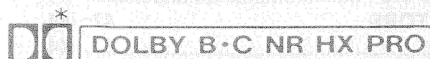


Service Manual

Dolby NR-Equipped
Stereo Cassette Deck

Cassette Deck
RS-B555



Color

(K)...Black Type



Area

Country Code	Area	Color
(P)	U.S.A.	(K)
(PC)	Canada	
(E, E5)	Continental Europe	
(EB)	Great Britain	
(EG)	F.R. Germany and Italy	

* HX Pro headroom extension originated by Bang Olufsen and manufactured under license from Dolby Laboratories Licensing Corporation.
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MECHANISM SERIES: AR350

SPECIFICATIONS

CASSETTE DECK SECTION

Deck system	Stereo cassette deck
Track system	4-track, 2-channel
Heads	
Rec/play	Permalloy head
Erasing	Double-gap ferrite head
Motors	
Capstan	Direct drive DC motor
Reel table drive	DC motor
Recording system	AC bias
Bias frequency	80 kHz
Erasing system	AC erase
Tape speed	4.8 cm/sec. (1 7/8 ips)
Frequency response	
NORMAL	20 Hz~18 kHz
CrO ₂	20 Hz~16 kHz (DIN)
METAL	20 Hz~18 kHz (DIN)
METAL	20 Hz~17 kHz (DIN)
METAL	20 Hz~19 kHz (DIN)
METAL	20 Hz~18 kHz (DIN)
S/N (signal level=max recording level, CrO ₂ type tape)	
Dolby C NR on	74 dB (CCIR)
Dolby B NR on	66 dB (CCIR)
Dolby NR off	56 dB (A weighted)

Wow and flutter 0.05% (WRMS)
±0.15% (DIN)

Fast forward and rewind times
Approx. 90 seconds with C-60 cassette tape

Input sensitivity and impedance

MIC	0.25 mV/400Ω~10 kΩ
LINE	60 mV/47 kΩ

Output voltage and impedance

LINE	400 mV/800Ω
HEADPHONES	125 mV/8Ω (8Ω~600Ω)

GENERAL

Power consumption 21W

Power supply

For U.S.A. and Canada	AC 120V, 60 Hz
For Great Britain	AC 240V, 50/60 Hz
For others	AC 220V, 50/60 Hz

Dimensions (W × H × D)

430 × 125 × 290 mm

(16 15/16" × 4 15/16" × 11 13/32")

Weight

4.4kg (9.7 lb.)

Note:

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

Technics

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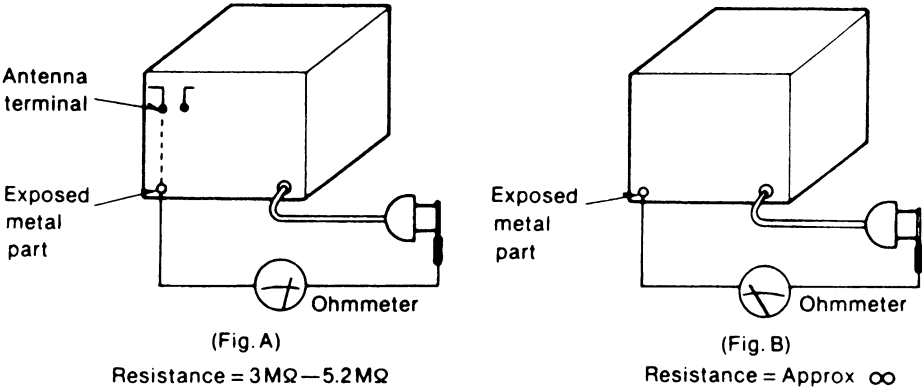
SAFETY PRECAUTION (This "safety precaution" is applied only in U.S.A.)

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

INSULATION RESISTANCE TEST

1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between $3M\Omega$ and $5.2M\Omega$ to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

ACCESSORIES

- Stereo connection cables 2
[SJP2249-3]
- AC power supply cord 1
[SFDAC05E03: (E, E5, EG)]
SJA175: (PC)
SJA175-1: (P)
SJA193-1: (EB)

FRANÇAIS

METHODES DES MEASURES ET REGLAGES

Reglage Azimutal de la tete 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 ce 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. Nota: 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. 2. Effectuer le même réglage sur le mode d'audition.	Vérification de la différence de niveau pour les deux sens de rotation 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 1dB. 4. Après cela, mettre une goutte de vernis de blocage sur la vis de réglage de l'azimut.
Reglage de L'amplification de Lecture 1. Faire jouer la partie réglée de l'amplification (315Hz, 0dB) de la bande d'essai (QZZCFM). 2. Régler la platine 1: VR1 (canal de gauche) [VR2 (canal de droite)] de telle sorte que la sortie soit en deçà de la valeur standard.	
Reponse en Frequence de la Lecture 1. Faire jouer la partie de la réponse en fréquence (315Hz, 12.5kHz, -63Hz, -20dB) de la bande d'essai (QZZCFM). 2. S'assurer que la réponse en fréquence soit en deçà de la plage montrée dans la Fig. 5, à la fois pour le canal de gauche et le canal de droite.	
Réglage du bouchon de polarisation 1. Introduire la cassette d'essai vierge (QZZCRZ) et régler l'appareil pour l'enregistrement. 2. Régler L1 (L-CH) et L2 (R-CH) de sorte que la tension entre TP1 (TP2) et la masse (GND) soit inférieure à la valeur minimale.	

Reponse en Frequence Totale

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, -24dB) 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 **VR301** (canal de gauche) et **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 **CrO₂** (QZZCRX) et la bande métallisée (QZZCRZ) 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

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 **VR3** (canal de gauche) et **VR4** (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

Ajuste Azimutal de Cabeza

1. 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.

Nota:

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.

2. Efectuar el mismo ajuste en la modalidad de reproducción.

Comprobación de la diferencia de nivel de giro hacia adelante y hacia atrás

3. 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 1 dB.
4. Después del ajuste, aplique pintura de fijación al tornillo de ajuste del azimut.

Ajuste de Ganancia de Reproduccion

1. Reproducir la porción ajustada de ganancia (315Hz, 0dB) de la cinta de prueba (QZZCFM).
2. Ajustar la Platina 1: **VR1** (CH-I) [[**VR2** (CH-D)]] de manera que la salida esté dentro del valor estándar.

Respuesta de Frecuencia de Reproduccion

1. Reproducir la parte de respuesta de frecuencia de reproducción (315Hz, 12.5kHz~63Hz, −20dB) de la cinta de prueba (QZZCFM).
2. Asegurarse de que la respuesta de frecuencia esté dentro de la gama mostrada en la **Fig. 5** para ambos CH-I y CH-D.

Ajuste del Circuito Trampa de Polarizacion

1. Introduzca la cinta virgen de metal (QZZCRZ) para pruebas y ponga el aparato en el modo de grabación.
2. Ajuste **L1** (canal izq.) ((**L2** (canal der.)) de manera que la tensión de salida entre **TP1** (**TP2**) y **GND** (Tierra) sea menor que el valor mínimo.

Respuesta de Frecuencia Total

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 **VR301** (CH-I) y **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 CrO₂ (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

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 **VR3** (CH-I) y **VR4** (CH-D).
6. Repetir el paso 2~5 de arriba hasta que la salida esté dentro del valor estándar.

Cassette Deck

DEUTSCH

RS-B555
RS-B655

MESSUNGEN UND EINSTELL METHODEN

Tonkopf-Azimuteinstellung

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 Lissajossche 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.

Einstellung der Wiedergabeverstärkungsregelung

1. Spielen Sie auf dem Testband (QZZCFM) den Teil für die Einstellung der Verstärkungsregelung (315Hz, 0dB) ab.
2. Stellen Sie **VR1** (L-K) [**VR2** (R-K)] so ein, daß die Abgabe den Normwert erfüllt.

Wiedergabefrequenzgang

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.5** gezeigten Bereich liegt.

Wechselstrom-Vorrichtungsmagnetisierungseinstellung

1. Das unbespielte Metalltestband (QZZCRZ) einlegen, und das Gerät auf Aufnahme Schalten.
2. **L1** (L-CH) (**L2** (R-CH)) so einstellen, daß die Ausgangsspannung zwischen **TP1** (**TP2**) und **GND** geringer als der Minimalwert ist.

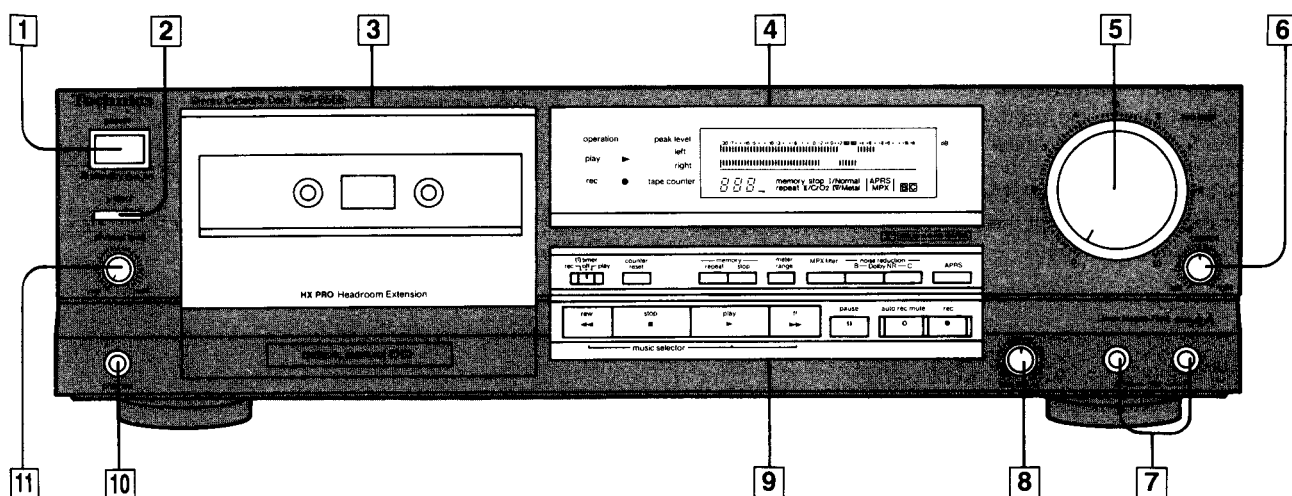
Gesamtfrequenzgang

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 Bazugsfrequenz (1 kHz) in dem in **Abb. 8** aufgezeichneten Bereich befindet.
6. Sollte das Signal nicht im Normbereich liegen, justieren Sie **VR301** (L-K) und **VR302** (R-K), so daß der Frequenzpegel mit der Norm übereinstimmt.
7. Wiederholen Sie die Schritte 2~6 und verwenden das CrO₂ 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

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 **VR3** (L-K) und **VR4** (R-K).
6. Wiederholen Sie die Schritte 2~5 von oben so lange, bis das Ausgangssignal im Normbereich liegt.

FRONT PANEL CONTROLS AND FUNCTIONS



1 Power "standby" switch (power "standby")

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 Eject button (▲ eject)

This button can be used to open the cassette holder.

3 Cassette holder

4 Display section

5 Recording-level control (rec level)

This control can be used to regulate the recording level and the peak level.

6 Recording-balance control (balance)

Use this control to balance the left and right sound levels during recording.

7 Microphone jacks (mic)

8 Bias-adjustment control (bias adjust)

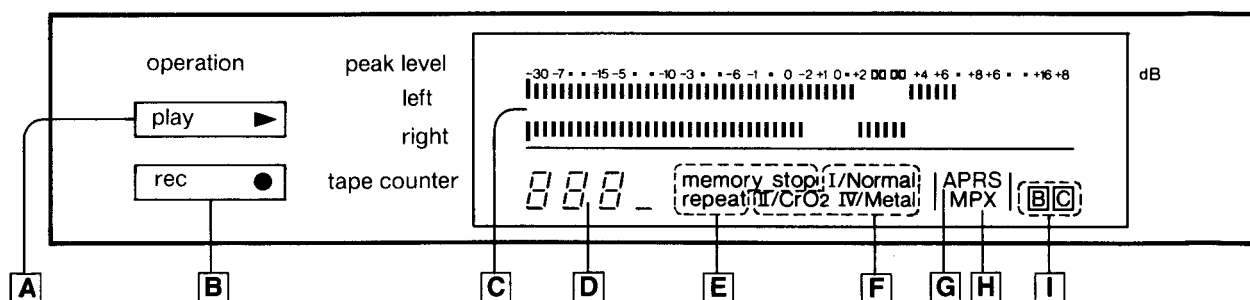
The frequency response for each tape type can be equalized by using this control.

9 Operation section

10 Headphones jack (phones)

11 Headphones volume control (phones level)

Display section



A Play back 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.

B Recording indicator (rec/○)

This indicator illuminates to indicate that this tape deck is in the recording stand-by mode, or is recording.

C Input level meter (peak level)

During playback, this meter indicates the level of the recorded sound. During recording, it indicates the level being recorded, adjusted by the recording-level control.

D Tape counter

Indicates the amount of tape movement.

E Memory-mode indicators (memory stop/repeat)

Each indicator illuminates to show which of the memory mode was set by the memory-mode buttons.

F Tape-select indicators

The type of tape being used will be automatically detected and the indicator will illuminate.

G APRS indicator (APRS)

Illuminates to indicate that the "APRS" is set to "on" in the recording stand-by mode.

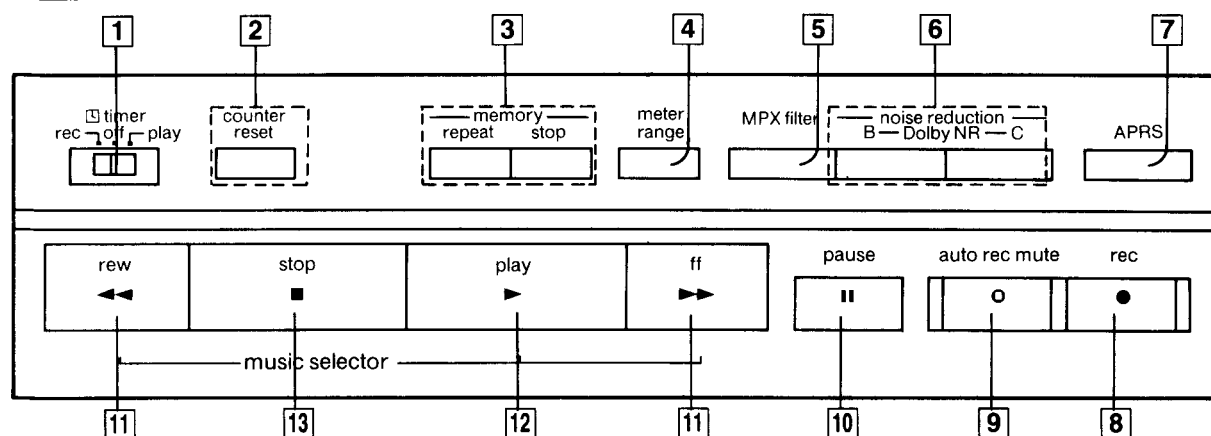
H Multiplex filter indicator (MPX)

Illuminates to indicate that the multiplex filter is set to "on".

I Dolby noise-reduction indicators (B, C)

Each indicator illuminates to show the type of Dolby noise-reduction system selected by pressing one of the Dolby noise-reduction buttons.

Operation section



1 Timer switch (timer)

This switch is used to automatically begin a tape recording or tape playback at a certain time, selected by a timer (not included).

2 Counter reset button (counter reset)

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

3 Memory-mode buttons (memory repeat/stop)

stop: This button can be used to rewind the tape to the preset "000" point when the rewind (◀◀) button is pressed.

repeat: This button can be used to set this unit to the "A-B repeat" mode.

4 Meter-range selector (meter range)

This selector can be used to select the meter-range display of the input level meter.

5 Multiplex filter switch (MPX filter)

This switch can be used during the recording of an FM stereo broadcast that employs Dolby noise reduction so as to prevent misoperation of the Dolby noise reduction.

6 Dolby noise-reduction buttons (noise reduction)

These buttons are used to reduce the hissing noise heard from the tape. This unit is provided with both the B-type and C-type noise-reduction systems.

7 APRS button (APRS)

This button can be used to hold the peak level while monitoring the input sound.

The "APRS" can only be used in the recording stand-by mode.

8 Record button (rec/●)

This button can be used to change the tape deck to the recording stand-by mode.

9 Automatic-record-muting button (auto rec mute/□)

This button can be used to make a silent interval on the tape being recorded on tape deck.

10 Pause button (pause/||)

This button can be used to temporarily stop the tape playback or recording of tape deck.

11 Rewind/fast-forward/search buttons (rew/◀◀/ff/▶▶)

These buttons can be used to fast forward or rewind the tape, or to easily search for the tune's beginning of the tape quickly.

12 Playback button (play/▶)

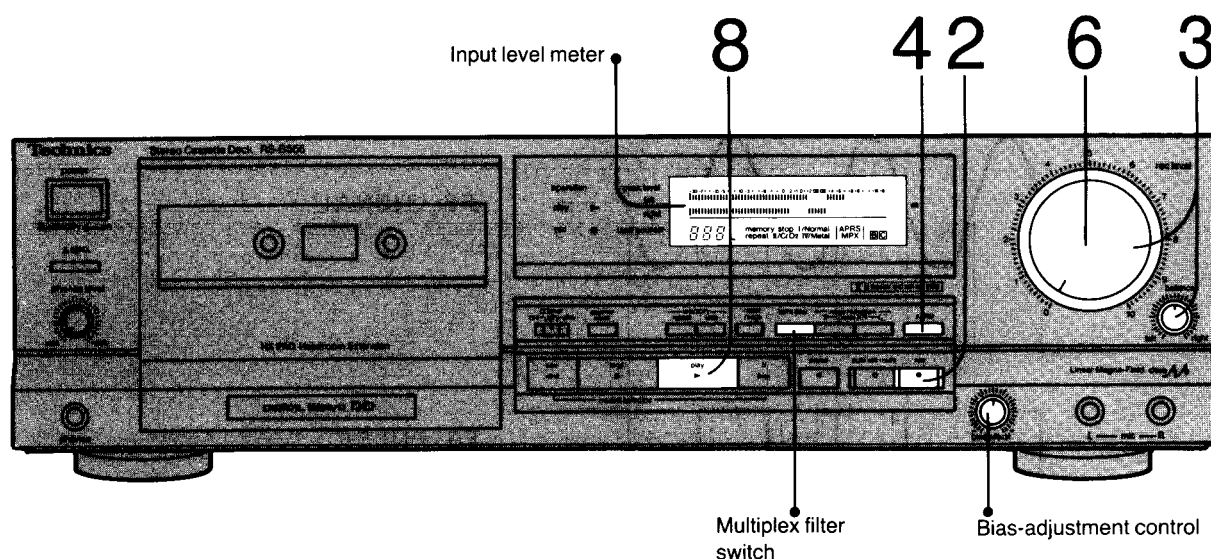
This button can be used to start the playback or recording of the cassette.

(The tape will then begin moving in the left-to-right direction.)

13 Stop button (stop/■)

This button can be used to stop tape movement.

RECORDING WITH HIGH TONE QUALITY



APRS function

Because the dynamic range of cassette tape is narrower than the dynamic range of a digital source, the recording will be too noisy if the recording level setting is too low, and, conversely, the recorded sound will be distorted if the setting is too high.

It was for this reason that it has always been recommended that the signals to be recorded be first (before recording) input to the cassette deck and the recording level then be set while watching the level meter, but, for former conventional level meter equipped with the peak-hold function, it was necessary to re-adjust and input the signals again if the level setting was too high or too low.

This unit, however, is equipped with the **APRS: Advanced Precise Recording-level System**, which holds and displays the maximum peak of the input signal level, so that once the peak level of the source is held, there is no necessity to re-input the source signals, and the optimum recording level can be set.

•The APRS function can be used only during the recording-standby mode.

1 Prepare for recording as described in steps 1 to 6 of the "Recording" section.

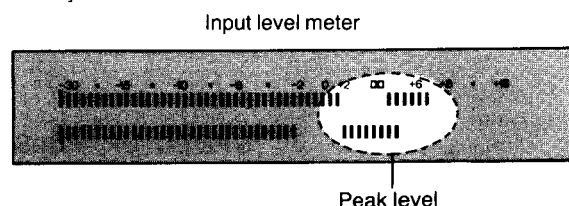
2 **rec**
Press the record button.
(The recording indicator will illuminate and the playback indicator will flash continuously; the unit will be in the recording stand-by mode.)

3 **rec level** / **balance**
Set the recording-level control and the recording-balance control to the suitable position for the sound source.

4 **APRS**
Press the APRS button.
(The APRS indicator will illuminate.)

5 Play the sound source to be recorded, from beginning to end.

[The peak level (the highest level of the input signal) of the sound source will be displayed and held on the input-level meter.]



Note:

The range within which the peak level can be held is -8 dB to $+16$ dB. Note that the APRS indicator will flash continuously if the peak level of the sound source is input at a level that exceeds the maximum recording level ($+16$ dB).

If that happens, press the APRS button to cancel the APRS function, and then reset the recording level and set the APRS once again.

Also note that the peak level cannot be held to less than -8 dB.

6 **rec level**
Using the recording-level control, adjust the peak level to the desired setting.

The peak level will move to the right when the recording-level control is turned to the right, and will move to the left when the recording-level control is turned to the left.

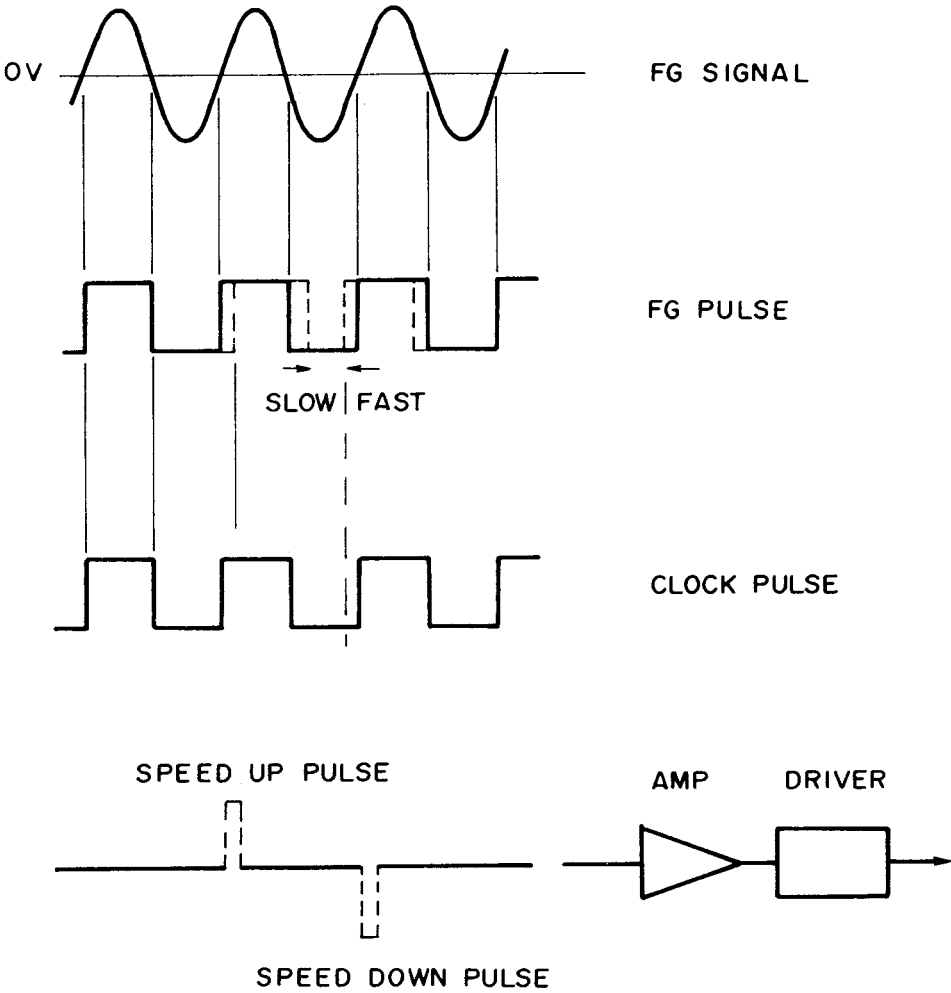
•The recording-balance control cannot be used to adjust the peak level.

