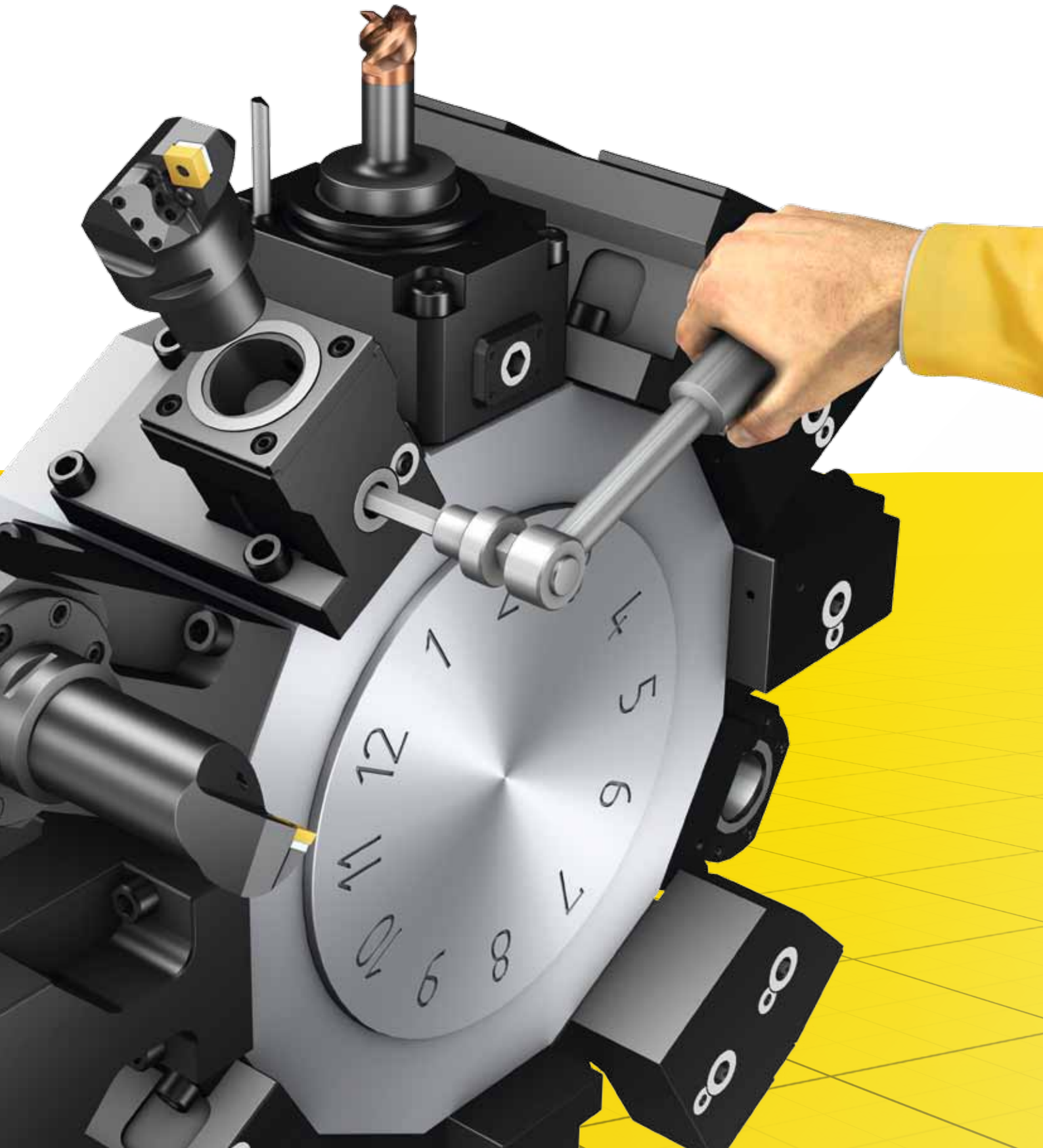
SANDVIK Coromant

Quick change

for turning centres

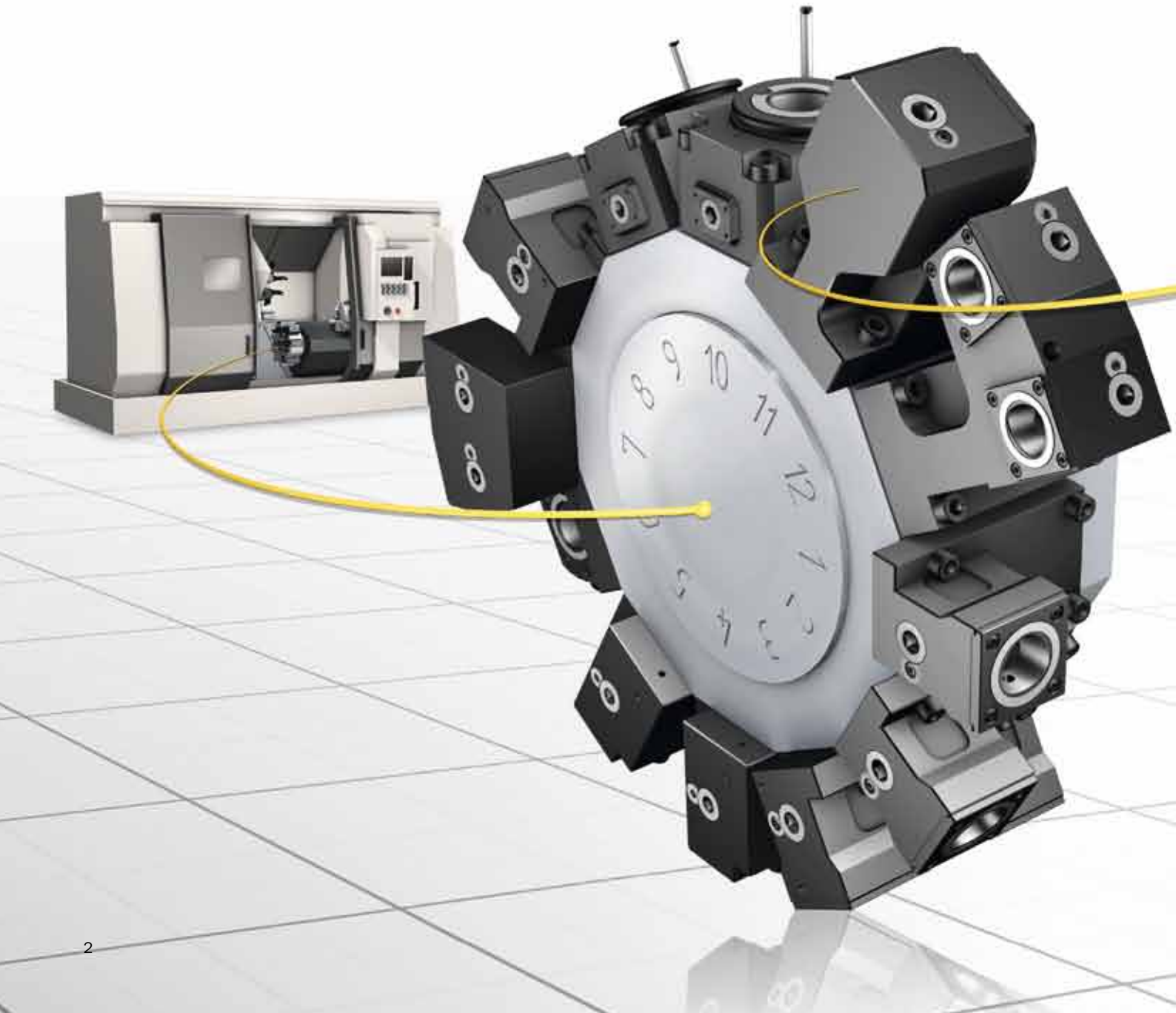


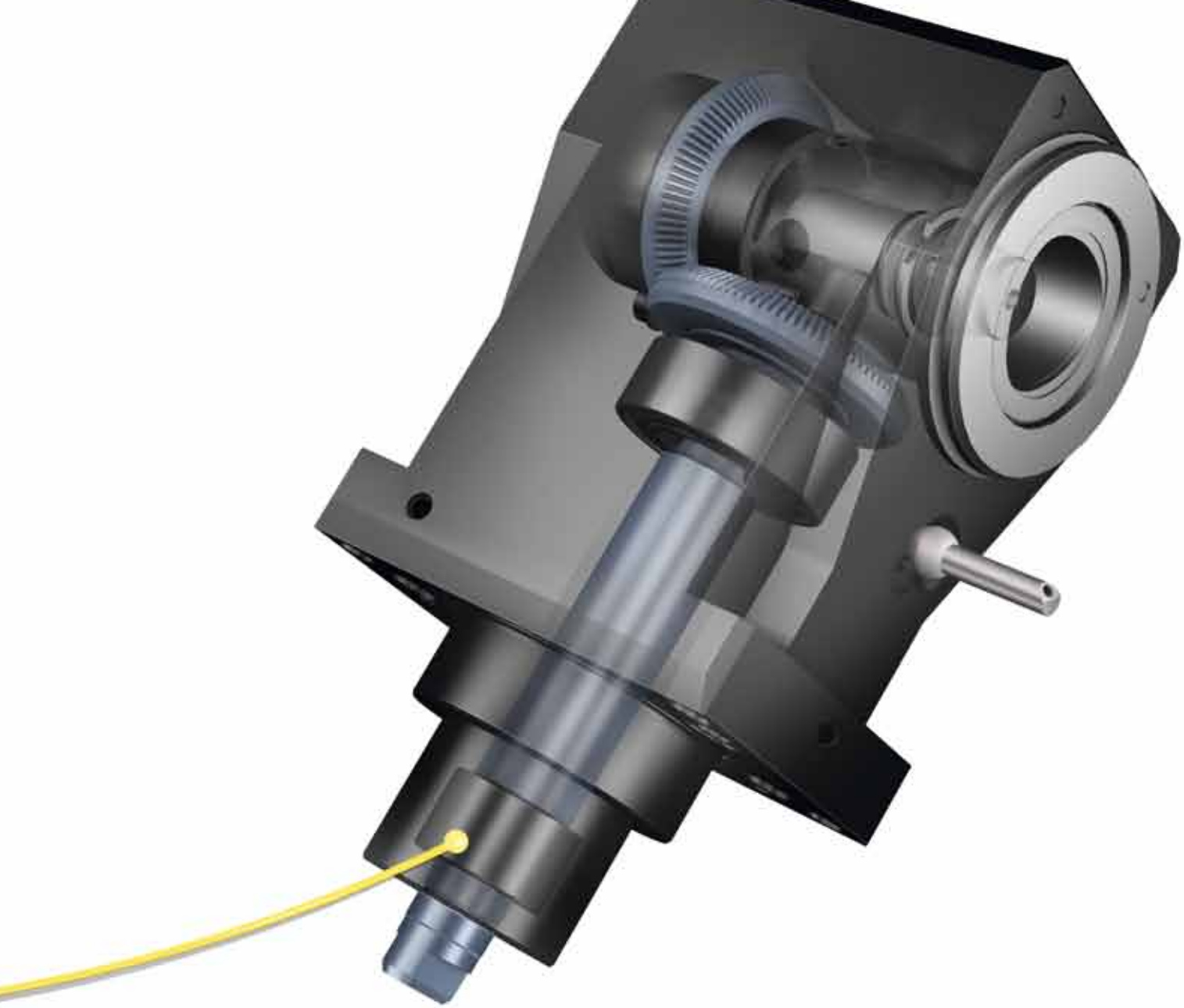
Maximized amount of machining time

It makes sense to invest in Quick Change clamping units if one of your goals is to maximize the amount of actual machining time on your machine.

The clamping units utilize Sandvik Coromant's quick change tooling system Coromant Capto® which has been proven to dramatically reduce downtime through setup- and tool changing efficiency.

With the increase of high-pressure coolant systems as a standard option, Coromant Capto can assure that the full capabilities of the machine are harnessed with CoroTurn® HP cutting units delivering the coolant with maximum impact.





Improve your productivity with 25%
more time for metal cutting!

Turning centre turret options

Turning centres utilizing turrets have several interface options. The evolution of these options provide different capabilities and benefits.

CDI

Coromant Capto Disc Interface – new solution to replace VDI turrets. Same adaptors fit multiple machine brands and models. Large hole in turret to allow driven tool holder (DTH) bearings to be mounted inside the turret allowing short gauge lines.

VDI (DIN 69880)

VDI has been the standard design for many turret interfaces and was designed as a quick-change solution. Although driven units can be adopted, the bearings are always outside the turret, building longer gauge lines and less stable performance.

CBI

Coromant Capto Bolt on interface – unique hole pattern for each machine brand. The interface design determines if there is room to mount driven units inside the turret, for short gauge lines and high stability.

'Shank' turret

Designed for shank and cylindrical holders, this design can accept quick change for static tool holders but driven solutions can not be used.

Which turret style is best for you?

