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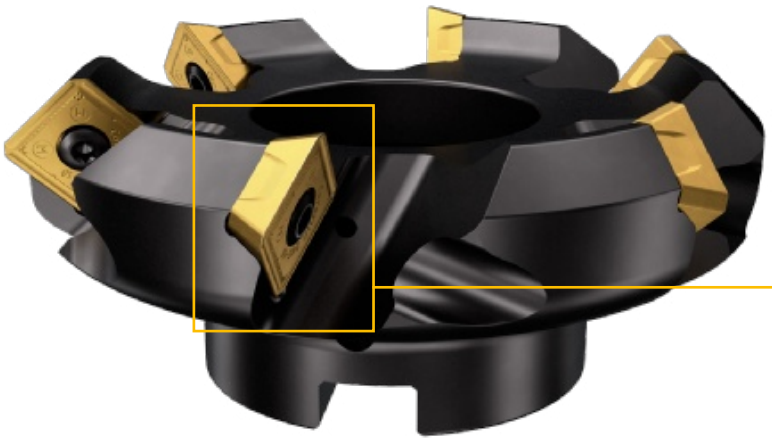
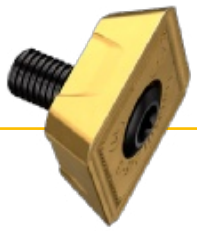
CoroMill® 745

A double-sided, multi-edge concept with positive cutting action

The secret behind the unique CoroMill® 745 cutter is the patented insert positioning system. By tilting the insert, the cutting edge position and angle are the same as in a light-cutting positive concept. Since the inserts are double-sided, you still get 14 edges per insert. The advantage: performance and economy in one.



Single-sided milling concept.



The inserts are positively tilted in the tip seat to create a light-cutting action.

Meet the developers

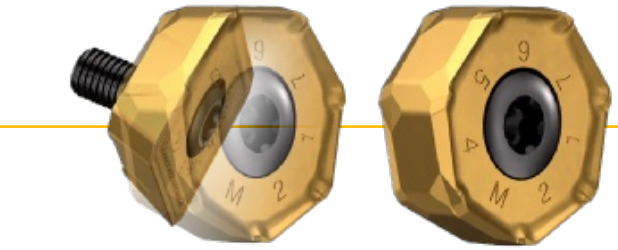
How did you come up with the idea for CoroMill 745?

We wanted to create a multi-edge tool that is not heavy-cutting and has a smooth sound. We took our inspiration from positive inserts and end mills, and our aim was to generate a more positive inclination angle. We then realized that by tilting the insert, we could keep the cutting edge position and angle the same as on a light-cutting positive concept.

What has the working process been like?

Once we had come up with the idea and realized that we were onto something revolutionary, development was quick. Thanks to a dedicated group and a creative way of working, we were able to understand what needed to be changed and easily incorporate new ideas that came up along the way.

By using EDM and laser processing, we were able to develop prototypes in just a couple of days, then test them directly and modify them with grinding tools.



With CoroMill 745, the positive single-sided cutting edge position is transformed into a double-sided concept by modifying the insert inclination.

The result: the first face milling cutter with 14 cutting edges and a positive cutting action.

What are the main advantages of the concept?

