

Replacing Your Heating Element In ECM/Profitec Heat Exchange Machines

Introduction

Replacing the heating element in the ECM/Profitec Heat Exchange Machines can be a challenge, however, we've got you covered with a simple technique that can be used with similar machines such as the ECM Technika (Profi), Mechnika (Profi, **NOT Slim**), Elektronika (Profi) or Profitec Pro 500 and 500PID. The machine used as an example in this technique is the ECM Technika IV Profi. Please refer to the 3 key notes below before reading on.

⚠ Please note

- 1) Be cautious when working with these lines. They are copper and very malleable, so if you apply too much pressure to them when removing/tightening they can bend/twist/sheer.
- 2) Some of these nuts can be hard to break free, you may need to do what's called, "shocking" with your wrench. This is where you place a wrench on the nut you're looking to break free and hit that wrench with another object. Another wrench can be used to do this.
- 3) The type of heating element used has changed; it looks different. If you have an older style machine, you may have a long skinny element, whereas the new ones will be a short, coil-shaped element.

Tools You Will Need:

10-inch adjustable wrench
12mm wrench
13mm socket/wrench
17mm wrench

Heating Element(s):

ECM/Profitec Heating Element (SKU: US1000 for ECM Profi Models/Pro500/500PID)
ECM Heating Element for **NON-Profi** Models (ECM-US1003)

Heating Element Gasket:

ECM/Profitec Heating Element Gasket (SKU: ECM-P9013 for ECM Profi Models/Pro500/500PID)
ECM/Profitec Heating Element Gasket (SKU: ECM-P1001 for **NON-Profi** Models/Technika/Mechanika/Electronika)

Draining Your Machine:

Before removing the housing and jumping right in, you will need to drain the boiler. Use the 10-inch adjustable wrench to remove the mushroom nut from the group head. Make sure you wrap the mushroom nut or wrench in tape or cover them in some way when undoing to avoid scratching or damaging the group. You can follow our video below for a draining demonstration:

[How To Drain A Heat Exchanger](#)

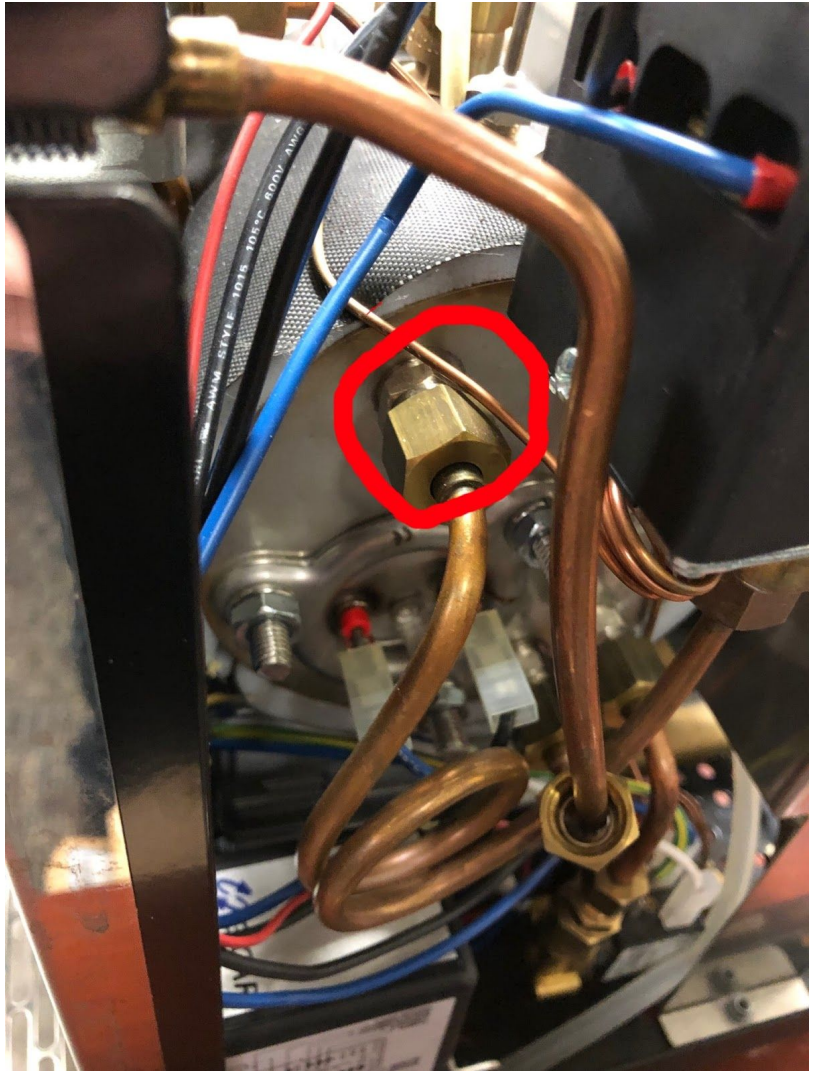
Start by removing the casing from the machine. Once you've got the case off, the heating element will be on the right side of the boiler. You should be looking at something similar to the photo below:

Depending on which machine you have, you may not be removing all of the same hard-lines. Machines like the Profitec Pro 500PID do not have as many hard-lines as the other machines in the line-up, making them slightly less intensive to take apart.



Again, before jumping in, take a quick look at how your hardlines are situated. Some of them will need to be removed before others, as they might block access to nuts to get other lines off as well. Here is an example:

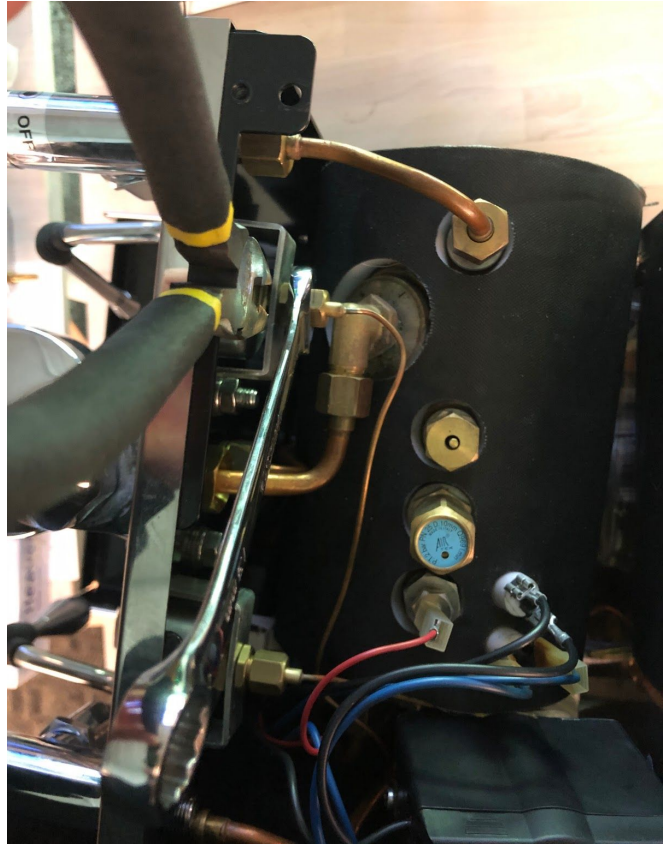
You can see that the smaller hard-line, circled in red, is preventing you from undoing the other nut. You would need to remove the small line before you can remove the larger one. In this case, we'll start here for our disassembly.



