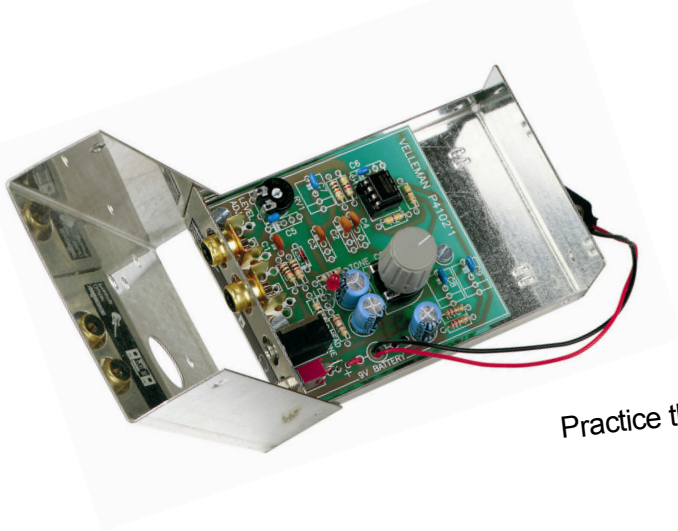


Total solder points: 79

Difficulty level: *beginner* 1  2  3  4  5  *advanced*

# GUITAR PREAMPLIFIER WITH HEADPHONE OUTPUT



## K4102

Practice the guitar without disturbing others.

### Features:

An electric guitar cannot be connected to just any amplifier or audio installation. This preamplifier has been designed for this purpose and provides you with a headphone output, allowing you to practice without disturbing others. Moreover, it is fitted with a special device for tone adjustment, allowing anyone to create their personal sound.

- sound adjustment
- adjustable input sensitivity
- low noise
- housing included

### Specifications:

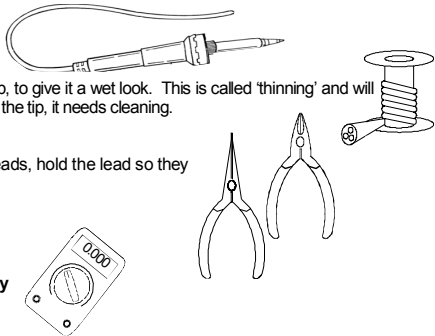
- Headphones output: max. 2 x 50mW / 32ohm
- Power supply: 9V battery (not incl.)
- Dimensions: 70 x 30 x 105mm (2.8" x 1.2" x 4.1")

**1. Assembly (Skipping this can lead to troubles !)**

Ok, so we have your attention. These hints will help you to make this project successful. Read them carefully.

**1.1 Make sure you have the right tools:**

- A good quality soldering iron (25-40W) with a small tip.
- Wipe it often on a wet sponge or cloth, to keep it clean; then apply solder to the tip, to give it a wet look. This is called 'thinning' and will protect the tip, and enables you to make good connections. When solder rolls off the tip, it needs cleaning.
- Thin rosin-core solder. Do not use any flux or grease.
- A diagonal cutter to trim excess wires. To avoid injury when cutting excess leads, hold the lead so they cannot fly towards the eyes.
- Needle nose pliers, for bending leads, or to hold components in place.
- Small blade and Phillips screwdrivers. A basic range is fine.



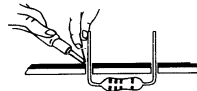
**For some projects, a basic multi-meter is required, or might be handy**

**1.2 Assembly Hints :**

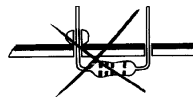
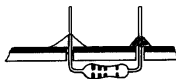
- ⇒ Make sure the skill level matches your experience, to avoid disappointments.
  - ⇒ Follow the instructions carefully. Read and understand the entire step before you perform each operation.
  - ⇒ Perform the assembly in the correct order as stated in this manual
  - ⇒ Position all parts on the PCB (Printed Circuit Board) as shown on the drawings.
  - ⇒ Values on the circuit diagram are subject to changes.
  - ⇒ Values in this assembly guide are correct\*
  - ⇒ Use the check-boxes to mark your progress.
  - ⇒ Please read the included information on safety and customer service
- \* Typographical inaccuracies excluded. Always look for possible last minute manual updates, indicated as 'NOTE' on a separate leaflet.

### 1.3 Soldering Hints :

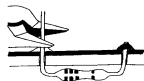
1- Mount the component against the PCB surface and carefully solder the leads



2- Make sure the solder joints are cone-shaped and shiny

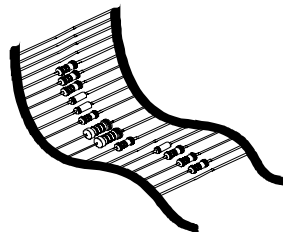


3- Trim excess leads as close as possible to the solder joint

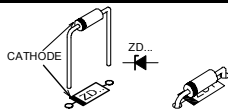


REMOVE THEM FROM THE TAPE ONE AT A TIME !

