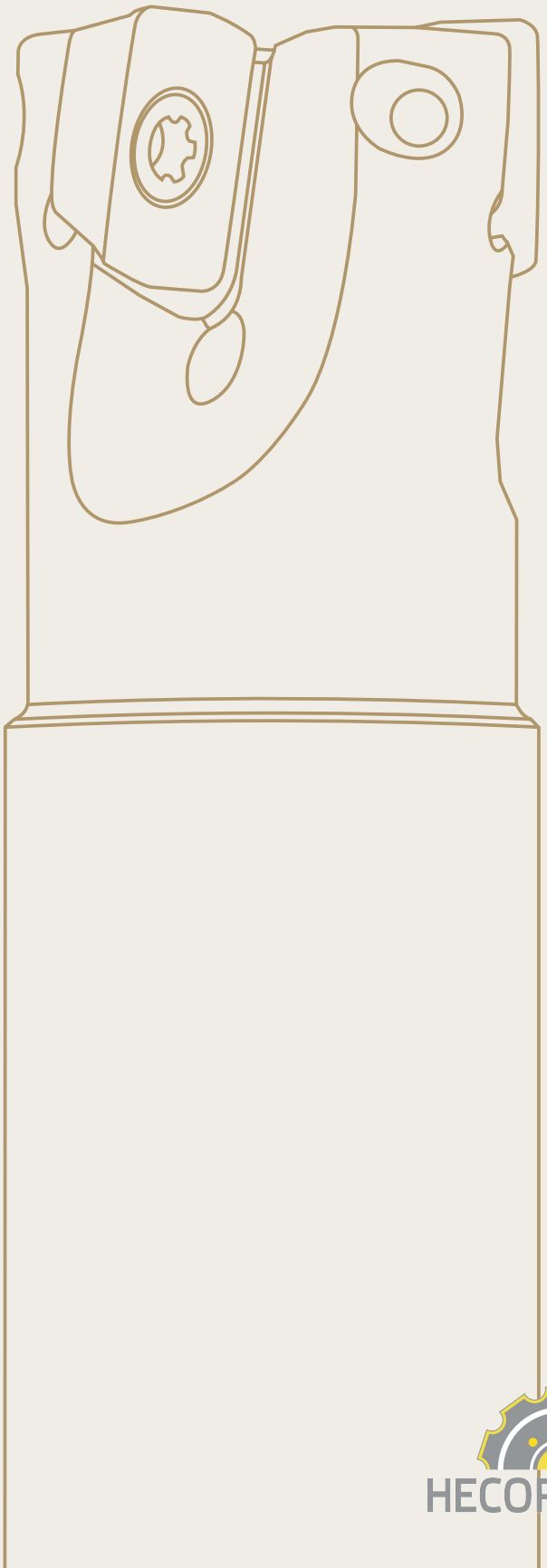
Introducing

CoroMill® MS20

Shoulder milling redefined



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Introduction

Shoulder milling is a cornerstone process in the manufacturing world, vital for achieving precise components with flat surfaces and sharp edges. However, it's no secret that this operation comes with its share of hurdles that can hinder efficiency and quality.

Are you grappling with achieving tight tolerances and precise cornering in your milling operations? How difficult is it to maintain surface finish and dimensional accuracy, especially near vertical walls? Moreover, have you considered the impact of tool selection on your milling process? These are critical factors that can make or break manufacturing success.

In this whitepaper, Sandvik Coromant delves into the common challenges associated with shoulder milling — and poses a solution. Introducing CoroMill® MS20.

What is successful milling?

> “ It can be difficult to distinguish which tool can meet your individual machining challenges. ”

Ask several machine operators, and they’ll likely all agree on what a successful milling application looks like. It features a capable machine that, together with the appropriate tool that’s matched to the characteristics of the workpiece, produces a part that meets the desired surface finish, tool wear and tool life.

But selecting the right tools to reach that end result isn’t always easy. With a market full of choices, it can be difficult to distinguish which tool can meet your individual machining challenges. Typically, milling success can be characterised by:

Accuracy. Successful milling means achieving the desired dimensional accuracy and geometric tolerances on the machined workpiece. This involves precise control over tool paths, cutting parameters and machine dynamics.

Surface finish. Attaining the required surface finish is crucial, especially in applications where the machined surface is visible or functional, such as in the manufacturing of aerospace components.

Efficiency. Efficiency in milling refers to maximising material removal rates and minimising machining time, all while maintaining quality standards.

