PRESS RELEASE

Date: 15.01.2020

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Milling cast and steel parts more cost-effectively

Whether they're producing turbochargers, steering knuckles or cylinder blocks, customers can mill their cast and steel parts considerably more cost-e®ectively with the radial insert milling range from MAPAL than with the previously available solutions. Since the product launch in 2018, there have been a large number of measurable successes resulting from the use of the tools in the series.

The new Milling Cutter program with radial indexable inserts offers a concrete benefit

Let's take a quick look back: MAPAL first showcased a product range for milling with compressed radial indexable inserts at the AMB exhibition in Stuttgart in 2018. "This move was the natural next step towards our aim of being a comprehensive service provider for our customers," explains Dr Wolfgang Baumann, who is responsible for the product range of tools with ISO elements at MAPAL. "But our aim isn't just to provide the customer with all their machining needs in terms of tools and chucks – we also want to offer them added value through our solutions," adds Baumann. Accordingly, the development process of the new tools was comprehensive and detailed.

"Before this milling range, our focus was mainly on supporting customers with specific application needs, such as providing support for high levels of stock removal or unstable conditions," explains Dr Baumann. This machining was mostly carried out using ground tangential indexable inserts. "We're obviously not the first company to offer a radial milling range. We've simply plugged a gap in our portfolio," admits Baumann. However, he further adds: "Through our work with special applications, we've accumulated extensive in-depth knowledge that has been incorporated into the development of our compressed radial blades. They therefore offer considerable added value and, in particular, economic benefits for users."

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Cost-per-part clearly reduced for a multitude of applications

"The success stories that we've gathered over the past year prove that our meticulous work
is paying off for our customers today," explains Dr Wolfgang Baumann enthusiastically. In many applications, the cost per part (CPP) was considerably reduced. There are several reasons for this: "In many cases, other tools were superseded once we had analysed the application and selected the optimal tool," Baumann explains. "For some applications, our tools now machine significantly more parts until the blades have to be replaced. And in some other machining operations, the same machining times per part can be achieved with fewer blades. However, there are other cases where we can achieve considerably higher cutting data with more blades. We sometimes rely on indexable inserts with more cutting edges, thanks to which each individual indexable insert can be used for considerably longer." By way of example, three machining operations on customer parts demonstrate the added value that the radial milling range offers.

Face milling cutter: costs per part are decreased by 44 percent.

A MAPAL Face Mill cutter with a diameter of 100 mm is used on the side with stainless steel in the turbo charger application. The tool features 9 cutting edges in contrast to the before used tool with 7 edges. The indexable inserts differ in cutting edges: MAPAL inserts feature 16 edges but the competitor features only 12. MAPAL's cutting tool achieves 50 percent more parts through a significantly higher feed rate. The cycle time goes down drastically, and due 2 MAPAL's solutions costs per part is 44 percent lower than before.

58 percent reduced costs per part for steering knuckle machining

An end mill works on different connecting parts of a cast iron stearing nuckle with nodular graphite, with cutting depth of 2.5 to 4.5 mm. MAPAL's end mill with 6 indexable inserts, with 8 cutting edges per insert, the places the competitor´s tool, that features 7 indexable inserts with each insert has only 4 cutting edges. Despite

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the negative clearance angle of MAPAL's tool the tool life is exactly the same as it was with the competitors tool. In fact the new end mill works on as many parts as before, but the costs per part are reduced by 58 percent.

Cylinder block: tool life increased by 88 percent

An end mill has to rough mill different surfaces on a cylinder block made of cast iron with lamellar graphite. The cutting depth differs between 2 and 5 mm. MAPAL's end mill with 8 indexable inserts replaces the competitor's tool with also 8 indexable inserts. But MAPAL's solution features 8 cutting edges per insert which means it is twice as much. With running the same machining parameters MAPAL's tool life is much higher: 60 parts instead of 32 parts in the past. Costs per part are beeing reduced by 58 percent.

Captions:

Dr Wolfgang Baumann, who is responsible for the product area of tools with ISO elements at MAPAL, reports on the successes that the new radial milling cutter range with indexable inserts from MAPAL is achieving on the market.

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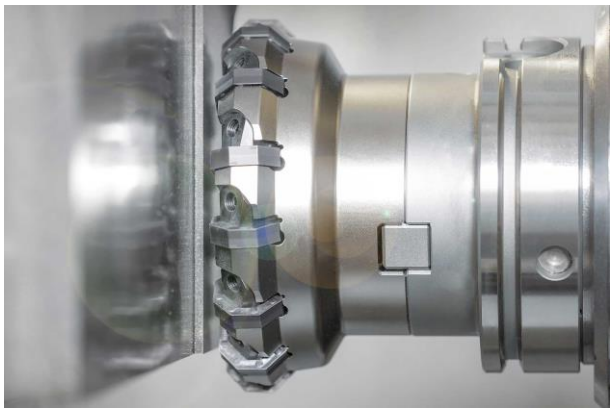
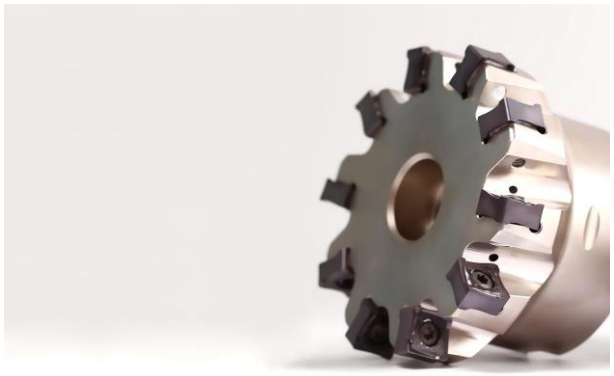


A face milling cutter from MAPAL machines 50 per cent more parts. The costs per part are 44 per cent lower.



The new MAPAL shoulder milling cutters bring major improvements in roughing.

If published, please send a voucher copy
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