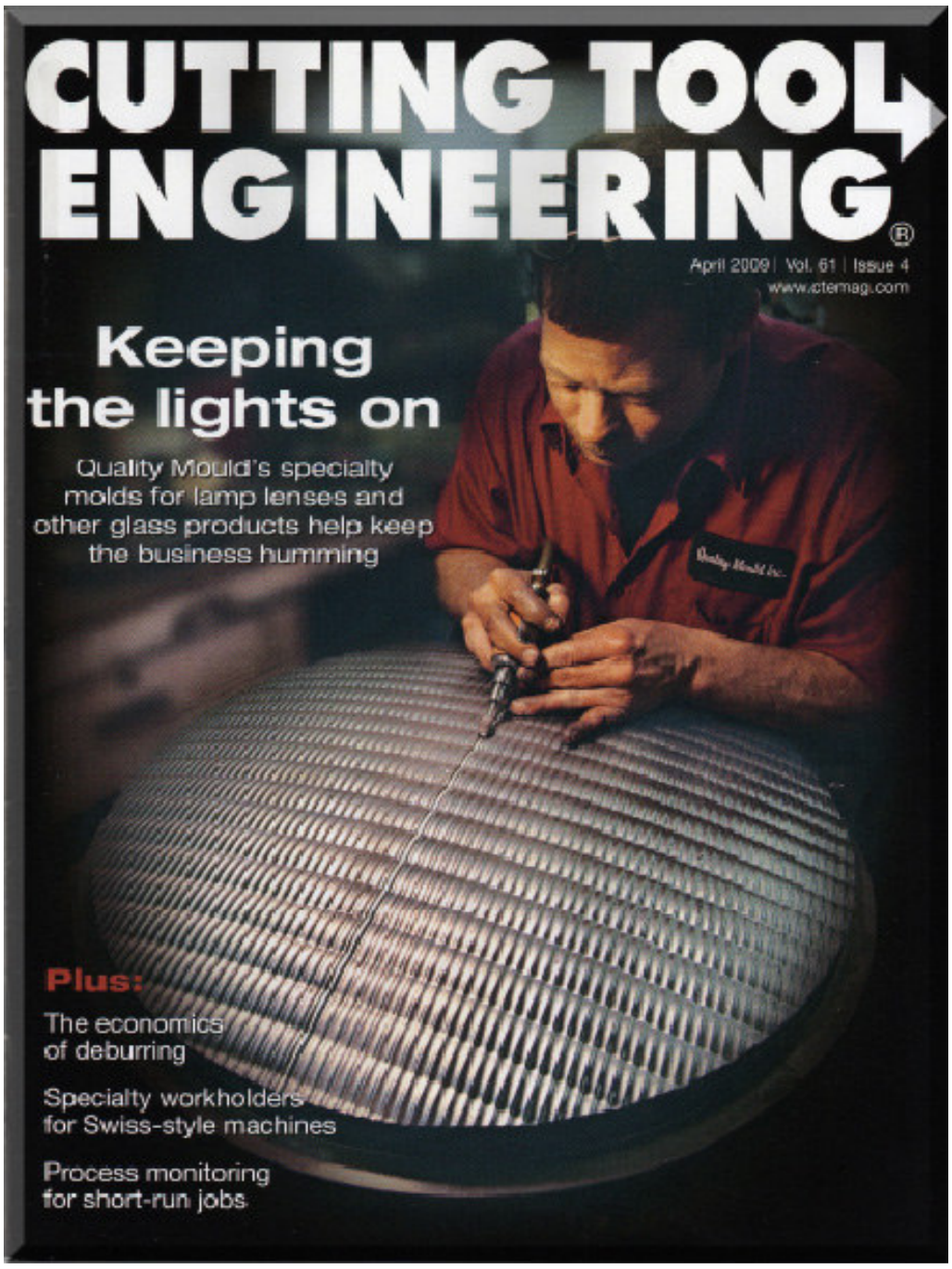
Unison Corporation

FEATURED IN APRIL EDITION OF CUTTING TOOL ENGINEERING



Designers and Builders of DedTru, TruFlute and Other Precision Grinding Equipment.

