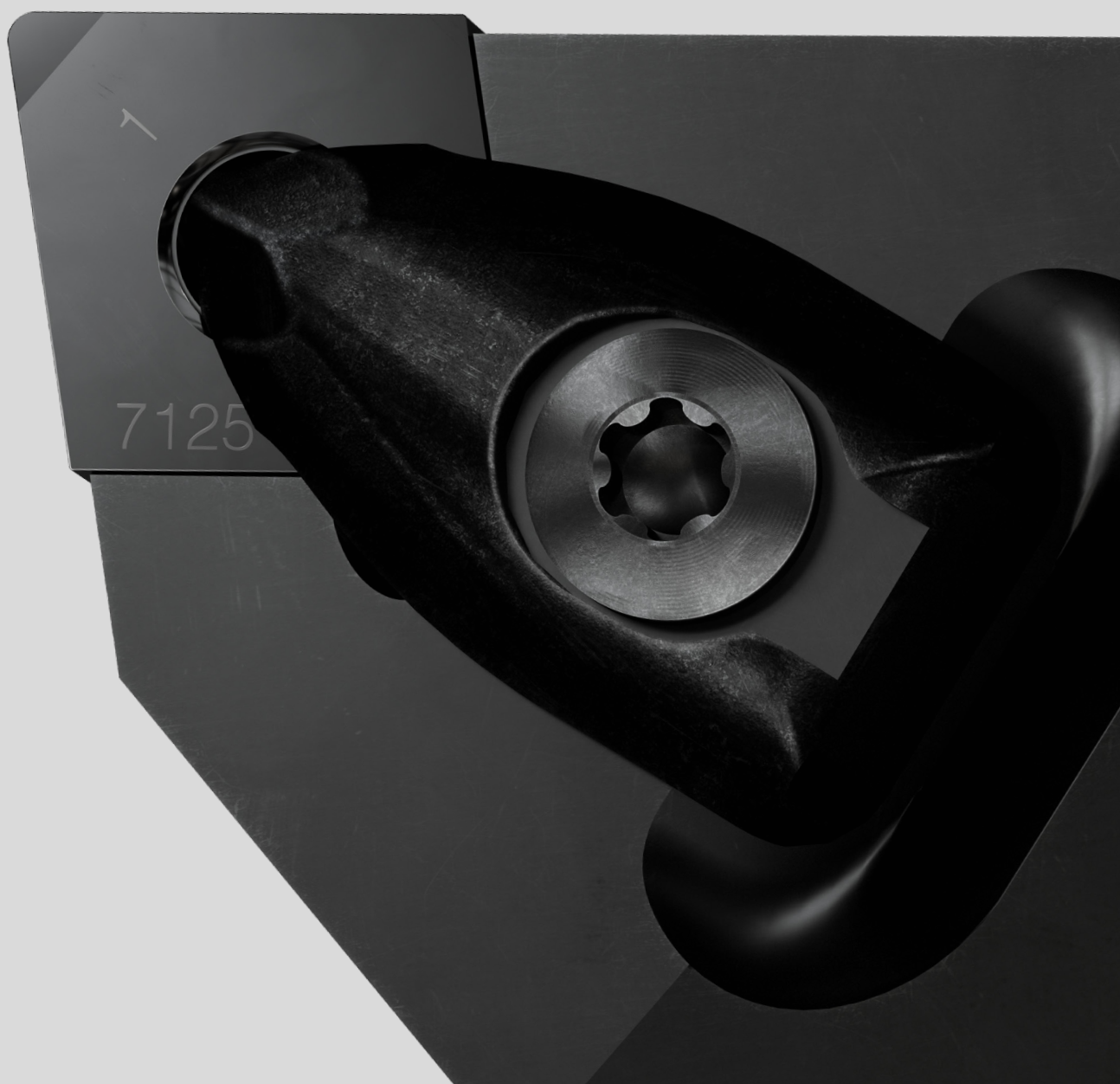


Hard part turning

GENERAL TURNING
PARTING AND GROOVING
THREAD TURNING



Hard part turning

Turning steel with a hardness of typically 55–65 HRC is defined as hard part turning, and is a cost-efficient alternative to grinding. Hard part turning has been proven to reduce machining time and costs by 70% or more, and offers improved flexibility, better lead times and higher quality.

- Simpler production process, like normal turning
- Flexible machine utilization—use the same machine for external and internal machining
- Increased productivity and lower cost per part
- Complex component shapes machined in one setup
- Environmentally friendly—no coolant, no grinding waste



Components

Hard part turning is a well-accepted method. Typical parts are transmission gears, pinions, valve seats, pistons, cylinder liners, input/output shafts, crown wheels and CV-joints (inner/outer race & cage).



Cutting tool materials

Cubic boron nitride (CBN) grades are the ultimate cutting tool material for hard part turning of case and induction hardened steels.

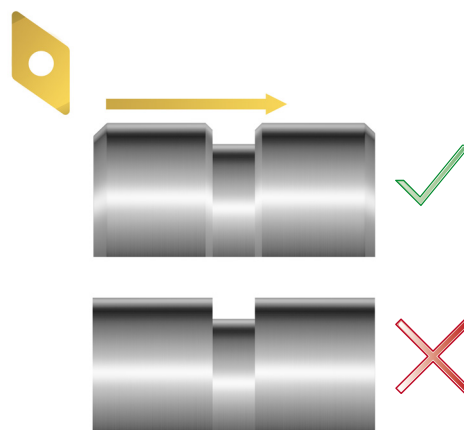


Key factors in hard part turning

Careful preparation of the component in the soft (unhardened) state will benefit the hard part turning process. Due to the relatively small depths of cut used in hard part turning, tight dimensional tolerances in soft machining are key to achieving a consistent process. This delivers longer tool life and high-quality components. The use of features such as chamfers and radii on the component will optimize entry and exit paths for maximum tool life.

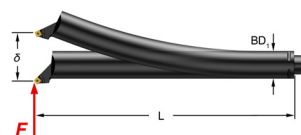
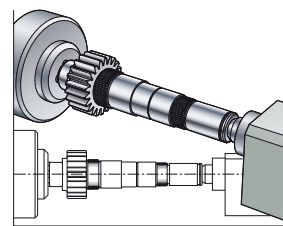
Points to remember when planning your soft machining conditions:

- Avoid burrs
- Keep close dimensional tolerances
- Chamfer and make radii in the soft state
- Do not enter or leave cut abruptly
- Enter or leave by programming radius movement



Setup

- Good machine stability, clamping and alignment of the workpiece are crucial.
- As a guideline, a workpiece length-to-diameter ratio of up to 2:1 is normally acceptable for workpieces that are only supported on one end. If there is additional tailstock support, this ratio can be extended.
- Use the Coromant Capto® system.
- Minimize all overhangs to maximize system rigidity.
- Always consider carbide bars for internal turning.

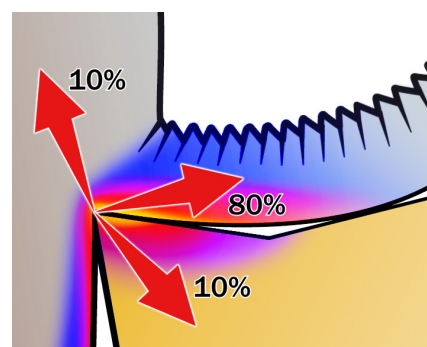


Wet or dry machining

Hard part turning (HPT) without coolant is the ideal situation and is entirely feasible. Both CBN and ceramic inserts tolerate high cutting temperatures, which eliminates the costs and difficulties associated with coolants.

Some applications may require coolant, e.g. to control the thermal stability of the workpiece. In such cases, ensure a continuous flow of coolant throughout the entire turning operation.

Generally, the heat generated when machining is distributed among the chip (80%), workpiece (10%) and insert (10%). This shows the importance of evacuating chips from the cutting-edge zone.

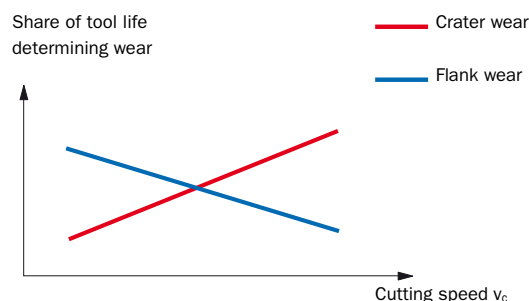


Cutting data and wear

High heat in the cutting-edge zone reduces cutting forces. Therefore, a cutting speed that is too low generates less heat and can cause insert breakage.

Crater wear gradually affects the insert strength but does not affect the surface finish as much.

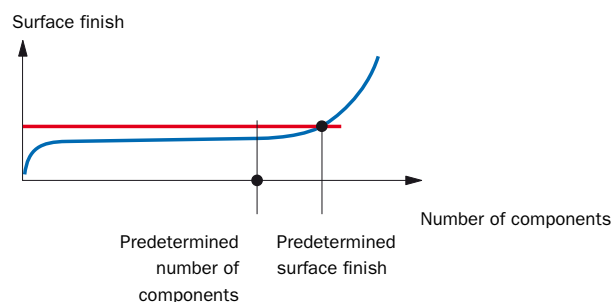
In contrast, flank wear gradually affects the dimensional tolerance.



Insert change criteria

Predetermined surface finish is a frequent and practical insert change criterion. Surface finish is automatically measured in a separate station and a value is given to a specified finish quality.

When this set value is reached, it is time to change the tool. Set the predetermined number of components to 10–20% less than the average tool life of an optimized process. The exact figure will need to be determined on a case-to-case basis.



One- or two-cut strategy

When deciding between a one- or a two-cut strategy, the following factors must be considered:

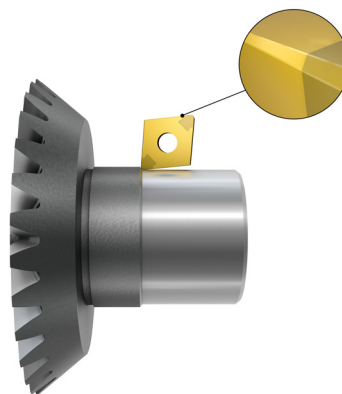
- Machine capability
- What the most important process measures are

It is very often a matter of balancing accuracy and productivity.

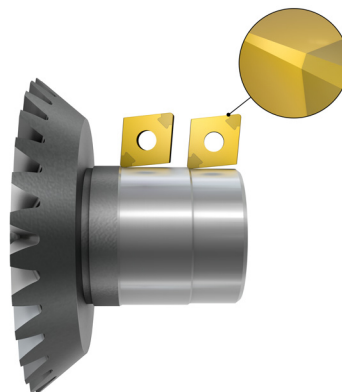
One-cut strategy

With a high-quality machine tool and a stable setup, a single cut can produce acceptable levels of surface quality and dimensional tolerance.

One-cut strategy



Two-cut strategy



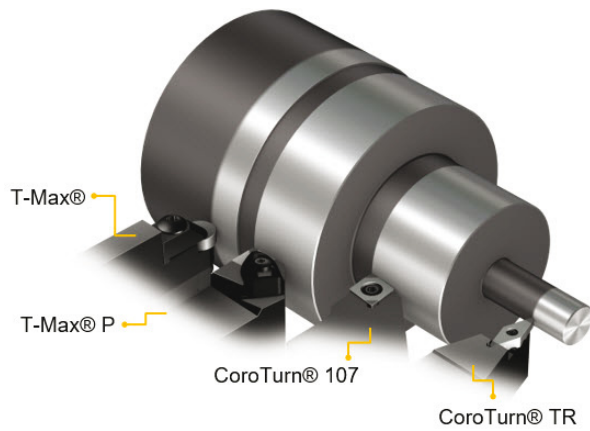
Two-cut strategy

When the machine setup is unstable, if there is any inconsistency in the component or if a very high final tolerance or surface quality is required, a two-cut strategy is likely to be the best option.

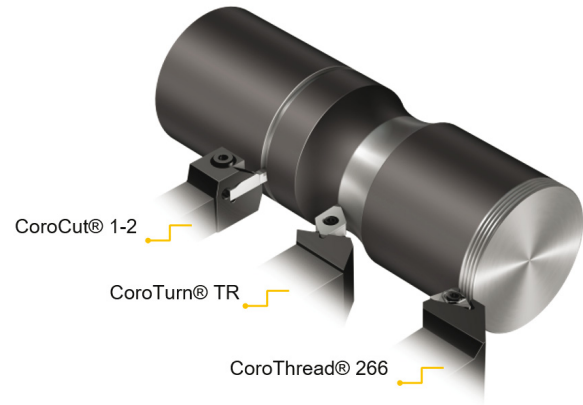
Choose the right tool

External turning

Longitudinal and facing

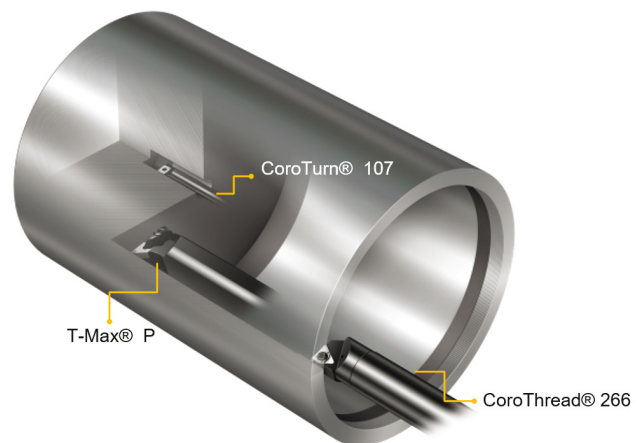
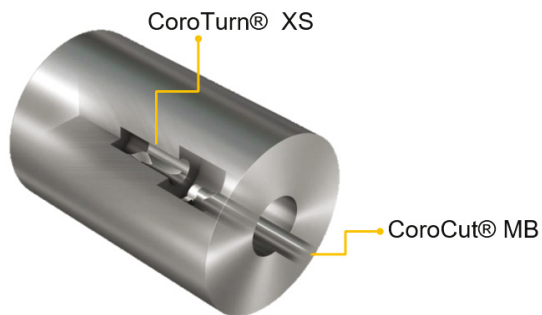


Grooving, threading and profiling



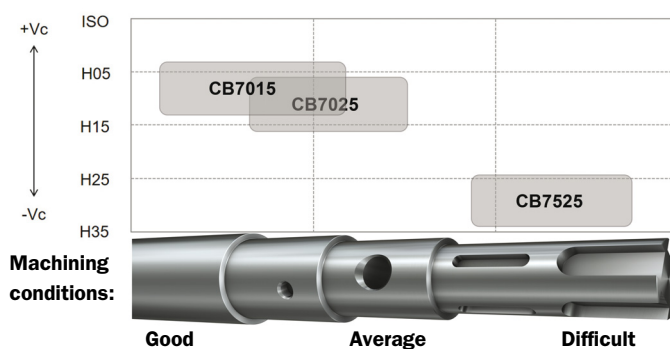
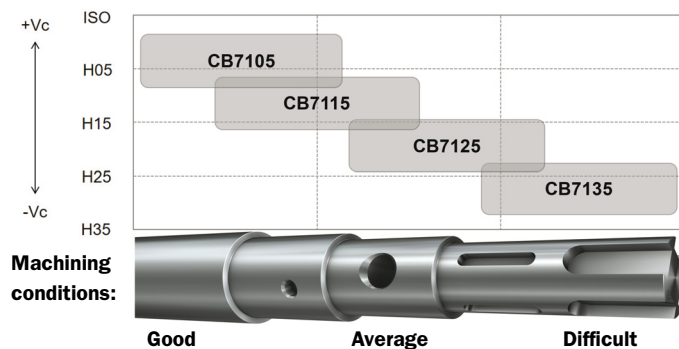
Internal turning

Longitudinal, profiling and threading



Choose the right grade

Our CBN grade assortment consists of uncoated and PVD-coated inserts for various machining conditions. Use the information below to find the right grade for your application



CB7105 (H05)

First choice CBN grade for low feeds and continuous cuts in stable conditions at highest speeds in case and induction hardened steels.



CB7115 (H15)

First choice CBN grade for high feeds and/or depths of cut in continuous to light interrupted cuts at high speeds in case and induction hardened steels.



CB7125 (H25)

First choice CBN grade designed to deliver stable and predictable tool life when machining case and induction hardened steels with light to medium interrupted cuts (chamfered component edges).



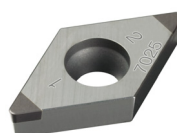
CB7135 (H35)

First choice CBN grade designed to deliver stable and predictable tool life while machining case and induction hardened steels with heavy interrupted cuts (unchamfered component edges).



CB7015 (H10)

CBN grade with low CBN content. Use in continuous to light interrupted cuts at high speeds in case and induction hardened steels



CB7025 (H20)

CBN grade for medium to light interruptions and continuous cuts at medium speeds in case and induction hardened steels



CB7525 (H30)

CBN grade designed for gray cast iron machining and heavy interrupted hard part turning at low to medium speeds.



CB7925 (H35)

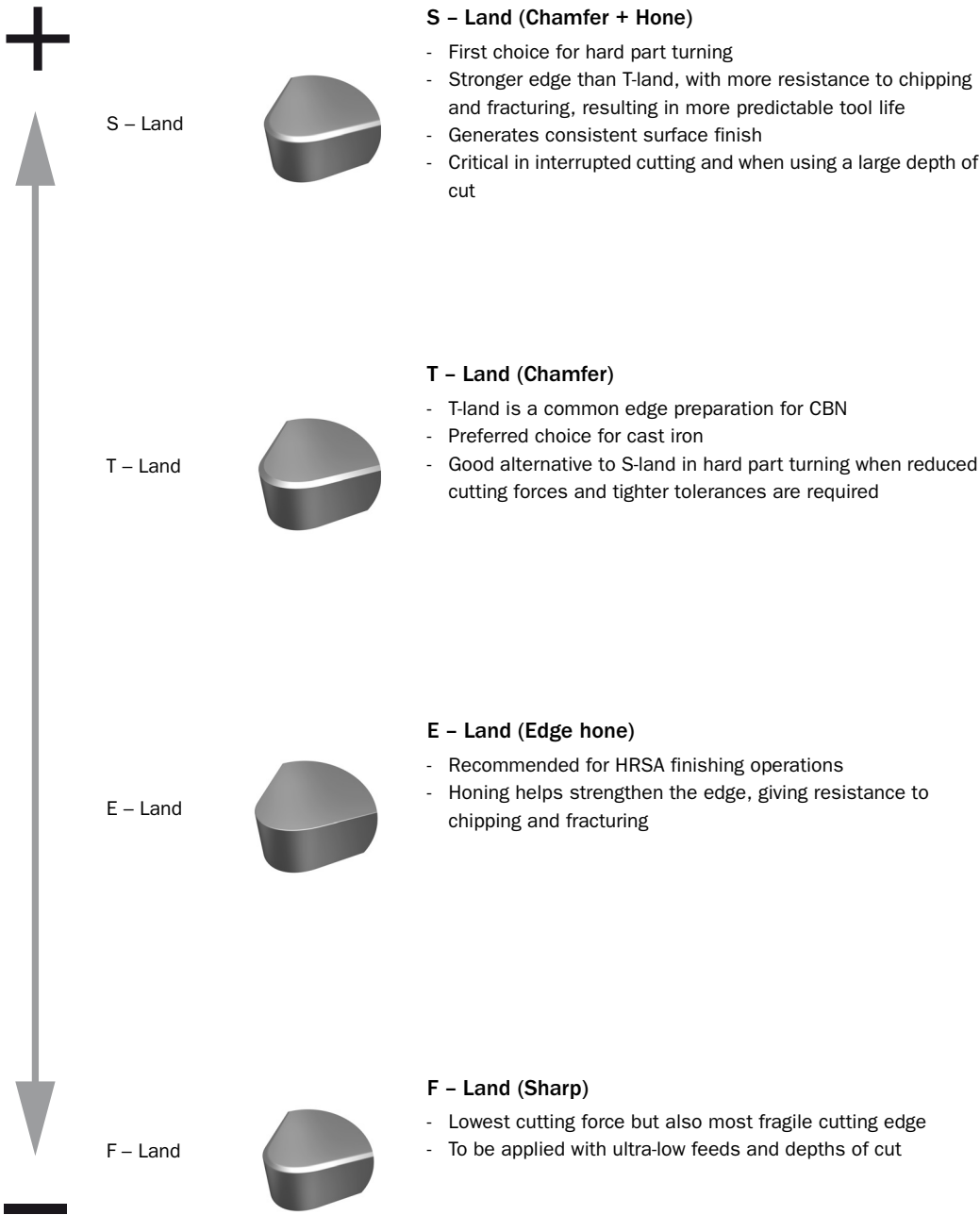
Solid CBN grade, originally designed for high-alloyed cast iron, that also works as a complement in hardened steels with greater depths of cut or higher feeds at low to medium speeds.

