

# Micro90t

# Micro90

**Micro Reference Series**



***Boston***Acoustics

# Safety Instructions



**WARNING:** To reduce the risk of fire or electric shock, do not expose this product to rain or moisture.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user 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 product.

- 1. Read Instructions:** All the safety and operating instructions should be read before the product is operated.
- 2. Retain Instructions:** The safety and operating instructions should be retained for future reference.
- 3. Heed Warnings:** All warnings on the product 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 product should not be used near water—for example, a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement or near a swimming pool, etc.
- 6. Carts and Stands:** The product should be used only with a cart or stand that is recommended by the manufacturer. A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.
- 7. Wall- or Ceiling-Mounting:** The product should be mounted to a wall or ceiling only as recommended by the manufacturer.
- 8. Ventilation:** The product should be situated so that its location or position does not interfere with its proper functioning. For example, the product should not be situated on a bed, sofa, rug or similar surface that may obstruct the heat sink surfaces; or placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air near the heat sink surfaces.
- 9. Heat:** The product should be situated away from heat sources such as radiators, stoves or other products that produce heat.
- 10. Power Sources:** The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.



S3125A

- 11. Grounding or Polarization:** This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
- 12. 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. Pay particular attention to cords and plugs, convenience receptacles and the point where they exit from the product.
- 13. Cleaning:** The product should only be cleaned as recommended by the manufacturer.
- 14. Nonuse Periods:** The power cord should be unplugged from the outlet when left unused for long periods of time.
- 15. Object and Liquid Entry:** Care should be taken so that objects do not fall into and liquids are not spilled into the inside of the product.
- 16. Damage Requiring Service:** The product should be serviced if any of the following events occur:
  - The power supply cord or the plug has been damaged;
  - Objects have fallen or liquid has been spilled into the product;
  - The product has been exposed to rain;
  - The product does not appear to operate normally or exhibits a marked change in performance; or
  - The product has been dropped or the enclosure damaged.
- 17. Servicing:** The user should not attempt to service the product beyond what is described in the operating instructions. For all other servicing, consult your dealer or contact Boston Acoustics.

# Specifications

## Micro90pv Powered Subwoofer

Frequency Response (±3dB)	35–150Hz
Subwoofer Amplifier Power	75 watts continuous 4Ω; < .15% THD @ 60 watts, 4Ω, 25-200Hz
Subwoofer Crossover	-3dB point variable from 50-150Hz, 24dB/octave low-pass
Bass Unit	8" (200mm) copolymer with butyl rubber surround
Dimensions (HxWxD)	14 3/4 x 14 1/2 x 15 3/8" (375 x 368 x 391mm)
Weight	35 lbs (16 kg)
Finish	Black ash or white vinyl veneer

	Micro90x Satellites	Micro90c Center Channel Speaker*
Frequency Response (±3dB)	120–20,000Hz	100–20,000Hz
Recommended Amplifier Power	15–125 watts	15–125 watts
Nominal Impedance	8 ohms	8 ohms
Sensitivity [1watt (2.83v) at 1m]	89dB	90dB
Tweeter	1" (25mm) aluminum dome	1" (25mm) aluminum dome
Bass Unit	3 1/2" (89mm) copolymer	dual 3 1/2" (89mm) copolymer
Crossover Frequency	3800Hz	2500Hz
Dimensions (HxWxD)	6 7/8 x 4 1/4 x 5 3/4" (175 x 108 x 146mm)	4 3/4 x 12 x 5 1/4" (120 x 300 x 132mm)
Weight	6 lbs ea. (3 kg)	11 lbs (5 kg)
Finish	Black or white	Black

\*Micro90c is included in the Micro90t system only

# Description

The Micro90t home theater speaker system delivers exceptional performance from small speakers that virtually disappear in your listening room. The front channels are handled by miniature monitors housing our most advanced drive units—Boston-built, high-power, 3 1/2" (89mm) midrange drivers and our exclusive 1" (25mm) Lynnfield VR™ tweeter. The satellite and center channel housings are made from die-cast aluminum. The great strength and rigidity of this material assure the sound is not degraded by spurious resonances and cabinet vibrations.

