
# OWNER'S MANUAL

# BRAVO REFERENCE AMPLIFIER

JUNE, 2002

# TABLE OF CONTENTS

Safety Notices……..…….....03

Introduction…….…….05

Unpacking……..…….05

Placement Considerations……..06

Special Design Features……..07

Amp Rear Panel…..……12

Supply Rear Panel……..……13

Mono Operation……16

Bridged Operation……17

Biamplification……..……18

Care and Maintenance……..……18

Troubleshooting……..……19

Service……..……19

Warranty……20

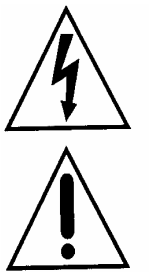
Specifications……..……22

Dimensions……..……23

# SAFETY

**WARNING:** TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE

**CAUTION:** TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.



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 the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Please read all instructions and precautions carefully and completely before operating your power amplifier.

**CAUTION**: Changes or modifications to this equipment not expressly approved by the manufacturer will void the user's warranty.
The information contained in the manual is subject to change without notice. The most current version of this manual will be posted on our web site at http://www.violalabs.com.

# Important Safety Instructions

Please read all instructions and precautions carefully and completely before operating your Viola Audio Labs power amplifier.

1. **ALWAYS** disconnect your entire system from the AC mains before connecting or disconnecting any cables, or when cleaning any component.

2. This product must be terminated with a three-conductor AC mains power cord which includes an earth ground connection. To prevent shock hazard, all three connections must **ALWAYS** be used.

3. AC extension cords are **not** recommended for use with this product.

4. **NEVER** use flammable or combustible chemicals for cleaning audio components.

5. **NEVER** operate this product with any covers removed.

6. **NEVER** wet the inside of this product with any liquid.

7. **NEVER** pour or spill liquids directly onto this unit.

8. **NEVER** block air flow through ventilation slots or heatsinks.

9. **NEVER** bypass any fuse.

10. **NEVER** replace any fuse with a value or type other than those specified.

11. **NEVER** attempt to repair this product. If a problem occurs, contact your Viola Audio Labs retailer or factory.

12. **NEVER** expose this product to extremely high or low temperatures.

13. **NEVER** operate this product in an explosive atmosphere.

14. **ALWAYS** keep electrical equipment out of the reach of children.

15. **ALWAYS** unplug sensitive electronic equipment during lightning storms.

# INTRODUCTION

Thank you for choosing the Viola Bravo Reference Amplifier. We have designed and manufactured this exciting product utilizing the latest techniques and the best materials available. Our goal is to provide you with the highest quality listening pleasure available.

# UNPACKING

Under no circumstances should you consider unpacking your amplifier without adequate assistance as both personal injury and damage to the product is likely unless you follow the procedures listed below.

Your new VIOLA Bravo Power Amplifier is heavy—the shipping weight of the Bravo is about 260 pounds (118 kg). We recommend you use two or three people to unpack these amplifiers safely.

Do not attempt to lift your power amplifier from its packing carton alone. Never attempt to lift your power amplifier while bending from the waist. Always stand as straight as possible and use your leg muscles to lift your amplifier.

After unpacking your Bravo power amplifier, keep all packing materials for future transport. In the event that you need to ship your amplifier, only the original, purpose-designed shipping carton is acceptable. Any other method of shipping this heavy product will almost certainly result in damage to the amplifier—damage that would not be covered by the warranty.

Please inspect your amplifier for any obvious damage due to shipping. If you discover any problems, contact your VIOLA dealer immediately so an appropriate freight claim can be made.

Although your VIOLA Bravo power amplifier delivers outstanding performance straight out of the box, you should expect to hear it continue to improve as it reaches its normal operating temperatures and its various components "break-in." It has been our experience that the greatest changes occur within the first 25-50 hours, but that the amplifier will continue to improve in sound quality for about 300 hours, after which time it remains quite constant.

The only exception to this rule is if power is removed from the unit, allowing it to cool down. This can occur due to: extended power outages, unplugging the amplifier from the wall during a vacation; or by leaving the amplifier in sleep mode rather than in standby. In these cases you should expect a brief warm-up period before the amplifier's sound quality is at its best. (Fortunately, you will never have to repeat the full 300 hour break-in period.)

# PLACEMENT CONSIDERATIONS

For your protection, review "Important Safety Instructions" above before you install your amplifier.

