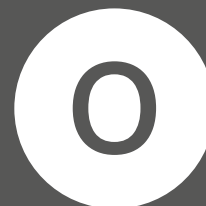


Solid Round Tools

Solid Carbide Drills
Reamers
End Mills
Thread Mills
HSS Taps



Versatile



Optimized



Customized

Content

Introducing Solid Round Tools	1
Product portfolio	2
How to find the right product	3
Milling offer	4
Drilling offer	9
Tapping offer	18
Reaming offer	23
Customized solutions	27
Tailor Made	28
Reconditioning	29
IFind	30
How to order your tools	31

Introducing Solid Round Tools

Turning Sandvik Coromant into your complete business partner

With more than 10 000 standard products our Solid Round Tools range is developed to cover all application types within the areas of solid carbide drilling, milling, high speed steel tapping, reaming and threading. Every tool is carefully designed to fulfill demands of high quality, precision and maximum productivity so you can get the most out of your machining process. In addition to the standard product range we offer Customized Solutions, including Tailor Made and Advanced Engineered solutions, individually developed by our Yellow Coat experts for your most sophisticated machining demands. Above all, Solid Round Tools come together with an extensive service portfolio, adding that extra portion of efficiency, profitability and knowledge to your production process.

24 hour delivery of standard products

Extensive service portfolio

Yellow Coat expertise

Leading industry segment know-how

Customized solutions

To view complete tool range online, visit

www.sandvik.coromant.com/solidroundtools



Our product portfolio

It's not the size of the operation, it's the range of application.

Everything we do is about supporting workflow, efficiency and productivity. From experience we know that this requires different solutions for different customers on different occasions. There is no one size fits all. Consequently we have developed an offer that includes solid round tools in three different categories.



Versatile solutions

A complete range of high performance products that offer high flexibility and cost efficiency.

To view Versatile solutions on our web, visit
www.sandvik.coromant.com/solidroundtools/versatile



Optimized solutions

A unique line of refined tools for specific needs that provide extreme efficiency, reliability and durability.

To view Optimized solutions online, visit
www.sandvik.coromant.com/solidroundtools/optimized



Customized solutions

Tailor Made and Advanced engineered products, individually designed to meet the highest demands on performance.

Find more information about Customized solutions on our web at
www.sandvik.coromant.com/solidroundtools/customized

How to find the right product

1. Select application type (drilling, milling, tapping etc)
2. Select the section of our portfolio depending on your demands

- One tool for many materials
- A robust tool for various applications
- Ideal for small batch- and varied production

Choose Versatile



Versatile

- Tool dedicated for specific material
- Tool refined for specific application
- Ideal for medium to large batch production

Choose Optimized



Optimized

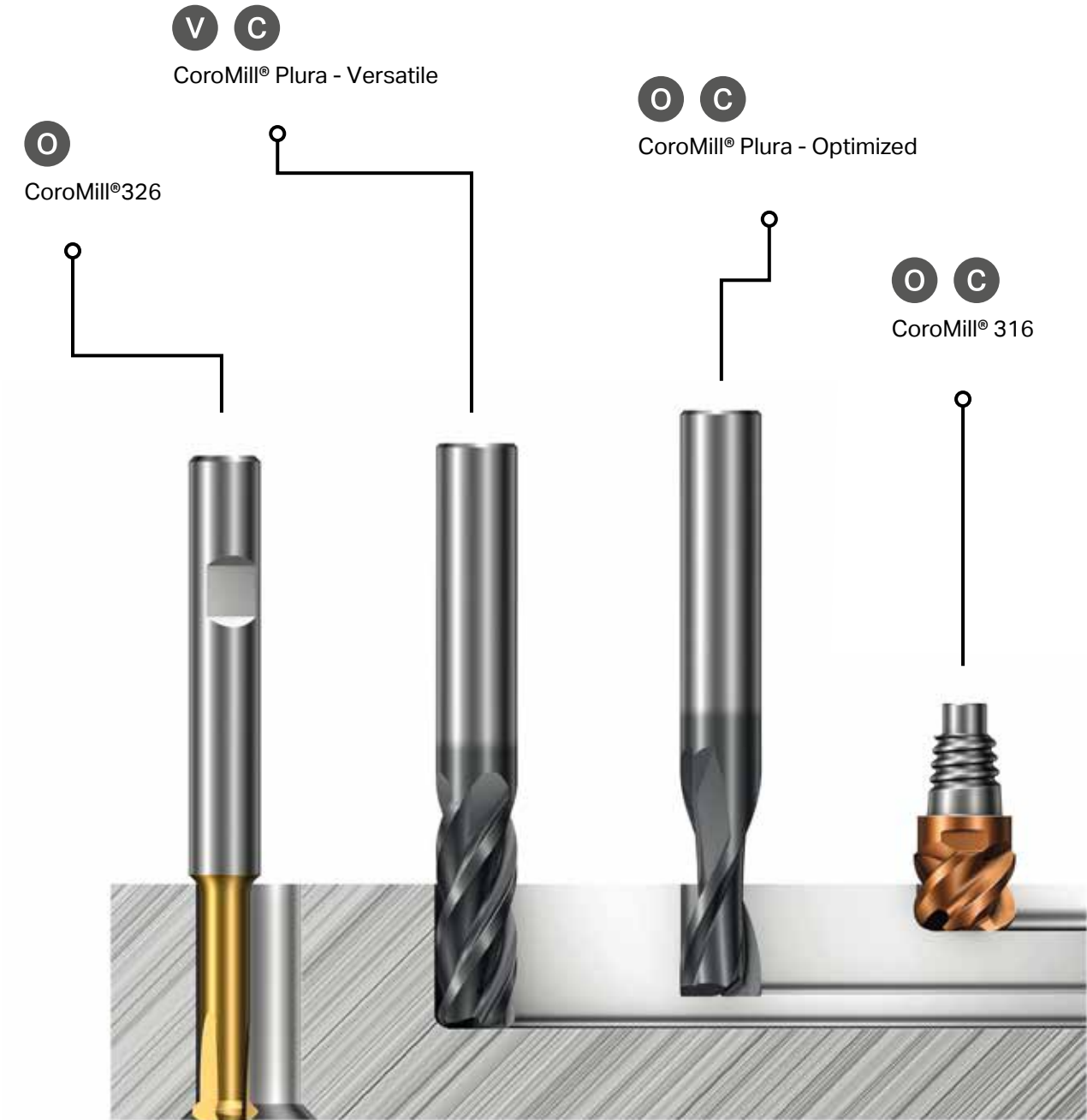
- A unique tool customized for your application
- Advanced application knowledge and expert advice
- Tool that is not available in the standard offer

Choose Customized



Customized

Milling



CoroMill® Plura - Versatile

High performance end mills with high flexibility and cost efficiency



Versatile tools designed for high performance and secure machining in a variety of materials, applications, component sizes and shapes, allowing maximum machine utilization.



Application

- Heavy roughing
- Medium roughing
- Roughing with chip breaker
- Profiling
- Chamfer milling



For your most demanding machine utilization in various components and for variable production you need tools with the highest precision, robustness and versatility. When precision, stability, and cost-efficient machining is paramount a CoroMill Plura Versatile is your first choice.

ISO application area:



Product range

- Selected high quality grades for all materials and conditions
- Robust geometries smartly designed to adapt in different milling applications
- Cylindrical and Weldon shank options
- Straight, with and without chip-dividing cutting edge tool shapes
- Ball nose tools and chamfering tools
- Can be reconditioned up to three times to original specifications



CoroMill® Plura - Optimized

Top performing end mills for specific materials and applications



Optimized tools with geometries and grades for specific materials and applications, maximizing production output per time unit.



Application

- Heavy duty milling
- High feed side milling
- Stable multi-operations milling
- Large chip removal
- Hard part milling
- Composite milling
- Finishing
- Micro-milling
- High feed face milling
- Profile milling
- Roughing with chip-breaker
- Turn milling
- Thread milling



For your most quality-demanding components and difficult applications you need the highest quality tools. When close tolerances and efficient machining are paramount, a solid end mill is your choice.

ISO application area:



Product range

- Perfect combination of specific high quality grade and a sophisticated geometry for specific material and application
- Cylindrical, Weldon and shank options
- Straight, spherical and conical ball nose tools
- Roughing tools with and without chip-dividing geometry
- With and without neck, undersized shanks available
- Tools with internal coolant available
- Can be reconditioned up to three times to original specifications



CoroMill® 316

Roughing to finishing

Application

- Slot milling
- Helical interpolation
- Shoulder milling
- Profile milling
- High feed face milling
- Chamfer milling



ISO application area:



Product range

- Tools with high feed capability
- Chip-breaker geometry
- Tools with internal coolant
- Geometries for roughing to super-finishing
- Wide assortment of shanks and integrated machine adaptors



Coromant EH coupling

The Coromant EH coupling provides reliability and accuracy between the head and the shank. It is easy to handle and the head can be changed in a few seconds.



