

Service Manual

Digital Audio Tape Deck

SV-DA10



Color

(K)... Black Type
(A)... Gold Type

Area

Country Code	Area	Color
(E)	Continental Europe.	(K) (A)
(EB)	Great Britain.	
(EG)	F.R. Germany & Italy.	

SPECIFICATIONS

■ Signaling Format

Tape recording system: Rotary head type DAT
Sampling frequencies:
 For recording; 48 kHz/44.1 kHz
 32 kHz (automatically selected during digital recording)
 For playback; 48 kHz/44.1 kHz/32 kHz
 (selected automatically)
No. of quantizing bits: 16-bit linear
No. of channels: 2 (stereo)

■ Audio Parameters (Digital recording/playback)

Frequency response: 2 Hz~22,000 Hz
 (Sampling frequency 48 kHz)
 2 Hz~20,000 Hz
 (Sampling frequency 44.1 kHz)
 2 Hz~15,000 Hz
 (Sampling frequency 32 kHz)
Dynamic range: Greater than 95 dB (IHF'A weighted)
Signal to noise ratio: Greater than 107 dB (IHF'A weighted)
Total harmonic distortion: Less than 0.003% (1 kHz)
Wow and flutter: Unmeasurable

(Analog recording/playback)

Frequency response: 2 Hz~22,000 Hz (± 0.5 dB)
Dynamic range: Greater than 90 dB (IHF'A weighted)
Signal to noise ratio: Greater than 90 dB (IHF'A weighted)
Total harmonic distortion: Less than 0.007% (1 kHz)
Wow and flutter: Unmeasurable

- Technics world first developed the MASH type DAC. MASH technology was invented by NTT (LSI lab.).
- MASH is a trademark of NTT.

■ Input/Output Jacks

Analog input jacks
 Minimum input level: 140 mV (-12 dB rec level)
 Input impedance: 47 k Ω
Analog output jacks
 Full-scale output level: 2 V
 Output impedance: 600 Ω
Phones output: Max. 30 mW+30 mW/32 Ω
 (Matching impedance 8~600 Ω)
Digital input jacks: Coaxial/75 Ω , Optical
 (with selector switch)
Digital output jacks: Coaxial/75 Ω , Optical
 (parallel output)

■ Mechanism

Heads: Amorphous ferrite composite type
Cylinder diameter: 30 mm
Cylinder rotation speed: 2000 r.p.m.
 (recording and playback)
Tape speed: 8.15 mm/sec., 12.225 mm/sec.
 (selected automatically)
Search speed: Up to 400 times normal playback speed
FF/Rewind time: Approx. 27 sec. (2 hours DAT tape)

■ General

Power supply
 For Great Britain AC 50 Hz/60 Hz, 240 V
 For others AC 50 Hz/60 Hz, 220 V
Power consumption: 27 W
External dimensions (W×H×D): 43×12.2×33.9 cm
 (17"×4 $\frac{3}{4}$ "×13 $\frac{5}{16}$ ")
Weight: 5.7 kg (12 $\frac{1}{2}$ pounds)

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

Technics

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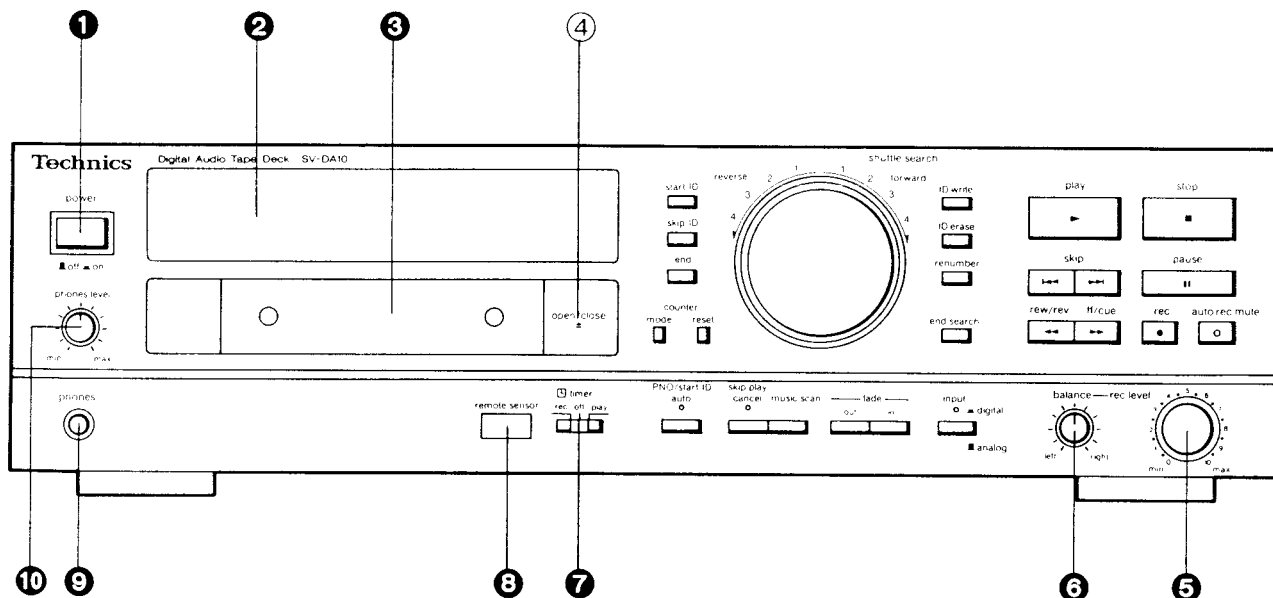
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LOCATION OF CONTROLS

The functions indicated by the black numbers (with white background, ④ etc.) can also be activated using the remote control transmitter.

Front panel



① Power switch (power)

② Display panel
(Refer to page 5.)

③ Cassette holder

④ Open/close button (▲ open/close)

⑤ Rec level control (rec level)
Use to adjust the recording level of left and right channels.

⑥ Rec balance control (balance)
Use to adjust recording balance between left and right channels.

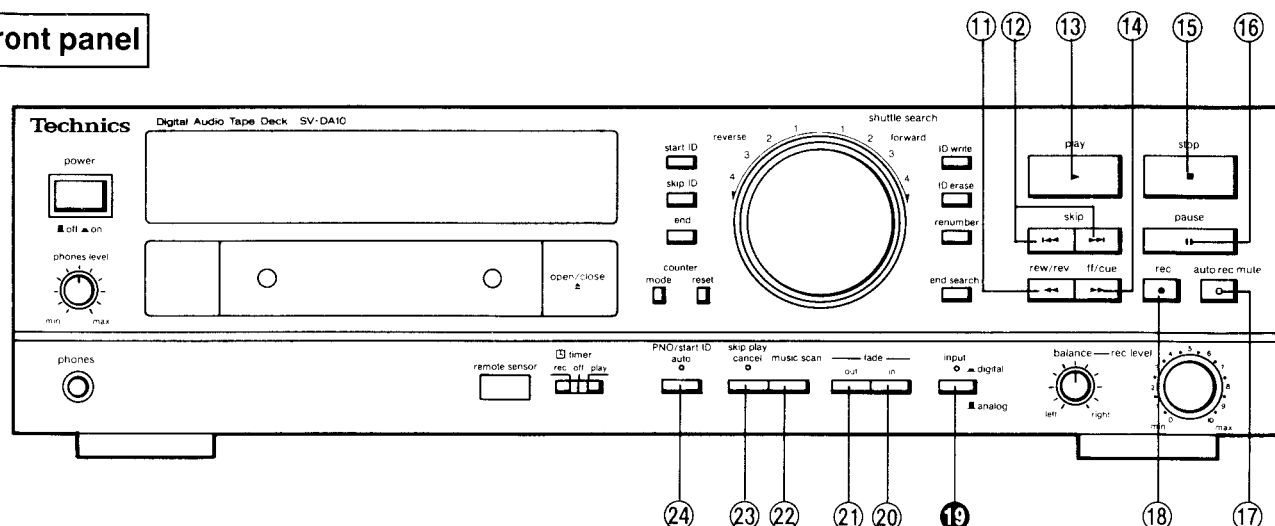
⑦ Timer Selector (□ timer)
Used to automatically begin playback or record when the unit is connected to an AC line timer. Setting this switch to "rec" or "play" causes the unit to switch to record or playback mode as soon as AC power is applied.
If a timer is not used, leave this switch in the "off" position.

⑧ Remote control signal sensor (remote sensor)

⑨ Phones jack (phones)
A 6 mm connector for standard stereo headphones.

⑩ Phone level control (phones level)
Use this control to adjust the output level to the headphones.

Front panel



11 Rew/rev button (◀◀ rew/rev)

Use to rewind the tape or for audible high-speed search in play mode (review).

12 Skip buttons (◀◀•▶▶▶ skip)

Use the skip buttons to advance to the desired program. The ▶▶▶ button skips the program forward. The ◀◀ button skips the program backward. Repeated pressing of the skip buttons causes the unit to skip forwards or backwards several programs.

13 Play button/indicator (▶ play)

Use to initiate recording or playback mode. Use also to record program numbers manually.

14 Ff/cue button (▶▶ ff/cue)

Use to advance the tape rapidly or for audible high-speed search (cue).

15 Stop button (■ stop)

Use to stop all functions. This button also clears the program memory.

16 Pause button/indicator (|| pause)

Use to temporarily interrupt playback or recording mode.

17 Auto rec mute button (□ auto rec mute)

Use to automatically insert a silent space approximately four seconds long during a recording.

18 Record button/indicator (● rec)

Use to place the unit in record standby mode.

19 Input selector button/indicator (input)

Use to select digital or analog recording input.

20 Fade in button (fade in)

Use to start recording increasing the level of sound gradually for approx. 2½ seconds.

21 Fade out button (fade out)

Use to cease recording reducing the level of the sound gradually for approx. 5 seconds.

22 Music scan button (music scan)

Use to play back the beginning of each recorded program on the tape for about 15 seconds. This is useful for quick identification of program contents.

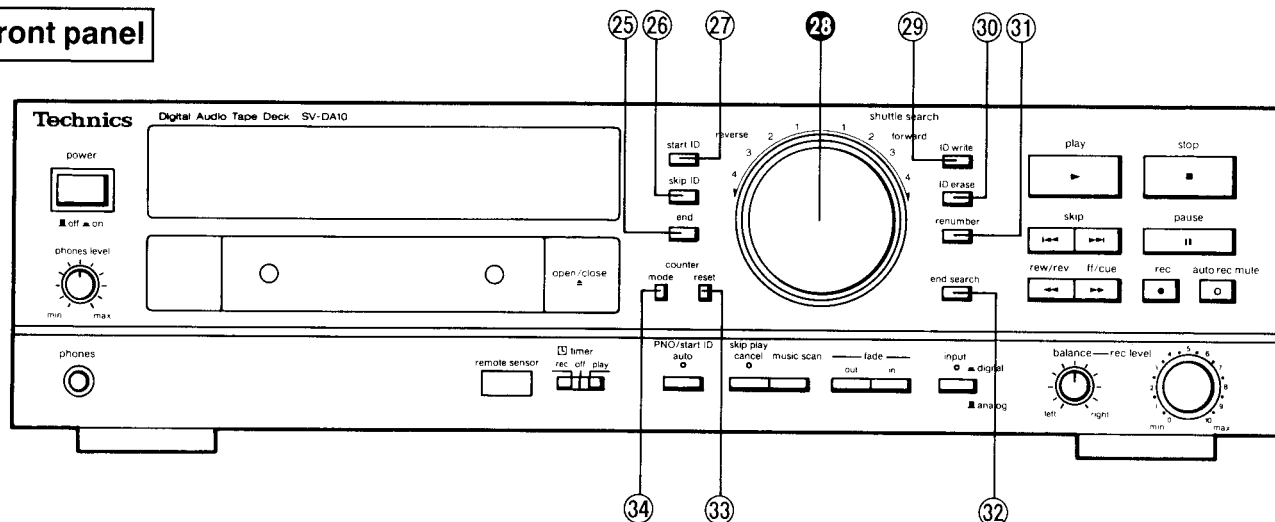
23 Skip play cancel button/indicator (skip play cancel)

Use to release skip mode.

24 PNO/start ID auto button/indicator (PNO/start ID auto)

Use to automatically record program numbers or start ID's during recording or indexing by detecting the beginning of signal after a blank position.

Front panel

**25 End button (end)**

Use to record an end mark on a recording.

26 Skip ID button (skip ID)

Use to enter the skip ID mode.

27 Start ID button (start ID)

Use to enter the start ID mode.

28 Shuttle search dial (shuttle search)

Use to locate specific places on the tape during play and pause mode at high speed, in either forward or reverse directions.

29 ID write button (ID write)

Use to record start or skip ID's during indexing*.

*Indexing allows certain DAT subcode data that has been recorded on the tape to be changed without affecting to the actual program recording.

With this unit, the following types of indexing are possible.

1. Recording or erasure of start ID's at the beginning of a program
2. Recording or erasure of skip ID's
3. Renumber function

30 ID erase button (ID erase)

Use to erase start or skip ID's during indexing.

31 Renumber button (renumber)

Use to assign program numbers (01, 02, 03...) to start ID's recorded during indexing.

32 End search button (end search)

Use to advance at high speed to the end of the recorded portion of the tape.

Use also to continue recording from the last recorded position, or to find the total number of programs or total time recorded on the tape (in the case of tapes where absolute time and program numbers have been recorded).

33 Counter reset button (counter reset)

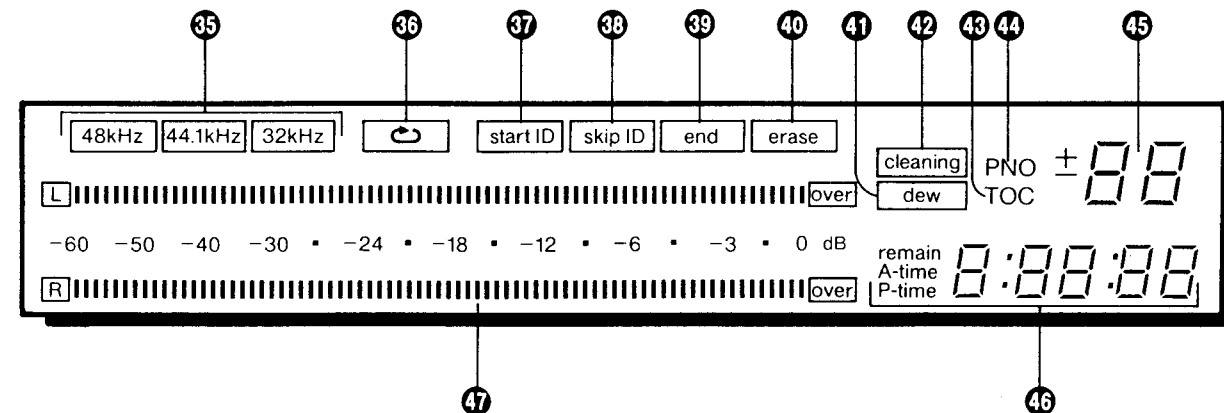
Use to reset the tape counter to "0000" (when the display mode is set to tape counter).

34 Counter mode button (counter mode)

Use to select the desired counter mode.

(absolute time, program time, remain time, TOC, tape counter)

Display panel

**35 Sampling frequency indicators**

Displays sampling frequency of digital signals during recording or playback.
Changes automatically depending on the input signal.

36 Repeat indicator

This indicator is used for the repeat loop-play function. Indicates that all programs or memorized programs can be played back repeatedly ().

37 start ID indicator

Indicates that a start ID is being or has been recorded.

38 skip ID indicator

Indicates that a skip ID is being or has been recorded.

39 end indicator

Indicates that an end mark is being or has been recorded.

40 erase indicator

Indicates that a start ID or skip ID is being erased.

41 dew indicator

Indicates the formation of dew within the unit.

42 cleaning indicator

Indicates that the DAT heads need cleaning.

43 TOC (table of contents) indicator

Indicates the total program count and tape length of a tape onto which the TOC information has been recorded.

44 PNO (program number) indicator

Indicates the number of the current program.

45 Program number display

Displays the TOC information when TOC indicator appears. Displays the number of the program when PNO indicator appears.

46 Counter display panel

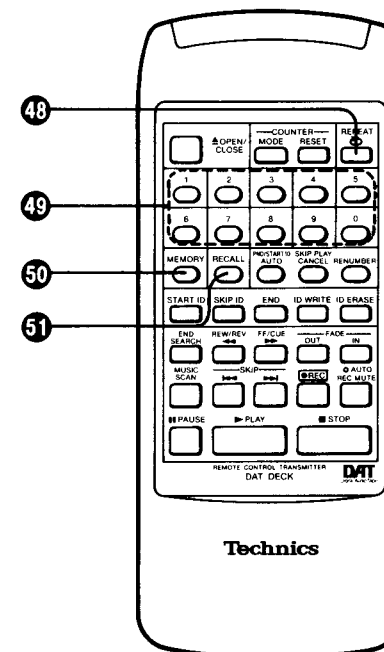
The following are displayed according to the setting of the counter mode button:

- 1) absolute time
This display is always shown when power is first switched on.
- 2) program time
- 3) remaining time
- 4) TOC information
- 5) tape counter

47 Peak level meter

Recording level in recording and playback level in playback are indicated by a bar graph.

Remote control transmitter

**48 REPEAT button (REPEAT)**

Use for a repeat playback of a tape or a programmed sequence.

49 PROGRAM buttons (1~9, 0)

Use to select program numbers, to cue to a desired program, etc.

50 MEMORY button (MEMORY)

Use to program a random playback sequence.

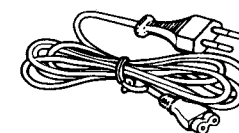
51 RECALL button (RECALL)

Use to display and check program numbers that have been memorized.

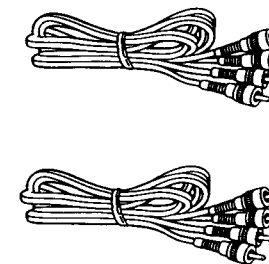
Unnumbered buttons on the remote control transmitter function identically to their corresponding parts on the unit.

ACCESSORIES

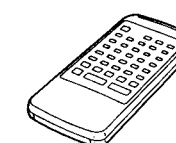
•AC power supply cord 1
SJA187 (E, EG)
SJA193 (EB)



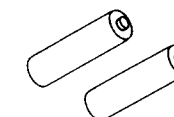
•Stereo connection cables } 2
(SJP2249-4)



•Remote control transmitter } 1
(RAK-SV303W)



•Batteries } 2
(UM-4NEP-2S)



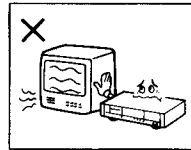
The configuration of the AC power supply cord differs according to area.

■ INSTALLATION

Installation

■ Avoid locations nearby tuners or television sets.

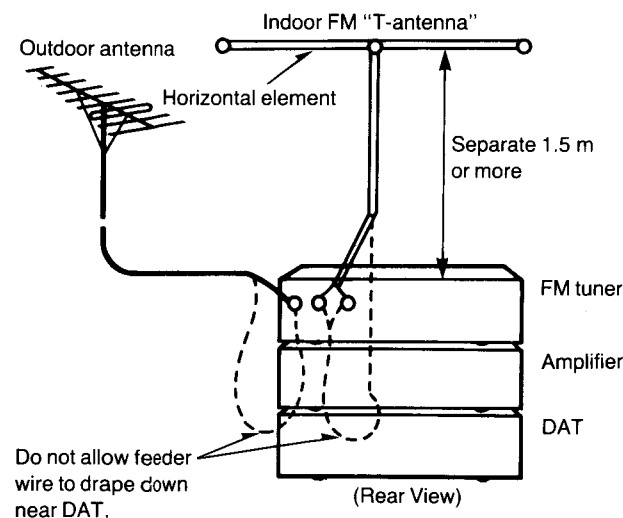
Since this unit uses high-frequency signals, placing it near a tuner or television set may result in interference with the tuner/TV reception. If this kind of audio or video interference is experienced, move the DAT unit away from other AV components.



The some kind of phenomenon may occur when using an indoor TV antenna; whenever possible, use an outdoor antenna instead.

■ Precautions when using an indoor wire-strip antenna (T-antenna) with FM tuner.

- Separate the horizontal elements of the FM antenna at least 1.5 m from the tuner.
- Do not allow the feeder wire from an indoor or outdoor FM antenna to drape near the DAT unit. If excess feeder wire is present inside the room, coil it up as far as possible away from the DAT unit.



Placement notes

■ This unit is a precision instrument. Be sure to place it on a flat surface.

■ Avoid places such as the following:

- Near any equipment or device that generates strong magnetism.
- On any heat-generating equipment or device, or in any place where the temperature is high (35°C or higher).
- Extremely cold places (5°C or below).
- Near a tuner or TV (It may cause noise in the broadcast, or disturbance of the TV picture.)
- For long periods of time in direct sunlight.
- In dusty or smoky locations.
- In locations prone to vibrations.
- In locations where the rear panel is less than 10 cm (about 4") away from the wall or back of an audio rack.
- Within reach of children.

■ When carrying or storing the unit, handle it with care so it is not subjected to any strong bumps.

■ To avoid problems due to vibration.

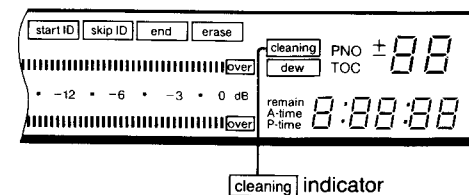
- Do not place a book or similar object under this unit.
- Do not route the connection cables (of this or other units) across the operation panel, across the top, or under the unit.

DAT head and tape transport cleaning

As with any tape based recording media, the head and transport may become contaminated due to exposure to dust or dirt. To maintain the best possible recording/playback, we recommend periodic cleaning.

Depending on how dirty the head and/or mechanism becomes, the **cleaning** indicator will flash. In such a case, playback the optional cleaning tape (RT-RCLP), according to the following procedure:

1. Insert the head cleaning tape.
2. Press the play button, let the tape play for 15~20 seconds, then press the stop button.
3. Remove the cassette without rewinding it.
4. Check the recording and playback sound quality.



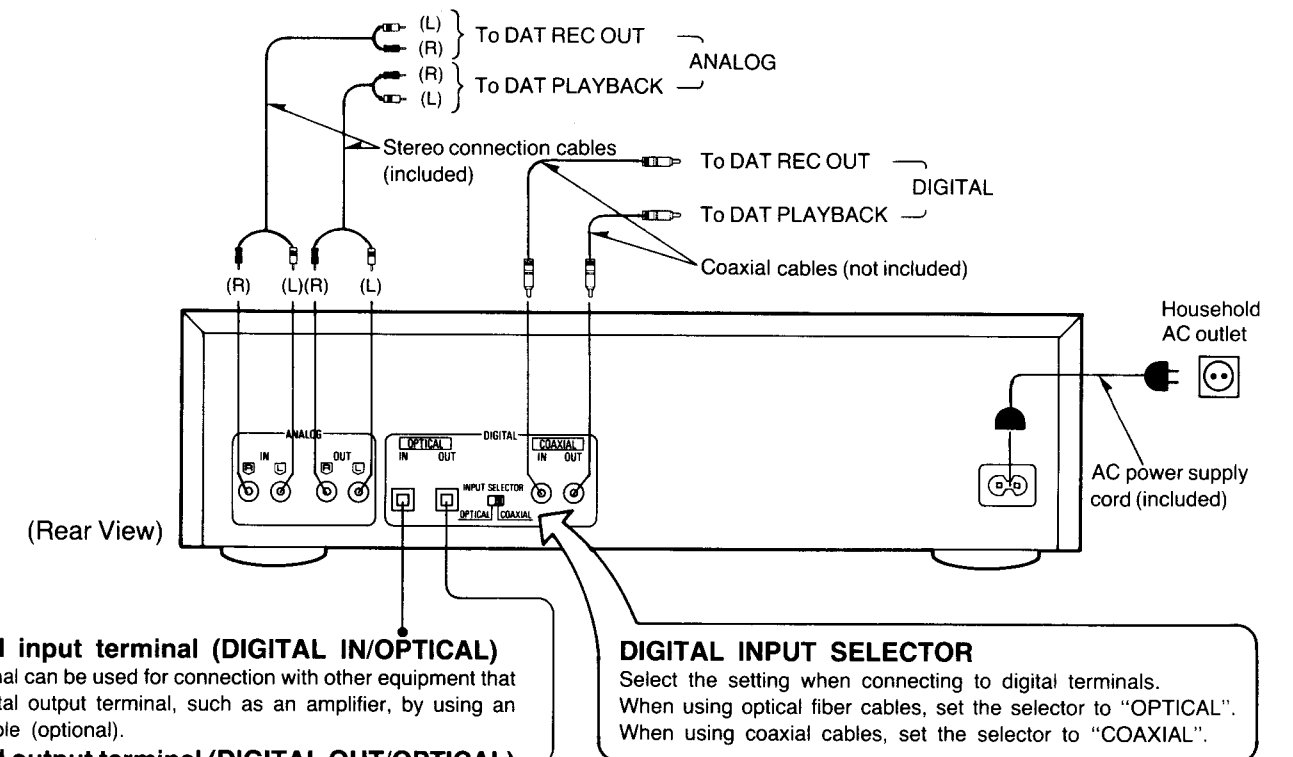
- Cleaning tapes cannot be used for recording or playback (be sure to read the operating instructions supplied with the tape).

- If sound quality does not improve after two consecutive cleanings, consult your dealer.

- If playback quality improve after cleaning, but then deteriorates immediately after recording or playback, the tape has probably reached its usefulness. In this case, use a new tape.

■ CONNECTIONS

Turn power off on all components before making connections.



• Optical input terminal (DIGITAL IN/OPTICAL)

This terminal can be used for connection with other equipment that has a digital output terminal, such as an amplifier, by using an optical cable (optional).

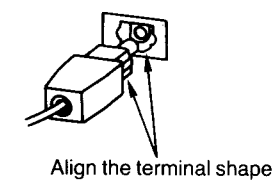
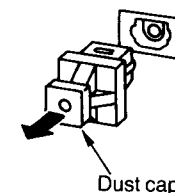
• Optical output terminal (DIGITAL OUT/OPTICAL)

This terminal can be used for connection with other equipment that has a digital input terminal, such as an amplifier, by using an optical cable (optional).

About Optical Fiber Cables

To connect optical fiber cables

- (1) Remove the dust cap from the terminal.
- (2) Connect the cable.



Notes:

- Do not attempt to bend optical fiber cables at severe angles.
- Be sure that connections are made securely.
- Store the dust cap securely, and replace it whenever cables are not connected to the terminals. If dust is allowed to enter the terminal connector, signal errors may result.

About OPTICAL connector

When the optical connectors are used, electrical signals are converted into light signals for transmission between units, making the signals impervious to adverse effects from external noise. This form of connection thus allows the highest quality of digital audio signal transmission.

Precautions when using this unit's DIGITAL OUT connection

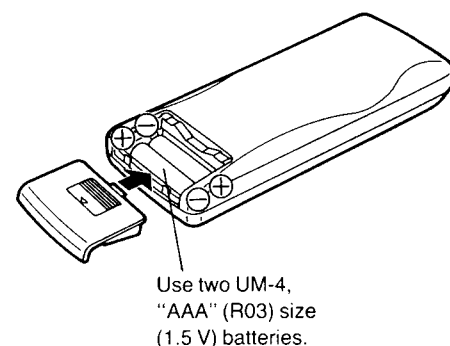
If this unit is connected incorrectly to your stereo amplifier, a recording feedback loop may occur within which the DAT unit's output is fed back into the DAT unit for recording, resulting in and possible damage to your speakers. Be sure to abide by the following precautions:

- 1) When using the unit's DIGITAL IN/OUT terminals for recording or playback, be sure to connect only to your amplifier's DIGITAL REC OUT (OUTPUT) and DIGITAL PLAYBACK (INPUT) terminals.
- 2) If your amplifier has no DIGITAL PLAYBACK or DIGITAL REC OUT terminals, and you make your connections to the amplifier's conventional DIGITAL INPUT terminals for playback, be sure to use this unit (DAT recorder) for playback only (not for recording).
- 3) If your unit is used for recording when connected as described in step 2 above, do not set the DAT unit's INPUT SELECTOR to the DIGITAL position.

■ REMOTE CONTROL TRANSMITTER

Insertion of remote control transmitter batteries

Battery life is about 1 year.

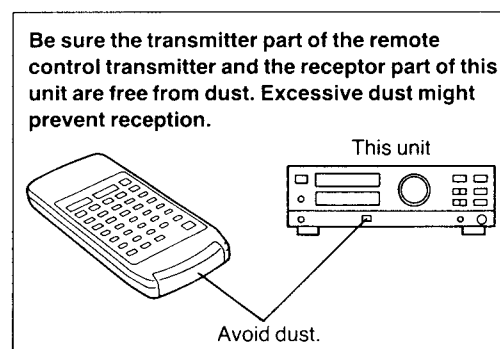
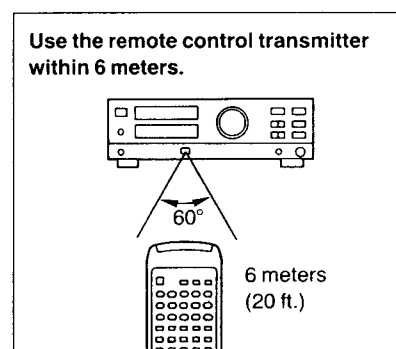
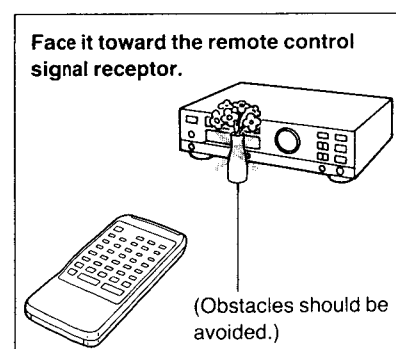


■ Notes concerning use of batteries

- Do not use rechargeable batteries (Ni-Cd type).
- Be sure the batteries are inserted so that the positive (+) and negative (-) polarities are correct. Batteries installed with incorrect polarities may leak and damage the remote control transmitter.
- Never subject the batteries to excessive heat or flame; do not attempt to disassemble them; and be sure they are not short-circuited.
- If the remote control transmitter is not to be used for a long time, remove the batteries.
- Remove old, weak or worn-out batteries promptly and dispose of them.
- Never mix old and new batteries, nor batteries of different types (carbon or alkaline).

Remote control transmitter operation notes

Note that operation may not be correct if direct sunlight or other strong light strikes the remote control signal receptor part of this unit. If there is a problem, place the unit away from the direct sunlight or other strong light source.



Notes:

- The control panel of the remote control transmitter may be covered by a clear protective sheet. This sheet may be removed if desired.
- If this unit is installed in a rack with glass doors, the glass door's thickness or color might make it necessary to use the remote control transmitter at a shorter distance from the unit.
- Do not use a remote control transmitter for a TV set, VCR or other component at the same time as this unit's remote control transmitter is being used, because this could result in an operation error.

■ SV-DA10 DAT MAINTENANCE CHART

• DAT Head and Tape Transport Cleaning

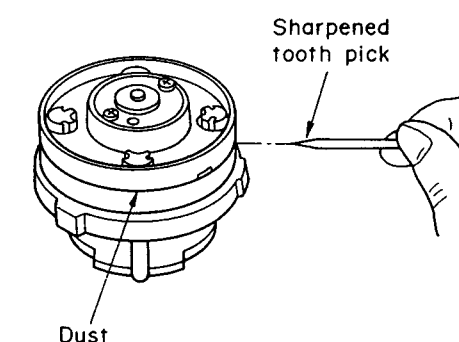
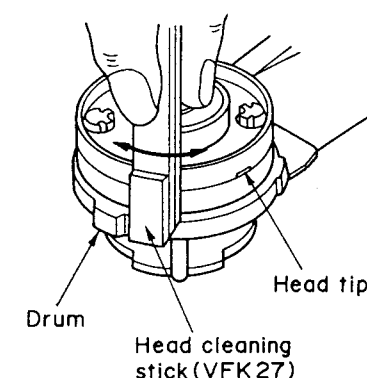
Through normal usage of any tape machine, dirt and debris from the tape accumulates on the heads, which eventually causes performance problems. By using a cleaning cassette regularly, dirt buildup can be minimized, prolonging the life of the tape heads, and also keeping tape posts, tape guides, and the pinch roller clean.

• CLEANING

1. Play the cleaning cassette (Panasonic Part No. RT-RCLP) for 15-20 seconds.
2. Do not use the same part of the cleaning tape more than once.
3. Clean all tape contact surfaces, including the upper and lower drum, thoroughly with a soft cloth soaked in alcohol.
4. Clean both heads by gently rubbing in a horizontal direction, as depicted, using a head cleaning stick (VFK27) or a lint free cloth moistened with alcohol.
5. Wipe all tape contact surfaces, including upper and lower drum, with a dry soft cloth to ensure that all residual moisture is removed from the tape contact surfaces.

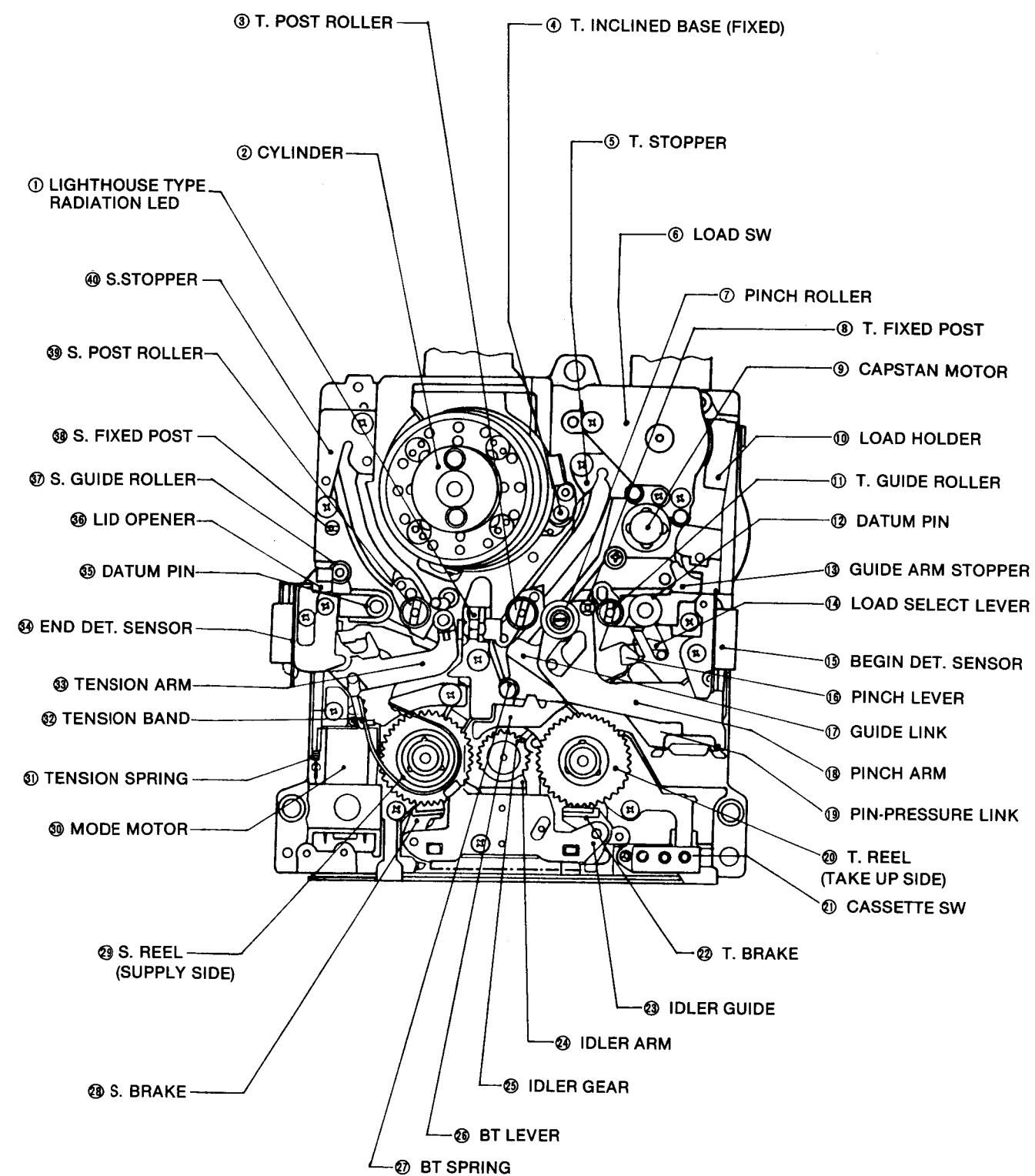
Note:

1. When cleaning the upper drum, hold it secure by the top edges with your finger tips.
2. Occasionally, dirt or debris may become lodged in the air bearing channels that are cut in the upper drum's surface. This can be removed by gently dislodging it with a sharpened toothpick.
3. The amount of solvent applied to the head drum should be used in moderation. Excess alcohol will dilute and remove the bearing lubricant in the capstan motor and rotary guides.