Your VIOLA Bravo power amplifier is specifically designed to accommodate a wide range of installation options. These amplifiers may be placed on the floor, near the loudspeakers they drive. They may also be located on shelves provided the shelves are sturdy enough to bear the weight of the amplifier and have sufficient room for proper ventilation. The sophisticated ventilation system employed by the Bravo power amplifier will maintain optimal operating temperatures in the output stage of the amplifier even when they are stacked one above another.
However, if you have a choice in your design, locating each amplifier near its respective loudspeaker is usually best. This approach minimizes the length of the speaker wires, and necessitates longer interconnecting cables from the preamplifier to the power amplifier. The advantage to this strategy lies in the fact that the interconnecting cables carry low-current signals that are more readily transmitted over distances with great accuracy than are the necessarily high current signals required by loudspeakers.

Note that adequate clearance for the AC cord and connecting signal cables must be left behind your amplifiers. We suggest leaving at least six inches (15 cm) of free space behind your amplifier so all cables have sufficient room to bend without crimping or undue strain.

The Bravo power amplifier was designed to use both active and passive cooling strategies. This highly efficient system features a forced air cooling system to maintain optimal operating temperatures under a wide range of conditions. This combination of passive and active cooling is accomplished by fans running in conjunction with an efficient system of heat sinks. Two ultra low-noise fans provide cooling

from side to side in the amplifier. If you look closely, you will see crosscuts in the side plates of the amplifier. These cutouts provide the air intake and exhaust for the forced-air cooling system. The fans' superior engineering and ball-bearing construction allow them to run extremely quietly. Most people will never notice them. The only time you are likely to hear them is when you first turn the volume off after a prolonged period of extremely high volume listening.

Regardless of where you choose to locate your amplifier, we advise locating the amplifier near the floor and well away from sensitive low-level components. The Bravo power amplifier dissipates approximately 350 watts of energy as heat when on and at idle (no input signal). It is therefore normal and perfectly safe for them to run somewhat warm.

Mechanical drawings are included in this manual to facilitate special installations where necessary (see "Dimensions" at the end of this manual).

# SPECIAL DESIGN FEATURES

Congratulations on your purchase of a BRAVO Reference Amplifier by Viola Audio Labs. While your new amplifier is straightforward in everyday use, it includes several design features that are responsible for its outstanding performance. In particular, your new power amplifier defies the accepted wisdom that it is impossible to design a large, powerful amplifier that also has all of the finesse of the finest smaller amplifiers. A few of the technical highlights that make this possible are given below.

## Power Supply

The Bravo power amplifier used as a two box set is a stereo amplifier with separate power supply. The separate power supply assures complete freedom from electro-magnetic interference (EMI) produced by the electromagnetic power supply components, i.e. the power transformer and inductor (or choke).

The inductor (choke) input filter power supply design was chosen because it produces far less EMI than conventional capacitor input systems. The inductor (choke) input filter system greatly reduces the electrical stress placed on the power supply components. Therefore,

this greatly increases the life span and reliability of the power supply components. Capacitor lifespan in particular can be increased by at least an order of magnitude. The virtual elimination of the high peak ripple currents also minimizes intermodulation distortion on the power supply “rails” and ground returns.

Additional power factor (PF) correction circuitry increases the PF from .9 (typical for “choke” input supplies) to .96 (a power factor of 1 [unity] is considered ideal). The power supply utilizes large, conventional components instead of a switching power supply because they can operate at power levels several times their continuous power ratings for longer periods. Given the duty cycles found in even the most demanding music, large conventional magnetic components can be used in audio power amplifiers whose continuous sine wave power ratings would otherwise require a switching power supply rated at 3 times that of the conventional type. *

*** Note: This duty cycle concept has nothing to do with so called “music power”. FTC regulations were issued in the early 1970s to standardize power ratings. These requirements include a preconditioning of 1 hour operation at 1/3 rated power output after which the amplifier is expected to be able to produce its full rated power at any frequency within the rated bandwidth at a THD level of no more than the manufacturer’s rated THD with all channels driven together. This FTC rating approach was in fact a reaction to the infamous “music power” rating system which at best represented the amount of power an amplifier could deliver for a fraction of a second! Actual music can demand sustained full power levels for up to 30 seconds.**

The conventional magnetic supply used for this amplifier does not utilize high frequency switching and therefore is devoid of any high frequency noise. It offers much higher reliability and does not have to be derated nearly as much as an equivalent switching power supply for a given ambient temperature.

