

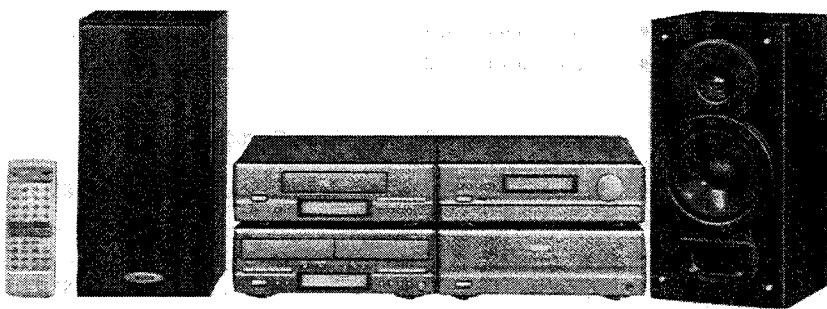
DENON

Hi-Fi Personal Component System

SERVICE MANUAL

PERSONAL COMPONENT SYSTEM

UNIT No. UTP-250 (MW, LW, FM Tuner/Pre Amplifier)



COMPACT
disc
DIGITAL AUDIO

• The D-250 Personal Component System consists of the following:

Power Amplifier	UPO-250
MW, LW, FM Tuner / Pre Amplifier Section	UTP-250
Remote Control Unit	RC-154
Cassette Deck Section	UDRW-250
CD player Section	UCD-250

MAIN FEATURES

- **AM/FM 30-station random preset tuner**
Random presetting permits easy operation and will be convenient for the increased number of FM stations in the future.
- **Independent power amplifier designed for quality sound**
High quality 50 W per channel power amplifier with large speaker terminals.
- **New SDB control**
The Super Dynamic Bass control circuit delivers clear bass sound.
- **Super linear converter and high performance digital filter**
Denon's unique systems for preventing loss of CD sound quality permit excellent sound field reproduction.
- **Editing circuit**
Automatic selection of CD tracks for minimum blank space on the tape when recording.
- **Dolby B, C and HX PRO circuits**
For high quality sound in playback and recording.
- **CD SRS circuit**
CDs can be recorded at the touch of a button.
- **Easy-to-use remote control unit**
- **Auto on/off function**
This function switches on the power with just a press of the CD or cassette deck play button. The power is switched off about 10 minutes after playback has finished.

BEFORE USING

- **Moving the system**
To prevent short-circuiting or damage of connection cords, be sure to unplug the power cord and disconnect all connection cords before moving the system.
In addition, always remove CDs before moving the system. If not, the CD may be scratched.
- **Before turning the power on**
Check again that all connections are proper and that the connection cords are not damaged. Always set the power switch to the STANDBY position before disconnecting connection cords.
- Humming may be produced if the system is set near a TV set or other audio component or its connection cords. If this happens, try changing the position of the equipment and connection cords.
- Do not move the system abruptly from a cold place to a warm place, as this may cause dew (water droplets) to form in the set, preventing proper operation. If this happens, wait one hour before using the system.
- **Be sure to keep this manual**
The illustrations used in this manual may differ from the actual system.

Check that the following parts are included in the package aside from the main unit:

① Operating Instructions	1
② FM Antenna	1
③ AM Loop Antenna	1
④ Remote Controller	1
⑤ R6P/AA batteries	2
⑥ System Connectors 1 & 2	2
⑦ FM Antenna adaptor	1
⑧ Pin Plug Cords	4

NIPPON COLUMBIA CO., LTD.

GENERAL SECTION

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Tuner Pre-Amp Unit	UTP-250	1S
Power Amplifier Unit	UPO-250	1S
CD Player Unit	UCD-250	1S
Cassette Deck Unit	UDRW-250	1S
Top Cushion	503 1002 001	1
Top Spacer	502 0763 018	1
Top Spacer	502 0763 034	1
Space Cushion	502 9124 001	2
(Master) Carton	501 1626 012	1
Envelope Sub Assy		1S
Envelope	505 8006 019	1
Notice Sheet	515 0601 008	1
Inst. Manual	511 2421 006	1
Loop Antenna	231 0922 009	1
Remocon (RC-154)	499 0228 008	1
FM Ant. Ass'y	395 0019 025	1
Envelope Sub Ass'y		1S
Envelope	505 9119 002	1
Output Cord Ass'y	009 9022 015	2

SPECIFICATIONS

- **Tuner-preamplifier (UTP-250)**
Reception Frequency Range: FM: 87.50 MHz to 108.00 MHz
AM: 522 kHz to 1611 kHz (MW), 153 kHz to 279 kHz (LW)
Receiving Sensitivity: FM: 1.5 μ V, 75 ohms (SN ratio 30 dB)
AM: 20 μ V (SN ratio 20 dB, MW), 35 μ V (SN ratio 20 dB, LW)
FM Stereo Separation: 40 dB (1 kHz)
Bass Adjustment: 100 Hz \pm 8 dB
Treble Adjustment: 10 kHz \pm 8 dB
Super Dynamic Bass: 80 Hz +8 dB
Jacks: PREOUT: Output jacks
PHONO: Input jacks
DAT: Input jacks, recording output jacks
Processor: Processor input/output jacks
270 (W) \times 86 (H) \times 330 (D) mm (10-5/8" \times 3-25/64" \times 13")
3.2 kg (7 lbs 10 oz)
Power Supply: AC 230 V, 50Hz, AC 240 V, 50Hz (for U.K. model)
Power Consumption: 18 W
 - **Amplifier (UPO-250)**
Rated Output Power: 50 W + 50 W (20 Hz to 20 kHz, 8 ohm)
Jacks: 6.3 mm headphone jack
Dimensions (max.): 270 (W) \times 96 (H) \times 330 (D) mm (10-5/8" \times 3-25/32" \times 13")
Weight: 4.1 kg (9 lbs 1 oz)
Power Supply: AC 230 V, 50Hz, AC 240 V, 50Hz (for U.K. model)
Power Consumption: 140 W
 - **CD Player (UCD-250)**
Wow and Flutter: Below measurable limits (\pm 0.001% W. Peak)
Sampling Frequency: 44.1 kHz
Light Source: Semiconductor
Dimensions (max.): 270 (W) \times 86 (H) \times 313 (D) mm (10-5/8" \times 3-25/64" \times 12-21/64")
Weight: 3.1 kg (6 lbs 13 oz)
Power Supply: AC 230 V, 50Hz, AC 240 V, 50Hz (for U.K. model)
Power Consumption: 15 W
 - **Cassette Deck (UDRW-250)**
Type: Horizontal 4-track, 2-channel auto reverse stereo cassette deck
Heads: 1 hard permalloy recording/playback head, 1 hard permalloy playback head,
and 1 double-gap ferrite erase head
Tape Speed: 4.75 cm/s
Noise Reduction Circuits: Dolby B and C NR
Usable Tapes: Normal, chrome, and metal tapes
Dimensions (max.): 270 (W) \times 96 (H) \times 318 (D) mm (10-5/8" \times 3-25/32" \times 12-33/64")
Weight: 4.4 kg (9 lbs 11 oz)
Power Supply: AC 230 V, 50Hz, AC 240 V, 50Hz (for U.K. model)
Power Consumption: 18 W
 - **Remote Control Unit (RC-154)**
Type: Infrared pulse
Number of Buttons: 41 (including 1 slide switch)
Dimensions (max.): 60 (W) \times 177 (H) \times 18 (D) mm (20-23/64" \times 6-31/32" \times 45/64")
Weight: 130 g (Approx. 6.4 oz) (including batteries)
- * Maximum dimensions include controls, jacks, and covers. (W) = width, (H) = height, (D) = depth
• For improvement purposes, specifications and functions are subject to change without advanced notice.

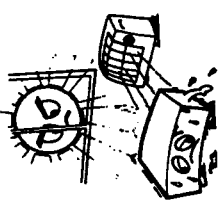
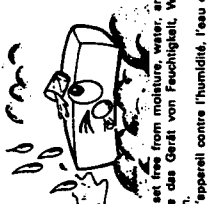

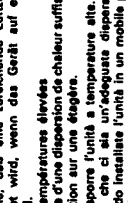



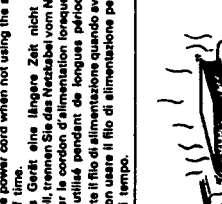
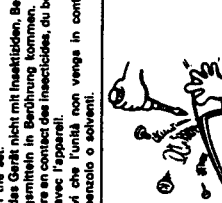
ADVARSEL: USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSAETTELSE FOR STRÅLING.

VARO! AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

VARNING - OSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.

GENERAL SECTION

NOTE ON USE/HINWEISE ZUM GEBRAUCH/OBSERVATIONS RELATIVES A L'UTILISATION/NOTE SULL'USO

 <ul style="list-style-type: none"> • Avoid high temperatures • Allow for sufficient heat dispersion when installed on a rack. • Beachten Sie hohe Temperaturen • Beachten Sie, daß eine ausreichende Luftzirkulation gewährleistet wird, wenn das Gerät auf ein Regal gestellt wird. • Eviter des températures élevées • Tenir compte d'une dispersion de chaleur suffisante lors de l'installation sur une étagère. • Evitare di esporre l'unità a temperature alte. • Assicurarsi che ci sia un'adeguata dispersione del calore quando si installa l'unità in un mobile per componenti audio. 	 <ul style="list-style-type: none"> • Keep the set free from moisture, water, and dust. • Halten Sie das Gerät von Feuchtigkeit, Wasser und Staub fern. • Protéger l'appareil contre l'humidité, l'eau et la poussière. • Tenete l'unità lontana dall'umidità, dall'acqua e dalla polvere. 	 <ul style="list-style-type: none"> • Do not let foreign objects in the set. • Keine fremden Gegenstände in das Gerät kommen lassen. • Ne pas laisser des objets étrangers dans l'appareil. • È importante che nessun oggetto è inserito all'interno dell'unità.
 <ul style="list-style-type: none"> • Unplug the power cord when not using the set for long periods of time. • Wenn das Gerät eine längere Zeit nicht verwendet wird, ziehen Sie das Netzstecker heraus. • Débranchez le cordon d'alimentation de l'appareil n'est pas utilisé pendant de longues périodes. • Disinnestare il filo di alimentazione quando avete finenzione di non usare il filo di alimentazione per un lungo periodo di tempo. 	 <ul style="list-style-type: none"> • Do not obstruct the ventilation holes. • Die Belüftungsdürrungen dürfen nicht verdeckt werden. • Ne pas obstruer les trous d'aération. • Non coprire i fori di ventilazione. 	 <ul style="list-style-type: none"> • Do not let insecticides, benzene, and thinner come in contact with the set. • Lassen Sie das Gerät nicht mit Insektiziden, Benzin oder Verdünnungsmitteln in Berührung kommen. • Ne pas mettre en contact des insecticides, du benzène et un diluant avec l'appareil. • Assicurarsi che l'unità non venga in contatto con insetticidi, benzolo o solventi.
 <ul style="list-style-type: none"> • Handle the power cord carefully. • Hold the plug when unplugging the cord. • Gehen Sie vorsichtig mit dem Netzstecker um. • Halten Sie das Kabel am Stecker, wenn Sie den Stecker herausziehen. • Manipuler le cordon d'alimentation avec précaution. • Tenir la prise lors du débranchement du cordon. • Maneggiare il filo di alimentazione con cura. • Agire per la spina quando scollegate il cavo dalla presa. 	 <ul style="list-style-type: none"> • Never disassemble or modify the set in any way. • Versuchen Sie niemals das Gerät auseinander zu nehmen oder auf jegliche Art zu verändern. • Ne jamais démonter ou modifier l'appareil d'une manière ou d'une autre. • Non smontare mai, né modificare l'unità in nessun modo. 	 <ul style="list-style-type: none"> • Do not let insecticides, benzene, and thinner come in contact with the set. • Lassen Sie das Gerät nicht mit Insektiziden, Benzin oder Verdünnungsmitteln in Berührung kommen. • Ne pas mettre en contact des insecticides, du benzène et un diluant avec l'appareil. • Assicurarsi che l'unità non venga in contatto con insetticidi, benzolo o solventi.

SAFETY IMPORTANT

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

(UTP-250 only)

IMPORTANT
(BRITISH MODEL ONLY)
The wires in this mains lead are coloured in accordance with the following code:
Blue: Neutral
Live

The colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows.
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

CLASS 1 LASER PRODUCT
LICKSÄM
KLASS 1 LASERAPPARAT
ADVARESEL: UBYNUG LASERSTRÅLING VED ÅBNING. NÅR SKRIVHEDSBEVØDRE ER UDE AF FUNKTION. UNDGA UDSTRÆLSELSE FOR STRÅLING.
VAROITUSI: LAITTEEN KÄYTTÄMINEN MUULLA KUIN TÄSSÄ KÄYTTÖOHJEISSA MAINUTULLA TAVALLA SAATTAÄÄNÄ KÄYTTÄÄNÄ TURVALLISUUSLUOKAN 1 LASERIN VÄLTTÄMÄLLÄ MÄKIVÄLTTÄMÄLLÄ LASERISÄTEILYLLE.
VARNING: ÖMÄ APPARATEN ANVÄNDAS PÅ ANMÄT SÄTT AN I DENNA INSTRUKTIONEN. ÖMÄ ANVÄNDNINGEN UTSÄTTAS FÖR ÖVERSKEDIG LASERSTRÅLING. ÖVERSENDER GRÄNSER FÖR LASERKLASS 1.



Irregularities
• If the system should smoke or produce strange smells, immediately set the power switch to the STANDBY position, unplug the power cord, and contact your store of purchase.
Unregelmäßigkeiten
• Sollte das Gerät Rauch produzieren oder eigenartig riechen, stellen Sie den Netzschalter sofort auf die Position STANDBY (Bereitschaft), ziehen Sie den Netzstecker heraus und kontaktieren Sie Ihren Händler.

Anomalies
• Si de la fumée sort de la chaîne ou des odeurs bizarres, placer l'interrupteur d'alimentation immédiatement sur la position de veille (STANDBY), débrancher le cordon d'alimentation et contacter le distributeur.

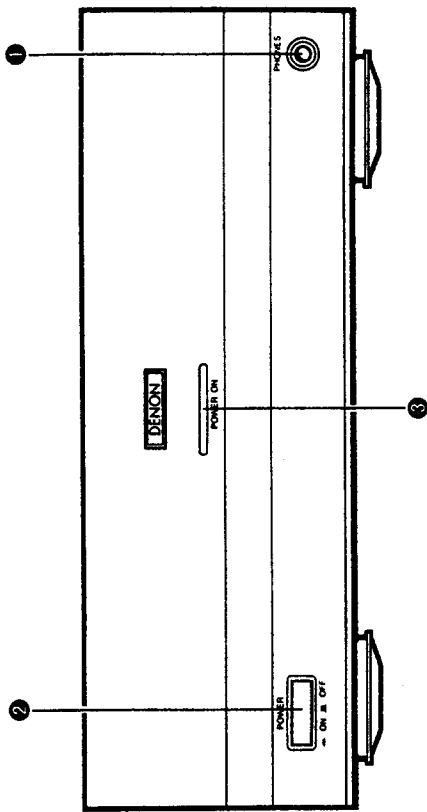
Irregolarità
• Quotora il sistema dovesse produrre del fumo o degli odori strani, collocare immediatamente l'interruttore di accensione nella posizione STANDBY, disinnestare il filo di alimentazione e rivolgetevi al negozio dell'acquisto.

"SERIAL NO.
PLEASE RECORD UNIT SERIAL NUMBER ATTACHED TO THE REAR OF THE CABINET FOR FUTURE REFERENCE"

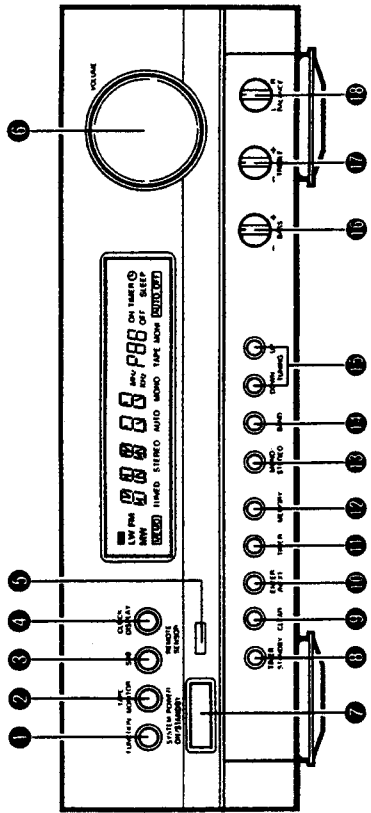
GENERAL SECTION

FRONT PANEL/FRONTPLATTE/PANNEAU AVANT/PANNELLO ANTERIORE

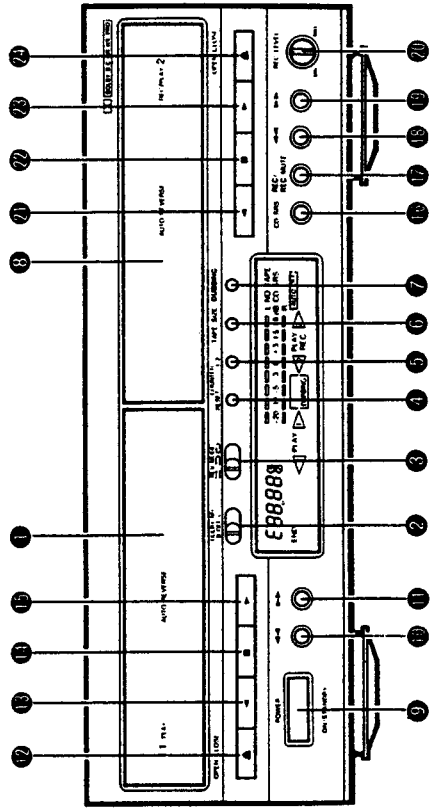
POWER AMPLIFIER
LEISTUNGSVERSTÄRKER
AMPLIFICATEUR DE PUISSANCE
AMPLIFICATORE DI POTENZA



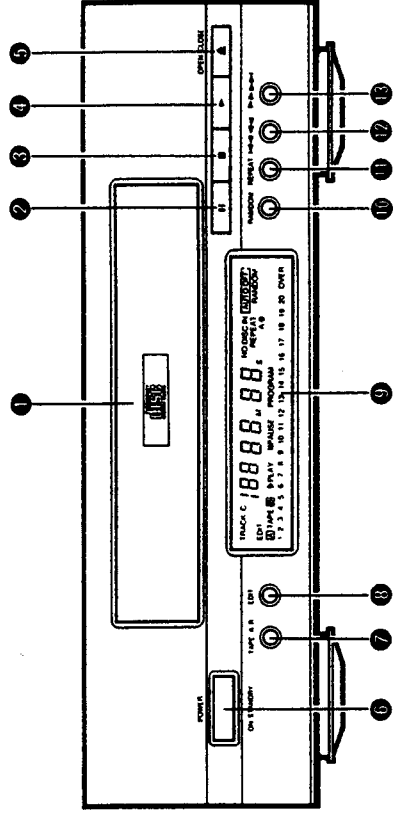
TUNER-PREAMPLIFIER
TUNER-VORVERSTÄRKER
TUNER-PREAMPLIFICATEUR
SINTONIZZATORE-PREAMPLIFICATORE



CASSETTE DECK
CASSETTENDECK
PLATINE CASSETTE
PIASTRA A CASSETTE



CD PLAYER
CD-SPIELER
LECTEUR CD
DISPLAY DELLA PIASTRA A CASSETTE



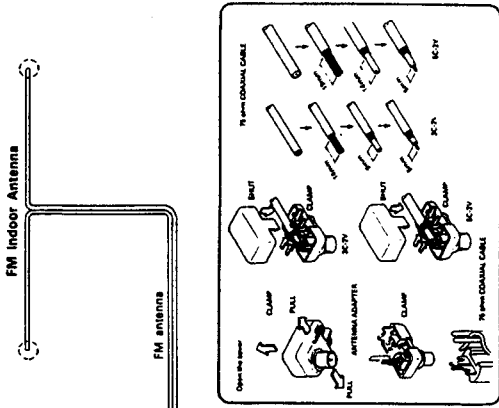
- As an aid to better understanding the operation method, the illustrations used in this manual may differ from the actual system.
- Als Hilfestellung zum besseren Verständnis der Betriebsmethode, erlauben wir uns den Hinweis, daß sich die Abbildungen in dieser Bedienungsanleitung leicht von dem aktuellen System unterscheiden.
- Pour faciliter la compréhension de la méthode de fonctionnement, les illustrations utilisées dans ce manuel peuvent être différentes de celles de la chaîne réelle.
- Per rendere la spiegazione del metodo operativo più facile, le illustrazioni usate in questo libretto delle istruzioni possono differire dal sistema stesso.

GENERAL SECTION

3 ANTENNA CONNECTIONS

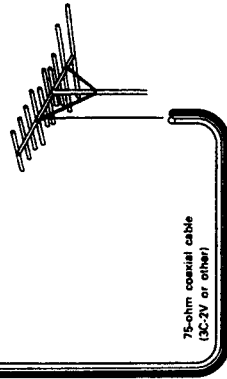
Connecting the Included Antennas

AM Loop Antenna
 Assemble the included AM loop antenna as shown in the diagram, separate it as far from the system as possible, and place it in a position that provides the best reception. In some cases, reception is better if the polarities of the connections are reversed. AM broadcasts will not be received well if the loop antenna is not connected or if it is connected but is located near a metal part. Attach the loop antenna even when using an outdoor AM antenna.

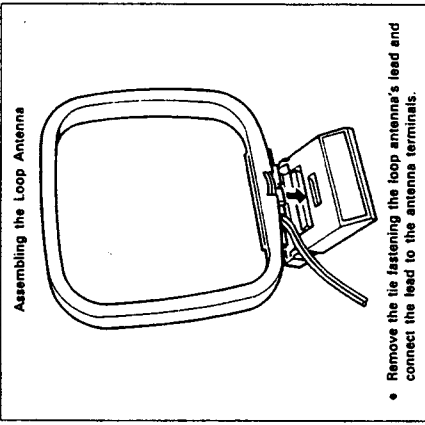


Connecting an Outdoor Antenna

Use an outdoor antenna if reception cannot be heard clearly with the included antenna. Change the location, height, and direction of the antenna to find the position of best reception, then fix the antenna in that position.



- Connect the outdoor antenna using 75-ohm coaxial cable. This will help shield the antenna from external noise.
- **Places for Installing Outdoor Antennas**
 - Install the outdoor antenna facing a broadcast station's transmission antenna.
 - When surrounded by buildings or hills, place the antenna in the location which provides best reception and try changing the direction of the antenna to obtain optimum reception.
 - Do not install the antenna under power lines.
 - It is extremely dangerous for the antenna to come into contact with a power line.
 - Install away from roads and train tracks to prevent noise from cars and trains.
 - Do not install the antenna too high, as it may be hit by lightning.



- Separate the FM and AM antenna wires from the system connector wires.

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Check that the following parts are included in the package aside from the main unit:

- 1 Operating Instructions
- 2 FM Antenna
- 3 AM Loop Antenna
- 4 Remote Controller
- 5 RBP/AA Batteries
- 6 System Connectors 1 & 2
- 7 FM Antenna Adaptor
- 8 Pin Plug Cords

1 MAIN FEATURES

- **AM/FM 30-station random preset tuner**
 Random presetting permits easy operation and will be convenient for the increased number of FM stations in the future.
- **Independent power amplifier designed for quality sound**
 High quality 50 W per channel power amplifier with large speaker terminals.
- **New SDB control**
 The Super Dynamic Bass control circuit delivers clear bass sound.
- **Super linear converter and high performance digital filter**
 Denon's unique systems for preventing loss of CD sound quality permit excellent sound field reproduction.
- **Editing circuit**
 Automatic selection of CD tracks for minimum blank space on the tape when recording.
- **Dolby B, C and HX PRO circuits**
 For high quality sound in playback and recording.
- **CD SRS circuit**
 CDs can be recorded at the touch of a button.
- **Easy-to-use remote control unit**
- **Auto on/off function**
 This function switches on the power with just a press of the CD or cassette deck play button. The power is switched off about 10 minutes after playback has finished.
- **Hum may be produced if a TV set or another audio component is set near this system or their connection cords are nearby.** If this happens, try changing the position of the equipment and connection cords.
- **Do not move the system abruptly from a cold place to a warm place, since this may cause water droplets (condensation) to form in the equipment, preventing proper operation.** If this happens, wait one hour before using the system.

2 BEFORE USING

- **Note the following points before using the D-250.**
- **Moving the system**
 To prevent short-circuiting or damage of the connection cords, be sure to unplug the power cord and disconnect all connection cords before moving the system.
- **In addition, always remove CDs before moving the system.** Failing to do so may result in scratched CDs.
- **Before switching on the power**
 Check again that all connections are proper and that the connection cords are not damaged. Be sure to disconnect the power plug before disconnecting or connecting the connection cords.

GENERAL SECTION

4 CONNECTIONS

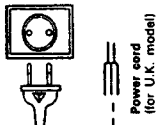
AC OUTLET
Always connect the amplifier's (UFO-250) power cord to this AC outlet.

- **SWITCHED** (total capacity of 370 W)
The power of this outlet is switched on and off with the tuner's power switch.
- **UNSWITCHED** (total capacity - 110W)
The power is supplied to these outlets regardless of whether or not the tuner's power switch is turned on or off.

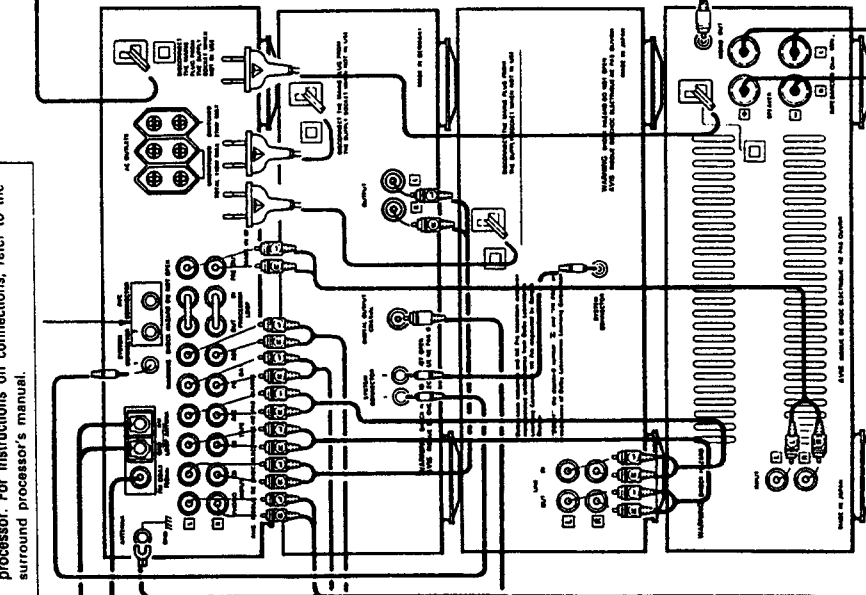
Plug the power cords of the CD player and cassette deck into these outlets.

MONO OUT jack
Jack for connecting a subwoofer (super woofer) with built-in amplifier.

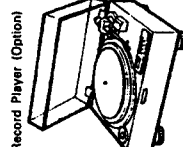
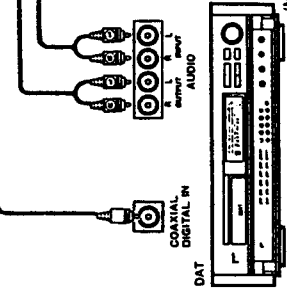
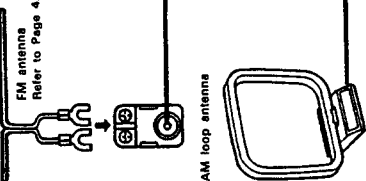
Power plug
AC 230 V 50 Hz
AC 240 V 50 Hz (for U.K. model)
(Plug into a power outlet)



These jacks are for connecting the exclusive surround processor. For instructions on connections, refer to the surround processor's manual.



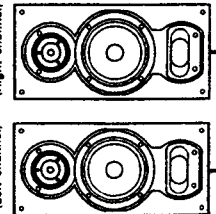
Keep the FM and AM antenna wires away from the system connector wires to prevent noise from entering the antennas.



