



Owner's Manual For The

Skyline

Rear Speaker System



- 1. Warranty**
- 2. Unpacking/Connections**
- 3. Speaker Placement and Installation**
- 5. Designer's Note**
- 6. Cabinetry/Our Commitment**
- 7. Specifications**
- 8. Hook Up Cables**
- 9. The Amplifier**
- 10. Troubleshooting**

Thank you for selecting a Legacy Loudspeaker System. These hand-crafted instruments will provide you with many years of listening enjoyment. Please take a few moments to read this brief manual to insure maximum benefit from your speaker system.

Limited Warranty

Legacy Audio, Inc. extends to the original owner coverage of defects in materials and workmanship for a period of 90 days from the date of purchase. To extend this warranty to 10 years, please fill out the enclosed warranty card and return to Legacy Audio.

This warranty does not include a) damage in shipment, b) damage caused by accidental or intentional misuse or abuse, c) units not registered with Legacy Audio, d) damage resulting from unauthorized modifications or repairs. Liability is limited to the repair or replacement, at our option, of any defective component and shall not include property or consequential damages which may result from the failure of this product.

Customer Record

Model No. _____

Serial No. _____

Date of Purchase ____ / ____ / ____

Owner _____

Street Address _____

City _____ State ____ Zip _____

Unpacking

Your new speaker system has been very carefully packaged to insure that it travels to you safely. Each speaker is protected by a double-wall outer carton with heavy V-board corner protectors. Molded foam end caps are used to protect the elegant cabinetry, and a plastic liner is provided as waterproofing.

Please save this packing for future transportation. If cartons become damaged or misplaced, new ones can be purchased from Legacy Audio.

Connections

At the top end of your Skyline you will find a terminal plate housing one pair of five-way binding posts.

Connect the output of the rear channel amplifier to the loudspeaker via the gold five-way binding posts provided. Dual banana plugs or gold spade lugs are recommended means of termination.

Be sure that you observe polarity when making the connections. The positive (+) terminal (red) of the amplifier should be connected to the positive terminal of the loudspeaker. The negative (-) terminal (black) of the amplifier should be connected to the negative terminal of the loudspeaker.

Speaker Placement and Installation

A pair of Skylines can be mounted vertically or horizontally, along the top of a side wall, high in room corners or along the top of a rear wall.

NOTE: Ceiling height in most listening rooms ranges between 7 to 12 ft., so most of the recommendations here are based on that model. If you have an unusual room situation (cathedral ceiling, lofts, exceptionally high or non-level ceiling) and are unsure about optimal placement for the Skyline feel free to call us at 800-283-4644. We'll be happy to help.

Once a speaker position has been determined the Skyline mounting brackets should be mounted on the wall first.

Items needed before beginning to attach wall brackets.

- **Cordless electric drill/screwdriver**
- **Pencil**
- **Stud finder (optional)**
- **1/8" drill bit**

Instructions for attaching brackets to wall:



1. **Select a mounting site.** Try finding a site with solid wood backing.

2. On the portion of the bracket that will connect to the back of the Skyline are four keyhole shaped holes that correspond to the four screws on the back of the Skyline. In addition to the keyhole shaped holes you will notice a fifth hole. This fifth hole corresponds to the plunger hole on the back of the Skyline. If mounting the Skyline in a three-wall corner, (whether mounting vertically or horizontally), the plunger hole should be on the half closest to where all three walls meet. The plunger hole corresponds to the side of the Skyline that houses the bass section. **The bass section should point INTO the corner to benefit from bass extension provided by all three walls.**

3. Using one of the brackets as a pattern, **mark eight holes on the wall** that correspond to the screw holes on the vertical top and bottom of the bracket.

4. **Drill eight 1/8" (.32cm) diameter holes** as marked. In some cases we've found that a satisfactory mount can be made just using the inner four holes, provided there is a stud present.

5. **Fasten bracket to wall** with wood screws provided.

6. If mounting in a three-wall corner, make sure to **connect speaker cable and tighten binding posts** before attaching the skyline to its bracket. This would be extremely difficult to do afterwards.

