CoroTurn® 300

Webinar

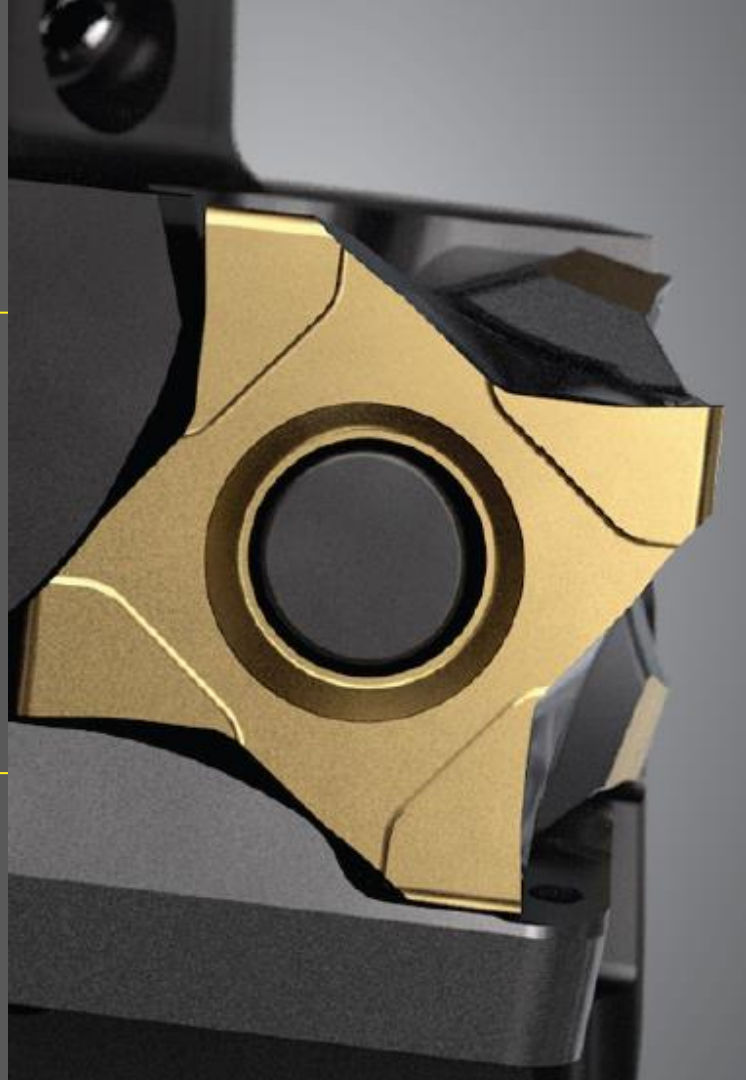
Welcome!

CoroTurn® 300

Why this introduction?

Benefits in brief

- Predictable and secure machining
- Chip control and stable performance for high component quality and long tool life
- Handling efficiency: short set-up times when changing tool holder and insert saves time and money

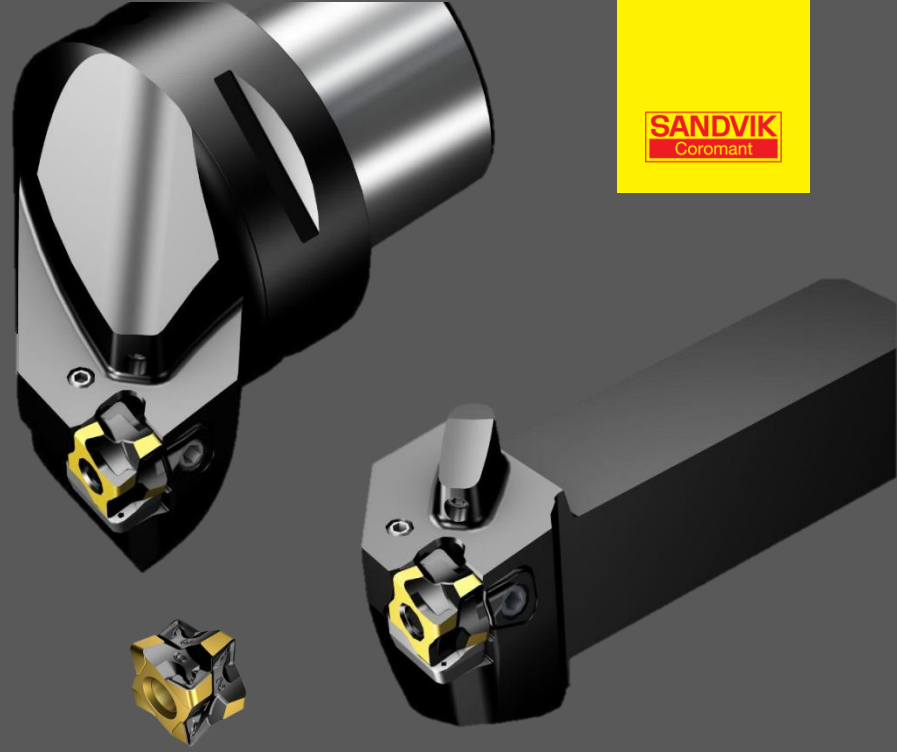


Assortment

Coromant Capto® holders
Sizes: C4, C5, C6

QS™ shanks
Sizes: 2020, 2525, 12(3/4”), 16 (1")

Inserts for steel turning:
Grades: GC4325 and GC4315
Geometries: -L4, radii 04, 08, 12 and -M5 radii 08, 12
Insert shape: 80 degree corner



Added assortment in CoroPak 16.2

Wiper inserts -M5W

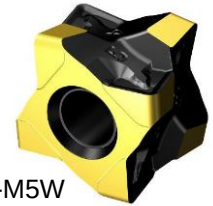
Extra fine surface with medium feeds, or same surface at double feed

Nose radii 08: feed up to 0.6 mm/rev

Nose radii 12: feed up to 0.7 mm/rev

4 new articles:

- 3-80-101108-8-M5W 4315
- 3-80-101108-8-M5W 4325
- 3-80-101112-8-M5W 4315
- 3-80-101112-8-M5W 4325



-M5W

Coromant Capto tools

Specially designed for multi-task machines

Optimized to be used with the B-axis in 45 degree angle for good stability

2 new articles:

- C5-3-80-MN00115-10C
- C6-3-80-MN00115-10C

Coromant Capto for multi-task machines

Coromant Capto® tools for multi-task machines

- Size C5 and C6
- Optimized to use with the B-axis in 45 degree angle
- Excellent stability and accessibility
- Short set-up times when changing tool holder saves time and money

Added accessory part in CoroPak16.2

Torque wrench

Big handle for comfortable tightening

Article code: 5680 074-01

H_{ex}: 3 mm

Torque: 4.5 Nm (40 inch/lbs)

Tailor Made

- Tailor Made options on tool holders
  - Coolant options: no coolant, only under coolant or only over high precision coolant
  - As shanks (2020-3232)
  - Coromant Capto® (C4 to C8)
  - Customized entering angle

Introduction assortment codes

Coromant Capto® holders:

C4	-	3	-	80	-	L	R	27	050	-	10	C
1		2		3		4	5	6	10		11	12

QS™ shank (mm)

QS	-	3	-	80	-	L	R	20	20	34	-	10	C
1		2		3		4	5	6	7	10		11	12

QS™ shank (inch)

QS	-	3	-	80	-	L	R	16	-	20	-	10	C
1		2		3		4	5	8		10		11	12

Holder:

1: Connection type (and size for Coromant Capto)

2: Family name

3: Point angle of inserts (80 degree)

4: Tool holder entering angle (L = 95 degree)

5: Positioning of cutting edge (R, L or N)

6: Shank height

7: Shank width

8: Shank size, inch (Parts of 1/16 inch)

9: Functional width in mm

10: Functional length in mm (Parts of 1/16 inch)

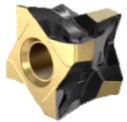
11: Insert width in mm

12: Coolant type (A = HPC, B = Under coolant, C = HPC and under coolant, No letter = No coolant)

Introduction assortment codes

Inserts:

3	-	80	-	10	11	08	-	8	-	L4
1		2		3	4	5		6		7



Insert:

1: Family name

2: Point angle of inserts (80 degree)

