

# P10

*Power Amplifier  
Instruction Manual*



**PLINIUS**

*The heart of music*  
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# Contents

Introduction .....	2
Design Philosophy .....	3
Unpacking.....	4
Placement & Ventilation.....	4
Care & Maintenance.....	5
Precautions .....	6
Front Panel Functions.....	6
Rear Panel Functions .....	7
Installation & Operation .....	9
Product Features .....	12
Loudspeaker Selection.....	13
Troubleshooting.....	14
Specifications .....	15
Index .....	16

All operational, technical and descriptive material in this publication is subject to change at any time without notice. For further product information or queries, please contact your Plinius dealer.

Plinius products are designed and manufactured by Plinius Audio Limited, New Zealand.

# Introduction

Congratulations on your decision to become the proud owner of this Plinius P10 Power Amplifier.

This manual has been prepared to help you understand the operation of your amplifier, and to provide information about its design and the variety of ways it may be used.

We have designed and manufactured this amplifier to reproduce your favourite music faithfully and accurately. With a little care and a full understanding of the operating recommendations in this manual, your Plinius P10 Power Amplifier will provide years of high-quality, trouble-free performance.

Please take the time to read this manual thoroughly before using your amplifier.

SERIAL NUMBER \_\_\_\_\_

FINAL TEST CERTIFIED BY \_\_\_\_\_

# Design Philosophy

From a distance you can see that the design of the Plinius products is more than an applied styling exercise to the front panel. We have started from the ground up to produce a casing for our electronics that is unrivalled in its physical strength and visual simplicity.

Wherever possible we have reduced the number of parts needed and then invested massively in refining and producing the remaining parts to the highest quality achievable with state of the art computer controlled machines allied with expert craftsman. Examples of this approach include the hydraulically formed corners on the amplifiers giving much greater strength and the one piece housing for the remote control that looks, feels and genuinely is robust.

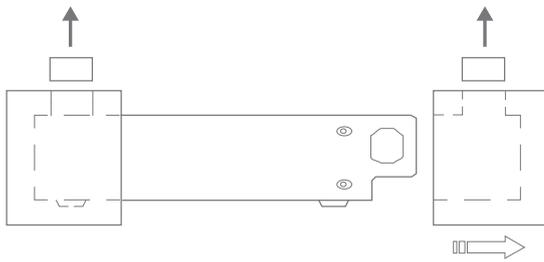
As with music that you are not familiar with, truly innovative new designs can take time to understand and enjoy. How often have you heard music that you were first unsure of, that over repeated listening, has become a firm favourite?

Our designs are fundamentally different to many other companies, and we hope that you will take the time to explore their unique character and qualities because we have not made them different simply to be different. We genuinely believe that their visual and tactile qualities do improve the experience of listening to music and that is our design goal!



Ross Stevens  
DESIGN DIRECTOR

# Unpacking



Open the box from the top and remove the accessories from the foam end caps. You may now proceed to lift the unit from the box. Once the unit is removed you can proceed with the removal of the foam end caps. These caps are designed to fit on the front and back of the unit for maximum protection. Retain the packaging for future transportation of this unit.

# Placement & Ventilation

This Plinius product may operate at a moderately high temperature, especially during extended listening sessions. With this in mind, we recommend the following guidelines for placement and ventilation:

- The ideal location is upon a rigid stand, away from direct contact with any temperature sensitive materials, furniture or deep pile carpets.
- Ventilation through and around the amplifier should be kept unimpeded.
- Ensure heat vents (slots in the base and lid) are not covered or restricted in any way.
- Equipment racks should be of an open type with no closed side panels and no closed front or rear panels. Ensure a minimum of 100mm clearance on all sides of your Plinius unit to other equipment and the shelf above.
- If the unit is in an enclosed cabinet, the clearance should be greater than 400mm on all sides. Ensure the space between the chassis and shelf below the unit is unobstructed at all times.
- When stacking separate audio components, ensure a minimum of 400mm clearance above the top unit is maintained for suitable airflow.
- NOTE: This unit has been designed for use in moderate climates only, not for tropical conditions.

