

Service Manual

Dolby NR-Equipped
Stereo Cassette Deck

Cassette Deck
RS-B755



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. "DOLBY", the double-D symbol, and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

MECHANISM SERIES: AR350

■ SPECIFICATIONS

■ CASSETTE DECK SECTION

| | |
|---|-------------------------|
| Deck system | Stereo cassette deck |
| Track system | 4-track, 2-channel |
| Heads | |
| Record | Permalloy (Combination) |
| Playback | Permalloy (Combination) |
| Erasure | Double-gap ferrite |
| Motors | |
| Capstan drive | Quartz DD motor |
| Reel table drive | DC motor |
| Cassette holder open/close | 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~19 kHz |
| | 20 Hz~18 kHz (DIN) |
| CrO₂ | 20 Hz~20 kHz |
| | 20 Hz~19 kHz (DIN) |
| METAL | 20 Hz~21 kHz |
| | 20 Hz~20 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 | 57 dB (A weighted) |

| | |
|--|--|
| Wow and flutter | 0.05% (WRMS) ±0.14% (DIN) |
| Fast forward and rewind times | Approx. 90 seconds with C-60 cassette tape |
| Input sensitivity and impedance | |
| LINE | 60 mV/47 kΩ |
| Output voltage and impedance | |
| LINE | 400 mV/800Ω |
| HEADPHONES | 125 mV/8Ω (8Ω~600Ω) |

■ GENERAL

| | |
|---------------------------|--|
| Power consumption | 21 W |
| 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) | 430×135×290 mm (16 ¹⁵ / ₁₆ "×5 ¹ / ₈ "×11 ¹³ / ₃₂ " |
| Weight | 5.3 kg (11.7 lb.) |

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

Matsushita Services Company
Division of Matsushita Electric
Corporation of America
50 Meadowland Parkway,
Secaucus, New Jersey 07094

Panasonic Sales Company,
Division of Matsushita Electric
of Puerto Rico, Inc.
San Gabriel Industrial Park
65th Infantry Ave. Km.9.5
Carolina, P.R. 00630

Matsushita Electric of Canada Limited
5770 Ambler Drive, Mississauga, Ontario,
L4W 2T3

Matsushita Electric Industrial
Co., Ltd.
Central P.O. Box 288,
Osaka 530-91, Japan

Technics

CONTENTS

| | Page |
|---|--------|
| SAFETY PRECAUTION | 2 |
| ACCESSORIES | 2 |
| FRONT PANEL CONTROLS AND FUNCTIONS | 3, 4 |
| CONNECTIONS | 5 |
| RECORDING WITH HIGH TONE QUALITY | 5~7 |
| DISASSEMBLY INSTRUCTIONS | 8~12 |
| MEASUREMENT AND ADJUSTMENT METHODS | 13~15 |
| TERMINAL FUNCTION OF IC'S | 16, 17 |
| BLOCK DIAGRAM | 18, 19 |
| INTERNAL CONNECTION OF FL | 20 |
| SCHEMATIC DIAGRAM | 21~28 |
| TROUBLESHOOTING OF DIRECT DRIVE MOTOR | 28, 29 |

| | Page |
|---|-------|
| PRINTED CIRCUIT BOARDS | 30~34 |
| WIRING CONNECTION DIAGRAM | 35 |
| REPLACEMENT PARTS LIST | 36~38 |
| EXPLODED VIEWS | 39~42 |
| REPLACEMENT PARTS LIST | 43 |
| RESISTORS & CAPACITORS | 44~46 |
| TERMINAL GUIDE IC'S, TRANSISTORS AND DIODES | 46 |
| ※ TECHNICAL INFORMATION | |
| ※ This technical information is located on pp 45-51 of the RS-B555 Service Manual (Order No. AD8907231C5). Therefore, refer to that Service Manual. | |

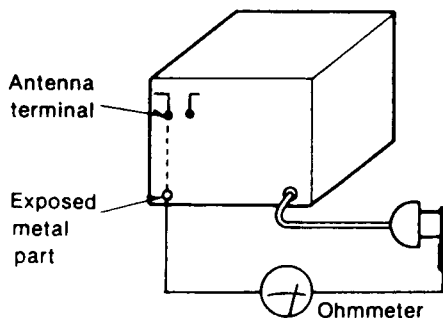
SAFETY PRECAUTION (This "safety precaution" is applied only in U.S.A.)

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

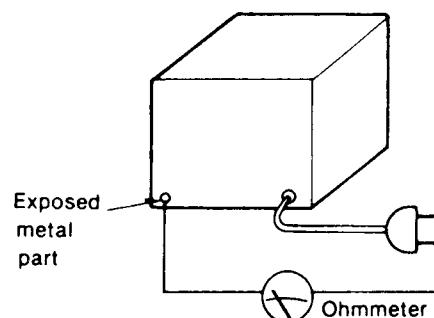
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with 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.



(Fig. A)

Resistance = $3M\Omega$ — $5.2M\Omega$



(Fig. B)

Resistance = Approx ∞

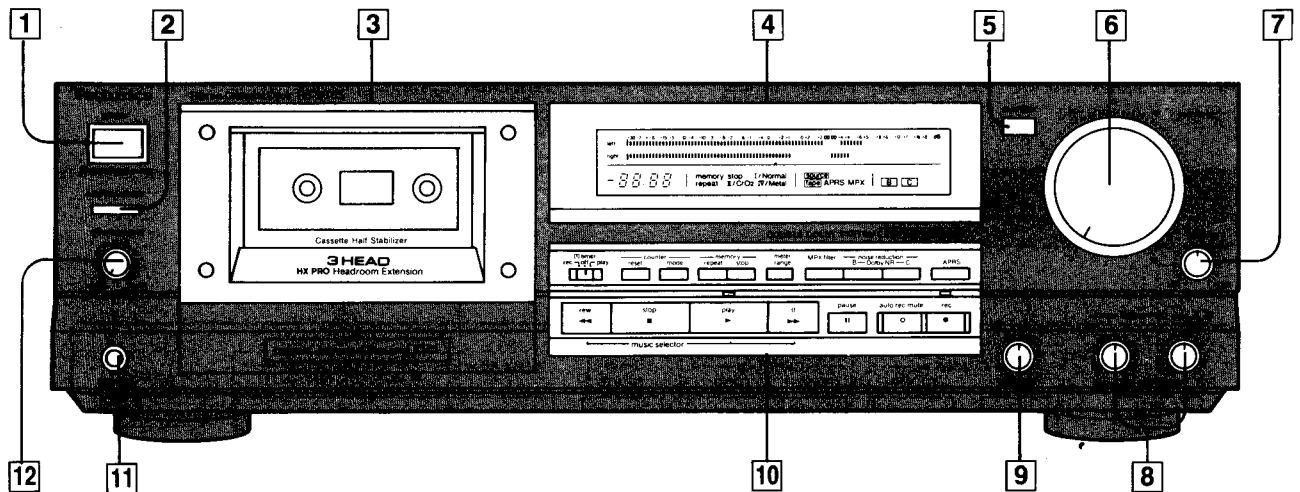
4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

ACCESSORIES

• Stereo connection cables 2
[SJP2249-3]

• AC power supply cord 1
[SFDAC05E03: (E, E5, EG)
SJA172: (PC)
SJA172-1: (P)
SJA193-1: (EB)]

FRONT PANEL CONTROLS AND FUNCTIONS



1 Power "standby $\text{\textcircled{O}}$ /on" switch (power "standby $\text{\textcircled{O}}$ /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 $\text{\textcircled{O}}$ " 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 Open/close button (\blacktriangle open/close)

This button can be used to open or close the cassette holder.

3 Cassette holder

4 Display section

5 Monitor switch (monitor)

In order to monitor the tape (check the recording condition), the sound on the tape (immediately after recording) and the sound of the sound source (the original sound, before recording) can be alternately selected by pressing this button. (The corresponding indicator will illuminate.)

6 Recording-level control (rec level)

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

7 Recording-balance control (balance)

This control can be used to balance the left and right sound levels during recording.

8 Recording-calibration adjustment controls (rec calibration)

The sensitivity differences (high or low recording levels) for each tape type can be corrected by using these controls.

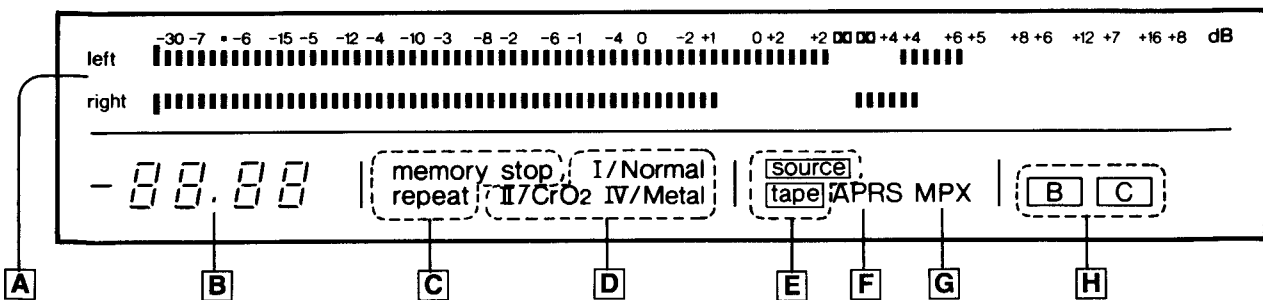
9 Bias-adjustment control (bias adjust)

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

10 Operation section

11 Headphones jack (phones)

12 Headphones volume control (phones level)



A Input level meter

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.

B Tape/Linear counter

Indicates the amount of tape movement or elapsed time.

C Memory-mode indicators (memory repeat/stop)

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

D Tape-select indicators

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

E Monitor indicators (source/tape)

Each indicator illuminates to show which of the monitor was set by the monitor switch.

F APRS indicator (APRS)

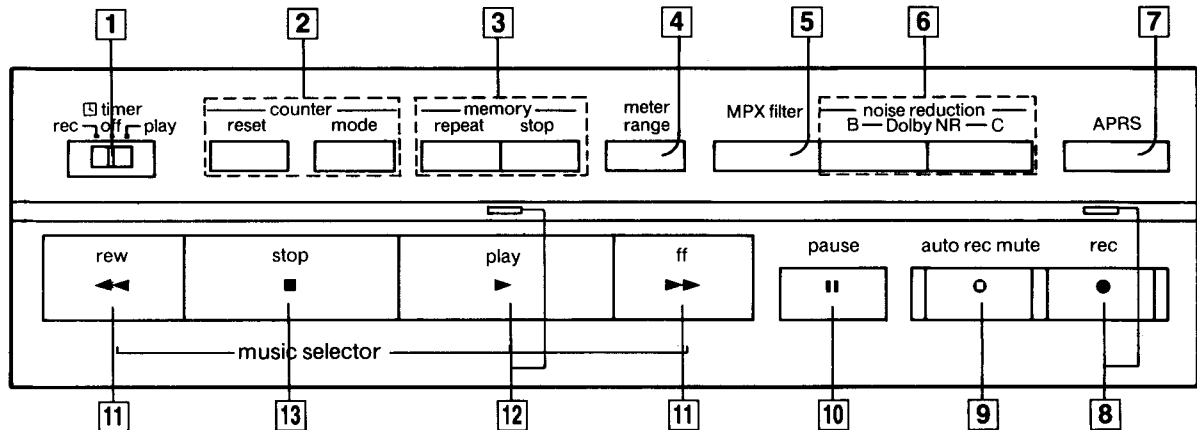
Illuminates to indicate that the "APRS" is set to "on" in the recording stand-by mode.

G Multiplex filter indicator (MPX)

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

H 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.

**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 buttons (counter reset/mode)

reset: This button can be used to reset the tape/linear counter indication to "000_" / "00.00".

mode: This button can be used to select the tape/linear counter indication.

3 Memory-mode buttons (memory repeat/stop)

repeat: This button can be used to set this unit to the "A-B repeat" mode.
(Refer to page 7.)

stop: This button can be used to rewind the tape to the preset "0000" point when the rewind (◀◀) button is pressed. (Refer to pages 7.)

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.
(Refer to page 5.)

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. (Refer to page 6.)

8 Record button and indicator (rec/●)

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

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

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 and indicator (play/▶)

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

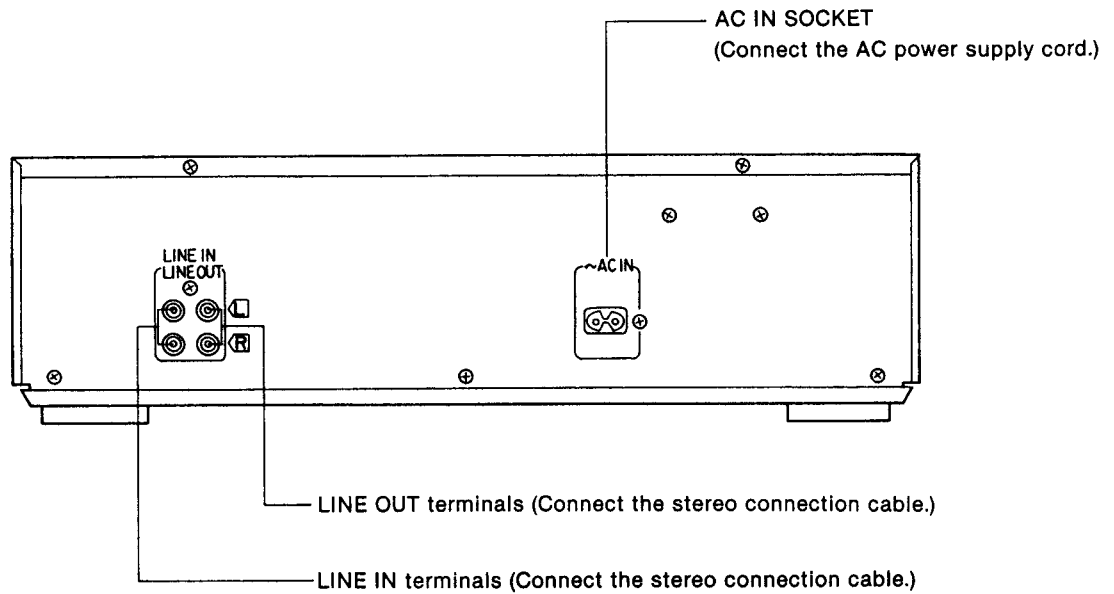
(The tape will then begin moving in the left-to-right direction.)

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.

13 Stop button (stop/■)

This button can be used to stop tape movement.

CONNECTIONS

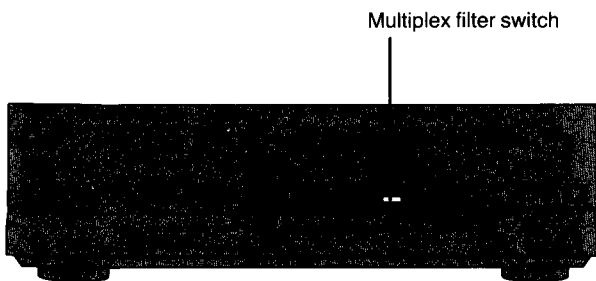


RECORDING WITH HIGH TONE QUALITY

MPX filter

Because the pilot signals*, etc. included with FM stereo broadcast signals are subjected to Dolby noise-reduction processing in the same way as the music signals when an FM stereo broadcast is being recorded, there is apt to be deterioration of the tone quality, and the noise-reduction effect is reduced.

This unit, however, is provided with an MPX filter that filters out the 19 kHz frequency, which is the frequency of the pilot signal. Note that there is virtually no audible effect upon the tone quality as a result of the use of the 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. This switch, however, should be switched OFF when a sound source other than the FM broadcast is being recorded, such as, for example, a sound source that has a wide frequency range, such as a compact disc, etc.

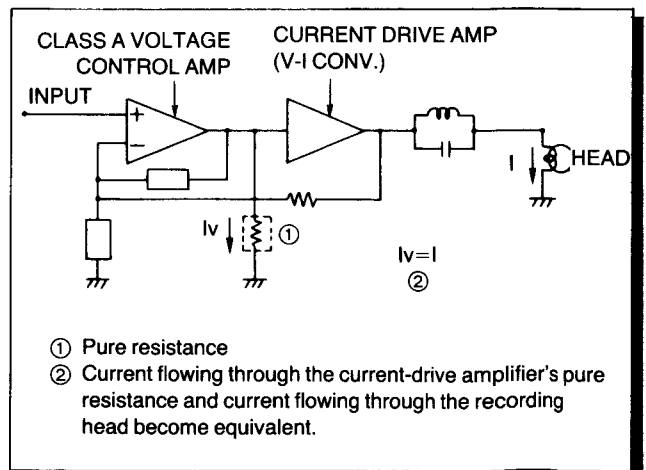
*Pilot signal

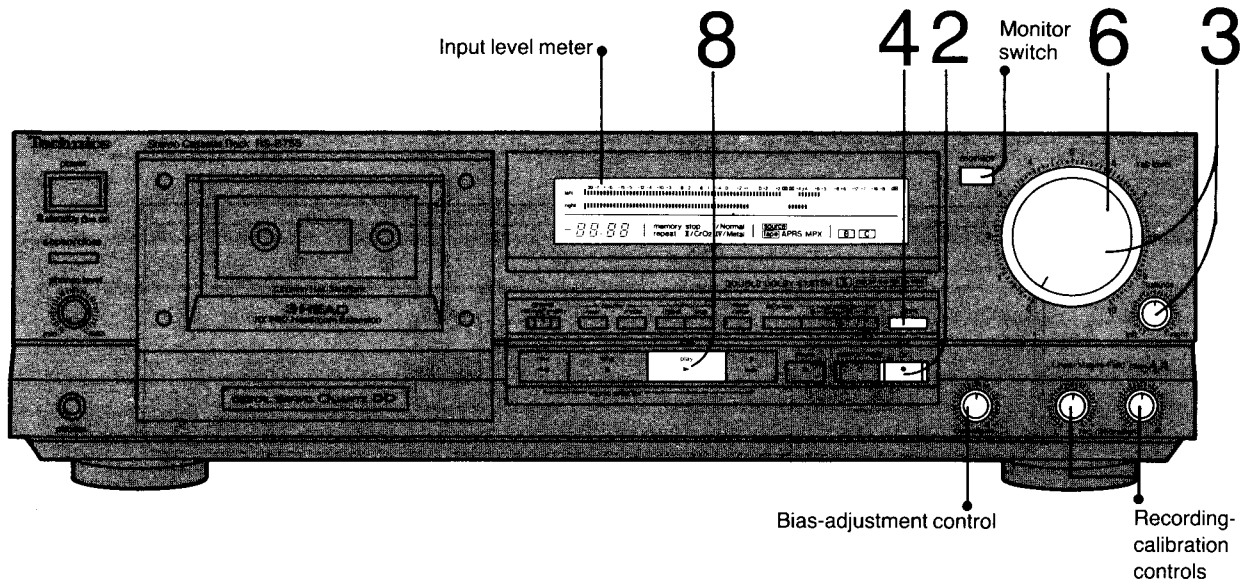
The pilot signal is a signal that is used to separate FM broadcast signals in stereo (left and right channels); this signal is generated on a frequency that is very close to the 19 kHz music band.

Linear Magne-Field class AA

The recording-equalizer amplifier is an amplifier for supplying (to the head) the current necessary for recording. Usually, loads such as the recording head and bias trap circuitry (circuitry for control of the bias current) would be applied to the output of this amplifier, with the result that complex changes of the current phase occur, causing distortion of the recording signal.

The recording-equalizer amplifier used in this unit, however, is a linear magne-field class AA amplifier that is a combination of class A voltage-control amplifier circuitry and current-drive amplifier circuitry. (See the figure below.) As a result, a current flow that is equivalent to the current flowing in the pure resistance of the current-drive amplifier can be supplied to the recording head. Consequently, a magnetic field that corresponds to the input signals is produced at the head and is recorded on the tape, which means that recorded sounds are faithful to the original sound source, without fluctuations of the current phase.





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.]

Input level meter



Peak level

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.

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.

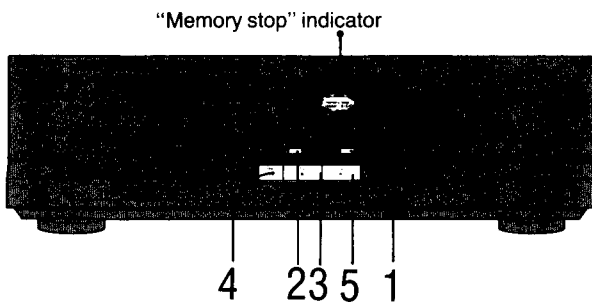
- The recording-balance control cannot be used to adjust the peak level.

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.

Playback after "memory stop"

The tape is rewound to the designated point and then play can be begun from that point.



To set the playback start point

- 1 Press the memory-stop button and then begin the playback.
(The memory-stop indicator will illuminate.)
- 2 Press the counter-reset button at the place to which you want the tape to rewind.
(The counter will be reset to "0000".)

To begin playback from the set point

- 3 Press the stop button.
 - 4 Press the rewind (◀◀) button.
The tape will be rewound to the set point, and then will be automatically stopped.
 - 5 Press the playback button to begin the playback once again.
- ▶ To cancel the "memory stop" function, press the memory stop button once again.
(The memory stop indicator will be switched OFF.)

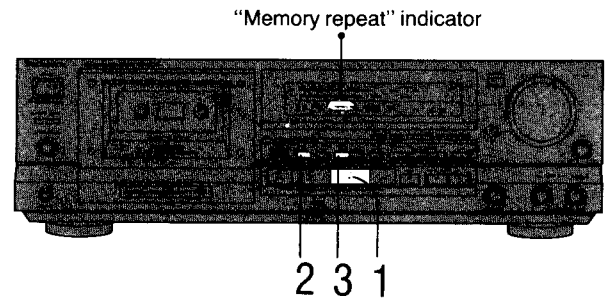
Notes:

- The "memory stop" function can be used while either the tape counter or the linear counter is displayed, but a change from one to the other cannot be made during the "memory stop" mode.
- There may be a slight difference (maximum +4 seconds) between the point where the tape counter was reset and the point where the tape actually stops during rewind.

A ↔ B repeat play ("memory repeat")

By simply designating the beginning ("0000") and the end of the part that you want to play repeatedly, that part can be repeatedly played for as many as 16 times.

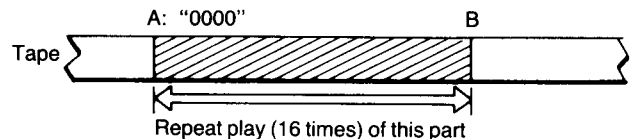
(This repeat-play feature can be used only in the playback mode.)



- 1 Press the playback button.
(The playback indicator will illuminate, and playback will begin.)
- 2 Press the counter-reset button at the place (A) where you want the repeat play to start.
(The counter will be reset to "0000".)
- 3 Press the memory-repeat button at the place (B) where you want the repeat play to end.
(The memory-repeat indicator will illuminate.)
When the memory-repeat button is pressed, the tape will be rewound to point (A), and the repeat play will then begin.

Place where counter-reset button was pressed

Place where memory-repeat button was pressed

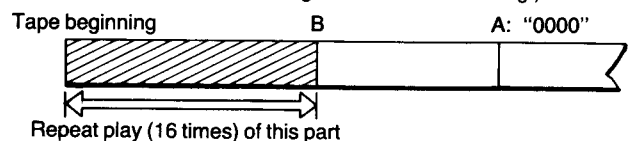


- ▶ To cancel the repeat-play function before it stops (after 16 repeats), press the memory-repeat button.
(The memory-repeat indicator will switch OFF.)
- ▶ To change the setting of point (B), first cancel the repeat-play operation (see above), and then press the memory-repeat button at the new place.

Notes:

- The repeat-play function will be cancelled if the stop button or the rewind/fast-forward/search button is pressed during repeat play. To stop temporarily, press the pause button.
- Repeat play is possible while either the tape counter or the linear counter is displayed, but a change from one to the other cannot be made while repeat play is in progress.
- If, after setting point (A), the tape is rewound to set point (B), the repeat play will be of the part between the tape beginning and point (B).

(The linear counter reading will be a minus reading.)

