

YAMAHA AX-440

Natural Sound Stereo Amplifier

Amplificateur stéréo de la série "Natural Sound"

Natural Sound Stereoverstärker

Natural Sound stereoförstärkar

Amplificatore stereo dal suono natural

Amplificador estéreo de sonido natural

CENTER

EC 03文6710

OWNER'S MANUAL
MODE D'EMPLOI
BEDIENUNGSANLEITUNG
BRUKSANVISNING
MANUALE DELL'UTENTE
MANUAL DE INSTRUCCIONES

ENGLISH

Thank you for purchasing the YAMAHA Integrated Amplifier. In order to ensure proper operation for the best possible performance, please read this manual thoroughly before connecting up your new amplifier and turning it on.

IMPORTANT!

Please record the serial number of your unit in the space below.

Serial No:

PRECAUTIONS

OWNER'S MANUAL

Keep this manual in a safe place for future reference.

LOCATION

Avoid placing your unit in direct sunlight or close to a source of heat. Also avoid locations in which the device is likely to be subjected to excessive dust, cold or moisture.

VENTILATION

The openings on the cabinet ensure the ventilation of the amplifier. If these openings are obstructed, the temperature inside the cabinet will rise rapidly and eventually damage the circuits. Therefore, avoid placing objects against these openings and do not install your amplifier in a place such that the flow of air through the ventilation openings could be impeded.

HANDLING

● Power cord

When removing the power plug from the wall outlet, always pull directly on the plug. Never yank the cord as this may result in damage to the cord and possibly a short-circuit.

If you do not intend to use this unit for an extended period of time, it is advisable to unplug the power cord.

● Switches and knobs

Avoid applying excessive force to the switches and knobs.

● Relocation

Before moving your amplifier, be sure to unplug the power cord and remove all other connecting cables.

IN CASE OF TROUBLE

● Troubleshooting Chart

Consult the Troubleshooting Chart for advice on the common operation errors before concluding that your amplifier is faulty.

● Servicing

Do not open the cabinet or attempt to make repairs by yourself, as this may aggravate the damage and expose you to an electrical shock.

● Object and liquid entry

See to it that foreign objects or spilled liquids do not enter inside the cabinet. Should this case arise, consult your YAMAHA dealer.

CLEANING

Wipe off dust with a dry soft cloth. To remove dirt or fingermarks, use a soft damp cloth then dry immediately with a clean cloth. Do not use alcohol, thinners or other chemical solvents since they may damage the finish or remove the panel lettering.

Do not use any aerosol sprays near this unit as these products can easily get into the unit and damage the circuitry.

CAUTION (FOR CANADA MODEL)

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.

SPECIAL INSTRUCTIONS FOR THE BRITISH MODEL

IMPORTANT

The Wires in the mains lead are coloured in accordance with the following code:

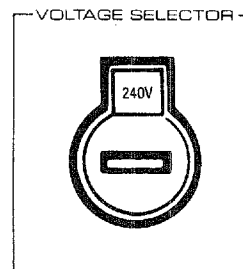
Blue: NEUTRAL

Brown: LIVE

The colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug. Proceed as follows: the wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK. The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED. Making sure that neither core is connected to the earth terminal of the three pin plug.