The design of this Plinius product incorporates a very high level of mechanical decoupling of the input and output. It can however still be influenced by acoustical feedback in the operating environment. The use of acoustic cones or a suitably spiked amplifier stand or table may further enhance the performance of this amplifier. Consult your Plinius dealer for further advice if required.

# Care & Maintenance

With simple care and maintenance your Plinius product can be kept looking and operating like new for many years to come.

## **MAINTAINING THE CONNECTORS**

Exposed connectors such as the RCA connectors will be subject to environmental factors, and over time the surface may degrade. This can be greatly reduced by fitting readily available 'RCA caps' to reduce the effects of environmental elements on the RCA connectors. These RCA caps or RCA shorting caps can also provide sonic benefits. Connector cleaning products are also available to clean the RCA and cable connectors and frequent checks and cleaning will help maintain a good signal connection.

NOTE: DO NOT use RCA shorting caps on output connectors or power amplifier input connectors. Use RCA shorting caps on unused preamplifier stage input connectors only. Standard RCA shielding caps can be used on any unused input or output connectors.

## **MAINTAINING THE SWITCHES**

Switches should be maintained by using each various switch setting periodically. Even if a switch or a switch setting is not used, it is a good idea to toggle small switches and turn rotary switches through the full range of the switch several times in succession to keep the contacts active. Performing this simple action will promote longevity of the switch contacts.

## **SURFACE CLEANING**

From time to time you may wish to clean the surface of your Plinius equipment to remove dust, or any material build up from the atmosphere or on commonly used controls. Your Plinius product is made up of parts that have a hard anodised or a powder coat finish and will clean easily without being damaged.

Cleaning should be carried out using a soft cleaning cloth, dry or with either a small amount of water or a very mild surface cleaner, while observing the following guidelines:

- As a safety precaution, always switch the equipment off prior to cleaning
- Always use a cloth that is soft and clean
- Never use abrasives or polishing compounds anywhere on the unit
- Never apply liquid directly to the surface of the unit
- Use the cloth dry or with mild surface cleaners of either liquid or foaming type
- Apply only small amounts of cleaner to the cloth
- DO NOT rub the surface but wipe clean only. Excessive rubbing may dull powder coat or wear the screen printed text.

# Precautions



PLEASE TAKE SPECIAL NOTE OF THE FOLLOWING PRECAUTIONS BEFORE OPERATING YOUR NEW AMPLIFIER.

- The Plinius P10 Power Amplifier can deliver in excess of 200 watts into 8 ohms. This amplifier is also capable of a very large peak current delivery.
- The Plinius P10 Power Amplifier operates in Class AB. It is capable of generating heat that could have an adverse effect on other electronic equipment, furniture, etc.
- DO NOT leave flammable material on the amplifier whilst running, as this could pose a serious fire risk.
- This amplifier operates at hazardous voltage levels. There are some alterations that may be made by you, the owner, however, we recommend that any work requiring removal of the lid be referred to a suitably qualified & experienced service technician.
- DO NOT attempt to connect any input of this amplifier to its own outputs.
- DO NOT earth any output terminal or connect any of these terminals together without following the instructions in this manual or seeking qualified assistance.
- DO NOT place this amplifier in any position where liquids, or any foreign material may accidentally enter it.
- DO NOT connect any voltage source, short circuit, earth/ground or appliance (other than suitable high fidelity loudspeakers) to the amplifier output terminals.
- DO NOT expose the unit to dripping or splashing.
- DO NOT place objects filled with liquids on the unit, e.g. vases.
- DO NOT place sources of naked flame on the unit, e.g. candles.

