIRE BLOCK(5P)     |         |
| 103      | RZLAR300  | ROD                        |         | 161      | XTW2+6L   | SCREW                   |         |
| 103-1    | RJW143Z   | SPRING                     |         | 162      | XTW2+8L   | SCREW                   |         |
| 104      | 1UB0089ZA | ARM                        |         | 163      | XTN26+7J  | SCREW                   |         |
| 104-1    | RJW148ZA  | SPRING                     |         | 164      | XTN26+16F | SCREW                   |         |
| 105      | 1DM0018ZA | REEL TABLE (R)             |         | 165      | XTW2+8S   | SCREW                   |         |
| 106      | 1DM0017ZA | REEL TABLE (F)             |         | 166      | XYC2+JF16 | SCREW                   |         |
| 107      | RUB502Z   | LEVER                      |         | 167      | QH1303    | SCREW                   |         |
| 108      | RDG5772Z  | GEAR                       |         | 168      | RJS10T7ZA | CONNECTOR (10P), J971A  |         |
| 109      | RUB508ZA  | BRAKE ROD                  |         | 169      | RHD26003  | SCREW                   |         |
| 110      | RUB506Z   | LEVER                      |         | 170      | REX0145   | LEAD WIRE BLOCK(3P)     |         |
| 111      | 1UB0088ZA | ARM (R)                    |         |          |           |                         |         |
| 111-1    | RJW141Z   | SPRING                     |         |          |           |                         |         |
| 112      | 1UB0087ZA | ARM (F)                    |         |          |           |                         |         |
| 112-1    | RJW140Z   | SPRING                     |         |          |           |                         |         |
| 114      | RNL1Z     | DAMPER ARM                 |         |          |           |                         |         |
| 115      | RUB503Z   | MAIN LEVER                 |         |          |           |                         |         |
| 116      | RZUSX980  | CHASSIS                    |         |          |           |                         |         |
| 117      | RJW142ZA  | SPRING                     |         |          |           |                         |         |
| 118      | RUD105Z   | SPRING                     |         |          |           |                         |         |
| 120      | RJW139ZA  | SPRING                     |         |          |           |                         |         |
| 121      | RFM133ZA  | DC MOTOR                   |         |          |           |                         |         |
| 122      | 1UE0015ZA | PLUNGER                    |         |          |           |                         |         |
| 123      | RUB428Z   | MOVING IRON CORE           |         |          |           |                         |         |
| 124      | RUL1030XA | ANGLE                      |         |          |           |                         |         |
| 125      | FMD5014Z  | ANGLE                      |         |          |           |                         |         |
| 126      | RDG5927ZA | GEAR                       |         |          |           |                         |         |
| 127      | 1DW0053ZB | FLYWHEEL (F)               |         |          |           |                         |         |
| 128      | 1DW0054ZB | FLYWHEEL (R)               |         |          |           |                         |         |
| 129      | 1DG0006ZA | REEL TABLE GEAR            |         |          |           |                         |         |
| 130      | RUB513Z   | ARM                        |         |          |           |                         |         |
| 131      | 1UB0091ZA | LEVER                      |         |          |           |                         |         |
| 131-1    | RJW146ZA  | SPRING                     |         |          |           |                         |         |
| 132      | 1DR0011ZA | MAIN PULLEY                |         |          |           |                         |         |
| 133      | RDV902B   | BELT                       |         |          |           |                         |         |
| 134      | RDG5769ZA | REEL TABLE GEAR            |         |          |           |                         |         |
| 135      | RJQ10Z    | SPRING                     |         |          |           |                         |         |
| 136      | RJW145ZA  | SPRING                     |         |          |           |                         |         |
| 137      | 1UB0090ZA | ROD                        |         |          |           |                         |         |
| 137-1    | RUB512Z   | ROD                        |         |          |           |                         |         |
| 138      | RDG5773ZA | GEAR                       |         |          |           |                         |         |
| 139      | RJQ30Z    | SPRING                     |         |          |           |                         |         |
| 140      | RUS609Z   | TAPE PRESSURE SPRING       |         |          |           |                         |         |
| 141      | RUB514Z   | LEVER                      |         |          |           |                         |         |
| 142      | RJW147ZA  | SPRING                     |         |          |           |                         |         |
| 143      | RUB515Z   | LEVER                      |         |          |           |                         |         |
| 144      | RUB509ZA  | LEVER                      |         |          |           |                         |         |

# EXPLODED VIEWS



Note:  
When changing mechanism parts,  
apply the specified grease to areas  
marked "XX" as shown in the drawing.

