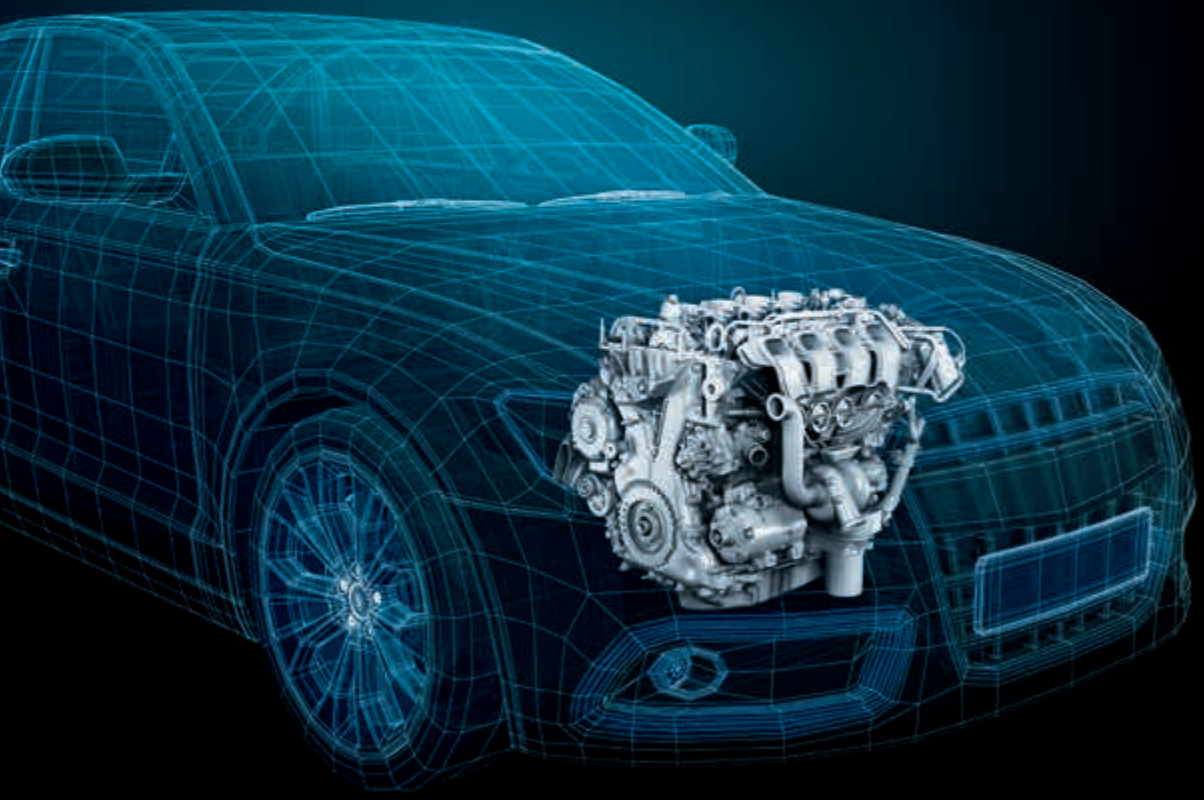
WALTER
Engineering Kompetenz

Sector solutions

Automotive

_EXPERTISE IN AUTOMOTIVE APPLICATIONS

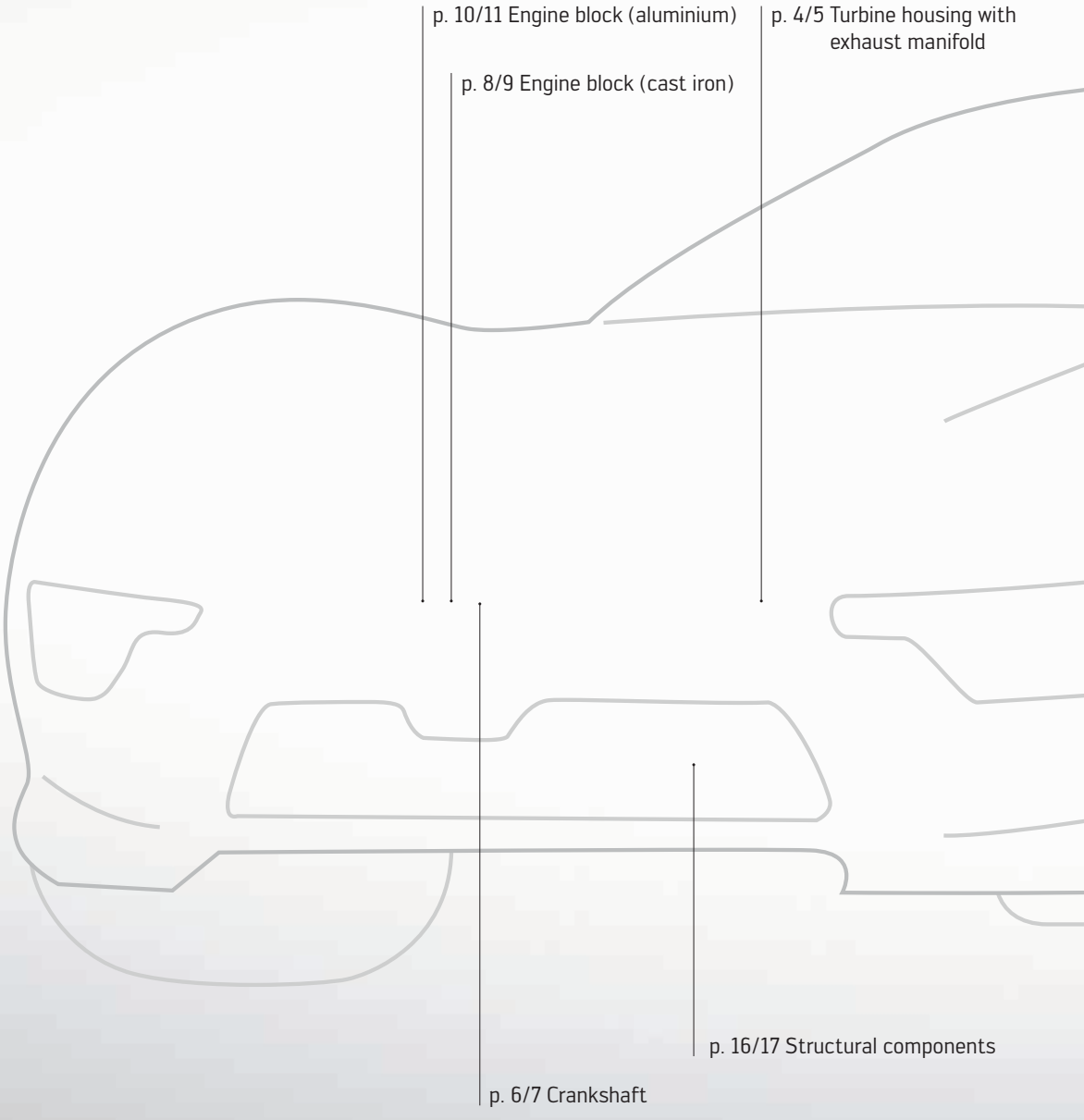
Accelerate your productivity.