3: Insert width

4: Insert height

5: Insert nose radius

6: Number of edges

7: Insert geometry

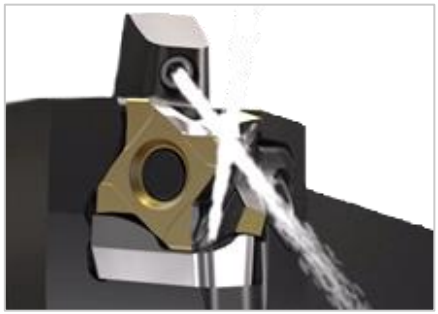
CoroTurn® 300

Technical features and benefits

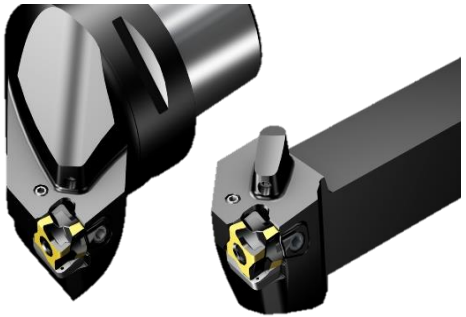
Technical features

Benefits

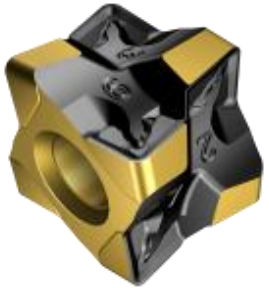
iLock™



Coolant



Quick change tool holders



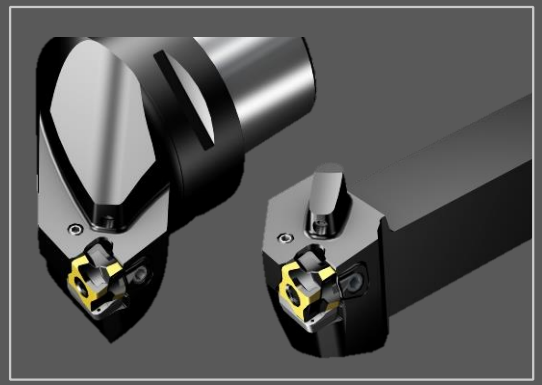
Multi-edges

Technical features

Benefits, iLock

- Stable insert clamping
  - Shim works as distance between the insert and tool holder, protecting the tool holder
  - New clamping solution with lever makes the insert to be self-locking into the tip seat and ensure a rigid seating because of fixed location points (iLock™).

Chip control and handling efficiency



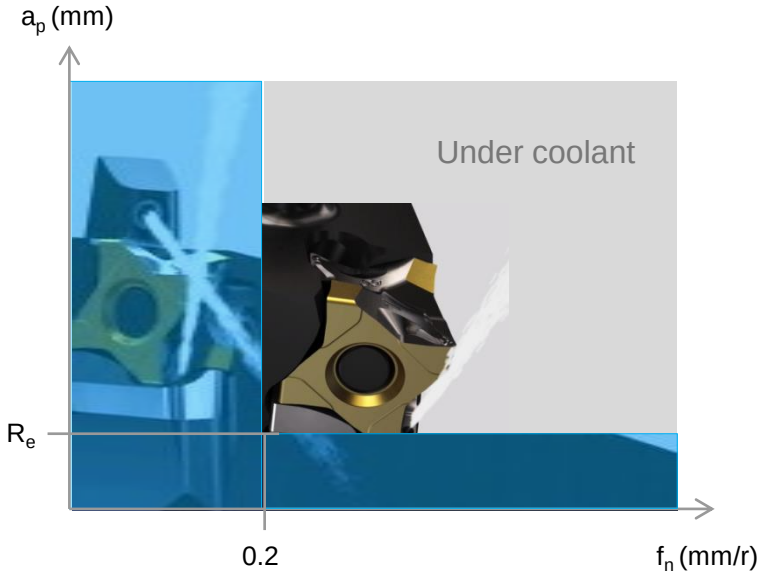
Coromant Capto® interface or QS™ shanks enable quick tool change and easy coolant connection for maximized production time

High precision coolant ensures good chip breaking for secure machining, while under coolant controls the temperature for long and predictable tool life

Technical features

When to use over and under coolant?

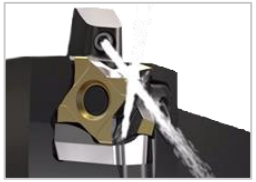
- Over coolant should be applied when machining within the blue a_p and f_n area
- Outside the blue area over coolant might cause minor edge wear and increase crater wear in ISO P
- The crater wear might be difficult to evaluate, which means unpredictable and shortened tool life compared to using under- or external coolant.



R_e = nose radii

Technical features

When to use over/ under coolant?



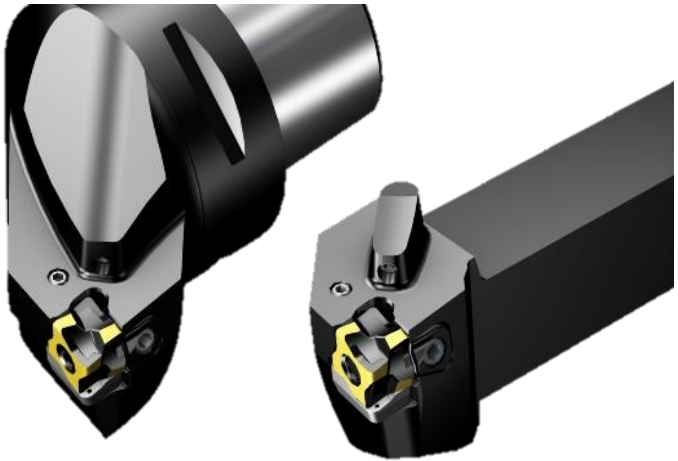
	Coolant type	P	
Finishing	Over	✓	Better chip breaking and surface finish
	Under	✓	Better tool life
Medium	Over	✗	Over coolant might have negative effect on performance (outside blue HPC area)
	Under	✓	Better tool life
Roughing	Over	✗	Over coolant might have negative effect on performance (outside blue HPC area)
	Under	✓	Better tool life

Technical features

Quick change

Tool holders with Coromant Capto interface or QS shanks

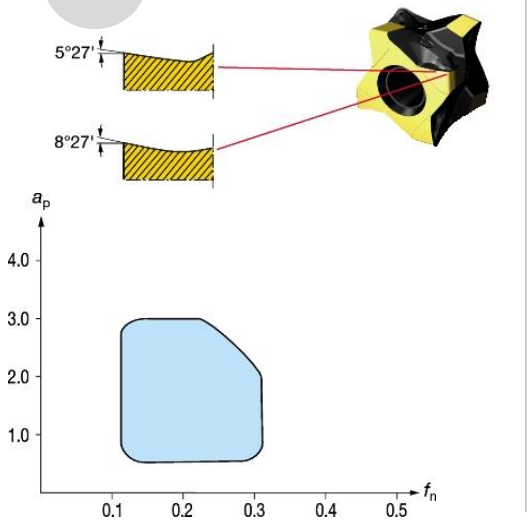
- Enable quick tool change and improved coolant connection for maximized production time
- Operate without any coolant connection tubes externally (the coolant will be going through the QS-stop or the clamping unit**)**