| Ref. No. | Part Name    | Part No.  |
|----------|--------------|-----------|
| A        | FL0IL AK-152 | S2ZOL 18  |
| C        | FL0IL 947 P  | R 2ZOL 02 |



**(Top view)**



**Note:**  
When changing mechanism parts, apply the specified grease to areas marked "XX" as shown in the drawing.

| Ref. No. | Part Name   | Part No. |
|----------|-------------|----------|
| A        | FLOIL AK-12 | SZZOL 18 |
| C        | FLOIL 947P  | RZZOL 02 |

# REPLACEMENT PARTS LIST

| Ref. No. | Part No.  | Part Name & Description    | Remarks | Ref. No. | Part No.  | Part Name & Description | Remarks |
|----------|-----------|----------------------------|---------|----------|-----------|-------------------------|---------|
|          |           | MECHANISM PARTS LIST       |         | 243      | RUB515Z   | LEVER                   |         |
|          |           |                            |         | 244      | RUB509ZA  | LEVER                   |         |
|          |           |                            |         | 245      | RDV108ZA  | CAPSTAN BELT            |         |
| DECK2    |           |                            |         | 249      | RHG3032Z  | RUBBER CUSHION          |         |
| 201      | RXQ0008   | HEAD BLOCK (REC./PLAYBACK) |         | 250      | RNL97ZA   | DAMPER ARM              |         |
| 202      | RUA793Z   | HEAD BASE                  |         | 251      | REX0133   | LEAD WIRE BLOCK(5P)     |         |
| 203      | RZLAR300  | ROD                        |         | 261      | XTW2+6L   | SCREW                   |         |
| 203-1    | RUW143Z   | SPRING                     |         | 262      | XTW2+8L   | SCREW                   |         |
| 204      | 1UB0089ZA | ARM                        |         | 263      | XTN26+7J  | SCREW                   |         |
| 204-1    | RUW148ZA  | SPRING                     |         | 264      | XTN26+16F | SCREW                   |         |
| 205      | 1DM0018ZA | REEL TABLE (R)             |         | 265      | XTW2+8S   | SCREW                   |         |
| 206      | 1DM0017ZA | REEL TABLE (F)             |         | 266      | XYC2+JF16 | SCREW                   |         |
| 207      | RUB502Z   | LEVER                      |         | 267      | QH1303    | SCREW                   |         |
| 208      | RDG5772Z  | GEAR                       |         | 268      | RJS10T7ZA | CONNECTOR (10P), J971   |         |
| 209      | RUB508ZA  | BRAKE ROD                  |         | 269      | RHD26003  | SCREW                   |         |
| 210      | RUB506Z   | LEVER                      |         | 270      | REX0145   | LEAD WIRE BLOCK(3P)     |         |
| 211      | 1UB0088ZA | ARM (R)                    |         |          |           |                         |         |
| 211-1    | RUW141Z   | SPRING                     |         |          |           |                         |         |
| 212      | 1UB0087ZA | ARM (F)                    |         |          |           |                         |         |
| 212-1    | RUW140Z   | SPRING                     |         |          |           |                         |         |
