

## CUSTOMER PROFILE



### Company Name:

Rotary Technologies, Inc.

### Headquarters:

Orlando, Florida

### Industry:

Tools and controls for printing press/converting line industry

### Size:

Medium organization

### Business Objectives:

To help customers in the printing industry overcome challenges with printing presses and converters

### Situation:

Newly designed re-register unit needed control and HMI in one package, small form factor, suitable for harsh environments

### Solution:

Xycom GLC2400 Graphic Logic Controller

*Rotary Technologies, Inc. developed the world's first portable re-register system for presses and converting lines. The Servo3000 Digital Re-register System™ uses Xycom's GLC2400 controller/HMI for easy configuration, portability, and reliability in a pressroom environment.*

The printing press has been greatly refined since its invention several hundred years ago. Today, high speed presses costing millions of dollars can print in color at blinding speeds. The resulting newspapers, magazines, and books are practically everywhere. Thus, it is tempting to think that the best printing innovations are in the past. But you'd be wrong.

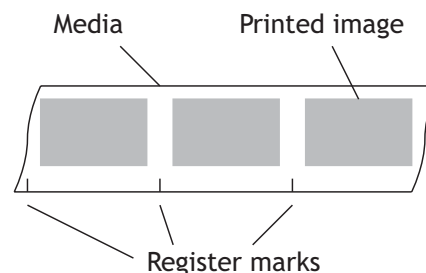
There's a quiet revolution happening in *web press* technology. As you may know, a web press prints on continuous rolls of paper or other media. It usually has multiple stations for printing in different ink colors or for doing operations such as folding, trimming, gluing, or punching. As print jobs become more complex, presses need a breakthrough in flexibility to keep pace. The problem is that presses are too expensive to just replace or to keep adding new stations to do more operations.



*Servo3000 Digital Re-register System™*

### Re-registration: An Idea Whose Time Has Come

Rotary Technologies, located in Orlando, Florida, is a machinery supplier to the web press and converting line industry. To understand re-registration and why we need it, let's ask the inventor himself. Meet Joe Nicholson, Technical Director at Rotary Technologies, Inc. He explains: "Consider a game piece, for example—a card that has an area to scratch away to reveal a number. It can have 4-color printing, plus a unique number and the coating over the number. The card may be folded and glued as well. That's a total of eight printing steps. Traditionally, we have had to do all print operations in one pass to maintain alignment, or registration, from step to step. A 4-color press would need four additional stations to print this job."



## Xycom Automation

750 North Maple Road  
Saline, MI 48176-1292  
1-800-289-9266  
<http://www.xycom.com>  
<http://support.xycom.com>

“Now, a printer can add a Rotary Technologies’ *re-register* unit to an existing web press,” Nicholson continues. “They can feed a roll of paper into the press for a second pass. Our servo control aligns the existing registration marks to the press with under 0.005” accuracy. In this way, a small press can perform successive passes, doing the job of a more expensive web press with many stations.”

The many applications for re-registration include:

- Add more die-cuts at full speed
- Use an ordinary 4-color press to deliver 8-color printing
- Add specialty printing steps such as embossing or adding RFID
- Repair printed rolls

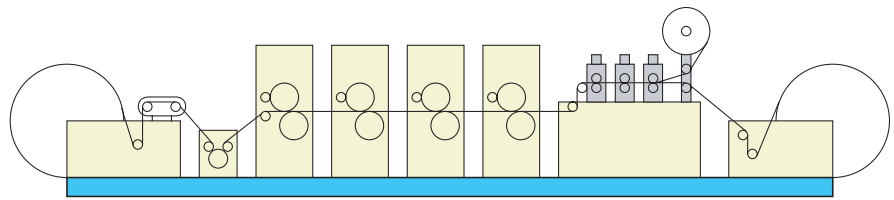
“The main thing we liked about the Xycom GLC is that it is a PLC and HMI in one package.”

Joe Nicholson

Pro-face  
GLC

### The Versatile Servo3000

Rotary Technologies’ Servo3000 product provides a re-registration solution in a small-machine footprint. Its portability allows a press operator to move it from one press to another during job setup. In fact, the Servo3000 can be inserted in front of any station on a press. This tremendous amount of flexibility can make marginal presses profitable again.



