

Steel milling evolution

Flaking and chipping that result in a short insert tool life and unstable production are some of the most common milling issues, especially when machining complex tool paths with long overhang, deep cavities or when using coolant. With GC1130, the new steel milling grade, chipping and flaking are no longer a problem.

GC1130 is a highly reliable insert grade designed to withstand many difficult machining conditions. Produced with Zertivo™, a unique PVD production technology that amplifies grade's exceptional benefits, GC1130 inserts provide long tool life, making your production process predictable and secure.

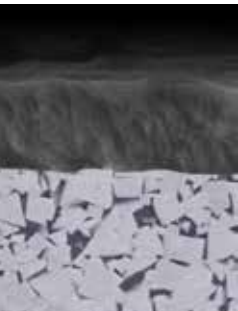
Benefits of GC1130

- Secure machining with long and predictable insert tool life thanks to a clean and intact edge
- High metal removal rate, even in difficult and unstable conditions
- Great performance in both dry and wet machining



CoroMill® 490 insert with GC1130 steel milling grade

What goes into GC1130?



1. Next generation PVD coating

The new PVD coating in GC1130 is produced with Zertivo technology, giving great edge-line security and reduced flaking. It is designed to provide the perfect balance between abrupt chipping and continuous wear resistance.

2. High-Cr content substrate

The high-Cr content fine-grain substrate is optimized to withstand edge-line chipping and cracks arising from difficult and demanding machining conditions, such as temperature variations.

Zertivo in a nutshell

- Sandvik Coromant unique production technology developed for PVD grades
- Enables increased control of the grade production process
- Improved adhesion between substrate and coating and optimized cutting edge integrity
- Amplifies each grade's unique benefits, resulting in longer tool life and secure machining

For more information about Zertivo visit:

www.sandvik.coromant.com/zertivo

Application area

GC1130 is optimized for steel machining in all conditions. First choice for shoulder milling within the ISO P area.

- Challenging machining e.g. unfavourable tool paths, deep cavities and long overhangs
- Roughing to finishing
- Wet and dry machining (dry machining is recommended)
- Good choice for mixed material production

GC1130 is today featured in three milling concepts for general shoulder milling, repeated shoulder milling and chamfering. Soon to be implemented in all CoroMill® concepts.



CoroMill® 390 – Versatile concept for mixed production



CoroMill® 490 – First choice for general and repeated shoulder milling



CoroMill® 495 – Chamfer milling cutter

Performance: Slot and shoulder milling with long overhang

Unstable conditions with long overhang, combined with a forged surface and coolant were causing some challenges for the insert tool life in this application. Surface quality issues, caused by flaking of the coating, set the limitation on insert tool life. By exchanging the existing solution with GC1130 inserts, flaking was significantly reduced and 57% more components could be machined.



Component	Rear spindle	
Workpiece material	P2.5.Z.HT	
Operation	Slot and shoulder milling	
	GC1130	Existing solution
Tool	R390-020A20-11M	
Insert	R390-11 T3 08M-PM 1130	
z_n	3	3
n rpm	2400	2400
v_c m/min (ft/min)	151 (495)	151 (495)
v_f mm/min (in/min)	864 (34.016)	864 (34.016)
f_z mm (inch)	0.12 (0.005)	0.12 (0.005)
a_p mm (inch)	3.5 (0.138)	3.5 (0.138)
a_e mm (inch)	20 (0.787)	20 (0.787)
Result	Tool life 440 components	Tool life 280 components

+57%
tool life

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



ABRASIVE SPECIALISTS INC.

15825 Central Avenue N.E. • Ham Lake, MN 55304
763-571-4111 FAX 763-571-5026