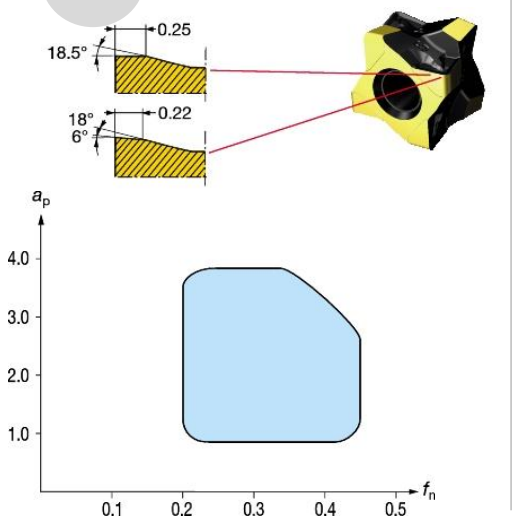
Geometry description

Cross sections and application area

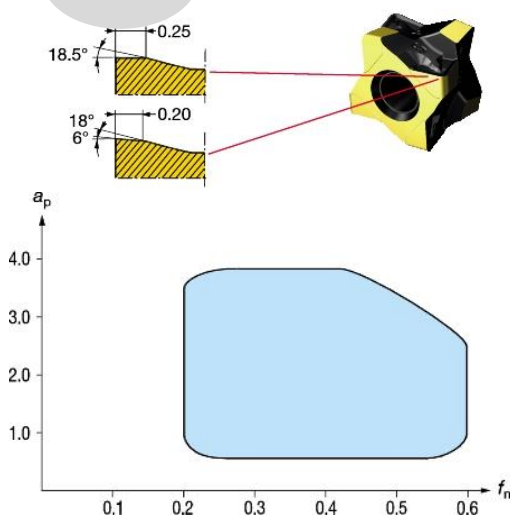
-L4



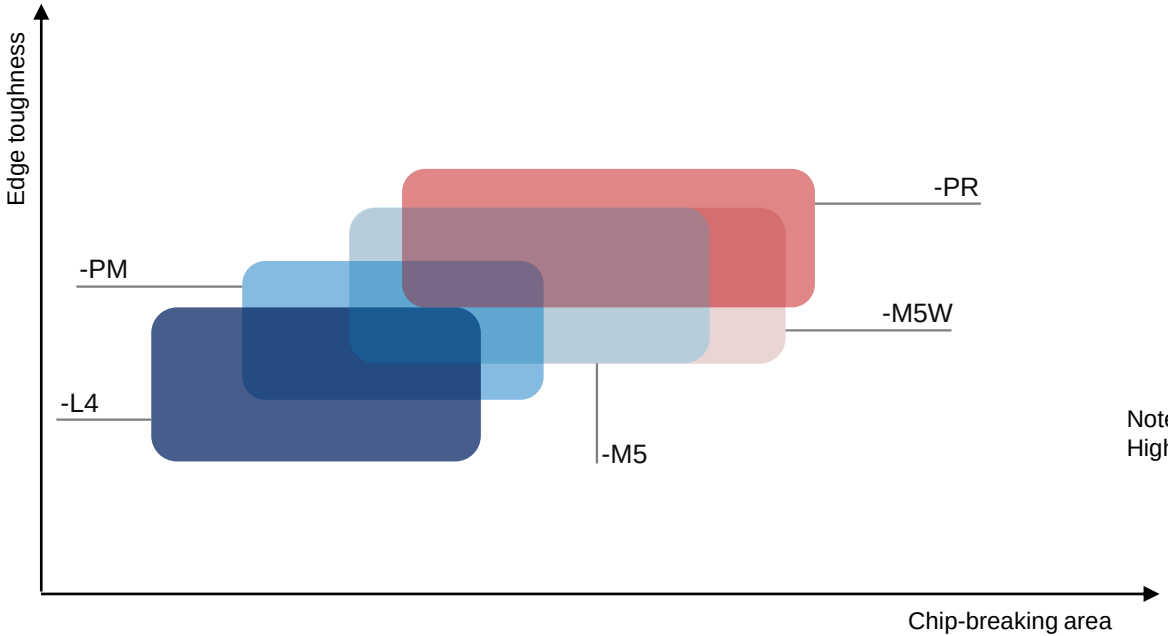
-M5



-M5W



Positioning -L4, -M5 and -M5W vs. ISO geometries

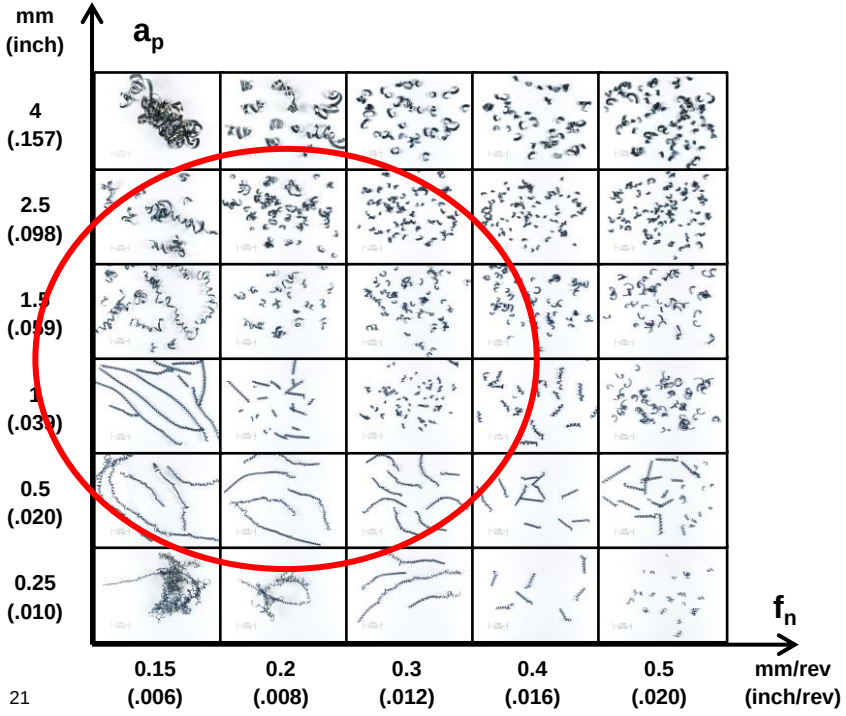


Note:
Higher chip-breaking area = higher a_p and f_n

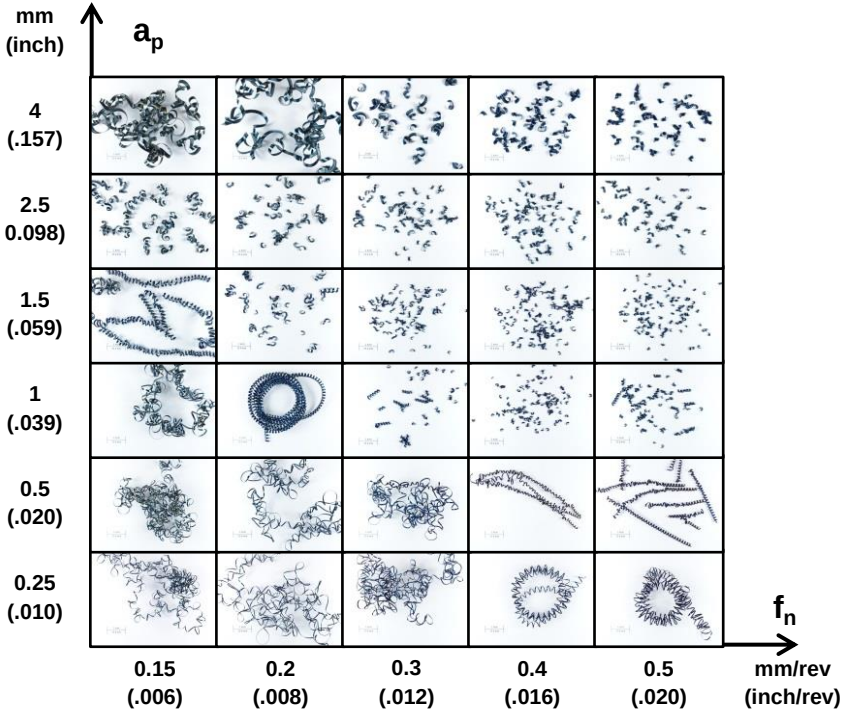
-L4 vs. -PM

Materal: CMC 02.2, P2.2.Z.AN, SS2541
v_c = 200 m/min (656 ft/min)
κ_r = 95°
Dry machining

L4, 3-80-101112-8



-PM CNMG 120412 (433)

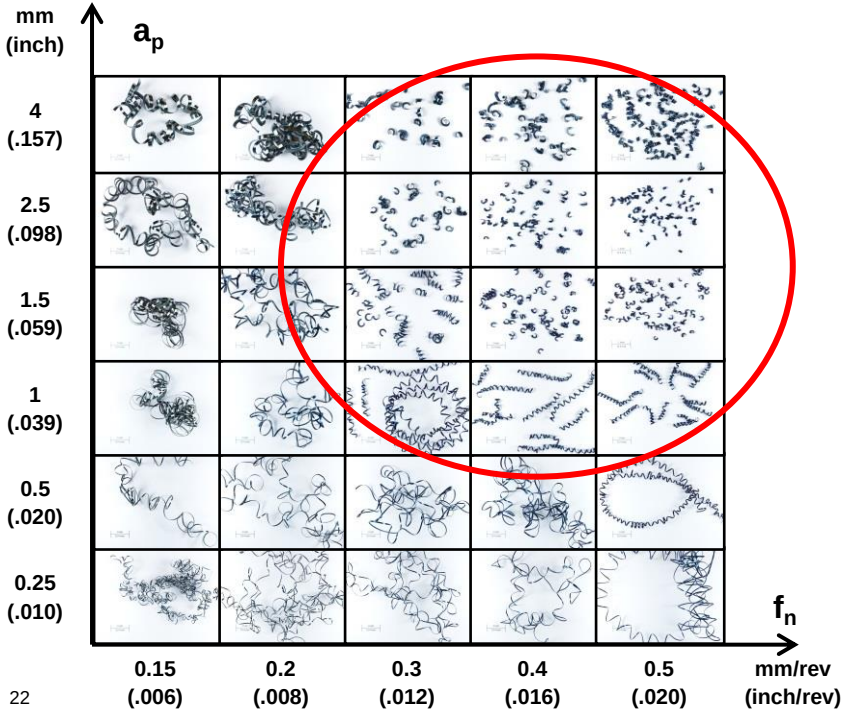


-M5 vs. -PM

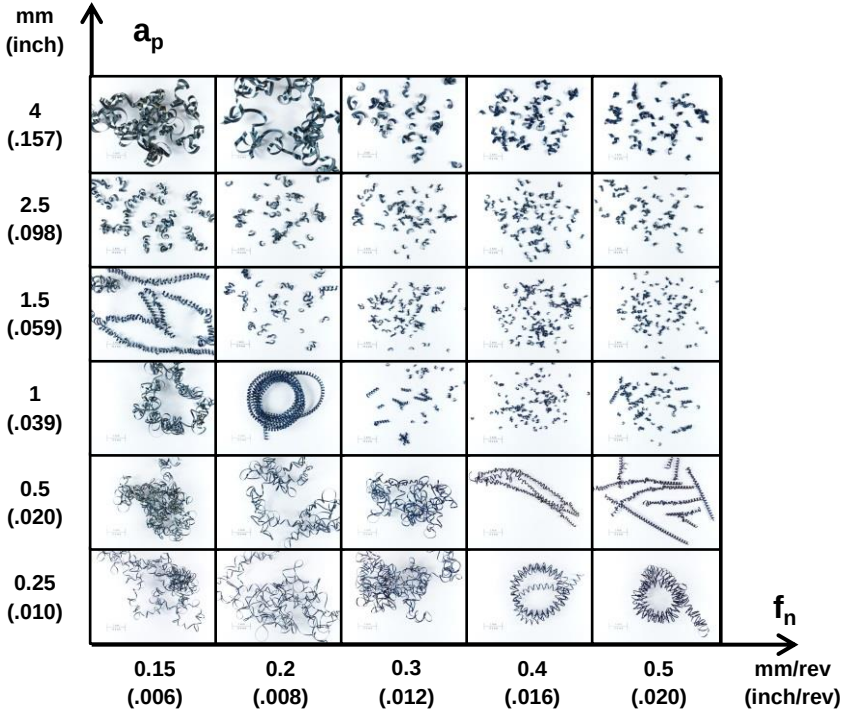
Materal: CMC 02.2, P2.2.Z.AN, SS2541
v_c = 200 m/min (656 ft/min)
κ_r = 95°
Dry machining

