

DRT and Minster...

Partners in Precision and Innovation

Innovation and precision have been a successful combination for the Dayton Reliable Tool & Mfg. Co. (DRT) in Dayton, Ohio.

Company founder Ermal (Ernie) Frazee put his engineering and tool and die experience to work in the development of the world's first easy-open (pull tab) beverage container production system in the 1960's.



DRT office and manufacturing facility in Dayton, Ohio.



DRT Vision Food System with Minster ECH Press

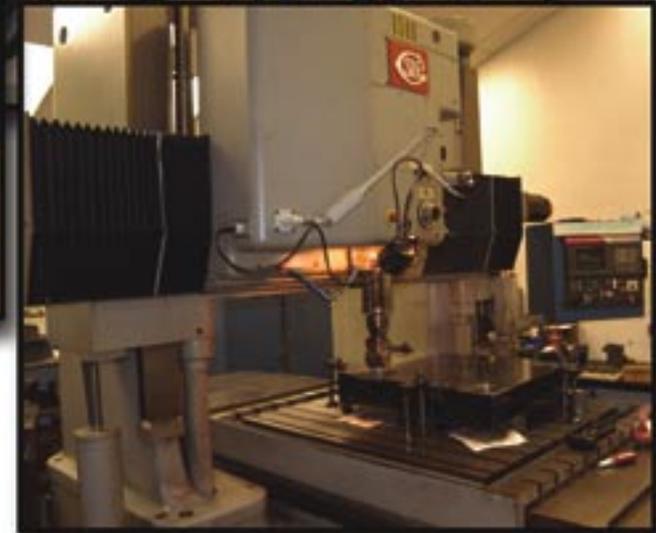
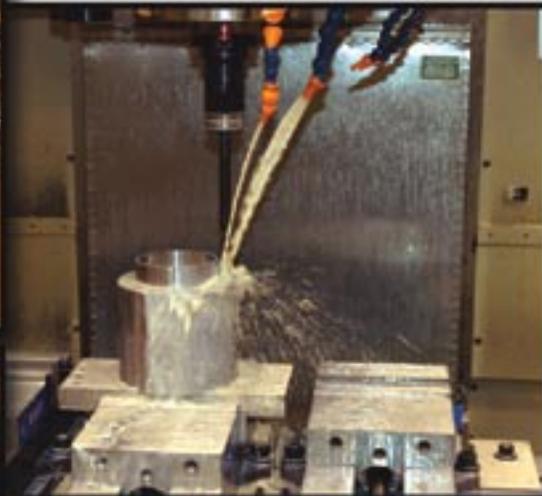
We take for granted the ease of opening a beverage can today, however, Frazee's invention was a major breakthrough during an era when a

forgotten can opener meant going thirsty.

DRT refined the technology of staking a tab to, and scoring the can end within the same tool. The result enabled a consumer to pull the tab and the scored section of the can end to effectively "open" the beverage.

Frazee realized that his invention would need a stamping press capable of holding extreme tolerances at high speeds. His first stop was The Minster Machine Company, and a 40-year partnership was born.

Today DRT easy-open systems with Minster presses are producing can ends on three-out dies running at 750 strokes a minute -- that's more than three million can ends a day on a single press.



DRT has over 200 machine tools including state-of-the-art turning, jig grinding, EDM, and five axis milling capabilities.

“Our relationship with Minster has been very good over the years,” said DRT Vice President of Operations Greg Martin. “Minster has always supplied what we sell -- value, quality and support.”

“DRT stands for quality, so we depend on quality suppliers like The Minster Machine Company,” DRT President Gary Van Gundy added.

DRT manufactures several different high speed conversion systems that produce a seemingly endless variety of food and beverage easy-open can ends. At the heart of these systems is typically a Minster EC or ECH press. Dynamically balanced, Minster end conversion

presses are designed with main bearings that give exceptional support to the eccentric shaft to resist deflection and reduce

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*Gary Van Gundy
President
Dayton Reliable Tool & Mfg.*

stress for high speed production while maintaining extreme part tolerances.

Because carbonated beverage cans also have internal pressure

requirements, total product specification ranges of .0006 need to be held in the progressive dies of the DRT easy-open end systems.

The last station of the die stakes the “tab” portion of the end. This typically happens on a three-out die at speeds up to 750 strokes per minute.

“Thermal control and bottom dead center repeatability are extremely important with the press,” Martin said. “The presses hold up very well, and to Minster’s credit they are the standard of the industry.”

DRT and Minster have collaborated on numerous innovations over the years.



High speed conversion systems under construction on the assembly floor at Dayton Reliable Tool.

“There have been many enhancements to the Minster presses, some of which have been developed for some of our applications,” Martin said. “Minster’s clutch technology is phenomenal, giving us extreme quick starting and stopping. Another great technology is the quick lift slide, which gives us the ability to get at the tooling

quickly and without busting up our knuckles.”

DRT’s world class engineering resources and ultra precision machining capabilities also provide customers with high quality progressive dies and custom contract machining.

“We are continuing to diversify our offering of products and

services,” Martin said. “Some of the skills developed in our systems business over the years are now being used to produce ultra precision complex parts, and progressive dies with die sets to .0001” tolerances.

