D.World

News and insight from Dormer • No. 2 • 2011

Family affairs

The right tools help Torriani Gianni improve its business, generation by generation. p.6

Fashion house

Accessory manufacturer ArtiModa experienced a 150 percent productivty increase. p.8

Striking gold

Drastically cutting production times to meet customer demands made Canada's Tallman Bronze a winner. p.4

D.World view

Increased performance without sacrifice

▶▶ Change is inevitable. This is nothing new.

The world of communication is a good example. Through a seemingly ever-increasing range of applications for mobile devices – such as Dormer's new iPhone app detailed on the opposite page – we can access a world of information almost instantly.

New forms of social media are credited with this change. Even the business world has embraced Facebook and Twitter and the like. The major advantage is speed of communication, although some would argue that this has gone hand in hand with a decline in the quality of information.

While such a decline might be inevitable in social media, in a production environment it must be vigilantly guarded against. At Dormer, we have always believed that increased performance should not involve any kind of sacrifice.

Indeed, we see performance and precision as intrinsically linked. The story of Lebanese fashion accessory producer ArtiModa (page 8) is a perfect illustration of how good tool design can improve both elements.

All case studies in this latest issue of *D.World* feature customers who embraced change. With the help and expertise of Dormer's people and products they are now reaping the benefits.

FABRIZIO RESMINI
PRESIDENT, DORMER

Bringing clarity and simplicity to tool selection

With Dormer's new 2012 product catalog classifications choosing and finding the right tooling solution has never been easier.

▶▶ Industrial operations face constant pressure to cut costs and maximize output. This is due in part to the fact that the running costs of a business often increase at a faster rate than the selling price of the finished goods. This is what is known as the productivity gap.

One area often overlooked when it comes to addressing this imbalance is the choice of cutting tool.

Relative to the total manufacturing costs incurred during the production process, the cost of tooling can be very small – as little as just 2 or 3 percent. However, the correct choice and application of a cutting tool can influence total costs by as much as 20 percent.

Bringing simplicity and clarity to choosing a tooling solution is a priority for Dormer.

"It's all about making sure customers get the right tool for the job," says Dormer Business Development Manager Stefan Steenstrup.

"Increasingly customers are

DORMER

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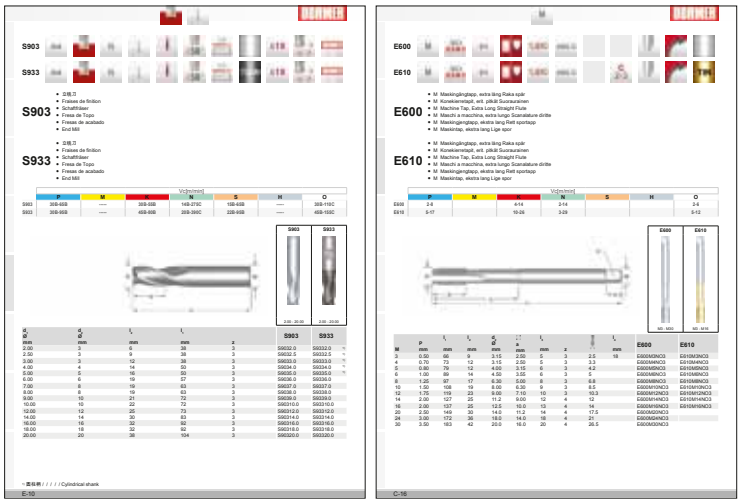
"Whatever the need, Dormer wants to help end users and distributors identify the most appropriate tooling solution more easily and quickly."

STEFAN STEENSTRUP



Sample pages from Dormer's new product catalog, available in early 2012, showing cutters (l) and taps (r).

looking for greater efficiencies in their tooling operations," he explains. "For some customers, that could mean optimizing production costs with a single tool that offers longer life; for others, having versatile tooling capable of working with a range of materials brings efficiencies. Whatever the need, Dormer wants to help end users and distributors identify the most appropriate tooling solution more easily and quickly."

Dormer Business Development Manager Stefan Steenstrup.

The emphasis is on being able to easily identify the attributes of a particular tool. "In a complex world, we want to make it easy for customers," he explains.

The thought that has gone into the production of Dormer's new catalog – available in early 2012 – underlines the importance of this. Although the format used will be instantly recognizable to those already familiar with Dormer materials, the end result is a clean, attractive format that strikes a perfect balance between ease of use and provision of information.

