

# *Sarastro*

[ Beyond Imagination ]

## **OWNER'S MANUAL**

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## Safety Instructions

In these safety instructions, the word "product" refers to the Verity Audio Sarastro and all its accessories.

- 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  **Read Warnings** — All warnings on the product and in the owner's manual should be followed;
- 4  **Follow Instructions** — All operating and maintenance instructions should be followed;
- 5  **Cleaning** — Unplug the product and clean it with a damp cloth. Do not use a liquid or aerosol cleaner, or a magnetic/static cleaning device. The product should be cleaned only as recommended in this manual;
- 6  **Accessories** — Do not use accessories unless recommended in this manual. Do not connect or play the product before making certain that the associated accessories are in good condition;
- 7  **Heat** — Avoid placing this product near a heat source;
- 8  **Placing or moving** — Do not place on an unstable cart, stand, tripod, bracket, or table. The product may fall causing serious injuries, and serious damage to the product. A product with cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product cart combination to overturn; The upper module is not attached to the lower module. It holds by gravity and with the help of cushion pads. Attempting to move the product without removing the upper module could cause the later to fall and result in serious injuries. Before moving your product, always remove the upper module;
- 9  **Power amplifier** — Hazard of electric shock — Do not manipulate, move, clean or disconnect your product while your power amplifier is turned on;
- 10  **Spikes** — The underneath spikes assure a tight coupling with the floor. They are razor-sharp and must be manipulated with extreme care. Do not move the product while the spikes are installed. The spikes should be removed before moving the product;
- 11  **Moving when Packed** — The product comes packed in four ATA flight cases. These cases are HEAVY and cannot be carried by a single person. Attempting to move a transportation case alone could cause serious injuries;
- 12  **Input power** — To reduce the risk of fire or electric shock, do not allow an input power over 500 watts RMS (45 volts) to the product;
- 13  **Unpacking and Packing Instructions** — The product should be unpacked and / or packed only as indicated in this manual;
- 14  **Tweeter air exposure** — The pure aluminum ribbon is very sensitive to air flow. Never blow or suck air close or at the tweeter nor expose the tweeter to an air draft;
- 15  **Object and Liquid Entry** — Do not expose the product to liquid or moisture, or spill liquids on or near it. Do not place the product on a wet surface. Never put objects of any kind into the product openings, as they may touch dangerous voltage points or cause short-circuits that could result in a fire or electric shock;
- 16  **Servicing** — Do not attempt to service this product yourself. Refer all servicing to qualified service personnel;
- 17  **Damage Requiring Service** — Turn off your power amplifier(s) and disconnect all cables from this product, and refer servicing to qualified service personnel under the following conditions: When the product exhibits a distinct change in performance. This indicates the need for service; If any liquid has been spilled into, or objects have fallen into, the product; If the product has been exposed to rain or water; If the product does not operate normally even if you follow the operating instructions. Connect only your product as recommended in your owner's manual. Improper connections may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation; If the product has been dropped or the cabinet has been damaged;
- 18  **Replacement Parts** — When replacement parts are required, be sure the service technician has used original replacement parts from Verity Audio. Unauthorized substitution may result in poor performance, fire, electric shock or other hazards;
- 19  **Safety Check** — Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in safe operating order;

## Using this Manual

Please take the time to carefully read this instruction manual prior to installation or use of your Sarastro loudspeaker. Your reading efforts will be rewarded by the satisfaction of getting a full performance achievement and a long service life. We believe that a thorough understanding of your new and highly accurate loudspeakers can save you a lot of anxiety.

This manual will guide you for setting up and operating your loudspeakers and will teach you how to unpack, repack, clean and service your product. Furthermore, we have included a few informative sections for the benefit of your own Sarastro familiarization.

We are pleased to count you among the most privileged owners of a unique product that will yield a very enjoyable experience for years to come.

## Product Overview

Your new Sarastro is a mature-engineered high-precision audio component. It is the cornerstone of a design association between worldwide audio professionals and acoustic engineers. It has been designed to provide an awe-inspiring level of musical satisfaction in any domestic environment. The Sarastro brings a substantial improvement to any audio system and gives its full potential when associated with the finest ancillary equipment.