CoroMill® 326

Internal threading and chamfering in small holes

Application

- Internal thread milling
- Chamfer milling



ISO application area:



Features and benefits

- Three cutting edges for productivity
- Chamfering and back-chamfering of holes with one tool
- Very high precision and low cutting forces
- Same tool for different pitches
- One grade for all materials
- Partial thread profiles for flexibility



Chamfering

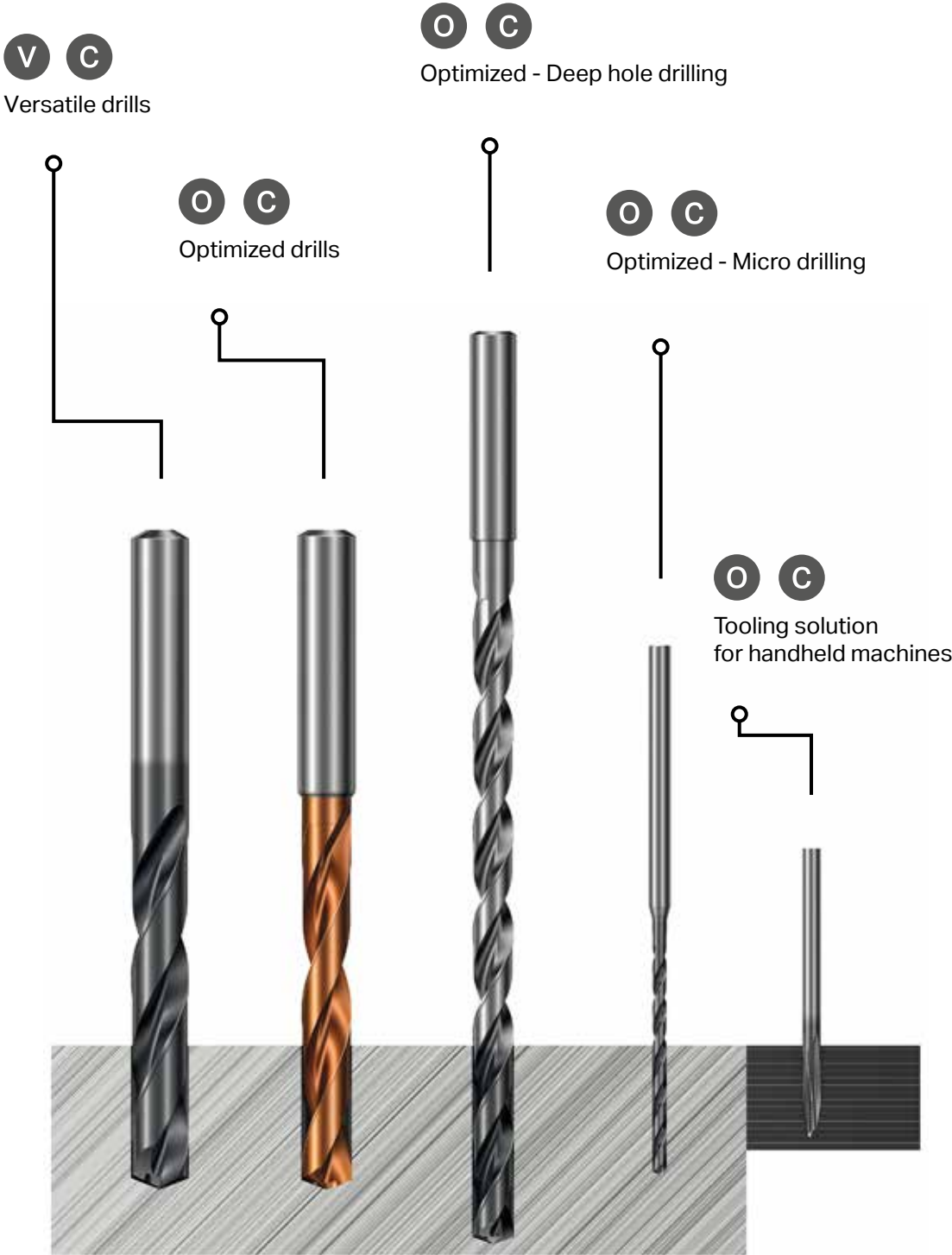


Threading

Use CoroChuck™ 930 to maintain efficient production through quick and easy tool set ups and changes.



Drilling



CoroDrill® 460

Versatile high-performance solid carbide drills



Application

- For a wide range of materials in all industry segments, e.g. general machining, die and mould, automotive, energy and power generation
- Internal and external coolant

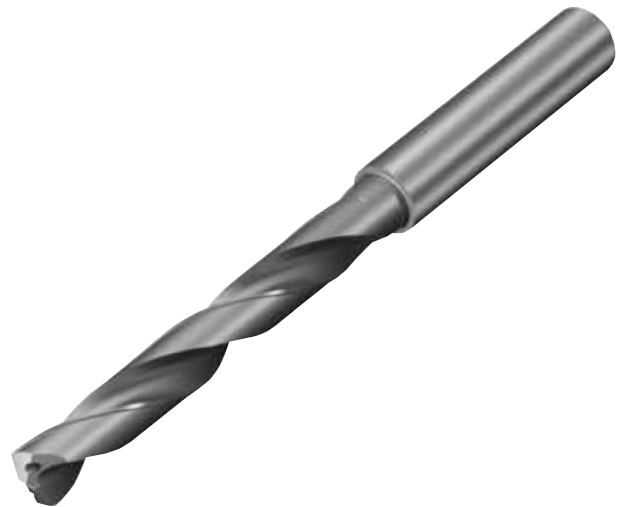


ISO application area:



Features and benefits

- High productivity and consistent tool life
- Exceptional value with no compromise on quality
- Excellent hole quality
- Reduced tooling costs
- Can be reground up to three times, extending tool life even further
- 20 Bar coolant pressure



Recommendations

Designed to be used with high precision shrink fit collet of a hydraulic chuck. This will further promote good hole quality, reduced radial run-out and extended tool life

Use internal coolant for optimal cutting efficiency and chip evacuation, resulting in higher productivity

Use CoroChuck™ 930 to maintain efficient production through quick and easy tool set ups and changes.



CoroDrill® 860

High performance drills optimized for steel, stainless steel and aluminium



Application

860-PM: Long- and short-chipping steel materials, such as unalloyed steels, low carbon steels, low-alloy steels, high-alloy steels and steel castings.

860-MM: Long-chipping stainless steel materials such as austenitic, super austenitic, ferritic and duplex stainless steels.

860-NM: Non-ferrous materials, such as aluminium alloys, magnesium and copper based alloys including bronze.

For nickel-based and titanium-based alloys, use CoroDrill R846.



ISO application area:



Features and benefits

- Optimized cutting data
- Low cost per hole
- Improved performance reliability
- Trouble-free chip evacuation
- Long tool life, controlled wear formation
- Consistent hole tolerance
- Can be reconditioned up to 3 times to its original specification



Recommendations

It is recommended to use internal coolant, minimum recommended pressure 20 bar.

Use CoroChuck™ 930 to maintain efficient production through quick and easy tool set ups and changes.



CoroDrill® R840

Problem solver for difficult applications



Application

- Conventional drilling, stack drilling, step- and chamfer, angled surfaces, cross hole and thread holes
- High precision applications in various materials



ISO application area:



Features and benefits

- Secure and predictable solution with minimized run-out
- Close hole tolerances
- Regrindable
- Suitable for a large range of materials
- With or without through coolant
- Robust geometry and grade for all materials

Recommendations

Stable tool holding with CoroChuck™ 930
20 bar coolant pressure
Rigid workpiece clamping



Use CoroChuck™ 930 to maintain efficient production through quick and easy tool set ups and changes.



CoroDrill® 861

High stability deep hole drilling up to 30 x DC



Application

- Achievable hole tolerance H8-H9
- Drilling depths: 12-30 x drill diameter
- Clamp with high precision chucks only
- A wide range of workpiece materials
- Conventional drilling, cross holes, angled faces
- Automotive: crankshafts, engine blocks, cylinder heads
- 20 bar coolant pressure

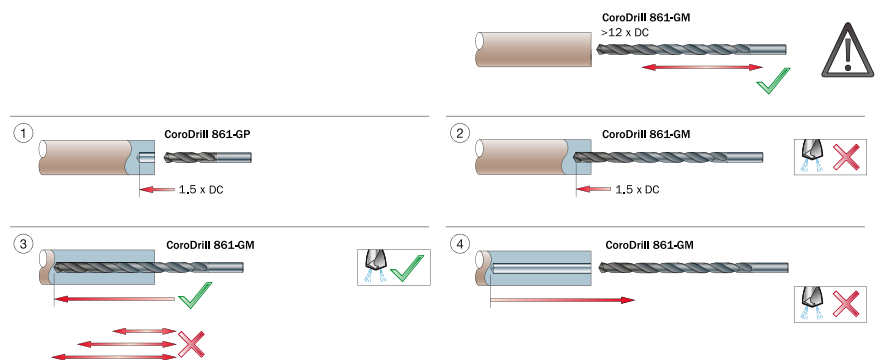


ISO application area:



Features and benefits

- Specially designed point geometry, helps reduce thrust forces
- Consistent edge preparation, protects the cutting edge from premature chipping and flaking
- Double offset margin patented geometry offers greater stability to the drilling operation
- Internal coolant holes deliver coolant directly to the tip of the drill even at deep drilling depths
- Can be reconditioning to tools original specification, for extended tool life



Use CoroChuck™930 with your CoroDrill 861 to maintain efficient production through quick and easy tool set ups and changes.



