Allow us to introduce our new catalogs

In your hands, you have one of our latest brochures or catalogs. It includes several new features. Find out more about what's new below.

- Includes CoroPak 11.1
- Two parts, more user-friendly
- Metric and inch assortment

Appears from 11.2

- Easier to find information
- Includes the latest machining solutions

What's new?

There are two parts; rotating and turning tools and all the news from CoroPak 11.1 is included.

Rotating tools – milling, drilling, boring and related tooling systems
Turning tools – general turning, parting & grooving, threading and related tooling systems

More information about the new tools and machining solutions is presented in a new brochure, **New cutting tools and solutions.**

Where to find ...

... ordering information, dimensions, cutting data:

in the Rotating Tools or Turning Tools catalog
or, for new tools from 11.2, in a CoroPak Supplement

... more information about new cutting tools and machining solutions:

in **New cutting tools and solutions**.

To quickly get you started

The CoroKey guide provides a first-choice selection of tools, inserts and cutting data.

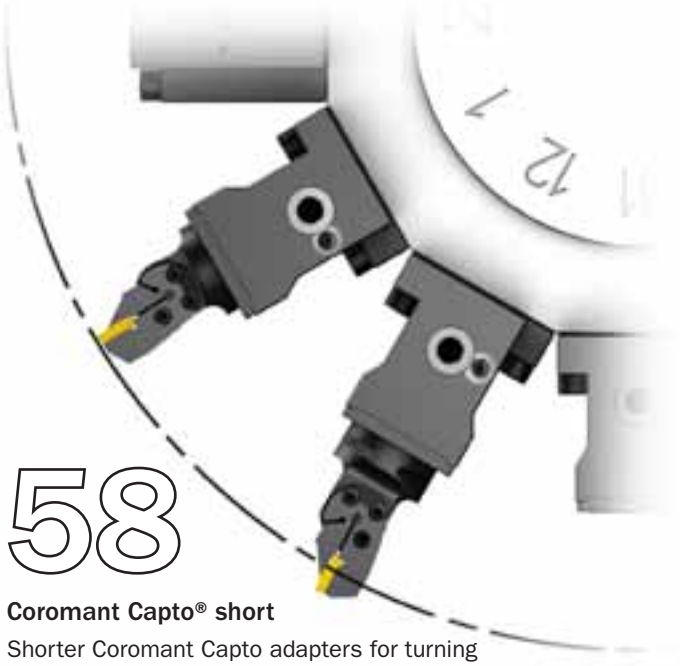
It's all online

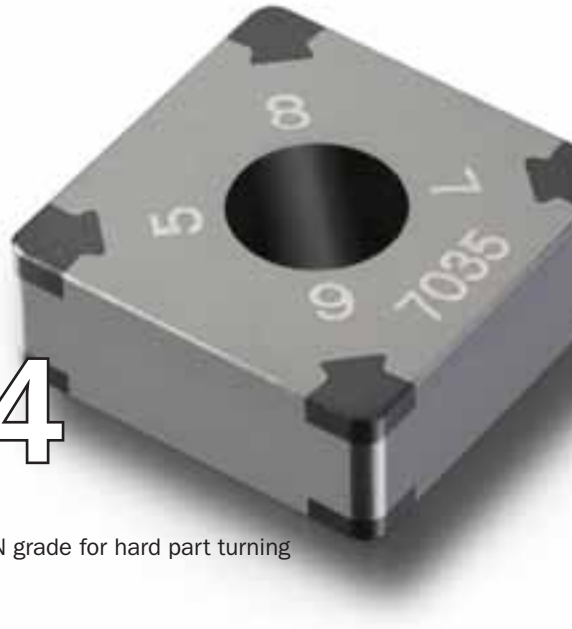
You can download all catalogs, brochures and technical guides from our website, www.sandvik.coromant.com. You can also get a DVD version that includes all latest catalogs, **New cutting tools and solutions** and the Technical Guide. The DVD contains active links, illustrative animations and many film sequences. To order your copy of the DVD or any other printed media, contact your nearest sales representative or order it at www.sandvik.coromant.com.

Our website is always updated with the latest information.

Table of contents

Front cover:
Hard part turning with new insert grade CB7035



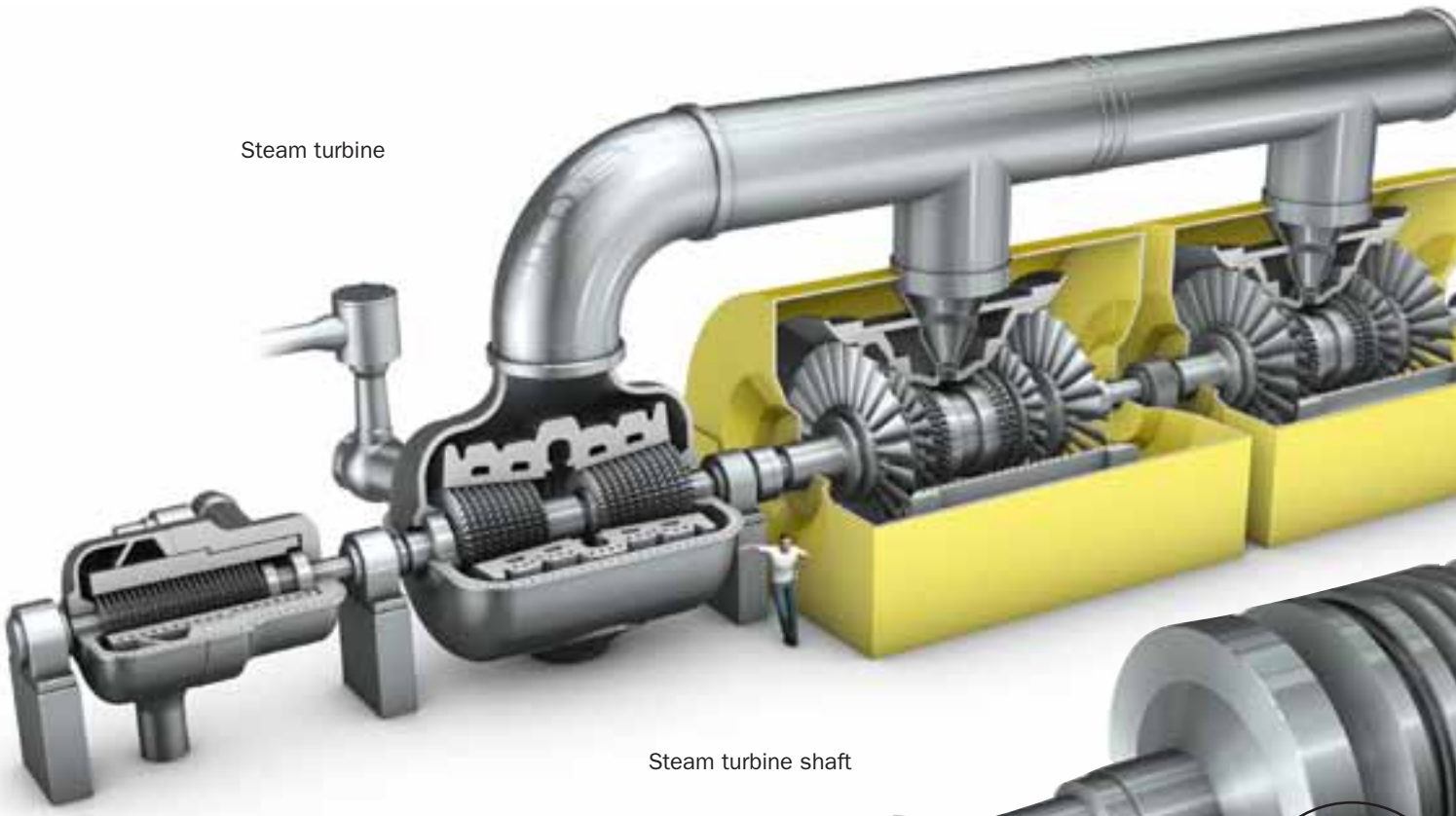


Powerful grooving

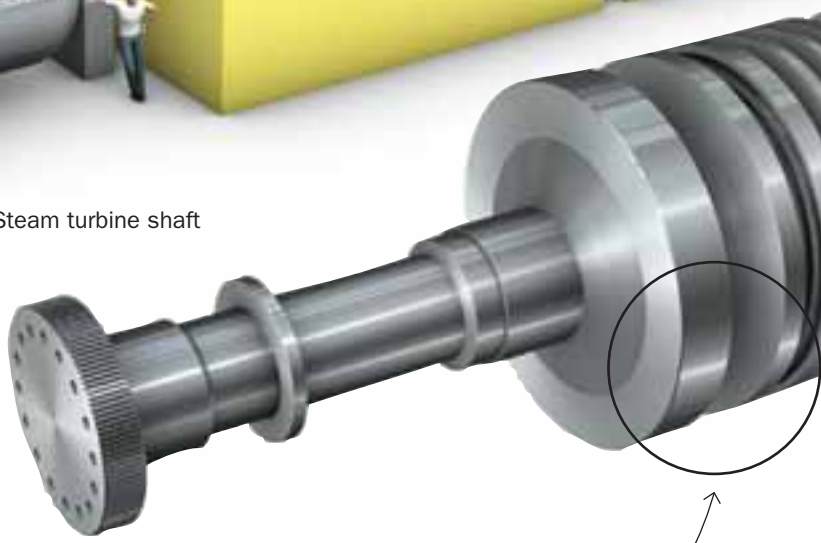
Let's take a look into the power generation industry. Here, the components are big and chip volumes pile up fast. It is a great example that shows how our solutions can make a difference. In this CoroPak, we offer a range of grooving solutions that are ideal for this type of machining. We've chosen just a few examples to highlight the capabilities of these tools. To see the whole picture, visit:

www.sandvik.coromant.com/power

Steam turbine

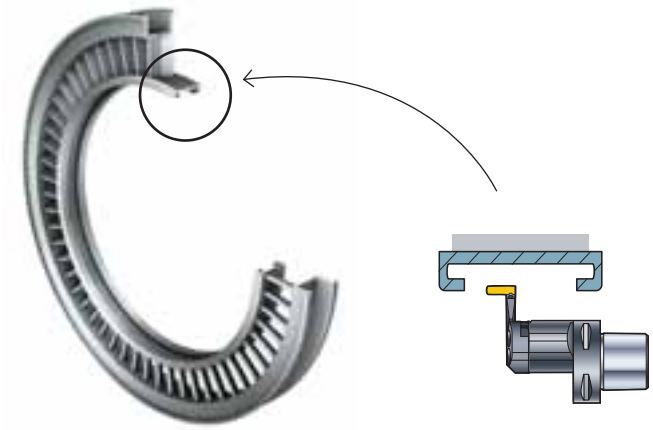


Steam turbine shaft

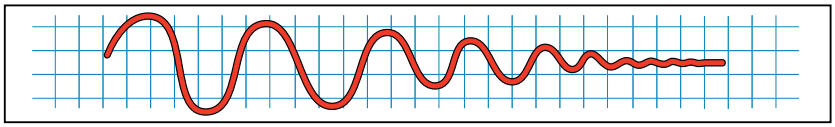


Deep grooves in a single infeed
When grooving depths are deep, chip jam is a common problem that is often solved by programming techniques such as stop and back-out. This can be avoided if you use CoroCut inserts and geometry -GM. Up to 15 mm wide, 120 mm deep (0.591 inch wide, 4.724 inch deep) cuts can be made in a single infeed.

Turbine diaphragm



Cut cycle time
Trochoidal programming with CoroCut angled inserts mounted in CoroTurn SL70 HP (high pressure) coolant adapters make it possible to reduce the number of tools and to increase cutting data. In this component, cycle time was reduced from two hours to 20 minutes!



Eliminate vibration in deep grooves
Large grooving depths require long tool overhangs that are prone to vibration. A safe way to make the process stable and reliable is to use the dampened blades for grooving.

CoroCut® R-size –GM geometry
A new insert for chip control in the deepest and widest grooves, see page 24 and the tools, page 22.

CoroTurn® SL70 and CC6060
Modular tooling system with great reach and stability. Here, with ceramic insert grade CC6060 for highest productivity in heat resistant super alloys, see page 28.

Engineered solution

Dampened blades with Coromant Capto®
For blades longer than 4 x width, a patented dampening device is part of the design. Depths of cut can be increased four times in HRSA and titanium.

Wind Power
Gear milling solutions

Producing gear wheels for a wind turbine gear box involves some intensive applications - always to tough standards, and in demanding materials.
Our high performance tools for this area are designed to run quicker, reduce cycle time and make gear milling more profitable for you.

For more knowledge, support and information on our total gear milling offer, see www.sandvik.coromant.com/wind.

