

Owners Manual

**Bose® 501™ Series III
Direct/Reflecting®
Loudspeaker System**



BOSE®

The Bose® 501™ Series III Direct/Reflecting® Loudspeaker System

1. Introduction

Thank you for purchasing the Bose 501 Series III Direct/Reflecting® Loudspeaker System. Its advanced design and quality construction will give you many years of listening pleasure.

The installation and operating principles of your Bose 501 system are significantly different from those of conventional speaker systems. To obtain the best possible performance, **please take the time to read this manual.**

2. Unpacking

Your 501 system is packaged in two separate cartons marked **Part 1** (left speaker) and **Part 2** (right speaker). Unpack each unit carefully, saving the cartons and all packing materials for later use.

If either speaker appears to be damaged when unpacking, **do not place the damaged unit into operation.** Repack the speaker in its original carton and notify your authorized Bose dealer immediately.

3. Placement

Bose 501 speakers are designed for flexible placement in a wide variety of listening environments. For optimum results, follow the placement recommendations listed below. Refer to **Figure 1.**

1. Place the **Part 1** and **Part 2** speakers on the **left** and **right** sides of the room respectively, spaced 4 to 12 feet (1.2–3.6 m) apart.
2. The most accurate bass response is realized when the speakers are set directly against the wall behind them. However, satisfactory performance can still be obtained with the speakers located up to 12 inches (30 cm) away from the rear wall.
3. Position the speakers **at least 18 inches** (45 cm) from the side walls. Optimum distance is 2 to 5 feet (0.6–1.5 m). Large objects (furniture, etc.) should not be placed in front of the speakers.

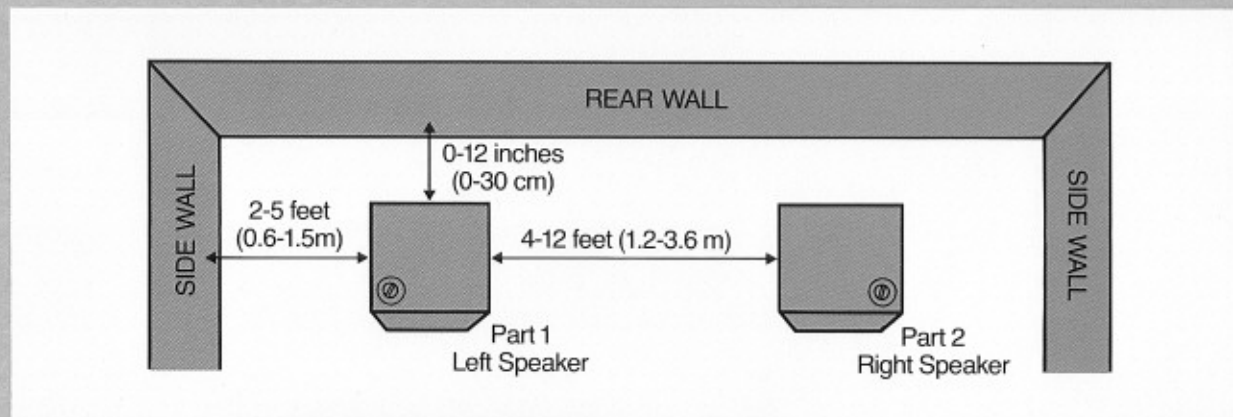


Figure 1. Recommended placement in average-sized listening rooms.

4. A large proportion of the sound energy radiated by your 501 system comes through the sides of the enclosures. For this reason, **it is important not to block or cover the side grille panels.** Always allow at least 18 inches (45 cm) of clear space around both sides of the speaker cabinets.
5. Sound-absorbent furnishings (stuffed chairs, heavy drapes, etc.) should be kept **at least 2 feet** (60 cm) away from the speakers.

4. Wire Selection

If the wire connecting the speakers to your amplifier or receiver is too small, audible coloration of the sound and/or power loss can occur. The table below specifies the **minimum** thickness of 2-conductor wire recommended for various speaker-to-amp distances.

Standard 2-conductor zipcord (available at electrical and hardware stores) can be used for speaker connection. This wire is often color-coded, or else has a ribbed line(s) running along one conductor for easy identification of the positive and negative leads.

RECOMMENDED WIRE SIZES*

Maximum Length	Wire Gauge
30 feet (9m)	18 (0.75 mm ²)
45 feet (14m)	16 (1.5 mm ²)
70 feet (21m)	14 (2.0 mm ²)

*Based on a maximum frequency response deviation of ± 0.5 dB.

5. Connection

Follow the next procedure to assure that both 501™ speakers are properly connected to your music system. Refer to **Figure 2.**

1. Turn off your amplifier or receiver and unplug it from the ac power mains before attempting to connect the loudspeakers.
2. Slightly separate the conductors at the ends of each length of wire. Strip approximately 1/2 inch (12 mm) of insulation off each conductor.

