

LT-UNBRICK

INSTALLATION MANUAL FOR HEADER INSTALL

Version 1.1 - 8/3/2024

- TOOLS REQUIRED/USED DURING INSTALL: (Amazon links provided)
- DESOLDERING IRON: <https://www.amazon.com/dp/B007Z7MNEM>
- TOOLS: <https://www.amazon.com/dp/B083LQS8QF>
- FLUX: <https://www.amazon.com/dp/B07DCD9M3P>
- COMPRESSED AIR: <https://www.amazon.com/dp/B0BPHPVP4X>
- DESOLDERING BULB: <https://www.amazon.com/dp/B012EIYHWC>
- DESOLDERING VACUUM: <https://www.amazon.com/dp/B01K72SBWY>
- DESOLDERING WICK: <https://www.amazon.com/dp/B09B9DF96D>
- ESD GROUND STRAP: <https://www.amazon.com/dp/B08CXQN86W>
- KESTER SOLDER: <https://www.amazon.com/dp/B095SXBK5Z>
- SOLDERING IRON PREFERREDLY 15-WATT OF YOUR CHOICE



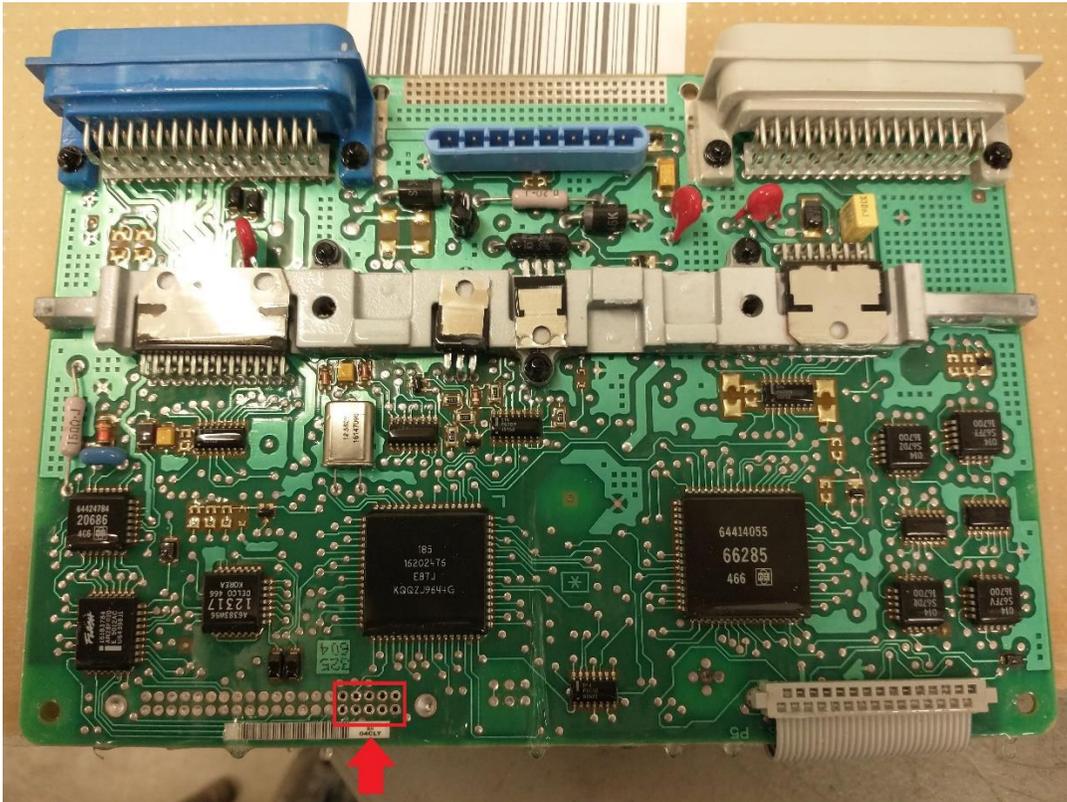
NOTE: PCM is susceptible to ESD (electro static discharge) Please ground yourself with ESD strap or touch something metal before handling pcm.