Turret interface comparison

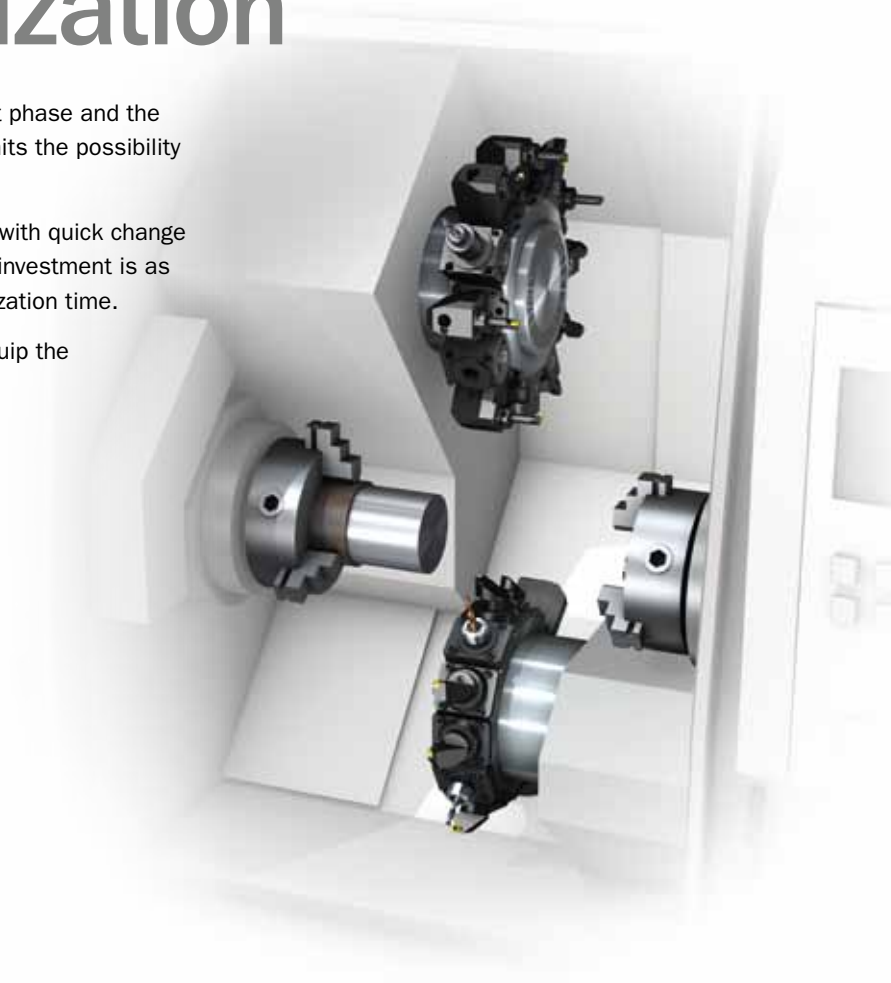
	CDI	CBI	VDI	'Shank'
Short projection	+++	++	+	+
DTH suitability	+++	+++	+	–
Symetric interface	+++	+++	–	–
HPC suitability	+++	+++	++	+
Multiple turrets/spindles	+++	+++	+	+
Common system	++	+	++	++

Investing to increase machine utilization

Too often the tooling is considered after the investment phase and the extra investment required is not budgeted for, which limits the possibility to optimize the efficiency and utilization.

Investing in optimized high pressure (HP) coolant tools with quick change capability ensures that the payback on a new machine investment is as short as possible with typically 25% extra machine utilization time.

Calculate an average of 10% of the machine cost to equip the machine for best machine utilization.

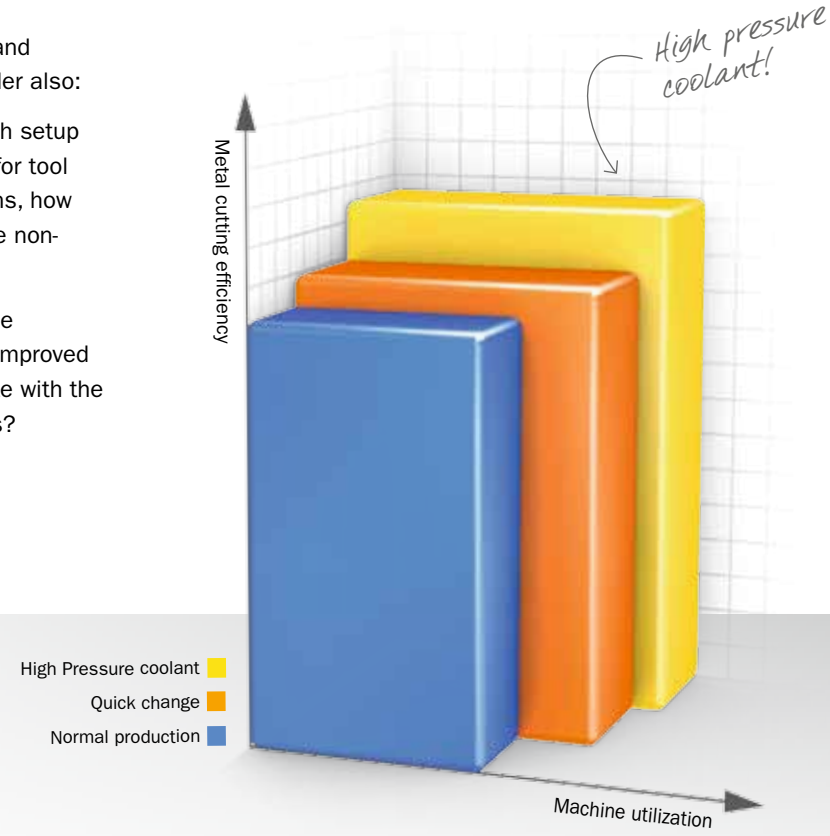


When selecting a turning centre normal considerations are:

- number of turrets – top and bottom
- number of turning spindles (sub spindle)
- part loading – bar feed, robot, gantry, manual

To ensure that the machining efficiency and machine utilization are optimized, consider also:

- Quick Change tooling – for new batch setup requiring different tool holders and for tool changing on rotating tool applications, how much will QC tool holding reduce the non-cutting time?
- HP – High Pressure coolant – Will the materials to be machined allow for improved chip breaking and metal removal rate with the use of optimized CoroTurn® HP tools?