Tool life and cost-effectiveness. Greater tool life can help lower production costs. Manufacturers that can get as many products out of their machine in the shortest time will see greater value from their machining operations.

Chip control. Effective chip evacuation relies on good use of coolant, chip breakers and machining parameters to ensure efficient chip removal from the cutting zone.

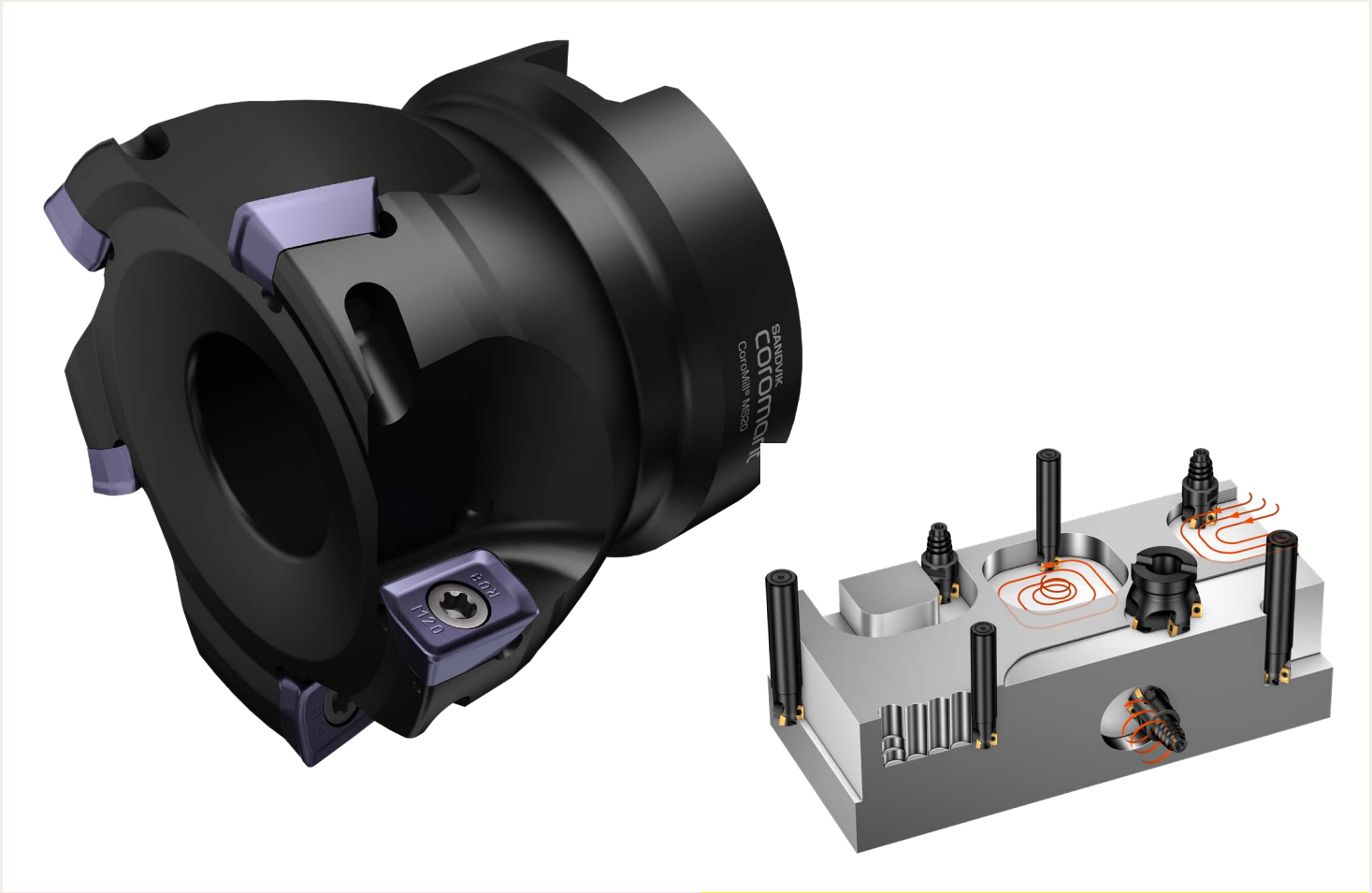
What is successful shoulder milling?

Shoulder milling generates two faces simultaneously, which requires peripheral milling in combination with face milling. Achieving a true, 90-degree shoulder is one of the most important requirements. Shoulder milling can be performed by traditional square shoulder cutters, and also by using end milling cutters, long edge cutters and side and face milling cutters. Due to these numerous options, operators must consider their machining requirements carefully in order to make the right choice.

