TRILOGY

968

User Manual

THANK YOU

Welcome

Firstly, thank you for purchasing your Trilogy Audio Systems 968 Power-amplifier, we value your custom.

We strive to design and build world class products that stand the test of time. By reading this manual you can gain clear understanding of its operation and learn to care for it correctly. In turn, it will reward you with a lifetime of outstanding performance.

Nic Poulson.
CEO Trilogy Audio Systems.
www.trilogyaudio.com

CONTENTS

Getting Started

5 Introduction
5 About this manual
7 Unpacking
7 Environment
7 Power Supply
9 Connections
11 Operation Guide
11 Triode or Pentode Mode
13 Biasing the output valves
15 Trouble biasing ?
17 Output valve choice

Appendices

19 Appendix A

Care & Service

21 Cleaning
21 Servicing
21 Declarations

Glossary

22 Glossary

Specifications/Returns

23 968 Specifications
23 Returns

Acknowledgements

24 Acknowledgements.

Introduction

We prefer that your Trilogy dealer delivers, installs, sets up and explains your 968's operation to you. However, we still recommend that you read through this manual thoroughly and keep it to hand for reference.

Should any part of this manual or the operation of the 968 not be clear to you, please do not hesitate to contact your Trilogy dealer. If they are not available please contact ourselves directly.

About this manual

Throughout this user manual, the following icons are used:

[enter]	This refers to a physical control on the 968.
LEFT OUTPUT	This refers to a physical connection on the 968.

From this point on, any information presented on the left hand pages are pictorial representations of either the front or back views of the 968 or other diagrams. Therefore consider the left hand pages as additional information to accompany the written descriptions on the opposite pages.

Unpacking

Be careful when unpacking your Trilogy amplifier, it is heavy. Seek assistance if necessary. Store the packaging safely for future use. It is the ideal method of protecting your amplifier from damage during transport.

Environment

Do not site the amplifier near liquids, or place water-filled containers near the unit. If water does come into contact with the unit there is serious potential for an electric shock or fire hazard. Immediately pull out the mains plug from the wall socket. Contact your dealer to arrange an inspection before further use.

The amplifier is cooled by convection and so needs good circulation of room temperature air under and around it. Do not place it near sources of heat such as radiators or in direct sunlight. Do not enclose in a cupboard. Do not place directly on carpet.

A flat, smooth surface is required. As with all high resolution audio equipment, your amplifier is sensitive to vibration, strong magnetic fields and radio interference. A dedicated high performance equipment platform sited away from other appliances is the optimum location.

Power Supply

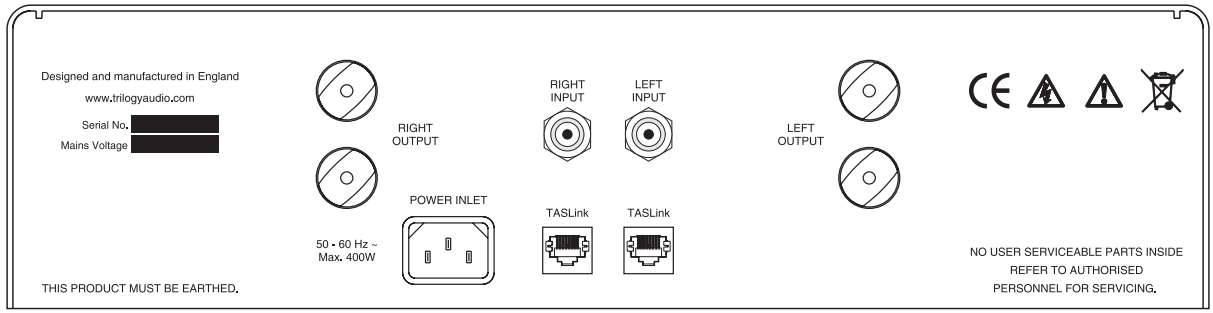
The AC input voltage has been set for the country it was purchased in. Check that the label on the rear panel matches your AC supply voltage before plugging in. The AC inlet cable provided should be used. If another cable is used check it is wired correctly. The fuse should be rated at 10 amps.