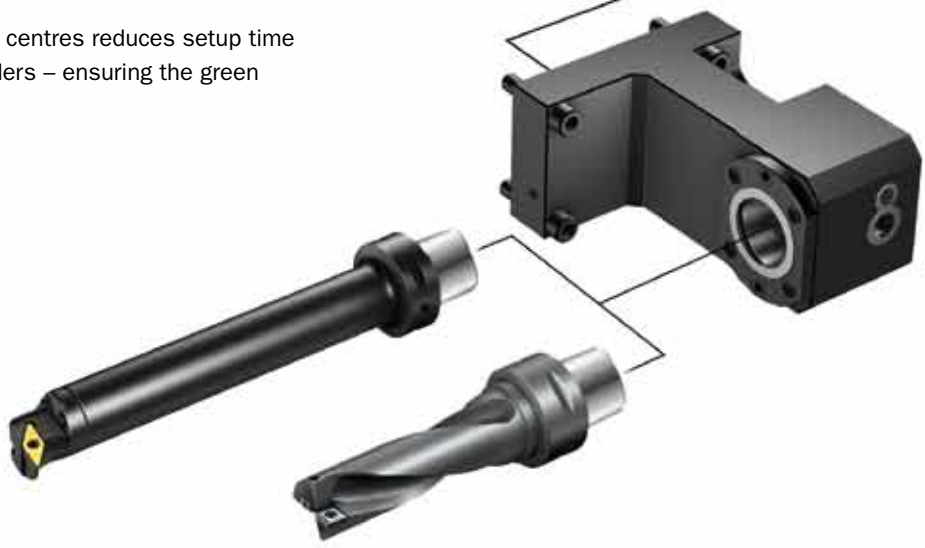
Quick change for turning centres

'Green light machining'

Turning centres typically have a lower utilization than machining centres due to the tool change time.

For machining centres it would be unthinkable to change the tools by hand in the spindle.

Utilizing quick change tool holders for turning centres reduces setup time and also tool change time for driven tool holders – ensuring the green light on the machine is on for longer!



Faster return on investment

Coromant Capto® clamping units provide unrivalled performance, ensuring that the machine utilization is optimized through reduced setup and production time, leading to a faster return on your investment.

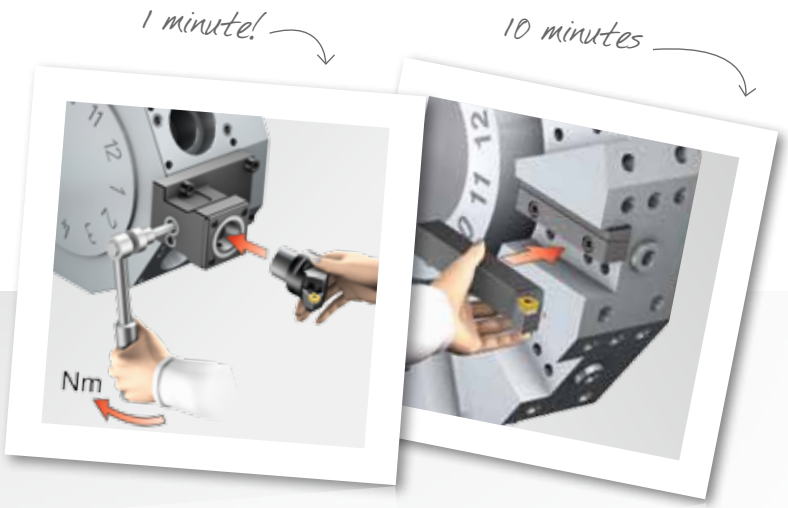
Reduced production setup:

In turning

Shorter time to change over one tool style to another: from 10 minutes with a shank tool down to just one minute with Coromant Capto.

In rotating

Faster tool changes to replace worn tools: from 15 minutes with an ER collet down to just one minute with Coromant Capto.



Versatility

In turning

Twin station clamping units increase the capacity of the turret, required for sister tools or two turning spindles/chucks.

Internal machining right up to 10 x D with anti-vibration boring bars.

In rotating

All application areas can be covered with one clamping unit. The reduced need for dedicated units saves turret space and changeover time.

- Face milling – up to Ø 63 mm (2.5 inches) C5
- End milling
- Drilling
- Tapping

Traditional ER collets limit the cutter diameter to 20 mm (0.75 inches).

Savings with Coromant Capto®

	Factor		Savings
Fixed savings	Batch changeover	Setup time (including offset)	60 min/batch
	Tool change	Changing worn rotating tool	10 min/tool change
Variable savings	High pressure coolant	Increase cutting speed	+20%
		Increase tool life	+50%
		Chip control	No operator/cycle intervention
		Nozzle setting	
	Face and endmilling	Larger diameter and depth of cut	Increase metal removal
	Ease of handling	Tool changing	Operator safety
		Chip control	

Turret information

Increase the number of turret positions with new machine functions.

Half-indexing function

Turret option for turning flexibility not requiring Y-axis

	EXTERNAL – OD	INTERNAL – FACE/ID
STANDARD TURRET POSITION		
HALF INDEXING POSITION		

Y-axis function

Y-axis is often required when using driven tools

EXTERNAL – OD

INTERNAL – FACE/ID

Y OFFSET '-' POSITION

Y OFFSET '+' POSITION

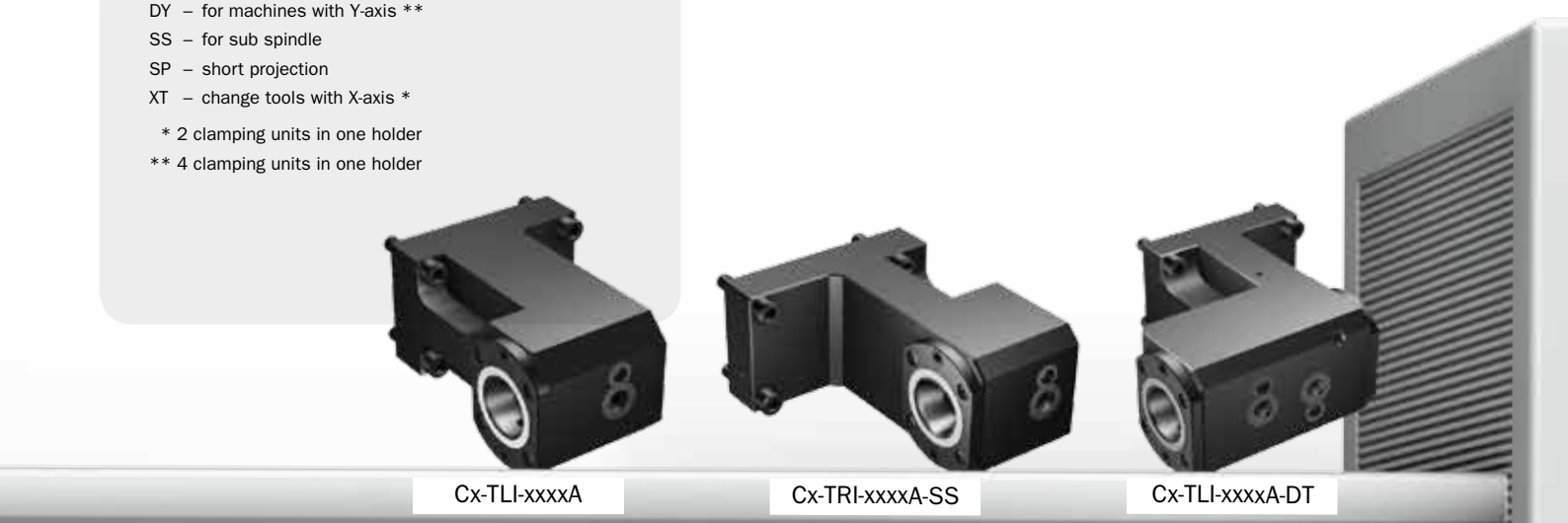
Customize your turret

Different clamping unit configurations are available to suit your type of production. Clamping units with two Coromant Capto positions provide additional turret positions.