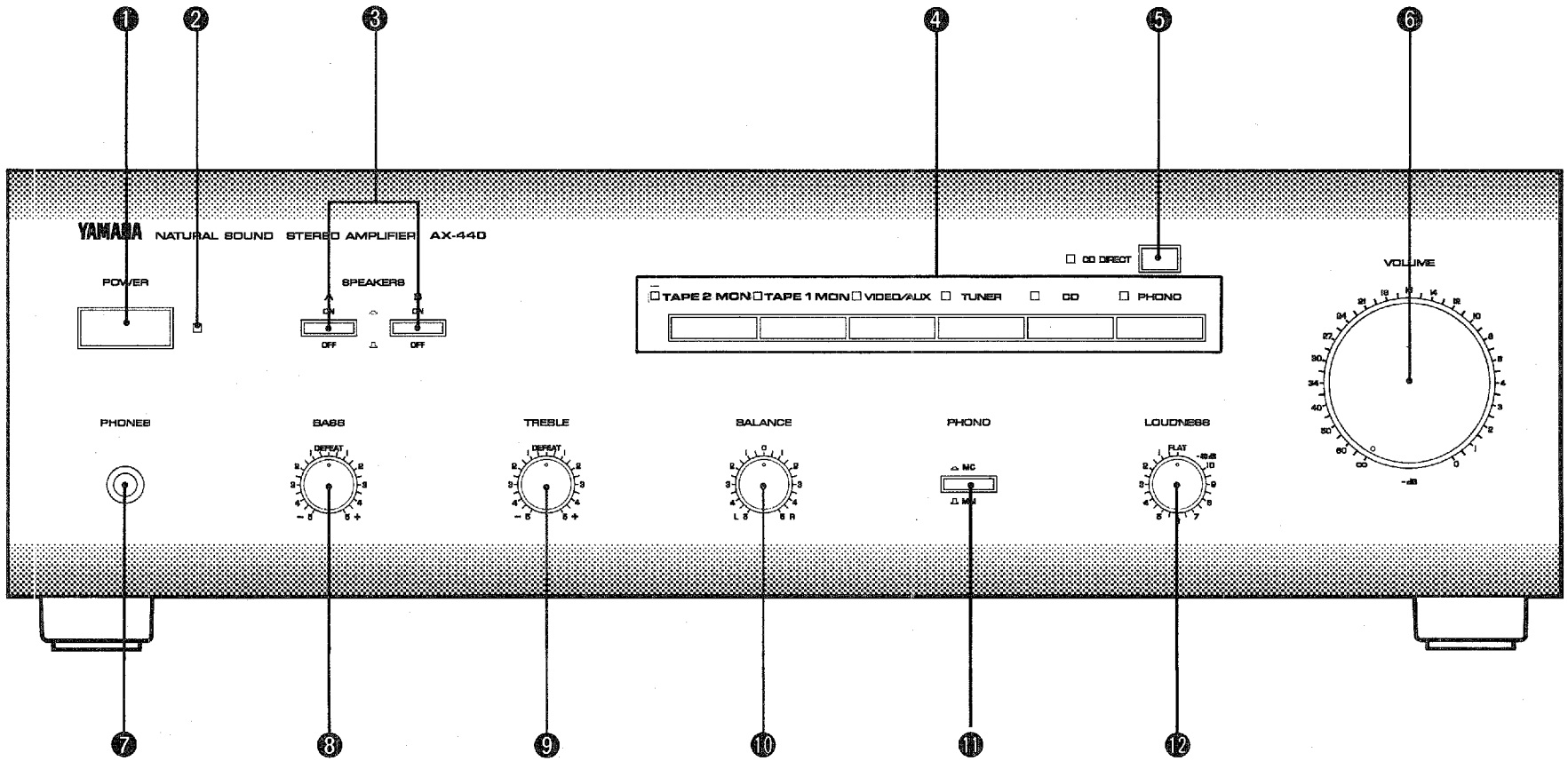
VOLTAGE SELECTOR (General Model)

The voltage selector switch on the rear panel of the unit must be set for your local voltage BEFORE plugging in the AC mains supply. Voltages are 110/120/220/240 V AC, 50/60 Hz.