3. Locate the **left** speaker input terminals located on the back of the cabinet. Note that there are **two** terminals marked + (POS) and - (COM).
4. Connect one wire conductor to the terminal marked - (COM) on the **left** speaker. Connect the other end of the **same** conductor to the output terminal marked COM, GND, NEG or - on the **left** channel of your amplifier. Use the color-coding or ribbed line(s) on the wire to be sure you are using the same conductor.
5. In the same manner, connect the + (POS) terminal on the **left** speaker to the output terminal marked POS or + on the **left** amplifier channel. (If your amplifier offers a choice of output impedances, use the terminal marked 8 or 8 OHMS).
6. Repeat steps 4 and 5 above, connecting the **right** speaker to the **right** output channel of your amplifier or receiver. Tighten all terminal connections firmly.
7. Check **very carefully** to be certain that no loose strands of wire are accidentally "bridged" across the terminals on either the speakers or the amplifier. **Bridged wires create short circuits which can damage your amplifier.** Repair any loose wire strands **before** plugging in your amplifier or receiver.

6. Phasing Test

If you are not certain that the speakers are connected to your amplifier "in phase" (i.e., positive to positive, negative to negative), perform this simple test:

1. Set your sound system for MONO (monophonic) reproduction. Be sure the balance control is centered or set to normal.
2. Temporarily place the loudspeakers so that they are facing each other closely.
3. Play music containing deep bass notes through the system. If the speakers are phased correctly, the sound will appear to come from a point between the speakers with full, natural bass response.

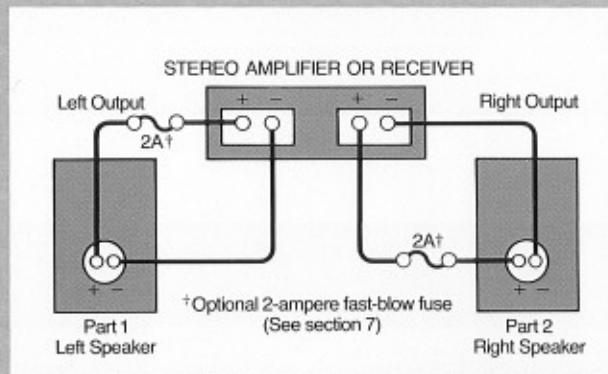


Figure 2. Speaker connection.

4. If the music seems to be lacking in deep bass, reverse the wire connections to **one** speaker and repeat the test. **Use the connection that produces the most powerful bass.**

7. Fusing

Any loudspeaker can be damaged if the amplifier driving it should fail. Damage may also occur by playing the music so loudly that it sounds distorted. **This can happen even with a low-powered amplifier or receiver.**

Your Bose® 501™ speakers incorporate automatic protection circuitry which guards against certain types of electrical stress. Fusing will provide additional protection, and is recommended in most applications.

The fuseholders should be inserted into the + (POS) wire connecting each speaker to your amplifier or receiver (see **Figure 2**). Use **2-ampere, fast-blow** Buss AGC Series or equivalent fuses.

A fuse kit containing fuses and holders is available from the Bose Customer Service Department, The Mountain, Framingham, Massachusetts USA 01701 for \$5.00. Ask for 501 Fuse Kit, Part Number 108938-1.

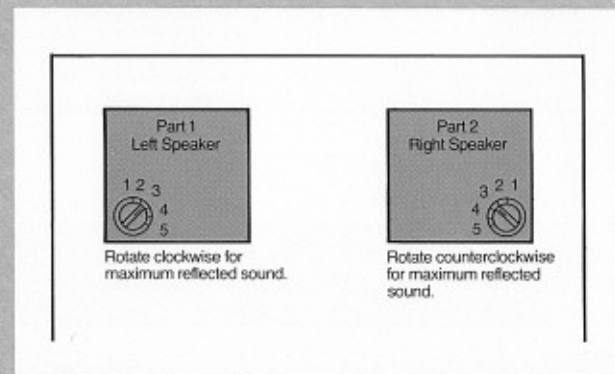


Figure 3. Operation of the Direct Energy Control.

8. Direct Energy Control

The 501 Direct Energy Control lets you change the spatial distribution pattern of your speakers to fit virtually any type of placement or music. Its audible effect depends on your distance from the speakers and the acoustics of your listening room. In most cases, proper adjustment of the Direct Energy Controls will significantly improve the spatial performance of your 501 system.

Note that the numbers shown in **Figure 3** are for reference purposes only and do **not** actually appear on the speakers.