Code key

– for normal single clamping unit
DT – for main spindle and sub spindle *
ET – extended
DE – extended for main spindle and sub spindle *
TT – for machine with half index turret *
YT – for machines with Y-axis *
DY – for machines with Y-axis **
SS – for sub spindle
SP – short projection
XT – change tools with X-axis *

* 2 clamping units in one holder
** 4 clamping units in one holder



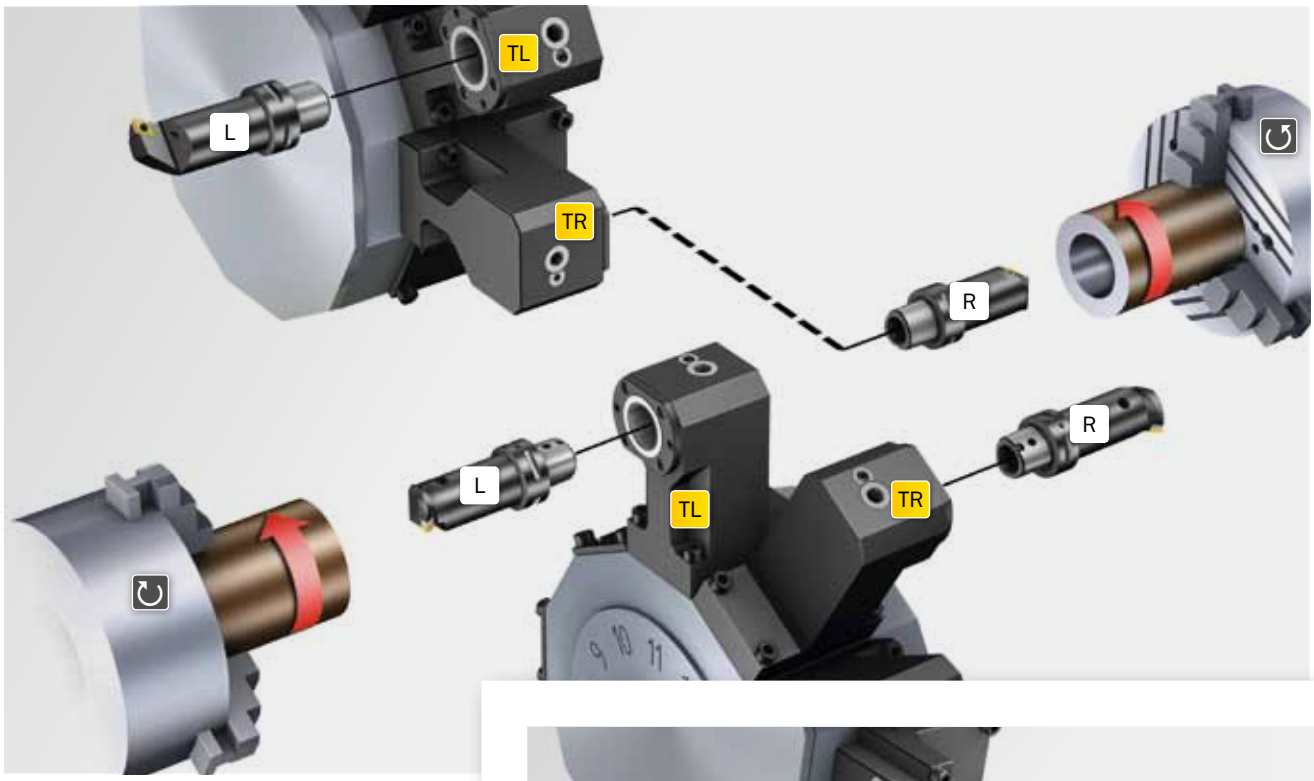
Cx-TLI-xxxxA | Cx-TRI-xxxxA-SS | Cx-TLI-xxxxA-DT

Cx-TRI-xxxxA-TT | Cx-TRI-xxxxA-YT | Cx-TRI-xxxxA-DY | Cx-TRI-xxxxA-XT

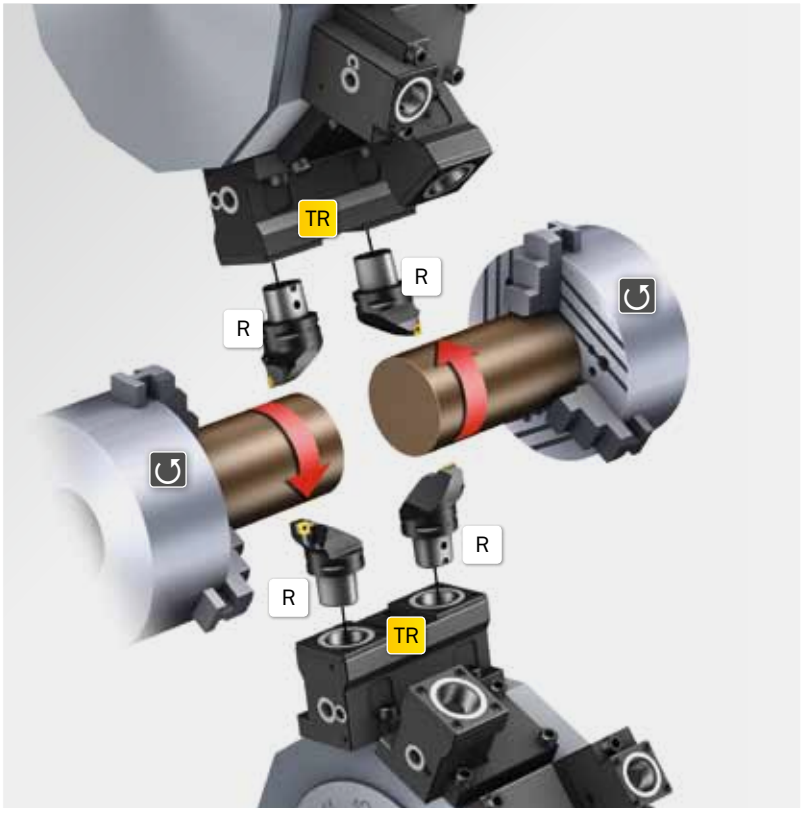
E – External coolant
I – Internal coolant