Each amplifier’s large, robust power supply includes a high capacity, low noise toroidal transformer and inductor. Specifically, the supply uses a 2kVA transformer with 320,000 mF total capacitance. Four large, low ESR ("Equivalent Series Resistance") capacitors (80,000 mf each) are located in the amp chassis. They are designed to minimize the buss length to the output stages for optimum decoupling of the supply lines.

Heavy oxygen-free copper bus bars enhance the efficiency of power distribution within the amplifier and eliminate variances

introduced by wiring harnesses, etc. more commonly found in high performance amplifiers. High frequency power supply bypass is accomplished on individual PC boards with capacitors of several film types. The resulting uniformly low power supply impedance seen by the various circuits within the amplifier lays the foundation for both the massive power and the extraordinary finesse that characterizes the Bravo power amplifier.

## Balanced design

A truly balanced input topology eliminates the need for an input buffer amplification stage and allows the first stage differential amplifier to be driven directly by the source. Matched impedances are presented to the source and both signals travel through identical circuit paths. Painstaking attention to layout of the amplifier was essential to minimize magnetic field distortions possible with such a massive power delivery system, including careful mirror-imaging of circuits to cancel magnetic fields. A balanced input signal remains balanced throughout the voltage gain stages.

## True Voltage Source

Your new amplifier operates as a virtually perfect textbook case of "voltage sources." This is to say that they will maintain whatever the appropriate voltage might be at any moment (given the demands of the music, and within the rated voltage output of the amplifier), without any particular regard for the current demands of the loudspeaker. Because of this "voltage source" characteristic, the amplifiers double their power output every time the loudspeaker impedance is cut by half. For example, the Bravo power amplifier's continuous rated power is 350 watts per channel at 8 Ohms; 700 watts per channel at 4 Ohms; 1400 watts per channel at 2 Ohms—assuming the electrical circuit in the wall can support these extraordinary power levels. A continuous 2 Ohm test of the BRAVO at maximum power requires over 25 amperes at 120V. (The laws of physics refuse to be cheated. Long-term, you cannot deliver more power into the speaker than you can pull from the wall.) Forty TO-3P output transistors are distributed in the heat sinks of the Bravo power amplifier to conduct and control the flow of its remarkable power capabilities to the loudspeaker. There are twenty matched, complementary pairs of output transistors in each channel of the amplifier.

No known high quality loudspeaker can absorb the continuous full power capability of the Bravo (nor would you want to be present in the

room were you to find one that could do so). However, many high quality loudspeakers may require rather extreme power levels on a short term basis when reproducing music at realistic levels. Your new amplifier can answer these needs with impunity, without any power supply "sag" and without altering its sonic performance in any way. The resultant imperturbable nature of these amplifiers is reflected in the authority and control with which they reproduce music. Your selection of any particular model depends only on the maximum power you need, based on your loudspeakers, listening room, and listening habits. Viola produces a line of loudspeakers that are designed to match the Bravo amplifier. Ask your dealer about them.

## Extensive Protection

Your new power amplifiers will shut themselves down if they sense any of a number of fault conditions that could cause damage to either themselves or to your loudspeakers. These fault conditions include:

- the presence of DC (direct current) at the output
- demand for excessive current (indicating a short circuit) at the output
- either over-voltage or under-voltage conditions on the AC mains
- unsafe operating temperatures in any of several critical areas within the amplifier.

In the case of either significant DC offset or an over-current condition, the amplifier will shut down to protect itself and your speakers. To restore normal operation, remove the cause of the fault and cycle power (e.g., the AC mains power button).

If the AC mains voltage it either too high or too low for safe operation, the amplifier will automatically shut down. The amplifier will not turn back on until the AC mains voltage is again "legal" for normal operation. As an example, a 120V unit will operate between approximately 90-140V; a 240V unit will operate between approximately 180-280V. Outside these generous limits, the amplifier will shut off. Once the fault condition is removed, the amplifier can again be turned on.

If the amplifier manages to become overheated despite the innovative cooling system, it will once again shut down. Once the fault condition is removed, the amplifier can again be turned on. In addition, the AC input to each transformer is fused to protect against excessive current conditions such as driving shorted outputs. Inrush limiting prevents premature aging of power supply components during

power-up, and switches off-line once the power supply has been charged.