A 75-watt powered subwoofer with our 8" (200mm) Deep Channel Design (DCD™) bass unit provides a solid foundation for the system. The heavy-duty DCD subwoofer driver features a deeply grooved pole plate, developed using Finite Element Analysis computer optimization, giving this driver tremendous excursion for clean, powerful bass. Drive power comes from a Boston-designed high-current amplifier with oversized transformer, for a subwoofer that translates demanding program material into an exciting, thunderous experience.

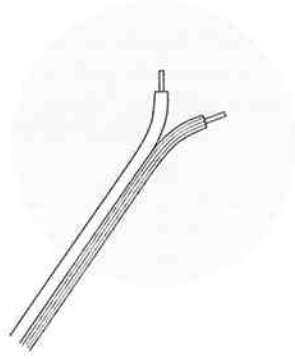
Wall-mount brackets for the left and right satellites are included, and all units feature MagnaGuard® magnetic shielding for complete placement flexibility.

## How to Wire Your Speakers

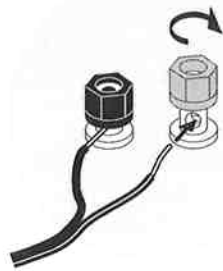
You need to wire your speakers correctly to obtain the best sound quality and the proper image. Wiring should just take a few minutes, but it's important to do it carefully, since incorrect wiring (such as reversed connections) can result in a poor soundstage or poor bass.

We recommend using 18-gauge or larger speaker wire for runs up to 25 feet (8m), and thicker 16-gauge or larger for longer runs. Strip 1/2" (12mm) of insulation off the ends of each speaker cable to expose the two conductors and tightly twist the wire strands. Maintain consistency of the + (red) and - (black) connections by using the markings on the wire.

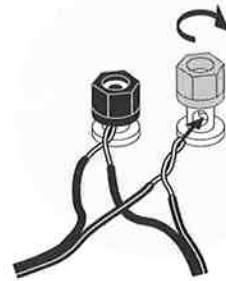
**IMPORTANT:** Typically, one side of the wire is smooth. Connect this side to the - (black) connection. The other side has a rib or stripe. Connect this to the + (red) connection.



**Using the five-way binding posts:** The binding posts permit easy connection to banana plugs, pins, spade lugs, and bare wire. The metal surfaces are plated with 24K gold to prevent corrosion.



Insert the wire in the hole and tighten.



To connect two wires to one terminal, first twist them together. Then insert the wire in the hole and tighten.

## Connecting the Micro90t System

### Speaker-Level Connections

The simplest way to wire the Micro90t System is via speaker connections. Wired in this way, the subwoofer (Micro90pv) does not present any additional load to your amplifier. There are three ways to wire the subwoofer to your speaker connections; each way produces the same result. You may want to use long wires to the subwoofer at first, so you may experiment with placement.

As a general rule, it is best to keep the total length of wire between the amplifier and Micro90x satellites as short as possible. The subwoofer, on the other hand, is not sensitive to wire length.

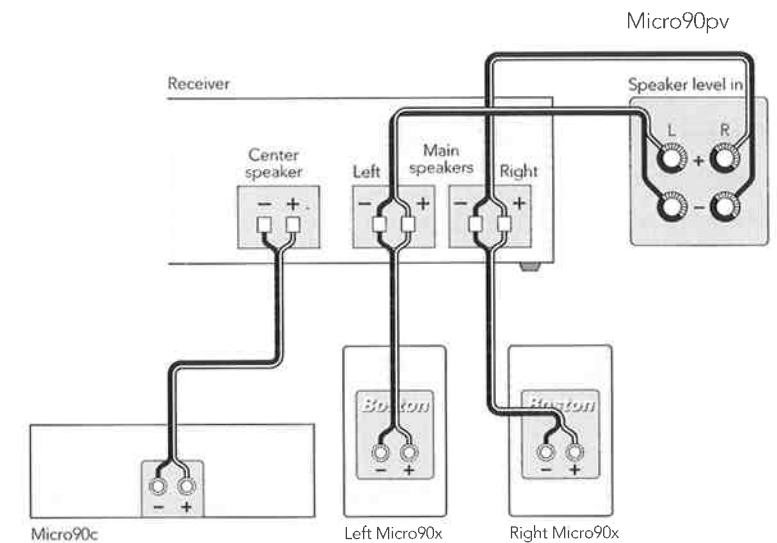
Be sure to connect + to + (positive) and - to - (negative) by using the markings on the wire.

