

New steel turning grades

GC4425 and GC4415

Today, depending on the market demand, reducing production cost or increasing output is a top priority for making steel turning operations more efficient. Common challenges often involved are to increase metal removal rates, reduce cycle times and to minimize material waste, but can also include optimizing tool inventory and to operate at lower capacity without compromising process security.

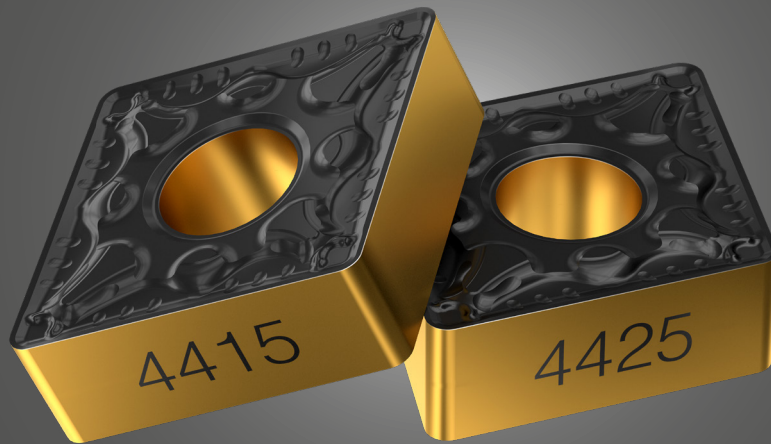
Sandvik Coromant offers a complete, market-leading steel turning offer, developed to help your business thrive and production to reach new levels. The new generation steel turning grades are enhanced in every aspect, from tool life to wear and heat resistance, offering secure, efficient and productive steel turning.

Toughness and wear resistance combined

New substrates with a unique combination of good toughness and resistance against plastic deformation offer a reliable performance. The cobalt-enriched surface gradient adds to security.

New post-treatment

Improved post-treatment lifts the performance in intermittent cutting operations. The bright yellow top TiN coating on the insert flank allows for easy wear detection.

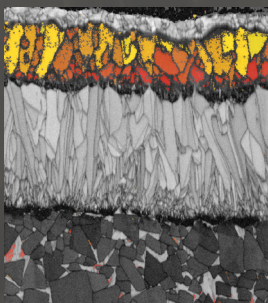


Second generation Inveio® technology

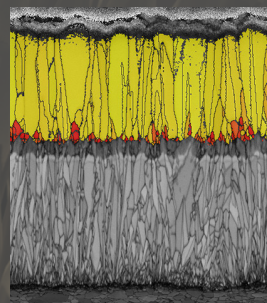
With the introduction of the second generation Inveio® technology, the benefits of uni-directional coating have been further developed. Improved crystal orientation makes for an even more consistent performance and significantly improved wear resistance and tool life.

Sustainable steel turning

An average of 25% tool life increase combined with a reliable and predictable performance helps minimize both insert and workpiece material waste, necessary preconditions for sustainable machining. Moreover, its carbide substrate contains a high proportion of recycled carbide material, making them one of the most environment-friendly grades.



Conventional CVD alumina coating with random crystal orientation.

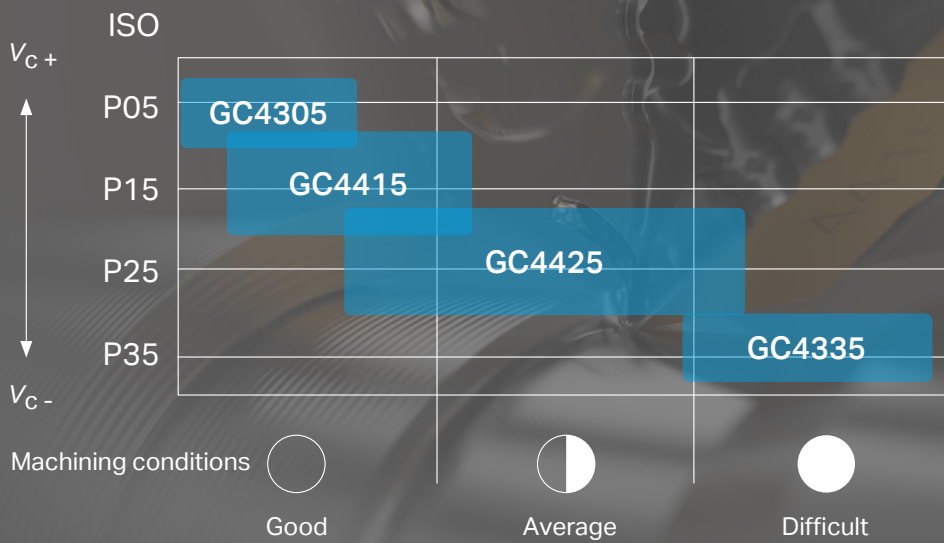


With Inveio®, every crystal in the alumina coating is lined up in the same direction, creating a strong barrier towards the cutting zone.



Inveio®
Uni-directional crystal orientation

First choice for steel turning



First choice grade GC4425 delivers improved wear resistance, heat resistance and toughness, significantly expanding the application range.

Grade GC4415 complements GC4425 with enhanced performance when more heat resistance is needed. It allows for high cutting speed and long times in cut when machining in stable conditions.

Refined in every aspect



Application

- Low-alloyed and unalloyed steels
- Suitable for mass and batch production
- External and internal machining
- Finishing to roughing in applications with continuous cuts and light interruptions



Performance case: Automotive

Component: Main shaft

Material: Forged, P1.1.Z.AN (SAE 1026), 172 HB

Operation: Continuous external turning, roughing and semi-finishing

Cutting data

v_c , m/min (ft/min) 192 (630)
 f_n , mm/rev (in/rev) 0.32 (0.013)
 a_p , mm (inch) 1.2 (0.047)

	Competitor	Sandvik Coromant
Insert, ISO (ANSI)	-	TNMG160412 (TNMG 333) -PR
Grade	-	GC4425
Tool life, pcs	150	270

Result: The competitor insert has large crater wear, while GC4425 produced 80% more pieces with a stable and predictable flank wear.



Performance case: General engineering

Component: Pressure roller

Material: Machined, P1.4.Z.AN (19MnV6), 205 HB

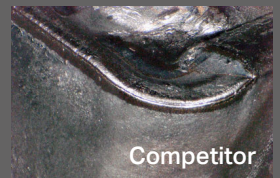
Operation: Continuous external axial turning, semi-finishing

Cutting data

v_c , m/min (ft/min) 200 (656)
 f_n , mm/rev (in/rev) 0.4 (0.016)
 a_p , mm (inch) 4.0 (0.157)

	Competitor	Sandvik Coromant
Insert, ISO (ANSI)	-	CNMG120408 (CNMG 432) -PR
Grade	-	GC4425
Tool life, pcs	12	18

Result: The competitor insert wore out due to plastic deformation. GC4425 worked 50% longer with a stable and predictable wear.



CTM ENGINEERING SUPPLIES

Need help choosing the right tooling?

Talk with CTMES for practical product selection, application support and workshop supply advice.

Technical sales and product enquiries

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