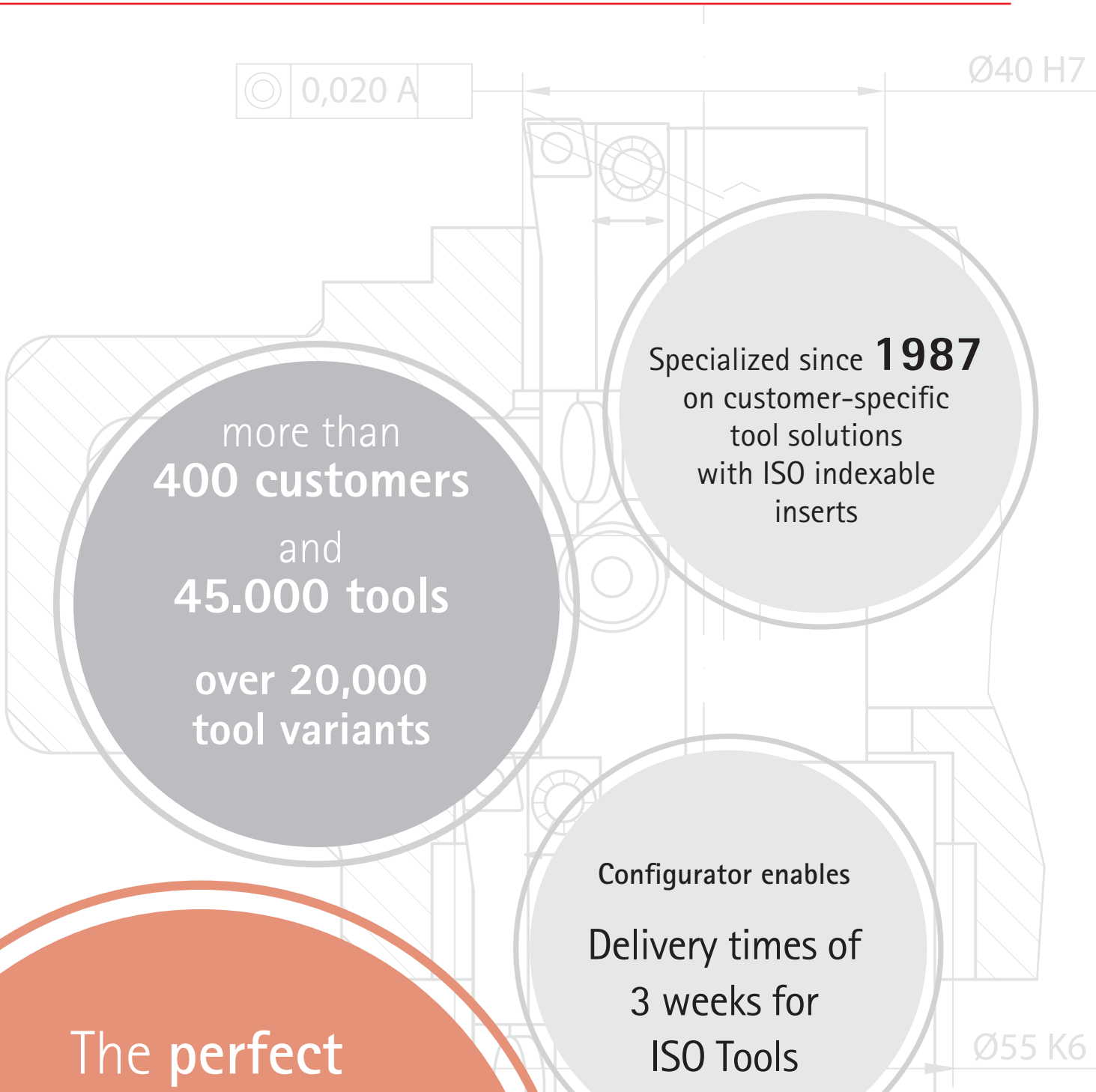
LOTHMANN

YOUR PARTNER

for individual machining

LOTHMANN IN FIGURES



more than
400 customers
and
45.000 tools

over 20,000 tool variants

Specialized since **1987** on customer-specific tool solutions with ISO indexable inserts

Configurator enables

Delivery times of 3 weeks for ISO Tools

The **perfect partner** for the optimal processing solution when it comes to machining.

CONTENT

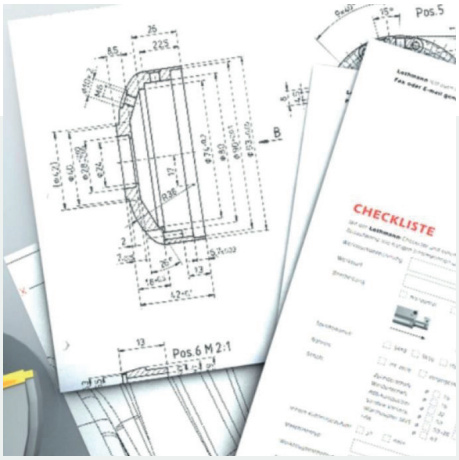
FAST **PRODUCTION...**

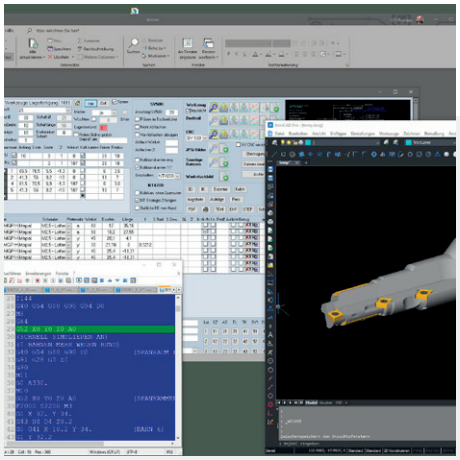
... through automated project management – from the inquiry... until delivery

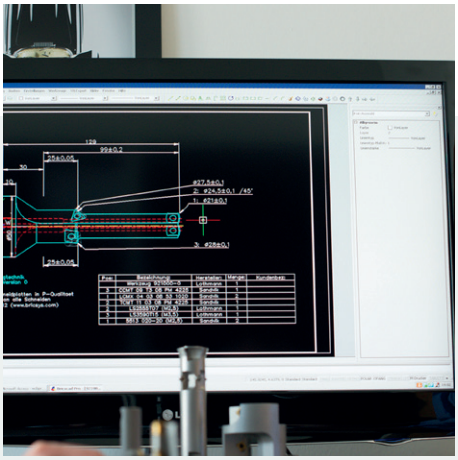
Due to a high degree of standardization of our design and production, it is possible to simplify many processes through our central database and partly to completely automate them.

Short quotation and delivery times have a high priority for special tools. That's why Lothmann began automating many stages of work preparation many years ago. For this purpose, an in-house administration and design software was developed:

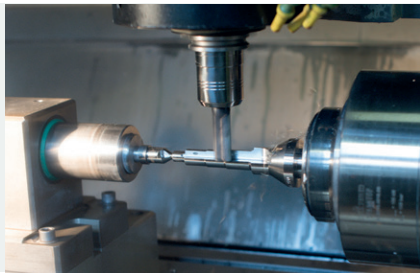
INQUIRY → DESIGN → CALCULATION →







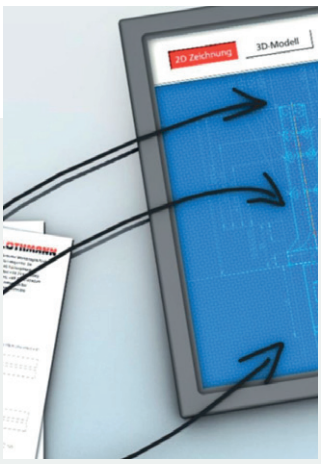
HIGH MANUFACTURING DEPTH OF OVER 90%

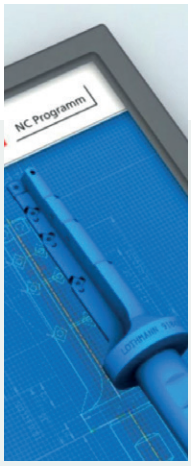


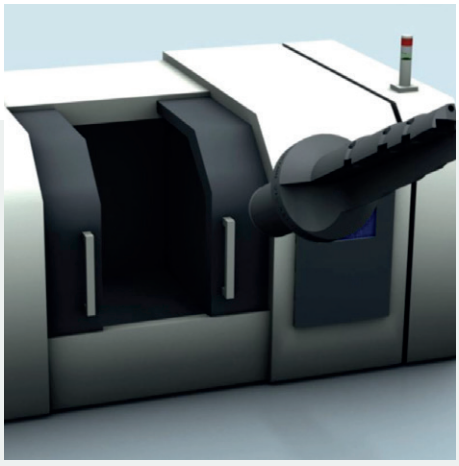
CONFIGURABLE PRODUCTS:

- ISO tools for drilling and boring
- Reverse countersinking tools
- Bell tools and fine spindle tools in radial design

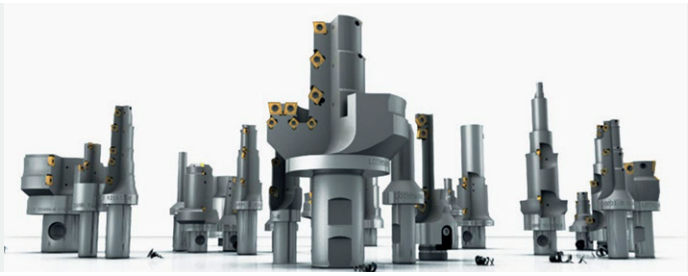
2D/3D DATA → PRODUCTION / PLANNING →







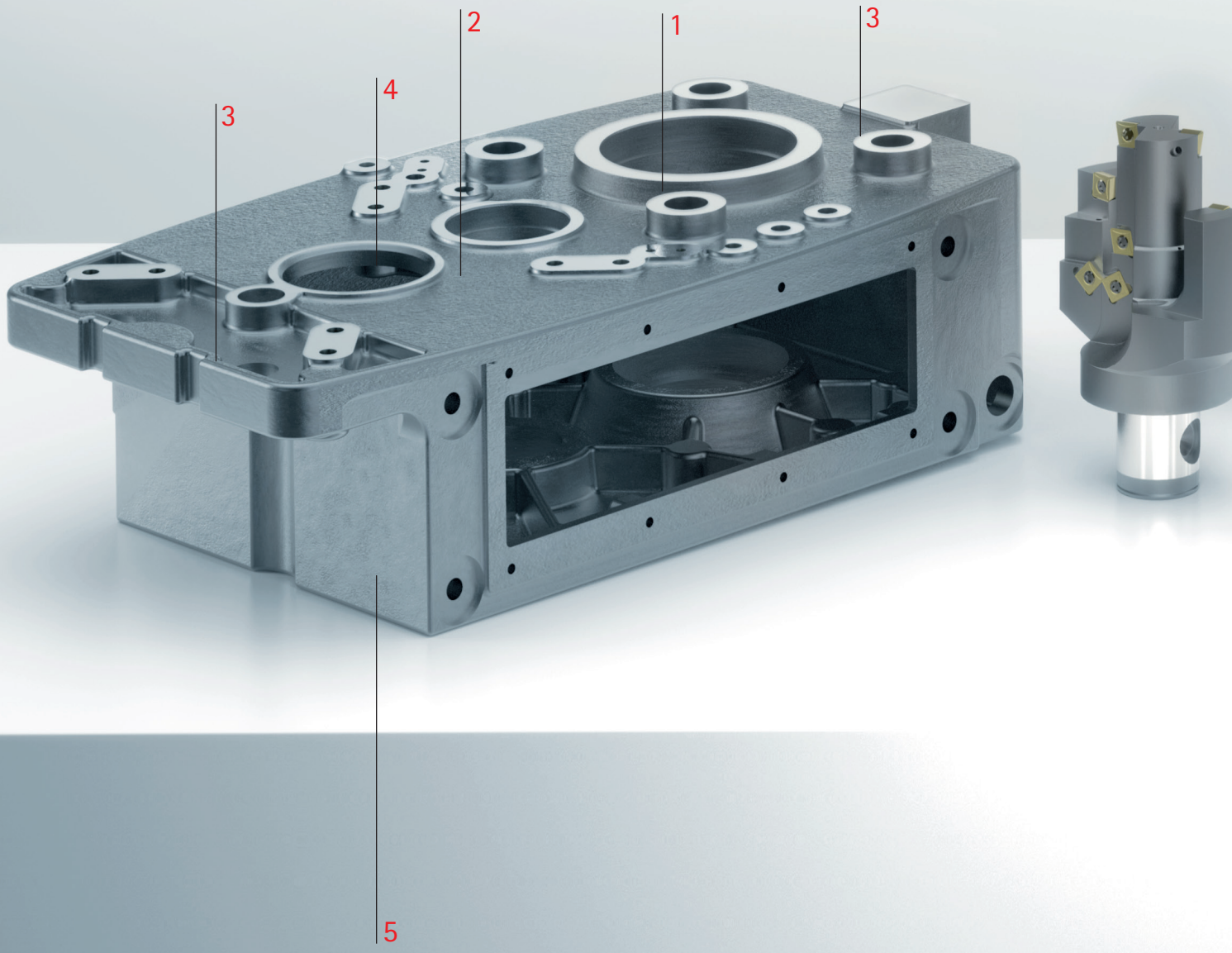
SQL-DATABASE



MACHINING **GEARBOX HOUSING**

Complete machining of several bearing bores with few tools

The gearbox housing made of EN-GJS500-7 for the commercial vehicle sector is manufactured on a machining centre using an efficient tool concept with little effort. Thanks to multi-staged tools, tool magazine positions and machining time could be saved.

