

Press Release

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Bosch Rexroth successfully completes seven year project to modernize the Welland Canal



Photo: Bosch Rexroth Canada Corp.

Bosch Rexroth Canada has successfully completed a seven year project to modernize the locks on the St. Lawrence Seaway's Welland Canal with a complete engineered hydraulic and controls solution.

The St. Lawrence Seaway is one of the world's busiest inland waterways, connecting the Midwest with the Atlantic Ocean. The Welland Canal allows safe passage around Niagara Falls. There is a 100 meter height difference between Lake Ontario and Lake Erie, and that difference is overcome by eight locks over a distance of 44 kilometers.

The original electromechanical drives, gears, chains and steel cables that controlled the locks were 70 years old, and in 2002, the St. Lawrence Seaway Management Corporation (SLSMC) realized it needed to upgrade all the locks. The SLSMC had Bosch Rexroth Canada undertake a two-year pilot project to help upgrade the hydraulic systems and the controls on two of the eleven locks that make up the Welland Canal as the new technology was more cost efficient than replacing the traditional technology. When the pilot project was successfully completed, the SLSMC contracted Bosch Rexroth to upgrade the remaining nine locks over five years. Bosch Rexroth has now completed the entire project within the planned timeframe and has met the project's stringent requirements.

The SLSMC originally chose Bosch Rexroth for the project because of the company's superior products and worldwide application experience on

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similar large-scale projects in Europe. During the project, the SLSMC also grew to rely on Rexroth's expertise and problem-solving.

"The SLSMC didn't just buy hardware and software from Bosch Rexroth," says Wayne Scutt, Contract Manager with Bosch Rexroth Canada. "They got our expertise as well. We worked together to solve problems and find new answers when something didn't go according to plan." The expertise came not only from Bosch Rexroth Canada, but also from the Netherlands and Germany, where Bosch Rexroth has extensive experience equipping locks with the latest technology.

Bosch Rexroth Canada used the latest design technology, including Inventor, to create three-dimensional previews of all parts for the SLSMC. That allowed all the parties involved to communicate well throughout the process, as well as optimize access for maintenance.

Over the course of the project, Bosch Rexroth supplied approximately 73,000 litres of oil, 360 electrical panels made up of PLC, motor control, operator and terminal stations, 130 hydraulic cylinders and more than 40 hydraulic power units. The Bosch Rexroth team spent from April to December of each year designing and programming the PLC, HMI, electrical and hydraulics, then was on site from January to March for start up, commissioning and installation support. Bosch Rexroth worked closely with both the SLSMC and the site contractor to ensure each and every lock was operating at peak performance within the predetermined timeframe.

"The key was planning ahead," says Tom Vermelfoort, Engineering Manager of Bosch Rexroth Canada's Automation Business Unit. "We spent a great deal of time perfecting the electrical control design process to come up with a concept that was modular and can be used year after year. By planning ahead, we were able to ensure the installations went as smoothly as possible in the tight time frame required by the SLSMC."

The new Bosch Rexroth solution uses hydraulic cylinders to provide drive and control to the locks without any additional mechanical elements. The SLSMC operators can constantly monitor essential parameters through the PLC, helping them fine tune positioning accuracy, speed and power.

The project was completed in March, 2009, and today the locks are not only running smoothly, but also with less downtime, and potentially providing a

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longer shipping season. And, after seven successful years of partnership, the relationship between Rexroth and SLSMC will continue on into the future. The companies have embarked on starting maintenance programs for the hydraulics and controls, providing additional training to the SLSMC employees to ensure the equipment stays running at its peak performance for another 70 years.

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Bosch Rexroth Canada is the Canadian subsidiary of Bosch Rexroth AG, one of the world's leading specialists in the field of drive and control technologies. Under the brand name of Rexroth the company supplies more than 500,000 customers with tailored solutions for driving, controlling and moving machinery used in industrial and factory automation as well as in mobile applications. Bosch Rexroth is a partner for industrial applications and factory automation, mobile applications and using renewable energies. As The Drive & Control Company, Bosch Rexroth develops, produces and sells components and systems in more than 80 countries. In 2008 Bosch Rexroth AG, part of the Bosch Group, achieved sales of around 5.9 billion Euro with 35,300 employees.

For more information please visit: www.boschrexroth.ca

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