
BOSE®

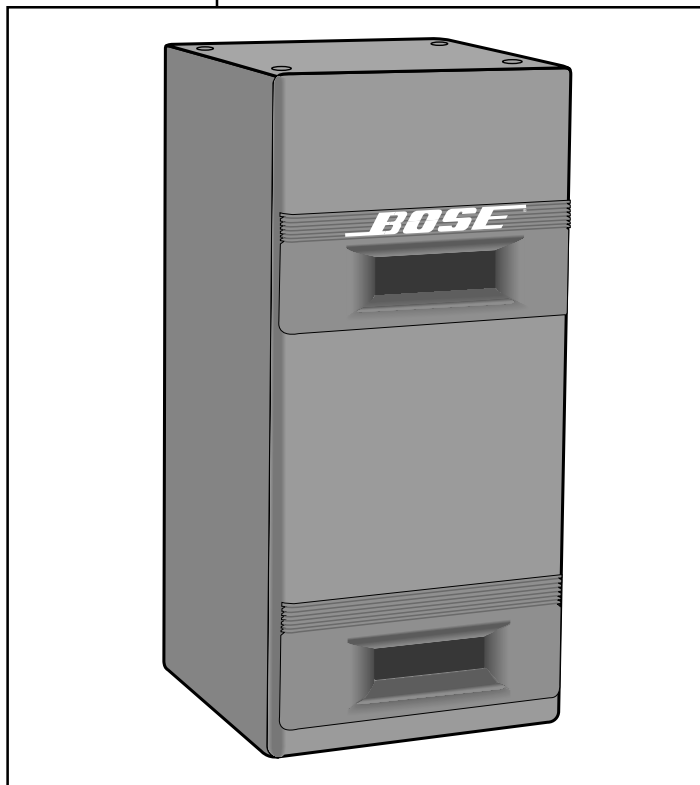
502®BEX

ENVIRONMENTAL

EXTENDED RANGE

ACOUSTIMASS®

ENCLOSURE



OWNER'S GUIDE

***BOSE*®**



DECLARATION OF CONFORMITY

We, the offerer:

Bose® Corporation, The Mountain, Framingham, MA 01701-9168 USA

acknowledge our sole responsibility, that the product:

Kind of equipment: Loudspeaker
**Type designation: Panaray® 502®BEX Environmental
Extended Range Acoustimass® Enclosure**


in accordance with EMC Directive 89/336/EEC and Article 10(1) of the Directive,
is in compliance with the following norm(s) or document(s):

Technical regulations: EN50081-1, EN50082-1

Accredited by Bose Corporation

20 May 1997

Bose B.V.
Nijverheidstraat 8, 1135 GE Edam
The Netherlands


Anton Schalkamp
General Manager, Bose Europe
Manufacturer's authorized EU representative

Contents

1.0	Safety Information	4
2.0	General Operating Instructions for the Bose® 502®BEX Environmental Acoustimass® Enclosure	5
2.1	Unpacking the 502BEX Acoustimass enclosure	6
2.2	502BEX Acoustimass enclosure component description	7
2.3	502BEX Acoustimass enclosure electrical connections	8
2.4	502BEX Acoustimass enclosure mechanical connections	11
2.5	502BEX Acoustimass enclosure	
	accessories	11

Appendices

Appendix A:	502BEX Acoustimass Enclosure Specifications	12
A.1	Acoustic specifications	12
A.2	Mechanical specifications	12
A.3	Accessories.....	12
Appendix B:	Warranty And Service	12
B.1	Warranty period	12
B.2	Service	12
B.3	Contacting Bose Corporation	13

1.0 Safety Information

Please read this safety information before using, connecting, or operating the Bose® 502®BEX environmental Acoustimass® enclosure.

1.1 Read the instructions

Read and keep all safety and operating instructions.

1.2 Follow cautions

For your safety, follow all cautions and warnings in the Owner's Guide and on all products.

1.3 Avoid heat

Do not use or place this unit near excessive heat sources. This includes radiators, heat registers, flood lamps, spotlights, stoves, or other appliances.

1.4 Protect cables

Always route cables to keep them from being pinched or cut by heavy or sharp objects.

1.5 If damage occurs

Refer servicing to qualified service personnel under the following conditions:

- a. If liquid other than water spills into the bass enclosure;
- b. If water accumulates inside the bass enclosure;
- c. If the bass enclosure does not operate normally even though you have followed the instructions in this guide;
- d. If the bass enclosure exhibits a distinct change in performance.

