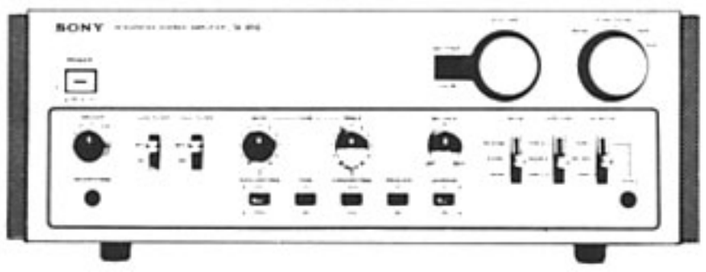
SONY®

INTEGRATED STEREO AMPLIFIER

TA-3650



Owner's Instruction Manual
Mode d'emploi
Bedienungsanleitung
Manual de instrucciones

English

The instruction manual in English applies to two types : one for the United Kingdom and the other for countries other than the U.K.
Before operating, please read this manual completely to become familiar with all the features and capabilities of your new Sony sound unit.
Keep this manual handy for future reference.

TABLE OF CONTENTS

WARNING

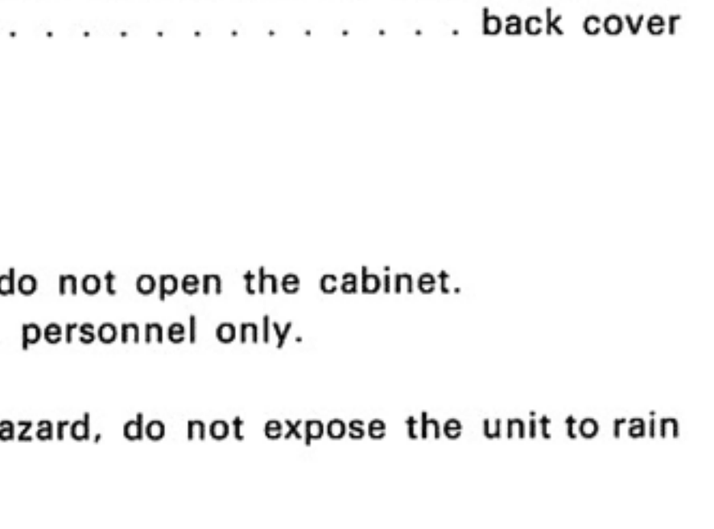
To avoid electrical shock, do not open the cabinet.
Refer servicing to qualified personnel only.

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

UNPACKING

Do not throw away the carton and the associated material ; they will come in handy if you ever have to transport or ship the unit. Inspect your unit immediately after unpacking. If any sign of damage is found, consult your local Sony dealer.

When shipping the unit for repair work or to another location, it should be repacked in the original carton and packing material just as it was originally.



Français

Avant de faire fonctionner l'appareil, lisez attentivement en détail ce manuel pour devenir familier avec toutes les particularités et possibilités de votre nouvelle unité sonore Sony. Conservez ce manuel à portée de main pour toute référence ultérieure.

TABLE DES MATIERES

AVERTISSEMENT

Pour éviter toute électrocution, ne pas ouvrir le coffret. Confier l'entretien uniquement à un personnel qualifié.

Pour éviter tout danger d'incendie ou d'électrocution, ne pas exposer l'appareil à la pluie ou à l'humidité.

DEBALLAGE

Ne pas se débarrasser du carton d'emballage, ni des matériaux qu'il contient. Ils seront très utiles lors de l'expédition ou du transport de l'appareil. Inspecter l'appareil aussitôt après le déballage. Si la moindre anomalie est décelée, consulter le concessionnaire Sony le plus proche.

Pour déplacer l'appareil ou le ré-expédier pour une réparation, employer le carton d'emballage original avec tous les matériaux d'emballage, qui assurent la meilleure protection possible. Tout remettre en place comme il se trouvait à la livraison.

eutsch

Bevor Sie Ihren neuen Sony-Verstärker in Betrieb nehmen, lesen Sie bitte diese Bedienungsanleitung vollständig durch, damit Sie mit den besonderen Einrichtungen und Möglichkeiten vertraut werden.
Bewahren Sie diese Anleitung gut auf, um später jederzeit darin nachschlagen zu können.

INHALTSVERZEICHNIS

VORSICHT

Um einen elektrischen Schlag zu vermeiden, darf das Gehäuse nicht geöffnet werden. Wartungsarbeiten sollten nur vom Fachmann vorgenommen werden.

einen elektrischen Schlag oder Brandgefahr zu vermeiden, darf das Gerät weder Regen noch Feuchtigkeit ausgesetzt werden.

AUSPACKEN

Werfen Sie den Versandkarton und anderes Verpackungsmaterial nicht weg ; sie erweisen sich als praktisch, wenn Sie Ihr Gerät transportieren oder verschiffen müssen. Überprüfen Sie Ihr neues Gerät gleich nach dem Auspacken.
Falls die Anlage beschädigt sein sollte, wenden Sie sich bitte an Ihren Sony-Händler.

Bei Versand zu Reparaturzwecken oder sonstigem Transport sollten Sie es im Originalkarton mit dem ursprünglichen Verpackungsmaterial in gleicher Weise wieder verpacken.

Español

Antes de operar, lea por favor este manual completamente para familiarizarse con todas las características y capacidades de su amplificador nuevo de Sony.
Conserve este manual para las referencias futuras.

INDICE

CUIDADO

Para evitar choques eléctricos, no abra la caja. Demande los servicios sólo al personal calificado.

Para evitar peligros de incendio o choque eléctrico, no exponga el aparato a la lluvia ni a la humedad.

DESEMPAQUE

No bote el cartón ni los demás materiales de empaque ; estos serán de uso obligado cuando alguna vez haya usted de empacar o transportar su aparato. Inspeccione inmediatamente su aparato después de desempacarlo.
Si se buscan las señales de daños, consulte al distribuidor local de Sony.

Cuando haya usted de empacar el aparato para la reparación o llevar al otro lugar, debe ser montado el aparato en el cartón y los materiales de empaque como fue empacado anteriormente.

VOLTAGE SELECTION

Before connecting the unit to the power source, check that the voltage selector setting is correct for your power supply. If the selector must be reset, change the setting as follows.
WARNING: Check that the ac power cord is disconnected.
❶ Loosen the arrow-marked screw on the selector cover, and remove the other screw.
❷ Unplug the selector and reinsert it firmly with the arrow mark pointing to the proper voltage figure.
❸ Replace the selector cover.

ADAPTATION DE LA TENSION

Avant l'utilisation, vérifier que le sélecteur de tension a bien été ajusté à la tension du secteur local. Le sélecteur peut être réglé comme suit:
ATTENTION: Vérifier que le cordon d'alimentation est débranché.
❶ Desserrer la vis marquée d'une flèche du couvercle du sélecteur et enlever l'autre vis.
❷ Retirer le sélecteur, et le réinsérer fermement, la flèche dirigée sur le nombre correspondant à la tension adéquate.
❸ Remettre en place le couvercle du sélecteur.

SPANNUNGSEINSTELLUNG

Vor dem Netzanschluß vergewissern Sie sich, daß der Spannungswähler richtig auf Ihre örtliche Netzspannung eingestellt ist. Falls die Umstellung notwendig ist, ist der Wähler wie folgt umgestellt zu werden.
VORSICHT: Vergewissern Sie sich, daß der Netzstecker abgezogen ist.
❶ Lockern Sie die mit einem Pfeil markierte Schraube der Abdeckung des Spannungswählers und nehmen Sie die anderen Schraube ab.
❷ Ziehen Sie den Spannungswähler heraus und setzen Sie ihn erneut so ein, daß die Pfeilmarkierung auf die entsprechende Voltzahl zeigt.
❸ Befestigen Sie wieder die Abdeckung.

SELECCION DE TENSION

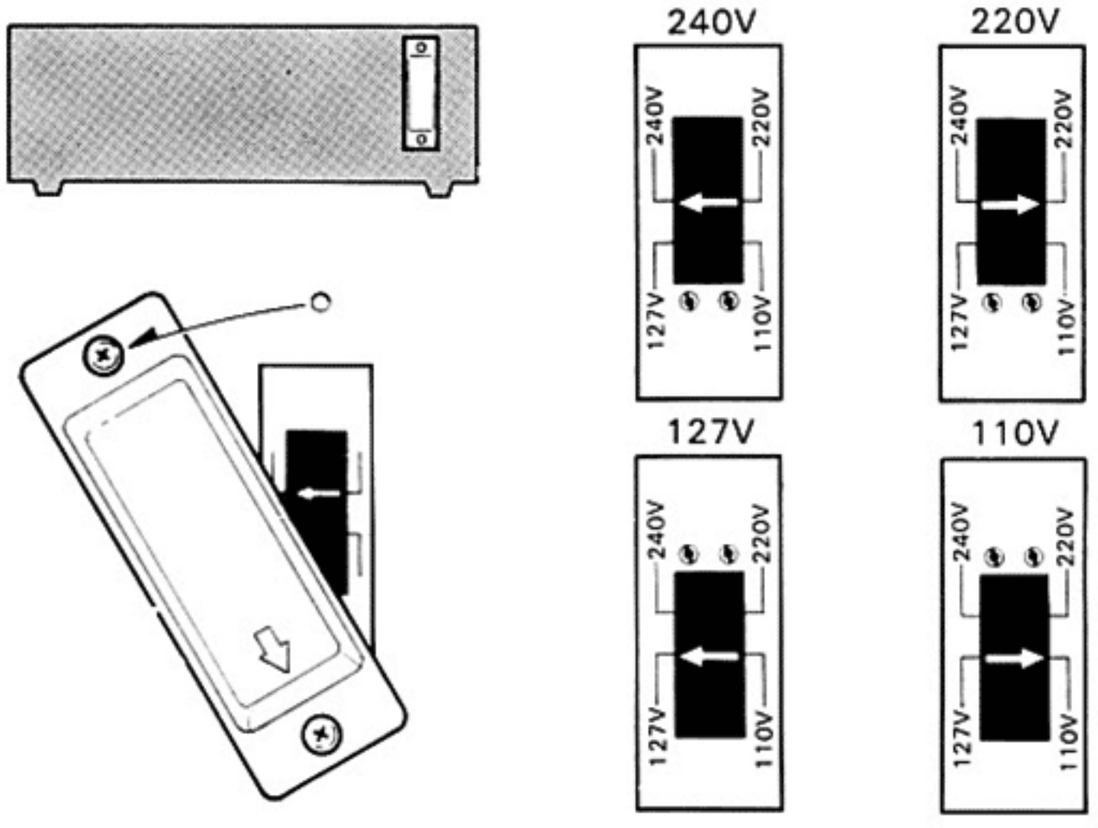
Antes de conectar el amplificador a la tomacorriente, compruebe que está ajustado el selector de tensión a la tensión en su área. Si es necesario reajustar, cambie la tensión de operación como sigue.
AVISO: Asegúrese que se queda desconectado el cordón de alimentación desde la tomacorriente.
❶ Suelte el tornillo marcado con flecha situado sobre la cubierta de selector, y remueva el otro tornillo.
❷ Desenchufe el selector y insértelo firmemente con la marca de flecha mirando con la figura apropiado de tensión.
❸ Vuelve a colocar la cubierta de selector.