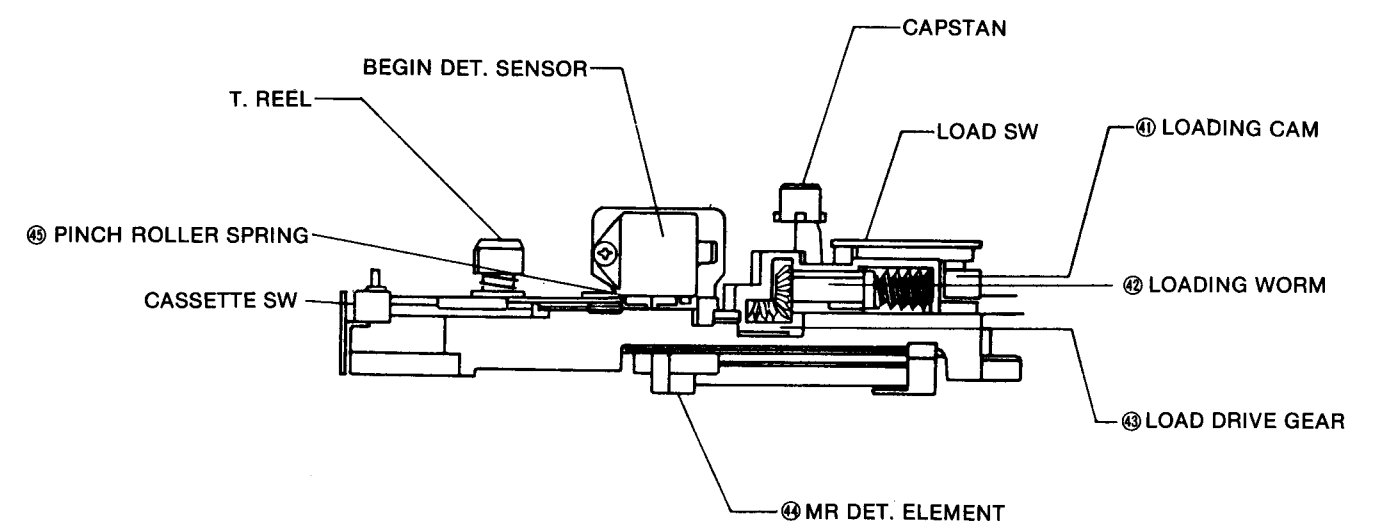


• MECHANISM COMPONENT LAYOUT

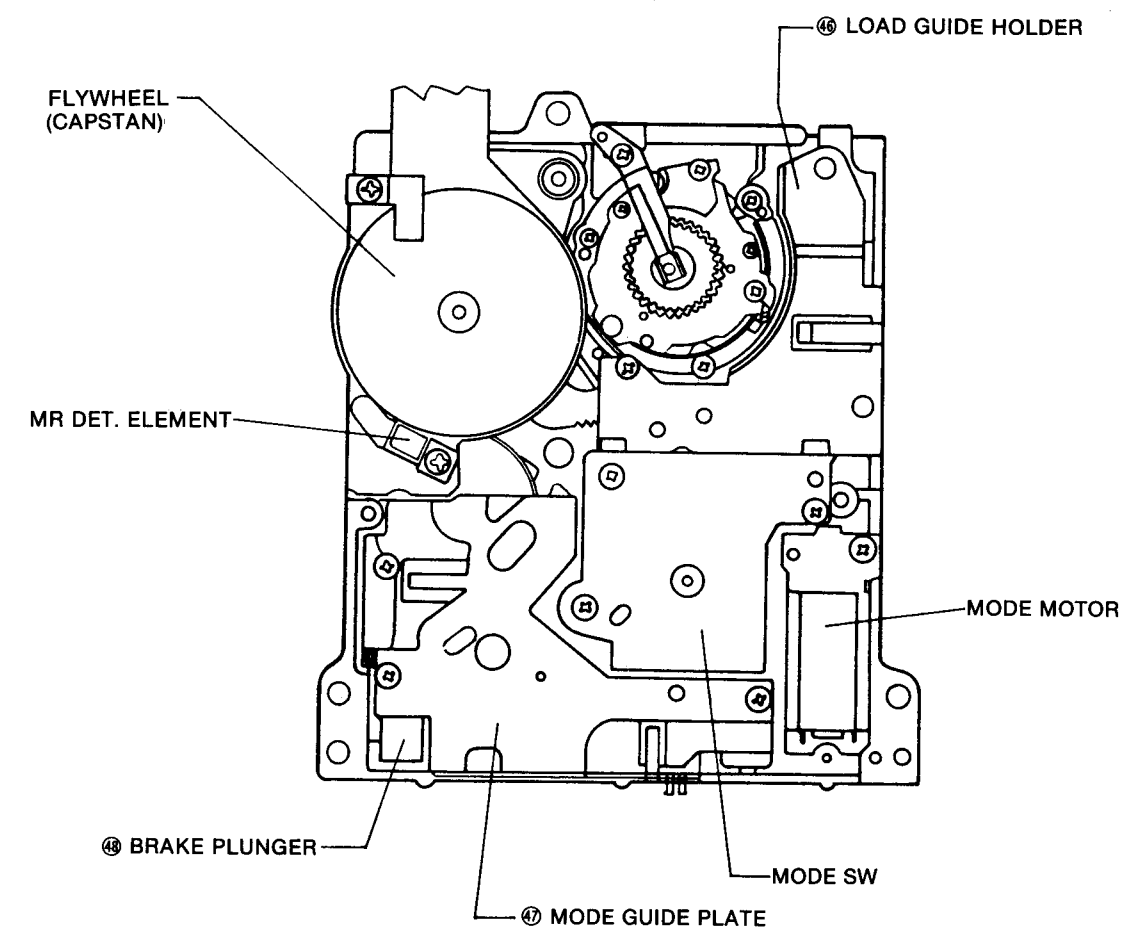
• Top view



• Side view



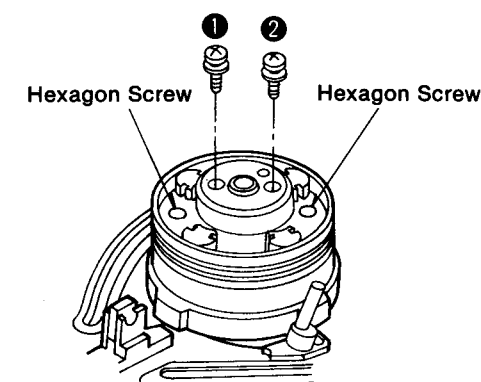
• Bottom view



MECHANISM CONTROLS AND FUNCTIONS

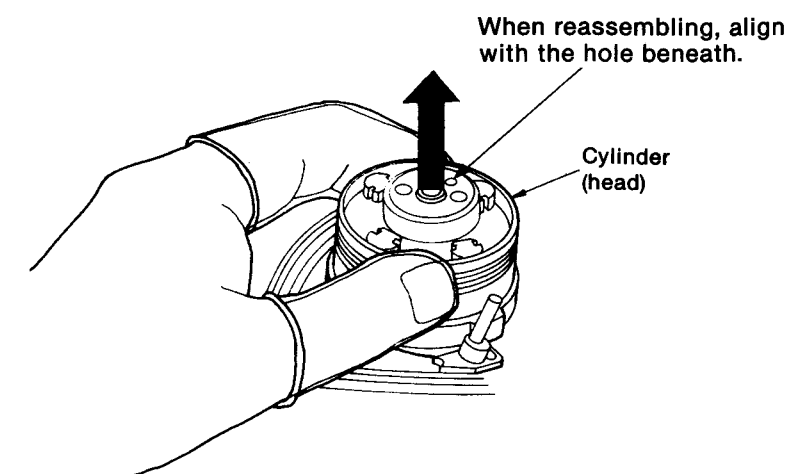
① LIGHT HOUSE TYPE RADIATION LED	Lighthouse-shaped, LEDs blink at start and end of tape.	②⑤ IDLER GEAR	Transmits movement to S and T reels in accordance with mode.
② CYLINDER	30mm in diameter, 40 FG pulses, maintains specified speed of 1000 to 3000rpm.	②⑥ BT LEVER	Applies back tension to T reel during review.
③ T. POST ROLLER	Regulates tape travel position (upper edge).	②⑦ BT SPRING	Provides pressure for back tension lever.
④ T. INCLINED BASE (FIXED)	Regulates angle (90°) at which tape is wound around cylinder (stationary).	②⑧ S. BRAKE	Presses brake shoe against S reel base gear to perform braking.
⑤ T. STOPPER	Determines position of T post roller base during loading.	②⑨ S. REEL (SUPPLY SIDE)	Supply reel base, 64 FG pulses.
⑥ LOAD SW	Two-bit rotary switch, detects loading position.	②⑩ MODE MOTOR	6.5V DC motor, switches mode by forward and reverse revolution.
⑦ PINCH ROLLER	Presses against tape during play and review.	②⑪ TENSION SPRING	Provides back tension force of tension regulator.
⑧ T. FIXED POST	Regulates tape travel position.	②⑫ TENSION BAND	Mounted to tension regulator, applies back tension to S reel base.
⑨ CAPSTAN MOTOR	1.5mm in diameter, 290 FG pulses.	②⑬ TENSION ARM	Detects tape condition and applies back tension during play and review.
⑩ LOAD HOLDER	Contains loading drive gear and worm gear, engages and disengages M gear A.	②⑭ END DET. SENSOR	Light-receiving element for LED (detection at end of tape).
⑪ T. GUIDE ROLLER	Regulates tape travel position (top edge).	②⑮ DATUM PIN	Regulates width and height (left side) during loading of cassette tape.
⑫ DATUM PIN	Regulates width and height (right side) during loading of cassette tape.	②⑯ LID OPENER	Opens cassette lid during loading of tape.
⑬ GUIDE ARM STOPPER	Determines position of T guide roller base K during loading.	②⑰ S. GUIDE ROLLER	Regulates tape travel position (bottom edge).
⑭ LOAD SELECT LEVER	Switches engagement and disengagement of loading gear in accordance with loading conditions.	②⑱ S. FIXED POST	Regulates tape travel (bottom edge).
⑮ BEGIN DET. SENSOR	Light-receiving element for LED (detection at start of tape).	②⑲ S. POST ROLLER	Regulates tape travel position (top edge).
⑯ PINCH LEVER	Presses pinch roller against tape during play and review.	③① S. STOPPER	Determines position of S post roller base during loading.
⑰ GUIDE LINK	Links T post roller base and guide roller base.	③② LOADING CAM	Uses movement transmitted from loading worm to move loading lever.
⑱ PINCH ARM	Comprised of pinch roller and T holding post, presses against the capstan.	③③ LOADING WORM	Transmits movement of loading drive gear and loading cam.
⑲ PIN-PRESSURE LINK	Connected by the pin pressure spring and the pinch arm.	③④ LOAD DRIVE GEAR	Transmits movement of M gear A and loading worm, engages and disengages in accordance with mode.
⑳ T. REEL (TAKE UP SIDE)	Take-up reel base, 64 FG pulses.	③⑤ MR DET. ELEMENT	Detects magnetic changes (290 pulses) of flywheel.
㉑ CASSETTE SW	Detects cassette information (mistaken erasure, cassette detection).	③⑥ PINCH ROLLER SPRING	Mounted to the pinch arm, returns the pinch roller.
㉒ T. BRAKE	Presses brake gear against reel base gear to perform braking.	③⑦ LOAD GUIDE HOLDER	Holding cover of the loading arm and loading lever.
㉓ IDLER GUIDE	Holding cover for idler arm and S and T brakes.	③⑧ MODE GUIDE PLATE	Holding cover of the various gears, holds the plunger in position.
㉔ IDLER ARM	Moves left or right in accordance with mode condition, transmits movement of counter gear to S and T reels.	③⑨ BRAKE PLUNGER	5V, 200mA, switches brakes on and off in accordance with the mode.

REMOVAL OF THE UPPER CYLINDER



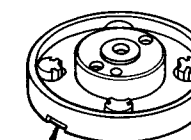
1. Remove the 2 screws (①, ②).

Caution: Please do not touch Hexagon screws.



2. Remove the cylinder (head) in the direction of the arrow.

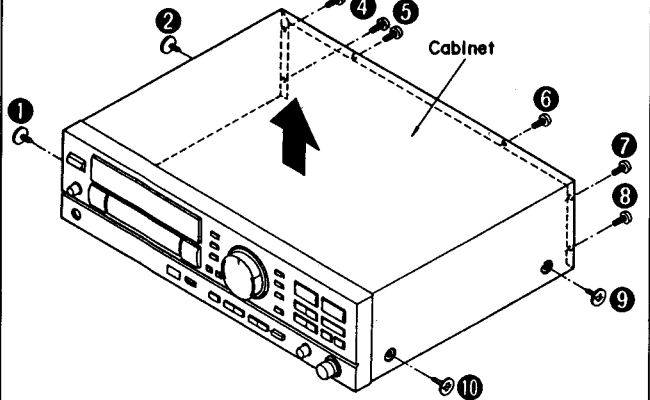
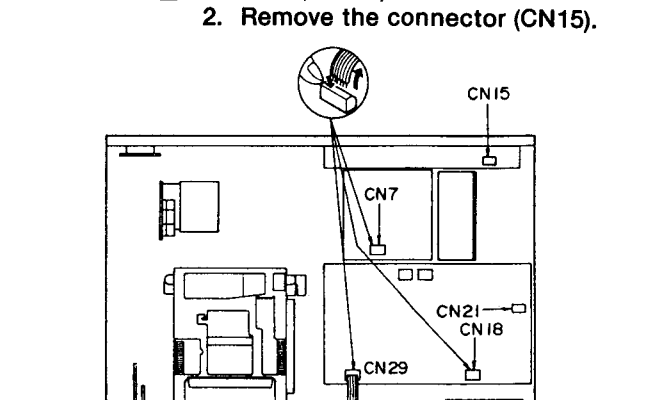
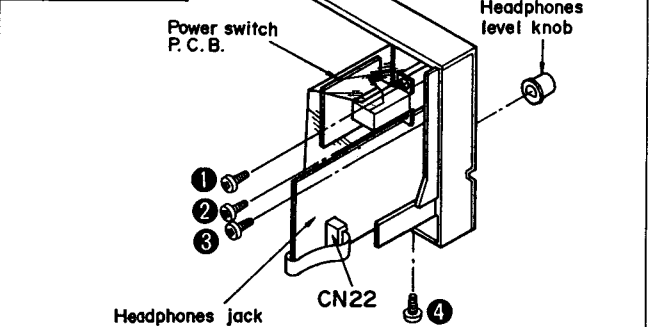
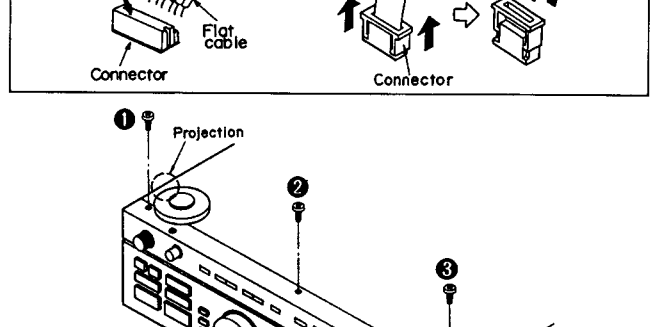
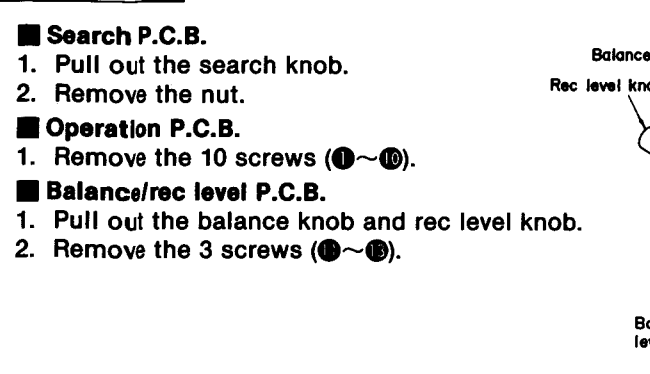
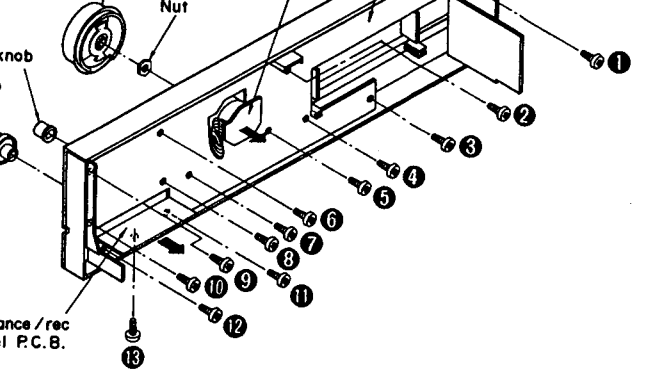
Note: Do not touch the cylinder (head) with your bare hand; always be sure to wear a glove or other protection.

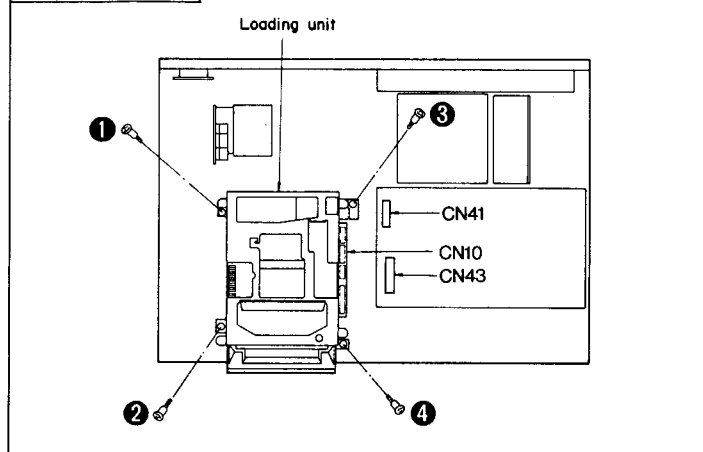
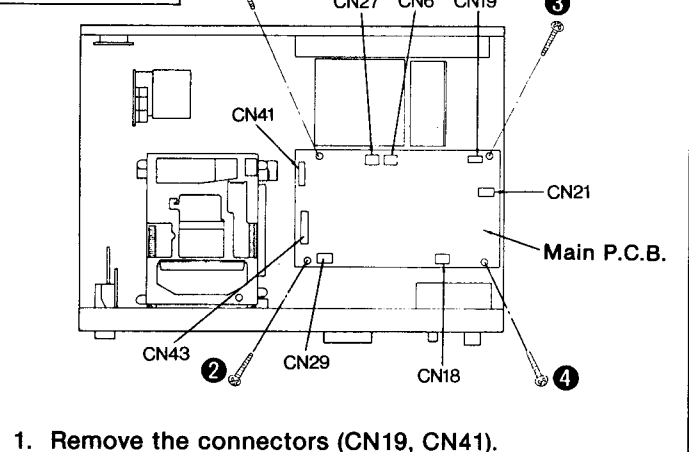
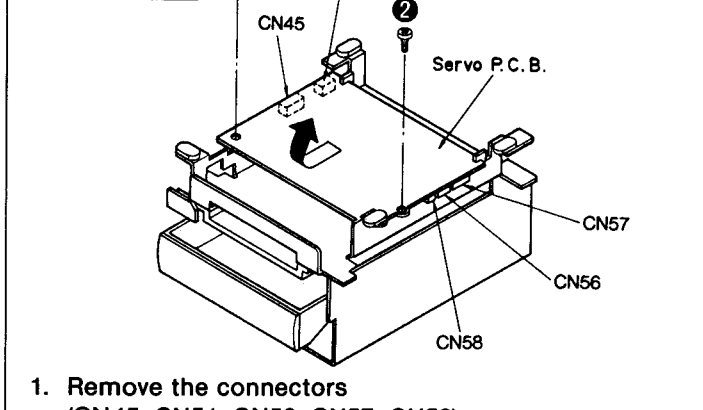
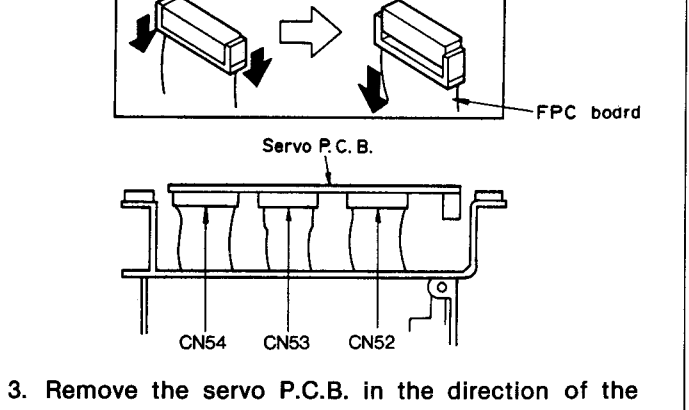
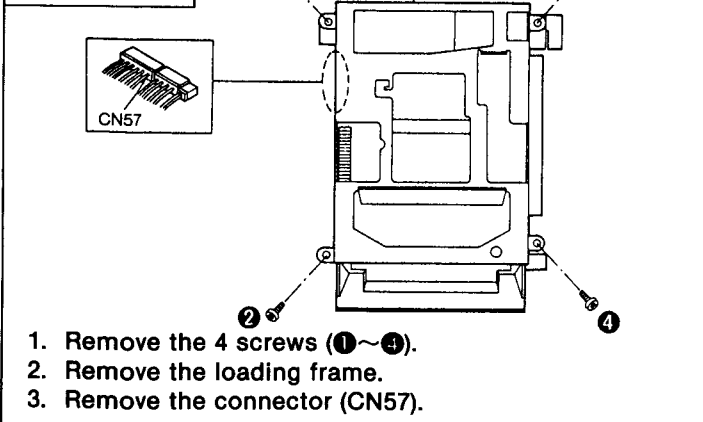
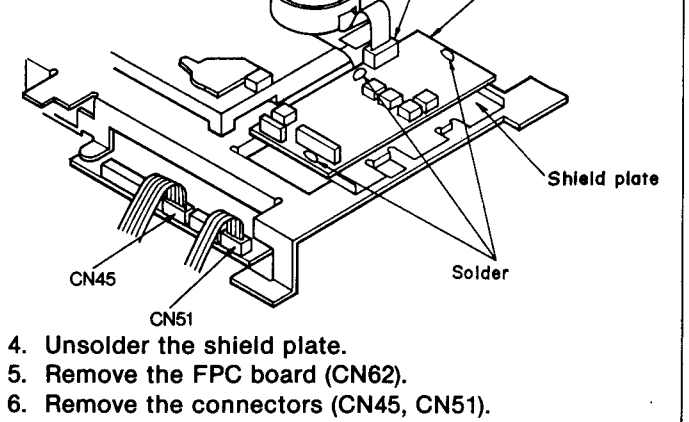


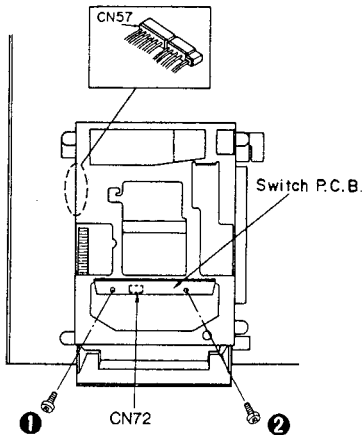
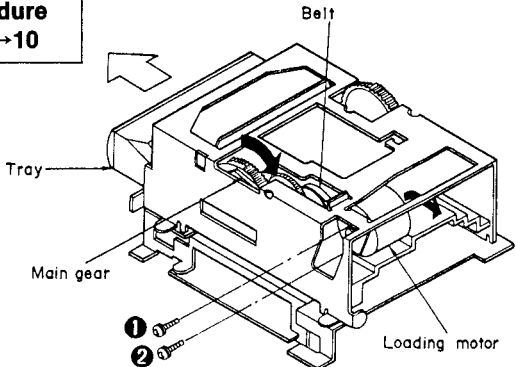
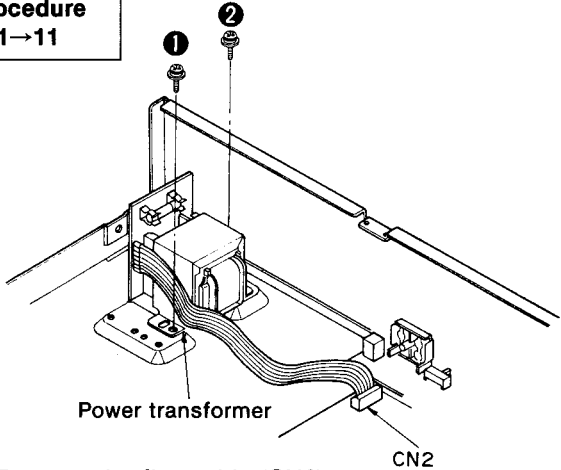
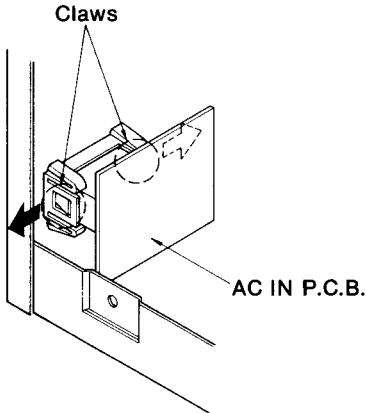
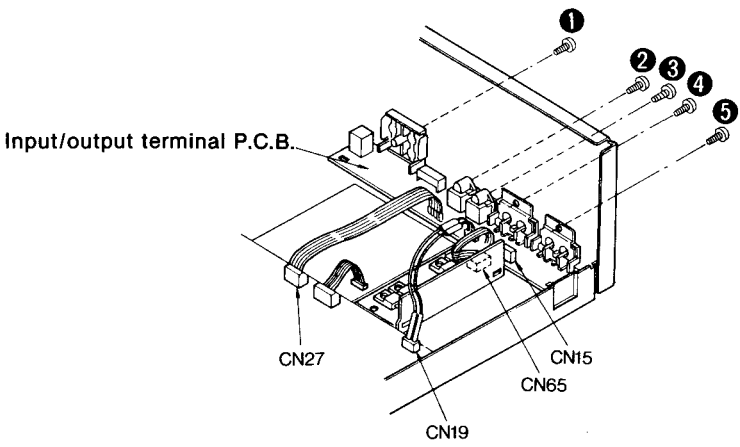
Be sure not to touch the head part.

* When reassembling the cylinder (head), be sure that the direction is correct. (If it is assembled in the wrong direction, the left and right channels will be reversed during recording and playback.)

DISASSEMBLY INSTRUCTIONS

Ref. No. 1	Removal of the cabinet	Ref. No. 2	Removal of the front panel
Procedure 1	 • Remove the 10 screws (①~⑩).	Procedure 1→2	 1. Remove the flat cables (CN7, CN18, CN21, CN29). 2. Remove the connector (CN15).
Ref. No. 3	Removal of the power switch P.C.B. and headphones jack P.C.B.	Ref. No. 4	Removal of the search P.C.B., operation P.C.B. and balance/rec level P.C.B.
Procedure 1→2→3	 ■ Power switch P.C.B. 1. Remove the 2 screws (①, ②). ■ Headphones jack P.C.B. 1. Remove the headphones level knob. 2. Remove the FPC board (CN22). 3. Remove the 2 screws (③, ④).	Procedure 1→2→3	 • Pull out the flat cable while pressing the connector. 1. Lift the connector. 2. Pull out the FPC board. (CN7, CN18, CN21, CN29) 3. Remove the 3 screws (①~③). 4. Remove the front panel from the projection of the bottom chassis.
Ref. No. 4	Removal of the search P.C.B., operation P.C.B. and balance/rec level P.C.B.	Ref. No. 5	Removal of the loading unit
Procedure 1→2→4	 ■ Search P.C.B. 1. Pull out the search knob. 2. Remove the nut. ■ Operation P.C.B. 1. Remove the 10 screws (①~⑩). ■ Balance/rec level P.C.B. 1. Pull out the balance knob and rec level knob. 2. Remove the 3 screws (⑪~⑬).	Procedure 1→2→5	 1. Remove the FPC board (CN43). 2. Remove the connectors (CN10, CN41). 3. Remove the 4 screws (①~④).

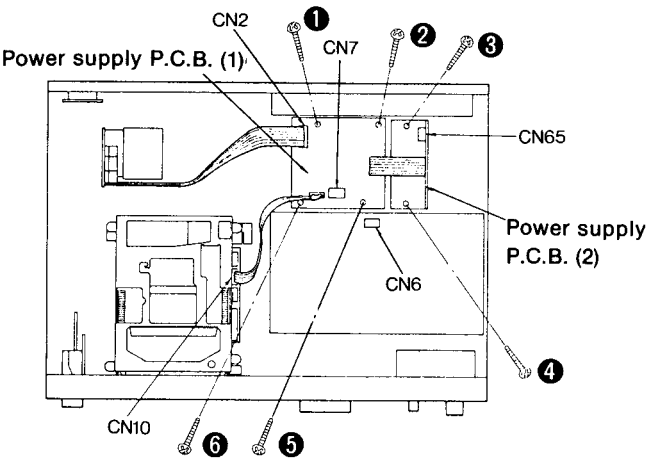
Ref. No. 5	Removal of the loading unit	Ref. No. 6	Removal of the main P.C.B.
Procedure 1→2→5	 1. Remove the FPC board (CN43). 2. Remove the connectors (CN10, CN41). 3. Remove the 4 screws (①~④).	Procedure 1→6	 1. Remove the connectors (CN19, CN41). 2. Remove the flat cables (CN6, CN18, CN21, CN27, CN29, CN43). 3. Remove the 4 screws (①~④).
Ref. No. 7	Removal of the servo P.C.B.	Ref. No. 8	Removal of the RF P.C.B.
Procedure 1→2→5→7	 1. Remove the connectors (CN45, CN51, CN56, CN57, CN58). 2. Remove the 2 screws (①, ②).	Procedure 1→2→5→8	 3. Remove the servo P.C.B. in the direction of the arrow. 4. Remove the FPC boards (CN52, CN53, CN54).
Ref. No. 8	Removal of the RF P.C.B.	Ref. No. 9	Removal of the RF P.C.B.
Procedure 1→2→5→8	 1. Remove the 4 screws (①~④). 2. Remove the loading frame. 3. Remove the connector (CN57).	Procedure 1→2→5→9	 4. Unsolder the shield plate. 5. Remove the FPC board (CN62). 6. Remove the connectors (CN45, CN51).

Ref. No. 9	Removal of the switch P.C.B.	Ref. No. 10	Removal of the loading motor
Procedure 1→2→9	 1. Remove the 2 screws (❶, ❷). 2. Remove the connectors (CN57, CN72).	Procedure 1→2→10	 1. Roll the main gear in the direction of the arrow, and draw out the tray. 2. Remove the belt. 3. Remove the 2 screws (❶, ❷). 4. Remove the loading motor in the direction of the arrow.
Ref. No. 11	Removal of the power transformer	Ref. No. 12	Removal of the AC IN P.C.B.
Procedure 1→11	 1. Remove the flat cable (CN2). 2. Remove the 2 screws (❶, ❷).	Procedure 1→12	 • Release the 2 claws in the direction of the arrow.
Ref. No. 13	Removal of the digital input/output terminal P.C.B.		
Procedure 1→13	1. Remove the connectors (CN15, CN19). 2. Remove the flat cables (CN27, CN65). 3. Remove the 5 screws (❶~❺).		

Ref. No. 14	Removal of the power supply P.C.B. (1), (2)
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Procedure 1→14

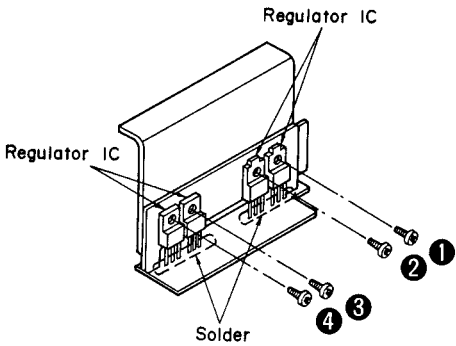
- 1. Remove the connector (CN10).
- 2. Remove the flat cables (CN2, CN6, CN7, CN65).
- 3. Remove the 6 screws (①~⑥).



Ref. No. 15	Removal of the regulator IC
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Procedure 1→14→15

- 1. Unsolder the regulator IC.
 - 2. Remove the 4 screws (①~④).
- When mounting the regulator IC, apply silicone compound (SZZ0L15 or equivalent) to the rear of the regulator IC.

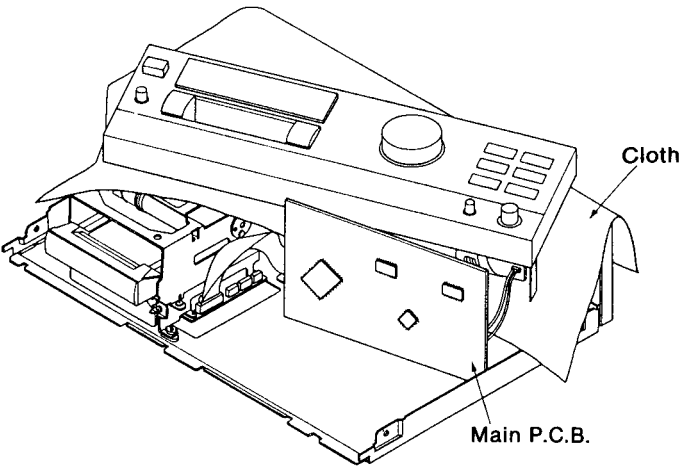


Ref. No. 16	How to check the main P.C.B.
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Procedure 1→2→6→16

To check the backside of the main P.C.B., stand the P.C.B. up as shown in the figure at right.