1.6 Safety check

Following service or repairs, ask the service technician to perform a safety check. This includes proper electrical and mechanical connections within the bass enclosure.

2.0 General Operating Instructions for the Bose® 502®BEX Environmental Acoustimass® Enclosure

The 502BEX enclosure (Figure 1) has an extended frequency range compared to the standard 502B enclosure. The frequency response of the 502BEX (55Hz to 180Hz) has been optimized for use with Bose Panaray® LT systems. The 502BEX features a rugged construction that allows it to withstand the conditions associated with outdoor use. The specially constructed cabinet and driver allow the enclosure to withstand moisture and resist corrosion and rot.

Note: While the 502BEX bass enclosure can withstand exposure to rain, ice, and snow, the unit should not be allowed to accumulate standing water, ice, or snow inside the cabinet. This could interfere with the ports and/or damage the woofer which is located above the bottom port.

Based on Bose patented Acoustimass loudspeaker technology, the 502BEX bass enclosure provides clear, deep bass reinforcement from 55Hz to 180Hz. It also offers high acoustic output and power handling (450W RMS IEC pink noise, 1200W RMS music). This results from use of the high-power 12" woofer that includes a 4" heat-resistant voice coil. The woofer also features a moisture-resistant rubber surround, high-strength cast aluminum basket, and advanced design spider.

Aerodynamic ports in the enclosure reduce cone excursion and port noise. This provides greater reliability and output, while dual air masses filter out unwanted distortion and out-of-band artifacts.

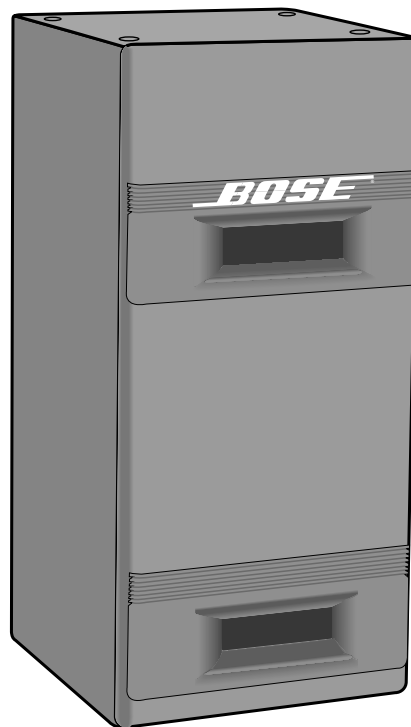


Figure 1

The 502BEX bass enclosure's frequency response has been optimized for use with Panaray LT systems and the unit has been designed to be used both indoors and outdoors.

2.1 Unpacking the 502^{BEX} Acoustimass[®] Enclosure

Unpack the 502BEX Acoustimass enclosure carefully. Save the carton and all packaging materials for possible later use. A convenient way to unpack the 502BEX enclosure is by opening the top flaps completely, turning the unit over upside down on the floor, then lifting the carton clear of the unit (See Figure 2).

If any of the components appear damaged, do not try to install or operate the system. Repack the components in their original cartons. Notify the Bose[®] Service Department or your authorized Bose Professional Products dealer immediately.