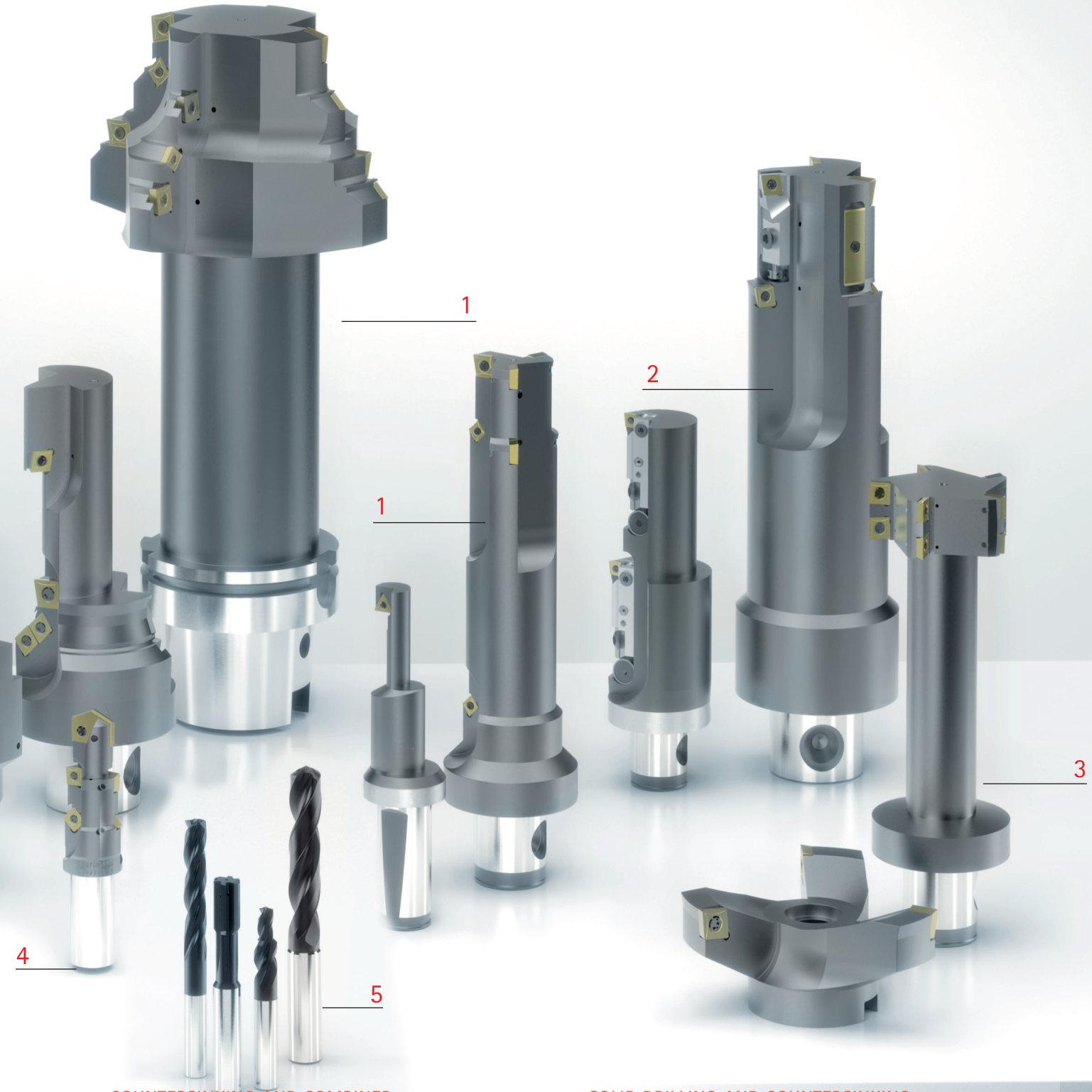


REQUIREMENTS

- Concentricity of the bearing bore < 10 µm
- Surface quality max. R_a 3.2 µm
- Feasible with ISO indexable inserts

ADVANTAGES

- High process reliability for contour-dependent shapes and geometries
- Reduction of time-consuming machining sequences
- Multiple cutting edges in the production of complex contours



1 COUNTERSINKING AND COMBINED FORWARD AND BACKWARD MACHINING

Multi-staged countersinking and deburring of pre-cast contours

Reduced processing time 60 %

2 SEMI-FINISHING AND FINISHING MACHINING

Optimal concentricity of bearing bores

Increase in positional accuracy 100 %

3 MILLING WITH ISO CUTTING

Machining the inside of the housing and the outer contour

35 % reduction in tooling costs

4 SOLID DRILLING AND COUNTERSINKING

Non-precast elements are drilled directly, countersink and deburred

Reduction of processing time 50 %

5 SOLID CARBIDE DRILLS AND REAMERS

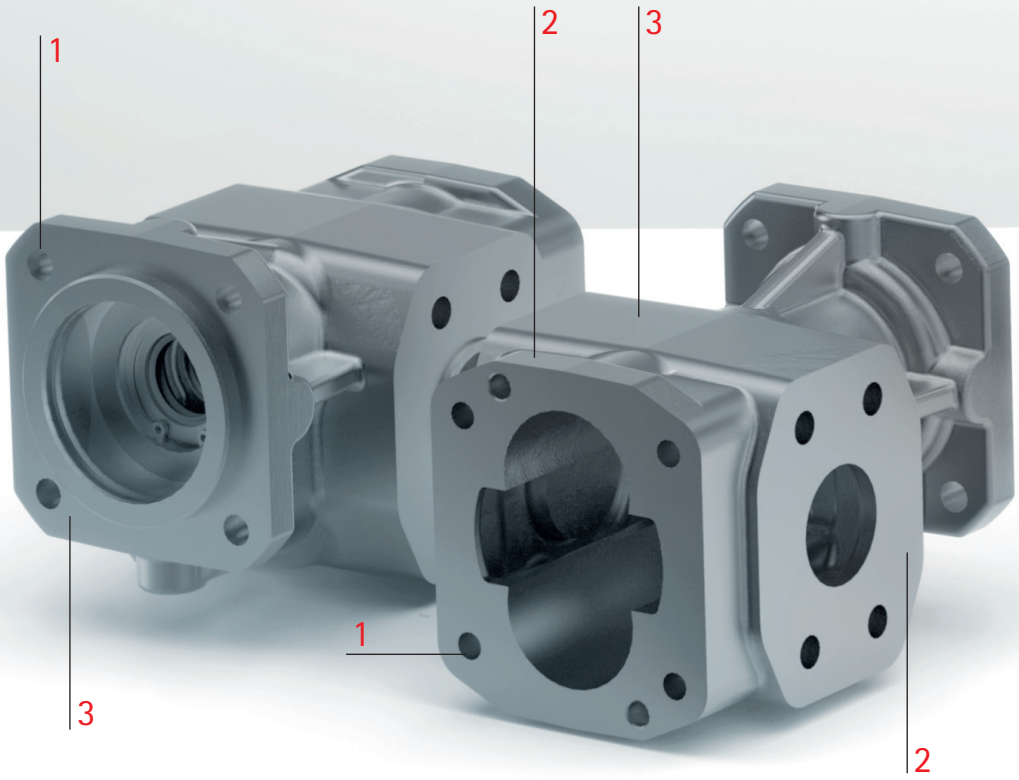
High feed rates and short machining time

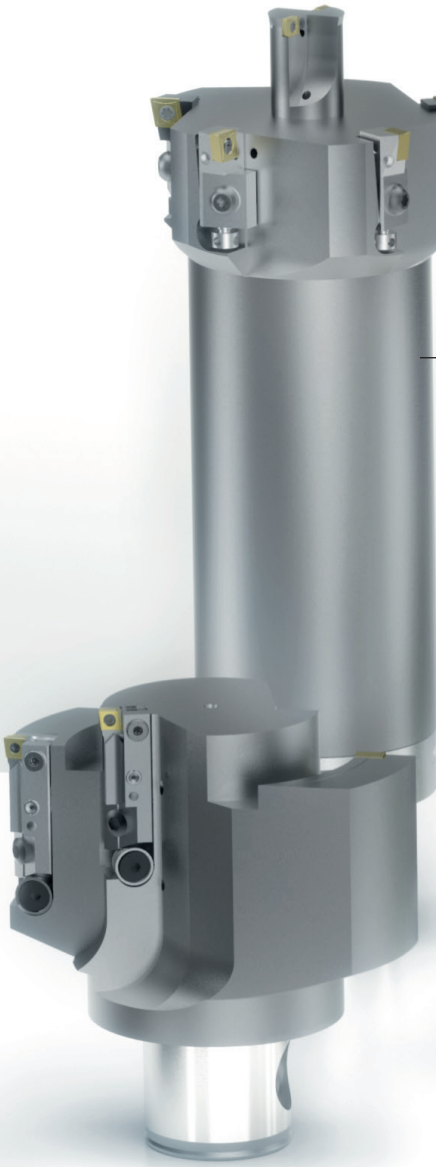
High efficiency in drilling and reaming

MACHINING **GEAR PUMP**

Efficient pre-machining and semi-finishing with high form and position accuracy

The pump housing made of EN-GJS-400-15 is machined at the critical points with a perfectly coordinated tool concept. The housing is completely manufactured in two clamping set-ups on one machining center. Due to the partially modular tool design, it is possible to use the tools on different machines.



