

DENON

Hi-Fi AM-FM Stereo Receiver

For U.S.A & CANADA
Models

SERVICE MANUAL

MODEL DRA-775RD

AM-FM STEREO RECEIVER



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NIPPON COLUMBIA CO., LTD.



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



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



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



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

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION

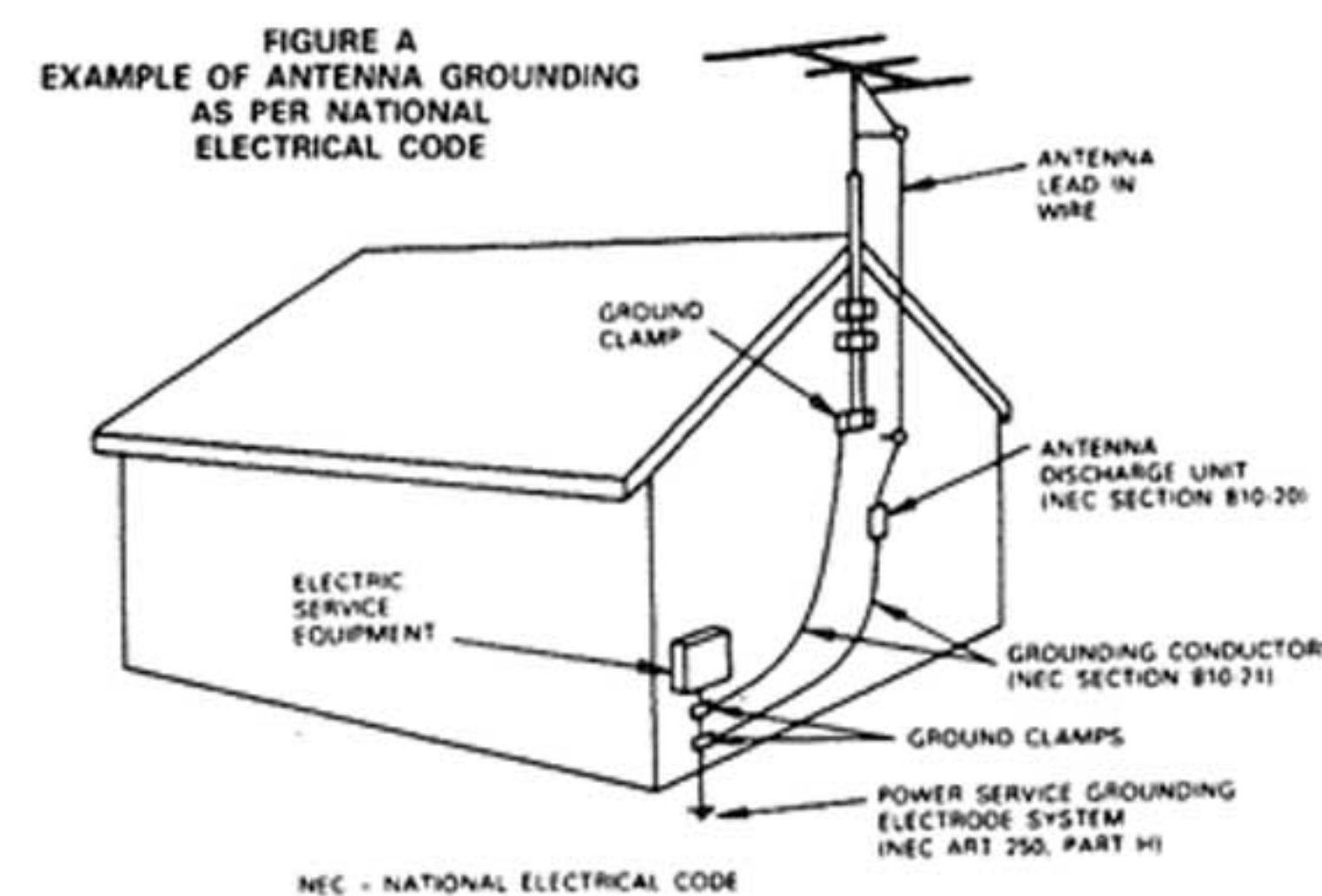
TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION

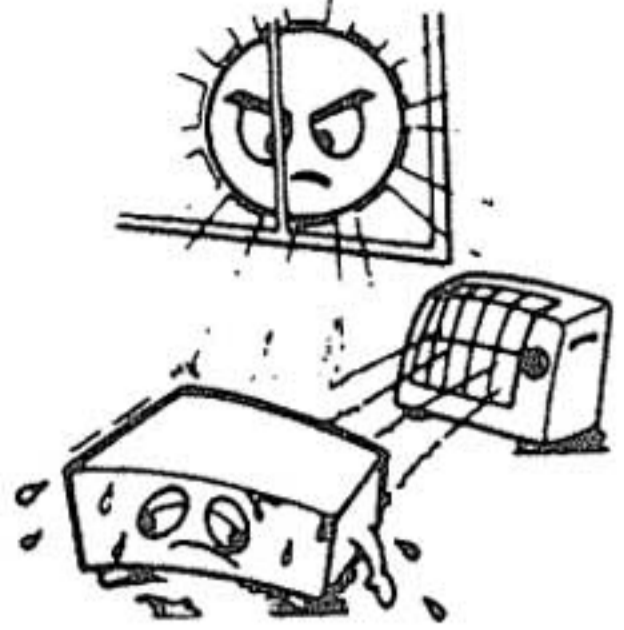



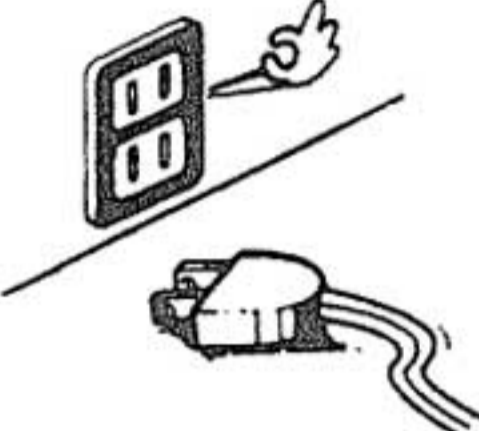



POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

SAFETY INSTRUCTIONS

1. Read Instructions – All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions – The safety and operating instructions should be retained for future reference.
3. Heed Warnings – All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow Instructions – All operating and use instructions should be followed.
5. Water and Moisture – The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.
6. Carts and Stands – The appliance should be used only with a cart or stand that is recommended by the manufacturer.
- 6A. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.
7. Wall or Ceiling Mounting – The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. Ventilation – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. Heat – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. Power Sources – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. Grounding or Polarization – Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.
12. Power-Cord Protection – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
14. Cleaning – The appliance should be cleaned only as recommended by the manufacturer.
15. Power Lines – An outdoor antenna should be located away from power lines.
16. Outdoor Antenna Grounding – If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna-discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure A.
17. Nonuse Periods – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
18. Object and Liquid Entry – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
19. Damage Requiring Service – The appliance should be serviced by qualified service personnel when:
 - A. The power-supply cord or the plug has been damaged; or
 - B. Objects have fallen, or liquid has been spilled into the appliance; or
 - C. The appliance has been exposed to rain; or
 - D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
 - E. The appliance has been dropped, or the enclosure damaged.
20. Servicing – The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.



NOTE ON USE/OBSERVATIONS RELATIVES A L'UTILISATION

 <ul style="list-style-type: none"> • Avoid high temperatures Allow for sufficient heat dispersion when installed on a rack. • Éviter des températures élevées Tenir compte d'une dispersion de chaleur suffisante lors de l'installation sur une étagère. 	 <ul style="list-style-type: none"> • Keep the set free from moisture, water, and dust. • Protéger l'appareil contre l'humidité, l'eau et la poussière. 	 <ul style="list-style-type: none"> • Do not let foreign objects in the set. • Ne pas laisser des objets étrangers dans l'appareil.
 <ul style="list-style-type: none"> • Handle the power cord carefully. Hold the plug when unplugging the cord. • Manipuler le cordon d'alimentation avec précaution. Tenir la prise lors du débranchement du cordon. 	 <ul style="list-style-type: none"> • Unplug the power cord when not using the set for long periods of time. • Débrancher le cordon d'alimentation lorsque l'appareil n'est pas utilisé pendant de longues périodes. 	 <ul style="list-style-type: none"> • Do not let insecticides, benzene, and thinner come in contact with the set. • Ne pas mettre en contact des insecticides, du benzène et un diluant avec l'appareil.
<ul style="list-style-type: none"> • Do not obstruct the ventilation holes. • Ne pas obstruer les trous d'aération. 	 <p>*(For sets with ventilation holes)</p> <ul style="list-style-type: none"> • Do not obstruct the ventilation holes. • Ne pas obstruer les trous d'aération. 	 <ul style="list-style-type: none"> • Never disassemble or modify the set in any way. • Ne jamais démonter ou modifier l'appareil d'une manière ou d'une autre.

● INSTALLATION PRECAUTIONS

Using this receiver or other electronic equipment containing microprocessors simultaneously with a tuner or TV may result in noise in the sound or picture.

If this should happen, take the following steps:

- Install the receiver as far as possible from the tuner or TV set.
- Keep the antenna lines of the tuner or TV as far as possible from the receiver's power cord and connection cables.
- This problem is especially frequent when using indoor antennas. We recommend using outdoor antennas and 75 Ω /ohms coaxial cables.

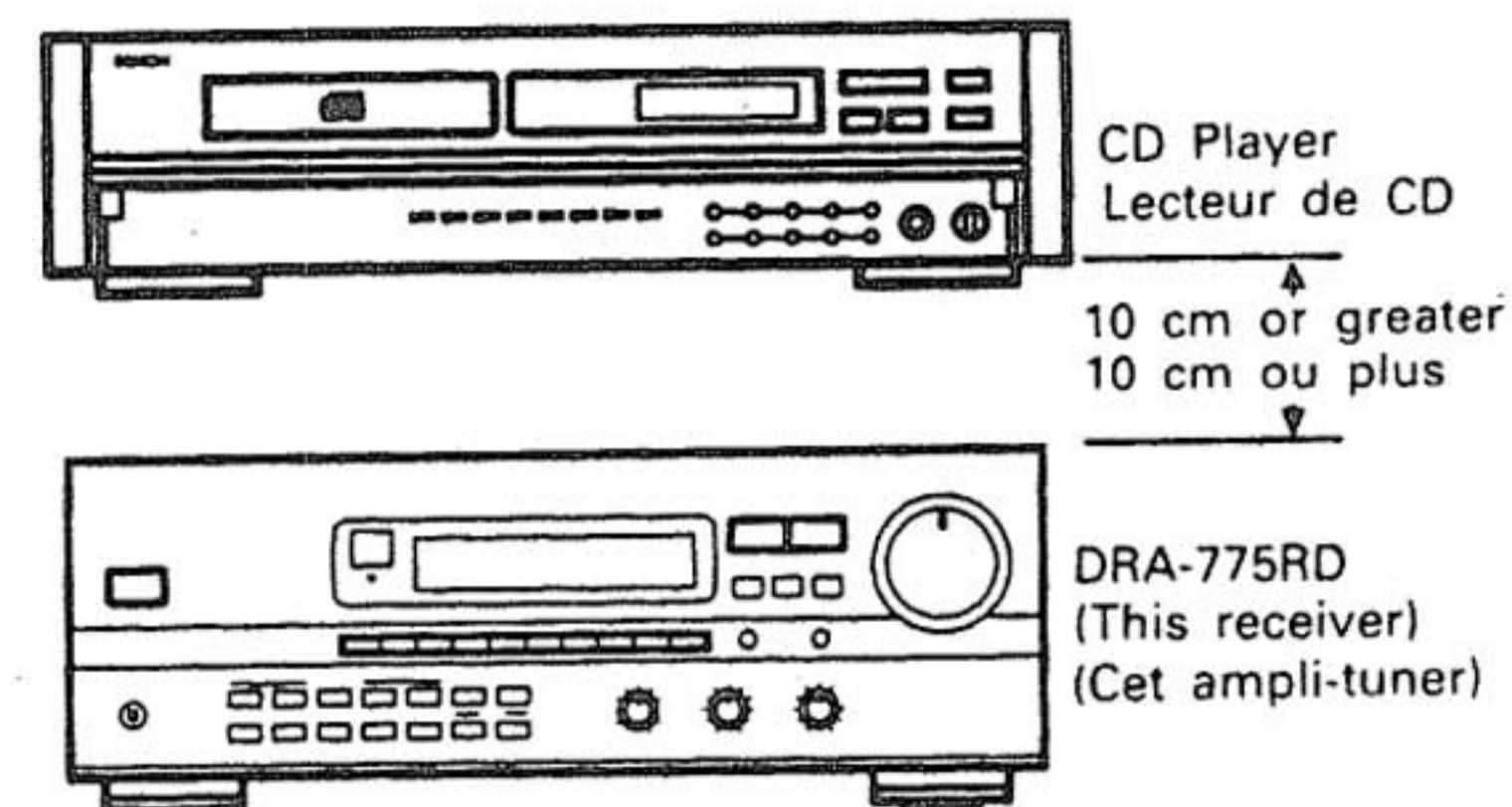
● PRECAUTIONS D'INSTALLATION

L'utilisation simultanée de cet ampli-tuner ou d'autres appareils électroniques à microprocesseur avec un tuner ou un téléviseur peut produire des parasites dans le son ou l'image.

Si cela se produit, prendre les mesures suivantes:

- Installer l'ampli-tuner aussi loin que possible du tuner ou du téléviseur.
- Eloigner les câbles d'antenne du tuner ou du téléviseur aussi loin que possible du cordon d'alimentation et des câbles de connexion de l'ampli-tuner.
- Ce problème est fréquemment rencontré lors de l'utilisation d'antennes intérieures. L'utilisation d'antennes extérieures et de câbles coaxiaux de 75 Ω /ohms est recommandée.

A note on stacking Remarque sur la juxtaposition



For cooling purposes, do not place another AV component directly on top of the receiver. Be sure to leave a space of at least 10 cm.

Pour permettre la dissipation de la chaleur, ne pas placer un autre appareil audio/vidéo directement sur le dessus de l'ampli-tuner. Toujours laisser un espace d'au moins 10 cm.

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● ACCESSORIES

Check that the following parts are included in addition to the main unit:

① Operating instructions 1	③ R6P/AA batteries 2x2	④ AM loop antenna 1	⑤ FM indoor antenna 1
② Remote control unit (RC-190) 1			
(RC-191) 1			

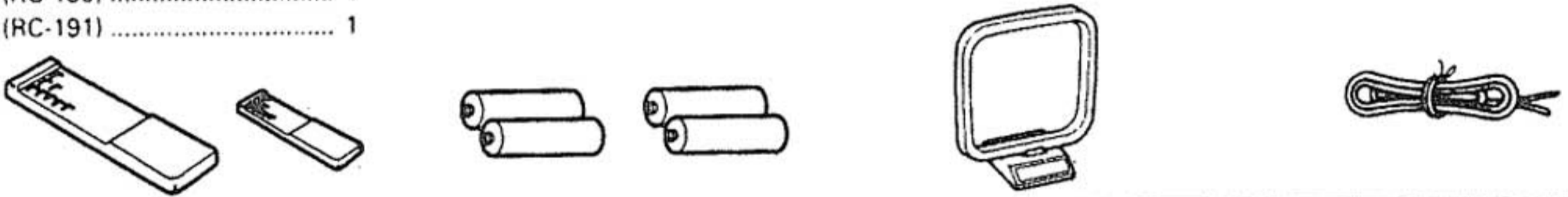


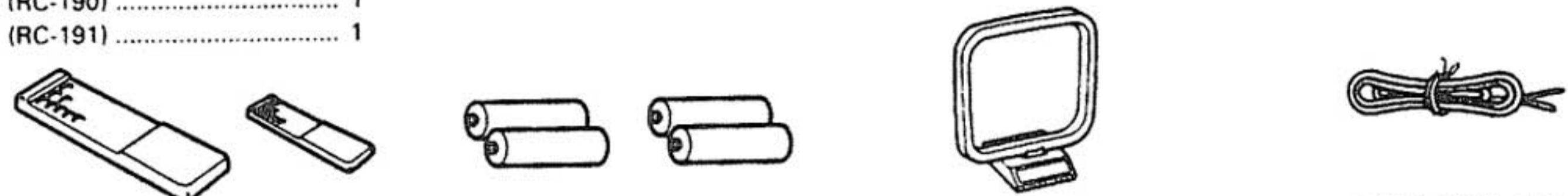
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● ACCESSOIRES

Vérifier que les articles suivants sont inclus dans le carton en plus de l'unité principale:

① Mode d'emploi 1	③ Piles R6P/AA 2x2	④ Antenne-cadre AM 1	⑤ Antenne intérieure FM 1
② Télécommande (RC-190) 1			
(RC-191) 1			



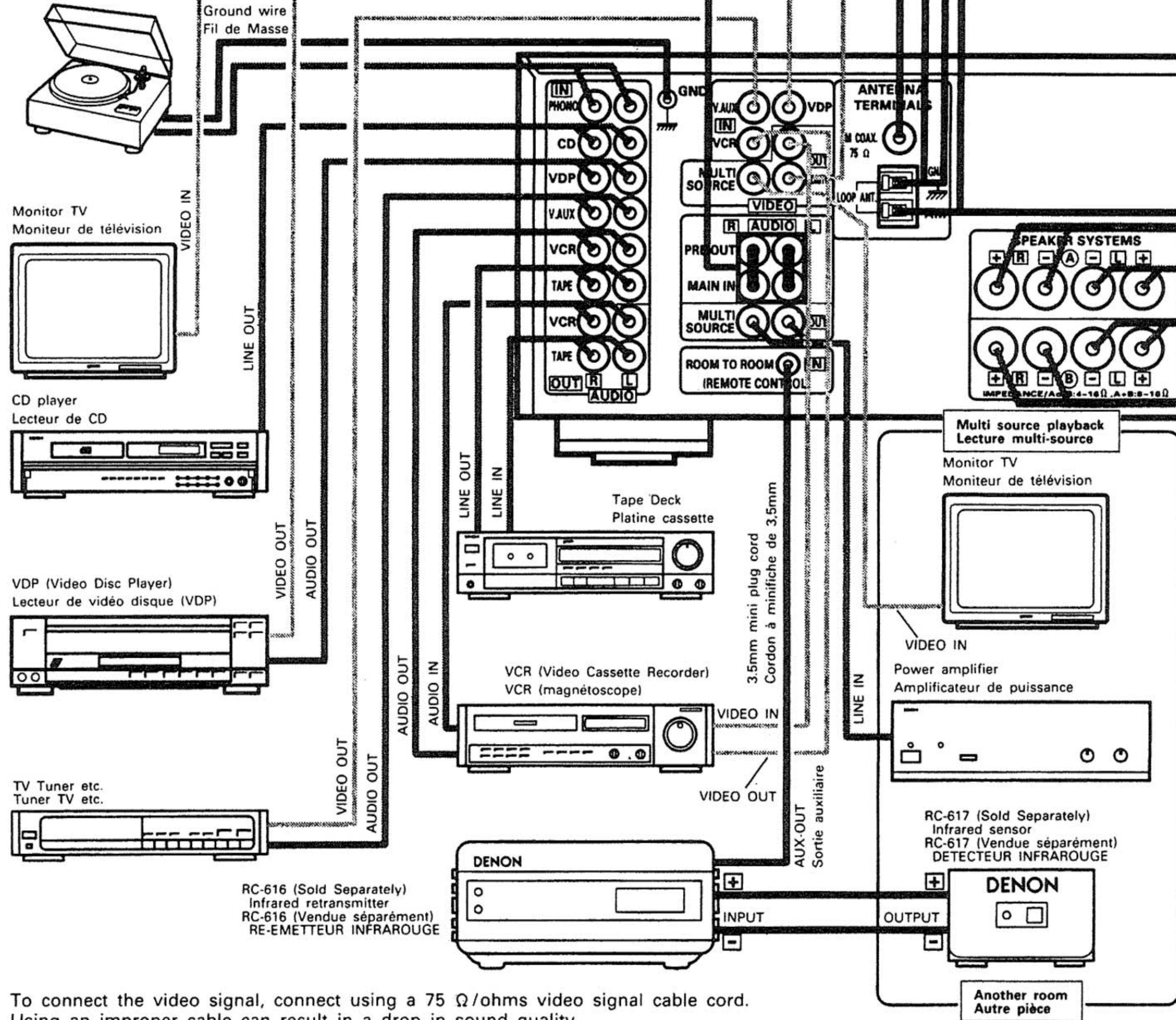
1 CONNECTIONS / CONNEXIONS

1-1 Connecting the audio components 1-1 Connexion des composants audio

NOTE:
The receiver cannot be used with MC cartridges directly. Use a separate head amplifier or step-up transformer.

REMARQUE:
L'ampli-tuner ne peut pas être utilisé directement avec les cellules à bobine mobile (MC). Utiliser un amplificateur de tête séparé ou un transformateur survoitour.

Turntable (MM cartridge)
Platine tourne-disque (cellule à bobine mobile (MM))



To connect the video signal, connect using a 75 Ω/ohms video signal cable cord.
Using an improper cable can result in a drop in sound quality.

- Do not plug in the power cord until all connections have been completed.
- Be sure to connect the left and right channels properly (left with left, right with right).
- Insert the plugs securely. Incomplete connections will result in the generation of noise.
- Use the AC OUTLETS for audio equipment only. Do not use them for hair driers, etc.

- Note that binding pin plug cords together with power cords or placing them near a power transformer will result in the introduction of hum or other noise.
- If hum or other noise is produced when the ground wire is connected, disconnect it.
- Noise or humming may be generated if a connected component is used independently without turning the power of the DRA-775RD on. If this happens, turn on the power of the DRA-775RD.

• Precautions when connecting speakers
If a speaker is placed near a TV or video monitor, the colors on the screen may be disturbed by the speaker's magnetism. If this should happen, move the speaker away to a position where it does not have this effect.

• Précautions à prendre lors de la connexion des enceintes
Si une enceinte est placée près d'un téléviseur ou d'un moniteur vidéo, les couleurs de l'écran peuvent être perturbées par le magnétisme de l'enceinte. Si cela se produit, déplacer l'enceinte vers un endroit où cet effet ne se produit pas.

POWER OUTLET
AC 120V, 60Hz
POWER OUTLET
(prise secteur)
CA 120V, 60Hz

Connecting the AC OUTLETS
AC OUTLETS
• SWITCHED (total capacity - 120W (1A.))
The power to this outlet is turned on and off in conjunction with the POWER switch on the DRA-775RD, and when the power is switched between on and standby from the remote control unit. No power is supplied from these outlets when the DRA-775RD's power is at standby. Never connect equipment whose total capacity is above 120W (1A.).
NOTE:
Only use the AC outlets for audio equipment. Never use them for hair driers, TVs or other electrical appliances.

Connexion des AC OUTLETS (prises secteur)
AC OUTLETS (prises secteur)
• Prises SWITCHED (commutées) (capacité totale 120 W) (1A.)
L'alimentation de ces prises est activée et désactivée par l'interrupteur POWER (alimentation) situé sur l'DRA-775RD. Ces prises sont également commutées lorsque l'alimentation est mise en veille (ON-STANDBY) à l'aide de la télécommande. Lorsque l'DRA-775RD est en mode de veille, les prises sont désactivées. Ne jamais connecter d'équipement dont la capacité totale est supérieure à 120 W (1A.).
REMARQUE:
N'utiliser les AC OUTLETS (prises secteur) que pour l'équipement audio. Ne jamais les utiliser pour des sèche-cheveux, des télévisions ou d'autres appareils électriques.

Pour connecter le signal vidéo, connecter en utilisant un câble de signal vidéo de 75 Ω/ohms.
L'utilisation d'un mauvais câble peut entraîner une baisse de la qualité du son.

- Ne pas brancher le cordon d'alimentation avant d'avoir terminé toutes les connexions.
- Toujours connecter correctement les canaux de gauche et de droite (gauche avec la gauche et droite avec la droite).
- Insérer fermement les fiches. Des connexions incomplètes peuvent générer des parasites.
- N'utiliser les prises AC OUTLETS (prises secteur) que pour l'équipement audio. Ne pas les utiliser pour un sèche-cheveux, etc.

- Remarquer que le groupement de cordons à fiches à broche avec des cordons d'alimentation, ou le fait de les placer près d'un transformateur provoque un bourdonnement ou un autre bruit.
- Si un bourdonnement ou un autre bruit se produit quand le câble de masse est connecté, le déconnecter.
- Un bruit ou un bourdonnement peut être généré si un composant connecté est utilisé indépendamment sans mettre l'DRA-775RD sous tension. Dans ce cas, mettre l'DRA-775RD sous tension.

1-2 Speaker System Connections

- This receiver can accommodate connections of a total of four speakers including two set of (front) main amplifier speakers (A and B).
- Connect the speaker terminals with the speakers making sure that like polarities are matched (\oplus with \oplus , \ominus with \ominus). Mismatching of polarities will result in weak central sound, unclear orientation of the various instruments, and the sense of direction of the stereo being impaired.
- When making connections, take care that none of the individual conductors of the speaker cord come in contact with adjacent terminals, with other speaker cord conductors, or with the rear panel.

• Speaker Impedance

- When speaker systems A and B are use separately, speakers with an impedance of from 4 to 16 Ω /ohms can be connected.
- Be careful when using two pairs of main speakers (A + B) at the same time, since use of speakers with an impedance outside the range of 8 to 16 Ω /ohms will lead to damage.
- The protection circuit may operate or damage may occur when speakers with an impednce outside of the above range are used.

1-2 Connexions du système d'enceintes

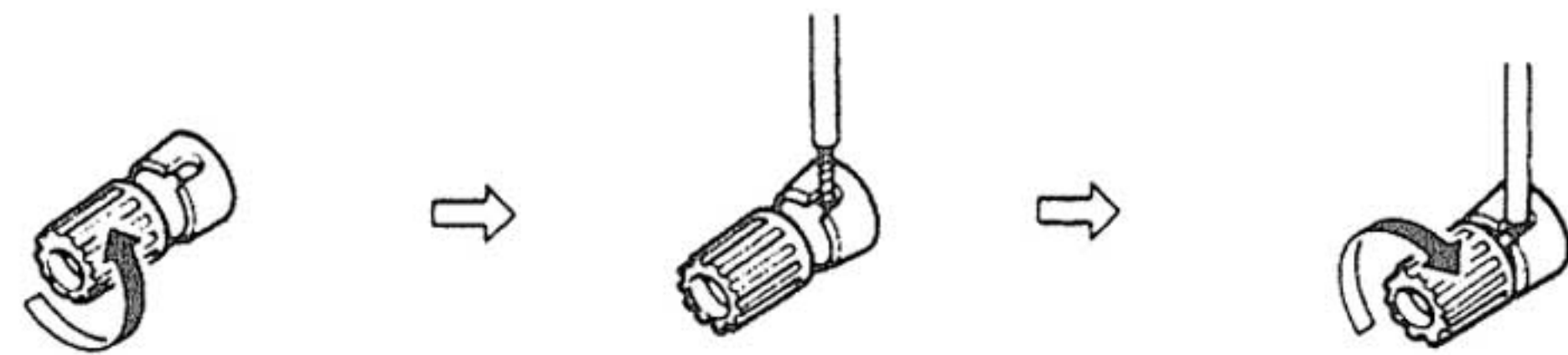
- Cet ampli-tuner peut accepter des connexions de quatre enceintes au total, y compris deux paires d'enceintes (A et B) avec amplificateur principal (avant).
- Connecter les bornes d'enceinte aux enceintes en respectant les polarités (\oplus au \oplus , \ominus au \ominus). Si les polarités ne sont pas respectées, un son central faible est entendu, l'orientation des divers instruments n'est pas correcte et le sens de la direction du son stéréo est détérioré.
- Lors de la réalisation des connexions, prendre soin de ne mettre en contact aucun des conducteurs individuels du cordon d'enceinte avec des bornes adjacentes, avec des conducteurs d'autres cordons d'enceinte ou avec le panneau arrière.

• Impédance d'enceinte

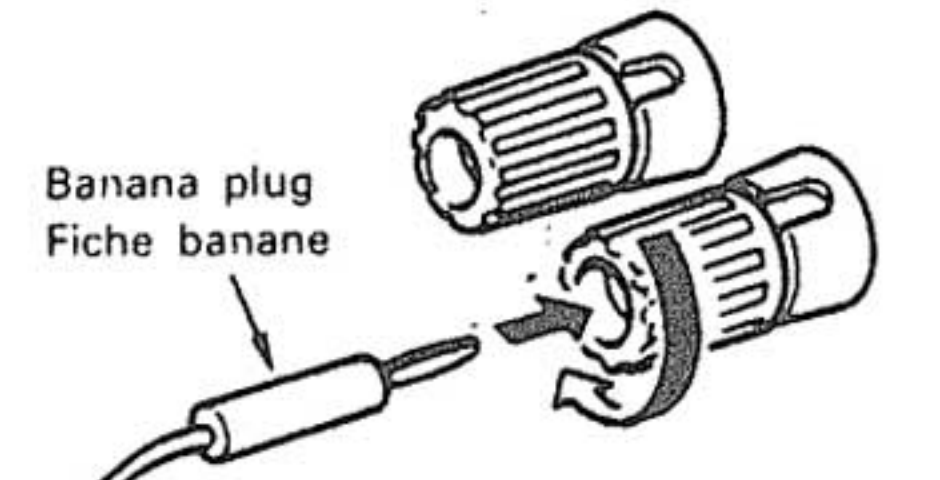
- Lorsque des systèmes d'enceinte A et B sont utilisés séparément, les enceintes ayant une impédance de 4 à 16 Ω /ohms peuvent être connectées.
- Faire attention lors de l'utilisation simultanée de deux paires d'enceintes principales (A + B), car l'utilisation d'enceintes ayant une impédance en dehors de la plage de 8 à 16 Ω /ohms peut provoquer des dégâts.
- Le circuit de protection peut fonctionner ou une détérioration peut avoir lieu lorsque des enceintes d'une impédance différente de celle citée ci-dessus sont utilisées.

Connecting the speaker terminals/Connexion des bornes d'enceinte

- | | | |
|---|-----------------------|---|
| 1. Losen by turning counterclockwise. | 2. Insert the cord. | 3. Tighten by turning clockwise. |
| 1. Tourner dans le sens contraire des aiguilles d'une montre pour la desserrer. | 2. Insérer le cordon. | 3. Tourner dans le sens des aiguilles d'une montre pour la resserrer. |



Connecting banana plugs Connexion des fiches bananes

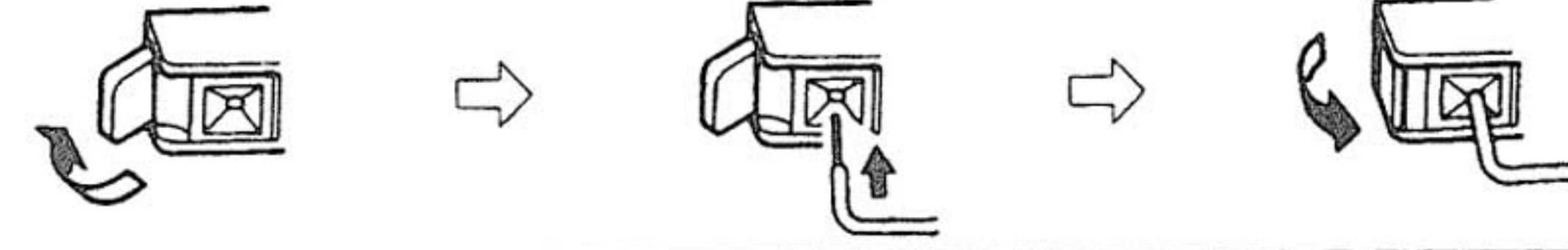


Turn clockwise to tighten, then insert the banana plug.
Tourner dans le sens des aiguilles d'une montre pour serrer, puis insérer la fiche banane.

1-3 Connecting the antenna terminals 1-3 Connexion des bornes d'antennes

Connection of AM antennas/Connexion des antennes AM

- | | | |
|---------------------------|---------------------------|-----------------------|
| 1. Push the lever. | 2. Insert the conductor. | 3. Return the lever. |
| 1. Appuyer sur le levier. | 2. Insérer le conducteur. | 3. Ramener le levier. |



AM loop antenna assembly Montage d'antenne à boucle AM

- | | |
|--|----------------------------------|
| ① | ② |
| | |
| • Remove the vinyl tie and take out the connection line. | • Bend in the reverse direction. |
| • Retirer l'attache en vinyle et sortir la ligne de connexion. | • Replier en sens inverse. |

- | | |
|--|--|
| ③ | |
| • With the antenna on top of any stable surface. | • Avec l'antenne sur le dessus d'une surface stable. |

Note to CATV system installer:

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Remarque à l'installateur de système de télédistribution:

Ce rappel est fourni pour attirer l'attention de l'installateur de système de télédistribution sur l'article 820-40 du NEC qui fournit des directives sur une bonne mise à la masse et, en particulier, spécifie que la terre du câble doit être connectée au système de mise à la masse du bâtiment, aussi près du point d'entrée de câble que possible.

ANTENNA INSTALLATION

• FM ANTENNA

The supplied FM antenna can be used inside wooden houses for receiving local FM stations and other strong FM signals. Stretch out the ends of the antenna and mount the antenna on the wall or ceiling where optimum reception is achieved. A indoor FM antennas may not consistently ensure stable reception, due to environment changes. In such cases, the indoor FM antenna should only be used temporarily until an outdoor FM antenna has been installed. When connecting an outdoor FM antenna, the use of 75 Ω /ohms coaxial cable (3C-2V, 5C-2V) is strongly recommended.

• AM ANTENNA

Attach the supplied AM loop antenna even when using an outdoor AM antenna. Connect the leads to the AM and GND terminals. Also use the AM terminals for connecting an outdoor AM antenna (when making such a connection do not disconnect the AM loop antenna.) Adjust the loop antenna to obtain optimum reception. Where broadcast stations are distant and only weak signals are received, or where signals are blocked, it is best to install an outdoor AM antenna.

NOTES

- This receiver has a full back-up system. When the power is turned on, the INPUT SELECTOR buttons are set to the last mode set before the power was turned off.
- When using this receiver in close proximity to video equipment (TV, VCR, VDP, etc.), noise may be generated in AM broadcasts. To avoid this, keep the receiver as far away from other video components as possible, or detach the AM loop antenna from the antenna holder and place it where noise is reduced. If the noise is not reduced, turn off the power of the video components when listening to AM broadcasts.

INSTALLATION DES ANTENNES

• ANTENNE FM

L'antenne FM fournie peut être utilisée dans des maisons en bois pour la réception de stations FM locales et d'autres signaux FM puissants. Déployer les extrémités de l'antenne et la fixer au mur ou au plafond où une réception optimale peut être obtenue. Une antenne FM intérieure peut ne pas assurer de manière consistante une réception stable à cause des changements d'environnement. Dans ces cas, l'antenne FM intérieure ne doit être utilisée que de manière provisoire jusqu'à ce qu'une antenne FM extérieure ait été installée. Lors de la connexion d'une antenne FM extérieure, l'utilisation du câble coaxial de 75 Ω /ohms (3C-2V, 5C-2V) est fortement recommandée.

• ANTENNE AM

Fixer l'antenne-cadre AM fournie, même en cas d'utilisation d'une antenne FM extérieure. Connecter les fils aux bornes AM et GND. Utiliser également les bornes AM pour la connexion d'une antenne FM extérieure (lors de cette connexion, ne pas déconnecter l'antenne-cadre AM.) Ajuster l'antenne-cadre pour obtenir la meilleure réception. Il vaut mieux installer une antenne AM extérieure lorsque les stations de radiodiffusion sont distantes et que seuls des signaux faibles sont reçus, ou lorsque les signaux sont bloqués.

REMARQUES

- Cet ampli-tuner possède un système de sauvegarde complet. A la mise sous tension, les touches INPUT SELECTOR (sélection d'entrée) sont réglées au dernier mode réglé avant la mise hors tension.
- Lors de l'utilisation de l'ampli-tuner à proximité d'équipements vidéo (TV, VCR, VDP, etc.), des parasites risquent d'être générés dans des émissions AM. Pour éviter ce phénomène, garder l'ampli-tuner aussi loin que possible d'autres équipements vidéo, ou détacher l'antenne-cadre AM du porte-antenne et la placer là où le bruit est réduit. Si le bruit n'est pas réduit, couper l'alimentation des composants vidéo lors de l'écoute d'émissions AM.

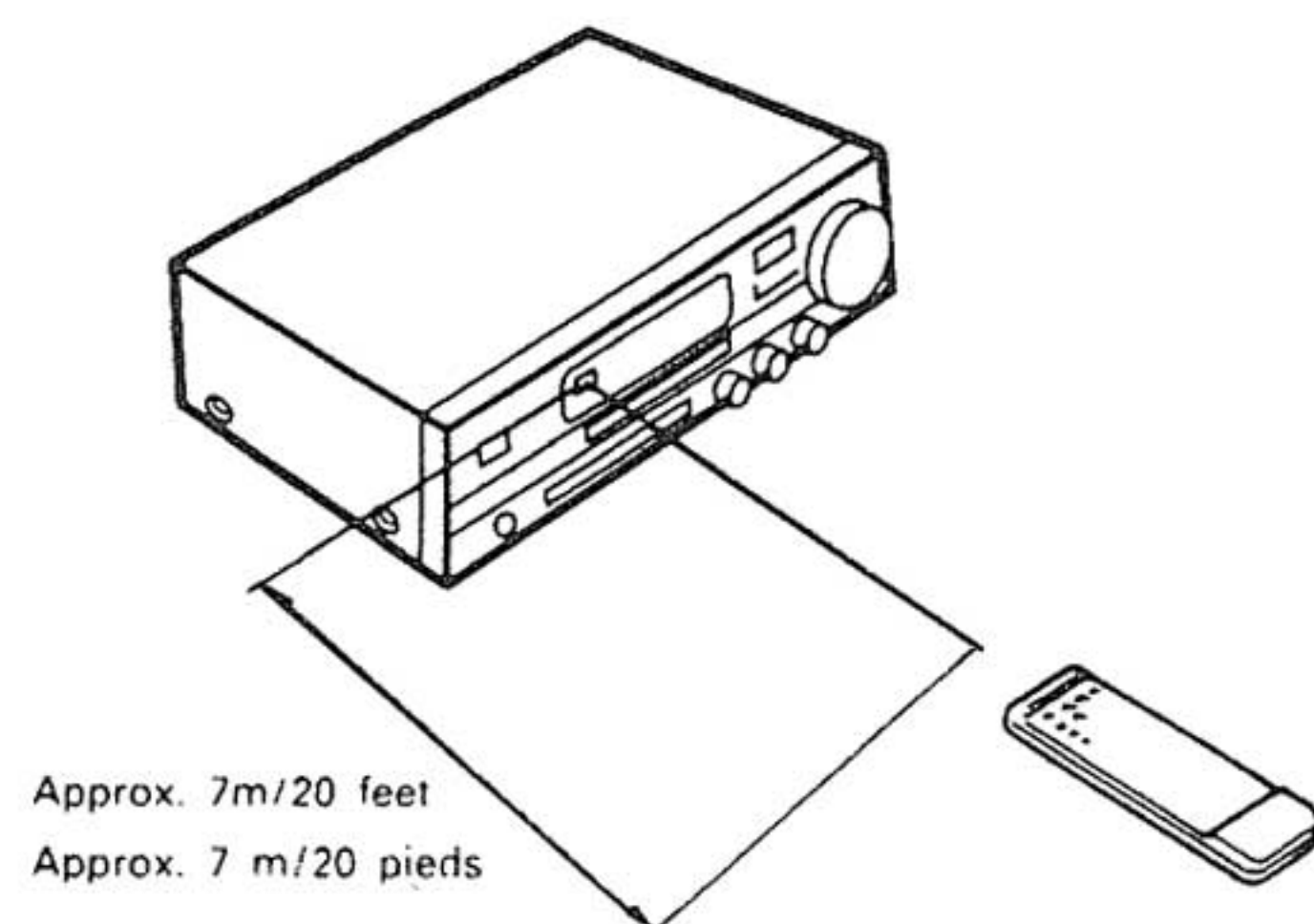
2 REMOTE CONTROL UNIT/TELECOMMANDE

Following the procedure outlined below, insert the batteries before using the remote control unit.

■ Range of operation of the remote control unit

En suivant la procédure expliquée ci-dessous, insérer les piles avant d'utiliser la télécommande.