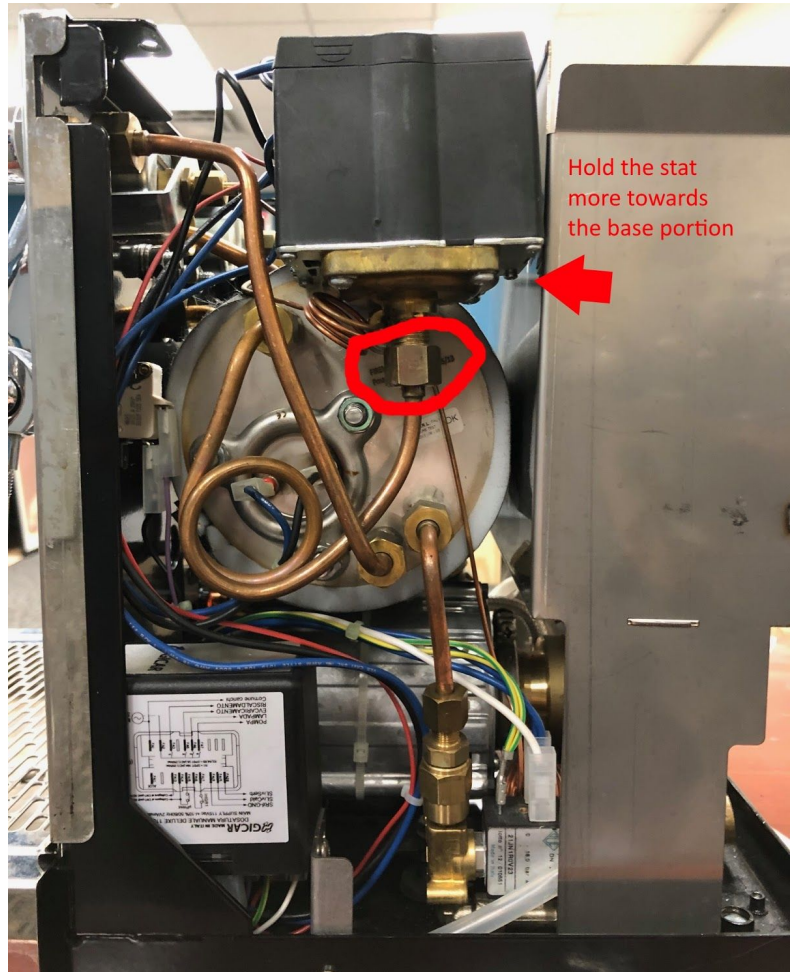
If we follow this line back, it will lead to our steam gauge. From there, brace the square on the back of the gauge. You can use a thin wrench or pliers.

Undo the nut circled in the picture.

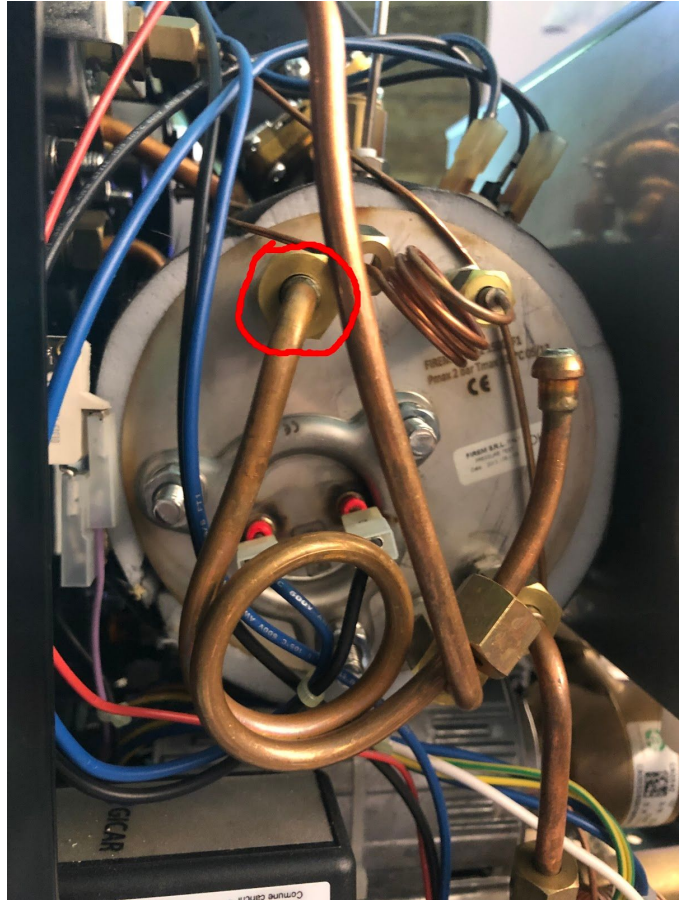
This should give you enough space to move the line out of the way so you can access the nut we referenced in the example earlier. To undo this nut, you will need your 12mm wrench.