**WARNING:** To reduce the risk of electrical shock, always switch off the system and the amplifier and/or receiver when making connections to the system and speakers.

**NOTE:** The system should be wired to connections for the front left and right speakers. If you are using a center channel speaker with a Dolby® ProLogic® system, set the Center Channel Mode to "NORMAL." This will send all the bass to the subwoofer.

**Option 1:** Connect the speaker binding posts on the Micro90pv to the left and right speaker outputs of your receiver. Use the same speaker outputs that drive your main or front speakers. Do not connect the Micro90pv to any other speaker outputs that may be on your receiver. If you are using a center channel speaker, connect it as shown.

**IMPORTANT:** When making connections, be sure to connect + to + (positive) and - to - (negative).

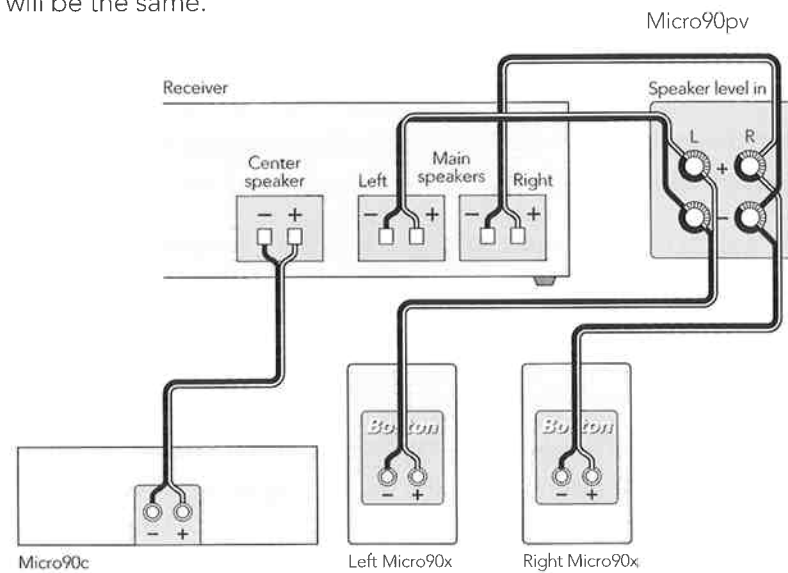


## Connecting the Micro90t System (cont.)

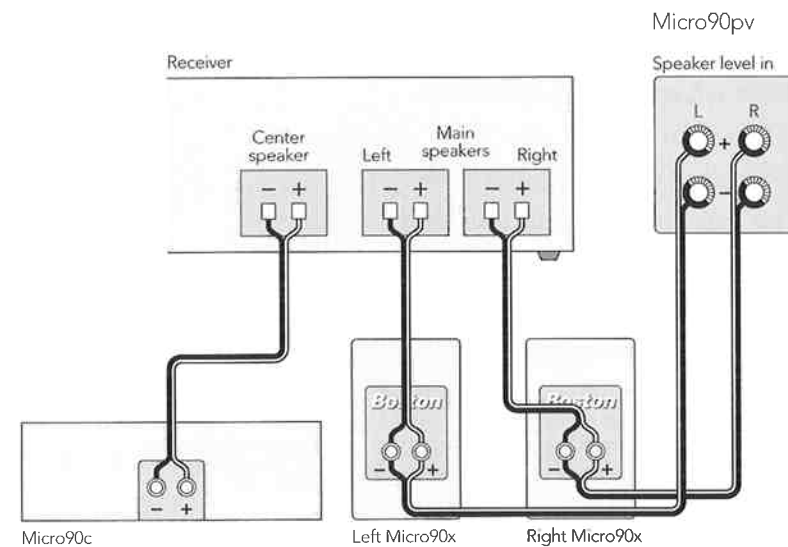
### Speaker-Level Connections (cont.)