"UNISON = GRINDING SOLUTIONS"

DIY saves manufacturer money

Outsourcing non-core competency work can be beneficial, but Advanced Environmental Recycling Technologies Inc. (AERT) found it was costing too much time and money to have the builder of its pulverizing machines re-sharpen the pulverizing discs once they became dull. AERT, Springdale, Ark., manufacturers a line of composite lumber products from recycled polyethylene plastic and waste wood fiber for the home building market.

AERT processes densified plastic in Orenda pulverizing machines to achieve a consistency "like sugar", said Tim LeDuc, the company's vice president of operations. "It's similar to the method used to grind flour in a flour mill.

END USE: **Advanced Environmental Recycling Technologies Inc.**
(800) 951-7400
www.aertinc.com

CHALLENGE: Reduce the time and expense of outsourcing pulverizer disc resharpening.

SOLUTION: A grinding machine to resharpened discs in-house

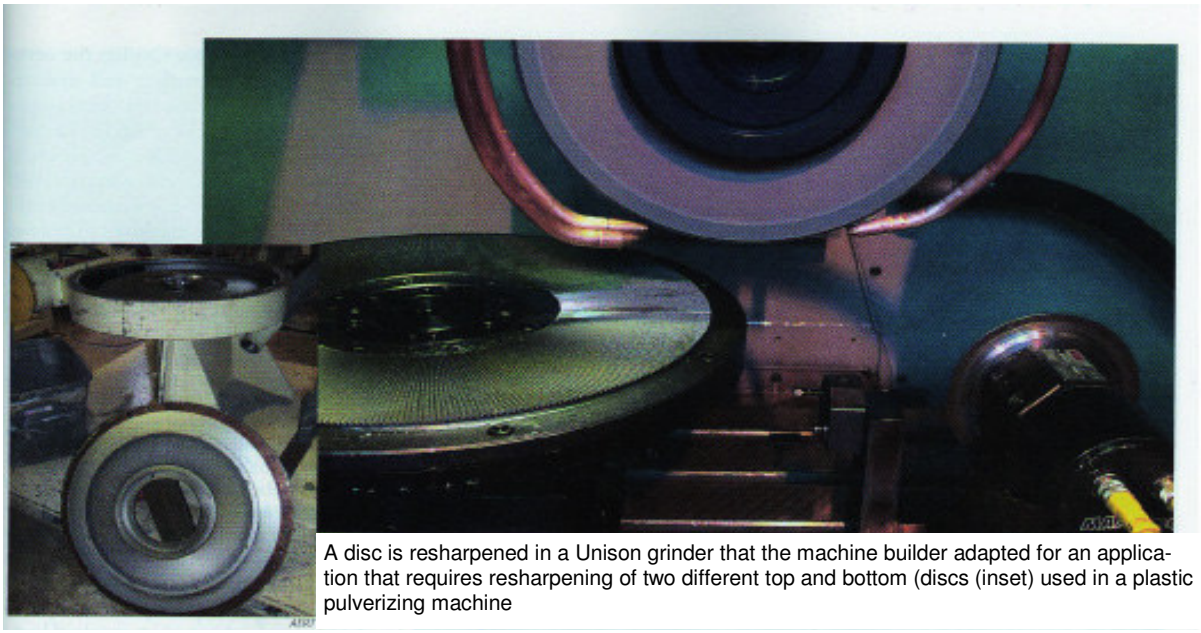
SOLUTION PROVIDER:
Unison Corp.
(248) 544-9500

Each machine uses two different 20" dia. steel discs, each with 320 teeth, to mash the plastic as it travels from the inside to the outside of the discs. The bottom disc rotates while the top one remains stationary. The individual teeth are about 5" long with an outer parameter that's 0.16" higher than the inner edge.

