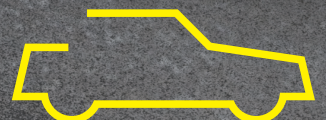




SANDVIK
Coromant

Automotive solutions

Aluminium machining



Complete offer for automotive aluminium machining

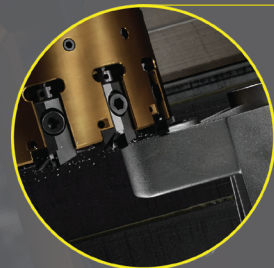
With the automotive industry increasing its use of engine, powertrain and brake system parts manufactured from aluminium, the challenge for OEMs and their supply chain partners is to deliver more productive machining operations. Tooling selection is the key to genuine market differentiation in this segment, where the correct application of optimized milling cutters across the entire range of engine component manufacturing operations can pay significant dividends.

Sandvik Coromant offers solutions and tools for aluminum components, backed up with in-depth application know-how. We have a global presence with dedicated engineering teams supporting the automotive industry with several high-quality solutions. Here we are sharing a selection of productive solutions for some of the challenging features in aluminium machining.



M5Q90

Roughing tangential milling cutter, designed to clean the surfaces in the first machining stage on newly casted aluminium parts in a single operation without burring.



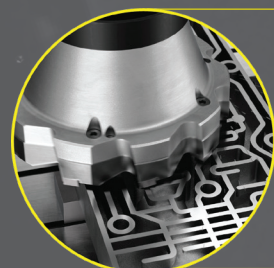
M5R90

A first-choice solution for roughing to semi-finishing in shoulder milling operations of automotive aluminium components, such as cylinder blocks, cylinder heads and transmission housings.



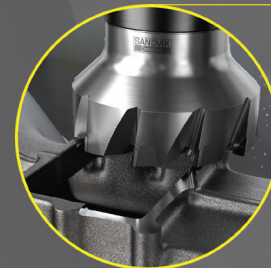
M5C90

Face milling concept for high speed direct finishing of aluminium automotive parts with wide cutter engagement. It can replace the need for both roughing and finishing, thus only one operation is needed.



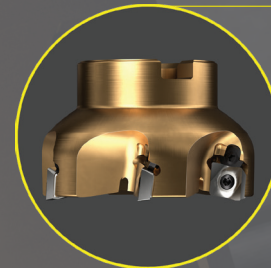
M5B90

An engineered face milling cutter that offers outstanding surface quality, minimized cycle times, close component tolerances and high-volume production.



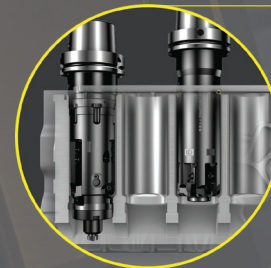
M5F90

Machining parts without burring, scratching or chipping, M5F90 is a concept face-milling cutter that enables roughing and finishing in a single operation.



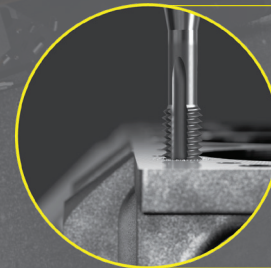
CoroMill® Century

Face mill concept with aluminium or steel body for high speed machining. The tool is designed with serrated insert interface for safe performance and reduced run-out.



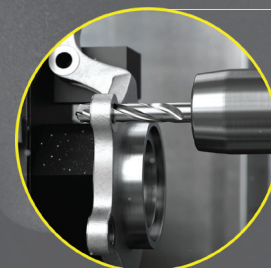
B685/ B687

High speed cylinder boring concept with easy set-up without time-consuming manual insert position adjustment. Produces excellent roundness and cylindricity.



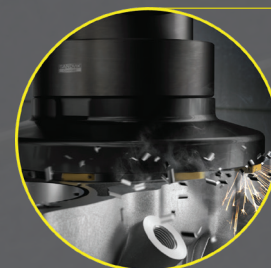
CoroTap®

Developed for through holes and blind-hole operations, CoroTap tools feature an enhanced edge design and material grade to ensure reduced axial forces and torque.