**Alternative options:** In some cases, you may find it easier to use one of the following alternative wiring plans. The resulting sound will be the same.

**Option 2:** Connect the speaker binding posts on the Micro90pv to the left and right main (or front) speaker outputs of your receiver and to your left and right speakers.



**Option 3:** Connect the speaker binding posts on the Micro90pv to the terminals on your left and right main (or front) speakers.



### Testing the Connections

A simple listening test will tell you if your Micro90x satellites are connected properly. Place the satellites face to face, with about an inch (25mm) between them. While listening to music, reverse the connections at one speaker only. You'll hear a dramatic change in sound. The connection that yields the fuller and louder sound is the correct one.

After checking the satellites, you can perform this same test with the subwoofer by reversing the speaker wires at one of its two pairs of terminal connectors. If the bass output is reduced, then the original connections were correct.

## Connecting the Micro90t System (con't)

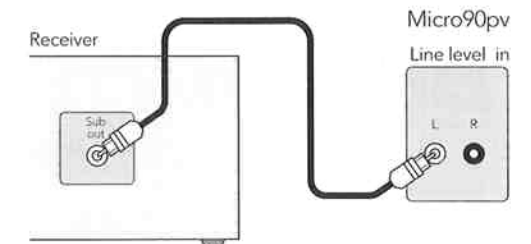
### Line-Level Connections for Micro90pv Subwoofer

**Preamp out, Sub out:** The listener may wish to use the *Preamp out* or *Sub out* from a receiver. These may be connected to the Line level in jacks on the Micro90pv.

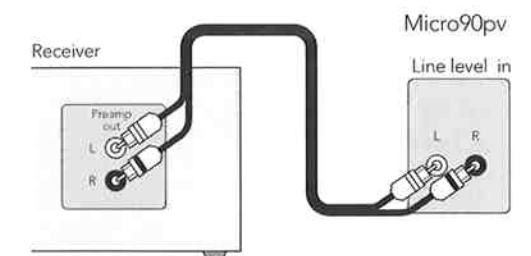
**NOTE:** In surround-sound systems, the Micro90pv should be wired at speaker level (see pages 5-6) to the left front and right channels. If you are using a center channel speaker with a Dolby® Pro Logic® system, set the Center Channel Mode to "NORMAL." This will send all the bass to the subwoofer.

**Option 1:** Using the Sub out connection:

Use an RCA cable to connect your system's *Sub out* jack to either one of the Line level in jacks on the Micro90pv. **Important:** If your receiver lets you switch the *Sub out* jack between a flat response or low-frequency-only signal, use the flat-response setting. Do not use a *Sub out* jack that has a low-pass turnover lower than 200Hz. Use speaker level connections (pages 5-6) if your receiver does not specify the low-pass turnover frequency.



**Option 2:** Receiver or integrated amp systems with a preamp output: If your receiver or integrated amplifier has a *Preamp out* jack, use a stereo RCA cable to connect your system's *Preamp out* jacks to the Line level in jacks on the Micro90pv.