Cx-DNI-xxxxA-E/I | Cx-DNI-xxxxA-DTE/I

Clamping unit configuration



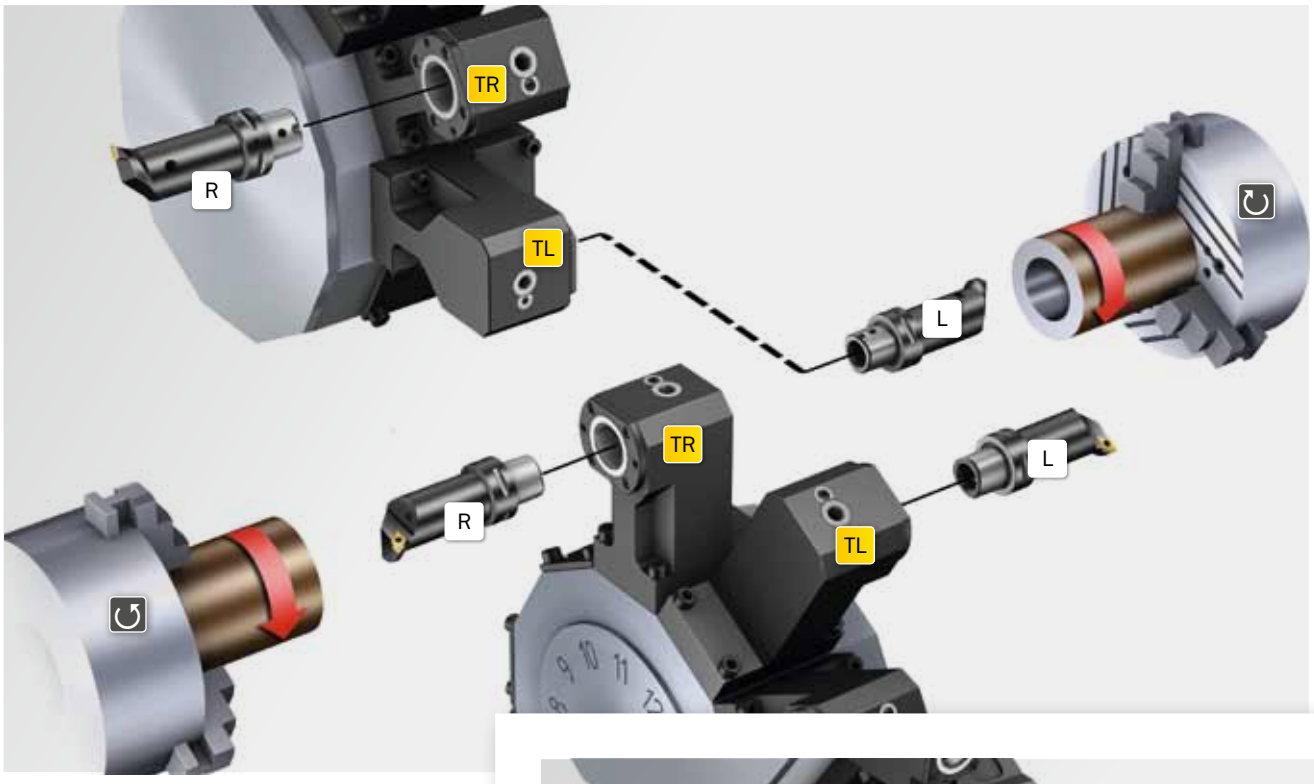
Internal setup



External setup

Single clamping units is also right handed.

Internal setup



External setup

R	Right-hand cutting unit
L	Left-hand cutting unit
TR	Right hand clamping unit
TL	Left hand clamping unit
↻	Clockwise spindle rotation
↺	Anti-clockwise spindle rotation

Single clamping units is also left handed.

Coromant Capto® tooling

The right tooling can lead to even greater savings

Using the right tools can lead to better performance and utilization of the machine, and ultimately lead to even greater cost savings. Savings come from process improvements, such as increasing cutting speeds, or extending the time between tool changes through use of a longer-lasting insert grade.

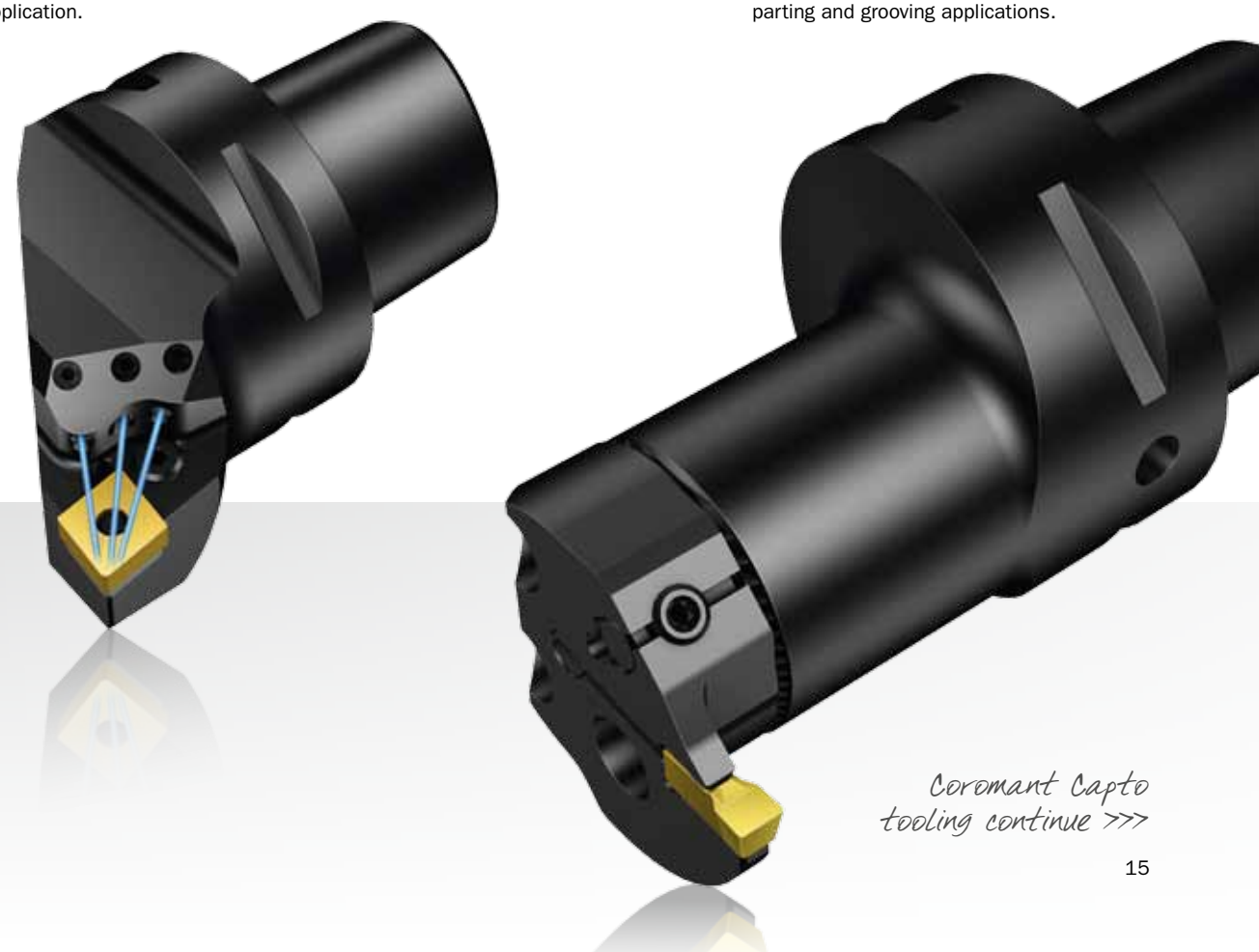
The Coromant Capto coupling is available in an extensive range of tools proven to increase productivity in every application.

