

DENON

Hi-Fi Component

SERVICE MANUAL MODEL DN-790R STEREO CASSETTE TAPE DECK

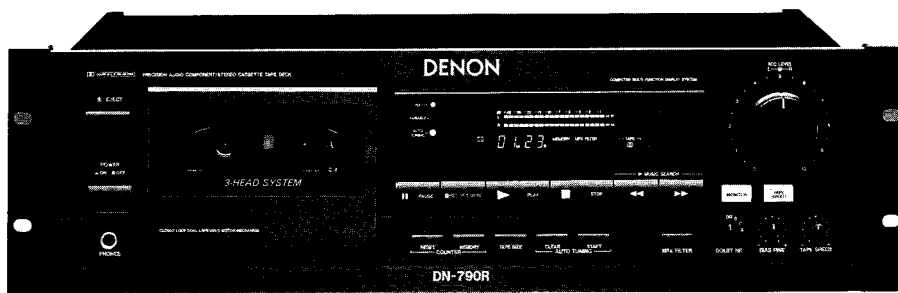


TABLE OF CONTENTS


OPERATING INSTRUCTIONS.....	2~8
SPECIFICATION	9
BLOCK DIAGRAM.....	10
LEVEL DIAGRAM.....	11
DISASSEMBLY INSTRUCTIONS.....	12, 13
ADJUSTING AND CHECKING THE MECHANISM SECTION	14~15
ADJUSTING THE ELECTRICAL SECTIONS.....	16, 17
PARTS LIST OF EXPLODED VIEW	18
EXPLODED VIEW OF CHASSIS AND CABINET	19
EXPLODED VIEW OF CASSETTE MECHANISM UNIT	20
PARTS LIST OF CASSETTE MECHANISM EXPLODED VIEW	21
SEMICONDUCTOR	22, 23
PRINTED WIRING BOARD PARTS LIST.....	24~30
PRINTED WIRING BOARD PATTERNS	31, 32
GU-2848 AUDIO P.W.B. UNIT ASS'Y	31
3U-2603 POWER SUPPLY P.W.B. UNIT ASS'Y.....	32
GU-2861 DOLBY S P.W.B. UNIT ASS'Y	32
WIRING DIAGRAM.....	33
BUNDEL DIAGRAM	34
SCHEMATIC DIAGRAM.....	35, 36

NIPPON COLUMBIA CO., LTD.


IMPORTANT TO SAFETY

- WARNING:**
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.
- CAUTION:**
- Handle the power supply cord carefully**
Do not damage or deform the power supply cord. If it is damaged or deformed, it may cause electric shock or malfunction when used. When removing it from wall outlet, be sure to remove by holding the plug attachment and not by pulling the cord.
 - Do not open the top cover**
In order to prevent electric shock, do not open the top cover. If problems occur, contact your DENON DEALER.
 - Do not place anything inside**
Do not place metal objects or spill liquid inside the cassette tape deck. Electric shock or malfunction may result.

Please record and retain the Model name and serial number of your set shown on the rating label.
Model No. DN-790R
Serial No. _____



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

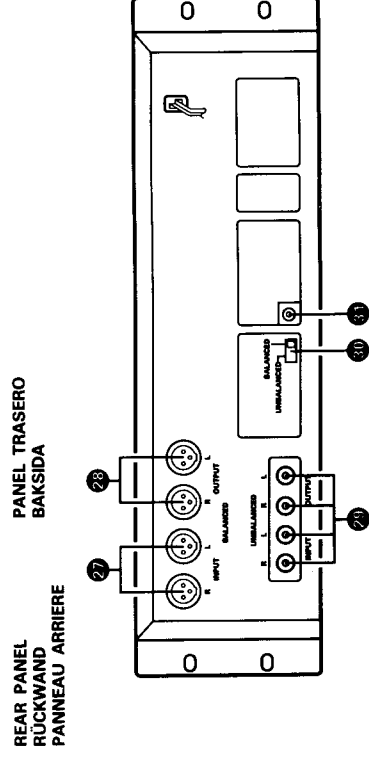
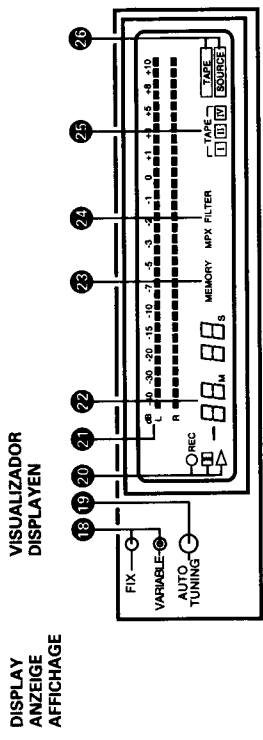
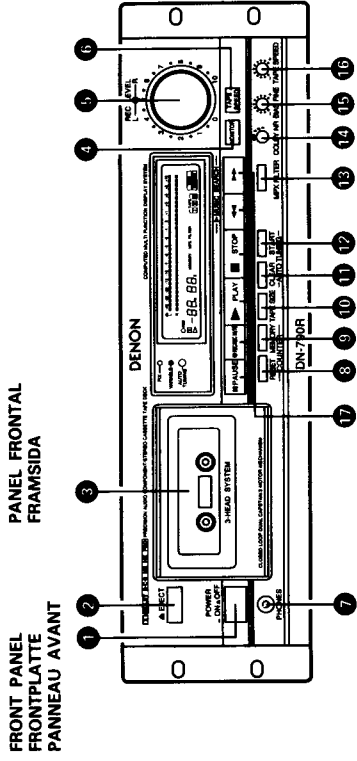
The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

- FOR U.S.A. & CANADA MODEL ONLY
- CAUTION**

TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.
- POUR LES MODELES AMERICAINS ET CANADIENS UNIFORMEMENT
- ATTENTION**

POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT EXTENSION, UN RECEPTACLE OU UN AUTRE APPAREIL A MANS PEUVENT ETRE INSERES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.



NUR FÜR EUROPÄISCHE MODELLE

Konformitätserklärung

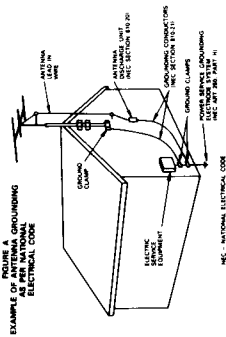
Die DENON Electronic GmbH
Heidestraße 32
40880 Ratingen

Erklärt, als Hersteller/Importeur, daß das in dieser Bedienungsanleitung beschriebene Gerät den Technischen Vorschriften für Ton- und Fernseh-Rundfunkempfänger nach der Amtsblattverfügung 8687/1989 (Amtsblatt des Bundesministers für Post und Telekommunikation vom 31. 8. 1989) entspricht.

- Line Voltage Selection (for multiple voltage model only)**
 - The desired voltage may be set with the VOLTAGE SELECTOR knob on the rear panel, using a screwdriver.
 - Do not twist the VOLTAGE SELECTOR knob with excessive force as this may cause damage.
 - If the VOLTAGE SELECTOR knob does not turn smoothly, please contact a qualified serviceman.

SAFETY INSTRUCTIONS

1. Read Instructions - All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions - The safety and operating instructions should be retained for future reference.
3. Read Warnings - All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow Instructions - All operating and use instructions should be followed.
5. Water and Moisture - The appliance should not be used near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.
6. Carts and Stands - The appliance should be used only with a cart or stand that is recommended by the manufacturer.
- 6A. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.
7. Wall or Ceiling Mounting - The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. Ventilation - The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. Heat - The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. Power Sources - The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. Grounding or Polarization - Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.



<p>NOTE ON USE/HINWEISE ZUM GEBRAUCH/OBSERVATIONS RELATIVES A L'UTILISATION NOTE SULL'USO/NOTAS SOBRE EL USO/ALVORENS TE GEBRUIJKEN/OBSERVERA OBSERVAÇÕES QUANTO AO USO</p>	<p>Do not let foreign objects in the set come in contact with the set.</p> <p>Keine fremden Gegenstände in das Gerät kommen lassen.</p> <p>Ne pas laisser des objets étrangers dans l'appareil.</p> <p>È importante che nessun oggetto entri nel interno dell'unità.</p> <p>No diele objecten extrinsies, dentro die apparaat vallen.</p> <p>Laat geen vreemde voorwerpen in de apparaat vallen.</p> <p>Se till att frammande föremål inte tränger in i apparaten.</p> <p>Não deixe objetos estranhos no aparelho.</p>	<p>Keep the set free from moisture, water, and dust.</p> <p>Halten Sie das Gerät von Feuchtigkeit, Wasser und Staub fern.</p> <p>Protéger l'appareil contre l'humidité, l'eau et la poussière.</p> <p>Tenete l'unità lontana dall'umidità, dall'acqua e dalla polvere.</p> <p>Mantenga el equipo libre de humedad, agua y polvo.</p> <p>Laat geen vochtigheid, water of stof in het apparaat binnendringen.</p> <p>Usett nie apparaten for fukt, væten och støv inn i apparaten.</p> <p>Mantenha o aparelho livre de qualquer umidade, água ou poeira.</p>	<p>Do not let insecticides, benzene, and thinners come in contact with the set.</p> <p>Laassen Sie das Gerät nicht mit Insektiziden, Benzin, Terpentin, Lösungsmitteln in Berührung kommen.</p> <p>Ne pas mettre en contact des insecticides, benzène et diluants avec l'appareil.</p> <p>Evitar el contacto de insecticidas, benceno y diluyentes con el equipo.</p> <p>Laat het apparaat niet in contact komen met insecticiden, benzine of verdunders met dit apparaat.</p> <p>Evitar o contato de inseticidas, benzena e diluentes com o aparelho.</p>	<p>Unplug the power cord when not using the set for long periods of time.</p> <p>Wenn das Gerät für längere Zeit nicht verwendet werden soll, trennen Sie das Netzstecker vom Netzstecker.</p> <p>Quando o aparelho não estiver sendo usado por longos períodos, desligue o fio de alimentação.</p> <p>Desconecte el cordón de alimentación cuando no lo usare por largos períodos.</p> <p>Neem altijd het apparaat gedurende een lange periode niet wordt gebruikt, trek de stekker uit het stopcontact.</p> <p>Desligue o fio condutor de força quando o aparelho não tiver que ser usado por um longo período.</p>	<p>Avoid high temperatures.</p> <p>Vermeiden Sie hohe Temperaturen.</p> <p>Beachten Sie, daß eine ausserordentlich hohe Temperatur nicht zulässig ist.</p> <p>Evitar das temperaturas elevadas.</p> <p>Evitar o aparelho quando a temperatura estiver alta.</p> <p>Evitate di esporre l'unità a temperature elevate.</p> <p>Evitar o aparelho que o usuário expuser a elevadas temperaturas.</p> <p>Evite altas temperaturas.</p> <p>Quando o aparelho estiver muito quente, não use.</p> <p>Evite temperaturas elevadas.</p> <p>Quando o equipamento estiver muito quente, não o utilize.</p> <p>Evite temperaturas elevadas.</p> <p>Quando o equipamento estiver muito quente, não o utilize.</p>	<p>Handle the power cord carefully.</p> <p>Behandeln Sie das Kabel am Stecker, wenn Sie den Stecker herausziehen.</p> <p>Manipuler le cordon d'alimentation avec précaution.</p> <p>Tenha a prise lors du débranchement du cordon.</p> <p>Mantenga el filo de alimentación con cuidado.</p> <p>Agile per la spina quando scollegate il cavo dalla presa.</p> <p>Quando o aparelho estiver muito quente, não use.</p> <p>Evite temperaturas elevadas.</p> <p>Quando o equipamento estiver muito quente, não o utilize.</p>
<p>Never disassemble or modify the set in any way.</p> <p>Versuchen Sie niemals das Gerät auseinander zu nehmen oder auf irgendeine Art zu modifizieren.</p> <p>Ne jamais démonter ou modifier l'appareil d'une manière ou d'une autre.</p> <p>Nunca desarme o modifique el equipo de ninguna manera.</p> <p>Não desmonte ou modifique o aparelho de qualquer maneira.</p> <p>Ta inte rar apparaten och forsk inte bygg om den.</p> <p>Não desmonte ou modifique o aparelho de alguma forma.</p>	<p>Do not obstruct the ventilation holes.</p> <p>Die Belüftungöffnungen dürfen nicht verdeckt werden.</p> <p>Ne pas obstruer les trous de ventilation.</p> <p>No obstruya los orificios de ventilación.</p> <p>Deventilatieopeningen mogen niet worden afgeplakt.</p> <p>Não obstrua os orificios de ventilação.</p>	<p>Acid high temperatures.</p> <p>Vermeiden Sie hohe Temperaturen.</p> <p>Beachten Sie, daß eine ausserordentlich hohe Temperatur nicht zulässig ist.</p> <p>Evitar das temperaturas elevadas.</p> <p>Evitar o aparelho quando a temperatura estiver alta.</p> <p>Evitate di esporre l'unità a temperature elevate.</p> <p>Evitar o aparelho que o usuário expuser a elevadas temperaturas.</p> <p>Evite altas temperaturas.</p> <p>Quando o aparelho estiver muito quente, não use.</p> <p>Evite temperaturas elevadas.</p> <p>Quando o equipamento estiver muito quente, não o utilize.</p>	<p>Unplug the power cord when not using the set for long periods of time.</p> <p>Wenn das Gerät für längere Zeit nicht verwendet werden soll, trennen Sie das Netzstecker vom Netzstecker.</p> <p>Quando o aparelho não estiver sendo usado por longos períodos, desligue o fio de alimentação.</p> <p>Desconecte el cordón de alimentación cuando no lo usare por largos períodos.</p> <p>Neem altijd het apparaat gedurende een lange periode niet wordt gebruikt, trek de stekker uit het stopcontact.</p> <p>Desligue o fio condutor de força quando o aparelho não tiver que ser usado por um longo período.</p>	<p>Do not obstruct the ventilation holes.</p> <p>Die Belüftungöffnungen dürfen nicht verdeckt werden.</p> <p>Ne pas obstruer les trous de ventilation.</p> <p>No obstruya los orificios de ventilación.</p> <p>Deventilatieopeningen mogen niet worden afgeplakt.</p> <p>Não obstrua os orificios de ventilação.</p>	<p>Handle the power cord carefully.</p> <p>Behandeln Sie das Kabel am Stecker, wenn Sie den Stecker herausziehen.</p> <p>Manipuler le cordon d'alimentation avec précaution.</p> <p>Tenha a prise lors du débranchement du cordon.</p> <p>Mantenga el filo de alimentación con cuidado.</p> <p>Agile per la spina quando scollegate il cavo dalla presa.</p> <p>Quando o aparelho estiver muito quente, não use.</p> <p>Evite temperaturas elevadas.</p> <p>Quando o equipamento estiver muito quente, não o utilize.</p>	<p>Do not obstruct the ventilation holes.</p> <p>Die Belüftungöffnungen dürfen nicht verdeckt werden.</p> <p>Ne pas obstruer les trous de ventilation.</p> <p>No obstruya los orificios de ventilación.</p> <p>Deventilatieopeningen mogen niet worden afgeplakt.</p> <p>Não obstrua os orificios de ventilação.</p>

Please check to make sure the following items are included with the main unit in the carton:

- (1) Operating Instructions 1
- (2) Connection Cords 2

Thank you very much for purchasing the DENON component stereo cassette tape deck. DENON proudly presents this advanced tape deck to audiophiles and music lovers as a further proof of DENON's non-compromising pursuit of the ultimate in sound quality. The high quality performance and easy operation are certain to provide you with many hours of outstanding listening pleasure.

— TABLE OF CONTENTS —

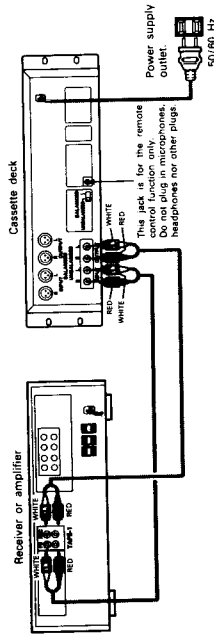
FEATURES	6
CONNECTION	7
NAMES AND FUNCTION OF PARTS	8, 9
CASSETTE TAPES	9
AUTO TAPE SELECT FEATURE	10
PLAYBACK	10
RECORDING	10
AUTO TUNING	11
MONITOR BUTTON	11
PROPER RECORDING LEVEL	12
RECORDING BIAS ADJUSTMENT	12
REC./REC. MUTE BUTTON	12
MUSIC SEARCH SYSTEM	12
TAPE COUNTER AND MEMORY STOP	13
DOLBY NOISE REDUCTION SYSTEM	13
DOLBY HX PRO HEADROOM EXTENSION SYSTEM	13
WIRED REMOTE CONTROL BOX CIRCUIT DIAGRAM	14
MAINTENANCE	15
TROUBLESHOOTING	16
SPECIFICATIONS	16

FEATURES

- Computer Controlled Mechanism
- Closed-loop Dual Capstan Tape Transport
- Non-slip Reel Drive for Stabilizing Tape Tension
- Dual Power Supply
- 3-Head Design Utilizes The Amorphous Head
- Dolby S Noise Reduction System
- Dolby HX PRO System
- XLR Type (Balanced) Input/Output Connectors Provided
- Auto Tuning
- Manual Bias Adjustment Controls
- Computing Linear or Real Time Tape Counter With 4-Digit Read out and Memory Stop
- Auto Tape Selector
- 19-inch Rack Mountable
- Speed Control of Approximately ±12%
- Accurate Music Search System

CONNECTION

- Leave your entire system (including this cassette deck) turned off until all connections between the deck and other components have been completed
- **Tape Dubbing**
 - Many stereo amplifiers and receivers have tape dubbing circuitry so that tape duplication can be performed between two or more tape decks. Review your amplifier's instruction manual for a full explanation of this mode of operation.
- **Connecting the Deck to an Amplifier**
 - Before connecting the deck to your amplifier, it is a good practice to review your amplifier's instruction manual.
 - Use the white plugs for the left channel and red plugs for the right channel.



- **Systems Remote Control (Refer to page 14)**
 - A wired remote control box can be connected to this unit. No remote control box is included. For remote control, the user should build a remote control box referring to the schematic diagram. (remote control box schematic diagram) Connect the remote control terminal to the remote control jack on the rear panel.
 - **Connecting Headphones**
 - To listen through headphones, plug your headphones into the PHONES jack.
 - **Installation Precautions**
 - If the deck is placed near an amplifier, tuner or other components, noise interference may result (especially during AM or FM reception). If this occurs, separate the deck from other components or reposition its position.
- NOTE:**
Use this unit in a horizontal orientation. When the unit is used with the front panel facing upward (and the unit is in a vertical orientation) or when the front panel is on an incline, the unit will not operate properly.

NAMES AND FUNCTIONS OF PARTS (Refer to Page 3.)

FRONT PANEL

- 1 **Power Switch (POWER)**
Controls the supply of AC power to the deck. One push turns the deck on, a second push turns it off. The deck remains in a standby (power-saving) mode for approximately 2 seconds after it is switched on.
- 2 **EJECT button**
Press this button to eject the cassette. When the deck is operating (tape is running), press the stop button first to stop the tape transport; then press the EJECT button.
- 3 **Cassette compartment cover**
If this compartment cover is not closed completely, the deck's transport controls will remain inoperative.
- 4 **MONITOR button**
The SOURCE position of this button allows you to monitor the source program before it is recorded. The TAPE position of this button is used for tape playback monitoring or simultaneous monitoring during recording.
- 5 **REC LEVEL control**
The recording input level is adjusted by this knob. The levels in the left and right channels can be changed independently.
- 6 **TAPE SPEED button**
This button is for setting the tape speed to the fixed speed (FIX) or variable speed (VARIABLE) position. When set at the FIX position, the tape is played at the standard (fixed) speed regardless of the position of the tape speed control knob. When set at the VARIABLE position, the tape speed changes according to the position of the tape speed control knob.
- 7 **PHONES jack**
For private music enjoyment without disturbing others, or for monitoring a recording, a set of headphones may be plugged in. Impedance should be from 8 to 1200 Ω/ohms.
- 8 **COUNTER RESET button**
Operation of the button resets the counter to all zero.
- 9 **MEMORY STOP button**
During rewinding operations, the tape will stop at the "00 00" counter point automatically when this button is pressed in.

- 10 **TAPE SIZE button**
You can know accurate elapsed time of the tape by adjusting the TAPE SIZE button to the tape size used. When the TAPE SIZE button is pressed, the current tape size is displayed for 1 sec in the 4-figures counter. If you further press the button during the display, the tape size will change in the following cycle:
C-90 → C-74 → C-60 → C-45 → C-30
- 11 **Auto Tuning CLEAR button (CLEAR)**
When this button is pressed after setting auto tuning or during the auto tuning operation, auto tuning is cleared and the recording characteristics are reset to the standard values. Refer to page 11.
- 12 **Auto Tuning START button (START)**
When this button is pressed, the auto tuning operation starts and the recording characteristics most suited for the tape being used are set automatically. Refer to page 11.
- 13 **MPX FILTER button**
The MPX FILTER button should be used to prevent interference with the Dolby NR circuit when making Dolby NR encoded recordings of FM stereo programs. When making Dolby NR encoded recordings from any program source other than FM stereo, leave this button in the "OFF" position.
- 14 **DOLBY NR switch**
Two independent buttons for the Dolby NR "OFF", "B", "C" and "S" recording. When recording tapes, set the Dolby NR function as desired. When playing tapes, set the Dolby NR function to the same position as when the tape was recorded.
- 15 **BIAS FINE control**
For NORMAL, CO, and METAL tape. Adjust the bias according to the tape characteristics. Standard biasing is obtained at the center click-stop position.
- 16 **TAPE SPEED control**
Use this knob to vary the tape speed.
First set the tape speed to the VARIABLE position. The speed can be varied within a range of approximately ±12% according to the position of the tape speed control knob.

Tape transport controls

▶ PLAY	PLAY button	Press to playback tape.
■ STOP	STOP button	Press to stop tape in any mode.
◀◀	REW button	Press for fast rewind.
▶▶	FF button	Press fast forward tape winding.
● REC/REC MUTE	RECORD/MUTE button	To begin recording, press the RECORD and PLAY buttons simultaneously. If only the RECORD button is pressed, the deck is placed in the REC PAUSE (record standby) mode. When this button is pressed under the REC PAUSE state, the mode shifts to the Auto Rec Mute, when this button is pressed for making a non-recorded part between two melodies, about 5 sec of non-recorded part can automatically be created.
⏸ PAUSE	PAUSE button	Press this button to enter the recording pause mode from the recording or recording mute mode. Press this button to enter the playback pause mode from playback mode.

DISPLAY

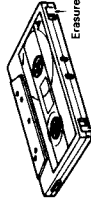
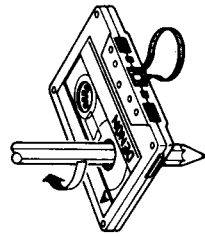
- 18 **TAPE SPEED indicator**
"FIX" or "VARIABLE" is interlocked with the TAPE SPEED button. The tape speed can be controlled when "VARIABLE" is light.
- 19 **AUTO TUNING indicator**
This indicator flashes during the auto tuning operation and stops flashing, remaining lit once auto tuning is completed. The indicator turns off when the CLEAR button is pressed, and when the auto tuning data is cleared.
- 20 **PLAY, PAUSE and REC indicator**
When the PLAY, PAUSE and REC buttons are pressed, this indicator will light.
- 21 **Fluorescent peak meters**
These meters indicate recording or playback peak levels for each channel. For peak levels exceeding -7 dB, the Auto Peak Hold feature holds the peak level reading for approximately 1 seconds.
- 22 **Tape counter**
Tape passage is indicated digitally in minutes and seconds. When "M" and "S" are lit, the counter is set to the real time display mode. When "M" and "S" are off, the counter is set to the linear display mode.
For an explanation of the real time and linear time display modes, refer to the section "TAPE COUNTER AND MEMORY STOP".
- 23 **MEMORY indicator**
This indicator light is interlocked with the memory stop button. (MEMORY)
- 24 **MPX FILTER indicator**
This indicator light is interlocked with the MPX FILTER button.
- 25 **TAPE SELECT indicator**
This indicator light is interlocked with the Auto Tape Select feature and an indicator appears the deck to the type of tape in use. (TYPE I TYPE II or TYPE IV).
- 26 **MONITOR indicator**
This indicator light is interlocked with the MONITOR button to inform the use of the selected monitoring source TAPE or SOURCE.

REAR PANEL

- 27 **XLR Type input connectors (BALANCED INPUT)**
a) These are active balanced inputs using XLR type connectors (XLR-331). Connected them to the balanced output terminals on an amplifier or console.
b) Pin layout:
Pin 1 — Common
Pin 2 — Cold
Pin 3 — Hot
c) Applicable connector: XLR-3-12C or the equivalent.
NOTE: Do not short-circuit the hot or cold pin with the common pin.
- 28 **XLR Type output connectors (BALANCED OUTPUT)**
a) These are active balanced outputs using XLR type connectors (XLR-332). Connected them to the balanced input terminals on an amplifier or console.
b) Pin layout:
Pin 1 — Common
Pin 2 — Hot
Pin 3 — Cold
c) Applicable connector: XLR-3-11C or the equivalent.
NOTE: Do not short-circuit the hot or cold pin with the common pin.
- 29 **RCA Pin Jack (UNBALANCED)**
- 30 **INPUT Selector switch**
Use this to select the input jack to be used.
- 31 **Remote Control Jack**
Use this to operate the DN-790R using the remote control box. (The remote control box is not included with the DN-790R.)

CASSETTE TAPES

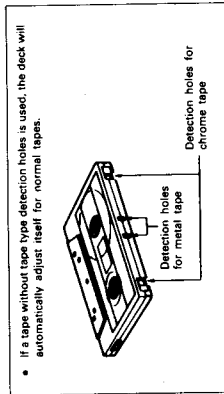
- **Handling Precautions**
 - C-120 Cassettes
 - C-120 cassette tapes are not recommended as they use a very thin tape base which may become tangled around the capstan or pinchroller.
 - Tape Slack
- This cassette deck incorporates an automatic tape slowness preventive mechanism, but it can not prevent such a slowness as shown below. Remove it with a pencil or the file prior to use.
- **Storage Precautions**
 - Do not store cassette tapes in a place where they will be subject to:
 - Extremely high temperature or excessive moisture
 - Excessive dust
 - Direct sunlight
 - Magnetic fields (near TV sets or speakers)
 - To eliminate tape stack, store your cassettes in cassette cases with hub stops
- **Accidental Erasure Prevention**
Every cassette has erasure prevention tabs for each side. To protect your valuable recorded tapes from accidental or inadvertent erasure, remove the tab for the appropriate side with a screwdriver or other tool.
To record on a tape with the erasure prevention tabs removed, cover the tab holes with plastic tape.



Erasure prevention tab for side B

AUTO TAPE SELECT FEATURE

This Stereo Cassette Deck contains an Auto Tape Select feature which automatically selects the optimum bias and equalization for the tape in use. This is accomplished by detection of tape type detection holes in the cassette housing.



If a tape without tape type detection holes is used, the deck will automatically adjust itself for normal tapes.

PLAYBACK

- Switch on your amplifier or receiver.
- Set the TAPE MONITOR switch on your amplifier or receiver to the TAPE position.
- Operate the deck in numerical order as illustrated below:
 - ① PHONES
Playback sound is fed into the headphones ● set.
 - ② POWER
Push the switch ● to turn "ON" () the power.
 - ③ EJECT the EJECT button ● to open the cassette compartment.
 - ④ Cassette Compartment Cover
Load the cassette tape ●
 - ⑤ DOLBY NR
For recordings made without Dolby NR, set to "OFF".
For recordings made with Dolby B NR, set to "B".
For recordings made with Dolby C NR, set to "C".
For recordings made with Dolby S NR, set to "S".

RECORDING

- Switch on the source component (tuner, amplifier, etc.).
- Set the TAPE MONITOR switch on your amplifier or receiver to the SOURCE position.
 - ① POWER
Push the switch ● to turn "ON" () the power.
 - ② EJECT
Press the EJECT button ● to open the cassette compartment.
 - ③ Cassette Compartment Cover
(Make sure the ejection prevention tab has not been removed from the cassette shell half.)
 - ④ DOLBY NR
In accordance with the recording to be made. For recordings without Dolby NR, set to "OFF". For recordings with Dolby B NR, set to "B". For recordings with Dolby C NR, set to "C". For recordings with Dolby S NR, set to "S". Future mistakes during playback can be avoided if the cassette is so marked for Dolby NR encoded recordings.
 - ⑤ MPX FILTER
Button ● "ON" for the DOLBY NR recording of FM broadcasts (The MPX FILTER indicator ● will light up).

Note:
When recording mode, the variable speed mode cannot be selected, and the mode is automatically switched to the fixed speed mode.

- When recording is finished, press the STOP (STOP) button ●.

Caution:
Be careful not to erase important recordings by mistake. Mis-erasing can be avoided by following the two steps below:

1. If the PLAY (PLAY) and RECORD (RECORD) are pressed while the OREC indicator is on, the tape will be recorded.
 2. If the PLAY (PLAY) button ● are pressed at the same time, the tape will not be recorded.
3. Performing the record pause or the stop operation during recording will erase the portion in the recording signal. The previously recorded signal may remain after erasure at this connecting portion. Also, a very small amount of the end portion of the previous song may be erased.

AUTO TUNING

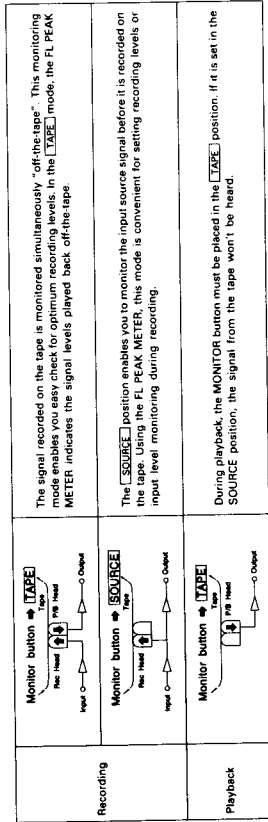
Though tapes may be of the same type, tapes of different manufacturers and even tapes of the same manufacturer may have slightly different recording characteristics. The system is a function which automatically sets the optimum recording characteristics to take maximum advantage of the performance of individual tapes.