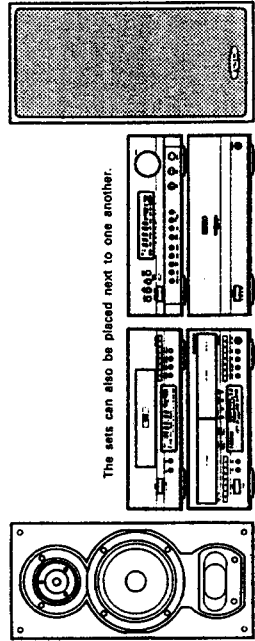
NOTE:
This system includes digital circuitry which may interfere with the colors on a TV. Should this occur, switch off the power of the unused component(s).

- Do not plug the power cord into the outlet until all connections have been completed. Connect properly, as illustrated in the diagram.
- Check the left and right channels, then properly connect the left speaker's terminals to the amplifier's L terminals and the right speaker's terminals to the amplifier's R terminals.
- Insert the plugs securely. Incomplete connections can cause noise.
- When the power cord has been disconnected from the power outlet, wait about 5 seconds before plugging it back in.
- Use the AC OUTLET to plug in the amplifier CD and Cassette deck. Never use it for other appliances, such as hair driers, etc.
- Note that grouping connection cords (pin-plug cords) together with power cords or setting them near power transformers can cause hum or other noise.
- Note that if the input jacks selected with the FUNCTION button are open (if a component is not connected), there might be leakage of the reproduced sound of a component connected to another set of input jacks.

(Left channel)
USC-250
(Right channel)



Speaker system connections
Connect the speaker system for the left channel (the left side as seen from the front) to the L terminals, and the speaker system for the right channel to the R terminals.



The sets can also be placed next to one another.

NOTE:
System operation is not possible and the power cannot be turned on and off unless all system connector cords and pin-plug cords are connected.

GENERAL SECTION

5 PART NAMES AND FUNCTIONS

POWER AMPLIFIER

- 1 **PHONES jack**
When using headphones, plug them in here. The sound from the speakers is cut when headphones are plugged in.
- 2 **POWER switch**
When pressed once, the power is switched on and the power indicator LED lights up. This switch is usually left on.

TUNER-PREAMPLIFIER

- 1 **FUNCTION button**
Use this to select the program source. The selection changes in the order of TUNER, TAPE, CD, PHONO, and DAT.
- 2 **TAPE MONITOR button**
Use this to listen to the sound of the tape. When used with a 3-head tape deck, the sound can be monitored while recording.
- 3 **SDB (Super Dynamic Bass) button**
Press this button for more powerful bass sound.
- 4 **CLOCK/DISPLAY button**
This button switches the display to the reception frequency or the function display and time display.
- 5 **Remote control sensor**
The remote control unit is pointed toward this sensor and operated.
- 6 **VOLUME control**
This control adjusts the overall volume. Turn clockwise (☺) to increase the volume, counterclockwise (☹) to decrease it.
- 7 **SYSTEM POWER button**
(This switch can switch on the power for the entire system.) Press to switch the power on, press again to put the system into standby.
- 8 **TIMER STANDBY button**
Press this button to cause the timer to operate at the set time. When the timer has been set, pressing this button will light up the display's timer standby indicator (☺), and pressing it again will switch off the standby indicator. The timer will not function when the standby indicator is off.
- 9 **CLEAR button**
This button is used to change the current time setting or the contents of the set timer.
- 10 **Power indicator LED**
This LED will flash for about 5 seconds until the speaker relay goes on, then it will light steadily. The LED will also flash when the protection circuit is activated. Should this occur, switch the power off, check the speaker connections, then switch the power on again.
- 11 **ENTER/NEXT button**
This is used when setting the timer, setting the current time, and when advancing to the next operation.
- 12 **TIMER button**
This is used to set the timer.
- 13 **MEMORY button**
This button is used when presetting FM, MW and LW stations.
- 14 **MONO/STEREO (FM stereo mute/mono) button**
This button will not function when receiving MW/LW broadcasts.
(For FM reception) Use this mode to receive FM broadcasts in stereo.
(For MW/LW reception) ("AUTO" appears on the display.) The muting circuit is activated to cut the hiss noise between stations.
- 15 **MONO:** In this mode, FM broadcasts are received in monaural, regardless of whether they are broadcast in monaural or stereo.
Set to the mono mode if there is much noise in the stereo mode (with "AUTO" displayed) or if the signals are weak.
- 16 **BAND (FM/MW/LW selection) button**
With each press, the band is switched in the order of FM, MW, LW, PH, and so on.
- 17 **TUNING UP and DOWN buttons**
Use these to tune in FM, MW or LW stations and when setting the clock and timer.
- 18 **BASS control**
Use this control to adjust the bass.
- 19 **TREBLE control**
Use this control to adjust the treble.
- 20 **BALANCE control**
Use this control to adjust the balance of the volume between the left and right channels. The volume is the same for the left and right channels when the control is at the center.

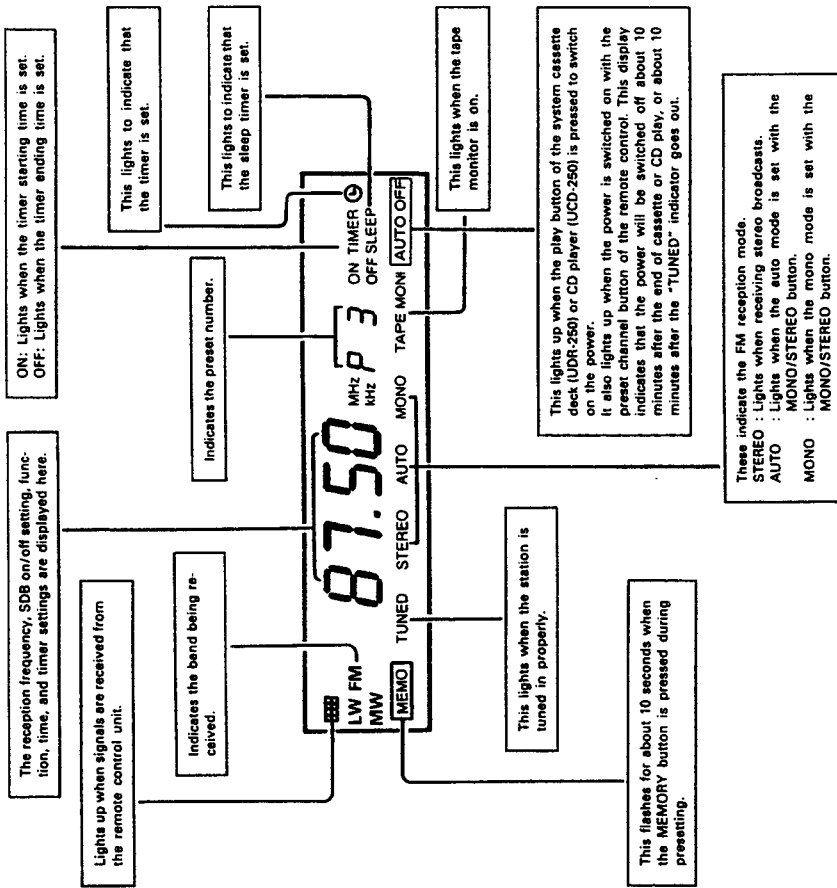
CASSETTE DECK

- 1 **Cassette tray: Deck 1**
The cassette tray opens outward when the OPEN/CLOSE button is pressed. Insert the cassette tape with the side on which the tape is exposed facing away from you. To close the cassette tray, press the OPEN/CLOSE button again.
- 2 **DOLBY NR selection switch**
Use this switch to select the Dolby NR mode: off, B type or C type. During playback, set this switch to the same mode in which the tape was recorded.
- 3 **REV MODE switch**
Use this switch to set the reverse mode to one of the following modes: (☺) (single side mode), (☻) (two-side mode), or (☼) (continuous mode). Refer to Page 13 for details.
- 4 **COUNTER RESET button**
Press this button to reset the tape counter to 00.00.
- 5 **COUNTER 1/2 selection button**
Use this button to change the counter display between deck 1 and deck 2.
- 6 **TAPE SIZE setting button**
Set the time of the tape to the length of the tape being used. Refer to Page 8 for details.
- 7 **DUBBING button**
Simply pressing this button permits dubbing (copying) a tape from deck 1 to deck 2.
- 8 **Cassette tray: Deck 2**
The cassette tray opens outward when the OPEN/CLOSE button is pressed. Insert the cassette tape with the side on which the tape is exposed facing away from you. To close the cassette tray, press the OPEN/CLOSE button again.
- 9 **POWER ON/STANDBY switch**
This switch turn the power of the cassette deck on and off.
- 10 **◀ (rewind) button: Deck 1**
Press this button to rewind the tape in deck 1. Also, if pressed during playback in the ▶ (forward) direction, the tape is rewound to the beginning of the currently playing selection. If pressed during playback in the ◀ (reverse) direction, the tape is forwarded to the beginning of the next selection (on the back side of the tape).
- 11 **▶ (fast-forward) button: Deck 1**
Press this button to fast forward the tape in deck 1. Also, if pressed during playback in the ▶ (forward) direction, the tape is fast forwarded to the beginning of the following selection. If pressed during playback in the ◀ (reverse) direction, the tape is rewound to the beginning of the next selection (on the back side of the tape).
- 12 **▶ (fast-forward) button: Deck 2**
Press this button to fast forward the tape in deck 2. Also, if pressed during playback in the ▶ (forward) direction, the tape is fast forwarded to the beginning of the following selection. If pressed during playback in the ◀ (reverse) direction, the tape is rewound to the beginning of the next selection (on the back side of the tape).
- 13 **REC LEVEL (recording level) control**
Use this control to set the recording level.
- 14 **◀ (reverse play) button: Deck 2**
Press this button to begin playback in the reverse direction on deck 2. When this button is pressed in the standby condition, the power is automatically switched on and the deck plays.
- 15 **■ (stop) button: Deck 2**
Press this button to stop the moving tape in deck 2.
- 16 **▶ (forward play) button: Deck 2**
Press this button to begin playback in the forward direction on deck 2. When this button is pressed in the standby condition, the power is automatically switched on and the deck plays.

- 17 **◀ (reverse play) button: Deck 1**
Press this button to begin playback in the reverse direction on deck 1. When this button is pressed in the standby condition, the power is automatically switched on and the deck plays.
- 18 **■ (stop) button: Deck 1**
Press this button to stop the moving tape in deck 1.
- 19 **▶ (forward play) button: Deck 1**
Press this button to begin playback in the forward direction on deck 1. When this button is pressed in the standby condition, the power is automatically switched on and the deck plays.
- 20 **CD SRS (CD synchronized recording button)**
Use this button for simple CD synchronized recording. Refer to Page 15.
- 21 **REC/REC MUTE (recording/recording mute) button**
To record, press the REC/REC MUTE button and the ▶ play button only. If only the REC/REC MUTE button is pressed, the deck is set to the recording pause mode. If this button is pressed again, or pressed during recording, the recording mute mode is set for approximately 5 seconds, after which the deck is set to the recording pause mode.

Recording pause mode
When the play button of the CD player is pressed in the recording pause mode, the CD begins to be recorded.
- 22 **◀ (rewind) button: Deck 2**
Press this button to rewind the tape in deck 2. Also, if pressed during playback in the ▶ (forward) direction, the tape is rewound to the beginning of the currently playing selection. If pressed during playback in the ◀ (reverse) direction, the tape is forwarded to the beginning of the next selection (on the back side of the tape).
- 23 **▶ (fast-forward) button: Deck 2**
Press this button to fast forward the tape in deck 2. Also, if pressed during playback in the ▶ (forward) direction, the tape is fast forwarded to the beginning of the following selection. If pressed during playback in the ◀ (reverse) direction, the tape is rewound to the beginning of the next selection (on the back side of the tape).
- 24 **REC LEVEL (recording level) control**
Use this control to set the recording level.
- 25 **◀ (reverse play) button: Deck 2**
Press this button to begin playback in the reverse direction on deck 2. When this button is pressed in the standby condition, the power is automatically switched on and the deck plays.
- 26 **■ (stop) button: Deck 2**
Press this button to stop the moving tape in deck 2.
- 27 **▶ (forward play) button: Deck 2**
Press this button to begin playback in the forward direction on deck 2. When this button is pressed in the standby condition, the power is automatically switched on and the deck plays.

TUNER-PREAMPLIFIER DISPLAY



Trap Door

- To open the trap door, press area of the PUSH OPEN Δ indication at the upper right of the panel. When the door lock is released, open the door with your hand.
- To close the trap door, press the indicated area at the upper right of the panel and lock the door.

NOTE:

- The "ON" of the timer standby display will not light up unless the current time and the timer have been set.
- When the FUNCTION button is used to switch the function while "AUTO OFF" is lit, the auto on/off mode is cancelled and the display goes out.
- Also note that when the play button of one of the components (CD player or cassette deck) is pressed while "AUTO OFF" is lit, causing the function to change, the auto on/off mode will not be cancelled and the display will remain lit.

These indicate the FM reception mode.
 STEREO : Lights when receiving stereo broadcasts.
 AUTO : Lights when the auto mode is set with the MONO/STEREO button.
 MONO : Lights when the mono mode is set with the MONO/STEREO button.

This lights up when the play button of the system cassette deck (UDR-250) or CD player (UCD-250) is pressed to switch on the power.
 It also lights up when the power is switched on with the preset channel button of the remote control. This display indicates that the power will be switched off about 10 minutes after the end of cassette or CD play, or about 10 minutes after the "TUNED" indicator goes out.

This lights when the station is tuned in properly.

This flashes for about 10 seconds when the MEMORY button is pressed during presetting.

- OPEN/CLOSE button: Deck 2**
 Press this button to open and close the cassette tray. The button also works in the standby condition.

- Deck 1 is for playback only and deck 2 is for recording and playback.
- After the power cord is plugged into an outlet, a mechanical sound is produced from the cassette deck when the power switch is pressed on the first time only. This is the sound of the cassette mechanism being set to the proper operating position, and is not a problem with the deck.

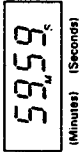
CD PLAYER

- Disc tray**
 Compact discs are loaded to the disc tray.
- Pause button**
 Press this button to stop CD play temporarily.
 Press the play button to resume CD play.
- Stop button**
 Press this button to stop CD play.
- Play button**
 Press this button to start playing the disc. If pressed when the disc tray is open, the disc tray closes and playback begins. Pressing this button in the standby mode automatically switches on the power and plays the disc.
- OPEN/CLOSE button**
 Press this button to open the disc tray. Press once to open the disc tray forward, then press again to close the disc tray. This button also operates in the standby mode.
- POWER ON/STANDBY switch**
 Press this to switch the CD player's power on and off.
- TAPE A/B button**
 Press this button during editing to switch the display between the display of program contents for tape side A and the display for tape side B.
- EDIT button**
 Press this button for edited recording (dividing the tracks to be recorded to fit onto sides A and B of a tape according to the length of the tape).
- Display**
 This displays the time and the settings of the various buttons.
- RANDOM button**
 Press this button to play the disc tracks in random order.
- REPEAT button**
 Press this button for repeat play.
- Automatic/manual search backward button**
 Press this button to move the pickup back to the beginning of the desired track.
 Press in the play, stop, or pause mode to move back a number of tracks equal to the number of times the button is pressed.
- Automatic/manual search forward button**
 Press this button to move the pickup forward to the beginning of the desired track.
 Press in the play, stop, or pause mode to move forward a number of tracks equal to the number of times the button is pressed.
- The automatic search function is set if button \odot or \bullet is released within 0.5 seconds, and the manual search function is set if the button is held in for more than 0.5 seconds.
- Buttons \odot and \bullet do not function in the pause mode.

GENERAL SECTION

USING THE TAPE COUNTER

1. Tape Counter Display
 - The tape counter indicates the elapsed time of the running tape in minutes and seconds.



- The counter is reset to 00:00 when the tape is ejected and loaded, and by the COUNTER RESET button.
- Making a memo of the contents of a recording and the range of the counter numbers while you are recording or playing back a tape will be convenient when you search for a portion of the tape you would like to listen to or when you search for the next portion you would like to record.

2. Tape Size Selector

- Match the tape size with the tape being used.
- Press the TAPE SIZE button until the desired tape size is displayed, then press the button again while the tape size is being displayed to set it. With each press of the button, the display will change according to the following cycle.

C46 → C50 → C54 → C60 → C74 → C90 → C100 → C120 → C54L → C50L → C46L →

- * C46L, C50L, and C54L indicate large-hubbed cassettes.
- * Only values included in the display can be set.

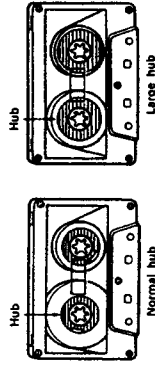
3. END Display

- This display indicates that the tape is reaching the end during recording or playback.
- Match the tape size with the tape you are going to use.
- The END indicator will start flashing when the remaining time to the end of the tape is about 5 minutes. (Note that this will be the case only when the TAPE SIZE setting and the length of the tape are in agreement. When the tape used and the TAPE SIZE setting differ, a large error may arise in the time at which the END indicator starts flashing.)
- When the tape has been recorded or played back to its end, the flashing of the END indicator will change to steady lighting.
- Note that this indicator is only a guide and its operation will vary according to the size of the hub diameter of the tape as well as with differences of tape thickness, so that the END indicator might not light in some cases.

NOTE:

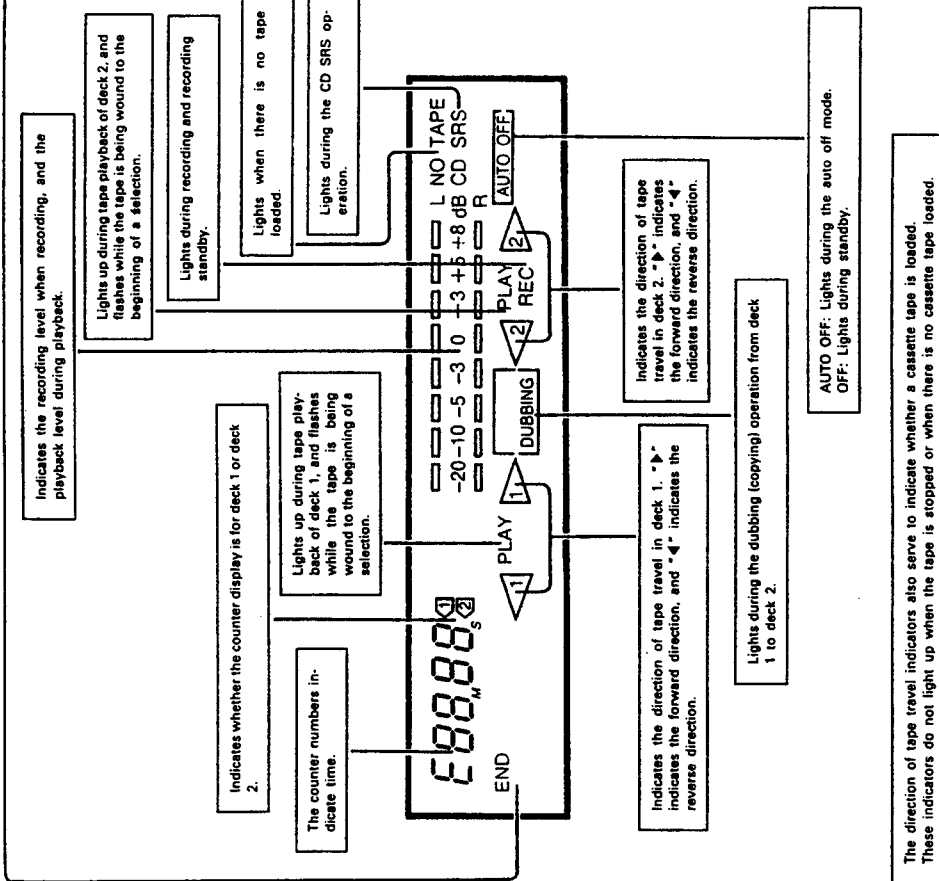
This deck's linear tape counter has been set for the following cassette tape lengths: C46, C50, C54, C60, C74, C90, C100, C120, C46L, C50L, and C54L. (L indicates large-hubbed cassettes.)
Using a tape that lies outside of this range, or a tape with a different length than the displayed lengths, will result in error. When using a tape that is not included in the TAPE SIZE selection, select the tape size closest to the length of the tape to be used. (This will reduce the error.)
The linear tape counter is not accurate like a clock. The thickness of the tape will differ depending on the type of tape used (tape position and time), and so there will be some error introduced. Error also arises from the difference between tapes with smaller and larger hubs.

- Large hubs are ones with a diameter of about 27 mm. Note that if the hub is larger than this, there will be a large error in indicating the tape travel time.



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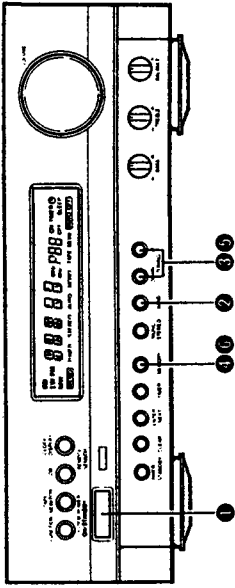
CASSETTE DECK DISPLAY



6 LISTENING TO RADIO BROADCASTS

(Check that connections are proper, referring to Page 5)

TUNING



Example: Tuning to 87.50 MHz, FM

1	Set the VOLUME control to the minimum position, then press the SYSTEM POWER button.		
2	Select the FM band with the BAND button.		
3	Use the UP and DOWN buttons to set the frequency to 87.50 MHz.		

Presetting MW, LW and FM Stations

Example: Presetting the (currently tuned) FM 87.50 MHz to preset number 3

4	Press the MEMORY button. [MEMO] flashes for 10 seconds.		
5	Use the UP and DOWN buttons to call up the number to which you want to preset the station. Or, directly press the number buttons on the remote control unit. The preset number will flash.		
6	Press the MEMORY button while [MEMO] is flashing.		

Up to 30 MW, LW and FM stations can be preset at random using this procedure.

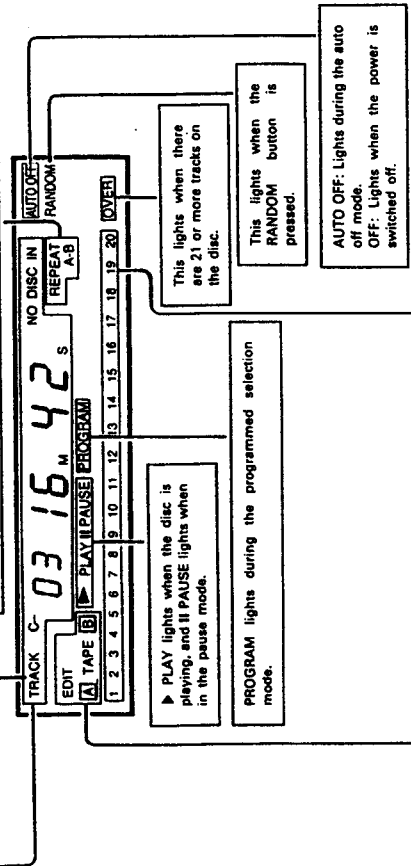
- Auto Tuning
- When the TUNING buttons are pressed, the frequency changes in steps of 50 kHz for FM, 9 kHz for MW and 1 kHz for LW.
 - If the TUNING UP or DOWN button is held in for more than 1 second, the frequency continues to change when the button is released.
- The next station is tuned in automatically and the tuning stops there. Note that tuning will not stop if the antenna input is weak and the TUNED indicator does not light. To stop the auto tuning, press the UP or DOWN button again.

CD PLAYER DISPLAY

Tape type and remaining time display
During the editing operation, C-D lights and the tape time is displayed.

Track number display
DD is displayed when the disc data cannot be read properly.
When a disc is loaded:
• The total number of tracks is displayed in the stop mode.
• The track number is displayed in the play and program modes.
• [C] or [D] is displayed when the innermost or outermost section of the disc is reached in the manual search mode.

The indicators switch as follows when the REPEAT button is pressed in the play mode:
First press: REPEAT (single track repeat) The repeated track number lights on the music calendar.
Second press: REPEAT (all tracks repeat) The track numbers of the tracks on the disc light.
Third press: REPEAT A-
Fourth press: REPEAT A-B
Fifth press: No display
• When track 21 or higher is repeated in 1-track repeat, the TRACK number flashes.



During the editing operation, EDIT [A] TAPE lights up, the remaining time for side A of the tape is indicated on the time section of the display, the track numbers set for side A light on the calendar section of the display, while the track numbers set for side B flash. When the TAPE A/B button is pressed, [A] goes off, [B] lights, and the remaining time and track numbers set for side B are indicated in the same way.

Music calendar display
This indicates the track numbers on the disc to a maximum of 20. The track numbers go off after the corresponding tracks are played. In the program mode, the track numbers of the programmed tracks are indicated to a maximum of 20. All track numbers from 1 to 20 light when the disc data cannot be read properly.

- NO DISC lights on the display if no disc is loaded, or if the disc is loaded upside-down or is heavily scratched or dirty.

GENERAL SECTION

7 USING THE TIMER

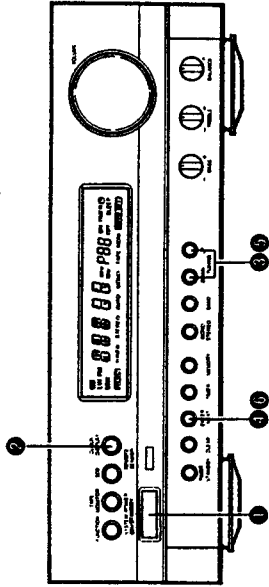
Setting the Timer

- Be sure to set the current time.
 - Regular timer: The power can be switched on and off once every day at the same time. (Wake-up music)
 - Sleep timer: The power can be set to turn off in up to 80 minutes in steps of 10 minutes using the remote control unit. (Bedtime music)
- Be sure to preset stations before setting the timer.
Refer to "Presenting MW, LW and FM Stations" on Page 9.
- Turn the standby switch off when not using the timer.

Power Failure

Should a power failure occur or if the power cord becomes unplugged from the power outlet, 00:00 or the time at which the power failed will flash on the time display. If this happens, reset the current time.
(Reset the current time and timer settings. If 00:00 was displayed, also reset the stations preset on the tuner.)
The standby mark starts flashing if there is a power failure or the power cord is unplugged while the standby mark is lit. If this happens, reset the time and the timer. (If the display reads 00:00, also reset the tuner's preset channels.)
To make the standby mark stop flashing, press the TIMER button, then press the TIMER or CLEAR button while "FUNC" is displayed.

Setting the Current Time (A 24-hour clock display is used.)



Example: Setting to 19:30 (7:30 p.m.)

1	Press the SYSTEM POWER button.		
2	Hold in the CLOCK/DISPLAY button for 3 seconds or longer.		The hour's place flashes. (All places flash if the time has already been set.)
3	Set the hours with the UP and DOWN buttons.		The set places flash.
4	Press the ENTER/NEXT button.		The minutes' places flash.
5	Set the minutes with the UP and DOWN buttons.		The set places flash.
6	Press the ENTER/NEXT button at the sound of a time signal. The time display lights steadily and the clock starts keeping the time.		The display lights steadily and the clock starts to count from 0 seconds.

Listening to Preset Stations

Example: Listening to the FM station preset at number 3

1	Press the TUNER button on the remote control unit.		
2	Press button "3" on the remote control unit.		

FM Stereo Reception

- When the MONO/STEREO button is pressed (which lights the AUTO and MONO indicators) and an FM stereo broadcast is received, the STEREO indicator lights and the station is received in stereo. If the MONO indicator is lit by pressing the MONO/STEREO button, the STEREO indicator goes off and the station is received in monaural.

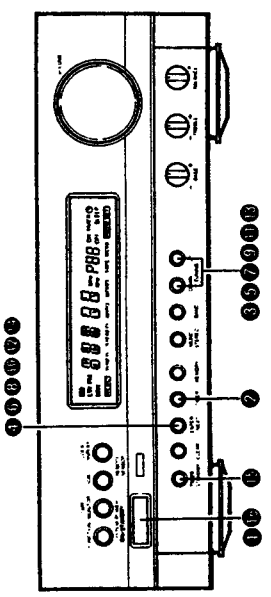
Notes on Presenting

- When an FM station is preset, the auto or monaural mode is also set, so check the display before presenting the station.
- If a station is preset to a number at which another station has previously been preset, the previous station is cleared and the new station is preset.
- If the power cord is unplugged, the preset memory is not cleared immediately, but will be cleared if the cord is left unplugged over a long period. Should this happen, preset the stations again.

GENERAL SECTION

Setting the Timer

(Presets the MW, LW and FM stations in advance)



Example: Setting the timer to turn on at 12:35 and off at 12:56.
 90.00 MHz FM is being received on preset number "1".
 87.50 MHz FM is set to preset number "3".