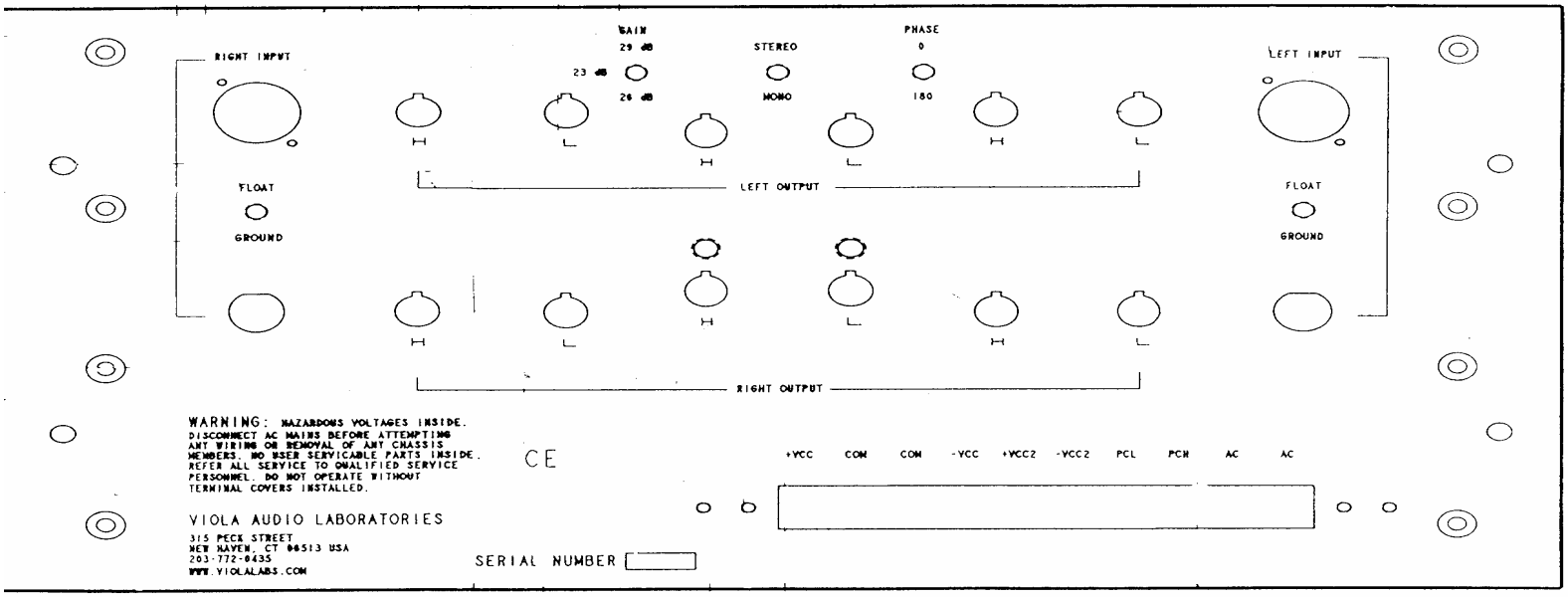
Finally, your amplifier incorporates a controlled clipping circuit that prevents the output devices from saturating. The harsh high frequency harmonics generated by hard-clipped output devices are avoided by the wave shaping action of this controlled clip circuitry.

## Cooling System

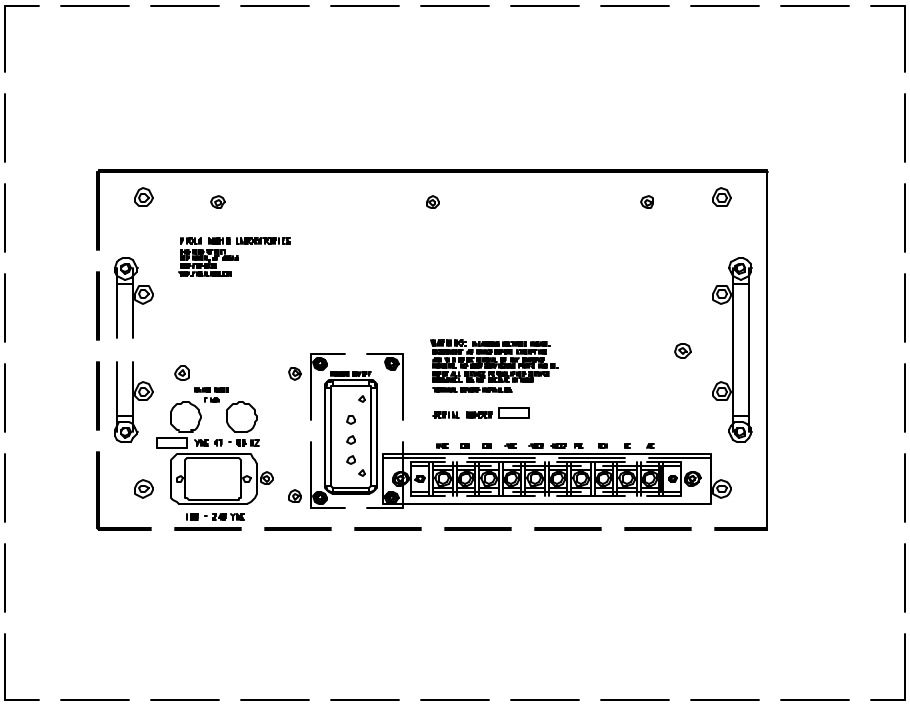
The cooling system for your amplifier includes both fans and heat sinks that use both active (fan-driven) and passive (convection) cooling to ensure maximum performance and reliability.

