Your technology partner for cost-effective machining

SOLUTIONS AND INNOVATIONS 2026

You

don't want to do everything differently. But there's a lot you'd like to improve.

New opportunities

We

always find new ways to obtain more for you.

Maximum impact with minimal effort

Focus on productivity

Productivity is not accidental – it's the result of carefully considered processes, smart tools and working with a strong technology partner. MAPAL helps its customers do more with less: with smart tool solutions tailored and targeted to specific requirements.

In this brochure, we present our latest product innovations – all with the clear goal of making manufacturing even more efficient. New solutions from the segments that take existing concepts further and tap into more potential areas for boosting productivity are being added to the portfolio.

Discover all the innovations on www.mapal.com

Scan the QR code for more information.

Contents

OptiMill®-Uni-HPC

New generation for maximum process reliability

MAPAL presents the third generation of the solid carbide milling cutter OptiMill-Uni-HPC – optimised for automated manufacturing and high cutting performance.

The new OptiMill-Uni-HPC for machining steel, stainless steel and castings has been specially developed for automated processes and meets the highest requirements for process reliability, stability and resistance to wear.

The newly developed cutting material has a high ductility, reducing the risk of tool breakage. Combined with wear-resistant coatings and optimised geometry, this results in a tool that's ultra-reliable, even in dynamic machining.

A version with an integrated chip breaker is a new addition to the OptiMill-Uni-HPC range. It creates short chips that are easy to remove – offering clear benefits for air cooling and high cutting performance and enabling high infeed depths.

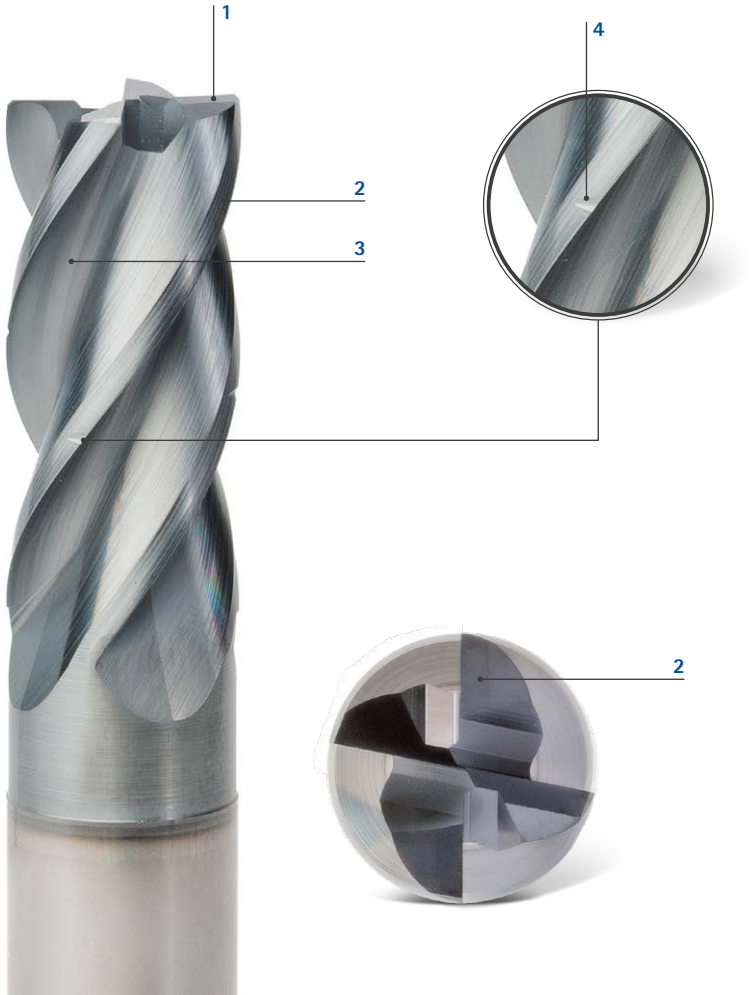
The result Longer machine running times, lower monitoring efforts and higher process reliability – ideal for unmanned shifts and automated workflows.

From September 2025, the milling cutter is available in three versions:

- Short without chip breaker (ø 3–20 mm)
- Long without chip breaker (ø 3–25 mm)
- Long with chip breaker (ø 6–25 mm)

This sees MAPAL draw on the targeted development of a tried-and-tested concept – for more efficiency, process reliability and versatility in modern machining.