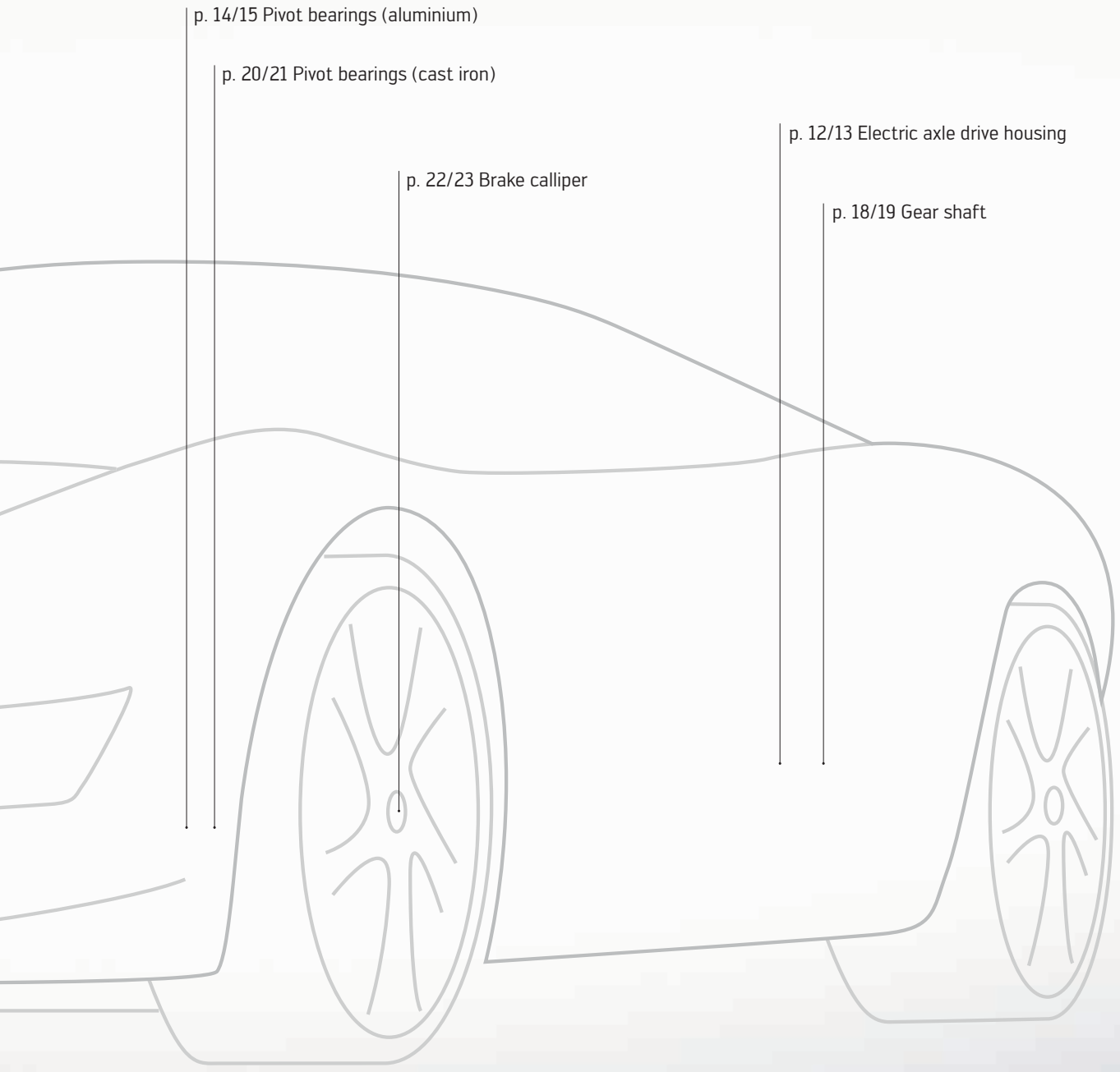


INTEGRATED COMPONENT EXPERTISE

for your machining tasks

By 2035, there will be an additional 600 million cars around the world, taking the global figure to 1.8 billion. Whilst the number of cars soars, the demands placed on cars are also rising sharply: Fuel consumption, electromobility, new materials and more … Vehicle manufacturers and suppliers are having to overhaul their designs with increasing rapidity in order to keep pace with the enormous shifts in the market. What remains constant, however, is demand for excellent machining solutions. Process optimisation at the component level is just as crucial to this end as intelligent tool management; and, of course, a partner who can put this into practice. Walter combines economical tool solutions and reliable service under one roof; because only high productivity with consistent component quality can provide the right drive in the automotive industry. Pick up speed with Walter Engineering Kompetenz.

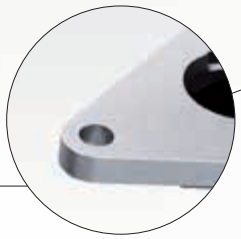



p. 14/15 Pivot bearings (aluminium)
p. 20/21 Pivot bearings (cast iron)
p. 12/13 Electric axle drive housing
p. 22/23 Brake calliper
p. 18/19 Gear shaft

TURBINE HOUSING WITH EXHAUST MANIFOLD

Heat-resistant steel casting

The manufacture of exhaust manifolds and turbine housings on a machining centre presents particular challenges for tools and machines alike. The machining process requires the highest levels of precision and wear resistance. Critical machining operations include: Milling exhaust manifold surfaces and relief slots, machining the main turbo bore and machining the V-flange. In order to ensure a long tool life and stable processes, the focus is on designing the tools for maximum stability.



YOUR APPLICATION

Rough milling the exhaust manifold surface

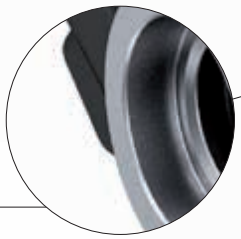
OUR SOLUTION

Walter heptagon milling cutter with a double-sided indexable insert

- 14 cutting edges
- The latest Tiger·tec® Gold cutting tool material
- Shim to protect the insert pocket
- Suitable for machining chrome-nickel steels

BENEFITS FOR YOU

Long tool life and high feed rates for chrome-nickel steels.



YOUR APPLICATION

Turbo interface machining

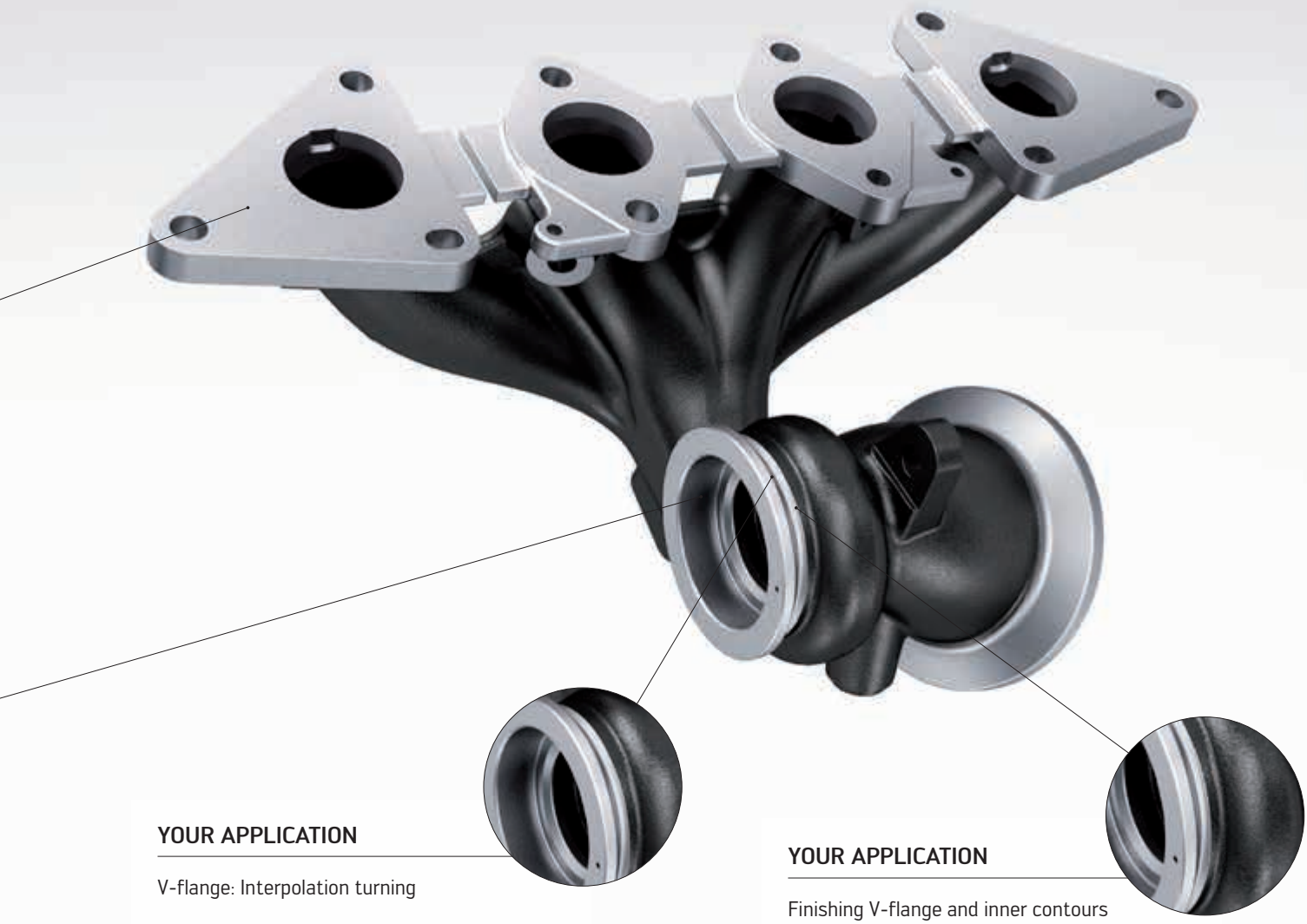
OUR SOLUTION

Walter combination tool for boring

- machining the main bore
- Simultaneously: Forming the V-flange
- Small number of tools in the magazine

BENEFITS FOR YOU

The main bore can be machined with maximum productivity and high process reliability thanks to the stable process and low machining times.



YOUR APPLICATION

V-flange: Interpolation turning

OUR SOLUTION

Walter interpolation tool

- Two effective cutting edges for roughing operations
- Cost-optimised indexable insert with 3 cutting edges
- Cartridge system for twin spindle machines

BENEFITS FOR YOU

Low cutting material costs thanks to long tool lives – as well as short machining times.

YOUR APPLICATION

Finishing V-flange and inner contours

OUR SOLUTION

Walter Capto™ turning tool with two indexable inserts

- Finish machining for V-flange and inner contours with just one tool
- Stable insert on chrome-nickel steels, optimised indexable insert geometry

BENEFITS FOR YOU

Long tool lives and high process reliability thanks to exceptional tool and indexable insert stability.

CRANKSHAFT

Steel and cast iron

High tolerance and surface quality requirements make crankshafts exceptionally complex to machine. Highly precise, efficient tool concepts are necessary to meet these requirements. As far as the economy of the machining process is concerned, increasingly efficient tools have to be developed and deployed. Solutions tailored to specific customer needs are created and continuously developed together with our partners and machine manufacturers. The new indexable inserts with Walter Tiger·tec® Gold technology are just one example of this. These are the foundations on which you can continuously build on your success and increase your lead over the competition.

YOUR APPLICATION

TTB – turn turn broaching

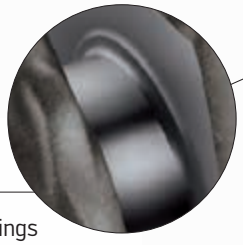
OUR SOLUTION

Turn turn broach disc

- Innovative indexable insert concept with semi-standard indexable inserts
- Outer diameter up to 700 mm
- Up to 45 cartridges

BENEFITS FOR YOU

High process reliability and long tool life. Unbeatable workpiece values with simultaneous easy handling.