The Sarastro comes in two separate modules. One upper and one bottom loudspeaker cabinet. The upper cabinet includes a pure ribbon tweeter and a wide-bandwidth midrange. The bottom cabinet consists of a state-of-the-art 11-inch woofer tuned in a fourth-order Bessel enclosure. Together, they constitute an exquisite extended-bandwidth reference loudspeaker.

Both cabinets are independent and isolated with a thick platform made of damped aluminum.

Your Sarastro uses proprietary and highly innovative custom-designed components integrated in a resonance-free cabinet construction.

The result is a high-resolution loudspeaker that gives a great sense of liveliness, scale, and presence in the listening space. Your Sarastro, without any doubt, will sound natural even throughout a seemingly unlimited frequency spectrum and dynamic range. It will give you hours of enjoyable music without fatigue.

## Features & Benefits

The Sarastro ability to reproduce music with a high degree of sound intelligibility comes from many useful features.

### **Seamless Coherence**

Matched (Verity Audio CAM™ system) and high-quality components for wide soundstage imaging homogeneity.

### **Effortless Neutrality**

Proprietary low-distortion, high-headroom transducers for amazingly low-fatiguing dynamics.

### **Long-lived Reliability**

High power-handling, strongly manufactured high-reliability components for years of trouble-free enjoyment.

### **Striking Velocity**

Low-inertia voice-coil technology and quick rise-time symmetrical drive for sparkling speed and authentic transients.

### **Spacious Bottom-End**

Outstanding transducer displacement uniformity complete with all symmetrical drive topology for dynamic and full-bodied bass performance down to 14Hz (-6dB at 10Hz in most domestic environment).

### **Extended Harmonics Reproduction**

Pure-ribbon tweeter going-up to over 50 kHz for astonishing transient response and harmonic precision.

### **Exquisite Finishing**

Splendid Italian polyester finish of sumptuous brilliance and impeccable coating that will last for years.

### **Compact Design**

Accommodating size with no performance impairment that grants dazzling sound in any listening environment.

All these features synthesize Verity Audio's commitment for bringing the music back to its original essence: *Pure and exalted emotions.*

## Upper Module

Sarastro's main cabinet includes two high-performance transducers. A pure ribbon tweeter and a 5-inch high-quality midrange.

Your Sarastro tweeter is an extremely accurate device that gathers exceptional qualities: linear frequency response, instant decay, low energy storage, extreme bandwidth, high sensitivity and low distortion. The tweeter covers a 6-octave bandwidth up to a high 50kHz. Furthermore, to eliminate any possible brake-up resonances, the Sarastro tweeter is high-passed at 5,000 Hz. Its high extension gives an astonishing harmonic coherence. It's a pure 3-inch aluminum ribbon electrically coupled to a precision impedance transformer. The aluminum front-plate was redesigned to adapt the dispersion and phase to perfectly match with the Sarastro cabinet. All the above, was

considered as an obvious choice to achieve limitless speed, efficiency and precision. Qualities that any top-performance sound-reproduction device should exhibit.

The midrange is also a wide-bandwidth component. It is band-passed to cover a wide spectrum eliminating any crossover point within the most sensitive human ear listening area. It possesses a high sensitivity of 93 dB, a very linear frequency response, and a speed that easily pace with the tweeter velocity. Its inherent speed and high bandwidth characteristics make sure that your attention is always focused on music. It makes the Sarastro coherent, homogeneous and focused all the time.

The midrange have been developed by Verity Audio and AudioTechnology. Over years, these drivers proved to be extremely reliable.

Without any doubt, the Sarastro is an exquisite loudspeaker that truly offers an effortless sense of realism throughout any home audio software collection. It's a luxurious piece of engineering and furniture that integrates state-of-the-art components, an investment for years of enjoyment.

## Woofers Module

The Sarastro bottom cabinet shapes the indispensable air volume needed to reproduce the very first octaves. It is driven by an impressive custom-made 11-inch woofer developed in association with AudioTechnology.

