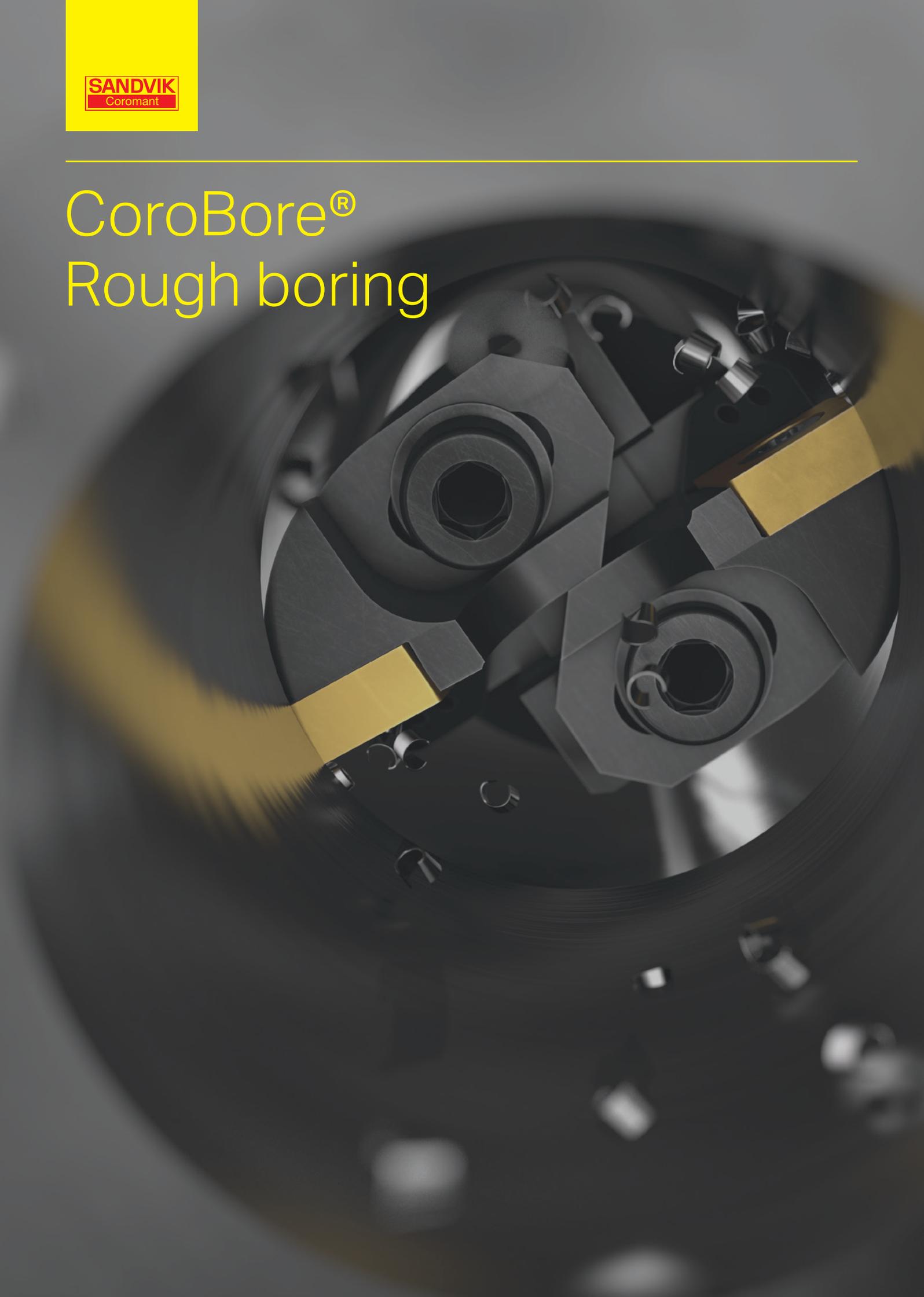

CoroBore[®] Rough boring



Front, step and back boring



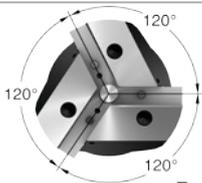
The new generation of CoroBore® rough boring concepts meets challenges with vibration, chip breaking and process security – while giving you high-end productivity in all your rough boring operations.

The combination of CoroBore® together with Coromant Capto® and Coromant EH enables you to be more flexible in your production. It also saves you money on reduced tool investment and inventory.

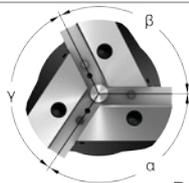
Each solution is available as single items and as complete tool assembly kits for your convenience.