**DO NOT BLINDLY FOLLOW THE ORDER OF THE COMPONENTS ONTO THE TAPE. ALWAYS CHECK THEIR VALUE ON THE PARTS LIST!**

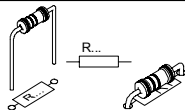


### 1. Zenerdiode. Watch the polarity!



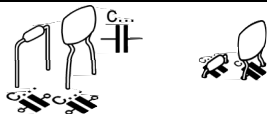
- ZD1 : 4V7

### 2. 1/4W Resistors



- R1 : 470K (4 - 7 - 4 - B)
- R2 : 470K (4 - 7 - 4 - B)
- R3 : 47K (4 - 7 - 3 - B)
- R4 : 10K (1 - 0 - 3 - B)
- R5 : 10K (1 - 0 - 3 - B)
- R6 : 10K (1 - 0 - 3 - B)
- R7 : 68 (6 - 8 - 0 - B)
- R8 : 68 (6 - 8 - 0 - B)
- R9 : 390 (3 - 9 - 1 - B)
- R10 : 2,2 (2 - 2 - B - B)
- R11 : 2,2 (2 - 2 - B - B)

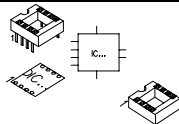
### 3. Capacitors



- C1 : 470pF (471)
- C2 : 10nF (103)
- C3 : 33nF (333)
- C4 : 33nF (333)
- C5 : 100nF (104)
- C6 : 100nF (104)
- C7 : 470nF (474)
- C8 : 470nF (474)
- C9 : 470nF (474)

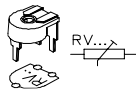
### 4. IC socket. Watch the position of the notch!

- IC1 : 8p



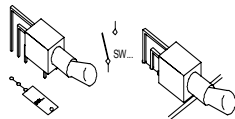
### 5. Resistor trimmers

- RV1 : 100K
- RV2 : 1K



### 6. Switch

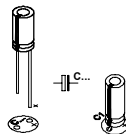
- SW1



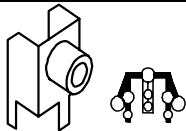
### 7. Electrolytic Capacitors

- C10 : 220µF
- C11 : 220µF
- C12 : 220µF

Watch the polarity!

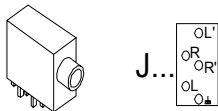


## 8. RCA connectors



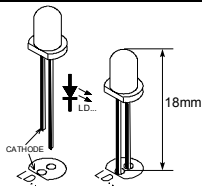
- J1 GUITAR IN
- J2 LINE OUT

## 9. Headphones connector



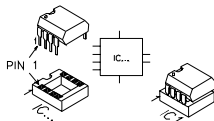
- J3 : 3,5mm stereo phone

## 10. LED



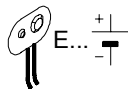
- LD1 : 3mm red

## 11. IC. Watch the position of the notch!



- IC1 : NE5532A

## 12. Battery snap



The connection leads are first plaited through the openings to reduce pulling. The red is connected to the "+" and the black to the "-".

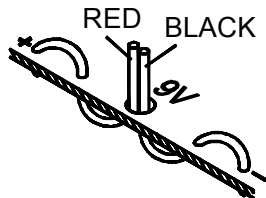


Fig 1.0

### 13. Assembly in the housing

- Attach the sticker showing the connections to the housing, fig 4.0.
- Mount three spacers to the bottom of the housing, together with a shakeproof washer and an M3 countersunk bolt, see figure 2.0

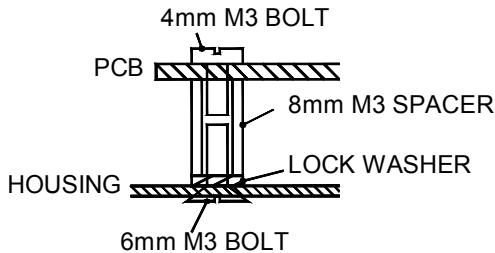


Fig 2.0

- Mount the PCB on the spacers using the three M3 bolts
- Click the shaft into the tone-control potentiometer and mount the knob on the shaft, fig 3.0
- After connection of the 9V battery (check the polarity), the cover of the housing can be clicked in place.

