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Mini Amp



A Budgetronics building kit to make your own mini amp, based on the LM 386 op amp. Handy for amplifying weak signals on a headphone like for instance from a crystal radio. You could also connect a small loudspeaker to it. If you want to amplify a stereo signal you can use two mini amps. One for each channel. Easy connection of output and input signals with block terminals screw connection.

The mini amp has a flexible power need. You can use voltages between 4 and 12 volts to power your mini amp. The mini-map is delivered as a bag of parts which you can solder together yourself.

A 9 volts battery-clip is supplied to easily power your mini-amp with a 9 volts block battery. This kit is easy to assemble even for a beginner.

Budgetronics building kits

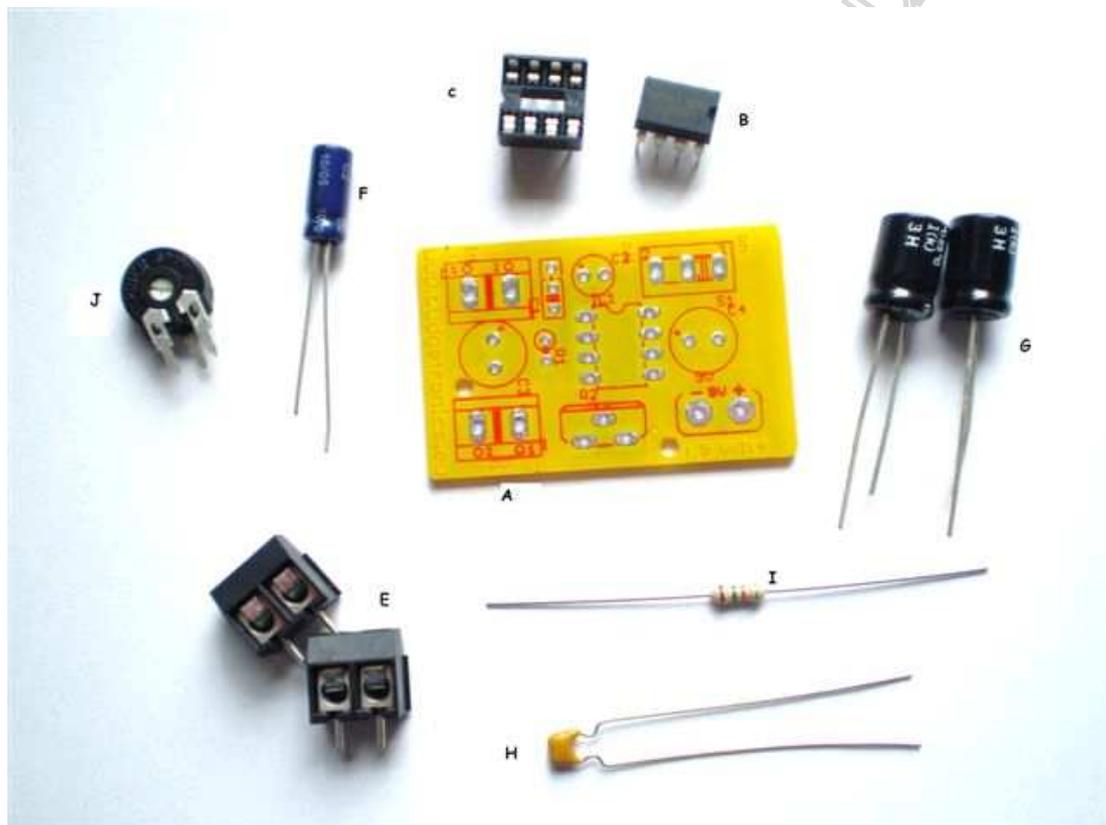
Introduction

De mini amp

At the heart of the mini amp you will find the LM386 op-amp IC. The LM386 is an amplifier with a low power use and an amplifying factor of max. 200 times. The mini-map kit is a very compact amplifier at which you can connect input and output signals easily by means of screw connections. The volume can be controlled with the small potentiometer on the PCB. Great to use where you need to slightly amplify a weak signal.

Partslist of the mini-amp.