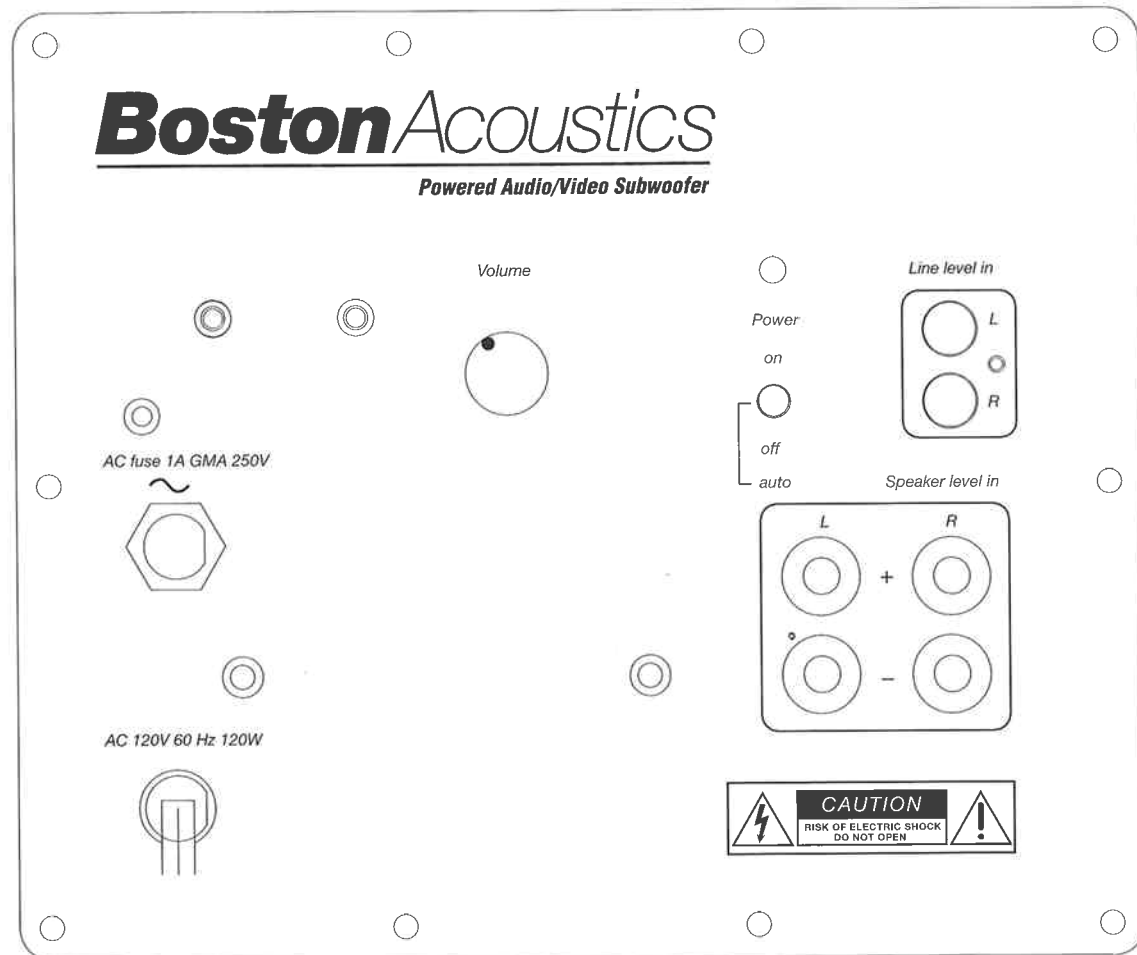
## Setting the Micro90pv Subwoofer Controls

**Volume:** Adjusts the sound level of the subwoofer. If you are using the speaker-level connections, begin with a setting at about the 10:00 o'clock position. When using the line-level connections, begin with a setting around 11:00 o'clock. Your actual setting will vary due to personal taste, program material, and subwoofer placement in the room. (see page 10)

**Power off/auto/on:** Set to *auto*, and the subwoofer turns on automatically when a signal is presented to it. Set to *on*, and the subwoofer will stay on all the time.

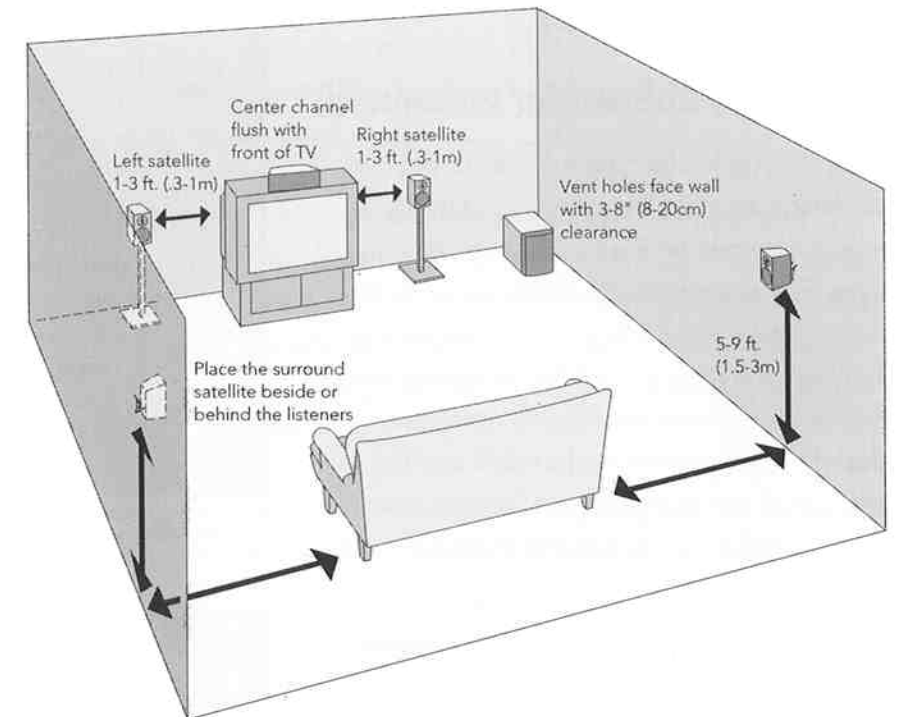
The subwoofer turns off the power amplifier, with the switch in the *auto* position, if no signal is present for 15 minutes.