1	Press the SYSTEM POWER button.		FUNC	Timer
2	Press the TIMER button.		TUNER	Timer
3	Press the UP and DOWN buttons to display "TUNER".			Timer
4	Press the ENTER/NEXT button.		87.50	Flashes
5	Press the UP and DOWN buttons to set the preset number.			Timer
6	Press the ENTER/NEXT button.		00	Lights up.
7	Use the UP and DOWN buttons to set the hour at which the timer is to switch on.		12:00	Flashes
8	Press the ENTER/NEXT button.		12:00	Timer
9	Use the UP and DOWN buttons to set the minutes at which the timer is to switch on.		12:35	Flashes
10	Press the ENTER/NEXT button.		00	Lights up.

11	Use the UP and DOWN buttons to set the hour at which the timer is to switch off.		12:00	Flashes
12	Press the ENTER/NEXT button.		12:00	Timer
13	Use the UP and DOWN buttons to set the minutes at which the timer is to switch off.		12:56	Flashes
14	Press the ENTER/NEXT button.		90:00	Timer
15	Press the TIMER STANDBY button.		90:00	Lights up. (See NOTE)
16	Press the SYSTEM POWER button.		10:15	The illumination goes off. The next preset time is displayed.

- When the TIMER STANDBY button is pressed and the "S" mark is lit, the timer will function at the same times each day.
- To switch off the timer, press the TIMER STANDBY button and turn off the "S" mark.

NOTE:
 The timer standby mark "S" will not light unless the current timer has been set. Should this be the case, set the current time, then press the TIMER STANDBY button.

GENERAL SECTION

Ways to Use the Timer

<p>Example 1: Waking up to the music of a compact disc.</p> <p>Press the tuner-preamplifier's SYSTEM POWER button to switch on the power. → Press the CD player's OPEN/CLOSE button to open the tray. → Set the compact disc in the tray. → Press the OPEN/CLOSE button again to close the tray.</p>	
1	
2	
3	
4	<p>Follow steps 6 to 16 under "Setting the Timer" on Page 11.</p>
	<p>Press the tuner-preamplifier's TIMER button.</p> <p>Press the UP and DOWN buttons of the tuner-preamplifier to display "CD".</p> <p>Press the tuner-preamplifier's OPEN/CLOSE button to open the tray. → Press the OPEN/CLOSE button again to close the tray.</p> <p>Press the tuner-preamplifier's SYSTEM POWER button to switch on the power. → Press the CD player's OPEN/CLOSE button to open the tray. → Set the compact disc in the tray. → Press the OPEN/CLOSE button again to close the tray.</p> <p>Press the tuner-preamplifier's TIMER button.</p> <p>Press the UP and DOWN buttons of the tuner-preamplifier to display "CD".</p> <p>Follow steps 6 to 16 under "Setting the Timer" on Page 11.</p>

<p>Example 2: Waking up to the music of a cassette tape.</p> <p>Press the tuner-preamplifier's SYSTEM POWER button to switch on the power. → Press the cassette deck's OPEN/CLOSE button to open the tray. → Press the OPEN/CLOSE button again to close the tray.</p>	
1	
2	
3	
4	<p>Follow steps 6 to 16 under "Setting the Timer" on Page 11.</p>
	<p>Press the tuner-preamplifier's TIMER button.</p> <p>Press the UP and DOWN buttons of the tuner-preamplifier to display "TAPE".</p> <p>Press the tuner-preamplifier's OPEN/CLOSE button to open the tray. → Press the OPEN/CLOSE button again to close the tray.</p> <p>Press the tuner-preamplifier's SYSTEM POWER button to switch on the power. → Press the cassette deck's OPEN/CLOSE button to open the tray. → Press the OPEN/CLOSE button again to close the tray.</p> <p>Press the tuner-preamplifier's TIMER button.</p> <p>Press the UP and DOWN buttons of the tuner-preamplifier to display "TAPE".</p> <p>Follow steps 6 to 16 under "Setting the Timer" on Page 11.</p>

The tape will be played back in the direction indicated by the tape direction indicator in the tape deck on the side of the tape counter display.

Example 3: Unattended recording of radio broadcasts ("air checks")

<p>Press the tuner-preamplifier's SYSTEM POWER button to switch on the power. → Press the deck 2 OPEN/CLOSE button to open the tray. → Load the cassette tape to which you will record. → Press the OPEN/CLOSE button again to close the tray.</p>	
1	
2	
3	
4	<p>Follow steps 4 to 16 under "Setting the Timer" on Page 11.</p>
	<p>Press the tuner-preamplifier's TIMER button.</p> <p>Press the UP and DOWN buttons of the tuner-preamplifier to display "AIR.CH".</p> <p>Press the tuner-preamplifier's OPEN/CLOSE button to open the tray. → Press the OPEN/CLOSE button again to close the tray.</p> <p>Press the tuner-preamplifier's SYSTEM POWER button to switch on the power. → Press the deck 2 OPEN/CLOSE button to open the tray. → Load the cassette tape to which you will record. → Press the OPEN/CLOSE button again to close the tray.</p> <p>Press the tuner-preamplifier's TIMER button.</p> <p>Press the UP and DOWN buttons of the tuner-preamplifier to display "AIR.CH".</p> <p>Follow steps 4 to 16 under "Setting the Timer" on Page 11.</p>

- Timer recording starts in the direction indicated by the tape direction indicator of deck 2.
- Check that the tape direction and REV MODE switch settings are as desired.
- The section of leader tape at the beginning of the tape cannot be recorded. To avoid missing the beginning of the recording, set the starting time to about 1 minute before the program is scheduled to start.

Checking the Timer Settings

To check the timer settings, switch on the power of the tuner-preamplifier, press the TIMER button, then press the ENTER/NEXT button. The timer start mode, reception band, preset number, on time, and off time are displayed in order each time the ENTER/NEXT button is pressed. One more press returns the display to the reception frequency. When the on time and off time have not been set, DDDD flashes and there is no transition to the next display.

Changing the Timer Settings

When the timer setting operation is repeated, the previous settings are deleted and the new settings are set.

Deleting the Timer Settings

The timer settings can be cleared by pressing the TIMER button and then while FUNC is being displayed, pressing the TIMER button again or pressing the CLEAR button.

Note about the Set Timer

If the set time of the timer is reached while the power is on, the timer settings will take over and there will be a switch to the function that has been set on the timer.

Cancelling the Timer

Press the TIMER STANDBY button and the ⏻ mark will go off.

GENERAL SECTION

8 CASSETTE DECK

Before Recording and Playback

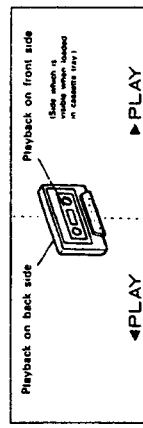
Auto Reverse

This deck is equipped with an auto reverse mechanism, so cassette tapes can be played and recorded on both sides or played continuously without having to turn them over.

- Direction of tape travel
This deck has two play buttons, one for the forward direction (front side) and another for the reverse direction (back side). The side being played can be changed during playback by pressing the opposite play button.

Reverse mode
Set the reverse mode switch (REV MODE) as follows:

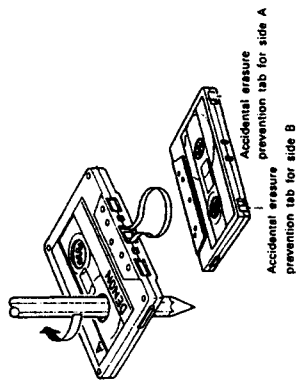
- Single-side recording/playback mode ()
In this position, only the front side or the back side of the cassette tape is played or recorded. (The tape stops automatically when the end of that side is reached.)
- Two-side recording/playback mode ()
In this position, when the end of the front side is reached, recording or playback automatically switches to the back side and continues from there. (The tape stops automatically when the end of the back side is reached.)
- Continuous playback mode ()
When tape is loaded in only one of the decks, playback continues until the STOP button is pressed.
- Relay playback mode ()
When tapes are loaded in both decks, playback continues from deck 1 onto deck 2, and then back again, as shown in the diagram at the right.



- If you start playing or recording from the back side, the tape will stop automatically at the end of the back side.
- The reverse recording/playback mode () is set automatically during recording.

Cassette Tapes

- Handling Precautions
C-120 cassette tapes
Avoid using 120-minute cassette tapes, since they have extremely thin tape which tends to become wound onto the capstans or pinch rollers.
- Tape slack
If the tape is slack, it may become wound onto mechanism parts or otherwise damaged. Take up the slack with a pencil before loading the cassette.



- Storage Precautions
Avoid storing in the following places:
• Hot, humid places
• Dusty places
• Places exposed to direct sunlight
• Near magnetic fields (TVs, speakers, etc.)
Store the cassette tape in a case equipped with stoppers to keep the tape from coming slack.
- Protecting Cassette Tapes From Being Erased Accidentally
Cassette tapes are equipped with accidental erasure prevention tabs. To protect recorded tapes from being erased accidentally, use a screwdriver, etc., and break these tabs off.
To record on a cassette tape whose accidental erasure prevention tabs have been broken off, place a piece of cellophane tape over the hole.

Setting the Sleep Timer

(Use the remote control unit for these operations.)
Example: Setting the power to switch off in 50 minutes.

1	Currently receiving 87.50 MHz, FM.		Press the remote control unit's SLEEP button.
			"60" is displayed, and the frequency display (87.50) flashes for 5 seconds.
2	Press the SLEEP button again while "SLEEP" is flashing.	"50" is displayed, and the frequency display (87.50) reappears after 5 seconds.	The power is switched off after 50 minutes.

- If the sleep timer and regular timer settings overlap, the sleep timer is given priority.
- Do not press the TIMER STANDBY button after the power has been switched on with the timer. If this is done, the timer will not function properly.
- If the same time is set for the on time and off time, the power will not be switched on even when the "STANDBY" indicator is lit.
- If the timer is set for an AM or FM station and the on time of the timer is reached while listening to another station, the tuner switches to the station which was set with the timer.
- If the display is not normal, unplug the power cord, then holding in the MEMORY button and the BAND button, plug the power plug into the power outlet. This will reset the tuner to the initial settings and provide a proper display. If this is done, reset the preset stations, current time, and timer settings.

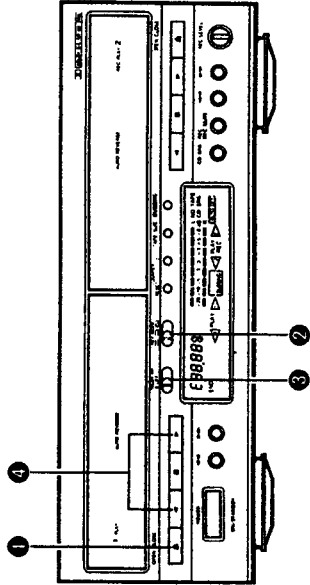
Cancelling the Sleep Timer

- To cancel the timer while it is operating in the sleep mode, press the SLEEP button, and while "SLEEP" is flashing, press the CLEAR button on the tuner-preamplifier.
- Press the SLEEP button and continue to press it until the power is switched off. When the power is switched off the sleep timer will be cancelled.

GENERAL SECTION

9 PLAYING CASSETTE TAPES

(Single Side Playback, Two-Side Playback, and Continuous Playback)



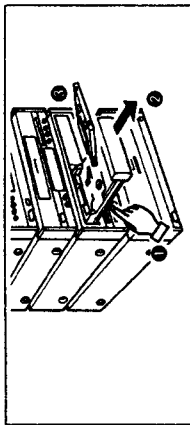
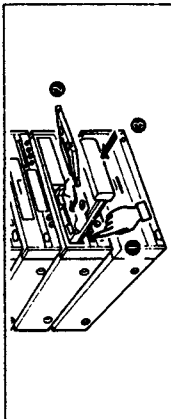
- Functions common for deck 1 and deck 2.
- When operating from the remote control unit, the operation switches between deck 1 and deck 2 each time the **DECK** 1/2 button is pressed. The counter indicator (1) or (2) lights for the selected deck.

<p>1</p> <p>Press the OPEN/CLOSE button, and load a recorded tape into the tray. Refer to Page 14.</p>		<p>Loading the tape</p> <p>The tape can be loaded easily by inserting it at an angle.</p>
<p>2</p> <p>Set the REV MODE switch. Refer to Page 13.</p>		<p>Removing the tape</p> <p>The tape can be removed easily by lifting it out toward yourself at an angle.</p>
<p>3</p> <p>Set the DOLBY NR switch. Refer to Page 6 6.</p>	<p>Set to B or C (as indicated on the tape) for tapes recorded with Dolby NR.</p>	<p>Press the stop button to stop the playback.</p>
<p>4</p> <p>Press the play button (▶ or ◀).</p>	<p>Playback starts in the direction of the button pressed.</p>	

Before Operating

Loading and Unloading Cassette Tapes (Common for Deck 1 and Deck 2)

- **Loading**
 - 1 Press the **OPEN/CLOSE** button (▲) to open the cassette tray.
 - 2 Set the tape in the cassette tray with the open side (on which the tape is exposed) facing away from you.
 - 3 Press the **OPEN/CLOSE** button again to close the tray.



Check the following before recording or playing cassette tapes:

1. Is the head dirty?...
 2. Are the accidental erasure prevention tabs broken off?...
- Recording is not possible if these tabs are broken off. Refer to Page 13.

- **NOTE:**
- Load the cassette tape on an angle with the open side facing away from you. Loading it in the opposite direction can cause damage.
- Do not press the **OPEN/CLOSE** button during playback or recording. Always press the **STOP** button before pressing the **OPEN/CLOSE** button.

- This counter displays the elapsed running time of the tape in minutes and seconds.
- The counter can be reset to 00:00 by pressing the **COUNTER RESET** button. Or, the counter will also be reset when the tape is loaded or unloaded.
- Making a memo of the contents of a recording and the range of the counter numbers while you are recording or playing back a tape will be convenient when you search for a portion of the tape to which you would like to listen.

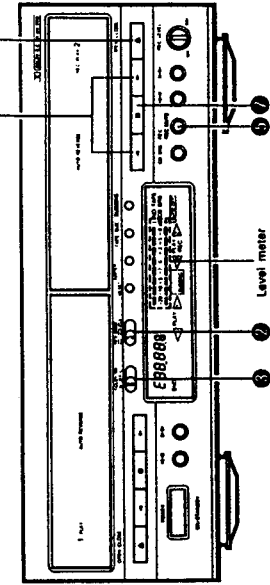
- **NOTE:**
- This deck's linear tape counter has been set for the following cassette tape lengths: C46, C50, C54, C60, C74, C90, C100, C120, C46L, C50L, and C54L. (L indicates large-hubbed cassettes.) Using a tape that lies outside of this range, or a tape with a different length than the displayed lengths, will result in error. When using a tape that is not included in the **TAPE SIZE** selection, select the tape size closest to the length of the tape to be used. (This will reduce the error.)
- The linear tape counter is not accurate like a clock. The thickness of the tape will differ depending on the type of tape used (tape position and time), and so there will be some error introduced. Error also arises from the difference between tapes with smaller and larger hubs, and shows up in the remaining tape display (END mark).

Auto Tape Selector Mechanism

This deck is equipped with an auto tape selector mechanism which uses the detection holes in the cassette halves to automatically set the recording bias and equalization best suited for that type of tape.

- Do not use ferrichrome tapes.
- Use metal tapes equipped with detection holes. (Use of the old type of metal tape without detection holes will result in the sound having an emphasized treble region.)

10 RECORDING CASSETTE TAPES



The positions of the VOLUME and tone controls do not affect the sound being recorded.

1	<p>Press the OPEN/CLOSE button for deck 2 and load the tape to which you will record. Refer to Page 14.</p>	2	<p>Set the REV MODE switch to Single-side recording (Two-side (reverse) recording).</p>	3	<p>Set the DOLBY NR switch. Refer to Page 6.</p>	4	<p>Press the BAND selector button.</p>	5	<p>Press the REC/REC MUTE button.</p>	6	<p>Press the REC (recording) indicator lights.</p>	7	<p>To stop recording, press the stop button.</p>
---	---	---	---	---	--	---	--	---	---------------------------------------	---	--	---	--

Adjust the recording level.

REC LEVEL
MAX

Adjust the lighting condition of the level meter with the recording level control. Refer to the section on Page 15.

When the CD SRS button is pressed, a 7-second blank portion is automatically created before recording starts.

PLAYING CASSETTE TAPES

Using the MS (Music Search) Function and the Music Search Display

Using the MS (Music Search) Function

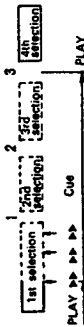
Use this function to move to the beginning of the following section or return to the beginning of the current selection.

- 1 Press **▶** or **◀**.
- 2 Press **▶▶** or **◀◀**.

In the rewind direction, playback starts from the beginning of the selection which is currently playing, and in the fast-forward direction, playback starts from the beginning of the following selection.

The tape stops by a number of selections equal to the number of times the **▶▶** or **◀◀** button is pressed.

For example:



For the normal fast-forward or rewind operations, press the stop button **■** before pressing the **▶▶** or **◀◀** button.

Display During the Music Search Operation

During the music search operation, the number of selections being skipped is indicated on the tape counter, and this number decreases each time a blank section is detected (for example, 3 → 2 → 1).

- When skipping back to a previous selection

P-03

—Number of tracks to be skipped

↳ This lights when skipping backward

- When skipping ahead to a following selection

P 05

—Number of tracks to be skipped

Adjustment of the Recording Input Level Control

Too high a recording level will result in a recording which has a high degree of distortion, whereas too low a recording level will result in a high degree of noise. Adjustment of the recording input level is of the utmost importance in making a well-balanced recording.

Guide to Recording Input Levels

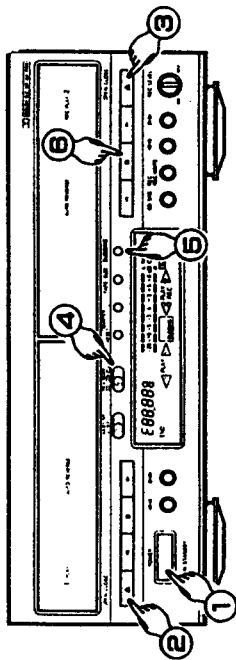
Type I (normal) tapes	0 dB
Type II (CrO ₂) tapes	+3 dB
Type IV (metal) tapes	+3 dB

NOTE:
The optimum recording level will actually differ, depending on the source and the type of tape, and so a trial recording should be made.

GENERAL SECTION

RECORDING CASSETTE TAPES

- Making a Synchro Dubbing (Copy)
Synchro dubbing (tape copying) can be made at regular speed from deck 1 to deck 2.



- Press the SYSTEM POWER button of the tuner-preamplifier or press the POWER ON/STANDBY button of the deck.
 - Press the OPEN/CLOSE (▲) button and load the tape to be played back in deck 1.
 - Press the OPEN/CLOSE (▲) button and load the tape to be recorded back in deck 2.
 - Set the reverse mode with the REV MODE switch.
(REV MODE : : : C)
 - Press the DUBBING (synchro dubbing) button. Note that if the POWER ON/STANDBY button of the deck is pressed to switch on the power, the POWER of the tuner-preamplifier will automatically be switched on when the DUBBING button is pressed. You will be able to hear the audio normally.
 - To stop the dubbing, press the stop button (■) or press the DUBBING button.
The tape will automatically stop when it reaches the end and the synchro dubbing mode will be cancelled.
- Recording level during synchro dubbing
During synchro dubbing, the recording is made at the same level as the playback tape of deck 1, regardless of the position of the recording level control. Note that when the recording tape and the playback tape are of different types, the recording level might be different and so synchro dubbing should be done with the same types of tape if possible.
 - Dolby NR mode during synchro dubbing
The Dolby NR system is automatically disengaged from the panel switch during synchro dubbing (even though the display does not change) and the tape is recorded with the Dolby NR mode of the playback tape.
 - You can listen to the sound of another source while synchro dubbing.
Changing the source with the FUNCTION button or the CD play button will not interrupt the synchro dubbing.
 - When synchro dubbing, both decks begin running in the forward direction (from the A side).
 - The synchro DUBBING button is effective in starting the operation only when both tapes are in the stopped condition.
 - The following buttons do not function during the synchro dubbing operation: forward play ►, reverse play ◀, fast forward ►►, rewind ◀◀, and REC/REC MUTE.
 - To ensure complete reproduction, use the same length of recording tape as the playback tape, and rewind both tapes to the beginning of side A before starting the dubbing operation.
 - By setting the REV MODE switch to the ◀ or C position, when the playback tape of deck 1 reverses at the end of the tape on side A, the deck 2 tape will reverse at the same time and dubbing can continue on side B.

11 PLAYING CDS

Compact Discs

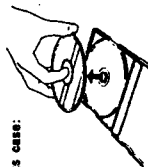
- Press the OPEN/CLOSE button (▲) once to open the disc tray, once again to close it.
- The disc tray can also be closed by pressing the play (▶) button. When this is done, playback automatically starts from the first track on the disc (or if the tracks are programmed, the first programmed track).
- Load the disc with the label side facing up, being careful not to touch the disc surface.
- Load the disc with the disc tray open all the way.
- Set the disc securely in the tray guide at the center of the disc tray.
- To play an 8 cm disc, place the disc in the sunken part at the center of the disc tray.
- When the disc tray is closed, the disc turns automatically for several seconds, and the number of tracks and total playing time appear on the display.



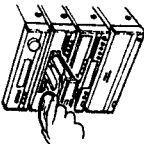
Only discs with this mark can be played.

- For CDVs, only the audio part is played (the video part is not played).

Disc	Remarks
CD	
CDV	Only the audio part is played.
CD single (8 cm)	



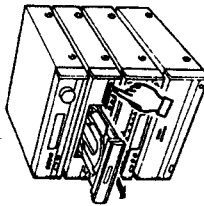
■ When removing the disc from its case:
As shown in the diagram, grasp the disc along the edges, gently press down on the hole in the middle with a finger, and lift the disc. It should come out easily.



■ When setting the disc in the disc tray:
Always set the disc with the label side facing up. (Compact discs can only be played on one side). For 8 cm CDs, set the disc in the sunken part in the middle of the tray.

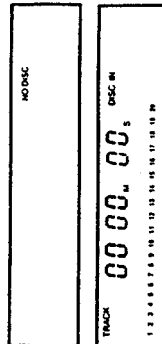
Handling the Disc Tray

- Do not switch off the power or push or pull the disc tray when it is moving, since this may damage it.
- If the cord of a set of headphones, etc., gets caught in the disc tray when it is closed, press the OPEN/CLOSE button (▲) again.
- Never set objects other than CDs in the disc tray, as this can cause damage.



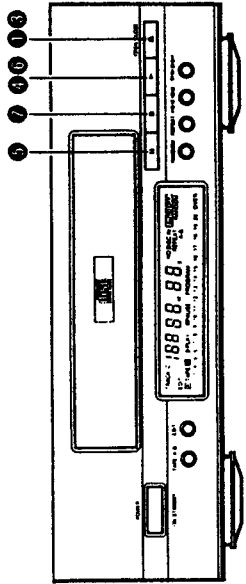
NOTE:

"NO DISC" is displayed on the display window when no disc is loaded, when the disc is loaded upside-down, or when the disc is not properly loaded. Also, "00.00" may appear during playback of a CD if the disc is scratched or dirty. If this happens, the set will not operate when a normal operating button (other than the OPEN/CLOSE button) is pressed, so press the OPEN/CLOSE (▲) button, remove the disc, clean it as necessary, then press the PLAY (▶) button again.



GENERAL SECTION

Regular Play



Example: Playing a CD with 15 tracks and a total playing time of 82 minutes 03 seconds, starting from track 1

1	Press the OPEN/CLOSE button. 	NO DISC
2	Set the CD in the disc tray. Refer to Page 16. 	The display appears several seconds after the disc tray closes.
3	Press the OPEN/CLOSE button. 	TRACK 15 62.03, DISC IN 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
4	Press the play button. 	TRACK 01 16.01, DISC IN 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
To stop play temporarily:		
5	Press the pause button. 	"PAUSE" goes off and "II PAUSE" appears. CD play is paused at the point the button is pressed.
To resume CD play:		
6	Press the play button. 	"II PAUSE" goes off and "▶ PLAY" appears. CD play resumes from the point the pause button was pressed.
To stop CD play:		
7	Press the stop button. 	TRACK 15 62.03, DISC IN 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

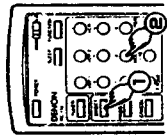
NOTE: "00" is displayed on the track number section of the display for several seconds after the disc is set, while the data on the number of tracks, playing time, etc., is being read from the disc. After this, the number of tracks and total playing time appear.

Various CD Play Functions

(Insert the disc before performing the following operations.)

Playing Certain Tracks

Example: Playing the 8th track Perform this operation from the remote control unit.

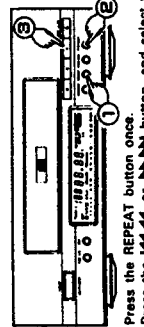


- 1 Press the DIRECT button.
- 2 Press track button "8". "TRACK 8" appears on the display, and the 8th track begins playing.
- 3 When the end of the track is reached, play continues on to the next track.

- For track numbers of 11 and higher, for example 15, press [15] and [8].
- For track numbers of 20 and higher, for example 23, press [20], [3], and [3].
- For track number 20, press [20] and [10].

DIRECT SELECTION

Playing 1 Track Repeatedly



- 1 Press the REPEAT button once.
- 2 Press the TRACK 1 or TRACK 10 button, and select the desired track.
- 3 Press the play button (▶) to start play.

1 TRACK REPEAT

- When the specified track finishes playing, the pickup returns to the beginning of that track and play is repeated.
- If the REPEAT button is pressed once during play, the track will be played repeatedly.
- If the REPEAT button is pressed once during programmed play, the track will be played repeatedly.
- If the REPEAT button is pressed once while the disc is stopped, the TRACK numbers indicator flashes and the 1 track repeat play mode is set.

Playing All Tracks Repeatedly



- 1 Press the REPEAT button twice.
- 2 Press the play button (▶) to start play.

ALL TRACKS REPEAT

- When the last track finishes playing, the pickup returns to the first track of the disc and play is repeated.
- If the REPEAT button is pressed twice during play, the disc will be played repeatedly.
- If the REPEAT button is pressed twice during programmed play, the program will be played twice during programmed play.
- If the REPEAT button is pressed twice while the disc is stopped, the TRACK numbers indicator lights and the all tracks repeat play mode is set.

Playing a Specific Section Repeatedly

Example: The CD has a total of 15 tracks

1st time	(1) Press the REPEAT button during CD play. 	TRACK 03 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	Only that track is played repeatedly, and that track number lights on the music calendar. With a 1-track repeat of track 21 or higher, "TRACK No." flashes.
2nd time	(2) Press the REPEAT button before CD play. 	TRACK 03 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	The total number of tracks flashes, and then 1 the first track is repeated by pressing the play button 2 when play is started by direct selection from the remote control or with the PAH or PAE button, only those selected tracks are played repeatedly.
3rd time	Press the REPEAT button during CD play. 	TRACK 03 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	The track numbers contained on the disc light up on the music calendar, and all tracks are played repeatedly.
4th time	Press the REPEAT button during CD play. 	TRACK 03 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	"REPEAT A." lights up. If nothing else is done, all tracks are played repeatedly.
			"REPEAT A-B" lights up. The A-B section is played repeatedly.

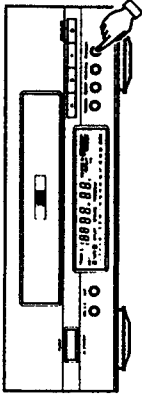
Pressing the REPEAT button once again returns the player to regular CD play.

SECTION REPEAT

GENERAL SECTION

QUICK SEARCH

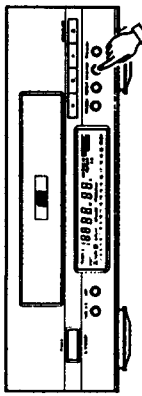
- ① Press the auto search forward button (▶▶▶▶).
- Each press of the auto search forward button (▶▶▶▶) moves the pickup to the beginning of following tracks.



② Moving to the Next Track During CD Play

QUICK SEARCH

- ① Press the auto search backward button (◀◀◀◀).
- Each press of the auto search backward button (◀◀◀◀) during the search operation moves the pickup to the beginning of previous tracks.

