



Babbitt bearings have been a long-standing specialty of Davis Machine and currently represent 40 to 50 per cent of the shop's business, giving the company a larger geographical reach.

# Shaping the power generation sector

*Davis Machine has been producing babbitt bearings since its start in 1919*

*By Lindsay Luminoso*

**B**ill Davis' dream of starting a machine shop in downtown Saskatoon became a reality 105 years ago. Originally located on Avenue A—now the corner of Idylwyld Drive, between 22nd and 23rd Street—Davis Machine Company is said to be the province's first established machine shop.

In its early days, the shop served local manufacturing needs and did some work on the Ford Model A and Model T vehicles, specifically the babbitt bearings.

During this time, it is said that a man came into the shop one day needing help to fix a broken automobile axle. Willing to fix just about anything, the Davis team got to work and fixed the component. It wasn't until later that Bill Davis discovered, much to his surprise, that the owner of the automobile was infamous Mafia boss Al Capone.

"It's a story that has been circulating here for a long time," said Jim Rhode, president, Davis Machine. "Obviously, there is not concrete proof that it actually happened, but it's a cool story nonetheless."

After spending over 40 years at the helm of Davis Machine Co., Bill Davis sold the business to Larry Woodward and Ian Tiessen in 1960. The company also saw another breakup that decade when the duo decided to move locations to where the shop sits today.

"We are and always have been a custom manufacturer, servicing many different industries," said Rhode. "We are a job shop that provides machining and welding capabilities."

The shop focuses on all various industries within the province. The potash sector, which boomed in the 1960s through the 1980s, is a significant one,

along with other mining and oil and gas work. However, agriculture and power generation are big industry shares for the company.

## The Rhode Era

Rhode's family background was in business—his father was a masonry contractor. That was his inherited path, but not his chosen one. In 1985, fresh out of high school, Rhode got his start at Davis Machine.

However, just a few years after getting his feet wet in manufacturing, Rhode spoke with Woodward and Tiessen, inquiring if they had ever thought of selling the business. And as it turned out, they were planning on it in the immediate future. Rhode reached out to some other employees to see if they would be interested in purchasing the shop with him. And in 1989, four Davis Machine employees, including Rhode, bought the shop.

However, this partnership was somewhat short-lived when Rhode bought out his partners in 1993 and 1997 respectively.

"It's been solely mine ever since," said Rhode. "But a lot of what we do remains the same. We still work in the uranium and mining sectors, especially potash mining. We basically service all the resource sectors within Saskatchewan. With that though, we also deal with significant market fluctuations that typically align with the underlying commodity."

Beyond that, the shop had taken on work for other industries, like the food manufacturing sector, with Maple Leaf Foods, and the communications sector, with Northern Telecom when the fibre optic manufacturing sector was thriving.

With the market volatility and the death of the fibre telecom sector in the province, Rhode learned that the best practice was diversification.



Davis Machine is limited to 7,500 sq. ft. of shop floor space in Saskatoon with a mix of both manual and CNC machining and welding equipment. President Jim Rhode plans to double the shop's size, sales, and number of employees in the near future.

## Babbitt Bearings

"While we have certainly focused on diversifying the markets we serve, we have always produced babbitt bearings," Rhode said. "We started doing crank shaft and connection rod work for the Ford Model A and Ts, and even as recent as a few weeks ago, we had an inquiry from a customer looking for help to rebuild his Model A."

Beyond this, the shop takes on significant work in the power generation sector along with any kind of electric motors, pumps, and mining sector mills.

Its babbitt bearing work sets it apart from other shops, and it is one of only a handful of companies doing it in the country. While one big Ontario shop does babbitt bearings and several other smaller shops have come and gone over the years, Davis Machine is the only company who makes them in Saskatchewan.

"Our machine shop competitors are also our customers," said Rhode. "If they are doing anything with babbitt bearings, we can do it for them, and we subcontract some of the machining back to them. It has always been our speciality, and because of that, we have really focused on expanding beyond our local geographic region to cut through some of the typical ups and downs. In 2010, we really got aggressive with promoting this area of our business."

The shop would do odd jobs for Manitoba Hydro or work in neighboring provinces, but Rhode real-

ized the opportunity was there to work from coast to coast. The company has since expanded to bid on work in Europe and China, as well.

Babbitt bearings currently represent 40 to 50 per cent of the shop's business, as it has a larger geographical reach with this type of work.

For example, the shop works with three big customers in Quebec, which isn't always the case for Saskatchewan-based companies, something Rhode is quite proud of.