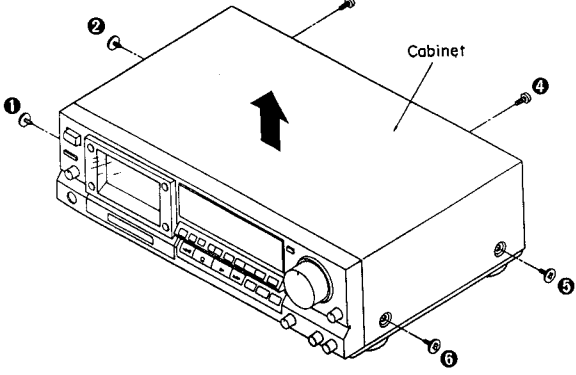
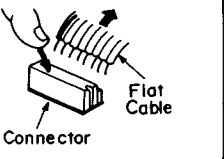
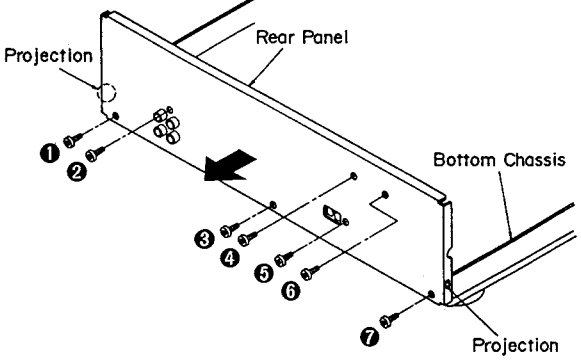
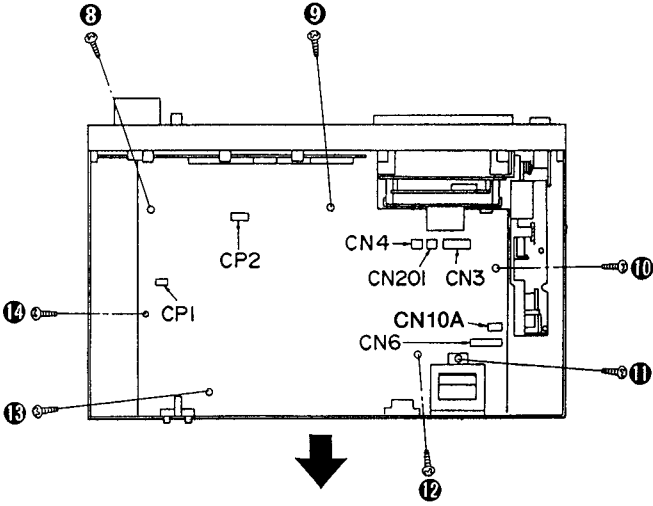
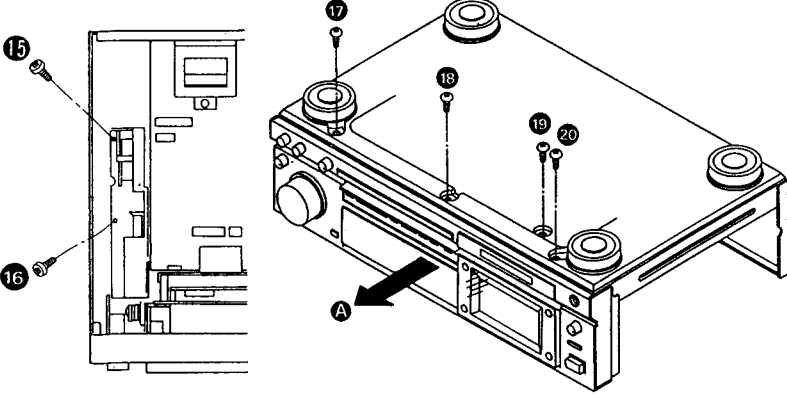
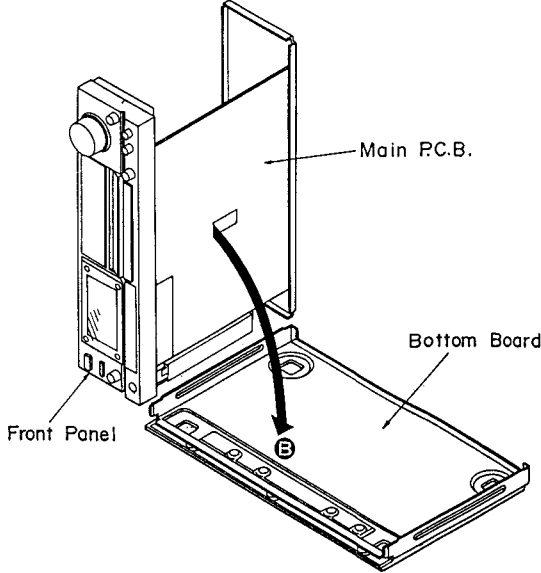


- There may be a slight difference (maximum ± 4 seconds) between the settings made for points (A) and (B) and the points at which the tape is actually played during repeat play.

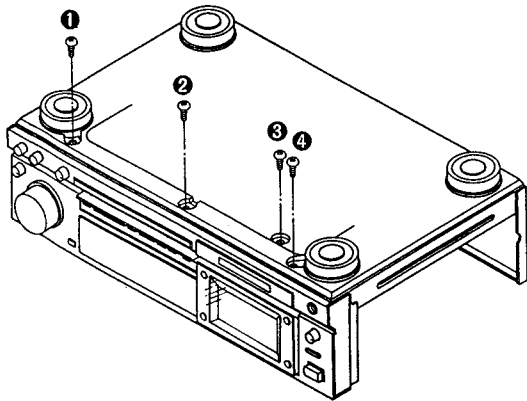
DISASSEMBLY INSTRUCTIONS

“ATTENTION SERVICER”

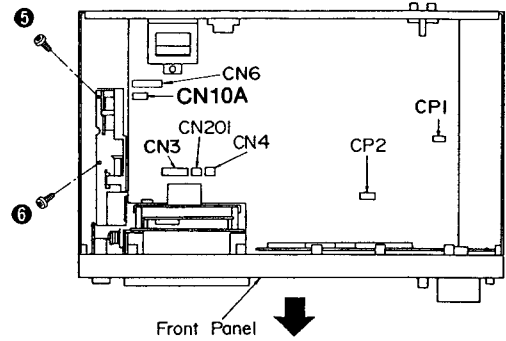
Some chassis components may have sharp edges. Be careful when disassembling and servicing.

| Ref. No. 1 | Removal of the cabinet | Ref. No. 2 | Removal of the main P.C.B. |
|----------------|--|------------------|---|
| Procedure 1 |  <p>• Remove the 6 screws (1~6).</p> | Procedure 1→2 | <ol style="list-style-type: none"> 1. Remove the 7 screws (1~7). 2. Remove the rear panel from the projection of the bottom chassis. |
| | <ol style="list-style-type: none"> 3. Remove the 7 screws (8~14). 4. Remove the 2 connectors (CP1, CP2). 5. Remove the 5 flat cables (CN3, CN4, CN6, CN10A, CN201). 6. Remove the main P.C.B. in the direction of the arrow. <p>How to remove the flat cable</p> <p>• Pull out the flat cable while pressing the connector.</p>  | |   <ol style="list-style-type: none"> 4. Remove the bottom board in the direction of the arrow B. 5. Reinstall the front panel to the main P.C.B. |
| | <p>How to check the main P.C.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"> 1. Remove the 10 screws (1, 3, 7~14) in above figure. 2. Remove the 6 screws (15~20). 3. Remove the front panel in the direction of the arrow A.  | |  |

| | |
|-------------------------|-----------------------------------|
| Ref. No. 3 | Removal of the front panel |
| Procedure 1→3 | 1. Remove the 6 screws (①~⑥). |

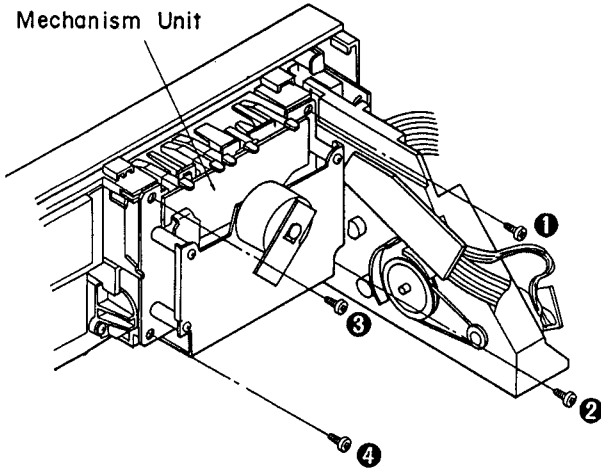


2. Remove the 2 connectors (CP1, CP2).
3. Remove the 5 flat cables (CN3, CN4, CN6, CN10A, CN201).
4. Remove the front panel in the direction of the arrow.



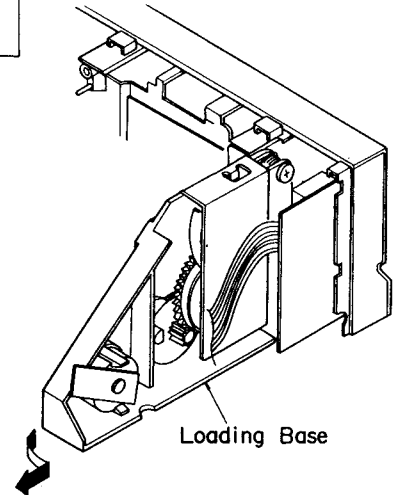
| | |
|---------------------------|--------------------------------------|
| Ref. No. 4 | Removal of the mechanism unit |
| Procedure 1→3→4 | |

Mechanism Unit



- Remove the 4 screws (①~④).

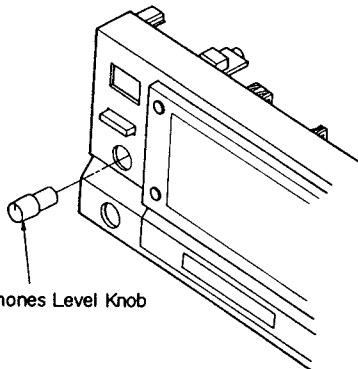
| | |
|-----------------------------|------------------------------------|
| Ref. No. 5 | Removal of the loading base |
| Procedure 1→3→4→5 | |



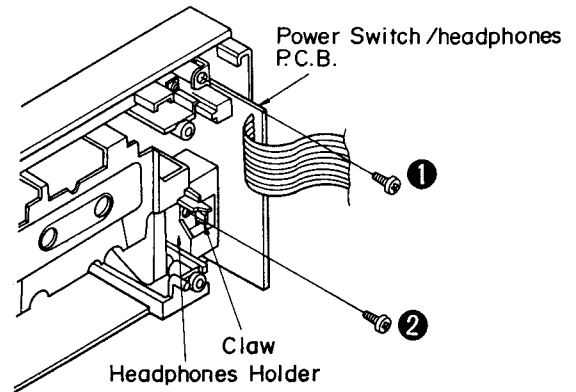
- Remove the loading base in the direction of the arrow.

| | |
|-------------------------------|---|
| Ref. No. 6 | Removal of the power switch/ headphones P.C.B. |
| Procedure 1→3→4→5→6 | |

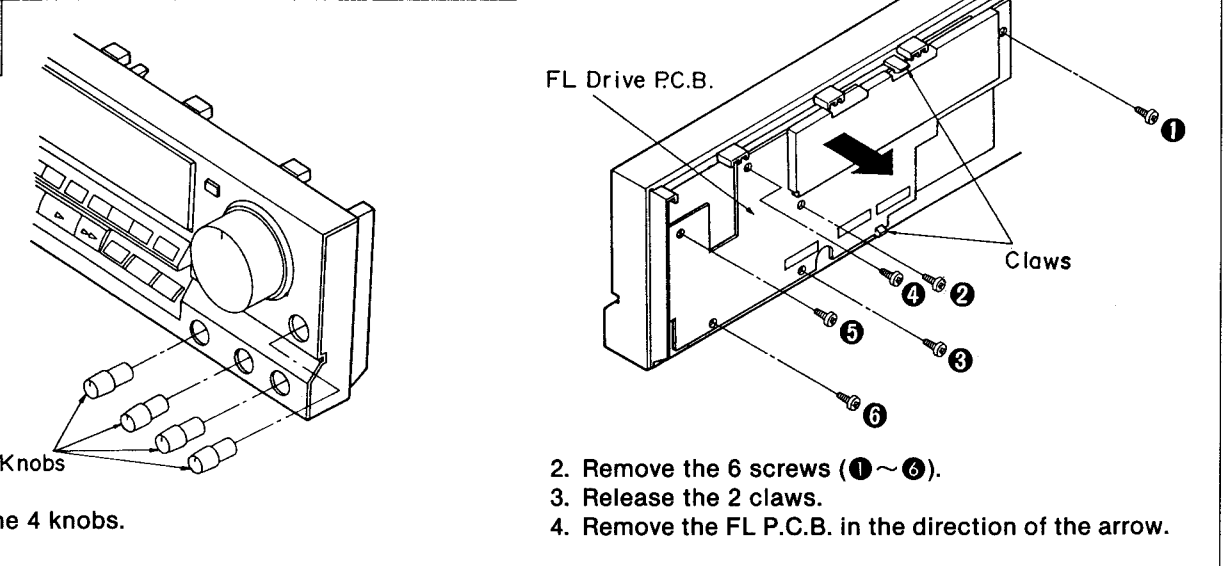
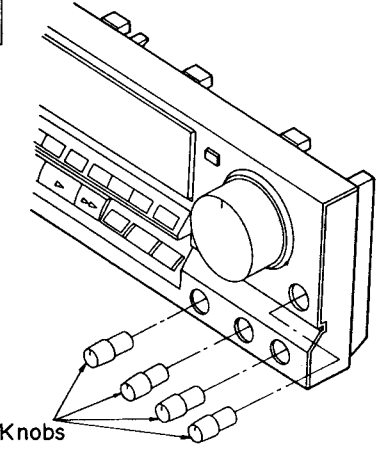
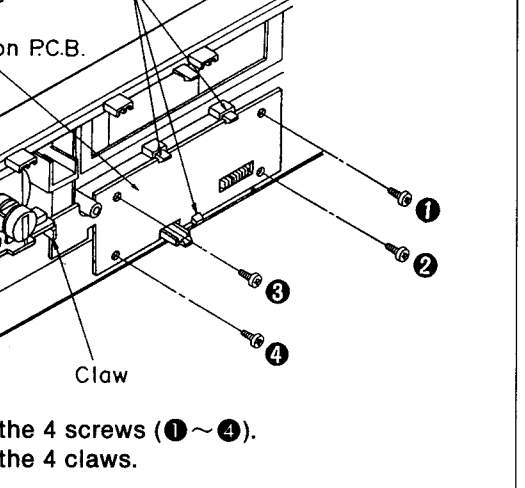
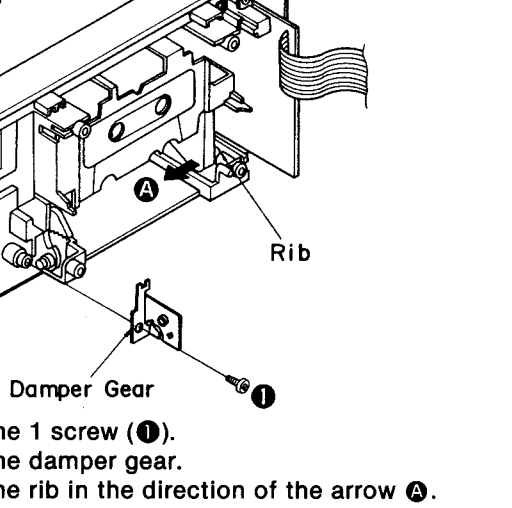
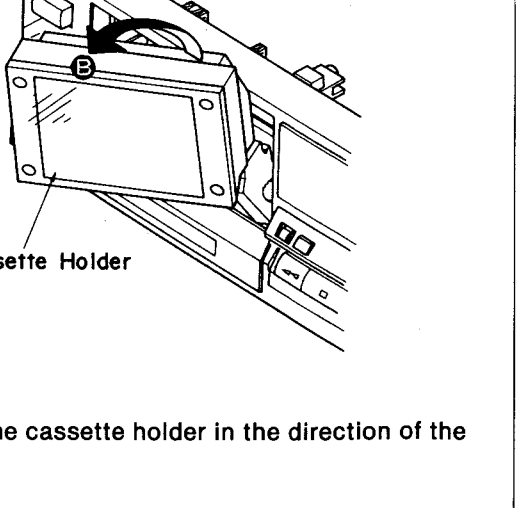
Headphones Level Knob



1. Pull cut the headphones level knob.

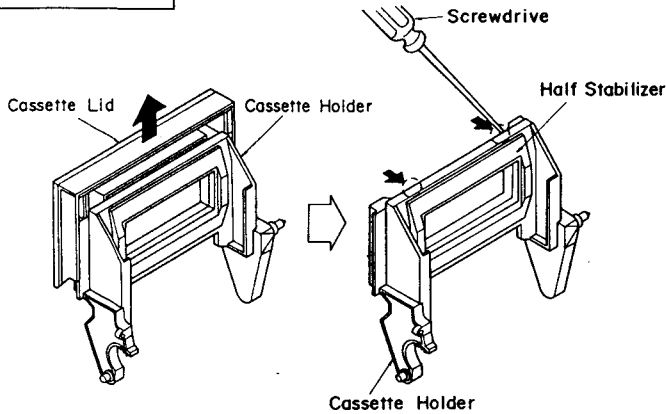


2. Remove the 2 screws (①, ②).
3. Release the 1 claw.
4. Remove the headphones holder.

| | | | |
|---|--|--|--|
| <p>Ref. No. 7</p> | <p>Removal of the FL Drive P.C.B.</p> |  <p>FL Drive P.C.B.</p> <p>Knobs</p> <p>Claws</p> <ol style="list-style-type: none"> 1. Pull out the 4 knobs. 2. Remove the 6 screws (①~⑥). 3. Release the 2 claws. 4. Remove the FL P.C.B. in the direction of the arrow. | |
| <p>Procedure 1→3→7</p> | | | |
| <p>Ref. No. 8</p> | <p>Removal of the rec level P.C.B.</p> | <p>Ref. No. 9</p> | <p>Removal of the operation switch P.C.B.</p> |
| <p>Procedure 1→3→7→8</p> |  <p>Rec Level Knob</p> <p>Nut</p> <p>Rec Level P.C.B.</p> <ol style="list-style-type: none"> 1. Pull out the rec level knob. 2. Remove the 1 nut. | |  <p>Claws</p> <p>Operation P.C.B.</p> <p>Claw</p> <ol style="list-style-type: none"> 1. Remove the 4 screws (①~④). 2. Release the 4 claws. |
| | | | |
| <p>Ref. No. 10</p> | <p>Removal of the cassette holder</p> | | |
| <p>Procedure 1→3→4 →5→10</p> |  <p>Rib</p> <p>Damper Gear</p> <ol style="list-style-type: none"> 1. Remove the 1 screw (①). 2. Remove the damper gear. 3. Remove the rib in the direction of the arrow ①. | |  <p>Cassette Holder</p> <ol style="list-style-type: none"> 4. Remove the cassette holder in the direction of the arrow ②. |
| | | | |

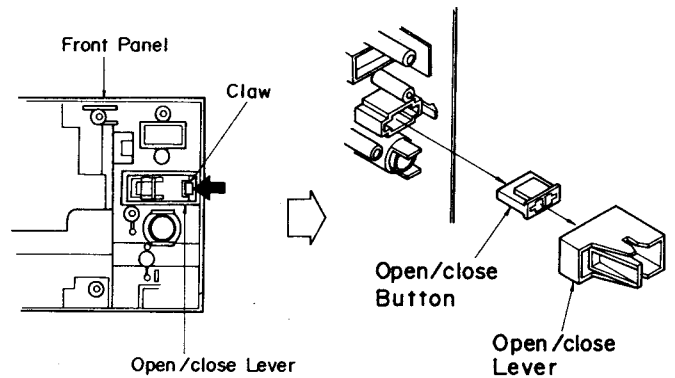
Ref. No. 11
Removal of the cassette cover and cassette half stabilizer

Procedure
10→11



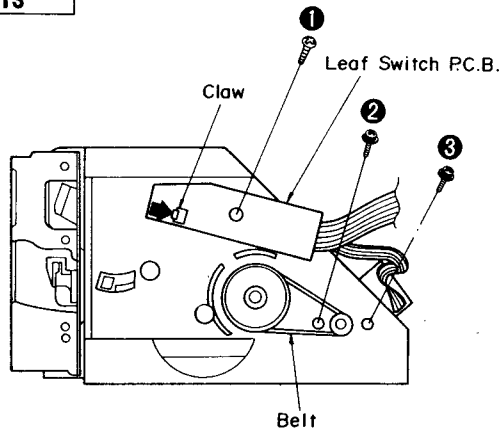
Ref. No. 12
Removal of the open/close lever and open/close button

Procedure
5→6→12



Ref. No. 13
Removal of the leaf switch P.C.B. and eject drive motor

Procedure
1→3→4
→5→13

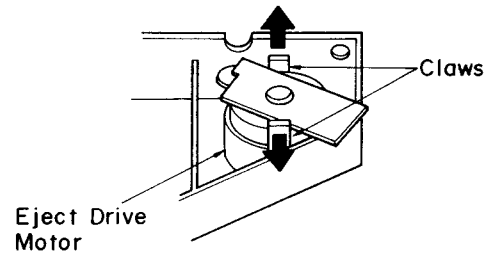


■ Removal of the leaf switch P.C.B.

1. Remove the 1 screw (❶).
2. Release the 1 claw.

■ Removal of the eject drive motor

1. Remove the belt.
2. Remove the 2 screws (❷, ❸).
3. Release the 2 claw.



Ref. No. 14
Removal of the drive sector lever and loading angle

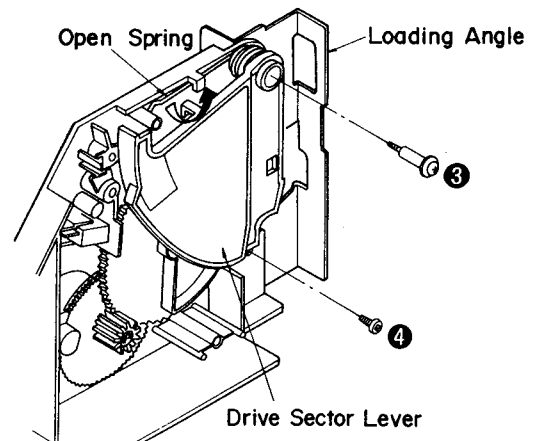
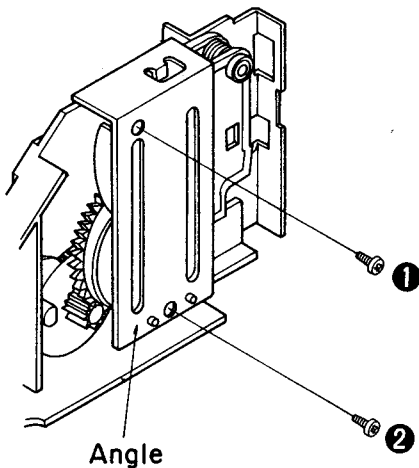
Procedure
1→3→4→14

1. Remove the 2 screws (❶, ❷).
2. Remove the angle.

3. Remove the 2 screws (❸, ❹).

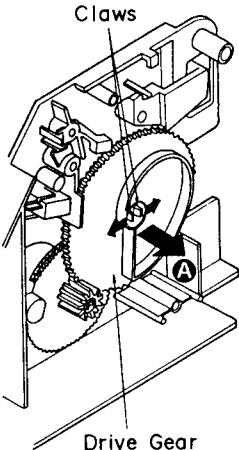
4. Remove the loading angle.

5. Remove the open lever spring in the direction of the arrow.



Ref. No. 15 **Removal of the drive gear**

Procedure 14→15

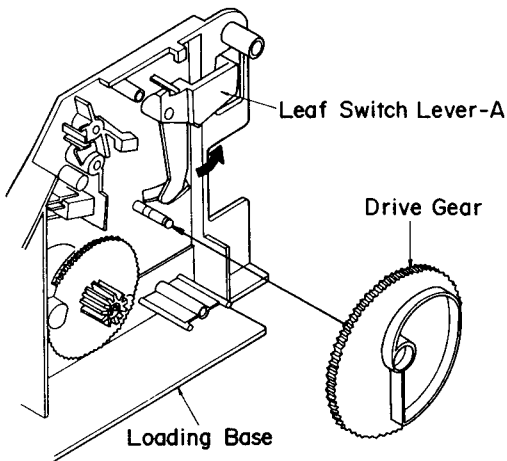


1. Release the 2 claws.
2. Remove the drive gear in the direction of the arrow **A**.

Ref. No. 17 **Installation of the Drive Gear and the Drive Sector Lever**

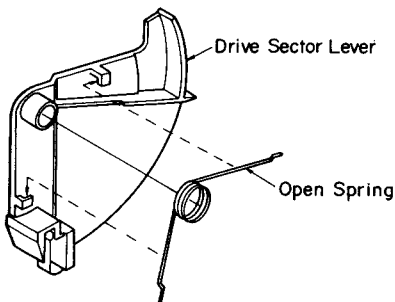
Procedure 17 **Installation of the Drive Gear**

1. Push the leaf switch lever A in the direction of the arrow.
2. Place the drive gear as shown below and then install it in the loading base.



Installation of the Drive Sector Lever

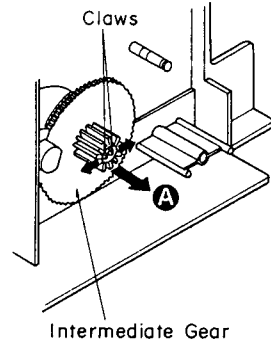
1. Temporarily install the open spring in the drive sector lever.