Typical diagram of a 4-color web press

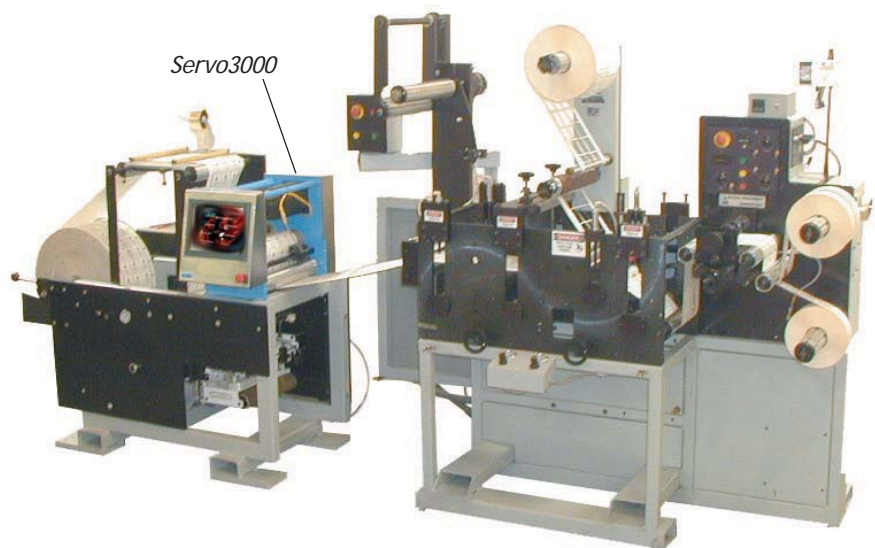
As the hands-on inventor, Nicholson selected a Xycom HMI during the Servo3000 development. The Xycom GLC2400 has a 7.4 inch TFT color screen and 256 colors at 640 x 480 resolution. “The main thing we liked about the Xycom GLC is that it is a PLC and HMI in one package,” notes Nicholson. “It is small enough to fit in the end of the feed roller unit that sits above the press. This conveniently locates the HMI for the press operator. And, at just 70 lbs. total, the feed roller unit can be readily moved from one press station to another.”

Discrete I/O and other support hardware are in a small, separate control panel. The panel connects to the feed roller unit via an umbilical cable. The GLC2400 communicates with the I/O base via one of several standard factory I/O protocols available from Xycom.

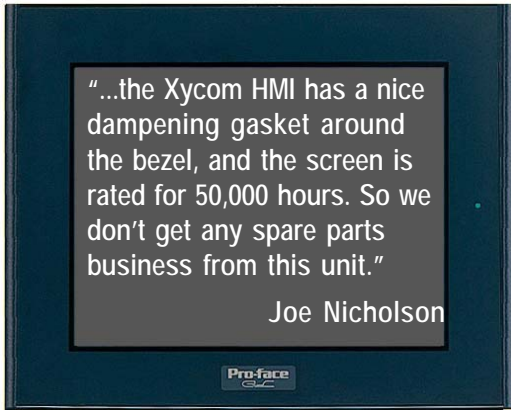
### Just Follow the Script

“We used the Xycom GLC and GP-Pro software to develop the Servo3000,” Nicholson recalls. “With one software application we could develop HMI screens, ladder logic, and custom scripts. The built-in D-script capability uses a BASIC-like language that runs upon entry to each screen. Global D-scripts run in the background for all screens.”

“To enhance an existing press,” Nicholson continues, “a lot of print shops will have a system integrator put together a big-box solution (translation: oversized add-on with a clunky user interface). Instead, our scripts convert HMI data to make it easier on the control logic and the press operator. For example, the press operator enters data in the preferred feet-per-minute units. A script converts that value to RPMs



A 3-station diecutter machine with integrated Servo3000



After setup, the Servo3000 is so easy to use that only two main operator screens are required. But Nicholson knew the GLC could store much more... and he put the extra memory capacity to good use. "We used to include a printed user manual," Nicholson says, "which also covered machine setup. But the manual was frequently lost in the field. So