Choose the right geometry

The insert geometry and edge preparation are extremely important in hard part turning, as they have a significant influence on tool life and productivity. The Sandvik Coromant CBN product range includes inserts with standard nose radius, wipers and the unique Xcel design. The standard nose radius generates the lowest cutting forces and has the lowest stability requirements, while wipers and Xcel give an unbeatable combination of high productivity and excellent surface finish.

Edge condition: There are four edge conditions available in the Sandvik Coromant CBN range:

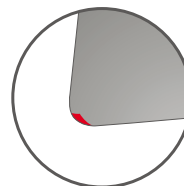
Cutting forces
Edge strength



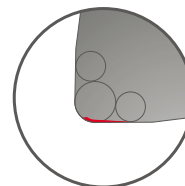
Insert corner geometry

1. Radius – For poor to stable conditions
2. WH / WG – For improved surface finish or increased feed in average to stable conditions
3. Xcel (XA) – For high productivity in stable conditions
4. XB – Geometry for highest feed rate or best surface finish tolerances with normal feed rates in stable conditions

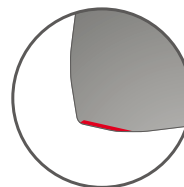
The Xcel geometry is a good complement for finishing. It has a straight cutting edge with a low entry angle, which helps to produce thinner chips and lower cutting temperatures, reducing crater wear development and increasing feed capacity.



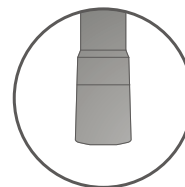
1. Standard radius



2. Wiper



3. Xcel



4. -XB Geometry

Edge preparations

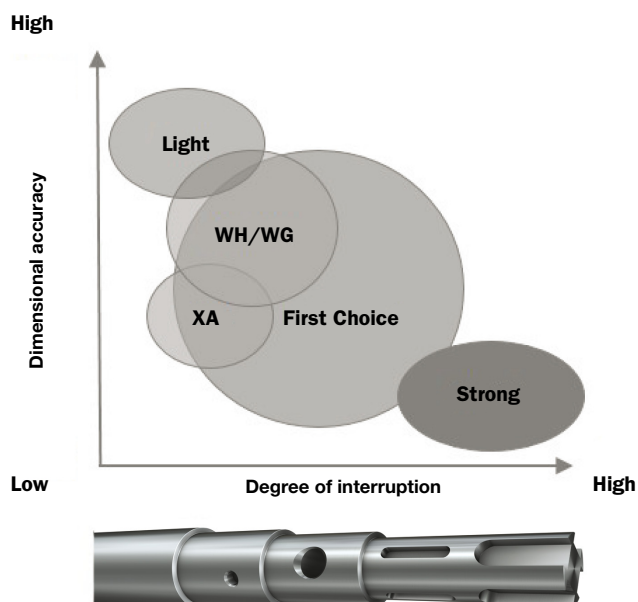
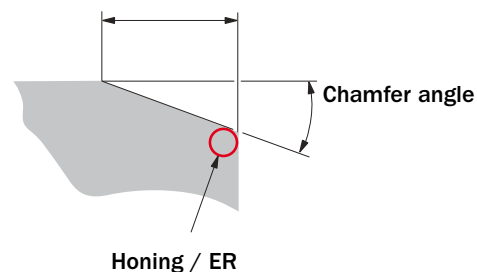
The strength of the cutting edge increases with increasing chamfer angle and width. A wide chamfer spreads the cutting forces over a larger area, which provides a more robust cutting edge, allowing for higher feed rates.

If surface finish and dimensional accuracy are the main requirements, a small chamfer will provide the best results.

Cutting forces and temperature will be reduced and therefore pose less risk of vibration.

Apply first choice edge preparation or strong edge preparation if long tool life and/or process security is most important.

Chamfer width



Edge preparations CB7015 and CB7025

Product family	T-Max® P		CoroTurn® 107		CoroTurn® TR	
Grade	CB7015	CB7025	CB7015	CB7025	CB7015	CB7025
First Choice	S01030	S01030	S01020	S01020	S01020	S01020
WH/WG	S01030 T01030	S01030	S01020 T01020 T01030	S01020 S01530 T01030	-	-
XA	S01515	S01515	S01515	S01515	-	-
Light	E F	S01020	T01020	-	-	-
Strong	S02035	S02035	S01530 T01030	S01530 T01030	-	-

Edge preparations CB7525

Product family	T-Max® P / T-Max®	CoroTurn® 107
Grade	CB7525	CB7525
First Choice	S01530	S01030
WH/WG	T01020	-
XA	-	-
Light	T01020	T01020
Strong	S02035	S01530

Edge preparations CB7105 and CB7115

Product family	T-Max® P		CoroTurn® 107		CoroTurn® TR		CoroCut® 1-2	
Grade	CB7105	CB7115	CB7105	CB7115	CB7105	CB7115	CB7105	CB7115
First Choice	S01525	S01525	S01020	S01020	S01020	S01020	-	-
WH/WG	S01520	S01520	S01520	S01520	-	-	-	-
XA	S01515	S01515	S01515	S01515	-	-	-	-
XB	-	-	-	-	-	-	S01025	S01025
Light	S01020	-	-	-	-	-	-	-
Strong	-	S02030	-	S02030	-	-	-	-

Edge preparations CB7125 and CB7135

Product family	T-Max® P		CoroTurn® 107		CoroTurn® TR	
Grade	CB7125	CB7135	CB7125	CB7135	CB7125	CB7135
First Choice	S01525 S01230*	S01530	S01020 T01020	S01530	S01020	-
WH/WG	S01520	S01520	S01520	-	-	-
XA	S01515	-	S01515	-	-	-
Light	S01025	S01025	-	-	-	-
Strong	S02035	-	S02030	-	-	-

* = HGR

Cutting data recommendations for CB7015 / CB7025 / CB7525 / CB7925

Valid for H1.3.Z.HA

Grade	CB7015		CB7025		CB7525		CB7925	
v_c m/min (ft/min)	120-220	(394-722)	90-150	(295-492)	80-150	(262-492)	60-110	(197-361)
f_r mm/rev (inch/rev)	0.05-0.25	(.002-.010)	0.05-0.25	(.002-.010)	0.05-0.3	(.002-.012)	0.1-0.40	(.004-.016)
f_r WH/WG mm/rev (inch/rev)	0.05-0.35	(.002-.014)	0.05-0.35	(.002-.014)	0.05-0.35	(.002-.014)	-	-
f_r Xcel - T-max® P mm/rev (inch/rev)	0.25-0.45	(.010-.018)	0.25-0.45	(.010-.018)	-	-	-	-
f_r Xcel - CoroTurn® 107 mm/rev (inch/rev)	0.15-0.40	(.006-.016)	0.15-0.40	(.006-.016)	-	-	-	-
f_r HGR mm/rev (inch/rev)	-	-	0.08-0.25	(.003-.010)	-	-	-	-
a_p mm (inch)	0.05-0.3	(.001-.012)	0.05-0.3	(.002-.012)	0.05-0.3	(.001-.012)	0.3-0.6	(.012-.016)
a_p Xcel - T-max® P mm (inch)	0.15-0.25	(.006-.010)	0.15-0.25	(.006-.010)	-	-	-	-
a_p Xcel - CoroTurn® 107 mm (inch)	0.05-0.20	(.002-.008)	0.05-0.20	(.002-.008)	-	-	-	-
a_p HGR mm (inch)	-	-	0.8-2.0	(.003-.008)	-	-	-	-

Cutting data recommendations for CB7105 / CB7115 / CB7125 / CB7135

Valid for H1.3.Z.HA

Grade	CB7105		CB7115		CB7125		CB7135	
v_c m/min (ft/min)	150-250	(492-820)	120-220	(394-722)	100-200	(262-492)	80-160	(262-524)
f_r mm/rev (inch/rev)	0.05-0.15	(.002-.006)	0.05-0.25	(.002-.010)	0.05-0.3	(.002-.012)	0.05-0.40	(.002-.016)
f_r WH/WG mm/rev (inch/rev)	0.05-0.25	(.002-.010)	0.05-0.35	(.002-.014)	0.05-0.35	(.002-.014)	0.05-0.35	(.002-.014)
f_r Xcel - T-max® P mm/rev (inch/rev)	0.25-0.40	(.010-.016)	0.25-0.45	(.010-.018)	0.25-0.45	(.010-.018)	-	-
f_r Xcel - CoroTurn® 107 mm/rev (inch/rev)	0.15-0.35	(.006-.014)	0.15-0.40	(.006-.016)	0.15-0.40	(.006-.016)	-	-
f_r XB - CoroCut® 1-2 mm/rev (inch/rev)	0.4-1.2	(.016-.047)	0.4-1.2	(.016-.047)	-	-	-	-
f_r HGR mm/rev (inch/rev)	-	-	-	-	0.08-0.25	(.003-.010)	-	-
a_p mm (inch)	0.05-0.25	(.002-.010)	0.05-0.3	(.002-.012)	0.05-0.5	(.002-.020)	0.05-0.5	(.002-.02)
a_p Xcel - T-max® P mm (inch)	0.15-0.20	(.006-.008)	0.15-0.25	(.006-.010)	0.15-0.25	(.006-.010)	-	-
a_p Xcel - CoroTurn® 107 mm (inch)	0.05-0.15	(.002-.006)	0.05-0.20	(.002-.008)	0.05-0.20	(.002-.008)	-	-
a_p XB - CoroCut® 1-2 mm (inch)	0.08-0.12	(.003-.005)	0.08-0.12	(.003-.005)	-	-	-	-
a_p HGR mm (inch)	-	-	-	-	0.8-2.0	(.003-.080)	-	-

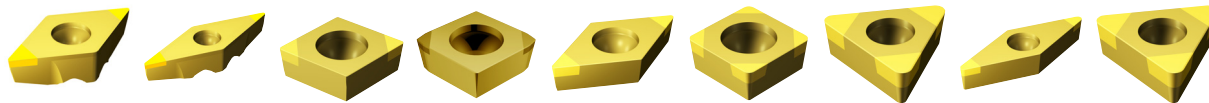
General turning	A
Parting and grooving	B
Thread turning	C
General information	D

General turning

CoroTurn® TR

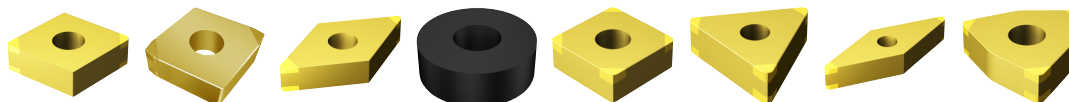
CoroTurn® 107

CoroTurn® 111

Xcel
geometryTR-DC..
A3TR-VB..
A4CC..
A6CC..
A8DC..
A9SC..
A10TC..
A11VB..
A12TP..
A13

Page

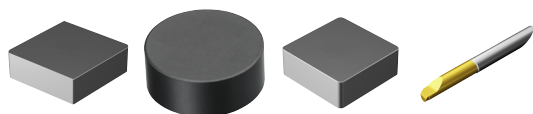
T-Max® P

Xcel
geometryCN..
A16CN..
A18DN..
A20RN..
A22SN..
A24TN..
A26VN..
A27WN..
A28

Page

T-Max®

CoroTurn® XS

CN..
A31RN..
A32SN..
A33CXS..
A35

Page

Parting and grooving

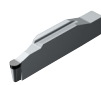
CoroCut® 1-2
Grooving

Profiling

Turning

CoroTurn® XS
GroovingCoroCut® MB
Grooving

Turning

123-GE/S
B3123-S
B5123-RE
B6123-S
B7CXS..
B9MB..R
B11MB..T093
B12

Page

Thread turning

CoroThread® 266

CoroTurn® XS

CoroCut® MB

V-profile 60° Non-
toppingV-profile 60° Non-
topping

Metric 60° Topping

266RG/RL
C3CXS..
C5MB..R
C7

Page

General turning

CoroTurn® TR A2

Inserts A3-A4

CoroTurn® 107 A5

Inserts A6-A12

CoroTurn® 111

Inserts A13

T-Max® P A14

Inserts A15-A29

T-Max® A30

Inserts A31-A33

CoroTurn® XS A34

Cutting tools A35

CoroCut® 1-2

Inserts B7

CoroCut® MB

Cutting tools B12

CoroThread® 266

Inserts C3

CoroTurn® TR

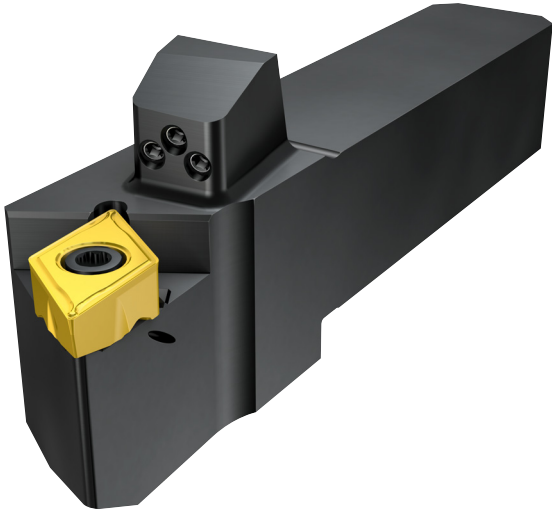
For stable external and internal profiling

Application

- Profiling
- Medium to finishing

Benefits and features

- Stable insert clamping (iLock) ensures good repeatability and accuracy while allowing for high cutting data
- Precision coolant improves chip control and tool life
- Easy coolant connection and tool changes with plug and play adapters or QS stops (QS shanks)

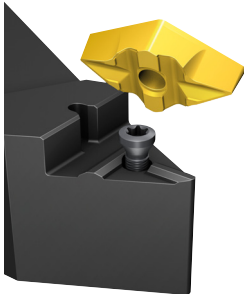


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iLock™ locking interface

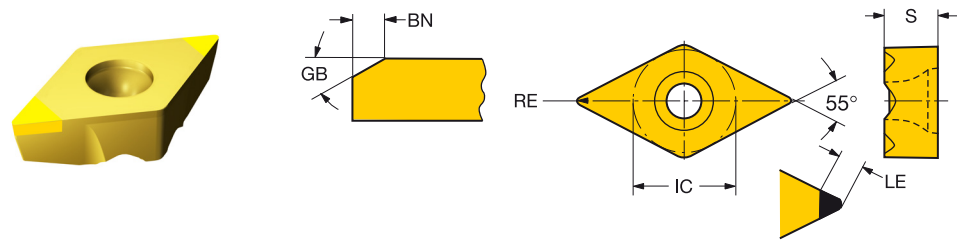
The T-rail on the holder and corresponding groove on the insert lock the insert precisely and securely.

- High stability and tolerances
- High indexing repeatability



CoroTurn® TR insert for turning

D-style insert (Rhombic 55°)

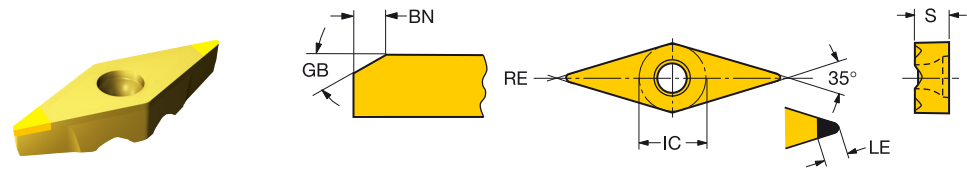


		LE	S	RE	GB	BN	ISO CODE	H					
								7015	7025	7105	7115	7125	
								☆	★	☆	☆		
								☆	☆	☆	☆	★	
Finishing	13	3.1	5.53	0.4	20°	0.10	TR-DC1304S01020F	☆	★	☆	☆		
		.122	.218	.016	20°	.004							
		3.1	5.53	0.8	20°	0.10	TR-DC1308S01020F	☆	☆	☆	☆	★	
		.122	.218	.031	20°	.004							



CoroTurn® TR insert for turning

V-style insert (Rhombic 35°)



		LE	S	RE	GB	BN	ISO CODE	H				
								7015	7025	7105	7115	
								☆	☆	☆	☆	
								☆	★	☆	☆	
								☆	☆	☆	☆	
Finishing		13	3.1	4.53	0.4	20°	0.10	TR-VB1304S01020F				★
								☆	☆	☆	☆	
								☆	★	☆	☆	
								☆	☆	☆	☆	
		13	3.1	4.53	0.4	20°	0.10	TR-VB1304S01020F				★
								☆	☆	☆	☆	
								☆	★	☆	☆	
								☆	☆	☆	☆	
		13	3.1	4.53	0.4	20°	0.10	TR-VB1308S01020F				★
								☆	☆	☆	☆	
								☆	★	☆	☆	
								☆	☆	☆	☆	



CoroTurn® 107

For internal and external turning of slender components

Application

- Longitudinal turning
- Profiling
- Back boring
- Medium to finishing

Benefits and features

- Low cutting forces
- Screw clamping ensures stability and unobstructed chip flow
- Insert geometries and grades for all materials
- Wiper geometries available for high feeds and excellent surface finish
- Holders and insert geometries with conventional and CoroTurn® HP design



www.sandvik.coromant.com/coroturn107

Positive insert shape

- 5°, 7° clearance angle
- All types of insert shapes and sizes
- Geometries and grades for all application areas
- Insert grades also in advanced cutting materials PCD, CBN, and ceramics

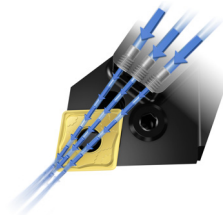
Tools

- Coromant Capto® cutting units
- Shank tools
- QS™ shank tools
- Boring bars
- CoroTurn® SL heads

Tools with EasyFix™ and Silent Tools™ available.

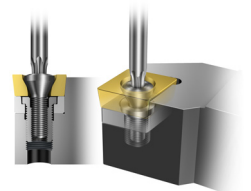
Designed for precision coolant

Holders are available with precision nozzles for excellent chip control.



