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## NeoMill-Alu-QBig mills aluminium with a material removal rate of 18 litres per minute

The NeoMill-Alu-QBig indexable insert milling cutter from MAPAL stands for top performance in high-volume milling of aluminium. The tool manufacturer thus offers a very economical solution for use on high-performance machines, such as those found primarily in the aerospace industry.

MAPAL Präzisionswerkzeuge  
Dr. Kress KG  
Postfach 1520 | D-73405 Aalen

Contact:  
Oliver Munz

Phone: +49 7361 585-1463  
E-mail: [presse@mapal.com](mailto:presse@mapal.com)



With its indexable insert milling cutter NeoMill-Alu-QBig for aluminium materials, MAPAL is taking full advantage of the performance of the fastest machines available on the market, thus achieving a material removal rate of more than 18 litres per minute. At the same time, it is of course also possible to use the high-volume milling cutter on less powerful machines. The tool manufacturer is thus taking into account the fact that aircraft parts are often manufactured on machines with spindle outputs between 40 and 80 kW, for which there was previously no suitable milling cutter in the portfolio.

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In order to achieve as large a material removal rate as possible, the new aluminium volume milling cutter is designed for use at spindle speeds of up to 35,000 rpm (with a diameter of 50 mm). For a tight fit despite high centrifugal forces, screws with increased tensile strength are used to hold the indexable inserts firmly in the prismatic seat. In addition, countersinks on the indexable insert ensure weight savings. MAPAL has fitted the tool body with a fine balancing system. Four threaded bores enable precise adjustment in order to protect the machine spindle at high speeds and achieve the highest possible surface finishes.

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**Dr. Kress KG**  
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Oliver Munz

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E-mail: [presse@mapal.com](mailto:presse@mapal.com)



The NeoMill-Alu-QBig from MAPAL achieves material removal rates of 18 litres per minute and more. ©MAPAL

In addition, focus was placed during development on low cutting forces and highly precise indexable inserts. High chip volumes with very high achievable surface finishes of Ra 0.8 µm and Rz 4.0 µm for rough and fine machining can thus be achieved with the tool. For the main application, machining wrought aluminium alloys, MAPAL uses uncoated cutting edges with a highly positive rake angle and polished chip guiding stage for low

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frictional resistance. This reduces the amount of heat generated. For this purpose, PVD-coated indexable inserts for machining AlSi alloys and CVD-diamond-coated indexable inserts for the automotive industry and general machining are available in the portfolio. The maximum stock removal is 13 mm. Internal cooling and very large chip spaces ensure optimum heat dissipation and chip removal. MAPAL produces the tool bodies in a diameter range of 32 to 80 mm for hollow shank taper or shank taper as well as mounting tool variants.

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**Contact:**  
Oliver Munz

Phone: +49 7361 585-1463  
E-mail: [presse@mapal.com](mailto:presse@mapal.com)

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Characters with spaces: 2671

If published, please send a voucher copy by mail to Kathrin Rehor or by e-mail to [kathrin.rehor@mapal.com](mailto:kathrin.rehor@mapal.com).