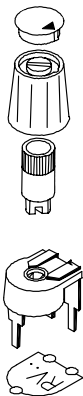
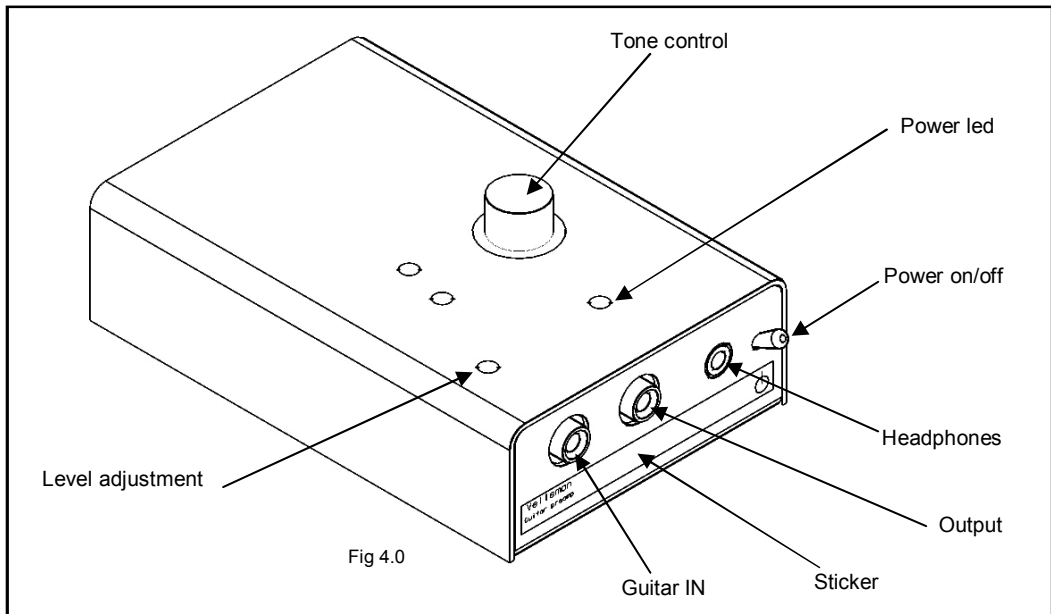


Fig 3.0

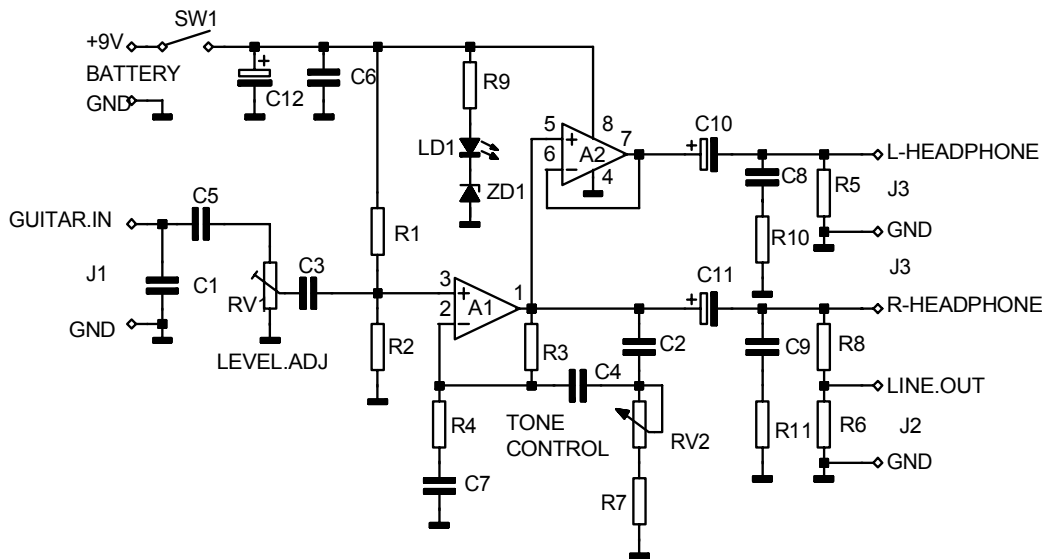




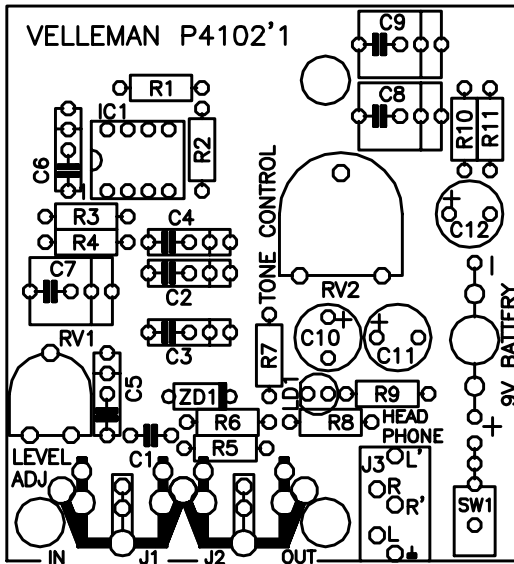
## 14. Test & use

- Connect a 9V battery and switch the equipment on. The LED should normally light up. This LED is also used as a "battery low" indication.
- Turn potentiometer RV1 to the middle of its adjustment range and connect a pair of headphones to the unit. A slight hum should be heard in the headphones when the central terminal of the input connector is touched. Turn the tone control RV2 clockwise and slight noise should be heard.
- The guitar can be connected to the input connector by using a suitable cable. The sensitivity can be controlled using "RV1".
- The output connector can be connected to the "TAPE IN" or "AUX" input of a stereo system. Be very careful with the volume knob so that you do not damage your expensive speakers.

## 15. Schematic diagram.



16. PCB



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