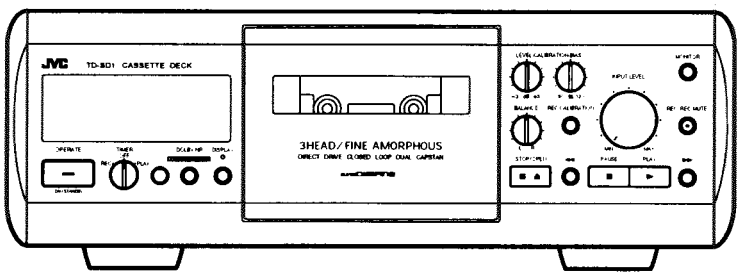
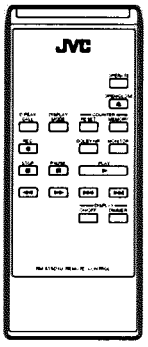
JVC

SERVICE MANUAL

INTEGRATED AMPLIFIER

TD-SD1GD





Area Suffix

BS .... the U.K.
EN .... Nordic Countris

Contents

No. 20596U
Sept. 1996

Safety Precautions

1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorised in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits.
2. Any unauthorised design alterations or additions will void the manufacturer's guarantee ; furthermore the manufacturer cannot accept responsibility for personal injury or property damage resulting therefrom.
3. Essential safety critical components are identified by (⚠) on the Parts List and by shading on the schematics ,and must never be replaced by parts other than those listed in the manual. Please note however that many electrical and mechanical parts in the product have special safety related characteristics . These characteristics are often not evident from visual inspection . Parts other than specified by the manufacturer may not have the same safety characteristics as the recommended replacement parts shown in the Parts List of the service manual and may create shock , fire , or other hazards .
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.

Warning

1. Service should be performed by qualified personnel only.
2. This equipment has been designed and manufactured to meet international safety standards.
3. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
4. Repairs must be made in accordance with the relevant safety standards.
5. It is essential that safety critical components are replaced by approved parts.
6. If mains voltage selector is provided, check setting for local voltage .

Table of Contents

General Information

Welcome !

We would like to thank you for purchasing one of our JVC products. Before connecting this unit to the wall outlet, please read the instructions carefully to ensure that you obtain the best possible performance. If you have any questions, please consult your JVC dealer.

Important cautions

Installation of the Unit

- Select a place which is level, dry and neither too hot nor too cold (Between 5°C and 35°C or 41°F-95°F).
- Leave sufficient distance between the Unit and a TV.
- Be sure to place the Unit in a location with good ventilation.
- Do not use the Unit in a place subject to vibrations.
- Do not place the Unit on a carpet.
- Do not place the Unit on top of another heat-generating piece of equipment.

Power cord

- Do not handle the power cord with wet hands!
- When unplugging the Unit from the wall outlet, always pull the plug, not the power cord.

Malfunctions, etc.

- There are no user serviceable parts inside. If anything goes wrong, turn off the power immediately. If the same problem re-occurs when the power is turned on once more, turn off the power again, unplug the power cord and consult your dealer.
- Do not insert any metallic object into the Unit.

For safe use, observe the following

Avoid moisture, water and dust
Do not set your machine in moist or dusty places.

Avoid high temperatures
Do not expose your machine to direct sunlight or set near a heating device.

Provide adequate ventilation
Poor-ventilation may damage your machine. So do not put the unit in a poorly ventilated place.

When you're away
When away on travel or otherwise for an extended period of time, set POWER to OFF and pull the plug from the electrical socket.

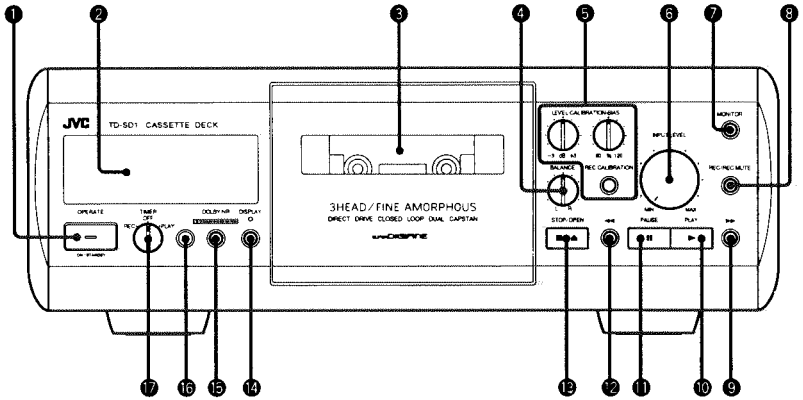
Do not insert foreign matter into the machine
Do not insert wires, hairpins, coins, etc. into your machine.

Care of the cabinet
When cleaning your machine, use a soft cloth and follow the relevant instructions on the use of chemically-coated cloths. Avoid applying benzene, thinner or other organic solvents and disinfectants. This may cause deformation or discolouring.

If water gets inside the machine
Cut the POWER switch and pull the plug from the electrical socket, then call the store where you made your purchase. Using the machine in this state may cause a fire or electrical shock.

Names of Parts

Cassette deck: Front panel



❶ OPERATE
Use to switch the cassette deck between on and standby. The indicator on the button lights red in standby mode or orange when the power is on (see page 9).

❷ Display
Provides displays of various information (see page 6).

❸ Cassette holder
For loading a cassette for playback or recording (see page 9).

❹ BALANCE
Use to adjust balance between the left and right channels before recording. Normally, set to the centre position.

❺ Calibration adjustment controls
LEVEL, BIAS, and REC CALIBRATION : use to adjust the bias current and tape response before recording (see page 17).

❻ INPUT LEVEL
Use to adjust the input level before recording (see page 15).

❼ MONITOR
Use to switch between source monitor and tape monitor (see page 19).

❽ REC / REC MUTE
Use to record or for record muting (see pages 13 and 14).

❾ ►►
Use to fast forward or to go to the beginning of a song by using MUSIC SCAN during playback (see page 11).

❿ ► PLAY
Use to start playback or recording (see pages 10 and 13).

⓫ II PAUSE
Use to pause playback or recording (see page 10).

⓬ ◄◄
Use to rewind or to go to the beginning of a song by using MUSIC SCAN during playback (see page 11).

⓭ ■ STOP / ▲ OPEN
Use to open and close the cassette holder (see page 9) and stop playback or recording (see page 10).

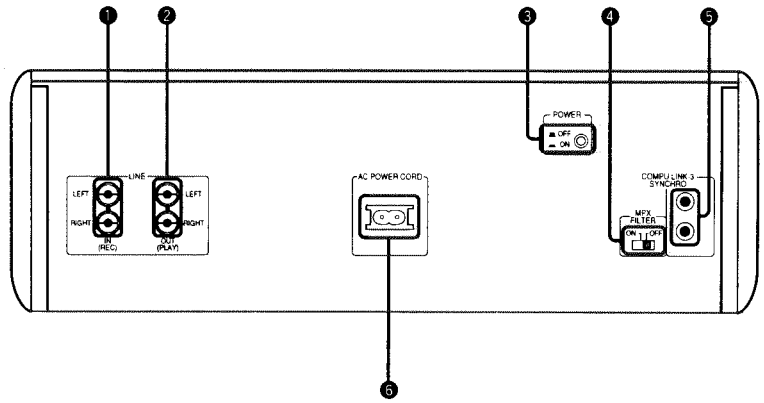
⓮ DISPLAY
Turns off the display (see page 20).

⓯ DOLBY NR
Use to select either B or C type Dolby Noise Reduction (see page 20).

⓰ Remote sensor

⓱ TIMER
Use for timer playback and timer recording (see page 22).

Cassette deck: Rear panel



❶ LINE IN (REC)
These are input terminals for line level audio signals Connect to the line output terminals of an amplifier (see page 7).

❷ LINE OUT (PLAY)
These terminals output line level audio signals during playback of a cassette tape. Connect to the line in terminals of an amplifier (see page 7).

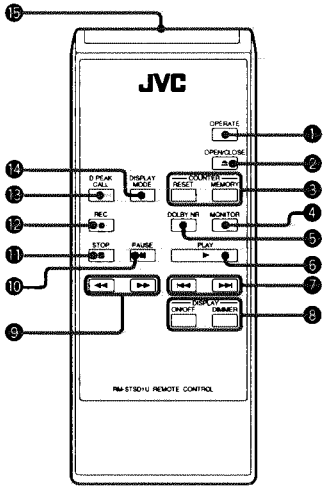
❸ POWER
Press this button to put the cassette deck in standby (see page 9).

❹ MPX FILTER
Use to record FM broadcasts using the Dolby NR system (see page 21).

❺ COMPU LINK-3 SYNCHRO
Connect these terminals to other JVC components to take advantage of the COMPU LINK Remote Control System's automatic operation functions (see "COMPU LINK connections" on page 24).

❻ AC POWER CORD
Connect to a wall outlet using the supplied AC power cord (see page 8).

Cassette deck: Remote control



❶ OPERATE
Turns the cassette deck on or standby (see page 9).

❷ ≙ OPEN / CLOSE
Opens and closes the cassette holder (see page 9).

❸ Counter function buttons
RESET : use to set the counter to "0.00" (see page 12).
MEMORY : press to set fast forward or rewind to stop automatically when the counter reaches "0.00" (see page 12).

❹ MONITOR
Use to switch between source monitor and tape monitor (see page 19).

❺ DOLBY NR
Use to select either B or C type Dolby Noise Reduction (see page 20).

❻ ► PLAY
Use to start playback or recording (see pages 10 and 13).

❼ ⏮ ⏭
Use to go to the beginning of a song when the cassette deck is in stop mode (see page 11).

❽ Display function buttons
DIMMER : selects the display brightness (see page 20).
ON/OFF : turns the display on and off (see page 20).

❾ ◄◄ ►►
Use to fast forward or rewind or to go to the beginning of a song during playback (see page 11).

❿ II PAUSE
Use to pause playback or recording (see page 10).

⓫ ■ STOP
Use to stop playback or recording (see pages 10 and 13).

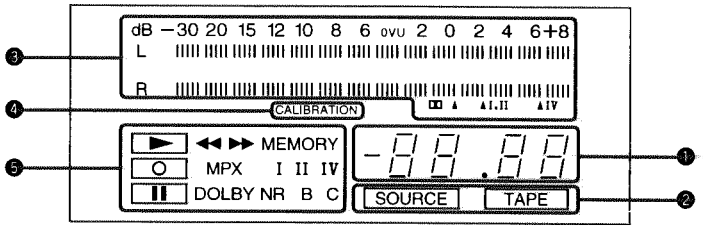
⓬ ● REC
Use to record or for record muting (see pages 13 and 14).

⓭ D.PEAK CALL
Use to check the value of the largest peak level (see page 16).

⓮ DISPLAY MODE
Use to switch between the tape counter and the digital peak display (see page 16).

⓯ Remote control signal emitter
When operating the remote, point the remote control signal emitter towards the remote sensor on the cassette deck.

Cassette deck: Display



❶ Tape counter / Digital peak display
The tape counter display shows the running time of the tape in minutes and seconds (see page 12). The digital peak display shows the numerical value indicated by the level meter (see page 16).

❷ Monitor indicators
Shows the MONITOR setting (see page 19).

❸ Level meter
Shows the signal level. 0 dB on the scale represents the reference level of 250 nWb/m as determined by IEC requirements. The symbols on the level meter are as follows:

0VU
Represents the former reference level of 160 nWb/m.

□□
Represents the reference level determined by Dolby Laboratories for use with Dolby noise reduction.

▲
Calibration compensation guide (see page 18).

▲I.II
Record level guide for normal and high-position tapes (see page 15).

▲IV
Record level guide for metal tapes (see page 16).

❹ CALIBRATION
Lights during CALIBRATION mode (see page 17).

❺ Indicators
Light to indicate the operating status.

►
Lights during tape transport, such as playback and recording (see pages 10 and 13).

○
Lights during recording or record pause (see page 13).

II
Lights when playback or recording is paused (see pages 10 and 13).

►►
Lights during fast forward (see page 11).

◄◄
Lights during rewind (see page 11).

MPX
Lights when the MPX (multiplex) filter is active (see page 21).

I, II, IV
Light to indicate the type of tape loaded in the tape transport (see page 26).

DOLBY NR B C
Lights when Dolby Noise Reduction is turned on. "B" indicates B type noise reduction, "C" indicates C type noise reduction (see page 20).

MEMORY
Light when memory is turned ON (see page 12).

Connections

Before making any connections

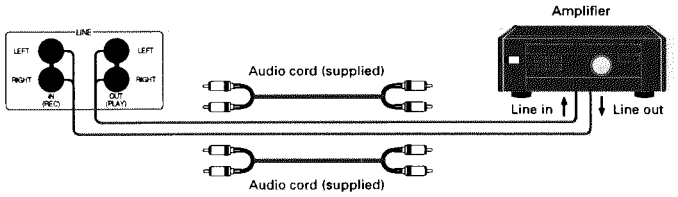
- Be sure to confirm the locations of the left and right, and IN and OUT terminals on each component and make connections correctly and firmly. Incorrect or incomplete connections may result in degradation of the stereo effect, or no sound at all. As a general rule, use the red plugs on the connecting cords to connect the right channels and the white plugs to connect the left channels.
- Keep tuner, TV, and video deck, antennas away from the cassette deck's rear panel and power cord. Nearby antennas can produce noise in the audio signal. Therefore, we also recommend using shielded coaxial antenna cables whenever possible.
- Since different components often have different terminal names, carefully read the instruction manual supplied with the component you are connecting.
- Do not connect the AC power cord until all other connections are complete.

Notes regarding placement

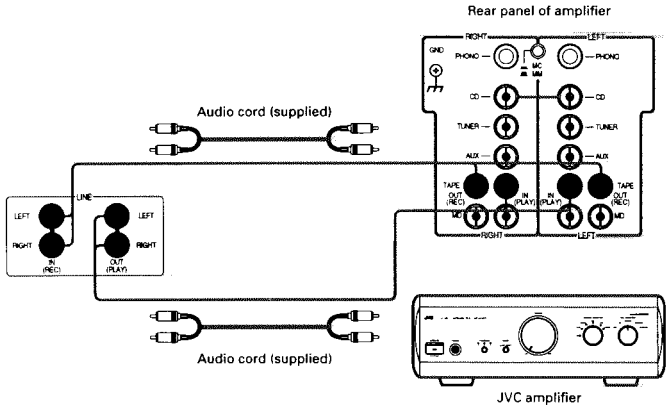
Place the cassette deck away from the amplifiers and TV sets. Induction interference caused by placing the cassette deck directly on top of an amplifier or close to a TV may produce noise in the audio signal.

Audio connections

Connect the LINE IN (REC) terminals to the line output terminals on the amplifier. Then connect the LINE OUT (PLAY) terminals to the line in terminals on the amplifier.



When connecting the cassette deck to a JVC amplifier with more than one set of input/output terminals, be sure to connect it to the TAPE terminals.

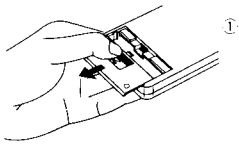


Cassette deck: Power connections

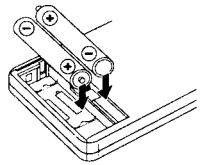
After completing all other connections, use the supplied AC power cord to connect the AC POWER CORD terminal on the back of the cassette deck to a wall outlet.

Remote control batteries

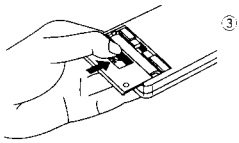
Load the supplied batteries (2) into the remote control.



① Open the battery case



② Load the batteries
Match the polarity (+ and –) of the batteries with the + and – marks inside the battery compartment.



③ Close the battery case.

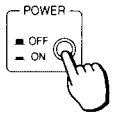
Cautions

Observe the following to avoid battery leakage or explosion:

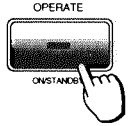
- If the range or effectiveness of the remote control decreases, replace the batteries using R03(UM-4)/AAA(24F) type dry cells.
- Do not use an old battery together with a new one.
- Do not use different types of batteries together.
- Do not disassemble the batteries or subject them to high temperatures, like an open fire.
- Remove the batteries if the remote control will not be used for a long time.

Operations

Turning on the cassette deck

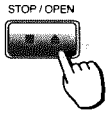


① Set the POWER switch on the rear panel to ON .
This lets you use the OPERATE button on the front panel (or the remote control) to switch the cassette deck between ON (orange OPERATE indicator) and STANDBY (red OPERATE indicator). When POWER is set to OFF, the OPERATE indicator goes out and the power cannot be turned on. You will probably find it most convenient to leave the POWER button set to ON. However, if you are not going to use the unit for an extended period of time, such as during a vacation, set POWER to OFF to avoid unnecessary power consumption. A small amount of power (13 watts) is always consumed as long as POWER is set to ON.

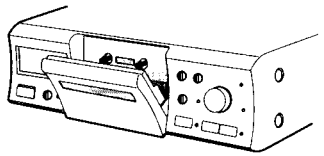


② Press OPERATE to turn on the cassette deck.
The indicator on the button turns orange.

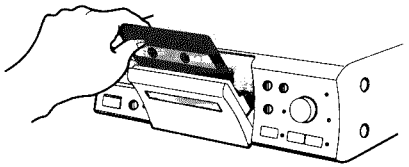
Loading a cassette tape

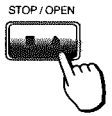


Press ■ STOP / ▲ OPEN (or ▲ OPEN/CLOSE on the remote control) to open the cassette holder.

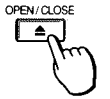


Load a cassette with the side to be played, or recorded on, facing forward. When loading a tape for recording, be sure to wind past the cassette tape's, leader (clear) section.





Press ■ STOP / ▲ OPEN (or ▲ OPEN/CLOSE on the remote control) again to close the cassette holder. When the cassette holder closes, the deck automatically prepares for playback by winding up any slack in the tape (auto tape slack removal).
You can also close the cassette holder by pressing one of the operation buttons, like ► PLAY, ◄◄, or ►►.



(continued)

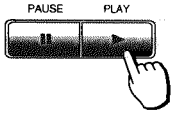
Auto tape slack removal

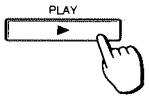
Playing a cassette before taking up slack in the tape can result in the tape being wound around the capstan and other such trouble.
This unit is equipped with an automatic tape slack removal function that takes up tape slack automatically whenever you close the cassette holder, rewind the tape, or turn on the power. Other operations are not possible when the auto tape slack removal function is working (about 1 or 2 seconds).

The cassette holder opens automatically in the following types of situations:

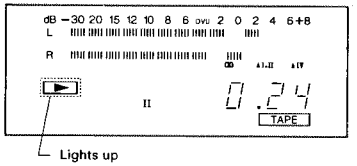
- If you try to record on a tape whose tabs have been removed to prevent accidental erasure.
- If you press an operation button, like ► PLAY, when no cassette is loaded.

Playing a cassette tape





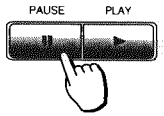
Load a tape, then press ► PLAY to start playback. To stop play, press ■ / ▲ (or ■ STOP on the remote control).



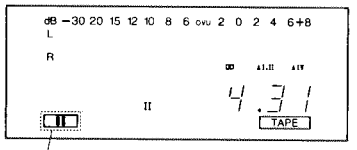
Lights up

Use the volume control on the amplifier to adjust the volume level.
The sound quality will be different during playback if the Dolby NR button is set to a different position than it was set at during recording (see "Using Dolby noise reduction" on page 20).

Pausing

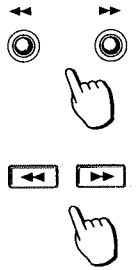


Press ❚❚ PAUSE during playback to pause. During pause, the pause indicator lights in the display. Press ► PLAY to resume play from the point where it was paused.

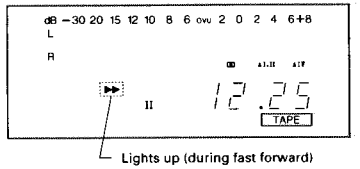


Lights up

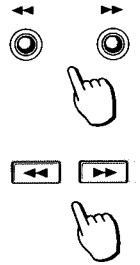
Fast forward and rewind



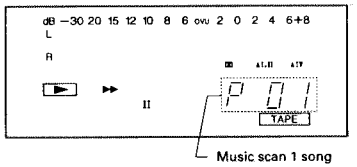
When playback is stopped, press ►► to fast forward.
When playback is stopped, press ◄◄ to rewind.
Press ■ / ▲ (or ■ STOP on the remote control) to stop.



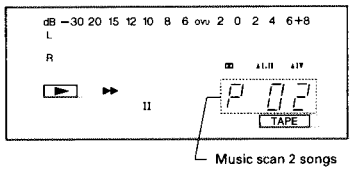
Going to the beginning of a song (MUSIC SCAN)



You can go to the beginning of the a song you want to hear.
During playback, press ►► to forward to the beginning of the next song.
During playback, press ◄◄ to rewind to the beginning of the current song.
To go to the beginning of a song when playback is stopped, use the I◄◄ or ►►I buttons on the remote control.



If you press ◄◄ or ►► before reaching the beginning of the song, you can go to the beginning of the previous or following songs.



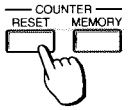
The MUSIC SCAN function stops automatically when it finds an unrecorded blank portion between 4 and 5 seconds long.

The MUSIC SCAN function may not operate correctly in the following situations:

- If the space between songs is too short.
- If there is excessive noise.
- If a song has long sections of low level sound or no sound.

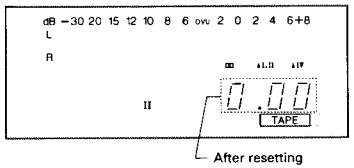
Using the tape counter

The tape counter display shows the running time of the tape in minutes and seconds. You can use the tape counter to determine how much time has elapsed on a tape or to locate a specific position on the tape.



Counter reset

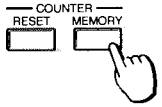
Press COUNTER RESET to reset the tape counter to "0.00" (0 minutes and 00 seconds). Resetting the counter before playing or recording from the beginning of a tape lets you check the running time. (The counter can also be reset during the digital peak display mode.)



The running time of the previously played/recorded tape remains in the tape counter when you exchange tapes. The counter resets to "0.00" when you set the POWER switch to OFF or unplug the AC power cord.

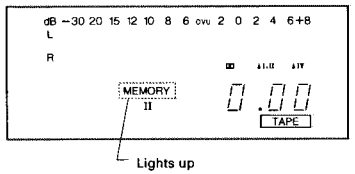
Note

The tape counter is designed to provide an accurate time display with C-90, C-60, and large hub C-46 tapes. With other tapes, the time display may differ from the actual running time.
The tape reels (hubs) in large hub tapes are about 27 mm in diameter. There are two types of C-46 tapes, large hub and small hub.



Counter memory

By using the counter memory function, you can have the deck stop rewinding or fast forwarding automatically when the counter reaches approximately "0.00". To use the counter memory function press COUNTER MEMORY to light the MEMORY indicator, then press ◄◄ or ►► when the tape is stopped to rewind or fast forward.

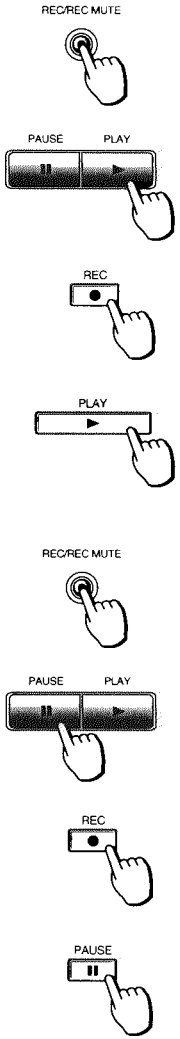


For example, if you press COUNTER RESET to reset the counter to "0.00" at a part you want to hear again, the counter memory function makes it easy to return to that part of the tape.

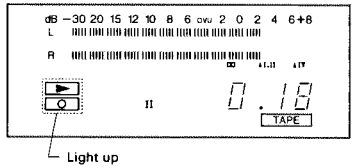
To cancel

Press COUNTER MEMORY so that "MEMORY" disappears from the display.

Recording



To start recording, load a tape, hold down ● REC/REC MUTE and press ► PLAY (or hold down ● REC and press ► PLAY on the remote control).

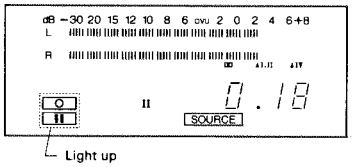


For high quality recordings, be sure to perform the following operations before recording.

- Adjust the input level (see "Adjusting the input level" on page 15).
- Calibrate the cassette deck (see "Calibration" on page 17).
- Set the Dolby Noise Reduction (see "Using Dolby noise reduction" on page 20).

For easier record start timing

Hold down ● REC/REC MUTE and press ❚❚ PAUSE (or hold down ● REC and press ❚❚ PAUSE on the remote control) to activate the record pause mode.



Then press ► PLAY when you want to start recording.
If you set the cassette deck to record pause when recording a CD from a JVC CD player with COMPU LINK, recording starts automatically when you start to play the CD (see "COMPU LINK operations" on page 25).

It should be noted that it may be unlawful to re-record prerecorded tapes, records, or discs without the consent of the owner of copyright in the sound and video recording, broadcast or cable programme and in any literary, dramatic, musical, or artistic embodied therein.

Recording a space between songs (REC MUTE)

The rec mute function provides a convenient way to create a blank (unrecorded) space between songs.
You can use the rec mute function while recording or in the record pause mode.

To create a 4 second blank

Press ● REC/REC MUTE at the point where you want to create a blank space. The deck records a 4 second blank space, then tape transport stops and the deck switches to record pause automatically.
To resume recording, press ► PLAY.

To create a blank longer than 4 seconds

Hold down ● REC/REC MUTE at the point where you want to create a blank space. A blank space is recorded as long as you hold the button. When you release the button, tape transport stops and the deck switches to record pause automatically.

To create a blank less than 4 seconds long

Press ● REC/REC MUTE, then press ► PLAY, before the deck switches to record pause, to resume recording. Pressing ❚❚ PAUSE instead of ► PLAY switches immediately to record pause.

When using the remote control

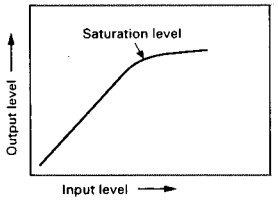
Press ● REC instead of REC/REC MUTE. You can create blanks of four seconds or less, but not blanks longer than 4 seconds.

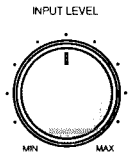
Adjusting the input level

Before recording, be sure to set the appropriate input level for the tape you are recording on.

To obtain the correct input level, rotate the INPUT LEVEL knob so that the largest peak in the input signal is matched as closely as possible to the tape's saturation level. If the input level is too high and exceeds the tape's saturation level, the sound will break up and cause distortion. On the other hand, if the input level is too low, the tape noise (hiss) will be too apparent.

What's the saturation level?
Normally, an increase in the input level, will result in a corresponding increase in the output level. When the input level is increased beyond a certain point, however, the output level stops increasing and starts to distort. This is called the saturation level.

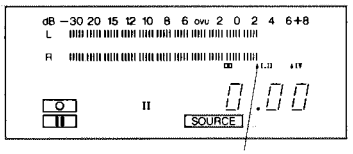




Hold down ● REC/REC MUTE and press ❚❚ PAUSE to set the cassette deck to record pause (see page 13) or press MONITOR so that "SOURCE" appears in the display (see page 19).

While playing the source to be recorded, turn the INPUT LEVEL knob to adjust the input level. Adjust the input level so that the level meters in the display fluctuate as described below.

Normal tape (TYPE I)
High position (CrO_2) tape (TYPE II)

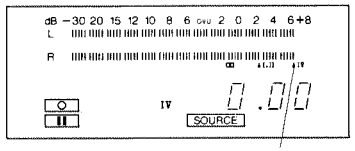


Recording guide for normal and high position tapes

Adjust the input level so that the level meter just reaches the "2" mark when the loudest sound is input.

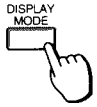
(continued)

Metal tape (TYPE IV)



Recording guide for metal tapes

Adjust the input level so that the level meter just reaches the "6" mark when the loudest sound is input.



Determining the numeric peak value

Press DISPLAY MODE on the remote control to display the numeric value for the peak level indicated by the level meter. The peak level display shows values from −10 to +8 dB by choosing the higher of the left and right channel levels.

Determining the largest peak level

First, press DISPLAY MODE on the remote control to display the peak level meter. Then press D.PEAK CALL on the remote control. The numeric value of the largest peak level value flashes in the peak level display. The value displayed represents the largest peak level occurring since peak call was reset.

To reset
Press D.PEAK CALL twice. Once to display a flashing peak level, and once more, while the level is flashing, to reset the display. The peak call is also reset when you press OPERATE to put the cassette deck in standby mode.

Calibration

Since there are various types of cassette tape, there may even be slight differences between the same type of tape by the same maker. This cassette deck determines the tape type automatically with auto the tape select function as well as the bias current and characteristic equalization. However, to obtain the best possible performance from your tapes, we recommend performing the following fine adjustments. (Normally, leave the following controls set to the centre position.)

Adjusting the Bias

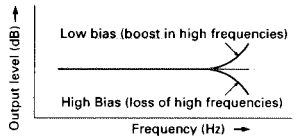
The tape bias can be adjusted ±20%. Adjusting the bias changes the tape characteristics as follows.

Reducing the bias

Increases high frequency levels, but may also increase distortion. To reduce the bias, rotate the BIAS knob toward 80%.

Increasing the bias

Reduces distortion, but may also reduce high frequency levels. To increase the bias, rotate the BIAS knob toward 120%.



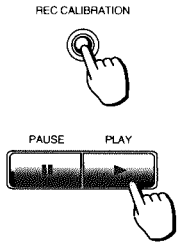
Adjusting the tape sensitivity

The tape sensitivity can be adjusted ±3 dB. Adjusting the tape sensitivity lets you fine tune the recording level for precisely for the tape you plan to use.
Fine tuning the recording level when recording tapes using the Dolby NR system lets you take full advantage of the Dolby NR effect by matching the recording and playback levels.

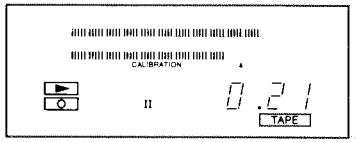
(continued)

Adjustment

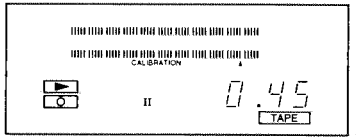
Adjustment is done while recording a test tone generated by the cassette deck onto the cassette you plan to use.
Before adjusting, be sure to load the cassette tape you plan to record on.



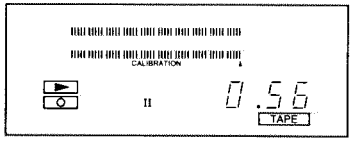
① Recording the test tone.
Hold down REC CALIBRATION and press ► PLAY. A test tone generated by the cassette deck is automatically recorded on the cassette tape. The sound of the test tone cannot be heard.



② Adjust the bias.
Rotate the BIAS knob so that both the top and bottom level meters flash at the same level.



③ Adjust the tape sensitivity.
Rotate the LEVEL knob so that both the top and bottom level meters just reach the ▲ mark.



④ Press ■/▲ to stop the tape.
This completes the bias and tape sensitivity adjustment. To erase the test tone, rewind the tape and start recording the source you desire.

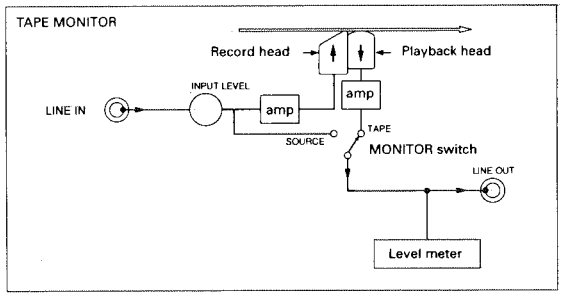
Notes

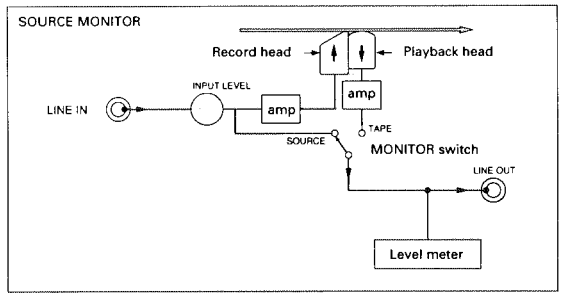
- When using Metal tapes, the difference in frequency characteristic obtainable by adjusting the BIAS is relatively less than what can be obtained when using Normal or High position tapes. Additionally, this cassette deck's adjustable range (±20%) may not be enough to obtain optimum bias for certain tapes. This is a result of variance in tape characteristics.
- The MONITOR sound cannot be heard during calibration, regardless of the monitor setting.

Monitoring the recorded sound

The cassette deck has three heads: a record head, a play head, and an erase head. While recording, you can listen to and compare the sound before and after it is recorded to determine whether or not the recording is proceeding as you desire. In the following explanation, "source monitor" refers to the sound before recording, and "tape monitor" refers to the sound after recording.

Press MONITOR to switch between source monitor and tape monitor. The "SOURCE" indicator lights up during source monitor and the "TAPE" indicator lights up during tape monitor.

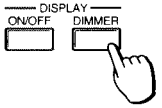




The cassette deck automatically switches to the tape monitor during playback and recording. It switches to source monitor during record pause and when recording is stopped.

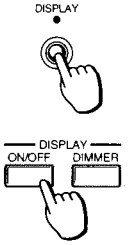
If your amplifier has a monitor function, you can use the cassette deck's MONITOR button to switch between and compare the recorded sound to the original source sound while recording.

Dimming the display



You can dim (darken) the display by pressing DISPLAY-DIMMER on the remote control.
Press again to return to the original brightness.

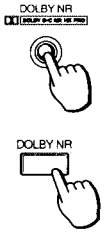
Turning off the display



You can turn off the display during playback/recording. Turning off the display provides better sound quality by eliminating signal flow to the display circuit.

Press DISPLAY (or DISPLAY -ON/OFF on the remote control), to light the DISPLAY indicator and the display goes out automatically during playback/recording. The display automatically returns in non-playback/recording situations like pause, search, and stop (etc.). To return to the original (full-time) display, press DISPLAY to turn off the DISPLAY indicator.

Using Dolby noise reduction

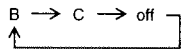


The Dolby NR process boosts the high frequencies, which are most likely to reveal audible noise, during recording, then lowers them to the original level during playback. Since the hiss noise is reduced as the high frequencies are returned to their original level, the noise reduction does not effect the sound quality.
Since reducing noise in only the high frequencies has a tendency to reveal noise in the lower frequencies, C type noise reduction was devised to provide noise reduction starting from a lower frequency band than B type reduction.

Setting the Dolby NR

Using Dolby NR during recording and playback lets you decrease unpleasant tape hiss. This cassette deck is equipped with both the commonly used B type as well as the newer, highly effective, C type.

Press DOLBY NR during, or before, playback or recording to select B or C type reduction. The modes switch as follows:



Please note that using different Dolby NR settings during recording and playback will result in a change in sound.

The Dolby NR setting will be preserved for approximately 2 or 3 days, even if POWER is set to OFF, the AC power cord is unplugged, or the power goes out.

Setting the MPX FILTER (multiplex filter)

The MPX FILTER switch is located on the rear of the cassette deck. When recording FM stereo broadcasts using the Dolby NR system, extra information mixed in with the audio signals, such as the pilot signal and sub-carrier, etc., can interfere with the Dolby NR process and cause a change in the sound.
The MPX FILTER allows you to cut out the extraneous information to prevent misoperation of the Dolby NR system.

To take advantage of the MPX filter, set the MPX FILTER switch on the rear panel to ON. When either B or C type Dolby NR is selected, the MPX filter turns on automatically to eliminate the extraneous signals, and MPX lights up in the display. The MPX filter does not turn on when Dolby NR is set to off.

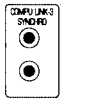
Dolby HX PRO headroom extension

This cassette deck uses the Dolby HX PRO system to produce recordings with extended dynamic range.
Since high frequency components are a primary factor in determining the bias adjustment, source signals with lots of high frequency components tend to cause changes in the effective bias, generating low frequency variations and high frequency distortion.
Dolby HX PRO adapts to variations in the high frequency components of the input signal and controls the bias current so that the effective bias is always at the same level. The result is fewer variations in the low frequency signals and a greater high frequency saturation level.
Dolby HX PRO works automatically whenever you make a recording and doesn't require any operations. In addition, the sound recorded using this system can be enjoyed during playback on any cassette deck, even one without Dolby HX PRO.

Operations

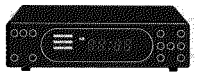
Timer recording and timer playback

You can have the cassette deck turn on and start playing, or recording, automatically. To take advantage of the timer function, you will need an optional timer. You can use either a standard commercially available audio timer, or a JVC COMPU LINK-3 component equipped with a timer function.



Using a JVC COMPU LINK-3 component equipped with a timer function.

Set the cassette deck's TIMER switch to OFF. Refer to the operating instructions supplied with the respective component.



Using a standard commercially available audio timer

When connecting a standard optional timer, be sure to connect the timer to control the power of the cassette deck, amplifier, and other related equipment.
Before using the timer function be sure to refer to the operating instructions supplied with the timer.

Timer recording (REC TIMER)

1 Turn ON the power of all the components connected to the timer.
2 Set the tuner to the station you want to record and adjust the recording level on the cassette deck.
3 Set the timer to the desired record start and stop times.
4 Set the TIMER switch on the cassette deck to REC.
Recording starts automatically at the time set on the timer.