SANDVIK Coromant

-M5, 3-80-101112-8



-PM CNMG 120412(433)

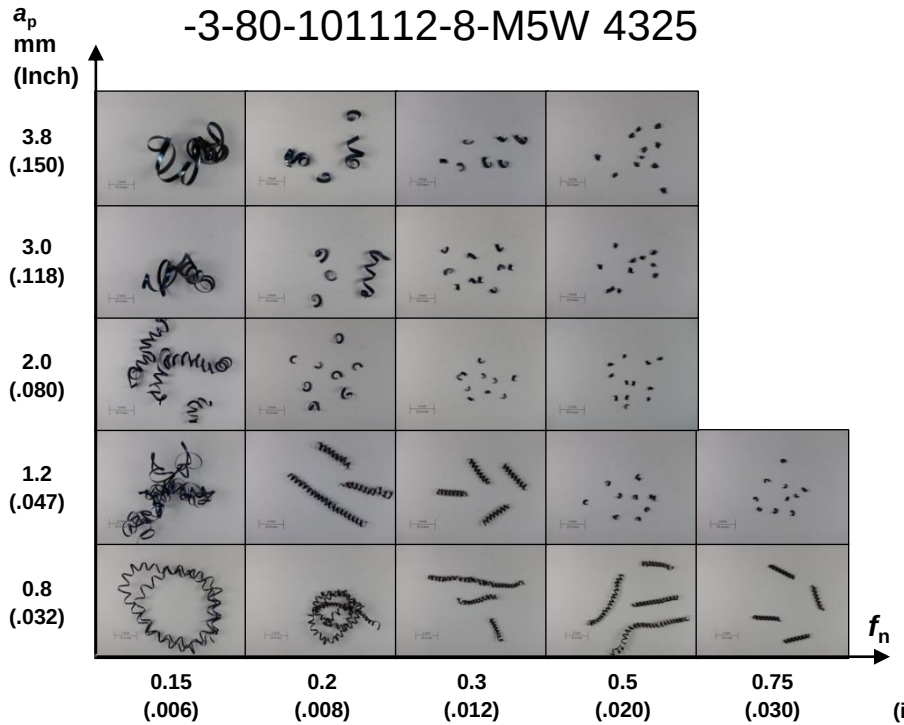


Chip charts -M5W vs. -WMX

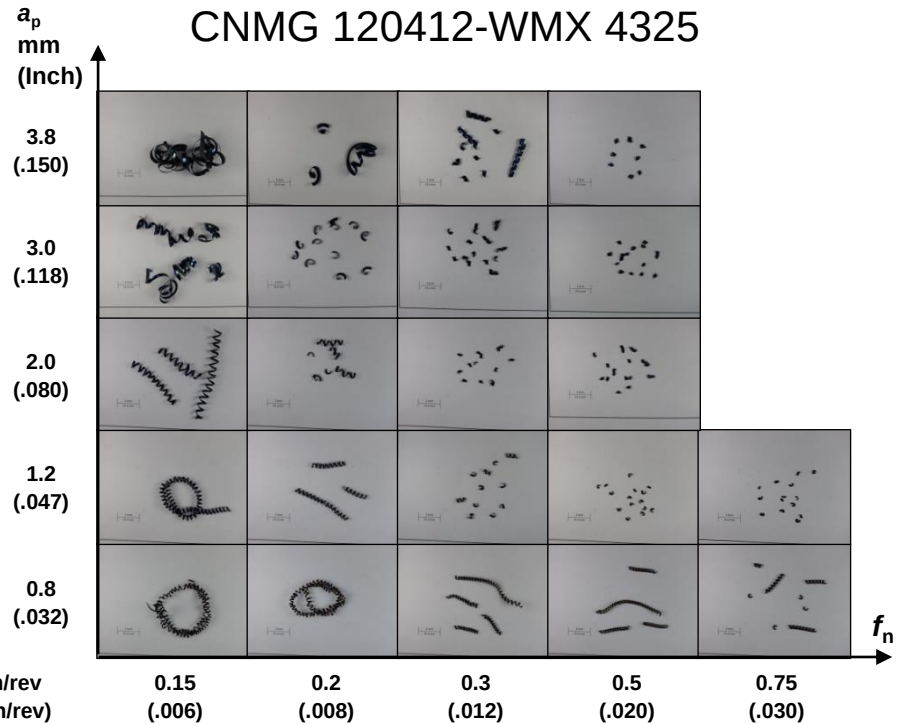
- Materal: CMC 02.2, P2.2.Z.AN, SS1672
- v_c = 200 m/min (656 ft/min)
- κ_r = 95°
- Dry machining

SANDVIK Coromant

-3-80-101112-8-M5W 4325

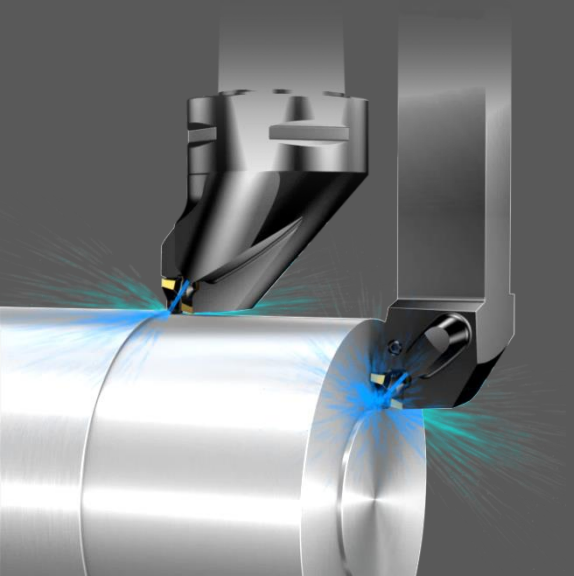


CNMG 120412-WMX 4325



Technical features

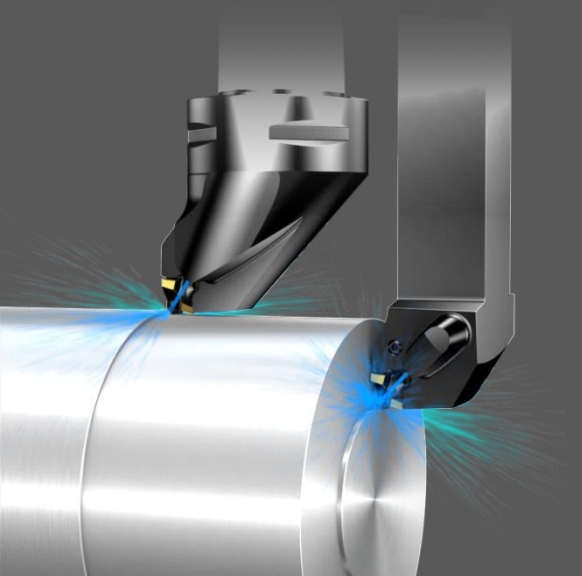
Technical application area / summary



- L4, nose radii 04 excels in:
  - ap 0.25–3 mm (.010–.118 inch) and
  - fn between 0.1–0.3 mm/r (.004–.012 inch/rev)
- L4, nose radii 08 excels in:
  - a_p 0.5–3 mm (.020–.118 inch) and
  - f_n between 0.12–0.32 mm/r (.005–.013 inch/rev)
- L4, nose radii 12 excels in :
  - ap 0.65–3 mm (.026–.118 inch) and
  - fn between 0.15–0.35 mm/r (.006–.014 inch/rev)

Technical features

Technical application area / summary

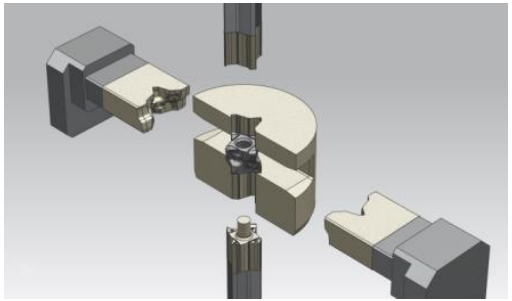


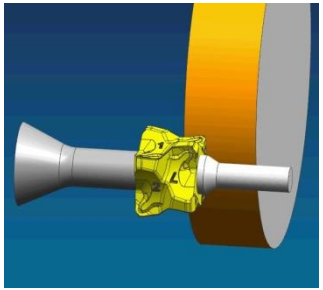
- M5, nose radii 08 excels in:
  - ap 0.8–3.8 mm (.031 –.150 inch) and
  - fn between 0.2–0.45 mm/r (.008–.018 inch/rev)
- M5, nose radii 12 excels in
  - ap 1.2–3.8 mm (.047–.150 inch) and
  - fn between 0.25–0.55 mm/r (.010–.022 inch/rev)