CoroDrill® 400 and CoroDrill® 430

Designed with dedicated substrates and coatings to withstand the abrasive wear resulting from high speeds and temperatures, typical in aluminium silicon alloys and cast-iron machining.

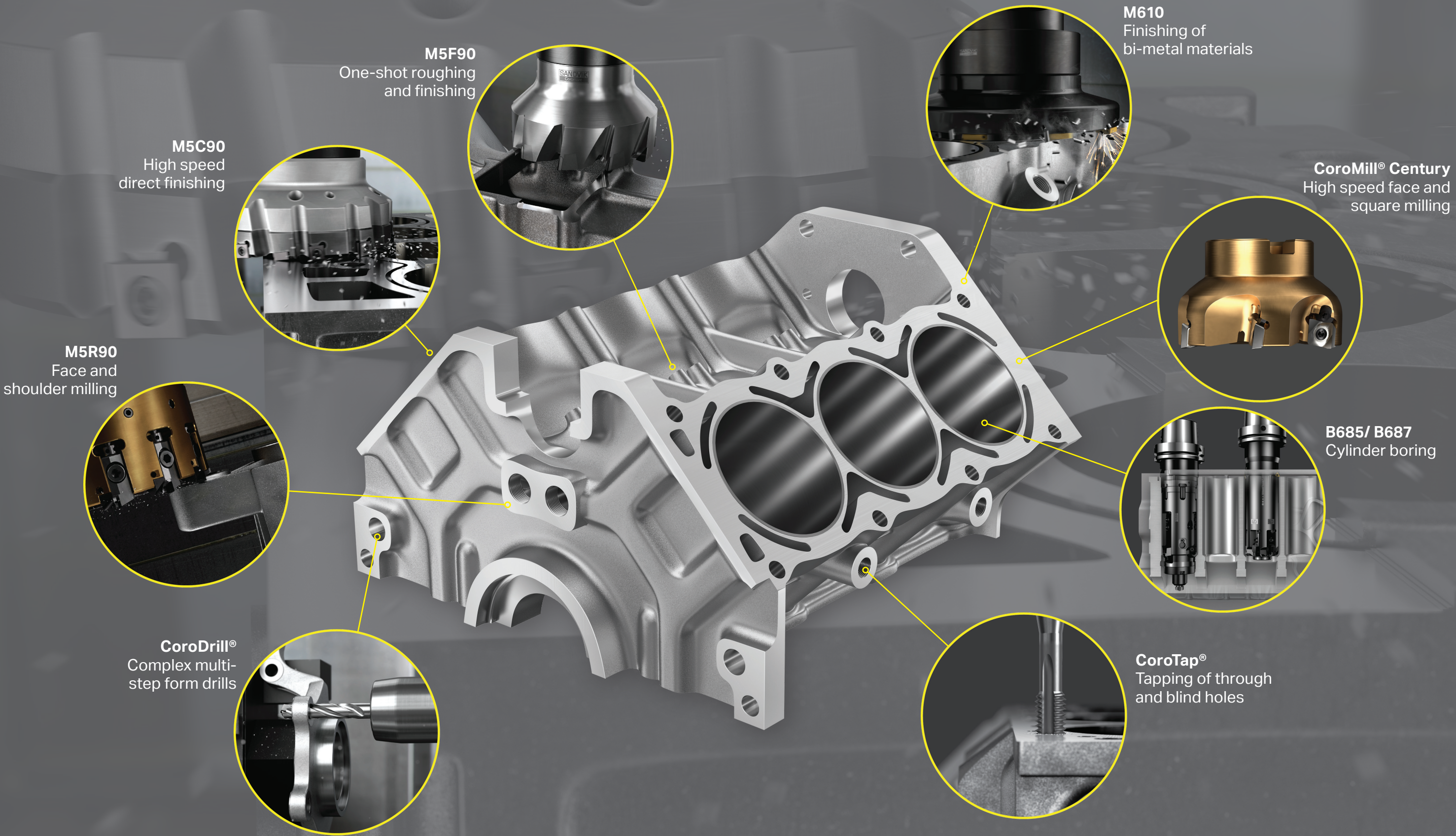


M610

Stand-alone milling cutter for finishing milling of bi-metal materials such as aluminium and GCI. It requires no set-up and no adjustment, and results in high feed rates with no chipping, burring or scratching on the parts.