Timer playback (PLAY TIMER)

1 Turn ON the power of all the components connected to the timer.
2 Play the tape and adjust the volume on the amplifier to the desired level.
3 Set the timer to the desired playback start and stop times.
4 Set the TIMER switch on the cassette deck to PLAY.
Playback starts automatically at the time set on the timer.

Notes

- Be sure to set the TIMER selector to OFF when not using the timer.
- Be sure that the cassette deck's POWER switch is set to ON when using a timer. If the POWER switch is set to OFF, the timer can not turn on the cassette deck at the designated time.

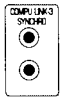
COMPU LINK Remote Control System

COMPU LINK basics

Buying a separate CD player, cassette deck, MD recorder, amplifier, etc., is a good way to enjoy high-quality sound from the exact combination of components you want. However, since each component has to be operated individually, operation can be somewhat difficult. JVC's COMPU LINK Remote Control System allows you to enjoy the flexibility of single components with the ease of operation found in single unit component systems.
In the descriptions and instructions that follow, the COMPU LINK Remote Control System is referred to as 'COMPU LINK' for the sake of convenience.

Products that are compatible with COMPU LINK have terminals marked either COMPU LINK-1, COMPU LINK-2, or COMPU LINK-3 (referred to collectively as COMPU LINK terminals). Linking components by the COMPU LINK terminals, allows simplified collective operation, like that of a single unit component system.

COMPU LINK versions



- There are currently three versions of COMPU LINK available from JVC; COMPU LINK-1, COMPU LINK-2, and COMPU LINK-3. COMPU LINK 3 is the newest version, with the most functions.
- You can distinguish the COMPU LINK version by looking at the COMPU LINK terminals of the respective components.

COMPU LINK-3 components may be connected to components with earlier version components, but in this case the newest functions may not work.

COMPU LINK-3 functions

The following is a brief overview of the available functions:

One touch play
Lets you listen to a source component, such as a CD player ,without operating the amplifier. All you have to do is start playing the source component (see page 25).

Synchro recording
Lets you start recording automatically when you start playing the source component (see page 25).

Total operation by one remote control
Lets you operate all the source components, such as the CD player, cassette deck, and tuner, from the amplifier's remote control (see the instructions provided with the amplifier).

MiniDisc recorder automatic input switching
When the MiniDisc recorder's input selector is set to digital input, digital signals are input only when the source selector on the amplifier is set to CD. When it is set to other sources, analog signals are input. This saves you the trouble of manually switching the input selector every time you change the source (see the instructions provided with the amplifier).

Timer Operation
Lets you use a component equipped with a timer function to start and stop recording or playback at the time(s) you specify (see the instructions provided with the respective component).

(continued)

COMPU LINK Remote Control System

Automatic source switching upon reception of desired EON information
When a tuner equipped with RDS EON functions receives the information you desire, the source selector on the amplifier automatically switches to TUNER to allow you to hear the desired information. When the information is over, the amplifier switches back to the previous component (see the instructions provided with an RDS tuner).

COMPU LINK connections

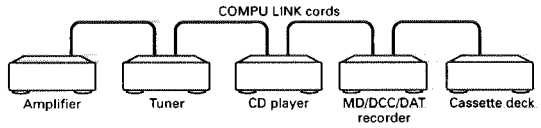
Use COMPU LINK cords (or connecting cables with mono mini plugs) to connect the COMPU LINK terminals of each component.

- When there is more than one COMPU LINK terminal, any terminal can be used.
- Be sure to plug the power cords of the component into UNSWITCHED outlets or a wall outlets. If components are plugged into SWITCHED outlets, the COMPU LINK functions will not work properly.
- When components have POWER switches on the rear panel, that switch must be set to ON in order for COMPU LINK to work properly.
- Some amplifiers may not have specially marked MD or DAT terminals. In such cases, you can connect a DAT deck to the MD terminals or an MiniDisc recorder to the DAT terminals. If the MiniDisc recorder or DAT deck is connected a different set of line input terminals, the COMPU LINK functions will not work properly.

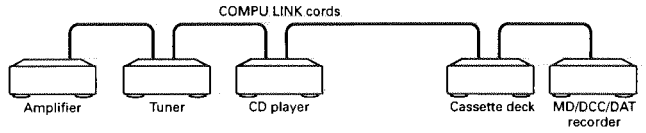
Note
- You can not connect an MD recorder, DCC deck and DAT deck, into the COMPU LINK system at the same time. Select the component you use most, and connect only that component.
- If no amplifier is connected, only the "synchro recording" function will be operable.
- COMPU LINK timer operation is possible only when a JVC tuner equipped COMPU LINK-3 SYNCHRO terminals and a timer function is connected into the COMPU LINK system.

COMPU LINK Connection example

The following is a basic example of COMPU LINK connections for JVC audio components. With these connections, all the functions are bridged, so there is no set order in which the components must be connected.



Some record players or MD recorders only have one COMPU LINK terminal. In such a case, branch the connections as shown below.



COMPU LINK operations

One touch play

The one touch play function lets you listen to a source simply by starting playback from the source component.

① Press the play (►) button on the source component.
(For the tuner, press the band selector (FM or AM) button.)

The following operations are done automatically, all you need to do is enjoy!

- The source component and amplifier turn on.
- The source selector on the amplifier switches to the respective source component.
- The source component starts playing.

Selecting a source component with the amplifier's source selector will also start playback from the respective source. The previous source component stops playing.
After the amplifiers turned on, it takes about 5 seconds before any sound is output. Since there will be no sound during this time, even if the source component start playing, the initial section may be left out when playback begins.

Note

If both the amplifier and source component are not COMPU LINK-3 compatible, the power will not turn on automatically. When using components with earlier versions of COMPU LINK, be sure to turn the amplifier and respective components on before operation.

Synchro Recording

The synchro recording function lets you start recording automatically when you start playing the source component. It can also be used for recording PROGRAM play from CD (etc.).

① Load a disc or tape into the source component.
② Load a disc or tape into the recording component.
③ Set the recording component to the record pause (REC PAUSE) mode.
④ Press the play (►) button on the source component.

Recording starts automatically when the source component starts playing.

Notes

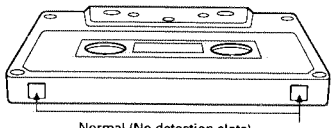
- Synchro recording cannot be done to 2 components (such as an MD recorder and cassette deck) at the same time.
- Synchro recording is not possible when the source component is the cassette deck.
- Synchro recording will stop if you change the recording selector during the synchro recording process. With certain amplifiers, the source selector function is locked during the synchro recording process and cannot be changed when the recording selector is set to SOURCE. Please, do not switch the setting of the recording and source selectors while recording.
- When synchro recording PROGRAM play onto a cassette deck, a 4 second space is automatically created between each track. This is to let you locate the beginning of the tracks by using the cassette deck's MUSIC SCAN function after the tape is recorded, it is not a malfunction.

Additional Information

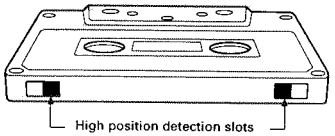
Types of cassette tape

This cassette deck incorporates an auto tape select function. The auto tape select function uses the tape-type detection holes to distinguishes which type of tape was inserted, and sets the bias and equalizer to the optimum settings for that tape automatically.
The following types of tapes may be used with this cassette deck. The tape type determined by the auto tape select function is shown in the display.

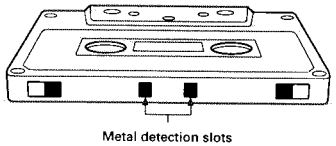
Normal tape
TYPE I
BIAS:NORMAL
EQ:120μs



High Position (CrO_2) tape
TYPE II
BIAS:HIGH
EQ:70μs



Metallic tape
TYPE IV
BIAS:METAL
EQ:70μs



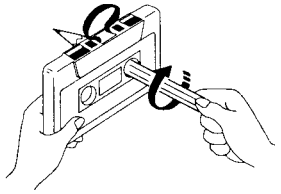
Caution

- Tapes longer than 90 minutes, such as C-120 or C-150 tapes, are extremely thin and stretch easily. Please note that frequent rewinding and fast forwarding of small sections of tape may cause these tapes to jam in the pinch roller and capstan.
- Certain early period metal and high position (CrO_2) tapes may not have tape-type detection slots. The cassette deck cannot obtain the correct characteristics for these tapes.
- Ferrochromite (FeCr) TYPE III tapes cannot be used with this cassette deck.

Handling cassette tapes

Cautions regarding handling

Do not touch the surface of the tape or pull the tape out of the cassette.
Tape spooled loosely around the hubs is likely to jam in the pinch roller and capstan. Before loading the tape into the cassette holder, take up the slack in the tape as shown below.



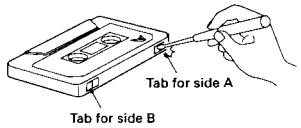
Tape storage

Place tapes in their cases for storage.
Avoid storing tapes on top of TVs or speakers, in sunlight or places of high temperature, or in humid or dusty areas.

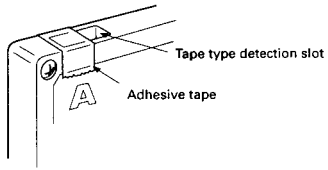
To prevent accidental erasure

Cassette tapes have tabs to prevent accidental erasure.
If you remove the tabs after making a recording, the cassette deck can not be set to record when that tape is loaded. Remove the tabs so that valuable recordings will not be accidentally erased.

Recording (erasure) is not possible when the tabs are removed.



To make another recording on a tape whose tabs have been removed, cover the tab holes with adhesive tape.



Be careful not to cover the tape-type detection slots.

Additional Information

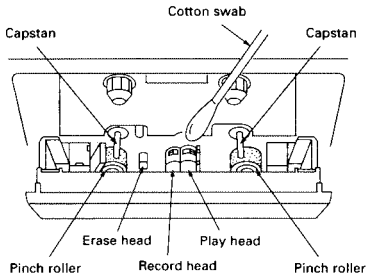
Maintenance

Cleaning the tape heads

Since the tape is always touching the heads as it travels through the tape transport, in time magnetic particles and dust build up, making the heads dirty. When the heads become extremely dirty, the sound quality becomes poor, the output level is reduced, recording doesn't work, and previously recorded sounds cannot be erased (etc.).
In order to prevent important recordings from coming out as failures, we recommend cleaning the heads, pinch rollers and capstans on a regular basis (after about every 10 hours of use), before the symptoms described above begin to appear.

Cleaning method

Wipe off the heads, capstans, and pinch rollers with a cotton swab soaked in absolute alcohol. After cleaning, wait until all the alcohol on the internal parts evaporates completely before loading a cassette tape.



Demagnetizing the tape heads

After the cassette deck has been used for long period of time, the metal parts which contact the tape may become magnetically charged. When this occurs, tape hiss increases, and the high pitched sounds on recorded tapes will be erased. The same type of malfunction could also be caused by bringing a charged metal object (such as a screwdriver) near the tape heads.
We recommend demagnetizing the tape heads regularly (after about every 20 to 30 hours of use) with a commercially available tape head demagnetizer.

You may also use cassette type demagnetizers with this cassette deck. When doing so, be sure to turn the volume of the amplifier all the way down, or you may harm the amplifier or speakers.
For details, read the instructions that come with the tape head demagnetizer.

Troubleshooting

If you experience any difficulty with your cassette deck, check the following list for a possible solution before calling for service. If you cannot solve the problem from the hints given here, or the cassette deck has been physically damaged, call a qualified person, such as your dealer, for service.

SYMPTOM	POSSIBLE CAUSE	ACTION
Recording is not possible	• The tabs on the cassette have been removed.	• Use a different cassette tape. • If you don't mind erasing the previously recorded material, cover the holes with tape.
	• The deck is set to pause.	• Press ► PLAY to release the pause.
	• The INPUT LEVEL knob is set to MIN.	• Adjust the INPUT LEVEL.
Playback is not possible	• The deck is set to pause.	• Press ► PLAY to release the pause.
No sound	• Connections are incorrect or incomplete.	• Check to make sure the all equipment is connected correctly.
	• Volume control on amplifier is turned all the way down.	• Adjust the volume on the amplifier.
	• The source selector on the amplifier is set to a different source.	• Set the source selector to tape.
Music scan does not work	• The blank spaces between songs is too short.	• Try a different cassette tape.
Sound level is low or sound is intermittent	• The heads, capstans, and pinch rollers are dirty	• Clean the heads, capstans, and pinch rollers.
Tape hiss or absence of high frequency sounds	• The play and record heads have become magnetically charged	• Demagnetize the heads.
Previously recorded material is not erased when recorded over	• The erase head is dirty	• Clean the erase head.
Bad sound quality or absence of high frequency sounds	• The Dolby NR setting is different from that used when recording.	• Set the Dolby NR to the same setting used during recording.
Cassette holder will not open (or close)	• The POWER switch on the rear panel is set to OFF.	• Set the POWER switch to ON.
	• The AC power cord is unplugged.	• Plug the AC power cord into a wall outlet.
Humming noise	• Cassette deck is directly above or below the amplifier.	• Move cassette deck away from amplifier.
Remote does not work	• Batteries are exhausted.	• Replace the batteries.
	• Battery polarity (+, –) is reversed.	• Reinsert batteries correctly.
	• Incorrect operation.	• Point remote at the remote sensor on the cassette deck and make sure there are no obstructions between the remote and cassette deck.
	• The remote sensor is in direct sunlight.	• Keep the remote sensor away from direct sunlight.
No display	• The display off function is turned on.	• Press DISPLAY (or DISPLAY-ON/OFF on the remote control) to turn on the display.
Recording (or playback) starts immediately when the power is turned ON.	• TIMER is set to REC (or PLAY)	• Set TIMER to OFF.

Specifications

Audio performance

Frequency response (-20 dB recording)	Type IV tape : 10 Hz to 22 kHz (15 Hz to 20 kHz (±3 dB)) Type II tape : 10 Hz to 20 kHz (15 Hz to 18 kHz (±3 dB)) Type I tape : 10 Hz to 20 kHz (15 Hz to 18 kHz (±3 dB))
Signal-to-noise ratio	61 dB (S = 315 Hz, k3 = 3%, N = A-weighted, Type IV tape) The S/N is improved by about 15 dB at 500 Hz and by max. 20 dB at 1 kHz to 10 kHz with Dolby C NR on and improved by 5 dB at 1 kHz and by 10 dB at above 5 kHz with Dolby B NR on. MOL Improved 4 dB at 10 kHz
Wow and flutter	0.035% (WRMS); ±0.09% (DIN)
Channel Separation	More than 40 dB (at 1kHz)
Crosstalk	More than 60 dB (at 1 kHz)
Harmonic Distortion (K3)	0.7% (Type IV tape, 315 Hz, 0 VU)

Input/Output Terminals

LINE IN (REC)	Input level / Impedance : 80 mV (0 VU) / 50 k ohms
LINE OUT (PLAY)	Output level / Impedance : 300 mV (0 VU) / 450 ohms

General

Format	Compact Cassette Stereo
Track System	4-track, 2-channel
Tape Speed	4.8 cm/sec. (1-7/8 inch/sec.)
Heads	Record : Amorphous x 1 Playback : Amorphous x 1 Erase : SA(Sen-Alloy) & Ferrite x 1
Motors	Capstan : Pulse servo DD motor x 1 Reel : DC motor x 1 Mechanism drive : DC motor x 1
Fast forward / Rewind time	Approx. 100 sec. with C-60 cassette
Power requirements	AC 230 V 50 Hz
Power Consumption	28 watts (OPERATE ON); 13 watts (OPERATE STANDBY)
Dimensions (WxHxD)	360 x 129 x 330 mm (14-3/16 x 5-3/8 x 13 inches)
Mass	8.6 kg (19.0 lbs)

Accessories

Remote control unit (RM-STSD1U)	1
Battery (R03(UM-4)/AAA(24F))	2
Audio cord	2
COMPU LINK cord	1
AC power cord	1

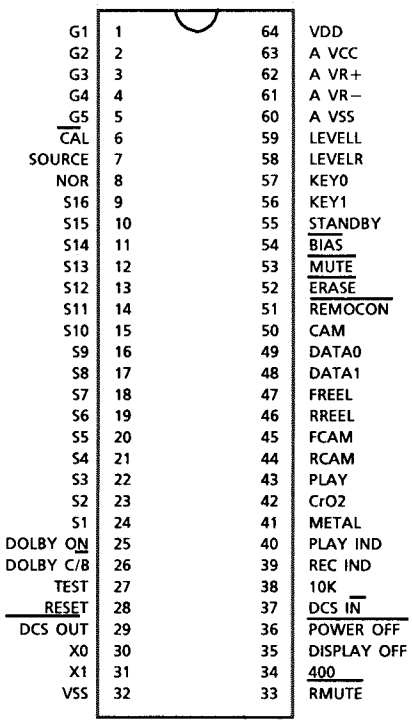
Design and specifications subject to change without notice.

–MEMO–

Description of Major LSIs

■ MB88625B-181 (IC811) : System Controller

1. Terminal layout



2. Key input

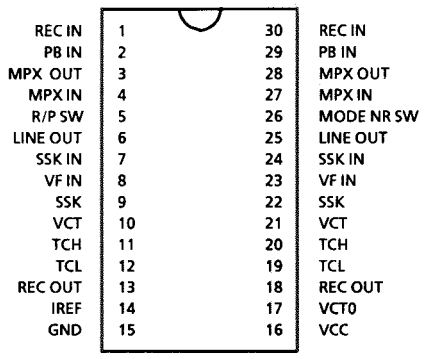
KEY IN 0 (57PIN)	KEY IN 1 (56PIN)
STOP/OPEN (S801)	PAUSE (S806)
▶▶ (S802)	PLAY (S807)
◀◀ (S803)	MONITOR (S808)
REC/REC MUTE (S804)	OPERATE (S809)
CAL (S805)	DISPLAY OFF (S810)
—	DOLBY NR (S811)
—	TIMER SW (S812)

3. Description

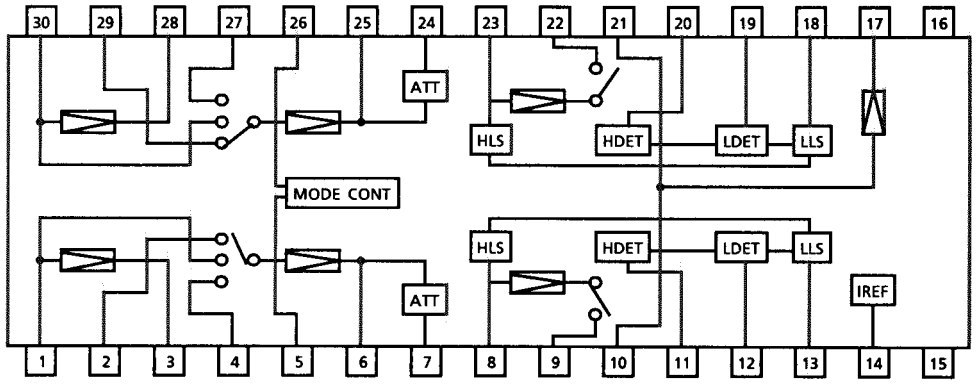
Pin No.	Symbol	I/O	Description	Pin No.	Symbol	I/O	Description
1~5	G1~G5	O	FL grid control output	41	METAL	O	Metal tape, record
6	CAL	O	Calibration mode switching output	42	CrO2	O	CrO2 tape, record
7	SOURCE	O	TAPE / SOURCE switching output	43	PLAY	O	Reel motor speed control signal
8	NOR	O	Normal tape, record control output	44,45	RCAM,FCAM	O	Cam motor control signal
9~24	S16~S1	O	FL segment	46,47	RREEL,FREEL	O	Reel motor control signal
25	DOLBY ON	O	NR ON/OFF signal output	48,49	DATA1,0	I	Dynamic scan signal input
26	DOLBY C/B	O	NR B / C switching signal output	50	CAM	I	Cam mode detect signal input
27	TEST	--	Connected to GND	51	REMOCON	I	Remote control signal input
28	RESET	I	Reset signal input	52	ERASE	O	Erase oscillation control signal
29	DCS OUT	O	Compulink signal output	53	MUTE	O	Muting signal output
30,31	X0,X1	--	Clock oscillation terminal 8MHz	54	BIAS	O	Bias ON/OFF control signal
32	VSS	--	GND	55	STANDBY	O	Power ON/OFF control signal
33	RMUTE	O	REC. muting control signal	56,57	KEY1,0	I	Key input
34	400	O	It is 400Hz output when calibration mode	58,59	LEVELL,R	I	Level signal input
35	DISPLAY OFF	O	Indication control for Display Off	60	A VSS	--	Analog GND
36	POWER OFF	I	Power ON/OFF signal output (H:ON,L:OFF)	61	A VR−	--	Connected to GND (Analog)
37	DCS IN	I	Compulink signal input	62	A VR+	--	Pull up (+5V)
38	10K	O	It is 10KHz output when calibration mode	63	A VCC	--	Power supply (Analog)
39	REC IND	O	Indication control for REC	64	VDD	--	Power supply (+5V)
40	PLAY IND	O	Indication control for PLAY				

■ CXA1331S (IC301) : Dolby B,C Noise Reduction IC

1. Terminal Layout



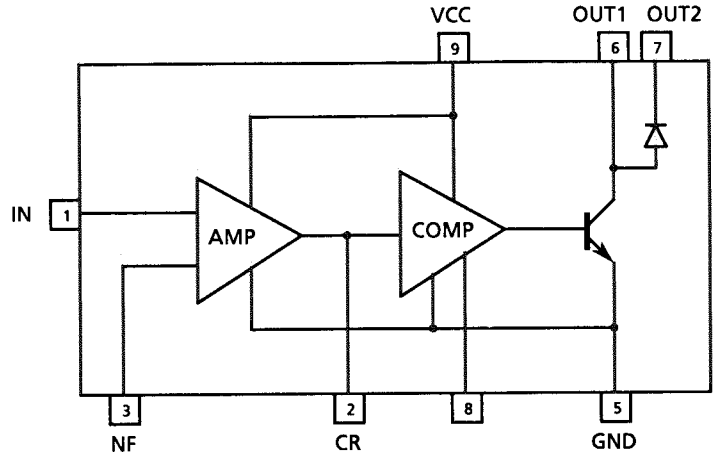
2. Block Diagram



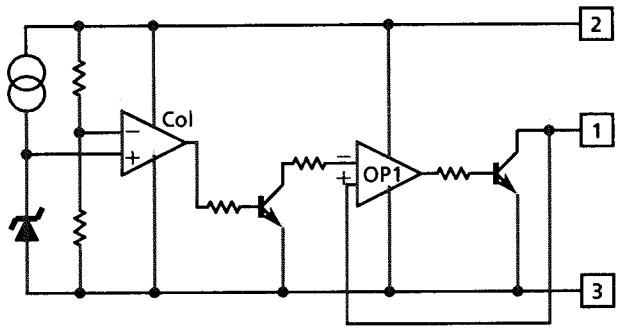
3. Description

Pin No.	Symbol	I/O	Description
1,30	LINE IN	I	REC input terminal
2,29	PB IN	I	PB input terminal
3,28	MPX OUT	O	Buffur amp output for MPX filter drive
4,27	MPX IN	I	Buffur amp input for MPX filter drive
5	MODE SW	I	Mode control terminal (H:REC Filter on , M:REC Filter off , L:PB)
6,25	LINE OUT	O	Line output terminal
7,24	SSK IN	I	Spectrum skewing circuit drive output terminal
8,23	VF IN	I	Encoder input terminal
9,22	SSK	--	Spectrum skewing circuit swiching output terminal
10,21	VCT	--	VCC/2 output terminal
11,20	TCH	I	Time constant connect terminal of HLS detector
12,19	TCL	I	Time constant connect terminal of ILS detector
13,18	REC OUT	O	REC output terminal
14	IREF	I	Referrence current input terminal
15	GND	--	GND
16	VCC	--	Power supply
17	VCT0	--	Referrence voltage terminal
26	NR SW	I	NR control terminal (H:C-type , M:B-type , L:NR off)

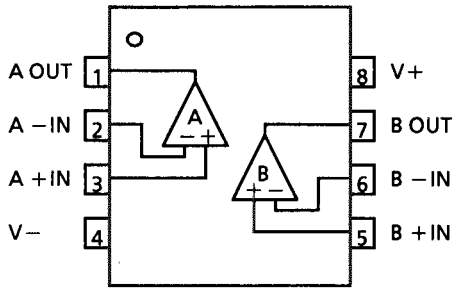
■ LA2000S (IC551) : Music scan detect IC



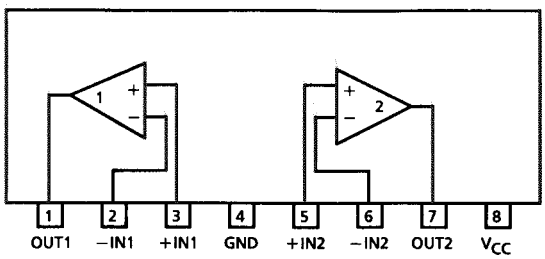
■ PST9140T (IC812) : Reset IC



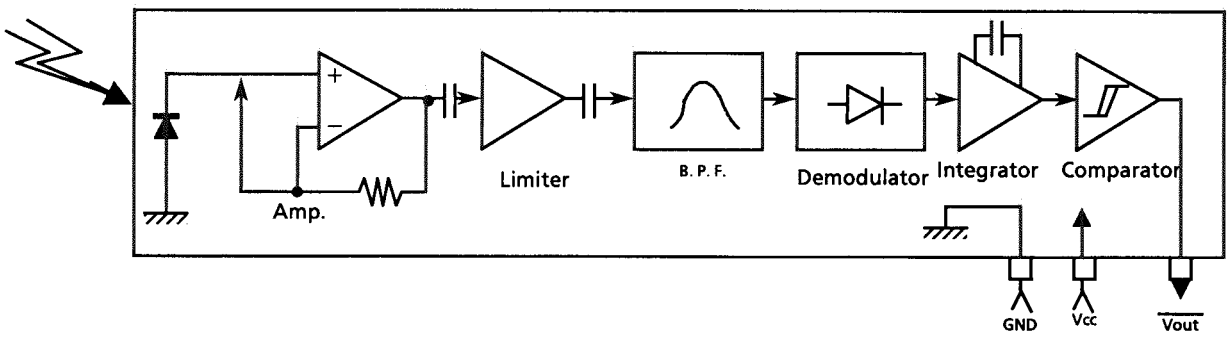
■ BA15218 (IC501) : Dual OP Amp.
VC4580LD (IC102) : Dual OP Amp.



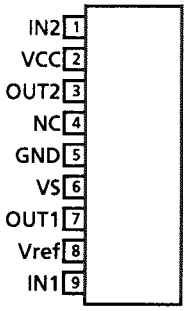
■ BA15218N (IC901) : Dual OP Amp.



■ GP1U501X (IC801) : Receiver for remote controller



■ TA8409S (IC802,803) : DC MOTOR DRIVER

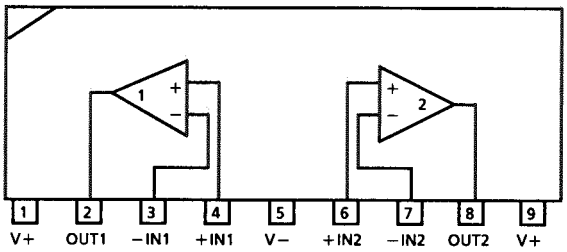


Function

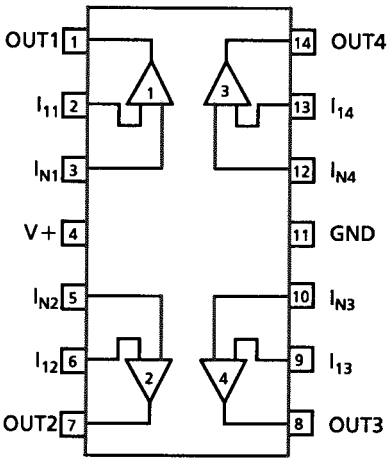
INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	FORWARD
0	1	L	H	REVERSE
1	1	L	L	BRAKE

∞: Hight impedance

■ µPC4570HA (IC601,602) : Dual OP Amp.



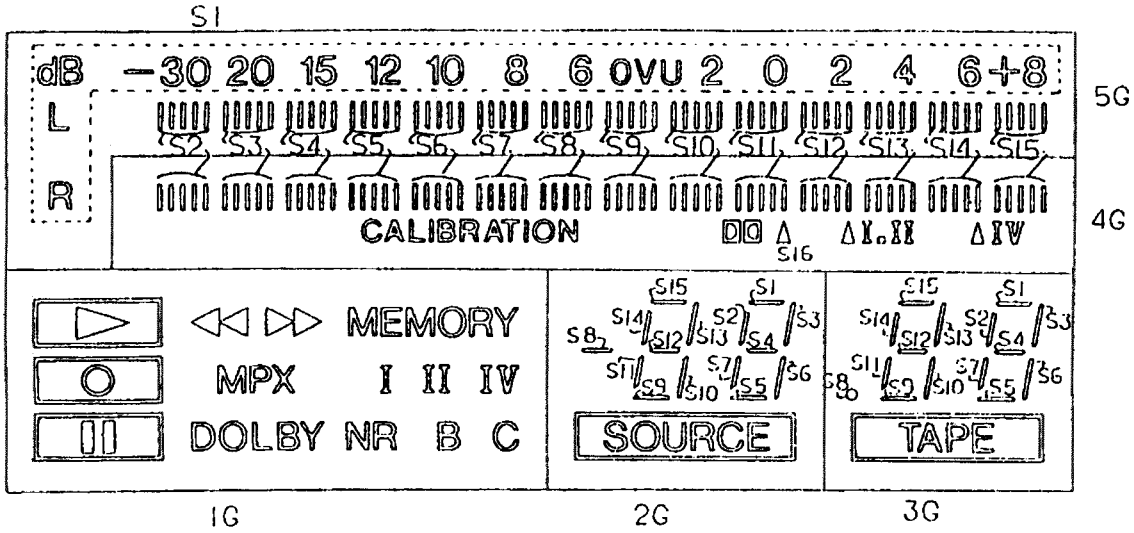
■ µPC324C (IC603) : OP amp.



Internal connections of Display

■ ELU0001-203 (FL801)

1. Grid Layout



2. Anode Designation

	1G	2G	3G	4G	5G
S1	C	S1	S1	CALIBRATION.Δ I.II.ΔIV	S1
S2	B	S2	S2	S2	S2
S3	IV	S3	S3	S3	S3
S4	II	S4	S4	S4	S4
S5	I	S5	S5	S5	S5
S6	DOLBY NR	S6	S6	S6	S6
S7	DOLBY	S7	S7	S7	S7
S8	▷	S8	S8	S8	S8
S9	◁◁	S9	S9	S9	S9
S10	▷▷	S10	S10	S10	S10
S11		S11	S11	S11	S11
S12	MEMORY	S12	S12	S12	S12
S13		S13	S13	S13	S13
S14		S14	S14	S14	S14
S15		S15	S15	S15	S15
S16	○	SOURCE	TAPE	CALIBRATION.Δ	
S17	MPX				

3. Pin Connection

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Electrode	F1	F1	F1	NP	1G	2G	3G	4G	5G	NP	NP	NP	NP	NP	P s16	P s15	P s14	P s13

Pin No.	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Electrode	P s12	P S11	P s10	P s9	P s8	P s7	P s6	P s5	P s4	P s3	P s2	P s1	P s17	NP	F2	F2	F2

Note · · · · F : Filament, G : Grid, P : Anode, NP : No Pin,

Disassembly Procedures

1. Side Panel removal

1) Remove 8 screws Ⓐ fastening both side panels.

2. Front Panel removal

1) Disassemble the side panels.

2) Remove 4 screws Ⓑ on both sides and 4 screws Ⓑ on the rear side and 4 screws Ⓑ on the bottom side.

3) Pull out the 4 knobs and volume knob.

4) Remove the cassette holder.

5) Disassemble the front panel.

[NOTE]

Take care not to scratch the button for the panel assembling.

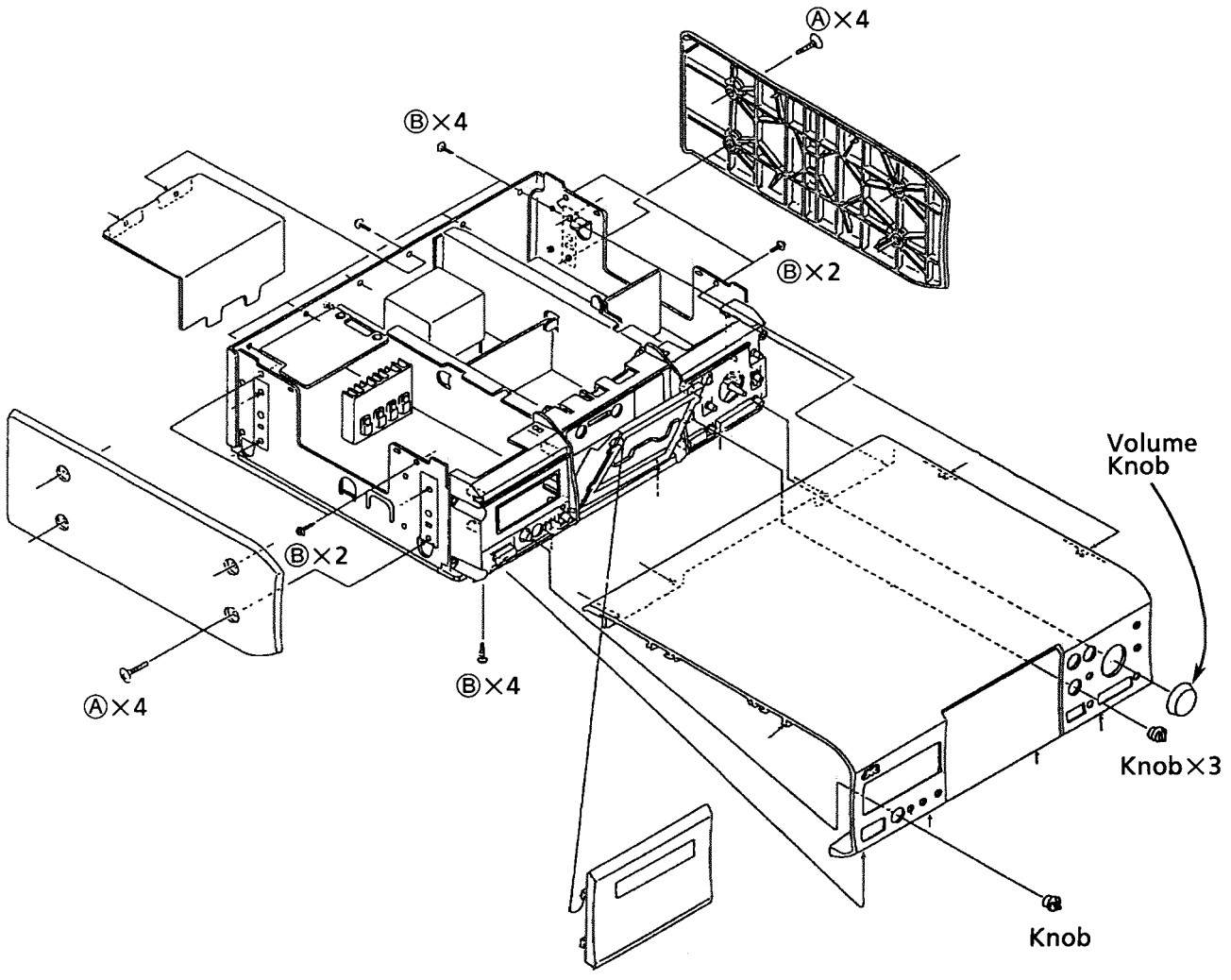


Fig1 Outward appearance

Ⓐ .. E74274-003 Ⓑ GBSG3008CC

3. Frame removal

1) Disassemble the side panels, cassete holder and front panel.

2) Remove 2 screws Ⓑ on the rear panel to disassemble the shield cover above the power transformer.

3) Remove 3 screws Ⓑ fastening the power supply PCB (END-102-1) to remove it.

4) Remove 2 screws Ⓑ and Ⓔ fastening rear panel side of the frame.

5) Remove 5 screws Ⓒ and 1 screw Ⓨ fastening the frames and remove 2 plastic rivets Ⓓ.

6) Remove 3 plastic rivets Ⓕ and 2 flatwires which fasten the shield PCB. from CN812/J802 to disassemble 2 frames.