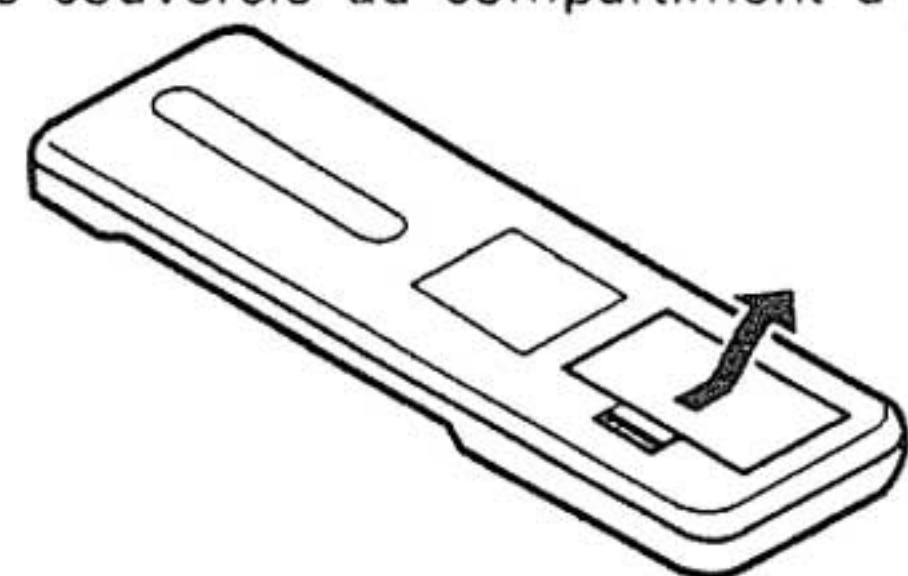
■ Plage d'utilisation de la télécommande



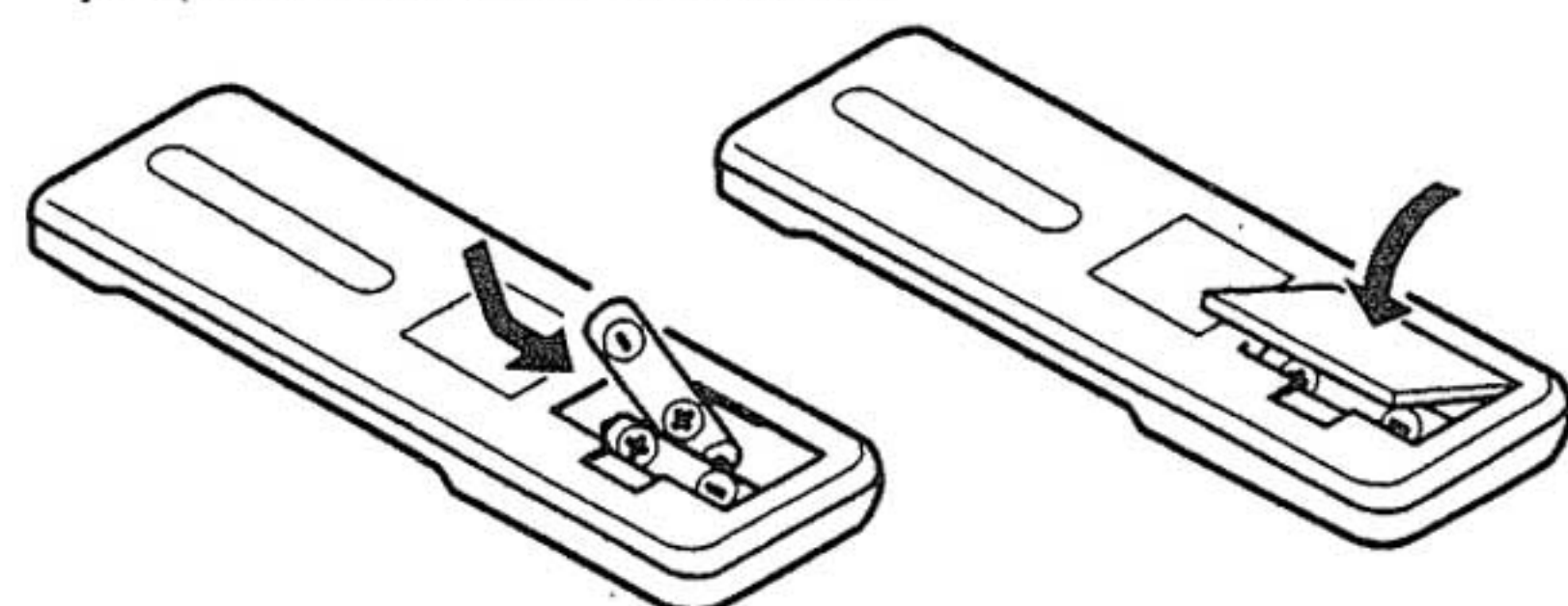
■ Inserting the batteries

■ Insertion des piles

1. Open the bottom cover of the remote control unit and remove the battery cover.
1. Ouvrir le couvercle inférieur de la télécommande et retirer le couvercle du compartiment à piles.



2. Insert the two R6P/AA batteries, matching the ⊕ and ⊖ marks on the batteries with those in the case. Close the bottom cover until it clicks shut.
2. Insérer les deux piles R6P/AA en faisant correspondre les marques ⊕ et ⊖ situées sur les piles avec celles du compartiment à piles. Refermer le couvercle inférieur jusqu'au déclic de fermeture.



Point the remote control unit at the remote control sensor as shown on the diagram at the left.

NOTES:

- The remote control unit can be used from a straight distance of approximately 7 meters/20 feet, but this distance will shorten or operation will become difficult if there are obstacles between the remote control unit and the remote control sensor, if the remote control sensor is exposed to direct sunlight or other strong light, or if operated from an angle.
- Neon signs or other devices emitting pulse-type noise nearby may result in malfunction, so keep the set as far away from such devices as possible.

NOTES

- Use only AA, R6P, UM-3 batteries for replacement.
- Be sure the polarities are correct. (See the illustration inside the battery compartment.)
- Remove the batteries if the remote control transmitter will not be used for an extended period of time.
- If batteries leak, dispose of them immediately. Avoid touching the leaked material or letting it come in contact with clothing, etc. Clean the battery compartment thoroughly before installing new batteries.
- Have replacement batteries on hand so that the old batteries can be replaced as quickly as possible when the time comes.
- The codes that have been learned may be lost if removed batteries are not replaced within about 5 minutes.

Diriger la télécommande vers le détecteur de télécommande de la manière indiquée sur le diagramme de gauche.

REMARQUES:

- La télécommande peut être utilisée à une distance directe d'environ 7 m/20 pieds, mais cette distance diminue ou le fonctionnement devient difficile s'il y a des obstacles entre la télécommande et le détecteur de télécommande, si le détecteur de télécommande est exposé à la lumière directe du soleil ou à une autre lumière forte, ou si elle est actionnée d'un angle.
- Des enseignes au néon ou autres dispositifs émettant des parasites type impulsion à proximité peuvent entraîner un mauvais fonctionnement, par conséquent garder l'appareil aussi loin que possible de ces dispositifs.

REMARQUES

- N'utiliser que des piles AA, R6P, UM-3 pour le remplacement.
- Vérifier que les polarités sont correctes. (Voir l'illustration à l'intérieur du compartiment à piles.)
- Retirer les piles si l'émetteur de la télécommande n'est pas utilisé pendant une longue période.
- Si des piles fuient, les jeter immédiatement. Eviter de toucher le matériel fuyant ou de le laisser entrer en contact avec un vêtement, etc. Nettoyer à fond le compartiment à piles avant de mettre de nouvelles piles en place.
- Avoir des piles de remplacement à portée de main de manière à ce que les anciennes piles puissent être remplacées aussi vite que possible quand il en est temps.
- Les codes programmés peuvent être perdus si les piles enlevées ne sont pas remplacées dans un délai d'environ 5 minutes.

2-1 RC-190 System code buttons

DENON remote-controllable audio components can be controlled using this unit's remote control unit. Note that some components, however, cannot be operated with this remote control unit.

2-1 RC-190 Touches de code de système

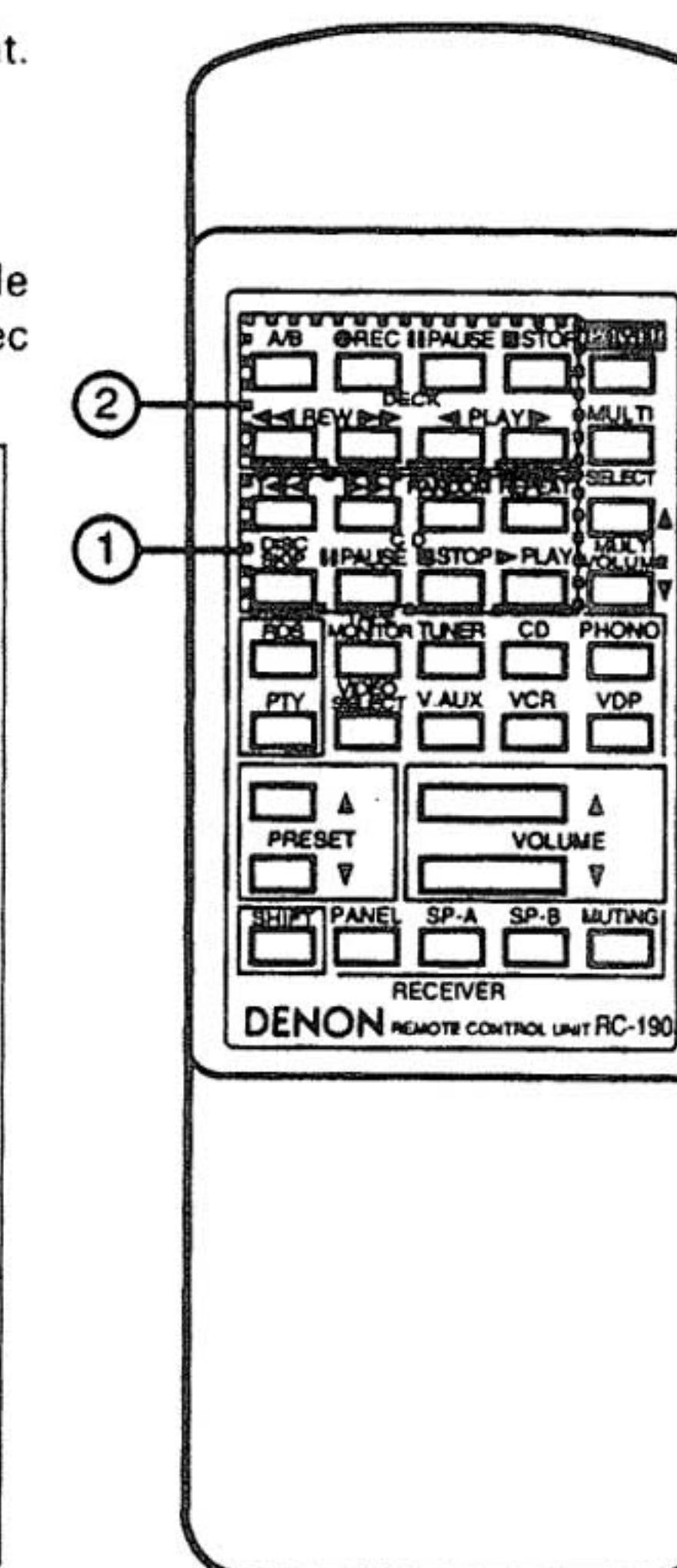
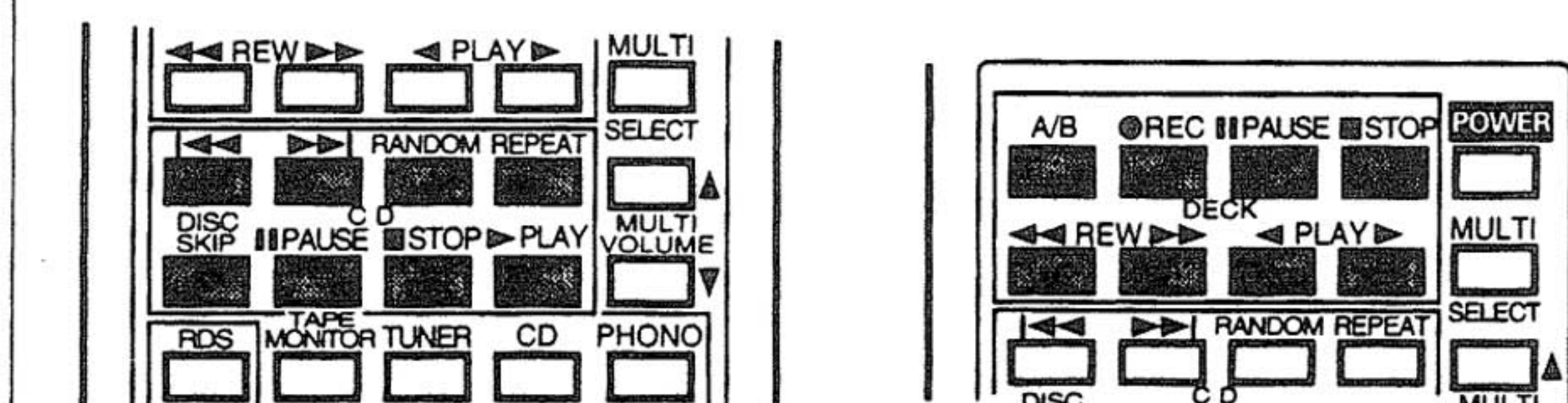
Les composants audio télécommandables DENON peuvent être contrôlés en utilisant la télécommande de cet appareil. Cependant, remarquer que certains composants ne peuvent pas être actionnés avec cette télécommande.

Use the buttons shown below to operate the component.
For details, refer to the respective component's manual.

Utiliser les touches indiquées ci-dessous pour actionner le composant.
Pour les détails, se reporter au mode d'emploi du composant respectif.

1. For CD players
2. For tape decks

1. Pour lecteurs de CD
2. Pour platines cassettes



2-2 RC-191 Multi-source remote control unit

This is a remote control unit for multi-source and multi-zone playback.

Buttons ① can not be used when the main unit's multi-source mode is set to the REC OUT mode. Buttons ③ can only be used when the main unit's multi-source mode is set to the MULTI mode.

1. MULTI SOURCE terminal output function control buttons (PHONO, TUNER, VDP, VCR, V.AUX and TAPE)
2. MULTI SOURCE terminal output level control buttons (VOLUME up and down)
3. PRESET up and down buttons (when MULTI SOURCE function is set to TUNER)

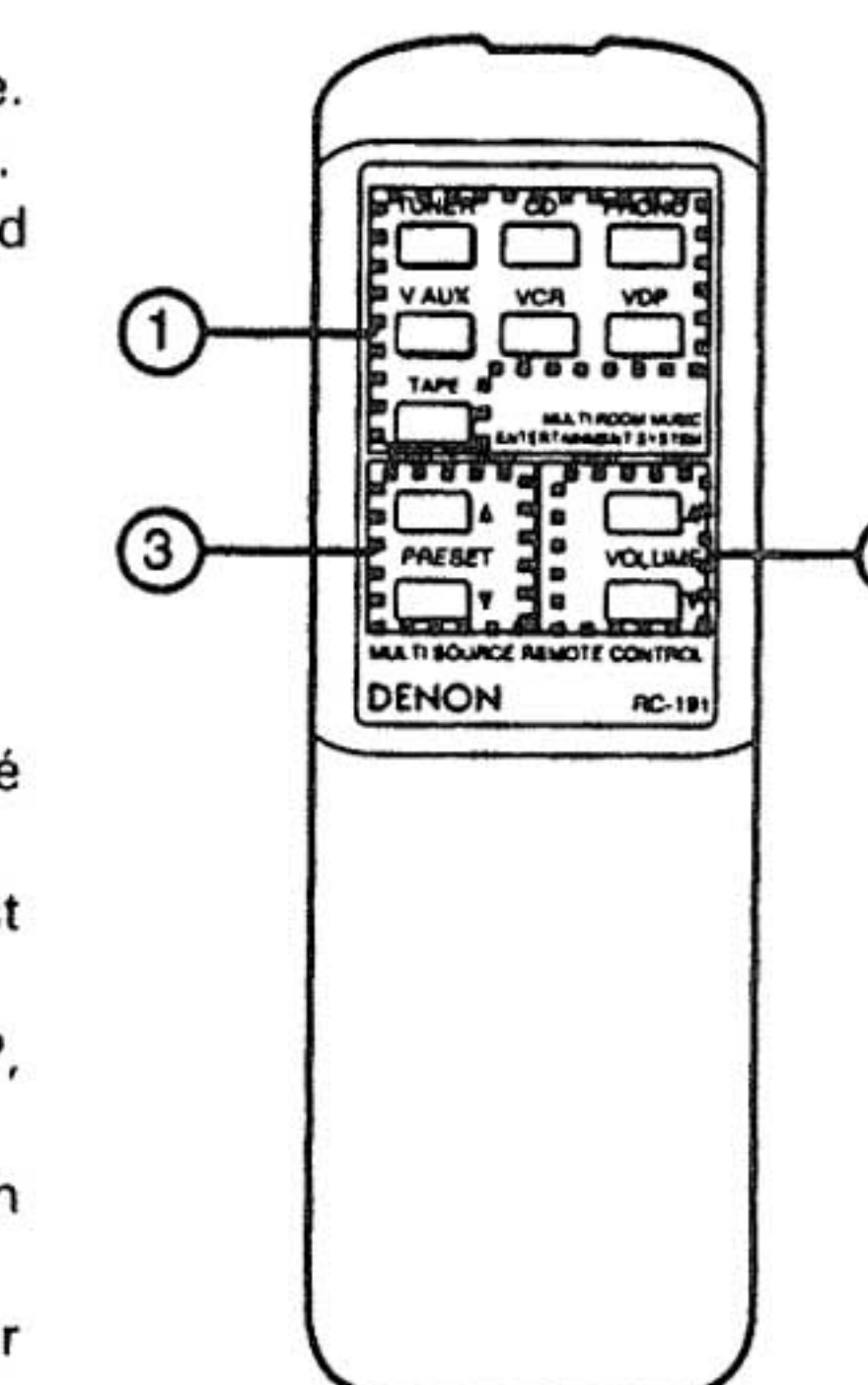
2-2 RC-191 Télécommande multi-source

Cette télécommande est une télécommande pour la lecture multi-source ou multi-zone.

Les touches ① ne peuvent pas être utilisées lorsque le mode multi-source de l'unité principale est réglé en mode REC OUT (sortie d'enregistrement).

Les touches ③ peuvent être utilisées seulement lorsque le mode multi-source de l'unité principale est réglé en mode MULTI.

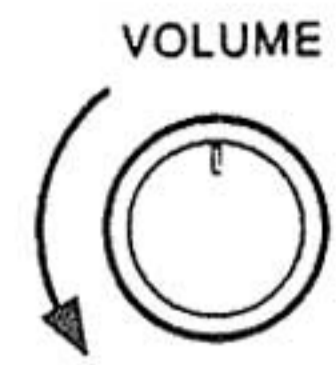
1. Touches de commande de fonction de sortie de la borne MULTI SOURCE (PHONO, TUNER, VDP, VCR, V.AUX et TAPE (cassette)).
2. Touches de commande de niveau de sortie de la borne MULTI SOURCE (augmentation et diminution de VOLUME).
3. Touches PRESET (préréglage Haut et Bas) (lorsque la fonction MULTI SOURCE est réglée sur TUNER).



3 OPERATIONS

3-1 Preparations for Play Back

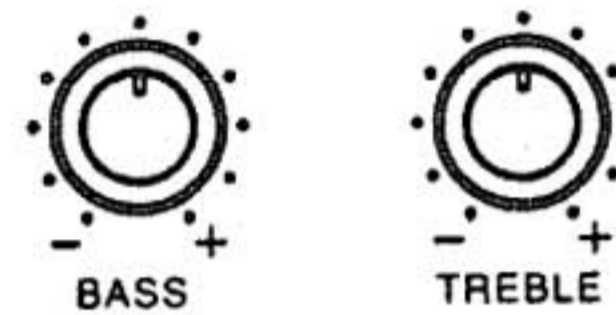
1. Check that all connections are proper.
2. Set to the minimum position.



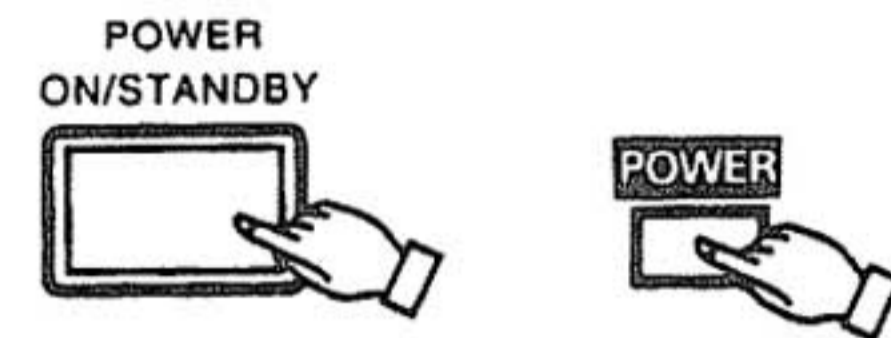
3. Set to the center position.



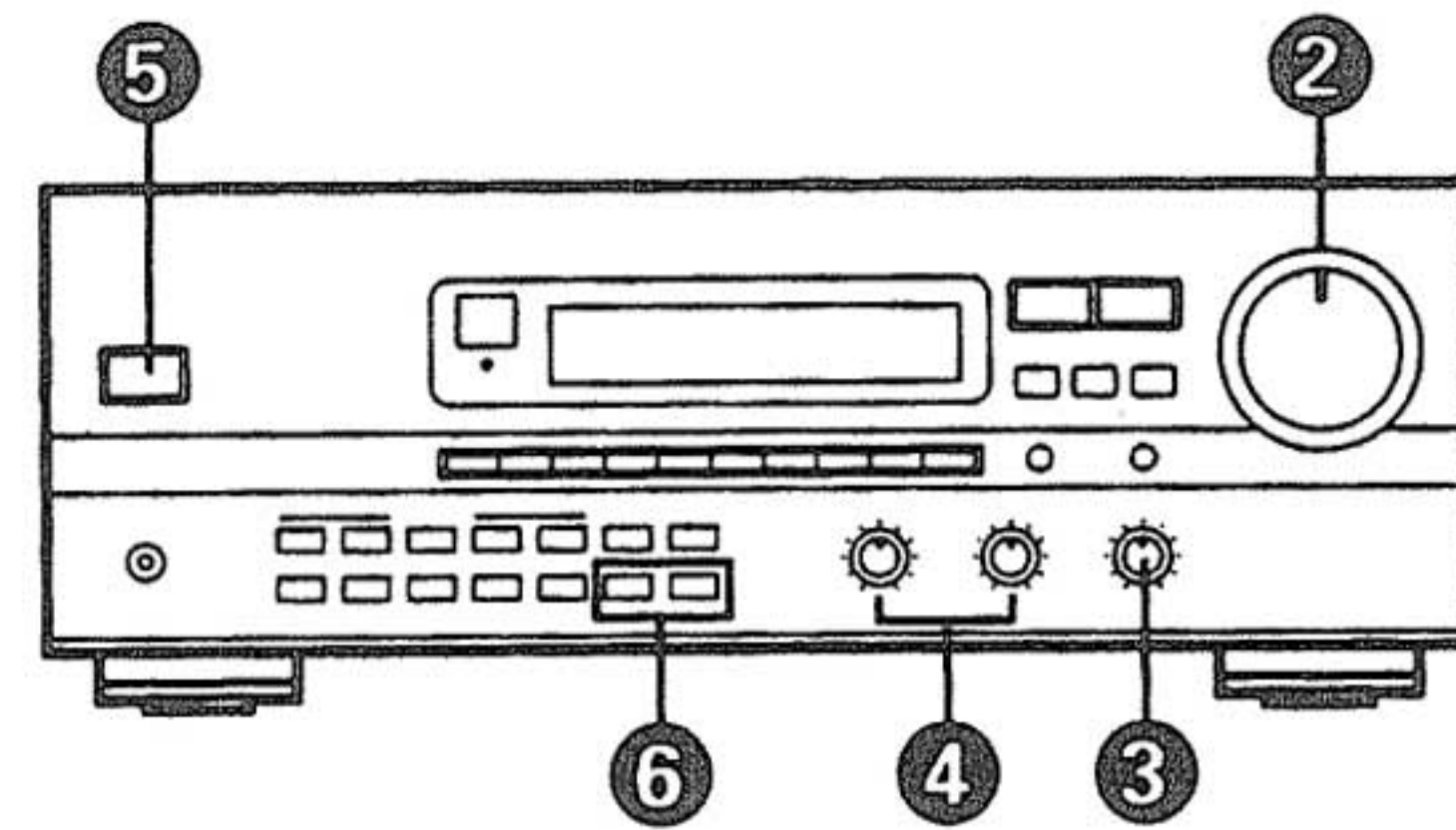
4. Set to the center position.



5. Press the power button to turn the power on.

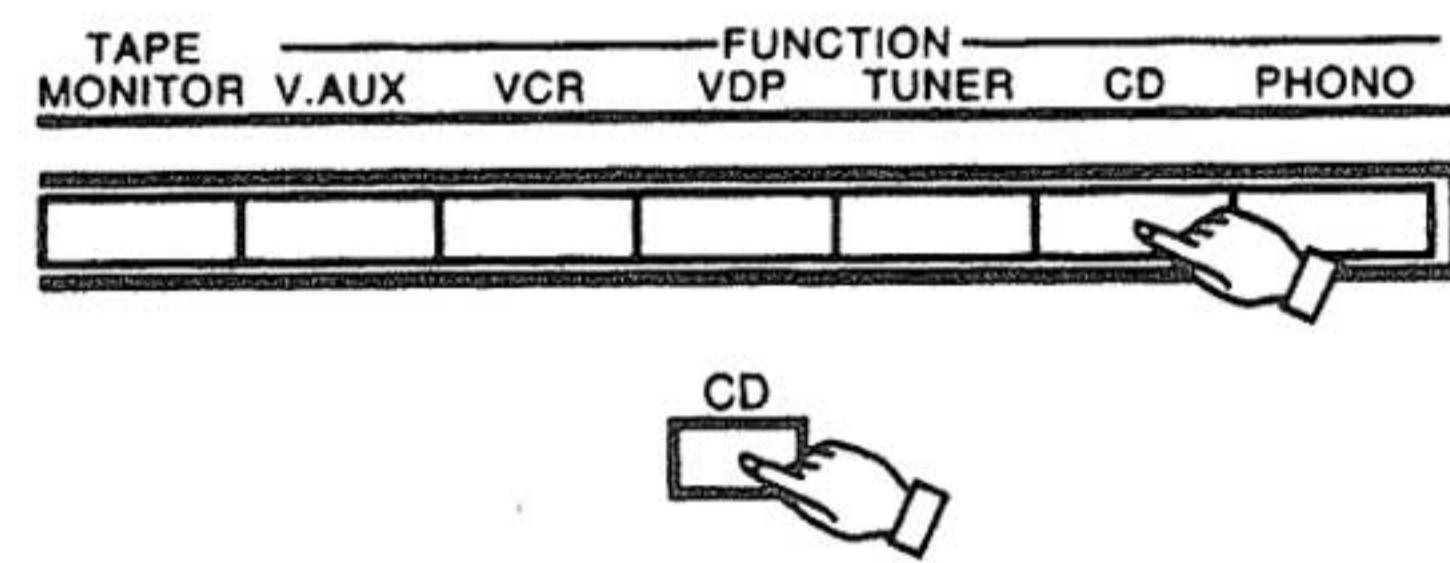


6. Select the front speakers. Press the speaker A or B button to turn the speaker on.



3-2 Playing the program source

1. Select the source to be played.

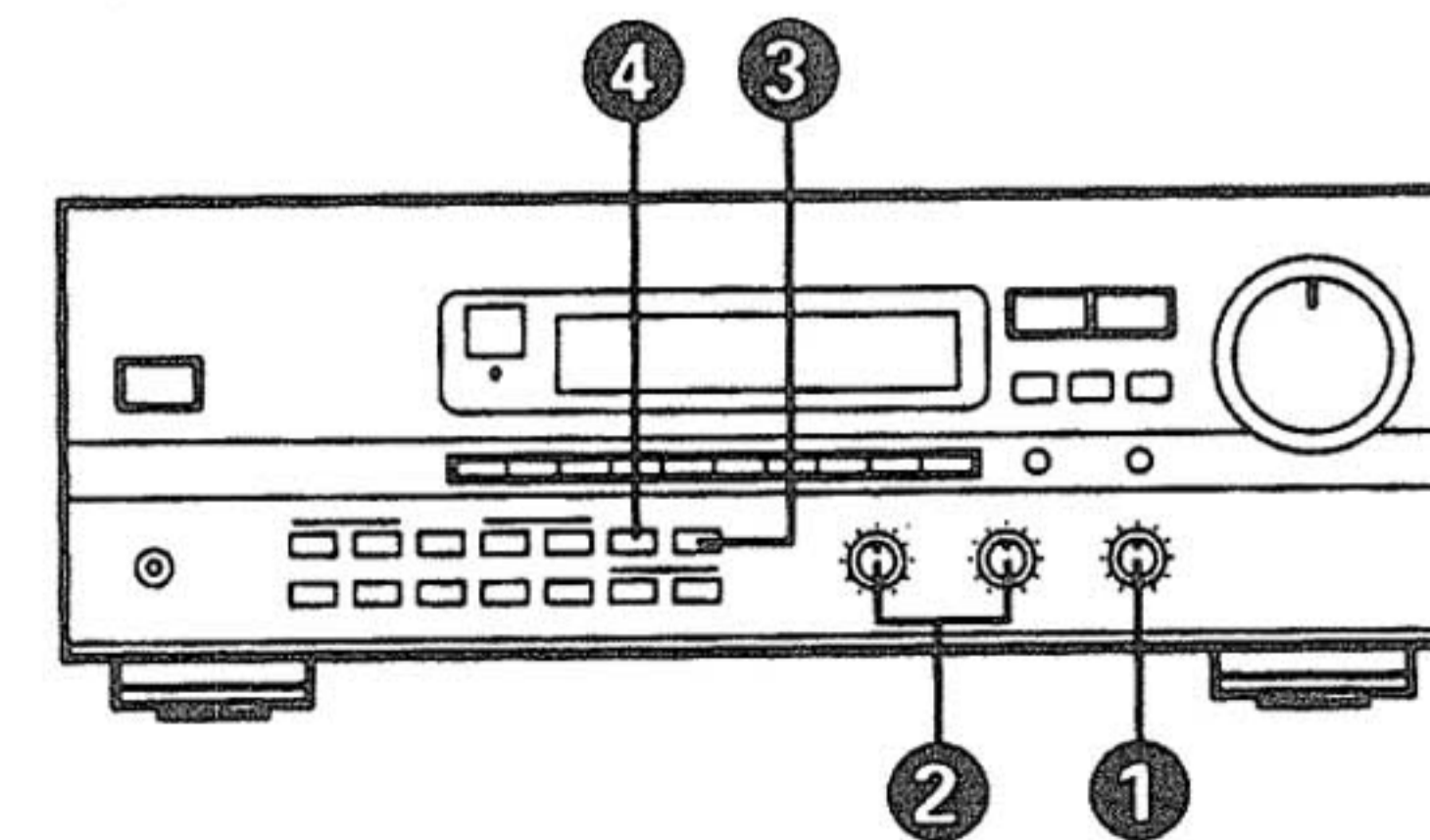
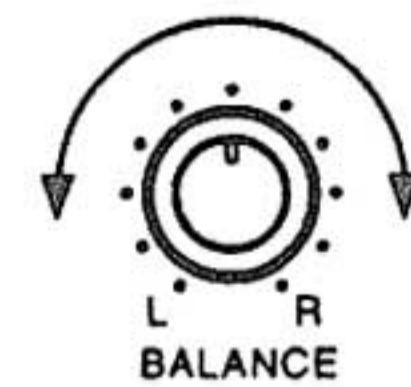


2. Adjust the VOLUME control.

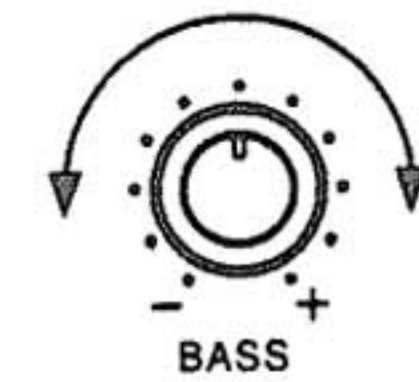


3-3 Adjusting the BALANCE, TONE, and LOUDNESS control

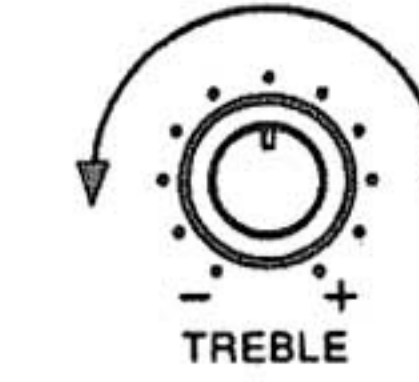
1. Adjust the left/right BALANCE. Turn the control counterclockwise to reduce the volume of the right channel, clockwise to reduce the volume of the left channel.



2. Adjust the BASS and TREBLE.



Turn the control clockwise to increase the bass, counterclockwise to decrease it.



Turn the control clockwise to increase the treble, counterclockwise to decrease it.

3-4 Simulcast playback/recording

Use this switch to monitor or recording a video source other than the audio source.

1. Press the VIDEO SELECT button repeatedly until the desired source appears on the display.

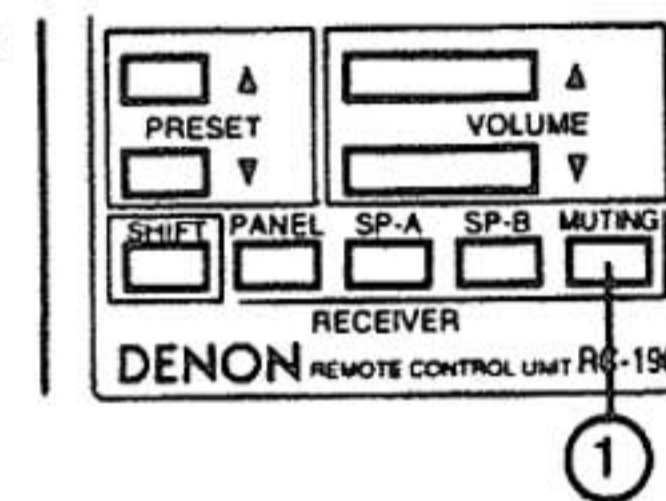


- ※ Cancelling simulcast playback/recording
- Press the VIDEO SELECT button once more.
- Select the VIDEO function.

3-5 Using the muting function

Use this to turn off the audio output temporarily.

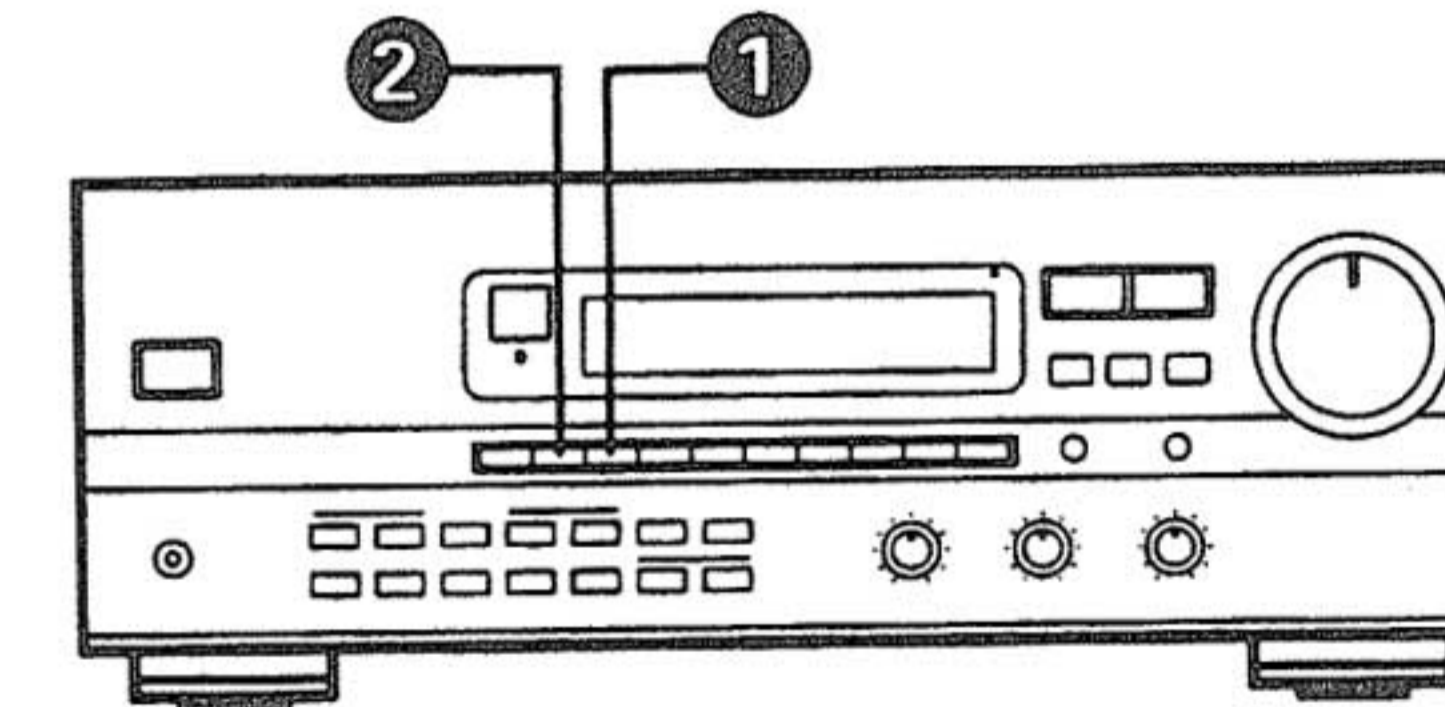
1. Press the MUTING button.
- ※ Cancelling MUTING mode. Press the MUTING button again.



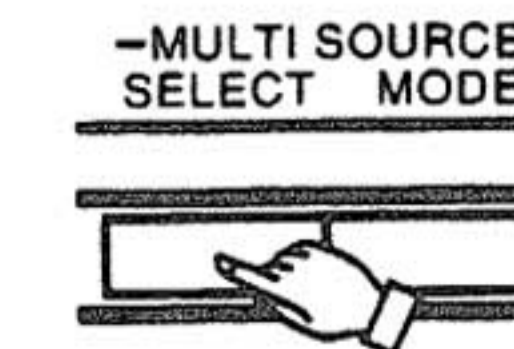
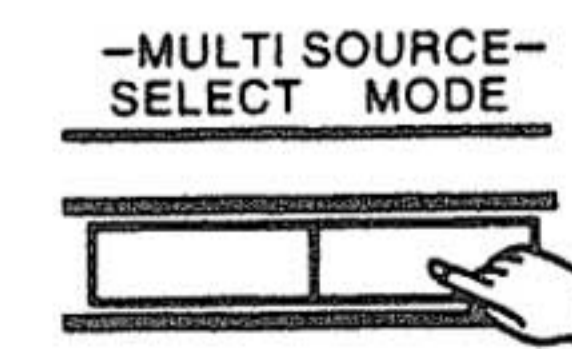
3-7 Multi-Source recording/playback

The Multi-Source function allows you to record a source other than the source currently playing or to output its signal to the MULTI SOURCE output terminal.

- Recording a source other than the one currently playing (REC OUT mode)

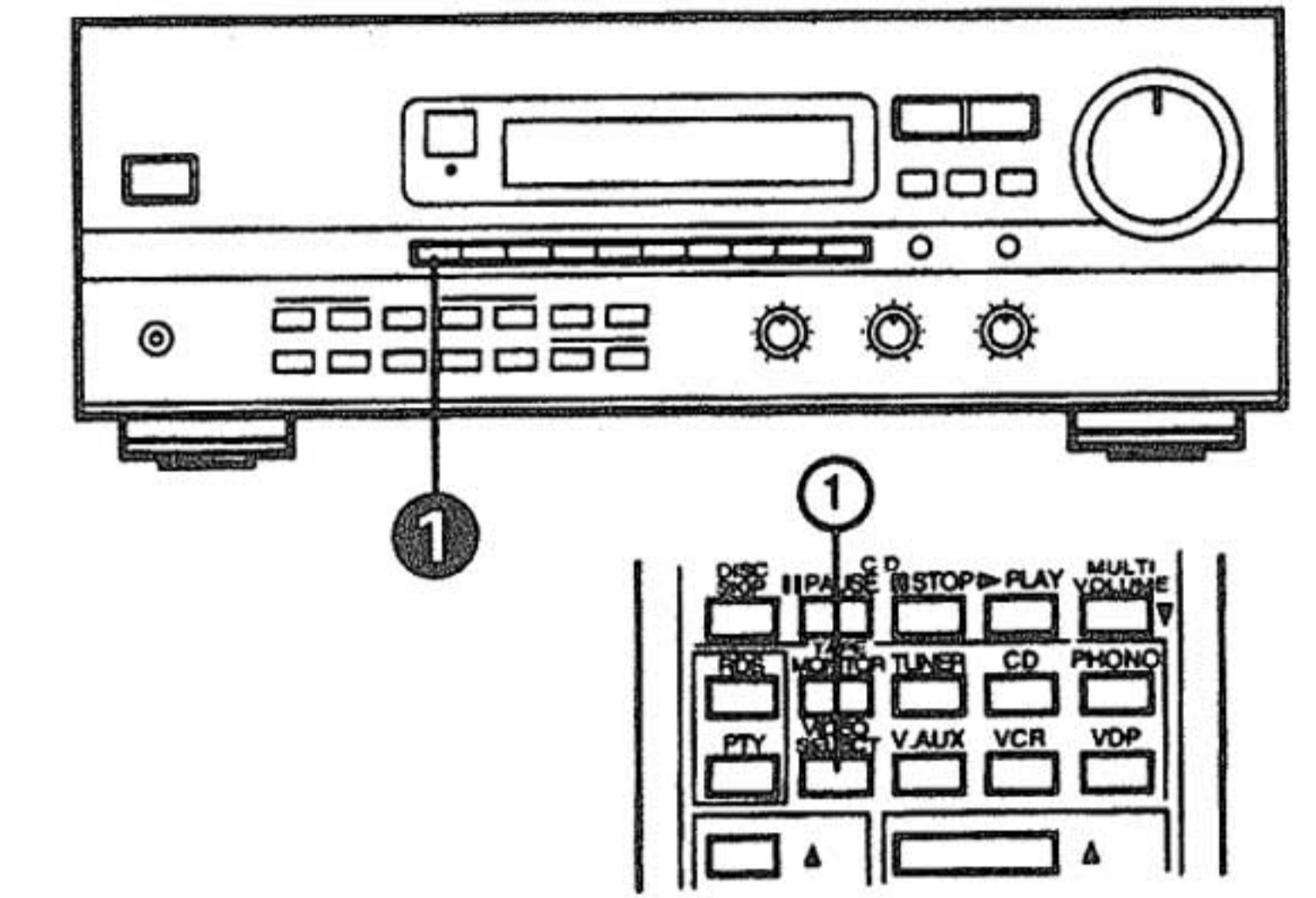
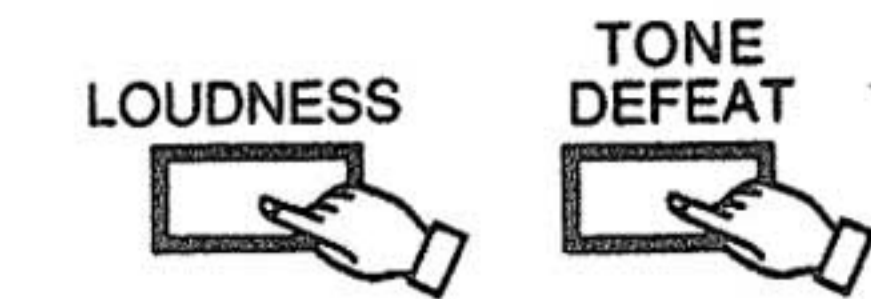


1. Press the MULTI SOURCE MODE button until "REC OUT" appears on the display.
2. Select the source to be output to the recording output terminal. Press the MULTI SOURCE SELECT button repeatedly until the desired source appears on the display.