Component: Sun shaft
Our unique hob design will reduce cycle times and tooling costs by up to 50%, compared to HSS tools.

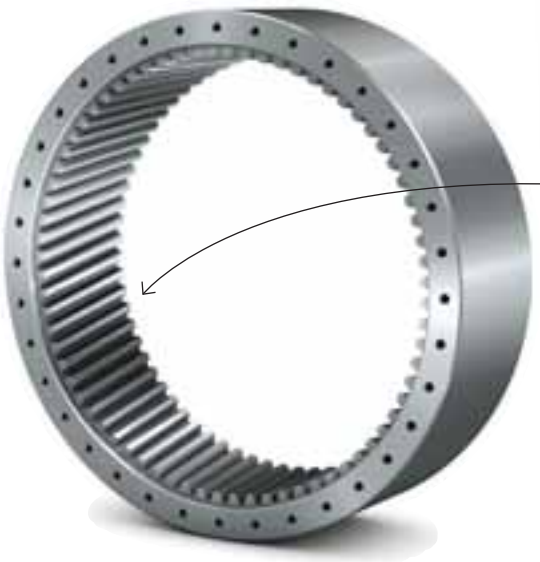
Tooling solutions for your gear milling needs

CoroMill 170
The first-choice gear milling solution (12-22 module range) designed for the highest quality roughing of internal and external gears.

Hob*
Gear profile size: Module 8-24. An indexable carbide hob for high metal removal rates.

Component: Planetary gear
Our effective hobbing solutions, based on the latest grade technology make high cutting speeds and short cycle times possible.

Hob*
Gear profile size: Module 5-8. For productivity improvements and cost savings compared to HSS- and indexable carbide hobs.



Component: Ring gear
The finishing disc-cutter for internal gears is equipped with high-performance indexable inserts, giving process security and high productivity for each specific gear.

Finishing cutter*
Gear profile size: Module 8-24. This finishing cutter can be tailored to your specific internal-gear profiles.

* Delivered by special order. Contact your local Sandvik Coromant representative.

Hard part turning

It's all about surface quality, and a secure, productive manufacturing process. Our mission is to exceed your requirements with our cutting tools and solutions. Here is a selection from our hard part turning offer, dedicated to doing just that.

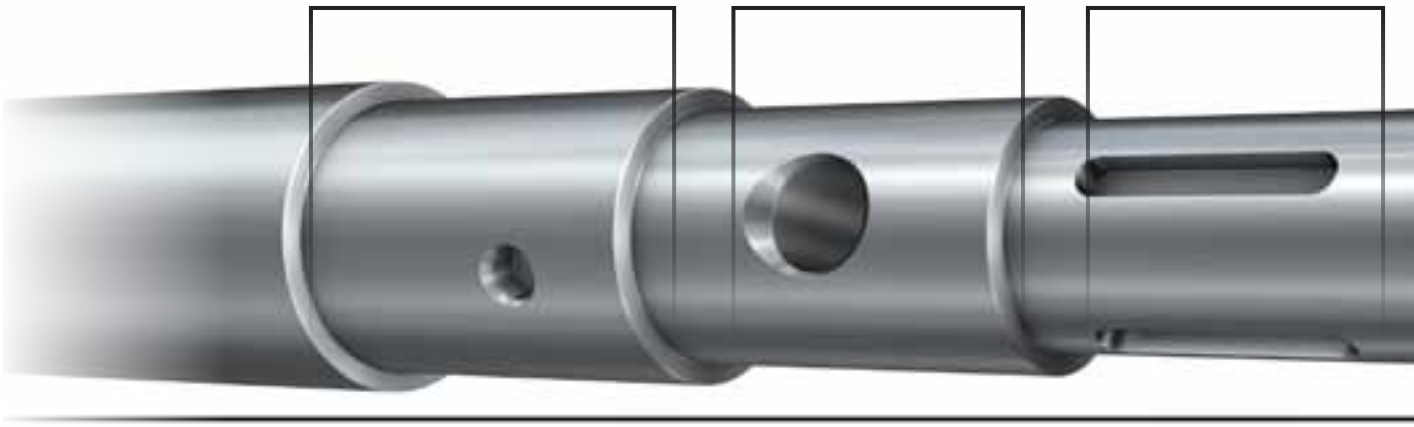
A grade for every need

Switching from grinding to turning hardened surfaces with cubic boron nitride (CBN) inserts offers significant savings, both economical and environmental. We have added two new grades, CB7035 and CB7525, to a CBN grade chain that covers every need in hard part turning. Every grade is optimized in its application area to give the highest possible productivity and process security.

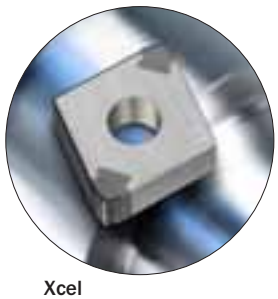
CB7015
for continuous to light interrupted cuts

CB7025
for light to medium interrupted cuts

New!
CB7035
for medium to heavy interrupted cuts



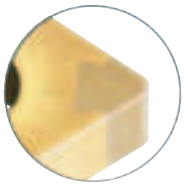
Surface quality + productivity = true
Our patented wiper and Xcel inserts take surface quality and productivity forward. Wiper inserts generate the surface finish of a regular insert at up to three times higher feed rates. Xcel takes the wiper concept further in open cuts at high stability and makes the finest surfaces at even higher feed rates.



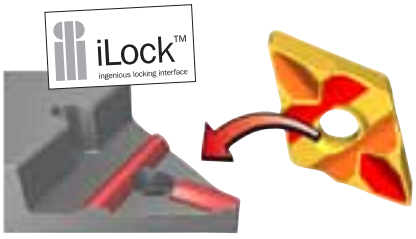
Xcel

Security is essential
The iLock interlocking interface keeps the inserts securely fastened under high and multidirectional loads in profiling and threading. A selection of CoroTurn TR- and CoroThread 266 inserts are now available in CBN grades.

Safe-Lok design for CBN-tip fixturing combines mechanical interlocking shape with traditional brazing techniques to double the security.



Safe-Lok



CoroTurn® TR

New!

CB7525
for heavy interrupted cuts

Toughness demand

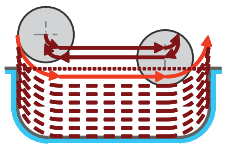
CoroTurn® TR CBN
New inserts for stable profiling in hardened materials, see page 12.

CB7035 and 7525
New insert grades for hard part turning, see pages 14 and 16.

CoroThread® 266 CBN
New threading inserts for hardened materials, see page 33.

Go for ceramics!

All Ni-based alloys are most efficiently rough machined with ceramic inserts. Some components may not allow for the loads of such rapid metal removal rate, but when they do – go for ceramics!



Trochoidal turning

CoroTurn® SL70, grade CC6060

Turbine disc, Inconel 718

Trochoidal ramping wins
Always use trochoidal technique to rough machine pockets with ceramics. When compared to a conventional ramping method, the time to make a pocket is reduced two to three times.

- Faster, as number of passes is reduced
- More secure, as soft entries and exits into cut make inserts wear less and more evenly

Ceramics versus carbide: 2 - 0

1. Turning application		
Inconel 718 aged, 46 HRc	Carbide round insert	Ceramic round insert, CC6060
v_c m/min (ft/min)	50 (164)	250 (820)
f_n mm/r (inch/r)	0.5 (0.020)	0.2 (0.008)
a_p mm (inch)	2 (0.079)	2 (0.079)
Q cm^3/min (in^3/min)	**50 (3.05)**	**100 (6.10)**
SCL (spiral cutting length), m (ft)	250 (820)	1000 (3280)
2. Milling application		
Inconel 718 aged, 46 HRc	Carbide round insert	Ceramic round insert, CC6060
v_c m/min (ft/min)	30 (98)	1000 (3281)
f_z mm/z (inch/z)	0.1 (0.004)	0.3 (0.012)
a_p mm (inch)	1.5 (0.059)	2 (0.079)
a_e mm (inch)	35 (1.378)	35 (1.378)
Q cm^3/min (in^3/min)	**19 (1.16)**	**106 (6.47)**
Total chip volume, Q_{tot}* cm^3 (in^3)	475 (29.0)	424 (25.9)
Total machining time, min	25	4

*) removed at max tool wear

Five times faster
Turn milling with ceramics is far faster than an optimized carbide machining process. Unlike conventional carbides, the ceramics run at speeds of 1000 m/min (3280 ft/min), removing the same amount of metal but five times faster.

Turn milling with CoroMill 300C, grade CC6060

Strong grades for strong results

- CC6060 – An optimizer for increased productivity through increased cutting depths, feed and cutting length.
- CC6065 – For heavy roughing applications, plunging and machining directly into corner.
- CC670 – For secure machining of forged components with rough scale and ovality.

See page 17

Engineered solution

CoroMill® 300C
Specialized for ceramics milling.
To be quoted.

CoroTurn® SL70
See page 28

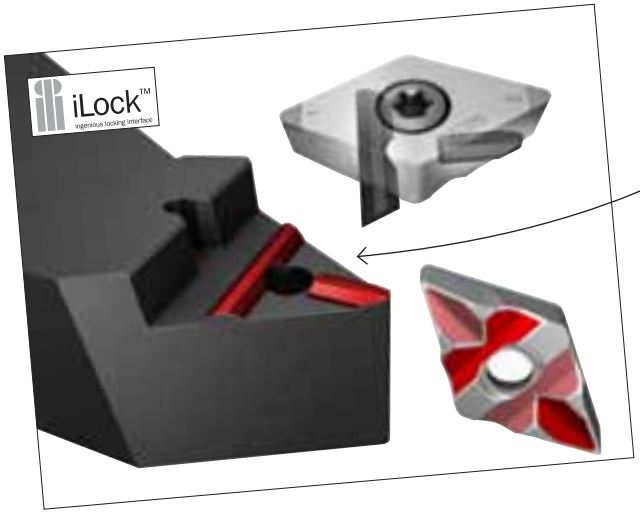
CoroTurn® TR

CBN inserts for hardened steel profiling

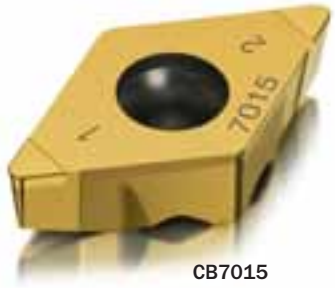
CoroTurn TR inserts with CBN add a new dimension to hard-part, profile turning. The T-rail insert interface provides the stability essential for this demanding application area to improve component tolererances.

Benefits

- Outstanding performance in profiling
- Maximum insert stability in the tool holder
- Repeatable insert indexing
- Closer tolerances and high quality surfaces
- Long, predictable tool life



T-rail interface for secure insert location



CB7015

CB7025

Technical features

- CB7015 and CB7025 optimized for case-hardened steels
- Interlocking T-rail interface secures the insert against multidirectional forces in profile turning
- CoroTurn TR inserts are also available in a range of coated and uncoated grades for all material types

Application

- Profile turning of hardened-steel components (55-65 HRc)
- CB7015 for continuous to light interrupted cuts
- CB7025 for light to medium interrupted cuts

H

ISO application area

Assortment

Insert shape	Cutting edge length, mm	Nose radii, mm	Nose radii, inch	Grade	Catalog ref: Turning tools 2011
D (55°)	13	04, 08	1/64, 1/32	CB7015, CB7025	A177
V (35°)	13	04, 08	1/64, 1/32	CB7015, CB7025	A177

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

CBN grade CB7035

A new grade for hard part turning

High security in toughness-demanding operations

CB7035 is a new CBN grade for high security in hard part turning. It is tough enough to resist heavy interruptions, yet wear resistant to handle long times in cut.

Technical features

- Fine-grained, medium content CBN grade with ceramic binder – reliability and tool life in interrupted cuts
- Safe-Lok technology – strength and reliability by design
- Xcel and wiper inserts for highest productivity and surface quality
- Multi-corner inserts

Benefits

- Secure performance in hard part turning; no chipping in heavy interrupted cuts
- High productivity
- Multi-corner inserts for cost efficiency
- Long, predictable tool life

Application

- Hard part turning (55-65 HRc), primarily case-hardened steels
- Finish machining with high surface quality
- Heavy interruptions, typically slots, where the time in cut may be long

A grade for every need in hard part turning:

- CB7015 - for continuous to light interrupted cuts
- CB7025 - for light to medium interrupted cuts
- CB7035 - for medium to heavy interrupted cuts
- CB7525 - for heavy interrupted cuts

Recommendations

Cutting data	Metric				Inch			
	Min	Rec.	Max		Min	Rec.	Max	
a_p	0.10	0.15	1.00	mm	0.004	0.006	0.039	inch
f_n	0.05	0.15	0.30	mm/r	0.002	0.006	0.012	inch/r
v_c	120	145	170	m/min	395	470	560	ft/min

The table is based upon recommendations for CNGA 432 S0630B 7035.

