



The AVI Laboratory Series Integrated Amplifier

Owners Instruction Manual

For the use, care and maintenance of your Amplifier

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Introduction

Thank you for purchasing an AVI Laboratory series Integrated amplifier. As the name implies it is a precision instrument, meticulously hand built and tested and, given the right circumstances will produce the best sound quality that technology will allow.

We recommend that before you attempt to use your new amplifier, you carefully read the following instructions. An AVI Laboratory Series Integrated amplifier will, under certain circumstances, produce as much current as an electric arc welder! Therefore it pays to be absolutely sure everything is correctly connected before you switch it on.

Installation

The amplifier can have other units of the same size stacked on top of it but it should be in a well ventilated, and not unduly dusty environment. If you are using an AVI amplifier with another manufacturers products that "plop or click" on switch on, then they should be turned on first and allowed a few seconds to stabilise before switching on the power amplifier. An amplified "plop or click" can sometimes damage loudspeakers.

Use good quality, screened coaxial phono to phono leads to connect CD players, tuners, record players, VCR and DVD players. The make is not important but the quality is. Locking phono plugs are inadvisable as are unscreened interconnects.

Loudspeaker cable runs are best kept below 10M and multi stranded conductors running side by side are best. We use 1.5mm sq multi stranded copper cable ourselves. Use good quality 4mm Banana plugs not spade lugs.

AVI amplifiers are designed to be largely immune from cable effects provided the correct type is used.

AVI products are exceptionally reliable but many of the faults we deal with are damaged phono sockets and speaker connections caused by people who are not getting satisfactory results and believe changing cables may cure the problem. This is extremely unlikely as the biggest differences you will hear are caused by room differences and then ancillaries like CD players etc. If you are concerned with the sound you are getting, please contact us and, provided you are able to describe reasonably accurately what it is that you do not like, we will advise.

Loudspeaker Choice

Your Laboratory series Integrated amplifier is designed to drive speakers of between 4 and 8 ohms nominal impedance, ones that are lower are not suitable. These are extremely rare so it should not be a problem. The amplifier is protected from short circuit or near short circuit damage and will shut down if something is wrong. To reset it, switch it off at the mains for a few minutes and then on again.

AVI has carefully designed the Pro-Nine-Plus and the Trios to go with our amplifiers and we recommend that you thoroughly check them out before deciding on another make. In many instances we find that people are buying speakers that are not good enough to do justice to the Laboratory Series Amplifier. The Pro-Nine-Plus is the best choice where there are space constraints or our Trios where there is room and floor standing speakers are preferred. If you are concerned, do contact us for advice. Buying loudspeakers can be very difficult indeed. We will do our best to help.

Your Laboratory Series Integrated will drive and properly control a wider range of two and three way speakers than most others. You have more choice and it pays to take time to select ones that suit you best. There are enormous differences in the sound of loudspeakers so be very careful, as expensive mistakes are easy to make.

Remember that your amplifier is exceptionally powerful and quite capable of damaging your loudspeakers if very high power levels are used with certain types of Music. This high power provides a dramatic improvement in sound quality over low powered amplifiers merely because clipping or limiting is avoided, however loudspeakers are designed to handle low levels of power continuously and instantaneous peaks or transients in music. Music that is intended to sound loud like Dance or Garage is heavily compressed and may cause damage to your speakers if very high volume settings are used for prolonged periods. For most occasions, the level in question (depending on the loudspeakers) would be uncomfortably high.

It is also important not to damage your loudspeakers with massive low frequency peaks, typically kick drum type sounds. If these are very loud they can drive the cone out of the magnetic gap or against the backplate of the magnet assembly. The only remedy is a new bass drive unit.

Once you are ready to listen to your new amplifier, switch everything on as described having first turned the volume down as far as it will go. Put in a CD and then progressively increase the level until you reach a comfortable listening level but a lower one than you would normally use.

It is very likely that your AVI Laboratory Series Integrated amp is much more powerful and much cleaner sounding than you are used to, this will make it sound less loud than a lower powered amplifier, however, some of the peaks in the music will be much louder. Unless you allow for this, you may find the sound uncomfortable. With much more care and patience than you would think a volume control warranted, you would achieve quite startling results.

The Remote Control Handset

All AVI products now use standard Philips RC5 codes and the Laboratory Series Integrated amplifier comes with a One for All Handset. This can control up to four units, all from different manufacturers. An AVI owner can customise this handset to suit any system or, because the amplifier uses widely accepted codes, it may be that a handset already in your possession will control it.

The One for All handset has comprehensive instructions for customising it to suit your requirements. The code number is 121142.

Control functions for the Laboratory Series Amplifier are as follows:

Standby:	Puts Amplifier into standby. NB. Only the program up down control will bring it out of standby again.
Program up/down	brings unit out of standby (and back to last input selected) and changes input selected.
Volume up/down	controls volume and brings unit out of mute.
Mute	Press to mute and press again to regain sound.

All these controls are located together in the lower half of the handset.

Phono Stage (if fitted) S21MI Laboratory Series Integrated Amplifier

If your amplifier has been fitted with a phono stage then it will operate from the Disc button on the front panel and the two phono sockets on the left rear (viewed from the front). It is best to ask your dealer to select moving coil or moving magnet for you but if you do it yourself you must observe the following instructions.

Changing from moving coil to moving magnet

Switch off the amplifier and remove mains connector. **This is absolutely essential if damage is to be avoided.** Using a matchstick or plastic knitting

needle of similar diameter, carefully insert it through the hole marked on the back-plate until it reaches the push button. Very gently apply pressure until the button clicks. Once you have done this, re-connect everything, power up the amp and check that you have selected the right position. If you have to do it again, switch the amp off, take out the mains lead and wait for five minutes before repeating the operation. Do not apply more pressure than necessary to operate the switch or damage may result.