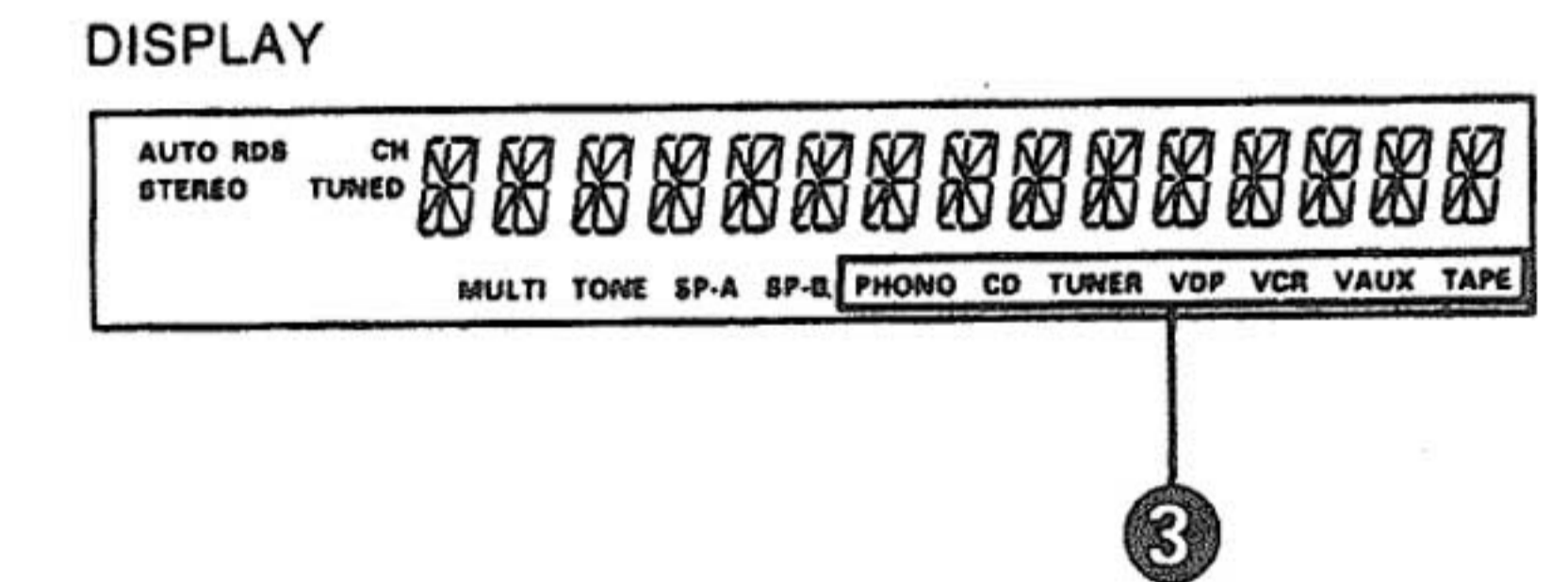
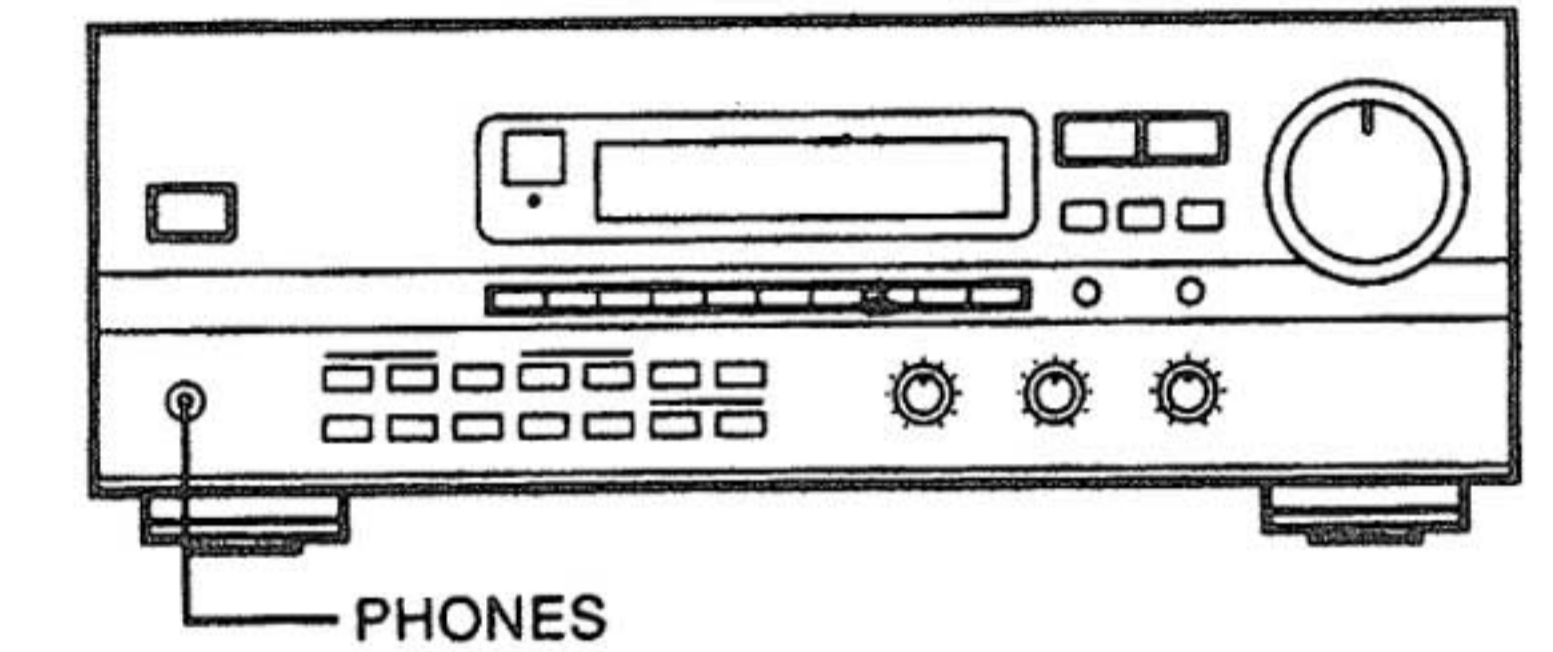
- ※ The REC OUT mode cannot be set from the remote control unit.

3. TONE DEFEAT switch. Use this when you do not want to adjust the sound.
4. LOUDNESS switch. Press the loudness switch ON when listening to music at a low volume. The low notes and high notes will be corrected to produce a natural sound.



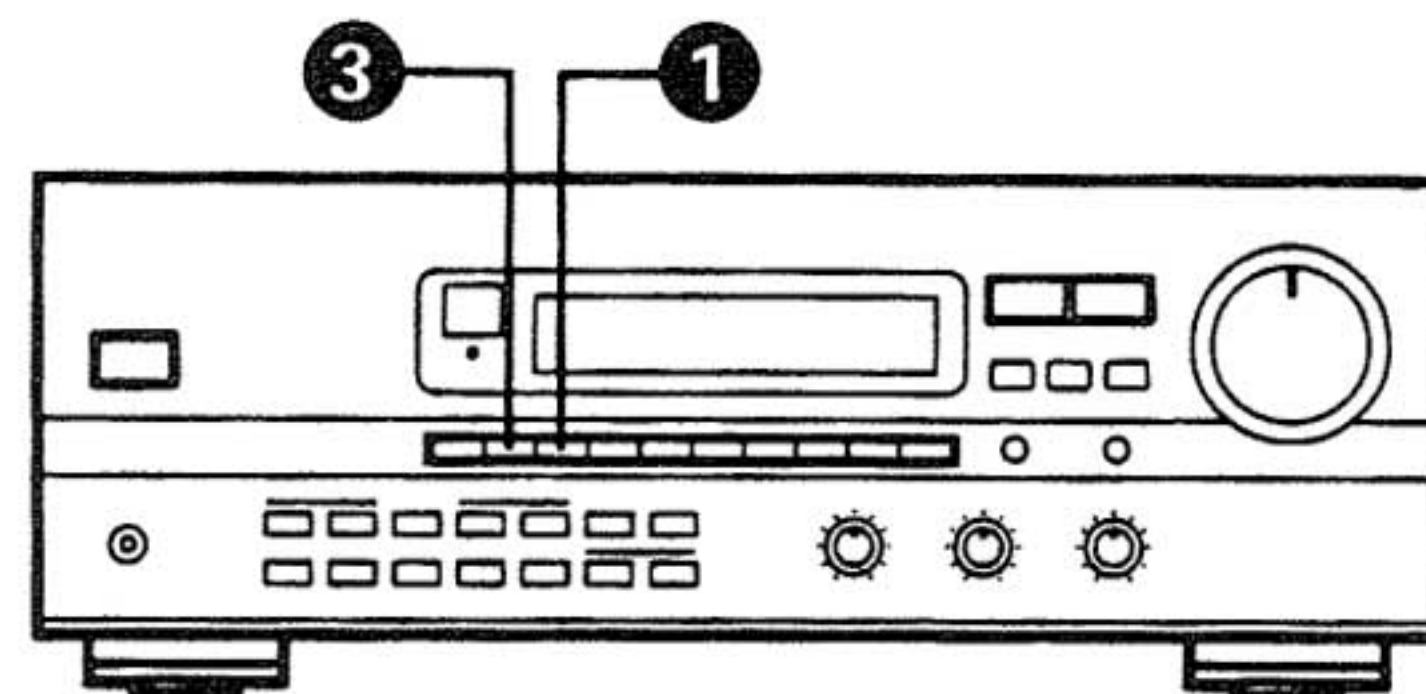
3-6 Listen with headphones

Connect the headphones to the PHONES jack. When listening with headphones privately, set all SPEAKER switches to the OFF position.

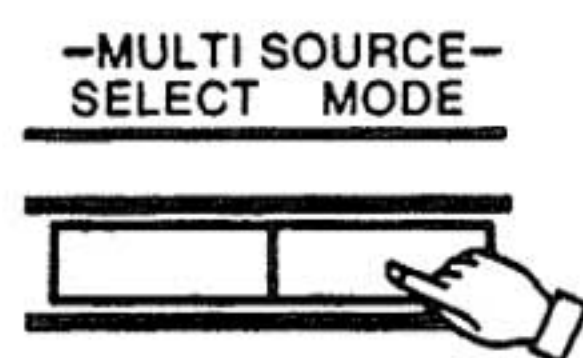


3. The selected source is indicated.
- ※ The signals of the source selected with the REC OUT mode are also output from the MULTI SOURCE AUDIO/VIDEO OUT terminals.
 - ※ To cancel the REC OUT mode. Press the MULTI SOURCE MODE button repeatedly until "SOURCE" appears on the display.

■ Playing a source other than the one currently playing in a different room (MULTI mode)



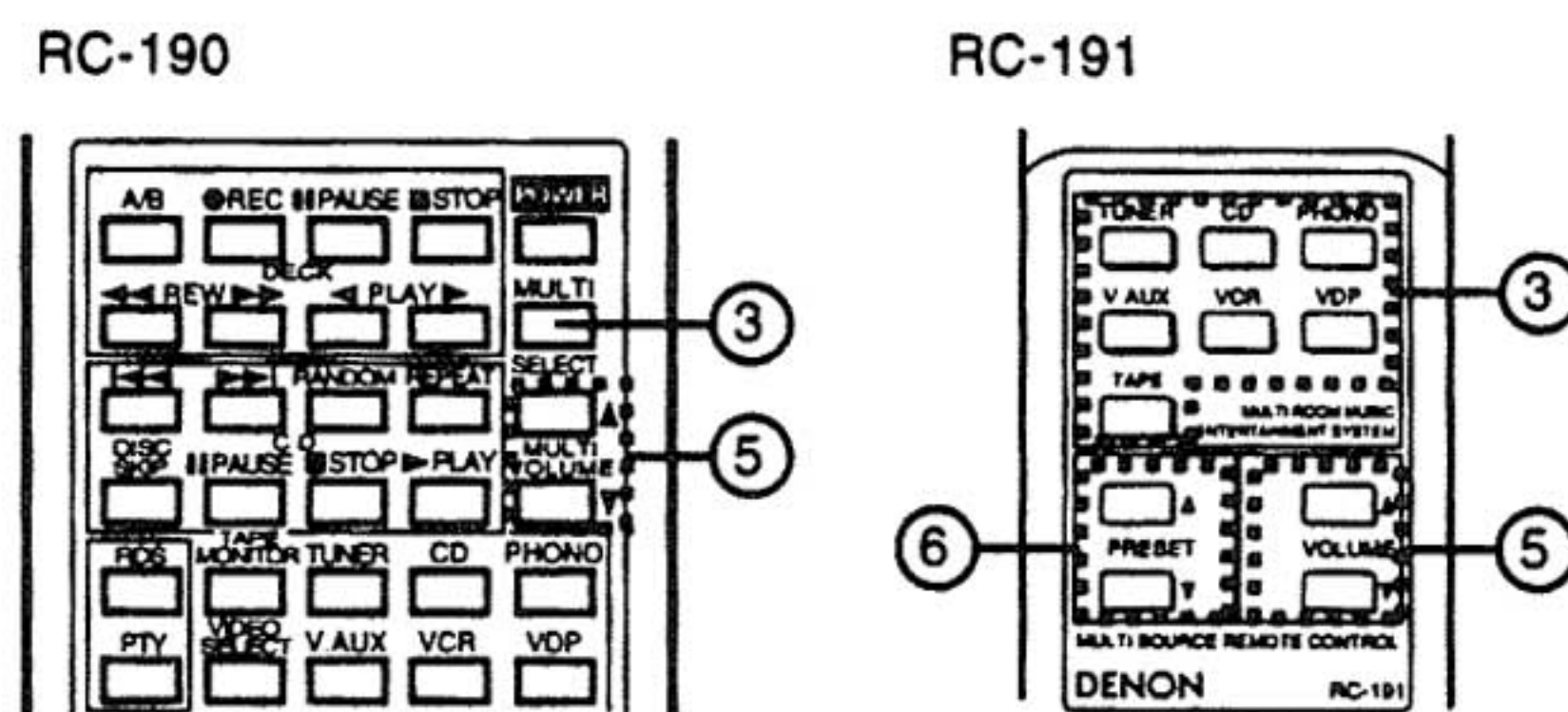
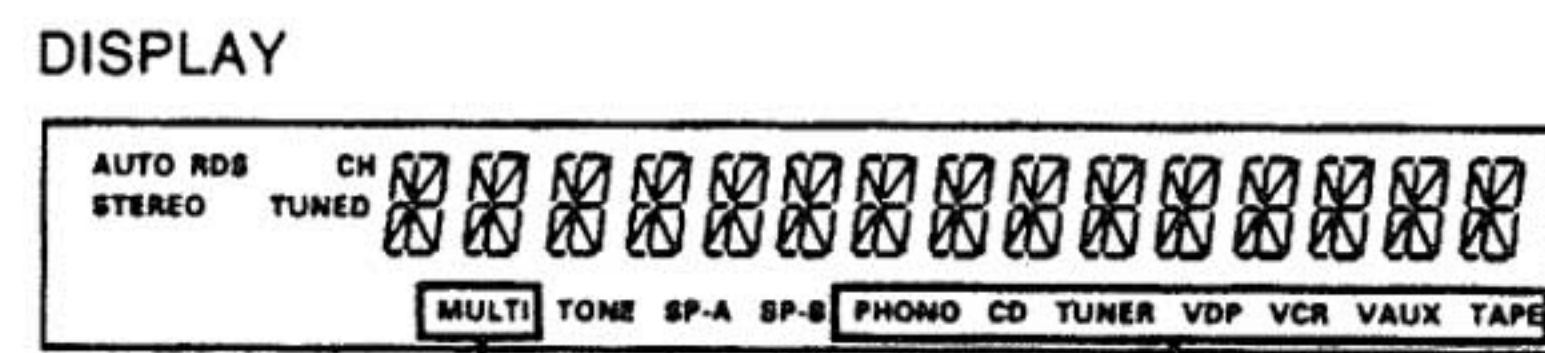
1. Press the MULTI SOURCE MODE button repeatedly until "MULTI OUT" appears on the display



2. Turn on the "MULTI" indicator
3. Select the source to be output to the MULTI SOURCE output terminal. Press the MULTI SOURCE SELECT button repeatedly until the desired source appears on the display.



- ※ When the MULTI SELECT button on the RC-190 remote control unit is pressed, the MULTI mode is set directly (the "MULTI" indicator lights), and the source to be output from the MULTI SOURCE terminals can be selected.
- ※ When the PHONO ~ TAPE buttons on the RC-191 multi source remote control unit is pressed, the MULTI mode is set directly (the "MULTI" indicator lights), and the source to be output from the MULTI SOURCE terminals can be selected directly. (This cannot be selected when the main unit is in the REC OUT mode.)



4. The selected source is indicated.
※ To cancel the MULTI mode Press the MULTI SOURCE MODE button or the MULTI SELECT button on the RC-190 remote control unit repeatedly until "SOURCE" appears on the display.

NOTE:
The signals of the source selected in the MULTI mode are also output from the TAPE and VCR recording output terminals.

5. The output level of the MULTI SOURCE AUDIO terminals can be controlled using the MULTI VOLUME UP and DOWN buttons on the RC-190 remote control unit or the VOLUME UP and DOWN buttons on the RC-191 multi source remote control unit.
6. When the MULTI SOURCE FUNCTION is set to TUNER, the preset channel can be selected using the PRESET up and down buttons on the RC-191 multi source remote control unit. (This is only possible when the main unit is in the MULTI mode.)

NOTE:
Note that this also switches the preset reception channel on the main unit when playing or recording the tuner in the MULTI mode.

Multi-source and multi-zone playback

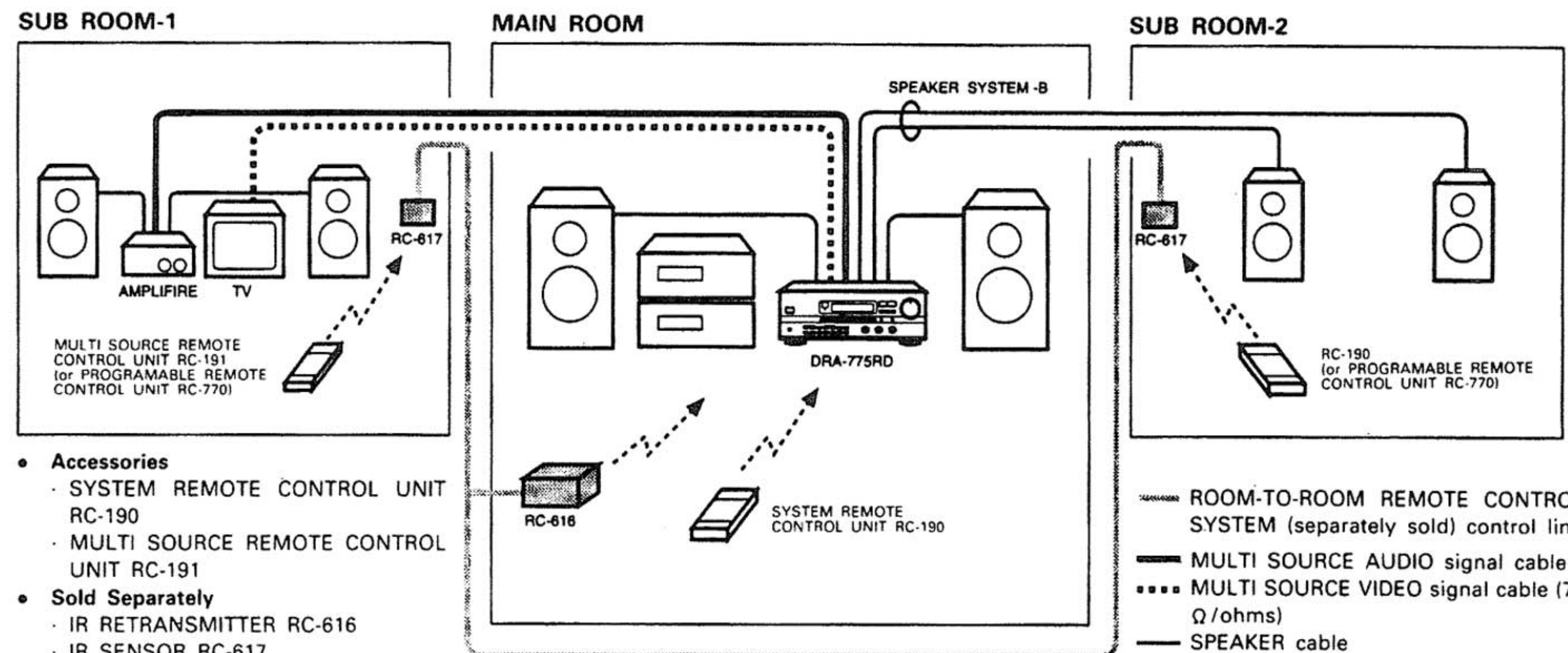
MULTI ROOM MUSIC ENTERTAINMENT SYSTEM

- When the outputs of the MULTI SOURCE AUDIO/VIDEO OUT terminals are wired and connected to power amplifiers or TV displays installed in other rooms, different sources can be played in rooms other than the main room in which the DRA-775RD and the playback devices are installed. (Refer to SUB ROOM-1 on the diagram.)
- When the output of the SPEAKER SYSTEM-B terminals is wired and connected to speakers in a sub room, the same source can be played in both the main room and sub room. Set the DRA-775RD's SPEAKER A/B selector according to the room in which the source is to be played. (Refer to SUB ROOM-2 on the diagram.)
- When a separately sold room-to-room remote control unit (DENON RC-616, 617 or 618) is wired and connected between the main room and the sub room, the remote-controllable devices in the main room can be controlled from the sub room using the remote control unit.
- ※ With SUB ROOM-1 multi-source playback, the DRA-775RD's MULTI SOURCE output can be controlled with the included RC-191 multi source remote control unit. Operations on the RC-191 remote control unit other than turning the multi source output volume up and down can not be performed when the main unit is in the REC OUT mode.
- ※ With SUB ROOM-2 playback, the DRA-775RD and DENON CD players or tape decks can be controlled using the included RC-190 system remote control unit.
- ※ To control playback devices other than the ones above, either use that device's remote control unit or preset a separately sold programmable remote control unit (DENON RC-770, etc.).

NOTES:

- Use a 75 Ω /ohms coaxial pin-plug cord for video signals to connect and wire the MULTI SOURCE VIDEO output. For the AUDIO output, use high quality pin-plug cords and wire in such a way that there is no humming or noise.
- For instructions on installation and operation of separately sold devices, refer to the devices' operating instructions.

MULTI ROOM MUSIC ENTERTAINMENT SYSTEM



- **Accessories**
 - SYSTEM REMOTE CONTROL UNIT RC-190
 - MULTI SOURCE REMOTE CONTROL UNIT RC-191
- **Sold Separately**
 - IR RETRANSMITTER RC-616
 - IR SENSOR RC-617
 - SUPPLEMENT EMITTER RC-618
 - PROGRAMABLE REMOTE CONTROL UNIT RC-770

— ROOM-TO-ROOM REMOTE CONTROL SYSTEM (separately sold) control line
— MULTI SOURCE AUDIO signal cable
••• MULTI SOURCE VIDEO signal cable (75 Ω /ohms)
— SPEAKER cable
※ Refer to CONNECTIONS on pages 6 and 7.

4 LISTENING TO THE RADIO

4-1 Auto preset memory

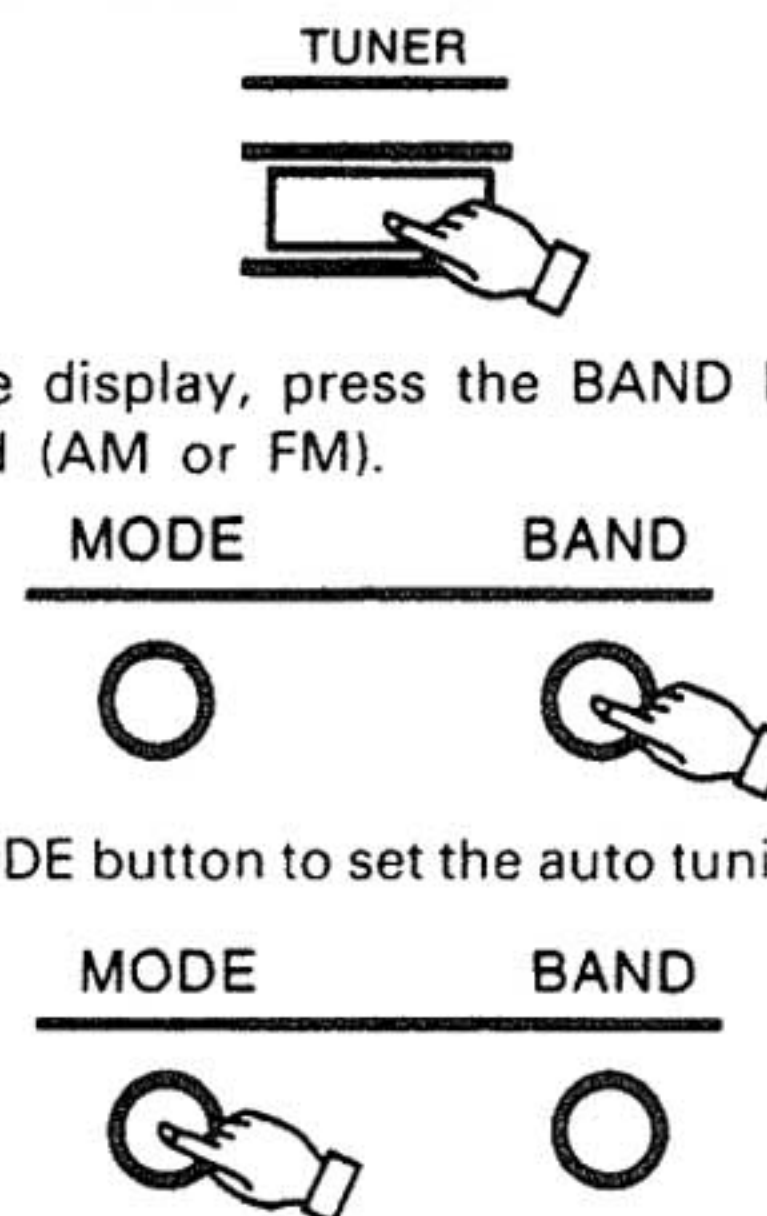
This unit is equipped with a function for automatically searching for FM broadcast stations and storing them in the preset memory.
1. Press the POWER button while holding in the MEMORY button. The unit automatically begins searching for FM broadcast stations.



2. When the first FM broadcast station is found, that station is stored in the preset memory at channel A1. Subsequent stations are automatically stored in order at preset channels A2 to A8, B1 to B8, C1 to C8, D1 to D8 and E1 to E8, for a maximum of 40 stations.
3. Channel A1 is tuned in after the auto preset memory operation is completed.

4-2 Auto tuning

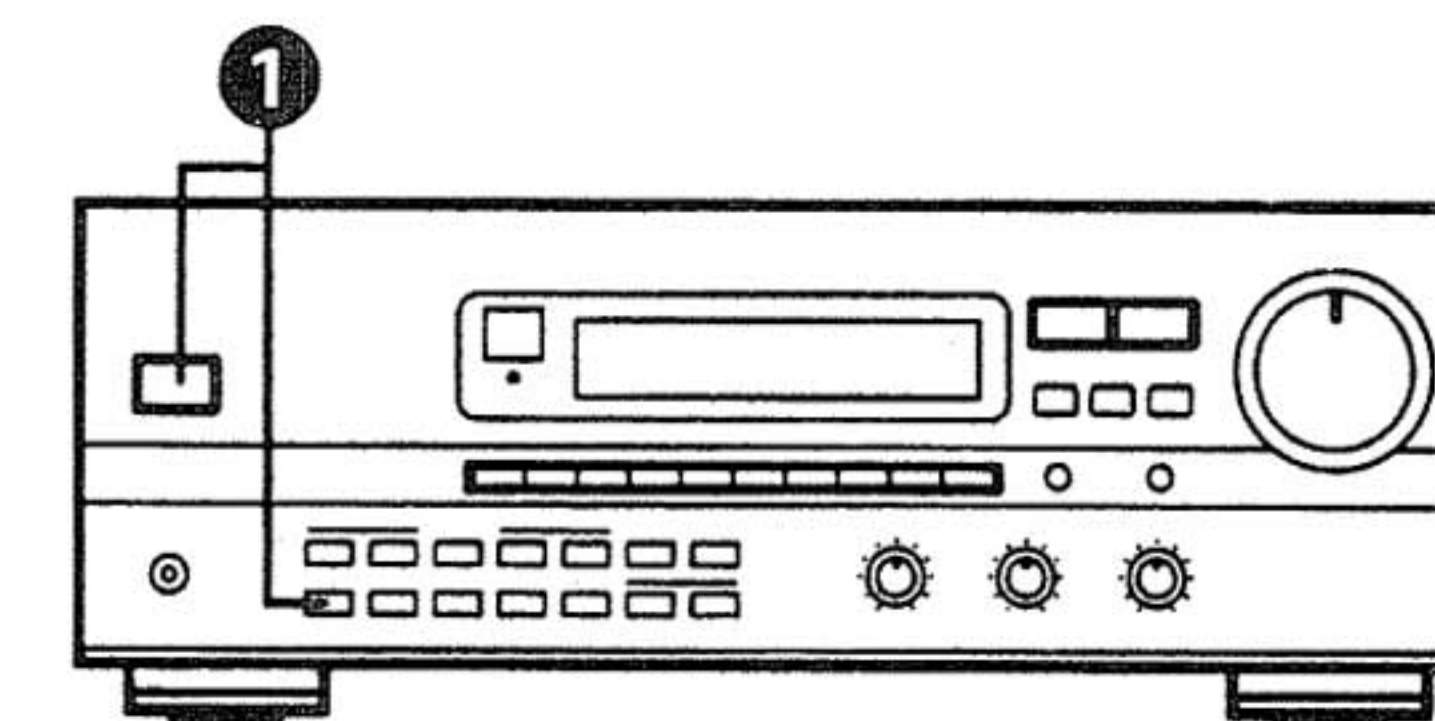
1. Set the input function to "TUNER".
2. Watching the display, press the BAND button to select the desired band (AM or FM).



3. Press the MODE button to set the auto tuning mode.

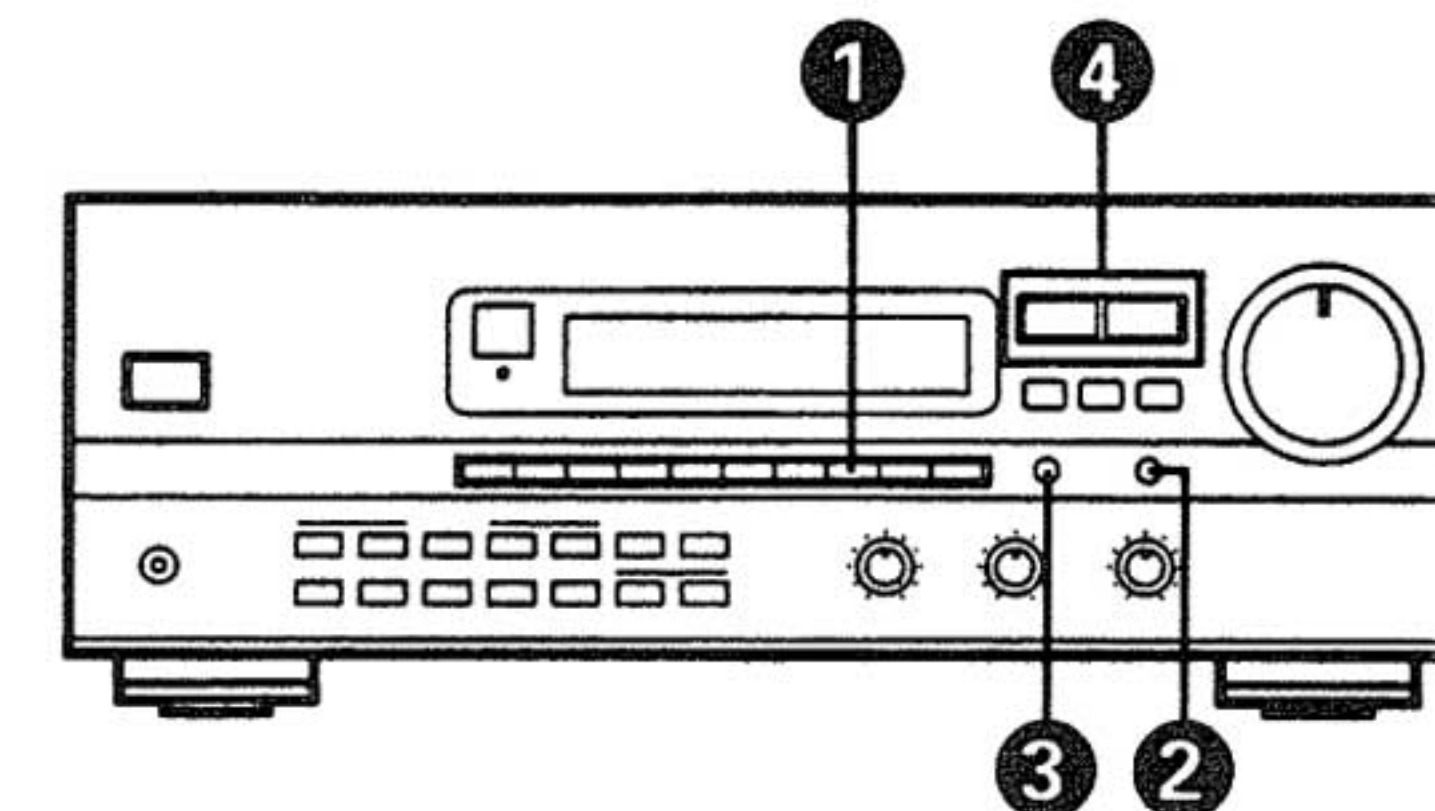
"AUTO" appears on the display.

If tuning does not stop at the desired station, use to the "Manual tuning" operation.

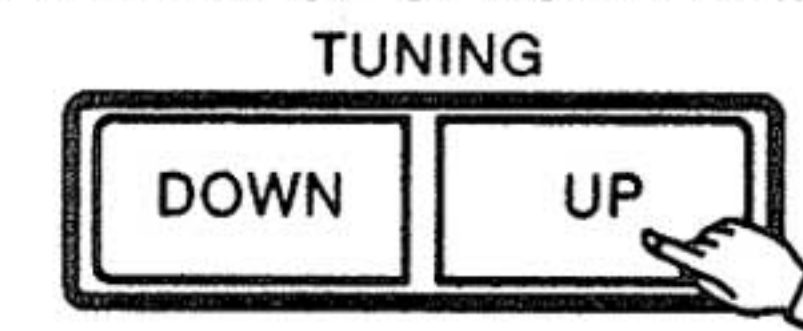


NOTES:

- If an FM station cannot be preset automatically due to poor reception, use the "Manual tuning" operation to tune in the station, then preset it using the manual "Preset memory" operation.
- RDS stations are stored in the memory with priority.



4. Press the TUNING UP or DOWN button.



Automatic searching begins, then stops when a station is tuned in.

4-3 Manual tuning

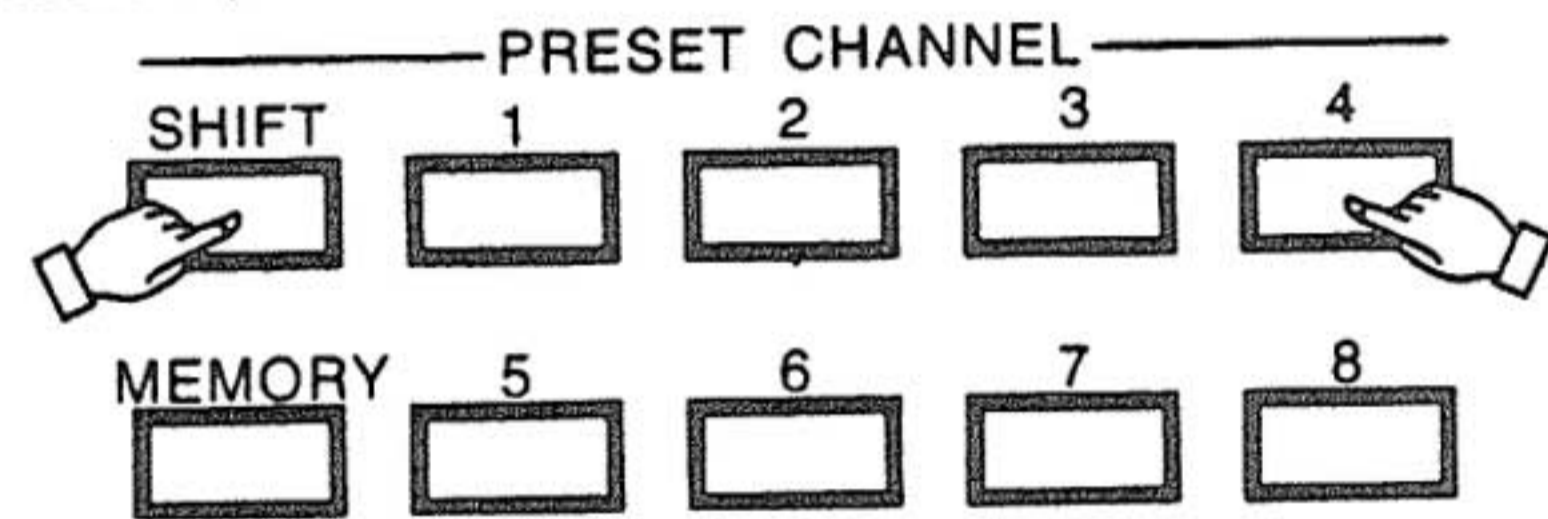
1. Set the input function to "TUNER".
2. Watching the display, press the BAND button to select the desired band (AM or FM).
3. Press the MODE button to set the manual tuning mode. Check that the display's "AUTO" indicator turns off.

4-4 Preset memory

1. Use the "Auto tuning" or "Manual tuning" operation to tune in the station to be preset in the memory.
2. Press the MEMORY button.

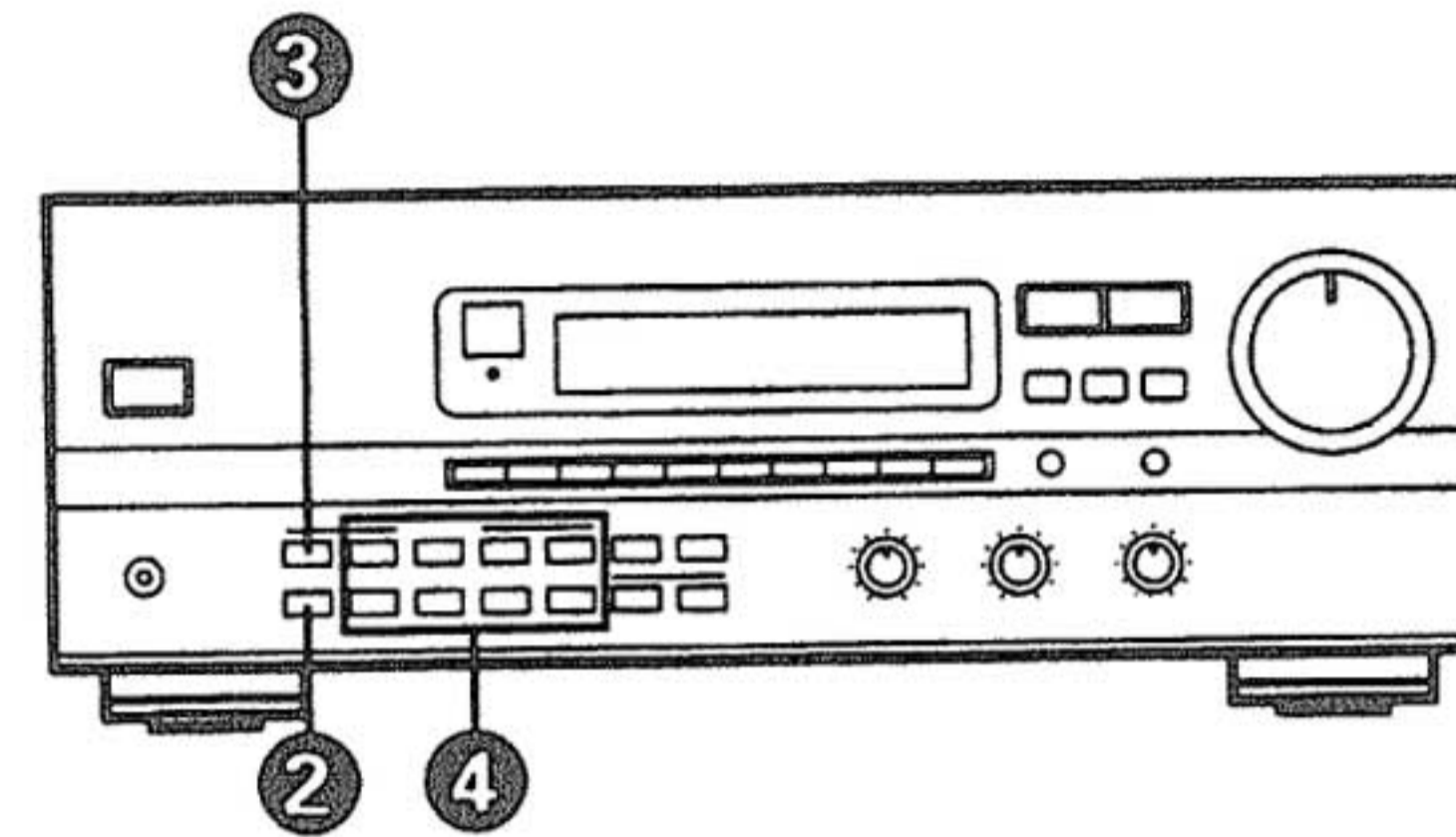


3. Press the SHIFT button and select the desired memory block (A to E).
4. Press the PRESET CHANNEL button (1 to 8) to select the desired preset channel (1 to 8).