| 213      | RUB541ZB  | EJECT ROD (R)              |         |          |           |                         |         |
| 214      | RNL1Z     | DAMPER ARM                 |         |          |           |                         |         |
| 215      | RUB503Z   | MAIN LEVER                 |         |          |           |                         |         |
| 216      | RZUSX980  | CHASSIS                    |         |          |           |                         |         |
| 217      | RUW142ZA  | SPRING                     |         |          |           |                         |         |
| 218      | RUD105Z   | SPRING                     |         |          |           |                         |         |
| 219      | RUW167ZA  | SPRING                     |         |          |           |                         |         |
| 220      | RUW139ZA  | SPRING                     |         |          |           |                         |         |
| 221      | RFM133ZA  | DC MOTOR                   |         |          |           |                         |         |
| 222      | 1UE0015ZA | PLUNGER                    |         |          |           |                         |         |
| 223      | RUB428Z   | MOVING IRON CORE           |         |          |           |                         |         |
| 224      | RUL1030XA | ANGLE                      |         |          |           |                         |         |
| 225      | RMD5014Z  | ANGLE                      |         |          |           |                         |         |
| 226      | RDG5927ZA | GEAR                       |         |          |           |                         |         |
| 227      | 1DW0053ZB | FLYWHEEL (F)               |         |          |           |                         |         |
| 228      | 1DW0054ZB | FLYWHEEL (R)               |         |          |           |                         |         |
| 229      | 1DG0006ZA | REEL TABLE GEAR            |         |          |           |                         |         |
| 230      | RUB513Z   | ARM                        |         |          |           |                         |         |
| 231      | 1UB0091ZA | LEVER                      |         |          |           |                         |         |
| 231-1    | RUW146ZA  | SPRING                     |         |          |           |                         |         |
| 232      | 1DR0011ZA | MAIN PULLEY                |         |          |           |                         |         |
| 233      | RDV902B   | BELT                       |         |          |           |                         |         |
| 234      | RDG5769ZA | REEL TABLE GEAR            |         |          |           |                         |         |
| 235      | RUQ10Z    | SPRING                     |         |          |           |                         |         |
| 236      | RUW145ZA  | SPRING                     |         |          |           |                         |         |
| 237      | 1UB0090ZA | ROD                        |         |          |           |                         |         |
| 237-1    | RUB512Z   | ROD                        |         |          |           |                         |         |
