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.

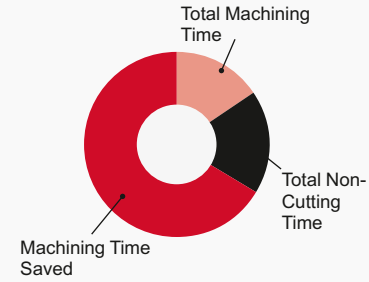
www.tallman-bronze.com

TOOLBOX

R573 DRILL FOR DEEP HOLES

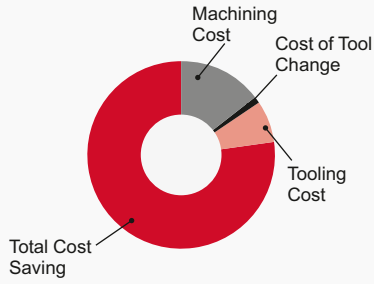
TALLMAN TIME SUMMARY

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



TALLMAN COST SUMMARY

Total saving: $47,633 (per year)



PRODUCTIVITY ANALYSIS