To preset other channels, repeat steps 1 to 4.
A total of 40 broadcast stations can be preset — 8 stations (channels 1 to 8) in each of blocks A to E.

4. Press the TUNING UP or DOWN button to tune in the desired station. The frequency changes continuously when the button is held in.

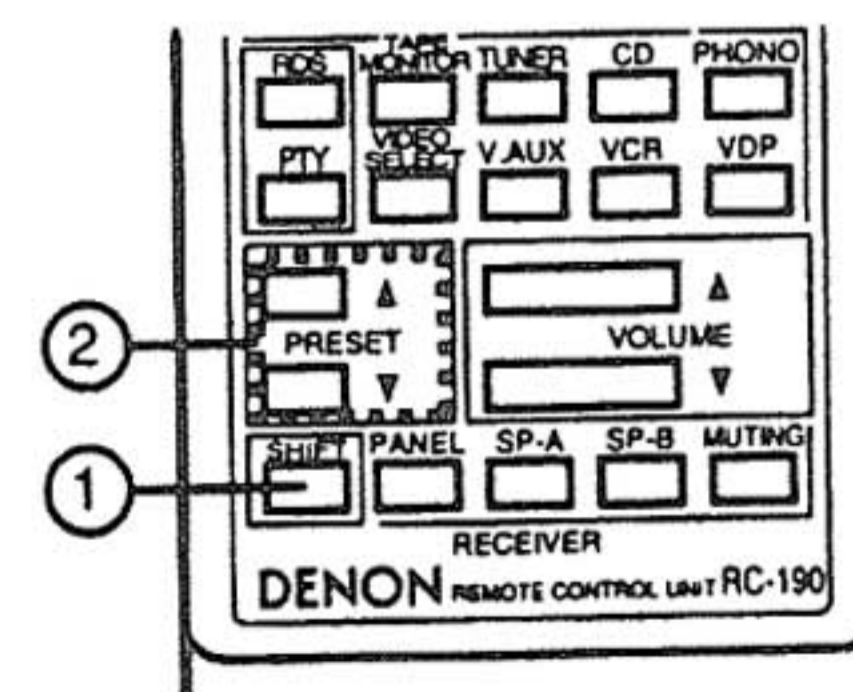
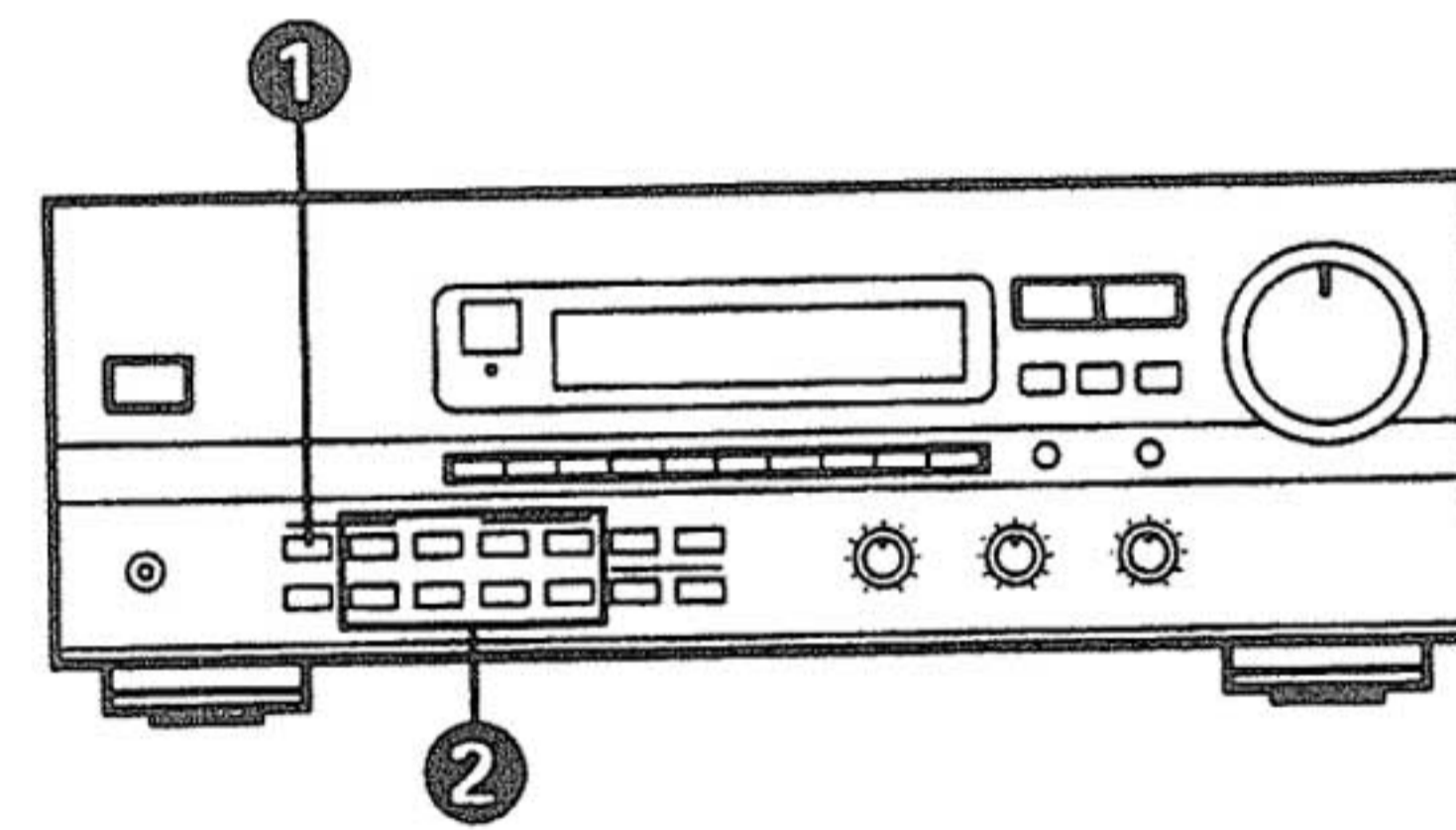
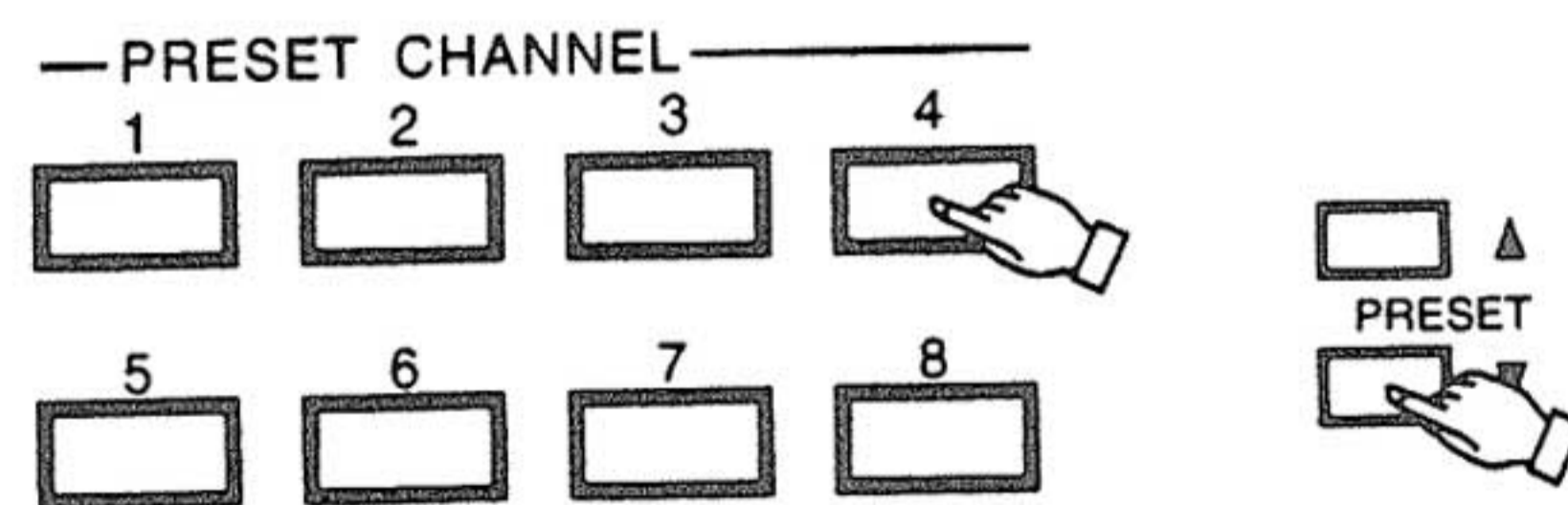


4-5 Recalling preset stations

1. Watching the display, press the SHIFT button to select the preset memory block.



2. Watching the display, press the PRESET CHANNEL button (1 to 8) to select the desired preset channel. (When using the remote control unit, select the preset channel by pressing the PRESET up or down button.)



4-6 RDS (Radio Data System)

RDS (works only on the FM band) is a broadcasting service which allows station to send additional information along with the regular radio program signal.

The following three types of RDS information can be received on this unit:

• Program Type (PTY)

PTY identifies the type of RDS program.

The program types and their displays are as follows:

NEWS	News	TOP 40	Top 40	SOFT R&B	Soft R & B
INFORM	Information	COUNTRY	Country	LANGUAGE	Language
SPORTS	Sports	OLDBIES	Oldies	REL MUSC	Religious Music
TALK	Talk	SOFT	Soft	REL TALK	Religious Talk
ROCK	Rock	NOSTALGA	Nostalgia	PERSNLTY	Personality
CLS ROCK	Classic Rock	JAZZ	Jazz	PUBLIC	Public
ADLT HIT	Adult Hits	CLASSICL	Classical		
SOFT RCK	Soft Rock	R & B	R & B		

• Traffic Program (TP)

TP identifies programs that carry traffic announcements.

This allows you to easily find out the latest traffic conditions in your area before you leaving home.

• Radio Text (RT)

RT allows the RDS station to send text messages that appear on the display.

4-7 RDS search

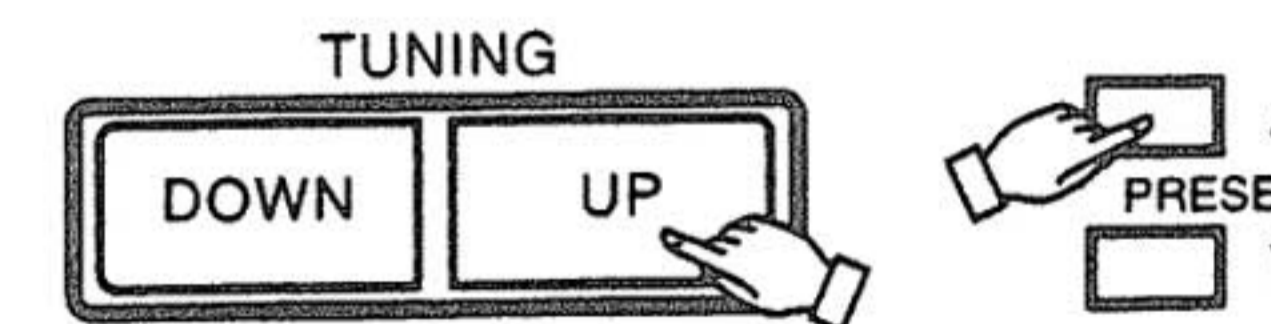
Use this function to automatically tune to FM stations that provide RDS service.

1. Set the input function to "TUNER".

2. Press the RDS button until "RDS SEARCH" appears on the display.



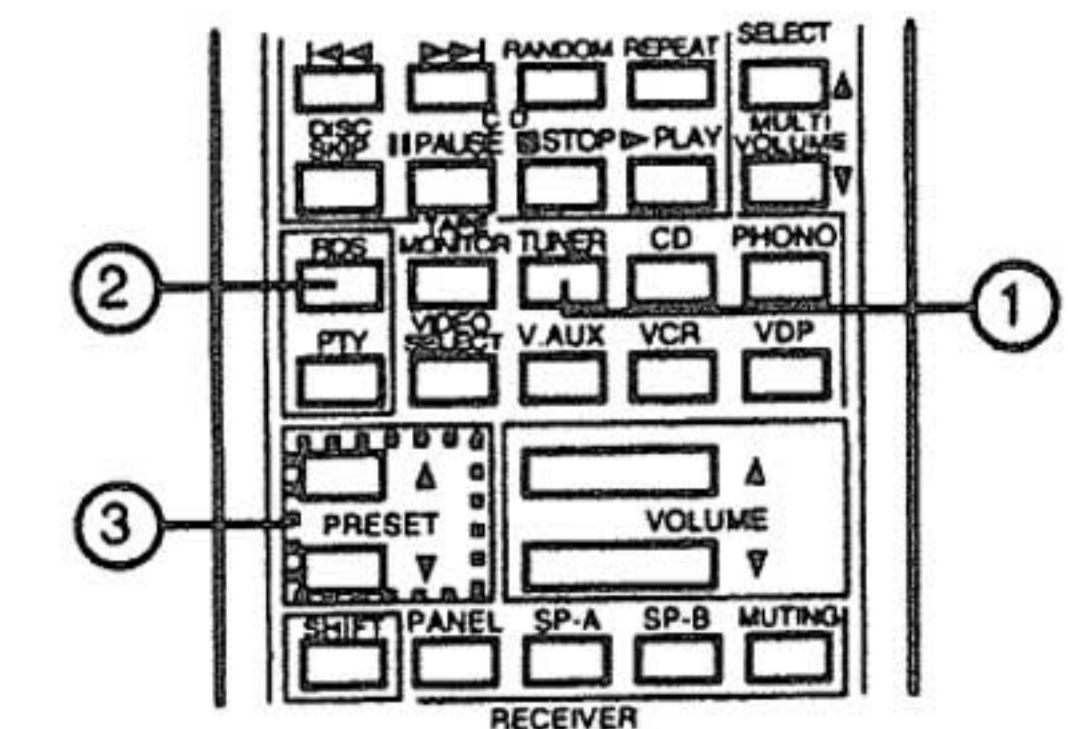
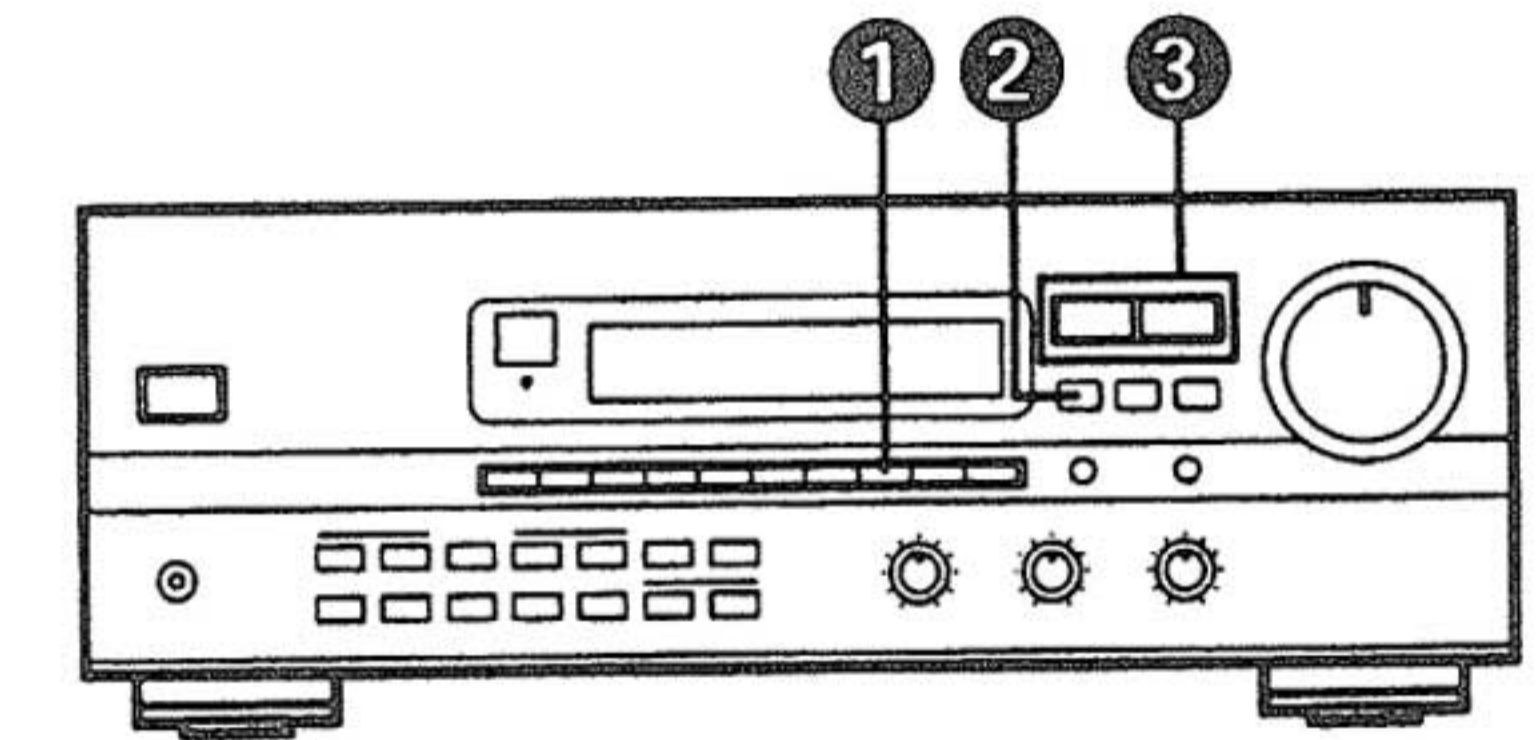
3. Press the TUNING UP or DOWN button to automatically begin the RDS search operation. (When using the remote control unit, press the PRESET up or down button.)



If no RDS stations is found with above operation, all the respection band are searched.

4. When a broadcast station is found, that station's name appears on the display.

5. To continue searching, repeat step 3. If no other RDS station is found when all the frequencies are searched, "NO RDS" is displayed.



4-8 PTY search

Use this function to find RDS stations broadcasting a designated program type (PTY). For a description of each program type, refer to "Program Type (PTY)".

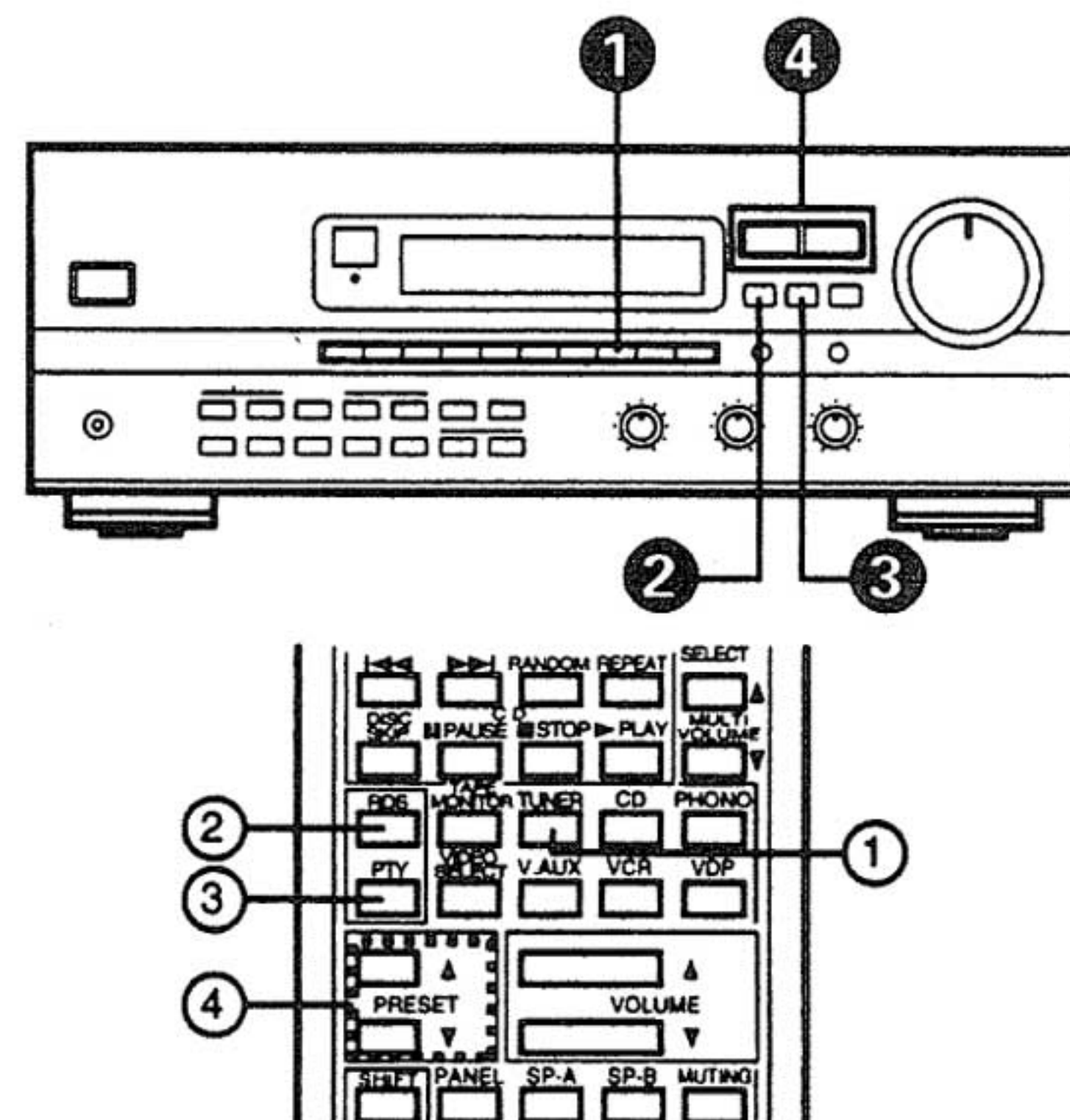
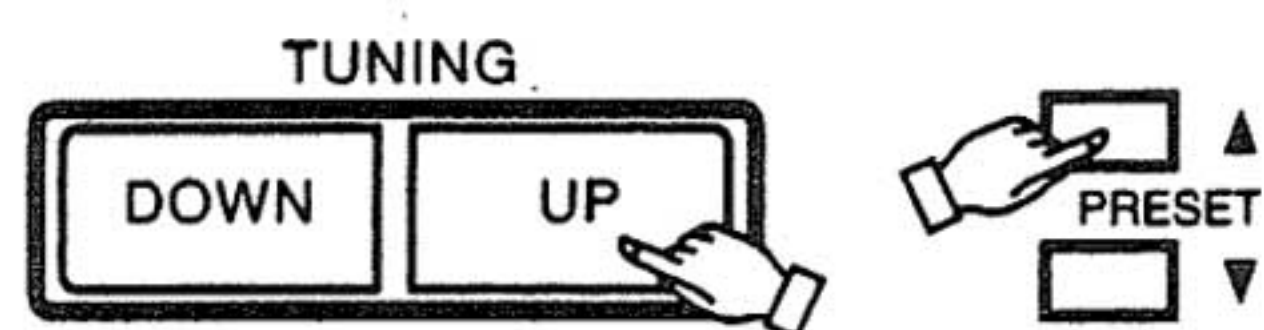
1. Set the input function to "TUNER".
2. Press the RDS button until "PTY SEARCH" appears on the display.



3. Watching the display, press the PTY button to call out the desired program type.



4. Press the TUNING UP or DOWN button to automatically begin the PTY search operation. (When using the remote control unit, press the PRESET up or down button.)



If there is no station broadcasting the designated program type with above operation, all the reception bands are searched.

5. The station name is displayed on the display after searching stops.
6. To continue searching, repeat step 4. If no other station broadcasting the designated program type is found when all the frequencies are searched, "NO PROGRAM" is display on the display.

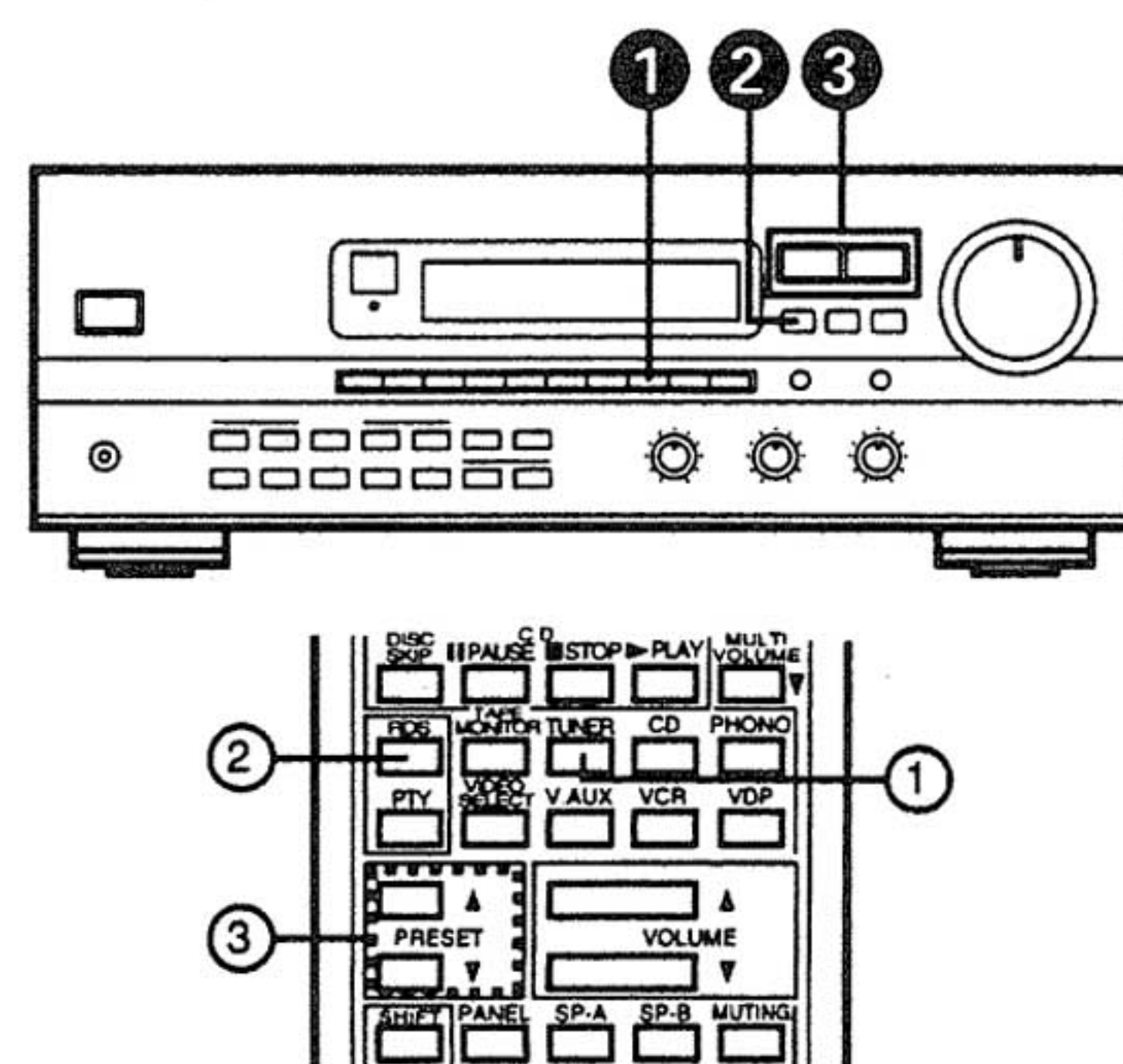
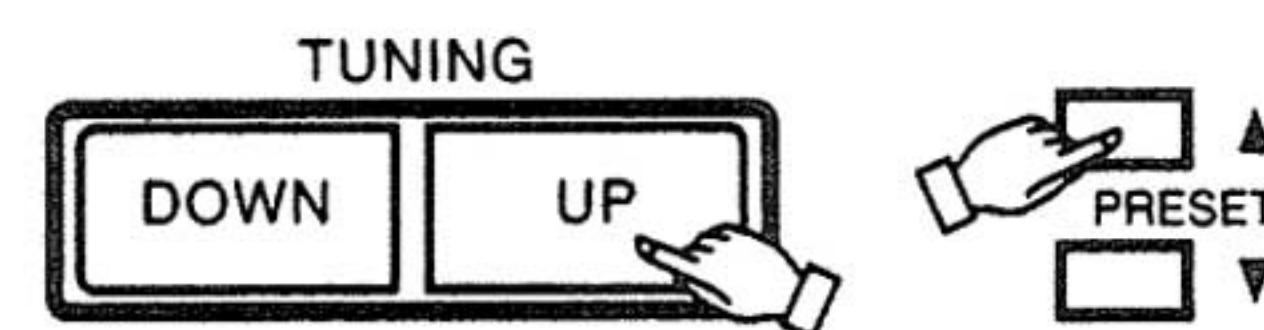
4-9 TP search

Use this function to find RDS stations broadcasting traffic program (TP stations).

1. Set the input function to "TUNER".
2. Press the RDS button until "TP SEARCH" appears on the display.



3. Press the TUNING UP or DOWN button TP search begins. (When using the remote control unit, press the PRESET up or down button.)



If no TP station is found with above operation, all the reception bands are searched.

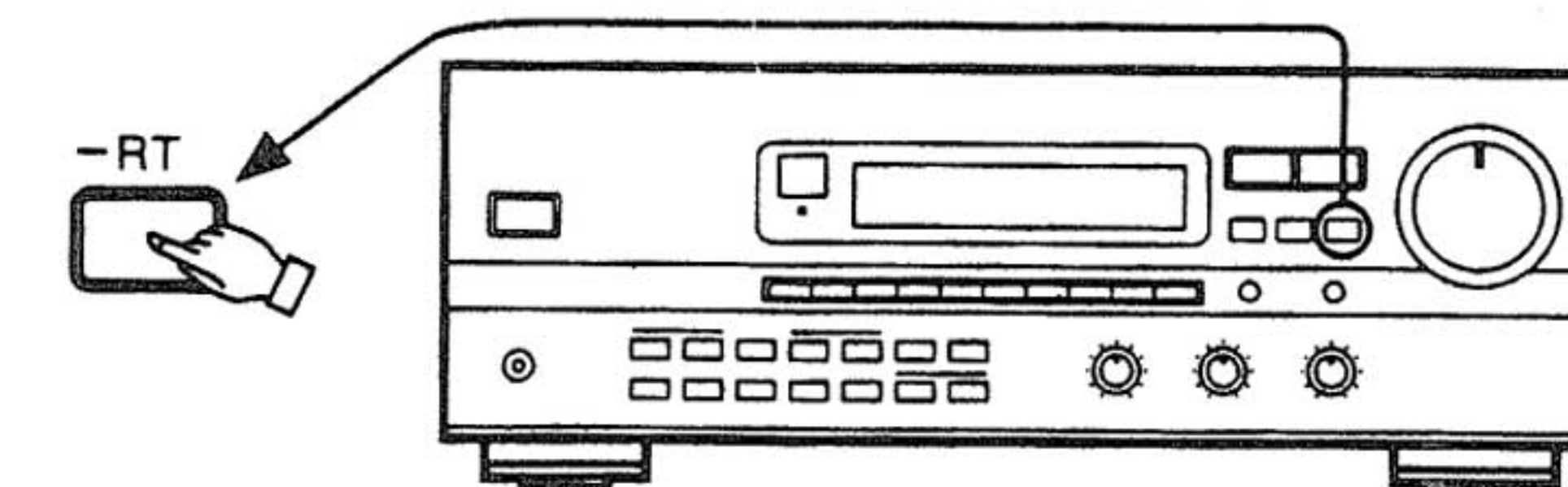
4. The station name is displayed after searching stops.

5. To continue searching, repeat step 3. If no other TP station is found when all the frequencies are searched, "NO PROGRAM" is displayed.

4-10 RT (Radio Text)

"RT" appears on the display when radio text data is received.

When the RT button is pressed while receiving an RDS broadcast station, the text data broadcast from the station is displayed. To turn the display off, press the RT button again. If no text data is being broadcast, "NO TEXT DATA" is displayed.



RDS Emergency Alert

"ALERT" will flash on the display when the unit receives the Emergency Program Type Code (PTY31) from an RDS station. This feature may not operate properly if the signal from the RDS station is too weak or is subjected to interference. It is not possible to select the "ALERT" display from the PTY search mode.

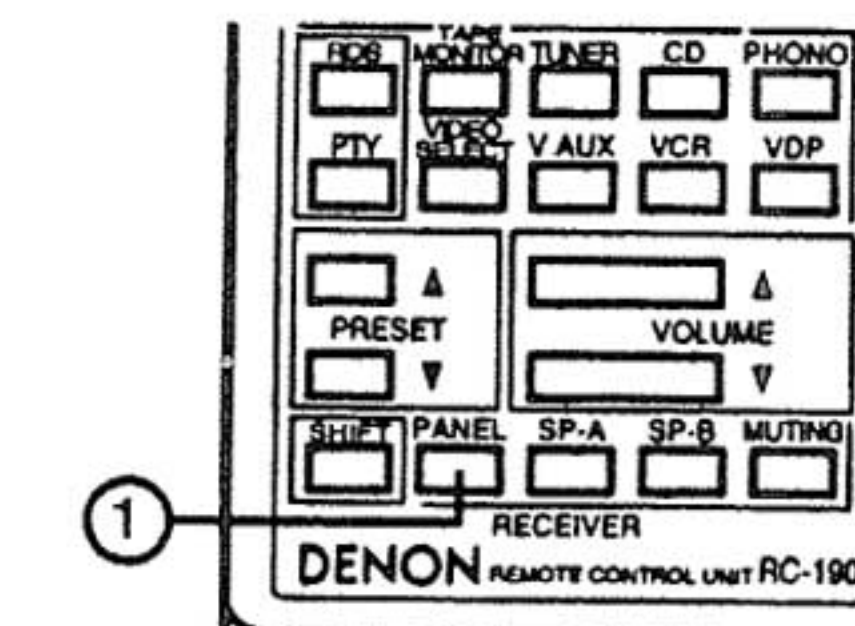
RDS Emergency Alert Feature

The RDS Emergency Alert Feature is activated by a signal sent at the sole discretion of the RDS broadcaster. The RDS Emergency Alert Feature is included in this product for the convenience of the consumer, and is not intended to augment or replace the Official Emergency Broadcast System as administered by the Federal Communications Commission. For this reason, Nippon Columbia Co. and its Subsidiaries, including but not limited to DENON ELECTRONICS a division of DENON Corporation (USA) and DENON Canada, Inc., refuse all Warranties, claims of merchantability or fitness, or liabilities, whether incidental, consequential or otherwise, related to, either directly or indirectly, the operation or lack of operation of this feature. This exclusion applies to any and/or all Nippon Columbia Co. Products, whether present or future, that implement, in any form or variation, the RDS Emergency Alert Feature.

5 OTHER OPERATION FUNCTION

Front panel display

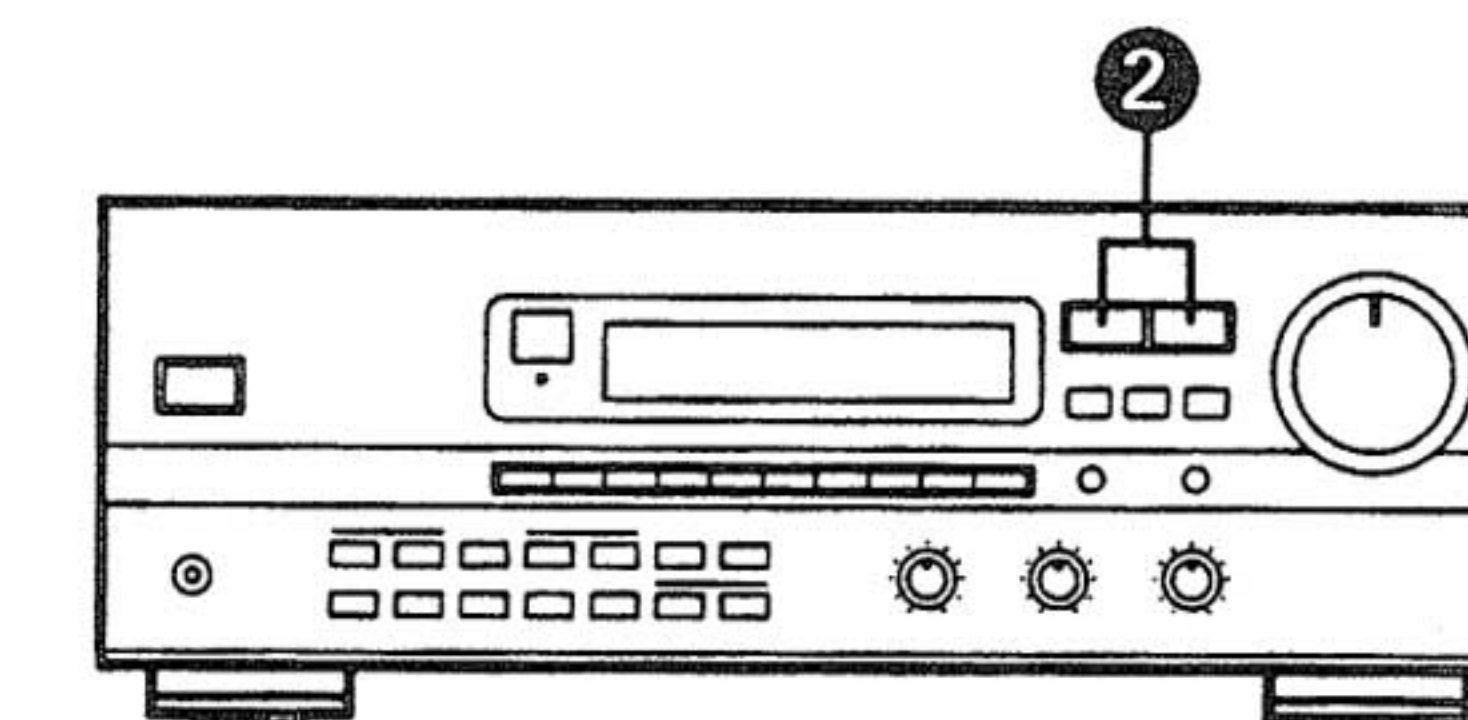
Descriptions of the unit's operations are also displayed on the front panel display. In addition, the display can be switched to check the unit's operating status while playing a source by pressing the remote control unit's PANEL button.



6 INITIALIZATION OF THE MICROPROCESSOR

When the indication of the display is not normal or when the operation of the unit does not show the reasonable result, the initialization of the microprocessor is required by the following procedure.

1. Switch off the unit and remove the AC power cord from the wall outlet.
2. Hold the following TUNING UP button and DOWN button, and plug the power cord into the outlet.
3. Check that the entire display is flashing with an interval of about 1 second, and release your fingers from the 2 buttons.
4. Switch on the unit and the microprocessor will be initialized.



CAUTION

Protective Circuit

The receiver is equipped with a high-speed protection circuit. This circuit protects the internal circuitry from damage due to large currents flowing if the speaker jacks are not completely connected or if an output is generated by a short circuit. In such a case, the protection circuit will operate to cut off the output to the speakers. Should this happen, turn the power off and check the speaker connections. Then turn the power on again. After muting for several seconds, the receiver should be operating normally.

7 LAST FUNCTION MEMORY

- This receiver is equipped with a last function memory which stores the input and output setting conditions as they were immediately before the power is switched off. This function eliminates the need to perform complicated resettings when the power is switched on.
- This receiver is also equipped with a back-up memory. This function provides approximately one week of memory storage with the power cord disconnected.

8 TROUBLESHOOTING

If a problem should arise, first check the following:

- Are the connections correct?
- Have you operated the amplifier according to the Operating Instructions?
- Are the speakers, turntable, and other components operating properly?

If the receiver is not operating properly, check the items listed in the table below. Should the problem persist, there may be a malfunction. Disconnect the power immediately and contact your store of purchase.