Now that you've got that undone, move the pressurestat out of the way. You can hold onto the body of the stat, and undo the nut that holds onto it. You can leave the wires connected and rest it on top of the boiler.



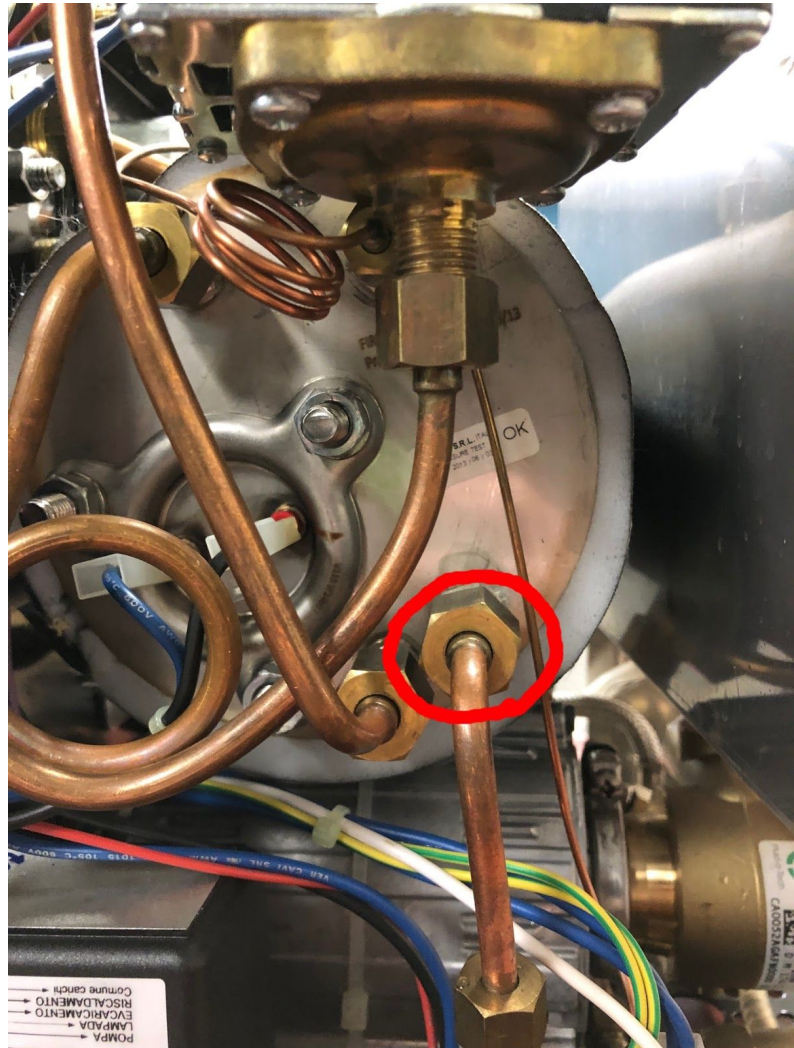
Once that is removed and set aside, remove the hard-line that was connecting to two. While you're in there, I would also recommend removing the other end of the steam pressure gauge. It can get in the way of undoing nuts later on. Use your 17mm wrench to remove this line, and the 12mm again to remove the other end of the steam gauge line.