CoroDrill® 862

Solid carbide drill with internal coolant supply for micro holes



Application

- Achievable hole tolerance: H8–H9
- Suitable for all materials
- Drill lengths: 8–12 × drill diameter



ISO application area:



Features and benefits

- High performance in steel, stainless steel, cast iron and aluminium
- Engineered tool geometry and surface treatment for efficient chip removal
- Good hole entry and exit, tight hole tolerance
- ACM (Advanced Chip Management) flute geometry for small and manageable chips
- Specially designed point geometry reduces thrust forces
- Smooth drill surface enables fast and efficient chip evacuation
- Internal coolant holes deliver coolant directly to the tip of the drill even at deep drilling depths



Use CoroChuck™930 with your CoroDrill 862 to maintain efficient production through quick and easy tool set ups and changes .



CoroDrill® 854

Solid carbide drills for CFRP materials



Application

- CFRP fiber-rich materials
- CFRP/Aluminum stacked materials
- High quality holmaking in composite
- For fiber-rich CFRP with geometry optimized to reduce splintering and fraying



ISO application area:



Features and benefits

- The geometry design with spurs is developed to successfully reduced fraying and splintering
- CoroDrill 854 are introduced in grade NB20C, a diamond coated solid carbide grade that provides long tool life in these abrasive materials.



Use CoroChuck™ 930 to maintain efficient production through quick and easy tool set ups and changes.



CoroDrill® 863

Drills for CNC, ADU and Robotic machines
in aerospace assembly materials

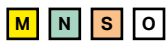


Application

- CNC and ADU operations
- CVD, PCD and carbide options available
- Material types: composite, aluminium, titanium, heat resistant super alloys and stainless steel



ISO application area:



Features and benefits

- Low-thrust geometries reduce hole delamination and exit burr
- Stocked items are perfect for testing capability in specific applications
- Point geometry of CFRP cutters can successfully exit woven and unidirectional CFRP



Assortment

- CoroDrill 863® - O: Designed for long life in CFRP stacks
- CoroDrill 863® - OS: Designed for good chip management in CFRP/Titanium stacks
- CoroDrill 863® - N: Designed for high speed machining in aluminum stacks
- CoroDrill 863® - MS: Designed for hard metal stack applications

CoroDrill® 452

Solid carbide drills, reamers and countersinks

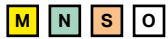


Application

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



ISO application area:



Features and benefits

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



A family of tools for rivet and bolt holes. Options such as step drills, reamers and countersinks are available.

Assortment

- CoroDrill® 452.1-C: Designed for drilling CFRP stacks
- CoroDrill® 452.1-CM: Designed for drilling CFRP/metal stacks
- CoroDrill® 452.R-CM: Designed for reaming CFRP/metal stacks
- CoroDrill® 452.C1: Designed for countersinking CFRP

Tapping

O C

CoroTap™ 100

- Taps with straight flutes
- Mainly used for short chipping materials like cast iron
- Suitable for both through and blind holes

V O C

CoroTap™ 300

- Taps with spiral flute grinding
- The spiral flute transports the chips out of the hole
- Best option for blind holes

V O C

CoroTap™ 200

- Taps with spiral point grinding
- Pushes the chips forward
- Used for through holes

V O C

CoroTap™ 400

- Taps that form the thread instead of cutting
- For both through and blind holes
- Available with and without oil grooves



CoroTap™ 100

Cutting tap with straight flutes for through holes and blind holes

Application

- Taps optimized for specific materials
- For both through- and blind holes
- Depths up to 2.5 x diameter
- Tolerances ISO K: 6H, 6HX, 2B, 2BX, 3B
- Tolerances ISO N: 6H
- Tolerances ISO H: 6H, 6HX



Features and benefits

- Three coolant holes for optimized strength
- Five flutes to reduce load on cutting edges and to reduce wear
- Unique grade with higher hardness to reduce wear on coating and substrate
- For ISO N materials: taps with interrupted threads for reduced torque

- Taps with straight flutes
- Mainly used for short chipping materials like cast iron
- Suitable for both through and blind holes
- Flute mainly used for cutting fluid but with internal coolant, chip evacuation is also possible

Use CoroChuck™ 970 for synchronized tapping as a first choice. The versatile CoroChuck 970 is designed for a stable and precise tapping process in all materials.



CoroTap™ 200

Spiral point tap for through holes

Application

- Only for through holes
- Available in many thread forms and standards
- Up to 3xD depending on materials



ISO application area:



Features and benefits

- Chamfer B (3.5-5 threads) for high process security
- Edge treatment for reduced axial force and torque makes the tool run more smoothly, reduces risk of cutting-edge chipping and improves surface quality, tool life and chip formation
- High speed powder steel taps for improved strength, wear resistance and tool life
- Different coatings and grades are available



Use CoroChuck™ 970 for synchronized tapping as a first choice. The versatile CoroChuck 970 is designed for a stable and precise tapping process in all materials.



CoroTap™ 300

Spiral flute tap for blind holes

Application

- Suitable for blind holes
- Available in many thread forms and standards
- Depths up to 3 × diameter



ISO application area:



Features and benefits

- The design of the spiral flute secures a constant rake angle and gives a constant cutting process
 - Back chamfer, used on taps with high helix angle, reduces torque and chipping
 - Taps with high spiral angle give excellent chip evacuation and possibilities to thread up to 3 × diameter in blind holes
 - Taps with low spiral angle give strong edges and are suitable for tapping tough materials, generating short chips in blind holes
 - High speed powder steel taps for improved strength, wear resistance and tool life
 - Solid carbide taps for long tool life and high productivity
-
- Taps with spiral flute grinding
 - The spiral flute transports the chips out of the hole
 - Best option for blind holes
 - Different helix angle for different applications
 - Flute used for both cutting fluid and chip evacuation
 - Different threading depths due to application and geometry

Use CoroChuck™ 970 for synchronized tapping as a first choice. The versatile CoroChuck 970 is designed for a stable and precise tapping process in all materials.



CoroTap™ 400

Forming tap for through holes and blind holes

Application

- Suitable for both through holes and blind holes
- Available in many thread forms and standards
- Depths up to $3.5 \times$ diameter



Tailor Made

ISO application area:



Features and benefits

- Chamfer C (2-3 threads) and chamfer E (1.5-2 threads).
Chamfer E mainly used in blind holes with low clearance
 - High speed steel with cobalt taps for improved wear resistance
 - High speed powder steel taps for improved strength, wear resistance and tool life
-
- Taps that form the thread instead of cutting
 - A chip-free solution
 - All materials not suitable since there is need of certain ductility. Recommended tensile strength limit is 1200 N/mm^2
 - For both through and blind holes
 - Available with and without oil grooves



Use CoroChuck™ 970 for synchronized tapping as a first choice. The versatile CoroChuck 970 is designed for a stable and precise tapping process in all materials.

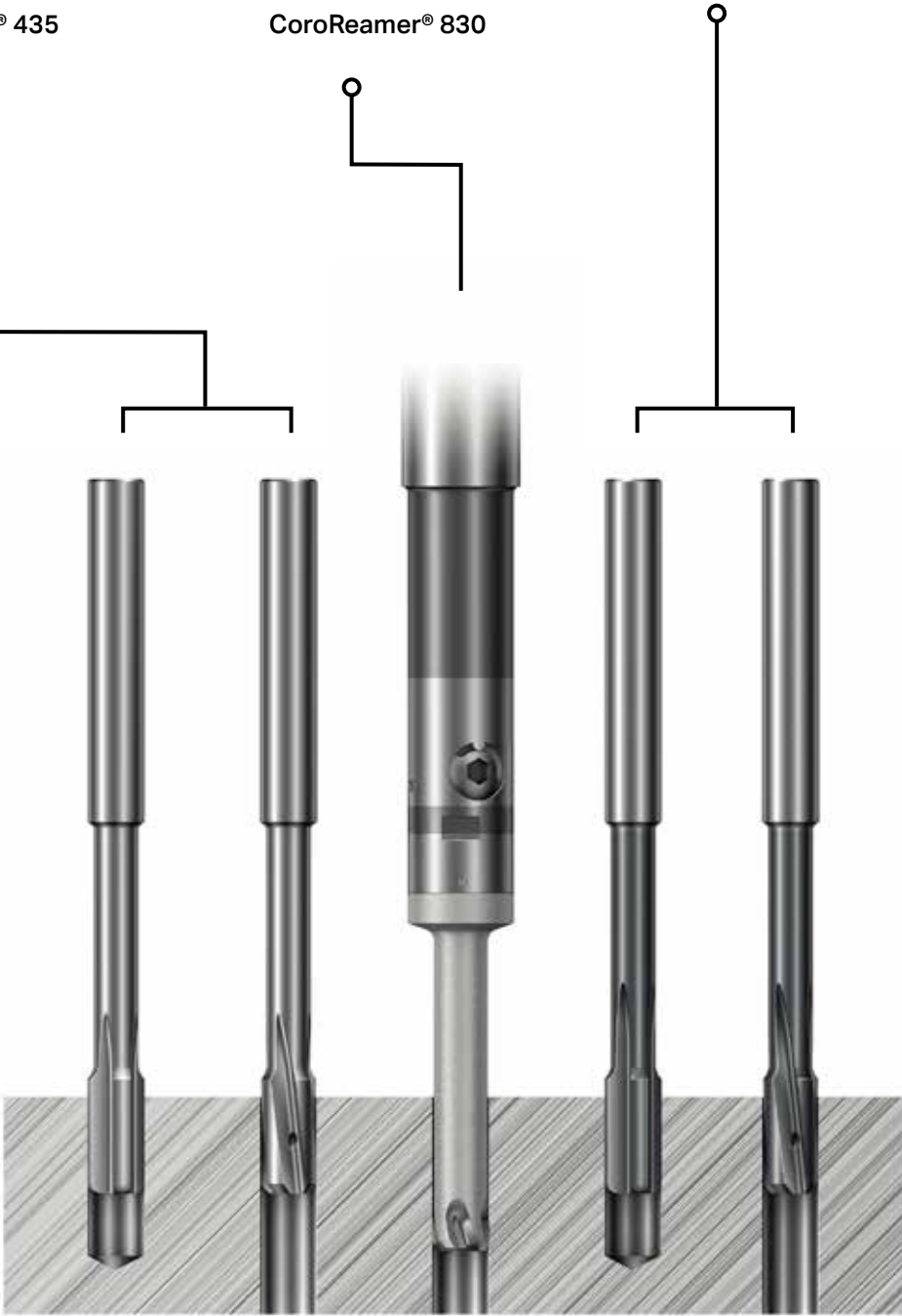


Reaming

V C
CoroReamer® 435

O
CoroReamer® 830

O C
CoroReamer® 835



CoroReamer™ 435

Flexible and high-performance reamer, suitable for a wide range of materials



Features and benefits

- High productivity due to high cutting parameters
- Consistency and productivity saving time and costs
- Excellent surface finish on the component
- Uniform concentricity for long tool life and dimensional accuracy
- High stability due to the solid carbide body
- Internal coolant for better chip evacuation and reduced wear



