

Pro412 Fuser Repairs... NOT disposable!

Pro412, M15, M15i, C20, M20, M20i, WC312



Once again, a fuser has inspired me to write... ah yes, here's another module out of which Xerox has chosen to spare only some of the parts... no doubt with the idea of doing their own rebuilding or perhaps with the idea of making a buck on simply selling the modules straight away. The good news is that some non-spared parts (including the Fuser Roller) are now available... enough to make it worthwhile to hold onto the used fusers as you replace them... so you can repair them at the comfort of your own work bench to sell later.

Later in this article, we'll talk about some fuser related problems, discuss how to remove and disassemble the fuser and talk a bit about what parts are available nowadays.

First you need to know that there is a difference between the Pro412 version of the fuser (part number 126N182 for models Pro412, F12, WC312) and the M15 version (part number 108N515 for models M15, M15i). It'd be easy to overlook the difference at a cursory glance... the only difference which I was able to discern was that the Fuser Lamp has a significant difference in wattage rating. This wattage difference makes it so that the fusers are not interchangeable. The Pro412 version uses a 600watt lamp while the M15 version uses a 750 watt lamp. Fortunately the manufacturer was kind enough to print the voltage and wattage on the lamp's end in plain sight so you can tell which version you have in hand by the lamp. The C20, M20, M20i are still unknown to me although I expect they are extremely similar if not the same as the M15's. We'll have to get one of them in to look at.

Some of the problems you'll be trying to solve which relate to the fuser include the obvious overheat and underheat situations as well as unclearable or intermittent fuser jams. The fuser related jams will show on the display with the message: "Paper Jam 1". The Fuser Jam Actuator is part of the Fuser Gate / Actuator Assembly, so a broken gate is one of the first things to check out... you'll be checking to see if the gate's actuator flag is broken or out of position with relation to the jam switch (the switch is located above the fuser in the machine). Another message which you may face is: "Overheat" which will usually clear by itself given a few minutes. This is because these fusers are equipped with a self-resetting Thermal Breaker which will reset on its own once the fuser cools down. Common causes of repeated "Overheat" messages would include a contaminated

Thermistor or a failing cooling fan. Another message which the service manual does not mention for some reason, would be “Open Heat Error”. This message would come up if the fuser lamp were bad, or if the thermal fuse has died altogether... basically anything which causes the fuser lamp to not heat up the fuser. Oddly enough, the same exact message is displayed if the Thermistor is disconnected or “open”.

These fusers are easy to remove. You simply open the right side door, remove 4 screws, and disconnect one connector, at which point the fuser is easy to pull out.

Now to disassembly... you will find this to be a cake walk... most of the items you'd be concerned with removing are extremely easy to get to. To remove the Fuser Exit Gate / Actuator Assembly (the gate piece with the green handle near the front end of it), you will first take careful note of how the spring sits on the rear end (drive end)... then use the green handle to index the shaft of the gate towards the rear till the front end is free of its plastic hole... then pull that end out (see photo #1).

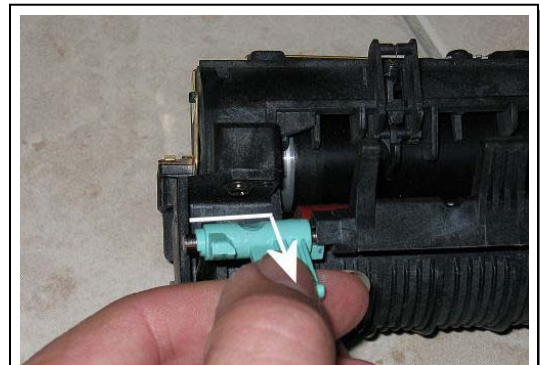


Photo #1: Pull the green handle to the right and then out to remove the gate...

To get the Thermistor or Thermal Fuse out is equally simple (one screw allows you to remove the Thermistor... and there are two screws holding the Thermal Fuse in place.

