

ICS Sub 300 Powered Subwoofer  
Basis 300 Powered Subwoofer  
Owner's Manual

# ICS Sub 300 Basis 300

Snell

## SAFETY INSTRUCTIONS

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**Warning:** To reduce the risk of fire or electric shock, do not expose this appliance 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 appliance.

**Read Instructions:** All the safety and operating instructions should be read before the appliance is operated.

**Retain Instructions:** The safety and operating instructions should be retained for future reference.

**Heed Warnings:** All warnings on the appliance and in the operating instructions should be adhered to.

**Follow Instructions:** All operation and other instructions should be followed.

**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.

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

**Wall or Ceiling Mounting:** The appliance should not be mounted to a wall or ceiling.

**Ventilation:** The appliance should be situated so that its location or position does not interfere with its proper functioning. For example, the appliance 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.

**Heat:** The appliance should be situated away from heat sources, such as radiators, stoves, or other appliances that produce heat.

**Power Sources:** The appliance should be connected to a power supply only of the type described in the operation instructions or as marked on the appliance.

**Power Cord Protection:** Supplies 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 appliance.

**Cleaning:** The appliance should only be cleaned as recommended by the manufacturer.

**Non-Use Periods:** The power supply cord should be unplugged from the outlet when left unused for long periods of time.

**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 appliance.

**Damage Requiring Service:** The appliance should be serviced if any of the following events occur:

- ▶ The power supply or plug has been damaged.
- ▶ Objects have fallen, or liquid has been spilled into the appliance.
- ▶ The appliance has been exposed to rain.
- ▶ The appliance does not appear to operate normally or exhibits a marked change in performance.
- ▶ The appliance has been dropped, or the enclosure is damaged.

**Servicing:** The user should not attempt to service the appliance beyond what is described in the operating instructions. For all other servicing, consult your dealer or contact Snell Acoustics.