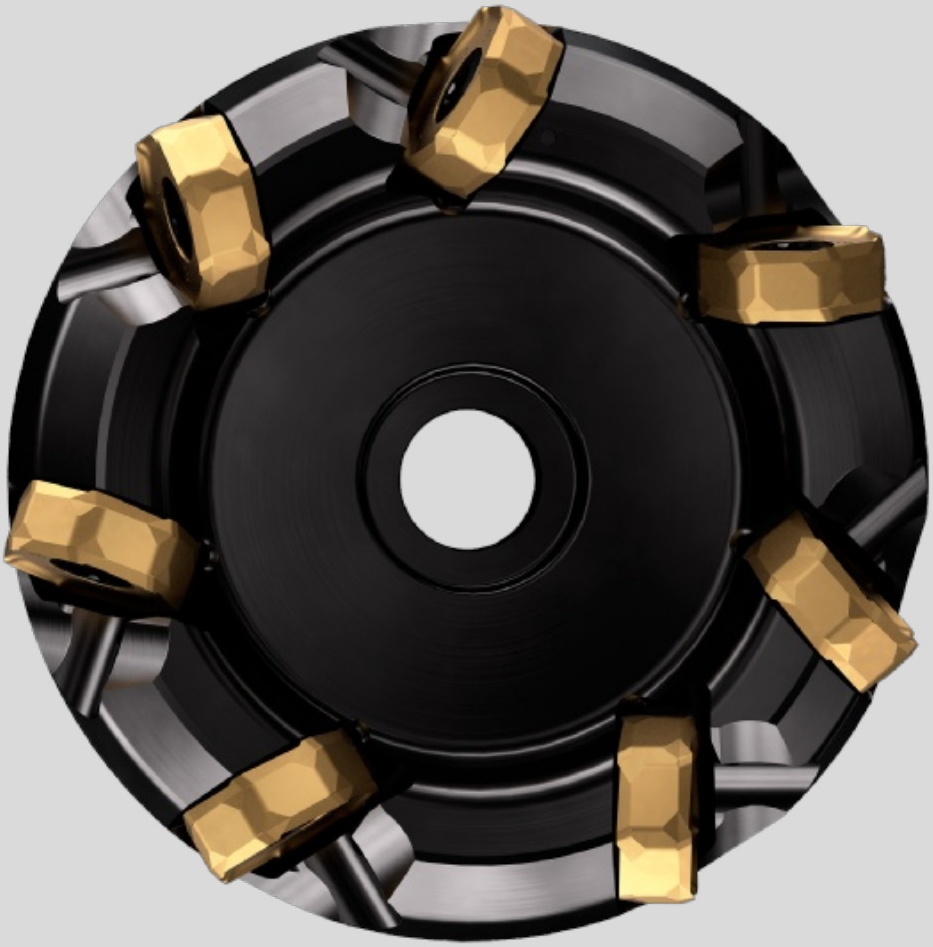
The single most important feature of CoroMill 745 is the unconventional insert inclination angle, which provides a large positive angle on the main cutting edge for a positive cutting action.

We also chose to develop a 14-edge concept in order to achieve the best possible insert positioning in the holder. It is a large, robust insert with a large screw, which makes clamping very stable. In addition, less powder is needed with the big screw hole, making the insert more environmentally friendly.

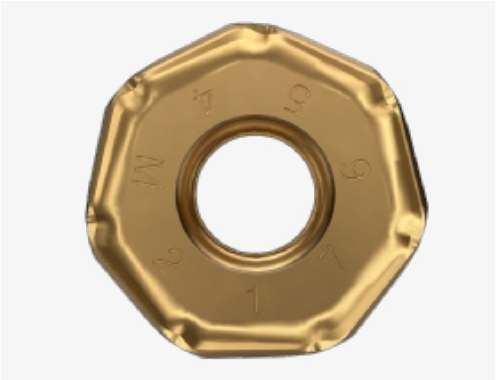
Stefan Roman and Per Viklund, Product Development Engineers, milling.