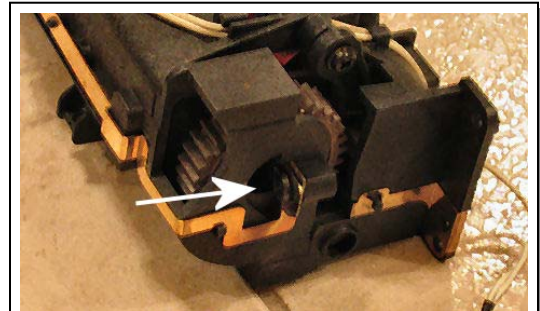


Photo #2: Rear Fuser Lamp screw.

To remove the Fuser Lamp is also easy... one screw holds each end of the lamp to its terminal (see photo #2 which shows the rear end terminal's screw). You'll definitely need to remove the lamp before you disassemble the fuser any further to reduce the chance of the lamp getting broken.

To remove the Fuser Roller with its plastic bearings and the fuser drive gear means first removing two screws which marry the two halves of the fuser together (see photo #3).



Photo #3: Removing one of the two screws which hold the two halves of the fuser together.

Once those are removed, the pressure roll half of the fuser can pivot away from the heat roll half. Take a careful account of how the Fuser Heat Roll's bearings sit in the assembly (refer to photo

#5 which shows the rear bearing which is the more critical one as far as positioning)... it is possible to reassemble it incorrectly later which would cause wrinkled copies and jams due to inconsistent pressure in the fuser. Then you can lift the fuser roll out. When you go to reinstall the fuser roll, you'll want to be very careful about the picker fingers as they want to scratch the surface... if you're gentle and patient, you can reinstall the roll without having to remove the picker fingers. (start at one end and carefully lift one picker finger at a time as you lower the roll back into place). The pressure roller is also easy to get out at this point... just remove the Front Pressure Roll Arm... then the roll can lift out. When you reassemble, the Front Pressure Arm has to go on properly (see photo #6 to see the proper position of the Front Pressure Arm). It could potentially be installed upside down although it would be pretty obvious by the time you got around to trying to reinstall the Fuser Gate / Actuator.

That's about all there is to taking one of these apart... not bad at all. Now as to parts availability... it's getting better. A few parts are spared in the OEM Parts List including the Fuser Lamp (remember, you need to order the correct lamp for your particular model) and the Thermal Fuse as well as the Thermistor and the Fuser Drive Gear. They do not, however, offer a Fuser Roller, nor a Pressure Roll. Fortunately, aftermarket Heat and Pressure Rolls are in the works. A few suppliers have also managed to source the Exit Gate / Actuator Assembly in spite of Xerox's reluctance to spare it themselves (at least in any of the parts lists I've seen so far).

Once again, it's a story of opportunity knocking... the marketing plan of the OEM would have their repair centers replace the entire fuser module... but whether you're an authorized repair center or an independent, there's more to be made (and saved) in repairing these. Plus we get to keep



Photo #4: Pivot the two halves away from one another.

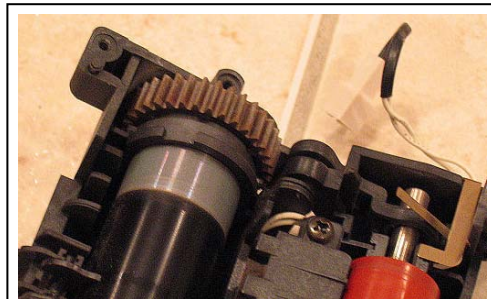


Photo #5: Take note of the proper position of the Bearing.



Photo #6: Front Pressure Arm.

a perfectly useable assembly out of the landfills... a win-win situation for all involved!

Britt works for The Parts Drop, a company whose primary business is providing parts, supplies and information for Xerox brand copiers. You can find more information on their website www.partsdrop.com. There's a complete listing of past articles under contributing writers on the ENX website (www.ENXMAG.com) if you'd like to read more about Xerox brand copiers & printers.