FOR THE CUSTOMER IN THE UNITED KINGDOM

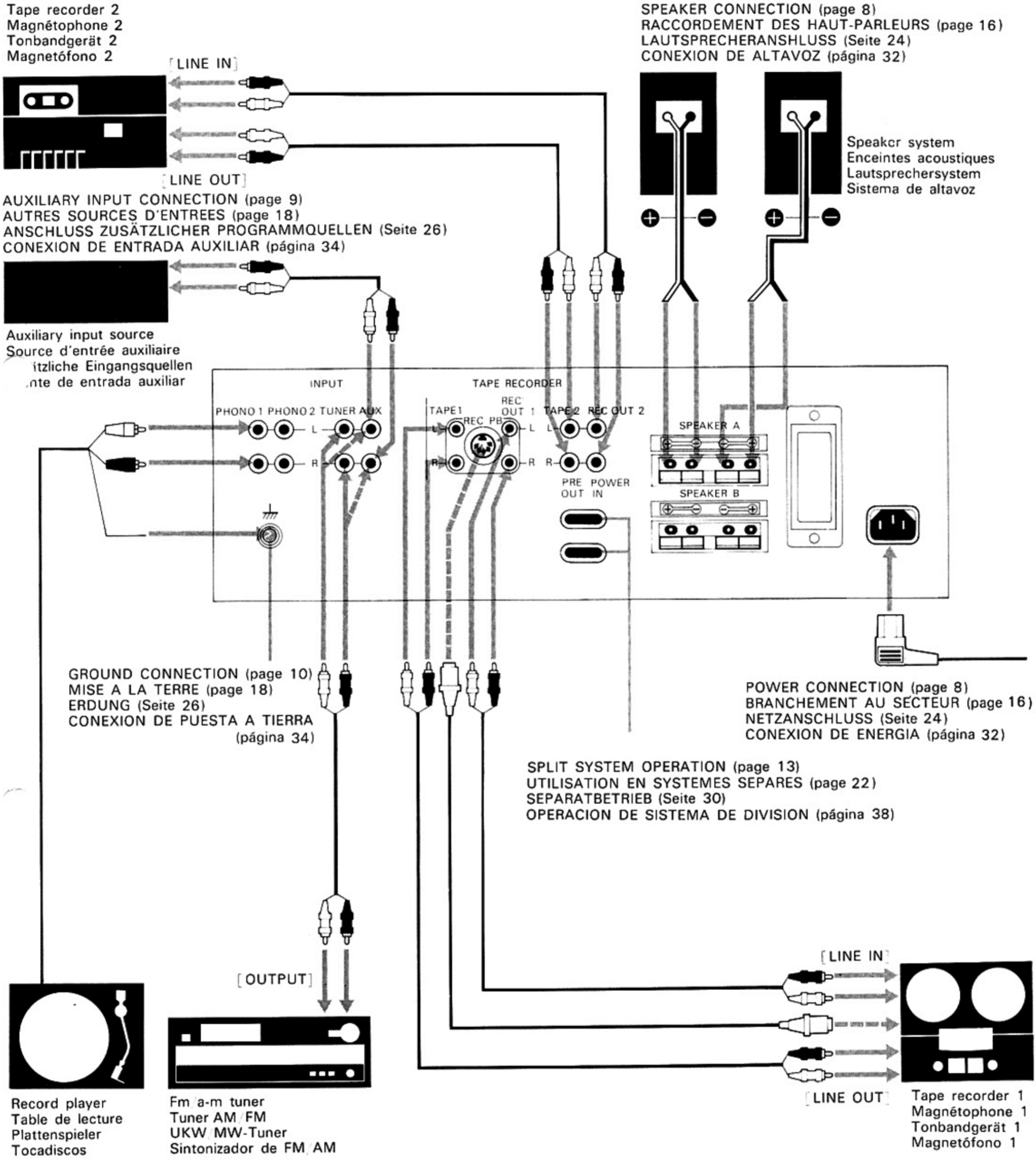
This apparatus must be earthed at the terminals in your 3-pin plug as follows:
IMPORTANT
The wires in this mains lead are coloured in accordance with following code.

Green-and-yellow	Earth (safety earth)
Blue	Neutral
Brown	Live

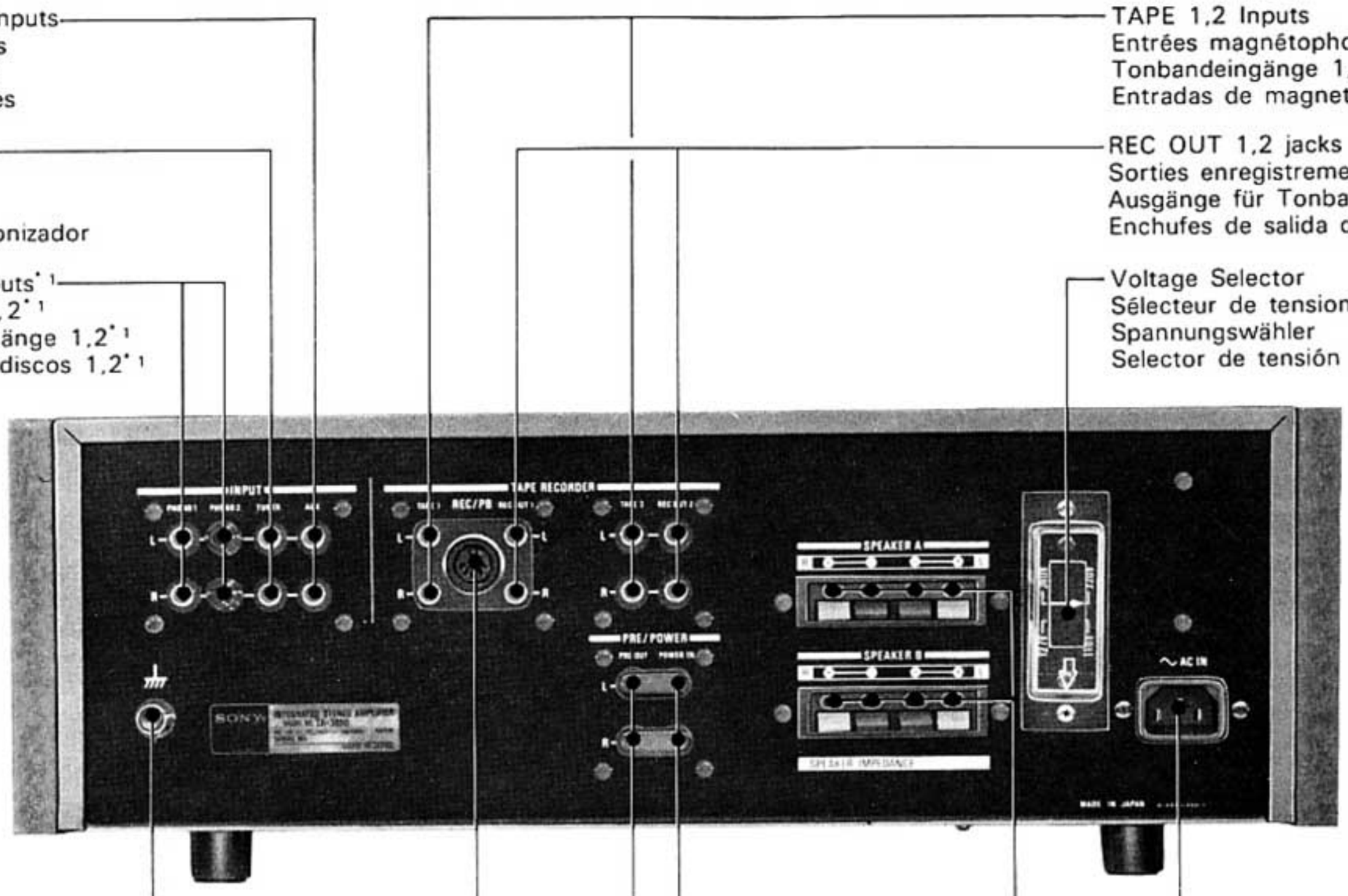
As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured makings identifying the terminals in your plug, proceed as follows:
The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked with the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow.
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black. The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.



CONNECTION DIAGRAM/SCHEMA DE CONNEXION/ ANSCHLUSSPLAN/ESQUEMA DE CONEXION



LOCATION OF EACH PART/EMPLACEMENT DES COMMANDES
LAGE DER BEDIENUNGSELEMENTE/COLOCACION DE CADA PARTE



Auxiliary [AUX] Inputs
Entrées auxiliaires
Reserveeingänge
Entradas auxiliares

TUNER Inputs
Entrées tuner
Tunereingänge
Entradas de sintonizador

PHONO 1, 2 Inputs*1
Entrées phono 1,2*1
Plattenspielereingänge 1,2*1
Entradas de tocadiscos 1,2*1

TAPE 1,2 Inputs
Entrées magnétophone 1,2
Tonbandeingänge 1,2
Entradas de magnetófono 1,2

REC OUT 1,2 jacks
Sorties enregistrement 1,2
Ausgänge für Tonbandaufnahme 1,2
Enchufes de salida de grabación 1,2

Voltage Selector
Sélecteur de tension
Spannungswähler
Selector de tensión

Ground Terminal
Borne de terre
Erdungsklemme
Terminal de puesta a tierra

Record/Playback [REC/PB] Connector
Connecteur DIN d'enregistrement/écoute
DIN-Anschluß für Aufnahme/Wiedergabe
Enchufe de grabación/reproducción

Preamplifier Outputs [PRE OUT]
Sorties préamplificateur
Vorverstärker-Ausgänge
Salida desde el preamplificador

Power Amplifier Inputs [POWER IN]
Entrées amplificateur de puissance
Endverstärker-Eingänge
Entrada al amplificador de potencia

AC INput
Prise d'alimentation CA
Netzanschlußbuchse
Entradas de energia de C.A.

SPEAKER A,B Terminals
Bornes de haut-parleur A,B
Lautsprecheranschlüsse A,B
Terminales de altavoz A,B

Jumper plugs
For normal operation, connect the jumper plugs between the POWER IN and PRE OUT jacks.

Fiches volantes
Pour l'utilisation normale, brancher les fiches volantes sur les prises [POWER IN] et [PRE OUT].

Steckbügel
Für Normalbetrieb müssen End- und Vorverstärkeranschlüsse [POWER IN] und [PRE OUT] durch diese Steckbügel verbunden sein.

Enchufes de calbe de empalme
Para la operación ordinaria, conecte los enchufes de cable de empalme entre los enchufes POWER IN y PRE OUT.

*1
Insert the shorting plugs (supplied) for muting the phono terminals when these inputs are not in use.
Never insert the shorting plugs in any output or input jacks other than PHONO.

*1
Enfoncer les fiches de court-circuit (fournies) pour désensibiliser les bornes d'entrée [PHONO], lorsque ces entrées ne sont pas utilisées.
Ne jamais insérer les fiches de court-circuit dans les prises autres que les prises [PHONO].