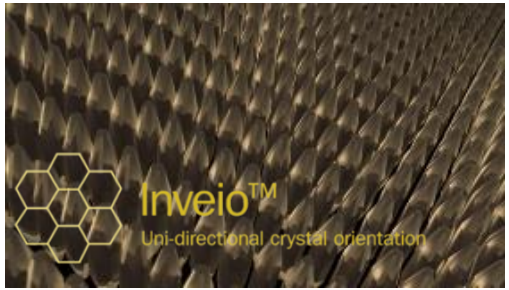
Technical features

Production technology

- MAP (Multi Axial Pressing)
- Ground edges
- Coating

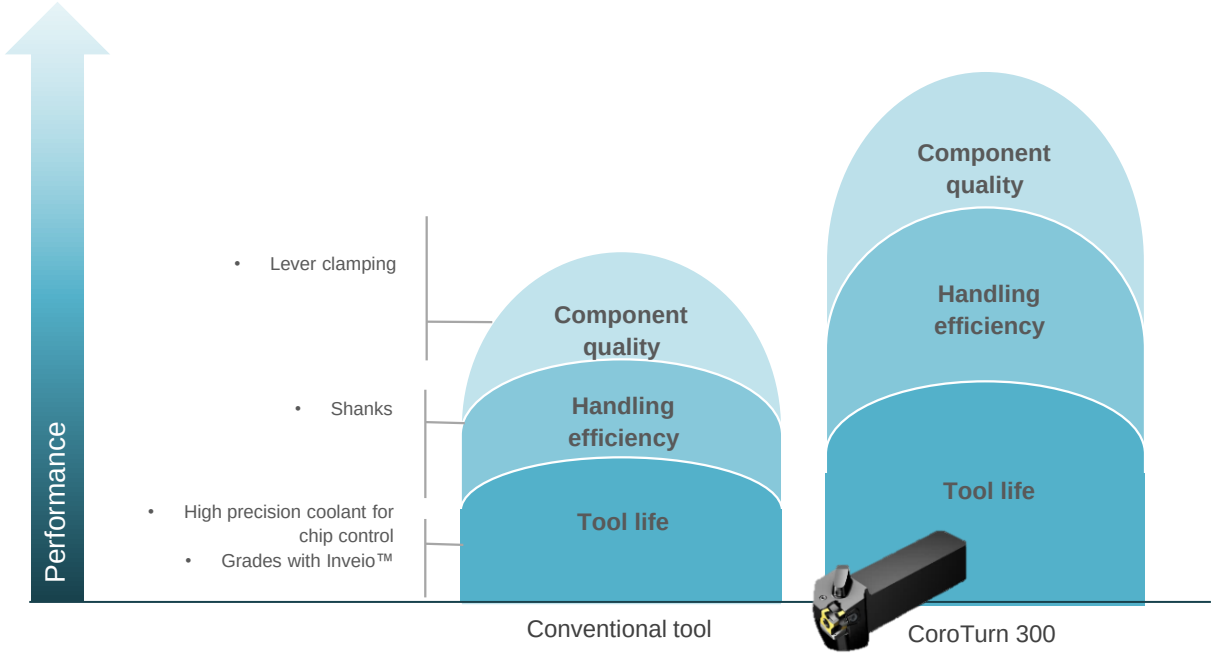






From good to great

Conventional tool vs. CoroTurn 300

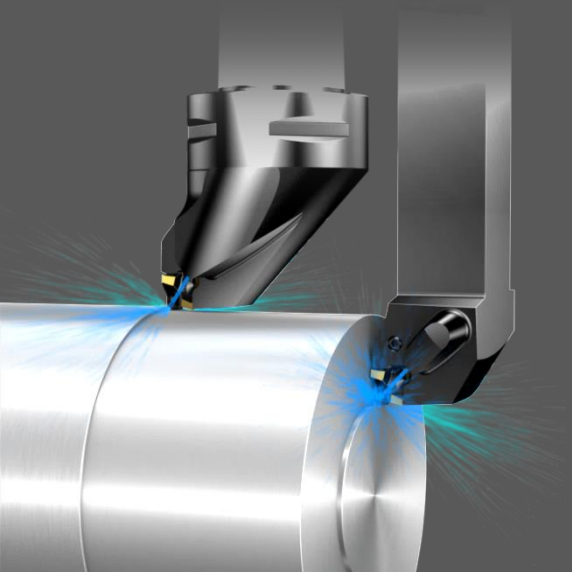


CoroTurn® 300

Product positioning

Product positioning

Longitudinal and face turning



- Use CoroTurn 300 for efficient medium to finishing steel turning operations
- ISO P
- Machine types: turning centres and multi-task machines)

CoroTurn® 300

Handling

Handling

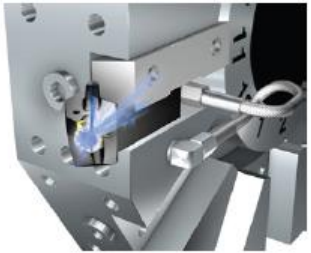
Four ways to connect the coolant.

1. Using adaptor (first choice)

2. Rear tube connection with a QS-stop

3. Front and underneath connection

4. Using rear tube connection

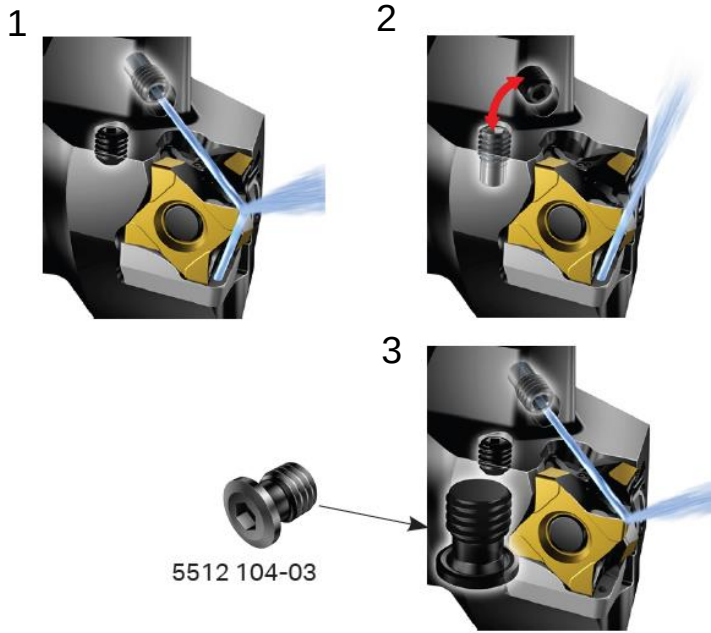


Handling

Handling of coolant supply to cutting edge

You can choose between using just over- or under coolant, or both.

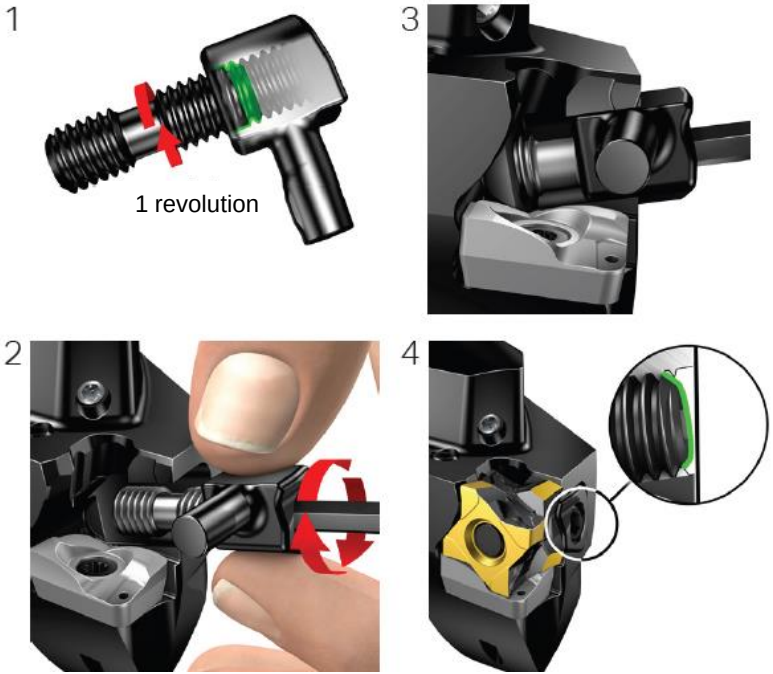
1. Over and under coolant
2. Under coolant only
3. Over coolant only



Handling

Handling clamp assembly

1. For correct assembly of the wedge clamp the double threaded screw needs to be assembled with one revolution into the wedge clamp
2. Assemble the screw/wedge clamp into the pocket
3. Position for insert fixture
4. Control that the screw is not protruding