This 11-inch unit is tightly designed to fit with the Sarastro requirements. It was thought for high-performance home audio. It differs substantially from those typical drivers commonly used for professional sound and found in several expensive high-end products. Being optimized for high power handling, the later often exhibits very poor low-frequency reproduction qualities. Conversely, the Sarastro 11-inch woofer is by-design flat down to the lowest octaves. Because of its Bessel fourth-order tuning, it cleverly incorporates a 6dB room reinforcement characteristic to flatten the frequency response down to 20 Hz. The room-reinforcement and tuning combination result in a very modest cone displacement for minimal distortion.

Simply said, the Sarastro delivers a high-resolution down to the lowest octaves. This precision opens the door to an astonishing sound intelligibility. Why is that ? Because it perfectly merges top-to-bottom frequency information in a limpid whole. In other words, the hiss of a background-recorded fan couldn't be clearly recognized if its associated low frequency rumble wouldn't be well defined. This resolution is bringing true realism to your listening experience. It supplies you with a tremendous amount of detail regardless of your recording venue.

The woofer cabinet is inner reinforced to damp and control parasitic energy. It is ported with a 4-inch aluminum flared-vent. It is powdered painted to increase air-dynamics.

Four custom-made decoupling and adjustable spiked-cone devices are firmly fixed to the bottom. They isolate the cabinet from the floor. Because of the Sarastro heavy weight, four Teflon skates are also included with the product. They can be placed under the cones to easily move the Sarastro within the listening room.

To realize their full potential, your Sarastro should be associated with the finest ancillary equipment. When set up properly, they offer a unique blend of smoothness, accuracy, dynamic and bass performance yielding a highly gratifying musical experience for years to come.

## Unpacking

Before they left the factory, your Sarastro cabinets passed an exhaustive quality control procedure to guaranty their genuine state. Please carefully observe the included unpacking instructions for maximum product safety. Once your Sarastro cabinets will be unpacked, inspect them carefully for any physical damage. If any transit damage can be noticed, please notify your dealer immediately and request the name of the carrier so a written claim can be initiated.

Your Sarastro comes packed in four ATA (Air Transporter Association) approved flight cases. For transportation purposes, we strongly recommend you to utilize the same cases.

You will find the isolating plates underneath each monitor by removing the protection foam located at the bottom of the cases.

Unless the carrier is notified promptly and all the shipping cases are available for inspection, the right to claim can be forfeited.

## Installation

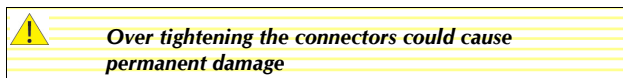
This section will assist you in assembling and connecting your Sarastro loudspeaker.

In order to install your Sarastro in a proper location, please refer to the *Room Placement* section of this manual or follow the recommendations of your dealer or Verity Audio representative.

Make sure that your power amplifier(s) is turned off. Place your woofer cabinets in their respective locations. Install one of the supplied Teflon pads under each brass cone located underneath each woofer module. These pads will make the speaker placement process much easier. Once you find the proper location, just remove them and install the floor decoupling spikes. Adjust the underneath spikes to level each cabinet, then secure your adjustment by firmly tightening the locking nuts. Carefully place the isolating platforms on each cabinet by matching the edge angles. Sit each upper module

on its respective isolating platform. Your upper-module, isolating platform and lower-module should now align and match perfectly.

At the back of your Sarastro, there are three sets of binding post connectors. One at the bottom of the lower-module, one at the top of the lower module and one at the bottom of the upper-module. Screw all the connector posts halfway-in before installing cables. Speaker cables should always be installed according to the manufacturer's recommendations. When connecting your Sarastro, make sure that the polarities are respected at both ends. The positive polarity is clearly identified by a red dot located on each connector set. If your power amplifier(s) has(ve) multiple output impedance-taps, the eight-ohm taps usually provide a better match.



The Sarastro can be either single wired, biwired or biamped.

