

Faceup and Modding series  
Dollfie Dream edition

# Additive Modding: Welding Edition

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## INTRO

This is a form of modding that uses a soldering iron and welding technique to heat and bond vinyl scraps to the head. [Tsutomu-san](#) on Youtube has heavily documented the process, however most of it is in japanese. I have linked his channel for further perusing.

Disclaimer: I am not a professional, many of my techniques and methods are derived from Tsutomu-san and my own experimentation to achieve consistent results.

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## Vinyl Welding Properties

There's a couple of key elements to keep in mind. I'll put them in a short list with more in depth explanations below.

The pros:

- mods will not crack, discolour (yellow), nor separate from the head.
- is a perfect colour match
- easy to access, no need to import colour matched resin/epoxy clay.
- is not toxic or detrimental to health (still recommended to be in a ventilated area)
- Overall lowest cost out of all modding techniques.

Cons:

- requires a high degree of control
- extremely time consuming to do the initial additive portion, as well as post processing (sanding, redoing/filling in holes)
- discolouration due to heating can occur.
- dust can be trapped easily in the mod during welding
- need to know how to maintain a soldering tip/machine.
- Initial cost to try can be high if you cannot borrow a soldering machine

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## Tools and Materials

These are the list of tools and materials needed. Some of these are optional and some are mandatory.

## 1. Vinyl Scraps (from a head!!)

These are relatively easy to obtain. Just order a closed eye type head, and cutting out the eye holes will give you the perfect colour match to the head.



For example, my collection of scraps:



If you don't have any (or ordered the wrong type of head) you may scale some off the top of the head like so. Just be careful not to shave off too much or else your headcap will be too loose and not stay on.



At this point you may be asking, why not vinyl from extra parts of body scraps? Unfortunately I do NOT recommend using vinyl from body pieces (which you may have a lot of) as it is often much softer and a different density than the original head vinyl. On a surface level, it burns much faster and melts differently than the harder head vinyl, and can lead to inconsistencies while sanding and smoothing down. If you move onto the faceup process, you may find that putting pressure on those areas may result in sealant cracks. As such I recommend only using those body pieces to test weld.

## 2. Soldering Machine and soldering tips

For welding I've only owned a soldering machine, though I've heard of (and known) others to use wood burning pens. I highly recommend to invest in a quality machine and not cheap soldering pen, as those are usually not great at temperature regulation nor does the pen usually heat up low enough to melt (and not burn) vinyl. Temp. regulation is very important as 3-5 degrees of fluctuation will be enough to burn the vinyl you are trying to weld. Even for pens with temperature readers I recommend a full machines as the accuracy of the cheap pens are questionable.



For soldering machines its highly suggested to have one with a temperature reader. I recommend the Hakko fx888d! Its extremely well made and has served me well to mod 2 years worth of heads.



For soldering tips I suggest a 3mm chisel tip. It's small enough to sculpt detail whilst big enough that the tip does not immediately burn the vinyl stuck on it. You MUST buy an additional tip as the stock tip that comes with the soldering machine is not suitable for vinyl welding unless the machine comes with a variety pack of extra option tips.



Its also possible to buy a variety pack off amazon and see which one suits you best.

### 3. Sanding Tools

-Sanding paper (required): you will need grit 200, 400, and 800. You can use any but again I recommend Godhand Tool as it sands very cleanly on vinyl.



-Diamond needle files (optional): optional yes but honestly if you're modding you've probably already got these cuz they're needed for mouth mods lol. They're also usually only 10 bucks a pack so go crazy.

-Sanding pen (optional): optional but very highly recommended if you plan to do this often. Saves you from acute wrist pain.



I recommend david d400 (shown above), Mr. Polisher/polisher pro, Proxxon 28594 Pen Sander PS 13 (thanks F15 for the help!)