# Front Panel Functions

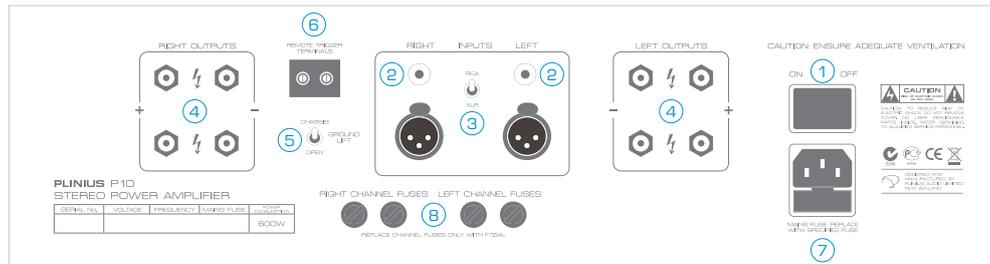


## 1. DISPLAY LED

The LED on the front panel indicates the mode of operation. When first switched on, the display LED will vary in brightness until the initialisation sequence is completed, after which the LED remains lit. Whenever the remote trigger is activated to switch the unit to standby, the LED will vary in brightness.

# Rear Panel Functions

This panel incorporates the terminals for connecting the input signal from a preamplifier, outputs to the loudspeakers, and mains supply. Please remember that your Plinius P10 Power Amplifier is a high quality electronic instrument capable of an exceptional level of performance. Be sure that you understand your system's requirements fully before you make any connection to this amplifier.



## 1. MAINS SWITCH

The heavy-duty rocker switch in the centre of the panel turns the Mains/Line Power to the amplifier ON or OFF. The amplifier draws a moderately high current when switched on, so it is not good practice to rapidly turn the Mains switch on and off repeatedly.

## 2. INPUT TERMINALS

The input terminals for your Plinius P10 Power Amplifier are easily accessible at the centre of the rear panel.

**RCA INPUTS LEFT & RIGHT:** These standard RCA terminals are for use with unbalanced signals from most signal sources such as audio preamplifiers.

**XLR BALANCED INPUTS LEFT & RIGHT:** XLR connectors fitted to this amplifier are for use with balanced line signals from audio preamplifiers. Balanced signals are carried via a three way cable.

The XLR pin configuration used in all Plinius product is:



NOTE: Because of the way our XLR and balanced inputs are configured it is not possible to connect both XLR and RCA at the same time.

### **3. INPUT SELECTION SWITCH**

This switch at the centre of the inputs is used to select the pair of input sockets required as described above. Up selects the RCA input connections, while down selects XLR input.

### **4. OUTPUT TERMINALS**

Connections for the loudspeakers are provided on the left and right sides of the rear panel. Two parallel pairs of five way binding posts for each channel are fitted – these provide ease of use with bi-wiring and multiple cables requiring a large contact area.

### **5. GROUND LIFT SWITCH**

This switch is located below the remote trigger terminals, and allows the signal ground to be disconnected from the chassis. In some installations a hum loop may exist due to duplicate ground paths from different equipment. Use this switch to remove the connection from 0V to ground thus allowing some flexibility in your particular set-up.

### **6. REMOTE TRIGGER TERMINALS**

In order to integrate more effectively into a home theatre system, the Plinius P10 has remote trigger terminals fitted to the rear panel. By connecting a processor with a remote trigger signal to these terminals, the P10 can be put in and out of standby by the processor to which it is connected. When in standby, the amplifier draws less current and will operate at minimum temperature. The output relays are also open, disconnecting the loudspeakers. This may be of advantage in a multi-amplifier and/or remote installations. The standby mode can only be activated via the remote trigger terminals. Polarity of the connections to the remote trigger is not important.

### **7. MAINS POWER CORD IEC SOCKET**

This connector is where the mains supply cable from your wall connects to the amplifier. You will notice that a fuse holder is mounted within this connection, and it holds a mains fuse to provide surge and overload protection for your amplifier.

### **8. RAIL FUSES**

These tubular fuse holders house the positive and negative rail protection fuses. Depress and turn anti-clockwise to open. An LED is fitted next to each fuse holder to indicate a blown fuse.

