



PRINTER TECH ARTICLE

Envelope Printing with Lexmark Laser Printers

Wrinkling and poor fusing are the main difficulties when running envelopes through laser printers. HP addresses the wrinkling issue with levers that control the gap between the fuser rollers. It tackles the poor fusing problem with a user menu to increase fuser temperature.

Lexmark's approach is completely different and is the subject of this article.

Fuser temperature adjustment: Unlike HP LaserJets, Lexmark printers don't generally allow manual increase of temperature. It is unclear whether Lexmark printers automatically adjust temperature based on paper type (like some of HP's color models). In any event, make sure to define the paper type as "envelope" in the printer menus and/or driver settings (on the computer).

Pressure relief: This is only an issue on fusers with solid metal rollers. This includes the Lexmark Optra S, Optra T, and later T series printers (T520 series, T620 series, T630 series, T640 series, T650 series, etc.). All of these printers use the same scheme. There is a large solenoid in the fuser that, when it fires, opens up a small gap between the hot roller (metal) and the pressure roller (rubber). Unlike HP printers, which maintain a constant gap during the entire time that the envelope is passing through the fuser, these Lexmark models open and close the gap by repeatedly firing the solenoid (5 or 6 times)

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Editor-in-Chief: David K. Reinke

Editor: Robert Reinke

Writers: Dennis Kosterman, Robert Reinke

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while the envelope is in the fuser. This scheme provides pressure relief, to prevent wrinkling, while still allowing enough pressure for good fusing. The drawback is that it makes an audible thumping sound during operation (Lexmark calls the solenoid a “thumper” in some of their service manuals).

Solenoid operation requires two things:

- 1 The “Envelope Enhance” feature must be turned on in the printer menu;
- 2 The printer must detect that an envelope is being fed. It does this by means of two sensors in the fuser. One of these sensors is triggered whenever any kind of media enters the fuser; the other one is triggered only by a full-width sheet of paper (and therefore not by an envelope).

When both of these conditions are met, the printer will fire the solenoid repeatedly until the envelope clears the fuser. Note that this allows one to run envelopes without having the solenoid fire (by turning off “Envelope Enhance”) if the noise is bothersome. However, you then take the risk of envelopes wrinkling in the fuser.

It is also possible to control the magnitude of the gap between the rollers. This is done by physically adjusting a screw on the solenoid. If the toner isn’t fusing well enough, you can decrease the gap; if envelopes are wrinkling, you can increase it. For each printer model, the service manual indicates what the nominal value of the gap is. This is a good starting point for adjustments. Note that there is also a “gap adjustment” in the printer menu, but this has nothing to do with the solenoid gap – it refers to the gap between one sheet of paper and the next when printing a multi-page job.



HP AND LEXMARK ENVELOPE PRINTING COMPARISON		
	HP	Lexmark
Automatic?	No. Levers must be moved to the “up” position when printing envelopes, and then to the “down” position for other media.	Yes. The Lexmark system is completely automatic once “Envelope Enhance” is turned on in the menu.
Physically adjustable?	No.	Yes, the solenoid gap can be adjusted.
Temperature adjustable?	Yes, the temperature is adjustable based on media type.	Can't increase temperature for better fusing.
Quiet?	Yes.	No. There is a thumping sound when printing envelopes.