- ① Set the cassette tape to be tuned into the cassette box.
 - ② Set the Dolby NR switch for the position to be used for recording.
 - ③ Press the REC/REC MUTE button to set the recording pause mode (The "O" - Rec and "B" - PAUSE indicators will light up)
 - ④ Press the START button. Tuning starts. The AUTO TUNING indicator flashes during tuning.
 - ⑤ After 5 to 10 seconds, tuning is completed, the tape is automatically rewound a few centimeters before the position at which tuning started, and the AUTO TUNING indicator stops flashing, remaining lit.
 - ⑥ To cancel the setting:
During tuning: Press the STOP or CLEAR button.
After tuning: Press the CLEAR button.
Turn off the power.
- The recording characteristics are reset to the standard values.

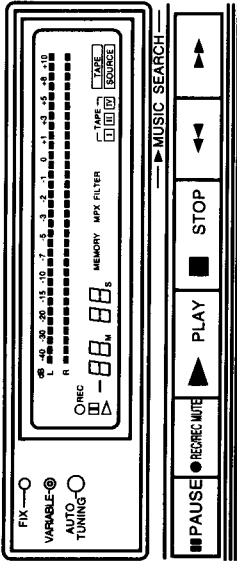
Note: To achieve the optimum recording characteristics, we recommend always tuning each tape before recording, even for tapes of the same type and the same manufacturer.

MONITOR BUTTON

This Stereo cassette deck uses a three-head system which permits simultaneous "off-the-tape monitoring" during recording.



TAPE COUNTER AND MEMORY STOP



1) Operation of the Real Time Tape Counter and the Linear Tape Counter

- Real Time Tape Counter: The time of the tape travelling at a constant speed is indicated in "M" (minutes) and "S" (seconds). A microcomputer measures and displays the time with high precision. Display example: 32:00, 32 minutes, 10 seconds. The tape travel time is indicated with a 4-digit value. The first two digits indicate the minutes, the last two digits the seconds. Display example: 00:00, 34 minutes, 36 seconds. Press the RESET button to reset the counter to 00:00.
- Linear Tape Counter: "M" and "S" are not displayed when "VARIABLE" is displayed. They are also not displayed when "FX" is displayed during the fast-forward, rewind, music search operations or when the STOP button has been pressed during an operation. Select "FX" using the TAPE SPEED button. "FX" appears on the display. The counter is set to the real time mode, and "M" (minutes) and "S" (seconds) are displayed on the real time mode when the play, pause, record pause or stop mode is selected at this time. The counter automatically switches to the linear mode if the fast forward or rewind mode is set from any of the modes in (2) ① or if the "VARIABLE" mode is set during playback. If the music search mode is selected, the counter automatically switches to the linear mode, then switches back to the real time mode once playback begins after the music search operation.

2) Operation of MEMORY STOP

- (1) During recording or playback operations, MEMORY STOP can be used to locate a particular point on the tape. At the desired point, press the counter to "00:00". With the MEMORY STOP button in the "00:00" position, the deck will stop at the "00:00" point. Subsequently, "00:00" will be displayed on the MEMORY STOP indicator.
- (2) The MEMORY indicator will light when this function is activated. Notes:
 - When the power is turned "OFF", this function is automatically deactivated.
 - The MEMORY STOP is accurate to -50 on the counter, and will stop between "00:00" and "00:00".
 - The MEMORY STOP is released by pressing the EJECT button.
- (3) Display Back-up: The DOLBY NR, MPX FILTER, COUNTER VALUE, TAPE SPEED and TAPE SIZE functions are protected for approximately one month by a memory back-up. Once the back-up period is up, the DOLBY NR and MPX FILTER functions will be reset to "C-90", the TAPE SPEED setting is set to "FX", and the counter is reset to "00:00".

3) Dolby Noise Reduction System

- The Dolby noise reduction system substantially reduces the tape background noise (his) which occurs during high frequency information, which is particularly annoying during soft passages. The Dolby NR system increases the level of low volume mid and high frequency signal during recording and reduces the level of these signals by an identical amount during playback. As a result, the playback signal is identical to the original source signal, but the level of background noise generated by the tape is greatly reduced.

DOLBY NOISE REDUCTION SYSTEM

- The operating principle of Dolby C NR is similar to that of Dolby B NR with effect obtained with Dolby C NR. The noise reduction effect obtained with Dolby C NR is similar to that of Dolby B NR with Dolby B NR. In addition, Dolby C NR uses an anti-saturation network and spectral skewing circuitry for a significant improvement in the dynamic range of the mid- to high-frequencies.
- The S-Type provides a maximum noise reduction effect of 24 dB in the high frequencies and 10 dB in the low frequencies, and expands the dynamic range over a wide frequency range.

DOLBY HX-PRO HEADROOM EXTENSION SYSTEM

- This deck is equipped with the Dolby HX-PRO headroom extension system. Since the system functions automatically during recording, no switching operation or adjustment is required. The system is effective with any type of Normal, C-90, and Metal tapes.
- The Dolby HX-PRO headroom extension system functions during recording by raising up the saturation level in the treble range. Therefore, most of the treble information is recorded during recording. This is different from conventional cassette decks are more faithfully recorded on the new cassette deck.

Features of the Dolby HX-PRO Headroom Extension System

- (1) Performance of Normal and C-90 tapes can be upgraded closer to that of Metal tapes.
- (2) The dynamic range in the treble is improved significantly.
- (3) Since no decoding in playback is necessary, the improvement can be obviously heard on any hi-fi playback system including portable stereos and car systems.
- (4) The system functions whether the Dolby B/C/S NR is engaged or not.

PROPER RECORDING LEVEL

A too high recording level can saturate the tape and cause distortion. On the other hand, if the recording levels are set too low, soft passages will be masked by residual noise. Proper recording level is the single most important factor for making well balanced recordings.

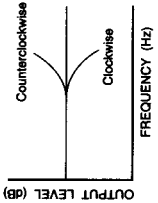
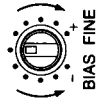
Guideline for maximum recording level

Normal tape	TYPE I	+1 dB levels on peaks
C-90 tape	TYPE II	+3 dB levels on peaks
Metal tape	TYPE IV	+5 dB levels on peaks

Note: Optimum recording levels can differ depending on program sources or the type of tape used.

RECORDING BIAS ADJUSTMENT

- Use this to change the characteristics to suit your tastes, taking advantage of the performance of the tape.
- For normal recording, set the control at the center click position to achieve satisfactory characteristics.
- If the bias is low (when the knob is turned to the " - " side), the high frequencies increase, but so does distortion. If the bias is high, (when the knob is turned to the " + " side), the high frequencies decrease, but so does distortion.



Caution:

The bias control knob functions independently of the auto tuning system, so if it is adjusted after auto tuning, the bias changes starting from a flat recording characteristic.

REC/REC MUTE BUTTON

REC/REC MUTE is the DENON's unique and convenient function. By using this button, it is easily possible to insert a suitable space (the non-recorded part) between two melodies.

- When you want to make about 5 seconds of non-recorded part after the recording state: Press the REC/REC MUTE button. The recorder will automatically create about 5 seconds of non-recorded part and will stay in the standby state.
- To create about 5 seconds of non-recorded part after the standby state: Press the REC/REC MUTE button, and the recorder will enter the non-recording state, automatically create about 5 seconds of non-recorded part and stay in the standby state.

MUSIC SEARCH SYSTEM

This device is a convenient system which detects the non-recorded part of more than 4 seconds between melodies, cues the next melody while the present melody is being reproduced or automatically detects the beginning of the melody now being reproduced and makes it into the reproducible state.

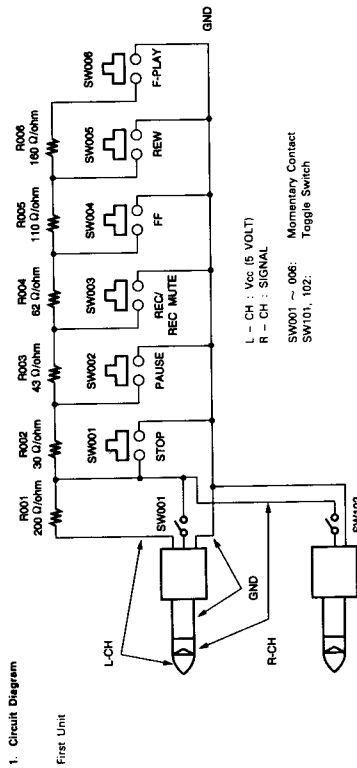
- For cueing the next melody while the present melody is being reproduced: At PLAY mode, depress the PLAY button and the FF button simultaneously. This device will detect the interval between melodies with the CUE state and will automatically become the PLAY mode and begin performing the next melody. For hearing again the melody being reproduced: At PLAY mode, depress the PLAY button and the REW button simultaneously. This device will detect the interval between melodies with the REVIEW state on, automatically become the PLAY mode, detect the beginning of the melody now being performed and play it from the first again.

NOTE: Note about MUSIC SEARCH action:

- MUSIC SEARCH is a function which operates by detecting a comparatively long non-recorded part on the tape. Therefore, MUSIC SEARCH may not operate normally in the following cases.
 - Sound on the tape is interrupted by speech or conversation.
 - Long periods of pianissimo (softly played music) or non-recorded intervals occur on the tape.
 - The tape has picked up noise in a non-recorded interval.
 - Non-recorded intervals on the tape are less than 4 seconds in length.
 - Noise such as static, hiss, etc. in operation nearby, i.e., Electric razor, drill, refrigerators, etc.

WARNING:
INSTRUCTIONS ON THIS PAGE ARE FOR QUALIFIED SOUND INSTALLERS AND SERVICE PERSONNELS ONLY.

WIRED REMOTE CONTROL BOX CIRCUIT DIAGRAM



Second and Subsequent Units

- Make a control box using the supplied remote control box connection wire.
 - Do not connect the left channel of the plug (Vcc) with R001 (200 Ohm) in the second and subsequent units.
 - Use resistors having a tolerance of 5% (1/4W).
 - Use resistors having a power tolerance will cause incorrect operation.
 - Never short circuit the left-channel line (Vcc). Doing so will damage the main unit.
- Operation with Parallel Connections**

A number of DN-790R units can be simultaneously operated in parallel with 1 button.

Operation with parallel connections can be used with a maximum of 5 units.

Connection of 6 or more units will lead to incorrect operation.
 - Cable Length**

The longer the length of the cable, the more susceptible the system will be to the effects of external noise.

Keep cable lengths to 2 m. or less.

Do not locate equipment that produces electrical noise in the vicinity of the cable.

Doing so might lead to incorrect operation due to the noise.

MAINTENANCE

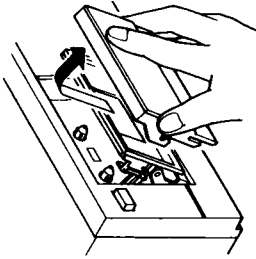
- Removing the cassette compartment cover**

It will be more convenient if the cassette compartment cover is removed during turning of the pinchroller and heads, or during cleaning of heads.

Follow these procedures:

 1. Press the EJECT button to open the cassette compartment.
 2. Hold only the cover of the cassette compartment and pull it up. The compartment cover is removed from the front.

When attaching the cassette compartment cover, reverse the above procedure.



- Head Cleaning**

After long usage, tape coating or dust may adhere to the heads, causing deterioration of sound. Clean the heads regularly.

Hold only the cover of the cassette compartment and pull it up. The compartment cover is removed from the front.

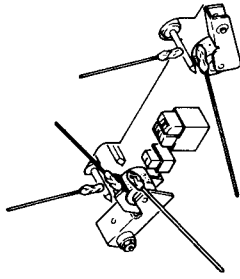
When attaching the cassette compartment cover, reverse the above procedure.

Note:

1. Some cleaning cassettes on the market have a strong abrasive effect and scratch the heads. Use cotton swabs instead of cleaning cassettes.
2. Since the use of metal tapes is apt to collect more dust on the heads, clean the heads more often to enjoy optimum sound.

- Cleaning the Pinchroller and the Capstan**

If the pinchroller or the capstan accumulate dust, tape transport may become unstable resulting from slippage during recording or playback. The tape can also be damaged by being rolled up around the capstan. Clean them with a cotton swab or soft cloth moistened with cleaning solution (such as alcohol).

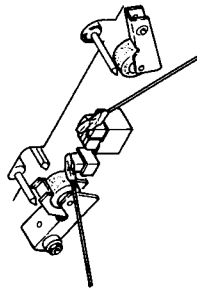


Demagnetizing the Heads

The heads may become magnetized after long usage or by having a strongly magnetized object brought near them. This causes the generation of noise or dropouts from the tape. To prevent this, clean the heads of remnants of pre-recorded tapes and adding noise. Demagnetize the heads on a regular basis.

Procedure

1. Be sure to turn "off" the power supply.
2. Turn the demagnetizer "on" while it is more than 30cm away from the heads. Bring the demagnetizer near the heads and slowly move it in a small circle four or five times.
3. Slowly move the demagnetizer away from the heads and turn "off" the power of the demagnetizer when it is about 30cm away from the heads.




TROUBLESHOOTING

Make sure of the followings before you consider as any malfunctions:

- Are all the connections correct?
 - Is the set being operated correctly in accordance with the operating instructions?
 - Are the speakers and amplifiers functioning correctly?
- If the tape deck still does not function properly, check it again, using the check list below. If the symptom does not correspond to the check list, please contact your DENON dealer.

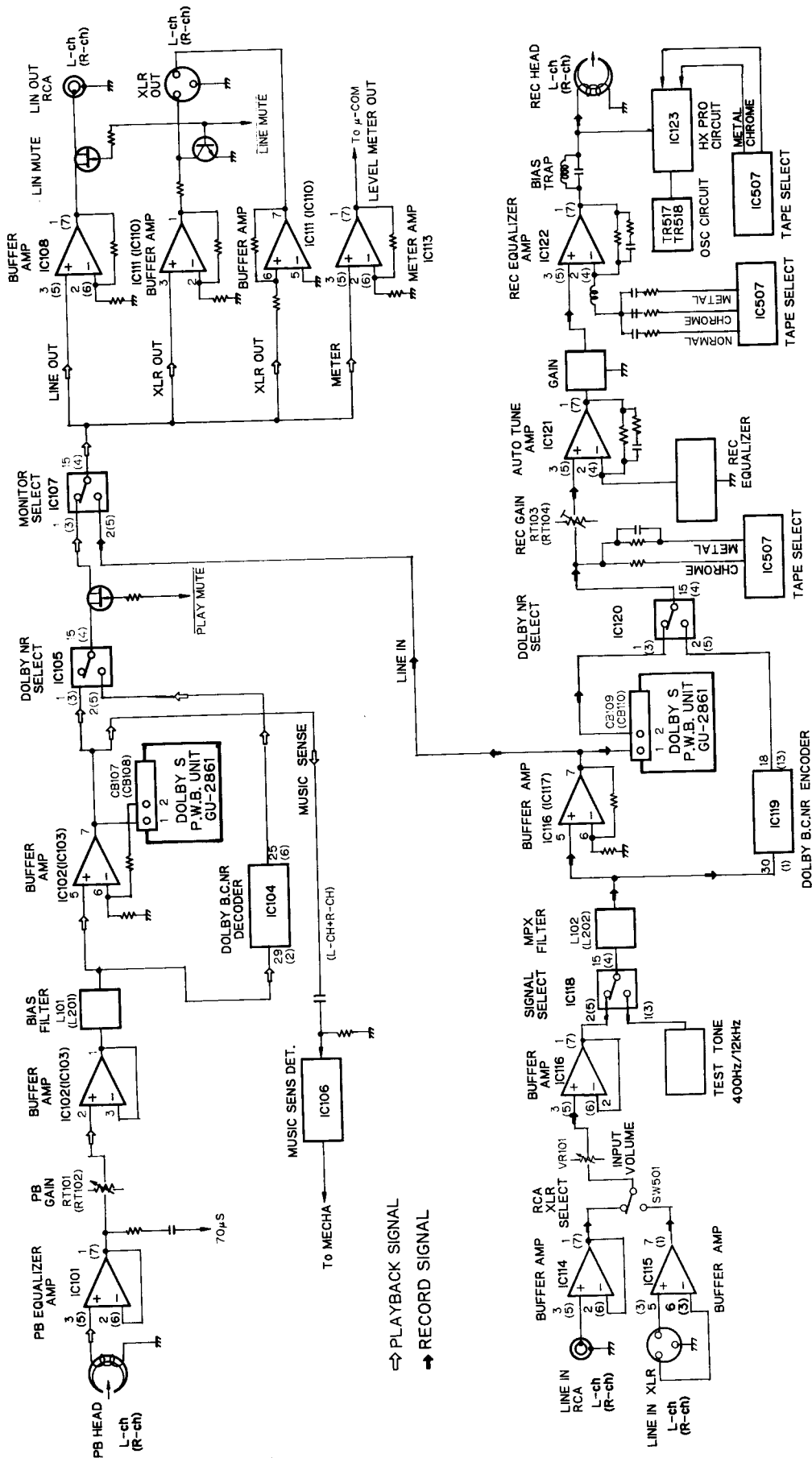
Problem	Cause	Remedy
Tape does not run.	<ul style="list-style-type: none"> Power cord is off. Power supply is completely wound up Tape is loose Cassette is not loaded properly. Defective cassette 	<ul style="list-style-type: none"> Check power cord Recharge power supply Tighten tape with a pencil, etc. Load cassette properly. Replace cassette
Tape is not recorded when recording button is pressed	<ul style="list-style-type: none"> No cassette is loaded Erase prevention tab is broken off. 	<ul style="list-style-type: none"> Load cassette. Cover hole with plastic tape
Sound is warbled or distorted	<ul style="list-style-type: none"> Heads, capstan or pinchroller are contaminated Tape is wound too tight. Recording input level is too high Tape is worn out and has "drop-outs" 	<ul style="list-style-type: none"> Clean them. Fast forward or rewind to loosen tape winding. Adjust recording input level. Replace tape.
Excessive noise	<ul style="list-style-type: none"> Tape is worn Heads, capstan or pinchroller are contaminated Heads are magnetized. Recording input level is too low 	<ul style="list-style-type: none"> Replace tape Clean them. Demagnetize heads Adjust recording input level
High frequency (treble) is emphasized.	<ul style="list-style-type: none"> Dolby NR button is set improperly. 	<ul style="list-style-type: none"> Set Dolby NR button properly.
High frequency (treble) is lost	<ul style="list-style-type: none"> Heads are contaminated Tape is worn. 	<ul style="list-style-type: none"> Clean them. Replace tape
When a C/O or metal tape is placed in the deck, a different tape indicator comes on.	<ul style="list-style-type: none"> The cassette housing is of an older design without tape type detection holes. 	<ul style="list-style-type: none"> Use the latest cassette with tape type detection holes.
The cassette tape cannot be removed.	<ul style="list-style-type: none"> If the power switch is turned off in either the stop or fast forward mode, the tape will stop. If the power switch is stopped here may be case when the cassette cannot be removed, even if the EJECT button is pressed 	<ul style="list-style-type: none"> Turn the power switch ON again, and then take the cassette out. Then, in the stop mode, press the EJECT button to remove the cassette tape.

SPECIFICATIONS

Type	Vertical tape loading, 4-track 2-channel
Heads	Recording head (amorphous) x 1 Playback head (amorphous) x 1 Erase head (Double-gap ferrite) x 1
Motors	Capstan DC servo motor x 1 Reel (DC motor) x 1 Actuator (DC motor) x 1
Tape Speed	4.8 cm/sec. (FX)
Variable (PLAY)	Approx. ±12%
Fast Forward	Approx. 100 sec. with a C-60 cassette
Fast Reverse	Approx. 105 Hz
Recording Bias	Dolby C NR on: more than 75 dB (CCR/ARM)
Overall S/N Ratio	20 ~ 20,000 Hz ±3 dB (at -20 dB, Metal tape)
Response	More than 40 dB (at 1 kHz)
Channel Separation	More than 65 dB (at 1 kHz)
Crosstalk	0.03% (WRMS ULS method), ±0.1% w. peak
Wow & Flutter	1.23 V (±4 dBm) input level at maximum
Inputs	More than 80 dB (at 1 kHz)
Line XLR Type Connector	Input impedance: 200 Ω ohms balanced
RCA Pin Jack	Input impedance: 50 kΩ/ohms unbalanced
Outputs	
Line XLR Type Connector	1.23 V (±4 dBm) (with 600 Ω)
RCA Pin Jack	715 mV (0 dBm) (with 47 kΩ/ohms load, recorded level of 200 pwb/mm)
Headphone	1.2 mW output level at maximum (optimum load impedance 8 Ω/ohms ~ 1.2 kΩ/ohms)
Power Supply	Voltage is shown on rating label
Power Consumption	483 (W) x 134 (H) x 275 (D) mm
Dimensions	(19" x 5.17" (64" x 10.53" (64" x 11.02")
Weight	5.1 kg (11 lbs. 11 oz)
Installation	19 inch rack mountable (3U)
<p>■ Above specifications and design styling are subject to change for improvement.</p> <p>■ Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen. "DOLBY", the double-D symbol  and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.</p>	

Best results will be obtained with use of DENON DX and HD Series cassette tapes.

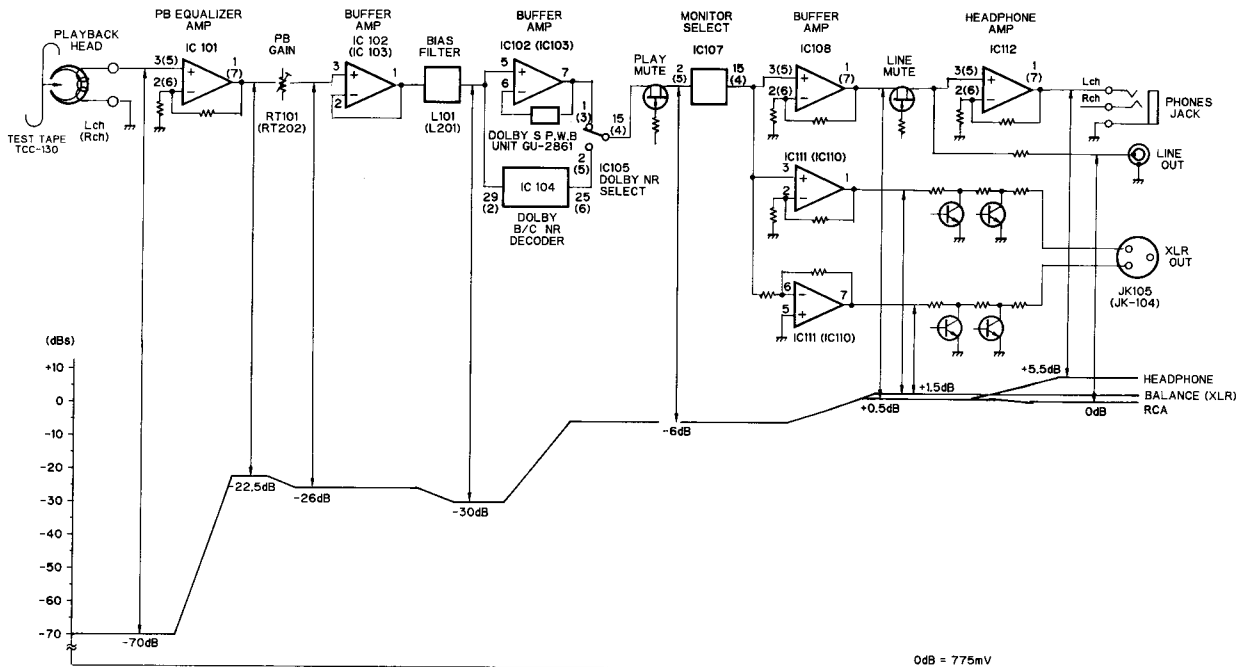
BLOCK DIAGRAM



LEVEL DIAGRAM

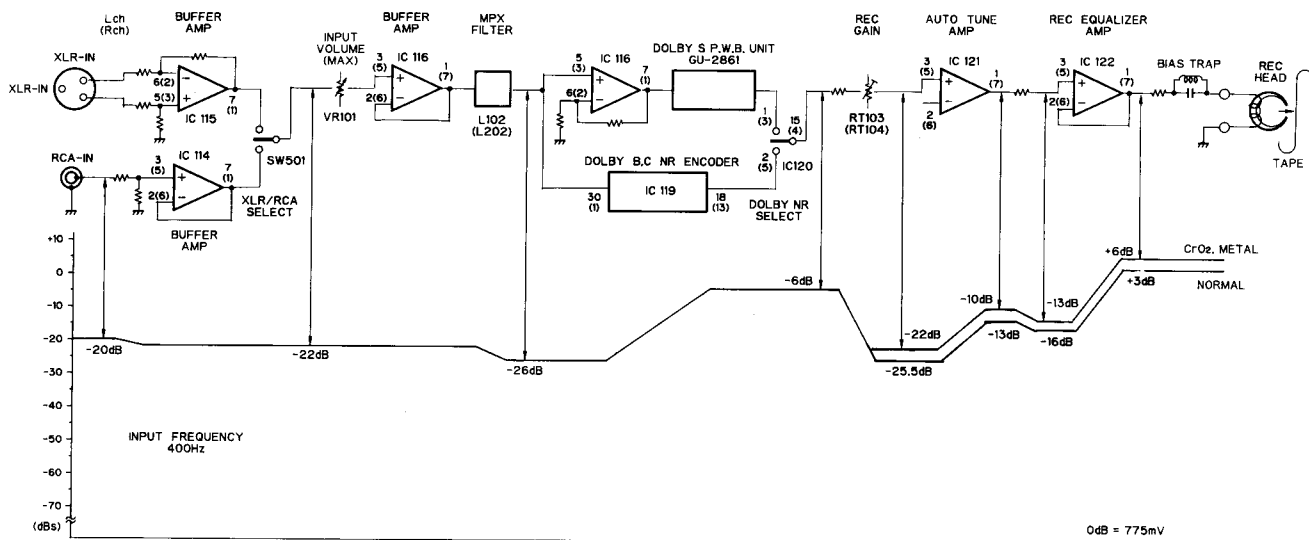
PLAYBACK SYSTEM
TCC-130 DOLBY B-TYPE
400 Hz 200 nwb/m

(PLAYBACK MODE)



RECORDING SYSTEM
INPUT FREQUENCY
400 Hz

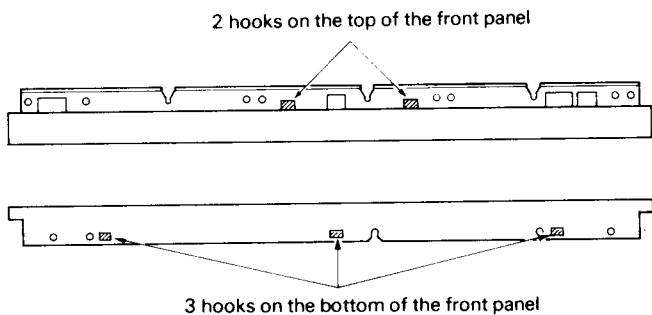
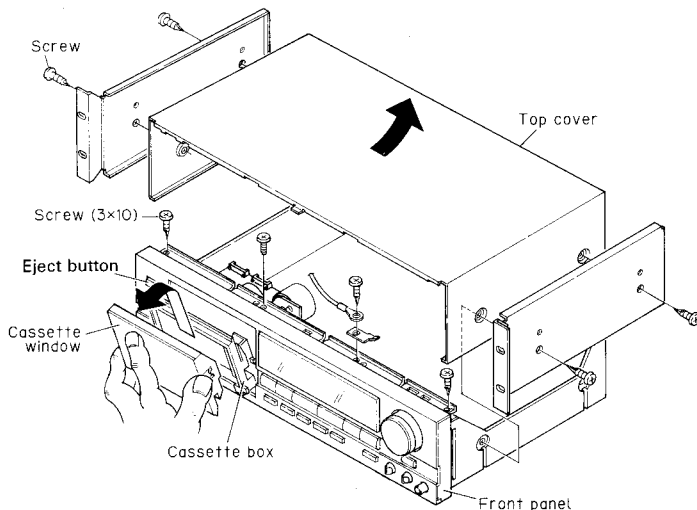
(REC MODE)



DISASSEMBLY INSTRUCTIONS

1. How to Remove the Front Panel

- (1) Remove the four screws (4 × 12 CBTS-P) in the side of the top cover. Move the top cover to the rear and rise it to remove it.
- (2) Press the eject button, open the cassette box and remove the cassette window as shown in the figure.
Note: Handle the cassette window with care because it can be scratched easily.
- (3) Remove the three screws (3 × 10 CBTS-P) on top of the front panel, the two hooks on the top, the three hooks on the bottom and pull the unit forward to detach it.



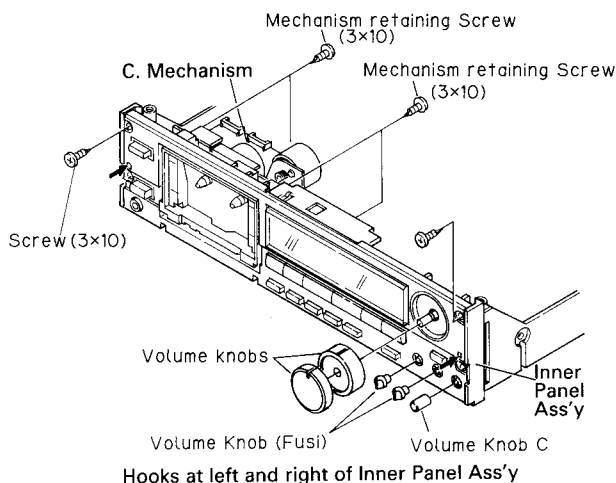
2. How to Remove the Inner Panel Ass'y

- (1) Remove the top cover and front panel. (Refer to Step 1.)
- (2) Remove the three retaining screws 3 × 10 CBTS-(P)-B holding the Inner panel at the front.

- (3) Disconnect all lead connectors.

C. Mechanism	W104 (11P) → CB104	} Audio P.W. Board
	Head wire → CB105	
	Head wire → CB106	
Meter P.W. Board	21P FFC → CB102	
	17P FFC → CB103	
H/P JACK P.W. Board	W119 (3P) → CB118	
REC VR P.W. Board	W117 (5P) → CB116	

- (4) Remove Volume Knob (L), (R), Volume Knob (Fuji) and Volume Knob (C).
- (5) Remove the Hooks at the left and right of the front face of the Inner panel Ass'y, and the two hooks on the bottom, Front Ass'y can be removed towards the front.