Even more importantly, new Sandvik Coromant tooling technology is developed with the Coromant Capto coupling, making the system a wise investment towards the long-term profitability of your shop.

Silent Tools®
Anti-vibration boring bars for cutting lengths up to 10 x D. can be combined with SL high pressure cutting heads to turn a potential problem into a competitive advantage.

CoroTurn® HP
A standard concept for external and internal turning with high pressure coolant. Holders are equipped with 2-3 nozzles positioned and directed depending upon the tool type and the application.

CoroTurn® SL
The ingenious Serration Lock (SL) interface allows you to create a wide range of tool combinations from a small inventory. The system features modular cutting heads for general turning, threading and parting and grooving applications.



Coromant Capto tooling continue >>>

Integrated drilling tools

CoroDrill® 880 short hole drills with Coromant Capto provide accuracy and stability in holemaking.

Integrated milling tools

The most productive family of milling products, including CoroMill® 300, CoroMill 316, CoroMill 345, CoroMill 390 and CoroMill 490, all available with Coromant Capto®.

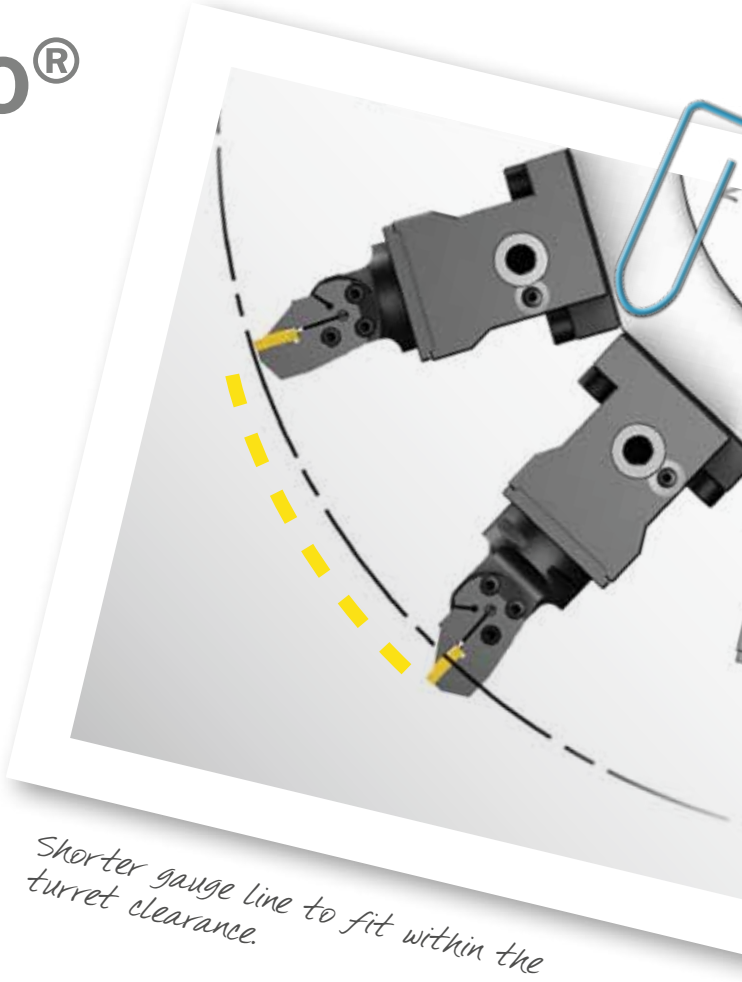
Coromant Capto® short

Shorter gauge lines possible

Coromant Capto short tools are available to provide the shortest gauge line and fit within the turret clearance.

The turret swing diameter is often a limitation for applications requiring tool penetration clearance past the outer diameter – such as drilling, end milling and parting/grooving operations.

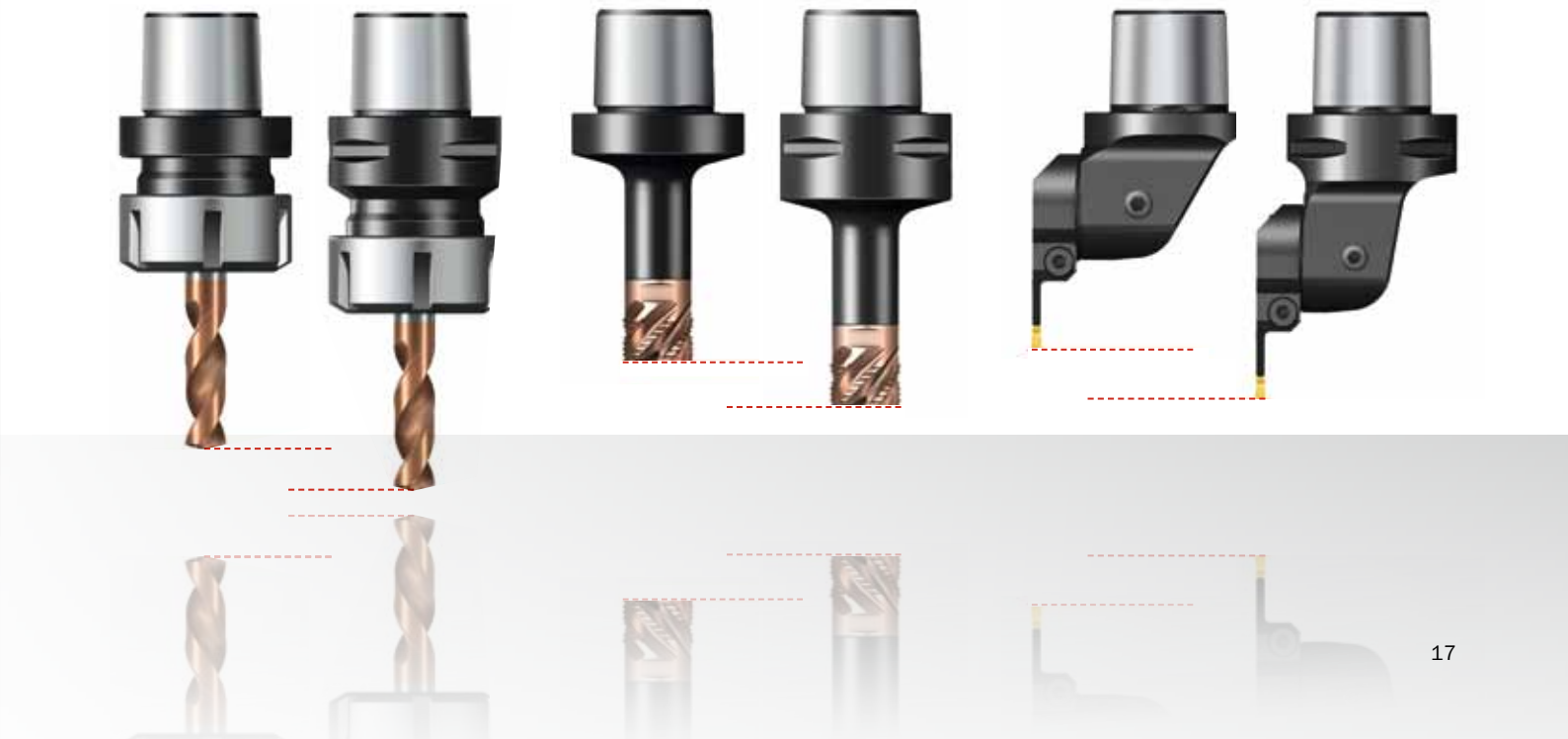
Coromant Capto short tools have no gripper grooves and are for manual tool change only.



