

OPOS Alignment Methods

Introduction

Contour cutting is made possible by the highly accurate Optical Positioning System (OPOS).

The OPOS sensor, which is mounted on the cutter head, registers printed squares that are placed around the graphic. Because of this registration process, OPOS can determine the exact position of the printed graphic.

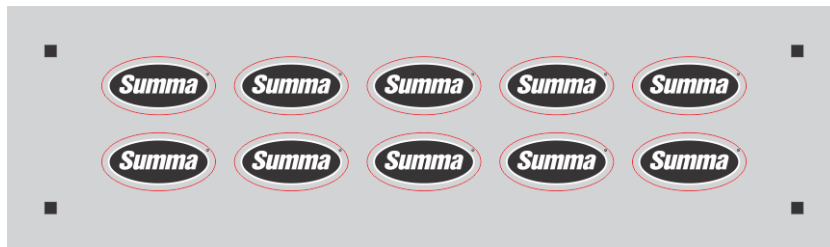
The sensor drops automatically while registering the marks and rises again after completing this task. The OPOS sensor can read virtually any kind of media-mark combination.

OPOS-X

A row of marks is printed at the left and right side of the graphic. These marks are read by the OPOS sensor and then used for compensating printing deformation.

Depending on the printer/media/cutter bowing, a shift on the contour may become visible.

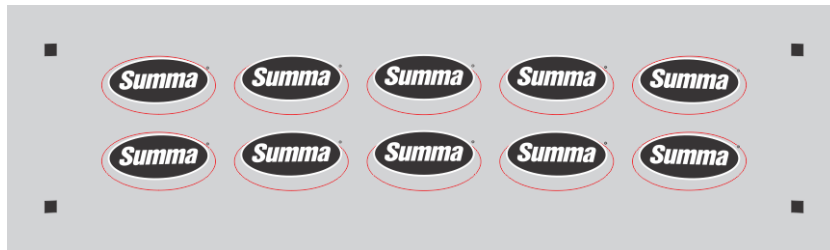
- How the design was created:



- There may be a bowing on the printout:



- When cutting with the OPOS-X alignment method, the bowing of the print is not compensated:



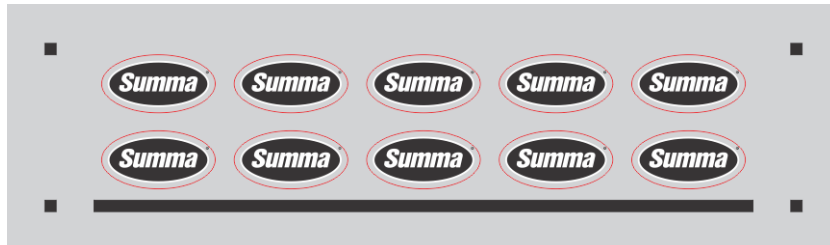
OPOS-XY

An extra line at the bottom of the job is printed, the sensor reads it and can also compensate for deformations along the width of the machine as well.

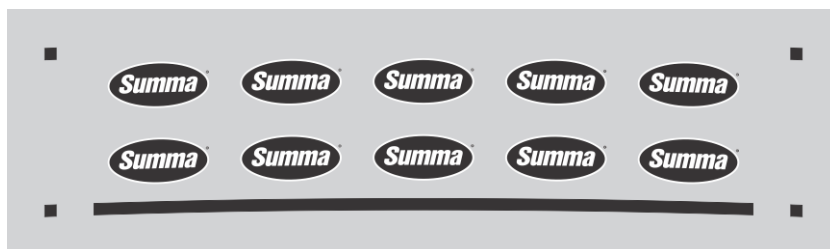
In case the shift is more prominent in the middle of the width of the job, then there may be some bowing of the media. This because the media has been deformed due to the heating used to cure the ink in the film.

Use the alignment method OPOS-XY to compensate for this.

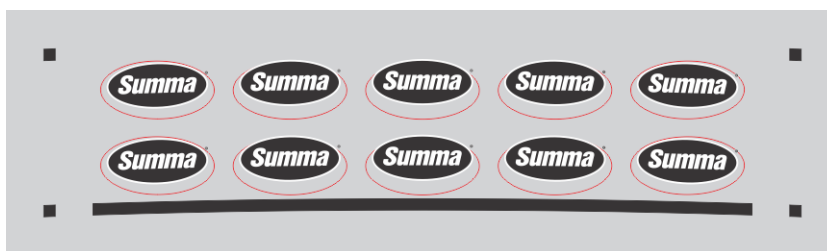
- How the design was created:



- There may be a bowing on the printout:



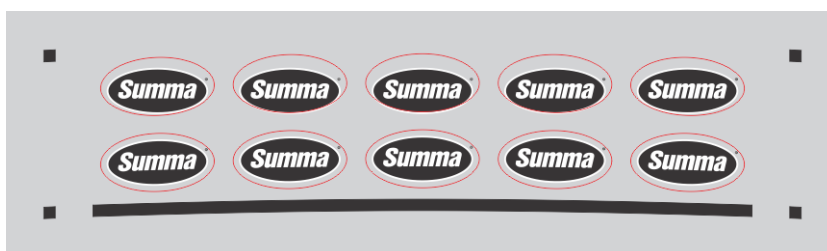
- When cutting with the OPOS-X alignment method, the bowing of the print is not compensated:



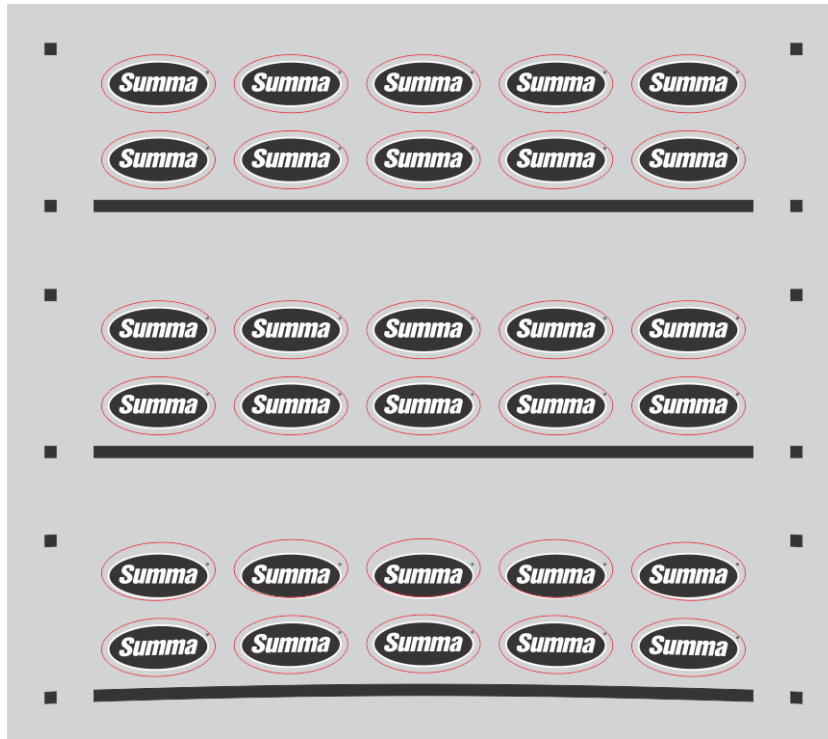
- By using the OPOS-XY alignment method, the bowing will be compensated:



- In case the bowing of the print is not constant over the length of the job, then only the first part of the job may be correctly compensated for the bowing:



- When printing multiple jobs immediately one after the other, the first job may contain a deviation, where the following jobs usually have no shifts, as the printer and media became stabilized.

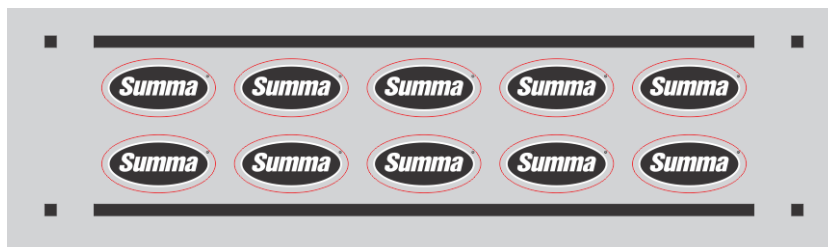


OPOS-XY2

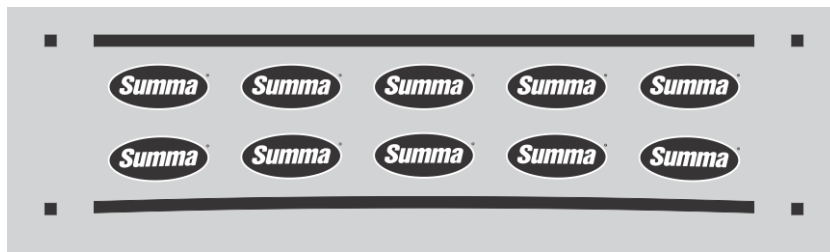
Analogue to the bottom XY line, a line is printed at the top of the job for cutting large jobs more accurately.

When the bowing changes over the length of the media, then OPOS-XY2 can be used. The bowing at the bottom and the top of the design is measured, then linear compensated.

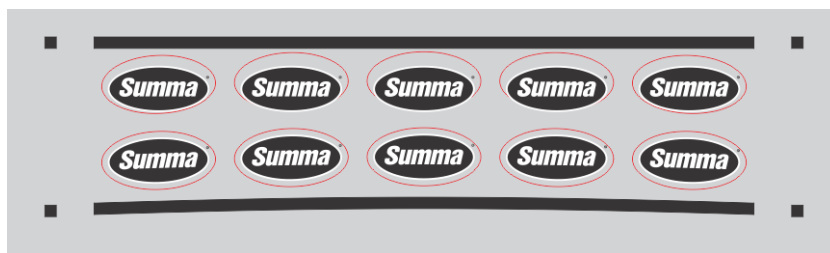
- How the design was created:



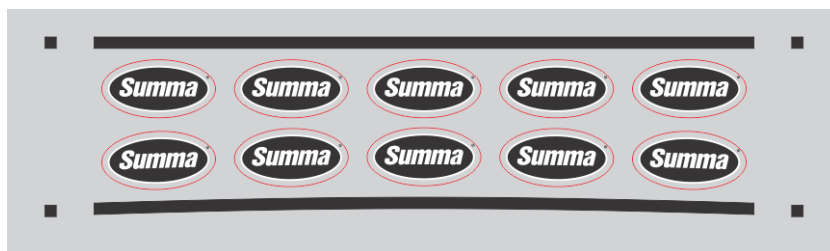
- There may be a bowing at the beginning of the printout, at the end of the printout the bowing may be different or non-existing:



- When cutting with the OPOS-XY alignment method, the bowing of the print is only correctly compensated at the start:



- By using the OPOS-XY2 alignment method, the bowing will be compensated both at the start and at the end:



Note: OPOS-XY2 is supported by the S Class 2 series roll-cutters from firmware revision 024 on, and by the S One series roll-cutters from firmware revision 002 on.