After about 48 hours of operation, during which approximately 70,000 lbs. are pulverized, a set of discs become dull. Previously, that required AERT to crate and ship the dull discs to the OEM for resharpening and to maintain an adequate inventory of discs to prevent downtime during the 2-week turn-around required to resharpen the discs.

When LeDuc joined the company a few years ago, he felt there had to be a more efficient and cost-effective way to resharpen the discs. A new set of pulverizing discs was sent to an engineering firm for reverse engineering to create detailed drawings. Those drawings were sent to potential vendors, and many balked at the unique application. One machine builder who didn't was Unison Corp., Ferndale, Mich., which agreed to customize one of its grinders for AERT.

In addition to the disc drawings, AERT sent Unison pulverizer discs, which helped enable the builder to adapt it Model 9000 Super TruFlute 5-Axis, dual-spindle production flute grinder for the application, which included designing a custom servocontrolled rotary axis for the machine. Unison delivered the machine in about 6 months after receiving the purchase order.



A disc is resharpened in a Unison grinder that the machine builder adapted for an application that requires resharpening of two different top and bottom (discs (inset) used in a plastic pulverizing machine

(Based on the initial customization, Unison now offers the Model 9100 Pulverizer Blade Regrinder).

The turnkey package included a wheeled cart to transport the discs from the pulverizing machines to a building next door that's free of the abrasive plastic dust, a small crane to aid in manually lifting and loading/unloading the approximate 40-lb. discs, an Ebbco metalworking fluid filtration system, a complimentary tank of Blaser Swisslube coolant, Saint Gobain Abrasives tooling including custom G-Force CBN grinding wheels, a Max Torque II electric rotary profile dresser and a BPR diamond dressing disc. Unison also wrote two software programs for the machine—one each for the top and bottom discs.

LeDuc noted that disc resharpening initially consumed 3 hours of machine time but, by working with Saint-Gobain engineers, AERT was able to reduce cycle time to 90 minutes. To reduce the total cost further, Saint-Gobain suggested changing the grinding wheel. AERT went with a different bond system and saw wheel life increase.

AERT is reaping another benefit from resharpening in-house. Disc life increased by removing only 0.015" to 0.020" of material instead of the 0.045" that the OEM was removing, without degrading pulverizing performance. "AERT now realizes two to three times as many sharpenings per disc," LeDuc said.

Unison trained two AERT maintenance workers as sharpening technicians who work in staggered shifts. Because the Unison grinder can run unattended after setup, the operators are able to walk away and perform other tasks.

According to LeDuc, the Unison Pulverizer Blade Regrinder saves AERT from $600,000 to $700,000 a year, which provided a payback of the machine's cost in about 6 months.

MODEL 9100 PULVERIZER BLADE REGRINDER

Unison's Model 9100 Pulverizer Blade Regrinder is a 5-Axis turnkey grinder featuring an integrated 25 horsepower, direct drive, dual ended spindle. The direct drive spindle motor provides a continuous torque rating through its entire operating range.

The Model 9100 regrinds Pulverizer Blades in your factory thereby eliminating the costly expense of shipping them to a third party regrind facility. In addition, you can minimize the number of blades you maintain as spares since blades can be quickly reground in-house.

The Model 9100 features our latest tool grinding software which utilizes a Windows™ operating system. The flexibility of our software allows your machine operators to customize grinding programs to meet your needs. Our "Geometral™" software allows the operator an easy means of quickly modifying tool geometry making the Model 9100 one of the most powerful and flexible machines on the market today.

For more information about the Model 9100, please click on "Unison News" on our Home Page and see the article in the April 2009 issue of Cutting Tool Engineering Magazine.

The Model 9100 was designed to achieve five major goals

1. High consistent quality of finished product
2. Fast programming and machining
3. Long machine life with reduced unscheduled downtime for maintenance
4. Allows minimal stock removal which extends pulverizer blade life

TECHNICAL & SALES SUPPORT AVAILABLE BY TELEPHONE OR EMAIL

Unison Corporation
Since 1959

Unison Corporation = "Grinding Solutions"

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