

THE RIGHT FIX

New Ulm Precision Tool focuses on customers and quality; delivers cost and run-time reduction for fixtures and dies



A successful shop is going to keep the customer involved. At least that's what the people at New Ulm Precision Tool Inc. (NUPTI) think.

NUPTI, which designs and builds work cell components and progressive and compound dies, was founded 28 years ago in 1974. Located in a 12,000 sq. ft. facility in New Ulm, Minn., NUPTI has 26 employees and total sales in excess of \$2.5 million a year.

What has made NUPTI successful for the



This fixture holds four "Manifolds"—two in Operation "A" and two in Operation "B."



A single operation fixture for "Pump Housing". This fixture uses six locators, three clamps, two work supports, two pusher style clamps, two roller pushers and an equalizing mechanism, resulting in excellent Cpk readings.

past 28 years is their dedication to people and quality. "We always stand behind our work until it's working exactly the way we said it would, and the customer is happy," says Curt Asleson, president. "Quality control in this shop is second to none. It has to be there."

NUPTI's general philosophy encompasses its dedication to people, especially its employees and customers, and quality.

As part of this philosophy, NUPTI designs equipment that is friendly for the operator and set-up personnel.

"If we keep those who operate the machine or fixture happy with the equipment, it's going to make their supervisors, managers and everybody else in the plant happy," says Howard Blume, director of tooling services and sales.

In order to create operator-friendly equipment, NUPTI designs fixtures so there are not many hydraulic lines in the machining area that chips can get hung up on. They also design fixtures so that the parts are easy to load, and datum locators, clamps, work supports, etc. are easy to keep clean.

In keeping in line with their customer focus, NUPTI makes sure they use customer-preferred components when making tooling. "This really streamlines

our tooling to the customer because if we supply components other than those they've been using, they will need to go in to their tool crib and restock additional replacement parts," Blume says. "This way, they are familiar with their replacement parts and they can reduce their tool crib inventory."

Along the same lines, NUPTI also uses design features the customer prefers. "We try to design a fixture that will adapt to the customer's way of doing things," Blume says. Although NUPTI typically designs in Mechanical Desktop 6.0, it can supply designs in other formats to satisfy customer's requirements.

But NUPTI doesn't stop at using the customer's preferred components and design features, the company goes to great lengths to make sure the customer is involved every step of the way. Once NUPTI gets a print from the manufacturer they take a look at it and create conceptual drawings to show how NUPTI thinks the tooling should be built. At the same time, which is instantly, NUPTI gets in touch with the project leader on the customer's end. Once the conceptual drawings are complete, NUPTI will get together with the customer, find out their likes and dislikes, and modify the drawings from there.

"This is a process where one sale might take six to eight visits to the customer before things get sorted out and an actual contract is signed," says Asleson, explaining they do this because more useful information is gained with more visits. "We want the customer to be very oriented as far as working together in a team."

Keeping the customer involved almost guarantees them they will get what they want. But what makes it a 100 percent guarantee is NUPTI's equally important emphasis on quality control. That, and the fact that NUPTI will back the job until the part is exactly what the customer envisioned.

Blume says a lot of work goes in to designing datum and pressure points, and figuring out the amount of pressure it takes to hold a particular part. Pressure reducing valves also are used

so that different pressures can be put on different clamps throughout the fixture in case an adjustment is needed.

"Once the part is machined the first time, we then use datum points off the already machined surfaces, that way we can exactly finish the part so everything is true to everything else," Asleson says.

Along with that, NUPTI then does a tolerance analysis. "Now with Statistical Process Control (SPC), sometimes the tolerances you see on a drawing are

not really what is required out of the fixture," says Blume, explaining NUPTI always makes sure the fixture will produce a part that exceeds the process capability requirement, which may be half the print tolerance.

Along with customer and quality emphasis, NUPTI also mainly focuses on fixtures – small and large.

New Ulm Precision Tool Inc. will always strive to be a leader in the design and fabrication of quality tool and die products. We accomplish this by putting our most important asset, our customers, first. To meet our customers' quality, delivery and cost effective tooling requirements, we use state-of-the-art equipment. We hire, train and strive to retain the best employees in the industry.



A two-operation tombstone-style hydraulic fixture for locating and clamping a "Cover."



This fixture holds a die cast part using two operations, a total of eight parts in the fixture.

"We can go from holding small, delicate die-cast parts to big, iron steel castings," Blume says.

Asleson says the small parts that are delicate to hold can be toughest to design because there is little area for clamping and it's hard to find places for datum points. But NUPTI has been successful at

creating fixtures for parts such as small housings and computer components for the auto and computer industry.

On the other end of the spectrum, NUPTI is just finishing a one-year, \$1.5 million project for Yamazen-John Deere.

"We were asked by Yamazen to quote on the fixtures along with other machinery distributors," Asleson says. "We ended up coming up with the best ideas and the best cost."

John Deere Waterloo Works decided to upgrade its Drivetrain department, which still had equipment from the 1970s. John Deere ended up installing a new cell-based system – NUPTI designed and built an excess of 40 fixtures to hold all the parts for the system.

For John Deere, the benefit of this three-cell project was cost reduction. In addition to that, the old equipment utilized 68,000 sq. ft of manufacturing space; now only 8,000 sq ft. is used for



A close-up view of a fixture nest that holds an "Axle Housing."

the first cell. The entire three-cell complex has replaced 42 machine tools with 16, which allows for John Deere to complete things faster. Fixture design was critical for speed up of cycle times.

"In the end, what we do is design and build fixtures to greater reduce cost and run time," Asleson says.

There's no arguing; NUPTI is the right fix when it comes to work cell components and progressive and compound dies. ■

New Ulm Precision Tool Inc.'s

MAIN AREAS OF DESIGNING AND BUILDING

- 1 Work cell components, including:
 - Hydraulic and manual work holding fixtures for horizontal and vertical machining centers
 - Special/dedicated "metal removal" machines
 - Secondary operation machines
 - Gaging
 - Production machining short to long runs
 - Assembly machines

- 2 Progressive and compound dies

- 3 Piece parts for tool crib replacement, such as replacement parts for dies, molds, machines, etc.



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