Coromant EH and Coromant Capto® modular coupling interfaces in different sizes.



Equal pitch

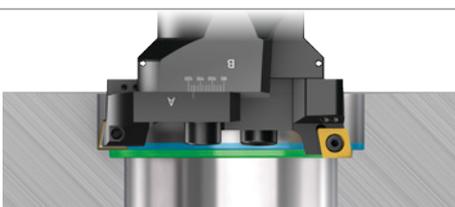


$\alpha \neq \beta \neq \gamma$ Differential pitch

Differential pitch reduces vibration tendencies – tools can be used at longer overhangs and larger depth of cuts.



Coolant nozzles with high precision capability built into slide for precise coolant direction.



Built-in step boring functionality for machining in difficult materials or at large depths of cut, without any need of an extra shim.

CoroBore® BR10

Single-edge back boring tools

CoroBore® BR20

Twin-edge rough boring tools with high degree of flexibility

CoroBore® BR30

Three-edge rough boring tools for superior metal removal rate

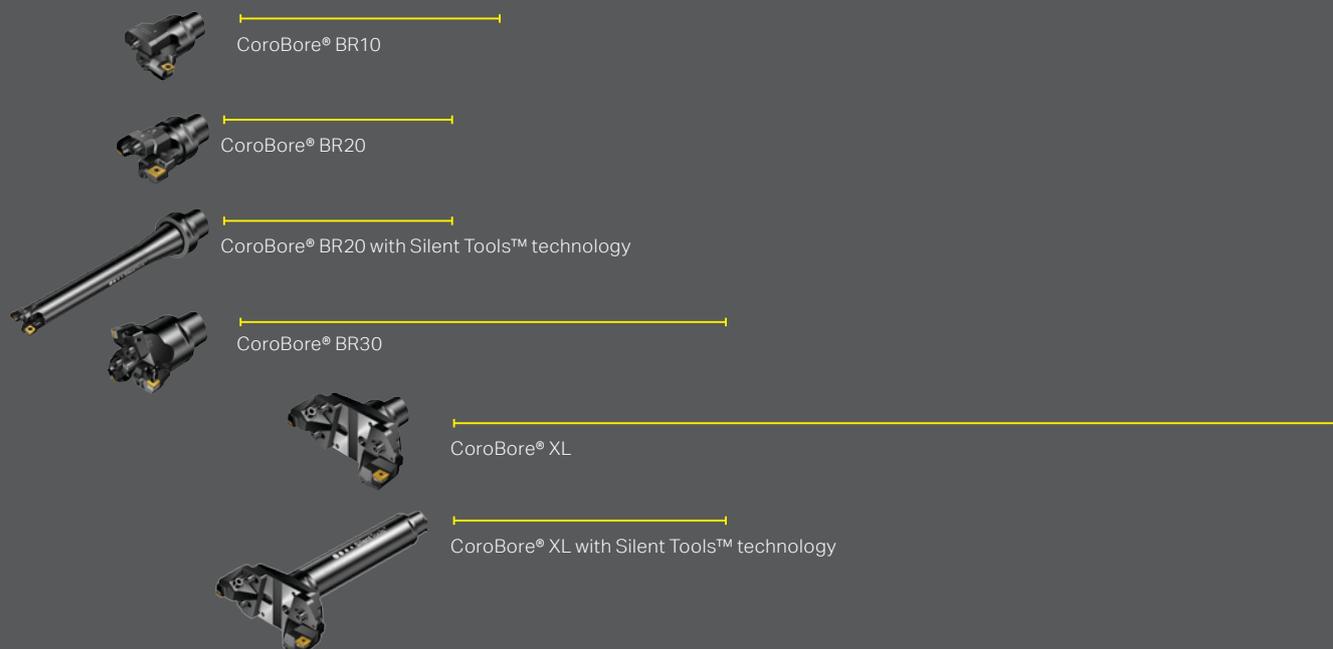
CoroBore® XL

Large diameter rough boring solution with high stability and rigidity

CoroBore® BR20 with Silent Tools™ technology

Twin-edge rough boring tools with Silent Tools™ damping technology for long overhang machining without chatter