Control positions 1 and 2 provide maximum **direct** sound energy at high frequencies. These positions should be used:

- a. if there is no sound-reflecting surface within 3 feet (90 cm) of the outward-firing tweeter system;
- b. when a relatively narrow stereo image is desirable; e.g., solo musicians and small performing ensembles.

Control position 3 provides a normal balance of reflected and direct sound energy. Use this position:

- a. when there is a sound-reflecting surface within 1½–3 feet (45–90 cm) of the outward-firing tweeter system;

- b. when a normal stereo image is desirable; e.g., medium-sized performing groups, "studio" rock and disco.

Control positions 4 and 5 provide maximum **reflected** sound energy at high frequencies. These positions should be used:

- a. **only** if there is a sound-reflecting surface within 1½–3 feet (45–90 cm) of the outward-firing tweeter system;
- b. when a wide stereo image is desirable; e.g., symphonic performances, live concerts and electronic music.

These guidelines are based on experiments conducted in a wide range of acoustic environments and may not apply in every listening situation. Try various combinations of control settings on each speaker to obtain a spatial balance that satisfies your specific requirements. **It is not always necessary to adjust both Direct Energy Controls the same way.**

9. Room Acoustics

1. Your Bose® 501™ system works best when sound energy is given room to develop "around" the speakers, reflecting off nearby walls. Hard materials such as wood, brick, glass, sheetrock and/or sturdy paneling generally provide the most effective sound-reflecting surfaces.
2. If your room contains few furnishings with bare walls and floors, the music may sound unnaturally shrill or bright. The addition of carpeting, wall hangings and drapes usually helps to alleviate this problem. Distribute these furnishings evenly around the listening area for best results.
3. Rooms filled with stuffed furniture, unusually heavy carpeting or drapes can absorb much of the high-frequency energy radiated by your speakers. Such rooms often make reproduced music sound dull and lifeless. By rearranging or removing some of the absorbent furnishings, the tonal balance can be substantially improved.
4. If your music seems to be lacking in deep bass, move the speakers closer to the wall behind them and/or nearer to the corners of the listening room. Heavy, "booming" bass can be tamed by moving the speakers away from cor-

ners or walls. In all cases, follow the placement guidelines outlined in Section 3 as closely as possible to assure a proper balance of reflected and direct sound.

5. Many problems with room acoustics can be solved by judicious use of the tone controls on your amplifier or receiver. Experiment with various settings to achieve a frequency balance that suits your personal tastes.

10. Maintenance

The walnut-grain vinyl cabinetry of your 501 speakers can be cleaned by wiping with a soft damp cloth and a mild detergent. The grille panels require no special care although they can be carefully vacuumed if necessary.

11. In Case of Difficulty

If you suspect a problem with your Bose® 501™ speakers, use the following checklist to determine if the difficulty is actually in the speakers or in some other component of your music system.

If one speaker sounds less brilliant than the other, try adjusting the positions of **both** Direct Energy Controls in accordance with the recommendations in Section 8.

If one speaker sounds defective, do not switch the speaker cables, as this could damage a speaker. Disconnect the defective speaker at the amplifier output terminals and reconnect it to the amplifier channel that is operating correctly. If the speaker that sounded defective now plays properly, the problem is not in the speaker or wiring.

If trouble appears in both speakers, connect them to another amplifier or receiver that is known to be working properly. If the speakers now operate correctly, the problem is not in the speakers.

If trouble persists in one or both speakers, contact your authorized Bose dealer. He will verify any defects and arrange for service by an authorized service agency or by the Bose factory. Bose Corporation will make every effort to remedy any problem within the terms of the warranty at minimum inconvenience to you.

12. Technical Information

Features

Asymmetrical Design
Direct Energy Control
Dual Frequency™ crossover network
Efficient ducted-port enclosure system
Automatic tweeter protection circuitry
Thermal Protection System
Syncom® II computerized quality control

Driver complement: One (1) 10-inch (25.4 cm) long-excursion woofer, two (2) 3-inch (7.6 cm) tweeters

Nominal impedance: 8 ohms

Crossover transition frequencies: 1.5 kHz and 2.5 kHz

Power rating: 20 watts minimum, 100 watts RMS maximum per speaker

Cabinet: Walnut-grain vinyl veneer, 24 x 14½ x 14¼ inches (61 x 36.8 x 36.2 cm)

Covered by patent rights issued and/or pending.
501-III speaker design is a trademark of Bose Corporation.
© Copyright 1982 Bose Corporation. All rights reserved.
Printed in U.S.A.

BOSE®
Better sound through research.

Bose Corporation, The Mountain,
Framingham, Massachusetts USA 01701
Australia, Belgium, Canada, Denmark, England, France,
Germany, Greece, Ireland, Italy, Japan, Netherlands, Spain,
Switzerland.