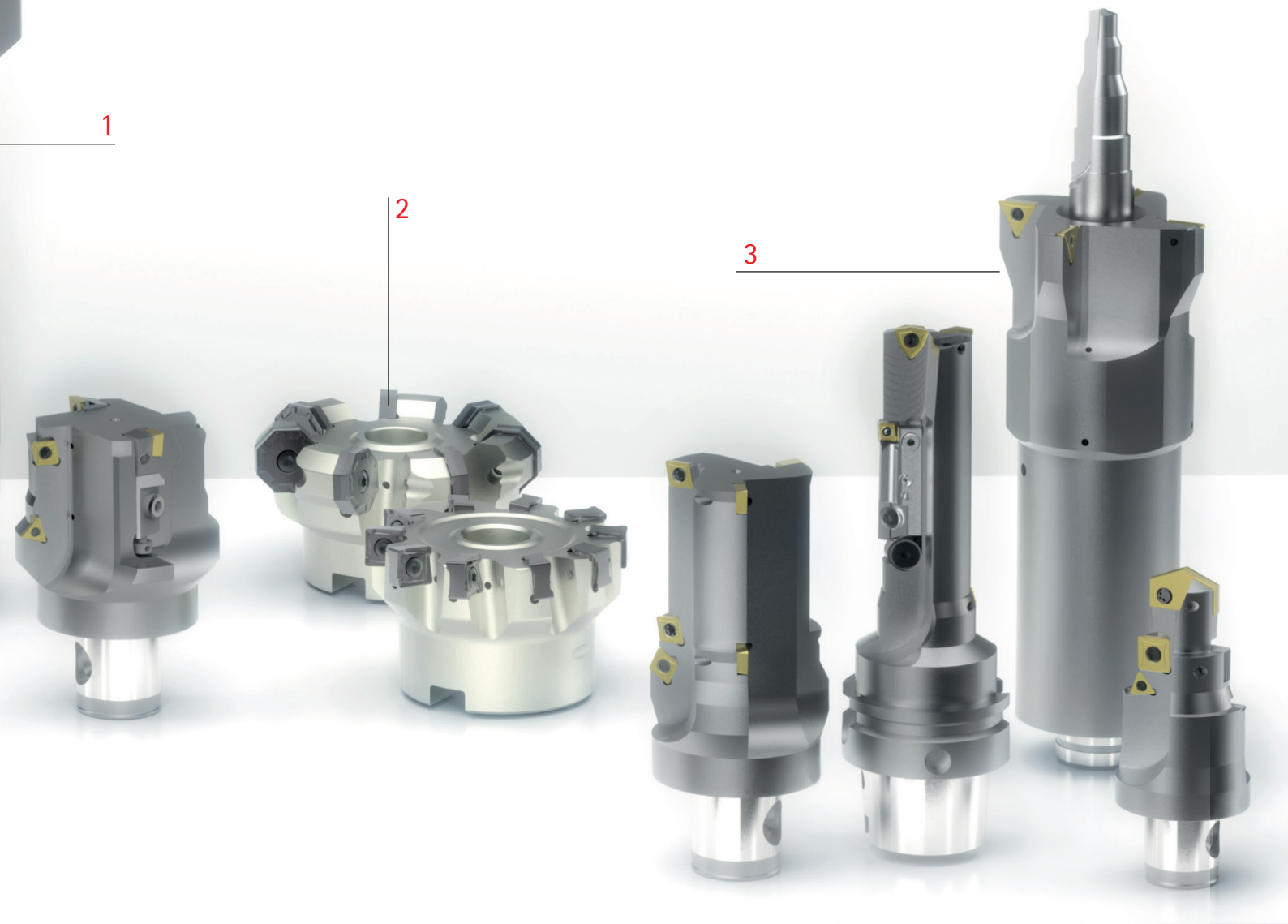


REQUIREMENTS

- Accurate pre-machining for friction process
- Increased service life when machining the chamber bores
- Limited tool capacity in the magazine

ADVANTAGES

- Flexible system for different pump materials
- Fast availability of tools through ISO articles
- Low tool circulation costs



1 FINISHING AND SEMI-FINISHING

Fine machining of the fits up to tolerance level IT6. Optimum concentricity of bearing bores by milling of finely adjustable tool inserts

Reduced process time > 50 %

2 NEOMILL® SHOULDER AND FACE MILLING CUTTER

Efficient milling of large areas with modern technology

Reduction of processing time > 50 %

3 DRILLING FROM SOLID AND BORING

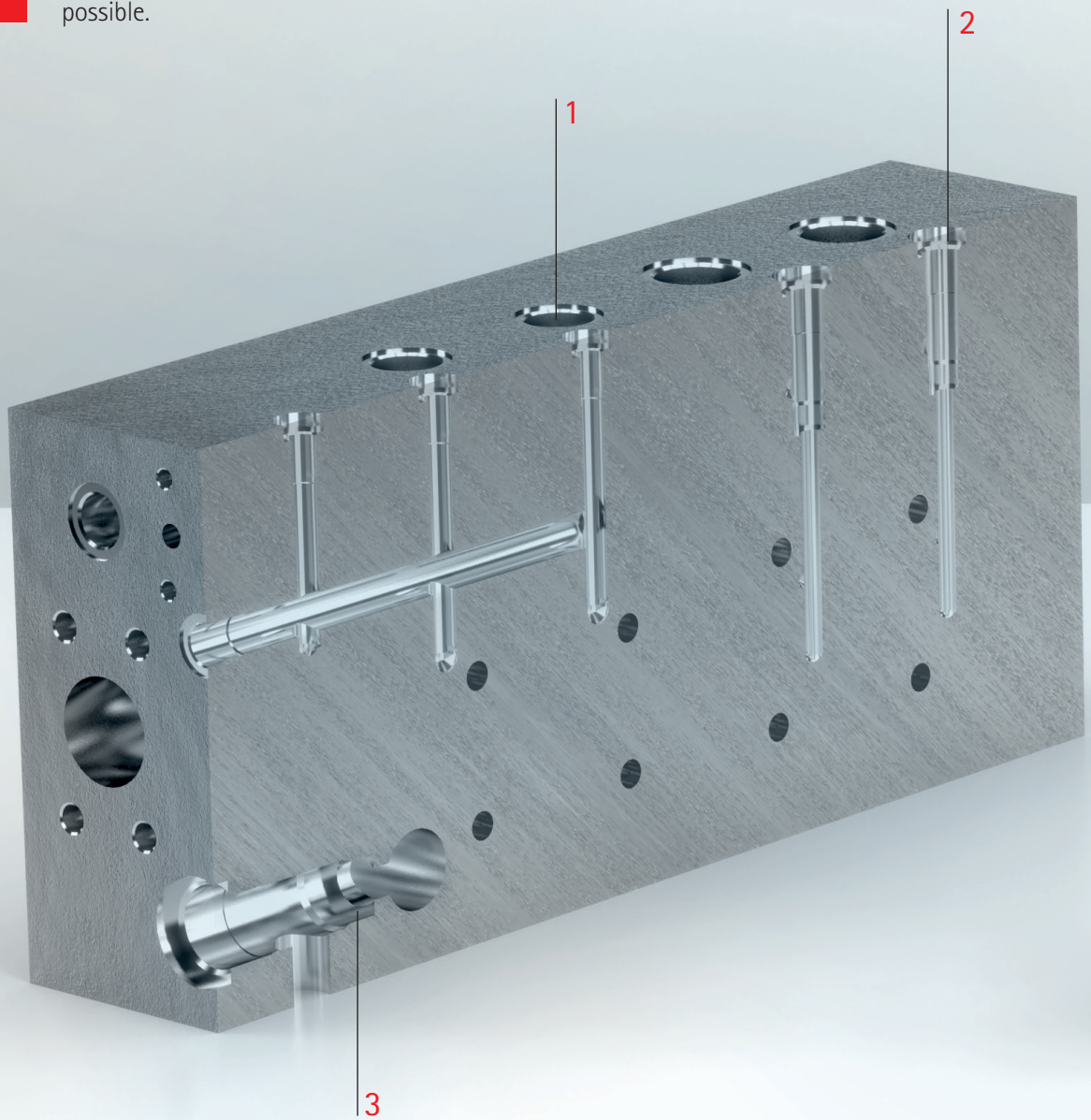
Different combinations for drilling with indexable inserts, fine boring cassettes or solid carbide tools.