Your amplifier includes two ultra quiet fans that maintain a uniform temperature in all output devices. Located at the right side of the heat sink assembly, they provide cooling to avoid destructive conditions caused by inadequate ventilation or unusually high ambient temperatures.

# AMP REAR PANEL



# SUPPLY REAR PANEL



**Caution!** Turn the volume on your preamplifier all the way down before attempting to connect anything to your Bravo power amplifier.

1. Rear Panel Handles

Please use these handles to make unpacking and moving your new amplifier around both safer and more convenient. Have help available for the initial unpacking and placement, as these amplifiers are quite heavy. As with anything this massive, proper care should be taken to avoid injury.

2. Speaker Binding Posts

Bravo power amplifiers are equipped with custom made, gold-plated, high-current binding posts for output termination to a loudspeaker system. To take full advantage of the amplifier's sonic quality, we recommend using high-quality speaker cable such as VIOLA Jazz cable; please see your VIOLA dealer for details.

## Caution!

- **NEVER** connect a power amplifier's output terminals to any device other than a loudspeaker.
- **NEVER** short-circuit the amplifier's output terminals.
- **NEVER** connect the output terminals of one amplifier to the output terminals of another amplifier unless connecting for bridge mode operation (see Bridged Operation below).

**Caution!** There are two recommended methods for connecting speaker cables to your amplifier. A high-quality spade lug or hook lug, soldered to the cable (or crimped with extremely high pressure), is best.

**Spade lug**

**Hook lug**

- Connect a + (positive or red) output post of the amplifier to the + (positive or red) input terminal of the appropriate loudspeaker.
- Connect a - (negative or black) output post of the amplifier to the - (negative or black) input terminal of the appropriate loudspeaker.

## Caution!

- DO NOT OVERTIGHTEN the binding posts on your amplifier! The unique design of these posts gives far more leverage than traditional posts. You will achieve tight, high-contact pressure connections with only modest finger-tightening, and without having to resort to special tools.
- DO NOT FORCE the nut over a bent or oversized connector, as this may damage the binding post. If your connectors obstruct the turning of the nut, slide the connectors into place when the binding post opening is a snug fit; then apply a final quarter-turn as needed to tighten the connection.

3. Balanced Audio Input

Bravo will accept a signal from a preamplifier with balanced outputs via a high quality XLR or Fischer connector.

The pin assignments of the Bravo amplifier XLR-type female chassis input connector is


Pin 1: Signal ground
Pin 2: Signal + (non-inverting)
Pin 3: Signal - (inverting)
Connector ground lug or case: chassis ground

These pin assignments are consistent with the standards adopted by the Audio Engineering Society. Refer to the operating manual of your balanced-output preamplifier to verify- that the pin assignments of its output connectors correspond to your Bravo power amplifier. If not, wire the cables so that the appropriate output pin connects to the equivalent input pin.

4. AC mains cord and AC mains switch

IEC standard power cords are used in the Bravo power amplifier. Plug the cord into the high-current IEC outlet provided, and then into a suitable wall outlet.

Your new Bravo power amplifier has been safety-tested and is designed for operation with a three-conductor power cord. Do not defeat the "third pin" or earth ground of the AC power cord.

Two fuses are located at the rear of the Bravo power amplifier. The protection circuitry has been designed such that only a catastrophic failure would cause these fuses to blow. As a result, if you suspect that your AC fuses have blown, disconnect your amplifier from the AC mains and check them.

Potentially dangerous voltages and current capabilities exist within your power amplifier, even when disconnected from AC mains. Do not attempt to open any portion of the amplifier's cabinet. There are no user-serviceable parts inside your power amplifier. All service of this product must be referred to a qualified VIOLA dealer or distributor.