7 **Begin playing the sound source from the beginning once again.**

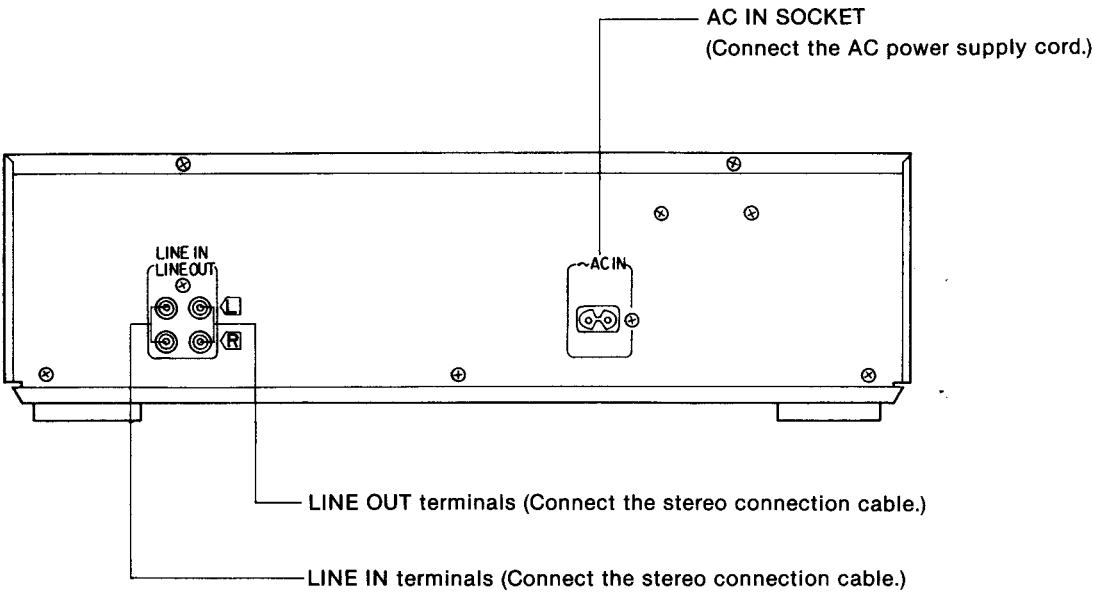
8 **play**
Press the playback button.
(The playback indicator will illuminate steadily, and the recording will begin.)
The APRS indicator will switch OFF, and the indication of the input-level meter will return to the ordinary peak-hold mode.

■ OUTLINE OF THE DIRECT DRIVE MOTOR SYSTEM

The capstan motor is actuated by the DD motor digital servo system. The FG pulse is generated after the detection of the zero crosspoint, and the reference signal generated from the quartz oscillator is compared with this FG pulse. From this comparison, the accelerated and reduced speed pulses are generated, causing the driving coil to function.



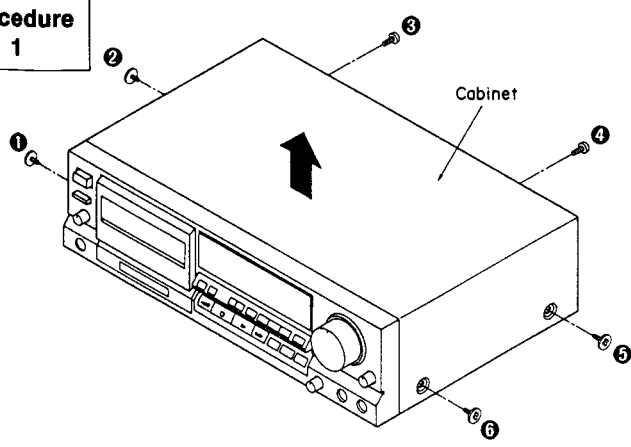
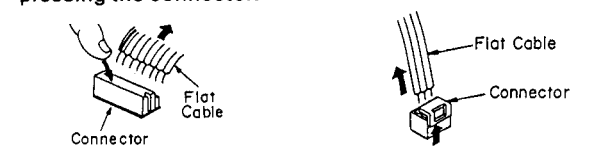
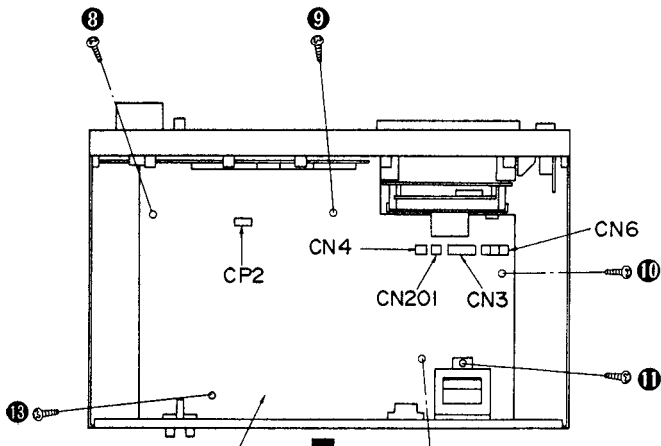
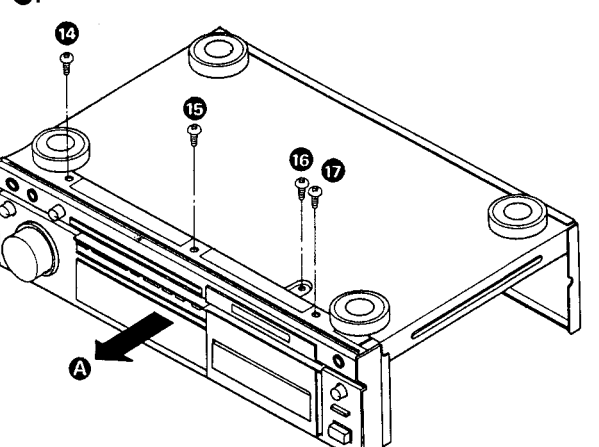
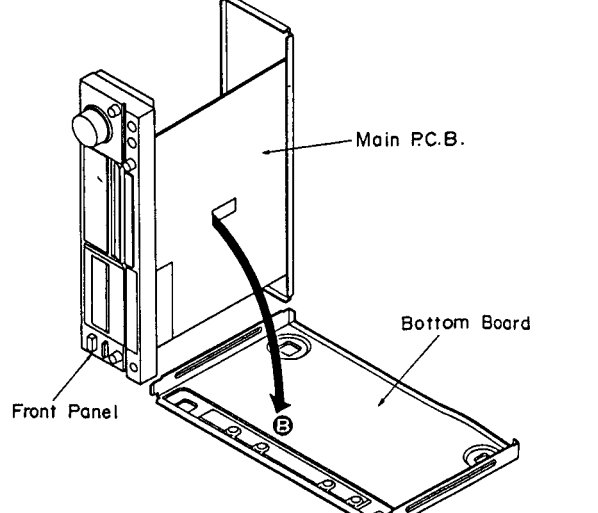
■ CONNECTIONS



DISASSEMBLY INSTRUCTIONS

"ATTENTION SERVICER"

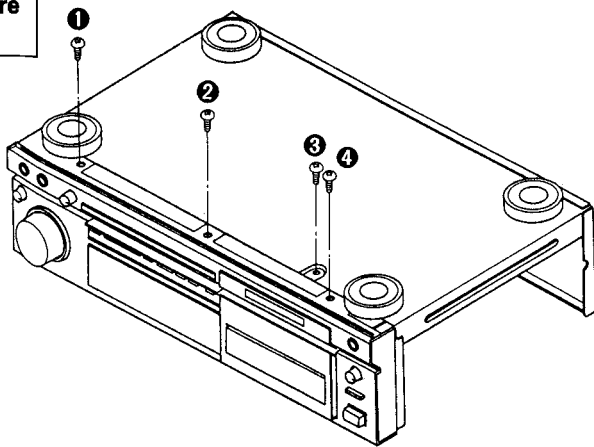
Some chassis components may have sharp edges. Be careful when disassembling and servicing.

Ref. No. 1	Removal of the cabinet	Ref. No. 2	Removal of the main P.C.B.
Procedure 1	 • Remove the 6 screws (①~⑥).	Procedure 1→2	1. Remove the 7 screws (①~⑦). 2. Remove the rear panel from the projection of the bottom chassis.
	3. Remove the 6 screws (⑧~⑬). 4. Remove the 1 connector (CP2). 5. Remove the 4 flat cables (CN3, CN4, CN6, CN201). 6. Remove the main P.C.B. in the direction of the arrow. How to remove the flat cable • Pull out the flat cable while pressing the connector. 1. Lift the connector. 2. Pull out the flat cable. 		
	How to check the main P.C.B. • When checking the soldered surfaces of main P.C.B. and replacing the parts, do as show. 1. Remove the 9 screws (①, ③, ⑦~⑬) in above figure. 2. Remove the 4 screws (⑭~⑰). 3. Remove the front panel in the direction of the arrow A. 		4. Remove the bottom board in the direction of the arrow B. 5. Reinstall the front panel to the main P.C.B. 

Ref. No.
3

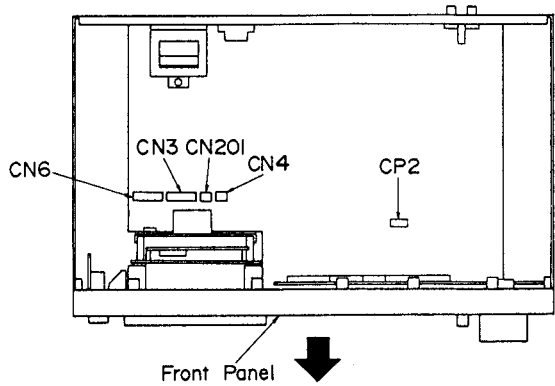
Removal of the front panel

Procedure
1→3



1. Remove the 4 screws (①~④).

2. Remove the 1 connector (CP2).
3. Remove the 4 flat cables (CN3, CN4, CN6, CN201).

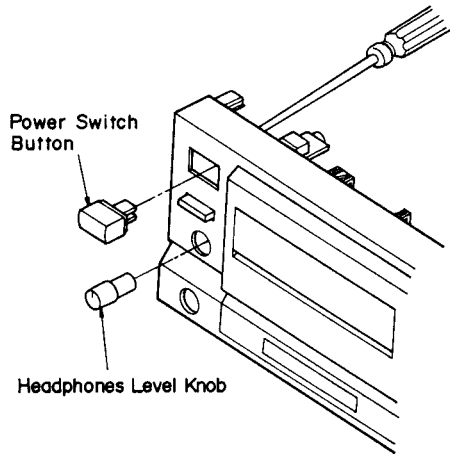


4. Remove the front panel in the direction of the arrow.

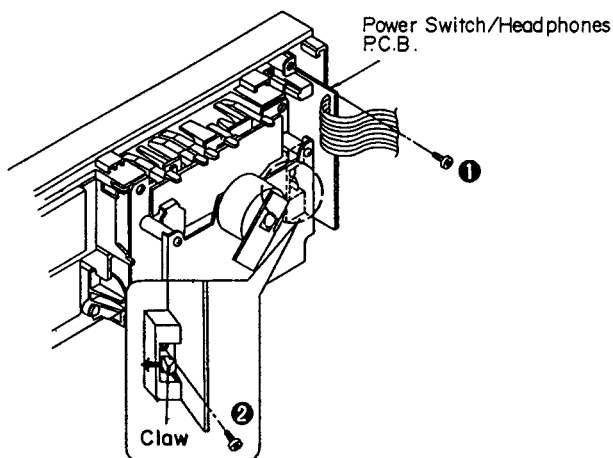
Ref. No.
4

Removal of the power switch/ headphones P.C.B.

Procedure
1→3→4



1. Remove the power switch button by pushing it from behind the front panel.
2. Pull out the headphones level knob.

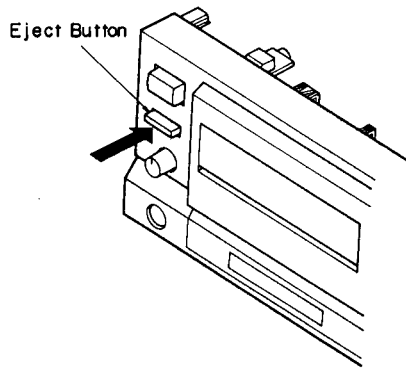


3. Remove the 2 screws (①~②).
4. Release the 1 claw.

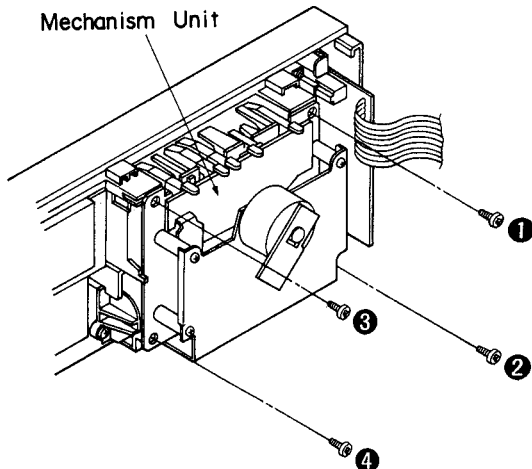
Ref. No.
5

Removal of the mechanism unit

Procedure
1→3→5

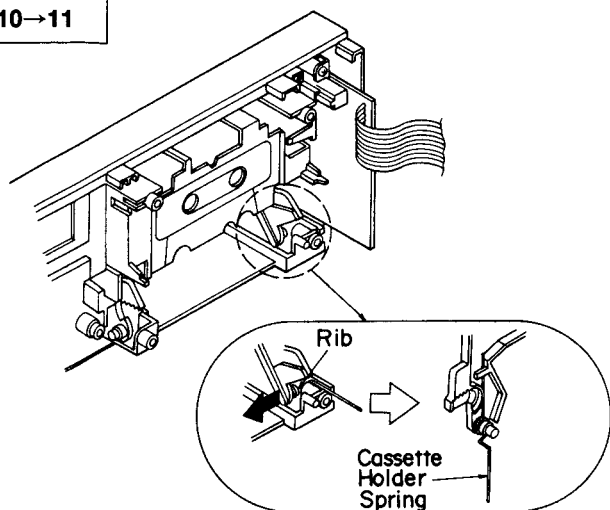


1. Push the eject button.

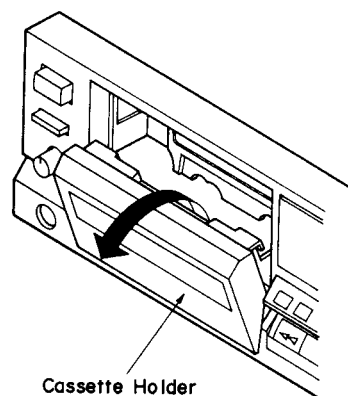
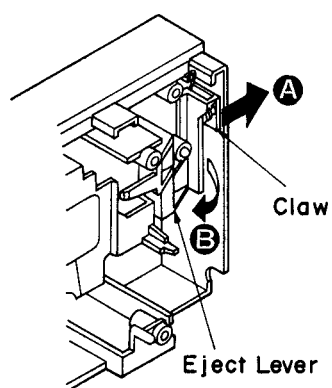


2. Remove the 4 screws (①~④).

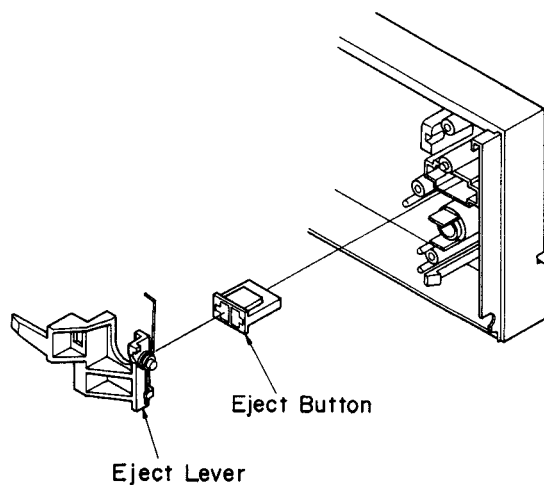
Ref. No. 6	Removal of the FL drive P.C.B.	FL Drive P.C.B. Claw 1 2 3 4 5 6	
Procedure 1→3→6	Knobs 1. Pull out the 2 knobs. 2. Remove the 6 screws (1~6). 3. Release the 2 claws. 4. Remove the FL drive P.C.B. in the direction of the arrow.		
Ref. No. 7	Removal of the mic jack P.C.B.	Ref. No. 8	Removal of the rec level P.C.B.
Procedure 1→3→6→7	Mic Jack P.C.B. • Remove the mic jack P.C.B. in the direction of the arrow. Rec Level Knob Nut Rec Level P.C.B. 1. Pull out the rec level knob. 2. Remove the 1 nut.		
Ref. No. 9	Removal of the operation P.C.B.	Ref. No. 10	Removal of the damper gear
Procedure 1→3→6→9	Claws Operation P.C.B. Claw 1 2 3 4 1. Remove the 4 screws (1~4). 2. Release the 4 claws. Damper Gear 1 • Remove the 1 screw (1).		

Ref. No.
11**Removal of the cassette holder**Procedure
10→11

1. Remove the rib in the direction of the arrow.
2. Remove the cassette holder spring.
3. Pull out the cassette holder in the direction of the arrow.

Ref. No.
12**Removal of the eject lever and eject button**Procedure
1→3→4→5→12

1. Push the claw in the direction of the arrow A.
2. Remove the eject lever in the direction of the arrow B.



3. Pull out the eject button.

MEASUREMENT AND ADJUSTMENT METHODES

Measurement Condition

- Rec. level control; Maximum
- Timer switch; Off
- MPX filter switch: off
- Bias-adjustment VR: Center

- 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

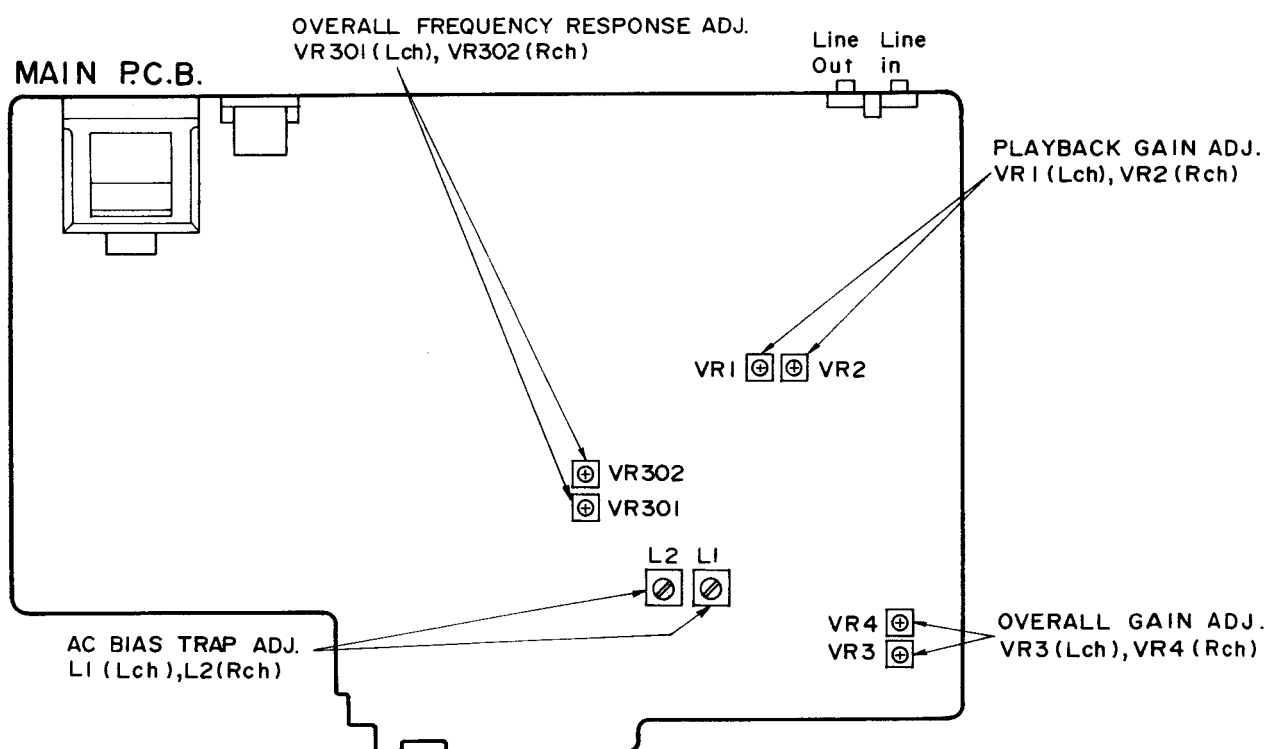
- ATT (Attenuator)
- DC voltmeter
- Resistor (600Ω)

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
CrO₂ reference blank tape; QZZCRX
Metal reference blank tape; QZZCRZ

Adjustment Points



HEAD AZIMUTH ADJUSTMENT

1. Playback the azimuth adjustment portion (8 kHz, -20 dB) 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.

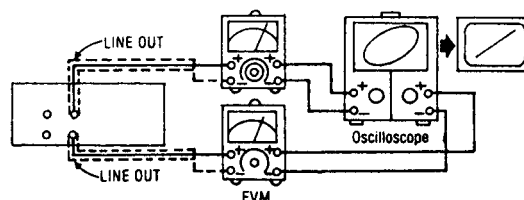
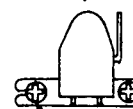


Fig. 1

Record/Playback Head



Azimuth Screw

Fig. 2

PLAYBACK GAIN ADJUSTMENT

1. Playback the gain adjusted portion (315 Hz, 0 dB) of the test tape (QZZCFM).
2. Adjust VR1 (L-CH) and VR2 (R-CH) so that the output is within the standard value.