Saving of 6 tool magazine slots

MACHINING **CONTROL BLOCK**

Machining of pilot and installation valve bores for pressure, directional, shut-off and flow valves, control surfaces, threaded holes and O-ring bores

Control blocks have a high proportion of mechanical processing and must be machined very precisely in many places. With the right tooling concept, efficient production is possible.

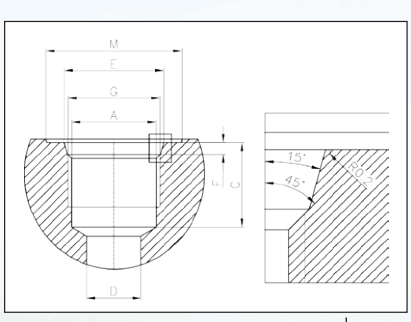


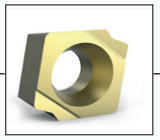
REQUIREMENTS

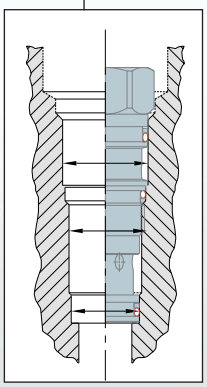
- Reduction of processing time during pre-machining
- High process reliability
- High flexibility thanks to indexable inserts
- Processing of standardized connections for different materials

ADVANTAGES

- Low tool circulation costs
- Entire pre- and semi-finishing machining can be implemented







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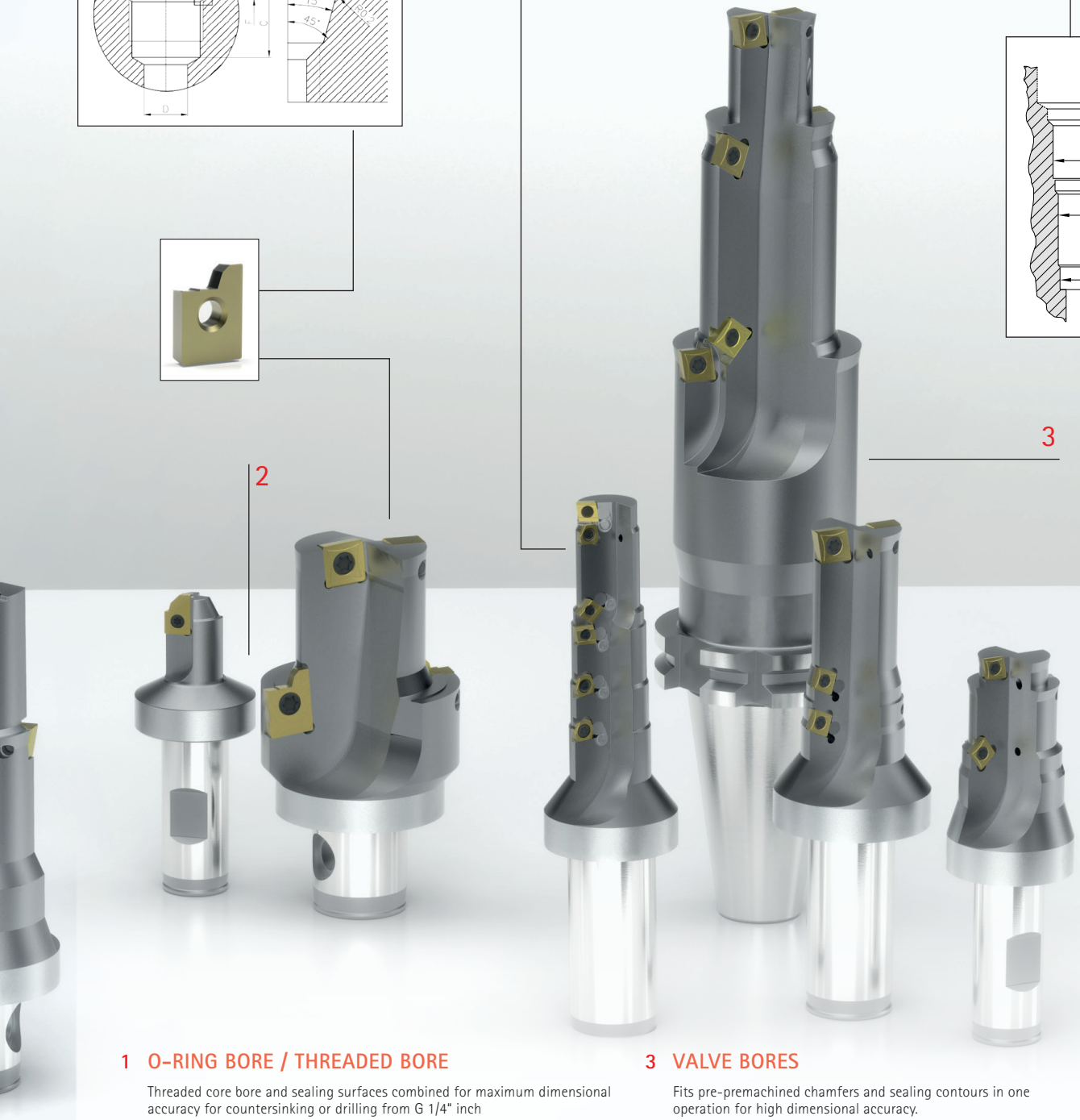


1 O-RING BORE / THREADED BORE

Threaded core bore and sealing surfaces combined for maximum dimensional accuracy for countersinking or drilling from G 1/4" inch

Reduced process time > 50 %

2 CONNECTION BORES FOR UNF THREADS AND ISO 6149

Core diameter and sealing contour for O-ring finished by shape cutting edge. Can be used for inch threads and metric connections.

Reduction of processing time > 40 %

3 VALVE BORES

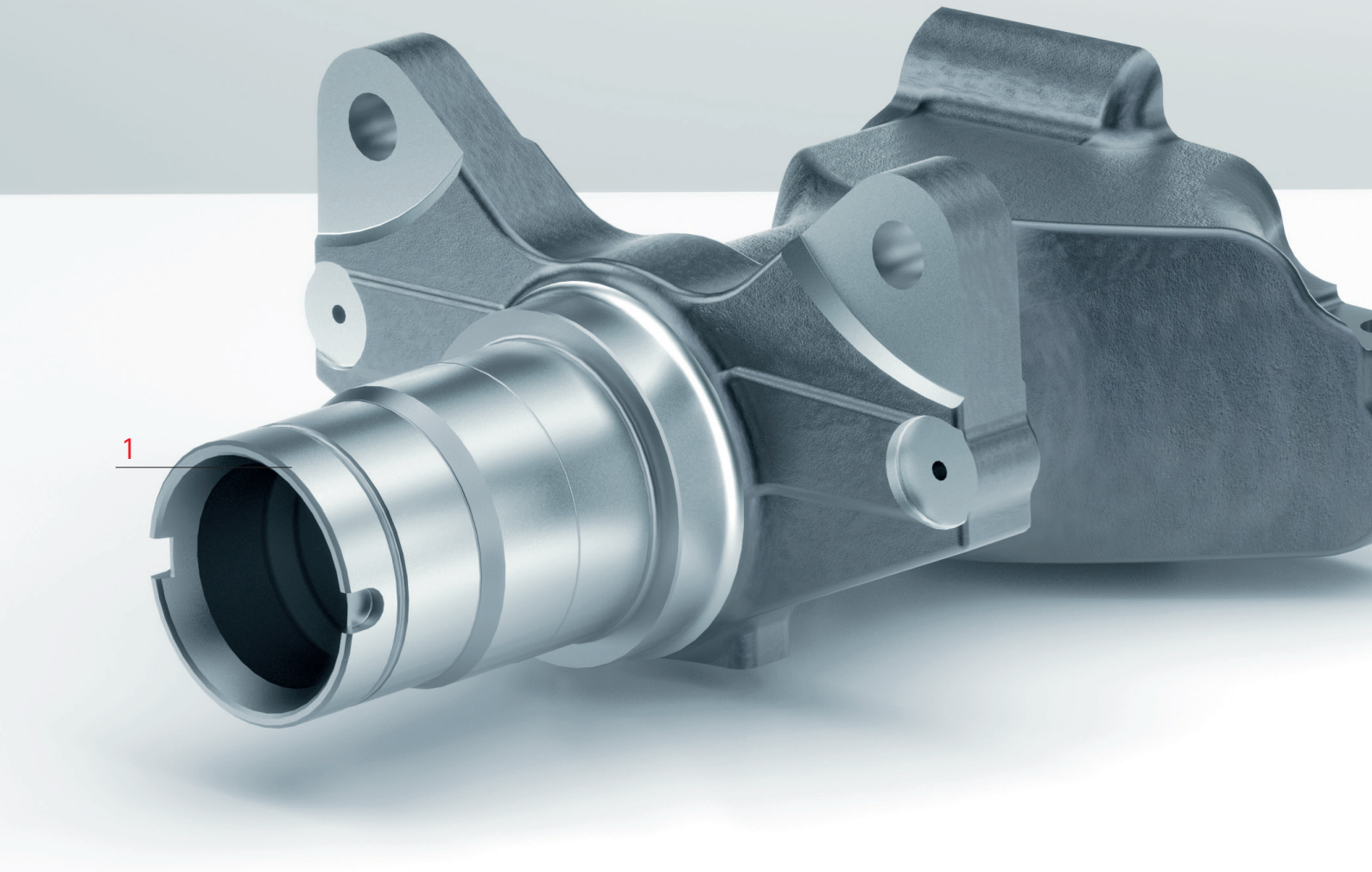
Fits pre-premachined chamfers and sealing contours in one operation for high dimensional accuracy.