Figure 2

502^{BEX} carton removal

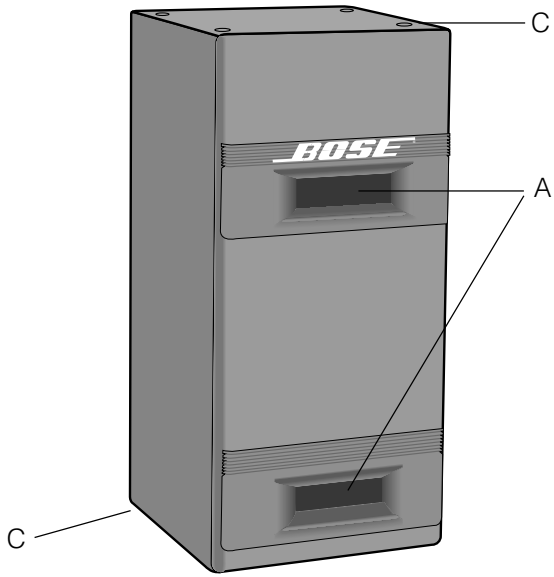


Figure 3

502BEX Acoustimass® enclosure front view

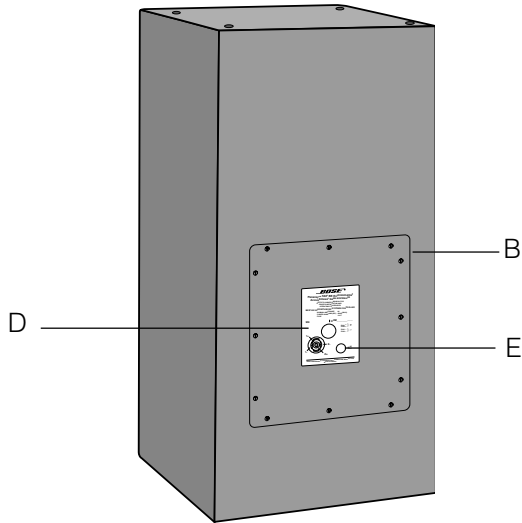


Figure 4

502BEX Acoustimass enclosure rear view

2.2 502BEX Acoustimass® Enclosure Component Description

To locate the main components of the 502BEX bass enclosure, refer to Figures 3 and 4.

- A. Ports.** Do not block these in any way during installation.
- B. Rear access panel.** Removable for driver replacement.
- C. Attachment points.** These eight 8mm threaded inserts are correctly spaced for mounting the CSB-5B suspension bracket.
- D. Audio connector panel.** This houses the fuse and the Neutrik Speakon® NL-4 connector.
- E. Fuse holder.** Houses the 7-ampere quick-acting fuse.

Note: The Speakon® connector and the fuse holder have been designed to withstand exposure to rain and snow while the 502BEX Acoustimass enclosure is in use.

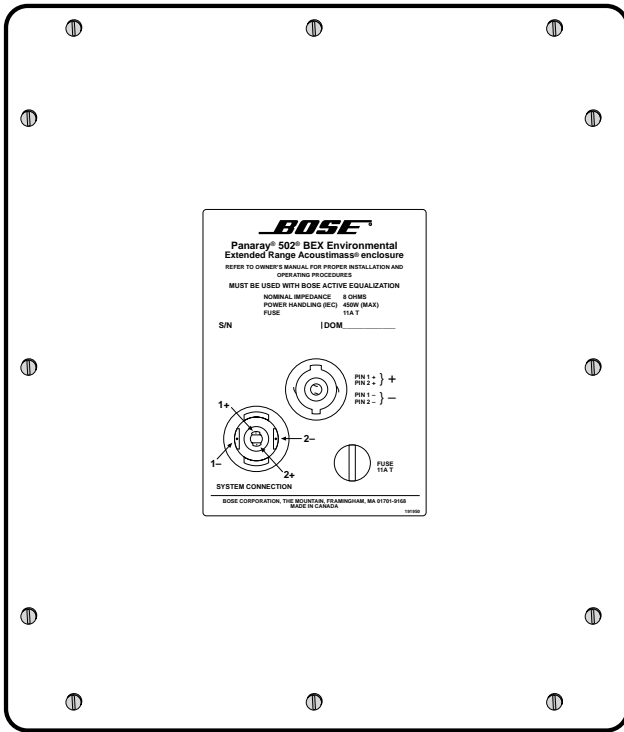


Figure 5
502®BEX bass enclosure rear panel

2.3 502®BEX Acoustimass® Enclosure Electrical Connections

CAUTION: The nominal impedance of the 502BEX Acoustimass enclosure is 8Ω. If you connect TWO 502BEX enclosures in parallel, the resultant nominal load will be 4Ω. If you connect a third, the impedance will be 2.6Ω, and a fourth will result in a 2Ω load.

Depending on the amplifier you use, permanent damage to the loudspeakers or the amplifier may result if you operate the system in the 2-3Ω range for prolonged periods.

Consult the amplifier's owner's manual (or the manufacturer) before connecting and operating a Panaray® sound system with a load (per channel) of less than 4Ω.

The 502BEX Acoustimass enclosure is equipped with a Neutrik Speakon® NL-4 connector. See Sections A & B for information on connecting the 502BEX bass enclosure to an amplifier.

Pins 1+ and 2+ are connected in parallel inside the enclosure and Pins 1- and 2- are connected in parallel inside the enclosure. Pins 2+ and 2- of the 502BEX Speakon® connector can be used to connect a second 502BEX enclosure in parallel with the first enclosure, if desired.