## SPECIFICATIONS

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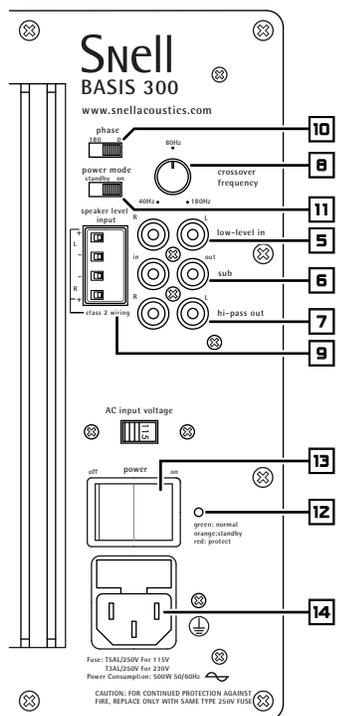
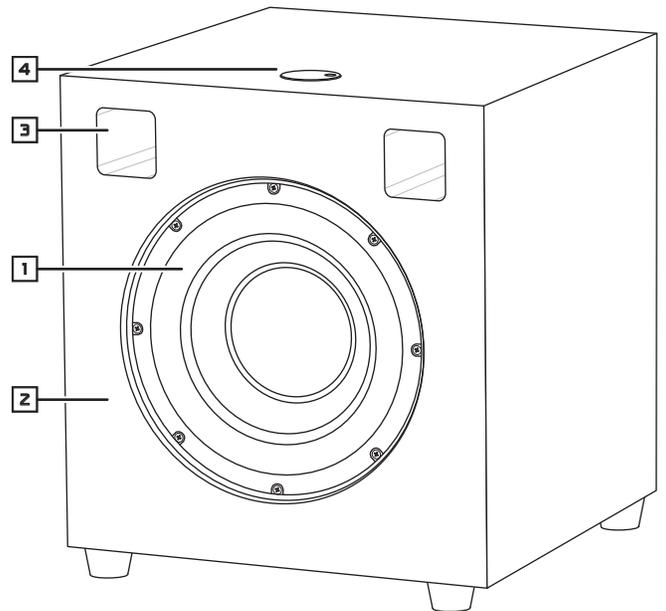
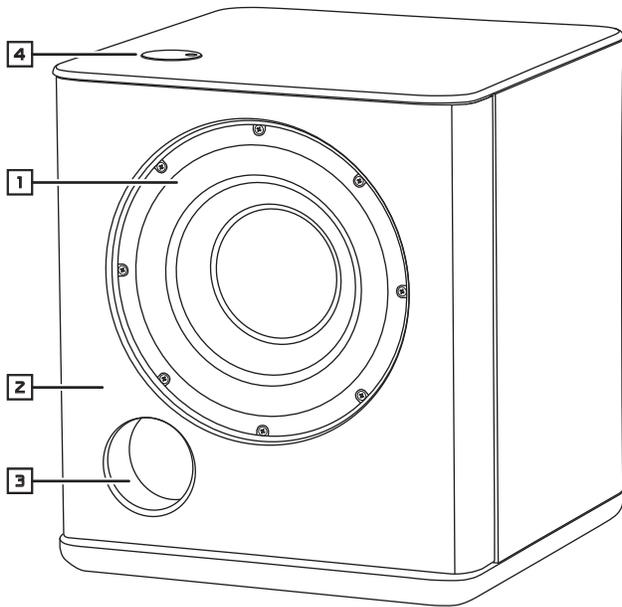
Design	Bass reflex powered subwoofer
Frequency Response ( $\pm 3$ dB)	25-150Hz
Amplifier Power	300 watts
Maximum Output at 30 Hz	110dB
Driver Unit	10-inch (254mm) polymer treated cone, 15mm excursion
Inputs/Outputs	L/R Low Pass, Low/High Level Inputs, Full Range Input/Output
Controls	Level Control - Top mounted on Basis 300, Front mounted on ICS Sub 300 Variable Low-Pass, Phase Switch (0°/180°), On/Off, Auto On-Off Switch with Instant On, and Turn-Off Delay
Video Shielding	Standard
Dimensions (HxWxD)	Basis 300 - 17" x 15.25" x 15.25" (432mm x 388mm x 388mm) ICS Sub 300 - 17" x 15.25" x 15.25" (432mm x 388mm x 388mm) including feet
Cabinet Finish	Basis 300 - Real cherry veneer, hand rubbed satin black (most wood and paint finishes available) ICS Sub 300 - Black paint (most wood and paint finishes available at extra cost)
Grille	Basis 300 - Silver or black perforated metal, 47% open ICS Sub 300 - N/A
End Caps (Basis 300 only)	Solid aluminum plate, anodized black or silver

## INTRODUCTION

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The Basis 300 is designed to complement the performance and style of the Series 7 loudspeakers. Hand-crafted from real wood and solid aluminum, these elegant speaker, with their soft lines and superb finish, plays perfect host to the technology inside. The Basis 300 features an extremely tight, long throw 10-inch woofer, with a neodymium magnet and cast frame. Its total excursion is nearly an inch! Coupled with a 300 watt amplifier and a very sophisticated cabinet, the B300 is deep, tight, and blends seamlessly to the front speakers.

The ICS part of the ICS Sub300 name stands for In-Cabinet Speaker. When conventional speakers are placed in cabinets, or near corners or walls, their sound can become cupped and chesty. Snell ICS speakers are referenced from our acclaimed "in-room" models, then re-engineered for the boundaries and conditions found in cabinets and millwork. The ICS models are hand-finished in black texture paint, ideal for these applications. The ICS Sub300, with its innovative mechanical design, can be either front or down firing. The cleverly designed enclosure allows the feet and amplifier to be repositioned so that the driver can be firing downward, for a "slot grille" application, or forward firing when in millwork with a full faced grille.



## FEATURES

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### 1 Bass Driver

The Basis 300 and ICS 300 use a 10-inch (254mm) custom-built long-throw driver with a treated paper cone and a die-cast aluminum chassis.

### 2 Handmade Cabinets

Snell cabinets are hand-assembled with exceptional workmanship to ensure sharp corners and smooth sides. The wood veneers of the Basis 300 are hand sanded several times before the final finish is applied. Even the black finish of the ICS 300 is applied with uncompromising attention to detail.

### 3 Bass Reflex Ports

Provide maximum extended bass response. The ports in each model are specifically tuned to provide the best possible performance with the driver, cabinet and likely placement.

