Upgrading for Uptime

Uponor reaps impressive savings with Videojet printers and inks

uponor

Uponor first got its start in 1620 forging weapons for the King of Sweden. Today, they are a leading manufacturer and supplier of plumbing, heating, cooling and fire sprinkler systems for the residential and commercial building markets across North America and Europe. Today, Uponor's North American corporate offices and the company's manufacturing facility in Apple Valley, Minnesota employ nearly 500 workers. In addition, the Uponor Corporation oversees operations in 30 countries and employs more than 3,200 people globally.

Producing thousands of feet of crosslinked polyethylene (PEX) piping every day for use in plumbing, fire sprinklers and radiant heating and cooling systems, Uponor must ensure its product is properly and clearly coded.

Seeking the Right Connection

Historically, the manufacturing facility has been using coding and marking printers on each of their extrusion lines to comply with coding requirements set forth by regulatory agencies. Some older printers used by Uponor started to show some age, causing unnecessary downtime on the production lines.

It became a bigger issue when specific inks were discontinued and third-party inks were brought it.

As a result, the company was experiencing so many delays that a maintenance position was dedicated to the upkeep and cleaning of the printers to minimize the downtime. Knowing this was only a temporary fix, Uponor sought out a new, more reliable coding solution. With at least one printer on each of its many extrusion lines, Uponor was facing an extensive upgrade that could keep up with its 24/7 production schedule. Of the new coding requirements, one was the need for trustworthy equipment that would also complement the ink needed for the company's demanding applications. Uponor researched several vendors and looked into all options for its coding solution across all production lines.

Ultimately, Uponor selected Videojet not only for its reputable, high-quality ink jet printers and vast selection of inks, but also due to the high-utilization 1610 dual head and 1620 ink jet printers' ease of integration and ability to communicate with external systems.

"We have partnered with Videojet for more than 20 years and the ease of integration has been one of the biggest reasons we chose the Videojet solution," said Brian Czapiga, electrical control engineering supervisor at Uponor.

In addition to the ease of integration, Videojet also offered Uponor a wide selection of ink options. This is important given Uponor needed to find inks that would adhere and withstand extreme temperatures and the life of the pipe. While the testing was extensive – Uponor needed to run through 10 to 16 different internal tests, some of which took four weeks – Videojet was up to the task and supplied many inks for these tests to uncover the right ones for Uponor's unique applications.

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Czapiga's colleague and process engineer for Uponor, Bryan Baxter, added that Videojet's service was a key factor in the selection process.

"The value of having a partner like Videojet is pretty high, especially when we can call the service technicians and receive help with the change," said Baxter. "That support was invaluable to us as we were rolling out the printers on the production floor."

Testing the Limits of Ink

Working closely with Uponor, Videojet guided the company to select 27 Videojet 1620 continuous ink jet printers and three Videojet 1610 Dual Head continuous ink jet printers. Because the next generation Videojet printers are high-speed and have a larger array of inks to choose from, Uponor was able to focus the printing on their secondary coating lines, reducing the number of printers needed upstream by nearly two-thirds! Videojet spent
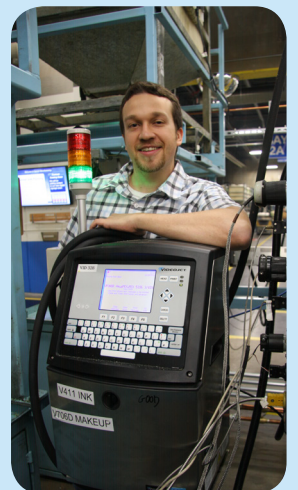
Uponor Process Engineer, Brian Baxter

Spools of tubing in Uponor's facility in Apple Valley, MN.

Uponor operator Mark Morgan adjusts the printhead on the Videojet 1620 continuous ink jet printer

time onsite duplicating Uponor applications during the rigorous four-month testing period. The V435-D ink was chosen for the Wirsbo hePEX™ pipe and Uponor AquaPEX® coating lines and the V411-D ink was selected for the natural Uponor AquaPEX® extruded pipe production lines.

