

Heatgun Desoldering

by [mage2](#) on January 30, 2007

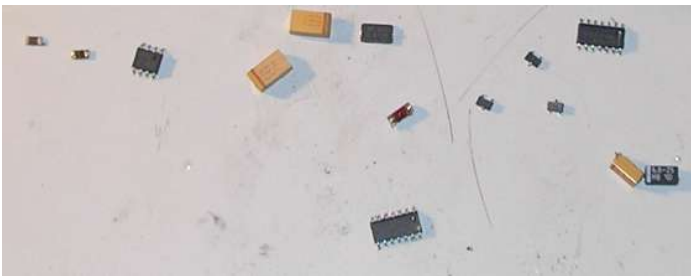
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Intro: Heatgun Desoldering

Using a Heatgun to remove/ scavenge parts from old or broken PCB.

I using a old harddrive as a example. You can salvage most any surfacemount, BGA or even through hole parts using this method.



step 1: Remove the PCB from any other casings.

First remove the PCB from any casings.
Here I have just a few screws to remove.



step 2: Heat up area using heatgun.

Now you will heat up the area with the heatgun. I would suggest using something nonflammable to put the item on and place it at a comfortable angle to work with. I used an old case side to protect the bench. You will also want to make sure there is nothing that could melt or burn in the area around it.
Here I am going to heat the area around the yellow SMT parts in the top left corner.

After heating the area. Watch the solder to turn shiny to show that its flowing, You can then remove the parts using tweezers or needle nose pliers. Then place in a safe place to cool off.

Be careful especially with the smaller parts or the parts that might be heat sensitive. The air from the heatgun can blow small parts around. You also don't want to burnout the parts you are trying to save.



step 3: Parts are removed.

Now that you have removed the parts you are interested in. Let the board cool and do with as you please.

This picture shows the parts removed.

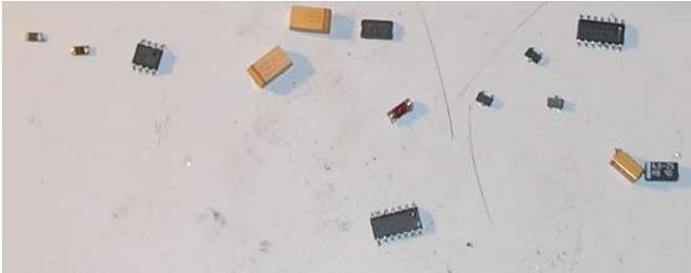
I have removed through-hole, BGA, SMT parts using this method. For some parts heating the backside of the PCB and letting the parts fall off can be faster. This only works with parts big enough to fall off.

Also I have seen some parts seem to be glued to the board and are more difficult to remove. So be warned.



step 4: Results

Here are some of the parts I removed from the HDD PCB. In this picture I can see IC's, SMT transistors, capacitors, and diodes.



Related Instructables



Don't throw solder away by neelandan



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My Book 250Gb Mod: Customized LED Color by firdaws



How to De-Solder surface mount ICs by smartie_on_compu

Comments

29 comments

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ratgod says:


Excellent instructable,


I use this method on a regular basis, my biggest suggestion is that you wear safety glasses.


Heating a PCB too much will cause the board to delaminate and the resin can boil and burst through the board sometimes, In my early attempts I have also had an electrolytic cap burst on me, nowadays I rip them off before hand (unless I really want them, then I would desolder the old fashion way).


I usually stand my heatgun on the desk (mine has a flat back so I can do this), then I will prop the circuit board about an inch or 2 above the heatgun while its running then I will pick the components off in the area then move the board quickly before it delaminates. Another method is heating the board in this way then hitting the side of the board against the desk or a brick so all the reflowed components come off, the only downside to this method is that you have to clean the globs of solder off afterwards.