## Power Generation Sector

One of the shop's customers does work for a small power plant five hours north of Montreal.

"The power plant had a bearing that was down and needed to be refurbished," said Rhode. "They knew we could do it for them in a hurry. Two workers drove 36 hours to our location and waited here for the week it took us to produce it, then they drove back with it. There are some shops that are closer that may have been able to do it, but our long-standing relationship, delivery, and quality of our work is what gave this customer confidence in our ability to get it done."

Bearings for power generation, especially hydrostations, are often located at the bottom of the pit, with other components loaded and assembled on top. Due to the critical nature and inaccessibility of these components, users must have confidence in them.

"There can be hundreds of millions of dollars running on these parts. They obviously need to work," said Rhode. "There is a lot of reliance on these parts."

And as a long-time producer of these components, the shop works with eight provincial power utilities. And while there are many ways to produce electricity—coal, gas, and even nuclear—the shop's primary focus is hydro.

"While we work in all areas, most of our work is towards hydro refurbishment," said Rhode. "We are assisting in upgrading current hydrostations to make sure they are up and running. Refurbishment and upgrades are a big opportunity, one that we don't see in the wind or solar."

When it comes to refurbishment of a power or hydrostation, there can be anywhere from four to 16 generator units. And typically, the stations will replace one per year for multiple years.

"This means that when we bid on this work, it is for multi-year contracts," said Rhode. "This summer, we will be finishing a six-year project. We recently bid

on a power station project in Ontario for Sir Adam Beck for a 16-unit refurbishment that would start in 2025 and run for 16 years. That is quite different for us, and a bit of a challenge because who knows what the shop will look like or [what] costs will be in five years, let alone 16."

Outside of hydro, Davis Machine is located where the most uranium is produced in the world, which leads to nuclear being another area of opportunity for the shop, especially with small modular reactors.

Currently, the provinces of New Brunswick, Ontario, and Saskatchewan are working on a joint venture to build the first of such reactors, which currently are located in Ontario but will eventually come to Saskatchewan.

Rhode is unsure how this venture will affect local businesses, but he believes that the shop will be involved in some aftermarket capacity.

"Getting into the work in power generation, unfortunately, is very difficult," said Rhode. "Everyone wants to see experience, and it's hard to demon-

strate experience without having it. For those looking to break in, make sure you understand what industries you're going after. We are fortunate to have a history in that space and have support from our local utility, SaskPower. Years ago, they really tried to build the supply chain and have work done locally. We were already doing work in this area, so it helped us build those relationships."

## Shop Challenges

The resources sectors have been in a tough place for a while, except for potash, which brings about a new set of challenges.

Generally speaking, when the potash sector is doing well, it hires people from all areas of the trades and pays them well above market. It is great at sourcing



Davis Machine produces babbitt bearings in diameters from 2 in. to 10 ft. for pumps at pipelines, coal plants, hydro dams, or natural gas turbines.



An important step in the process is testing, including ensuring that the babbitt is chemically bonded to the steel. Once that is confirmed, the bearing is machined and then inspected again to ensure features meet proper specifications before being shipped out. The FARO portable CMM arm also is used to reverse-engineer components.

workers, but that can leave shops like Davis Machine struggling to find skilled workers in an already challenging labour market.

“Everyone in this province faces this challenge, and it leads to us having to compete with extremely high salary expectations,” said Rhode. “That makes competing for work outside of the province a challenge, because the cost of doing business is so high.”

Rhode explained that because of this, the shop has changed its production workflow. Rather than having one person focused on one process or machine, an employee will follow the project from start to finish. This allows for workers to be more broadly skilled. If there is a shortage, other workers trained in this manner will have the skills to take on the job.

“It’s all about being as versatile as possible for our customers,” said Rhode. “With bearings and power generation, it’s often emergency work, where something has failed and needs immediate fixing. We need to make sure that we can do that, and with this workflow model, it just makes sense for us.”

## Growth Opportunities

The shop has been around for 100-plus years and has a reputation for quick services and high-quality work. Currently, it is limited to 7,500 sq. ft. of shop floor space with a mix of manual and CNC machining and welding equipment.

“We could very easily fill 25,000 sq. ft.,” said Rhode. “That would be realistic for us in a near-future expansion. And we certainly have plans to do that. However, buying land is a challenge in the province, with soaring prices and low availability. We had plans to expand prior to the pandemic but that was obviously put on hold. Now, the plan is to double the shop size, sales, and number of employees, which now sits at 18, within the next three to five years. It’s a really exciting time for us.” **CM**

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