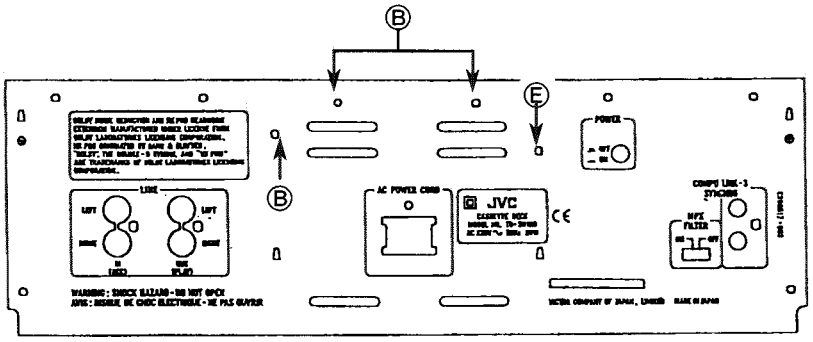


Fig.2 Rear view

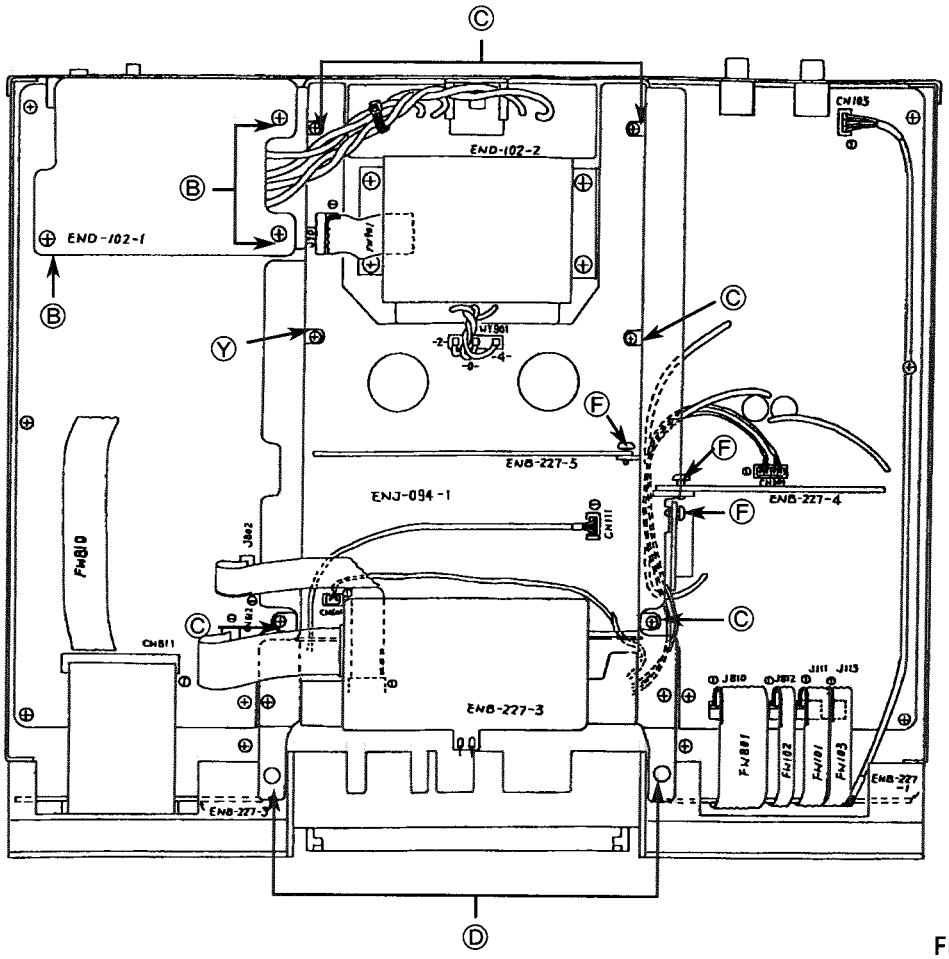


Fig.3 Inside view

Ⓑ .. GBSG3008CC Ⓒ .... GBSG3006CC Ⓓ ... E48729-003
Ⓔ .. E66052-006 Ⓕ .... E48729-008 Ⓨ ... E408499-002

4. Front base & Cassette mechanism assembly removal

1) Remove the 2 frames.

2) From its front, remove 4 screws Ⓑ which fasten the front base and remove 4 screws Ⓗ fastening its inside.

3) Remove 4 flatwires from J810/J812/J111/J112/CN811 and 3 headwires from CN601/CN111/CN301/CN105 to disassemble the front base together with the cassette mecha. ass'y.

5. Cassette mechanism assembly removal

1) Disassemble the front base and the cassette mecha. ass'y.

2) Unsloder the indicator lead on the cassette switch PCB. (ENB-227-3).

3) Remove 4 screws Ⓖ and Ⓗ fastening the cassette mecha. ass'y to remove it.

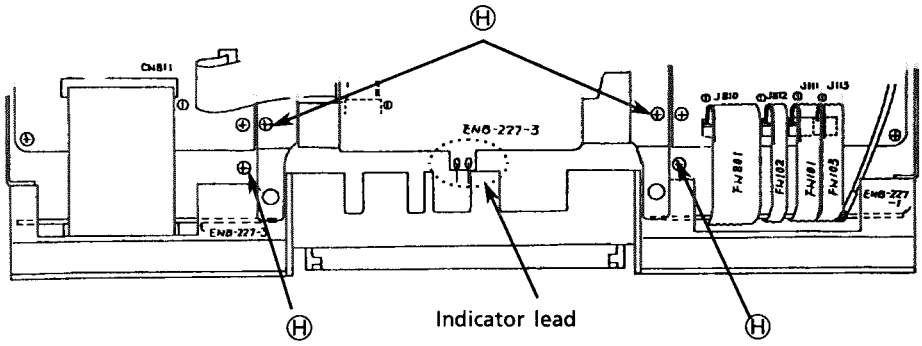


Fig.4 Inside view

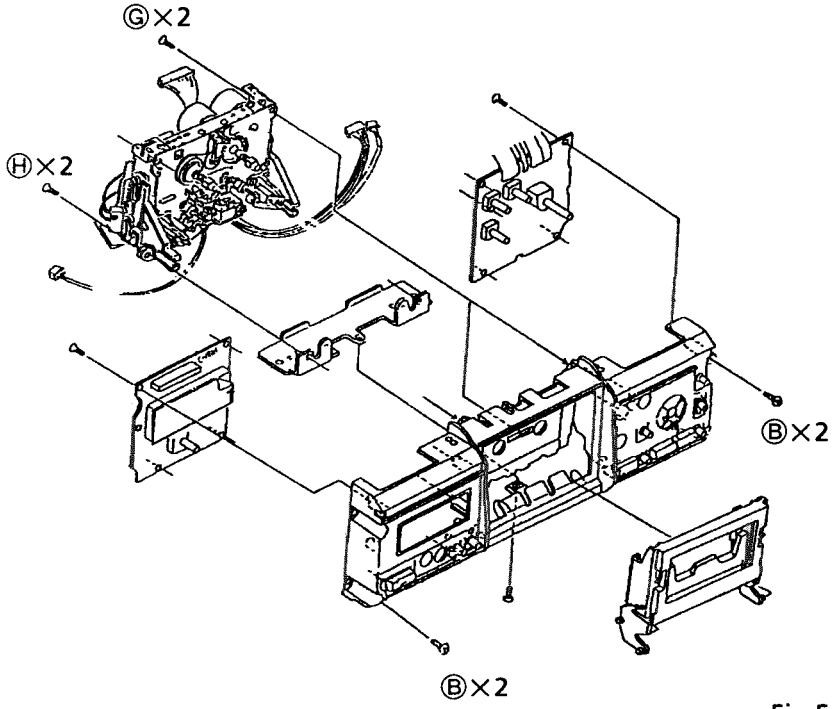


Fig.5 Front view

Ⓑ .. GBSG3008CC Ⓖ .... SBSF3008CC Ⓗ ... SBST3006CC

6. Main PCB (ENJ-094-1) removal

1) Remove the 2 frames.

2) Remove 7 screws Ⓑ, Ⓨ on the rear and 4 screws Ⓑ on the bottom side to remove the rear panel.

3) Remove 8 screws Ⓒ fastening the main PCB and 4 screws Ⓘ fastening the power trans.

4) Remove flatwires and headwires on the main PCB. to disassemble the PCB. together with the power transformer.

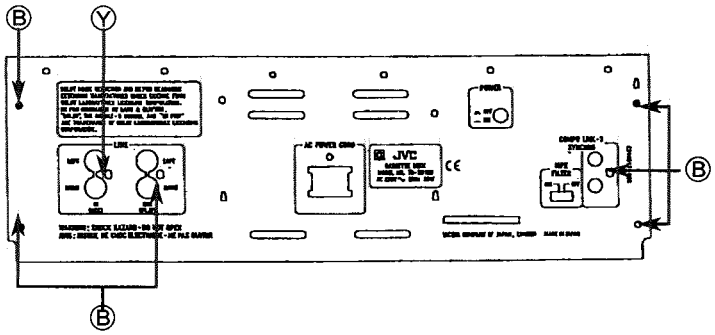


Fig.6 Rear view

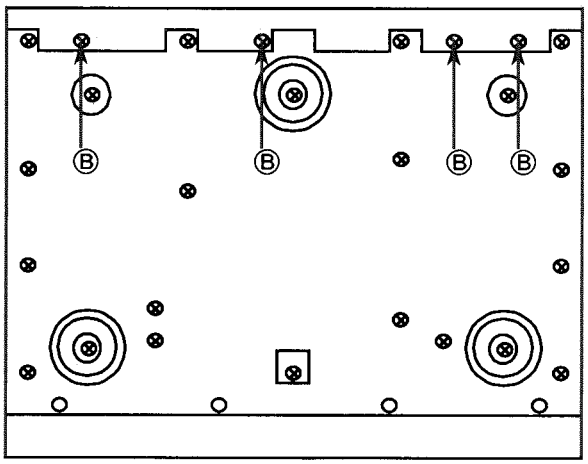


Fig.7 Bottom view

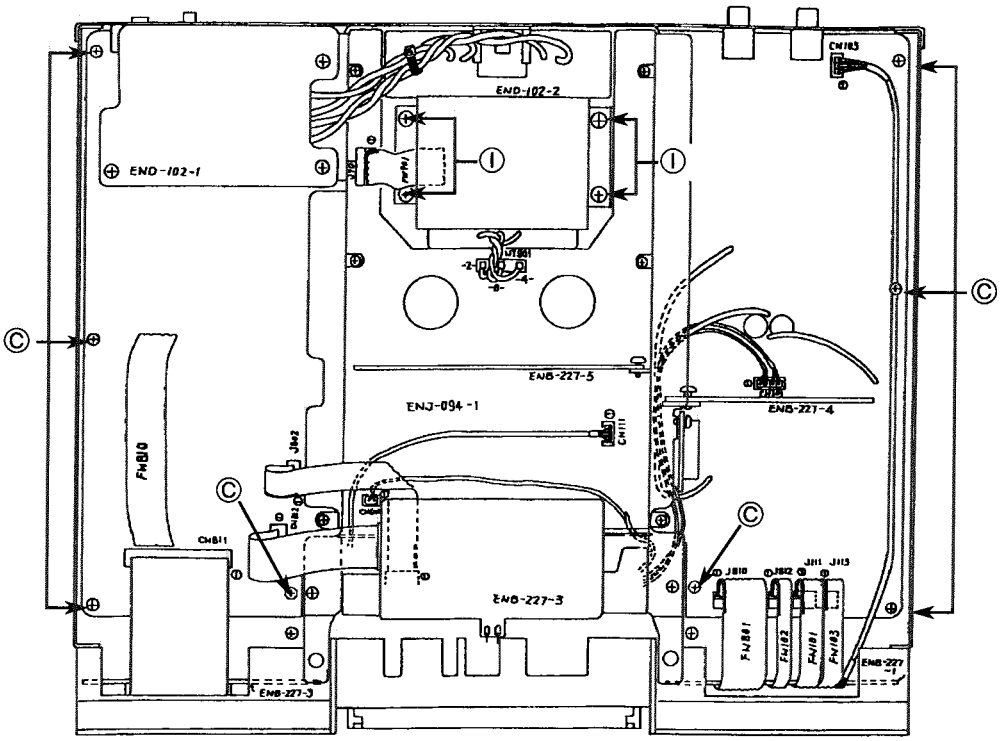


Fig.8 Inside view

Ⓑ .. GBSG3008CC Ⓒ .... GBSG3006CC Ⓘ ... E61661-003 Ⓨ ... E408499-002

7. Bottom cover removal

1) Remove the 2 frames.

2) Remove 7 screws Ⓑ, Ⓨ on the rear side and 4 screws Ⓑ on the bottom side to remove the rear panel. (See fig.6,7.)

3) Remove 4 screws Ⓗ which fasten the cassette mecha. ass'y and the front base, 2 scews Ⓒ fastening the main PCB. and 4 screws Ⓘ which fasten the power transformer. (See Fig.-8.)

4) Reverse the unit while supporting the power transformer.

5) Remove 8 screws Ⓑ fastening the bottom cover to remove it.

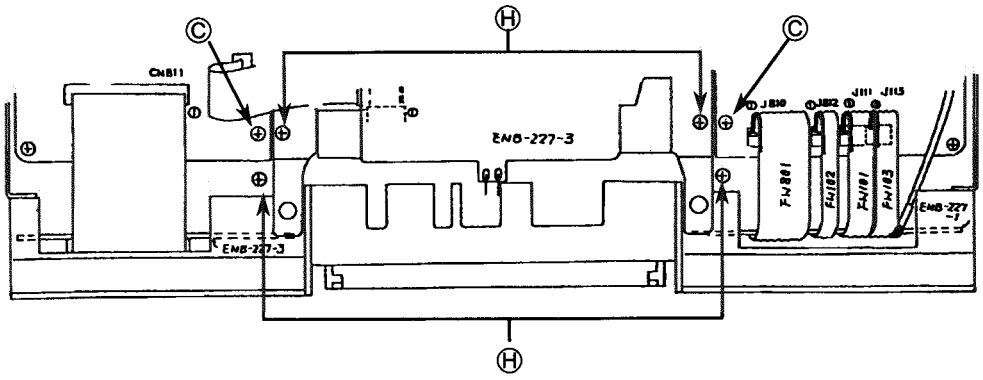


Fig.9 Inside view

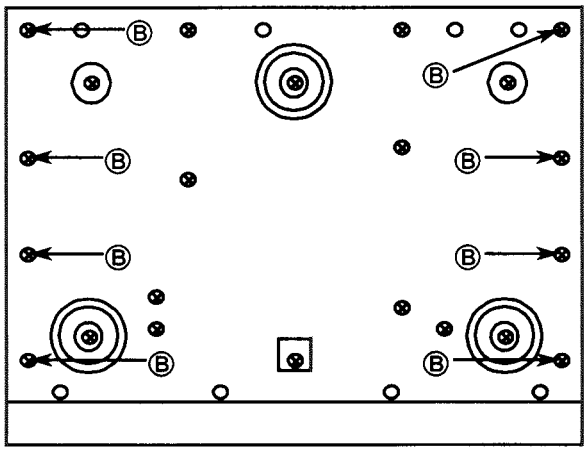


Fig.10 Bottom view

Ⓑ .. GBSG3008CC Ⓒ .... GBSG3006CC Ⓗ ... SBST3006CC

8. Leaf switch PCB (ENB-227-3) removal

1) Remove the cassette mechanism assembly.

2) Remove 3 screws Ⓙ fastening the leaf switch PCB assembly to remove it.

9. Pinch roller removal

[Right side]

1) Remove the E washer Ⓚ of pinch roller.

2) Pull the pinch roller arm ass'y slightly upward to remove the return spring (black and thin) for chassis side from the pinch roller.

[Left side]

1) Remove a screw for height adjsutment of the pinch roller arm shaft.

2) Remove the return spring of bracket side.

(note)

Height adjsutment by M300 gauge is needed after the replacement.

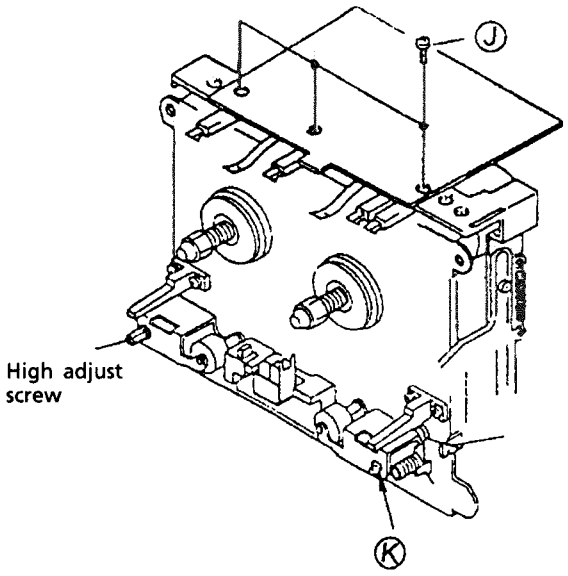


Fig.11 Cassette mech. Ass'y

10. Head parts removal

Readjustment is always needed after screwing.

1) Remove the cassette mechanism assembly.

2) Remove 3 screws Ⓛ and Ⓜ fastening the head block to remove it.

3) Remove 2 screws Ⓝ to remove the REC head and PB head.

4) Remove screw Ⓞ to remove the Erase head.

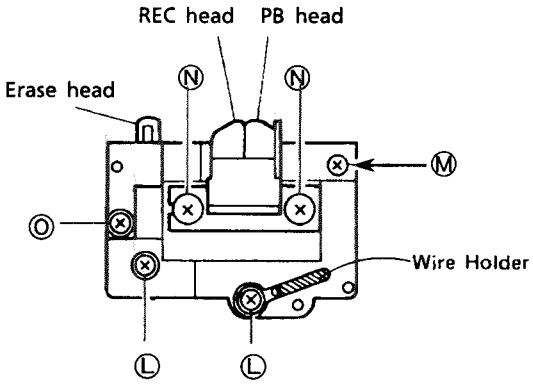


Fig.12 Head block

11. Fly wheel removal

1) Remove the cassette mechanism assembly.

2) Remove 3 screws Ⓟ on reversed side of the cassette mech. to disssemble DD bracket.

3) Remove the belts to remove the fly wheels.

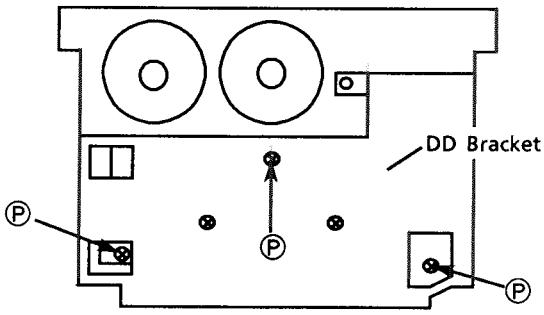


Fig.13 Cassette mech. back side

Ⓙ .. SDST2608Z Ⓛ .... LPSP2010N Ⓜ ... SPSP2016N Ⓝ ... SDSP2006N
Ⓞ .. LPSP2004N Ⓟ SDST2605Z

12. Cam & reel motor PCB removal

1) Remove the leaf switch PCB assembly.

2) Unscrew Ⓠ and Ⓡ on the front cassette mecha. to remove the cam motor.

3) Unscrew Ⓢ and Ⓣ on the front cassette mecha. to remove the reel motor.

13. Cam switch PCB assembly removal

1) Remove the leaf switch PCB assembly.

2) Remove the 3 screws Ⓟ and 2 screws Ⓥ to remove the bracket of both side.

3) Remove the fly wheels. (See the above 11.)

4) Remove the 4 screws Ⓦ to remove the FG bracket.

5) Remove 2 screws Ⓠ and Ⓣ on the front cassette mech.

6) Remove a screw Ⓧ on the rear cassette mech. to disassemble the cam switch PCB. ass'y.

[NOTE]

Put the holes of the pinch roller cam gear and the cam switch gear together for the assembling. (See Fig.-16)

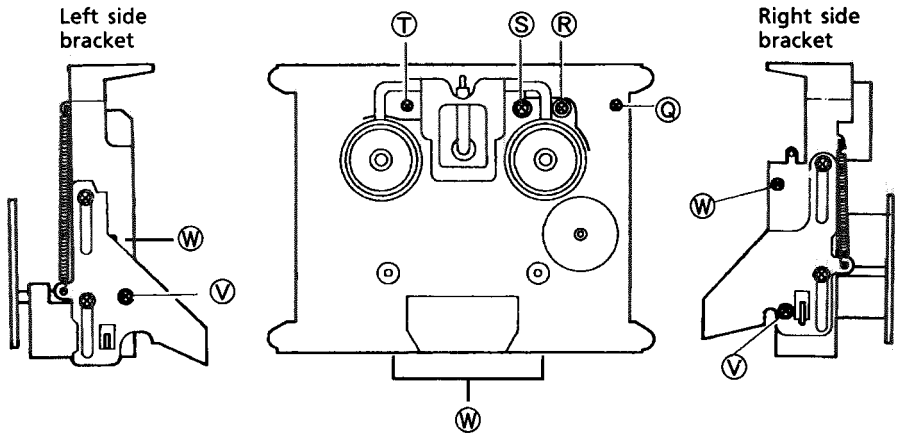


Fig.14 Cassette mecha.

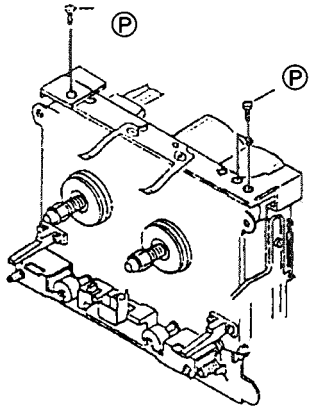


Fig.15 Cassette mecha.

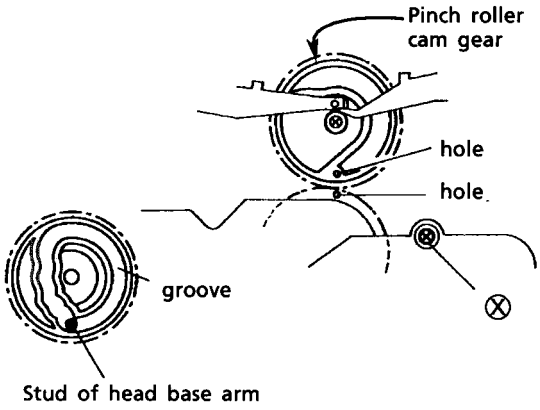


Fig.16 Cam switch PCB

Ⓟ .. SDST2605Z Ⓠ .... SPSP2615Z Ⓡ ... DPSP2608Z
Ⓢ .. SWSP2608Z Ⓣ .... LPSP2614Z Ⓥ ... SSST2605Z Ⓦ ... SSST2605Z
Ⓧ .. LPSP2608Z

Adjustment Procedures (Cassette Deck)

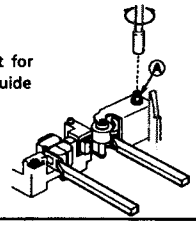
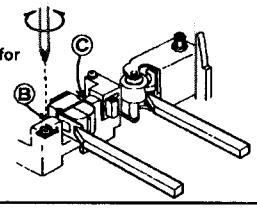
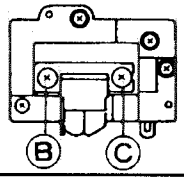
1. Measuring instruments

Audio frequency signal generator (0dbs output at the 600 ohm output terminal from 50Hz to 20kHz)
Electronic voltmeter / Frequency counter / Wow & Flutter meter
Oscilloscope / Distortion Meter with band pass filter / Attenuator (600 ohm impedance)
A resistor with 600Ω / M300 Gauge

Standard Tape **0dBs=0.775V**

Tape No.	Frequency	Level (Wow&Flutter)	Purpose
VTT-704	12.5kHz	−10dBs	Head azimuth , Frequency Response
VTT-712	3000Hz	0dBs 0.025%WRMS	Tape Speed , Wow & Flutter
VTT-727	400Hz	−2dBs	Standard Level
VTT-735	1kHz,12.5kHz	−2dBs	Playback Frequency
TMT-6447 , TMT-6448	—	—	Music Scan
AC-224	—	—	Recording standard Normal : AD
AC-712	—	—	Recording standard METAL :MA
AC-513	—	—	Recording standard CrO_2 :SA
CTG-N,TW-2111	—	—	Forward / reverse play torque measuring
TW-2231	—	—	Feed forward / rewind torque measuring
C-120 Tape	—	—	Comfirming the tape running

2. Adjustment and repair of the mechanism

Item	Adjustment method	Standard value	Remarks
Height adjustment for the pinch roller guide	1. Adjust Ⓐ by M300 gauge for 3.8mm. 2. Screw lock is needed after the adjustment.		
Height adjustment for the playback head.	1. Adjust Ⓑ by M300 gauge so that 3.8mm gauge can be through the tape guide of the playabck head. 2. Screw lock is needed after the adjustment.		
Playback azimuth adjustment	1. Connect an oscilloscope with the LINE OUT and play VTT-704. 2. Play VTT-704 to adjust screwⒸ so that the output level becomes maximum and phase difference between L and R is miimum. 3. Screw lock is needed after the adjustment.		
Playback torque	1. Measure the torque in the playback mode by the torqu meter.	30~70 g-cm	When the standard torque cannot be obtained, replace the FR arm assembly or motor.
Fast forward / Rewind torque	1. Measure the torque in the fast forward mode and rewind mode by the torqu meter.	70~200 g-cm	When the standard torque cannot be obtained,replace the FR arm assembly or motor.
Wow &Flutter	1. Connect the wow & flutter meter to the LINE OUT and play back VTT-712 . 2. Its reading should be within 0.11%.	Less than 0.08% (JIS WRMS)	—

Item	Adjustment method	Standard value	Remarks
Auto-stop check	1. Make sure to operate AUTO STOP at the end of tape running and not to operate on the way of the playing.	—	—
Music Scan	1. Make sure not to work the music scanning operation at the start of tape wind using TMT-6447. 2. Make sure to work the music scanning operation at the end of tape wind using TMT-6448.	—	—

3. Electrical Adjustments (Make the following adjustments after adjusting the head azimuth.)

In principle, the adjustments should be made in the following sequence.
Adjustments marked with an asterisk (*) should always be made after the head is replaced

The following settings are needed to set each switches and a volume knob.

INPUT LEVEL=MAX., BALANCE=CENTER, DOLBY NR=OFF
MPX FILTER=OFF, BIAS CAL.=CENTER, LEVEL CAL.=CENTER

0dBs=0.775V

	Item	Method	Adjustment Location	Standard Value	Remarks
1	Tape Speed	1. Connect a frequency counter to the LINE OUT and play back VTT-712.	check	3000 ±15Hz	—
*2	Standard level (Playback Level)	1. Connect an electronic voltmeter to the LINE OUT. 2. Play back VTT-727 (400Hz : −2dBs) to adjust the semi-fixed resistors.	L : VR301 R : VR302	−4.5dBs (411mV) ±0.5dB	1) The playback level varies when the head is replaced so should be adjusted. Use an electronic voltmeter with an impedance of 100 kΩ or more.
*3	Playback Frequency Response	1. Connect an electronic voltmeter to the LINE OUT. 2. Play TMT735(1KHz,12.5KHz) and adjust semi-fixed resistors to obtain the standard values.	L : VR303 R : VR304	0±0.5dB for 12.5kHz with 1kHz as the standard.	
*4	Recording Bias Frequency	1. Connect a frequency counter to the body of C604. 2. Set a metal tape recording mode with no signal to get standard value.	L601	105 kHz ± 1 kHz	
5	Adiustment HX PRO	Adjust L603(L) and L604(R) so that DC voltage at both ends of R632 and R633 become maximum.	L:L603 R:L604	33mV	Adjusted during recording in metal tape.
*6	Record / Play Frequency Response (Bias current)	1. Supply 1kHz and 12.5kHz with 7.75mV signals to LINE IN terminals respectively to record them. 2. Connect an electronic voltmeter to the LINE OUT to confirm the recorded values. 3. If the values are not satisfied, adjust the semi-fixed resistors and record the signal again to confirm the recorded values.	L : VR601 R : VR602	0±0.5 dB for 12.5kHz with 1kHz as the standard.	**Refer to Fig.-1 below.** 1) Normal tapes are for the adjustment. Chrome and metal tapes are used for the check.
*7	Record / Playback Sensitivity	1. Input a 400Hz (30mV) signal to LINE IN terminals and record it on the left and right channels. 2. Connect an electronic voltmeter to the LINEOUT to confirm the recorded values. 3. Switch the monitor SW so that level difference between the tape monitor and the source monitor becomes the standard.	L : VR113 R : VR114	0±0.5dB	
8		1. Set BIAS and LEVEL volume on the front panel to the centre. 2. Press CALIBRATION and PLAY keys at the same time to set the calibration mode. 3. Adjust VR111 so that LEVEL bar graph(upper indicator) emits until ▲mark. 4. Adjust VR112 so that BIAS bar graph(upper indicator) emits until ▲mark.	LEVEL : VR111 BIAS : VR112		"CALIBRATION" will be emitted on the display, if it is set to calibration mode.

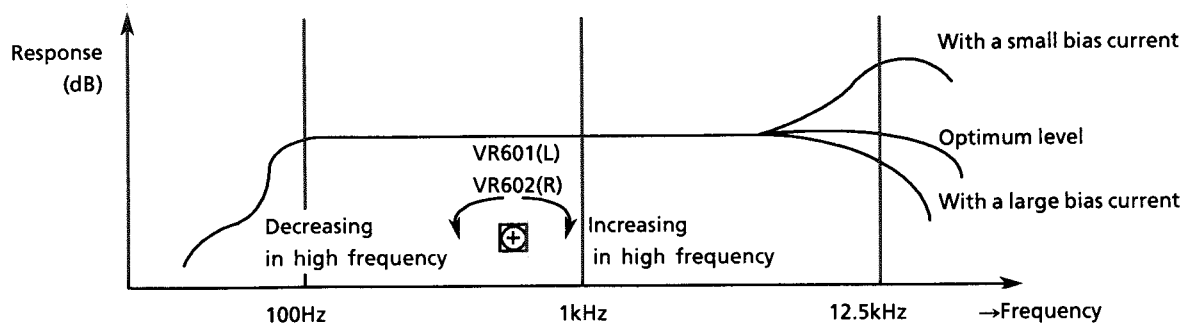


Figure 1

■ Adjustment point

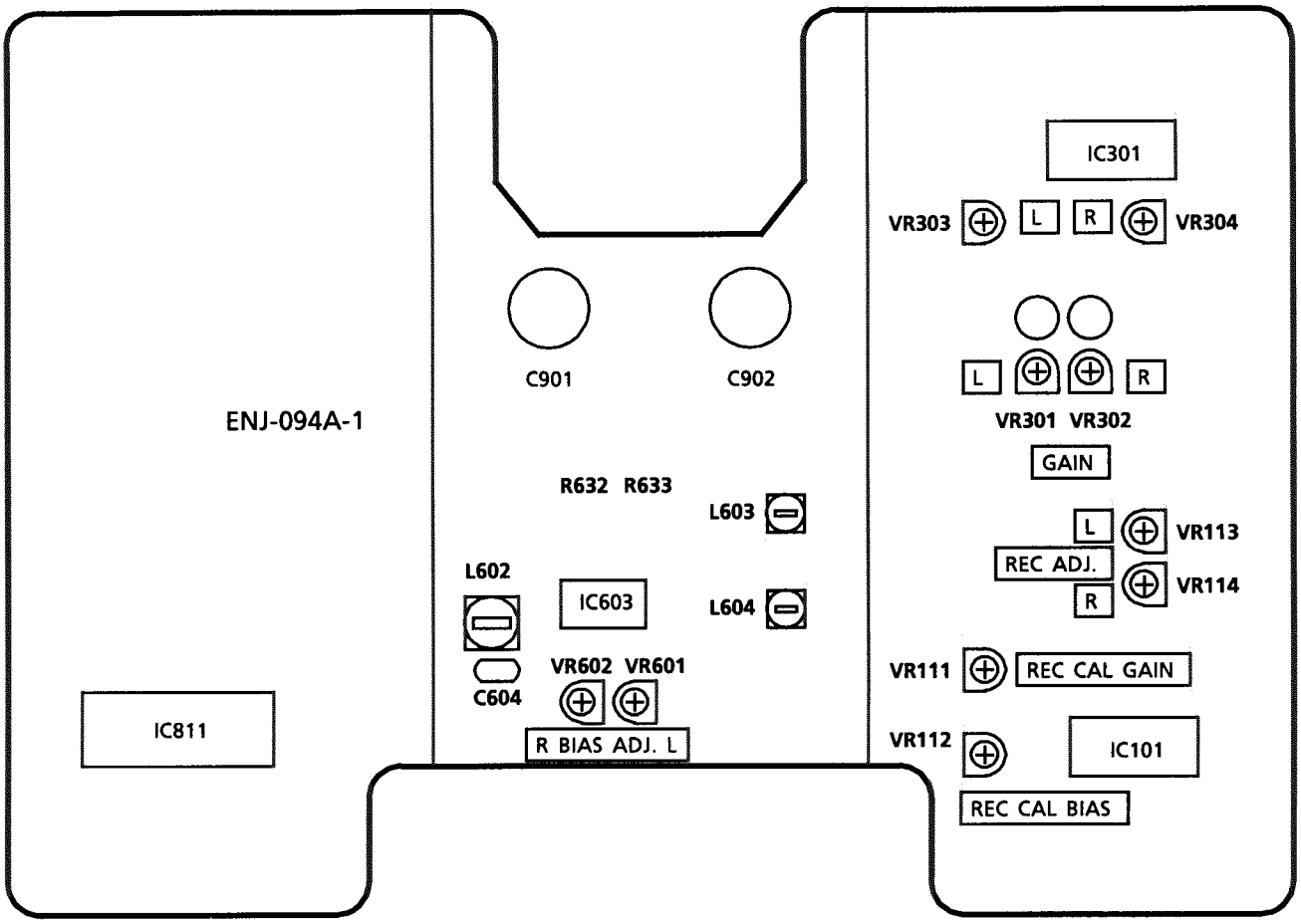
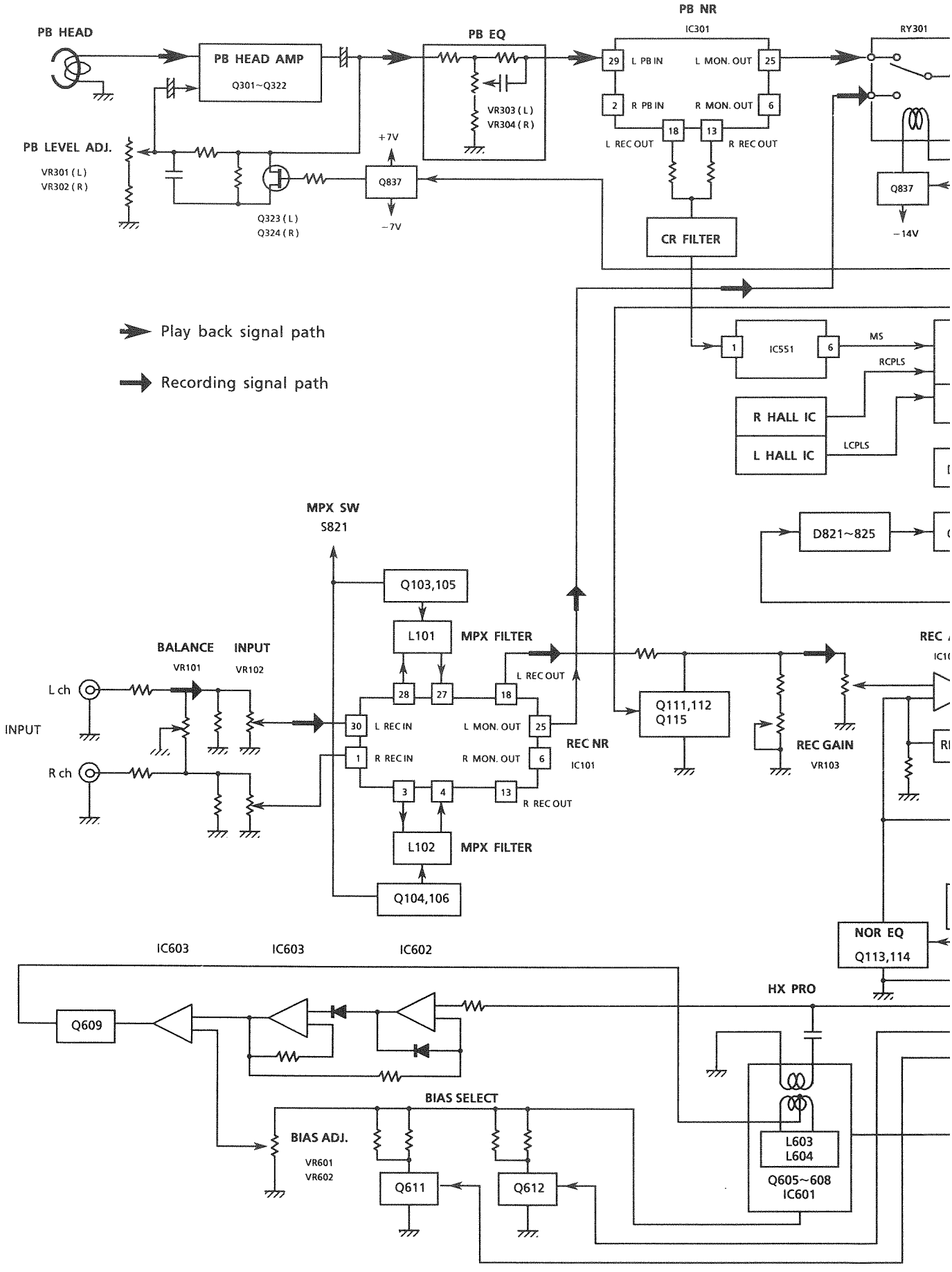
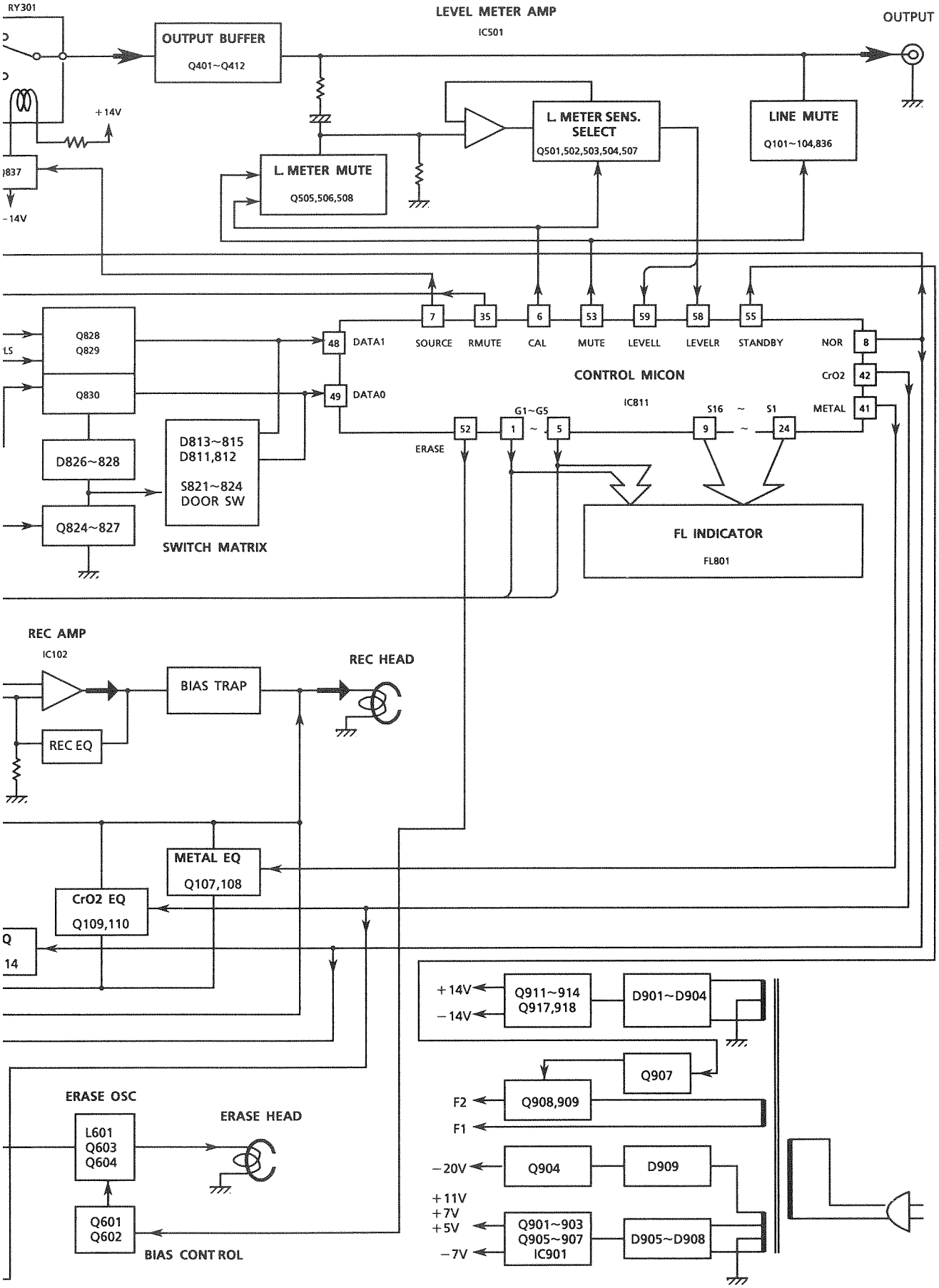