The 502BEX Acoustimass enclosure has been specifically designed to be used with Bose® active equalization. Using the 502BEX enclosure without Bose active equalization may damage the 502BEX enclosure and will void the warranty. Active equalization for the 502BEX enclosure may be provided from a Bose Model 1800-V amplifier equipped with an optional 502BEX loudspeaker equalization card or from a separate equalizer.

The 502BEX enclosure incorporates a 7-ampere, quick-acting fuse. This is mounted in a fuse holder on the rear connector panel (Figure 8). The fuse will blow if excessive power is applied to the loudspeaker, or if the amplifier driving the loudspeaker fails. Always check your power amplifier before replacing blown loudspeaker fuses.

If you need to replace the fuse, use only a 7-ampere, quick-acting Buss type AGC, or equivalent replacement fuse. The use of slow-blow fuses or fuses with a higher current rating will void your warranty.

Bose Model 1800-V amplifier (with 502[®] BEX EQ Card installed)

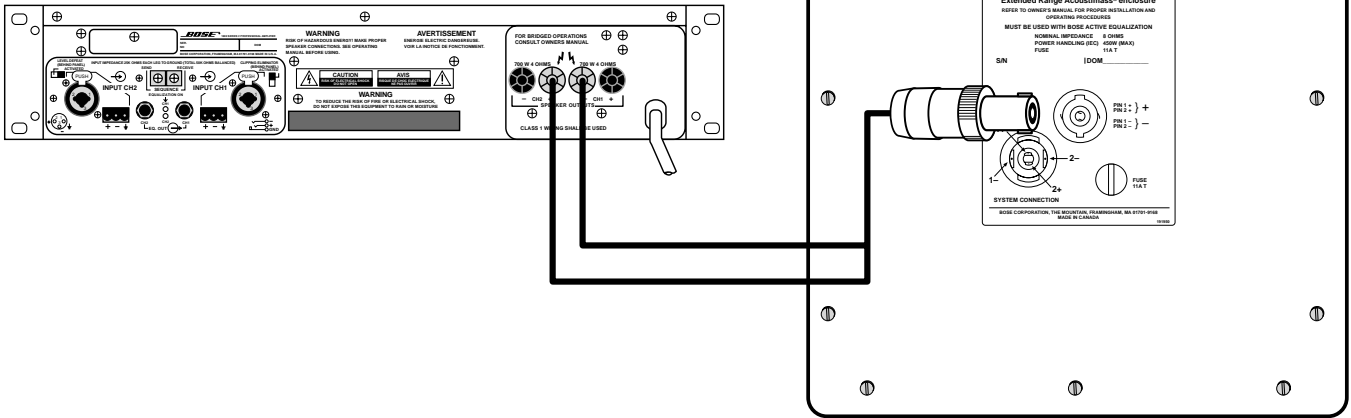


Figure 6

502[®]BEX bass enclosure connections using Bose[®] Model 1800-V amplifier

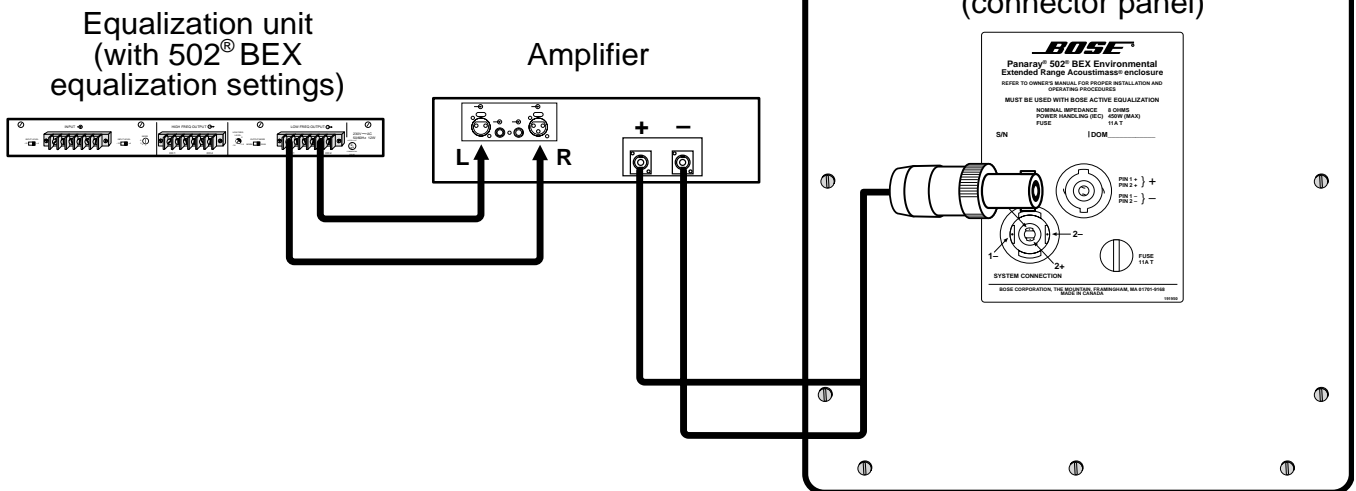


Figure 7

502[®]BEX bass enclosure connections using an equalization unit

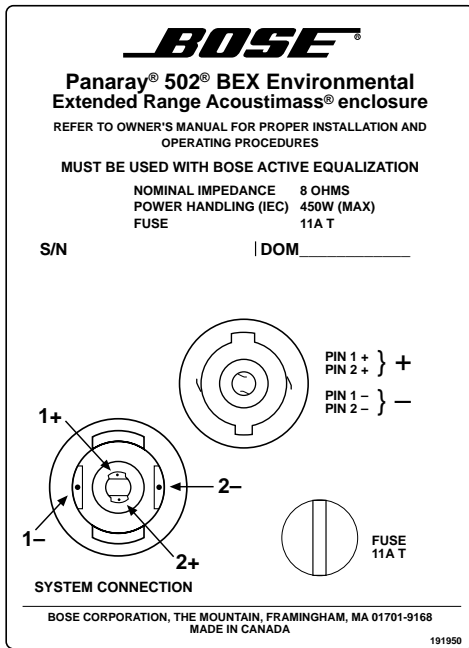


Figure 8

502^{BEX} bass enclosure fuse holder

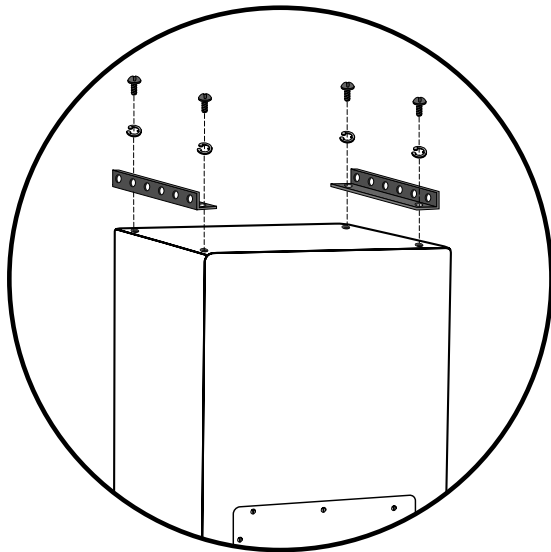


Figure 9

Attachment of CSB-5B Suspension Bracket

