

Print quality in thermal transfer printing

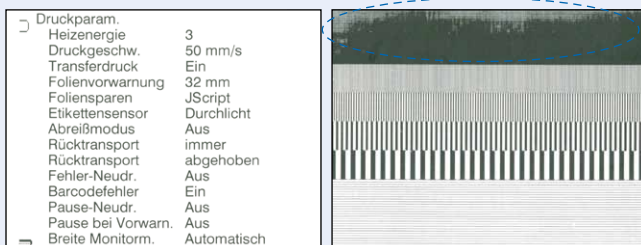
In the last edition of the News, we informed you about the theoretical basis of thermal transfer printing. We also outlined the possible application of the three different color ribbon qualities. Today we would like to embark deeper into the subject of print quality in thermal transfer printing.

For sophisticated applications and extreme environments, thermal transfer printing represents the optimal solution. This method creates long-lasting labels with a high-quality print image that tolerate many physical and chemical stresses. In general, an optimal print result is achieved in thermal transfer printing when the printing system, label material and color ribbon are precisely coordinated. With the actual print system other factors are crucial for the print quality, namely the selected thermal transfer printer model, the printing speed, the heat of the print head and the print image to be created.

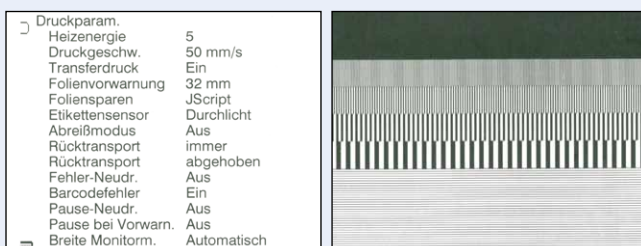
The print speed and choice of heat at the print head are primarily responsible for a good print image in the printing process. The following figures illustrate the impact these two parameters have on the print result. All the important elements such as font, lines and surfaces are contained in the print image itself.

A: Parameter – heat setting with constant print speed 50mm/sec.

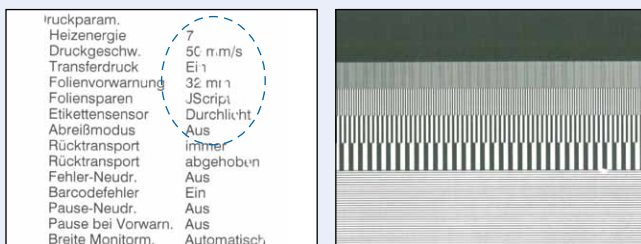
Heat setting level 3: Quality of letters good – quality of areas bad



Heat setting level 5: Quality of letters good – quality of areas good



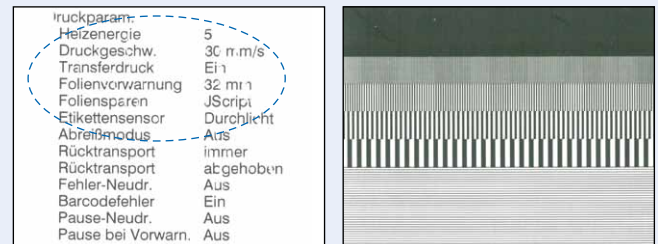
Heat setting level 3: Quality of letters bad – quality of areas good



B: Parameter – print speed with constant heat setting level 5

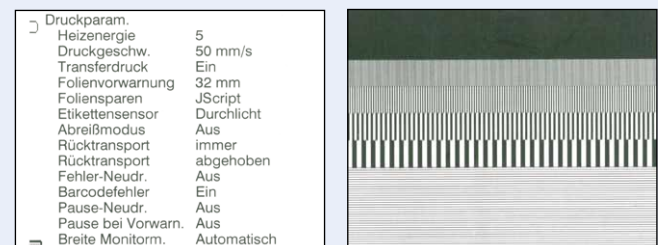
print speed 30mm/sec. :

Quality of letters bad – quality of areas good



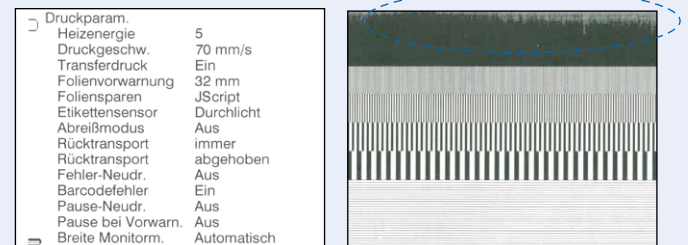
print speed 50mm/sec. :

Quality of letters good – quality of areas good



print speed 70mm/sec. :

Quality of letters good – quality of areas bad



Lessons learned:

Changing the heat setting while maintaining a constant print speed has a lasting impact on the print result. The same is true for maintaining a constant heat setting and changing the printing speed. Basically, one cannot assume that high heat setting will create a good print image. The difficulty lies in the creation of clean fine lines/fonts as well as clean full areal forms in this printing process.

We always recommend performing a print test with the printer model and materials used, such as the adhesive material and the corresponding thermal transfer color ribbon. Our specialists would be pleased to assist you in the selection of appropriate material combinations.