



## New Machining Technologies Sandvik Coromant



# Power Skiving

Sandvik Coromant

# Solution portfolio

SANDVIK  
Coromant

Finishing Disc

Double Disc

Duplex Disc

CM 170

cutter

Cutter

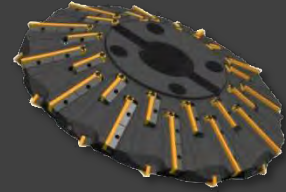
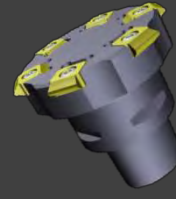
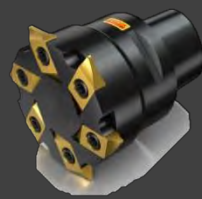
Cutter

CM 171

CM 171.4

CM 172

CM 174



Up-Gear

Technology

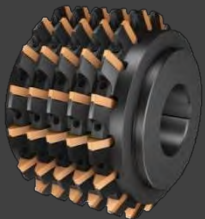
InvoMilling 1.0

Power skiving

CM 176

CM 177

CM 167



# Power skiving- the game changer



- Power skiving is an intermittent milling process of the gear tooth profile and a mixture between hobbing and shaping.
- Basics are the gear type tool, cross axis position and the chip generation made by the rotation of tool and gear component.
- Power skiving considerably reduces the machining cycle time between conventional gear machining and multiaxis gear machining
- In multiaxis gear machining, all machining can be made in one set up. This means reduced run out and spacing deviations.

# Power Skiving

## Technology advantages

- High Flexibility
- Considerably reduced machining cycle time
- Non advanced tool production (solid tools)
- Manageable and predictable component machining (if synchronization is in place)
- Power skiving makes possible to machine the component in one single set up

## Technology disadvantages

- Poor or minimal process knowledge in the market

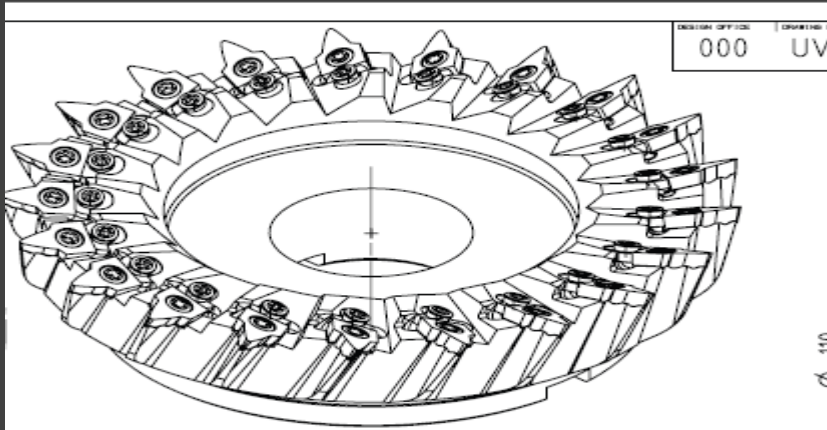
# Machine basics requirements for power skiving

- **Accurate synchronizing between table and spindle**
- "Master/Slave" ratio between spindles
- Vertical machining (chip evacuation)
- Robust machine design
- Increased table speed
- High number of starts required in software > 150
- Tool diameter up to 200 mm (high number of Zeff )
- Dry machining