### Single Wire

This is the easiest and cheapest way to connect the Sarastro as you only need one set of speaker cables and one set of amplifiers. Connect one set of speaker cable from your amplifier to the lower-module bottom binding-posts, then jump the lower-module upper binding-posts to the upper-module binding-posts by using the short speaker jumpers included with the Sarastro. Do the same for the second Sarastro.

### Biwire:

Even though it's a more expensive approach, many audiophiles prefer to biwire their loudspeakers. There are two ways to biwire your Sarastro.

#### Method no. 1:

Connect one set of speaker cable from your amplifier to the lower-module binding-posts, then one set of speaker cable from the lower-module binding-posts to the upper-module binding-posts. Do the same for the second Sarastro. Some people may rather connect the upper module first and jump with the lower-module. You will have to experiment to find out which way you like most.

#### Method no. 2:

Connect one set of speaker cable from your amplifier to the lower-module binding-posts and a second set of speaker cable from your amplifier to the upper-module binding-posts. Do the same for the second Sarastro.

The second method should give better results but may require two sets of long speaker cables.

### Biamp:

This is the most expensive approach but sometimes the one that will give the highest level of performance. To biamplify, you need four monoblocks or two stereo amplifiers. It is highly recommended to use all-identical amplifiers. Using different

amplifiers may mismatch the upper-module and lower-module gains and impair seriously the overall performance. Please consult your dealer or a Verity Audio specialist to get further assistance.

Connect each binding post to their respective amplifier outputs using individual speaker cables. Make sure that the left and right channels are respectively connected to the left and right loudspeakers.

In any case, we recommend using the best quality speaker cables and amplifier(s). Make sure that none of the speaker cables, connected to the upper module, touches the 15-inch woofer surround. To avoid that, it is good practice to attach together both cables with a velcro strap.

## Room Placement

Indoors, acoustic intelligibility is of great concern for a variety of reasons. It requires low background noise levels and "good" acoustical design. In any room, the reverberant sound pressure level increases as the acoustic power increases and decreases as sound absorption in the room increases and / or sound power flows from the room. The sound field in a room is composed of two parts, the direct field and the reverberant field.

The complex theories of physical acoustics, the uncertainties in predicting the property variations of both natural and manufactured room materials, and the none negligible effects of painting, sealing, bracing, furring, and draping all keeps the specification and prediction of room acoustics from being an exact science. Adding together, loudspeaker characteristics, the auditory personal taste, and ergonomics, makes, by practical means, the equation impossible to solve. The frequent need to evaluate the final result by listening rather than by purely quantitative methods gives acoustical tuning a somewhat subjective aspect.

Nevertheless, knowing what the Sarastro is capable of, will be your major asset in establishing the best setup for your loudspeaker. Here are a few simple rules that will guide you. A good setup will give you fast transients from bottom-end to top-end, proper image height and a wide and deep soundstage.

Having that in mind, the following guidelines are based on our own experience with the Sarastro. We recommend you to start with these and later on, after getting familiar with your Sarastro, bring your own modifications that will optimize your setup.

*Please note that the below specified distances are all relative to the center of the Sarastro 11-inch woofer.*

Install your Sarastro at 4 feet (122 cm) from the front wall and space them apart by a distance of 10 feet (3.0 meters). To get the best performance, we highly recommend being seated at a

minimum of 10 feet (3.0 meters) away from the loudspeakers. Align the speakers to point directly at your listening position. Slowly open them outward until you get the best soundstage without losing too much center-stage definition. For most cases, the left tweeter should point toward your left shoulder and the right tweeter should point toward your right shoulder. This setup should give good results in most common situations.

Should they need further adjustment follow these next guidelines. Moving the speakers closer to the front wall will mainly increase the bottom-end. Changing the spacing between each speaker will primarily affect the width, height, depth and center of acoustic-image. The Sarastro can be placed fairly close to the side wall without much problems

Should they get closer to the side wall, the boundary reinforcement will increase the bass. Opening them will improve your image width and closing them will improve your image center definition. Conversely, if you wish to broaden your listening area, tow them inward even more until they are aligned with your opposite shoulder. Always move the speaker step by step. For each step, search for a uniform tonal balance, a good width, height and depth of the acoustic image and a well-defined center stage. Improvement of a sonic feature frequently deteriorates another. Try moving the speakers in the direction that appears to give a better overall improvement. It is sometime a long process that needs perseverance and assiduity. But your efforts will be well rewarded.

