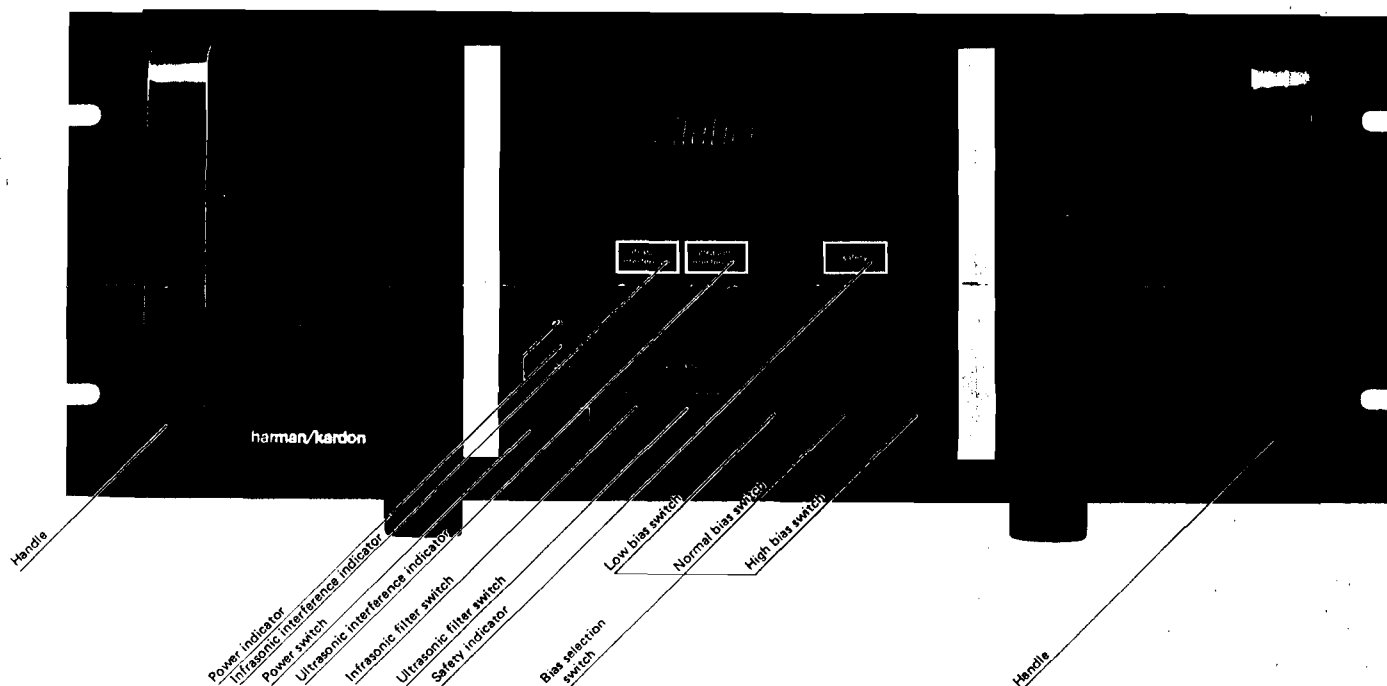


# Citation XX



## General Instructions

Since Citation XX is extremely heavy, carry out system connection after carefully selecting the installation place in the listening room. Firmly hold the carrying handles when carrying the unit.

### Always use the unit at 110V AC

This unit is designed for use at 110V AC. Connect the unit to a wall outlet with ample capacity because of the high power consumption of this unit. Do not connect this unit to an AC convenience outlet or an outlet supplying a higher voltage, and refrain from using a multiple outlet type connection because it is dangerous.

### Do not open the cabinet

To prevent shock hazard or unexpected trouble, do not tamper with internal components for inspection or maintenance. Harman Kardon does not guarantee performance resulting from any modification.

### When water or a metal piece enters the unit

When water, a hair pin or wire accidentally enters the unit, immediately extract the AC plug from the outlet and consult with the nearest Harman Kardon service

### Do not operate the unit in vertical state

The rear side of this unit is provided with a protector so that it can temporarily stand on end. However, the protector is only for protection of the terminals on the rear panel. Do not operate the unit while standing on end under any circumstances.

### Handle the AC cord carefully

This unit consumes a large amount of power instantaneously. The AC cord is of vital importance in this sense.

- Always hold the plug when disconnecting the AC cord from the outlet. Pulling at the cord may cause discontinuity.
- Do not place or drop heavy objects such as furniture on the cord. Do not make a knot in the AC cord. Otherwise, the cord may be damaged, causing fire or shock hazard.
- If the unit is not used for a prolonged period, disconnect the plug from the outlet.

