



Velco Tool & Die, Inc.

Seibu

Velco Tool & Die and Seibu: A STORY OF COMMITMENT

Located in the beautiful city of Lake Forest, California, Velco Tool & Die is a quintessential American success story. Founded in 1984 by Joe Velez, Velco has shown that they can adapt to the changing needs of their customers and capitalize on new business opportunities.



Velco Headquarters – Lake Forest, California

Originally, Joe had planned on starting a metal stamping company with his brother. While working at McDonnell Douglas, he saved up and purchased a surface grinder and Bridgeport knee mill. In 1984, Joe purchased his first Wire EDM machine and set out to build his job shop.

Recently, EDM Today had the opportunity to visit Velco and learn more about their history, and what sets them apart. EDM Today was joined by a team from KGK International and Seibu. We were welcomed to Velco by Christy Pennino, Velco's Vice President. Christy is responsible for the day-to-day management and developing the strategic vision and strategies that keeps Velco at the forefront of their industry.



*Christy Pennino
Vice President*

Also included in the visit was Arnie Sugiyama and Patrick Corbett of Caltec Concepts and Engineering, the Southern California machine tool dealer that represents Seibu. In looking at the interaction between these various companies, it was evident that this was a story of commitment. It is the commitment of Velco to their customers to provide exceptional quality products, timely delivery, and competitive pricing. But it is also a commitment between Seibu and Caltec to provide Velco with the EDM equipment and technology that will allow Velco to meet their customers' needs.

We met at Velco's headquarters in Lake Forest. It is one of two buildings that Velco uses for production. There is a third building that will be opening soon. The third location will be primarily an engineering and prototype center.

anything. Joe has the ability to communicate clearly and succinctly complex ideas with few words. It was refreshing, and a pleasure to talk with him.

In 1984, Velco began operations with traditional tool & die being their primary market. Today, Velco still does a limited amount of tool & die work, but the majority of their work is now in the medical industry. When asked how Velco made the transition from tool & die to medical, Joe explained that it came out of simple networking. He met a salesman in the medical device industry who made some key introductions into the industry. One job led to another, and Joe saw a very good fit for his company.



*Joe Velez
Founder Velco Tool & Die*

While tool & die could be considered a precision metalworking industry, it does not compare to the accuracy demands of medical customers. Christy added that it is Joe's personality and work ethic that naturally leads to high accuracy. Christy explained that Joe is a brilliant self-taught mechanical engineer. He has incredible capabilities in analyzing motion, energy, and force to transfer a design to an object. With that comes a natural dedication to high levels of precision and to producing top quality work. This makes high accuracy medical work a perfect fit for Velco.

Velco's relationship with Seibu began in 2021 with the purchase of two MB Series Wire EDM machines. KGK Sales Manager, Greg Weirich stated that he spent over two years working with Joe Velez, and Senior CNC Programmer, Jamie Velez before receiving the first order. Working with Patrick Corbett from Caltech Concepts, KGK needed to provide the justification to try Seibu equipment. Greg added that Velco is an extremely demanding customer when considering support, service, reliability, tolerance, and performance. Greg stated proudly that they met the challenge and were rewarded with an order.

During the peak of COVID in 2022, Velco purchased another MB Series machine. In 2023, Velco purchased four more machines, two of which are the new M-HP Series. In total, Velco purchased eight machines – one of which was purchased for a remote location. EDM Today asked Joe if he would share the justification that he used in choosing Seibu equipment. Joe explained that it was simple. A customer asked Velco to quote on producing a very challenging part. Joe did not believe that his existing equipment could produce it effectively. He visited IMTS and looked at new equipment on the market. After test cutting the Seibu machines, he found that they met all his accuracy and production requirements. The first two machines had proven themselves in many ways. Velco has continued to purchase Seibu. Velco believes that they are a perfect fit for the high precision work that Velco continues to seek.

The most recent Seibu machine that Velco purchased is the new M-HP Series. This series offers many advancements that will help Velco produce high levels of accuracy and productivity.



