

The ups and downs of oil and gas

Alberta machine shop's diversified services help keep business booming



(From left) Ron Feigel, business development, and Fred Aleksic, product manager, show off the company's flagship power tong equipment. Images: Universe Machine

In 1960 a then 18-year-old Kurt Feigel Sr. immigrated to Canada with plans only to stay for a year or two. To earn a living he capitalized on his skills, and in 1965 established Universe Machine Corp. with two other people within a 2,000-sq.-ft. building in the Edmonton area. What started out as a small machine shop with a plan to move on shifted, and Feigel Sr. grew both his business and his family in Canada for decades to come. To this day Universe Machine remains in the hands of the Feigel family.

From its humble beginnings, the shop has always focused on heavy industry, including oil and gas. Today the shop has expanded both its operations and services to include more than 200 employees during peak times, and a more than 100,000-sq.-ft. facility. In decades past depending on market conditions, the company has branched out from a singular focus to include three divisions.

General manufacturing was the shop's strength. However, in the late 1980s Universe machine found itself focused on product development. The shop designed and engineered a high-quality line of power tongs—a machine used on drilling rigs to screw and unscrew tubing or casing to a specific torque. It was this development that really pushed the shop to branch out into this new area of opportunity. Today Universe Machine's power tongs and other related products are sold globally.

The 1980s also saw another significant shift for the shop. The company expanded into valve servicing, specializing in the service, modification, and repair of valves for many industries. Universe Machine boasts that this valve service division has grown to be one of the largest of its kind in all of Canada.

Throughout all the changes and iterations, the company took on, it continues to remain a family-owned business. In 2014 Kurt Sr. passed the reins to his son Kurt Jr., who became president of the company. A third generation of Feigels, including Kurt Jr.'s sons, are helping to continue the family legacy.

"We've been really fortunate to see steady growth over all these years," said Ron Feigel, business development, Universe Machine. "We've spent 57 years in business, and while we've had some low points and struggled with market conditions, we've always come through stronger. We've chosen a slow and steady path, unlike other operations that just grew too fast and are no longer around anymore. We've remained and continue to thrive."

The shop has spent decades honing its skills and expertise, focusing on the three divisions that have helped it grow: manufacturing, valve services, and products development. In that time the shop has taken on many unique projects, including machining the first heart implant valve for the University of Alberta, designing valves used in the NASA launch facilities, and producing valves for pipelines throughout Canada.



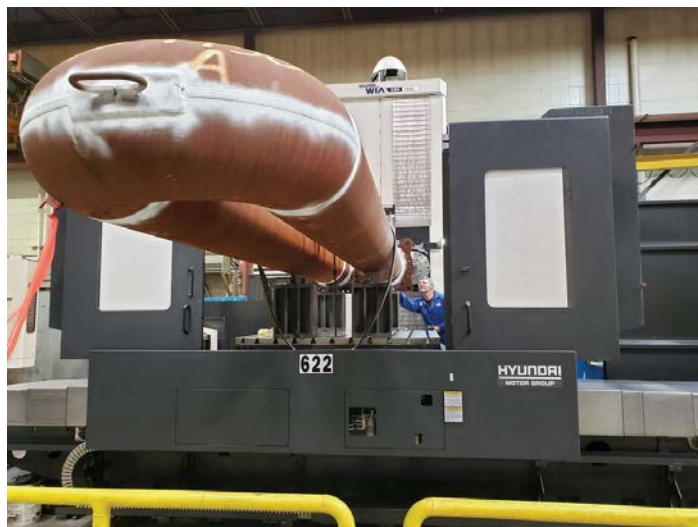
Universe Machine specializes in valves ranging from ½ to 72 in. in diameter. This extremely large 42 in. valve body can easily be machined on its equipment.

Machine Shop

The shop started out as a job shop with manual machining, drilling, and welding capabilities. These core competencies have continued to this day while expanding to include extensive CNC machining, grinding, heat treatment, laser cladding, and plasma cutting services. The diversity in equipment and services allows the company to take on a range of challenging projects.

“Having highly skilled and dedicated workers, stringent quality control standards, and large equipment capacities has really set us apart from the competition,” said Feigel. “Our largest CNC machines can handle 50-ton workpieces. Our large, high-quality machines allow us to regularly work on massive, complex components.”

Universe’s manufacturing division focuses on modifying or repairing some of the biggest and most unique components in Canada. Because of this the shop requires extremely large and diverse machining equipment, including CNC machining centers and lathes, horizontal and vertical boring mills, milling machines, drill presses, surface grinders and shapers. It also provides full in-house engineering support, and its certifications include ISO 9001:2015, APEGA, ABSA, and COR. Beyond machining, the manufacturing division also provides laser PTA heat treating and cladding, robotic and B-pressure welding, fabricating, and millwrighting services.