Before you begin check if you got all the needed parts and look at the picture to recognize the parts:

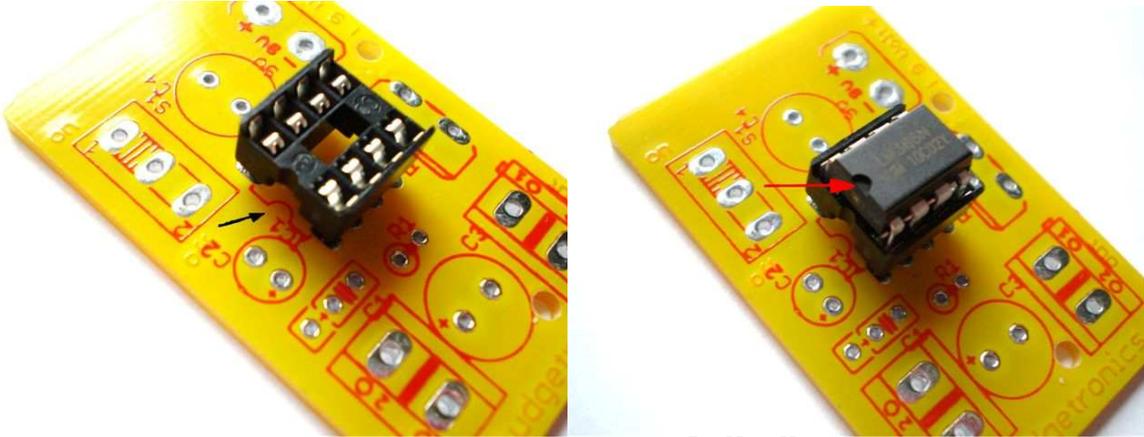


- A: 1 x PCB mini amp
- B: 1 x op-amp LM 386
- C: 1 x 8 pins ic socket
- D: 1 x 9 volts battery clip (not in picture)
- E: 2 x block terminal with screws
- F: 1 x electrolytic capacitor 10 uf
- G: 1 x electrolytic capacitor 470 uf
- H: 1 x ceramic capacitor 100nf
- I: 1 x resistor 1K5 Ohms (colour code brown, green, red)
- J: 1 x potentiometer 25K

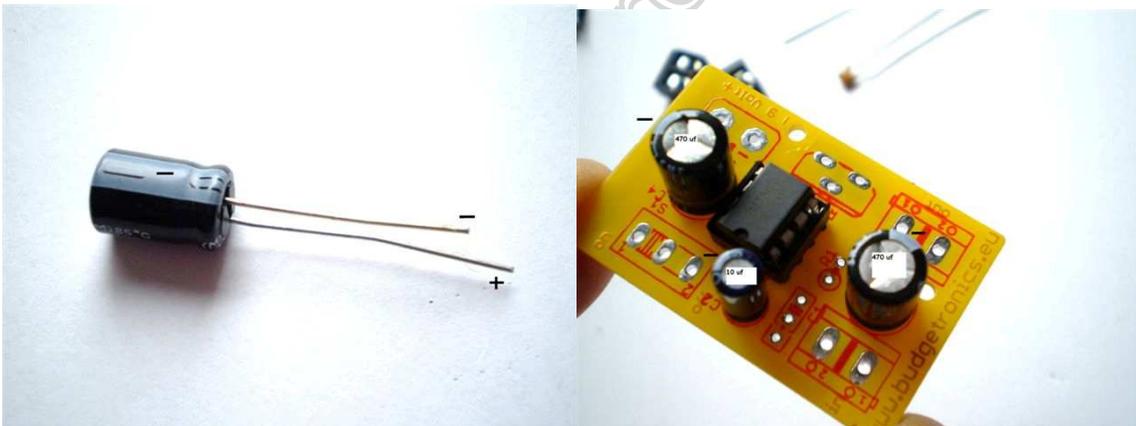
The part scan differs from the ones shown in the picture.

Construction

To begin place the IC socket on the PCB. Take care to put it in the right way. At one side of the socket you can see a little dent. If you look at the PCB you will see the same dent drawn there. Solder the IC socket in place and insert the IC (LM386) only after you have soldered the socket. If you insert the IC in its socket watch out that you put the little dent at the same side as the dent on the PCB and socket. See the picture below:



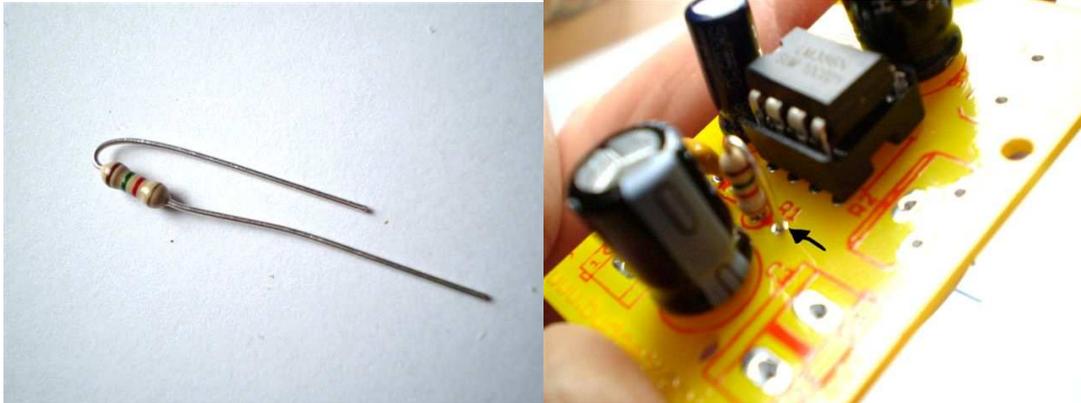
Now place the two electrolytic capacitors and watch the polarity. At the side of the capacitors you will see a clear indicator of what is the negative side (-). Look closely at the picture in which way to connect the capacitors. The short lead is the negative side. On the PCB you will see a + indication on one side.