H

ISO application area

Performance

Operation Facing, semi-finishing of cover
Workpiece material DIN17210, 60 HRc, MC H1.3.Z.HA

Cutting data
v_c m/min (ft/min) 160 (525)
f_n mm/rev (inch/rev) 0.1 (0.004)
a_p mm (inch) 0.15 (0.006)

Result	**Competitor**	**CB7035**
Tool life, min / pcs	49 / 7	77 / 11

The application has heavy, infrequent interruptions and long continuous cuts. Grade CB7035 improves tool life by +50%.

Assortment

Insert shape ISO/ANSI	Cutting edge length, mm	*iC*, inch	Options	Catalog ref: Turning tools 2011
CNGA	09, 12	3/8, 1/2	Radii, Wiper	A68
CNGX	12	1/2	Xcel	A69
DNGA	11, 15	3/8, 1/2	Radii, Wiper	A71
SNGA	12	1/2	Radii	A75
TNGA	11, 16	1/4, 3/8	Radii	A77
WNGA	06, 08	3/8, 1/2	Radii, Wiper	A79
VNGA	16	3/8	Radii	A81
CCGW	06, 09	1/4, 3/8	Radii, Wiper	A82
DCGW	07, 11	1/4, 3/8	Radii	A83
SCGW	09	3/8	Radii	A85
TCGW	09, 11	7/32, 1/4	Radii	A86
TPGW	11	1/4	Radii	A87
VBGW	16	3/8	Radii	A88

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

CBN grade CB7525

For cast iron and hard part turning

New edge preparations optimized for hard part turning

A new range of positive inserts makes it possible to apply grade CB7525 also in internal machining of gray cast irons.

Grade CB7525 is also a backup in hard part turning, where it takes the heaviest interruptions. Additional S-land edge preparations improve the grade's efficiency in these applications.

Application

- High speed machining of gray cast irons, e.g. brake discs for automotive
- Finish machining of hardened steels, with S-land inserts, in heavy interruptions with short time in cut

K H

ISO application area

Assortment (extension)

Insert shape ISO/ANSI	Cutting edge length, mm	*iC*, inch	Edge preparation	Catalog ref: Turning tools 2011
CNGA	12	1/2	S	A69
DNGA	15	1/2	S	A72
TNGA	16	3/8	T	A77
CCGW	06, 09	1/4, 3/8	S, T	A82
DCGW	07, 11	1/4, 3/8	S, T	A83
TCGW	09, 11	7/32, 1/4	S, T	A86
VBGW	16	3/8	T	A88

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

Benefits

- Large tip size for larger depths of cut in gray cast irons
- High productivity
- Multi-corner inserts for cost efficiency
- Long, predictable tool life

Ceramic grades CC6060 and CC670

Rapid rough machining of Ni-based alloys

Expanding the ceramics range

Ceramics have a great advantage over other tool materials in Ni-based alloys, like Inconels. Their fantastic resistance to heat makes it possible to speed up machining ten-fold over carbides.

S

ISO application area

Application

- Rough machining
- Turning and milling
- Ni-based heat resistant super alloys

Assortment (extension)

Grade	Insert shape ISO/ANSI	Cutting edge length, mm	*iC*, mm	Catalog ref: Turning tools 2011
CC6060	CNGN/CNG	12	1/2	A70
CC6060	RNGN/RNG	09, 12, 15, 25	3/8, 1/2, 5/8, 1	A74
CC6060	SNGN/SNG	12	1/2	A76
CC6060	RCGX	06	1/4	A84
CC670	RNGN/RNG	25	1	A74
CC670	RPGX	06, 12	1/4, 1/2	A84

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

Benefits

- Highly productive turning and milling of Ni-based heat resistant super alloys
- Reliable, high performance grades

QS holding system - high precision

Enhanced performance for sliding head machines

The QS holding system now with high precision coolant

QS high precision combines the quick change capability of the QS holding system with high precision coolant. The result is problem-free machining and improved component quality in the most demanding, long-chipping materials.

Benefits

- Improved chip breaking in long-chipping materials
- Longer tool life
- Uninterrupted machining, improved component surface
- Quick tool changing, reduced machine downtime

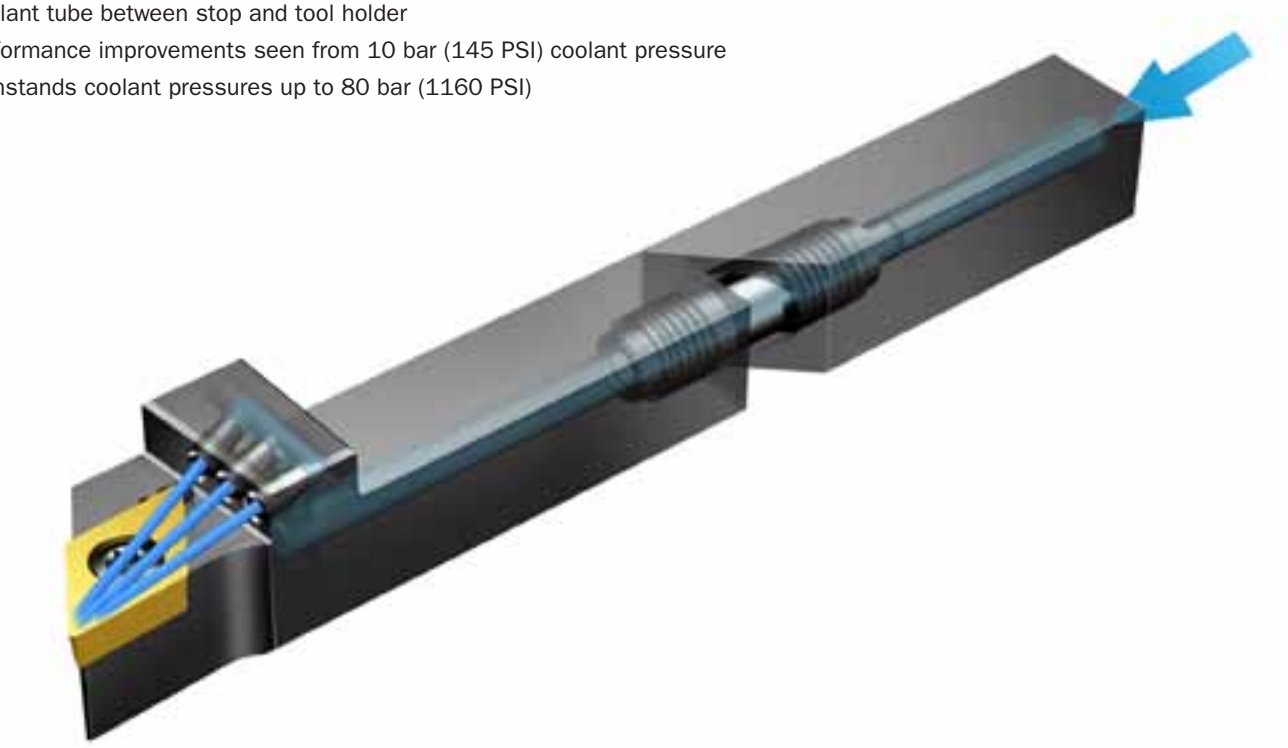
Application

- Turning, parting and grooving of small components
- Citizen, Star, Nexturn sliding head machines
- For best results in long-chipping materials

M N S
ISO application area

Technical features

- Small tool holders with directed nozzles for accurate coolant delivery
- Easy to modify existing QS systems with the new coolant function
- Coolant is precision-directed for best effect
- Coolant tube between stop and tool holder
- Performance improvements seen from 10 bar (145 PSI) coolant pressure
- Withstands coolant pressures up to 80 bar (1160 PSI)



Assortment

QS short holder	Hand of tool	Insert shape	Shank dimensions (mm)	Shank dimensions (Inch)	Catalog ref: Turning tools 2011
CoroTurn® 107	R	D, V, C (55°, 35°, 80°)	1010, 1212, 1616	06, 08, 10	A219
CoroCut® XS	R	CoroCut XS	1010, 1212, 1616	06, 08, 10	A221
CoroCut® 3	R	CoroCut 3	1010, 1212, 1616	06, 08, 10	A222

QS stop	Machine type	Catalog ref: Turning tools 2011
1010, 1212, 1616 (mm)	Citizen, Star, Nexturn	A223
06, 08, 10 (inch)	Citizen, Star, Nexturn	A223

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

T-Max® P inserts - ISO S geometries

Now in grade GC2025 for stainless steels

Wear resistance in stainless steels

The addition of CVD-coated grade GC2025 for ISO M broadens the successful application area for the new ISO S geometries. These geometries not only excel in stainless steels but also in softer heat resistant super alloys, i.e. solution treated or annealed Ni- and Fe- based alloys, where a wear resistant CVD coating will increase tool life and cutting speed capability.

Benefits

- Optimized performance in ISO S and M materials
- Great chip control and productivity with specialized geometries
- Easy to choose optimal geometry

Application

Highly productive turning operations in stainless steels and ISO S alloys with limited hardness, i.e. solution treated or annealed Ni- and Fe- based heat resistant super alloys.

M S

ISO application area

Recommendations

Cutting data	ISO CNMG 120408-SMR ANSI CNMG 432-SMR GC2025	ISO CNMG 190616-SM ANSI CNMG 644-SM GC2025	ISO CNMG 190616-SMR ANSI CNMG 644-SMR GC2025
ISO M Austenitic bars and forgings CMC 05.21, MC M1.0.Z.AQ			
a_p mm (inch)	0.5 – 4.0 (0.020 – 0.157)	1.0 – 9.0 (0.039 – 0.354)	1 – 9 (0.039 – 0.354)
f_n mm/r (inch/r)	0.1 – 0.45 (0.004 – 0.018)	0.25 – 0.5 (0.010 – 0.020)	0.3 – 0.75 (0.012 – 0.030)
v_c m/min (ft/min)	175 – 265 (574 – 869)	150 – 225 (492 – 738)	110 – 225 (361 – 738)
ISO S Annealed or solution treated Ni-based HRSA materials CMC 20.11, MC S1.0.U.AN			
a_p mm (inch)	0.5 – 4 (0.020 – 0.157)	1 – 9 (0.039 – 0.354)	1 – 9 (0.039 – 0.354)
f_n mm/r (inch/r)	0.1 – 0.4 (0.004 – 0.016)	0.25 – 0.4 (0.010 – 0.016)	0.3 – 0.65 (0.012 – 0.026)
v_c m/min (ft/min)	25 – 70 (82 – 230)	25 – 50 (82 – 164)	25 – 50 (82 – 164)

Assortment (extension)

Insert shape, ISO / ANSI	Cutting edge length, mm	*iC*, mm	Geometries	Catalog ref: Turning tools 2011
CNMG	12	1/2	-SM, -SMR	A22
CNMG	16, 19	5/8, 3/4	-SM, -SMR	A24
DNMG	15	1/2	-SMR	A27
SNMG	15, 19	5/8, 3/4	-SM, -SMR	A32
WNMG	08	1/2	-SMR	A41

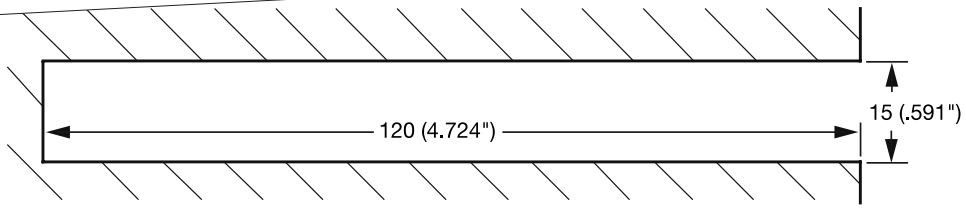
For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

CoroCut® blades and tool blocks for deep grooving

Stability and long reach in heavy grooving

With a new set of large tool blocks and blades, CoroCut M- and R-size inserts can now be used for deeper grooves. Tool blocks with integrated Coromant Capto are also available, for the highest stability and best productivity.

Make this groove in one pass!