YOUR APPLICATION

External milling for pin and main bearings

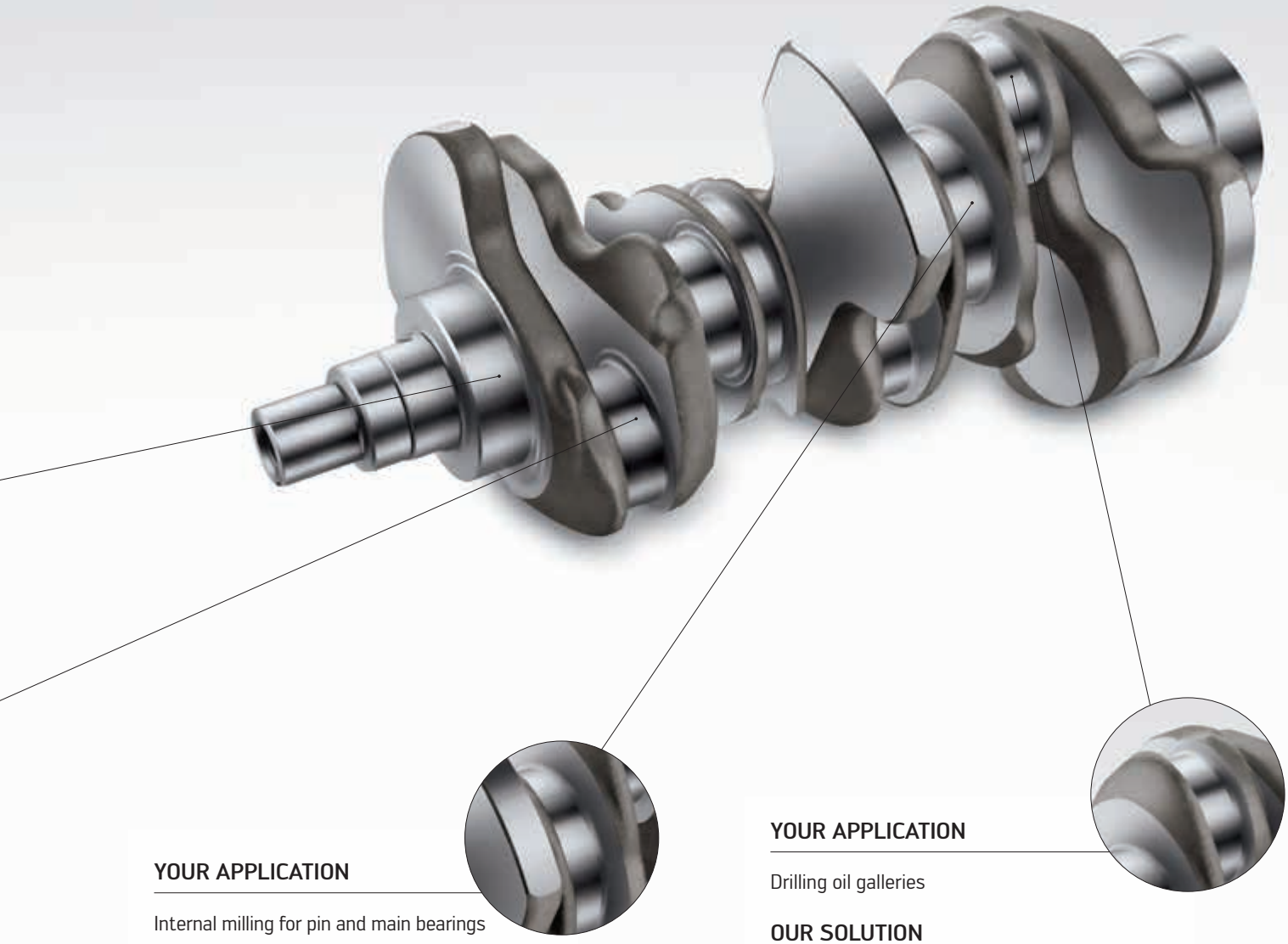
OUR SOLUTION

Walter external milling cutter with Tiger·tec® Gold indexable inserts

- Outer diameter 700 mm
- Indexable inserts with new Tiger·tec® Gold technology
- 48 to 120 teeth

BENEFITS FOR YOU

Long tool life, high process reliability and accuracy thanks to new Tiger·tec® Gold coating technology – and a substantially lower cost per part.



YOUR APPLICATION

Internal milling for pin and main bearings

OUR SOLUTION

Walter internal milling cutter with Tiger·tec® Gold indexable inserts

- Inner diameter 180–350 mm
- Innovative indexable insert concept
- Indexable inserts with new Tiger·tec® Gold technology
- 12 to 36 teeth

BENEFITS FOR YOU

Long tool life, high process reliability and accuracy thanks to new Tiger·tec® Gold coating technology – and a substantially lower cost per part.

YOUR APPLICATION

Drilling oil galleries

OUR SOLUTION

Walter DC173 solid carbide drill

- For steel and cast iron materials
- Suitable for use with minimum quantity lubrication
- D_c = 3–12 mm; L= 12 × D_c to 35 × D_c
- 140° lead angle
- Suitable for reconditioning

BENEFITS FOR YOU

Significantly increased tool lives and process reliability – at a lower cost per part.

ENGINE BLOCK

Cast iron

The trend towards higher performance with smaller displacement and lower fuel consumption leads to higher mechanical loads on the engine block. This necessitates increasingly high-quality materials made from grey cast iron (GG) and compacted graphite iron (CGI). Our Tiger·tec® Silver and Tiger·tec® Gold cutting tool materials and innovative tooling systems are ideal for machining such materials.

You can achieve an extremely high level of dimensional accuracy, optimum surface quality and increases in productivity of up to 100% thanks to the combined use of Walter milling tools and high-performance drills. We can handle every engine block machining operation. And you gain competitive per-part costs in mass production, even where complex components are concerned.

YOUR APPLICATION

Finish-milling for main mating surfaces

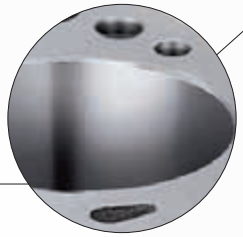
OUR SOLUTION

Walter M2025/M2026 multi-tooth finishing face milling cutter

- Roughing insert with 16 cutting edges
- Fixed pocket finishing indexable insert with 4 cutting edges
- Close pitch teeth for a high feed rate

BENEFITS FOR YOU

High feed rates, excellent surface quality and easy tool handling as no adjustment is necessary.



YOUR APPLICATION

Cylinder bore roughing

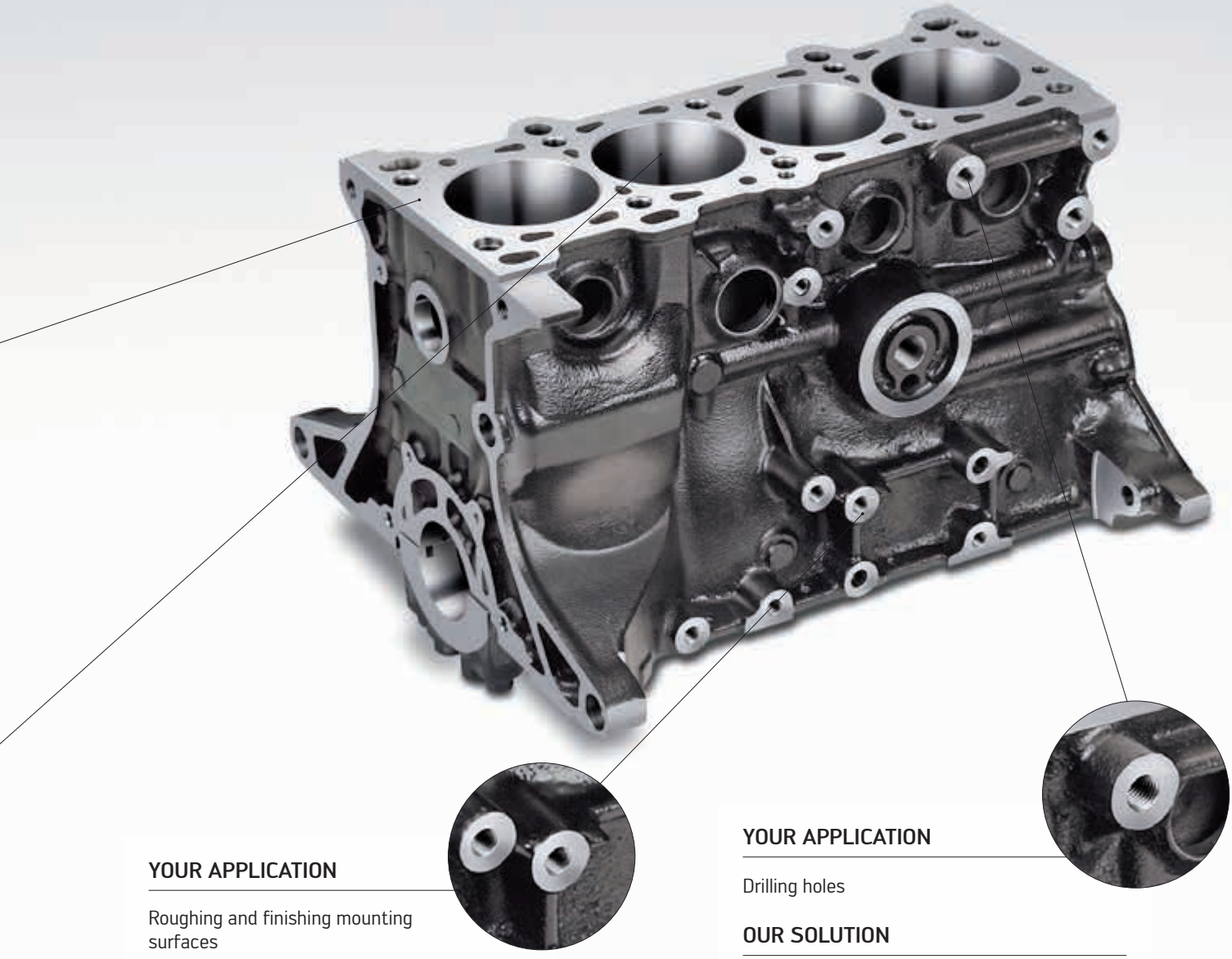
OUR SOLUTION

Walter rough boring bar with tangential cutting edges

- Highly stable, compact design
- Standard indexable inserts
- 8 useable cutting edges
- Cooling using emulsion or MQL/air

BENEFITS FOR YOU

Low cost per part and reliable machining, with no vibration and maximum stability.