Component solution for aluminium cylinder blocks

For many years, the engine block has been manufactured using cast iron alloys due to its strength, low cost and wear resistance. But as engines become more complicated, new materials have been taken in use to reduce its weight as well as to increase strength and wear resistance. Today's most common materials for passenger car engines are aluminium alloys, because of their reduced weight and excellent casting properties.



Component solution for aluminium cylinder heads

Besides the cylinder block, the cylinder head process is the one involving the most machining in automotive component production. There are several complex processes and tight tolerances involved, especially in the valve seat and guide and in the deck face. As the cylinder head is an essential part of the engine, quality is crucial for the performance of the vehicle. Cost-efficient manufacturing is also of great importance for these types of components.

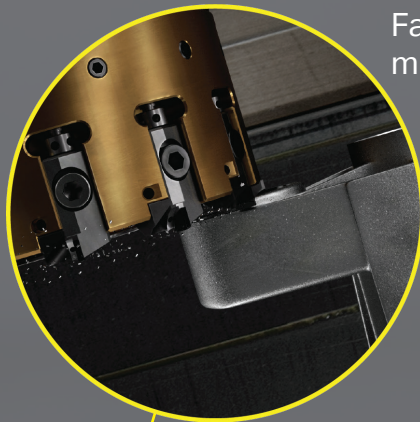
M5Q90
First stage roughing



M5C90
High speed direct finishing



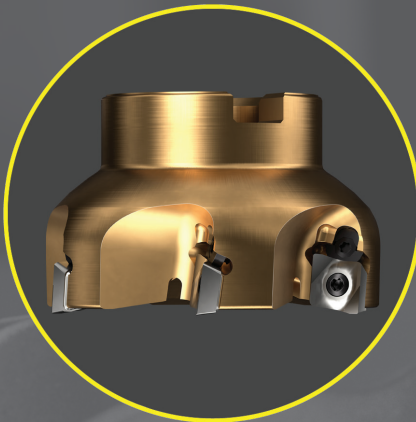
M5R90
Face and shoulder milling



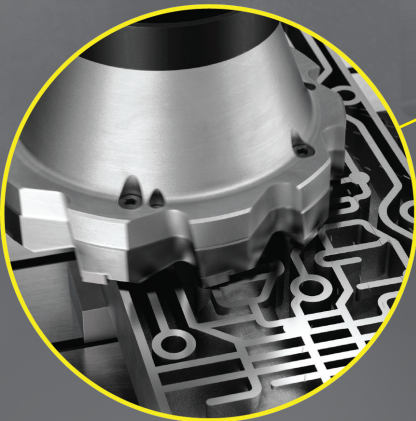
M5F90
One-shot roughing and finishing



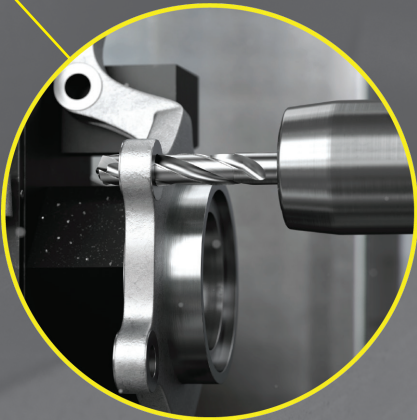
CoroMill® Century
High speed face and square milling



