

# Proper Soldering Iron cleaning & maintenance

by **exponent** on January 12, 2007

## Table of Contents

intro: Proper Soldering Iron cleaning & maintenance .....	2
step 1: Tools of the trade .....	2
step 2: Cleaning the soldering iron .....	2
step 3: Tinning the tip .....	3
Related Instructables .....	3
Advertisements .....	4
Customized Instructable T-shirts .....	4
Comments .....	4

## intro: Proper Soldering Iron cleaning & maintenance

This instructable will guide you on how to properly care for your soldering iron. Proper iron care will result in lower melt times, cleaner solders, and a longer iron life. Cleaning and caring for your soldering iron is very easy and can be accomplished with everyday household items.



### Image Notes

1. A new soldering iron. Notice how the tip shines... it won't stay like this for long. Following this guide will help you maintain and clean that new soldering iron for better performance and longer life.

## step 1: Tools of the trade

This section will explain the tools of the trade. Some of these you will need, some of these you will not. The first (and most common) apparatus is the simple yellow sponge.

### Yellow Sponge

The purpose of the sponge is as follows; the sponge is porous, so it holds water. Rubbing a hot soldering iron tip on a wet sponge causes the solder to contract at a different rate than the soldering iron, helping to knock off any globs of solder that may be clinging to the tip. **NOTE:** Make sure the sponge is damp (not soaked) with water.

### 600 Grit Sandpaper

The second tool of the trade, is 600 grit sandpaper. **NOTE:** Paper ignites at 451 F, so make sure the iron is unplugged, and has had time to cool before using sandpaper. You will only use sandpaper if the tip has been abused by the previous technician, student, or co-worker.

### Tip Tinner / Cleaner

You won't need this if you've got some extra solder. I wouldn't recommend spending the money to buy it unless you have a high-end soldering iron (\$XXX.XX price range) for all intensive purposes, regular solder will work just as well for what we're doing.



### Image Notes

1. The corpse of SpongeBob SquarePants. (kidding) Actually, it's just a yellow soldering sponge. Most GOOD irons or iron stands come with one. They last a long time if you take care of them.

## step 2: Cleaning the soldering iron

This has been broken down into two different scenarios. Each scenario has its own technique for adequate cleaning and storage.

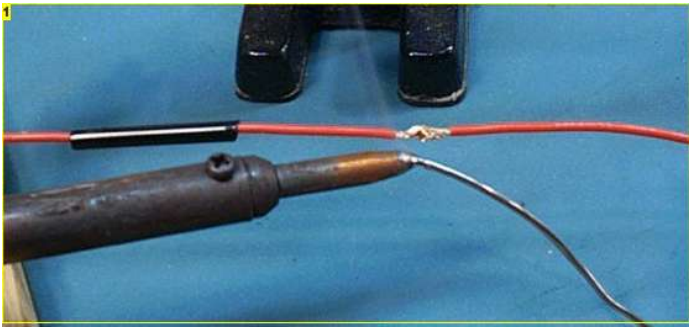
### Scenario 1: Someone left me with a cold & dirty iron.

This is common in some workplaces / college electronic labs, etc. If the tip of the iron is covered in gunk, it may not heat properly, even if you heat it up, and use the steps listed under **Scenario 2**. If this is the case, unplug the iron and allow it to cool. After the iron is cool, lightly scuff the surface of the iron tip with 600 grit (or higher) sandpaper until it begins to gain some luster again. You are not trying to remove metal, just the oxidation. (notice the tip of the iron in the provided picture)

### Scenario 2: My Iron is dirty from use, but still hot.

Remember that sponge from earlier? All you need to do is set your iron to the side and allow it to heat for a few moments (about 90 seconds is usually sufficient). Once the iron has heated, you'll start to notice some brown deposits on the tip. This is rosin. Simply take your iron, and flick the tip on the wet sponge (**WARNING:** do not hold the sponge in your hand to do this.)

We're almost done.. but not quite. Proceed to the next step.



#### Image Notes

1. Notice the tip of this iron, clean compared to the rest of the iron.

### step 3: Tinning the tip

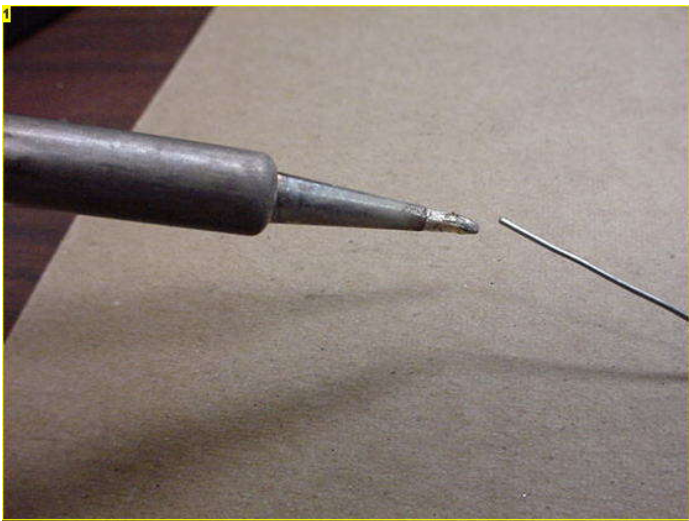
After cleaning the iron, it's a good idea to tin the tip. We will achieve this by allowing a thin coating of solder to cover the tip of our iron. This will protect the iron from oxidation as the solder serves as a sacrificial buffer zone against oxidation (it oxidizes rather than our tip oxidizing).