**NOTE:** Power is always supplied to the subwoofer electronics, even when it is switched off, unless it is unplugged. The auto-on circuitry only activates or deactivates the power amplifier.



## How to Place Your Speakers

Room placement is one of the most important factors for sound quality. Taking a few minutes to try different placements ensures that your speakers will sound best in your listening environment.



### Micro90x Left/Right Satellite Placement

Most people like to hear a realistic soundstage, as they might hear from a good seat in a concert hall. To achieve this effect, we recommend that you center the two satellites in front of your favorite listening position, about 6 to 12 feet (2-4m) apart, and near ear level when you are in a seated position.

The satellites may be hung from a wall with the included keyhole bracket or the optional MRB pedestal stand/wall-mount bracket. (See page 11 for more details.) A threaded insert on the back of each satellite allows for use with many brands of satellite floor stands. Check with your dealer for more details.

### Other Placement Possibilities

Part of the beauty of the Micro Reference design is that the satellites can be placed almost anywhere in a room. Put them high up in a bookcase, near upper corners, on adjacent walls, even at different heights. Choose the placement that works in your listening room, but avoid placing the satellites in corners and locations blocked by furniture.

### Micro90c Center Channel Placement

The Micro90c center channel speaker provides the dynamics and tonal purity necessary to reproduce center channel dialog and action sounds of Dolby® ProLogic® and Dolby® Digital surround sound. This low-profile, dedicated speaker is designed to rest unobtrusively on top of your television. The speaker's MagnaGuard® magnetic shielding allows this placement without TV interference. The front of the speaker should be flush with the front of the television.

The speaker includes self-adhesive rubber feet to protect the TV's finish and to prevent vibration.

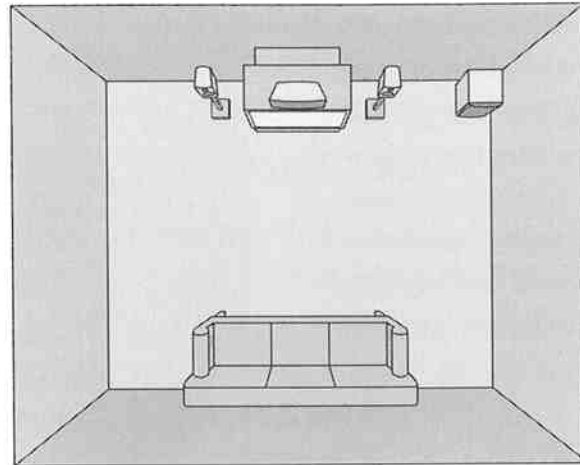
## How to Place Your Speakers (cont.)

