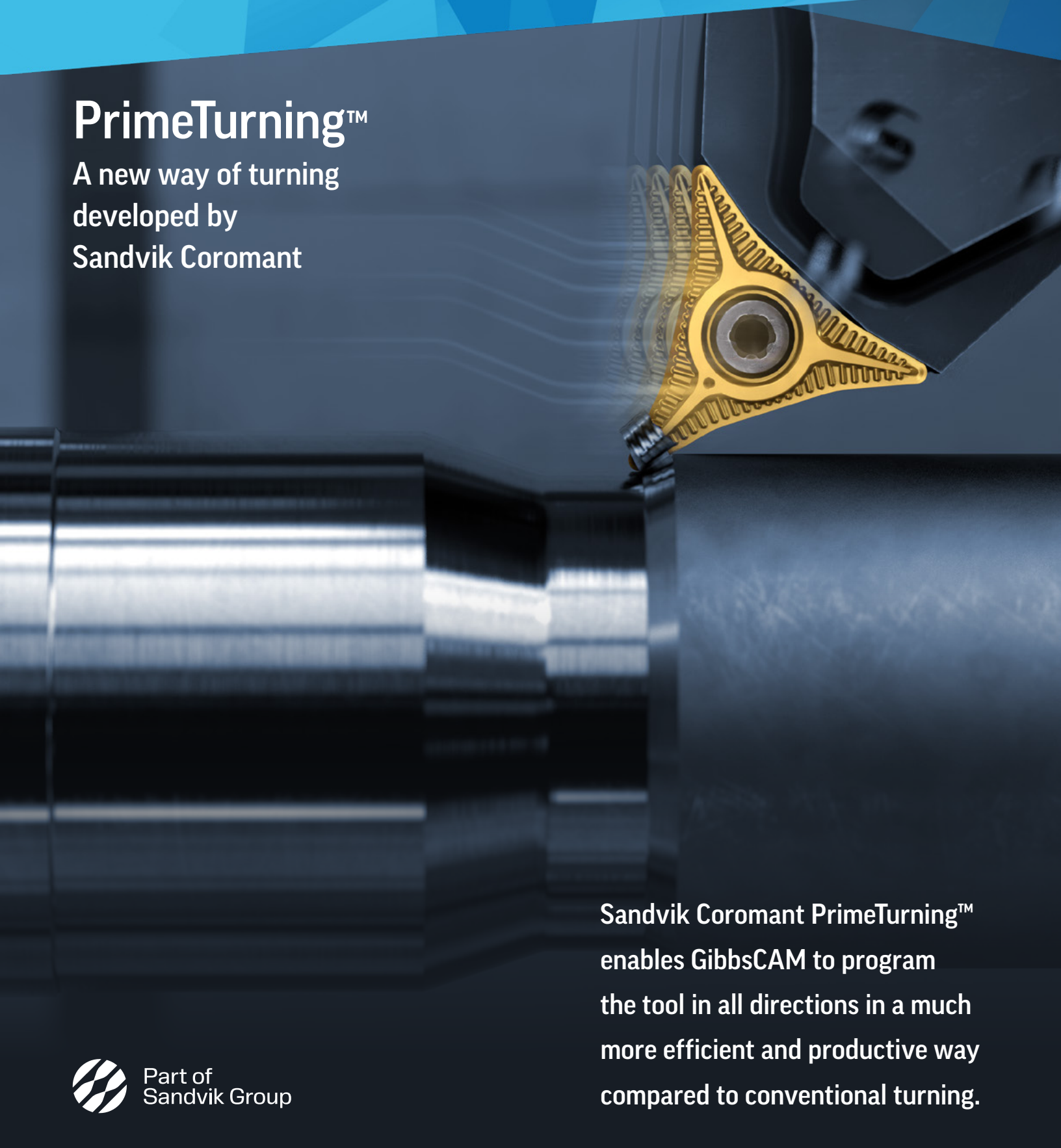
GIBBSCAM

PrimeTurning™

A new way of turning developed by Sandvik Coromant



Sandvik Coromant PrimeTurning™ enables GibbsCAM to program the tool in all directions in a much more efficient and productive way compared to conventional turning.

Part of Sandvik Group

GIBBSCAM

Up to 5X Tool Life

PrimeTurning™ uses the slope of the insert for chip thinning to allow you to make heavy cuts and spread cutting forces and heat over a larger portion of the cutting edge.

> 50% Faster

Faster metal removal rates mean more parts per run by doubling the speed and feed. Higher machine utilization and less time with set-up and tool changes.