ISO application area:



Product range

- Achievable hole tolerance: H7
- Available in spiral flute for through holes and straight flute for blind holes
- 20 bar coolant pressure

Versatile tools designed for high performance and secure machining in a variety of materials, applications, component sizes and shapes, allowing maximum machine utilization.

Flute geometry with extremely unequal flute spacing

Extremely unequal flute spacing means that the divide is not the same for each tooth. As there are no teeth diametrically opposite each other, the reamer produces a hole with improved hole roundness variance.

Through hole Blind hole



CoroReamer™ 835

High performance reamer for steel and stainless steel



Application

- For all industry segments e.g. general machining, die and mould, automotive, energy and power generation
- Available in spiral flute for through holes and straight flute for blind holes
- Through holes, angled surface and cross hole
- 20 Bar coolant pressure



ISO application area:



Features and benefits

- High productivity due to high cutting parameters
- Consistency and productivity saving time and costs
- Excellent surface finish on the component
- Uniform concentricity for long tool life and dimensional accuracy
- High stability due to the solid carbide body
- Internal coolant for better chip evacuation and reduced wear
- Micro-grained carbide for high hardness and toughness
- Flute geometry with extremely unequal flute spacing



Flute geometry with extremely unequal flute spacing

Extremely unequal flute spacing means that the divide is not the same for each tooth. As there are no teeth diametrically opposite each other, the reamer produces a hole with improved hole roundness variance.

Through hole

Blind hole



CoroReamer™ 830

High feed exchangeable-head tool for through holes

Application

- For all industry segments e.g. general machining, die and mould, automotive, energy and power generation
- Available in spiral flute for through holes and straight flute for blind holes
- Achievable hole tolerance: H7
- 20 Bar coolant pressure

ISO application area:



Features and benefits

- High surface finish and operation security
- High penetration rate
- Fast and easy head change with high accuracy <math>< 3 \mu\text{m}</math> (120 μinch)
- Effective chip evacuation by directing cutting fluid at each edge
- Achievable hole tolerance: H7
- Brazed cermet inserts in grade P10R
- Short and long shank options
- Head change

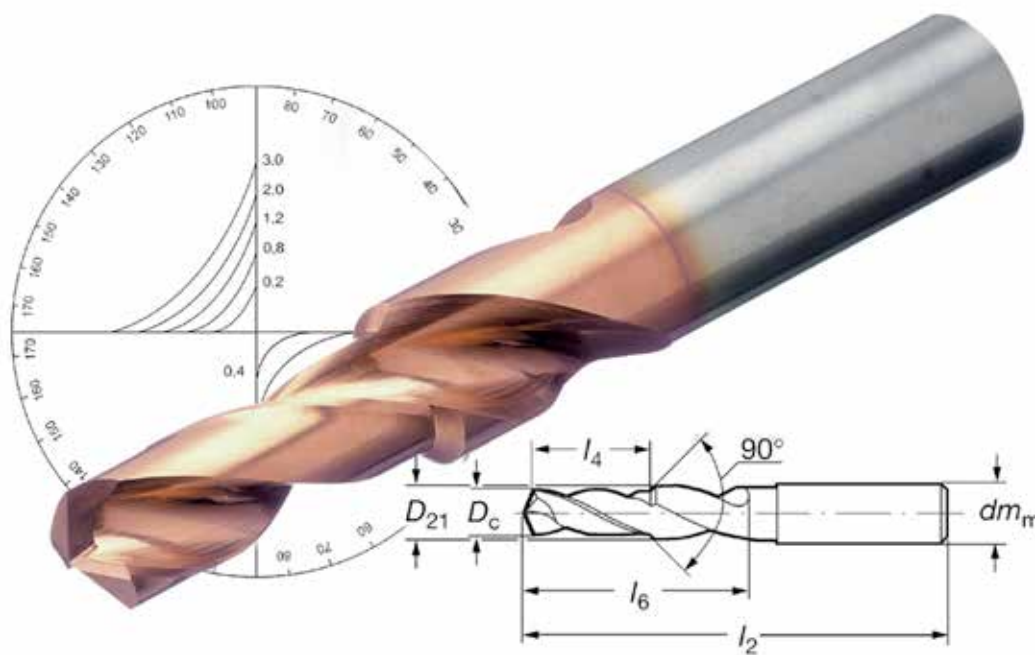


Customized Solutions



Customized

If your required product solution is not within our standard assortment, we have the expertise to individually engineer, design and manufacture a bespoke product that meets your specific application demands. In our Customized Solutions offer you can choose between Tailor Made or Advanced Engineered, depending on your application complexity and component feature.

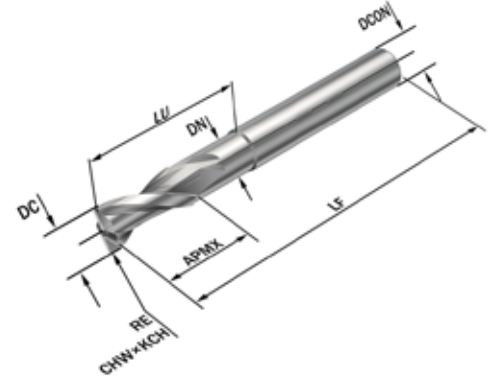


To learn more about Customized Solutions and order your tools, visit www.sandvik.coromant.com/solidroundtools/customized

Tailor Made



With our Tailor Made range we believe to have created an offer that meets the requirements for most of your needs. Whether it is an alternative diameter, length, shank or other feature required our Tailor Made offer delivers the highest quality and is matched with a swift delivery.



To order: Contact your local Sandvik Coromant representative or visit www.sandvik.coromant.com/tailormade

Advanced Engineered

In cases where the Tailor Made offer does not meet your demands due to application complexity or a specific component feature, based on Sandvik Coromant's expertise and in cooperation with you we can engineer, design and manufacture a bespoke product for your application needs.



To order: Contact your local Sandvik Coromant representative



Reconditioning

We offer more than just traditional „regrinding“.
 With our reconditioning service we guarantee repeated original performance of your tools to reduce your cost per application.

Our offer



100%

Reliability

Our specialists are available for you with support and know-how.



x3

Original performance

The original tool quality is guaranteed - up to three times.

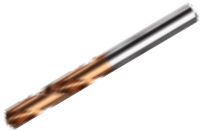


50%

Savings

With reconditioning you can reduce your tool costs up to 50%.

Products in service



Drilling



Milling



Reaming



As indicated by the reconditioning symbol on family and product pages.

Additional information



Reconditioning box

The box can be ordered in two sizes

- Small (300 x 200 x 138 mm)
Article number: 6949557
 - Medium (400 x 300 x 138 mm)
Article number: 6949558
- All Sandvik Coromant tool types can be shipped in same box.



Reconditioning service

- Prior to reconditioning, an inspection will determine if your tool can be reconditioned. Non-reconditionable tools will be returned
- A laser mark on the tool shank indicates each reconditioning service performed
- The tools are delivered back in original packaging



What happens with your tools?

- Complete geometry restoration
- Drill length is reduced
- End mill diameter and length are reduced
- Minimum diameter is about 0.9xDc
- Reamer diameter tolerance is maintained

Ifind

Our most practical tools collected for your convenience

You are online, you are on the move and you are in the workshop. Wherever you are, you can access the features you need through the Ifind app.

The app will help you find tools, solutions or the information you need for your activities. You can get tool recommendations, you can make purchases, track your order, and even educate yourself. What do you want to do today?

Everything you find in the Ifind app is available on any device.



To order your tools...

There are many ways to find the complete assortment and to order your tools. Use this catalogue or find our complete assortment on our web. Also, in our digital library Publications you can find our latest catalogues and brochures in digital format.



www.sandvik.coromant.com

Find the latest assortment on our website.



Publications

The digital library is available both online and offline at www.sandvik.coromant.com/publications

We are always here for you!

Our ambition is to make it easy for you to find and order the right tool. Do not hesitate to contact Sandvik Coromant representative if you do not find what you need. Whether it is a customized tool you need or a particular service that you are looking for - we are just a call away!