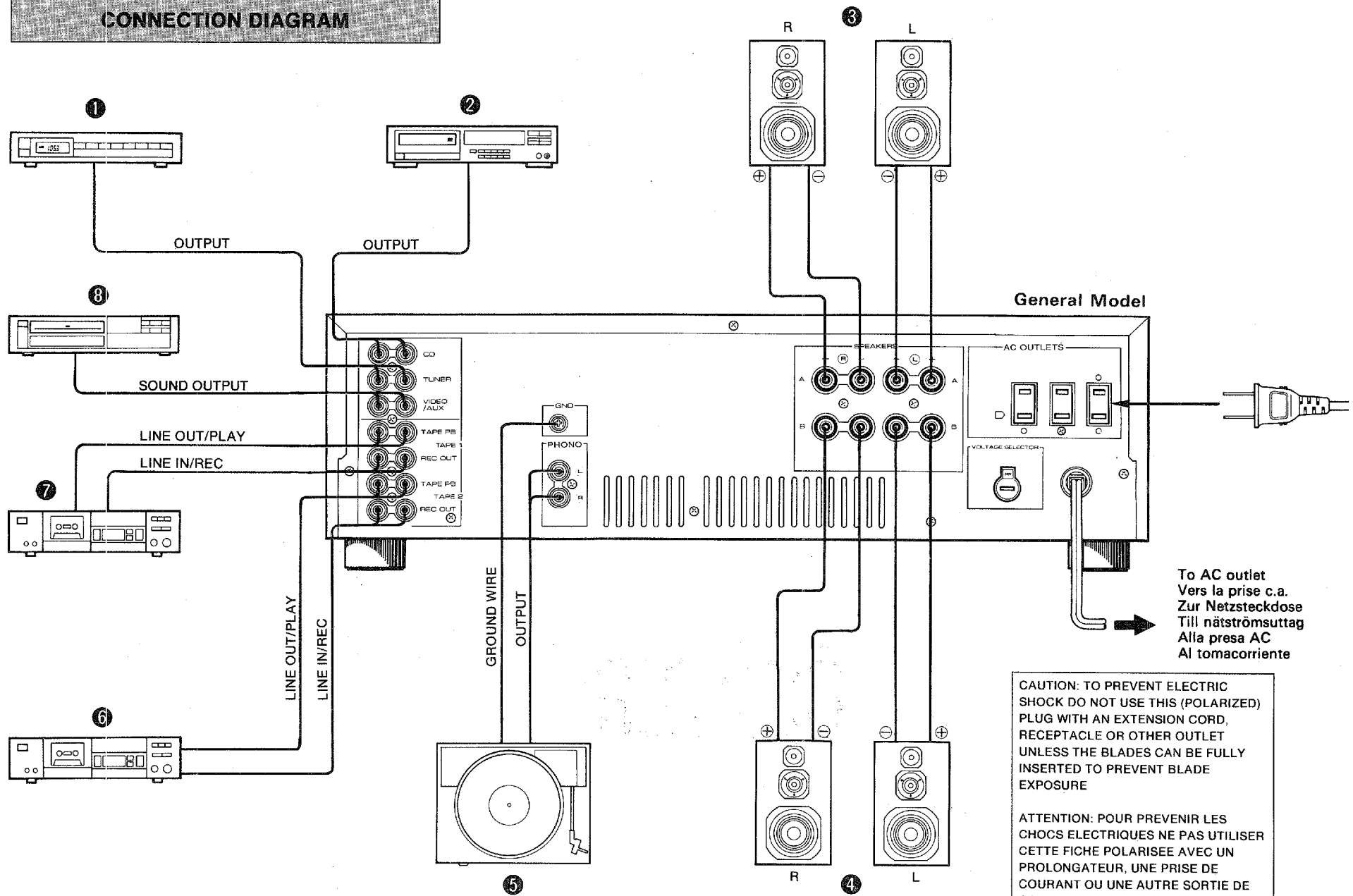


* This product complies with the radio frequency interference requirements of the Council Directive 82/499/EEC and/or 87/308/EEC.

FRONT PANEL



CONNECTION DIAGRAM



To AC outlet
Vers la prise c.a.
Zur Netzsteckdose
Till nätströmsuttag
Ala presa AC
Al tomacorriente

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

CONNECTIONS

The connection diagram is provided on page 4.

- ① Tuner
- ② Compact disc player
- ③ Speaker A
- ④ Speaker B
- ⑤ Turntable
- ⑥ Tape deck 2
- ⑦ Tape deck 1
- ⑧ Video player

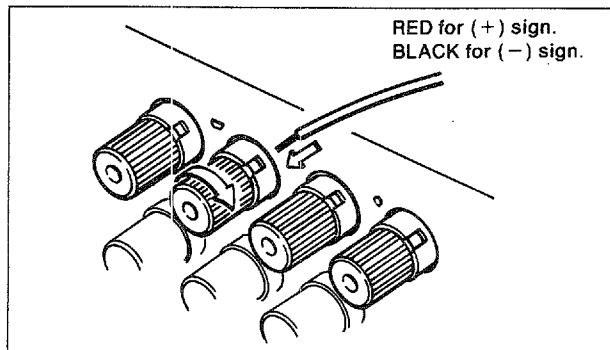
Before making any connections turn off all equipment.

Be sure to connect the left (L) and right (R) channels consistently between components.