The wires in the AC input cable supplied are coloured in accordance with the following code:

Green and yellow.....Earth
Blue.....Neutral
Brown.....Live

The amplifier must be earthed. Do not disconnect the AC earth at any time. If in doubt about any aspect of power supply, consult your Trilogy dealer or a qualified electrician.

A direct connection to a mains outlet is best for your amplifier, avoid adapters. To realise your amplifier's full potential we recommend high quality mains conditioning. See www.Isol-8.co.uk for more on power supply and system solutions from our highly acclaimed sister company.


Designed and manufactured in England
www.trilogyaudio.com
Serial No.
Mains Voltage
RIGHT OUTPUT
RIGHT INPUT
LEFT INPUT
LEFT OUTPUT
POWER INLET
50 - 60 Hz ~
Max. 400W
TASLink
TASLink
THIS PRODUCT MUST BE EARTHED.
NO USER SERVICEABLE PARTS INSIDE
REFER TO AUTHORISED
PERSONNEL FOR SERVICING.

Connections

It is good practice to complete all interconnections before switching on to avoid any damage to your systems loudspeakers while plugging in.

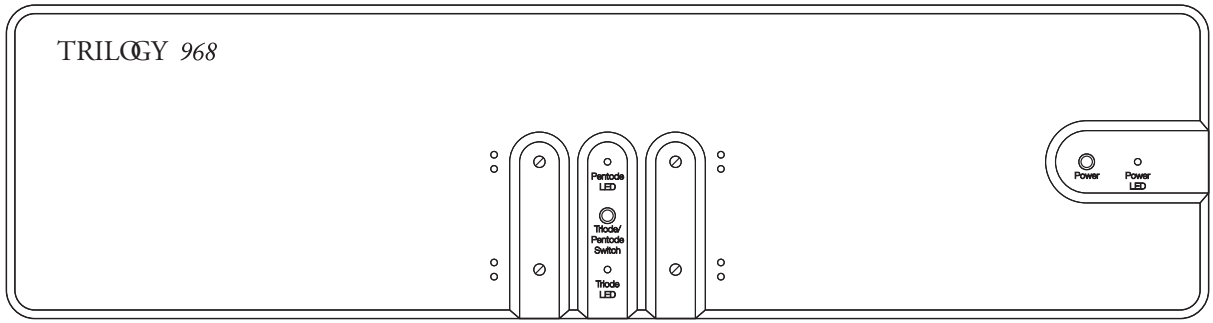
The IEC inlet provides the unit with power. Connect with the supplied AC input cable. It can be left connected at all times to ensure reliable operation. If not being used for extended periods of time switch off at the mains outlet.

The 968 has a left and right line level audio inputs. Connect your preamplifier's main output to these inputs via RCA phono cables as required.

Each channel has outputs via copper terminals for connection to your loudspeakers. It is important to connect your speaker cables correctly. Connect the RED terminal to the positive terminal of your loudspeaker, and the BLACK terminal to the negative. Make sure that each connection is secure and not touching another. Do not over tighten the terminals as damage may result. Finger tight is sufficient torque.

Twin TASLink connectors allow system interconnection and control via QuietBuss with other Trilogy Audio System products. This 968 can be remotely switched on and off via TASLink. See your Trilogy Pre amplifier manual for further details.

TASLink cables of varying lengths are available from your Trilogy dealer.


TRILOGY 968
Pentode LED
Triode/ Pentode Switch
Triode LED
Power
Power LED

Operation Guide

Having made and checked all appropriate input, output and AC connections, press the [power] button. The [power indicator] will glow brightly.

If this is the first time that the 968 has been turned on, the [pentode indicator] will light. The four [low bias] indicators will also light. This is explained on the next page.