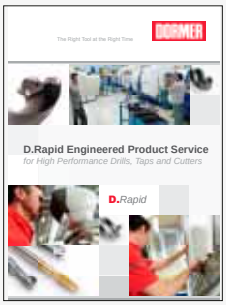
For example:

- Key product attributes are communicated through redesigned icons for increased clarity.
- Concise operating data are shown – by material – adjacent to the product dimensional details, removing the need to refer to a separate section.
- Related products are grouped together to show alternative coating, substrate and length options available.

"The new product range catalog builds on and highlights Dormer's depth of knowledge and competence in tooling applications," explains Steenstrup. "We want Dormer to be regarded as a partner with end users for our cutting tools and support customers in their need to continually improve the performance of their machining operations."

ELAINE MCCLARENCE

Expanded D.Rapid service



THE D.RAPID SERVICE for customer-defined products has been expanded and now applies to cutters and taps as well as to the original drilling products. This rapid-turnaround service brings together the unique features of Dormer's high-performance tooling ranges and the customer's specific requirements, with several key benefits:

- High-performance tooling
- Price and delivery details within 24 hours
- Generation of drawing within 24 hours
- Clearly defined features
- A manufacturing time of 10 days
- Rapid dispatch
- Historical quotes held in database for future use
- A user-friendly quotation form that enables customers to quickly define specific requirements, choosing from a wide variety of features that include diameter, length, shank, flute construction and surface treatment.

Dormer Engineers App

DORMER HAS DEVELOPED an iPhone application capable of calculating the exact diameter of drill required for precise thread-creation operations. The Dormer Tools Threadsize Calculator has been designed to help engineers and machinists quickly and accurately select the optimum drill diameter needed to create a thread.

"There are formulae that can be used to calculate the recommended tapping drill diameter, but as there are numerous types and standards of taps available, the recommended dimensions can vary, so it is crucial to get this right," explains Thomas Junfors, senior project manager at Dormer. "The user inputs the size of the desired thread and selects the process and relevant standard, and the calculator determines the correct drill size to use."

Unlike similar applications currently available, Dormer's Threadsize Calculator is free to download from the iTunes App Store and is the first in a series of applications to be launched by Dormer.

"At Dormer we are committed to helping our customers carry out their machining processes in the most efficient way possible," says Junfors. "We invest significantly in research and development so that we can share our expertise with industry partners and customers alike.

"This app and the apps to come all fit in with that ethos," he continues. "It's about selecting the right tool for the job in order to get the best results."

PHOTO: DEAN MACDONELL

Power trio, from left: Tallman Bronze President Michael Strelbisky, Dormer representative Rich Morrison and project manager Goran Dimitrijevik.

Rocket science

When Canada's Tallman Bronze needed to reduce lead time to meet growing customer demand, the right tools helped cut production from 90 minutes to a mere seven.

IT'S BEEN 10 MONTHS now and the R573 from Dormer's range of deep hole drills is still sliding through Tallman Bronze's copper as if it were butter. Better yet, the new drill dramatically slashed production times – by up to 80 percent on most parts.

"Dormer's technical sales rep Rich Morrison made my day when he delivered on his promise to cut production time to seven minutes from 90," says Goran Dimitrijevik, project manager at Tallman Bronze Company. The company specializes in custom-designing and machining centrifugal and sand-cast parts for a range of industry sectors including aerospace, power generation, nuclear and steel.

Tallman has been custom-designing and manufacturing water-cooled supersonic oxygen-blowing copper lance tips and distributors that disperse oxygen at high velocity for some 60 years. At more than Mach II, twice the speed of sound, those tips inject up to 46,000 standard cubic feet of oxygen per minute into molten iron to convert the iron into steel.

"What we do here really is rocket science because our lance tips are designed using the same nozzle technology that's used in rockets," says Michael Strelbisky, president of Tallman Bronze.

"One substandard component in a lance can destroy a multimillion-dollar steel furnace, so the quality and consistency of every single Tallman product must be a given," says Dimitrijevik.

WHILE QUALITY is paramount, Dimitrijevik also needed to reduce lead time to meet growing customer demand, and he suspected the 90-minute cycle time to machine 10 holes, each 1/4" (6.35mm) diameter by 4.6" (117mm) deep could be reduced. As a result, he welcomed a visit from Dormer engineer Rich Morrison, who was brought in by distributor SB Simpson's Adam Risso, in the hope that he could recommend an alternative to the non-coolant carbide-drilling process that Tallman had been relying on for decades.