● CONNECTING THE SPEAKERS

Connect the cords for the left speakers to the L terminals and the right speaker cords to the R terminals, ensuring that the polarity (+ and -) markings are observed. Be sure to do this consistently from component to component. If the polarity is reversed at either speaker, the sound will be unnatural and lack bass. Speaker cords should be cut as short as possible. Avoid coiling the wire on the floor or bundling it up with cords from other system components.

- ★ Strip about 1cm (0.39in) of insulating material from the ends of the speaker wires and twist the strands of each end. Loosen the speaker terminal knobs, insert the exposed wire into the hole and then tighten the speaker terminal knobs.



● CONNECTING A TURNTABLE

Connect the output cords of the turntable to the amplifier Phono jacks and connect the ground wire to the GND terminal. Normally connecting the ground wire produces minimum hum but in some cases better results are obtained with the ground wire disconnected. The turntable component and its output cords should be positioned well away from sources of hum such as power cords or power transformers of other system components.

● CONNECTING A TUNER

Connect the cords from the Tuner's output jacks to the TUNER jacks of the amplifier. As the amplifier's power supply may generate a certain amount of radio frequency noise, position the tuner so that its AM antenna is well away from the amplifier.

● CONNECTING TO THE CD AND VIDEO/AUX JACKS

Connect your CD component to the CD terminals and video sound output leads to the VIDEO/AUX terminals. Please note that a turntable cannot be connected to these jacks as they do not provide the necessary RIAA equalization.

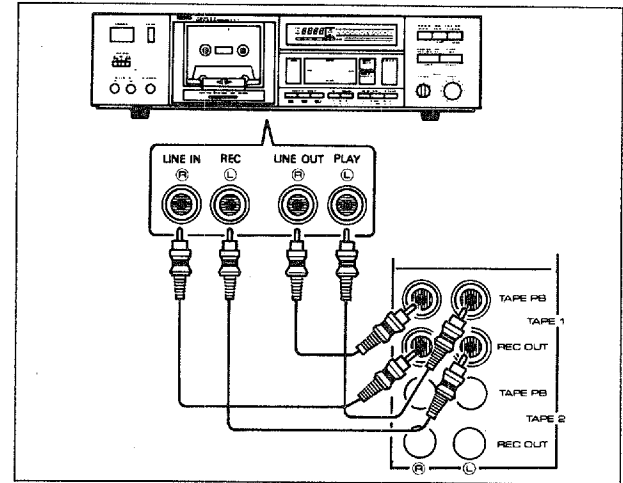
● CONNECTING TAPE DECKS

TAPE DECK 1.

Connect the cords from the tape deck's Line In jacks to the REC OUT jacks of TAPE 1, ensuring that left and right are not reversed. Then connect the tape deck's Line Out jacks to the amplifier's TAPE PB jacks of TAPE 1.

TAPE DECK 2.

Another tape deck can be connected to TAPE 2 terminals in the same fashion as described above.



● AC OUTLETS (General and Canadian models)

For added convenience this unit provides 3 AC outlets. Two "switched" outlets (the power to these receptacles is turned on and off by this unit's power switch) and one "unswitched" outlet (the power to this receptacle is independent of this unit's power switch). Be sure not to connect appliances totaling more than 200 watts to the unswitched outlet or more than 100 watts (for Canadian model) or 150 watts (for General model) to the two switched outlets.

FRONT PANEL DESCRIPTIONS

The Front Panel illustration is provided on page 3.

① POWER SWITCH (POWER)

Press once to turn the power ON and once again to turn the power OFF. Before turning the power ON set the volume to its lowest position (extreme counterclockwise), to protect the speakers from any sudden high level sound.

② POWER ON INDICATOR

Illuminated when power is ON.

③ SPEAKERS SWITCHES (SPEAKERS)

As one or two speaker systems can be connected to this unit, these switches allow you to select speaker system A, B or both at once. When listening to the headphones only set both the A and B switches to the OFF position.

④ INPUT SELECTOR PANEL

Selects the program source you wish to listen to. The LED indicator above the selected source will light up.

The following is an example of signal channelling when you select combinations of the CD and the Tape 1 and 2 components via the Input Selector Panel.

