



Easily achieving throughput rates of 150,000 cases

by **Gerhard Maier** Burrs are removed from around 2,500 transmission and clutch cases every day at IDS Casting Service GmbH in Oggelsbeuren. IDS achieves these throughput rates reliably and smoothly with the help of pneumatic spindles sourced from the Biax company.

It's a process that's repeated every day in Oggelsbeuren. Cast by Albert Handtmann Metallgusswerke GmbH in Biberach, the die-cast aluminium components – destined for Mercedes A- and B-Class cars – are delivered to IDS, deburred and then moved on. The company uses four of its own automatic robot cells in two daily shifts along with four pneumatic deflecting spindles manufactured by the Maulbronn-based Biax Schmid & Wetzel GmbH & Co. KG to achieve these throughput rates. Biax is certain that it was able to offer an ideal and cost-effective solution to the task that IDS faced given the operating hour rate of a machine tool and the time it would take to remove the burrs from the cases by hand – and especially in view of the large throughput rates that the company was required to realise.

When they arrive, the cases are first machine-blasted with stainless-steel filter-free blasting materials before they are transported by conveyor belt to the four deburring stations. The spindles used during this stage of the work are fixed in position while the robots guide the components through the process.

Adapting to component tolerances through deflection

According to the Biax company, pneumatic spindles are considerably cheaper in acquisition and repair than electrically-driven ones. Its spindles are also extraordinarily robust in spite of their slender design. They also come with a deflection system that adapts to component tolerances and inaccuracies in the positioning of the work pieces. It would not be possible to remove

IDS removes the burrs from around 2,500 transmission and clutch cases on four stations a day. The tool spindles are fixed in position while robots move the work pieces.



The Biax RWA 2-22 pneumatic spindle possesses two inlets for compressed air. This allows the deflection system to be controlled separately

Photos: Biax / NCFertigung

burrs from components with rigid spindles. The deflection system on Biax spindles is controlled autonomously by separate air supplies with pressures of up to six bars. Biax says that the high speeds achieved with its products – the RWA spindles operate at 30,000 min⁻¹ – allow cycle times to be optimised.

Biax also states that its systems have helped IDS achieve triple time savings over the removal of burrs by hand. But the consistent quality of the results achieved is almost as important as the speed as it constitutes a significant factor in the throughput rates that IDS realises. Another major contributor to IDS' decision to work with Biax spindles was the support that the experts in Maulbronn provided. The people in Oggelsbeuren were happy, for instance, to take up Biax's suggestion to test the spindles first. "We were able to try out the spindles over an extended period of time and received the best support from Biax's experts during the trial and introduction phases," said Reinhard Maier, Business Administration Manager at IDS. The spindles' robustness, the availability of spare parts and services along with pricing that was more favourable than that of competitors were major factors in the investment decision. Reinhard Maier is very satisfied with the results achieved to date: "The oldest spindle has been running without problems for 16 hours a day for more than seven months now. That's the equivalent of more than 3,800 operating hours and more than 150,000 deburred casings." So it's no surprise that IDS will soon be adding to its existing number of spindles. "I've decided to have a fifth spindle installed to work on this project from April," said Reinhard Maier. But the people in Maulbronn are not resting on their laurels. They are continuing to develop their products and have joined forces with the Fraunhofer-Institut für Produktionstechnologie (IPT – Institute for Production Technology) in Aachen to produce a modular system with optional deflection for the pneumatic spindles to be employed in a variety of applications at speeds ranging from 16,000 min⁻¹ to 100,000 min⁻¹ ■

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