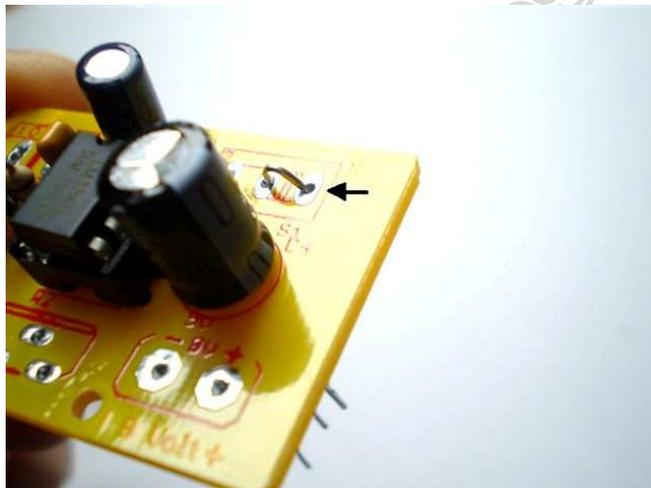
Solder the ceramic capacitor in its place. Watch out that you connect it to the right PCB holes. As you can see on the picture one hole is crossed out. Don't use this one. Solder the capacitor exactly as shown in the picture.



Connect the resistor and bend the resistor as is shown in the picture.



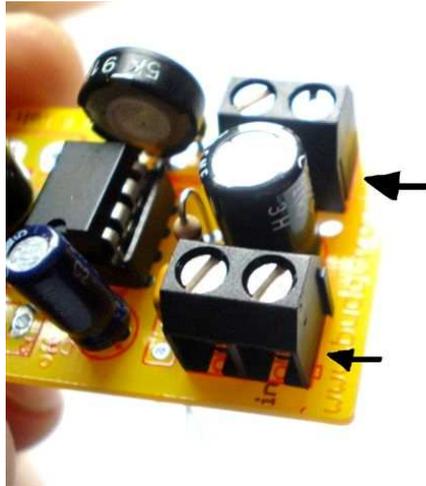
Instead of a switch use a wire bridge. You can use a resistor wire which was cut of in the step before this one. If you want you can install a switch later on.



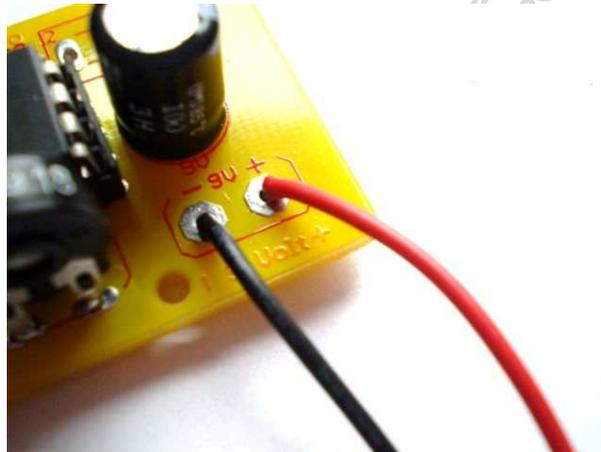
Put the potentiometer in its place. You can only connect this in one way.



Install the Block terminal as shown on the picture.



The last part to place is the 9 volts battery clip. Watch out that you connect the + and – wire in the right way! Black is negative (-) and red is positive (+). Look at the picture.



Last check and powering up

Check if everything is connected as is shown in the picture. Look at the solder side to check for loose leads or shorts. If you checked out everything you can connect the 9 volts battery. You can only connect the battery in one way. Watch out that the battery does not make contact with the wrong contacts

We wish you a lot of success with your mini-amp. If you want to change the specifications read on, if not you can stop reading and start using your mini-amp.

Changing the amount of amplifying

The building kit has an electrolytic capacitor of 10 uF between pin 1 en 8 of the IC. This makes the IC's amplifying factor 200 X. If this is to much for you or the signal is getting distorted you can take away this capacitor. After this you mini-amp will amplify 20 times instead of 200 times.