

## Flexibility and Functionality in the Alberta Oil Fields

The oil and gas business has changed substantially since Dietmar Sedens' father established Domino Machine Inc. in 1967. Edmonton, Alberta in western Canada is a hub of intense oil patch activity and expertise, and the stuffing boxes, and blow-out preventers (BOP's) Domino manufactures are environmentally responsible, acting to prevent oil spillage and leaks. Domino is also registered with a number of international safety and quality organizations.

"And in some ways, oil and gas will never change," Sedens says. "It's like just-in-time manufacturing in the automotive business, but without the planning. Car-model changeovers are scheduled, whereas oil field guys wake up Friday and need 12 wellheads Saturday. We have to be nimble."

And the nature of the customers' requests is changing as well. "Customers used to supply cut bar stock to us to machine their parts," Sedens relates. "Now they want us to manage the complete manufacturing process and supply parts turnkey. And they want us to quote for 200 parts, but ship 50 a month. And if they get busy, the workload can quadruple at any given time."

As a result, Sedens and vice president of operations Werner Harder found it very difficult to set up machines for any one job. "We needed more flexibility," Harder says. "Parts change constantly, and raw materials are always changing, too, depending on available bar stock, castings, and forgings."

Domino not only needed flexibility, they needed to ensure quality and meet stringent delivery schedules as well. One customer's choke valve bodies, for example, would take days to manufacture since they required milling on multiple faces, turning, boring, drilling, and tapping.

Meeting these needs was why Domino Machine became the first company in North America to install Mazak's Integrex e650H. Choke valve bodies were made by special order because they took days to supply. Now they are a standard production item, as they can be machined completely in a single setup.

"More than 60% of our work comes from wellhead OEMs, and they require literally thousands of parts in all shapes and sizes," Sedens says. "Tolerance in lengths might vary by inches, where diameters must be held within 0.005 in. for sealing purposes. Going from raw material to a finished part in a single setup is very advantageous. If it were on cost alone, it would be very difficult to compete with third-world countries. We set ourselves apart on quality and being able to deliver on time."

With 15 Mazak turning centers and six Mazak machining centers, Domino also relies on Mazak support as a competitive advantage. "Whether maintaining existing machines or installing new equipment, with Mazak it's plug and play," Sedens says. He notes that Domino's VTC 250/50 with NC rotary table and tailstock installed late last year was up and running in three days.

To smooth out the ups and downs of the oil and gas business, Domino is quoting more and more international work. It currently exports products to Europe, the Middle East, and South America, as well as Houston, Texas, in the U.S. "It would be unthinkable to even bid on this business the way we were 10 years ago," Sedens says. "Now we can document safety, part quality, delivery schedules, and a host of other statistics based largely on how we are set up with our equipment. We can prove that we can deliver quality on time."



Exterior of Domino Machine Inc., Edmonton, Alberta, Canada.



Domino's Integrex e650H with an indexing chuck is the first of its kind in North America.



Valve bodies such as these require multiple operations on multiple faces, making them great candidates for multitasking.



Domino President Dietmar Sedens in his office. The Mazak-machined chess set was a gift from Mazak Corp. President Brian Papke, the mountain lion was shot by Sedens' father.