Standard value: $0.4V \pm 0.5dB$

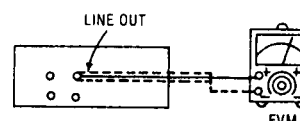


Fig. 3

PLAYBACK FREQUENCY RESPONSE

1. Playback the frequency response portion (315 Hz, 12.5 kHz ~ 63 Hz, -20 dB) 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.

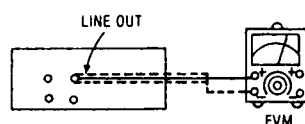


Fig. 4

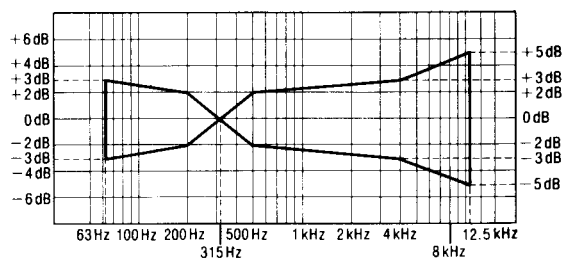
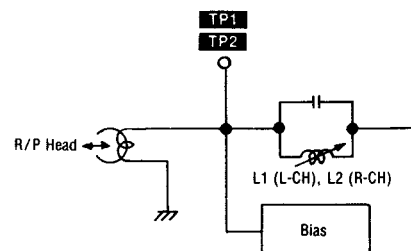


Fig. 5

AC BIAS TRAP ADJUSTMENT

1. Insert the Metal blank test tape (QZZCRZ) and set the unit to the Record mode.
2. Adjust L1 (L-CH) [[L2 (R-CH)]] so that the output voltage between TP1 (TP2) and GND is less than the minimum value.



OVERALL FREQUENCY RESPONSE

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 VR301 (L-CH) and VR302 (R-CH) so that the frequency level is within the standard range.
 - Level up in high frequency rangeIncrease the bias current.
 - Level down in high frequency range ...Decrease the bias current.
7. Repeat steps 2~6 above using the CrO₂ 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.

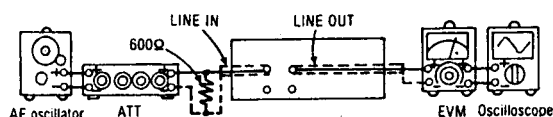


Fig. 10

Normal Overall frequency response chart (NR OUT)

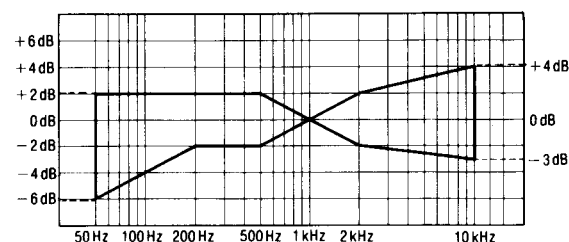


Fig. 8

CrO₂ Metal Overall frequency response chart (NR OUT)

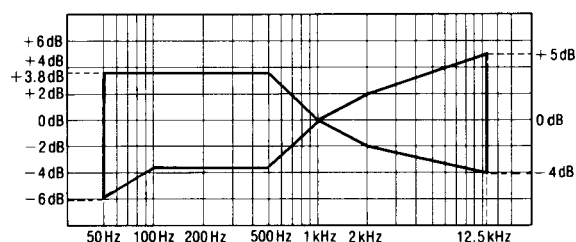


Fig. 9

OVERALL GAIN ADJUSTMENT

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 VR3 (L-CH) and VR4 (R-CH).
6. Repeat the step 2~5 above until the output is within the standard value.

Standard value: $0.4V \pm 0.5dB$

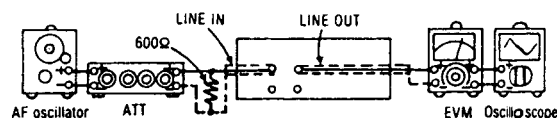


Fig. 11

■ TERMINAL FUNCTION OF IC'S

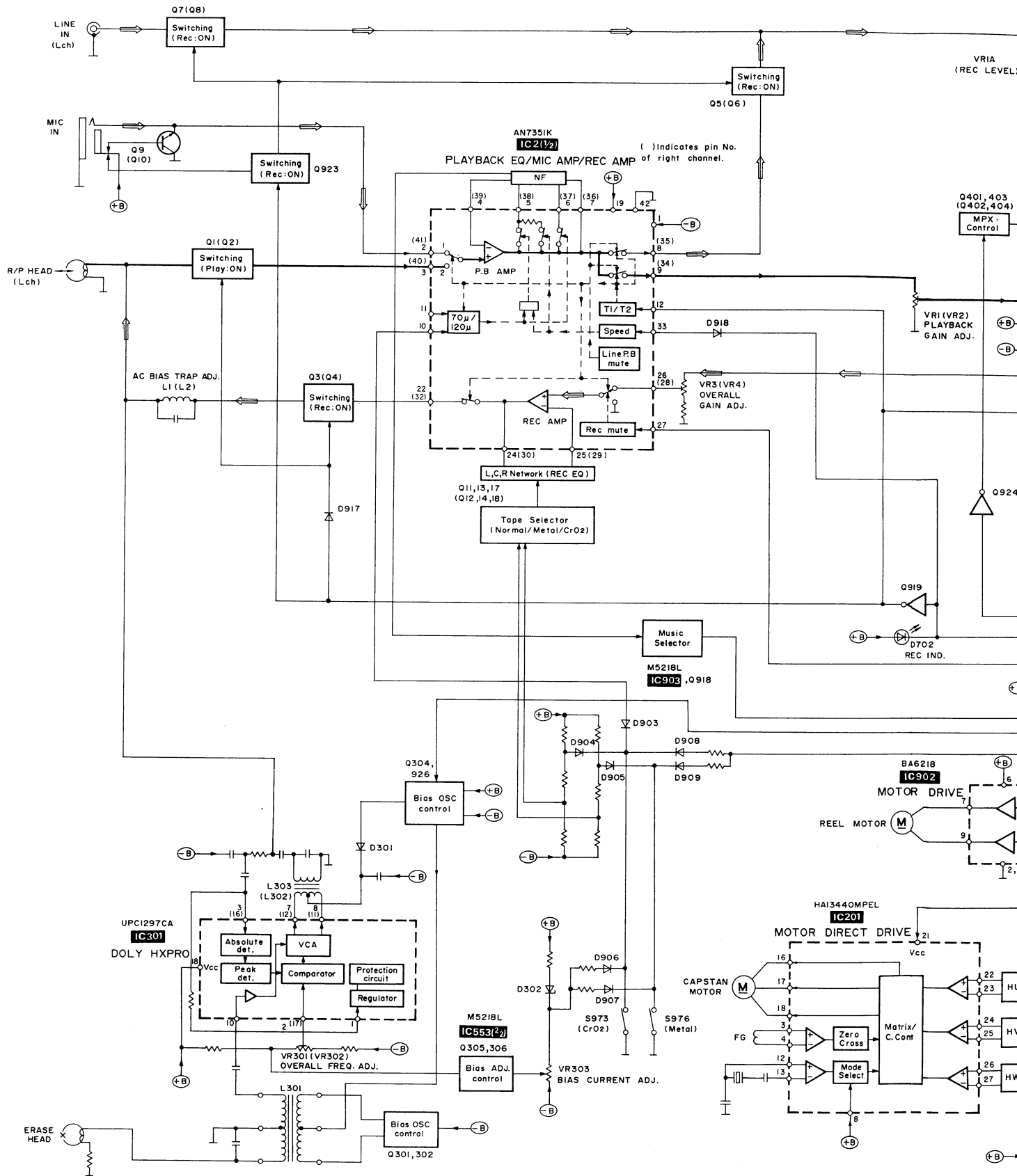
• IC901 (MB88511-224N): MICROCOMPUTER (This microcomputer is used for mechanical operation.)

Pin No.	Mark	I/O Division	Function	Pin No.	Mark	I/O Division	Function
1	DMT	O	Line out mute signal ("H"...ON, "L"...OFF)			I	CD direct operation det. signal
2	RMT	O	REC AMP mute signal ("H"...ON, "L"...OFF)	22	DIRECT	O	CD direct/LINE input select control signal ("H"...CD DIRECT, "L"...LINE INPUT)
3	BOS	O	BIAS OSC ON/OFF control signal ("H"...OFF, "L"...ON)	23	C	O	Dolby NR mode select signal
4	REC	O	REC LED ON/OFF control signal ("H"...OFF, "L"...ON)	24	B		NR OFF Dolby B Dolby C dbx
5	PLAY	O	PLAY LED ON/OFF control signal ("H"...OFF, "L"...ON)				
6	EJECT F	O	Power eject motor open control signal ("H"...OPEN, "L"...CLOSE/STOP)	25	MPX	O	MPX coil ON/OFF control signal ("H"...MPX OFF, "L"...MPX ON)
7	EJECT R	O	Power eject motor close control singnal ("H"...CLOSE, "L"...OPEN/STOP)	26	T/S	I	Two head/Three head select signal ("H"...THREE HEAD, "L"...TWO HEAD)
8	CAPM	O	Capstan motor ON/OFF control signal ("H"...OFF (POWER OFF or ABNORMAL CONDITION), "L"...ON)			O	Tape/Source monitor select control ("H"...TAPE MONITOR, "L"...SOURCE MONITOR)
9	SOL1	O	Trigger solenoid ON/OFF control signal ("H"...OFF, "L"...ON)	27	HALF	I	Cassette half det. SW terminal ("L"...ON)
10	SOL2	O	Brake solenoid ON/OFF control signal ("H"...OFF, "L"...ON)	28	MODE	I	Mechanism mode SW terminal
11	SOL2C	O	Brake solenoid hold ON/OFF control signal ("H"...OFF, "L"...ON (FF/REW/MS)	29	ARM	I	Auto Rec Mute key signal ("L"...PUSH)
12	RP (REEL PULSE)	I	Reel pulse signal	30	AVss	—	Connected to GND
13	RMR	O	Reel motor reverse control signal ("H"...REW, "L"...STOP/PLAY/FF)	31	AVR	—	Connected to GND
14	RMF	O	Reel motor foward control signal ("H"...FF/PLAY, "L"...STOP/REW)	32	AVcc	—	Power supply terminal
15	OSC	I	Single capstan/Dual capstan select signal ("H"...DUAL CAPSTAN, "L"...SINGLE CAPSTAN)	33	KEY 1	I	Key SW input (STOP/FF REW/PLAY/REC/PAUSE/ dbx/C/B/MPX/TIMER REC/TIMER PLAY)
		O	Calibration OSC circuit ON/OFF control signal ("H"...OFF, "L"...ON)	34	KEY 2	I	Key SW input (MEMORY REPEAT/MEMORY STOP/EJECT/MONITOR/CD DIRECT/ OSC/TEST/REMOTE A/B)
16	Ex	I	Clock OSC terminal (6 MHz)	35	ATS	I	Auto Tape Select SW input (ATSC/ATSM/EJECT OPEN LEAF SW)
17	X	O		36	INH	I	REC INH SW input (REC INH/EJECT MOTOR LEAF SW)
18	RES	I	Reset signal ("L"...RESET)	37	B555	I	Connected to GND
19	OSCF	O	Calibration OSC circuit (400 Hz/10 kHz) select signal ("H"...HIGH FREQ. (10 kHz), "L"...LOW FREQ. (400 Hz)	38	DISP	O	Serial data signal of FL display (ACTIVE: "H")
20	POF	I	AC POWER detect signal	39	MSP	I	Music select det. signal ("H"...NO SIGNAL, "L"...ON SIGNAL)
21	Vss	—	GND	40	MEMORY PULSE	I	Memory Pulse signal
				41	REMOCON	I	Remote control serial data ("L" for 50ms. with counter "0000")
				42	Vcc	—	Power supply terminal

• IC551 (HD404302SA07): MICROCOMPUTER (This microcomputer is used for FL meter operation.)

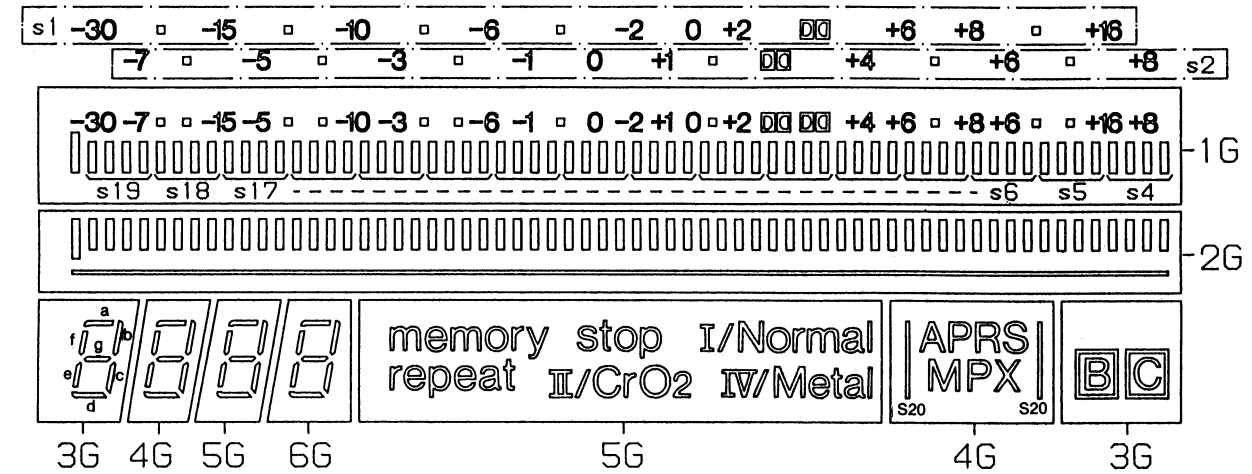
Pin No.	Mark	I/O Division	Function	Pin No.	Mark	I/O Division	Function
1	S5	O	Segment signal for FL display	22	AVcc	—	Power supply terminal
2	S6	O		23	VR IN	I	Rec level control (VR MAX...+5V)
3	S7	O		24	F IN	I	Function key terminal (COUNTER RESET/COUNTER MODE/APRS)
4	Vdisp	—	Pull down power supply terminal (—Vcc)	25	SIG L	I	LCH level signal
5	S8	O	Segment signal for FL display	26	SIG R	I	RCH level signal
6	S9	O		27	AVss	—	Connected to GND
7	S10	O		28	RESET	I	Reset terminal (with Reset: "H")
8	S11	O		29	TEST	I	Test terminal
9	S12	O		30	OSC 1	O	Clock OSC terminal (4 MHz)
10	S13	O		31	OSC 2	I	
11	S14	O		32	Vcc	I	Power supply terminal
12	S15	O	Grid signal for FL display	33	G1	O	Grid signal for FL display
13	S16	O		34	G2	O	
14	S17	O		35	G3	O	
15	S18	O		36	G4	O	
16	S19	O		37	G5	O	
17	RPT	I	Reel pulse signal of tape up reel	38	G6	O	Segment signal for FL display
18	RPS	I	Reel pulse signal of supply reel	39	S1	O	
19	MP	O	Memory pulse signal ("L" for 50ms. with counter "0000")	40	S2	O	
20	DISP	I	Serial data signal (ACTIVE: "H")	41	S3	O	
21	GND	—	GND terminal	42	S4	O	

■ BLOCK DIAGRAM



INTERNAL CONNECTION OF FL

• Grid connection diagram

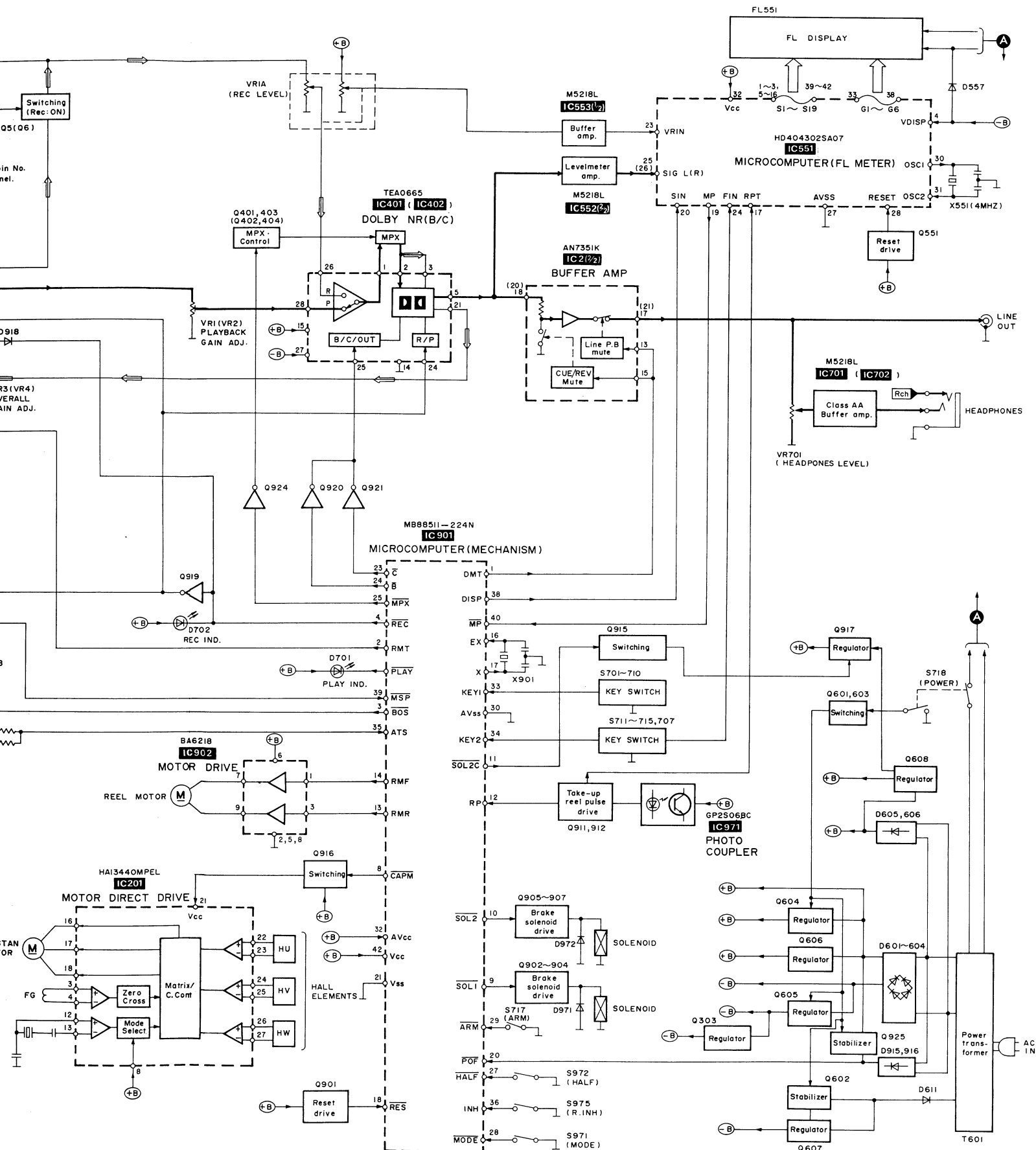


• Anode connection table

	1G	2G	3G	4G	5G	6G
S1	S1	-	-	APRS	-	-
S2	S2	-	-	-	-	-
S3	-	-	-	-	-	-
S4			-	-	-	-
S5			-	-	-	-
S6			-	-	memory	-
S7			-	-	repeat	-
S8			-	-	stop	-
S9			B	-	-	-
S10			C	-	I /Normal	-
S11			-	MPX	II /CrO ₂	-
S12			-	-	IV /Metal	-
S13			a	a	a	a
S14			b	b	b	b
S15			f	f	f	f
S16			g	g	g	g
S17			c	c	c	c
S18			e	e	e	e
S19			d	d	d	d
S20 (dB)			-		-	-

• Pin connection

PIN NO.	35	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 2	F 2	N P	N P	S 19	S 18	S 17	S 16	S 15	S 14	S 13	S 12	S 11	S 10	S 9	S 8	S 7	S 6	S 5	S 4	N C	S 2	S 1	N C	6 G	5 G	4 G	3 G	2 G	1 G	S 20	N P	N P	F 1	F 1



Notes
• Playback signal
• Recording signal

SCHEMATIC DIAGRAM

(Parts list on pages 34, 35, 42~44.)

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

Notes:

- S701 : Stop switch (stop) in "off" position.
- S702 : F.F. switch (ff) in "off" position.
- S703 : Rew switch (rew) in "off" position.
- S704 : Playback switch (Play) in "off" position.
- S705 : Record switch (rec) in "off" position.
- S706 : Pause switch (pause) in "off" position.
- S707 : Dolby noise-reduction switch (Dolby NRC) in "off" position.
- S708 : Dolby noise-reduction switch (Dolby NR B) in "off" position.
- S709 : Multiplex filter switch (MPX filter) in "off" position.
- S710 : Timer switch (timer) in "off" position.
- S711 : Counter reset switch (counter reset) in "off" position.
- S713 : Meter range switch (meter range) in "off" position.
- S714 : Memory mode switch (memory repeat) in "off" position.
- S715 : Memory mode switch (memory stop) in "off" position.
- S716 : APRS switch (APRS) in "off" position.
- S717 : Automatic-record-muting switch (auto rec mute) in "off" position.

- S718 : Power switch (standby ϕ / on) in "on" position.
- S971 : Mode switch in "off" position.
- S972 : Cassette half detection switch in "off" position.
- S973 : ATS (CrO₂) switch in "off" position.
- S975 : Rec Inhibit switch in "off" position.
- S976 : ATS (Metal) switch in "off" position.

• Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.

1K=1,000 (Ω), 1M=1,000k (Ω)

• Capacity are in micro-farads (μ F) 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.

• ($\text{---} < +B > \text{---}$) indicates +B (bias).

• ($\text{---} < -B > \text{---}$) indicates -B (bias).

• ($\text{---} < \text{PLAYBACK SIGNAL} > \text{---}$) indicates the flow of the playback signal.

• ($\text{---} < \text{RECORD SIGNAL} > \text{---}$) 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.