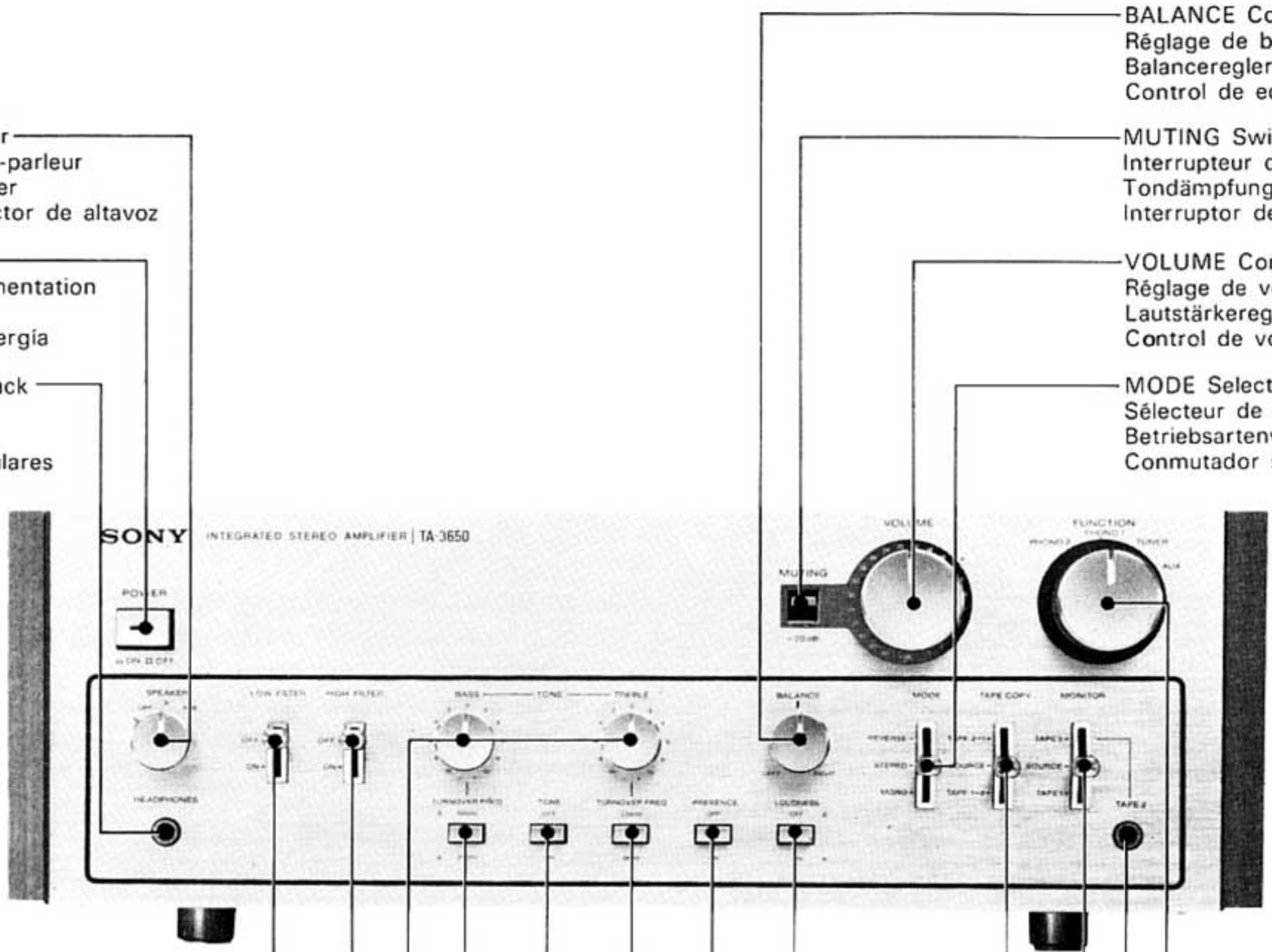
*1
Wenn an den Plattenspielereingänge nichts angeschlossen ist, stecken Sie die mitgelieferten Blindstecker ein, um das Rauschen dieser Eingänge zu unterdrücken.
Stecken Sie die Blindstecker niemals in irgendwelche anderen Ausgangs- oder Eingangsbuchsen außer Plattenspielereingänge [PHONO].

*1
Inserte los enchufes de descarga (suministrados) para silenciar los terminales de tipo fono cuando no están usadas estas entradas.
No jamás inserte los enchufes de descarga en cualquier salida o entrada menos el enchufe PHONO.

SPEAKER Selector
Sélecteur de haut-parleur
Lautsprecherwähler
Conmutador selector de altavoz

POWER Switch
Interrupteur d'alimentation
Netzschalter
Interruptor de energía

HEADPHONES Jack
Prise de casque
Kopfhörerbuchse
Enchufe de auriculares de casco



FILTER Switches
Interrupteur filtre
Filtertasten
Interruptores de filtro

TONE Controls
Réglages de tonalité
Klangregler
Conmutadores de tono

TONE Switch
Interrupteur de tonalité
Klangregelungstaste
Control de tono

TURNOVER FREQuency Switches
Interrupteurs de fréquence d'aiguillage
Frequenztasten
Interruptores de frecuencia de vuelta

PRESENCE Switch
Interrupteur de présence
Präsenztaste
Interruptor de presencia

LOUDNESS Switch
Interrupteur d'accentuation
Lautstärkekonturtaste
Interruptor de alteza

BALANCE Control
Réglage de balance
Balanceregler
Control de equilibrio

MUTING Switch
Interrupteur d'assourdissement
Tondämpfungsschalter
Interruptor de silenciación

VOLUME Control
Réglage de volume
Lautstärkeregler
Control de volumen

MODE Selector
Sélecteur de mode
Betriebsartenwähler
Conmutador selector de modo

FUNCTION Selector
Sélecteur de fonction
Eingangswähler
Conmutador selector de función

TAPE 2 Input
Entrée magnétophone 2
Tonbandeingang 2
Entrada de magnetófono 2

MONITOR Selector
Sélecteur de moniteur
Monitorwähler
Conmutador selector de monitor

TAPE COPY Selector
Sélecteur de copie de bande
Bandkopierwähler
Conmutador selector de duplicación de cinta

PRECAUTIONS

On Safety

- Check that the operating voltage of your unit is identical with the voltage of your local power supply.
- Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not to be used for an extended period of time. To disconnect the cord, pull it out by grasping the plug. Never pull the cord itself.
- Avoid removing the side boards due to safety regulations. If necessary, consult your nearest Sony dealer.

On Installation

- Do not install the unit in a location near heat sources such as radiators or air ducts, or in place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Good air circulation is essential to prevent internal heat build-up in the unit. Place the unit in the location with adequate air circulation. Do not place the unit on soft surfaces such as a rug that would block the ventilation holes on the bottom.
- Do not place anything on top of the cabinet. The top ventilation holes must be unobstructed for the proper operation of the unit and to prolong the life of its components.

On Operation

- Before making program source connections, be sure to turn the power switch off and unplug the unit.
- Do not attempt to test the protection circuits by blocking the ventilation holes or connecting improper loads.
- Never remove the jumper plugs between the PRE OUT and POWER IN jacks except when the unit is separately used as a preamplifier or a power amplifier.
- When the unit is not used, turn the power off, to conserve energy and to extend the useful life of your unit.
- If any problem arises in the operation of this unit, such as no sound from the one or both channels, etc., first follow the procedures suggested in "TROUBLE CHECKS" on page 13. Most problems that arise are the result of a simple misconnection or incorrect operation and can be cleared up easily. If the difficulty still persists, contact your nearest Sony dealer.

SYSTEM CONNECTIONS (See page 5)

CONNECTION NOTES

- To assure correct matching at the input and output terminals of your audio system, refer to the "SPECIFICATIONS" on page 14 or 15, and to the specifications given in the instruction manuals provided with the components you wish to connect to the TA-3650. Generally the output level of a signal source (phono cartridge, tape recorder, etc.) should be equal to or slightly greater than the sensitivity of the corresponding input. Also the output impedance of a signal source should be considerably lower than the impedance of the corresponding input.
For example, a tape recorder having an output level and impedance of 250 mV and 10 k ohms respectively can be connected to the TA-3650 TAPE inputs which are rated at 150 mV and 100 k ohms.
- For all program source input and output connections, use a low-capacitance type shielded cable. Keep the cables as short as practicable, avoiding horizontal runs. Excessively-long runs of over 2 meter (6 feet) tend to reduce the high frequency response, while horizontal runs are susceptible to power hum pickup.
- The cable should be fully inserted into the jacks. A loose connection may cause hum and noise.
- If reconnections are made, be sure to lower all source level controls and turn off the TA-3650 to avoid possible speaker damage.

POWER CONNECTION

Before making any form of power connection, make sure the TA-3650 POWER switch is OFF. First plug the ac power cord into the AC INput, then into a wall outlet.

SPEAKER CONNECTION

The TA-3650 has provision for two pairs of speaker systems—system A and sysytem B, which can be selected either individually or simultaneously by means of the front panel SPEAKER selector.
Note that the speaker systems A and B are series-connected. No sound will be heard if only one of the speaker systems is used with the SPEAKER selector at "A+B" position.

Caution

The TA-3650 is rated at 55 watts minimum RMS per channel with an 8-ohm load from 20 – 20,000 Hz and may deliver an instantaneous peak power much greater than the rated power. Be sure to use speakers with adequate power handling capabilities. Always reduce the volume, when setting down or removing a tonearm or when tuning an fm tuner across the band. Speaker damage may result if these precautions are not observed.

Speaker Impedance

Care should be taken that the speaker impedance should not be less than the lowest indicated value on the TA-3650 rear panel : 8 ohms or more (for the U.K.); 4 ohms (except for the U.K.).

Speaker Cable Type

The type of wire used to connect the speakers to the amplifier is not critical in most home stereo systems.

Common 18-gauge lamp cord (the center conductor of 1 mm in diameter) is fine for short runs. However, 16-gauge (1.3 mm) to 14-gauge (1.6 mm) may be needed for long runs to prevent excessive power losses in the wiring.

Connecting Speaker Cord to the Amplifier

Connect each speaker to the corresponding amplifier speaker terminals i.e. right speaker to the Ⓡ speaker terminals of the amplifier and left speaker to the Ⓛ speaker terminals.

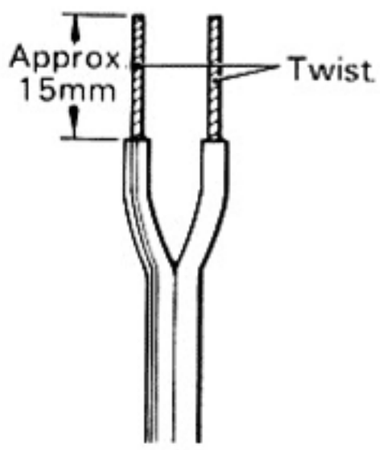
❶ Strip approx. 15 mm (5/8") of outer covering from the speaker cord.