LET'S BEGIN:

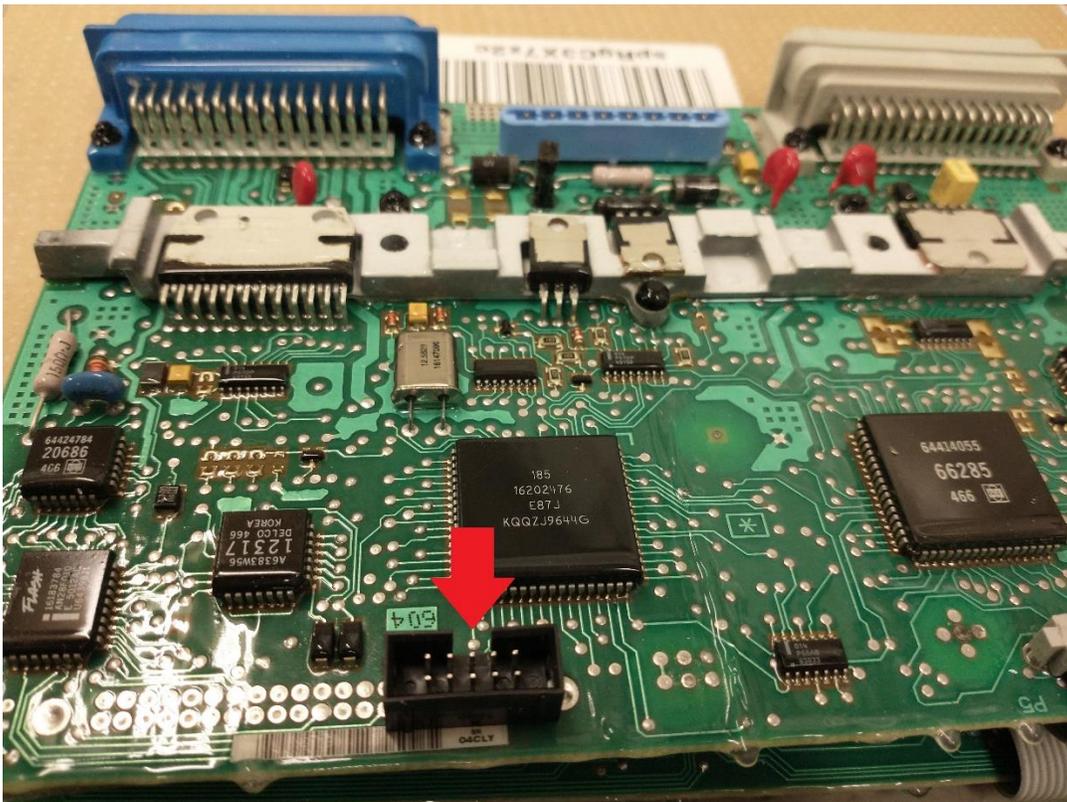
Disassemble the pcm and get it on your workbench. I like to keep the boards separated with a piece of cardboard the entire time so they do not touch each other. The ribbon cable that connects the boards together is fragile, be careful not to stretch or bend this cable much during this operation.

Let's start by showing the location of the headers on the T and E sides of the board:

T-Side (Blue and Gray Connectors)