### 4 Bass Level Control

The Bass Level control adjusts the output level of the subwoofer. It is located for easy access to make it easy to achieve the correct balance between the subwoofer and the main speakers. A typical setting for the control is around the 12 o'clock position.

### 5 Low Level Inputs

Use this input when your system has preamp outs and amplifier inputs.

### 6 Sub Input and Output

If your preamp, sound processor or receiver has a low level subwoofer output, you can use the Sub Input. This input bypasses the amplifier's adjustable low pass filter. In some cases the crossover frequency of the external electronics may not be adjustable and may not produce the best subwoofer-to-main speaker transition. In such cases it is better to use a full-range low level input from the source electronics and let the ICS 300 or Basis 300 control the crossover.

### 7 Low Level High Pass Outputs

These outputs provide the signal that goes to the power amplifier that drives the main speakers in the system. The signal from these outputs is high pass filtered to remove bass sound below the frequency set by the Crossover Frequency control.

### 8 Crossover Frequency Control

This control sets the frequency of the low-pass filter, and is fully adjustable from 40 to 180Hz. Bass sound below the frequency set by the control are directed to the Basis 300/ ICS Sub 300 amplifier and speaker. The sound above the frequency set by the control go to the High Pass Output

### 9 Speaker Level Inputs

The Basis 300/ICS Sub 300 also have high-level inputs that can be used when preamp outputs/power amp inputs are not available. The speaker output wires are attached to a special connector which is then plugged into the back of the amplifier.

### 10 Phase Switch

Determines whether the subwoofer adds or cancels in the crossover region. The proper setting changes based upon the current location of the speaker. Use the setting that produces the most smoothest, most sound through the crossover region.

### 11 Power Mode

This switch controls the automatic power function. When the switch is set to Standby, the amplifier will power up when it senses an input signal. If no input signal is present, the amplifier switches to low power standby mode after 8-10 minutes. When the switch is in the On position the automatic power on/standby feature is disabled and the amplifier is always on.

### 12 Power Mode Indicator Light

This LED lights green when the amplifier is on, and orange when it is in standby mode. If the LED is red it indicates the amplifier in protection mode.

### 13 Power Switch

This switch turns the power to the subwoofer on and off. Usually the only time the main power switch should be turned off is when the subwoofer will not be used for an extended period of time, such as when you are away on a vacation.

**Warning:** To reduce the risk of electric shock, always switch off the subwoofer and the amplifier and or receiver when making connections to the subwoofer and speakers.

### 14 Power Input Connector

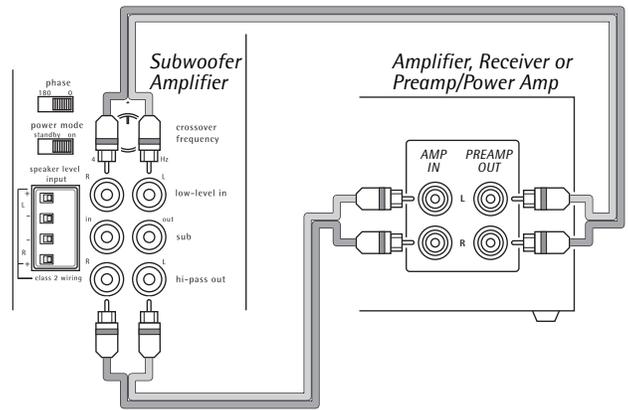
Plug the power cord into this connector and the wall power outlet.

## CONNECTION

### Low Level Connection

Whenever possible connect the subwoofer to the system through low level (also called line level) input and output connections. Even if you do not have a separate preamp and power amp, many receivers and integrated amplifiers include "Preamp Out" and "Amplifier In" connectors.

When using the low level connections, the signal from the High Pass Outputs is returned to your amplifier which will drive the main speakers in the system. This output is high pass filtered to remove sound below frequency set by the Crossover Low Pass Filter Control. See the Fine Tuning section of this manual for more information.