| 238      | RDG5773ZA | GEAR                       |         |          |           |                         |         |
| 239      | RUQ30Z    | SPRING                     |         |          |           |                         |         |
| 240      | RUS609Z   | TAPE PRESSURE SPRING       |         |          |           |                         |         |
| 241      | RUB514Z   | LEVER                      |         |          |           |                         |         |
| 242      | RUW147ZA  | SPRING                     |         |          |           |                         |         |

## RESISTORS & CAPACITORS

Notes : \* Capacity valuse are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)  
 \* Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM) , 1M=1,000k (OHM)

| Ref. No.  | Part No.    | Values & Remarks | Ref. No.  | Part No.    | Values & Remarks   | Ref. No.  | Part No.     | Values & Remarks          |
|-----------|-------------|------------------|-----------|-------------|--------------------|-----------|--------------|---------------------------|
|           |             | RESISTORS        | R137, 138 | ERDS2TJ562T | 1/4W 5.6K          | R602      | ERDS2TJ472T  | 1/4W 4.7K                 |
|           |             |                  | R139, 140 | ERDS2TJ472T | 1/4W 4.7K          | R603      | ERDS2TJ103T  | 1/4W 10K                  |
|           |             |                  | R301      | ERDS2TJ1R0T | 1/4W 1.0           | R604      | ERDS2TJ472T  | 1/4W 4.7K $\Delta$        |
| R1, 2     | ERDS2TJ394T | 1/4W 390K        | R302, 303 | ERDS2TJ183T | 1/4W 18K           | R605      | ERDS1FVJ5R6T | 1/2W 5.6 (E, EG) $\Delta$ |
| R3, 4     | ERDS2TJ393T | 1/4W 39K         | R304, 305 | ERDS2TJ100T | 1/4W 10            | R605      | ERD2FCVJ5R6T | 1/4W 5.6 (EB)             |
| R5, 6     | ERDS2TJ183T | 1/4W 18K         | R306      | ERDS2TJ471T | 1/4W 470           | R606      | ERDS1FVJ3R3T | 1/2W 3.3 $\Delta$         |
| R7, 8     | ERDS2TJ225T | 1/4W 2.2M        | R307      | ERDS2TJ222T | 1/4W 2.2K          | R607, 608 | ERDS2TJ102T  | 1/4W 1K                   |
| R9, 10    | ERDS2TJ332T | 1/4W 3.3K        | R311, 312 | ERDS2TJ101T | 1/4W 100           | R611      | ERDS1FVJ100T | 1/2W 10 (E, EG) $\Delta$  |
| R11, 12   | ERDS2TJ561T | 1/4W 560         | R313, 314 | ERDS2TJ154T | 1/4W 150K          | R611      | ERD2FCVG100T | 1/4W 10 (EB)              |
| R13, 14   | ERDS2TJ332T | 1/4W 3.3K        | R315, 316 | ERDS2TJ153T | 1/4W 15K           | R612      | ERDS1FVJ270T | 1/2W 27 (E, EG) $\Delta$  |
| R19, 20   | ERDS2TJ101T | 1/4W 100         | R319      | ERDS2TJ102T | 1/4W 1K            | R612      | ERD2FCVG270T | 1/4W 27 (EB)              |
| R21, 22   | ERDS2TJ104T | 1/4W 100K        | R321      | ERDS2TJ102T | 1/4W 1K            | R613      | ERDS2TJ102T  | 1/4W 1K                   |
| R23, 24   | ERDS2TJ101T | 1/4W 100         | R329      | ERDS2TJ222T | 1/4W 2.2K          | R614      | ERDS2TJ222T  | 1/4W 2.2K $\Delta$        |
| R25, 26   | ERDS2TJ225T | 1/4W 2.2M        | R351      | ERDS2TJ1R0T | 1/4W 1.0           | R615, 616 | ERDS2TJ270T  | 1/4W 27                   |