## Room Treatment

The Sarastro gives its best performance in an average-furnished domestic listening room. It requires a minimum of room treatment. Before investing in room treatment we strongly recommend you to take the time to listen and get familiar with your speakers. The Sarastro has proved to be a standalone loudspeaker that rarely needs to be acoustically corrected. A good room placement is usually the most effective approach. You should always start to position your speakers without any treatment. If speaker positioning cannot solve standing waves or reverberation problems read the following.

The principal design factor for internal acoustics of a room, in addition to shape and size, is the control of sound absorption and reflection. The total absorption required to give optimum reverberation is inherent to your room characteristics, i.e., which surfaces are absorptive or reflective, the area of these surfaces and the selection of acoustical materials.

A **flutter echo** is a rapid (usually regular) succession of reflected pulses resulting from a single pulse. They can be easily identified by clapping your hands while walking in the room. They are frequently located at the ceiling corners or at the center of the ceiling-wall intersections. If flutter echos are prominent, please consult your dealer to get proper assistance on that matter.

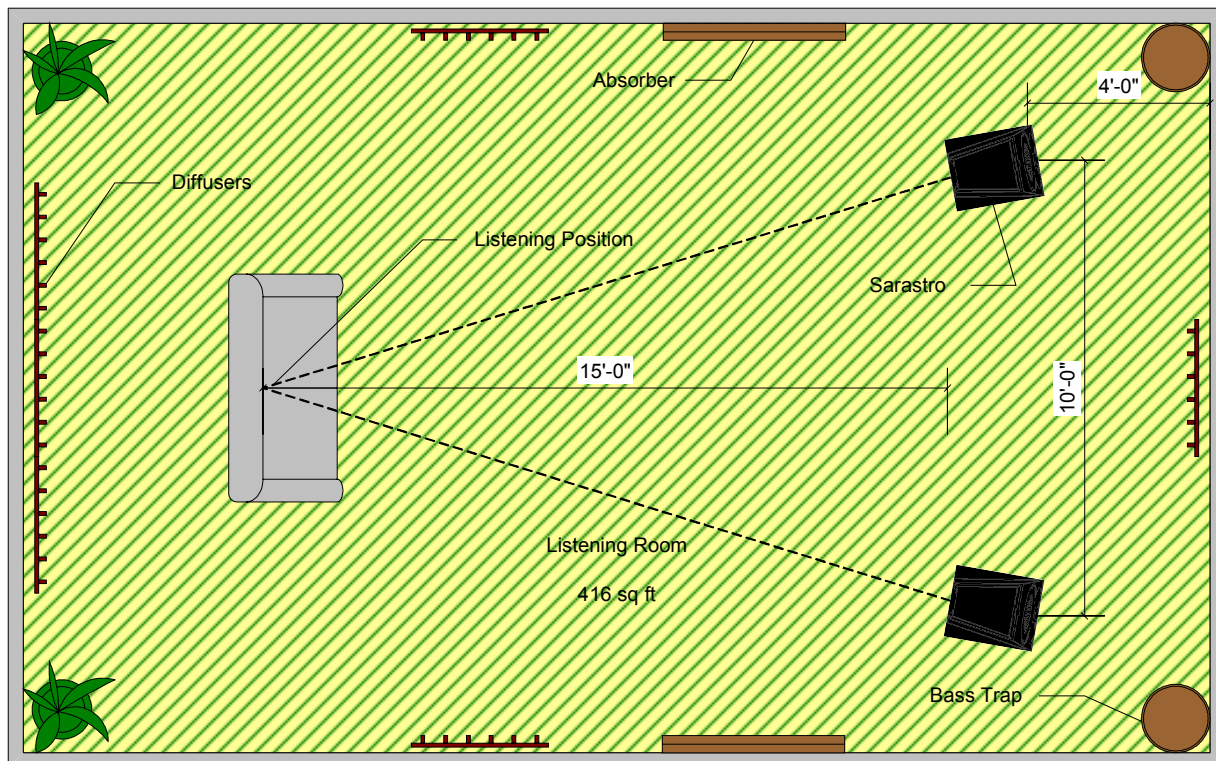


Figure 1: Typical setup in a 26' x 16' x 10' IEC recommended listening room showing diffusers, absorbers and bass control devices.