# MONO OPERATION

The Bravo Amplifier is a 2 channel stereo amplifier that can be converted to a mono amplifier in one of two ways, Internal Bridge Mode or Internal Parallel Mode. Internal Bridge mode is better suited for high impedance loudspeakers (4 ohms and above) that require more voltage. Internal Parallel Mode is better suited for lower impedance loudspeakers (4 ohms and below) requiring more current.

## INTERNAL BRIDGE MODE:

Switch settings:

1) STEREO-MONO/PARALLEL-MONO/BRIDGE switch: Set to MONO/BRIDGE
2) PHASE switch: Set to 180 degrees

Input / Output setup:

1) Use Left channel input for signal input
2) Use Left channel “H” output terminals for plus (±) output to speaker
3) Use Right channel “H” output terminal for minus (-) output to speaker

## INTERNAL PARALLEL MODE:

Switch settings:

1) STEREO-MONO/PARALLEL-MONO/BRIDGE switch: Set to MONO/PARALLEL
2) PHASE switch: Set to 0 degrees

Input / Output setup:

1) Use Left channel input for signal input
2) Install parallel jumpers between center “H” Left and Right terminals and center “L” Left and Right terminals
3) Use remaining Left and/or Right channel output terminals to speaker. “H” is plus (+) and “L” is minus (-)

# BRIDGED OPERATION

Bridging is the process of converting the left and right channels of your amplifier to act as if it was a single, much larger, one channel amplifier. To play music from both channels (stereo) you would need a second amplifier in bridged mode. Bridging permits you to increase the amount of power you send to each channel by almost four times. Bridging is useful with low sensitivity, high-impedance speakers that require high voltage.

Bravo is a 350 w/ch two channel power amplifier consisting of two chassis. Supply chassis features inductor (choke) input. Amplifier chassis consists of two half-bridge audio sections permitting amplifier to be configured as:

- A stereo amp rated at 350 w/ch (a two box set);
- A half-bridge parallel mode mono block rated at 400 w/ch (a four box set) recommended for use with low impedance speakers (4 Ohms to 1 Ohm)-rated at 1000 w/ch into 4 Ohms, 1200 w/ch into 2 Ohms and 1600 w/ch into 1 Ohm; used in full bridge mode (an 8 box set) will produce 3600 w/ch into 1 ohm;
- A bridge-mode mono block rated at 1200 w/ch into 8 Ohms (a four box set) and 1600 w/ch into 4 Ohms.

## BRIDGE OPERATION

NOTE: Two Bravo amplifier chassis can be bridged together if each amplifier is set to Internal Parallel Mode. For setup purposes we will designate one amplifier amp A and the second amplifier amp B.

Setup:

1) Set each amplifier to Internal Parallel Mode
2) Use Left channel input of amp A for signal input
3) Connect input Bridging cable provided in your Bridging Kit, from amp A to Left channel input of amp B
4) Use Left channel “H” output terminals of amp A as your plus (+) speaker out
5) Use Left channel “H” output terminal of amp B as your minus (—) speaker out
6) Connect Left channel “L” output terminals of amps A&B together with the jumper provided in your Bridging Kit.
7) Connect DC Supply harness provided in your Bridge Kit between DC inputs of amp A and amp B. Observe proper color codes.

# WIRING AND BIAMPLIFICATION

## SINGLE WIRE CONFIGURATION

Single-wiring uses one amplifier channel to power each loudspeaker. A single wire carries the high frequency (HF) and low frequency (LF) information. Jumpers connect the HF and LF sections of the speaker's crossover network at the loud speaker.

## BI-WIRE CONFIGURATION

Bi-wiring also uses one amplifier channel to power each loudspeaker. However separate wires carry the high frequency and low frequency information. This wiring method is considered superior to single-wiring because it reduces the likelihood of the two sections of the band interacting and creating audible distortion. Since the bi-wire has twice as much conductor as the single-wire the common or shared resistance of the cable is reduced.

## BI-AMPLIFICATION

Bi-amplification uses two stereo amps to power a single pair of loudspeakers. One amplifier is used for each speaker and one channel in each amplifier is used for each of the high and low frequencies of each speaker. Bi-amplification extends the benefits of bi-wiring into the amplifier. Not only does it reduce interaction in the cable but in the amplifier channels as well.