FOCUS ON
PRODUCTIVITY
- ✓ Automated manufacturing
- ✓ High process reliability



1 Configurable cutting-edge design
- Chamfer for high-level wear protection
- Radii for near-net-shape machining
- Sharp cutting edge design

2 Optimised geometry
- Stable machining at high infeed depths
- Very good chip formation

3 Newly developed cutting material
- Lower risk of tool breakage
- High degree of process reliability during dynamic machining
- High degree of ductility under impact strain

4 Integrated chip breaker
- Short chips that are easy to remove

NeoMill®-16-Finish

New finishing milling cutters for maximum efficiency in series production

With the new NeoMill-16-Finish, MAPAL presents a milling tool specially developed for the toughest requirements for surface finish and dimensional accuracy in the series production of steel and cast materials.

Setting the finishing inserts is easy, making surface qualities of up to Rz 4 µm possible – all while being highly economical. The face milling cutters are available in standard sizes from 63 to 200 mm and offer an ideal solution for challenging manufacturing environments.

The unique combination of a 16-blade pre-machining insert (ONMU05) and an eight-blade indexable insert for finishing (OFGW07) ensures maximum process reliability and efficiency.

NeoMill-16-Face for pre-machining

MAPAL is also adding NeoMill-16-Face, an economical tool for pre-machining, to the range. Efficiency is at the forefront here, too: the 16 cutting edges on the indexable insert facilitate low costs per part and stable processes – ideally suited to machining cast and steel parts with stock allowances of up to 2 mm. The tools are available in diameters from 32 to 100 mm.

With the NeoMill-16-Finish and the NeoMill-16-Face, MAPAL is expanding its successful range of indexable-insert milling cutters for series production include economical semi-finishing and finishing solutions for steel and cast materials. Both series are available from autumn 2025.

3

NeoMill-16-Face

FOCUS ON PRODUCTIVITY

- ✓ Efficient series production
- ✓ Minimal setting effort

NeoMill-16-Finish

1 Adjustable finishing inserts
- High surface quality
- Easy setting

2 Combination of pre-machining and finishing insert
- Stable processes
- Long tool life

3 Indexable insert with 16 cutting edges
- Low unit costs
- Minimised tool change

NeoMill®-Alu-Rough

Maximum performance for roughing aluminium

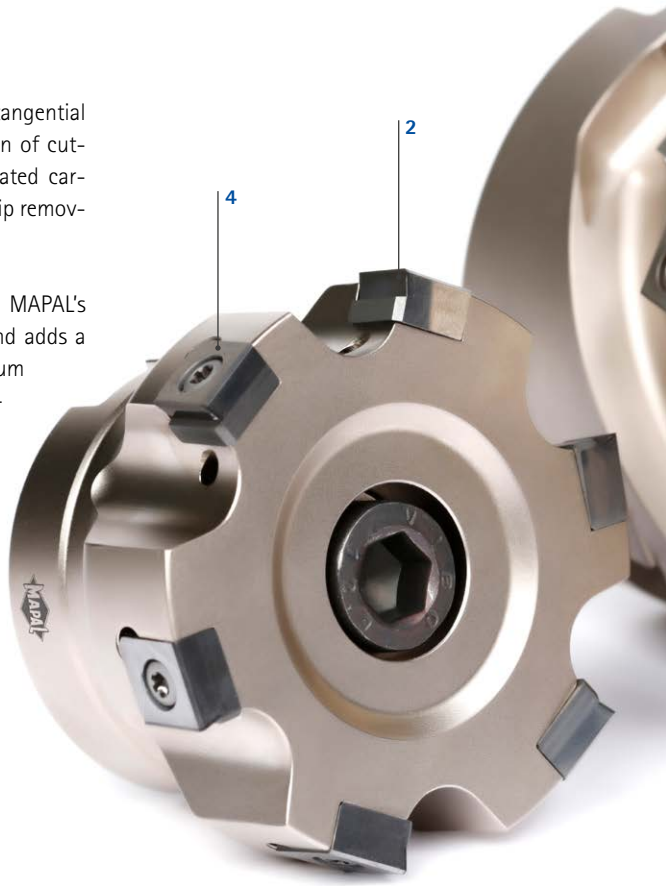
MAPAL has developed a powerful solution for roughing cast aluminium parts in the shape of the indexable-insert milling cutter NeoMill-Alu-Rough.