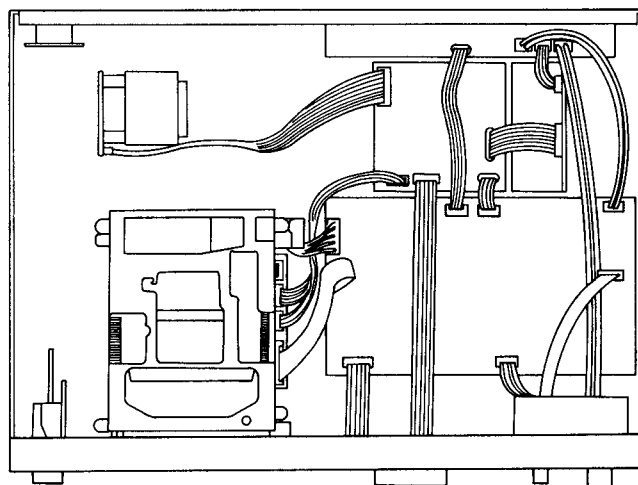
Note:
Spread a cloth or insulating sheet to prevent shortcircuiting of the operation P.C.B.



MEASUREMENTS AND ADJUSTMENTS

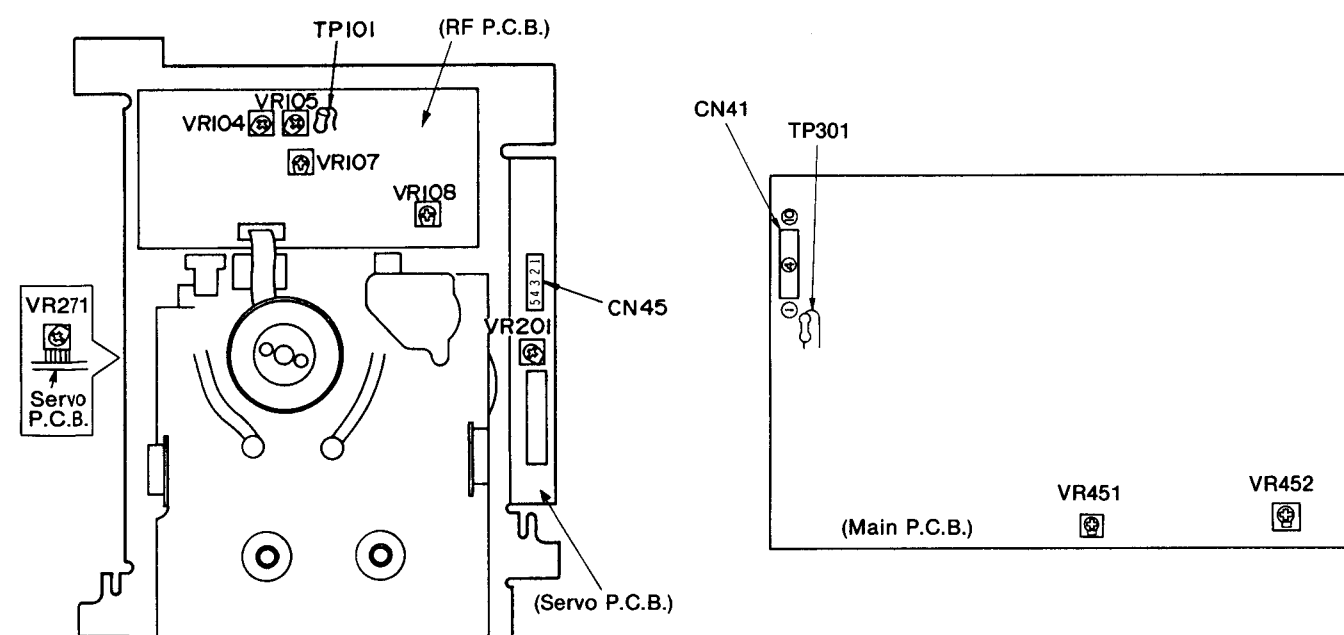
• PREPARATION

- (1) Remove the cabinet
(Refer to Procedure 1 under "Disassembly Instructions").



• ELECTRICAL ADJUSTMENT

• Adjustment points

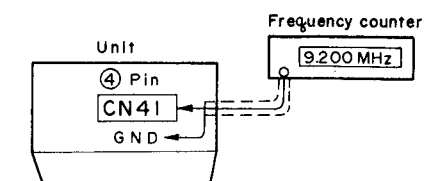


Equipment and Tools

- 2-channel 30MHz oscilloscope (with external trigger and delay sweep) (with a 10 : 1 probe)
- Standard electrical tools and equipment
- Standard test tapes – RD-PG01 (PG reference), RD-ER01 (error rate)
- Blank tape for recording and playback (commercially available blank tape)
- Linearity adjusting tape: RD-LR02
- Post roller adjusting screwdriver: SZZV1102C
- Frequency counter

1. PLL Free Run Adjustment

1. Test equipment connection is shown in figure.
2. Power switch in "on" position.
3. Set the unit to cassette holder in "open" position.
4. Adjust **VR108** for $9.2 \pm 0.2 \text{ MHz}$ on frequency counter reading.



2. PG Phase Adjustment

1. Play the PG reference portion of the standard test tape (RD-PG01).
2. Set up the oscilloscope and connect as shown below.

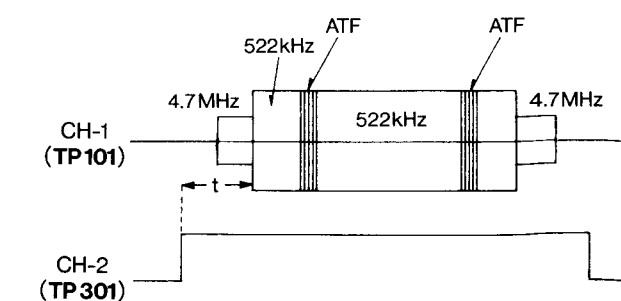
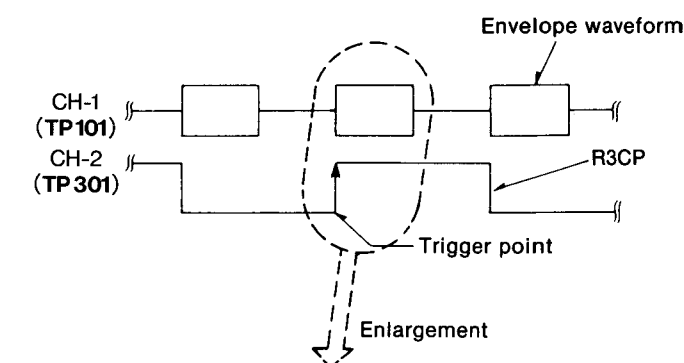
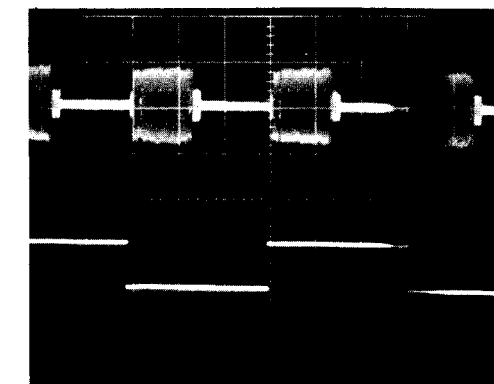
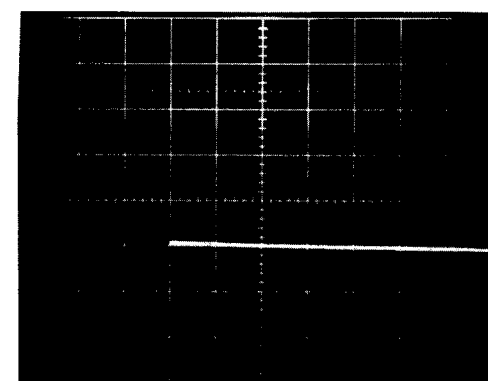
	CH-1	CH-2
Test point	TP101 (RPRF)	TP301 (R3CP)
Volts/Div.	50mV	0.5V
Time/Div.	5msec.	
Delay	50μsec.	
Trig.	CH-2	
Mode	CHOP	
AC-GND-DC	AC	DC
Adjustment point	VR201	

Note: GND is the shield plate of the RF circuit.

3. After set up, the waveform shown on the right appears.
4. The waveform in the figure on the right is enlarged using the delayed sweep. The point where the delayed sweep is used to enlarge the waveform is the leading edge of the CH-2 (R3CP) waveform.

Delayed sweep – 50μsec.

5. Adjust **VR201** (located on the servo P.C.B.) so that the time "t" (in the figure below) from the leading edge of the waveform of CH-2 to the leading edge of the 522kHz waveform of CH-1 it is within $\pm 40 \mu\text{sec}$ of the time indicated on the label of the standard tape (e.g. $170 \mu\text{sec}$).



t: Value (μsec) indicated on the standard tape $\pm 40 \mu\text{sec}$.

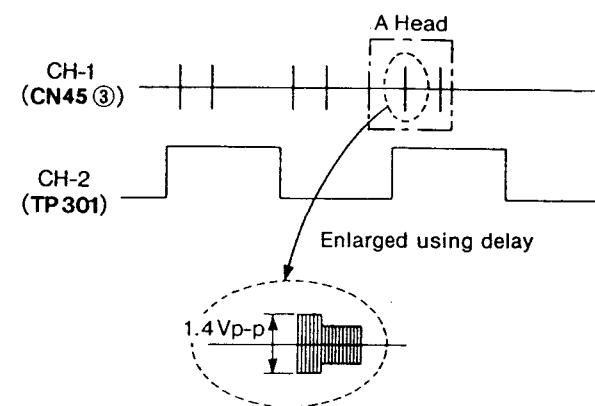
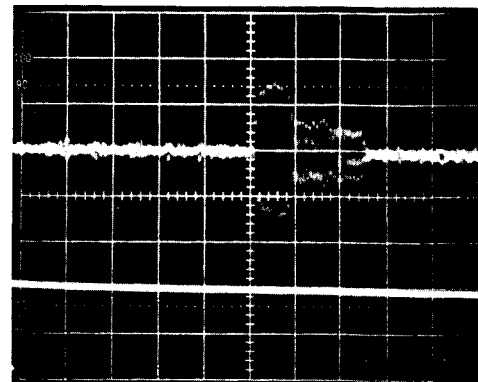
3. ATF Gain Adjustment

1. Play the **error rate measurement** standard test tape (RD-ER01).
2. Set up the oscilloscope and connect as shown below.

	CH-1	CH-2
Test point	CN45 ③ (PILOT)	TP301 (R3CP)
Volts/Div.	50mV	0.5V
Time/Div.	5msec.	
Delay	0.1msec.	
Trig.	CH-2	
AC-GND-DC	AC	DC
Adjustment point	VR107	

3. Monitor about 8 lines of the ATF waveform. Select the line with the largest amplitude and enlarge it using the 50μsec. delayed sweep.
4. Adjust **VR107** so that the amplitude of the waveform is **1.4Vp-p** check that the other smaller amplitudes are **1.2Vp-p** or higher.

Standard value: $1.4 \pm 0.2 \text{Vp-p}$



4. RF Recording Level Adjustment

1. Load a blank tape into the unit, place the unit in the REC-play mode, and make a blank signal recording for 10 to 15sec. Rewind the tape and play back the recorded portion.
2. Connect and set up the oscilloscope as follows:

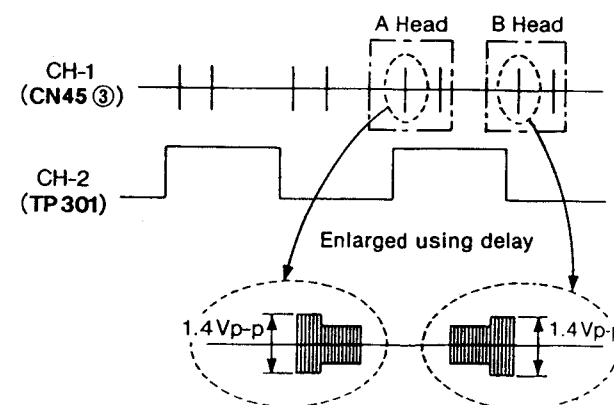
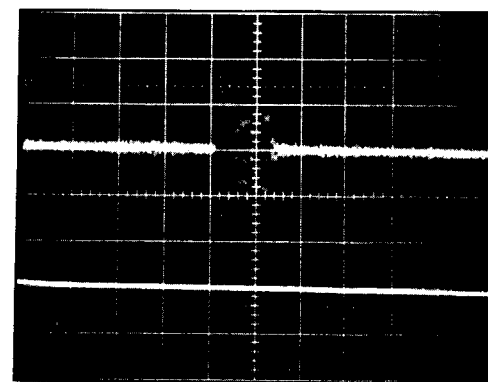
	CH-1	CH-2
Test point	CN45 ③ (PILOT)	TP301 (R3CP)
Volts/Div.	50mV	0.5V
Time/Div.	2msec.	
Delay	0.2msec.	
Trig.	CH-2	
AC-GND-DC	AC	DC
Adjustment point	VR104: Head A, VR105: Head B	

3. While playing back the erased portion of the tape, verify that the signal amplitude falls in the range of $1.4 \pm 0.2 \text{Vp-p}$.

Standard value: $1.4 \pm 0.2 \text{Vp-p}$

4. If the signal amplitude is less than **1.2V**, turn **VR104** (head A) or **VR105** (head B) counter-clockwise until the amplitude falls into the specification. If it exceeds **1.4V**, turn the same variable resistors clockwise until the specification is met.

5. Repeat step 2 above again, then verify that the playback signal amplitude falls in the range specified in step 3. (Repeat step 2, 3 and 4 above until the specification is met.)



5. ADC Offset Adjustment

This adjustment is necessary when the indication of the level meter is abnormal.

1. Load a blank tape into the deck and place the deck in REC-PAUSE mode.
2. Adjust **VR451** (Lch) and **VR452** (Rch) so that the indication of the level meter is not illuminated.

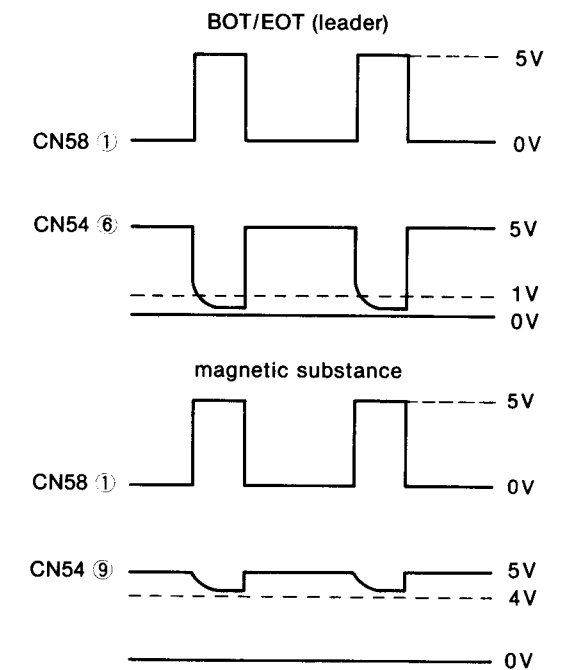
6. BOT/EOT Detection Sensitivity Verification and Adjustment

1. Make sure that the tape stops with the leader portion (the beginning and ending portion).
- ※ If the tape does not stop at the leader, make adjustment by following procedure outlined below.

- ① Insert a blank tape into the tape compartment of the set and press the playback button at the end of the tape.
- ② Set up the oscilloscope and connect as shown below.

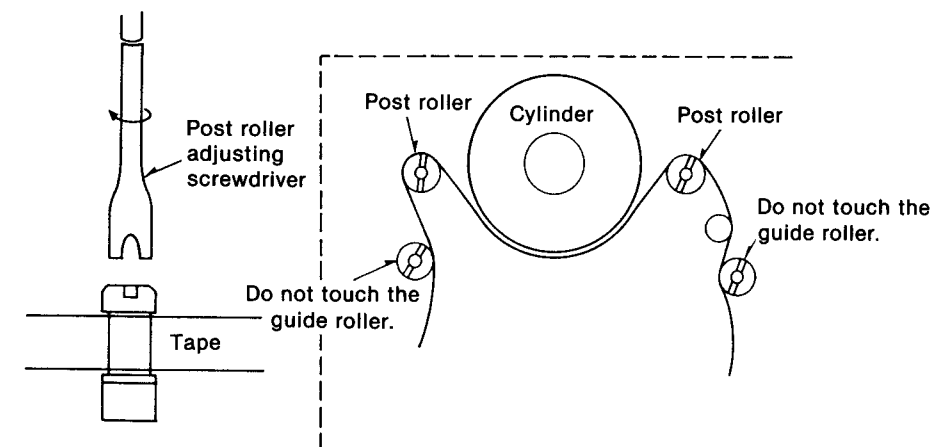
	CH-1	CH-2
Test point	CN54 ⑥ (BOT/EOT) ⑨ (magnetic substance)	CN58 ①
Volts/Div.	0.2V	0.2V
Time/Div.	2msec.	
Delay	—	
Trig.	CH-2	
AC-GND-DC	AC	DC
Adjustment point	VR271	

- ③ Adjust the amplitude of waveform to less than **1V** at the magnetic substance and more than **4V** at the leader on **VR271**.



7. Linearity Adjustment

Caution: The post rollers are used for linearity adjustment. Gradually change the post roller heights until the RF signal envelope becomes rectangular.



• DAT Linearity Adjustment

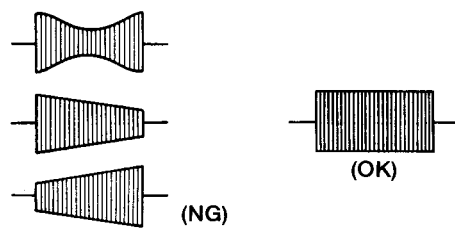
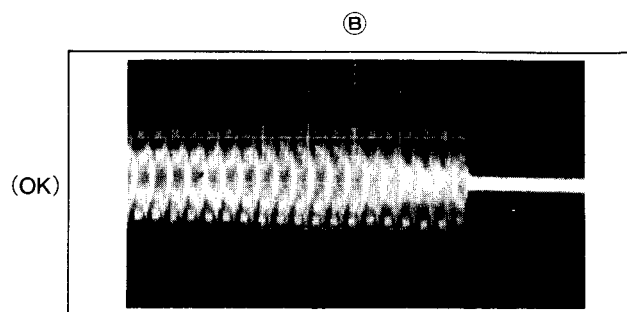
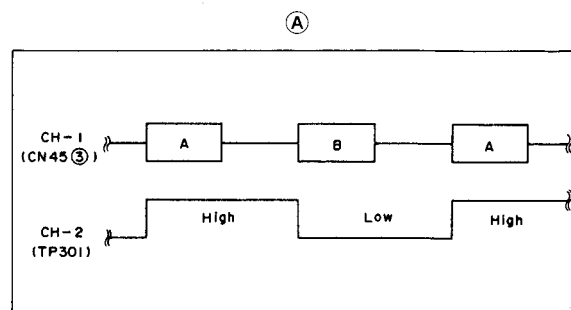
1. Load the linearity adjusting tape (RD-LR02) into the deck.
2. Connect and set up the oscilloscope as follows:

	CH-1	CH-2
Test point	CN45 ③ (PILOT)	TP301 (R3CP)
Volts/Div.	0.2V	2.0V
Time/Div.	① 5msec. ② 1msec. ③ 0.2msec.	
Delay	—	
Trig.	CH-2	
AC-GND-DC	AC	DC
Adjustment point	Post rollers	

3. Monitor the head "A" side of RF envelope waveform.

Note: When the waveform of TP301 (R3CP) is high, the envelope is output from the head "A".

4. While playing back the linearity adjusting tape, gradually adjust the **post roller** heights until the RF signal envelope ⑥ becomes rectangular.



■ If the loading unit is to be removed for adjustment, note the following.

(PREPARATIONS)

- (1) Remove the loading unit. (With the underside facing up.)
(Refer to Procedure 5 under "Disassembly Instructions." However, leave the flat cable and the connector as they are.)
- (2) Open the cassette holder.
- (3) Move the slider opening/closing plate of the removed loading unit in the direction indicated by the arrow in Fig. 1, and hook it above the prong of the reinforcement plate.
Caution: The slider opening/closing plate will be deformed if it is left as is.
- (4) Place a tape with the slider lock released in the mechanism.
- (5) Switch on the power and check the loading operation.

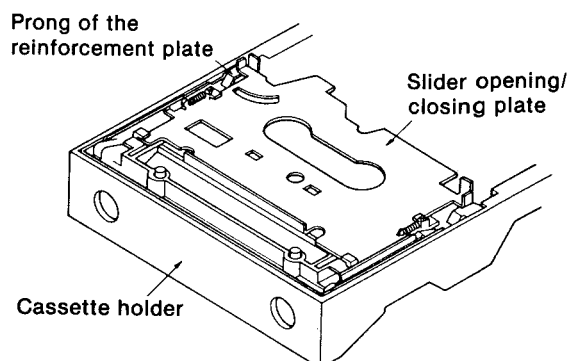
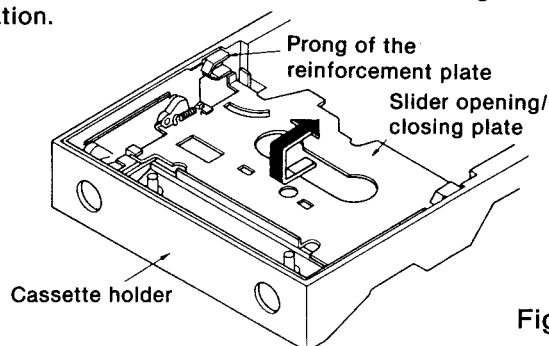
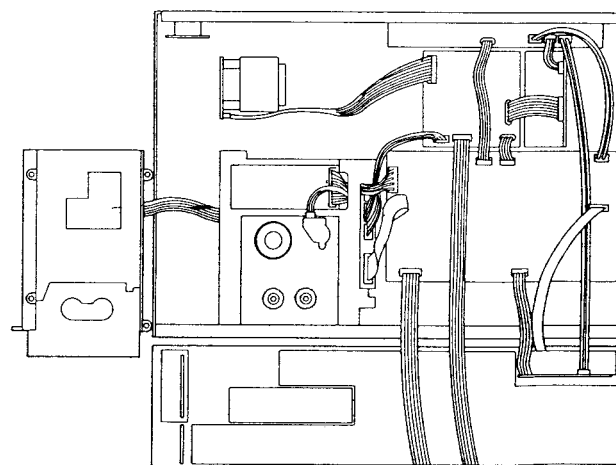


Fig. 1

■ TERMINAL FUNCTION OF IC'S

• IC101 (AN7030SE2): RF AMP.

Pin No.	Mark	I/O Division	Function
1	V _{CC} 1	I	Power supply terminal
2	ACH FB	O	Playback feed back signal (Ach)
3	ACH IN	I	Playback amp. signal (Ach)
4	GND 1	—	GND terminal
5	BCH IN	I	Playback amp. signal (Bch)
6	BCH FB	O	Playback feed back signal (Bch)
7	AREC PCM	I	RF recording level adj. terminal
8	AREC PLT		
9	AREC ATF		
10	BREC ATF		
11	BREC PLT		
12	BREC PCM		
13	REC CNT 1	I	Track pitch signal
14	REC CNT 2	I	ATF area det. signal
15	SRRF IN	I	Recording signal
16	GND 2	—	GND terminal
17	VREF	O	Reference voltage terminal (Not used, open)
18	AREC OUT	O	Recording signal (Ach)
19	BREC OUT	O	Recording signal (Bch)
20	BTL REC	O	Recording control signal
21	V _{CC} 2	I	Power supply terminal
22	REC ON	O	Recording drive terminal (REC: "H")
	PLAY ON	O	Playback drive terminal (PLAY: "H")

Pin No.	Mark	I/O Division	Function
24	HSW	I	Head switching signal
25	AR/RSEL	I	Not used, connected to power supply
26	R/PSEL	I	Recording/playback select signal (REC: "H", PLAY: "L")
27	EQ OUT	O	Equalization signal
28	EQ IN 3	I	Equalization amp. signal
29	EQ IN 2		
30	EQ IN 1		
31	BF REQ	I	Equalization amplitude drive terminal (Bch)
32	B PHASE	I	Equalization phase drive terminal (Bch)
33	B GAIN	I	Equalization gain drive terminal (Bch)
34	AF REQ	I	Equalization amplitude drive terminal (Ach)
35	A PHASE	I	Equalization phase drive terminal (Ach)
36	A GAIN	I	Equalization gain drive terminal (Ach)
37	SV RF	O	Playback signal
38	GND 3	—	GND terminal
39	A INT	I	Playback amp. signal (Ach)
40	B INT	I	Playback amp. signal (Bch)
41	B INT IN	O	Playback amp. signal (Bch)
42	A INT IN	O	Playback amp. signal (Ach)

• IC102 (AN7035SCE2): Playback PLL

Pin No.	Mark	I/O Division	Function	Pin No.	Mark	I/O Division	Function
1	LPF	O	Buffer amp. 1 reference terminal	16	V _{CC} 1	I	Power supply terminal
2	GND 1	—	GND terminal	17	VCOC 1	O	VCO terminal
3	ENVC	O	ENV time constant setting terminal	18	VCOC 2	O	VCO terminal
4	ENVR	I	ENV threshold voltage adj. terminal	19	V _{CC} 2	I	Power supply terminal
5	RSENV	O	RF envelope signal	20	PLL CP 1	O	Clock (2CK) signal (Not used, open)
6	RSENV C	O	RSENV time constant setting terminal	21	PLL CP 2	O	Clock (CK) signal
7	RSRF	I	RF signal	22	DEMCOD	O	NRZI demodulated signal for playback signal with PLL
8	DELOUT	O	RF signal	23	SVSYNC	O	ATF sync. signal
9	DELIN 1	I	Delay (45°) signal	24	GND 2	—	GND terminal
10	DELIN 2	I	Delay (90°) signal	25	OP OUT 3	O	ATF 3 signal
11	PDOUT	O	Phase comparator signal	26	OP IN 3	I	ATF 3 signal
12	VREF 1	I	V/I converter reference voltage terminal	27	OP OUT 2	O	ATF 2 signal
13	VCOV	I	OSC frequency control terminal	28	OP IN 2	I	ATF 2 signal
14	R/P	I	Recording/playback select terminal (Not used, connected to GND)	29	OP OUT 1	O	ATF 1 signal
15	VCOR	I	OSC frequency adj. terminal	30	OP IN 1	I	ATF 1 signal
				31	VREF 2	I	Reference voltage terminal
				32	COMP 1	I	Output amp. 1 (+) signal

• IC201 (MN6742SDR): Servo processor

Pin No.	Mark	I/O Division	Function	Pin No.	Mark	I/O Division	Function
1	OP10A	O	Cylinder rotative stop signal	33	CAE	O	Capstan velocity control signal
2	SCK	I	Serial clock signal	34	CYE	O	Cylinder velocity control signal
3	SDA	I/O	Serial data signal	35	END	I	VREF or ATFTER voltage signal
4	OSC 1	I	System clock (8MHz) signal	36	VSY	I	CYLPG signal
5	OSC 2	O		37	ASH 1	I	Capstan FG or RLFGT signal after EXOR
6	NRST	I	Reset signal	38	NC	—	Not connection
7	NC	—	Not connection	39	AFB 1	O	Inverter amp. signal of ATFTER input (Not used, open)
8	OP20A	O	SSP ready signal	40	NC	—	Not connection
9	NC	—	Not connection	41	AFG 1	I	ATF tracking error voltage terminal
10	V _{SS}	—	GND terminal	42	ASH 2	O	Not used, connected to GND
11	VHS	—	Not used, open	43	AFB 2	O	Not used, open
12	OP 101	O	CAPFG/RLFGT select signal	44	NC	—	Not connection
13	TP 2	O	R3CP/RLFGT select signal	45	AFG 2	I	Reference voltage terminal
14	TP 3	I	PLL off-set/parallel data signal	46	VDA	I	Power supply terminal
15	TP 4			47	VSA	—	GND terminal
16	TP 5			48	ORE	O	Reference voltage terminal
17	TP 6			49	IRE	I	
18	TP 7	I	PLL off-set/data effective flag terminal	50	GND	—	GND terminal
19	TP 8	I	Not used, connected to power supply	51	IPL	O	Not used, open
20	MOS	I	Serial port/strobe signal	52	NC	—	Not connection
21	TST	I	Test mode terminal (Normal, connected to GND)	53	CLP	I	Not used, connected to GND
22	ENC	—	Connected to GND terminal	54	CP 1	O	Not used, open
23	NC	—	Not connection	55	CP 2	I	Supply reel FG signal
24	NC			56	NC	—	Not connection
25	V _{DD}	I	Power supply terminal	57	NC		
26	NC	—	Not connection	58	CN 1	O	Not used, open
27	RSW	—	Not used, open	59	CN 2	I	Not used, connected to GND
28	HAS	O	A/D input select signal	60	CTL	O	Not used, open
29	AVM	—	Not used, connected to GND	61	PFG	I	Cylinder FG signal
30	VLP	—	Not used, open	62	PGM	I	Not used, connected to GND
31	STM	I	R3TU or RLFGT (64 P/R) signal	63	CUL	O	Capstan rotative direction signal
32	STR	I	Comparator reference signal of STM input	64	NC	—	Not connection

• IC202 (MN53020SDQ): ATF

Pin No.	Mark	I/O Division	Function	Pin No.	Mark	I/O Division	Function
1	NSNCOK	O	SYNC det. monitor terminal	22	TEST 6	—	Not used, connected to GND
2	SVAL	I	ATF select terminal	23	P MODE	I	Pulse width select terminal
3	PCMOK	I	PCM playback monitor terminal	24 28	TEST 1 TEST 5	I	Test terminal (Not used, connected to GND)
4	SPE	O	Starting pulse of counter track lock	29	SPHT	—	Not used, open
5	SP 2	O	Sampling pulse signal for pilot signal of adjacent track	30	HSWS	O	Head switching signal (33.33Hz)
6	SP 1			31	HSWR		
7	DCYLPG	I	Cylinder PG signal	32	SEL A	I	CAPFGTU signal select terminal
8	DCAPFG 1	I	Capstan FG signal	33	SEL B	I	R3TU signal select terminal
9	DCAPFG 2			34	PLL 0	O	Output signal after decoded 4 bit parallel data of PLLOFS
10	DRLFGT	I	Take-up reel FG signal	35	PLL 1		
11	DCYLFG	I	Cylinder FG signal	36	PLL 2		
12	SYNC	I	ATF sync. det. terminal	37	PLL 3		
13	NRST	I	Reset signal	38	MODE 2	—	Not used, open
14	R3CP	I	Timing signal for RF envelope signal control	39	V _{SS} 2	—	GND terminal
15	ENVT			40	V _{DD} 2	I	Power supply terminal
16	FCH	I	System clock signal (9.408MHz)	41	R3TU	O	Building-up edge signal of R3CP/DRLFGT
17	V _{DD}	I	Power supply terminal	42	CAPFGTU	O	Capstan FG signal/Take-up reel FG signal
18	V _{SS}	—	GND terminal	43	CAPER	O	Capstan rotative direction control signal
19	MODE 1	I	SYNC det. select terminal (Not used, connected to GND)	44	NLNROK	O	Track linearity monitor terminal
20	HFCH	I	Clock signal for PLL off-set data				
21	PLLOFS	I	PLL off-set data signal				

• IC203 (AN8320NFA): Linear servo

Pin No.	Mark	I/O Division	Function	Pin No.	Mark	I/O Division	Function
1	FG1 AO	O	Capstan FG signal	26	LEDH 2	—	Constant current terminal (Not used, open)
2	FG1 AI	I	Capstan FG (–) signal	27	CYL FG	O	Cylinder FG signal
3	FG1 FI	—	Frequency characteristic setting terminal	28	CYF GSI	I	Cylinder schmidt comparator terminal
4	CYL PG	O	Cylinder PG signal	29	CYF GAO	O	Cylinder op. amp. terminal
5	PGVR	—	PG delay time adj. terminal	30	CYF GAI	I	Cylinder op. amp. (–) terminal
6	CYPGI	I	PG schmidt comparator terminal	31	NST BY	I	STAND BY signal (Not used, connected to power supply)
7	GND	—	GND terminal	32	TF GAI	I	Take-up reel op. amp. (–) terminal
8	SVRF	I	ATF terminal	33	TF GAO	I	Take-up reel op. amp. terminal
9	CPD	—	Det. capacity connection terminal	34	TF GSI	I	Take-up reel schmidt comparator terminal
10	CCI	O	Full-wave rectification buffer terminal	35	RFLGT	O	Take-up reel FG signal
11	CCO	I	Clamp circuit terminal	36	RFLGS	O	Supply reel FG signal
12	SP 1	I	SP 1 terminal	37	SF GSI	I	Supply reel schmidt comparator terminal
13	SP 2	I	SP 2 terminal	38	SF GAO	O	Supply reel op. amp. terminal
14	VSPE	—	SPE setting terminal	39	SF GAI	I	Supply reel op. amp. terminal
15	SPE	I	SPE terminal	40	V _{CC}	I	Power supply terminal
16	CSH	I	Hold capacity connection terminal	41	FG 2FI	—	Frequency characteristic setting terminal
17	ATFTER	O	ATF control command signal	42	FG 2AI	I	Capstan FG (–) signal
18	CFB	—	Phase compensation terminal	43	FG 2AO	O	Capstan FG signal
19	V _{CC}	I	Power supply terminal	44	FG 2SI	I	Capstan FG schmidt comparator terminal
20	ATFON	I	ATF ON terminal (Not used, connected to power supply)	45	CPFG 2	O	Capstan FG signal
21	PTBIA	—	Photo-transistor bias terminal (Not used, open)	46	FILSLD	I	Frequency characteristic DOWN terminal
22	VREF	O	Reference voltage terminal	47	CPFG 1	O	Capstan FG signal
23	LEDH 1	I	Bias voltage terminal	48	FG 1SI	I	Capstan FG schmidt comparator terminal
24	LEDH 1	—	Constant current terminal (Not used, open)				
25	LEDH 2	I	Bias voltage terminal				

• IC271 (MN17541SDN2): Mechanism control

Pin No.	Mark	I/O Division	Function
1	NSBOA	O	Serial data signal
2	NRST	I	Reset signal
3	NSYNC	—	Not used, open
4	X 2		
5	X 1		
6	V _{SS}	—	GND terminal
7	OSC 2	—	Not used, open
8	OSC 1	I	Clock signal
9	V _{DD}	I	Power supply terminal
10	NTC1B	I	Supply reel FG signal
11	NIRQ 0	I	Take-up reel FG signal
12	NIRQ 1	I	Transfer strobe signal of system control
13	P00 (MSTB)		
14	P 01 (MRDY)	O	Transfer ready signal of system control
15	P 02 (NSSTB)	O	Transfer strobe signal
16	P 03 (NSRDY)	I	Transfer ready signal
17	P 10 (ATFGT)	O	ATF gain ($\times 1/2$) select terminal
18	P 11 (REWGT)	O	REW FG · PG gain select terminal
19	P 12 (LPMOD)	—	Not used, open
20	P 13 (MODMT0)	O	Mode motor control signal
21	P 20 (MODMT1)		
22	P 21 (MODMT2)		
23	P 22	—	Not used, open
24	P23 (PLG)	O	Plunger control signal
25	P 30	—	Not used, open
26	P 31		
27	P 32 (LOAD 1)	O	Tray motor control (+) terminal
28	P 33 (LOAD 2)	O	Tray motor control (–) terminal
29	P 40	—	Not used, open
30	P 41 (DEW)	I	Dew sensor det. signal
31	P 42 (EOT)	I	Tape end det. signal
32	P 43 (BOT)	I	Tape begin det. signal
33	P 50 (OPEN)	I	Cassette open det. signal