Over the next twenty seconds or so, the [high bias] indicators will begin to light as well.

A slight hum may be heard through the speakers for a few seconds as the various stages within the amplifier stabilise.

The 968 is ready for use. However, please allow one or two minutes if you wish to play loud music. In the same way you would allow a car engine warm before pushing it hard.

To switch the 968 off, briefly press the [power button].

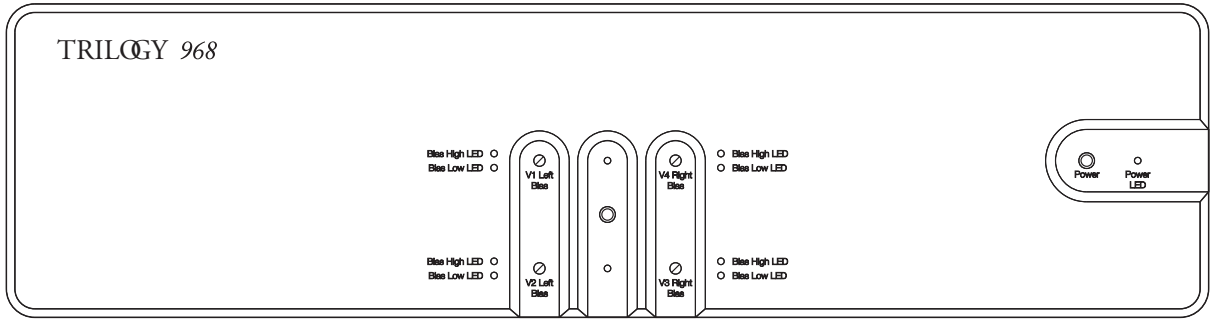
Frequent switching on and off is best avoided as this will shorten valve life. However, it is not advisable to leave the 968 on continually, as it is wasteful of energy. The 968 typically achieves optimal performance within ten minutes of switching on.

Triode or Pentode Mode

The [Triode/Pentode switch] allows the amplifiers output stage to be configured to your taste. When first powered up the amplifier will be set to Pentode operation. Triode mode subtly changes the character of the sound but reduces the amplifiers available power.

Pressing this button will toggle between the two modes. The top [pentode] or bottom [triode] indicator will show which mode is in use.

Providing the mains lead has not been removed, the 968 remembers which setting was last used and will start in that mode.



Too little Bias current

Correct Bias current

Too much Bias current

Biasing the output valves

The 968 uses four output valves. One pair is used for each channel and they are configured in a “push-pull” arrangement to drive the loudspeaker.

In a setup somewhat similar to the “idle speed” adjustment of a car’s engine, the idle current of each of these four valves needs to be adjusted periodically. We call this BIASING.

Each valve has a pair of LEDs to indicate the bias point and a potentiometer to adjust it.
The pair of LEDs are arranged vertically one above the other.

The lower one indicates too little bias (under bias).
The upper one indicates too much bias (over bias).
When they are both equally lit, this indicates correct bias.

The potentiometer is turned clockwise to increase the bias.
The potentiometer is turned anti clockwise to decrease the bias.
Please use the supplied bias tool to make any adjustments.

During the first 20 seconds of powering the 968, it is normal that only the four low bias LEDs light.
When adjusting the bias, make sure the 968 has been powered for at least 40 seconds and has no music playing through it.

Biasing may be necessary every few months and will take no more than one minute.

You may notice a slight increase or decease of bias on all four valves simultaneously at different times of the day.
This is due to the rise and fall of the mains voltage and this does not need to be adjusted for.
However, should you notice a consistent low or high bias, it is best to adjust accordingly.

Trouble biasing ?

Valves do gradually wear out. Some may continue for a very long time without actually failing, but at some point you will be unable to bias correctly. At this point the valve will need replacing.