| R27, 28   | ERDS2TJ820T | 1/4W 82          | R352, 353 | ERDS2TJ183T | 1/4W 18K           | R617, 618 | ERQ16NKR15E  | 1/6W 0.15 (EB) $\Delta$   |
| R29, 30   | ERDS2TJ103T | 1/4W 10K         | R354, 355 | ERDS2TJ100T | 1/4W 10            | R619-621  | ERDS2TJ560T  | 1/4W 56                   |
| R31, 32   | ERDS2TJ273T | 1/4W 27K         | R356      | ERDS2TJ471T | 1/4W 470           | R622      | ERQ16NKR15E  | 1/6W 0.15 (EB) $\Delta$   |
| R33, 34   | ERDS2TJ183T | 1/4W 18K         | R357      | ERDS2TJ222T | 1/4W 2.2K          | R623      | ERDS2TJ560T  | 1/4W 56                   |
| R35, 36   | ERDS2TJ474T | 1/4W 470K        | R361, 362 | ERDS2TJ101T | 1/4W 100           | R624, 625 | ERDS2TJ270T  | 1/4W 27                   |
| R37, 38   | ERDS2TJ272T | 1/4W 2.7K        | R363, 364 | ERDS2TJ154T | 1/4W 150K          | R632      | ERDS1FVJ5R6T | 1/2W 5.6 (E, EG) $\Delta$ |
| R43, 44   | ERDS2TJ103T | 1/4W 10K         | R365, 366 | ERDS2TJ153T | 1/4W 15K           | R632      | ERD2FCVJ5R6T | 1/4W 5.6 (EB)             |
| R45, 46   | ERDS2TJ223T | 1/4W 22K         | R369      | ERDS2TJ102T | 1/4W 1K            | R701      | ERDS2TJ821T  | 1/4W 820                  |
| R47, 48   | ERDS2TJ472T | 1/4W 4.7K        | R371      | ERDS2TJ102T | 1/4W 1K            | R702      | ERDS2TJ102T  | 1/4W 1K                   |
| R49, 50   | ERDS2TJ102T | 1/4W 1K          | R379      | ERDS2TJ222T | 1/4W 2.2K          | R703      | ERDS2TJ122T  | 1/4W 1.2K                 |
| R51, 52   | ERDS2TJ470T | 1/4W 47          | R401-404  | ERDS2TJ101T | 1/4W 100           | R704      | ERDS2TJ152T  | 1/4W 1.5K                 |
| R53, 54   | ERDS2TJ392T | 1/4W 3.9K        | R407, 408 | ERDS2TJ242T | 1/4W 2.4K          | R705      | ERDS2TJ182T  | 1/4W 1.8K                 |
| R55, 56   | ERDS2TJ272T | 1/4W 2.7K        | R409-412  | ERDS2TJ684T | 1/4W 680K          | R706      | ERDS2TJ222T  | 1/4W 2.2K                 |
| R57, 58   | ERDS2TJ103T | 1/4W 10K         | R413, 414 | ERDS2TJ562T | 1/4W 5.6K          | R707      | ERDS2TJ332T  | 1/4W 3.3K                 |
| R59, 60   | ERDS2TJ562T | 1/4W 5.6K        | R415, 416 | ERDS2TJ102T | 1/4W 1K            | R708      | ERDS2TJ472T  | 1/4W 4.7K                 |
| R63, 64   | ERDS2TJ472T | 1/4W 4.7K        | R417, 418 | ERDS2TJ332T | 1/4W 3.3K          | R709      | ERDS2TJ682T  | 1/4W 6.8K                 |
| R65       | ERDS2TJ392T | 1/4W 3.9K        | R419, 420 | ERDS2TJ333T | 1/4W 33K           | R710      | ERDS2TJ123T  | 1/4W 12K                  |
| R67       | ERDS2TJ103T | 1/4W 10K         | R421-424  | ERDS2TJ823T | 1/4W 82K           | R711      | ERDS2TJ223T  | 1/4W 22K                  |
| R93       | ERDS2TJ273T | 1/4W 27K         | R425, 426 | ERDS2TJ683T | 1/4W 68K           | R712      | ERDS2TJ683T  | 1/4W 68K                  |
| R94       | ERDS2TJ123T | 1/4W 12K         | R427, 428 | ERDS2TJ222T | 1/4W 2.2K          | R713      | ERDS2TJ821T  | 1/4W 820                  |
| R101, 102 | ERDS2TJ225T | 1/4W 2.2M        | R429, 430 | ERDS2TJ512T | 1/4W 5.1K          | R714      | ERDS2TJ102T  | 1/4W 1K                   |
| R103-108  | ERDS2TJ103T | 1/4W 10K         | R463, 464 | ERDS2TJ122T | 1/4W 1.2K          | R715      | ERDS2TJ122T  | 1/4W 1.2K                 |