Pin No.	Mark	I/O Division	Function
34	P 51 (CLOSE)	I	Cassette close det. signal
35	P 52 (LOAD S)	I	Loading start det. signal
36	P 53 (LOAD E)	I	Loading stop det. signal
37	P 60 (SW 2)	O	Test terminal
38 39 40	P 61 (MMOD 0) P 63 (MMOD 2)	I	Tape mode det. signal
41 42 43 44	P 70 (MBUS 0) P 73 (MBUS 3)	I/O	Transfer bus terminal of system control
45	P 80 (RCC)	—	Not used, open
46	P 81 (FIL)	O	FILTER select signal
47	P 82 (ATFON)	—	Not used, open
48	P 83 (NSTBY)	—	Not used, open
49	P 90 (NSRST)	O	Reset signal
50	P 91 (LEDDRV)	O	Tape begin/end LED control signal
51	P 92 (PCMOK)	I	PCM playback det. signal
52	P 93 (SVAL 0)	I	ATF effective position setting terminal
53	NEXPS	I	Not used, connected to power supply
54	PA 0 (NSNCOK)	I	ATF sync. det. terminal
55	PA 1 (NLNOK)	I	Track linearity det. terminal
56	PA 2 (CAPER)	I	Capstan rotative direction command signal
57	PA 3	—	Not used, open
58	PB 0 (TH 1)	I	Tape hall det. signal
59	PB 1 (TH 2)		
60	NSBTB	I	Muting det. signal
61	NSBIB	I	Test terminal
62	NSBOB		
63	NSBTA (SCLK)	I	Serial transfer clock signal
64	NSBIA (SDAT)	I/O	Serial transfer data signal

• IC301 (MN188161SDS4): System control

Pin No.	Mark	I/O Division	Function
1	V _{DD}	I	Power supply terminal
2 3 4 5 6 7 8 9	P 67 (SPDT 7) P 60 (SPDT 0)	I/O	Signal processor transfer address and data bus terminal
10	P 57 (SPRDY)	I	Signal processor data transfer command signal
11	P 56 (PBLANK)	I	Blank skip select ("H": no skip, "L": skip)
12	P 55 (R3CP)	I	Frame sync. signal
13 14	P 54 (PMID6B) P 53 (PMID6A)	—	Main ID6 select terminal
15	P 52	I	Not used, connected to resistor
16	P 51	I	Not used, connected to resistor
17	P 50 (PDIOSEL)	I	D I/O select ("H": AES/EBV, "L": IEC)
18	EXI	—	Not used, connected to GND
19	EXO	—	Not used, open
20	NRST 1	I	Reset signal ("L": RESET)
21	P 47 (NSERVST)	O	Reset signal to servo block
22	P 46	—	Not used, open
23	P 45	—	
24	P 44	—	Not used, open
25	P 43 (SLAD)	O	
26	P 42 (XCK32)	O	32kHz OSC control ("H": OSC, "L": STOP)
27	P 41 (XCK44)	O	44.1kHz OSC control ("H": OSC, "L": STOP)
28	P 40 (XCK48)	O	48kHz OSC control ("H": OSC, "L": STOP)
29	P 27 (NPRDY)	I	Transfer ready signal from panel control
30	OSC 1	I	Crystal OSC terminal
31	OSC 2	O	
32	V _{SS}	—	GND terminal
33	XI	—	Not used, open
34	XO	—	
35	P 26	—	Not used, connected to power supply
36	P 25 (RF ENV)	I	RF envelope signal

Pin No.	Mark	I/O Division	Function
37	P 37 (FLGCLK)	O	Clock signal of flag counter
38	P 36 (FLGDT)	O	Data signal of flag counter
39	P 35 (TP)	O	Track pitch signal ("L": normal)
40	P 34 (UNLOCK)	O	DIGITAL-IN PLL unlock signal ("L": det.)
41	P 33	—	Not used, open
42	P 32 (DISCHG)	O	DIGITAL-IN PLL discharge signal
43	P 31 (DINPLINH)	O	DIGITAL-IN PLL prohibition signal ("H": prohibition)
44	P 30 (ANRST)	O	Reset signal ("H": RESET) to DAC
45	P 21 (HSW)	I	Head switching pulse signal
46	P 20 (NMRDY)	I	Transfer command signal from mechanism control
47	P 01	—	Not used, open
48	P 00	—	
49	P 17 (PTXD)	O	Serial data transmission terminal
50	P 16 (PRXD)	I	Serial data reception terminal
51	P 15 (PCLK)	O	Serial data transmission/reception clock signal
52	P 14	—	Not used, open
53 54 55 56	P 13 (MDT 3) P 10 (MDT 0)	I/O	Transfer data bus of mechanism control
57	P 77	—	Not used, open
58	P 76 (NDEMP)	O	de-emphasis signal
59	P 75 (SGMTG)	O	Muting signal
60	P 74 (DOUTTH)	O	Digital out through select ("H": through)
61	P 73 (NRST 2)	O	Reset signal
62	P 72 (MSTB)	O	Transfer command terminal of mechanism control
63	P 71 (SPSTB)	O	Signal processor strobe signal
64	P 70 (SPAW)	O	Signal processor address setting signal

• IC351 (MN6624): Digital signal processor

Pin No.	Mark	I/O Division	Function	Pin No.	Mark	I/O Division	Function
1	PCMCIF	O	Flag counter terminal	40	V _{DD}	I	Power supply terminal
2	IDPP			41	XO 1	O	Crystal OSC terminal
3	IDP	O	Test terminal	42	XI 1	I	
4	V _{DD}	I	Power supply terminal	43	V _{SS}	—	GND terminal
5	TESTS	—	Not used, connected to GND	44	PC OUT	—	Not used, open
6	V _{SS}	—	GND terminal	45	RAD 0	O	RAM address bus terminal
7	CKIO FS	—	Not used, open	46	RAD 1		
8	CKIO 128	O	Test terminal	47	RAD 2		
9	CKIO 512	—	Not used, open	48	RAD 3		
10	NDALOAD	—	Not used, open	49	RAD 4		
11	DADAT	O	DA data signal	50	RAD 5		
12	DALRCK	O	LR discrimination signal	51	RAD 6		
13	DABCK	O	Serial bit clock signal	52	RAD 7		
14	DAMCK	—	Not used, open	53	V _{DD}	I	Power supply terminal
15	V _{DD}	I	Power supply terminal	54	TEST 2	—	Not used, connected to GND
16	TEST 6	—	Not used, open	55	V _{SS}	—	GND terminal
17	V _{SS}	—	GND terminal	56	RAD C	O	RAM address bus terminal
18	ADDAT	I	AD data signal	57	RAD E		
19	ADLRCK	O	LR discrimination signal	58	NWE	O	Write enable for memory
20	ADBCK	O	Serial bit clock signal	59	RAD D	O	RAM address bus terminal
21	ADMCK	O	External clock signal	60	RAD 8		
22	TX	O	Digital signal	61	RAD 9		
23	RX	I		62	RAD B		
24	VCOS L32	—	Not used, open	63	NOE	O	Output enable for memory
25	VCOS L44			64	RAD A	O	RAM address bus terminal
26	VCOS L48			65	V _{DD}	I	Power supply terminal
27	DIO REF	O	Digital signal (PLL control)	66	NCS	O	Chip select terminal for memory
28	DIO VAR	O		67	V _{SS}	—	GND terminal
29	V _{DD}	I	Power supply terminal	68	RDT 7	I/O	RAM data bus terminal
30	DI 512	I	Digital signal (512FS)	69	RDT 6		
31	V _{SS}	—	GND terminal	70	RDT 5		
32	XO 4	—	Not used, open	71	RDT 4		
33	XI 4	I	Crystal terminal (32kHz×512)	72	RDT 3		
34	TEST 0	—	Not used, connected to GND	73	RDT 2		
35	XO 3	—	Not used, open	74	RDT 1		
36	XI 3	I	Crystal terminal (44.1kHz×512)	75	RDT 0		
37	TEST 1	—	Not used, connected to GND	76	V _{SS}	—	GND terminal
38	XO 2	—	Not used, open	77	TEST 3	—	Not used, connected to GND
39	XI 2	I	Crystal terminal (48kHz×512)	78	V _{DD}	I	Power supply terminal

Pin No.	Mark	I/O Division	Function	Pin No.	Mark	I/O Division	Function
79	SPDT 7	I/O	Address and data bus terminal	102	V _{DD}	I	Power supply terminal
80	SPDT 6			103	SRPR	O	Recording/playback select signal (REC: "H", PLAY: "L")
81	SPDT 5			104	SRWND 2	O	ATF area det. signal
82	SPDT 4			105	SRWND 1	O	Track pitch signal
83	SPDT 3			106	PBDT	I	Playback signal
84	SPDT 2			107	PBCK	I	Playback envelope signal
85	SPDT 1			108	RFMSK	O	Not used, open
86	SPDT 0			109	PLLOFS	O	PLL off-set information signal
87	V _{SS}	—	GND terminal	110	HFCH	O	System clock signal
88	TEST 4	—	Not used, connected to GND	111	VFPLFS	O	PLL OFS effective information signal
89	V _{DD}	I	Power supply terminal	112	EXFCH	—	Not used, connected to GND
90	SPAW	I	Signal processor address setting terminal	113	EEMD	—	Not used, connected to GND
91	SPSTB	I	Signal processor strobe signal	114	V _{SS}	—	GND terminal
92	SPRDY	O	Data transfer command signal	115	SL NRZI	—	Not used, connected to GND
93	UNLOK	O	PLL unlock signal	116	SELF CH0		
94	DISYND	—	Not used, open	117	SELF CH1		
95	NSTBY	I	Not used, connected to power supply	118	V _{DD}	I	Power supply terminal
96	NRST	I	Reset signal	119	M9CP	O	Master clock signal
97	M7CK	—	Master clock signal (Not used, open)	120	HSW	I	Head switching signal
98	R6CP/ (ENV T)	O	Timing signal for RF envelope signal control	121	NR TRST	—	Not used, connected to power supply
99	R3CP			122	SUBWND	—	Not used, open
100	V _{SS}	—	GND terminal	123	IPF	O	Output terminal for flag counter
101	SRRF	O	Recording signal	124	SUBC 1		

• IC405, 406 (MN6460): A/D converter

Pin No.	Mark	I/O Division	Function	Pin No.	Mark	I/O Division	Function
1	D V _{DD}	I	Power supply terminal	17	CV _{DD}	I	Power supply terminal
2	LRPOL	I	LR clock polarity select terminal (Not used, connected to GND)	18	DAV _{SS}	—	GND terminal
3	I-E	—	Not used, connected to GND	19	DAV _{DD}	I	Power supply terminal
4	LRCLK	I	LR discrimination signal	20	AV _{SS}	—	GND terminal
5	BCLK	I	Serial bit clock signal	21	AV _{DD}	I	Power supply terminal
6	CLR	I	Reset signal	22	VREF	I	Reference voltage terminal
7	OFCLR	I	Clock det. terminal	23	AG	I	GND terminal
8 14	IC	—	Not used, open	24	AIN	I	Analog data signal
15	EXCLK	I	External clock signal	25	AV _{DD}	I	Power supply terminal
16	CV _{SS}	—	GND terminal	26	AV _{SS}	—	GND terminal
				27	DAV _{SS}	—	GND terminal
				28	AMP BIAS	I	Bias voltage adj. terminal of OP amp.

Pin No.	Mark	I/O Division	Function
29 35	IC	—	Not used, open
36	NC	—	Not connection
37	NSUB	—	Not used, connected to power supply terminal
38	TV _{DD}	I	Power supply terminal

Pin No.	Mark	I/O Division	Function
39	DOUT	O	Digital data signal
40	TV _{SS}	—	GND terminal
41	TEST	I	Test terminal (Connected to power supply)
42	DV _{SS}	—	GND terminal

• IC501 (MN6470): Digital filter & D/A converter

Pin No.	Mark	I/O Division	Function
1	MLD	I	Microcomputer command load signal (Not used, connected to power supply)
2	RSB	I	Reset terminal ("L": reset)
3	IE	I	Not used, connected to GND
4	TP1	O	Test terminal
5	TP2		
6	TEST 1	I	Test terminal (Connected to GND)
7	TEST 2		
8, 9	NC	—	Not connection
10	V _{DD} 4	I	Power supply terminal
11	OUT L-	O	Lch (-) data signal
12	A V _{SS} 4	—	GND terminal
13	A V _{SS} 3		
14	OUT L+	O	Lch (+) data signal
15	A V _{DD} 3	I	Power supply terminal
16	NC	—	Not connection
17	A V _{DD}	I	Power supply terminal
18	OUT R+	O	Rch (+) data signal
19	A V _{SS}	—	GND terminal
20	A V _{SS}		
21	OUT R-	O	Rch (-) data signal
22	A V _{DD}	I	Power supply terminal
23	D V _{DD}	I	Power supply terminal
24	D V _{SS}	—	GND terminal

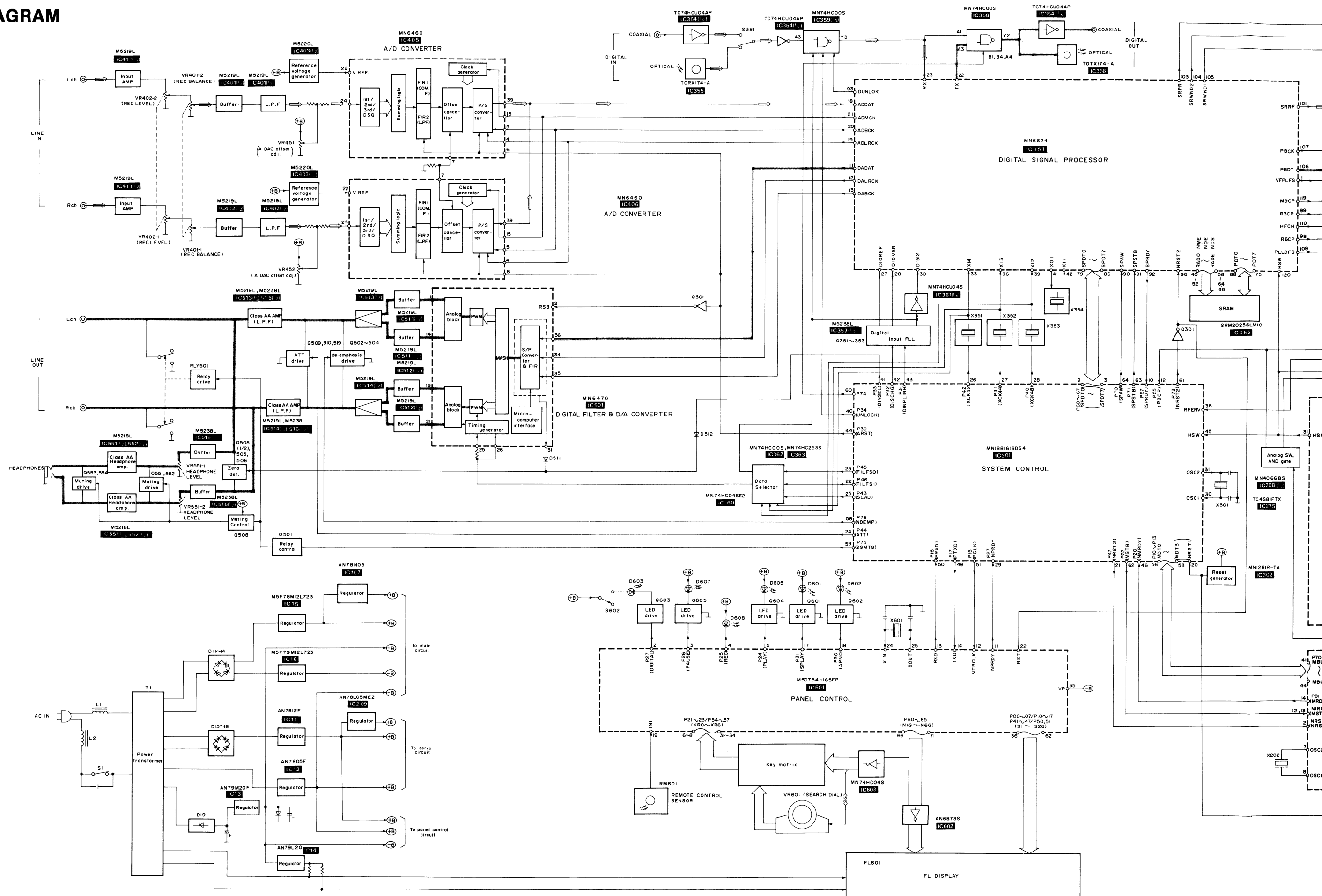
Pin No.	Mark	I/O Division	Function
25	X2	I	Crystal OSC terminal
26	X1		
27	NC	—	Not connection
28	D V _{DD}	I	Power supply terminal
29	D V _{SS}	—	GND terminal
30	NSUB	I	Sub straight terminal (Not used, connected to power supply)
31	ZFLGB	O	Zero det. terminal
32	128FS	—	Not used, open
33	LRPOL	I	LR clock polarity select terminal (Not used, connected to GND)
34	LRCLK	I	LR discrimination signal
35	BCLK	I	Serial bit clock signal
36	SRDATA	I	Serial data signal
37	D V _{SS}	—	GND terminal
38	D V _{DD}	I	Power supply terminal
39	256FS	O	256fs signal
40	PD	I	Power down terminal (Not used, connected to GND)
41	MDATA	I	Microcomputer command data signal (Not used, open)
42	MCLK	I	Microcomputer command clock signal (Not used, connected to power supply)

• IC601 (M50754-165FP): Panel control & FL drive

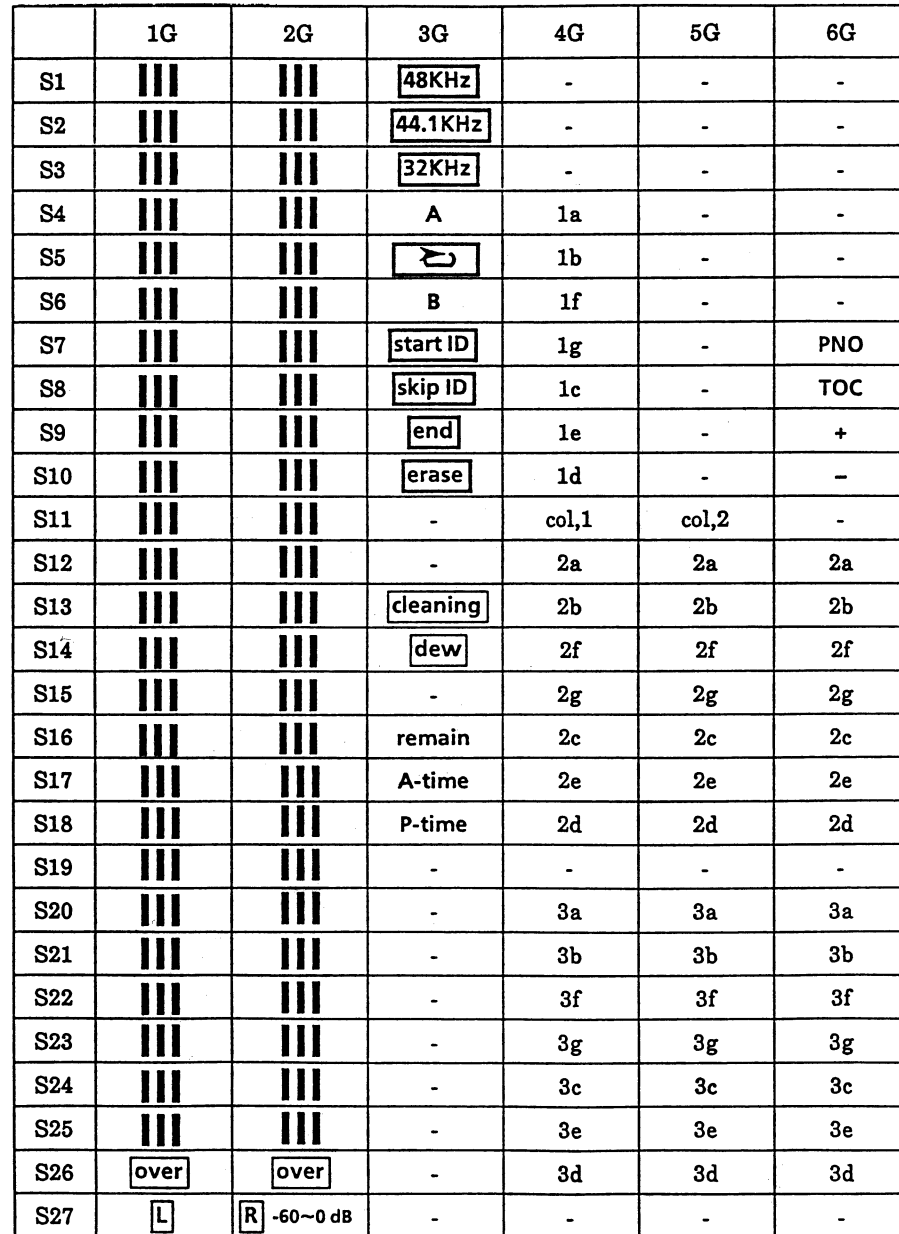
Pin No.	Mark	I/O Division	Function
1	V _{SS}	—	GND terminal
2	P 27	O	Input select signal (DIGITAL↔ANALOG)
3	P 26	O	LED display drive terminal (PAUSE)
4	P 25	O	LED display drive terminal (REC)
5	P 24	O	LED display drive terminal (PLAY)
6 7 8	P 23 P 21	I	Key return signal
9	P 20	O	Buffer control signal
10	NC	—	Not connection
11	NPRDY	O	Ready signal
12	NTRCLK	I/O	Serial data transmission/reception clock signal
13	RXD	O	Serial data transmission signal
14	TXD	I	Serial data reception signal
15	P 33	—	Not connection
16	P 32		
17	P 31	O	LED display drive terminal (S. PLAY)
18	P 30	O	LED display drive terminal (A. PNO)
19	INT 1	I	Remote control signal
20	INT 2	I	Not used, connected to power supply
21	CNV _{SS}	—	GND terminal
22	RST	I	Reset signal ("L": RESET)
23	NC	—	Not connection
24	X IN	I	Master clock terminal (6MHz)
25	X OUT	O	
26	NC	—	Not connection
27	X CIN	—	Not used, connected to GND
28	X COUT	—	Not used, open
29	V _{SS}	—	GND terminal
30	NC	—	Not connection
31	P 57	I	Key return signal
32	P 56		

Pin No.	Mark	I/O Division	Function
33	P 55	I	Key return signal
34	P 54		
35	VP	I	Power supply terminal for FL drive
36	P 51	O	Segment signal for FL drive
37	P 50		
38 39 40 41 42 43 44 45	P 17 P 10		
46	NC		
47	P 07	O	Segment signal for FL drive
48	P 06		
49	P 05		
50	P 04		
51	P 03		
52	P 02		
53	P 01		
54	P 00		
55	P 47		
56	P 46		
57	P 45		
58	P 44		
59	P 43		
60	P 42		
61	P 41		
62	P 40		
63	V _{CC}	I	Power supply terminal
64	V _{CC}		
65	V _{SS}	—	GND terminal
66	P 65	O	Digit signal for FL drive and key scan signal
67	P 64		
68	P 63		
69	P 62		
70	P 61		
71	P 60		
72	NC	—	Not connection

BLOCK DIAGRAM



36



PIN NO.	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41
CONNECTION	F 2	F 2	N P	N P	S 1	S 2	S 3	S 4	S 5	S 6	S 7	S 8	S 9	S 10	S 11

— 39 —

1000

— 40 —

SCHEMATIC DIAGRAM

(Parts list on pages 80~82, 92~94.)

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

Note 1:

- **S701** : Tape hole detection switch.
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.
1K=1,000 (Ω), 1M=1,000k (Ω)
- Capacity are in micro-farads (μ F) unless specified otherwise.
- All voltage values shown in circuitry are under no signal condition and playback mode with volume control at minimum position otherwise specified.
() Voltage values at recording mode.
- For measurement us EVM.
- Important safety notice
Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

Part No.	Original Part No.	Supply Part No.
IC551, 552	M5218AL	M5218L

- (———) indicates +B (bias).
- (- - -) indicates -B (bias).
- (———) indicates the flow of the playback signal.
- (———) indicates the flow of the recording signal.

* Caution!

IC and LSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

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

A

B

C

D

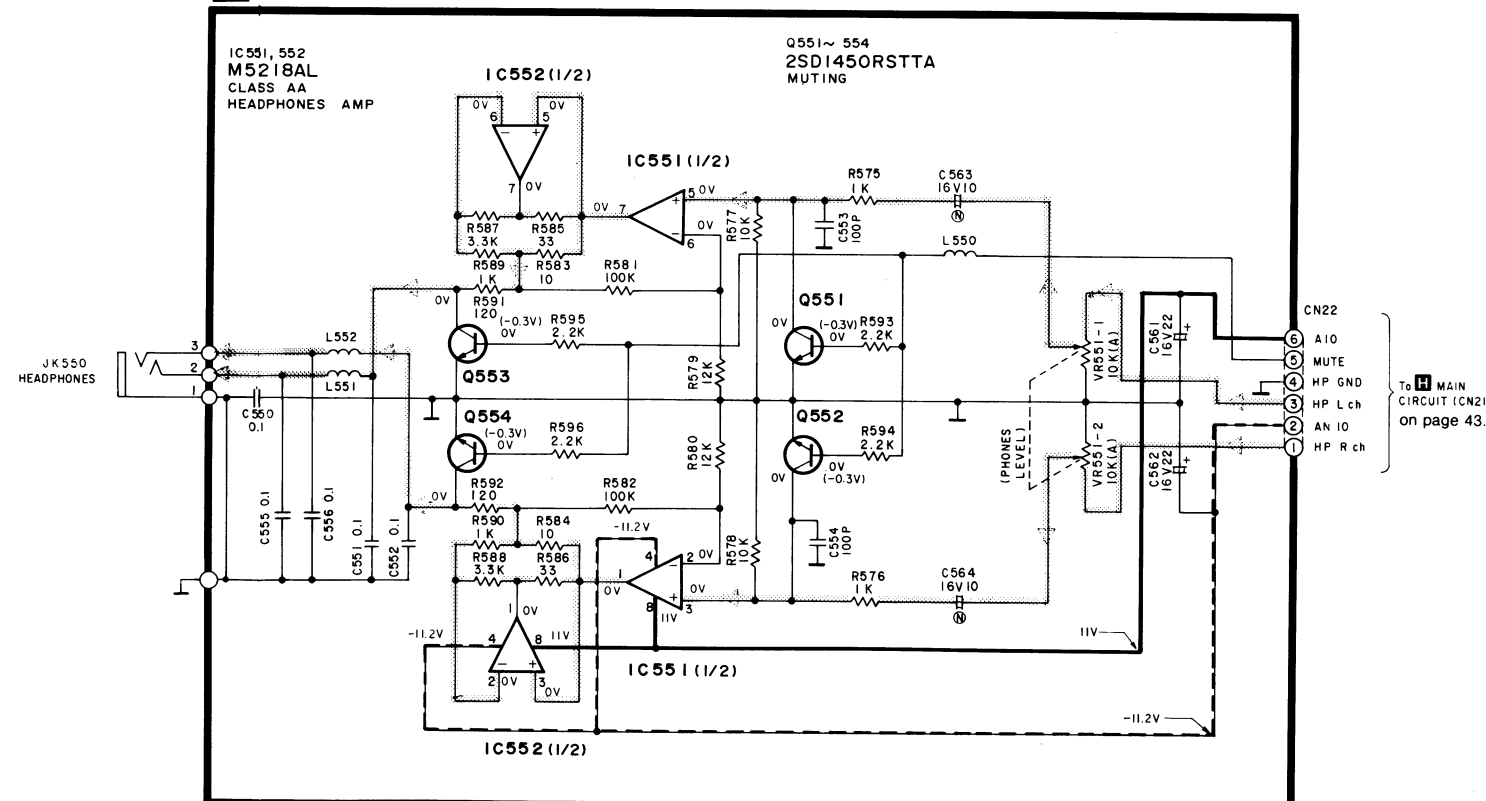
E

F

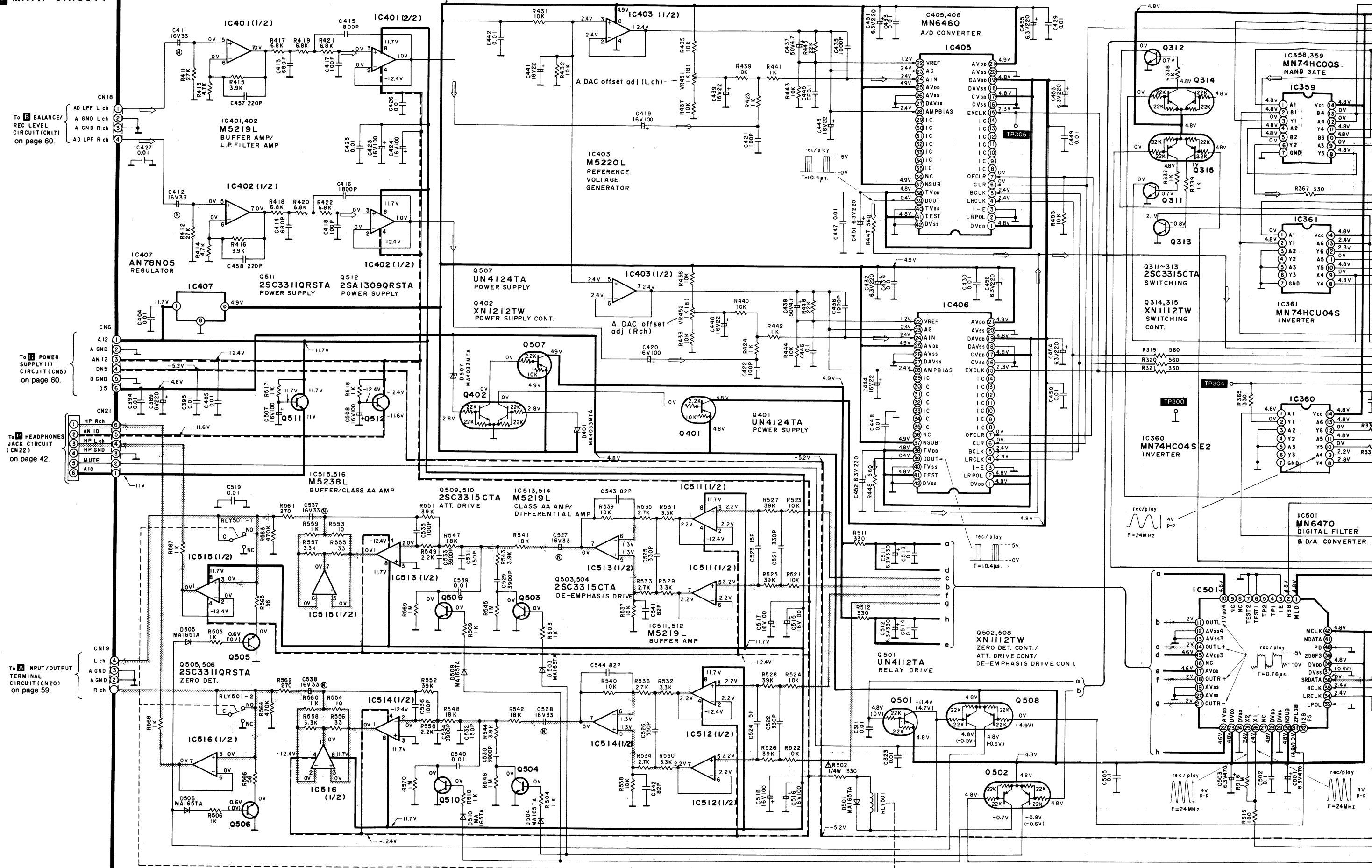
To **L** SERVO
CIRCUIT (CN54, 56)
on page 52.

JK 550
HEADPHONES

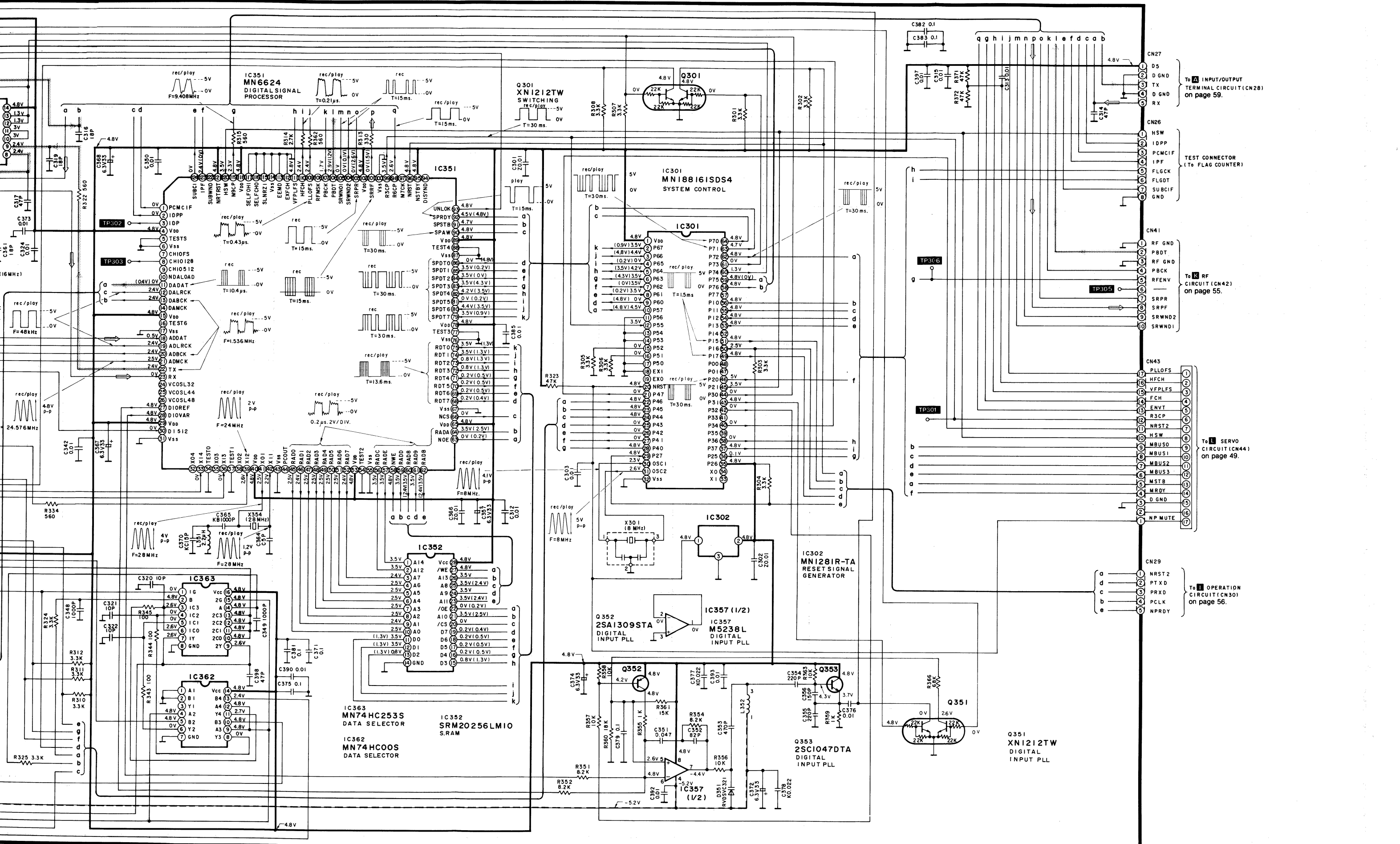
P HEADPHONES JACK CIRCUIT



H MAIN CIRCUIT







SERVO CIRCUIT

Note 2:

- **S702** : Loading detection switch.
- **S703** : Mode detection switch.
- **S751** : Cassette tray open detection switch.
- **S752** : Cassette tray close detection switch.