The milling tools are tailored specifically to the requirements of the automotive and mechanical engineering industry. The NeoMill-Alu-Rough boasts maximum effectiveness, including at high chip volumes.

The standard range includes shoulder milling cutters with a single row of inserts with diameters from 50 to 160 mm. Versions with multiple rows of inserts are available as shell end face milling cutters with diameters of 63, 80 and 100 mm. Customer-specific tool solutions can also be configured – for maximum adjustment to individual manufacturing processes.

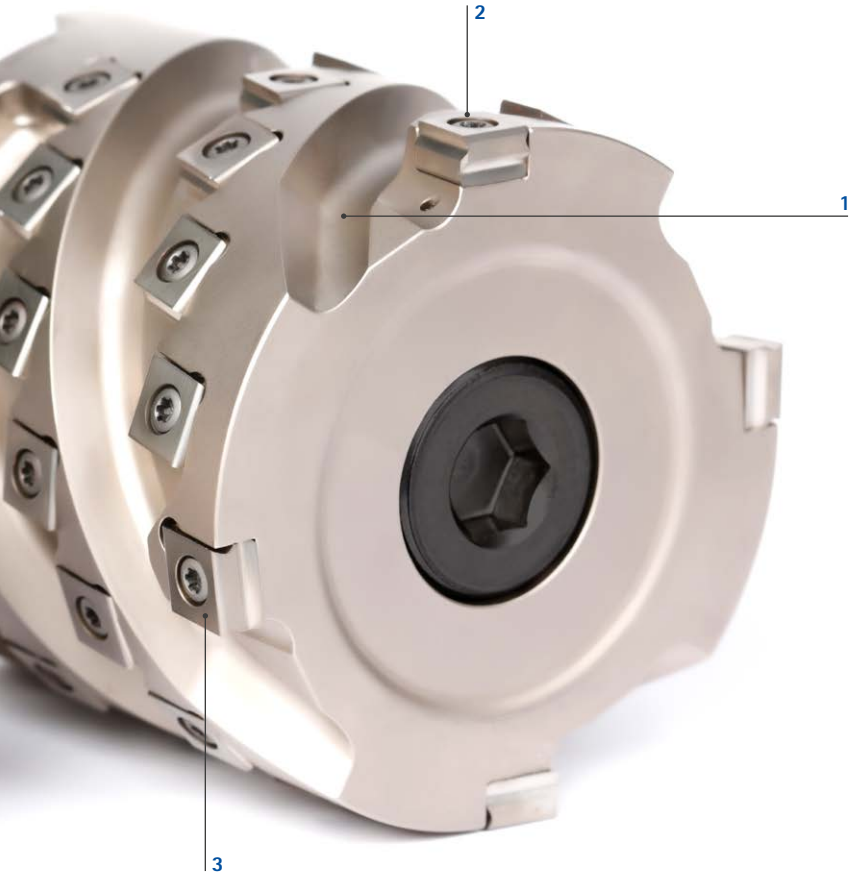
The combination of large chip flutes, tangential indexable inserts and a wide selection of cutting materials (PCD, coated or uncoated carbide, CVD diamond) ensure reliable chip removal and high flexibility.

The NeoMill-Alu-Rough highlights MAPAL's expertise in aluminium machining and adds a future-forward solution for maximum productivity to the existing portfolio. The roughing cutter is available from autumn 2025.



FOCUS ON PRODUCTIVITY

- ✓ High cutting performance
- ✓ Short set-up times



1 Large chip flutes
- Safe chip removal
- Stable machining at high volumes

2 Maximum cutting depth
- Shoulder milling cutters to 8 mm
- Shell end face milling cutters to 65 mm

3 Tangential indexable inserts
- High process reliability
- Minimal vibrations

4 Selection of cutting materials (PCD, carbide, CVD diamond)
- Optimum adjustment to workpiece material
- Long tool life

New chip breaker geometry for fine boring

New solution for machining long-chipping steels

In metal machining, chip formation plays a key role in process reliability, tool life and surface quality. Controlled chip formation is particularly crucial to the fine machining of unalloyed, alloyed and stainless steels.

With the new, standardised chip breaker geometry for fine boring blades, MAPAL offers an innovative solution combining technical precision with economical added value.