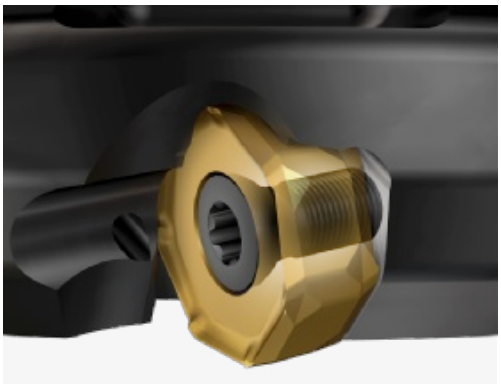
CoroMill® 745: the benefits

- The double-sided multi-edge design is a cost-efficient solution. It offers high productivity and a low cost per edge
- Reliable tool with secure performance guarantees trouble-free machining
- The innovative design provides a light cutting action with excellent chip formation, a smooth, soft sound, and low power consumption
- Easy handling and secure positioning of inserts for reliable machining



MD pitch



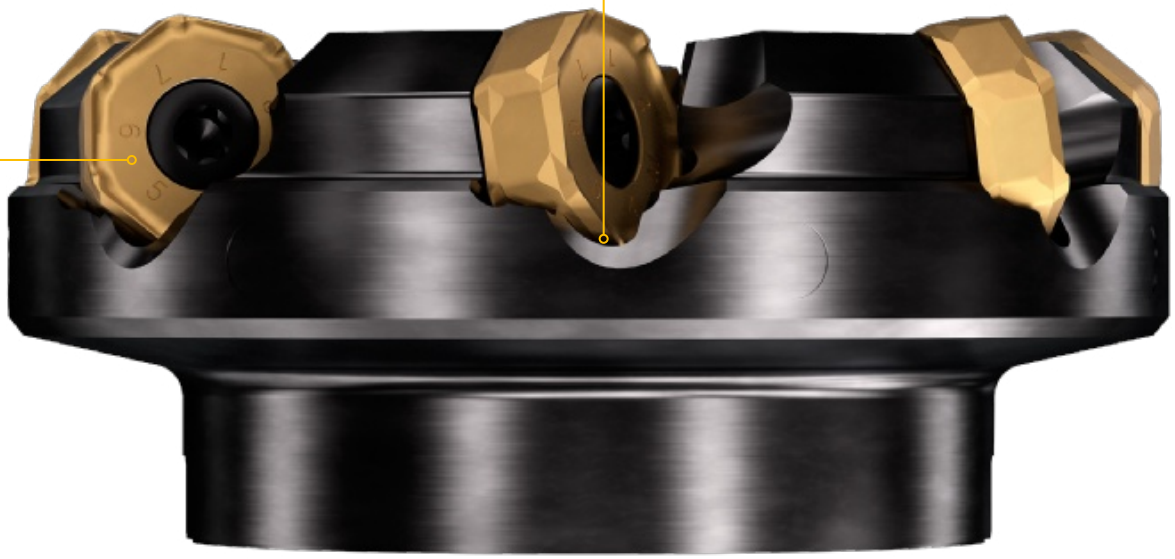


Innovative design with patented insert positioning system

- Multi-edge concept with 14 true cutting edges
- Double-sided insert design, tilted for a positive cutting action
- Thick and secure ground insert with strong and sharp edges for high precision and a secure cutting process
- Precision-ground geometries designed to avoid workpiece frittering in cast iron
- Clear insert marking (1–14) for easy indexing of the cutting edges

Secure tip seat with easy insert indexing

- The large, robust M7 insert screw makes handling easy, even while wearing gloves
- Extremely secure mounting due to the heptagonal insert shape
- The insert is quickly and easily indexed. The unique insert position is designed for convenient insert replacement



Strong cutter body

- Diameter range: 63–250 mm (2.500–10.000 inches)
- Internal coolant up to diameter 160 mm (6.000 inches)
- Unique differential MD pitch (available up to diameter 160 mm (6.000 inches)) with reduced weight, optimized with genetic algorithms to reduce vibration when machining weak components. The insert position is radially compensated for an even chip load

Application

- Face milling
- Roughing to semi-finishing
- Multi-edge concept suitable for large batch productions, flexible transfer lines, and when maximum tool utilization is important
- Operations with a maximum depth of cut (APMX) of 5.2 mm (0.205 inch), when using all 14 edges

