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Christian Jørgensen, Production Manager, XGS Danfoss

Lights Out Performance at Danfoss

Industry

Manufacturing In-Plant

Application

Product Manuals

Printers

Xerox DocuPrint® 180
Xerox DocuPrint® 4635

Solution

DocuSheeter™ DP

When Danfoss asked Xerox Global Services (XGS) to construct and operate an in-plant print on demand facility at their Gråsten, Denmark site, one of the biggest tasks was choosing the best mix of equipment for what would become the world’s first – and so far only – 24-hour fully automated print site.

A global manufacturer of refrigeration, heating and industrial controls headquartered in Nordborg, Denmark, Danfoss employs 18,000 people worldwide, and annual sales exceed two billion euros. The Gråsten POD facility produces just-in-time product manuals for their frequency controller product line.

“When you’re running this type of an operation the equipment you choose must not only perform at a very high level of automation, it must also be very reliable,” said Ole Buus, general manager for XGS-Nordic, part of Xerox’s international division providing information technology consulting, outsourcing and systems integration.

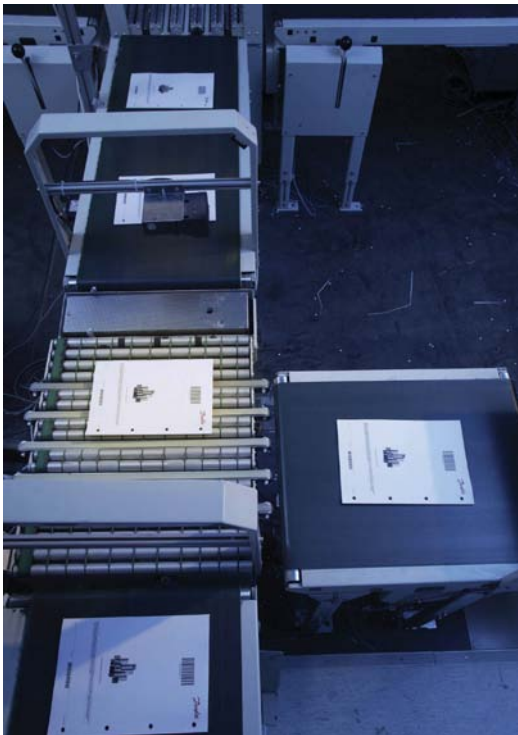
According to Buus, there are as many as 2,000 different components to some Danfoss products, and the

product manuals produced at the POD facility are considered just one more component of the final shipped product.

“Our operation is part of the company’s manufacturing line, so if the reliability of one of our machines goes down then we not only lose time but it affects the entire manufacturing line and we have to find a way to make it up,” he said.

XGS relies on Xerox DocuPrint® 180 and 4635 highspeed digital printers equipped with Lasermax Roll Systems DocuSheeter® DP roll feed systems to produce the more than 530,000 operator and service manuals needed in Gråsten each year. The five DocuSheeters automatically produce cut sheets from large rolls and feed single sheets on demand, resulting in hours of uninterrupted roll feeding for the DocuPrint printers. Each printed manual is perfect bound and transported through a network of conveyors and elevators to a robot that collects each set of manuals and delivers each to the right box.

“It takes only 34 minutes for our system to deliver a customized product manual,” Buus said. “Other



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than loading the paper into our DocuSheeters, the first time a person touches our manual is when the customer takes it out of the box.”

With Denmark’s tax structures, employing people is very costly. Yet Danfoss competes with companies in Eastern Europe and Asia, where labor costs are much less. In order to remain competitive, Danfoss felt that they had to automate.

“To ensure maximum quality and no errors, Danfoss required the production of manuals to be fully automated as people normally make mistakes,” said Buus. “Since they produce very complicated high-tech products they required the highest level of automation with the fewest people possible for their in-plant operation.”

The facility employs only six full-time site operators so XGS knew they needed a high capacity paper feeder system. XGS decided to test the market for rollfeed systems. At the completion of the trial, the company’s site operators chose Lasermax Roll’s DocuSheeter DP.

“Our operators found that loading the rolls and threading paper through the DocuSheeter was quick and easy, minimizing printer downtime,” said Buus. “The DocuSheeters are very dependable and increase both our printer and labor productivity.

“They also fit well into our very limited space. The DocuSheeters are an integral part of our operation.”

Christian Jørgensen, production manager for XGS Danfoss, echoes Buus. “The DocuSheeters are very easy to use, with very quick roll changes. They keep the Xerox printers running non-stop, just as we needed,” he said. “Plus, the DocuSheeters had to be very reliable, and they’ve succeeded with that also.”

All of Danfoss Gråsten’s products move on a conveyor belt through a hole in

the wall into the POD facility. As a product is ready to ship, its bar code alerts the system that a specific manual (matching the product and language criteria) needs to be produced. The DocuSheeter feeds paper to the DocuPrint while at the same time a cover is printed on another printer, eventually meeting with the printed manual in a perfect binder. The manuals then move on to a three-knife trimmer and a hole-punch before being stored in the robot for delivery into the box with the corresponding product.

While more companies in Europe and some in the U.S. are moving to this type of automated operation, Buus gives Danfoss high marks for being a pioneer in the industry.

“It requires some courage to invest in this type of manufacturing methodology but those companies that do will experience huge cost savings on a mid-term basis,” he said. “They can also reduce or eliminate many of the complex processes that require more people and result in more mistakes, as well as provide added flexibility to their operation.”

When XGS constructed the automated printing site they allowed for a 50 percent increase in capacity, but they may have to expand. The Danfoss Drives division alone, which produces motor drives, is growing 20 percent each year. But Buus is confident that their DocuPrints and DocuSheeters will allow them to handle more capacity without hiring any more staff.

“The DocuSheeters have made our printers and our people more productive and they have lived up to all of our expectations,” said Buus. “We feel very confident that the construction and simplicity of the DocuSheeter will help ensure the high level of reliability we need to achieve our goals now and in the future.”

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