A. Using with the Bose[®] Model 1800-V amplifier

Verify that the Model 1800-V amplifier has the optional 502BEX equalization card installed and the amplifier is configured correctly (see the owner's guide for the Model 1800-V and the equalizer card installation sheet). Connect the input signal to the amplifier. Connect the output of the amplifier to the 502BEX bass enclosure according to the wiring diagram on the rear panel label of the 502BEX bass enclosure (see Figures 5 and 6). The 1800-V has been connected to the 502BEX bass enclosure in the bridged mono mode in Figure 6. This is the recommended configuration. Pin 1+ of the 502BEX enclosure should be connected to the plus or hot terminal of the amplifier, the channel 2 plus terminal in bridged mono mode. Pin 1- should be connected to the negative terminal of the amplifier, the channel 1 plus terminal in bridged mono mode.

Pins 1+ and 2+ are connected in parallel inside the enclosure and Pins 1- and 2- are connected in parallel inside the enclosure. Pins 2+ and 2- of the 502BEX Speakon[®] connector can be used to connect a second 502BEX enclosure in parallel with the first enclosure, if desired.

B. Using with a separate equalization unit

Connect the output of the amplifier driven by the low frequency outputs of the equalization unit to the 502BEX bass enclosure according to the wiring diagram on the rear panel label of the 502BEX bass enclosure (see Figures 5 and 7).