YOUR APPLICATION

Roughing and finishing mounting surfaces

OUR SOLUTION

Walter M2136 close pitch cutter

- Stable wedge clamp
- Close pitch teeth for a high feed rate
- Low power requirement thanks to positive indexable insert geometry

BENEFITS FOR YOU

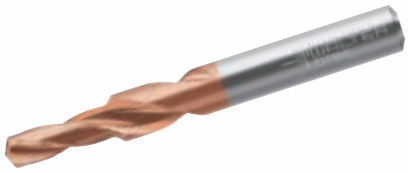
Very high surface quality thanks to high-accuracy insert seats. Low cost per part thanks to indexable insert with 8 cutting edges.

YOUR APPLICATION

Drilling holes

OUR SOLUTION

Walter Titex X-treme CI step drill



- XPL coating
- Internal coolant supply
- Chamfer combined

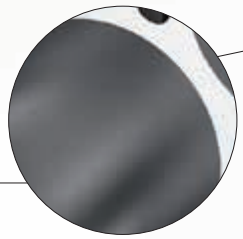
BENEFITS FOR YOU

High process reliability and excellent drilling quality, as well as a long tool life thanks to the high-performance coating and special tool geometry.

ENGINE BLOCK

Aluminium

Anyone looking to lower emissions (CO_2) has to save fuel, and one way of doing so is through weight reduction. This is, of course, leading to lighter materials being used. Over half of all engine blocks are now made from aluminium cast alloys; and that number is rising. At the same time, machining times have to be reduced. This in turn demands high spindle speeds for machine tools. Tool solutions require special designs to realise both successfully. Walter tools meet these requirements par excellence.



YOUR APPLICATION

Cylinder bore surface roughening
(in preparation for thermal spraying)

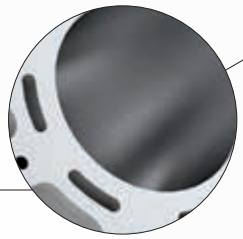
OUR SOLUTION

Walter boring bar with PCD profiling insert

- Profile adapted to the coating type (APS, RSW or wire arc spraying)
- Precisely adjustable cartridge

BENEFITS FOR YOU

Easy handling, long tool life and reliable machining – without the risk of miscutting the profile.



YOUR APPLICATION

Cylinder bore precision machining

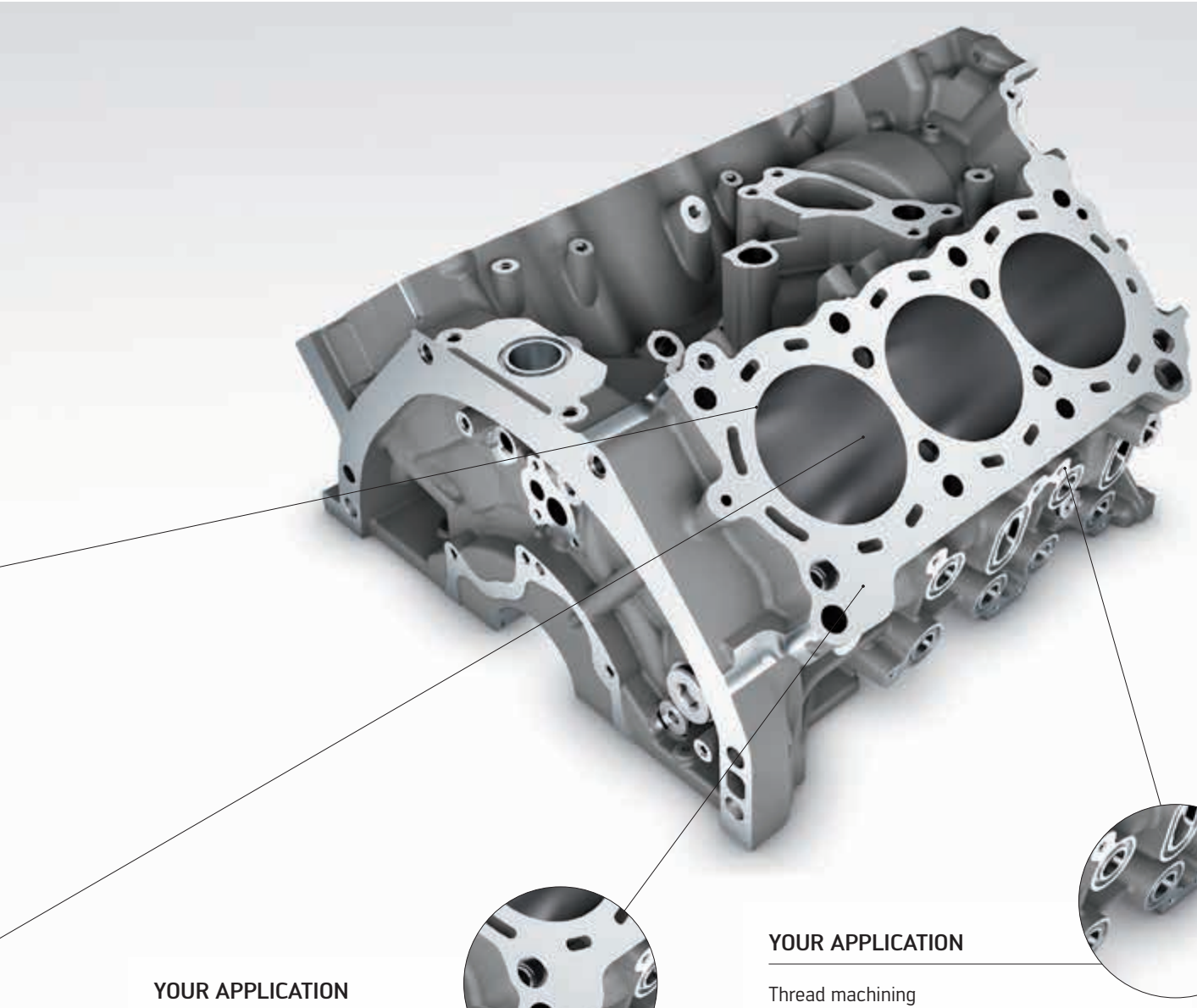
OUR SOLUTION

MODCO® actuation tool

- Semi-finishing and finishing on machining centres
- Wear compensation within the machine
- No tool changes required

BENEFITS FOR YOU

High component quality, short machining times and optimum wear compensation.



YOUR APPLICATION

Pre-milling and finish-milling for main surfaces

OUR SOLUTION

Walter PCD milling cutter

- Close pitch teeth for high feed rates
- Peripheral chip evacuation; no chips in the component or on the surface of the component
- Cooling using emulsion or MQL

BENEFITS FOR YOU

Short process times and excellent surface quality.

YOUR APPLICATION

Thread machining

OUR SOLUTION

Walter Protodyn® S Prototyp HSC thread former

- Solid carbide thread former
- TiCN-coated
- With lubrication grooves

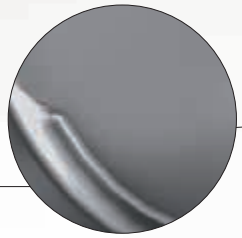
BENEFITS FOR YOU

No chip issues and very long tool edge life with high thread quality.

ELECTRIC AXLE DRIVE HOUSING

Aluminium

Their low weight, combined with outputs of up to 120 kW and torques of up to 2000 Nm, requires very high precision in the manufacture of large and thin-walled drive housings. To manufacture fit tolerancing up to IT6, including the required geometrical accuracies and interrupted cuts in some instances, tools are needed that are exceptionally precise and create as little cutting force as possible. Requirements that make Walter pad-guided reamers the idea tools for the job.



YOUR APPLICATION

Preparing the coil bore
for the electric motor

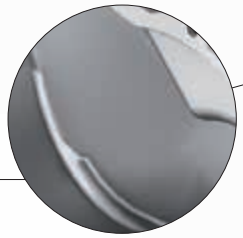
OUR SOLUTION

Walter PCD reamer with brazed cutting edges in a lightweight design

- Roughing geometry with 8 cutting edges
- Tool with a disc design to save weight
- Hollow basic body in a tubular design for high stability and vibration damping due to low weight

BENEFITS FOR YOU

Short machining times thanks to the multiple-edged design. Low weight thanks to lightweight design, adapted to the tool change system on the machine.