	Symptom	Cause	Measures	Page	
Common problems arising when listening to the CD, records, tapes, and FM broadcasts, etc.	DISPLAY not lit and sound not produced when power switch set to on.	<ul style="list-style-type: none"> Power cord not plugged in securely. 	<ul style="list-style-type: none"> Check the insertion of the power cord plug. 	7	
	DISPLAY lit but sound not produced.	<ul style="list-style-type: none"> Speaker cords not securely connected. Speaker switch is off. Improper position of the audio function button. Volume control set to minimum. MUTING is on. 	<ul style="list-style-type: none"> Connect securely. Turn on speaker switch. Set to a suitable position. Turn volume up to suitable level. Switch off MUTING. 	6, 7 12 12 13	
	-PROTECT- display appears.	Speaker terminals are short-circuited.	<ul style="list-style-type: none"> Switch power off, connect speakers properly, then switch power back on. 	<ul style="list-style-type: none"> Turn off the set's power, then ventilate it well to cool it down. 	6, 7
		Block the ventilation holes of the set.	<ul style="list-style-type: none"> Turn off the set's power, then ventilate it well to cool it down. Once the set is cooled down, turn the power back on. 	<ul style="list-style-type: none"> Turn off the set's power, then ventilate it well to cool it down. Once the set is cooled down, turn the power back on. 	4 4
	The unit is operating at continuous high power conditions and/or inadequate ventilation.	Sound produced only from one channel.	<ul style="list-style-type: none"> Incomplete connection of speaker cords. Incomplete connection of input/output cords. Left/right balance is off. 	<ul style="list-style-type: none"> Connect securely. Connect securely. Adjust balance knob properly. 	6, 7 6, 7 12
			Positions of instruments reversed during stereo playback.	<ul style="list-style-type: none"> Reverse connections of left and right speakers or left and right input/output cords. 	<ul style="list-style-type: none"> Check left and right connections.
When playing records			Humming noise produced when record is playing.	<ul style="list-style-type: none"> Ground wire of turntable not connected properly. Incomplete PHONO jack connection. TV or radio transmission antenna nearby. 	<ul style="list-style-type: none"> Connect securely. Connect securely. Contact your store of purchase.
	Howling noise produced when volume is high.	<ul style="list-style-type: none"> Turntable and speaker systems too close together. Floor is unstable and vibrates easily. 	<ul style="list-style-type: none"> Separate as much as possible. Use cushions to absorb speaker vibrations transmitted by floor. If turntable is not equipped with insulators, use audio insulators (commonly available). 	- -	
	Sound is distorted.	<ul style="list-style-type: none"> Stylus pressure too weak. Dust or dirt on stylus. Cartridge defective. 	<ul style="list-style-type: none"> Apply proper stylus pressure. Check stylus. Replace cartridge. 	- - -	
	Volume is weak.	<ul style="list-style-type: none"> MC cartridge being used. 	<ul style="list-style-type: none"> Replace with MM cartridge or use a head amplifier or step-up transformer. 	6	
Remote control unit	Receiver does not operate properly when remote control unit is used.	<ul style="list-style-type: none"> Batteries dead. Remote control unit too far from receiver. Obstacle between receiver and remote control unit. Different button is being pressed. + and - ends of battery inserted in reverse. 	<ul style="list-style-type: none"> Replace with new batteries. Move closer. Remove obstacle. Press the proper button. Insert batteries properly. 	10 10 10 10	
				10	

9 SPECIFICATIONS / SPECIFICATIONS

ENGLISH		FRANCAIS	
AMPLIFIER SECTION		SECTION AMPLIFICATEUR	
Continuous Power Output:	90 watts per channel, minimum RMS, both channels driven into 8 Ω from 20 Hz ~ 20 kHz, no more than 0.05% THD	Puissance de sortie continue:	90 Watts par canal, RMS minimum, les deux canaux en charge sous 8 Ω de 20 Hz ~ 20 kHz, DHT ne dépassant pas 0,05%
Power Bandwidth:	5 Hz ~ 40 kHz (0.15% THD, both channels driven into 8 Ω)	Largeur de bande:	5 Hz ~ 40 kHz (DHT 0,15%, les deux canaux en charge sous 8 Ω)
Total Harmonic Distortion:	0.009% (-3 dB at rated output 8 Ω, 1 kHz)	Distorsion harmonique totale:	0,009% (-3 dB sous 8 Ω, 1 kHz)
Frequency Response:	PHONO RIAA Deviation Standard Curve (Recording Output) MM 20 Hz~20 kHz ±0.5 dB CD, TAPE 20 Hz~50 kHz ±1.5 dB VDP, VCR, V.AUX (at 1 W)	Réponse en fréquence:	Courbe standard RIAA PHONO (sortie d'enregistrement) MM 20 Hz~20 kHz ±0,5 dB CD, TAPE 20 Hz~50 kHz ±1,5 dB VDP, VCR, V.AUX (à 1 W)
Input Sensitivity / Impedance:	PHONO MM 2.5 mV 47 kΩ CD, TAPE 150 mV 47 kΩ VDP, VCR, V.AUX	Sensibilité / impédance d'entrée:	PHONO MM 2,5 mV 47 kΩ CD, TAPE 150 mV 47 kΩ VDP, VCR, V.AUX
Maximum Input Level:	PHONO MM 150 mV	Niveau d'entrée maximum:	PHONO MM 150 mV
Signal-to-Noise Ratio: (A weighting)	PHONO MM 86 dB at 5.0 mV input CD, TAPE 100 dB VDP, VCR, V.AUX	Rapport signal / bruit: (Pondéré A)	PHONO MM 86 dB à entrée 5,0 mV CD, TAPE 100 dB VDP, VCR, V.AUX
Tone Control:	BASS ±10 dB at 100 Hz TREBLE ±10 dB at 10 kHz 100 Hz: +10 dB, 10 kHz: +7 dB	Commande de tonalité:	GRAVES ±10 dB à 100 Hz AIGUES ±10 dB à 10 kHz 100 Hz: +10 dB, 10 kHz: +7 dB
Loudness Control Effect:		Commande de compensation physiologique:	
PRE OUT terminals		Bornes PREOUT (sortie préamplificateur)	
Rated output:	1 V	Puissance de sortie nominale:	1 V
MAIN IN Terminals		Bornes MAIN IN (entrée principale)	
Input Sensitivity / Impedance	1 V / 47 kΩ	Sensibilité / impédance d'entrée	1 V / 47 kΩ
MULTI SOURCE OUT Terminals		Bornes MULTI SOURCE OUT (sortie multi-source)	
Rated output:	1 V	Puissance de sortie nominale:	1 V
TUNER SECTION		SECTION TUNER	
[FM] (note: μV at 75 Ω, 0 dBf=1 × 10⁻¹⁵ W)		[FM] (Remarque: μV à 75 Ω, 0 dBf=1 × 10⁻¹⁵ W)	
Receiving Range:	87.5 ~ 107.9 MHz	Gamme de réception:	87,5 ~ 107,9 MHz
Usable Sensitivity:	0.9 μV (10.3 dBf)	Sensibilité utilisable:	0,9 μV (10,3 dBf)
S/N at 50 dB Sensitivity (μV at 75 Ω):	MONO 1.6 μV (15.3 dBf) STEREO 23 μV (38.5 dBf)	Seuil de sensibilité 50 dB (μV à 75 Ω):	MONO 1,6 μV (15,3 dBf) STEREO 23 μV (38,5 dBf)
Signal-to-Noise Ratio (A-weighted)	MONO 82 dB STEREO 78 dB	Rapport signal / bruit (pondéré A)	MONO 82 dB STEREO 78 dB
Total Harmonic Distortion:	MONO 0.1% STEREO 0.15%	Distorsion harmonique totale:	MONO 0,1% STEREO 0,15%
Capture Ratio:	1.5 dB	Taux de capture:	1,5 dB
Image Rejection:	42 dB	Facteur de réjection:	42 dB
AM Suppression:	50 dB	Suppression AM:	50 dB
Selectivity (±400 kHz):	55 dB	Sélectivité (±400 kHz):	55 dB
Frequency Response:	30 Hz ~ 15 kHz ^{+0.2} dB _{-1.5} dB	Réponse en fréquence:	30 Hz ~ 15 kHz ^{+0,2} dB _{-1,5} dB
Stereo Separation (at 1 kHz):	40 dB	Séparation stéréo (à 1 kHz):	40 dB
[AM]		[AM]	
Tuning Frequency Range:	520 ~ 1710 kHz	Gamme de réception:	520 ~ 1710 kHz
Usable Sensitivity:	18 μV	Sensibilité utilisable:	18 μV
Signal-to-Noise Ratio:	55 dB	Rapport signal / bruit:	55 dB
GENERAL		GENERALITES	
Power Supply:	AC 120V, 60 Hz	Alimentation:	AC 120V, 60 Hz
Power Consumption:	3.4 A	Consommation:	3,4 A
Power Outlets:	SWITCHED 120 W	Sorties d'alimentation:	SWITCHED 120 W
Dimensions:	434 mm (17-3/32") W × 161 mm (6-11/32") H × 416 mm (16-3/8") D	Dimensions:	434 mm (17-3/32") L × 161 mm (6-11/32") H × 416 mm (16-3/8") P
Weight:	11.5 kg (25 lbs 6 oz)	Poids:	11,5 kg (25 lbs 6 oz)
REMOTE CONTROL UNIT		UNITE DE TELECOMMANDE	
Remote control system:	RC-190, RC-191 Infrared pulse system	Système de télécommande:	RC-190, RC-191 Système à impulsion infrarouge
Power supply:	3 V DC, Two size R6P ("AA") dry cell batteries	Alimentation:	3 V CC, deux piles de format R6P ("AA")
External dimensions:	RC-190 65 mm (2-9/16") W × 194 mm (7-41/64") H × 18 mm (45/64") D RC-191 44.5 mm (5-23/64") W × 136 mm (1-3/4") H × 18 mm (45/64") D	Dimensions extérieures:	RC-190 65 mm (2-9/16") L × 194 mm (7-41/64") H × 18 mm (45/64") P RC-191 44,5 mm (5-23/64") L × 136 mm (1-3/4") H × 18 mm (45/64") P
Weight:	RC-190 105 g (about 3.7 oz)(including batteries) RC-191 70 g (about 2.4 oz)(including batteries)	Poids:	RC-190 105 g (environ 3,7 oz)(y compris les piles) RC-191 70 g (environ 2,4 oz)(y compris les piles)

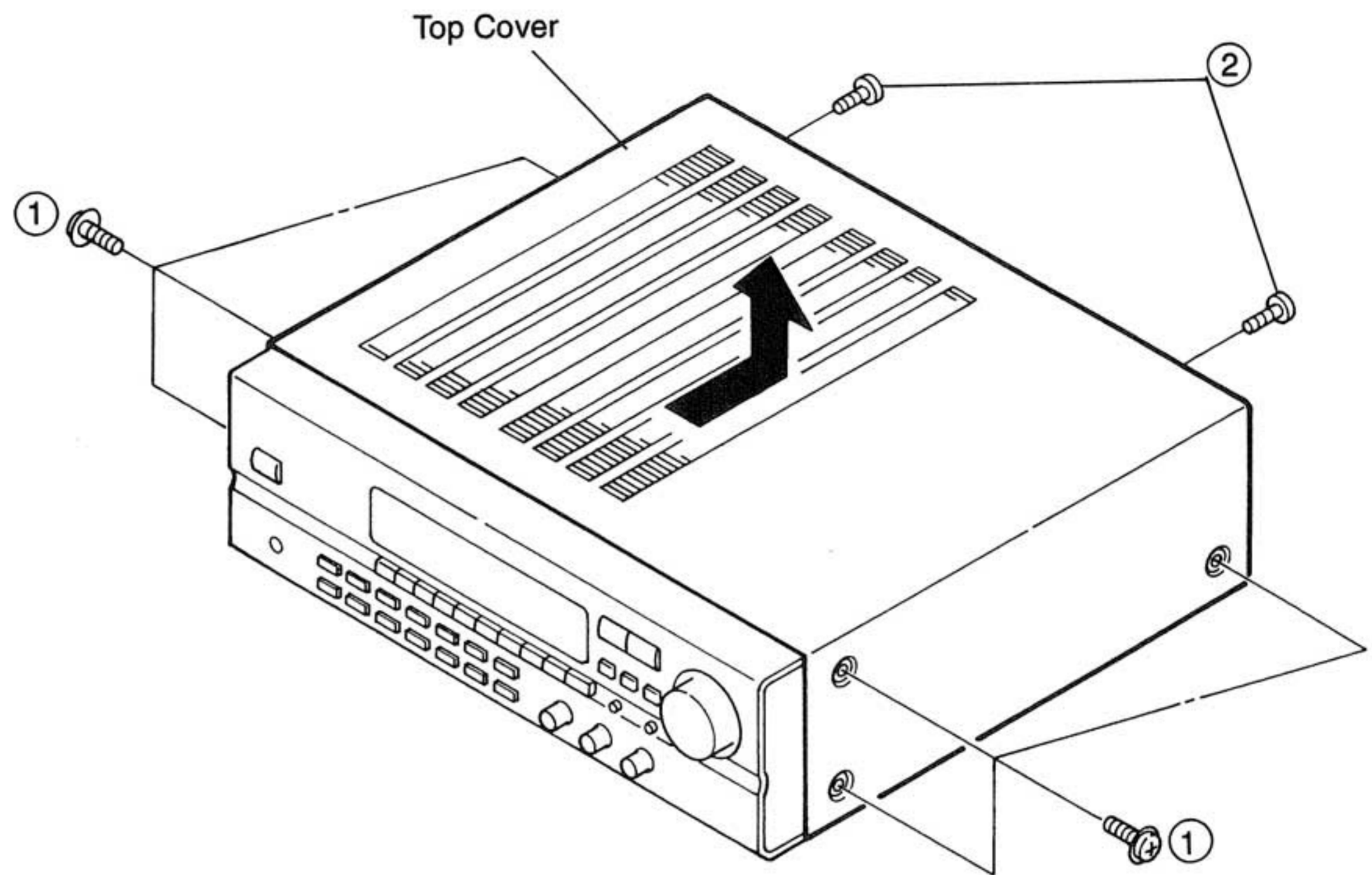
Design and specifications are subject to change without prior notice.
La conception et les spécifications sont susceptibles de modification sans préavis.

DISASSEMBLY

(To reassemble reverse disassembly)

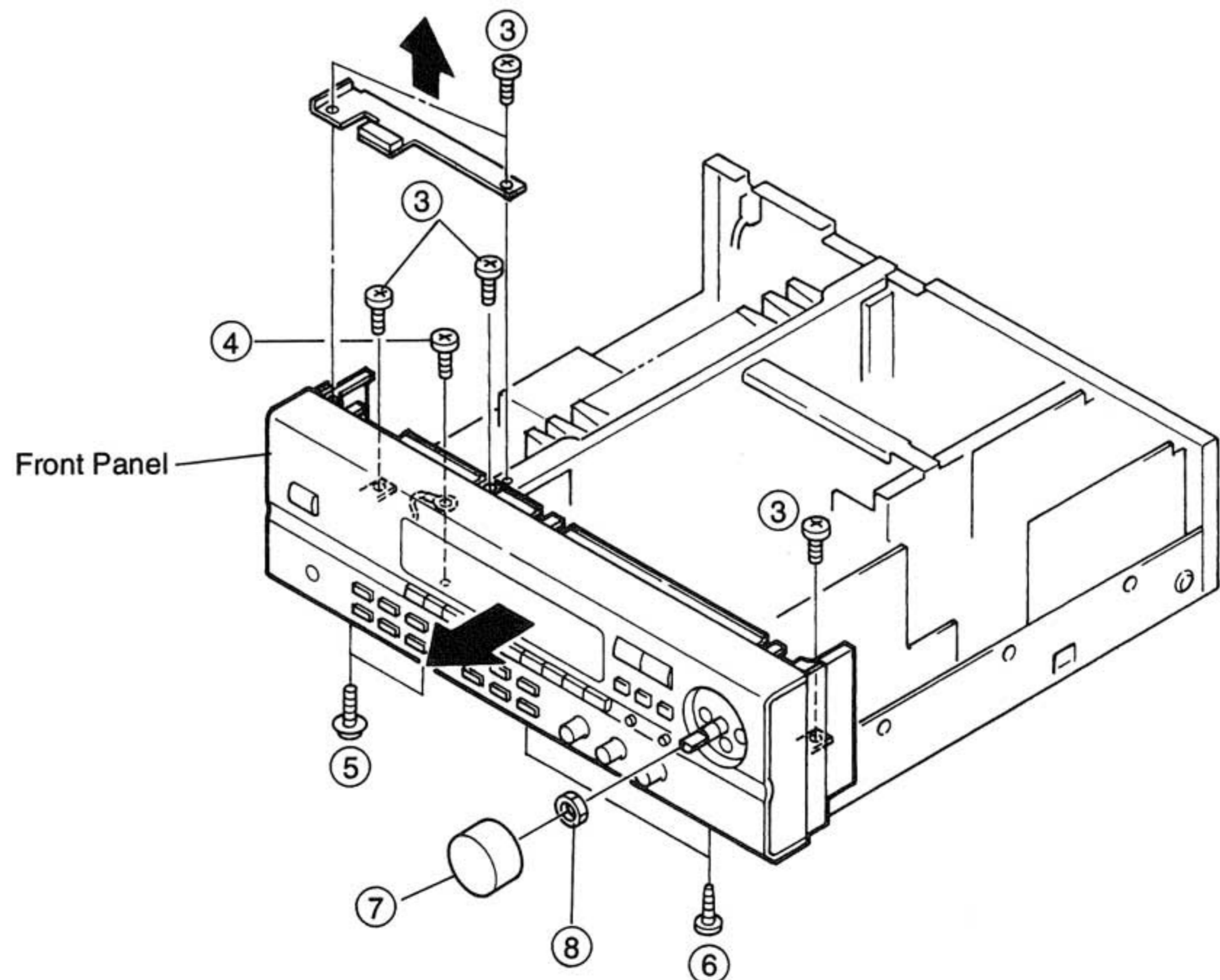
1. Top Cover

Remove 6 screws ① and 2 screws ②, detach the Top Cover in the arrow direction.



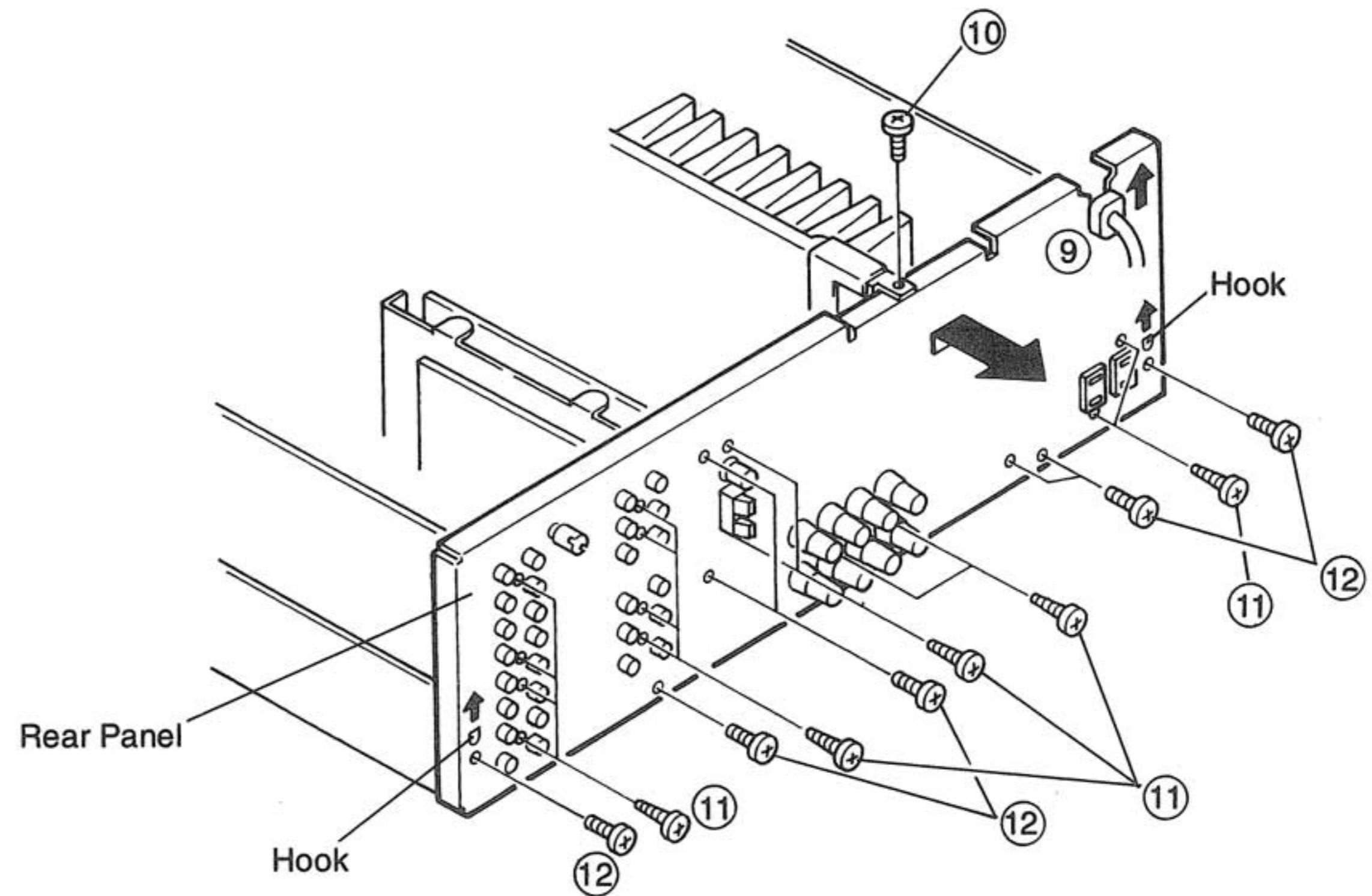
2. Front Panel

- (1) Remove 5 screws ③ and 1 screw ④.
- (2) Remove 2 screws ⑤ and 2 screws ⑥ fixing the Front Panel.
- (3) Pull out volume knob ⑦ and remove nut ⑧, detach the Front Panel in the arrow direction.



3. Rear Panel

- (1) Remove cord bushing ⑨ from the Rear Panel.
- (2) Remove 1 screw ⑩, 14 screws ⑪ and 7 screws ⑫.
- (3) While releasing 2 hooks, detach the Rear Panel in the arrow direction.

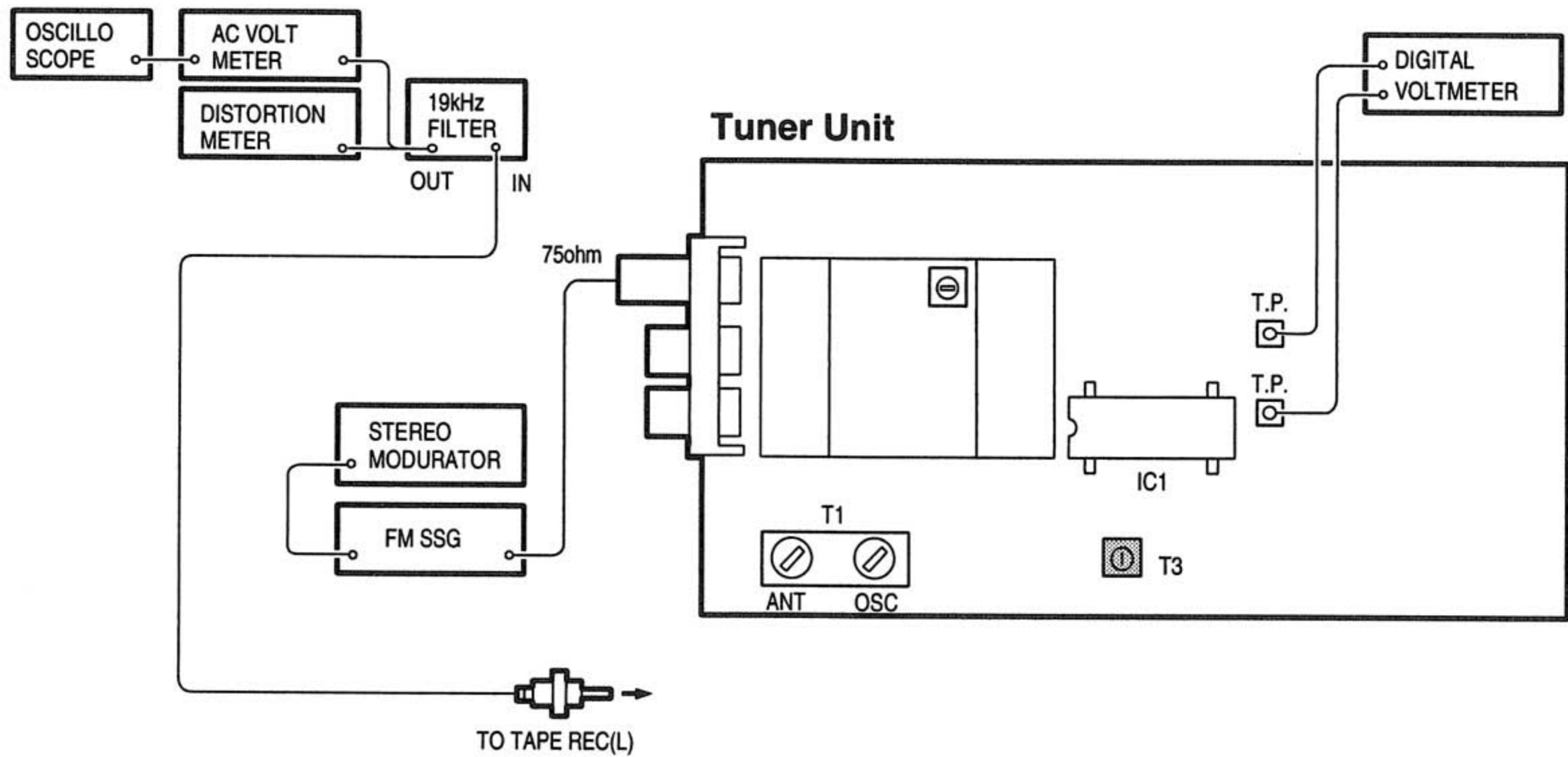


ADJUSTMENT

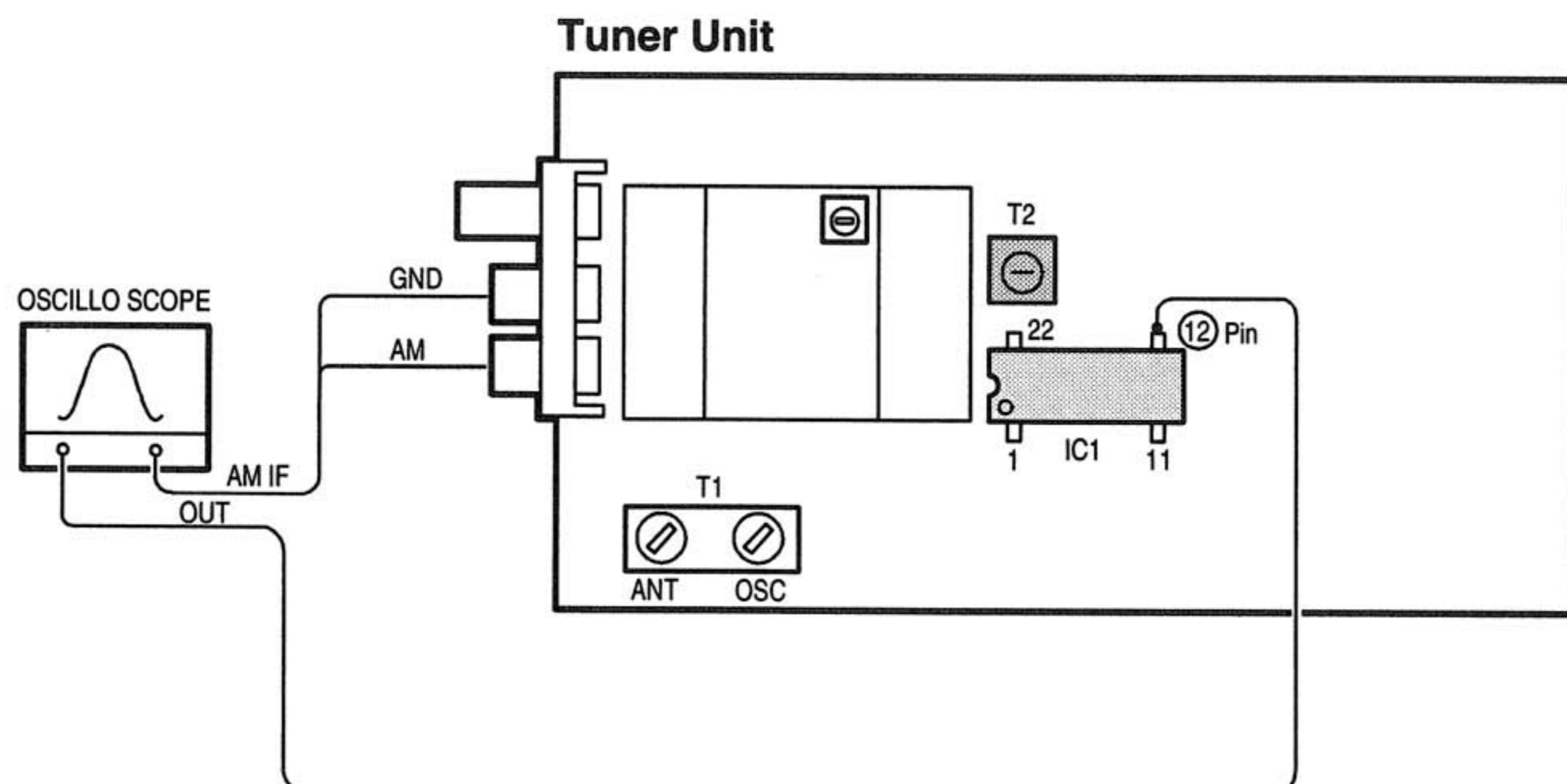
TUNER SECTION

Connection diagram of measuring instruments

● FM



● AM



FM/MPX ALIGNMENT

Step	Alignment Item	Tuning Frequency Setting	Input			Output			Adjust		Remarks	
			Type	Frequency	Input Level	Modulation	Coupling	Type	Connect to	Points		Adjust to
1	Tuning Center	98.1 MHz (98.10)	FM SSG	98.1 MHz (98.10)	60 dB μ	None	Antenna Terminal	Digital Voltmeter	T.P. by IC1	T3	\pm 50mV	Function : FM Mode : Auto

() are Europe and Multi-Voltage Models.

AM ALIGNMENT

Step	Alignment Item	Frequency	Input	Output			Adjustment		Remarks
				Type	Connect to	Points	Adjust to		
1	IF	—	IF SWEEP (Input level is not over to work A.G.C.)	Oscilloscope	IC1 12Pin	T2	Maximum height and best symmetry curve		

AUDIO SECTION

IDLING CURRENT (1U-2743-1)

Required measurement equipment: DC Voltmeter

Arrangement

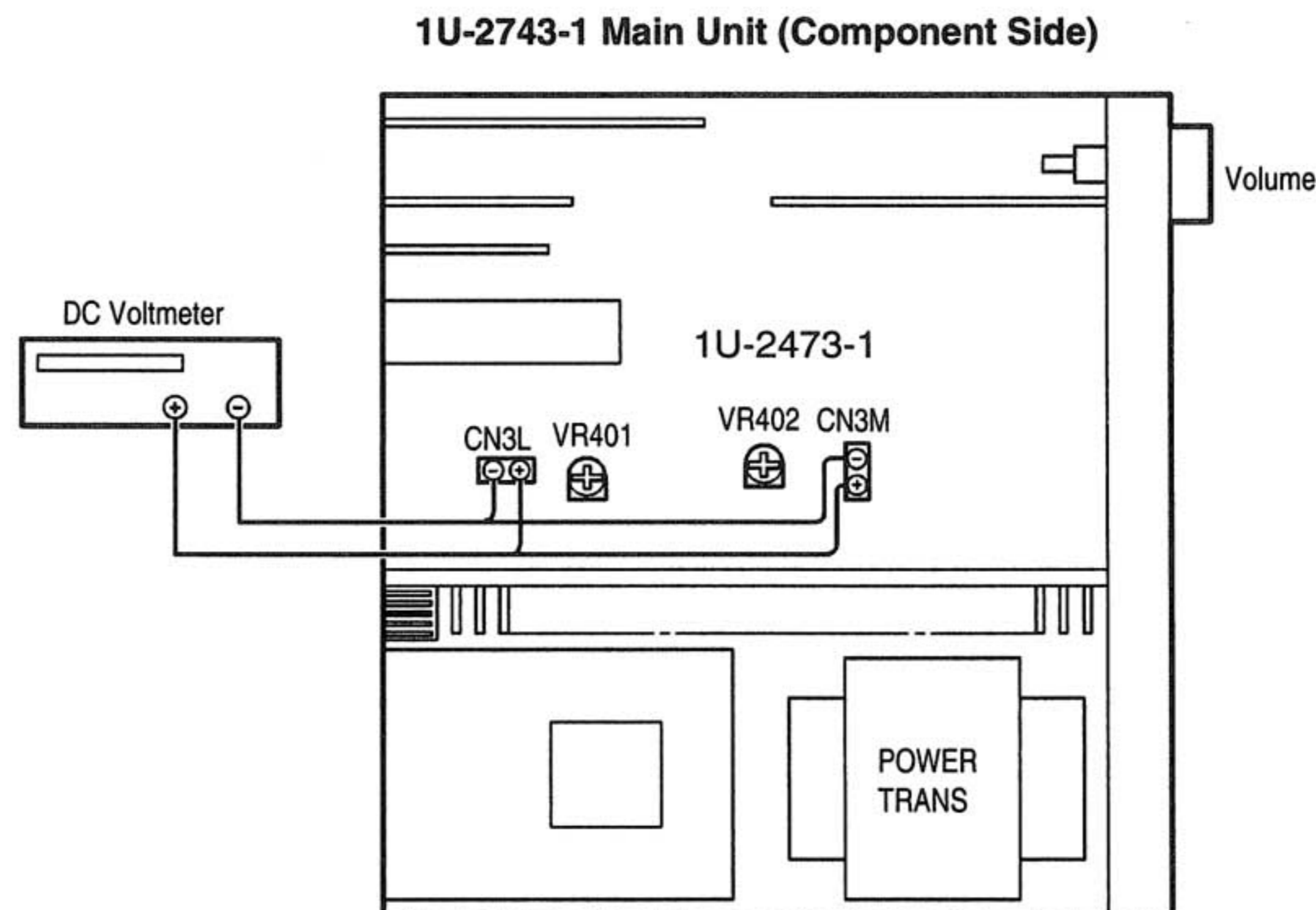
(1) Avoid direct blow from an air conditioner or an electric fan, and adjust the unit at normal room temperature 15°C ~ 30°C. (59°F ~ 86°F).

(2) Presetting

- | | |
|--------------------------------|--|
| ● POWER (Power source switch) | → OFF |
| ● FUNCTION (Function button) | → CD |
| ● VOLUME (Volume control) | → Fully counterclockwise (⤴ min.) |
| ● BALANCE (Volume control) | → Controls to center |
| ● BASS, TREBLE (Tone control) | → Controls to center |
| ● SPEAKER-A (Speaker terminal) | → No load (Do not connect speaker, dummy resistor, etc.) |

Adjustment

- Remove top cover and set VR401, VR402 of 1U-2743-1 (Main Unit) at counterclockwise fully.
- Connect DC Voltmeter to test points (Lch CN3L, Rch CN3M).
- Connect power cord to AC Line, and turn power switch "ON".
- Allow 15 minutes, and turn VR401, VR402 clockwise (⤵) and adjust the TEST POINTS voltage to $1.5 \text{ mV} \pm 0.5 \text{ mV DC}$.
- After 2 minutes from preset, turn VR401, VR402 to set the voltage to $3 \text{ mV} \pm 0.5 \text{ mV DC}$.



INITIATING (Memory clearing) METHOD

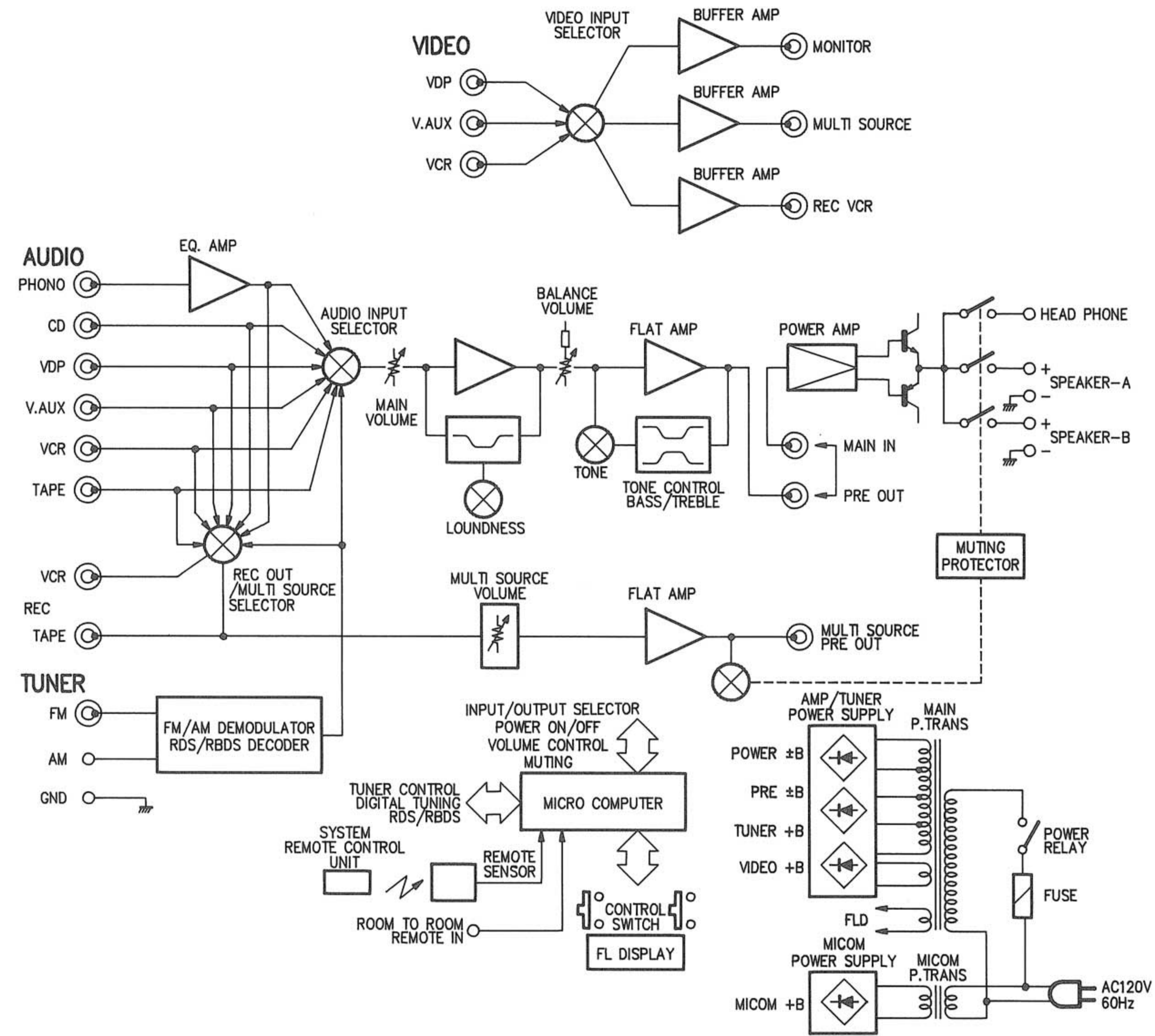
To clear memory contents of microcomputer and restore to the initial state, take the following steps;

- Press power switch, turn off the unit, and set to standby mode.
- Pull out power cord from wall outlet temporarily.
- Insert power cord into outlet while simultaneously pressing two keys of UP and DOWN.
- Press power switch to confirm that memory contents are cleared.

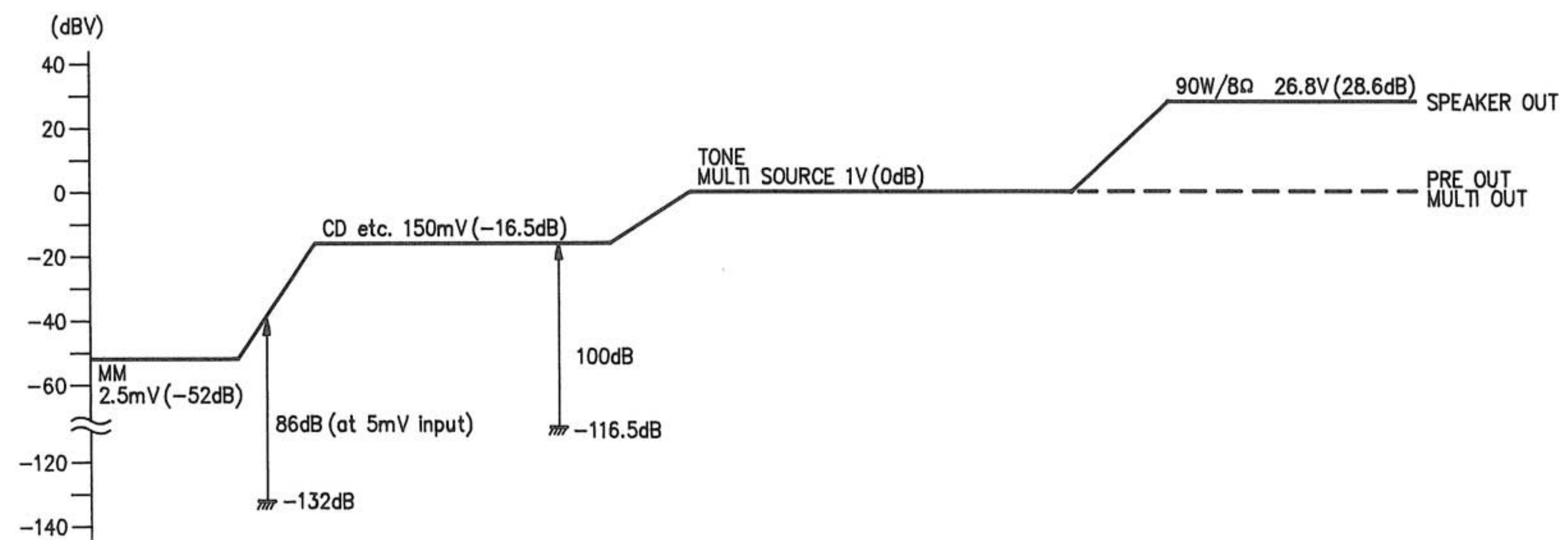
By completion of the above, the initial state is restored. In case the memory can not be cleared due to some reasons, repeat steps 1 though 3.