Number of tools reduced by 50 %

MACHINING **AXIS JOURNAL**

High rationalization due to short Turnaround times

The axle journal made of EN-GJS-600-3 can be produced on a machining center with the highest roundness and cylindricity. Machining is carried out with ISO inserts and replaces time-consuming milling. Fits in the IT6 area are processed directly.



REQUIREMENTS

- Reduction of processing time
- Higher surface quality

ADVANTAGES

- Simple tools
- High rationalization, due to shorter feed distance than with milling
- High surface quality - comparable to turning

1 JOURNAL PROCESSING

Outer diameters can be pre-machined and finished.
Multi-edged versions and steps possible.

Reduced process time > 50 %

CLAMPING

UNIQ® Mill Chuck and UNIQ® DReaM Chuck 4,5°

The clamping technology range from MAPAL guarantees performance, process reliability as well as concentricity and changeover accuracy in every application. Manufactured using state-of-the-art technologies, the specialists continuously further develop the chucks. The standard program covers the requirements and circumstances of customers with a wide variety of systems: from hydraulic expansion and shrink chucks to mechanical clamping systems. Both hydraulic expansion chuck series – UNIQ Mill Chuck and UNIQ DReaM Chuck – in the new design clearly combine the performance promise of quality and function. This is achieved through an optimal interplay of geometric and functional properties.

UNIQ Mill Chuck

AT A GLANCE

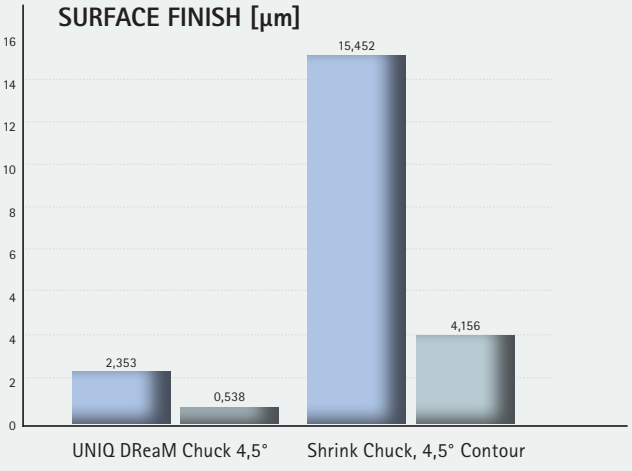
- High temperature resistance of 80°C even with very long milling cycles (over 240 minutes)
- For high-performance milling operations up to 33,000 revolutions per minute
- Maximum process reliability

UNIQ DReaM Chuck 4,5°

AT A GLANCE

- Hydro expansion chuck with the original dimensions of a shrink chuck (DIN contour with 4.5°)
- Application-oriented system design
- Maximum process reliability and service life
- Fast and highly accurate tool change

SURFACE FINISH [µm]



PROCESSING DATA

Material	K720 1.2872 90MnCrV8
Processing	Finish machining
n [1/min]	~ 7,500
v_c [m/min]	140
f_z [mm]	0,13
v_f [mm/min]	1,950

Mill Chuck | HB Mill Chuck

The MillChuck HB surface chuck convinces with strong tension, easy handling and high concentricity. Axially parallel cooling channels in the clamping area ensure optimum coolant supply.

Mill Chuck, HB

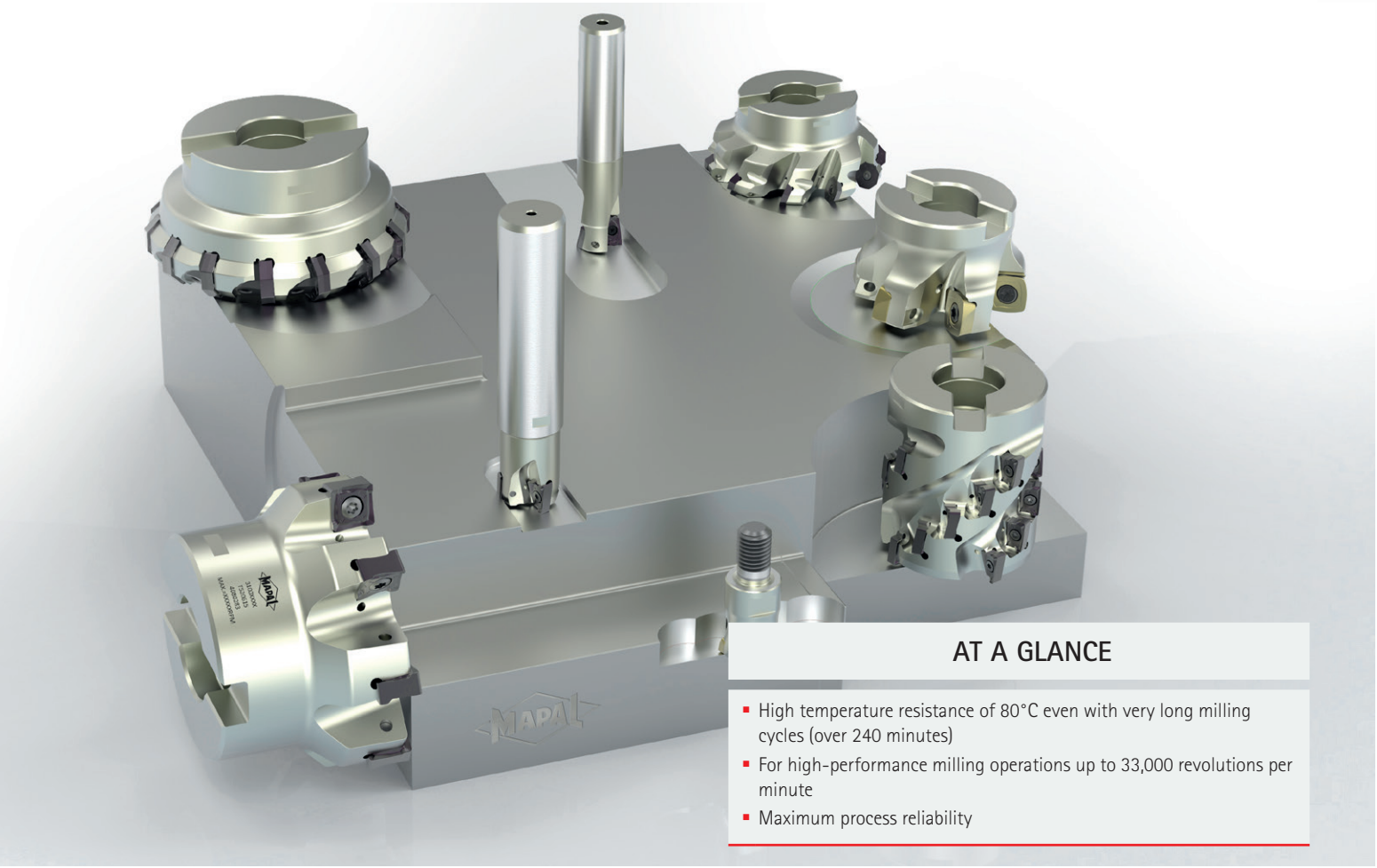
AT A GLANCE

- Easy handling thanks to differential screw
- Maximum efficiency and precision
- Defined axial tool positioning thanks to spring system
- Optimal positioning of profile tools for control edge machining