7. Carefully **line up the 4 screws on back of the Skyline** with the larger round portion of the 4 key shaped holes. Make sure the plunger hole on the back of the speaker corresponds with the plunger hole on the mounting bracket. You should be able to feel the speaker slide into place as the screws move into their corresponding hole.

8. Once your sure the screws are through the holes, **lock the speaker in place by sliding it** in the direction away from the plunger hole, (down if mounted vertically) a slight snapping sound will indicate that the speaker is locked in place.



Designer's Note from Bill Dudleston.

Conveniently tucked away in room corners, Skyline will disperse music evenly throughout the listening area.

Legacy's exclusive ACOUSTIC POLAR HYBRID TECHNOLOGY cancels early midrange reflections to avoid the "cardboard honk" sound characteristic of some in-wall and on-wall speakers. The midrange and highs will sound open and detailed; music will literally seem to be suspended in air.

Whether mounted horizontally or vertically, Skyline takes full advantage of the bass reinforcement corners provide. Skyline benefits from 9 dB of bass reinforcement when mounted in ceiling corners. The special 7" carbon-polymer woofer pumps out more than twice the bass one would expect from a speaker of its size.

Utilizing the Manhattan system's extraordinary 5.25" Kevlite-Ti midrange and the silky smooth NEOdome tweeter, Skyline will integrate perfectly with the Empire front channel speakers to satisfy the most critical listeners.

With the increasing popularity of discrete multichannel audio formats like Dolby Digital 5.1 and DTS, the characteristics of a direct radiating surround speaker quite desirable. Conventional direct firing speakers placed to the side of the listener can create a hot spot, "overcooking" the listener seated in proximity and thus drawing attention to themselves. Mounting the speakers higher on the sidewall can reduce this problem but may lead to vertical lobing error in the polar pattern. Skylines are designed to be mounted high to eliminate the "hot spot" problem with an optimized polar pattern, firing toward the listening position.

ACOUSTIC POLAR HYBRID TECHNOLOGY

The Skyline is a hybrid; open air/sealed box loudspeaker.

The satellite section is mounted in open air to provide an open sound and a narrower radiating pattern. The bass section is built into a sealed enclosure to provide the reinforcement we need to achieve the low frequency reinforcement needed. The additional reinforcement achieved when corner-mounting provides output one would expect from a box three times Skyline's size.

**Dolby Digital and Pro Logic are trademarks of Dolby Laboratories Licensing Corporation. DTS and DTS ES are trademarks of Digital Theater Systems.*

The Cabinetry

Beneath the surface of Skyline's elegant exterior lies rigid MDF construction. Interlocking joinery maximizes the strength of the cabinet parts. Polyester fiberfill is selected for internal damping. A sharp rap on the enclosure will leave you with little more than bruised knuckles.

Each cabinet is impeccably finished on all exposed surfaces with select veneers. The exquisite finish is hand-rubbed several times to assure a patina at home with the most elegant decor.

Our Commitment

A great deal of forethought, love and satisfaction is instilled in each piece of Legacy workmanship. We take pride in getting to know many of our customers on a first name basis.

Your purchase of this product is backed by the renowned "Legacy Satisfaction Guarantee". We continue to stand behind it with a solid ten year warranty, more than twice the industry standard.



Specifications

System Type: Acoustic polar hybrid.

Tweeter: 1" NEOdome.

Midwoofer: 5.25" Kevlite-Ti.

Woofers: 7" Carbon polymer.

Recommended Amplification: 15 - 200 watts.

Dimensions: 8 1/4" W x 20" H x 4 1/2" D

Crossover Frequencies (Hz): 200, 3k

Frequency Response: 100 Hz - 22 kHz +/-2 dB

Binding Posts: 1 pair/5-way.

Sensitivity: 90 dB.

Impedance: 4 ohms

Weight: 18 lbs each.

Hook-up Cables

The ideal conductor would have negligible resistance, inductance and capacitance. The table below shows how a few actual speaker cables measure up.