Oct 20, 2009, 6:35 PM [REPLY](#)


 **dentsinger** says: Sep 19, 2007. 7:17 AM [REPLY](#)
Why can't you heat it from the back side and let the components falls out? Just curious since I'm wanting to clear away components from boards en masse for art.


 **mage2** says: Sep 14, 2009. 1:41 PM [REPLY](#)
You could for some componets but with the amount of heat you might toast (burn) the side the heat is on PCB is not very conductive so be wary of heat buildup.


 **denilsonsa** says: Dec 14, 2007. 11:01 AM [REPLY](#)
I've never done that, but I read somewhere on the Internet that we can (or should?) heat from the back side. Then, the component will just fall off.

 **rocketman221** says: Jul 30, 2008. 12:17 AM [REPLY](#)
i have done that before with a pencil torch and it seems to work alright.

 **dentsinger** says: Dec 14, 2007. 1:25 PM [REPLY](#)
Actually I wasn't thinking too smartly when I made that comment about why not heat the back side. Surface mount components have the solder on the face of the board. Since then, I did get my self a heat gun, but the board would scald and start smoking before any solder would run.


 **awang8** says: Dec 21, 2008. 12:06 AM [REPLY](#)
Funny, the board is made out of fibreglass and copper. Make sure it doesn't have a protective layer which is usually plastic that melts.

 **pinkhairkid** says: Sep 12, 2009. 6:23 AM [REPLY](#)
thanks a million
I've been trying to get a flyback transformer off of a circuit board for weeks


 **mage2** says: Sep 14, 2009. 1:39 PM [REPLY](#)
Glad i could help everyone with this.
I plan on having new instructables sometime in the near future.

 **MichealY** says: May 7, 2009. 8:54 AM [REPLY](#)
Thanks.

 **Patented** says: Jul 3, 2008. 2:12 PM [REPLY](#)
Nice method!

 **wethecom** says: Jun 28, 2008. 5:38 PM [REPLY](#)
if you superglue something to the part being removed you can create alot of pull to remove smaller to handle parts
dosnt seem like a bad idea
and thanks for the tip

 **BFeely** says: May 17, 2008. 10:20 AM [REPLY](#)
Parts are often glued to board if they are on the underside.

 **mrmeval** says: Feb 4, 2007. 5:56 AM [REPLY](#)
You can achieve better control with this.
It's a Weller heat gun designed for reflow soldering and desoldering. It comes with restrictor/reflector tips for various uses.

Ow, I did not realize how expensive those are! I use them at work.

The bigger ones work and we have those too. They're variable and come with a similar restrictors and reflectors.
Something like this
heat gun example

As to heat effecting the parts most can take the heat of reflow for so many seconds. Get the right heat on the part, get the part off and then let them cool.

Use ESD protection or a lot of them will die, some instantly some may take weeks. Some will fail with weird symptoms, intermittant, wrong output levels, etc.
http://en.wikipedia.org/wiki/Electrostatic_discharge
<http://www.cisco-eagle.com/storage/safety%20and%20ergonomics/mats/esd-mats.htm>

I think Rat shack has a kit but you can find cheaper.



Kegtapper says:

Looks like the \$34 one at Amazon is for heat shrink tubing, not SMT soldering/desoldering.

Mar 31, 2008. 8:39 PM [REPLY](#)



OmnivoreNZ says:

Someone (can't remember where) suggested working over a container of water. I hold the board upside down and heat from above. Parts fall off, land in the water, and cool down immediately. Very few components are damaged by getting wet. Only big problem is my wife "hates" the smell - I have to have a shower and change before she'll come near me.

Feb 29, 2008. 1:03 PM [REPLY](#)



tomyu says:

I saw crazy desoldering in here .

(Original page is written in Japanese. This link is linked to automatic translator.)

He puts the PCB into cooking-pan filled with hot cooking oil, and scoops detached surface mounted parts.

Caution: If you try this, remove the aluminium electric capacitor before you try.