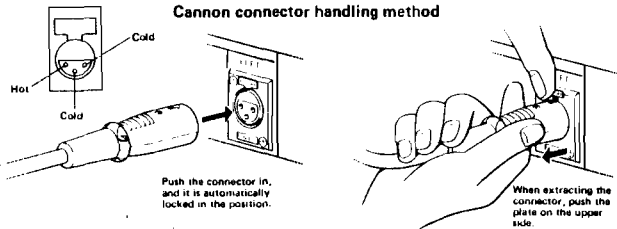
# Connections

Always disconnect the AC cord from the mains outlet before making connections with other components.

## Connection with preamplifier

For connection between the input terminals (INPUT) of this unit and the output terminals of a stereo preamplifier, always use high-quality connection cords. Connect the left channel and right channel output terminals of the preamplifier correctly to the LEFT (left channel) and RIGHT (right channel) INPUT terminals of this unit, respectively. Insert plugs fully. This unit is also provided with input terminals for cannon connectors. Since a cannon connector is provided with a hook to prevent accidental disconnection during operation, it is safe. Capability of sure, firm connection by one-touch operation is very convenient for those who frequently change connections. When using cannon connectors, make correct connections by checking preamplifier polarities.

- Connection cords to the preamplifier should not entangle with the AC cord because it may degrade the sound quality.



## Speaker system connection

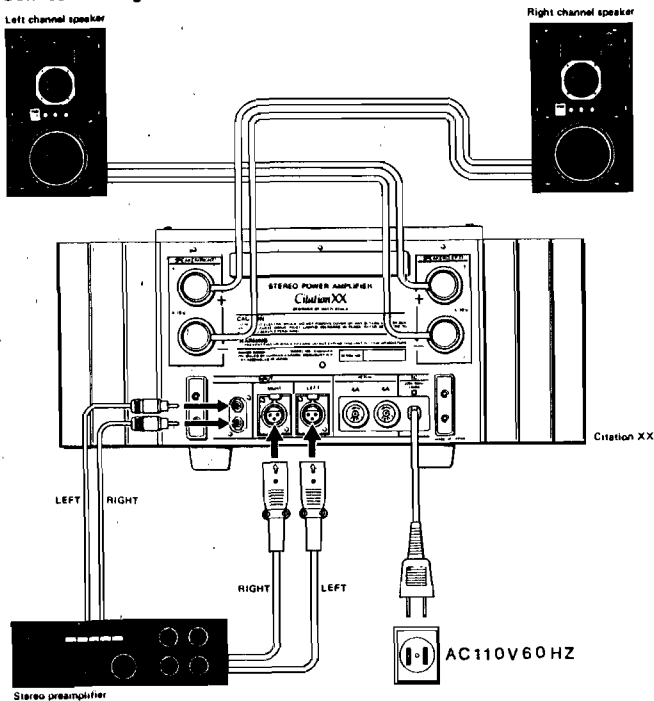
Connect speaker systems to speaker terminals of this unit. Carefully connect the cords so as not to mistake left and right channels and speaker polarities (+, -).

- Use sufficiently thick cords (14 gauge minimum) with thick insulation for full attainment of the unit's performance. Speaker cords should be as short as possible.
- To minimize the contact resistance between the speaker terminals of this unit and speaker cords, fully tighten the terminal knobs.
- To prevent shorting between the bare metal conductors of the positive and negative cords, the tip ends of the conductors should be thoroughly wound in the terminals.

The nominal speaker impedance should be between 4Ω and 16Ω.



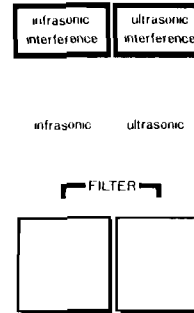
## Connection diagram



# Infrasonic filter

Since this unit is a DC amplifier, any DC or subsonic component of the input signal will be amplified. Since a DC signal component adversely influences speakers, it should be filtered out. When a DC component or strong subsonic signal is present, the red "infrasonic interference" indicator illuminates to warn the user. Press the infrasonic filter switch. A 1 Hz filter is inserted into the circuit to cut off the unwanted signal component. The green "infrasonic" indicator illuminates, and the red warning display will soon turn off.

If the DC component increases abnormally, a protection circuit stops the amplifier operation, and the "safety" indicator illuminates. If this state occurs, turn the power off, check and eliminate the cause, and then turn the power on again. Possible causes of the DC or subsonic signal components are warped records and DC leakage from the preamplifier, tuner or tape deck.



