

# PLINIUS

## M16

Audio Preamplifier



# *INSTRUCTION MANUAL*

REFINED AUDIO EQUIPMENT



MANUFACTURED WITH PRIDE IN NEW ZEALAND



**CONGRATULATIONS** on your decision to become the proud owner of this  
Plinius M16 Preamplifier.

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 preamplifier to reproduce faithfully and accurately, your favourite music. With a little care and a full understanding of the operating recommendations in this manual, your Plinius M16 Preamplifier will provide years of high-quality, trouble-free performance.

Serial Number: .....

Date of Manufacture: .....

Final Test Certified By: .....

**IMPORTANT: PLEASE TAKE THE TIME TO READ THIS MANUAL  
THOROUGHLY BEFORE USING YOUR PREAMPLIFIER.**

# CONTENTS

Introduction .....	Page 3
Precautions .....	Page 5
Preamplifier Features – Front Panel .....	Page 6
Preamplifier Features – Rear Panel .....	Page 8
Preamplifier Features – Remote .....	Page 10
Installation and Operation .....	Page 12
Input/Output Connection .....	Page 13
M16 Features .....	Page 15
Specifications .....	Page 17
Index .....	Page 18
Contact Details .....	Page 19

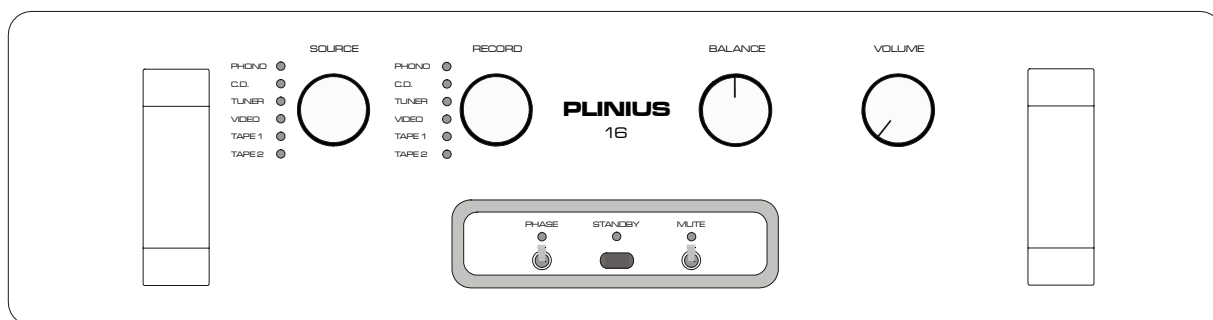
# PRECAUTIONS

Please take special note of the following precautions before operating your new preamplifier:

- This preamplifier operates at hazardous voltage levels. We recommend that any work requiring removal of the lid or base be referred to a suitably qualified and experienced service technician.
- DO NOT attempt to connect any input of this preamplifier 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 preamplifier 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 audio power amplifiers) to the preamplifier output terminals.
- DO NOT connect any voltage source, short circuit, earth/ground or appliance (other than suitable audio source components) to the preamplifier input terminals.

# PREAMPLIFIER FEATURES – FRONT PANEL

The front of the Plinius M16 Preamplifier incorporates all the facilities you will require on a daily basis.



***FRONT PANEL LAYOUT SHOWING VOLUME, BALANCE, SOURCE AND RECORD KNOBS, PHASE AND MUTE SWITCHES, AND DISPLAY LEDs***

## ***STANDBY LED***

The standby LED indicates when the preamplifier is in standby mode. This LED also lights to show whenever the remote control is being used to change the volume level.

## ***PHASE SWITCH***

Use the phase switch to change the phase response of the Plinius M16 from absolute to inverted 180°. The LED above the switch will light when the unit is set to inverted phase. If your M16 has the optional phono stage installed, the opposite applies for the phono circuitry only. In other words, when in phono the phase LED will light when in absolute phase, but with any other input selected the phase LED will light when in inverted phase.

## ***MUTE SWITCH***

Whenever the Plinius M16 is muted either with the remote control or by using this switch, the LED will light and the preamplifier outputs will be shorted.

### ***SOURCE ROTARY ENCODER***

The source selection is controlled electronically, hence the way the source rotary encoder can spin through a full 360°. An LED will light to show which input is currently selected.

### ***RECORD SOURCE ROTARY ENCODER***

The record selection is controlled electronically, hence the way the record rotary encoder can spin through a full 360°. An LED will light to show which record source is currently selected. There is also a hidden seventh position where no record source is selected, and no LED will be lit.

### ***BALANCE CONTROL KNOB***

The balance control is an ALPS unit that provides accurate alteration of relative gain between the right and left channels. The balance control has a detent at the centre position.

