Cyclops Machine Vision

Aeronaut's Cyclops machine vision is a simple gantry mounted high resolution camera which puts a real-time magnified image of what's under the cutting head directly into a Tangent nesting queue.

In conjunction with Tangent's software joystick, Cyclops lets you see clearly what's on the vacuum table and do a whole range of jobs quickly, accurately and easily, without leaving the computer.
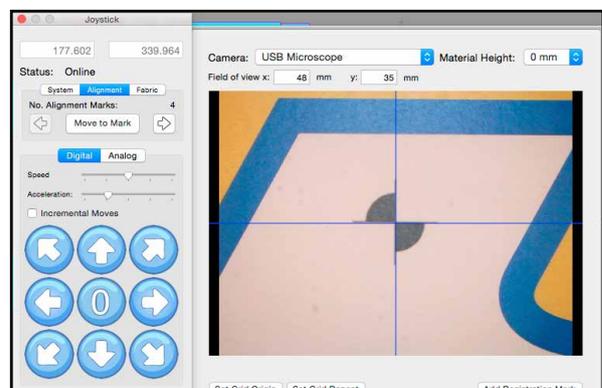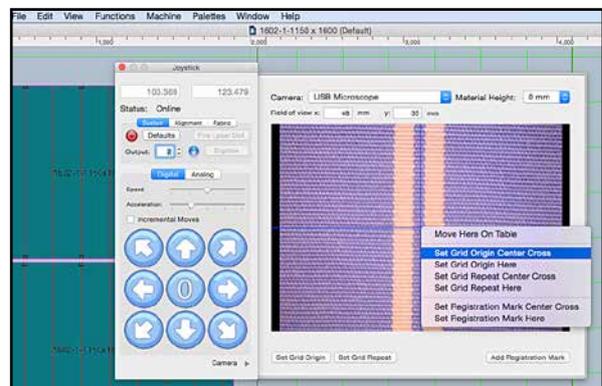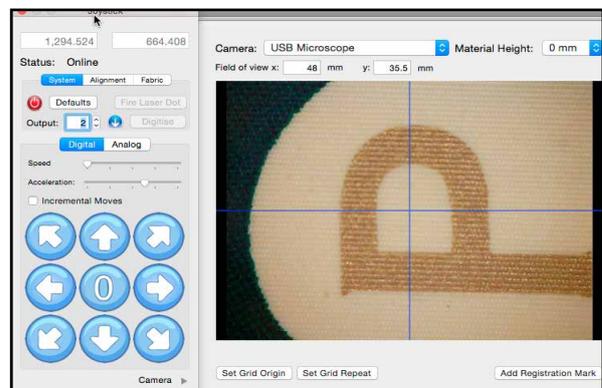
Cyclops machine vision works in almost all industries and on almost all sizes of cutting table, making tasks like checking for fabric faults, aligning cut profiles with fabric and aligning cut profiles with registration marks fast and efficient.

If you're not sure if a cut shape will fit on a short end or off-cut of fabric, you can run the cutter around the shape… Cyclops real-time vision lets you see the picture as the cutter moves.

Cyclops makes grid creation really easy. If you are working with striped or patterned material, or just cutting arrays of regular shapes, you can create an accurate and exact alignment grid using Cyclops.

When cutting digitally printed material, you can set registration marks on the print with a control-click in the Cyclops window.

Imported patterns with matching alignment marks can then be set and rotated to the registration marks. With a mouse click, you can send the cutter to any mark to make sure the profile fits the print before pressing the cut button.

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Cyclops is a versatile and powerful vision system but when used in conjunction with Aeronaut's SiliconEye machine vision system the capabilities and ease of use are greatly expanded.

SiliconEye uses one or more overhead cameras to capture an overview of the entire cutting table, and with Cyclops, you get the detailed view as well as the wide shot, right down to the weave of the material.

Cyclops is real-time meaning that the image is constantly updated, even as the cutter moves while SiliconEye is a single shot camera system which loads an image into the background of a nesting queue.

The most expensive fabric you have got in the factory is the stuff in the waste bin. Aeronaut's machine vision system will pay for itself by making it easy to cut useful patterns out of otherwise scrap material because it's easy to see if a pattern will fit.

Fault detection and marking is easy and accurate. If there's something suspicious in the SiliconEye view, you control-click on the mark, and send Cyclops over to see if it's a fault… and if it is, mark it with Tangent's fault line feature so it can't be nested over.

Without a machine vision system, it's difficult or impossible to work with digitally printed or patterned fabric. With a machine vision system, it's as easy as cutting plain fabric. Digitally printed textiles are becoming increasingly common and the ability to work with these materials commands a premium price over off-the-shelf fabric.

SiliconEye and Cyclops use reasonably priced off-the-self cameras, calibrated to remove distortion and deliver an accurate image. What this means is that having a state of the art machine vision system on a cutter is more affordable than it has ever been.

Cyclops can be fitted to any current Aeronaut automated cutting system including blade cutters, ultrasonic and crush cut and laser cutters.