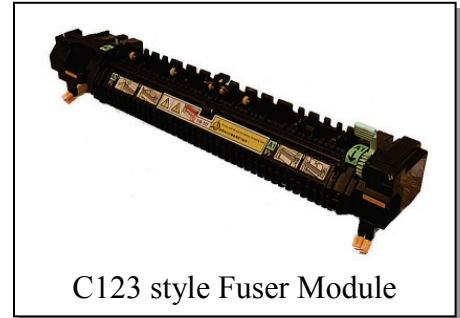


Fuser Repairs: Xerox C118, C123, & 5225 styles... Servicing the Fuser Modules for the Xerox CopyCentre C123, C128, C133, & WorkCentre M123, M128, M133, Pro123, Pro128, Pro133... also the C118, M118, M118i... and the Phaser 5500:



Here we go... More fuser modules worthy of service: C118 style and C123 style fusers are closely related to one another with a few significant differences. The newer 5225 fusers follow the C123 very closely. These fusers are rated for 175k but are reportedly needing service far before that yield is ever met. So... we'll just have to take a look at how these things come apart. We'll start with some notes on the differences between the C118 and C123 fusers, then we'll hit on the disassembly process and finally end with a refresher on resetting the Fuser Codes from diagnostics.

The C118 version of the fuser (126K16451 = 110 volt... 126K16461 = 220 volt) and the C123 style (126K16480 = 110 volt... 126K16490 = 220 volts). look very similar to one another and they come apart the same way. However, they are not even close to being interchangeable. The AC Connectors near the rear end of the fusers are pinned differently partly owing to the fact that the C123 version has dual heat lamp circuits as opposed to the C118's single lamp circuit. As far as the parts are concerned... At first glance it appears that the heat and pressure rollers would probably be the same part however this proves to be completely untrue. The C123 and Phaser 5500 versions use a thin-walled steel core roll which allows it to reach operating temperature very rapidly while the C118 has a much thicker walled aluminum core. The Pressure Rolls are larger diameter in the C123 version. Picker Fingers, and Fuser Drive Gears are interchangeable. There are two Thermal Fuses (thermostats) in the C123 fuser and only one in the C118. The C123 also has two Thermistors (the C118 shares the centrally located one but is missing the one which is closer to the rear end of the fuser roll). The Heat Lamp Assembly in the C123 is one of the most exotic looking Heat Lamps I've seen to date. It is basically two lamps joined together at either end. The two halves of the lamp assembly are on separate input circuits but share the same return line which goes through both thermal fuses. The C118 has ends which would remind you of the C123 but with only one lamp.

I found these fusers to be typical as far as form and function but quite different from most of the others we've covered in the past when it comes to disassembly procedure. To take them apart you'll end up taking the Pressure Roll off before you can get anywhere near the Heat Lamp Assembly or Heat Roller. This means that they will require a little more time than many of the other fusers in the Xerox lines. Still, you should remain undaunted. Once you take one apart and reassemble it, like most things, it'll get far easier the second time you do it.

According to the OEM Parts List, Xerox appears not to spare any of the parts in the fuser (you'd have to buy the entire fuser even if just a gear breaks). So you'll need to rely on the generic rollers & gears, etc. which are proving to work most excellently.

Now for the disassembly procedure... lets start with getting oriented. In the procedure, I'm going to refer to the "outer face" which will be the part of the fuser which faces out when you see it in the machine. If you're looking at the Outer Face, the two

thumbscrews and the green jam release lever will be facing you. The Bottom of the fuser has the two thumbscrews, the Idler Gear pair and the thermal fuses. The Rear of the fuser is the end with the Fuser Drive Gear. Now to it...