The precisely defined lead and rake angle geometry is optimally adapted to cutting data and cutting depths. This enables controlled chip formation, even for challenging materials.

The benefits for the user are clear: optimum chip removal, low heat development and very high process reliability.

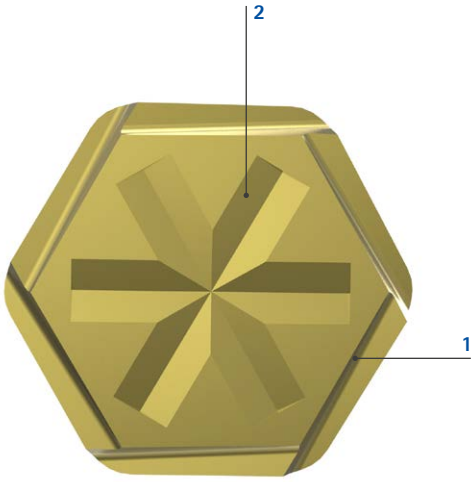
The technology contributes to the efficiency of manufacturing and ensures the high quality of the machined workpieces. Less machine downtime, less machine wear and high dimensional accuracy translate into tangible cost benefits.

MAPAL has put its many years of experience in developing chip breakers into a solution with series production maturity, available from stock with defined geometries and coatings from autumn 2025.

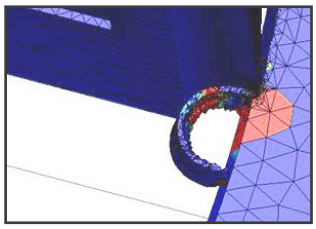
With chip breaker geometry

FOCUS ON
PRODUCTIVITY

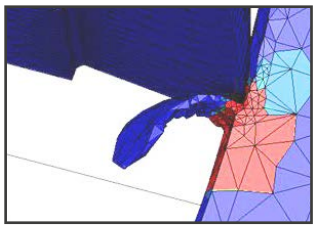
- ✓ Process-reliable fine machining
- ✓ Automated manufacturing



HX indexable insert



With chip breaker geometry



Without chip breaker geometry

1 Standardised chip breaker geometry
- Controlled chip formation
- Optimum chip removal
- Low heat development

2 Various insert forms
- Depending on cutting edge designs, available with two, four and six cutting edges

WP indexable insert

TEC indexable insert

UNISET-V basic plus

Precise setting technology for large fine boring tools

MAPAL is filling the gap between mechanical and CNC setting fixtures.

In early 2026, with the UNISET-V basic plus, MAPAL is set to launch a manual setting device on the market that has been specially designed for large fine boring tools. Its procurement is particularly suitable for small and medium-sized companies that have previously done without precise setting technology for economic reasons.