# Ultrasonic filter

This unit features the wide-band design in which the high-frequency zone extends up to 3 MHz. Therefore, an AM radio station or a CB radio in the neighborhood may become mixed with the input signal and amplified. It will adversely affect the sound quality. Since the mixed radio frequency is outside the audible frequency range, the user may not be aware of its presence. In such a case, the red "ultrasonic interference" indicator illuminates to warn the user. Press the ultrasonic filter switch. The green "ultrasonic" indicator illuminates and, at the same time, the red indicator will turn off. A two-pole Bessel filter (100 kHz) is inserted into the circuit, and the mixed radio signal is removed from the music signal. This Bessel filter was chosen over other types because its effect on audible frequencies is less likely to be noticed. When amplifier clipping occurs the high frequency distortion may cause the "ultrasonic interference" indicator to illuminate for a short period. This is not a fault, but an indication that the input signal should be reduced.

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## Bias selection switches

This unit enables bias selection in 3 stages (low, normal and high). The bias settings allow the effective use of the heat sink thermal capacity by adjusting the idle current to the operating conditions. Generally select the normal bias position.

### low position

The low bias position reduces the bias but is the optimum setting for continuous use at high power levels. The low bias position is also optimal for use at a high room temperature and/or a poor heat radiation environment.

### normal position

The normal bias position is recommended for normal use irrespective of the music genre, big band orchestra, popular or jazz. The heat generated is a little more than that in the low bias position.

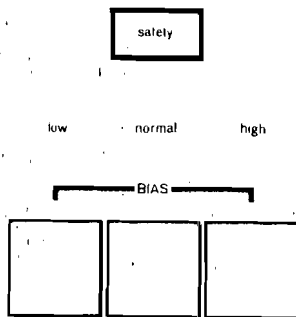
### high position

The high bias position is suitable when delicate reproduction is required such as when listening to baroque music. The heat generation is the highest and the heat sink temperature rises up to about 50°C. Use at this position should be avoided when the room temperature is high or heat radiation environment is poor. When it is desired to expedite warming up after power on, the amplifier is warmed in a short time by selecting this position.

- Do not operate continuously at high volume levels at the high bias position for a long time. A high temperature protector may be activated when the chassis temperature reaches about 65°C.

### Thermal protector

When the heat sink temperature exceeds 65°C, a thermal protector is operated to protect the power transistors. The red "safety" indicator illuminates and the operation stops. If this occurs, turn the power off temporarily. After cooling the unit awhile, place the bias selection switch in the low or normal bias position, turn on the power and continue to use the unit.



## Operating procedure

Before turning the power on, be sure to check that all connections are correct.

- Turn the volume control knob of your preamplifier to the minimum level.
- Select the desired source.
- Turn on the preamplifier power.
- Press the normal bias switch. Press the high bias switch when it is desired to expedite warming up of the amplifier.
- Turn on the power switch. The red "wait" indicator illuminates. In about 7 seconds, the "wait" indicator goes off, the green "on" and "Citation XX" indicators illuminate and the amplifier is ready for operation.
- Start the source (tape deck, turntable, etc.). Gradually increase the preamplifier volume and sound will be heard from the speakers.
- If the "infrasonic interference" or "ultrasonic interference" indicators illuminate during operation, press the corresponding filter switch. (See Infrasonic and Ultrasonic filter explanations.)
- When turning off the system power at the end of operation, first turn off the power of this unit and then turn off the power of other system components. Turning off the preamplifier power first may cause generation of a turn-off transient which will be amplified by this unit and may damage the speakers.