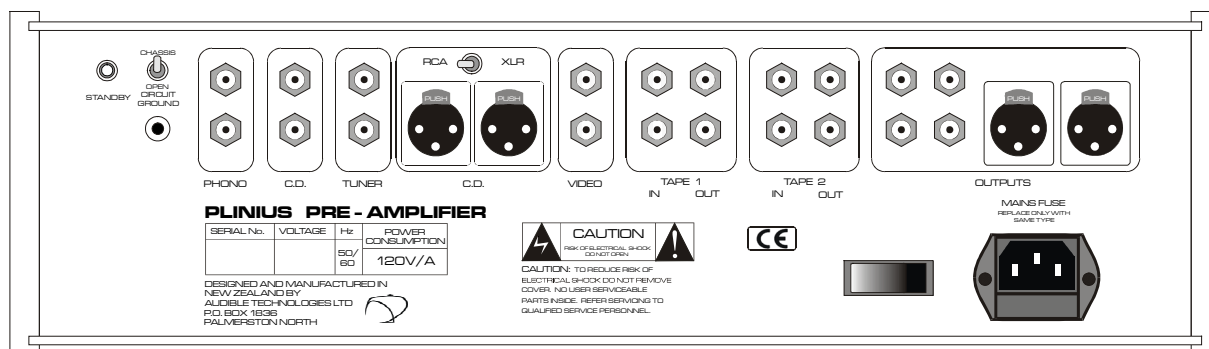
### ***VOLUME CONTROL KNOB***

The volume control is an ALPS motorised unit that will accurately convey the selected source signal to the line stage of the Plinius M16. When using the remote control to alter the volume level, stab the button to make small adjustments, or hold the button down to continuously adjust the volume.

# PREAMPLIFIER FEATURES – REAR PANEL

This panel incorporates all the terminals for connecting the input signals from your phono turntable, CD player, tuner, etc, and the outputs to the power amp and mains supply.

Please remember that your Plinius M16 Preamplifier 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 preamplifier.



***REAR PANEL SHOWING INPUT AND OUTPUT TERMINALS, CD SELECT, GROUND LIFT AND STANDBY SWITCHES, MAINS SWITCH AND MAINS SOCKET.***

## ***INPUT TERMINALS***

The input terminals of your Plinius M16 Preamplifier are easily accessible along the rear panel. These standard RCA terminals are for use with single ended signals from line level audio components such as CD, tuner, video, etc. Also included is one pair of balanced XLR inputs for use with XLR type cables. The switch above the CD inputs is used to select either single-ended or XLR type input. If you wish to use the XLR input, the switch above it must be set to XLR also, and the opposite is true for use of the RCA terminals. Consult your **PLINIUS** dealer for further advice if required.

Note that in 'line' configuration (no phono stage installed) all the inputs can be used with normal line level sources. If the optional phono stage has been installed, do not connect any source other than a suitable phono turntable to the phono input.

## ***OUTPUT TERMINALS***

Connections for power amplifiers are provided on the right hand side of the rear panel. Connections are available for both single ended (RCA type) and balanced (XLR type) cables. Note that the only time the outputs aren't 'live' is when the preamplifier is in mute or standby.

## ***TAPE OUTPUTS***

These RCA outputs are situated next to the tape RCA inputs, and are provided to interface to a pair of line level recording devices. The position of the record rotary encoder on the front panel determines from which device a recording is made. These tape outputs are always 'live' except when standby is selected.

## ***GROUND LIFT SWITCH***

This switch 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.

## ***STANDBY SWITCH***

This switch works in conjunction with the remote control to short the outputs and disconnect the inputs. Use this switch whenever the Plinius M16 is not in use. Note that when in standby the line stage and power supply is still live, so the internal circuitry will stay at normal operating temperature.

## ***MAINS SWITCH***

The heavy-duty rocker switch to the right of the panel turns the Mains/Line Power to the amplifier ON or OFF. Depress the right hand side of the switch to turn the amplifier on. 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.

