

Tested and True

New machine tools help tooling manufacturer expand market reach beyond Canada

ISSUE: New machine tools to secure more complex contracts in the aerospace, nuclear, wind and solar power industries.

SOLUTION: Five axis, multi-tasking machines.

XL Tool, Inc. president, Gord Jokic, believes that his company's slogan "Tested and True" isn't a catchy jingle, but a business building philosophy.

As a startup in 1992, the Kitchener, ON, firm was just a two-person tool and die business, earning a paltry \$49,000. But last year XL amassed more than \$4.6 million in sales, and is averaging about a 20 per cent increase annually. It's clear that Jokic is doing the right things to sustain XL Tool's steady growth.

Recognized as one of Canada's fastest growing and most profitable enterprises (XL garnered a PROFIT 100 award in 2004), the company continues to solidify its position as a leader in the tooling manufacturing category. Although about 90 per cent of XL's contract work involves making tooling for the automotive parts industry, specializing in designing and building metal stamping dies (progressive, stage, compound, transfer, extrusions, brake, embossing, notching and punching, prototypes, and short run), most of which its customers use in their own production, the company also offers precision custom sheeting for satellite companies and extrusion firms.

"For us at XL Tool, we help our customers by producing quality tooling in shorter lead times than our competitors," remarks Jokic. "Our job is to help our customers find a better way for their tooling needs."

When asked how a young company ascends in such short order to a leadership role in its field, Jokic gives credit to his loyal and growing list of customers and XL's dedicated employees. "We're fortunate to have a tremendous depth of experience amongst our staff," he notes. "In 16 years we've grown our team to more than 40 experienced and competent die makers, machinists and design professionals, and we regularly enhance our technology with the most up-to-date design software and CNC equipment available."

A native Kitchenerite, Jokic (pronounced yo-kich) began his career as a truck driver in the oil exploration sector. He went on to study aircraft maintenance at Centennial College in Toronto, but found his life's calling when he took the position of press operator at Kitchener-based auto parts supplier Budd Canada, where he apprenticed to become a tool and die maker. Prior to leaving Budd in 1996, Jokic launched XL in a 1,500 sq ft shop. He and a partner ran it as a part-time operation. Then, based on the company's accelerating success, the company moved to a 7,000 sq ft building in Kitchener. The entrepreneurial duo invested \$50,000 of their own savings in equipment and machinery.

"It was all used equipment that I purchased at auction sales," recalls Jokic. "It was time for us to take a chance." As for profits, Jokic still strives to reinvest a healthy amount back into the company. "The kind of business we run here requires quite a bit of capital expenditures. The equipment is expensive. If you don't put money back into it, you're going to be slipping behind."

The focus on top-rate technology is exhibited by the depth and range of machines at XL, including three Tacumi Seiki CNC machining centres, a Pheonix CNC machining centre, four Sodick wire EDMs, a Fortworth vertical mill, a Topper CNC lathe, two Okamoto surface grinders, an 800-ton and a 200-ton CMC Bliss tryout presses, and an Amada horizontal bandsaw.



The Okuma machine tools, including the five axis MU-500 seen here, have allowed XL Tool to machine complex parts for new markets.

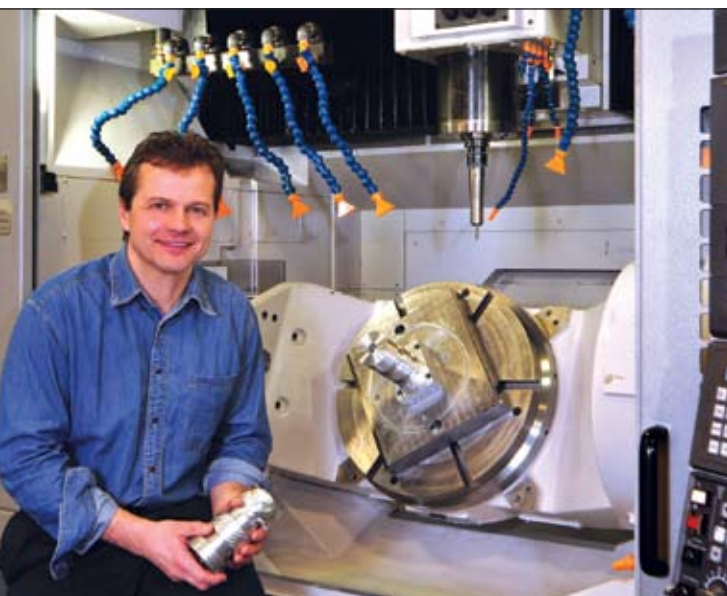
XL's raw materials—tool steel (80 per cent), and aluminum and stainless steel (20 per cent)—are mainly sourced from Canadian suppliers such as Alloys Division of CSM Inc., Bay City (Burlington) Steel Company Ltd., C.F.F Stainless Steels Inc., Castle Metals, ThyssenKrupp Materials NA, and Vanguard Steel Ltd. (Alloy Steel Division).