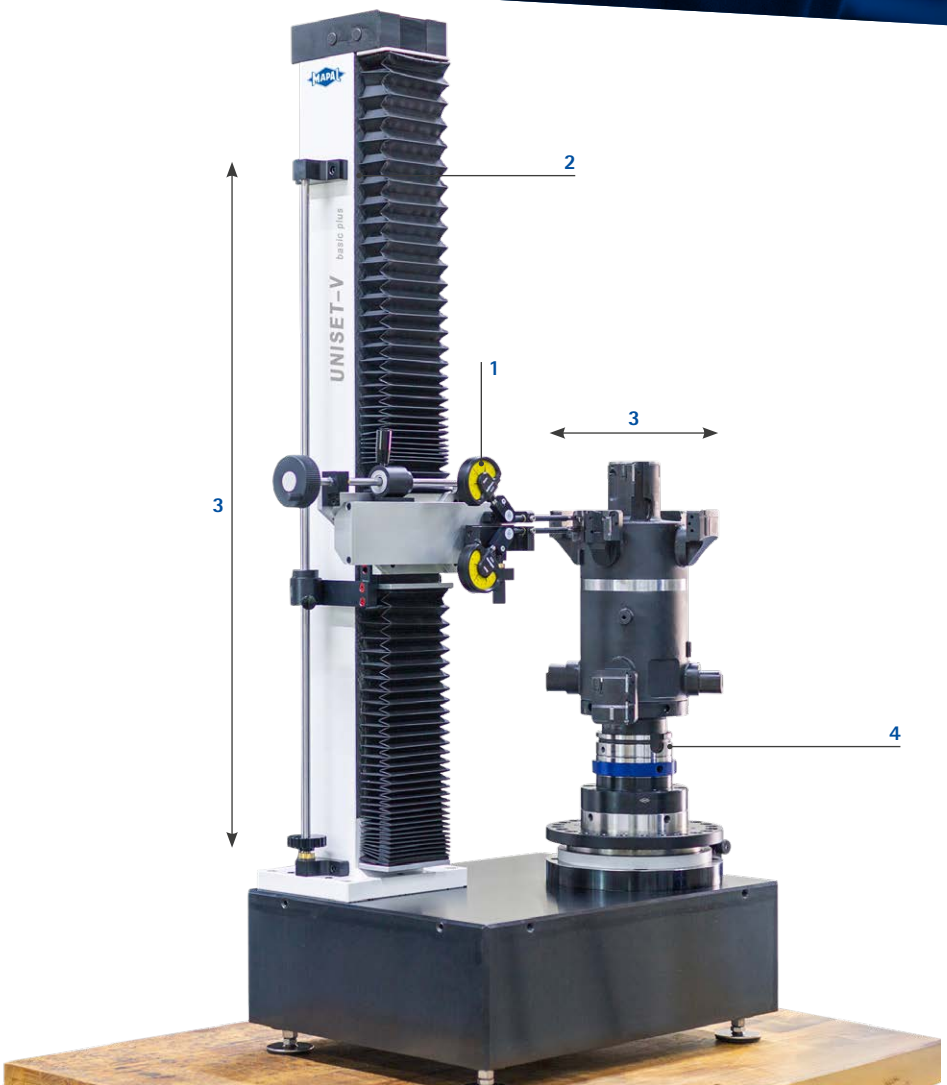
At the same time, the UNISET-V basic plus also offers larger operations a cost-effective solution with high weights and large diameters. It is positioned in the MAPAL product range between the entry model MASTERSET and the CNC-based expert devices.

The device is designed for tools of 100 mm to 400 mm in diameter, up to 45 kg in weight and a large number of connections. With a stable welded design and modular construction, it is particularly robust, yet flexible in use: the UNISET-V basic plus can also be placed right next to the machine, as well as in the setting room.

It is operated using a two-button principle, which enables sensitive and micrometre-precise setting of cutting edge overhang and back taper for fine boring tools.

FOCUS ON PRODUCTIVITY

- ✓ Quick and intuitive operation
- ✓ Flexible placement in production possible



1 Tactile blade adjustment
- Simple and precise operation
- High-precision setting of overhang and back taper

2 Stable welded design
- Vibration-free setting process
- Cost-efficient with high stability

3 Versatile application
- Diameter of 100–400 mm
- Measuring length up to 750 mm and tool weight up to 45 kg

4 Modular construction
- Can be adapted with device options and spindle versions

UNIQ® DirectCool

Decentralised cooling for maximum precision

MAPAL is expanding the UNIQ hydraulic chucks to include an innovative cooling technology for higher process reliability and tool life.

With UNIQ DirectCool, MAPAL is bringing a future-forward solution for modern machining processes onto the market. The new option for hydraulic chucks in the UNIQ series enables precise decentralised cooling along the tool shank to the cutting edge via three integrated cooling channels. This ensures even temperature distribution, little thermal distortion and low levels of tool wear.

Particularly in boring processes, DirectCool displays its strengths, enabling reliable cooling and preventing tool breakage with effective chip removal.