## ***MAINS POWER CORD IEC SOCKET***

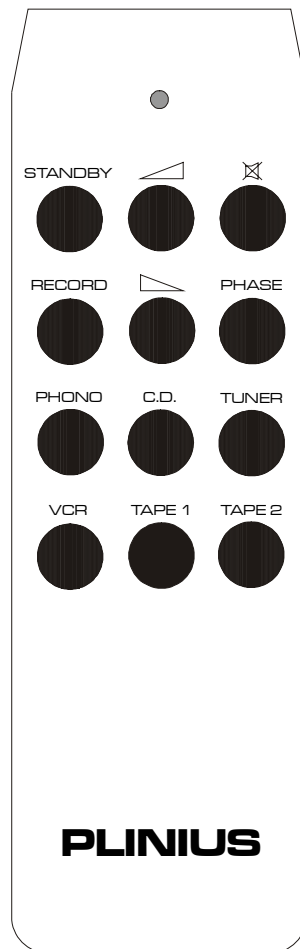
This connector is where the mains supply cable from your wall connects to the preamplifier. You will notice that a fuse holder is mounted within this connection, and it holds a mains fuse to provide surge and overload protection for your preamplifier.

## ***EARTH POST***

This is a chassis connected gold-plated earth post for use with certain phono turntables.

# PREAMPLIFIER FEATURES – REMOTE

The Plinius M16 Remote provides access to most of the controls you will require on a daily basis.



*REMOTE CONTROL SHOWING FUNCTION BUTTONS.*

## ***VOLUME CONTROL***

Use these two buttons to control the volume level of the preamplifier. The middle top button increases volume, while the button directly below it decreases the volume. Stab either button to make fine adjustments to the volume level. Hold down either button to continually adjust the volume level.

### ***MUTE***

Use this button when you require the preamplifier to mute the output from the preamplifier. Pressing the button again brings the preamplifier back out of mute.

### ***PHASE***

The phase of the input signal to the preamplifier is switched from absolute to inverted 180° with each press of this button.

### ***STANDBY***

Standby shorts the outputs of the preamplifier and disconnects the inputs. It is recommended that whenever the Plinius M16 is left switched on but not in use, the standby function be implemented.

### ***RECORD***

The record button toggles the selected recording source for both tape loop outputs. Use this button to select the source from which you want to record. The seventh hidden position can also be selected using this button on the remote control.

### ***SOURCE SELECTION***

The six bottom buttons labelled Phono through to Tape 2 are used to make active the source from which you wish to listen to.

# INSTALLATION AND OPERATION

## ***PLACEMENT AND VENTILATION***

Ventilation through and around your Plinius M16 Preamplifier should be kept unimpeded, so ensure that the heat vents (slots in the lid) are not covered or restricted in any way.

The Plinius M16 design incorporates a very high level of mechanical de-coupling of the input and output. However, it can still be influenced by acoustical feedback in the operating environment. The use of acoustic cones or a suitably spiked preamplifier stand or table, may further enhance the performance of this preamplifier. Consult your **PLINIUS** dealer for further advice if required.

## ***MAINS VOLTAGE CONNECTION***

Firstly, check that the mains supply voltage printed on the rear of this preamplifier 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 supplied plug-in lead. A standard IEC socket connects the mains power at the preamplifier end, while a local mains plug is required at the wall end.

The wiring code used inside all Plinius product is:

**Green to Earth/Ground**

**Blue to Neutral**

**Brown to Phase/Live**

Should a 'local' plug need fitting to the wall end of the lead, ensure that a suitably qualified service technician wires the plug correctly.

**IMPORTANT: DO NOT POWER UP YOUR PREAMPLIFIER UNTIL YOU HAVE CONNECTED YOUR INPUT/OUTPUTS CORRECTLY FOR YOUR SYSTEM, (AS EXPLAINED IN THE NEXT SECTION).**

# INPUT / OUTPUT CONNECTION

It is important that you connect your power amplifier/s (outputs) and source components (inputs) to your Plinius M16 Preamplifier correctly to ensure the preamplifier is not damaged, and sounds its best within your system. Now that you have read and familiarised yourself with the various connections on the preamplifier, as covered in previous sections, we will describe in detail the way in which you can connect the preamplifier to your system.

Connect your phono turntable, CD player, tuner, tape deck, etc, to the corresponding RCA inputs on the back of the Plinius M16. Make sure you connect the red coded cable to the red RIGHT RCA input, and the black (or white) cable to the black LEFT RCA input. Also make sure the RCA connectors are a snug fit and are inserted all the way in. If you are using balanced XLR cables note that only the CD input caters for this type of connection. Remember to flick the CD selection switch to the XLR position to activate the XLR circuitry.

Next, connect your power amplifier/s cables to the output sockets. Ensure that you observe polarity on all cables (red is right, black is left) to ensure correct channel phasing.

## ***RECORDING MUSIC***

In order to record music to tape, or some other line level recording device, these devices will need to be connected to the tape 1 and tape 2 outputs. Set the record rotary encoder on the front panel to the input you wish to record from, and the preamplifier will now send signal to both tape 1 and tape 2 outputs. Note that the volume control does not adjust the recording level: this is done at the recording device itself.