P M K N S H
ISO application area

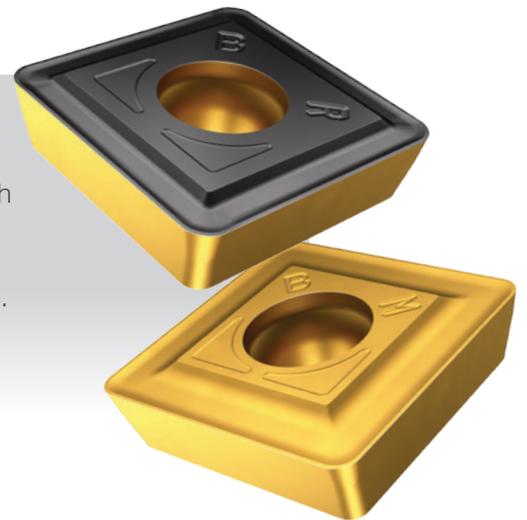


Equipped for successful boring

All CoroBore® rough boring tools give you:

- Top-level productivity
- Reliability and high process security
- Excellent chip formation and chip evacuation
- Stable and rigid tools with a low vibration machining process

CoroBore® 111 are dedicated four-edged inserts with optimized grade selection for rough boring applications. The unique first-choice solution offers excellent chip breaking and increased lifetime in ISO P, M, K and S materials.



CoroBore® BR20

This twin-edge boring concept utilizes a differential pitch to reduce vibration, enabling tools to be used at longer overhangs and larger depth of cuts. The high precision coolant nozzles can handle coolant pressure up to 80 bar (1160 psi). CoroBore® BR20 slides can be alternated to allow either two effective cutting edges or step boring (without shims) when high cutting depths are required. By combining the CoroBore® BR20 adaptor with CoroBore® BR10 slides, it can also easily be rebuilt into a back boring tool.



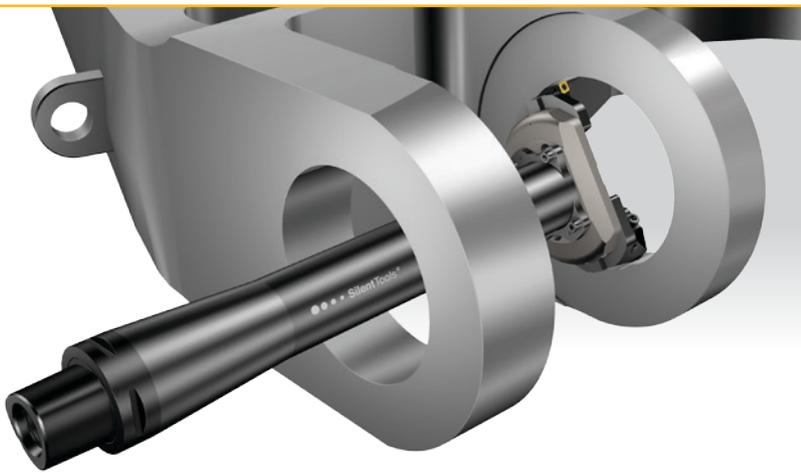
CoroBore® BR20 with Silent Tools™ technology

The damped version of CoroBore® BR20 is a problem-solver when working with long overhangs or when extra stability is required. When using Silent Tools™, you have the opportunity to double the depth of cut, while maintaining secure machining. This unique solution offers the same high-quality boring process as the conventional CoroBore® BR20 when machining deep bores or hard-to-reach features.



Tool features

	CoroBore® BR10	CoroBore® BR20	CoroBore® BR20 Silent Tools™	CoroBore® BR30
Differential pitch		•	•	•
CoroBore® 111 inserts		•		•
High precision coolant	•	•	•	
Flexible diameter range		•	•	
Backboring	•	•		
Laser-marked scale on adaptor	•	•	•	•
Silent Tools™			•	
Step boring		•		•
Coromant Capto®	•	•	•	•
Coromant EH	•	•		



CoroBore® XL is available with damped Silent Tools™ adaptors built to reduce vibration and enable long overhang machining.

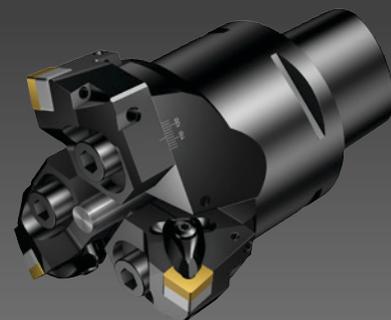
CoroBore® BR10

For back boring, the single-edge CoroBore® BR10 is the number one option. Based on the design of the CoroBore® BR20 adaptor together with a back boring slide and cover, it provides secure and productive back boring. It can be purchased as a back boring kit, or as separate additional items to be used with an existing CoroBore® BR20 – this allows you to reduce inventory and reap the benefits of modularity.