YOUR APPLICATION

Coil bore finish machining
for the electric motor

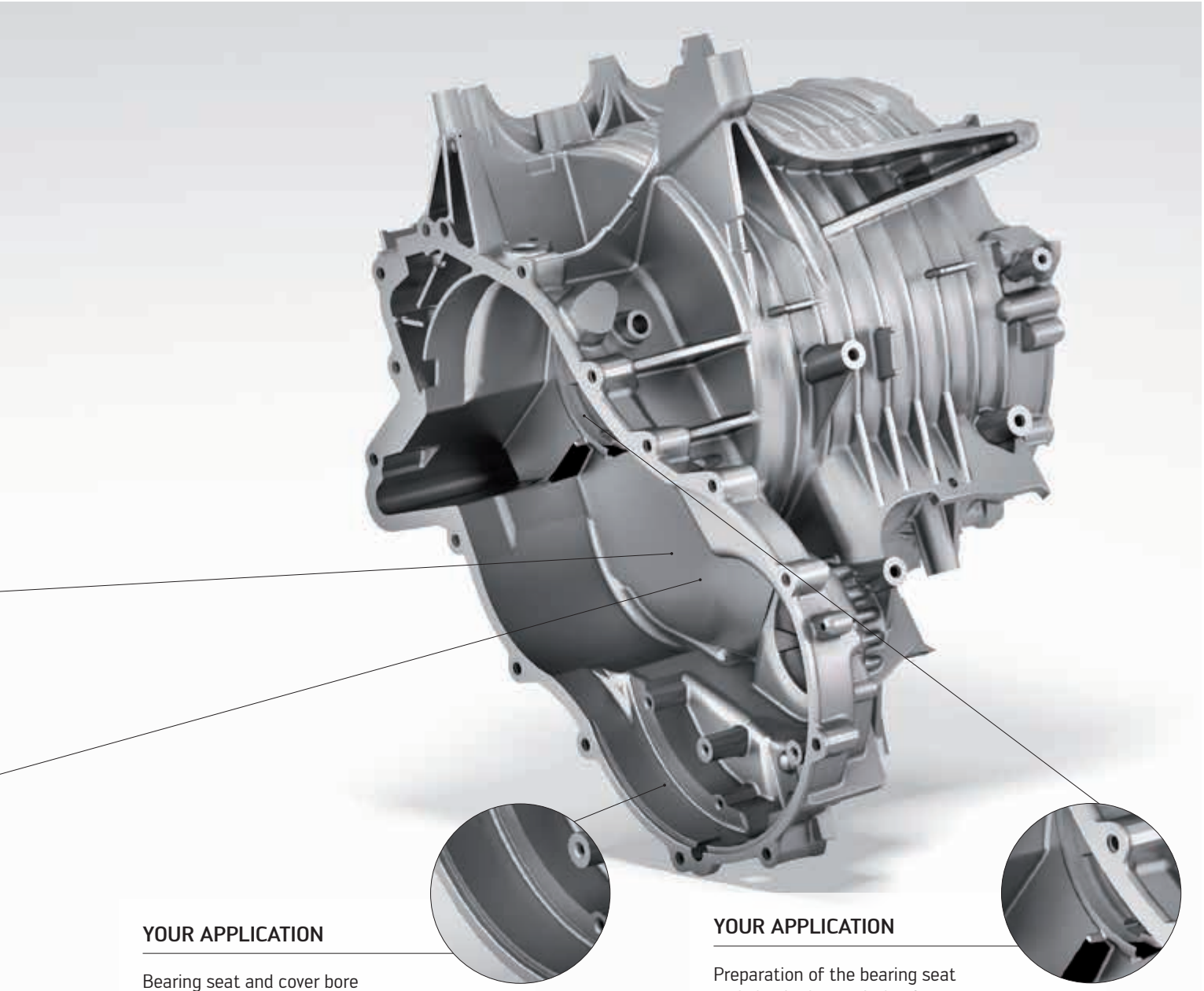
OUR SOLUTION

Walter reamer as a multiple-edged solution

- 6 changeable PCD cutting edges
- Cutting edge adjustment possible with µm precision
- PCD guide pads

BENEFITS FOR YOU

Short machining times thanks to
the multiple-edged design.
High geometrical and dimensional
accuracy and impressive cutting
parameters thanks to PCD guide pads.



YOUR APPLICATION

Bearing seat and cover bore finish machining

OUR SOLUTION

Walter reamer as a single-edged solution

- Changeable PCD cutting edge
- Cutting edge adjustment possible with µm precision
- PCD guide pads

BENEFITS FOR YOU

Optimal concentricity despite large differences in diameter. Excellent guidance despite interrupted cut on the large diameter.

YOUR APPLICATION

Preparation of the bearing seat and circular interpolation for grooves and relief grooves

OUR SOLUTION

Walter PCD combination tool for preboring and milling

- Brazed PCD cutting edges
- Various relief grooves with one tool
- Changeable milling insert
- Modular design

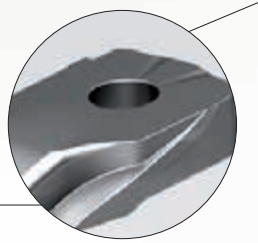
BENEFITS FOR YOU

Combination tool to eliminate tool change times. High dimensional accuracy thanks to the reference dimensions on the tool.

PIVOT BEARINGS

Aluminium

Aluminium components reduce weight by up to 50%. Especially when it comes to the chassis, unsprung masses are significantly lowered as a result. This has a positive influence on the driving comfort and the handling dynamics. Forged, high-strength and high-toughness components that permit significant deformation for safety reasons are particularly difficult to machine. They require equivalent tool concepts with excellent chip control.



YOUR APPLICATION

Upper king pin and support – drilling, milling and back deburring

OUR SOLUTION

Walter PCD combination tool

- Changeable carbide drill inserts with 4 cutting edges
- Chamfering, back deburring and spot-facing
- With brazed PCD cutting edges
- Simultaneous milling on both sides

BENEFITS FOR YOU

Combination tools to eliminate tool change times. Short machining time as a result of the high cutting speed.

YOUR APPLICATION

Ball seat milling for lower king pin

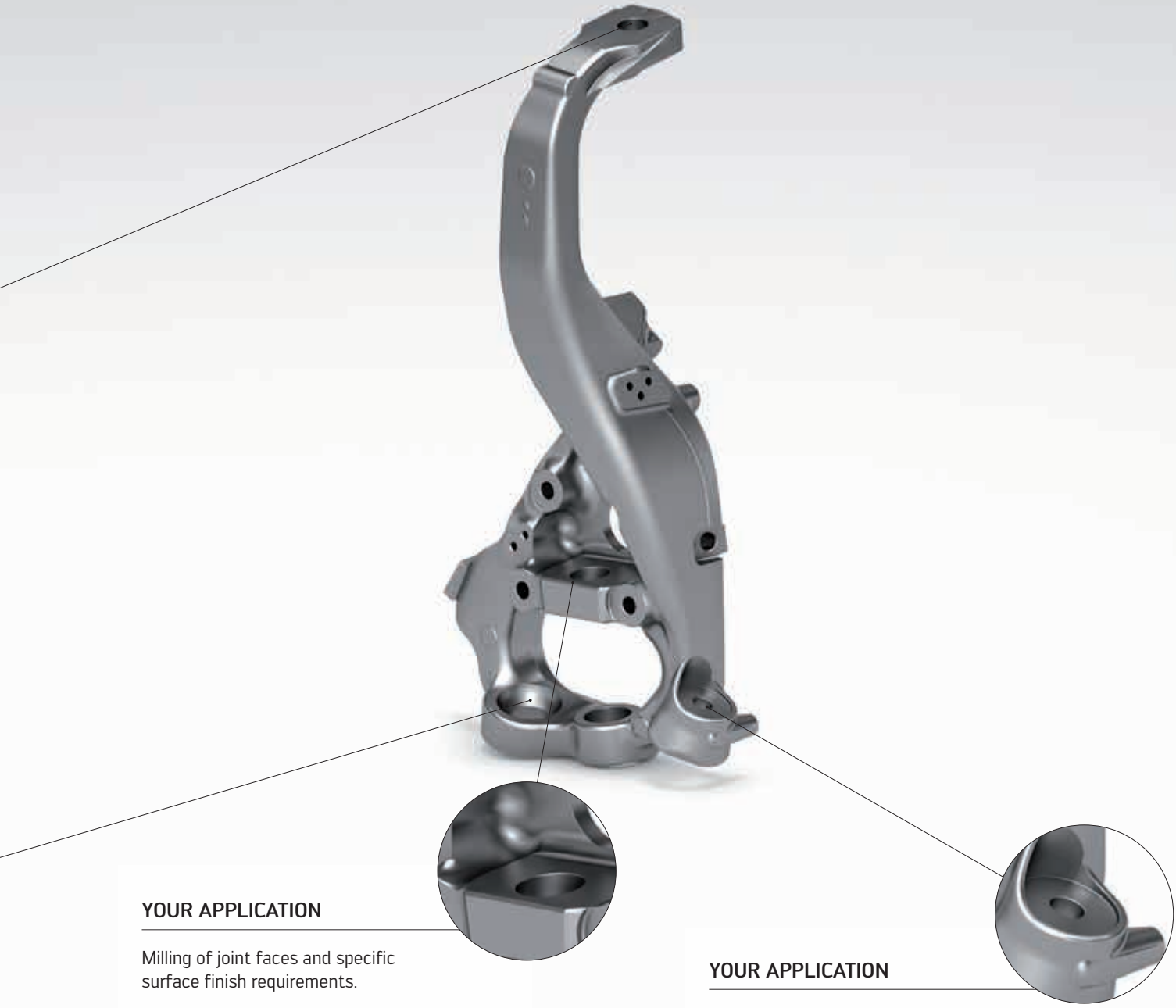
OUR SOLUTION

Walter profile mill

- Monoblock solution with brazed PCD cutting edges
- Short, stable design
- Optimised cooling for each cutting edge

BENEFITS FOR YOU

High geometrical accuracy thanks to laser-generated cutting edges. Low chip width due to graduated PCD segments.