| R109, 110 | ERDS2TJ562T | 1/4W 5.6K        | R465, 466 | ERDS2TJ332T | 1/4W 3.3K          | R716      | ERDS2TJ152T  | 1/4W 1.5K                 |
| R111, 112 | ERDS2TJ103T | 1/4W 10K         | R468, 469 | ERDS2TJ223T | 1/4W 22K           | R717      | ERDS2TJ182T  | 1/4W 1.8K                 |
| R113, 114 | ERDS2TJ223T | 1/4W 22K         | R473-475  | ERDS2TJ472T | 1/4W 4.7K          | R718      | ERDS2TJ222T  | 1/4W 2.2K                 |
| R115, 116 | ERDS2TJ472T | 1/4W 4.7K        | R522      | ERDS2TJ333T | 1/4W 33K           | R719      | ERDS2TJ332T  | 1/4W 3.3K                 |
| R117, 118 | ERDS2TJ470T | 1/4W 47          | R551-556  | ERDS2TJ473T | 1/4W 47K           | R720      | ERDS2TJ472T  | 1/4W 4.7K                 |
| R121, 122 | ERDS2TJ102T | 1/4W 1K          | R557, 558 | ERDS2TJ220T | 1/4W 22            | R721      | ERDS2TJ682T  | 1/4W 6.8K                 |
| R123, 124 | ERDS2TJ392T | 1/4W 3.9K        | R559, 560 | ERDS2TJ152T | 1/4W 1.5K          | R722      | ERDS2TJ123T  | 1/4W 12K                  |
| R125, 126 | ERDS2TJ272T | 1/4W 2.7K        | R561      | ERDS2TJ102T | 1/4W 1K            | R723      | ERDS2TJ223T  | 1/4W 22K                  |
| R127, 128 | ERDS2TJ223T | 1/4W 22K         | R562      | ERDS2TJ471T | 1/4W 470           | R724      | ERDS2TJ683T  | 1/4W 68K                  |
| R129, 130 | ERDS2TJ183T | 1/4W 18K         | R563, 564 | ERDS2TJ103T | 1/4W 10K           | R823, 824 | ERDS2TJ472T  | 1/4W 4.7K                 |
| R131, 132 | ERDS2TJ104T | 1/4W 100K        | R565      | ERDS2TJ105T | 1/4W 1M            | R825, 826 | ERDS2TJ103T  | 1/4W 10K                  |
| R133, 134 | ERDS2TJ562T | 1/4W 5.6K        | R566, 567 | ERDS2TJ103T | 1/4W 10K           | R827      | ERDS2TJ563T  | 1/4W 56K                  |
| R135, 136 | ERDS2TJ822T | 1/4W 8.2K        | R601      | ERDS2TJ472T | 1/4W 4.7K $\Delta$ | R828      | ERDS2TJ272T  | 1/4W 2.7K                 |

| Ref. No.  | Part No.     | Values & Remarks  | Ref. No.  | Part No.     | Values & Remarks | Ref. No.  | Part No.     | Values & Remarks |
|-----------|--------------|-------------------|-----------|--------------|------------------|-----------|--------------|------------------|
| R829      | ERDS2TJ392T  | 1/4W 3.9K         | R954      | ERDS2TJ223T  | 1/4W 22K △       | C59-62    | ECBT1H4R7KC5 | 50V 4.7P         |
| R830      | ERDS2TJ103T  | 1/4W 10K          | R955      | ERDS2TJ821T  | 1/4W 820         | C64       | ECEA1H0010SB | 50V 1U           |
| R831      | ERDS2TJ272T  | 1/4W 2.7K         | R956      | ERDS2TJ223T  | 1/4W 22K △       | C101, 102 | ECBT1H102KB5 | 50V 1000P        |
| R832      | ERDS2TJ152T  | 1/4W 1.5K         | R957      | ERDS2TJ821T  | 1/4W 820         | C103, 104 | ECKD2H101KB  | 500V 100P        |
| R837      | ERDS2TJ473T  | 1/4W 47K          | R958      | ERDS2TJ223T  | 1/4W 22K △       | C105, 106 | ECBT1H561KB5 | 50V 560P         |
| R838      | ERDS2TJ272T  | 1/4W 2.7K         | R959      | ERDS2TJ821T  | 1/4W 820         | C107, 108 | ECEA1H0R47B  | 50V 0.47U        |
| R839      | ERDS2TJ222T  | 1/4W 2.2K         | R960      | ERDS2TJ153T  | 1/4W 15K         | C109, 110 | ECBT1H181KB5 | 50V 180P         |