Cable	Ω s/ft	pF/ft	μ H/ft
12 ga.	0.0033	24	0.21
14 ga.	0.0048	17	0.13
16 ga.	0.0079	16	0.18
18 ga.	0.0128	28	0.21

Capacitance is considered insignificant in each cable because its effect is well out of the audio bandwidth; inductance can be decreased (at the expense of increased capacitance) by keeping the conductor pair closely spaced.

How long would a cable have to be before inductance effects would impinge on the audio spectrum? Approximately 300 feet of 12 gauge would be required to establish a corner frequency of 20 kHz with an 8 ohm loudspeaker. As you see, inductance is not a problem for most of us.

What about phase shift due to frequency dependent travel times down the speaker cable? Measurements show that 100 Hz waves will be delayed about 20 billionths of a second behind 10 kHz waves when traveling to the end of a 10 foot speaker cable. Since the cilia of the ear requires 25,000 times longer than this just to transmit phase information, phase shifting is obviously not the primary concern when considering speaker cables.

What about resistance? Finally we are getting somewhere. Resistance is the controlling factor of the amplifier/loudspeaker interface.

Excessive resistance can cause major shifts of speaker crossover frequencies. The lower the impedance of the loudspeaker, the greater the effects of series resistance. A run of 20 feet of 18 gauge can cause up to 10% deviations of crossover center frequencies. That same 20 feet can undamp your damping factor and reduce your systems' output by one-half decibel.

The best way to approximate the ideal would be to keep loudspeaker leads as short as is practical. However, for rear room installation, cable runs exceeding 50 feet are not unusual. Using an in-wall approved cable of 12 gauge is recommended.

The Amplifier

Ideally the loudspeaker would be among the first components selected when assembling a playback system. This would allow the user to choose an amplifier capable of delivering adequate amounts of current into the frequency dependent load presented by the loudspeaker. However, when upgrading a system, audiophiles may find themselves matching their new loudspeakers to their existing amplification. For this reason, extensive measures have been taken to ensure that each Legacy speaker system represents an efficient load to any amplifier.

Often there is much confusion regarding amplification and loudness levels. It should be understood that the role of the amplifier goes beyond that of driving loudspeakers to a given sound pressure level. The amplifier should be able to CONTROL the loudspeakers across the entire music spectrum. This means that parameters such as damping factor (values greater than 60 are acceptable) and dynamic headroom should not be overlooked when comparing amplifiers.

How much power will your new speakers need? That ultimately depends on your listening environment and musical tastes. As little as five watts per channel should drive them to a level satisfactory for background music. A typical 45 watt per channel receiver may fill a room with the compressed mid-band energy of “heavy metal,” but seem to lack weight or control with classical recordings. Some audiophiles feel that 200 watts per channel is the bare minimum to avoid audible clipping distortion when reproducing music at “live” playback levels. Your Legacy speakers are designed to take advantage of “high-powered” amplifiers, so don’t be afraid to put them through their paces.

How much is too much power? Rarely is a drive unit damaged by large doses of music power. More often than not the villain is amplifier clipping distortion. Even through decades of refinement, loudspeakers are still notoriously inefficient transducers, requiring huge amounts of power to recreate the impact of the live performance. Typically less than 1% of electrical power is converted into acoustic output. For example, an omni-directional transducer with an anechoic sensitivity of 90 dB @ 1w/1m has a full space efficiency of only 0.63%. When an amplifier is unable to fulfill your loudspeakers demands, a damaging harmonic spike may be leaked to the high frequency drivers.

Another important point regarding loudness is that the dB scale is a logarithmic one. This means that a 150 Watt amplifier will potentially sound only twice as loud as a 15 Watt amplifier.

If all of this discussion of power and loudness seems a bit abstract, consider the example to the left.

The average acoustical power developed by a person speaking in a conversational tone corresponds to a mere 0.00001 Watts. The power that would be developed by the entire population of the city of New York speaking at once would barely illuminate a single 100 Watt light bulb.



Troubleshooting

If no output is heard:

1. Check speaker connections.
2. Verify signal is actually being sent to the speaker.
 - A. Check player status
 - B. Check processor mode
 - C. Check processor's rear channel level setting
 - D. Verify program material is encoded with rear channel information