Screw clamping

Adds stability and unobstructed chip flow

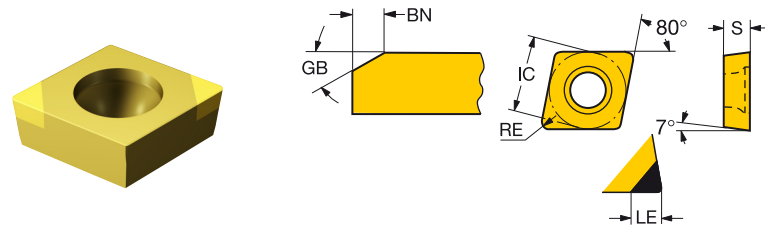


A6



D3

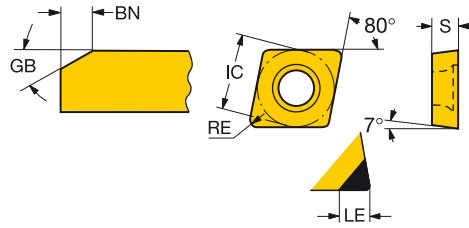
CoroTurn® 107 insert for turning
C-style insert (Rhombic 80°)



			LE	S	RE	BS	GB	BN	ISO CODE	K	H						ANSI CODE
											7625	7015	7025	7105	7125	7135	
Finishing	06	1/4	2.4	2.38	0.2	20°	0.10	CCGW060202S01020F						★			CCGW2(1.5)0S0320F
			.095	.094	.008	20°	.004										
			2.6	2.38	0.2	20°	0.10	CCGW060202T01020F							★		CCGW2(1.5)0T0320F
			.102	.094	.008	20°	.004										
			1.5	2.38	0.2	30°	0.10	CCGW060202T01030F		☆	★						CCGW2(1.5)0T0330F
			.059	.094	.008	30°	.004										
			2.6	2.38	0.4	20°	0.10	CCGW060204S01020F		☆	☆	☆	☆	★			CCGW2(1.5)1S0320F
			.102	.094	.016	20°	.004										
			2.8	2.38	0.4	30°	0.10	CCGW060204S01030F		☆	☆					★	CCGW2(1.5)1S0330F
			.110	.094	.016	30°	.004										
			2.6	2.38	0.4	30°	0.15	CCGW060204S01530F							★		CCGW2(1.5)1S0530F
			.102	.094	.016	30°	.006										
			2.8	2.38	0.4	20°	0.10	CCGW060204T01020F	★							★	CCGW2(1.5)1T0320F
			.110	.094	.016	20°	.004										
			1.8	2.38	0.4	30°	0.10	CCGW060204T01030F		★							CCGW2(1.5)1T0330F
			.071	.094	.016	30°	.004										
			2.5	2.38	0.8	20°	0.10	CCGW060208S01020F				☆	★				CCGW2(1.5)2S0320F
			.098	.094	.031	20°	.004										
			2.0	2.38	0.8	30°	0.10	CCGW060208S01030F		☆	★						CCGW2(1.5)2S0330F
			.079	.094	.031	30°	.004										
			2.0	2.38	0.8	30°	0.10	CCGW060208T01030F		★							CCGW2(1.5)2T0330F
			.079	.094	.031	30°	.004										
			2.6	2.38	0.4	0.5	20°	0.15	CCGW060204S01520FWH				☆	★			CCGW2(1.5)1S0520FWH
			.102	.094	.016	.018	20°	.006									
			1.8	2.38	0.4	0.5	30°	0.10	CCGW060204T01030FWH		☆	★					CCGW2(1.5)1T0330FWH
			.071	.094	.016	.018	30°	.004									
			2.6	2.38	0.8	0.6	20°	0.15	CCGW060208S01520FWH				☆	★			CCGW2(1.5)2S0520FWH
			.102	.094	.031	.022	20°	.006									
			2.0	2.38	0.8	0.6	30°	0.10	CCGW060208T01030FWH		☆	★					CCGW2(1.5)2T0330FWH
			.079	.094	.031	.022	30°	.004									



5

3

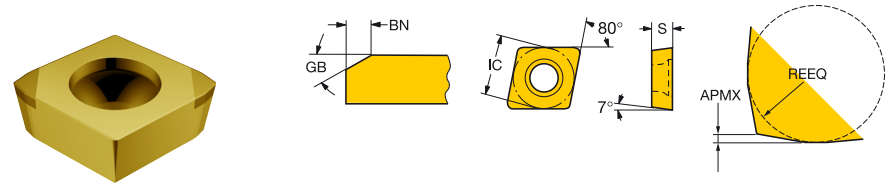
C

D



CoroTurn® 107 insert for turning

C-style insert (Rhombic 80°)



					LE	S	REEQ	APMX	GB	BN	ISO CODE	H					
												7015	7025	7105	7115	7125	
Finishing	09	3/8	2.3	3.97	1.9	0.2	15°	0.15		0.15	CCGX09T3L020-15FXA	☆	☆	☆	☆	★	
			.091	.156	.075	.008	15°	.006									

C

D

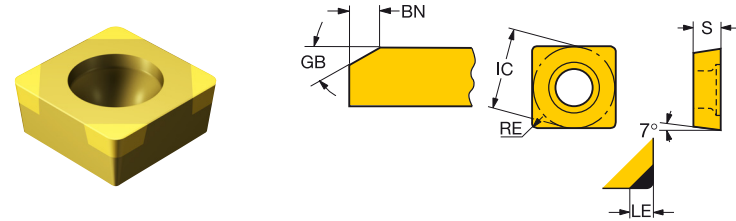


5

C

CoroTurn® 107 insert for turning

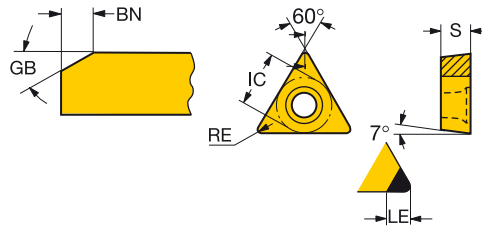
S-style insert (Square)



Finishing			LE	S	RE	GB	BN	ISO CODE	H			ANSI CODE
									7015	7025	7525	
	09	3/8	1.8	3.97	0.4	30°	0.10	SCGW09T304S01030F	☆	★		SCGW3(2.5)1S0330F
			.071	.156	.016	30°	.004					
			2.8	3.97	0.4	20°	0.10	SCGW09T304T01020F			★	SCGW3(2.5)1T0320F
			.110	.156	.016	20°	.004					
			2.1	3.97	0.8	30°	0.10	SCGW09T308S01030F	☆	★		SCGW3(2.5)2S0330F
			.083	.156	.031	30°	.004					
			3.1	3.97	0.8	30°	0.15	SCGW09T308S01530F			★	SCGW3(2.5)2S0630F
			.122	.156	.031	30°	.006					
			3.1	3.97	0.8	20°	0.10	SCGW09T308T01020F			★	SCGW3(2.5)2T0320F
			.122	.156	.031	20°	.004					



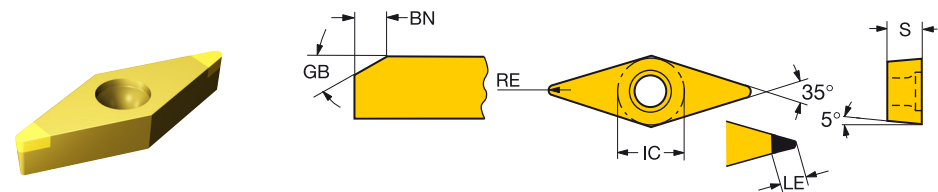
5

3

C

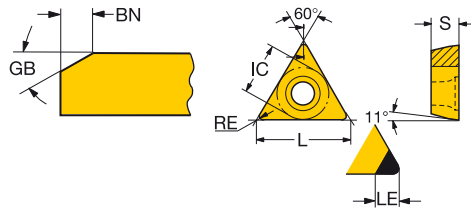
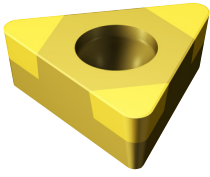


V-style insert (Rhombic 35°)

[illegible]

CoroTurn® 111 insert for turning

T-style insert (Triangular)



								H					
								7015	7025	7105	7115		
Finishing		LE	S	RE	GB	BN	ISO CODE					ANSI CODE	
	11 1/4	1.8	3.18	0.4	20°	0.10	TPGW110304S01020F	☆	★	☆	☆	TPGW221S0320F	
		.071	.125	.016	20°	.004							
		2.0	3.18	0.8	20°	0.10	TPGW110308S01020F	☆	★	☆	☆	TPGW222S0320F	
		.079	.125	.031	20°	.004							



D2



D3



D6

T-Max® P

Optimized for external turning

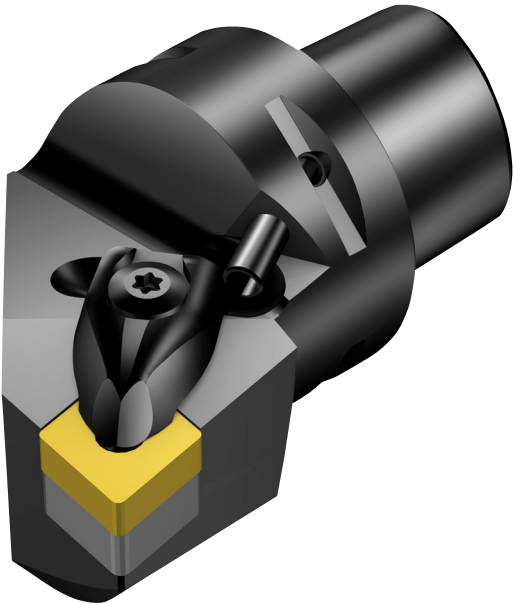
B

Application

- Longitudinal turning
- Face turning
- Profiling
- Roughing to finishing
- Internal turning of large diameter bores from dia 50 mm (2 inch)

Benefits and features

- Productive solution with wiper and Xcel technologies
- Tools featuring precision coolant for excellent chip breaking
- Reliable and secure machining, even in roughing applications
- Double-sided inserts with strong edges
- Lever clamping for wet machining, rigid-clamping for dry machining and short chip materials, wedge clamp for improved accessibility



C

www.sandvik.coromant.com/tmaxp

Inserts

- All types of insert shapes and sizes
- Geometries and grades for all application areas
- Insert grades also in advanced cutting materials PCD, CBN, and ceramic
- Inserts dedicated for precision coolant

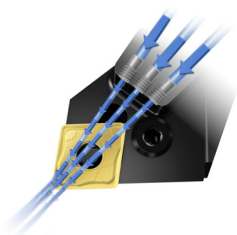
Tools

- Coromant Capto® cutting units
- Shank tools
- Boring bars
- CoroTurn® SL heads

D

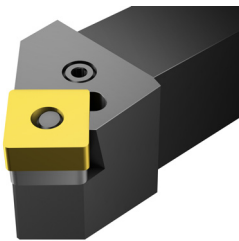
Precision coolant

Holders are available with precision nozzles for excellent chip control.



Different clamping solutions

Lever clamping
Not recommended for HPT

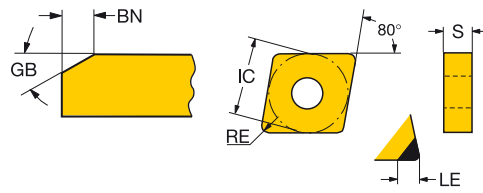
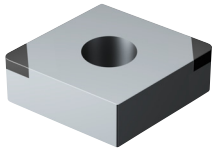


Rigid clamping
Recommended for HPT

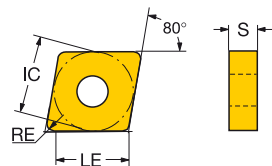
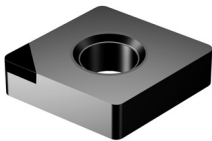


T-Max® P insert for turning

C-style insert (Rhombic 80°)



											H		
											7/125	7/135	
Finishing	12	1/2	LE	S	RE	BS	GB	BN	ISO CODE				ANSI CODE
			2.6	4.76	0.4		30°	0.15	CNGA120404S01530F	★			CNGA431S0530F
			.102	.188	.016		30°	.006					
			2.5	4.76	0.8		30°	0.15	CNGA120408S01530F	★			CNGA432S0530F
			.098	.188	.031		30°	.006					
			2.5	4.76	0.8		35°	0.20	CNGA120408S02035F	★			CNGA432S0835F
			.098	.188	.031		35°	.008					
			2.9	4.76	1.2		30°	0.15	CNGA120412S01530F	★			CNGA433S0530F
			.113	.188	.047		30°	.006					
			2.4	4.76	1.2		35°	0.20	CNGA120412S02035F	★			CNGA433S0835F
			.094	.188	.047		35°	.008					
			2.8	4.76	1.6		35°	0.20	CNGA120416S02035F	★			CNGA434S0835F
			.110	.188	.063		35°	.008					
			3.5	4.76	0.8		30°	0.12	CNGM120408F-HGR	★			CNGM432F-HGR
			.138	.188	.031		30°	.005					
			3.5	4.76	1.2		30°	0.12	CNGM120412F-HGR	★			CNGM433F-HGR
			.138	.188	.047		30°	.005					
			2.5	4.76	0.8	0.6	20°	0.15	CNGA120408S01520FWH	★			CNGA432S0520FWH
			.098	.188	.031	.022	20°	.006					



											H		
											CB20		
Finishing	12	1/2	LE	S	RE	GB	BN	ISO CODE					ANSI CODE
			2.8	4.76	0.4	20°	0.10	CNMA120404S01020E	☆				CNMA431S0320E
			.110	.188	.016	20°	.004						
			2.8	4.76	0.8	20°	0.10	CNMA120408S01020E	☆				CNMA432S0320E
			.110	.188	.031	20°	.004						
			2.7	4.76	1.2	20°	0.10	CNMA120412S01020E	☆				CNMA433S0320E
			.106	.188	.047	20°	.004						



D2



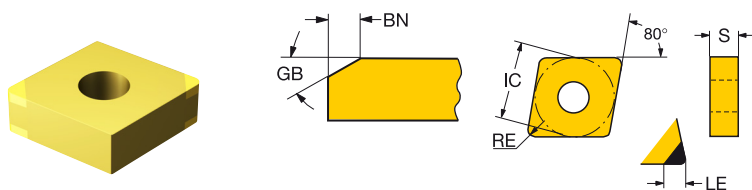
D3



D6

T-Max® P insert for turning

C-style insert (Rhombic 80°)



		LE	S	RE	BS	GB	BN	ISO CODE	K						H						ANSI CODE	
									7525	7015	7025	7105	7115	7125	7525	7015	7025	7105	7115	7125		
Finishing	09	3/8	2.4	3.18	0.4		30°	0.10	CNGA090304S01030A		☆	★									CNGA321S0330A	
			.094	.125	.016		30°	.004														
	2.4	3.18	0.8		30°	0.10	CNGA090308S01030A		☆	★										CNGA322S0330A		
	.094	.125	.031		30°	.004																
	2.0	3.18	0.8		35°	0.20	CNGA090308S02035A			★										CNGA322S0835A		
	.079	.125	.031		35°	.008																
	2.4	3.18	0.4	0.5	30°	0.10	CNGA090304S01030AWH			★										CNGA321S0330AWH		
	.094	.125	.016	.018	30°	.004																
	2.4	3.18	0.4	0.5	30°	0.10	CNGA090304T01030AWH		★											CNGA321T0330AWH		
	.094	.125	.016	.018	30°	.004																
	2.4	3.18	0.8	0.6	30°	0.10	CNGA090308S01030AWH			★										CNGA322S0330AWH		
	.094	.125	.031	.022	30°	.004																
	2.4	3.18	0.8	0.6	30°	0.10	CNGA090308T01030AWH		★											CNGA322T0330AWH		
	.094	.125	.031	.022	30°	.004																
	12	1/2	1.8	4.76	0.4		20°	0.10	CNGA120404S01020A			★										CNGA431S0320A
			.071	.188	.016		20°	.004														
		2.6	4.76	0.4		20°	0.10	CNGA120404S01020H				★									CNGA431S0320H	
		.102	.188	.016		20°	.004															
		3.0	4.76	0.4		30°	0.10	CNGA120404S01030A		☆	★										CNGA431S0330A	
		.118	.188	.016		30°	.004															
		2.6	4.76	0.4		25°	0.15	CNGA120404S01525H				☆	★	★							CNGA431S0525H	
		.102	.188	.016		25°	.006															
		1.8	4.76	0.4		35°	0.20	CNGA120404S02035A			★										CNGA431S0835A	
		.071	.188	.016		35°	.008															
		3.1	4.76	0.4		35°	0.20	CNGA120404S02035B	★										★		CNGA431S0835B	
		.122	.188	.016		35°	.008															
		3.1	4.76	0.4		20°	0.10	CNGA120404T01020B	★										★		CNGA431T0320B	
		.122	.188	.016		20°	.004															
		2.9	4.76	0.8		18°	0.10	CNGA120408S01018A		☆	★											CNGA432S0318A
		.114	.188	.031		18°	.004															
		2.5	4.76	0.8		20°	0.10	CNGA120408S01020H				★										CNGA432S0320H
		.098	.188	.031		20°	.004															
		2.9	4.76	0.8		30°	0.10	CNGA120408S01030A		☆	★											CNGA432S0330A
		.114	.188	.031		30°	.004															
		2.5	4.76	0.8		25°	0.15	CNGA120408S01525H				☆	★	★								CNGA432S0525H
		.098	.188	.031		25°	.006															
		2.1	4.76	0.8		30°	0.15	CNGA120408S01530B												★		CNGA432S0630B
		.083	.188	.031		30°	.006															
		2.5	4.76	0.8		30°	0.20	CNGA120408S02030H					★									CNGA432S0830H
		.098	.188	.031		30°	.008															
		2.9	4.76	0.8		35°	0.20	CNGA120408S02035A		☆	★											CNGA432S0835A
		.114	.188	.031		35°	.008															
		2.1	4.76	0.8		35°	0.20	CNGA120408S02035B												★		CNGA432S0835B
		.083	.188	.031		35°	.008															
		2.1	4.76	0.8		20°	0.10	CNGA120408T01020B	★											★		CNGA432T0320B
		.083	.188	.031		20°	.004															
2.1		4.76	0.8		30°	0.10	CNGA120408T01030A		★												CNGA432T0330A	
.083		.188	.031		30°	.004																
2.8		4.76	1.2		18°	0.10	CNGA120412S01018A		☆	★											CNGA433S0318A	
.110		.188	.047		18°	.004																
2.4		4.76	1.2		20°	0.10	CNGA120412S01020H				★										CNGA433S0320H	
.095		.188	.047		20°	.004																
2.8		4.76	1.2		30°	0.10	CNGA120412S01030A		☆	★											CNGA433S0330A	
.110		.188	.047		30°	.004																
2.4		4.76	1.2		25°	0.15	CNGA120412S01525H				☆	★	★								CNGA433S0525H	
.094		.188	.047		25°	.006																
2.4		4.76	1.2		30°	0.15	CNGA120412S01530B												★		CNGA433S0630B	
.094		.188	.047		30°	.006																
2.4		4.76	1.2		30°	0.20	CNGA120412S02030H					★									CNGA433S0830H	
.095		.188	.047		30°	.008																