Disassembly Procedure:

1. We'll start with accessing the Thermal Fuses on the bottom of the unit. There's a sliding cover. You'll have to use a small flat-head screwdriver to pry up on a catch (see Photo #1) and then slide the cover towards the rear end of the fuser (the end with the gears).
2. The Thermal Fuses (C123 has 2 of them, C118 has only one) are now easily removed (two screws on each). If any lamp circuit is out, you can measure these fuses in place for continuity and replace whichever one shows no continuity.
3. Remove the Outer Cover from the Outside Face (2 screws... one at the front, one at the rear end). Hinge the cover down and remove it. This exposes the Pressure Roll and the Heat Roll can be seen behind it. You can also get a look at the end of the Heat Lamp Assembly, and the Fuser Drive Gear. You also get a peek at one of the troublesome things about the Heat Lamp Assembly... the leads at the rear end go directly into the pins on the AC Connector so you'll need to detach the pins from the AC Connector if you ever need to replace it. (See Photo #2).
4. Next you'll be gunning for the Pressure Roll Assembly... This can be done safely by placing the assembly outside-face down so that the metal pressure arms are down on a hard surface. Keep pressure down on those arms while you use a springhook or the blade of a small flat-head screwdriver to lift the springs off of the plastic on the opposite side (see Photo #3). With the pressure off, the arms will hinge away and allow you to take the Pressure Roll out of its plastic line bearings.
5. Remove the metal Entry Baffle. This requires releasing an extremely delicate little plastic clip at the front end. It is best to pry this plastic clip lightly from the outside of the entry baffle just enough to clear the metal and then slide the metal baffle out at that end first. I broke my first test subject by pushing it too far from the inside. The good news is that once the outer cover is back in place, it will hold the metal baffle in position even if you broke the plastic retaining clip.
6. Now you'll be prepping for removing the Heat Roller and the Heat Lamp Assembly. First remove the ground contact near the front end. Press the square part in and pay attention to how it seats so you can get it right at reassembly (see Photo #4). You'll also need to remove the green jam release lever / gear to make room for the Heat Roll to come out. It is held by a single

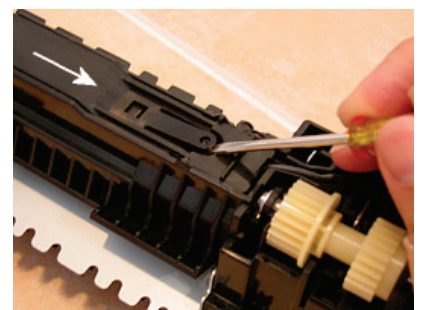


Photo #1: Pry here and slide the cover towards the rear.

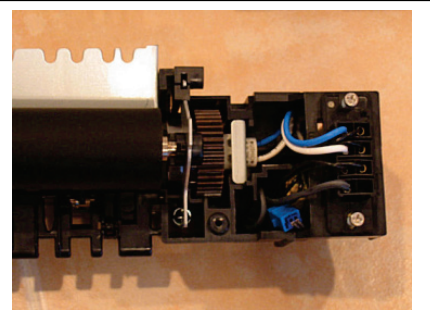


Photo #2: Behind the Outer Cover

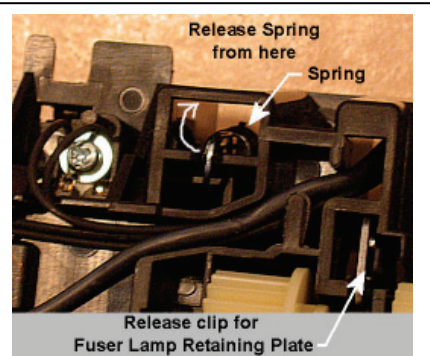


Photo #3: Releasing the Pressure Springs and the lamp retaining plates.