# Installation & Operation



WARNING: RISK OF ELECTRIC SHOCK. TERMINALS MARKED WITH ⚡ SHOULD BE CONSIDERED HAZARDOUS LIVE AT ALL TIMES.

This amplifier operates at hazardous voltage levels. We recommend that any work requiring removal of the lid be referred to a suitably qualified and experienced service technician. DO NOT place this amplifier in any position where liquids or any foreign material may accidentally enter it.



PLEASE READ & UNDERSTAND THE PRECAUTIONS WITHIN THIS MANUAL FOR CORRECT PLACEMENT & OPERATION OF THIS PRODUCT.

## CONNECTIONS

Connections to your P10 Integrated Amplifier should be made in the same order as they are listed in this section. DO NOT attempt to connect your P10 Integrated Amplifier until you have read and fully understood these instructions. Although these instructions refer to the connection of a preamplifier, the P10 can also be safely installed into multimedia systems by following the same installation guidelines. Should you require any further assistance, please contact your Plinius dealer.



DO NOT POWER UP YOUR AMPLIFIER UNTIL YOU HAVE CONNECTED YOUR INPUT/OUTPUTS CORRECTLY FOR YOUR SYSTEM.

## PREAMPLIFIER INPUTS

Connect your preamplifier to the input of the Plinius P10 using suitable single-ended RCA or Balanced XLR interconnect cables only. If using single-ended RCA inputs, connect your preamplifier to the RCA inputs on the back of the Plinius P10. Make sure you connect the red coded cable to the red RIGHT RCA input, and the black (or white) cable to the white LEFT RCA input. Also make sure the RCA connectors are a snug fit and are inserted all the way in. For XLR input connection, make sure you connect the RIGHT XLR input and LEFT XLR inputs to the right and left outputs from your preamplifier respectively. Use the Amplifier Configuration Selector switch to select RCA STEREO if you are using unbalanced RCA inputs or to select XLR STEREO if you are using balanced XLR inputs.

NOTE: DO NOT connect XLR and RCA at the same time, use only one or the other.



PREAMPLIFIER OUTPUTS



P10 INPUTS

## LOUDSPEAKER OUTPUTS

The connection of your loudspeakers to the output posts of the Plinius P10 must be made by an 'instructed person' or by ready made loudspeaker cables only. Connect your left loudspeaker (ie. the one on your left when seated in your normal listening position) to the left output terminals, ensuring that the red positive (+) terminal on the amplifier is connected to the red positive (+) terminal on your loudspeaker. Do the same with the black or negative (-) terminals. Repeat this process for the right outputs.



## TERMINATION QUALITY

Quality of the connections must be examined to ensure that high performance trouble free operation is enjoyed. Check that the connections are tight but do not over tighten. If bare wires are used make sure that no loose strands of wire short cross the other terminals or the amplifier chassis. When using plugs such as bananas, be sure to use good quality plugs with a firm fit.

## BI-WIRING

Bi-wiring uses two pairs of loudspeaker cables for each channel loudspeaker. You will notice that the rear panel of your Plinius P10 has two pairs of output terminals for this purpose. Be sure to follow correct practises for stereo and mono configurations when using bi-wiring.

## PHASING (OR POLARITY)

It is important to achieve good stereo imaging in your listening room. By observing the wiring instructions above, each Power Amplifier/loudspeaker combination should be in phase. If you experience poor stereo image and/or a lack of bass, check that the loudspeaker wiring has been connected correctly. We recommend that you use one of the easily obtainable 'test discs' to help you ensure both phasing and channel orientation are correct. If in doubt, consult your Plinius dealer for advice.

To achieve a sound performance that is correctly aligned to your room, make sure all of the leads carrying signals for the right channel loudspeaker are connected to the right input to the amplifier from your preamplifier or CD player etc. Signals for the left channel should be wired in a similar fashion.