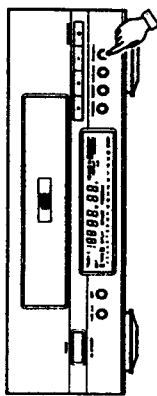


③ Moving Back to the Beginning of the Current Track During CD Play

SKIP MONITOR

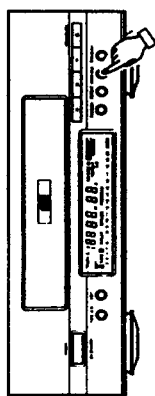
- ② Searching for Tracks While Listening to the Sound
 - Use this to skip through a disc listening to the sound at high speed. This function is convenient when searching for a certain section within a long track.
 - Use the skip monitor function to find the desired position, then release the search button to start regular playback from there.

1 Forward skip monitor



① During CD play, press and hold in the forward search button (▶▶▶▶) to skip forward while listening to the sound.

2 Backward skip monitor



① During CD play, press and hold in the backward search button (◀◀◀◀) to skip backward while listening to the sound.

If the forward or backward skip button is pressed during programmed CD play and released at a track which has not been programmed, the next programmed track will be played once that track has been played to the end.

PROGRAMMED SELECTION

- ② Playing Certain Tracks in any Desired Order (Perform this operation from the remote control unit.)

Example: Programming track 3 to play first, track 18 to play second, on a CD with 18 tracks and a total playing time of 62 minutes, 3 seconds

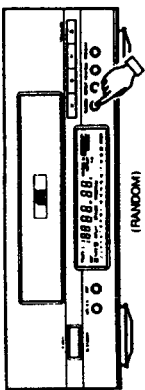
Setting and Playing the Program (Set the Slide Switch to the "MAIN" Side.)

1	Press the PROGRAM button.		
2	Set track 3 to play first.		<p>After 2 seconds The display when track 3 is set to play first Time of first track: 8 minutes, 00 seconds</p>
3	Set track 18 to play second.		<p>After 2 seconds The display when track 18 is set to play second Time of first track: 16 minutes, 05 seconds</p>
4	Press the play button.	The tracks start playing in the programmed order.	

- The numbers of the programmed tracks go off once the tracks are played.
- The time display will read "—M —S" if a track number of 31 or higher is set in the program.
- When a program is set during CD play after a direct selection, the track currently playing is set as the first track in the program.
- Up to 20 tracks of your choice from among track numbers 1 through 98 can be programmed with this CD player.
- If you attempt to set a track number that is greater than the number of tracks on the disc, that track number will not be displayed when the buttons are pressed.
- Programming is also possible when the disc tray is open. In this case, track numbers greater than the number of tracks on the disc can be programmed, but these are ignored when the disc is played.
- There is a silent interval of 4 seconds between tracks. This is has been designed to create a blank section of 4 seconds between selections when recording programmed tracks onto tape.
- The entire program is cleared when the disc tray is opened or closed (by pressing the ▲ button).
- If you make a mistake when programming tracks, press the CANCEL button and program again. (Each press of the CANCEL button cancels the last track.)
- An A-B section repeat is not possible during programmed play.
- Other operations possible during programmed play:
 - The quick search, pause, skip monitor, and other operations can be used during programmed play. To move to the beginning of the previous track with the quick search operation, press ◀◀◀◀ once, then once again while the time display reads 00.00. To move to the beginning of the following track, press ▶▶▶▶ once, regardless of the time display.
 - Perform programming and canceling in the stop mode.

RANDOM SEARCH

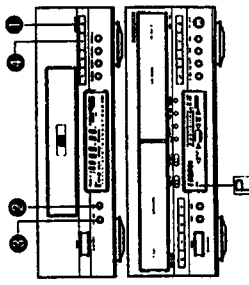
- **Playing Tracks in Random Order**
- The function plays each track on the disc once in random order.



- A press of the **RANDOM** button lights the **[RANDOM]** indicator to show that the random mode has been set. Random search will begin when the play button is pressed and the disc will start playing automatically.
- Simply pressing the **RANDOM** button during CD play will start the random search and start random play.

Edited Recording onto Sides A and B of a Tape (EDIT)

Editing is possible with CDs containing up to 20 tracks. Before starting the edited recording operation, load the cassette tape to which you will record into deck 2 with side A facing up. The leader tape is automatically taken up before recording starts. (Set the **REV MODE** switch to the **EDIT** position.)



- **Automatic Edited Recording**

Example: Recording a disc with 18 tracks and a total playing time of 56 minutes onto a C-60 cassette tape

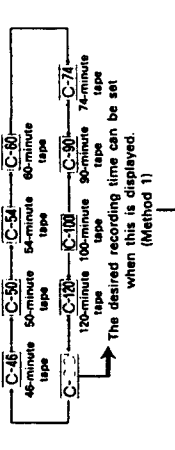
1

Press the **OPEN/CLOSE** button. → Set the disc. → Press the **OPEN/CLOSE** button. → Press the play button and set the function to CD. → Press the stop button.

- NOTE:**
- With edited recording, side B of the tape will be recorded automatically even when the **REV MODE** switch of the deck is set to the **EDIT** position.
 - During edited recording, only the following buttons will function: the stop button of the CD or the **OPEN/CLOSE** button, and the stop button of the deck.
 - When using a recorded tape for edited recording, the tape should be erased before use, since when the tape is longer than the set time, an unrecorded section of side B will remain after the tape stops. When a tape which has been recorded with this system is played back, there will be 4-second blank portions between tracks (for making it easy to reach the beginning of a track). This will differ from the actual silent portions between the tracks on the disc, and so there will be some error in the actual remaining time of the tape and the displayed time.

- **Setting the desired recording time (Method 2)**

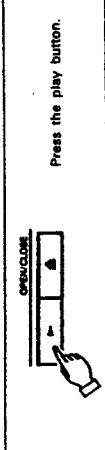
Select a tape length close to the desired time, then make a time adjustment using the **EDIT** or **PROGRAM** button. For example, to set 51 minutes, select C-50, then press the **EDIT** button once to set C-51.



Example: For a 36-minute tape, use the **EDIT** button to set 36. To set the tape length using the remote control unit, use the number buttons. For example, in the case of a 30-minute tape, press **[30]** twice and press **[EDIT]**.

If you make a mistake, press the **EDIT** button to display C-00, then start over again.

- **Pressing the PROGRAM button of the remote control unit**



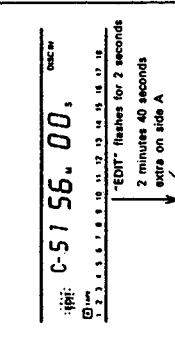
Note that in some cases, even if the tape is longer than the total playing time on the disc, it may not be possible to record all the tracks onto the tape, since they are divided onto sides A and B. In such cases, the **OVER** indicator flashes.

- **Programmed Edited Recording**
- ① Follow the instructions under "PROGRAMMED SELECTION" on Page 18 to program the tracks.
- ② Perform steps 2 through 4 under the aforementioned "Automatic Edited Recording".

- **Programmed CD Play Using the Search Buttons**
- Pressing the **PROGRAM** button of the remote control unit will light up the "PROGRAM" indicator. When the disc is stopped, programming can be done with the search buttons **[4]** **[4]** **[4]** on the CD player or with the search buttons **[4]** **[4]** **[4]** on the remote control unit.
- Select the tracks with the search buttons, then press the **PROGRAM** button to program them.
- The search buttons **[4]** **[4]** **[4]** can be used to change the track numbers continuously.
- After the track numbers have been selected with the search buttons, if the play button is pressed to start CD play before the **PROGRAM** button is pressed, the last track of the program set up to this point will be played. In this case, the tracks selected with the search buttons will not be programmed.

- **Setting the desired recording time (Method 2)**

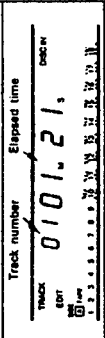
Select a tape length close to the desired time, then make a time adjustment using the **EDIT** or **PROGRAM** button. For example, to set 51 minutes, select C-50, then press the **EDIT** button once to set C-51.



Example: For a 36-minute tape, use the **EDIT** button to set 36. To set the tape length using the remote control unit, use the number buttons. For example, in the case of a 30-minute tape, press **[30]** twice and press **[EDIT]**.

If you make a mistake, press the **EDIT** button to display C-00, then start over again.

- **Pressing the PROGRAM button of the remote control unit**



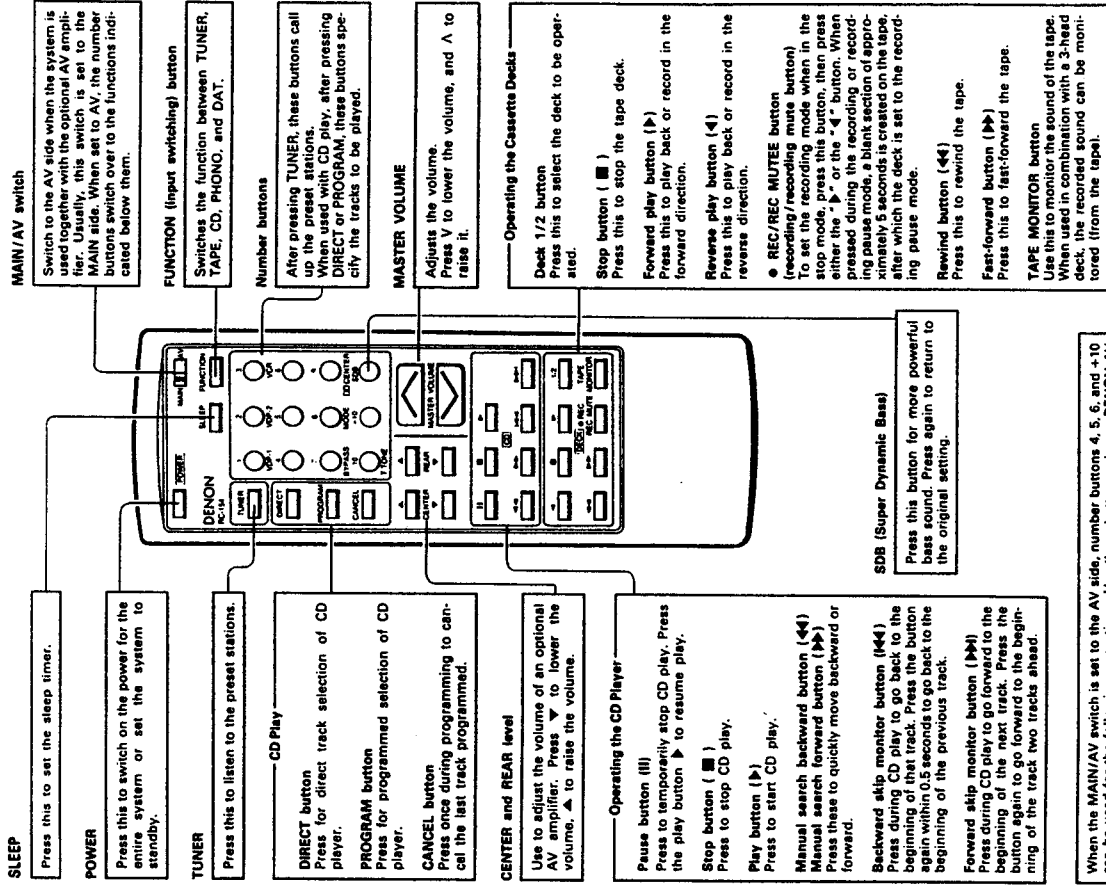
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- After the track numbers have been selected with the search buttons, if the play button is pressed to start CD play before the **PROGRAM** button is pressed, the last track of the program set up to this point will be played. In this case, the tracks selected with the search buttons will not be programmed.

GENERAL SECTION

Button Names and Functions



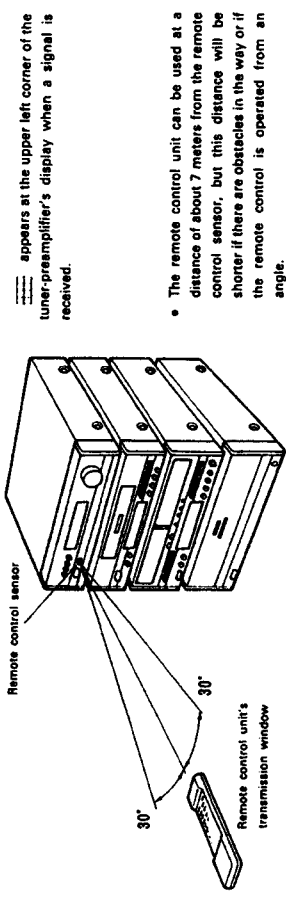
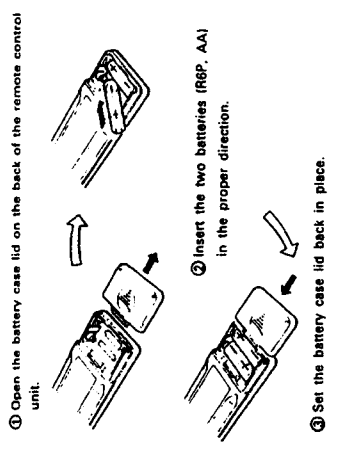
When the MAIN/AV switch is set to the AV side, number buttons 4, 5, 6, and +10 can be used for the following operations. Use these buttons when a DENON AV amplifier having these functions is used with this system.
4 button → VCR-2
5 button → DBS
6 button → TV
+10 button → 3CH LOGIC

12 REMOTE CONTROL UNIT

Cautions on Use

- The D-250 is supplied with a remote control unit (RC-154) for system control.
- Replace the batteries with new ones when the transmission distance possible with the remote control unit shortens. For longer battery life, remove the batteries when not using the remote control unit for long periods.
- When replacing batteries, use two new batteries. Never use an old battery with a new one.
- Do not use two different types of batteries.
- Do not heat batteries or take them apart.
- Be careful that the remote control sensor is not exposed to direct sunlight or strong light from lighting fixtures.
- The remote control sensor is located on the tuner preamplifier. Point the remote control unit at the sensor, then press the buttons for the desired operation.
- Operate the remote control unit within the range illustrated in the diagram.

Inserting the Batteries



- The remote control unit can be used at a distance of about 7 meters from the remote control sensor, but this distance will be shorter if there are obstacles in the way or if the remote control is operated from an angle.
- Do not press buttons on the remote control unit and on the main unit at the same time. Doing so will lead to a malfunction.
- If the tuner-preamplifier's display due to incident light even though the remote control unit has not been operated, it is best to move the set or place it in a different direction. Even if this happens, it will not cause a malfunction with remote control unit.
- When adjusting the volume continuously with the remote control unit, the volume adjustment will stop if the remote control unit is moved away from the remote control sensor. Should this happen, press the button again to continue changing the volume.

15 SPECIFICATIONS

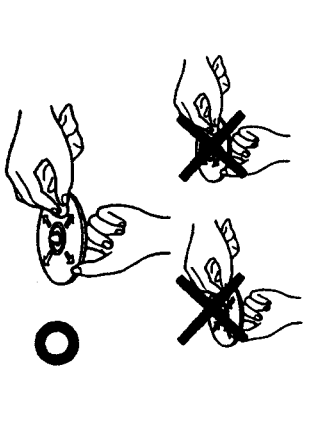
- **Tuner-preamplifier (UTP-250)**
 Reception Frequency Range:
 Receiving Sensitivity:
 FM Stereo Separation:
 Bass Adjustment:
 Treble Adjustment:
 Super Dynamic Bass:
 Jacks:
 PHONO: Input jacks
 DAT: Input jacks, recording output jacks
 Processor: Processor input/output jacks
 270 (W) x 86 (H) x 330 (D) mm (10-5/8" x 3-25/64" x 13")
 3.2 kg (7 lbs 10 oz)
 AC 230 V, 50Hz, AC 240 V, 50Hz (for U.K. model)
 18 W
- **Dimensions (max.):**
 Weight:
 Power Supply:
 Power Consumption:
 Amplifier (UPO-250)
 Rated Output Power:
 Dimensions (max.):
 Weight:
 Power Supply:
 Power Consumption:
 CD Player (UCD-350)
 Wow and Flutter:
 Sampling Frequency:
 Light Source:
 Dimensions (max.):
 Weight:
 Power Supply:
 Power Consumption:
 Cassette Deck (UDRW-250)
 Type:
 Heads:
 Tape Speed:
 Noise Reduction Circuits:
 Usable Tapes:
 Dimensions (max.):
 Weight:
 Power Supply:
 Power Consumption:
 Remote Control Unit (RC-154)
 Type:
 Number of Buttons:
 Dimensions (max.):
 Weight:
- **Below measurable limits (±0.001% W, Peak)**
 44.1 kHz
 Semiconductor
 270 (W) x 86 (H) x 313 (D) mm (10-5/8" x 3-25/64" x 12-21/64")
 3.1 kg (6 lbs 13 oz)
 AC 230 V, 50Hz, AC 240 V, 50Hz (for U.K. model)
 15 W
- **Horizontal 4-track, 2-channel auto reverse stereo cassette deck**
 1 hard permalloy recording/playback head, 1 hard permalloy playback head, and 1 double-gap ferrite erase head
 4.76 cm/s
 Dolby B and C NR
 Normal, chrome, and metal tapes
 270 (W) x 86 (H) x 318 (D) mm (10-5/8" x 3-25/32" x 12-33/64")
 4.4 kg (9 lbs 11 oz)
 AC 230 V, 50Hz, AC 240 V, 50Hz (for U.K. model)
 18 W
- **Infrared pulse**
 41 (including 1 slide switch)
 60 (W) x 177 (H) x 18 (D) mm (20-23/64" x 6-31/32" x 45/64")
 130 g (Approx. 6.4 oz) (including batteries)
- **Maximum dimensions include controls, jacks, and covers. (W) = width, (H) = height, (D) = depth.**
 • For improvement purposes, specifications and functions are subject to change without advanced notice.

13 AUTO ON/OFF FUNCTION

- When the CD or deck play button, or the OPEN/CLOSE button is pressed from the standby mode, the power is switched on automatically, and the play or open/close operation is performed. The "AUTO OFF" indicator lights at this time.
- When play ends in this mode and there are no operations for 10 minutes, the power is automatically switched off and the system enters the standby mode. If there is no disc or cassette in the system, the power will be switched off in about 1 minute.
- When the disc tray or the cassette tray is open, the tray will close in about 1 minute.
- When the tuner number buttons (preset numbers) are pressed, the power will be switched on in the same way and the system will enter the auto off mode. In this case, the "TUNED" indicator will go off and 10 minutes later the power will be switched off.

14 IMPORTANT INFORMATION

- **Head Demagnetizing**
 The heads become magnetized after the deck has been used over a long period of time or if the heads are exposed to a magnetic field. This results in noise and reduced treble. In addition, there may be a reduction of the treble range of recorded tapes as well as noise produced on these tapes.
 When the heads become magnetized, use one of the cassette tape head demagnetizers (erasers) available on the market to demagnetize the heads.
 • For details, read the operating instructions of the demagnetizer.
- **Disc Cleaning**
 Dust, fingerprints, or spittle on the disc can cause noise or skipping.
 If the disc is dirty or if the player does not work properly, clean the disc as follows:
 • Hold the disc as shown in the diagram, with the signal surface facing up (and the labelled side facing down).
 • Using a soft cloth, wipe the disc gently from the inside straight towards the edges (as shown by the arrows).
 • Do not wipe from the edges towards the center, or around the disc as you would wipe records.
 • Do not use hard cloths or rub the disc forcefully, since the signal surface is susceptible to scratches.



- **Never use the following to clean discs:**
 • Solvents such as benzene or alcohol
 • Cleaners containing abrasives
 • Record sprays or cleaners
 • Anti-static products

GENERAL SECTION

Avoid using ultrasonic humidifiers nearby. If ultrasonic humidifiers are used nearby, the calcium, etc., included in the water may be scattered into the air, causing white dust to accumulate on the surface of the objective lens or sensor, resulting in improper operation.

Normal operation may not be possible if there is dirt or other substances on the surface of the internal objective lens or sensor. These parts must be cleaned periodically depending on the place of installation. For details, contact your store of purchase.

When Condensation Forms
The signals of the disc may not be read and this product will not operate properly. To remove the condensation, take out the disc and switch on the power. The condensation will evaporate within 1 hour and the set will operate normally.

Dew (Condensation) Phenomenon
Dew (water droplets) may form on the lens of the internal optical system or on the disc, or on the rotating parts of the tape deck in situations such as the following:
• Soon after a heater is put on.
• When the set is placed in a steamy or damp room.
• When the set is moved from a cold place to a warm room.

This system consists of precision components using microprocessors. Avoid using it in places where there is much external noise. If used in such places, the system may not operate properly, but this is not a problem with the system. If the system does not operate properly, try performing the desired operation again.

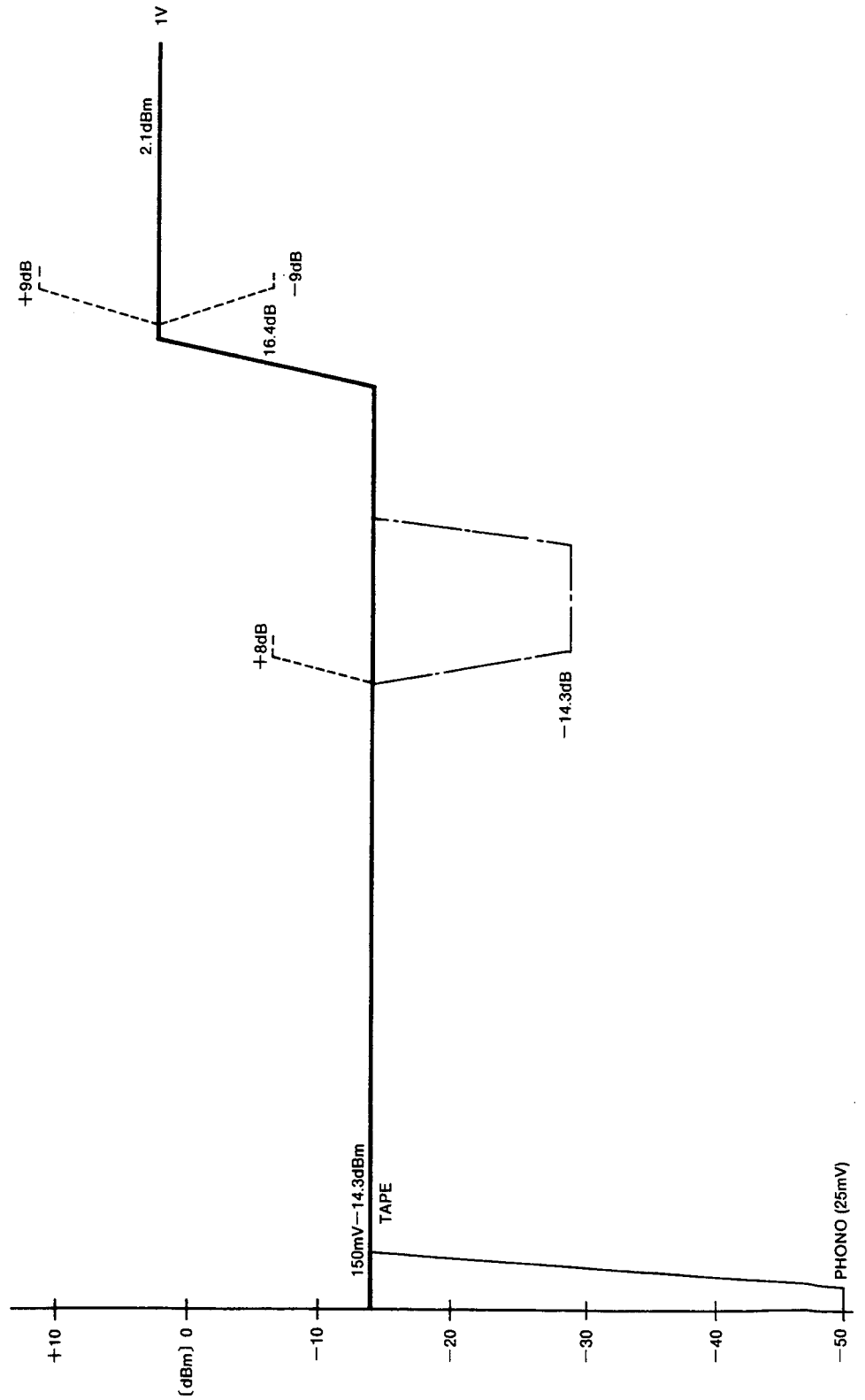
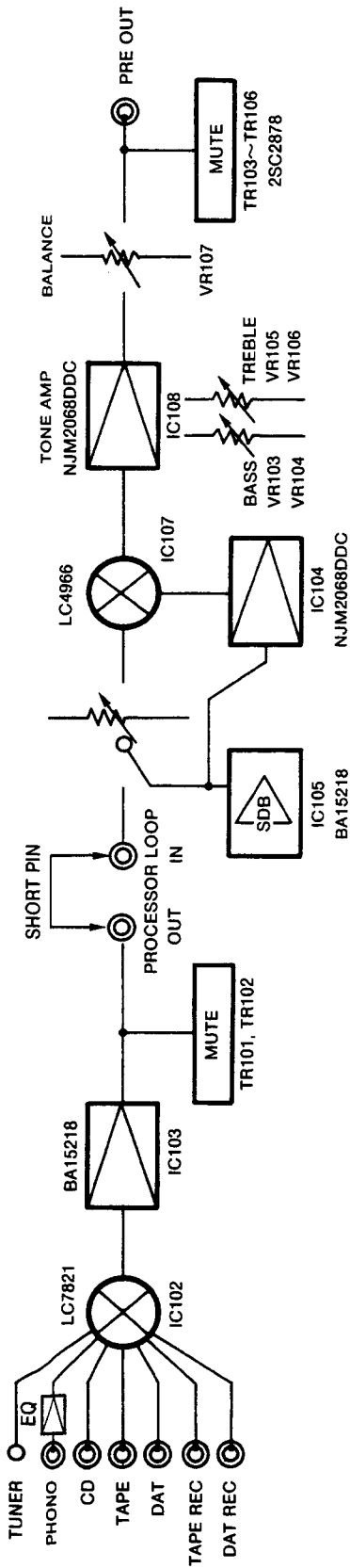
16 TROUBLESHOOTING

1. Check that the connections are proper.
2. Check that you are operating the system according to the instructions in the manual. Check the following table if the system does not seem to be working properly. If the problem is not solved after checking these points carefully, the system may be malfunctioning. Switch off the power and contact your store of purchase.