• All voltage values shown in circuitry are under no signal condition and playback mode with volume control at minimum position otherwise specified.

()..... Voltage values at recording mode.

For measurement us EVM.

• Important safety notice

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

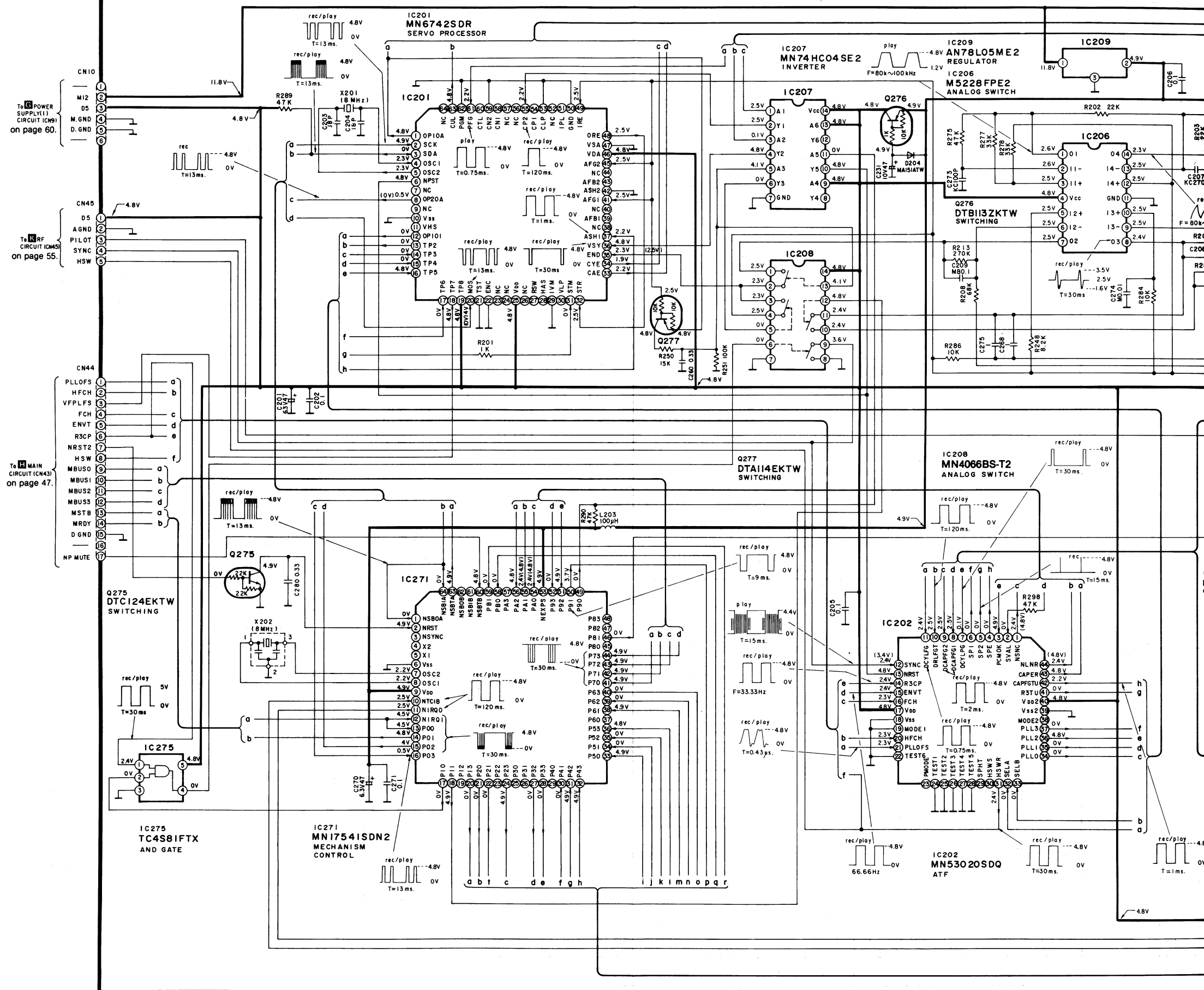
• (———) Indicates +B (bias).

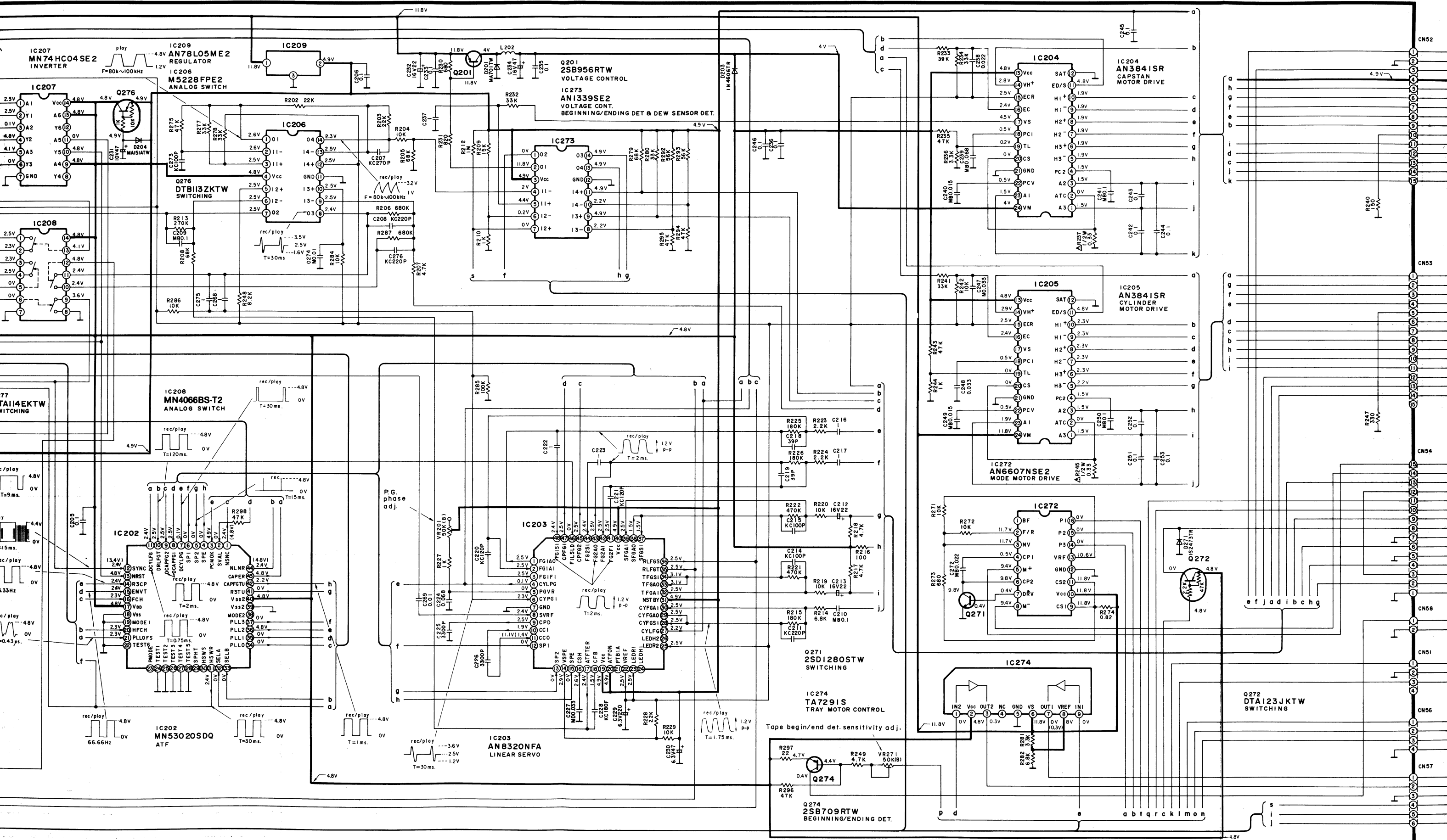
• (- - - -) indicates -B (bias).

• (———→) Indicates the flow of the playback signal.

• (———→) Indicates the flow of the recording signal.

• The "IC701, IC702, Q701, Q702, D701, MR701, L701~708, CAPH701~703, CYLH701~703" parts are not supplied separately and are thus not found on the replacement parts list.



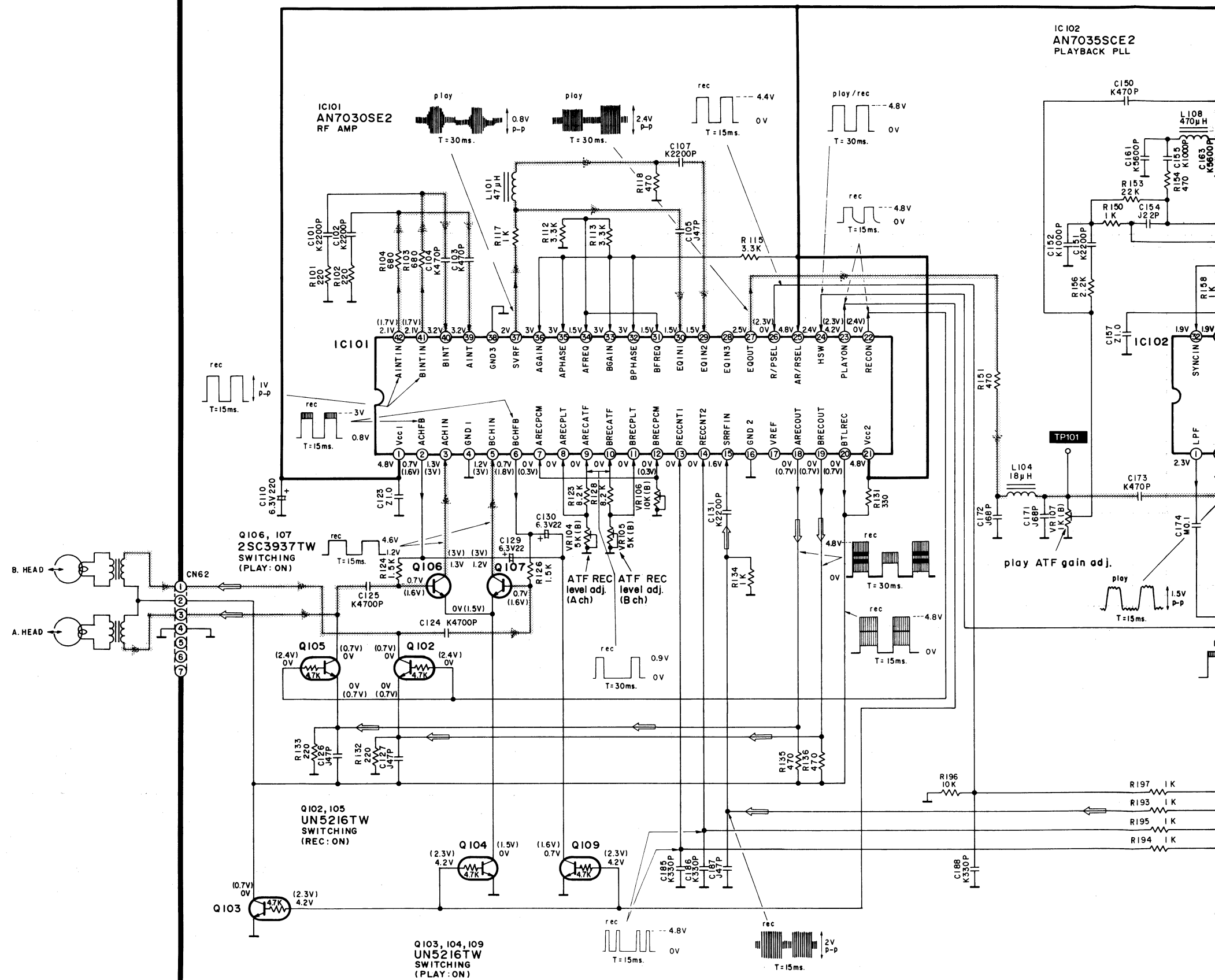




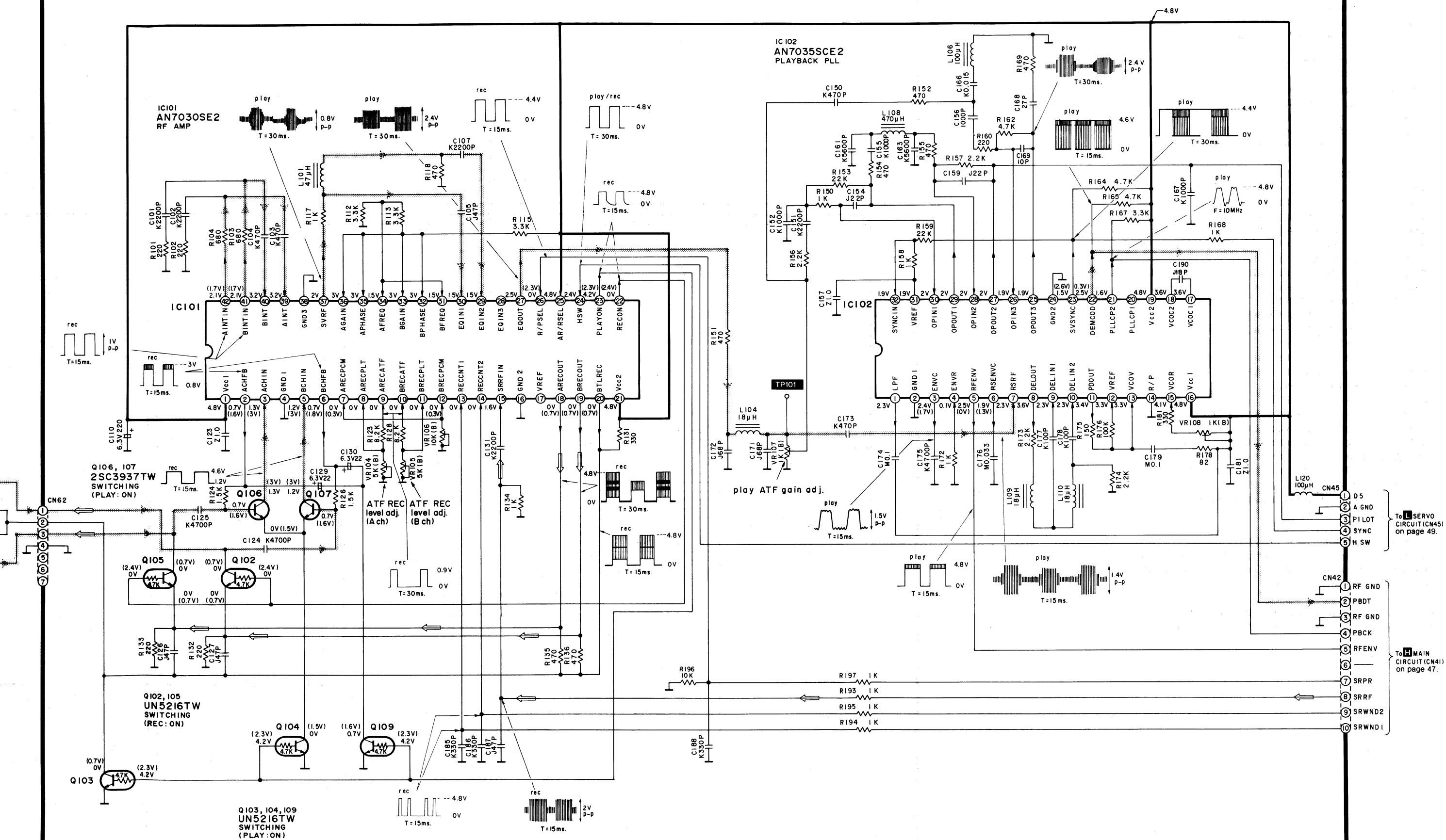
K RF CIRCUIT

Note 3:

- All voltage values shown in circuitry are under no signal condition and playback mode with volume control at minimum position otherwise specified.
- () Voltage values at recording mode.
- For measurement us EVM.
- Important safety notice
- Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
- (—) indicates +B (bias).
- (- - -) indicates -B (bias).
- (—) indicates the flow of the playback signal.
- (—) indicates the flow of the recording signal.

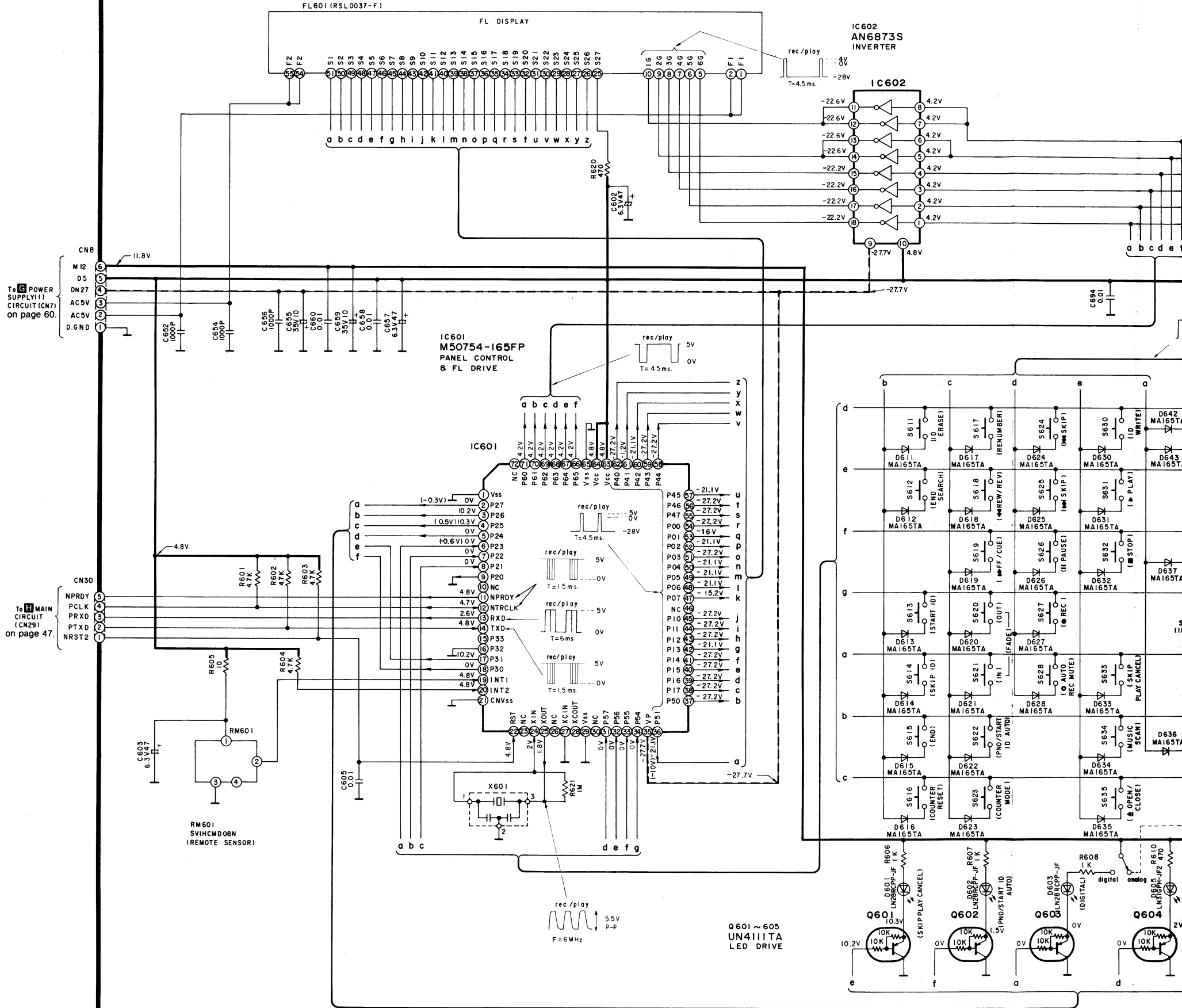


— 55 —

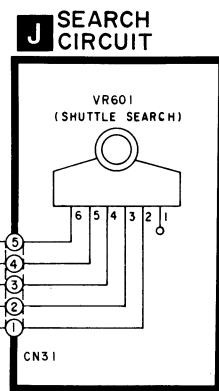


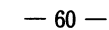
1 OPERATION CIRCUIT

- Note 4:**
- **S1** : Power switch (POWER).
 - **S381** : Digital input selector switch. (DIGITAL INPUT SELECTOR) (OPTICAL ↔ COAXIAL)
 - **S601** : Timer switch (TIMER). (rec ↔ off ↔ play)
 - **S602** : Input selector switch (INPUT) (DIGITAL/ANALOG).
 - **S611** : ID erase switch (ID ERASE).
 - **S612** : End search switch (END SEARCH).
 - **S613** : Start ID switch (START ID).
 - **S614** : Skip ID switch (SKIP ID).
 - **S615** : End switch (END).
 - **S616** : Counter reset switch (COUNTER RESET).
 - **S617** : Renumber switch (RENUMBER).
 - **S618** : Rew/rev switch (REW/REV).
 - **S619** : FF/cue switch (FF/CUE).
 - **S620** : Fade out switch (FADE OUT).
 - **S621** : Fade in switch (FADE IN).
 - **S622** : PNO/start ID auto switch (PNO/START ID AUTO).
 - **S623** : Counter mode switch (COUNTER MODE).
 - **S624, 625** : Skip switches (SKIP). [S624 ◀◀, S625 ▶▶]
 - **S626** : Pause switch (PAUSE).
 - **S627** : Record switch (REC).
 - **S628** : Auto rec mute switch (AUTO REC MUTE).
 - **S630** : ID write switch (ID WRITE).
 - **S631** : Play switch (PLAY).
 - **S632** : Stop switch (STOP).
 - **S633** : Skip play cancel switch (SKIP PLAY CANCEL).
 - **S634** : Music scan switch (MUSIC SCAN).
 - **S635** : Open/close switch (OPEN/CLOSE).
- All voltage values shown in circuitry are under no signal condition and playback mode with volume control at minimum position otherwise specified.
- () Voltage values at recording mode.
- For measurement us EVM.
- Important safety notice**
- Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
- (—) indicates +B (bias).
 - (- - -) indicates -B (bias).
 - (———) indicates the flow of the playback signal.
 - (———) indicates the flow of the recording signal.

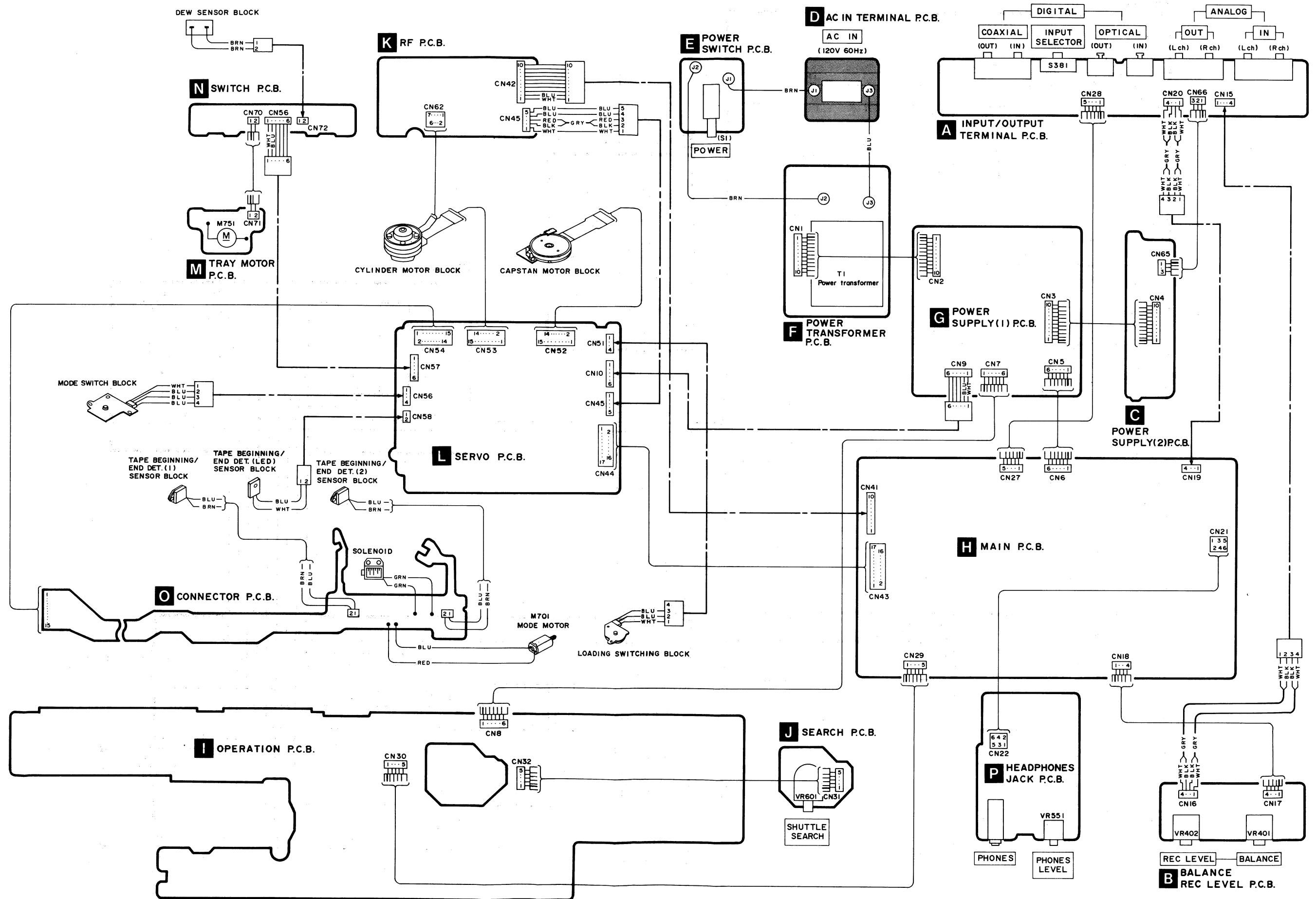


OPERATION CIRCUIT



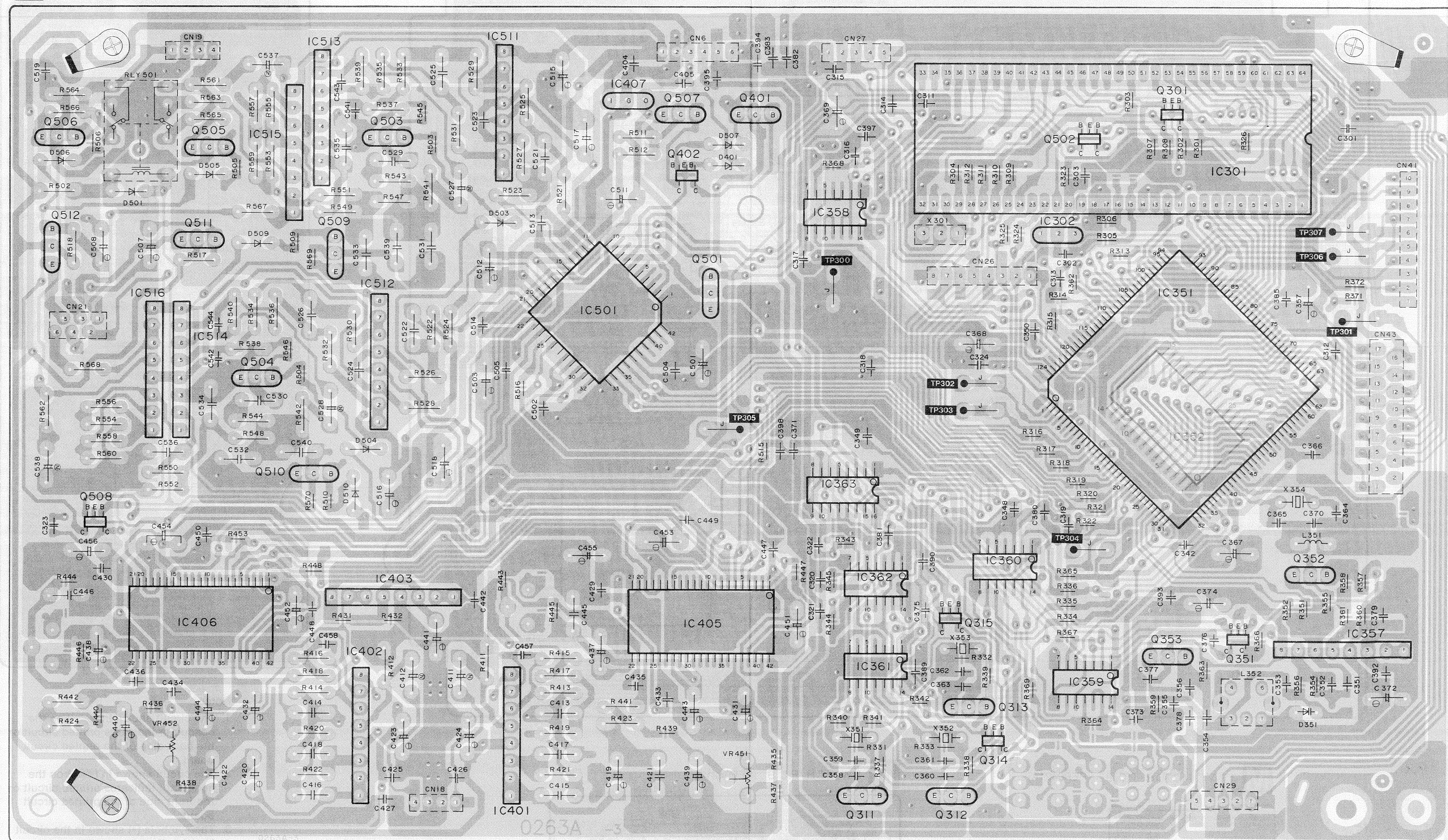


WIRING CONNECTION DIAGRAM



PRINTED CIRCUIT BOARDS

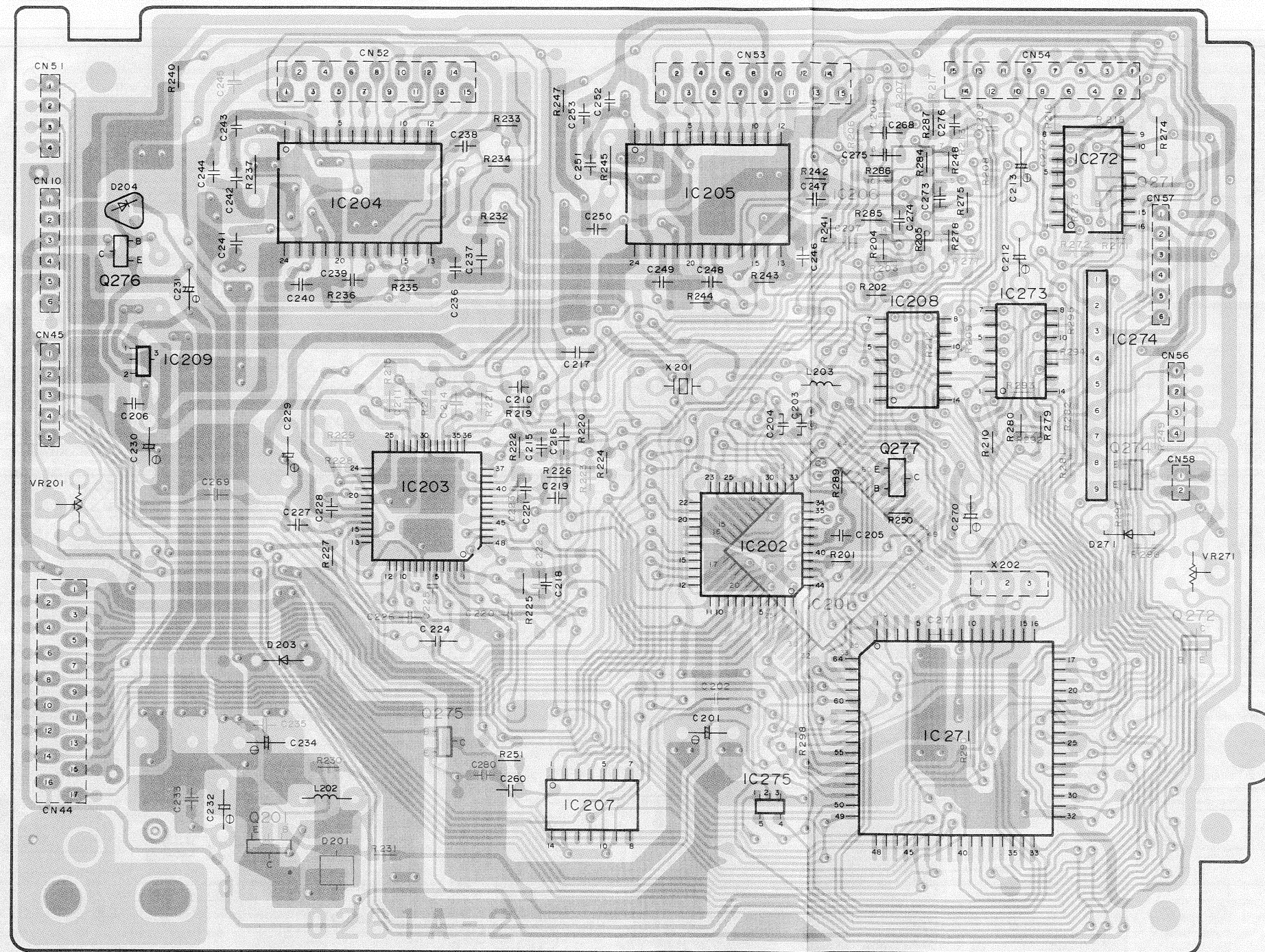
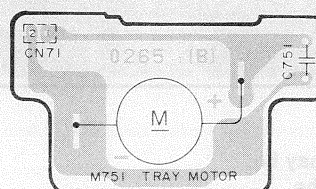
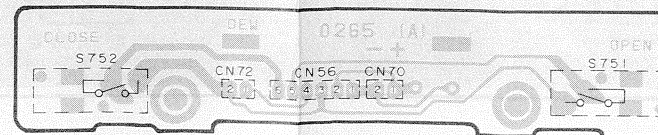
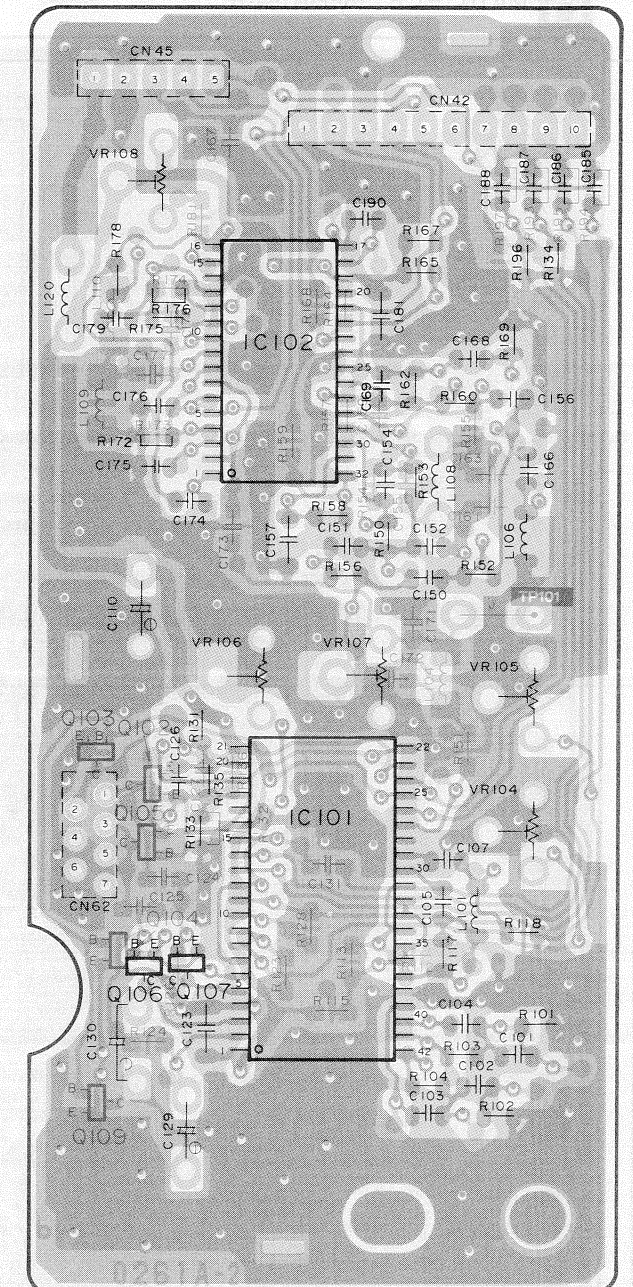
H MAIN P.C.B. (REP0419A-1)



Notes:

1. The circuit shown in () on the conductor indicates printed circuit on the back side of the printed circuit board.
2. The circuit shown in () on the conductor indicates printed circuit on the front side of the printed circuit board.
3. The symbols (•) shown in the circuit board indicate connection points between conductors on the front side and back side of the circuit board.