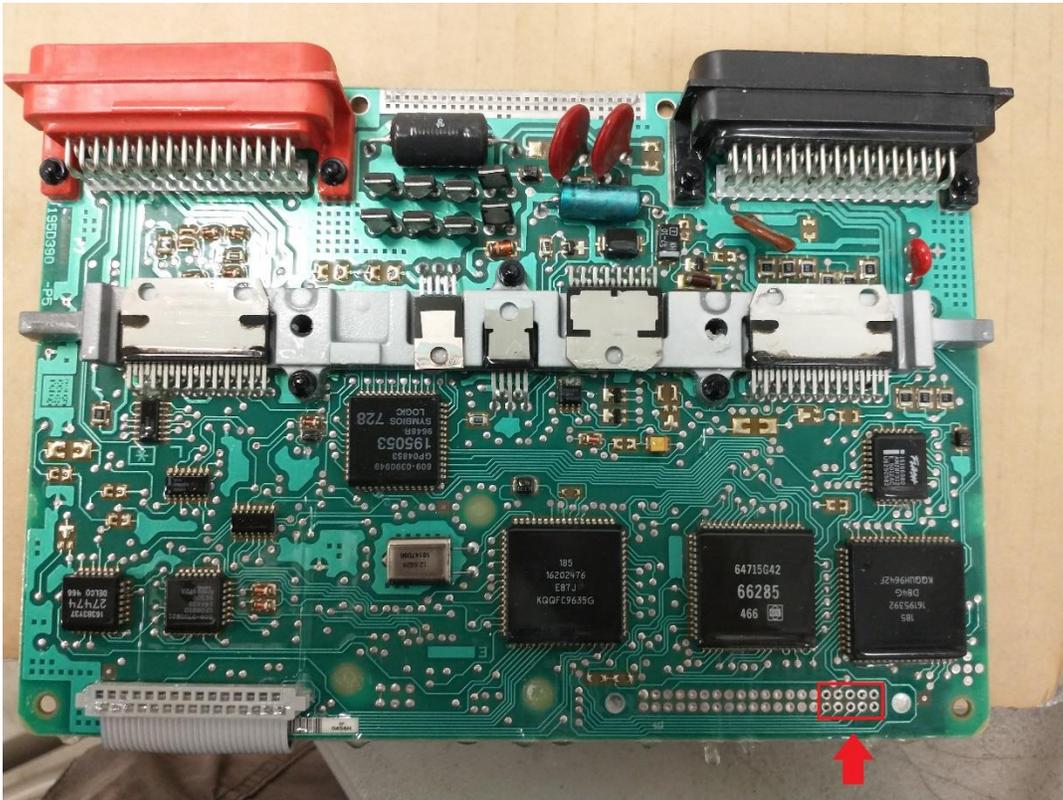


TAKE NOTE ABOVE OF THE CLEANED OUT HEADER HOLES (LAST 5 TOP AND BOTTOM)

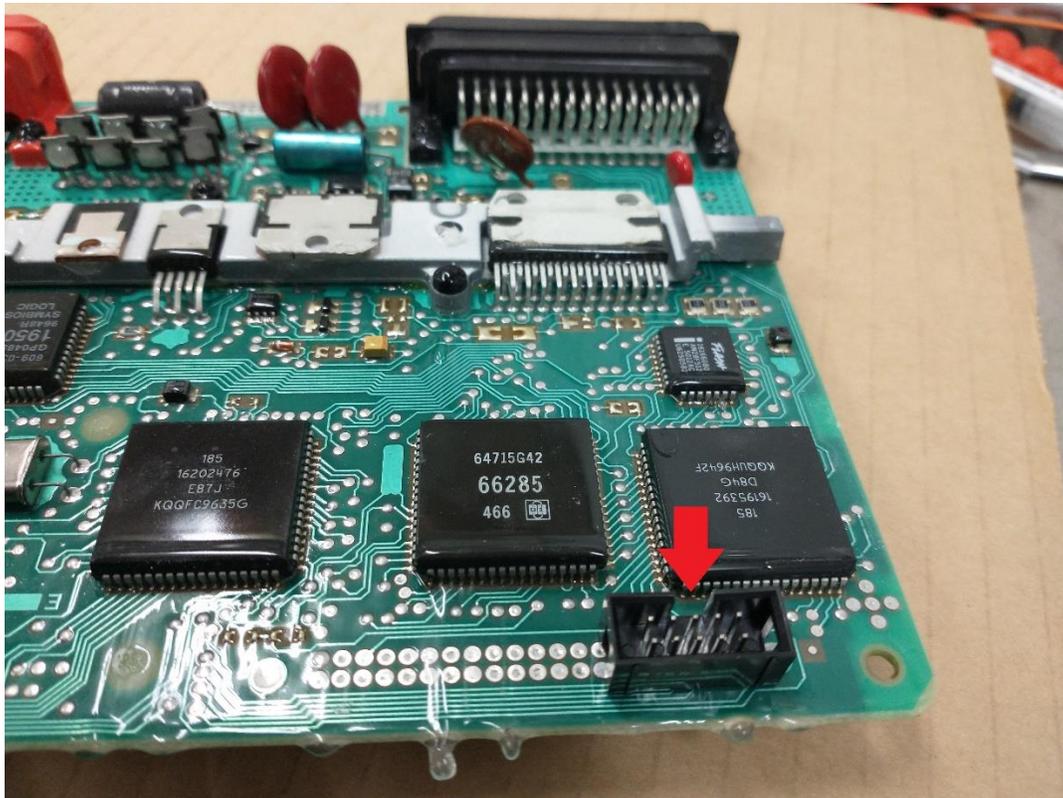


TAKE NOTE ABOVE OF THE ORIENTATION OF THE HEADER WITH THE RED ARROW

E-side (Red and Black Connectors)