3. How to Remove the Mechanisms

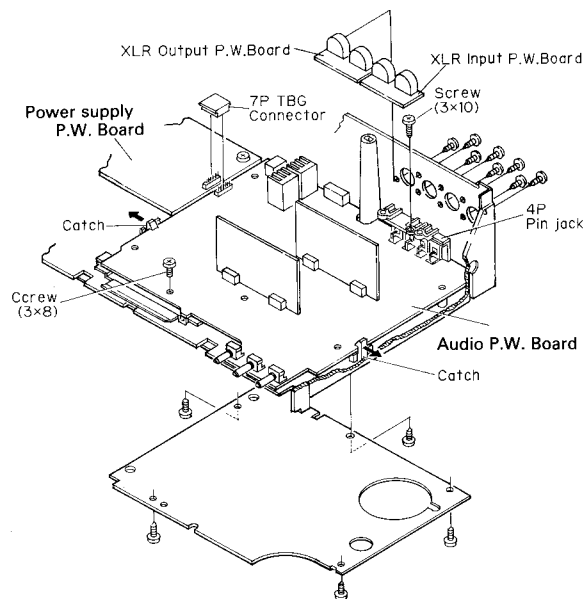
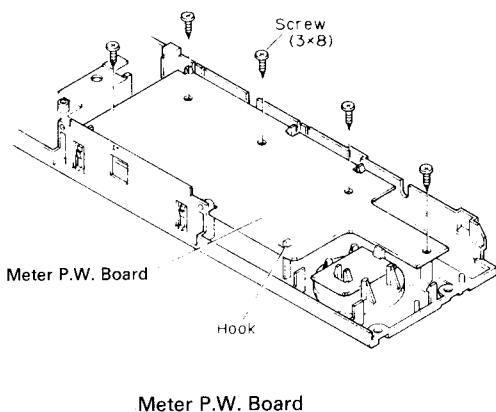
Remove the four Mechanism retaining screws 3 × 10 CBTS(P)-B and take out C Mechanism.

4. How to Remove the Meter P.W. Board

- (1) Remove the top cover and the front panel (Refer to section 1.)
- (2) Remove the Inner Panel ass'y. (Refer to section 2.)
- (3) If you remove the five binding screws (3 × 8 CBTS · P tight) of the meter P.W. Board, and loosening the five hooks, the meter P.W. Board can be taken off.

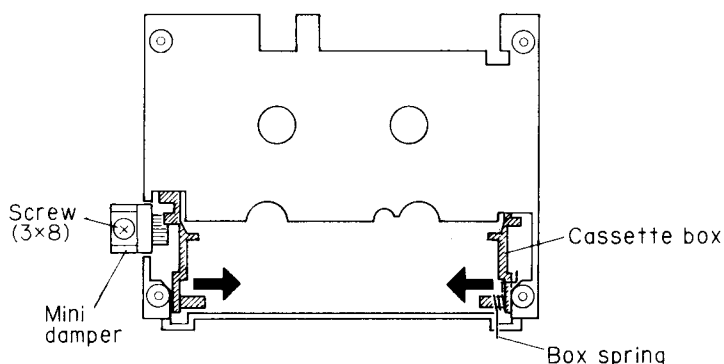
Note: When replacing the tact switch, check to make sure that it is not floating above the P.W. Board. If it is floating, the switch will be in the on condition when the set is assembled.





5. How to Remove the Cassette Door

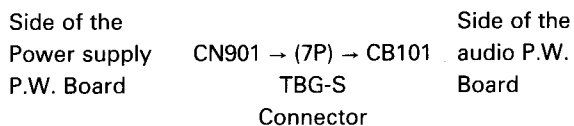
- (1) Remove the Mini damper retaining screw 3 × 8 CBTS(P)-B and take out the Mini damper.
- (2) Hold the legs of the Cassette box folded inwards and pull up to remove the Cassette box and Box spring.



Front surface of Front Ass'y

6. How to Remove the Audio P.W. Board

- (1) Remove the top cover and the front panel. (Refer to section 1.)
- (2) Remove the inner panel ass'y. (Refer to section 2.)
- (3) Remove the connectors from the audio P.W. Board and power supply P.W. Board.



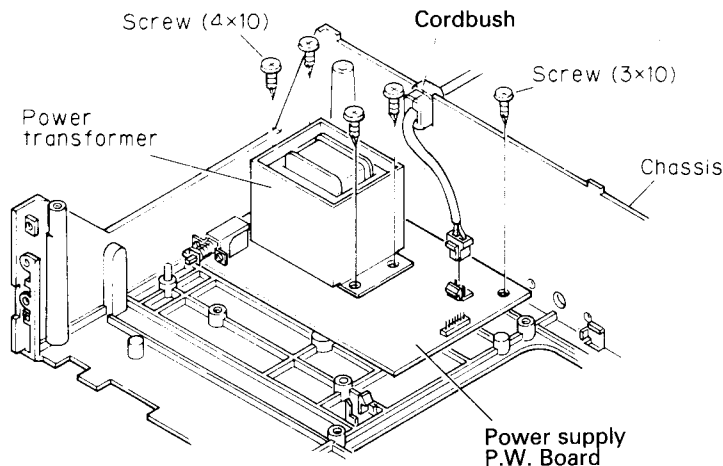
- (4) Remove the screw (3 × 10 CBTS · P tight (3 × 8 CBTS · S tight) that is holding down the 4P pin jack and P.W. Board. By removing the two catches (left and right) of the chassis holding down the P.W. Board in the directions of the arrows shown below, the audio P.W. Board can be pulled forward.

Note:

- Almost all of the service repairs to the audio P.W. Board can be performed by removing the bottom cover on the rear side of the chassis. Only when it is unavoidable should you refer to the removal method mentioned above.
- When reassembling, follow the procedures in the reverse order. However, if each of the various parts are not assembled properly in their respective position, the set cannot be assembled in some cases. Therefore, check the work of each step carefully when assembling.

7. How to Remove the Power Supply P.W. Board

- (1) Remove the top cover and the front panel. (Refer to section 1.)
- (2) Remove the bushing that is fixing the power supply cord from the chassis.
- (3) When the five screws (4 × 10 CBTS · P tight) (3 × 10 CBTS · P tight) that are holding the power transformer and P.W. Board are removed, the power supply P.W. Board can be removed by raising it.



ADJUSTING AND CHECKING THE MECHANISM SECTION

1. Exchanging pinch roller

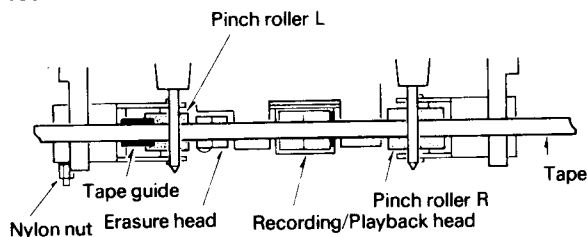
Before exchanging the pinch roller, clean the tape contact surfaces of the pinch roller and of the capstan shaft.

Defects on tape playing are primarily caused by a dirty pinch roller or capstan shaft.

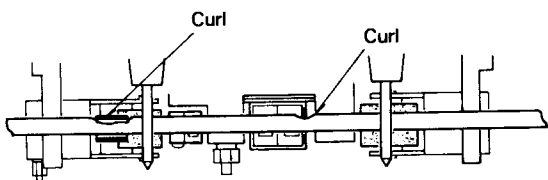
The right pinch roller arm (4) can be detached by removing the washer (28). The left pinch roller arm (20) can be taken out by removing The spring (26) and the nylon nut (37).

After exchanging the pinch roller, run a tape without a C-90 butt and verify that no tape curling occurs at the tape guide and the tape guide part on the record/playback head.

Normal condition

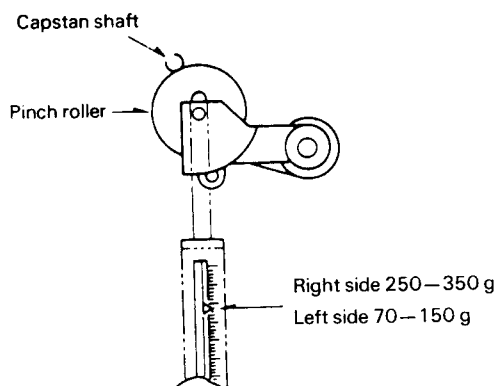


Defective running condition



2. Verifying pinch roller crimping

In the playback condition, hook a stick type spring balance to the bracket on the central axis of the pinch roller. After pulling the pinch roller away from the capstan shaft, let the pinch roller contact the capstan shaft as it is and verify that the readings on the stick type spring balance are 250 to 350 g on the right side and 70 to 150 g on the left when the pinch roller starts turning. If the readings exceed the standard values, replace spring (26) or (4).



3. Exchanging recording/playback head (77)

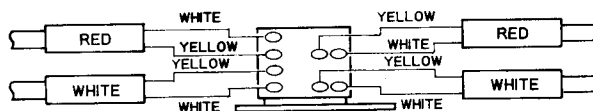
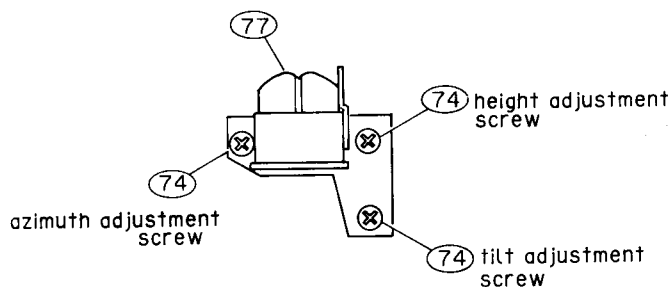
Detach the front panel first.

3-1 Dismounting recording/playback head

- (1) Detach the recording/playback head locking screw (74).
- (2) Remove soldering on the head wire and separate the mechanical unit to dismount the recording/playback head.

3-2 Recording/playback head installation

Assembly is the reverse of the installation procedure described in section 3-1. The soldering for the head wire is performed as shown in Figure 3-1.



4. Recording/playback head Adjustment

4-1 Height adjustment (adjust with head adjustment jig THG-801)

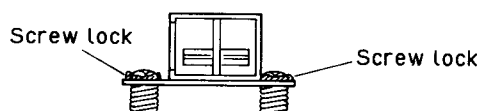
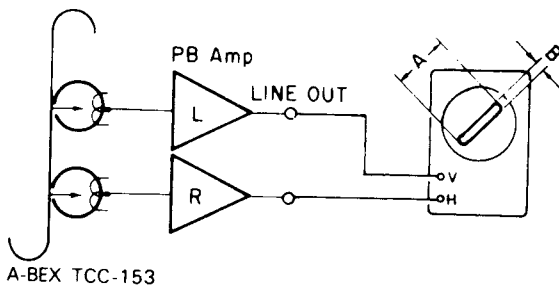
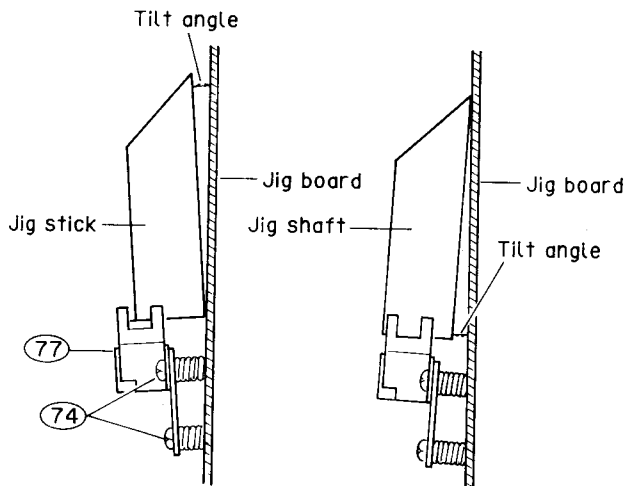
- (1) Set THG-801 (jig board) on the mechanical unit and perform the adjustment by turning the special height adjustment screw (74) so the 3.8 mm part on THG-801 (jig shaft) can move without touching the tape guide on the recording/playback head (77).
- (2) Turn the azimuth adjusting screw (74) so that the recording/playback head does not tilt while adjusting the height, and make a rough visual adjustment.

4-2 Adjustment of tilt angle

- (1) Set THG-801 (jig board) in the mechanical unit and place THG-801 (jig shaft) on the recording head to inspect the gap between the jig board. If the jig shaft is tilted forward, the tilt screw (74) is too tight. Loosen it slightly and adjust the tilt screw (74) until the jig stick is parallel to the jig board and the gap is completely eliminated.
- (2) Readjusting the tilt may cause the height adjustment to slip. After adjusting the tilt, be sure to verify the height. If the height is misaligned, turn the special height adjustment screw (74) and the tilt screw (74) to the same angle to shift the recording/playback head so it is parallel to the jig board for height readjustment. After the adjustment is completed, tighten the lock nuts.

4-3 Azimuth Adjustment

Playback test tape A-BEX TCC-153 and perform the adjustment by turning the azimuth adjustment screw (74) until A and B in the Lissajous wave figure are at the maximum and the minimum positions respectively. After azimuth adjustment is completed, check again to make sure there is no dislocation on the head height with the readjusting jig THG-801. After the adjustment is completed, secure the lock nuts on the adjusted parts.



5. Erasure Head (78) Exchange

- 5-1 Remove the locking screw (74) for the erasure head.
- 5-2 Remove the solder on the head wire, and separate the mechanical unit to dismount the erasure head.

6. Tape guide height verification

Set the jig board THG-801 on the mechanical unit. Adjust it by turning the height adjustment screw (74) so that the 3.8 mm part on the jig stick THG-801 jig shaft move without contacting the tape guide part of the tape guide.

7. Verifying fast-forwarding torque

Load a cassette-type torque meter and verify that the reading on the torque meter at the median value is 30–70 g-cm during playback.

If the reading is outside the standard, verify the voltage of the reel motor ($4.1 \text{ V} \pm 0.3 \text{ V}$). If the voltage is low the torque is weak and when the voltage is high the torque is strong. Also verify the reel thrusting gutter in Item 8.

8. Verification Reel Driver Thrust Movement

Verify that the thrust movement is 3.0 to 4.0 mm.

9. FF and REW Torque Verification

- When using cassette-type torque meter:
Verify that the readings at the end of the fast-forward and rewind is 90–180 g-cm.
- Load the cassette half-modified jig and hook the tip of a dial tension meter (full scale 100–300 g) on the triangle part. Switch to the FF (REW) position and feed a tape at a somewhat slower pace than the speed of the tape that is rolled in. Verify that the value on the dial tension meter at that time is more than 90 g-cm.

10. Back tension torque verification for recording/playback

Load a cassette-type torque meter to verify that the reading on the torque meter for recording/playback is 6 to 12 g-cm and there is no unevenness.

If the reading is outside the standard values, verify the reel thrust gutter or replace the REEL BASE BLK (82).

11. FF and REW Time Verification

Load a DENON HD-7E/60 cassette tape and verify that the FF and REW time is 80 to 110 seconds. If the reading is outside the standard values, verify Items 8 and 10.

12. Accidental erasure prevention, metal and chrome switch function verification

Verify that switch (9) is functioning normally depending on whether the hole is present or not.

ADJUSTING THE ELECTRICAL SECTIONS

ELECTRICAL SYSTEM ADJUSTMENT

• Gauges necessary for adjustment

- (1) Low frequency oscillator (2) Variable resistance attenuator
 (3) Electronic voltmeter (4) Oscilloscope (5) Frequency counter
 (6) Adjustment driver (7) Trap coil adjustment square regulation shaft
 (8) Test tape (SONY TY224)
 (A-BEX TCC-153, TCC-130, TCC-262B/162B)
 (DENON GR-2/60)
 (9) Mirror cassette for playing (A-BEX TCC-902)

• Adjustment Notes

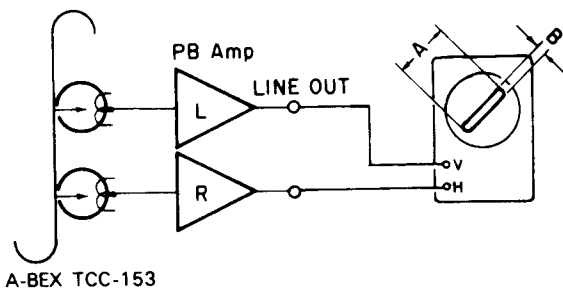
- (1) Clean the head surface, capstan axis, pinch roller, etc. with gauze or cotton swabs soaked with alcohol before adjusting.
- (2) Demagnetize the recording head and erasure head with the head eraser.
- (3) Completely demagnetize the adjusting driver.
- (4) Set function switches as follows unless specifically indicated.
 - MONITOR switch: TAPE
 - INPUT volume: Maximum (right side)
 - DOLBY NR switch: OFF
 - BIAS volume: Center (clicking detent in center)
 - TAPE SPEED switch: FIX
 - AUTO TUNING switch: CLEAR

1. Tape playing check

Load a mirror cassette for playing and examine the area around the fixed guide of the recording/playback head at playing condition with lighting and verify that the tape edge is not contacting the tape guide part. The tape playing is the most important element that determines the capacity of the entire cassette deck. Make every effort to avoid moving the adjusting part. Also, refer to "Adjustment and verification of mechanical system" for exchanging and adjusting the recording/playback head.

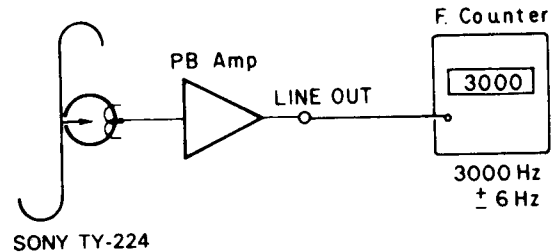
2. Azimuth adjustment

- 2-1 After verifying the tape playback, load the test tape (A-BEX TCC-153).
- 2-2 Playback the test tape and make any necessary adjustment by turning the azimuth adjustment nut so that A and B in the Lissajous wave figure are at the maximum and minimum levels respectively.



3. Checking and Adjusting the Tape Speed

- (1) Connect the frequency counter to the LINE OUT terminal and load test tape (SONY TY-224).
- (2) Playback a test tape. At about halfway through the tape, where the tape transport is stable, adjust the adjustment points (RT107) on the P.W. BOARD (222 2848 006) so that the frequency counter will have a reading within the range of 3,000 Hz \pm 6 Hz.



3. Adjusting the Playback and Recording Section

Procedure	Item	Usage tape — input condition	Response	Mode	Adjustment location	Adjustment procedure
1	PLAYBACK GAIN	A-BEX TCC-130	Fig. 4-1	PLAYBACK	RT-101 (L) RT-102 (R)	Adjust the LINEOUT output to 775 mV (0 dB).
2	P.B. Frequency	A-BEX TCC-162B, 262B	Fig. 4-1	PLAYBACK		Make sure the playback characteristics conform to Figure 4-1.
3	REC/P.B. Frequency	GR-2/60 400 Hz, -20 dB 10 kHz, -20 dB	Fig. 4-2	REC. PLAY	RT-105 (L) RT-106 (R)	Record 400 Hz and 10 kHz alternately. Adjust each volume so the 10 kHz playback output is 0.5 dB in relation to the 400 Hz playback output.
4	REC GAIN	GR-2/60 400 Hz, -10 dB	Fig. 4-2	REC. PLAY	RT-103 (L) RT-104 (R)	Adjust each volume to the playback output is the same as when the recording monitor is output.
5	REC/P.B. Frequency	GR-2/60 Dolby NR C	Fig. 4-3	REC. PLAY		Make sure that the DOLBY NR C recording and playback characteristics conform to Figure 4-3.

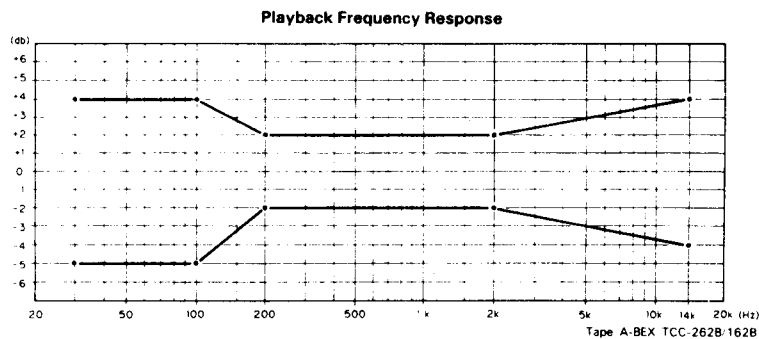


Fig. 4-1

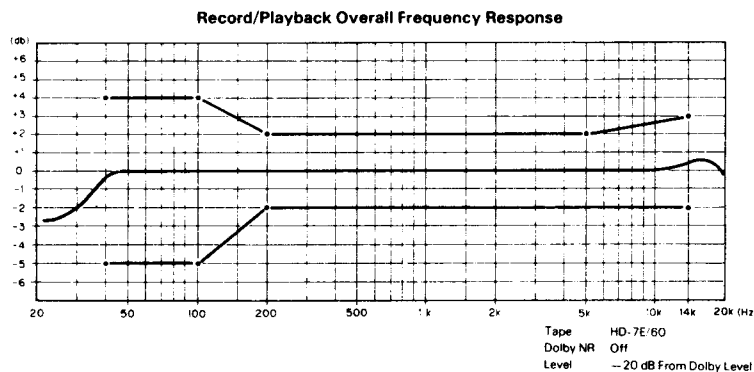


Fig. 4-2

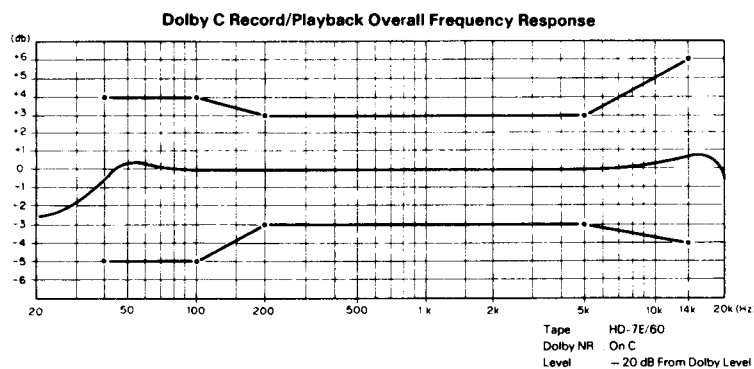


Fig. 4-3

PARTS LIST OF EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks	Q'ty
● 1	GU- 2848	Audio/meter P.W.B. unit Ass'y		1
1-1	—	Audio P.W.B unit		
1-2	—	Meter P.W.B. unit		
1-3	—	XLR out P.W.B unit		
1-4	—	XLR in P.W.B unit		
1-5	—	H/P jack P.W.B. unit		
1-6	—	REC VR P.W.B. unit		
● 2	3U- 2603 Z	:Power supply P.W.B unit Ass'y	Europe & U.K. models	1
● 2	3U- 2603	:Power supply P.W.B. unit Ass'y	U.S.A. & Canada models	1
● 2	3U- 2603 M	Power supply P.W.B. unit Ass'y	Multi-Voltage model	1
● 3	GU- 2861	Dolby S P.W.B. unit Ass'y		2
4	338 0184 009	Cassette mechanism		1
⚠ 5	233 5985 005	Power transformer	Europe & U.K. models	1
⚠ 5	233 5758 008	Power transformer	U.S.A. & Canada models	1
⚠ 5	233 5760 000	Power transformer	Multi-Voltage model	1
⚠ 6	212 0286 003	Power switch		1
⚠ 7	206 2089 106	AC cord with connector	Europe model	1
⚠ 7	206 2128 009	AC cord with connector	U.K. model	1
⚠ 7	206 2110 004	:AC cord with connector	U.S.A. & Canada models	1
⚠ 7	206 2089 106	:AC cord with connector	Multi-Voltage model	1
⚠ 8	445 0056 008	Cord bush		1
● 9	412 2008 012	Bushing plate		1
● 10	412 3942 009	Volume bracket		1
11	414 0637 009	Shield label		2
12	104 0208 311	Foot Ass'y		4
● 13	411 1272 079	Chassis	Europe & U.K. models	1
● 13	411 1272 082	Chassis	U.S.A & Canada models	1
● 13	411 1272 095	Chassis	Multi-Voltage model	1
● 14	412 2523 115	:*Earth bracket		1
15	205 0712 074	7P TBG-S connector		1
16	204 8261 003	4P pin jack	JK101	1
17	212 0369 001	Rotary switch	Dolby	1
18	211 0852 007	Variable resistor	V09V15FB502K (VR102)	1
19	211 0850 009	Variable resistor	V1611V30FA203A203R (VR101)	1
20	212 1147 002	Slide switch	Input select	1
21	204 8416 007	Mini jack		1
22	204 8264 071	Head phone jack		1
23	393 4128 000	FL tube (FIP6BCM6)	F601	1
● 24	146 1581 109	LED holder		1
25	431 0310 004	Power SW. lever Ass'y		1
26	113 1481 377	Push button (B)		1
27	113 1436 377	Function button		1
28	113 1480 200	Push button (A)		1
29	113 1438 003	Eject button		1
30	112 0759 007	Volume knob (R)		1
31	112 0760 106	Volume knob (L)		1
32	112 0765 004	Volume knob (Fuji)	DOLBY/BIAS FINE	2
● 33	103 1650 101	:Inner panel		1

Ref. No.	Part No.	Part Name	Remarks	Q'ty
● 33	103 1650 101	:Inner panel	U.S.A. & Canada model only	1
● 34	144 2309 326	Front panel		1
35	103 1511 305	:*Cassette box		1
35	103 1511 318	:*Cassette box	U.S.A. & Canada model only	1
36	463 0655 009	Cassette spring		2
37	463 0659 005	Box spring (R)		1
38	103 1660 010	C. window (A) Ass'y		1
39	421 9007 007	Mini damper		1
● 40	414 0595 015	Earth plate		1
● 41	203 2279 014	2C terminal wire		1
● 42	105 0787 107	Bottom cover		1
43	205 0955 006	3P cannon connector		1
44	205 0956 005	3P cannon connector		1
● 45	102 0434 406	Top cover		1
47	412 3676 207	:*Eject lever		1
48	412 9398 107	:*Lever stay		1
49	463 8238 004	Spring		1
● 50	412 3677 002	Mount bracket		2
● 51	129 0163 002	Indicate sheet		1
52	143 0765 244	Meter window		1
53	211 0851 008	Variable resistor	V09V25FB502K (VR103)	1
54	112 0727 000	Volume knob (C)	TAPE SPEED	1
55	445 8028 009	Cord holder		1
	009 0045 004	21P FFC		1
	009 0096 008	17P FFC cable		1

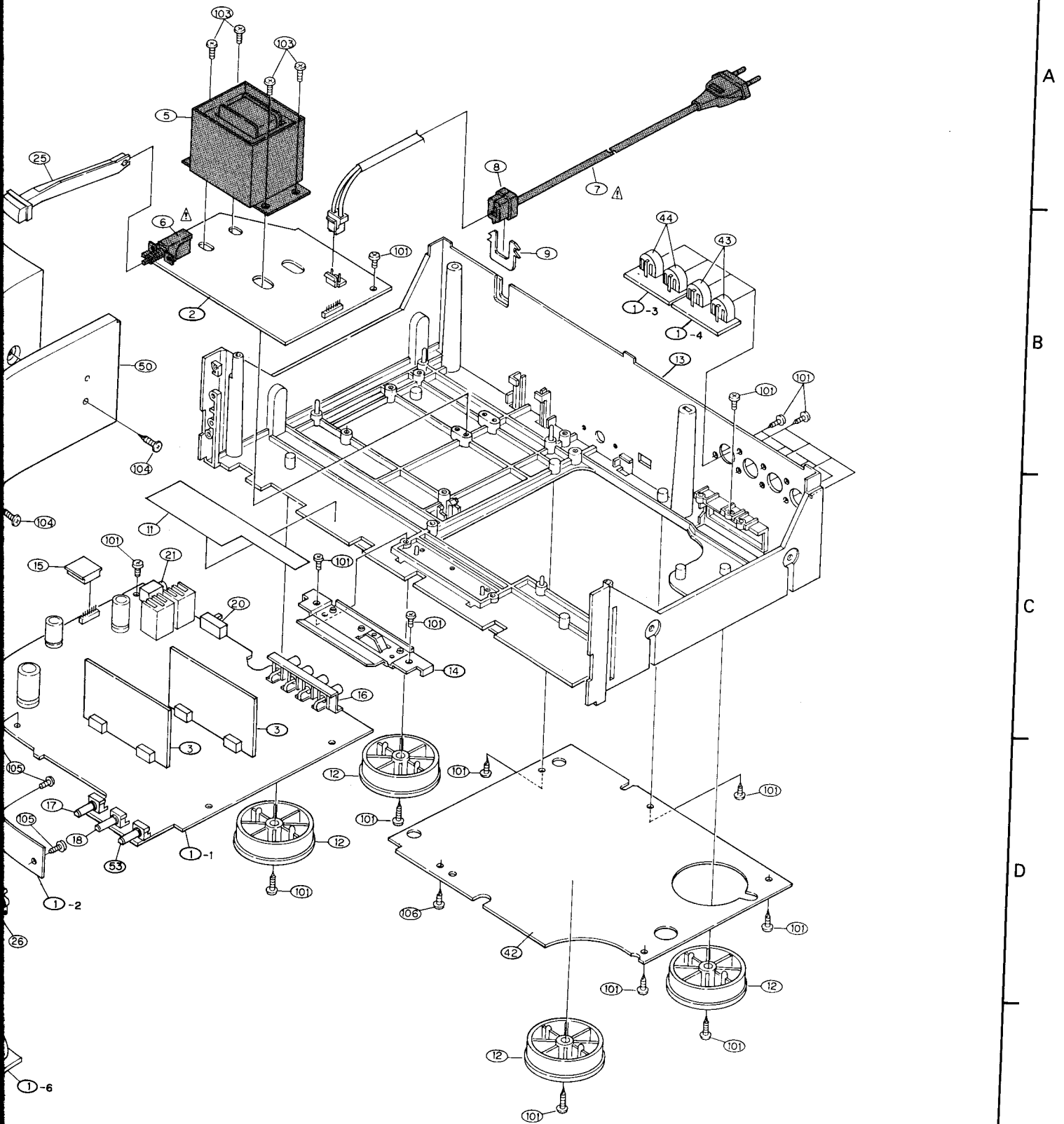
SCREW

100	473 8047 001	Special Screw		1
101	473 7508 017	Screw 3×10 CBTS (P)-B		30
102	477 0262 006	Special Screw		1
103	473 7502 013	Screw 4×10 CBTS (P)-Z		4
104	473 7509 058	Screw 4×12 CBTS (P)-P		4
105	473 7500 044	Screw 3×8 CBTS (P)-B		7
106	473 7002 018	Screw 3×8 CBTS (S)-Z		2
107	473 7007 039	Screw 4×20 CBTS (S)-B		2
108	471 3102 013	Screw 2×5 CBS-Z		2


PACKING & ACCESSORIES

Ref. No.	Part No.	Part Name	Remarks	Q'ty
●	505 0038 030	Envelope		1
	203 2360 004	2P pin cord		2
●	511 2775 008	Operating instruction (5)		1
	202 0042 004	AC adaptor	Multi-Voltage only	1
●	515 0692 004	DEL warranty home	U.S.A. model only	1
●	505 8092 007	Laminate envelope	For set	1
●	503 1079 005	Cushion		2
●	501 1698 040	Carton case		1
●	501 1818 079	Carton case	U.K. model only	1
●	502 0852 000	Pad Ass'y	U.K. model only	1
●	513 0772 009	UL label	U.S.A. model only	1

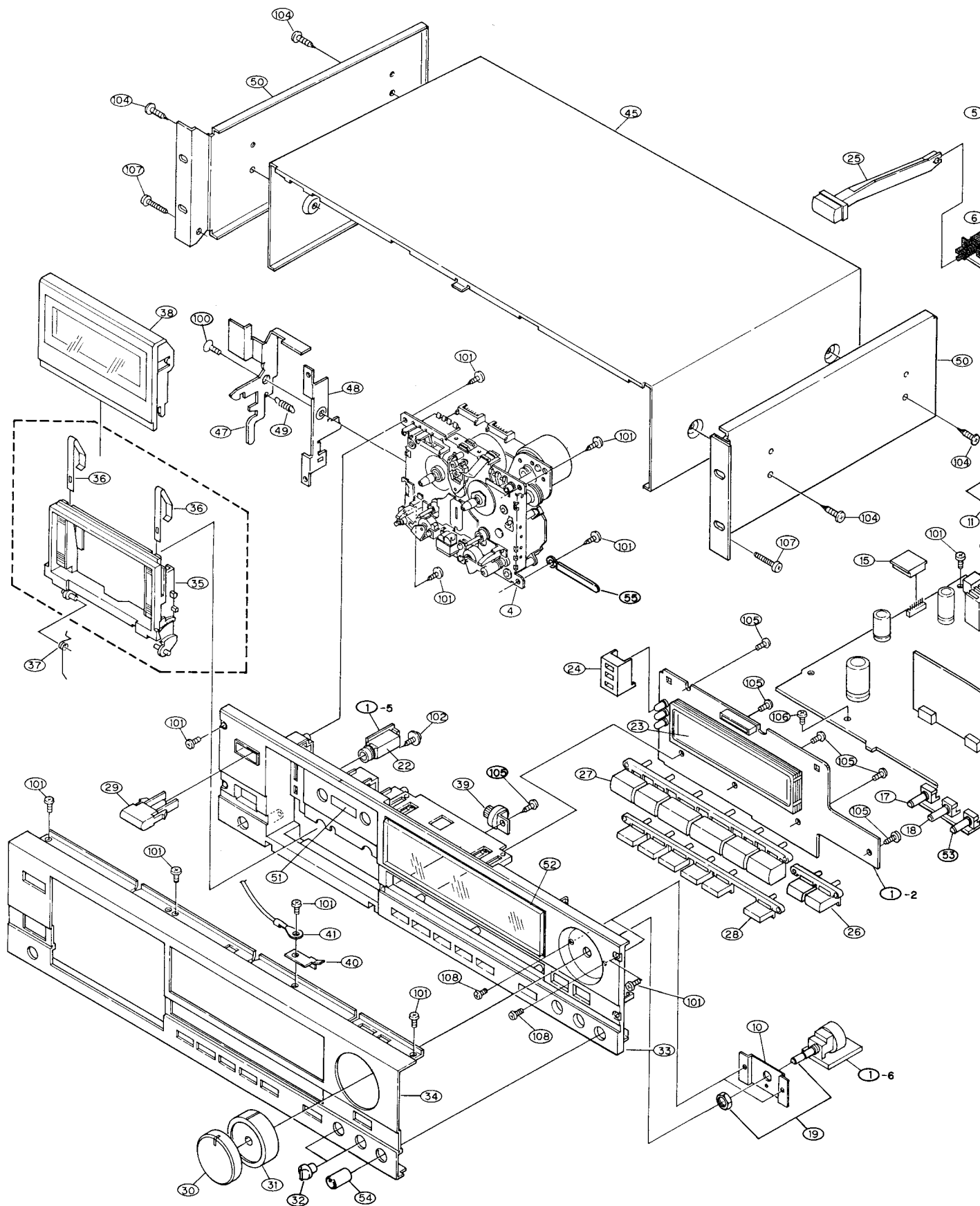
● Part indicated with the mark " ● " are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.