Local support is just a click away

www.sandvik.coromant.com



Contact your local Sandvik Coromant representative

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

C-1040:223 en-GB © AB Sandvik Coromant 2018
Printed on recycleable paper. Printed in Sweden by Elanders.

SANDVIK
Coromant

CoroDrill[®] 400, CoroDrill[®] 430 and CoroTap[™] for ISO N

Optimized for aluminium

Drills and taps optimized for aluminium

Automotive manufacturers are increasingly turning to aluminium components to reduce weight. To support demand, Sandvik Coromant has introduced drills and taps with new grades optimized for ISO N.

These tools belong to the optimized solutions offer within the solid round range. Optimized solutions feature a unique line of refined tools for specific needs that provide extreme efficiency, reliability and durability. These tools are ideal for large to medium batch production.

www.sandvikcoromant.com/solidroundtools/optimized



Optimized

Key benefits

CoroDrill[®] 400 and CoroDrill[®] 430

- High productivity
- Low cost-per-hole
- Long and more consistent tool life
- High repeatability
- Improved process security
- Great technical support

Key benefits

CoroTap[™] 100, 200, 300 and 400

- Tools dedicated for aluminium components
- Optimized tool provides significantly longer tool life
- Ideal for large to medium batch production
- A unique line of refined tools for specific needs that provide extreme efficiency, reliability and durability

Automotive solutions for aluminium and cast iron

Complete range of tools for ISO N and ISO K

Drill aluminium with CoroDrill® 400 (carbide or PCD) or CoroDrill® 430 (carbide) for ISO N

- Complex, multi-step form drills in straight flute and 3-flute geometries
- Optimized features, including polished flutes and precision coolant holes
- Standard and Tailor Made options available

Thread aluminium with CoroTap™ 100, 200 or 300 cutting taps for ISO N or CoroTap™ 400 forming tap for ISO N

- High speed cobalt (HSS-E) and high speed powder (HSS-PM) for wear resistance
- Standard and special coating options

Drill cast iron with CoroDrill® 400 or CoroDrill® 430 for ISO K

- Supported by customized solutions

Thread cast iron with CoroTap™ 100 for ISO K

- Standard and customized solutions available

For more information please contact your local Sandvik Coromant representative.

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

C-1040:230 en-GB © AB Sandvik Coromant 2018

The Sandvik Coromant logo consists of the word "SANDVIK" in a bold, red, sans-serif font, positioned above the word "Coromant" in a smaller, black, sans-serif font. Both words are enclosed within a thin red rectangular border.

SANDVIK
Coromant

CoroDrill® 880



Boost your production economy

Indexable drills are truly cost efficient, and with the reinforced CoroDrill® 880 you can really boost your production economy.

The enhanced drill body is up to 30% stiffer than its predecessor for applications of four to five times the drill diameter. This gives you a more reliable drilling experience and a much better hole quality.

Combine this experience with the new grade chain for steel and cast iron for improved insert tool life. Two of the insert grades are designed with Inveio™ coating for better wear resistance, while the third, optimized for tough machining conditions, has a thin PVD coating with excellent edge-line properties. These three grades complete the full grade chain with solutions for all materials and a large variety of applications.

The new grade positioning is designed to make it easier to select the right grade from the start.



Patrik Pichler
Global Product Manager,
indexable short hole drills

Application

The CoroDrill 880 product range covers hole diameters from 12 to 84 mm (0.472-3.307 inch) off the shelf, as well as engineered solutions up to 129 mm (5.078 inch). The drills produce holes with tolerances of H12-13 and are suitable for holes up to five times the drill diameter.

Avoiding undersized holes

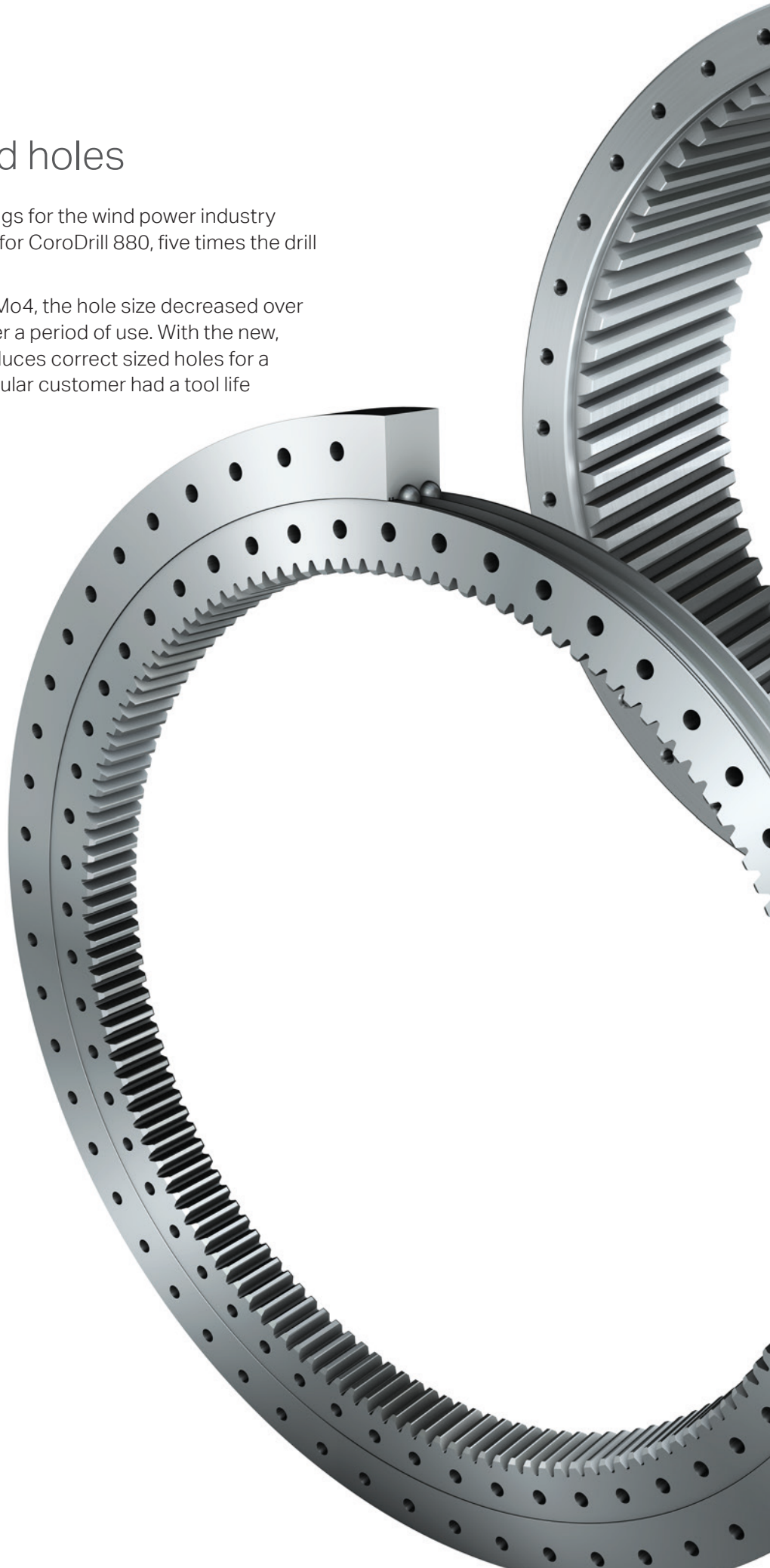
A customer manufacturing slewing rings for the wind power industry tried the new and improved tool body for CoroDrill 880, five times the drill diameter.

With the old tool body, drilling in 42CrMo4, the hole size decreased over time providing an undersized hole after a period of use. With the new, stronger tool body, CoroDrill 880 produces correct sized holes for a much longer period of use. This particular customer had a tool life increase of 975%!

Did you know...

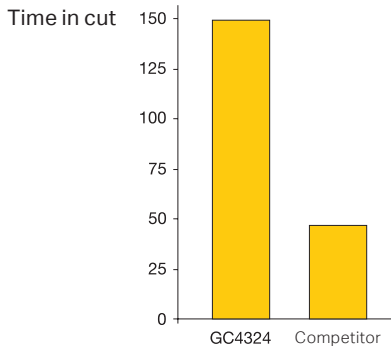
... that with the new GC4344 at hand, you now have a complete grade chain available for steel and cast iron.

- GC4324: Productivity booster for stable conditions
- GC4334: First choice for good to average conditions
- GC4344: Excellent performance in difficult conditions



Automotive

CoroDrill 880 provides a smooth drilling process for components like wheel suspension arms, flanges and many more. A customer drilling through holes in a wheel suspension arm replaced the existing insert grade to the new GC4324 with Inveio coating. Thereby, tool life increased by more than 200%.

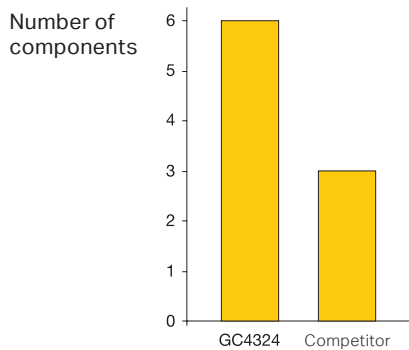


Oil and gas

Both large and small diameter holes are usually required in the oil and gas industry. CoroDrill 880 is available for 65.00–84.00 mm (2.559–3.307 inch) holes, with rigid cartridge design and fast deliveries worldwide.