Figure 2

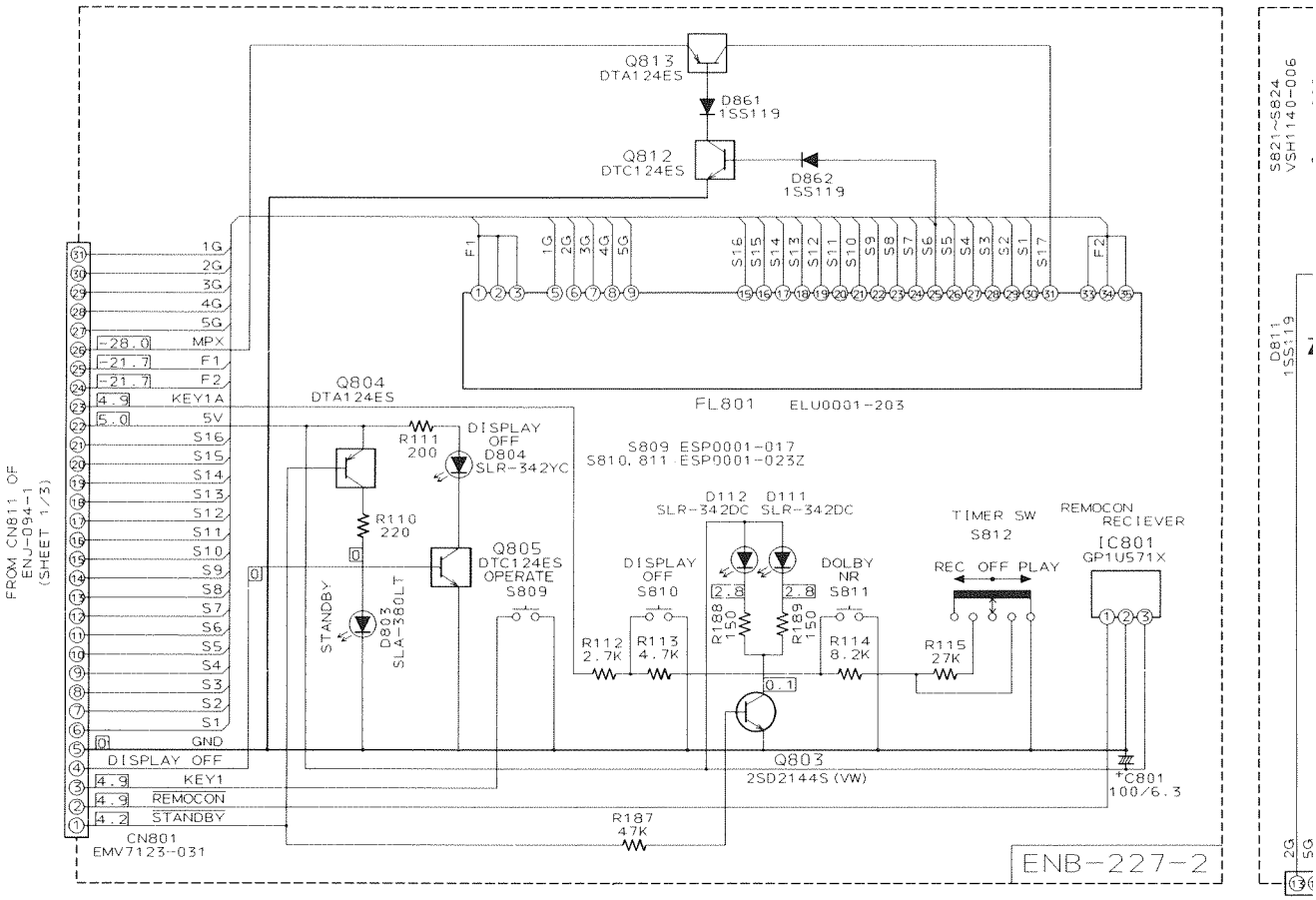
–MEMO–

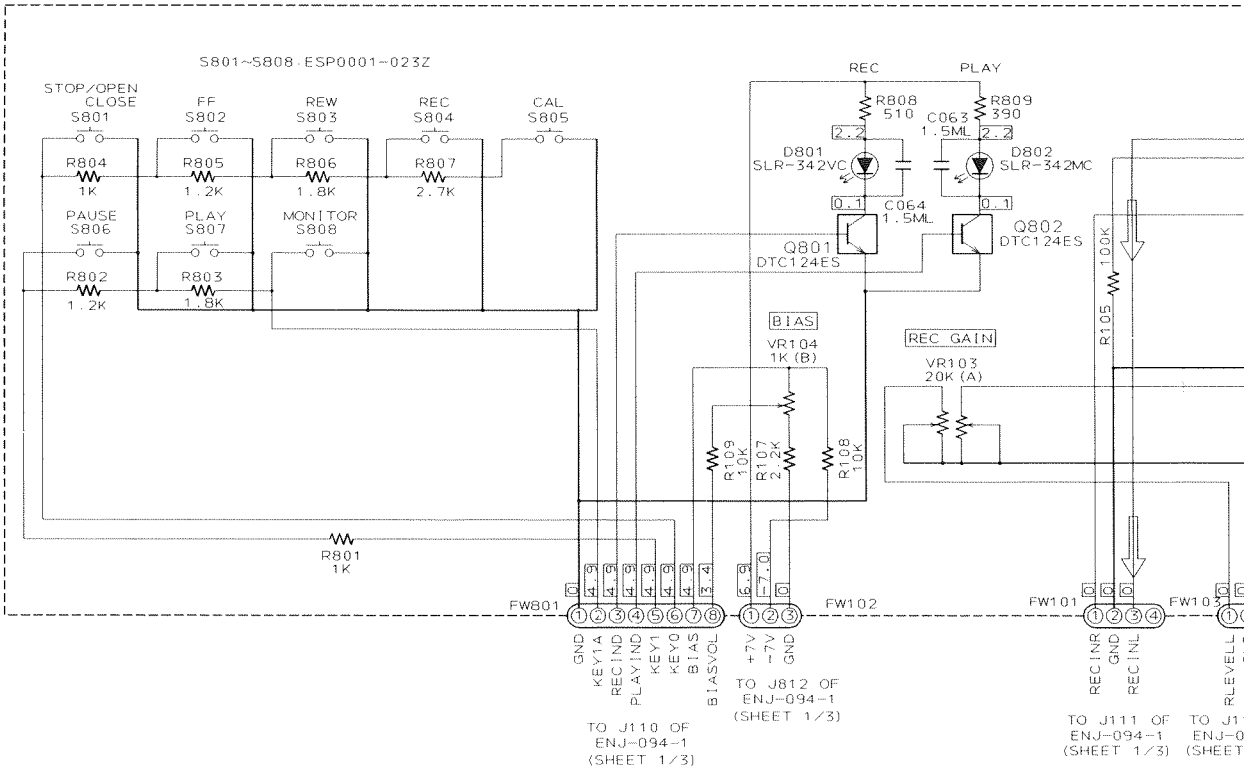
Block Diagrams

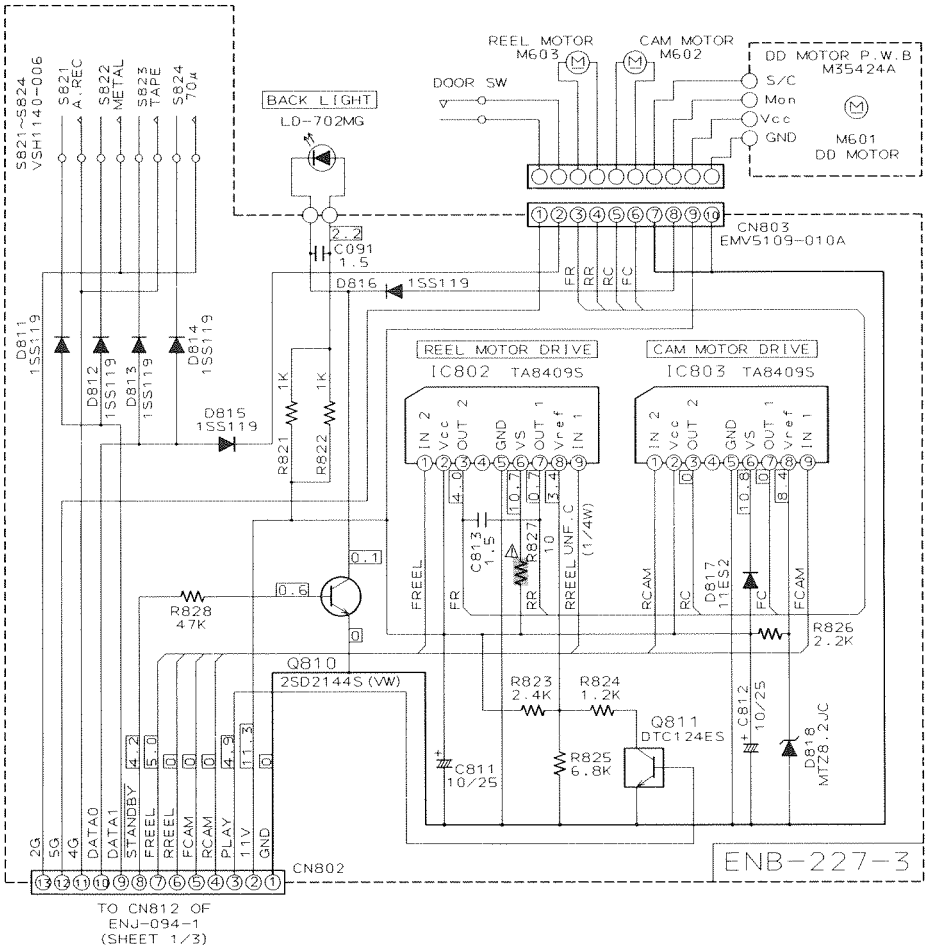


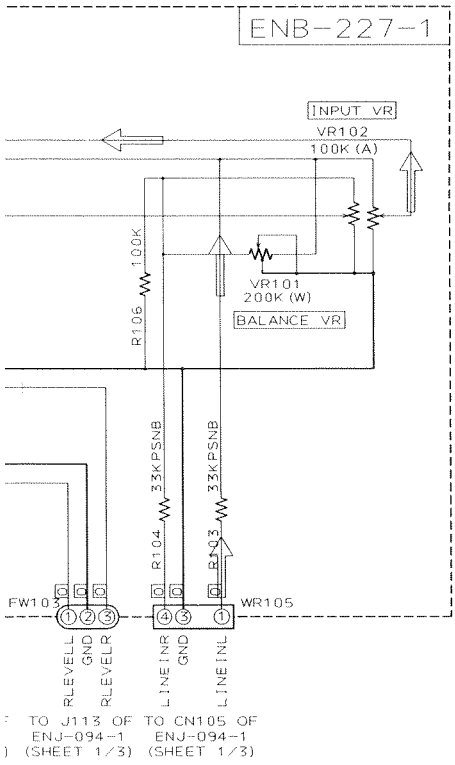

RY301
LEVEL METER AMP
IC501
OUTPUT
OUTPUT BUFFER
Q401~Q412
+14V
L. METER SENS. SELECT
Q501,502,503,504,507
LINE MUTE
Q101~104,836
L. METER MUTE
Q505,506,508
-14V
Q828
Q829
Q830
D826~828
Q824~827
D813~815
D811,812
S821~824
DOOR SW
SWITCH MATRIX
7
35
6
53
59
58
55
48
DATA1
49
DATA0
SOURCE
RMUTE
CAL
MUTE
LEVELL
LEVELR
STANDBY
NOR
8
CrO2
42
METAL
41
CONTROL MICON
IC811
G1~G5
S16
S1
52
1
5
9
24
ERASE
FL INDICATOR
FL801
REC AMP
IC102
REC HEAD
BIAS TRAP
REC EQ
METAL EQ
Q107,108
CrO2 EQ
Q109,110
+14V
-14V
Q911~914
Q917,918
D901~D904
Q907
F2
F1
Q908,909
-20V
Q904
D909
+11V
+7V
+5V
-7V
Q901~903
Q905~907
IC901
D905~D908
ERASE OSC
L601
Q603
Q604
ERASE HEAD
Q601
Q602
BIAS CONTROL

(1) FL, Swich & Motor Drive Section







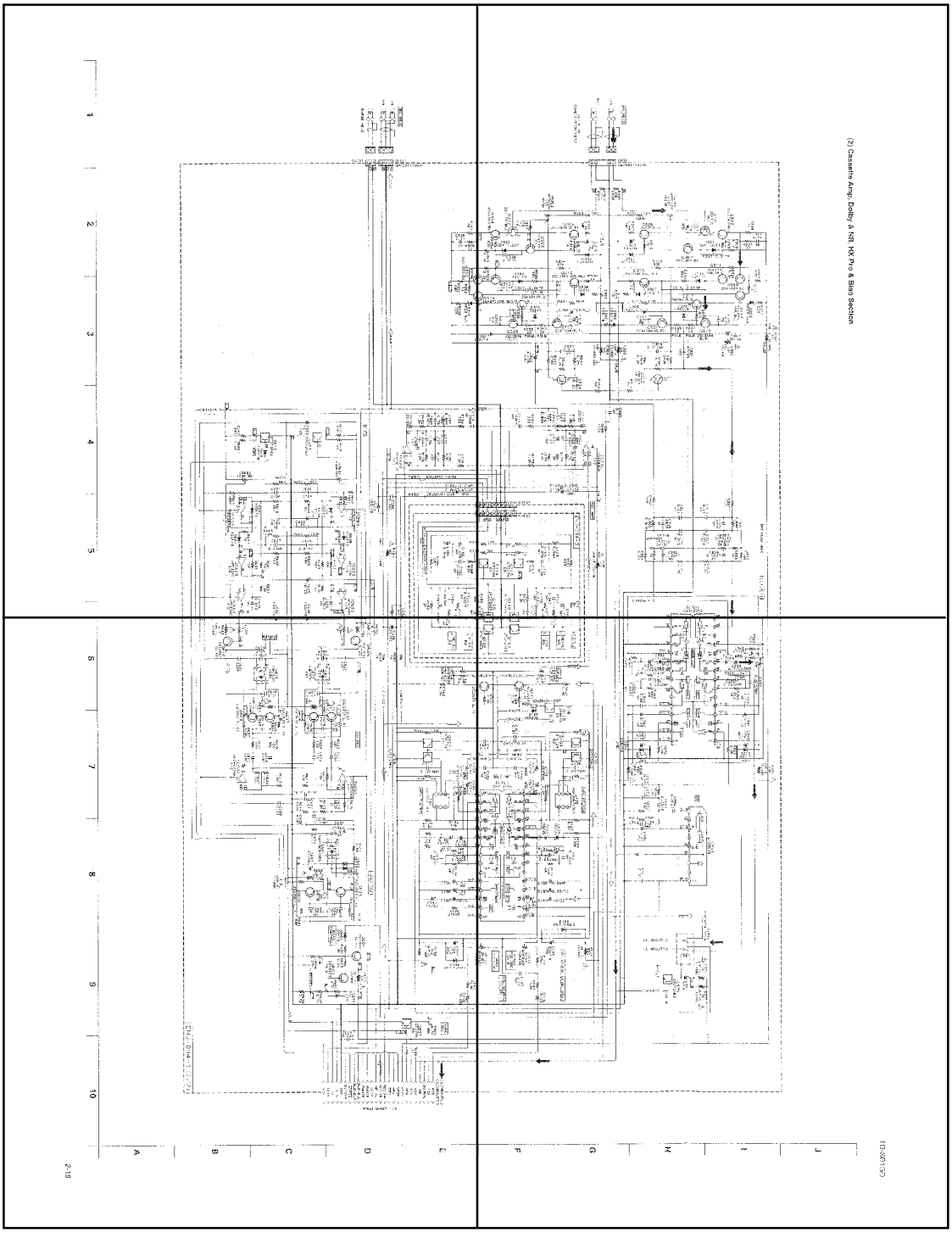


— Notes —

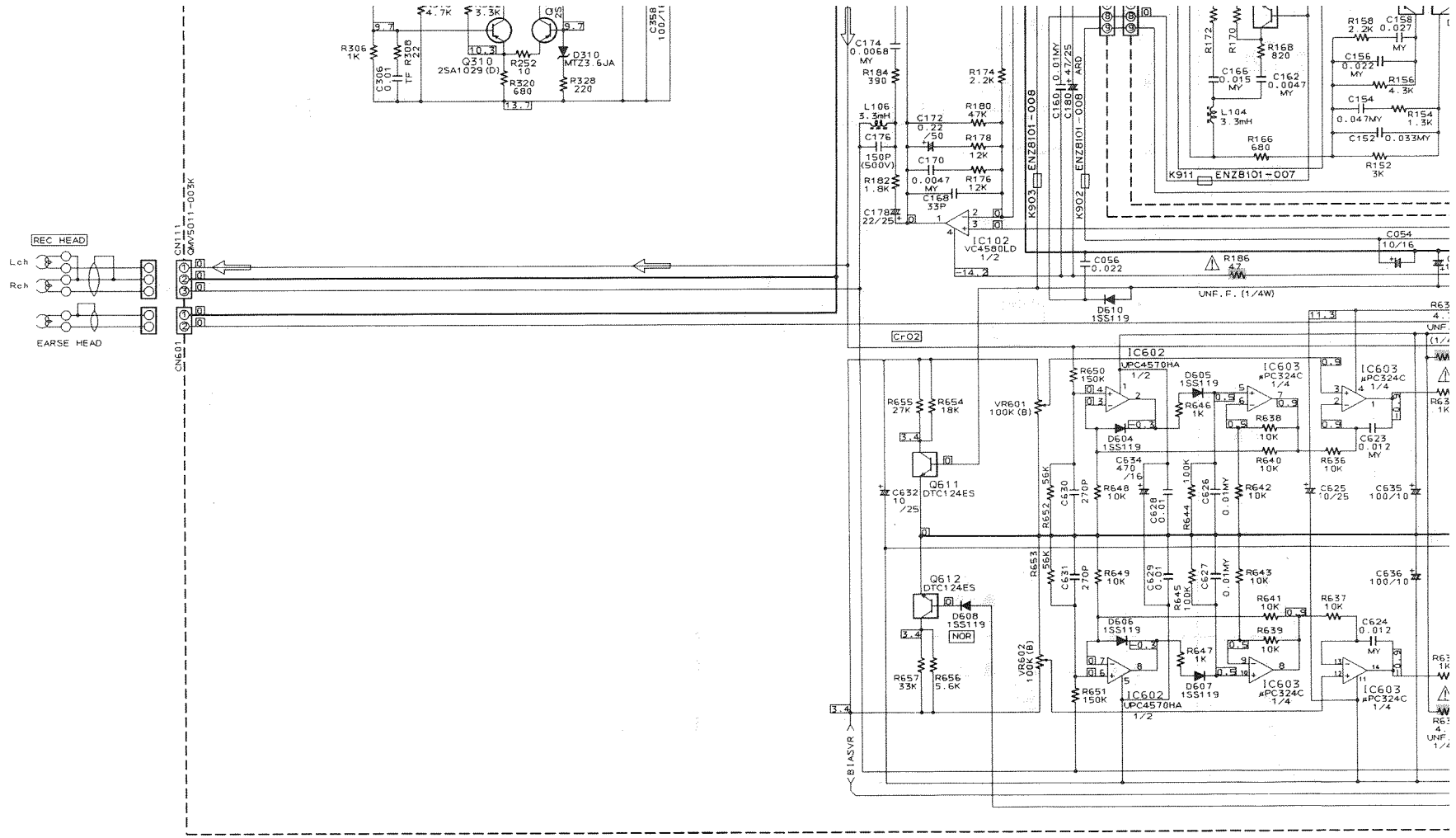
1. ➡ indicates Play signal path.
2. ⇨ indicates Recording signal path.
3. When replacing the parts in the darkened are (▒▒) and those marked with ⚠, be sure to use the designated parts to ensure safety.
4. This is the standard circuit diagram.
   The design and contents are subject to change withoutnotice.

6	7	8	9	10

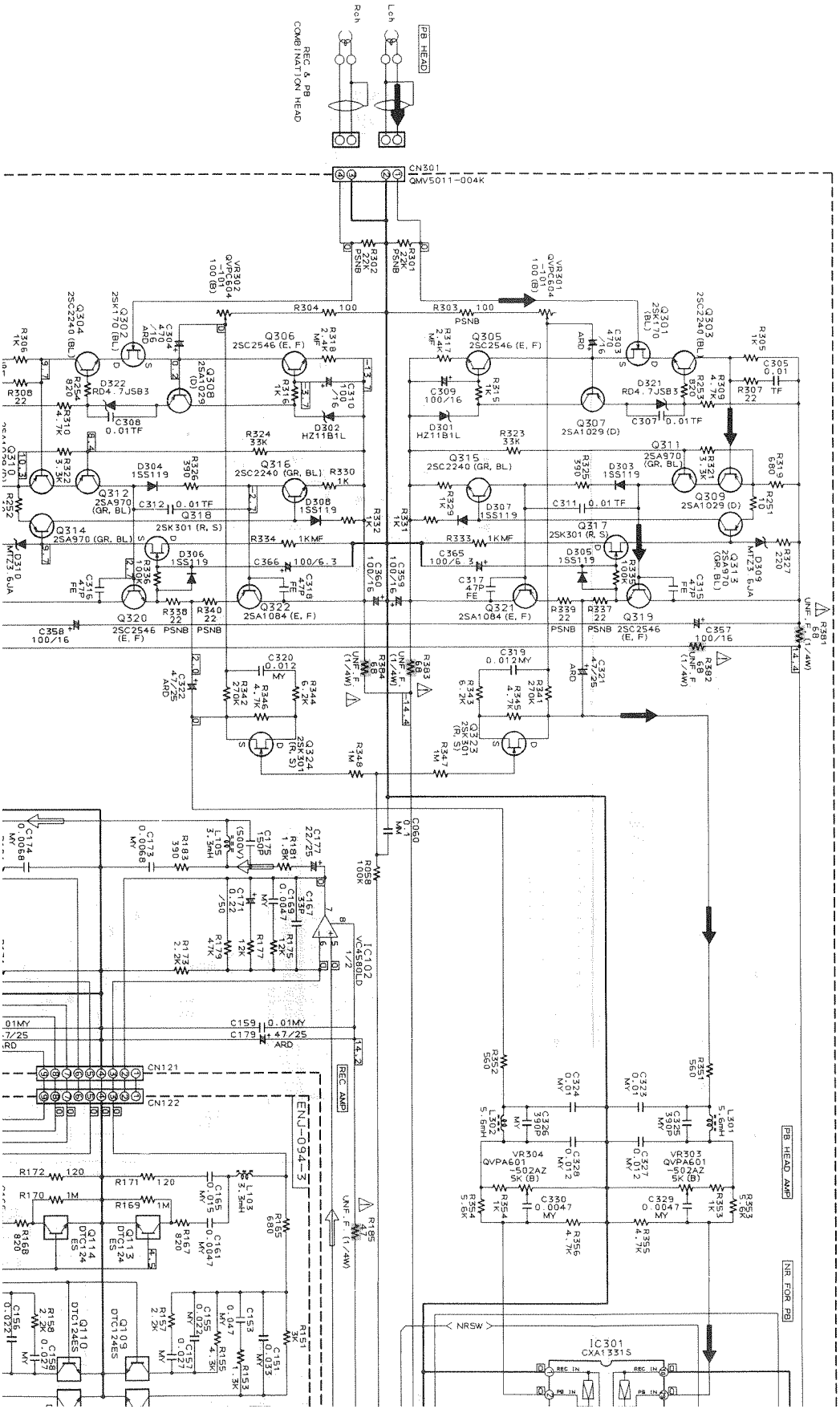
P2-19-a P2-19-b

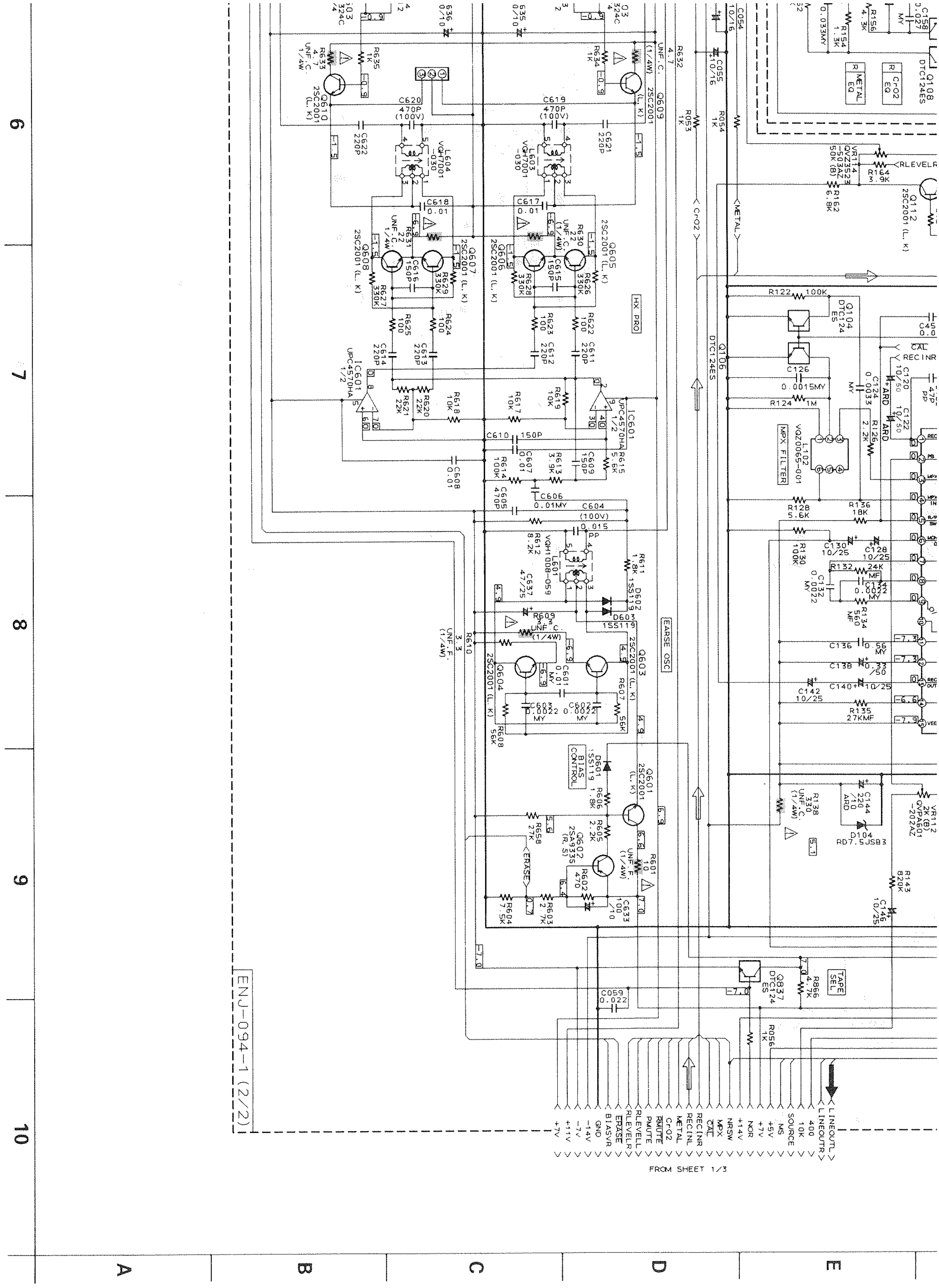


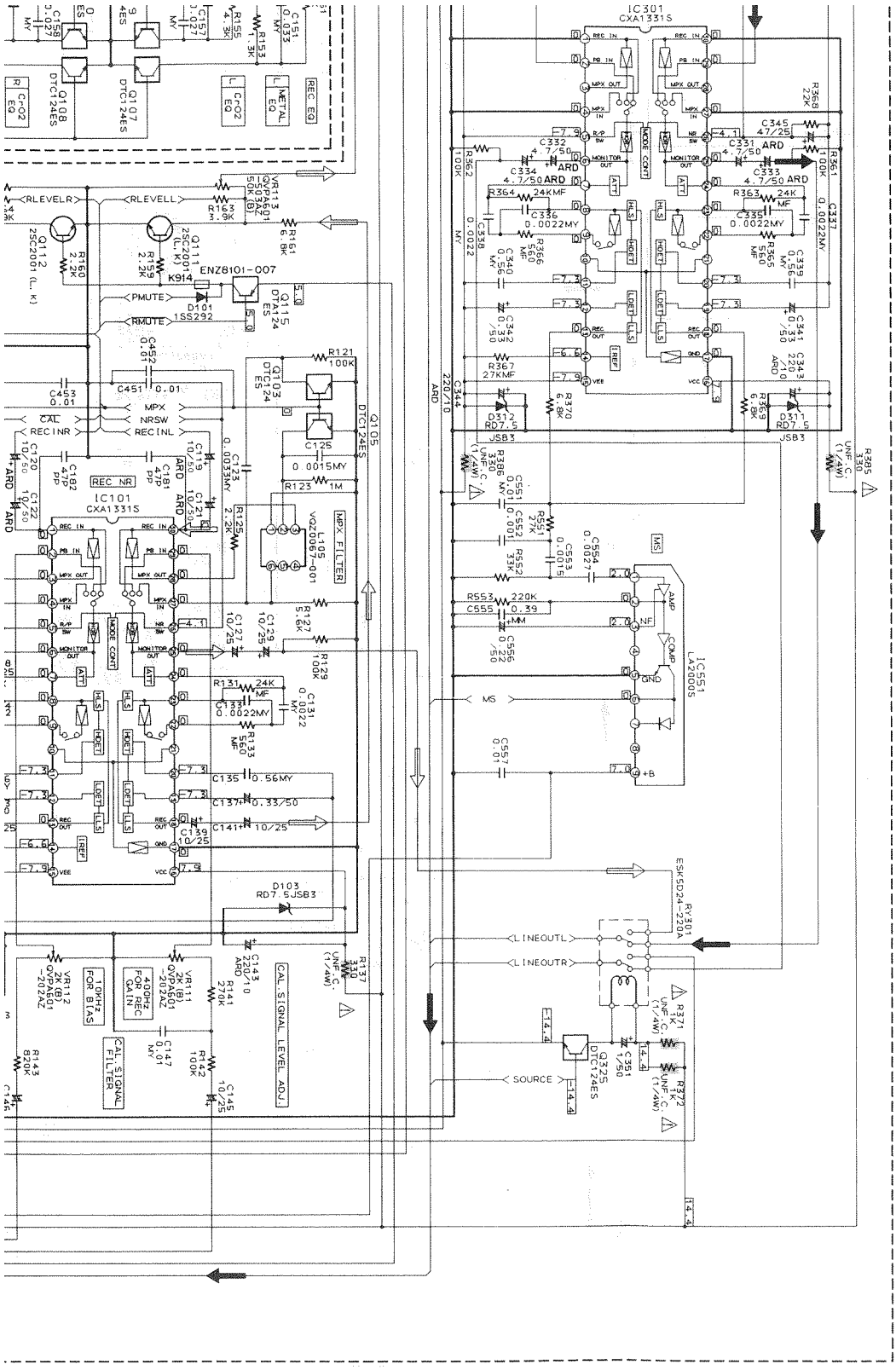
P2-19-c P2-19-d


REC HEAD
Lch
Rch
EARSE HEAD
CN111
QMV5011-003K
CN601
Q310
2SA1029(D)
D310
MTZ3.6JA
IC102
VC4580LD
1/2
K903
ENZ8101-008
K902
ENZ8101-008
K911
ENZ8101-007
IC602
UPC4570HA
1/2
IC603
μPC324C
1/4
Q611
DTC124ES
Q612
DTC124ES
D608
1SS119
NOR
D610
1SS119
D604
1SS119
D605
1SS119
D606
1SS119
D607
1SS119
VR601
100K(B)
VR602
100K(B)
BIASVR
UNF.F.(1/4W)

1	2	3	4	5


REC. & PB COMBINATION HEAD
Rch
Lch
PB HEAD
CN301
QMV5011-004K
Q304 2SC2240 (BL)
Q302 2SK170 (BL)
Q306 2SC2546 (E, F)
Q308 2SA1029 (D)
Q305 2SC2546 (E, F)
Q301 2SK170 (BL)
Q303 2SC2240 (BL)
Q307 2SA1029 (D)
Q310 2SA970 (GR, BL)
Q312 2SA970 (GR, BL)
Q316 2SC2240 (GR, BL)
Q318 2SK301 (R, S)
Q315 2SC2240 (GR, BL)
Q311 2SA970 (GR, BL)
Q309 2SA1029 (D)
Q314 2SA970 (GR, BL)
Q317 2SK301 (R, S)
Q313 2SA970 (GR, BL)
Q320 2SC2546 (E, F)
Q322 2SA1084 (E, F)
Q321 2SA1084 (E, F)
Q319 2SC2546 (E, F)
Q324 2SK301 (R, S)
Q323 2SK301 (R, S)
IC102 vc4580LD 1/2
IC301 CXA1331S
CN121
CN122
ENJ-094-3
REC AMP
PB HEAD AMP
NR FOR PB
NRSW
VR302 QVPC604 100 (B)
VR301 QVPC604 100 (B)
VR304 QVPA601 502AZ 5K (B)
VR303 QVPA601 502AZ 5K (B)