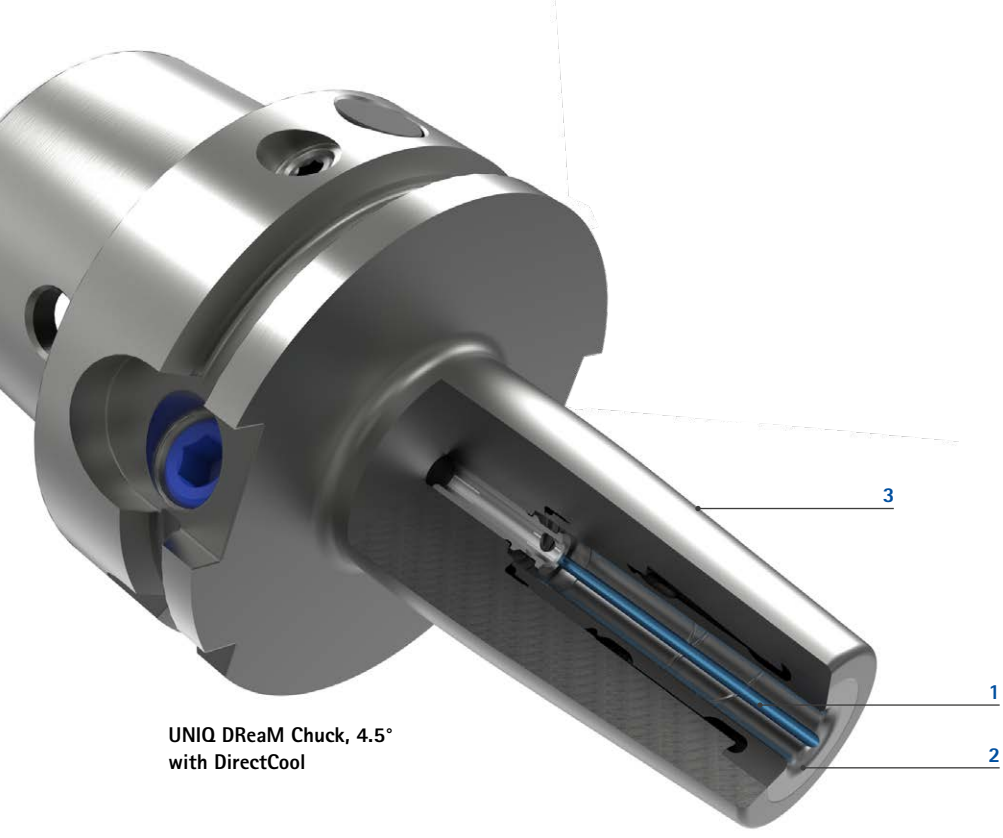
The new technology improves surface quality and boosts process reliability – without adjusting existing processes. After all, the UNIQ hydraulic chucks already available feature unlimited DirectCool compatibility. The tool restriction remains unchanged, and no specific shank grooves are necessary.

With its smart cooling channel guidance, UNIQ DirectCool is initially available for UNIQ Mill Chucks HA and UNIQ DReaM Chucks with 4.5° geometry in diameters from 6 to 32 mm from autumn 2025.

CONFIG **Configurable for the UNIQ series**

FOCUS ON PRODUCTIVITY

- ✓ Process-reliable drilling and milling
- ✓ Constant machining quality



UNIQ DReaM Chuck, 4.5°
with DirectCool

1 Integrated coolant outlets
- Reduced wear thanks to cooled tool and chucks
- For long tool life and stable processes

2 Decentralised cooling
- Use of standard tools without internal cooling
- Saving on expensive shank grooves
- Flushing effect optimises process reliability and surface quality

3 Same tool restriction
- Easy to integrate into existing processes

Innovative pre-machining for hydraulic components

With powerful pilot drills and boring tools

MAPAL adds powerful spool bore tool solutions to its range.

The spool bore is a key element in hydraulic components like valve housing or axial piston pumps. Fine machining these with fine boring tools has always been one of MAPAL's core competencies. With new tool solutions for pre-machining, the tool solution is expanding its position as a comprehensive technology partner. Customers benefit from a full one-stop machining concept – from piloting to fine machining.

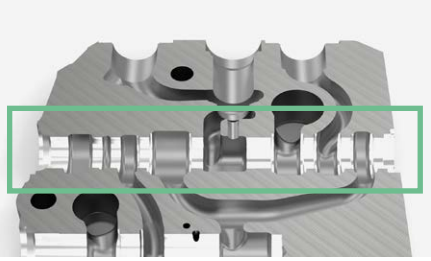
The focus is on two new tools: the pilot drill with three or five cutting edges for different casting properties enables efficient and highly economical component piloting, reducing machining steps and saving tool changes. While the three-lipped core drill is used for stable raw parts, the option with five cutting edges offers precise results at high feeds in unstable casting conditions.

Like the pilot drill with three cutting edges, the solid carbide boring tool with three cutting edges is based on MAPAL's patented multi-chamfer technology. This ensures clean chip removal and prevents swirling in chip removal – including at drilling depths up to 10xD. Targeted internal cooling enables long tool lives and also increases process reliability.

Both tools are optimally tailored towards subsequent fine machining. Coordinated processes, reduced scrap rates and maximum cost-effectiveness help create innovative solutions for fluid power – with measurable added value for the customer.