CoroTurn® 300

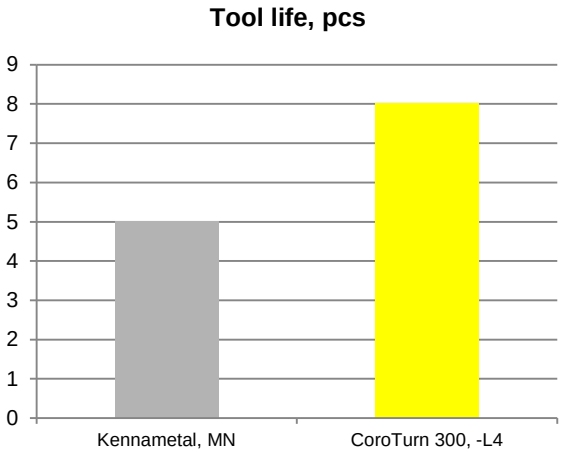
Test cases

L4 vs. MN (Competitor)

Performance

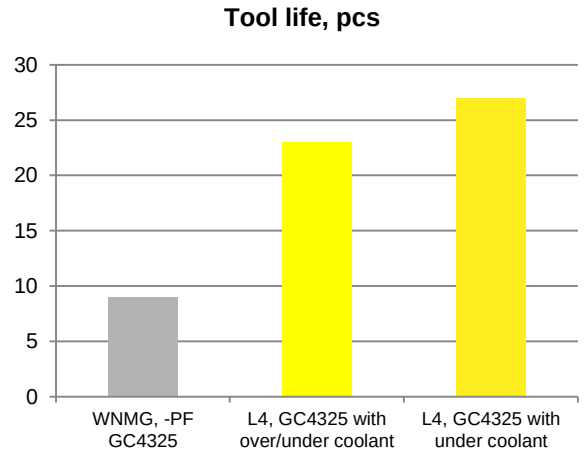
Customer case		
Industry segment	Automotive	
Operation	External axial	
Time in cut	3.83 min/component	
Component	Primary shaft	
Workpiece material	Forged/rolled/cold drawn, MC P2.5.Z.HT, 297 HB (AFNOR42CD4TS)	
Cutting data		
v_c m/min (ft/min)	170 (558)	
f_n mm/r (inch/rev)	0.4 (.016)	
a_p mm (inch)	3.0 (.12)	
Results		
Insert ISO (ANSI)	3-80-101108-8-L4	CNMG120408 (CNMG 432)-MN
Grade	GC4325	KCP25B
Tool life, pcs	8	5
Reason for tool change	Pre-determined no of components	Risk of insert break down

Geometry -L4 gave 60% increase in tool life compared to the competitor insert.



L4 vs. -PF

Performance

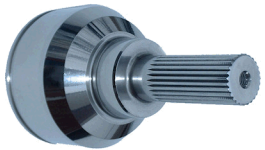


Customer case	
Industry segment	Automotive
Operation	External axial and facing
Time in cut (min/component)	1.19
Component	Outer CV joint
Workpiece material	Forged low-alloy steel, P2.1.Z.AN
Coolant pressure	3 bar (43.5 psi)
Cutting data	
v_c m/min (ft/min)	350 (1148)
f_n mm/r (inch/rev)	0.35 (.014)
a_p mm (inch)	2.5 (.10)

Results	**WNMG 080408-PF 4325**	**CoroTurn 300 o/u coolant[1]**	**CoroTurn 300 u coolant[2]**
Tool holder	C4-DWLNL-27050-08	C4-3-80-LL27055-10C	C4-3-80-LL27055-10C
Grade	GC4325	GC4325	GC4325
Tool life, pcs	9	23	27
Reason for tool change	Pre-determined no of components	Pre-determined no of components	

When changing from the –PF geometry and standard holder to CoroTurn 300 with -L4 geometry it gave 156% increase in tool life when using over- and under coolant and remarkable 200% when using under coolant only.

1) With over- and under coolant
2) With under coolant



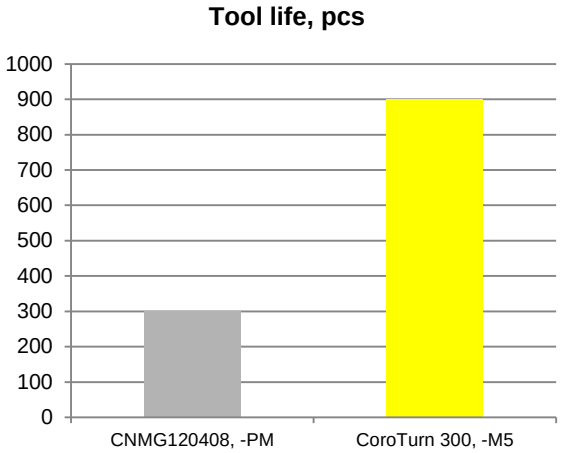
Outer CV joint

M5 vs. -PM

Performance

Customer case		
Industry segment	Automotive – components	
Operation	External axial	
Time in cut	0,12 min/component	
Component	Ball but (for power steering)	
Workpiece material	Forged/rolled/cold drawn, MC P2.1.Z.AN, 146 HB (JIS SCr 415 (H))	
Cutting data		
v_c m/min (ft/min)	200 (656)	
f_n mm/r (inch/rev)	0.3 (.012)	
a_p mm (inch)	3.4 (.13)	
Results		
Insert ISO (ANSI)	3-80-101108-8-M5	CNMG120408 (CNMG 432)-PM
Grade	GC4325	GC4215
Tool life, pcs	900	300
Reason for tool change	Pre-determined no of components	Poor chip breaking

Geometry –M5 gave 200% increase in tool life compared to PM and more consistent chip breaking.



M5 vs. -PM

Performance

-PM 4315

-M5 4325

Customer case	
Industry segment	Die and Mould
Operation	External axial and facing
Time in cut (min/component)	2.93
Component	Punch Driver
Workpiece material	High-alloy tool steel, P3.0.Z.AN
Coolant pressure	7 bar (100 psi)
Cutting data	
v_c m/min (ft/min)	244 (800)
f_n mm/r (inch/rev)	0.254 (.01)
a_p mm (inch)	1.905 (.075)

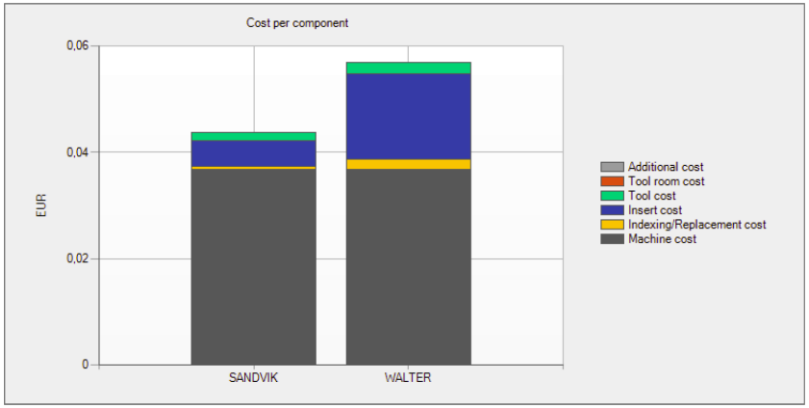
Results	**CNMG 120408-PM 4315**	**CoroTurn 300 o/u coolant[1]**
Tool holder	DCLNL 2525M12	C4-3-80-LR27055-10C
Grade	GC4315	GC4325
Tool life, pcs	6	5.5
Reason for tool change	Pre-determined no of components	Pre-determined no of components

CoroTurn 300 finished 6 component but with an edge breakage after that.

Test cases CNC Pusnik, Slovenia

Performance – tool life

Customer case	
Industry segment	Automotive
Operation	External axial and facing
Time in cut (min/component)	0.22
Component	Gelenk 710
Workpiece material	Low-alloy steel, CMC 01.2
Coolant pressure	10 bar
Cutting data	
v_c m/min	270
f_n mm/r	0.38
a_p mm	1.0



Results	**CNMG 120412-WPP10S**	**CoroTurn 300 o/u coolant**	**CoroTurn 300 o/u coolant**
Tool holder	DCLNL 2525M12	C4-3-80-LR27055-10C	C4-3-80-LR27055-10C
Grade	WPP10S	3-80-101112-8-L4 4325	3-80-101112-8-M5 4315
Tool life, pcs	80	170	240
Reason for tool change	Risk of insert break down	Risk of insert break down	Risk of insert break down

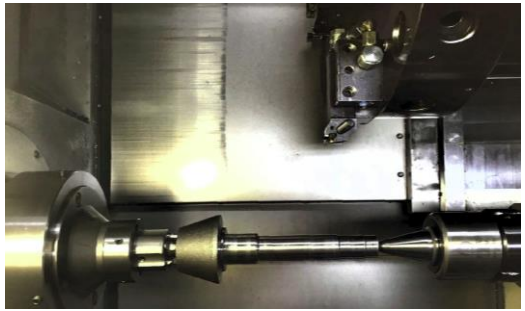
CoroTurn 300 has increased tool life 3 times. Savings per year are 9.170 EUR