HX PRO
EARSE OSC
BIAS CONTROL
MPX FILTER
TAPE SEL.
ENJ-094-1 (2/2)
FROM SHEET 1/3

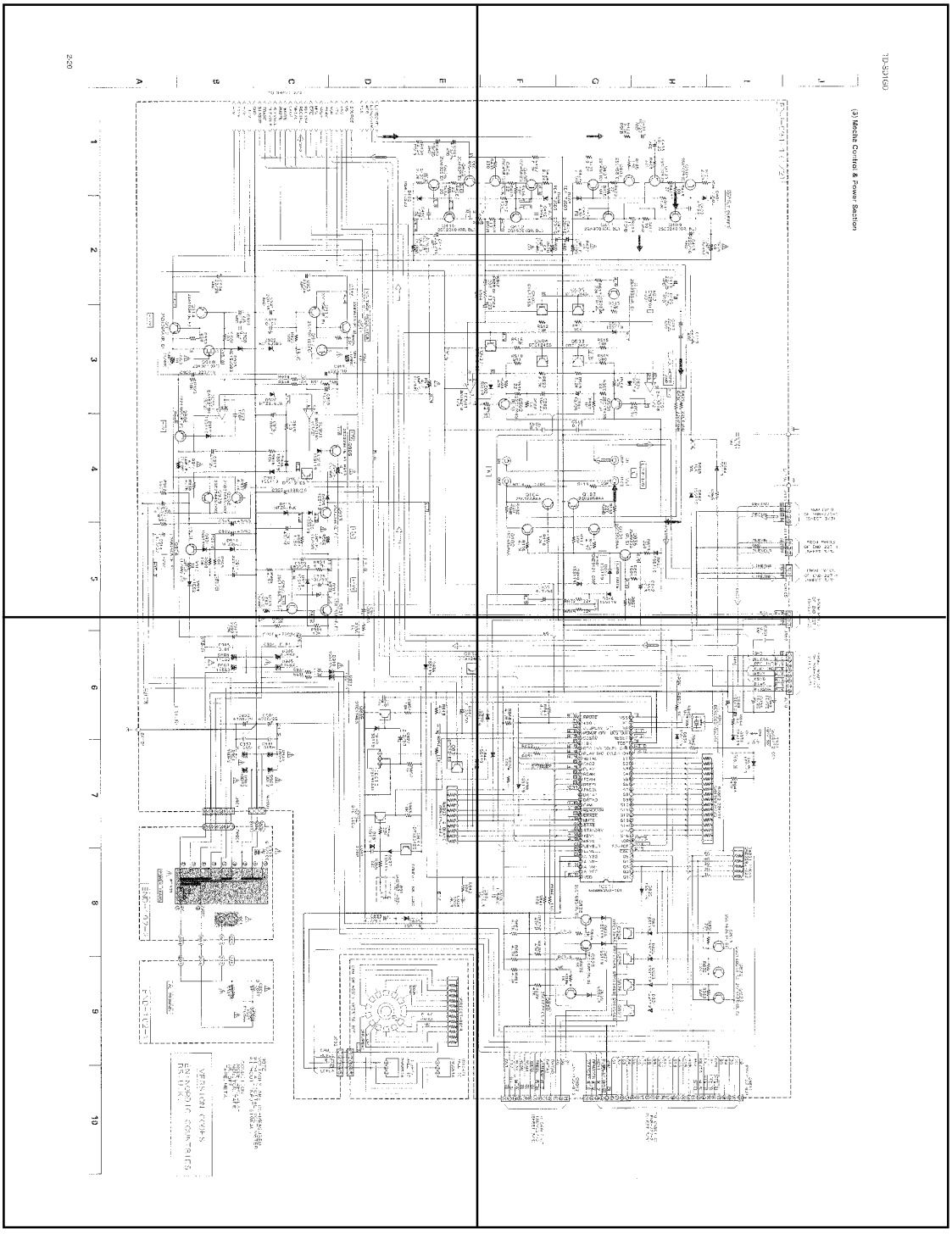


F G H I J

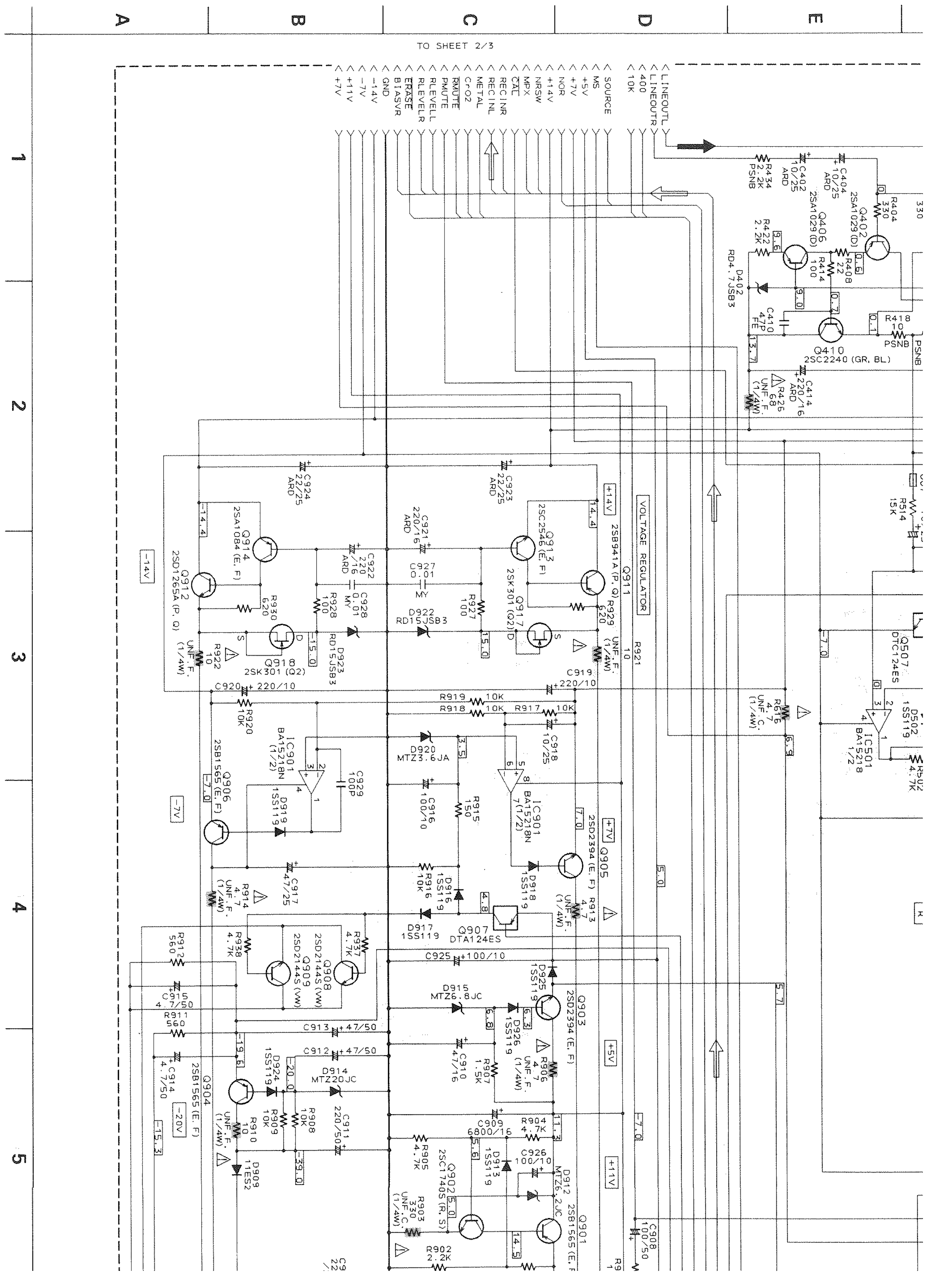
TD-SD1GD

P2-19-d

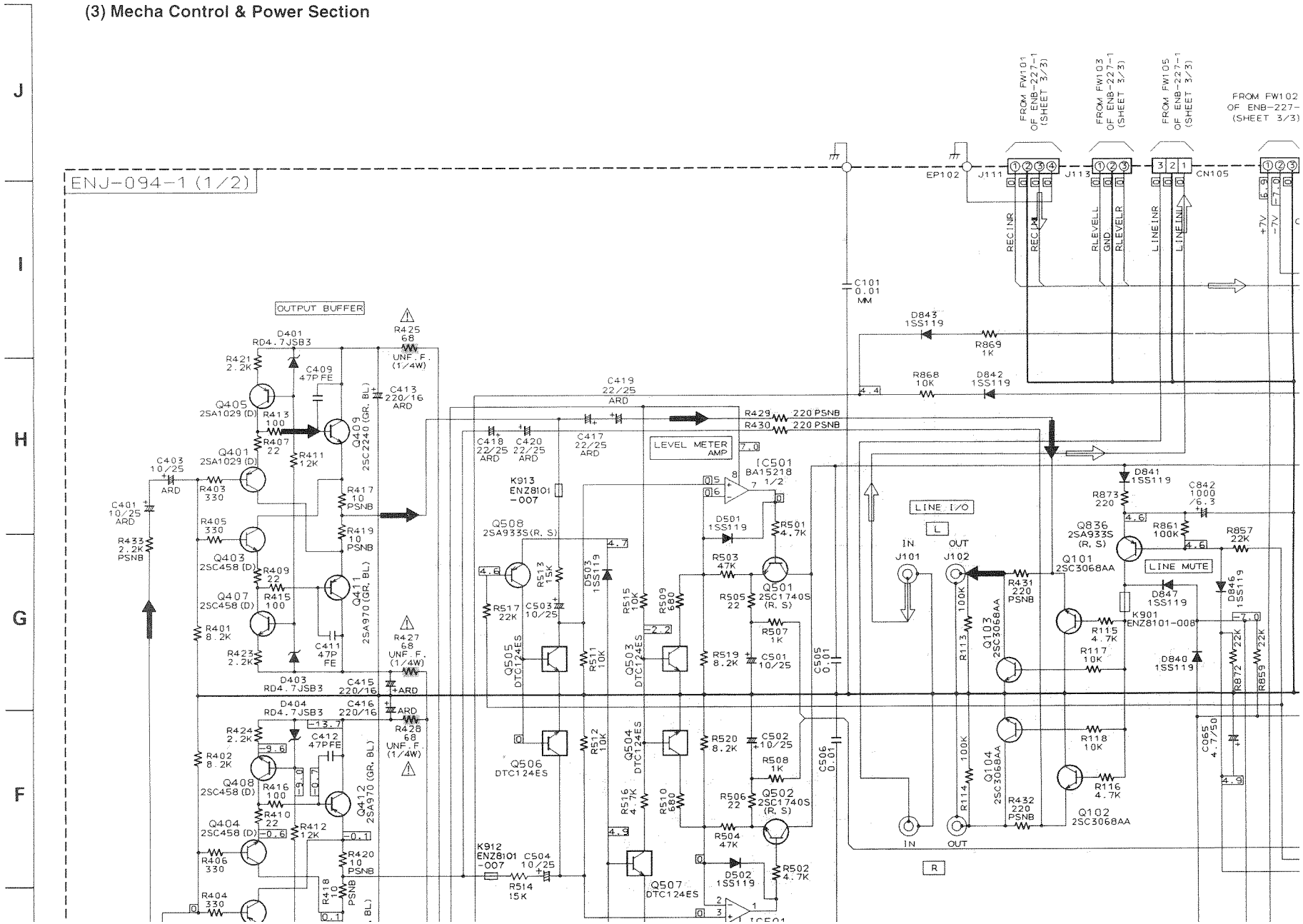
P2-20-a P2-20-b

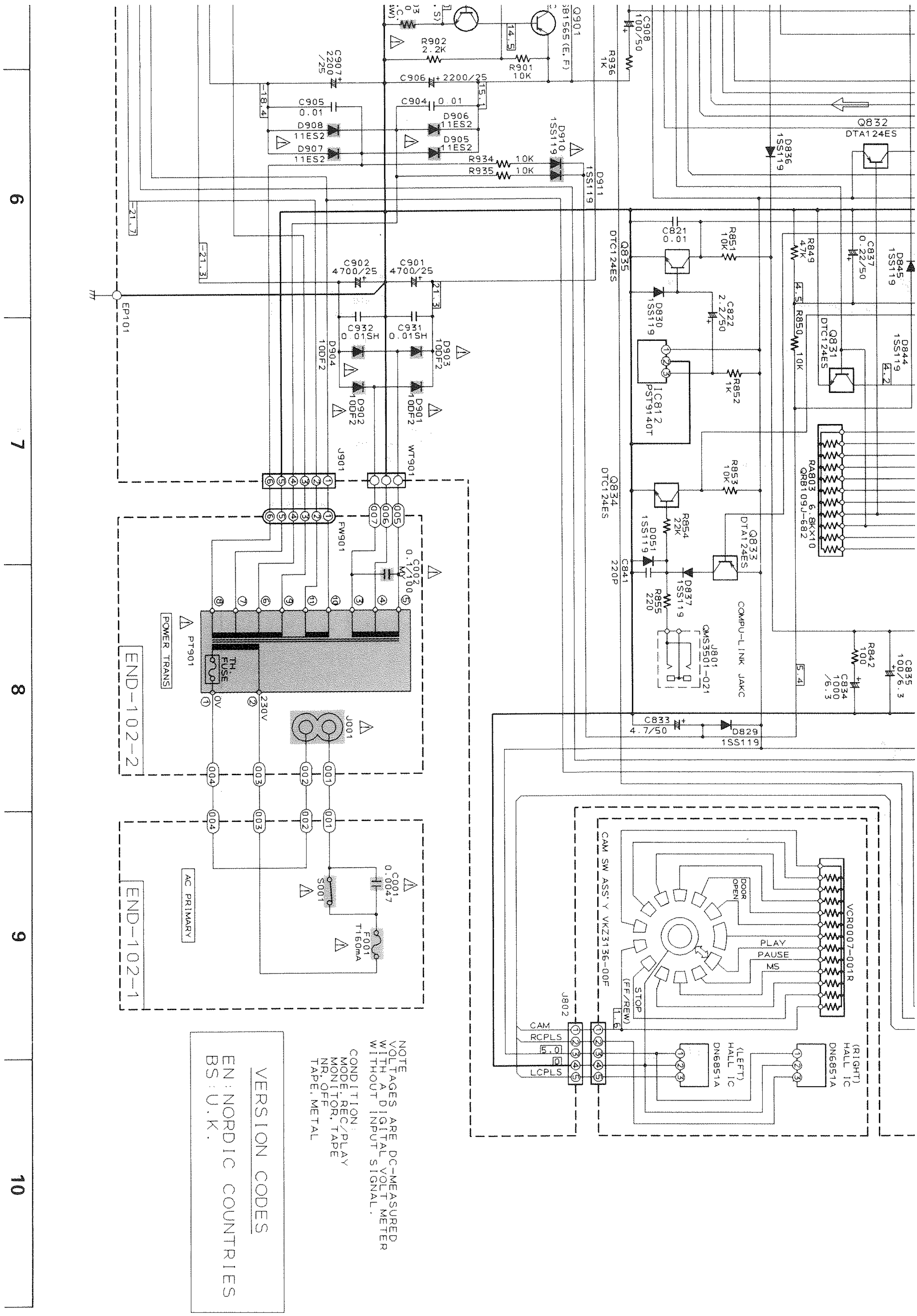


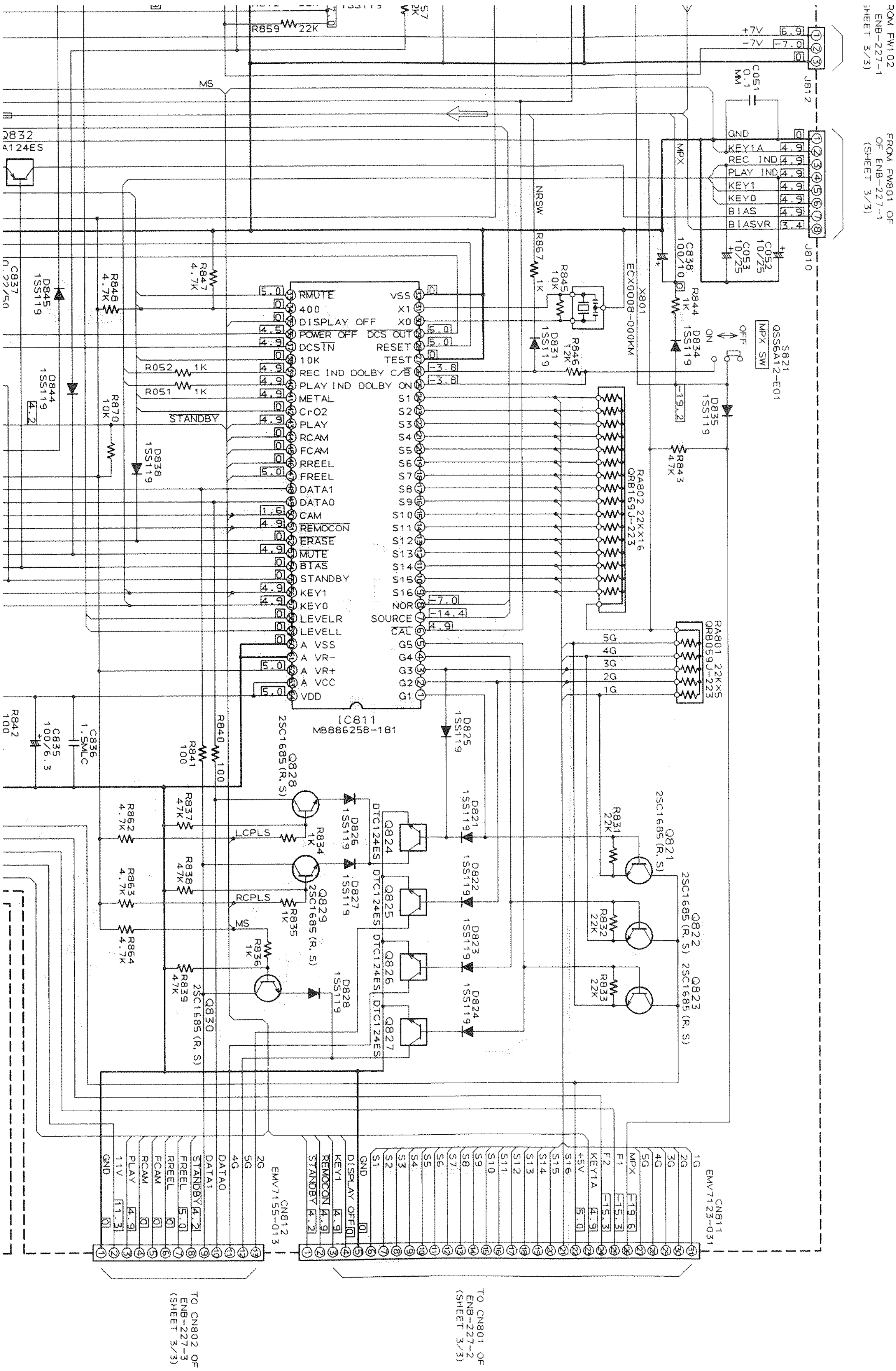
P2-20-c P2-20-d


A
B
C
D
E
1
2
3
4
5
TO SHEET 2/3
+7V
+11V
-7V
-14V
GND
BIASVR
ERASE
RLEVELR
RLEVELL
PMUTE
RMUTE
CrO2
METAL
RECINL
RECINR
CAL
MPX
NRSW
+14V
NOR
+7V
+5V
MS
SOURCE
10K
400
LINEOUTR
LINEOUTL
VOLTAGE REGULATOR
Q911
2SB941A (P, Q)
Q912
2SD1265A (P, Q)
Q914
2SA1084 (E, F)
Q913
2SC2546 (E, F)
Q918
2SK301 (Q2)
Q917
2SK301 (Q2)
IC901
BA15218N
Q906
2SB1565 (E, F)
Q905
2SD2394 (E, F)
Q907
DTA124ES
Q908
2SD2144S (VW)
Q909
2SD2144S (VW)
Q903
2SD2394 (E, F)
Q904
2SB1565 (E, F)
Q902
2SC1740S (R, S)
Q901
2SB1565 (E, F)
Q402
2SA1029 (D)
Q406
2SA1029 (D)
Q410
2SC2240 (GR, BL)
Q507
DTC124ES
IC501
BA15218
1/2
D920
MTZ3.6JA
D922
RD15JSB3
D923
RD15JSB3
D915
MTZ6.8JC
D914
MTZ20JC
D912
MTZ6.2JC
D909
11ES2
D402
RD4.7JSB3
-14V
-7V
-20V
+14V
+7V
+5V
+11V

(3) Mecha Control & Power Section

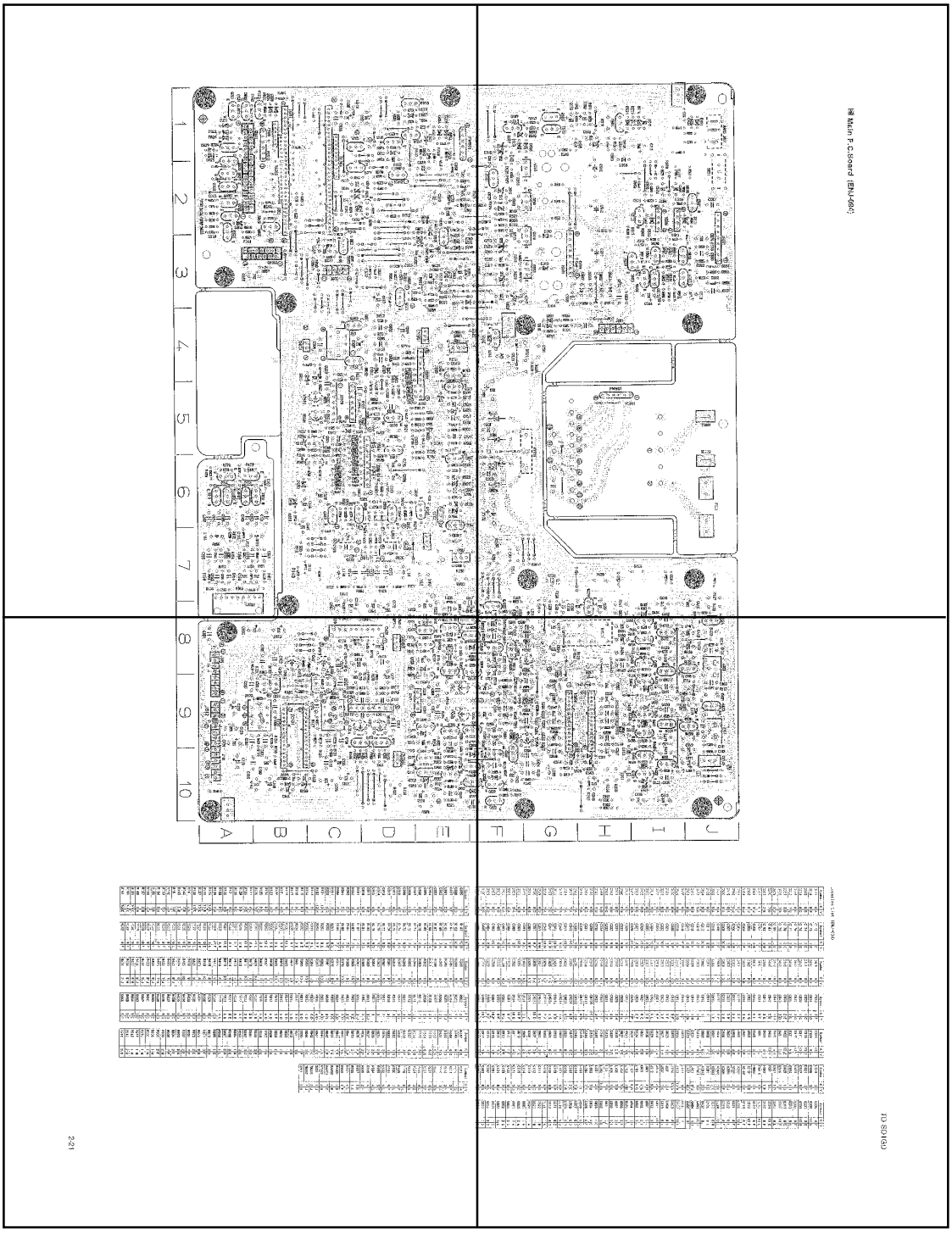



END-102-2
END-102-1
POWER TRANS
AC PRIMARY
CAM SW ASS'Y VKZ3136-00F
COMPU-LINK JAKC
NOTE
VOLTAGES ARE DC-MEASURED
WITH A DIGITAL VOLT METER
WITHOUT INPUT SIGNAL.
CONDITION:
MODE:REC/PLAY
MONITOR:TAPE
NR:OFF
TAPE:METAL
VERSION CODES
EN:NORDIC COUNTRIES
BS:U.K.


IC811
MB88625B-181
RMUTE
400
DISPLAY OFF
POWER OFF
DCSTN
10K
REC IND DOLBY C/B
PLAY IND DOLBY ON
METAL
CrO2
PLAY
RCAM
FCAM
RREEL
FREEL
DATA1
DATA0
CAM
REMOCON
ERASE
MUTE
BIAS
STANDBY
KEY1
KEY0
LEVELR
LEVELL
A VSS
A VR-
A VR+
A VCC
VDD
VSS
X1
X0
DCS OUT
RESET
TEST
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
S13
S14
S15
S16
NOR
SOURCE
CAL
G5
G4
G3
G2
G1
RA802 22KX16
QRB169J-223
RA801 22KX5
QRB059J-223
X801
ECX0008-000KM
S821
QSS6A12-E01
MPX SW
J810
J812
CN811
EMV7123-031
CN812
EMV7155-013
TO CN801 OF
ENB-227-2
(SHEET 3/3)
TO CN802 OF
ENB-227-3
(SHEET 3/3)
FROM FW801 OF
ENB-227-1
(SHEET 3/3)

P2-21-a

P2-21-b

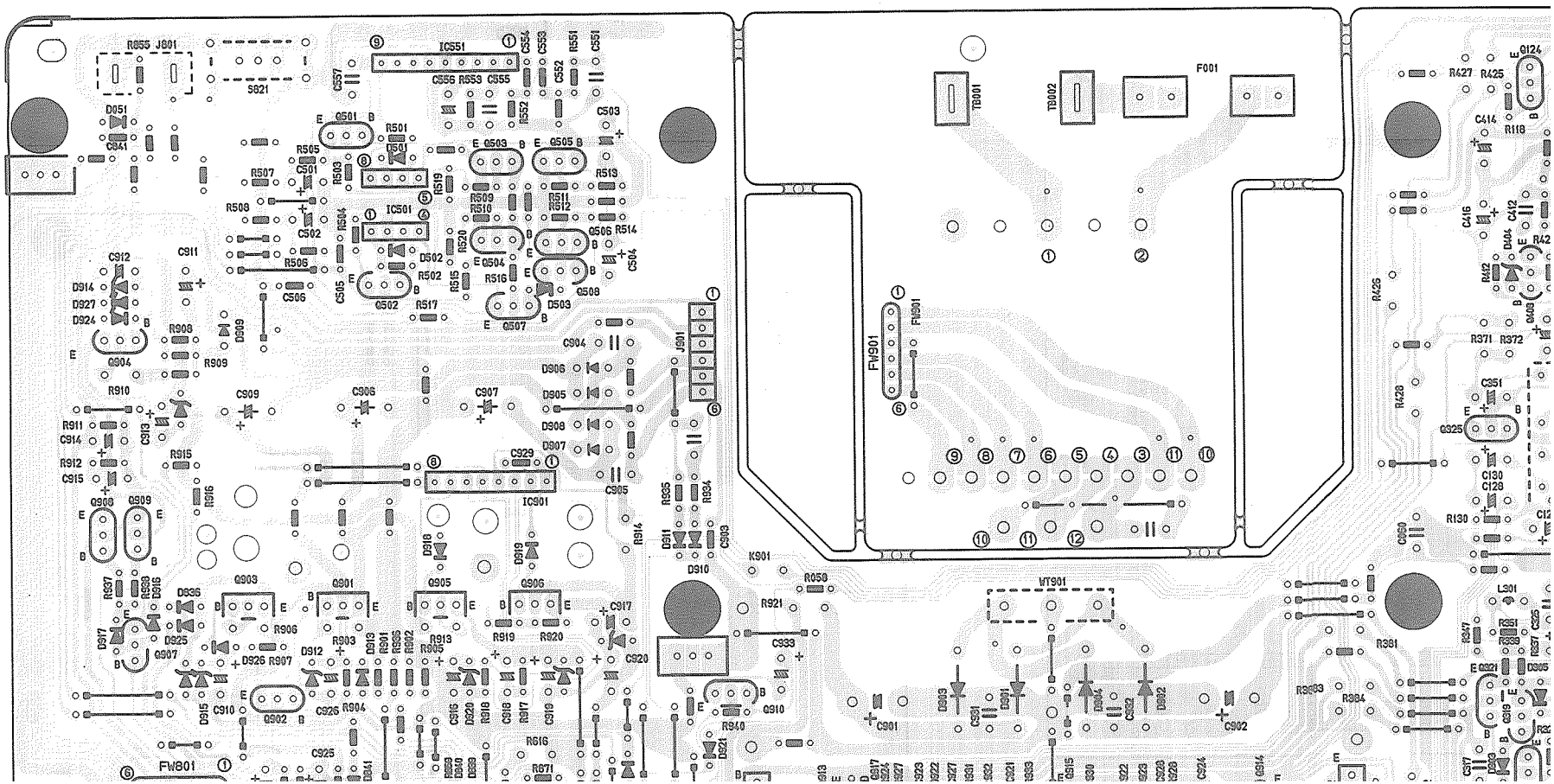


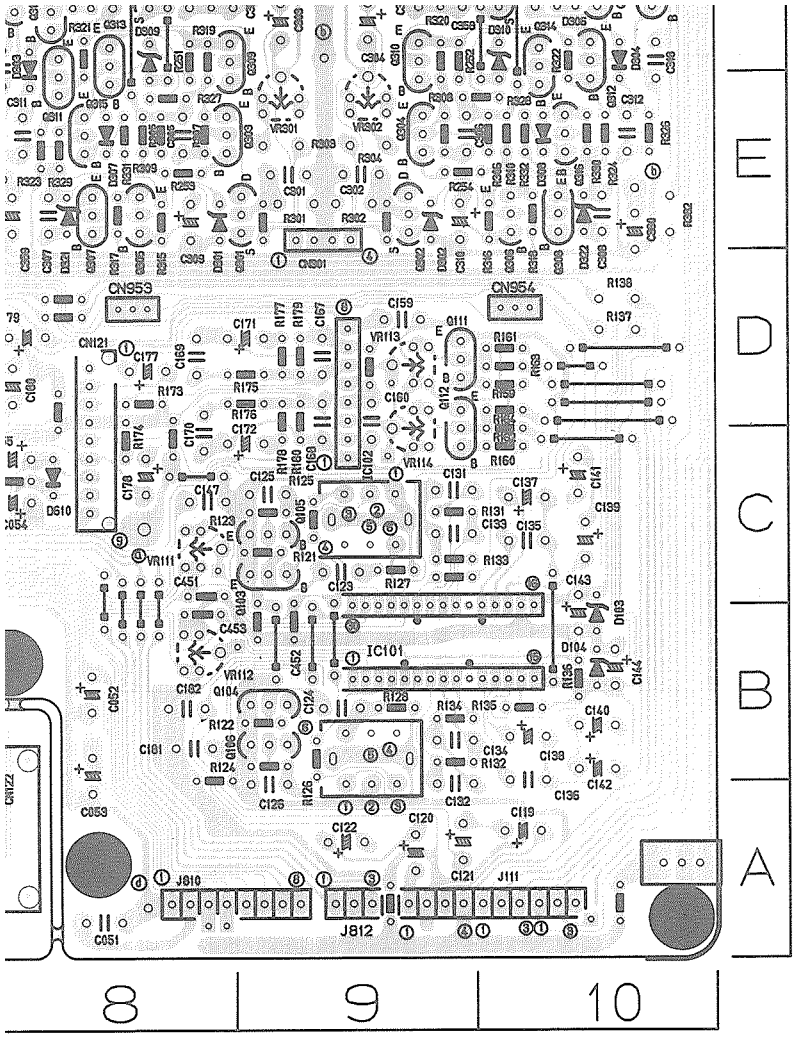
P2-21-c

P2-21-d

1
2
3
4
5
6
7

■ Main P.C.Board (ENJ-094)





C169	8	D
C170	8	C
C171	8	D

C404	8	H
C405	9	I
C406	8	H

C637	4	D
C821	2	B
C822	1	D

D305	8	F
D306	10	F
D307	8	E

D916	1	F
D917	1	F
D918	3	G

Q302	9	E
Q303	8	E
Q304	9	E

Q832	2	C
Q833	1	D
Q834	1	D

Symbol	X	Y
Q835	1	D
Q836	2	D
Q837	3	E
Q901	2	G
Q902	2	F
Q903	2	G
Q904	1	H
Q905	3	G
Q906	3	G
Q907	1	F
Q908	1	G
Q909	1	G
Q910	4	F
Q911	4	E
Q912	7	F
Q913	4	E
Q914	6	E
Q915	6	E
Q917	5	E
Q918	6	E
R051	3	D
R052	3	D
R053	2	D
R054	2	C
R056	2	D
R057	3	B
R058	4	G
R101	10	H
R102	10	H
R113	9	J
R114	8	J
R115	9	I
R116	9	J
R117	9	J
R118	8	J
R121	9	C
R122	9	B
R123	9	C
R124	9	B
R125	9	C
R126	9	B
R127	9	C
R128	9	B
R129	8	H
R130	8	G
R131	9	C
R132	9	B
R133	9	C
R134	9	B
R135	10	B
R136	10	B
R137	10	D
R138	10	D
R141	7	C
R142	7	B
R143	7	B
R151	7	B
R152	7	A
R153	7	A
R154	7	A
R155	7	B
R156	7	A
R157	7	B
R158	7	A
R159	10	D
R160	10	C
R161	10	D

Symbol	X	Y
R162	10	D
R163	10	D
R164	10	D
R165	7	A
R166	7	A
R167	6	B
R168	6	A
R169	6	A
R170	6	A
R171	7	A
R172	7	A
R173	8	D
R174	8	C
R175	8	D
R176	8	D
R177	9	D
R178	9	C
R179	9	D
R180	9	C
R181	7	D
R182	7	C
R183	7	D
R184	7	C
R185	7	E
R186	7	E
R251	8	E
R252	9	E
R253	8	E
R254	9	E
R301	9	E
R302	9	E
R303	9	E
R304	9	E
R305	8	E
R306	10	E
R307	8	E
R308	9	E
R309	8	E
R310	10	E
R315	8	E
R316	10	E
R317	8	E
R318	10	E
R319	8	E
R320	9	E
R321	8	F
R322	10	E
R323	8	E
R324	10	E
R325	8	E
R326	10	E
R327	8	E
R328	9	E
R329	8	E
R330	10	E
R331	8	E
R332	10	E
R333	8	F
R334	9	F
R335	8	F
R336	10	F
R337	8	F
R338	10	F
R339	8	F
R340	10	F
R341	9	F
R342	9	F

Symbol	X	Y
R343	9	F
R344	9	F
R345	8	F
R346	9	F
R347	8	F
R348	9	F
R351	8	F
R352	10	G
R353	9	G
R354	9	G
R355	9	G
R356	9	G
R357	9	G
R358	9	G
R361	9	H
R362	8	G
R363	9	H
R364	9	G
R365	9	H
R366	9	G
R367	9	G
R368	10	H
R369	9	H
R370	10	G
R371	8	H
R372	8	H
R381	7	F
R382	10	E
R383	7	F
R384	7	F
R385	10	H
R386	10	H
R401	9	H
R402	8	H
R403	9	I
R404	8	I
R405	10	I
R406	8	I
R407	9	I
R408	8	I
R409	10	I
R410	8	I
R411	10	I
R412	8	I
R413	9	I
R414	9	I
R415	10	I
R416	8	I
R417	9	I
R418	8	I
R419	10	I
R420	8	I
R421	9	I
R422	9	I
R423	10	I
R424	8	I
R425	8	J
R426	7	I
R427	7	J
R428	7	H
R429	9	J
R430	8	J
R431	9	J
R432	8	J
R433	9	H
R434	8	H
R501	2	J

Symbol	X	Y
R502	2	I
R503	2	I
R504	2	I
R505	2	J
R506	2	I
R507	2	I
R508	2	I
R509	3	I
R510	3	I
R511	3	I
R512	3	I
R513	3	I
R514	3	I
R515	3	I
R516	3	I
R517	2	I
R519	3	I
R520	3	I
R551	3	J
R552	3	J
R553	3	J
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R604	3	D
R605	3	E
R606	3	E
R607	4	D
R608	4	D
R609	4	D
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R611	5	D
R612	5	D
R613	5	D
R614	5	D
R615	5	D
R616	3	F
R617	5	D
R618	4	D
R619	5	D
R620	5	E
R621	5	D
R622	5	E
R623	5	E
R624	6	E
R625	5	E
R626	6	D
R627	6	C
R628	6	D
R629	6	C
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R631	6	C
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R634	5	D
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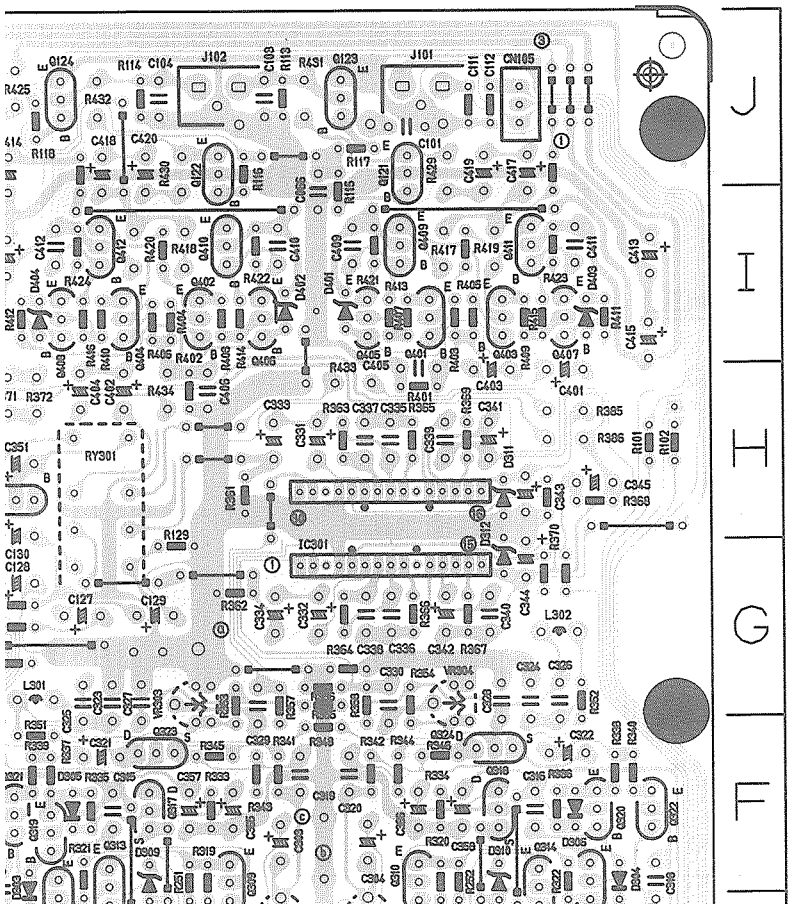
R637	5	D
R638	5	C
R639	5	D
R640	5	C
R641	6	C
R642	5	C
R643	5	C
R644	6	C
R645	5	C
R646	5	C