A

B

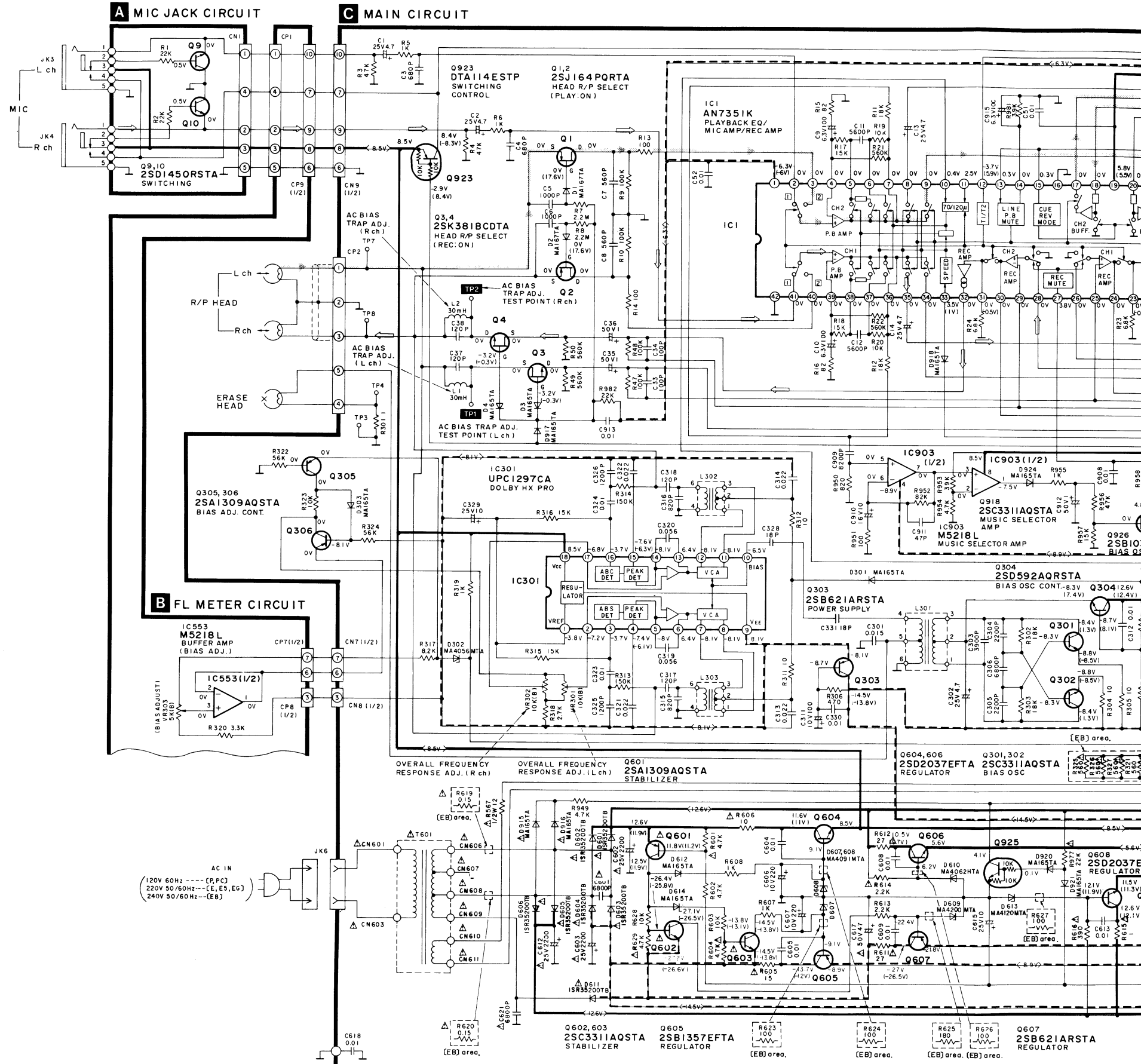
C

D

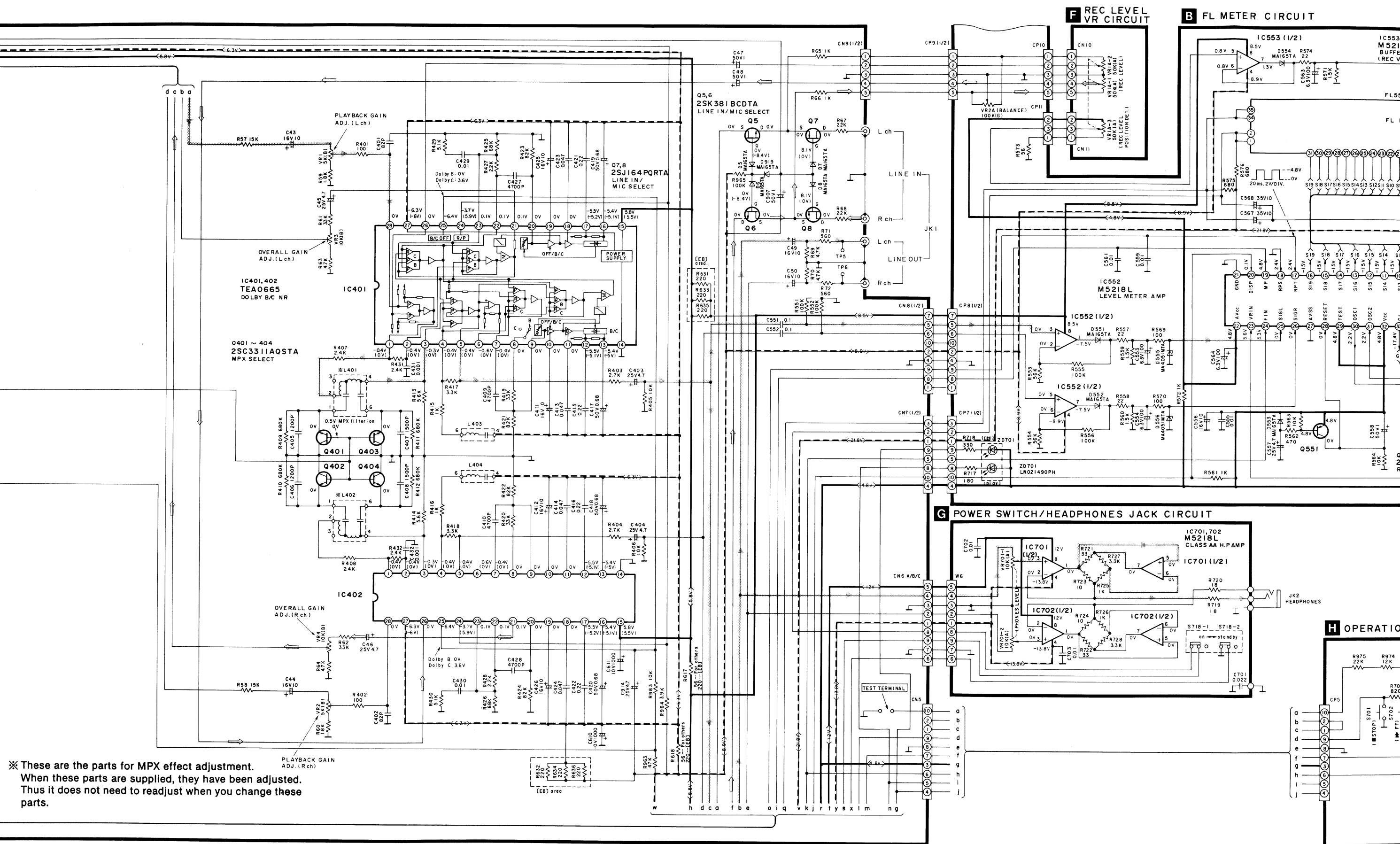
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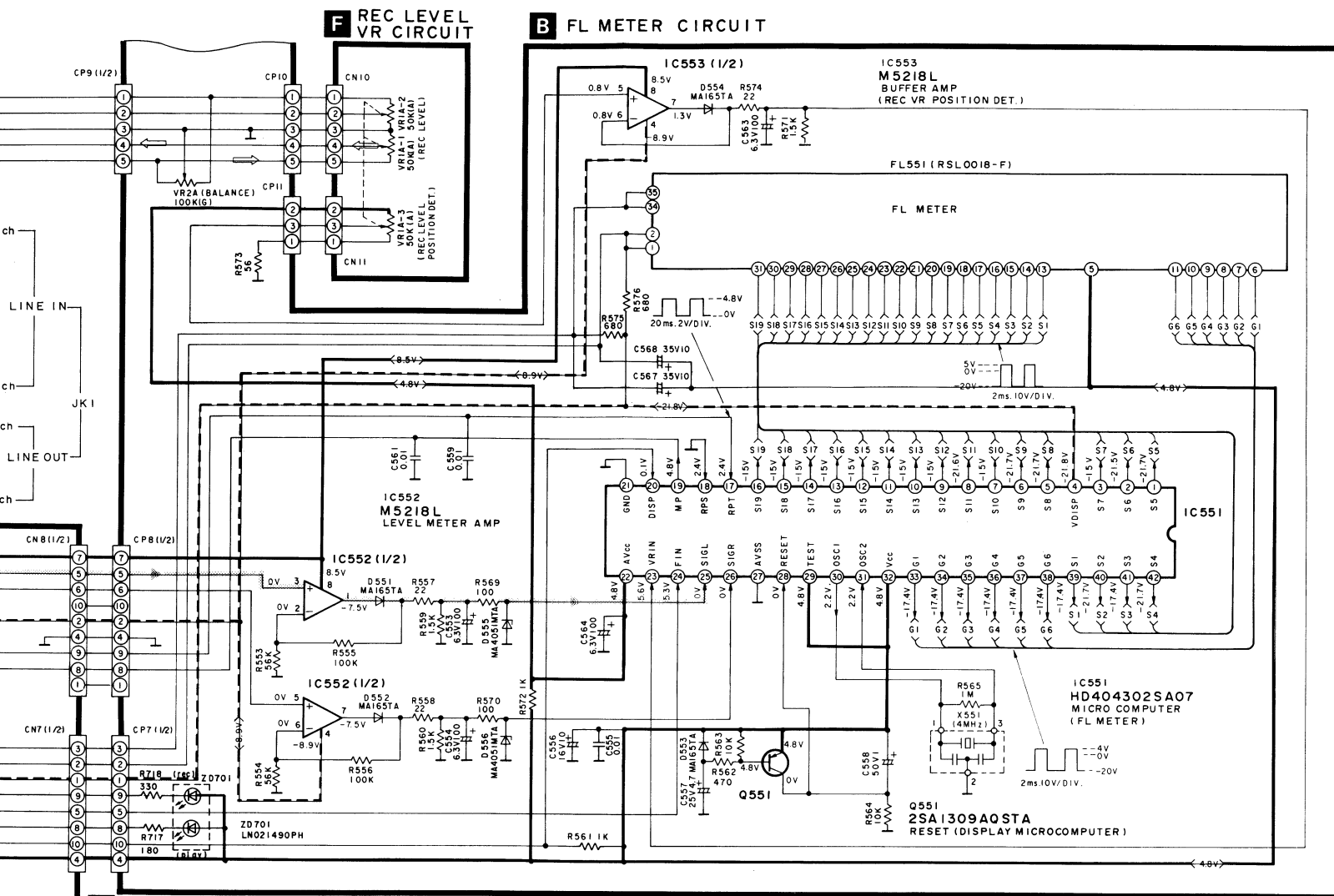
F

G





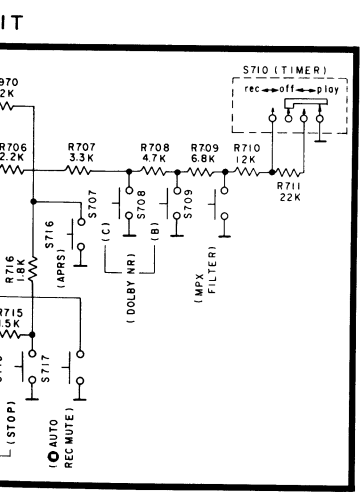
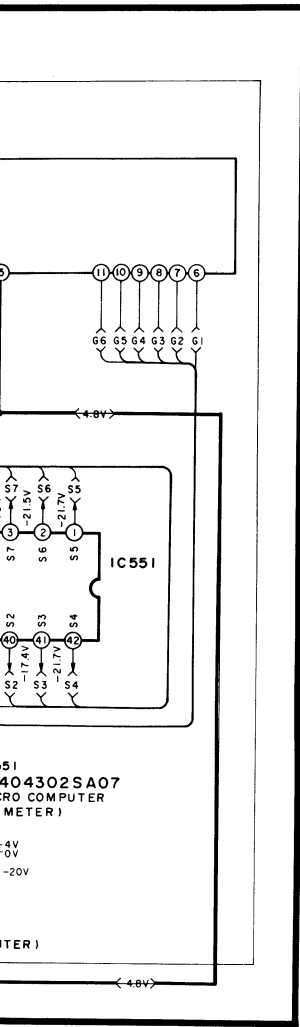




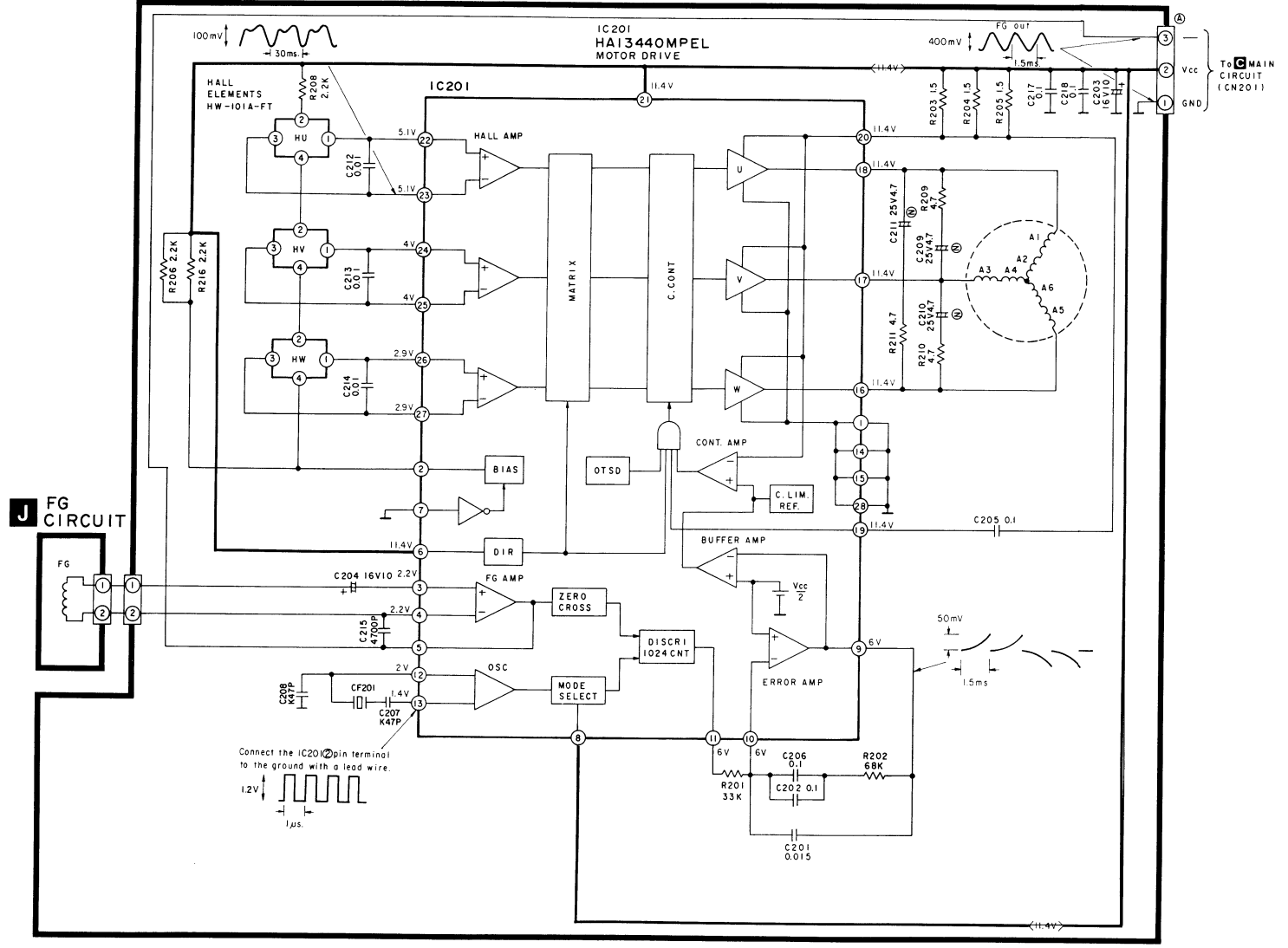
■ TROUBLESHOOTING OF DIRECT DRIVE

Problem	Possible Cause
1. The motor does not rotate.	1. No power supply (+12V) 2. The Hall element has failed (Current does not flow). 3. The ceramic (or crystal) does not oscillate.
2. The motor does not rotate properly. (When pressed, it stops at certain angles. Sometimes it does not rotate even if power is ON.)	1. The coil is broken or not properly soldered. 2. Output of the Hall element is not proper.
3. The motor is out of control.	1. The FG coil is broken.
4. Abnormal wow	1. Same as those described for problem 2.

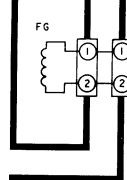
Note: Check the points marked with an asterisk (*) by removing the DD pin ② to GND with a lead wire. (After the DD motor control P.C.B. the coil, heating the IC.)



I CAPSTAN MOTOR(D.D) CIRCUIT



J FG CIRCUIT



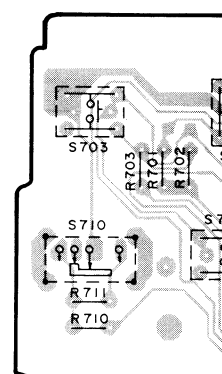
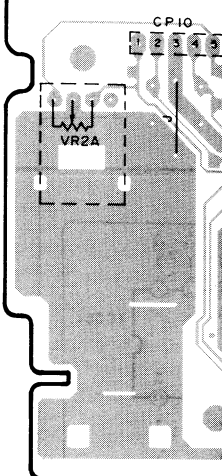
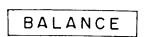
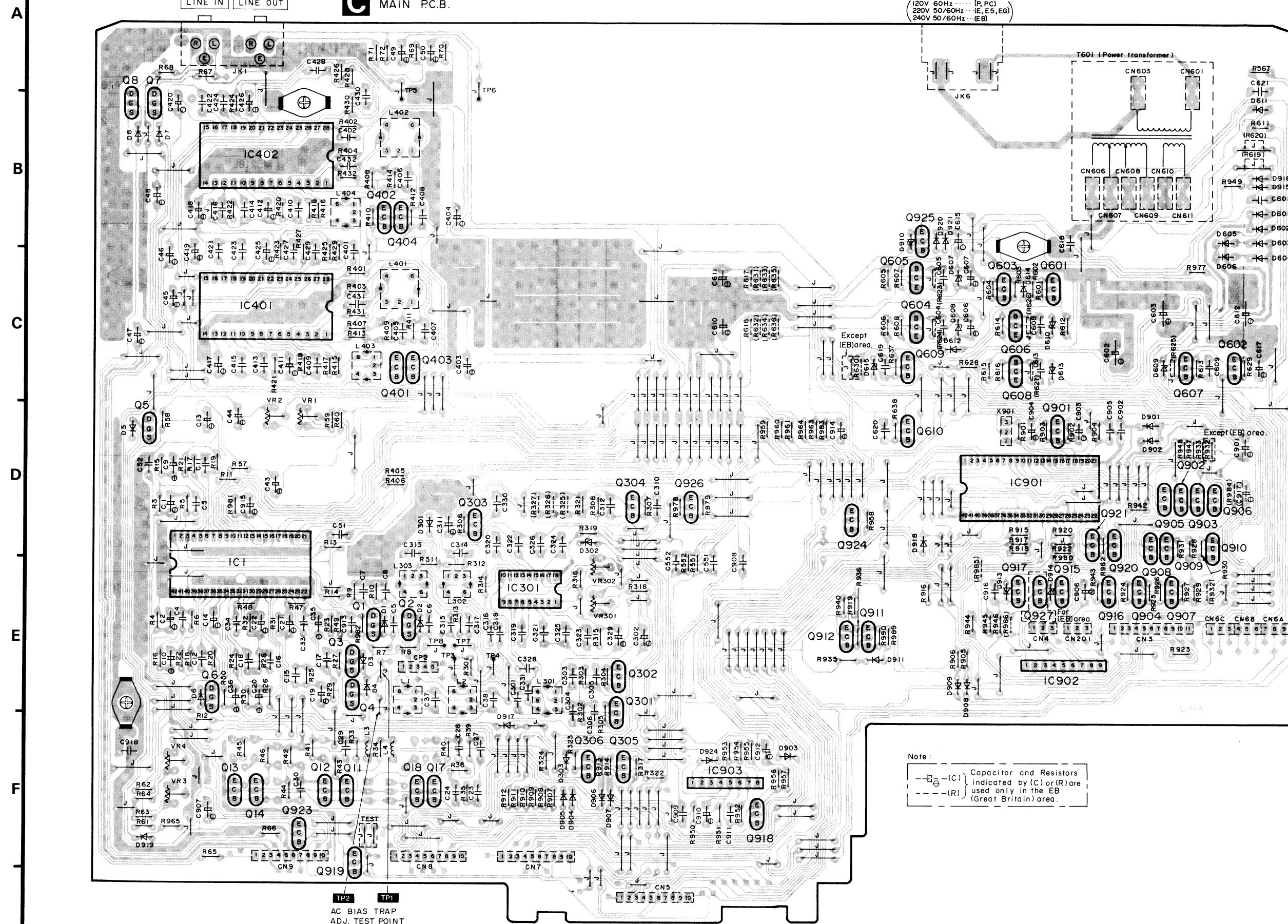
TROUBLESHOOTING OF DIRECT DRIVE MOTOR

Problem	Possible Cause	Check Points
1. The motor does not rotate.	1. No power supply (+12V) 2. The Hall element has failed (Current does not flow). 3. The ceramic (or crystal) does not oscillate.	• Check the voltage applied to the connector. • Check the DC potential on IC pins 22~27. * Check the waveform of IC pin 13.
2. The motor does not rotate properly. (When pressed, it stops at certain angles. Sometimes it does not rotate even if power is ON.)	1. The coil is broken or not properly soldered. 2. Output of the Hall element is not proper.	* Check the conductance of the coil. If normal, the resistances between IC pins 16~17, 17~18, 16~18 will reach 20 ohms. • Check the waveform of IC pins 22~27.
3. The motor is out of control.	1. The FG coil is broken.	• Check the waveform of IC pin 5. • Check if the FG coil is broken.
4. Abnormal wow	1. Same as those described for problem 2.	

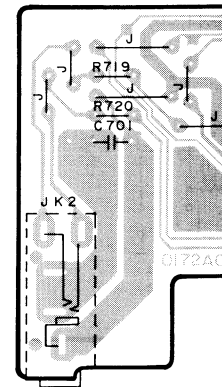
Note: Check the points marked with an asterisk (*) by removing the DD motor control P.C.B. and then connecting IC pin 2 to GND with a lead wire. (After the DD motor control P.C.B. is removed, current will start flowing through the coil, heating the IC.)

TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

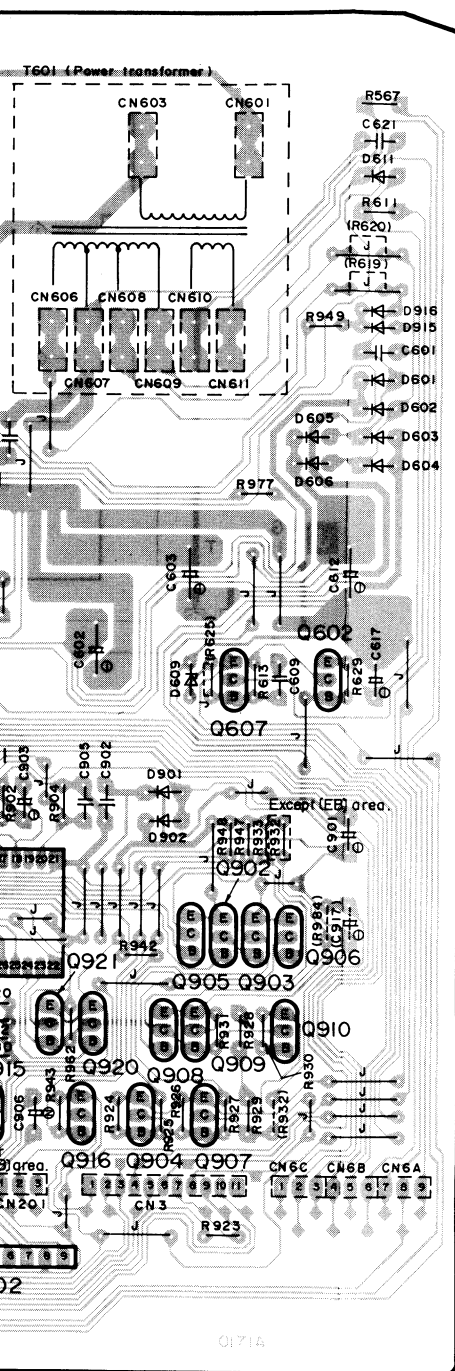
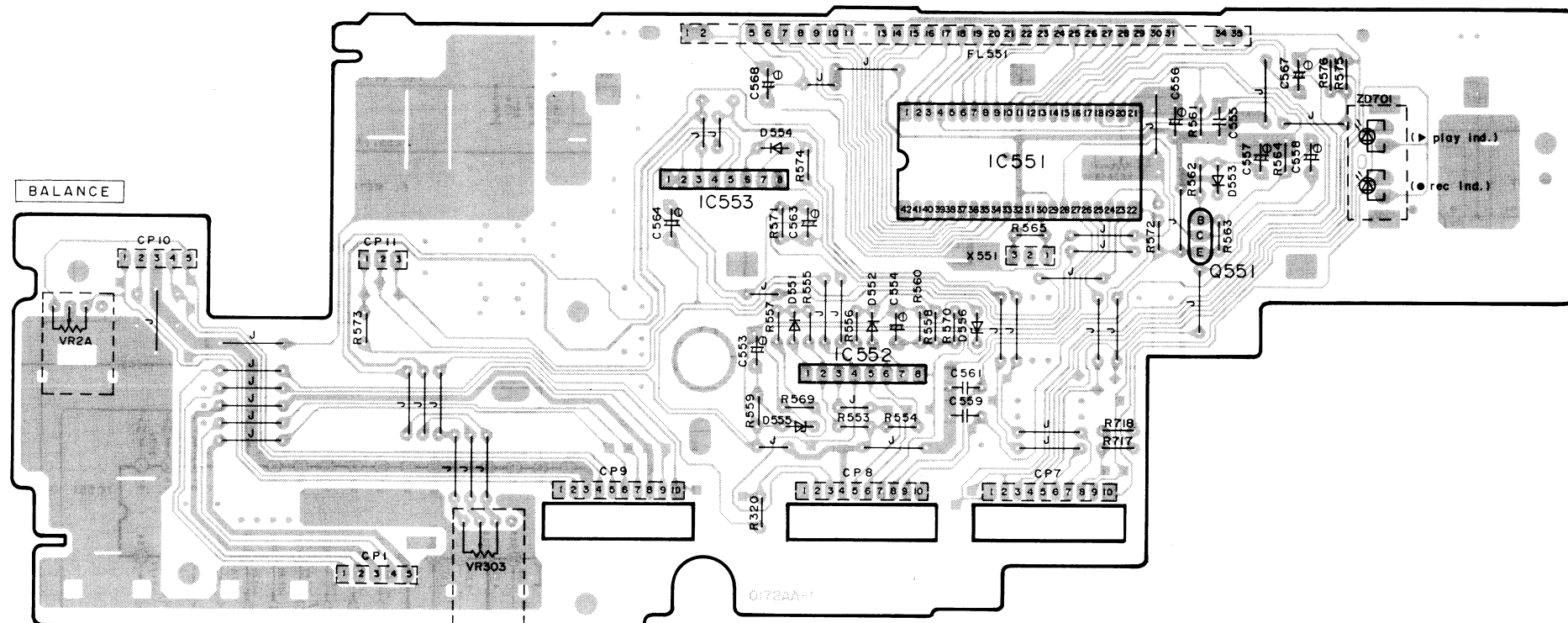
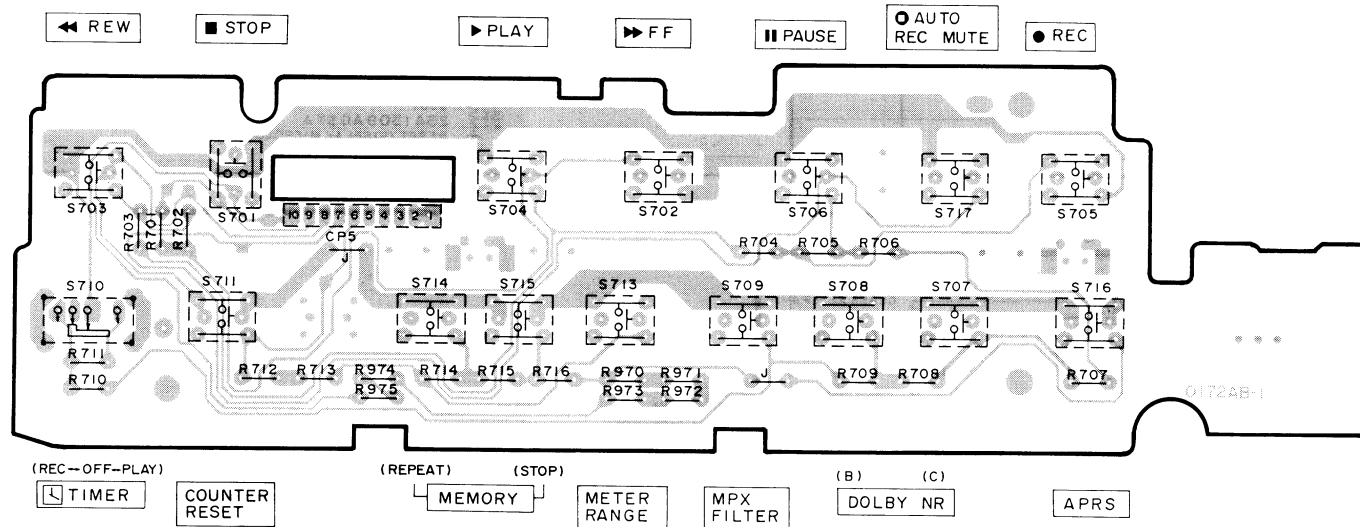
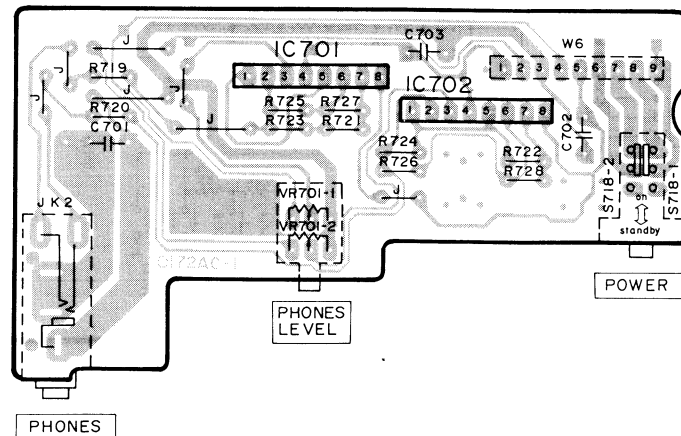
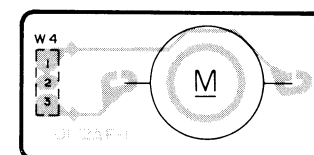
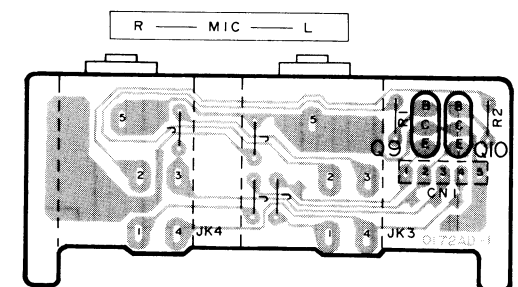
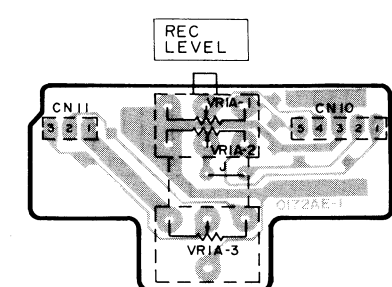
 UPC1297CA 18 Pin TEA0665 28 Pin AN7351K 42 Pin HD404302SA07 42 Pin MB88511-224N 42 Pin	 HA13440MPEL 30 Pin
 M5218L 8 Pin BA6218 9 Pin	 2SJ164PQRTA Drain Gate Source
 2SB621ARSTA 2SD592A	 2SA1309AQSTA 2SC3311AQSTA 2SD1450RSTTA 2SB1030RSTTA
 DTC114YSTP DTC114ESTP	 DTA114ESTP
 2SB1357DEFTA 2SD2037EFTA	 MA167TA MA165TA 1SR35200TB 1SS133
 MA4200M MA4047MTA MA4091MTA MA4062HTA MA4120M MA4330MTA MA4056H MA4051MTA MA4056MTA	 2SK381BCDTA Drain Gate Source



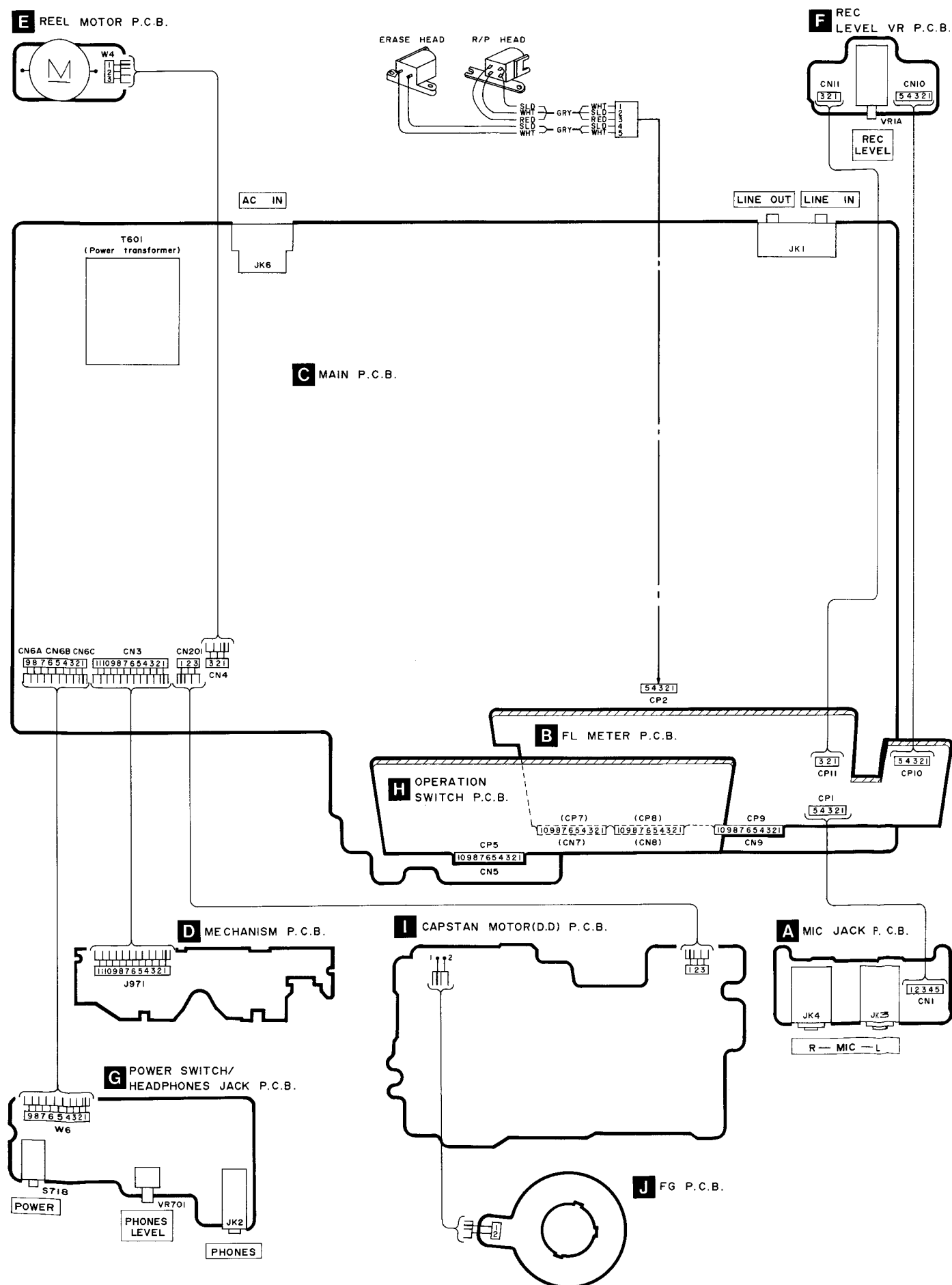
(REC → OFF-PLAY)



PHONES

**B** FL METER P.C.B.**H** OPERATION SWITCH P.C.B.**G** POWER SWITCH/HEADPHONES JACK P.C.B.**E** REEL MOTOR P.C.B.**A** MIC JACK P.C.B.**F** REC LEVEL VR P.C.B.

WIRING CONNECTION DIAGRAM



REPLACEMENT PARTS LIST

Notes : * 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.

- * 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)		Q909	2SC3311AQSTA	TRANSISTOR	
				Q910	2SB1030RSTTA	TRANSISTOR	Δ
				Q911	2SC3311AQSTA	TRANSISTOR	
IC1	AN7351K	IC, PLAYBACK EQ. /MIC AMP		Q912	DTC114ESTP	TRANSISTOR	
IC201	HA13440MPEL	IC, MOTOR DRIVE		Q915	DTC114YSTP	TRANSISTOR	
IC301	UPC1297CA	IC, DOLBY HX PRO		Q916	2SB1030RSTTA	TRANSISTOR	
IC401, 402	TEA0665	IC, DOLBY B/C NR		Q917	2SD592A	TRANSISTOR	
IC551	HD404302SA07	IC, MICROCOMPUTER; FL METER		Q918	2SC3311AQSTA	TRANSISTOR	
IC552	M5218L	IC, LEVEL METER AMP		Q919-921	DTA114ESTP	TRANSISTOR	
IC553	M5218L	IC, BUFFER AMP		Q923, 924	DTA114ESTP	TRANSISTOR	
IC701, 702	M5218L	IC, Class AA : H.P. AMP		Q925	DTC114ESTP	TRANSISTOR	
IC901	MB88511-224N	IC, MICROCOMPUTER; MECHANICAL		Q926	2SB1030RSTTA	TRANSISTOR	
IC902	BA6218	IC, REEL MOTOR CONTROL		Q927	2SC3311AQSTA	TRANSISTOR	(EB)
IC903	M5218L	IC, MUSIC SELECTOR AMP				DIODE (S)	
IC971	GP2S06BC	IC, PHOTO COUPLER					
		TRANSISTOR(S)		D1, 2	MA167TA	DIODE	
				D3-8	MA165TA	DIODE	
Q1, 2	2SJ164PQRTA	TRANSISTOR		D301	MA165TA	DIODE	
Q3-6	2SK381BCDTA	TRANSISTOR		D302	MA4056MTA	DIODE	
Q7, 8	2SJ164PQRTA	TRANSISTOR		D303	MA165TA	DIODE	
Q9, 10	2SD1450RSTA	TRANSISTOR		D551-554	MA165TA	DIODE	
Q11-14	2SC3311AQSTA	TRANSISTOR		D555, 556	MA4051MTA	DIODE	
Q17, 18	2SA1309AQSTA	TRANSISTOR		D601-606	1SR35200TB	DIODE	Δ
Q301, 302	2SC3311AQSTA	TRANSISTOR		D607, 608	MA4091MTA	DIODE	
Q303	2SB621ARSTA	TRANSISTOR	Δ	D609	MA4200M	DIODE	
Q304	2SD592A	TRANSISTOR		D610	MA4062HTA	DIODE	
Q305, 306	2SA1309AQSTA	TRANSISTOR		D611	1SR35200TB	DIODE	Δ
Q401-404	2SC3311AQSTA	TRANSISTOR		D612	MA165TA	DIODE	
Q551	2SA1309AQSTA	TRANSISTOR		D613	MA4120M	DIODE	
Q601	2SA1309AQSTA	TRANSISTOR	Δ	D614	MA165TA	DIODE	
Q602, 603	2SC3311AQSTA	TRANSISTOR	Δ	D615	MA4330MTA	DIODE	
Q604	2SD2037EFTA	TRANSISTOR		D901, 902	1SR35200TB	DIODE	
Q605	2SB1357EFTA	TRANSISTOR		D903	MA165TA	DIODE	Δ
Q606	2SD2037EFTA	TRANSISTOR		D904-909	MA165TA	DIODE	
Q607	2SB621ARSTA	TRANSISTOR		D910	MA4051MTA	DIODE	
Q608	2SD2037EFTA	TRANSISTOR		D911	MA165TA	DIODE	
Q609	2SC3311AQSTA	TRANSISTOR	Δ	D913	MA4056H	DIODE	
Q610	2SA1309AQSTA	TRANSISTOR	Δ	D914	MA4091MTA	DIODE	
Q901	2SC3311AQSTA	TRANSISTOR		D915, 916	MA165TA	DIODE	Δ
Q902	DTA114ESTP	TRANSISTOR		D917-921	MA165TA	DIODE	
Q903	DTC114ESTP	TRANSISTOR		D924	MA165TA	DIODE	
Q904	2SB1030RSTTA	TRANSISTOR	Δ	D971, 972	1SS133	DIODE	
Q905	DTA114ESTP	TRANSISTOR				VARIABLE RESISTOR (S)	
Q906	DTC114ESTP	TRANSISTOR					
Q907	2SB1030RSTTA	TRANSISTOR	Δ				
Q908	DTC114YSTP	TRANSISTOR		VR1, 2	EVNDXAA00B53	V. R. PLAYBACK GAIN ADJ.	

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
VR1A	EWGU2A029A54	V. R. REC. LEVEL CONTROL		S973	RSH1A90Z	SW, ATS	
VR2A	EVJ02SF06G15	V. R. BALANCE CONTROL		S975	RSH1A90Z	SW, REC INHIBIT	
VR3, 4	EVNDXAA00B14	V. R. OVERALL GAIN ADJ.		S976	RSH1A90Z	SW, ATS	
VR301, 302	EVNDXAA00B14	V. R. OVERALL FREQ. ADJ.					
VR303	EVJ02VF04B53	V. R. BIAS CURRENT ADJ.				CONNECTOR(S) AND SOCKET(S)	
VR701	EVU57A043A14	V. R. HEADPHONES CONTROL					
				CN1	SJT30545JQ	CONNECTOR (5P)	
		COIL (S)		CN3	SJSD1105	CONNECTOR (11P)	
				CN4	RJS1A1703	CONNECTOR (3P)	
L1, 2	RLZ0003	COIL		CN5	RJU003K010M	SOCKET (10P)	
L3, 4	SLQX272-1YT	COIL		CN6A-6C	RJS1A1703	CONNECTOR (3P)	
L301	SL09B4-K	COIL		CN7-9	RJU003K010M	SOCKET (10P)	
L302, 303	SL09B1-K	COIL		CN10	SJT30545JQ	CONNECTOR (5P)	
L401, 402	QLM9Z10K	COIL		CN11	SJT30345JQ	CONNECTOR (3P)	
L403, 404	SLM1B8-K	COIL		CN201	RJS1A1703	CONNECTOR (3P)	
				CN201A	RJS2T4ZA	CONNECTOR (2P)	
		TRANSFORMER (S)		CN601	RJS1A1101	SOCKET (1P)	△
				CN603	RJS1A1101	SOCKET (1P)	△
T601	RTP1K4B007-V	POWER TRANSFORMER	(EB) △	CN606-611	RJS1A1101	SOCKET (1P)	
T601	RTP1K4C004-V	POWER TRANSFORMER	(P, PC) △	CP1	SJS50578JQ	SOCKET (5P)	
T601	RTP1K4E008-V	POWER TRANSFORMER	(E, E5, EG) △	CP2	SJTD513	CONNECTOR (5P)	
				CP5	RJT003K010	CONNECTOR (10P)	
		OSCILLATOR(S)		CP7-9	RJT003K010	CONNECTOR (10P)	
				CP10	SJS50578JQ	SOCKET (5P)	
X551	EF0GC4004T4	CERAMIC FILTER		CP11	SJS50378JQ	SOCKET (3P)	
X901	EF0GC6004T4	CERAMIC FILTER					
						GND PART(S)	
		DISPLAY TUBE					
				E1-3	SNE1004-1	GND PLATE	
FL551	RSL0018-F	DISPLAY TUBE (FL METER)		E701	SUSD165	GND SPRING	
		SWITCH(ES)				JACK(S)	
S701	EVQQTG05R	SW, STOP		JK1	SJF3069N	TERMINAL BOARD	
S702	EVQQTG05R	SW, F. F.		JK2	SJJ146B	JACK, HEADPHONES	
S703	EVQQTG05R	SW, REW.		JK3, 4	RJJ65MS01	JACK, MIC	
S704	EVQQTG05R	SW, PLAYBACK		JK6	SJS9236	AC INLET	(E, E5, EB, EG) △
S705	EVQQTG05R	SW, RECORD		JK6	SJSD16	AC INLET	(P, PC) △
S706	EVQQTG05R	SW, PAUSE					
S707	EVQQTG05R	SW, DOLBY NR C				LED BLOCK	
S708	EVQQTG05R	SW, DOLBY NR B					
S709	EVQQTG05R	SW, MPX FILTER		ZD701	LN021490PH	LED BLOCK ASS'Y	
S710	SSS166	SW, TIMER					
S711	EVQQTG05R	SW, COUNTER RESET				CERAMIC FILTER(S)	
S713	EVQQTG05R	SW, METER RANGE					
S714	EVQQTG05R	SW, MEMORY REPEAT		CF201	RSXZ935KM01	CERAMIC FILTER	
S715	EVQQTG05R	SW, MEMORY STOP					
S716	EVQQTG05R	SW, APRS				JAMPER(S)	
S717	EVQQTG05R	SW, AUTO REC MUTE					
S718	SSH1230	SW, POWER		J201, 202	ERJ6GEY0R00V	CHIP JAMPER	
S971	RSH1A89Z	SW, MODE					
S972	RSH1A90Z	SW, HALF					

