PRESS RELEASE

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Economical and reliable machining of steel beams

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Steel beams and sectional steels are indispensable in many areas. Both their dimensions as well as the position and size of their bores are standardised. For this reason, the manufacturers of steel beams focus on the bore quality produced during machining, in addition to process reliability and cost-effectiveness. MAPAL offers the optimum solution for this with the QTD-STEEL-PYRAMID indexable insert drill with pyramid tip.

Steel beams are a prime example of successful recycling. Mainly produced from scrap metal, they're used in the construction of halls, bridges or apartments, in mining, in the transport and logistics sector as well as in mechanical and vehicle engineering. Their job is just as important as the variety of possible applications and uses. For example, if load-bearing walls are knocked down during house renovations, steel beams are the solution to maintain the statics and replace the wall as a support.

Dimensions, masses and cross-sectional properties of steel beams and sectional steels are standardised. For the various profile shapes, it is precisely defined which static values they must meet for defined dimensions. The position and size of the pin bores are also defined. The machining of these bores is subject to challenging conditions. Generally speaking, machining conditions are usually unstable, the material thickness fluctuates, and the material specification also varies.

In one specific case in Australia, the managers at a company that manufactures steel construction materials were not satisfied with the performance of the tool produced by one of the other players on the market. The tool life of the drill fluctuated immensely. Jammed chips in particular meant that the machinist often had to replace it after just 150 bores.

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The customer turned to MAPAL. The experts at the precision tool manufacturer designed a QTD-STEEL-PYRAMID indexable insert drill (QTD) with a diameter of 18 mm especially tailored to the conditions on site. The QTD was predestined for the machining of steel beams. Work is carried out with MQL and with the same cutting values as the previously used tool:

- Cutting speed: 63 m/min
- Spindle speed: 1,115 rpm
- Feed: 0.3 mm

The results are exciting. With the MAPAL tool, the customer is now able to machine a whole 2,000 bores reliably and economically.

In addition to the significantly longer tool life, the QTD provides the construction material manufacturer with extra advantages over the previously used drill. The chips are broken up better. They're significantly smaller and therefore easier to transport. Problems with jammed chips are a thing of the past thanks to the MAPAL tool. Even with fluctuating material thicknesses (in this case between three and twelve millimetres) the QTD works reliably with consistent performance. It produces excellent bore quality with a burr-free bore exit. Moreover, changing indexable inserts is as simple as it is safe.

The tool not only persuaded the customer with its high performance and user-friendliness, using it also saves resources and is extremely economical. This is because the cost-intensive carbide is limited to the indexable insert. And all of this without the user having to accept losses compared to the solid carbide counterpart.

More details about the MAPAL tool:

- QTD indexable insert drill with pyramid tip
- Indexable insert made from coated solid carbide especially for steel machining

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- Pyramid tip for the best possible self-centring and therefore a reliable bore entrance
- Shank according to ISO 9766
- Back relief for reliable chip removal
- Optimum power transmission due to embedded indexable insert
- Hardened steel holder with cylindrical shank
- Stable Torx Plus tension
- Prismatic insert seat for optimum centring of the indexable insert
- Maximum performance when combined with MAPAL chucks

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Caption:

The QTD-STEEL-PYRAMID indexable insert drill with pyramid tip from MAPAL is the optimal tool for machining the pin bores on steel beams.

If published, please send a voucher copy by mail to Kathrin Rehor
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