Symbol	X	Y
R647	6	C
R648	6	C
R649	6	C
R650	7	D
R651	7	D
R652	6	C
R653	6	C
R654	6	C
R655	5	C
R656	5	C
R657	5	C
R658	3	E
R831	1	A
R832	1	B
R833	1	B
R834	2	A
R835	2	A
R836	2	A
R837	2	A
R838	2	A
R839	2	A
R840	2	A
R841	3	A
R842	1	C
R843	1	E
R844	1	E
R845	2	B
R846	2	B
R847	3	C
R848	3	C
R849	3	C
R850	2	E
R851	1	D
R852	2	D
R853	1	D
R854	1	D
R855	1	J
R856	1	D
R857	2	D
R858	2	C
R859	3	E
R861	2	D
R862	3	C
R863	3	C
R864	1	B
R866	3	E
R867	6	B
R868	1	E
R869	1	E
R870	2	D
R871	3	F
R872	2	E
R873	2	E
R901	2	F
R902	2	F
R903	2	G
R904	2	F
R905	2	F
R906	2	G
R907	2	F
R908	1	H
R909	1	H
R910	1	H
R911	1	H
R912	1	H
R913	2	G
R914	3	G

Symbol	X	Y
R915	1	H
R916	1	G
R917	3	F
R918	3	F
R919	3	G
R920	3	G
R921	4	G
R922	7	E
R923	4	E
R924	5	E
R927	5	E
R928	6	E
R929	4	E
R930	7	E
R931	5	E
R932	5	E
R933	5	E
R934	4	G
R935	4	G
R936	2	F
R937	1	G
R938	1	G
R939	4	E
R940	4	F
RA801	1	B
RA802	1	B
RA803	2	C
RY301	8	H
S821	1	J
TB001	5	J
TB002	6	J
X801	2	B



Location List (ENJ-094)

Symbol	X	Y
C051	8	A
C052	8	B
C053	8	B
C054	8	C
C055	8	C
C056	7	C
C057	3	D
C058	3	B
C059	3	D
C060	7	G
C065	3	E
C066	9	I
C101	9	J
C103	9	J
C104	8	J
C111	9	J
C112	10	J
C119	10	A
C120	9	A
C121	9	A
C122	9	A
C123	9	C
C124	9	B
C125	9	C
C126	9	B
C127	8	G
C128	8	G
C129	8	G
C130	8	H
C131	9	C
C132	9	B
C133	9	C
C134	9	B
C135	10	C
C136	10	B
C137	10	C
C138	10	B
C139	10	C
C140	10	B
C141	10	C
C142	10	B
C143	10	C
C144	10	B
C145	6	B
C146	6	C
C147	8	C
C151	7	B
C152	7	A
C153	7	A
C154	7	A
C155	7	B
C156	7	A
C157	7	B
C158	7	A
C159	9	D
C160	9	C
C161	6	B
C162	6	A
C163	6	B
C164	6	A
C165	6	A
C166	6	A
C167	9	D
C168	9	C
C169	8	D
C170	8	C
C171	8	D

Symbol	X	Y
C172	8	C
C173	7	D
C174	7	D
C175	7	D
C176	7	C
C177	8	D
C178	8	C
C179	8	D
C180	8	D
C181	8	B
C182	8	B
C301	9	E
C302	9	E
C303	9	F
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C306	9	E
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C331	9	H
C332	9	G
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C338	9	G
C339	9	H
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C360	10	E
C365	8	F
C366	9	F
C401	10	I
C402	8	H
C403	10	I
C404	8	H
C405	9	I
C406	8	H

Symbol	X	Y
C409	9	I
C410	9	I
C411	10	I
C412	8	I
C413	10	I
C414	8	J
C415	10	I
C416	8	I
C417	10	J
C418	8	J
C419	10	J
C420	8	J
C451	8	C
C452	9	B
C453	8	B
C501	2	I
C502	2	I
C503	3	J
C504	3	I
C505	2	I
C506	2	I
C551	3	J
C552	3	J
C553	3	J
C554	3	J
C555	3	J
C556	3	J
C557	2	J
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C619	7	D
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C632	6	C
C633	3	E
C634	4	D
C635	6	D
C636	6	D
C637	4	D
C821	2	B
C822	1	D

Symbol	X	Y
C833	3	E
C834	1	D
C835	1	C
C836	1	C
C837	3	C
C838	2	E
C839	2	E
C840	2	D
C841	1	J
C842	2	E
C843	3	E
C901	5	F
C902	6	F
C903	4	G
C904	3	H
C905	3	H
C906	2	H
C907	3	H
C908	2	E
C909	2	H
C910	1	F
C911	1	I
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C913	1	H
C914	1	H
C915	1	H
C916	3	F
C917	3	G
C918	3	F
C919	3	F
C920	3	F
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C922	6	E
C923	5	E
C924	6	E
C925	2	F
C926	2	F
C927	5	E
C928	6	E
C929	3	H
C930	6	E
C931	5	F
C932	6	F
C933	4	F
CN105	10	J
CN111	7	D
CN121	8	D
CN122	7	B
CN301	9	E
CN601	4	C
CN811	1	A
CN812	3	B
CN951	4	E
CN952	7	E
CN953	8	D
CN954	10	D
D051	1	J
D101	3	E
D103	10	B
D104	10	B
D301	8	E
D302	9	E
D303	8	F
D304	10	F
D305	8	F
D306	10	F
D307	8	E

Symbol	X	Y
D308	10	E
D309	8	E
D310	10	E
D311	10	H
D312	10	G
D321	8	E
D322	10	E
D401	9	I
D402	9	I
D403	10	I
D404	8	I
D501	2	J
D502	2	I
D503	3	I
D601	3	E
D602	4	D
D603	4	D
D604	5	D
D605	5	C
D606	6	D
D607	5	C
D608	4	C
D609	6	C
D610	8	C
D821	1	A
D822	1	A
D823	1	B
D824	1	B
D825	1	A
D826	1	A
D827	1	A
D828	2	A
D829	3	E
D830	1	D
D831	6	B
D834	1	E
D835	1	E
D836	1	G
D837	1	D
D838	2	D
D839	3	E
D840	3	E
D841	2	F
D842	1	E
D843	2	E
D844	2	D
D845	3	E
D846	2	E
D847	3	E
D901	5	F
D902	6	F
D903	5	F
D904	6	F
D905	3	H
D906	3	H
D907	3	H
D908	3	H
D909	2	H
D910	4	G
D911	4	G
D912	2	F
D913	2	F
D914	1	I
D915	1	F
D916	1	F
D917	1	F
D918	3	G

Symbol	X	Y
D919	3	G
D920	3	F
D921	4	F
D922	5	E
D923	6	E
D924	1	I
D925	1	G
D926	2	F
D927	1	I
F001	6	J
FW801	1	F
FW810	1	B
FW901	5	I
IC101	9	B
IC102	9	C
IC301	9	G
IC501	2	I
IC551	3	J
IC601	5	E
IC602	5	D
IC603	5	C
IC811	1	B
IC812	2	D
IC901	3	G
J101	9	J
J102	8	J
J111	9	A
J113	10	A
J114	10	A
J801	1	J
J802	3	C
J810	8	A
J812	9	A
J901	4	H
K901	4	G
L101	9	C
L102	9	B
L103	7	B
L104	7	A
L105	7	D
L106	7	C
L301	8	G
L302	10	G
L601	4	C
L603	7	D
L604	7	C
Q103	9	C
Q104	9	B
Q105	9	C
Q106	9	B
Q107	6	A
Q108	6	A
Q109	6	B
Q110	6	A
Q111	9	D
Q112	9	C
Q113	6	A
Q114	6	A
Q115	3	C
Q121	9	J
Q122	8	J
Q123	9	J
Q124	8	J
Q301	9	E
Q302	9	E
Q303	8	E
Q304	9	E

Symbol	X	Y
Q305	8	E
Q306	10	E
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Q412	8	I
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Q504	3	I
Q505	3	J
Q506	3	I
Q507	3	I
Q508	3	I
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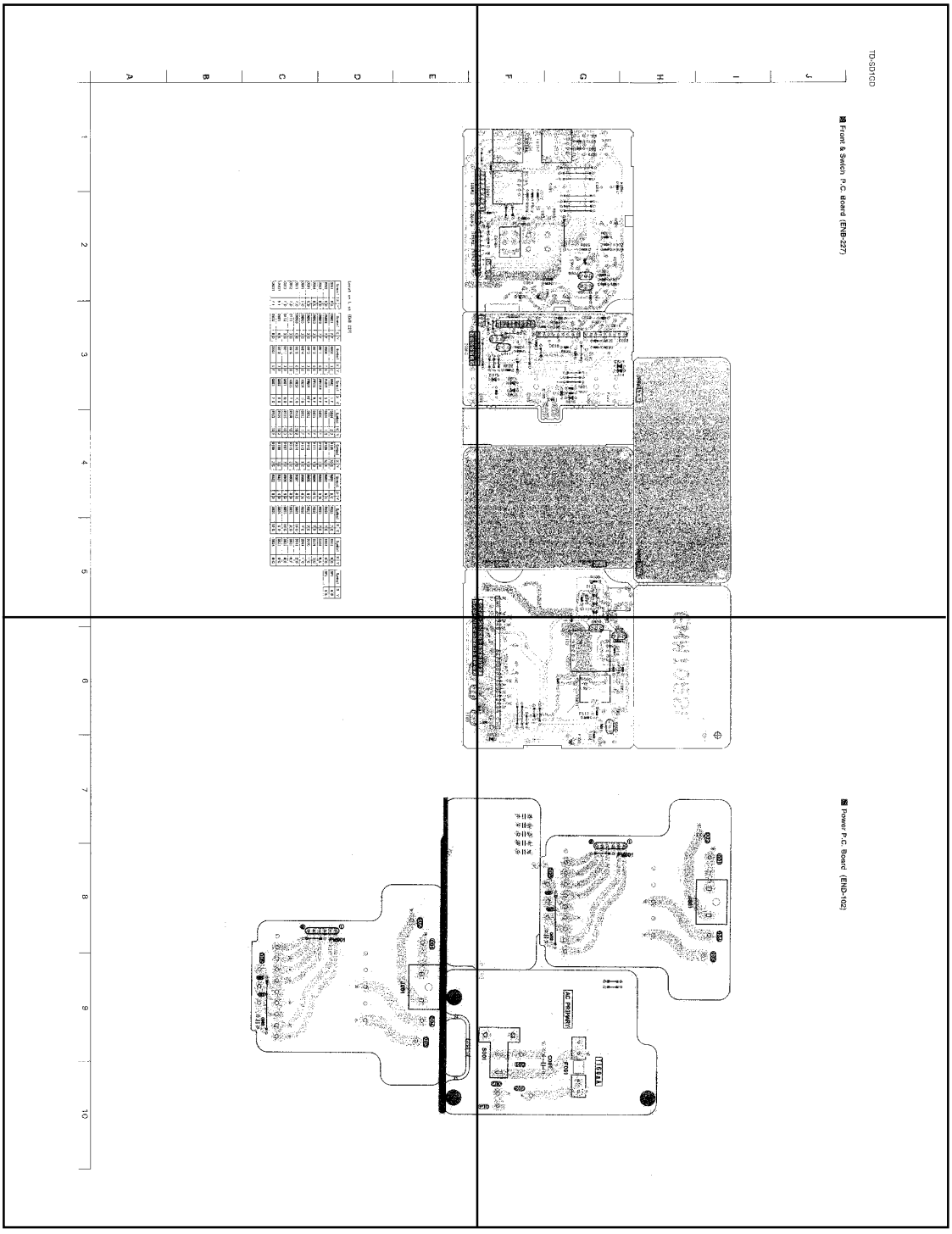
Q602	3	E
Q603	4	C
Q604	4	C
Q605	6	E
Q606	6	D
Q607	6	C
Q608	6	D
Q609	5	D
Q610	5	D
Q611	6	C
Q612	5	C
Q821	1	A
Q822	1	B
Q823	1	B
Q824	1	A
Q825	1	A
Q826	2	A
Q827	2	A
Q828	2	A
Q829	2	A
Q830	3	A
Q831	1	C
Q832	2	C
Q833	1	D
Q834	1	D

P2-22-a P2-22-b



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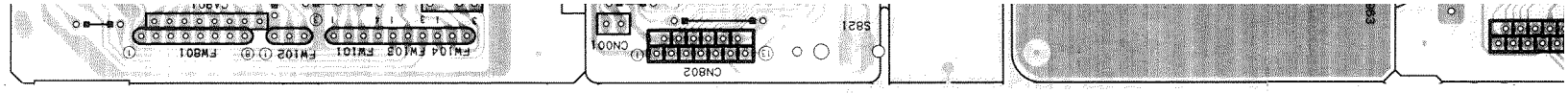


Location List (ENB-227)

Symbol	X	Y
C061	9	E
C062	9	D
C063	8	D
C064	8	E
C091	6	D
C801	1	C
C811	7	C
C812	7	D
C813	7	D
CA801	9	F
CN001	7	F

Symbol	X	Y
CN801	2	F
CN802	7	F
CN803	7	F
CN963	3	E
CN964	3	C
CN965	3	C
CN966	6	C
D111	3	C
D112	3	C
D801	8	E
D802	8	D

Symbol	X	Y
D803	3	C
D804	1	D
D811	6	E
D812	6	E
D813	7	C
D814	7	C
D815	6	F
D816	6	D
D817	7	D
D818	7	D
D861	1	F

Symbol	X	Y
D862	1	F
FL801	3	F
FW101A	9	F
FW102	9	F
FW801	10	F
IC801	1	D
IC802	7	C
IC803	7	D
Q801	8	D
Q802	8	D
Q803	2	C

Symbol	X	Y
Q804	2	D
Q805	1	C
Q810	7	F
Q811	7	F
Q812	1	F
Q813	1	F
R103	10	D
R104	10	D
R105	10	D
R106	10	D
R107	10	E

Symbol	X	Y
R108	10	E
R109	10	E
R110	3	D
R111	1	D
R112	1	D
R113	1	C
R114	2	C
R115	2	C
R187	3	C
R188	3	C
R189	3	C

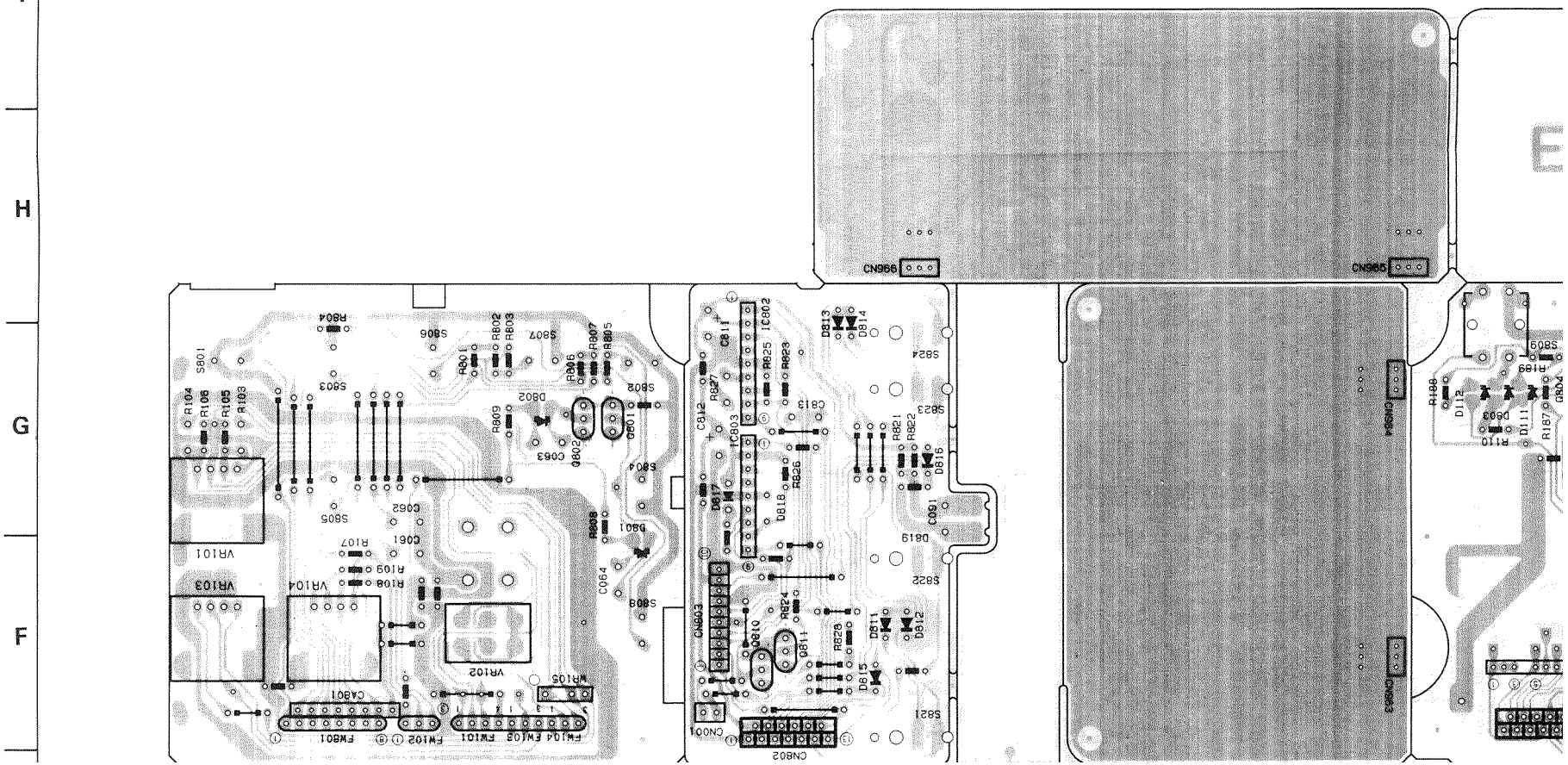
Symbol	X	Y
R801	9	C
R802	9	C
R803	9	G
R804	10	C
R805	8	C
R806	8	C
R807	8	C
R808	8	D
R809	9	D
R821	6	D
R822	6	D

Symbol	X	Y
R823	7	C
R824	7	E
R825	7	C
R826	7	D
R827	7	C
R828	7	E
S801	10	C
S802	8	C
S803	10	C
S804	8	D
S805	10	D

Symbol	X	Y
S806	9	C
S807	8	C
S808	8	E
S809	3	C
S810	1	C
S811	1	C
S812	2	D
S821	6	F
S822	6	E
S823	6	C
S824	6	C

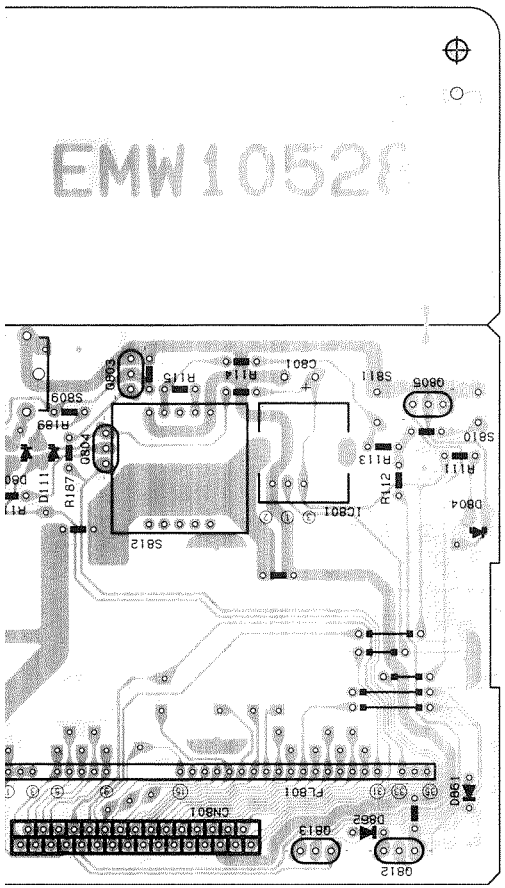
Symbol	X	Y
SP1	6	D
SP2	6	E

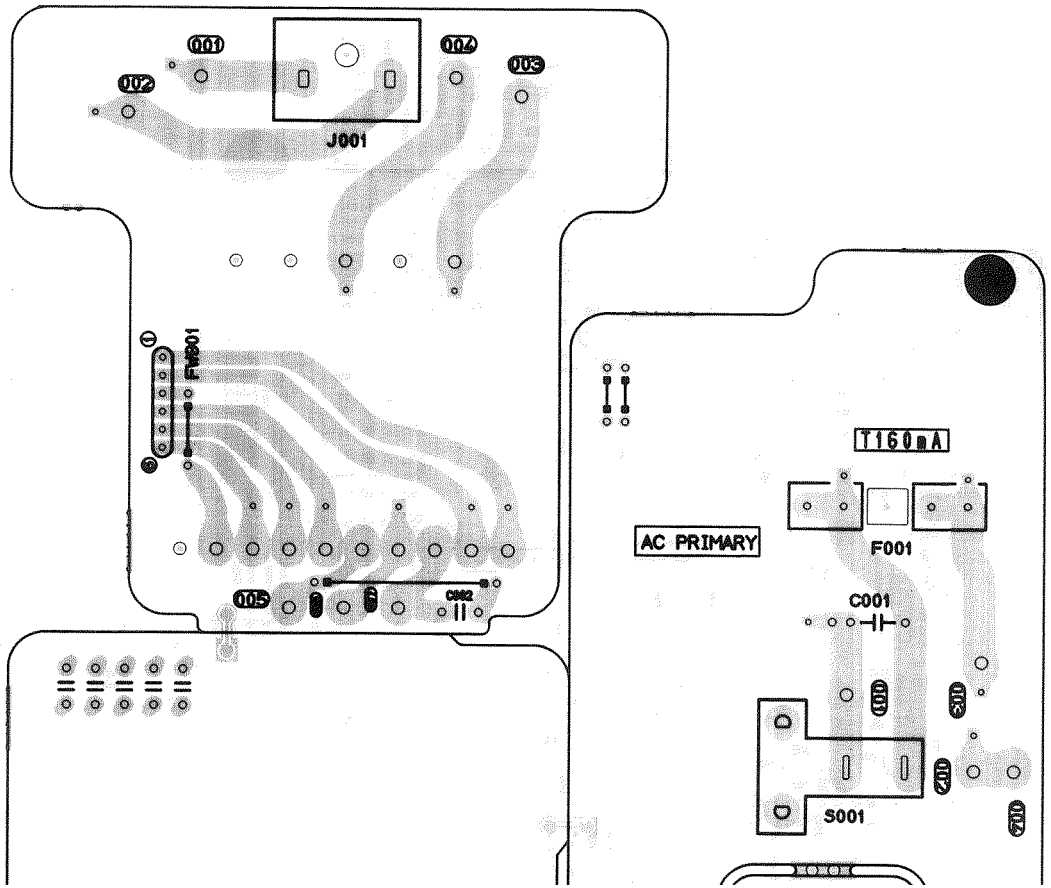
■ Front & Swich P.C. Board (ENB-227)



CN801
D801
D802
PW901
J001
S001

■ Power P.C. Board (END-102)





PARTS LIST

* All printed circuit boards and its assemblies are not available as service parts.

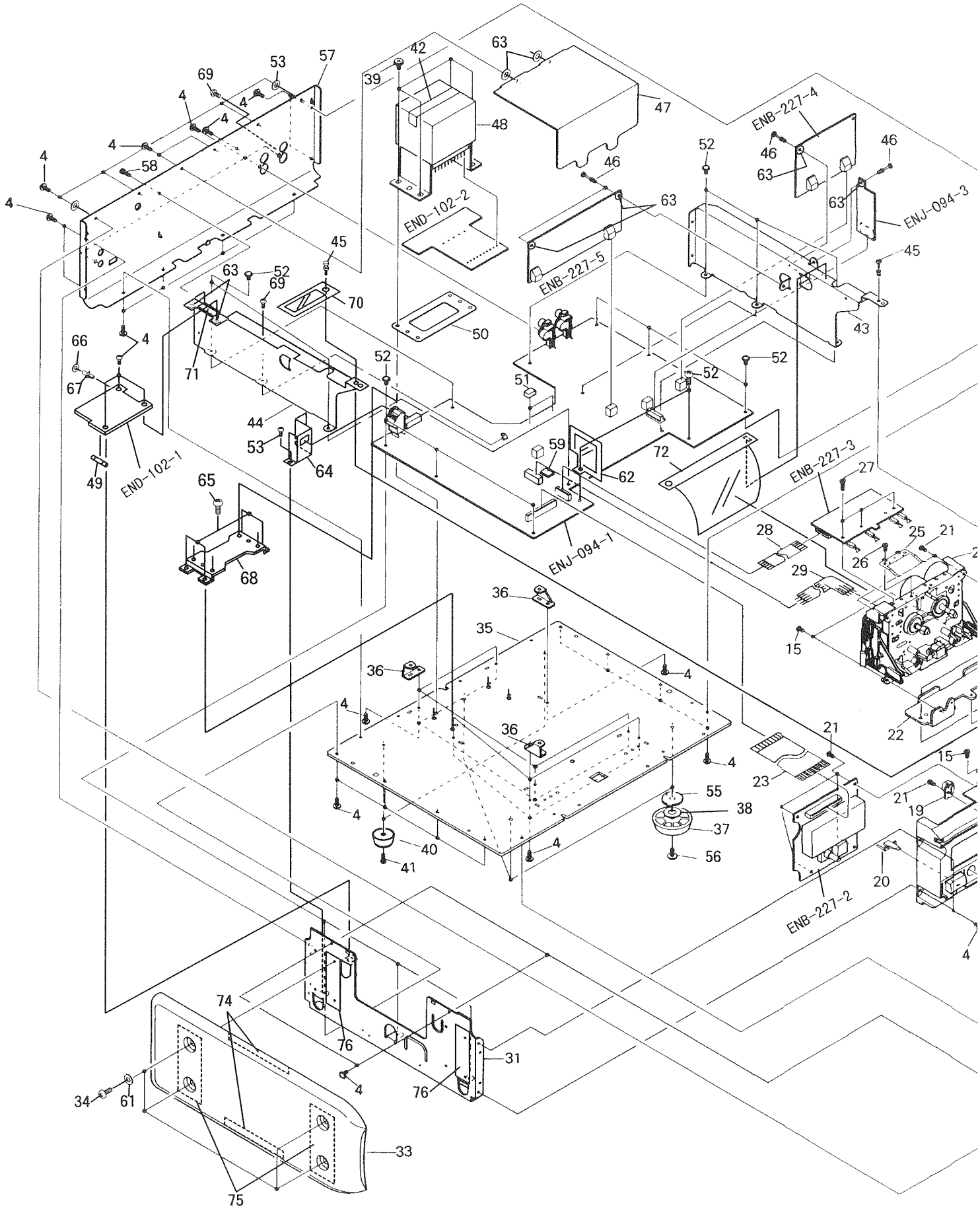
The Marks for Designated Areas

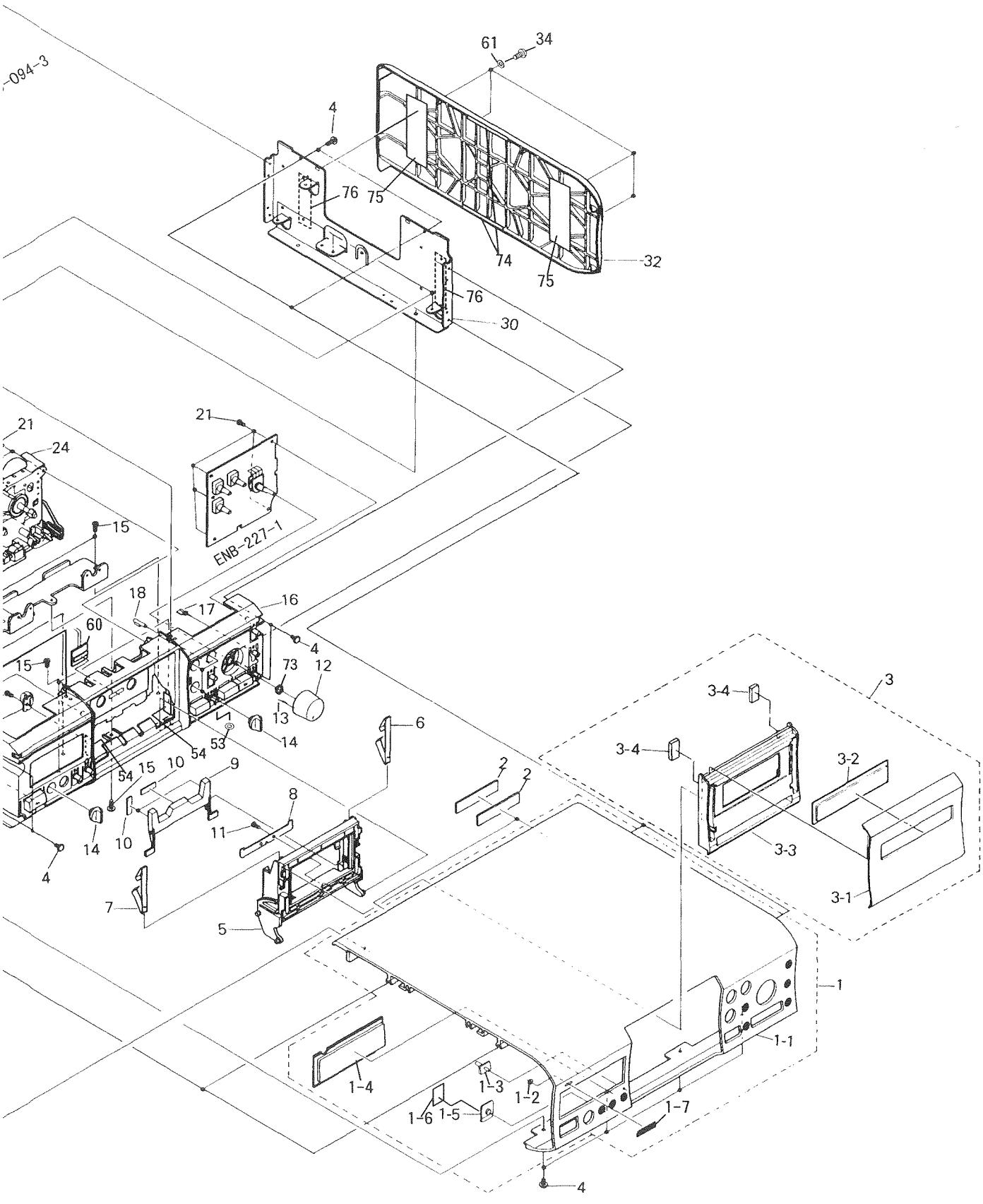
BS - the U.K. EN - Scandinavia No marks indicates all areas.

Contents -

General Exploded View and Parts List

Block No. M1MM

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1-5
1-7
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■ Parts List

Block No. M1MM

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	EFP-TDSD1GDE(S)	FRONT PANEL ASSY	1		
	1-1	E103028-002	FRONT PANEL	1		
	1-2	E60912-003	SPEED NUT	1		
	1-3	E408644-001	INDICATOR LENS	1	DISPLAY	
	1-4	E309386-001	WINDOW SCREEN	1		
	1-5	E408647-002	REMOTE CONTROL WINDOW	1		
	1-6	E72437-013	SPACER	1		
	1-7	E409213-002	JVC MARK	1		
	2	E306805-147	SPACER	4		
	3	E208512-002SA	CASSETTE LID ASSY	1		
	3-1	E208512-002	CASSETTE LID	1		
	3-2	E309388-002	CASSETTE LENS	1		
	3-3	E208513-002	LID BASE	1		
	3-4	VJD5341-001	DOOR PAD	2		
	4	GBSG3008CC	TAPPING SCREW	48		
	5	E208514-001	CASSETTE HOLDER	1		
	6	VKY4382-008	SPRING	1		
	7	VKY4382-007	SPRING (L)	1		
	8	VKY4638-001	SPRING	1		
	9	VJT3314-005	STABILIZER	1		
	10	VJD5341-001	DOOR PAD	3		
	11	SDSF2605Z	SCREW	1		
	12	E309297-003	VOLUME KNOB	1		
	13	E408294-001	SPACER	1		
	14	E309394-001	BALANCE KNOB	4		
	15	SBST3006CC	TAPPING SCREW	7		
	16	E103034-002	FRONT BASE	1		
	17	E408646-001	INDICATOR LENS	1	REC MUTE	
	18	E408645-001	INDICATOR LENS	1	PLAY	
	19	E305654-004	DAMPER ASSY	1		
	20	E408523-001	INDICATOR LENS	1		
	21	SBSF3008CC	TAPPING SCREW	12		
	22	E309392-001	MECHA BRACKET	1		
	23	VWF1213-14TTB	FFC CABLE	1	CN802	
	24	----------	CASSETTE MECHANISM ASSY	1	See page 3-6	
	25	VKY4279-001	SPRING	1		
	26	SDST2604Z	SCREW	2		
	27	SDST2608Z	SCREW	3		
	28	VWF1231-14TTBW	FFC CABLE	1	CN801	
	29	EWR35B-20LLT	FLAT WIRE ASSY	1		
	30	E208447-005	SIDE BRACKET	1	RIGHT	
	31	E208447-006	SIDE BRACKET	1	LEFT	
	32	E102981-019	SIDE PANEL	1	RIGHT	
	33	E102981-020	SIDE PANEL	1	LEFT	
	34	E74274-003	SPECIAL SCREW	8		
	35	E103032-002	BOTTOM PLATE	1		
	36	E68587-010	BRACKET	8		
	37	E309292-002	FOOT ASSY	3		
	38	WSS5000CC	WASHER	3		
	39	E61661-003	SPECIAL SCREW	4		
	40	E47227-008	FOOT	2		

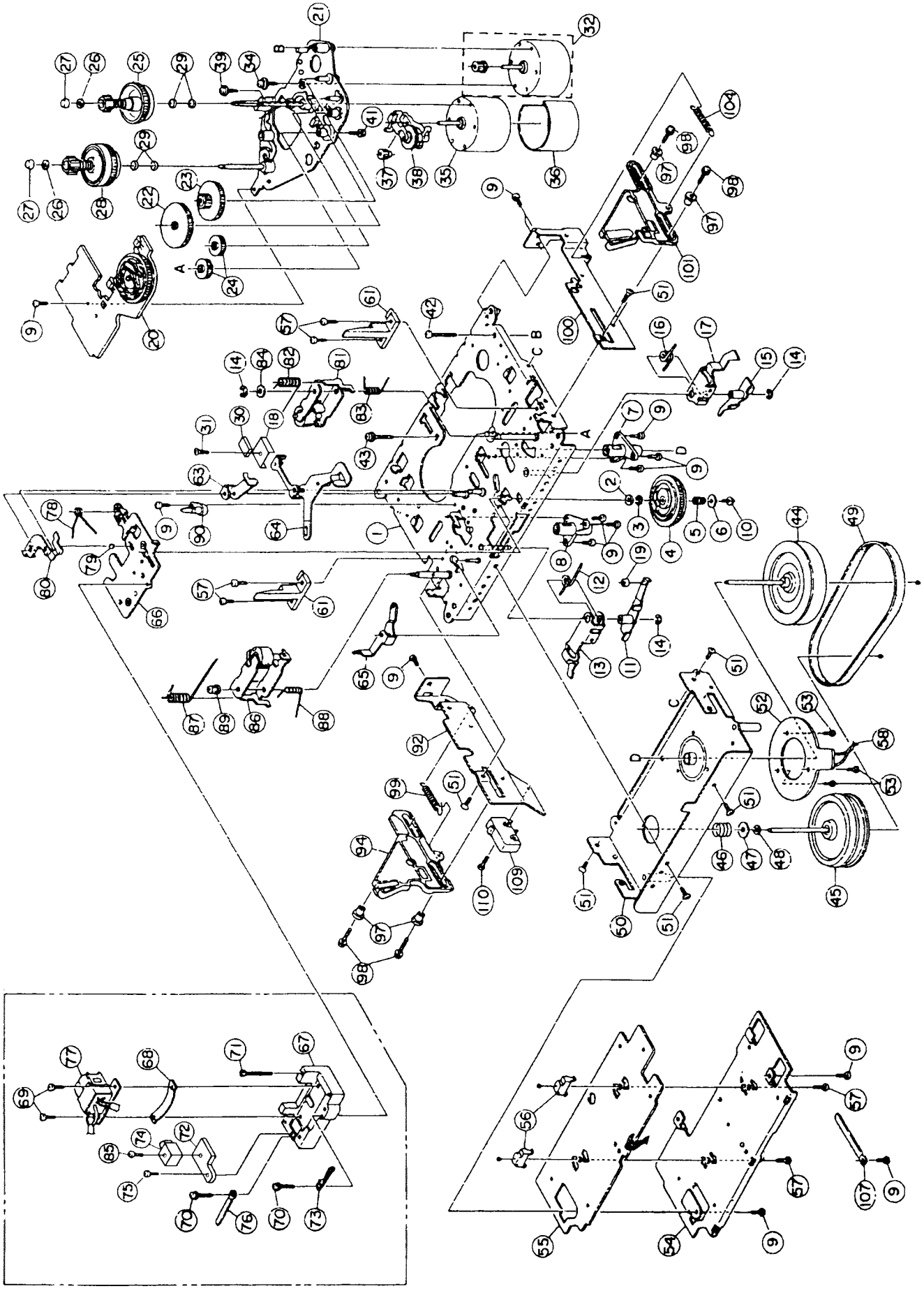
■ Parts List

Block No. M1MM

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	41	SBSG3010CC	TAPPING SCREW	2		
	42	E409516-001	ACETATE TAPE	1		
	43	E309398-002	REAR FRAME	1	RIGHT	
	44	E309397-003	REAR FRAME	1	LEFT	
	45	E48729-003	PLASTIC RIVET	2		
	46	E48729-008	PLASTIC RIVET	3		
	47	E309502-003	SHIELD COVER	1		
	48	ETP1020-40EA	POWER TRANSFORMER	1	PT901	
⚠	49	QMF51A2-R16	FUSE	1	F001(TO.16A/250V)	
	50	E406471-002	SPACER	1		
	51	E306805-160	SPACER	2		
	52	GBSG3006CC	SCREW	13		
	53	E73967-010	SPACER	2		
	54	E306805-192	SPACER	2		
	55	E409508-001	SPACER	3		
	56	E65389-006	SPECIAL SCREW	3		
	57	E208517-004	REAR PANEL	1		
	58	E66052-006	SPECIAL SCREW	1		
	59	E3400-431	FELT SPACER	1		
	60	LD-702MG	L.E.D.	1	D819	
	61	E409352-003	WASHER	8		
	62	E310183-001	SHIELD PLATE	1		
	63	E73967-016	SPACER	23		
	64	E310121-001	PROTECTOR COVER	1		
	65	E61660-007	SPECIAL SCREW	4		
	66	E73968-008SM	SPACER	1		
	67	E407321-002SM	PUSH BUTTON	1		
	68	E309313-003	TRANSFORMER BRACKET	1		
	69	E408499-002	ASSY SCREW	3		
	70	E310182-001	SHIELD PLATE	1		
	71	E306805-189	SPACER	1		
	72	E310184-001	SHIELD PLATE	1		
	73	E71862-001	VOLUME NUT	1		
	74	E409366-001	SPACER	4		
	75	E409351-001	SPACER	4		
	76	E408756-002	SPACER	4		
	-	E61029-005	NUMBER LABEL	1		