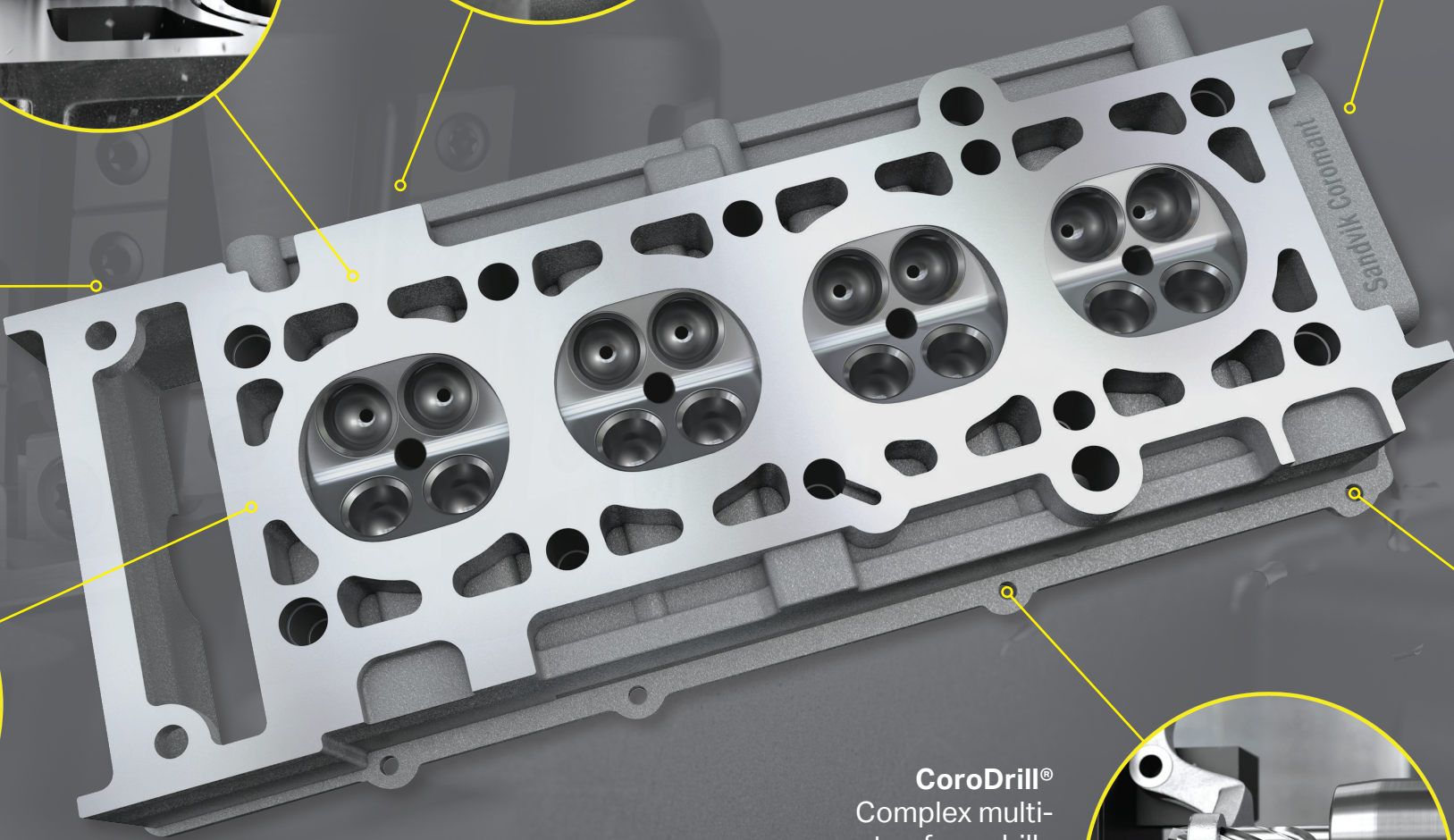
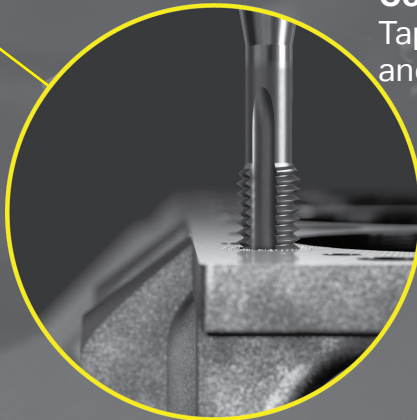
M5B90
Face milling



