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Parting off and grooving

How to increase productivity by 400 percent - "He who parts off wins."

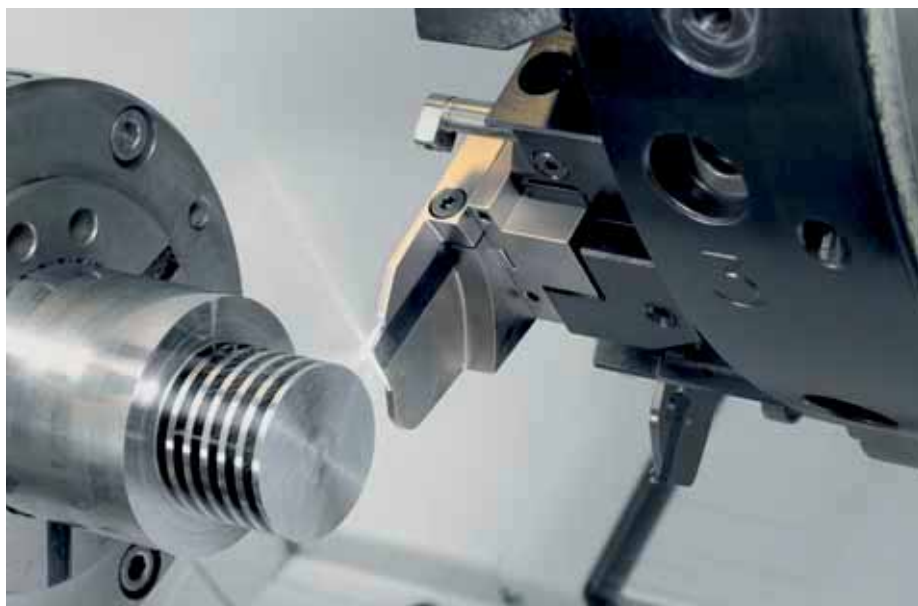
Parting off and grooving are among the most important, but also most demanding turning operations. There are many parameters that determine the result and productivity of the process and production. In addition to the rigidity of the machine, feed rate and cutting speed, the parting-off and grooving tool and its holder are decisive factors governing the quality and efficiency of the grooving operation and workpiece. If you ignore the diversity of cutting materials, blades and holders, it will quickly become very costly. Innovative manufacturers with a customer-oriented mindset and application expertise are important advisers.

Parting off is like many other important manufacturing processes: the devil is in the detail. There is so much to be considered in this important turning operation. After all, it plays a decisive role at the end of the turning process, i.e. when a lot of added value has already been invested in the workpiece. In addition to feed rate and cutting speed, groove width and cutting depth, chip evacuation is one of the factors that requires particular attention. Finally, the right tool and its holder determine the quality of the components and process efficiency.

Diversity of variants reflects application experience

Anyone who underestimates the complexity of grooving and only uses individual parameters for their decisions will quickly pay dearly. By the way, this also applies to parting off and profile grooving. Suppliers with application experience, consultancy expertise and fast-response service can boost processes and productivity. Increases of 400 percent are achievable.

Karl-Heinz Arnold GmbH in Ostfildern near Stuttgart has made a name for itself as a tool manufacturer with considerable application experience and consultancy expertise. The family-owned company known as ARNO Werkzeuge offers innovative parting-off and grooving systems with a diversity that reflects the company's vast experience. The double-edged SA grooving system with groove widths of 1.5-10 mm is suitable for parting off and grooving at cutting depths of up to 140 mm in diameter. Together with many modules,



holders and blades, the parting-off tool is always optimally adapted to the situation. In addition, the manufacturer offers a wide range of machine-related flange mounted holders for many machine brands.

Stability and low vibrations for best results. Users can choose from six geometries, seven coatings and two solid carbide substrates to achieve the best possible cut on various materials. The SA grooving system is adapted to steel, stainless steel, aluminium or materials that are difficult to machine. It has been tried and tested for years and ensures an uninterrupted cut for applications that require optimum chip breaking geometry, thanks to its negative chamfer geometry.

For grooving applications and Swiss type machining, the manufacturer recommends the flexible solution of its SE groove turning system. As it is highly stable, it achieves perfect results despite high lateral forces. The SE system allows users to part off even if workpieces have a large radius.

The manufacturer has developed a third tool especially for parting off small components with small diameters. The three-edged ATS system can be used by turning operators for a wide range of short, precise grooves. Here, the manufacturer focuses on proven substrates and coatings. A countersunk clamping screw clamps the tool rigidly and precisely to the ground

contact surface. ATS offers a large cutting depth of 6.5 mm compared to its compact dimensions. Groove widths start at a very narrow 0.8 mm and extend to 6 mm. When it comes to profile grooving inserts, contours up to 20 mm long can be mirrored on one insert. Since the system is so compact, users also use the ATS system for applications in shoulder grooving or in Swiss type machining.

Think about the processes, not just the products

If a tool manufacturer is a serious supplier and does not merely want to sell products to its customers, he will also find custom and application solutions to improve processes and increase productivity. In our example, the manufacturer ARNO Werkzeuge presents innovative products that demonstrate precisely this philosophy. For example, customers are delighted with the AWL/AFC quick-change tooling system. Two-part carrier tools make for quick tool changes that even unskilled personnel can easily perform safely.

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