| R840      | ERDS2TJ102T  | 1/4W 1K           | R961      | ERDS2TJ561T  | 1/4W 560         | C111, 112 | ECFR1C273JR  | 16V 0.027U       |
| R841      | ERDS2TJ473T  | 1/4W 47K          | R962      | ERDS2TJ103T  | 1/4W 10K         | C113, 114 | ECFR1C103JR  | 16V 0.01U        |
| R842      | ERDS2TJ333T  | 1/4W 33K          | R963      | ERDS2TJ432   | 1/4W 4.3K        | C115, 116 | ECFR1C273JR  | 16V 0.027U       |
| R843      | ERDS2TJ393T  | 1/4W 39K          | R964      | ERDS2TJ184T  | 1/4W 180K        | C117, 118 | ECFR1C103JR  | 16V 0.01U        |
| R844      | ERDS2TJ822T  | 1/4W 8.2K         | R965      | ERDS2TJ103T  | 1/4W 10K         | C119, 120 | ECEA1H0010B  | 50V 1U           |
| R845      | ERDS2TJ823T  | 1/4W 82K          | R966      | ERDS2TJ223T  | 1/4W 22K △       | C121      | ECBT1E103ZF5 | 25V 0.01U        |
| R846      | ERDS2TJ101T  | 1/4W 100          | R967      | ERDS2TJ821T  | 1/4W 820         | C301      | ECQP1153JZ   | 50V 0.015U       |
| R847      | ERDS2TJ122T  | 1/4W 1.2K         | R968-970  | ERDS2TJ472T  | 1/4W 4.7K        | C302      | ECEA1EK4R7B  | 25V 4.7U         |
| R852, 853 | ERDS1FVJ470T | 1/2W 47 (E, EG) △ | R975, 976 | ERDS2TJ331T  | 1/4W 330         | C303      | ECKR1H392KB5 | 50V 3900P        |
| R852, 853 | ERD2FCVG470T | 1/4W 47 (EB)      | R977, 978 | ERDS2TJ103T  | 1/4W 10K         | C304, 305 | ECFR1E222KAY | 25V 2200P        |
| R903      | ERDS2TJ393T  | 1/4W 39K          | R979      | ERDS2TJ153T  | 1/4W 15K         | C306      | ECFR1E682KAY | 25V 6800P        |
| R904, 905 | ERDS2TJ222T  | 1/4W 2.2K         | R980-985  | ERDS2TJ393T  | 1/4W 39K         | C309      | ECKR1H103ZF5 | 50V 0.01U        |
| R906      | ERDS2TJ103T  | 1/4W 10K          | R986      | ERDS2TJ103T  | 1/4W 10K         | C310      | ECKD1H472KB  | 50V 4700P        |
| R907      | ERDS2TJ563T  | 1/4W 56K          | R990      | ERDS2TJ100T  | 1/4W 10          | C311      | ECEA1AU471B  | 10V 47U          |
| R908-910  | ERDS2TJ103T  | 1/4W 10K          | R991, 992 | ERDS1FVJ1R0T | 1/2W 1.0 △       | C313, 314 | ECQB1H223JZ3 | 50V 0.022U       |
| R911      | ERDS2TJ392T  | 1/4W 3.9K         | R994      | ERDS2TJ102T  | 1/4W 1K          | C315, 316 | ECKD2H821KB  | 500V 820P        |
| R912, 913 | ERDS2TJ272T  | 1/4W 2.7K         | R995, 996 | ERDS2TJ100T  | 1/4W 10          | C317, 318 | ECKD2H121KB  | 500V 120P        |
| R914      | ERDS2TJ152T  | 1/4W 1.5K         | R997      | ERDS2TJ102T  | 1/4W 1K          | C319, 320 | ECQV1H473JZ3 | 50V 0.047U       |
| R915      | ERDS2TJ473T  | 1/4W 47K          | R998      | ERDS2TJ100T  | 1/4W 10          | C321, 322 | ECQB1H223JZ3 | 50V 0.022U       |
| R916      | ERDS2TJ272T  | 1/4W 2.7K         |           |              |                  | C323, 324 | ECQB1H103JZ3 | 50V 0.01U        |
| R917, 918 | ERDS2TJ103T  | 1/4W 10K          |           |              | CAPACITORS       | C325, 326 | ECKD1H122KB  | 50V 120P         |
| R919      | ERDS2TJ471T  | 1/4W 470          |           |              |                  | C328      | ECCD2H100K   | 500V 10P         |
| R920-922  | ERDS2TJ103T  | 1/4W 10K          | C1-3      | ECEA1H0010B  | 50V 1U           | C331      | ECBT1E103ZF5 | 25V 0.01U        |
