YAMAHA A-520

Natural Sound Stereo Integrated Amplifier

ZDR (Zero Distortion Rule) Amplifier 75 Watts (0.01% THD) Output Power per Channel

Direct-MC Cartridge Input

Independent Recording and Listening Selection

Continuously Variable Loudness Control



OWNER'S MANUAL

Thank you for purchasing the YAMAHA A-520 integrated stereo amplifier.

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IMPORTANT!

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

Model : **A-520**

Serial No. :

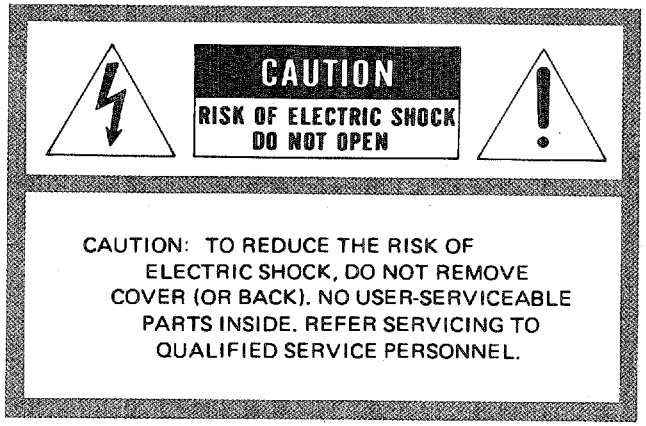
The serial number is located on the rear of the cabinet.

Retain this Owner's Manual in a safe place for future reference.

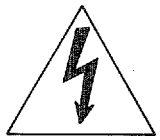
WARNING

To prevent fire or shock hazard, do not expose this appliance to rain or moisture.

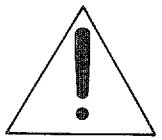
SAFETY INSTRUCTIONS



- **Explanation of Graphical Symbols**



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert you 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 you to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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 other 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, etc.

6 Carts and Stands – The appliance should be used only with a cart or stand that is recommended by the manufacturer.

7 Wall or Ceilling Mounting – The appliance should be mounted to a wall or ceilling 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, stoves, or other appliances 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 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, payin particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

12 Cleaning – The appliance should be cleaned only as recommended by the manufacturer.

13 Nonuse Periods – The power cord of the appliance should be unplugged from the outlet when left unused for long period of time.

14 Object and Liquid Entry – Care should be taken so that objects do not fall into and liquids not spilled into the inside of the appliance.

15 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 cabinet damaged.

16 Servicing – The user should not attempt to service the appliance beyond those means described in the operating instructions. All other servicing should be referred to qualified service personnel.

CAUTION: READ THIS BEFORE OPERATING YOUR A-520

1
The A-520 is a sophisticated integrated stereo amplifier. To ensure proper operating for the best possible operation, please read this manual carefully.

2
Choose the installation of your A-520 carefully. Avoid placing it in direct sunlight or close to a source of heat. Also avoid locations subject to vibration and excessive dust, heat, cold or moisture. Keep away from such sources of hum as transformers or motors.

3
Do not open the cabinet as this might result in damage to the set or electrical shock. If a foreign object should get into the set, contact your dealer.

4
Do not place records or other objects on top of the amplifier so that the ventilation holes are blocked. This will cause the internal temperature to rise and may result in a failure.

5
When removing the power plug from the wall outlet, always pull directly on the plug; never yank the cord.

6
Do not use force when using the switches and knobs.

7
When moving the set be sure to first pull out the power plug and remove cords connecting to other equipment.

8
Always set the volume controls to " ∞ " while lowering the tonearm to play a record, then turn the volume up after the stylus is seated in the record groove.

9
Do not attempt to clean the A-520 with chemical solvents as this might damage the finish. Use a clean, dry cloth.

10
Be sure to read the "troubleshooting" section for advice on common operating errors before concluding that your A-520 is faulty.