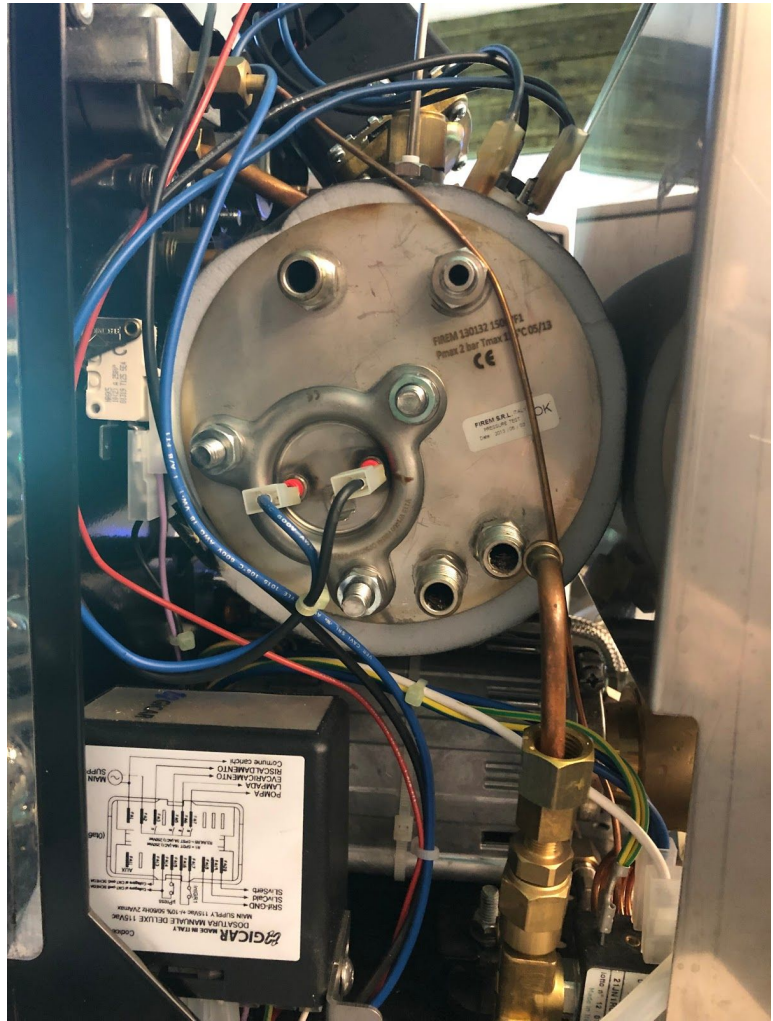
Now you'll need to remove your hot water valve hard-line. This is another line that will have a nut in the way and will prevent you from removing it. You can start by removing the nut at the back of the valve body first. Use the 17mm wrench.