M-HP Series Machine



Example Maintenance Dashboard

These new models include some very innovative features. Improvements in the wire tension system reduce tension fluctuation by as much as 30%. The system also reduced wire vibration by as much as 50%.

New casting design and technology result in a 25% increase in structural rigidity. Y-axis travel is increased by 50mm, while still retaining the improved rigidity. The combination of improvements supports a pitch error accuracy specification of $\pm 3 \mu\text{m}$ on the high-precision version of the model, and an incredible $\pm 1 \mu\text{m}$ of pitch error accuracy on the ultra-precision versions of the model.

In addition to mechanical improvements that support high accuracy cutting, Seibu has made significant improvements in software and HMI to make programming and operation more intuitive and easier to use. Seibu instructed their software engineers to look at development from a user experience standpoint.

The updated HMI also includes comprehensive manuals and video help to provide active guidance to operators and maintenance people performing various tasks.

Aside from the enhanced user experience supported by the redesigned HMI, the Seibu machine supports remote and social media connectivity using popular communication apps such as SLACK and LINE. Machines can be monitored from remote locations using a phone or tablet. For safety, the machine can be monitored only. The machine cannot be controlled remotely.

Velco's decision to purchase Seibu technology is also in support of their management philosophy and how they position themselves in the market. In a discussion with Velco Vice President Christy Pennino, EDM Today asked how they approach building market share. Christy explained that they enjoy taking on challenges, with the goal of exceeding customer expectations. She added that their quote will always be competitively priced without any sacrifice of quality.

Clearly Seibu's accuracy is far better than what is currently required of even the most demanding medical applications. But who knows what challenges Christy and the Velco team will face in the coming years. Their Seibu equipment will allow them to achieve whatever accuracy requirements may come their way in the future.



Example Video Help



Velco Robotic Workcell

EDM Today also asked Christy to look in her crystal ball and make a prediction for the future and where Velco will be in both the near and long term. Christy indicated that, unfortunately, the shortage of skilled workers impacting the entire country will likely be with them for the foreseeable future. She further mentioned that Velco has responded in several ways to combat the situation. In one way, they are investing in their employees. Instead of training their employees, Velco educates them so that they can function with a high level of autonomy. Velco also strives to create an environment that leads to productive employees. Competitive salary and benefits are, of course, in place, but the environment in which the employees work is also designed for high levels of employee satisfaction.

Additional steps to combat the shortage of workers is to employ robotics and automation to allow existing employees to do more with less. Velco's Nachi robotic workcell is an example of automation of a vertical milling machine. Christy stated that it was their goal to complete one automation project per year.

It was extremely important to the Seibu team that Velco is happy with their equipment. In attendance was Seibu Director Kazuhiro Matsushita, and KGK Product Manager Dodge Ito. They were both delighted to learn that Velco was extremely happy with their equipment. KGK knew that, since the first machine was installed in 2021, there was not one service call required on any of the eight machines in service. Velco also added that in all of that time, there was not one single auto-threading fault that stopped the equipment from running overnight.



Seibu Director Kazuhiro Matsushita, Dodge Ito, Joe Velez, Christy Pennino and Jamie Velez Jr.

There is no doubt that Seibu reliability will help Velco toward their goal of exceeding customer expectations. Clearly the relationship between Seibu and Velco is one that exemplifies commitment. It is a commitment to each other, but most importantly to the end customer that will reap the benefits.

About Seibu

Seibu's Precision Machine Division is part of the larger Seibu Electric & Machinery Co., Ltd. They are headquartered in Koga, Fukuoka Prefecture, Japan. They are a publicly traded company, listed on the Tokyo Stock Exchange as of 2006.

Seibu

Seibu created the world's first CNC Wire EDM in 1972. Since then, they have steadily improved the productivity and precision of their expanding line of EDM systems. Seibu is constantly researching EDM technology to stay on the leading edge of the industry.

<https://www.seibudenki.com/>

EDM