# CARE & MAINTENANCE

To remove dust from the cabinet of your amplifier, use a feather duster or a lint-free soft cloth. To remove dirt and fingerprints, we recommend a non-abrasive glass cleaner and a soft cloth. Do not use alcohol or any other flammable liquid. Dampen the cloth with the cleaner first and then lightly clean the surface of the amplifier with the cloth. Do not use excessive amounts of cleaner that might drip off the cloth and into the amplifier.

**Caution!** At no time should liquid cleaners be applied directly to the amplifier, as direct application of liquids may result in damage to electronic components within the unit.

# TROUBLESHOOTING

In general, refer any service problems to your VIOLA dealer. Before contacting your dealer, however, check to see if the problem is listed here. If it is, try the suggested solutions. If none of these solves the problem, contact your VIOLA dealer.

1. No sound and the LED is not lit? Check the following:
   - The amplifier is not plugged into the AC mains, or the AC mains are down (circuit breaker, fuse).
   - A power loss had occurred, requiring restart.
   - The front panel AC mains switch is in the off position.
   - One or more fuse is blown in your amplifier (contact your VIOLA dealer: no user-serviceable components inside).

2. No sound and the LED is lit? Check the following:
   - Check your wiring; the amplifier is on and operational, but signal is not getting through.
   - Check that the preamplifier and the source are on.
   - Check the volume control to be sure that it is set high enough to hear.

3. The amplifier keeps shutting off?

Disconnect both the input signal and speaker cable from the amplifier and try restarting the amplifier. If the amplifier comes on (LED on), something is wrong with either the input (e.g., DCO from the preamp) or the output (e.g., shorted speaker wires). Turn off, reconnect only the speakers, and try again. If everything is okay, turn off and connect only the preamp. You should be able to isolate the source of the problem.

# OBTAINING SERVICE

We take great pride in our dealers. Experience, dedication, and integrity make these professionals ideally suited to assist with our customers' service needs.

If your VIOLA component must be serviced, please contact your dealer. Your dealer will then decide whether the problem can be remedied locally, or whether to contact the VIOLA factory for further service information or parts, or to obtain a Return Authorization. The VIOLA Technical Services Department works closely with your dealer to solve your service needs expediently.

### Important!

Return authorization must be obtained from VIOLA'S Technical Services Department **BEFORE** a unit is shipped for service.

It is extremely important that information about a problem be explicit and complete. A specific, comprehensive description of the problem helps your dealer and the VIOLA Technical Services Department locate and repair the difficulty as quickly as possible. A copy of the original bill of sale will serve to verify warranty status. Please include the copy with the unit when it is brought in for warranty service.

### Warning!

All returned units must be properly packaged (preferably in their original packing material), and the proper return authorization numbers must be marked on the outer carton for identification. If the packaging to protect the unit is, in our opinion or that of our dealer, inadequate to protect the unit, we reserve the right to repackage it for return shipment at the owner's expense. Neither VIOLA nor your dealer can be responsible for shipping damage due to improper (that is, non-original) packaging.

Your dealer can order a new set of shipping materials for you if you need to ship your component and no longer have the original materials. There will be a charge for this service. We strongly recommend saving all packing materials in case you need to ship your unit some day.

## WARRANTY

Products of Viola Audio Labs are warranted to be free of defects if used under normal conditions for a period of five years from the date of shipment from the factory. This warranty is transferable to subsequent owners for the balance of the warranty period. Purchasers

of previously owned equipment should contact the factory to determine the balance of the warranty period.

## SERVICE

If you believe your VIOLA equipment is not functioning properly, please call your dealer. If you need to return your component, you will be given a Return Authorization number (RA#) by the factory. This number must appear on the outside of the shipping box. Returns without RA# will not be accepted. Returns received in non-standard boxes will be replaced with new packing at the owner's expense. If you need replacement packaging, please contact your dealer or the factory. Return Authorization numbers (RA#) may be obtained from your dealer or by calling the factory or email to info@violalabs.com .

Viola will repair, under the warranty, any defect in the product except when caused by abusive conditions. Any defect in the product during the first year shall be repaired for the customer by the distributor. At VIOLA'S discretion, or if the distributor is unable to perform the repair, the unit may be returned to the factory for service, at Viola's expense, using a factory approved freight carrier. After repair, the unit will be returned via the same carrier or an equivalent service.

During years 2 to 5, if the distributor is unable to perform the warranty repairs, VIOLA will pay return from the factory by approved carrier provided the unit was shipped to the factory with freight prepaid. VIOLA will not pay freight if units are returned without a Return Authorization Number (RA#). VIOLA will not pay the freight if units are found to be in perfect working order. For non-warranty repairs it is expected that the customer will pay for shipping both ways.