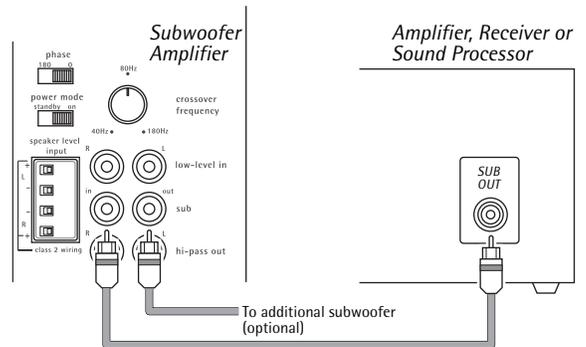


### Subwoofer Input Connection

Some receivers, amplifiers or sound processors have low level monophonic subwoofer outputs. If your equipment has this type of an output it can be connected to the Sub Input. This input bypasses the subwoofer amplifier's low pass filter – the subwoofer crossover frequency is determined by the other component. Note: The Subwoofer Input does not bypass the Subwoofer Level Control. It can still be used to adjust the output level of the subwoofer.

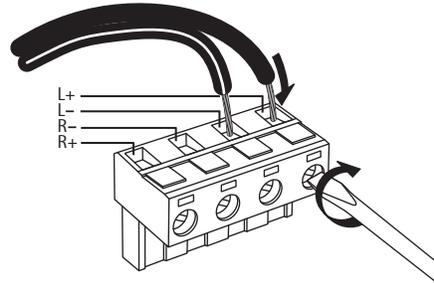
If the crossover frequency of the component providing the subwoofer output signal is not adjustable, it may not produce the best subwoofer-to-main speaker transition. In such cases it is better to use a full-range low level input from the source electronics and let the subwoofer amplifier control the crossover.

If system has more than one subwoofer, the Subwoofer Output may be used to provide it with a signal.



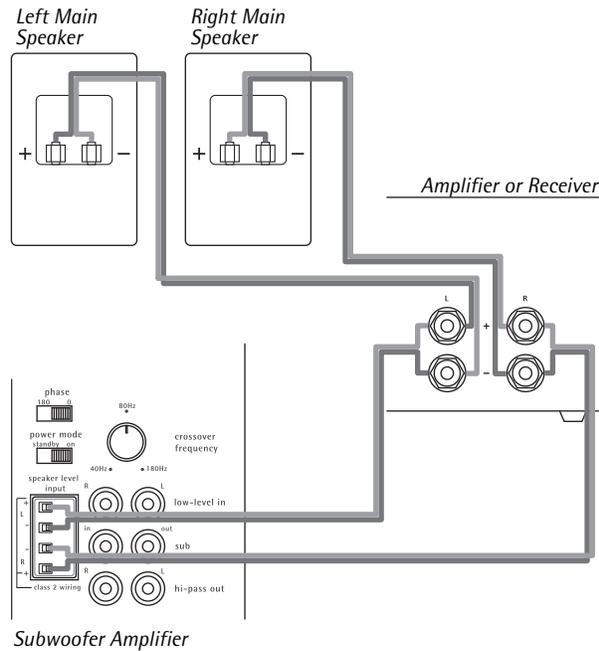
## High Level Connection

If the electronics in your system does not have a preamp level output, the subwoofer can be connected to speaker outputs using the Speaker Level Inputs. A special plug-in connector is used to make it easy to use the Speaker Level Inputs.



To attached the wires to the connector, strip of about 3/8" (8mm) of the insulation. Twist the wire strands into a bundle. Make sure their are no loose strands. Insert the wire into the hole in the top of the connector. Turn the screw in the side of the connector as shown in the illustration to clamp the wire in place.

**NOTE:** Be sure to maintain proper polarity – that is connect + to + (positive to positive) and – to – (negative to negative). All wire has one conductor marked in some way to make it easy to trace the connections. Typically there is a stripe on the insulation or a rib molded into it. Or the insulation will be transparent and the wire strands of one conductor will be copper colored and the other will be silver colored.



With a Speaker Level Input connection both the subwoofer and the main speakers are connected directly to the amplifier. Consequently the main speakers will operate full range. Take this into account when setting the crossover frequency of the subwoofer. The crossover frequency should be set at approximately the same frequency where the bass response of the main speakers starts to decrease. That will prevent a situation where both the main speakers and the subwoofer will both be reproducing a part of the bass range, which would produce an unnatural sound.

In addition to the connection method shown above you may also connect the amplifier to the main speakers and then run extension wires from the main speakers to the subwoofer. Which one you use will depend largely on you physical set up of your room.