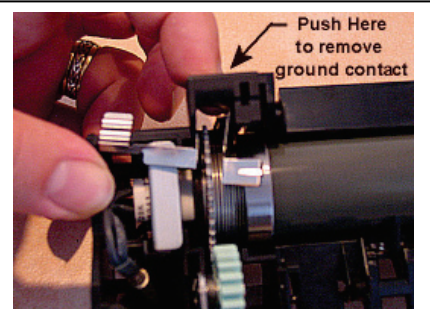


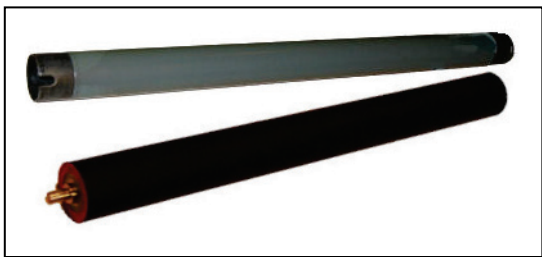
Photo #4: Press the square part of the contact to remove.

e-clip. Don't lose the little tension spring for the lever / gear. One more thing to do to prepare... Release the front Fuser Lamp lead. It is connected with a spade connector to the front Thermal Fuse.

7. Now for the tricky part... you'll be removing the fragile lamp assembly and the roller together. Release the front and rear seating clips from the Heat Lamp's metal Retaining Plates so that they're loose. (refer back to Photo #3). You'll then work the Heat Roll Assembly and the Heat Lamp Retaining Plates out a little at a time from either end. Pay close attention to the Heat Lamp Assembly to make sure you don't put any stress on it or it will certainly shatter.

8. Each thermistor (the C118 has only one) has one screw securing its head and then wires go to a tiny connector which seats in a larger connector which then had wires continuing to the AC Connector. The blue connector goes to the central Control Thermistor which has longer wire leads by necessity. The yellow connector goes to the Overheat Thermistor located near the rear end of the Heat Roll (this is the thermistor which is missing from the C118 version of the fuser).

9. When it comes time to reassemble, you'll need to tie back the five Picker Fingers with rubberbands or tape, or else they'll get in your way and endanger the Heat Roll's surface.



Dual Heat Lamp Assembly (C123 version)

That's it on the procedure. Now for a bit of a refresher on fuser related Status Codes and how to reset them. We had covered all this in a series of 4 previous articles (two in the May and June 2007 ENX articles about the C118 style followed closely by two from July & August ENX articles on the C123 style machines). Status Codes and Diagnostic procedures are thoroughly different for the two styles of machines.

Fuser Related Status Codes & how to reset them:

C123 style (C123/128/133, M123/128/133, Pro123/128/133)

- 010-313 Fuser Control Thermistor failure (open Control Thermistor)
- 010-314 Fuser Side Thermistor failure (open Side Thermistor)
- 010-318 Fuser temperature did not rise quickly enough during heating cycle
Fuser Overheat (must be reset from diagnostics by resetting NVM (Non Volatile Memory code 744-220 back to "0") *
- 010-320* Memory code 744-220 back to "0") *
- 010-327* Fuser took too long to warm up (must be reset from diagnostics by resetting NVM (Non Volatile Memory code 744-220 back to "0") *

*** C123 style: Resetting Fuser Codes (010-320, & 010-327)**

Accomplished by resetting NVM code 744-220 to '0'...

First enter UI (User Interface) Diagnostic Mode: Hold down the '0' button for 5 seconds and then press the 'Start' button while still holding the '0' button. The machine will prompt you for a Password. Enter the default Access Number: '6789' and press "Confirm". The colors on the display will be reversed to indicate that you're now in diagnostic mode. Next press the

“Log In/Out” button on the Control Panel. Select ‘System Settings’, ‘Common’ Settings, followed by ‘Maintenance / Diagnostics’. Now you will find the main menu includes one choice called “NVM Read / Write” (NVM is Non Volatile Memory)... Now you can enter your “Chain-Link” code (in this case 744-220) and press ‘Confirm / Change’. The current value will appear (if the machine is in a fuser fault condition, the value will be set to “1”). Select the “New Value” column and input your new value (‘0’). Select “Save” and the new number should now appear in the “Current Value” column. You can turn the power off and back on at this point. The machine will attempt to warm up the fuser again. If the condition which caused the fault in the first place is still happening, the Status Code will return after a few minutes of attempting to warm up.