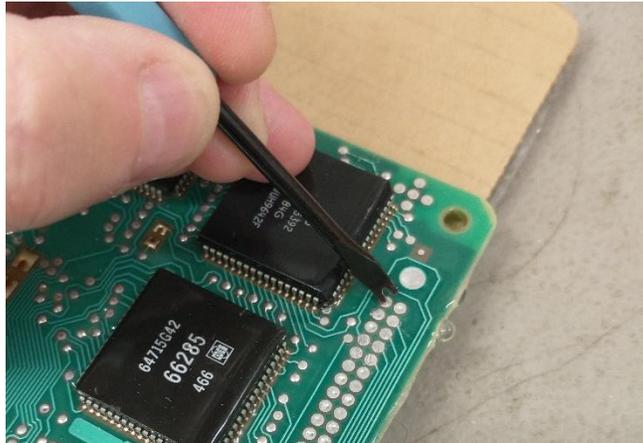


TAKE NOTE ABOVE OF THE CLEANED OUT HEADER HOLES (LAST 5 TOP AND BOTTOM)

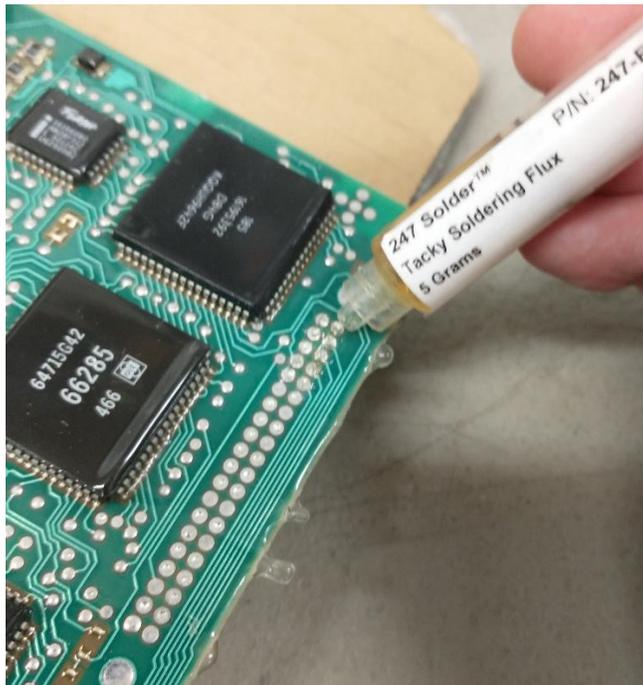


TAKE NOTE ABOVE OF THE ORIENTATION OF THE HEADER WITH THE RED ARROW

You'll want to start off by cleaning the protective coating off the location you want to install the headers. This will be both front and back sides of both of the PCB's as you need to be able to suck the solder out of the hole so both sides will need to be cleaned. I use one of the tools provided in the toolkit I listed above to scrape the coating off the header pins then use a toothbrush to brush the area clean:



Next apply some flux on the holes you plan on pulling the solder from. It helps the de-soldering iron connect to the solder and heat the area to pull the solder from the holes. If it seems like it doesn't work the first time, re-apply and try again. You will get the hang of it.