"We really needed the right inks that would meet branding approval and industry requirements," said Baxter. "And to find one Videojet ink that fit the bill for both coating substrates helps limit the confusion on the floor."

The transition took about a month to complete as printers needed to be shut down at extrusion and the new ones installed on the coating lines. With the upgrade, Uponor was able to eliminate many printers as a result of the equipment efficiency and new printer placements. Having worked together previously, Videojet easily pulled existing data to network. The ESI commands were exactly the same as they were with the previous printers, making the control transition seamless. All print streams are now sent down to the printers from the local database virtually eliminating human error.

All Uponor pipe operators on the floor were trained on how to replace the new inks and clean the equipment.

"We originally planned to dedicate two internal positions to service the printers and prepare them to be placed on the lines," said Baxter. "The printers, however, are pretty self-sufficient and don't require much maintenance... so now those employees can work elsewhere on the lines."

Scrapping Waste for Quick Savings

With the high quantity of pipe manufactured daily, some scrap is expected due to errors or cosmetic issues. Since upgrading the printing equipment and inks, Uponor says they have seen a 90% reduction in waste associated with printing errors[*].

"We increased our overall yield by 5%[*]. Mix in the reduction in maintenance and downtime associated with those outdated coding solutions, we're talking about an ROI (Return On Investment) of a few months[*]." said Baxter. "We call that a slam dunk."

The company was experiencing ink waste during bottle replacement, including spills and residual ink in the old bottles. Uponor claims they quickly saw a 40% savings in ink and make-up costs from the 1000 Line printers' self-contained cartridge with needle and septum design, helping eliminate fluid spills and ensuring all fluids drain from the cartridge before replacement.
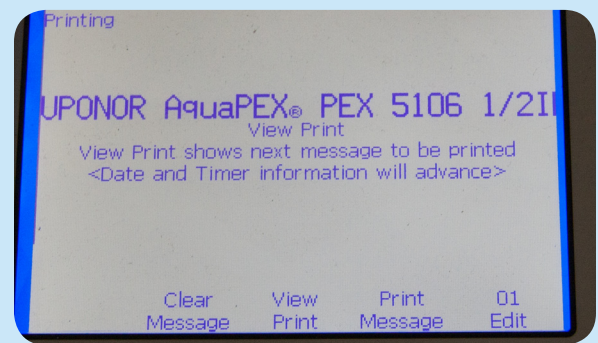
The user-friendly interface on the Videojet 1620 helps operators set up jobs with alphanumeric codes and graphics.

* Individual results will vary

Czapiga was also surprised to experience an unexpected benefit – the Videojet coding solution's ability to handle graphics (e.g., coding/listing symbols, trademarks, etc.)

"Before we had to have a graphic set burnt, but now we can create our own graphics and just send them down to the printers," said Czapiga. "This flexibility was one big win for us. We can just print graphics on the fly or easily create new graphics from scratch — saving us precious time and money. "

What's in Store for the Future?

Uponor continues rolling out new Videojet continuous ink jet printers – with plans to replace all outdated printers within the next year. For Uponor, this process was all about finding the right vendor who could provide the best ink for its applications. As the company grows and expands, Uponor plans to have Videojet solutions right by its side.

Videojet 1610 Dual Head Series

The Videojet 1610 Dual Head series printers fit the needs of Uponor for better print quality. With an innovative dual print head that automatically calibrates and cleans itself, Uponor operators not only count on clearer customer codes, but can spend less time cleaning and preparing the printers.

Videojet 1620

Videojet 1620 Series

The Videojet 1620 series printers offer Uponor superior uptime in high speed applications and around-the-clock coding. An integrated core consolidates the ink system into a single part, making maintenance simple and ink change-outs quick and virtually mess-free.

For more information about the Videojet 1620 continuous ink jet printers, please visit http://www.videojet.com/usa/videojet-1620-ink-jet-printer.

For more information about the Videojet 1610 Dual Head continuous ink jet printers, please visit http://www.videojet.com/usa/videojet-1610-dual-head-inkjet-printer.

Learn more at: www.videojet.com/usa/wirecablepipe

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