

Jetting Ahead



Alberta newcomer not fazed by recession or low oil prices

In an economy wracked by recession and falling oil prices, Keith Bruinsma, founder and director of Yellowhead Waterjet in Edmonton, AB, is pleased with the progress his company has made in its first few months of operation.

"I'm on track with my business plan," says Bruinsma. "The goals I've set for myself, I'm reaching."

The 28-year-old entrepreneur runs a 4,500 sq ft shop located close to the Yellowhead highway (from which the company got its name) in west-end Edmonton. He incorporated Yellowhead Waterjet in July 2008 and opened the firm for business in January 2009. The mainstay of his operation is a Z-813 waterjet, from Wardjet, Tallmadge, OH.

Using his waterjet, Bruinsma says he can "cut up to 10 in. of steel. I regularly cut nine inches; that's pretty cool. I know there's not too many shops that handle the thickness I can."

Steel is the primary material he works with, followed by stainless steel, then aluminium.

As for what he's making, Bruinsma says, "I do a lot of top drive components, gear boxes and pipeline equipment."

He estimates that 80 per cent of his work is related to the Alberta oil/energy sector, which is a concern given the falling price of oil.



The image to the left shows the start of the waterjet cutting process for the top drive for an oil rig, seen on the right, finished.

The part, 9 in. thick 43/30 forged steel, was cut with the WARDJet waterjet. The part took one hour to pierce and required two pierces. It required 26 hours cut time at .08 ipm, saving time and money for Yellowhead's customer, says Keith Bruinsma.



"Working in the oil industry, it's very much a rollercoaster," Bruinsma admits. "When you're busy, you're balls to the wall 24 hours. When you're slow, you're dead—nothing going on. It's tough right now. Everyone's catered to the oil field here in Alberta."

While there's not much new construction happening in the oil patch, thanks to low fuel prices, maintenance work on existing gas and oil facilities and pipelines are keeping western shops busy, he says. In addition to energy-related work, Yellowhead has also made signs and worked with a variety of non-metallic materials, including marble, tile, plastic and fibreglass.

Prior to launching Yellowhead, Bruinsma worked as

an operator at an Edmonton job shop that used Jet Edge waterjets. Last year, Bruinsma decided it was time to go into business for himself. He also decided to keep using a waterjet cutter.

"I went out to all the waterjet manufacturers, picked the best machine and off I went," he states.

In June 2008, Bruinsma travelled to the US to look at suppliers' waterjets and eventually settled on a Wardjet Z-813. He found Wardjet's price, quality and service appealing. He says he selected the Z-813 because it had, the "right size table, right size pump and future ability for five axis cutting."

According to company tech specs, the Z-813 has a footprint of 119 in. (3.02 m) by 195 in. (5 m) (gantry only) and a pump measuring 33 in. (838 mm) by 74 in. (1.8 m). The cutting envelope is 97 in. (2.4 m) by 145 in. (3.6 m) with one carriage and approximately 97 in. (2.4 m) by 156 in. (4 m) with two carriages. The machine is ball screw driven in all axes and operates at a pressure of 55,000 – 60,000 psi and a speed of 0.1 ipm up to 250 ipm.

During the summer of 2008, Bruinsma trained at Wardjet's Ohio production facility, to get the hang of the Z-813. Bruinsma describes the training as "very helpful" and says he had no problems mastering the Z-813 software programs. He currently runs two-head machines and always cuts on automatic. Bruinsma uses abrasive from GMA Garnet of Australia, and Target of Burnaby, BC.

Asked to name the best thing about waterjet, besides cutting ability, and Bruinsma ticks off a list: "the variety of materials [it can cut], no heat affected zones, no contamination, precision of cut and repeatability and it's environmentally friendly."

He adds that "waterjet has no heat-affected zones, which means no thermal distortion or hardening of material. This is very important for finished products that are put under extreme temperatures and pressure."

Waterjet doesn't contaminate the material it is cutting, an important consideration when working with pure nickel, titanium or stainless steel.

As for precision, Yellowhead, "can cut prototypes up



Keith Bruinsma isn't fazed about the economic climate.

to .005 in. or better," states Bruinsma. "With the aid of specialized software (we can) effectively cut patterns on any given material. This allows us to cut near net shapes, reduces scrap and saves our customer's money."

Waterjet is also a 'green' technology that doesn't produce rivers of effluent. Abrasive materials used in the cutting process can be reused and recycled.

Working with an earth-friendly technology like waterjet, "is very important," says Bruinsma. "I have a young daughter. The most important thing we have as human beings is our health, which is directly affected by our surroundings."

Wardjet offers four different grate options for their waterjets, each with a different application in mind. Bruinsma selected the modular "Job Shop Grate"—a grating, clamping and fixturing system that is efficient and user friendly, according to its maker.

The flat, rigid design can eliminate movement of parts during cutting. The thinner 16 gauge steel construction substantially reduces back-spray and kickback, says Wardjet.

Bruinsma says the Job Shop Grate works just fine, though he does add that, "grating is always an on-going project."

So is maintaining a healthy bottom line: "The job shop business is not easy," Bruinsma confesses. "It's not an easy business but it's been good to me so far. For [the company] to really take off, it's probably going to take a couple more years. I need the price of oil to be back up to 70 bucks a barrel. I'm turning a pretty good profit, but eventually you gotta grow the business."

Bruinsma would ideally like a staff of 20, and to diversify into machining and welding in addition to waterjet.

As for now, he says the best thing about running a job shop is "being part of some really cool projects. Getting to see large scale projects finished that have your work attached to them."

He reasserts his determination to make a go of his business, even in the face of an economic recession.

"It's only up from here. If I can make it now, I can make it anytime," states Bruinsma. **CM**

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Running in the Family



Jean Proteau, seen here and his brother Yves run APN.

Diversification is key to second generation chip shop's global success

It's no understatement to say that Quebec City chip shop Atelier de Précision Neufchâtel (APN) has come a long way from its start in 1974. Launched by Claude Proteau in the basement of his family home, the shop

long ago emerged from the underground and now has spiffy new headquarters that are being recognized for their architectural merit.

Not only that, but the company is running three shifts daily. And, in the midst of a pounding recession, it's doing \$4 million in annual business and is still growing.

Named after Neufchâtel, a Swiss town known for its precision work, the machine shop is also making a name for itself in Europe. And 35 years after its debut, the business remains firmly in family hands with the second generation now in command and a third on its way.

APN is now run by brothers Jean and Yves Proteau. Jean has been with the company since 1974, while Yves joined the firm in 2004, after obtaining an MBA and running his own business. Jean is in charge of sales, technical support and methods, and applications, while Yves is in charge of management, R&D, financing, training and implementation of software systems like JobBOSS.

The company is doing solid business in a variety of fields including aerospace, automobile and military ballistics. "Despite the gloomy economy, our diversification is allowing us to pull our weight," says Jean Proteau.

Big-name clients include General Dynamics, Olympus and, by way of sub-contractors, Bombardier and Pratt & Whitney. Most clients are Canadian, but exports now