## Protection circuit

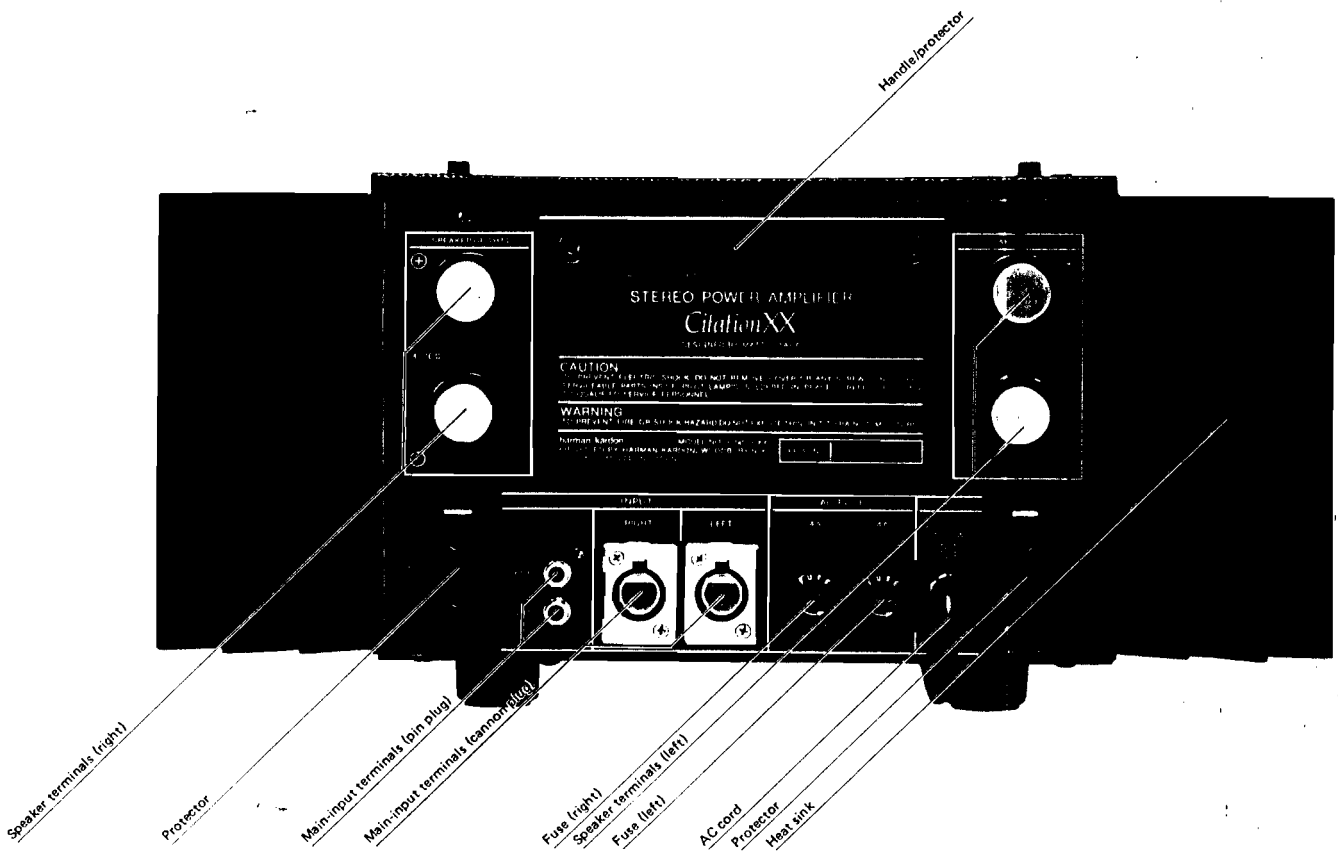
- The "wait" indicator illuminates for about 7 seconds after the power is turned on, and no sound will be heard from the speakers during this period. The protection circuit mutes the unit until it stabilizes. This prevents noise and turn-on transients from damaging the speaker systems.
- The protection circuit also mutes the speaker output when the speaker terminals are shorted during operation. Although the protection circuit resets automatically, turn off the power temporarily and remove the short circuit.
- In case of abnormal heat generation, refer to the explanation of bias selection switches.

## Specifications

Output	8Ω load	250W x 2
	4Ω load	440W x 2
Input sensitivity	1V/15kΩ	
Filter	Infrasonic 1Hz (6dB/oct) Ultrasonic 100kHz (Secondary Bessel filter)	
Power source	AC 110V 60 HZ	
Power consumption	1050W	
Dimensions	425mm(W) x 195mm(H) x 487mm(D)	
Weight	42kg	

- The design and specifications are subject to change for improvement without notice.

on XX



#### Locations for installation

Avoid the following locations for safe operation of this unit:

- Place exposed to direct sunlight, near a heat source, or a cold place such as near a cooling air outlet.
- Humid or dusty place, or a place exposed to direct vibration such as on a speaker.
- Since this unit weighs 42kg, avoid an unstable base or a rack with insufficient strength. A sturdy base will ensure better sound quality.

**Pay special attention to heat radiation.**

This unit generates much heat because of high current conduction to obtain better sound quality. Do not place the unit on another component or in a narrow rack that will obstruct the vertical flow of air required for adequate heat radiation.

Select an installation place ensuring sufficient ventilation. Rack mounting according to the EIA specification is possible, but be sure to also pay sufficient attention to

#### Fuse replacement

To maximize the high current performance of this unit, it uses a special fuse that will not melt in normal operation. If the fuse is blown, consult with your dealer or Harman Kardon service shop. Do not try to replace the fuse yourself.