D2



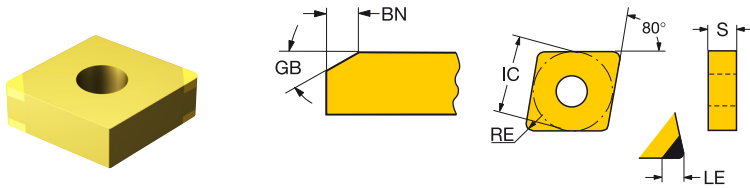
D3



D6

T-Max® P insert for turning

C-style insert (Rhombic 80°)



			LE	S	RE	BS	GB	BN	ISO CODE	K	H					ANSI CODE
											7525	7015	7025	7105	7115	
											7525	7015	7025	7105	7115	
Finishing	12	1/2	2.8	4.76	1.2		35°	0.20	CNGA120412S02035A		☆	★				CNGA433S0835A
			.110	.188	.047		35°	.008								
			2.4	4.76	1.2		35°	0.20	CNGA120412S02035B							★ CNGA433S0835B
			.094	.188	.047		35°	.008								
			2.4	4.76	1.2		20°	0.10	CNGA120412T01020B	★						★ CNGA433T0320B
			.094	.188	.047		20°	.004								
			2.4	4.76	1.2		30°	0.10	CNGA120412T01030A		★					CNGA433T0330A
			.094	.188	.047		30°	.004								
			2.8	4.76	1.6		25°	0.10	CNGA120416S01025H						★	CNGA434S0325H
			.110	.188	.063		25°	.004								
			2.7	4.76	1.6		30°	0.10	CNGA120416S01030A		☆	★				CNGA434S0330A
			.106	.188	.063		30°	.004								
			2.3	4.76	1.6		25°	0.15	CNGA120416S01525H				☆	★		CNGA434S0525H
			.092	.188	.063		25°	.006								
			2.7	4.76	1.6		35°	0.20	CNGA120416S02035A			★				CNGA434S0835A
			.106	.188	.063		35°	.008								
			2.1	4.76	0.8				CNGA120408EA		★					CNGA432AA
			.083	.188	.031											
			2.4	4.76	1.2				CNGA120412EA		★					CNGA433AA
			.094	.188	.047											
			1.8	4.76	0.4	0.8	20°	0.10	CNGA120404T01020BWG	★						★ CNGA431T0320BWG
			.071	.188	.016	.031	20°	.004								
			2.9	4.76	0.8	1.0	30°	0.10	CNGA120408S01030AWG		☆	★				CNGA432S0330AWG
			.114	.188	.031	.039	30°	.004								
			2.5	4.76	0.8	0.6	20°	0.15	CNGA120408S01520HWG				☆	★	★	CNGA432S0520HWG
			.098	.188	.031	.022	20°	.006								
			2.1	4.76	0.8	1.0	20°	0.10	CNGA120408T01020BWG	★						★ CNGA432T0320BWG
			.083	.188	.031	.039	20°	.004								
			2.8	4.76	1.2	1.2	30°	0.10	CNGA120412S01030AWG		☆	★				CNGA433S0330AWG
			.110	.188	.047	.047	30°	.004								
			2.4	4.76	1.2	1.2	20°	0.15	CNGA120412S01520HWG				☆	★		CNGA433S0520HWG
			.095	.188	.047	.047	20°	.006								
			3.0	4.76	0.4	0.5	30°	0.10	CNGA120404S01030AWH			★				CNGA431S0330AWH
			.118	.188	.016	.018	30°	.004								
			2.6	4.76	0.4	0.5	20°	0.15	CNGA120404S01520HWH						★	CNGA431S0520HWH
			.102	.188	.016	.018	20°	.006								
			3.0	4.76	0.4	0.5	30°	0.10	CNGA120404T01030AWH		★					CNGA431T0330AWH
			.118	.188	.016	.018	30°	.004								
			2.9	4.76	0.8	0.6	30°	0.10	CNGA120408S01030AWH		☆	★				CNGA432S0330AWH
			.114	.188	.031	.022	30°	.004								
			2.5	4.76	1.2	0.6	20°	0.15	CNGA120408S01520HWH				☆	★	★	CNGA432S0520HWH
			.098	.188	.047	.022	20°	.006								
			2.1	4.76	0.8	0.6	35°	0.20	CNGA120408S02035AWH		☆	★				CNGA432S0835AWH
			.083	.188	.031	.022	35°	.008								
			2.9	4.76	0.8	0.6	30°	0.10	CNGA120408T01030AWH		★					CNGA432T0330AWH
			.114	.188	.031	.022	30°	.004								
			2.8	4.76	1.2	0.6	30°	0.10	CNGA120412S01030AWH			★				CNGA433S0330AWH
			.110	.188	.047	.024	30°	.004								
			2.4	4.76	1.2	0.6	20°	0.15	CNGA120412S01520HWH				☆	★	★	CNGA433S0520HWH
			.094	.188	.047	.024	20°	.006								
			2.8	4.76	1.2	0.6	30°	0.10	CNGA120412T01030AWH		★					CNGA433T0330AWH
			.110	.188	.047	.024	30°	.004								

B

C

D



D2



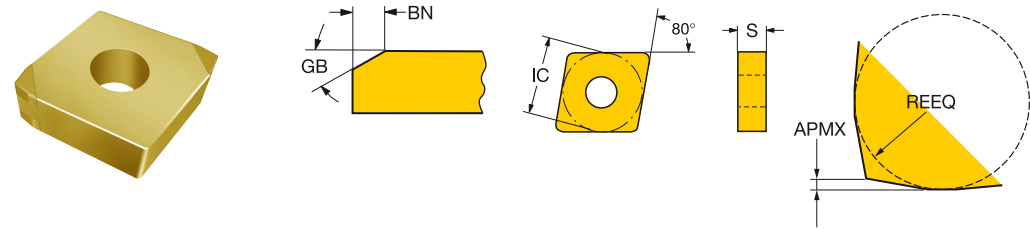
D3



D6

T-Max® P insert for turning

C-style insert (Rhombic 80°)

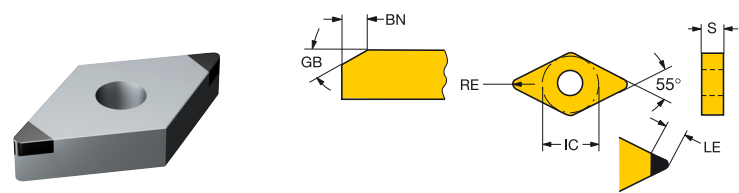


Finishing			LE	S	REEQ	APMX	GB	BN	ISO CODE	H				
										7015	7025	7105	7115	7125
	12	1/2								☆	★			
			4.76	2.3	0.3	15°	0.15		CNGX1204L025-18AXA					
			.188	.091	.010	15°	.006							
			3.3	4.76	2.3	0.3	15°	0.15	CNGX1204L025-18HXA		☆	★	★	
			.128	.188	.091	.010	15°	.006						

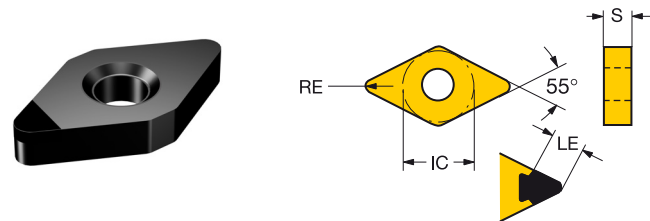


T-Max® P insert for turning

D-style insert (Rhombic 55°)



			LE	S	RE	GB	BN	ISO CODE	H		ANSI CODE
									7125	7135	
Finishing	11	3/8	2.9	4.76	0.4	30°	0.15	DNGA110404S01530F	★		DNGA331S0530F
			.114	.188	.016	30°	.006				
			2.5	4.76	0.8	30°	0.15	DNGA110408S01530F	★		DNGA332S0530F
			.098	.188	.031	30°	.006				
	15	1/2	2.5	4.76	0.8	30°	0.15	DNGA150408S01530F	★		DNGA432S0530F
			.098	.188	.031	30°	.006				
			2.5	4.76	0.8	35°	0.20	DNGA150408S02035F	★		DNGA432S0835F
			.098	.188	.031	35°	.008				
			3.2	4.76	1.2	30°	0.15	DNGA150412S01530F	★		DNGA433S0530F
			.125	.188	.047	30°	.006				
			3.2	4.76	1.2	35°	0.20	DNGA150412S02035F	★		DNGA433S0835F
			.125	.188	.047	35°	.008				
			3.5	4.76	0.8	30°	0.12	DNGM150408F-HGR	★		DNGM432F-HGR
			.138	.188	.031	30°	.005				
			3.5	4.76	1.2	30°	0.12	DNGM150412F-HGR	★		DNGM433F-HGR
			.138	.188	.047	30°	.005				

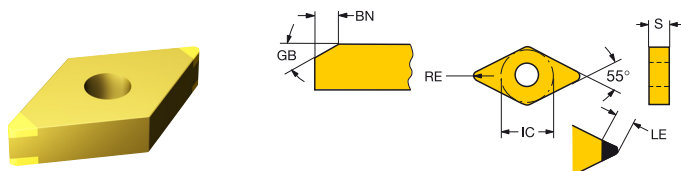


			LE	S	RE	GB	BN	ISO CODE	H		ANSI CODE
									CB20		
Finishing	15	1/2	3.3	4.76	0.4	20°	0.10	DNMA150404S01020E	☆		DNMA431S0320E
			.130	.188	.016	20°	.004				
			2.9	4.76	0.8	20°	0.10	DNMA150408S01020E	☆		DNMA432S0320E
			.114	.188	.031	20°	.004				
			2.6	4.76	1.2	20°	0.10	DNMA150412S01020E	☆		DNMA433S0320E
			.102	.188	.047	20°	.004				



T-Max® P insert for turning

D-style insert (Rhombic 55°)



			LE	S	RE	BS	GB	BN	ISO CODE	K					H					ANSI CODE		
										7525	7015	7025	7105	7115	7125	7525						
Finishing	11	3/8	1.8	4.76	0.4		20°	0.10	DNGA110404S01020A				★						DNGA331S0320A			
			.071	.188	.016		20°	.004														
			3.2	4.76	0.4		30°	0.10	DNGA110404S01030A		☆	★							DNGA331S0330A			
			.126	.188	.016		30°	.004														
			2.9	4.76	0.4		25°	0.15	DNGA110404S01525H				☆	★	★				DNGA331S0525H			
			.114	.188	.016		25°	.006														
			1.8	4.76	0.4		20°	0.10	DNGA110404T01020B	★							★		DNGA331T0320B			
			.071	.188	.016		20°	.004														
			2.1	4.76	0.8		20°	0.10	DNGA110408S01020A			★							DNGA332S0320A			
			.083	.188	.031		20°	.004														
			2.8	4.76	0.8		30°	0.10	DNGA110408S01030A		☆	★							DNGA332S0330A			
			.110	.188	.031		30°	.004														
			2.5	4.76	0.8		25°	0.15	DNGA110408S01525H				☆	★	★				DNGA332S0525H			
			.098	.188	.031		25°	.006														
			1.8	4.76	0.8		35°	0.20	DNGA110408S02035A			★							DNGA332S0835A			
			.071	.188	.031		35°	.008														
			2.1	4.76	0.8		20°	0.10	DNGA110408T01020B	★							★		DNGA332T0320B			
			.083	.188	.031		20°	.004														
			2.5	4.76	1.2		30°	0.10	DNGA110412S01030A		★								DNGA333S0330A			
			.098	.188	.047		30°	.004														
			2.1	4.76	1.2		25°	0.15	DNGA110412S01525H				☆	★					DNGA333S0525H			
			.084	.188	.047		25°	.006														
			Finishing	15	1/2	1.8	4.76	0.4		20°	0.10	DNGA150404S01020A			★						DNGA431S0320A	
						.071	.188	.016		20°	.004											
						2.9	4.76	0.4		20°	0.10	DNGA150404S01020H				★					DNGA431S0320H	
						.113	.188	.016		20°	.004											
						4.0	4.76	0.4		30°	0.10	DNGA150404S01030A		☆	★						DNGA431S0330A	
						.157	.188	.016		30°	.004											
						2.9	4.76	0.4		25°	0.15	DNGA150404S01525H				☆	★	★			DNGA431S0525H	
						.114	.188	.016		25°	.006											
						1.8	4.76	0.4		35°	0.20	DNGA150404S02035A			★						DNGA431S0835A	
						.071	.188	.016		35°	.008											
						2.1	4.76	0.8		20°	0.10	DNGA150408S01020A			★						DNGA432S0320A	
						.083	.188	.031		20°	.004											
						2.5	4.76	0.8		20°	0.10	DNGA150408S01020H				★					DNGA432S0320H	
						.098	.188	.031		20°	.004											
						3.6	4.76	0.8		30°	0.10	DNGA150408S01030A		☆	★							DNGA432S0330A
						.142	.188	.031		30°	.004											
2.5	4.76	0.8					25°	0.15	DNGA150408S01525H				☆	★	★				DNGA432S0525H			
.098	.188	.031					25°	.006														
2.2	4.76	0.8					30°	0.15	DNGA150408S01530B								★		DNGA432S0630B			
.087	.188	.031					30°	.006														
2.5	4.76	0.8					30°	0.20	DNGA150408S02030H					★					DNGA432S0830H			
.098	.188	.031					30°	.008														
2.1	4.76	0.8					35°	0.20	DNGA150408S02035A		☆	★							DNGA432S0835A			
.083	.188	.031					35°	.008														
2.1	4.76	1.2					20°	0.10	DNGA150412S01020H				★						DNGA433S0320H			
.084	.188	.047					20°	.004														
3.3	4.76	1.2					30°	0.10	DNGA150412S01030A		☆	★							DNGA433S0330A			
.130	.188	.047					30°	.004														
3.2	4.76	1.2					25°	0.15	DNGA150412S01525H				☆	★	★				DNGA433S0525H			
.125	.188	.047					25°	.006														
3.3	4.76	1.2					30°	0.15	DNGA150412S01530B								★		DNGA433S0630B			
.130	.188	.047					30°	.006														
2.1	4.76	1.2					30°	0.20	DNGA150412S02030H				★						DNGA433S0830H			
.084	.188	.047					30°	.008														
2.4	4.76	1.2					35°	0.20	DNGA150412S02035A		☆	★							DNGA433S0835A			
.094	.188	.047					35°	.008														
2.9	4.76	1.6					30°	0.10	DNGA150416S01030A		☆	★							DNGA434S0330A			
.114	.188	.063					30°	.004														



D2



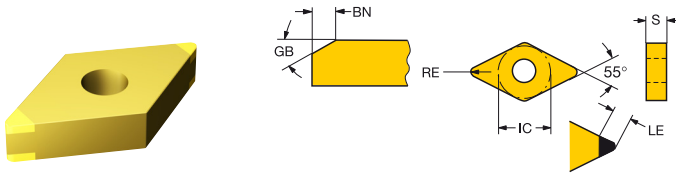
D3



D6

T-Max® P insert for turning

D-style insert (Rhombic 55°)



			FINISHING						ISO CODE	K	H						ANSI CODE
			LE	S	RE	BS	GB	BN			7525	7015	7025	7105	7115	7125	
Finishing	15	1/2	2.5	4.76	1.6		25°	0.15	DNGA150416S01525H				☆	★	★	DNGA434S0525H	
			.098	.188	.063		25°	.006	DNGA150408EA		★					DNGA432AA	
			.087	.188	.031				DNGA150412EA		★					DNGA433AA	
			2.5	4.76	1.2				DNGA150408S01030AWH		☆	★				DNGA432S0330AWH	
			.098	.188	.047				DNGA150408S01520HWH				☆	★	★	DNGA432S0520HWH	
			.142	.188	.031	.022	30°	.004	DNGA150408S02035AWH			★				DNGA432S0835AWH	
			2.5	4.76	0.8	0.6	20°	0.15	DNGA150412S01030AWH		☆	★				DNGA433S0330AWH	
			.098	.188	.031	.022	20°	.006	DNGA150412S01520HWH				☆	★		DNGA433S0520HWH	
			2.1	4.76	0.8	0.6	35°	0.20									
			.083	.188	.031	.022	35°	.008									
			3.3	4.76	1.2	0.6	30°	0.10			☆	★					
			.130	.188	.047	.024	30°	.004									
		2.1	4.76	1.2	0.6	20°	0.15	DNGA150412S01520HWH				☆	★		DNGA433S0520HWH		
		.084	.188	.047	.024	20°	.006										



D2



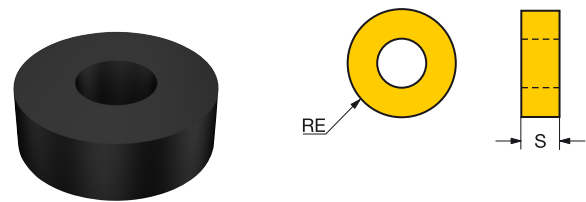
D3



D6

T-Max® P insert for turning

R-style insert (Round)

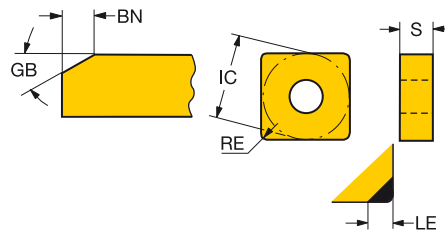
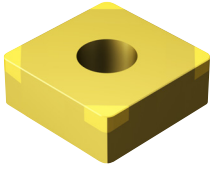


							H	CB20	☆	ANSI CODE				
Medium	S	RE	GB	BN	ISO CODE									
	09	3/8	3.18	4.76	20°	0.10					RNGA090300S01020D		RNGA32S0320D	
			.125	.188	20°	.004								



T-Max® P insert for turning

S-style insert (Square)



			LE	S	RE	GB	BN	ISO CODE	H					ANSI CODE
	12	1/2							7105	7115	7125	7135	CB20	
Finishing	12	1/2	2.5	4.76	0.8	25°	0.15	SNGA120408S01525F	☆	★				SNGA432S0525F
			.098	.188	.031	25°	.006							
			2.5	4.76	0.8	30°	0.15	SNGA120408S01530F				★		SNGA432S0530F
			.098	.188	.031	30°	.006							
			2.5	4.76	1.2	25°	0.15	SNGA120412S01525F	☆	★				SNGA433S0525F
			.098	.188	.047	25°	.006							
			2.8	4.76	1.2	30°	0.15	SNGA120412S01530F				★		SNGA433S0530F
			.110	.188	.047	30°	.006							
			2.8	4.76	1.6	25°	0.10	SNGA120416S01025F			★	☆		SNGA434S0325F
			.110	.188	.063	25°	.004							
			2.9	4.76	2.0	25°	0.10	SNGA120420S01025F			★			SNGA435S0325F
			.114	.188	.079	25°	.004							
			2.8	4.76	2.4	25°	0.10	SNGA120424S01025F			★	☆		SNGA436S0325F
			.110	.188	.094	25°	.004							
			3.4	4.76	0.8	20°	0.10	SNMA120408S01020E					☆	SNMA432S0320E
			.134	.188	.031	20°	.004							



