

Carot One

ERNESTOLO 50K, LIMITED EDITION,
AUDIOPHILE TUBE AMPLIFIER





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1. Introduction

Thank you for your purchase of Carot One ERNESTOLO 50K Class D stereo Headamp, Preamp and power amplifier, Limited Edition.

Carot One introduced the mini-size Class-D stereo amplifier SUPER ERNESTOLO a few years ago. Thanks for its popularity, we decided to further improve the circuitry and upgrade most components to build our Limited Edition, the ERNESTOLO 50K. ERNESTOLO 50K provides up to 2 x 25Watt output with the bundled 5A AC power supply unit. A newly designed mini chassis makes ERNESTOLO 50K a more professional hi-end Hi-Fi, but yet a more space friendly amplifier at a very affordable price.

2. Features

- Digital Class-D amplifier for audiophile quality sound, high power efficiency (90%) and less heat generation.
- Tube pre-amplification provides high clarity in reproducing high and recording music.
- Rigid and compact aluminum chassis to ensure a quick and smooth release of vibrations.
- Provide up to 2 x 25 Watt output
- Separated amplifier and AC adaptor design to minimize mutual interference and flexible to apply other power source, e.g. lead-acid battery.
- Standard audio sockets compatible with most audiophile quality cables.
- Gold-plated speaker binding post and RCA for better looking and sound quality.
- Audiophile-graded parts and components
- Air-core inductor used instead of magnetic-core for better sound.
- The stylish & specially-plated aluminum case provides not only good-looking, and also provides outstanding shielding capability.



Safety Guidelines

Important safety instructions

This product is designed and manufactured to meet strict quality and safety standards. However, you should be aware of the following installation and operation precautions.

1. Take heed of warnings and instructions

You should read all the safety and operating instructions before operating this equipment. Retain this handbook for future reference and adhere to all warnings in the handbook or on the equipment.

2. Water and moisture

The presence of electricity near water can be dangerous.

Do not use the equipment near water, for example next to a bathtub, washbowl, kitchen sink, in a wet basement or near a swimming pool, etc.

3. Object or liquid entry

Take care that objects do not fall and liquids are not spilled into the enclosure through any openings. Liquid filled objects such as vases should not be placed on the equipment.

4. Placing the equipment

Only use a rack or shelf that is stable and strong enough to support the weight of this equipment.

5. Ventilation

Do not place the equipment on a bed, sofa, rug or similar soft surface, or in an enclosed bookcase or cabinet, since ventilation may be impeded. We recommend a minimum distance of 50mm around the sides and top of the equipment to provide adequate ventilation.

6. Heat

Locate the equipment away from naked flames or heat producing appliances such as radiators, stoves or other appliances that produce heat.

7. Climate

The equipment has been designed for use in moderate climates and in domestic situations.

8. Cleaning

Unplug the unit from the mains supply before cleaning.

The case should normally only require a wipe with a soft, lint-free cloth. Do not use chemical solvents for cleaning.

We do not advise the use of furniture cleaning sprays or polishes as they can cause indelible white marks.

9. Power sources

Only connect the equipment to a power supply of the type described in the operating instructions or as marked on the equipment.

The primary method of isolating ERNESTOLO 50K from the mains supply is to use the switch on the rear of the unit. ERNESTOLO 50K must be installed in a manner that makes disconnection possible.

10. Power-cord protection

Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to the point where they exit from the equipment.

11. Power lines

Locate any outdoor antenna/aerial away from power lines.

12. Non-use periods

If the equipment is not being used for an extended period, we recommend that you unplug the power cord of the equipment from the outlet, to save power.

13. Abnormal smell

If an abnormal smell or smoke is detected from the equipment, turn the power off immediately and unplug the equipment from the wall outlet. Contact your dealer and do not reconnect the equipment.

14. Servicing

You should not attempt to service the equipment.

Contact your dealer to arrange servicing.

15. Damage requiring service

The equipment should be serviced by qualified service personnel when:

- A. the power-supply cord or the plug has been damaged, or
- B. objects have fallen, or liquid has spilled into the equipment, or
- C. the equipment has been exposed to rain, or
- D. the equipment does not appear to operate normally or exhibits a marked change in performance, or
- E. the equipment has been dropped or the enclosure damaged.

Safety compliance

This equipment has been designed to meet the EOCENE 60065 international electrical safety standards.