## PLACEMENT

### Basis 300

Typically the Basis 300 will produce the smoothest response when placed against a wall. Placement in a corner can enhance audible bass output. This may allow you to run operate the subwoofer at a lower power level. However in some case corner placement will result in "thick" or "heavy" sounding bass. Experiment with subwoofer placement while at the same time adjusting crossover frequency, output level, and phase. (See section on Fine-Tuning The Subwoofer.)

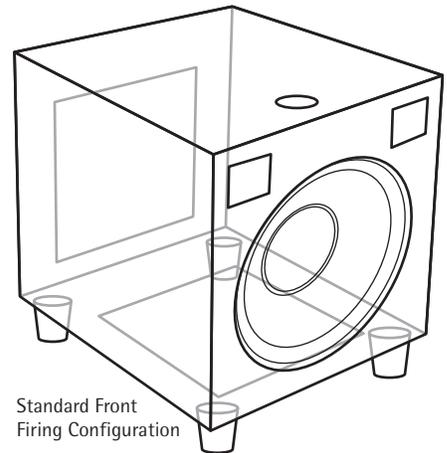
### ICS Sub 300

The ICS Sub 300 is engineered for the boundaries and conditions found in cabinets and millwork. In addition it can be configured so the driver is either front or down firing. If the subwoofer is installed in a location where the front of the cabinet is fully open to the listening room, then the front firing configuration may be used. If the subwoofer is installed in a location where the front of the cabinet and driver are not fully open to the listening room, then reconfiguring the subwoofer for downward firing will probably produce better performance.

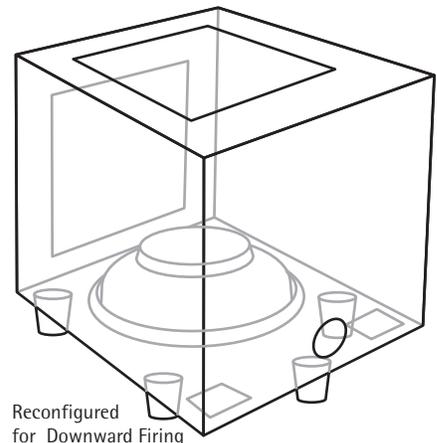
#### Reconfiguring the ICS Sub 300

- Carefully lay the subwoofer in its right or left side on a surface that will not damage the cabinet.
- Remove the feet from the and the cover plate from the bottom of the cabinet. Disconnect the wires from the amplifier to the subwoofer and volume control. (Simply push in on the back of the speaker terminals and pull out the wire and disconnect the plug-in connector of the volume control wires.)
- Remove screws around the periphery of the amplifier, leaving the screws in the upper corners for last. Then, while holding the amplifier in place, remove the last two screws and the amplifier.
- Locate the five pilot holes around the driver. Reinstall the four feet previously removed and the additional foot shipped with the unit.
- Carefully roll the cabinet onto what will now be the front surface, that is, the one with the volume control. Be sure the gasket around the amplifier installation hole is set properly, then set the amplifier in place.

- Carefully reinstall the mounting screws. Replace the screws in the corners first, driving them in just until they are lightly set. Then reinstall the remaining screws in the same way. Then, working from side-to-side and corner-to-corner, gradually tighten the screws until they are all firmly set. Be sure not to over-tighten the screws.
- Carefully roll the cabinet onto its feet. Reconnect the volume control. Connect the wires to the driver – be sure the red and black wires are attached to the respective red and black speaker terminals.
- Be sure the gasket around the cover plate installation hole is set properly, then set the plate in place. Carefully reinstall the mounting screws using the same procedure described for the amplifier mounting screws.



Standard Front Firing Configuration



Reconfigured for Downward Firing

## FINE TUNING THE SUBWOOFER

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The best way to determine the best location for the subwoofer and the best settings for the various controls is with the aid of electronic instrumentation such as a sound spectrum analyzer. Your retail dealer may offer to do this as a part of the installation process. If that is not an option then systematic adjustment of the controls in conjunction with careful listening tests can also produce very good results.

### Subwoofer Bass Level Control

The first step of the process is to choose a musical selection with a heavy and continuous bass line. Set the Bass Level Control at its mid-rotation point and play a short section several times until you have a firm impression of it in your mind. Then try another raising or lowering the Bass Level Control to see if it provides smoother or more balanced response.