Pin 1+ of the 502BEX enclosure should be connected to the plus or hot terminal of the amplifier. Pin 1- should be connected to the negative terminal of the amplifier.

Pins 1+ and 2+ are connected in parallel inside the enclosure and Pins 1- and 2- are connected in parallel inside the enclosure. Pins 2+ and 2- of the 502BEX Speakon[®] connector can be used to connect a second 502BEX enclosure in parallel with the first enclosure, if desired.

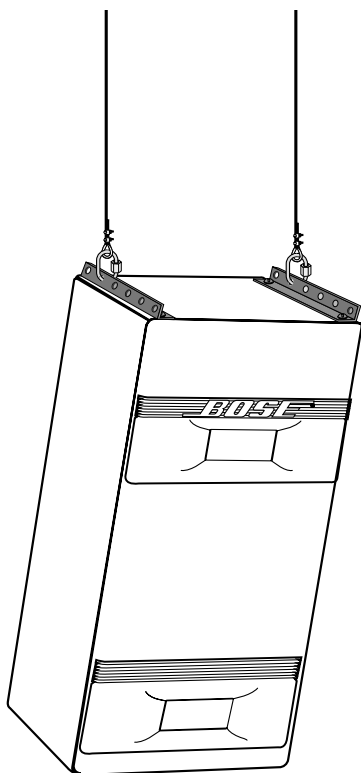


Figure 10

Single 502[®]BEX enclosure flown with CSB-5B

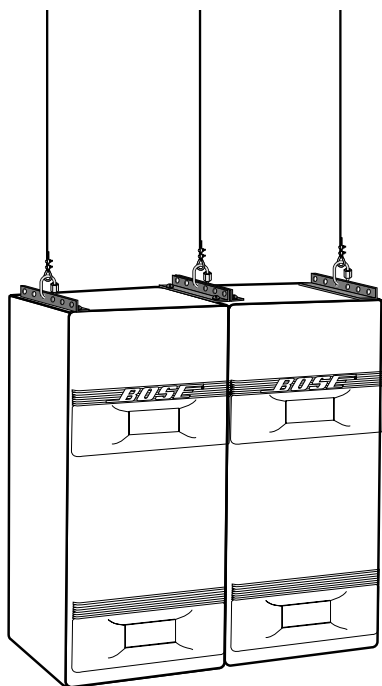


Figure 11

Two 502BEX enclosures flown with two CSB-5B brackets and three wires

2.4 502[®]BEX Acoustimass[®] Enclosure Mechanical Connections

You can wall-mount or fly the bass enclosure by using the eight built-in inserts. On the 502BEX bass enclosure, these attachment points are M8 (8mm) thread, with a 20mm maximum depth.

Flying the 502BEX bass enclosure is possible by using the **CSB-5B suspension bracket** (Figures 10-11).

The holes along each side of the CSB-5B are marked with pitch angle indications, allowing precise pitch adjustments (see note below). The bracket comes in two pieces and attaches with four bolts to the four inserts on the upper surface of the 502BEX bass enclosure (Figure 9).

The CSB-5B suspension bracket for the 502BEX Acoustimass enclosure is a gravitational type hanging device. It makes flying the bass very easy with the use of carabiners, quick-links, and wire rope or chain (Figure 10).

A second CSB-5B can be attached to the bottom of the 502BEX bass enclosure to provide additional hanging possibilities.

Use two CSB-5B brackets to fly two 502BEX bass enclosures next to each other (for extra output through acoustic coupling) with three wires (Figure 11).

Instructions and safety precautions on flying the 502BEX bass enclosure are in the instruction sheet accompanying the CSB-5B.

When using the 502BEX bass enclosure outdoors, always mount the unit so that the ports are facing horizontally (Figure 11) or downward (Figure 10) to prevent rain or snow from accumulating inside the unit.

2.5 502BEX Acoustimass Enclosure Accessories

- Mounting brackets: Bose[®] CSB-5B suspension brackets can be used to fly the 502BEX enclosure. See Section 2.4 for detailed information on the use of the CSB-5B suspension bracket.

- Grille kits: The grilles mount over each port of the 502BEX enclosure. They are designed to keep debris and animals from entering the unit. They do not affect the acoustic performance of the unit. Mounting instructions are included with the kits.

