

## Bar peeling is heavy-duty machining in every aspect

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**Bar peeling, also known as skiving, is one of the most demanding chip-removing machining operations, in which the process engineering know-how lies to a particular extent directly at the point of action. As a partner for successful bar peeling, Boehlerit offers complete tool systems, i.e. peeling head, holder and cassettes.**

In terms of process technology, bar peeling is a kinematically reversed longitudinal round turning in which the workpiece is concentrically passed through a rotating tool, the peeling head. In fact, bar peeling is heavy machining that is economically operated in diameter ranges from 20 to 500 millimetres. With standard materials, feed rates of up to 18 millimetres per revolution are practised nowadays, which is many times more than is possible with general turning. At the same time, cutting depths of up to 15 millimetres can be achieved with appropriate cassette systems.

However, users also associate heavy cutting in connection with bar peeling with heavy, in the sense of difficult. The processes take place under enormous quantities of cooling lubricant and are not visible to the machine operator. In addition, due to the high loads, vibrations or guiding problems occur in the long run. Another complicating factor is that in bright steel production, materials that are difficult to machine, such as stainless steels or nickel-based alloys, are often processed. In addition, forged bars in particular are often relatively crooked and out of round.

Process reliability depends heavily on the experience of the machine operator. It is particularly important to avoid the breakage of indexable inserts. This would lead to enormous damage to the cassettes, possibly to the entire peeling head, the bar and above that also to the guide rollers in the insertion apparatus.

The only options left for optimal process control are the assessment of the machining results via the dimensional accuracy and the surface quality achieved, as well as the assessment of the chips, the wear on the WSP and one's own experience. The challenge lies in the adaptation of the process parameters and the application-related matching of the inserts. This is usually done in close cooperation with the manufacturer of the WSP via cutting material compositions and geometries, i.e. cutting edge length, chip shape stage and support chamfer design.

## Presseinformation

### Always in the lead

Bar peelers benefit from the comprehensive know-how from a wide range of applications and processes when it comes to achieving performance increases through new coating developments. In addition, Boehlerit has all coating technologies in-house. Due to the process and the extremely high feed rates, the greatest challenges result from the necessary coating adhesion. The application-specific design of the cutting edge geometries is much more important in rotary peeling than in conventional turning. In the Boehlerit portfolio, users will find the widest range of geometries in standard versions, adapted to a wide variety of material classes.

Currently, simulation software is used for the development of new plate geometries in order to recognise the chip flow, the resulting temperatures and forces in order to achieve the best possible results. A large number of parameters are entered into the software in order to obtain results that are as close to reality as possible. The interaction of cutting material, coating geometry and cutting edge dressing is mostly dependent on the machine and the material to be machined.

The application is constantly changing, as new materials to be machined are constantly being developed and, due to cost savings, the allowance before the peeling process is reduced to a minimum, especially in smaller diameters. This aspect poses some challenges, especially in terms of roundness and surface quality. In larger diameters, this is only possible to a limited extent due to the manufacturing process, which is why tandem or trio peeling systems with large round plates are still used for large material removal.

Current examples of innovative solutions for machining new materials or for significant performance increases in bar peeling are the development of a new WSP grade for machining duplex or superduplex steel, the nanotechnology of the universal bar peeling grade LC228E or the new grade BCP35P for the round insert RNMH 5018.

## Presseinformation

### **The company**

As a carbide pioneer, the Boehlerit Group is one of the world's leading manufacturers of wear protection solutions and cutting tools for machining metal and composite materials. With cutting materials, semi-finished products, precision tools and tool systems for milling, turning, grooving and forming, the family-owned company has been ensuring process reliability and efficiency worldwide since 1932. Around 800 employees offer customers comprehensive know-how in all aspects of metallurgy in order to be able to realise process-optimised manufacturing technologies, the highest quality and an edge in tool productivity. With three production sites in Europe and Asia, international subsidiaries and a network of sales partners, the carbide and tool specialist has a global presence. Together with its two legally independent sister companies Leitz and Bilz, the Boehlerit Group forms the globally active Brucklacher Group, in which over 4,000 employees generate an annual turnover of around 450 million euros.

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**Fig. 1:** As a partner for successful rotary peeling, Boehlerit offers complete tool systems, i.e. peeling head, holder and cassettes.