Repeat this process until you are content with the balance between the main speakers and the subwoofer. Avoid the tendency to set the control so it produces "impressive" bass output. Strive for a balanced, natural sound. How the system sounds with a male speaking voice is a good indicator of how well the main speaker-to-subwoofer balance is set.

### Crossover Frequency Control

The goal in setting the Crossover Frequency control is to make the transition from the main speakers to the subwoofer as smooth as possible.

**NOTE:** If your system has a subwoofer output and you are connecting the subwoofer via the Sub Input  you can skip this section. This input bypasses the amplifier's adjustable low pass filter. In some cases the crossover frequency of the external electronics may not be adjustable and may not produce the best subwoofer-to-main speaker transition. In such cases it is better to use a full-range low level input from the source electronics and let the ICS 300 or Basis 300 control the crossover.

### When Using the Low Level Inputs

If you are using the Low Level Inputs and returning the high-pass filtered signal to the amplifier (see the diagram on page 6), begin by setting the crossover at 100Hz – with the control knob indicator at the one o'clock position. Some rooms naturally overemphasize bass in this region, creating an undesirable "bump" or "boomy" quality in the sound. If this is the case with your room, try turning the crossover down to 80Hz. On the other hand, some rooms have a natural tendency to "swallow up" the bass in the 100Hz region, causing the sound to appear thin. In rooms of this type, try setting the crossover at 125Hz – with the control knob indicator at the three o'clock position. This may help to round out the overall sound.

### When Using the Speaker Level Inputs

If you are running your main speakers full range, set the crossover close to the bass cut-off frequency of your main speakers. See the specifications for your main speakers for information. This will help achieve a smooth, seamless blend between your speakers and the subwoofer. Experiment until you are happy with the main speaker-to-subwoofer transition.

### Control Interaction

There is significant interaction between the Crossover Frequency control and the Bass Level control. This interaction affects the sound in the midbass range where the transition from the main speakers to the subwoofer occurs. If you are hearing too much midbass, adjust the Crossover Frequency control to a lower setting while increasing the Bass Level control. This decreases midbass output while increasing the amount of lower bass energy. Conversely, turning down the Bass Level control while setting the Crossover Frequency control to a slightly higher setting will increase the ratio of mid bass-to-low bass sound. The result will be a sound with a "quick" quality. Experiment while listening to a variety of sources. Adjust the subwoofer controls until you achieve a smooth and seamless blend with the main speakers .

## LIMITED WARRANTY

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### Setting the Phase

The proper setting for the Phase Switch changes based upon the location of the speaker. To determine the correct setting for your room, use a source with a full and continuous bass line. Have a second person repeatedly switch the Phase Switch from one position to the other. You will notice that one position will deliver stronger midbass sound. This is the proper position for the Phase Switch. If the midbass now seems too prominent, compensate by slightly lowering the crossover frequency or the output level.

### How To Care For Your Speakers

- ▶ Use a soft terry cloth towel slightly dampened with water, glass cleaner, or a diluted mild detergent. The towel should be just damp enough to wipe the surface clean without leaving a trail of moisture.
- ▶ Do not use abrasive cleaners or any cleaner containing chemicals harsher than those found in glass cleaner.

During the warranty period, Snell Acoustics will repair, for the original owner, any defect in materials or workmanship that occurs in normal use of the speaker system, without charge for parts and labor. The warranty period for all parts of the subwoofer, except the amplifier, is five (5) years. The warranty period on the amplifier is one (1) year.

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

Excluded from this warranty is damage that results from abuse, misuse, accidents, shipping, repairs, or modifications by anyone other than an authorized Snell 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 that vary from state to state.

#### If Service Seems Necessary

Contact the dealer from whom you purchased the speaker system. If that is not possible, call us at 978-538-6262, or write to:

Snell Acoustics  
300 Jubilee Drive, P.O. Box 3717  
Peabody, MA 01961-3717

We will promptly advise you of what action to take. If it is necessary to return your speaker system to the factory, please ship it prepaid in the original factory packaging. Please note that Snell Acoustics will not be held liable for shipping damage due to improper packaging. After it has been repaired, we will return it freight-prepaid in the U.S. or Canada.



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Part #542-1033-1

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