

# THE PLAIN DEALER

## Visual Replenishment System through Constraint Management

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Astro Manufacturing & Design has balanced inventory levels, streamlined inventory ordering, and created a more time-efficient and cost-effective manufacturing system with its Visual Replenishment System through Constraint Management.

"Our goal was to increase production four to six fold, while managing inventory levels for quick product assembly of patient support beds for CT Scanner units," said Rich Peterson, vice president of business development. "We didn't have a computer system in place to develop a plan. Through a partnership with Lakeland Community College and a consultant from CMG, we developed a visual manufacturing system." The first step, according to Chief

Operating Officer John Powers, was to identify both internal and external bottlenecks and constraints that affected the manufacturing process. The visual system was then created, internal training was implemented, and the new system was brought online within 90 days and then continuously refined over time.

According to continuous improvement coordinator Paula Talbot, the Visual Replenishment System involves the use of three bins, color-coded similar to a stoplight in green, yellow and red. Each bin is filled with one-third of the on-hand inventory of a particular part for assembly. When the green bin is empty, an order for that particular part is placed. When the yellow bin is empty, a second order is placed. And when the red bin is empty, a third order is placed. This ensures that inventory is being continually replenished, based on actual rather than anticipated usage. It also ensures that capital is being used efficiently rather than tying it up in unneeded inventory stock.

"The system actually communicates with us. If the bins are not emptying quickly enough, that means we have too much inventory. If the bins empty too fast, that means that our inventory levels are not high enough," said Talbot.

"The use of this system, and its ability to manage inventory throughout the manufacturing process, has allowed Astro to go from 8-10 to 80 units per month, about an 800-percent increase in production. It has also allowed us to effectively manage production during sales spikes," said Peterson. "We have been able to reduce problems related to the carrying of inventory and better service our customers through excellent on-time delivery."

Astro Manufacturing & Design Corp. (Astro) is a full-service ISO 9001-2000 manufacturer offering comprehensive manufacturing services for government and industry in the medical, defense-aerospace, automotive and other industrial- and commercial-technology-related industries. Astro boasts CNC and manual machining, sheet-metal fabricating, plastics, rapid prototyping, painting, product development, engineering design, assembly, and numerous other vital manufacturing services. The company is now a production supplier to over 250 different customers annually.

# MAGNET awards go to MTD International, McNeil Industries, Astro Manufacturing

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**Frank Bentayou**  
**Plain Dealer Reporter**

MAGNET, Northeast Ohio's manufacturing advocacy group, said Thursday that MTD International won the organization's large-manufacturing category award for competitiveness with a proposal aimed at improving the Medina County company's quality control operations.

MTD, which makes outdoor power equipment for homes and businesses, submitted a plan for a new product-release center at its headquarters. The competition's large-manufacturing category is for companies whose annual sales exceed \$100 million.

Other winners in the competition were McNeil Industries of Painesville and Astro Manufacturing & Design of Eastlake.

McNeil won in the small manufacturing category for companies with less than \$25 million in annual sales. It develops and makes bearings, pins, bushings and other guide system components used in industrial applications.

**Astro, winner in the medium manufacturing category for companies with annual sales between \$25 million and \$100 million, provides manufacturing services for the medical, aerospace, automotive and other industries.**

MAGNET asked companies last spring to submit proposals aimed at internal improvements, put their vision into practice during the summer and then report on the results of these new operational guidelines. Thirteen area manufacturers submitted proposals.

Three judges reviewed the projects and named the award winners. The judges were Stephen Gage, former MAGNET president; Robert Stimpert, operating director of the Burton D. Morgan Center for Entrepreneurial Studies at Ashland University; and Shawn DaVis, consultant for business retention and expansion for the Greater Cleveland Partnership/COSE.

To reach this Plain Dealer reporter:  
fbentayou@plaind.com, 216-999-4116