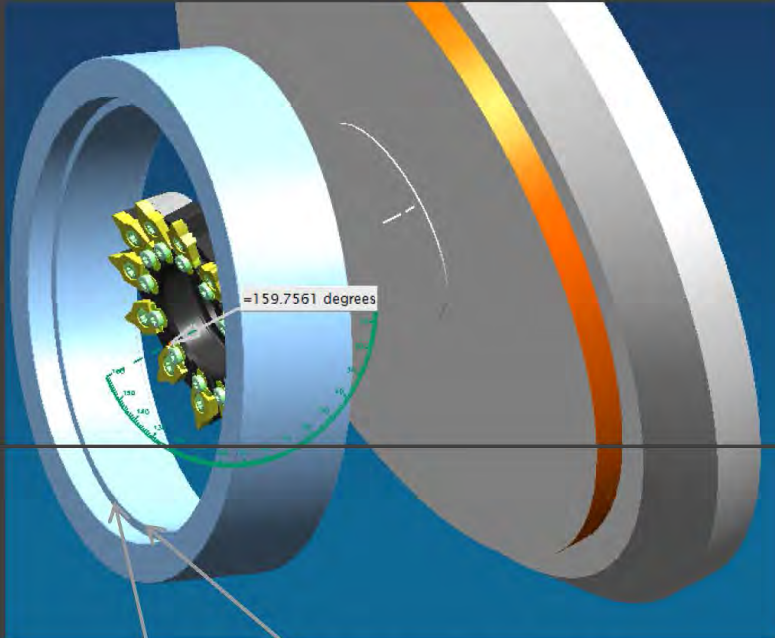


# Power skiving brings improved gear quality

Quality: class 7, DIN 3962



# Combined offer of roughing and finishing tools- designed at same time



=159.7561 degrees

Tip diameter = 123.62

Root diameter = 132.62

DESIGN OFFICE | DRAWING NUMBER  
000 249262R8\_D1

SECTION E-E  
View perpendicular to 4°52'41" deg. cutting plane

SECTION F-F  
4° Rake angle

Semi tapping chamfer  
50°  
4.6 hp0

0.22 Offset

4°52'41" lead

Geor dato  
MODULE 1  
Z-SS.  
ALPHA 10  
BE: A Isord - RIGHT

ITEM	QTY	DESCRIPTION	INTERNAL REFERENCE	EXTERNAL REFERENCE	UNIT
5	1	Washer	5541 015-03 (or similar max. Ø35)		
4	12	Insert	000 009262N100_D1		
3	12	Setting device	5513 014-021		
2	12	Screw	5513 020-25		
1	1	Cutter body	000 249262R8_D2		

Radial run-out over inserts max 0.002 (after insert radial setting)

GROUP	DESIGNS	DESIGN	CHECKED	DATE	SCALE
026	SSJ			14.05.16	1:1

Where tolerance not stated:  
 Dimensions 150 065-2 Medium  
 = Company standard

Dimension	Tol	Angle	Tol
0-2	±0.05		
2-10	±0.10		
10-20	±0.15		
20-50	±0.20		
50-100	±0.30		
100-200	±0.50		

Power skiving tool Z=36/12 (1/3 effective)  
module Z ROUGHING PROFILE

SAP no. Z0026585

DESIGN OFFICE | DRAWING NUMBER  
000 249262R8\_D1



# Connected solutions for digital machining

A background graphic consisting of a complex network of white lines connecting various nodes, set against a dark blue gradient background. The nodes are represented by small white dots, and the lines form a web-like structure that suggests connectivity and digital networks.



**Advanced machining analytics**



- CoroPlus™ Enterprise



**Design and planning connectivity**



- CoroPlus™ ToolGuide  
- Adveon™ Tool Library+



**In-machining connectivity**



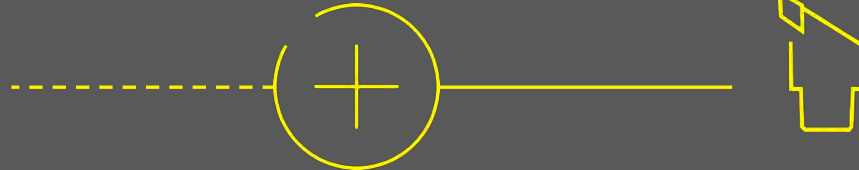
- Silent Tools™+  
- CoroBore®+  
- Promos 3+

# Open API

**CAM and other  
software systems**



**Sandvik Coromant cutting  
data recommendations**



CoroPlus™ ToolGuide is the Sandvik Coromant software that allows our partners to integrate our cutting data recommendations into their own software through a standardized connection.

# Silent Tools™+

Damped turning adaptors with embedded connectivity for process optimization

**SANDVIK**  
Coromant

SilentTools®

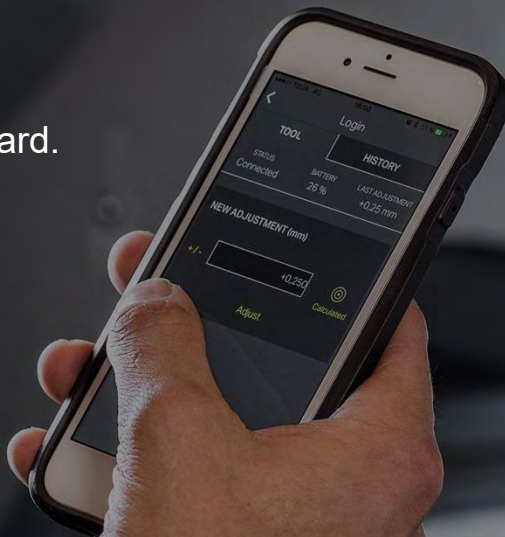
**SANDVIK**  
Coromant

# Post processing and quality control

- Record and store cut data
- Quality control
- Trend graph



Adjust cutting edge via machine controller or by-machine dashboard.



# Advanced machining analytics



Process intelligence from  
macro to micro level –  
enterprise, factory, machine.



Connected tools and machines  
for live stream monitoring and  
process optimization.



We're entering the future of manufacturing.  
Are you coming?

[coroplus.sandvikcoromant](https://coroplus.sandvikcoromant.com)