• This printed circuit board may be modified at any time with the development of new technology.

L SERVO P.C.B. (RFKBV3700-O)**M** TRAY MOTOR P.C.B. (REP0421A)**N** SWITCH P.C.B. (REP0421A)**K** RF P.C.B. (RFKBV3700-N)**Notes:**

1. The circuit shown in () on the conductor indicates printed circuit on the back side of the printed circuit board.
2. The circuit shown in () on the conductor indicates printed circuit on the front side of the printed circuit board.
3. The symbols (•) shown in the circuit board indicate connection points between conductors on the front side and back side of the circuit board.

• This printed circuit board may be modified at any time with the development of new technology.

10

11

12

13

14

15

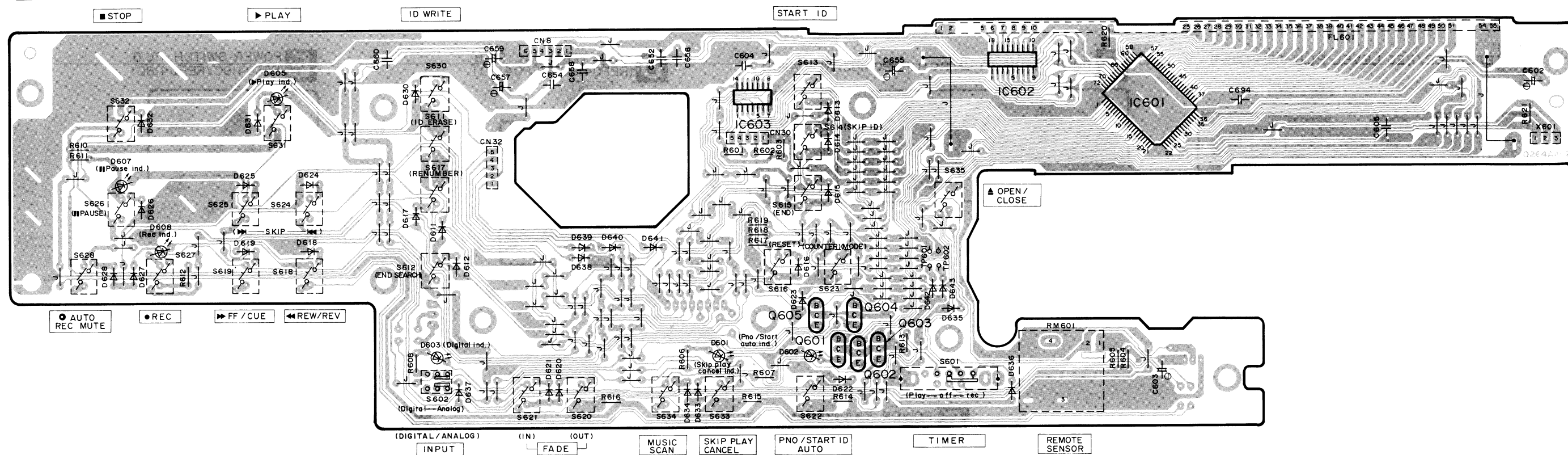
16

17

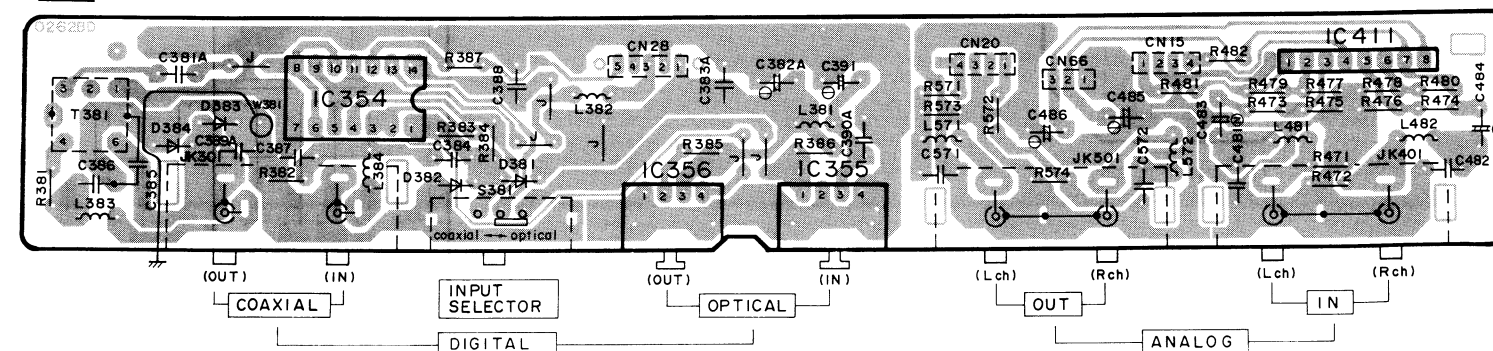
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19

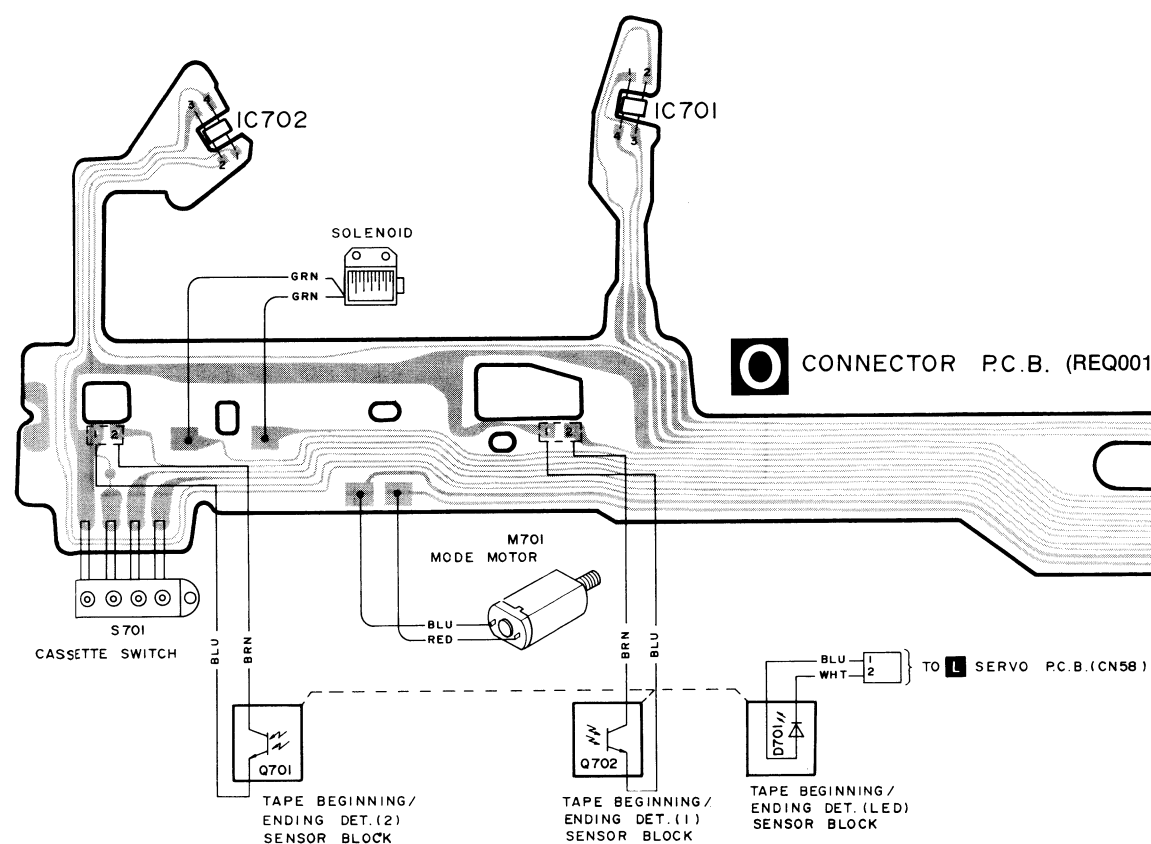
I OPERATION P.C.B. (REP0420A-1)



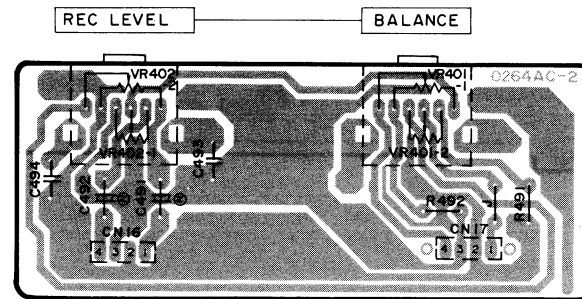
A INPUT/OUTPUT TERMINAL P.C.B.(REP0418C/REP0418D)



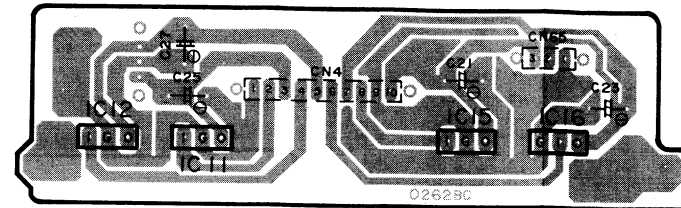
O CONNECTOR P.C.B. (REQ0012)



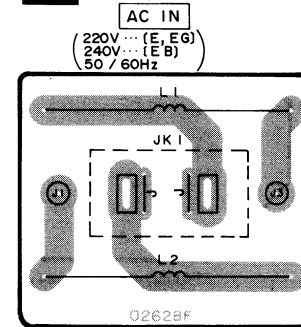
B BALANCE/REC LEVEL P.C.B. (REP0420A-1)



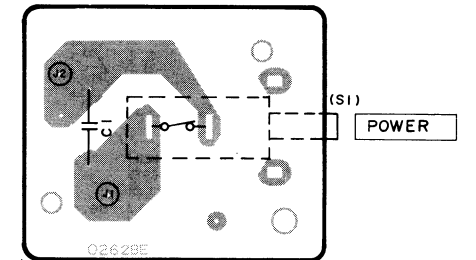
C POWER SUPPLY (2) P.C.B.(REPO4I8C/REPO4I8D)



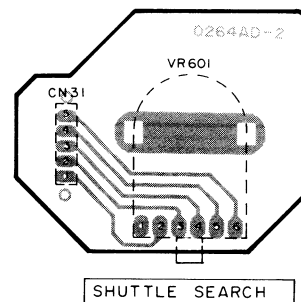
D AC IN TERMINAL P.C.B.
(REPO418C / REPO418D)



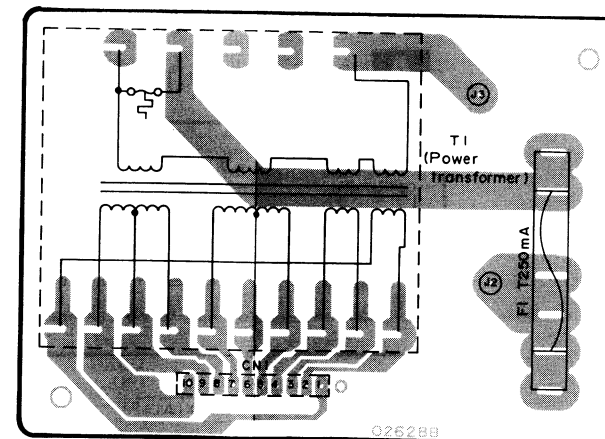
E POWER SWITCH P.C.B.
(REP0418C/REP0418D)



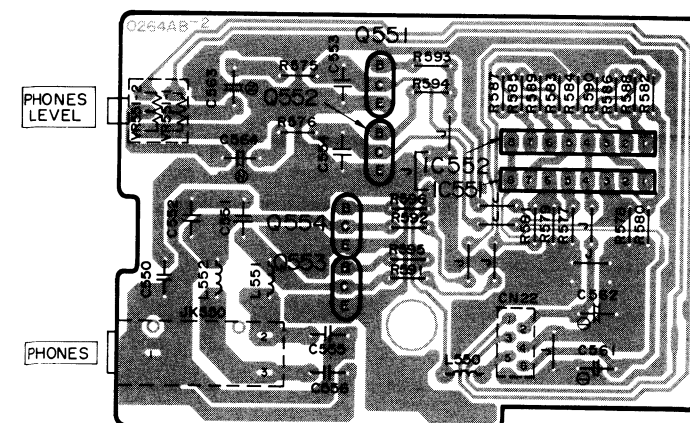
J SEARCH P.C.B. (REP0420A-1)



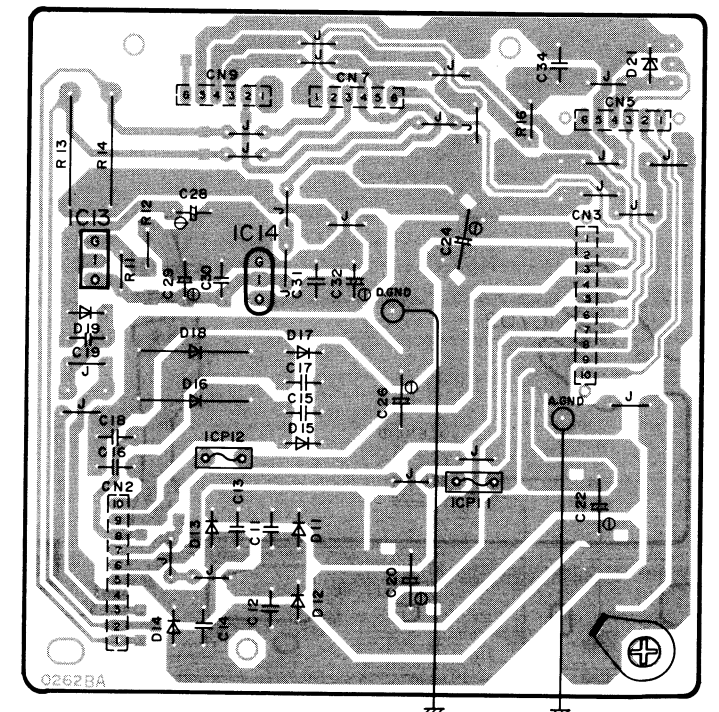
F POWER TRANSFORMER P.C.B.
(REPO418C / REPO418D)



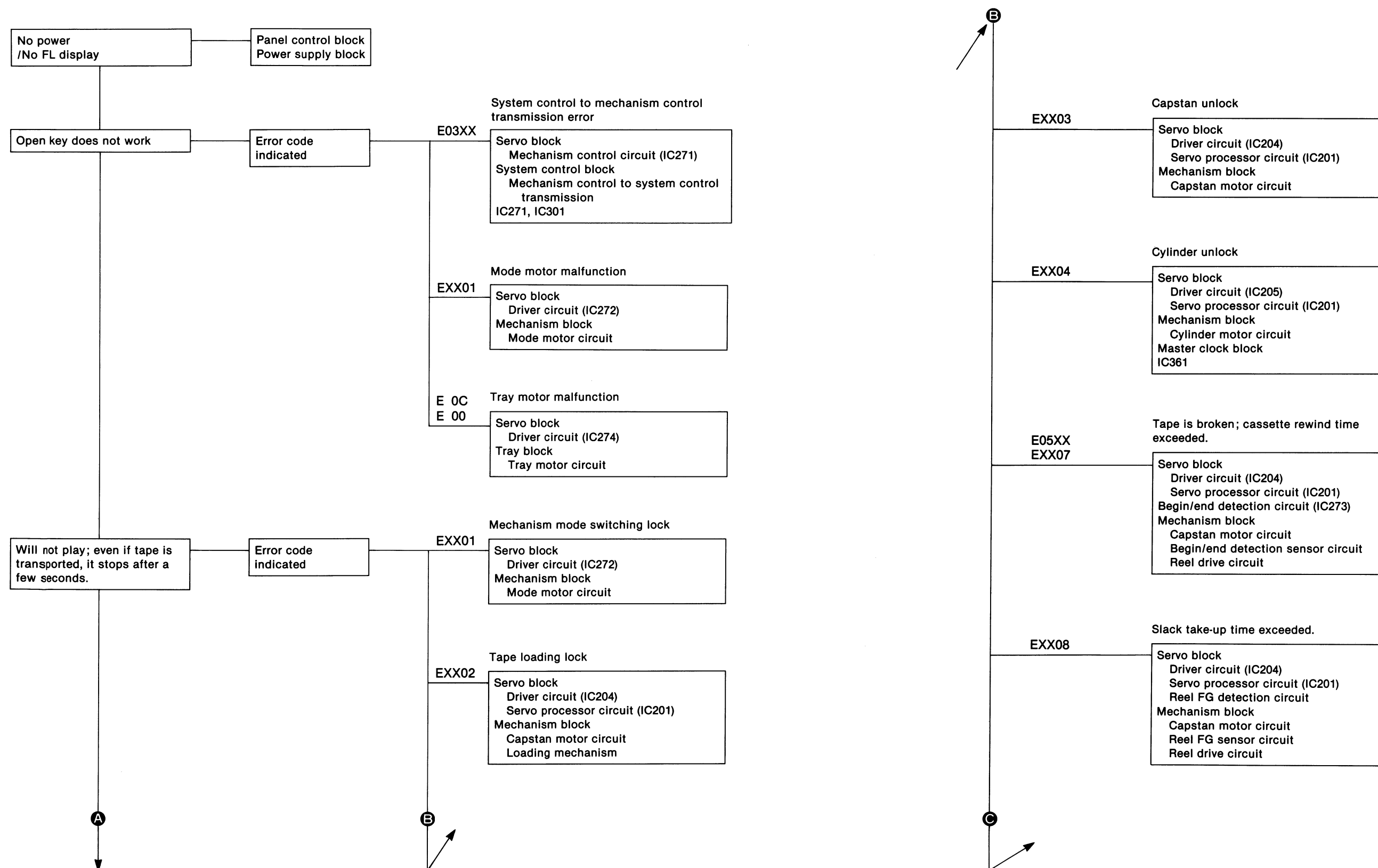
P HEADPHONES JACK P.C.B. (REP0420A-1)

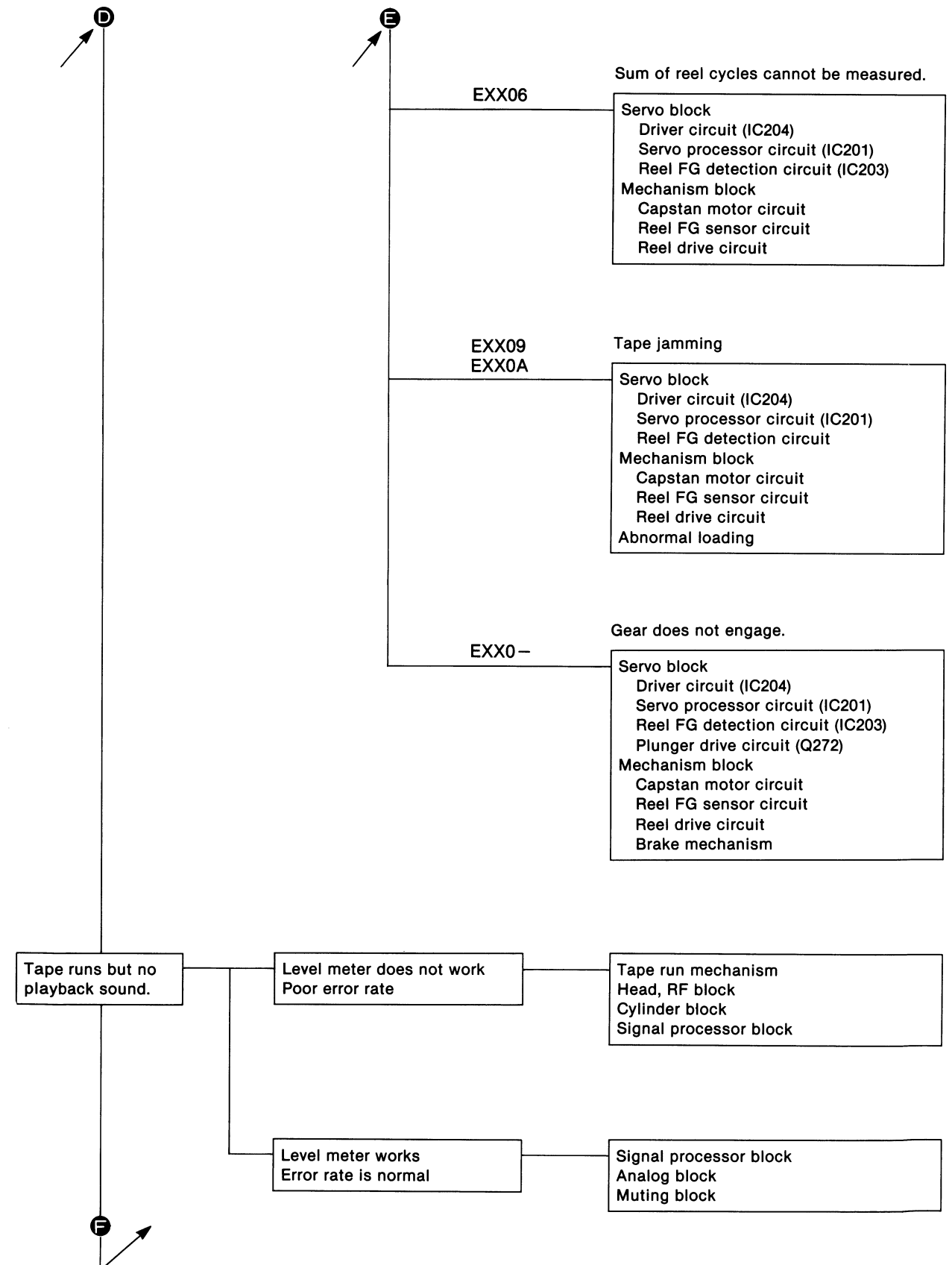
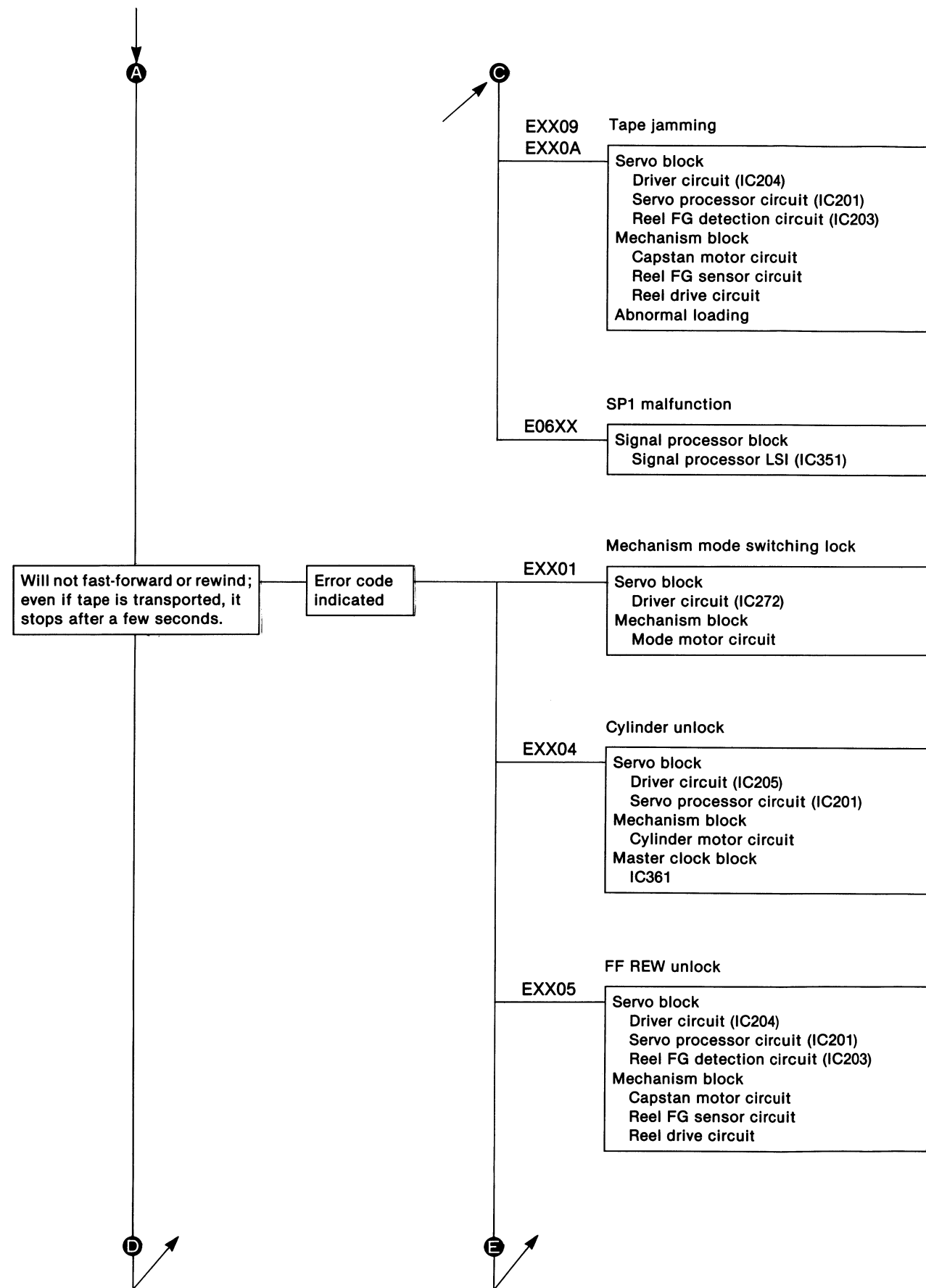


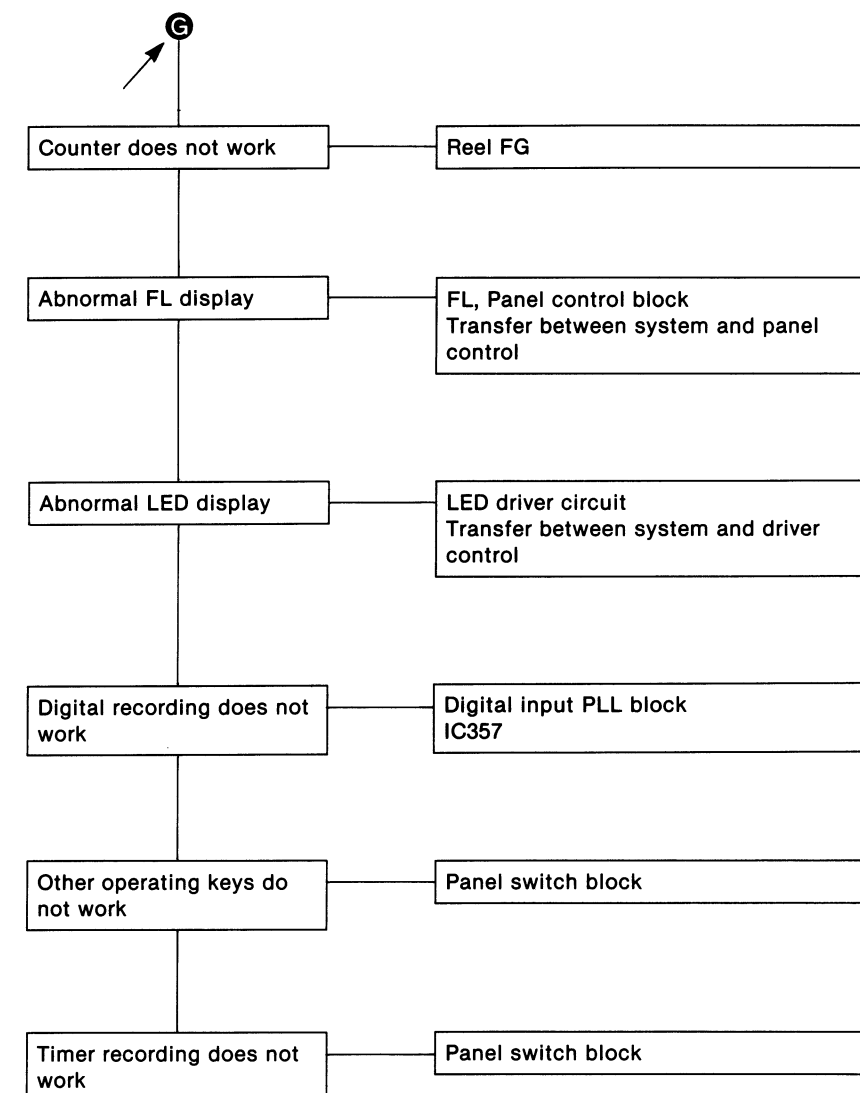
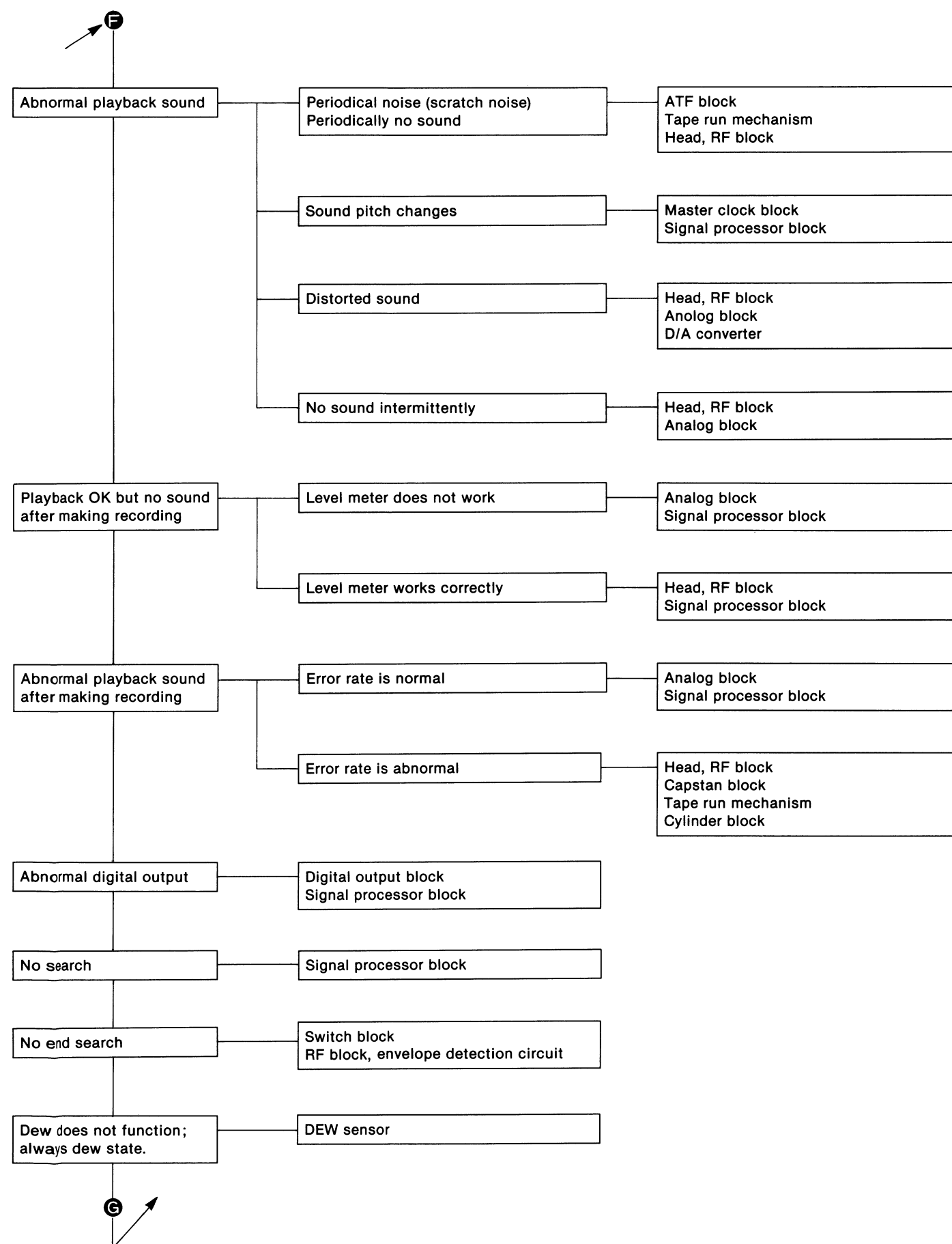
G POWER SUPPLY (1) P.C.B. (REP0418C/REP0418D)



■ TROUBLESHOOTING







KEY POINTS FOR TROUBLESHOOTING

Mechanism block
Loading mechanism
Post roller
Tension regulator
Pinch roller
Brake lever
Brake mechanism
Brake lever
Solenoid
Solenoid driver
Mechanism switch block
Tape hole detection switch
Cassette detection switch
Holder switch
Reel FG block
Detection photo transistor
Detection LED
Reel FG amp (servo P.C.B.)
FPC & FPC connector

Mode motor block
Mode motor
Mode switch
Mode motor driver circuit

Master clock block
28MHz oscillator
16MHz, 22MHz, 24MHz oscillate and select circuit

Panel switch block
Switch
Panel control IC

Head, RF block
Head FPC & FPC connector
Head dirty
Head cracked or damaged
RF recording current
Playback eye pattern

Tape begin/end detection block
Begin/end detection photo transistor
Begin/end detection LED
Comparator circuit
FPC & FPC connector

Power supply block
Power supply regulator output
Fuse

Capstan block
Capstan FG
FG amp
Motor driver output
Motor current

Cylinder block
Cylinder FG
Cylinder PG
FG amp
PG amp
Motor driver output
Motor current

ATF block
RF ATF output
ATF SYNC output
ATF select circuit
ATF gate allay

Signal processor block
Data & clock to D/A
Data & clock to A/D
All clocks

Digital output block
Digital output PB

Panel control block
Panel control block
Transfer between panel and system control
Panel control reset

Analog block
Input amplifier
Output amplifier
Muting circuit
A/D converter
D/A converter

ABOUT THE ERROR RATE

If the error rate is normal, it can be judged that everything up to signal processing, meaning the operation of the RF head mechanism, is normal.
Thus, when there is a problem with playback, if the error is normal, it can be assumed that the origin of the problem is in the analog system.