Ref. No. 16 **Removal of the intermediate gear, leaf switch lever-A, leaf switch lever-B, and leaf switch lever-C**

Procedure 14→15→16 **Removal of the intermediate gear**

1. Release the 2 claws.
2. Remove the intermediate gear in the direction of the arrow **A**.



Removal of the leaf switch lever-A

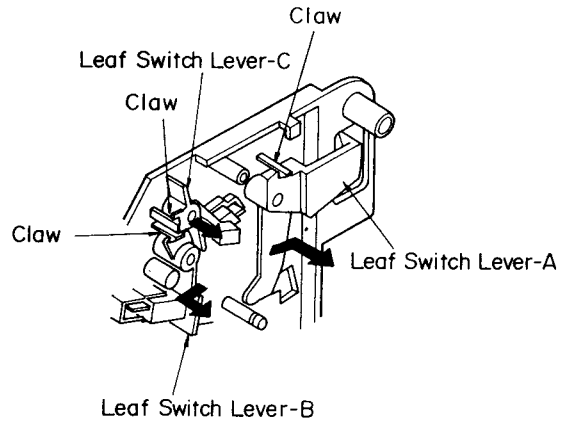
- Release the 1 claw.

Removal of the leaf switch lever-B

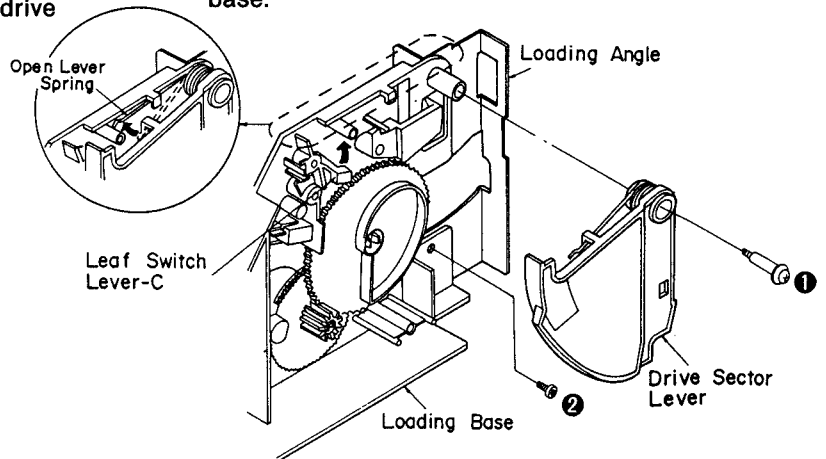
- Release the 1 claw.

Removal of the leaf switch lever-C

- Release the 1 claw.



2. Install the loading angle in the loading base and then secure it with the 1 screw **2**.
3. Push the leaf switch lever C in the direction of the arrow.
4. Secure the drive sector lever with 1 screw **1**.
5. Engage the open spring in the claw of the loading base.



MEASUREMENT AND ADJUSTMENT METHODES

Measurement Condition

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

Measuring Instrument

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

Test tape

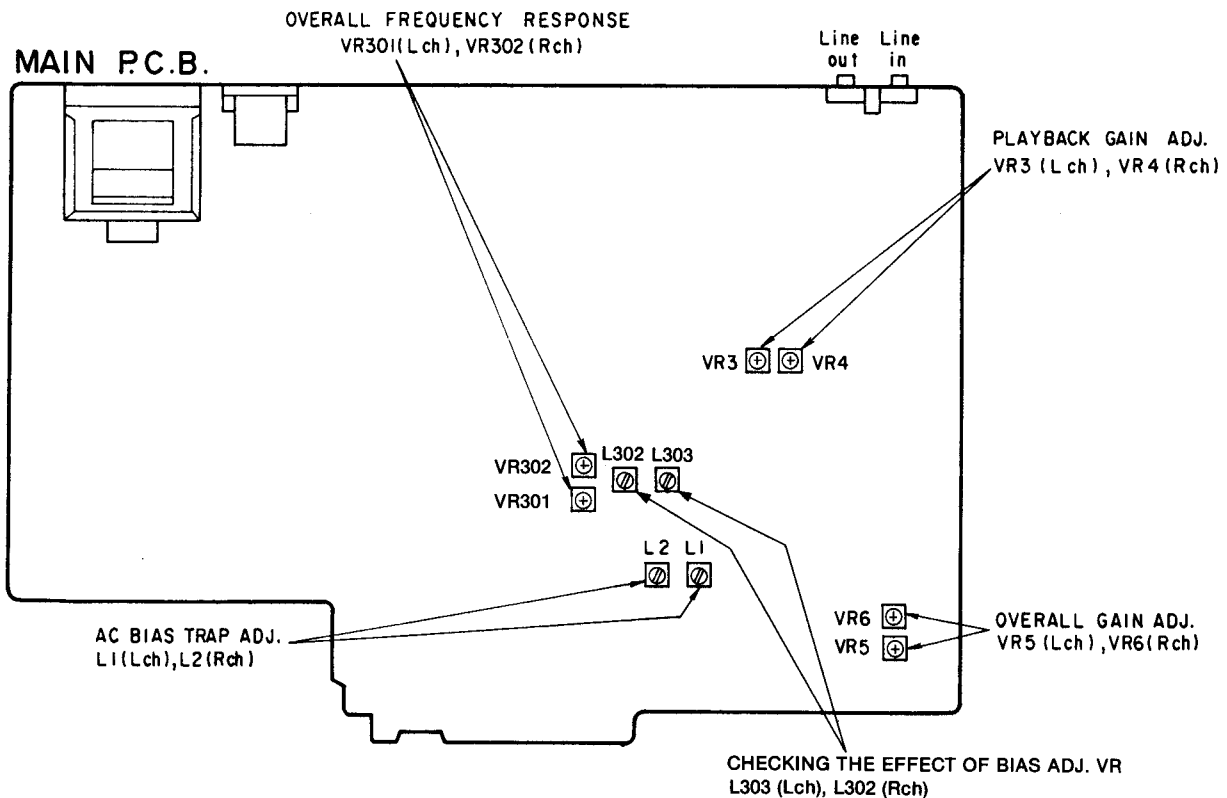
- Head azimuth adjustment (8kHz, -20dB); QZZCFM
- Tape speed adjustment (3kHz, -10dB); QZZCWAT
- Playback frequency response (315Hz, 12.5kHz, 10kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz, 63Hz, -20dB); QZZCFM

- Rec. calibration adjustment; Center
- Dolby NR switch; Off
- Make sure heads are clean
- Make sure capstan and pressure roller are clean
- Judgeable room temperature $20 \pm 5^{\circ}\text{C}$ ($68 \pm 9^{\circ}\text{F}$)

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

- 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.

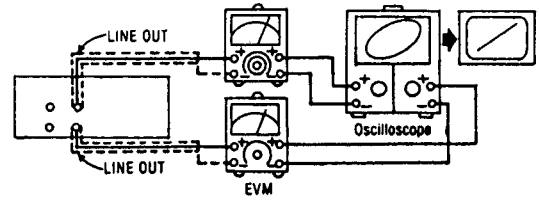


Fig. 1

Record/Playback Head

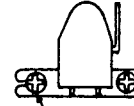


Fig. 2

PLAYBACK GAIN ADJUSTMENT

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

Standard value: 0.4V±0.5dB

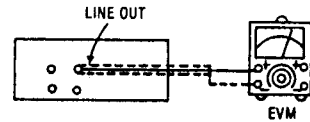


Fig. 3

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.

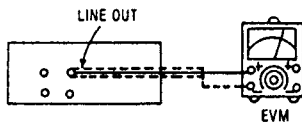


Fig. 4

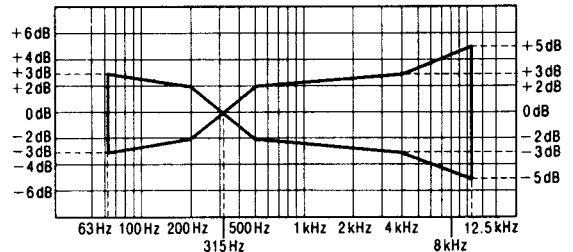
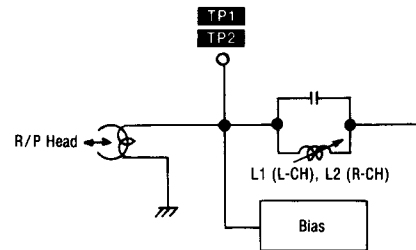


Fig. 5

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.

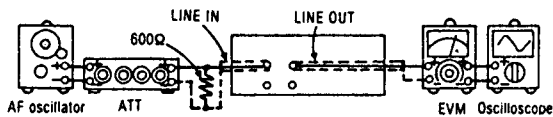


Fig. 10

Normal Overall frequency response chart (NR OUT)

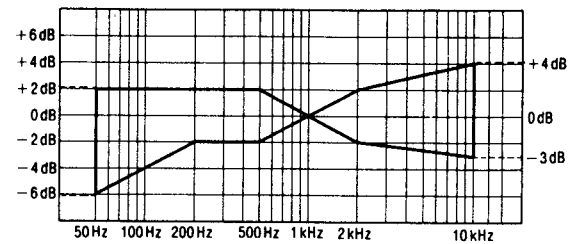


Fig. 8

CrO₂ Metal Overall frequency response chart (NR OUT)

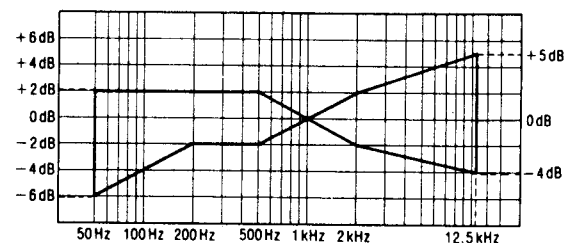


Fig. 9

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 VR5 (L-CH) and VR6 (R-CH).
6. Repeat the step 2~5 above until the output is within the standard value.

Standard value: 0.4V ± 0.5 dB

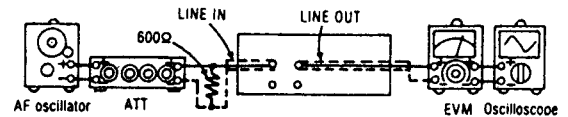
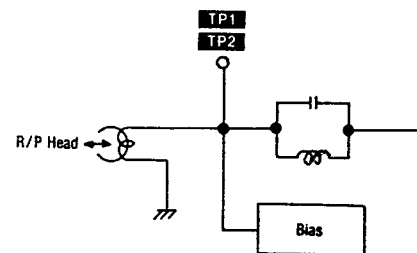


Fig. 11

CHECKING THE EFFECT OF BIAS ADJ. VR

1. Insert the Metal blank test tape (QZZCRZ) and set the unit to the Record mode.
2. While turning the Bias Adj. VR from minimum to maximum, verify that the output at TP1 (L-CH) and TP2 (R-CH) to ground vary more than +3.5 dB. If the output variation span is less than +3.5 dB, adjust L303 (L-CH) or L302 (R-CH) until it exceeds +3.5 dB.



■ TERMINAL FUNCTION OF IC'S

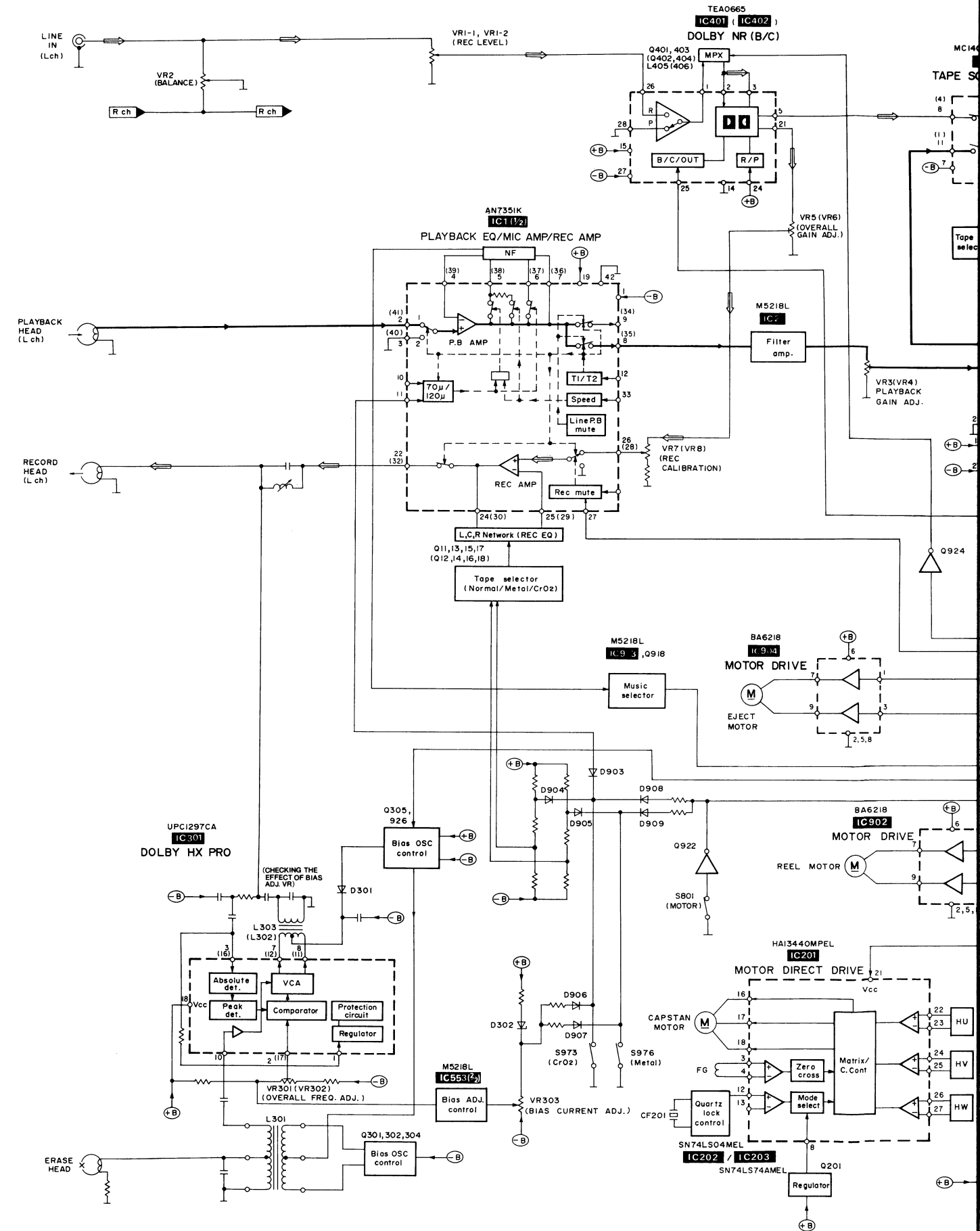
- IC901 (MB88511-224N): MICROCOMPUTER (This microcomputer is used for mechanical operation.)

| 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) | 22 | $\overline{\text{DIRECT}}$ | I | CD direct operation det. signal | | | | |
| 2 | RMT | O | REC AMP mute signal ("H"...ON, "L"...OFF) | | | O | CD direct/LINE Input select control signal ("H"...CD DIRECT, "L"...LINE INPUT) | | | | |
| 3 | $\overline{\text{BOS}}$ | O | BIAS OSC ON/OFF control signal ("H"...OFF, "L"...ON) | 23 | $\overline{\text{C}}$ | O | Dolby NR mode select signal | | | | |
| 4 | $\overline{\text{REC}}$ | O | REC LED ON/OFF control signal ("H"...OFF, "L"...ON) | 24 | $\overline{\text{B}}$ | | | NR OFF | Dolby B | Dolby C | dbx |
| 5 | $\overline{\text{PLAY}}$ | O | PLAY LED ON/OFF control signal ("H"...OFF, "L"...ON) | | | | $\overline{\text{C}}$ | H | H | L | L |
| 6 | EJECT F | O | Power eject motor open control signal ("H"...OPEN, "L"...CLOSE/STOP) | | | | $\overline{\text{B}}$ | H | L | H | L |
| 7 | EJECT R | O | Power eject motor close control signal ("H"...CLOSE, "L"...OPEN/STOP) | 25 | MPX | O | MPX coil ON/OFF control signal ("H"...MPX OFF, "L"...MPX ON) | | | | |
| 8 | $\overline{\text{CAPM}}$ | O | Capstan motor ON/OFF control signal ("H"...OFF (POWER OFF or ABNORMAL CONDITION), "L"...ON) | 26 | $\text{T}/\overline{\text{S}}$ | I | Two head/Three head select signal ("H"...THREE HEAD) | | | | |
| 9 | $\overline{\text{SOL1}}$ | O | Trigger solenoid ON/OFF control signal ("H"...OFF, "L"...ON) | | | | O | Tape/Source monitor select control ("H"...TAPE MONITOR, "L"...SOURCE MONITOR) | | | |
| 10 | $\overline{\text{SOL2}}$ | O | Brake solenoid ON/OFF control signal ("H"...OFF, "L"...ON) | 27 | $\overline{\text{HALF}}$ | I | Cassette half det. SW terminal ("L"...ON) | | | | |
| 11 | $\overline{\text{SOL2C}}$ | O | Brake solenoid hold ON/OFF control signal ("H"...OFF, "L"...ON (FF/REW/MS)) | 28 | $\overline{\text{MODE}}$ | I | Mechanism mode SW terminal | | | | |
| 12 | RP (REEL PULSE) | I | Reel pulse signal | 29 | $\overline{\text{ARM}}$ | I | Auto Rec Mute key signal ("L"...PUSH) | | | | |
| 13 | RMR | O | Reel motor reverse control signal ("H"...REW, "L"...STOP/PLAY/FF) | 30 | AVss | — | Connected to GND | | | | |
| 14 | RMF | O | Reel motor forward control signal ("H"...FF/PLAY, "L"...STOP/REW) | 31 | AV $\overline{\text{R}}$ | — | Connected to GND | | | | |
| 15 | $\overline{\text{OSC}}$ | I | Single capstan/Dual capstan select signal ("H"...DUAL CAPSTAN, "L"...SINGLE CAPSTAN) | 32 | AVcc | — | Power supply terminal | | | | |
| | | O | Calibration OSC circuit ON/OFF control signal ("H"...OFF, "L"...ON) | 33 | KEY 1 | I | Key SW input (STOP/FF REW/PLAY/REC/PAUSE/C/B/MPX/TIMER REC/TIMER PLAY) | | | | |
| 16 | Ex | I | Clock OSC terminal (6 MHz) | 34 | KEY 2 | I | Key SW input (MEMORY REPEAT/MEMORY STOP/EJECT/MONITOR/CD DIRECT/OSC/TEST) | | | | |
| 17 | X | O | | | 35 | ATS | I | Auto Tape Select SW input (ATSC/ATSM/EJECT OPEN LEAF SW) | | | |
| 18 | $\overline{\text{RES}}$ | I | Reset signal ("L"...RESET) | 36 | INH | I | REC INH SW input (REC INH/EJECT MOTOR LEAF SW) | | | | |
| 19 | OSCF | O | Not used in this unit. Calibration OSC circuit (400Hz/10kHz) select signal ("H"...HIGH FREQ. (10kHz), "L"...LOW FREQ. (400Hz)) | 37 | SYNC | — | Connected to GND | | | | |
| 20 | $\overline{\text{POF}}$ | I | AC POWER detect signal | 38 | DISP | O | Serial data signal of FL display (ACTIVE: "H") | | | | |
| 21 | Vss | — | GND | 39 | MSP | I | Music select det. signal ("H"...NO SIGNAL, "L"...ON SIGNAL) | | | | |
| | | | | 40 | $\overline{\text{MEMORY PULSE}}$ | I | Memory Pulse signal | | | | |
| | | | | 41 | REMOCON | I | Not used in this unit. 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.)

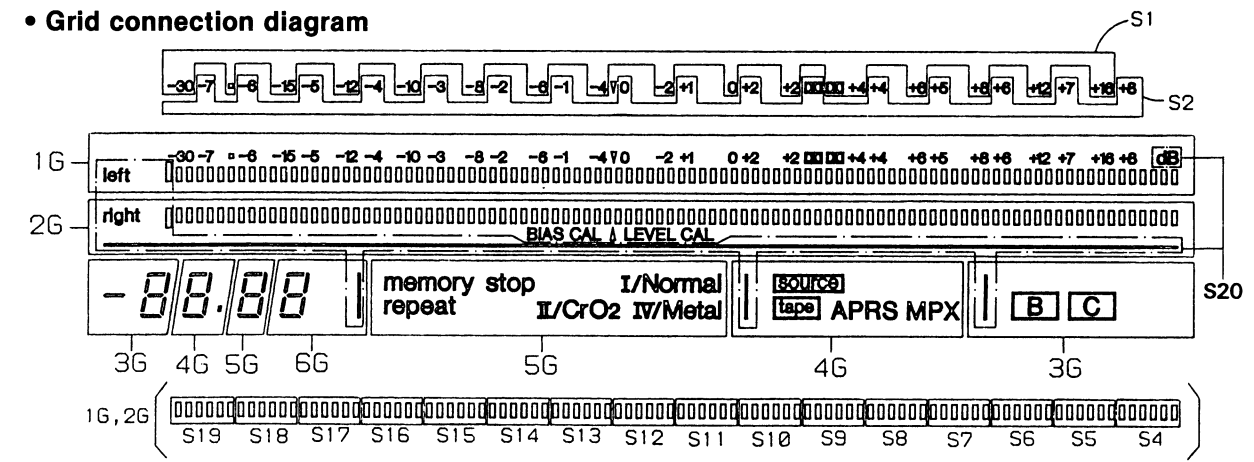
| Pin No. | Mark | I/O Division | Function | Pin No. | Mark | I/O Division | Function | |
|---------|-------|--------------|---|----------------------------|-------|--------------|---|-----------------------|
| 1 | S5 | O | Segment signal for FL display | 22 | AVcc | — | Power supply terminal | |
| 2 | 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 (4MHz) | |
| 10 | S13 | O | | 31 | OSC 2 | I | | |
| 11 | S14 | O | | Grid signal for FL display | 32 | Vcc | I | Power supply terminal |
| 12 | S15 | O | | | 33 | G1 | O | |
| 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

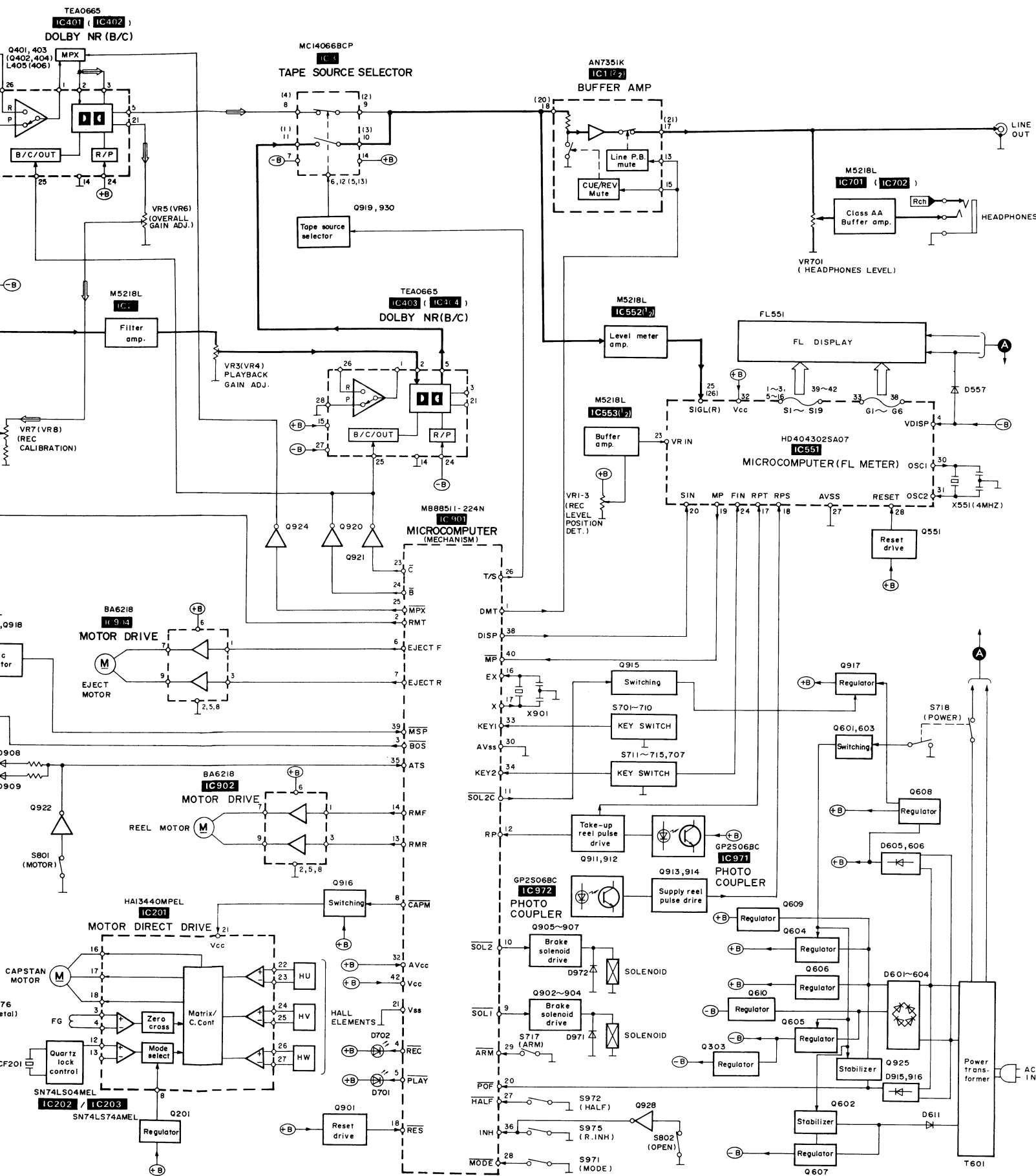
| | 1G | 2G | 3G | 4G | 5G | 6G |
|----------|------|-----------|----|--------|-----------------------|----|
| S1 | S1 | LEVEL CAL | - | APRS | - | - |
| S2 | S2 | BIAS CAL | - | - | - | - |
| S3 | ▼ | ▲ | - | - | - | - |
| S4 | | | - | - | - | - |
| S5 | | | - | - | - | - |
| S6 | | | - | - | memory | - |
| S7 | | | - | - | repeat | - |
| S8 | | | - | tape | stop | - |
| S9 | | | B | source | - | - |
| 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) | left | dB right | | | - | |