Common	Symptom	Cause	Measures	See Page
Common	Power does not come on when POWER button pressed.	• Power cord not plugged into outlet.	• Plug cord into outlet properly.	5
	No sound produced from speakers.	• VOLUME control set to minimum. • Headphones are plugged in. • Speaker cables not connected to speaker terminals. • Speaker polarities (+ and -) not matched.	• Turn VOLUME control clockwise (∞). • Disconnect headphones. • Connect speaker cables properly. • Connect speaker cables properly.	6 6 5
	Treble not produced. Orientation of sound field not clear.	• Function selector button not set properly.	• Set to desired function.	6
Deck	Source other than the desired one is heard.	• No cassette tape loaded. • Accidental erasure prevention tabs of cassette broken off.	• Load tape. • Apply cellophane tape over holes.	14 13
	Sound is interrupted during playback and recording, or treble sound is low.	• Head dirty. • Tape stretched.	• Clean. • Replace tape.	21 -
	Wow (fluctuation) is heavy during playback and recording.	• Capstans and pinch rollers dirty.	• Clean.	21
Tuner	Buzzing noise heard during playback.	• Noise from TV. • (Some TVs produce noise.)	• Separate TV from system. • Turn off TV.	- -
	Hissing noise heard during FM reception.	• Antenna not pointed in proper direction. • Signals weak.	• Change direction of antenna. • Install outdoor antenna.	4 4
	Hissing or scratchy noise heard during AM reception.	• Noise from TV, etc., or interference from other stations.	• Turn off TV. • Change position of loop antenna. • Install outdoor antenna.	- 4
CD Player	Hum noise heard during AM reception.	• Signals coming over power cord are modulated by power source frequency.	• Plug in cord in opposite direction. • Install outdoor antenna.	5 4
	Disc loaded but total number of tracks not displayed.	• Disc loaded upside-down. • Disc dirty. • Non-standard disc loaded.	• Reload disc. • Clean disc. • Replace with standard disc.	16 21 16
	Operation not performed when buttons pressed, or playback stops in middle of track.	• Disc loaded upside-down. • Foreign object in disc holder. • Disc dirty. • Disc scratched.	• Reload disc. • Remove disc and remove foreign object. • Clean disc. • Replace with non-scratched disc.	16 16 21 -
CD Player	Sound skips.	• Dust, fingerprints, or spittle on disc. • Disc scratched. • Player set in shaky, unstable place.	• Clean disc. • Replace with non-scratched disc. • Set player in stable place.	21 - -
	Buzzing noise mixed in with CD sound.	• Signals coming over power cord are modulated by power source frequency.	• Plug in cord in opposite direction.	5

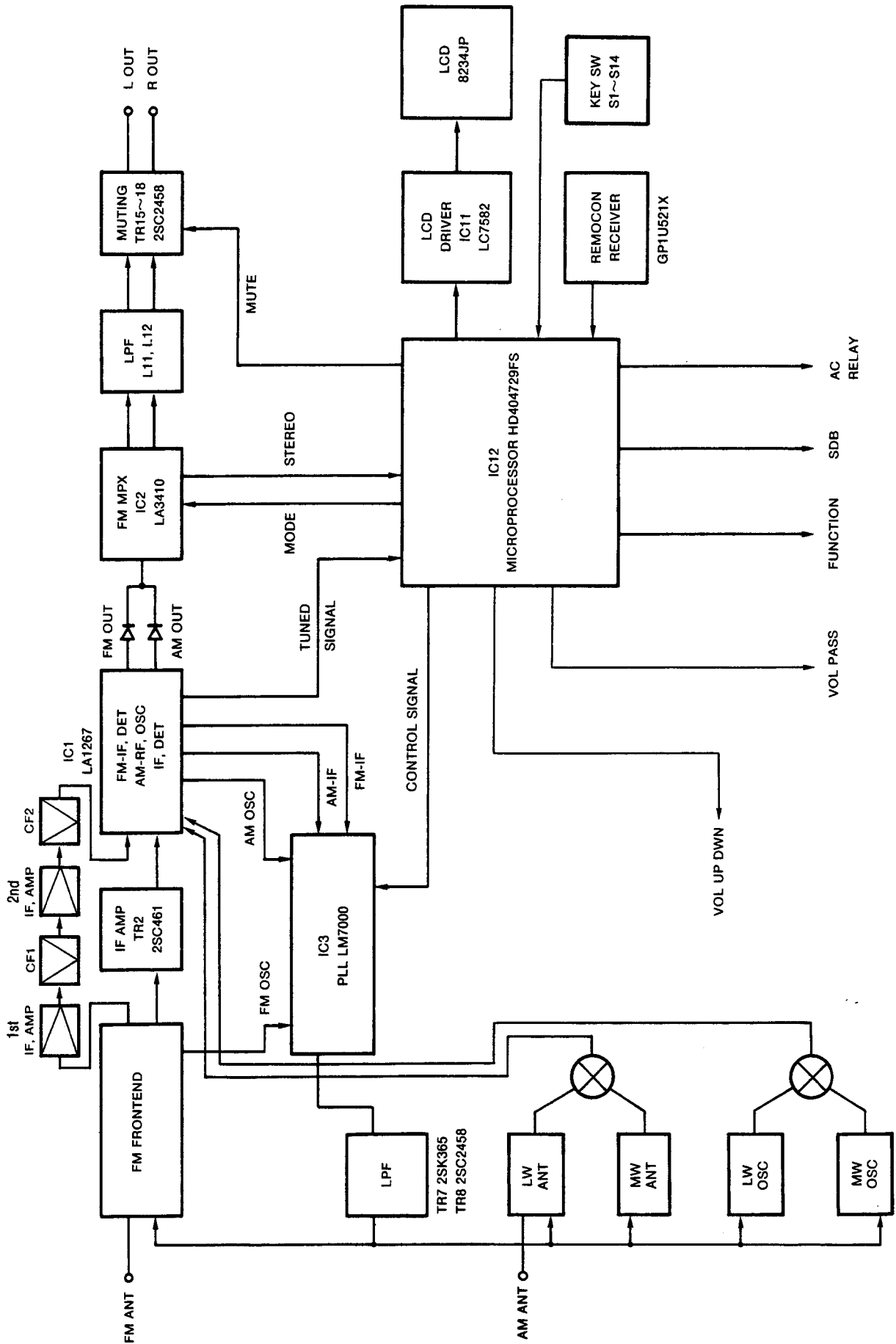
TUNER PRE SECTION

LEVEL DIAGRAM



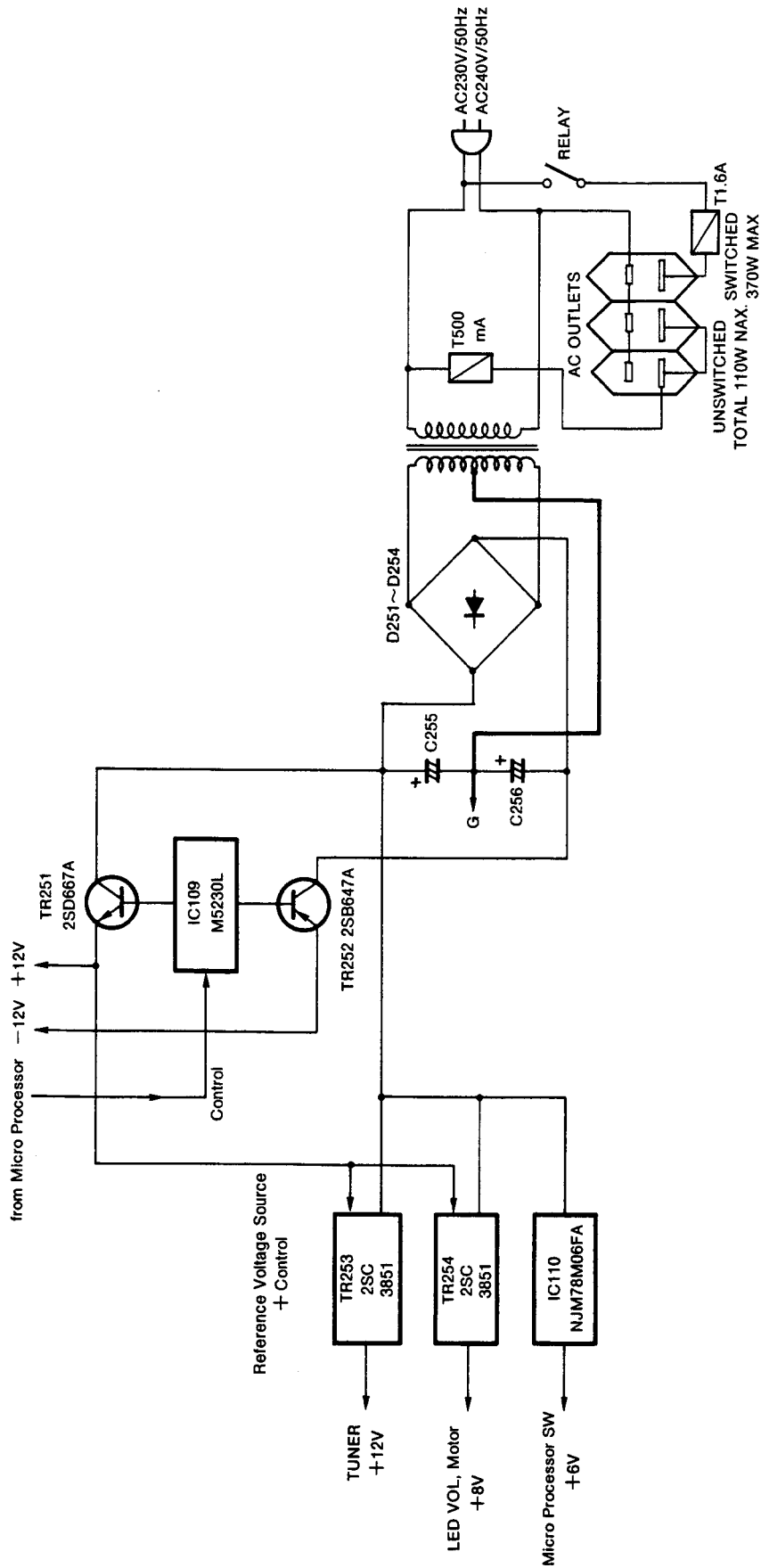
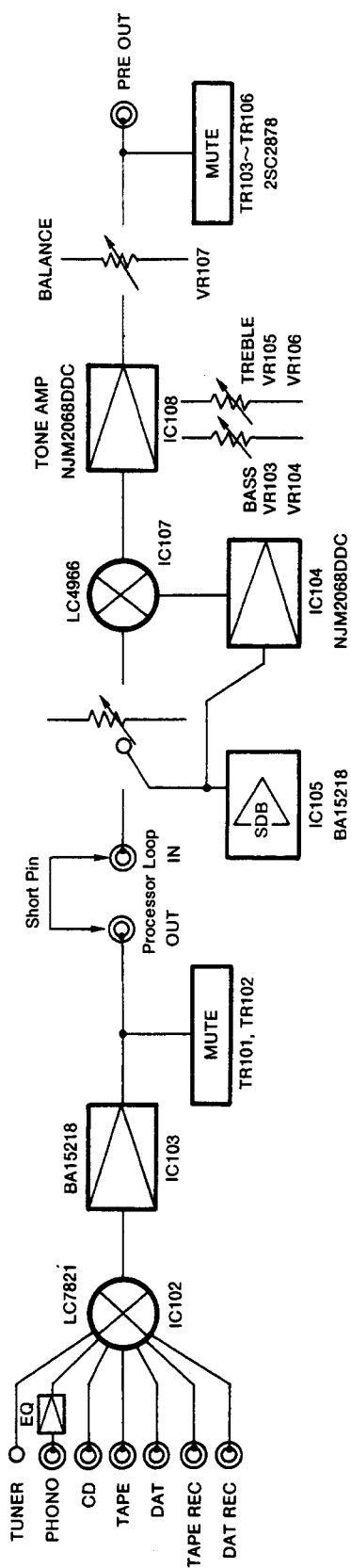
TUNER PRE SECTION

BLOCK DIAGRAM (TUNER SECTION)



TUNER PRE SECTION

(PRE AMPLIFIER SECTION)



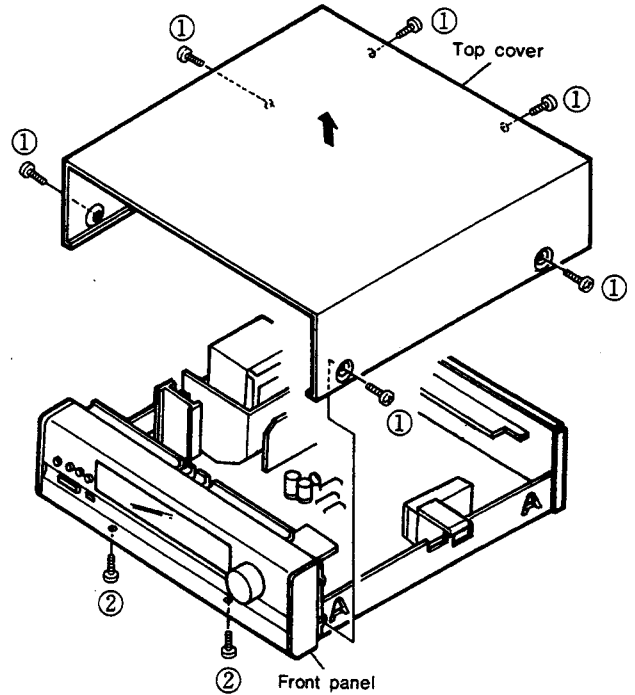
TUNER PRE SECTION

DISASSEMBLY PROCEDURES

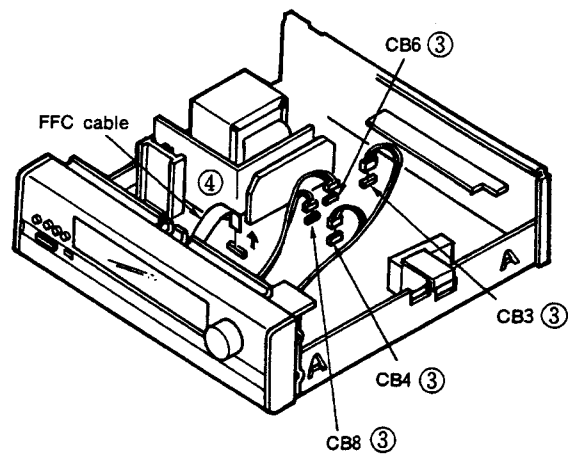
(Follow these procedures in reverse order to reassemble.)

1. Removing the top cover and front panel

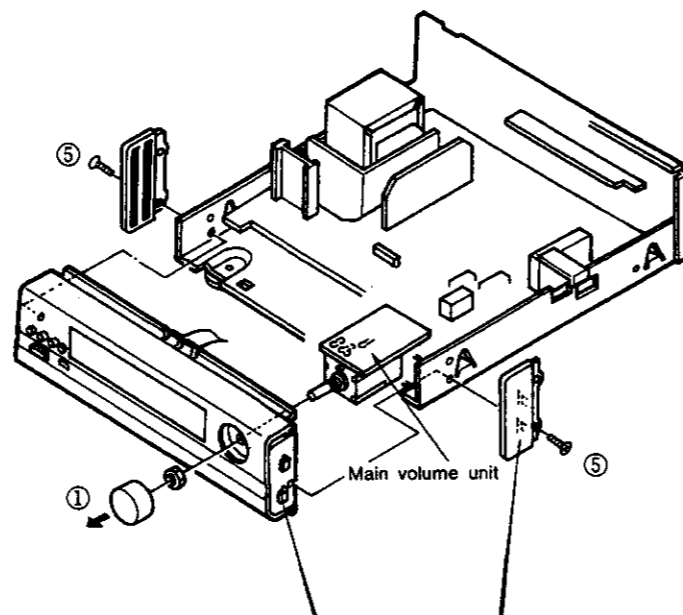
- ① Remove the 6 screws which fasten the top cover.
- ② Remove the 2 screws of the bottom side which fasten the front panel.



- ③ Disconnect connectors CB3, CB4, CB6, and CB8 which are attached to the main unit.
- ④ Remove the FFC cable, which is connected to the main unit, in the direction of the arrow.



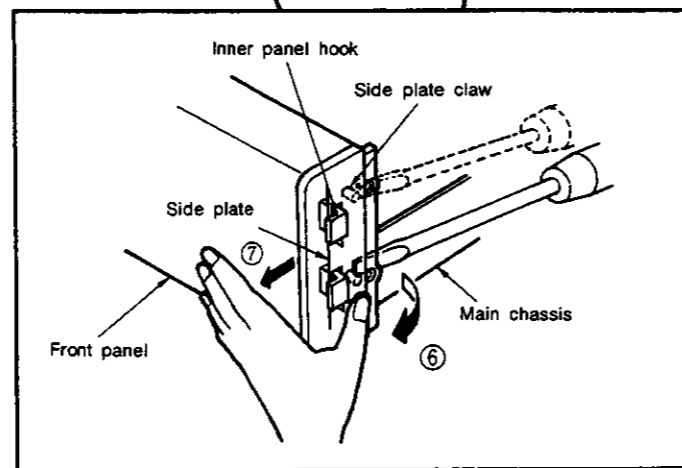
- ⑤ Remove the 2 screws which fasten the side plate.
- ⑥ While disengaging in the direction of the arrow the tabs of the side plate and the holes of the main chassis (with a flat-bladed screwdriver),
- ⑦ Use your fingers to push out the hook of the inner panel from the side plate in the direction of the arrow.
Using the same method for the left side, remove the side plate. Remove the front panel in the direction of the arrow.



2. Removing the printed wiring boards

MAIN VOLUME UNIT IU-2476-5

- ① Remove the volume control assembly in the direction of the arrow and remove the nuts attached to the main volume unit.

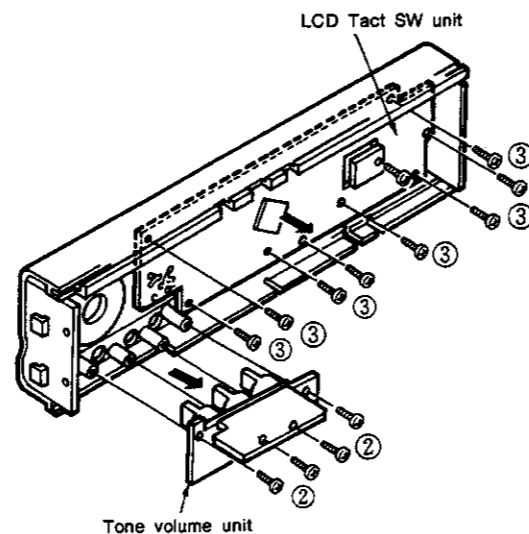


TONE VOLUME UNIT IU-2476-4

- ② Remove the 4 screws which fasten the tone volume unit (IU-2376-4) and remove the board in the direction of the arrow.

LCD TACT SWITCH UNIT IU-2476-3

- ③ Remove the 9 screws which fasten the LCD Tact switch unit and remove the board in the direction of the arrow.

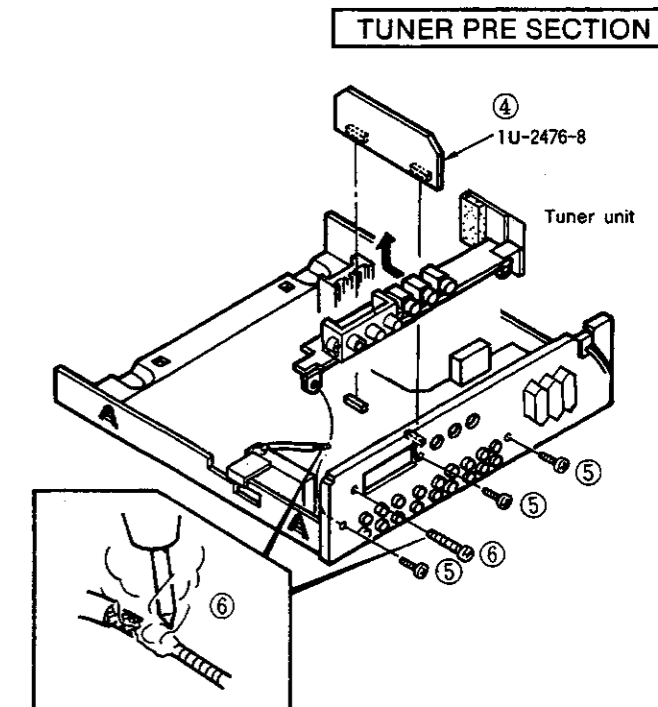


S.D.B. UNIT 1U-2476-8

- ④ Remove the S.D.B. unit in the direction of the arrow.

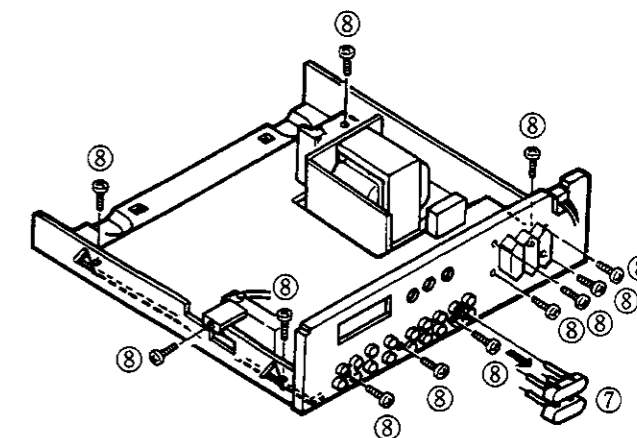
TUNER UNIT IU-2476-2

- ⑤ Remove the 3 screws which fasten the tuner unit.
- ⑥ Remove the solder from the shielded wire, then remove the screw.

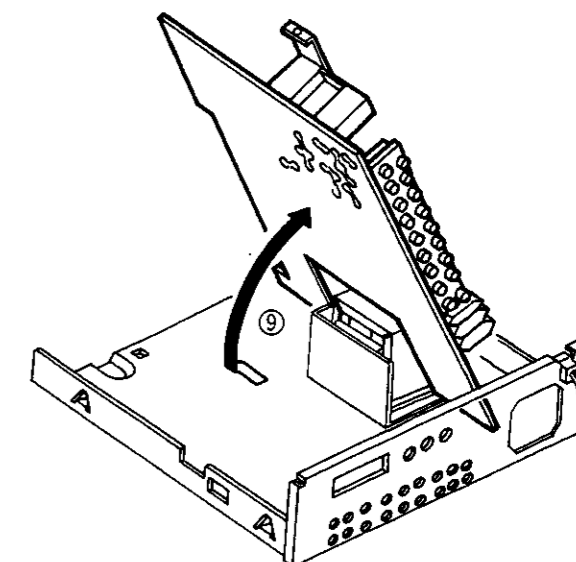


MAIN UNIT IU-2476-1

- ⑦ Remove the 2 shorting pins which are attached to the 6-pin pin jack.
- ⑧ Remove the 12 screws which are attached to the main unit.

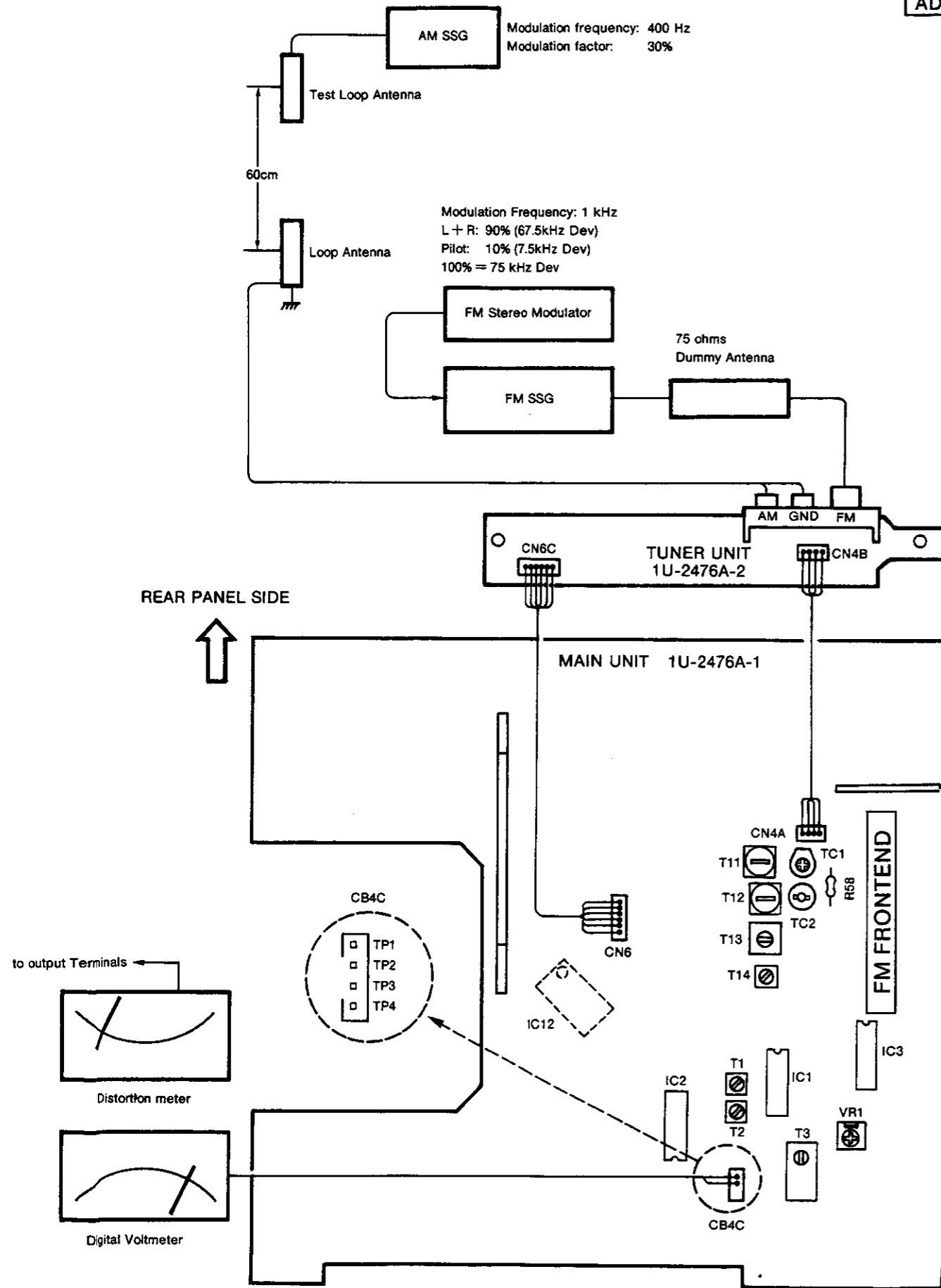


- ⑨ Remove the main unit in the direction of the arrow.

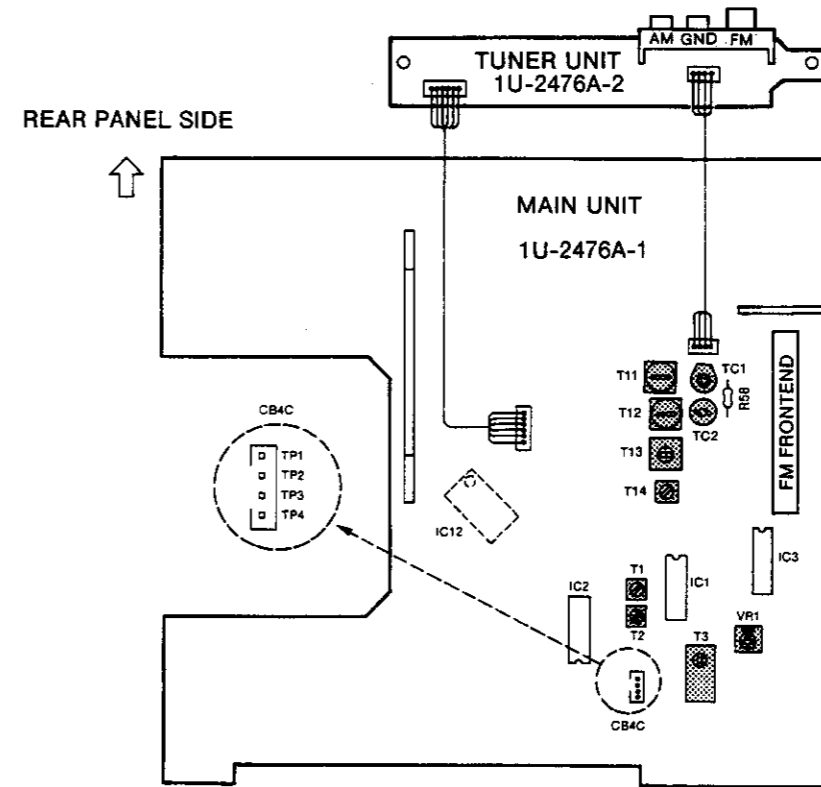


TUNER PRE SECTION

ADJUSTMENTS



1U-2476 TUNER UNIT ASS'Y (Component Side)



TUNER PRE SECTION

1. FM adjustment (BAND SELECTOR button: FM, STEREO / MONO MUTE button: AUTO)

Step	Adjustment item	Tuning point (Channel setting)	Input				Output		Adjustment location	Setting value	Notes	
			Measuring instrument	Frequency	Input level	Modulation	Connection location	Measuring instrument				Connection location
1	FM DC balance	98MHz	FM S.G.	98MHz	60dB μ	1kHz 75kHz DEV	FM antenna terminal	Digital Volt	TP.1, TP.2	T-1	0 \pm 50 mV	Perform with monaural modulation signal
2	Distortion	"	"	"	"	"	"	Distortion factor meter	Output jack	T-2	Minimum distortion	"
3	Repeat Steps 1 and 2.											
4	AUTO STOP level	98MHz	FM S.G.	98MHz	22dB μ	1kHz 75kHz DEV	FM antenna terminal	Check for the lighting of TUNED	Output jack	VR-1	Input level 22dB μ \pm 4dB	(Level at which TUNED lights up) Level at which the output is provided

2. MW adjustment (BAND SELECT button: MW)

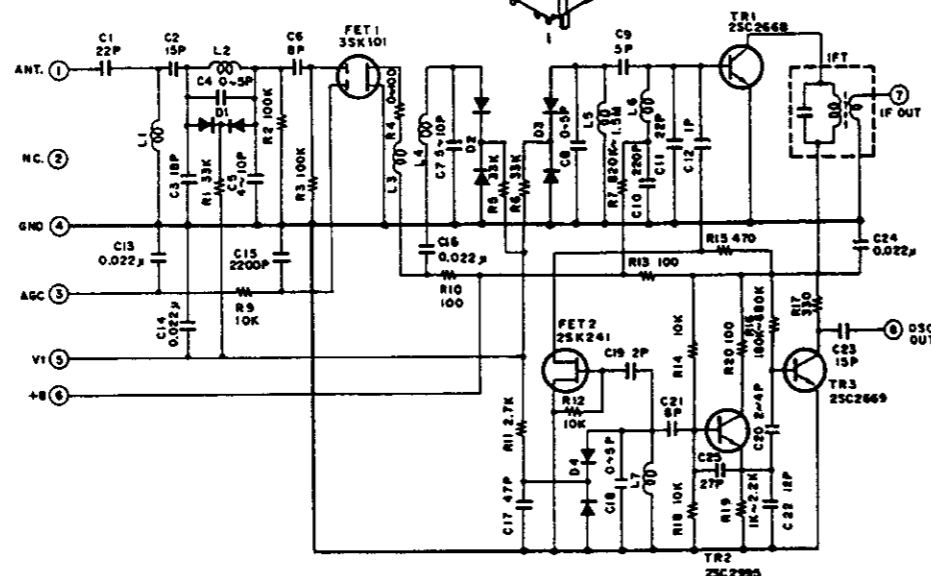
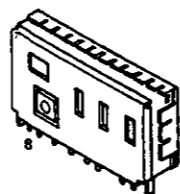
1	IF	Clear frequency (without a broadcast)	AM IF sweep	-	Level at which AGC is not applied	-	AM antenna terminal	Oscilloscope	\oplus TP.3 \ominus TP.4	T-3	Waveform maximum and symmetry	
2	Band edge	522kHz	-	-	-	-	-	Digital voltmeter	\oplus R58 \ominus G	T-14	1.2V	
		1611kHz	-	-	-	-	-	-	-	-	Approx. 8.2V	No place to adjust
3	Tracking	603kHz	AM S.G.	603kHz	Level at which AGC is not applied	400Hz 30%	Loop antenna	VTVM	Output terminal	T-12	Maximum output	
4	Tracking	1404kHz	"	1404kHz	"	"	"	"	"	TC-2	Maximum output	
5	Repeat Steps 3 and 4, and set the output to maximum.											