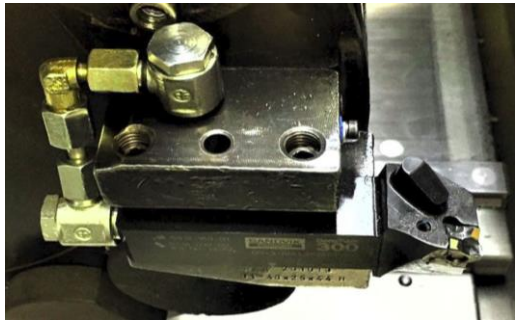
Test cases CNC Pusnik, Slovenia

Performance – productivity and tool life

Customer case		
Industry segment	Automotive	
Operation	External axial and facing	
Time in cut (min/component)	0.12	
Component	Gear pinion	
Workpiece material	16MnCr5, Low-alloy steel, CMC 01.2	
Coolant pressure	10 bar	
Cutting data		
v_c m/min	280	280
f_n mm/r	0,3	0,3
a_p mm	1,25 (vibrations, 2 passes)	2,5
Results	**CNMG 120412-QM 4325**	**CoroTurn 300 o/u coolant**
Tool holder	DCLNL 2525M12	QS-3-80LL252531-10C
Grade	4325	3-80-101112-8-M5 4325
Tool life, pcs	30	60
Reason for tool change	Risk of insert break down	Risk of insert break down

CoroTurn 300 has 100% better tool life and cycle was reduced by 21 sec (20%)





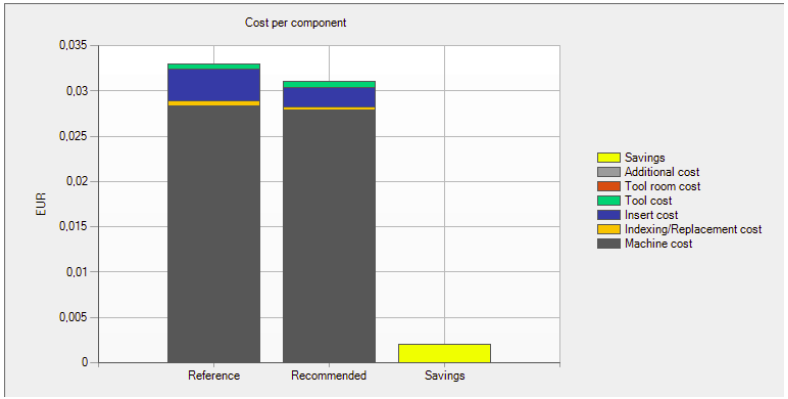
Test cases CNC Pusnik, Slovenia

Performance – tool life

Customer case		
Industry segment	Automotive	
Operation	External axial and facing	
Time in cut (min/component)	0.17	
Component	Antreibstad	
Workpiece material	Low-alloy steel, CMC 01.2	
Coolant pressure	10 bar	
Cutting data		
v_c m/min	300	330
f_n mm/r	0.46	0.41
a_p mm	1.0	1.0

Results	**CNMG 120408-ASW T9125**	**CoroTurn 300 o/u coolant**
Tool holder	DCLNL 2525M12	C4-3-80-LR27055-10C
Grade	T9125	3-80-101108-8-L4 4325
Tool life, pcs	270	540
Reason for tool change	Risk of insert break down	Risk of insert break down

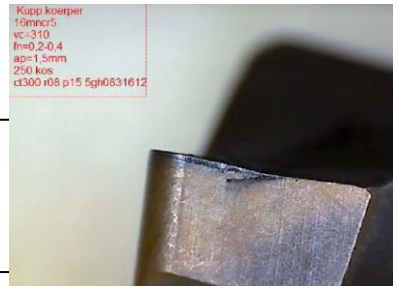
CoroTurn 300 has increased tool life 2 times.



Test cases CNC Pusnik, Slovenia

Performance – chip breaking

Customer case		
Industry segment	Automotive	
Operation	External axial and facing	
Time in cut (min/component)	0.13	
Component	KOPP. KOERPER	
Workpiece material	16MnCr5, Low-alloy steel, CMC 01.2	
Coolant pressure	10 bar	
Cutting data		
v_c m/min	310	310
f_n mm/r	0,2 – 0,35 – 0,4	0,2 – 0,35 – 0,4
a_p mm	1 – 2	1 – 2
Results	**CNMG 120408W-M3 TP1501**	**CoroTurn 300 o/u coolant**
Tool holder	DCLNL 2525M12	C4-3-80-LR27055-10C
Grade	TP1501	3-80-101108-8-M5 4315
Tool life, pcs	250	250
Reason for tool change	Risk of insert break down	Risk of insert break down



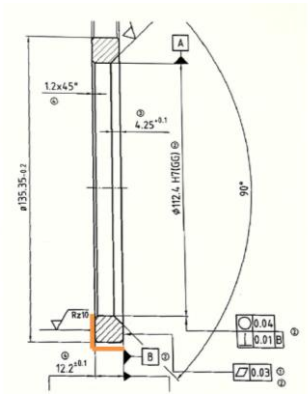
CoroTurn 300 has much better chip breaking

Test cases CNC Pusnik, Slovenia

Performance – chip breaking and tool life

Customer case		
Industry segment	Automotive	
Operation	External axial and facing	
Time in cut (min/component)	0.12	
Component	AD AGW	
Workpiece material	16MnCr5, Low-alloy steel, CMC 01.2	
Coolant pressure	10 bar	
Cutting data		
v_c m/min	280	280
f_n mm/r	0,25 – 0,3	0,25 – 0,3
a_p mm	1 – 2	1 – 2
Results	**WNMG 080408-ASW T9125**	**CoroTurn 300 o/u coolant**
Tool holder	DWLNL 2525M08	C4-3-80-LR27055-10C
Grade	T9125	3-80-101108-8-M5 4315
Tool life, pcs	250	350
Reason for tool change	Risk of insert break down	Risk of insert break down

CoroTurn 300 has much better chip breaking (no problem) and 40% better tool life



Summary – test cases CNC Pusnik

1. Better tool life comparing to ISO
2. Better chip breaking comparing to ISO
3. Works better in combination with Capto
4. Friendly to use for operator
5. Secure clamping (work also good at higher cutting datas)
6. Must be correct choice of woorkpice for it!

Competitor guide

	CUSTOMER VALUE	APPLICATION	STRENGTHS	WEAKNESSES	HOW TO ATTACK?
CoroTurn 300	Good geometries/grades, HPC (over/under), insert clamping, 8 edges, QS-shank and Coromant Capto coupling	General turning, longitudinal/ facing	Secure insert clamping, under coolant for tool life, HPC supporting chip control, machine side interface gives easy handling	Small assortment	
IMC	Innovative approach, Heliturn, Dove IQ Turn, CombiDLock, QNMG-offer	General turning awareness, becoming more and more popular	Similar offer as Sandvik Coromant	Difficult to choose right products, often not available	Utilization of under coolant, HPC, Coromant Capto and QS-shank coupling, less carbide/edge = 8 edge, safe insert clamping (self locking)
Kennametal	Large assortment, non-ISO concept Fix Perfect	General turning	Similar offer as Sandvik Coromant	Delivery time in Europe, weak grades	Work with cost per component, Utilization of under coolant, HPC, Coromant Capto and QS-shank coupling, less carbide/edge = 8 edge , safe insert clamping (self locking)
Tungaloy	Good geometries and grades	General turning	Strong in Asia, Price	Small assortment, lack of support	Work with cost per component, Utilization of under coolant, HPC, Coromant Capto and QS-shank coupling, less carbide/edge = 8 edge, safe insert clamping (self locking)
Sumitomo	Good geometries and grades	General turning	Strong in Asia, Price	Small assortment, lack of support	Work with cost per component, Utilization of under coolant, HPC, Coromant Capto and QS-shank coupling, less carbide/edge = 8 edge , safe insert clamping (self locking)

CoroTurn® 300

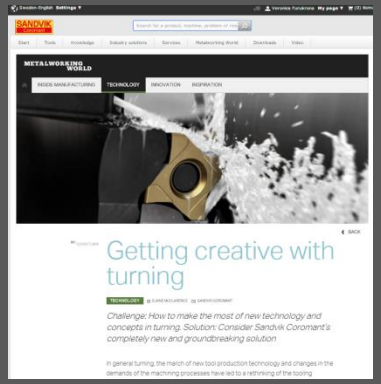
Sales and marketing support

Sales support and marketing material

Folder (4 pages)
Printed and in
Publications

Feature animation
On product family page

Demo film
on product family page



MWW technical article
on our website

Product family page
on our website

Sales kit
Including two inserts and one
holder

Sales support material

CoroTurn 300 sales kit

- Sales kit - Including tool holder and two inserts
- CoroTurn 300 Sales kits are planned to be released the 1 Feb 2016 according to list below