-Eye sanding stick Beveling tool from volks (optional): Not really needed always but sometimes you just wanna make the eye sit better in the mod. You don't really need this as you can always test fit with an actual eye (will be shown later in the doc)



4. Crafting/Xacto knife: Needed to cut eyeholes and chop the vinyl to small pieces.
5. Tweezers: to help pick out dust and hold onto the vinyl flash while it's being cut into small pieces.
6. A paper pad: to wipe your soldering tip off; vinyl will eventually burn and get stuck regardless of temperature.
7. Vcolour thinner/THF (VERY optional): Since this is illegal or you need a license for some countries, this is an optional step to smooth out the sanding lines. I don't recommend this at all as THF is explosive if not stored properly.

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## Mod Process

The exciting part! Maybe you skipped here? I'll start at the beginning anyways because its important to follow this process for success.

## Prepping the head

1. It's recommended to wash the head in hot water and colourless, scentless dish detergent. This is to get rid of any mold release that remains on the head, if this process is not completed it will still adhere but maybe just not as well, some bits may come off after it is cooled or not be completely melded into each other as it does when the vinyl is nice and clean.
2. Dry with a clean paper towel and let dry for 6-12 hours. Vinyl doesn't adhere well if water is present either.

## Welding onto the head

1. Start by chopping up the flash cut out from the eyes. They should be in very small pieces, preferably around 1mm or even smaller.
2. Turn your soldering machine on with the appropriate tip. Temperature varies a LOT by the size and shape of the tip used. I personally use a 3mm chisel tip for all mods as it heats very evenly. For the 3mm chisel the appropriate temperature range is 320°F to 340°F. If you use a bigger tip, it will need a higher temperature and vice versa. Please do testing on vinyl scraps to determine which tip you prefer as well as temperature ranges to ensure you do not burn the head you are working on. Vinyl burns VERY easily!
3. Take a piece and adhere to the eyehole! Take it slow and smear it thinly onto wherever you want to build up or add onto. Remember to occasionally use an eye to test fit your mod!





4. Don't forget to add support to your mod. You will need to adhere scraps to the inside of the head (back of the mod). You will have to do this via the back of the open head. This is an important step, you will go back and forth between adding to the front and back.



Remember to occasionally wipe your tip on the paper pad to clean it of burnt vinyl.

5. After you have built up enough vinyl and are satisfied with your mod, it is time to sand!! Make sure to double check your symmetry.



Asymmetrical mods are also done, but they are not as common.



## Sanding your mod

Sanding is easy. Just work your way from 200 grit to 400 to 800. If a bubble or unattached part of the mod comes apart during the sanding, just continue until you are done sanding the other parts. You will need to rinse and dry the head again as there will be a lot of debris from sanding the head down. Assess the part and re-weld the part or add more vinyl and repeat the welding-sanding process as needed.

Something important to note: while sanding can fix a lot of issues such as bumpiness, trapped dust or other inconsistencies, you must remember that you CAN overwork a head by doing so, leading to a weaker (thin) head and structural integrity issues that can cause the MSC layers sprayed onto the head to crack as it flexes too much. I recommend you to only sand and remove areas that have been welded onto the head as much as possible while keeping the original vinyl intact. Sanding to blend is necessary but the majority of leveling should be done with the solder.



And you are done!! You should have a decent mod following these steps.

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## Issues and concerns

Help! my mod is discoloured:

Turn your temperature down or swap to a different tip. Remember to clean the tip on the paper pad every so often. If your mod is discoloured in too many places, remember it's okay to start over. Cut off any discoloured parts and redo it.

It's smelling funny:

Please ventilate the room (window open, fan on). I recommend having a mini fan on your desk to move air around you.

How to get it smooth without using Vcolour/THF?

Glad you asked. It's a combination of sanding well AND making sure all the vinyl is adhered properly, meaning it had time to melt properly and stick all the way to the vinyl under it. Go slow, don't rush.

Please let me know if you have any other questions!

If you've made it all the way here, thank you for reading!

For questions or concerns you can contact me on instagram or discord.

Discord: gweneveryn

Instagram: <https://instagram.com/gweneveryn>

Special Thanks for Sklurk, F15, and everyone else who had helped me on the mod journey. And ofcourse Tsutomu-san, for introducing me to this method!