## **CONNECTING THE MAINS SUPPLY**

Firstly, check that the mains supply voltage printed on the rear of this amplifier is similar to the mains supply voltage in your area. If in doubt, please consult your Plinius dealer. Mains supply power connection is via the plug-in lead supplied with your Plinius P10. Where possible, check the wall outlet is switched OFF, then connect the local mains plug end of the lead to the wall outlet. Check the P10 is switched OFF, and connect the IEC end of the cable to the IEC socket at the back of the P10. With the cord fully connected, switch the wall outlet ON.

Now that your Plinius P10 is configured correctly, switch the power switch on the rear panel to ON. The display LED will cycle in brightness for approximately ten seconds as the internal circuitry stabilises. You can now enjoy your new Plinius P10 Power Amplifier.

NOTE: This unit must be connected to a mains socket outlet with a protective earthing connection. The wall outlet socket or P10 mains switch must be accessible at all times in case of emergency.

## **WARM-UP PERIOD**

You will find that the Plinius P10 will become noticeably 'purer' in sound after being on for a period of time. We recommend waiting at least 24 hours before expecting the best quality of sound reproduction from your amplifier.

# Product Features

## FUSE PROTECTION

When any rail fuse is damaged one or more fuse warning LED's will light. These LED's are located next to the fuse that has blown. To replace the fuse, steady the amplifier, then firmly push in the round fuse cap with your fingers. When the cap cannot push in any further, rotate the cap anti-clockwise (to the left) until it comes to a stop. Release inward pressure on the fuse cap and it can now be removed from the amplifier. Replace them with the same type only.

To re-fit the fuse, insert the fuse and gently turn it as far as possible anti-clockwise (to the left). Now push the fuse cap in firmly, then turn clockwise (to the right) until it comes to a stop. Release inward pressure on the cap and the fuse will be fitted securely.



**IMPORTANT: DO NOT FIT A FUSE WITH A HIGHER RATING.**

Note that fuse failure may indicate a severe problem. Check all speakers and speaker cables for damage/short circuit, etc. Should the amplifier continue to suffer rail fuse failure, contact your Plinius dealer.

## MAINS/LINE FUSE

A Mains/Line fuse is fitted within the IEC socket on the rear of the amplifier. A small drawer at the bottom of this socket may be removed (after the IEC plug is removed) by levering it out with a flat blade screwdriver. The fuse fitted should be rated as specified on the rear panel.



**IMPORTANT: DO NOT FIT A FUSE WITH A HIGHER RATING.**

In the unusual event that this fuse should blow, you must first establish the cause of this failure (such as power surges, damaged mains cable, etc) before replacing the fuse with one of the same rating and type. Should the amplifier continue to suffer mains fuse failure, contact your Plinius dealer.

## OVER TEMPERATURE PROTECTION

The P10 Power Amplifier is fitted with an auto-reset thermal sensor. The sensor is located at the main power transformer and should the transformer internal temperature exceed 110°C (230°F) the power will be disconnected from the unit. The unit will remain off until the temperature has reduced significantly, and then the sensor will automatically reset to the ON state.

If Over Temperature Protection occurs you should switch the unit off immediately. Check the placement of the unit and ensure there is adequate airflow above and around the unit. Refer to the Placement & Ventilation section on page 4 for further information.

# Loudspeaker Selection

Your Plinius P10 Power Amplifier is designed for use with high fidelity loudspeakers. It should not be used to operate any other type of appliance or equipment.

Choice of loudspeakers is one of personal taste, providing the chosen loudspeakers are suitable for use with your amplifier. Be certain that your loudspeakers can handle most of the rated output power of this amplifier. You may find loudspeaker specifications confusing or misleading, so you should discuss this with your audio dealer prior to purchase. As a general rule, the use of high power (200 Watt RMS or greater) loudspeakers is recommended and desirable. However, our experience indicates that medium to low power loudspeakers (100 to 200 Watt RMS) are quite often suitable for use on this amplifier, provided the volume is maintained at a level where no distortion is audible.