Benefits

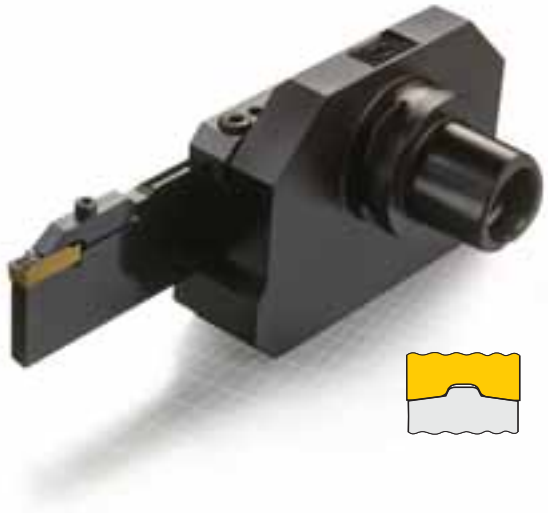
- Reliable heavy grooving with long reach and large widths
- Coromant Capto® for highest stability and best productivity

Application

- Deep rough grooving
- Max depth, a_r 120 mm (4.724 inch)
- Widths 9 - 15 mm (0.354 - 0.591 inch)
- Power generation; steam and gas turbines
- Pumps and valves

Technical features

- Solid construction with screw clamped stable fastening
- Integrated Coromant Capto® clamping unit
- Large range of high performance CoroCut insert shapes, grades and geometries
- CoroCut benefits from a rail interlocking interface, making it more stable than any other grooving solution



Performance

Semi finishing of flange component CMC02.1/MC P2.1.Z.AN

Cutting data

v_c m/min (ft/min)	100 (328)
f_n mm/r (inch/r)	0.23 (0.009)
a_p / a_r mm (inch)	10 / 67 (0.394 / 2.638)

Result	**Competitor**	**CoroCut N123M1-1000-0008-GM 1145**
Tool life, pcs	0.5	1
Tool life, min	8.4	16.8

Assortment

Tool blocks	Size, metric (inch)	For blade size	Catalog ref: Turning tools 2011
	5050 (2x2)	93	B32
	Coromant Capto C6, C8	45	B33

CoroCut blades	a_r max, mm (inch)	CoroCut seat size	Blade size	Catalog ref: Turning tools 2011
	100, 120 (3.937, 4.724)	M	45, 93	B31
	120 (4.724)	R	93	B31

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

CoroCut® R size inserts with -GM geometry

Chip control in heavy grooving

Chip control up to 15 mm (0.590 inch) widths

The cutting action of -GM geometry narrows the chips efficiently to ensure their removal from the groove. This makes it possible to groove deeply in a continuous infeed operation and avoid tricky programming for stop and back-out operations.

Benefits

- Chip control thanks to forming and narrowing of chips
- Programming is easier when stopping or backing-out, as chip removal is no longer needed
- The light-cutting geometry reduces vibration and requires less power

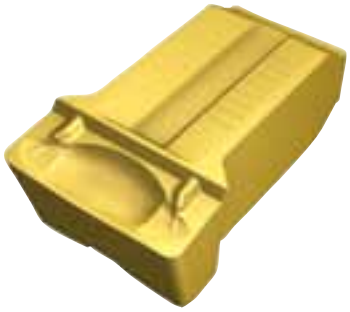
Technical features

- The -GM geometry forms and narrows the chips to ensure their removal from the groove.
- The positive cutting edge makes the insert cut smoothly and generate low cutting forces
- Inserts are available in several widths
- Available in high performance insert grades
- CoroCut benefits from a rail interface, making it more stable than any other grooving solution

ISO application area

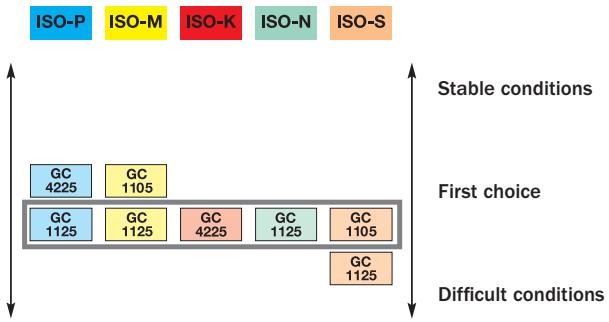
Application

- Heavy grooving with high metal removal rates
- Cam shafts, turbine rings and discs, shafts and rolls
- CoroCut R-size inserts are applicable in a large range of tooling solutions including CoroTurn® SL70. See also the new blades for deep grooving on page 22.



Recommendations

- Feed rate range 0.15 - 0.50 mm/rev (0.001 - 0.020 in/rev)



Assortment (extension)

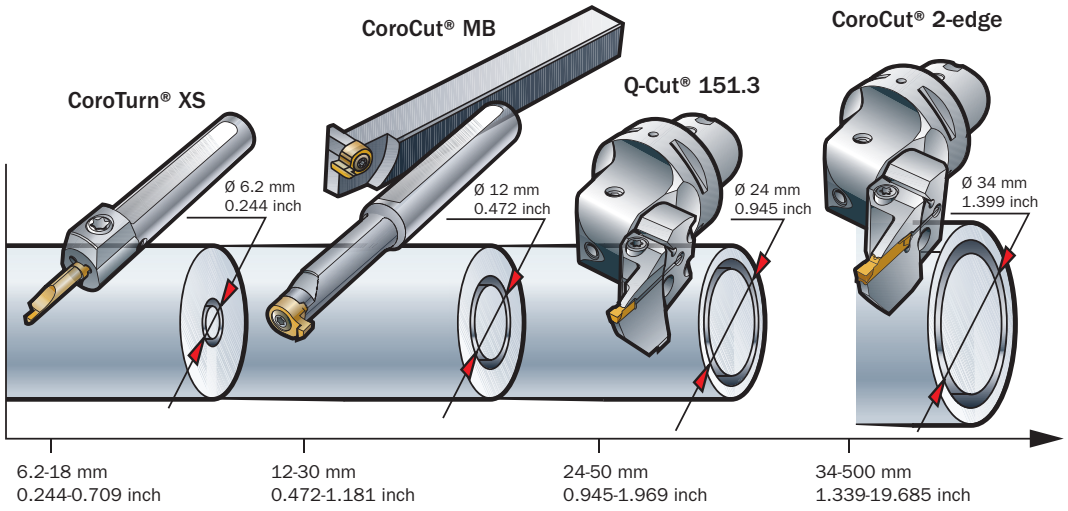
Insert width, mm (inch)	CoroCut insert seat size	Geometry	Grades	Catalog ref: Turning tools 2011
12, 12.7, 15	R	-GM	GC1105, GC1125, GC4225	B20
(0.472, 0.500, 0.591)	R	-GM	GC1105, GC1125, GC4225	B20

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

CoroCut® MB

Precision tools for small diameter face grooving

New shank holders for external machining



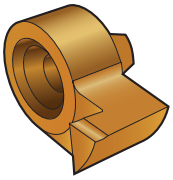
CoroCut MB is known as a tool system for internal grooving, threading and boring. To make even more use of its precision and light cutting ability, new external holders have been added for face grooving. They make it possible to use an external tooling solution down to first cut diameter 12 mm (0.472 inch).

Benefits

- Highly stable and productive solution for small first cut diameter face grooving
- High precision
- Low cutting forces

Technical features

- Light-cutting sharp-ground cutting edge
- High precision profiles
- Front-mounted exchangeable insert
- Extensive range of inserts for face grooving, turning, grooving and threading



Application

CoroCut MB is advantageous when high precision and low cutting forces are important. The new tool holders can be used with all CoroCut MB inserts in applications within:

- Shallow face grooving down to 12 mm (0.472 inch) first cut diameter
- Radial grooving
- Circlip grooving
- Inserts are available for all ISO materials, including grade CB7015 for hardened steels

ISO application area

Assortment

Shank size, metric (inch)	Hand of tool	CoroCut MB insert size	Catalog ref: Turning tools 2011
1212, 1616, 2020, 2525	R/L	09	B106
(0.500, 0.625, 0.750, 1.000)	R/L	09	B106

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

CoroTurn® SL70

Extended range of adapters

For vertical turning lathes, multi-task machines and turning centers

New adapters for CoroTurn SL70 cutting blades enable more complex component features to be machined with standard tooling.
The wide assortment of adapters is available in 0°, 45°, and 90° style.

Benefits

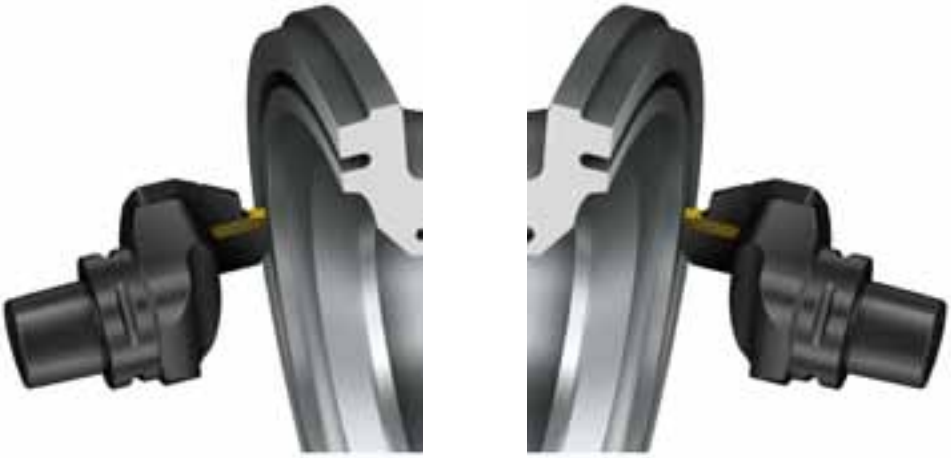
- A standard range of blades and adapters for machining complex component features
- Oval SL coupling offers excellent stability and accessibility
- Optimized for high performance in HRSA and titanium components
- Blades with high precision coolant improve chip breaking

Application

- Rough to finish profiling and pocketing
- Vertical turning lathes, multi-task machines and turning centers
- Aerospace engine and power generation
- Turbine disks, shafts, casings
- Heat resistant super alloys, titanium, steel

Technical features

- Modular blade and adapter system designed for profiling and pocketing
- Adapter dimensions optimized for improved component access
- Extensive blade program with round- and CoroCut® inserts
- High pressure coolant as standard for cutting blades for carbide RCMT- and CoroCut inserts



Assortment

Coromant Capto size	Hand of adapter	Shank style	Catalog ref: Turning tools 2011
C5, C6, C8	R/L	0°, 45°, 90°	I103

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

Coromant Capto® holders for CoroCut® with short a_r

For highest stability in shallow grooves

Shallow grooving can be performed with even higher metal removal rates if the holder length, a_r, is minimized. These new Coromant Capto holders add stability and directed coolant supply to improve chip forming, productivity and tool life.

Application

- General grooving applications
- Grooving depths 8 - 25 mm (0.315 - 0.984 inch)

Technical features

- Short a_r makes it possible to take higher loads without instability or vibration
- Coolant supply directed to insert cutting edge
- Coromant Capto coupling for highest stability
- Stable insert mounting with CoroCut rail interface
- Large selection of CoroCut insert grades and geometries for optimal performance

Assortment (extension)

Coromant Capto size	Hand of tool	CoroCut insert seat size	Insert width, mm (inch)	Catalog ref: Turning tools 2011
C3, C4, C5, C6, C8	R/L	D, E, F, G, J, K, L	1.5 - 8 (0.059 - 0.315)	B28

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

Benefits

- Higher output is possible through higher feed rates and cutting speeds
- Coolant supply directed to cutting edges improves chip control and tool life
- Maximum stability with short a_r

CoroCut® shank tools

Holders in smaller shank sizes

For shallow face- or radial grooving

A universal grooving tool holder for all kinds of shallow grooves extends its application range with new shank holders in sizes: metric 1616 and 2020 (0.625 and 0.750 inch).

Assortment (extension)

Shank size, metric (inch)	Hand of tool	Shank style	CoroCut holder seat size	First cut diameter, mm (inch)	CoroCut insert seat size	Catalog ref: Turning tools 2011
1616 (0.625)	R/L	0°, 90°	G	57 (2.244) - ∞	E - F	B44
2020 (0.750)	R/L	0°, 90°	G K	57 (2.244) - ∞ 46 (1.811) - ∞	E - F H - K	B44

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

Benefits

- Universal tool for shallow face- and radial grooving
- One tool handles a wide range of curve diameters in face grooving
- Large choice of CoroCut inserts is available for a variety of shapes, geometries and grades

CoroThread® 254

New circlip inserts

The shallow grooving solution

Secure CoroThread performance is now applied to circlip grooving and the machining of shallow grooves.