323
Number of hours saved annually.

Although Morrison knew that Dormer's R573 drill - with a depth capability of 20 x diameter - could easily handle the dimensions, he was also aware that consistent chip removal and the abrasiveness of the copper might present a challenge. "Sometimes I have to push the drills hard to figure out how I can improve our products' performance and our customers' processes," says Morrison. "If we're afraid of failure, we can't get ahead in a competitive industry."

Armed with the knowledge that Tallman's existing drills required 50 pecks per hole to evacuate the copper chips, Morrison asked: "What if you could drill a hole without pecking?"

"It can't be done," said Vit Malek, Tallman's resident CNC Haas machining center specialist, who has become a

Using the R573 deep hole drill led to significant cost savings.

"Cutting costs is great, but decreasing delivery times is even better."

GORAN DIMITRIJEVIK, TALLMAN BRONZE

Dormer expert as a result of brand-specific training with Morrison.

BUT AFTER CAREFULLY assessing the chip thickness and spindle load, Morrison did just that – a single hole without a peck. He then went on to machine out every one of the 10 holes required without pausing to peck.

"If I listen carefully, the machines tell me how the drills are performing and I can make the necessary adjustments," says Morrison, whose Dormer clients benefit from his nine years as a machinist and technical adviser at a machining company.

The R573 successfully drilled straight, deep and consistent holes at higher rpm and feed rates, due to the improved geometry of the cutting edge, the drill's coating and the through-tool coolant facility. As important, Morrison used Dormer's R470 pilot drill to ensure optimum accuracy and hole quality.

Morrison's documentation shows annual cost savings of more than 323 hours on the annual production of the cast-copper distributors and oxyfuel burner heads collectively.

"Cutting costs is great, but decreasing delivery times is even better because it really affects customer satisfaction," says Dimitrijevik, who notes delivery times from Tallman to customers have improved dramatically. "Everyone benefits when we share our technical expertise and experience to improve the process and the end product."

KARA KURYLLOWICZ

Tallman Bronze

Tallman Bronze, located in Burlington, Ontario, was founded more than 140 years ago in nearby Hamilton, a city that has always been at the heart of the Canadian steel industry. The company has a global reputation for superior quality and design, and its commitment to continuous improvement is evident in everything from its evolving technical expertise to high-level one-on-one technical support.

Tallman's products include centrifugal lance tips, post-combustion distributors, oxyfuel burners, blast furnace tuyeres and coolers, water-cooled furnace parts and a full range of sand and centrifugal castings for various industries. The company offers a full complement of services ranging from design and computer simulation to casting, machining and welding

Tallman uses a variety of Dormer products to machine materials such as copper, brass, bronze, Inconel, stainless steel and carbon steel.

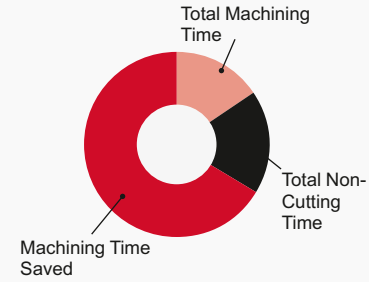
www.tallman-bronze.com

TOOLBOX

R573 DRILL FOR DEEP HOLES

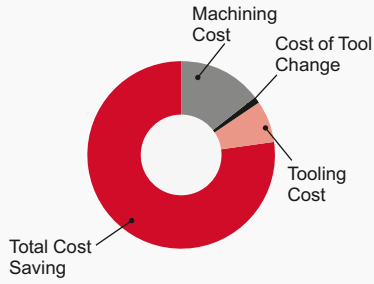
TALLMAN TIME SUMMARY

Total saving: 323 hours, 38 minutes (per year)

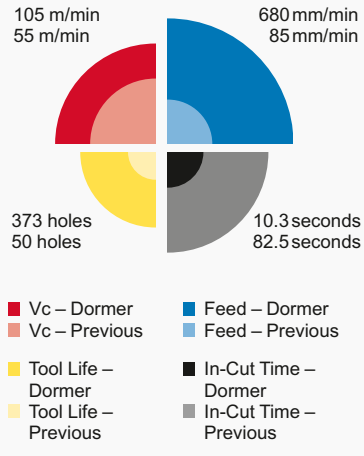


TALLMAN COST SUMMARY

Total saving: $47,633 (per year)



PRODUCTIVITY ANALYSIS



PHOTOS: MAURIZIO CAMAGNA

Giovanni Torriani represents the third generation of an ever-evolving family business.

