

# Investment Leads to Greater Capabilities



**Downhole high-pressure oil plug used in oil drilling**

Radax Industries Inc., specializing in the manufacture of fasteners and gun components, needed to produce parts with higher tolerances and more complexity. The company also wanted to diversify and make products the machinery they owned was not able to produce.

“Initially we sought new multi-spindle screw machines to add to our shop,” said Ben Sacco, Operation Manager, Radax Industries Inc. and Precision CNC Mfg. “We learned that multi-spindle screw machines were not going to be flexible enough nor capable of meeting the demands for complexity or productivity that our customers required. After research we realized that Swiss-type CNC machines are capable of machining the components we needed to make and are able to run unattended for a long period of time.”

With the assistance of Tsugami representative Mike Narcisso, Morris Great Lakes, Radax Industries purchased its first Tsugami, a BE20-V CNC Swiss lathe. The component machined on this Swiss lathe was a stainless-steel fastener with a custom pitch thread. Utilizing the BE20-V, the cycle time on the Tsugami was half of what it had been on other machines in the shop.

“The components made on the Tsugami BE20 met our customers’ requirements and helped Radax grow, resulting in the purchase of five more Tsugami machines to meet more demand.



**The Tsugami is equipped with an Edge Technologies Minuteman 320 SE bar feeder and a Tri-Mist 850 coolant filter. A parts catcher moves components to the outside of the machine to facilitate lights out machining.**

The manufacturing complexity and flexibility needed were met. It has been eight years since we first started our project. Productivity has been realized by unattended operations. The quality of the components is seen by our customer satisfaction consistently registering 4.8 out of 5.0,” said Sacco.

Radax now runs seven Tsugami machines: S206 20 mm 7-axis opposed gang tool CNC lathe, B0326 32 mm 7-axis opposed gang tool CNC lathe, two BE20-V Swiss type 5-axis CNC lathes with chucker mode capability, SS26 26 mm Swiss Type CNC 7-axis automatic lathe and SS20 20 mm Swiss Type 7-axis CNC automatic lathe.

Radax, founded in 1967 by Ben’s grandfather Rocco Sacco, has been a commercial fastener manufacturer producing standard and custom fasteners including custom screw thread forms, non-standard lengths, exotic materials, socket set screws and dowel pins. The first machines used at Radax were Davenport screw machines.



**Custom nocks for cross bow bolts**

The company has grown from a small facility to a 50,000 sq. ft. facility. It has expanded to include a new company called Precision CNC Mfg. (PCNC) which manufactures all types of products from round bar, generally of steel or stainless steel. The machines utilized by PCNC are fully automated and can run overnight without human operators if needed.

Dowel pins are machined with a chamfer on one end and a radius on the other. Dowels are

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made from alloy steel, stainless steel or brass. "The hardened ground alloy steel dowel pins manufactured at Radax do not bend, dent or break very easily because they are case hardened to Rockwell HRC 60," said Sacco.

Set screw are used to secure one object within another object. The set screw passes through a threaded hole in the outer object and is tightened against the inner object to prevent it from moving.

Radax also does cold forming which utilizes extreme pressure and rigid tooling to form metal components instead of cutting them. These products included shafts of various lengths and diameters.

Custom centerless grinding is also performed at Radax. This process removes material from the outside diameter of a round bar, part, dowel pin or a screw thread. Centerless grinding services have been used by industries such as sporting goods, firearms, defense, marine, irrigation and automotive.

Radax Industries is ISO 9008:2015 certified. "With continuous improvement being our primary goal, we are able to achieve tolerances as tight as  $\pm 0.0005$ " for concentricity and  $\pm 0.0005$ " for diameter," said Sacco. "We are geared to accommodate almost any production requirement, from prototyping to high volume runs. We will run nights and weekends to support our customers and are customer oriented. Our Tsugami Swiss machines have allowed us to venture into special products and given us an extra boost to keep us running and grow when it counted."



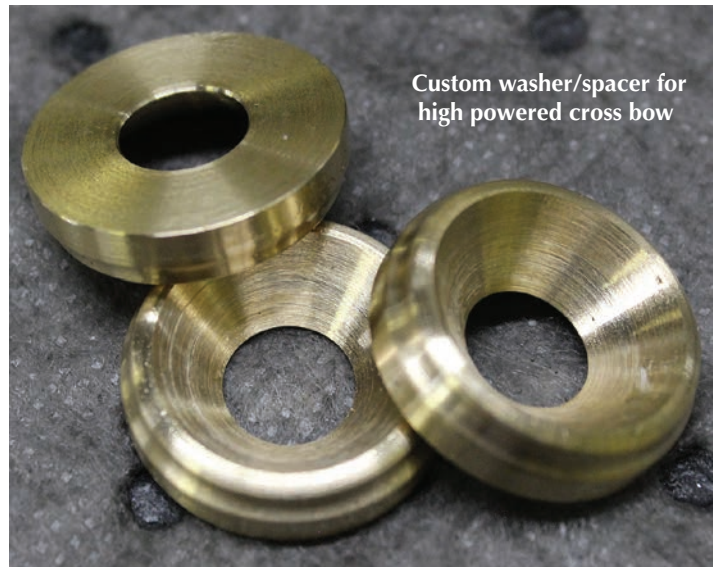
Operators at Radax Industries program the Tsugami. The machine is fitted with an Edge Technologies Patriot 338 bar feeder to increase productivity.

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Davenport screw machines were the first machines purchased by Rocco Sacco in 1967 to start his company called Radax Industries Inc.



Custom washer/spacer for high powered cross bow

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