To tin your tip, use a tinning compound, available at RadioShack. If a tinning compound is unavailable, you can substitute this with regular electronics solder. I recommend a low temperature solder for this because you want the iron to cool fairly quickly, so you don't fry the solder onto your tip which would defeat the purpose of cleaning.

A properly tinned tip will look similar to the tip below. An instructable has been created by **royalestel** demonstrating the proper technique of tinning a iron tip. The instructable can be found [here](#).

A properly maintained soldering iron will give you years of flawless service.

THE END



#### Image Notes

1. A properly tinned tip should resemble this.

## Related Instructables



**Soldering tips and tricks** by Mr. M



**How to tin even the grungiest Soldering Iron.** by Tool Using Animal



**What not to do when soldering** by Ghondi



**Soldering to large metal objects** by T3h\_Muffinator



**How to solder** by noahw



**How to Solder Videos: Why is soldering difficult sometimes?** by CuriousInventor.co



**Musical Altoid tin** by Mr\_e



**Don't throw solder away** by neelandan



## Comments

25 comments [Add Comment](#)



**MasterJames** says:

Jun 2, 2008. 5:11 PM [REPLY](#)

\*looks to Liquidhypnotic...\* picky, picky, picky. \*G\*

There will be those that will nit pick everything you say & do in life... best advice for you about them is, ignore it. I don't always know the proper terms for things I do either, but I almost always get the point across. My 2 cents on this Instructable?? I give it 2 thumbs up. when you're trying to help make others lives better, who really give a ragweed about proper terms anyway?

Keep up the good work.



**Liquidhypnotic** says:

May 3, 2008. 12:00 AM [REPLY](#)

Actually, the phrase is "for all intents and purposes". Otherwise, good instructable.



**bustedit** says:

May 27, 2008. 11:18 AM [REPLY](#)

Well, Liquid, maybe he/she REALLY likes soldering, to the point that they have a fanatical allegiance to a clean tip, then perhaps it could be "intensive" care of an iron.



**Liquidhypnotic** says:

Jun 1, 2008. 11:52 PM [REPLY](#)

Yes.

Or maybe he just used an incorrect phrase.



**pyroman50** says:

Feb 26, 2008. 7:47 AM [REPLY](#)

Or right after you solder you could scrape it with a razer blade.



**Jezza Bear** says:

Jan 12, 2007. 7:58 PM [REPLY](#)

I am happy to say I have never been given instruction to soldering. Why did my soldering iron tip get a great big chunk eaten out of it after one board. I was told to put solder to tip! What am I doing wrong?



**idlegravity** says:

Dec 25, 2007. 10:28 PM [REPLY](#)

This sounds like a plating failure. Too much force applied to the tip will cause the iron plating to crack. Once the copper core is exposed, solder will erode it rather quickly. This hollows out the tip, which then collapses. A sure sign of a stress failure is a hollowed-out or jagged tip.

It's easy to think that pushing hard on the iron will increase heat transfer, but it really does more harm than good. The best ways to improve heat transfer are to use the biggest tip you can (to maximize contact area) and use a molten solder "bridge" between the tip and the joint.



**exponent** says:

Jan 12, 2007. 9:16 PM [REPLY](#)

Can you upload a picture of the iron somewhere? I've never saw the tip of an iron get eaten away.



**Jezza Bear** says:

Jan 13, 2007. 6:10 AM [REPLY](#)

OK, here it is. The whole tip has fallen off now, but it had a chunk taken out of the side and it crumpled in



**exponent** says:

Jan 13, 2007. 5:19 PM [REPLY](#)

Sometimes tips will overheat if the iron left on for long periods of time without soldering. This can cause the metal to loose a bit of its strength. However, I've never seen something this bad before. It almost looks like the tip melted off. I have no idea why this happened. Perhaps the iron is getting too hot because of a design flaw or defect.