WARNING:

Parts marked with this symbol  have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

EXPLODED VIEW OF CHASSIS AND CABINET



1

2

3

4

EXPLODED VIEW OF CASSETTE MECHANISM UNIT

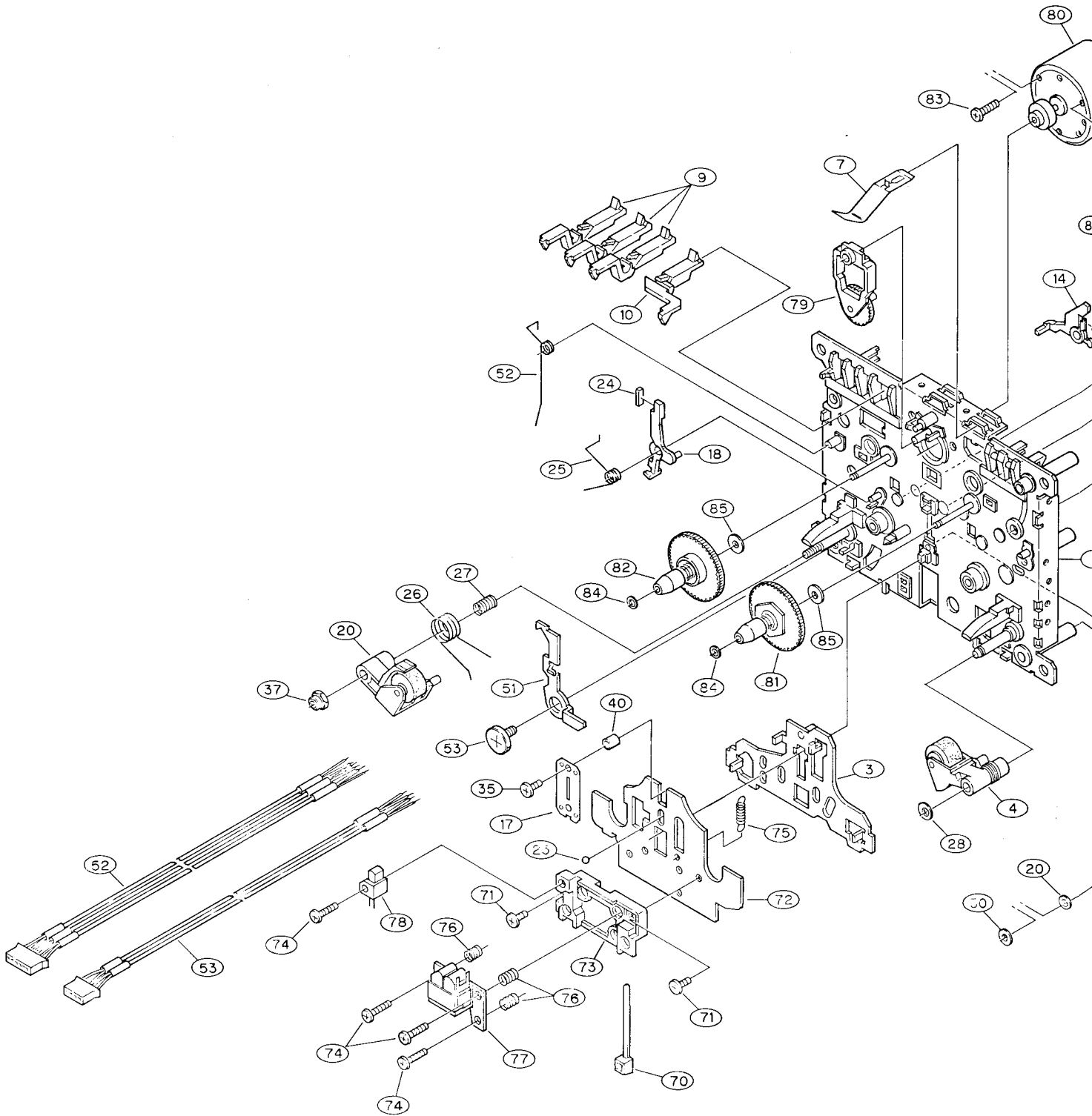
A

B

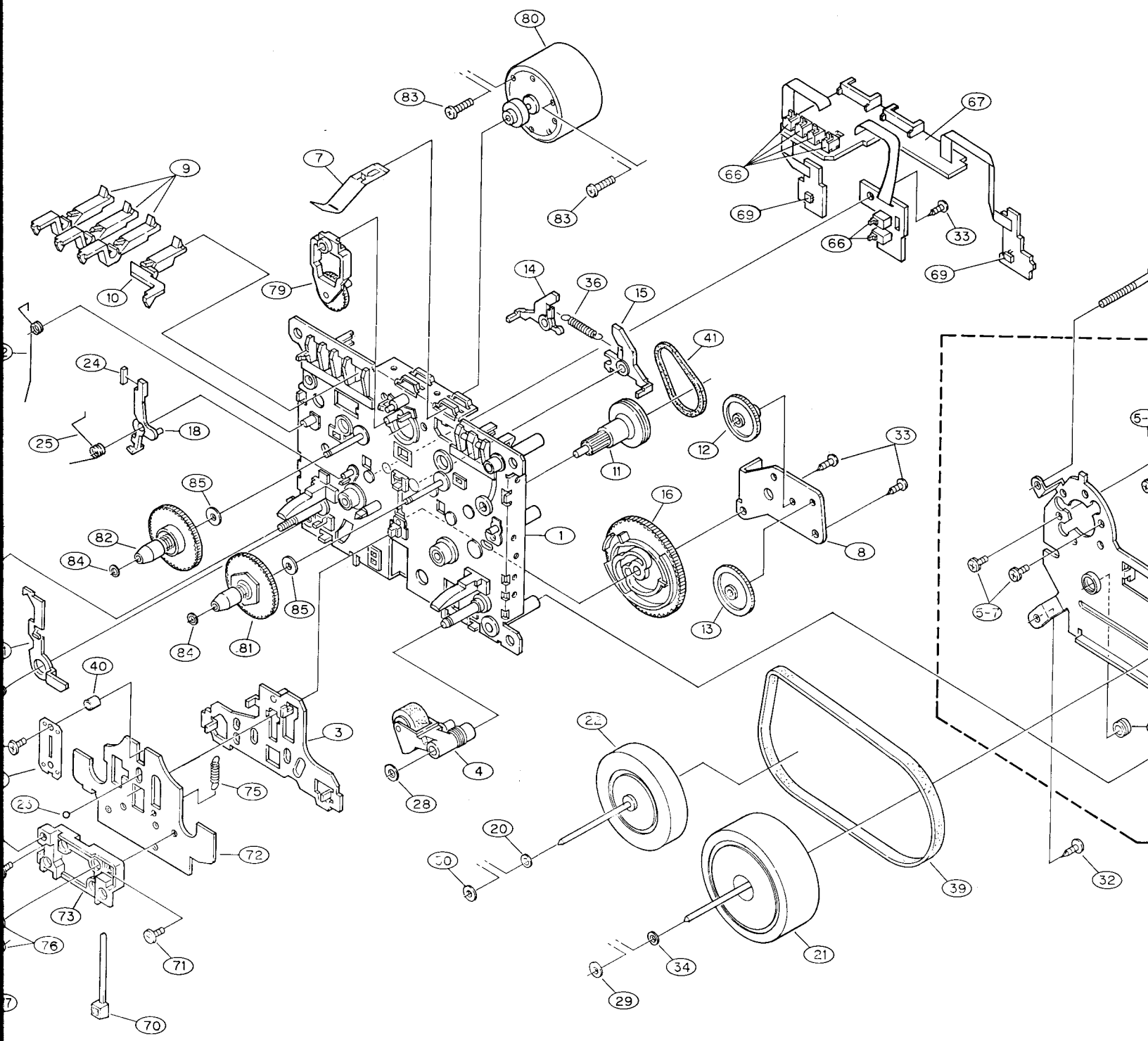
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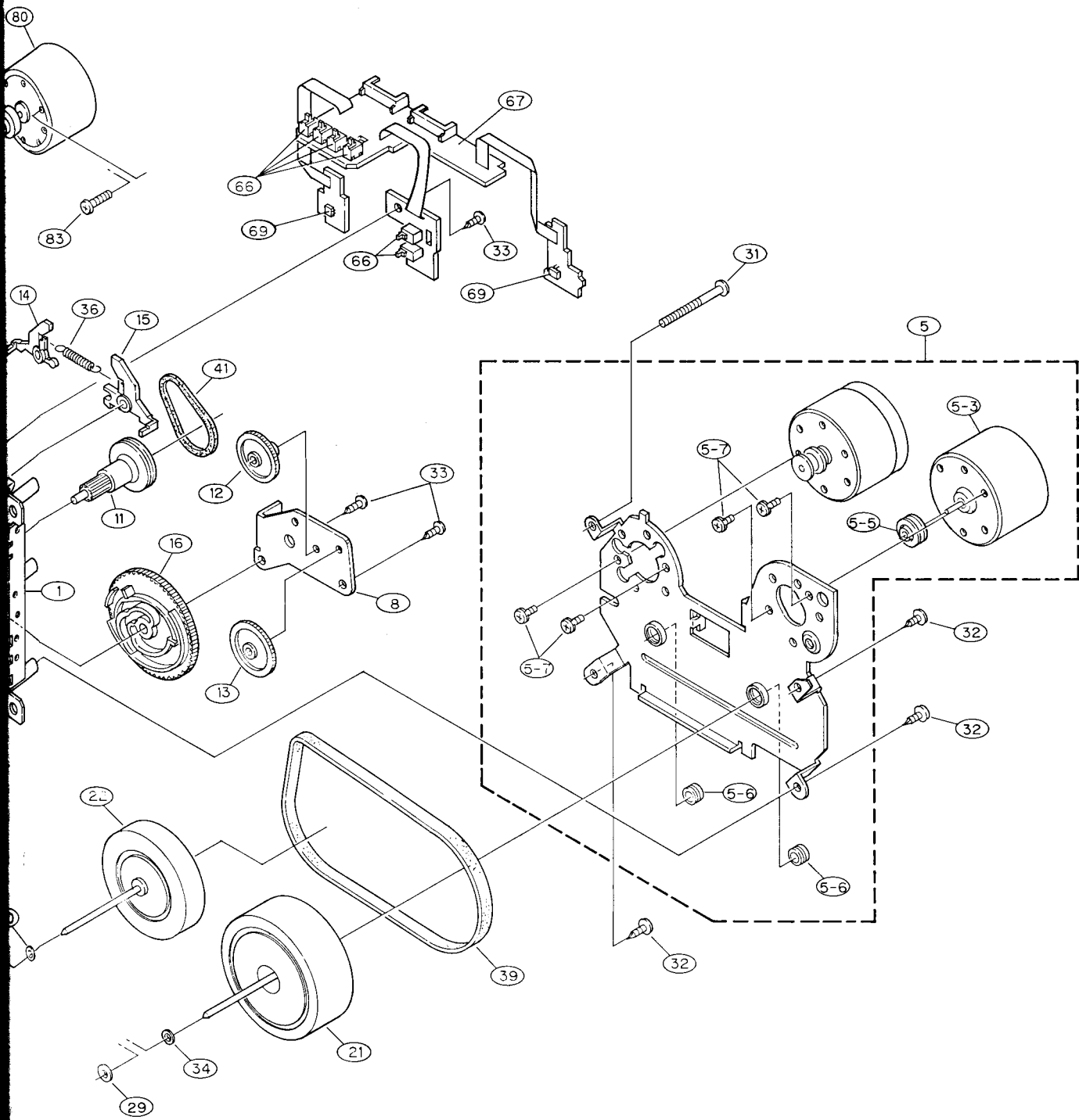
D

E



MECHANISM UNIT





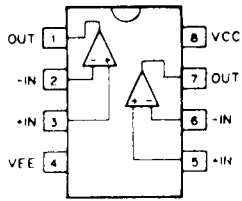
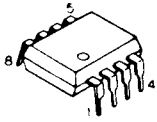
**PARTS LIST OF CASSETTE MECHANISM
EXPLODED VIEW**

Ref. No.	Part No.	Part Name	Remarks
1	9DF 6121 74	Chassis base BLK	
3	9DF 5121 22	Plate base BLK	
4	9DF R20L 22	Pinch Roller Ass'y	
5	9DF 5252 85	Motor main BLK	
5-3	9DF W15C 11	Mmn-6F4RB82	
5-5	9DF D47L 11	Pulley	
5-6	9DF M177 22	Wheel catch screw	
5-7	9DU G11S 14	Screw 2.6 × 3.5 ZN	
5-8			
5-9	9DF J141 12	W/rumina 1.9 × 0.25T	
7	9DF C52H 13	Cassette spring SH	
8	9DF C57H 11	P.C.B. BKT H	
9	9DF D44T 14	Rec detect lever	
10	9DF D44V 12	Metal detect lever (L)	
11	9DF D48Y 21	Gear A	
12	9DF D49A 11	Gear B	
13	9DF D49B 11	Gear C	
14	9DF D49C 11	Blake L	
15	9DF D49D 12	Blake R	
16	9DF D48W 12	Cam gear H	
17	9DF C57G 12	Thrust spring	
18	9DF D49E 13	B.T arm	
20	9DF R23F 11	Pinch roller	
21	9DF R23D 11	Ass'y F/W T	
22	9DF R23E 11	Ass'y F/W S	
23	9DM M113 11	Steel ball	
24	9DF Z11Y 12	Felt H	
25	9DF K31A 11	B.T SP	
26	9DF K26S 14	Pinch roller sp (L)	
27	9DF K26V 11	H adjust SP	
28	9DF J123 22	W/rumina c 3.5 × 0.25	
29	9DF J141 11A	Oil sheel 2.4 × 0.25	
30	9DF J141 14A	Oil sheel 2.15 × 0.25	
31	9DU G19G 11	S tyte screw m2.6 × 25	
32	9DU G12H 14	Wave screw 2.6 × 8 ZN	
33	9DU G12H 11	Wave screw 2.0 × 6 ZN	
34	9DF J111 30	Poly. washer 2.6 × 0.25	
35	9DU G22B 11	Screw TT 2.0 × 7 ZN	
36	9DF K20R 12	Blake SP	
37	9DU G20L 12	Nylon nut	
39	9DF F16M 31	Main belt	
40	9DF L42C 11	Spacer	
41	9DF F18R 11	Belt	
51	9DF C39L 70	Eject lock arm	
52	9DW H62R 02	HD cable (R/E)	
53	9DW H62S 02	HD cable (P.B)	
61	9DF C33L 51	Damper BKT	
62	9DK G194 28	Screw TT 2.6 × 4 ZN	
63	9DF C52P B1A	Eject arm (L)	

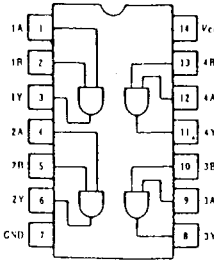
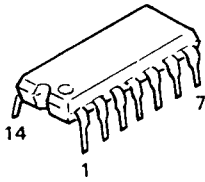
Ref. No.	Part No.	Part Name	Remarks
64	9DF K29H 11	Eject lock spring	
65	9DU G14M 11	Special screw	
66	9DU E16E 11	Puch switch	
68	9DA W12M 00	Reel sensor	
70	445 0033 005	Bundole band	
71	9DK G194 29	Screw 2.6 × 5 ZN	
72	9DF C57D 12	Head base D	
73	9DF D40L 13	Head spacer	
74	9DF G140 24	Screw 32.0 × 8 NI	
75	9DF K30W 11	Head base sp H	
76	9DF K30Y 11	Azimus sp H	
77	9DF U20M 11	H 5375	
78	9DF U20C 11	Hajab3523A	
79	9DF 5170 53	Idler BLK	
80	9DF 5643 02	Motor reel BLK	
81	9DF 6230 37	Reel base BLK	
82	9DF 6230 59	Reel base BLK	
83	9DU G14C 13	Screw 2.6 × 10 ZN	
84	9DF J111 17	Washer 1.7 × 0.25	
85	9DU J12V 11	Poly. washer 2.1 × 0.5	

SEMICONDUCTORS

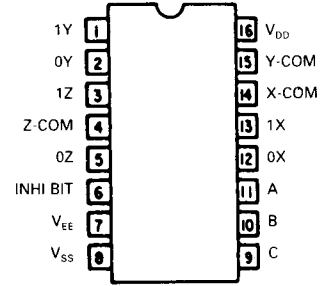
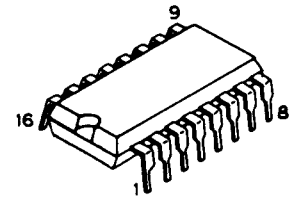
● IC



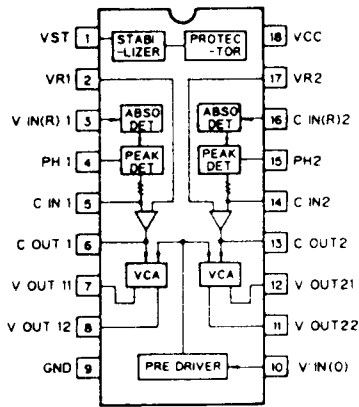
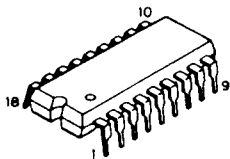
BA15218 (IC102, 103, 106
110~117, 121, 122)
μPC4572C



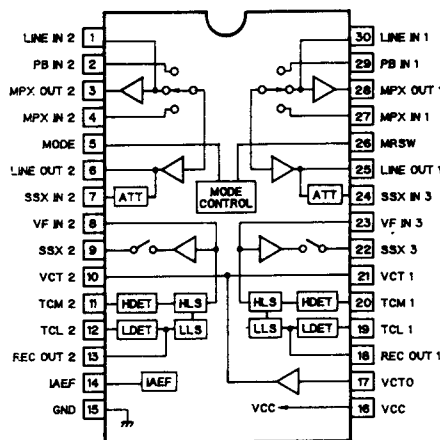
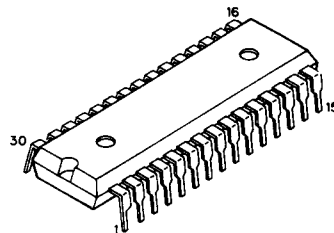
HD74HC00P (IC507)



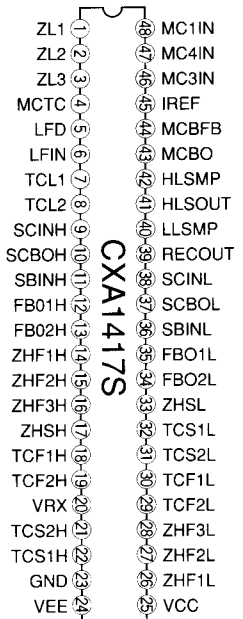
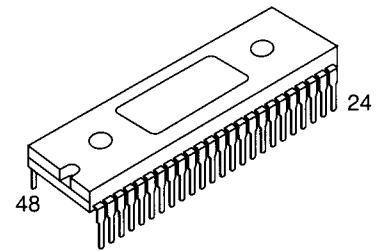
TC4053BP (IC105, 107, 118, 120)



μPC1297CA (IC123)

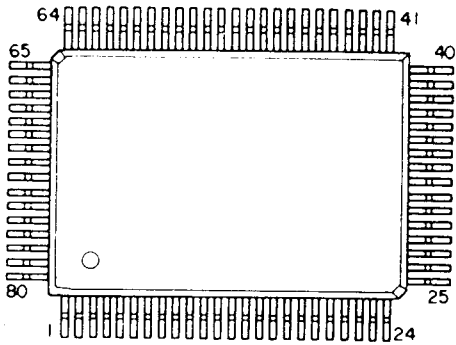


CXA1332S (IC104, 119)

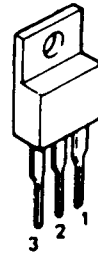


CXA1417S (IC001)

● TRANSISTORS

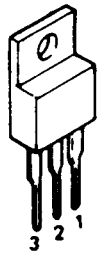


- UPD 78043 (μCOM)
- μPD78043 (IC601)



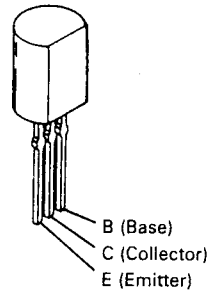
3 GND
2 INPUT
1 OUTPUT

NJM7908FA(S) (IC503)

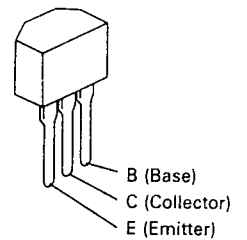


3 INPUT
2 GND
1 OUTPUT

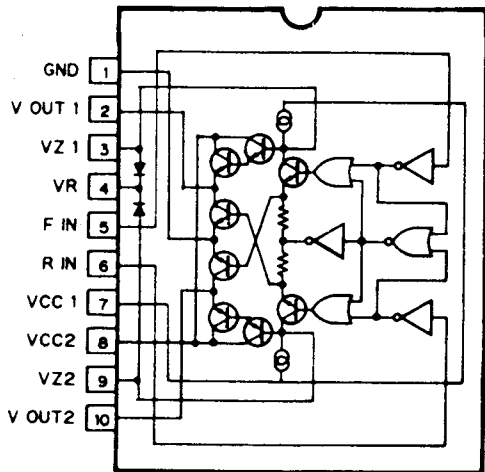
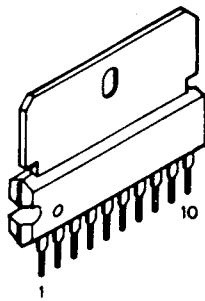
NJM78L05A (IC501)
NJM7806FA(S) (IC502)
NJM7808FA(S) (IC504)



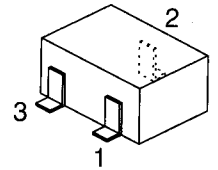
2SB562(C)



2SA933S(S)
DTA144TS
DTA144WS
DTC124XS
DTC143ES
DTC143XS
DTC144ES



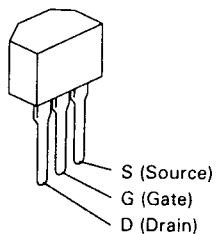
BA6109 (IC505, 506)



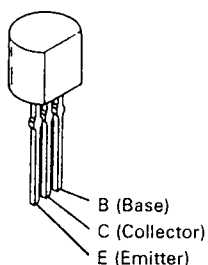
1: Emitter
2: Base
3: Collector

DTC143TK
DTC114TK
DTC124EK
DTC144WK

● DIODES



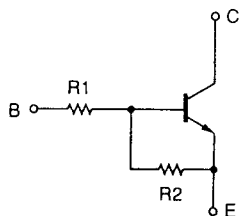
2SK184 (GR)/(BL)
2SK381 (D)/(E)



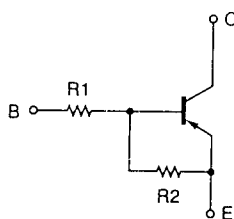
2SC2603E/F
2SC2878 (A/B)



1SS270A
1SR35-200A



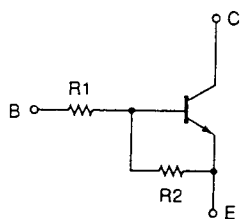
	R1	R2
DTC124XS	22 kohm	47 kohm
DTA143XS	4.7 kohm	10 kohm
DTC144ES	47 kohm	47 kohm



	R1	R2
DTA144WS	47 kohm	22 kohm
DTA144TS	47 kohm	—



HZS5C-1
HZS6C-1
HZS7B-1
HZS7C-1
HZS9B-1
HZS11B-1
HZS11C-1
HZS27-1



	R1	R2
DTC124EK	22 kohm	22 kohm
DTC144WK	47 kohm	22 kohm
DTC114TK	10 kohm	—
DTC143TK	4.7 kohm	—
DTC143ES	4.7 kohm	4.7 kohm

NOTE FOR PARTS LIST

- Part indicated with the mark "⊙" are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film ±5%, 1/4W Type in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

WARNING:

Parts marked with this symbol  have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

● **Resistors**

Ex.: RN 14K 2E 182 G FR

Type	Shape and performance	Power	Resistance	Allowable error	Others
RD Carbon	2B 1/8W	F ±1%	P Pulse-resistant type		
RC Composition	2E 1/4W	G ±2%	NL Low noise type		
RS Metal oxide film	2H 1/2W	J ±5%	NB Non-burning type		
RW Winding	3A 1W	K ±10%	FR Fuse-resistor		
RN Metal film	3D 2W	M ±20%	F Lead wire forming		
RK Metal mixture	3F 3W				
	3H 5W				

* **Resistance**

1 8 2 ——— 1800 ohm = 1.8 kohm
 ↓ Indicates number of zeros after effective number.
 ↓ 2-digit effective number.

● Units: ohm

1 R 2 ——— 1.2 ohm
 ↓ 1-digit effective number.
 ↓ 2-digit effective number, decimal point indicated by R.

● Units: ohm

* **Capacity (electrolyte only)**

2 2 2 ——— 2200µF
 ↓ Indicates number of zeros after effective number.
 ↓ 2-digit effective number.

● Units: µF

2 R 2 ——— 2.2µF
 ↓ 1-digit effective number.
 ↓ 2-digit effective number, decimal point indicated by R.

● Units: µF

● **Capacitors**

Ex.: CE 04W 1H 2R2 M BP

Type	Shape and performance	Dielectric strength	Capacity	Allowable error	Others
CE Aluminum foil electrolytic	0J 6.3V	F ±1%	HS High stability type		
CA Aluminum solid electrolytic	1A 10V	G ±2%	BP Non-polar type		
CS Tantalum electrolytic	1C 16V	J ±5%	HR Ripple-resistant type		
CQ Film	1E 25V	K ±10%	DL For charge and discharge		
CK Ceramic	1V 35V	M ±20%	HF For assuring high frequency		
CC Ceramic	1H 50V	Z ±80%	U UL part		
CP Oil	2A 100V	-20%	C CSA part		
CM Mica	2B 125V	P ±100%	W UL-CSA type		
CF Metalized	2C 160V	-0%	F Lead wire forming		
CH Metalized	2D 200V	C ±0.25pF			
	2E 250V	D ±0.5pF			
	2H 500V	= Others			
	2J 630V				

* **Capacity (except electrolyte)**

2 2 2 ——— 2200µF = 0.0022µF
 ↓ (More than 2) — Indicates number of zeros after effective number.
 ↓ 2-digit effective number.