Power generation

A power generation customer producing through holes in a flange. The hole diameter was 39 mm (1.535 inch). With the same cutting data, the tool life was increased by 100% compared to the existing solution.

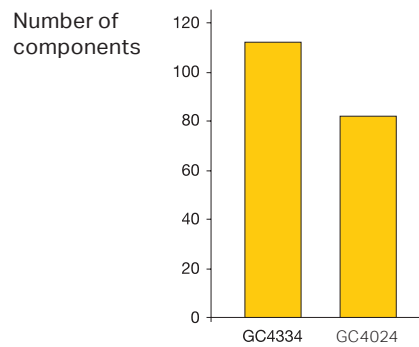


Pump and valve

A customer producing valve bodies in various sizes exchanged his existing solution to GC4324. Thanks to the switch, the customer increased penetration rate by 30% and the number of produced components by more than 200%.

Mechanical engineering

Through holes are common features for a number of components. A customer decided to use our first choice GC4334 instead of existing GC4024 for his internal gear ring. With the same cutting data, the customer perceived a tool life increase of 30%.



Bringing you the best combination of process stability and productivity

CoroDrill 880 provides high performance in most materials. With a reinforced drill body and new insert grades with a central insert featuring Step Technology™, your machining is characterised by a smooth step-by-step entrance into the workpiece, excellent cutting force balance and efficient chip evacuation.

CoroDrill 880 is also available for larger holes, equipped with replaceable rigid cartridges for high reliability, flexibility and process security.

Benefits

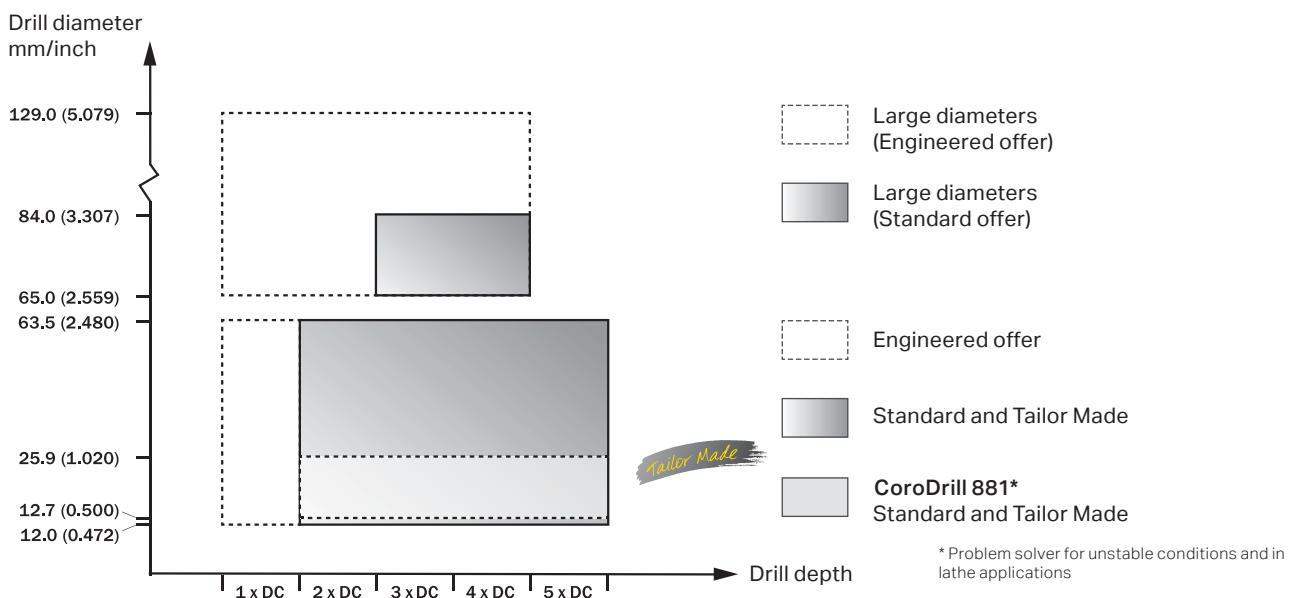
- Up to 100% productivity increase
- Four true cutting edges and long insert tool life
- Wiper technology, providing excellent surface finish or improved productivity
- Excellent chip control and evacuation

Tailor Made

Tailor Made available in intermediate sizes with different connection types within the assortment range. Step and chamfer drills are also available as Tailor Made.

Choosing the right drill and insert

There is a large assortment of CoroDrill 880 off the shelf, with overnight delivery, as well as the option to order engineered solutions designed exactly to suit your needs. CoroDrill 880 provides a number of grades and geometries for most materials and applications.



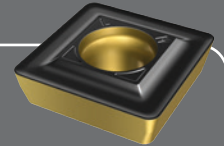
Choosing the right insert grade for ISO P and ISO K

Complete grade chain for all materials

The grade chain for CoroDrill 880 is designed to suit a large variety of materials and applications. This page will guide you to make the best choice for our new insert grades for steel and cast iron. Find the complete assortment on the web: www.sandvik.coromant.com/corodrill880.

GC4334 – first choice in ISO P and ISO K

- Grade GC4334 is the first choice in applications with good to average conditions
- Inveio technology provides a high level of wear resistance
- Long tool life and reliable wear that is easy to follow, in order to detect in advance when it is time to index the insert



Stable conditions

GC4324 – your productivity choice

- Grade GC4324 is the productivity choice in stable conditions
- Withstanding high cutting temperatures, making it suitable for high cutting speed, high feed, or long time in cut under stable conditions
- GC4324 will achieve a high level of productivity without compromising tool life, using Inveio technology



Average to difficult conditions

GC4344 – for demanding operations

- When machining in average to difficult conditions, select grade GC4344 for good edge-line properties and reliable tool life
- The PVD surface coating is optimised to provide edge-line toughness and high wear resistance



Latest technology coating for reliable operations

Inveio™

GC4324 and GC4334 have Inveio coatings, where tightly packed uni-directional crystals create a strong barrier towards the cutting zone and chip. In combination with fine-structured TiCN technology, featuring a hard, wear-resistant coating against abrasive wear, these grades also provide improved crater and flank wear resistance.

Zertivo™ technology

GC4344, produced with Zertivo™ technology, provides great edge-line security as a result of an optimized cutting-edge integrity with optimal coating and substrate adhesion properties.

You'll find it all and more online

www.sandvik.coromant.com

Products, solutions, tips and a wealth of knowledge,
just one click away!

Publications

Browse through brochures, catalogues and other printed material and get all the information you need about our tools and solutions. Access the content suite both online and offline as well.

My Pages, customized digital catalogue

Enjoy the convenience of creating your own catalogue online where you can pick and view all the products you need, review product information, save and even sort them under different application types. Seamless online shopping at your fingertips.

Newsletter

Sign up for our monthly newsletter and get the latest updates on developments and solutions delivered right into your inbox.

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

C-1040:111 ENG/01 © AB Sandvik Coromant 2015

The logo consists of the word "SANDVIK" in a bold, sans-serif font, with "Coromant" in a smaller font below it, all contained within a red rectangular border.



SANDVIK
Coromant

CoroDrill® 880

Non-ferrous materials in focus

TREND:

Less weight means less fuel

Since it takes less energy to accelerate a lighter object than a heavier one, lightweight materials offer great potential for increasing vehicle efficiency. A ten percent reduction in vehicle weight can result in a 6-8 percent fuel economy improvement. Replacing cast iron and traditional steel components with lightweight metals such as aluminium alloys or carbon fiber and polymer composites can directly reduce the weight of a vehicle's body and chassis by up to 50 percent and therefore reduce a vehicle's fuel consumption.