Impedance of the loudspeaker load is important to ensure the rated performance of this amplifier. Any combination of loudspeakers may be used, but the total average impedance load for each channel should be within a range of 4 to 8 ohms. Again, if you have doubts about the impedance of your loudspeaker configuration, we recommend you speak to your Plinius dealer.

# Troubleshooting

## **NO SOUND FROM THE UNIT**

If the unit is not reproducing audio take the following steps:

- Check the Preamplifier is correctly connected to an appropriate input on the Unit.
- Check the source is playing, and not paused or muted. If it has adjustable volume, check this is at the usual output level.
- Check the preamplifier is set to select the correct source input. Adjust the source selector for the correct source component.
- Check the volume. Turn the unit volume on the preamplifier up to a point just below the normal listening level. DO NOT turn the volume up to maximum in case the sound begins to come through the speakers.
- Check the unit is not in Standby. If the Display LED is varying in brightness, this indicates the unit is in Standby mode. The Display LED should be full brightness for operational mode.

## **SOUND IS QUIET OR DISTORTED**

If the sound is quiet or distorted a rail fuse may have failed. While the unit is ON check the fuses in the rear panel. A Red LED being on will indicate a fuse failure. If the fuse has failed, see Fuse Protection in the Product Features section of this manual.

NOTE: If the unit immediately or repeatedly suffers rail fuse failure, there may be a major problem and you should contact your Plinius dealer.

## **POWER FAILURE**

The unit may have suffered mains fuse failure or be in thermal overload protection mode.

- Mains Fuse Failure: Check the mains fuse and replace if needed.
- Thermal Overload Protection: Assess the temperature of the unit. If the unit seems excessively hot, the Over Temperature Protection may have activated.

Refer to the Product Features section for further information.

NOTE: If the unit immediately or repeatedly suffers mains fuse failure or thermal overload protection, there may be a major problem and you should contact your Plinius dealer.

# Specifications

## **POWER**

200 watts RMS per channel into 8 ohms.  
Both channels driven from 20Hz to 20kHz at  
less than 0.2% total harmonic distortion.

## **FREQUENCY RESPONSE**

20Hz to 20kHz +/-2dB  
-3dB at 5Hz and -3dB at 70kHz

## **DISTORTION**

Typically <0.05% THD at rated power  
0.2% THD and IM worst case prior to clipping

## **CURRENT OUTPUT**

40A short duration peak per channel  
Fuse protected

## **SLEWING**

50V/ $\mu$ s

## **HUM & NOISE**

90dB below rated output 20Hz to 20kHz  
unweighted

## **GAIN**

RCA Inputs: 32dB  
XLR Inputs: 38dB

## **INPUT IMPEDANCE**

47k ohms

## **POWER/CURRENT CONSUMPTION**

600VA  
0.4A (92W) Class AB Idle  
0.01A (2.3W) Standby

## **DIMENSIONS**

Height: 120mm (4.75")  
Width: 450mm (17.75")  
Depth: 400mm (15.75")  
Weight: 14kg (30lbs)

# Index

Bi-wiring .....	10
Care & Maintenance.....	5
Display LED.....	6
Front Panel Layout .....	6
Fuse Protection.....	8, 12
Ground Lift Switch.....	8
IEC Power Connector .....	8, 11
Input Terminals.....	7, 9
Loudspeaker Impedance .....	13
Loudspeaker Power .....	13
Mains/Line Fuse.....	12
Mains Supply Connection .....	11
Mains Switch .....	7
Operating Temperature.....	4
Output Terminals .....	8, 10
Over Temperature Protection.....	12
Phasing.....	10
Placement .....	4
Rail Fuses .....	8, 12
Rear Panel Layout.....	7
Safety Precautions .....	6
Serial Number .....	2
Terminations .....	10
Troubleshooting.....	14
Ventilation.....	4, 6
Warm-Up Period.....	11