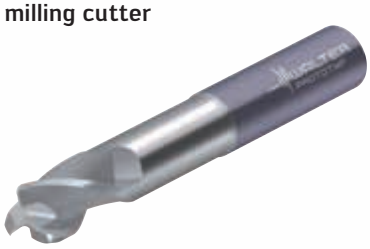


YOUR APPLICATION

Milling of joint faces and specific surface finish requirements.

OUR SOLUTION

Walter MB266 Supreme solid carbide milling cutter



- High performance solid carbide finish milling cutter
- Polished flutes
- With internal coolant supply
- Shank with special surface treatment for better adaptor grip

BENEFITS FOR YOU

High level of process reliability due to special shank treatment for increased torque and transmission of power in the tool adaptor.

YOUR APPLICATION

Lower king pin and support – drilling, back deburring and countersinking

OUR SOLUTION

Walter PCD combination tool

- Chip breaker on extra-long PCD cutting edge
- PointDrill P6004 exchangeable solid carbide drill insert

BENEFITS FOR YOU

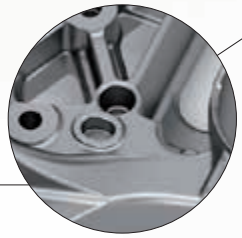
High precision and surface quality on the countersunk hole. Excellent chip breaking control thanks to laser-generated chip breaker.

STRUCTURAL COMPONENTS

Aluminium

Subframes or support frames are installed as structural components in modern vehicles. The engine, transmission, steering gear and suspension are attached to them. Isolating them from the bodywork and the floorpan ensures that forces are absorbed more effectively and increases driving comfort.

These days, modern components are cast from aluminium and heat-treated. Minimum quantity lubrication is often used for cooling purposes when machining. The high strength and large size of the components makes them difficult to machine – which in turn calls for equivalent tool concepts.



YOUR APPLICATION

Reaming and spot facing – concentric mounting bores

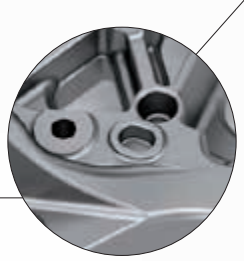
OUR SOLUTION

Walter stepped PCD reamer

- Monoblock solution for machining deep bores
- Unbeatable concentricity with a large projection length
- Suitable for MQL
- Special microgeometry for avoiding vibration and chatter marks

BENEFITS FOR YOU

High surface quality thanks to low-vibration machining. No adjustment effort thanks to monoblock solution.



YOUR APPLICATION

Counterboring and spot facing bores

OUR SOLUTION

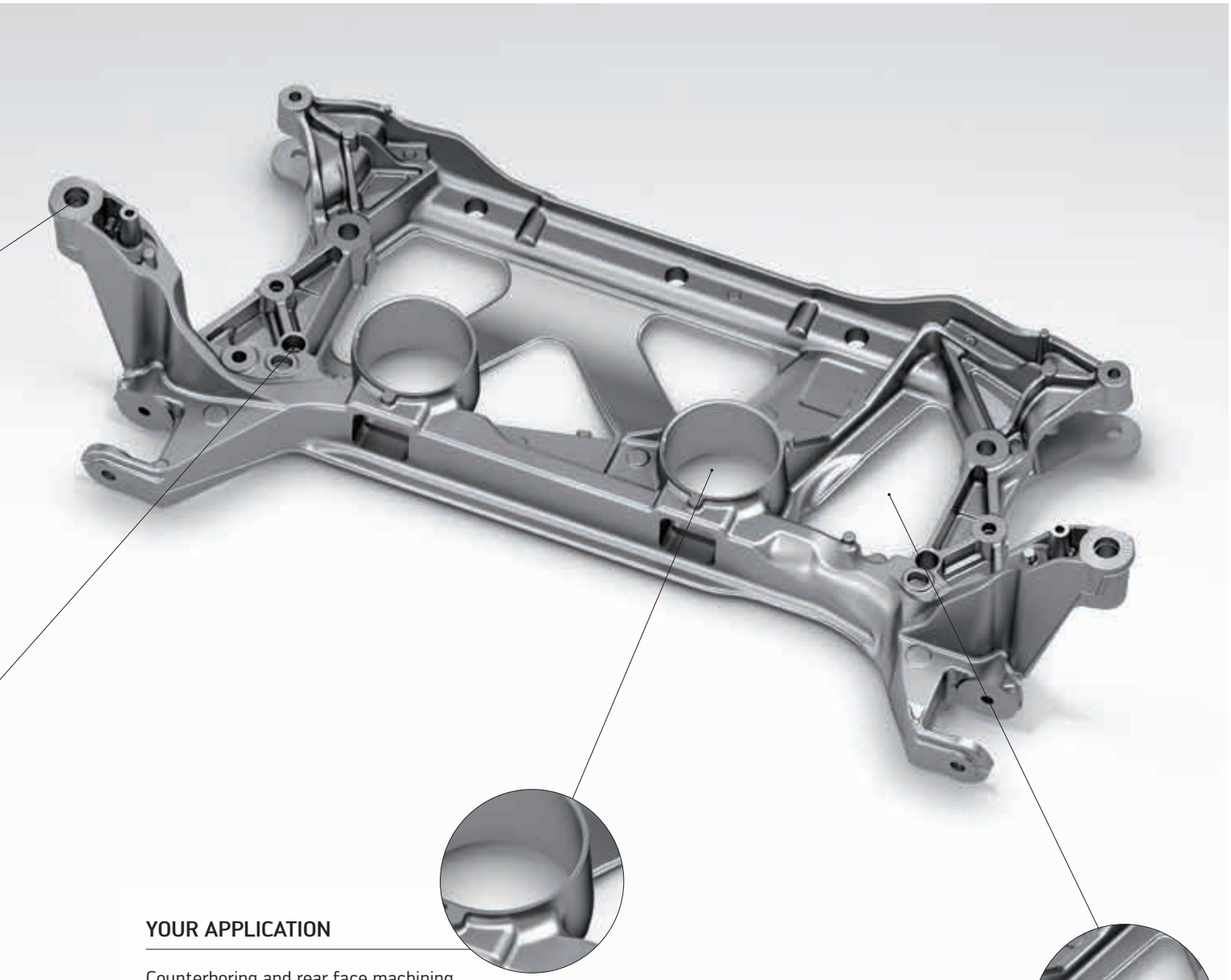
Walter stepped PCD reamer

Monoblock solution with a large projection length

- Various levels of chip clearance for optimised chip removal
- Special cutting edge geometry for interrupted cuts
- Suitable for MQL

BENEFITS FOR YOU

High process reliability thanks to optimised chip removal. Improved concentricity – even on interrupted cuts ores.



YOUR APPLICATION

Counterboring and rear face machining diameters and spotfaces

OUR SOLUTION

Walter PCD combination tool

- Monoblock solution for front and rear machining
- Balanced construction
- Various levels of chip clearance for optimised chip removal
- Suitable for MQL

BENEFITS FOR YOU

Bore machining on both sides without moving the machine axes, resulting in higher concentricity between diameters.

YOUR APPLICATION

Contour milling and back chamfering

OUR SOLUTION

Walter profile mill

- Brazed PCD cutting edges and positive cutting edge geometry
- Divided cutting edges for soft cutting action despite a large cutting width
- Suitable for minimum quantity lubrication

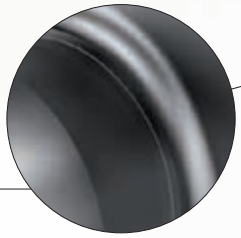
BENEFITS FOR YOU

Rear-facing cutting edge means the component can be machined from just one side.

GEAR SHAFT

Carbon steel

Gears in transmission systems guarantee non-slip interlocking for the purpose of transferring forces and torques between two rotating shafts. There are as many gear and shaft geometries as there are strategies for machining them. In turn, each strategy requires tools individually adapted to the specific application. The greatest challenges are presented by recess machining, finish and precision machining (hard turning in particular) and deep-hole drilling. Walter meets these high standards – with tool technologies precisely tailored to these applications.



YOUR APPLICATION

Radial grooving and recessing

OUR SOLUTION

Walter Cut G1011-P groove turning holder

- Walter Cut monoblock tools for grooving, parting off and recessing
- Internal coolant supply right at the cutting edge
- Clamping screw operable from above and below
- For double-edged recess cutting inserts: GX16, GX24 and GX30

BENEFITS FOR YOU

Low head height for optimum chip removal. Excellent finish quality and flatness thanks to unbeatable cooling.