Jan 31, 2007. 11:42 AM [REPLY](#)



technodude92 says:

if you try this I recomend that you use mineral oil. Mineral oil will not go rancid and is used in electronics regularly(high voltage xformers etc.)

Feb 25, 2008. 8:45 PM [REPLY](#)



RaNDomLeIGH says:

Now that is a clever idea. You'd probably want to use a pan that you DON'T use for cooking (lead/mercury poisoning and all that).

Will the oil do icky things to the components? And does it get off all the extra solder?

I have a LOT of things I've been saving to desolder bits and pieces from (telephones, alarm clocks, and also to use the PCB for crafty) and that would really be a time-saving way to do it.

May 5, 2007. 11:18 PM [REPLY](#)



uzerzero says:

Something tells me that those parts probably smell like burnt plastic, and that they probably don't work. Still though, that's a creative idea for desoldering surface mounts.

Jan 31, 2007. 12:14 PM [REPLY](#)



tomyu says:

Sorry, I could not make proper link.

Please enjoy original page.

<http://www.paken.org/aaf/fried-board/index.html>

(There is link named 'Rough English Here' which is linked to automatic translator.)

Jan 31, 2007. 11:55 AM [REPLY](#)



mightywombat says:

Most of these board from consumer electronics are soldered automatically by passing the "stuffed" board through an oven. The parts are pre-tinned (their contacts have a little solder on them) and are placed on the board by a machine, to get the placement just-so. Then the board rides through an oven where the solder that is on the components melts just enough to fuse to the pads on the board. My point is this: chances are that if you are only heating up the component enough to cause the solder to melt (reflow) then you probably aren't getting the component any hotter than it got during the production of the board itself. If you're "really" curious about the heat tolerances of a part, try looking up the datasheet online and see what the maximum temperature the part can stand is. If your gun gets hotter than that, you are risking the chip, but if you can set your gun to a lower setting and still melt the solder, the component should be fine.

Aug 26, 2007. 7:06 PM [REPLY](#)



jok says:

I once i used my hot air gun (aoyue 909) to reflow a circuit board it had this farad capacitor it blow up witha loud bang. so be careful when heating around the area filled with capacitors.

Mar 13, 2007. 5:31 PM [REPLY](#)



ghostrider157 says:

you can actually take this idea to fix an Apple G3 iBook. one of the main issues with those laptops is a bad logic board, because the video chip wouldn't make a clean connection. If you take the bottom case off and the bottom shield off, and then just heat the snot out of that chip without touching or moving it at all, 9 times out of ten it fixes the computer

Feb 6, 2007. 1:57 PM [REPLY](#)



dfowler7437 says:

I have an article and some pages devoted to heat gun scrounging. The following link leads to a How-To and FAQ section and a post about scrounging a rack mount router.

Feb 1, 2007. 2:32 AM [REPLY](#)

<http://www.uchobby.com/index.php/scrounging/>



mage2 says:

Jan 31, 2007. 8:33 PM [REPLY](#)

Some parts are more sensitive to heat than others. If you are quick about it you should not have any problems. I have not had anything fail so far. But I have not tried using this method on anything that was really sensitive. I do not let the parts get any hotter than I have to let the solder melt so that I can lift the part. If you smell burning plastic and the part is still attached then you have got it a little to hot and the part is glued in place. I was using a Harbor F Heatgun, It cost me about \$10.

It works for me.



HamO says:

Jan 31, 2007. 2:53 PM [REPLY](#)

Good Instructable (we need a shorthand for that), just don't do this near the smoke detector. I set off the whole building alarm once.



MD_Willington says:

Jan 31, 2007. 12:58 PM [REPLY](#)

I've also seen this done with a used electric skillet, the type that you set on the counter and plug into a wall socket, works well for reflow work too.



mothflavour2 says:

Jan 31, 2007. 10:03 AM [REPLY](#)

Wow, I'm going to have to get a heat gun to try this. By the way, do you know if the heat adversely affects any of the parts?