CoroDrill®
Complex multi-step form drills



CoroTap®
Tapping of through and blind holes

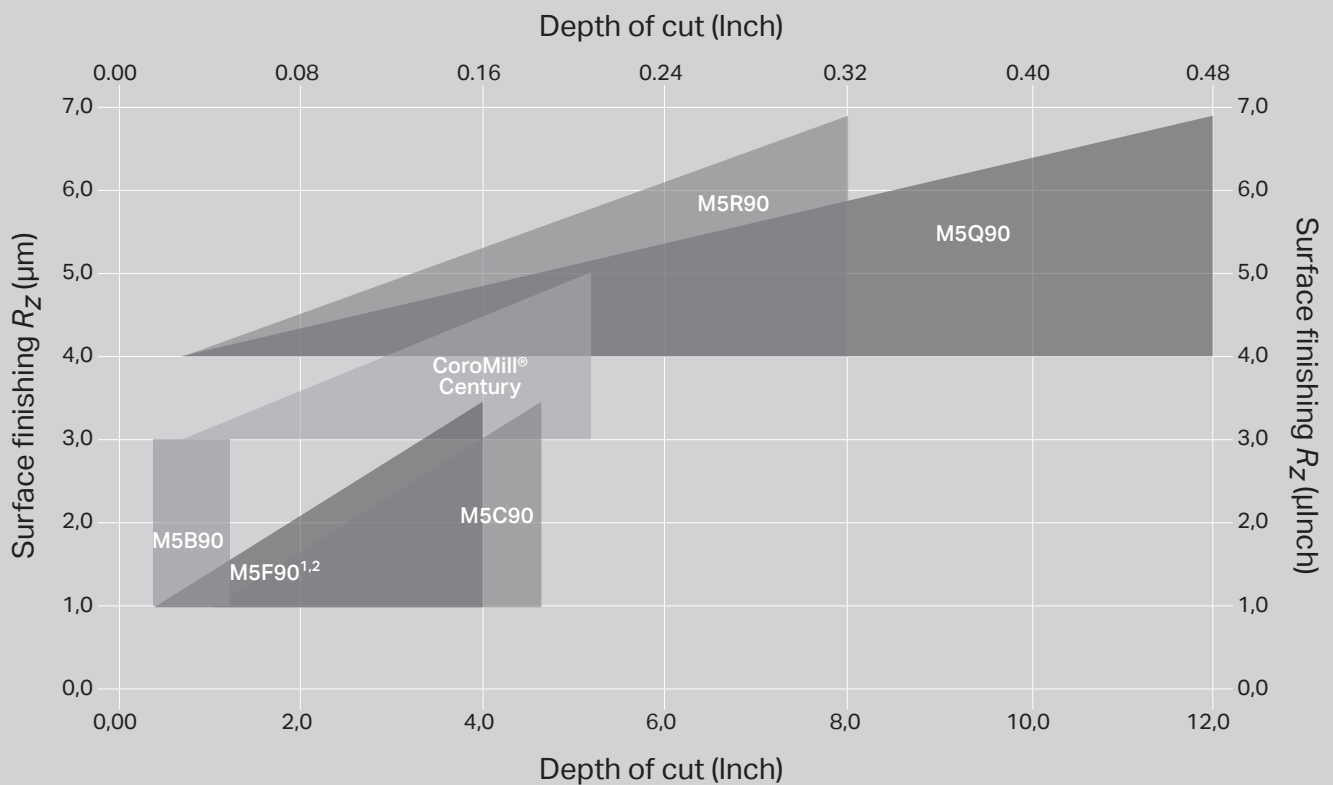


Working range in PCD cutting materials

PCD is a composite of diamond particles sintered together with a metallic binder. Diamond is the hardest of all materials, and therefore the most abrasion resistant. As a cutting tool, it has good wear resistance but dissolves easily in iron due to the high temperatures generated. Hence PCD grades works best in highly abrasive workpiece materials at high cutting speeds..

¹ Wide and low engagement material

² Thin wall applications only



For more information please contact your local Sandvik Coromant representative.

Head office:
AB Sandvik Coromant
SE-811 81 Sandviken, Sweden
E-mail: info.coromant@sandvik.com
www.sandvik.coromant.com