3. LW adjustment (BAND SELECT button: LW)

1	Band edge	153kHz	-	-	-	-	-	Digital voltmeter	\oplus TP.5 \ominus TP.6	T-13	1.2V	
		279kHz	-	-	-	-	-	-	-	-	Approx. 7.0V	No place to adjust
2	Tracking	163kHz	AM S.G.	163kHz	Level at which AGC is not applied	400Hz 30%	Loop antenna	VTVM	Output terminal	T-11	Maximum output	
3	Tracking	270kHz	"	270kHz	"	"	"	"	"	TC-1	Maximum output	
4	Repeat Steps 2 and 3, and set the output to maximum.											

Front End
Part No.: 2160079005

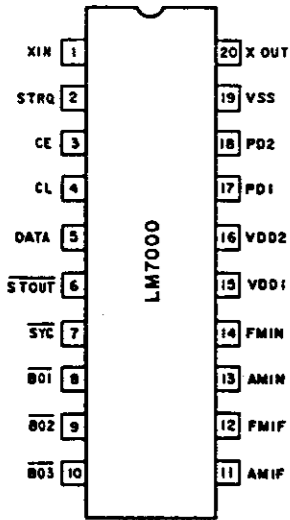
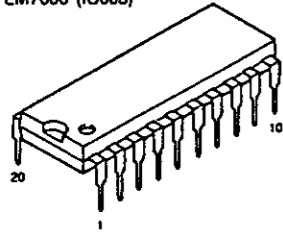
No.	Name	No.	Name
1	ANT	5	V1
2	ANT	6	+B
3	AGC	7	IF OUT
4	GND	8	OSC OUT



TUNER PRE SECTION

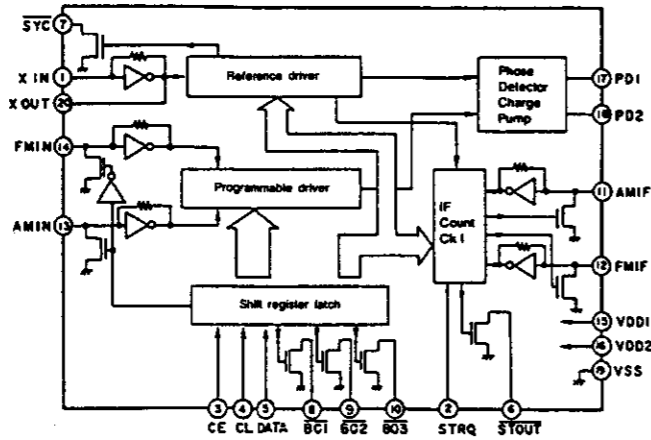
IC's

LM7000 (IC003)

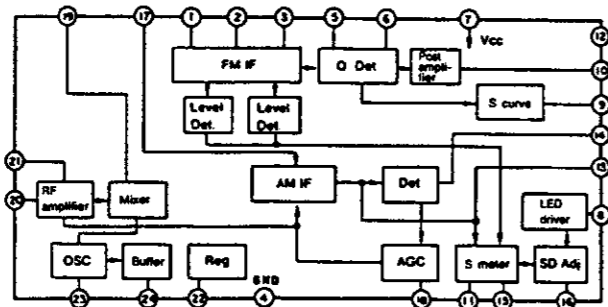
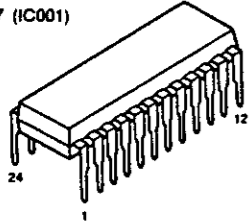


Pin Description

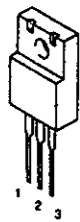
- SYC : Clock (400 kHz) for the controller
- XIN, XOUT : X'tal oscillator (7.2 MHz) with built-in feedback resistor
- FM IN, AM IN : Local oscillator signal input
- CE, CL, DATA : Data input
- B01, B02, B03 : Band data output. B01 can be set as the time base output (8 Hz).
- STRQ : IF counter request input
- STOUT : Auto research stop signal output
- VDD1, VDD2, VSS : Power supply (VDD2 is a back-up power supply)
- AMIF, FMIF : IF signal input
- PD1, PD2 : Charge pump output



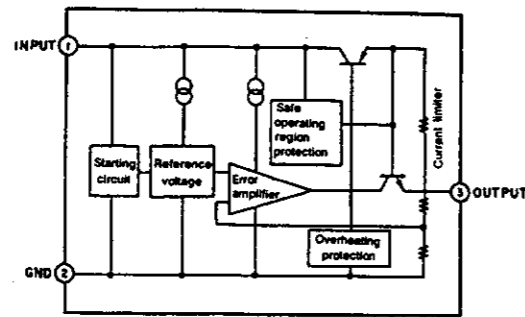
LA1267 (IC001)



NJM78M06FA (IC110)

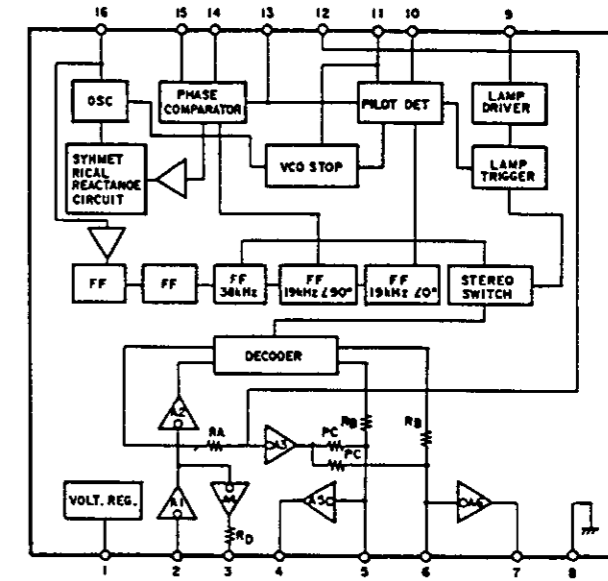
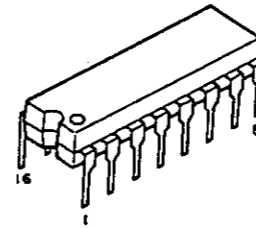


- 1: Input
- 2: GND
- 3: Output

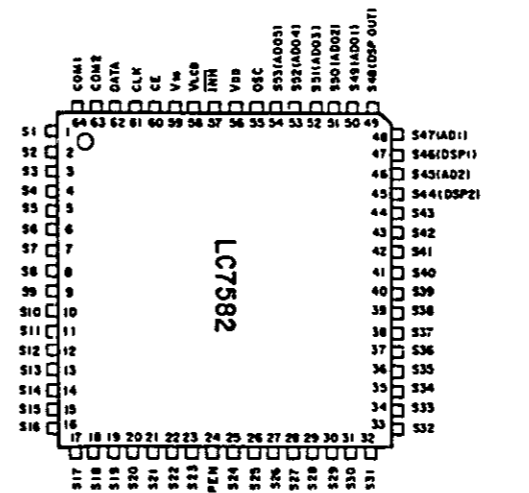
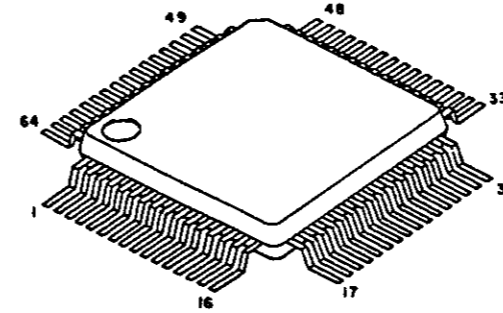


SEMICONDUCTORS

LA3410 (IC002)

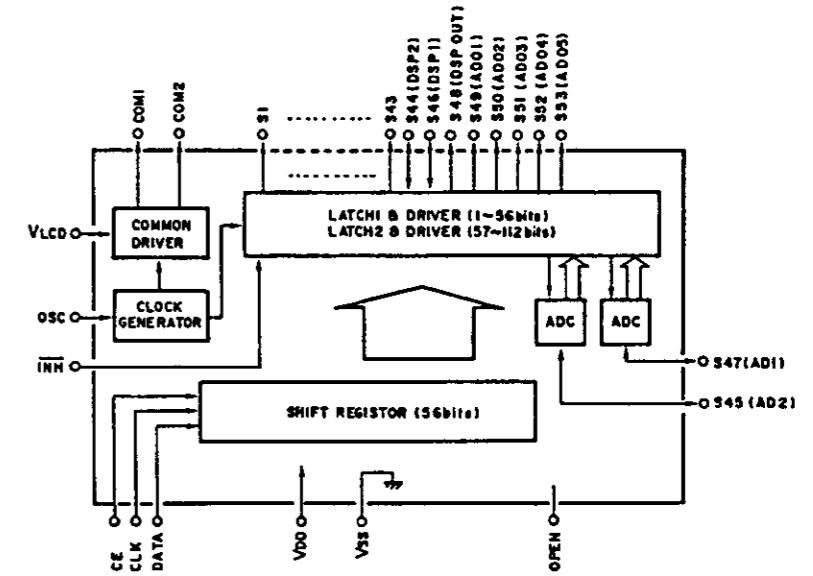


LC7582 (IC011)

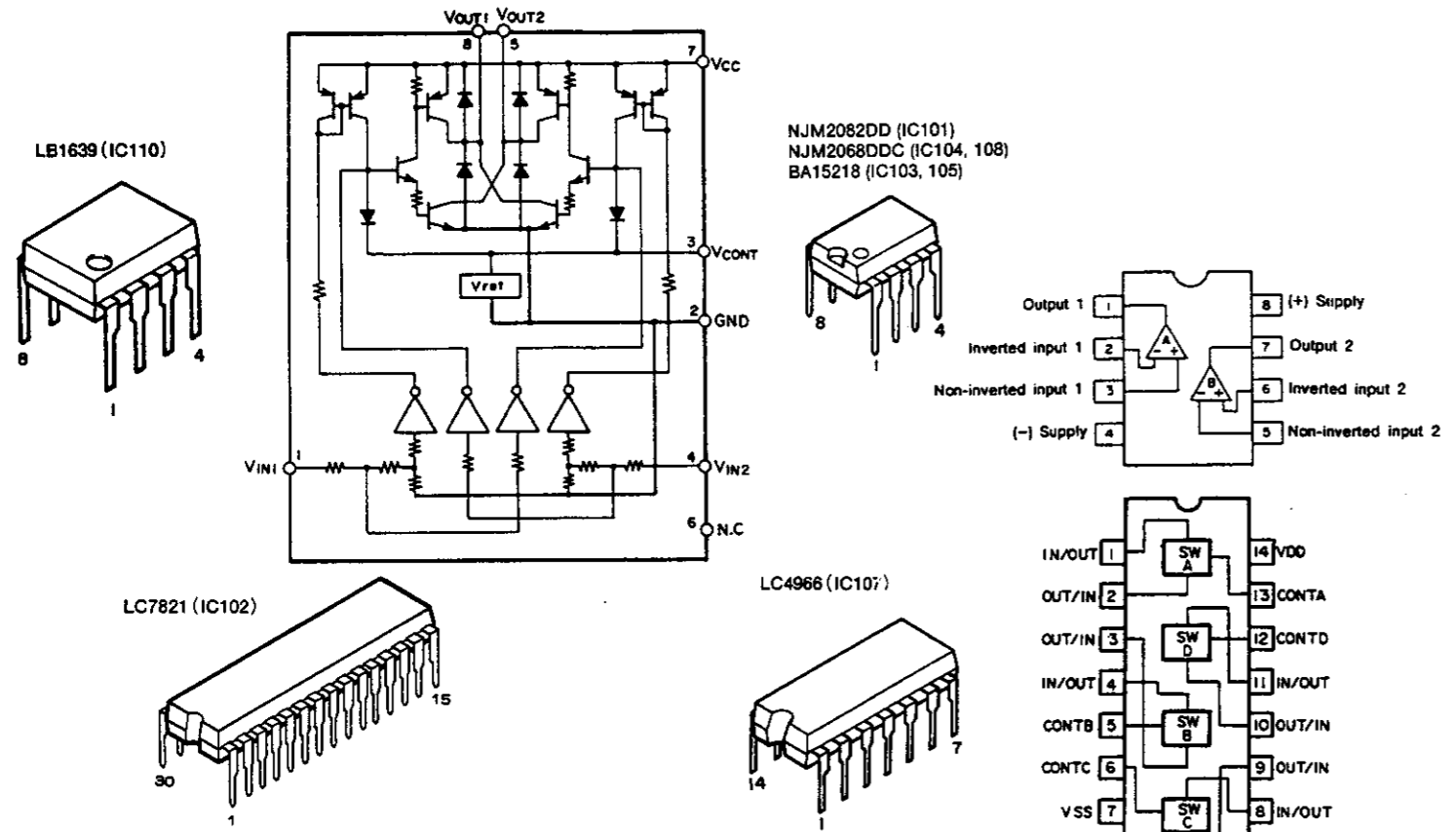


Pin Description

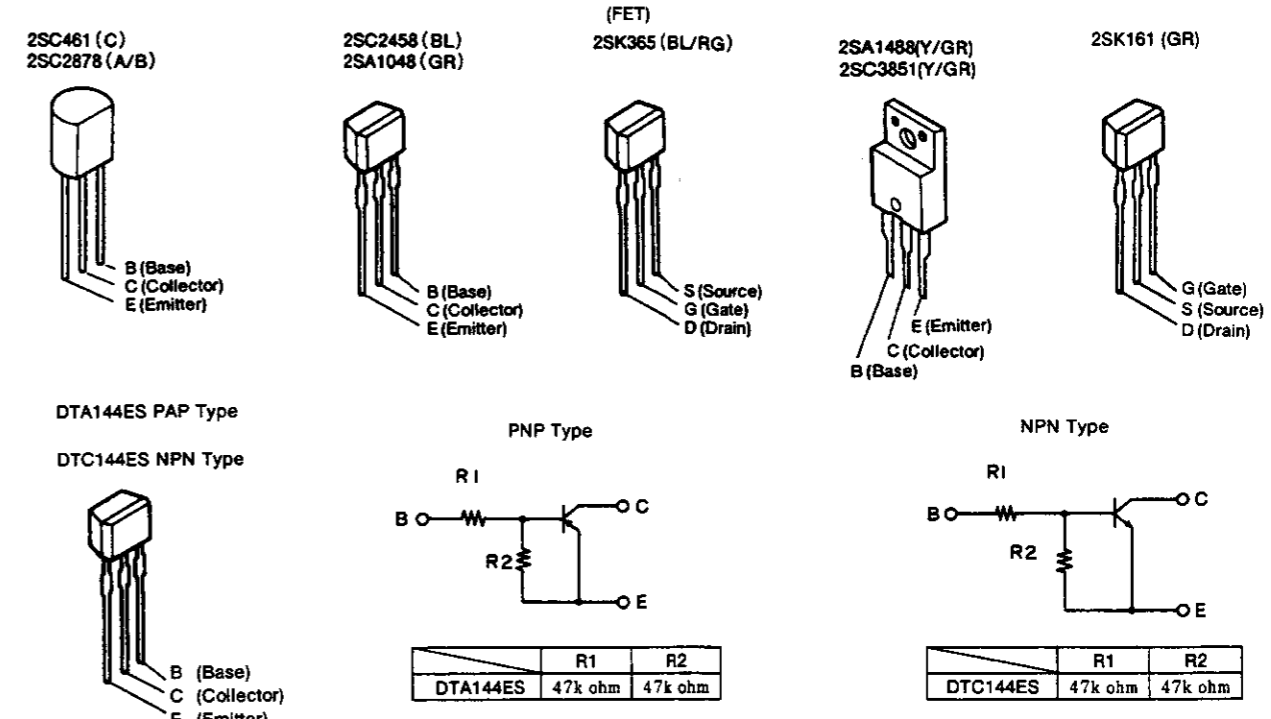
- S1 through S43 : Segment output pins
- S46 (DSP1), S44 (DSP2) : Segment output or DSP input pins
- S47 (AD1), S45 (AD2) : Segment output or AD input pins
- S48 (DSPOUT) : Segment output of DSP output pin
- S49 through S53 (AD01 through 5) : Segment output or AD output pins
- COM1, 2 : Common output pins (Only COM1 is used at time of 1:1 duty, and COM2 is set open)
- V_{LD} : LCD bias voltage setting pin
- OSC : Oscillation pin
- CE, CLK, DATA : Input pin for serial data transfer
- V_{SS}, V_{DD} : Supply pins
- INH : Display-off input pin. (Valid only with the output driver. This means that the transfer of serial data is possible while the display is off.)
- OPEN : No connection is made.



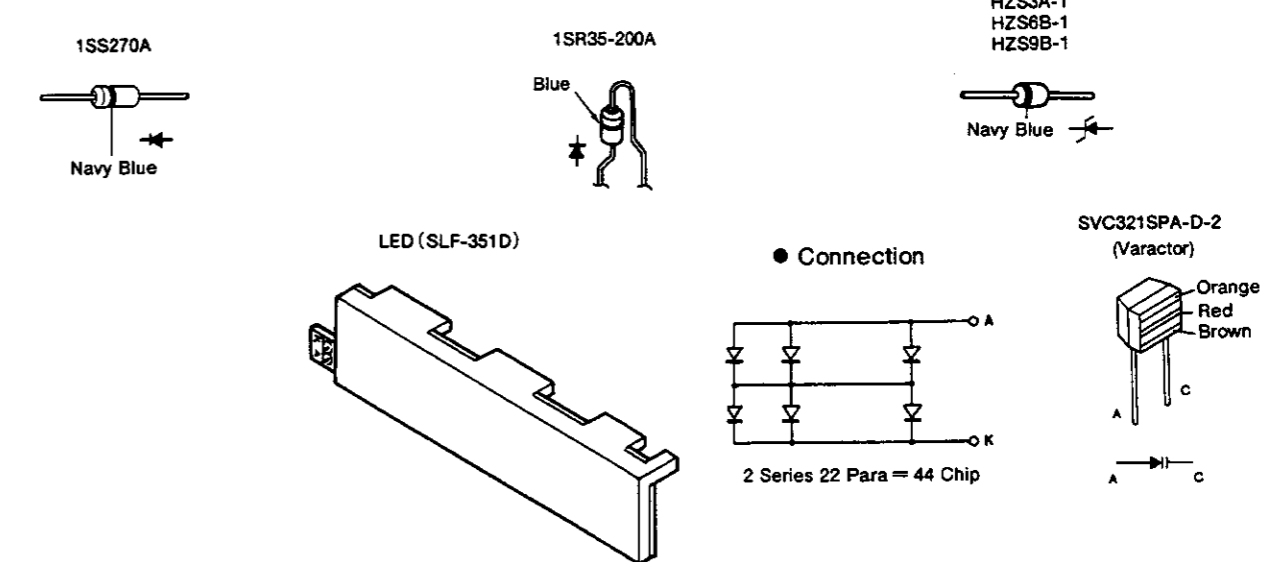
TUNER PRE SECTION



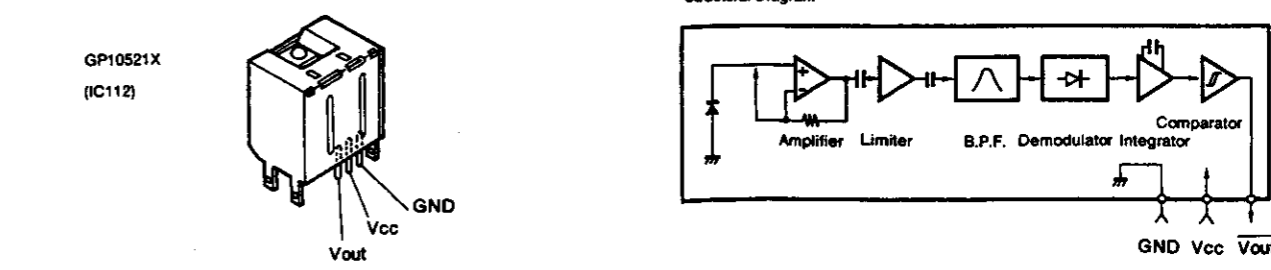
● Transistors



● Diodes (including LED)

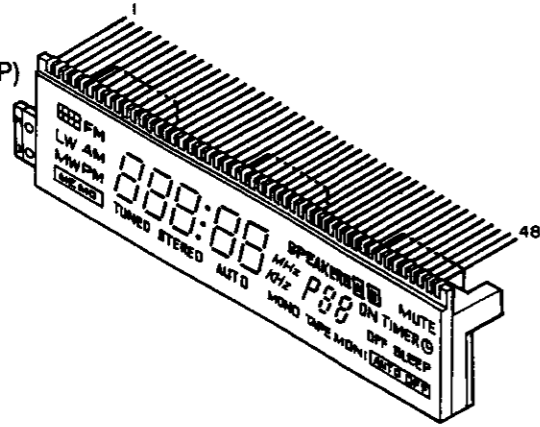


● Infrared Remote Control Sensor

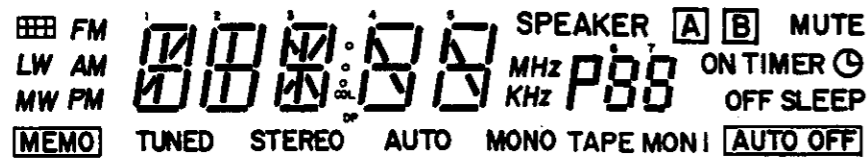


TUNER PRE SECTION

● LCD ASS'Y
Part No.: 3934142002 (8234JP)



Segment division



● LCD Pin Configuration Pin configuration definitions (segment side)

A/B	COM1	COM2	A/B	COM1	COM2
S 1	A11	A 4	S31	C (LW)	K (MONO)
S 2	A10	A 3	S32	M (kHz)	N (MHz)
S 3	A 9	A 2	S33	A (□□)	L (DIRECT)
S 4	A 8	A 1	S34	G 4	G 3
S 5	A 7	A 6	S35	T (P)	O (SPEAKER)
S 6	A 5	B 3	S36	G 2	G 1
S 7	B 8	B 2	S37	G 7	G 6
S 8	B 7	B 1	S38	G 5	H 3
S 9	B 5	B 6	S39	Q (B)	P (A)
S10	B 9	B 4	S40	H 7	H 2
S11	C12	C 4	S41	H 6	H 1
S12	C11	C 3	S42	S (OFF)	R (ON)
S13	C 9	C 2	S43	H 4	H 5
S14	C 8	C 1	S44	V (TIMER)	U (MUTE)
S15	C 7	C 6	S45	W (□)	X (SLEEP)
S16	C13	C10	S46	B (FM)	Y (AUTO OFF)
S17	D 2	C 5	S47	-	-
S18	I (STEREO)	D 1	S48	-	-
S19	E 4	E 3	S49	-	-
S20	E 7	E 2	S50	-	-
S21	E 6	E 1	S51	-	-
S22	E 9	E 8	S52	-	-
S23	E 5	F 3	S53	-	-
S24	F 7	F 2			
S25	F 6	F 1			
S26	F 4	F 8			
S27	F 9	F 5			
S28	G (MEMO)	H (TUNED)			
S29	F (PM)	J (AUTO)			
S30	D (AM)	E (MW)			

B. Common side
COM1
COM2

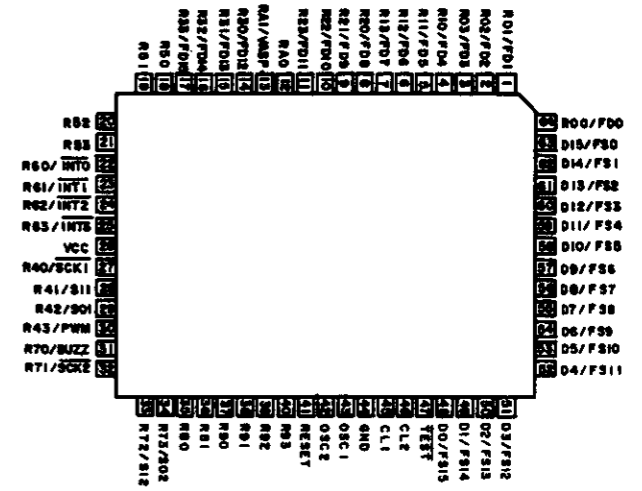
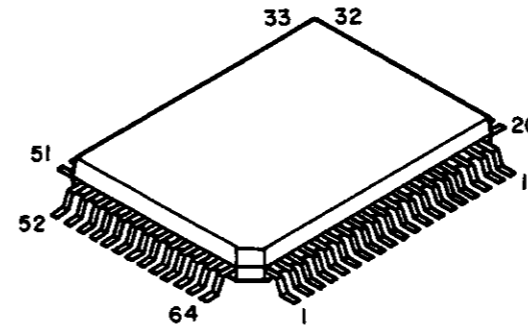
Pin Connection

NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
COM1	-	COM	1l	1m	1g	1i	1j	1c	2g	2i	2c	2l	3l	3m	3h	3i	3j	3k	DP	STEREO	4d	4h	4b	4k
COM2	COM	-	1d	1e	1f	1a	1b	2e	2f	2a	2b	2d	3d	3e	3f	3a	3b	3g	3c	COL	4e	4f	4a	4g

NO	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
COM1	4c	5b	5b	5d	5k	MEMO	PM	AM	LW	KHZ		6d	P	6f	6g	6c	B	7g	7b	OFF	7d	TIMER		FM	
COM2	5e	5f	5a	5g	5c	TUNED	AUTO	MW	MONO	MHZ	TAPE	MONI	6e	SPEA	6a	6b	7e	SUB	7f	7a	ON	7c	MUTE	SLEEP	AUTO

MICROPROCESSOR DOCUMENTATION

HD404729FS Part No.: 2621624106
(IC012)



1. Overview

The functions of this microcomputer are made up of the following four pillars.

- a. Tuner Functions
 - These functions perform the required control for the reception of FM and AM broadcasts.
- b. Auto Functions
 - Positioned at the heart of the system stereo, the auto functions perform serial communications with other components (such as the deck, CD, and amplifier) to provide overall control.
 - These functions decode the signals from the remote control and send them to each component of the system.
- c. Timer Functions
 - Counts the clock of the 24-hour display.
 - Provides 2 types of timer operation: once and sleep.
- d. Display Function
 - Outputs the control signal of the LCD.

Note 1: When buttons "ENTER/NEXT" and "MEMORY" of the wiring diagram are pressed simultaneously and the power cord is inserted into the power outlet, the frequencies used for the tracking adjustment will automatically be registered in the preset memory as indicated below.

Use this information for tuning and other procedures.