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Beverage being test



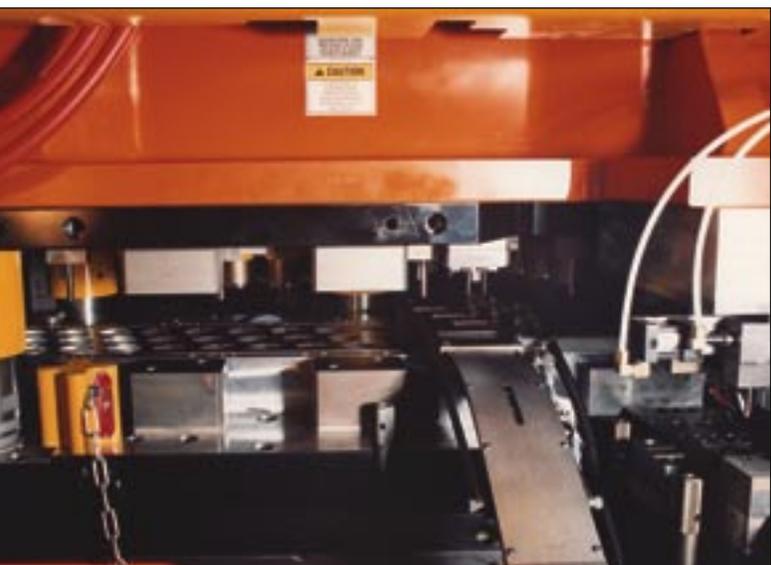
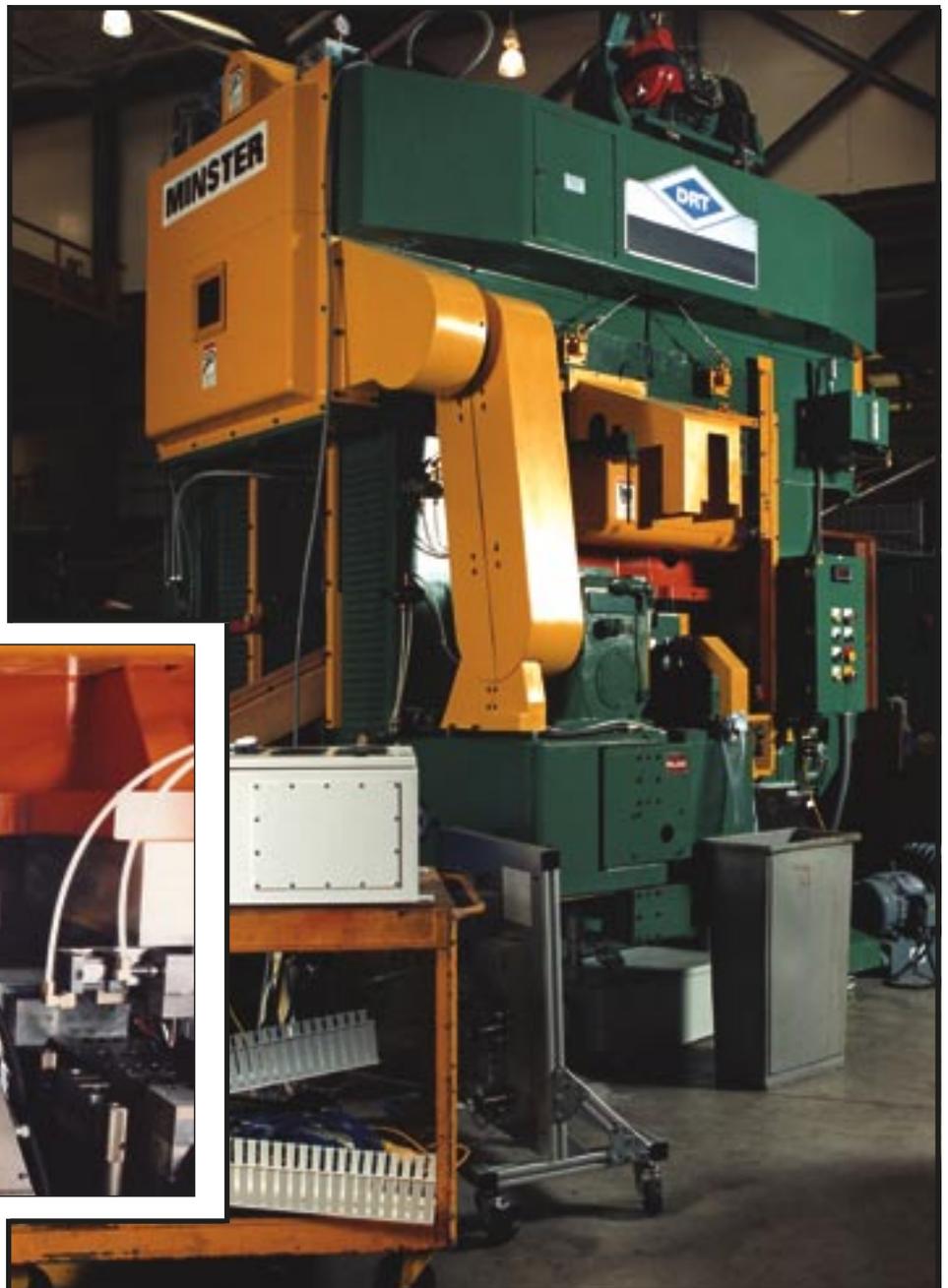
five axis milling capabilities. DRT's customers over the years have included NASA and the Atomic Energy Commission.

"We have very strong engineering and design capabilities, along with our strong manufacturing abilities," Van Gundy said. "A lot of our competitors offer one or the other, but we can provide our customers with a complete package of products and services."

"There are many similarities between us and Minster," Van Gundy continued, "high quality

products, customer service and constantly making advancements for the industry in which we do business. Integrity is also very important to us. We don't make promises we can't keep, and folks at Minster are good people that share those same values."

DRT also operates Hovis Precision Products, Inc. in Simpsonville, South Carolina and DRT GmbH & Co. in Braunschweig, Germany. For additional information including a virtual tour, visit DRT online at www.drtusa.com.



*can end conversion press and tooling
ted on the assembly floor at DRT.*