“We used to have to send those parts out to get them honed, and between the freight and cost of the process, it made it hard for us to remain competitive,” said Gary Snoe, owner and president of Snoe Inc. (Caldwell, TX), a machine shop specializing in the manufacture of fracking equipment, subsea tree, drilling and completion components used in the oil & gas industry.

The parts that he was referring to are flowline products, a consumable component used in surface wellheads and subsea systems for the exploration, drilling and development of oil and gas fields. The parts are created by drilling and finishing a 7.1” (180-mm) long, 1.2” (31-mm) diameter hole in 4.5” (114-mm) diameter bar stock, creating a thick-walled part that can sustain extremely high pressures and temperatures. The material used in this case is an annealed alloy steel, a softer, gummiер and more abrasive type of steel, which makes the job more challenging.

An oil & gas subcontractor found a solution that delivered the whole package: Greater throughput, a better finish and less outsourcing.

The KUB Centron Powerline used at Snoe Inc. after drilling 140 parts.
As a preferred subcontractor to very large players in the energy industry, Snoe Inc. was struggling with being able to respond to its customers’ demands in a manner that was a winning situation for both parties. The bars were first drilled using a spade drill and bored at Snoe, and then sent out for honing. This proved to be a lengthy and costly process, which was far from optimal for Snoe. The company had long been looking for a standard drill that could achieve a better finish, thus eliminating the honing operation, but nothing seemed readily available in the required diameter and length. That is until Kelly Gantt, sales engineer for Komet of America (Schaumburg, IL) discussed the project with the team at Snoe and proposed to try and use Komet’s new KUB Centron Powerline drill. Very appropriately called “Powerline”, the drill is specifically designed to achieve superior performance for deep-hole drilling up to 9 × D.

**Recommendations—and Results**

For this application, Gantt recommended a 31-mm diameter head with a 6 × D element equipped with the proven ABS connection. The machining center used is a Samsung SL35 CNC lathe with a 2” (51-mm) shank, coolant through and 35 hp (26.1 kW). Gantt used an ABS 50 / 2” cylindrical shank holder to connect the tool to the turret.

Snoe ran an initial test batch that got them enthused with the new process. Not only did they make significant gains in machining time, they also realized that the new drill would allow them to achieve the required finish without having to perform a secondary finishing operation. They can now manufacture the entire part in-house in a turnkey process.

“The Powerline achieved the same part in approximately half the time of a spade drill,” enthused Gary Snoe, the same day that the final tests were run: “We have had excellent results on a first test run of 140 parts or so. We are now confident that we can make these parts in-house while maintaining the finish. We look forward to getting larger quantities of a job that we had to decline before. Komet is helping us expand our capabilities and better serve our customers, and ultimately grow our business.”

The design of the KUB Centron Powerline is what allowed Snoe Inc. to achieve that level of performance. The new drill is essentially an advanced take on the existing KUB Centron drill head, now enhanced with a larger center drill and square W83 style inserts offering four effective cutting edges. Because of the design of the center drill and the use of symmetrical inserts, the new drill can achieve outstanding straightness and process reliability at deep drilling depths without the use of guide pads. This makes the drill simpler and quicker to use as there is no need to adjust and replace the guide pads. The design essentially allows the Powerline to achieve feed rates which are double those of similar drills.

The initial test results obtained at Snoe Inc. are as follows:

- **Spindle speed**: 1845 rpm
- **Surface feet per minute**: 590” (15 m/min)
- **Feed**: 0.008” (0.2 mm)
- **Inches per minute**: 14.76” (375 mm/min)
- **Length of cut**: 7.10”
- **Time in cut**: 28.86 seconds
- **Horsepower required**: 20 hp (15 kW)

**Twice the Speed**

The Komet KUB Centron Powerline provided a very stable process, excellent chip quality and evacuation with a process that is twice as fast as with the spade drill formerly used. The same hole took 61.92 seconds to drill with the previous drill compared to only 28.86 seconds with the KUB Centron Powerline, making the process twice as efficient not counting the honing operation which was performed externally.

Another advantage of the KUB Centron Powerline is that it can be run at a much faster rpm than a spade drill. This diminishes the strain on the spindle, which (in the eyes of a shop owner) is another long-term benefit as it helps extend the useful life of the machining center.

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The Komet KUB Centron Powerline is available from stock in a diameter range from 20 to 39.9 mm. It is fully compatible with the existing KUB Centron basic elements available in 4 × D, 6 × D and 8 × D.

Snoe definitely appreciated the support of the Komet team with that project, but it was not his first experience with Komet. The shop also runs custom KUB Quatron drills and KUB V464 drills for the manufacture of other components and consistently gets excellent results. They currently average a monthly drilling production of 225,000” (5,715,000 mm), and at times run upwards of 450,000” (11,530,000 mm) per month.

“Without the support of Komet and the consistency of the drilling operation we would not be able to achieve the foot-age required to satisfy our customers on a monthly basis,” said Snoe. “We know we can rely on the predictability of the Komet drills throughout the process, and we can focus on serving our customers.”

This article was edited by Yearbook Editor James D. Sawyer from material provided by Komet of America.