FRÄSEN

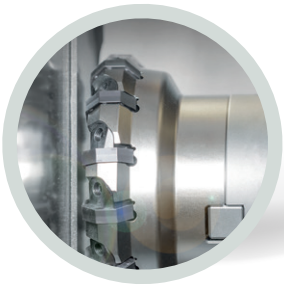
NeoMill® – Milling cutters combine productivity and cost-effectiveness

The radial standard milling program NeoMill® from MAPAL with its face, corner, groove, shell end and high-feed milling cutters stands for maximum productivity and cost-effectiveness, especially in series production. The development was based on many years of experience with special tools, with which the industry produces large quantities with constant quality very efficiently.



AT A GLANCE

- High temperature resistance of 80°C even with very long milling cycles (over 240 minutes)
- For high-performance milling operations up to 33,000 revolutions per minute
- Maximum process reliability

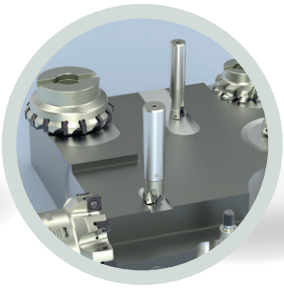


Standard program

- In stock available tools and inserts

Milling application / clamping

- Component requirements
- Clamping concept



Machining strategy

- Tool selection
- Design of milling strategy

OptiMill-Uni-HPC-Plus

The precise rounding of the cutting edges of the shoulder milling cutter ensures low wear while maintaining good surface quality. During machining, the uneven pitch and tooth pitch ensure smooth running, large machining volumes, high process reliability and low machine load. For the highly economical universal machining of steel, stainless steel and cast iron.

OptiMill-Uni-HPC-Plus | SCM760

P K H

Design:

Mill diameter:	3,00 – 20,00 mm
Cutting material:	HP920
Number of cutting edges:	4
Side rake angle:	36°/38°
Particularities:	uneven pitch, cutting edge rounding

AT A GLANCE

- High-performance substrate and high-end coating for excellent tool life
- Dynamic twist pitch and uneven division for particularly smooth running
- Precise cutting edge rounding for high surface quality

DRILLING

MEGA-Speed-Drill-Iron | High-speed drill

The cutting edges of the MEGA-Speed-Drill are unevenly divided. In addition, the drill has three guide chamfers. This avoids vibrations and reduces friction. The highly polished flutes guarantee optimum chip flow.

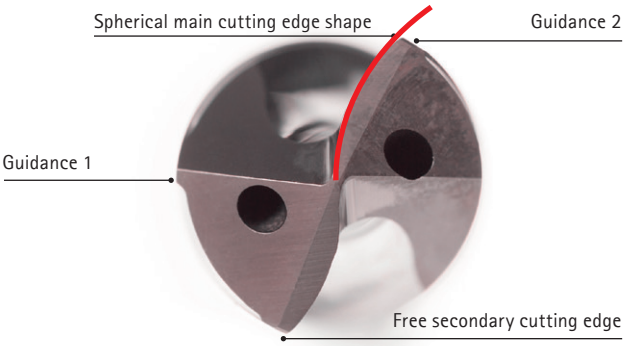
These features of the drill in combination with the cutting geometries and cutting materials specially adapted to cast iron, steel and stainless steels allow the MEGA-Speed-Drill to produce bores with up to 30% higher feed rates than is possible with conventional drills.

MEGA-Speed-Drill-Iron | SCD421 (5xD)

K

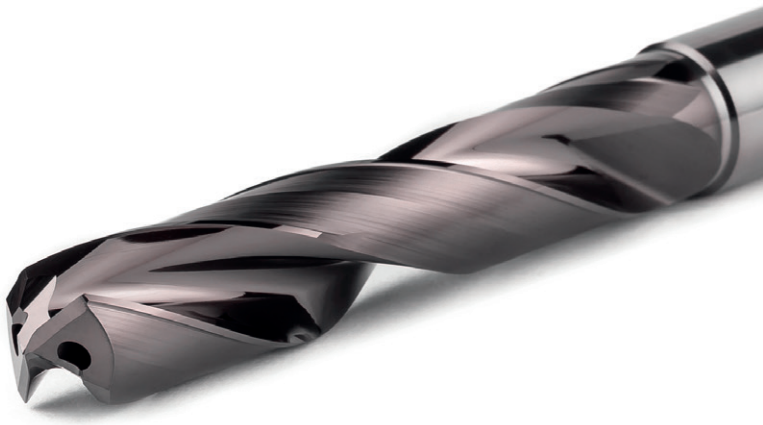
Design:

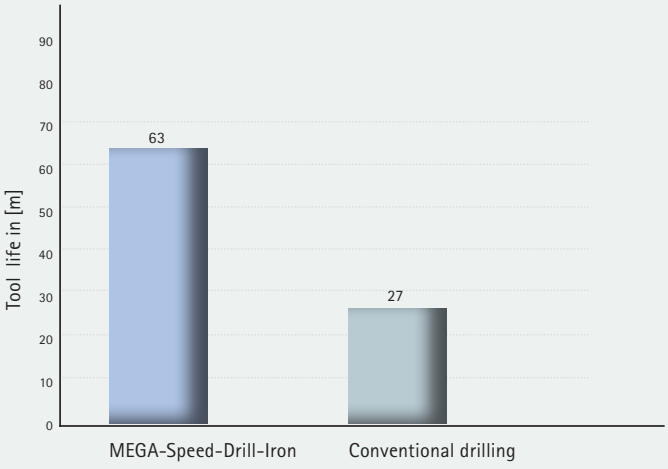
Drill diameter:	3,00 – 20,00 mm
Bore tolerance:	≥ IT 9
Cutting material:	HP238
Number of cutting edges:	2
Number of guiding chamfers:	3
Tip angle:	130°
Side rake angle:	30°



AT A GLANCE

- For high-speed machining.
- Significantly higher cutting speeds
- Polished chip flutes guarantee optimum chip removal
- Powerful in cast iron, steel and stainless steel





Material	GJL-250 (GG-25) | ø 8,5
v_c [m/min]	200
f_u [mm/U]	0,35

MEGA-Step-Drill-Steel-Plus | Step drills for threaded core bores

The step drill creates ideal machining conditions for the subsequent threading tool and thus ensures an economical production of threaded core bores. The cutting edge diameter of the drill is matched to the thread to be produced, for standard-compliant threads and high process reliability of the tap.

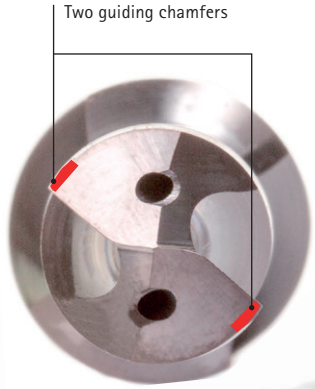
The 90° countersink for the thread is generated in one step with the core bore.