D2



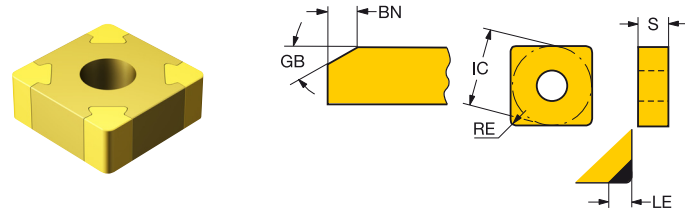
D3



D6

T-Max® P insert for turning

S-style insert (Square)

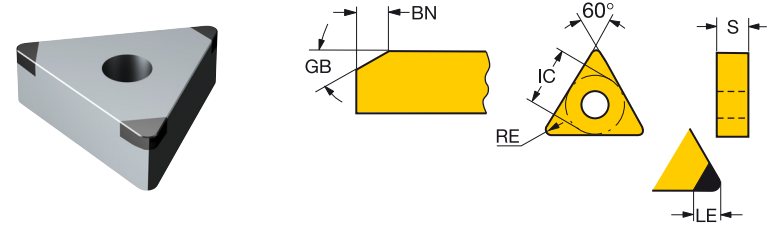


Finishing			LE	S	RE	GB	BN	ISO CODE	K				H				ANSI CODE
									7525	7015	7025	7525	7525	7015	7025	7525	
	09	3/8	2.2	3.18	0.8	30°	0.10	SNGA090308S01030A									SNGA322S0330A
			.087	.125	.031	30°	.004										
	12	1/2	2.8	4.76	0.8	30°	0.10	SNGA120408S01030A									SNGA432S0330A
			.110	.188	.031	30°	.004										
			2.8	4.76	0.8	20°	0.10	SNGA120408T01020B									SNGA432T0320B
			.110	.188	.031	20°	.004										
			2.8	4.76	1.2	30°	0.10	SNGA120412S01030A									SNGA433S0330A
			.110	.188	.047	30°	.004										
			2.8	4.76	1.2	35°	0.20	SNGA120412S02035A									SNGA433S0835A
			.110	.188	.047	35°	.008										
			2.8	4.76	1.2	35°	0.20	SNGA120412S02035B									SNGA433S0835B
			.110	.188	.047	35°	.008										
			2.8	4.76	1.2	20°	0.10	SNGA120412T01020B									SNGA433T0320B
			.110	.188	.047	20°	.004										



T-Max® P insert for turning

T-style insert (Triangular)



			LE	S	RE	GB	BN	ISO CODE	H		ANSI CODE
									7125	7135 CB20	
Finishing	16	3/8	2.5	4.76	0.8	30°	0.15	TNGA160408S01530F	★		TNGA332S0530F
			.098	.188	.031	30°	.006				
			3.1	4.76	1.2	25°	0.10	TNGA160412S01025F	★		TNGA333S0325F
			.122	.188	.047	25°	.004				
			3.1	4.76	1.2	30°	0.15	TNGA160412S01530F	★		TNGA333S0530F
			.122	.188	.047	30°	.006				
			2.8	4.76	1.6	25°	0.10	TNGA160416S01025F	★	☆	TNGA334S0325F
			.110	.188	.063	25°	.004				
			3.9	4.76	2.0	25°	0.10	TNGA160420S01025F	★	☆	TNGA335S0325F
			.154	.188	.079	25°	.004				
			3.6	4.76	2.4	25°	0.10	TNGA160424S01025F	★	☆	TNGA336S0325F
			.142	.188	.094	25°	.004				
			3.6	4.76	0.4	20°	0.10	TNMA160404S01020E		☆	TNMA331S0320E
			.142	.188	.016	20°	.004				
			3.3	4.76	0.8	20°	0.10	TNMA160408S01020E		☆	TNMA332S0320E
			.130	.188	.031	20°	.004				
	22	1/2	3.2	4.76	0.8	20°	0.10	TNMA220408S01020E		☆	TNMA432S0320E
			.126	.188	.031	20°	.004				
			2.9	4.76	1.2	20°	0.10	TNMA220412S01020E		☆	TNMA433S0320E
			.114	.188	.047	20°	.004				

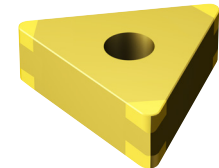
B

C

D



T-style insert (Triangular)

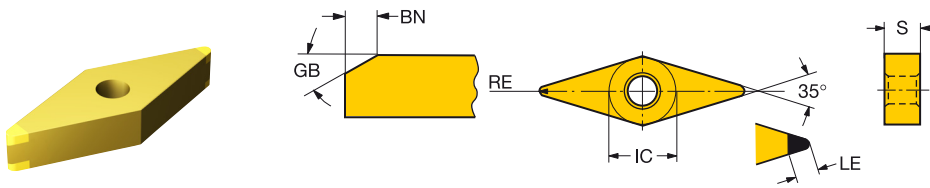


		LE	S	RE	GB	BN	ISO CODE	7625	7015	7025	7105	7115	7525	ANSI CODE	
Finishing	11	1/4	1.8	3.18	0.4	30°	0.10	TNGA110304S01030A		☆	★			TNGA221S0330A	
			.071	.125	.016	30°	.004								
			1.8	3.18	0.4	20°	0.10	TNGA110304T01020B	★				★	TNGA221T0320B	
			.071	.125	.016	20°	.004								
			1.5	3.18	0.8	30°	0.10	TNGA110308S01030A		☆	★			TNGA222S0330A	
			.059	.125	.031	30°	.004								
			2.1	3.18	0.8	20°	0.10	TNGA110308T01020B	★				★	TNGA222T0320B	
			.083	.125	.031	20°	.004								
	16	3/8	3.0	4.76	0.4	30°	0.10	TNGA160404S01030A		☆	★			TNGA331S0330A	
			.118	.188	.016	30°	.004								
			2.8	4.76	0.4	25°	0.15	TNGA160404S01525H				☆	★	TNGA331S0525H	
			.110	.188	.016	25°	.006								
			1.8	4.76	0.4	20°	0.10	TNGA160404T01020B	★					★	TNGA331T0320B
			.071	.188	.016	20°	.004								
			2.7	4.76	0.8	30°	0.10	TNGA160408S01030A		☆	★			TNGA332S0330A	
			.106	.188	.031	30°	.004								
			2.5	4.76	0.8	25°	0.15	TNGA160408S01525H				☆	★	TNGA332S0525H	
			.098	.188	.031	25°	.006								
			2.8	4.76	0.8	30°	0.15	TNGA160408S01530B						★	TNGA332S0630B
			.110	.188	.031	30°	.006								
			2.0	4.76	0.8	35°	0.20	TNGA160408S02035A			★			TNGA332S0835A	
			.079	.188	.031	35°	.008								
			2.8	4.76	0.8	35°	0.20	TNGA160408S02035B						★	TNGA332S0835B
			.110	.188	.031	35°	.008								
			2.8	4.76	0.8	20°	0.10	TNGA160408T01020B	★					★	TNGA332T0320B
			.110	.188	.031	20°	.004								
			2.4	4.76	1.2	30°	0.10	TNGA160412S01030A		☆	★			TNGA333S0330A	
			.094	.188	.047	30°	.004								
			2.2	4.76	1.2	25°	0.15	TNGA160412S01525H				☆	★	TNGA333S0525H	
			.087	.188	.047	25°	.006								
		2.4	4.76	1.2	35°	0.20	TNGA160412S02035A			★			TNGA333S0835A		
		.094	.188	.047	35°	.008									
		2.4	4.76	1.2	20°	0.10	TNGA160412T01020B	★					★	TNGA333T0320B	
		.094	.188	.047	20°	.004									



T-Max® P insert for turning

V-style insert (Rhombic 35°)



								ISO CODE	H					ANSI CODE
									7015	7025	7105	7115	7125	
Finishing	16	3/8	2.1	4.76	0.4	20°	0.10	VNGA160404S01020A	★					VNGA331S0320A
			.083	.188	.016	20°	.004							
			4.4	4.76	0.4	30°	0.10	VNGA160404S01030A	☆	★				VNGA331S0330A
			.173	.188	.016	30°	.004							
			2.5	4.76	0.4	25°	0.15	VNGA160404S01525H			☆	★	★	VNGA331S0525H
			.098	.188	.016	25°	.006							
			2.4	4.76	0.8	20°	0.10	VNGA160408S01020A		★				VNGA332S0320A
			.094	.188	.031	20°	.004							
			3.5	4.76	0.8	30°	0.10	VNGA160408S01030A	☆	★				VNGA332S0330A
			.138	.188	.031	30°	.004							
			2.5	4.76	0.8	25°	0.15	VNGA160408S01525H			☆	★	★	VNGA332S0525H
			.098	.188	.031	25°	.006							
			2.4	4.76	0.8	35°	0.20	VNGA160408S02035A	☆	★				VNGA332S0835A
			.094	.188	.031	35°	.008							



D2



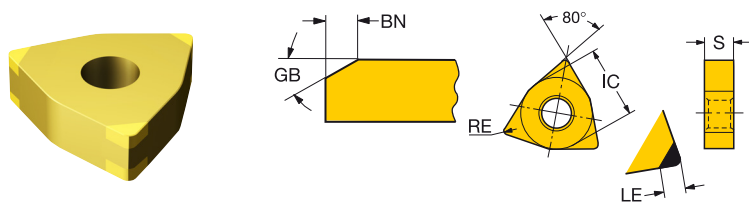
D3



D6

T-Max® P insert for turning

W-style insert (Trigon 80°)



		LE	S	RE	BS	GB	BN	ISO CODE	K							H					ANSI CODE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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Finishing	06	3/8	2.4	4.76	0.4		30°	0.10	WNGA060404S01030A		☆	★																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				</



D2



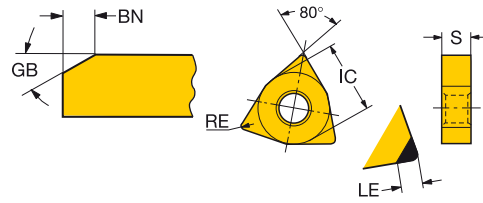
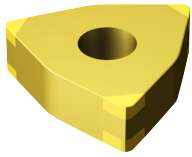
D3



D6

T-Max® P insert for turning

W-style insert (Trigon 80°)



			LE	S	RE	BS	GB	BN	ISO CODE	K						ANSI CODE
	08	1/2								7525	7015	7025	7105	7115	7125	
Finishing	.118	.188	.016	.018	30°	.004			WNGA080404T01030AWH	★						WNGA431T0330AWH
	2.9	4.76	0.8	0.6	30°	0.10			WNGA080408S01030AWH		★					WNGA432S0330AWH
	.114	.188	.031	.022	30°	.004			WNGA080408S01520HWH			☆	★			WNGA432S0520HWH
	2.5	4.76	0.8	0.6	20°	0.15			WNGA080408S01520HWH							WNGA432S0520HWH
	.098	.188	.031	.022	20°	.006			WNGA080408T01030AWH	★						WNGA432T0330AWH
	2.9	4.76	0.8	0.6	30°	0.10			WNGA080412S01030AWH		★					WNGA433S0330AWH
	.114	.188	.031	.022	30°	.004			WNGA080412S01030AWH							WNGA433S0330AWH
	2.8	4.76	1.2	0.6	30°	0.10			WNGA080412S01520HWH			☆	★			WNGA433S0520HWH
	.110	.188	.047	.024	30°	.004			WNGA080412S01520HWH							WNGA433S0520HWH
	2.4	4.76	1.2	0.6	20°	0.15			WNGA080412T01030AWH	★						WNGA433T0330AWH
	.095	.188	.047	.024	20°	.006			WNGA080412T01030AWH							WNGA433T0330AWH
	2.8	4.76	1.2	0.6	30°	0.10			WNGA080412T01030AWH	★						WNGA433T0330AWH
	.110	.188	.047	.024	30°	.004			WNGA080412T01030AWH							WNGA433T0330AWH



D2



D3



D6

T-Max®

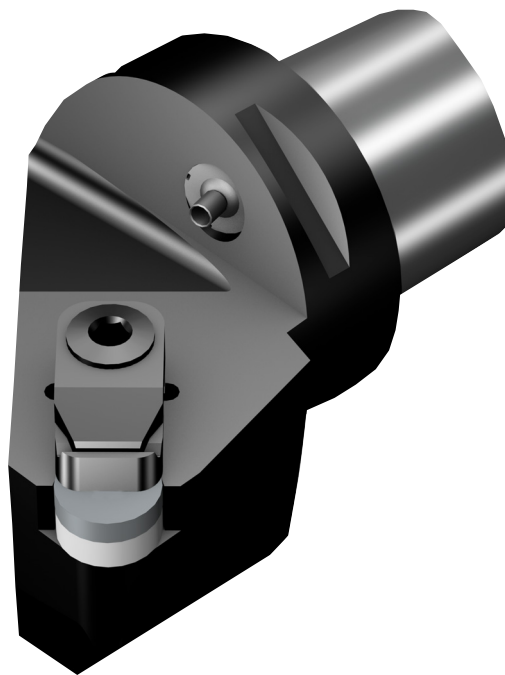
For productive turning of difficult-to-machine materials

Application

- Longitudinal turning
- Face turning
- Profiling
- Roughing to finishing

Benefits and features

- Reliable and secure machining, even in roughing applications
- Double-sided inserts with strong edges
- Secure and rigid-clamping and top clamp



Clamping

- Rigid clamp and top clamp

Tools

- Coromant Capto® cutting units
- Shank tools

Inserts

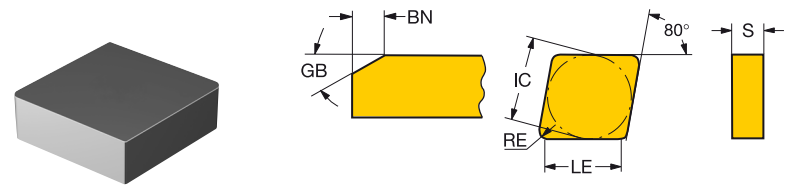
- T-Max® inserts without holes.



A31

T-Max® insert for turning

C-style insert (Rhombic 80°)

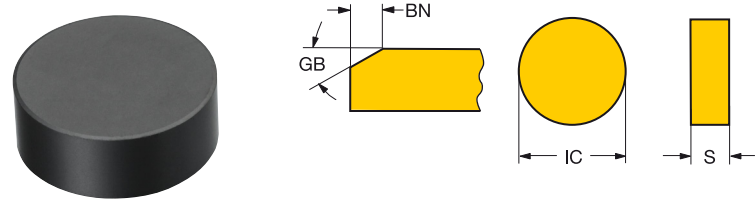


Finishing			LE	S	RE	GB	BN	ISO CODE	7925 K	ANSI CODE
	12	1/2								
			11.7	4.76	1.2	20°	0.25	CNGN120412S02520M	★	CNG433S0820M
			.460	.188	.047	20°	.010			
			11.3	4.76	1.6	20°	0.25	CNGN120416S02520M	★	CNG434S0820M
			.445	.188	.063	20°	.010			



T-Max® insert for turning

R-style insert (Round)

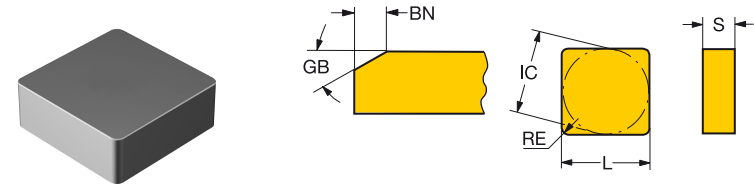


								K	H					
							7925	CB50	CB50					
							ISO CODE			ANSI CODE				
Finishing	06	1/4	3.18	3.0	20°	0.25	RNGN060300S02520M	★			RNG22S1020M			
			.125	.118	20°	.010								
	09	3/8	3.18	4.8	20°	0.25	RNGN090300S02520M	★			RNG32S1020M			
			.125	.188	20°	.010								
	12	1/2	3.18	6.4	20°	0.25	RNGN120300S02520M	★			RNG42S1020M			
			.125	.250	20°	.010								
			4.76	6.4	20°	0.25	RNGN120400S02520M	★			RNG43S1020M			
			.188	.250	20°	.010								
			4.76	6.4			RNGN120400FD		☆	☆	RNG43FD			
			.188	.250										



T-Max® insert for turning

S-style insert (Square)



Finishing			LE	S	RE	GB	BN	ISO CODE	7925	K	CB50	H	CB50	ANSI CODE
	IC													
	09	3/8	8.3	3.18	1.2	20°	0.25	SNGN090312S02520M	★				SNG323S1020M	
			.328	.125	.047	20°	.010							
	12	1/2	11.5	4.76	1.2	20°	0.25	SNGN120412S02520M	★				SNG433S1020M	
			.453	.188	.047	20°	.010							
			11.1	4.76	1.6	20°	0.25	SNGN120416S02520M	★				SNG434S1020M	
			.437	.188	.063	20°	.010							
			11.9	4.76	0.8			SNGN120408FD		☆	☆		SNG432FD	
			.469	.188	.031									
		11.5	4.76	1.2			SNGN120412FD		☆	☆		SNG433FD		
		.453	.188	.047										
		11.1	4.76	1.6			SNGN120416FD		☆	☆		SNG434FD		
		.437	.188	.063										



CoroTurn® XS

Internal turning, face grooving, and threading of small components

Application

- Internal turning
- Copying
- Back boring
- Profiling
- Grooving
- Face grooving
- Pre-parting
- Threading



Benefits and features

- Optimized for machining small, high-quality features
- High precision and repeatability
- Reliable and easy-to-use clamping system
- Precision-ground tools for high repeatability
- Longer tool life by minimized micro-vibrations with cylindrical carbide shank adapters
- Clamping nut ensures easy change of cutting tool with cylindrical carbide shank adapters

www.sandvik.coromant.com/coroturnxs

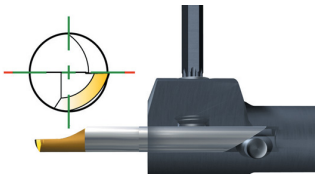
Internal coolant

- The adapters are designed with internal precision coolant supply.
- Selectable coolant direction for better chip evacuation and safe machining.

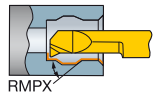
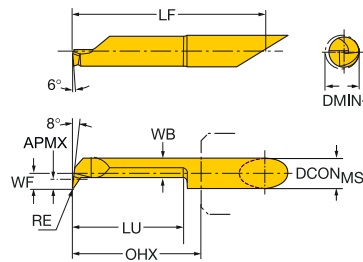
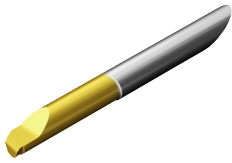


Locking precision

Precise location into the boring bar due to a locating pin.