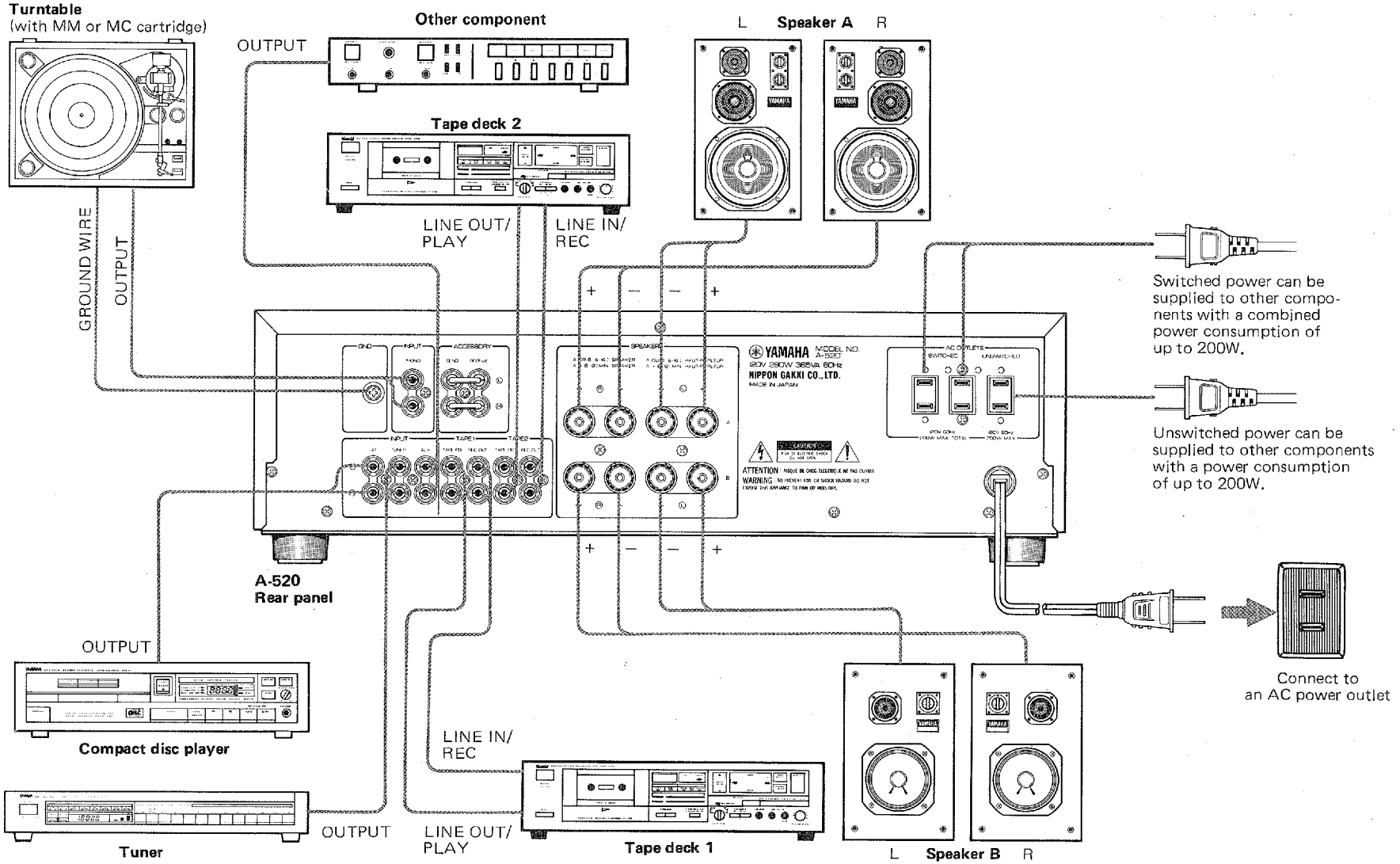
11
Keep this manual in a safe place for future reference.

12
Do not connect audio equipment to the AC outlets on the rear panel if that equipment requires more power than the outlets are rated to provide.

A-520

CONNECTION DIAGRAM

Before making any connections, turn off equipment. Be sure to connect the left (L) and right (R) channels consistently from component to component.



CONNECTIONS

• CONNECTING THE SPEAKERS

The matching impedance of this amplifier is 6Ω. Either one or two pairs of speakers may be connected. If only one pair is connected the recommended speaker impedance may by anywhere between 4 and 16Ω. If two pairs are connected, however, it is advisable to use speakers with at least an 8Ω impedance for optimum performance. Connecting two pair of 4Ω speakers is not recommended.

Connect the cords going to the left speakers to the L terminals and the right speaker cords to the R terminals, making sure that the "+" and "–" marking are observed. If the "+" and "–" wires are reversed at either speaker, the sound will be unnatural and will lack bass. Speaker cords should be cut as short as possible; do not coil up excess wire on the floor. Also, do not bundle with cords from other system components.

Strip about 1cm insulation from the ends of the speaker cords. Loosen the speaker knobs, insert the exposed wire of the speaker cord into the hole and then tighten up the speaker knob.