Notes : * Important safety notice:

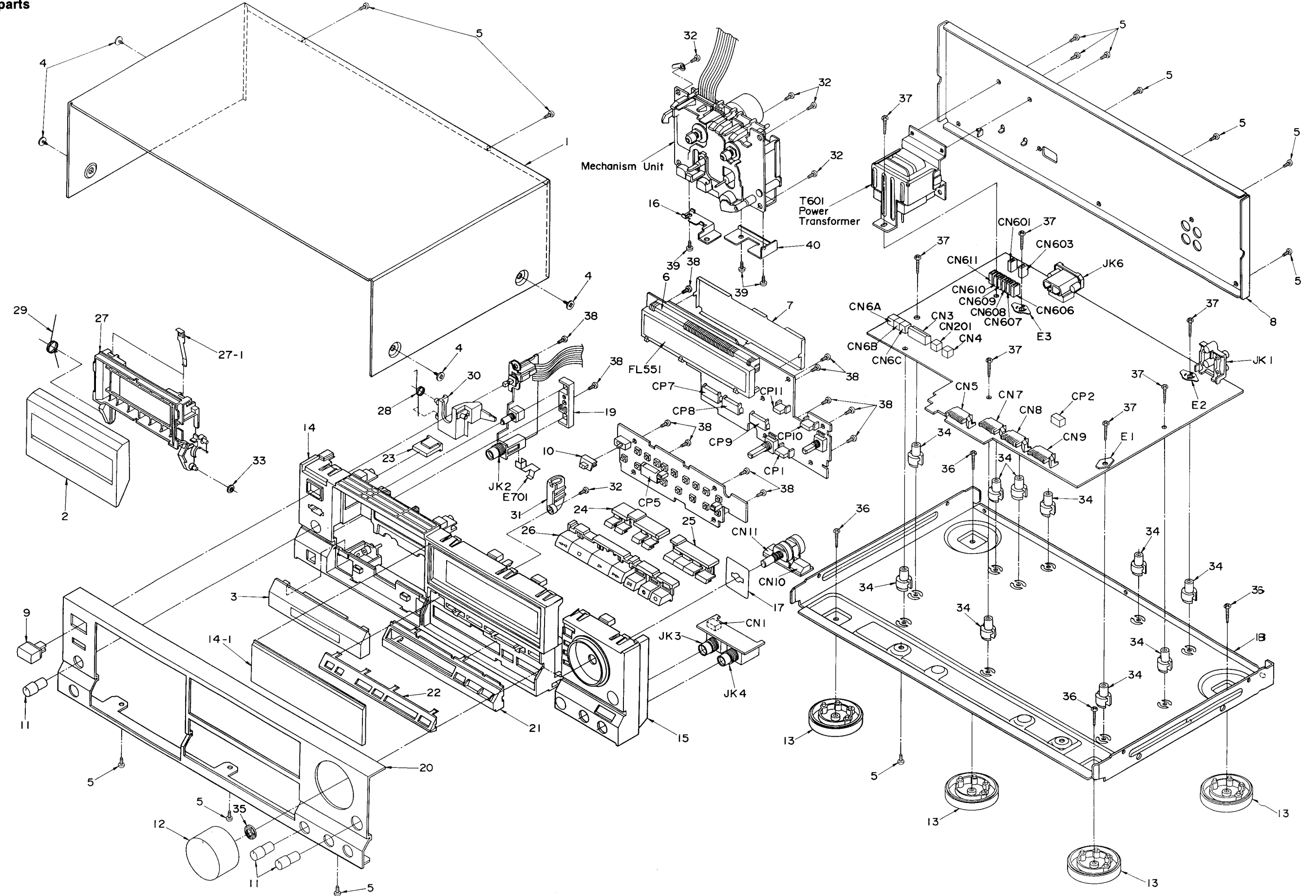
Components identified by $\triangle$ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

* 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		38	XTB3+8JFZ	SCREW	
				39	XTB26+4FFZ	SCREW	
				40	RSC0076	SHIELD PLATE	
1	RKM0036-K	CABINET				PACKING MATERIAL	
2	RYF0027	CASSETTE LID					
3	RYQ0032	ORNAMENT		P1	RPG0256	CARTON BOX	(PC, E, E5, EB, EG)
4	SNE2129-1	SCREW		P1	RPG0300	CARTON BOX	(P)
5	XTBS3+8JFZ1	SCREW		P2	RPN0179	PAD, FRONT/BACK	
6	RMN0021	FL HOLDER		P3	SPS5185	PAD, ACCESSORIES	
7	RSC0048	SHIELD PLATE		P4	SPP756	PROTECTION COVER	
8	RGR0024-B	REAR PANEL	(E)			ACCESSORIES	
8	RGR0024-D	REAR PANEL	(E5)				
8	RGR0024-F	REAR PANEL	(EB)				
8	RGR0024-G	REAR PANEL	(P, PC)				
8	RGR0024-M	REAR PANEL	(EG)	A1	RQF0297	INSTRUCTION MANUAL	(E, E5)
9	RGU0030	BUTTON, POWER		A1	RQF0298	INSTRUCTION MANUAL	(EB)
10	RGV0022	KNOB, TIMER		A1	RQF0299	INSTRUCTION MANUAL	(EG)
11	RGW0032	KNOB, BALANCE LEVEL		A1	RQF0300	INSTRUCTION MANUAL	(P)
12	RGW0033	KNOB, REC LEVEL		A1	RQF0301	INSTRUCTION MANUAL	(PC)
13	RKA0009-1	FOOT		A2	SFDAC05E03	POWER CORD	(E, E5, EG) $\triangle$
14	RFKNSB555EAK	FRONT GRILLE ASS'Y (1)		A2	SJA175	POWER CORD	(PC) $\triangle$
14-1	RKW0038	TRANSPARENT PLATE		A2	SJA175-1	POWER CORD	(P) $\triangle$
15	RFKNSB655EBK	FRONT GRILLE ASS'Y (2)		A2	SJA193-1	POWER CORD	(EB) $\triangle$
16	RMC0040	BRACKET		A3	SJP2249-3	STEREO CONNECTION CABLE	
17	RMC0056	SHIELD PLATE					
18	RMKD026-1	CHASSIS					
19	RMN0022	ORNAMENT					
20	RFKGSB555E-K	FRONT PANEL ASS'Y	(E, E5, EB, EG)				
20	RFKGSB555P-K	FRONT PANEL ASS'Y	(P, PC)				
21	RGK0117	ORNAMENT, BUTTON (A)					
22	RGK0119	ORNAMENT, BUTTON (B)					
23	RGU0130	BUTTON, EJECT				MECHANISM UNIT	
24	RFKNSB555E-K	BUTTON ASS'Y, COUNTER		MECH1	RAA0801	MECHANISM ASS'Y	
25	RGU0132	BUTTON, NOISE REDUCTION					
26	RGU0133	BUTTON, OPERATION				PRINTED CIRCUIT BOARDS	
27	RKF0020A-3	CASSETTE HOLDER					
27-1	QBP2006A	SPRING, TAPE PRESSURE		PWB1	REP0308A	MAIN P. C. B. ASS'Y	(E, E5, EG)
28	RME0032	SPRING		PWB1	REP0308B	MAIN P. C. B. ASS'Y	(EB)
29	RME0034	SPRING		PWB1	REP0308C	MAIN P. C. B. ASS'Y	(P, PC)
30	RML0086	EJECT LEVER					
31	RMRO153	DAMPER GEAR ASS'Y		PWB2	REP0309A	SUB P. C. B. ASS'Y	
32	XTB3+10JFZ	SCREW					
33	SUD444-1	WASHER					
34	SHE187-2	HOLDER					
35	SNE4021-1	NUT					
36	XTB3+6J	SCREW					
37	XTB3+20J	SCREW					

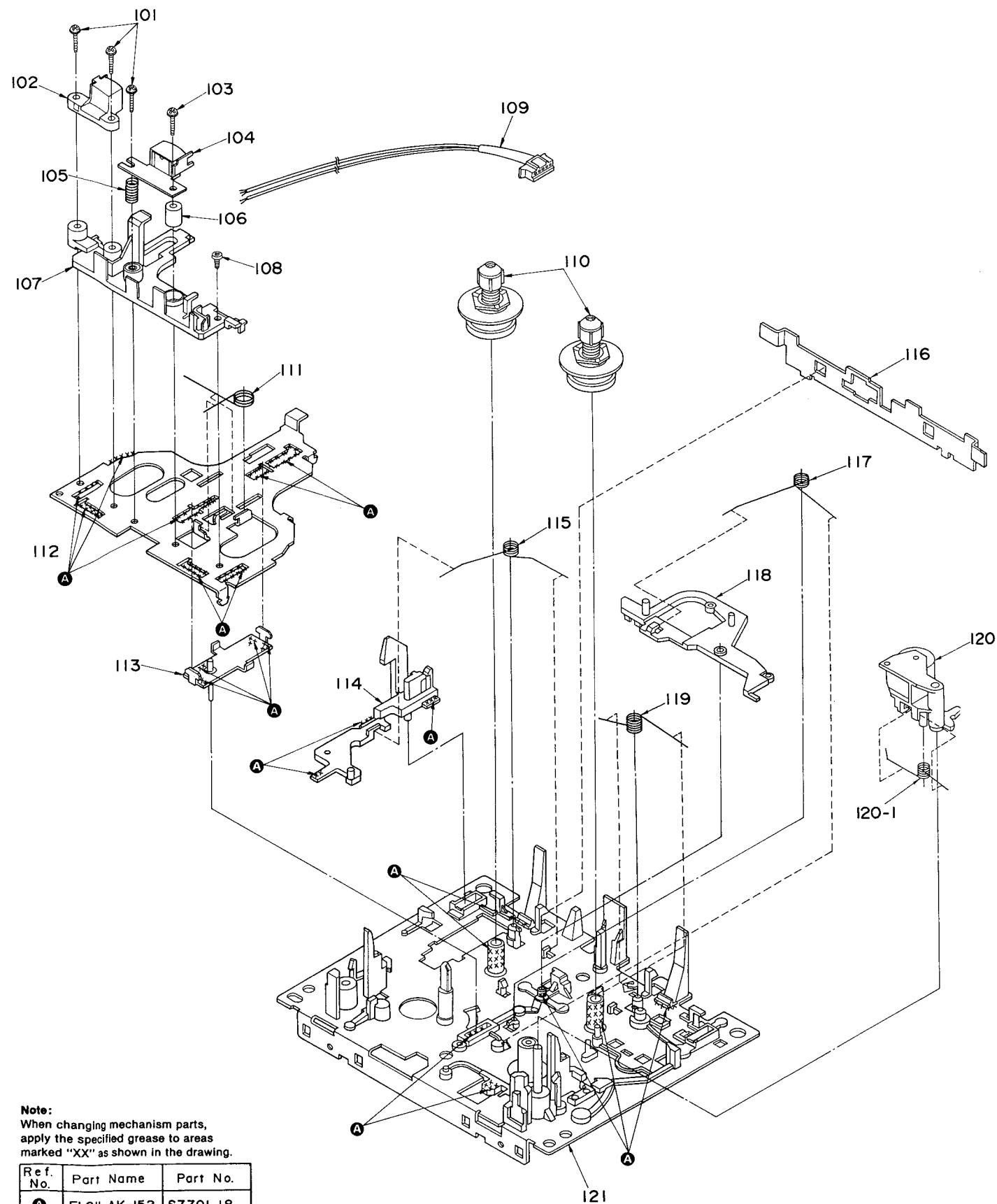
EXPLODED VIEWS

• Cabinet parts



• Mechanical parts

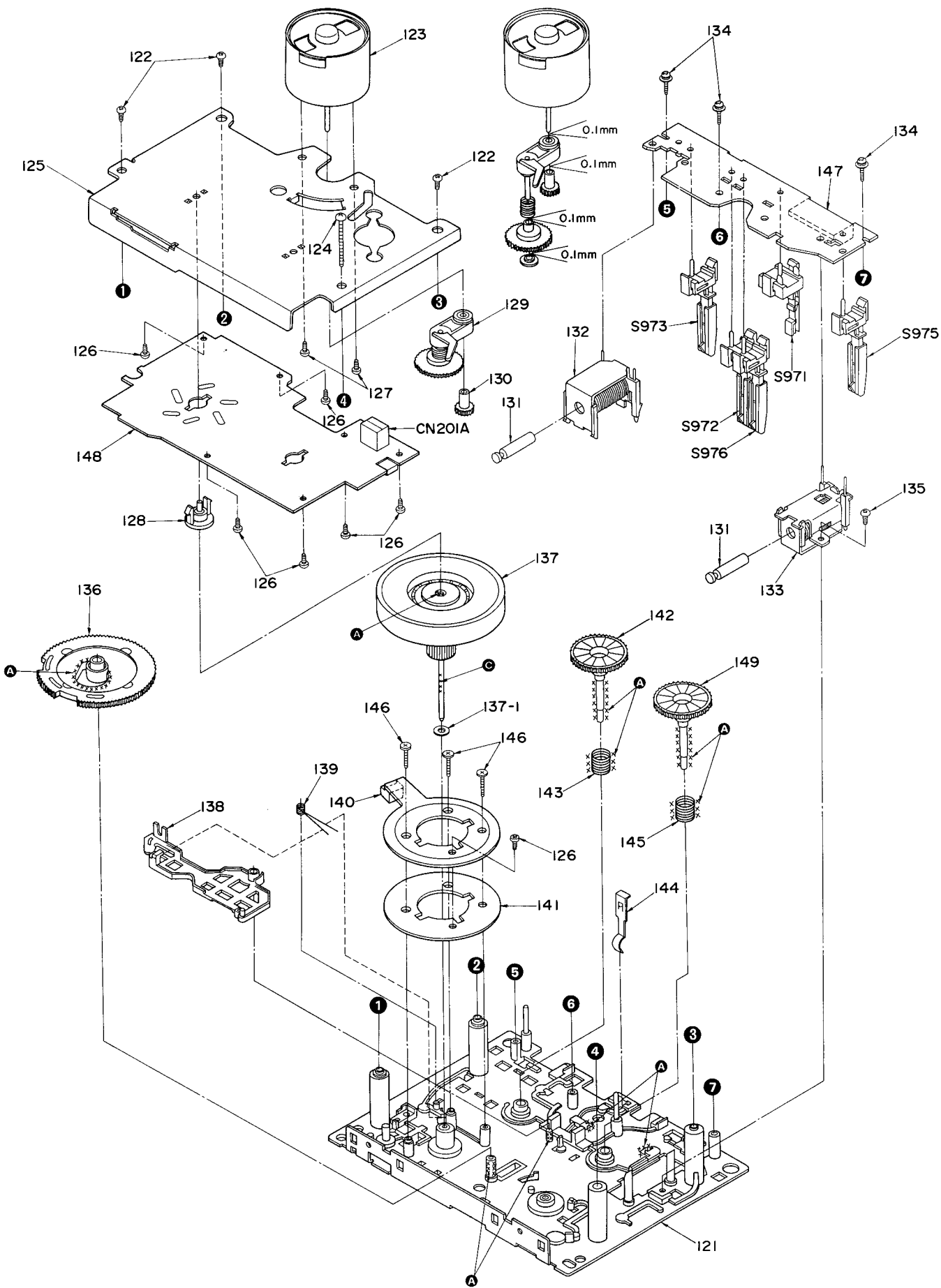
(Top view)



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	FL0ILAK-I52	SZZOL18
C	FL0IL947P	RZZOL02

(Bottom view)



REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		MECHANISM PARTS LIST		148	REPO268	STATER P.C.B. ASS'Y	
				149	RDG0033	REEL TABLE GEAR	
101	QH01361A	SCREW					
102	SJH96-1	E HEAD					
103	RHE52012A	SCREW					
104	RJH4C35GZAM	R/P HEAD					
105	QBC1278A	SPRING					
106	RHM2782A	SPACER					
107	RMD5013ZC	HEAD SPACER					
108	XTN2+5F	SCREW					
109	REX0075	LEAD WIRE BLOCK					
110	RXR0001	REEL TABLE					
111	RUW1392A	SPRING					
112	RMA0047B	HEAD BASE					
113	RXQ0078	MAIN ROD ASS'Y					
114	RMD012-2	EJECT ROD (L)					
115	RME0018-1	SPRING					
116	RUB502Z	LEVER					
117	RME0020	SPRING					
118	RXL0007	BRAKE LEVER					
119	RUW1422A	SPRING					
120	RXP0004	PINCH ROLLER ARM					
120-1	RUW1402B	SPRING					
121	RFKRSB555E-K	CHASSIS ASS'Y					
122	XTN26+7J	SCREW					
123	MMN-6F4RA88	REEL MOTOR					
124	XTN26+26F	SCREW					
125	RMA0048A	FLYWHEEL PLATE					
126	XTN2+3F	SCREW					
127	XSN26+3	SCREW					
128	RMR0141	THRUST BEARING					
129	RXG0009	GEAR ASS'Y					
130	RDG0034	REEL MOTOR GEAR					
131	RUB428Z	MOVING IRON CORE					
132	RSJ0003	SOLENOID					
133	RXQ0011	BRAKE SOLENOID					
134	XTW2+8S	SCREW					
135	XTN26+4F	SCREW					
136	RDG0030	MAIN GEAR					
137	RXF0008	FLYWHEEL					
137-1	RNW1392A	WASHER					
138	RML0037	LEVER					
139	RUW1472A	SPRING					
140	RJS2T72A	CONNECTOR (2P)					
141	RMQ0037	FG YOKE					
142	RXG0003	REEL TABLE GEAR					
143	RUQ1122A	SPRING					
144	RJS609Z	TAPE PRESSURE SPRING					
145	RUQ1112A	SPRING					
146	RHE52042A	SCREW					
147	RJS10T72A	CONNECTOR (10P)					

RESISTORS & CAPACITORS

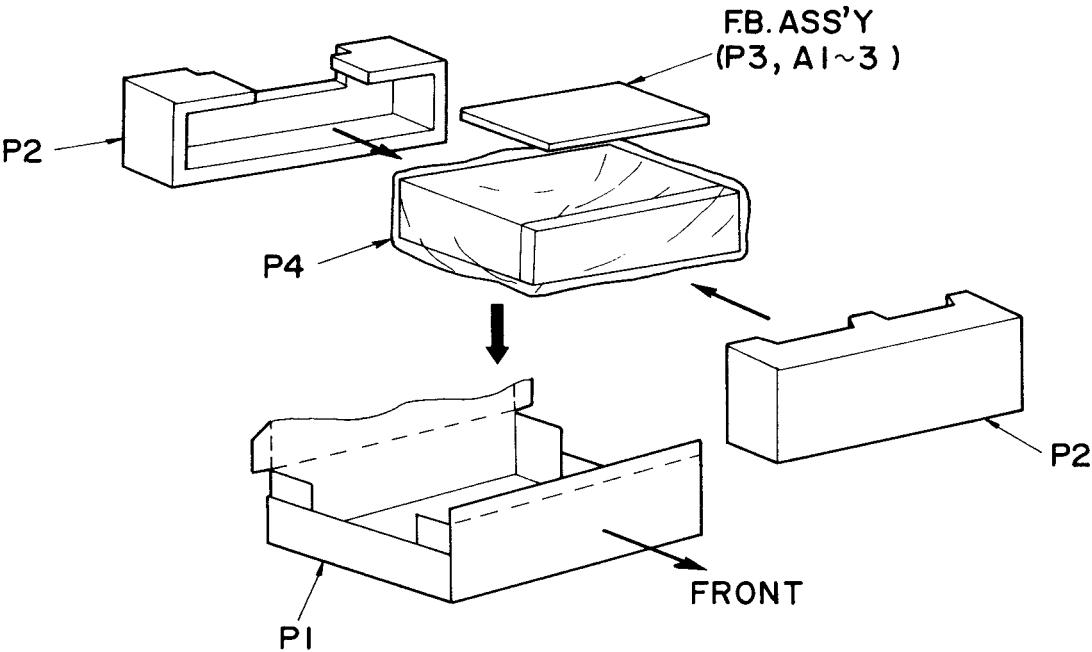
Notes : * Capacity valuse are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
 * Resistance values are in ohms, unless specified otherwise, 1K=1,000(OHM) , 1M=1,000k(OHM)