C118 style (C118, M118, M118i)

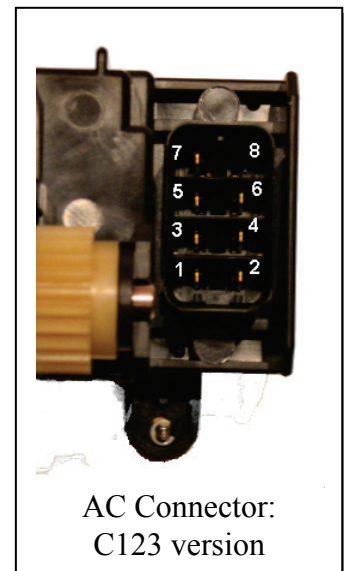
U4-1000 (U4-1)	Fuser failure (did not come up to temperature in time)... must be reset from diagnostics (NVM code 50-20 must be reset to ‘0’)*.
U4-2000 (U4-2)	Fuser over temperature.... Must be reset from diagnostics (NVM code 50-19 must be reset to ‘0’)*.
U4-3000 (U4-3)	Fuser thermistor circuit is detected as being an open circuit.

* **C118 style: Resetting Fuser Codes (U4-1 or U4-2):** Enter diagnostics (from the powered on state, hold down the ‘0’ button and then press ‘Start’. The display will change to opposite colors to show you it’s in diagnostics)... Select ‘Chain-Func’ in the ‘CE Setting’ screen by using the ‘Select’ button, followed by ‘Enter’. Select “NVRAM R/W”. Enter the “Chain” (in this case ‘50’). Next select “Func” (function) by using the “Select” button. Enter the “function” (‘20’ if you’re clearing a U4-1 code or ‘19’ for clearing a U4-2 code) followed by ‘Start’. The current value for that memory code (50-20 or 50-19 in these cases) will appear in the “Read” column (if the machine is in a U4-1 or U4-2 status condition, the value will read as ‘1’). Change the value by pressing the “Select” button at the “Read” column to switch to “Write”. Enter a ‘0’ for the new value, and then press ‘Start’. Finally, select “Write NVM”.

You’ll probably be well served by being able to test the lamp and thermistor circuits from the AC Connector so you know what you’re looking to replace before you even rip into the fuser.

On the C123 & WC-5225 versions, there are slots for 8 pins (2 rows of 4 arranged vertically). Pin 7 is on the upper left and Pin 8 on the upper right is empty. Pins 7 & 1 are one of the two Heat Lamp Circuits. Each Heat Lamp Circuit goes through its respective half of the Heat Lamp Assembly, and then through both thermal fuses to the return wire (pin 7 is the return wire which is common to both heat lamp circuits). Pins 7 & 3 are the other Heat Lamp Circuit. If either Thermal Fuse is blown, neither lamp circuit will conduct. If one circuit measures good and the other measures bad, then the Heat Lamp Assembly must have failed.

The Thermistor circuits for the C123 are between Pins 2 & 4 and Pins 5 & 6. If you set your meter to 200K ohms, you can measure the Thermistors... they should measure a high resistance and then if you were to warm up the Thermistor’s head, the resistance should begin to drop. These Thermistors are unusual in that the heads are naked (no yellow kapton tape).



The C118 fuser's AC Connector is shaped the same as the C123 version (slots for 8 pins) however there are only 4 pins actually present and they numbered the pins differently for this one. On this one, Pin 2 is in the upper left corner and Pin 1 is in the upper right. On this connector, Pins 1 & 3 form the Heat Lamp Circuit. The Thermistor Circuit is between Pins 2 & 6.

Hope this turns out to be valuable information for you. It'd be a shame to replace one of these fusers and then throw out or return the used one without at least inspecting it for the possibility of fixing it for the next customer who needs one. Be a green-tech and fix'em when you can. Happy Repairs everyone!

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