BLOCK/LEVEL DIAGRAM

● BLOCK DIAGRAM



● LEVEL DIAGRAM



PARTS LIST EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks	Q'ty	Ref. No.	Part No.	Part Name	Remarks	Q'ty
①-1	1U-2743 N	Main amp unit Ass'y		1	④ 49	412 2814 002	Card spacer(L=8)		8
①-1-1	—	Main amp unit			④ 50	412 3876 201	*Radiator bracket		1
①-1-2	—	Head phone unit			④ 51	412 3913 009	Shield chassis		1
②	KU-9325 N	Input unit Ass'y		1	④ 52	412 2814 044	Card spacer(L=6)		1
②-1	—	Audio input unit			④ 53	411 1305 205	*Center chassis		1
②-2	—	Video input unit			△ 54	445 0056 008	Cord bush		1
②-3	—	Volume unit			△ 55	206 2050 009	:AC cordWith plug		1
②-4	—	Regulator unit			56	415 0234 007	Insulating sheet		4
②-5	—	Power trans unit			④ 57	412 2741 007	P.W.B. holder(H=8)		1
③	1U-2745 N	FLD unit Ass'y		1	④ 58	205 0071 016	Terminal Ass'y		1
③-1	—	FLD unit			④ 59	146 1532 200	*Inner panel		1
③-2	—	Power supply unit			④ 60	412 3933 005	Safety cover		1
③-3	—	Tuner unit			④ 61	122 0183 049	Spacer		2
③-4	—	Tact switch unit			62	113 1691 028	*Tact button(A)		1
③-5	—	Tone unit			63	113 1692 001	*Function button		1
4	214 9003 005	Relay	RL551,552	2	65	113 1292 281	Power button		1
5	214 0127 003	Relay(RY-12W)	RL602	1	66	113 1693 107	*Tact button(B)		2
6	205 0472 013	8P speaker terminal		1	④ 67	412 3878 102	*Side bracket(L)		1
9	204 8465 003	Head phone jack		1	④ 68	412 3879 101	*Side bracket(R)		1
11	211 9129 003	Variable resistor	VR301	1	④ 69	104 0194 205	Foot Ass'y		4
12	212 5604 910	Tact switch		34	△ 70	233 9679 003	Power transformer		1
15	204 8365 006	6P pin jack(S-GND)	PN801	1	71	144 2416 028	Front panel		1
21	499 0150 008	Remote sensor	SBX1610-52	1	72	417 9091 001	CU bracket		1
△ 23	206 1046 014	Fuse 8A	F001	1	73	417 9092 000	Radiator		1
△ 24	206 1046 043	Fuse 10A	F005	1	④ 75	102 0554 001	*Top cover		1
25	205 0874 006	3P Antenna terminal		1	77	112 0749 004	*Volume knob		1
26	216 0064 007	Front end		1	78	112 0739 001	*Knob(Round)		3
27	393 4156 001	FL tube	FIP16FM7R	1	④ 79	477 0018 001	Washer (P-87)		1
28	211 0798 103	Variable resistor	VR565	1	79	254 4362 707	Electrolytic 10000μF/63V	C610,611	2
29	211 0797 117	Variable resistor	VR566	1	④ 80	205 0752 005	Short pin		2
30	211 0797 104	Variable resistor	VR567	1	81	513 9379 005	Fuse caution label		1
△ 31	214 0170 005	Relay(TV-8)	RL603	1	82	461 0836 013	*Rubber sheet		1
△ 32	203 3941 008	AC outlet(2P)		1	④ 83	513 2389 005	Caution label(A)		1
33	204 8278 009	6P pin jack(S-GND)	PN101,102	2	④ 84	411 9471 008	Stay		1
34	204 8266 008	4P pin jack(S-GND)	PN103	1	④ 85	412 9465 001	Trans bracket		1
△ 34	233 6018 010	Power transformer(Mini)		1	④ 86	412 9473 006	Radiator bracket F		1
35	204 8346 009	6P pin jack(S-GND)	PN601	1	④ 87	412 9474 005	Radiator bracket B		1
36	204 8422 004	Mini jack(SW)	JK001	1	④ 88	412 3938 000	Support bracket		1
△ 37	206 1039 063	Fuse 2A	F3,4	2	④ 89	412 9476 003	Support bracket		1
④ 41	411 1304 206	*Main chassis		1	④ 90	415 9095 001	Insulating sheet		1
④ 42	105 9264 100	*Rear panel		1	④ 91	461 0836 026	Rubber sheet		1
④ 43	417 0510 109	*Power radiator		1	④ 92	461 0836 039	Rubber sheet		1
④ 44	412 2814 015	Card spacer(L=14)		1	393 9434 906	LED SEL1210S	LD751	1	
45	273 0389 002	Transistor 2SC3855(O/P/Y)(Z)	TR421,422	2	④ 93	122 9034 005	Spacer		1
46	271 0240 006	Transistor 2SA1491(O/P/Y)(Z)	TR417,418	2	SCRWES				
④ 47	412 3767 006	*P.W.B. bracket		2	102	473 8007 009	Cup Screw 3×12		2
④ 48	412 3766 007	*L. bracket		1	103	473 7500 015	Screw 3×8 (P)		26
					101	473 7015 018	Screw 3×8 (S)	Black	10

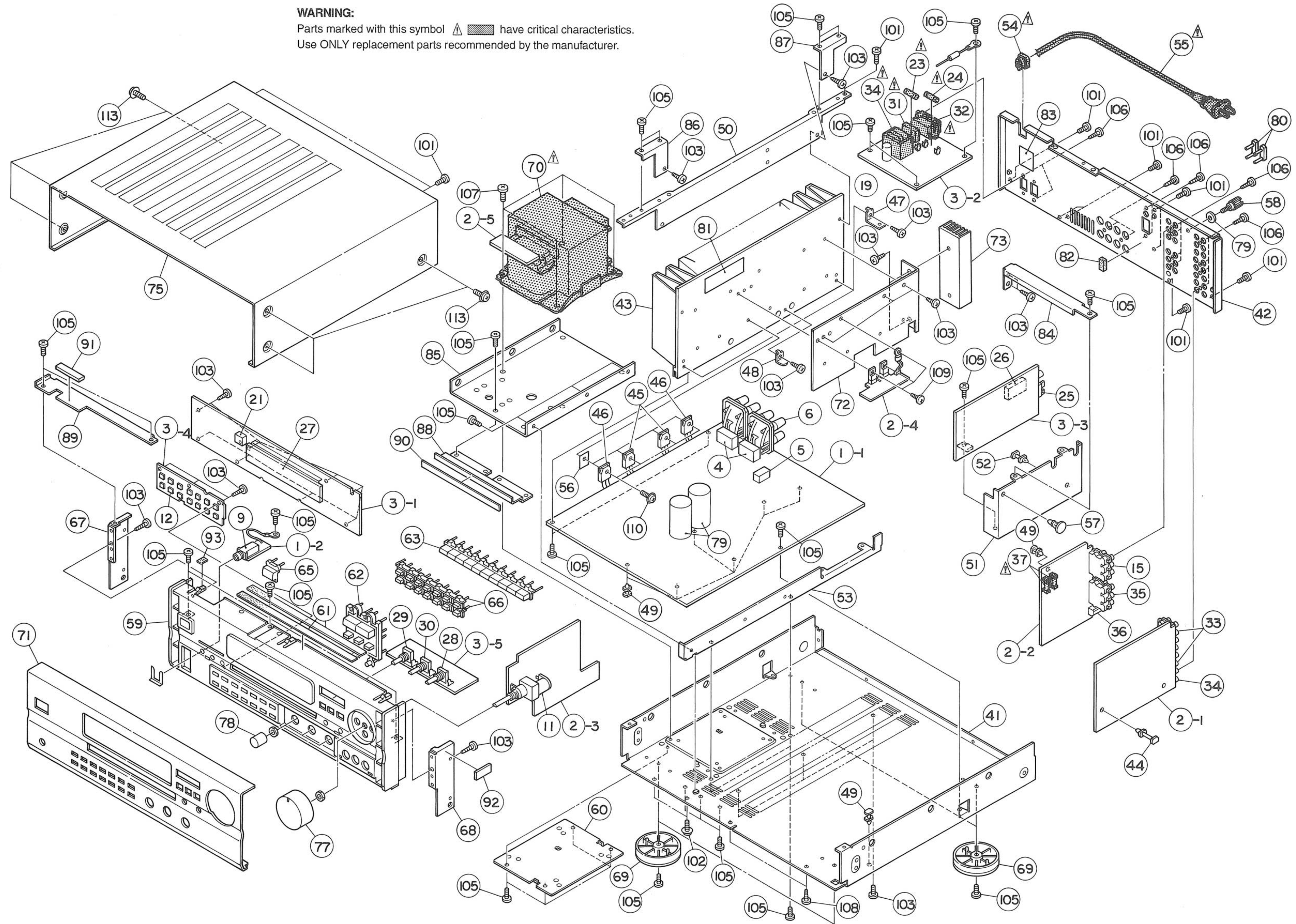
PACKING&ACCESORIES

Ref. No.	Part No.	Part Name	Remarks	Q'ty	Ref. No.	Part No.	Part Name	Remarks	Q'ty
105	473 7002 018	Screw 3×8 (S)		35	④	504 0162 013	Stylen paper		1
107	473 7004 003	Screw 4×8 (S)		4	④	505 0272 003	:Poly cover		1
108	473 7501 001	Screw 3×10 (P)		2	④	511 9417 000	*Operating instructions		1
113	477 0263 005	3P swelling screw		4	④	515 0671 119	DENON service network		1
106	477 0064 107	Fixing screw 3×10	Black	14	④	505 8006 019	Envelope		1
109	473 7005 002	Screw 3×10 (S)		3		231 0922 009	Lope antenna		1
110	473 8007 038	Cup screw 3×14		4		395 0023 008	FM antenna Ass'y		1
						399 0287 008	Remort control unit	RC-190	1
						399 0288 007	Remort control unit	RC-191	1
					④	503 1170 205	*Cushion Ass'y		1
					④	501 1843 044	*Carton case		1
					④	515 0690 006	DELWarranty home		1
						517 0104 093	UPC label		1

EXPLODED VIEW OF CHASSIS AND CABINET

1 2 3 4 5 6 7 8

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



A
B
C
D
E

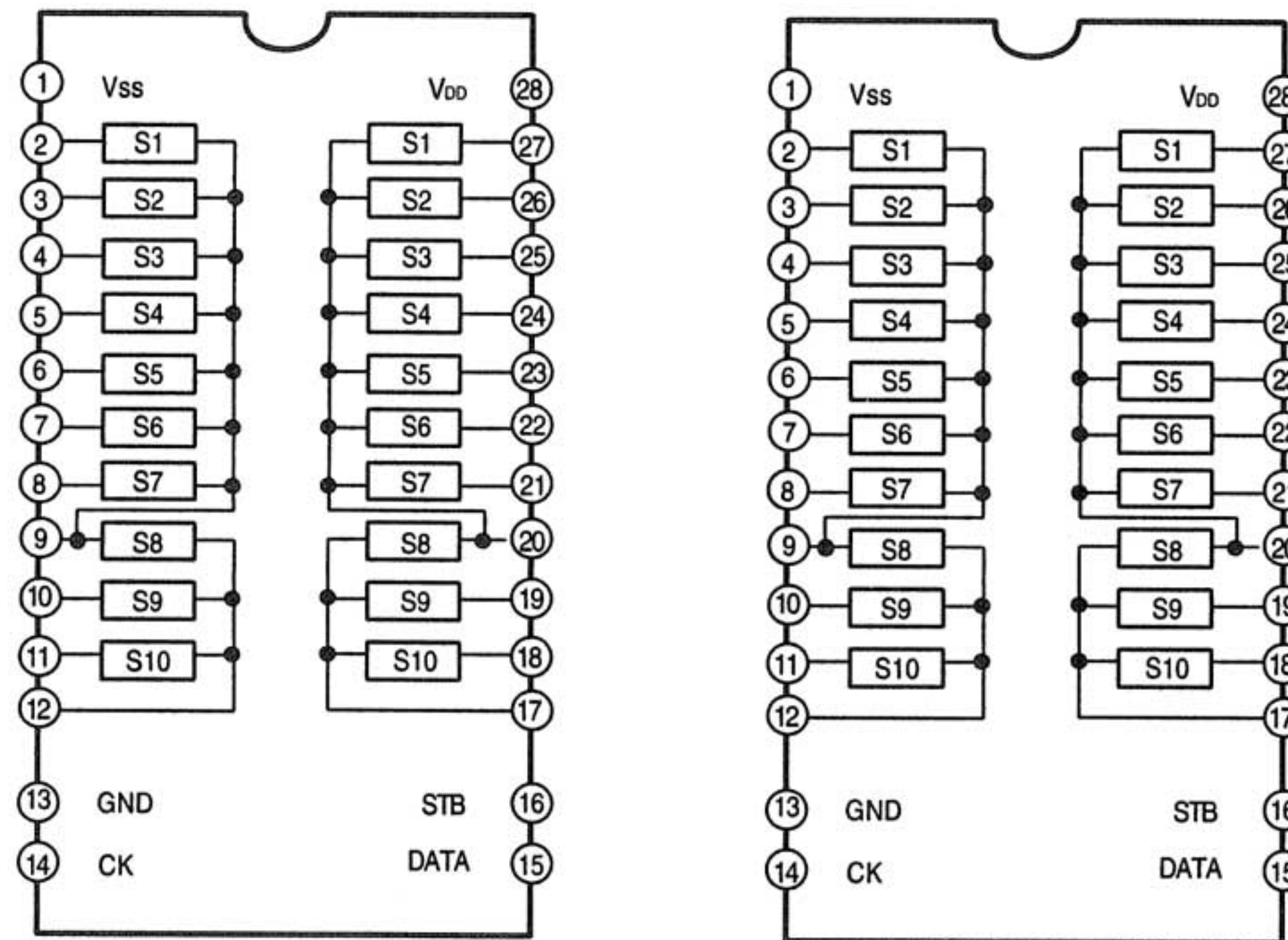
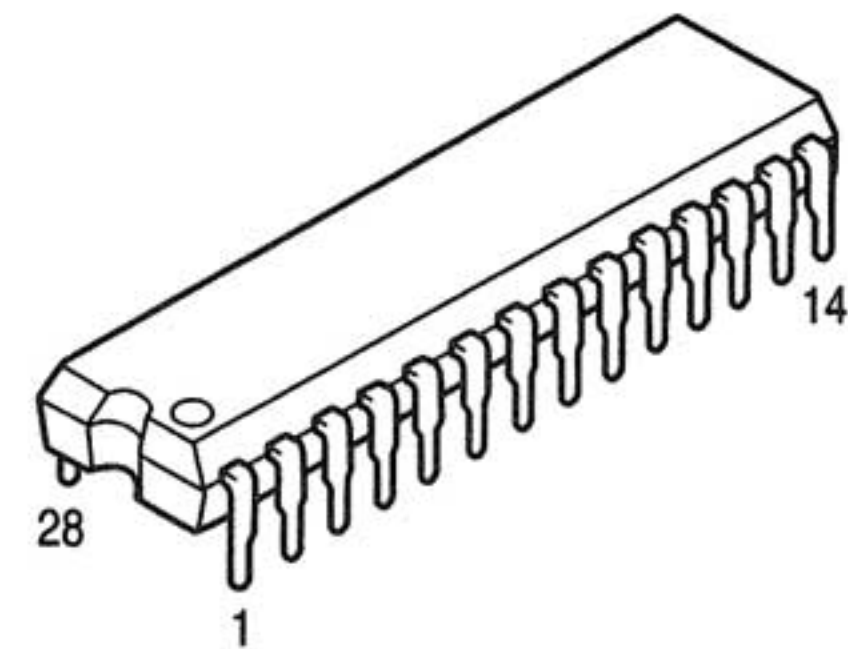
SEMICONDUCTORS

● IC's

Note: Indications before IC numbers denote P.W.B. name.

- MA : Main P.W.B. Unit
- IN : Input P.W.B. Unit
- FL : FLD P.W.B. Unit

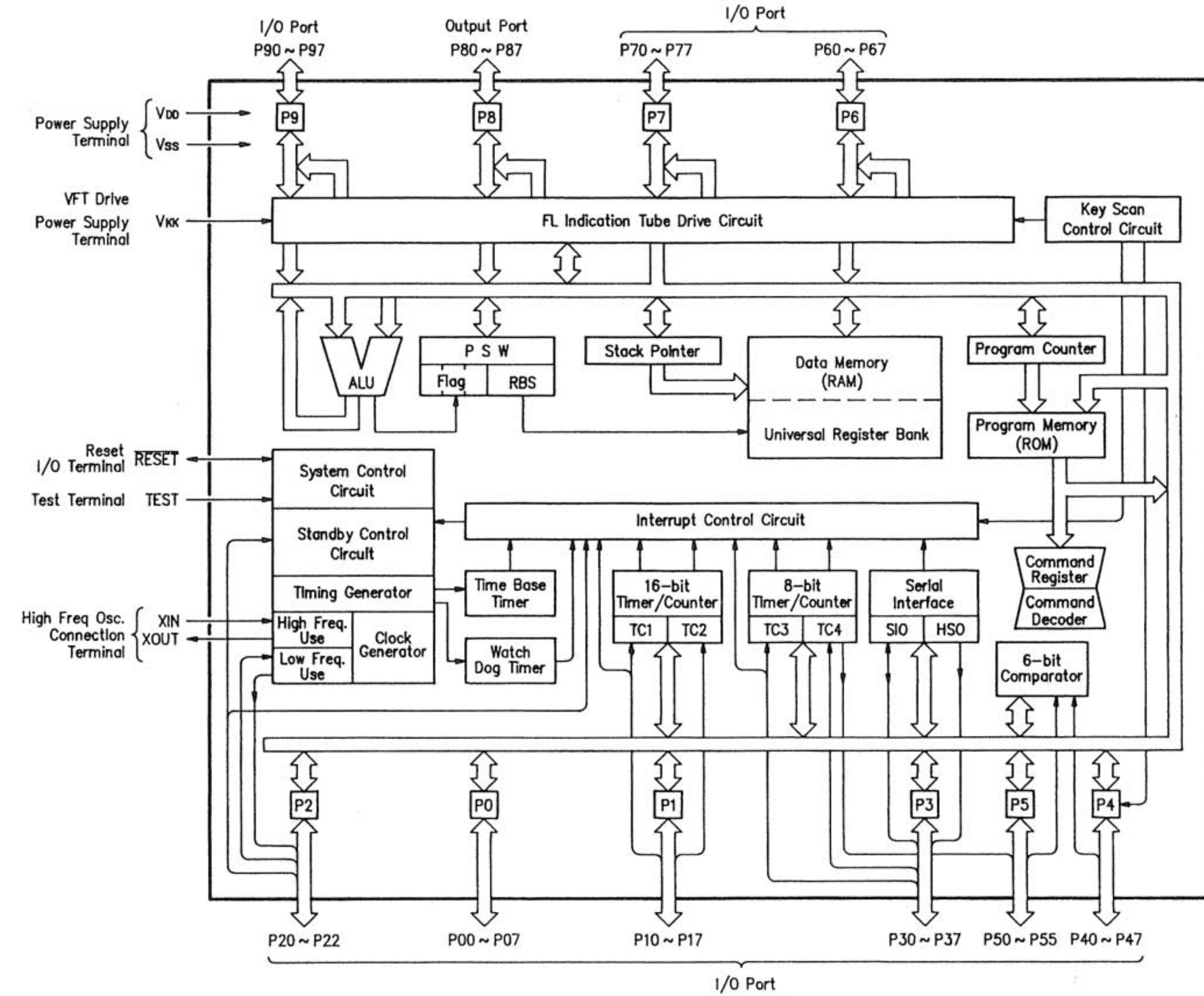
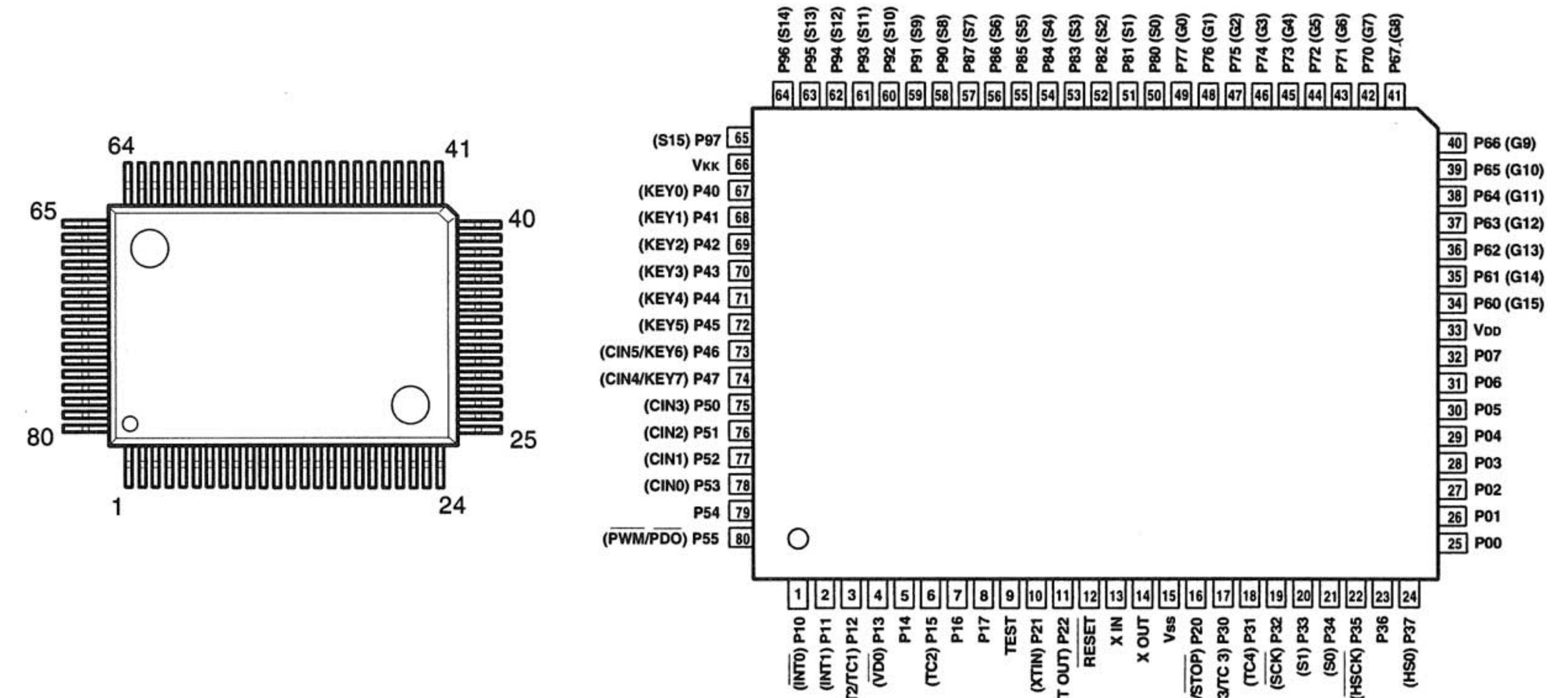
TC9273N-007 (IN: IC103)
 TC9273N-004 (IN: IC104)



TC9273N Terminal Function

Pin No.	Symbol	Name	Function	Note
1	Vss	-Power Terminal	Dual Power Use: V _{DD} = 8.0~17V GND = 0V Vss = -8.0~-17V Single Power Use: V _{DD} = 8.0~18V Vss = GND = 0V	—
2-12	S1-11	I/O Terminal	Input terminal of analog switch.	—
13	GND	Digital Ground	Dual Power Use: V _{DD} = 8.0~17V GND = 0V Vss = -8.0~-17V Single Power Use: V _{DD} = 8.0~18V Vss = GND = 0V	—
14	CK	Clock Input	Clock input for data transfer.	Low level Border Input Terminal
15	DATA	Data Input	Serial input for switch setting.	
16	STB	Strobe Input	Strobe input for data writing.	
17-27	S1-11	I/O Terminal	Input terminal of analog switch.	—
28	V _{DD}	+Power Terminal	Dual Power Use: V _{DD} = 8.0~17V GND = 0V Vss = -8.0~-17V Single Power Use: V _{DD} = 8.0~18V Vss = GND = 0V	—

TMP87CM71F-6274 (MA: IC701)



TMP87CM71F-6274 Terminal Function

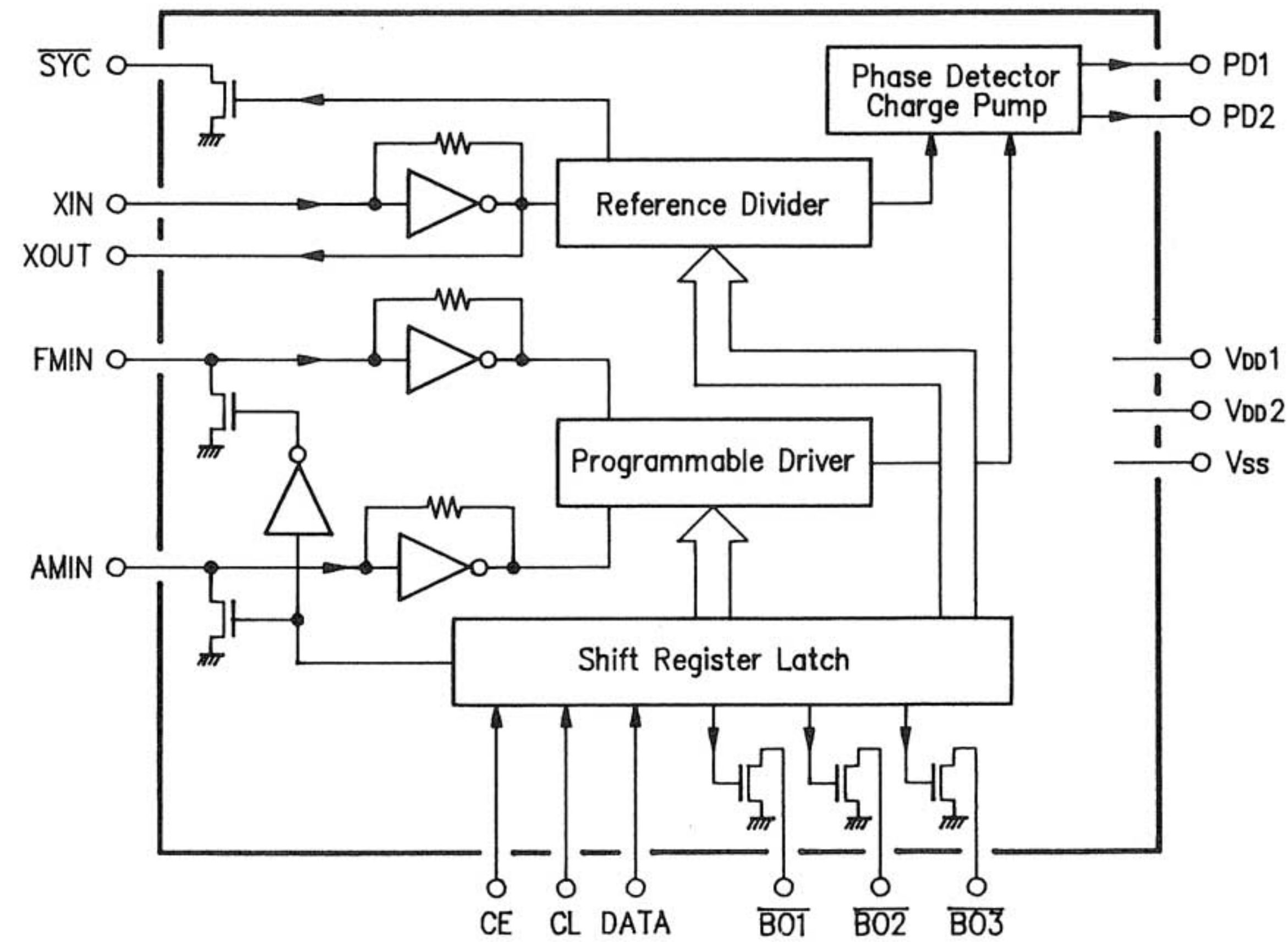
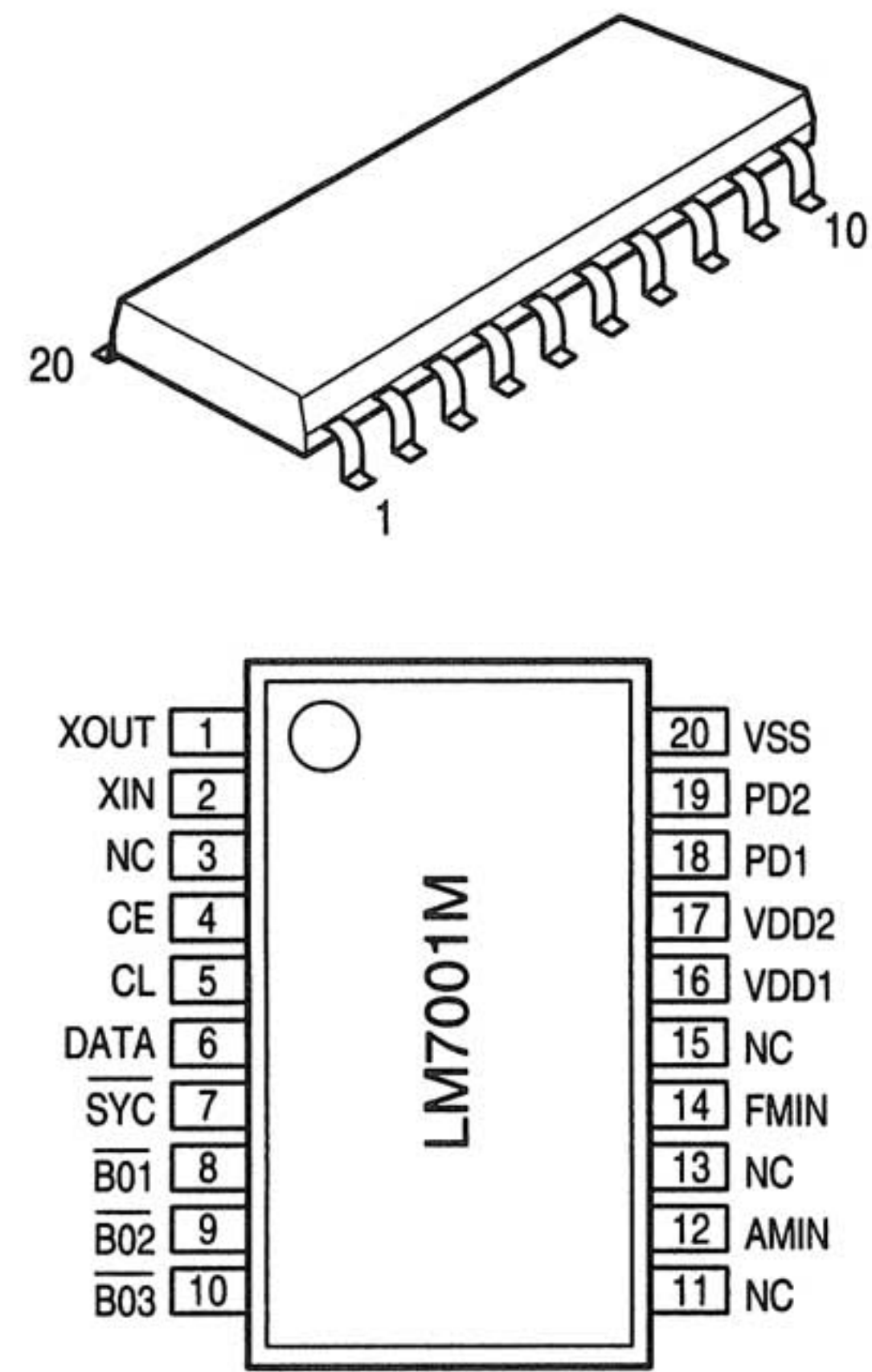
Pin No.	Port Name	Symbol	I/O	Type	Op	Det	Res	Ini	Function
1	P10/INT 0	POWER DOWN	I	—	Eu	Lv	Z	—	Power down detection ("L" at power down).
2	P11/INT 1	PROTECTION	I	—	Eu	E&L	Z	—	Protection input ("H" at protection).
3	P12/INT 2	MULTI REMOCON	I	—	Eu	E&L	Z	—	Multiple Remote control input.
4	P13/DVO	STEREO/MONO	O	C	—	—	Z	L	STEREO/MONO control signal ("L" at STEREO).
5	P14	PLL-ST	O	C	—	—	Z	L	LM7001 control output.
6	P15/TC2	PLL-CLK	O	C	—	S	Z	L	LM7001 control output.
7	P16	PLL-DATA	O	C	—	S	Z	L	LM7001 control output.
8	P17	TUNER MUTE	O	C	—	—	Z	H	TUNER MUTE output ("H" at MUTE).
9	TEST	TEST	I	—	GND	—	—	—	Connect to GND.
10	P21/XTIN	STEREO SIGNAL	I	—	Eu	Lv	Z	—	Tuning detection ("L" at tuning).
11	P22/XTO	TUNED SIGNAL	I	—	Eu	Lv	Z	—	"L" at stereo reception.
12	RESET	RESET	I	—	Eu	Lv	Z	—	Reset input.
13	XIN		I	—	—	—	—	—	Oscillation circuit (4MHz).
14	XOUT		O	—	—	—	—	—	Oscillation circuit (4MHz).
15	VSS	GND	I	—	GND	—	—	—	
16	P20/INT 5	RDS START	I	—	—	Ed	Z	—	RDS data input (LC7074).
17	P30/INT 3	REMOCON	I	—	Eu	E&L	Z	—	Remote control signal input.
18	P31/TC4	RDS RES	O	N	Eu	—	Z	H	RDS data output (LC7074).
19	P32/SCK	RDS CLK	I	—	—	S	Z	—	RDS data input (LC7074).
20	P33/SI	RDS DATA	I	—	—	S	Z	—	RDS data input (LC7074).
21	P34/S0		O	—	—	—	Z	—	Not used.
22	P35/HACK		O	—	—	—	Z	—	Not used.
23	P36		O	—	—	—	Z	—	Not used.
24	P37/HSO		O	—	—	—	Z	—	Not used.
25	P00	POWER	O	C	—	—	Z	H	Power supply relay control output ("H" at ON).
26	P01		O	—	—	—	Z	—	Not used.
27	P02		O	—	—	—	Z	—	Not used.
28	P03		O	—	—	—	Z	—	Not used.
29	P04		O	—	—	—	Z	—	Not used.
30	P05		O	—	—	—	Z	—	Not used.
31	P06		O	—	—	—	Z	—	Not used.
32	P07		O	—	—	—	Z	—	Not used.
33	VDD	VDD	I	—	—	—	—	—	Connect to +5V.
34	P60		O	P	Id	—	L	L	Not used.
35	P61		O	P	Id	—	L	L	Not used.
36	P62		O	P	Id	S	L	L	Not used.
37	P63		O	P	Id	S	L	L	Not used.
38	P64		O	P	Id	S	L	L	Not used.
39	P65		O	P	Id	S	L	L	Not used.
40	P66		O	P	Id	—	L	L	Not used.
41	P67		O	P	Id	—	L	L	Not used.
42	P70	LOUDNESS	O	P	Id	—	L	H	Loudness control output ("L" at ON).
43	P71	E. VOL CLK	O	P	Id	—	L	L	Electronic volume control output. (TC9210).
44	P72	E. VOL DATA	O	P	Id	—	L	L	Electronic volume control output. (TC9210).
45	P73	E. VOL ST	O	P	Id	—	L	L	Electronic volume control output. (TC9210).
46	P74	VOL. UP	O	P	Id	—	L	L	Motor volume control output. (BA6208F).
47	P75	VOL. DOWN	O	P	Id	—	L	L	Motor volume control output. (BA6208F).
48	P76	FL DATA	O	P	Id	—	L	H	FL tube indication control output (MSC1937).
49	P77	FL RES	O	P	Id	—	L	L	FL tube indication control output (MSC1937).
50	P80	FL CLK	O	P	Id	—	L	H	FL tube indication control output (MSC1937).

Pin No.	Port Name	Symbol	I/O	Type	Op	Det	Res	Ini	Function
51	P81	STANDBY LED	O	P	Id	—	L	H	Standby indication LED drive output ("H" at lighted).
52	P82	TONE DEFEAT	O	P	Id	—	L	H	Tone defeat control output ("L" at ON).
53	P83	H/P PRE MUTE	O	P	Id	—	L	H	Headphone and pre-out relay control output ("L" at MUTE).
54	P84		O	P	Id	—	L	L	Not used.
55	P85		O	P	Id	—	L	L	Not used.
56	P86	SP-B	O	P	Id	—	L	L	Front B speaker relay control output ("L" at MUTE).
57	P87	SP-A	O	P	Id	—	L	H	Front A speaker relay control output ("L" at MUTE).
58	P90		O	P	Id	—	L	L	Not used.
59	P91		O	P	Id	—	L	L	Not used.
60	P92		O	P	Id	—	L	L	Not used.
61	P93		O	P	Id	—	L	L	Not used.
62	P94		O	P	Id	—	L	L	Not used.
63	P95	FUNC CLK	O	P	Id	S	L	L	Function control output (TC9273).
64	P96	FUNC DATA	O	P	Id	S	L	L	Function control output (TC9273).
65	P97	FUNC ST	O	P	Id	—	L	L	Function control output (TC9273).
66	VKK	VKK	I	—	—	—	—	—	Connect to GND.
67	P40/KEY0		O	—	—	—	Z	—	Not used.
68	P41/KEY1	A	O	N	Eu	—	Z	H	Video input control ("L" at selection) BA7625.
69	P42/KEY2	B	O	N	Eu	—	Z	H	Video input control ("L" at selection) BA7625.
70	P43/KEY3	C	O	N	Eu	—	Z	H	Video output control ("L" at selection) BA7625.
71	P44/KEY4	D	O	N	Eu	—	Z	H	Video output control ("L" at selection) BA7625.
72	P45/KEY5	E	O	N	Eu	—	Z	H	Video input/output control ("L" at selection) BA7625.
73	P46/CIN5	MODE	I	—	Eu	Lv	Z	—	Forward country shifting input.
74	P47/CIN4	KEY5	I	—	Eu	Lv	Z	—	Button input 5.
75	P50/CIN3	KEY4	I	—	Eu	Lv	Z	—	Button input 4.
76	P51/CIN2	KEY3	I	—	Eu	Lv	Z	—	Button input 3.
77	P52/CIN1	KEY2	I	—	Eu	Lv	Z	—	Button input 2.
78	P53/CIN0	KEY1	I	—	Eu	Lv	Z	—	Button input 1.
79	P54	TAPE INH.	O	N	Eu	—	Z	H	Tape inhibition ("L" at inhibition).
80	P55/PMW	MULTI MUTE	O	N	Eu	—	Z	L	Multi source output mute.

Notes:

- Pin No. : Terminal number of microcomputer.
- Port Name : The name mentioned in the data sheet of microcomputer.
- Symbol : Symbolized interface function.
- I/O : Input or output of part.
"I" = Input port
"O" = Output port
- Type : Composition of port in case of output port.
"C" = CMOS output
"N" = NMOS open drain output
"P" = PMOS open drain output.
- Op : Pull up/Pull down selection information.
"Iu" = Inner microcomputer pull up
"Id" = Inner microcomputer pull down
"Eu" = External microcomputer pull up
"Ed" = External microcomputer pull down
- Det : Indicates judging state of input port. Level detection is "Lv"; Edge detection is "Ed"; Detection by both shifting is "E&L"; Serial data detection is "S" (Serial data output is also "S").
- Res : State at reset.
"H" = Outputs High Level at reset
"L" = Outputs Low Level at reset
"Z" = Becomes High Impedance mode at reset.
- Ini : Initial output state.
- Function : Function and logical level explanation of signals to be interface.

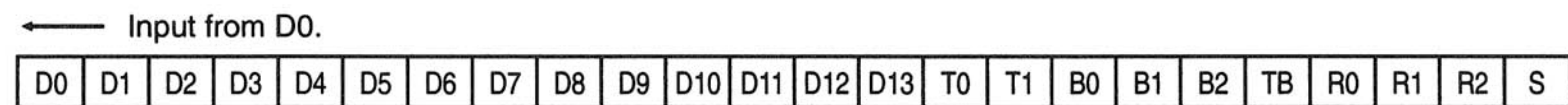
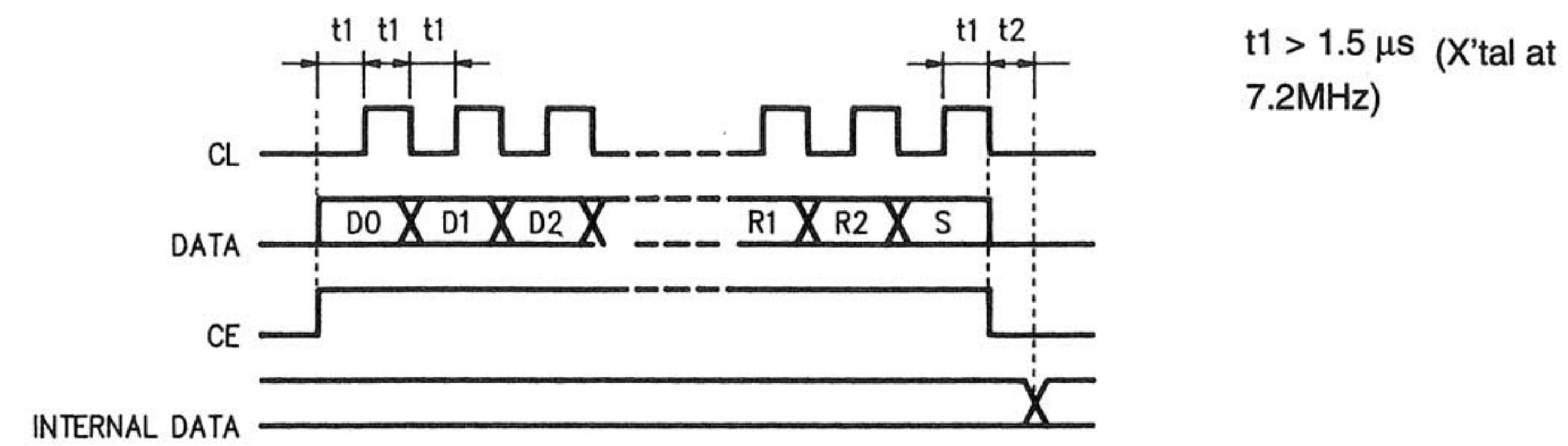
LM7001M
(FL: IC003)



Terminal Description

- SYC : Clock for controller (400 kHz)
- XIN, XOUT : X'tal OSC (7.2MHz)
- FMIN, AMIN : Station oscillation signal input.
- CE, CL, DATA : Data input.
- B01, B02, B03 : Band data output. B01 is feasible for time base output (8Hz).
- VDD1, VDD2, VSS : Power supply. (VDD2 is for back-up)
- PD1, PD2 : Charge pump output.