Application

- Internal and external grooves
- Grooving widths from 1.10 - 4.15 mm (0.043-0.163 inch)

P M K N S H

ISO application area

Assortment

Cutting edge length, (mm)	Insert size (inch)	Grade	Hand of tool	Width (mm)	Width (inch)	Catalog ref: Turning tools 2011
16	3/8	GC1135	R, L	1.10, 1.30, 1.60, 1.85, 2.15	0.043, 0.051. 0.063, 0.073, 0.085	B85
22	1/2	GC1135	R, L	2.65, 3.15, 4.15	0.104, 0.124, 0.163	B85

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

iLock™ ingenious locking interface

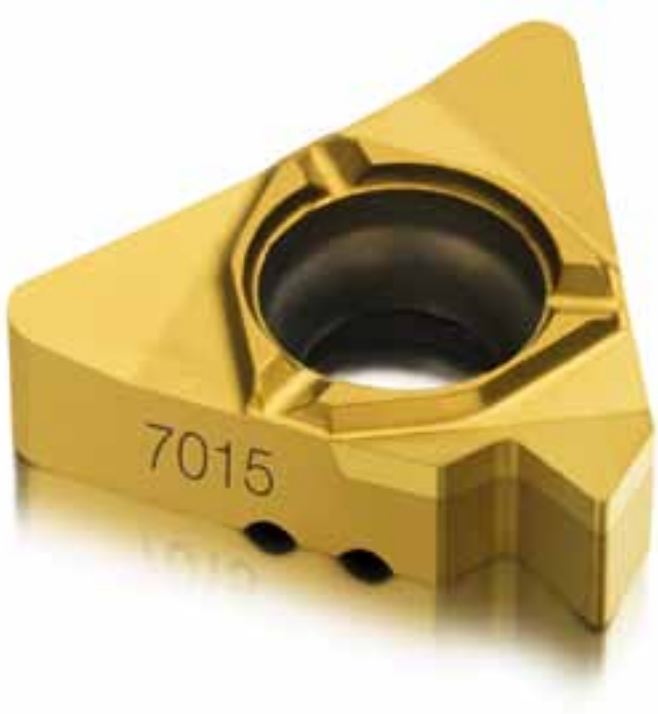
Benefits

- Sharp cutting edges for high-quality grooves
- Available in optimized grade GC1135
- Full program of grooving widths

CoroThread® 266

New CBN inserts for threading hardened steels

The secure threading solution



This new solution for threading hardened-steel components combines high-precision threading performance with optimized CBN grade CB7015.

Application

- All threading in hardened steels (55-65 HRc)
- V-profile, 60° thread form
- Right hand threads

H
ISO application area

Assortment

Cutting edge length, (mm)	Insert size (inch)	Thread profile	Type of machining	Catalog ref: Turning tools 2011
16	3/8	V-profile 60°	Internal/external	C12

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

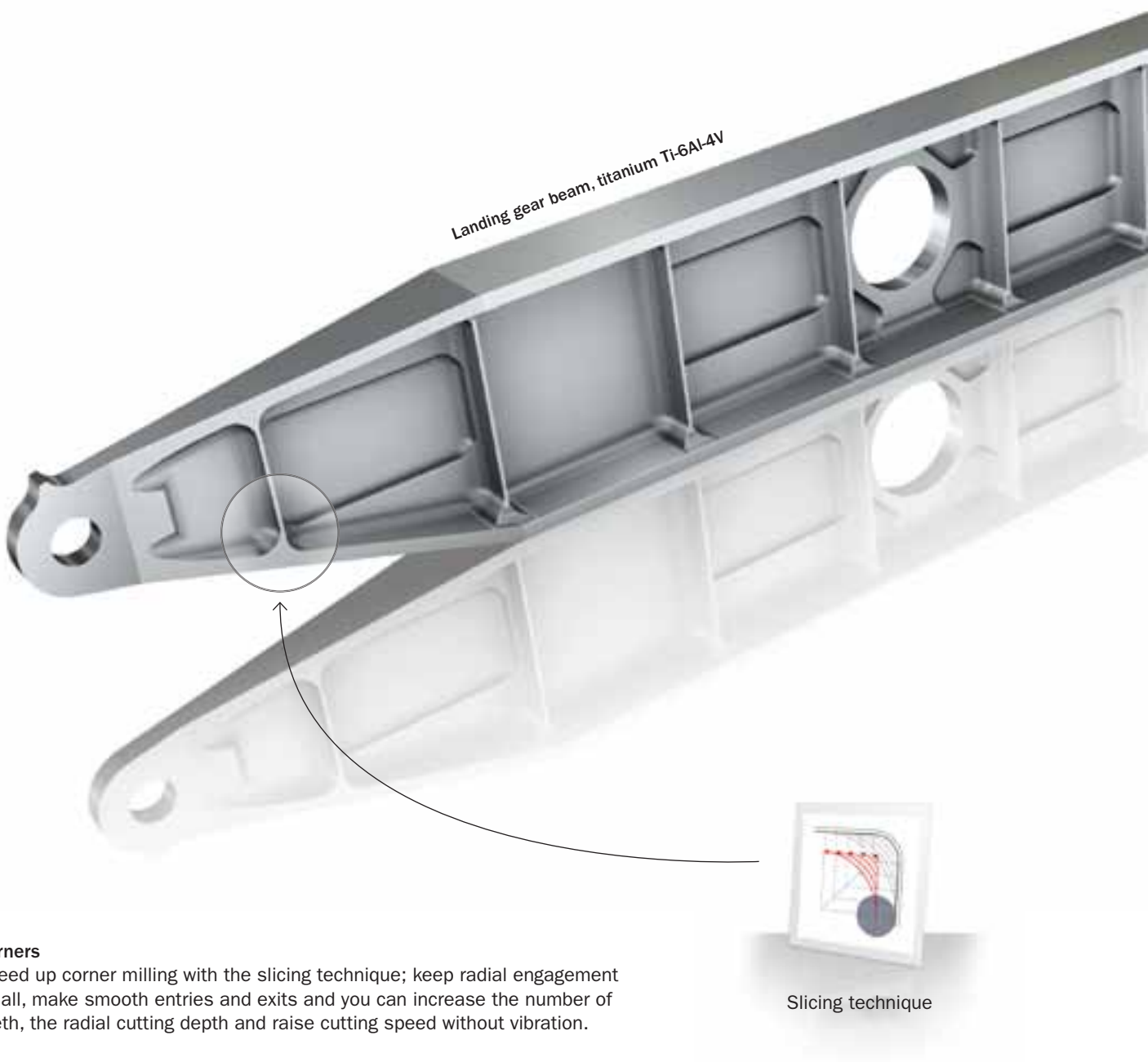
iLock™ ingenious locking interface

Benefits

- Increased cutting speed capability
- High stability and reliability
- For internal and external threads

End mill solutions that save time

Finish machining of aerospace components, like this landing gear beam, is time consuming. Very time consuming, but there are more efficient ways to do it. Let us show you some solutions that will speed up the finishing with full security.



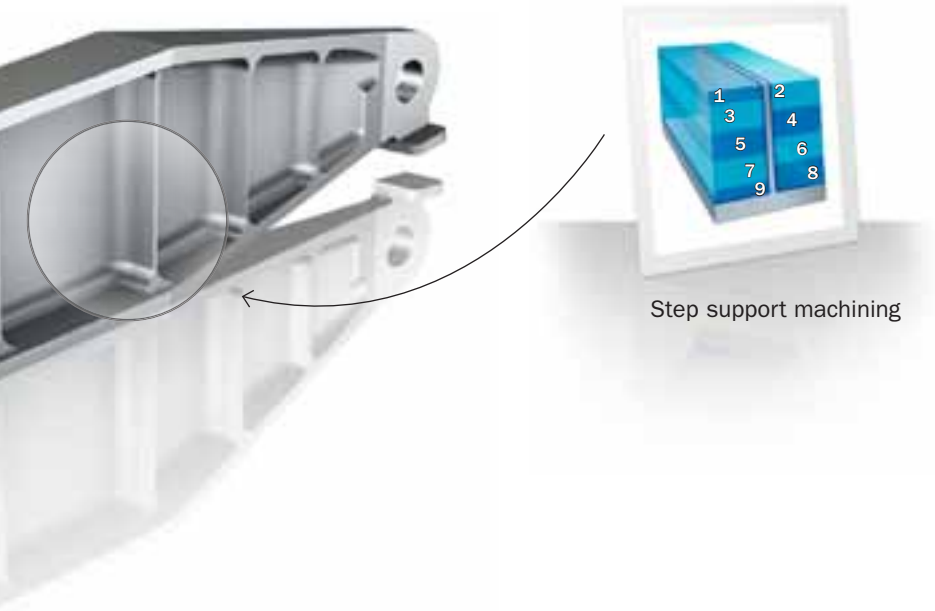
Slicing technique

Corners
Speed up corner milling with the slicing technique; keep radial engagement small, make smooth entries and exits and you can increase the number of teeth, the radial cutting depth and raise cutting speed without vibration.

Advanced programming techniques are developed by Sandvik Coromant specialists in cooperation with the AMRC, Advanced Manufacturing Research Centre.

Thin walls

- High speed techniques, small a_p and a_e at high cutting speed facilitates milling of thin walls as it reduces cutting forces and deflection.
- Use stepwise machining in overlapping passes when wall thickness to height ratio is larger than 15:1.



Step support machining

Higher cutting speeds, more teeth

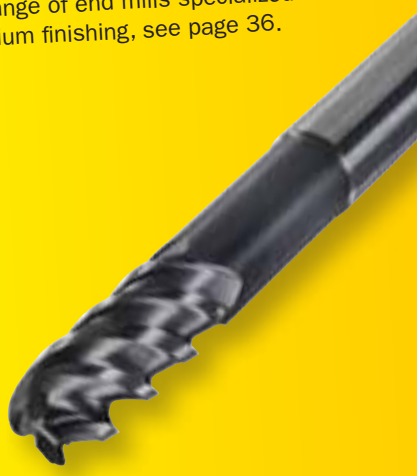
It may be an obvious way of increasing productivity, but not as simple as it sounds. The quality and design of the tool and its holder will make the difference between vibration or success.

	Previous	Recommended
Tool:	Competitor end mill, hydraulic chuck	CoroMill Plura, Hydro-Grip HD
Cutting data:		
v_c m/min (ft/min)	150 (492)	200 (656)
f_z mm/z (in/z)	0.050 (0.002)	0.075 (0.003)
z	4	8
a_p / a_e mm (in)	20 / 1 (0.787 / 0.039)	20 / 1 (0.787 / 0.039)
Tool life, m (ft)	156 (512)	348 (1142)

The secret lies in the tool, see page 36.

CoroMill® Plura

A new range of end mills specialized for titanium finishing, see page 36.



CoroMill® 316

Exchangeable-head milling system for end milling with limited depth of cut.

Hydro-Grip® HD

Strong tool clamping improves performance, see page 56.

CoroMill® Plura

Specialized end mills for finishing titanium

For deep pockets with thin walls

A new range of end mills within the CoroMill Plura family is specialized for aerospace components. These end mills are optimized for titanium alloys and finishing in deep pockets at high metal removal rates without vibration.

Benefits

- High accuracy
- Long tool life at high cutting data
- Makes it possible to finish deep down in pockets on thin-walled aerospace components without vibration

Application

- Finishing and semi-finishing
- Deep pockets with corner radius
- Titanium alloys, up to 48 HRc
- Aerospace components, die and mold components

M S

ISO application area

For cutting data, use PluraGuide 09.2 order number C-2948-117.

Technical features

- Neck to reach into deeper pockets
- Light cutting 50° helix angle for finishing
- Reliable solid carbide grades with multi-layered PVD coating
- Extra length 5 x D with radius 6.35 mm (1/4 inch)
- Variable flute depth
- Kordell cutters with corner radius are available for roughing

Performance

Long tool life at high cutting data
Finish machining of titanium alloy Ti-6Al-4V with CoroMill Plura

a_e / D_c mm (inch)	0.5 / 25 (0.020 / 0.984)
v_c m/min (ft/min)	120 (394)
f_z mm/z (inch/z)	0.1 (0.004)
Tool life, min	**94**

Assortment

End mill type	Tool diameter, mm (inch)	Shank	z_n	Grade	Catalog ref: Rotating tools 2011
High feed	12 - 20 (0.472 - 0.984)	Cylindrical	4	GC1620	D221
Roughing, semi-finishing	12 - 25 (0.472 - 0.984)	Cylindrical with neck	4, 5	GC1620	D223
Kordell	16 - 25 (0.630 - 0.984)	Cylindrical with neck	6, 8	GC1640	D239

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

CoroMill® Plura

New small ballnose end mills

Diameters down to 0.1 mm (0.004 inch)

This is a new range of small CoroMill Plura ballnose end mills for profiling applications in medium hard to hard steels, 35-72 HRc. Small diameters down to 0.1 mm (0.004 inch) make them suitable for all small die and mold manufacturing where high precision is important.