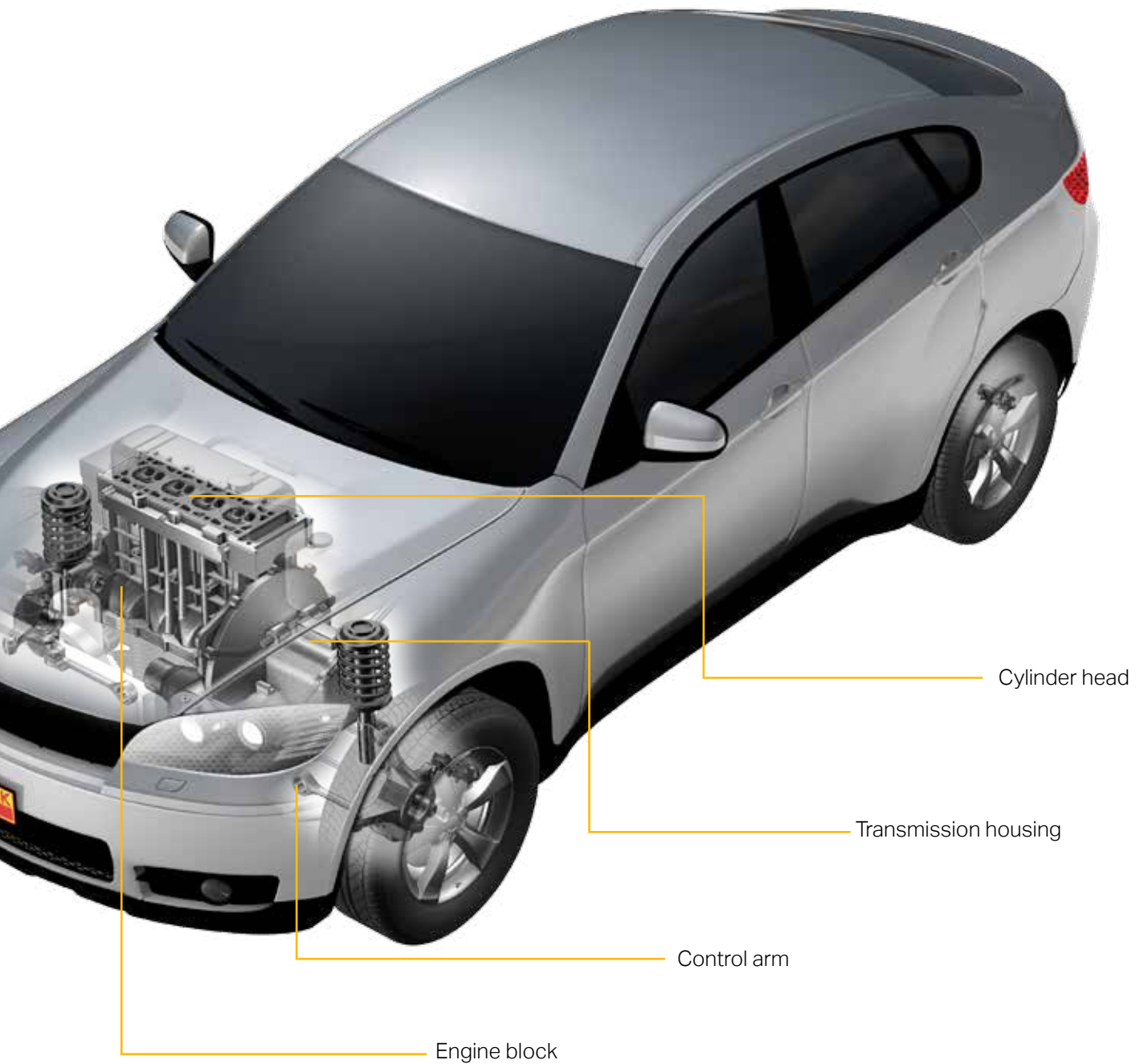


Aluminium

Non-ferrous materials contain soft metals with hardness under 130 HB, except for high strength bronzes (>225HB). Aluminium is one of the metals that belongs to this category. Pure aluminium is soft, ductile, corrosion resistant and has a high electrical conductivity. When applied to an automotive body structure, it provides weight savings of up to 50 percent compared with the traditional mild steel structure. Such weight savings allow other vehicle systems to be downsized, including the engine, transmission, suspension and wheels.

Machinability of aluminium

- When machined, aluminium exhibits a tendency to adhere to the cutting tool, which leads to build-up edge, poor surface finish and cutting tool fracture.
- Relatively easy chip control, if alloyed
- Cutting forces, and thus the power required to machine, are low
- Cast AlSi-alloys are abrasive and over-eutectic AlSi-alloys with Si-content over 12% are very abrasive



Exchanging traditional steel components with aluminium components provides up to 50% in weight reduction



Did you know?

Aluminium can be recycled continuously with no loss of its qualities. Aluminium recycling benefits present and future generations by conserving energy and other natural resources. It requires up to 95 percent less energy to recycle aluminium than to produce primary metal and thereby avoids corresponding emissions, including greenhouse gases.

With the strength of a diamond

Making holes in aluminium can be a challenging task. Aluminum is difficult to drill because its ductility and softness causes the material to make constant prolonged contact with the cutting edges of a drill. The built-up edge that is generated by the adhering aluminium makes chip formation and evacuation difficult.

CoroDrill® 880 CVD diamond coated insert grades, N124 and N134, are specifically designed for demanding drilling in non-ferrous materials. This is where the insert coating combines the super-hardness of a real crystalline diamond providing long insert tool life. Together with chip breaker designs and a unique geometry, these inserts guarantee a superior performance in non-ferrous materials.



"It's great to see how CoroDrill 880's optimized centre and periphery geometries, combined with dedicated diamond-coated grades for each insert position, deliver not only outstanding tool life and productivity but also an impressive ability to handle sticky non-ferrous metals. This really makes these tools products all-round in non-ferrous metal applications."

Gustav Grenmyr, Senior R&D Engineer

3 facts about CVD diamond coating:

1. CVD diamond is a synthetic diamond grown by CVD (chemical vapor deposition) technique.

Benefits

- Low cost per hole thanks to long-lasting insert tool life and/or productivity increase
- Productivity increase thanks to a reduced machine down time with fewer insert changes
- Easier handling in production due to the reliability of the inserts and longer insert tool life
- Good hole surface finish thanks to great resistance to built-up edge



Application area

Automotive industry: Drilling and boring in aluminium components such as cylinder blocks, cylinder heads, knuckles, housings, brake calipers, control arms, transmission cases, steering column covers and yokes.

Niche composite applications such as drilling GFRP rotor/wind mill blades.

Assortment

Insert grade	Insert type	Insert size	Geometry
N124	Peripheral insert	1-9	MS
N134	Central insert	1-9	LM

2. CVD diamond coating is grown directly on the insert substrate and is essentially a pure diamond formed as interconnected diamond microcrystallites with no binder.

3. CVD diamond has all the extreme chemical and physical properties of natural diamond and high-pressure, high-temperature (HPHT) synthetic diamond.

Customer cases

In these customer cases we have compared current uncoated insert grades with the new CVD diamond-coated insert grades.

Case 1: Front control arm

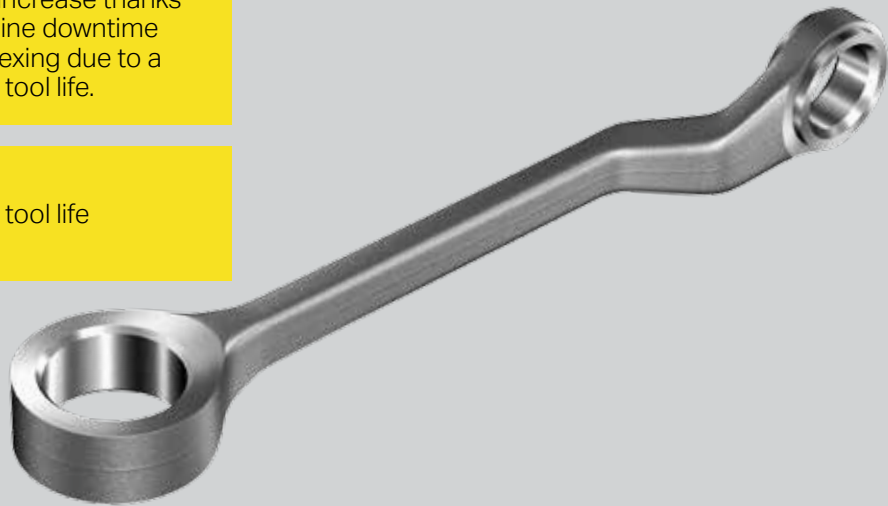
In this particular case, a through hole drilling operation was performed for machining of a front control arm.

Results for the CVD diamond-coated inserts:

17% Lower hole cost per component

10% productivity increase thanks to less machine downtime for insert indexing due to a longer insert tool life.

10 times longer insert tool life



Tips! Increase your cutting data for even better results!

Industry	Automotive
Operation	Through hole drilling
	Hole diameter; depth mm (inch): 22.5; 20 (0.886; 0.787)
Workpiece material	AlSi1Mg-T6 (N.1.3.C.AG), 150 HB

	CVD diamond-coated insert grades	Present insert grades
Central insert	880-04 03 05H-C-LM N134	880-04 03 05H-C-LM H13A
Peripheral insert	880-04 03 W07H-P-MS N124	880-04 03 W07H-P-LM H13A
Cutting data		
v_c m/min	459	459
v_f m/min	1.625	1.625
f_n mm/rev	0.25	0.25
Insert tool life, pcs	30.000	3.000

Case 2: Cylinder head

Blind hole drilling operation was performed during machining of a cylinder head component.

Results for the CVD diamond-coated inserts:



23%

Lower hole cost per component

+332%

insert tool life

+33%

productivity increase

300 h

saved production time per year

Tips! Maximize the output of your machine by combining long tool life and higher cutting data!

Industry	Automotive
Operation	Blind hole drilling
	Hole diameter; depth mm (inch): 22; 84.1 (0.866; 3.31)
Workpiece material	Aluminum 6061-T6 (N.1.3.C.AG), 90-100 HB

	CVD diamond-coated insert grades	Present insert grades
Central insert	880-04 03 05H-C-LM N134	880-04 03 05H-C-LM H13A
Peripheral insert	880-04 03 W07H-P-MS N124	880-04 03 W07H-P-LM H13A
Cutting data		
v_c m/min	276	207
v_f m/min	0,60	0,46
f_n mm/r	0,15	0,15
Insert tool life, pcs	3.024	700

More about CoroDrill[®] 880

The CoroDrill 880 range features indexable insert drills from 12 to 84 mm (0.472–3.307 inch) in diameters with drill length of 2, 3, 4 and 5×DC. The large variety of geometries and grades makes it easy to find the right and optimized solution for most materials.

With the generous Tailor Made offer it is possible to order intermediate diameter and length combinations as well as different connection types and sizes such as HSK, Coromant Capto[®], cylindrical shank.

As a Tailor Made option it is also possible to design your own step and chamfer drill especially made for your component.

