Tips On Thermal Transfer Ribbon Wrinkles That Can Cause Unreadable Barcodes

Description

Thermal transfer ribbons are made of a very thin polymer with a layer of wax or other heat sensitive material that melts under the heat of a label printer print head. The waxy material comes off the ribbon and sticks to the label stock.

Since the ribbon is very thin and flexible it is prone to folding, or wrinkling, that can cause stripes in the non-printed area to appear on a label.

If barcodes are printing, the wrinkle in the thermal transfer ribbon can cause the barcode to be unreadable.

Explanation

A ribbon will tend to follow the path of least resistance, here are some areas that can affect the tension and pressure of a thermal transfer ribbon:

- **Uneven printhead pressure** - Most printers have some sort of tension mechanism above the print head that has two or more adjustable pressure points these should be adjusted for an even pressure along the width of the transfer ribbon.
- **Incorrect Label Design format (uneven printing)** - A label that has very heavy printing on one side of the label and very light printing on the other can cause half the label to be very hot and the other to be cooler. This can cause uneven pressure between the platen roller and print head.
- **Mis-matched media sizes** - A label that is narrower than the thermal transfer ribbon will cause the ribbon that is over the label to have a tighter squeeze between the platen and the print head than the ribbon that is going over the print head with no ribbon.
- **Print head heat setting too high** - Too high of heat can cause the same issues as seen with incorrect label design, the ribbon can stretch and deform over the high heat area causing wrinkling.
- **Dirty print head or print path** - Dirty print head or rollers can cause uneven pressure from over the width of the ribbon.
- **Worn or damaged platen roller** - A worn platen roller can cause uneven pressure over the width of the roller.
- **Incorrect media guide setting** - Binding on one side can cause an uneven pull from one side of the ribbon to the other.
- **Incorrect supply spindle tension** - Heavy tension on the ribbon can cause buckling and folding of the ribbon. The take-up spindle should have only enough tension to keep the ribbon taunt, it is not meant to pull the ribbon over the print head.
- **Supply and take-up spindles out of plane** - supply and take up spindles that are not parallel to each other can cause wrinkles as the pressure from one side to the other is uneven, even if all the other items are correct adjusted.

Result

Correct mechanical settings on the thermal transfer printer are essential to proper label production, checking the above items can correct most ribbon wrinkling and produce superior barcode labels.

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