FOCUS ON
PRODUCTIVITY
- ✓ High machining speed
- ✓ Longer tool lives

Spool bore process description



Machining requirements

- Safe chip removal from the housing
- Avoid macroscopic flaws on the control edges and ring formation in the boring process
- Very high accuracy for form and position tolerance

Pilot drill

Combined machining steps
- Efficient pilot bore

Flexibility for changing raw parts
- Versions with three and five cutting edges

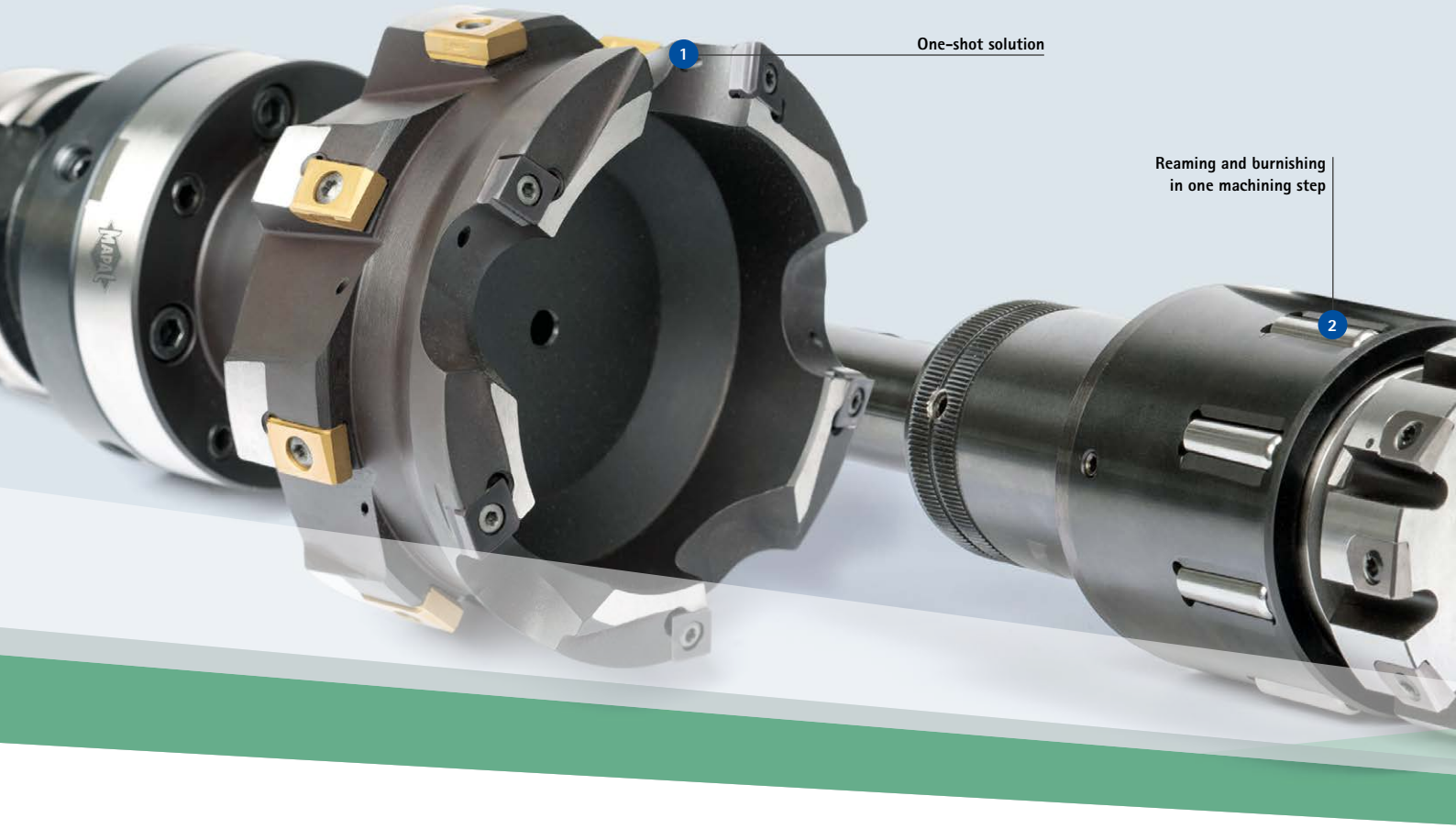
Higher machining speed
- Precision for unstable casting conditions (version with five cutting edges)