**Jezza Bear** says:

Jan 13, 2007. 5:40 PM [REPLY](#)

Thanks for the feedback, it is a cheap iron for me to learn on. I bought one of these children's robots to learn how to solder components and I after one board of about 20 components you could see a hole appear on one side getting bigger and bigger. It has dented my confidence a little, but I shall have another go as it is one of those skills that is needed. Thanks for getting back to me



**BubbleDragon** says:

Jan 24, 2007. 2:41 PM [REPLY](#)

Mine did this too! I don't solder for electronics, though. I used it to make a bunch of microscope slide pendants, with soldered edges like in stained glass. I assumed the melted iron tip was because I was using lead-free solder, which has a higher melting point, and was really too much for my cheap cheap iron to handle. It's a \$7 range iron, so nothing too bad lost.



**exponent** says:

Jan 24, 2007. 8:58 PM [REPLY](#)

I'm beginning to think some of the cheaper irons have an alloy tip that isn't as strong as conventional steel, and thus through processes unknown (possibly galvanic corrosion) the metal weakens.

I managed to find a chart here [Galvanic Corrosion Chart](#) that may open some doors to this theory.



**oliver22** says:

Jan 18, 2007. 2:40 PM [REPLY](#)

Hi, I was wondering what watt your iron is, I got a 100watt from draper-not for electricians as the watt is way too high/15watts+ I think is better for light electric stuff.-but I have had the tip, what seems like melt on me. I have just written to them to see about returning it and I was wondering if yours was a draper iron too.....I will let you know what they recon if they come up with a cause.



**Jezza Bear** says:

Jan 20, 2007. 4:35 PM [REPLY](#)

Hi Oliver

It is a 15 watt one and very cheap. What you pay for is what you get. Maybe I need to get a better one, practice on simple things like joining wires and then move to more complicated scenarios



**bigpinecone** says:

Jan 15, 2007. 1:57 PM [REPLY](#)

mine has a chunk taken out too, but i can't figure out how to get that little extra bit of solder out of it



**exponent** says:

Jan 15, 2007. 2:46 PM [REPLY](#)

There's a good chance that when the tip was cast, a void or air pocket occurred in the casting.



**ColeP** says:

Jan 18, 2007. 2:52 PM [REPLY](#)

Well that is some good advice, but all that falls by the wayside of the 100% best way to take care of your soldering iron. And it is most simply this:

Go buy a box of that bulldog steel wool.

Keep it beside your soldering station.

Everytime you take the iron out of the receptacle, with a few quick strokes ala knife sharpening, run the steel wool over the tip.

There you go. Always perfectly clean, perfectly tinned soldering iron.



**exponent** says:

Jan 18, 2007. 6:10 PM [REPLY](#)

Steel wool is pretty helpful, but it will never replace the sponge => Always good to have some steel wool around though because it does a great job at cleaning the iron.



**Myself** says:

Nov 15, 2007. 8:37 AM [REPLY](#)

I've had stupendous luck with cardboard, actually. It's abrasive and absorbent enough to rub the crud and oxides right off, but it's soft enough that it doesn't wear down the tip cladding. Try just stabbing the hot iron tip through the side of a corrugated cardboard box a few times, I think you'll be surprised! It's also oddly cathartic. :)



**Darkshot** says:

Sep 27, 2007. 3:30 PM [REPLY](#)

cool thakns i just cleaned mine and it was free! thanks alot :D



**!Andrew\_Modder!** says:

Jul 20, 2007. 3:03 PM **REPLY**

hmm. My Iron is a 30-watt radioshack model, which i just sponge off and after like 15 times of using it i sand down the tip to get everything off, then later mabe buy a new tip for like a doller :-)



**tnraven** says:

Jul 16, 2007. 3:52 AM **REPLY**

Rosin core solder that builds up over time can actually eat away at the tips. Acids and whatnot form and cook on the surface of the metal. That combined with cooling/heating can cause the metal to become soft..



**Trust\_in\_Dust** says:

Jun 29, 2007. 8:15 PM **REPLY**

it's worth mentioning that you don't need to buy a special 'soldering sponge' per se, which are often overpriced. any cheap sponge will do as long as it's made of cellulose and not plastic.



**cyclotour** says:

Feb 10, 2007. 4:48 PM **REPLY**

Maintenance of tools is an important item for the brain of an instructable to think of and act upon!

Many years ago I lived overseas in a "developing nation." International organizations would provide enormous sums of money to build extraordinarily large infrastructure projects. Sometimes they would give small health centers, schools or communities vitally needed facilities & equipment such as water wells, water towers and basic farming equipment. All these was very good except that the instruction booklets were not provided or no one made certain that someone in the community was responsible for and knew how to maintain and fix the equipment. After a short time the equipment would not work, many times simply because no one put oil into the engine or changed the brushes on a motor.

The old time colonials who lived in the village would say, "You ... the ... with a noun for a nation or a continent with a "...ans" suffix break everything you touch."

The locals did not break anything, the colonials or the international organization simply forgot to tell the receivers of their largess that maintenance had to be performed on the machinery. Just like they maintained the thatch on their roofs or fences.

The assumption is by folks in the developed world as well as in the "developing world" that maintenance is really not needed. "Just buy another one!"