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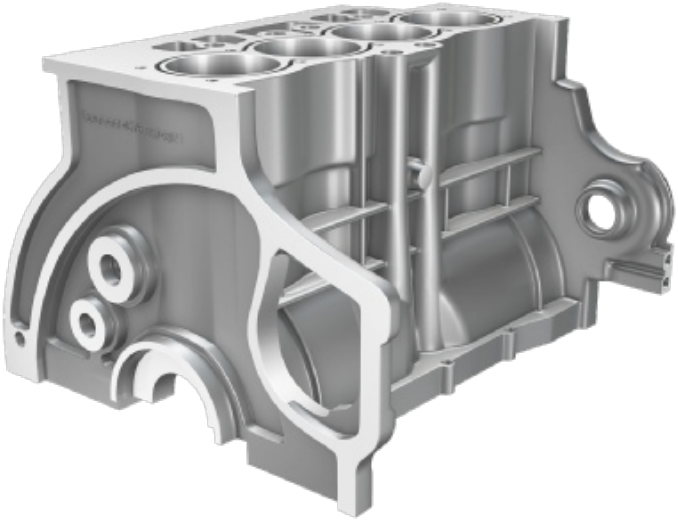
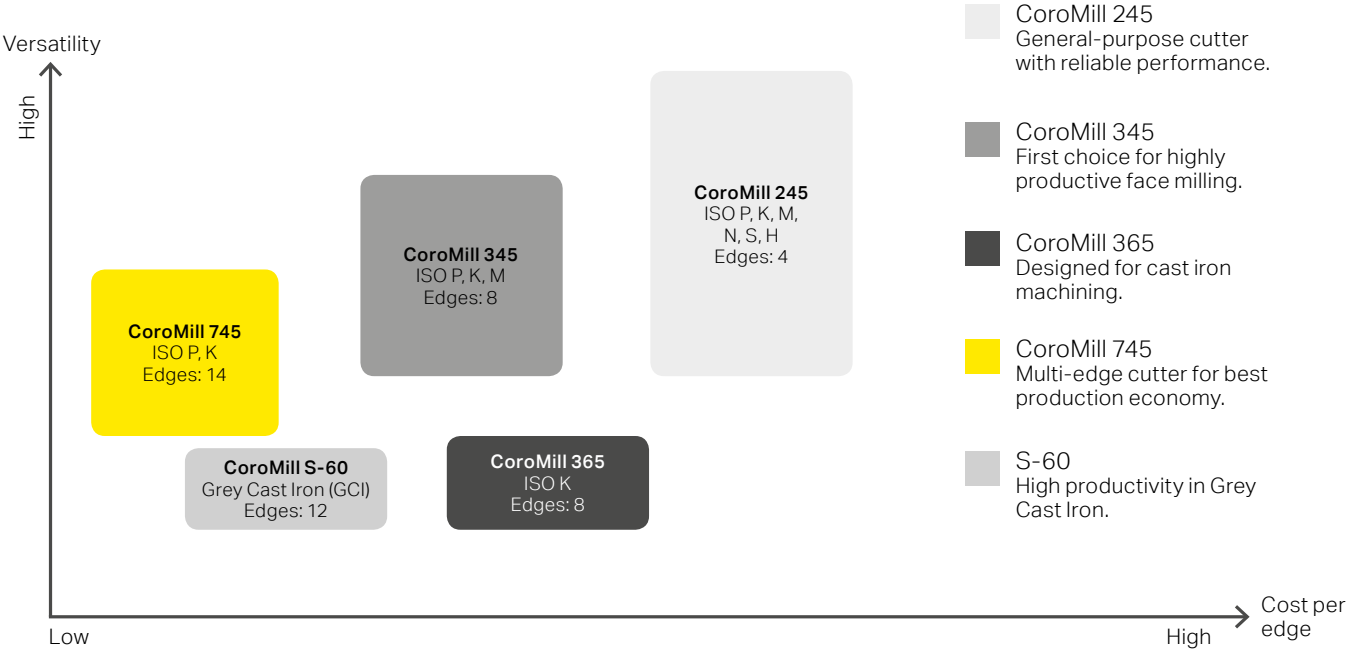
ISO application area



Recommendations

Insert screw torque 12 Nm (106 in-lbs). Use a torque wrench.