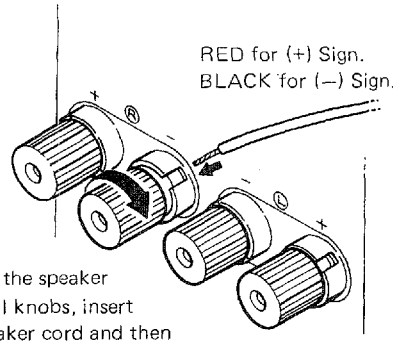


Fig. 1

• CONNECTING A TURNTABLE

Connect the output cords of the turntable to the amplifiers 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 cartridge and the turntable's output cords should be positioned well away from such sources of hum as power cords or power transformers of other system components.

• CONNECTING A TUNER

Connect 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 AUX JACKS

The CD and Aux terminals can be used for connecting additional equipment such as a compact disc player, a second tuner etc. Note that a turntable cannot be connected to the Aux jacks as there is no RIAA equilization.

• CONNECTING TAPE DECK

Connect the tape deck's Line In jacks to the amplifier's Tape 1 Rec Out jacks, verifying that left and right are not reversed. Then, connect the deck's Line Out jacks to the amplifier's Tape 1 Tape PB jacks.
A second deck may be connected to the Tape 2 jacks if desired.

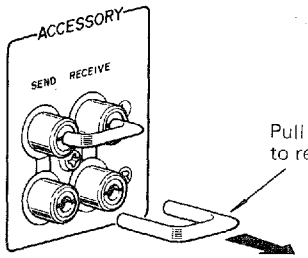
• AC OUTLETS

For your convenience, the A-520 provides 3 AC outlets (2 switched and 1 unswitched) on the rear panel. Be sure not to connect appliances to totaling more than 200 watts to the 2 switched outlets or more than 200 watts to the unswitched outlet.

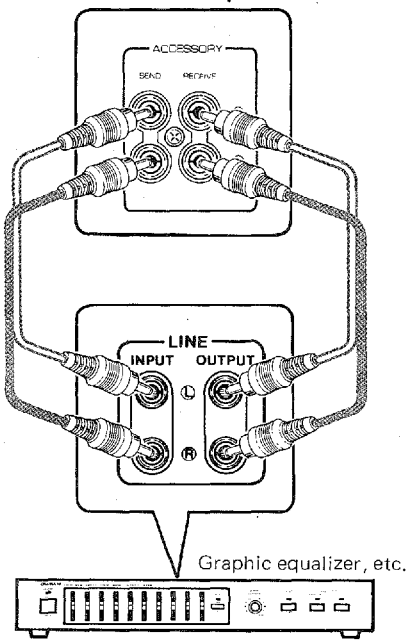
• ACCESSORY JACKS

For extra system flexibility, this amplifier allows you to connect a signal processing system such as an equalizer in the signal path prior to the tone control. Connect the Accessory Send terminals to the inputs of the equalizer and the outputs of the equalizer to the Accessory Receive terminals.

When using the accessory jack, pull out the jumper bar. When not using leave the jumper bar in.



A-520 Rear panel



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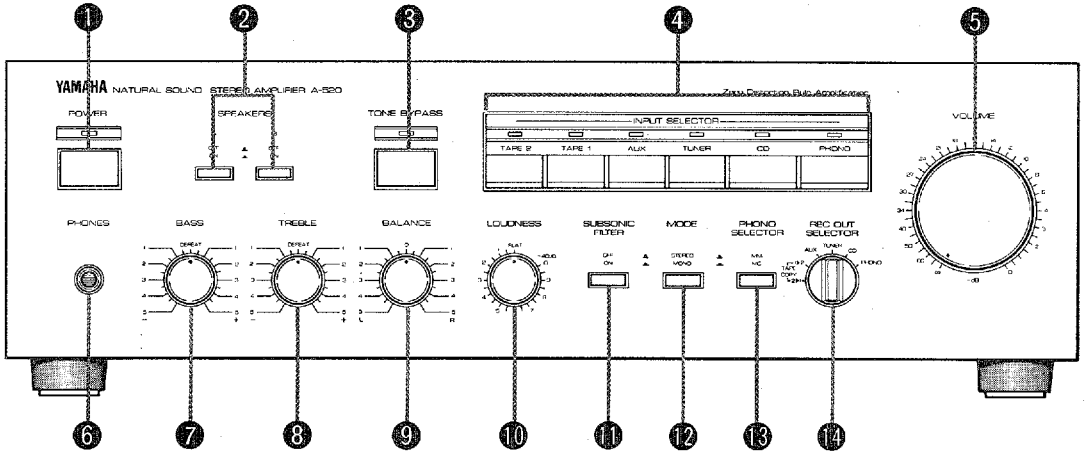
FRONT PANEL PARTS AND FUNCTIONS



❶ POWER SWITCH

This is a "push-on, push-off" type POWER switch. When POWER is pushed on the indicator lamp corresponding to the selected input source will light.