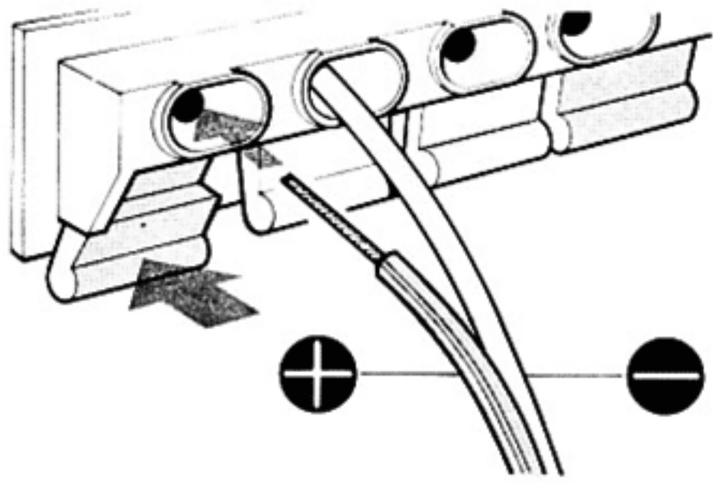
❷ Twist the wire ends for easy insertion. Do not coat with solder.

❸ While depressing the terminal button, fully insert the twisted wires into the slot, and then release the button.

Note that the colored or marked lead of a speaker cord goes to the ⊕ terminal and the remaining one to the ⊖ terminal, to avoid making any incorrect connections.

❹ After these procedures are completed, pull the speaker cord lightly to see if the connection is secure.





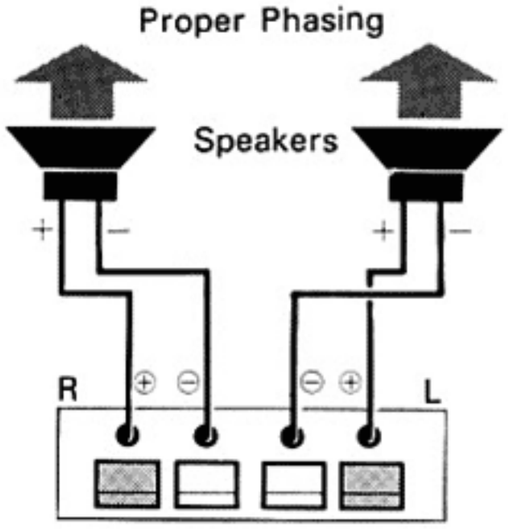
Caution

Do not connect the speaker terminals of one channel in parallel (together) with those of the other channel.

Speaker Phasing

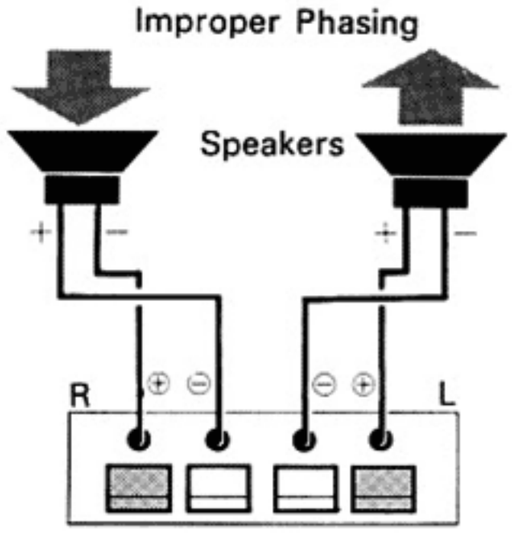
One of the most important requirements for good stereo reproduction is correct speaker phasing (all speaker cones move in the same direction when similarly energized). For correct speaker phasing, all speakers must be connected correctly i.e. all ⊕ terminals of the speakers should be connected to ⊕ terminals of the amplifier, and ⊖ to ⊖. If one connection is reversed, all others must also be changed. Otherwise the speaker phasing becomes reversed so that the bass tones seem to be missing and the position of the instruments becomes obscure.

Proper Phasing



Both speaker cones move in the same direction.

Improper Phasing



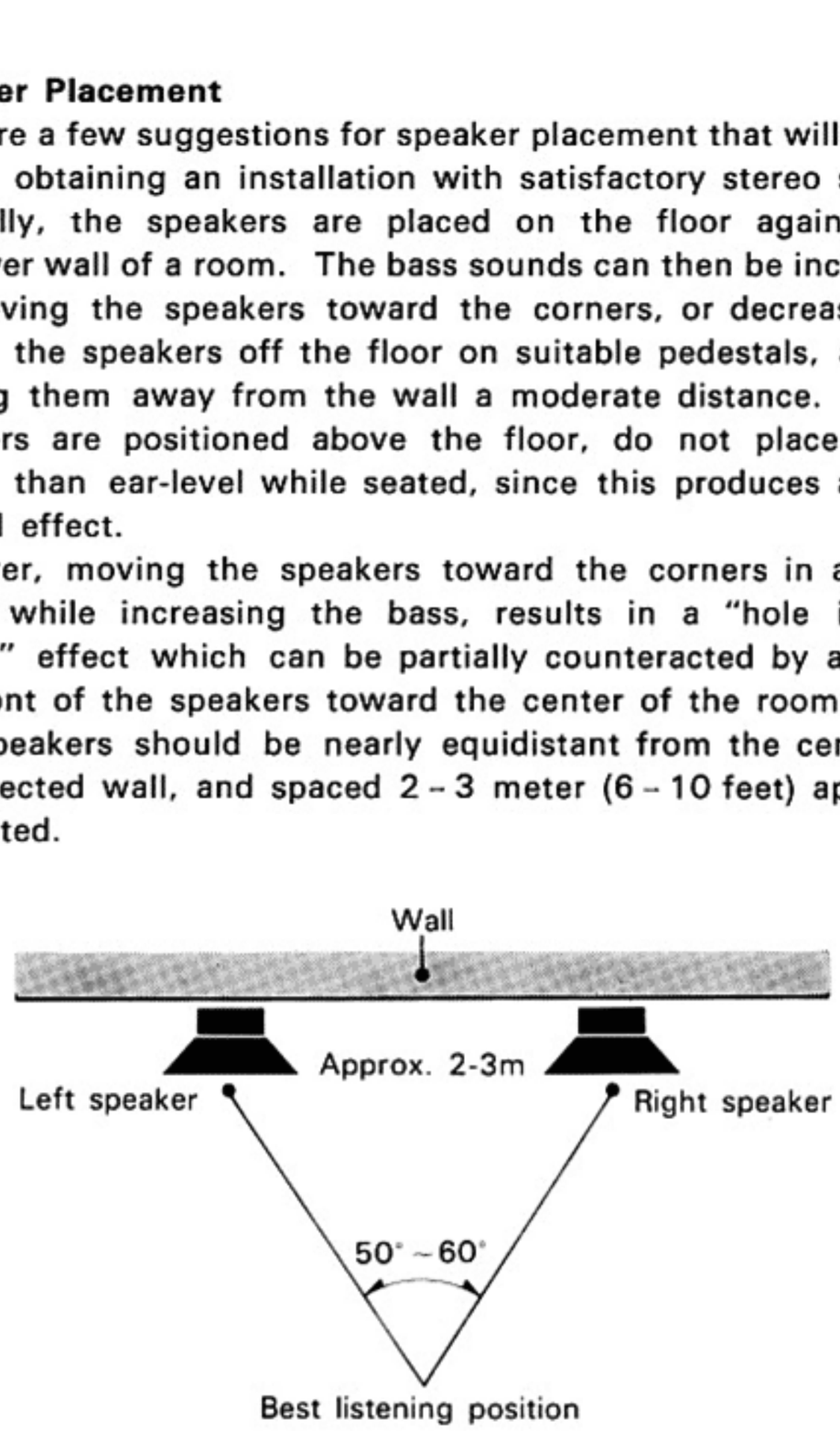
The ⊕ ⊖ connection of right speaker are reversed, so two cones move in the opposite direction.

Speaker Placement

Here are a few suggestions for speaker placement that will assist you in obtaining an installation with satisfactory stereo sound. Normally, the speakers are placed on the floor against the narrower wall of a room. The bass sounds can then be increased by moving the speakers toward the corners, or decreased by raising the speakers off the floor on suitable pedestals, and/or moving them away from the wall a moderate distance. If the speakers are positioned above the floor, do not place them higher than ear-level while seated, since this produces an unnatural effect.

However, moving the speakers toward the corners in a large room, while increasing the bass, results in a "hole in the middle" effect which can be partially counteracted by angling the front of the speakers toward the center of the room.

The speakers should be nearly equidistant from the center of the selected wall, and spaced 2 - 3 meter (6 - 10 feet) apart as illustrated.



Place the right and left speakers in similar acoustic environments, otherwise you will obtain unbalanced sound. For example, placing one speaker near an open door or archway will decrease the apparent bass from that speaker.

Best sound is usually obtained in a room with carpeting on the floor, and having heavy draperies and upholstered furniture. Since each room has its own individual acoustic characteristics, which are a function of its size, construction and furnishings, some experimentation with speaker placement is generally necessary before the correct balance of stereo image and bass response is obtained. This will be time well spent, resulting in your enjoyment of the maximum capabilities of your music system.

DIN CABLE CONNECTION

A DIN connector (indicated REC/PB) can be used as an alternate for the TAPE 1 and REC OUT 1 jacks if your tape recorder is so equipped.

The recording and playback connections can be readily made with a single record/playback (REC/PB) connecting cable such as the Sony RC-2H (optional).

● Be sure to disconnect all cables from the TAPE 1 and REC OUT 1 jacks when the REC/PB connector is used.

AUXILIARY INPUT CONNECTION

The AUX inputs are provided for connecting various input sources such as a cassette tape recorder, additional tuner, record player equipped with a ceramic cartridge and so forth.