Data input

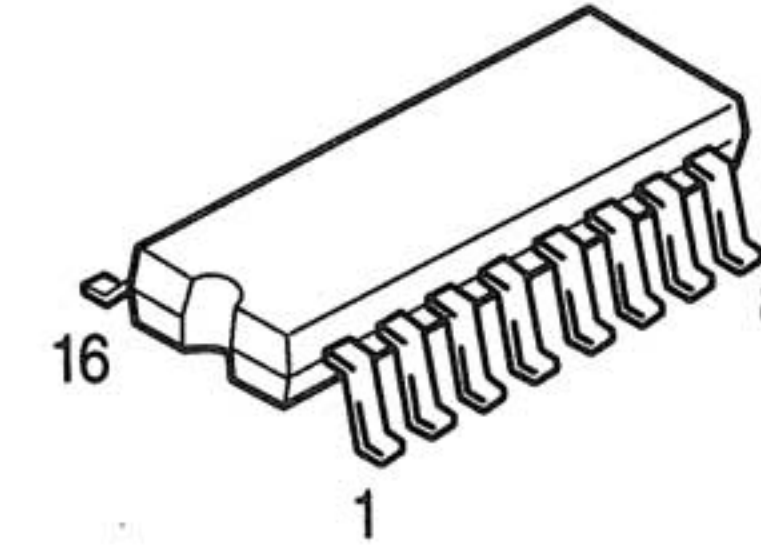


(1) D0 (LSB)~D13 (MSB) :Frequency dividend data
For FMIN, use D0~D13; for AMIN, use D4~D13.

D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	
1	0	1	0	0	0	0	0	0	1	0	1	1	1	→ FMIN Frequency dividend number= 14853
LSB													MSB	
X	X	X	X	0	0	0	0	0	1	0	1	1	1	→ AMIN Frequency dividend number = 928
				LSB									MSB	

(2) T0, T1 : For test of LSI(0,0)

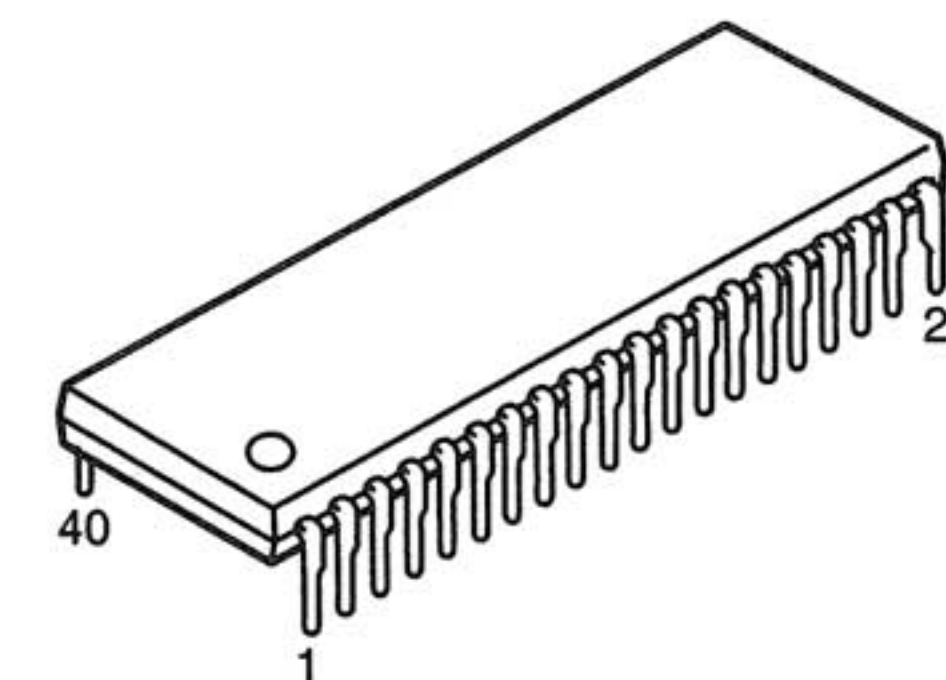
SAA6579T (MA: IC703)



SAA6579T Terminal Function

Pin No.	Symbol	Description
1	QUAL	Quality indication output.
2	RDDA	RDS data output.
3	Vref	Reference voltage output (0.5 VDDA).
4	MUX	Multiplex signal input.
5	VDDA	+5V supply voltage for analog part.
6	VSSA	Ground for analog part (0V).
7	CIN	Subcarrier input to comparator.
8	SCOUT	Subcarrier output of reconstruction filter.
9	MODE	Oscillation mode/test control input.
10	TEST	Test enable input.
11	VSSD	Ground for digital part (0V).
12	VDDD	+5V supply voltage for digital part.
13	OSCI	Oscillator input.
14	OSCO	Oscillator output.
15	T57	57kHz clock signal output.
16	RDCL	RDS clock output.

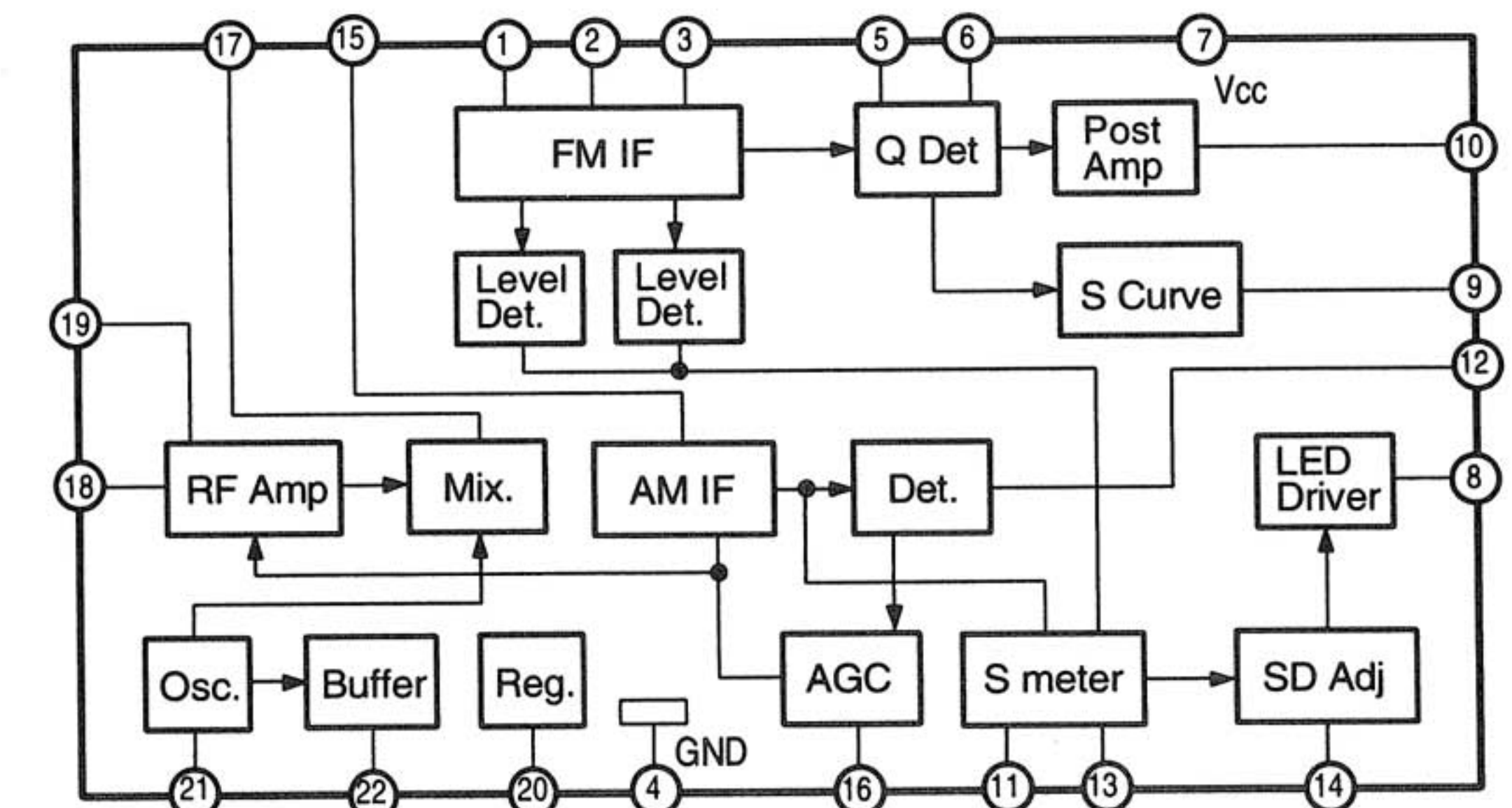
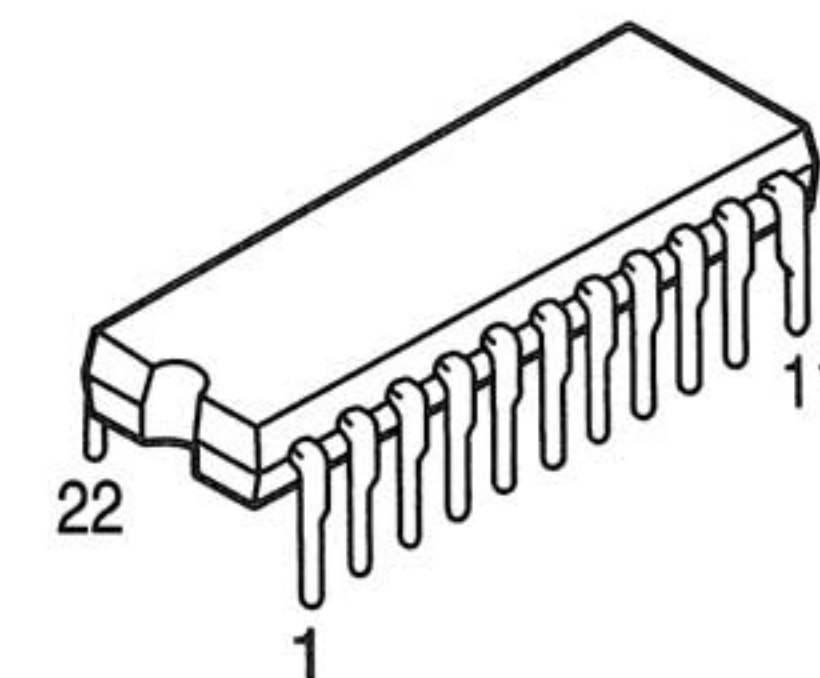
MSC1937-03RS (FL: IC751)



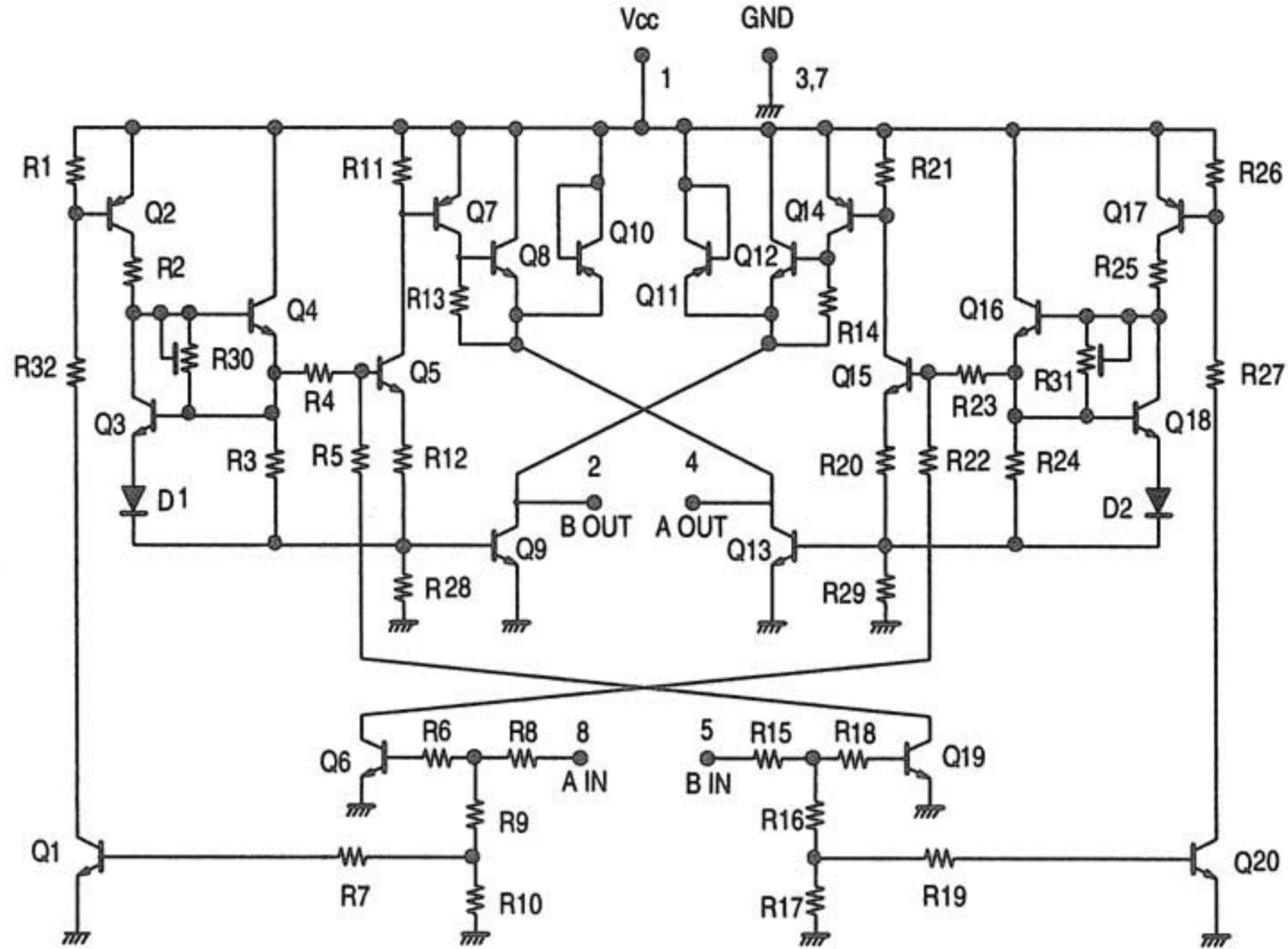
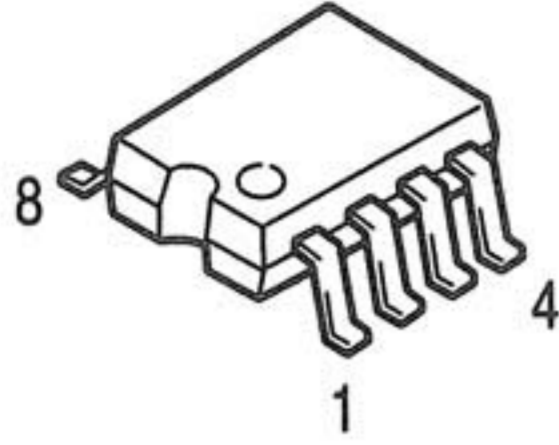
MSC1937-03RS Terminal Function

Pin No.	Terminal Function
1	Power Supply (+5V)
2	Digit 1 Output
3	?
4	?
5	?
6	?
7	?
8	?
9	?
10	?
11	?
12	?
13	?
14	?
15	?
16	?
17	Digit 16 Output
18	GND
19	—
20	POWER-ON-RESET
21	Data Input
22	Shift Clock Input
23	Segment A Output
24	?
25	?
26	?
27	?
28	?
29	?
30	?
31	?
32	?
33	?
34	?
35	?
36	?
37	?
38	Segment P Output
39	—
40	POINT Output

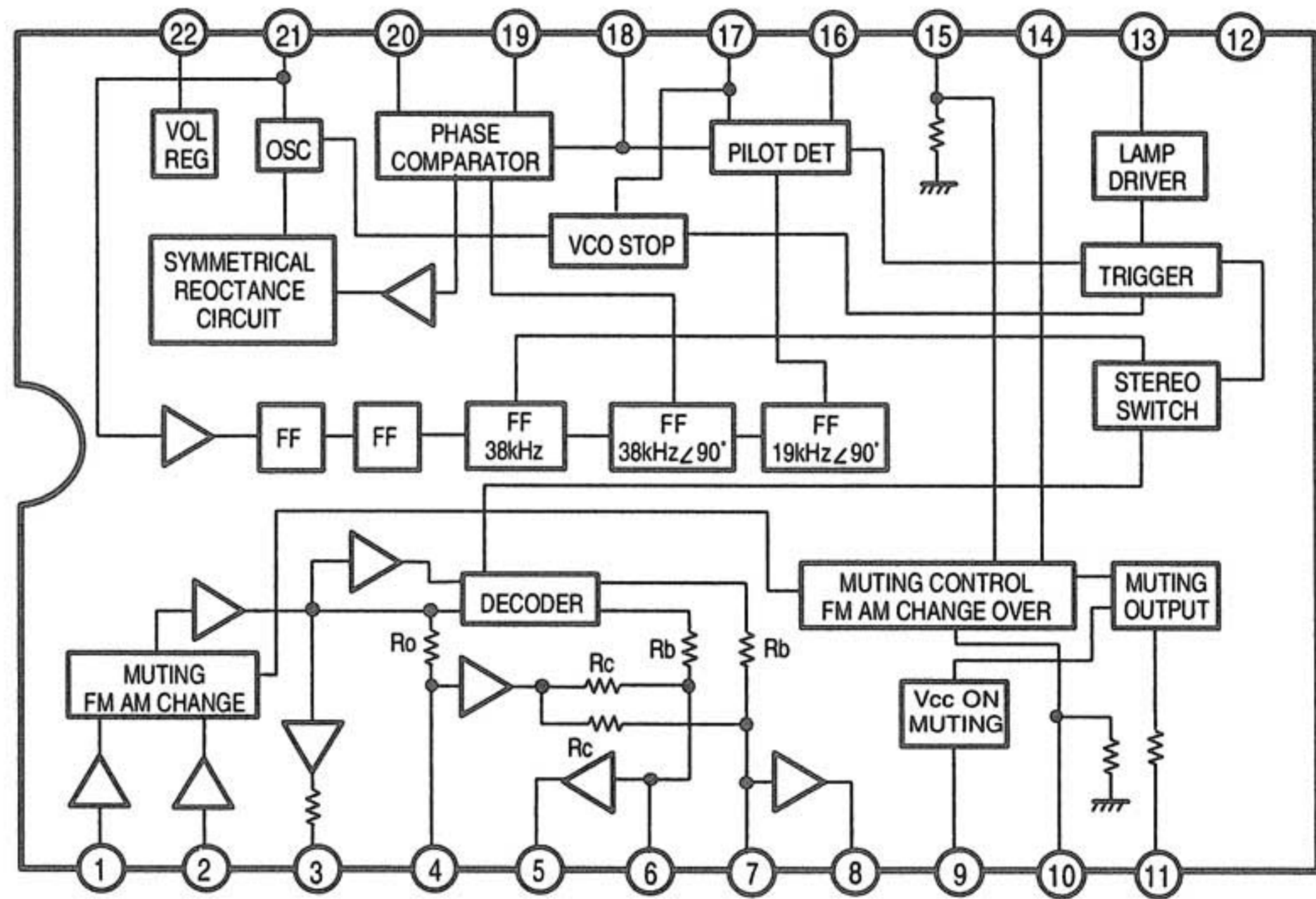
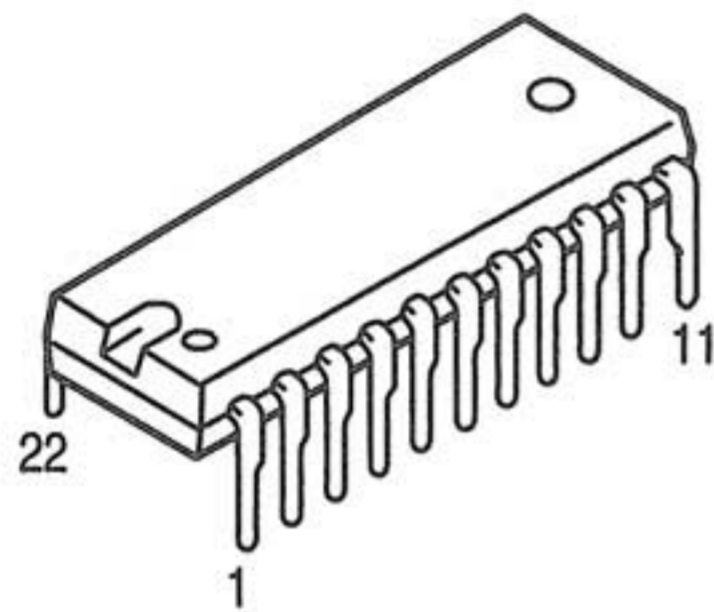
LA1265 (S) (FL: IC001)



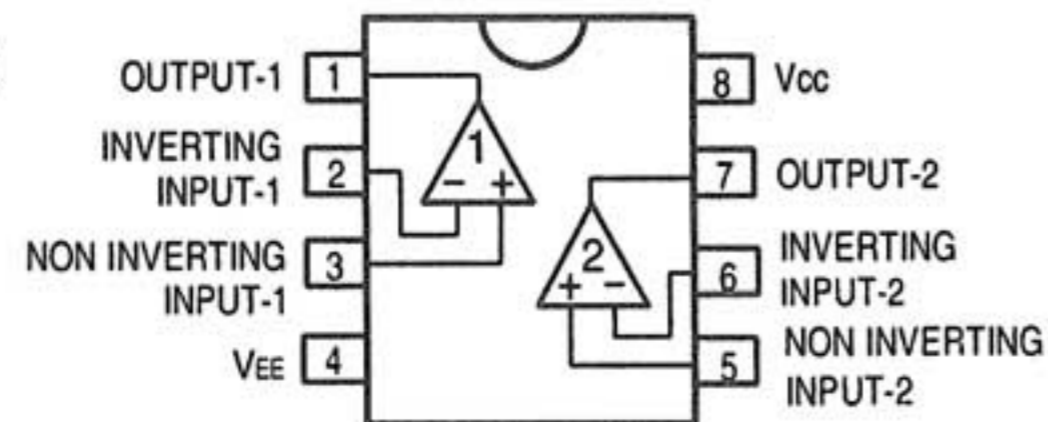
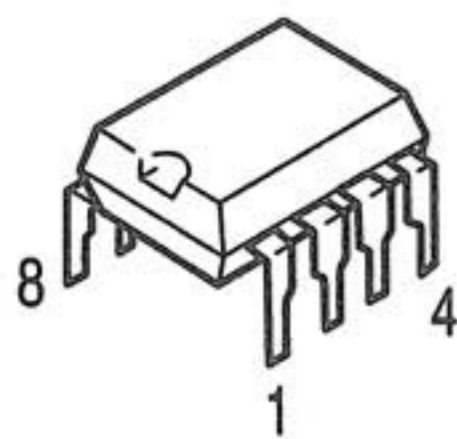
BA6208F (IN: IC306)



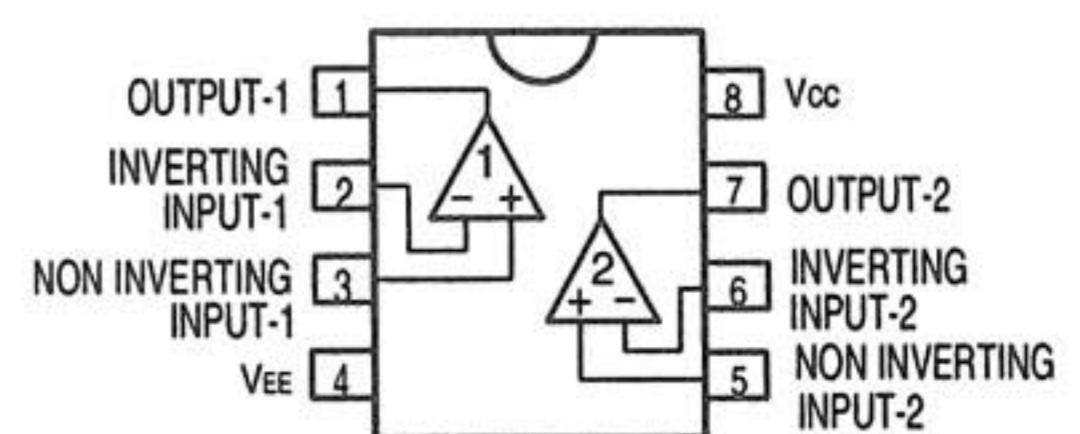
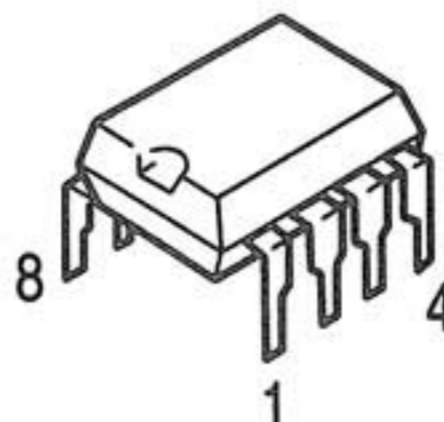
LA3401 (FL: IC002)



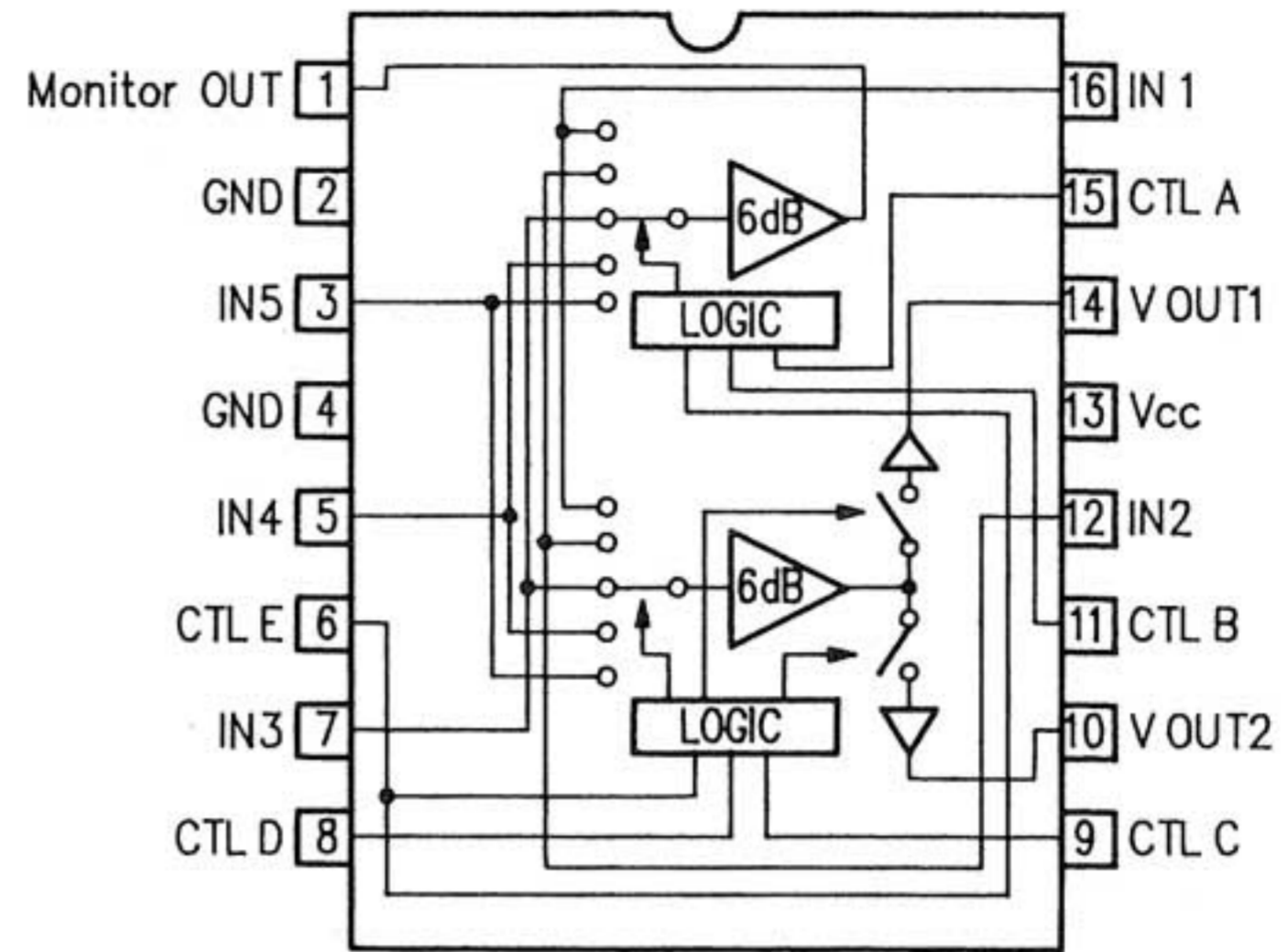
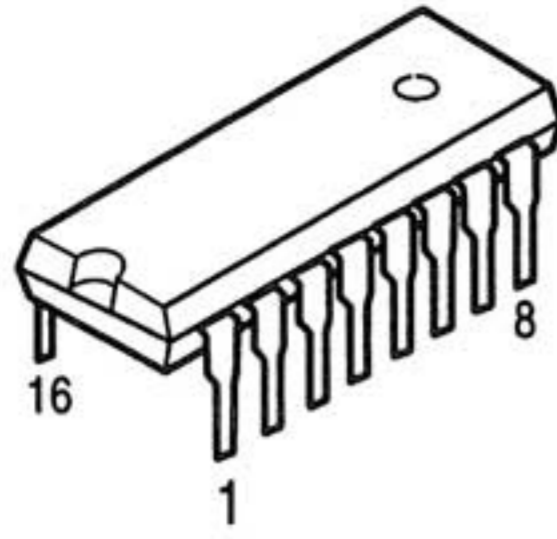
BA15218 (IN: IC106, 304)



NJM2068DDC (IN: IC101, 305)
(FL: IC565)



BA7625 (IN: IC801)

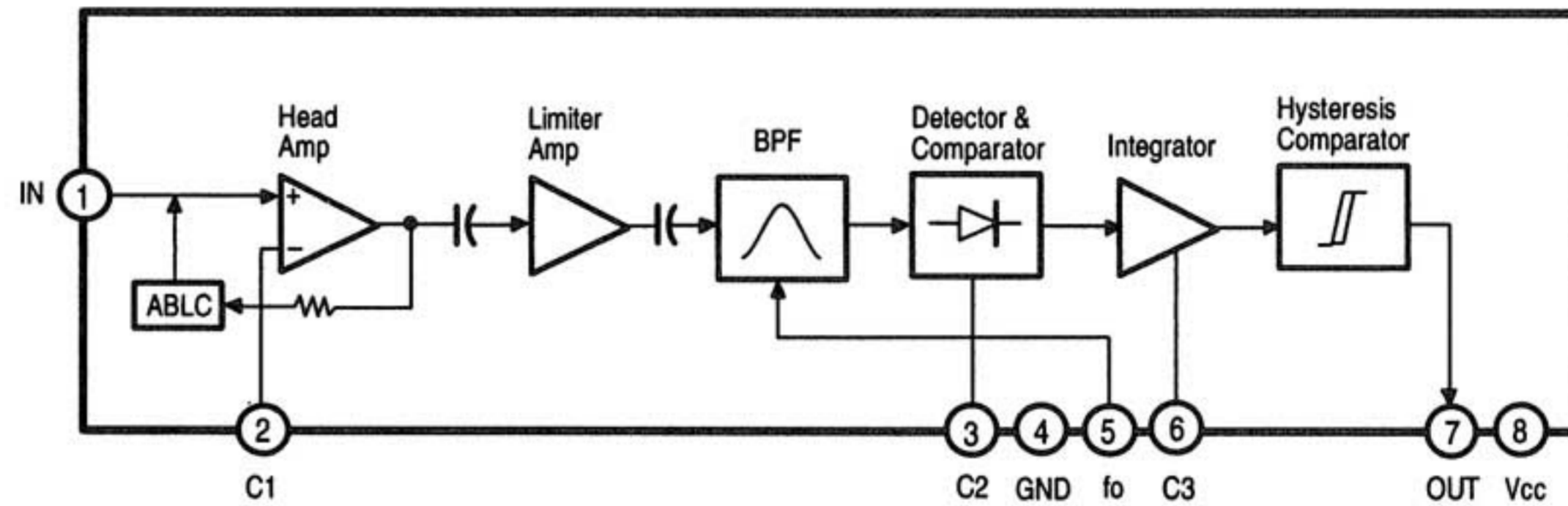
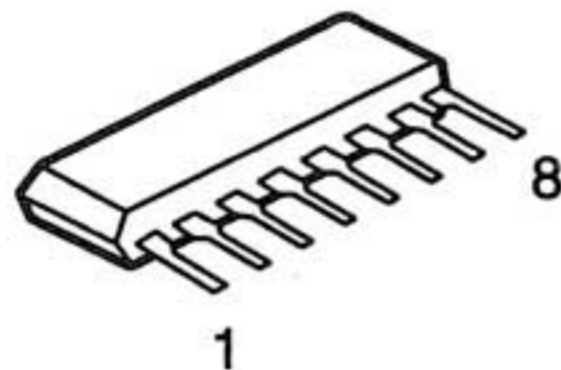


A	B	E	MONITOR OUT	C	D	E	V OUT 1	C	D	E	V OUT 2
L	L	*	IN 1	L	L	*	—	L	L	*	IN 1
H	L	*	IN 2	H	L	*	IN 2	H	L	*	—
L	H	*	IN 3	L	H	*	IN 3	L	H	*	IN 3
H	H	L	IN 4	H	H	L	IN 4	H	H	L	IN 4
H	H	H	IN 5	H	H	H	IN 5	H	H	H	IN 5

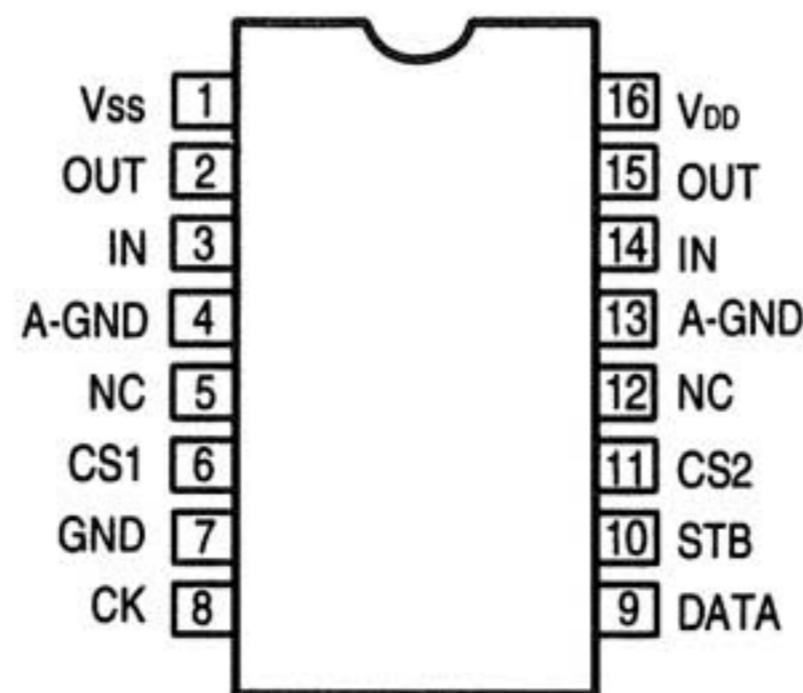
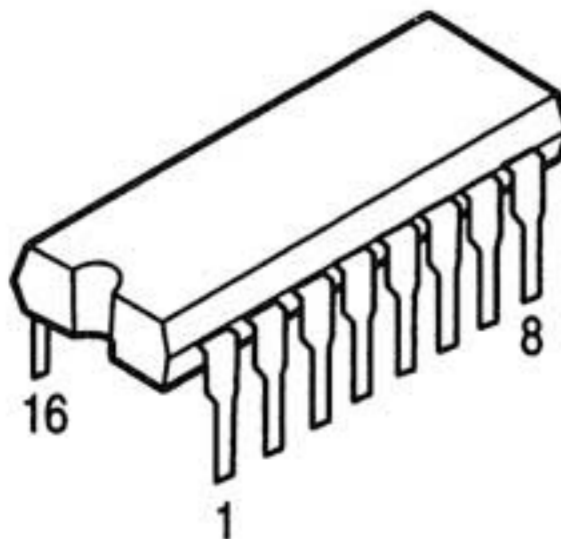
Note 1: * mark means that feasible for either H or L.

Note 2: Each input terminal is provided with sink chip clamp.