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

WARNING:

Due to the mains power supply being located on the rear panel, the apparatus must be located in an open area without anything obstructing access to the mains switch.

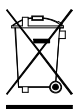
Mains plug/appliance coupler is used to disconnect device and it shall remain readily operable.

Correct disposal of this product

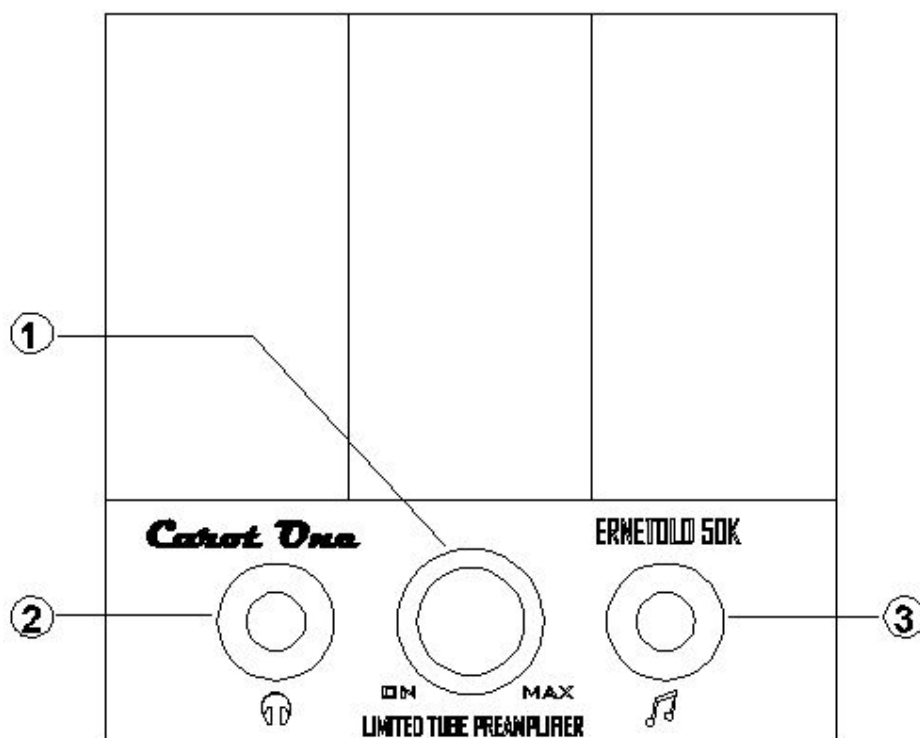
This marking indicates that this product should not be disposed with other household waste throughout the EU.

To prevent possible harm to the environment or human health from uncontrolled waste disposal and to conserve material resources, this product should be recycled responsibly.

To dispose of your product, please use your local return and collection systems or contact the retailer where the product was purchased.