Engineered solution

If your component requires special features which our standard or Tailor Made programme cannot offer, there is always a way of solving your challenges by letting us help you to develop your own engineered solution.



ISO application area

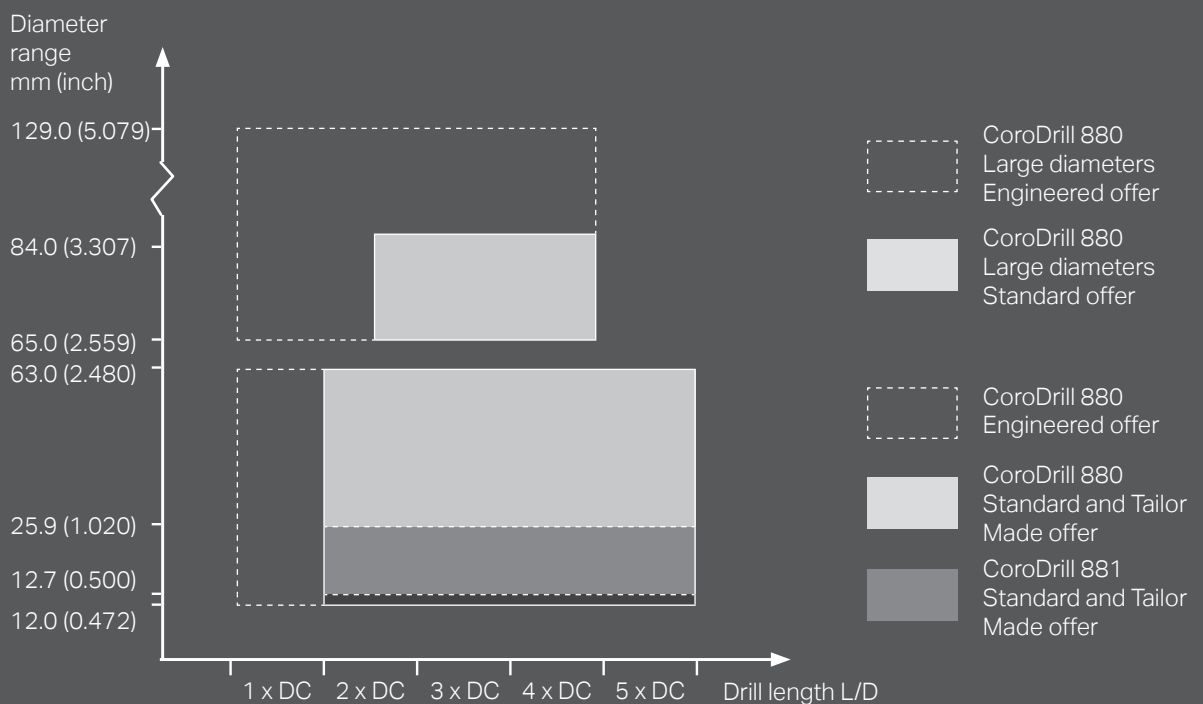


Features and benefits

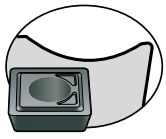
- Optimized inserts featuring geometries and coatings for high performance in most materials
- Wiper geometry for great surface finish and high feed machining possibilities
- Optimized chip channels for accelerated chip evacuation
- Excellent chip control and chip evacuation the a result of an optimized flute design

Different drilling concepts

- For hole diameters 12.00–63.50 mm (0.472–2.500 inch), use CoroDrill 880 indexable insert drill
- For hole diameters 65.00–84.00 mm (2.559–3.307 inch), use CoroDrill 880 indexable insert drill for large-diameter holes
- Complementary product for unstable conditions and non-rotating applications see CoroDrill 881

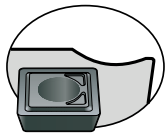


Insert geometries



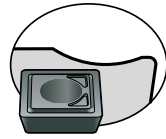
-LM, -MS

- Low to medium feed
- Light cutting
- Excellent chip control in long-chipping materials
- -LM: first choice for long-chipping materials
- -MS: sharp edge geometry optimized for stainless steel and non-ferrous metals



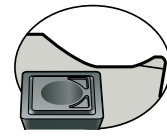
-GM

- Low to medium feed
- Light cutting
- Excellent chip control in feed area
- Low deflection



-GR

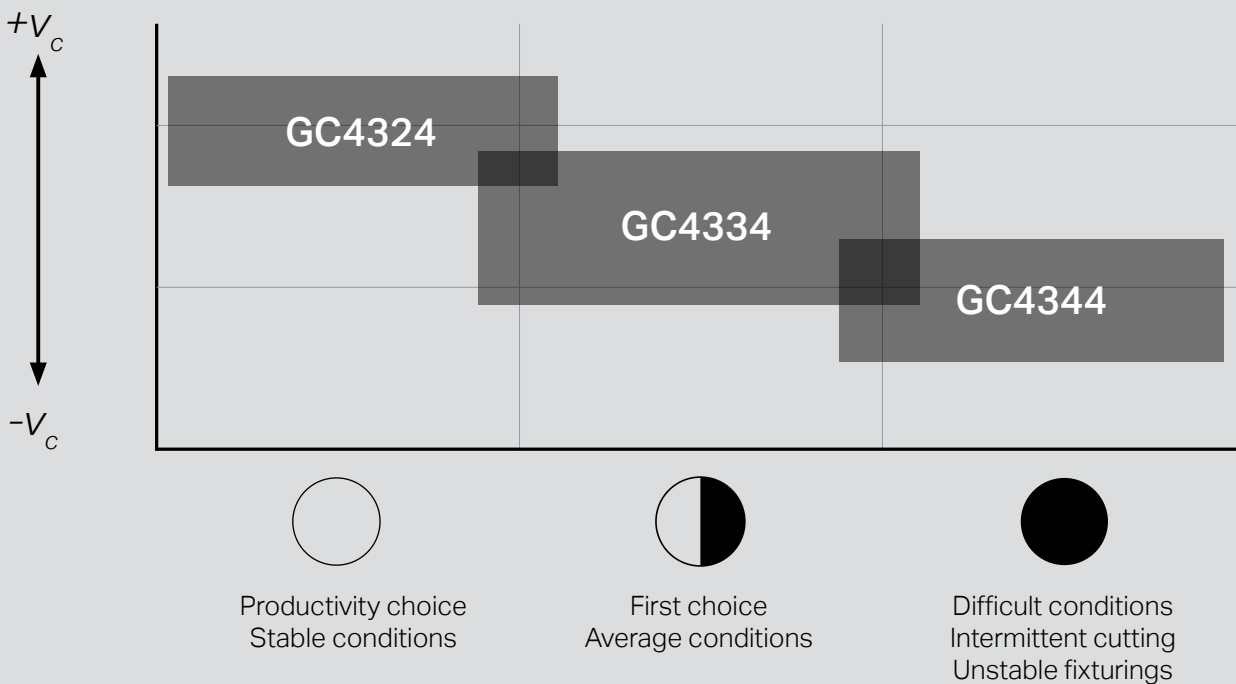
- Low to high feed
- Strong reinforced edge
- Good chip control in high feeds



-GT

- Low to high feed
- Very strong reinforced edge
- Good chip control in most materials
- First choice for unstable conditions and interrupted cuts

Peripheral insert grade positioning in ISO P and ISO K



Choose the right insert and grade combination

	First choice		Complementary choice	
	Centre insert	Peripheral insert	Centre insert	Peripheral insert
<div style="background-color: #00AEEF; color: white; padding: 5px; text-align: center; font-weight: bold; font-size: 1.2em;">P</div> <p>Low-carbon steel</p>	-LM 1044	-LM 4334	-LM 1044	-LM 4324 -LM 4344
<div style="background-color: #00AEEF; color: white; padding: 5px; text-align: center; font-weight: bold; font-size: 1.2em;">P</div> <p>Low-alloy steel</p>	-GR 1044	-GR 4334	-GR 1044	-GR 4324 -GR 4344
<div style="background-color: #FFD700; color: black; padding: 5px; text-align: center; font-weight: bold; font-size: 1.2em;">M</div> <p>Stainless steel</p>	-LM 1144	-MS 2044	-LM 1044	-LM 4344
<div style="background-color: #D62728; color: white; padding: 5px; text-align: center; font-weight: bold; font-size: 1.2em;">K</div> <p>Cast Iron</p>	-GR 1044	-GR 4334	-GR 1044	-GR 4324 -GR 4344
<div style="background-color: #2CA02C; color: white; padding: 5px; text-align: center; font-weight: bold; font-size: 1.2em;">N</div> <p>Non-ferrous metal</p>	-LM N134	-MS N124	-LM H13A	-LM H13A
<div style="background-color: #FFC107; color: black; padding: 5px; text-align: center; font-weight: bold; font-size: 1.2em;">S</div> <p>HRSA</p>	-LM 1044	-LM 4344	-LM 1144 -LM H13A	-MS 2044 -LM H13A
<div style="background-color: #A9A9A9; color: black; padding: 5px; text-align: center; font-weight: bold; font-size: 1.2em;">H</div> <p>Hardened steels</p>	-GM 1044	-GM 4344	-GR 1044	-GR 4344



www.sandvik.coromant.com/corodrill880

Head office:
AB Sandvik Coromant
E-mail: info.coromant@sandvik.com
www.sandvik.coromant.com
C-1040:196 en-GB © AB Sandvik Coromant 2017

SANDVIK
Coromant