* Before pushing power on, set the volume to its lowest (extreme counter-clockwise) position to prevent any loud power-on noise from occurring.
* No sound will be heard from the speakers for several seconds after power is pushed on because the speaker protection circuit is activated.

❷ SPEAKER SWITCH

Allows you to select speaker system A, system B, or both at once. When listening to headphones only, turn both A and B off.

❸ TONE BYPASS SWITCH

Press this button to engage Tone Bypass, which routes the input signal so that it is unaffected by the bass and treble tone control circuitry.

❹ INPUT SELECTOR SWITCH

Selects the program source to be listened to.

❺ VOLUME CONTROL

Used to adjust overall sound volume.

❻ PHONES JACK

Used for plugging in headphones. When it is desired to listen to headphones only, Speaker switches A and B should both be set to the Off (■) position.

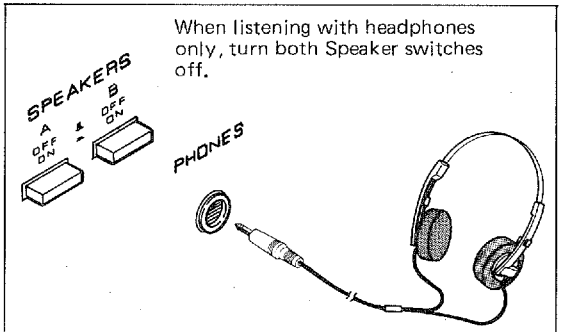


Fig. 2

❼ BASS CONTROL

Used to control the bass response, a flat response is obtained at the DEFEAT position. The bass effect is emphasized when the control is rotated to the right and attenuated when rotated to the left.

❽ TREBLE CONTROL

Used to control the treble response, a flat response is obtained at the DEFEAT position. The treble effect is emphasized when the control is rotated to the right and attenuated when rotated to the left.

❾ BALANCE CONTROL

This control lets you adjust the relative volume of the left and right speakers, enabling you to compensate for unbalance caused by installation locations of the speakers and furniture arrangement.

❿ LOUDNESS CONTROL

Attenates midrange frequencies to compensate for our ear's reduced sensitivity to bass and treble at low volume. Set it to the Flat position while the Volume control is set to your normal listening level. Turning it counterclockwise will reduce the volume while retaining the natural balance of the low and high frequencies.

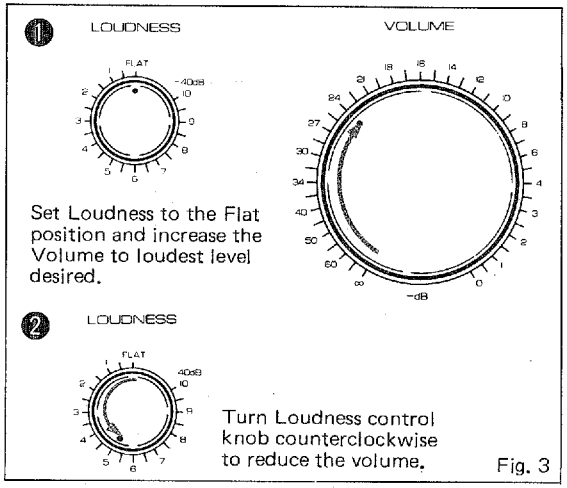


Fig. 3

⓫ SUBSONIC FILTER

This switch lets you cut out ultra low frequency signals caused by turntable rumble or warped records without affecting the quality of audible sounds. These subsonic interference signals can sap vital power from the amplifier or even harm speakers if not attenuated.