Application

- Die and mold; manufacturing of small, often plastic, moldings, forging and casting dies
- Electronic components
- Medical tooth implants
- Hardened steels (35–72 HRc)

H

ISO application area

Benefits

- High accuracy
- Keeps the profile shape intact for longer times in cut
- Long reach with long neck

Technical features

- Fine-grained solid carbide grade, GC1700, with multi-layered PVD coating having high hardness and high wear resistance
- Geometry design prevents radius from deteriorating from uneven wear
- Edge preparation for improved wear behavior
- Neck – an advantage in pocket milling
- High accuracy: +0.001 / -0.005 mm (+0.00004 / -0.0002 inch)

Assortment

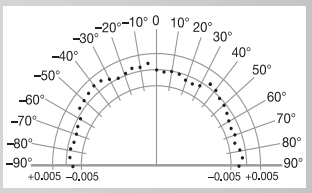
Diameter, mm (inch)	Coupling type	Neck length, mm (inch)	Catalog ref: Rotating tools 2011
0.1 - 12 (0.004 - 0.472)	Cylindrical shank	0.15 - 20 (0.006 - 0.787)	D265

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

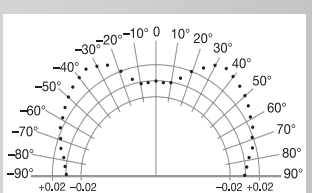
Performance

Operation	**Finishing**
Workpiece material	SKD11, 60 HRc, ISO H
Tools	R216.42-01030-FC10G 1700 / competitor
Cutting data	
v_c m/min (ft/min)	38 (125)
f_z mm/rev (inch/rev)	0.032 (0.0013)
a_p mm (inch)	0.05 (0.0020)
a_e mm (inch)	0.14 (0.0055)

CoroMill Plura maintains its profile shape after 120 m (394 ft) cut length.



R216.42-01030-FC10G 1700



Competitor

CoroMill® 326

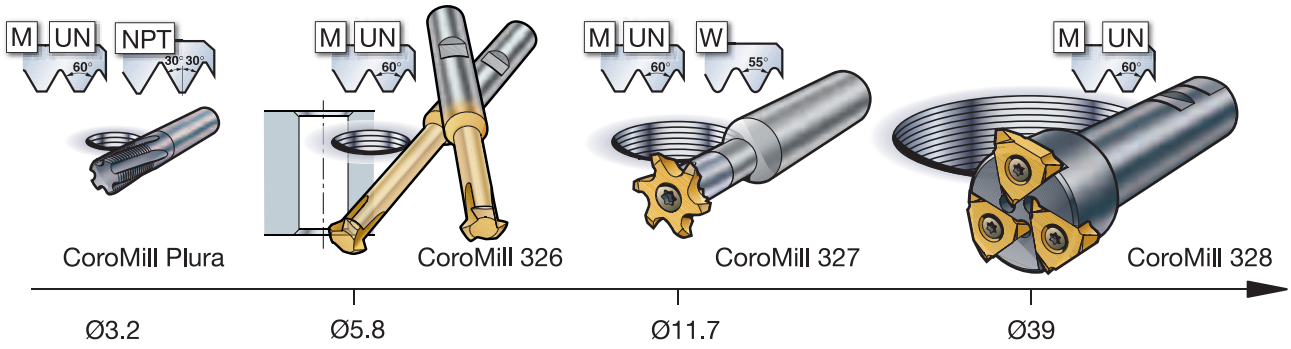
Internal threading and chamfering in small holes

For hole diameter from 6 mm (0.236 inch)

Versatile and cost efficient
This miniature milling cutter benefits from three cutting edges for internal threading and chamfering. Use it in small holes, down to 6 mm (0.236 inch) as a complement to CoroMill 327, CoroMill 328 and CoroMill Plura.

Benefits

- High metal removal rates with three cutting edges
- Chamfering and back-chamfering of holes with one tool
- Very high precision
- Low cutting forces



CoroMill 326 is part of a family of productive thread milling and chamfer milling tools

Application

- Internal machining in small holes, diameters from 6 mm (0.236 inch)
- Thread milling
- Chamfering and back-chamfering applications with same tool

ISO application area

Technical features

- Three cutting edges for productivity
- High precision ground profiles
- Sharp cutting edges for low cutting forces
- Thread and chamfer profiles including partial thread profiles for flexibility
- Solid carbide grade GC1025 with wear resistant PVD coating
- Small diameter tools, down to 5.8 mm (0.228 inch)
- Long reach, up to 35 mm (1.378 inch)

Assortment

Type of tool	Shaft	Profile	Pitch, mm / t.p.i.	Tool diameter, mm (inch)	Reach length, l_3 mm (inch)	Catalog ref: Rotating tools 2011
Thread milling	Weldon	Partial 60° metric and UN	0.5 - 2.0 / 12 - 48	5.8, 7.8 (0.228, 0.307)	15, 25 (0.591, 0.984)	D195
Chamfering	Weldon	45°	-	5.8, 7.8 (0.228, 0.307)	15, 25, 35 (0.591, 0.984, 1.378)	D195

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

Recommended holders

- Hydro-Grip® for best stability and precision
- CoroGrip®

Always use with cylindrical collets for Hydro-Grip and CoroGrip.

CoroMill® 327

Small cutter for internal machining

For threading and grooving in holes from 10 mm (0.394 inch)

Many new inserts expand the possibilities with this popular milling tool. The extension covers new insert profiles for threading, grooving and circlip grooving with chamfer.

Benefits

- High productivity with many cutting edges
- Universal tool with inserts for threading, grooving and chamfering
- High quality grooves and threads

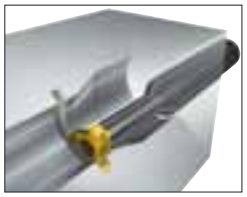
Application

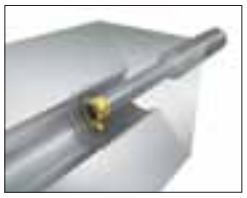
- Internal threading, grooving, circlip grooving and chamfering in holes from 10 mm diameter (0.394 inch)
- Groove depths up to 10 mm (0.394 inch)

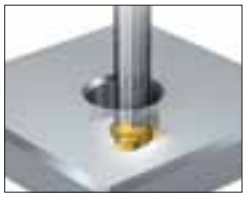
ISO application area

Technical features

- Sharp cutting-edges for high quality grooves
- Multiple edges for highly productive and cost-efficient machining
- Front-mounted inserts positioned in grooves for safe and stable mounting
- Through coolant for improved chip evacuation
- Four insert sizes
- Solid carbide and steel shanks in several lengths for stable setups and high productivity


Grooving and circlip grooving


Threading


Chamfering

Recommendations

- Use inserts with six teeth for highest productivity when stability is high and with short reach-length.
- Apply inserts with three teeth for general use.

It is important to clean the insert seat before mounting and to use a torque key when fastening the insert.

Assortment (extension)

Type of insert	Insert size	Thread profile	Thread pitch, mm / t.p.i.	z_n	Catalog ref: Rotating tools 2011
Groove milling	9, 14	-	-	6	D182
Circlip grooves with chamfer	12	-	-	3	D185
Thread milling	9	Partial profile 60°, metric and UN	1 - 3.5 / 7 - 24	3, 6	D186
Thread milling	9	Full profile Whitworth 55°	– / 19, 14, 11	3, 6	D186
Thread milling	9	Full profile 60°, UN	1.5 - 3.5 / 8 - 24	3, 6	D187
Thread milling	9	Full profile 60°, metric	1.5 - 3.5 / 8 - 24	3, 6	D188

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

CoroMill® 328

Grooving and threading cutter

More profiles with new inserts

New inserts for full-profile threading plus a series of circlip grooving inserts with chamfer.

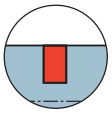
Benefits

- High quality grooves and threads
- High productivity with many cutting edges
- Large choice of inserts for threading, grooving and circlip grooving with chamfer

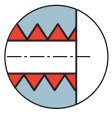
Application

- Internal, in holes over 39 mm (1.535 inch), shallow slotting, grooving, threading and circlip grooving with chamfer
- External shallow slotting, grooving and circlip grooving with chamfer

ISO application area


Shallow slotting and grooving


Circlip grooving


Threading

Technical features

- Sharp cutting edges for high quality grooves
- PVD coated grade GC1025 for all ISO materials
- Multiple edges for highly productive, cost efficient machining
- Inserts securely mounted in pockets
- Weldon, arbor and bore with keyway mounting
- Large range of insert profiles for threading, grooving and circlip grooving

Assortment (extension)

Type of insert	Thread profile	Thread pitch mm / t.p.i.	Catalog ref: Rotating tools 2011
Circlip grooves with chamfer	-	-	D177
Thread milling	Full profile, internal, metric and UN 60°	1.5 - 6.0 / 04 - 20	D178

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

CoroMill® 325

Thread whirling cutter

Now for WTO machine tool spindles

Stable insert fixturing and high performance insert grades make CoroMill 325 the most productive solution for external threading of long and slender components, such as bone screws.

CoroMill 325 thread whirling rings are introduced to fit WTO spindles. It is now applicable in more machine tools; see full range on next page.

P M K N S H

ISO application area

Insert blanks for do-it-yourself grinding

If you need a unique threading profile, you can now use CoroMill 325 with insert blanks for customized do-it-yourself grinding*.

CoroMill 325 total range

MTM	Spindle producer
Citizen	PCM
Citizen	Jarvis
Star	Star
Tsugami	Tsugami
Tornos	Tornos
-	WTO

Assortment (extension)

New items	Description	d_c, mm (inch)	s, mm (inch)	Catalog ref: Rotating tools 2011
Thread whirling ring	Spindle producer WTO	12 (0.472)	-	D190
Insert blanks	Grade H10F	-	4.0, 5.5 (0.157, 0.217)	D192

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

*Note: Precaution should be taken when grinding cemented carbide products. Please refer to the safety information in Chapter J of the rotating tools catalog.

Benefits

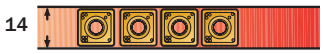
- Low radial forces allows for high productivity and high precision threading of long, slender components
- High productivity threading in a single pass
- Cost reduction since no additional finishing operation is needed
- Deep threads, like ACME, are easily made

CoroMill® 490

Free-cutting square shoulder and face milling

Insert size 14 takes up to 10 mm (0.394 inch) depth of cut

More radii options and L-version
The CoroMill 490 insert assortment is extended with new nose radii to fit more applications with the large size 14 insert. We also added a selection of left-hand inserts for duplex machine tools with two milling spindles.



r_e	0.8	1.2	1.6	2.0	mm
r_e	.059	.047	.063	.079	inch

Assortment (extension)

Insert size	R/L	Nose radii, mm	Geometry	Grades	Catalog ref: Rotating tools 2011
14	R	1.2, 1.6	M-PM	GC1030, GC4240, GC4230, GC1020, GC3220, GC3040	D22
14	L*	0.8	M-PM	GC4230, GC4240, GC3040, GC3220	D22

*) There is a new shim for left-hand inserts, ordering code 5513 478-01.

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

Benefits

- Excellent machining economy - high metal removal rate, long tool life, four cutting edges
- Exceptional surface quality - low R_a value, no steps and high visual quality
- High security - shim design with unique cutting action

CoroDrill® 881

Secure hole making for smaller diameters

A problem solver for holes below 24 mm (0.945 inch) diameter

This complementary tool is optimized for unstable conditions, providing increased process security and stability for smaller hole diameters.

Benefits

- Excellent choice for unstable conditions
- Robust drill-body concept and insert design
- Good choice for non-rotating applications
- Easy to use

Technical features

- Strong insert design for improved reliability in unstable conditions
- Reliable alternative for applications below 24 mm (0.945 inch)
- Ideal design for non-rotating applications
- Two cutting edges per insert
- One all-purpose geometry for all material groups
- Shot-peened drill body for better fatigue resistance
- Large radial adjustment range
- Back-boring possibilities

Application

- Diameter range: 14–23.50 mm (inch sizes 0.562 - 0.937)
- Low- to medium- feed applications
- Unstable conditions requiring strong, robust inserts
- Non-rotating applications

ISO application area

Assortment

Drills

Coupling type	Drill dimension	Drill length	Catalog ref: Rotating tools 2011
Cylindrical ISO 9766, 20 mm	14.00-17.00 (mm)	2-5 x D	E79
Cylindrical ISO 9766, 25 mm	17.50-23.50 (mm)	2-5 x D	E79
Cylindrical ISO 9766, 0.75 inch	0.562-0.656 (inch)	2-5 x D	E81
Cylindrical ISO 9766, 1 inch	0.687-0.937 (inch)	2-5 x D	E81
Cylindrical US (P shank) 0.75 inch	0.562-0.656 (inch)	3-4 x D	E82
Cylindrical US (P shank) 1 inch	0.687-0.937 (inch)	3-4 x D	E82
Coromant Capto C4, C5, C6	14.00-23.00 (mm)	3-4 x D	E83


Central insert

Inserts

Drill dimension	Insert size	Geometry	Central insert grade	Peripheral insert grade	Catalog ref: Rotating tools 2011
14.00-17.00 mm, 0.562-0.656 inch	2	GM1	GC1044, GC1144	GC2044, GC4044, GC4024	E85
17.50-20.50 mm, 0.687-0.812 inch	3	GM1	GC1044, GC1144	GC2044, GC4044, GC4024	E85
21.00-23.50 mm, 0.875-0.937 inch	4	GM1	GC1044, GC1144	GC2044, GC4044, GC4024	E85


Peripheral insert

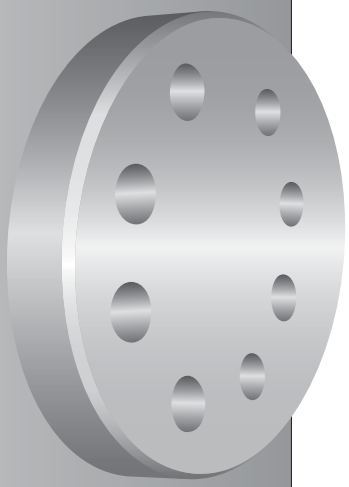
For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

Performance

In a stainless steel application, CoroDrill® 881 improved process security and increased the number of holes per edge by 25%.