YOUR APPLICATION

Radial grooving

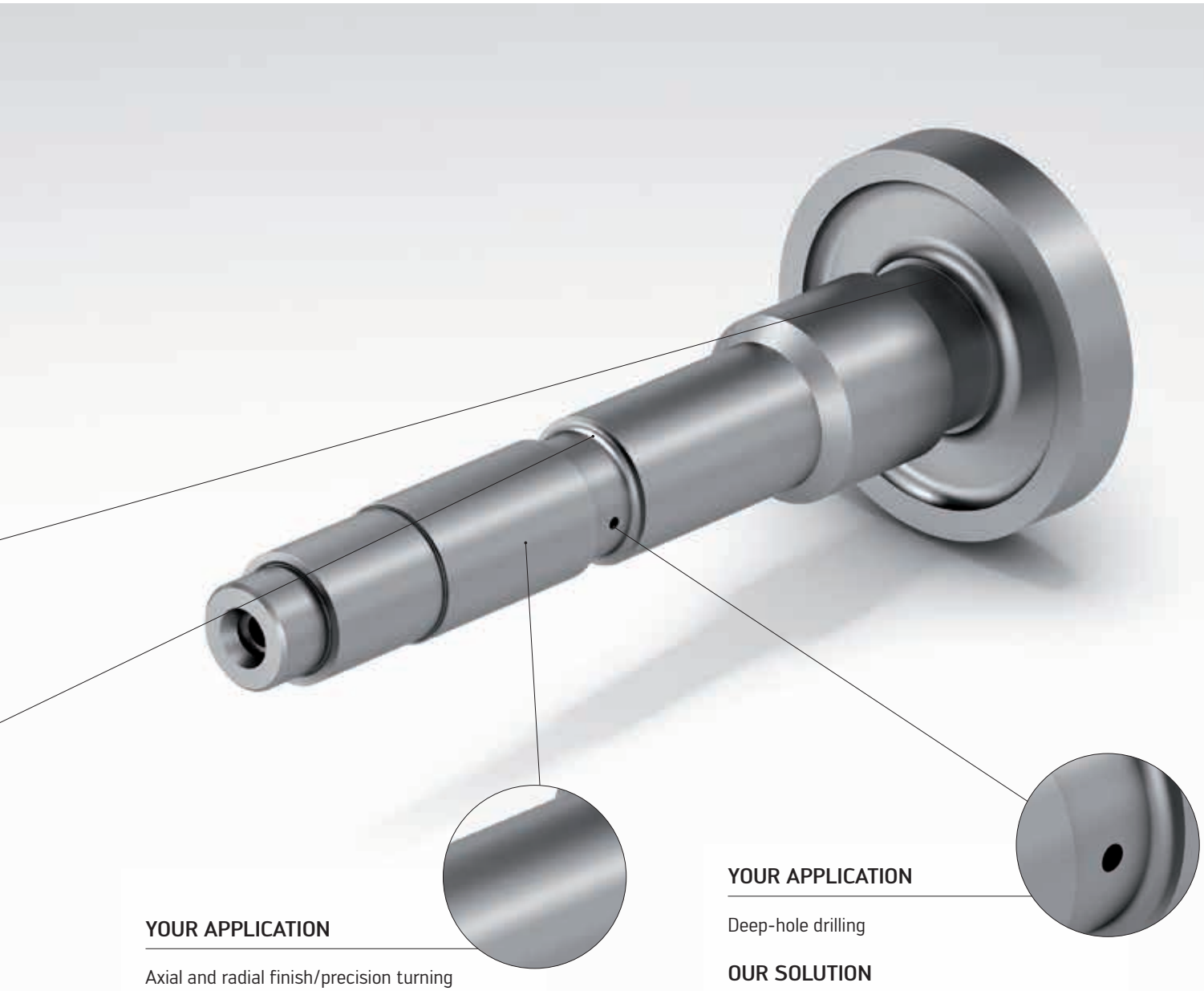
OUR SOLUTION

Walter Cut G3011-P groove turning holder

- Grooving and parting off tool with Walter precision cooling
- Toolholder protected by a cutting insert (insert seat is not damaged if a cutting edge breaks)
- If a cutting edge breaks, the remaining cutting edges can still be used
- Self-aligning, tangential insert mount: User-friendly – optimum power absorption
- Dowel pin location in the insert seat: Impossible to locate the insert incorrectly – and high changeover precision

BENEFITS FOR YOU

Reliable handling, excellent flatness and surface quality. Maximum tool life thanks to Tiger·tec® Silver indexable inserts.



YOUR APPLICATION

Axial and radial finish/precision turning

OUR SOLUTION

Walter Capto™ with CBN indexable insert

- Walter Capto™ C3–C8
- The latest CBN cutting tool material for hard machining as a standard or special indexable insert in a design optimised for customers
- Simple insert changeovers: Just one screw in the normal and overhead position

BENEFITS FOR YOU

Shorter production times thanks to complete machining in one fixture. Reduced unit costs and additional capacity released.

YOUR APPLICATION

Deep-hole drilling

OUR SOLUTION

DC170 Supreme solid carbide drill

- 140° point angle
- Innovative new land design
- Polished flutes from 8 × D_c for optimal chip removal
- Exceptional stability thanks to the carbide mass directly behind the cutting edge corner
- Flat recesses for unchecked coolant flow, preventing chip jams
- Continuous drilling guidance reduces vibration

BENEFITS FOR YOU

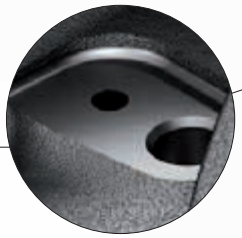
The new land design optimises wear behaviour – and therefore extends the tool life. Lower vibration and fewer chip jams improves quality and process reliability.

PIVOT BEARINGS/WHEEL MOUNTS

Ductile graphite iron

Pivot bearings and wheel mounts are typically machined on machining centres or special purpose machines. Both of these machine concepts are catered for by the flexibility of Walter tooling systems. The components themselves often have complex component geometries and are consequently difficult to clamp. This can result in a higher vibration tendency.

The poor accessibility of the components also makes long reach tools necessary at times. The challenge therefore lies in preventing vibration as much as possible, for example, by applying small machining forces. High accuracies are required when drilling the main bearing in particular. Walter tools can handle complete machining for this component.



YOUR APPLICATION

ABS connection thread

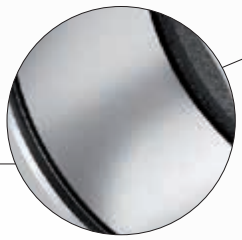
OUR SOLUTION

Walter Paradur® Eco-CI tap – Prototyp

- For blind and through-hole threads
- TiCN-coated
- With internal coolant supply

BENEFITS FOR YOU

Reliable machining – with a low cost per part.



YOUR APPLICATION

Bearing bore – rough boring

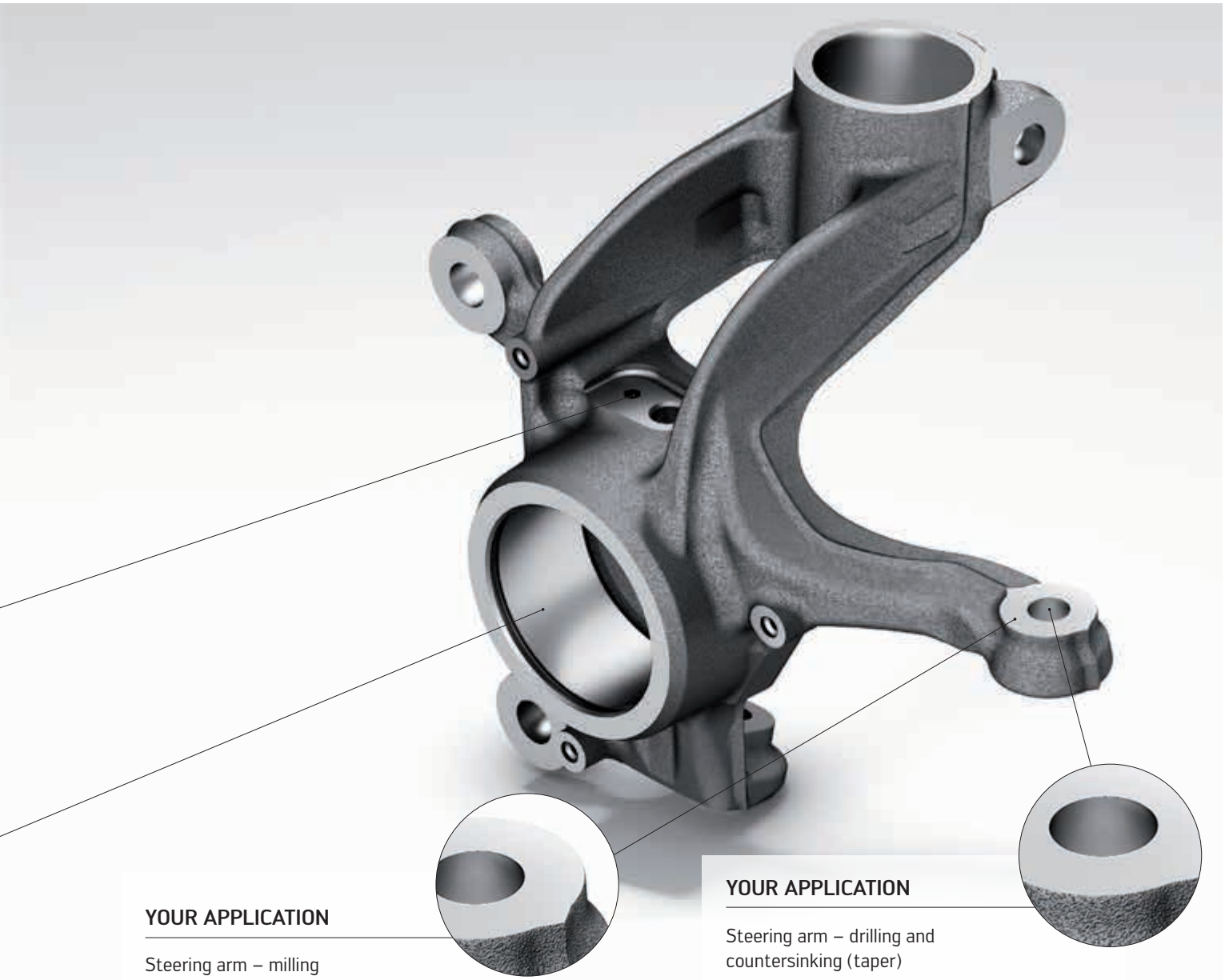
OUR SOLUTION

Walter stepped boring bar

- Cooling using emulsion or MQL
- Walter Tiger·tec® Silver indexable inserts
- Optimum chip removal thanks to specially designed chip spaces

BENEFITS FOR YOU

Reliable machining and long tool life.