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		RESISTORS	R313, 314	ERDS2TJ154T	1/4W 150K	R605	ERD2FCVG150T	1/4W 15 (EB) △
			R315, 316	ERDS2TJ153T	1/4W 15K	R606	ERDS1FVJ100T	1/2W 10 (E, E5, EG, P, PC) △
			R317	ERDS2TJ822T	1/4W 8.2K			
R1, 2	ERDS2TJ223T	1/4W 22K	R318	ERDS2TJ272T	1/4W 2.7K	R606	ERD2FCVG100T	1/4W 10 (EB) △
R3, 4	ERDS2TJ473T	1/4W 47K	R319	ERDS2TJ102T	1/4W 1K	R607, 608	ERDS2TJ102T	1/4W 1K
R5, 6	ERDS2TJ102T	1/4W 1K	R320	ERDS2TJ332T	1/4W 3.3K	R611, 612	ERDS1FVJ270T	1/2W 27 (E, E5, EG, P, PC) △
R7, 8	ERDS2TJ225T	1/4W 2.2M	R321	ERDS1FVJ121T	1/2W 120 (E, E5, EG, P, PC) △			
R9, 10	ERDS2TJ104T	1/4W 100K				R611, 612	ERD2FCVG270T	1/4W 27 (EB) △
R11, 12	ERDS2TJ183T	1/4W 18K	R321	ERDS1FVJ561T	1/2W 560 (EB) △	R613	ERDS2TJ222T	1/4W 2.2K △
R13, 14	ERDS2TJ101T	1/4W 100	R322	ERDS2TJ563T	1/4W 56K	R614	ERDS2TJ222T	1/4W 2.2K
R15, 16	ERDS2TJ820T	1/4W 82	R323	ERDS2TJ103T	1/4W 10K	R615	ERDS2TJ1R0T	1/4W 1.0 △
R17, 18	ERDS2TJ153T	1/4W 15K	R324	ERDS2TJ563T	1/4W 56K	R616	ERDS2TJ391T	1/4W 390 △
R19, 20	ERDS2TJ103T	1/4W 10K	R325-327	ERDS1FVJ561T	1/2W 560 (EB)	R617, 618	ERDS2TJ221T	1/4W 220 (EB)
R21, 22	ERDS2TJ564T	1/4W 560K	R401, 402	ERDS2TJ101T	1/4W 100	R617, 618	ERDS2TJ560T	1/4W 56 (E, E5, EG, P, PC)
R23, 24	ERDS2TJ682T	1/4W 6.8K	R403, 404	ERDS2TJ272T	1/4W 2.7K			
R25, 26	ERDS2TJ223T	1/4W 22K	R405, 406	ERDS2TJ103T	1/4W 10K	R619, 620	ERQ16NKR15E	1/6W 0.15 (EB) △
R27, 28	ERDS2TJ103T	1/4W 10K	R407, 408	ERDS2TJ242	1/4W 2.4K	R623, 624	ERDS2TJ101T	1/4W 100 (EB)
R29, 30	ERDS2TJ472T	1/4W 4.7K	R409-412	ERDS2TJ684T	1/4W 680K	R625	ERDS2TJ181T	1/4W 180 (EB)
R31, 32	ERDS2TJ392T	1/4W 3.9K	R413, 414	ERDS2TJ562T	1/4W 5.6K	R626, 627	ERDS2TJ101T	1/4W 100 (EB)
R33, 34	ERDS2TJ102T	1/4W 1K	R415, 416	ERDS2TJ102T	1/4W 1K	R628	ERDS2TJ103T	1/4W 10K
R35, 36	ERDS2TJ820T	1/4W 82	R417, 418	ERDS2TJ332T	1/4W 3.3K	R629	ERDS2TJ472T	1/4W 4.7K △
R39, 40	ERDS2TJ121T	1/4W 120	R419, 420	ERDS2TJ333T	1/4W 33K	R630	ERD2FCVG100T	1/4W 10 (EB) △
R41, 42	ERDS2TJ392T	1/4W 3.9K	R421-424	ERDS2TJ823T	1/4W 82K	R631-636	ERDS2TJ221T	1/4W 220 (EB)
R43, 44	ERDS2TJ152T	1/4W 1.5K	R425, 426	ERDS2TJ683T	1/4W 68K	R637, 638	ERDS2TJ391T	1/4W 390 △
R45, 46	ERDS2TJ272T	1/4W 2.7K	R427, 428	ERDS2TJ222T	1/4W 2.2K	R701	ERDS2TJ821T	1/4W 820
R47, 48	ERDS2TJ104T	1/4W 100K	R429, 430	ERDS2TJ512	1/4W 5.1K	R702	ERDS2TJ102T	1/4W 1K
R49, 50	ERDS2TJ564T	1/4W 560K	R431, 432	ERDS2TJ242	1/4W 2.4K	R703	ERDS2TJ122T	1/4W 1.2K
R57, 58	ERDS2TJ153T	1/4W 15K	R551, 552	ERDS2TJ104T	1/4W 100K	R704	ERDS2TJ152T	1/4W 1.5K
R59, 60	ERDS2TJ182T	1/4W 1.8K	R553, 554	ERDS2TJ563T	1/4W 56K	R705	ERDS2TJ182T	1/4W 1.8K
R61, 62	ERDS2TJ333T	1/4W 33K	R555, 556	ERDS2TJ104T	1/4W 100K	R706	ERDS2TJ222T	1/4W 2.2K
R63, 64	ERDS2TJ472T	1/4W 4.7K	R557, 558	ERDS2TJ220T	1/4W 22	R707	ERDS2TJ332T	1/4W 3.3K
R65, 66	ERDS2TJ102T	1/4W 1K	R559, 560	ERDS2TJ152T	1/4W 1.5K	R708	ERDS2TJ472T	1/4W 4.7K
R67, 68	ERDS2TJ223T	1/4W 22K	R561	ERDS2TJ102T	1/4W 1K	R709	ERDS2TJ682T	1/4W 6.8K
R69, 70	ERDS2TJ472T	1/4W 4.7K	R562	ERDS2TJ471T	1/4W 470	R710	ERDS2TJ123T	1/4W 12K
R71, 72	ERDS2TJ561T	1/4W 560	R563, 564	ERDS2TJ103T	1/4W 10K	R711	ERDS2TJ223T	1/4W 22K
R201	ERJ6GEYJ333V	1/10W 33K	R565	ERDS2TJ105T	1/4W 1M	R712	ERDS2TJ821T	1/4W 820
R202	ERJ6GEYJ683V	1/10W 68K	R567	ERDS1FVJ120T	1/2W 12	R713	ERDS2TJ102T	1/4W 1K
R203-205	ERJ6GEYJ1R5V	1/10W 1.5	R569, 570	ERDS2TJ101T	1/4W 100	R714	ERDS2TJ122T	1/4W 1.2K
R206	ERJ8GEYJ222V	1/8W 2.2K	R571	ERDS2TJ152T	1/4W 1.5K	R715	ERDS2TJ152T	1/4W 1.5K
R208	ERJ6GEYJ222V	1/10W 2.2K	R572	ERDS2TJ102T	1/4W 1K	R716	ERDS2TJ182T	1/4W 1.8K
R209-211	ERJ6GEYJ4R7V	1/10W 4.7	R573	ERDS2TJ560T	1/4W 56	R717	ERDS2TJ181T	1/4W 180
R216	ERJ8GEYJ222V	1/8W 2.2K	R574	ERDS2TJ220T	1/4W 22	R718	ERDS2TJ331T	1/4W 330
R301	ERDS2TJ1R0T	1/4W 1.0	R575, 576	ERDS2TJ821	1/4W 820	R719, 720	ERDS2TJ180	1/4W 18
R302, 303	ERDS2TJ183T	1/4W 18K	R601	ERDS2TJ472T	1/4W 4.7K △	R721, 722	ERDS2TJ330T	1/4W 33
R304, 305	ERDS2TJ100T	1/4W 10	R602	ERDS2TJ472T	1/4W 4.7K	R723, 724	ERDS2TJ100T	1/4W 10
R306	ERDS2TJ471T	1/4W 470	R603	ERDS2TJ103T	1/4W 10K	R725, 726	ERDS2TJ102T	1/4W 1K
R307	ERDS2TJ222T	1/4W 2.2K	R604	ERDS2TJ472T	1/4W 4.7K △	R727, 728	ERDS2TJ332T	1/4W 3.3K
R308	ERDS2TJ472T	1/4W 4.7K	R605	ERDS1FVJ150T	1/2W 15 (E, E5, EG, P, PC) △	R901	ERDS2TJ105T	1/4W 1M
R311, 312	ERDS2TJ100T	1/4W 10				R902	ERDS2TJ103T	1/4W 10K

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
R903	ERDS2TJ471T	1/4W 470	R963	ERDS2TJ473T	1/4W 47K	C207, 208	ECUV1H470KC	50V 47P
R904	ERDS2TJ103T	1/4W 10K	R964	ERDS2TJ392T	1/4W 3. 9K	C209-211	ECEV1E4R7R	25V 4. 7U
R905	ERDS2TJ182T	1/4W 1. 8K	R965	ERDS2TJ104T	1/4W 100K	C212-214	ECUV1H103ZFN	50V 0. 01U
R906	ERDS2TJ682T	1/4W 6. 8K	R970	ERDS2TJ222T	1/4W 2. 2K	C215	ECUV1H472KB	50V 4700P
R907	ERDS2TJ103T	1/4W 10K	R971	ERDS2TJ332T	1/4W 3. 3K	C217, 218	ECUV1E104KB	25V 0. 1U
R908	ERDS2TJ392T	1/4W 3. 9K	R971A	ERDS2TJ271T	1/4W 270	C301	ECQP1153JZ	100V 0. 015U
R909	ERDS2TJ272T	1/4W 2. 7K	R972	ERDS2TJ472T	1/4W 4. 7K	C302	ECEA1EK4R7B	25V 4. 7U
R910	ERDS2TJ103T	1/4W 10K	R972A	ERDS2TJ183T	1/4W 18K	C303	ECKT1H392KB	50V 3900P
R911	ERDS2TJ392T	1/4W 3. 9K	R973	ERDS2TJ682T	1/4W 6. 8K	C304, 305	ECKT1H222KB	50V 2200P
R912	ERDS2TJ272T	1/4W 2. 7K	R974	ERDS2TJ123T	1/4W 12K	C306	ECKT1H682KB	50V 6800P
R913	ERDS2TJ561T	1/4W 560	R975	ERDS2TJ223T	1/4W 22K	C310	ECKD1H472KB	50V 4700P
R914	ERDS2TJ102T	1/4W 1K	R977	ERDS2TJ223T	1/4W 22K △	C311	ECEA1AU101B	10V 100U
R915	ERDS2TJ103T	1/4W 10K	R978	ERDS2TJ473T	1/4W 47K	C312	ECKT1H103ZF	50V 0. 01U
R916	ERDS2TJ332T	1/4W 3. 3K	R979	ERDS2TJ272T	1/4W 2. 7K	C313, 314	ECKT1H223ZF	50V 0. 022U
R917, 918	ERDS2TJ103T	1/4W 10K	R980	ERDS2TJ472T	1/4W 4. 7K	C315, 316	ECBT1H821KB5	50V 820P
R919, 920	ERDS2TJ223T	1/4W 22K	R981	ERDS2TJ392T	1/4W 3. 9K	C317, 318	ECBT1H121KB5	50V 120P
R922	ERDS2TJ472T	1/4W 4. 7K	R982	ERDS2TJ223T	1/4W 22K	C319, 320	ECQV1H563JZ3	50V 0. 056U
R923	ERDS2TJ152T	1/4W 1. 5K	R983	ERDS2TJ103T	1/4W 10K	C321, 322	ECQB1H223JZ3	50V 0. 022U
R924	ERDS2TJ223T	1/4W 22K △	R984	ERDS2TJ472T	1/4W 4. 7K (EB)	C323, 324	ECQB1H103JZ3	50V 0. 01U
R925	ERDS2TJ821T	1/4W 820	R985	ERDS2TJ222T	1/4W 2. 2K (EB)	C325, 326	ECKT1H122KB	50V 1200P
R926	ERDS2TJ223T	1/4W 22K △	R986	ERDS2TJ332T	1/4W 3. 3K (EB)	C328	ECBT1H180J5	50V 18P
R927	ERDS2TJ821T	1/4W 820	R989	ERDS2TJ822T	1/4W 8. 2K	C329	ECEA1EK100B	25V 10U
R928	ERG1SJ150E	1W 15 △	R990	ERDS2TJ473T	1/4W 47K	C330	ECKT1H103ZF	50V 0. 01U △
R929	ERG1SJ180E	1W 18 △				C331	ECBT1H180J5	50V 18P
R930	ERDS2TJ223T	1/4W 22K △			CAPACITORS	C401, 402	ECBT1H820KB5	50V 82P
R931	ERDS2TJ821T	1/4W 820				C403, 404	ECEA1EK4R7B	25V 4. 7U
R932	ERDS2TJ103T	1/4W 10K (E, E5, EG, P, PC)	C1, 2	ECEA1EK4R7B	25V 4. 7U	C405, 406	ECKT1H122KB	50V 1200P
R932	ERDS2TJ472T	1/4W 4. 7K (EB)	C3, 4	ECBT1H681KB5	50V 680P	C407, 408	ECKT1H152KB	50V 1500P
R933	ERDS2TJ472T	1/4W 4. 7K	C5, 6	ECBT1H102KB5	50V 1000P	C409, 410	ECQB1H472JZ3	50V 4700P
R935	ERDS2TJ682T	1/4W 6. 8K	C7, 8	ECBT1H561KB5	50V 560P	C411, 412	ECEA1CK100B	16V 10U
R936	ERDS2TJ223T	1/4W 22K	C9, 10	ECEA0JU101B	6. 3V 100U	C413, 414	ECQV1H473JZ3	50V 0. 047U
R940	ERDS2TJ562T	1/4W 5. 6K	C11, 12	ECQB1H562JZ3	50V 5600P	C415, 416	ECQV1H224JZ3	50V 0. 22U
R942	ERDS2TJ821T	1/4W 820	C13, 14	ECEA1EK4R7B	25V 4. 7U	C417-420	ECEA1H8R68B	50V 0. 68U
R943	ERDS2TJ223T	1/4W 22K	C15, 16	ECBT1H101KB5	50V 100P	C421, 422	ECQV1H224JZ3	50V 0. 22U
R944, 945	ERDS1FVJ180T	1/2W 18 △	C17, 18	ECQB1H822JZ3	50V 8200P	C423, 424	ECQV1H473JZ3	50V 0. 047U
R946	ERDS2TJ102T	1/4W 1K	C19, 20	ECEA1H8R47B	50V 0. 47U	C425, 426	ECEA1CK100B	16V 10U
R947, 948	ERDS2TJ103T	1/4W 10K	C21, 22	ECEA1CK100B	16V 10U	C427, 428	ECQB1H472JZ3	50V 4700P
R949	ERDS2TJ472T	1/4W 4. 7K	C23, 24	ECQV1H273JZ	50V 0. 027U	C429, 430	ECQB1H103JZ3	50V 0. 01U
R950	ERDS2TJ821T	1/4W 820	C27, 28	ECQB1H822JZ3	50V 8200P	C431, 432	ECKT1H102KB	50V 0. 001U
R951	ERDS2TJ101T	1/4W 100	C29, 30	ECQV1H563JZ3	50V 0. 056U	C551, 552	ECQV1H104JZ3	50V 0. 1U
R952	ERDS2TJ823T	1/4W 82K	C33, 34	ECBT1H101KB5	50V 100P	C553, 554	ECEA0JKS101B	6. 3V 100U
R953	ERDS2TJ393T	1/4W 39K	C35, 36	ECEA1H8K10B	50V 1U	C555	ECKT1H103ZF	50V 0. 01U
R954	ERDS2TJ472T	1/4W 4. 7K	C37, 38	ECQP1121JZ	100V 120P	C556	ECEA1CK100B	16V 10U
R955	ERDS2TJ102T	1/4W 1K	C43, 44	ECEA1CK100B	16V 10U	C557	ECEA1EK4R7B	25V 4. 7U
R956	ERDS2TJ473T	1/4W 47K	C45, 46	ECEA1EK4R7B	25V 4. 7U	C558	ECEA1H8K10B	50V 1U
R957	ERDS2TJ153T	1/4W 15K	C47, 48	ECEA1H8K10B	50V 1U	C559	ECBT1C103NS5	16V 0. 01U
R958	ERDS2TJ103T	1/4W 10K	C49, 50	ECEA1CK100B	16V 10U	C561	ECBT1C103NS5	16V 0. 01U
R959	ERDS2TJ152T	1/4W 1. 5K	C51, 52	ECKT1H103ZF	50V 0. 01U	C563, 564	ECEA0JK101B	6. 3V 100U
R960	ERDS2TJ472T	1/4W 4. 7K	C201	ECUV1E153MB	25V 0. 015U	C567, 568	ECEA1VK100B	16V 10U
R961	ERDS2TJ821T	1/4W 820	C202	ECUV1E104KB	25V 0. 1U	C601	ECKT2H682PEL	500V 6800P
R962	ERDS2TJ183T	1/4W 18K	C203, 204	ECEV1CA100R	16V 10U	C602, 603	ECEA1EU222E	25V 2200U △
			C205, 206	ECUV1E104KB	25V 0. 1U	C604, 605	ECKT1H103ZF	50V 0. 01U

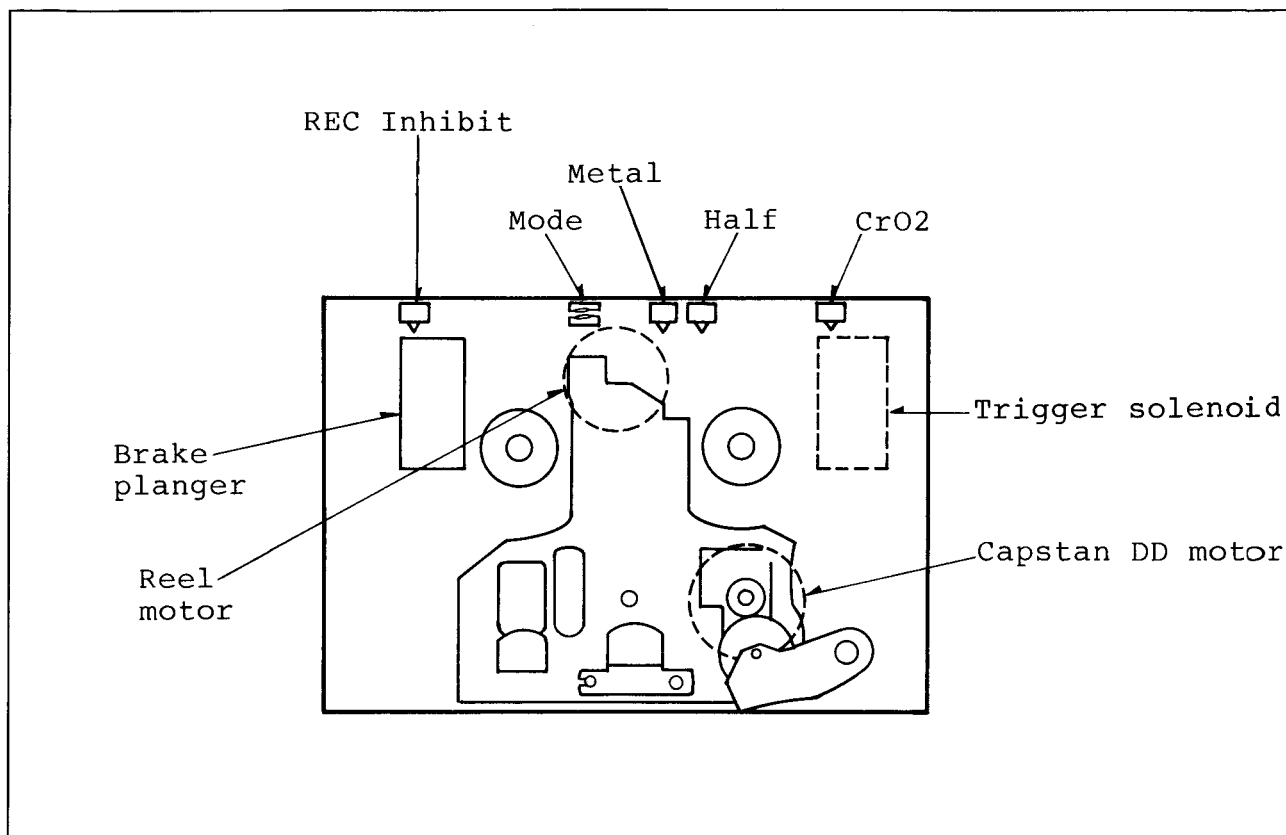
Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
C606, 607	ECEA1AU221B	10V 220U	C701	ECKT1H223ZF	50V 0.022U	C909	ECQB1H822JZ3	50V 8200P
C608, 609	ECKT1H103ZF	50V 0.01U	C702, 703	ECKT1H103ZF	50V 0.01U	C910	ECEA1CK100B	16V 10U
C610, 611	ECEA1AU102B	10V 1000U	C901	ECEA0JU222B	6.3V 2200U	C911	ECBT1H470J5	50V 47P
C612	ECEA1EU222E	25V 2200U △	C902	ECKT1H103ZF	50V 0.01U	C912	ECEA1HK010B	50V 1U
C613	ECKT1H103ZF	50V 0.01U	C903	ECEA1HK010B	50V 1U	C913	ECKT1H103ZF	50V 0.01U
C615	ECEA1EK100B	25V 10U	C904	ECEA1EK4R7B	25V 4.7U	C914	ECEA1EK4R7B	25V 4.7U
C617	ECEA1HU470B	50V 47U	C905	ECKT1H103ZF	50V 0.01U	C915	ECEA0JU101B	6.3V 100U
C618	ECKT1H103ZF	50V 0.01U	C906	ECEA1CN100SB	16V 10U	C916	ECKT1H103ZF	50V 0.01U
C619, 620	ECKT1H103ZF	50V 0.01U △	C907	ECEA1HK010B	50V 1U	C917	ECEA1HK010B	50V 1U (EB)
C621	ECKT2H682PEL	500V 6800P △	C908	ECKT1H103ZF	50V 0.01U	C918	ECKT1H103ZF	50V 0.01U

PACKING
(Parts list on page 36.)



■ TECHNICAL INFORMATION

1. Mechanism composition



Mechanism detection switches

Metal, CrO2	ATS detection
Half switch	Cassette detection
Mode switch	Mechanism mode detection
	Low level during PLAY and PAUSE
	High level during STOP

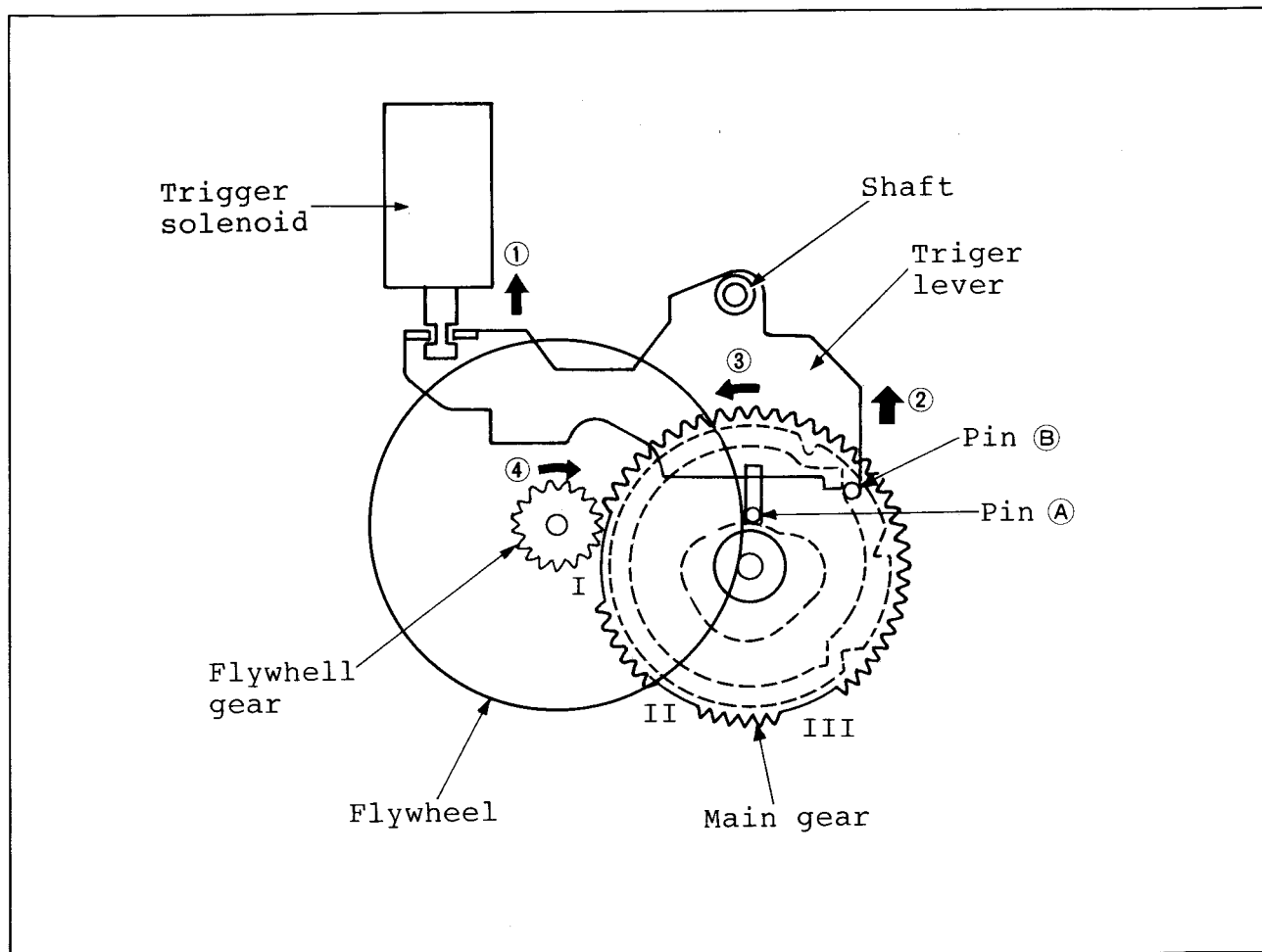
2. Mechanism operation

The mechanism operation is controlled by a microcomputer. There are three mechanism modes STOP, PLAY, and PAUSE. These modes are set by the operation of a trigger solenoid in accordance with the commands from the microcomputer.