	P 1	P 2	P 3	P 4	P 5	P 6	P 7	P 8	P 9	P 10
MW (kHz)	522	603	999	1,098	1,404	1,611	153	163	270	279
	P 11	P 12	P 13	P 14	P 15	P 16	P 17	P 18	P 19	P 20
FM (MHz)	87.50	89.00	98.00	100.10	108.00	87.50	254	163	87.50	87.50
	P 21	P 22	P 23	P 24	P 25	P 26	P 27	P 28	P 29	P 30
MW (kHz)	522	522	522	522	522	522	522	522	522	522

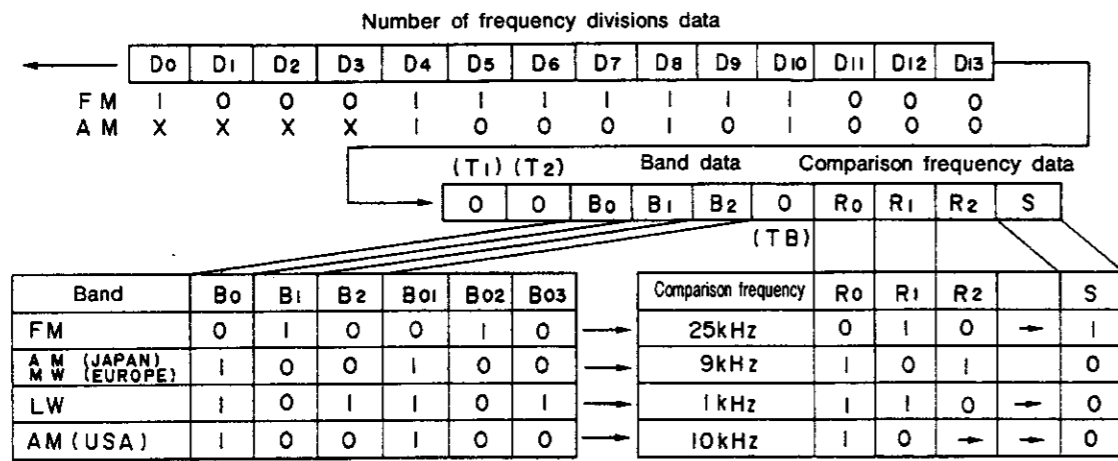
2. Receiving Band Table

Band	Receiving frequency	Local oscillator frequency	IF frequency	Frequency division ratio	Comparison frequency	Step frequency	Other
FM	87.50~108.00 MHz	98.20~118.70 MHz	10.7 MHz	1/2	25 kHz	100 kHz	STEREO
MW	522~1611 kHz	972~2061 kHz	450 kHz	-	9 kHz	9 kHz	
LW	153~279 kHz	603~729 kHz	450 kHz	-	1 kHz	1 kHz	

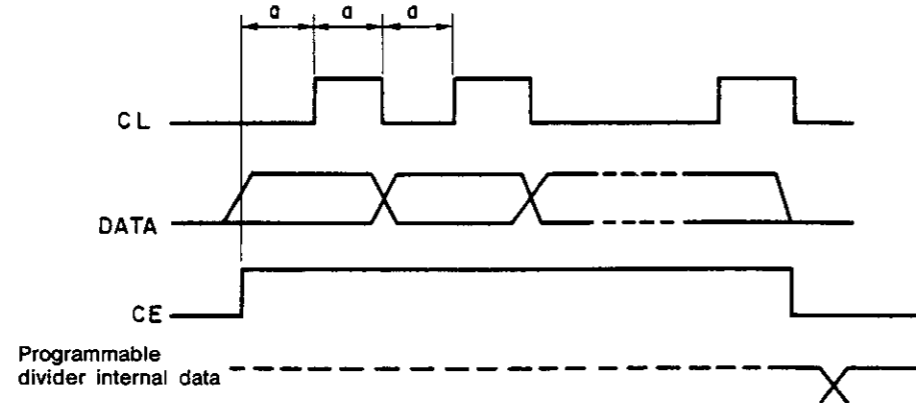
TUNER PRE SECTION

3. Signals sent to the LM7000 Programmable Divider

- a. Signals to the programmable divider are sent from 3 sources: CE OUT, CLOCK OUT, and DATA OUT.
- b. The programmable divider takes in DATA at CLOCK \bar{f} , when CE equals 1.
- c. The data is a 24-bit serial signal which is taken in to the programmable divider from the LSB.
(At the AM setting, D₀ through D₃ are ignored, so that D₄ becomes the LSB.)
- d. The data is made up of the number of frequency divisions data, the band data, and the comparison frequency data. (See diagram below.)



e. Timing for sending
a = 2.5 μsec



Description of Key and Selection Switch Inputs

No.	Function Name	Function
1	TAPE MONI	Pressing this button selects whether the tape monitor is on or off. *When the tape monitor is on, TAPE MONI OUT1 is high. *When the tape monitor is off, TAPE MONI OUT1 is low.
2	FREQ UP	*In the tuner mode, this function shifts the reception frequency upwards in steps of 1. After the button has been depressed for 0.5 seconds or longer, the frequency changes continuously, then from the point at which the button is released the tuner enters the auto tuning mode. Pressing the button again will set the step operation.
3	FREQ, DOWN	*In the tuner mode, this function shifts the reception frequency downwards in steps of 1. After the button has been depressed for 0.5 seconds or longer, the frequency changes continuously, then from the point at which the button is released the tuner enters the auto tuning mode. Pressing the button again will set the step operation.
4	BAND	This function operates cyclicly to command switching to the FM, AM (MW), and LW reception modes.
5	MODE	During FM reception this function commands switching of the reception mode to the stereo/mono auto mode and the forced mono mode.
6	SDB	Pressing this button selects whether SDB is on or off. With SDB on, high level is output. With SDB off, low level is output.
7	CLEAR	This function commands a clearing of the timer setting contents.
8	TIMER	When you would like the timer to operate only once at the set time, this button causes a shift to this setting mode. A one-course setting is possible.
9	ENTER/NEXT	This function is used to advance to the next step during the clock setting or the setting of the timer.
10	POWER	This is the RELAY OUT button which switches on and off the power of the other system components.
11	STAND BY	Pressing this button selects whether the timer operation is on or off. When timer operation is desired, pressing this button causes the standby mark in the LCD to light.
12	MEMORY	*During the tuner mode, this function causes a shift to the mode in which the station currently being received is registered in the preset memory. The "MEMORY" indication will flash and registration will be achieved when the P1-P10 and P+10 buttons are pressed.
13	FUNC	This function operates cyclicly to switch the function of the amplifier.
14	DISPLAY	This function switches the time display and the mode display.

TUNER PRE SECTION

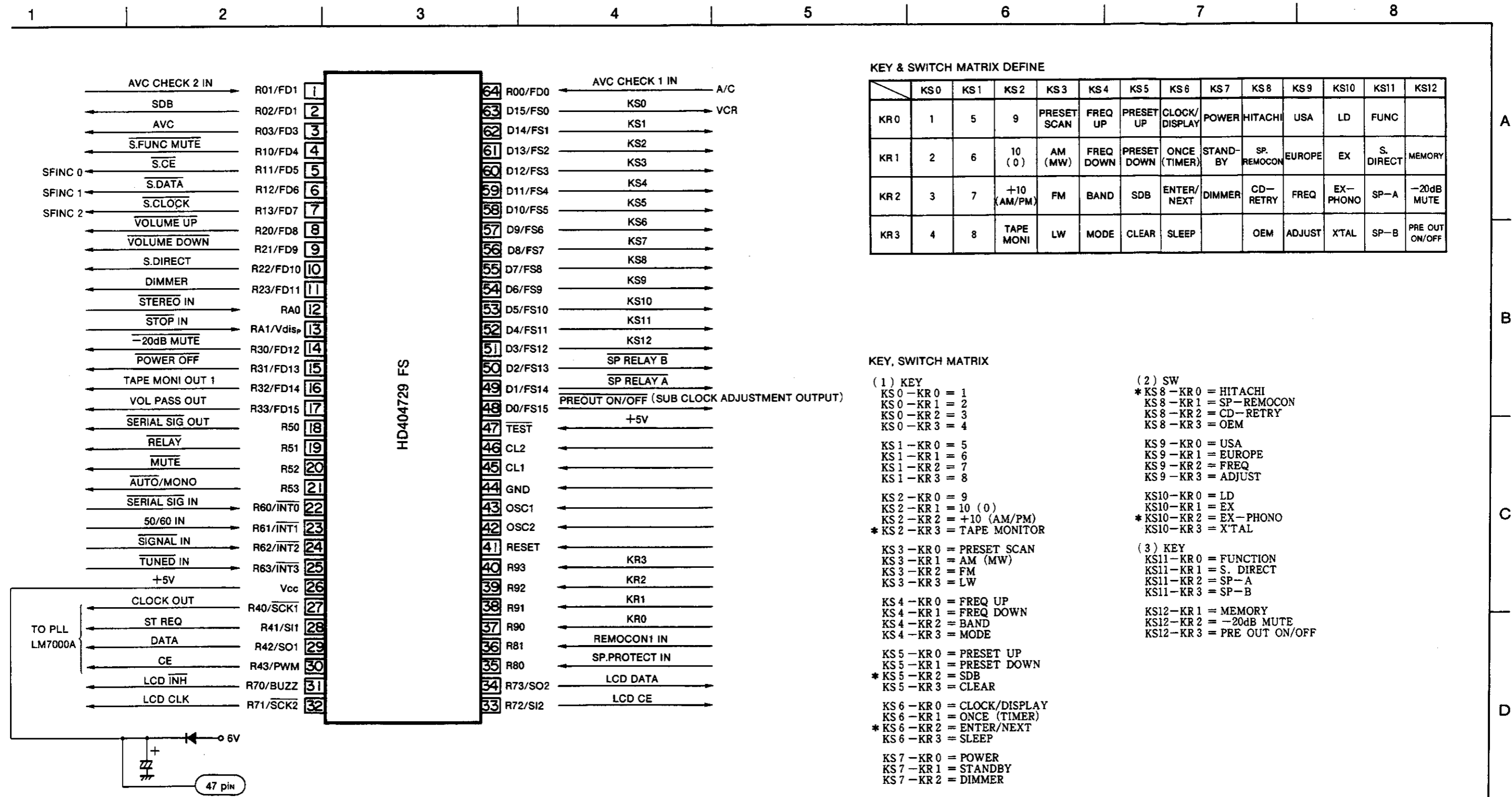
Pin Description (HD404729FS---)

Pin No.	Port Name	Function Name	Function
1	R01/FD1	AVC CHECK IN2	AVC on/off signal input pin.
2	R02/FD2	SDB	SDB control output.
3	R03/FD3	AVC	Outputs a high level at time of FUNCTION AVC.
4	R10/FD4	S.FUNC.MUTE OUT	FUNCTION MUTE output pin.
5	R11/FD5	S.CE	CE output for LC7821-L.
6	R12/FD6	S.DATA	Data output for LC7821-L.
7	R13/FD7	S.CLOCK	Clock output for LC7821-L.
8	R20/FD8	VOLUME UP OUT	Output for motor drive up.
9	R21/FD9	VOLUME DOWN OUT	Output for motor drive down.
10	R22/FD10	S.DIRECT	Direct mode switching output.
11	R23/FD11	DIMMER OUT	Dimmer mode switching output.
12	RA0	STEREO IN	STEREO indication signal input.
13	RA1/Vdisp	STOP IN	PTOP signal input.
14	R30/FD12	20DB MUTE OUT	20 dB muting output pin.
15	R31/FD13	POWER OFF OUT	Power on/off control output.
16	R32/FD14	MONI OUT1	High level output when tape monitor is on.
17	R33/FD15	VOL PASS OUT	Volume pass output control pin.
18	R50	SERIAL SIG OUT	Denon bus out pin.
19	R51	RELAY OUT	Provides a toggle operation in sync with the POWER button to control the AC relay.
20	R52	MUTE OUT	Muting output pin of the tuner audio output.
21	R53	AUTO/MONO OUT	Auto/Mono switching output pin.
22	R60/INT0	SERIAL SIG IN	Denon bus input pin.
23	R61/INT1	50/60 IN	50Hz/60 Hz pulse input pin.
24	R62/INT2	SIGNAL IN	Tuner signal input pin.
25	R63/INT3	TUNED IN	Tuning signal input pin.
26	VCC		5 V
27	R40/SCK1	PLL CLOCK OUT	Clock output pin for PLL.
28	R41/SI1	PLL ST REQ OUT	Request output pin for PLL.
29	R42/SO1	PLL DATA OUT	Data output pin for PLL.
30	R43/PWM	PLL CE OUT	CE output pin for PLL.
31	R70/BUZZ	LCD INH OUT	INH output for LCD (LC7582).
32	R71/SCK2	LCD CLOCK OUT	Clock output for LCD (LC7582).
33	R72/SI2	LCD CE OUT	CE output for LCD (LC7582).
34	R73/SO2	LCD DATA OUT	Data output for LCD (LC7582).
35	R80	PROTECT IN	Speaker protect input pin.
36	R81	REMOCON1 IN	Remote control 1 input pin.
37	R90	KRO	Key return 0.
38	R91	KR1	Key return 1.
39	R92	KR2	Key return 2.
40	R93	KR3	Key return 3.
41	RESET		Reset input pin.
42	OSC2		4 MHz Cell lock.
43	OSC1		4 MHz Cell lock.
44	GND		Ground
45	CL1		32 kHz xtal

Pin No.	Port Name	Function Name	Function
46	CL2		32 kHz xtal
47	TEST		5 V
48	D0/FS15	PRE OUT ON/OFF	Pre out control output.
49	D1/FS14	SP RELAY A OUT	Speaker A control output.
50	D2/FS13	SP RELAY B OUT	Speaker B control output.
51	D3/FS12	KS12	Key strobe 12.
52	D4/FS11	KS11	Key strobe 11.
53	D5/FS10	KS10	Key strobe 10.
54	D6/FS9	KS9	Key strobe 9.
55	D7/FS8	KS8	Key strobe 8.
56	D8/FS7	KS7	Key strobe 7.
57	D9/FS6	KS6	Key strobe 6.
58	D10/FS5	KS5	Key strobe 5.
59	D11/FS4	KS4	Key strobe 4.
60	D12/FS3	KS3	Key strobe 3.
61	D13/FS2	KS2	Key strobe 2.
62	D14/FS1	KS1	Key strobe 1.
63	D15/FS0	KS0	Key strobe 0.
64	R00/FD0	AVC CHECK IN1	AVC on/off signal input pin.

MICROPROCESSOR PERIPHERAL WIRING DIAGRAM

TUNER PRE SECTION



KEY & SWITCH MATRIX DEFINE

	KS0	KS1	KS2	KS3	KS4	KS5	KS6	KS7	KS8	KS9	KS10	KS11	KS12
KR0	1	5	9	PRESET SCAN	FREQ UP	PRESET UP	CLOCK/ DISPLAY	POWER	HITACHI	USA	LD	FUNC	
KR1	2	6	10 (0)	AM (MW)	FREQ DOWN	PRESET DOWN	ONCE (TIMER)	STAND- BY	SP. REMOCON	EUROPE	EX	S. DIRECT	MEMORY
KR2	3	7	+10 (AM/PM)	FM	BAND	SDB	ENTER/ NEXT	DIMMER	CD- RETRY	FREQ	EX- PHONO	SP-A	-20dB MUTE
KR3	4	8	TAPE MONI	LW	MODE	CLEAR	SLEEP		OEM	ADJUST	XTAL	SP-B	PRE OUT ON/OFF

KEY, SWITCH MATRIX

- (1) KEY
 - KS0 - KR0 = 1
 - KS0 - KR1 = 2
 - KS0 - KR2 = 3
 - KS0 - KR3 = 4
 - KS1 - KR0 = 5
 - KS1 - KR1 = 6
 - KS1 - KR2 = 7
 - KS1 - KR3 = 8
 - KS2 - KR0 = 9
 - KS2 - KR1 = 10 (0)
 - KS2 - KR2 = +10 (AM/PM)
 - * KS2 - KR3 = TAPE MONITOR
 - KS3 - KR0 = PRESET SCAN
 - KS3 - KR1 = AM (MW)
 - KS3 - KR2 = FM
 - KS3 - KR3 = LW
 - KS4 - KR0 = FREQ UP
 - KS4 - KR1 = FREQ DOWN
 - KS4 - KR2 = BAND
 - KS4 - KR3 = MODE
 - KS5 - KR0 = PRESET UP
 - KS5 - KR1 = PRESET DOWN
 - * KS5 - KR2 = SDB
 - KS5 - KR3 = CLEAR
 - KS6 - KR0 = CLOCK/DISPLAY
 - KS6 - KR1 = ONCE (TIMER)
 - * KS6 - KR2 = ENTER/NEXT
 - KS6 - KR3 = SLEEP
 - KS7 - KR0 = POWER
 - KS7 - KR1 = STANDBY
 - KS7 - KR2 = DIMMER
- (2) SW
 - * KS8 - KR0 = HITACHI
 - KS8 - KR1 = SP-REMOCON
 - KS8 - KR2 = CD-RETRY
 - KS8 - KR3 = OEM
 - KS9 - KR0 = USA
 - KS9 - KR1 = EUROPE
 - KS9 - KR2 = FREQ
 - KS9 - KR3 = ADJUST
 - KS10 - KR0 = LD
 - KS10 - KR1 = EX
 - * KS10 - KR2 = EX-PHONO
 - KS10 - KR3 = XTAL
 - (3) KEY
 - KS11 - KR0 = FUNCTION
 - KS11 - KR1 = S. DIRECT
 - KS11 - KR2 = SP-A
 - KS11 - KR3 = SP-B
 - KS12 - KR1 = MEMORY
 - KS12 - KR2 = -20dB MUTE
 - KS12 - KR3 = PRE OUT ON/OFF

A
B
C
D
E

TUNER PRE SECTION

PRINTED WIRING BOARD

1 2 3 4 5 6 7 8

1U-2476 UTP-250
UNIT ASS'Y
Component Side

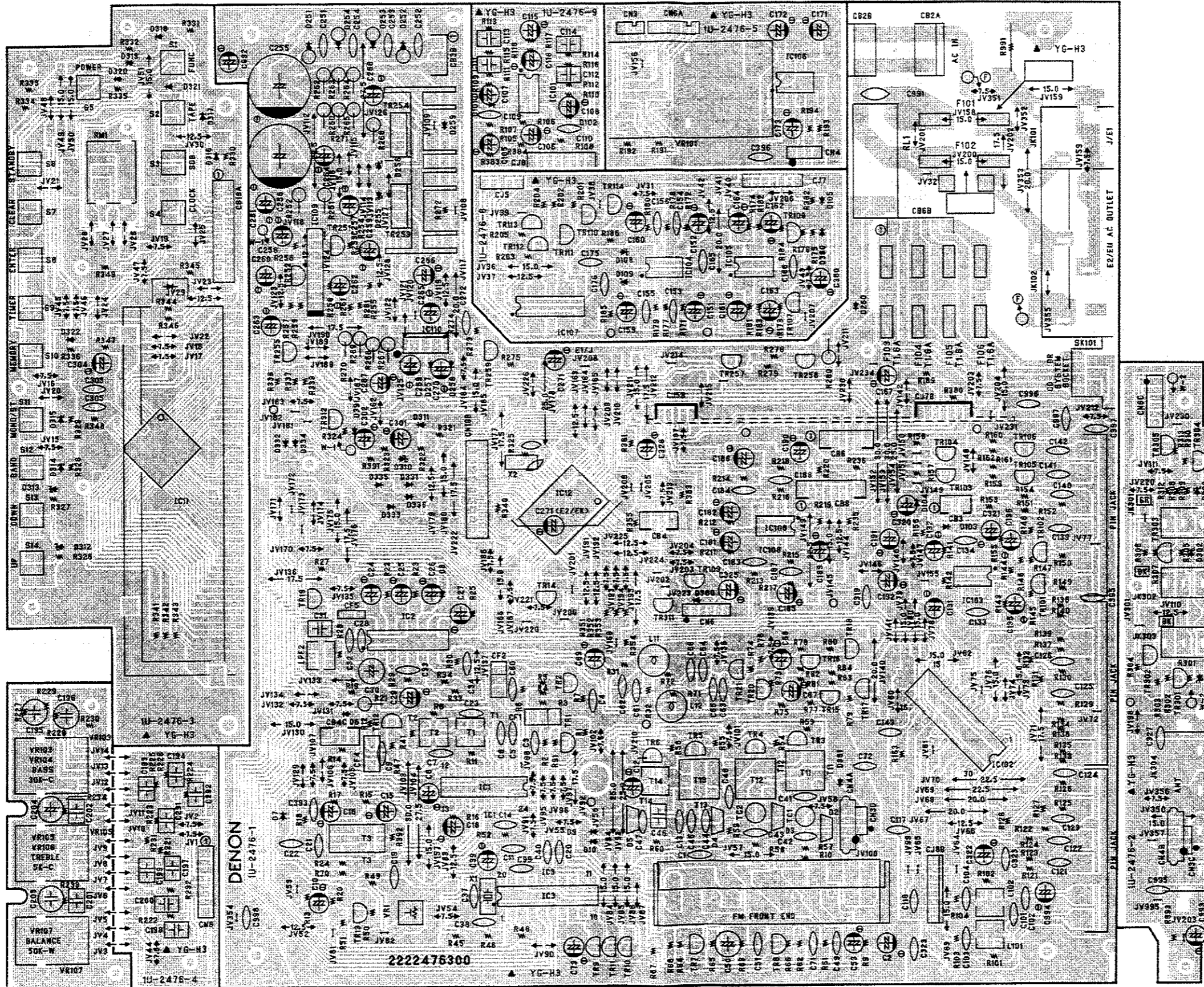
A

B

C

D

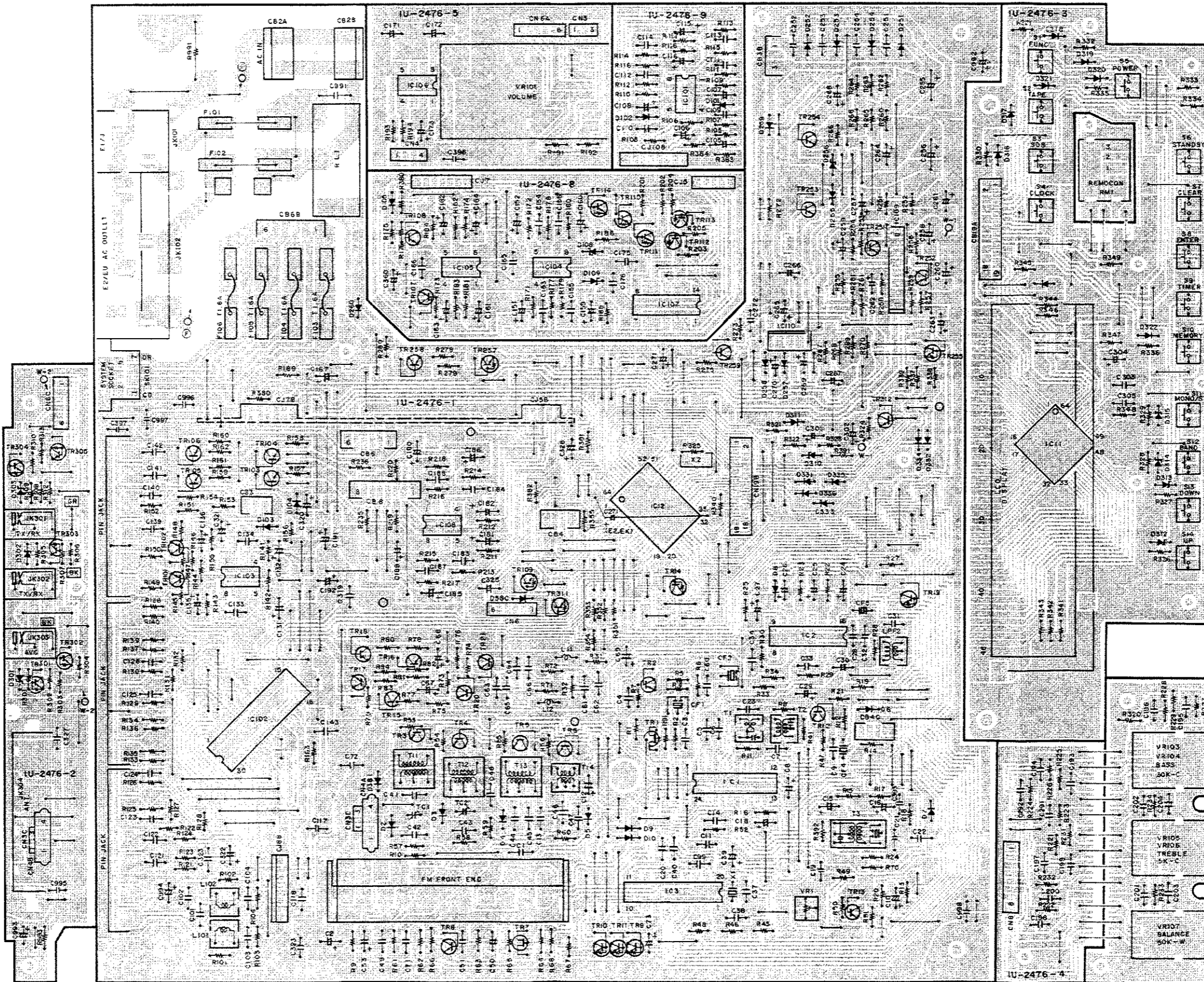
E



TUNER PRE SECTION

1 2 3 4 5 6 7 8

Pattern Side



A

B

C

D

E

TUNER PRE SECTION

Table with columns: Ref. No., Part No., Part Name, Remarks. Contains parts like Ceramic 0.022μF/50 V, Electrolytic 3.3μF/50 V, etc.

Table with columns: Ref. No., Part No., Part Name, Remarks. Contains parts like Electrolytic 10μF/16 V, Ceramic 1000pF/50 V, etc.

Table with columns: Ref. No., Part No., Part Name, Remarks, Qty. Contains parts like FM Front End(U), Anti. Birdie Filter, 3 P Conn. Base(KR-PH), etc.