YOUR APPLICATION

Steering arm – milling

OUR SOLUTION

Walter parallel side & face milling set

- Low-vibration machining
- Tangential cutting edge arrangement for high tool stability
- Easy-cutting Walter indexable inserts with Tiger·tec® Gold coating
- The positive indexable insert geometry reduces machining forces

BENEFITS FOR YOU

Reliable milling without vibration – with a long tool life.

YOUR APPLICATION

Steering arm – drilling and countersinking (taper)

OUR SOLUTION

Walter hybrid tool with taper drill and indexable inserts

- Two operations combined in one tool
- Drill with a high-performance coating
- Walter indexable inserts with Tiger·tec® Silver coating

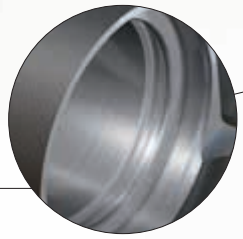
BENEFITS FOR YOU

Long tool life, significant savings on tools and short tool change times thanks to the integration of multiple machining operations in one combination tool.

BRAKE CALLIPER

Cast iron

The brake calliper is an important component on a disc brake. In the modern car industry, they are made of cast iron (GGG50) or aluminium. The brake calliper is an essential safety component that must withstand high thermal and mechanical loads.
A key aim in machining brake callipers is to achieve the highest levels of process reliability and dimensional stability. In the face of ever-increasing pressure from competition, another indispensable ingredient of success in mass production is the ability to minimise per-part costs while maintaining superior quality. Our tools are up to the task.



YOUR APPLICATION

Cylinder bore machining

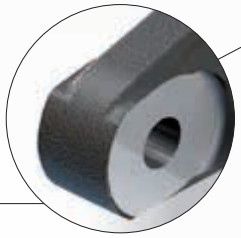
OUR SOLUTION

Walter combination tool

- Combined indexable insert tool with various steps
- Indexable inserts with new Tiger·tec® Gold technology

BENEFITS FOR YOU

Short machining times and a long tool life thanks to Tiger·tec® Gold indexable inserts. High process reliability thanks to precise adherence to manufacturing tolerances.



YOUR APPLICATION

Mounting Bracket – Milling

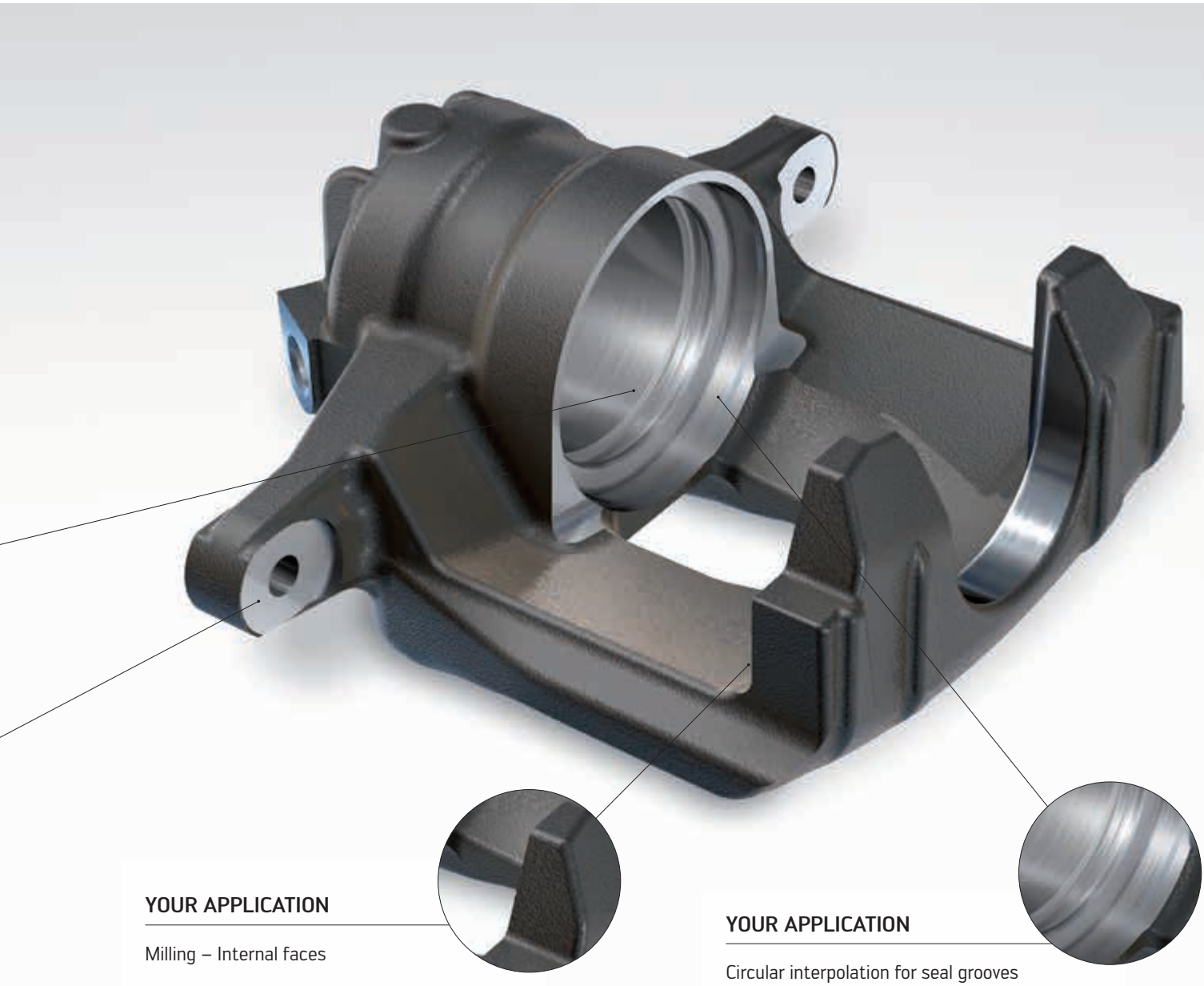
OUR SOLUTION

Walter parallel side & face milling cutter set with highly positive cutting edges

- Stable tangential design
- High-accuracy fixed insert seats
- Low vibration levels thanks to highly positive geometries Indexable inserts with new Tiger·tec® Gold technology

BENEFITS FOR YOU

Short machining times, maximum stability and low adjustment times due to high accuracies and low vibration levels. Long tool life thanks to Tiger·tec® Gold indexable inserts.



YOUR APPLICATION

Milling – Internal faces

OUR SOLUTION

Walter full side & Face cutter with tangential insert design

- Highly positive indexable inserts
- Close pitch teeth for high feed rates
- Wide range of indexable inserts available

BENEFITS FOR YOU

Low cutting forces and limited vibration thanks to highly positive indexable inserts. Low cost per part due to high number of cutting edges.

YOUR APPLICATION

Circular interpolation for seal grooves

OUR SOLUTION

Adjustable Walter circular interpolation milling cutter with anti-vibration damping

- Each indexable insert has adjustable concentricity
- No vibration during machining
- Reliable machining as there are no chips left in the groove
- New Tiger·tec® Gold technology indexable insert coating

BENEFITS FOR YOU

Reliable, vibration-free machining and an excellent tool life thanks to indexable inserts from the new generation of Tiger·tec® Gold.

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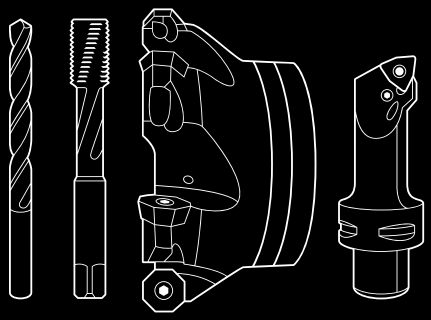

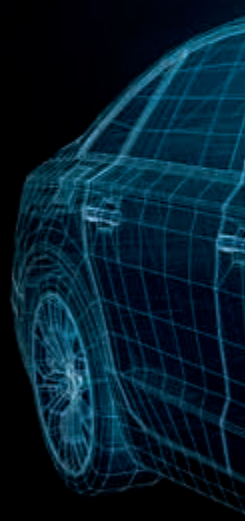

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Subject to changes – Printed in Germany 7433319 (07/2017) EN