Working with extremely large and complex components, the shop invested in a new Hyundai horizontal CNC mill that can handle challenging setups.

The company is an authorized repair and modification center for numerous valve manufacturers and is the only Canadian-based member of the Valve Repair Council. This division provides specialized services ranging from hydro-testing, and trim changes and extensions to full valve refurbishing back to OEM specifications. The shop specializes in valves ranging from ½ to 72 in. in diameter. For valve modifications the shop provides CRN numbers and certified processes accordingly.

And while much of the shop’s work focuses on oilfield products and servicing, the company has expanded to also include other heavy industries like mining and forestry. Universe products require extreme and rugged testing by staff to ensure they can withstand the harsh conditions found in these sectors.

There is much discussion surrounding the nation’s reliance on fossil fuels and the significant push towards renewable energy. However, many reports including the International Energy Outlook by the U.S. Energy Information Administration show that while renewable energy is the largest growing segment across North America, petroleum and natural gas are the most-consumed sources of energy. In essence, fossil fuels will continue to dominate for much of the next half century.

“If we are to ensure secure, reliable, and affordable energy for the world’s increasing population, it would be prudent to shape energy policy with this in mind,” said Feigel. “While Universe Machine does a lot of work for the oil and gas sector, we also have diversified into forestry, mining, and other heavy industry segments.”

However, the oil and gas sector has always been extremely volatile. Local and global conditions can have significant impact on manufacturers, and companies that survive the market’s ups and downs of the market often are those with grit, determination, and innovation.

“Leaders must maintain growth no matter what phase of boom or bust the industry is in,” said Feigel. “Global competition and remaining competitive is a challenge. But another challenge is right here in our own back yard. When our own federal government is not truly interested in efficiently utilizing our vast natural resources to help stabilize our economy, but instead creates roadblocks like increased taxes and changing rules for businesses, that is an even bigger problem. Investment dollars will flow elsewhere.”

Over the last six or seven years the shop has had to contend with low commodity prices, sporadic work, and tighter margins.

“However, the opportunities, creativity, and satisfaction the energy industry provides, thankfully, still seems to outweigh the negatives,” said Feigel. “Our highly skilled staff take great pride and find it rewarding to design, manufacture, repair, or modify the many interesting, challenging, and complex components we work on.”

And while Feigel acknowledged the importance of improving energy efficiency, including the mindful utilization of renewable energy, a realistic, wise, and balanced long-term transition plan that takes risk, reward, cost, and benefit into equal consideration is necessary.



An operator prepares to finish machine the bore on this heavy metal part to specification on the shop’s vertical CNC boring mill.

“We need provincial and federal governments to actually support our oil and gas industry in Alberta and across Canada,” said Feigel. “This approach has been proven to create stability, instill confidence, and spur investment, which creates more jobs and economic growth over the long term. Natural resource wealth should be utilized on a parallel platform, creating long-term diversification, energy efficiency, and sustainability without slowing growth or causing economic hardship.”

A Step Forward

The constant flux of the oil and gas industry has forced Universe's management to find new ways to generate revenue and keep business as steady as possible. Investing in training, apprenticeships, and improving employee skills are a few ways the shop has remained competitive.

"Investing and incorporating new technology and focusing on research and development during the pandemic has led to extensive testing and improvements of our existing products," said Feigel. "We've engineered a new line of compact, high-torque power tong equipment, which is currently being introduced to market. We also added a Toshiba TUE-200(S) vertical lathe with live tooling. All of this investment, including retaining skilled, long-term employees, signals to our employees and customers that we can be trusted to continue moving forward, even during difficult times."

Universe Machine has taken the difficulties and economic downturns in stride. Rather than letting these times bring them down, management has always focused on investing in strengthening employees' skills and in new equipment and services. This mindset has allowed the company to weather tough times and take advantage of opportunities during economic upswings.



An operator machines valve seats to tight tolerances on the shop's latest acquisition, a Toshiba TUE-200(S) vertical lathe with live tooling.

"It appears that industry confidence is slowly returning. Along with higher energy prices, this is driving a sustained improvement and more positive tone for our industry, but it's not without its challenges," said Feigel.

The company's efforts across nearly six decades have served it well. The focus on continual improvement has helped the shop be globally competitive.

Today Universe Machine is moving forward in the best way possible. Kurt Sr., with his decades of experience and wisdom, does his best to pass on that knowledge to his children, grandchildren, and shop employees. Mentoring young people has always been his passion. You can still find him in the office teaching anyone interested in learning tricks of the trade.

"With wise and dedicated mentors like Kurt Sr., the future looks bright as we transition to the next generation," said Feigel. "We are fortunate to have many intelligent, educated, and hard-working young people in the business. We are continuing to see improvements in the oil and gas sector and hope that this will continue through 2022 and into 2023. As a business, we are not just surviving but thriving and look forward to continuing this trend."

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