### Micro90pv Subwoofer Placement

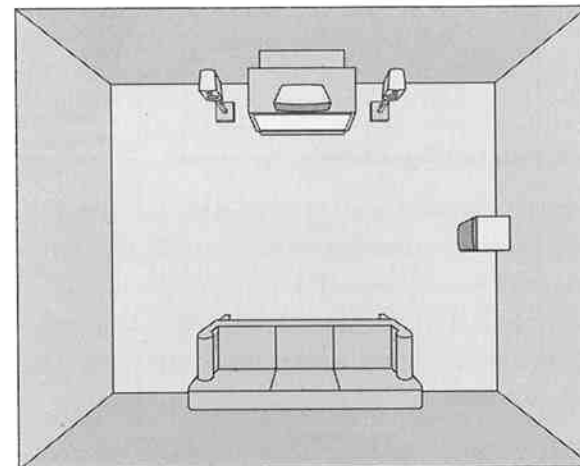
Place the subwoofer next to a wall or in a corner near your main speakers. Typically, the sound is best when the subwoofer is on the same wall as the main speakers. However, the sharp crossover roll-off permits placement farther from the main speakers if necessary. Since the ear is unable to localize the low frequencies of the subwoofer, the bass still appears to come from the main speakers. In most cases, the subwoofer may be placed anywhere in the listening room.

The level of bass output from the subwoofer will vary at different positions in a room. When placed near walls, its loudness is emphasized. Corner placement provides the most bass output, while placement near only one wall will provide somewhat less bass. Placement completely away from walls may produce too little bass. Regardless of how you place the subwoofer, you can adjust the subwoofer's level with its rear-panel level controls. If you move the subwoofer, recheck the setting of the polarity switch. Use the setting that yields the louder and more dynamic sound.

**IMPORTANT:** Do not place the subwoofer where there is a chance of contact between the rear-panel heat sinks and drapes or furniture. Avoid obstructing air flow to the back.



Corner placement produces the most bass.



The subwoofer can be placed away from the main speakers.

## Setting Up Your Home Theater System

**Volume Levels:** To obtain the best home theater effect, match the sound levels of each speaker. Home theater systems include a test signal that simplifies this level matching. Refer to the instructions provided with your surround-sound electronics.

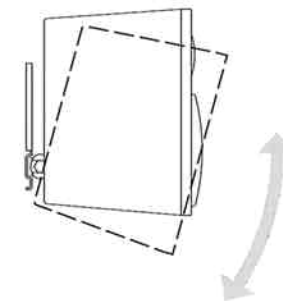
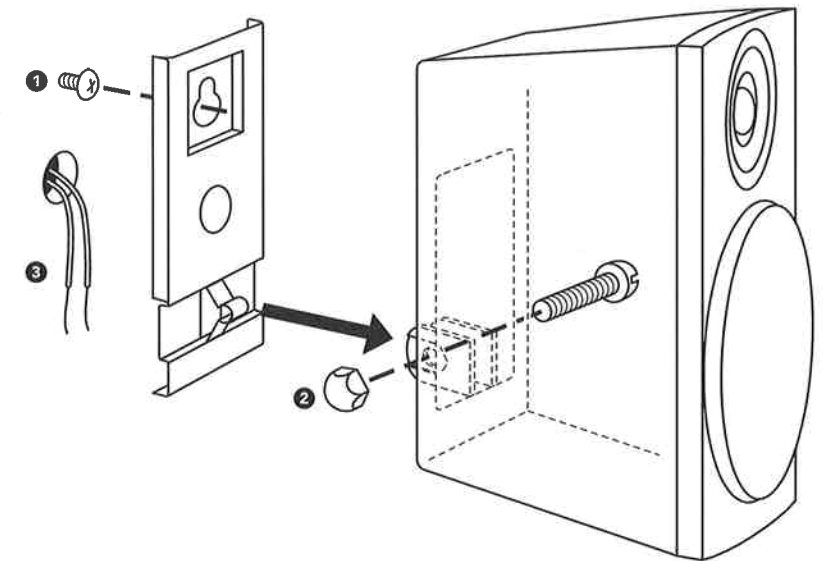
**Center Channel Mode:** Generally, with all surround systems, including Dolby® ProLogic® and Dolby® Digital, the Center Channel Mode should be set to "NORMAL" or "SMALL." This setting diverts low bass to the front left and right channels, and will result in the greatest total system bass output. The "NORMAL" or "SMALL" center speaker setting ensures the subwoofer receives the most bass information under all conditions. The "PHANTOM" setting, which presumes you do not have a center channel speaker, should not be used.

