

**HERMES  
PRECISION  
GRINDING TOOLS**



for an  
excellent finish



## SURFACES ARE OUR PASSION

As experts in grinding applications, we create high-quality functional or aesthetic surfaces for your workpieces utilizing individual solutions from our extensive product portfolio. For almost 100 years, we have stood for quality and service in all aspects of the grinding process.

With our numerous locations on all continents, we guarantee you fast service, personal support on site and reliable product availability.

Close and professional cooperation with you is our top priority since we want to find the most efficient solution for your machining processes. When doing so, we can rely on the knowledge and commitment of our experts from all departments.

## OUR PORTFOLIO: MORE THAN A RANGE OF PRODUCTS

### Precision grinding tools

Our comprehensive portfolio of bonded abrasives for precision grinding covers all relevant processes: From cylindrical, flat and profile grinding to all relevant gear grinding processes.

Our products are always developed and produced to precisely suit your application and its individual process requirements.

### Coated abrasives

With over 1500 different tools of flexible abrasives such as belts, discs, rolls or sheets, you can be sure to find the right product for your application - from stock, directly available worldwide!

### H.A.I - Hermes Abrasives Institute

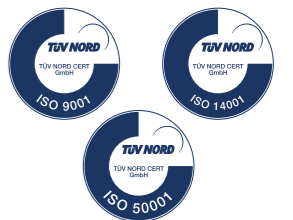
Under the H.A.I. umbrella we offer our expert knowledge. You benefit from customized process consulting, exclusive practical trainings or individual transfer of specialist knowledge by experienced engineers and application technicians.

## OUR RESPONSIBILITY: ESSENTIAL

Sustainable management and responsibility for the environment and society have always been part of our corporate strategy.

This is how we measure ourselves: Since 1993 with the quality certification ISO 9001, since 2002 with the certification of our environmental management by ISO 14001 and since 2014 with a certification of our energy management by ISO 50001.

As a co-founder of **SEAM** (Sustainable European Abrasives Manufacturers), the European Union-certified sustainability program for the European abrasives industry, we have put the spotlight on the subject for our entire industry and are pursuing ambitious goals.



## THE PERFECT SURFACES TO KEEP IT RUNNING SMOOTHLY FOR YOU

You expect excellent surface finishes and uncompromising precision.

We are the right partner for this purpose and support you in finding time- and cost-efficient process solutions using our customized grinding tools and services.

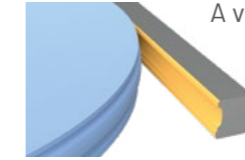
Thanks to many years of close cooperation with our customers, external partners (e.g. institutes, universities, machine manufacturers) as well as our experience and expertise, we understand your requirements and daily challenges.

Get to know our range of services so that we can design the right solution for you – based on your specifications in terms of batch size, target surface parameters, cycle times and grinding process.



## YOUR PROCESS AND OUR TOOL

### Profile grinding



A very economical and versatile process that can be used to produce individual profiles such as flutes, gear teeth or other complex shapes on flat and round surfaces. When designing your tools, we ensure that the very high demands regarding coolant supply and profile stability during this grinding process are met. Highly porous and very wear-resistant tools are in many cases the optimum choice for this purpose.

### Flat grinding

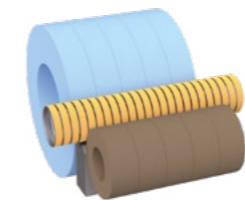


Face grinding is used when surfaces with specified surface qualities and dimensions are desired. This process requires a grinding tool that is tailored to the specific requirements and needs of the grinding mode – either creep feed grinding or reciprocating grinding.

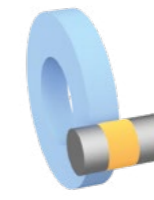
When designing those tools, we pay particular attention to providing the highest cutting performance and maximum productivity within the desired surface tolerances. This allows to increase the overall economic efficiency of the process.

### External cylindrical grinding

#### Centerless grinding



#### Grinding between tips

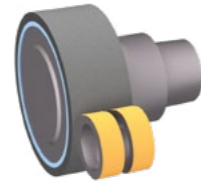


External cylindrical grinding processes are versatile and are used in a variety of different applications for grinding rotationally symmetrical components.