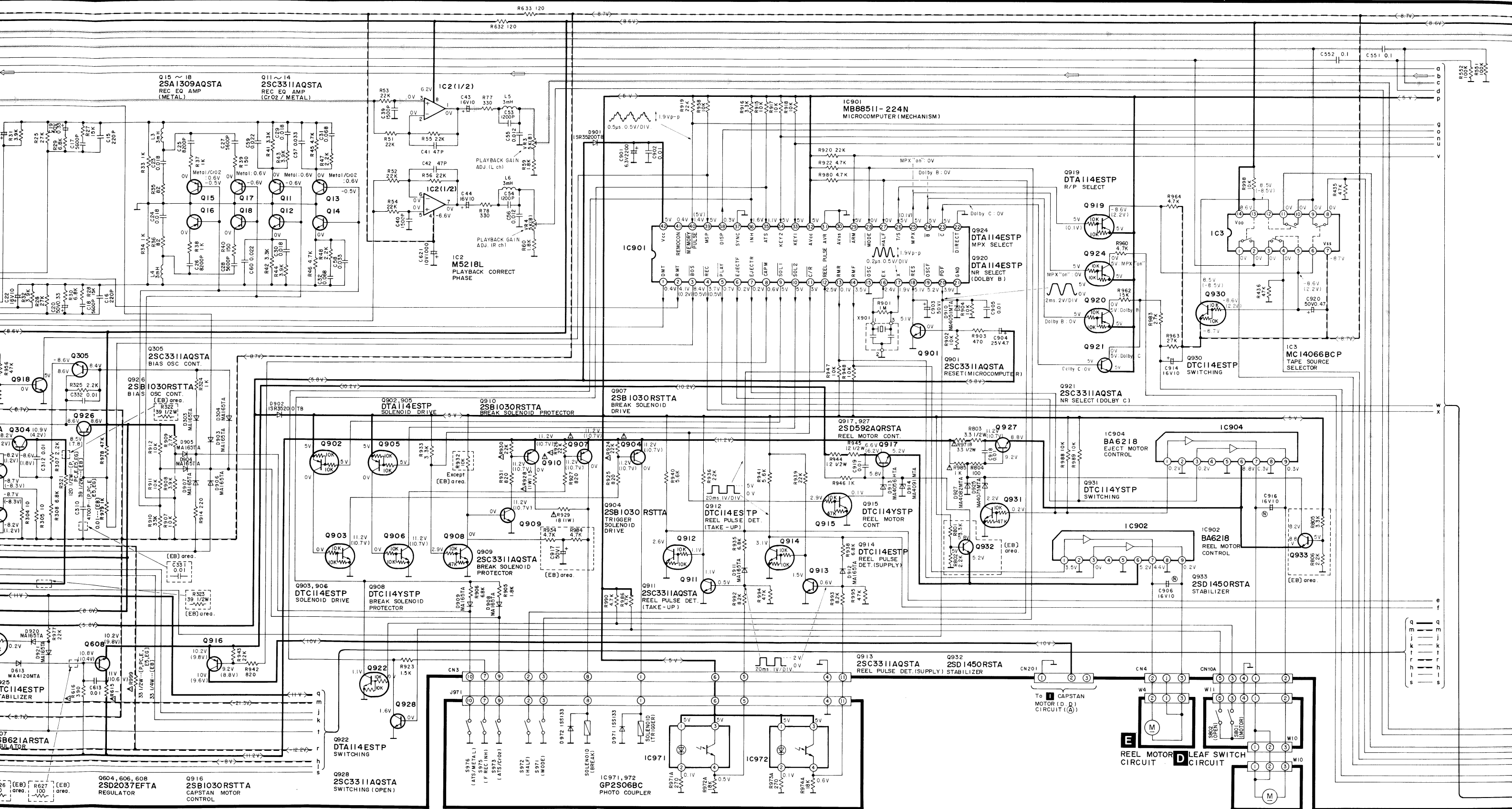
Pin connection

| PIN NO. | 40 | 39 | 38 | 37 | 36 | 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 | N | N | N | N | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | N | G | G | G | G | G | G | 20 | P | P | P | P | P | P | P | F | F |

| PIN NO. | 55 | 54 | 53 | 52 | 51 | 50 | 49 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 |
|------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| CONNECTION | F | 2 | F | N | N | N | N | N | N | N | N | N | N | N | N |

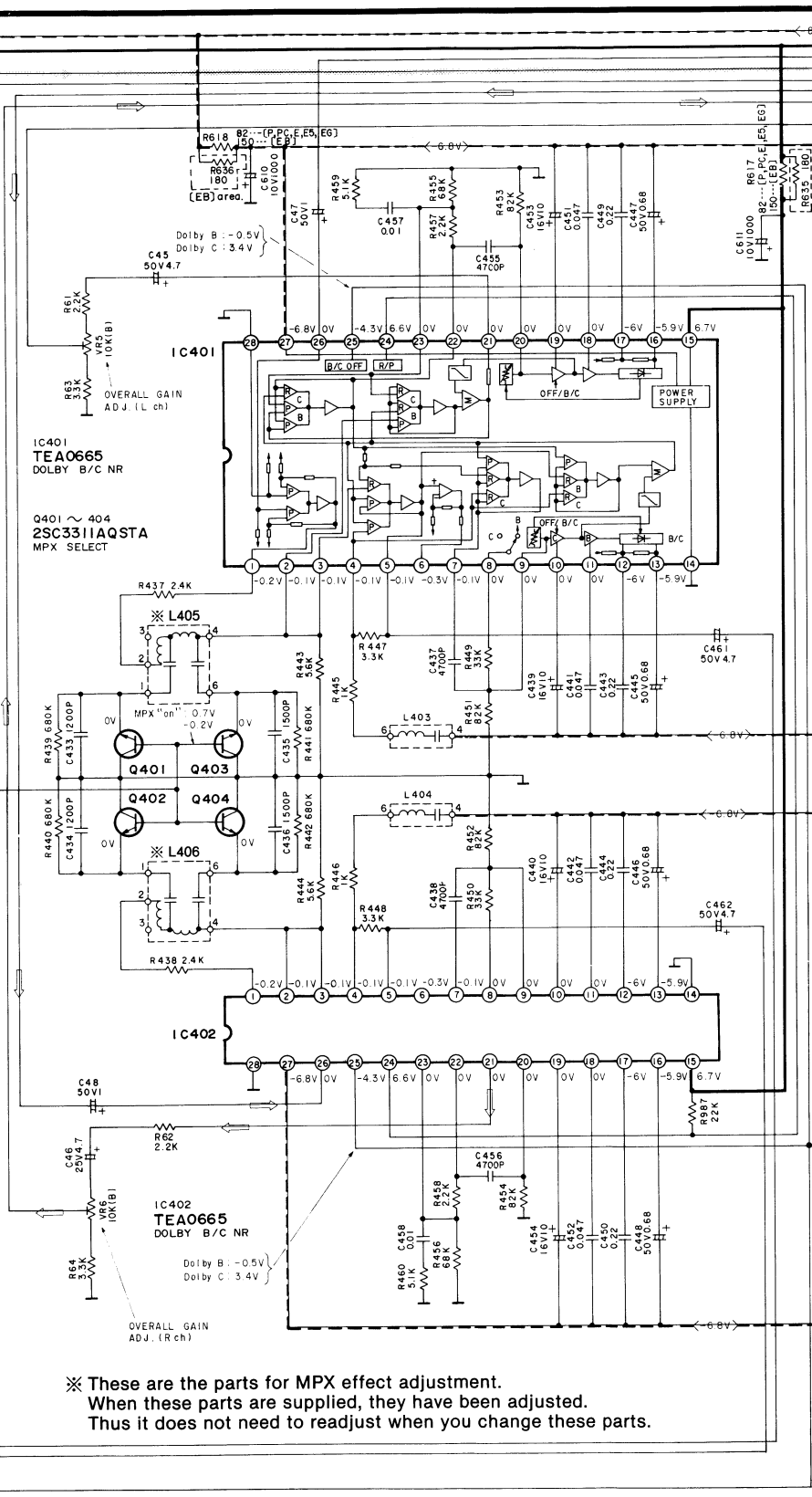
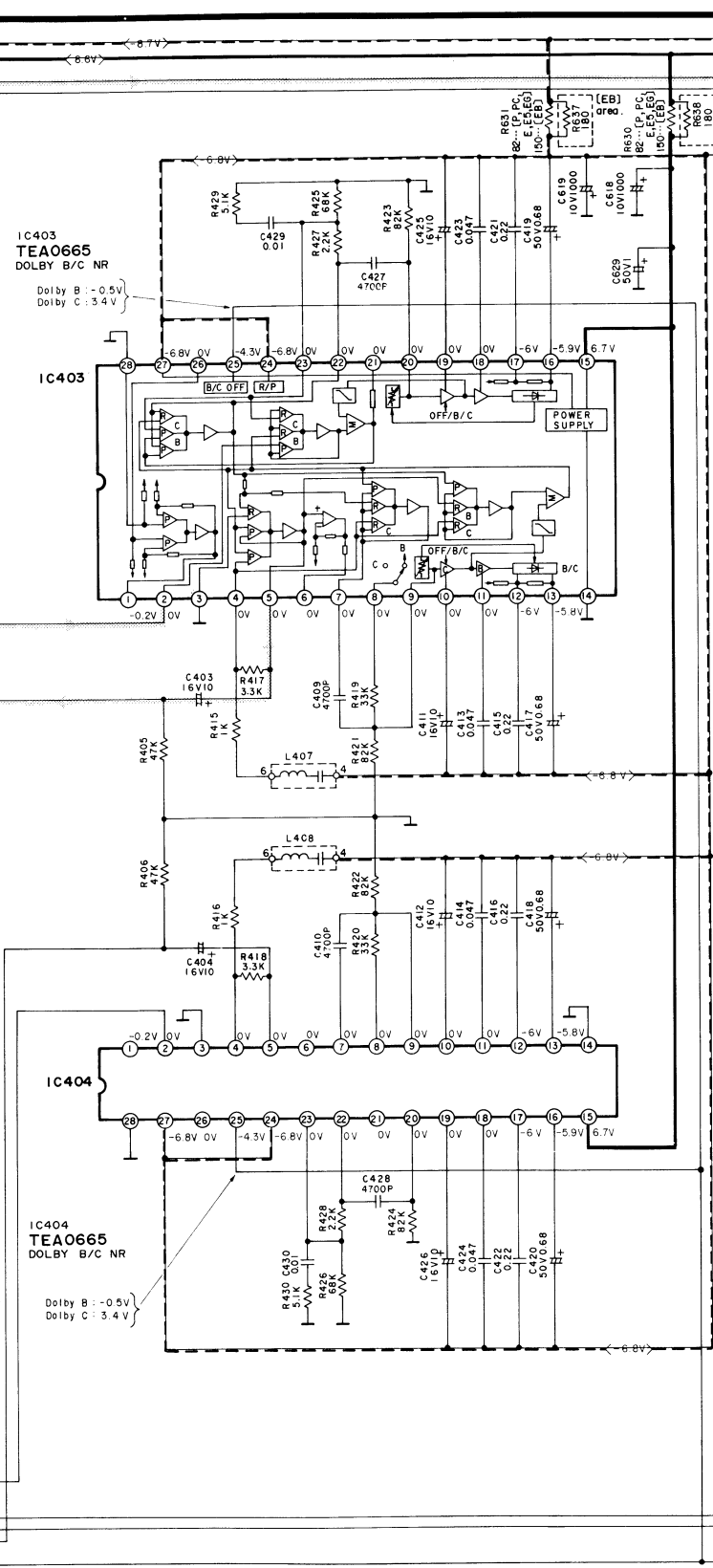
Notes
 ● Playback signal
 ● Recording signal



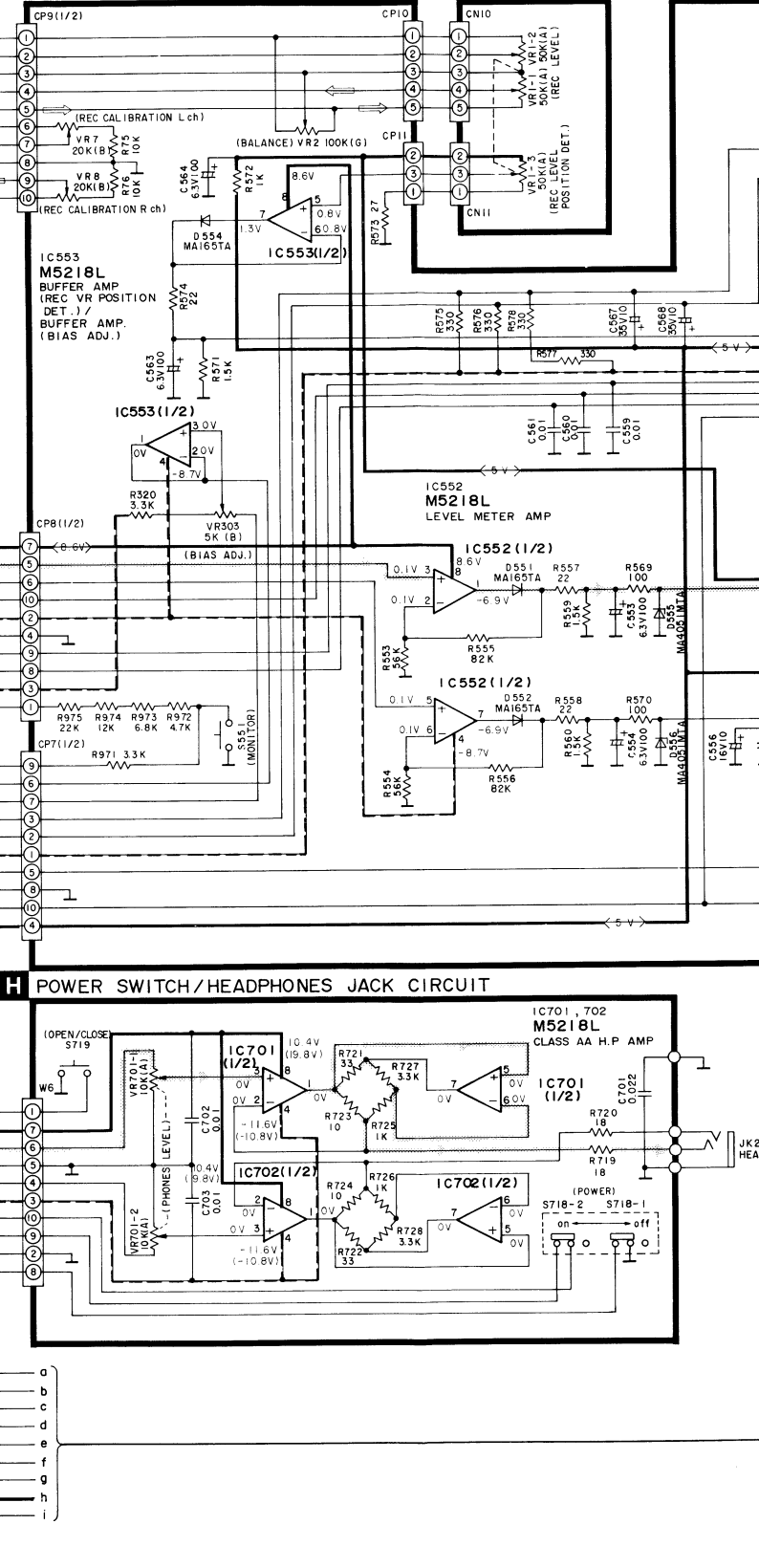
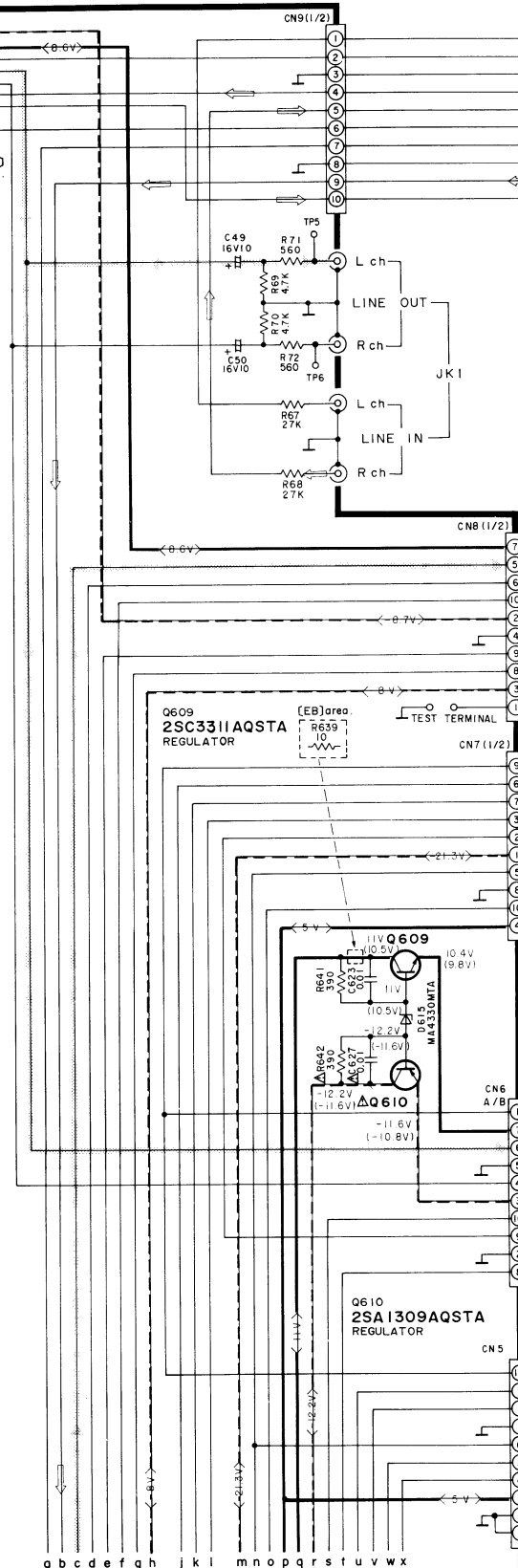


B MECHANISM CIRCUIT

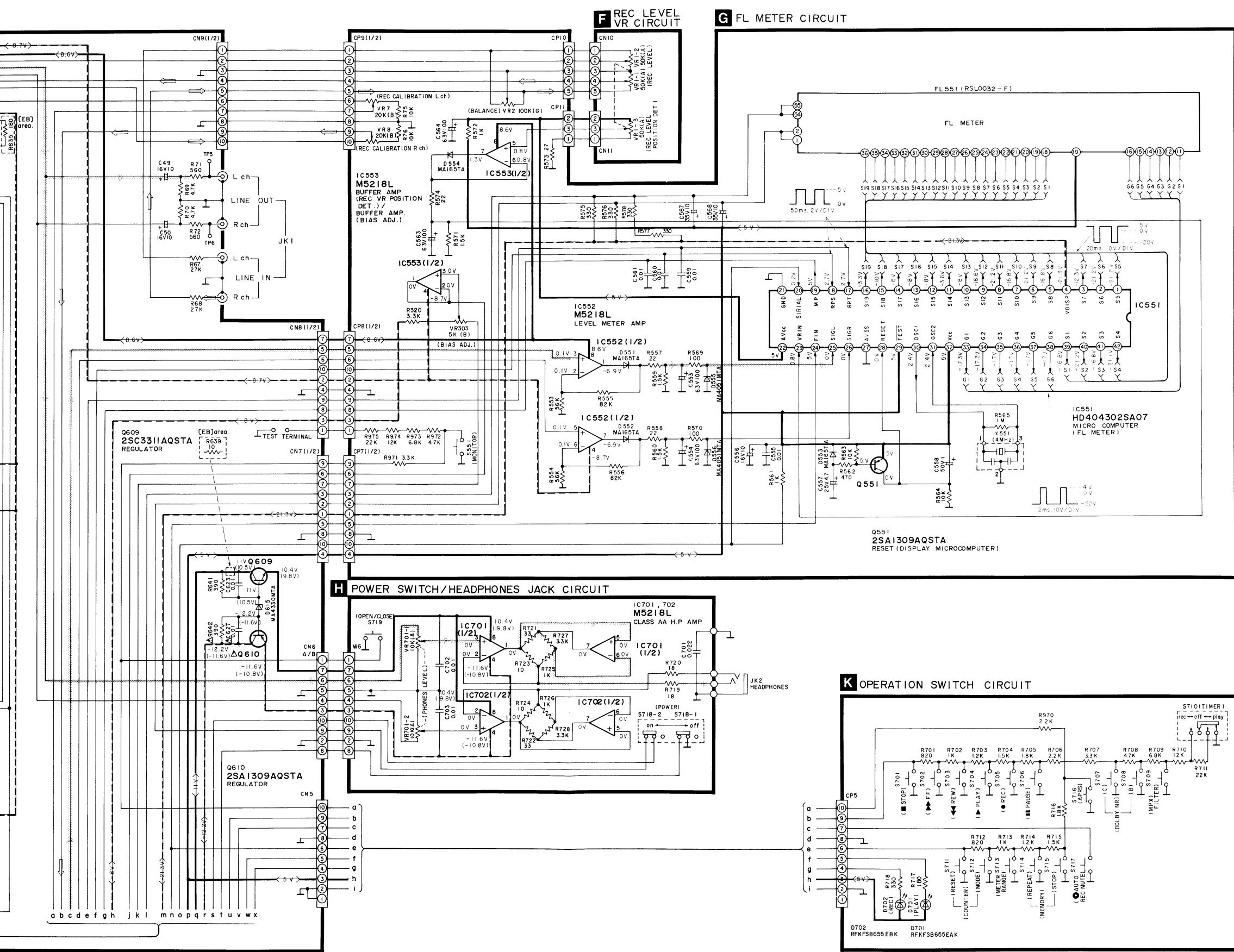
C EJECT MOTOR CIRCUIT



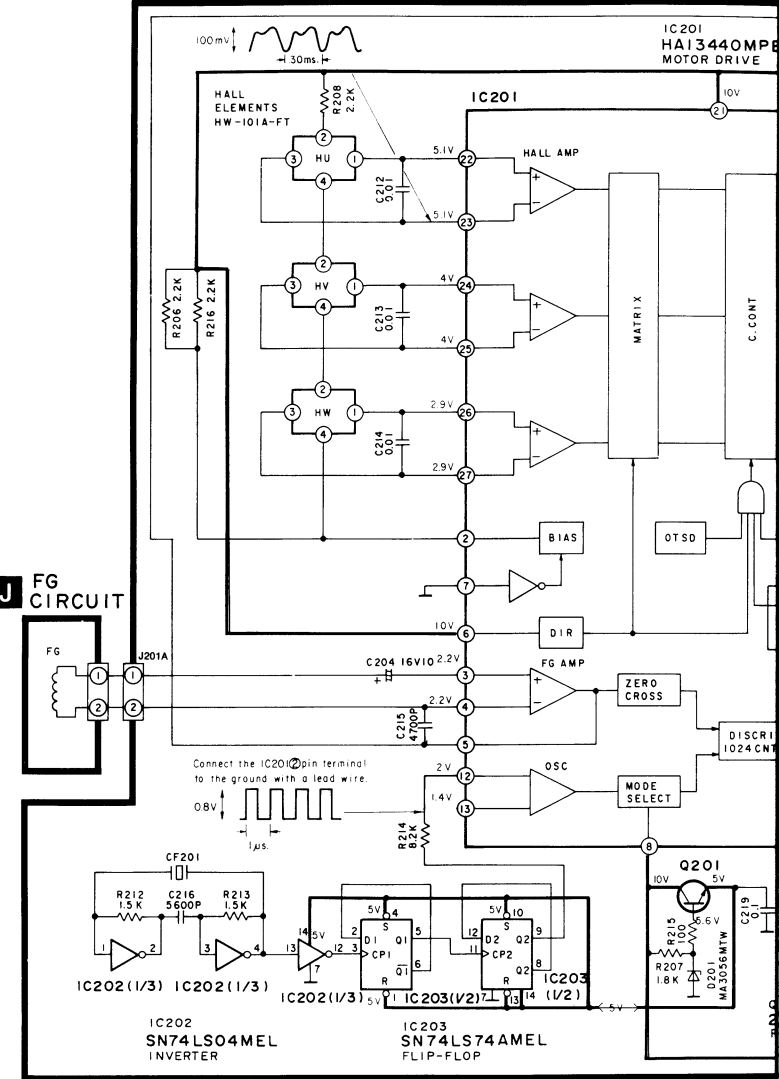
※ These are the parts for MPX effect adjustment.
 When these parts are supplied, they have been adjusted.
 Thus it does not need to readjust when you change these parts.