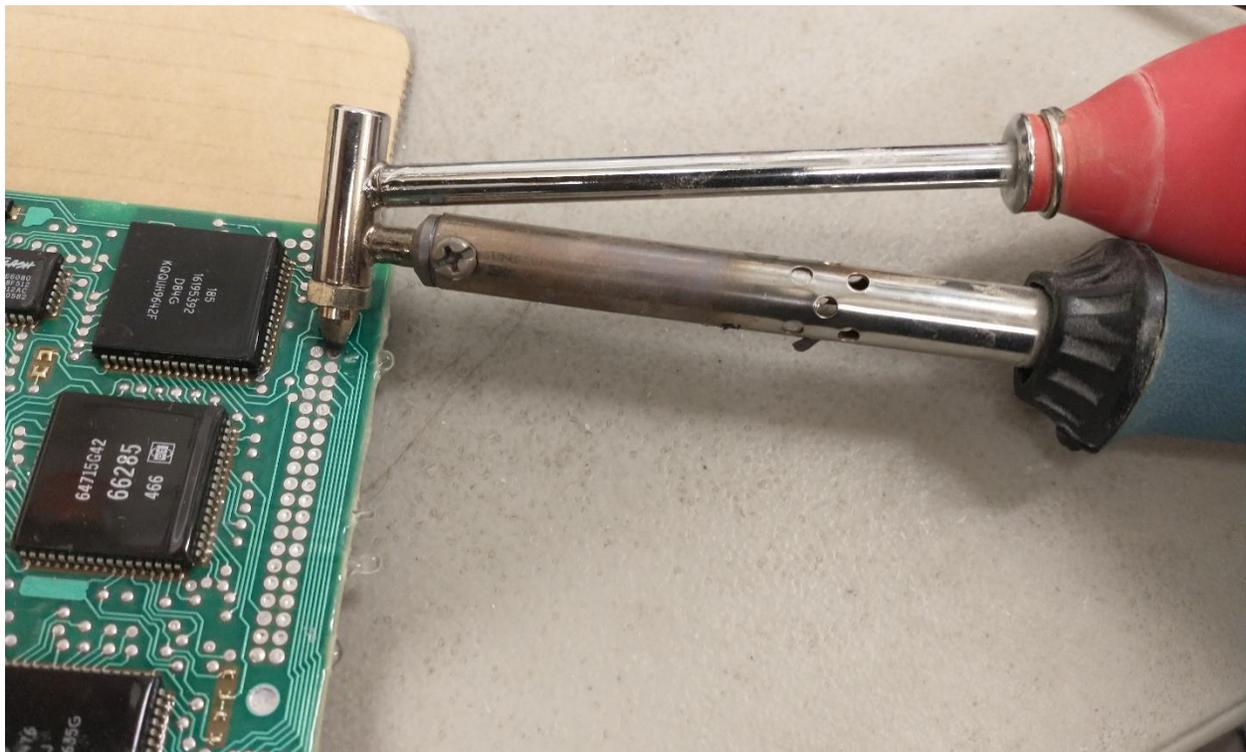


Now it's time to start pulling solder from the pcb board. Let the de-soldering iron warm up at least 5-10 min before starting this process. I like to depress the bulb before applying it to the pcb nice, flat and level, let it sit on the pcb 5 or so seconds and then releasing the bulb to pull the solder from the pcb. If it does not pull it the first time, re-apply flux and try again. Sometimes moving around slightly will help conduct heat to the area before sucking the solder out of the hole and leaving the heat on for 5-10 seconds while moving around does the trick! Once you clean a hole out, press the bulb (blow) very quickly to clean out the tip of the de-soldering iron into the trash can or tray before moving to the next hole.

If you chose to use wick or a suction bulb, you will want to use your iron here and wick/bulb to clean the holes out. If you are unfamiliar with wick or the suction bulb, there are plenty of videos on [YouTube](#) showing how to properly use a soldering iron and wick to do this method as well. I suggest go watch a few methods first and come back when prepared.

NOTE: The holes must be cleaned out fully to push the header into the pcb. You want to be able to push the header in without any resistance. More on this below.

(Picture shows at slight angle for reference only)



Now that you got the hang of it you should have some cleaned out holes that look like this:



This is also where the tools come in handy I provided a link for. In the toolkit there is a tool that is pointed but has 4 squared off sides. This tool works great for slight rounding of the holes if there is some solder left behind in the holes and preventing an easy header install. Be careful with this tool and do not apply much pressure, just stick in the hole and twist a little bit to clean it out. Wick is also a great option here to clean out the holes. You can see in this picture above on the left hand side second hole down, there is some residual solder still in the hole. This is where the tool or wick plays its part.

REMEMBER: After clearing the holes out of solder you will want to clean both sides of the board with isopropyl alcohol to remove any flux and a can of compressed air to remove excess solder bits that may be left over from clearing the holes out before installing headers. Again use either a toothbrush or q-tips to clean the board. I recommend 91% isopropyl alcohol for its low water content and quick drying capacity. Cleaning with isopropyl alcohol and toothbrush/q-tips during each step/process is a good practice so keep that in mind. Using the can of compressed air also works good for drying the pcb from excess isopropyl alcohol. Do not touch the can to the PCB for any ESD shock or shorts.