Cassette Mechanism Ass'y and Parts List

Block No. M2MM



■ Parts List (Cassette Mechanism Ass'y)

Block No. M2MM

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	VKL2449-0AB	CHASSIS BASE	1		
	2	VKZ4003-015	FELT	1		
	3	WFM467550	WASHER	1		
	4	VKS2202-002	P.ROLLER CAM	1		
	5	VKW3001-276	C.SPRING	1		
	6	VKL5116-005	PLATE	1		
	7	VKF4199-00A	CASSETTE HOUSING	1	RIGHT	
	8	VKF4199-00B	CASSETTE HOUSING	1	LEFT	
	9	SDST2605Z	SCREW	14		
	10	VKZ4340-002	SCREW	1		
	11	VKL6830-00E	PINCH ROLLER LEVER	1		
	12	VKW4872-001	T SPRING	1		
	13	VKL6832-001	ACTION LEVER	1		
	14	REE2500X	RING	3		
	15	VKL6843-00C	RECORDING LEVER	1		
	16	VKW4873-001	T SPRING	1		
	17	VKL6845-001	SWITCH BRACKET	1		
	18	VKL6222-002	ADJUST LEVER	1		
	19	VKH3000-147	COLLAR	1		
	20	VKZ3136-00F	CAM SWITCH	1		
	21	VKL2173-00E	DISK BASE	1		
	22	VKR3001-001	MAIN GEAR	1		
	23	VKR3001-002T	CAPSTAN GEAR	1		
	24	VKR3000-001	CAM GEAR	2		
	25	VKR4598-00A	REEL DISK	1	RIGHT	
	26	VKR4170-001	LOCK WASHER	2		
	27	VKS4131-001	REEL STOPPER	2		
	28	VKR4567-00C	REEL DISK	1	LEFT	
	29	VKZ4003-010	FELT	1		
	30	VKZ4414-001	BRAKE RUBBER	1		
	31	SPSK1716M	SCREW	1		
	32	MMN6F2RA8Z-SA1	DC MOTOR	1		
	34	DPSP2608Z	SCREW	1		
	35	MMN-6F4RA38	DC MOTOR	1		
	36	FE-ZMS409	SHIELD PLATE	1		
	37	VKR3000-004	DRIVE GEAR	1		
	38	VKS4503-00D	F.F/REW.ARM	1		
	39	SWSP2608Z	ASSY SCREW	1		
	41	LPSP2608Z	WOOD SCREW	1		
	42	SPSP2615Z	SCREW	1		
	43	LPSP2614Z	WASHER SCREW	1		
	44	M35689C	ROTOR ASSY	1		
	45	VKF3192-00E	FLYWHEEL	1		
	46	VKW3001-306	CASSETTE SPRING	1		
	47	Q03093-622	WASHER	1		
	48	Q03093-829	PLASTIC WASHER	1		
	49	VKB3001-056	DRIVE BELT	1		
	50	VKM3660-00A	CONNECTOR BRACKET	1		
	51	SSST2605Z	TAPPING SCREW	6		
	52	M40689	PRINTED BOARD	1		
	53	SPSN2025M	TAPPING SCREW	3		
	54	VKM3591-003	COVER BRACKET	1		
	55	M35688A	STATOR	1		
	56	VKS5415-001	MECHA PLATE	2		
	57	SDSF2605Z	SCREW	6		
	58	VWE290-05A1A1	VINYL WIRE	2		

■ Parts List (Cassette Mechanism Ass'y)　　Block No. M2MM

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	61	VKS4901-002	CASSETTE GUIDE	2		
	63	VKL5316-00G	CONTROL ARM	1		
	64	VKL3879-00B	PINCH ROLLER LEVER	1		
	65	VKL6190-00C	LEVER	1		
	66	VKL3881-005	HEAD BASE	1		
	67	VKZ3159-004	HEAD BASE	1		
	68	18400310AT	SPRING PLATE	1		
	69	SDSP2006Z	SCREW	2		
	70	LPSP2010N	WASHER SCREW	2		
	71	SPSP2016N	SCREW	1		
	72	VKL6846-001	HEAD HOLDER	1		
	73	VKZ4604-001	HOLDER	1		
	74	VGH0212-528	ERASE HEAD	1		
	75	LPSP2004Z	ASSY SCREW	1		
	76	VKZ4001-009	WIRE CLAMP	1		
	77	VGH0425-631	RECORD & PLAYBACK HEAD	1		
	78	VKW4467-004	SPRING	1		
	79	T41615-004	STEEL BALL	1		
	80	VKY4278-002	SPRING PLATE	1		
	81	VKP4210-00B	PINCH ROLLER	1	RIGHT	
	82	VKW3006-056	SPRING	1		
	83	VKW3006-057	SPRING	1		
	84	WFM316025	WASHER	2		
	85	SPSP2007Z	SCREW	1		
	86	VKP4129-00M	PINCH ROLLER	1	LEFT	
	87	VKW4735-004	TORSION SPRING	1		
	88	VKW3006-060	SPRING	1		
	89	VKS4513-001	PINCH ROLLER CAP	1		
	90	VKS4512-003	GUIDE POST	1		
	92	VKM3336-006	SIDE BRACKET	1	LEFT	
	94	E208515-001	SLIDE LEVER	1	LEFT	
	97	VKH3001-085	FRANGE COLLAR	4		
	98	LPSP2008Z	ASSY SCREW	4		
	99	VKW3002-277	CONNECT SPRING	1		
	100	VKM3337-003	SIDE BRACKET	1	RIGHT	
	101	E208516-001	SLIDE LEVER	1	RIGHT	
	104	VKW3002-268	SPRING	1		
	107	VKZ4001-111	HOLDER	1		
	109	VSH1162-002	LEAF SWITCH	1		
	110	SDSP2010Z	WOOD SCREW	1		

■ Electrical Parts List (ENJ-094)

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC101	CXA1331S	I.C(MONO-ANALOG)	
	IC102	VC4580LD	I.C(MONO-ANALOG)	
	IC301	CXA1331S	I.C(MONO-ANALOG)	
	IC501	BA15218	I.C(MONO-ANALOG)	
	IC551	LA2000S	I.C(MONO-ANALOG)	
	IC601	UPC4570HA	I.C(MONO-ANALOG)	
	IC602	UPC4570HA	I.C(MONO-ANALOG)	
	IC603	UPC324C	I.C(MONO-ANALOG)	
	IC811	MB88625B-181	I.C(M)	
	IC812	PST9140T	I.C(MONO-ANALOG)	
	IC901	BA15218N	I.C(MONO-ANALOG)	
		DIODES		
	D051	1SS119	SI.DIODE	
	D101	1SS292	SI.DIODE	
	D103	RD7.5JSB3	ZENER DIODE	
	D104	RD7.5JSB3	ZENER DIODE	
	D301	HZ11B1LTD	ZENER DIODE	
	D302	HZ11B1LTD	ZENER DIODE	
	D303	1SS119	SI.DIODE	
	D304	1SS119	SI.DIODE	
	D305	1SS119	SI.DIODE	
	D306	1SS119	SI.DIODE	
	D307	1SS119	SI.DIODE	
	D308	1SS119	SI.DIODE	
	D309	MTZ3.6JA	ZENER DIODE	
	D310	MTZ3.6JA	ZENER DIODE	
	D311	RD7.5JSB3	ZENER DIODE	
	D312	RD7.5JSB3	ZENER DIODE	
	D321	RD4.7JSB3	ZENER DIODE	
	D322	RD4.7JSB3	ZENER DIODE	
	D401	RD4.7JSB3	ZENER DIODE	
	D402	RD4.7JSB3	ZENER DIODE	
	D403	RD4.7JSB3	ZENER DIODE	
	D404	RD4.7JSB3	ZENER DIODE	
	D501	1SS119	SI.DIODE	
	D502	1SS119	SI.DIODE	
	D503	1SS119	SI.DIODE	
	D601	1SS119	SI.DIODE	
	D602	1SS119	SI.DIODE	
	D603	1SS119	SI.DIODE	
	D604	1SS119	SI.DIODE	
	D605	1SS119	SI.DIODE	
	D606	1SS119	SI.DIODE	
	D607	1SS119	SI.DIODE	
	D608	1SS119	SI.DIODE	
	D610	1SS119	SI.DIODE	
	D821	1SS119	SI.DIODE	
	D822	1SS119	SI.DIODE	
	D823	1SS119	SI.DIODE	
	D824	1SS119	SI.DIODE	
	D825	1SS119	SI.DIODE	
	D826	1SS119	SI.DIODE	
	D827	1SS119	SI.DIODE	
	D828	1SS119	SI.DIODE	
	D829	1SS119	SI.DIODE	
	D830	1SS119	SI.DIODE	
	D831	1SS119	SI.DIODE	
	D834	1SS119	SI.DIODE	
	D835	1SS119	SI.DIODE	
	D836	1SS119	SI.DIODE	
	D837	1SS119	SI.DIODE	
	D838	1SS119	SI.DIODE	
	D840	1SS119	SI.DIODE	
	D841	1SS119	SI.DIODE	
	D842	1SS119	SI.DIODE	
	D843	1SS119	SI.DIODE	
	D844	1SS119	SI.DIODE	
	D845	1SS119	SI.DIODE	
	D846	1SS119	SI.DIODE	
	D847	1SS119	SI.DIODE	
	D901	10DF2-FA11	DIODE	
	D902	10DF2-FA11	DIODE	
	D903	10DF2-FA11	DIODE	
	D904	10DF2-FA11	DIODE	
	D905	11ES2	SI.DIODE	
	D906	11ES2	SI.DIODE	
	D907	11ES2	SI.DIODE	
	D908	11ES2	SI.DIODE	
	D909	11ES2	SI.DIODE	
	D910	1SS119	SI.DIODE	
	D911	1SS119	SI.DIODE	
	D912	MTZ6.2JC	ZENER DIODE	
	D913	1SS119	SI.DIODE	
	D914	MTZ20JC	ZENER DIODE	
	D915	MTZ6.8JC	ZENER DIODE	
	D916	1SS119	SI.DIODE	
	D917	1SS119	SI.DIODE	
	D918	1SS119	SI.DIODE	
	D919	1SS119	SI.DIODE	
	D920	MTZ3.6JA	ZENER DIODE	
	D922	RD15JSB3	ZENER DIODE	
	D923	RD15JSB3	ZENER DIODE	
	D924	1SS119	SI.DIODE	
	D925	1SS119	SI.DIODE	
	D926	1SS119	SI.DIODE	
		TRANSISTORS		
	Q103	DTC124ES	DIGITAL TRANSISTOR	
	Q104	DTC124ES	DIGITAL TRANSISTOR	
	Q105	DTC124ES	DIGITAL TRANSISTOR	
	Q106	DTC124ES	DIGITAL TRANSISTOR	
	Q107	DTC124ES	DIGITAL TRANSISTOR	
	Q108	DTC124ES	DIGITAL TRANSISTOR	
	Q109	DTC124ES	DIGITAL TRANSISTOR	
	Q110	DTC124ES	DIGITAL TRANSISTOR	
	Q111	2SC2001(L,K)	SI.TRANSISTOR	
	Q112	2SC2001(L,K)	SI.TRANSISTOR	
	Q113	DTC124ES	DIGITAL TRANSISTOR	
	Q114	DTC124ES	DIGITAL TRANSISTOR	
	Q115	DTA124ES	DIGITAL TRANSISTOR	
	Q121	2SC3068	SI.TRANSISTOR	
	Q122	2SC3068	SI.TRANSISTOR	
	Q123	2SC3068	SI.TRANSISTOR	
	Q124	2SC3068	SI.TRANSISTOR	
	Q301	2SK170(BL)	F.E.T.	
	Q302	2SK170(BL)	F.E.T.	
	Q303	2SC2240(BL)	SI.TRANSISTOR	
	Q304	2SC2240(BL)	SI.TRANSISTOR	
	Q305	2SC2546(D,E)	SI.TRANSISTOR	
	Q306	2SC2546(D,E)	SI.TRANSISTOR	
	Q307	2SA1029(C,D)	SI.TRANSISTOR	
	Q308	2SA1029(C,D)	SI.TRANSISTOR	
	Q309	2SA1029(C,D)	SI.TRANSISTOR	
	Q310	2SA1029(C,D)	SI.TRANSISTOR	
	Q311	2SA970(GR)	SI.TRANSISTOR	
	Q312	2SA970(GR)	SI.TRANSISTOR	
	Q313	2SA970(GR)	SI.TRANSISTOR	
	Q314	2SA970(GR)	SI.TRANSISTOR	
	Q315	2SC2240(GR,BL)	SI.TRANSISTOR	
	Q316	2SC2240(GR,BL)	SI.TRANSISTOR	
	Q317	2SK301(P,Q)	F.E.T.	
	Q318	2SK301(P,Q)	F.E.T.	
	Q319	2SC2546(D,E)	SI.TRANSISTOR	
	Q320	2SC2546(D,E)	SI.TRANSISTOR	
	Q321	2SA1084(D,E)	SI.TRANSISTOR	
	Q322	2SA1084(D,E)	SI.TRANSISTOR	
	Q323	2SK301(P,Q)	F.E.T.	
	Q324	2SK301(P,Q)	F.E.T.	
	Q325	DTC124ES	DIGITAL TRANSISTOR	
	Q401	2SA1029(C,D)	SI.TRANSISTOR	
	Q402	2SA1029(C,D)	SI.TRANSISTOR	
	Q403	2SC458(C,D)	SI.TRANSISTOR	
	Q404	2SC458(C,D)	SI.TRANSISTOR	
	Q405	2SA1029(C,D)	SI.TRANSISTOR	

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⚠	Item	Parts Number	Description	Area
	Q406	2SA1029(C, D)	SI. TRANSISTOR	
	Q407	2SC458(C, D)	SI. TRANSISTOR	
	Q408	2SC458(C, D)	SI. TRANSISTOR	
	Q409	2SC2240(GR, BL)	SI. TRANSISTOR	
	Q410	2SC2240(GR, BL)	SI. TRANSISTOR	
	Q411	2SA970(GR)	SI. TRANSISTOR	
	Q412	2SA970(GR)	SI. TRANSISTOR	
	Q501	2SC1740S(R, S)	SI. TRANSISTOR	
	Q502	2SC1740S(R, S)	SI. TRANSISTOR	
	Q503	DTC124ES	DIGITAL TRANSISTOR	
	Q504	DTC124ES	DIGITAL TRANSISTOR	
	Q505	DTC124ES	DIGITAL TRANSISTOR	
	Q506	DTC124ES	DIGITAL TRANSISTOR	
	Q507	DTC124ES	DIGITAL TRANSISTOR	
	Q508	2SA933S(RS)	SI. TRANSISTOR	
	Q601	2SC2001(L, K)	SI. TRANSISTOR	
	Q602	2SA933S(RS)	SI. TRANSISTOR	
	Q603	2SC2001(L, K)	SI. TRANSISTOR	
	Q604	2SC2001(L, K)	SI. TRANSISTOR	
	Q605	2SC2001(L, K)	SI. TRANSISTOR	
	Q606	2SC2001(L, K)	SI. TRANSISTOR	
	Q607	2SC2001(L, K)	SI. TRANSISTOR	
	Q608	2SC2001(L, K)	SI. TRANSISTOR	
	Q609	2SC2001(L, K)	SI. TRANSISTOR	
	Q610	2SC2001(L, K)	SI. TRANSISTOR	
	Q611	DTC124ES	DIGITAL TRANSISTOR	
	Q612	DTC124ES	DIGITAL TRANSISTOR	
	Q821	2SC1685	SI. TRANSISTOR	
	Q822	2SC1685	SI. TRANSISTOR	
	Q823	2SC1685	SI. TRANSISTOR	
	Q824	DTC124ES	DIGITAL TRANSISTOR	
	Q825	DTC124ES	DIGITAL TRANSISTOR	
	Q826	DTC124ES	DIGITAL TRANSISTOR	
	Q827	DTC124ES	DIGITAL TRANSISTOR	
	Q828	2SC1685	SI. TRANSISTOR	
	Q829	2SC1685	SI. TRANSISTOR	
	Q830	2SC1685	SI. TRANSISTOR	
	Q831	DTC124ES	DIGITAL TRANSISTOR	
	Q832	DTA124ES	DIGITAL TRANSISTOR	
	Q833	DTA124ES	DIGITAL TRANSISTOR	
	Q834	DTC124ES	DIGITAL TRANSISTOR	
	Q835	DTC124ES	DIGITAL TRANSISTOR	
	Q836	2SA933S(RS)	SI. TRANSISTOR	
	Q837	DTC124ES	DIGITAL TRANSISTOR	
	Q901	2SB1565(E, F)	SI. TRANSISTOR	
	Q902	2SC1740S(R, S)	SI. TRANSISTOR	
⚠	Q903	2SD2394(E, F)	SI. TRANSISTOR	
	Q904	2SB1565(E, F)	SI. TRANSISTOR	
⚠	Q905	2SD2394(E, F)	SI. TRANSISTOR	
	Q906	2SB1565(E, F)	SI. TRANSISTOR	
	Q907	DTA124ES	DIGITAL TRANSISTOR	
	Q908	2SD2144S(VW)	SI. TRANSISTOR	
	Q909	2SD2144S(VW)	SI. TRANSISTOR	
	Q911	2SB941A(P, Q)	SI. TRANSISTOR	
	Q912	2SD1265A(O, P)	SI. TRANSISTOR	
	Q913	2SC2546(D, E)	SI. TRANSISTOR	
	Q914	2SA1084(D, E)	SI. TRANSISTOR	
	Q917	2SK301(P, Q)	F. E. T.	
	Q918	2SK301(P, Q)	F. E. T.	
		CAPACITORS		
	C051	QFVC1HJ-104ZN	0.1MF 50V METAL. MYLAR	
	C052	EETB1EM-106E	10MF 25V E. CAP.	
	C053	EETB1EM-106E	10MF 25V E. CAP.	
	C054	QER51CM-106G	10MF 16V AL E. CAP.	
	C055	QER51CM-106G	10MF 16V AL E. CAP.	
	C056	QCHB1EZ-223	0.022MF 25V CER. CAP.	
	C059	QCHB1EZ-223	0.022MF 25V CER. CAP.	
	C060	QFVC1HJ-104ZN	0.1MF 50V METAL. MYLAR	
	C065	EETB1HM-475E	4.7MF 50V E. CAP.	
	C101	EFH001J-103Z	0.01MF 100V METAL. MYLAR	
	C119	EET5010-106ZE	10MF 50V E. CAP.	
	C120	EET5010-106ZE	10MF 50V E. CAP.	

⚠	Item	Parts Number	Description	Area
	C121	EET5010-106ZE	10MF 50V E. CAP.	
	C122	EET5010-106ZE	10MF 50V E. CAP.	
	C123	QFLC1HJ-332ZM	3300PF 50V METAL. MYLAR	
	C124	QFLC1HJ-332ZM	3300PF 50V METAL. MYLAR	
	C125	QFLC1HJ-152ZM	1500PF 50V METAL. MYLAR	
	C126	QFLC1HJ-152ZM	1500PF 50V METAL. MYLAR	
	C127	EETB1EM-106E	10MF 25V E. CAP.	
	C128	EETB1EM-106E	10MF 25V E. CAP.	
	C129	EETB1EM-106E	10MF 25V E. CAP.	
	C130	EETB1EM-106E	10MF 25V E. CAP.	
	C131	QFLC1HJ-222ZM	2200PF 50V METAL. MYLAR	
	C132	QFLC1HJ-222ZM	2200PF 50V METAL. MYLAR	
	C133	QFLC1HJ-222ZM	2200PF 50V METAL. MYLAR	
	C134	QFLC1HJ-222ZM	2200PF 50V METAL. MYLAR	
	C135	QFV81HJ-564	0.56MF 50V THIN FILM CAP.	
	C136	QFV81HJ-564	0.56MF 50V THIN FILM CAP.	
	C137	QETC1HM-334Z	0.33MF 50V AL E. CAP.	
	C138	QETC1HM-334Z	0.33MF 50V AL E. CAP.	
	C139	EETB1EM-106E	10MF 25V E. CAP.	
	C140	EETB1EM-106E	10MF 25V E. CAP.	
	C141	EETB1EM-106E	10MF 25V E. CAP.	
	C142	EETB1EM-106E	10MF 25V E. CAP.	
	C143	EET1005-227ZE	220MF 10V E. CAP.	
	C144	EET1005-227ZE	220MF 10V E. CAP.	
	C145	EETB1EM-106E	10MF 25V E. CAP.	
	C146	EETB1EM-106E	10MF 25V E. CAP.	
	C147	QFLC1HJ-103ZM	0.01MF 50V METAL. MYLAR	
	C151	QFLC1HJ-333ZM	0.033MF 50V MYLAR CAP.	
	C152	QFLC1HJ-333ZM	0.033MF 50V MYLAR CAP.	
	C153	QFLC1HJ-473ZM	0.047MF 50V METAL. MYLAR	
	C154	QFLC1HJ-473ZM	0.047MF 50V METAL. MYLAR	
	C155	QFLC1HJ-223ZM	0.022MF 50V METAL. MYLAR	
	C156	QFLC1HJ-223ZM	0.022MF 50V METAL. MYLAR	
	C157	QFLC1HJ-273ZM	0.027MF 50V METAL. MYLAR	
	C158	QFLC1HJ-273ZM	0.027MF 50V METAL. MYLAR	
	C159	QFLC1HJ-103ZM	0.01MF 50V METAL. MYLAR	
	C160	QFLC1HJ-103ZM	0.01MF 50V METAL. MYLAR	
	C161	QFLC1HJ-472ZM	4700PF 50V METAL. MYLAR	
	C162	QFLC1HJ-472ZM	4700PF 50V METAL. MYLAR	
	C165	QFLG1HJ-153ZM	0.015MF 50V METAL. MYLAR	
	C166	QFLC1HJ-153ZM	0.015MF 50V METAL. MYLAR	
	C167	QCS31HJ-330Z	33PF 50V CER. CAP.	
	C168	QCS31HJ-330Z	33PF 50V CER. CAP.	
	C169	QFLC1HJ-472ZM	4700PF 50V METAL. MYLAR	
	C170	QFLC1HJ-472ZM	4700PF 50V METAL. MYLAR	
	C171	QETC1HM-224Z	0.22MF 50V AL E. CAP.	
	C172	QETC1HM-224Z	0.22MF 50V AL E. CAP.	
	C173	QFLC1HJ-682ZM	6800PF 50V MYLAR CAP.	
	C174	QFLC1HJ-682ZM	6800PF 50V MYLAR CAP.	
	C175	QCS32HJ-151Z	150PF 500V CER. CAP.	
	C176	QCS32HJ-151Z	150PF 500V CER. CAP.	
	C177	EETC1EM-226ZE	22MF 25V E. CAP.	
	C178	EETC1EM-226ZE	22MF 25V E. CAP.	
	C179	EET2508-476ZE	47MF 25V E. CAP.	
	C180	EET2508-476ZE	47MF 25V E. CAP.	
	C181	QFP31HJ-470	47PF 50V POLYPROPY. FILM	
	C182	QFP31HJ-470	47PF 50V POLYPROPY. FILM	
	C303	EET1610-477E	470MF 16V E. CAP.	
	C304	EET1610-477E	470MF 16V E. CAP.	
	C305	QFV81HJ-103	0.01MF 50V THIN FILM CAP.	
	C306	QFV81HJ-103	0.01MF 50V THIN FILM CAP.	
	C307	QFV81HJ-103	0.01MF 50V THIN FILM CAP.	
	C308	QFV81HJ-103	0.01MF 50V THIN FILM CAP.	
	C309	EETB1AM-107E	100MF 10V E. CAP.	
	C310	EETB1AM-107E	100MF 10V E. CAP.	
	C311	QFV81HJ-103	0.01MF 50V THIN FILM CAP.	
	C312	QFV81HJ-103	0.01MF 50V THIN FILM CAP.	
	C315	EFF001J-470	47P 150V FILM MICA CAP.	
	C316	EFF001J-470	47P 150V FILM MICA CAP.	
	C317	EFF001J-470	47P 150V FILM MICA CAP.	
	C318	EFF001J-470	47P 150V FILM MICA CAP.	
	C319	QFLC1HJ-123ZM	0.012MF 50V MYLAR CAP.	

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⚠	Item	Parts Number	Description	Area
	C320	QFLC1HJ-123ZM	0.012MF 50V MYLAR CAP.	
	C321	EET2508-476ZE	47MF 25V E.CAP.	
	C322	EET2508-476ZE	47MF 25V E.CAP.	
	C323	QFLC1HJ-103ZM	0.01MF 50V METAL.MYLAR	
	C324	QFLC1HJ-103ZM	0.01MF 50V METAL.MYLAR	
	C325	QFLC1HJ-391Z	390PF 50V MYLAR CAP.	
	C326	QFLC1HJ-391Z	390PF 50V MYLAR CAP.	
	C327	QFLC1HJ-123ZM	0.012MF 50V MYLAR CAP.	
	C328	QFLC1HJ-123ZM	0.012MF 50V MYLAR CAP.	
	C329	QFLC1HJ-472ZM	4700PF 50V METAL.MYLAR	
	C330	QFLC1HJ-472ZM	4700PF 50V METAL.MYLAR	
	C331	EET5010-475E	4.7MF 50V E.CAP.	
	C332	EET5010-475E	4.7MF 50V E.CAP.	
	C333	EET5010-475E	4.7MF 50V E.CAP.	
	C334	EET5010-475E	4.7MF 50V E.CAP.	
	C335	QFLC1HJ-222ZM	2200PF 50V METAL.MYLAR	
	C336	QFLC1HJ-222ZM	2200PF 50V METAL.MYLAR	
	C337	QFLC1HJ-222ZM	2200PF 50V METAL.MYLAR	
	C338	QFLC1HJ-222ZM	2200PF 50V METAL.MYLAR	
	C339	QFV81HJ-564	0.56MF 50V THIN FILM CAP.	
	C340	QFV81HJ-564	0.56MF 50V THIN FILM CAP.	
	C341	QETC1HM-334Z	0.33MF 50V AL E.CAP.	
	C342	QETC1HM-334Z	0.33MF 50V AL E.CAP.	
	C343	EET1005-227ZE	220MF 10V E.CAP.	
	C344	EET1005-227ZE	220MF 10V E.CAP.	
	C345	EETB1EM-476E	47MF 25V E.CAP.	
	C351	EETB1HM-105E	1MF 50V E.CAP.	
	C357	EETB1CM-107E	100MF 16V E.CAP.	
	C358	EETB1CM-107E	100MF 16V E.CAP.	
	C359	EETB1CM-107E	100MF 16V E.CAP.	
	C360	EETB1CM-107E	100MF 16V E.CAP.	
	C365	EETB0JM-107E	100MF 6.3V E.CAP.	
	C366	EETB0JM-107E	100MF 6.3V E.CAP.	
	C401	EET2508-106ZE	10MF 25V E.CAP.	
	C402	EET2508-106ZE	10MF 25V E.CAP.	
	C403	EET2508-106ZE	10MF 25V E.CAP.	
	C404	EET2508-106ZE	10MF 25V E.CAP.	
	C409	EFF001J-470	47P 150V FILM MICA CAP.	
	C410	EFF001J-470	47P 150V FILM MICA CAP.	
	C411	EFF001J-470	47P 150V FILM MICA CAP.	
	C412	EFF001J-470	47P 150V FILM MICA CAP.	
	C413	EET1610-227ZE	220MF 16V E.CAP.	
	C414	EET1610-227ZE	220MF 16V E.CAP.	
	C415	EET1610-227ZE	220MF 16V E.CAP.	
	C416	EET1610-227ZE	220MF 16V E.CAP.	
	C417	EET2508-226ZE	22MF 25V E.CAP.	
	C418	EET2508-226ZE	22MF 25V E.CAP.	
	C419	EET2508-226ZE	22MF 25V E.CAP.	
	C420	EET2508-226ZE	22MF 25V E.CAP.	
	C451	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C452	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C453	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C501	EETB1EM-106E	10MF 25V E.CAP.	
	C502	EETB1EM-106E	10MF 25V E.CAP.	
	C503	EETB1EM-106E	10MF 25V E.CAP.	
	C504	EETB1EM-106E	10MF 25V E.CAP.	
	C505	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C506	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C551	QFLC1HJ-103ZM	0.01MF 50V METAL.MYLAR	
	C552	QCGB1HK-102	1000PF 50V CER.CAP.	
	C553	QCXB1CM-152Y	1500PF 16V CER.CAP.	
	C554	QCXB1CM-272Y	2700PF 16V CER.CAP.	
	C555	QFV71HJ-394ZM	0.39MF 50V THIN FILM CAP.	
	C556	QETC1HM-224Z	0.22MF 50V AL E.CAP.	
	C557	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C601	QFLC1HJ-103ZM	0.01MF 50V METAL.MYLAR	
	C602	QFLC1HJ-222ZM	2200PF 50V METAL.MYLAR	
	C603	QFLC1HJ-222ZM	2200PF 50V METAL.MYLAR	
	C604	QFP82AJ-153	0.015MF 100V POLYPROPY.FILM	
	C605	QCBB1HK-471Y	470PF 50V CER.CAP.	
	C606	QFLC1HJ-103ZM	0.01MF 50V METAL.MYLAR	
	C607	QCVB1CM-103Y	0.01MF 16V CER.CAP.	

⚠	Item	Parts Number	Description	Area
	C608	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C609	QCBB1HK-151	150PF 50V CER.CAP.	
	C610	QCBB1HK-151	150PF 50V CER.CAP.	
	C611	QCBB1HK-221Y	220PF 50V CER.CAP.	
	C612	QCBB1HK-221Y	220PF 50V CER.CAP.	
	C613	QCBB1HK-221Y	220PF 50V CER.CAP.	
	C614	QCBB1HK-221Y	220PF 50V CER.CAP.	
	C615	QCBB1HK-151	150PF 50V CER.CAP.	
	C616	QCBB1HK-151	150PF 50V CER.CAP.	
	C617	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C618	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C619	QFP82AJ-471	470PF 100V POLYPROPY.FILM	
	C620	QFP82AJ-471	470PF 100V POLYPROPY.FILM	
	C621	QCBB1HK-221Y	220PF 50V CER.CAP.	
	C622	QCBB1HK-221Y	220PF 50V CER.CAP.	
	C623	QFLC1HJ-123ZM	0.012MF 50V MYLAR CAP.	
	C624	QFLC1HJ-123ZM	0.012MF 50V MYLAR CAP.	
	C625	EETB1EM-106E	10MF 25V E.CAP.	
	C626	QFLC1HJ-103ZM	0.01MF 50V METAL.MYLAR	
	C627	QFLC1HJ-103ZM	0.01MF 50V METAL.MYLAR	
	C628	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C629	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C630	QCBB1HK-271Y	270PF 50V CER.CAP.	
	C631	QCBB1HK-271Y	270PF 50V CER.CAP.	
	C632	EETB1EM-106E	10MF 25V E.CAP.	
	C633	EETB1AM-107E	100MF 10V E.CAP.	
	C634	EETB1CM-477E	470MF 16V E.CAP.	
	C635	EETB1AM-107E	100MF 10V E.CAP.	
	C636	EETB1AM-107E	100MF 10V E.CAP.	
	C637	EETB1EM-476E	47MF 25V E.CAP.	
	C821	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C822	EETB1HM-225E	2.2MF 50V E.CAP.	
	C833	EETB1HM-475E	4.7MF 50V E.CAP.	
	C834	EETB0JM-108E	1000MF 6.3V E.CAP.	
	C835	EETB0JM-107E	100MF 6.3V E.CAP.	
	C836	QCZ0202-155	1.5MF 25V CER.RES.	
	C837	QETC1HM-224Z	0.22MF 50V AL E.CAP.	
	C838	EETB1AM-107E	100MF 10V E.CAP.	
	C841	QCBB1HK-221Y	220PF 50V CER.CAP.	
	C842	EETB0JM-108E	1000MF 6.3V E.CAP.	
	C901	EEW2506-478	4700MF 25V E.CAP.	
	C902	EEW2506-478	4700MF 25V E.CAP.	
	C904	QFLC1HJ-103ZM	0.01MF 50V METAL.MYLAR	
	C905	QFLC1HJ-103ZM	0.01MF 50V METAL.MYLAR	
	C906	QETB1EM-228	2200MF 25V E.CAP.	
	C907	QETB1EM-228	2200MF 25V E.CAP.	
	C908	EETB1HM-107E	100MF 50V E.CAP.	
	C909	EETB1CM-688E	6800MF 16V E.CAP.	
	C910	EETB1CM-476E	47MF 16V E.CAP.	
	C911	EETB1HM-227E	220MF 50V AL E.CAP.	
	C912	EETB1HM-476E	47MF 50V E.CAP.	
	C913	EETB1HM-476E	47MF 50V E.CAP.	
	C914	EETB1HM-475E	4.7MF 50V E.CAP.	
	C915	EETB1HM-475E	4.7MF 50V E.CAP.	
	C916	EETB1AM-107E	100MF 10V E.CAP.	
	C917	EETB1EM-476E	47MF 25V E.CAP.	
	C918	EETB1EM-106E	10MF 25V E.CAP.	
	C919	EETB1AM-227E	220MF 10V E.CAP.	
	C920	EETB1AM-227E	220MF 10V E.CAP.	
	C921	EET1610-227ZE	220MF 16V E.CAP.	
	C922	EET1610-227ZE	220MF 16V E.CAP.	
	C923	EET2508-226ZE	22MF 25V E.CAP.	
	C924	EET2508-226ZE	22MF 25V E.CAP.	
	C925	EETB1AM-107E	100MF 10V E.CAP.	
	C926	EETB1AM-107E	100MF 10V E.CAP.	
	C927	QFLC1HJ-103ZM	0.01MF 50V METAL.MYLAR	
	C928	QFLC1HJ-103ZM	0.01MF 50V METAL.MYLAR	
	C929	QCBB1HK-101Y	100PF 50V CER.CAP.	
	C931	EFZ0096-103	0.01MF 630V METAL.MYLAR	
	C932	EFZ0096-103	0.01MF 630V METAL.MYLAR	
		RESISTORS		
	R051	QRD161J-102	1K 1/6W CARBON RES.	