Shorter gauge line to fit within the turret clearance.

New options

Coromant Capto Short options include ER collet chucks, CoroMill 316 exchangeable-head milling cutters and SL adapters for parting and grooving.



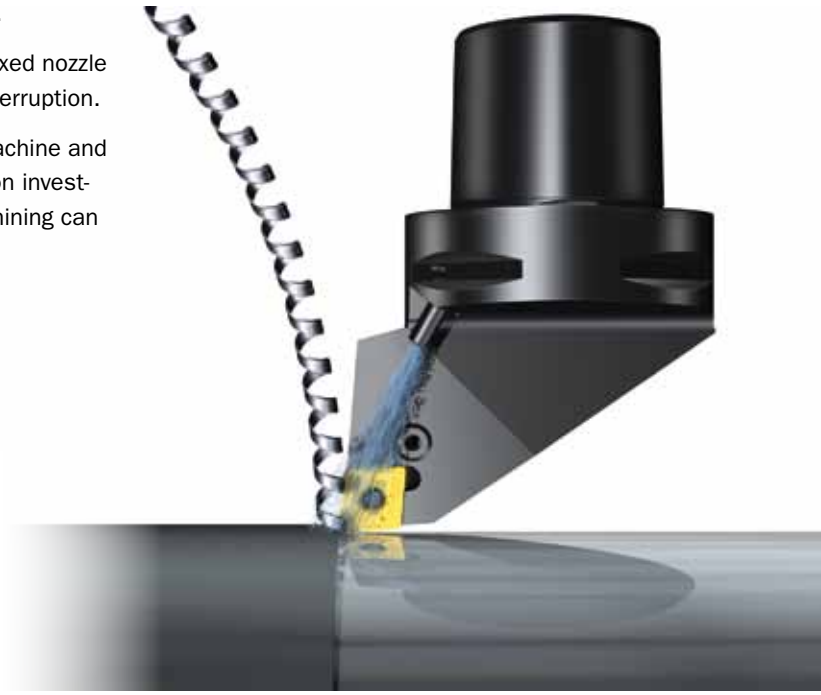
High pressure coolant

High performance. Reduced production time.

By channeling coolant delivery to the cutting edge through the spindle or turret, a high powered coolant jet of 80 bar (1160 PSI) can be positioned precisely at the cutting zone for maximum effect.

CoroTurn® HP high-pressure coolant turning heads feature fixed nozzle positions, offering total chip control and preventing cycle interruption.

The production advantages are a higher utilization of the machine and available production time, thereby maximizing the payback on investment. An optimized system with high-pressure coolant machining can pay for itself in a few months.



Flood coolant does cool the insert, but it does not help with chip control. The coolant is not directed accurately or close enough to the cutting edge, allowing long strands of chips to form.

TIP!
The future is under pressure. Harness your machines potential.

CoroTurn HP's fixed, pre-directed high precision nozzles create parallel laminar jets of coolant with high velocity, directed at the right place on the insert. The precision and character of these jets make the difference. No setting with trials is needed; performance and security is built in.

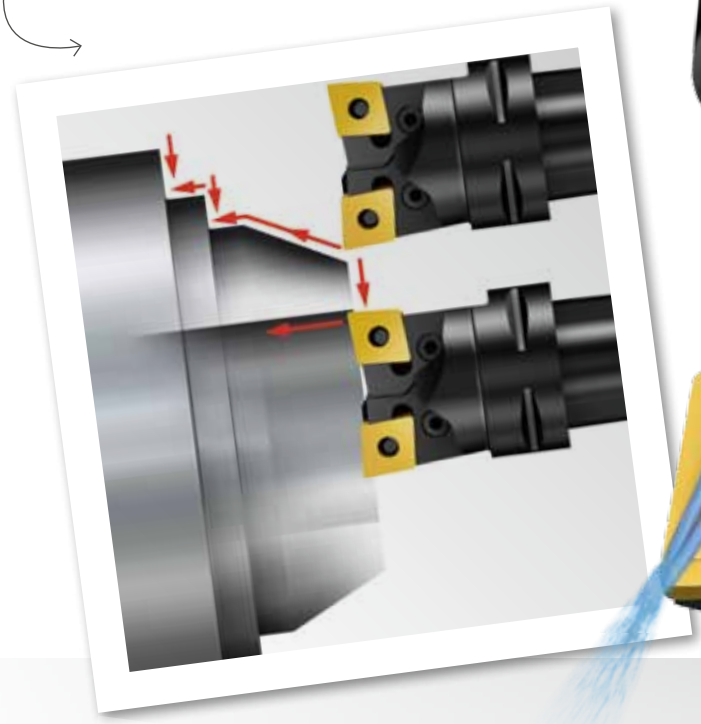
Turbo bars

Turn and **bo**re with one tool saves turret indexing (3 to 4 seconds) and allows more room for sister tooling.

Additionally, for high volume production, reduced turret indexing has been proven to reduce maintenance costs significantly.

The tool call-up number is made up of two parts allowing multiple offsets:
T01xx – turret position
Txx01 – offset number

Each cutting edge has its own ID:
T0101 – Finish bore
T0111 – Finish face and OD



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