OPERATING INSTRUCTIONS

GROUND CONNECTION

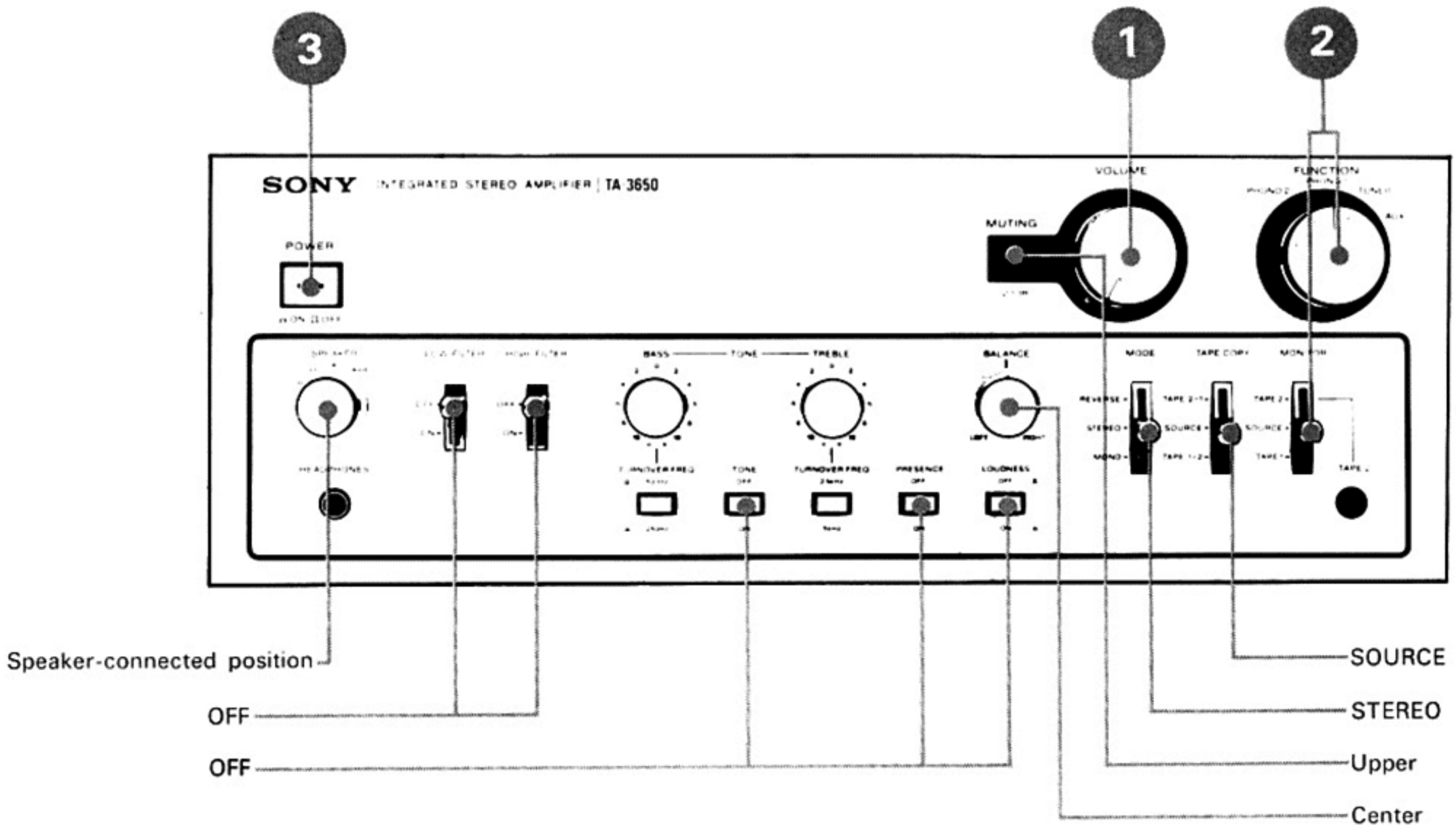
To prevent hum, be sure to connect the ground wire of the record player to the amplifier ground terminal. If hum still exists, it may be helpful to connect the ground terminal directly to earth via a ground rod.

INITIAL OPERATION

As a preliminary to initial operation, check that the POWER switch is released (OFF) and plug the TA-3650 into a suitable power outlet.
Before proceeding to any type of operation, set the controls and switches as shown.
❶ Set the VOLUME control at minimum position (fully counter-clockwise). The MUTING switch is set to its upper position.
❷ Select the desired program source.

Program	MONITOR	FUNCTION
Fm/a-m tuner	SOURCE	TUNER
Record playing		PHONO 1 or 2
Auxiliary source		AUX
Taped program	TAPE 1 or 2	—

❸ Depress the POWER switch to ON.
(A muting circuit activates a relay which provides several seco. delay after switch-on to avoid any annoying "thump" noises when the unit is first turned on.)



SOUND ADJUSTMENTS

Now your TA-3650 is ready for operation.

Sound Volume
Adjust the VOLUME control to the desired level.

Stereo Balance
The feeling of direction and depth that stereophonic sound produces is greatly diminished if the levels of both channels are not balanced. Set the MODE selector to MONO and adjust the BALANCE control for equal output from the right and left speakers. Balance variations with different program sources are then due to differences in the recording levels. Stereo balance is also influenced by the acoustics of the room. Carpets, furniture placement, and room size and shape have a definite effect upon sound quality and balance.

Tone
. manipulation of the tone control section does not interrupt the signal path in the amplifier.
However, its overuse may adversely affect amplifier tone quality.
For proper use, refer to "TONE CONTROL SECTION" on page 12.

TAPE RECORDING

❶ Set the MONITOR selector to SOURCE.
❷ Select the recording program with the FUNCTION selector.
❸ Set the TAPE COPY selector to SOURCE.
❹ Adjust the recording level at the recorder and start it in record mode.
● The VOLUME, BALANCE, TONE controls, FILTER switches, PRESENCE switch and LOUDNESS switch have no effect upon the recording.

Monitoring of 3-head Tape Recorder
If your tape recorder has separate record and playback heads, you can monitor the recording results by setting the MONITOR selector to TAPE position.
.his case, the recorder should be connected to the TAPE and REC OUT jacks and its tape monitor should be at the TAPE position.

FRONT PANEL FACILITIES

(See page 7 for identification of each part.)

This section describes the operation and function of each facility on the front panel of the TA-3650.
For clarity, these are grouped into three functionally related sections.

GENERAL CONTROL SECTION

POWER Switch
This turns the operating power on or off. A built-in lamp will light with a soft green glow when the amplifier is turned on.

SPEAKER Selector
Selects speaker systems A or B, or both.
A+B : To drive speaker systems A and B simultaneously.
A : To drive speaker system A.
OFF : To cut off the speaker sound or to monitor through the headphones.
B : To drive speaker system B.

HEADPHONES Jack
This jack accepts any low or high impedance stereo headphones. For headphone monitoring only, set the SPEAKER selector to OFF.

BALANCE Control
Governs the amount of sound coming from each paired speaker to get optimum stereo effect.
When you turn the BALANCE control to the right, the left channel volume is decreased, and vice versa.
For normal operation, set the BALANCE control to the center position.

MODE Selector
Determines the mode of the program produced at the speaker and headphone output.

MODE selector setting	Input	Output	Use
REVERSE	L	L	To reverse right and left stereo sound
	R	R	
STEREO	L	L	Normal stereo sound
	R	R	
MONO	L	L	To listen to any input program monophonically or to balance right and left channel sound levels
	R	R	

For normal operation, set the MODE selector to STEREO position.

VOLUME Control
This precisely matched attenuator control regulates the overall sound level. Note that the "0" indication (the fully clockwise position) means that the volume control provides zero attenuation (full gain amplification). Counterclockwise rotation from "0" to "−34" position lowers the volume in "2 dB" steps, that change in level being considered to be the minimum detectable by the human ear.
● To prevent inadvertent speaker damage, lower the volume each time you turn on or shut down the system.

MUTING Switch
When the MUTING switch is set to −20 dB, overall listening sound level is reduced by that amount.
This feature is useful when you lower the tonearm onto the disc or when you answer the telephone. When setting it back afterwards, you can restore exactly the same listening level as before.
For normal operation, set the MUTING switch to the upper position.

INPUT SELECTION SECTION

MONITOR Selector

TAPE 2 : For playback of a tape recorder with line outputs connected to the TAPE 2 input jacks.

SOURCE : For such program sources as record player, tuner, auxiliary source.

TAPE 1 : For playback of a tape recorder with line outputs connected to the TAPE 1 input jacks.

FUNCTION Selector

This selector is operative when the MONITOR selector is set at SOURCE position.

PHONO 1, 2 : For disc programs (connected to PHONO 1 or 2 inputs)

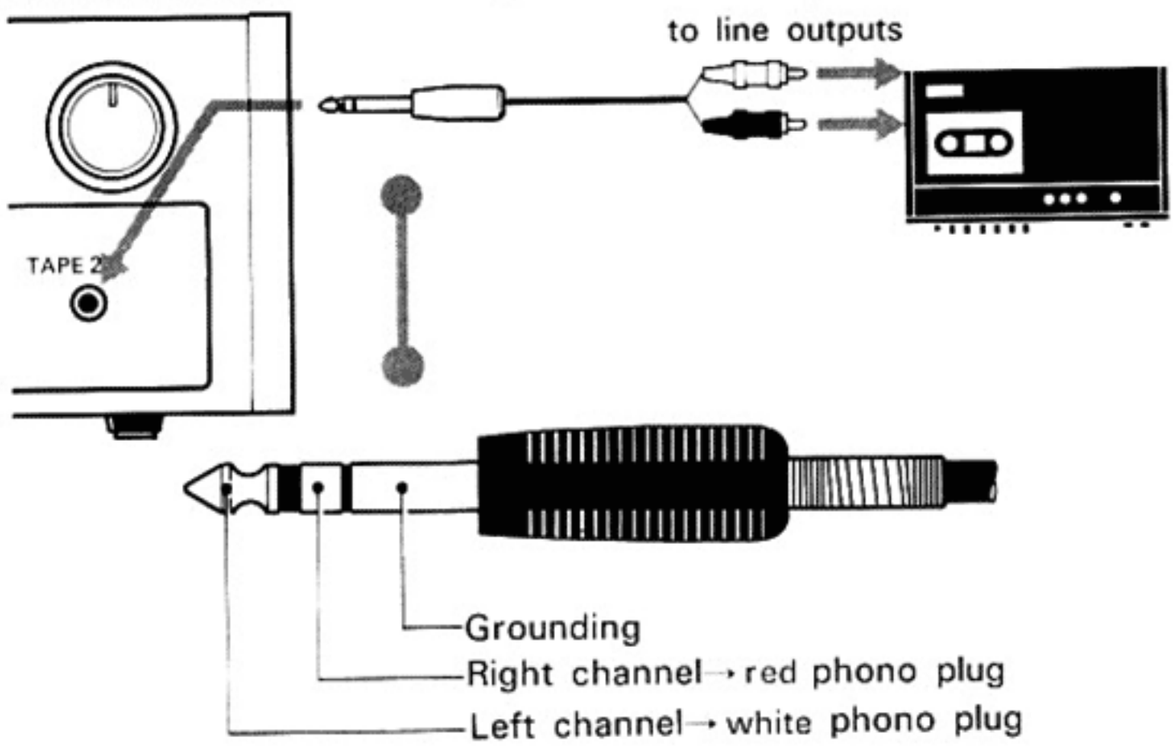
TUNER : For off-the-air programs (connected to TUNER inputs)

AUX : For auxiliary program (connected to AUX inputs)

TAPE 2 Input

This provides convenient front panel connection of a tape recorder (for playback). Use the phono-pin to stereo phone plug adaptor (RK-81H, optional) for this purpose.

● Note that the use of the TAPE 2 input on the front panel disconnects the TAPE 2 input on the rear panel.



TAPE COPY Selector

For normal operation, keep this selector at SOURCE position.

By positioning this selector to TAPE 2→1 or TAPE 1→2, you can dub from one tape recorder to another, while still listening to the program source you selected with the FUNCTION selector.

TAPE 2→1 : For dubbing from tape recorder 2 (for playback) to tape recorder 1 (for recording).

SOURCE : For normal use. In this position, a PHONO, TUNER, or AUX program signal selected by the FUNCTION selector is applied to both REC OUT 1 and 2, and allows you to record onto two tape recorders simultaneously.

TAPE 1→2 : For dubbing from tape recorder 1 (for playback) to tape recorder 2 (for recording).

TONE CONTROL SECTION

FILTER Switches

The purpose of a filter is to attenuate selected portions of the audio frequency spectrum. The TA-3650's LOW and HIGH FILTER switches have an attenuation slope of 6 dB per octave for eliminating unwanted noise components present in the program source.

If there is no need for the use of a filter, set the FILTER switches to OFF.