● Units: µF

2 2 1 ——— 220PF
 ↓ (0 or 1) — Indicates number of zeros after effective number.
 ↓ 2-digit effective number.

● Units: PF

● When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value.

PRINTED WIRING BOARD PARTS LIST

GU-2848 AUDIO/METER P.W.B. UNIT ASS'Y

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC101	262 2162 007	IC µPC4572C	
IC102, 103	263 0565 007	IC BA15218	
IC104	262 2177 005	IC CXA1332S	
IC105	262 0522 005	IC TC4053BP	
IC106	263 0565 005	IC BA15218	
IC107	262 0522 005	IC TC4053BP	
IC108	263 0565 007	IC BA15218	
IC110	263 0565 007	IC BA15218	
~117			
IC118	262 0522 005	IC TC4053BP	
IC119	262 2177 005	IC CXA1332S	
IC120	262 0522 005	IC TC4053BP	
IC121, 122	263 0565 007	IC BA15218	
IC123	263 0354 001	IC µPC1297CA	
IC501	263 0432 907	IC NJM78L05A	
IC502	263 0793 002	IC NJM7806FA (S)	
IC503	263 0503 001	IC NJM7908FA (S)	
IC504	263 0810 008	IC NJM7808FA (S)	

Ref. No.	Part No.	Part Name	Remarks
IC505, 506	262 0326 007	IC BA6109	
IC507	262 0591 007	IC HD74HC00P	
IC603	262 2163 006	IC µPD78043**	
TR101	273 0245 900	Transistor 2SC2603E/F	
TR102	275 0061 902	Transistor 2SK184 (GR)/(BL)	
TR103	296 0077 904	Transistor DTA144TS (47K)	Built in resistor
TR104	275 0048 909	Transistor 2SK381 (D)/(E)	
TR105	296 0077 904	Transistor DTA144TS (47K)	Built in resistor
TR106, 107	273 0253 918	Transistor 2SC2878 (A/B)	
TR108	269 0088 906	Transistor DTC114TK	Built in resistor
TR109	269 0015 908	Transistor DTC124XS (22K-47K)	Built in resistor
TR110	273 0245 900	Transistor 2SC2603E/F	
TR111, 112	269 0088 906	Transistor DTC114TK	Built in resistor
TR113	273 0245 900	Transistor 2SC2603E/F	
~120			
TR122	269 0088 906	Transistor DTC114TK	Built in resistor
~124			

Ref. No.	Part No.	Part Name	Remarks
TR125, 126	269 0102 905	Transistor DTC124EK (22k-22k)	Built in resistor
TR127, 128	273 0253 918	Transistor 2SC2878 (A/B)	
TR201	273 0245 900	Transistor 2SC2603E/F	
TR202	275 0061 902	Transistor 2SK184 (GR)/(BL)	
TR203	296 0077 904	Transistor DTA144TS (47K)	Built in resistor
TR204	275 0048 909	Transistor 2SK381 (D)/(E)	
TR205	296 0077 904	Transistor DTA144TS (47K)	Built in resistor
TR206, 207	273 0253 918	Transistor 2SC2878 (A/B)	
TR208	269 0088 906	Transistor DTC114TK	Built in resistor
TR209	269 0015 908	Transistor DTC124XS (22K-47K)	Built in resistor
TR210	273 0245 900	Transistor 2SC2603E/F	
TR211, 212	269 0088 906	Transistor DTC114TK	Built in resistor
TR213 ~220	273 0245 900	Transistor 2SC2603E/F	
TR222 ~224	269 0088 906	Transistor DTC114TK	Built in resistor
TR227, 228	273 0253 918	Transistor 2SC2878 (A/B)	
TR501, 502	273 0245 900	Transistor 2SC2603E/F	
TR506	269 0018 905	Transistor DTC143ES (4.7K-4.7K)	Built in resistor
TR507, 508	269 0041 902	Transistor DTC144ES (47K-47K)	Built in resistor
TR509 ~511	271 0192 905	Transistor 2SA933S (S)	
TR512	269 0015 908	Transistor DTC124XS (22K-47K)	Built in resistor
TR513	272 0025 907	Transistor 2SB562 (C)	
TR514	269 0090 907	Transistor DTC143XS	Built in resistor
TR515	269 0040 902	Transistor DTC144ES (47K-47K)	Built in resistor
TR516	272 0025 907	Transistor 2SB562 (C)	
TR517, 518	273 0245 900	Transistor 2SC2603E/F	
TR519	272 0025 907	Transistor 2SB562 (C)	
TR520	269 0102 905	Transistor DTC124EK	Built in resistor
TR521, 522	269 0016 907	Transistor DTA144WS (47K-22K)	Built in resistor
TR523, 524	269 0102 905	Transistor DTC124EK	Built in resistor
TR601, 602	269 0091 906	Transistor DTC143TK	Built in resistor
TR604	269 0122 901	Transistor DTC144WK T146	Built in resistor
D501 ~508	276 0432 903	Diode 1SS270A	
D512 ~517	276 0553 905	Diode 1SR35-200A	
D518, 519	276 0432 903	Diode 1SS270A	
D520 ~523	276 0553 905	Diode 1SR35-200A	
D601 ~607	276 0432 903	Diode 1SS270A	
D608, 609	393 9514 907	LED SEL1210S (Led)	
D610	393 9452 904	LED SEL1410E (Green)	
ZD502, 503	276 0468 906	Zener diode HZS9B-1	
ZD504	276 0471 906	Zener diode HZS11B-1	

Ref. No.	Part No.	Part Name	Remarks
ZD505	276 0466 908	Zener diode HZS7C-1	
ZD506	276 0460 904	Zener diode HZS5C-1	
ZD508	276 0463 901	Zener diode HZS6C-1	
ZD509	276 0472 905	Zener diode HZS11C-1	
ZD510	276 0482 908	Zener diode HZS27-1	
ZD511	276 0468 906	Zener diode HZS9B-1	
RESISTORS GROUP (not included carbon film $\pm 5\%$ 1/4W type)			
VR101	211 0850 009	Variable 20k ohm $\times 2$	V1611V30FA203A203R
VR102	211 0852 007	Variable 5k ohm	V09V15FB502K
VR103	211 0851 008	Variable 5k ohm	V09V25FB502K
RT101, 102	211 6093 954	Seni fixed 22k ohm	V06BP223
RT103, 104	211 6093 954	Seni fixed 22k ohm	V06BP223
RT105, 106	211 6093 970	Seni fixed 100k ohm	V06PB104
RT107	211 6093 912	Seni fixed 4.7k ohm	V06PB472
R102	247 0003 994	Chip 36 ohm 1/10W	RM73B--360J
R103	247 0008 944	Chip 2.7k ohm 1/10W	RM73B--272J
R104	247 0011 960	Chip 56k ohm 1/10W	RM73B--563J
R105	247 0008 928	Chip 2.2k ohm 1/10W	RM73B--222J
R106	247 0008 944	Chip 2.7k ohm 1/10W	RM73B--272J
R107	247 0009 943	Chip 6.8k ohm 1/10W	RM73B--682J
R108	247 0008 931	Chip 2.4k ohm 1/10W	RM73B--242J
R110	247 0009 927	Chip 5.6k ohm 1/10W	RM73B--562J
R111	247 0007 945	Chip 1k ohm 1/10W	RM73B--102J
R112	247 0010 929	Chip 15k ohm 1/10W	RM73B--153J
R113	247 0010 974	Chip 24k ohm 1/10W	RM73B--243J
R114	247 0006 988	Chip 560 ohm 1/10W	RM73B--561J
R115, 116	247 0008 944	Chip 2.7k ohm 1/10W	RM73B--272J
R117	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J
R118	247 0010 945	Chip 18k ohm 1/10W	RM73B--183J
R119	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J
R120	247 0013 984	Chip 470k ohm 1/10W	RM73B--474J
R121	247 0009 914	Chip 5.1k ohm 1/10W	RM73B--512J
R122	247 0017 906	Chip 10M ohm 1/10W	RM73B--106K
R123	247 0011 944	Chip 47k ohm 1/10W	RM73B--473J
R124	247 0009 914	Chip 5.1k ohm 1/10W	RM73B--512J
R125	247 0009 985	Chip 10k ohm 1/10W	RM73B--103J
R126	247 0009 998	Chip 11k ohm 1/10W	RM73B--113J
R127	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J
R128	247 0017 906	Chip 10M ohm 1/10W	RM73B--106K
R129	247 0014 938	Chip 750k ohm 1/10W	RM73B--754J
R130	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J
R131	247 0011 944	Chip 47k ohm 1/10W	RM73B--473J
R132	247 0011 902	Chip 33k ohm 1/10W	RM73B--333J
R133	247 0010 974	Chip 24k ohm 1/10W	RM73B--243J
R134	247 0005 905	Chip 100 ohm 1/10W	RM73B--101J
R135	247 0006 962	Chip 470 ohm 1/10W	RM73B--471J
R136	247 0009 998	Chip 11k ohm 1/10W	RM73B--113J
R137	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J
R138	247 0010 987	Chip 27k ohm 1/10W	RM73B--273J
R139	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J
R140	247 0004 922	Chip 47 ohm 1/10W	RM73B--470J
R141	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R142	247 0004 922	Chip 47 ohm 1/10W	RM73B--470J
R143	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R144	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J
R145	247 0004 922	Chip 47 ohm 1/10W	RM73B--470J
R146	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J
R147	247 0010 929	Chip 15k ohm 1/10W	RM73B--153J
R148	247 0011 944	Chip 47k ohm 1/10W	RM73B--473J
R149	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J
R150	247 0004 922	Chip 47 ohm 1/10W	RM73B--470J

Ref. No.	Part No.	Part Name	Remarks
R151	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R152	247 0004 922	Chip 47 ohm 1/10W	RM73B--470J
R153	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R154	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J
R155	247 0004 922	Chip 47 ohm 1/10W	RM73B--470J
R156	247 0010 974	Chip 24k ohm 1/10W	RM73B--243J
R157	247 0011 999	Chip 75k ohm 1/10W	RM73B--753J
R159	247 0008 957	Chip 3k ohm 1/10W	RM73B--302J
R160	247 0010 916	Chip 13k ohm 1/10W	RM73B--133J
R161	247 0011 928	Chip 39k ohm 1/10W	RM73B--393J
R162	247 0005 905	Chip 100 ohm 1/10W	RM73B--101J
R202	247 0003 994	Chip 36 ohm 1/10W	RM73B--360J
R203	247 0008 944	Chip 2.7k ohm 1/10W	RM73B--272J
R204	247 0011 960	Chip 56k ohm 1/10W	RM73B--563J
R205	247 0008 928	Chip 2.2k ohm 1/10W	RM73B--222J
R206	247 0008 944	Chip 2.7k ohm 1/10W	RM73B--272J
R207	247 0009 943	Chip 6.8k ohm 1/10W	RM73B--682J
R208	247 0008 931	Chip 2.4k ohm 1/10W	RM73B--242J
R210	247 0009 927	Chip 5.6k ohm 1/10W	RM73B--562J
R211	247 0007 945	Chip 1k ohm 1/10W	RM73B--102J
R212	247 0010 929	Chip 15k ohm 1/10W	RM73B--153J
R213	247 0010 974	Chip 24k ohm 1/10W	RM73B--243J
R214	247 0006 988	Chip 560 ohm 1/10W	RM73B--561J
R215, 216	247 0008 944	Chip 2.7k ohm 1/10W	RM73B--272J
R217	247 0013 984	Chip 470k ohm 1/10W	RM73B--474J
R218	247 0010 945	Chip 18k ohm 1/10W	RM73B--183J
R219	247 0007 945	Chip 1k ohm 1/10W	RM73B--102J
R220	247 0010 987	Chip 27k ohm 1/10W	RM73B--273J
R221	247 0015 940	Chip 2.2M ohm 1/10W	RM73B--225J
R222	247 0017 906	Chip 10M ohm 1/10W	RM73B--106K
R223	247 0011 944	Chip 47k ohm 1/10W	RM73B--473J
R224	247 0009 914	Chip 5.1k ohm 1/10W	RM73B--512J
R225	247 0009 985	Chip 10k ohm 1/10W	RM73B--103J
R226	247 0009 998	Chip 11k ohm 1/10W	RM73B--113J
R227	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J
R228	247 0017 906	Chip 10M ohm 1/10W	RM73B--106K
R229	247 0014 938	Chip 750k ohm 1/10W	RM73B--754J
R230	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J
R231	247 0011 944	Chip 47k ohm 1/10W	RM73B--473J
R232	247 0011 902	Chip 33k ohm 1/10W	RM73B--333J
R233	247 0010 974	Chip 24k ohm 1/10W	RM73B--243J
R234	247 0005 905	Chip 100 ohm 1/10W	RM73B--101J
R235	247 0006 962	Chip 470 ohm 1/10W	RM73B--471J
R236	247 0009 998	Chip 11k ohm 1/10W	RM73B--113J
R237	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J
R238	247 0010 987	Chip 27k ohm 1/10W	RM73B--273J
R239	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J
R240	247 0004 922	Chip 47 ohm 1/10W	RM73B--470J
R241	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R242	247 0004 922	Chip 47 ohm 1/10W	RM73B--470J
R243	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R244	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J
R245	247 0004 922	Chip 47 ohm 1/10W	RM73B--470J
R246	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J
R247	247 0010 929	Chip 15k ohm 1/10W	RM73B--153J
R248	247 0011 944	Chip 47k ohm 1/10W	RM73B--473J
R249	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J
R250	247 0004 922	Chip 47 ohm 1/10W	RM73B--470J
R251	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R252	247 0004 922	Chip 47 ohm 1/10W	RM73B--470J
R253	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R254	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J
R255	247 0004 922	Chip 47 ohm 1/10W	RM73B--470J
R256	247 0010 974	Chip 24k ohm 1/10W	RM73B--243J
R257	247 0011 999	Chip 75k ohm 1/10W	RM73B--753J
R260	247 0010 916	Chip 13k ohm 1/10W	RM73B--133J

Ref. No.	Part No.	Part Name	Remarks
R261	247 0011 928	Chip 39k ohm 1/10W	RM73B--393J
R262	247 0005 905	Chip 100 ohm 1/10W	RM73B--101J
R301	247 0010 945	Chip 18k ohm 1/10W	RM73B--183J
R302	247 0012 927	Chip 100k ohm 1/10W	RM73B--104J
R304	247 0010 990	Chip 30k ohm 1/10W	RM73B--303J
R305	247 0010 932	Chip 16k ohm 1/10W	RM73B--163J
R306	247 0011 944	Chip 47k ohm 1/10W	RM73B--473J
R307	247 0010 990	Chip 30k ohm 1/10W	RM73B--303J
R309	247 0010 932	Chip 16k ohm 1/10W	RM73B--163J
R311	247 0011 944	Chip 47k ohm 1/10W	RM73B--473J
R312	247 0008 960	Chip 3.3k ohm 1/10W	RM73B--332J
R313	247 0009 943	Chip 6.8k ohm 1/10W	RM73B--682J
R314	247 0017 906	Chip 10M ohm 1/10W	RM73B--106K
R315	247 0008 986	Chip 3.9k ohm 1/10W	RM73B--392J
R316	247 0007 903	Chip 680 ohm 1/10W	RM73B--681J
R317	247 0011 928	Chip 39k ohm 1/10W	RM73B--393J
R318	247 0010 974	Chip 24k ohm 1/10W	RM73B--243J
R319	247 0006 988	Chip 560 ohm 1/10W	RM73B--561J
R320, 321	247 0012 927	Chip 100k 1/10W	RM73B--104J
R322	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J
R323	247 0010 974	Chip 24k ohm 1/10W	RM73B--243J
R324	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R325	247 0010 987	Chip 27k ohm 1/10W	RM73B--273J
R326	247 0009 956	Chip 7.5k ohm 1/10W	RM73B--752J
R327	247 0018 905	Chip 0 ohm 1/10W	RM73B--0R0K
R328	247 0010 987	Chip 27k ohm 1/10W	RM73B--273J
R329	247 0008 928	Chip 2.2k ohm 1/10W	RM73B--222J
R330	247 0010 961	Chip 22k ohm 1/10W	RM73B--223J
R331	247 0008 973	Chip 3.6k ohm 1/10W	RM73B--362J
R332	247 0010 903	Chip 12k ohm 1/10W	RM73B--123J
R333	247 0017 906	Chip 10M ohm 1/10W	RM73B--106K
R334	247 0009 972	Chip 9.1k ohm 1/10W	RM73B--912J
R335	247 0010 903	Chip 12k ohm 1/10W	RM73B--123J
R336	247 0017 906	Chip 10M ohm 1/10W	RM73B--106K
R337	247 0010 961	Chip 22k ohm 1/10W	RM73B--223J
R338	247 0010 903	Chip 12k ohm 1/10W	RM73B--123J
R339	247 0017 906	Chip 10M ohm 1/10W	RM73B--106K
R340	247 0011 960	Chip 56k ohm 1/10W	RM73B--563J
R341	247 0010 903	Chip 12k ohm 1/10W	RM73B--123J
R342	247 0017 906	Chip 10M ohm 1/10W	RM73B--106K
R343	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R344, 345	247 0010 929	Chip 15k ohm 1/10W	RM73B--153J
R346	247 0008 928	Chip 2.2k ohm 1/10W	RM73B--222J
R347	247 0009 914	Chip 5.1k ohm 1/10W	RM73B--512J
R348	247 0010 903	Chip 12k ohm 1/10W	RM73B--123J
R349	247 0007 932	Chip 910 ohm 1/10W	RM73B--911J
R350	247 0010 932	Chip 16k ohm 1/10W	RM73B--163J
R351	247 0010 903	Chip 12k ohm 1/10W	RM73B--123J
R352	247 0006 962	Chip 470 ohm 1/10W	RM73B--471J
R353	247 0011 931	Chip 43k ohm 1/10W	RM73B--433J
R354	247 0010 903	Chip 12k ohm 1/10W	RM73B--123J
R355	247 0005 989	Chip 220 ohm 1/10W	RM73B--221J
R356	247 0011 986	Chip 68k ohm 1/10W	RM73B--683J
R357	247 0010 903	Chip 12k ohm 1/10W	RM73B--123J
R358	247 0010 929	Chip 15k ohm 1/10W	RM73B--153J
R360	247 0010 945	Chip 18k ohm 1/10W	RM73B--183J
R361	247 0005 947	Chip 150 ohm 1/10W	RM73B--151J
R362	247 0010 945	Chip 18k ohm 1/10W	RM73B--183J
R363	247 0005 947	Chip 150 ohm 1/10W	RM73B--151J
R364	247 0009 985	Chip 10k ohm 1/10W	RM73B--103J
R365	247 0005 989	Chip 220 ohm 1/10W	RM73B--221J
R366	247 0008 957	Chip 3k ohm 1/10W	RM73B--302J
R367	247 0012 985	Chip 180k ohm 1/10W	RM73B--184J
R368	247 0010 987	Chip 27k ohm 1/10W	RM73B--273J
R369	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J

Ref. No.	Part No.	Part Name	Remarks
R370	247 0012 969	Chip 150k ohm 1/10W	RM73B--154J
R371	247 0010 929	Chip 15k ohm 1/10W	RM73B--153J
△ R372	241 2315 912	Carbon 10ohm 1/4W (Fuse)	RD14B2E100GFRS
R373,	247 0008 915	Chip 2k ohm 1/10W	RM73B--202J
378			
R374	247 0011 928	Chip 39k ohm 1/10W	RM73B--393J
R375	247 0010 987	Chip 27k ohm 1/10W	RM73B--273J
R376	247 0010 916	Chip 13k ohm 1/10W	RM73B--133J
R377	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R379	247 0008 915	Chip 2k ohm 1/10W	RM73B--202J
R401	247 0010 945	Chip 18k ohm 1/10W	RM73B--183J
R402	247 0012 927	Chip 100k ohm 1/10W	RM73B--104J
R404	247 0010 990	Chip 30k ohm 1/10W	RM73B--303J
R405	247 0010 932	Chip 16k ohm 1/10W	RM73B--163J
R406	247 0011 944	Chip 47k ohm 1/10W	RM73B--473J
R407	247 0010 990	Chip 30k ohm 1/10W	RM73B--303J
R409	247 0010 932	Chip 16k ohm 1/10W	RM73B--163J
R411	247 0011 944	Chip 47k ohm 1/10W	RM73B--473J
R412	247 0008 960	Chip 3.3k ohm 1/10W	RM73B--332J
R413	247 0009 943	Chip 6.8k ohm 1/10W	RM73B--682J
R414	247 0017 906	Chip 10M ohm 1/10W	RM73B--106K
R415	247 0008 986	Chip 3.9k ohm 1/10W	RM73B--392J
R416	247 0007 903	Chip 680 ohm 1/10W	RM73B--681J
R417	247 0011 928	Chip 39k ohm 1/10W	RM73B--393J
R418	247 0010 974	Chip 24k ohm 1/10W	RM73B--243J
R419	247 0006 988	Chip 560 ohm 1/10W	RM73B--561J
R420,	247 0012 927	Chip 100k ohm 1/10W	RM73B--104J
421			
R422	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J
R423	247 0010 974	Chip 24k ohm 1/10W	RM73B--243J
R424	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R425	247 0010 987	Chip 27k ohm 1/10W	RM73B--273J
R426	247 0009 956	Chip 7.5k ohm 1/10W	RM73B--752J
R427	247 0018 905	Chip 0 ohm 1/10W	RM73B--0R0K
R428	247 0010 987	Chip 27k ohm 1/10W	RM73B--273J
R429	247 0008 928	Chip 2.2k ohm 1/10W	RM73B--222J
R430	247 0010 961	Chip 22k ohm 1/10W	RM73B--223J
R431	247 0008 973	Chip 3.6k ohm 1/10W	RM73B--362J
R432	247 0010 903	Chip 12k ohm 1/10W	RM73B--123J
R433	247 0017 906	Chip 10M ohm 1/10W	RM73B--106K
R434	247 0009 972	Chip 9.1k ohm 1/10W	RM73B--912J
R435	247 0010 903	Chip 12k ohm 1/10W	RM73B--123J
R436	247 0017 906	Chip 10M ohm 1/10W	RM73B--106K
R437	247 0010 961	Chip 22k ohm 1/10W	RM73B--223J
R438	247 0010 903	Chip 12k ohm 1/10W	RM73B--123J
R439	247 0017 906	Chip 10M ohm 1/10W	RM73B--106K
R440	247 0011 960	Chip 56k ohm 1/10W	RM73B--563J
R441	247 0010 903	Chip 12k ohm 1/10W	RM73B--123J
R442	247 0017 906	Chip 10M ohm 1/10W	RM73B--106K
R443	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R444,	247 0010 929	Chip 15k ohm 1/10W	RM73B--153J
445			
R446	247 0008 928	Chip 2.2k ohm 1/10W	RM73B--222J
R447	247 0009 914	Chip 5.1k ohm 1/10W	RM73B--512J
R448	247 0010 903	Chip 12k ohm 1/10W	RM73B--123J
R449	247 0007 932	Chip 910 ohm 1/10W	RM73B--911J
R450	247 0010 932	Chip 16k ohm 1/10W	RM73B--163J
R451	247 0010 903	Chip 12k ohm 1/10W	RM73B--123J
R452	247 0006 962	Chip 470 ohm 1/10W	RM73B--471J
R453	247 0011 931	Chip 43k ohm 1/10W	RM73B--433J
R454	247 0010 903	Chip 12k ohm 1/10W	RM73B--123J
R455	247 0005 989	Chip 220 ohm 1/10W	RM73B--221J
R456	247 0011 986	Chip 68k ohm 1/10W	RM73B--683J
R457	247 0010 903	Chip 12k ohm 1/10W	RM73B--123J
R458	247 0010 929	Chip 15k ohm 1/10W	RM73B--153J
R460	247 0010 945	Chip 18k ohm 1/10W	RM73B--183J
R461	247 0005 947	Chip 150 ohm 1/10W	RM73B--151J

Ref. No.	Part No.	Part Name	Remarks
R462	247 0010 945	Chip 18k ohm 1/10W	RM73B--183J
R463	247 0005 947	Chip 150 ohm 1/10W	RM73B--151J
R464	247 0009 985	Chip 10k ohm 1/10W	RM73B--103J
R465	247 0005 989	Chip 220 ohm 1/10W	RM73B--221J
R466	247 0008 957	Chip 3k ohm 1/10W	RM73B--302J
R467	247 0012 985	Chip 180k ohm 1/10W	RM73B--184J
R468	247 0010 987	Chip 27k ohm 1/10W	RM73B--273J
R469	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R470	247 0012 969	Chip 150k ohm 1/10W	RM73B--154J
R471	247 0010 929	Chip 15k ohm 1/10W	RM73B--153J
△ R472	241 2315 912	Carbon 10ohm 1/4W (Fuse)	RD14B2E100GFRS
R473	247 0007 945	Chip 1k ohm 1/10W	RM73B--102J
R474	247 0010 987	Chip 27k ohm 1/10W	RM73B--273J
R478	247 0008 915	Chip 2k ohm 1/10W	RM73B--202J
R501	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R502	247 0010 987	Chip 27k ohm 1/10W	RM73B--273J
R503	247 0017 906	Chip 10M ohm 1/10W	RM73B--106K
R504	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R505	247 0010 903	Chip 12k ohm 1/10W	RM73B--123J
R506	247 0017 906	Chip 10M ohm 1/10W	RM73B--106K
R507	247 0009 985	Chip 10k ohm 1/10W	RM73B--103J
R508	247 0011 960	Chip 56k ohm 1/10W	RM73B--563J
R510,	247 0009 985	Chip 10k ohm 1/10W	RM73B--103J
511			
R512	247 0009 985	Chip 10k ohm 1/10W	RM73B--103J
R513	247 0004 964	Chip 68 ohm 1/10W	RM73B--680J
R514	247 0010 903	Chip 12k ohm 1/10W	RM73B--123J
R515	247 0012 998	Chip 200k ohm 1/10W	RM73B--204J
R516	247 0011 973	Chip 62k ohm 1/10W	RM73B--623J
R517,	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
518			
R519	247 0011 973	Chip 62k ohm 1/10W	RM73B--623J
R520	247 0012 998	Chip 200k ohm 1/10W	RM73B--204J
R521	247 0010 990	Chip 30k ohm 1/10W	RM73B--303J
R522	247 0012 927	Chip 100k ohm 1/10W	RM73B--104J
R523	247 0003 994	Chip 36 ohm 1/10W	RM73B--360J
R524,	247 0008 915	Chip 2k ohm 1/10W	RM73B--202J
525			
R526	247 0009 969	Chip 8.2k ohm 1/10W	RM73B--822J
R527	247 0011 944	Chip 47k ohm 1/10W	RM73B--473J
R528	247 0007 945	Chip 1k ohm 1/10W	RM73B--102J
△ R529	241 2375 907	Carbon 10ohm 1/4W	RD14B2E100JNBST
△ R530	244 0017 020	Metal oxide film	RS14B3A100JNBF
R532	247 0007 987	Chip 1.5k ohm 1/10W	RM73B--152J
R533	247 0006 962	Chip 470 ohm 1/10W	RM73B--471J
~536			
△ R537,	241 2315 925	Carbon 22ohm 1/4W (Fuse)	RD14B2E220GFRS
538			
R539	247 0009 985	Chip 10k ohm 1/10W	RM73B--103J
R540	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R541,	247 0001 983	Chip 4.7 ohm 1/10W	RM73B--4R7K
542			
R543,	247 0011 999	Chip 75k ohm 1/10W	RM73B--753J
544			
R545	247 0010 945	Chip 18k ohm 1/10W	RM73B--183J
R546	247 0009 943	Chip 6.8k ohm 1/10W	RM73B--682J
R548	247 0012 927	Chip 100k ohm 1/10W	RM73B--104J
R549	247 0009 985	Chip 10k ohm 1/10W	RM73B--103J
R550	247 0009 943	Chip 6.8k ohm 1/10W	RM73B--682J
R553	247 0015 940	Chip 2.2M ohm 1/10W	RM73B--225J
R554	247 0013 984	Chip 470k ohm 1/10W	RM73B--474J
R555	247 0009 985	Chip 10k ohm 1/10W	RM73B--103J
△ R556,	244 2055 938	Metal oxide film 6.8 ohm 1W	RS14B3A6R8JNBS
557			
△ R558,	244 2055 925	Metal oxide film 8.2 ohm 1W	RS14B3A8R2JNBS
559			

Ref. No.	Part No.	Part Name	Remarks
R601 ~603	247 0009 985	Chip 10k ohm 1/10W	RM73B--103J
R604	247 0010 961	Chip 22k ohm 1/10W	RM73B--223J
R605	247 0009 985	Chip 10k ohm 1/10W	RM73B--103J
R606	247 0010 961	Chip 22k ohm 1/10W	RM73B--223J
R607, 608	247 0006 988	Chip 560 ohm 1/10W	RM73B--561J
R609	247 0006 920	Chip 330 ohm 1/10W	RM73B--331J
R610	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R611 ~614	247 0009 985	Chip 10k ohm 1/10W	RM73B--103J
R615	247 0009 985	Chip 10k ohm 1/10W	RM73B--103J
R616	247 0006 959	Chip 430 ohm 1/10W	RM73B--431J
R617	247 0006 917	Chip 300 ohm 1/10W	RM73B--301J
R618	247 0007 916	Chip 750 ohm 1/10W	RM73B--751J
R619	247 0006 917	Chip 300 ohm 1/10W	RM73B--301J
R620 ~622	247 0005 963	Chip 180 ohm 1/10W	RM73B--181J
R623 ~625	247 0005 947	Chip 150 ohm 1/10W	RM73B--151J
R628	247 0009 985	Chip 10k ohm 1/10W	RM73B--103J
R629	247 0007 945	Chip 1k ohm 1/10W	RM73B--102J
R630, 631	247 0007 945	Chip 1k ohm 1/10W	RM73B--102J
R632 ~639	247 0009 985	Chip 10k ohm 1/10W	RM73B--103J
R640	247 0013 900	Chip 220k ohm 1/10W	RM73B--224J
R641	247 0006 959	Chip 430 ohm 1/10W	RM73B--431J
R642	247 0009 985	Chip 10k ohm 1/10W	RM73B--103J