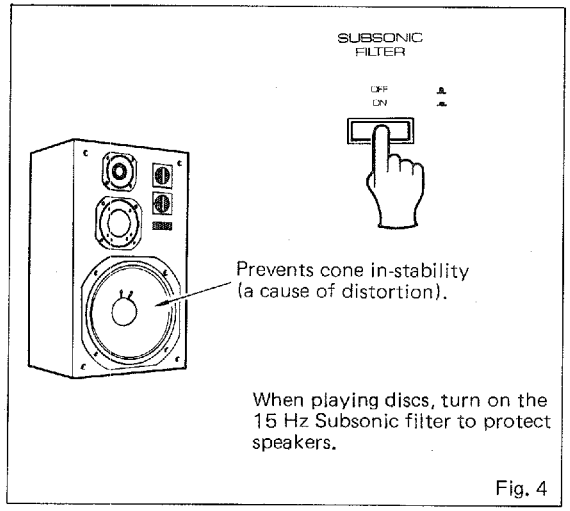


Fig. 4

⓬ MODE SWITCH

Allows switching between stereo and mono operation. Normally the switch should be set for stereo.

⓭ PHONO SELECTOR

Selects either MM (moving-magnet) or MC (moving-coil) cartridge type.

⓮ REC OUT SELECTOR

This switch selects the source for recording. Monitoring the recording source is optional: the input selector switches can be set to the same or a different source from that being recorded. If your tape deck has three-head monitoring capability, you can monitor the just-recorded signal by pressing the corresponding tape input selector switch.

• Independent Recording and Listening Examples

Rec Out selector	Input selector	Action
Tuner	Phono	Listening to a record with the speakers while recording an AM or FM broadcast.
Tuner	Tuner	Listening to an FM or AM broadcast with the speakers while recording it.
Phono	Phono	Listening to a record with the speakers while recording it.
Phono	Tuner	Listening to an FM or AM broadcast with the speakers while recording a record.

• Tape Dubbing

With a tape deck hooked up to each connector (TAPE 1 and tape 2), set the REC OUT switch to TAPE COPY position 1 ► 2 or 2 ► 1. Set the source deck to Play and the receiving deck to Record.

SPECIFICATION

Continuous Power Per Channel
20Hz ~ 20kHz 75W
(0.01% THD 8Ω)
Power Bandwidth
0.03% THD 37.5W (8Ω) . . . . . 10Hz ~ 50kHz
Input Sensitivity/Impedance
Phono MC 160μV/220Ω
MM 2.5mV/47kΩ
Aux, Tape Tuner, CD 150mV/47kΩ
Input Sensitivity (New IHF)
Phono MC 19μV
MM 0.3mV
Aux, Tape, Tuner, CD 18mV
Output Level/Impedance
Rec Out 150mV/470Ω
Headphone Jack Rated Output/Output Impedance
0.01% THD 8Ω 0.7V/270Ω
Frequency Response
20Hz ~ 20kHz Aux, Tape, Tuner, CD . . . . . +0 dB
−0.5dB
Damping Factor 1KHz, 8Ω 50
RIAA Equalization Deviation
Phono MC RIAA ±0.3dB
Phono MM RIAA ±0.2dB
Total Harmonic Distortion
(20Hz ~ 20kHz)
Phono MC to Rec Out (3V) 0.007%
Phono MM to Rec Out (3V) 0.003%
Aux, Tape, Tuner, CD to SP Out 1W/8Ω . . . 0.005%
Signal to Noise Ratio
(IHF-A-Network)
Phono MC (500μV Input Shorted) 75dB
MM (5mV, Input Shorted) 92dB
Aux, Tape, Tuner, CD (5.1kΩ) 100dB
Tone Control Characteristics
Bass boost/cut . . . . . ±10dB (at 20Hz)
Bass turnover frequency 350Hz
Treble boost/Out . . . . . ±10dB (at 20kHz)
Turnover frequency 3.5kHz
Filter Characteristics
Low (Subsonic) . . . . . 15Hz — 12dB/oct
Continuous Loudness Control
(Level-related equalization)
Attenuation . . . . . 40dB (at 1kHz)
Power supply AC120V, 60Hz
Power Consumption 290W
Dimensions (W x H x D) . . . . . 435 x 136 x 339
(17-1/8 x 5-5/16 x 13-5/16)
Weight . . . . . 7.5 kg (16.5 lbs.)

**Specifications subject to change without notice.*

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TROUBLESHOOTING

Before assuming that your amplifier is faulty, 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, get in touch with your nearest Yamaha dealer.

Fault	Cause	Cure
Power is not supplied even though the Power switch is turned on.	The power plug is not securely plugged in.	Plug it in securely.
	A fuse is blown.	Consult a service engineer.
There is no sound with any Input selector button 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.
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 the 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.
Interference from private commercial broadcasting.	A transmitter is located nearby.	Consult a service engineer.
		Consult with the company that is transmitting.

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