CoroTurn® XS solid carbide tool for turning



									H	Dimensions, mm, inch			
	CZC _{MS}	DMIN ₁	LU	RE	APMX	RMPX	OHX	Ordering code	7015	DCON _{MS}	WB	LF	WF
	4	1.7	6.0	0.100	0.20	17°	13.0	CXS-04T098-10-1706R	★	4	1.1	27.3	0.7
		.067	.236	.004	.008		.512			.157	.041	1.073	.028
	4	2.2	9.0	0.100	0.20	17°	13.0	CXS-04T098-10-2209R	★	4	1.6	27.3	1.0
		.087	.354	.004	.008		.512			.157	.061	1.073	.037
	4	2.7	10.0	0.150	0.20	17°	13.0	CXS-04T098-15-2710R	★	4	2.1	27.3	1.2
		.106	.394	.006	.008		.512			.157	.081	1.073	.047
	4	3.2	15.0	0.150	0.20	17°	18.0	CXS-04T098-15-3215R	★	4	2.6	32.3	1.5
		.126	.591	.006	.008		.709			.157	.100	1.270	.057
	4	3.7	15.0	0.150	0.20	17°	18.0	CXS-04T098-15-3715R	★	4	3.1	32.3	1.7
		.146	.591	.006	.008		.709			.157	.120	1.270	.067
	4	4.2	10.0	0.150	0.30	17°	13.0	CXS-04T098-15-4210R	★	4	3.5	27.3	2.0
		.165	.394	.006	.012		.512			.157	.136	1.073	.077
	4	4.2	15.0	0.150	0.30	17°	18.0	CXS-04T098-15-4215R	★	4	3.5	32.3	2.0
		.165	.591	.006	.012		.709			.157	.136	1.270	.077
	4	4.2	20.0	0.150	0.30	17°	23.0	CXS-04T098-15-4220R	★	4	3.5	37.3	2.0
		.165	.787	.006	.012		.906			.157	.136	1.467	.077
	4	4.2	25.0	0.150	0.30	17°	28.0	CXS-04T098-15-4225R	★	4	3.5	42.3	2.0
		.165	.984	.006	.012		1.102			.157	.136	1.663	.077
	5	5.2	10.0	0.200	0.50	17°	13.0	CXS-05T098-20-5210R	★	5	4.3	32.3	2.5
		.205	.394	.008	.020		.512			.197	.167	1.270	.096
	5	5.2	20.0	0.200	0.50	17°	23.0	CXS-05T098-20-5220R	★	5	4.3	42.3	2.5
		.205	.787	.008	.020		.906			.197	.167	1.663	.096
	5	5.2	25.0	0.200	0.50	17°	28.0	CXS-05T098-20-5225R	★	5	4.3	47.3	2.5
		.205	.984	.008	.020		1.102			.197	.167	1.860	.096
	5	5.2	30.0	0.200	0.50	17°	33.0	CXS-05T098-20-5230R	★	5	4.3	52.3	2.5
		.205	1.181	.008	.020		1.299			.197	.167	2.057	.096
	6	6.2	15.0	0.200	0.50	17°	18.0	CXS-06T098-20-6215R	★	6	5.3	37.3	3.0
		.244	.591	.008	.020		.709			.236	.207	1.467	.116
	6	6.2	20.0	0.200	0.50	17°	23.0	CXS-06T098-20-6220R	★	6	5.3	42.3	3.0
		.244	.787	.008	.020		.906			.236	.207	1.663	.116
	6	6.2	25.0	0.200	0.50	17°	28.0	CXS-06T098-20-6225R	★	6	5.3	47.3	3.0
		.244	.984	.008	.020		1.102			.236	.207	1.860	.116
	6	6.2	30.0	0.200	0.50	17°	33.0	CXS-06T098-20-6230R	★	6	5.3	52.3	3.0
		.244	1.181	.008	.020		1.299			.236	.207	2.057	.116
	6	6.2	40.0	0.200	0.50	17°	43.0	CXS-06T098-20-6240R	★	6	5.3	62.3	3.0
		.244	1.575	.008	.020		1.693			.236	.207	2.451	.116
	7	7.2	25.0	0.200	0.50	17°	28.0	CXS-07T098-20-7225R	★	7	6.3	47.3	3.5
		.283	.984	.008	.020		1.102			.276	.246	1.860	.136
	7	7.2	30.0	0.200	0.50	17°	33.0	CXS-07T098-20-7230R	★	7	6.3	52.3	3.5
		.283	1.181	.008	.020		1.299			.276	.246	2.057	.136
	7	7.2	40.0	0.200	0.50	17°	43.0	CXS-07T098-20-7240R	★	7	6.3	62.3	3.5
		.283	1.575	.008	.020		1.693			.276	.246	2.451	.136
	7	7.2	50.0	0.200	0.50	17°	53.0	CXS-07T098-20-7250R	★	7	6.3	72.3	3.5
		.283	1.969	.008	.020		2.087			.276	.246	2.844	.136

CZC_{MS} to correspond with CZC_{WS} on adapter.

R = Right hand, L = Left hand



D2



D8

Parting and grooving

CoroCut® 1-2	B2
Inserts	B3-B7
CoroTurn® XS	B8
Cutting tools	B9
CoroCut® MB	B10
Cutting tools	B11-B12

CoroCut® 1-2

Parting, profiling, and grooving operations

Application

- Parting off
- External grooving
- Internal grooving
- Face grooving
- Profiling

Benefits and features

- Strong tool material alloy for high fatigue resistance
- Plug and play adapters make it easy to connect the coolant
- Easy to change inserts: no torque wrench needed—always correct clamping with quick-release key



Note: In parting off and grooving, CoroCut® 1-2 is the best choice to depths where the 2-edged inserts can be used.

www.sandvik.coromant.com/corocut1-2

Inserts

- Geometries and grades for all applications and feeds
- Insert grades in advanced cutting materials, CBN
- Xcel inserts for excellent surface finish

Tools

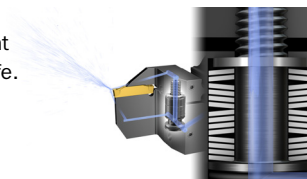
- Coromant Capto® cutting units
- Shank tools
- QS™ shanks
- Parting blades
- Boring bars
- CoroTurn® SL heads

Rigid spring clamping

The system combines rigid spring clamping mechanism with railed insert seat and long inserts for exceptional stability.

Over and under coolant

Tools with internal over and under coolant available for best chip control and tool life.

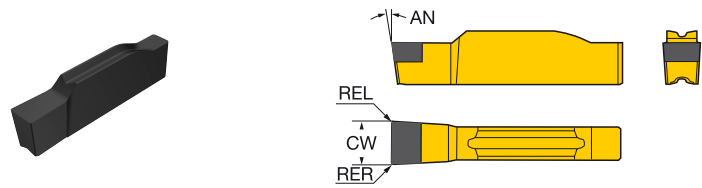


B3

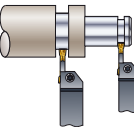


D3

CoroCut® 1-2 insert for grooving



CoroCut® 2-edge

							H	Dimensions, mm, inch				
Finishing		SSC	CW	REL	RER	Ordering code	CB20	AN	CWTOLL	CWTOLU	RETOLL	RETOLU
		G	3.00	0.20	0.20	N123G1-0300-0002-GE	☆	7°	-0.020	0.020	-0.050	0.050
			.118	.008	.008				-0.008	.0008	-0.0020	.0020
			3.18	0.20	0.20	N123G1-0318-0002-GE	☆	7°	-0.020	0.020	-0.050	0.050
			.125	.008	.008				-0.008	.0008	-0.0020	.0020
		H	4.00	0.20	0.20	N123H1-0400-0002-GE	☆	7°	-0.020	0.020	-0.050	0.050
			.157	.008	.008				-0.008	.0008	-0.0020	.0020
			5.00	0.20	0.20	N123H1-0500-0002-GE	☆	7°	-0.020	0.020	-0.050	0.050
			.197	.008	.008				-0.008	.0008	-0.0020	.0020
		J	6.00	0.20	0.20	N123J1-0600-0002-GE	☆	7°	-0.020	0.020	-0.050	0.050
			.236	.008	.008				-0.008	.0008	-0.0020	.0020
		K	6.35	0.20	0.20	N123K1-0635-0002-GE	☆	7°	-0.020	0.020	-0.050	0.050
	.250	.008	.008				-0.008	.0008	-0.0020	.0020		

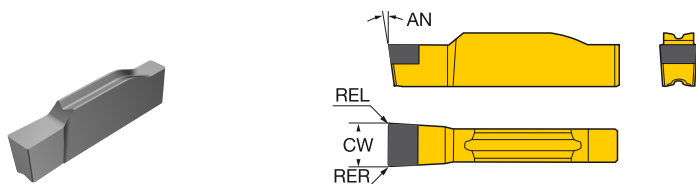
SSC = To correspond with SSC on holder.

N = Neutral



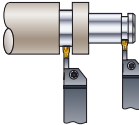
A

CoroCut® 1-2 insert for grooving



B

CoroCut® 1-edge

							S		H		Dimensions, mm, inch							
Finishing		SSC	CW	RE	REL	RER	Ordering code	7015	7015	GB	BN	AN	CWTOLL	CWTOLU	RETOLL	RETOLU		
		G	3.00		0.40	0.40	N123G1-030004S01025	★	★	25°	0.1	7°	-0.020	0.020	-0.050	0.050		
			.118		.016	.016				25°	.004		-.0008	.0008	-.0020	.0020		
		H	4.00		0.40	0.40	N123H1-040004S01025	★	★	25°	0.1	7°	-0.020	0.020	-0.050	0.050		
			.157		.016	.016				25°	.004		-.0008	.0008	-.0020	.0020		
			5.00		0.40	0.40	N123H1-050004S01025	★	★	25°	0.1	7°	-0.020	0.020	-0.050	0.050		
			.197		.016	.016				25°	.004		-.0008	.0008	-.0020	.0020		
		J	6.00		0.40	0.40	N123J1-060004S01025	★	★	25°	0.1	7°	-0.020	0.020	-0.050	0.050		
			.236		.016	.016				25°	.004		-.0008	.0008	-.0020	.0020		
		L	8.00	0.80	0.80	0.80	N123L1-080008S01025	★	★	25°	0.1	7°	-0.020	0.020	-0.050	0.050		
		.315	.031	.031	.031				25°	.004		-.0008	.0008	-.0020	.0020			

SSC = To correspond with SSC on holder.

N = Neutral

C

D



D2

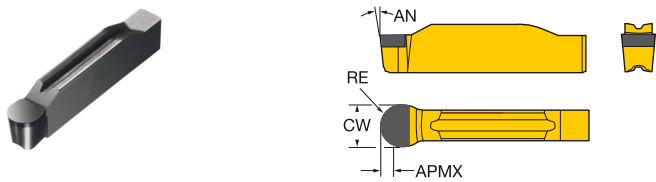


D3



D11

CoroCut® 1-2 insert for profiling



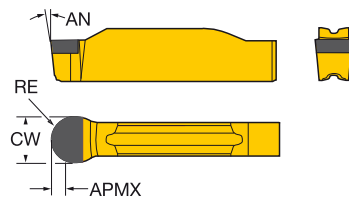
CoroCut® 1-edge

						S		H		Dimensions, mm, inch							
		SSC	CW	RE	APMX	Ordering code		7015	7015	GB	BN	AN	CWTOLL	CWTOLU	RETOLL	RETOLU	
Finishing		F	3.00	1.50	2.5	N123F1-0300S01025	★	★	25°	0.1	7°	-0.020	0.020	-0.020	0.020		
			.118	.059	.098				25°	.004		-.0008	.0008	-.0008	.0008		
		H	4.00	2.00	3.4	N123H1-0400S01025	★	★	25°	0.1	7°	-0.020	0.020	-0.020	0.020		
			.157	.079	.134				25°	.004		-.0008	.0008	-.0008	.0008		
			5.00	2.50	4.5	N123H1-0500S01025	★	★	25°	0.1	7°	-0.020	0.020	-0.020	0.020		
			.197	.098	.177				25°	.004		-.0008	.0008	-.0008	.0008		
		J	6.00	3.00	5.3	N123J1-0600S01025	★	★	25°	0.1	7°	-0.020	0.020	-0.020	0.020		
			.236	.118	.209				25°	.004		-.0008	.0008	-.0008	.0008		

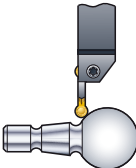
SSC = To correspond with SSC on holder. N = Neutral

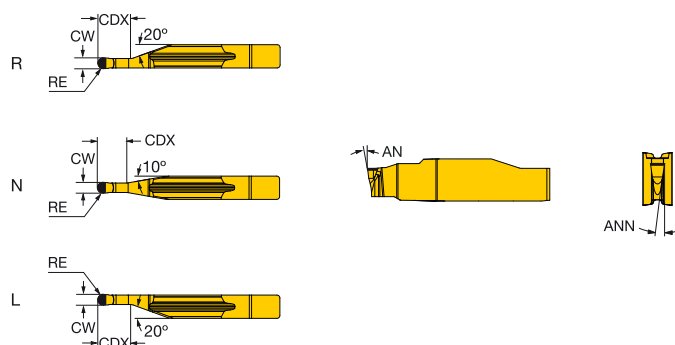
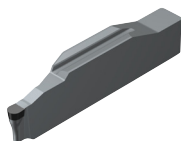


CoroCut® 1-2 insert for profiling

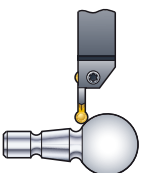


CoroCut® 1-edge

							S	H			Dimensions, mm, inch				
		SSC	CW	RE	APMX	Ordering code	7015	7015	7025	CB20	AN	CWTOLL	CWTOLU	RETOLL	RETOLU
Finishing		F	3.00	1.50	0.6	N123F1-0300-RE	★	★	☆	☆	7°	-0.020	0.020	-0.020	0.020
			.118	.059	.024							-.0008	.0008	-.0008	.0008
			3.18	1.59	0.6	N123F1-0318-RE	★	★			7°	-0.020	0.020	-0.020	0.020
			.125	.063	.024							-.0008	.0008	-.0008	.0008
		H	4.00	2.00	0.7	N123H1-0400-RE	★	★	☆	☆	7°	-0.020	0.020	-0.020	0.020
			.157	.079	.026							-.0008	.0008	-.0008	.0008
			5.00	2.50	0.7	N123H1-0500-RE	★	★		☆	7°	-0.020	0.020	-0.020	0.020
			.197	.098	.028							-.0008	.0008	-.0008	.0008
		J	6.00	3.00	0.8	N123J1-0600-RE	★	★		☆	7°	-0.020	0.020	-0.020	0.020
			.236	.118	.030							-.0008	.0008	-.0008	.0008
			6.35	3.18	0.8	N123J1-0635-RE	★	★			7°	-0.020	0.020	-0.020	0.020
			.250	.125	.030							-.0008	.0008	-.0008	.0008
		L	8.00	4.00	0.9	N123L1-0800-RE	★	★		☆	7°	-0.020	0.020	-0.020	0.020
			.315	.157	.033							-.0008	.0008	-.0008	.0008



CoroCut® 1-edge

										Dimensions, mm, inch					
		SSC	CW	RE	CDX	APMX	Ordering code	7015	7015	7025	AN	CWTOLL	CWTOLU	RETOLL	RETOLU
Finishing		HL	2.00	1.00	5.0	0.5	L123H1-0200-RE	★	★		7°	-0.020	0.020	-0.010	0.010
			.079	.039	.197	.020						-.0008	.0008	-.0004	.0004
		HN	2.00	1.00	5.0	0.5	N123H1-0200-RE	★	★	☆	7°	-0.020	0.020	-0.010	0.010
			.079	.039	.197	.020						-.0008	.0008	-.0004	.0004
		HR	2.00	1.00	5.0	0.5	R123H1-0200-RE	★	★		7°	-0.020	0.020	-0.010	0.010
			.079	.039	.197	.020						-.0008	.0008	-.0004	.0004

SSC = To correspond with SSC on holder.

N = Neutral, R = Right hand, L = Left hand



D2

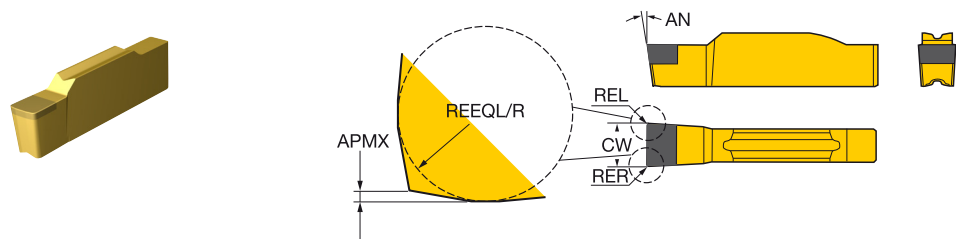


D3



D11

CoroCut® 1-2 insert for turning



CoroCut® 1-edge

									H		Dimensions, mm, inch							
									7105	7115								
								Ordering code			GB	BN	AN	CWTOLL	CWTOLU	RETOLL	RETOLU	
Finishing	G	3.00	1.60	1.60	0.40	0.40	0.12	N123G1-0300S01025-XB	★	★	25°	0.1	7°	-0.020	0.020	-0.050	0.050	
		.118	.063	.063	.016	.016	.005				25°	.004		-.0008	.0008	-.0020	.0020	
	J	5.00	2.60	2.60	0.20	0.20		N123J1-0500S01025-XB	☆	★	25°	0.1	7°	-0.020	0.020	-0.050	0.050	
		.197	.102	.102	.008	.008					25°	.004		-.0008	.0008	-.0020	.0020	

SSC = To correspond with SSC on holder. N = Neutral

CoroTurn® XS

Internal turning, face grooving, and threading of small components

Application

- Internal turning
- Copying
- Back boring
- Profiling
- Grooving
- Face grooving
- Pre-parting
- Threading



Benefits and features

- Optimized for machining small, high-quality features
- High precision and repeatability
- Reliable and easy-to-use clamping system
- Precision-ground tools for high repeatability
- Longer tool life by minimized micro-vibrations with cylindrical carbide shank adapters
- Clamping nut ensures easy change of cutting tool with cylindrical carbide shank adapters

www.sandvik.coromant.com/coroturnxs

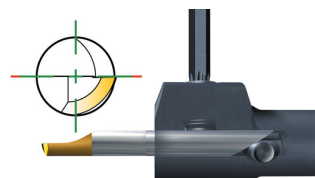
Internal coolant

- The adapters are designed with internal precision coolant supply.
- Selectable coolant direction for better chip evacuation and safe machining.

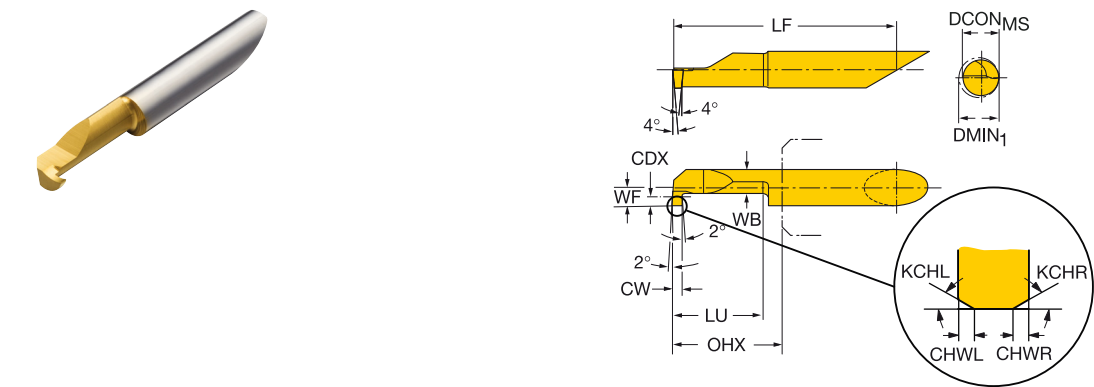


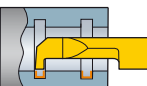
Locking precision

Precise location into the boring bar due to a locating pin.