CAPACITORS GROUP

C101	257 0004 987	Chip (Ceramic) 120pF/50V	CC73SL1H121J
C102	257 0004 961	Chip (Ceramic) 100pF/50V	CC73SL1H101J
C103	257 0010 997	Chip (Ceramic) 0.056μF/50V	CK73B1H563K
C104	254 3056 917	Electrolytic 1μF/50V	CE04D1H010MBP
C105	257 0010 955	Chip (Ceramic) 0.027μF/50V	CK73B1H273K
C106	254 4252 969	Electrolytic 470μF/10V	CE04W1A471M
C107	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C108, 109	257 0009 924	Chip (Ceramic) 2200pF/50V	CK73B1H222K
C110	254 4278 943	Electrolytic 0.56μF/50V	CE04W1HR56M
C111	254 4260 922	Electrolytic 0.33μF/50V	CE04W1HR33M
C112	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C113, 114	254 4254 938	Electrolytic 47μF/16V	CE04W1C470M
C115	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M
C116	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M
C117	257 0008 909	Chip (Ceramic) 220pF/50V	CK73B1H221K
C118	254 4258 950	Electrolytic 100μF/35V	CE04W1V101M
C119	254 4260 964	Electrolytic 3.3μF/50V	CE04W1H3R3M
C120	254 4258 950	Electrolytic 100μF/35V	CE04W1V101M
C121, 122	257 0011 941	Chip (Ceramic) 0.022μF/25V	CK73B1E223K
C127	254 3056 917	Electrolytic 1μF/50V	CE04D1H010MBP
C129	257 0014 935	Chip (Ceramic) 0.1μF/25V	CK73F1E104Z
C201	257 0004 987	Chip (Ceramic) 120pF/50V	CC73SL1H121J
C202	257 0004 961	Chip (Ceramic) 100pF/50V	CC73SL1H101J
C203	257 0010 997	Chip (Ceramic) 0.056μF/50V	CK73B1H563K
C204	254 3056 917	Electrolytic 1μF/50V	CE04D1H010MBP
C205	257 0010 955	Chip (Ceramic) 0.027μF/50V	CK73B1H273K
C206	254 4252 969	Electrolytic 470μF/10V	CE04W1A471M
C207	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C208, 209	257 0009 924	Chip (Ceramic) 2200pF/50V	CK73B1H222K
C210	254 4278 943	Electrolytic 0.56μF/50V	CE04W1HR56M
C211	254 4260 922	Electrolytic 0.33μF/50V	CE04W1HR33M
C212	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M

Ref. No.	Part No.	Part Name	Remarks
C213, 214	254 4254 938	Electrolytic 47μF/16V	CE04W1C470M
C215, 216	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M
C218	254 4258 950	Electrolytic 100μF/35V	CE04W1V101M
C219	254 4260 964	Electrolytic 3.3μF/50V	CE04W1H3R3M
C220	254 4258 950	Electrolytic 100μF/35V	CE04W1V101M
C227	254 3056 917	Electrolytic 1μF/50V	CE04D1H010MBP
C229	257 0014 935	Chip (Ceramic) 0.1μF/25V	CK73F1E104Z
C301, 302	257 0004 961	Chip (Ceramic) 100pF/50V	CC73SL1H101J
C303	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M
C304	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C306	257 0009 937	Chip (Ceramic) 2700pF/50V	CK73B1H272K
C307	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C308, 309	257 0009 924	Chip (Ceramic) 2200pF/50V	CK73B1H222K
C310	254 4278 943	Electrolytic 0.56μF/50V	CE04W1HR56M
C311	254 4260 922	Electrolytic 0.33μF/50V	CE04W1HR33M
C312	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
~314			
C315	257 0009 979	Chip (Ceramic) 5600pF/50V	CK73B1H562K
C316	257 0008 983	Chip (Ceramic) 1000pF/50V	CK73B1H102K
C317	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M
C318	257 0009 940	Chip (Ceramic) 3300pF/50V	CK73B1H332K
C319	257 0009 911	Chip (Ceramic) 1800pF/50V	CK73B1H182K
C320	257 0008 983	Chip (Ceramic) 1000pF/50V	CK73B1H102K
C321	257 0008 941	Chip (Ceramic) 470pF/50V	CK73B1H471K
C322	257 0008 996	Chip (Ceramic) 1200pF/50V	CK73B1H122K
C323	254 4254 938	Electrolytic 47μF/16V	CE04W1C470M
C324	256 1034 966	Metalized 0.082μF/50V	CF93A1H823J
C325	257 0010 900	Chip (Ceramic) 0.01μF/50V	CK73B1H103K
C326	257 0008 983	Chip (Ceramic) 1000pF/50V	CK73B1H102K
C327	257 0010 900	Chip (Ceramic) 0.01μF/50V	CK73B1H103K
C328	257 0008 983	Chip (Ceramic) 1000pF/50V	CK73B1H102K
C329	257 0009 982	Chip (Ceramic) 6800pF/50V	CK73B1H682K
C330	257 0008 967	Chip (Ceramic) 680pF/50V	CK73B1H681K
C331	257 0005 902	Chip (Ceramic) 150pF/50V	CC73SL1H151J
C332	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C333	257 0004 961	Chip (Ceramic) 100pF/50V	CC73SL1H101J
△C334	253 1131 909	Ceramic 390pF/500V	CK45B2H391K
C335	257 0011 967	Chip (Ceramic) 0.033μF/25V	CK73B1E333K
C336	257 0006 985	Chip (Ceramic) 820pF/50V	CC73SL1H821J
C337	257 0010 942	Chip (Ceramic) 0.022μF/50V	CK73B1H223K
C338	257 0010 900	Chip (Ceramic) 0.01μF/50V	CK73B1H103K
C339, 340	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C401, 402	257 0004 961	Chip (Ceramic) 100pF/50V	CC73SL1H101J
C403	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M
C404	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C406	257 0009 937	Chip (Ceramic) 2700pF/50V	CK73B1H272K
C407	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C408, 409	257 0009 924	Chip (Ceramic) 2200pF/50V	CK73B1H222K
C410	254 4278 943	Electrolytic 0.56μF/50V	CE04W1HR56M
C411	254 4260 922	Electrolytic 0.33μF/50V	CE04W1HR33M
C412	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
~414			
C415	257 0009 979	Chip (Ceramic) 5600pF/50V	CK73B1H562K
C416	257 0008 983	Chip (Ceramic) 1000pF/50V	CK73B1H102K
C417	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M
C418	257 0009 940	Chip (Ceramic) 3300pF/50V	CK73B1H332K
C419	257 0009 911	Chip (Ceramic) 1800pF/50V	CK73B1H182K
C420	257 0008 983	Chip (Ceramic) 1000pF/50V	CK73B1H102K
C421	257 0008 941	Chip (Ceramic) 470pF/50V	CK73B1H471K

Ref. No.	Part No.	Part Name	Remarks
C422	257 0008 996	Chip (Ceramic) 1200pF/50V	CK73B1H122K
C423	254 4254 938	Electrolytic 47μF/16V	CE04W1C470M
C424	256 1034 966	Metalized 0.082μF/50V	CF93A1H823J
C425	257 0010 900	Chip (Ceramic) 0.01μF/50V	CK73B1H103K
C426	257 0008 983	Chip (Ceramic) 1000pF/50V	CK73B1H102K
C427	257 0010 900	Chip (Ceramic) 0.01μF/50V	CK73B1H103K
C428	257 0008 983	Chip (Ceramic) 1000pF/50V	CK73B1H102K
C429	257 0009 982	Chip (Ceramic) 6800pF/50V	CK73B1H682K
C430	257 0008 967	Chip (Ceramic) 680pF/50V	CK73B1H681K
C431	257 0005 902	Chip (Ceramic) 150pF/50V	CC73SL1H151J
C432	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C433	257 0004 961	Chip (Ceramic) 100pF/50V	CC73SL1H101J
△ C434	253 1131 909	Ceramic 390pF/500V	CK45B2H391K
C435	257 0011 967	Chip (Ceramic) 0.033μF/25V	CK73B1E333K
C436	257 0006 985	Chip (Ceramic) 820pF/50V	CC73SL1H821J
C437	257 0010 942	Chip (Ceramic) 0.022μF/50V	CK73B1H223K
C438	257 0010 900	Chip (Ceramic) 0.01μF/50V	CK73B1H103K
C439	254 4256 907	Electrolytic 10μF/25V	CE04W1E100M
C440	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C501	253 9038 907	Ceramic 0.047μF/50V	CK45-1H473Z (BC)
C502, C503	257 0008 983	Chip (Ceramic) 1000pF/50V	CK73B1H102K
C504	254 4256 787	Electrolytic 1000μF/25V	CE0EW1E102MC
-506			
C507, 508	254 4252 930	Electrolytic 100μF/10V	CE04W1A101M
C509, 510	257 0013 910	Chip (Ceramic) 0.068μF/50V	CK73F1H683Z
C511	257 0014 935	Chip (Ceramic) 0.1μF/25V	CK73F1E104Z
C514	254 4261 756	Electrolytic 470μF/50V	CE0EW1H471MC
C515	254 4258 947	Electrolytic 47μF/35V	CE04W1V470M
C516	254 4258 950	Electrolytic 100μF/35V	CE04W1V101M
C517	257 0013 907	Chip (Ceramic) 0.047μF/50V	CK73F1H473Z
C518	254 4260 951	Electrolytic 2.2μF/50V	CE04W1H2R2M
C519	254 4403 035	Electrolytic 4700μF/25V	CE04W1E472M (SMG)
C520	254 4250 796	Electrolytic 4700μF/6.3V	CE0EW0J472MC
C521	257 0013 910	Chip (Ceramic) 0.068μF/50V	CK73F1H683Z
C522	257 0014 935	Chip (Ceramic) 0.1μF/25V	CK73F1E104Z
C523	257 0013 910	Chip (Ceramic) 0.068μF/50V	CK73F1H683Z
C524, 525	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C526	257 0010 926	Chip (Ceramic) 0.015μF/50V	CK73B1H153K
C527, 528	257 0009 940	Chip (Ceramic) 3300pF/50V	CK73B1H332K
C529	257 0009 982	Chip (Ceramic) 6800pF/50V	CK73B1H682K
C530	255 4120 900	Film 6800pF/100V	CQ93P2A682J
C531	254 4256 949	Electrolytic 100μF/25V	CE04W1E101M
C532	257 0019 914	Chip (Ceramic) 10pF/50V	CC73TH1H100D
C533	257 0010 984	Chip (Ceramic) 0.047μF/50V	CK73B1H473K
C534	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C535, 536	257 0010 942	Chip (Ceramic) 0.022μF/50V	CK73B1H223K
C537, 538	257 0010 900	Chip (Ceramic) 0.01μF/50V	CK73B1H103K
C539	254 4255 720	Electrolytic 6800μF/16V	CE04W1C682MC
C540	257 0013 910	Chip (Ceramic) 0.068μF/50V	CK73F1H683Z
C541	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C542	257 0008 983	Chip (Ceramic) 1000pF/50V	CK73B1H102K
C543	257 0011 970	Chip (Ceramic) 0.039μF/25V	CK73B1E393K
C544	257 0008 983	Chip (Ceramic) 1000pF/50V	CK73B1H102K
C545	257 0011 970	Chip (Ceramic) 0.039μF/25V	CK73B1E393K
C546	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C601	257 0011 909	Chip (Ceramic) 0.01μF/25V	CK73B1E103K
-604			
C605	254 4302 974	Electrolytic 100μF/10V	CE04W1A101M

Ref. No.	Part No.	Part Name	Remarks
C611	257 0008 983	Chip (Ceramic) 1000pF/50V	CK73B1H102K
C612	257 0008 983	Chip (Ceramic) 1000pF/50V	CK73F1H102K
~614			
C616	257 0013 910	Chip (Ceramic) 0.068μF/50V	CK73F1H683Z
C617, 618	254 4260 951	Electrolytic 2.2μF/50V	CE04W1H2R2M

OTHER PARTS

CB101	205 0711 075	7P TBG connector base	
CB102	205 0736 050	21P FFC connector base	
CB105	205 0343 061	6P connector base (KR-PH)	
CB106	205 0343 045	4P connector base (KR-PH)	
CB107	205 0696 051	JL connector (BT-E)	
~110			
CB113	205 0343 058	5P connector base (KR-PH)	
CB115, 116	205 0343 058	5P connector base (KR-PH)	
CB602	205 0736 050	21P FFC connector base	
CB103	205 0736 047	17P FFC connector base	
CB603	205 0736 047	17P FFC connector base	
FL101	393 4128 000	FL tube (FIP6BCM6)	
JK101	204 8261 003	4P pin jack	
JK102, 103	205 0955 006	3P cannon connector	
JK104, 105	205 0956 005	3P cannon connector	
JK106	204 8264 071	Head phone jack (Gold)	
JK107	204 8416 007	Mini jack	
L101	231 0825 009	:Bias filter	
L102	232 0109 003	:MPX filter	
L103	235 0020 903	Inductor 682J	
L104	235 0020 945	Inductor 153J	
L105	239 0010 009	:HX step up coil	
L201	231 0825 009	:Bias filter	
L202	232 0109 003	:MPX filter	
L203	235 0020 903	Inductor 682J	
L204	235 0020 945	Inductor 153J	
L205	239 0010 009	:HX step up coil	
L301	231 0078 005	:OSC coil	
SW501	212 1147 002	Slide switch	
SW502	212 0369 001	Rotary switch	
SW601	212 5604 910	Tact switch	
~614			
X101	399 0107 007	Resonator	CST4.19MGW

Input select
Dolby

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3U-2603 POWER SUPPLY P.W.B. ASS'Y

Ref. No.	Part No.	Part Name	Remarks
CAPACITORS GROUP			
△C001	253 8014 702	Ceramic 0.01 μ F/400VAC	CK45F2GAC103MC
OTHER PARTS GROUP			
CN901	205 0711 075	7P TBG connector base	
CN902	205 0581 001	2P VH connector base	
△SW001	212 0286 003	Power switch	
△	206 1031 045	Fuse (0.25A)	Multi-Voltage model only
△	212 4698 008	Voltage selector	Multi-Voltage model only
△	202 0022 008	Fuse holder	Multi-Voltage model only
△	513 1829 003	Fuse label	Multi-Voltage model only

GU-2861 DOLBY S P.W.B. ASS'Y

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC001	262 2160 009	IC CXA1417S	
IC701	262 2160 009	IC CXA1417S	
RESISTORS GROUP (not included carbon film $\pm 5\%$ 1/4W type)			
R006	247 0010 990	Chip 30k ohm 1/10W	RM73B--303J
R007	247 0011 915	Chip 36k ohm 1/10W	RM73B--363J
R008	247 0010 932	Chip 16k ohm 1/10W	RM73B--163J
R009	247 0009 914	Chip 5.1k ohm 1/10W	RM73B--512J
R010	247 0010 987	Chip 27k ohm 1/10W	RM73B--273J
R011, 012	247 0010 990	Chip 30k ohm 1/10W	RM73B--303J
R013	247 0009 998	Chip 11k ohm 1/10W	RM73B--113J
R014	247 0010 932	Chip 16k ohm 1/10W	RM73B--163J
R015	247 0008 931	Chip 2.4k ohm 1/10W	RM73B--242J
R016	247 0011 928	Chip 39k ohm 1/10W	RM73B--393J
R017	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J
R018	247 0010 961	Chip 22k ohm 1/10W	RM73B--223J
R019	247 0011 928	Chip 39k ohm 1/10W	RM73B--393J
R020	247 0009 914	Chip 5.1k ohm 1/10W	RM73B--512J
R021	247 0012 901	Chip 82k ohm 1/10W	RM73B--823J
R022	247 0009 998	Chip 11k ohm 1/10W	RM73B--113J
R023	247 0009 914	Chip 5.1k ohm 1/10W	RM73B--512J
R024	247 0009 985	Chip 10k ohm 1/10W	RM73B--103J
R025	247 0003 981	Chip 33 ohm 1/10W	RM73B--330J
R026	247 0010 945	Chip 18k ohm 1/10W	RM73B--183J
R027	247 0009 985	Chip 10k ohm 1/10W	RM73B--103J
R028	247 0010 974	Chip 24k ohm 1/10W	RM73B--243J
R029	247 0014 941	Chip 820k ohm 1/10W	RM73B--824J
R030	247 0009 969	Chip 8.2k ohm 1/10W	RM73B--822J
R031	247 0010 916	Chip 13k ohm 1/10W	RM73B--133J
R032	247 0007 990	Chip 1.6k ohm 1/10W	RM73B--162J
R034	247 0007 987	Chip 1.5k ohm 1/10W	RM73B--152J
R035	247 0014 941	Chip 820k ohm 1/10W	RM73B--824J
R036	247 0009 914	Chip 5.1k ohm 1/10W	RM73B--512J
R037	247 0007 990	Chip 1.6k ohm 1/10W	RM73B--162J
R038	247 0008 902	Chip 1.8k ohm 1/10W	RM73B--182J
R040	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R041	247 0009 914	Chip 5.1k ohm 1/10W	RM73B--512J
R042	247 0008 931	Chip 2.4k ohm 1/10W	RM73B--242J
R043	247 0008 902	Chip 1.8k ohm 1/10W	RM73B--182J
R044	247 0007 974	Chip 1.3k ohm 1/10W	RM73B--132J
R045	247 0004 922	Chip 47 ohm 1/10W	RM73B--470J
R046, 047	247 0003 981	Chip 33 ohm 1/10W	RM73B--330J
R048	247 0004 922	Chip 47 ohm 1/10W	RM73B--470J
R049	247 0008 931	Chip 2.4k ohm 1/10W	RM73B--242J
R050	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R051	247 0007 961	Chip 1.2k ohm 1/10W	RM73B--122J
R052	247 0009 969	Chip 8.2k ohm 1/10W	RM73B--822J
R090	247 0018 905	Chip 0 ohm 1/10W	RM73B--0R0K
R706	247 0010 990	Chip 30k ohm 1/10W	RM73B--303J
R707	247 0011 915	Chip 36k ohm 1/10W	RM73B--363J
R708	247 0010 932	Chip 16k ohm 1/10W	RM73B--163J
R709	247 0009 914	Chip 5.1k ohm 1/10W	RM73B--512J
R710	247 0010 987	Chip 27k ohm 1/10W	RM73B--273J
R711, 712	247 0010 990	Chip 30k ohm 1/10W	RM73B--303J
R713	247 0009 998	Chip 11k ohm 1/10W	RM73B--113J
R714	247 0010 932	Chip 16k ohm 1/10W	RM73B--163J
R715	247 0008 931	Chip 2.4k ohm 1/10W	RM73B--242J
R716	247 0011 928	Chip 39k ohm 1/10W	RM73B--393J
R717	247 0010 958	Chip 20k ohm 1/10W	RM73B--203J

Ref. No.	Part No.	Part Name	Remarks
R718	247 0010 961	Chip 22k ohm 1/10W	RM73B--223J
R719	247 0011 928	Chip 39k ohm 1/10W	RM73B--393J
R720	247 0009 914	Chip 5.1k ohm 1/10W	RM73B--512J
R721	247 0012 901	Chip 82k ohm 1/10W	RM73B--823J
R722	247 0009 998	Chip 11k ohm 1/10W	RM73B--113J
R723	247 0009 914	Chip 5.1k ohm 1/10W	RM73B--512J
R724	247 0009 985	Chip 10k ohm 1/10W	RM73B--103J
R725	247 0003 981	Chip 33 ohm 1/10W	RM73B--330J
R726	247 0010 945	Chip 18k ohm 1/10W	RM73B--183J
R727	247 0009 985	Chip 10k ohm 1/10W	RM73B--103J
R728	247 0010 974	Chip 24k ohm 1/10W	RM73B--243J
R729	247 0014 941	Chip 820k ohm 1/10W	RM73B--824J
R730	247 0009 969	Chip 8.2k ohm 1/10W	RM73B--822J
R731	247 0010 916	Chip 13k ohm 1/10W	RM73B--133J
R732	247 0007 990	Chip 1.6k ohm 1/10W	RM73B--162J
R734	247 0007 987	Chip 1.5k ohm 1/10W	RM73B--152J
R735	247 0014 941	Chip 820k ohm 1/10W	RM73B--824J
R736	247 0009 914	Chip 5.1k ohm 1/10W	RM73B--512J
R737	247 0007 990	Chip 1.6k ohm 1/10W	RM73B--162J
R738	247 0008 902	Chip 1.8k ohm 1/10W	RM73B--182J
R740	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R741	247 0009 914	Chip 5.1k ohm 1/10W	RM73B--512J
R742	247 0008 931	Chip 2.4k ohm 1/10W	RM73B--242J
R743	247 0008 902	Chip 1.8k ohm 1/10W	RM73B--182J
R744	247 0007 974	Chip 1.3k ohm 1/10W	RM73B--132J
R745	247 0004 922	Chip 47 ohm 1/10W	RM73B--470J
R746, 747	247 0003 981	Chip 33 ohm 1/10W	RM73B--330J
R748	247 0004 922	Chip 47 ohm 1/10W	RM73B--470J
R749	247 0008 931	Chip 2.4k ohm 1/10W	RM73B--242J
R750	247 0009 901	Chip 4.7k ohm 1/10W	RM73B--472J
R751	247 0007 961	Chip 1.2k ohm 1/10W	RM73B--122J
R752	247 0009 969	Chip 8.2k ohm 1/10W	RM73B--822J
R790	247 0018 905	Chip 0 ohm 1/10W	RM73B--0R0K

CAPACITORS GROUP

C005	254 4254 912	Electrolytic 22µF/16V	CE04W1C220M
C006	257 0009 911	Chip (Ceramic) 1800pF/50V	CK73B1H182K
C007, 008	257 0011 996	Chip (Ceramic) 0.1µF/25V	CK73B1E104K
C010	257 0010 939	Chip (Ceramic) 0.018µF/50V	CK73B1H183K
C011	257 0011 996	Chip (Ceramic) 0.1µF/25V	CK73B1E104K
C012	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M
C013	254 4260 935	Electrolytic 0.47µF/50V	CE04W1HR47M
C014	257 0010 942	Chip (Ceramic) 0.022µF/50V	CK73B1H223K
C015	257 0011 996	Chip (Ceramic) 0.1µF/25V	CK73B1E104K
C016	254 4260 919	Electrolytic 0.22µF/50V	CE04W1HR22M
C017	257 0011 996	Chip (Ceramic) 0.1µF/25V	CK73B1E104K
C018	257 0010 939	Chip (Ceramic) 0.018µF/50V	CK73B1H183K
C019	257 0009 911	Chip (Ceramic) 1800pF/50V	CK73B1H182K
C020	257 0010 942	Chip (Ceramic) 0.022µF/50V	CK73B1H223K
C021, 022	257 0009 911	Chip (Ceramic) 1800pF/50V	CK73B1H182K
C023	254 4260 919	Electrolytic 0.22µF/50V	CE04W1HR22M
C024, 025	257 0011 970	Chip (Ceramic) 0.039µF/25V	CK73B1E393K
C026	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
C027	257 0008 967	Chip (Ceramic) 680pF/50V	CK73B1H681K
C028	257 0008 983	Chip (Ceramic) 1000pF/50V	CK73B1H102K
C029	257 0008 941	Chip (Ceramic) 470pF/50V	CK73B1H471K
C030	257 0009 924	Chip (Ceramic) 2200pF/50V	CK73B1H222K
C031	257 0009 995	Chip (Ceramic) 8200pF/50V	CK73B1H822K
C033	257 0008 983	Chip (Ceramic) 1000pF/50V	CK73B1H102K
C034	257 0009 995	Chip (Ceramic) 8200pF/50V	CK73B1H822K
C035	256 1035 910	Metalized 0.22µF/50V	CF93A1H224J
C037	256 1034 966	Metalized 0.082µF/50V	CF93A1H823J

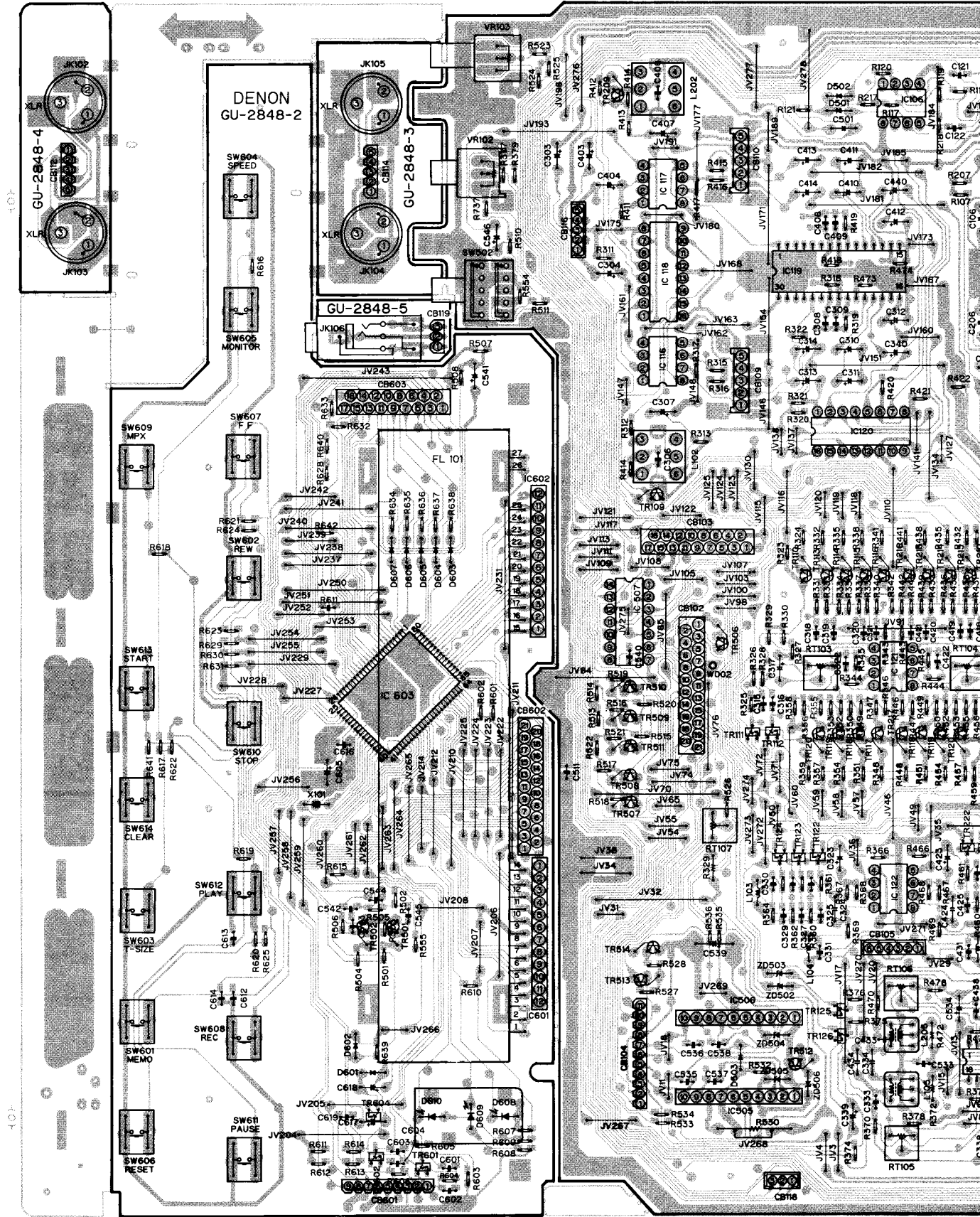
Ref. No.	Part No.	Part Name	Remarks
C038, 039	257 0010 926	Chip (Ceramic) 0.015µF/50V	CK73B1H153K
C040	257 0011 983	Chip (Ceramic) 0.047µF/25V	CK73B1E473K
C041	254 4260 906	Electrolytic 0.1µF/50V	CE04W1H0R1M
C042	254 4260 919	Electrolytic 0.22µF/50V	CE04W1HR22M
C043	254 4260 935	Electrolytic 0.47µF/50V	CE04W1HR47M
C044	254 4260 906	Electrolytic 0.1µF/50V	CE04W1H0R1M
C045	254 4260 935	Electrolytic 0.47µF/50V	CE04W1HR47M
C046	254 4260 919	Electrolytic 0.22µF/50V	CE04W1HR22M
C047	256 1034 966	Metalized 0.082µF/50V	CF93A1H823J
C048	254 4260 906	Electrolytic 0.1µF/50V	CE04W1H0R1M
C049	256 1035 936	Metalized 0.33µF/50V	CF93A1H334J
C050, 051	254 4254 938	Electrolytic 47µF/16V	CE04W1C470M
C705	254 4254 912	Electrolytic 22µF/16V	CE04W1C220M
C706	257 0009 911	Chip (Ceramic) 1800pF/50V	CK73B1H182K
C707, 708	257 0011 996	Chip (Ceramic) 0.1µF/25V	CK73B1E104K
C710	257 0010 939	Chip (Ceramic) 0.018µF/50V	CK73B1H183K
C711	257 0011 996	Chip (Ceramic) 0.1µF/25V	CK73B1E104K
C712	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M
C713	254 4260 935	Electrolytic 0.47µF/50V	CE04W1HR47M
C714	257 0010 942	Chip (Ceramic) 0.022µF/50V	CK73B1H223K
C715	257 0011 996	Chip (Ceramic) 0.1µF/25V	CK73B1E104K
C716	254 4260 919	Electrolytic 0.22µF/50V	CE04W1HR22M
C717	257 0011 996	Chip (Ceramic) 0.1µF/25V	CK73B1E104K
C718	257 0010 939	Chip (Ceramic) 0.018µF/50V	CK73B1H183K
C719	257 0009 911	Chip (Ceramic) 1800pF/50V	CK73B1H182K
C720	257 0010 942	Chip (Ceramic) 0.022µF/50V	CK73B1H223K
C721, 722	257 0009 911	Chip (Ceramic) 1800pF/50V	CK73B1H182K
C723	254 4260 919	Electrolytic 0.22µF/50V	CE04W1HR22M
C724, 725	257 0011 970	Chip (Ceramic) 0.039µF/25V	CK73B1E393K
C726	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
C727	257 0008 967	Chip (Ceramic) 680pF/50V	CK73B1H681K
C728	257 0008 983	Chip (Ceramic) 1000pF/50V	CK73B1H102K
C729	257 0008 941	Chip (Ceramic) 470pF/50V	CK73B1H471K
C730	257 0009 924	Chip (Ceramic) 2200pF/50V	CK73B1H222K
C731	257 0009 995	Chip (Ceramic) 8200pF/50V	CK73B1H822K
C733	257 0008 983	Chip (Ceramic) 1000pF/50V	CK73B1H102K
C734	257 0009 995	Chip (Ceramic) 8200pF/50V	CK73B1H822K
C735	256 1035 910	Metalized 0.22µF/50V	CF93A1H224J
C737	256 1034 966	Metalized 0.082µF/50V	CF93A1H823J
C738, 739	257 0010 926	Chip (Ceramic) 0.015µF/50V	CK73B1H153K
C740	257 0011 983	Chip (Ceramic) 0.047µF/25V	CK73B1E473K
C741	254 4260 906	Electrolytic 0.1µF/50V	CE04W1H0R1M
C742	254 4260 919	Electrolytic 0.22µF/50V	CE04W1HR22M
C743	254 4260 935	Electrolytic 0.47µF/50V	CE04W1HR47M
C744	254 4260 906	Electrolytic 0.1µF/50V	CE04W1H0R1M
C745	254 4260 935	Electrolytic 0.47µF/50V	CE04W1HR47M
C746	254 4260 919	Electrolytic 0.22µF/50V	CE04W1HR22M
C747	256 1034 966	Metalized 0.082µF/50V	CF93A1H823J
C748	254 4260 906	Electrolytic 0.1µF/50V	CE04W1H0R1M
C749	256 1035 936	Metalized 0.33µF/50V	CF93A1H334J
C750, 751	254 4254 938	Electrolytic 47µF/16V	CE04W1C470M