MEGA-Step-Drill-Steel-Plus | SCD590, SCD591

P K H

Design:

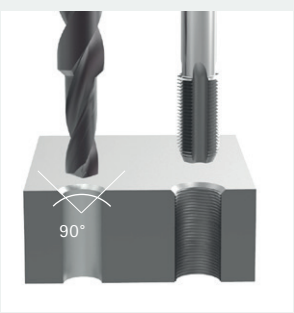
Drill diameter:	3,970 - 16,050 mm
Bore tolerance:	≥ IT 7
Cutting material:	HP358
Number of cutting edges:	2
Number of guiding chamfers:	4
Tip angle:	140°
Side rake angle:	30°

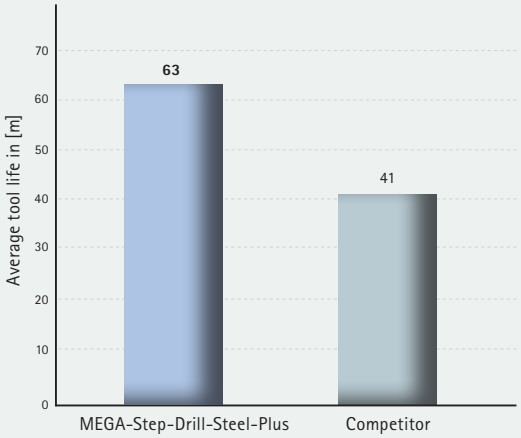


AT A GLANCE

- Version with and without internal cooling
- Upgrade of the MEGA-Step-Drill-Steel with and without internal cooling
- Innovative coating
- Optimized micro and macro geometry
- 15 % higher cutting speed, feed and tool life

Core drilling M10





Material	42CrMoS4 | ø 8,5
Drilling depth	25,5
v_c [m/min]	100
f [mm/U]	0,25

DRILLLING

Tritan-Drill-Reamer

With six guide chamfers for excellent guiding properties, finely ground flutes with matched groove shape for good chip removal and a self-centering cross cutting edge, the new Tritan-Drill-Reamer convinces all along the line.

The self-centering chisel ensures good positioning accuracy and improved drilling behavior. Three cutting edges guarantee optimum roundness of the fitting bore and maximum performance. The guide chamfers produce the best surfaces.

Tritan-Drill-Reamer | SDR301

Solid carbide twist drill with internal coolant supply.
As a preferred series in H7.

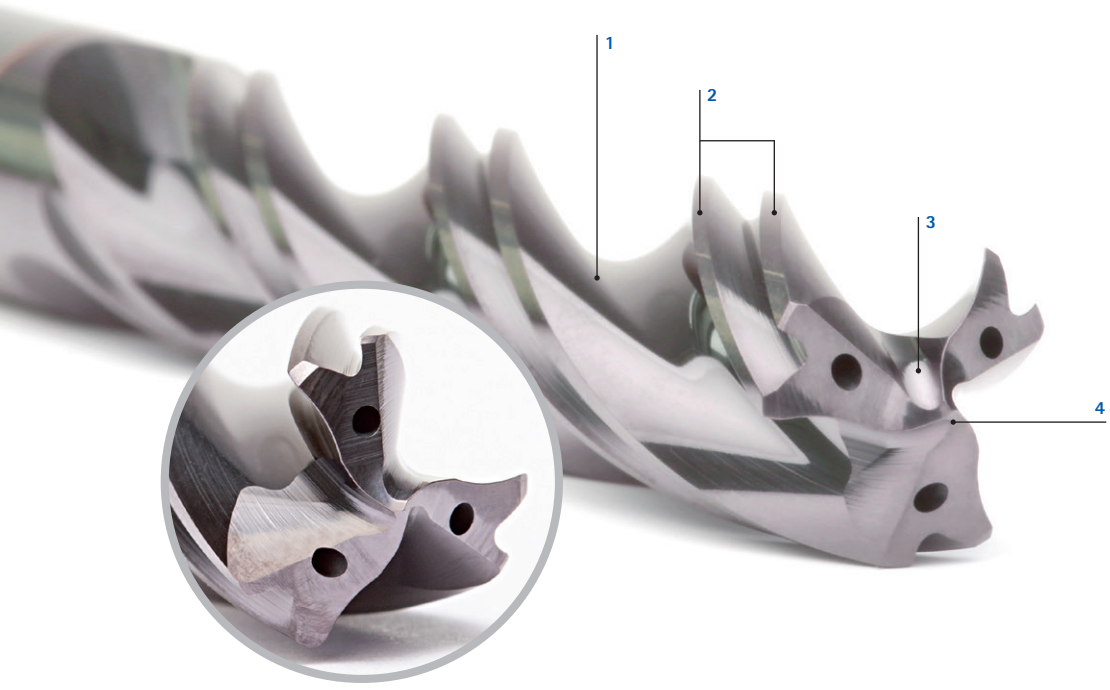
P K

Design:

Drill diameter:	3,970 - 20,020 mm
Bore tolerance:	≥ IT 7
Cutting material:	MxP
Number of cutting edges:	3
Number of guiding chamfers:	6
Tip angle:	140°
Side rake angle:	30°
Tip grinding:	Specific grinding

AT A GLANCE

- Combination of drilling and reaming
- Length versions 3xD and 5xD
- Three cutting edges and six guide chamfers
- With internal cooling
- Tolerance versions ±0.003 mm and H7



1 Finely ground flute profile

2 Six guiding chamfers

3 Innovative point thinning

4 Self-centring chisel edge

REAMING

FixReam | High-performance reamer

Depending on the diameter, the high-performance FixReam reamers have between four and eight cutting edges with internal cooling and thus achieve correspondingly high feed speeds. Numerous materials can be produced economically and reliably in the diameter range 2,800 to 20,200 mm in the tolerance range IT7.
We recommend our high-performance and cost-effective FXR Short Plus reamers for short machining depths.

FixReam | FXR510

High-performance reamers left hand fluted with internal cooling made of solid carbide. As a preferred series in H7.

Design VA:

Diameter:	3,701 - 20,200 mm
Lead:	MF1M
Cutting material:	HP145

Design Speed:

Diameter:	2,800 - 20,200 mm
Lead:	MG1M
Cutting material:	HP145

FixReam | FXR505

High-performance reamers straight fluted with internal cooling made of solid carbide. As a preferred series in H7.

Design VA:

Diameter:	3,701 - 20,200 mm
Lead:	MT0A
Cutting material:	HP145

Design Speed:

Diameter:	2,800 - 20,200 mm
Lead:	MV0A
Cutting material:	HP145

AT A GLANCE

- High cutting parameters with perfect concentricity
- High stock availability of standardized geometries
- Long service life and resource-saving use due to regrindability

TOOLS WITH GUIDE PADS

Tools with guide pads are used to compensate radial cutting forces and reduce vibrations. As a result, even more complex contours can be produced at higher machining depths. Guide pads can be used for pre-machining or finishing, depending on requirements. For pre- and semi-finish machining, Screwed carbide pads are used, which can be replaced quickly during service. Carbide pads are available from stock at short notice, so that the tools are ready for use again very quickly.

AT A GLANCE

- Use in pre- and semi-finishing
- Screwed carbide pads can be replaced quickly

INSERTS

Ground, high-precision indexable inserts of tolerance class H enable "true multi-edge" machining even with permanently installed inserts. In conjunction with precisely manufactured insert seats, the cutting edges show only minimal deviations. This means that all cutting edges during machining are in use at the same time. As a result, significant performance increases are possible.

The right cutting material for every application

AT A GLANCE

- Positive radial cutting edges for boring and turning
- Excellent price-performance ratio
- CVD and PVD coated cutting materials for P, M and K materials
- Tipped variants with PCD and PcBN for the highly economical processing of aluminium and cast iron

CONTACT

Get in touch with us –
we will be happy to make you an individual offer.

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