Other valves may fail abruptly. Depending on the particular mode of failure within the valve itself, one or more of the 968 internal systems will protect the 968.

Should only all four [low bias indicators] be illuminated and no sound be heard through the speakers, it is probable that an internal fuse has blown. In this case, turn off the 968 and return to your Trilogy dealer for service. It is likely that a valve has failed and needs a replacement or that an output has been shorted.

Should ALL of the front panel indicators go out with the exception of any of the [high bias] indicators, please make a note of which one is illuminated. The 968 has already switched off automatically. Unplug the 968 and return to your Trilogy dealer notifying them of which indicator was illuminated.

If the 968 has been used for over a thousand hours, it is probably worth replacing all of the four output valves.

Please see the section on Servicing.

Output valve choice

By virtue of the design, the 968 can use several different types of output valves.

Just as with transistors, there are many different designs of valves. Even within a type, there are often various manufacturers from different countries.

We fit as standard, output valves from JJ Electronic. The 968 is available with a choice of two types of output valve. These are the E34L or KT88. Neither is better than the other, they are simply different in their presentation of the music.

The E34L has a leaner clean sound and excels particularly when in triode mode, where the higher frequencies are sublime.

The KT88 has a richer sound and is more powerful.

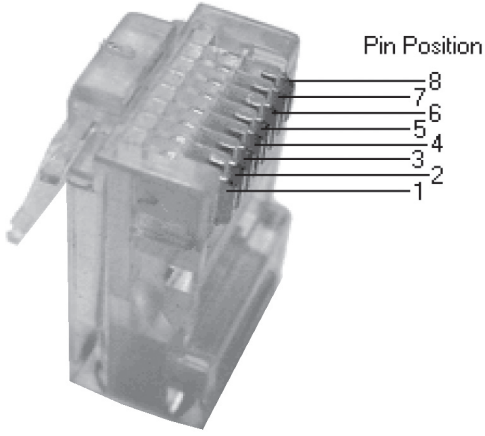
The final choice will be down to your personal taste, the type of music you like and the speakers that the 968 will be driving. Your Trilogy dealer will be able to guide you.

You can, at any point, ask your Trilogy dealer to install an alternative type of output valve. This is not a complicated procedure, but should be undertaken by your Trilogy dealer as they may wish to run in the new valves for a day to make sure all is well with them.

Appendix A

TASLink Pinout

RJ45		FUNCTION
2	Orange/white	BUS POWER
1	White/orange	0V
6	Green/white	LSW
3	White/green	LSS
4	Blue/white	DATA+
5	White/blue	DATA-
8	Brown/white	BUS REMOTE
7	White/brown	LSD



Cleaning

Dust the unit regularly with a soft cloth or soft brush. For more stubborn marks make sure the unit is switched off and disconnected from the power supply. Use a slightly damp cloth with a very small amount of mild detergent such as washing up liquid. Do not use a wet cloth. Be careful when using cleaning or polishing agents. Never use abrasives or alcohol based agents, they will harm the surface finish. Do not allow the unit to become wet when cleaning.

Servicing

Your Trilogy amplifier uses thermionic valves or vacuum tubes for amplification. They are the key component in realising your amplifiers very high performance. Valves have a finite lifespan and will need replacing during the lifetime of the amplifier. This lifespan depends on how long and how hard they are used. In typical use, small signal valves can last for 5000 hours, whilst the output valves may need changing every 2000 hours. Frequent switching on and off reduces valve life.

Please bear in mind that some failures can occur early on in a valve's working life, usually due to mechanical stresses that can occur during shipping. This is not a reflection on the amplifiers design but is an inherent characteristic of all valves, and is impossible to predict even during the amplifiers factory burn in period. The good news is considerate circuit design and modern manufacturing methods mean that valves are now typically very reliable once established in service.

It is good practice to replace the valves your amplifier periodically to prevent sudden loss of a signal path. Your Trilogy amplifier uses readily available and inexpensive valves should replacement be needed. If you are in any doubt your Trilogy dealer will help you assess whether your valves need replacing.