CoroTurn® XS solid-carbide tool for grooving



											H	Dimensions, mm, inch						
	CZC _{MS}	CW	KCHL	KCHR	CHWL	CHWR	CDX	DMIN ₁	LU	OHX	Ordering code	7015	DCON _{MS}	WB	LF	WF	CWTOLL	CWTOLU
	6	1.00	45°	45°	0.04	0.04	1.8	6.2	15.0	18.0	CXS-06G100-6215R	★	6	4.0	37.3	3.0	0.000	0.050
		.039			.002	.002	.071	.244	.591	.709			.236	.156	1.467	.116	.0000	.0020
	6	1.50	45°	45°	0.04	0.04	1.8	6.2	15.0	18.0	CXS-06G150-6215R	★	6	4.0	37.3	3.0	0.000	0.050
		.059			.002	.002	.071	.244	.591	.709			.236	.156	1.467	.116	.0000	.0020



CoroCut® MB

For internal machining with high precision

B

Application

- For internal machining of small holes
- Pre-parting
- Grooving
- Face grooving
- Profiling
- Turning
- Copying
- Back boring
- Threading

Benefits and features

- Vibration-free machining
- Fast setup for both tool and insert
- Stable, high precision interface between interface and tool holder
- Front-mounted exchangeable cutting tool
- Sharp cutting edges
- Geometries and grades for all materials
- Carbide shanks for long overhangs
- Through coolant
- Easy fix clamping
- Grooving tools in a large variety of widths and corner radii—also for standardized grooves such as O-rings and circlip grooves.



C

www.sandvik.coromant.com/corocutmb

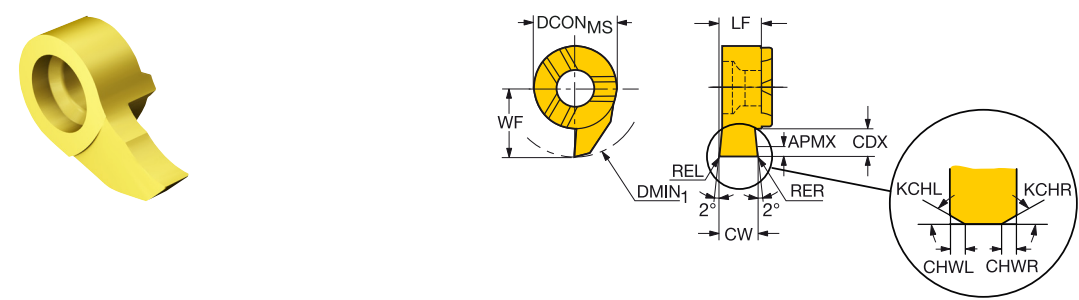
EasyFix

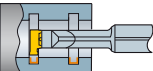
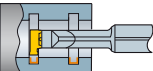
Cylindrical steel and carbide boring bars to be used with EasyFix sleeves for exact center height.

CoroCut® MB boring bars

For stability and accessibility the bars are designed with an eccentric head with oval cross section.

CoroCut® MB solid carbide head for grooving

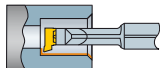


										H	Dimensions, mm, inch							
											7015							
	CZC _{MS}	CW	KCHL	KCHR	CHWL	CHWR	CDX	DMIN ₁				Ordering code	DCON _{MS}	LF	WF	CWTOLL	CWTOLU	
	07	1.00	45°	45°	0.04	0.04	2.8	11.0				MB-07G100-00-11R	★	7	3.9	6.8	0.000	0.050
		.039			.002	.002	.110	.433						.276	.154	.268	.0000	.0020
	07	1.50	45°	45°	0.04	0.04	2.8	11.0				MB-07G150-00-11R	★	7	3.9	6.8	0.000	0.050
		.059			.002	.002	.110	.433						.276	.154	.268	.0000	.0020

CZCMS to correspond with CZCWS on adapter.

CoroCut® MB solid-carbide head for turning





						H	Dimensions, mm, inch		
CZC _{MS}	RE	DMIN ₁	APMX	RMPX	Ordering code	7015	DCON _{MS}	LF	WF
07	0.20	10.0	1.8	15°	MB-07T093-02-10R	★	7	3.9	5.6
	.008	.394	.071				.276	.154	.220

CZC_{MS} to correspond with CZC_{WS} on adapter.

Thread turning

CoroThread® 266

C2

Inserts

C3

CoroTurn® XS

C4

Cutting tools

C5

CoroCut® MB

C6

Cutting tools

C7

CoroThread® 266

Ultra-rigid thread turning for all types of threads

B

Application

- External threads
- Internal threads

C

Benefits and features

- Reduced machine- and downtime
- Excellent surface finish thanks to the exceptional stability
- Multi-point inserts available, require fewer passes, resulting in increased productivity
- Large standard product range of tools and thread profile inserts
- Unique guide rail interface between the insert and tip seat
- Good edge indexing
- Easy to mount the insert correctly



www.sandvik.coromant.com/corothread266

D

Inserts

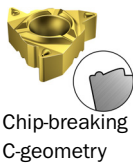
- Insert geometries and grades for all materials
- Tailor Made inserts for almost any thread form or pitch



Standard
A-geometry



Sharp
F-geometry

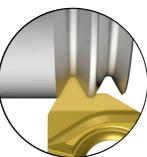


Chip-breaking
C-geometry

Three different threading insert types

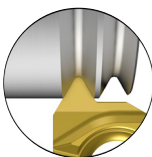
Full profile

High productivity



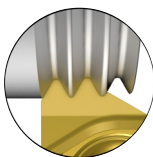
V-profile

Minimum tool
inventory



Multi-point

Economical mass
production



C3



D3

Tools

- Coromant Capto® cutting units
- Shank tools
- Boring bars
- CoroTurn® SL heads

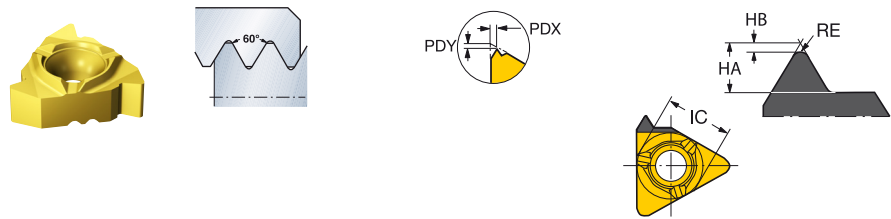


Secure iLock™ clamping

The slotted insert sits rigidly on the T-rails in the pocket eliminating any insert movement caused by cutting force variations.

CoroThread® 266 insert for thread turning

V-profile 60° Non-topping



External right-hand threads

							H	Dimensions, mm, inch					
	TPN	TPX	TPIN	TPIX	NT	Ordering code	7015	RER	REL	HA	HB	PDX	PDY
16 3/8	1.0	2.0	12.0	24.0	1	266RG-16VM01A001EE	★	0.13	0.13	1.68	0.14	1.00	1.03
								.005	.005	.0661	.0055	.039	.041
	1.5	3.0	8.0	16.0	1	266RG-16VM01A002EE	★	0.20	0.20	2.64	0.20	1.50	1.03
								.008	.008	.1039	.0079	.059	.041

Internal right-hand threads

							H	Dimensions, mm, inch					
	TPN	TPX	TPIN	TPIX	NT	Ordering code	7015	RER	REL	HA	HB	PDX	PDY
16 3/8	1.5	3.0	8.0	16.0	1	266RL-16VM01A002EE	★	0.09	0.09	2.54	0.09	1.50	1.01
								.004	.004	.1000	.0035	.059	.040

R = Right hand, L = Left hand



CoroTurn® XS

Internal turning, face grooving, and threading of small components

Application

- Internal turning
 - Copying
 - Back boring
 - Profiling
 - Grooving
 - Face grooving
 - Pre-parting
 - Threading



Benefits and features

- Optimized for machining small, high-quality features
 - High precision and repeatability
 - Reliable and easy-to-use clamping system
 - Precision-ground tools for high repeatability
 - Longer tool life by minimized micro-vibrations with cylindrical carbide shank adapters
 - Clamping nut ensures easy change of cutting tool with cylindrical carbide shank adapters

www.sandvik.coromant.com/coroturnxs

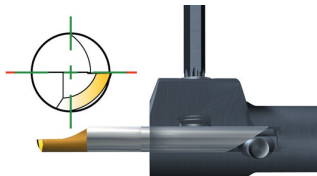
Internal coolant

- The adapters are designed with internal precision coolant supply.
 - Selectable coolant direction for better chip evacuation and safe machining.



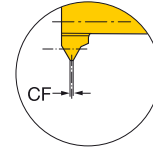
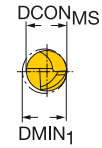
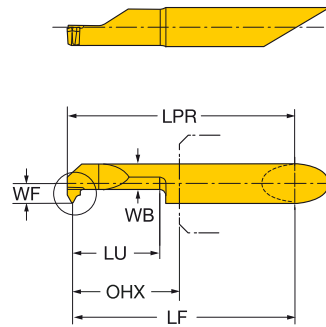
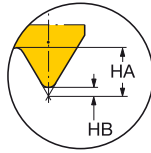
Locking precision

Precise location into the boring bar due to a locating pin.

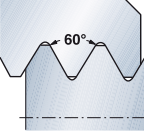


CoroTurn® XS solid-carbide tool for thread turning

V-profile 60° Non-topping



Internal right-hand threads

										H	Dimensions, mm, inch							
	CZC _{MS}	TPN	TPX	TPIN	TPIX	DMIN ₁	LU	OHX	Ordering code	CZC _{MS}	DCON _{MS}	WB	CF	LPR	LF	WF	HA	HB
	6	1.00	1.25	20.0	24.0	6.2	15.0	17.5	CXS-06TH100VM-6215R	★	6	3.6	0.1	37.9	37.3	3.0	0.8	0.1
		.039	.049			.244	.591	.687			.236	.140	.005	1.490	1.469	.116	.031	.004
	6	1.50	1.75	16.0	18.0	6.2	15.0	17.2	CXS-06TH150VM-6215R	★	6	3.6	0.2	38.3	37.3	3.0	1.1	0.2
		.059	.069			.244	.591	.676			.236	.140	.007	1.507	1.469	.116	.045	.006

CZC_{MS} to correspond with CZC_{WS} on adapter.

R = Right hand, L = Left hand



D2



D8

CoroCut® MB

For internal machining with high precision

Application

- For internal machining of small holes

- Pre-parting

- Grooving

- Face grooving

- Profiling

- Turning

- Copying

- Back boring

- Threading

Benefits and features

- Vibration-free machining

- Fast setup for both tool and insert

- Stable, high precision interface between interface and tool holder

- Front-mounted exchangeable cutting tool

- Sharp cutting edges

- Geometries and grades for all materials

- Carbide shanks for long overhangs

- Through coolant

- Easy fix clamping

- Grooving tools in a large variety of widths and corner radii—also for standardized grooves such as O-rings and circlip grooves.



www.sandvik.coromant.com/corocutmb

EasyFix

Cylindrical steel and carbide boring bars to be used with EasyFix sleeves for exact center height.

CoroCut® MB boring bars

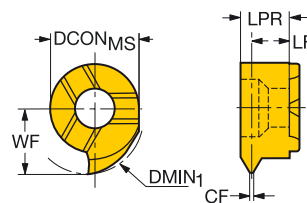
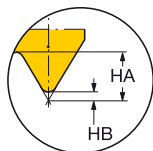
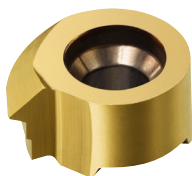
For stability and accessibility the bars are designed with an eccentric head with oval cross section.

CoroCut® MB solid-carbide head for thread turning

Metric 60° Topping

TCTR

IT 6



Internal right-hand threads

	H											
	Dimensions, mm, inch											
	CZC _{MS}	TP	DMIN ₁	Ordering code	7015	DCON _{MS}	CF	LPR	LF	WF	HA	HB
	07	1.0	10.0	MB-07TH100MM-10R	★	7	0.1	3.8	3.2	5.8	0.9	0.1
		.039	.394			.276	.005	.150	.126	.228	.035	.004
	07	1.5	10.0	MB-07TH150MM-10R	★	7	0.2	3.8	3.0	5.8	1.4	0.2
		.059	.394			.276	.007	.150	.118	.228	.054	.006

CZC_{MS} to correspond with CZC_{WS} on adapter.

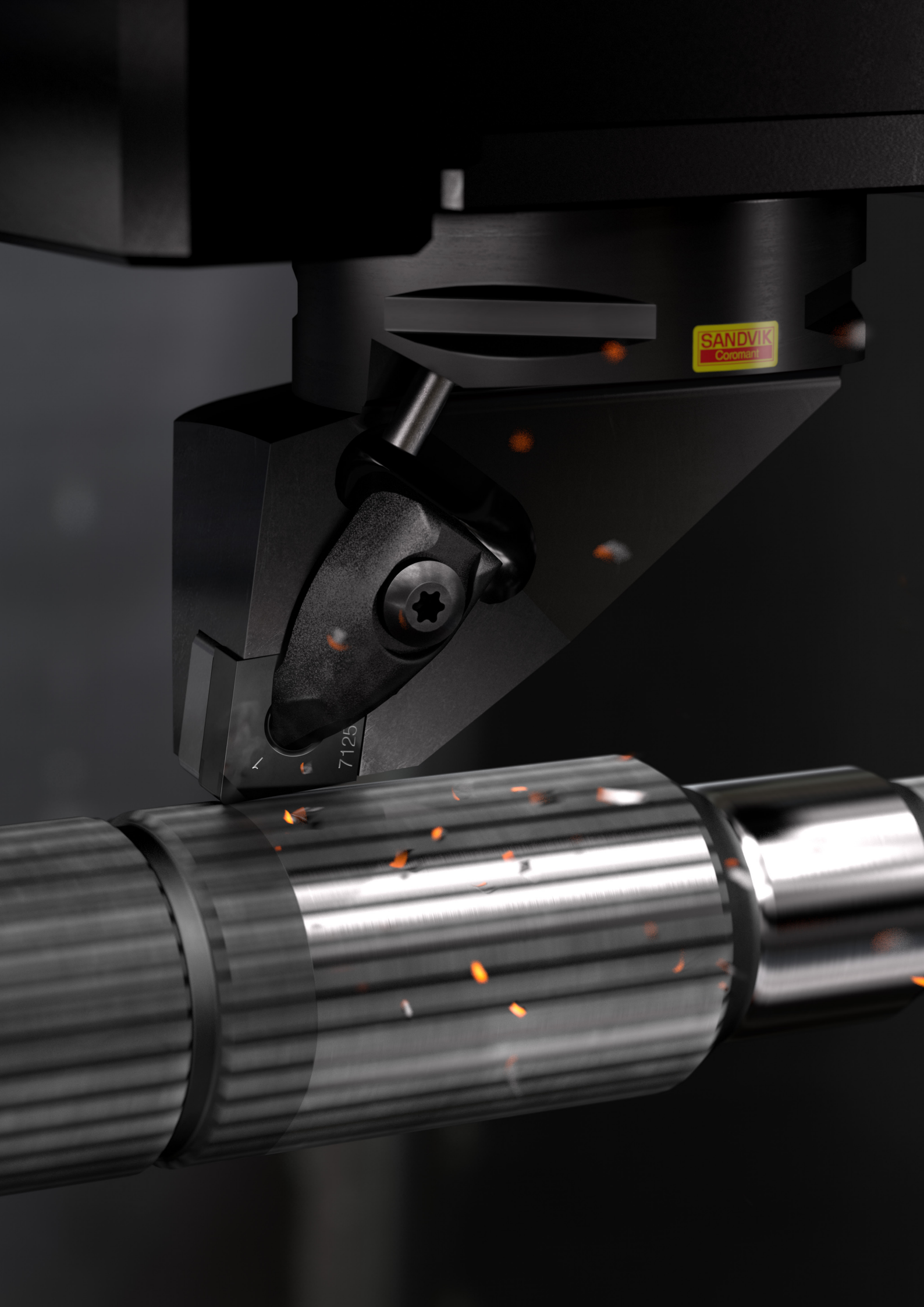
R = Right hand, L = Left hand



D2



D10



General information

ISO 13399 D2

Tailor Made D3

Safety information D4

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A new standard is developed

ISO 13399 is an international standard that will simplify the exchange of data for cutting tools. You will notice a slight difference, through the new parameters and descriptions of each tool.

For the first time ever, there is a standardized way of describing product data regarding cutting tools. When all tools in the industry share the same parameters and definitions, communicating tool information between software systems becomes very straightforward.

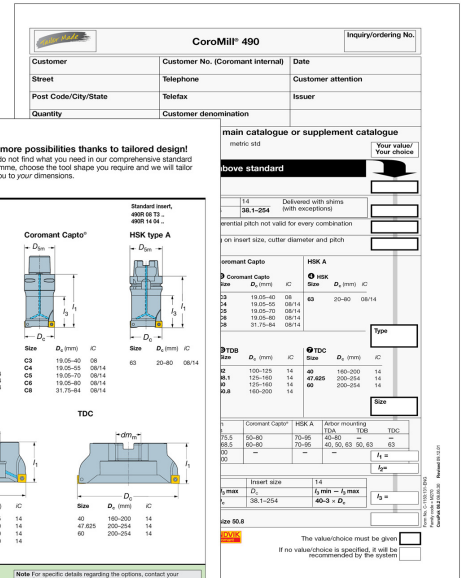
How this benefits you

Basically, it means that your systems can talk to ours, as they all speak the same language. Download product data from our web site and use it directly in your CAD/ CAM software to assemble tools that you use in production. No need to look for information in catalogs and interpret data from one system to another. Imagine how much time this will save you!

Parameters in hard part turning

Short name	Preferred Name
ANN	Minor clearance angle
APMX	Depth of cut maximum
BN	Face land width
CDX	Cutting depth maximum
CF	Spot chamfer
CW	Cutting width
CWTOLL	Cutting width lower tolerance
CWTOLU	Cutting width upper tolerance
CZC MS	Connection size code machine side
D1	Fixing hole diameter
DMIN	Minimum bore diameter
DMM	Shank diameter
GB	Face land angle
HA	Thread height theoretical
HB	Thread height difference
IC	Inscribed circle diameter
KAPR	Tool cutting edge angle
L	Cutting edge length
LE	Cutting edge effective length
LF	Functional length
LLTOLL	Length tolerance, lower
LLTOLU	Length tolerance, upper
LPR	Protruding length
LU	Usable length (max. recommended)
OHX	Maximum overhang
RE	Corner radius
REEQ	Corner radius equivalent
RETOLL	Corner radius lower tolerance
RETOLU	Corner radius upper tolerance
S	Insert thickness
SSC	Insert seat size code
TP	Thread pitch
TPIN	Minimum threads per inch
TPIX	Maximum threads per inch
TPN	Minimum thread pitch
TPX	Maximum thread pitch
TSYC	Tool style code
WB	Body width
WF	Functional width
WSC	Clamping width
WT	Weight of item
W1	Insert width

5



3

C

D

Safety information

Safety information in connection with grinding of cemented carbide

Material composition

Tool holders

Tool holders mainly contain iron (FE), and low alloy elements such as chromium, nickel, manganese, molybdenum and silicon.

Indexable inserts/cutting tools/round tools

Substances in cemented carbide products contain mostly wolfram carbide and cobalt. They may also contain carbides and carbonitrides of the following elements: titanium, tantalum, niobium, chromium, molybdenum and vanadium.