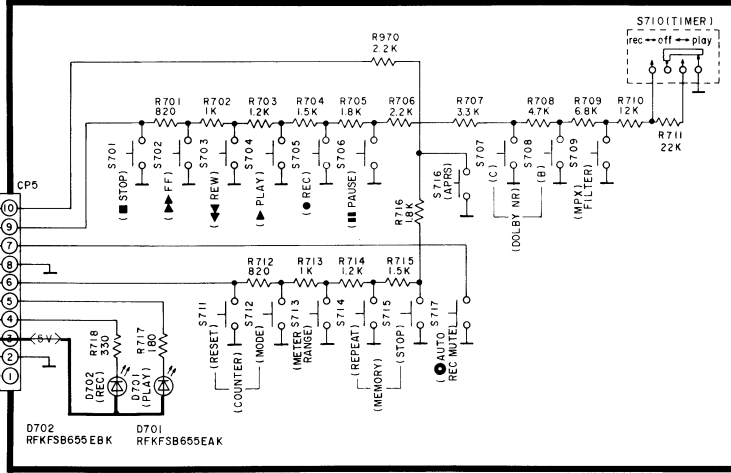
a b c d e f g h i j k l m n o p q r s t u v w x

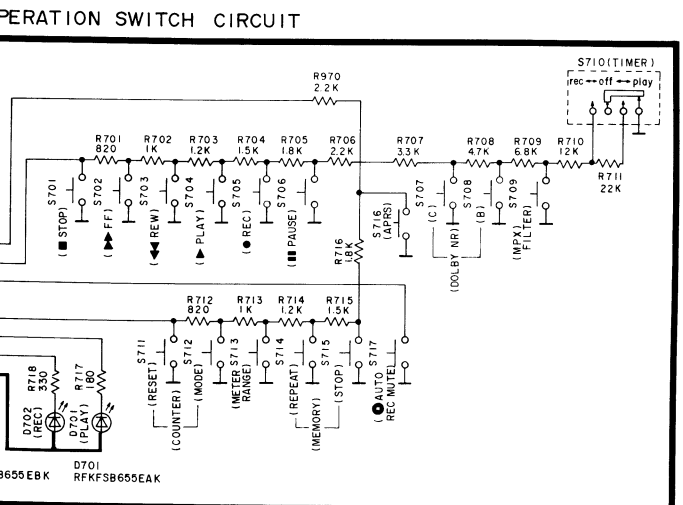
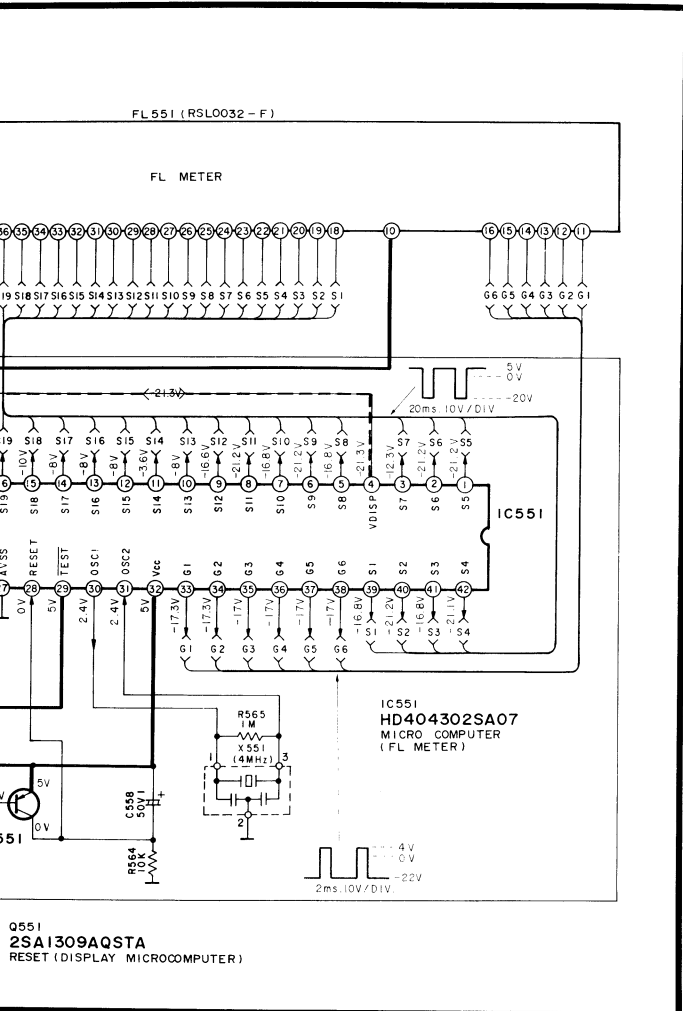


I CAPSTAN MOTOR(D.D) CIRCUIT

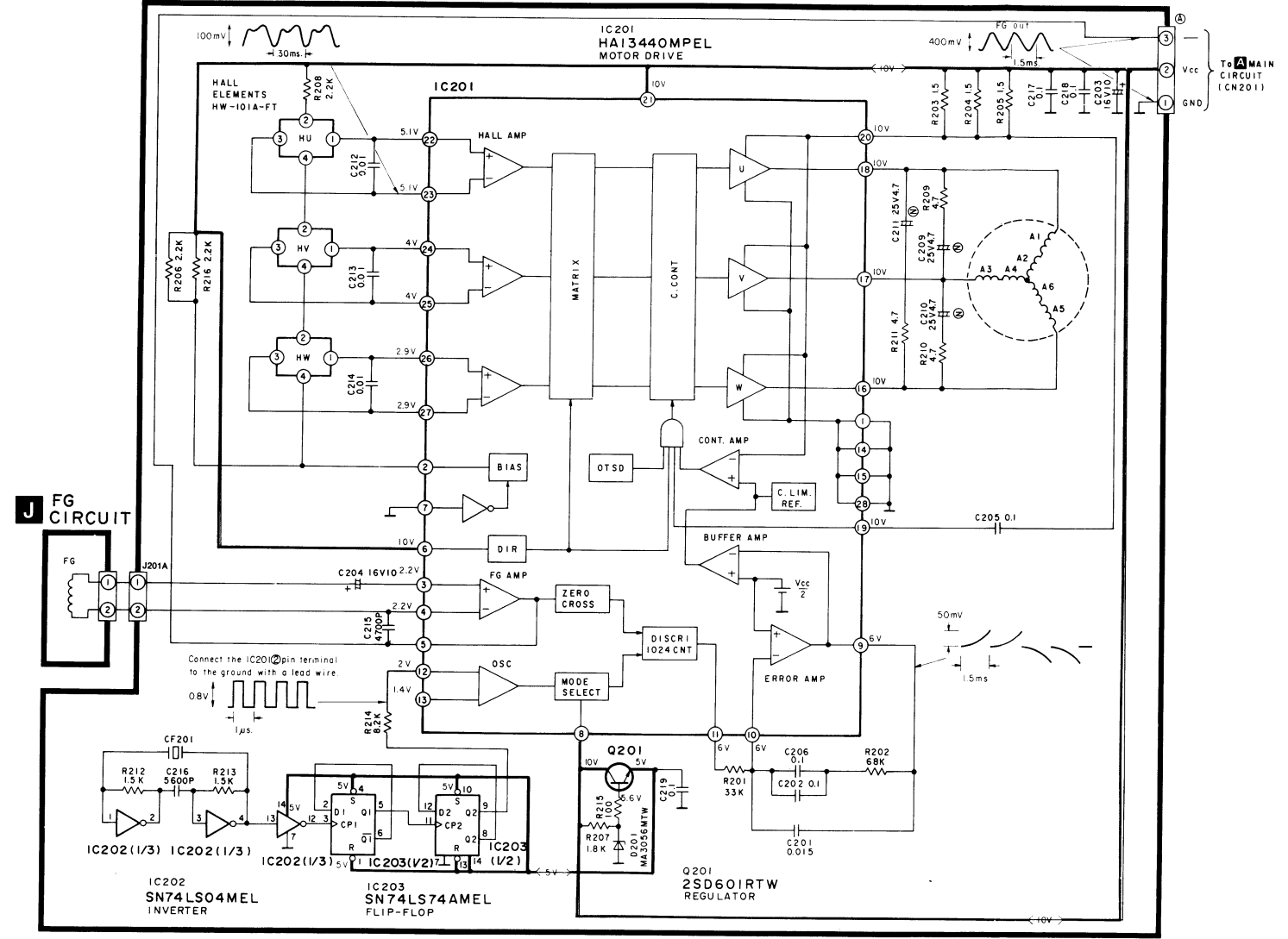


K OPERATION SWITCH CIRCUIT





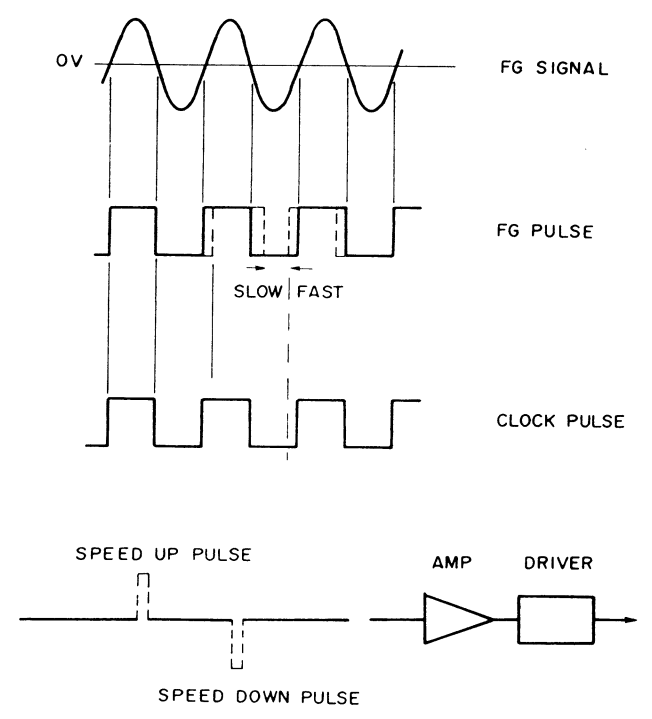
1 CAPSTAN MOTOR(D.D) CIRCUIT



TRUBLESHOOTING OF DIRECT DRIVE MOTOR

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.

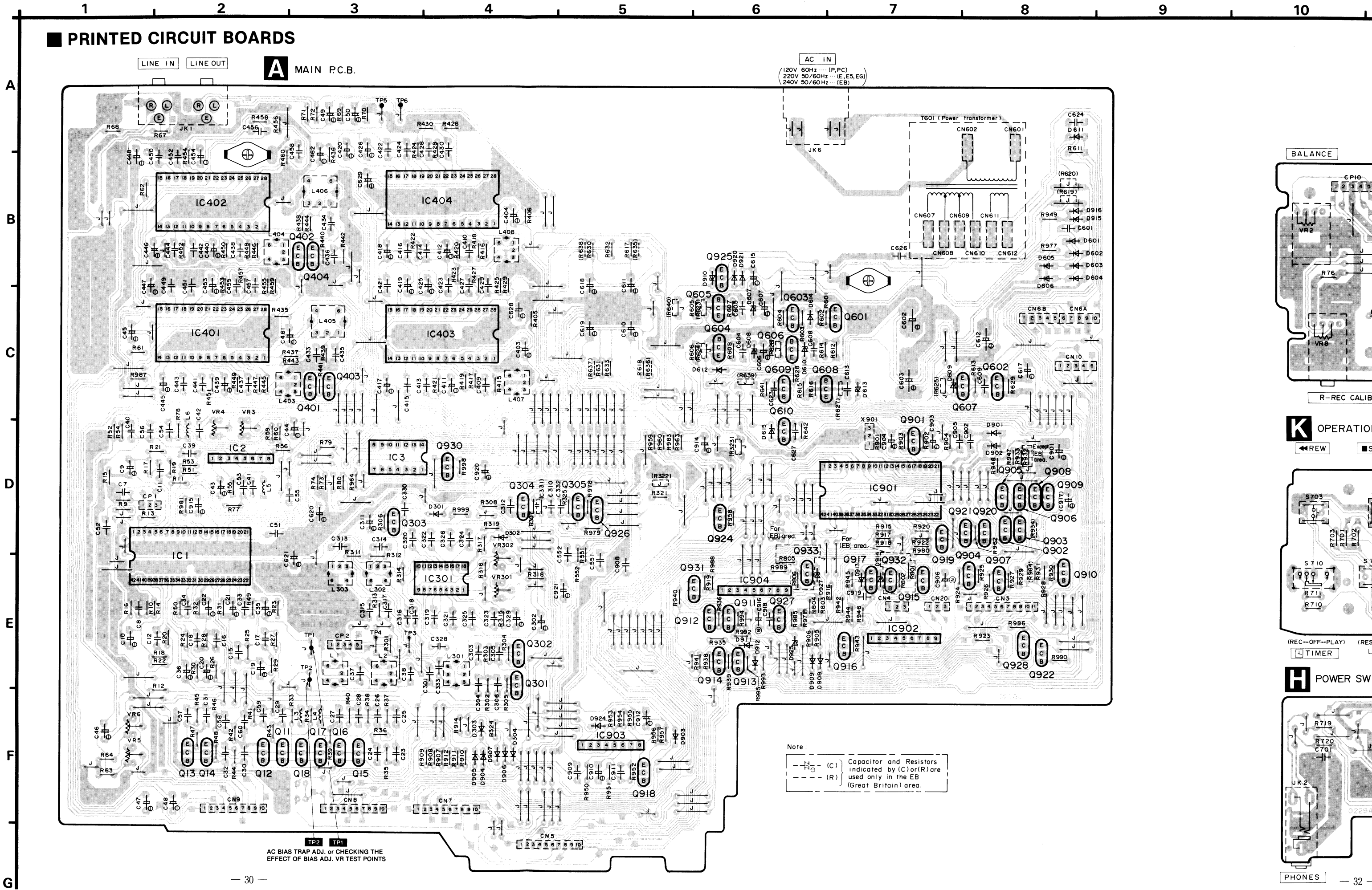


TRUBLESHOOTING OF DIRECT DRIVE MOTOR

| 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 ②~⑦. * 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 ⑩~⑪, ⑪~⑫, ⑫~⑬ will reach 20 ohms. • Check the waveform of IC pins ②~⑦. |
| 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.)

PRINTED CIRCUIT BOARDS



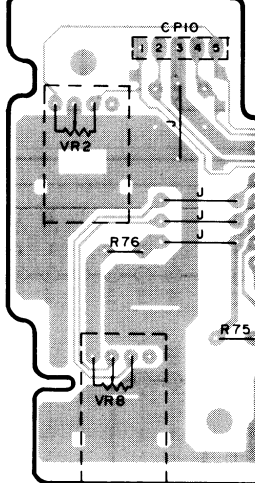
A MAIN P.C.B.

AC IN
 (20V 60Hz ... (P,PC)
 220V 50/60Hz ... (E, E5, EG)
 240V 50/60Hz ... (EB)

Note:
 --- (C) Capacitor and Resistors indicated by (C) or (R) are used only in the EB (Great Britain) area.

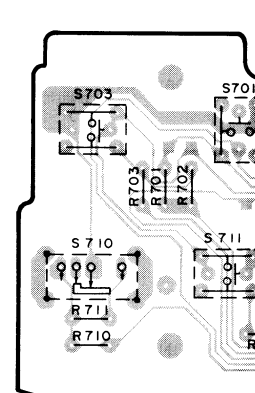
TP2 TP1
 AC BIAS TRAP ADJ. or CHECKING THE EFFECT OF BIAS ADJ. VR TEST POINTS

BALANCE



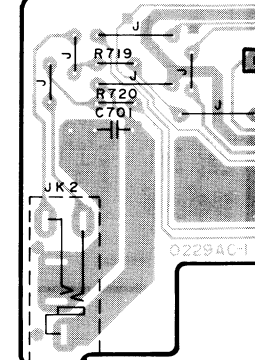
R-REC CALIBRATION

K OPERATION S

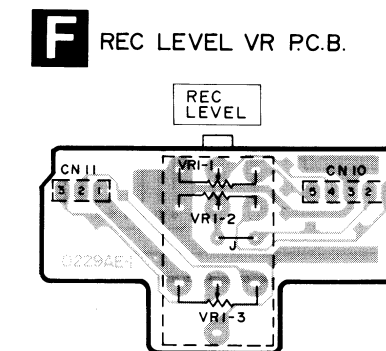
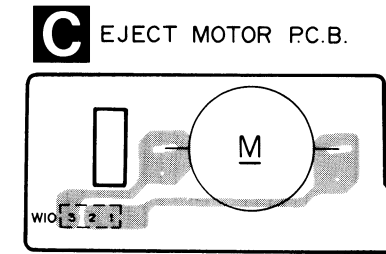
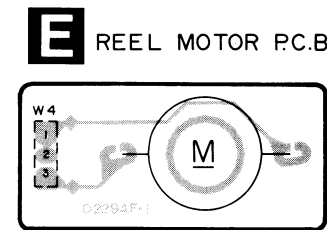
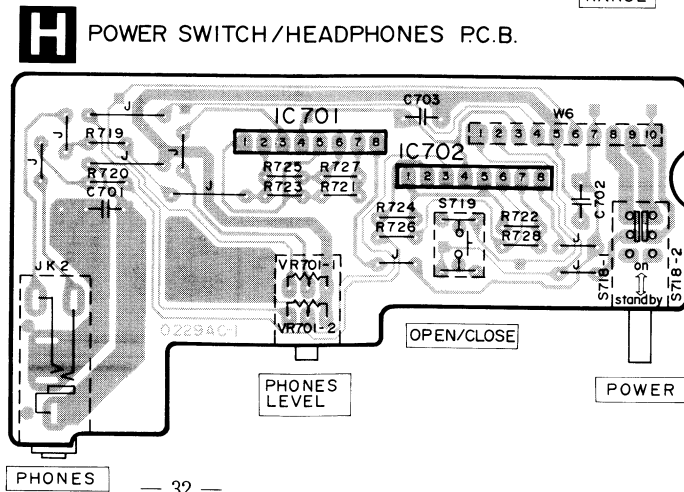
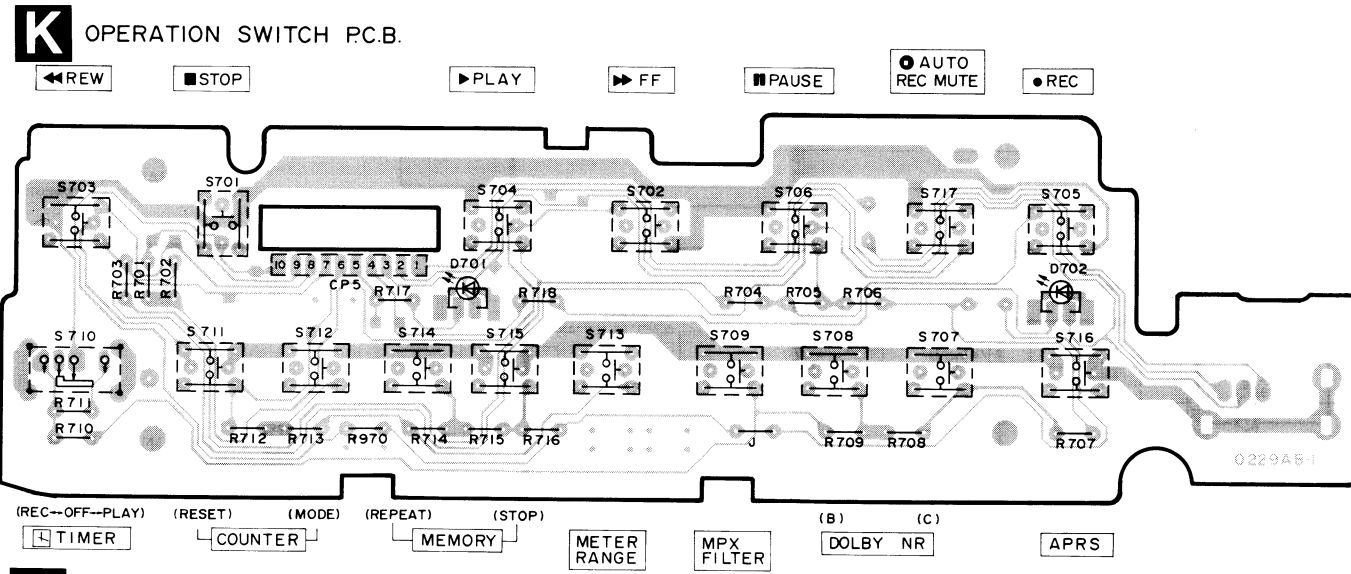
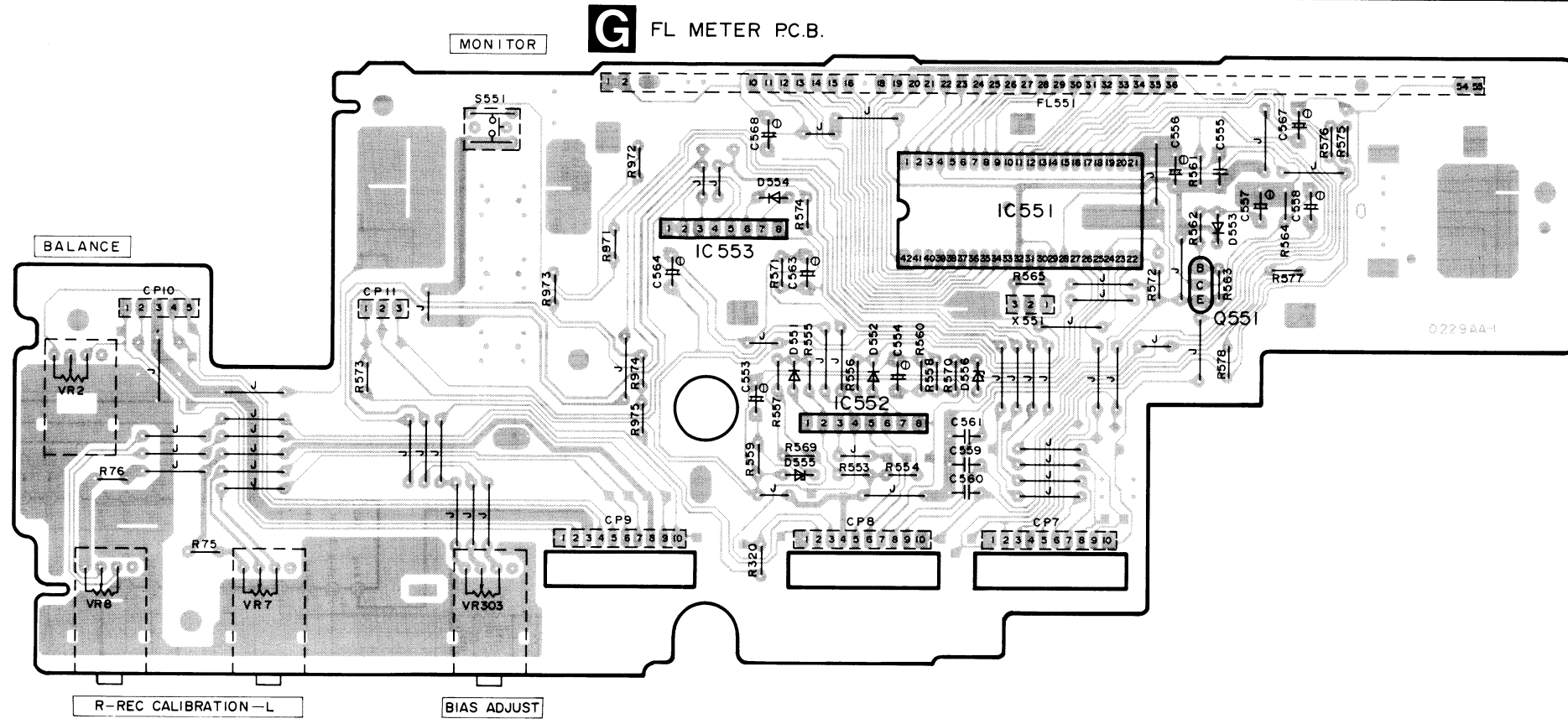
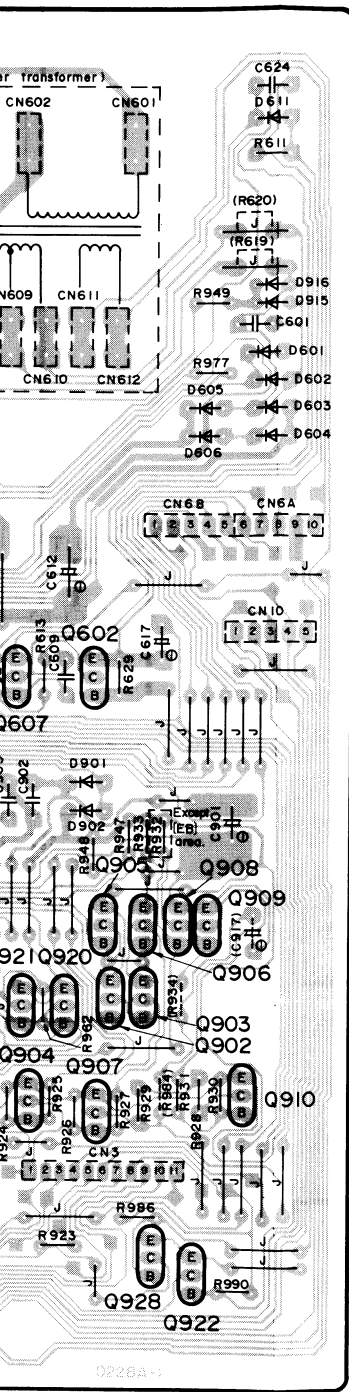