ABOUT THE LEVEL METER

Just as for the error rate, if the level meter is operating normally, it indicates that the signal is reaching signal processing.
In other words, if there is no problem with the level meter during playback, it indicates that the head and the RF are outputting the signal.
In addition, if there is no problem with the level meter during recording, it indicates that the analog system (input amplifier and AD) is functioning normally.

ERROR DISPLAY AND PROBLEM LOCATION

Display procedure
Simultaneously press the counter mode key, the counter reset key, and the pause key. The various internal data will be indicated in the counter section of the fluorescent lamp display.

There are four types of data as shown below; the data indicated will change each time the counter mode key is pressed.

① Total error rate for head A and head B.	“A” and “B” will light up in the repeat indication of the fluorescent lamp display.
② Error rate for head A	“A” will light up in the repeat indication of the fluorescent lamp display.
③ Internal code for microcomputer processing	
④ Error codes for system control (left) and mechanism control (right) (Refer to the next page.)	“E” will light up in the farthest left digit of the counter.

To return to the normal display mode, press the counter reset key.
Note that the error codes will be cleared when the tray is opened.

■ ERROR CODE TABLE

Error code (Note. 1)	System control error code		Mechanism control error code	
	Processing (Note 2)	Contents	Processing (Note 2)	Contents
1	Test operation	R3CP clock malfunction	Unload	Mechanism mode switching lock
2	Test operation	HSW clock malfunction	Unload	Tape loading lock
3	Transmission omitted	Faulty transmission of the mechanism control	Unload	Capstan unlock
4	Unload	Still protection during operation	Unload	Cylinder unlock
5	Unload	Broken tape	Unload	Reel unlock
6	Unload	Faulty transmission of SP1	Unload	Sum of reel cycles cannot be measured.
7			Unload	In-cassette rewind time exceeded.
8			Unload	Slack tape-up time exceeded.
9			Unload	Tape jamming (Supply side)
A			Unload	Tape jamming (Take-up side)
B (–)			Unload	Gear does not engage.
C			Tray stop	Initial tray setting not possible.
O		—		No error
FF (blank)		No error		—

Note 1: Display mode

E	X1	X2
---	----	----

E: Indicates that mode is the error rate display mode.

X1: System control error code

X2: Mechanism control error code

Note 2: Processing when an error occurs

Test operation:

Internal clock of the system control temporarily connects for operation.

Transmission omitted:

Transmission processing stopped.

Unload:

Tape is unloaded.

■ 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.

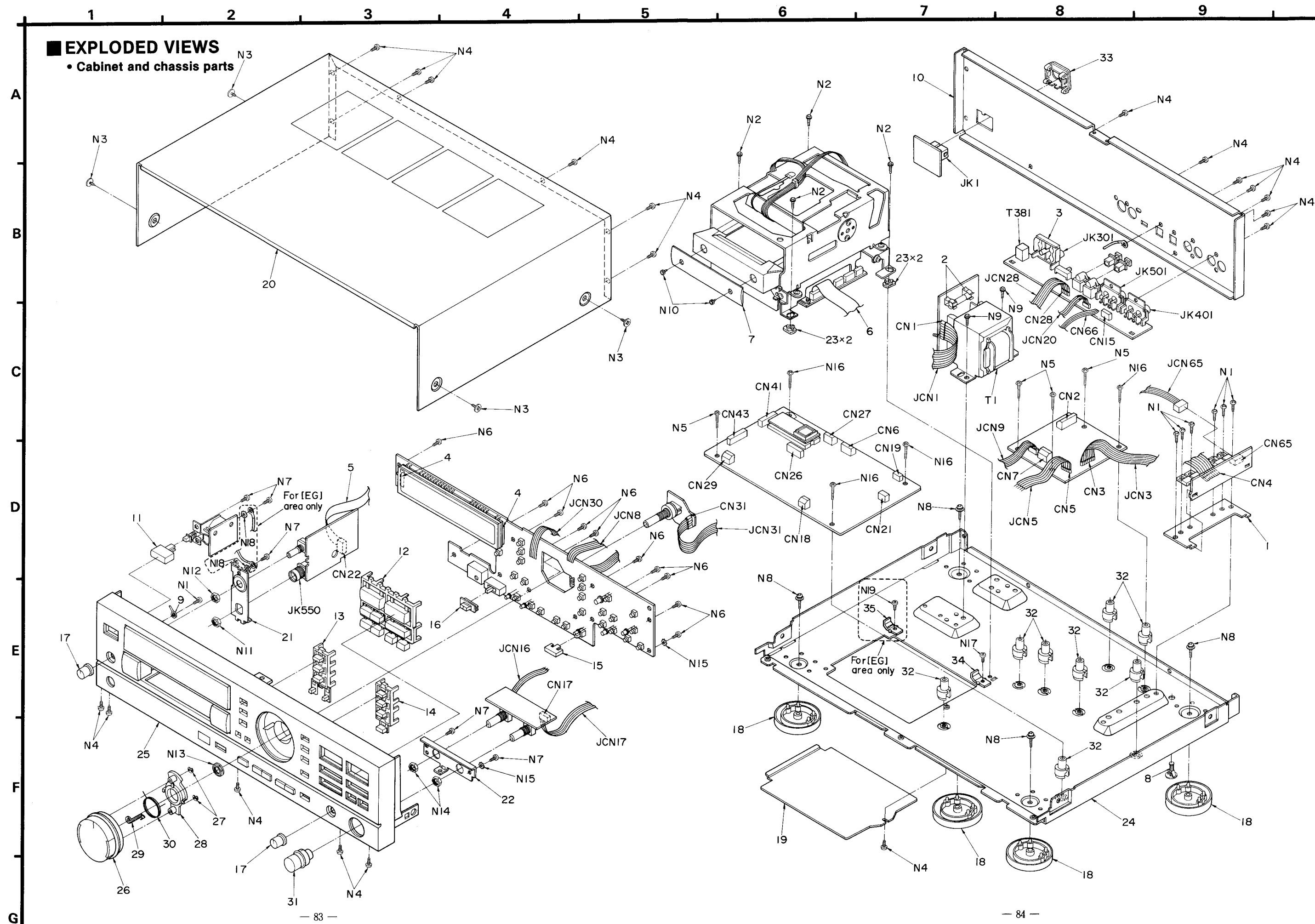
Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT (S)		IC602	AN6873S	IC, INVERTER	
				IC603	MN74HC04S	IC, INVERTER	
						IC PROTECTOR (S)	
IC11	AN7812F	IC, REGULATOR		ICP11, 12	RSFMA16W-U	IC PROTECTOR	
IC12	AN7805F	IC, REGULATOR				TRANSISTOR (S)	
IC13	AN79M20F	IC, REGULATOR					
IC14	AN79L20	IC, REGULATOR					
IC15	M5F78M12L723	IC, REGULATOR					
IC16	M5F79M12L723	IC, REGULATOR					
IC101	AN7030SE2	IC, RF AMP		Q102-105	UN5216-Q	TRANSISTOR	
IC102	AN7035SCE2	IC, PLAYBACK PLL		Q106, 107	2SC3937TW	TRANSISTOR	
IC201	MN6742SDR	IC, SERVO PROCESSOR		Q109	UN5216-Q	TRANSISTOR	
IC202	MN53020SDQ	IC, ATF		Q201	2SB956R	TRANSISTOR	
IC203	AN8320NFA	IC, LINEAR SERVO		Q271	2SD1280STW	TRANSISTOR	
IC204, 205	AN3841SR	IC, MOTOR DRIVE		Q272	DTA123JKTW	TRANSISTOR	
IC206	M5228FPE2	IC, ANALOG SW.		Q274	2SB709RTW	TRANSISTOR	
IC207	MN74HC04SE2	IC, INVERTER		Q275	DTC124EKTW	TRANSISTOR	
IC208	MN4066BS-T2	IC, ANALOG SW.		Q276	DTB113ZKTW	TRANSISTOR	
IC209	AN78L05ME2	IC, REGULATOR		Q277	DTA114EKTW	TRANSISTOR	
IC271	MN17541SDN2	IC, MECHANISM CONTROL		Q301	XN1212TW	TRANSISTOR	
IC272	AN6607NSE2	IC, MOTOR DRIVE		Q311-313	2SC3315CTA	TRANSISTOR	
IC273	AN1339SE2	IC, VOLTAGE CONTROL		Q314, 315	XN1112TW	TRANSISTOR	
IC274	TA7291S	IC, TRAY MOTOR CONTROL		Q351	XN1212TW	TRANSISTOR	
IC275	TC4S81FTX	IC, AND GATE		Q352	2SA1309A-R	TRANSISTOR	
IC301	MN188161SDS4	IC, SYSTEM CONTROL		Q353	2SC1047DTA	TRANSISTOR	
IC302	MN1281R-TA	IC, RESET GENERATOR		Q401	UN4124TA	TRANSISTOR	
IC351	MN6624	IC, DIGITAL SIGNAL PROCESSOR		Q402	XN1212TW	TRANSISTOR	
IC352	SRM20256LM10	IC, S RAM		Q501	UN4112	TRANSISTOR	
IC354	TC74HC04AP	IC, INVERTER		Q502	XN1112TW	TRANSISTOR	
IC355	T0RX174-A	IC, DIGITAL INPUT (OPTICAL)		Q503, 504	2SC3315CTA	TRANSISTOR	
IC356	T0TX174-A	IC, DIGITAL OUTPUT (OPTICAL)		Q505, 506	2SC3311A-Q	TRANSISTOR	
IC357	M5238L	IC, DIGITAL INPUT PLL		Q507	UN4124TA	TRANSISTOR	
IC358, 359	MN74HC00S	IC, NAND GATE		Q508	XN1112TW	TRANSISTOR	
IC360	MN74HC04SE2	IC, INVERTER		Q509, 510	2SC3315CTA	TRANSISTOR	
IC361	MN74HC04S	IC, INVERTER		Q511	2SC3311A-Q	TRANSISTOR	
IC362	MN74HC00S	IC, NAND GATE		Q512	2SA1309A-R	TRANSISTOR	
IC363	MN74HC253S	IC, DATA SELECTOR		Q551-554	2SD1450RTA	TRANSISTOR	
IC401, 402	M5219L	IC, BUFFER		Q601-605	UN4111	TRANSISTOR	
IC403	M5220L	IC, BUFFER				DIODE (S)	
IC405, 406	MN6460	IC, A/D CONVERTER					
IC407	AN78N05	IC, REGULATOR		D11-15	1SR35200TB	DIODE	Δ
IC411	M5219L	IC, INPUT AMP		D16	SVDS2V20	DIODE	Δ
IC501	MN6470	IC, DIF. &D/A CONVERTER		D17	1SR35200TB	DIODE	Δ
IC511-514	M5219L	IC, BUFFER		D18	SVDS2V20	DIODE	Δ
IC515, 516	M5238L	IC, BUFFER		D19	1SR35200TB	DIODE	Δ
IC551, 552	M5218L	IC, CLASS AA AMP		D21	MA4051TA	DIODE	
IC601	M50754-165FP	IC, PANEL CONTROL					

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
D201	MA701TX	DIODE		T1	RTP1L4E001	POWER TRANSFORMER	△ (E, EG)
D203	1N4606TR	DIODE		T1	RTP1L4B001	POWER TRANSFORMER	△ (EB)
D204	MA151ATW	DIODE		T381	RLZ0006-0	TRANSFORMER	△
D271	1S2473TR	DIODE					
D351	RVDSVC321	DIODE				FUSE (S)	
D381-384	MA165	DIODE					
D401	MA4033TA	DIODE		F1	XBA2C025TB0S	FUSE (250V, 250mA)	△
D501	MA165	DIODE					
D503-506	MA165	DIODE				OSCILLATOR (S)	
D507	MA4033TA	DIODE					
D509, 510	MA165	DIODE		X201	RSXC8M00J01T	OSCILLATOR	
D601-603	LN28RCPP-JF	DIODE		X202	RSXY8M00M01T	OSCILLATOR	
D605	LN31GPH-JF2	DIODE		X301	RSXY8M00M01T	OSCILLATOR	
D607	LN49YPH-JF1	DIODE		X351	RSXC16M3J01	OSCILLATOR	
D608	LN29RPH-JF1	DIODE		X352	RSXC22M5J01	OSCILLATOR	
D611-628	MA165	DIODE		X353	RSXC24M5J01	OSCILLATOR	
D630-643	MA165	DIODE		X354	RSXA28M2J01	OSCILLATOR	
				X601	RSXY6M00M01T	OSCILLATOR	
		VARIABLE RESISTOR(S)					
						DISPLAY TUBE	
VR104, 105	EVNDXAA00B53	V. R, RF REC LEVEL					
VR106	EVNDXAA00B14	V. R, RF REC LEVEL		FL601	RSL0037-F	DISPLAY TUBE	
VR107, 108	EVNDXAA00B13	V. R, SERVO ATF AMP GAIN ADJ.					
VR201	EVNDXAA00B54	V. R, PG PHASE ADJ.				SWITCH(ES)	
VR271	EVNDCAA03B54	V. R, TAPE BEGIN/END DET. ADJ.					
VR401	EVJCS1F04703	V. R, REC BALANCE		S1	ESB8249V	SW, POWER	△
VR402	EVJC20F02A24	V. R, REC LEVEL		S381	ESD1521201	SW, D-IN SELECTOR	
VR451, 452	EVNDXAA00B13	V. R, ADAC OFFSET ADJ.		S601	ESD1511301	SW, TIMER	
VR551	EVU57A022A14	V. R, HEADPHONES LEVEL		S602	ESB64801	SW, ANALOG/DIGITAL	
VR601	EVQWVS00004E	V. R, SEARCH DIAL		S611	EVQQTG05R	SW, ERASE	
				S612	EVQQTG05R	SW, END SEARCH	
		COIL (S)		S613	EVQQTG05R	SW, START ID	
				S614	EVQQTG05R	SW, SKIP ID	
L1, 2	SLQX400-D	COIL	△	S615	EVQQTG05R	SW, END	
L101	ELJFA470KF	COIL		S616	EVQQTG05R	SW, COUNTER RESET	
L104	ELJFA180KF	COIL		S617	EVQQTG05R	SW, RENUMBER	
L106	ELJFA101KF	COIL		S618	EVQQTG05R	SW, REW	
L108	RLQZB471KT-D	COIL		S619	EVQQTG05R	SW, FF	
L109, 110	ELJFA180KF	COIL		S620	EVQQTG05R	SW, FADE OUT	
L120	RLQZB101KT-D	COIL		S621	EVQQTG05R	SW, FADE IN	
L202	RLM9R001-Z	COIL		S622	EVQQTG05R	SW, AUTO PNO	
L203	RLQZB101KT-D	COIL		S623	EVQQTG05R	SW, COUNTER MODE	
L351	RLQZB2R2KT-D	COIL		S624	EVQQTG05R	SW, REVERSE SKIP	
L352	RL03B002-M	COIL		S625	EVQQTG05R	SW, FORWARD SKIP	
L381	RLQZB470KT-D	COIL		S626	EVQQTG05R	SW, PAUSE	
L382-384	EXCELD35V	COMBINATION PART		S627	EVQQTG05R	SW, REC	
L481, 482	EXCELD35V	COMBINATION PART		S628	EVQQTG05R	SW, AUTO REC MUTE	
L550-552	EXCELD35V	COMBINATION PART		S630	EVQQTG05R	SW, WRITE	
L571, 572	EXCELD35V	COMBINATION PART		S631	EVQQTG05R	SW, PLAY	
				S632	EVQQTG05R	SW, STOP	
		TRANSFORMER (S)		S633	EVQQTG05R	SW, SKIP PLAY CANCEL	
				S634	EVQQTG05R	SW, MUSIC SCAN	

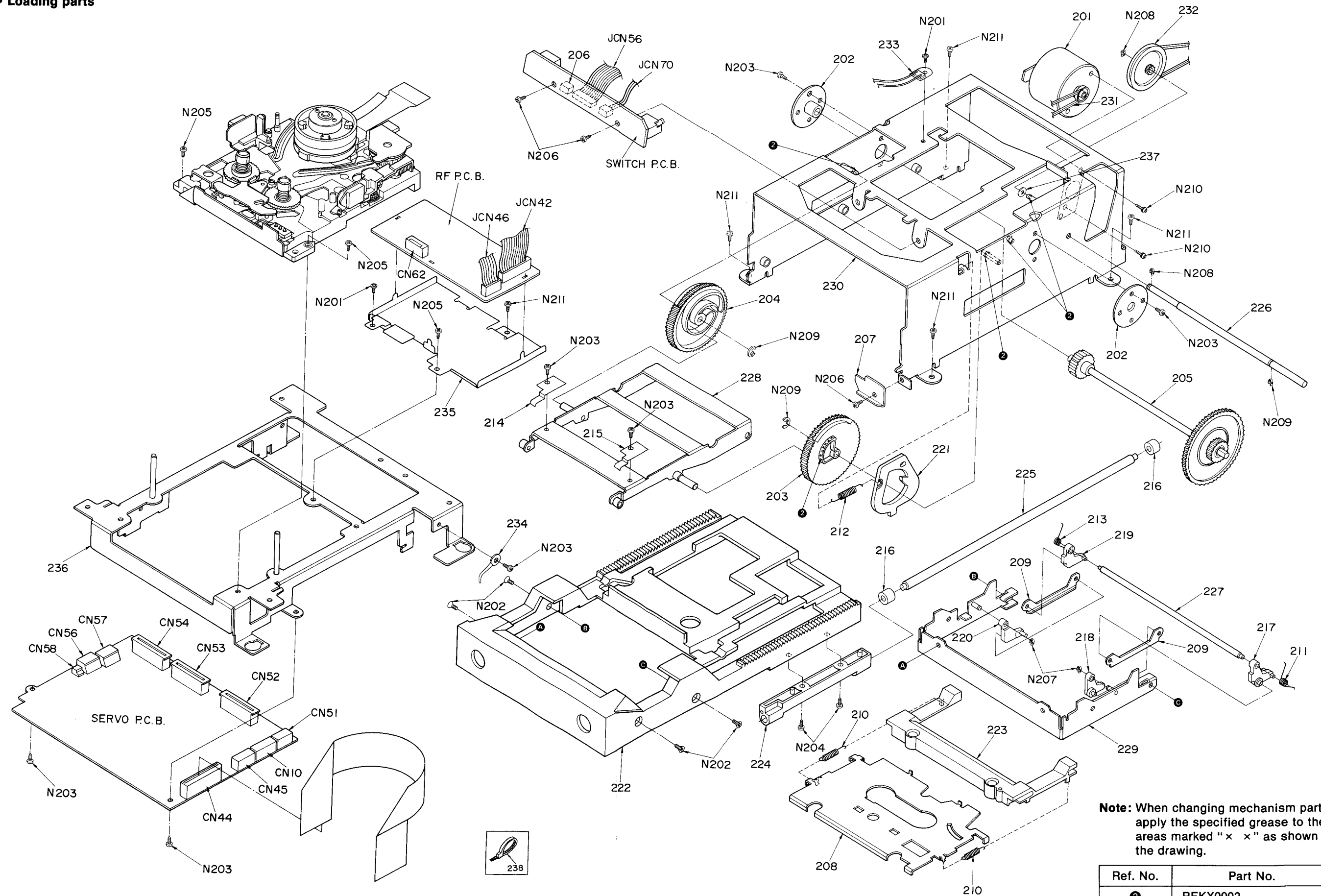
Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
S635	EVQQTG05R	SW, OPEN/CLOSE		JCN65	REZ0142A	CONNECTOR ASS' Y(3P)	
S701	EVQWR4002	SW, TAPE HOLE DET.		JCN70	REZ0138A-1	CONNECTOR ASS' Y(2P)	
S702	EVQWXM001	SW, LOAD DET.					
S703	EVQWXM001	SW, MODE DET.				RELAY(S)	
S751, 752	SSPD18-1	SW, LEAF (OPEN/CLOSE)					
				RLY501	AG80239	RELAY	
		CONNECTOR(S)					
						REMOTE CONTROL SENSOR	
CN1	RHR197ZA	CONNECTOR (10P)					
CN2	SJSD1005	CONNECTOR (10P)		RM601	SVIHCMD08N	REMOTE CONTROL SENSOR	
CN3, 4	RHR197ZA	CONNECTOR (10P)					
CN5	RHR193ZA	CONNECTOR (6P)				JACK(S)	
CN6, 7	RJS6T4ZA	CONNECTOR (6P)					
CN10	RJP6G27ZA	CONNECTOR (6P)		JK1	SJS9231B	AC INLET	△
CN15	RJP4G27ZA	CONNECTOR (4P)		JK301	SJF3057-7A-1	COAXIAL D-IN/OUT	
CN17	RHR191ZA	CONNECTOR (4P)		JK401	SJFD4-1	LINE IN	
CN18	RJS4T4ZA	CONNECTOR (4P)		JK501	SJFD4-1	LINE OUT	
CN19	RJP4G27ZA	CONNECTOR (4P)		JK550	SJJD19	HEADPHONE	
CN21, 22	RJS6Q8ZA	CONNECTOR (6P)					
CN26	RJP8G27ZA	CONNECTOR (8P)					
CN27	RJS5T4ZA	CONNECTOR (5P)					
CN28	RHR192ZA	CONNECTOR (5P)					
CN29	RJS5T4ZA	CONNECTOR (5P)					
CN31	RHR192ZA	CONNECTOR (5P)					
CN41	RJP10G27ZA	CONNECTOR (10P)					
CN43, 44	SJSD1721	CONNECTOR (17P)					
CN45	RJP5G27ZA	CONNECTOR (5P)					
CN51	RJP3G27ZA	CONNECTOR (3P)					
CN52-54	RJU051W015	CONNECTOR (15P)					
CN56	RJP4G28ZA	CONNECTOR (4P)					
CN57	RJP6G28ZA	CONNECTOR (6P)					
CN58	RJT036W002	CONNECTOR (2P)					
CN62	RJS7Q11ZA	CONNECTOR (7P)					
CN65	RHR190ZA	CONNECTOR (3P)					
CN66	RJS3T4ZA	CONNECTOR (3P)					
		CONNECTOR ASS' Y					
JCN1	REZ0140A-1	CONNECTOR ASS' Y(10P)					
JCN3	REZ0120A	CONNECTOR ASS' Y(10P)					
JCN5	REZ0122A	CONNECTOR ASS' Y(6P)					
JCN8	REZ0133A	CONNECTOR ASS' Y(6P)					
JCN9	REZ0121A	CONNECTOR ASS' Y(6P)					
JCN16	REZ0134A	CONNECTOR ASS' Y(4P)					
JCN17	REZ0131A	CONNECTOR ASS' Y(4P)					
JCN20	REZ0119A	CONNECTOR ASS' Y(4P)					
JCN28	REZ0118A	CONNECTOR ASS' Y(5P)					
JCN30	REZ0132A	CONNECTOR ASS' Y(5P)					
JCN31	REZ0180A	CONNECTOR ASS' Y(5P)					
JCN42	REZ0125A	CONNECTOR ASS' Y(10P)					
JCN46	REZ0126A	CONNECTOR ASS' Y(5P)					
JCN56	REZ0127A	CONNECTOR ASS' Y(6P)					

EXPLODED VIEWS

• Cabinet and chassis parts



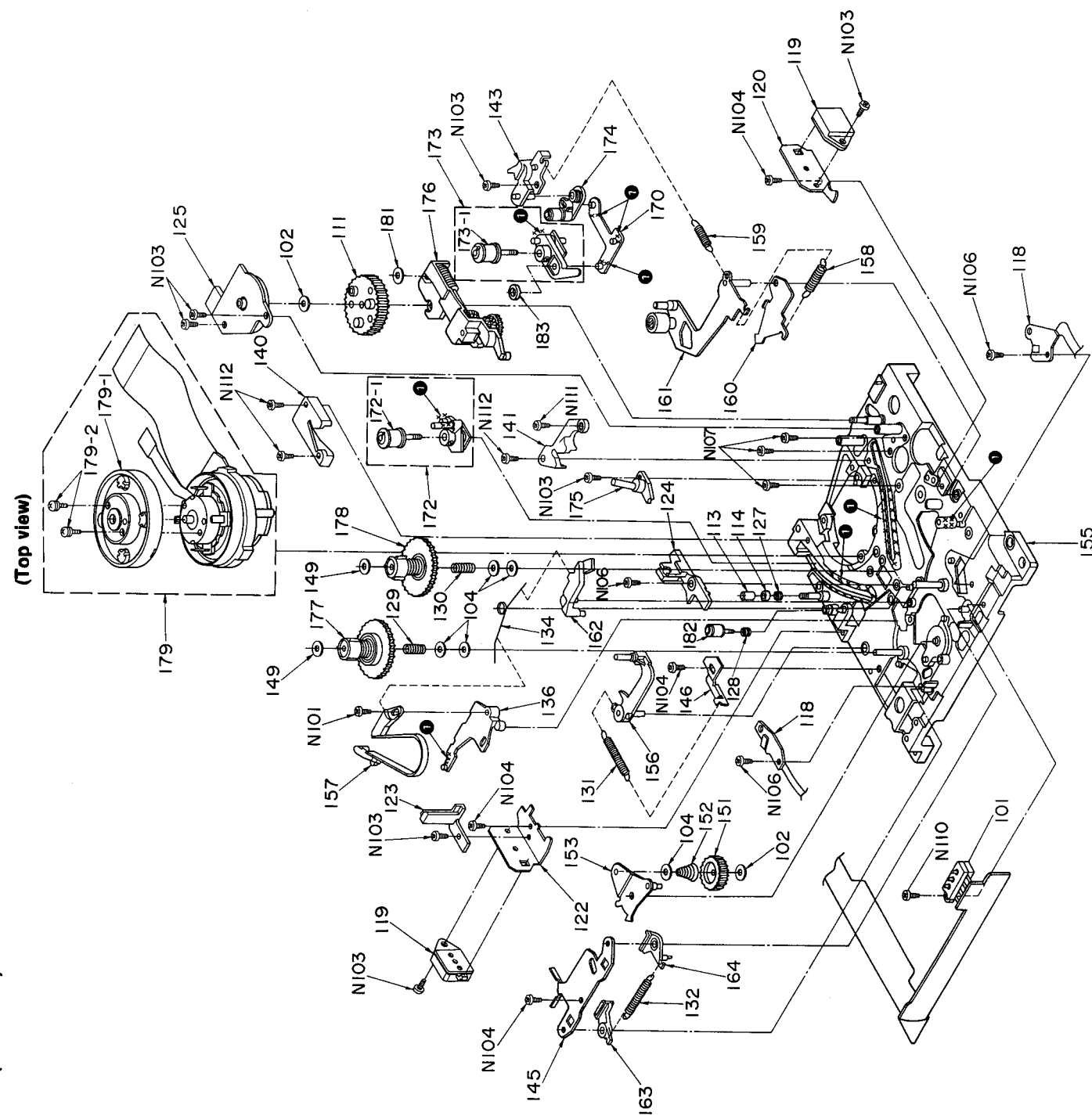
• Loading parts



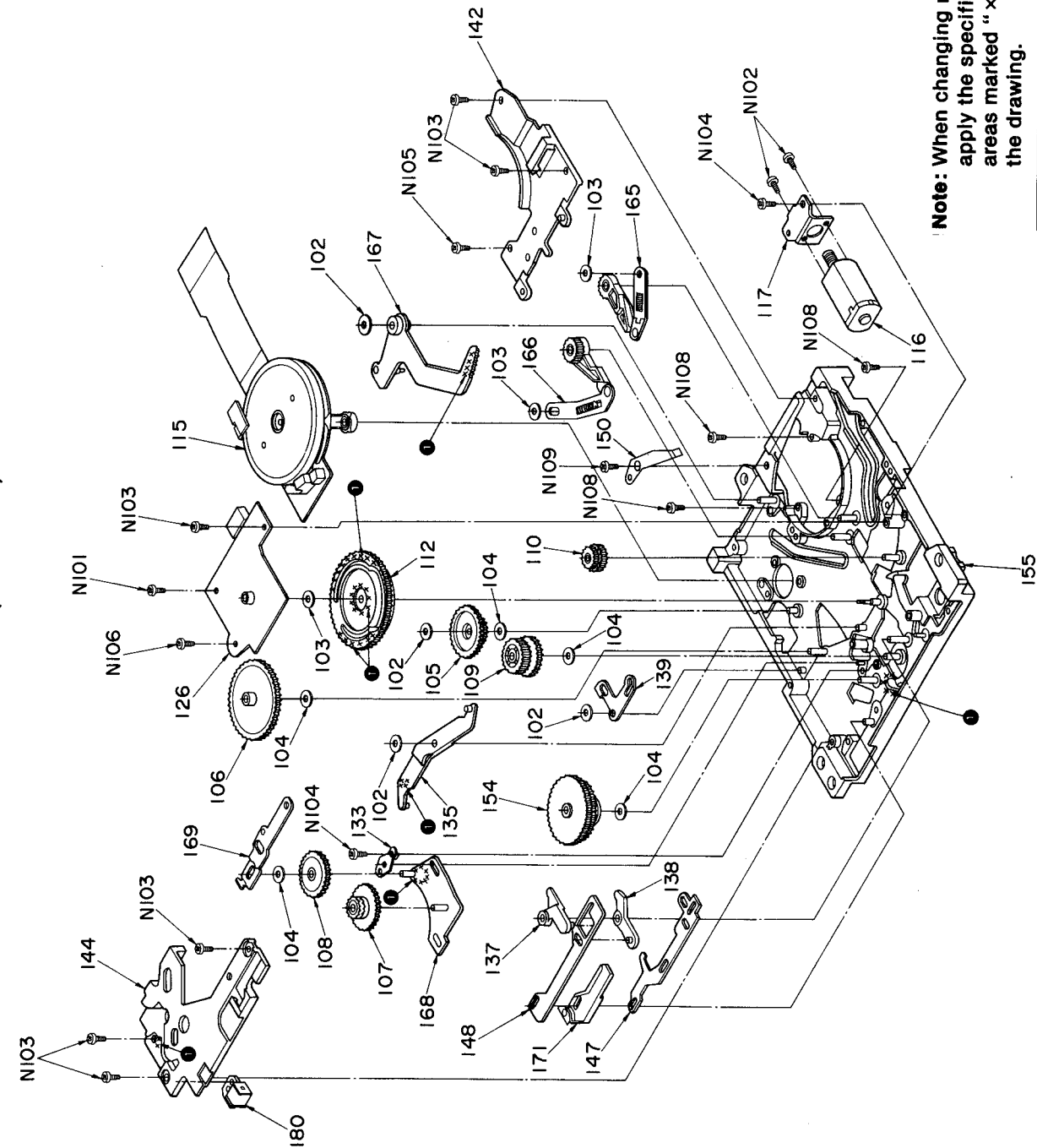
Note: When changing mechanism parts, apply the specified grease to the areas marked "x x" as shown in the drawing.