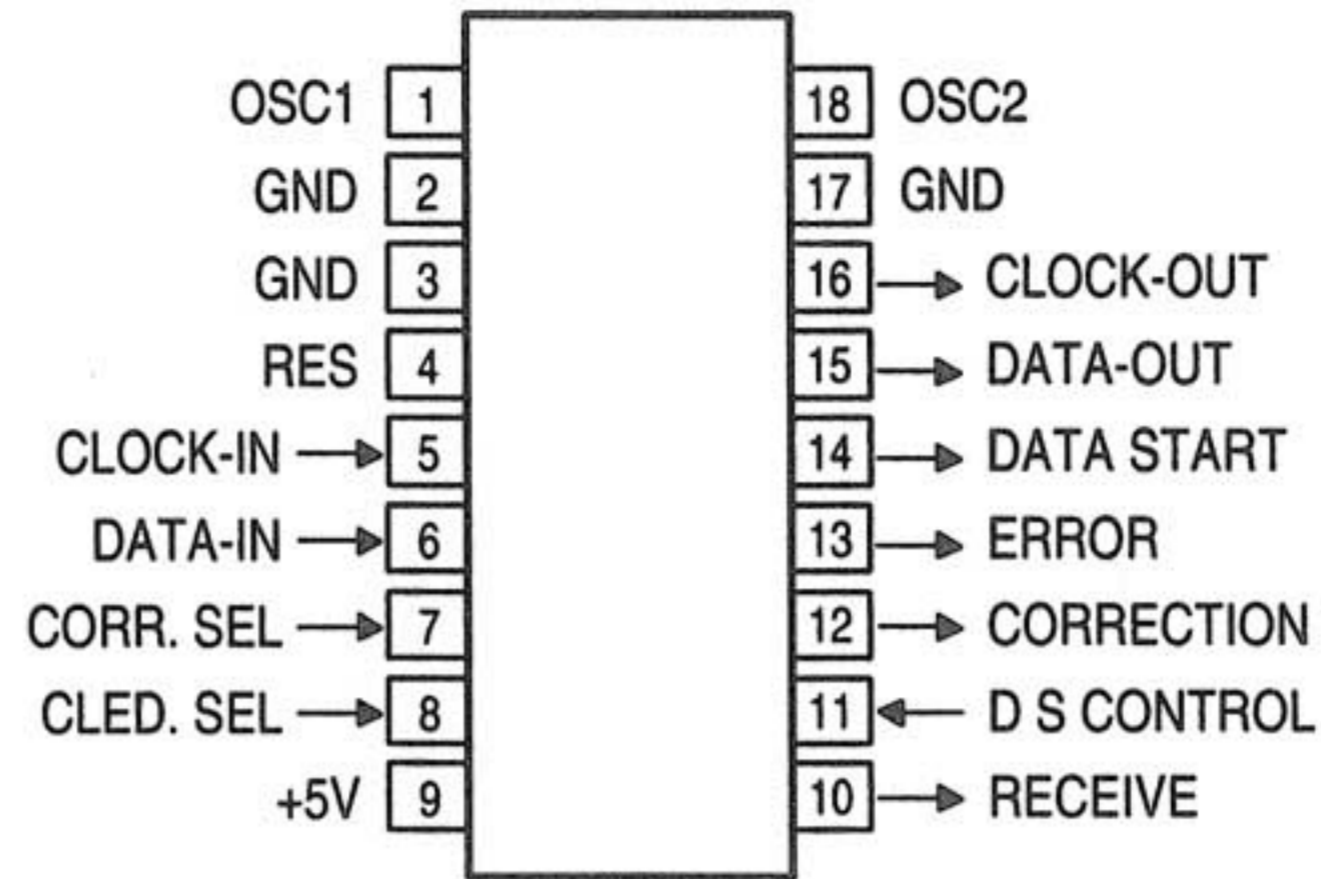
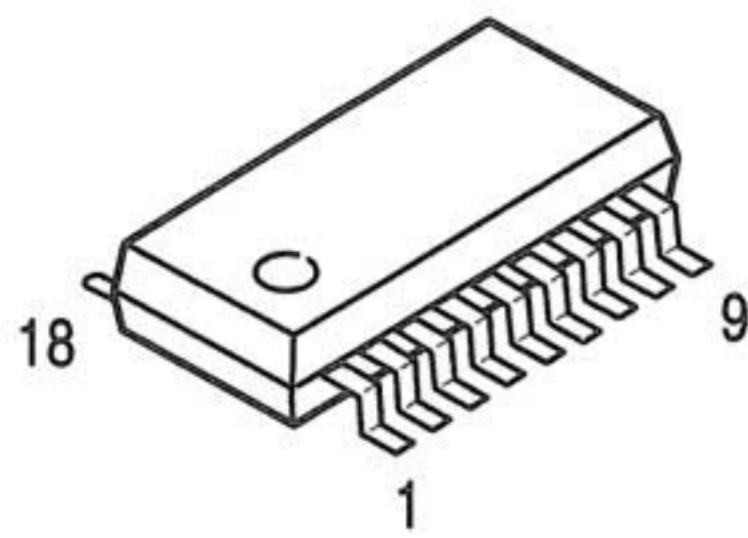
CX20106A (IN: IC809)



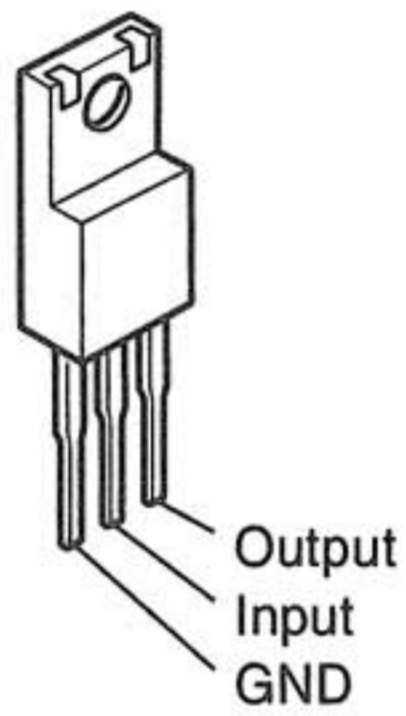
TC9210P (IN: IC303)



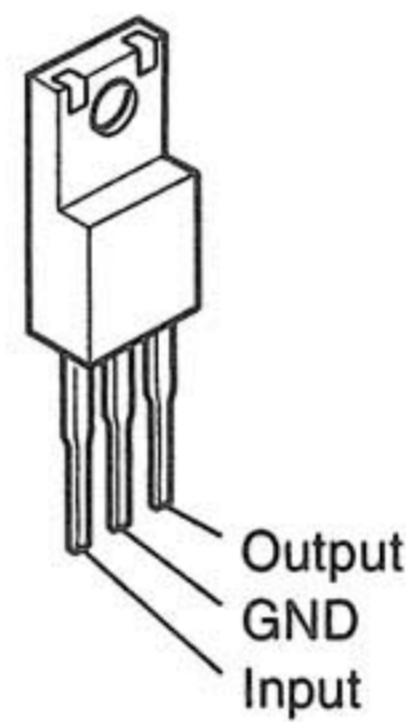
LC7074M (MA: IC702)



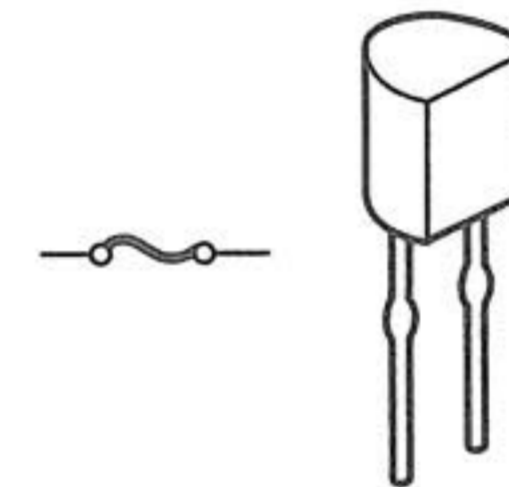
NJM7915FA (IN: IC645)



NJM7806FA (S) (MA: IC803) (IN: IC601)
NJM7812FA (S) (IN: IC005)
NJM7815FA (S) (MA: IC804)

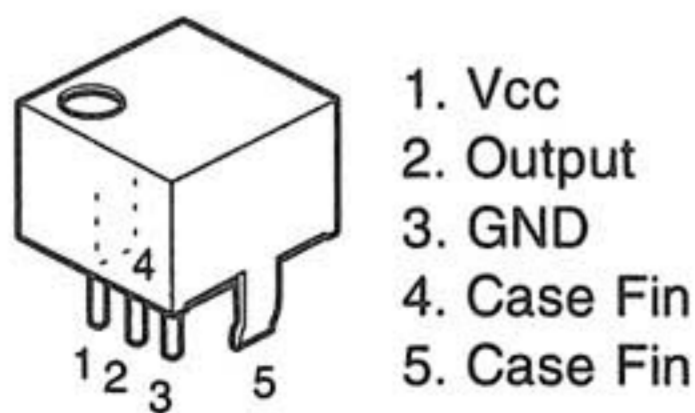


ICP-N15 (MA: IC802) (FL: IC004, 602)

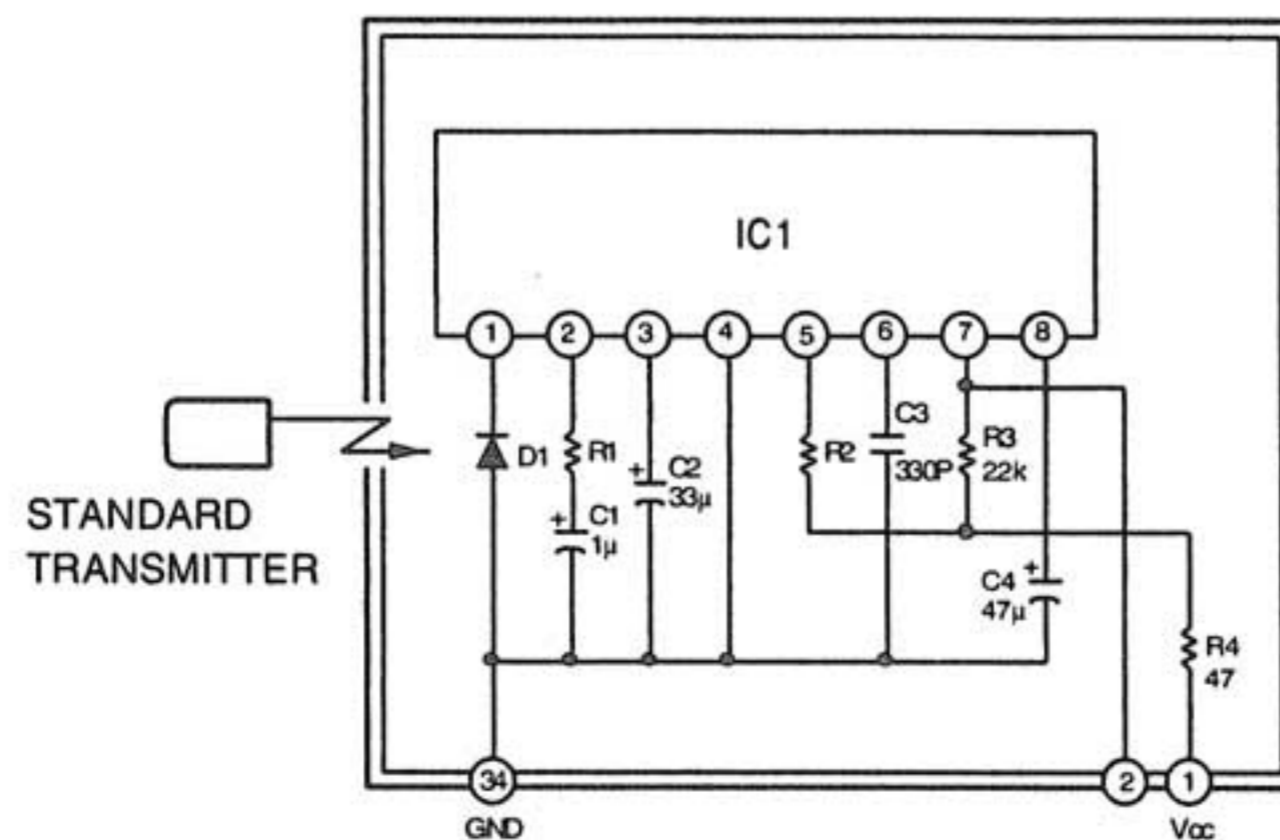


● **OTHERS**

SBX1610-52 (Remote Control Sensor) (FL: IC752)



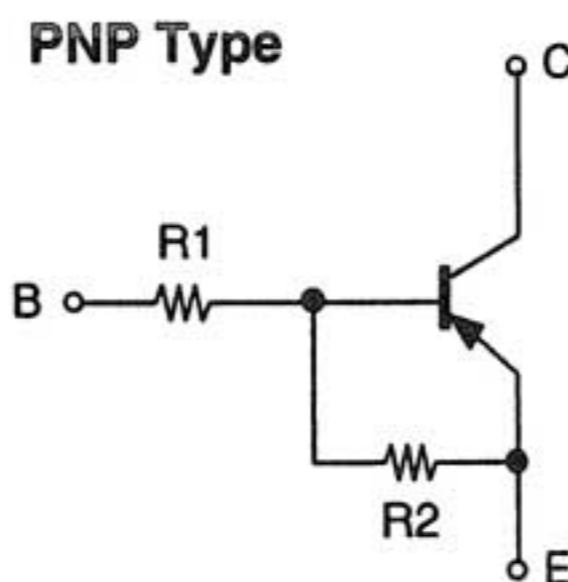
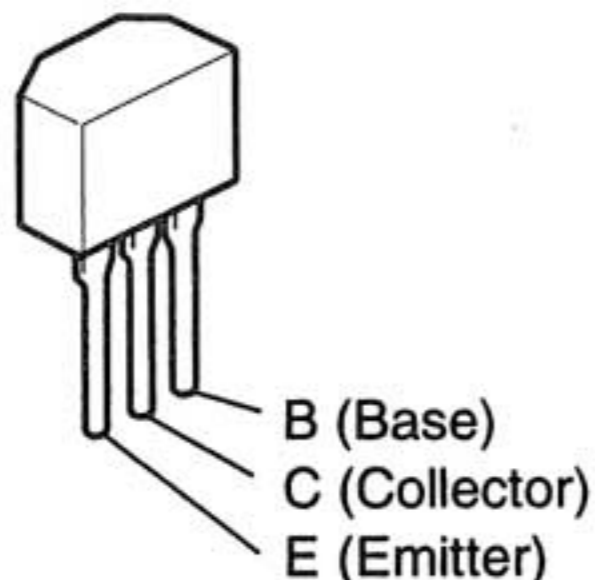
- 1. Vcc
- 2. Output
- 3. GND
- 4. Case Fin
- 5. Case Fin



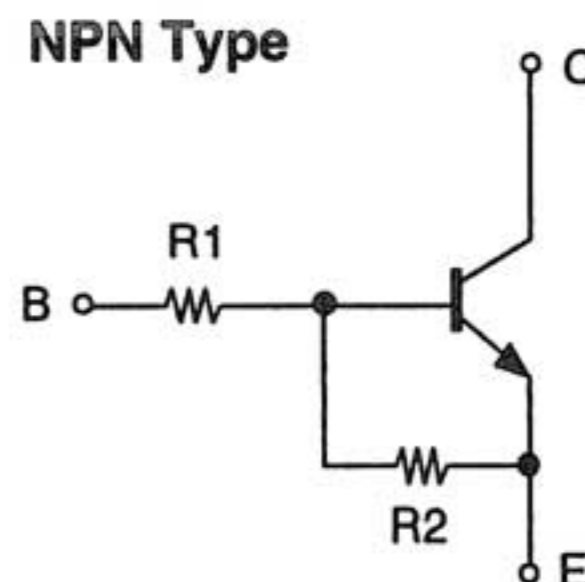
- IC1 : CX20106A Chip
- D1 : PIN Photodiode Chip
- C1,C2,C4 : Aluminum Electrolytic Capacitor
- C3 : SL Characteristic $\pm 5\%$
- R1 : Gain control resistor
- R2 : fo control resistor (Using $\pm 1\%$)
- R (Other than above items) : $\pm 5\%$

● TRANSISTORS

DTA114ES
DTA114ES
DTC144ES
DTA144ES
DTC143TS
RN1241(A/B)

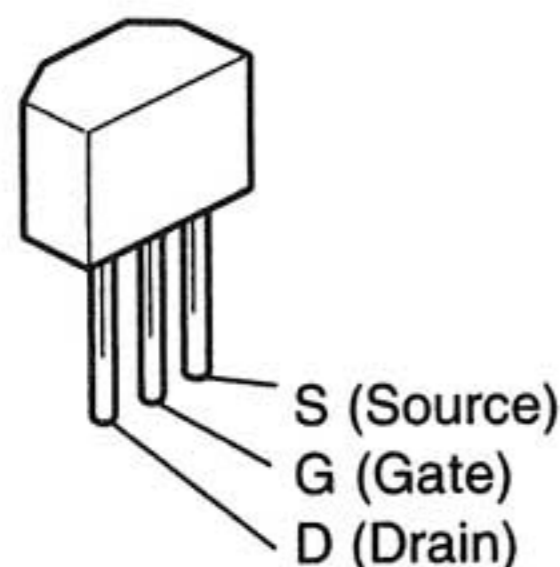


	R1	R2
DTA114ES	10kohm	10kohm
DTA144ES	47kohm	47kohm
DTC143TS	4.7kohm	—

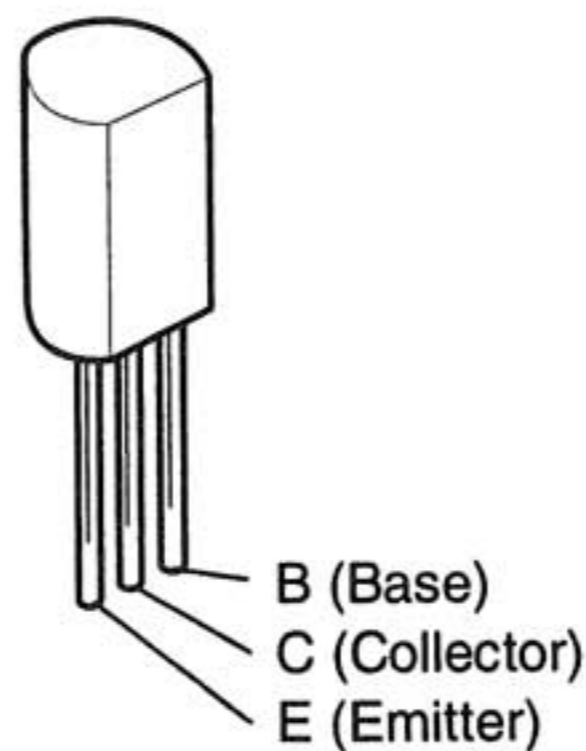


	R1	R2
DTC114ES	10kohm	10kohm
DTC144ES	47kohm	47kohm
RN1241	5.6kohm	—

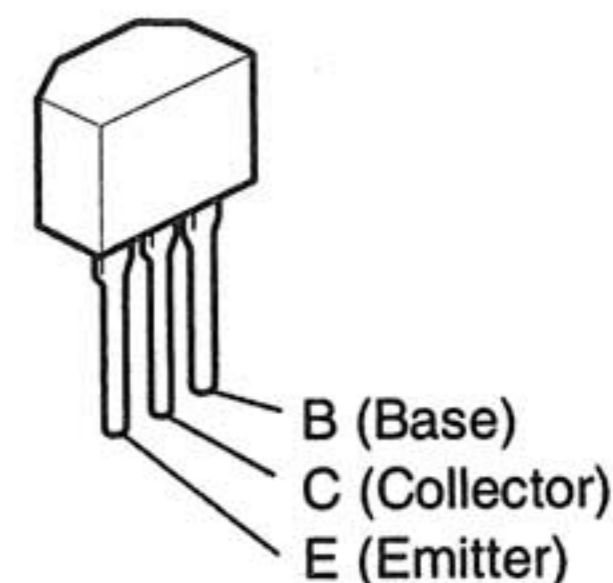
2SK184 (GR)/(BL)



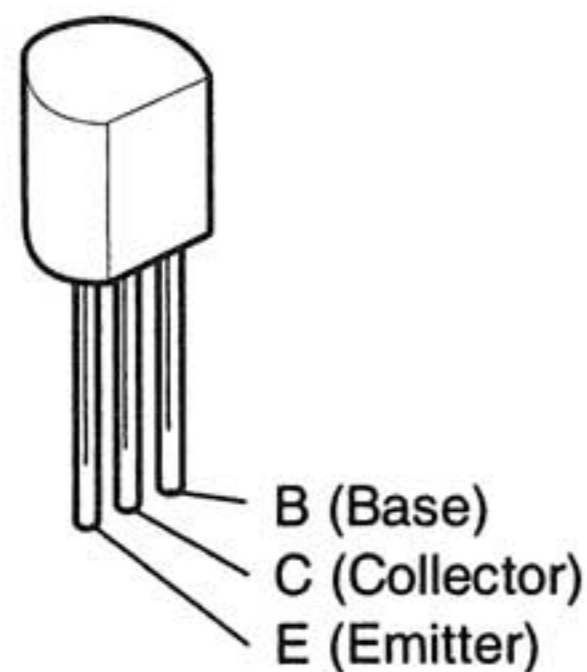
2SB647A (C)
2SB1041 (R)



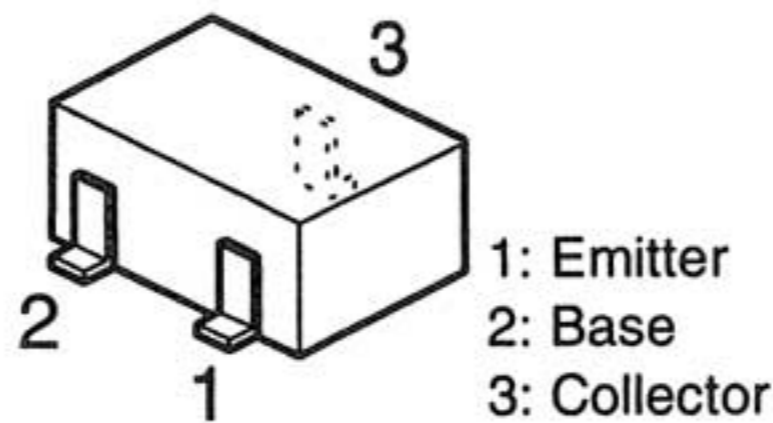
2SA933S (S)
2SC1740S (E)



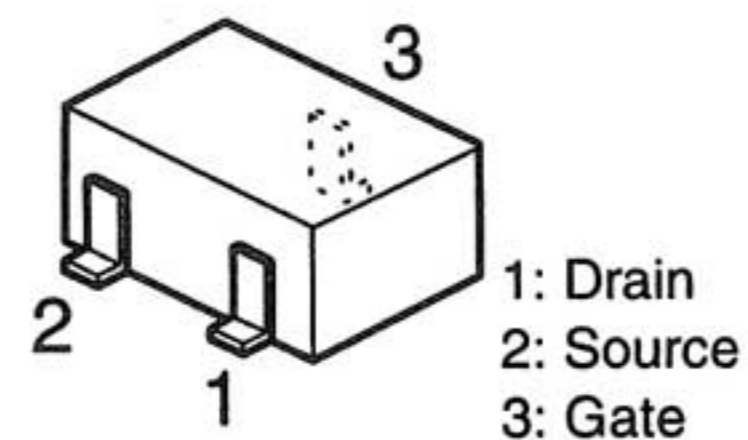
2SA1015 (GR) 2SA970 (BL)
2SC1815 (Y) 2SA988 (E/F)
2SC1841 (E/F)



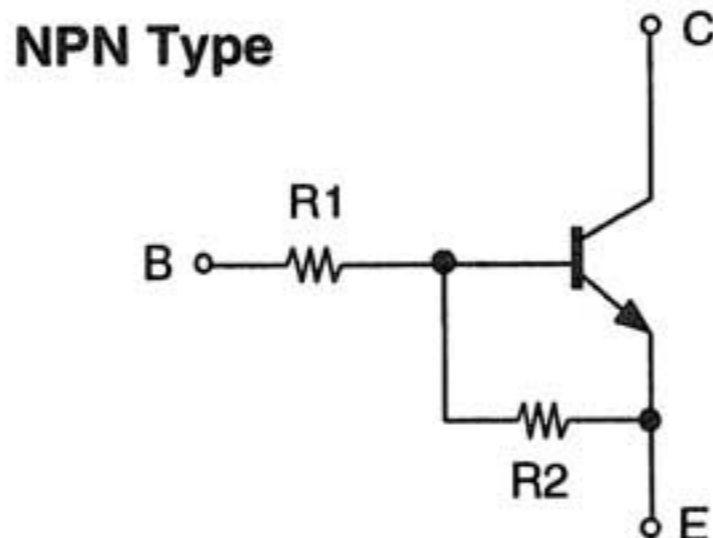
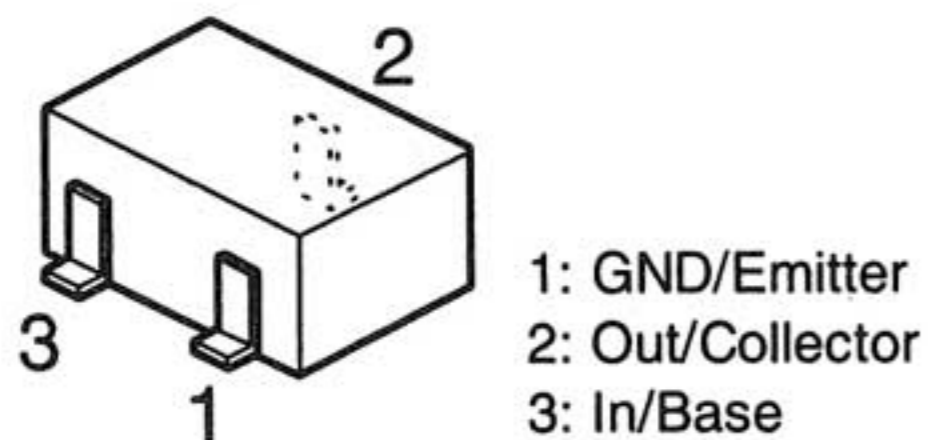
2SC2712 (Y/GR)
2SC2996 (Y)



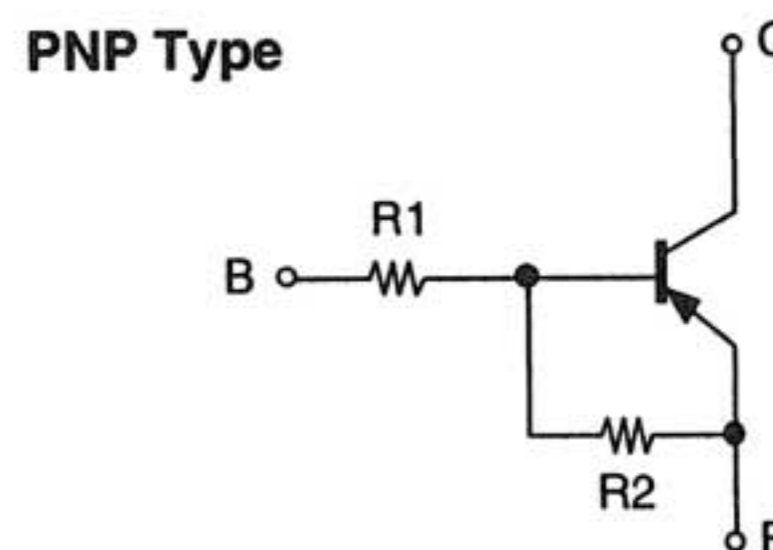
2SK209 (Y/GR)



DTA114TK
DTC144EK
DTC144TK
DTC323TK
RN2402



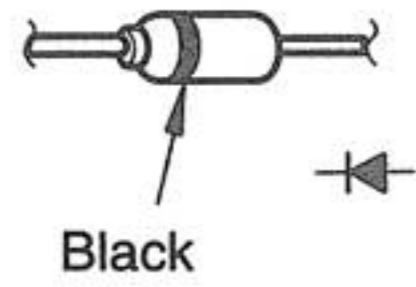
	R1	R2
DTC144EK	47kohm	47kohm
DTC323TK	2.2kohm	—



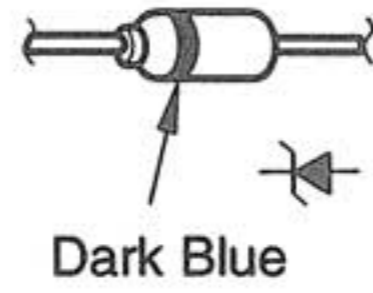
	R1	R2
DTA114TK	10kohm	—
DTC144TK	47kohm	—
RN2402	47kohm	47kohm

● DIODES (included LED)

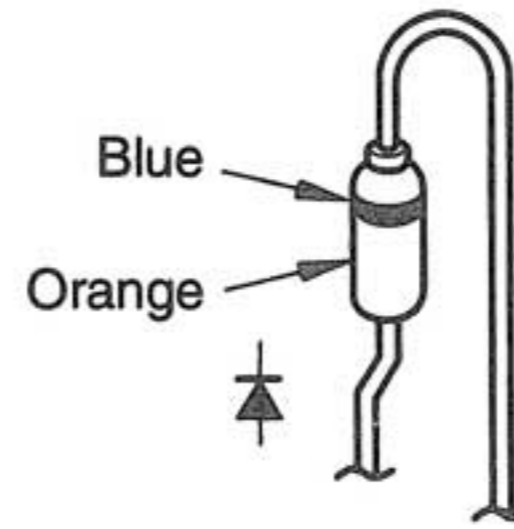
1SS252
1S2471



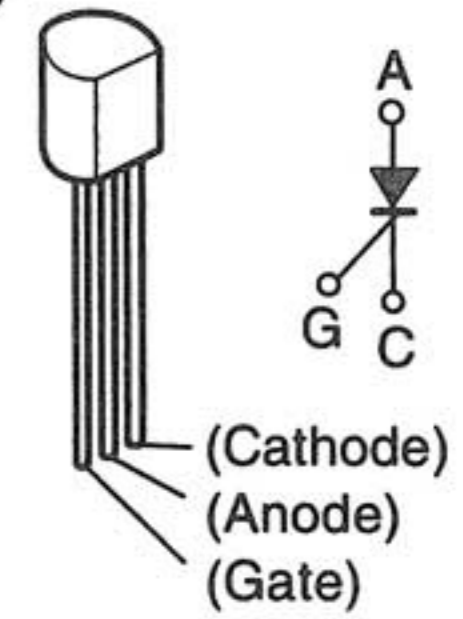
MTZJ3.3A MTZJ8.2A
MTZJ5.1A MTZJ13A
MTZJ7.5A MTZJ18A



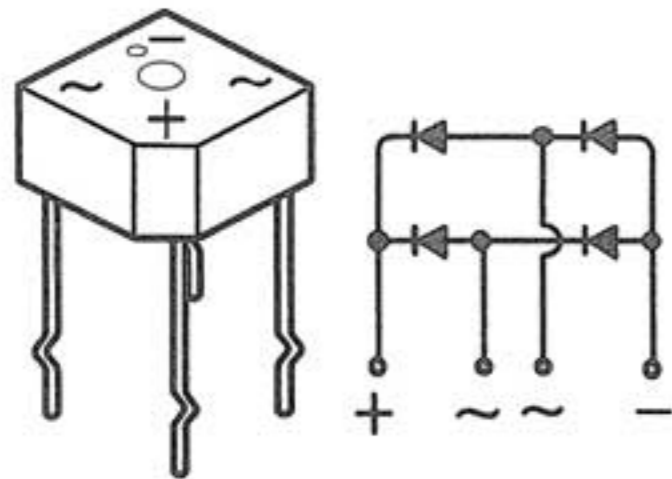
1SR35-200A



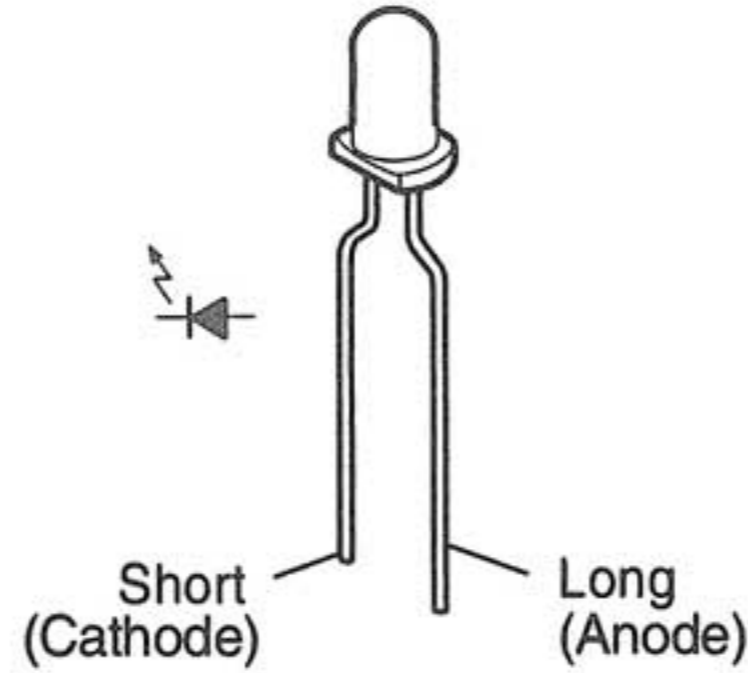
SF0R1A42
(Thyristor)
(MA: SC601)



4D4B42 (MA: D615)



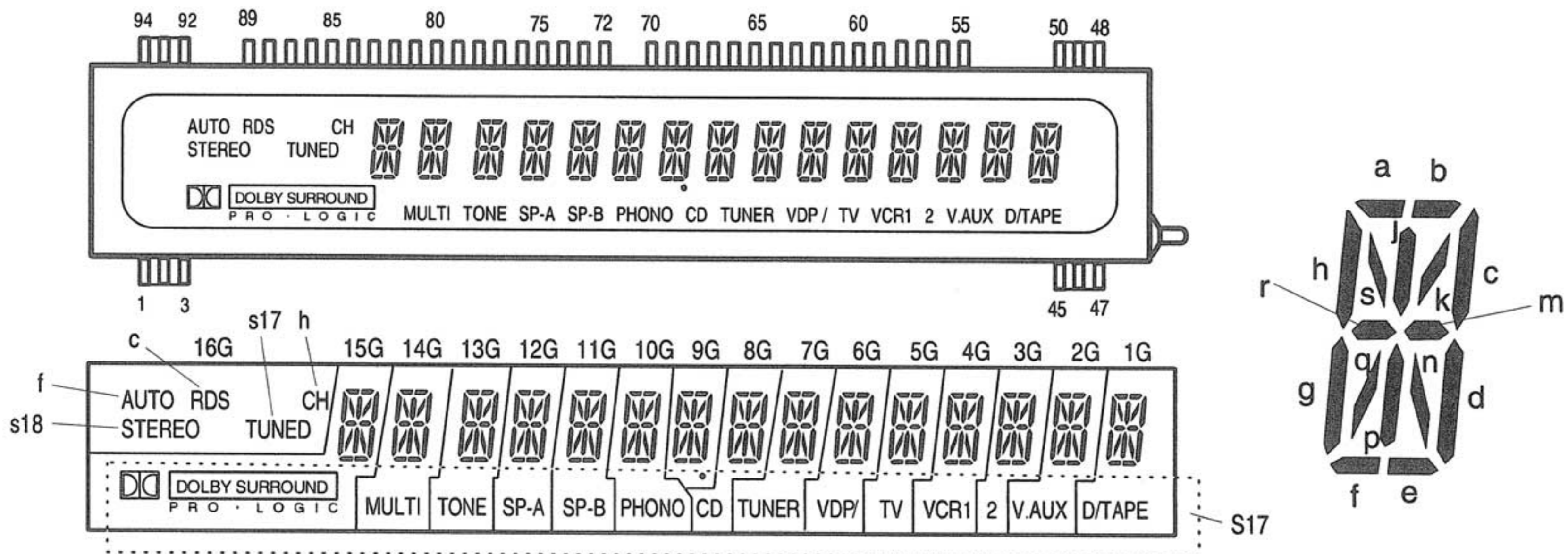
SEL1210S (Red)
(FL: LD751)



● POSISTOR
PTH9M04BB222TS2F333
(IN: P651)



● FL DISPLAY FIP16FM7R (Part No.: 3934156001)(FL751)



(UPPER)

TERMINAL No.	94	93	92	91	90	89	88	87	86	85	84	83	82	81						
ELECTRODE	F1	F1	F1	NP	NP	P	P	P	P	P	P	P	P	P						
TERMINAL No.	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61
ELECTRODE	P	P	P	P	P	P	P	P	P	NP	16G	15G	14G	13G	12G	11G	10G	9G	8G	7G
TERMINAL No.								60	59	58	57	56	55	54	53	52	51	50	49	48
ELECTRODE								6G	5G	4G	3G	2G	1G	NP	NP	NP	NP	F2	F2	F2

(LOWER)

TERMINAL No.								35	36	37	38	39	40	41	42	43	44	45	46	47
ELECTRODE								NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	F2	F2	F2
TERMINAL No.	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
ELECTRODE	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
TERMINAL No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
ELECTRODE	F1	F1	F1	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP						

Notes: F: Filament G: Grid A: Anode NP: No Pin

NOTE FOR PARTS LIST

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

WARNING:

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

● Resistors

Ex.: **RN** **14K** **2E** **182** **G** **FR**
 Type Shape and performance Power Resist-ance Allowable error Others

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

*** Resistance**

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

• Units: ohm

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

• Units: ohm

● Capacitors

Ex.: **CE** **04W** **1H** **2R2** **M** **BP**
 Type Shape and performance Dielectric strength Capacity Allowable error Others

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

*** Capacity (electrolyte only)**

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

• Units: μF.

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

• Units: μF.

*** Capacity (except electrolyte)**

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

• Units: μF.

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

• Units: pF.

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

PRINTED WIRING BOARD PARTS LIST

1U-2743N MAIN UNIT ASS'Y

Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP				RESISTORS GROUP			
IC701	262 2149 004	IC TMP87CM71F-6274		ZD605,606	276 0645 907	Zener Diode MTZJ18A	
IC702	262 1929 908	IC LC7074M-TE-R		ZD701	276 0634 905	Zener Diode MTZJ3.3A	
IC703	262 1701 906	IC :SAA6579T		SC601	279 0016 904	Shyristor SFOR1A42	
TR401~404	271 0094 919	Transistor 2SA970(BL)		RESISTORS GROUP			
TR405~410	273 0235 923	Transistor 2SC1841(E/F)		VR401,402	211 6047 023	Semi fixed 4.7Kohm	V06PB472
TR411,412	273 0198 002	Transistor 2SC1815(Y)		△ R409~412	241 2380 963	Carbon 2.2kohm 1/4W	RD14B2E222JNBS
TR413,414	271 0131 924	Transistor 2SA988(E/F)		△ R413,414	241 2315 967	Carbon 68ohm 1/4W(Fuse)	RD14B2E680GFBS
TR415,416	272 0053 908	Transistor 2SB647A(C)		△ R421~424	241 2377 976	Carbon 130ohm 1/4W	RD14B2E131JNBS
TR417,418	271 0240 006	Transistor 2SA1491(O/P/Y)(Z)		△ R427,428	241 2381 904	Carbon 3.3kohm 1/4W	RD14B2E332JNBS
TR421,422	273 0389 002	Transistor 2SC3855(O/P/Y)(Z)		△ R431,432	241 2378 920	Carbon 220ohm 1/4W	RD14B2E221JNBS
TR423,424	273 0235 923	Transistor 2SC1841(E/F)		△ R433~440	244 2043 982	Metallic 0.22ohm 1W	RS14B3AR22JNBS(S)
TR427	271 0131 924	Transistor 2SA988(E/F)		△ R445~448	241 2380 950	Carbon 2kohm 1/4W	RD14B2E202JNBS
TR471,472	269 0107 900	Transistor RN1241(A/B)	Built in resistor	△ R449,450	244 2051 987	Metallic 4.7ohm 1W	RS14B3A4R7JNBS(S)
TR488	269 0020 906	Transistor DTC114ES(10K-10K)	Built in resistor	△ R453,454	244 2051 987	Metallic 4.7ohm 1W	RS14B3A4R7JNBS(S)
TR489	269 0046 906	Transistor DTA114ES(10K-10K)	Built in resistor	△ R466~469	244 2051 958	Metallic 220ohm 1W	RS14B3A221JNBS(S)
TR490	269 0020 906	Transistor DTC114ES(10K-10K)	Built in resistor				
TR602,603	273 0388 906	Transistor 2SC1740S(E)		△ R552	241 2377 963	Carbon 120ohm 1/4W	RD14B2E121JNBS
TR605,606	273 0388 906	Transistor 2SC1740S(E)		△ R554	241 2377 963	Carbon 120ohm 1/4W	RD14B2E121JNBS
TR607	271 0192 905	Transistor 2SA933S(S)					
TR608	273 0388 906	Transistor 2SC1740S(E)		△ R611	241 2377 963	Carbon 120ohm 1/4W	RD14B2E121JNBS
TR609	271 0192 905	Transistor 2SA933S(S)		△ R612	244 2051 974	Metallic 1kohm 1W	RS14B3A102JNBS(S)
TR610	273 0388 906	Transistor 2SC1740S(E)		△ R621	244 2050 988	Metallic 2kohm 1W	RS14B3A221JNBS(S)
TR615	272 0131 901	Transistor 2SB1041(R)		△ R626	241 2376 964	Carbon 47ohm 1/4W	RD14B2E470JNBS
TR630	271 0192 905	Transistor 2SA933S(S)		△ R635	244 2064 958	Metallic 0.33ohm 1W	RS14B3AR33JNBS(S)
TR631	273 0388 906	Transistor 2SC1740S(E)		△ R636~638	244 2043 982	Metallic 0.22ohm 1W	RS14B3AR22JNBS(S)
TR632,633	271 0131 924	Transistor 2SA988(E/F)					
TR702	269 0046 906	Transistor DTA114ES(10K-10K)	Built in resistor	△ R709	241 2387 940	Carbon 4.7ohm 1/4W	RD14B2E4R7JNBS
TR703	269 0040 902	Transistor DTC144ES(47K-47K)	Built in resistor				
TR704	273 0388 906	Transistor 2SC1740S(E)		RA701	246 2053 033	Resistor array	RK99==472JP5
TR705	269 0046 906	Transistor DTA114ES(10K-10K)	Built in resistor	CAPACITORS GROUP			
TR705	269 0020 906	Transistor DTC114ES(10K-10K)	Built in resistor	C401,402	254 4260 980	Electrolytic 10μF/50V	CE04W1H100M
				C403,404	253 1179 945	Ceramic 220pF/50V	CK45B1H221K
D401~406	276 0616 907	Diode 1SS252		C405,406	253 1179 987	Ceramic 470pF/50V	CK45B1H471K
D407~410	276 0619 904	Diode 1S2471		C407,408	255 4222 963	Film 3300pF/50V	CQ92M1H332J(MRZ)
D411,412	276 0616 907	Diode 1SS252		C409,410	254 4256 949	Electrolytic 100μF/25V	CE04W1E101M
D551,552	276 0616 907	Diode 1SS252		△ C411,412	253 4474 906	Ceramic 15pF/500V	CC45SL2H150J
D602,603	276 0616 907	Diode 1SS252		C413,414	253 4536 941	Ceramic 15pF/50V	CC45SL1H150J
D615	276 0424 005	Diode 4D4B42(LC1)		C415,416	255 4223 920	Film 0.01μF/50V	CQ92M1H103J(MRZ)
D630	276 0616 907	Diode 1SS252		C417,418	255 4222 947	Film 2200pF/50V	CQ92M1H222J(MRZ)
D704	276 0616 907	Diode 1SS252		C419,420	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
D705	276 0619 904	Diode 1S2471		C421,422	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
D706~708	276 0616 907	Diode 1SS252		△ C423,424	253 1128 909	Ceramic 220pF/500V	CC45B2H221K
ZD601	276 0644 911	Zener Diode MTZJ7.5A		C425,426	255 4223 920	Film 0.01μF/50V	CQ92M1H103J(MRZ)
				C427,428	254 4262 917	Electrolytic 10μF/63V	CE04W1J100M
				C429,430	256 1042 903	Film 0.1μF/250V	CF93A2E104K
				C431,432	254 4262 917	Electrolytic 10μF/63V	CE04W1J100M

Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks
C433,434	256 1042 903	Film 0.1μF/250V	CF93A2E104K	CN8C,8E	205 0535 002	8P connector base	RY-12W CST4.00MGW-TF01 DCRHT4.00M L=10
C437	255 4223 920	Film 0.01μF/50V	CQ92M1H103J(MRZ)	CN8D	205 0343 087	8P connector base(KR-PH)	
C471,472	254 4260 980	Electrolytic 10μF/50V	CE04W1H100M	CN9B	205 0535 015	9P connector base	
C496	253 9039 906	Ceramic 0.1μF/25V	CK45=1E104Z	L401,402	235 0104 007	Inducter (1MHz)	
C555,556	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z	L701	235 0060 989	Inducter(121)	
C601	254 4260 993	Electrolytic 22μF/50V	CE04W1H220M	RL551,552	214 9003 005	Relay	
C602	254 4250 945	Electrolytic 330μF/6.3V	CE04W0J331M	RL602	214 0127 003	Relay	
C603	254 4261 905	Electrolytic 33μF/50V	CE04W1H330M	XL701	399 0178 007	Crystal	
C605	254 4260 980	Electrolytic 10μF/50V	CE04W1H100M	XL702	399 0191 903	Resonator	
C606	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M	XL703	399 0261 901	Ceramic oscillator	
C610,611	254 4362 707	Electrolytic 10000μF/63V	CE04W1J103MC(DL)		415 0309 071	PVC tube	
△C612,613	253 1151 905	Ceramic 4700pF/500V	CK45E2H472P		205 0472 013	8P speaker terminal	
C614	256 1042 903	Film 0.1μF/250V	CF93A2E104K		204 8465 003	Head phone jack	
C636,637	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z		203 0526 073	1P contact Ass'y	
C638	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M				
C701,702	253 4537 908	Ceramic 27pF/50V	CC45SL1H270J				
C703	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M				
C704	253 1179 990	Ceramic 560pF/50V	CK45B1H561K				
C705	254 4260 951	Electrolytic 2.2μF/50V	CE04W1H2R2M				
C709	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z				
C710	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M				
C713	254 4250 932	Electrolytic 220μF/6.3V	CE04W0J221M				
C714	256 1034 982	Film 0.12μF/50V	CF93A1H124J				
C715	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M				
C716,717	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z				
C718	254 4250 783	Electrolytic 3300μF/6.3V	CE04W0J332MC				
C719	254 4260 906	Electrolytic 0.1μF/50V	CE04W1H0R1M				
C721	253 1146 907	Ceramic 0.01μF/50V	CK45F1H103Z				
C722	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M				
OTHERS PARTS GROUP							
CN10A	205 0375 000	10P connector base(KR-PH)					
CN11A	204 6469 014	11P PH-SAN connector cord	L=280				
CN11B	205 0806 058	11P connector base (9115)					
CN11C	205 0535 099	11P connector base					
CN13B	205 0375 039	13P connector base(KR-PH)					
CN14A	205 0375 042	14P Connector base(KR-PH)					
CN3A	203 5012 045	3P SAN-PH connector cord	L=560				
CN3A	205 0343 032	3P connector base(KR-PH)					
CN3C	203 5012 032	3P SAN-PH connector cord	L=280				
CN3G	205 0829 035	3P CT connector base					
CN3L,3M	205 0190 036	3P NH connector base					
CN4B	203 6458 006	4P PH-SAN connector cord	L=470				
CN6A	205 0343 061	6P connector base(KR-PH)					
CN6C	205 0696 064	JL connector(BT-E)					
CN7A	205 0696 077	JL connector(BT-E)					
CN7B	205 0343 074	7P connector base(KR-PH)					