(REC-OFF-PLAY) (RESET) TIMER

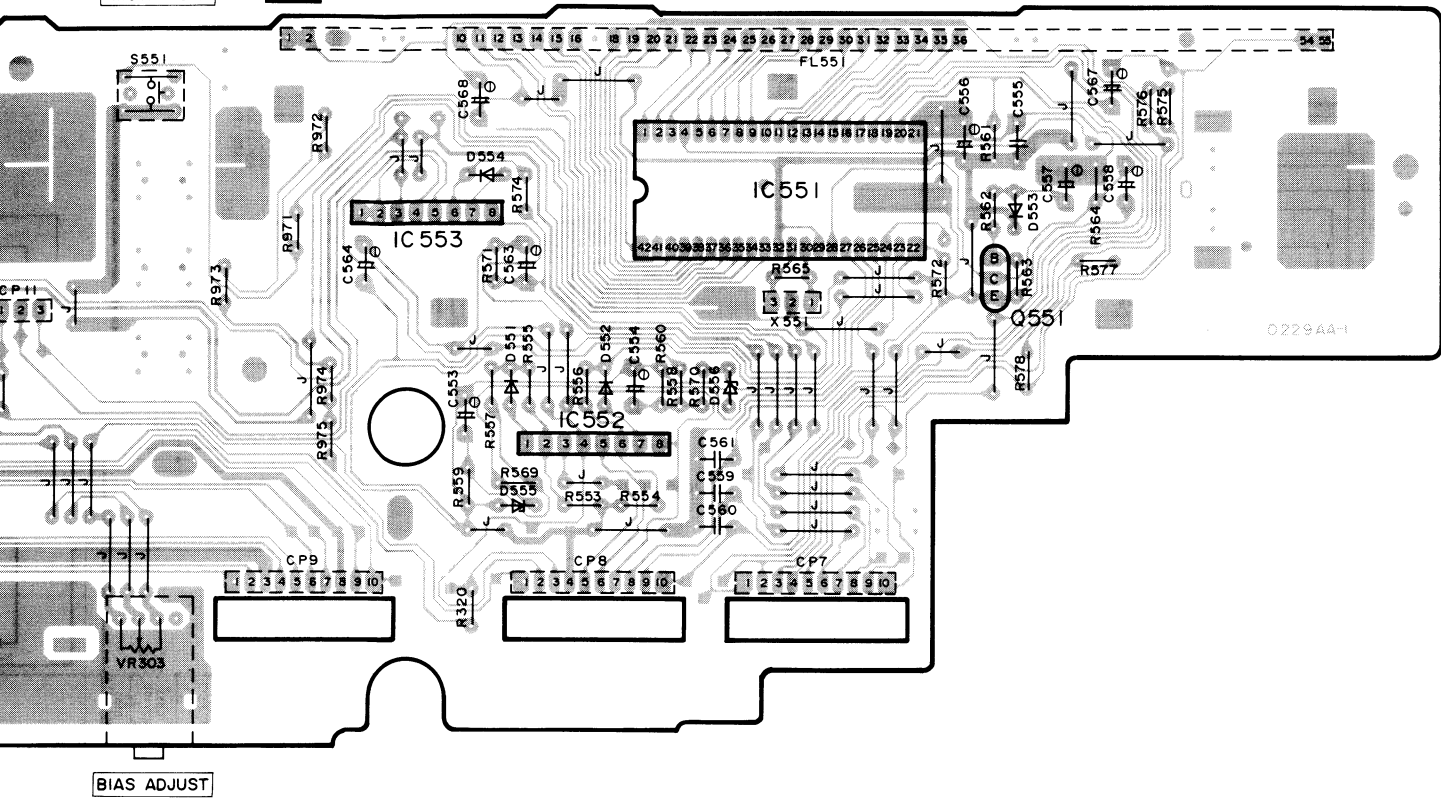
H POWER SWITCH



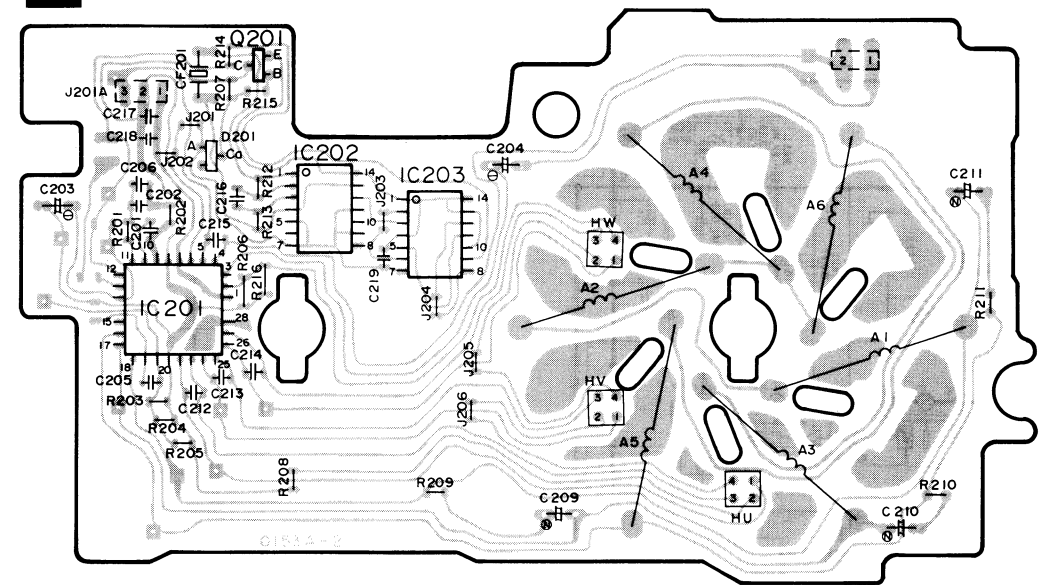
PHONES



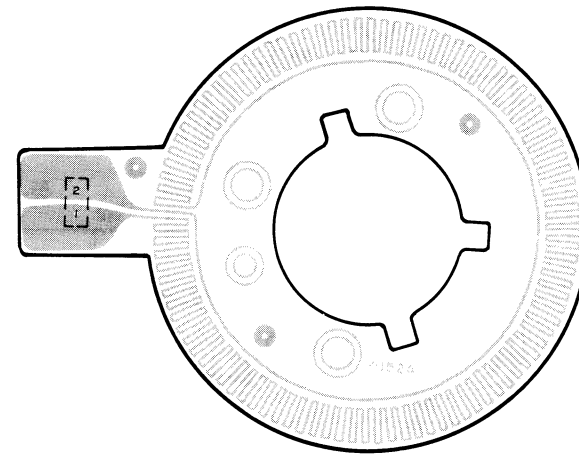
G FL METER P.C.B.



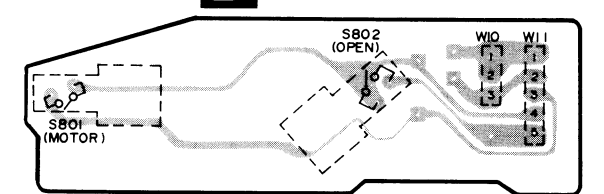
I CAPSTAN MOTOR (D.D) P.C.B.



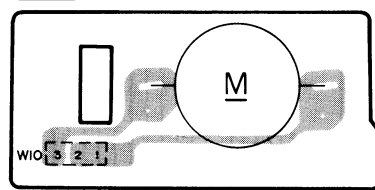
J FG P.C.B.



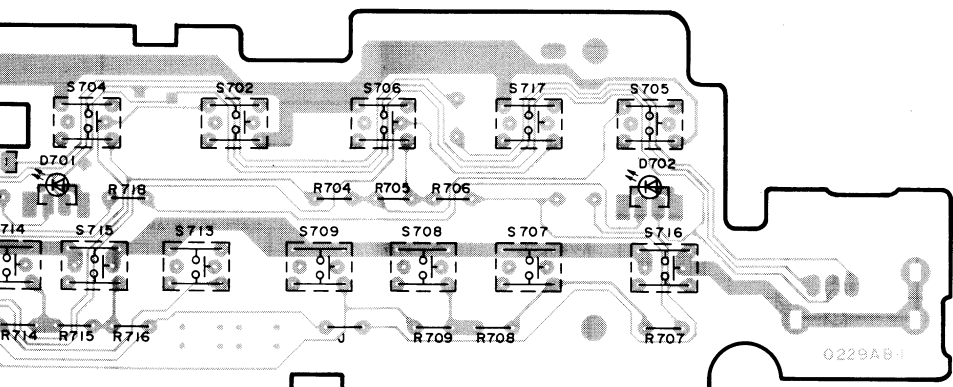
D LEAF SWITCH P.C.B.



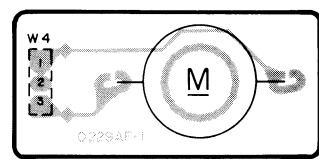
C EJECT MOTOR P.C.B.



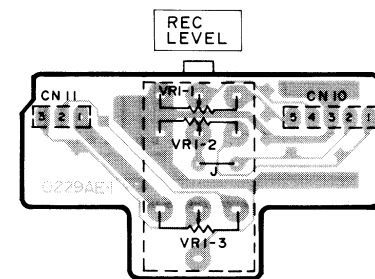
▶ PLAY ▶▶ FF ■ PAUSE ● AUTO REC MUTE ● REC



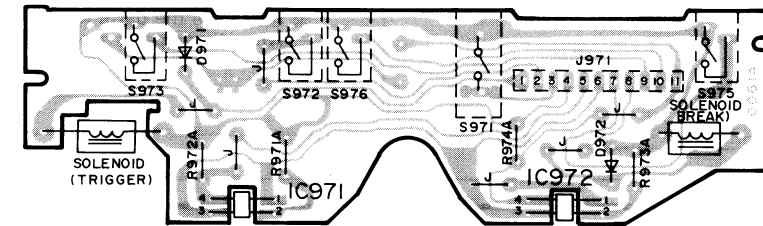
E REEL MOTOR P.C.B.



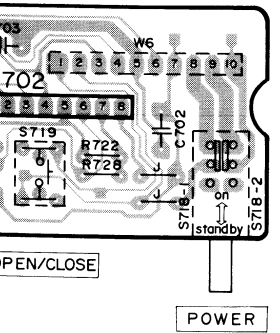
F REC LEVEL VR P.C.B.



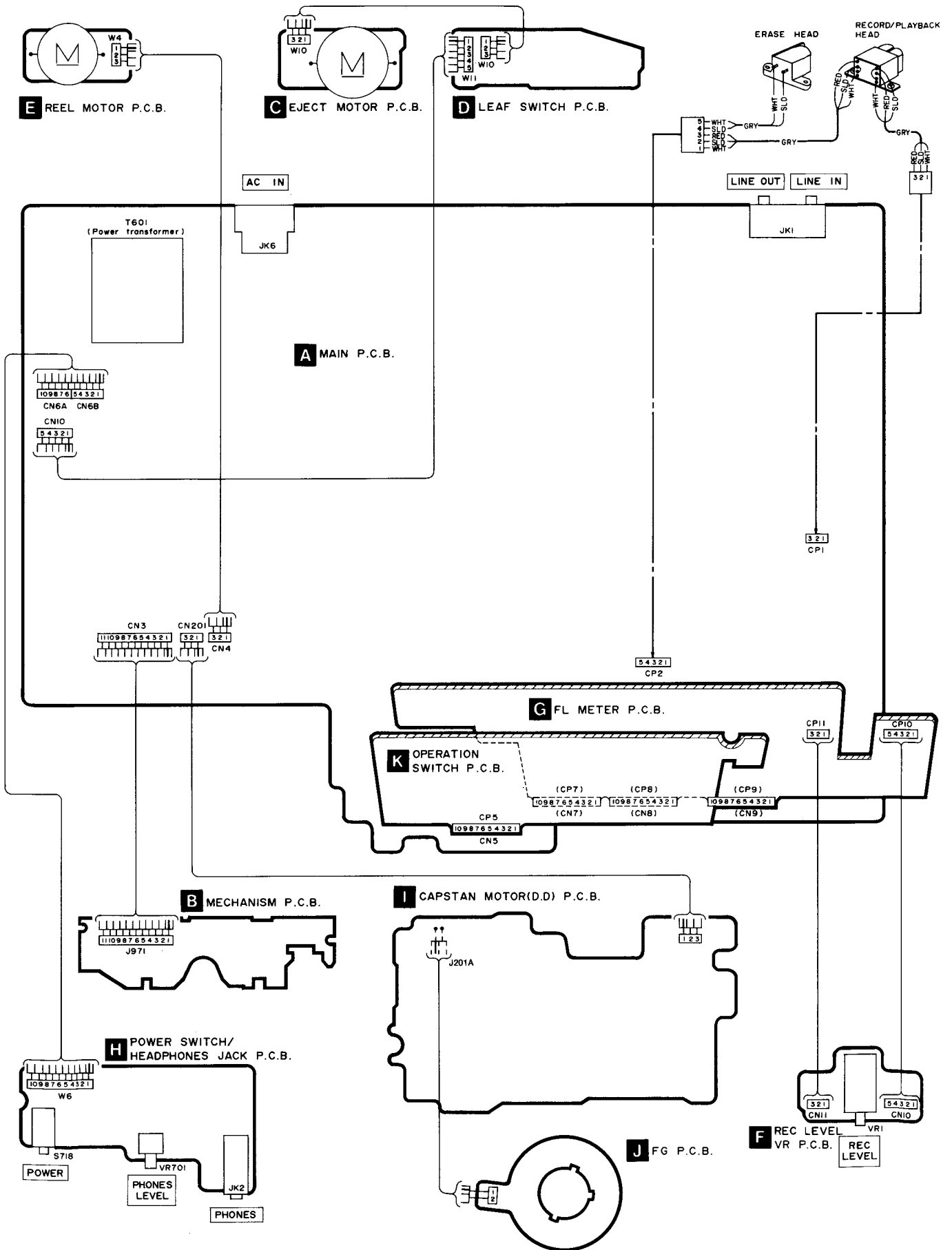
B MECHANISM P.C.B.



AT) (STOP) MEMORY METER RANGE MPX FILTER (B) (C) DOLBY NR APRS



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) | | Q905 | DTA114ESTP | TRANSISTOR | |
| | | | | Q906 | DTC114ESTP | TRANSISTOR | |
| IC1 | AN7351K | IC, PLAYBACK EQ./MIC AMP | | Q907 | 2SB1030RSTTA | TRANSISTOR | Δ |
| IC2 | M5218L | IC, PLAYBACK CORRECT PHASE | | Q908 | DTC114YSTP | TRANSISTOR | |
| IC3 | MC14066BCP | IC, TAPE SOURCE SELECTOR | | Q909 | 2SC3311AQSTA | TRANSISTOR | |
| IC201 | HA13440MPEL | IC, MOTOR DRIVE | | Q910 | 2SB1030RSTTA | TRANSISTOR | Δ |
| IC202 | SN74LS04MEL | IC, INVERTER | | Q911 | 2SC3311AQSTA | TRANSISTOR | |
| IC203 | SN74LS74AMEL | IC, FLIP-FLOP | | Q912 | DTC114ESTP | TRANSISTOR | |
| IC301 | UPC1297CA | IC, DOLBY HX PRO | | Q913 | 2SC3311AQSTA | TRANSISTOR | |
| IC401, 402 | TEA0665 | IC, DOLBY B/C NR | | Q914 | DTC114ESTP | TRANSISTOR | |
| IC403, 404 | TEA0665 | IC, DOLBY B/C NR | | Q915 | DTC114YSTP | TRANSISTOR | |
| IC551 | HD404302SA07 | IC, MICROCOMPUTER; FL METER | | Q916 | 2SB1030RSTTA | TRANSISTOR | |
| IC552 | M5218L | IC, LEVEL METER AMP | | Q917 | 2SD592A | TRANSISTOR | |
| IC553 | M5218L | IC, BUFFER AMP | | Q918 | 2SC3311AQSTA | TRANSISTOR | |
| IC701, 702 | M5218L | IC, Class AA : H. P. AMP | | Q919, 920 | DTA114ESTP | TRANSISTOR | |
| IC901 | MB88511-224N | IC, MICROCOMPUTER; MECHANICAL | | Q921 | 2SC3311AQSTA | TRANSISTOR | |
| IC902 | BA6218 | IC, REEL MOTOR CONTROL | | Q922 | DTA114ESTP | TRANSISTOR | |
| IC903 | M5218L | IC, MUSIC SELECTOR AMP | | Q924 | DTA114ESTP | TRANSISTOR | |
| IC904 | BA6218 | IC, EJECT MOTOR CONTROL | | Q925 | DTC114ESTP | TRANSISTOR | |
| IC971, 972 | GP2S06BC | IC, PHOTO COUPLER | | Q926 | 2SB1030RSTTA | TRANSISTOR | |
| | | TRANSISTOR(S) | | Q927 | 2SD592A | TRANSISTOR | |
| | | | | Q928 | 2SC3311AQSTA | TRANSISTOR | |
| Q11-14 | 2SC3311AQSTA | TRANSISTOR | | Q930 | DTC114ESTP | TRANSISTOR | |
| Q15-18 | 2SA1309AQSTA | TRANSISTOR | | Q931 | DTC114YSTP | TRANSISTOR | |
| Q201 | 2SD601RTW | TRANSISTOR | | Q932, 933 | 2SD1450RSTA | TRANSISTOR | (EB) |
| Q301, 302 | 2SC3311AQSTA | TRANSISTOR | | | | DIODE(S) | |
| Q303 | 2SB621ARSTA | TRANSISTOR | | D201 | MA3056MTW | DIODE | |
| Q304 | 2SD592A | TRANSISTOR | | D301 | MA165TA | DIODE | |
| Q305 | 2SC3311AQSTA | TRANSISTOR | | D302 | MA4056H | DIODE | |
| Q401-404 | 2SC3311AQSTA | TRANSISTOR | | D303, 304 | MA165TA | DIODE | |
| Q551 | 2SA1309AQSTA | TRANSISTOR | | D551-554 | MA165TA | DIODE | |
| Q601 | 2SA1309AQSTA | TRANSISTOR | | D555, 556 | MA4051MTA | DIODE | |
| Q602 | 2SC3311AQSTA | TRANSISTOR | | D601-606 | 1SR35200TB | DIODE | Δ |
| Q603 | 2SC3311AQSTA | TRANSISTOR | Δ | D607, 608 | MA4091MTA | DIODE | |
| Q604 | 2SD2037EFTA | TRANSISTOR | | D609 | MA4220 | DIODE | (P, PC, E, E5, EG) |
| Q605 | 2SB1357EFTA | TRANSISTOR | | D609 | MA4200M | DIODE | (EB) |
| Q606 | 2SD2037EFTA | TRANSISTOR | | D610 | MA4062HTA | DIODE | |
| Q607 | 2SB621ARSTA | TRANSISTOR | | D611 | 1SR35200TB | DIODE | Δ |
| Q608 | 2SD2037EFTA | TRANSISTOR | | D612 | MA165TA | DIODE | |
| Q609 | 2SC3311AQSTA | TRANSISTOR | | D613 | MA4120M | DIODE | |
| Q610 | 2SA1309AQSTA | TRANSISTOR | Δ | D614 | MA165TA | DIODE | |
| Q901 | 2SC3311AQSTA | TRANSISTOR | | D615 | MA4330MTA | DIODE | |
| Q902 | DTA114ESTP | TRANSISTOR | | D701 | RFKFSB655EAK | L. E. D. ASS' Y | |
| Q903 | DTC114ESTP | TRANSISTOR | | D702 | RFKFSB655EBK | L. E. D. ASS' Y | |
| Q904 | 2SB1030RSTTA | TRANSISTOR | Δ | D901, 902 | 1SR35200TB | DIODE | |

| Ref. No. | Part No. | Part Name & Description | Remarks | Ref. No. | Part No. | Part Name & Description | Remarks |
|------------|--------------|--------------------------|---------------|------------|-------------|----------------------------|---------|
| D903-909 | MA165TA | DIODE | | S702 | EVQQTG05R | SW, F. F. | |
| D910 | MA4051M | DIODE | | S703 | EVQQTG05R | SW, REW | |
| D911, 912 | MA165TA | DIODE | | S704 | EVQQTG05R | SW, PLAY | |
| D913 | MA4056H | DIODE | | S705 | EVQQTG05R | SW, REC | |
| D914 | MA4091MTA | DIODE | | S706 | EVQQTG05R | SW, PAUSE | |
| D915, 916 | MA165TA | DIODE | △ | S707 | EVQQTG05R | SW, DOLBY NR C | |
| D920, 921 | MA165TA | DIODE | | S708 | EVQQTG05R | SW, DOLBY NR B | |
| D924 | MA165TA | DIODE | | S709 | EVQQTG05R | SW, MPX | |
| D925 | MA4075MTA | DIODE | | S710 | SSS166 | SW, TIMER | |
| D927 | MA4082MTA | DIODE | | S711 | EVQQTG05R | SW, COUNTER (RESET) | |
| D971, 972 | ISS133 | DIODE | | S712 | EVQQTG05R | SW, COUNTER (MODE) | |
| | | VARIABLE RESISTOR(S) | | S713 | EVQQTG05R | SW, METER RANGE | |
| | | | | S714 | EVQQTG05R | SW, MEMORY (REPEAT) | |
| VR1 | EWGU2A029A54 | V. R. REC. LEVEL CONTROL | | S715 | EVQQTG05R | SW, MEMORY (STOP) | |
| VR2 | EVJ02SF06G15 | V. R. BALANCE CONTROL | | S716 | EVQQTG05R | SW, APRS | |
| VR3, 4 | EVNDXAA00B53 | V. R. PLAYBACK GAIN ADJ. | | S717 | EVQQTG05R | SW, ARM | |
| VR5, 6 | EVNDXAA00B14 | V. R. OVERALL GAIN ADJ. | | S718 | SSH1238 | SW, POWER | |
| VR7, 8 | EVJ02KF04B24 | V. R. REC. CALIBRATION | | S719 | EVQQTG05R | SW, OPEN/CLOSE | |
| VR301, 302 | EVNDXAA00B14 | V. R. OVERALL FREQ. ADJ. | | S801 | SSPD18 | SW, MOTOR | |
| VR303 | EVJ02VF04B53 | V. R. BIAS CURRENT ADJ. | | S802 | SSPD18 | SW, OPEN | |
| VR701 | EVU57A043A14 | V. R. HEADPHONES CONTROL | | S971 | RSH1A89Z | SW, MODE | |
| | | COIL(S) | | S972 | RSH1A90Z | SW, HALF | |
| | | | | S973 | RSH1A90Z | SW, ATS | |
| L1, 2 | RLZ0003 | COIL | | S975 | RSH1A90Z | SW, REC | |
| L3-6 | SLQX272-1YT | COIL | | S976 | RSH1A90Z | SW, ATS | |
| L301 | SL09B4-K | COIL | | | | CONNECTOR(S) AND SOCKET(S) | |
| L302, 303 | SL09B1-K | COIL | | CN3 | SJSD1105 | CONNECTOR (11P) | |
| L403, 404 | SLM1B8-K | COIL | | CN4 | RJS1A1703 | CONNECTOR (3P) | |
| L405, 406 | QLM9Z10K | COIL | | CN5 | RJU003K010M | SOCKET (10P) | |
| L407, 408 | SLM1B8-K | COIL | | CN6A, 6B | RJS1A1705 | CONNECTOR (5P) | |
| | | TRANSFORMER(S) | | CN7-9 | RJU003K010M | SOCKET (10P) | |
| | | | | CN10 | SJT30545JQ | CONNECTOR (5P) | |
| T601 | RTP1K4B007-V | POWER TRANSFORMER | (EB) △ | CN10A | RJS1A1705 | CONNECTOR (5P) | |
| T601 | RTP1K4E008-V | POWER TRANSFORMER | (E, E5, EG) △ | CN11 | SJT30345JQ | CONNECTOR (3P) | |
| T601 | RTP1K4C004-V | POWER TRANSFORMER | (P, PC) △ | CN201 | RJS1A1703 | CONNECTOR (3P) | |
| | | OSCILLATOR(S) | | CN201A | RJS2T4ZA | CONNECTOR (2P) | |
| | | | | CN601, 602 | RJS1A1101 | SOCKET (1P) | |
| X551 | EFOGC4004T4 | CERAMIC FILTER | | CN607-612 | RJS1A1101 | SOCKET (1P) | |
| X901 | EFOGC6004T4 | CERAMIC FILTER | | CP1 | SJTD313 | CONNECTOR (3P) | |
| | | DISPLAY TUBE | | CP2 | SJTD513 | CONNECTOR (5P) | |
| | | | | CP5 | RJT003K010 | CONNECTOR (10P) | |
| FL551 | RSL0032-F | DISPLAY TUBE | | CP7-9 | RJT003K010 | CONNECTOR (10P) | |
| | | SWITCH(ES) | | CP10 | SJS50578JQ | SOCKET (5P) | |
| | | | | CP11 | SJS50378JQ | SOCKET (3P) | |
| S551 | EVQQTG05R | SW, MONITOR | | | | GND PART(S) | |
| S701 | EVQQTG05R | SW, STOP | | E1, 2 | SNE1004-1 | GND PLATE | |
| | | | | E3 | SJSD165 | GND SPRING | |