The **reverberation** in the room is the resulting tendency for sound level in the room to persist after direct sound ceases. The optimum reverberation time for a room depends upon room volume, sound frequency, and the type of sound or reproduced music. The Sarastro performs at its best in lively listening rooms. Overly damped room will be detrimental to the Sarastro's performance. Optimum reverberation time (at 500 to 1,000 Hz) should be between 0.4 and 0.6 second.

**Standing waves** are reflections from opposing parallel surfaces resulting in serious peaks in the reverberation-time / frequency curve. In properly proportioned rooms, resonances can be effectively reduced and standing waves practically eliminated by introducing numerous sound treatment devices. The object is to prevent sound reflection back to the point of origin until after several reflections and/or after being considerably attenuated. Once again if you feel having a standing wave problem in your room, please consult your dealer to get proper assistance in this matter.

**Early reflections** are the first sound reflections heard at the listening position. They are usually intense and annoying. In order of importance, they usually come from the floor, the side walls and the ceiling. They can either be controlled by placing diffusors or absorbers at their image location. Your dealer can be of good assistance in properly helping you with this matter.

In an already well damped room, we recommend utilization of diffusion instead of damping.

If you choose to work with a specialized room treatment device, the included manufacturer's instructions should be followed.

## Ancillary Equipment

Your new Sarastro is an extremely precise instrument that can clearly reveal the qualities of your upstream equipment. Your Sarastro's performance will be closely related to the excellence of its associated equipment. Subsequently, it would be wise to invest in high-quality ancillary equipment as your enjoyment will be significantly rewarded.

The Sarastro shows an easy impedance load for most power amplifiers. It has been evaluated with a wide variety of power amplifiers and showed consistent results with quality solid state and vacuum tube equipment. Superb performance can be realized from either design.

The uniquely designed and manufactured binding-posts on the Verity Audio Sarastro accept banana plugs, spade connectors or bare wires. For best results, we recommend the use of spade connectors.

When choosing speaker cables, experimentation is the best way to find which one will be the most satisfying in your installation. Your Verity Audio dealer can be of assistance in making recommendations.

## Power Handling

The Sarastro offers an outstanding power handling capacity yielding astonishing dynamics.

Power tolerance of a loudspeaker is correlated to its maximum voice-coil heat dissipation and to its maximum cone displacement. These parameters are in turn stimulated by the time, amplitude and spectral characteristics of the applied musical energy. At low-frequencies, the maximum cone displacement is normally reached before maximum voice-coil temperature.

With the Sarastro's transducers, because of their superior ventilation system, the voice-coils will most likely never reach critical temperatures. But, low-frequencies played at high levels can ask for larger cone displacement than allowed by the driver suspension. A driver reaching its maximum displacement will not break unless this situation is maintained for an inordinate period of time. Before a driver reaches its maximum displacement, its distortion level will increase greatly and will become audible. So when a speaker starts sounding bright and hard or if any "cracking noise" can be heard, just lower the level until it sounds comfortable again.

The Sarastro has to be played unexpectedly loud before any occurrence of compression or distortion.

## Cabinet Resonances

Cabinet resonances are controlled in a very special way. Their amplitudes are lowered and their frequencies are increased. Because higher frequencies are more directional, it will be most unlikely that they get the chance to reach the listening point. Of course, the listening room has to be properly treated. Also, traveling high-frequency sonic waves attenuate faster than their low frequency counterpart. A unique cabinet bracing arrangement can break a wall resonance into multiple higher frequency resonances that are not harmonically related. By doing so, their amplitudes are greatly reduced. The cabinet construction tolerances are so tight that only computer-controlled tooling can cut panels with acceptable accuracy.