Choose the right cutter for your needs



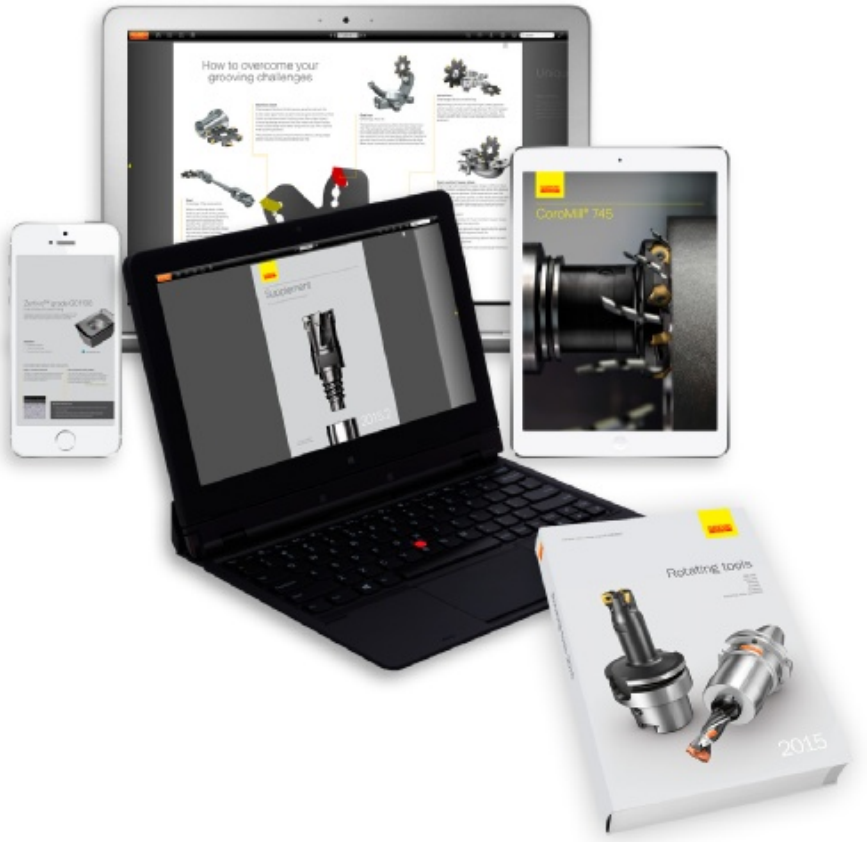
Performance CoroMill 745: 29% increased productivity when machining a universal joint.

By using CoroMill 745 instead of a competitor cutter, the customer was able to reduce the number of passes per component from four to three. Tool life increased by 12.5%.

Operation	Rough face milling	
Workpiece material	Cast steel, CMC02.1 (MC P2.2.Z.AN/P2.5.Z.HT) 250 HB	
Tool	745-100Q32-21M	
Insert	745-2109E-M30	
	CoroMill 745	**Competitor**
v_c m/min (ft/min)	260 (853)	260 (853)
f_n mm/rev (in/rev)	1.89 (0.074)	1.89 (0.074)
a_p mm (inch)	3.5 (0.138)	2.5 (0.098)
Feed per tooth mm (inch)	0.27 (0.011)	0.27 (0.011)
Results		
Insert wear-out	No (batch completed)	Yes (flank wear)
Pieces per edge	18	16
Tool life increase	12.5%	
Productivity increase	29%	

52%
lower spindle load than competitor

Order your tools



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