Depending on the application, a profile can be applied by using plunge grinding processes or productivity and surface quality can be focused by using the throughfeed method with fine-grain wheels like Hermes CERMIC. Depending on the requirements, the workpieces can either be clamped between centers or machined without centers. This often makes it easier to automate workpiece changes.

We supply customized tools for all machine types, workpiece dimensions and materials, from small engine components to rollers for steel production.

**Out-of-round grinding**



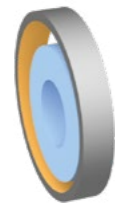
A particular specialty of external cylindrical grinding. It is used, for example, in the machining of cams for combustion engines. Thanks to the machine kinematics and a suitable tool, out-of-round geometries can be produced in a targeted manner.

**Thread grinding**



It's as simple as it sounds: machining threads into workpieces. However, to ensure a correctly ground thread profile in the end, the grinding wheel must be wear-resistant in order to avoid early profile loss.

**Internal cylindrical grinding**

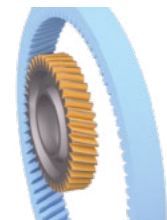


Used for bores and workpieces with high demands on geometric quality and roughness, which might be important for the later life or assembly of the workpiece, e.g. on an associated shaft. Cool grinding with porous tools is particularly important here due to the difficult supply of cooling lubricant.

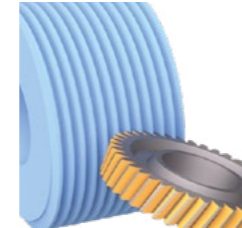
**Gear grinding**

For details about our tools for your gear grinding processes, please refer to the back of the brochure.

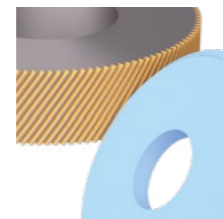
**Honing**



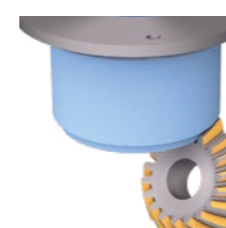
**Generating gear grinding**



**Profile grinding**



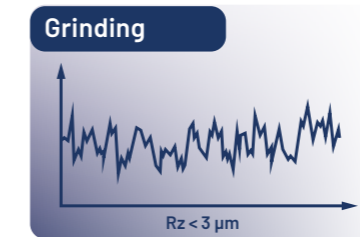
**Other gears**



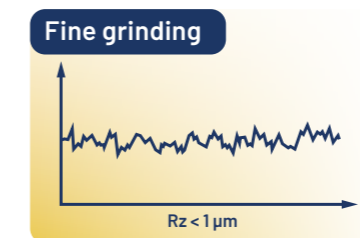
**YOUR REQUIREMENTS AND OUR RECIPE**

**The Hermes product families**

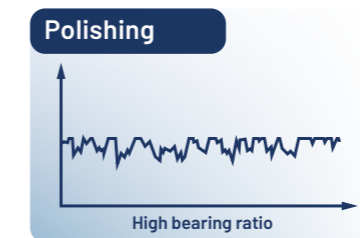
Depending on required roughness and general process parameters to be achieved, we recommend the corresponding tool from one of our product families.



- CERFINE** Vitrified bonded tools with fused or sintered corundum and silicon carbide
- CERBON** Superabrasives with CBN
- CERDIA** Superabrasives with diamond



- CERMIC** Vitrified bonded fine grain tools
- CERBON** Superabrasives with CBN
- CERDIA** Superabrasives with diamond
- PROFINE** Resin-bonded tools



- MICROLITE** Elastic polyurethane polishing tools

## Grain selection

The grain selection is a decisive factor for the performance of the designed tool. However, it also has a significant impact on costs. By specifically selecting the right grain, we will find the optimum economic solution for you, enabling you to manufacture in compliance with the specified tolerances.

The selection ranges from silicon carbide, fused and sintered corundum to the superabrasives CBN and diamond.

## Bonding systems

Experience, expertise and the ability to draw on a wide range of proven and extremely efficient bonding systems are the prerequisites for meeting the exact process and surface requirements with the final tool. We have it all.

And we are constantly developing new solutions for the ever-changing requirements.