LOW : Low frequency noise such as the rumble created by a turntable, record changers, or warped records is reduced.

HIGH : High frequency noise such as the surface noise of records or tapes when reproducing old and poor quality recordings, or high frequency distortion in records or tapes is reduced.

TONE Switch

OFF (⊓, released)

Bass and treble tone control circuits are disconnected from the signal path and an absolutely flat frequency response is obtained (provided the FILTER switches are both OFF), regardless of the BASS and TREBLE controls settings.

ON (⊓, depressed)

The BASS and TREBLE controls work normally.

TURNOVER FREQuency Switches

These switches select the "turnover frequency" point, or the frequency at which the BASS (or TREBLE) tone control begins to take effect. You can thereby change the bass (or treble) the spectrum extremes with a varying degree of effect on the mid-range.

BASS (left one) :

⊓ (released) . . . . 500 Hz turnover frequency

⊓ (depressed) . . . 250 Hz turnover frequency

TREBLE (right one)

⊓ (released) . . . . 2.5 kHz turnover frequency

⊓ (depressed) . . . 5 kHz turnover frequency

TONE Controls

TONE controls are useful for compensating any deficiency in your speaker system or listening room acoustics, correcting improperly equalized program source material, and so forth. These two controls each cause a response change of ±10 dB. When both are in their center position, a flat response results, the same as when the TONE switch is at OFF (provided both FILTER switches are OFF).

BASS : Clockwise rotation boosts and counterclockwise rotation reduces bass frequencies above and below a turnover point (250 Hz or 500 Hz) respectively.

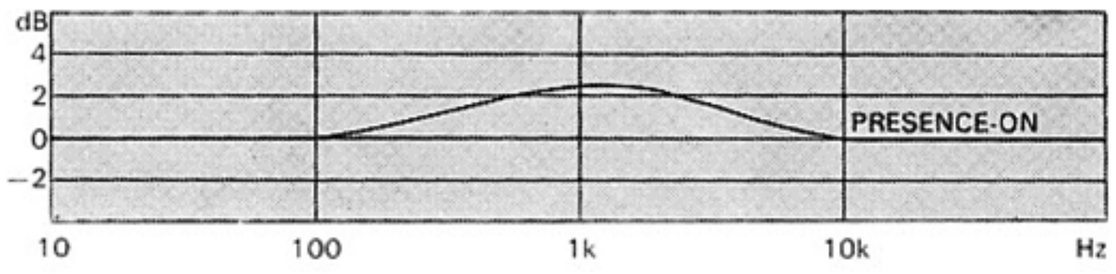
TREBLE : Clockwise rotation boosts and counterclockwise rotation reduces treble frequencies above and below a turnover point (2.5 kHz or 5 kHz) respectively.

PRESENCE Switch

When reproducing a vocal program (especially female vocal), set this switch to ON (⊓) position. A mid-range booster network works to emphasize the vocal portion.

For normal operation, set this switch at OFF (⊓) position.

● Presence effect will diminish beyond a halfway clockwise volume setting.



CARE OF YOUR TA-3650

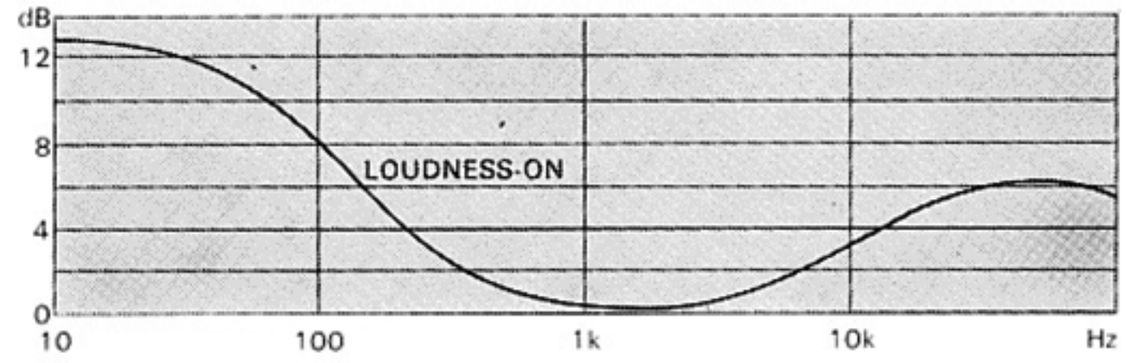
LOUDNESS Switch

When listening to the program sources at low volume level, set this switch to ON (⊓) position.

Human ears are less sensitive in their response to very low and very high notes at low levels. This loudness network compensates for this characteristic of the ear, and provides an apparently uniform response at such low volume levels.

For normal operation, set this switch at OFF (⊓) position.

● The loudness effect will also diminish beyond a halfway clockwise volume setting.



SPLIT SYSTEM OPERATION

By removing the jumper plugs the signal path is opened at an intermediate level point and the TA-3650 is divided into two separate units—preamplifier and power amplifier.

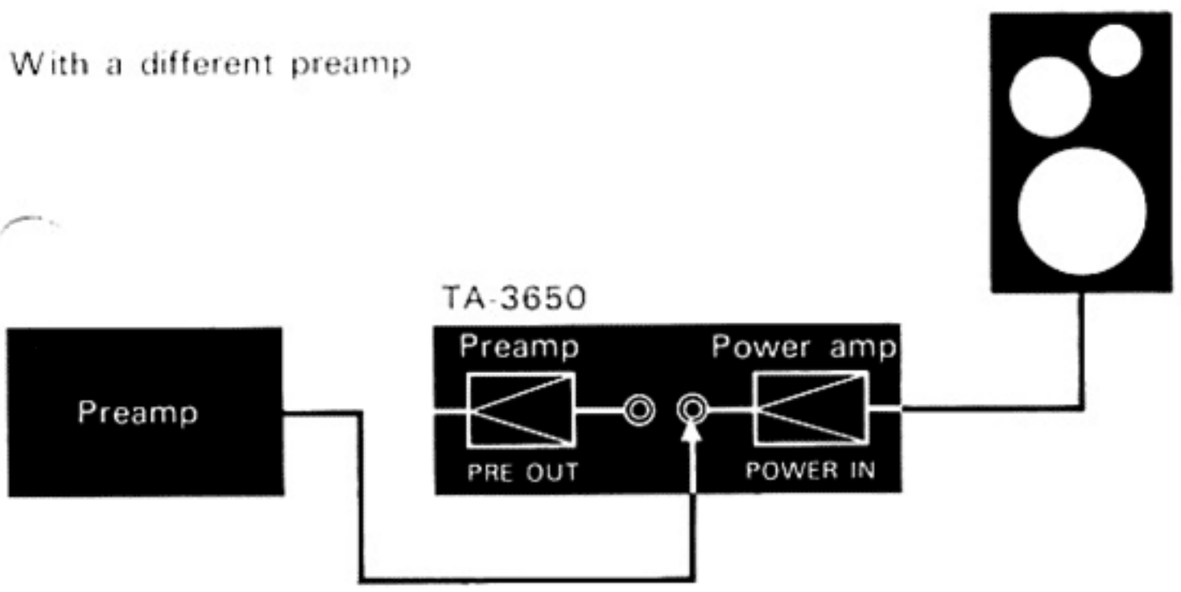
This allows you to connect other power amplifiers, preamplifiers and add-on components.

PRE OUT : Accepts channel filter amplifiers or various power amplifiers.

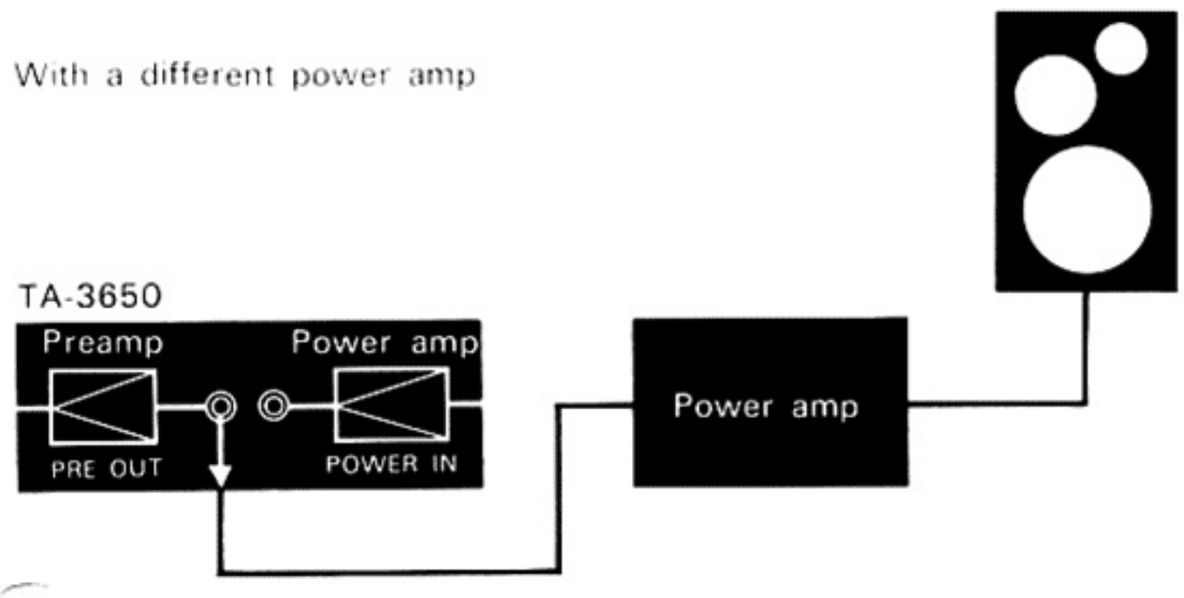
POWER IN : Accepts various preamplifiers.

● When not in use, be sure to connect the jumper plugs between the PRE OUT and POWER IN jacks.

With a different preamp



With a different power amp



TROUBLE CHECKS

The following chart will help correct most troubles which may occur with the unit. If the trouble persists after you have made these checks, consult your Sony Service Station or dealer. Before going through the check list of specified troubles below, first refer back to the "CONNECTION DIAGRAM" on page 5 and "INITIAL OPERATION" on page 10.

No audio and the POWER lamp not lit
- Check that the ac power cord is plugged into a working outlet.

No audio but the POWER lamp lights
- Turn up the volume.
- Check speaker cord connections.
- Set the MONITOR selector to SOURCE for program sources other than TAPE inputs.
- Check the setting of the FUNCTION selector.
- Check the SPEAKER selector setting.
- Check the jumper plugs on the rear panel.

Low sound level
- Set the MUTING switch to upper position.

Unbalanced left and right volume
- Adjust the BALANCE control.
- Check the level or balance controls of the signal source.

Abrupt loss of sound from both speakers*
- Check the speaker terminals or speaker cord for a short.
- Check for a connected audio component which might generate a dc content that affects the TA-3650.

Abrupt loss of sound from both speakers and unit is extremely hot*
- Remove any object on the top of the cabinet which might prevent normal air circulation.

No tone control adjustment
- Set the TONE switch to ON.

No tape copying
- Check the TAPE COPY selector to see if it is correctly set.

Reversed left and right sound
- Check the speaker cord connection and speaker location.

