Labels

Direct thermal or Thermal Transfer?

To help decide whether to select a direct thermal printer or thermal transfer printer (or whether you should use thermal transfer or direct thermal labels), consider the following questions:

- Will you ever need to print labels in colours other than black?
- Do the labels need to be scanned or have a shelf-life of over 1 year?
- Will you be printing high density bar codes (i.e. limited space)?
- Will the labels be subjected to heat or sunlight?
- Will the labels be prone to abuse or surface friction?
- Will you be printing on a variety of different substrates (i.e. papers, films and foils)?

If you answered "yes" to any of the above questions then you should consider going thermal transfer rather than direct thermal. Here are some printer comparisons:

Thermal transfer printers

Thermal transfer printers require the use of a printer ribbon which gets transferred onto the substrate via heat, hence the name "thermal transfer." The ribbons can be different colours, and is not limited to black print. The printing is very crisp and durable so this method is excellent for high density bar-codes and labels that require longevity. The other benefit is that thermal transfer printers can print on paper, film, and even foil substrates. **The proper selection and match of label stock and ribbon is critical to the overall quality and performance of printed media.**

Direct thermal printers

Direct thermal printers require the use of heat activated thermal papers and films, but don't require transfer ribbon. The print colour is limited to black, unless special, pre-printed direct thermal paper is utilized, and the printing is not as crisp as that of thermal transfer ribbon printing. Over time the labels will darken, particularly when the surface gets scratched, or is subjected to heat and sunlight. However, a true direct thermal label printer utilizes a print head that is made of thicker glass, for increased print head durability. Direct thermal printing is popular in the foods industry, since most items are stored away from heat and sunlight, and the label shelf life is less than 1 year. The primary benefit is an overall lower cost and easier media changeovers since ribbon is not required.

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Direct Thermal or Thermal Transfer Printing?

Direct Thermal Printing	Thermal Transfer Printing
Labels print only in black, unless digitally overprinted	Labels can be printed in a variety of colours
Labels have a shelf life of 1 year or less	Labels have a shelf-life in excess of 1 year
Cannot store near sunlight or heat	Storage Locations not as limited as Direct thermal
Care required when handling due to easily marking the label	Suitable for harsher conditions
Examples: Shipping Labels, Library Date Due Labels, Food Labels	Examples: Outdoor Use, Shelf Marking Labels, Product Labels, Shipping Labels, Industrial & Packing

Which Model Printer?

Once the print method is determined the next step is to find the appropriate model. The following questions will help to whittle down the options:

What is the label usage per day? If usage is over approximately 500 labels per day then an industrial printer should be considered. If usage is merely a couple of hundred labels a day, then a small table-top printer should be considered.

What is the maximum label width and length? What is the minimum label width and length? Some printers can handle wide width labels, but why pay for a 6" wide printer if

Labels

the maximum label width is only 4"? Also, certain customers may require extra-large labels, so a wide-web printer may be the only option. Extra-long label lengths may require memory cards installed in the printer. Finally, different printers have different requirements for minimum size labels.

What will be printed on the labels? Will the printer be used to print graphics, and/or very high density bar-codes, or tiny fonts? If so, then high resolution printers should be considered.

How do we want to connect the printer? Is USB, parallel, serial, wireless, or an Ethernet connection the best fit for your application? For networks that run several printers, an Ethernet connection is often preferred, since each printer that resides on the network would have its own IP address.

Will the printer have access to a PC? If not, then a remote system (stand-alone) should be considered. These systems utilize a keypad, and optional battery pack. The label formats are created on a PC and uploaded into the printer's memory. The formats are then recalled and printed from any location. Note that variable information can be entered into the keypad at print time, and the time/date can be automatically stamped with a real-time clock feature.

Learn more about industrial strength printers:

The information above is only a guide to help select a thermal printer. To receive a printer recommendation for your needs and application please call Autoprint today.

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