Versatility

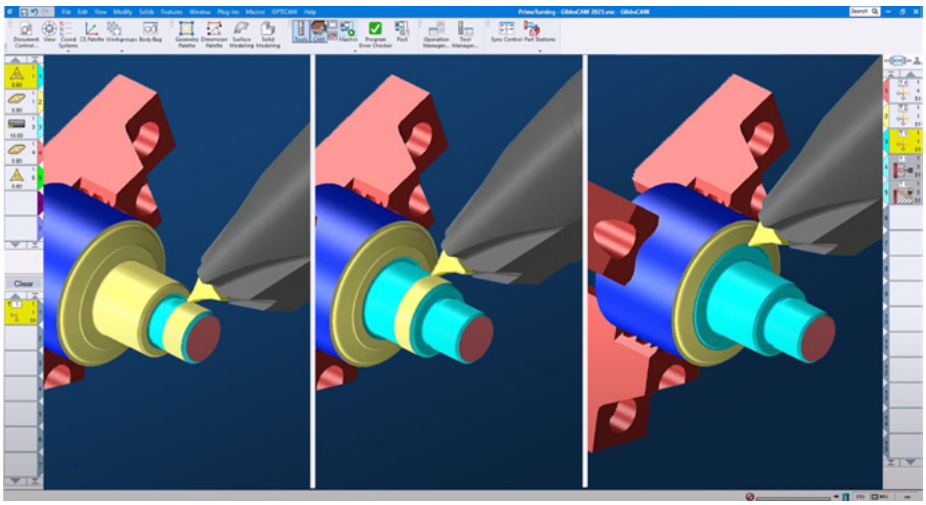
PrimeTurning™ adapts the feed rate (excellent for cutting on a taper) to constantly manage chip thickness which is ideal for high-volume and unattended environments.

Lower Cost

Extremely fast return on investment, higher productivity and less capital expenses result in a lower overall cost per component.

A New Way of Turning

Sandvik Coromant PrimeTurning™ enables you to program turning in all directions in a much more efficient and productive way compared to conventional turning. The PrimeTurning™ method uses dedicated CoroTurn® Prime tools integrated within GibbsCAM software.



METHOD: PrimeTurning™

PrimeTurning™ uses inserts with small entry angle in combination with a specific toolpath to dramatically increase both productivity and tool life.

CoroTurn® Prime A

TOOLS: CoroTurn® Prime

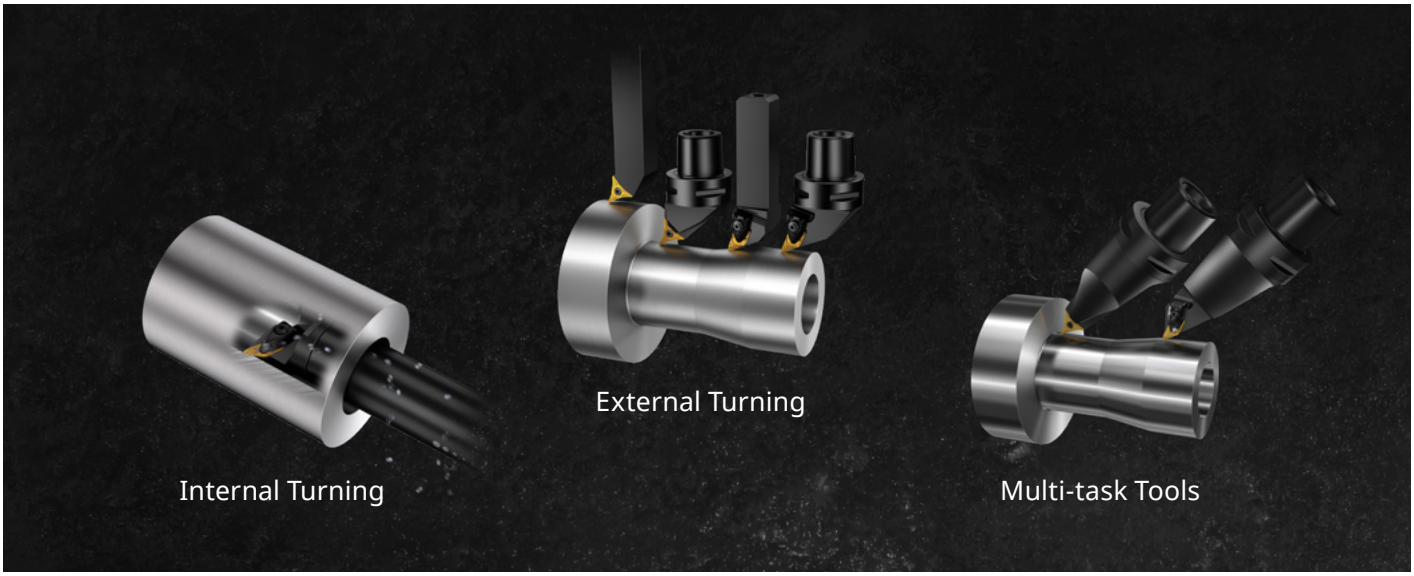
The PrimeTurning™ method requires specifically developed tools—CoroTurn® Prime A & B for roughing and finishing—with more tools to come in the future.

CoroTurn® Prime B

SOFTWARE: GibbsCAM

The GibbsCAM integration of PrimeTurning™ is verified by Sandvik Coromant, with all of the programming codes, tool models, cutting data and techniques to set up proper parameters and variables to achieve maximum output.