Lack of bass sound or obscure instrument position
- Check the speaker connections for proper phasing.

Severe hum or noise
- Use only shielded connection cords.
- Keep the connecting cords away from transformers or motors and at least 3 meters (10 feet) from TV sets and fluorescent lights.

Rustling noise
- Make secure connections.
- Wipe the plugs and jacks with a cloth lightly dampened with methanol.

CLEANING

Clean the cabinet, panel and knobs periodically with a soft cloth. If finger prints, food and beverage stains, etc. are difficult to remove, use a cloth moistened with a mild detergent solution. Do not use any type of scouring powder, abrasive pad or solvent, since these will damage the cabinet.

* These symptoms may be caused when the protection circuits activate.

SPECIFICATIONS I (for the U.K.)

Power Amplifier Section

Continuous RMS power output (Less than 0.1% THD, both channels driven simultaneously)	At 1 kHz 60+60 watts (8 ohms) At 20 Hz – 20 kHz 55+55 watts (8 ohms) According to DIN 45500 55+55 watts (8 ohms)
Dynamic power output (IHF constant power supply method)	170 watts (8 ohms)
Power bandwidth (IHF)	5 Hz – 40 kHz
Harmonic distortion	Less than 0.1% at rated output Less than 0.03% at 1 W output
Intermodulation (IM) distortion (60 Hz : 7 kHz = 4 : 1)	Less than 0.1% at rated output Less than 0.03% at 1 W output
Frequency response (at 1 W output)	3 Hz – 100 kHz $^{+0}_{-2}$ dB
Signal-to-noise ratio	Greater than 110 dB, short-circuited input
Residual noise	Less than 0.008 microwatt (8 ohms)
Damping factor	35 (8 ohms, at 1 kHz)
Inputs	POWER IN Sensitivity 1.0 V (for rated output) Impedance 47 k ohms
Outputs	SPEAKER terminals A, B Accept speakers of 8 ohms or more HEADPHONES jack Accepts low and high impedance headphones

Preamplifier Section

Harmonic distortion	Less than 0.05% at rated output
Intermodulation (IM) distortion (60 Hz : 7 kHz = 4 : 1)	Less than 0.05% at rated output
Frequency response	PHONO 1, 2 RIAA equalization ±0.5 dB TUNER, AUX, TAPE 1, 2, REC/PB: 10 Hz – 100 kHz $^{+0}_{-2}$ dB (TONE off, FILTERs off)
Tone controls	BASS ±10 dB at 100 Hz (TURNOVER 500 Hz) ±10 dB at 50 Hz (TURNOVER 250 Hz) TREBLE ±10 dB at 10 kHz (TURNOVER 2.5 kHz) ±10 dB at 20 kHz (TURNOVER 5 kHz)
Filters	LOW 6 dB/octave attenuation below 30 Hz HIGH 6 dB/octave attenuation above 10 kHz
Loudness (att. 30 dB)	+10 dB at 50 Hz +3 dB at 10 kHz
Presence (att. 30 dB)	+2.5 dB at 1 kHz

Inputs

	Sensitivity	Impedance	Maximum input capability (0.1% distortion)	S/N (weighting network, input level)
PHONO 1, 2	2.5 mV	50 k ohms	210 mV	70 dB (B, 2.5 mV)
TUNER AUX TAPE 1, 2 REC/PB	150 mV	100 k ohms	—	90 dB (A, 150 mV)

Outputs

	Voltage	Impedance
REC OUT 1, 2	150 mV	10 k ohms
REC/PB	17 mV	82 k ohms
PRE OUT	1.0 V	1.8 k ohms

General

System	Power amplifier section: direct-coupl… pure complementary SEPP OTL circu… Preamplifier section: dual-FET differential equalizer amplifier in direct-coupled design, two-stage, direct-coupled flat amplifier, and NF type tone control amplifier
Semiconductors	4 FETs (2 dual-FETs included), 43 transistors (2 dual-transistors included), 27 diodes
Power requirements	110, 127, 220 or 240 V ac ~ adjustable, 50/60 Hz
Power consumption	320 watts
Dimensions	Approx. 460 (w)×170 (h)×325 (d) mm (18 1/8×6 5/8×12 7/8 inches) Including projecting parts and controls
Weight	Approx. 12.0 kg (26 lb 8 oz) net 14.5 kg (32 lb) in shipping carton
Supplied accessories	Ac power cord (1) Shorting plugs (2)

Whilst the information given is true at the time of printing, sr… production changes in the course of our company's policy of improvement through research and design might not necessarily be indicated in the specifications.
We would ask you to check appointed Sony dealer if clarification on any point is required.

SPECIFICATIONS II (for countries other than the U.K.)

Power Amplifier Section

Continuous RMS power output
(Less than 0.1% THD, both channels driven simultaneously)

At 1 kHz
60+60 watts (8 ohms)
70+70 watts (4 ohms)
At 20 Hz – 20 kHz
55+55 watts (8 ohms)
According to DIN 45500
55+55 watts (8 ohms)

Dynamic power output 170 watts (8 ohms)
(IHF constant power supply method) 200 watts (4 ohms)

Power bandwidth (IHF) 5 Hz – 40 kHz

Harmonic distortion Less than 0.1% at rated output
Less than 0.03% at 1 W output

Intermodulation (IM) distortion
(60 Hz : 7 kHz = 4 : 1)
Less than 0.1% at rated output
Less than 0.03% at 1 W output

Frequency response 3 Hz – 100 kHz $^{+0}_{-2}$ dB
(1 W output)

Signal-to-noise ratio Greater than 110 dB, short-circuited input

Residual noise Less than 0.008 microwatt (8 ohms)

Damping factor 35 (8 ohms, at 1 kHz)

Inputs POWER IN
Sensitivity 1.0 V (for rated output)
Impedance 47 k ohms

Outputs SPEAKER terminals A, B
Accept speakers of 4 – 16 ohms
HEADPHONES jack
Accepts low and high impedance headphones

Preamplifier Section

Harmonic distortion Less than 0.05% at rated output

Intermodulation (IM) distortion
(60 Hz : 7 kHz = 4 : 1) Less than 0.05% at rated output

Frequency response
PHONO 1, 2 RIAA equalization ±0.5 dB
TUNER, AUX, TAPE 1, 2, REC/PB: 10 Hz – 100 kHz $^{+0}_{-2}$ dB (TONE off, FILTERs off)

Tone controls
BASS
±10 dB at 100 Hz (TURNOVER 500 Hz)
±10 dB at 50 Hz (TURNOVER 250 Hz)
TREBLE
±10 dB at 10 kHz (TURNOVER 2.5 kHz)
±10 dB at 20 kHz (TURNOVER 5 kHz)

Filters
LOW
6 dB/octave attenuation below 30 Hz
HIGH
6 dB/octave attenuation above 10 kHz

Loudness (att. 30 dB)
+10 dB at 50 Hz
+3 dB at 10 kHz

Presence (att. 30 dB)
+2.5 dB at 1 kHz

Inputs

	Sensitivity	Impedance	Maximum input capability (0.1% distortion)	S N (weighting network, input level)
PHONO 1, 2	2.5 mV	50 k ohms	210 mV	70 dB (B, 2.5 mV)
TUNER AUX TAPE 1, 2 REC/PB	150 mV	100 k ohms	—	90 dB (A, 150 mV)

Outputs

	Voltage	Impedance
REC OUT 1, 2	150 mV	10 k ohms
REC/PB	17 mV	82 k ohms
PRE OUT	1.0 V	1.8 k ohms

General

System Power amplifier section : direct-coupled, pure complementary SEPP OTL circuitry
Preamplifier section : dual-FET differential equalizer amplifier in direct-coupled design, two-stage, direct-coupled flat amplifier, and NF type tone control amplifier

Semiconductors 4 FETs (2 dual-FETs included), 43 transistors (2 dual-transistors included), 27 diodes

Power requirements 110, 127, 220 or 240 V ac~adjustable, 50/60 Hz

Power consumption 540 watts

Dimensions Approx. 460 (w) × 170 (h) × 325 (d) mm (18 1/8 × 6 5/8 × 12 7/8 inches)
Including projecting parts and controls

Weight Approx. 12.0 kg (26 lb 8 oz) net
14.5 kg (32 lb) in shipping carton

Supplied accessories Ac power cord (1)
Shorting plugs (2)

Design and specifications subject to change without notice.

PRECAUTIONS

Sécurité

- Vérifier que la tension de fonctionnement de l'appareil soit identique à celle du secteur local.
- Des objets étrangers ou des liquides viendraient-ils à pénétrer dans le coffret, débrancher l'appareil et le faire vérifier par un personnel qualifié avant tout nouvel emploi.
- Ne pas laisser l'appareil branché sur la prise du secteur, s'il ne doit pas être utilisé pour une longue période. Pour débrancher le cordon, le tirer par la fiche. Ne jamais tirer par le cordon lui-même.
- Par mesure de sécurité, éviter de retirer les plaques latérales. Si nécessaire, consulter le concessionnaire Sony le plus proche.

Installation

- Ne pas placer l'appareil près de sources de chaleur, comme des radiateurs ou des bouches d'air chaud ni à un endroit exposé au rayonnement direct du soleil. Le garder à l'abri de la poussière, des vibrations mécaniques et des chocs.
- Une bonne circulation d'air est essentielle pour éviter une surchauffe à l'intérieur de l'appareil. Placer l'appareil dans un endroit où cette circulation d'air est suffisante. Ne pas le placer sur une surface molle comme une couverture, ni dans un espace clos, ce qui boucherait les trous situés en dessous de l'appareil.
- Ne rien déposer sur le dessus du coffret. Les trous d'aération supérieurs ne doivent pas être obstrués, ceci pour un fonctionnement correct de l'appareil, et pour prolonger la vie des composants.

Opération

- Avant les connexions des programmes de source, mettre l'interrupteur d'alimentation hors tension et débrancher l'appareil.
- Ne pas tenter de tester les circuits de protection en bloquant les trous de ventilation ou en connectant les fils de façon incorrecte.
- Ne jamais retirer les fiches volantes entre les prises marquées [PRE OUT] et [POWER IN] excepté lorsque l'appareil est séparément utilisé comme un préamplificateur ou un amplificateur de puissance.
- Lorsque l'appareil n'est pas utilisé, le mettre hors tension pour éviter de l'endommager, et pour économiser l'énergie.
- Si des ennuis surviennent dans le fonctionnement de l'appareil—absence de son par l'un ou l'ensemble des canaux, etc.—se reporter en premier lieu, au chapitre "DEPANNAGE", page 22, et y suivre les conseils indiqués. La plupart des problèmes qui surviennent sont le fait d'une mauvaise compréhension dans les procédures de fonctionnement, ou plus simplement d'une mauvaise connexion, et cela peut être facilement résolu. Si le défaut persiste après avoir suivi les conseils indiqués, s'adresser au concessionnaire Sony le plus proche.

CONNEXIONS DE LA CHAINE (Voir page 5.)