Generational flexibility

Italian company Torriani Gianni has reached the state of cost-effective simplicity and consistency of performance it has been striving for.

A GENERATIONAL TRANSITION in the management of a family-owned company is a critical time. Many businesses have floundered, confirming the truth of the observation that "the first generation builds, the second enjoys, the third destroys."

But sometimes the opposite is true: Succeeding generations improve on the ideas of their predecessors, and the business flourishes. Such is the case of Torriani Gianni S.n.c., a family enterprise from the Lombardy region of northern Italy. Founder Gianni Torriani, who was fascinated by all things mechanical, started out by producing slew bearings for tractors, a profitable enterprise but one with a locally limited customer base. When his sons Vincenzo and Alessandro entered the firm in the mid-1980s, they turned the focus to international markets and expanded operations. Today the company sells slewing rings for a wide range of applications to customers on four continents – from Austria to Australia, and from Ireland to India.

1,200

The number of holes machined by the R950 drilling head

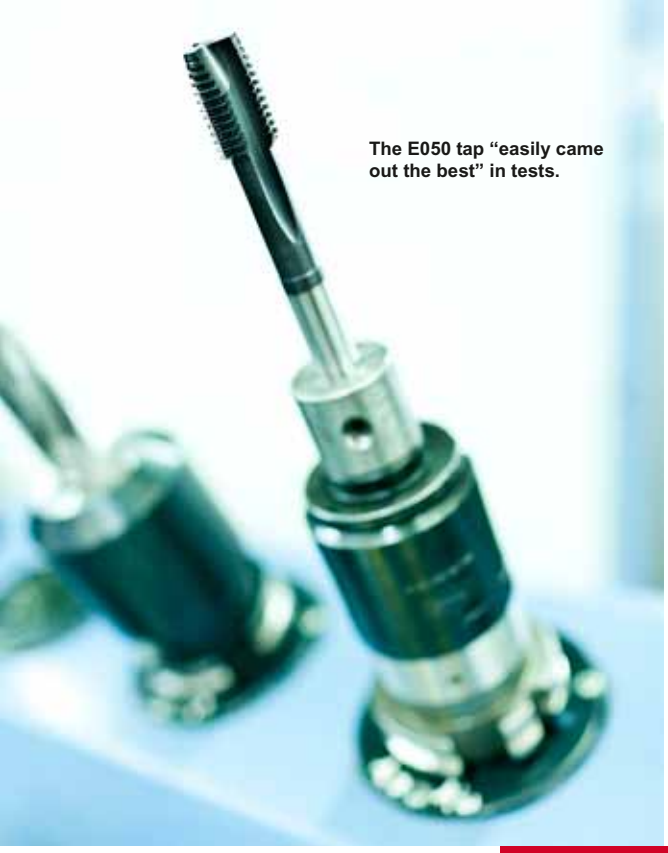
The third generation began making its mark in the past decade. Vincenzo's son Giovanni Torriani studied at a technical institute and was hired after graduation in 2003, when he was 19. As the young Torriani began working in production, he was conscious of the company's desire to expand its range, ensure greater precision in its products and continue to improve customer satisfaction. With those goals in mind Giovanni began analyzing how the production process could be optimized. "I asked myself what tools were we using and could they be improved? I questioned how we could improve quality, cost, timing and speed of delivery, with greater versatility, modularity and flexibility."

ALTHOUGH DORMER HAD been supplying tools to Torriani since its early days, Giovanni sought an even more collaborative arrangement. He contacted Dormer in 2006, and the two companies have been working closely together ever since

The R950 drill brought wide-ranging benefits.

to improve production processes. Torriani's expectations were clear: "Simplicity and consistency of performance that is cost-effective and has a good price/quality ratio."

One of Dormer's suggestions was to test the E050 spiral flute tap, designed primarily for applications in steels (ISO P). In trials with both earlier Dormer tap models and competitors, Giovanni says, the E050 "easily came out the best" for speed, reduced torque during threading, precision and wear resistance. In



The E050 tap "easily came out the best" in tests.

> ***"Simplicity and consistency of performance that is cost-effective and has a good price/quality ratio."***
>
> GIOVANNI TORRIANI'S EXPECTATIONS OF THE DORMER COLLABORATION

one test example, a competitor threaded 300 holes at 238 rpm and an older Dormer model threaded 420 holes at 291 rpm. The E050 achieved 600 holes at 372 rpm.

In factory operation, tool life and speed of operation have both improved 40 percent, thanks to the E050's vanadium powder steel composition, high-performance surface treatment and three radii flute profile with a constant rake angle.