There are two motors: a DC reel motor and a DD capstan motor.

(1) Setting of the mechanism mode

The microcomputer causes the trigger solenoid to be momentarily drawn in. This operation causes the main gear to move slightly in the direction indicated by arrow ③ and engage with the flywheel gear. When this occurs, the main gear rotates as far as toothless section III, and the PLAY mode begins. The PAUSE and STOP modes are set in the same way.



Rear View

Position of the main gear

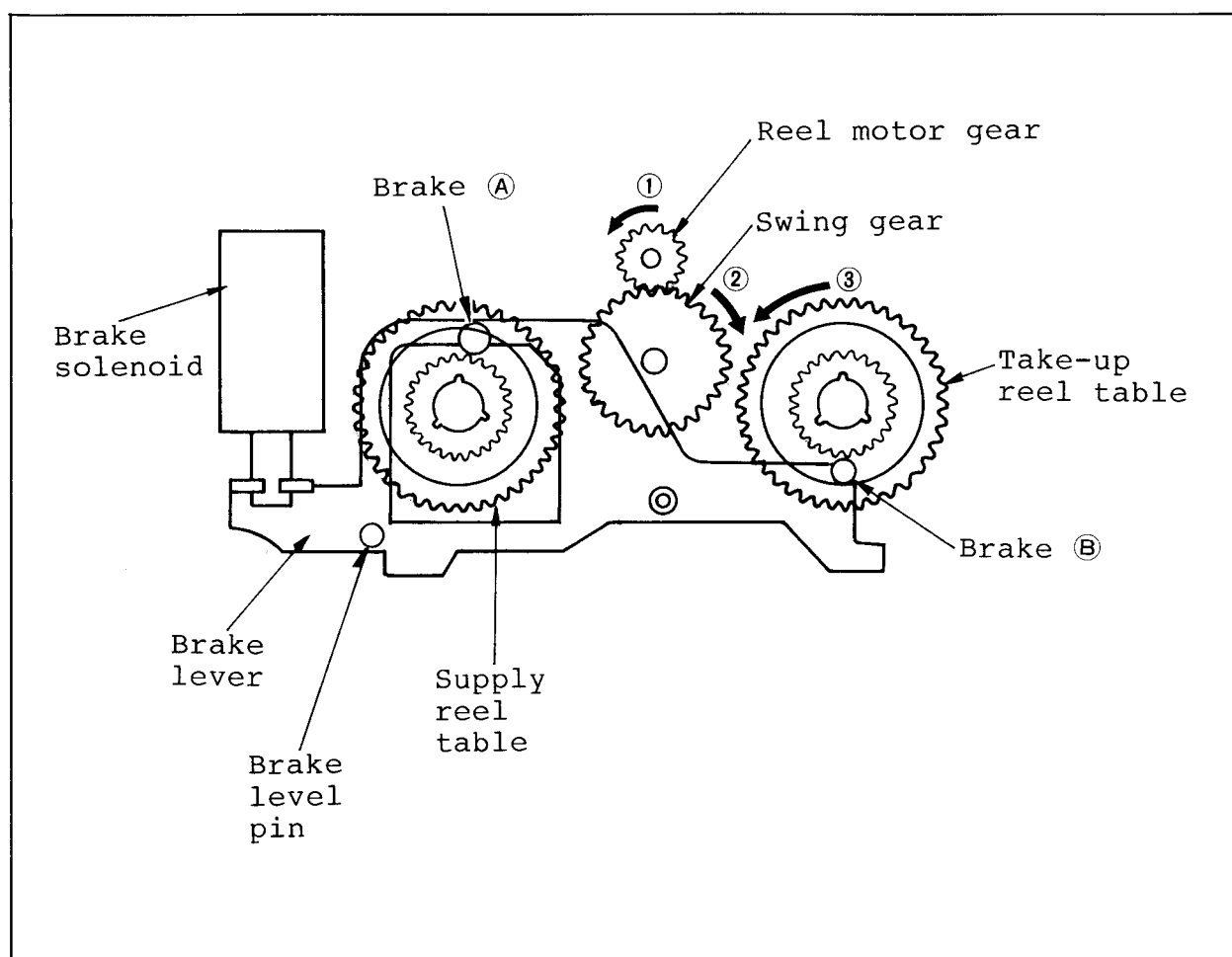
- I STOP mode, STOP/FF/REW
- II PAUSE mode, CUE/REV
- III ... PLAY mode, PLAY

* For the PAUSE operation, the mechanism is in the STOP mode.

Pin (A) is connected to the head base plate, and the shape of the main gear causes the head base plate to move up and down in accordance with the mode.

(2) Operation of the reel tables

The reel tables are rotated by the reel motor. During PLAY, the motor rotates in the direction indicated by arrow ①, thus causing the swing gear and the take-up reel table to engage so that the take-up reel table rotates. The winding torque is determined by the reel motor.



Top View

During FF/REW, the reel motor rotates in the opposite direction, thus causing the swing gear to swing left or right and transmit the rotation of the motor to the corresponding reel table.

(3) Operation of the brakes

During the PLAY and PAUSE mechanism mode, the brake lever pin is pressed by the head base plate, thus mechanically releasing the brakes. During FF/REW and CUE/REV, the brake solenoid is drawn in, thus releasing the brakes.

3. Operation of the mechanism control circuit

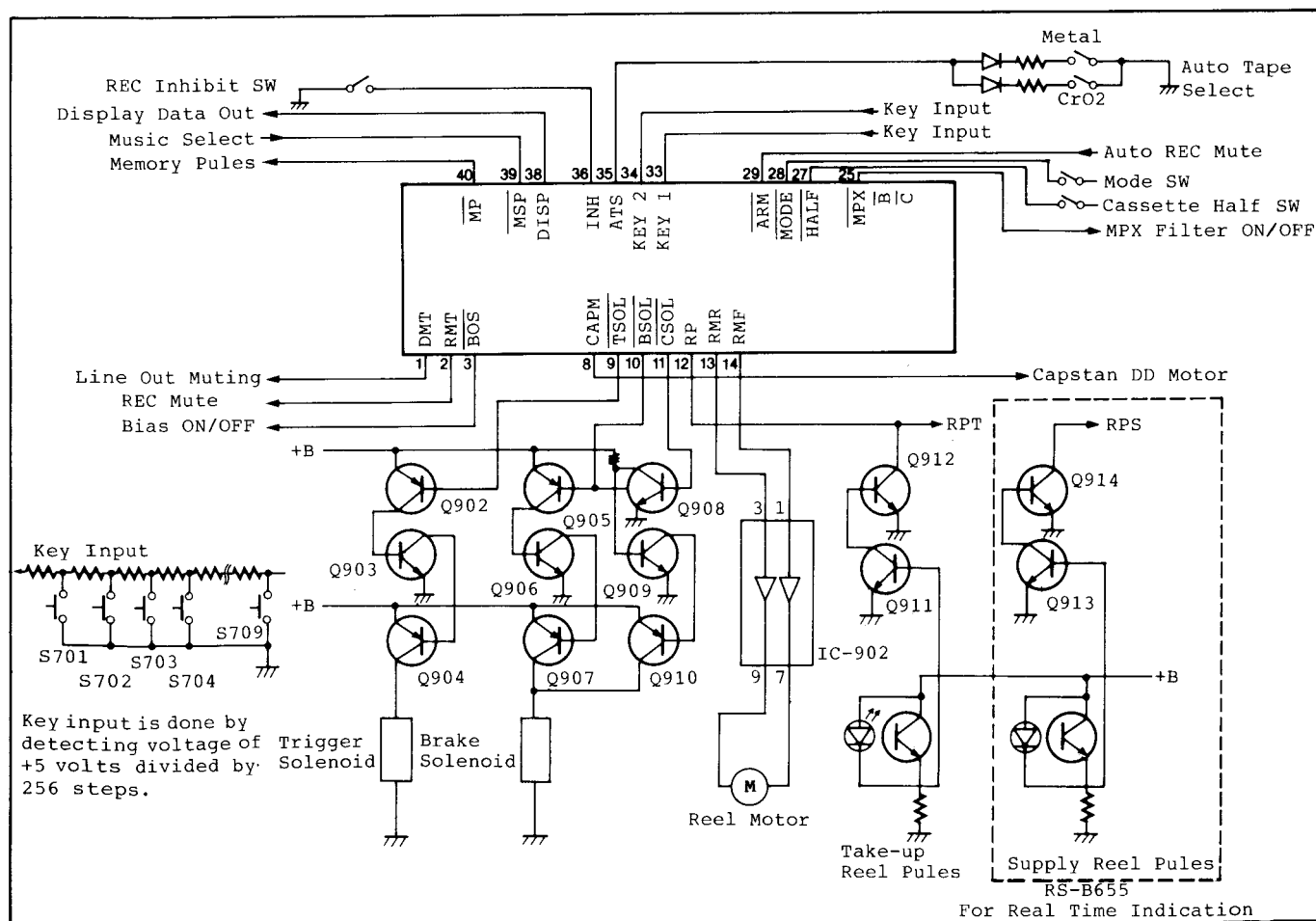
The mechanism and the entire deck are controlled by system control microcomputer IC-901 (MB88511). The signals from the key switches on the front panel are all input via key 1 and key 2.

The key input is detected by voltage detection of 256 division of 5 volts.

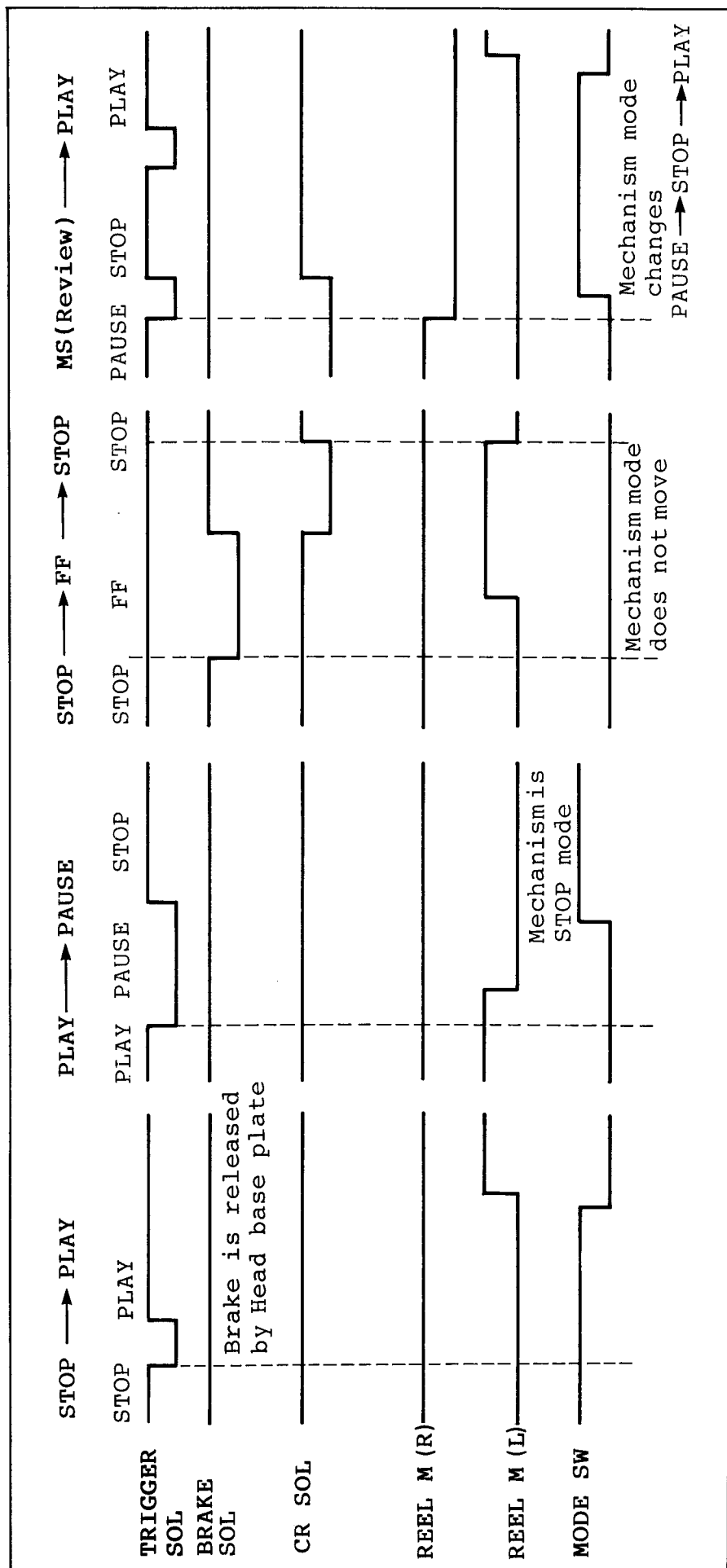
The trigger solenoid and the brake solenoid are controlled by the ON/OFF switching of transistors, and the CSOL signal is for the holding of the brake solenoid.

The take-up reel pulse and the supply reel pulse are supplied to fluorescent display IC-551 to become the input signals for the real time display (Model RS-B555 is not equipped with this function).

Mechanism Control Circuit

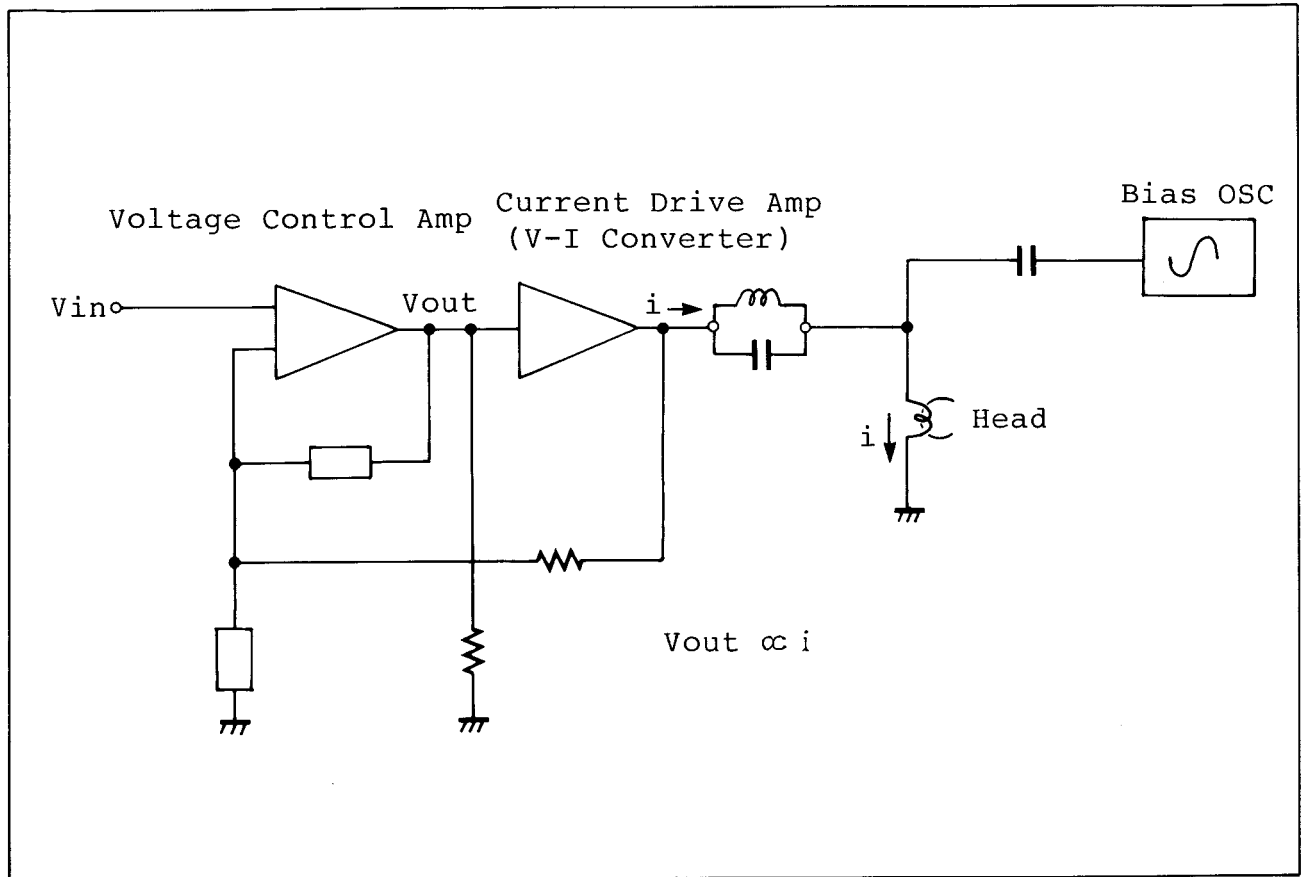


Timing chart of mechanism operation



- (1) Mechanism mode is STOP when PAUSE is pressed.
- (2) Brake solenoid is activated when FF/REW and CUE/REV operation.
(Brake solenoid become ON and after that, CR SOL become ON to hold the solenoid)

4. Linear magne-field Class AA recording amplifier



As in our previous Class AA amplifier, this new design consists of voltage control amplifier and a current supply amplifier and boasts true class A operation throughout. The voltage control amplifier incorporates equalizer elements in its feedback loop to provide a voltage output with recording equalizer characteristics.

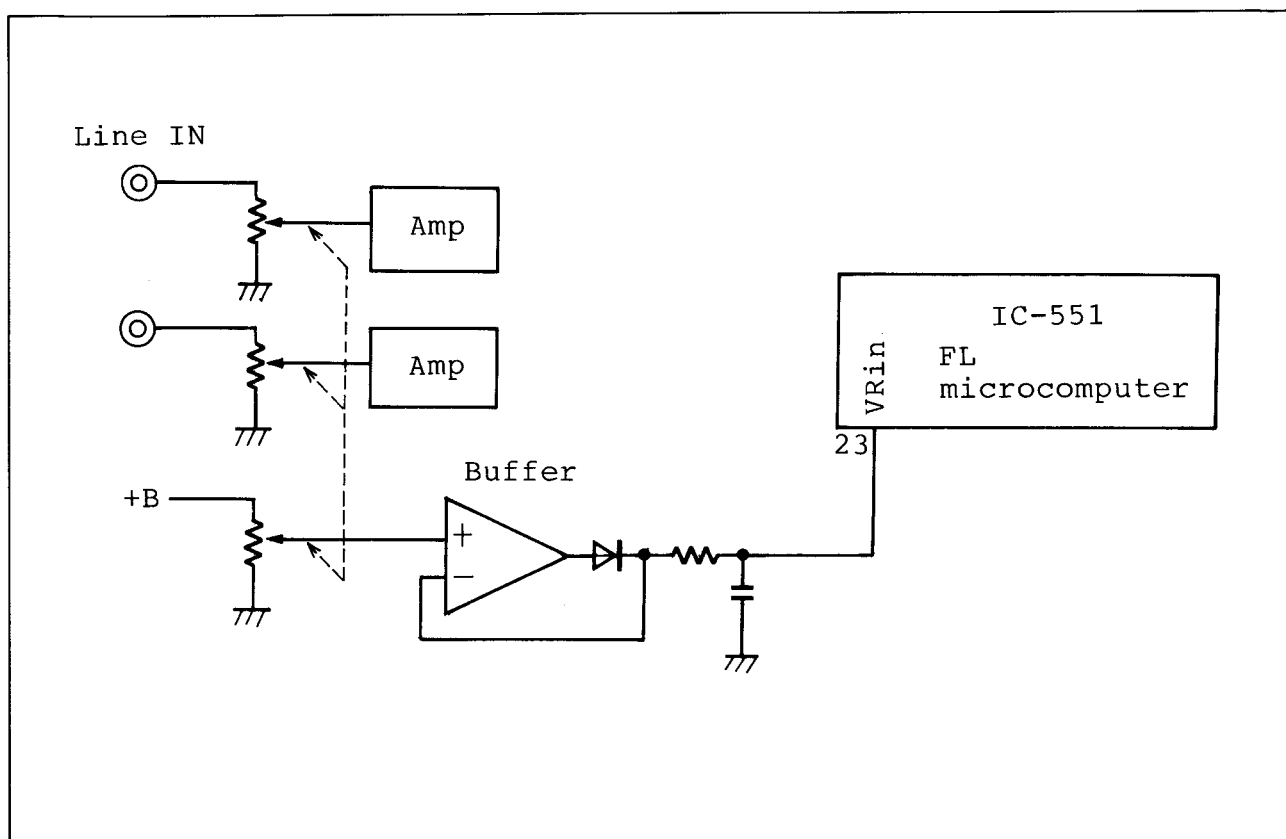
The current supply amplifier converts this output voltage into current, thereby supplying a current proportional to the signal voltage to the recording head.

In other words, even if the load impedance varies with frequency, the current supplied to the head is always proportional to the voltage control amplifier output voltage. This ensures that the signal filed generated by the recording head possesses the same gain and phase as the output signal from the voltage control amplifier and results in a remarkable improvement in waveform response.

5. APRS (Advanced Precise REC-Level System)

At last, relief with our new APRS system, setting the recording level is not only extremely simple, but very accurate as well.

The system uses a microcomputer to detect how far you turn up or down the REC-level knob. It then calculates the new peak level to match the new setting.



First you set the deck to rec-pause and press the APRS button. The meters hold the highest peak reached during play from that point onward. At this point the reading on the meters is that for the current rec-level setting. If the level is too high, turn the rec-level knob down. The peak level shown on the meters goes down to reflect the new setting. If it is too low, turn the rec-level up. The peak level reading increases by precisely the amount you turned up the rec-level knob.

The Rec-level position is detected by voltage detection of 256 division of +5 volts.