Shoulder face mills of conventional designs are often capable of milling “true”, 90-degree shallow shoulders. Many shoulder face mills are universal cutters and can offer a good alternative to face milling cutters when milling axially deflecting surfaces or for milling close to vertical faces.

Introducing CoroMill® MS20

In October 2025, Sandvik Coromant expanded its CoroMill® MS20 shoulder milling concept with the addition of grade GC1230, purpose-built for ISO P materials. Already proven in ISO M and ISO S materials, CoroMill® MS20 now also stands out as a go-to choice for general engineering and automotive applications. This true 90-degree shoulder milling concept offers outstanding performance, from roughing to finishing, with exceptional security, versatility and productivity.



Core features:

A versatile, competitive solution with true 90o shoulder milling, including ramping capability.

Reliable inserts with optimized geometries for ISO **P**, ISO **M** and ISO **S** materials.

Robust cutter body with the highest possible **accuracy**, close to the nominal diameter, with minimal run-out.

Simple tool and insert selection, reducing the need for unnecessary inventory.

A light cutting action yields superior surface quality and reduces power consumption.

Higher edge-line security and a more predictable and progressive wear pattern of the insert ensure overall **reduction in carbide consumption**.

True versatility — the power of a two-edged concept

Why choose a two-edged shoulder mill over a multi-edged cutter?

Unlike multi-edged cutters optimized for a specific task, the two-edged CoroMill® MS20 emerges as the overall winner, offering true versatility — from shoulder and face milling to ramping, helical interpolation, and full slotting.

By consolidating multiple operations into a single cutter, you save not only time but also reduce costs, all while promoting a more sustainable business

What can CoroMill® MS20 do for your milling operations?

At Sandvik Coromant, we understand that manufacturers are constantly looking to solve a number of challenges. Often, finding a solution to meet all your needs is complex and costly. But what if a single tool could take away several pain points?

Improve tool inventory management

Versatility is the key to CoroMill® MS20's success, enabling it to support a wide range of milling operations. This flexibility minimizes the need for multiple tools, simplifying inventory and streamlining tool management.

Increase machining utilisation

CoroMill® MS20 is engineered to minimize production interruptions. Its ability to handle multiple milling operations with a single tool means fewer tool changes and greater operational efficiency. Its high level of reliability makes it well-suited for automated machining environments.

Increase metal cutting efficiency

With optimized geometries tailored for different ISO material groups, CoroMill® MS20 delivers exceptional milling performance with high efficiency across diverse machining tasks. Additionally, the tool's ability to maintain low cutting forces and minimize vibration significantly boosts productivity, especially in long overhang applications.

Increase machining predictability

The insert design features a secure leading corner that promotes consistent wear and longer tool life, reducing the risk of sudden breakage. Its stable performance remains reliable even when tool overhang, component design, or fixture limitations are present, making it easy to apply in challenging setups.

Complementing tools

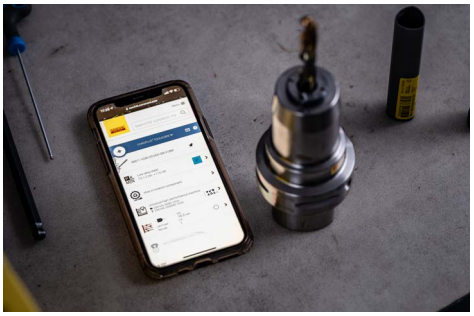
To further enhance your shoulder and face milling operations, Sandvik Coromant recommends several tools to use alongside CoroMill® MS20:

CoroMill® 390 and CoroMill® 490

Forming core parts of the Sandvik Coromant family of shoulder milling tools, finishing operations can be assisted with both tools.

CoroMill® Plura

Complete assortment of solid carbide end mills includes tools from roughing to finishing and thread milling to finalise small dimensional operations or to achieve the extreme accuracy specifications.



CoroPlus® Tool Guide

Find machining process and cutting data, as well as recommended cutting data for your specific tool in an instant.

Ready for sustainable machining gains?

With the ability to push cutting parameters and achieve high metal removal rates, machining time and energy consumption are significantly reduced. Consistent, reliable tool performance ensures fewer rejections and less waste, saving both resources and costs. And with longer tool life and reduced carbide usage, you are not just improving productivity, you are actively lowering your carbon footprint and supporting a more sustainable machining process.

To learn more about the tool, and to enquire about an order, contact your local sales manager over on sandvik.coromant.com.

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