Any specific repairs or modifications effected by the factory or authorized service facility shall be guaranteed for 100% parts and labor for the unexpired portion of the warranty period or one year, whichever is longer.

## LIMITS

Any unauthorized modifications, repairs or tampering, and/or any indications of obvious owner abuse, negligence or improper usage, as determined by VIOLA, will result in the voiding of the warranty.

There is no other express warranty on this component. This warranty shall not extend beyond the stated warranty period. No responsibility is assumed for incidental or consequential damages.

# SPECIFICATIONS

**Class of Output Operation:** $AB_2$

**Power Rating:**

350 watts continuous average power into 8 ohms; 20 Hz to 20 kHz with both channels driven at less than 0.1% THD

1200 watts continuous average power into 8 ohms when configured in Bridged Mode

**IM Distortion (SMPTE)**

1 watt to 300 watts into 8 ohms <0.075%
1 watt to 450 watts into 4 ohms

**THD** <0.1% @ 20 kHz/350 watts

**Frequency Response**

@ 1 watt into 8 ohms (10 Hz to 20 kHz) +/-0.15 db; 100k <-3 db

**Power Bandwith** 5 Hz to 100 kHz (-3dB points)

**Signal to Noise Ratio** -105 db at 1 kHz/350 watts; C weighted

**Gain** switchable gain to 23 / 26 / 29

**Input Impedance** 1 megOhm/1 megOhm balanced

**Inputs:** Balanced - XLR and Fischer

**Output Connections:** Binding post for ring or forked terminals

**Rise Time**

**Power Consumption**

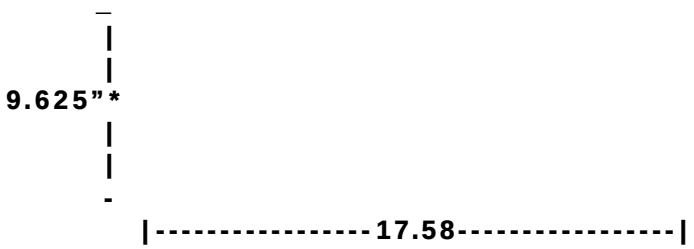
**Weight**

| | |
|---|---|
| Amp | 85 lbs. (38.6 kg.) |
| Supply | 125 lbs. (56.8 kg.) |
| Packed set | 260 lbs/2 box set (118 kg.) |

**Dimensions:** 17.6”W x 9.625”H x 26”D

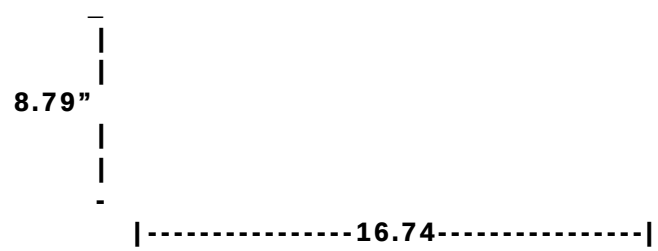
# DIMENSIONS

**FRONT PLATE**

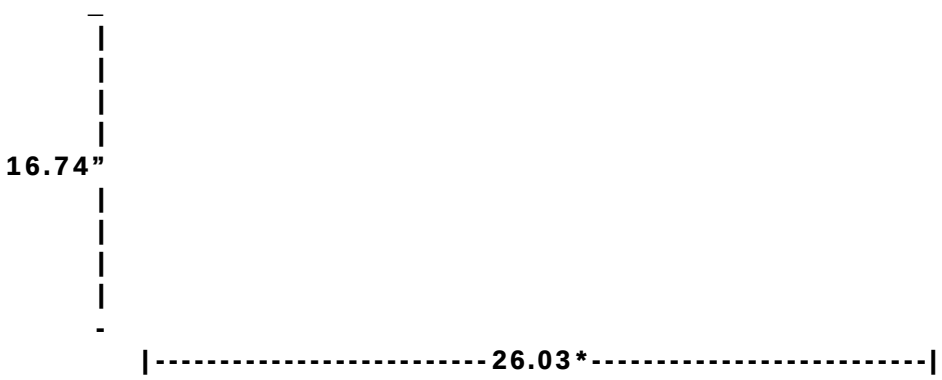



*ADD .75” FOR FEET

**REAR PLATE**




**BOTTOM PLATE**




*ADD 1.75” TO REAR AND 1” TO FRONT FOR CLEARANCES