Ref. No.	Part No.
2	RFKX0002

• Mechanism parts (RAA1001)



(Bottom view)



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

Ref. No.	Part No.
1	PZZ0L05

■ 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.
* "(K)" mark parts are used for black type only, while "(A)" mark parts are used for gold type only.
* Parts other than "(K)" and "(A)" marked are used for all color types.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS					
1	RM0030	RADIATOR		31	SBN1232-7A	KNOB, REC LEVEL	(A)
2	SJT347	FUSE HOLDER		32	SHE185-1	P. C. B. SUPPORT	
3	SMN2080	EARTH PLATE		33	SJS9231A	AC INLET COVER	
4	RMA0202	FL HOLDER		34	RMC0117	EARTH PLATE	
5	REZ0136A	CONNECTOR		35	RMC0117	EARTH PLATE	(EG)
6	REZ0137A	CONNECTOR				SCREWS	
7	RGK0165-K	TRAY ORNAMENT	(K)	N1	XTB3+8J	SCREW	
7	RGK0165-A	TRAY ORNAMENT	(A)	N2	SHDD4-1	SCREW	
8	RGQ0045	SPACER		N3	SNE2095-5	SCREW	(K)
9	SHR330	SPACER		N3	SNE2095-4	SCREW	(A)
10	RFKHVDA10EK	REAR PANEL ASS'Y	(E, EG)	N4	XTBS3+8JFZ1	SCREW	
10	RFKHVDA10EBK	REAR PANEL ASS'Y	(EB)	N5	XTB3+16JFR	SCREW	
11	RGU0030	BUTTON, POWER	(K)	N6	XTB3+10GFR	SCREW	
11	RGU0030-A	BUTTON, POWER	(A)	N7	XTB3+8GFR	SCREW	
12	RGU0235-K	BUTTON, OPERATION A	(K)	N8	XTV3+6G	SCREW	
12	RGU0235-A	BUTTON, OPERATION A	(A)	N9	XTW3+6T	SCREW	
13	RGU0236	BUTTON, OPERATION B	(K)	N10	XVE3A4FP	SCREW	(K)
13	RGU0236-A	BUTTON, OPERATION B	(A)	N10	XVE3A4FN	SCREW	(A)
14	RGU0237	BUTTON, OPERATION C	(K)	N11	XNS12	NUT	
14	RGU0237-A	BUTTON, OPERATION C	(A)	N12	XNS7S	NUT	
15	RGU0238	BUTTON, SWITCH	(K)	N13	XNS8S	NUT	
15	RGU0238-A	BUTTON, SWITCH	(A)	N14	XNS9	NUT	
16	RGV0033	KNOB, TIMER SWITCH	(K)	N15	XWC3B	WASHER	
16	RGV0033-A	KNOB, TIMER SWITCH	(A)	N16	XYA3+CJ16FR	SCREW	
17	RGW0055	KNOB, BALANCE/H. P. LEVEL	(K)	N17	XTB3+6F	SCREW	
17	RGW0055-A	KNOB, BALANCE/H. P. LEVEL	(A)	N18	XWC3B	WASHER	(EG)
18	RKA0009-1	FOOT	(K)	N19	XTB3+6F	SCREW	(EG)
18	RKA0009-H	FOOT	(A)			MECHANISM PARTS	
19	RKF0089	HOLDER (SERVO P. C. B.)					
20	RKM0076-K	CABINET	(K)	101	EVQWR4002	CASSETTE SW.	
20	RKM0076-A	CABINET	(A)	102	QBW2008	WASHER	
21	RMA0192	HOLDER (HEADPHONES)		103	QBW2030	WASHER	
22	RMA0193	HOLDER (BALANCE/REC LEVEL)		104	QBW2059	WASHER	
23	RMG0134	MECHANISM SUPPORT		105	RDG0066-1	MAIN GEAR A	
24	RMK0068-2	CHASSIS		106	RDG0067	MAIN GEAR B	
25	RFKGVDA10PPK	FRONT PANEL ASS'Y	(K)	107	RDG0068	IDLER GEAR (P)	
25	RFKGVDA10EA	FRONT PANEL ASS'Y	(A)	108	RDG0069	IDLER GEAR (F)	
26	RFKNVDA10EK	SHUTTLE KNOB ASS'Y	(K)	109	RDG0070	COUNTER GEAR	
26	RFKNVDA10EA	SHUTTLE KNOB ASS'Y	(A)	110	RDG0073-1	MODE REPEATING GEAR	
27	CSTW-2	RING		111	RDK0006-1	LOAD CAM	
28	SHRD202	SHUTTLE KNOB HOLDER		112	RDK0007-1	MODE CAM	
29	SHR9451	SPACER		113	RDPO020	FIXED POST	
30	SJSD162-1	SPRING		114	RDPO021	FIXED POST FLANGE	
31	SBN1232-7	KNOB, REC LEVEL	(K)	115	REM0001	CAPSTAN UNIT	

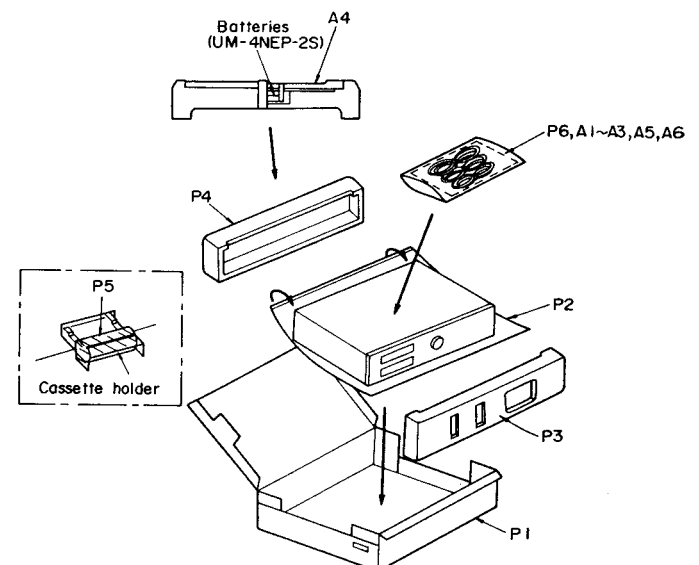
Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
116	REM0009	MODE MOTOR ASS'Y		169	RXL0058	LEVER, P. F. SELECTION	
117	RMN0028	HOLDER, MODE MOTOR		170	RXM0018	GUIDE LINK ASS'Y	
118	REQ0012	INTERFACE P. C. B.		171	RXM0019	PLUNGER LINK ASS'Y	
119	REQ0014	BEGIN/END DET. SENSOR ASS'Y		172	RXP0016-2	S. POST ROLLER ASS'Y	
120	RMN0030	BEGIN DET. ANGLE		172-1	RXP0008	POST ROLLER	
122	RMN0029	END DET. ANGLE		173	RXP0017-1	T. POST ROLLER ASS'Y	
123	RMQ0059	LEAD OPENER		173-1	RXP0008	POST ROLLER	
124	REQ0018	BEGIN/END DET. LED ASS'Y		174	RXP0020-1	T. GUIDE ROLLER	
125	EVQWXM001	LOAD SW. ASS'Y		175	RXQ0057	T. INCLINED BASE ASS'Y	
126	EVQWXM001	MODE SW. ASS'Y		176	RXQ0079-1	LOAD HOLDER ASS'Y	
127	RMB0061	SPRING, FIXED POST		177	RXR0006	S. REEL ASS'Y	
128	RMB0063	SPRING, GUIDE ROLLER		178	RXR0007	T. REEL ASS'Y	
129	RMB0071	SPRING, S. REEL		179	VEG0752-1	CYLINDER UNIT	
130	RMB0073-1	SPRING, T. REEL		179-1	VEH0460	UPPER CYLINDER	
131	RMB0074	SPRING, TENSION		179-2	VHD0593	SCREW	
132	RMB0075	SPRING, BRAKE		180	RSJ0006	PLUNGER	
133	RMC0034	ANGLE		181	QBW2081A	WASHER	
134	RMED037-1	SPRING, BT		182	RXP0027	GUIDE ROLLER	
135	RML0088	LEVER, PINCH		183	RHW12009	GUIDE WASHER	
136	RML0090	LEVER, TENSION				SCREWS	
137	RML0094	LEVER, S. BRAKE					
138	RML0095	LEVER, T. BRAKE					
139	RML0103	LEVER, LOAD SELECT		N101	QH1371	SCREW	
140	RMQ0052	S. STOPPER		N102	XQN14+C16	SCREW	
141	RMQ0053	T. STOPPER		N103	RHQ0014	SCREW	
142	RMQ0055	LOAD GUIDE HOLDER		N104	RHQ0007	SCREW	
143	RMQ0056-1	GUIDE ARM STOPPER		N105	RHQ0015	SCREW	
144	RMQ0058	MODE GUIDE PLATE		N106	RHQ0016	SCREW	
145	RMQ0062	IDLER GUIDE		N107	RHQ0017	SCREW	
146	RMQ0063	TENSION SPRING HOOK		N108	XQN16+A45T	SCREW	
147	RMQ0064-1	S. BRAKE DRIVE PLATE		N109	XQN2+A2	SCREW	
148	RMQ0065-1	T. BRAKE DRIVE PLATE		N110	RHQ0018	SCREW	
149	RNW1722A	WASHER		N111	RHQ0019	SCREW	
150	RUS7402A	EARTH ANGLE		N112	RHQ0020	SCREW	
151	RDG0071	IDLER GEAR				LOADING PARTS	
152	RMB0069-1	IDLER SPRING					
153	RXL0051	IDLER ARM ASS'Y					
154	RXG0011-2	DRIVE GEAR		201	RFKPVDA10-K	MOTOR ASS'Y	
155	RXK0019	CHASSIS UNIT		202	RDB0032	HOLDER, GEAR SHAFT	
156	RXL0035-4	TENSION ARM ASS'Y		203	RDG0120-2	MAIN GEAR	
157	RXL0036	TENSION BAND ASS'Y		204	RDG0122-1	MAIN GEAR	
158	RMB0066	PIN PRESSURE SPRING		205	RFKNVDA10BK	GEAR SHAFT ASS'Y	
159	RMB0067	PINCH ROLLER SPRING		206	RJP2G272A	CONNECTOR (CN72)	
160	RMMD036	PIN PRESSURE LINK		207	RMA0194	SHAFT FRAME	
161	RXL0046	PINCH ARM ASS'Y		208	RMA0197	ANGLE, CASSETTE HOLDER	
162	RXL0048	BT LEVER ASS'Y		209	RMA0200	HOLDER ARM	
163	RXL0049	S. BRAKE ASS'Y		210	RMB0110	SPRING	
164	RXL0050	T. BRAKE ASS'Y		211	RMB0111	SPRING	
165	RXL0052-1	S. LOAD ARM		212	RMB0131	SPRING	
166	RXL0054-1	T. LOAD ARM		213	RMB0144	SPRING	
167	RXL0056-2	LOAD LEVER		214	RMC0050	ANGLE	
168	RXL0057	P. F. IDLER ASS'Y		215	RMC0051	ANGLE	

Ref. No.	Part No.	Part Name & Description	Remarks
216	RMG0090	RUBBER	
217	RML0139-1	HOLDER, SHAFT	
218	RML0140-1	HOLDER	
219	RML0141-1	HOLDER, SHAFT	
220	RML0142-1	HOLDER	
221	RML0150-1	HOLDER, MAIN GEAR	
222	RMRO206	TRAY	
223	RMRO207	CASSETTE HOLDER	
224	RMRO209-1	SHAFT ANGLE	
225	RMS0158-1	SHAFT	
226	RMS0160	SHAFT	
227	RMS0165	SHAFT	
228	RXA0046	SUB FRAME	
229	RXA0047	CASSETTE HOLDER	
230	RXX0059	FRAME	
231	SMQ20025	BELT	
232	SMQ40032	PULLEY GEAR	
233	EYH-S78A4	DEW SENSOR	
234	SHE36-3	EARTH TERMINAL	
235	RSC0066	SHIELD PLATE	
236	RXA0060	MECHANISM FRAME	
237	RMX0044	WASHER	
		SCREWS	
N201	XSN2+3	SCREW	
N202	XSS26+4FZ	SCREW	
N203	XTB3+6J	SCREW	
N204	XTN3+10G	SCREW	
N205	XTN3+6F	SCREW	
N207	XUC15FT	WASHER	
N208	XUC2FT	WASHER	
N209	XUC3FT	WASHER	
N210	XYN26+C33	SCREW	
N211	XTB3+6F	SCREW	
		PACKING MATERIAL	
P1	RPG0815	PACKING CASE	(K)
P1	RPG0816	PACKING CASE	(A)
P2	RPF0017	PROTECTION BAG (UNIT)	
P3	RPN0221	PAD (FRONT)	
P4	RPN0222-1	PAD (BACK)	
P5	RPH0065	TRAY COVER	
P6	XZB24X33C04	PROTECTION BAG (F. B.)	
		ACCESSORIES	
A1	RFKSYDA10EK	INST. MANUAL ASS'Y	(E)
A1	RQT0826-D	INSTRUCTION MANUAL	(EG)
A1	RQT0825-B	INSTRUCTION MANUAL	(EB)
A2	SJA187	AC POWER SUPPLY CORD	△ (E, EG)

Ref. No.	Part No.	Part Name & Description	Remarks
A2	SJA193	AC POWER SUPPLY CORD	△ (EB)
A3	SJP2249-4	STEREO CONNECTION CABLE	
A4	RAK-SV303W	REMOTE CONTROL TRANSMITTER	
A4-1	RKK0020-K	BATTERY COVER	
A5	RQA0013	WARRANTY CARD	
A6	RQCB0169	SERVICENTER LIST	
		<PRINTED CIRCUIT BOARD ASS'Y>	
PCB1	REPO418C	INPUT/OUTPUT TERMINAL P. C. B.	(NLA) (E, EB)
	REPO418D	POWER SUPPLY(2) P. C. B.	(NLA) (EG)
		AC IN P. C. B.	(NLA)
		POWER SWITCH P. C. B.	(NLA)
		POWER TRANSFORMER P. C. B.	(NLA)
		POWER SUPPLY(1) P. C. B.	(NLA)
PCB2	REPO419A-1	MAIN P. C. B.	(NLA)
PCB3	REPO420A-1	BALANCE/REC LEVEL P. C. B.	(NLA)
		OPERATION P. C. B.	(NLA)
		SEARCH P. C. B.	(NLA)
		HEADPHONES JACK P. C. B.	(NLA)
PCB4	REPO417A	RF P. C. B., SERVO P. C. B.	(NLA)
PCB4-1	RFBV3700-N	RF P. C. B. ASS'Y	(NLA)
PCB4-2	RFBV3700-0	SERVO P. C. B. ASS'Y	(NLA)
PCB5	REPO421A	TRAY MOTOR P. C. B.	(NLA)
		SWITCH P. C. B.	(NLA)
PCB6	REQ0012	CONNECTOR P. C. B.	(NLA)
		<MECHANISM ASS'Y>	
MECH1	RAA1001	MECHANISM UNIT	(NLA)

Note: Printed circuit board assembly and mechanism assembly with mark (NLA) is no longer available after discontinuation of the product.

PACKING



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
			R205	ERJ6GEYJ683V	1/10W 68K	R286	ERJ6GEYJ103V	1/10W 10K
			R206	ERJ6GEYJ684V	1/10W 680K	R287	ERJ6GEYJ684V	1/10W 680K
			R207	ERJ6GEYJ472V	1/10W 4.7K	R289, 290	ERJ6GEYJ473V	1/10W 47K
			R208	ERJ6GEYJ683V	1/10W 68K	R292, 293	ERJ6GEYJ563V	1/10W 56K
		RESISTORS	R209	ERJ6GEYJ153V	1/10W 15K	R294-296	ERJ6GEYJ473V	1/10W 47K
			R210	ERJ6GEYJ102V	1/10W 1K	R297	ERJ6GEYJ220	1/10W 22
R11	ERDS2TJ392T	1/4W 3.9K	R212	ERJ6GEYJ105	1/10W 1M	R298	ERJ6GEYJ473V	1/10W 47K
R12	ERD25FJ102	1/4W 1K Δ	R213	ERJ6GEYJ274V	1/10W 270K	R301-312	ERJ6GEYJ332V	1/10W 3.3K
R13, 14	ERG1ANJP560S	1W 56	R214	ERJ6GEYJ682V	1/10W 6.8K	R313	ERJ6GEYJ331V	1/10W 330
R16	ERD25FVJ222T	1/4W 2.2K Δ	R215	ERJ6GEYJ184V	1/10W 180K	R314	ERJ6GEYJ272V	1/10W 2.7K
R101, 102	ERJ6GEYJ221V	1/10W 220	R216	ERJ6GEYJ101V	1/10W 100	R315-320	ERJ6GEYJ561V	1/10W 560
R103, 104	ERJ6GEYJ681V	1/10W 680	R217, 218	ERJ6GEYJ472V	1/10W 4.7K	R321	ERJ6GEYJ331V	1/10W 330
R112, 113	ERJ6GEYJ332V	1/10W 3.3K	R219, 220	ERJ6GEYJ103V	1/10W 10K	R322	ERJ6GEYJ561V	1/10W 560
R115	ERJ6GEYJ332V	1/10W 3.3K	R221, 222	ERJ6GEYJ474V	1/10W 470K	R323	ERJ6GEYJ473V	1/10W 47K
R117	ERJ6GEYJ102V	1/10W 1K	R223, 224	ERJ6GEYJ222V	1/10W 2.2K	R324-326	ERJ6GEYJ332V	1/10W 3.3K
R118	ERJ6GEYJ471V	1/10W 470	R225, 226	ERJ6GEYJ184V	1/10W 180K	R331-333	ERJ6GEYJ105	1/10W 1M
R123	ERJ6GEYJ822V	1/10W 8.2K	R227	ERJ6GEYJ102V	1/10W 1K	R334-336	ERJ6GEYJ561V	1/10W 560
R124	ERJ6GEYJ152V	1/10W 1.5K	R228	ERJ6GEYJ222V	1/10W 2.2K	R337-339	ERJ6GEYJ102V	1/10W 1K
R126	ERJ6GEYJ152V	1/10W 1.5K	R229	ERJ6GEYJ103V	1/10W 10K	R340-345	ERJ6GEYJ101V	1/10W 100
R128	ERJ6GEYJ822V	1/10W 8.2K	R230	ERJ6GEYJ681V	1/10W 680	R351, 352	RRJ6GCAD822T	1/10W 8.2K
R131	ERJ6GEYJ331V	1/10W 330	R231	ERJ6GEYJ821V	1/10W 820	R354	RRJ6GCAD822T	1/10W 8.2K
R132, 133	ERJ6GEYJ221V	1/10W 220	R232	ERJ6GEYJ333V	1/10W 33K	R355	ERJ6GEYJ102V	1/10W 1K
R134	ERJ6GEYJ102V	1/10W 1K	R233	ERJ6GEYJ393V	1/10W 39K	R356-358	ERJ6GEYJ103V	1/10W 10K
R135, 136	ERJ6GEYJ471V	1/10W 470	R234	ERJ6GEYJ333V	1/10W 33K	R359	ERJ6GEYJ102V	1/10W 1K
R150	ERJ6GEYJ102V	1/10W 1K	R235	ERJ6GEYJ473V	1/10W 47K	R360	RRJ6GCAD183T	1/10W 18K
R151, 152	ERJ6GEYJ471V	1/10W 470	R236	ERJ6GEYJ332V	1/10W 3.3K	R361	RRJ6GCAD153T	1/10W 15K
R153	ERJ6GEYJ223V	1/10W 22K	R237	ERX12SJR33E	1/2W 0.33 Δ	R362	ERJ6GEYJ561V	1/10W 560
R154, 155	ERJ6GEYJ471V	1/10W 470	R240	ERJ6GEYJ151V	1/10W 150	R363	ERJ6GEYJ103V	1/10W 10K
R156, 157	ERJ6GEYJ222V	1/10W 2.2K	R241	ERJ6GEYJ333V	1/10W 33K	R364	ERJ6GEYJ105	1/10W 1M
R158	ERJ6GEYJ102V	1/10W 1K	R242	ERJ6GEYJ103V	1/10W 10K	R365	ERJ6GEYJ331V	1/10W 330
R159	ERJ6GEYJ223V	1/10W 22K	R243	ERJ6GEYJ473V	1/10W 47K	R366	RRJ6GCAD683T	1/10W 68K
R160	ERJ6GEYJ221V	1/10W 220	R244	ERJ6GEYJ102V	1/10W 1K	R367	ERJ6GEYJ331V	1/10W 330
R162	ERJ6GEYJ472V	1/10W 4.7K	R245	ERX12SJR33E	1/2W 0.33 Δ	R368	ERJ6GEYJ561V	1/10W 560
R164, 165	ERJ6GEYJ472V	1/10W 4.7K	R247	ERJ6GEYJ331V	1/10W 330	R369	ERJ6GEYJ330V	1/10W 33
R167	ERJ6GEYJ332V	1/10W 3.3K	R248	ERJ6GEYJ822V	1/10W 8.2K	R371, 372	ERJ6GEYJ473V	1/10W 47K
R168	ERJ6GEYJ102V	1/10W 1K	R249	ERJ6GEYJ472V	1/10W 4.7K	R381, 382	ERDS2TJ750	1/4W 75
R169	ERJ6GEYJ471V	1/10W 470	R250	ERJ6GEYJ153V	1/10W 15K	R383	ERDS2TJ473	1/4W 47K
R172	ERJ6GEYJ102V	1/10W 1K	R251	ERJ6GEYJ104V	1/10W 100K	R384	ERDS2TJ334	1/4W 330K
R173, 174	ERJ6GEYJ222V	1/10W 2.2K	R271, 272	ERJ6GEYJ103V	1/10W 10K	R385	ERDS2TJ822	1/4W 8.2K
R175	ERJ6GEYJ151V	1/10W 150	R273	ERJ6GEYJ681V	1/10W 680	R386	ERDS2TJ102	1/4W 1K
R176	ERJ6GEYJ104V	1/10W 100K	R274	ERSB39JR82U	1/4W 0.82	R387	ERDS2TJ331	1/4W 330
R178	ERJ6GEYJ820V	1/10W 82	R275	ERJ6GEYJ473V	1/10W 47K	R411, 412	ERDAS3J273T	1/4W 27K
R181	ERJ6GEYJ331V	1/10W 330	R277, 278	ERJ6GEYJ333V	1/10W 33K	R413, 414	ERDAS3J472T	1/4W 4.7K
R193-195	ERJ6GEYJ102V	1/10W 1K	R279	ERJ6GEYJ683V	1/10W 68K	R415, 416	ERDAS3J392T	1/4W 3.9K
R196	ERJ6GEYJ103V	1/10W 10K	R280	ERJ6GEYJ333V	1/10W 33K	R417-422	ERDAS3J682T	1/4W 6.8K
R197	ERJ6GEYJ102V	1/10W 1K	R281	ERJ6GEYJ332V	1/10W 3.3K	R423, 424	ERDAS3J102T	1/4W 1K
R201	ERJ6GEYJ102V	1/10W 1K	R282	ERJ6GEYJ682V	1/10W 6.8K	R431, 432	ERJ6GEYJ103V	1/10W 10K
R202, 203	ERJ6GEYJ223V	1/10W 22K	R284	ERJ6GEYJ103V	1/10W 10K	R435-440	ERJ6GEYJ103V	1/10W 10K
R204	ERJ6GEYJ103V	1/10W 10K	R285	ERJ6GEYJ104V	1/10W 100K	R441, 442	ERDAS3J102T	1/4W 1K

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
R443, 444	ERJ6GEYJ103V	1/10W 10K	R612	ERDS2TJ102	1/4W 1K	C177, 178	ECUV1H101KCN	50V 100P
R445, 446	ERJ6GEYJ223V	1/10W 22K	R613-619	ERDS2TJ103	1/4W 10K	C179	ECUV1E104MBN	25V 0.1U
R447, 448	ERJ6GEYJ561V	1/10W 560	R620	ERDS2TJ471	1/4W 470	C181	ECUV1C1052FM	16V 1U
R453	ERJ6GEYJ103V	1/10W 10K	R621	ERDS2TJ105T	1/4W 1M	C185, 186	ECUV1H331KCN	50V 330P
R471, 472	ERDS2TJ474	1/4W 470K				C187	ECUV1H470JCN	50V 47P
R473-476	ERDAS3J273T	1/4W 27K			CAPACITORS	C188	ECUV1H331KCN	50V 330P
R477-480	ERDAS3J472T	1/4W 4.7K				C190	ECUV1H180JCN	50V 18P
R481, 482	ERDAS3J271T	1/4W 270K	C1	ECKWKC103PF2	400V 0.01U (E, EB) Δ	C201	ECEA0JK470	6.3V 47U
R491, 492	ERDS2TJ473	1/4W 47K	C1	ECKWNS103ZVS	400V 0.01U (EG) Δ	C202	ECUV1E104ZFN	25V 0.1U
R502	ERD25FJ331	1/4W 330 Δ	C11-18	ECKR1H103ZF5	50V 0.01U	C203, 204	ECUV1H180JCN	50V 18P
R503-506	ERJ6GEYJ102V	1/10W 1K	C19	ECKR2H682PE	500V 6800P	C205, 206	ECUV1E104ZFN	25V 0.1U
R509, 510	ERJ6GEYJ102V	1/10W 1K	C20	ECEA1EPZ332E	25V 3300U	C207	ECUV1H271KCN	50V 270P
R511, 512	ERDS2TJ331	1/4W 330	C21	ECEA1CU100	16V 10U	C208	ECUV1H221KCN	50V 220P
R515	ERJ6GEYJ101V	1/10W 100	C22	ECEA1EPZ332E	25V 3300U	C209, 210	ECUV1E104MBN	25V 0.1U
R516	ERJ6GEYJ105	1/10W 1M	C23	ECEA1CU100	16V 10U	C211	ECUV1H221KCN	50V 220P
R517, 518	ERDS2TJ102	1/4W 1K	C24	ECES1EU682G	25V 6800P	C212, 213	ECEA1CK220	16V 22U
R521-524	ERDAS3J103T	1/4W 10K	C25	ECEA1CU100	16V 10U	C214, 215	ECUV1H101KCN	50V 100P
R525-528	ERDAS3J393T	1/4W 39K	C26	ECEA1CU472E	16V 4700U	C216, 217	ECUV1C1052FM	16V 1U
R529-532	ERDAS3J332T	1/4W 3.3K	C27	ECEA1CU100	16V 10U	C218, 219	ECUV1H390KCN	50V 39P
R533-536	ERDAS3J272T	1/4W 2.7K	C28	ECEA1HJ221B	50V 220U	C220, 221	ECUV1H121KCN	50V 120P
R537-540	ERDAS3J103T	1/4W 10K	C29	ECEA1VU330	35V 33U	C222, 223	ECUV1C1052FM	16V 1U
R541, 542	ERDAS3J183T	1/4W 18K	C30, 31	ECKR1H103ZF5	50V 0.01U	C224	ECQV1H683JZ3	50V 0.68U
R543, 544	ERDAS3J392T	1/4W 3.9K	C32	ECEA1EU470	25V 47U	C225, 226	ECUV1H332MBN	50V 3300P
R545, 546	ERJ6GEYJ105	1/10W 1M	C34	ECKR1H103ZF5	50V 0.01U	C227	ECUV1E333MDN	25V 0.033U
R547, 548	ERDAS3J183T	1/4W 18K	C101, 102	ECUV1H222KBN	50V 2200P	C228	ECUV1H181KCN	50V 180P
R549, 550	ERDAS3J222T	1/4W 2.2K	C103, 104	ECUV1H471KCN	50V 470P	C229	ECEA0JK221B	6.3V 220U
R551, 552	ERDAS3J393T	1/4W 39K	C105	ECUV1H470JCN	50V 47P	C230	ECEA0JK470	6.3V 47U
R553, 554	ERDAS3G100T	1/4W 10	C107	ECUV1H222KBN	50V 2200P	C231	ECEA1AU470	10V 47U
R555, 556	ERDAS3G330T	1/4W 33	C110	ECEA0JK221B	6.3V 220U	C232	ECEA1CK220	16V 22U
R557, 558	ERDAS3G332T	1/4W 3.3K	C123	ECUV1C1052FM	16V 1U	C233	ECUV1E104ZFN	25V 0.1U
R559, 560	ERDAS3G102T	1/4W 1K	C124, 125	ECUV1H472KBN	50V 4700P	C234	ECEA1CK470	16V 47U
R561, 562	ERDAS3J271T	1/4W 270	C126, 127	ECUV1H470JCN	50V 47P	C235, 236	ECUV1E104ZFN	25V 0.1U
R563, 564	ERDS2TJ474	1/4W 470K	C129, 130	ECEA0JKS220B	6.3V 22U	C237	ECUV1C1052FM	16V 1U
R565, 566	ERDS2TJ560T	1/4W 56	C131	ECUV1H222KBN	50V 2200P	C238	ECUV1E223MBN	25V 0.022U
R567, 568	ERDS2TJ102	1/4W 1K	C150	ECUV1H471KCN	50V 470P	C239	ECUV1E683MBN	25V 0.068U
R569, 570	ERJ6GEYJ105	1/10W 1M	C151	ECUV1H222KBN	50V 2200P	C240	ECUV1E153MBN	25V 0.015U
R571, 572	ERDAS3J331T	1/4W 330	C152	ECUV1H102KBN	50V 1000P	C241	ECUV1E104MBN	25V 0.1U
R573, 574	ERDS2TJ104	1/4W 100K	C154	ECUV1H220JCN	50V 22P	C242-246	ECUV1E104ZFN	25V 0.1U
R575, 576	ERDS2TJ102	1/4W 1K	C155, 156	ECUV1H102KBN	50V 1000P	C247, 248	ECUV1E333MDN	25V 0.033U
R577, 578	ERDS2TJ103	1/4W 10K	C157	ECUV1C1052FM	16V 1U	C249	ECUV1E153MBN	25V 0.015U
R579, 580	ERDS2TJ123	1/4W 12K	C159	ECUV1H220JCN	50V 22P	C250	ECUV1E104MBN	25V 0.1U
R581, 582	ERDS2TJ104	1/4W 100K	C161	ECUV1H562KBN	50V 5600P	C251-253	ECUV1E104ZFN	25V 0.1U
R583, 584	ERDAS3G100T	1/4W 10	C163	ECUV1H562KBN	50V 5600P	C260	ECUV1E334ZFM	25V 0.33U
R585, 586	ERDAS3G330T	1/4W 33	C166	ECUV1E153MBN	25V 0.015U	C268	ECUV1C1052FM	16V 1U
R587, 588	ERDAS3G332T	1/4W 3.3K	C167	ECUV1H102KBN	50V 1000P	C269	ECUV1E103KBN	25V 0.01U
R589, 590	ERDAS3G102T	1/4W 1K	C168	ECUV1H270JCN	50V 27P	C270	ECEA0JK470	6.3V 47U
R591, 592	ERDS2EJ121	1/4W 120	C169	ECUV1H100JCN	50V 10P	C271	ECUV1E104ZFN	25V 0.1U
R593-596	ERDS2TJ222	1/4W 2.2K	C171, 172	ECUV1H680JCN	50V 68P	C272	ECUV1E223MBN	25V 0.022U
R601-604	ERDS2TJ472	1/4W 4.7K	C173	ECUV1H471KCN	50V 470P	C273	ECUV1H101KCN	50V 100P
R605	ERDS2TJ100	1/4W 10	C174	ECUV1E104MBN	25V 0.1U	C274	ECUV1E103KBN	25V 0.01U
R606-608	ERDS2TJ102	1/4W 1K	C175	ECUV1H472KBN	50V 4700P	C275	ECUV1C1052FM	16V 1U
R610, 611	ERDS2TJ471	1/4W 470	C176	ECUV1E333MDN	25V 0.033U	C276	ECUV1H221KCN	50V 220P

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
C280	ECUV1C334ZFN	16V 0.33U	C391	ECEA1H4U7	50V 4.7U	C553, 554	ECKT1H101KB	50V 100P
C301-303	ECUV1H103ZFN	50V 0.01U	C392-395	ECUV1H103ZFN	50V 0.01U	C555, 556	ECQV1H104JZ3	50V 0.1U
C311-313	ECUV1H103ZFN	50V 0.01U	C397	ECUV1H103ZFN	50V 0.01U	C561, 562	ECEA1CU220	16V 22U
C314	ECUV1H470KCN	50V 47P	C398	ECUV1H470KCN	50V 47P	C563, 564	ECEA1CN100SB	16V 10U
C315	ECUV1H103ZFN	50V 0.01U	C404, 405	ECUV1H103ZFN	50V 0.01U	C571, 572	ECHR1H102JZ3	50V 1000P
C316	ECUV1H180JCN	50V 18P	C411, 412	ECEA1CBZ330B	16V 33U	C602, 603	ECEA0JK470	6.3V 47U
C317, 318	ECUV1H470KCN	50V 47P	C413, 414	ECHR1H681JZ3	50V 680P	C604, 605	ECBT1E103ZF	25V 0.01U
C319	ECUV1H180JCN	50V 18P	C415, 416	ECHR1H182JZ3	50V 1800P	C652	ECBT1H102KB5	50V 1000P
C320-322	ECUV1H100JCN	50V 10P	C417, 418	ECHR1H101JZ3	50V 100P	C654	ECBT1H102KB5	50V 1000P
C323, 324	ECUV1H103ZFN	50V 0.01U	C419, 420	ECEA1CPZ101B	16V 100U	C655	ECEA1VK100B	35V 10U
C342	ECUV1H103ZFN	50V 0.01U	C421, 422	ECHR1H101JZ3	50V 100P	C656	ECBT1H102KB5	50V 1000P
C348, 349	ECUV1H102KBN	50V 1000P	C423, 424	ECEA1CPZ101B	16V 100U	C657	ECEA0JK470	6.3V 47U
C350	ECUV1H103ZFN	50V 0.01U	C425-427	ECUV1H103ZFN	50V 0.01U	C658	ECBT1E103ZF	25V 0.01U
C351	ECUV1E473MBN	25V 0.047U	C429, 430	ECUV1H103ZFN	50V 0.01U	C659	ECEA1VK100B	35V 10U
C352	ECUV1H820JCN	50V 82P	C431, 432	ECEA0JPZ221B	6.3V 220U	C660	ECBT1E103ZF	25V 0.01U
C353	ECUV1H471JCN	50V 470P	C433, 434	ECUV1H103ZFN	50V 0.01U	C694	ECBT1E103ZF	25V 0.01U
C354, 355	ECUV1H221JCN	50V 220P	C435, 436	ECUV1H102KBN	50V 1000P	C751	ECKW1H103ZF5	50V 0.01U
C356	ECUV1H151JCN	50V 150P	C437, 438	ECEA1H4U7	50V 4.7U			
C357	ECEA0JU330	6.3V 33U	C439-441	ECEA1CU220	16V 22U			
C358-361	ECUV1H180JCN	50V 18P	C442	ECUV1H103ZFN	50V 0.01U			
C362, 363	ECUV1H150JCN	50V 15P	C443, 444	ECEA1CU220	16V 22U			
C364	ECUV1H050CCN	50V 5P	C445, 446	ECQV1H104JZ3	50V 0.1U			
C365	ECUV1H102KBN	50V 1000P	C447-450	ECUV1H103ZFN	50V 0.01U			
C366	ECUV1H103ZFN	50V 0.01U	C451-454	ECEA0JU221	6.3V 220U			
C367, 368	ECEA0JU330	6.3V 33U	C455, 456	ECEA0JPZ221B	6.3V 220U			
C369	ECEA0JU221	6.3V 220U	C457, 458	ECUV1H221JCN	50V 220P			
C370	ECUV1H150JCN	50V 15P	C481, 482	ECHR1H102JZ3	50V 1000P			
C371	ECUV1E104ZFN	25V 0.1U	C483, 484	ECEA1CBZ330B	16V 33U			
C372	ECEA0JU330	6.3V 33U	C485, 486	ECEA1CPZ101B	16V 100U			
C373	ECUV1H103ZFN	50V 0.01U	C491, 492	ECEA1CBZ330B	16V 33U			
C374	ECEA0JU330	6.3V 33U	C493, 494	ECKR1H103ZF5	50V 0.01U			
C375	ECUV1E104ZFN	25V 0.1U	C501	ECEA0JU471	6.3V 470U			
C376	ECUV1E103KBN	25V 0.01U	C502	ECUV1E104ZFN	25V 0.1U			
C377, 378	ECUV1E223MBN	25V 0.022U	C503	ECEA0JU471	6.3V 470U			
C379	ECUV1E104ZFN	25V 0.1U	C504, 505	ECUV1E104ZFN	25V 0.1U			
C380	ECUV1H103ZFN	50V 0.01U	C507, 508	ECEA1CU101	16V 100U			
C381	ECQV1H104JZ3	50V 0.1U	C511, 512	ECEA0JPZ331B	6.3V 330U			
C381	ECUV1E104ZFN	25V 0.1U	C513, 514	ECUV1E104ZFN	25V 0.1U			
C382	ECEA0JU101B	6.3V 100U	C515-518	ECEA1CPZ101B	16V 100U			
C382	ECUV1E104ZFN	25V 0.1U	C519	ECUV1H103ZFN	50V 0.01U			
C383	ECKR1H103ZF5	50V 0.01U	C521, 522	ECHR1H331JZ3	50V 330P			
C383	ECUV1E104ZFN	25V 0.1U	C523, 524	ECUV1H150KCN	50V 15P			
C384	ECQB1H103JZ	50V 0.01U	C525, 526	ECHR1H331JZ3	50V 330P			
C385	ECKW1H103ZF5	50V 0.01U	C527, 528	ECEA1CBZ330B	16V 33U			
C385	ECUV1H103ZFN	50V 0.01U	C529, 530	ECHR1H392JZ3	50V 3900P			
C386	ECKD1H471KB	50V 470P	C531, 532	ECHR1H151JZ3	50V 150P			
C387	ECCR1H470K5	50V 47P	C533, 534	ECHR1H392JZ3	50V 3900P			
C388	ECQV1H104JZ3	50V 0.1U	C535, 536	ECHR1H101JZ3	50V 100P			
C389	ECKR1H103ZF5	50V 0.01U	C537, 538	ECEA1CBZ330B	16V 33U			
C389	ECUV1E104ZFN	25V 0.1U	C539, 540	ECQB1H103JZ	50V 0.01U			
C390	ECKR1H103ZF5	50V 0.01U	C541-544	ECUV1H820JCN	50V 82P			
C390	ECUV1H103ZFN	50V 0.01U	C550-552	ECQV1H104JZ3	50V 0.1U			