Boring tool

Stable processes
- Clean chip separation

Long tool lives
- Targeted internal cooling

Low unit costs
- Highly suitable for regrinding and robust design (up to 10xD)

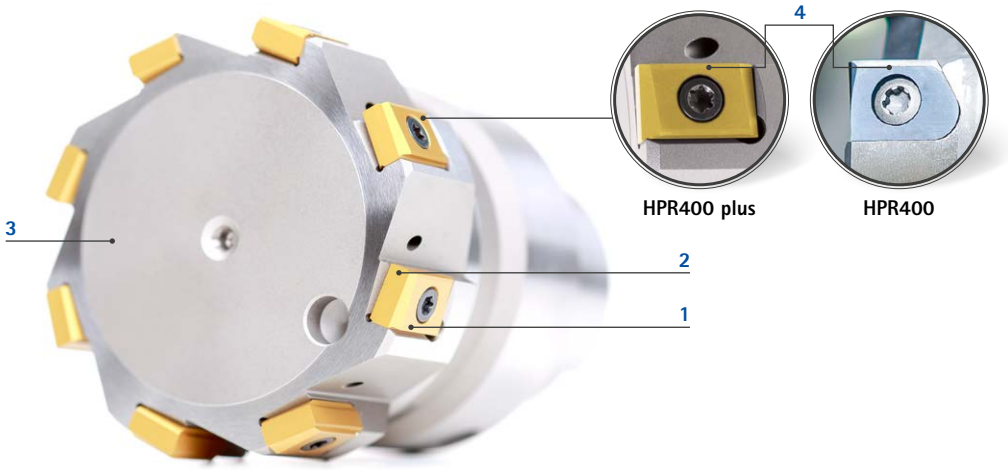


New innovative solutions for the HPR400 system

More productivity and process reliability with four new solutions for the HPR400 system

Complex processes and high quality requirements call for fine machining systems that are effective, precise and easy to use. With HPR400 and HPR400 plus for ultra-productive reaming of large diameters, MAPAL is meeting precisely these requirements. The multi-bladed tool systems offer the advantage that the inserts with one (HPR400) or four (HPR400 plus) cutting edges can be exchanged by the customer directly on site and ensure maximum accuracy thanks to high-precision insert seats.

With the four new solutions, MAPAL offers vehicle construction and fluid power customers future-forward tools for demanding machining applications.



1 Plug-and-play cutting edge system
- No setting necessary for insert changes
- Reduced machine downtime

2 Multi-blade design
- Higher cutting speeds and feed rates
- Shorter cycle times with the same quality

3 Adjustable tool configuration
- Flexible design for specific machining tasks
- Combination with other tool systems

4 HPR400 system
- HPR400 for the highest precision
- HPR400 plus for maximum cost-effectiveness

FOCUS ON
PRODUCTIVITY

- ✓ Short set-up and non-productive times
- ✓ Shorter machining times with more cutting edges

Four new solutions for practical use

One-shot solution
The combination tool with an ISO leading stage and HPR400 plus system enables the finishing of bores with high stock allowances (up to 6 mm) in a single step. The ISO part handles the main machining duties, while the HPR400 plus system takes care of finishing – with short cycle times and no setting effort required.

Reaming and burnishing
The combination of reaming and burnishing offers benefits for the machining of hydraulic pipes. Instead of an ISO tool, an HPR400 tool handles the pre-machining. The absence of setting effort reduces non-productive time and ensures the same good results. Burnishing takes place right after reaming in one machining step.

HPR400 plus for face grooves
The new solution with indexable inserts with two usable cutting edges was designed for bores with specific base contours. It offers high stability and reliability and is particularly economical – ideal for steering knuckles and bearing bores with clearance at the bottom of the bore.

HPR400 with PCD inserts for stator housings
MAPAL supplies a solution for finishing stator bores in electric motors with a higher number of cutting edges and no setting effort required. The result: high machining speed, low effort and high output – for high productivity.

Discover tool and service solutions now that give you a lead:

BORE MACHINING

REAMING | FINE BORING

DRILLING FROM SOLID | BORING | COUNTERSINKING

MILLING

CLAMPING

TURNING

ACTUATING

SETTING | MEASURING | DISPENSING

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