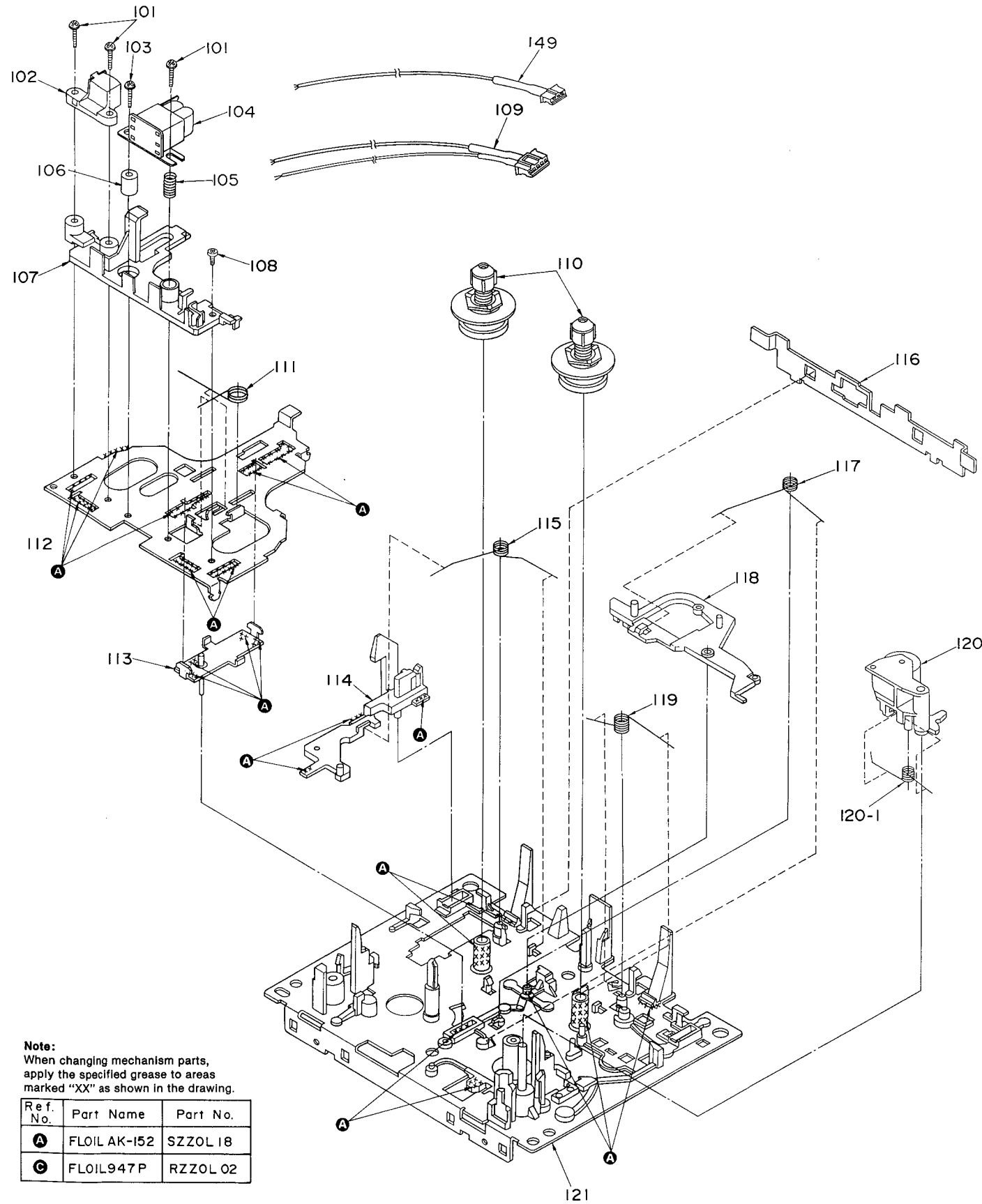
| Ref. No. | Part No. | Part Name & Description | Remarks | Ref. No. | Part No. | Part Name & Description | Remarks |
|----------|-------------|-------------------------|-------------------|----------|--------------|-------------------------|---------|
| | | JACK(S) | | | | JAMPER(S) | |
| JK1 | SJF3069N | TERMINAL BOARD | | J201-206 | ERJ6GEYOR00V | CHIP JAMPER | |
| JK2 | SJD19 | JACK, HEADPHONES | | | | | |
| JK6 | SJS9236 | AC INLET | (E, E5, EB, EG) Δ | | | | |
| JK6 | SJSD16 | AC INLET | (P, PC) Δ | | | | |
| | | CERAMIC FILTER(S) | | | | | |
| CF201 | RSXA3M74S01 | CERAMIC FILTER | | | | | |

REPLACEMENT PARTS LIST

| Ref. No. | Part No. | Part Name & Description | Remarks | Ref. No. | Part No. | Part Name & Description | Remarks |
|----------|--------------|-------------------------|---------|----------|-----------|-------------------------|---------|
| | | MECHANISM PARTS LIST | | 134 | XTW2+8S | SCREW | |
| | | | | 135 | XTN26+4F | SCREW | |
| 101 | QH1361A | SCREW | | 136 | RDG0030 | MAIN GEAR | |
| 102 | SJH96-1 | E HEAD | | 137 | RXF0008 | FLYWHEEL | |
| 103 | RHE5201ZA | SCREW | | 137-1 | RNW139ZA | WASHER | |
| 104 | RBR4CY003-C | R/P HEAD | | 138 | RML0037 | LEVER | |
| 105 | QBC1278A | SPRING | | 139 | RJW147ZA | SPRING | |
| 106 | RMX0014 | SPACER | | 140 | RJS2T7ZA | CONNECTOR(2P) | |
| 107 | RMRO184 | HEAD SPACER | | 141 | RMQ0037 | FG YOKE | |
| 108 | XTN2+5F | SCREW | | 142 | RXG0003 | REEL TABLE GEAR | |
| 109 | REX0092 | LEAD WIRE BLOCK | | 143 | RJQ112ZA | SPRING | |
| 110 | RXR0001 | REEL TABLE | | 144 | RJS609Z | TAPE PRESSURE SPRING | |
| 111 | RJW139ZA | SPRING | | 145 | RJQ111ZA | SPRING | |
| 112 | RMA0047A | HEAD BASE | | 146 | RHE5204ZA | SCREW | |
| 113 | RXQ0078 | MAIN ROD ASS'Y | | 147 | RJS11T7ZA | CONNECTOR(11P) | |
| 114 | RMMD012-2 | EJECT ROD(L) | | 148 | REPO268A | STATOR P. C. B. ASS'Y | |
| 115 | RME0018-1 | SPRING | | 149 | REX0093 | LEAD WIRE BLOCK | |
| 116 | RUB502Z | LEVER | | | | | |
| 117 | RME0020 | SPRING | | | | | |
| 118 | RXL0007 | BRAKE LEVER | | | | | |
| 119 | RJW142ZA | SPRING | | | | | |
| 120 | RXP0004 | PINCH ROLLER ARM | | | | | |
| 120-1 | RJW140ZB | 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 | RMRO141 | THRUST BEARING | | | | | |
| 129 | RXG0009 | GEAR ASS'Y | | | | | |
| 130 | RDG0034 | REEL MOTOR GEAR | | | | | |
| 131 | RUB428Z | MOVING IRON CORE | | | | | |
| 132 | RSJ0003 | SOLENOID | | | | | |
| 133 | RXQ0011 | BRAKE SOLENOID | | | | | |

EXPLODED VIEWS

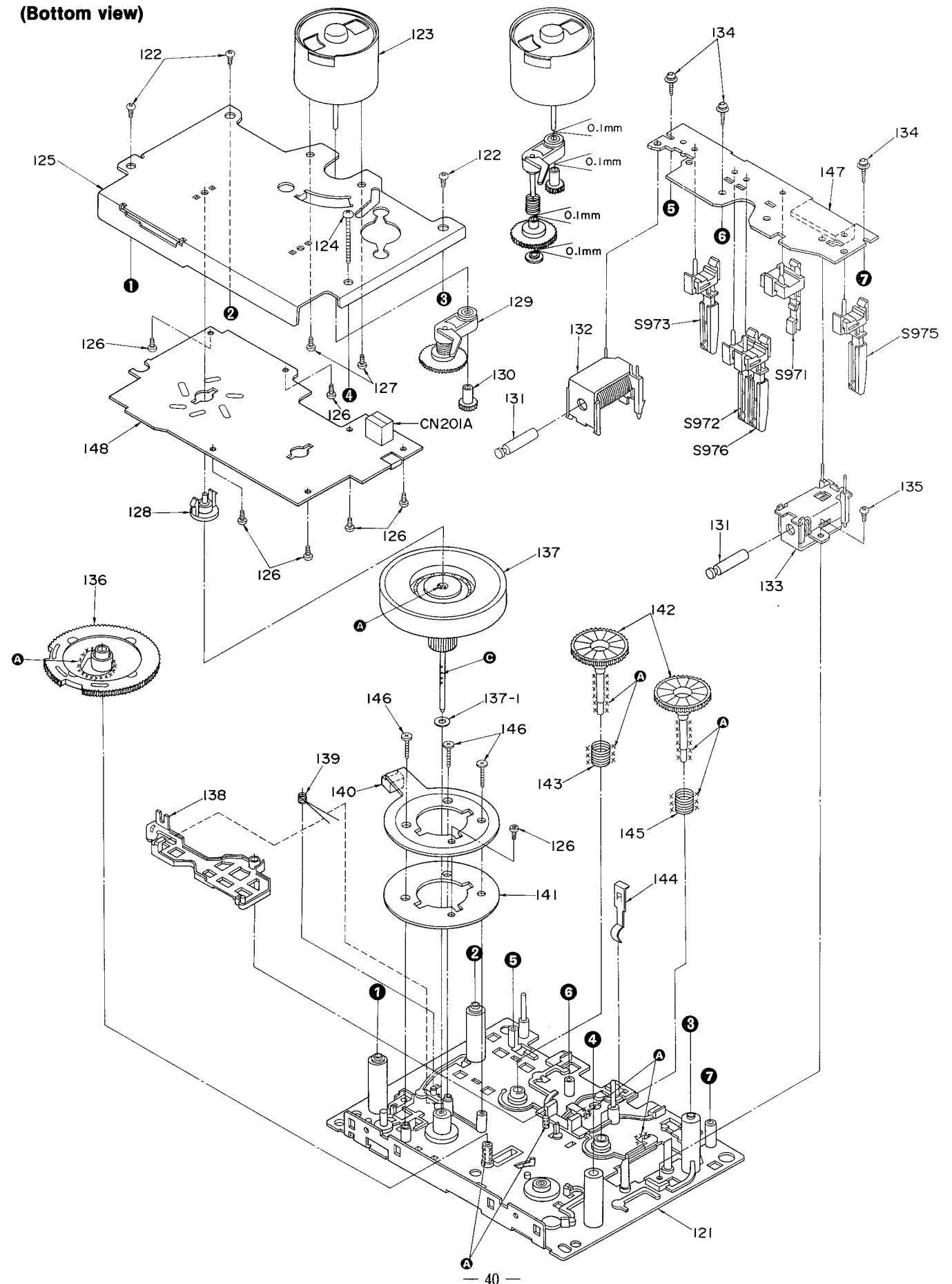
**• Mechanical parts
(Top view)**



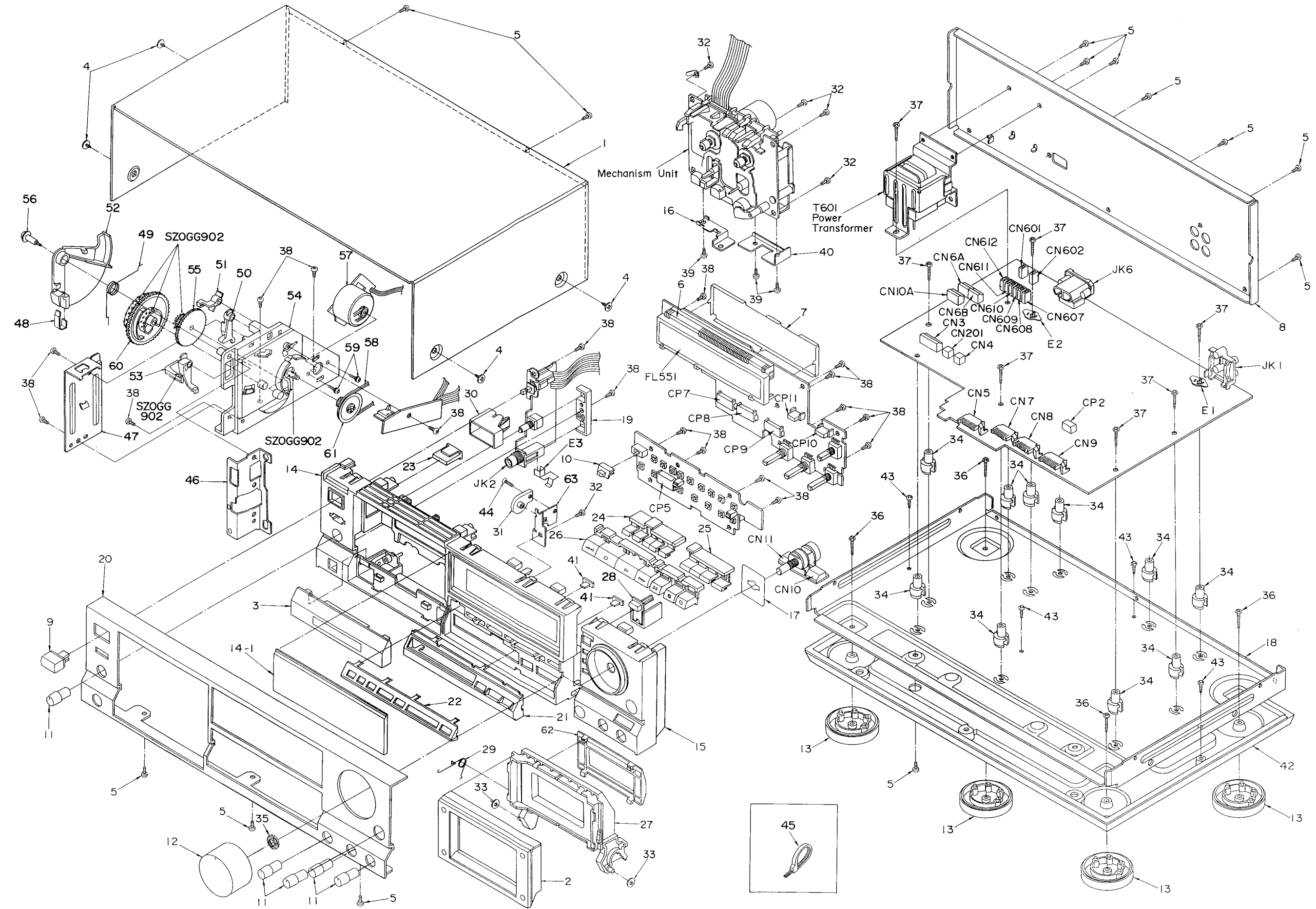
Note:
When changing mechanism parts,
apply the specified grease to areas
marked "XX" as shown in the drawing.

| Ref. No. | Part Name | Part No. |
|----------|--------------|----------|
| A | FLOIL AK-152 | SZZOL 18 |
| C | FLOIL947P | RZZOL 02 |

(Bottom view)



• Cabinet parts



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 |
|----------|--------------|-------------------------|-----------------|----------|--------------|--------------------------|----------------------|
| | | CABINET AND CHASSIS | | 39 | XTB26+4FFZ | SCREW | |
| | | | | 40 | RSC0076 | SHIELD PLATE | |
| 1 | RKMD036-K | CABINET | | 41 | RGL0030 | PANEL LIGHT | |
| 2 | RYF0036 | CASSETTE LID | | 42 | RKU0009 | BOTTOM BOARD | |
| 3 | RYQ0027 | ORNAMENT | | 43 | XTB3+10GFZ | SCREW | |
| 4 | SNE2129-1 | SCREW | | 44 | XTS3+8J | SCREW | |
| 5 | XTBS3+8JFZ1 | SCREW | | 45 | SHR301 | CLAMPER | |
| 6 | RMND021 | FL HOLDER | | 46 | RMAD146 | LOADING ANGLE | |
| 7 | RSC0048 | SHIELD PLATE | | 47 | RMAD242 | ANGLE | |
| 8 | RGR0024-H | REAR PANEL | (E) | 48 | RMCO039 | BRACKET | |
| 8 | RGR0024-I | REAR PANEL | (E5) | 49 | RMEO039 | OPEN SPRING | |
| 8 | RGR0024-J | REAR PANEL | (EB) | 50 | RML0110 | LEAF SWITCH LEVER (B) | |
| 8 | RGR0024-K | REAR PANEL | (P, PC) | 51 | RML0111 | LEAF SWITCH LEVER (C) | |
| 8 | RGR0024-O | REAR PANEL | (EG) | 52 | RML0112 | DRIVE SECTOR LEVER | |
| 9 | RGU0030 | BUTTON, POWER | | 53 | RML0113 | LEAF SWITCH LEVER (A) | |
| 10 | RGV0022 | KNOB, TIMER | | 54 | RFKNSB755EDK | LOADING BASE ASS' Y | |
| 11 | RGW0032 | KNOB, BALANCE LEVEL | | 55 | SFUGF01M02 | INTERMEDIATE GEAR | |
| 12 | RGW0033 | KNOB, REC LEVEL | | 56 | SHDD8 | SCREW | |
| 13 | RKA0009-1 | FOOT | | 57 | RFKPSB755E-K | EJECT DRIVE MOTOR ASS' Y | |
| 14 | RFKNSB755EAK | FRONT GRILLE ASS' Y (1) | | 58 | SMBD7 | BELT | |
| 14-1 | RKWD038 | TRANSPARENT PLATE | | 59 | XYN26+F6 | SCREW | |
| 15 | RFKNSB755EBK | FRONT GRILLE ASS' Y (2) | | 60 | RDG0080 | DRIVE GEAR | |
| 16 | RMCO040 | BRACKET | | 61 | RDG0081 | PULLEY GEAR | |
| 17 | RMCO056 | SHIELD PLATE | | 62 | RMQ0072 | HALF STABILIZER | |
| 18 | RMKD026-1 | CHASSIS | | 63 | RMAD157 | DAMPER ANGLE | |
| 19 | RMND022 | ORNAMENT | | | | PACKING MATERIAL | |
| 20 | RFKGSB755E-K | FRONT PANEL ASS' Y | (E, E5, EB, EG) | P1 | RPG0301 | CARTON BOX | (PC, E, E5, EB, EG) |
| 20 | RFKGSB755P-K | FRONT PANEL ASS' Y | (P, PC) | P1 | RPG0302 | CARTON BOX | (P) |
| 21 | RGKD117 | ORNAMENT, BUTTON (A) | | P2 | RPND178 | PAD, FRONT/BACK | |
| 22 | RGKD118 | ORNAMENT, BUTTON (B) | | P3 | SPS5185 | PAD, ACCESSORIES | |
| 23 | RGU0195 | BUTTON, OPEN/CLOSE | | P4 | SPP756 | PROTECTION COVER | |
| 24 | RGU0131 | BUTTON, COUNTER | | | | ACCESSORIES | |
| 25 | RGU0132 | BUTTON, NOISE REDUCTION | | | | | |
| 26 | RGU0133 | BUTTON, OPERATION | | A1 | RQTD224-P | INSTRUCTION MANUAL | (P) |
| 27 | RFKNSB755ECK | CASSETTE HOLDER ASS' Y | | A1 | RFKSSB755PC | INSTRUCTION MANUAL | (PC) |
| 28 | RGU0194 | BUTTON, MONITOR | | A1 | RQTD226-D | INSTRUCTION MANUAL | (EG) |
| 29 | RMEO049 | SPRING | | A1 | RQTD227-B | INSTRUCTION MANUAL | (EB) |
| 30 | RMRO185 | LEVER, OPEN/CLOSE | | A1 | RFKSSB755E | INSTRUCTION MANUAL | (E, E5) |
| 31 | SMQSX911-KE | DAMPER GEAR ASS' Y | | A2 | SFDAC05E03 | POWER CORD | (E, E5, EG) Δ |
| 32 | XTB3+10JFZ | SCREW | | A2 | SJA172 | POWER CORD | (PC) Δ |
| 33 | SJD444-1 | WASHER | | A2 | SJA172-1 | POWER CORD | (P) Δ |
| 34 | SHE187-2 | HOLDER | | A2 | SJA193-1 | POWER CORD | (EB) Δ |
| 35 | SNE4021-1 | NUT | | A3 | SJP2249-3 | STEREO CONNECTION CABLE | |
| 36 | XTB3+16G | SCREW | | | | | |
| 37 | XTB3+20J | SCREW | | | | | |
| 38 | XTB3+8JFZ | SCREW | | | | | |

RESISTORS & CAPACITORS

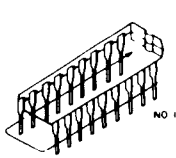
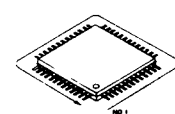
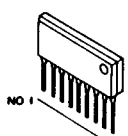
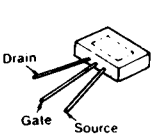
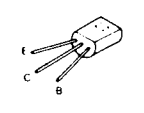
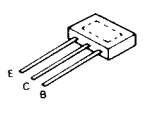
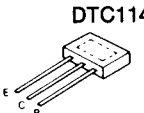
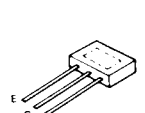
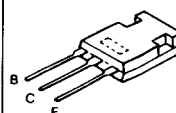
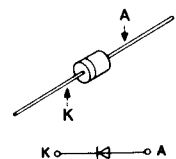
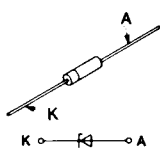
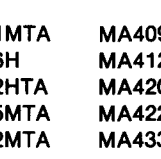
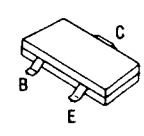
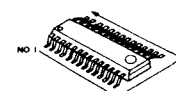
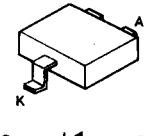
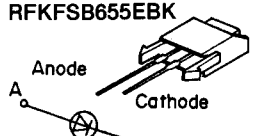
Notes : * Capacity value are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
 * Resistance values are in ohms, unless specified otherwise, 1K=1,000(OHM) , 1M=1,000k(OHM)