DORMER ALSO SUGGESTED that Torriani evaluate the R950 solid carbide replaceable head drill, also designed specifically for steel applications. Interlocking serrations on the drill head and the body ensure superior process rigidity and torque transmission, while a simplified screw fixing enables the head to be quickly changed without removing the body from the spindle.

In testing, Torriani found that the R950 drilling head could machine 1,200 holes before it had to be reconditioned, whereas the competitor tool had to be sharpened after 960 holes. Other advantages included less vibration during drilling, 20 percent greater durability, a 20 percent increase in rpm and a 5 percent improvement in energy consumption.

Torriani has since fully integrated both the E050 tap and the R950 replaceable head drill into its production cycle with significant cost and quality benefits.

CLAUDIA B. FLISI

Torriani Gianni S.n.c.

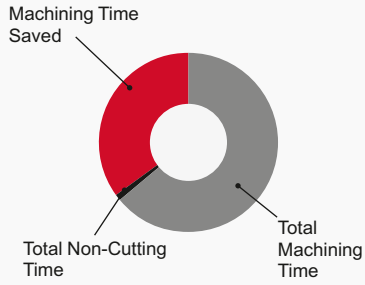
In 1973, Gianni Torriani founded the company that bears his name in a small town near Cremona in northern Italy. Passionate about mechanics, he began by producing slew bearings for agricultural use. Today the third generation of the Torriani family continues to focus on product quality and diversification, with emphasis on providing personalized customer service in more than 50 countries. The company's 60 employees produce around 50,000 bearings annually. While agricultural applications remain important, newer growth areas have emerged, including equipment for the construction and alternative energy industries.