Terminals Selection	TAPE1 REC OUT	TAPE2 REC OUT	SP OUT	LED indication
CD	CD	CD	CD	CD
CD + TAPE 1 MON	CD	TAPE 1 MON	TAPE 1 MON	CD + TAPE 1 MON
CD + TAPE 2 MON	CD	CD	TAPE 2 MON	CD + TAPE 2 MON
CD + TAPE 1 and TAPE 2 MON	CD	TAPE 1 MON	TAPE 2 MON	CD + TAPE 1 and TAPE 2 MON

⑤ CD DIRECT SWITCH (CD DIRECT)

This switch allows you to route the CD input signal directly to the output stage bypassing the Input Selectors, the Loudness, and Balance controls therefore avoiding any "muddying" caused by the switch and circuit routing to provide a pure sound.

⑥ VOLUME CONTROL KNOB (VOLUME)

This controls the sound level. Turning clockwise increases the sound volume and turning counterclockwise decreases it. Set this knob to the minimum level before turning the power ON or using the Input Selector Panel to select a different sound source, therefore, protecting the speakers from any sudden high level sound.

⑦ HEADPHONES JACK (PHONES)

Stereo headphones with a standard plug can be connected to this jack. When listening to the headphones only set both the A and B switches to the OFF position.

⑧ BASS CONTROL KNOB (BASS)

This knob controls bass response. Turn it clockwise to boost or counterclockwise to attenuate bass response. When this knob is in the center defeat position a flat response is obtained.

⑨ TREBLE CONTROL KNOB (TREBLE)

This knob controls treble response. Turn it clockwise to boost or counterclockwise to attenuate treble response. When this knob is in the center defeat position a flat response is obtained.

⑩ BALANCE CONTROL KNOB (BALANCE)

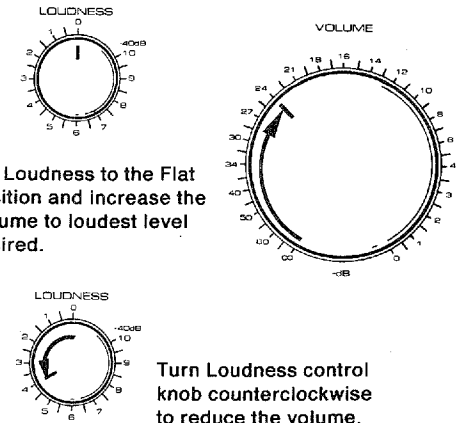
This knob is used to adjust the relative volume of the left and right channels, enabling you to compensate for unbalance created by installation locations of the speakers.

⑪ PHONO SELECTOR SWITCH (PHONO)

Selects either MM (moving magnet) or MC (moving coil) position to match your cartridge.

⑫ LOUDNESS CONTROL KNOB (LOUDNESS)

This control provides compensation for the human ear's loss of sensitivity to high and low frequency ranges at low volumes. As the amount of compensation required is determined by the listening level, this control provides the most accurate compensation for any listening level. Set it to the flat position while the volume control is set to your normal listening level. Turning it counterclockwise will decrease the volume while retaining the natural balance of low and high frequencies.



OPERATIONS

● Normal listening operation

1. Turn the volume control to the minimum level before turning the power ON. The power indicator lights when power is on.
2. Using the SPEAKER switches select the desired speaker system(s) or leave both switches in the OFF position to use the headphones.
3. Select the desired program source using the Input Selector Panel. The corresponding input indicator lights up.
4. Activate your chosen component.
5. Adjust your VOLUME, LOUDNESS, BASS, TREBLE and BALANCE to provide the desired sound quality.

● To record from a program source

1. Turn the volume control to the minimum setting then press the power switch (to the ON position). The power indicator lights up.
 2. Select the desired program source using the INPUT SELECTOR PANEL. The input indicator lights up.
 3. Activate the source program component.
 4. Advance the volume control to a suitable level.
 5. Commence recording by activating the tape deck connected to the Tape 1 or Tape 2 jacks.
- * To monitor Tape 1 or Tape 2 recording, simply press TAPE 1 MON or TAPE 2 MON switch. However, do not press both switches.

NOTE: When a tape deck is connected to the unit, via the Tape 1 jacks, pressing TAPE 2 MON during recording will disable monitoring of Tape 1 but will not disrupt the recording.

If the tape deck is connected via the Tape 2 jacks, pressing TAPE 1 MON during recording will disrupt recording.

● To "DUB" a tape

Dubbing can be performed from Tape 1 to Tape 2 (one way).