■ Electrical Parts List (ENJ-094)

⚠	Item	Parts Number	Description		Area
	R052	QRD161J-102	1K	1/6W CARBON RES.	
	R053	QRD161J-102	1K	1/6W CARBON RES.	
	R054	QRD161J-102	1K	1/6W CARBON RES.	
	R056	QRD161J-102	1K	1/6W CARBON RES.	
	R058	QRD161J-104	100K	1/6W CARBON RES.	
	R113	QRD161J-104	100K	1/6W CARBON RES.	
	R114	QRD161J-104	100K	1/6W CARBON RES.	
	R115	QRD161J-472	4.7K	1/6W CARBON RES.	
	R116	QRD161J-472	4.7K	1/6W CARBON RES.	
	R117	QRD161J-103	10K	1/6W CARBON RES.	
	R118	QRD161J-103	10K	1/6W CARBON RES.	
	R121	QRD161J-104	100K	1/6W CARBON RES.	
	R122	QRD161J-104	100K	1/6W CARBON RES.	
	R123	QRD161J-105	1M	1/6W CARBON RES.	
	R124	QRD161J-105	1M	1/6W CARBON RES.	
	R125	QRD161J-222	2.2K	1/6W CARBON RES.	
	R126	QRD161J-222	2.2K	1/6W CARBON RES.	
	R127	QRD167J-562	5.6K	1/6W CARBON RES.	
	R128	QRD167J-562	5.6K	1/6W CARBON RES.	
	R129	QRD161J-104	100K	1/6W CARBON RES.	
	R130	QRD161J-104	100K	1/6W CARBON RES.	
	R131	QRV144F-2402AY	24K	1/4W METAL FILM R	
	R132	QRV144F-2402AY	24K	1/4W METAL FILM R	
⚠	R133	QRV144F-5600	560	1/4W CONST. METAL	
⚠	R134	QRV144F-5600	560	1/4W CONST. METAL	
⚠	R135	QRV144F-2702	27K	1/4W CONST. METAL	
	R136	QRD161J-183	18K	1/6W CARBON RES.	
	R137	QRD14CJ-331SX	330	1/4W UNF. CARBON R	
	R138	QRD14CJ-331SX	330	1/4W UNF. CARBON R	
	R141	QRD161J-274	270K	1/6W CARBON RES.	
	R142	QRD161J-104	100K	1/6W CARBON RES.	
	R143	QRD161J-824	820K	1/6W CARBON RES.	
	R151	QRD161J-302	3K	1/6W CARBON RES.	
	R152	QRD161J-302	3K	1/6W CARBON RES.	
	R153	QRD161J-132	1.3K	1/6W CARBON RES.	
	R154	QRD161J-132	1.3K	1/6W CARBON RES.	
	R155	QRD161J-432	4.3K	1/6W CARBON RES.	
	R156	QRD161J-432	4.3K	1/6W CARBON RES.	
	R157	QRD161J-222	2.2K	1/6W CARBON RES.	
	R158	QRD161J-222	2.2K	1/6W CARBON RES.	
	R159	QRD161J-222	2.2K	1/6W CARBON RES.	
	R160	QRD161J-222	2.2K	1/6W CARBON RES.	
	R161	QRD167J-682	6.8K	1/6W CARBON RES.	
	R162	QRD167J-682	6.8K	1/6W CARBON RES.	
	R163	QRD161J-392YT	3.9K	1/6W CARBON RES.	
	R164	QRD161J-392YT	3.9K	1/6W CARBON RES.	
	R165	QRD161J-681	680	1/6W CARBON RES.	
	R166	QRD161J-681	680	1/6W CARBON RES.	
	R167	QRD161J-821	820	1/6W CARBON RES.	
	R168	QRD161J-821	820	1/6W CARBON RES.	
	R169	QRD161J-105	1M	1/6W CARBON RES.	
	R170	QRD161J-105	1M	1/6W CARBON RES.	
	R171	QRD161J-121	120	1/6W CARBON RES.	
	R172	QRD161J-121	120	1/6W CARBON RES.	
	R173	QRD161J-222	2.2K	1/6W CARBON RES.	
	R174	QRD161J-222	2.2K	1/6W CARBON RES.	
	R175	QRD161J-123	12K	1/6W CARBON RES.	
	R176	QRD161J-123	12K	1/6W CARBON RES.	
	R177	QRD161J-123	12K	1/6W CARBON RES.	
	R178	QRD161J-123	12K	1/6W CARBON RES.	
	R179	QRD161J-473	47K	1/6W CARBON RES.	
	R180	QRD161J-473	47K	1/6W CARBON RES.	
	R181	QRD161J-182	1.8K	1/6W CARBON RES.	
	R182	QRD161J-182	1.8K	1/6W CARBON RES.	
	R183	QRD161J-391	390	1/6W CARBON RES.	
	R184	QRD161J-391	390	1/6W CARBON RES.	
⚠	R185	QRZ0077-470	47	1/4W FUSIBLE RES.	
⚠	R186	QRZ0077-470	47	1/4W FUSIBLE RES.	
	R251	QRD161J-100	10	1/6W CARBON RES.	
	R252	QRD161J-100	10	1/6W CARBON RES.	
	R253	QRD161J-821	820	1/6W CARBON RES.	
	R254	QRD161J-821	820	1/6W CARBON RES.	

⚠	Item	Parts Number	Description		Area
	R301	ERD004J-223Z	22K	1/4W CARBON RES.	
	R302	ERD004J-223Z	22K	1/4W CARBON RES.	
	R303	ERD004J-101Z	100	1/4W CARBON RES.	
	R304	ERD004J-101Z	100	1/4W CARBON RES.	
	R305	QRD161J-102	1K	1/6W CARBON RES.	
	R306	QRD161J-102	1K	1/6W CARBON RES.	
	R307	QRD161J-220	22	1/6W CARBON RES.	
	R308	QRD161J-220	22	1/6W CARBON RES.	
	R309	QRD161J-472	4.7K	1/6W CARBON RES.	
	R310	QRD161J-472	4.7K	1/6W CARBON RES.	
	R315	QRD161J-102	1K	1/6W CARBON RES.	
	R316	QRD161J-102	1K	1/6W CARBON RES.	
⚠	R317	QRV144F-2401A	2.4K	1/4W CONST. METAL	
⚠	R318	QRV144F-2401A	2.4K	1/4W CONST. METAL	
	R319	QRD161J-681	680	1/6W CARBON RES.	
	R320	QRD161J-681	680	1/6W CARBON RES.	
	R321	QRD161J-332YTT	3.3K	1/6W CARBON RES.	
	R322	QRD161J-332YTT	3.3K	1/6W CARBON RES.	
	R323	QRD161J-333	33K	1/6W CARBON RES.	
	R324	QRD161J-333	33K	1/6W CARBON RES.	
	R325	QRD161J-391	390	1/6W CARBON RES.	
	R326	QRD161J-391	390	1/6W CARBON RES.	
	R327	QRD161J-221	220	1/6W CARBON RES.	
	R328	QRD161J-221	220	1/6W CARBON RES.	
	R329	QRD161J-102	1K	1/6W CARBON RES.	
	R330	QRD161J-102	1K	1/6W CARBON RES.	
	R331	QRD161J-102	1K	1/6W CARBON RES.	
	R332	QRD161J-102	1K	1/6W CARBON RES.	
⚠	R333	QRV144F-1001A	1K	1/4W CONST. METAL	
⚠	R334	QRV144F-1001A	1K	1/4W CONST. METAL	
	R335	QRD161J-104	100K	1/6W CARBON RES.	
	R336	QRD161J-104	100K	1/6W CARBON RES.	
	R337	ERD004J-220Z	22	1/4W CARBON RES.	
	R338	ERD004J-220Z	22	1/4W CARBON RES.	
	R339	ERD004J-220Z	22	1/4W CARBON RES.	
	R340	ERD004J-220Z	22	1/4W CARBON RES.	
	R341	QRD161J-274	270K	1/6W CARBON RES.	
	R342	QRD161J-274	270K	1/6W CARBON RES.	
	R343	QRD161J-622	6.2K	1/6W CARBON RES.	
	R344	QRD161J-622	6.2K	1/6W CARBON RES.	
	R345	QRD161J-472	4.7K	1/6W CARBON RES.	
	R346	QRD161J-472	4.7K	1/6W CARBON RES.	
	R347	QRD161J-105	1M	1/6W CARBON RES.	
	R348	QRD161J-105	1M	1/6W CARBON RES.	
	R351	QRD161J-561	560	1/6W CARBON RES.	
	R352	QRD161J-561	560	1/6W CARBON RES.	
	R353	QRD161J-102	1K	1/6W CARBON RES.	
	R354	QRD161J-102	1K	1/6W CARBON RES.	
	R355	QRD161J-472	4.7K	1/6W CARBON RES.	
	R356	QRD161J-472	4.7K	1/6W CARBON RES.	
	R357	QRD167J-562	5.6K	1/6W CARBON RES.	
	R358	QRD167J-562	5.6K	1/6W CARBON RES.	
	R361	QRD161J-104	100K	1/6W CARBON RES.	
	R362	QRD161J-104	100K	1/6W CARBON RES.	
	R363	QRV144F-2402AY	24K	1/4W METAL FILM R	
	R364	QRV144F-2402AY	24K	1/4W METAL FILM R	
⚠	R365	QRV144F-5600A	560	1/4W CONST. METAL	
⚠	R366	QRV144F-5600A	560	1/4W CONST. METAL	
⚠	R367	QRV144F-2702A	27K	1/4W CONST. METAL	
	R368	QRD161J-223	22K	1/6W CARBON RES.	
	R369	QRD167J-682	6.8K	1/6W CARBON RES.	
	R370	QRD167J-682	6.8K	1/6W CARBON RES.	
	R371	QRD14CJ-102SX	1K	1/4W UNF. CARBON R	
	R372	QRD14CJ-102SX	1K	1/4W UNF. CARBON R	
⚠	R381	QRZ0077-680	68	1/4W FUSIBLE RES.	
⚠	R382	QRZ0077-680	68	1/4W FUSIBLE RES.	
⚠	R383	QRZ0077-680	68	1/4W FUSIBLE RES.	
⚠	R384	QRZ0077-680	68	1/4W FUSIBLE RES.	
	R385	QRD14CJ-331SX	330	1/4W UNF. CARBON R	
	R386	QRD14CJ-331SX	330	1/4W UNF. CARBON R	
	R401	QRD161J-822	8.2K	1/6W CARBON RES.	
	R402	QRD161J-822	8.2K	1/6W CARBON RES.	

■ Electrical Parts List (ENJ-094)

⚠	Item	Parts Number	Description		Area
	R403	QRD161J-331	330	1/6W CARBON RES.	
	R404	QRD161J-331	330	1/6W CARBON RES.	
	R405	QRD161J-331	330	1/6W CARBON RES.	
	R406	QRD161J-331	330	1/6W CARBON RES.	
	R407	QRD161J-220	22	1/6W CARBON RES.	
	R408	QRD161J-220	22	1/6W CARBON RES.	
	R409	QRD161J-220	22	1/6W CARBON RES.	
	R410	QRD161J-220	22	1/6W CARBON RES.	
	R411	QRD161J-123	12K	1/6W CARBON RES.	
	R412	QRD161J-123	12K	1/6W CARBON RES.	
	R413	QRD161J-101	100	1/6W CARBON RES.	
	R414	QRD161J-101	100	1/6W CARBON RES.	
	R415	QRD161J-101	100	1/6W CARBON RES.	
	R416	QRD161J-101	100	1/6W CARBON RES.	
	R417	ERD004J-100Z	10	1/4W CARBON RES.	
	R418	ERD004J-100Z	10	1/4W CARBON RES.	
	R419	ERD004J-100Z	10	1/4W CARBON RES.	
	R420	ERD004J-100Z	10	1/4W CARBON RES.	
	R421	QRD161J-222	2.2K	1/6W CARBON RES.	
	R422	QRD161J-222	2.2K	1/6W CARBON RES.	
	R423	QRD161J-222	2.2K	1/6W CARBON RES.	
	R424	QRD161J-222	2.2K	1/6W CARBON RES.	
⚠	R425	QRZ0077-680	68	1/4W FUSIBLE RES.	
⚠	R426	QRZ0077-680	68	1/4W FUSIBLE RES.	
⚠	R427	QRZ0077-680	68	1/4W FUSIBLE RES.	
⚠	R428	QRZ0077-680	68	1/4W FUSIBLE RES.	
	R429	ERD004J-221Z	220	1/4W CARBON RES.	
	R430	ERD004J-221Z	220	1/4W CARBON RES.	
	R431	ERD004J-221Z	220	1/4W CARBON RES.	
	R432	ERD004J-221Z	220	1/4W CARBON RES.	
	R433	ERD004J-222Z	2.2K	1/4W CARBON RES.	
	R434	ERD004J-222Z	2.2K	1/4W CARBON RES.	
	R501	QRD161J-472	4.7K	1/6W CARBON RES.	
	R502	QRD161J-472	4.7K	1/6W CARBON RES.	
	R503	QRD161J-473	47K	1/6W CARBON RES.	
	R504	QRD161J-473	47K	1/6W CARBON RES.	
	R505	QRD161J-220	22	1/6W CARBON RES.	
	R506	QRD161J-220	22	1/6W CARBON RES.	
	R507	QRD161J-102	1K	1/6W CARBON RES.	
	R508	QRD161J-102	1K	1/6W CARBON RES.	
	R509	QRD161J-681	680	1/6W CARBON RES.	
	R510	QRD161J-681	680	1/6W CARBON RES.	
	R511	QRD161J-103	10K	1/6W CARBON RES.	
	R512	QRD161J-103	10K	1/6W CARBON RES.	
	R513	QRD161J-153	15K	1/6W CARBON RES.	
	R514	QRD161J-153	15K	1/6W CARBON RES.	
	R515	QRD161J-103	10K	1/6W CARBON RES.	
	R516	QRD161J-472	4.7K	1/6W CARBON RES.	
	R517	QRD161J-223	22K	1/6W CARBON RES.	
	R519	QRD161J-822	8.2K	1/6W CARBON RES.	
	R520	QRD161J-822	8.2K	1/6W CARBON RES.	
	R551	QRD161J-273	27K	1/6W CARBON RES.	
	R552	QRD161J-333	33K	1/6W CARBON RES.	
	R553	QRD161J-224	220K	1/6W CARBON RES.	
	R601	QRZ0110-100X	10	1/4W FUSIBLE RES.	
	R602	QRD161J-471	470	1/6W CARBON RES.	
	R603	QRD161J-272	2.7K	1/6W CARBON RES.	
	R604	QRD161J-752	7.5K	1/6W CARBON RES.	
	R605	QRD161J-222	2.2K	1/6W CARBON RES.	
	R606	QRD161J-182	1.8K	1/6W CARBON RES.	
	R607	QRD161J-563	56K	1/6W CARBON RES.	
	R608	QRD161J-563	56K	1/6W CARBON RES.	
⚠	R609	QRD14CJ-3R3S	3.3	1/4W UNF. CARBON R	
	R610	QRZ0109-3R3X	3.3	1/4W FUSIBLE RES.	
	R611	QRD161J-182	1.8K	1/6W CARBON RES.	
	R612	QRD161J-822	8.2K	1/6W CARBON RES.	
	R613	QRD161J-392YT	3.9K	1/6W CARBON RES.	
	R614	QRD161J-104	100K	1/6W CARBON RES.	
	R615	QRD167J-562	5.6K	1/6W CARBON RES.	
	R616	QRD14CJ-4R7SX	4.7	1/4W UNF. CARBON R	
	R617	QRD161J-103	10K	1/6W CARBON RES.	
	R618	QRD161J-103	10K	1/6W CARBON RES.	

⚠	Item	Parts Number	Description		Area
	R619	QRD161J-103	10K	1/6W CARBON RES.	
	R620	QRD161J-223	22K	1/6W CARBON RES.	
	R621	QRD161J-223	22K	1/6W CARBON RES.	
	R622	QRD161J-101	100	1/6W CARBON RES.	
	R623	QRD161J-101	100	1/6W CARBON RES.	
	R624	QRD161J-101	100	1/6W CARBON RES.	
	R625	QRD161J-101	100	1/6W CARBON RES.	
	R626	QRD161J-334	330K	1/6W CARBON RES.	
	R627	QRD161J-334	330K	1/6W CARBON RES.	
	R628	QRD161J-334	330K	1/6W CARBON RES.	
	R629	QRD161J-334	330K	1/6W CARBON RES.	
⚠	R630	QRD14CJ-220S	22	1/4W UNF. CARBON R	
⚠	R631	QRD14CJ-220S	22	1/4W UNF. CARBON R	
	R632	QRD14CJ-4R7SX	4.7	1/4W UNF. CARBON R	
	R633	QRD14CJ-4R7SX	4.7	1/4W UNF. CARBON R	
	R634	QRD161J-102	1K	1/6W CARBON RES.	
	R635	QRD161J-102	1K	1/6W CARBON RES.	
	R636	QRD161J-103	10K	1/6W CARBON RES.	
	R637	QRD161J-103	10K	1/6W CARBON RES.	
	R638	QRD161J-103	10K	1/6W CARBON RES.	
	R639	QRD161J-103	10K	1/6W CARBON RES.	
	R640	QRD161J-103	10K	1/6W CARBON RES.	
	R641	QRD161J-103	10K	1/6W CARBON RES.	
	R642	QRD161J-103	10K	1/6W CARBON RES.	
	R643	QRD161J-103	10K	1/6W CARBON RES.	
	R644	QRD161J-104	100K	1/6W CARBON RES.	
	R645	QRD161J-104	100K	1/6W CARBON RES.	
	R646	QRD161J-102	1K	1/6W CARBON RES.	
	R647	QRD161J-102	1K	1/6W CARBON RES.	
	R648	QRD161J-103	10K	1/6W CARBON RES.	
	R649	QRD161J-103	10K	1/6W CARBON RES.	
	R650	QRD161J-154	150K	1/6W CARBON RES.	
	R651	QRD161J-154	150K	1/6W CARBON RES.	
	R652	QRD161J-563	56K	1/6W CARBON RES.	
	R653	QRD161J-563	56K	1/6W CARBON RES.	
	R654	QRD161J-183	18K	1/6W CARBON RES.	
	R655	QRD161J-273	27K	1/6W CARBON RES.	
	R656	QRD167J-562	5.6K	1/6W CARBON RES.	
	R657	QRD161J-333	33K	1/6W CARBON RES.	
	R658	QRD161J-273	27K	1/6W CARBON RES.	
	R831	QRD161J-223	22K	1/6W CARBON RES.	
	R832	QRD161J-223	22K	1/6W CARBON RES.	
	R833	QRD161J-223	22K	1/6W CARBON RES.	
	R834	QRD161J-102	1K	1/6W CARBON RES.	
	R835	QRD161J-102	1K	1/6W CARBON RES.	
	R836	QRD161J-102	1K	1/6W CARBON RES.	
	R837	QRD161J-473	47K	1/6W CARBON RES.	
	R838	QRD161J-473	47K	1/6W CARBON RES.	
	R839	QRD161J-473	47K	1/6W CARBON RES.	
	R840	QRD161J-101	100	1/6W CARBON RES.	
	R841	QRD161J-101	100	1/6W CARBON RES.	
	R842	QRD161J-101	100	1/6W CARBON RES.	
	R843	QRD161J-473	47K	1/6W CARBON RES.	
	R844	QRD161J-102	1K	1/6W CARBON RES.	
	R845	QRD161J-103	10K	1/6W CARBON RES.	
	R846	QRD161J-123	12K	1/6W CARBON RES.	
	R847	QRD161J-472	4.7K	1/6W CARBON RES.	
	R848	QRD161J-472	4.7K	1/6W CARBON RES.	
	R849	QRD161J-473	47K	1/6W CARBON RES.	
	R850	QRD161J-103	10K	1/6W CARBON RES.	
	R851	QRD161J-103	10K	1/6W CARBON RES.	
	R852	QRD161J-102	1K	1/6W CARBON RES.	
	R853	QRD161J-103	10K	1/6W CARBON RES.	
	R854	QRD161J-223	22K	1/6W CARBON RES.	
	R855	QRD161J-221	220	1/6W CARBON RES.	
	R857	QRD161J-223	22K	1/6W CARBON RES.	
	R859	QRD161J-223	22K	1/6W CARBON RES.	
	R861	QRD161J-104	100K	1/6W CARBON RES.	
	R862	QRD161J-472	4.7K	1/6W CARBON RES.	
	R863	QRD161J-472	4.7K	1/6W CARBON RES.	
	R864	QRD161J-472	4.7K	1/6W CARBON RES.	
	R866	QRD161J-472	4.7K	1/6W CARBON RES.	

■ Electrical Parts List (ENJ-094)

⚠	Item	Parts Number	Description	Area
	R867	QRD161J-102	1K 1/6W CARBON RES.	
	R868	QRD161J-103	10K 1/6W CARBON RES.	
	R869	QRD161J-102	1K 1/6W CARBON RES.	
	R870	QRD161J-472	4.7K 1/6W CARBON RES.	
	R872	QRD161J-223	22K 1/6W CARBON RES.	
	R873	QRD161J-221	220 1/6W CARBON RES.	
	R901	QRD161J-103	10K 1/6W CARBON RES.	
	R902	QRD161J-222	2.2K 1/6W CARBON RES.	
	R903	QRD14CJ-331SX	330 1/4W UNF.CARBON R	
	R904	QRD161J-472	4.7K 1/6W CARBON RES.	
	R905	QRD161J-472	4.7K 1/6W CARBON RES.	
⚠	R906	QRZ0077-4R7	4.7 1/4W FUSE RESISTO	
	R907	QRD161J-152	1.5K 1/6W CARBON RES.	
	R908	QRD161J-103	10K 1/6W CARBON RES.	
	R909	QRD161J-103	10K 1/6W CARBON RES.	
⚠	R910	QRZ0077-100	10 1/4W FUSIBLE RES.	
	R911	QRD161J-561	560 1/6W CARBON RES.	
	R912	QRD161J-561	560 1/6W CARBON RES.	
⚠	R913	QRZ0077-4R7	4.7 1/4W FUSE RESISTO	
⚠	R914	QRZ0077-4R7	4.7 1/4W FUSE RESISTO	
	R915	QRD161J-151	150 1/6W CARBON RES.	
	R916	QRD161J-103	10K 1/6W CARBON RES.	
	R917	QRD161J-103	10K 1/6W CARBON RES.	
	R918	QRD161J-103	10K 1/6W CARBON RES.	
	R919	QRD161J-103	10K 1/6W CARBON RES.	
	R920	QRD161J-103	10K 1/6W CARBON RES.	
⚠	R921	QRZ0077-100	10 1/4W FUSIBLE RES.	
⚠	R922	QRZ0077-100	10 1/4W FUSIBLE RES.	
	R927	QRD161J-101	100 1/6W CARBON RES.	
	R928	QRD161J-101	100 1/6W CARBON RES.	
	R929	QRD161J-621	620 1/6W CARBON RES.	
	R930	QRD161J-621	620 1/6W CARBON RES.	
	R934	QRD161J-103	10K 1/6W CARBON RES.	
	R935	QRD161J-103	10K 1/6W CARBON RES.	
	R936	QRD161J-102	1K 1/6W CARBON RES.	
	R937	QRD161J-472	4.7K 1/6W CARBON RES.	
	R938	QRD161J-472	4.7K 1/6W CARBON RES.	
	RA801	QRB059J-223	22K 1/10WNETWORK RES.	
	RA802	QRB169J-223	22K 1/10WNETWORK RES.	
	RA803	QRB109J-682	6.8K 1/10WNETWORK RES.	
	VR111	QVPA601-202A	2K TRIMMER RES.	
	VR112	QVPA601-202A	2K TRIMMER RES.	
	VR113	QVPA601-503A	50K TRIMMER RES.	
	VR114	QVPA601-503A	50K TRIMMER RES.	
	VR301	QVPC604-101	100 0.3W TRIMMER RES.	
	VR302	QVPC604-101	100 0.3W TRIMMER RES.	
	VR303	QVPA601-502A	5K TRIMMER RES.	
	VR304	QVPA601-502A	5K TRIMMER RES.	
	VR601	QVPA601-104A	100K TRIMMER RES.	
	VR602	QVPA601-104A	100K TRIMMER RES.	
		OTHERS		
		EMW10529-102	PRINTED BOARD	
		E3400-431	FELT SPACER	
		E75303-003	SHIELD TAPE	
		E75303-005	SPACER	
		QWE350-09RR	VINYL WIRE	
		QWE350-30RR	VINYL WIRE	
		QWE690-16RR	VINYL WIRE	
		SBSG3008CC	TAPPING SCREW	
		VMZ0138-001	SHIELD CASE	
	J101	EMN00TV-224A	PIN JACK	
	J102	EMN00TV-206A	PIN JACK	
	J111	EMV7122-004Z	CONNECT TERMINAL	
	J113	EMV7122-103	CONNECT TERMINAL	
	J801	QMS3501-021	PIN JACK	
	J802	EMV7122-005	MALE CONNECTOR	
	J812	EMV7122-103	CONNECT TERMINAL	
	K901	ENZ8101-008	INDUCTOR	
	K902	ENZ8101-008	INDUCTOR	
	K903	ENZ8101-008	INDUCTOR	
	K911	ENZ8101-007	INDUCTOR	
	K912	ENZ8101-007	INDUCTOR	

⚠	Item	Parts Number	Description	Area
	K913	ENZ8101-007	INDUCTOR	
	K914	ENZ8101-007	INDUCTOR	
	L101	VQZ0065-001	OSCILLATOR COIL	
	L102	VQZ0065-001	OSCILLATOR COIL	
	L103	VQP0001-332ZS	INDUCTOR	
	L104	VQP0001-332ZS	INDUCTOR	
	L105	VQP0001-332ZS	INDUCTOR	
	L106	VQP0001-332ZS	INDUCTOR	
	L301	VQP0001-562ZS	INDUCTOR	
	L302	VQP0001-562ZS	INDUCTOR	
	L601	VQH1008-059	OSCILLATOR COIL	
	L603	VQH7001-030	OSCILLATOR COIL	
	L604	VQH7001-030	OSCILLATOR COIL	
	S821	QSS6A12-E01	SLIDE SWITCH	
	X801	ECX0008-000KMZ	CRYSTAL	
	CN105	EMV5111-003	MALE CONNECTOR	
	CN111	QMV5011-003K	MALE CONNECTOR	
	CN121	EMV7163-009	CONNECT TERMINAL	
	CN122	EMV5163-009R	CONNECT TERMINAL	
	CN301	QMV5011-004K	CONNECT TERMINAL	
	CN601	QMV5011-002K	CONNECT TERMINAL	
	CN811	EMV7123-031	MALE CONNECTOR	
	CN812	EMV7155-013	CONNECT TERMINAL	
	CN951	VMC0289-P03	CONNECT TERMINAL	
	CN952	VMC0289-P03	CONNECT TERMINAL	
	CN953	VMC0289-P03	CONNECT TERMINAL	
	CN954	VMC0289-P03	CONNECT TERMINAL	
	EP101	EMZ4002-001Z	EARTH PLATE	
	EP102	EMZ4002-001Z	EARTH PLATE	
	FW801	EWR36B-13SST	FLAT WIRE ASSY	
	FW810	EWR36B-13SST	FLAT WIRE ASSY	
	HS901	E75085-001	HEAT SINK	
	HS903	E70306-001	HEAT SINK	
	HS904	E70306-001	HEAT SINK	
	JT810	EMV7122-004Z	CONNECT TERMINAL	
	JT811	EMV7122-004Z	CONNECT TERMINAL	
	JT901	EMV7122-103	CONNECT TERMINAL	
	JT902	EMV7122-103	CONNECT TERMINAL	
	RY301	ESK5D24-220A	RELAY	
	WT901	E67764-103	CONNECT TERMINAL	

■ Electrical Parts List (ENB-227)

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC801	GP1U571X	INFRARED DETECT	
	IC802	TA8409S	I.C(MONO-ANALOG)	
	IC803	TA8409S	I.C(MONO-ANALOG)	
		DIODES		
	D111	SLR-342DCA47	L.E.D.	
	D112	SLR-342DCA47	L.E.D.	
	D801	SLR-342VC3F	L.E.D.	
	D802	SLR-342MCA47	L.E.D.	
	D803	SLA-380LT	L.E.D.	
	D804	SLR-342YC3F	L.E.D.	
	D811	1SS119	SI.DIODE	
	D812	1SS119	SI.DIODE	
	D813	1SS119	SI.DIODE	
	D814	1SS119	SI.DIODE	
	D815	1SS119	SI.DIODE	
	D816	1SS119	SI.DIODE	
	D817	11ES2	SI.DIODE	
	D818	MTZ8.2JC	ZENER DIODE	
	D861	1SS119	SI.DIODE	
	D862	1SS119	SI.DIODE	
		TRANSISTORS		
	Q116	2SD2144S(VW)	SI.TRANSISTOR	
	Q801	DTC124ES	DIGITAL TRANSISTOR	
	Q802	DTC124ES	DIGITAL TRANSISTOR	
	Q803	2SD2144S(VW)	SI.TRANSISTOR	
	Q804	DTA124ES	DIGITAL TRANSISTOR	
	Q805	DTC124ES	DIGITAL TRANSISTOR	
	Q810	2SD2144S(VW)	SI.TRANSISTOR	
	Q811	DTC124ES	DIGITAL TRANSISTOR	
	Q812	DTC124ES	DIGITAL TRANSISTOR	
	Q813	DTA124ES	DIGITAL TRANSISTOR	
		CAPACITORS		
	C063	QCZ0205-155	1.5MF 25V C.CAP.	
	C064	QCZ0205-155	1.5MF 25V C.CAP.	
	C091	QCZ0205-155	1.5MF 25V C.CAP.	
	C801	EETB0JM-107E	100MF 6.3V E.CAP.	
	C811	EETB1EM-106E	10MF 25V E.CAP.	
	C812	EETB1EM-106E	10MF 25V E.CAP.	
	C813	QCZ0202-155	1.5MF 25V CER.RES.	
		RESISTORS		
	R103	ERD141J-333S	33K 1/4W CARBON	
	R104	ERD141J-333S	33K 1/4W CARBON	
	R105	QRD161J-104	100K 1/6W CARBON RES.	
	R106	QRD161J-104	100K 1/6W CARBON RES.	
	R107	QRD161J-222	2.2K 1/6W CARBON RES.	
	R108	QRD161J-103	10K 1/6W CARBON RES.	
	R109	QRD161J-103	10K 1/6W CARBON RES.	
	R110	QRD161J-221	220 1/6W CARBON RES.	
	R111	QRD161J-201	200 1/6W CARBON RES.	
	R112	QRD161J-272	2.7K 1/6W CARBON RES.	
	R113	QRD161J-472	4.7K 1/6W CARBON RES.	
	R114	QRD161J-822	8.2K 1/6W CARBON RES.	
	R115	QRD161J-273	27K 1/6W CARBON RES.	
	R187	QRD161J-473	47K 1/6W CARBON RES.	
	R188	QRD161J-151	150 1/6W CARBON RES.	
	R189	QRD161J-151	150 1/6W CARBON RES.	
	R801	QRD161J-102	1K 1/6W CARBON RES.	
	R802	QRD161J-122	1.2K 1/6W CARBON RES.	
	R803	QRD161J-182	1.8K 1/6W CARBON RES.	
	R804	QRD161J-102	1K 1/6W CARBON RES.	
	R805	QRD161J-122	1.2K 1/6W CARBON RES.	
	R806	QRD161J-182	1.8K 1/6W CARBON RES.	
	R807	QRD161J-272	2.7K 1/6W CARBON RES.	
	R808	QRD167J-511	510 1/6W CARBON RES.	
	R809	QRD161J-391	390 1/6W CARBON RES.	

⚠	Item	Parts Number	Description	Area
	R821	QRD161J-102	1K 1/6W CARBON RES.	
	R822	QRD161J-102	1K 1/6W CARBON RES.	
	R823	QRD161J-242	2.4K 1/6W CARBON RES.	
	R824	QRD161J-122	1.2K 1/6W CARBON RES.	
	R825	QRD167J-682	6.8K 1/6W CARBON RES.	
	R826	QRD161J-222	2.2K 1/6W CARBON RES.	
⚠	R827	QRD14CJ-100SX	10 1/4W UNF.CARBON R	
	R828	QRD161J-473	47K 1/6W CARBON RES.	
	VR101	QVGA81W-E25B	200K VARIABLE RES.	
	VR102	QVDB87A-E15C	100K VARIABLE RES.	
	VR103	QVGA81A-E24B	20K VARIABLE RES.	
	VR104	QVGA81B-E13C	1K VARIABLE RES.	
		OTHERS		
		EMW10528-101A	PRINTED BOARD	
	S801	ESP0001-023M	TACT SWITCH	
	S802	ESP0001-023M	TACT SWITCH	
	S803	ESP0001-023M	TACT SWITCH	
	S804	ESP0001-023M	TACT SWITCH	
	S805	ESP0001-023M	TACT SWITCH	
	S806	ESP0001-023M	TACT SWITCH	
	S807	ESP0001-023M	TACT SWITCH	
	S808	ESP0001-023M	TACT SWITCH	
	S809	ESP0001-017	TACT SWITCH	
	S810	ESP0001-023M	TACT SWITCH	
	S811	ESP0001-023M	TACT SWITCH	
	S812	QSR2002-E01A	ROTARY SWITCH	
	S821	VSH1140-006	LEAF SWITCH	
	S822	VSH1140-006	LEAF SWITCH	
	S823	VSH1140-006	LEAF SWITCH	
	S824	VSH1140-006	LEAF SWITCH	
	CN801	EMV7123-031	MALE CONNECTOR	
	CN802	EMV7123-013R	MALE CONNECTOR	
	CN803	EMV5109-010A	CONNECT TERMINAL	
	CN963	VMC0289-S03	CONNECT TERMINAL	
	CN964	VMC0289-S03	CONNECT TERMINAL	
	CN965	VMC0289-S03	CONNECT TERMINAL	
	CN966	VMC0289-S03	CONNECT TERMINAL	
	FH801	E309468-001	FL HOLDER	
	FL801	ELU0001-203	FLUORESCENT DISPLAY TUBE	
	FS801	E75933-001	SPACER	
	FS802	E75933-001	SPACER	
	FW101	EWR34B-13LST	FLAT WIRE ASSY	
	FW102	EWR33B-13LST	FLAT WIRE ASSY	
	FW103	EWR33B-13LST	FLAT WIRE ASSY	
	FW801	EWR38B-13LST	FLAT WIRE ASSY	
	WR105	EWS243-085	SOCKET WIRE ASSY	

■ Electrical Parts List (END-102)

⚠	Item	Parts Number	Description	Area
		CAPACITORS		
⚠	C001	QCZ9050-472A	4700PF 250V CER. CAP.	
	C002	QFN82AJ-104	0.1MF 100V MYLAR CAP.	
	C003	QCS31HJ-101Z	100PF 50V CER. CAP.	
		OTHERS		
		EMG7331-002	FEEDER CLAMP	
		EMG7331-002U	CONTACT CLIP	
		EMW10600-002A	PRINTED BOARD	
		QWE690-16JR	VINYL WIRE	
		QWE692-16JR	VINYL WIRE	
		QWE694-16JR	VINYL WIRE	
		QWE881-22RR	VINYL WIRE	
		QWE883-18RR	VINYL WIRE	
		QWE886-23RR	VINYL WIRE	
		QWE887-17RR	VINYL WIRE	
⚠	J001	QMCB001-E02H	AC SOCKET	
⚠	S001	QSP4C11-E01	PUSH SWITCH	
	FW901	EWR36B-13LST	FLAT WIRE ASSY	

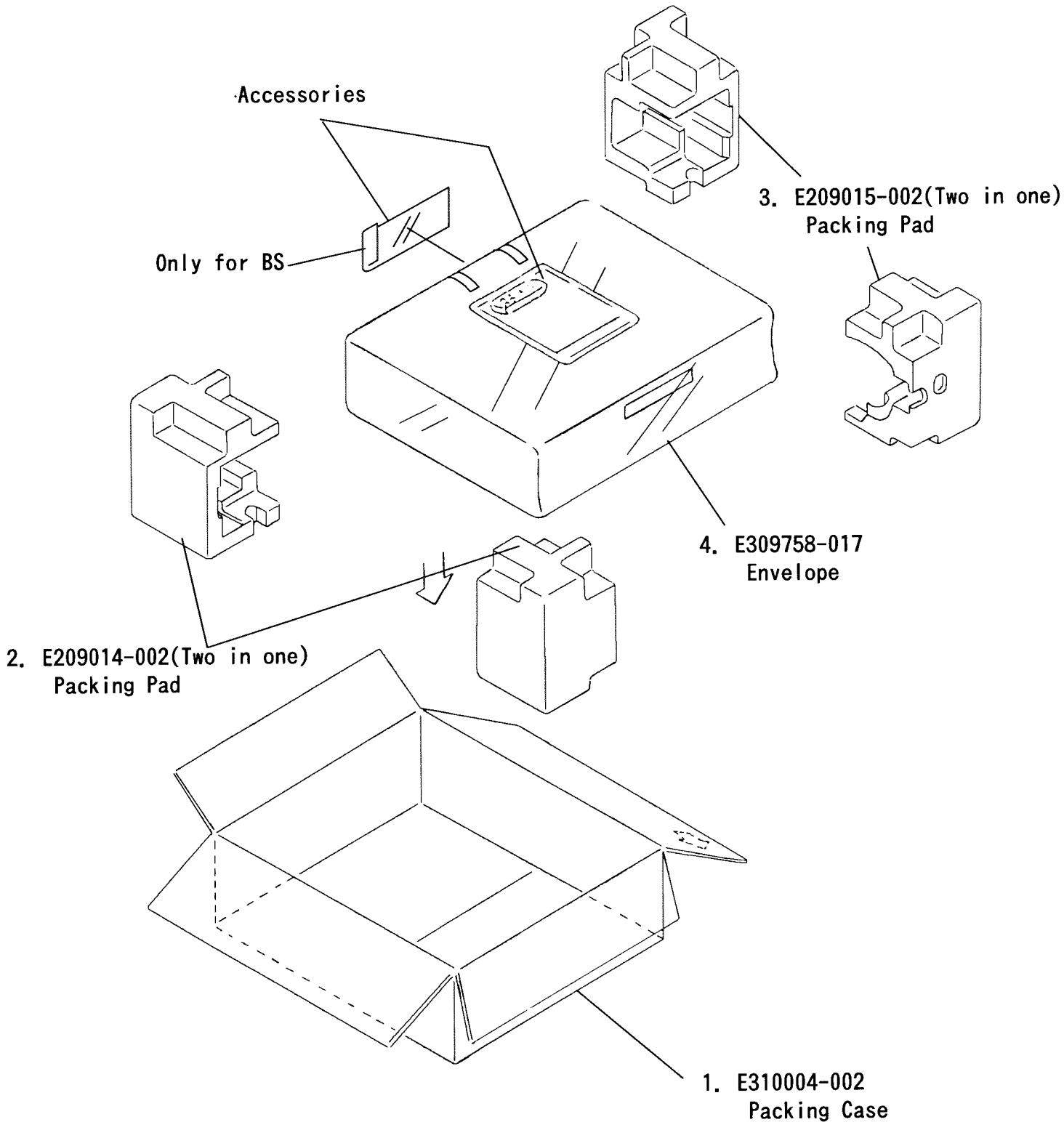
Accessories List

Block No. M3MM

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	E30580-2397B	INSTRUCTION BOOK	1		
	2	E309802-001	POLY BAG	1		
	3	EWP302-020	SIGNAL CORD	2		
	4	EWP805-012	PLUG WIRE ASSY	1		
	5	RM-STSD1U	WIRE-LESS REMOTE CONTROL	1		
	6	R03BPA-2STSA	DRY CELL	1		
	7	QMP39F0-183E	POWER CORD	1		EN
⚠	7	QMP5520-1835BS	POWER CORD	1		BS
	8	E300196-172	POLY BAG	1		BS
	9	BT-54003-1	WARRANTY CARD	1		BS
	10	BT-20066A	DISTRIBUTOR LIST	1		BS
	11	E43486-340A	SAFETY SHEET	1		BS

Packing Materials and Part Numbers

Block No. M4MM



–MEMO–

TD-SD1GD

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