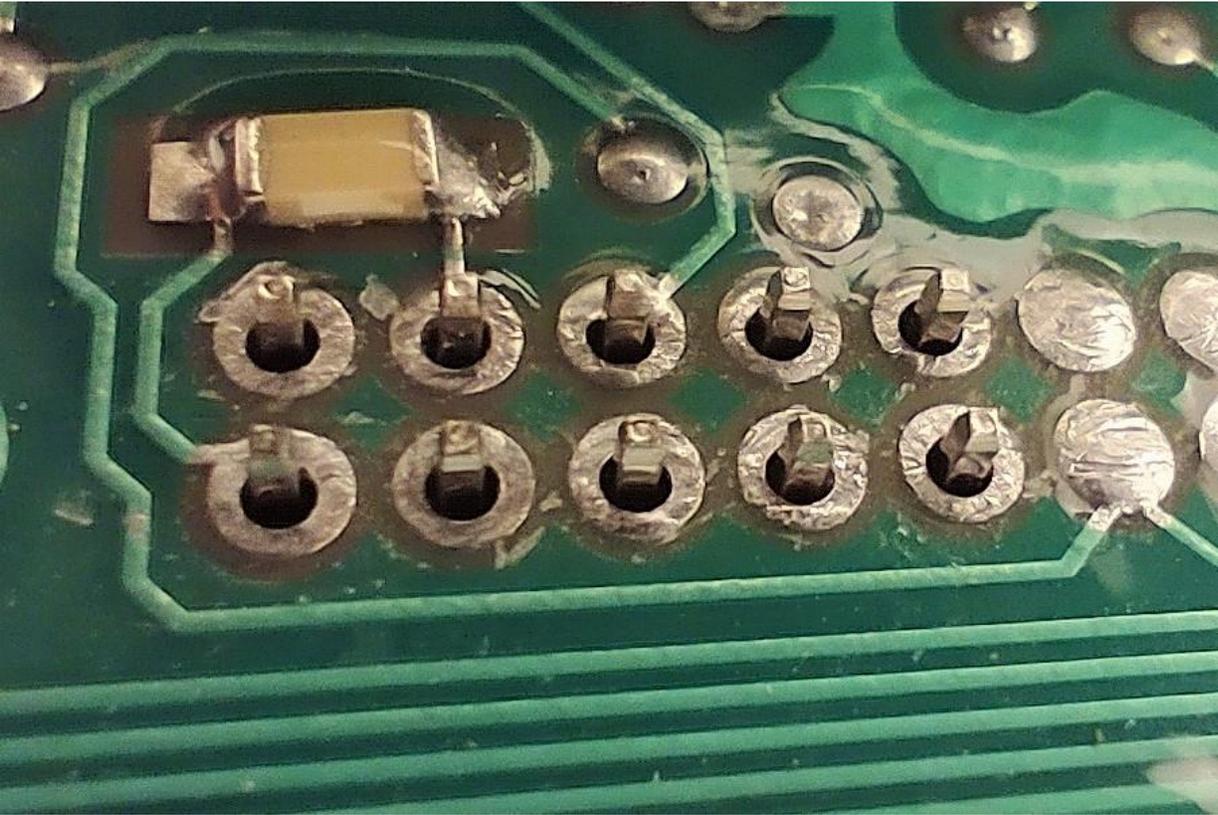
Now you are ready to install the headers.

REMEMBER: ORIENTATION MATTERS!

The opening of the header should face the pcm wiring connectors as noted in the first 4 pictures above. The header should freely or very slightly push into the pcb with little to no force! If you have to force it, it's not cleaned out good enough. Once the headers are installed, you are ready to solder them into place:



They should have protruded out the bottom of the pcb:



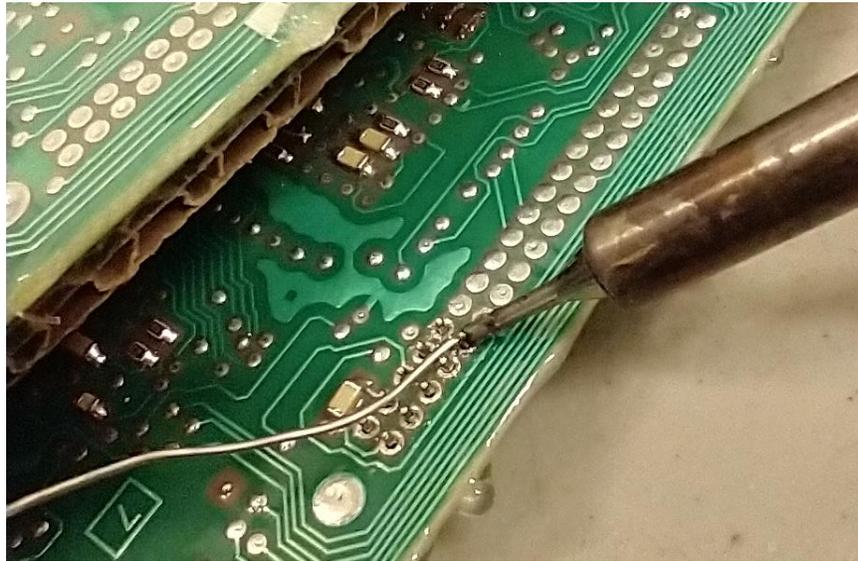
Apply flux to the pcb by dabbing onto each header pin:



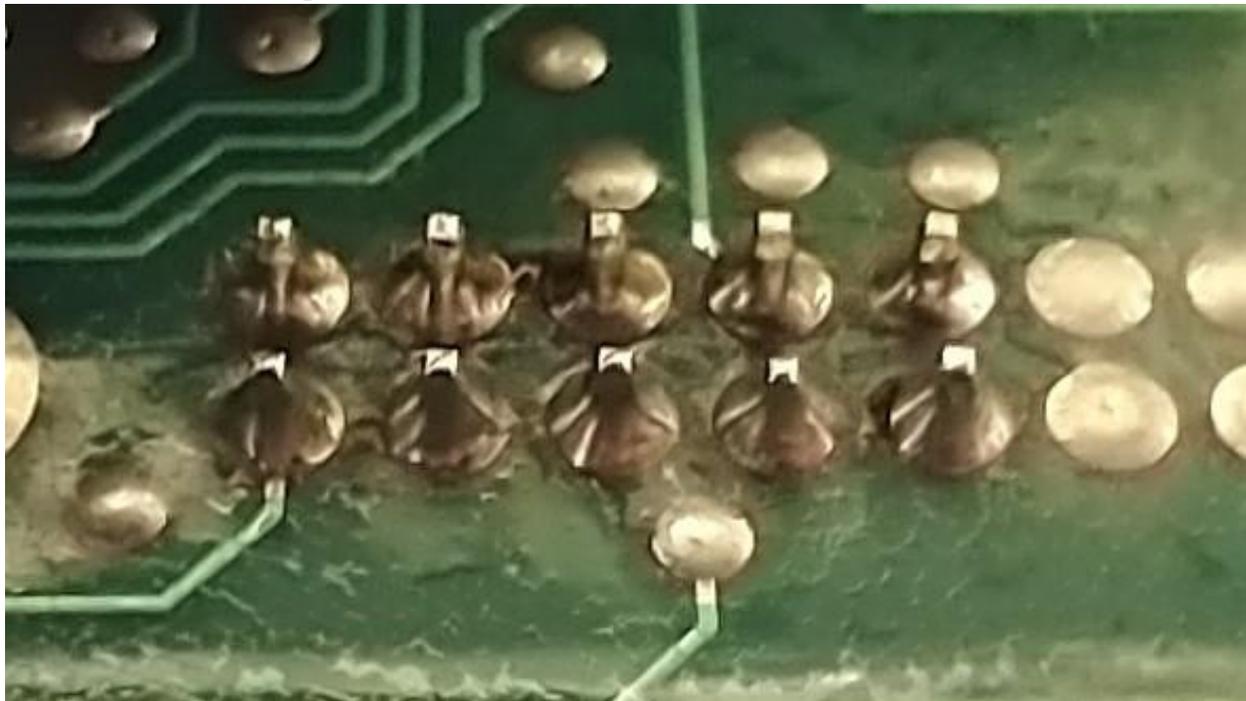
Also in this picture above you can see the headers orientation. The opening is facing away from the pcb edge and toward the pcm wiring connectors. This is the same for both T & E sides. If you get it backwards, pcm **DAMAGE WILL OCCUR** once you attempt to use the LT-UNBRICK tool and RESET Tab that is included in this

kit. If you are unsure, go back to the beginning and look at the first 4 pictures **VERY** carefully.

Now that flux is applied, it's time to solder them into place:



Once you are done soldering, make sure none of the pins touch one another. Visually inspect them and if you are uncertain if a pin may have connected with another pin you can ohm/continuity meter check for shorts. None of the pins should connect to each other. Now use a bit of isopropyl alcohol and a toothbrush or q-tips and clean the flux residue off after you are done soldering. Once completed it should look like this:



Congratulations, you have successfully installed your headers and now ready to use the UT-UNBRICK tools and repair your bricked pcms! Please refer to the LT-UNBRICK user manual for further instructions.