## ***TERMINATION QUALITY***

Quality of the connections must be examined to ensure that high-performance, trouble-free operation is enjoyed. Check that all interconnection cables are snug fitting and inserted all the way in. In the case of balanced XLR sockets, ensure that they click in positively.

## ***PHASING (OR POLARITY)***

It is important to achieve good stereo imaging in your listening room. By observing the wiring instructions above, each preamplifier/power amplifier/loudspeaker combination should be in phase. If you experience poor stereo image and/or a lack of bass, check that all interconnection cables and loudspeaker wires have 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/outputs on your power amplifier/preamplifier/CD player etc. Signals for the LEFT channel should be wired in a similar fashion.

### ***CONNECTING THE MAINS SUPPLY***

Now that your Plinius M16 Preamplifier is configured to your system correctly, the mains cable can be plugged into the IEC socket on the back of the preamplifier. Re-check all interconnection cables are fitted correctly. Flick the power switch on the back panel to the right. The standby LED will flash for about five seconds before closing the mute circuit and setting the active input to Phono.

### ***ENABLING THE INPUTS/OUTPUTS***

Use either the Standby switch on the rear panel, or the Standby button on the remote to bring the Plinius M16 out of standby. Press the Mute button, then alter the volume to achieve the sound level you require. The Phase button can be used to select absolute or inverted 180° phase. Note that either the remote or the switches/volume knob on the front panel can be used to perform these functions. You can now enjoy your new Plinius M16 Preamplifier.

### ***WARM-UP PERIOD***

You will find that the Plinius M16 will become noticeably 'warmer' in sound after being on for a period of time. We usually recommend waiting at least 72 hours before expecting the best quality of sound reproduction from your preamplifier. Also, as the Plinius M16 uses very little power while on, we suggest leaving the unit turned on (but in standby mode while not being used) so that it will always be at it's sonic best.

# M16 FEATURES

## ***PHONO CARTRIDGE LOADING ADJUSTMENT***

This section only applies if your M16 was purchased with optional phono stage fitted. The phono cartridge load can be adjusted to suit your particular phono cartridge, using two pairs of internal blue mini-switches.

The M16 mini-switches are factory set to a 47k $\Omega$  load. Also, switch 1 is set in the on position. This is a 220pF capacitive setting and is usually required for RF suppression. It is not recommended that you turn switch 1 off.

Disconnect the lead from the IEC socket on your Plinius M16. Carefully remove the lid by undoing the three cap screws. Locate the blue mini-switch banks to the rear of the smaller phono circuit board (right side rear). Adjust the settings of the five individual switches (remember to do both channels) to give a loading required with reference to the table below.

LOAD REQUIRED	SWITCH NUMBER AND SETTING						LOAD REQUIRED	SWITCH NUMBER AND SETTING					
	1	2	3	4	5	6		1	2	3	4	5	6
7.4 $\Omega$	ON	ON	ON	ON	ON	ON	29 $\Omega$	ON	ON	ON	ON	ON	
7.5 $\Omega$	ON		ON	ON	ON	ON	30 $\Omega$	ON		ON	ON	ON	
7.6 $\Omega$	ON	ON		ON	ON	ON	31 $\Omega$	ON	ON		ON	ON	
7.7 $\Omega$	ON			ON	ON	ON	32 $\Omega$	ON			ON	ON	
8.0 $\Omega$	ON	ON	ON		ON	ON	41 $\Omega$	ON	ON	ON		ON	
8.1 $\Omega$	ON		ON		ON	ON	43 $\Omega$	ON		ON		ON	
8.2 $\Omega$	ON	ON			ON	ON	45 $\Omega$	ON	ON			ON	
8.3 $\Omega$	ON				ON	ON	47 $\Omega$	ON				ON	
8.8 $\Omega$	ON	ON	ON	ON		ON	76 $\Omega$	ON	ON	ON	ON		
8.9 $\Omega$	ON		ON	ON		ON	82 $\Omega$	ON		ON	ON		
9.0 $\Omega$	ON	ON		ON		ON	90 $\Omega$	ON	ON		ON		
9.1 $\Omega$	ON			ON		ON	100 $\Omega$	ON			ON		
9.7 $\Omega$	ON	ON	ON			ON	320 $\Omega$	ON	ON	ON			
9.8 $\Omega$	ON		ON			ON	470 $\Omega$	ON		ON			
9.9 $\Omega$	ON	ON				ON	1k $\Omega$	ON	ON				
10.0 $\Omega$	ON					ON	47k $\Omega$	ON					

Now reassemble your Plinius M16.