TUNER PRE SECTION

WIRING DIAGRAM

1

2

3

4

5

6

7

8

A

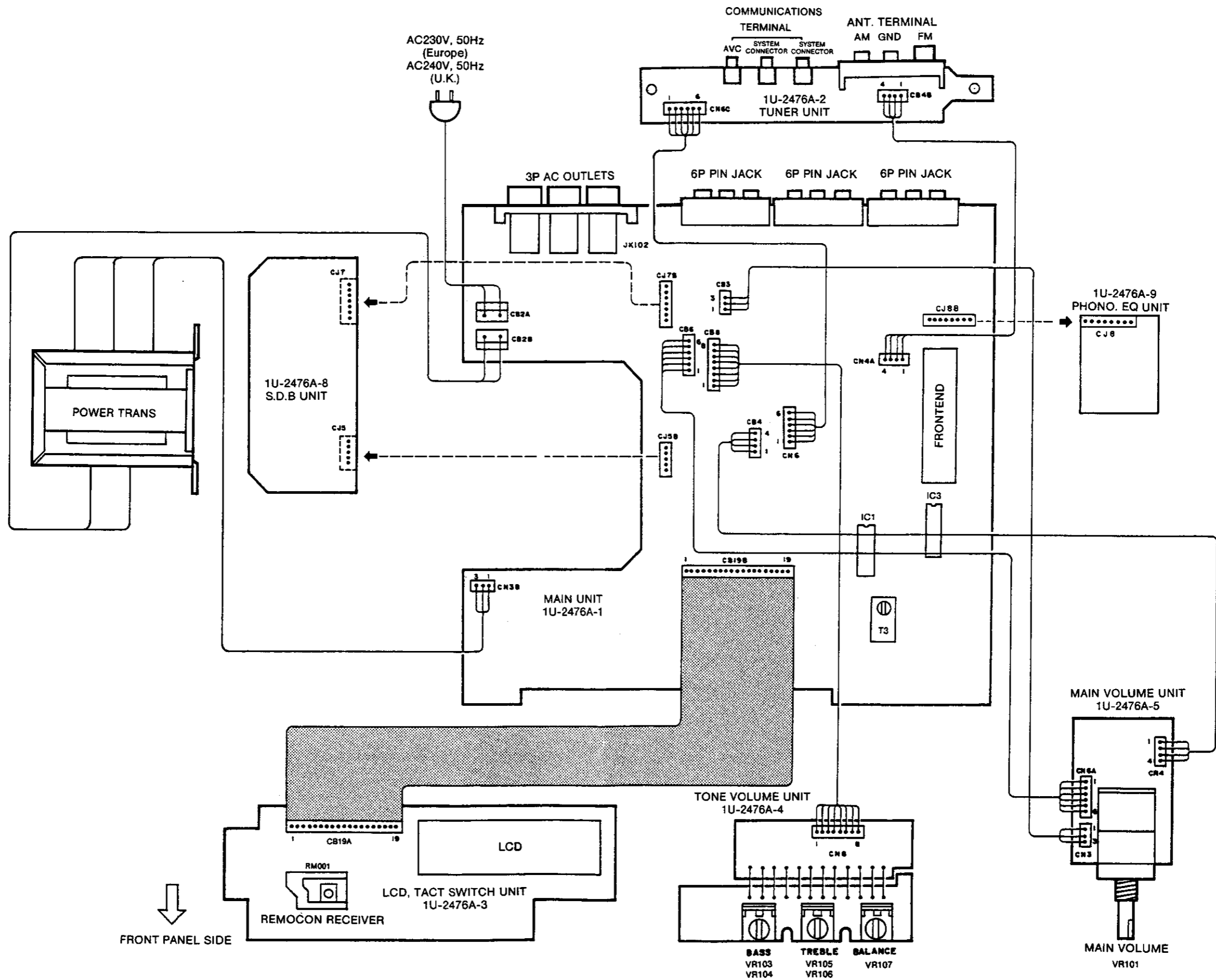
B

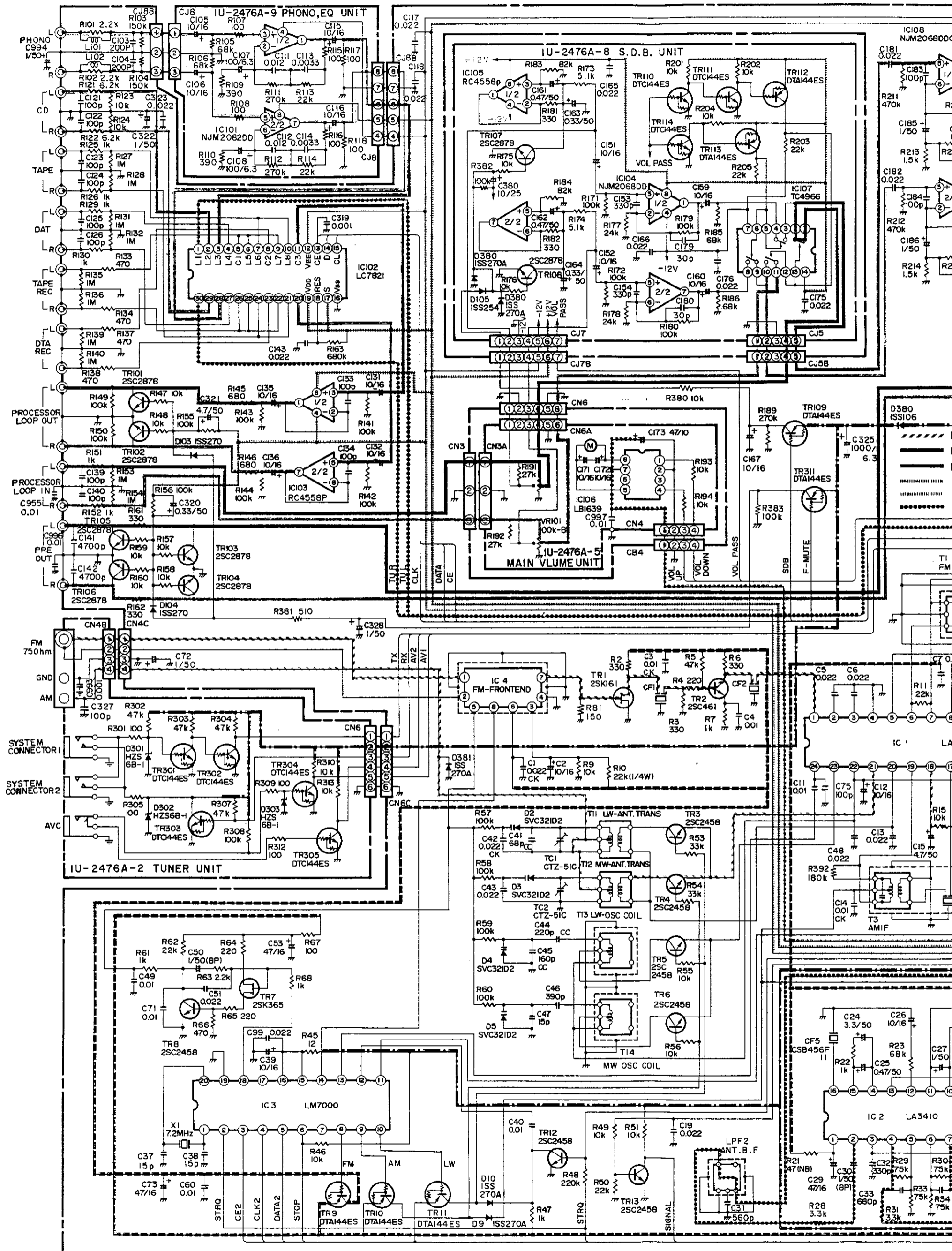
C

D

E

FRONT PANEL SIDE



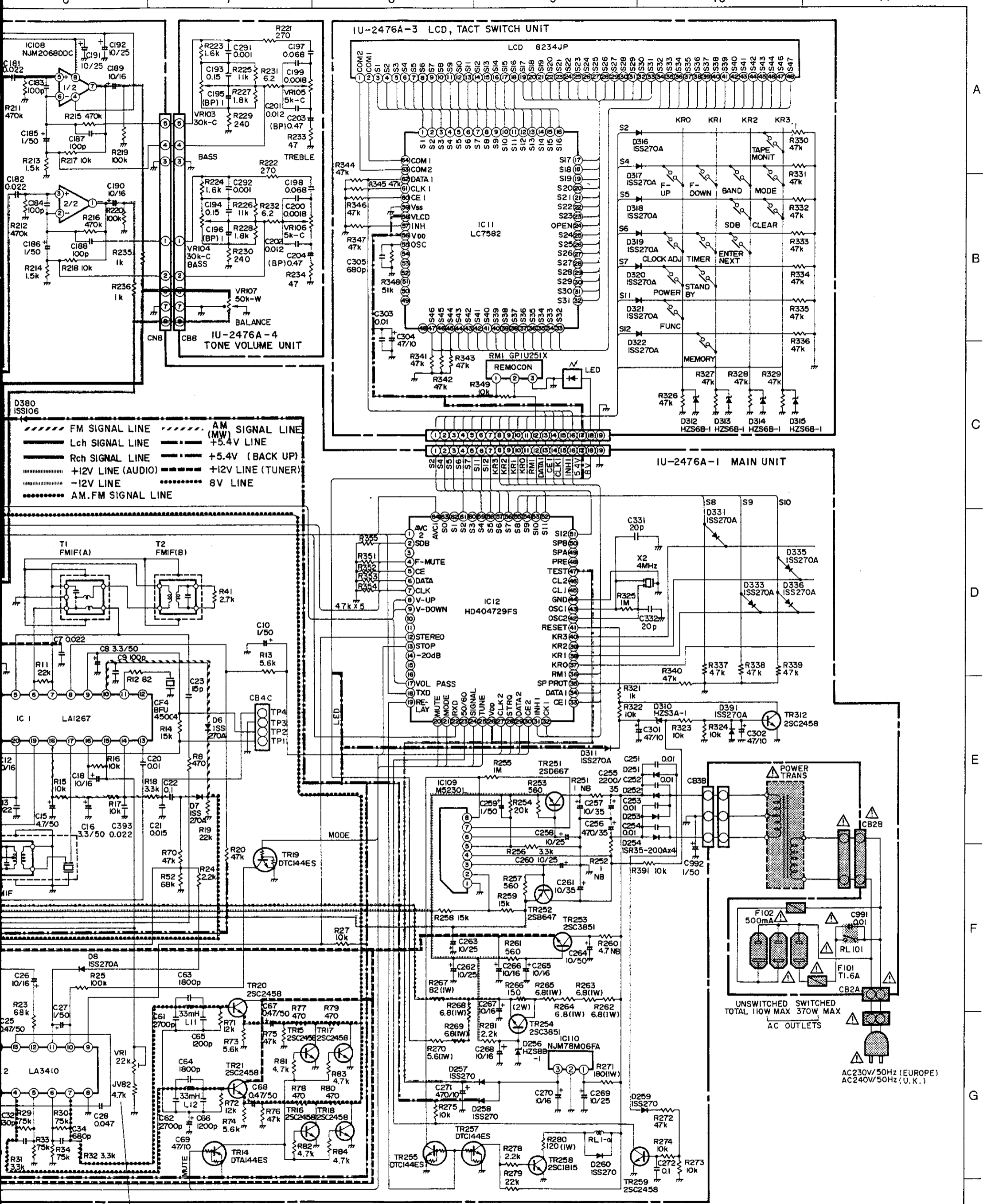


WARNING:
 Parts marked with this symbol have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

CAUTION
 Before
 leakage
 defectiv
 WARN
 DO NOT

SCHEMATIC DIAGRAM

TUNER PRE SECTION



Resistor inserted in JV82 (jumper silk)

CAUTION:
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 Kohms, the unit is defective.

WARNING:
DO NOT return the unit to the customer until the problem is located and corrected.

NOTES:
ALL RESISTANCE VALUES IN OHM K=1,000 OHM M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

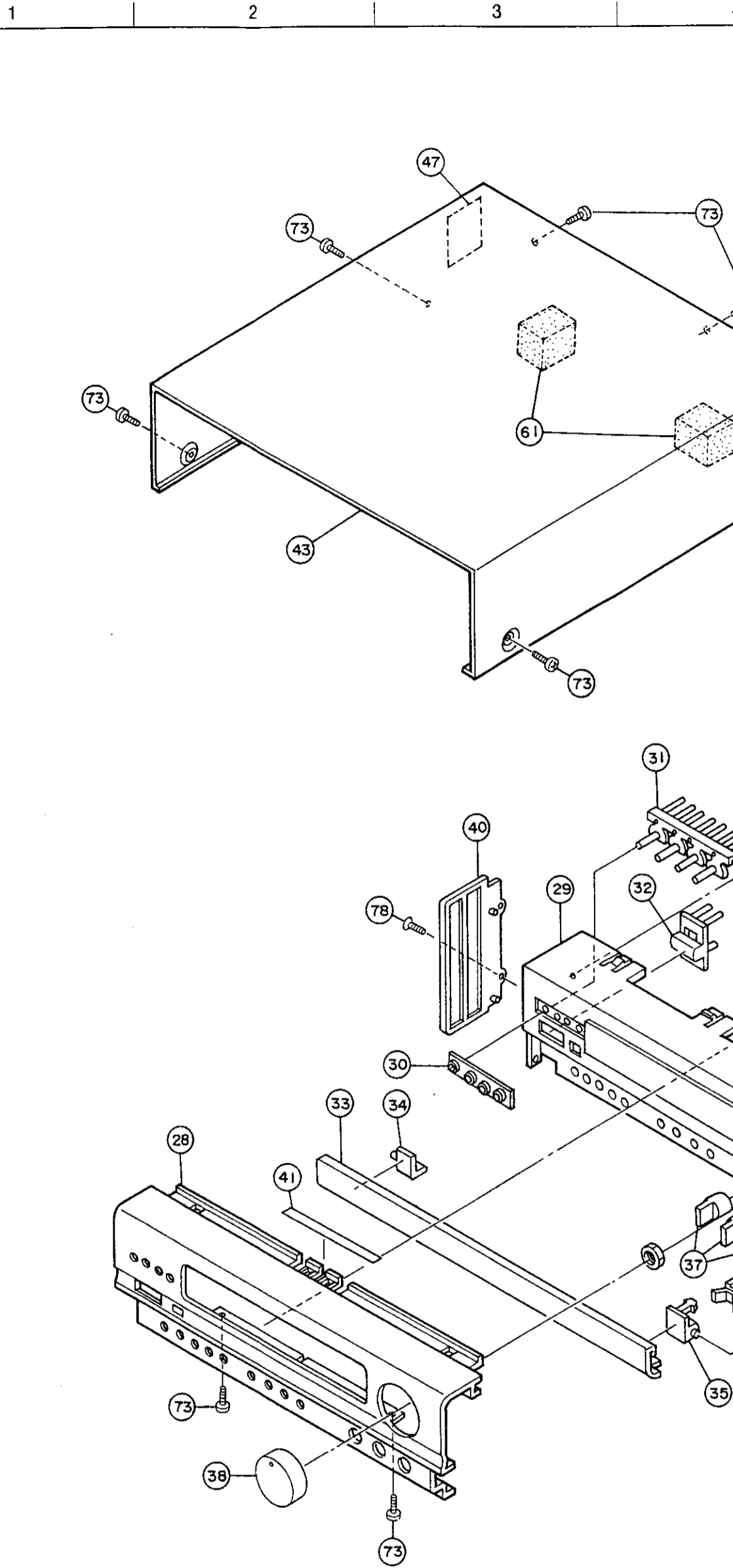
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TUNER PRE SECTION

EXPLODED VIEW OF PARTS LIST

Ref. No.	Part No.	Part Name	Remarks	Qty
1	1U- 2476 A	P.W.Board Unit Assy		1 ^S
1-1	-	Main Unit		(1)
1-2	-	Tuner Unit		(1)
1-3	-	LCD,Tact Switch Unit		(1)
1-4	-	Tone Volume Unit		(1)
1-5	-	Main Volume Unit		(1)
1-6	-	Trans Wire Unit(P)		(1)
1-7	-	Trans Wire Unit(S)		(1)
1-8	-	S.D.B. Unit		(1)
1-9	-	Phono,EQ Unit		(1)
2	204 8278 009	6 P Pin Jack(S-GND)		3
3	211 0749 107	Variable Resistor 100k ohm		1
4	211 0769 006	Variable Resistor 30k ohm	Bass	1
5	211 0768 007	Variable Resistor 5k ohm	Treble	1
6	211 9105 001	Variable Resistor 50k ohm		1
7	206 1015 058	Fuse 1.6 A(T)		1
8	203 3950 002	3 P AC Outlet		1
9	-	-		-
10	204 8421 005	Mini Jack	for system	2
11	204 8422 004	Mini Jack(SW)	for AVC	1
12	214 0120 013	Relay(TV-8)		1
13	254 4258 785	Chemicon 470µF/25 V	C256	1
14	254 4259 700	Chemicon 2200µF/35 V	C255	1
15	393 4142 002	LCD (8234JP)		1
16	449 0057 009	LCD Holder		1
17	205 0603 002	3 P Ant. Terminal(DIN)		1
18	216 0079 005	Front End(U)		1
19	411 1184 332	Main Chassis		1
20	412 9339 001	Trans Bracket		1
21	104 0237 201	Foot Assy		4
22	105 1042 249	Rear Panel	Europe model	1
22	105 1042 252	Rear Panel	U.K. model	1
23	208 2094 000	AC Cord W/Conn	Europe model	1
23	208 2109 002	AC Cord W/Conn	U.K. model	1
24	445 0057 008	Cord Bush		1
25	205 0752 005	Short Pin		2
26	412 2814 028	Card Spacer(L=10)		4
27	-	-		-
28	144 2211 236	Front Panel		1
29	146 1409 317	Inner Panel Assy		1
30	146 1420 121	Knob Guide(Round)		1
31	113 1549 044	Push Knob(Round)		1
32	113 1460 013	Power Knob		1
33	144 2216 215	Trap Door		1
34	401 0175 112	Door Hinge(L)		1
35	401 0176 111	Door Hinge(R)		1
36	435 0113 009	Latch(Y3Y18)		1
37	112 0645 166	Knob		3
38	112 0691 107	Volume Knob Assy		1
39	233 6001 001	Power Trans	Europe model	1
39	233 9650 006	Power Trans	U.K. model	1
40	146 1411 211	Side Plate		2
41	122 0183 007	Spacer	100X10XT5	1
42	445 8004 007	Wire Clamper		3
43	102 0519 211	Top Cover		1
44	414 0676 015	Shield Plate		1
45	009 0077 001	19 P F.F.Cable		1
46	412 3485 016	P.W.Bracket		2
47	513 9316 013	Rating Sheet	Europe model	1
47	513 9316 039	Rating Sheet	U.K. model	1
48	415 9066 001	Insulating Sheet		1
49	477 0018 001	Washer(P-87)		1
50	205 0071 016	Terminal Assy		1
51	461 0756 012	Rubber Sheet	10X10XT15	1
52	414 9132 000	Shield Plate		1
53	461 0496 026	Spacer	10X35XT3	1
54	461 0756 041	Rubber Sheet	10X10XT7	1
55	461 0756 025	Rubber Sheet	10X10XT10	1
56	513 2058 006	Blind Sheet		4
57	461 9039 002	Spacer		1
58	412 9340 003	Fix. Plate		1
59	414 9133 009	Earth Plate		1
60	461 0758 010	Rubber Sheet		1
61	461 0756 009	Rubber Sheet	25X25XT20	2
62	513 9328 001	Homologation Label		1
63	206 1015 003	Fuse 500 mA		1
64	513 0815 089	Fuse Label(T-1.6 A)		1
65	513 0815 005	Fuse Label(0.5 A)		1
66	-	-		-
67	-	-		-
68	-	-	20X20XT5	2
SCREWS				
71	473 7004 016	Tapping Screw(S)4X6		4
72	473 7002 018	Tapping Screw(S)3X8		10
73	473 7015 005	Tapping Screw(S)3X6	Black	13
74	473 7505 007	Tapping Screw(P)2.6X8		12
75	477 0064 107	Fixing Screw		8
76	477 0276 018	Earth Screw		1
77	473 7004 003	Tapping Screw(S)4X8		4
78	473 7500 028	F.Tapping Screw(P)3X8		2
79	473 7002 005	Tapping Screw(S)3X6		1
80	-	-		-
PACKING & ACCESSORIES (Not included EXPLODED VIEW)				
101	505 0178 000	:Poly Cover		1
102	503 1062 106	:Cushion		1
103	503 1061 000	:Top Cushion	Europe model	1
103	503 9040 001	:Top Cushion	U.K. model	1
104	501 1657 010	:Carton Case	Europe model	1
104	501 1657 023	:Carton Case	U.K. model	1
105	505 0241 005	Cabinet Cover		1
106	511 2421 006	:Inst. Manual		1
107	511 2433 007	:Inst. Manual		1
108	505 9124 000	:Poly Cover	U.K. model only	1

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NOTE ON 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 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.

WARNING:
Parts marked with this symbol Δ [hatched box] have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

EXPLODED VIEW

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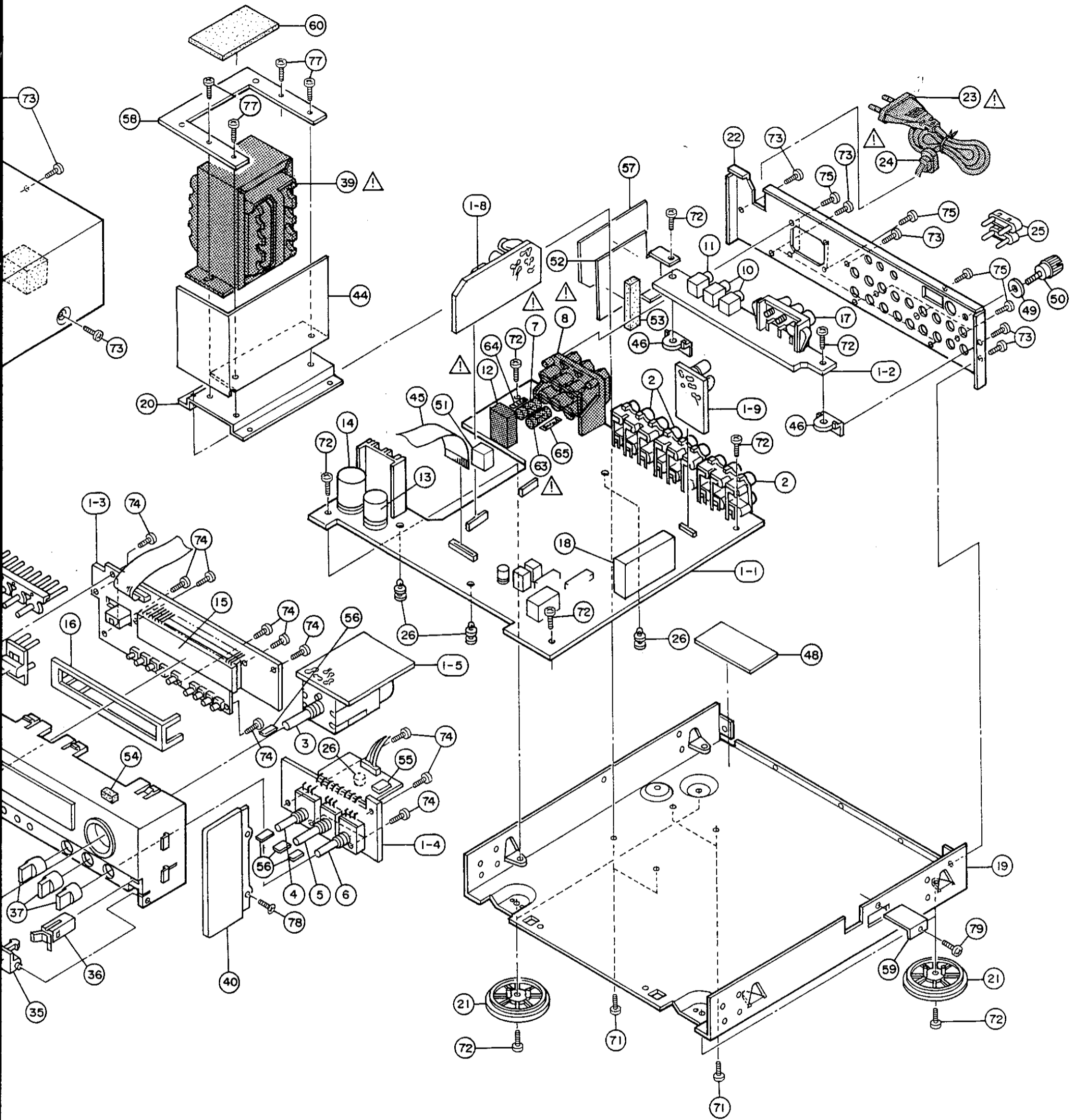
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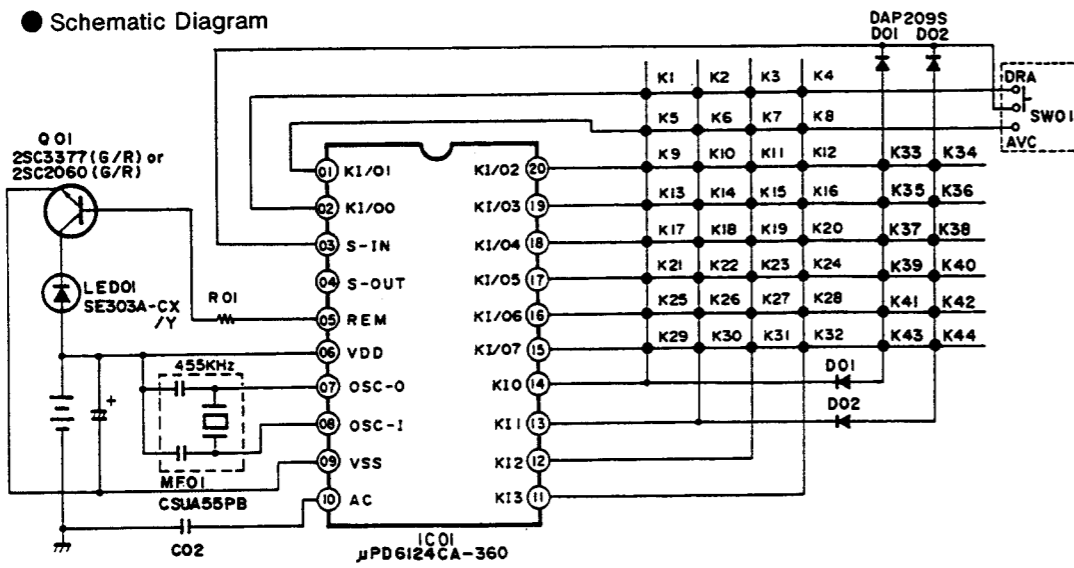
g, or in some case

REMOTE CONTROL UNIT (RC-154: Part No.: 3990168004)

TUNER PRE SECTION

1 2 3 4 5 6 7 8

● Schematic Diagram

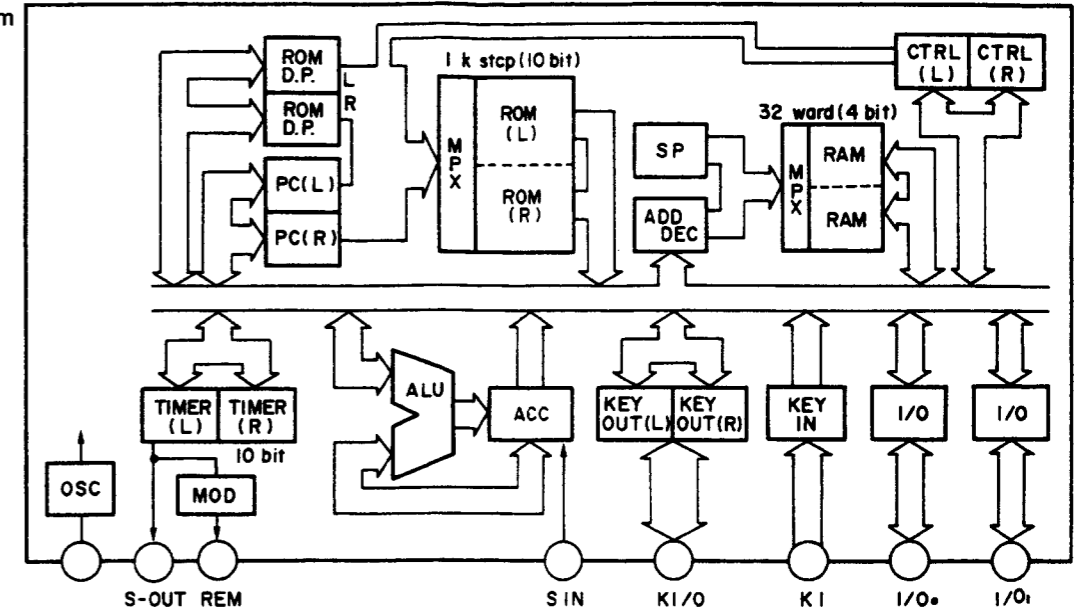
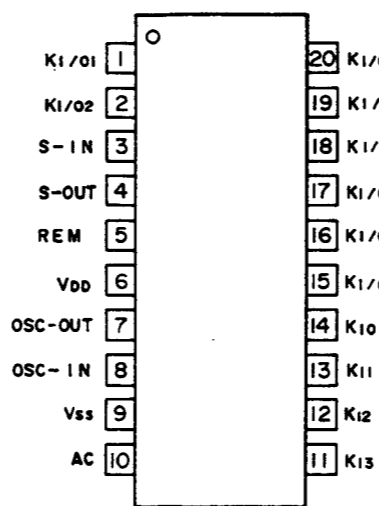


NOTES

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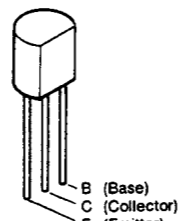
● IC Block Diagram

μPD6124CA-360 Pin Connection (Top View)



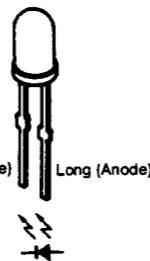
● Transistor

2SC2060 (G/R) 2SC3377 (G/R)



● Diodes

Infrared IED SE303A-C X/Y



● DAP209S



● Cord Table (SW DRA Mode Side)

Table with columns: Key No., System Address (C1-C5), Data Code (C6-C14), Expansion Mask, Remarks, RC-154. Lists keys like POWER, VOLUME UP, MUTING, etc.

● Cord Table (SW DRA Mode Side)

Tuner mode (after TUNER (K8) Key pressed (and in the initial state with the SW DRA mode values after the batteries have been inserted))

Table with columns: Key No., System Address, Data Code, Expansion Mask, Remarks, RC-154. Lists keys 1-27 for tuner mode.

● Cord Table (SW DRA Mode Side)

CD mode (after DIRECT (K33) or PROGRAM (K34) Key pressed)

Table with columns: Key No., System Address, Data Code, Expansion Mask, Remarks, RC-154. Lists keys 1-27 for CD mode.

● Cord Table (SW AVC Mode Side)

Table with columns: Key No., System Address, Data Code, Expansion Mask, Remarks, RC-154. Lists keys 1-44 for AVC mode including POWER, VOLUME, SLEEP, etc.

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