CoroPlus® Toolpaths



Success Factors

Three key attributes of PrimeTurning™ result in increased productivity and long lasting results.

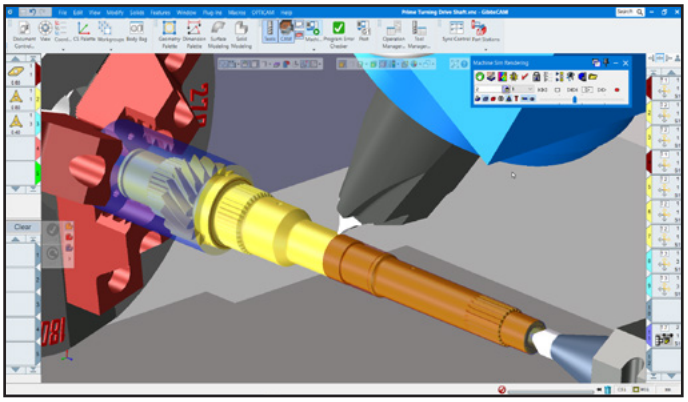
Small Entering Angle in the feed direction creates thin and wide chips that spreads the load and heat away from the nose radius.

Efficient Edge Utilization - Using the profiling tip and both adjacent edges of the tool distributes the wear and moves heat away from the cutting zone.

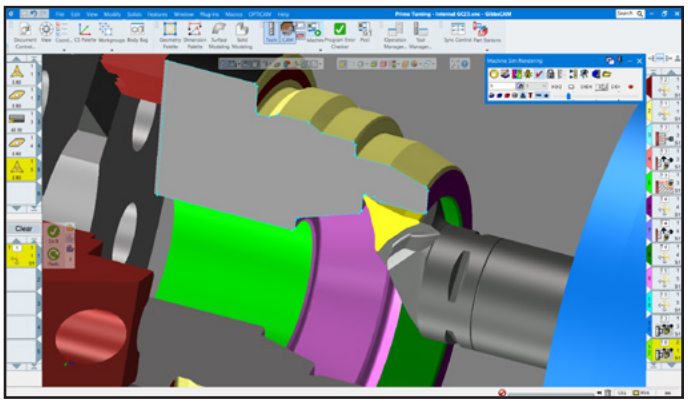
No Chip Jamming - By turning away from the shoulder, the risk of chip jamming is eliminated.

Longer Tool Life

Why longer tool life? Conventional turning concentrates the force on a single corner which is effectively the weakest part of the tool. The corner also has the least amount of carbide to absorb heat and leads to plastic deformation.



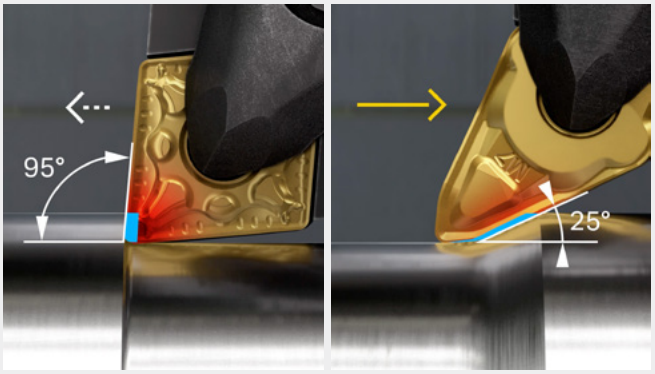
PrimeTurning™ External Shaft



PrimeTurning™ Internal Cylinder

BENEFITS

- More than 50% productivity increase
- Flexibility to do turning in all directions
- Longer-lasting inserts
- Faster metal removal rates mean more parts per run by doubling the speed and feed
- Extremely fast return on investment, higher productivity and less capital expenses result in a lower overall cost per component
- Higher machine utilization and less time with set-up and tool changes



Conventional Turning | PrimeTurning™

In contrast, PrimeTurning™ uses a small entering angle allowing a larger area to form the component surface. This improves part quality and tolerance, and also distributes head and load over a much larger area. This advantage gives the ability to drastically increase cutting speed and to achieve much longer tool life. Users can expect 150% to 200% tool life increase, even up to 500% for materials that are difficult to machine.

The second big factor is that PrimeTurning™ uses more edges of the tool since turning is performed in more than one direction. For conventional turning, the wear and tear occurs on a single pressure point, but for a CoroTurn® Prime insert, the load is spread over both edges.

Increased Output in Turning

The small entering angle used with PrimeTurning™ cuts a wider and thinner chip. This chip thinning effect increases feed rates and more than doubles productivity compared to conventinal turning.

While the benefits from low entering angles have been known for ages, accessing tight corners required two or three tool changes. The combination of PrimeTurning™ and CoroTurn® Prime inserts enables machining in tight areas with a single tool. Enjoy the full power and benefits of PrimeTurning™ with your GibbsCAM software solution.