Kit code	Qty	Tool holder	Qty	Insert	
KIT-CT300-QS-R2525	1	QS-3-80LR252531-10C	2	3-80-101112-8-M5	4325
KIT-CT300-QS-L2525	1	QS-3-80LL252531-10C	2	3-80-101112-8-M5	4325
KIT-CT300-QS-R16	1	QS-3-80-LR16-20-10C	2	3-80-101112-8-M5	4325
KIT-CT300-QS-L16	1	QS-3-80-LL16-20-10C	2	3-80-101112-8-M5	4325
KIT-CT300-C5-R-35060	1	C5-3-80-LR35060-10C	2	3-80-101112-8-M5	4325
KIT-CT300-C5-L-35060	1	C5-3-80-LL35060-10C	2	3-80-101112-8-M5	4325
KIT-CT300-C6-R-45065*	1	C6-3-80-LR45065-10C	2	3-80-101112-8-M5	4325
KIT-CT300-C6-L-45065*	1	C6-3-80-LL45065-10C	2	3-80-101112-8-M5	4325

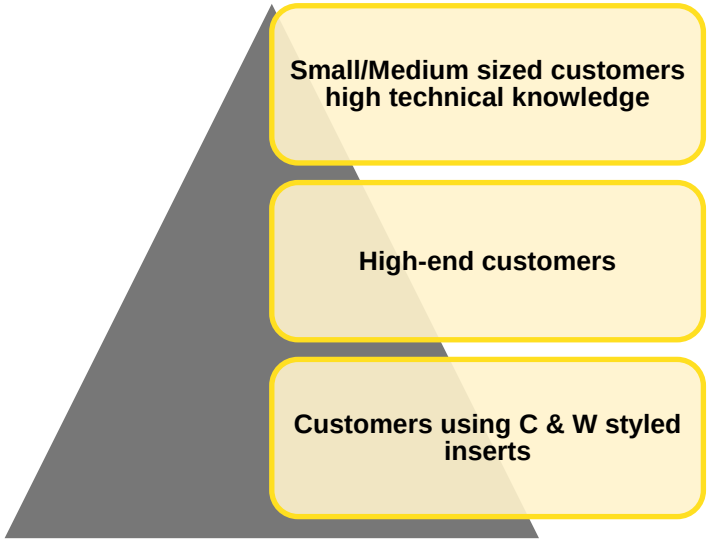
Tool box Insert box

* Available from 15 February 2016

CoroTurn® 300

Go to market strategy

Go to market strategy



#3: Small/medium sized accounts with high technical knowledge

Customer with high technical knowledge that is interested in continuous improvements of their production/processes by using the latest products. Quick purchasing decision process.

#2: Look for high-end customers that can utilize all of the technical features

We are leading the industry with this new concept containing all of the latest technologies. Combined with high knowledge skills we have the solutions for efficient and secure machining of high quality components. (Promote Sandvik Coromant as solution provider)

#1 Aim for competitor C & W styled inserts

Take business from competitors and secure continued sales thanks to the Sandvik Coromant unique insert interface.

CoroTurn® 300

Pricing

Pricing

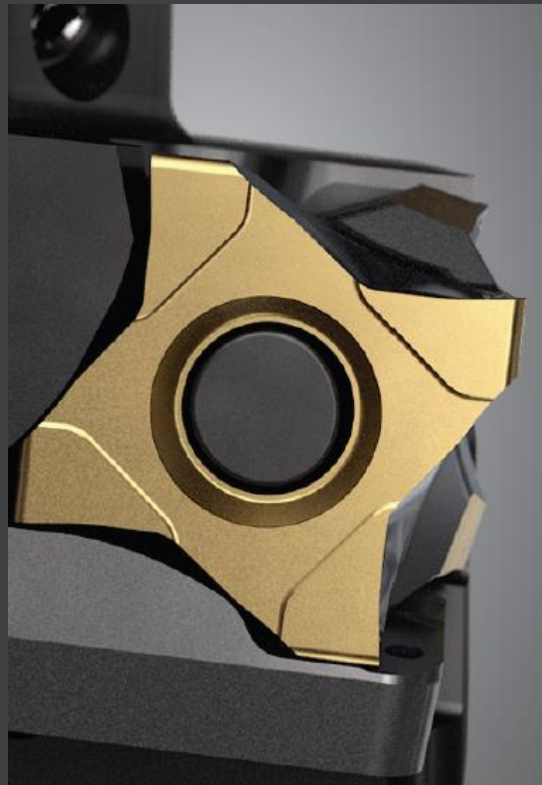
Price information and positioning

- The basic idea is that the products shall not have any price addition for the new family since we do not want to make any higher entry barriers than it already has with a concept competing with ISO products.

- **Holders** are priced on the same level as other holders for general turning.

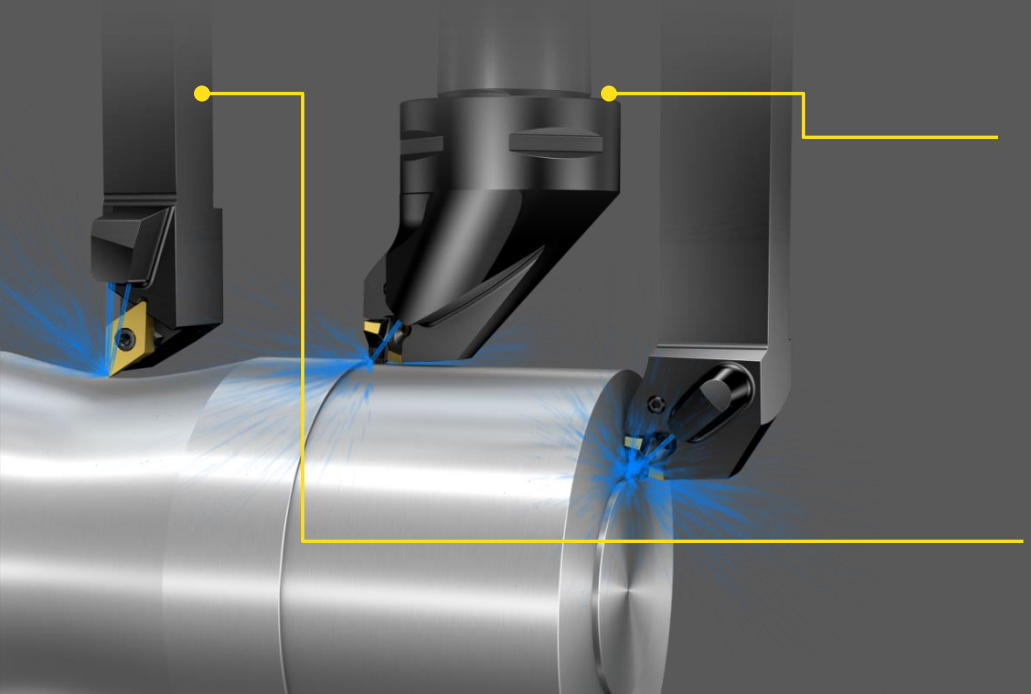
- **Inserts** CNMG1204-PM is the most comparable insert.
    - Price per edge is lower
    - You get eight edges for the price of seven

- Holders and inserts are discounted in the same category as general turning products.



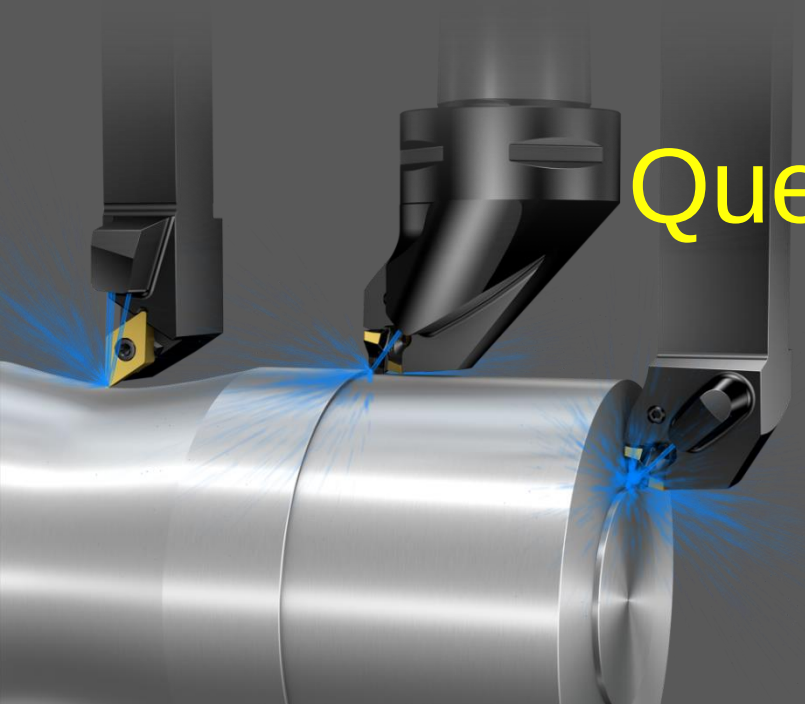
Unique turning solutions

CoroTurn 300 and CoroTurn TR



CoroTurn 300: For efficient longitudinal turning and facing

CoroTurn TR: For secure and stable profiling



Questions ?

www.sandvik.coromant.com/coroturn300