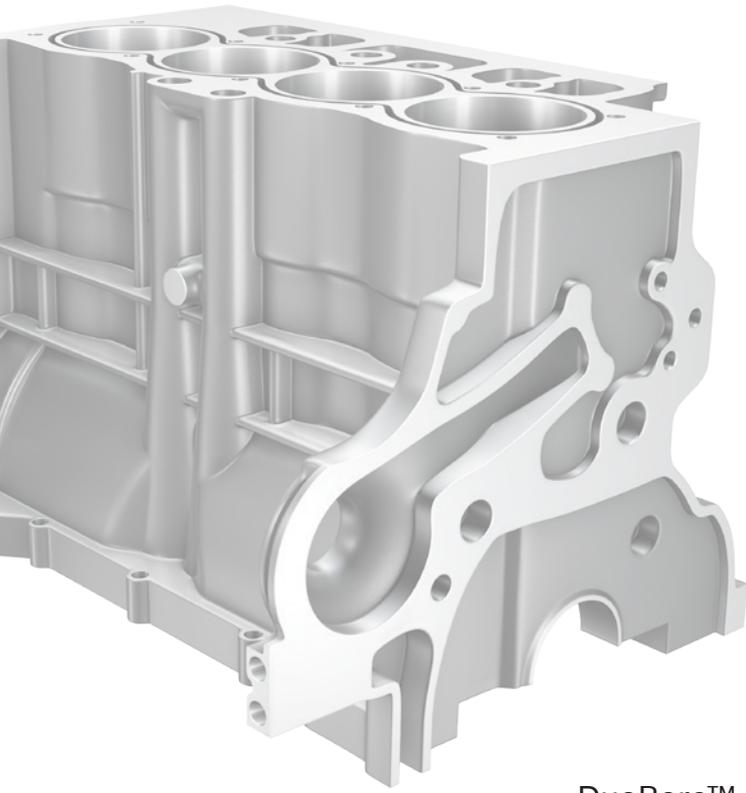
CoroBore® BR30

The three-edge, highly productive CoroBore® BR30 gives top-level metal removal rate in stable machines. Due to the differential pitch, a low vibration boring process is attainable in combination with a three-inserts design for highest productivity. Add the CoroBore® 111 inserts for extra security.



Application test: Differential pitch

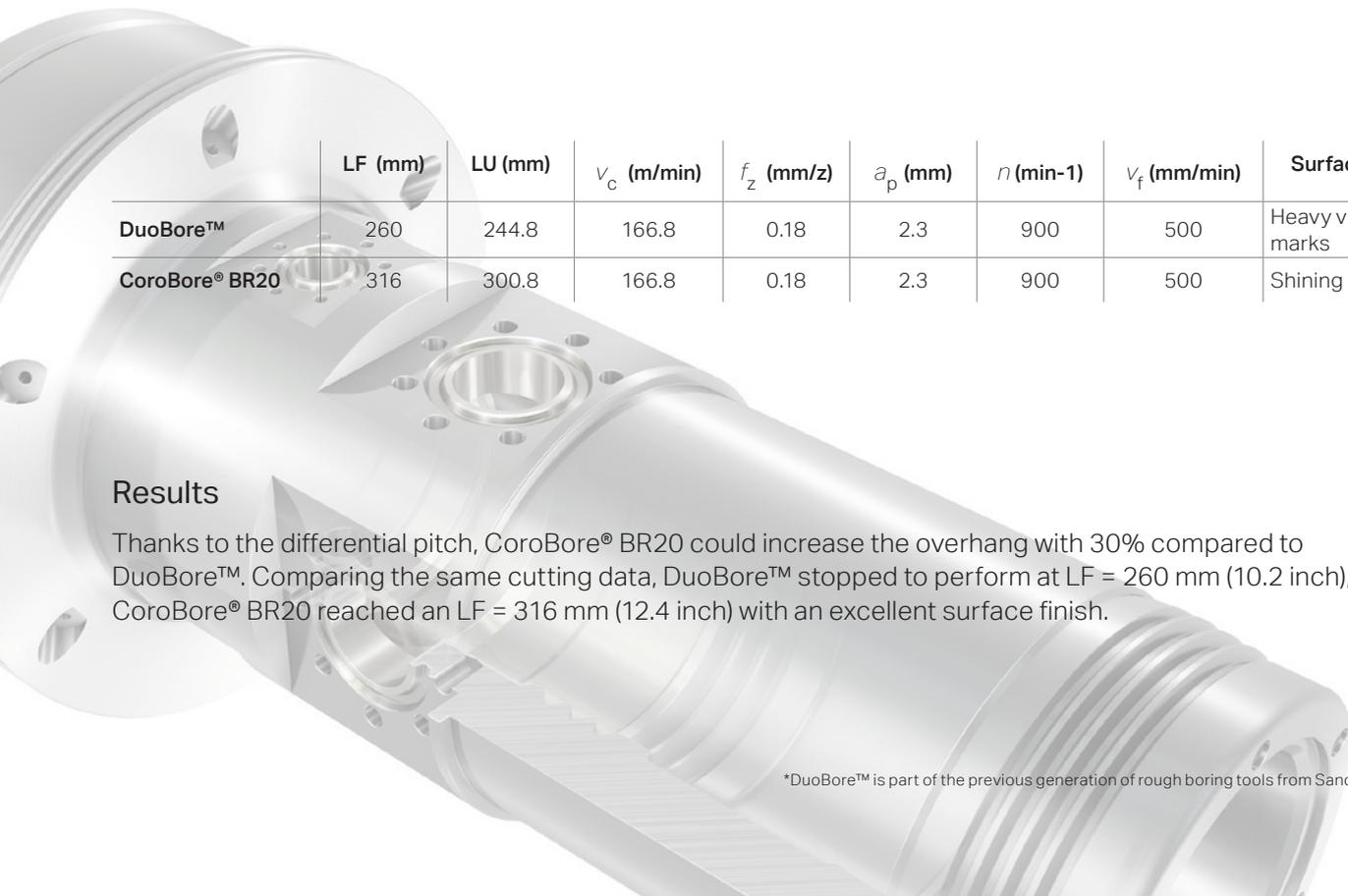
CoroBore® BR20 and DuoBore™ * comparison