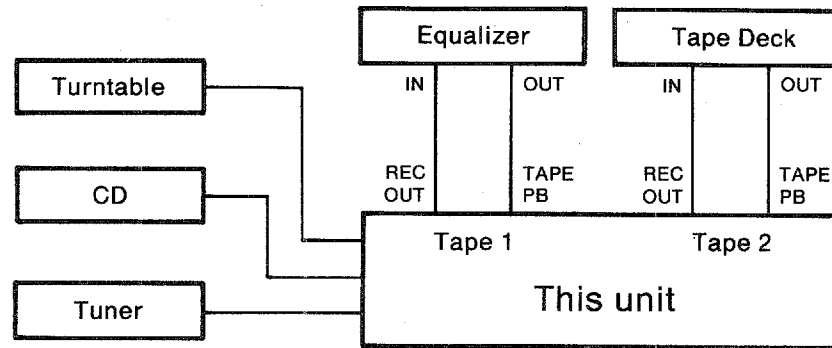
1. Using the Input Selector, select TAPE 2 MON.
2. To start recording set the source tape deck to playback and the recording tape deck to record. The recording can be monitored through the speakers or headphones.

* If your tape deck has three head monitoring capability you can monitor the just recorded signal by pressing TAPE 2 MON.

< < Advantage of the Tape Moni switch Construction > >

With an equalizer connected to TAPE 1 (REC OUT-TAPE PB), equalized output can be fed into TAPE 2 or fed to the speakers without rewiring.

For equalized output to the speakers only, set TAPE 1 MON switch ON and leave TAPE 2 MON OFF. To feed equalized output into TAPE 2, set TAPE 1 MON and TAPE 2 MON switches to ON. This setting also channels equalized output to the speakers.

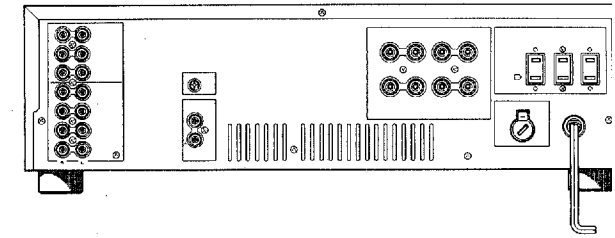


TROUBLESHOOTING

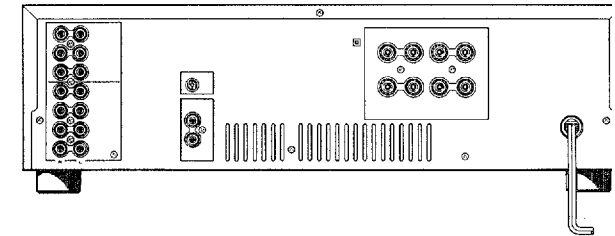
Before assuming that your unit is faulty, please check the following troubleshooting list which details the corrective action you can take yourself without having to call a service engineer. If you have any doubts or questions, contact your nearest Yamaha dealer.

PROBLEM	CAUSE	REMEDY
Power is not supplied even though the Power switch is turned on .	The power plug is not securely plugged in.	Plug it in securely.
There is no sound with any input selector switches pressed.	The Speakers switch is not set correctly.	Set the Speakers switch correctly.
	The input cords are not connected securely.	Connect them securely.
	The speaker system is not connected correctly.	Check and secure connections.
Only CD output is possible.	The CD DIRECT switch is ON.	Push the CD DIRECT switch to the OFF position.
There is no sound from one speaker.	The speaker connections are not secure.	Secure the connections.
	The Balance control is set all the way to the left or right.	Adjust the Balance control correctly.
There is a lack of bass and no ambience.	The + and - cords have been reversed at the amp or speakers.	Connect the speaker wires in the correct phase (+ and -).
There is a humming sound when playing records.	The input cords are not connected securely.	Plug the input cords in securely.
	The turntable's ground wire is not connected.	Connect the ground wire.
There is a howling sound when playing records at high volume.	The turntable and the speakers are too close together or the turntable is not mounted on a firm surface.	Change the location of the turntable or the speakers.
Turning the Bass or Treble knob does not affect the tone.	The Tone Bypass switch is on.	The Tone Bypass switch must be turned off to use the controls.
The sound suddenly goes off.	Driving speakers outside the rated impedance range at high power for an extended period has activated the speaker protection circuit.	Turning this unit off and then on will reset the speaker protection circuit. Use speakers inside the rated impedance range.
	There is a malfunction in the amplifier.	Consult your Yamaha dealer.