The cabinet rigidity lowers even more any chances of coloration caused by unwanted vibrations. Special materials are used to ensure stability of the cabinet in any acoustical environment.

## Care of the Finish

The high-gloss exotic wood veneer and black piano finish available for the Sarastro is composed of high-grade Italian lacquers. You will only find them on luxury pieces of furniture or on the best grand pianos. They are long-lasting finishes and need little care.

Never use any solvent or abrasives to clean your speakers. To remove fingerprints, use a lint-free cloth moistened with a few drops of water.

Use a cloth brush to clean the front panel black velvet. A transparent packing tape works also very well.

The Verity Audio gold-plated binding posts have been specially designed to introduce a very low impedance path for high-power signals. To keep it at its best, we recommend cleaning them every year with one of the special contact cleaners available on the market. The best results can be obtained from products that have been specially formulated for gold-plated connectors.

## Maintenance

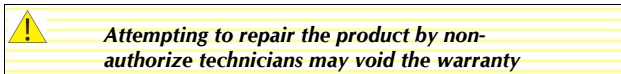
Verity Audio products offer years of trouble-free performance. If for any reason, your speakers need servicing, contact your authorized Verity Audio dealer or call the Verity Audio service department at **(418) 682-9940** (North America) or email us at [support@verityaudio.com](mailto:support@verityaudio.com). Help is available from 9:00 A.M. to 5:00 P.M. Eastern Standard Time (EST), Monday through Friday, except on holidays.

If you seem to have an operational problem, try to solve it by referring to the information in the Troubleshooting section of this manual. If you cannot quickly resume normal operation, contact Verity's experienced support personnel at the above phone number.

Before contacting your Verity Audio authorized service representative, make sure you have the following information in hand.

- Serial numbers
- Place of purchase
- Nature of the problem
- Steps you have taken to solve the problem and the obtained results

A return authorization number is required for servicing any of our products and it should be clearly identified on the packaging before any shipment to our facilities. Every unit shipped without return authorization number will be returned to sender.



## Troubleshooting

This section describes how to solve common problems you may encounter when using your loudspeakers. Many problems have simple solutions, so try these suggestions before you call your dealer or Verity Audio support (see *the Maintenance section of this manual*).

### Operational Problem(s):

This section contains problems and solutions related to the operation of your hardware. Try the solutions in the order listed within each section.

#### ***I hear no sound coming out of the speakers / I barely hear the music from the speakers:***

Make sure all your audio apparatuses are plugged into a power source and that they are turned on. Check that their respective power indicator shows that the power is on; Make sure every interconnect cable are connected properly and firmly; Make sure your audio equipment selectors and controls are suitably adjusted (source selector, volume control(s), mute selector, etc.); Make sure your software (CD, LP, Tape etc.) is properly installed and currently running; Check your speaker cable connections. Make sure the connections are secure and no leads are touching each other. See *the Installation section for details about connecting your loudspeakers*.

### Sonic Problem(s):

Make sure every transducer is currently working and none of them seems to make any abnormal noises; Make sure all polarities are respected and all cables are properly installed; Check if the problem persists at all power level; Make sure every transducer are properly sealed and no air leak seems to occur around the transducers while playing.

The sonic performance is closely related to your room inherent characteristics, your speaker positioning and your ancillary equipment. We recommend that you experiment with these to find the best solution. For help, contact your dealer or your Verity Audio service representative at **(418) 682-9940** or email us at [support@verityaudio.com](mailto:support@verityaudio.com).

## Customer Support

Verity Audio provides customer support and service for all Verity Audio products. If you have any questions regarding your new loudspeaker, call the Verity Audio at **(418) 682-9940** or email us at [support@verityaudio.com](mailto:support@verityaudio.com). Help is available from 9:00 A.M. to 5:00 P.M. Eastern Standard Time (EST), Monday through Friday, except on holidays.

If you seem to have an operational problem, try to solve it by referring to the information in the *Troubleshooting* section. If you cannot quickly resume normal operation, contact your dealer or Verity's experienced support personnel at the help desk.



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