Operation	**Hole making**	
Component	Flange	
Material	Stainless steel (CMC 05.21)	
Machine tool	Vertical machining center	
	CoroDrill 881	**Competitor**
Tool	881-D1600L20-03	Indexable insert drill
D_c mm (inch)	16 (0.630)	16 (0.630)
Central insert	881-020204M-C GM1 1144	-
Peripheral insert	881-020204M-P GM1 2044	-
v_c m/min (ft/min)	150 (492)	150 (492)
n rpm	2985	2985
f_n mm/rev (inch/rev)	0.07 (.003)	0.07 (0.003)
v_f mm/min (inch/min)	209 (8.228)	209 (8.228)
Hole depth mm (inch)	17 (0.669)	17 (0.669)
Tool life (holes)	**250**	**200**

Result: 25% increase in holes completed per edge



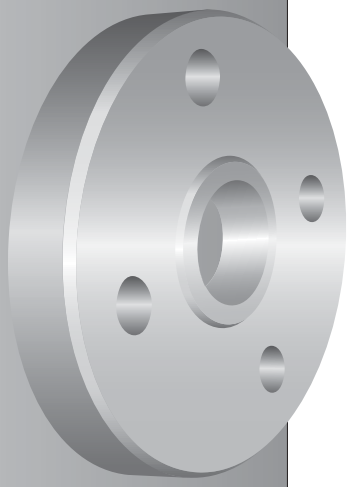
M **ISO application area**

Performance

Compared to the competitor drill, CoroDrill 881 completed 30% more holes per edge.

Operation	**Hole making**	
Component	Flange	
Material	Inconel 825 (CMC 20.2)	
Machine tool	Vertical machining center (ISO 50)	
	CoroDrill 881	**Competitor**
Tool	881-D1900L25-03	Indexable insert drill
D_c mm (inch)	19 (0.748)	19 (0.748)
Central insert	881-030308M-C-GM1 1144	-
Peripheral insert	881-030308M-P-GM1 2044	-
v_c m/min (ft/min)	90 (295)	90 (295)
n rpm	1508	1508
f_n mm/rev (inch/rev)	0.07 (0.003)	0.07 (0.003)
v_f mm/min (inch/min)	106 (4.173)	106 (4.173)
Hole depth mm (inch)	25 (0.984)	25 (0.984)
Tool life (holes)	**72**	**56**

Result: 30% increase in holes completed per edge



S **ISO application area**

Application hints:
Non-rotating applications

- Use CoroDrill® 881 to generate tapered holes
- Holes larger than the nominal size of the drill can be drilled and enlarged with a subsequent boring pass
- Chamfering and reliefs can also be achieved
- A hole for threading can be prepared in one pass, together with chamfering
- Finishing cuts can be made on the return stroke (back boring)

Where to use

CoroDrill 881 improves process security and reliability in a range of components, across many industrial areas.

General engineering
Cast housing, drive shaft, separator

Power generation
Bearing, flange, slewing bearing

Automotive
Crank shaft, connecting rod, transmission component

Oil and gas
Flange, reducer, collector

Pump and valve
Valve house, security valve

Tailor Made

Tool options designed to individual customer requirements are also available. For information on our Tailor Made program visit www.sandvik.coromant.com, or see your local Sandvik Coromant representative.

CoroDrill® 452

Close-tolerance hole making in composite materials

For carbon fiber reinforced plastics (CFRP) and metallic-stack

Introducing a range of standard tools for portable, hand-held machines used to produce aerospace rivet- and bolt-holes. They are optimized by material type and offer a complete composite hole-making solution.

In cooperation with Precorp

PRECORP

Benefits

- Close hole tolerances, good surface finish
- Tools optimized by CFRP and metallic-stack material type
- Low-thrust geometries reduce risk of hole delamination and burrs

Application

- Portable hand-held machines
- Aerospace rivet- and bolt holes
- Carbon fiber reinforced plastics (CFRP)
- Carbon fiber reinforced plastic/metallic-stack materials

N

ISO application area

Tools optimized for hole making in carbon fiber reinforced plastics (CFRP)

Technical features and benefits

Composite drill
CoroDrill® 452.1…C

- Right-hand drill with left-hand helix counteracts thrust forces to increase hole quality
- Designed for smooth exits from CFRP material
- Avoids damage caused by straight flute design
- Point geometry developed for CFRP materials, including uni-directional material
- Use with drill bushing for improved hole tolerance to IT 0.05 mm (0.002 inch)

Composite reamer
CoroDrill 452.R…C

- Designed for close hole tolerances
- Step pilot to reduce thrust and improve hole quality
- Designed to reduce risk of hole delamination
- Pilot diameters matched to drill diameters of CoroDrill 452.1 and CoroDrill 452.4

PCD countersink
CoroDrill 452.C…C

- Single-edge countersink to improve accuracy, optimized for CFRP materials
- PCD cutting edge gives longer tool life and resharpening capability
- Standard tools for 100° and 130° chamfer angle
- Correct chamfer depth ensured with micro-stop
- Wide range of radii, angles and dimensions available as engineered solution
- Carbide pilot to improve accuracy

Tools optimized for hole making in CFRP/metallic-stack materials

Technical features and benefits

Composite-metal drill
CoroDrill® 452.1…CM

- For pre-drilled and non pre-drilled applications
- For stacks of CFRP and aluminum, titanium and stainless steel
- Self-centering drill point
- Tolerance to 0.05 mm (0.002 inch) with drill bushing

Composite-metal drill with pilot
CoroDrill 452.4…CM

- Drill pilot designed for pre-drilled and non pre-drilled applications
- For high-quality holes with exceptional finish and quality
- Minimum force needed to complete hole
- Use with guide bushing for holes with minimum size difference between material stacks
- Self-centering drill pilot
- Tolerance to IT 0.05 mm (0.002 inch) with drill bushing

Composite-metal reamer
CoroDrill 452.R…CM

- Pilot diameters matched to drill diameters of CoroDrill 452.1 and CoroDrill 452.4
- Designed to reduce risk of hole delamination
- Close tolerances to IT 0.02 mm (0.0008 inch)

Assortment

Carbon fiber reinforced plastics (CFRP)	Diameter mm (inch)	Max depth mm (inch)	Coupling type	Grade	Catalog ref: Rotating tools 2011
Drill	2.50-12.70 (0.098-0.5)	44 (1.732)	Cylindrical	H10F	E42-
Reamer	4.17-12.70 (0.164-0.5)	25-32 (0.984-1.26)	Cylindrical	H10F	E44-
Countersink	4.14-12.68 (0.163-0.499)	10 (0.394)	Cylindrical	CD10	E44

CFRP/metallic-stack materials	Diameter mm (inch)	Max depth mm (inch)	Coupling type	Grade	Catalog ref: Rotating tools 2011
Drill	2.50-12.70 (0.098-0.5)	44 (1.732)	Cylindrical	H10F	E42-
Drill with pilot	4.17-12.70 (0.164-0.5)	34 (1.339)	Cylindrical	H10F	E43
Reamer	4.17-12.70 (0.164-0.5)	25-32 (0.984-1.26)	Cylindrical	H10F	E44

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

Composite machining

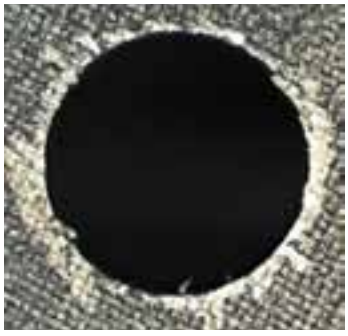
Solutions for portable hand machines
As the use of carbon fiber increases within the aerospace industry, so do demands on production methods and quality. Our solutions are dedicated by composite-material type to give high quality holes and surfaces, all at the best possible productivity levels.

See more of our total offer for composite machining at www.sandvik.coromant.com/composite

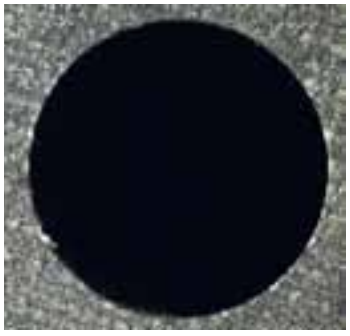
Hole making solutions for carbon-fiber composites (CFRP) and metallic-stack materials

Countersink tools for carbon-fiber composites (CFRP)

Hole making in the many different carbon fiber materials demands unique geometries to achieve acceptable hole tolerances and quality.
Each carbon fiber material is different, increasing the risk of delamination or splintering. The new CoroDrill® geometries reduce this risk to produce high quality holes.



Delamination with previous drill type



CoroDrill® solutions give improved hole quality without delamination or splintering

Hydro-Grip® HD

The most powerful milling chuck

Now for more machine types

The strong and precise tool clamping of Hydro-Grip HD (heavy duty) is the best choice for heavy machining. No other power chuck has higher clamping force, with great bending stiffness and dampening properties.

It guarantees secure clamping in the toughest milling applications, and is now available for more machine types, including Coromant Capto C5, HSK 63 and solid taper 40.

Benefits

- Higher productivity
- Longer tool life
- Better surface precision
- Secure machining
- Easy to use

Application

- Finishing to heavy roughing
- Heavy milling with solid carbide end mills
- Drilling
- Reaming

Technical features

- High clamping force, ideal for heavy machining with high security
- Low tool run out from symmetrical tool clamping
- Quick tool release and clamping to the correct level with the universal torque wrench
- User-friendly clamping procedure with no additional equipment required
- Each chuck is individually balanced, tested and approved for high speed

Performance

In a test against a competitor chuck with the CoroMill® Plura end mill, Hydro-Grip HD increased metal removal rate by 200%, at the same surface quality and without tool vibration.

Tool life increased by 15%

Assortment

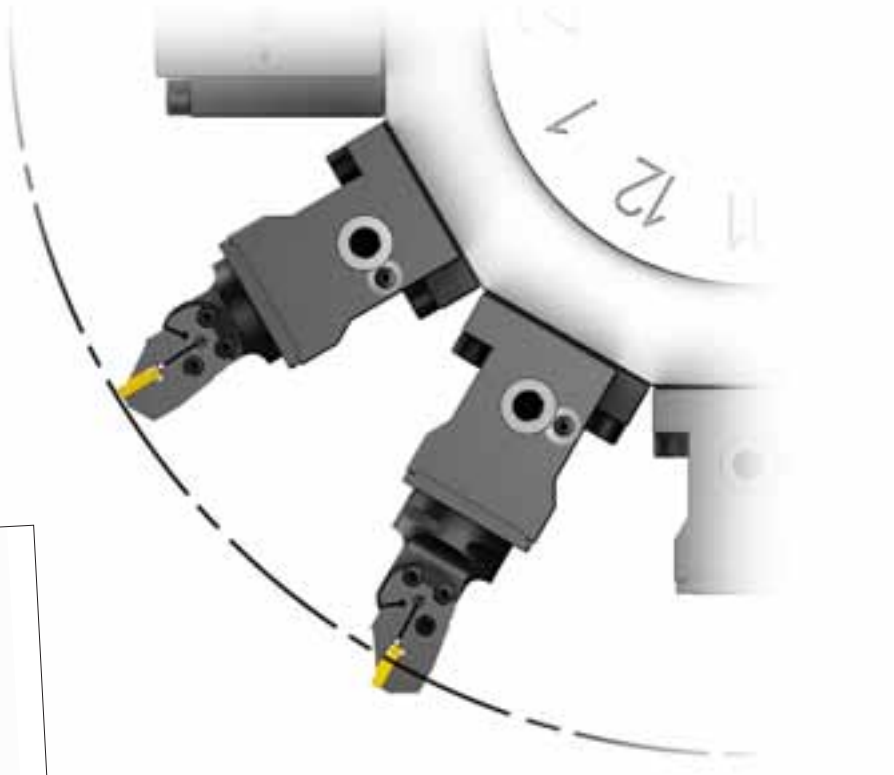
Machine coupling	Diameter (mm)	Diameter (inch)	Catalog ref: Rotating tools 2011
C5, C6, C8	20	0.787	G80
ISO 40	20	0.787	G85
MAS BT 40	20	0.787	G85
CAT-V 40	20	0.787	G85
HSK 63	20	0.787	G89

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

Coromant Capto® short

Quick-change tooling for turning centers

Shorter Coromant Capto adapters with SL interface



Turret swing diameter

Introducing a range of shorter Coromant Capto® adapters with SL (serration lock) interface, for use in turning centers. They save space in the turret and are optimized for larger components, with the advantages of high productivity and problem-free machining.