REMARQUES SUR LES CONNEXIONS

- Pour assurer un branchement correct aux bornes d'entrée et de sortie de l'amplificateur, se référer aux "SPECIFICATIONS", page 23 et aux instructions du mode d'emploi fourni avec les éléments que l'on désire brancher. En général, le niveau de sortie d'une source de signal (tuner, cellule de lecture, magnétophone, etc.) doit être égal ou "légèrement supérieur" à la sensibilité de l'entrée correspondante. Aussi l'impédance de sortie d'une source de signal doit être considérablement inférieure à l'impédance d'entrée correspondante.
Par exemple, un magnétophone ayant respectivement un niveau de sortie et une impédance de 250 mV et 10 kohms peut être branché sur les entrées magnétophone [TAPE] qui sont prévues pour recevoir une puissance nominale de 150 mV et 100 kohms.
- Pour toutes les connexions d'entrée et de sortie, utiliser un cordon blindé à faible capacitance. Les cordons doivent être aussi courts que possible. Eviter les cordons à l'horizontale sur de grandes longueurs plus de 2 mètres (6 pieds), ceci peut provoquer une atténuation de la réponse en haute fréquence et capter un bourdonnement du secteur.
- Les connecteurs des cordons seront bien enfoncés dans les prises. Un mauvais branchement peut être la cause de bruit et de bourdonnement.
- Si une nouvelle connexion s'effectue, s'assurer de baisser les niveaux de réglages de sources et de mettre hors tension l'appareil pour éviter un endommagement des haut-parleurs.

BRANCHEMENT AU SECTEUR

Avant tout branchement sur le secteur, s'assurer de ce que l'interrupteur d'alimentation [POWER] du TA-3650 est en position OFF. D'abord enficher le cordon d'alimentation dans la prise d'alimentation CA [AC IN], puis dans use prise du secteur.

RACCORDEMENT DES HAUT-PARLEURS

Le TA-3650 peut recevoir deux paires d'enceintes acoustiques: système A et système B, que l'on peut mettre en service séparément ou simultanément à l'aide du sélecteur de haut-parleur [SPEAKER] prévu sur le panneau avant.
A noter que les systèmes de haut-parleurs A et B sont tous deux connectés en série, de sorte que si un seul système est utilisé, on n'entend aucun son lorsque le sélecteur de haut-parleur occupe la position "A+B".

Attention

Le TA-3650 fournit une puissance efficace minimale de 55 watts par canal sur une charge de 8 ohms, entre 20 – 20 000 Hz, mais peut fournir pendant un bref instant une puissance de crête très supérieure à la puissance nominale.
Avoir soin d'utiliser des haut-parleurs de capacité adéquate. Toujours diminuer le volume sonore lorsqu'on pose ou relève le bras d'un tourne-disque ou lorsqu'on tourne le bouton d'accord d'un tuner FM. Si on néglige cette précaution, les haut-parleurs risquent d'être endommagés.

CARACTERISTICAS

Sección de amplificador de potencia

Salida ce potencia continua de RMS

(Menos de 0,1% Distorsión armónica total)

a 1 kHz
60+60 W (8 ohmios)
70+70 W (4 ohmios)
a 20 Hz – 20 kHz
55+55 W (8 ohmios)
Según DIN 45500
55+55 W (8 ohmios)

Salida de potencia dinámica

(Método de alimentación constante del IHF)

170 W (8 ohmios)
200 W (4 ohmios)

Amplitud de banda de potencia (IHF)

5 Hz – 40 kHz

Distorsión armónica
Menos de 0,1% a salida nominal
Menos de 0,03% a salida de 1 W

Distorsión intermodulada

(60 Hz : 7 kHz = 4 : 1)

Menos de 0,1% a salida nominal
Menos de 0,03% a salida de 1 W

Jencia de respuesta (a salida de 1 W)
3 Hz – 100 kHz $^{+0}_{-2}$ dB

Razón de señal/ruido
Más de 110 dB, entrada de corto-circuito

Ruido residual
Menos de 0,008 μW (8 ohmios)

Factor de amortiguamiento

35 (8 ohmios, a 1 kHz)

Entradas
POWER IN
Sensibilidad 1,0 V (para la salida nominal)
Impedancia 47 k ohmios

Salidas
Terminales SPEAKER A, B
Para los altavoces de 4 – 16 ohmios
Enchufe HEADPHONES
Para el auriculares de casco de impedancia baja y alta

Sección de preamplificador

Distorsión armónica
Menos de 0,05% a salida nominal

Distorsión intermodulada

(60 Hz : 7 kHz = 4 : 1)

Menos de 0,05% a salida nominal

uesta de frecuencia

PHONO 1, 2 Igualación RIAA ±0,5 dB
TUNER, AUX, TAPE 1, 2, REC/PB: 10 Hz – 100 kHz $^{+0}_{-2}$ dB (desconectados los interruptores TONE y FILTER)

Controles de tono

BASS
±10 dB a 100 Hz (frecuencia de vuelta 500 Hz)
±10 dB a 50 Hz (frecuencia de vuelta 250 Hz)
TREBLE
±10 dB a 10 kHz (frecuencia de vuelta 2,5 kHz)
±10 dB a 20 kHz (frecuencia de vuelta 5 kHz)

Filtros

LOW
6 dB/octava atenuación menos de 30 Hz
HIGH
6 dB/octava atenuación más de 10 kHz

Alteza (atenuación 30 dB) +10 dB a 50 Hz, +3 dB a 10 kHz

Presencia (atenuación30 dB) +2,5 dB a 1 kHz

Entradas

	Sensibilidad	Impedancia	Capacidad máxima de entrada (distorsión 0,1%)	Razón de señal/ruido (red de atenuación predeterminada, nivel de entrada)
PHONO 1, 2	2,5 mV	50 k ohmios	210 mV	70 dB (B, 2,5 mV)
TUNER, AUX, TAPE 1, 2 REC/PB	150 mV	100 k ohmios	—	90 dB (A, 150 mV)

Salidas

	Tensión	Impedancia
REC OUT 1, 2	150 mV	10 k ohmios
REC/PB	17 mV	82 k ohmios
PRE OUT	1,0 V	1,8 k ohmios

General

Sistema
Sección de amplificador de potencia: salida directamente unida, circuito SEPP OTL simétrico puramene complementario
Sección de preamplificador: Amplificador de igualación diferencial de FET dual directamente unido etapa dual, amplificador llano, directamente unido, amplificador de control de tono de realimentación negativa

Semiconductores
4 FETs (incluyendo 2 FETs duales)
43 transistores (incluyendo 2 transistores duales)
27 diodos

Alimentación
110, 127, 220 ó 240 V C.A. ajustable 50/60 Hz

Consumo de energía
540 W

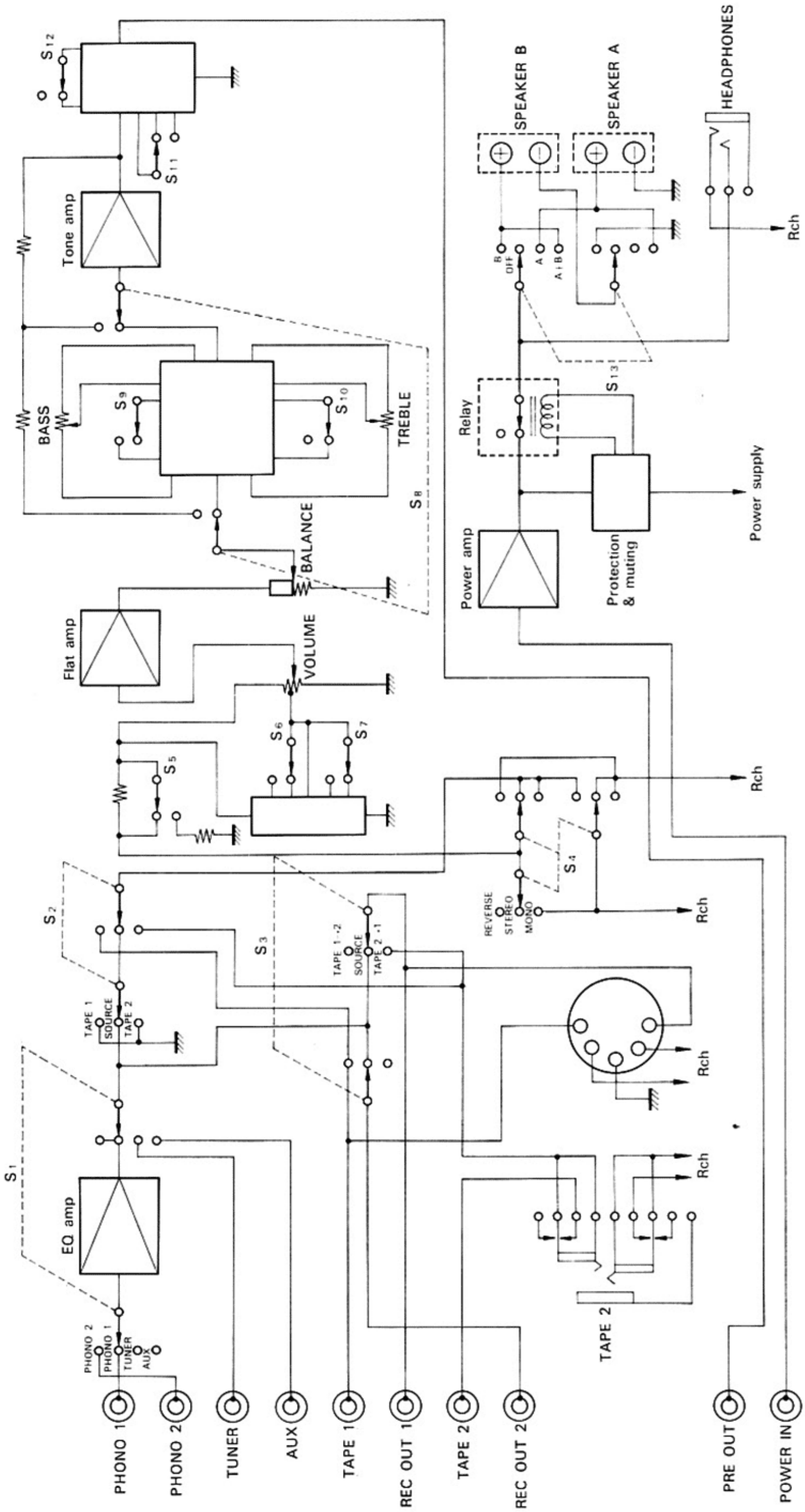
Dimensiones
460×170×325 mm aprox. (an/al/pro) incluyendo las partes y los controles proyectados

Peso
12,0 kg aprox. neto
14,5 kg aprox. en el cartón de transporte

Accesorios suministrados
Cordón de alimentación (1)
Enchufe de descarga (2)

Diseño y características sujetos a cambio sin previo aviso.

BLOCK DIAGRAM/SCHEMA DE PRINCIPE/BLOCKSCHALTPLAN/ESQUEMA DE BLOQUE



S11 HIGH FILTER switch
S12 LOW FILTER switch
S13 SPEAKER selector

S6 LOUDNESS switch
S7 PRESENCE switch
S8 TONE switch
S9 TURNOVER FREQ switch (BASS)
S10 TURNOVER FREQ switch (TREBLE)

S1 FUNCTION selector
S2 MONITOR selector
S3 TAPE COPY selector
S4 MODE switch
S5 MUTING switch

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