| R923      | ERDS2TJ100T  | 1/4W 10           | C5, 6     | ECEA1CK220B  | 16V 22U          | C332      | ECEA1CK100B  | 16V 1U           |
| R924      | ERDS2TJ103T  | 1/4W 10K          | C7-10     | ECBT1H561KB5 | 50V 560P         | C351      | ECQP1153JZ   | 50V 0.015U       |
| R925      | ERDS2TJ223T  | 1/4W 22K          | C11, 12   | ECBT1H102KB5 | 50V 1000P        | C352      | ECEA1EK4R7B  | 25V 4.7U         |
| R926      | ERDS2TJ100T  | 1/4W 10           | C13, 14   | ECEA0JU101B  | 6.3V 100U        | C353      | ECKR1H392KB5 | 50V 3900P        |
| R927      | ERDS2TJ223T  | 1/4W 22K          | C15, 16   | ECQB1H682JZ3 | 50V 6800P        | C354, 355 | ECFR1E222KAY | 25V 2200P        |
| R928      | ERDS2TJ273T  | 1/4W 27K          | C17-20    | ECEA1EK4R7B  | 25V 4.7U         | C356      | ECFR1E682KAY | 25V 6800P        |
| R931      | ERDS2TJ102T  | 1/4W 1K           | C21       | ECEA0JU101B  | 6.3V 100U        | C359      | ECKR1H103ZF5 | 50V 0.01U        |
| R932      | ERDS2TJ392T  | 1/4W 3.9K         | C25, 26   | ECEA1H0010B  | 50V 1U           | C360      | ECKD1H472KB  | 50V 4700P        |
| R933      | ERDS2TJ472T  | 1/4W 4.7K         | C27, 28   | ECBT1H561KB5 | 50V 560P         | C361      | ECEA1AU471B  | 10V 47U          |
| R934      | ERDS2TJ105T  | 1/4W 1M           | C29, 30   | ECKD2H101KB  | 500V 100P        | C363, 364 | ECQB1H223JZ3 | 50V 0.022U       |
| R935      | ERDS2TJ182T  | 1/4W 1.8K         | C31, 32   | ECCD1H181K   | 50V 180P         | C365, 366 | ECKD2H821KB  | 500V 82P         |
| R938, 939 | ERDS2TJ472T  | 1/4W 4.7K         | C33, 34   | ECEA1H0R47B  | 50V 0.47U        | C367, 368 | ECKD2H121KB  | 500V 12P         |
| R940      | ERDS2TJ103T  | 1/4W 10K          | C35, 36   | ECFR1C472JR  | 16V 4700P        | C369, 370 | ECQV1H473JZ3 | 50V 0.047U       |
| R941      | ERDS2TJ102T  | 1/4W 1K           | C37, 38   | ECFR1C223JR  | 16V 0.022U       | C371, 372 | ECQB1H223JZ3 | 50V 0.022U       |
| R943      | ERDS2TJ223T  | 1/4W 22K          | C39, 40   | ECFR1C103JR  | 16V 0.01U        | C373, 374 | ECQB1H103JZ3 | 50V 0.01U        |
| R945      | ERDS2TJ223T  | 1/4W 22K          | C41, 42   | ECFR1C223JR  | 16V 0.022U       | C375, 376 | ECKD1H122KB  | 50V 120P         |
| R948      | ERDS2TJ184T  | 1/4W 180K         | C43, 44   | ECFR1C103JR  | 16V 0.01U        | C378      | ECCD2H100K   | 500V 1P          |
| R949      | ERDS2TJ103T  | 1/4W 10K          | C45, 46   | ECBT1E103ZF5 | 25V 0.01U        | C381      | ECBT1E103ZF5 | 25V 0.01U        |
| R950      | ERDS2TJ222T  | 1/4W 2.2K         | C49, 50   | ECEA1CK100B  | 16V 10U          | C382      | ECEA1CK100B  | 16V 1U           |
| R951      | ERDS2TJ103T  | 1/4W 10K          | C53, 54   | ECFR1C273JR  | 16V 0.027U       | C401, 402 | ECBT1C222MR5 | 16V 2200P        |
| R952      | ERDS2TJ432   | 1/4W 4.3K         | C55       | ECBT1E103ZF5 | 25V 0.01U        | C403, 404 | ECEA1EK4R7B  | 25V 4.7U         |
| R953      | ERDS2TJ103T  | 1/4W 10K          | C57, 58   | ECEA1AU470B  | 10V 47U          | C405, 406 | ECKD1H122KB  | 50V 120P         |

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