### ***PHONO GAIN ADJUSTMENT***

This section only applies if your M16 was purchased with optional phono stage fitted. The phono stage can also be set to high or low gain to suit your phono turntable specifications (high gain is the factory setting).

Disconnect the lead from the IEC socket on your Plinius M16. Carefully remove the lid by undoing the three cap screws. Locate the small black phono jumpers to the centre-front of the smaller phono circuit board (right side rear). The gain can now be adjusted (remember to do both channels) noting that high gain is set with jumpers to the front position, and low gain is set with the jumpers towards the rear of the preamplifier. Now reassemble your Plinius M16.

### ***TAPE LOCKOUT PROTECTION***

On most tape decks, any signal recorded is sent to the tape outputs so that the signal level of the recording can be monitored. Should the user accidentally try to record the tape decks own output, feedback howl usually results. To prevent this the Plinius M16 Tape Lockout feature will short the outputs of tape 1 when tape 1 is selected as a record source. The same occurs with tape 2 also.

### ***LED BRIGHTNESS CONTROL***

Your Plinius M16 has an internal LED brightness control that will adjust the front panel LED's. A small flat bladed screwdriver can be used to adjust the brightness. The LED brightness control is a small multi turn potentiometer and is located on the front of the main circuit board within the top cavity of the amplifier, and is labelled VR3. Make sure you adjust the correct potentiometer, and remember to remove the mains supply from the amplifier before making any adjustments.

### ***REMOTE CONTROL***

Your Plinius M16 preamplifier is supplied with an extruded aluminium 12-button remote control. Use of this remote is described in the 'Preamplifier Features – Remote' section. Two AAA batteries power the remote, and these are replaced by removing the four button head screws holding the base in position. Replace the two batteries, taking care to refit the new ones with correct polarity.

### ***MAINS/LINE FUSE***

A Mains/Line fuse is fitted within the IEC socket on the rear of the preamplifier. 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 at no greater than 5 amp normal blow.

# SPECIFICATIONS

- **FREQUENCY RESPONSE:** Phono RIAA and Line Inputs 20Hz to 20kHz  $\pm 0.2$ dB.
- **DISTORTION:** Typically  $< 0.05\%$  THD at rated input level.
- **HUM & NOISE:** Phono -70dB, Line Inputs -80dB at rated input level, A Weighted.
- **INPUT SENSITIVITY FOR RATED OUTPUT:** Phono 500 $\mu$ V, Line Inputs 145mV RMS.
- **INPUT IMPEDANCE:** Phono user selectable, Line Inputs 50k $\Omega$ .
- **RATED OUTPUT LEVEL:** 500mV RMS into 10k $\Omega$  or higher.
- **OUTPUT SOURCE IMPEDANCE:** Typically 200 $\Omega$ .
- **HEIGHT:** 130mm (5")
- **WIDTH:** 490mm (19 1/4")
- **DEPTH:** 340mm (13 1/2")
- **WEIGHT:** 9.5kg (21lbs)

# INDEX

Balance Control.....	Page 7
Date of Manufacture .....	Page 3
Front Panel Layout.....	Page 6
Front Panel Switches.....	Page 6
Fuse Protection .....	Page 16
Ground Lift Switch.....	Page 9
IEC Power Connector.....	Pages 12,14
Input Terminals .....	Pages 8,13
Mains/Line Fuse.....	Page 16
Mains Supply Connection.....	Page 14
Mains Switch .....	Page 9
Output Terminals.....	Pages 7,12
Phase Function .....	Pages 6,11
Phasing.....	Page 13
Phono Features .....	Pages 15,16
Phono Inputs.....	Page 8
Placement.....	Pages 5,12
Rear Panel Layout.....	Page 8
Remote Control .....	Pages 10,16
Safety Precautions.....	Page 5
Serial Number .....	Page 3
Standby Function .....	Pages 9,11
Tape Outputs.....	Page 9
Tape Lockout.....	Page 16
Terminations .....	Page 12
Ventilation.....	Page 13
Volume Control .....	Pages 7,10
Warm-Up Period .....	Page 14
XLR Connections.....	Page 8

# CONTACT DETAILS

All operational, technical and descriptive material published here is subject to change at any time without notice. For further product information or queries, please contact us at the address below.

**PLINIUS** products are designed and manufactured by:

**Audible Technologies Ltd.  
P.O. Box 1836  
Palmerston North  
New Zealand**

**Phone:** 64 6 354 8583  
**Facsimile:** 64 6 354 8586  
**Email:** [info@pliniusaudio.com](mailto:info@pliniusaudio.com)  
**Internet:** [www.pliniusaudio.com](http://www.pliniusaudio.com)

©2000 Audible Technologies.