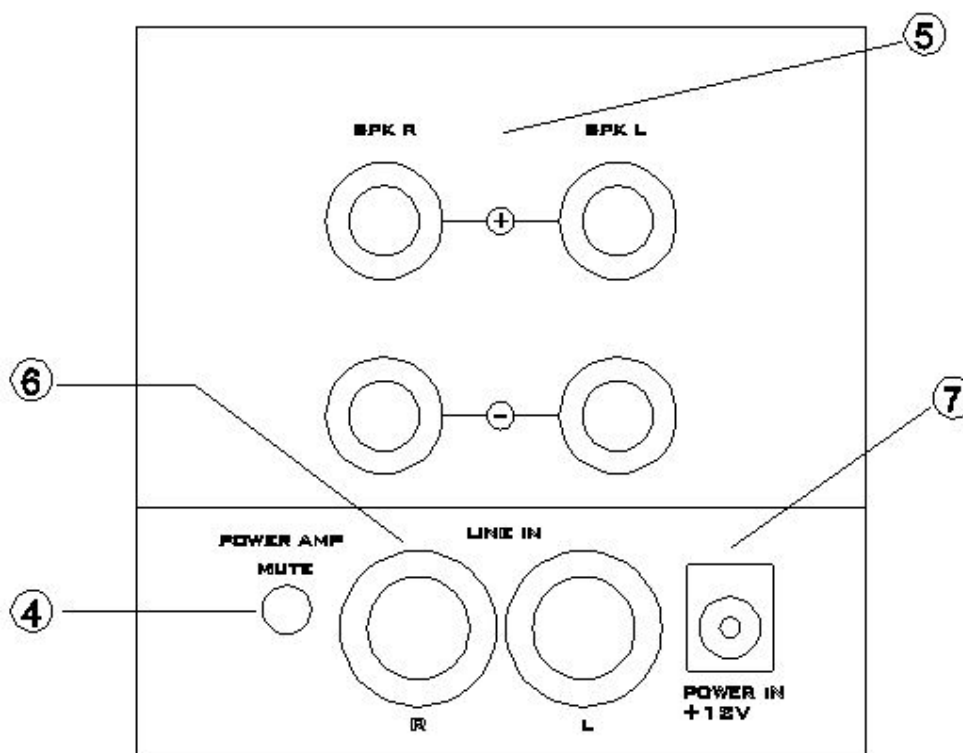
3. Overview



1. Volume Controller and Pre-Amp Power On/Off
2. 3.5mm Headphone socket
3. 3.5mm AUX input socket. Connect your Smartphone to the amplifier using the provided mini-RCA cable (this input over-rides rear input)

WARNING:

When plug in the supplied mini jack cable or your headphone to (2) or (3), always plug in a vertical way. NEVER shake the mini jack as this will permanently damage the internal structure of the socket causing bad contact of signal.



4. Mute on/off for amplifier. To protect your loudspeaker, before turning on the system using the volume controller (1), ALWAYS mute the amplifier using this switch. When the tube is warm-up enough, un-mute the amplifier and start playing your music.
5. Speaker Output (Gold-plated binding post)
6. Audio input. The audio signal input (LEFT/RIGHT) connects from audio source (e.g. CD player) to the amplifier by a RCA audio cable (not provided).
7. Power supply Socket; Plug the bundled AC Adaptor to this socket to supply power to this amplifier.



3.1 Connection

Carot-One ERNESTOLO 50k is easy to use product. Simply follow below steps, you can enjoy the high quality music in a second:

- Connect your CD player or other audio source to the "Line in" RCA socket (6) using normal RCA audio cable (not included).
- You can also connect your Smartphone to the 3.5mm AUX input socket (3) using a mini jack cable (included). Once this input is used, it will over-ride the rear RCA input (6)
- Connect your speakers to the Speaker Output (5)
- Connect the power adaptor to the "Power In" connector (7).

It's now all set and you are ready to enjoy your music.

3.2 Operation

Please follow the below steps such that you can enjoy the product without any difficulty:

To Turn on the unit

- Mute the unit by putting the Mute switch (4) to mute position.
- Turn the Volume controller (1) clockwise to turn on the amplifier. Wait around 15 seconds to allow the vacuum tube to warm up to its operation temperature.
- Un-mute the unit by putting the switch (4) to un-mute position.
- Play your source equipment and you can hear music from your loudspeakers. Now, you can control the volume using volume control (1)

To Turn off the unit

- Mute the unit by putting the Mute switch (4) to mute position.
- Turn the Volume controller (1) counter-clockwise to turn off the amplifier
- You can either put the Mute switch (4) to un-mute position or just leave it as is, so that when you turn on the unit again, you don't need to mute the unit before turning the volume control (1).

4. Specifications

4.1 Specification of the Power Amplifier Unit

Output Power	2x25W @4Ohm 2x12W @8Ohm (RMS)
Signal-to-Noise Ratio (SNR)	98dB
Dynamic Range	98dB
THD+Noise Audiophile Quality	0.03% @9W 4Ohm 0.15% @8W 4Ohm 0.11% @6W 8Ohm
High Power	10%@15W 4Ohm 10%@10W 4Ohm
Input Audio	Rear RCA (Left/Right) x 1 Front 3.5mm mini jack x 1
Power Socket	2.1mm x 1
Speaker OUT	Banana socket x 4
Other	Volume Knob Power ON/Off switch x 1
Power Indicator	Blue LED x 1
Power Supply	DC 12V-13.2V (max)

4.2 Specification of the Headphone Amplifier Unit

Signal-to-Noise Ratio (SNR)	92dB
Power Output	600mW / channel on 32 Ohm headphone
Frequency response	15Hz – 100kHz -1dB
Input Impedance	10k Ohms
Input Audio	CD in RCA (L/R) x 1 [3Vpp max.]