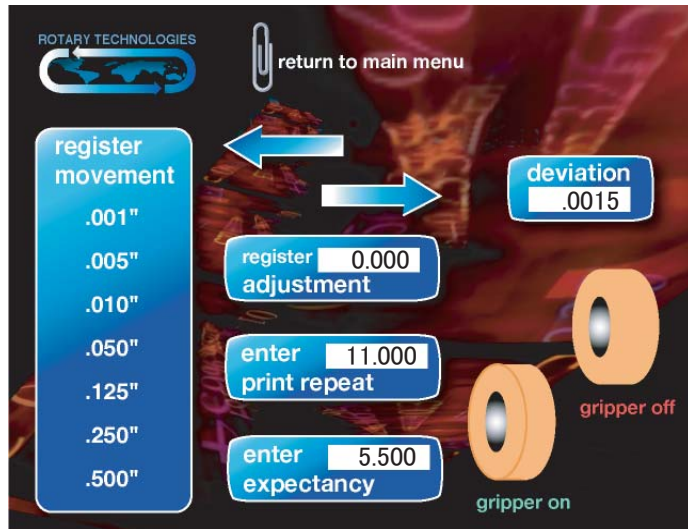
Pro-face GLC2400  
Graphic Logic Controller

for the servo controller. So, this doesn't look like a typical big-box solution."

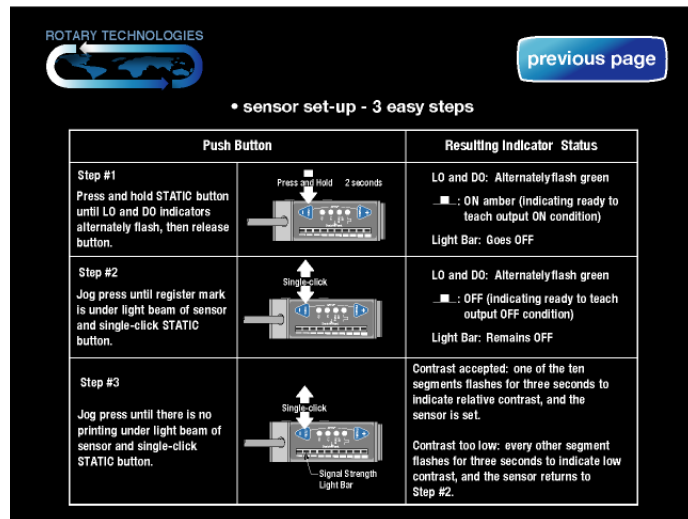
### Rugged, and Handsome, Too

"We needed an HMI touch screen that could handle ink, solvents, grease, and adhesives around a web press," Nicholson says. "There may be vibration, too, depending on the age of the press. But the Xycom HMI has a nice dampening gasket around the bezel, and the screen is rated for 50,000 hours. So, we don't get any spare parts business from this unit."

When it comes to operator interface design, Rotary Technologies went the extra mile to impress. "We needed an HMI that would look good to our printers, who are especially aware of image quality," Nicholson explains. "We really liked the resolution, brightness, and viewing angles of the TFT screen on the Xycom GLC. Although it does come with a graphic object library, it also allowed us to import our own objects such as indicators and buttons. We developed custom screens and objects in Adobe Illustrator and saved them as bit-mapped images. The GP-Pro software compressed and stored the images which look great; we can't see any artifacts from compression."



Main operator screen with data entry fields



Sensor setup Help screen—built-in user manual

we put the manual's pages in the GLC using 30 Help screens. Now the new 'manual' is impossible to lose."

The Servo3000 is the first machine of its kind—even defining re-registration as a new printing industry segment. Naturally, Nicholson is keen to protect Rotary Technologies' proprietary technology. "We also like that the Xycom HMI offers us several levels of password security," he says. "And if we ever have to change the program, we could load it on a flash memory card and boot up the GLC from the card."

And how has the printing industry received the Servo3000? Just ask Joe Nicholson: "It's been getting great reviews," he says. "For example, one customer says 'every [web press] shop in the country should have one.'" Indeed, that kind of product reception would make any OEM proud.

For more information about Xycom and Pro-face products, visit [www.xycom.com](http://www.xycom.com).



*A Servo3000 Digital Re-register System™ is positioned above the infeed station of a web press. Note the alternate mounting location for the Servo3000 a few stations to the right. Using the Xycom HMI/PLC, an operator can quickly re-configure the re-register unit after moving it to a different station or press.*