Appendix A: 502[®]BEX Acoustimass[®] Enclosure Specifications

Appendix A.1 Acoustic Specifications

- Sensitivity: 90dB 1W 1m
- Impedance: 8.0Ω nominal, 6.4Ω minimum
- Power handling: 450W continuous, IEC noise
Recommended power amplification: 1200W
(@ 8Ω, RMS) maximum
- Max acoustic output: 115dB-SPL at rated
power, 55Hz to 180Hz
- Bandwidth: 55Hz –180Hz (± 3dB)

Appendix A.2 Mechanical Specifications

- Dimensions: 31" (H) x 14" (W) x 15.5" (D);
78.7 cm (H) x 35.6 cm (W) x 39.4 cm (D)
- Weight: 85 lb; 38.6 kg
- Operating temperature range: -20° – 70° C;
-4° – 158° F
- Mounting points: 8 mm T-nut x 8, 20 mm depth
- Mounting point load strength: 10 times weight
of product per attachment point
- Fuse: AGC (Buss) or 3AG (Littelfuse), 7-ampere

Appendix A.3 Accessories

- CSB-5B suspension bracket
- Grille kits

Appendix B: Warranty And Service

B.1 Warranty period

The Bose[®] 502BEX environmental Acoustimass enclosure is covered by a five-year transferable limited warranty. The Bose Model 1800-V amplifier is covered by a 5-year limited warranty.

B.2 Service

If you experience problems with any component of your Bose 502BEX environmental Acoustimass enclosure system, contact your authorized Bose Professional Products dealer. The dealer will verify any defects and arrange for service by a factory-authorized Bose service agency, or by the Bose Corporation. Consult the 502BEX Acoustimass enclosure warranty card. An owner's registration card is provided with this manual. Please complete and return your card to Bose Corporation within ten days of your purchase.

B.3 Contacting Bose® Corporation

To obtain information or service directly from Bose:

USA

Bose Corporation, The Mountain
Framingham, MA 01701-9168
1-800-288-BOSE (1-800-288-2673)
Phone hours - ET (eastern time)
Weekdays 9 a.m. to 8 p.m.
Saturdays 9 a.m. to 3 p.m.

Canada

Bose Ltd., 8-35 East Beaver Creek Road
Richmond Hill, Ontario L4B 1B3
1-800-444-BOSE (1-800-444-2673)
Phone hours - ET (eastern time)
Weekdays 9 a.m. to 5 p.m.

European Office

Bose B.V., Nijverheidstraat 8
1135 GE Edam, Nederland
TEL 0299-390139 FAX 0299-390109

Australia

Bose Australia, Inc.,
1 Sorrell Street Parramatta, N.S.W. 2150
TEL 02 204-6111 FAX 02 204-6122

Belgique/België

Bose N.V., Limesweg 2,
B-3700 Tongeren
TEL 012-390800 FAX 012-390840

Danmark

Bose A/S, Industrivej 7,
2605 Brøndby
TEL 43437777 FAX 43437818

Deutschland

Bose GmbH, Max-Planck-Straße 36d
D-61381 Friedrichsdorf
TEL 06172-71040 FAX 06172-710419

France

Bose S.A., 6, rue Saint Vincent
78100 Saint Germain en Laye
TEL 01-30616363 FAX 01-30614105

India

Bose Corporation India Private Limited
W-16, Greater Kailash-II
New Delhi 110 048
TEL (011) 648 4462 FAX (011) 648 4463

Ireland

Bose Corporation
Carrickmacross, Co Monaghan
TEL 042-61988 FAX 042-61998

Italia

Bose S.p.A., Via Luigi Capucci, 12
00147 Roma
TEL 06-5127641 FAX 06-5115438

Japan

Bose K.K., Shibuya YT Building
28-3 Maruyama-cho
Shibuya-ku, Tokyo 150
TEL 3-5489-1054 FAX 3-5489-0591

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Bose B.V., Nijverheidstraat 8
1135 GE Edam
TEL 0299-390139 FAX 0299-390109

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Bose A/S, Solheimsgate 11
N-2001, Lillestrøm
TEL 63-817380 FAX 63-810819

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Bose Ges.m.b.H., Vienna Business Park
Wienerbergstrasse 7 (10.OG)
A-1100 Vienna
TEL 01-60404340 FAX 01-604043423

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Bose AG, Rünenbergerstrasse 13
4460-Gelterkinden
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Bose A/S, Blandsädsgratan 2D
S-43146 Mölndal
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