OTHER PARTS GROUP

CB001	205 0748 051	5P JL connector (R)	
CB701	205 0748 051	5P JL connector (R)	

PRINTED WIRING BOARD PATTERNS

GU-2848 AUDIO/METER P.W.B. UNIT ASS'Y



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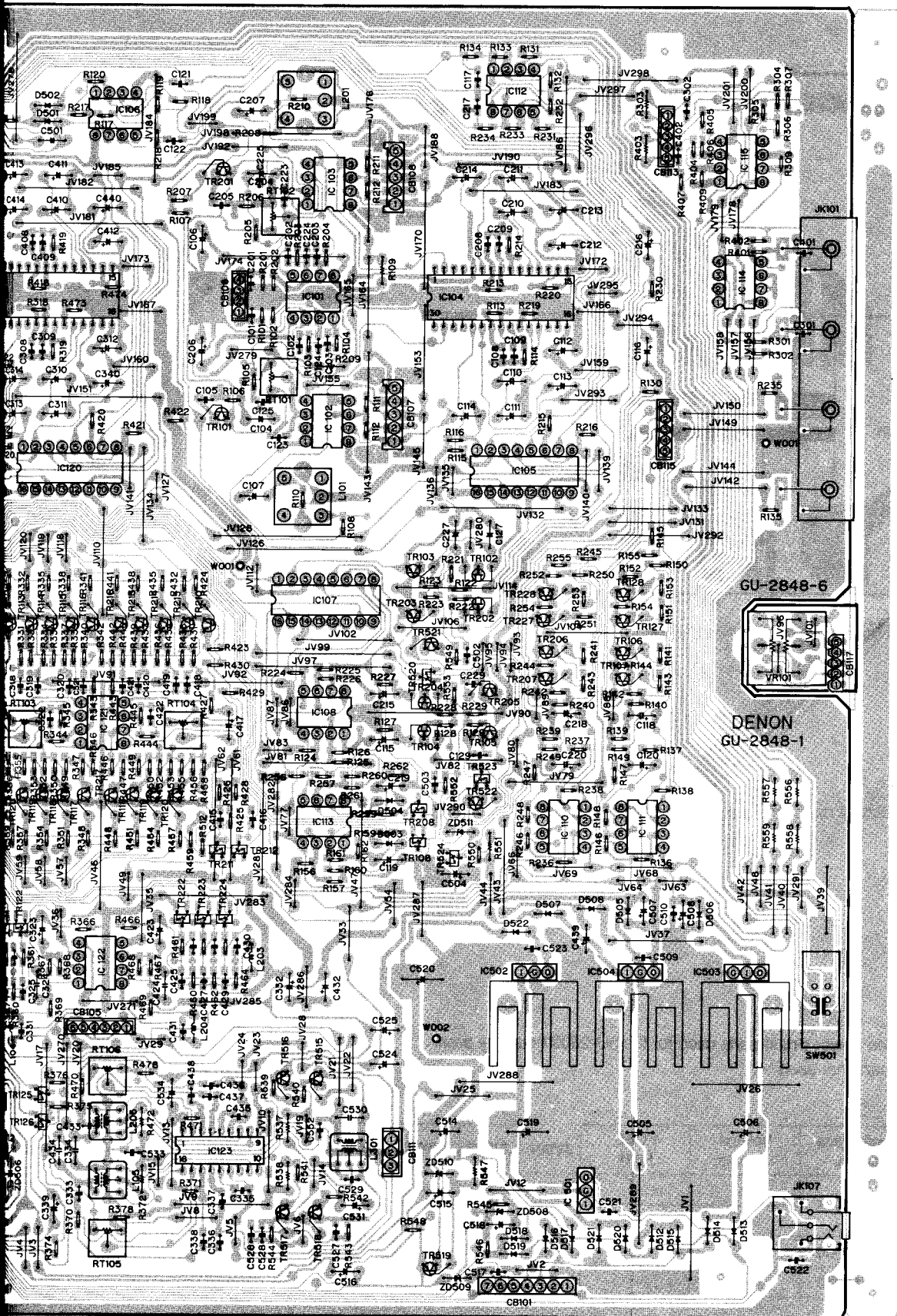
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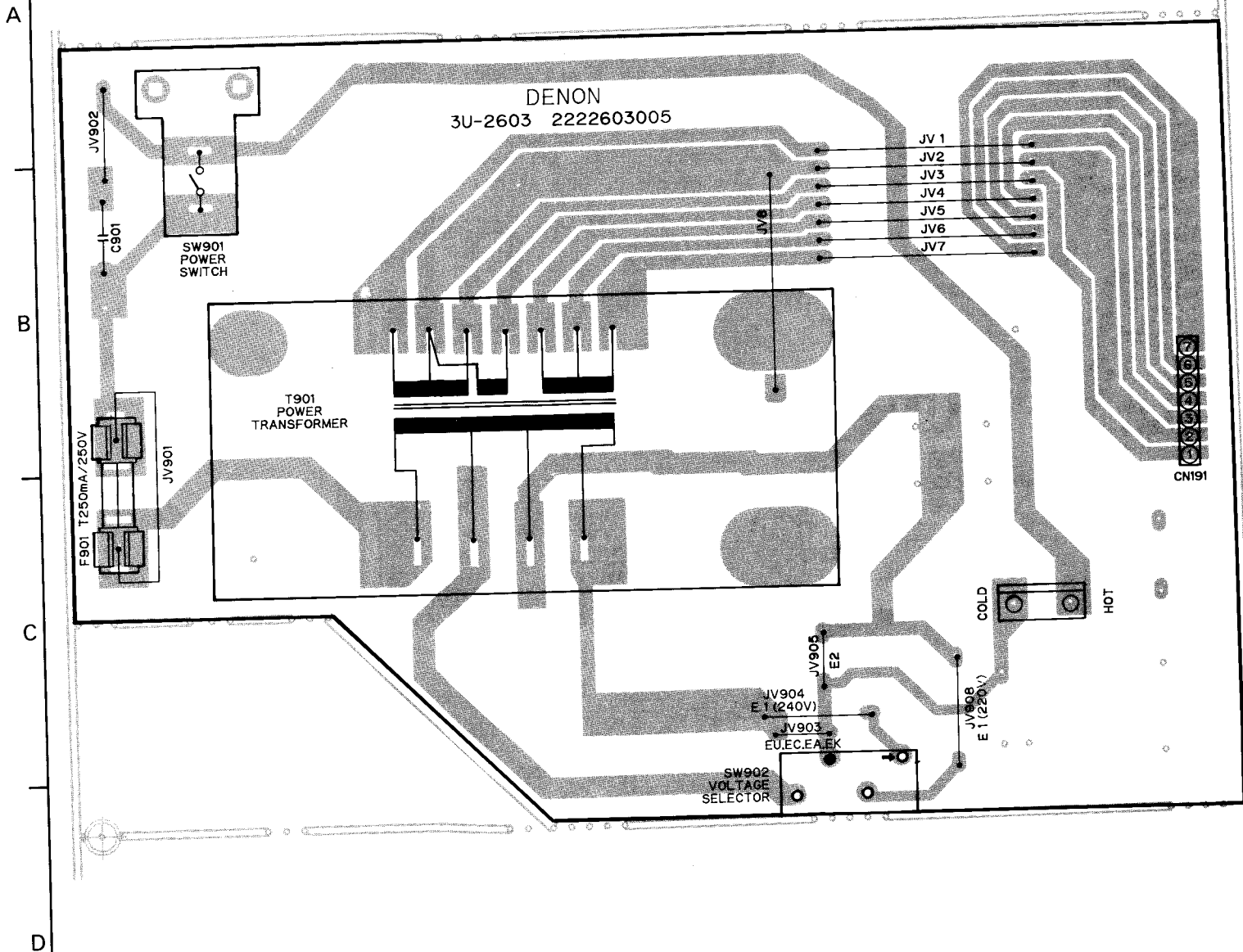
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D

E



3U-2603 POWER SUPPLY P.W.B. UNIT ASS'Y

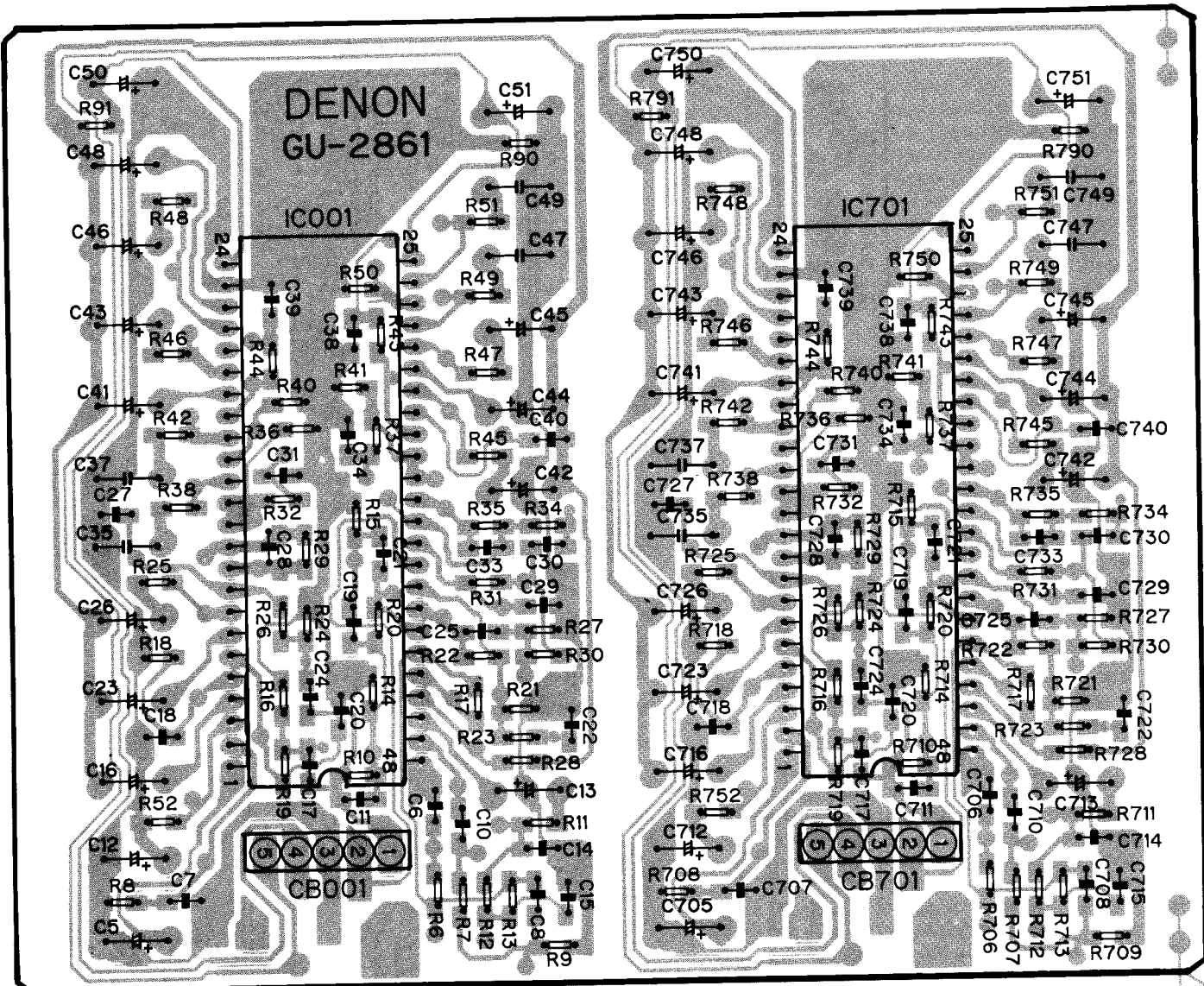


Remarks

1. The following table shows the power circuit parts used for the 3U-2603 board by area.
2. Parts used are marked ○, parts not used —.

Areas	Ref.No.	Power Trans part No.	Voltage Selector	FUSE F901	JV901	JV903	JV904	JV905	JV908
Europe (E2)	2335985005		—	—	○	—	—	○	—
U.K. (EK)			—	—	○	—	—	○	—
Multi-Voltage (E1)	2335760000		○	○	—	—	○	—	○
U.S.A. & Canada (E3)	2335758009		—	—	○	○	—	—	—

GU-2861 DOLBY S P.W.B. UNIT ASS'Y

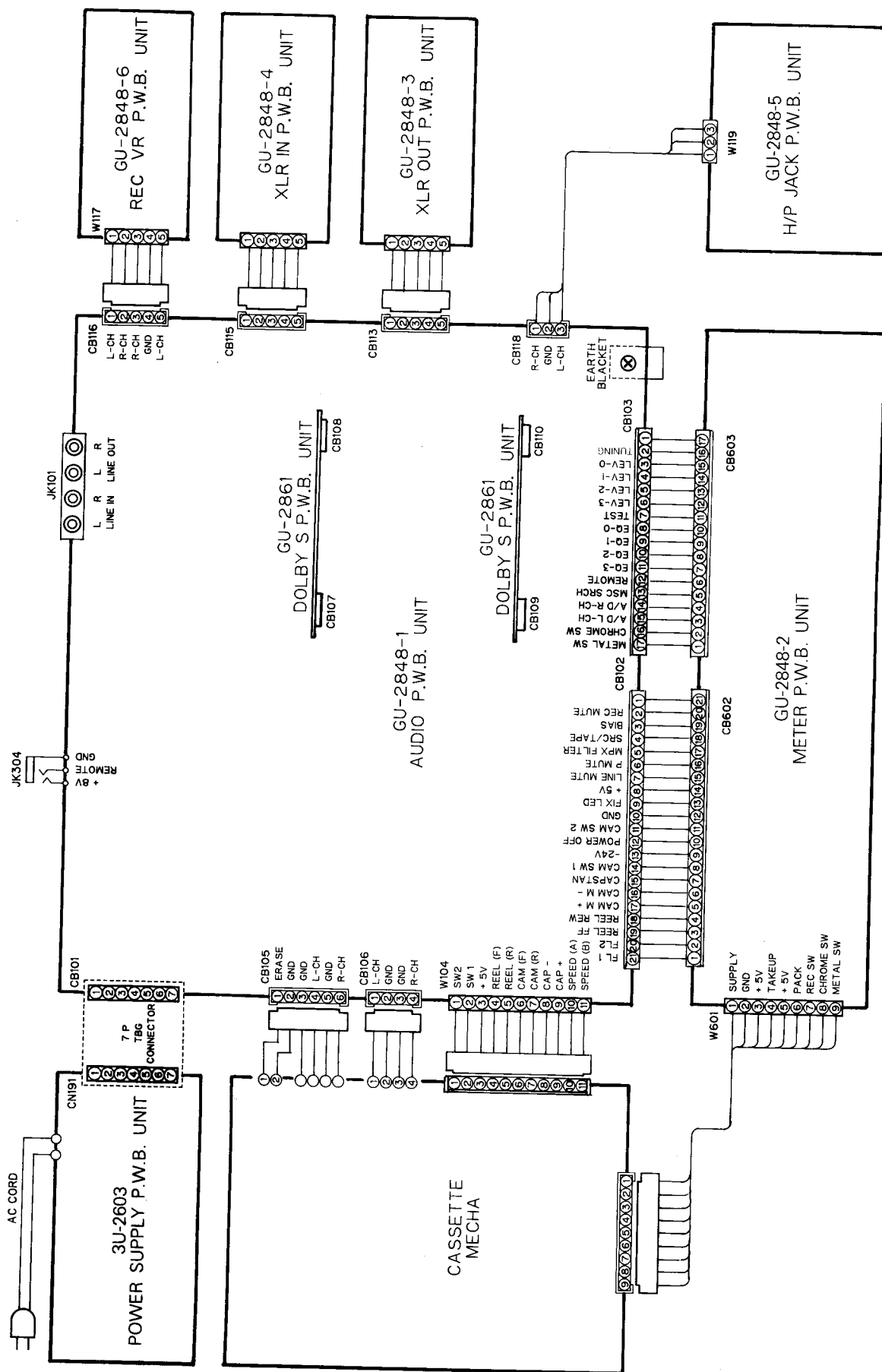


101

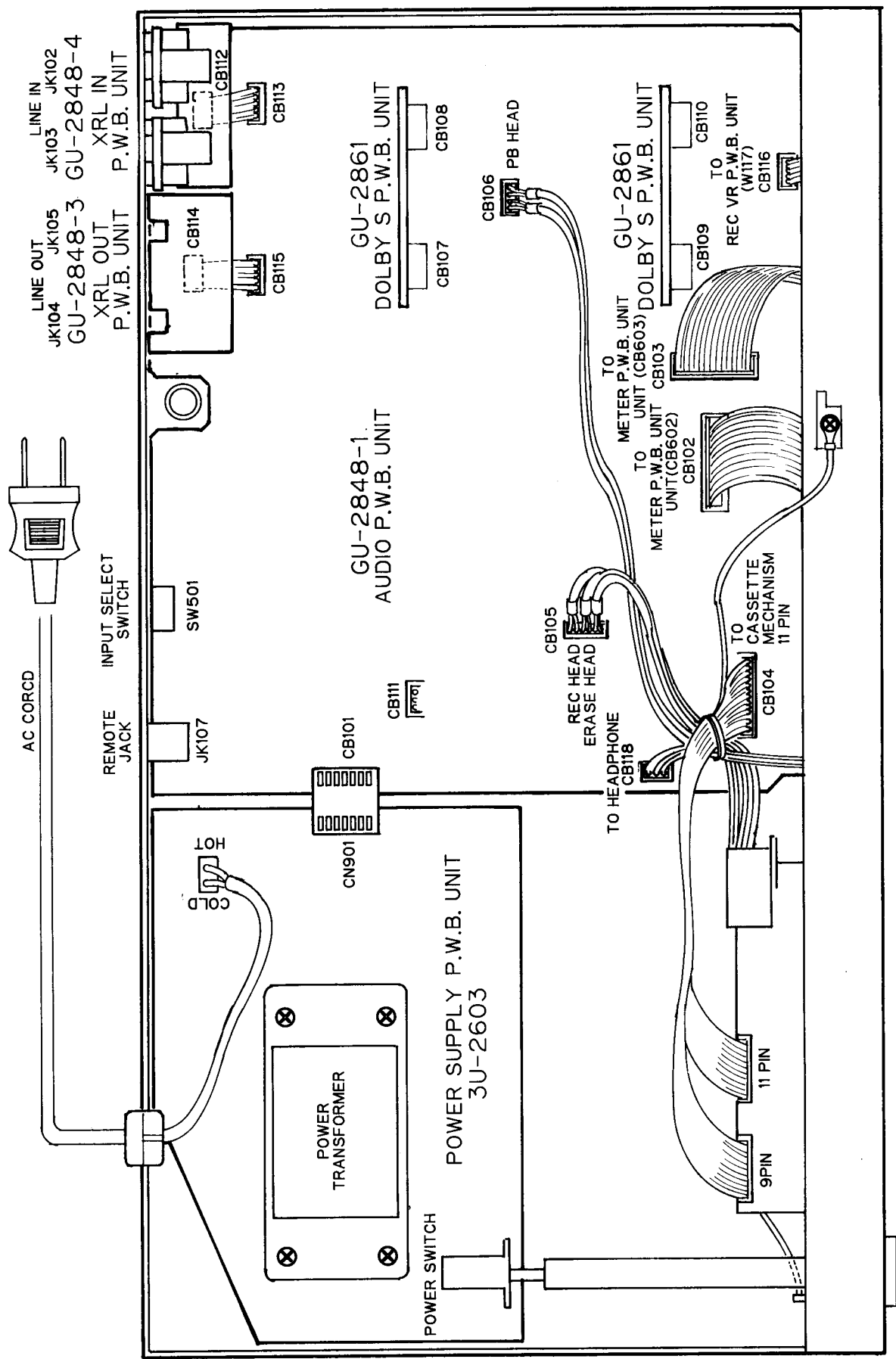
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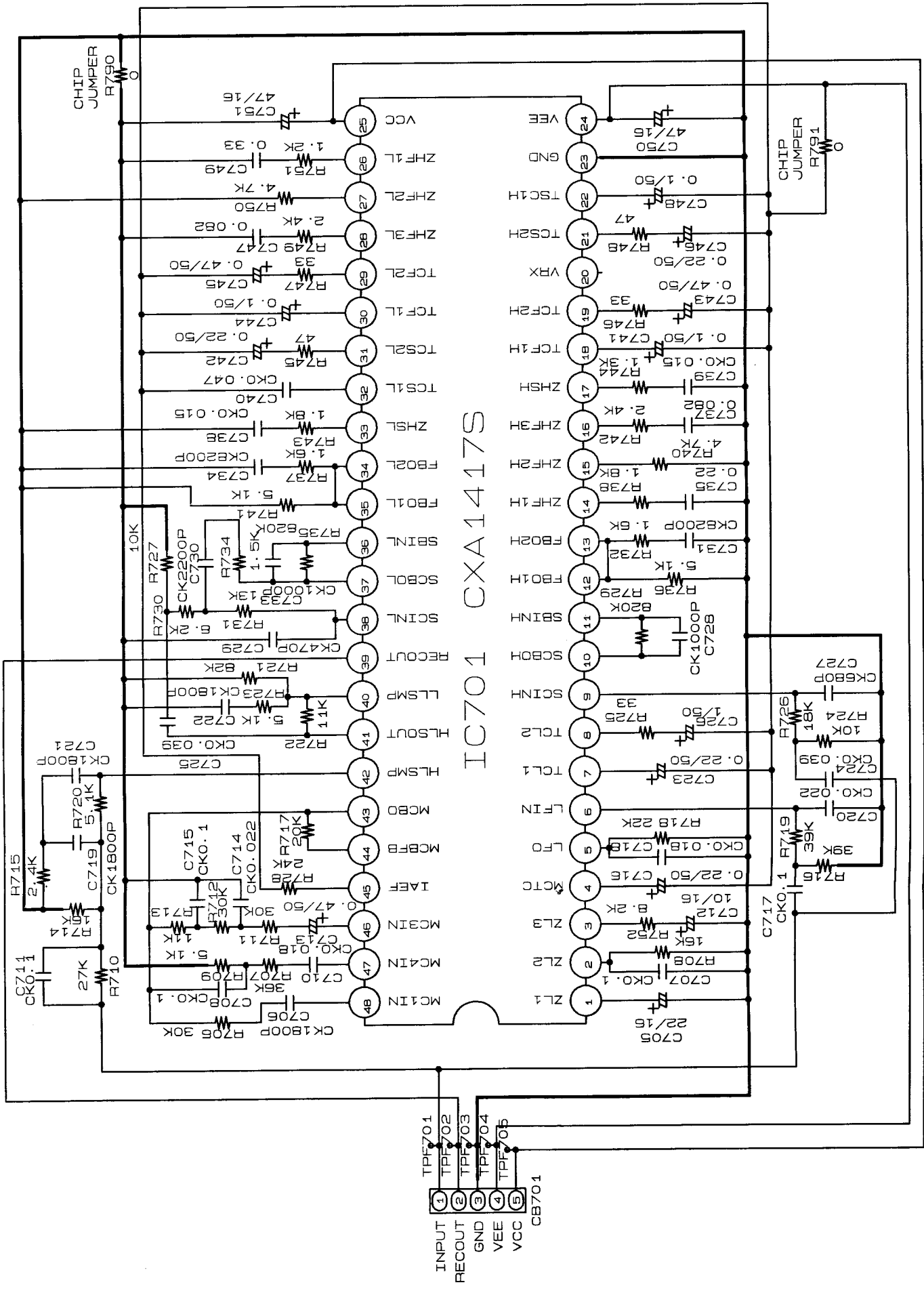
101

WIRING DIAGRAM



BUNDLE DIAGRAM

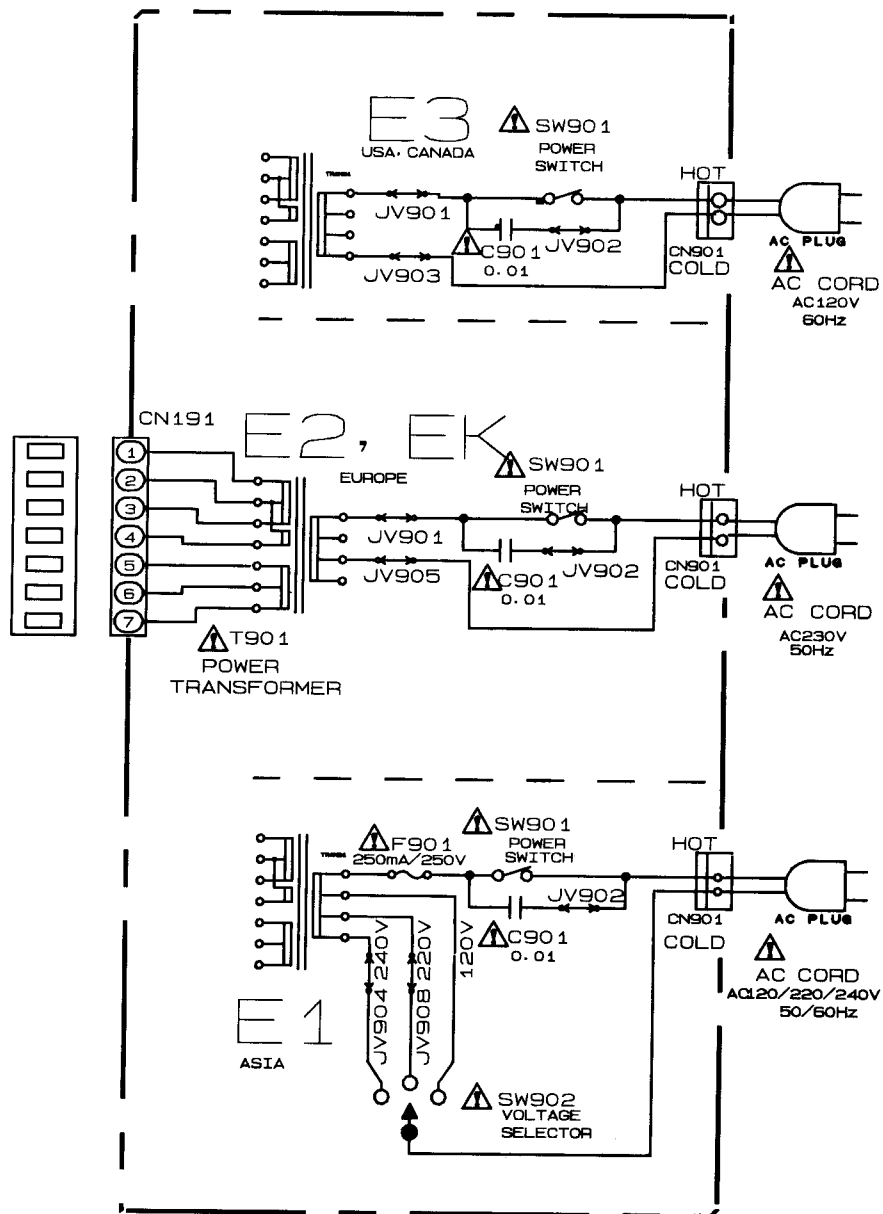




- 1 INPUT
- 2 TPF702
- 3 TPF703
- 4 TPF704
- 5 TPF705
- 6 VCC
- 7 VEE
- 8 GND
- 9 RECOUT
- 10 TPF701
- 11 CB701

IC701 CXA1417S

3U-2603 POWER SUPPLY



SCHEMATIC DIAGRAM

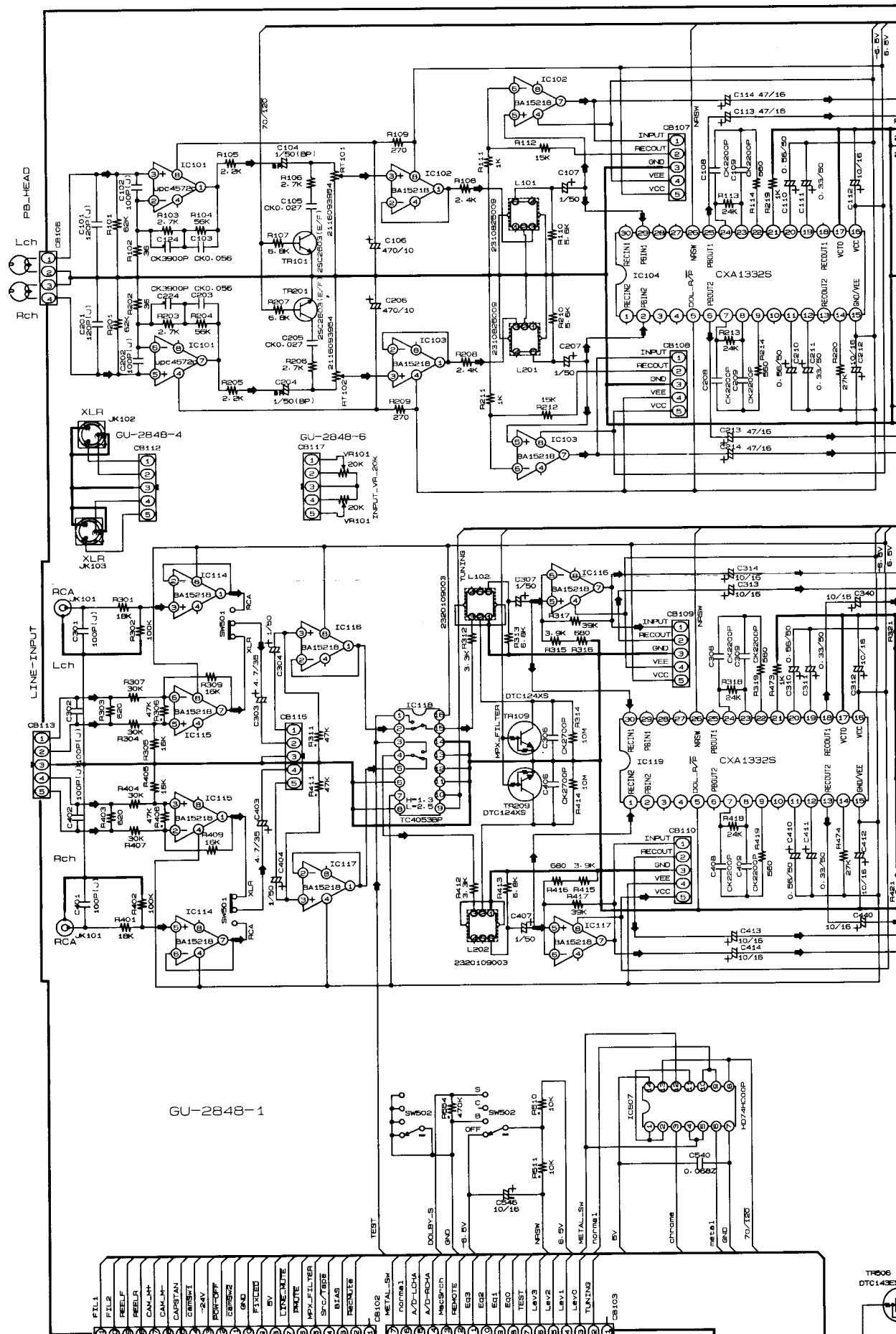
A

B

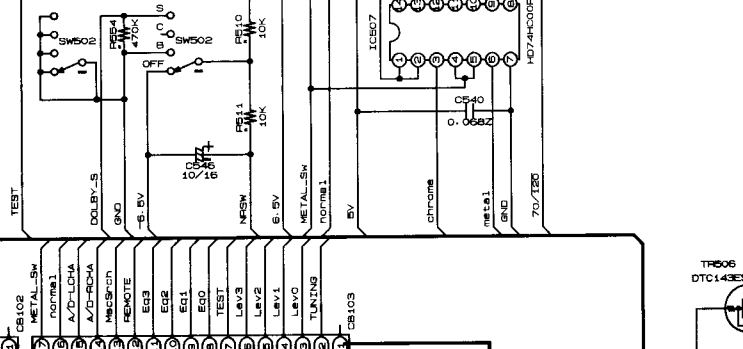
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D