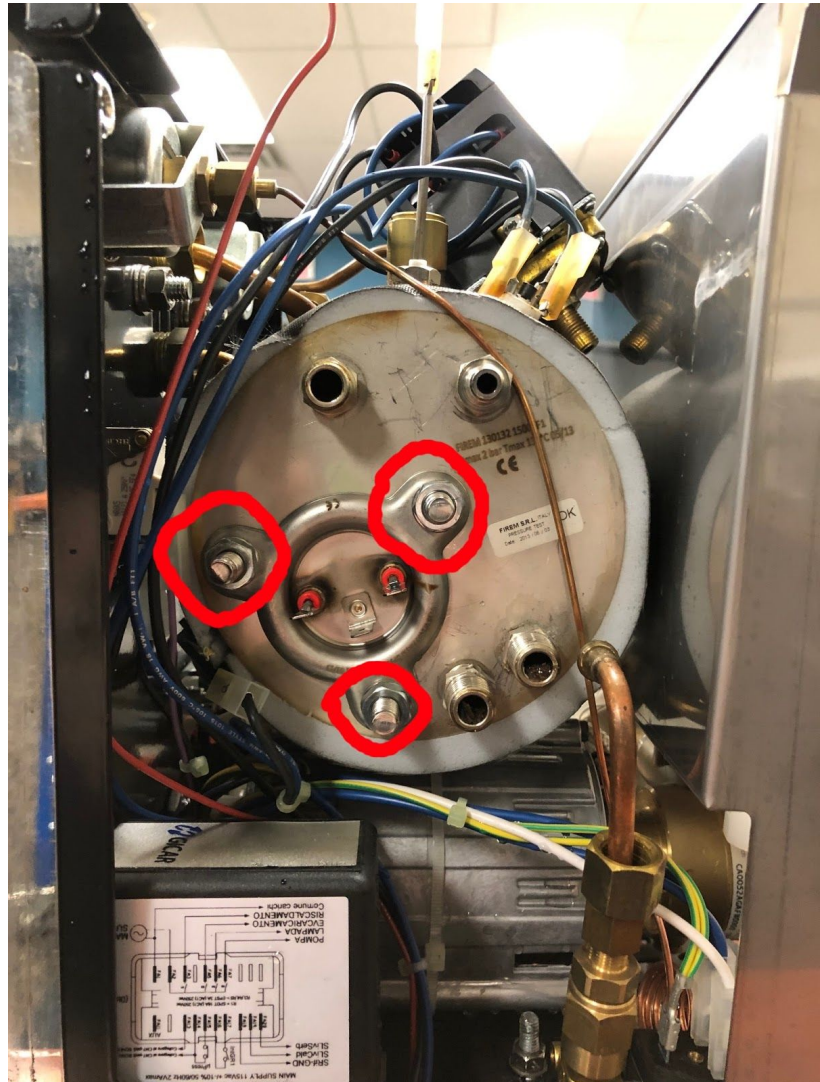
When you follow this line back to the other side to remove it, you'll run into the nut we mentioned earlier. You shouldn't have to remove the whole line, just undo the top nut with your 17mm wrench so you can gain access to the other side of the hot water valve hard-line.



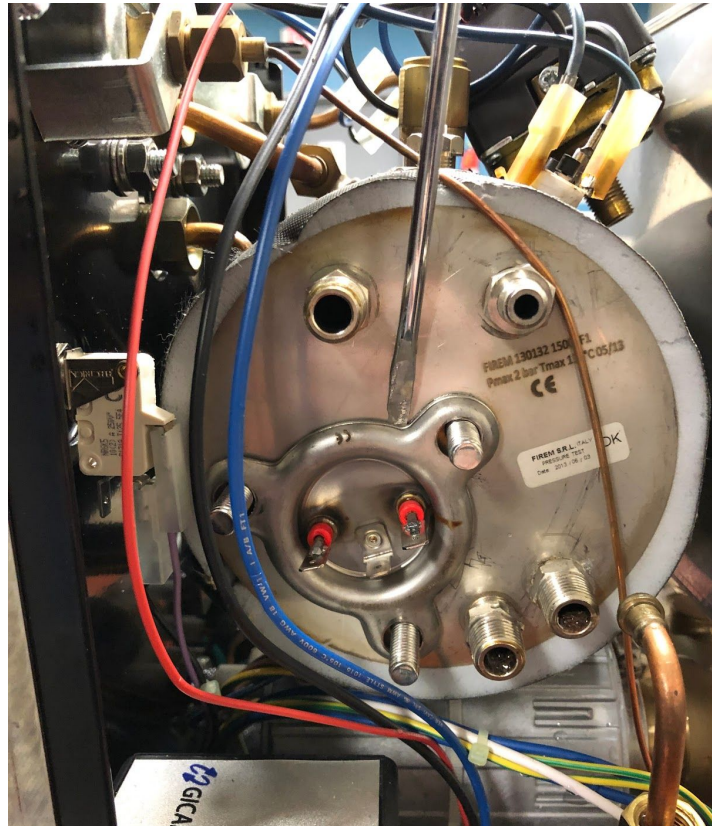
With that undone, you should now be able to remove your hot water valve hard-line. With everything undone and off, your boiler should now look something like this:



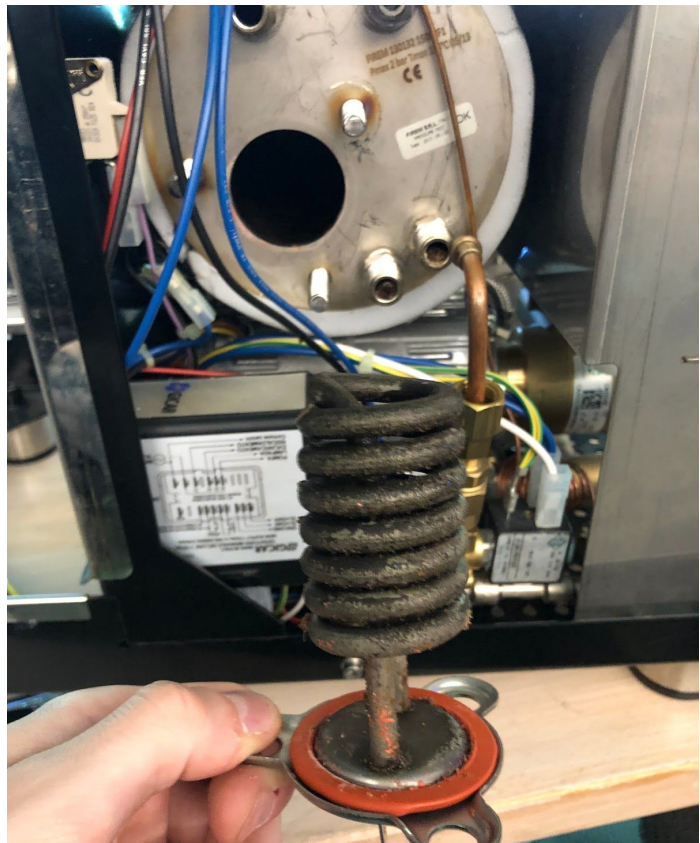
From here, label or take a picture of where your electrical leads go before removing them, pull the two electrical leads off of the heating element bottom/boiler. Once you've pulled those off, it's time to remove the heating element. All you need to do is remove the 3 bolts that hold it in (circled below). Use the 13mm wrench.



Once you've got those removed, the heating element should be able to slide out. You may need to work it loose at first with a flat head or something similar. Gently wedge the flat head in between the heating element flange and the boiler, and lightly wiggle around - like opening a paint can.



Slide the element out, you should now be looking at an open boiler.



The old element can be disposed of if you're replacing it, along with the old gasket; do not re-use the heating element gasket. The gasket might need to be worked off of the element and can leave a little bit of debris. Just make sure you've cleaned the element of any debris before you put it back in. While you have the element out, it would be worth looking inside the boiler to see if there's any build-up. Now would be the time to do any cleaning in there while you've got the element out, and the boiler drained. Once you're done cleaning, it's time to put the new element back in, or put your new gasket on and put your element back in. The gasket slides over the element as shown:



Since this is one of our test machines, this picture is just for demonstration. Here you can see the orange debris left from the gasket on the heating element itself. That is the reference debris that you want to clean if you are reusing your heating element.

Once the gasket is on, slide the element back in. When you're tightening down the nuts to secure the element, do it similarly to if you were putting lug nuts back on a car wheel. The gasket can sag, and you don't want to pinch it between the boiler and the heating element. Put the nuts back on first by hand to secure the element, make sure again that the gasket is not visible at all from the outside. If everything looks clear, begin tightening the nuts. You will want to use a "mechanics tightening"; tighten the nut until it's snug, then give it one last tighten to secure it down. Reattach the electrical leads to the heating element, and reassemble the machine. You should now have your heating element changed, and it'll be up and running.