| Ref. No. | Part No. | Values & Remarks | Ref. No. | Part No. | Values & Remarks | Ref. No. | Part No. | Values & Remarks |
|-----------|--------------|------------------|-----------|--------------|-----------------------------|-----------|--------------|------------------------------|
| | | RESISTORS | R307 | ERDS2TJ222T | 1/4W 2.2K | R601, 602 | ERDS2TJ472T | 1/4W 4.7K |
| | | | R308 | ERDS2TJ682T | 1/4W 6.8K | R603 | ERDS2TJ103T | 1/4W 10K |
| | | | R311, 312 | ERDS2TJ100T | 1/4W 10 | R604 | ERDS2TJ472T | 1/4W 4.7K Δ |
| R9, 10 | ERDS2TJ683T | 1/4W 68K | R313, 314 | ERDS2TJ154T | 1/4W 150K | R605 | ERD2FCVJ6R8T | 1/4W 6.8 (EB) Δ |
| R11, 12 | ERDS2TJ183T | 1/4W 18K | R315, 316 | ERDS2TJ333T | 1/4W 33K | R605 | ERDS1FVJ150T | 1/2W 15 (P, PC, E, E5, EG) Δ |
| R13, 14 | ERDS2TJ101T | 1/4W 100 | R317 | ERDS2TJ822T | 1/4W 8.2K | R606 | ERD2FCVJ4R7T | 1/4W 4.7 (EB) |
| R15, 16 | ERDS2TJ220T | 1/4W 22 | R318 | ERDS2TJ272T | 1/4W 2.7K | R606 | ERDS1FJ4R7 | 1/2W 4.7 (P, PC, E, E5, EG) |
| R17, 18 | ERDS2TJ153T | 1/4W 15K | R319 | ERDS2TJ102T | 1/4W 1K | R607, 608 | ERDS2TJ561T | 1/4W 560 |
| R19, 20 | ERDS2TJ103T | 1/4W 10K | R320 | ERDS2TJ332T | 1/4W 3.3K | R611, 612 | ERD2FCVG270T | 1/4W 27 (EB) |
| R21, 22 | ERDS2TJ564T | 1/4W 560K | R321 | ERDS1FJ390 | 1/2W 39 (EB) | R611, 612 | ERDS1FVJ270T | 1/2W 27 (P, PC, E, E5, EG) |
| R23, 24 | ERDS2TJ682T | 1/4W 6.8K | R321 | ERDS1FVJ121T | 1/2W 120 (P, PC, E, E5, EG) | R613, 614 | ERDS2TJ222T | 1/4W 2.2K |
| R25, 26 | ERDS2TJ273T | 1/4W 27K | R322, 323 | ERDS1FJ390 | 1/2W 39 (EB) | R615 | ERDS2TJ1R0T | 1/4W 1.0 Δ |
| R27, 28 | ERDS2TJ153T | 1/4W 15K | R324 | ERDS2TJ102T | 1/4W 1K | R616 | ERDS2TJ391T | 1/4W 390 Δ |
| R29, 30 | ERDS2TJ682T | 1/4W 6.8K | R325 | ERDS2TJ222T | 1/4W 2.2K | R617, 618 | ERDS2TJ151T | 1/4W 150 (EB) |
| R31, 32 | ERDS2TJ392T | 1/4W 3.9K | R405, 406 | ERDS2TJ473T | 1/4W 47K | R617, 618 | ERDS2TJ820T | 1/4W 82 (P, PC, E, E5, EG) |
| R33, 34 | ERDS2TJ102T | 1/4W 1K | R415, 416 | ERDS2TJ102T | 1/4W 1K | R619, 620 | ERQ16NKR15E | 1/6W 0.15 (EB) Δ |
| R35, 36 | ERDS2TJ820T | 1/4W 82 | R417, 418 | ERDS2TJ332T | 1/4W 3.3K | R623, 624 | ERDS2TJ101T | 1/4W 100 (EB) |
| R37, 38 | ERDS2TJ102T | 1/4W 1K | R419, 420 | ERDS2TJ333T | 1/4W 33K | R625 | ERDS2TJ181T | 1/4W 180 (EB) |
| R39, 40 | ERDS2TJ151T | 1/4W 150 | R421-424 | ERDS2TJ823T | 1/4W 82K | R626, 627 | ERDS2TJ101T | 1/4W 100 (EB) |
| R41, 42 | ERDS2TJ332T | 1/4W 3.3K | R425, 426 | ERDS2TJ683T | 1/4W 68K | R628 | ERDS2TJ103T | 1/4W 10K |
| R43, 44 | ERDS2TJ392T | 1/4W 3.9K | R427, 428 | ERDS2TJ222T | 1/4W 2.2K | R629 | ERDS2TJ472T | 1/4W 4.7K |
| R45, 46 | ERDS2TJ472T | 1/4W 4.7K | R429, 430 | ERDS2TJ512 | 1/4W 5.1K | R630, 631 | ERDS2TJ151T | 1/4W 150 (EB) |
| R47, 48 | ERDS2TJ222T | 1/4W 2.2K | R435, 436 | ERDS2TJ473T | 1/4W 47K | R630, 631 | ERDS2TJ820T | 1/4W 82 (P, PC, E, E5, EG) |
| R49, 50 | ERDS2TJ104T | 1/4W 100K | R437, 438 | ERDS2TJ242 | 1/4W 2.4K | R632, 633 | ERDS2TJ121T | 1/4W 120 |
| R51-56 | ERDS2TJ223T | 1/4W 22K | R439-442 | ERDS2TJ684T | 1/4W 680K | R635-638 | ERDS2TJ181T | 1/4W 180 (EB) |
| R59, 60 | ERDS2TJ182T | 1/4W 1.8K | R443, 444 | ERDS2TJ562T | 1/4W 5.6K | R639 | ERD2FCVG100T | 1/4W 10 (EB) |
| R61, 62 | ERDS2TJ222T | 1/4W 2.2K | R445, 446 | ERDS2TJ102T | 1/4W 1K | R640 | ERD2FCVJ6R8T | 1/4W 6.8 (EB) Δ |
| R63, 64 | ERDS2TJ332T | 1/4W 3.3K | R447, 448 | ERDS2TJ332T | 1/4W 3.3K | R641 | ERDS2TJ391T | 1/4W 390 |
| R67, 68 | ERDS2TJ273T | 1/4W 27K | R449, 450 | ERDS2TJ333T | 1/4W 33K | R642 | ERDS2TJ391T | 1/4W 390 Δ |
| R69, 70 | ERDS2TJ472T | 1/4W 4.7K | R451-454 | ERDS2TJ823T | 1/4W 82K | R701 | ERDS2TJ821T | 1/4W 820 |
| R71, 72 | ERDS2TJ561T | 1/4W 560 | R455, 456 | ERDS2TJ683T | 1/4W 68K | R702 | ERDS2TJ102T | 1/4W 1K |
| R73-76 | ERDS2TJ103T | 1/4W 10K | R457, 458 | ERDS2TJ222T | 1/4W 2.2K | R703 | ERDS2TJ122T | 1/4W 1.2K |
| R77, 78 | ERDS2TJ331 | 1/4W 330 | R459, 460 | ERDS2TJ512 | 1/4W 5.1K | R704 | ERDS2TJ152T | 1/4W 1.5K |
| R79, 80 | ERDS2TJ182T | 1/4W 1.8K | R551, 552 | ERDS2TJ104T | 1/4W 100K | R705 | ERDS2TJ182T | 1/4W 1.8K |
| R201 | ERJ6GEYJ333V | 1/10W 33K | R553, 554 | ERDS2TJ563T | 1/4W 56K | R706 | ERDS2TJ222T | 1/4W 2.2K |
| R202 | ERJ6GEYJ683V | 1/10W 68K | R555, 556 | ERDS2TJ823T | 1/4W 82K | R707 | ERDS2TJ332T | 1/4W 3.3K |
| R203-205 | ERJ6GEYJ1R5V | 1/10W 1.5 | R557, 558 | ERDS2TJ220T | 1/4W 22 | R708 | ERDS2TJ472T | 1/4W 4.7K |
| R206 | ERJ8GEYJ222V | 1/8W 2.2K | R559, 560 | ERDS2TJ152T | 1/4W 1.5K | R709 | ERDS2TJ682T | 1/4W 6.8K |
| R207 | ERJ6GEYJ182V | 1/10W 1.8K | R561 | ERDS2TJ102T | 1/4W 1K | R710 | ERDS2TJ123T | 1/4W 12K |
| R208 | ERJ6GEYJ222V | 1/10W 2.2K | R562 | ERDS2TJ471T | 1/4W 470 | R711 | ERDS2TJ223T | 1/4W 22K |
| R209-211 | ERJ6GEYJ4R7V | 1/10W 4.7 | R563, 564 | ERDS2TJ103T | 1/4W 10K | R712 | ERDS2TJ821T | 1/4W 820 |
| R212, 213 | ERJ6GEYJ152V | 1/10W 1.5K | R565 | ERDS2TJ105T | 1/4W 1M | R713 | ERDS2TJ102T | 1/4W 1K |
| R214 | ERJ6GEYJ822V | 1/10W 8.2K | R569, 570 | ERDS2TJ101T | 1/4W 100 | R714 | ERDS2TJ122T | 1/4W 1.2K |
| R215 | ERJ6GEYJ101V | 1/10W 100 | R571 | ERDS2TJ152T | 1/4W 1.5K | R715 | ERDS2TJ152T | 1/4W 1.5K |
| R216 | ERJ8GEYJ222V | 1/8W 2.2K | R572 | ERDS2TJ102T | 1/4W 1K | | | |
| R301 | ERDS2TJ1R0T | 1/4W 1.0 | R573 | ERDS2TJ270T | 1/4W 27 | | | |
| R302, 303 | ERDS2TJ183T | 1/4W 18K | R574 | ERDS2TJ220T | 1/4W 22 | | | |
| R304, 305 | ERDS2TJ100T | 1/4W 10 | R575-578 | ERDS2TJ331 | 1/4W 330 | | | |
| R306 | ERDS2TJ471T | 1/4W 470 | | | | | | |

| Ref. No. | Part No. | Values & Remarks | Ref. No. | Part No. | Values & Remarks | Ref. No. | Part No. | Values & Remarks |
|-----------|--------------|--------------------------------|-----------|--------------|---------------------------------|-----------|--------------|---------------------------------|
| R716 | ERDS2TJ182T | 1/4W 1.8K | R946 | ERDS2TJ102T | 1/4W 1K | C15, 16 | ECCD1H221KB | 50V 220P |
| R717 | ERDS2TJ181T | 1/4W 180 | R947, 948 | ERDS2TJ103T | 1/4W 10K | C17, 18 | ECQB1H562JZ3 | 50V 5600P |
| R718 | ERDS2TJ331 | 1/4W 330 | R949 | ERDS2TJ472T | 1/4W 4.7K | C19, 20 | ECEA1HMR33B | 50V 0.33U |
| R719, 720 | ERDS2TJ180 | 1/4W 18 | R950 | ERDS2TJ681T | 1/4W 680 | C21, 22 | ECEA1CPX100B | 16V 10U |
| R721, 722 | ERDS2TJ330T | 1/4W 33 | R951 | ERDS2TJ101T | 1/4W 100 | C23, 24 | ECQB1H183JZ3 | 50V 0.018U |
| R723, 724 | ERDS2TJ100T | 1/4W 10 | R952 | ERDS2TJ823T | 1/4W 82K | C25, 26 | ECQB1H822JZ3 | 50V 8200P |
| R725, 726 | ERDS2TJ102T | 1/4W 1K | R953 | ERDS2TJ393T | 1/4W 39K | C27, 28 | ECQB1H562JZ3 | 50V 5600P |
| R727, 728 | ERDS2TJ332T | 1/4W 3.3K | R954 | ERDS2TJ822T | 1/4W 8.2K | C29, 30 | ECQB1H183JZ3 | 50V 0.018U |
| R801 | ERDS2TJ332T | 1/4W 3.3K (EB) | R955 | ERDS2TJ102T | 1/4W 1K | C31, 32 | ECQV1H683JZ3 | 50V 0.068U |
| R802 | ERDS2TJ222T | 1/4W 2.2K (EB) | R956 | ERDS2TJ473T | 1/4W 47K | C33, 34 | ECBT1H101KB5 | 50V 100P |
| R803 | ERDS1FVJ3R3T | 1/2W 3.3 | R957 | ERDS2TJ183T | 1/4W 18K | C35, 36 | ECEA1HPX4R7B | 50V 4.7U |
| R804 | ERDS2TJ101T | 1/4W 100 | R958 | ERDS2TJ103T | 1/4W 10K | C37, 38 | ECQP1121JZ | 100V 120P |
| R805 | ERDS2TJ332T | 1/4W 3.3K (EB) | R959 | ERDS2TJ152T | 1/4W 1.5K | C39, 40 | ECKD1H152KB | 50V 1500P |
| R806 | ERDS2TJ222T | 1/4W 2.2K (EB) | R960 | ERDS2TJ472T | 1/4W 4.7K | C41, 42 | ECBT1H470J5 | 50V 47P |
| R901 | ERDS2TJ105T | 1/4W 1M | R962 | ERDS2TJ153T | 1/4W 15K | C43, 44 | ECEA1CPX100B | 16V 10U |
| R902 | ERDS2TJ103T | 1/4W 10K | R963 | ERDS2TJ273T | 1/4W 27K | C45, 46 | ECEA1HPX4R7B | 25V 4.7U |
| R903 | ERDS2TJ471T | 1/4W 470 | R964 | ERDS2TJ472T | 1/4W 4.7K | C47, 48 | ECEA1HPS010 | 50V 1U |
| R904 | ERDS2TJ103T | 1/4W 10K | R970 | ERDS2TJ222T | 1/4W 2.2K | C49, 50 | ECEA1CPX100B | 16V 10U |
| R905 | ERDS2TJ182T | 1/4W 1.8K | R971 | ERDS2TJ332T | 1/4W 3.3K | C51, 52 | ECKR1H103ZF5 | 50V 0.01U |
| R906 | ERDS2TJ682T | 1/4W 6.8K | R971A | ERDS2TJ271T | 1/4W 270 | C53, 54 | ECQB1H122JZ3 | 50V 1200P |
| R907 | ERDS2TJ103T | 1/4W 10K | R971B | ERDS1FVJ3R3T | 1/2W 3.3 Δ | C55, 56 | ECQB1H123JZ | 50V 0.012U |
| R908 | ERDS2TJ392T | 1/4W 3.9K | R972 | ERDS2TJ472T | 1/4W 4.7K | C57, 58 | ECQB1H333JZ3 | 50V 0.033U |
| R909 | ERDS2TJ272T | 1/4W 2.7K | R972A | ERDS2TJ183T | 1/4W 18K | C59, 60 | ECQB1H223JZ3 | 50V 0.022U |
| R910 | ERDS2TJ333T | 1/4W 33K | R973 | ERDS2TJ682T | 1/4W 6.8K | C201 | ECUV1E153MB | 25V 0.015U |
| R911, 912 | ERDS2TJ103T | 1/4W 10K | R973A | ERDS2TJ271T | 1/4W 270 | C202 | ECUV1E104KB | 25V 0.1U |
| R914 | ERDS2TJ221T | 1/4W 220 | R974 | ERDS2TJ123T | 1/4W 12K | C203, 204 | ECEV1CA100R | 16V 10U |
| R915 | ERDS2TJ103T | 1/4W 10K | R974A | ERDS2TJ183T | 1/4W 18K | C205, 206 | ECUV1E104KB | 25V 0.1U |
| R916 | ERDS2TJ332T | 1/4W 3.3K | R975 | ERDS2TJ223T | 1/4W 22K | C209-211 | ECEV1EN4R7R | 25V 4.7U |
| R917, 918 | ERDS2TJ103T | 1/4W 10K | R977 | ERDS2TJ223T | 1/4W 22K | C212-214 | ECUV1H103ZFN | 50V 0.01U |
| R919, 920 | ERDS2TJ223T | 1/4W 22K | R978 | ERDS2TJ473T | 1/4W 47K | C215 | ECUV1H472KB | 50V 4700P |
| R922 | ERDS2TJ472T | 1/4W 4.7K | R979 | ERDS2TJ102T | 1/4W 1K | C216 | ECUV1E562KBN | 25V 5600P |
| R923 | ERDS2TJ152T | 1/4W 1.5K | R980 | ERDS2TJ472T | 1/4W 4.7K | C217-219 | ECUV1E104KB | 25V 0.1U |
| R924 | ERDS2TJ223T | 1/4W 22K Δ | R981 | ERDS2TJ392T | 1/4W 3.9K | C301 | ECQP1153JZ | 50V 0.015U |
| R925 | ERDS2TJ821T | 1/4W 820 | R983 | ERDS2TJ222T | 1/4W 2.2K | C302 | ECEA1EK4R7B | 25V 4.7U |
| R926 | ERDS2TJ223T | 1/4W 22K Δ | R984 | ERDS2TJ472T | 1/4W 4.7K (EB) | C303 | ECKD1H392KB | 50V 3900P |
| R927 | ERDS2TJ821T | 1/4W 820 | R985 | ERDS2TJ102T | 1/4W 1K Δ | C304, 305 | ECKR1H222KB5 | 50V 2200P |
| R928 | ERG1SJ150E | 1W 15 Δ | R986 | ERDS2TJ472T | 1/4W 4.7K | C306 | ECKD1H682KB | 50V 6800P |
| R929 | ERG1SJ180E | 1W 18 Δ | R987 | ERDS2TJ223T | 1/4W 22K | C310 | ECKR1H103ZF5 | 50V 0.01U (EB) |
| R930 | ERDS2TJ223T | 1/4W 22K Δ | R988, 989 | ERDS2TJ103T | 1/4W 10K | C310 | ECKD1H472KB | 50V 4700P (P, PC, E, E5, EG) |
| R931 | ERDS2TJ821T | 1/4W 820 | R990 | ERDS2TJ472T | 1/4W 4.7K | | | |
| R932 | ERDS2TJ103T | 1/4W 10K (P, PC, E, E5, EG) | R992, 993 | ERDS2TJ822T | 1/4W 8.2K | C311 | ECEA1AU101B | 10V 100U |
| R933 | ERDS2TJ332T | 1/4W 3.3K | R994, 995 | ERDS2TJ473T | 1/4W 47K | C312 | ECBT1E103ZF | 25V 0.01U |
| R934 | ERDS2TJ472T | 1/4W 4.7K (EB) | R998 | ERDS2TJ103T | 1/4W 10K | C313, 314 | ECQV1H224JZ3 | 50V 0.22U |
| R935 | ERDS2TJ682T | 1/4W 6.8K | R999 | ERD2FCVG330T | 1/4W 33 (EB) Δ | C315, 316 | ECBT1H821KB5 | 50V 820P |
| R936 | ERDS2TJ223T | 1/4W 22K | R999 | ERDS1FVJ330T | 1/2W 33 (P, PC, E, E5, EG) Δ | C317, 318 | ECBT1H121KB5 | 50V 120P |
| R938 | ERDS2TJ682T | 1/4W 6.8K | | | | C319, 320 | ECQV1H563JZ3 | 50V 0.056U |
| R939 | ERDS2TJ223T | 1/4W 22K | | | CAPACITORS | C321, 322 | ECQB1H223JZ3 | 50V 0.022U |
| R940, 941 | ERDS2TJ562T | 1/4W 5.6K | | | | C323, 324 | ECQB1H103JZ3 | 50V 0.01U |
| R942 | ERDS2TJ821T | 1/4W 820 | C7, 8 | ECBT1H221KBY | 50V 220P | C325, 326 | ECKR1H561KB5 | 50V 560P |
| R943 | ERDS2TJ223T | 1/4W 22K | C9, 10 | ECEA0JPX471B | 6.3V 470U | C328 | ECBT1H470J5 | 50V 47P |
| R944, 945 | ERDS1FVJ120T | 1/2W 12 | C11, 12 | ECQB1H562JZ3 | 50V 5600P | C329 | ECEA1EK100B | 25V 10U |
| | | | | | | C330 | ECBT1E103ZF | 25V 0.01U |

| Ref. No. | Part No. | Values & Remarks | Ref. No. | Part No. | Values & Remarks | Ref. No. | Part No. | Values & Remarks |
|-----------|--------------|------------------|-----------|--------------|------------------|-----------|--------------|------------------|
| C331 | ECBT1E103ZF | 25V 0.01U (EB) | C457, 458 | ECQB1H103JZ3 | 50V 0.01U | C626 | ECKR1H103ZF5 | 50V 0.01U |
| C332 | ECBT1E103ZF | 25V 0.01U | C461, 462 | ECEA1HPX4R7B | 50V 4.7U | C627 | ECBT1E103ZF | 25V 0.01U Δ |
| C333 | ECBT1H470J5 | 50V 47P | C551, 552 | ECQV1H104JZ3 | 50V 0.1U | C628, 629 | ECEA1HPS010 | 50V 1U |
| C403, 404 | ECEA1CPX100B | 16V 10U | C553, 554 | ECEA0JKS101B | 6.3V 100U | C701 | ECKR1H223ZF5 | 50V 0.022U |
| C409, 410 | ECQB1H472JZ3 | 50V 4700P | C555 | ECBT1E103ZF | 25V 0.01U | C702, 703 | ECKR1H103ZF5 | 50V 0.01U |
| C411, 412 | ECEA1CPX100B | 16V 10U | C556 | ECEA1CK100B | 16V 10U | C901 | ECEA0JU222B | 6.3V 2200U |
| C413, 414 | ECQV1H473JZ3 | 50V 0.047U | C557 | ECEA1EK4R7B | 25V 4.7U | C902 | ECKR1H103ZF5 | 50V 0.01U |
| C415, 416 | ECQV1H224JZ3 | 50V 0.22U | C558 | ECEA1HK010B | 50V 1U | C903 | ECEA1HK010B | 50V 1U |
| C417-420 | ECEA1HKR68B | 50V 0.68U | C559-561 | ECBT1E103ZF | 25V 0.01U | C904 | ECEA1EK4R7B | 25V 4.7U |
| C421, 422 | ECQV1H224JZ3 | 50V 0.22U | C563, 564 | ECEA0JKS101B | 6.3V 100U | C905 | ECKR1H103ZF5 | 50V 0.01U |
| C423, 424 | ECQV1H473JZ3 | 50V 0.047U | C567, 568 | ECEA1VK100B | 35V 10U | C906 | ECEA1CN100SB | 16V 10U |
| C425, 426 | ECEA1CPX100B | 16V 10U | C601 | ECKD2H682PE | 500V 6800P Δ | C908 | ECKR1H103ZF5 | 50V 0.01U |
| C427, 428 | ECQB1H472JZ3 | 50V 4700P | C602 | ECEA1EU222E | 25V 2200U | C909 | ECQB1H822JZ3 | 50V 8200P |
| C429, 430 | ECQB1H103JZ3 | 50V 0.01U | C603 | ECEA1EU222E | 25V 2200U Δ | C910 | ECEA1CK100B | 16V 10U |
| C433, 434 | ECKD1H122KB | 50V 1200P | C604, 605 | ECKR1H103ZF5 | 50V 0.01U | C911 | ECBT1H470J5 | 50V 47P |
| C435, 436 | ECKD1H152KB | 50V 1500P | C606, 607 | ECEA1AJ221B | 10V 220U | C912 | ECEA1HK010B | 50V 1U |
| C437, 438 | ECQB1H472JZ3 | 50V 4700P | C608, 609 | ECKR1H103ZF5 | 50V 0.01U | C914 | ECEA1CK100B | 16V 10U |
| C439, 440 | ECEA1CPX100B | 16V 10U | C610, 611 | ECEA1AJ102B | 10V 1000U | C915 | ECEA0JU101B | 6.3V 100U |
| C441, 442 | ECQV1H473JZ3 | 50V 0.047U | C612 | ECEA1EU222E | 25V 2200U Δ | C916 | ECEA1CN100SB | 16V 10U |
| C443, 444 | ECQV1H224JZ3 | 50V 0.22U | C613 | ECKR1H103ZF5 | 50V 0.01U | C917 | ECEA1HK010B | 50V 1U (EB) |
| C445-448 | ECEA1HKR68B | 50V 0.68U | C615 | ECEA1EK100B | 25V 10U | C918, 919 | ECBT1E103ZF | 25V 0.01U |
| C449, 450 | ECQV1H224JZ3 | 50V 0.22U | C617 | ECEA1HJ221B | 50V 220U | C920 | ECEA1HKR47B | 50V 0.47U |
| C451, 452 | ECQV1H473JZ3 | 50V 0.047U | C618-621 | ECEA1AJ102B | 10V 1000U | C921 | ECEA1EK100B | 25V 10U |
| C453, 454 | ECEA1CPX100B | 16V 10U | C623 | ECBT1E103ZF | 25V 0.01U | | | |
| C455, 456 | ECQB1H472JZ3 | 50V 4700P | C624 | ECKD2H682PE | 500V 6800P | | | |

TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

| | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|-------------|---------|---|--|--------|--------------|--------|--------------|--------|--|-------------|--------|--|--------|-------|--------|-------|--|
|  <table border="1"> <tr><td>MC14066BCP</td><td>14 Pin</td></tr> <tr><td>UPC1297CA</td><td>18 Pin</td></tr> <tr><td>TEA0665</td><td>28 Pin</td></tr> <tr><td>AN7351K</td><td>42 Pin</td></tr> <tr><td>HD404302SA07</td><td>42 Pin</td></tr> <tr><td>MB88511-224N</td><td>42 Pin</td></tr> </table> | MC14066BCP | 14 Pin | UPC1297CA | 18 Pin | TEA0665 | 28 Pin | AN7351K | 42 Pin | HD404302SA07 | 42 Pin | MB88511-224N | 42 Pin |  <table border="1"> <tr><td>HA13440MPEL</td><td>30 Pin</td></tr> </table> | HA13440MPEL | 30 Pin |  <table border="1"> <tr><td>M5218L</td><td>8 Pin</td></tr> <tr><td>BA6218</td><td>9 Pin</td></tr> </table> | M5218L | 8 Pin | BA6218 | 9 Pin |  <p>Drain Gate Source</p> |
| MC14066BCP | 14 Pin | | | | | | | | | | | | | | | | | | | | |
| 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 | | | | | | | | | | | | | | | | | | | | |
|  <p>2SB621ARSTA 2SD592A</p> |  <p>2SA1309AQSTA 2SC3311AQSTA 2SD1450RSTTA 2SB1030RSTTA</p> |  <p>DTC114ESTP DTC114YSTP</p> |  <p>DTA114ESTP</p> | | | | | | | | | | | | | | | | | | |
|  <p>2SB1357DEFTA 2SD2037EFTA</p> |  <p>MA165TA 1SR35200TB 1SS133</p> |  <p>MA4051MTA MA4056H MA4062HTA MA4075MTA MA4082MTA</p> |  <p>MA4091MTA MA4120M MA4200M MA4220 MA4330MTA</p> | | | | | | | | | | | | | | | | | | |
|  <p>2SD601RTW</p> | <table border="1"> <tr><td>SN74LS04MEL</td><td>14 Pin</td></tr> <tr><td>SN74LS74MEL</td><td>14 Pin</td></tr> </table>  | SN74LS04MEL | 14 Pin | SN74LS74MEL | 14 Pin |  <p>MA3056MTW</p> |  <p>RFKFSB655EAK RFKFSB655EBK</p> <p>Anode Cathode Ca</p> | | | | | | | | | | | | | | |
| SN74LS04MEL | 14 Pin | | | | | | | | | | | | | | | | | | | | |
| SN74LS74MEL | 14 Pin | | | | | | | | | | | | | | | | | | | | |