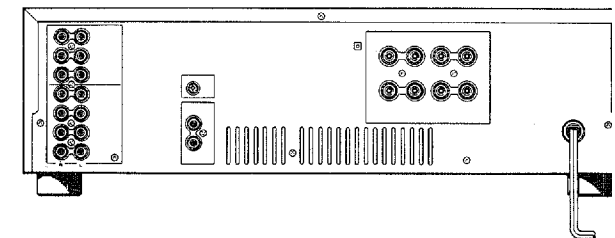
General Model



British and Australian Model



European Model



SPECIFICATIONS

Minimum RMS Output Power Per Channel	
20Hz~20kHz 0.015% THD 8Ω	55W
Dynamic Power Per Channel	
(by IHF Dynamic Headroom measuring method)	
8Ω/6Ω/4Ω/2Ω	
Canadian and General models	102W/117W/138W/158W
European, British and Australian models	98W/112W/126W/142W
DIN Standard Output Power Per Channel (European model)	
1kHz 1% THD 4Ω	70W
Dynamic Headroom	
8Ω	
Canadian and General models	2.68dB
European, British and Australian models	2.5dB
IEC Power	
1kHz 0.01% THD 8Ω	66W
Power Bandwidth	
0.05% THD 27.5W 8Ω	10Hz~50kHz
Damping Factor	
1kHz 8Ω	49
Input Sensitivity/Impedance	
Phono MC	160μV/220Ω
MM	2.5mV/47kΩ
CD/VIDEO-AUX/TUNER/TAPE	150mV/30kΩ
Input Sensitivity (New IHF) (Canadian and General models)	
Phono MC	23μV
MM	0.33mV
CD/VIDEO-AUX/TUNER/TAPE	20mV
Maximum Input Signal 1kHz	
0.02% THD Phono MC	11mV
MM	155mV
Output Level/Impedance	
REC OUT	150mV/470Ω
	(150mV/2kΩ-European)
Headphone Jack Rated Output/Impedance	
0.015% THD RL = 8Ω	0.7V/220Ω
Frequency Response	
20Hz~20kHz CD/VIDEO-AUX/TUNER/TAPE	±0.5dB
RIAA Equalization Deviation	
Phono MC 20Hz~20kHz	±0.8dB
MM	±0.5dB
Total Harmonic Distortion 20Hz~20kHz	
Phono MC to REC OUT 3V	0.008%
MM to REC OUT 3V	0.004%
Intermodulation Distortion	
CD/VIDEO-AUX/TUNER/TAPE Rated Output/8Ω	0.015%

Signal to Noise Ratio (IHF-A-Network)	
Phono MC (500μV Input Shorted)	75dB
MM (5mV Input Shorted)	91dB
CD/VIDEO-AUX/TUNER/TAPE (Shorted)	106dB
Signal to Noise Ratio (New IHF)	
Phono MC	75dB
MM	75dB
CD/VIDEO-AUX/TUNER/TAPE	86dB
Residual Noise (IHF-A-Network)	
Phono MC.MM Input Shorted 1kHz/10kHz	100μV
Channel Separation Vol - 30dB	
Phono MC.MM Input Shorted 1kHz/10kHz	46dB/43dB
CD/VIDEO-AUX/TUNER/TAPE	
Input 5.1kΩ terminated 1kHz/10kHz	67dB/50dB
Tone Control Characteristics	
BASS boost/cut	±10dB at 20Hz
turnover frequency	350Hz
TREBLE boost/cut	±10dB at 20kHz
turnover frequency	3.5kHz
Continuous Loudness Control (Level Related Equalization)	
Attenuation	-40dB (1kHz)
Gain Tracking error (0~ -60dB)	3dB
Power Supply	
Canadian model	AC120V 60Hz
European model	AC220V 50Hz
Australian British model	AC240V 50Hz
General model	AC110/120/220/240V 60/50Hz
Power Consumption	
Canadian model	370W
European model	430W
Australian British model	430W
General model	220W
AC Outlet (Canadian and General models)	
Switched x 2	(Canadian model) 100W max.
	(General model) 150W max.
Unswitched x 1	200W max.
Dimensions (W x H x D)	435 x 134 x 330.5mm
	(17.1 x 5.3 x 13.0 in)
Weight	6.7kg
	(14.8 lbs)

* Specifications subject to change without notice.