If your amplifier exhibits noticeable loss of performance, extreme sensitivity to vibration or becomes excessively noisy then new valves should be fitted by your authorised Trilogy dealer.

There are no user serviceable parts inside. Do not open or attempt to repair the unit. Refer to your authorised Trilogy dealer for servicing.

Declarations

This product is guaranteed against defects in material and workmanship for 3 years from the date of purchase.
This Guarantee excludes valves which are guaranteed for 6 months from date of purchase.
The Guarantee is not transferable and is offered to the original purchaser only.
This guarantee does not limit your statutory rights within the country of purchase.

Failure to comply with any of the above instructions during installation or operation will render the manufacturers warranty null and void.

Marking by the "CE" symbol indicates compliance of this device with the EMC (Electromagnetic Compatibility) and LVD (Low Voltage Directive) standards of the European Community

This amplifier has been tested to ensure that its operation is not adversely affected by normal background levels of radio frequency interference, and that it does not itself generate excessive amounts of radio frequency energy.

If your amplifier exhibits sensitivity to nearby radio frequency devices or is suspected of affecting another device, increase the distance between them. If the problem persists, consult your Trilogy dealer.

Glossary

Single ended input	An input with the signal referenced to earth, utilising the RCA “phono” connector.
Bias	The quiescent or “standing” current in the output valves.
Pentode	A mode of operation in the output stage offering most power.
Triode	A mode of operation in the output stage offering less power but slightly “sweeter” sound.
TASLink	Trilogy Audio Systems’ proprietary Link between products.
RJ45	A standard latching connector chosen for TASLink.
Cat5(e)	A standard 4 pair data cable chosen for TASLink.

968 Specifications

Size	424*428*115 (W*D*H)
Size (including connectors)	424*460*115 (W*D*H)
Size (packaged)	590*610*250 (W*D*H)
Weight	20Kg
Weight (packaged)	22.5Kg
Standby power consumption	4 Watts
Idle power consumption	120 Watts
Max power consumption	400 Watts
Input	RCA “phono”
Input impedance	130K Ohms
Input sensitivity	1.5V RMS for rated output
Frequency response	20Hz - 20KHZ +/-0.5dB
Rated power	60 Watts minimum into 6 Ohms (KT88 pentode)
Recommended load impedance	4-16 Ohms
Distortion	Less than 1.5% A weighted at rated out
Phase	Phase correct (non inverting)

Specification subject to change.

Returns

Should it be necessary for your 968 to be serviced, please send it in the original packaging to your dealer.

If this is not possible please contact us directly and request a Return Authorisation Number. Please mark this number in the space provided on the outer packaging.

Please do not send products back to us without this number as we will not accept liability for the product.

If a product is not returned to us in its original packaging, after servicing we will return it, in Trilogy packaging and a nominal charge will be made.

Whilst the information given in this document is correct at the time of printing, small production changes in the course of our Company's policy of improvement through continued research and development might not necessarily be indicated in the specification.

If clarification of any point or specification is required, please refer to your Trilogy dealer.

We welcome your feedback, whether positive or negative, to help us further refine our products.

Please write to;	Trilogy Audio Systems PO Box 56402 London SE3 7WQ
Or fax:	+44 (0) 20 8856 0616
Or email;	user@trilogyaudio.com
Please visit our web site;	www.trilogyaudio.com

Acknowledgements

Nearly three years in design and development, this current range of Trilogy products are un-paralleled in their performance, aesthetics and system architecture.

Only when a product is technically near perfect, blended with real passion and soul, is it possible for this level of overall performance to be achieved.

A great many people have worked tirelessly to help achieve this goal, and I would like to take this opportunity to thank Emeka Chigbu, Simon Dart, Cliff Orman, Chris Sims and Simon Quill for their dedication to this project.