Benefits

- Additional space in the turret for problem-free indexing
- Larger components can be machined with ease
- Flexibility with quick change capability of Coromant Capto
- SL interface enables use of wide range of tools from small tool inventory

Application

- Turning center turret lathes
- Parting and grooving, external turning

CoroTurn® SL

Technical features

- Tool holders without gripper groove
- Shorter offset clamping unit for shorter tool overhang
- Reduced total tool length for added clearance against machine guards in turret lathes
- Insert edge is closer to Coromant Capto gauge line
- The altered f_1- and offset-dimension gives a shorter gauge-line diameter, ideal for radial parting-off and grooving
- Coromant Capto short adapters without gripper groove are also available for CoroMill® EH- and ER- chucks

CoroMill® EH (adapter for exchangeable heads)

ER chuck

Assortment

Coromant Capto size	SL coupling size	Hand of adapter	Shank style	Catalog ref: Turning tools 2011
C3	25, 32	R/L	0°	I69
C4	32, 40	R/L	0°, 45°	I69-
C5	32, 40	R/L	0°	I69

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

**Note: SL short adapters are only available with segment clamping, not center-bolt clamping.*

Metallic-sealed ER collets

For cylindrical-shank tools with through coolant

New range of high performance collets

Sealed collets make it possible to deliver coolant securely through the tool. They also enable very high run out accuracy and are most commonly used with solid carbide drills.

Benefits

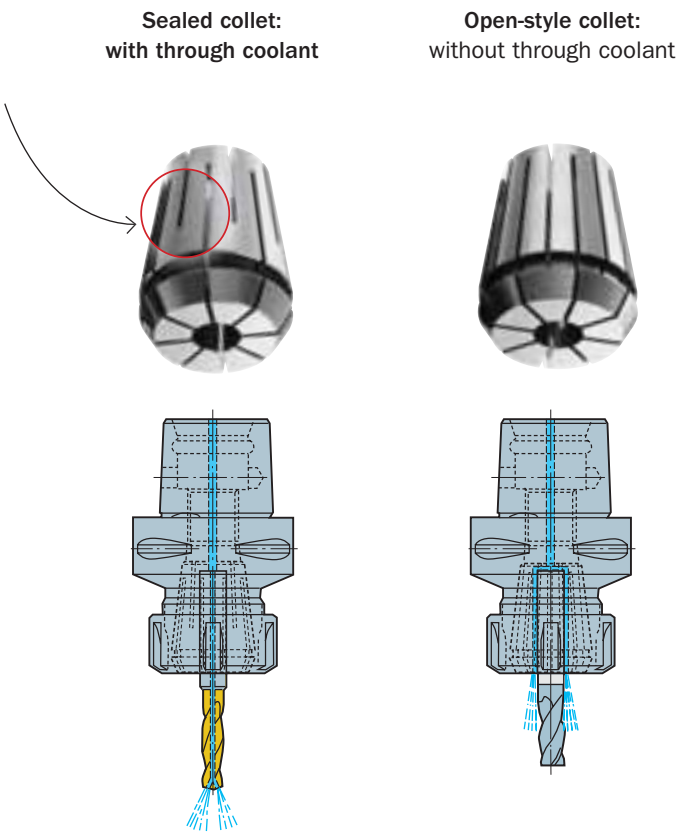
- High precision and stability, low tool run out
- Designed for use with high pressure coolant
- Vibration dampened
- No need for separate sealing disc and nut assembly

Application

- Cylindrical-shank tools with coolant through center
- CoroDrill® Delta-C
- CoroMill® Plura end mills

Technical features

- High precision run out to ≤6 µm (0.0002 inch)
- Secure at high coolant pressures
- Clamping range is h9 or 0.5 mm (see ordering catalog for more information



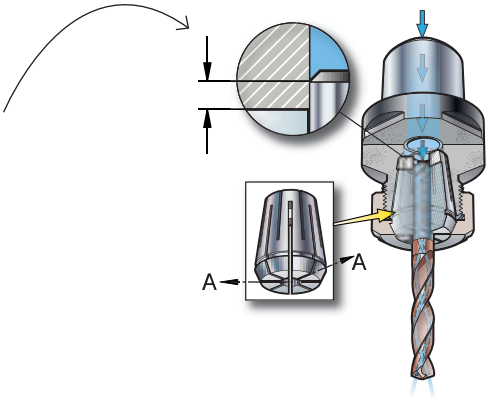
Assortment

ER size	Bore dia (mm)	Bore dia (inch)	Catalog ref: Rotating tools 2011
16	3-10	¼ - 5/16	G120
20	3-12	¼ - 5/16	G120
25	6-16	¼ - 5/8	G120
32	6-20	¼ - 5/8	G120
40	6-25	¼ - 1	G120

For full information see Rotating tools and Turning tools catalogs or www.sandvik.coromant.com

Handling instructions

To ensure the collet is completely metallic-sealed, the drill shank must be pushed in to cover the entire slit in the collet.



Other assortment extensions

All page references apply to the 2011 Turning- and Rotating tools catalogs.

GENERAL TURNING A292

CoroTurn® 107

Through coolant for bars with T/V 1102-size inserts

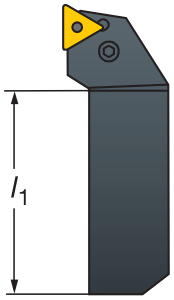
- New coolant channel improves chip control for internal boring
- Complements the existing range of bars with coolant, for T/V 1103 inserts

GENERAL TURNING A224

CoroTurn®

Small part machining holders for negative inserts

- Holders without offset for improved performance and versatility
- Short holders for the QS holding system
- Higher feeds in larger sliding head machines
- Compatible with the wide range of negative T-Max P inserts



CoroTurn® SL I23, I27, I16

CoroTurn® SL

New tools with SL interface

CoroTurn SL cutting heads

- For internal turning
- 2 SL cutting heads, CoroTurn RC design
- 4 SL cutting heads, CoroTurn 107 design
- 4 SL cutting heads,T-Max P lever design, with high precision coolant for improved chip control

CoroTurn® SL I86

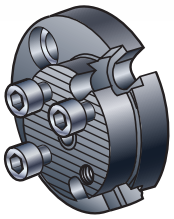
CoroTurn SL quick change cutting head

- Cutting head for CoroThread inserts, size 16 mm (*iC* 3/8 inch)
- SL quick change, size 80 coupling

CoroTurn® SL I67

CoroTurn SL frontal reduction adapter

- Reduces 40 mm diameter bars to SL coupling size 32
- Less vibration due to lighter front end, improved chip evacuation

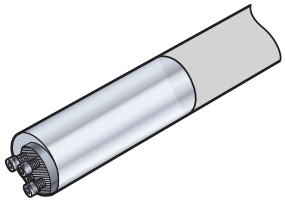


CoroTurn® SL I67

CoroTurn® 107

Carbide reinforced, cylindrical boring bars

- Extension of bars in 20-25 mm diameter
- Internal coolant supply
- EasyFix groove for correct center height



PARTING AND GROOVING A229

CoroCut® 3

External tool holders for small part machining

- Inch-size tool holders complement the existing range of metric holders
- Greater versatility for parting and grooving in sliding head machines

THREADING
C33

CoroThread® 266

More options for threading

- Insert blanks in size 16, 22, 27 mm (*iC* 3/8, 1/2, 5/8 inch) for grinding to chosen thread profile
- Extension of size 16 mm (*iC* 3/8 inch) inserts with more pitches for existing thread profiles

THREADING
C42

CoroThread® 266

Boring bars without shim for internal threading

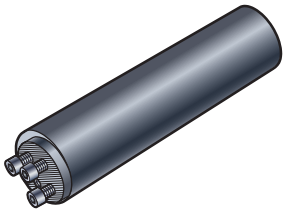
- Right-hand metric and inch-size bars for holes down to 20 mm (0.787 inch)
- Includes bars with flats and round bars with groove for EasyFix sleeve
- For insert sizes 16 (*iC* 3/8 inch) and 22 (*iC* 1/2 inch)

CoroTurn® SL
I64

CoroTurn® SL

570- 4C dampened boring bar for internal threading

- 1.50 inch diameter
- For SL cutting heads, size 32 coupling
- First choice for internal threading
- Also for parting & grooving and turning applications

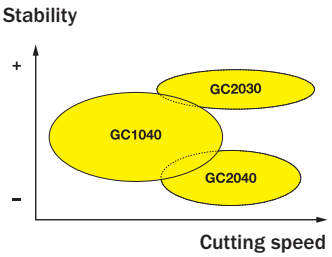


MILLING
D23

CoroMill® 200

Milling grade GC1040

- For toughness demanding operations in stainless steels (austenitic/duplex)

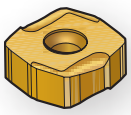


MILLING
D100

CoroMill® 365

Wiper inserts in grade GC3220

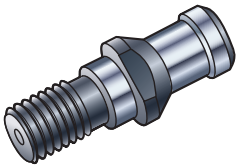
- Two new wiper inserts (KW4, KW8) in grade GC3220 for ISO K materials



TOOLING
SYSTEMS
G114

Pull studs (retention knobs)

- A larger range of pull studs for common machine types is also available



Our main releases from recent CoroPaks

CoroPak 09.1

GENERAL TURNING
GC1115 - for HRSA

PARTING AND GROOVING
CoroTurn® SL70

MILLING
CoroMill® 345 - new face mill
CoroMill® 360 - heavy duty face mill
CoroMill® 316 - exchangeable-head milling coupling (EH)

TOOLING SYSTEMS
Coromant Capto - size 10

CoroPak 09.2

GENERAL TURNING
Geometry -HM, grade GC4205
CoroTurn® 107 wiper insert, 0.2 mm (0.008 inch) radius
CC6190 - new ceramic grade

PARTING AND GROOVING
GC1145 - new grade
CoroCut® - M-size and R-size
CoroCut® , angled inserts

THREADING
CoroThread® 266 - new insert

MILLING
CoroMill® 300 - larger insert
CoroMill® 329 - new grooving cutter
CoroMill® 331 - new insert

DRILLING
CoroDrill® 880 - new inserts and grades
CoroDrill® 805 - deep hole drilling

TOOLING SYSTEMS
Hydro-Grip® Heavy Duty (HD) - new chuck adapter
HSK to Coromant Capto basic holders

CoroPak 10.1

GENERAL TURNING
QS holding system for sliding head machines

PARTING AND GROOVING
New grade GC1145

THREADING
CoroThread® 266, grades GC1135 and GC1125
Dampened adapter for threading

MILLING
New grades, S30T and S40T
CoroMill® 345, wiper inserts
Integrated holders with EH interface
CoroMill® 490, insert size 14

DRILLING
CoroDrill® 854 and CoroDrill 856

TOOLING SYSTEMS
Hydro-Grip® Heavy Duty (HD)

CoroPak 10.2

GENERAL TURNING
New geometries for HRSA
CoroTurn® HP, new cutting units
New grade CB7525

PARTING AND GROOVING
CoroCut® profiling CBN insert, grade CB7015
CoroTurn® SL70, extension

THREADING
CoroThread® 266, new insert geometry

MILLING
New grade, GC1040
CoroMill® 170, gear milling
CoroMill® 325, thread whirling
CoroMill® 790, new -NL geometry and HX cutter
CoroMill® Plura, new geometries
CoroMill® 345, new wiper

DRILLING
T-Max adjustable solid drill head

BORING
CoroBore® 825 XL
CoroBore® 826 XL
CoroBore® 820 XL

TOOLING SYSTEMS
Coromant Capto® Disk Interface
Dampened face mill adapter
Face mill adapters with arbor coolant
Coromant Capto® , flexible tool holding