Routes of exposure

Grinding or heating of hard metal blanks or hard metal products will produce dust or fumes with dangerous ingredients that can be inhaled, swallowed or come in contact with the skin or eyes.

Acute toxicity

The dust is toxic by inhalation. Inhalation may cause irritation and inflammation of the airways. Significantly higher acute inhalation toxicity has been reported during simultaneous inhalation of cobalt and tungsten carbide compared to inhalation of cobalt alone.

Skin contact can cause irritation and rash. Personnel whose skin is sensitive may experience an allergic reaction.

Chronic toxicity

Repeated inhalation of aerosols containing cobalt may cause obstruction in the airways. Prolonged inhalation of increased concentrations may cause lung fibrosis or lung cancer. Epidemiological studies indicate that workers exposed in the past to high concentrations of tungsten carbide/cobalt carried an increased risk of developing lung cancer.

Cobalt and nickel are potent skin sensitizers. Repeated or prolonged contact can cause irritation.

Risk phrases

Toxic: danger of serious damage to health by prolonged exposure through inhalation

Toxic by inhalation

Limited evidence of a carcinogenic effect.

May cause sensitization by inhalation and skin contact

Preventive measures

Avoid formation and inhalation of dust. Use adequate local exhaust ventilation to keep personal exposure well below the nationally authorised limits.

If ventilation is not available or adequate, use respirators nationally approved for the purpose.

Use safety goggles or glasses with side shields when necessary.

Avoid repeated skin contact. Wear suitable gloves. Wash skin thoroughly after handling.

Use suitable protective clothing. Launder clothing as needed.

Do not eat, drink or smoke in the working area. Wash skin thoroughly before eating, drinking or smoking.



For the sake of the environment

Get into the Coromant Recycling Concept (CRC) now!

The Coromant Recycling Concept (CRC) is a comprehensive service for used carbide inserts (including CBN and PCD if "carrier" is cemented carbide) and solid carbide tools offered by Sandvik Coromant to all its customers.

In the light of increasing consumption of non-renewable raw materials, the economic management of dwindling resources is a duty owed by all manufacturers.

Sandvik Coromant is playing its part by offering to collect used carbide inserts and solid carbide tools and recycle them in the most environmentally friendly way.

All used hard-metal inserts are collected in the collection box at the workplace.

When the collection box is sufficiently full, its contents are transferred to the transport box.

The full transport box is then sent to the nearest Sandvik Coromant office or to your Coromant dealer who can also give you more information.



The benefits of the CRC speak for themselves

- A one-stop worldwide recycling system.
- For direct and trade customers.
- Simple procedure with collection and transport boxes.
- Less waste, easing the burden on the environment.
- Better utilisation of resources.
- Other manufacturers' carbide inserts are also accepted.

Order collection boxes for each lathe, milling machine, drill or for your machining center. We recommend one collection box for inserts and one separate box for solid carbide tools for each cutting workplace.

For detailed instructions on how to sell your used cemented carbide, please visit www.sandvik.coromant.com and select your market.

Collection box:
Transport box for solid carbide tools (wooden):
Transport box inserts (wooden):

Order numbers
91617
92994
92995

Code key

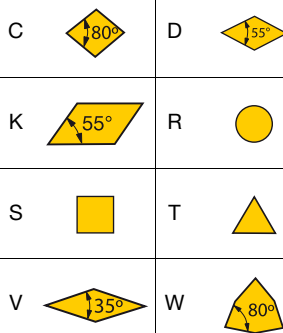
Metric

C	N	G	A	12	04	08	T	010	20	R	A	WG
1	2	3	4	5	6	7	8	9	10	11	12	13

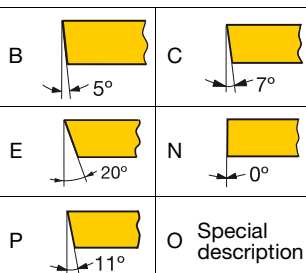
Inch

C	N	G	A	4	3	2	T	03	20	R	A	WG
1	2	3	4	5	6	7	8	9	10	11	12	13

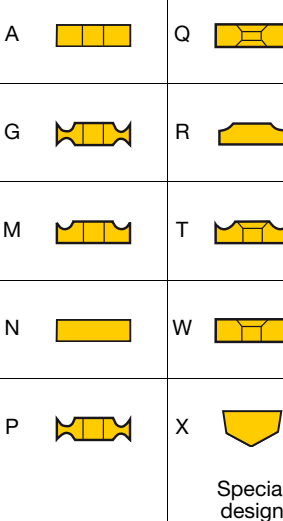
1 Insert shape



2 Insert clearance angle



4 Insert type



3 Tolerances, metric

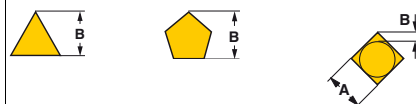
Class	S	IC / W1
G	±0.13	±0.025
M	±0.13	±0.05 – ±0.15 ¹⁾
U	±0.13	±0.08 – ±0.25 ¹⁾
E	±0.025	±0.025

¹⁾Varies depending on the size of IC. See below.

Inscribed circle IC mm	Tolerance class	
	M	U
3.97		
5.0		
5.56		
6.0	±0.05	±0.08
6.35		
8.0		
9.525		
10.0		
12.0	±0.08	±0.13
12.7		
15.875		
16.0	±0.10	±0.18
19.05		
20.0		
25.0	±0.13	±0.25
25.4		
31.75	±0.15	±0.25
32.0		

For positive inserts, *iC* is valid for a sharp corner. See cutting edge condition F. (Picture 8).

3 Tolerances, inch



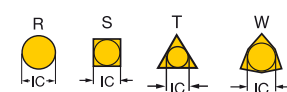
A: Theoretical diameter of the insert inscribed circle.
T: Thickness of the insert.
B: See figures.

Tolerances in inch

Class	B:	A:	T:
A	±.0002	±.001	±.001
B	.0002	.001	.005
C	.0005	.001	.001
D	.0005	.001	.005
E	.001	.001	.001
F	.0002	.0005	.001
G	.001	.001	.005
H	.0005	.0005	.001
J	.0002	.002-.005	.001
K	.0005	.002-.005	.001
L	.001	.002-.005	.001
M	.002-.005	.002-.005	.005
U	.005-.012	.005-.010	.005
N	.002-.010	.002-.004	.001

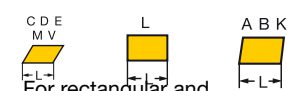
5 Insert size

Inscribed circle, inch



Inscribed circle is indicated in 1/8".

Cutting edge length, inch



For rectangular and rhombic inserts, cutting edge length is indicated in mm.

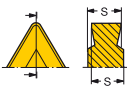
Cutting edge length, metric

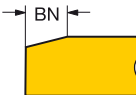
		C	D	R	S	T	V	W	K
IC mm	IC inch								
3.18	1/8"					05			
3.97	5/32"					06			
5.0				05					
6.0			06	09					
6.35	1/4"	06	07			11	11		
8.0				08					
9.525	3/8"	09	11	09	09	16	16	06	16 ¹⁾
10.0				10					
12.0				12					
12.7	1/2"	12	15	12	12	22	22	08	
15.875	5/8"	16		15	15	27			
16.0				16					
19.0	3/4"	19		19	19	33			
20.0				20					
25.0				25 ¹⁾					
25.4	1"			25 ²⁾	25				
31.75	1 1/4"	25		31					
32				32					

¹⁾ For rectangular and rhombic inserts cutting edge length is indicated in mm.

¹⁾ Metric base design

²⁾ Inch base design

6 Insert thickness, S, mm, inch				7 Nose radius, RE, mm, inch		
						
Metric		Inch		Metric:	Inch:	Actual dimension:
01	S = 1.59	1.	S = .0625	00 = 0	00	Round
T1	S = 1.98	(1.2)	S = .075	01 = 0.1	03	.004
02	S = 2.38	(1.5)	S = 3/32	02 = 0.2	0	.008
03	S = 3.18	2	S = 1/8	04 = 0.4	1 = 1/64	.0156
T3	S = 3.97	(2.5)	S = 5/32	05 = 0.5		
04	S = 4.76	3	S = 3/16	08 = 0.8	2 = 1/32	.0312
05	S = 5.56	4	S = 1/4	10 = 1.0		
06	S = 6.35	5	S = 5/16	12 = 1.2	3 = 3/64	.047
07	S = 7.94	6	S = 3/8	15 = 1.5		
09	S = 9.52	6.3	S = .394	16 = 1.6	4 = 1/16	.0625
10	S = 10.00	7.6	S = .475	24 = 2.4	6 = 3/32	.094
12	S = 12.00			32 = 3.2	8 = 1/8	.125
				Note: See example for approximation of metric nose radius. 16 = 1.6 mm = .063 ≈ .0625 inch		

8 Cutting edge condition			12 Insert Type (CBN)	
F		Sharp cutting edge	To allow a variety of machining demands to be met several types of inserts comprising CBN and PCD are manufactured. To easily identify the different types, Sandvik Coromant uses a letter to denote the variants.	
E (A)		ER treated cutting edge A (inch) E (metric)		
T		Negative land		
K		Double negative lands		
S		Negative land and ER treated cutting edge		
9 Chamfer width			A CBN, Multi Corner Inserts – Fully indexable - CBN brazed tip from top to bottom of the carbide carrier corners (double sided) B, H CBN, Multi Corner Inserts – Fully indexable - CBN brazed tip on the top and on the bottom of the carbide carrier corners (double sided). E CBN, Single tip inserts - Non-indexable - CBN brazed to the top of one of the carbide carrier corners F CBN, Multi tip inserts - Indexable - CBN brazed tip to the top of the carbide carrier corners (single sided) D CBN, Full Top inserts - Indexable - CBN sintered to the complete top surface of the carbide carrier M CBN, Solid inserts – Fully indexable - Complete insert made from CBN	
	ISO mm	ANSI inch		
	010 BN = 0.10	03 BN = (.003)		
	015 BN = 0.15	06 BN = (.006)		
	020 BN = 0.20	08 BN = (.0078)		
	025 BN = 0.25	08 BN = (.0098)		
	070 BN = 0.70	30 BN = (.030)		
	150 BN = 1.50	60 BN = (.060)		
	200 BN = 2.00	80 BN = (.080)		
10 Chamfer angle, degrees				
	15 GB = 15°	30 GB = 30°		
	20 GB = 20°	35 GB = 35°		
	25 GB = 25°			
11 Hand of insert			13 Geometry	
Inserts designed solely for machining in left or right direction are indicated as below.			Our unique Wiper and Xcel technologies can be used to boost productivity and generate superior surface finish.	
			WG	Wiper geometry for general purpose machining Allows high feed rates in HPT Suitable for finish machining of GCI
			WH	Wiper geometry optimized for HPT Low cutting forces for superior surface finish Designed for peak performance at HPT finishing feed rates
R	Right hand design	Xcel XA / XB	XA – For higher feed rates than WH and WG XB – For higher feed rates than XA or for tightest surface finish tolerances with lower feed rates	
L	Left hand design	HGR	Rough chip breaker for removal of case or induction hardened layer (skin)	

CoroTurn® XS

Insert for turning

CXS	04	T	098	A	10	-	22	06	R
1	2	3	4	13	5		9	10	12

Insert for grooving

CXS	06	F	100	-	62	15	A	R
1	2	3	6		9	10	11	12

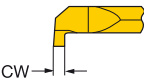
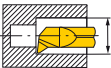
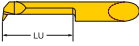
Insert for threading

CXS	04	TH	050	VM	-	42	15	R
1	2	3	7	8		9	10	12

B

1 Main code CXS = CoroTurn® XS	2 Insert size, mm (inch)  04 = 4 mm (.157 inch) 05 = 5 mm (.197 inch) 06 = 6 mm (.236 inch) 07 = 7 mm (.276 inch)	3 Type of operation T = Turning TE = Turning, copying, extended f_1 dimension F = Face grooving G = Grooving GX = Pre-parting R = Profiling full radius TH = Threading B = Back boring
4 Entering angle (Turning) E.g.: 098 = Entering angle 98° entering angle 98° Lead angle -8° (lead angle -8°)		

C

5 Nose radius, RE mm (Turning)  E.g.: 10 = 0.1 mm (.004 inch) 15 = 0.15 mm (.006 inch) 20 = 0.2 mm (.008 inch)	6 Insert width, CW mm (Grooving)  E.g.: 100 = 1.00 mm (.039 inch)	7 Pitch, mm (Threading) mm: pitch x 100 inch: No. of threads per inch x 10
8 Thread profile (Threading) VM = V-Profile 60° WH = Whitworth 55° NT = NPT 60° UN = UN 60° MM = MM 60° TR = Trapezoidal 30°	9 Min bore diameter, DMIN.  min. hole E.g.: 22 = 2.2 mm (.087 inch)	10 Penetration depth, LU  E.g.: 06 = 6 mm (.236 inch)

D

11 Type of curve (Face grooving) A = A-curved	13 Geometry - = Without chip forming geometry A = Chip forming geometry
12 Hand of insert R = Right hand style L = Left hand style	

CoroTurn® XS

Boring bars

CXS	A	10	-	04
1	2	3		4

Double ended boring bars

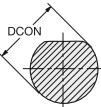
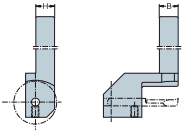
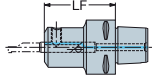
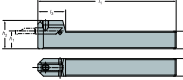
CXS	A	10	-	04	-	04
1	2	3		4		5

Shank tool

CXS	-	1010	-	04	F	N
1		6		4	10	7

Coromant Capto® holder

C4	-	CXS	-	47	-	04
8		1		9		4

1 Main code CXS = CoroTurn® XS	2 Type of bar A = Steel bar with internal coolant supply	3 Bar diameter, DCON  Metric 10 = 10 mm Inch 0500 = 1/2"
4 Insert size  04 = 4 mm (.157 inch) 05 = 5 mm (.197 inch) 06 = 6 mm (.236 inch) 07 = 7 mm (.276 inch)	5 Insert size for sub-spindle For double ended boring bars, same as 4.	6 Shank size (width and height), mm  H = 10 mm (.394 inch) B = 10 mm (.394 inch)
7 Hand of tool L = Left hand style R = Right hand style N = Neutral	9 Coromant Capto® length LF = 47 mm (1.850 inch) 	10 Shank style F = 0° 
8 Coromant Capto® size C3: DCON = 32 mm (1.260 inch) C4: DCON = 40 mm (1.575 inch) C5: DCON = 50 mm (1.968 inch) C6: DCON = 63 mm (2.480 inch)		

CoroCut® MB

Insert for turning/back boring

MB	-	07	T	093	A	-	02	-	10	R
1		2	3	4	16		5		9	12

Insert for grooving/pre-parting

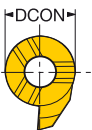
MB	-	07	G	070	-	00	-	10	R
1		2	3	6		5		9	12

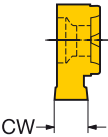
Insert for threading

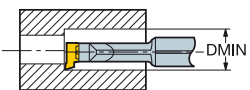
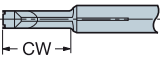
MB	-	07	TH	050	VM	-	10	R
1		2	3	7	8		9	12

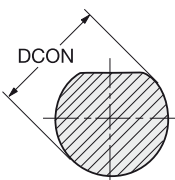
Boring bars

MB	-	A	16	-	16	-	07	R
1		13	14		10		2	15

1 Main code MB = CoroCut® MB	2 Insert size, mm (inch)  07 = 7 mm (.276 inch) 09 = 9 mm (.354 inch)	3 Type of operation B = Back boring G = Grooving GX = Pre-parting R = Profiling full radius T = Turning TE = Turning, copying, extended f_1 dimension TH = Threading FA = Face grooving A-sweep FB = Face grooving B-sweep
4 Entering angle (Turning) E.g.: 093 = 93°		

5 Nose radius, RE mm (Turning)  E.g.: 00 = Sharp 02 = 0.2 mm (.008 inch)	6 Insert width, CW mm (Grooving)  E.g.: 100 = 1.00 mm (.039 inch)	7 Pitch (Threading) mm: pitch x 100 inch: No. of threads per inch x 10 (TPI)
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8 Thread profile (Threading) VM = V profile 60° MM = Metric 60° WH = Whitworth 55° UN = UN 60° NT = NPT 60° AC = ACME 29° SA = STUB-ACME	9 Min bore diameter, DMIN (Insert)  E.g.: 10 = 10 mm (.394 inch)	10 Penetration depth, CW (boring bar)  Inch, e.g.: e.g.: 06 = .630 inch 08 = .787 inch 12 = 1.260 inch Metric, e.g.: 16 = 16 mm
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12 Hand of insert R = Right hand style L = Left hand style	14 Bar dia, DCON inch  Inch 0625 = .625 inch Metric 16 = 16 mm	15 Shank type R = Cylindrical No symbol = With flats
13 Type of bar A = Steel bar with internal coolant supply E = Carbide shank bar		16 Geometry - = Without chip forming geometry A = Chip forming geometry

CoroCut® 1-2

N	123	H	2	-	0400	-	00	04	-	TF
1	2	3	4		5		6	7		8

1 Hand of insert	2 Main code	3 Seat size
R  N  L 	123	CoroCut® 1-2 D G K E H L F J M R CoroCut® 3 T = Right hand cutting U = Left hand cutting To correspond with seat size on holder.

B

Insert seat interchangeability:					
Insert seat size	Size, mm	Holder	Insert seat size	Size, mm	Holder
D	1.5	D	H	4.0	H
E	2.0	E	J	5.0	J, H
F	2.5	F, E	K	6.0	K, J, H
G	3.0	G, F, E	L	8.0	L
			M	9.0	M
			R	15.0	R

C

4 Number of edges	5 Insert width	6 Front angle
1 or 2  3 	E.g.: 0400 = .157 inch (4 mm) 0400 = .157 inch (4 mm)	E.g.: 00 = 0° 05 = 5°

7 Corner radius	8 Geometry designation
E.g.: 04 = .016 inch (0.4 mm) 08 = .031 inch (0.8 mm) 	First digit: Type of operation A = Aluminum/profiling C = Cut off T = Turning G = Grooving R = Profiling B = Blank Second digit: E = ER treated cutting edge F = Low feed M = Medium feed R = High feed O = Optimized for special areas S = Sharp cutting edge G = Blank

D

Code	Page	Code	Page	Code	Page
266R/LG	C3				
C					
CCGW	A6-A7				
CCGX	A8				
CNG	A31				
CNGA	A16				
CNGA090304S01030AWH	A15-A17				
CNGM	A15				
CNGN	A31				
CNGX	A18				
CNMA	A15				
CXS	A35, B9, C5				
D					
DCGW	A9				
DCMW	A9				
DCWG	A9				
DNGA	A19-A21				
DNGM	A19				
DNMA	A19				
L					
L123	B6				
M					
MB	B11-B12, C7				
N					
N123	B3-B7				
R					
R123	B6				
RNG	A32				
RNGA	A22				
RNGN	A32				
S					
SCGW	A10				
SNG	A33				
SNGA	A23-A24				
SNGN	A33				
SNMA	A23				
T					
TCGW	A11				
TCMW	A11				
TNGA	A25-A26				
TNMA	A25				
TPGW	A13				
TR-DC	A3				
TR-VB	A4				
V					
VBGW	A12				
VBMW	A12				
VNGA	A27				
W					
WNGA	A28-A29				