**Surround Channel Mode:** If your electronics have a surround channel mode, it should also be set to "NORMAL" or "SMALL." This setting will divert any low bass in the surround channels to the subwoofer.

### Wall-Mounting Your Micro Reference Speakers

The Micro90x satellite may be wall-mounted using the included keyhole bracket:

- 1 Install a #8 or #10 mounting screw on the wall (not supplied—consult a knowledgeable installer regarding the proper hardware to use on your wall surface).
- 2 Attach the bracket to the back of the speaker with the machine screw and acorn nut as shown.
- 3 If you are running wires behind the wall, make a  $\frac{3}{8}$ " (9.5mm) wire hole,  $1\frac{3}{4}$ " (44mm) below the mounting screw for the wire.



The speaker may be angled for optimum coverage of the listening area.

An optional pedestal shelf stand/wall-mount bracket (Model MRB) is available for the Micro90x that provides greater positioning flexibility. For more information, contact your dealer or Boston Acoustics directly.

# Troubleshooting

## • Subwoofer does not make sound

1. Check to ensure the subwoofer's AC power cord is properly plugged in. If the outlet being used is controlled by a switch, make sure the switch is on.
2. Check to make sure the power switch on the subwoofer is switched to either "on" or "auto-on."
3. If the power cord is properly attached but the red pilot light does not illuminate, the AC fuse may be blown. If necessary, replace the fuse with a same-type fuse or consult a service technician.

## • Subwoofer does not play loudly enough

1. Put the subwoofer in a corner. Corner placement produces the most bass.
2. In a Dolby® ProLogic® surround system, set the Center Channel Mode to "NORMAL." This diverts movie bass from the center channel to the left and right front channels and thus to the subwoofer.
3. Set the crossover frequency to its highest setting. This will subjectively produce the loudest and most dynamic sound.
4. Try both settings of the polarity switch. Use the setting that results in the louder sound.

## • Subwoofer has a boomy quality

A boomy sound may signify that the room has a resonance between 100Hz and 150Hz. This condition is exemplified by an unnatural heaviness in the sound of voice or acoustic instruments.

1. Try adjusting the crossover frequency lower than 150Hz to confine the subwoofer's reproduction to below the room's resonant frequency.
2. Try moving the subwoofer. Often, moving the subwoofer away from a corner, or unequal distances from walls, will solve this problem.

## • Auto turn-on is not sensitive enough

If you find that the subwoofer does not turn on for quiet signals, or that it turns off too readily, set the power switch to "on." The subwoofer will stay on at all times. The power consumption is minimal.

## **Boston**Acoustics

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978.538.5000

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# Listening Levels and Power-Handling

The power recommendation for the speaker assumes the amplifier is not overdriven, which, over a long period, can damage even our rugged speakers. If you hear a harsh, gritty noise, turn down the volume control. Prolonged or repeated operation with a distorted signal from the amplifier can cause damage to the speakers, which is not covered by the warranty.

## Limited Warranty

For five years from the date of purchase, Boston Acoustics will repair for the original owner any defect in materials or workmanship that occurs in the normal use of the Micro90x satellites and Micro90c center channel speaker, without charge for parts and labor.

For one year from the date of purchase, Boston Acoustics will repair for the original owner any defect in materials or workmanship that occurs in normal use of the Micro90pv powered subwoofer, without charge for parts and labor.

Your responsibilities are to use the system according to the instructions supplied, to provide safe and secure transportation to an authorized Boston Acoustics service representative and to present proof of purchase in the form of your sales slip when requesting service.

Excluded from this warranty is damage that results from abuse, misuse, accidents, shipping or repairs or modifications by anyone other than an authorized Boston Acoustics service representative.

This warranty is void if the serial number has been removed or defaced.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

## If Service Seems Necessary

First, contact the retailer from whom you purchased the Micro90t or Micro90 System. If that is not possible, write to:

Boston Acoustics, Inc.  
300 Jubilee Drive  
Peabody, MA 01960 U.S.A.

We will promptly advise you of what action to take. If it is necessary to return your speaker to the factory, please ship it prepaid. After it has been repaired, we will return it freight prepaid in the U.S. and Canada.