"Our key plus over the competition is the technology we have at our disposal," nods Jokic. And in order to pursue more complex and more exacting contracts in the aerospace, nuclear, and wind and solar power industries, he decided to purchase two leading edge Okuma CNCs: the MU-500VA five axis, and the MB-46VAE CNC. "A colleague at another company has long used Okumas, and recommended them as robust machines offering both high torque and high tolerances," he



Top: The Okuma MU-500 five axis machine tool in action at XL Tool.

Below: Gord Jovic, XL Tool president, shows off one of his parts.



says. So when he looked into purchasing new equipment, Okuma topped his list from the start. "I knew what I wanted, and stayed with my decision when we bought the MB-46 in May 2007 and the MU-500 in November of that year. We now have the confidence to go after contracts we were afraid to bid on in the past."

Okuma is recognized as a machining powerhouse known for controlling every aspect of the design and production of its core components (its automatic tool changer, motor/drive/encoder, base casting, OSP control, turret, and spindle). Its products are distributed from Manitoba to the Atlantic provinces by EMEC Machine Tools Inc.

Bill Mara, president of EMEC, Mississauga, ON, and Montreal, QC, says what distinguishes Okuma is that its machines are built using Mechatronics, an equipment design targeted at achieving a good balance of power, speed and size that addresses most applications. Its CNCs, the MU-500 and the MB-46 in particular, meet market demands for increased speed, high precision, and the automation and increased flexibility of factory production systems.

The MB Series, according to Mara, offers thermal stability and zero table overhang for tight tolerances and enhanced accuracy. The ergonomic front-access configuration of the MB Series requires a small footprint—2,940 x 3,360 mm (115.75 x 132.28 in.). In addition, the MB is environmentally friendly, requiring no hydraulic fluid. Construction optimization based on FEM analysis and a rapid spindle traverse with Hi-G acceleration combine to create a solid, nimble machine fashioned to deliver speed and accuracy, says Mara. He points out that the MB-46 CNC 762 mm (30 in.) X-travel x 460 mm (18 in.) Y-travel x 460 mm (18 in.) Z-travel also features maximum work dimension of 1,000 x 460 mm.

It was a natural progression from this vertical machining centre to the MU-500 5-axis trunnion CNC, observes Jovic, emphasizing that it's the tight tolerances of his latest CNC purchase that he values most. "There are quite a few factors that dictate tolerances that can be held, such as material being machined, geometry, depth of cut, size, type, and length of cutter," he says. "In a lot of cases we have been able to cut out secondary/post operations like surface grinding and wire cutting, which in the past we would perform on tolerance callouts of .0005 in. or less. The roundness of interpolated circular features can be comparable to what you would achieve on a lathe."

The MU-500—914 mm (36 in.) x 660 mm (26 in.) x 660 (26 in.)—is considered the cornerstone of XL's operations. Jovic says he's pleasantly surprised at the performance of the advanced five axis control technology. "Today's buzzwords in metalworking are 'less handling' and that describes the MU-500. It takes less time for setup while improving productivity and throughput. This machine exceeds my expectations."

Okuma's original direct drive motor has been adopted for the A and C spindles of this trunnion table, and by rotating the rotary table the MU-500 becomes a new multi-tasking machine that can also perform turning operations. The machine brings power with spindle speeds up to 35,000 rpm and X/Y/Z cutting feedrates of 1260 ipm. The trunnion construction provides positioning accuracy with ± 1 arc sec (actual data) repeatability of the A and C axes. The standard Hi-G control function reduces positioning time and greatly

A machine operator checks a machined part in the Okuma MU-500 five axis machine tool.

reduces non-cutting time. From artificial joints and complex valves to rock bits, flanges and impellers, the rigidity and simultaneous five axis machining allow for precision-crafted components with a maximum load capacity of 1,100 lb (almost 500 kg). The direct drive motor on the C axis allows turning up to 1,000 rpm and a lathe function up to 12,000 rpm. Thermo-Friendly Construction offers critical 0.1-micron compensation while the Okuma Abso-Scale system provides accurate positioning.

Jokic doesn't flinch when he cites the \$600,000 combined price tag of his Okumas, although he also admits it's difficult to estimate a return on investment on this equipment. "We don't track what each machine produces," he says. "But we believe the investment is warranted and represents a crucial component in the growth of our company."

Boasting a broadening customer base that extends across the local Kitchener-Waterloo Region, as well as nearby Guelph and Toronto, XL Tool is putting the onus on its Okumas to open new markets. "We are building tools for the Mexican market and are maintaining our customers there," says Jokic.

Where XL will expand next? Jokic remains upbeat despite fierce competition. "There are lots of people around doing the same thing. We haven't reinvented anything. But the leading edge technology and machinery XL uses may provide us with a greater diversity than most other companies. There's a lot that we can do now." **CM**

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