Cartridge selection

Bearing in mind that most records are now irreplaceable, it is worth considering a good quality, moving magnet cartridge as they track better and at a lower weight than moving coil ones. This means that your records will last longer.

Your AVI phono stage is equally suited to either moving coil or moving magnet cartridges and can easily be matched to specific ones by having phono leads made up with a suitable resistor fitted in the plugs. Companies like Russ Andrews provide a suitable service and we can advise the resistor value, however the standard input load resistance is suitable for a wide range of cartridges.

Specifications

Sensitivity	MM 2mV 47K ohms MC 500uV 220 ohms
Input Impedance	MM 47k Ω MC 220 Ω
Equalisation (I.E.C. Characteristics)	100Hz – 10kHz <+or- 0.1dB 20Hz-20kHz < + or – 1dB
Headroom	+ 26dB
Noise	MM –76dB, MC –64dB
Distortion	Well below noise floor.

Rear Panel connections and controls

In normal use your Laboratory Series Integrated Amplifier can be left on standby. There is no sonic gain in so doing, however if it is not going to be used for some time, i.e., for a few days or whilst you are on holiday, then it should be turned off by the main power switch that is located on the rear panel. It is a push button and can be reached by putting your hand over the top of the centre of the unit and then pressing it.

Although the loudspeaker terminals are binding posts and will accept the bared ends of speaker cables, we do not like this method of connection. They can come loose and strands of wire can short out causing the amplifier to protect itself. It is far better to use 4mm Banana plugs that have been properly soldered to the speaker cable.

For ease of installation the phono sockets are in line with the button on the front that selects them. i.e., if the unit has a phono stage then it will be the first input on the left looking at the Amplifier from the front.

Your Laboratory Series Integrated amplifier has preamplifier outputs that can be used to Bi-Amplify certain types of loudspeakers (check with AVI first) or to provide an output to another amplifier speaker combination in another room.

Tape outputs can be selected whilst the unit is in standby so that recordings can be made without the need to listen or, since the outputs are buffered, the selected source can be delivered to a subsidiary system in another room.

SAFETY INFORMATION

If a mains fuse blows it should only be replaced with those shown below. Disconnect the unit from the mains before you start. Use only light pressure from the thumb to fit it not a screwdriver or damage may be done.

Fuse ratings:	110/120 Volts	T10A H
	220/230 Volts	T 6.3A H

Operate only from AC Mains.

The unit must be earthed.

Always disconnect the mains supply before making connections.

If the mains lead is damaged, replace it. Fuse rating should be 13A

If liquid is spilt into the works, disconnect the mains and return the unit for repair with an explanation of what has happened.

Makes sure the unit is installed in a well-ventilated area, preferably free of dust.

There are no user serviceable parts inside the case.

CLEANING

Use a soft damp cloth, nothing abrasive.

Do not use solvents of any kind and always disconnect from the mains whilst cleaning

SPECIFICATIONS

Frequency response (-3dB).....	<1.5Hz ->250kHz
Input impedance	14K Ohms
Input sensitivity (150W into 8 Ohms, 1kHz)	530mV
Tape output Level (at rated sensitivity)	530mV

Maximum Power Output (One channel driven):

8 Ohms, 1kHz, 1% distortion	200W
4 Ohms, 1kHz, 1% distortion	325W
*2 Ohms, 1kHz, 1% distortion	480W

Maximum Power Output (Both channels driven):

8 Ohms, 1kHz, 1% distortion	175W
4 Ohms, 1kHz, 1% distortion	300W
*2 Ohms, 1kHz, 1% distortion	420W

S+N/N Ratio Unweighted	96dB
S+N/N Ratio IEC "A"	112dB
Absolute Phase	+VE

Distortion (T.H.D., 1kHz, -1dB below full power):

8 Ohms	<0.002%
4 Ohms	<0.002%

AC Mains supply (factory pre-set)	110-120/220-240V
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AC mains consumption	1000VA max
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Dimensions (W X D X H)	315 X 350 X 95mm
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Shipping dimensions (W X D X H)	400 X 440 X 170mm
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Gross weight	12.8 Kg.
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*Power delivery for approximately 5 seconds before protection.

Guarantee Information

Your AVI Laboratory Series Integrated Amplifier is guaranteed against defective workmanship or materials for a period of two years from the date of purchase. Misuse or abuse is not covered and the customer is required to pay for the unit to be returned to our works.

If service or repair is required then your amplifier should be returned to us in its original packaging together with a note explaining the problem and a return address where someone is present to sign for it when it comes back.

Do not include handsets, mains leads or instruction manuals and do remember that if the correct packaging is not used, we will supply a new set for which there will be a charge.

This guarantee does not affect your statutory rights.

If it is impractical to return the unit for service because you are outside the UK for example, AVI can supply comprehensive service information to enable a local engineer to effect repairs.

Return Address:

**AVI Ltd
Suite 7 Lightpill Mill
Bath Road Trading Estate
Stroud
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MI/MP Audio Zapper Quick Start Guide

Install 2 X AAA Batteries

Press and release **MD** button

Press and hold **MAGIC** button until the red light blinks twice

Press the following buttons in sequence:

VOL +

VOL -

VOL +

VOL +

CH -

VOL -

The handset is now programmed to control the S21MI Integrated Amplifier and S21MP Preamplifier.