iTECH Smartmark Sensor

Operational Testing and Troubleshooting

This document will explain how to verify the Smartmark sensor is operating correctly and how to adjust the registration cut if necessary. You may see a target error (tAr 1, 2, or 3) if the Smartmark eye is not able to read the registration mark. Below are some methods to resolve causes of an error or miscut.

Confirm the Smartmark sensor is 4mm (+-0.6mm) above the material.

To ensure the Smartmark Sensor is able to detect the printed registration marks, open the TMC Remote Panel which was installed with the installation disc:

Click Home > Cutter Display > Cutting Head > Flag Position/Smartmark Sensor

The Smartmark ADC value will change when moving the material under the sensor from the background to your registration mark. Verify the change of the ADC button value in the remote panel is greater than 60.

NOTE: See color guide on pg 2 if using colored background/registration marks.

Sensor Offsets

The distance from the Smartmark eye to the tip of the blade. If your registration 'L-cut' is not on the corner of your registration mark, the offsets/sizes may need to be adjusted.

Home > Cutter Display > Smart Mark

NOTE: Sensor Size adjustments apply ONLY when using more than 1 mark.

When using Origin only:

X Sensor Offset

Negative adjustment moves registration cut towards the supply ("Left")
Positive adjustment moves registration cut towards the take-up ("Right")

NOTE: X Sensor Offset is always a positive #

Y Sensor Offset

Negative adjustment moves registration cut towards OPERATOR
Positive adjustment moves registration cut towards GEAR

NOTE: Y Sensor Offset is always a negative #

When using Origin, Skew & Scale Marks:

X Sensor Size

Increase value to decrease the frame length
Decrease value to increase the frame length

Y Sensor Size

Increase value to decrease the frame width
Decrease value to increase the frame width

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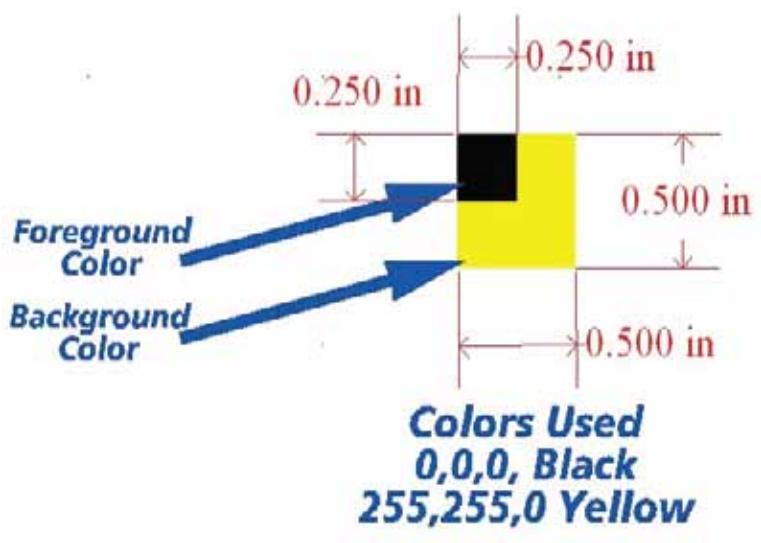
The smartmark sensor needs to read the contrast between the media background and the registration mark color in order to scan correctly. The media (background) and the color of the registration mark should be in opposite columns.

Example: A yellow bakground with a red target will not work as consistently as a blue background with a red target.

The numbers next to the colors are the RGB color intensities. Colors are listed in increasing order of response from the sensor vertically.

Dark Colors	Bright Colors
Mirrored materials	200,255,0 green-yellow
0,0,255 blue	150,150,150 grey
0,255,200 green-blue	255,235,0 yellow-green
0,0,0 black	255,0,255 red-blue
50,50,50 dark dark gray	255,0,0 red
0,150,255 blue blue green	255,0,200 red-red-blue
0,230,255 blue-green	255,0,100 red-red-red-blue
170,0,255 blue-blue-red	255,255,0 yellow
0,255,0 green	255,100,0 red orange
100,255,0 green-green-yellow	255,200,0 orange
100,100,100 dark grey	200,200,200 light grey
220,0,255 blue-red	240,240,240 off white
	255,255,255 white



The photo to the left shows an example of a case when you may need to print a seperate colored box around the registration mark for it to read properly. Note: the two colors chosen are from separate columns creating an ideal contrast between the background and the registration mark.

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