4.3 Specification of the Pre Amplifier Unit

Vacuum Tube	6DJ8/6922 series or 12AU7 series (exchangeable)
Signal-to-Noise Ratio (SNR)	92dB
THD+Noise	0.05% @10kOhm 0.15% @33Ohm
Input Audio	CD in RCA (L/R) x 1 [3Vpp max.]
Power Supply	DC 12V-13.2V (max)
Dimensions (W x H x D)	76mm x 75mm x 136mm

4.3 Specification of the AC Adaptor

AC Input Universal AC 100V-240V/50-60Hz
DC Output DC 12V 5A(60W)
DC Plug DC 2.1mm
Ripple & Noise $\leq 25\text{mV}$
Over-load Protection 105%-150%
Over-voltage Protection 115%-150%

5. Technical Notes (for professional user only)

Carot One has already pre-set the jumpers and fine-tuned the DC bias voltage of each ERNESTOLO 50K with the packaged vacuum tube before shipping. However, changing different tubes to taste for different sound is the great fun for many audiophiles and also a great feature of ERNESTOLO 50K.

There are some important notes should be aware before changing tubes.

ERNESTOLO 50K supports two major tube series:

- (1) 6DJ8, 6922, 6N11, 6H23n, ECC88, E88CC, etc.. and
- (2) 12AU7, 5963, 5814, ECC82, etc..

If you change the tube within the same series, it needs to re-tune the DC bias voltages ONLY.

If you change the tube to another series, it needs both to re-tune the DC bias voltages and re-set the jumper. Otherwise, the tube may be burnt out.

The power amplifier jumper setting for Different Tube Series:

The two series of tube are operated in either 6Volt or 12 Volt. Thus, before changing to a new series of tube, please make sure to set the jumper (P2) to the appropriate voltage supply (6V or 12V). After setting the jumper voltage, you can go to section 5.1 to do the bias tuning.

(Remember to power OFF the unit before doing any setting)

5.1 DC Bias Voltage Tuning

Since each tube might deviate a bit in parameters, especially from different series, it needs to re-tune the DC bias voltages to guarantee the machine is working in the best point and performing the best sound quality.

There are two blue precise adjustable potentiometers (RP1, RP2) for tuning the DC bias voltage of each channel. The DC bias has been tuned in factory. But after run-in for a period of time or changed another tube, it would be deviated that the fine-tuning is needed.

Before you tune these, you need a screwdriver (take off the case), a small screwdriver (Turn the screw of the potentiometer) and a (digital) multi-meter to detect the DC bias voltage:

1. Remove the crystal block to access the tube. Slowly shake the vacuum tube back and forth to remove the vacuum tube. Plug in your preferred vacuum tube and select the voltage at the jumper (P2)
2. Use screwdriver to take out the 4 screws at the bottom of the unit and remove the base plate.
3. Power ON the machine with no audio signal input.
4. Wait at least 5 minutes for the machine to run in.
5. Use the multi-meter to detect the DC voltage between the test point (L), next to RP1, in the PCB & the GND (e.g. the ring of the power switch or the outer ring of the RCA sockets) of the LEFT channel.
6. Turn the screw on the top of the RP1 potentiometer by a small screwdriver clockwise or anticlockwise until the voltage as close as to +6~+8V.
7. Then repeat step 5 and 6 for the RIGHT channel by changing the test point to (R), next to RP2, and turning the screw on the top of the RP2 potentiometer.
8. Power OFF the amplifier.
9. Cover back the base plate and tighten the screws.



6 Troubleshooting

If your machine is out of order, it may not be very serious. Before you call your local distributor or us to repair, you are suggested to check the following:

SYMPTOM	POSSIBLE CAUSE	REMEDY
cannot power ON indicator not bright	power cords not properly connected	properly connect the power cords
no sound at all	The audio cable not properly connected	properly connect the audio cable
	The mute switch (4) is not at mute position	Un-mute the amplifier
	The volume level is too low	Turn volume level higher
	The audio source not started playing	Start playing the audio source
	the speaker cables not properly connected	properly connect the speaker cables
Hum	audio connector plug not fully pushed in	Insert plug securely
	Tube not fully pushed in	Insert the tube securely
sound out(s)	loose connection	check input and output connections.



7. Accessories

- . 3.5MM to 2 x RCA connection cable x 1
- . Power cable x 1
- . 12V power supply x 1
- . User Guide x 1

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