**CIRCUIT
DIAGRAM**

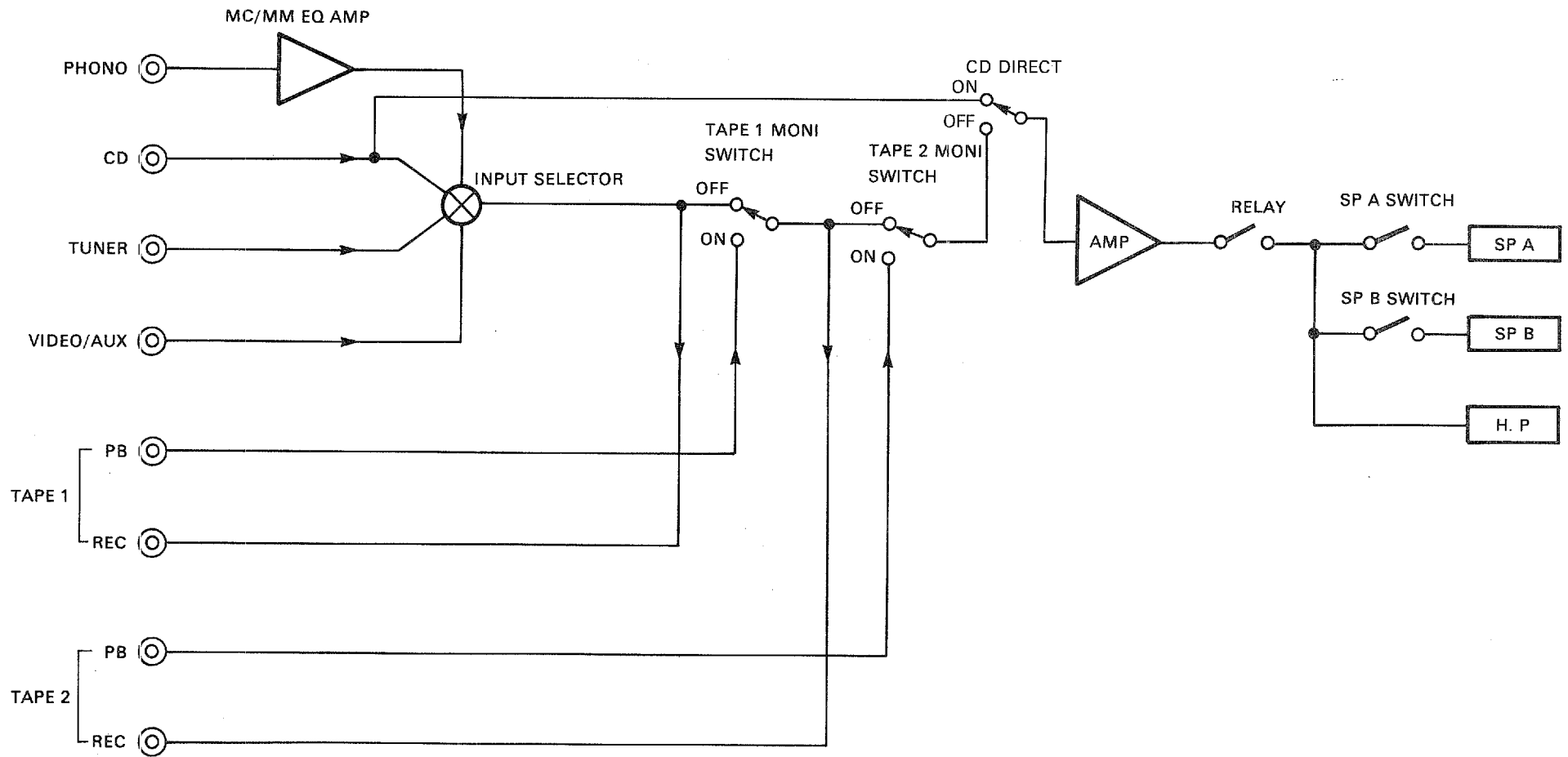
**SCHEMA DU
CIRCUIT**

SCHALTPLAN

**KOPPLINGS
DIAGRAM**

**SCHEMA DI
CIRCUITO**

**DIAGRAMA DEL
CIRCUITO**



YAMAHA

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