

## Print Quality and Saving

### Reprint 151

#### Viscosity System Saves Ink and Improves Print Quality

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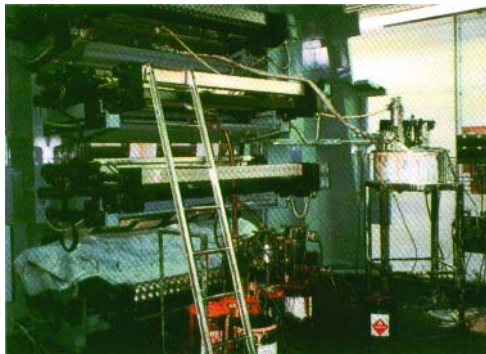
By choosing a Norcross in-tank viscosity control system for its new press, Lally Pak improved both its process printing and efficiencies of operation.

There are many proven ways to increase productivity and consequently improve profit, but one of the easiest, least costly methods is to reconsider ancillary systems. An example of this strategy is the decision that Lally Pak, a rapidly growing packaging converter in Hillside, NJ, made when confronted with the need for a new viscosity control system.

Lally Pak provides printed film and bags to a variety of industries, including packaged frozen food, medical and pharmaceuticals, confectionary, and single-service paper and plastic disposables. The company prints on a variety of substrates, including polyethylene, polypropylene, OPP, and shrink films. Materials are provided by Mobil, James River, Huntsman, and World Class Films.

Lally Pak recently purchased a CMF Europa Prestige 808 eight-color flexographic press from Novopak. With printing at the very core of Lally Pak's business, company president Henry Herbst wanted a viscosity system that would be sensitive to ink changes and, because the company runs two shifts, rugged enough for day-to-day use. Approximately 50% of Lally Pak's work is in process color, which, by its nature, requires tight control in all aspects of the printing operation.

"We need precise viscosity control," says Herbst. "The new CMF press is



*Lally Pak's CMF Europa Prestige 808 eight-color flexographic press features a Norcross viscosity control system that offers repeatable accuracy to within 0.06 Zahn Cup seconds.*

designed to run four-color process printing, and the anilox rolls are configured for printing process color. The amount of solvent being introduced into the ink has to be measured very carefully, otherwise you have distortion."

An existing in-line viscosity system fitted on a six-color Kidder-Stacy 660 press has continually had problems with line clogging and has been difficult to maintain. Lally Pak's dissatisfaction with the viscosity control system it was using and its desire to provide customers with consistent and reliable print quality led the company to first lease and eventually purchase a Norcross viscosity control system.

#### Simplicity Works Well

Considering the important job it performs, the Norcross system is actually quite simple. The system, Herbst reports, is not in-line but in-tank, with a design that offers ease of cleaning and a measuring cycle that can be observed by the operator. The installation consists of eight MP90 controllers and M8BO measuring ele-

ments mounted on 5- or 10-gal ink containers. (Lally Pak uses solvent-based inks from Sun Chemical and Zeneca.) The Norcross unit controls the viscosity of all eight decks on the new press. A Kidder pollution control system is used to abate emissions from the solvent-based inks.

Prior to makeready the press operator puts the controller into manual mode. The controller allows the operator to manually add solvent as required to each station by means of a push button on the microprocessor panel, rather than by dumping solvent into the ink pail. Inside the M8BO measuring element is a piston/cylinder setup. The piston is raised up by an air lifting mechanism, drawing a sample of the ink to be measured down through the clearance between the piston and the inside of the cylinder into the space that is formed below the piston as it's raised. The piston is then allowed to fall by gravity, expelling the ink sample out the same way it entered. The time of piston fall is the viscosity measurement.

Solvent is added from the panel until viscosity reaches the ink manufactur-



*The MP90 microprocessor from Norcross allows the press operator to select and maintain virtually any viscosity control parameters desired. The unit activates alarms when viscosity levels reach high or low setpoints.*

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er's recommendation. The operator then takes a final Zahn cup reading and enters the elapsed time into the MP90 viscosity controller. This cup time represents the station's setpoint. The press operator can now place the unit into the automatic mode, and it will maintain that reading for the duration of the printing job.

Viscosities are measured automatically twice a minute during press runs. If a viscosity reading exceeds the setpoint by more than 2%, the MP90 will signal a solvent valve to add the correct proportion of solvent.

According to Herbst, once a press is running, the operators are busy and would typically take Zahn cup readings every half hour to 45 minutes. He explains that if an operator takes a Zahn cup reading and it's too high, he dumps in solvent to bring viscosity down. A half hour later he checks viscosity again, and now it's too low, so he pours more ink in. In effect, the operator chases viscosity. "If you were monitoring this on a chart you'd see steep peaks and valleys. With an automatic system such as the Norcross, viscosity is measured twice every minute, so there are no steep peaks and valleys but a fine sawtooth pattern. Viscosity is continuously kept within the ink manufacturer's recommended parameters for optimum ink performance throughout the entire print run."

When a printer relies solely on the Zahn cup to measure viscosity, he's at the mercy of the pressman's skill with the cup, skill that will vary from operator to operator. An increase in drain time from 17 to 18 seconds can reportedly increase ink consumption on the press by 18%. "Pressmen use



*The M8BO measuring element, seen here jutting out of the 5-gal ink pail, is designed for easy cleaning. Even if ink is allowed to dry inside it overnight, the system can be disassembled and cleaned in two minutes.*

Zahn cups with a stopwatch," says Herbst. "If you're off by a couple of seconds, and Zahn cups have a tendency to dribble, you can have 50% more ink laydown than is necessary, and that's a waste of the printer's money." He adds that if the viscosity is too low and the ink is too thin, coverage may be insufficient, resulting in a mottled image.

The Norcross system is said to take the art out of viscosity measurement and turn it into a precise science. The falling piston is very sensitive, repeatedly detecting viscosity to within 0.06 seconds. "This in-tank system doesn't clog up and doesn't give false readings; once it's set up, it stays set," says Herbst.

Because it's controlled by a microprocessor, the MP90 can be hooked up to alarms, level control, analog output, and an RS485 serial port connection, which, with available software, can be tied into Lally Pak's operation system, providing a wealth of data. The company can wire into a desktop computer and monitor and store all the data generated by each print job.

### **Efficiency Is Up All Around**

Since the installation of Norcross vis-

cosity controls, Lally Pak's colors are more stable, and press operators spend much less time checking the ink with Zahn cups, which frees them up to work on other parts of the job.

"Maintenance and downtime are important factors," says Herbst. "We want to print continuously. One of the more time-consuming elements of job changeover is cleanup, and the clean-up phase with the in-line system may take an hour or more."

Herbst notes that the Norcross system cleans itself quickly and efficiently, requiring only two minutes to take apart and clean, even if ink was inadvertently left inside and allowed to dry. He says that the system is also designed so operators can change the settings quickly.

Lally Pak initially rented the equipment from Norcross to make sure it worked the way it was supposed to and was compatible with the company's printing equipment. Before Norcross will ship rental equipment, it disassembles it, rebuilds it, and tests it. Part of the rental/purchase agreement includes a plant visit by Norcross technicians to train operators and to make sure the equipment is installed and operating correctly.

Says Herbst, "The system works fine, it's trouble-free, and it doesn't shut itself down or freeze, which is a problem we have sometimes with our in-line system [on the Kidder-Stacy]."

Those problems won't be around for long. The Norcross viscosity measurement system has worked so well that Lally Pak is getting ready to acquire another one for the Kidder-Stacy press.