www.torrianigianni.com

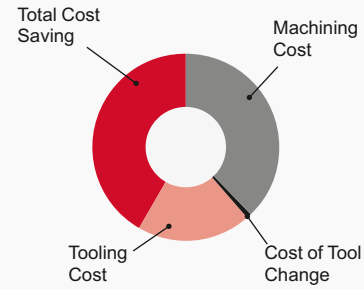
TOOLBOX

E050 SPIRAL FLUTE TAP

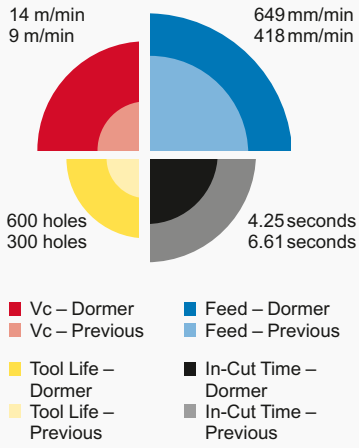
TORRIANI TIME SUMMARY



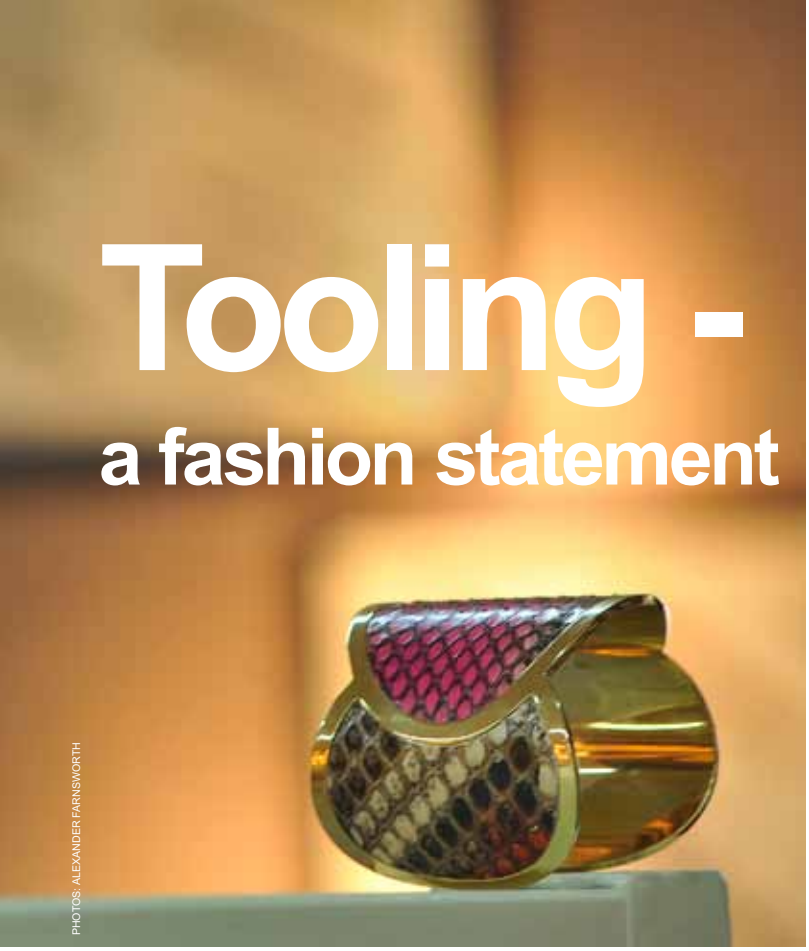
TORRIANI COST SUMMARY



PRODUCTIVITY ANALYSIS



Tooling - a fashion statement



PHOTOS: ALEXANDER FARNSWORTH

For one Lebanese fashion accessory producer the secret to better productivity proved to be a change in tooling.

▶▶In the Armenian Bourj Hammoud district of Beirut, the Lebanese family company ArtiModa transforms aluminum and brass into elegant fashion accessories. Dormer's S140 milling cutter – designed for non-ferrous applications – looks certain to play an integral role in maintaining the exclusive quality and originality of the brand.

ArtiModa's customers include big and small fashion houses that select their accessories for shoes, bags, belts, hats, hair ornaments and garments from the 800 to 1,000 new designs the company produces each year. ArtiModa is primarily a wholesaler and manufacturer, but the company also has its own proprietary retail brand, Gali.

While metalworking is a core competence of ArtiModa, the nature of the fast-moving fashion business means that the company not only has to be a year ahead of the trends, but it also has to be able to make things that competitors can't duplicate.

"That is why we try to combine a lot of different materials, like this brass bracelet with inlaid snakeskin, to make it difficult for competitors to copy," says ArtiModa General Manager Raffi Hudaverdian, who took over the reigns of the company from his father Archavir in 1999. "We have to be unique."

General Manager Raffi Huddaverdian (left) and Design Director Hratch Nokhoudian.

150%

Productivity increase gained with the S140.

IN THE BASEMENT of the ArtiModa building sit four Italian Cielle CNC machines that run 24/7 to keep up with demand for the company's products. About a decade ago, Dormer tools were incorporated into their production facility. Constant improvements have been implemented in order to increase productivity and efficiency, the latest being a switch from HSCo tools to the S140 carbide milling cutter for aluminum and magnesium alloys, copper, bronze and brass. One of the primary benefits of the S140 is that its unique design promotes a high-quality surface finish on the component, vital to the ArtiModa line of products. Although the S140 has been designed primarily for use in aluminum alloys, extensive preliminary trials have been made on brass alloy, with good results.

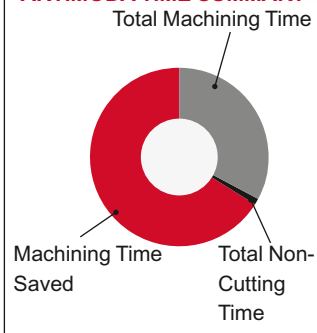
"Besides cutting, milling, casting, turning and engraving, we also do a lot of polishing, bending and plating," says Hratch Nokhoudian, design manager at ArtiModa. Nokhoudian led the tests that showed a 150 percent increase in productivity with the S140. "There are many different stages to our production," he explains, "so any saving, like using the S140, is a big advantage for us."

ALEXANDER FARNSWORTH

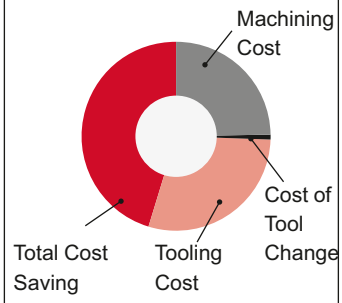
TOOLBOX

S140 SLOT DRILL FOR NON-FERROUS MATERIALS

ARTIMODA TIME SUMMARY



ARTIMODA COST SUMMARY



ArtiModa

The Lebanon-based manufacturer of fashion accessories was founded in 1949 by Archavir Hudaverdian. Today the company employs 80 people and exhibits its wares regularly at the Modamont and Eclat de Mode fashion fairs in Paris, and the Lineapelle show in Bologna, Italy, and also supplies Swarovski with accessories. The company motto is "Transforming ideas into touchable metal accessories."

www.artimoda.com