30%
Increased overhang

Material:	42CrMo4 soft, P2.1.Z.AN
Machine:	Vertical milling machine
Machine interface:	ISO 50
Coolant:	No
Diameter range:	55–70 mm (2.17–2.76 inch)
Insert:	CCMT 12 04 08-PM 4325
Kappa (Kr):	90°

	DuoBore™	CoroBore® BR20
Basic holder	C5-390.00-50 030	C5-390.00-50 030
Extension	C5-391.01-50 080A	C5-391.01-50 080A
Boring tool assembly	821-70CC12-C5	BR20-71CC12F-C5



	LF (mm)	LU (mm)	v_c (m/min)	f_z (mm/z)	a_p (mm)	n (min-1)	v_f (mm/min)	Surface finish
DuoBore™	260	244.8	166.8	0.18	2.3	900	500	Heavy vibration marks
CoroBore® BR20	316	300.8	166.8	0.18	2.3	900	500	Shining

Results

Thanks to the differential pitch, CoroBore® BR20 could increase the overhang with 30% compared to DuoBore™. Comparing the same cutting data, DuoBore™ stopped to perform at LF = 260 mm (10.2 inch), while CoroBore® BR20 reached an LF = 316 mm (12.4 inch) with an excellent surface finish.

*DuoBore™ is part of the previous generation of rough boring tools from Sandvik Coromant.

Case: CoroBore® BR20

Challenge: Machining a connecting rod in weak machining conditions. The customer required a stable and secure machining process, good chip control and long insert life and tool life, while obtaining a high surface quality.



Component:	Connecting rod
Material:	C70S6; CMC: 02.2, MC: P2.5.Z.HT, hardness HB280~310
Operation:	Semi-finishing after an initial rough boring operation performed with a combination tool with chamfer
Machine:	Vertical machining center
Coolant	Internal coolant, 15 bar
Output power	11 kW
DC, mm (inch)	59.6 (2.35)

70%
Increased tool life

	Competitor tool	CoroBore® BR20
Total length:	120 mm	120 mm
Machine interface adaptor		C5-390B.555-40 050
Boring tool assembly		BR20-71SP12Y-C5
Insert		SPMT 12 12 – BR 4325 (CoroBore® 111)
Kappa (Kr)	75°	84°

Cutting data

z_n	2
n rpm	1500
v_c m/min (ft/min)	280 (919)
f_z mm/rpm (in/rev)	0.09 (0.0035)
a_p mm (inch)	1.2 mm (0.047)

Results

CoroBore® BR20 together with CoroBore® 111 inserts achieved good surface finish, excellent chip breaking and 70% increased tool life compared to existing tooling solution. The customer can now produce 700 pieces instead of 400 pieces within the same time.

Find more online

Visit the Sandvik Coromant website to learn more about boring, find application tips and get more details about CoroBore® solutions.

www.sandvik.coromant.com

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

SANDVIK
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