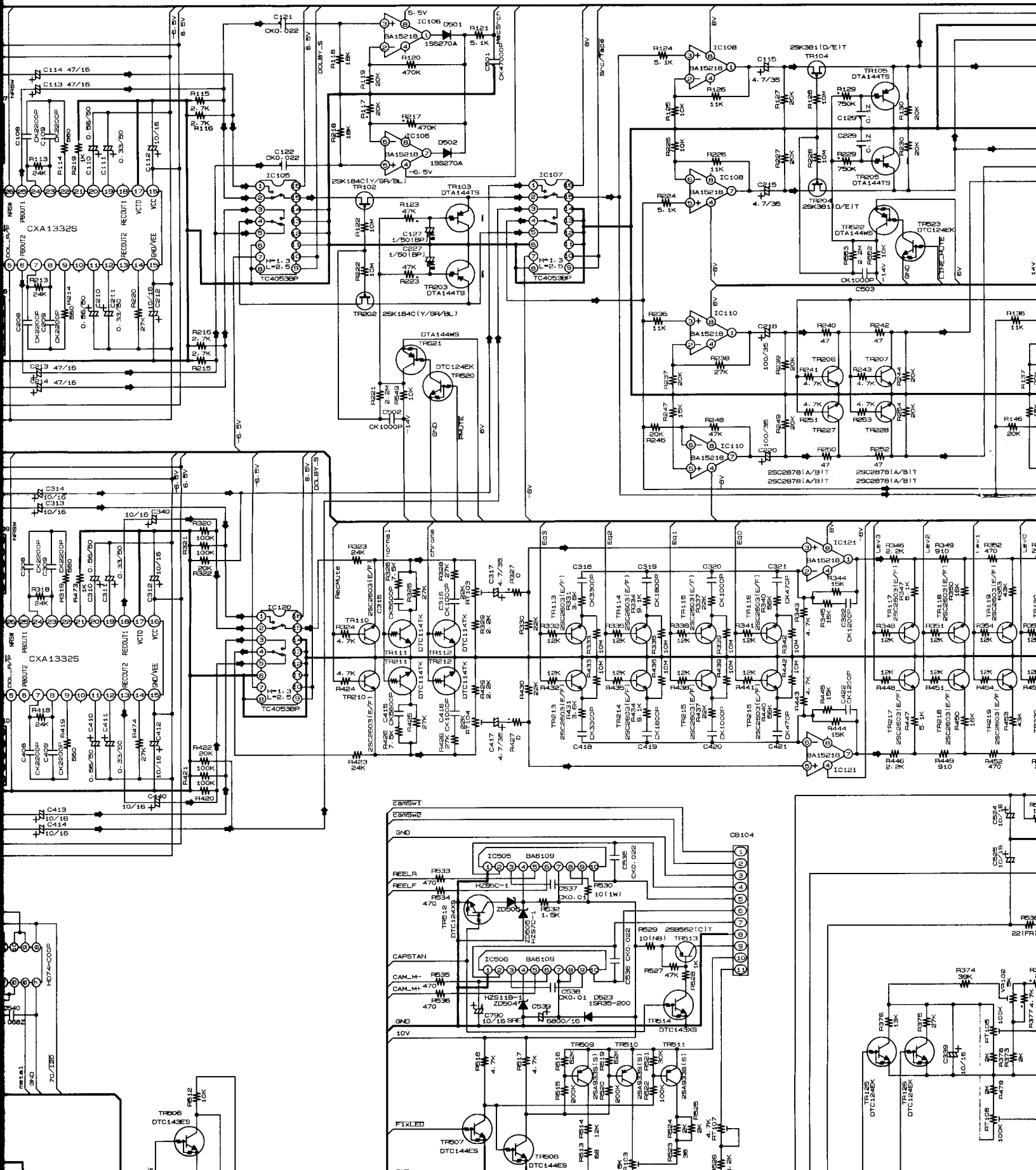
E



GU-2848-1



TR806 DTC148ES



C

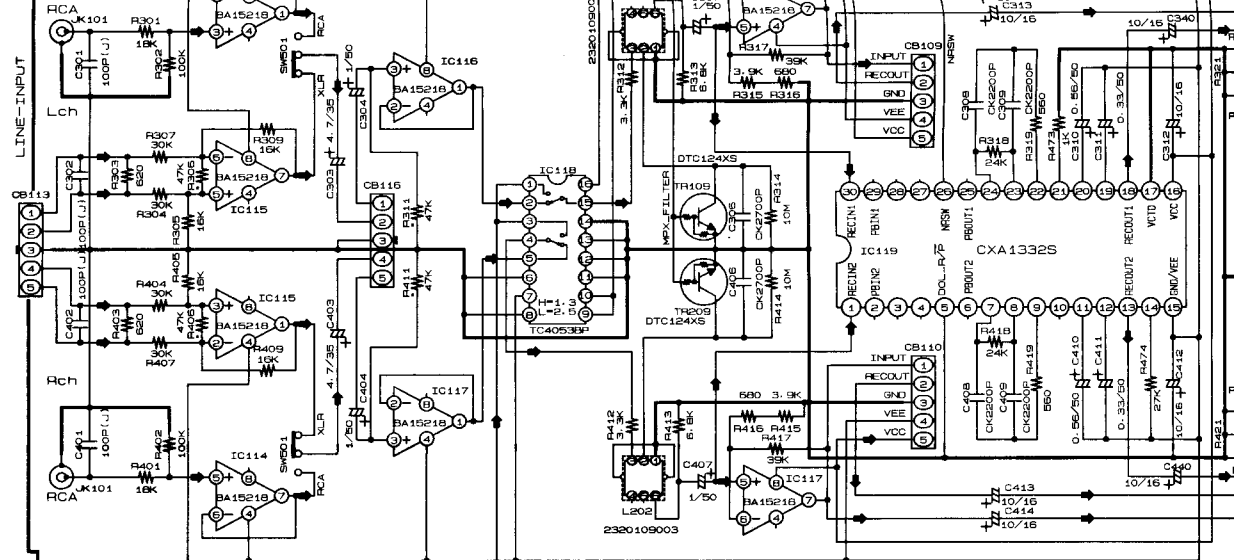
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E

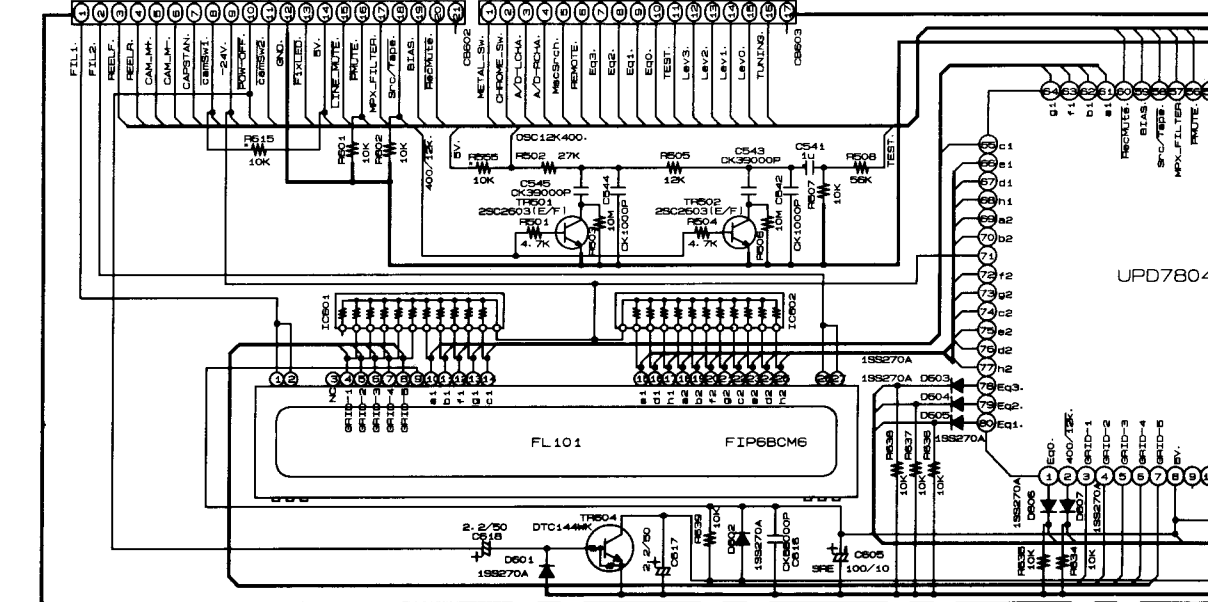
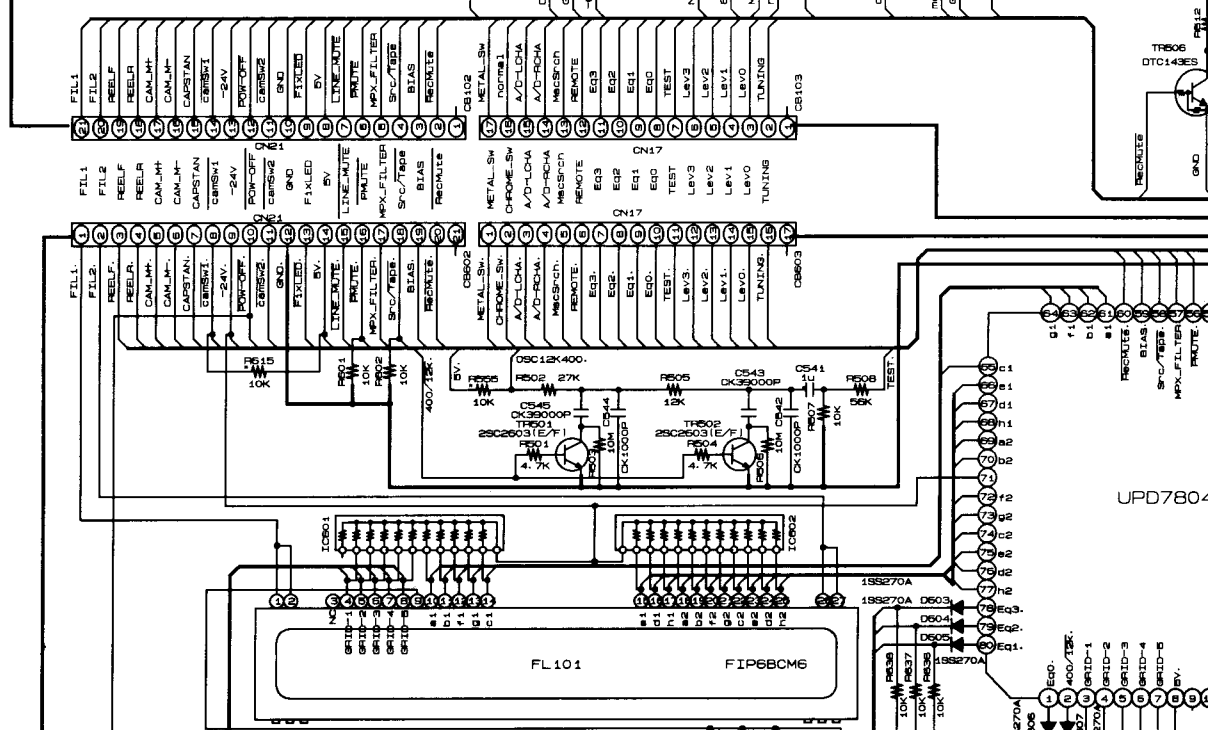
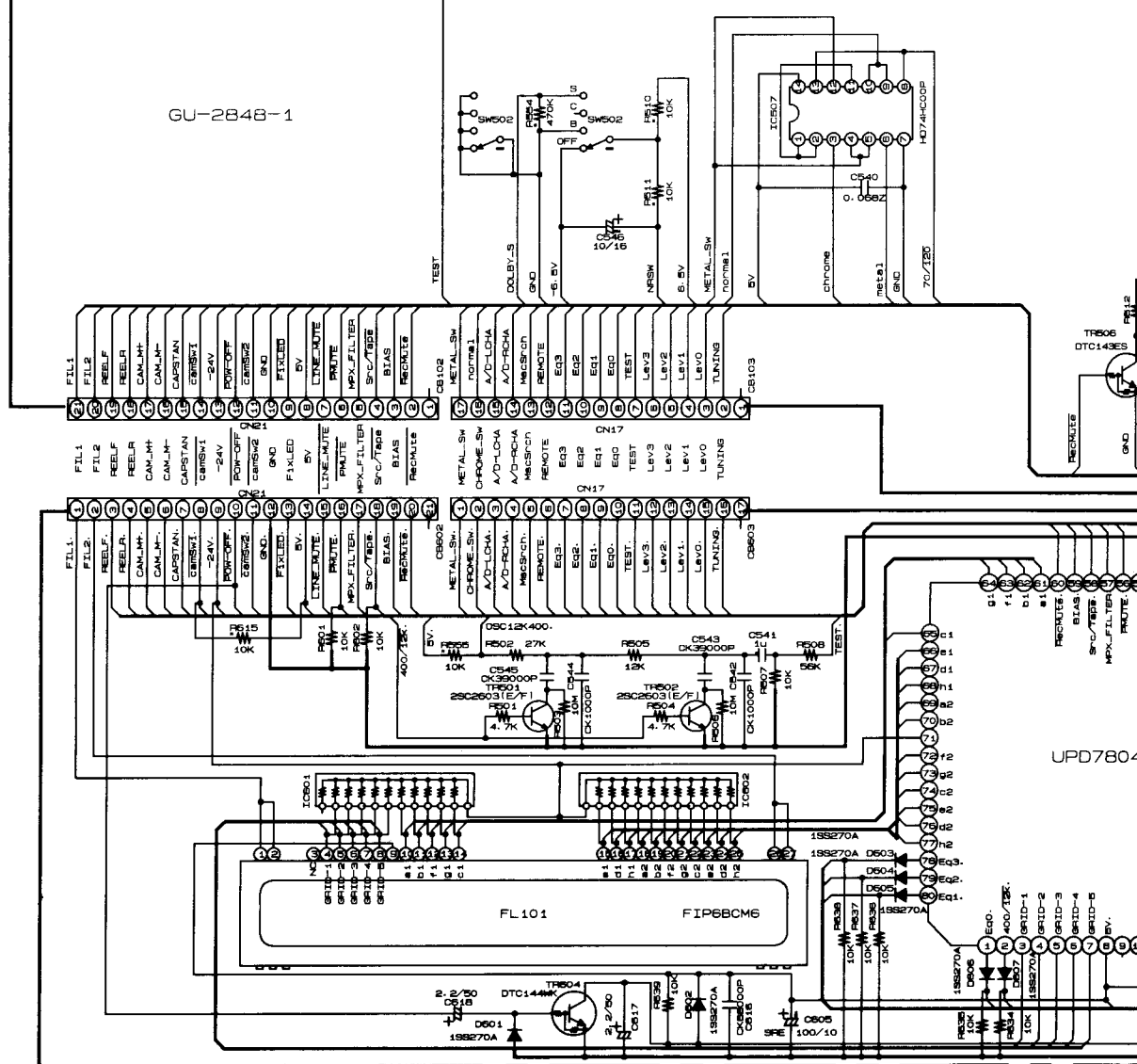
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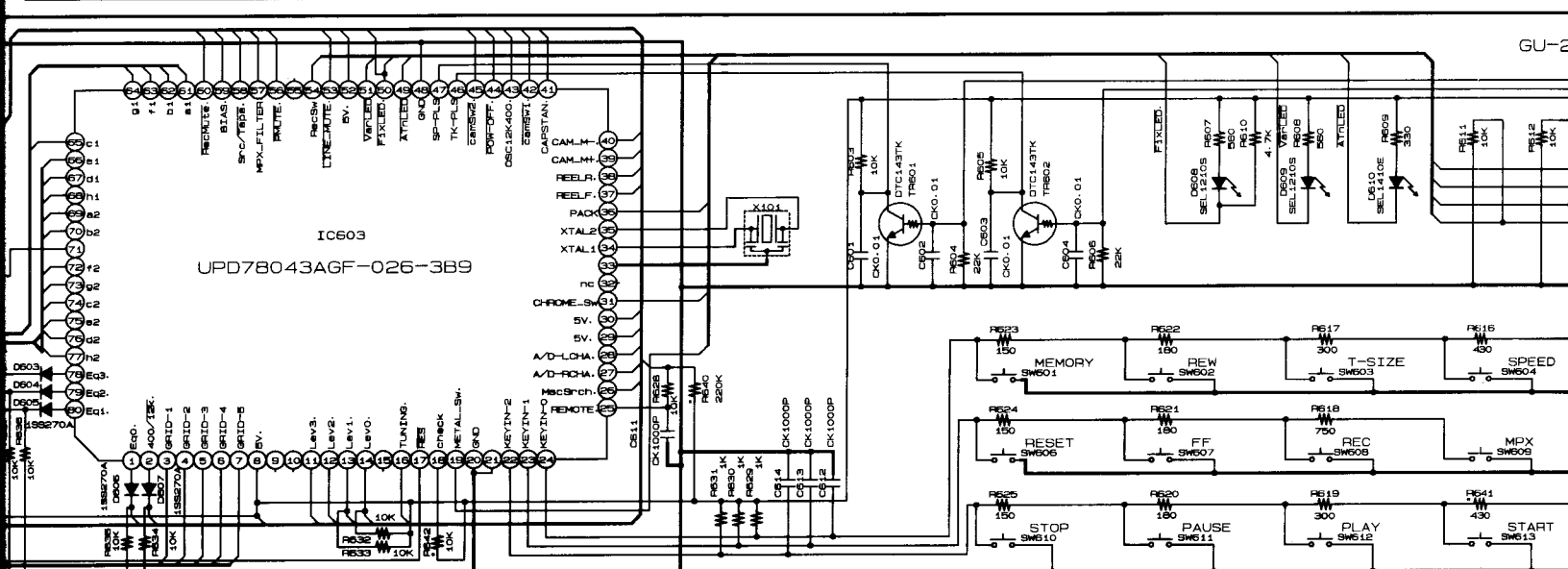
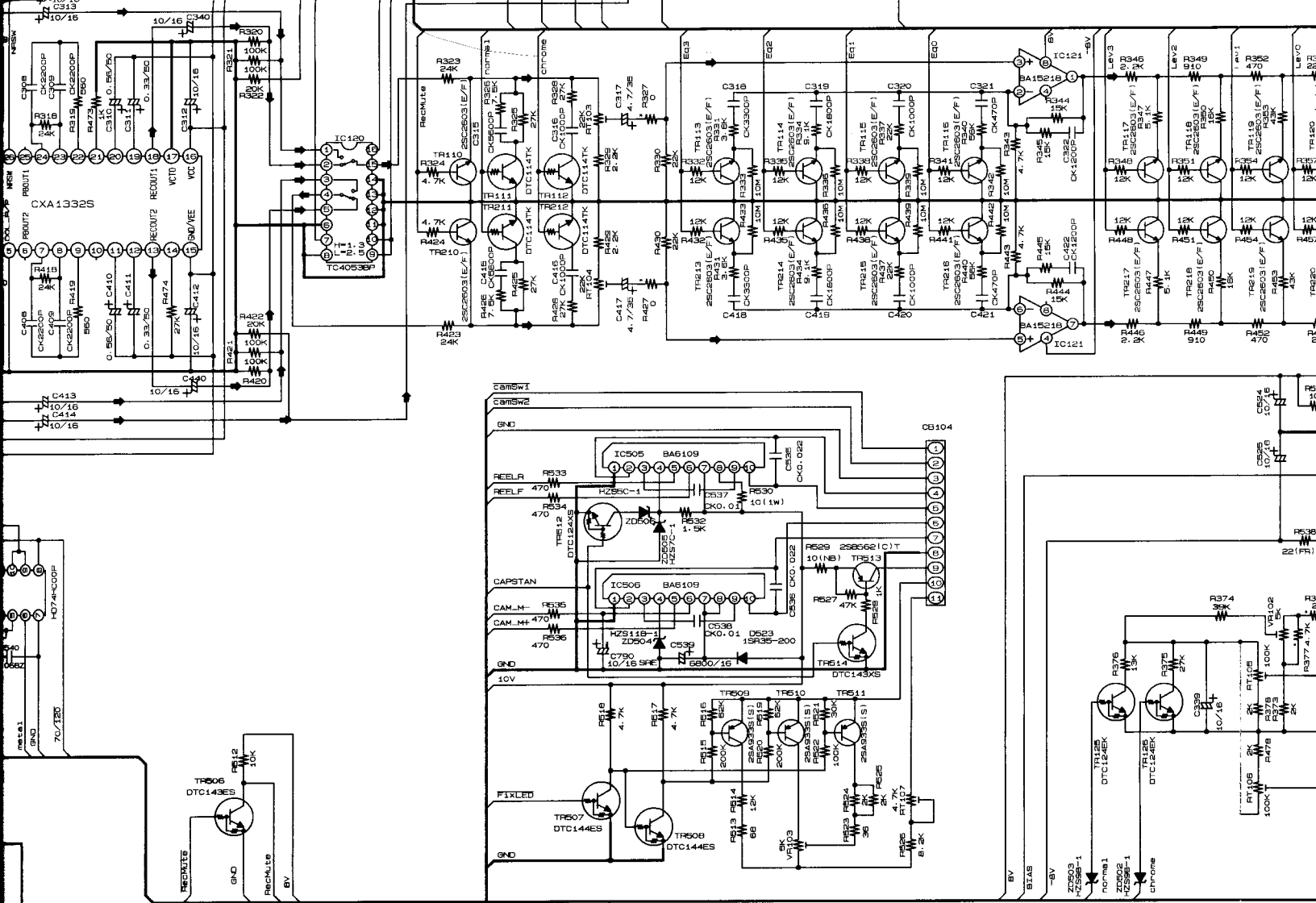
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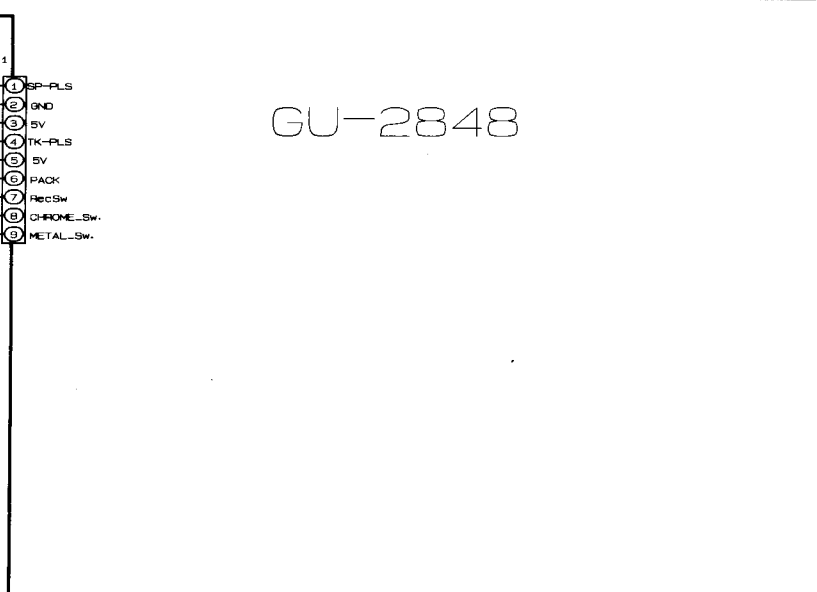
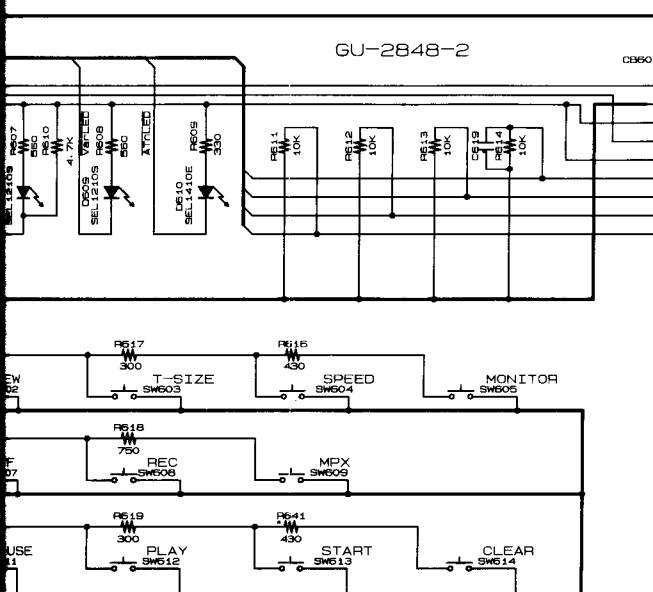
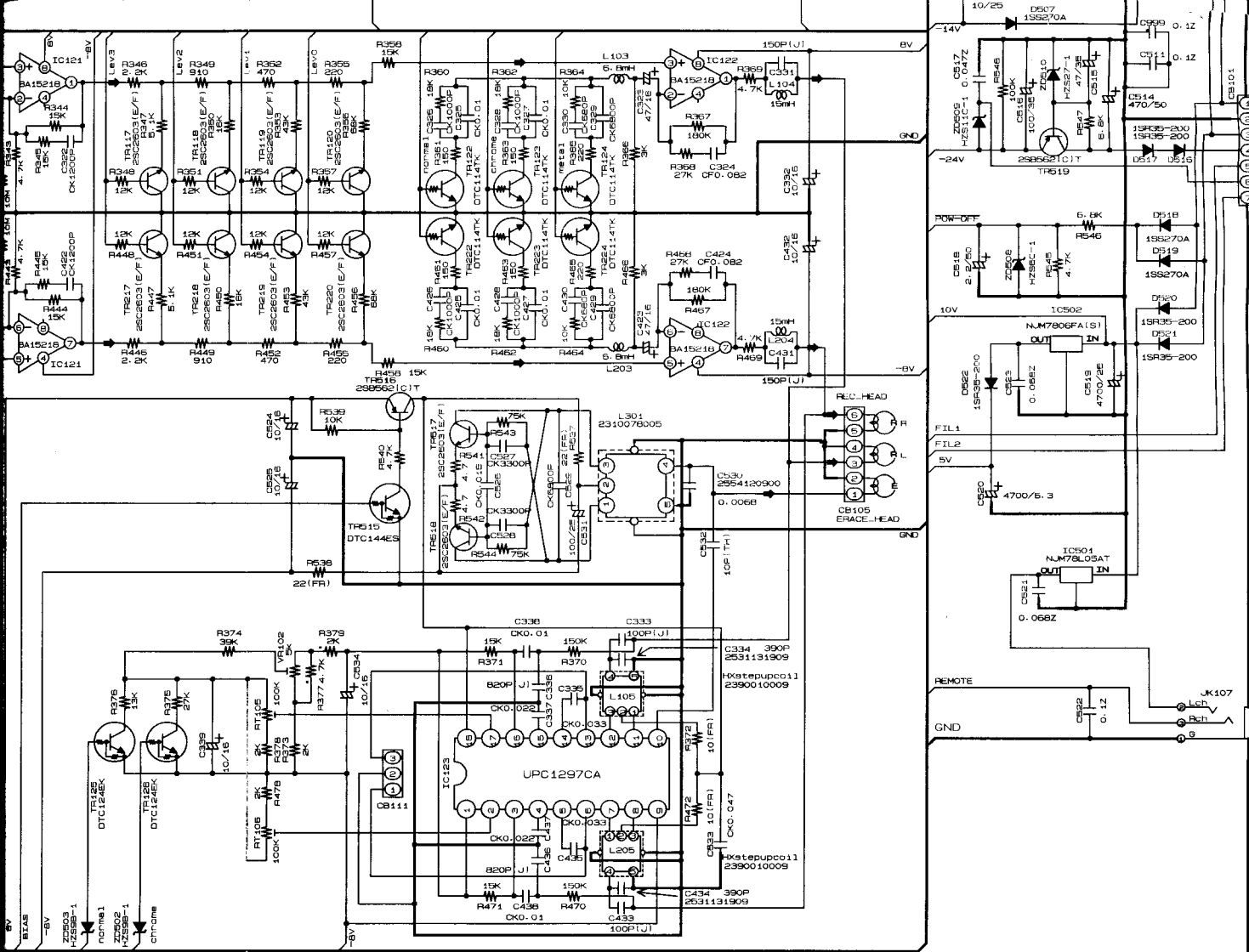


GU-2848-1






No
Par
Use



GU-2848

Note:

- Resistance shall be 1/4 W unless otherwise specified and the unit is ohm.
- The unit of capacitor is μF , P is pF unless otherwise specified.
- This circuit diagram shows the basic circuit. It is subject to change for the purpose of improvement.

Parts marked with this symbol  have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

DENON

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