## Standard and yet individual

Not every application requires a specially designed tool. That's why we have certain standard specifications available from stock. To ensure maximum process efficiency for the application, we offer them in the following four performance classes:

### CLASSIC

Cost-effective solutions with high-performance fused corundum

### PERFORMANCE

Powerful all-round specifications with high grinding performance and high profile stability

### PREMIUM

Specifications with very high cutting performance and wear resistance for the highest requirements

### PREMIUM+

For applications with the highest performance requirements in terms of cutting performance, tool life, profile stability and thermal load even when machining highly demanding materials

## GET EVEN MORE OUT OF IT OUR SERVICES

### Process consulting



Optimization potential lies hidden even in processes that appear to run optimally. Our experts from the H.A.I – Hermes Abrasives Institute – will advise you individually. At your site or at ours. Let's find out together how we can get more out of it for you.

### Training & education



Skills shortages, staff turnover, process changes, increasing complexity and requirements. There are many reasons to build up or expand know-how. However, you may not always have enough capacity to do so yourself. With our training courses and seminars you can draw on our knowledge and experience.

The training content is tailored specifically to your requirements.

### Better together - always at the pulse of time

You can benefit from our many years of intensive cooperation with partners from industry and academia, too! Contact us if you are facing particular challenges or are looking for new impulses, current trends and developments.

## TOOTH BY TOOTH AT THE END THE PERFECT GEAR

Gear grinding, with its diverse, highly complex processes, is one of our particular strengths. In this area, we have an outstanding market position.

The exact fulfillment of your requirements in terms of geometry and dimensional accuracy, topography and sub-surface properties are uncompromising in the face of continuously increasing pressure to improve performance in gear technology.

We are the best partner for precisely this. Our in-depth knowledge of processes and applications in the gearbox sector and the associated challenges are a prerequisite for the production of customized products that guarantee the best surface quality of the workpieces as well as time and cost-efficient processes.

## YOUR PROCESS AND OUR TOOL

### Gear honing

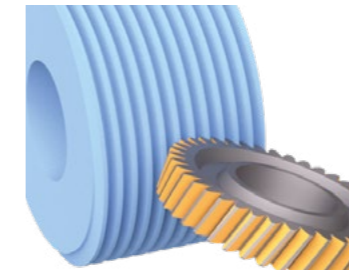


Compared to other industry-relevant gear grinding processes, gear honing generally achieves the best surface quality.

This makes the process indispensable when machining gear parts with high demands on noise emissions and power density, for example for e-mobility or in the commercial vehicle sector.

The tools configured and produced by us are essential for this. With vitrified and resin-bonded honing rings you can rely on particularly wear-resistant and highly productive solutions. If that still is not enough, you can use our microlite honing rings to further increase surface quality. Whilst polishing in a honing process, you can easily achieve Rz values significantly lower than 1µm. The desired surface result is guaranteed.

### Continuous generating grinding



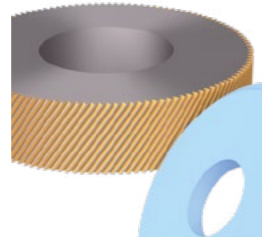
Bulk production of gears with a small to medium module is most productive with a continuous generating gear grinding process.

With our high-performance bonds and microlite polishing tools, the process focus can be shifted according to your desire between maximum productivity and the best surface quality thanks to polished tooth flanks.

Hermes combination tools are a special feature. They combine a vitrified part for the preliminary grinding process and an elastic microlite part for the final polishing of the tooth flanks. Both parts are connected with an innovative, patented connection technology that also allows for very high cutting speeds.

With these hybrid tools, you can run highly productive polishing processes, as there is no need for time-consuming tool changes or transferring the component to a separate machine. Furthermore, the customized tool specification always allows to perform the polishing process in one single stroke.

### Profile grinding

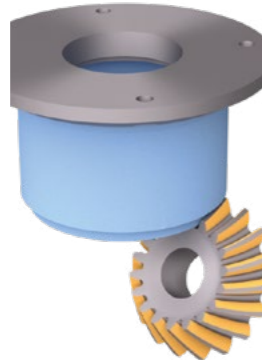


If you grind gears with large modules or in small quantities, profile grinding is the perfect solution.

The individually profiled tools create the corresponding counter profile of the grinding wheel on the workpiece. As high infeeds are often used and thus lead to high contact

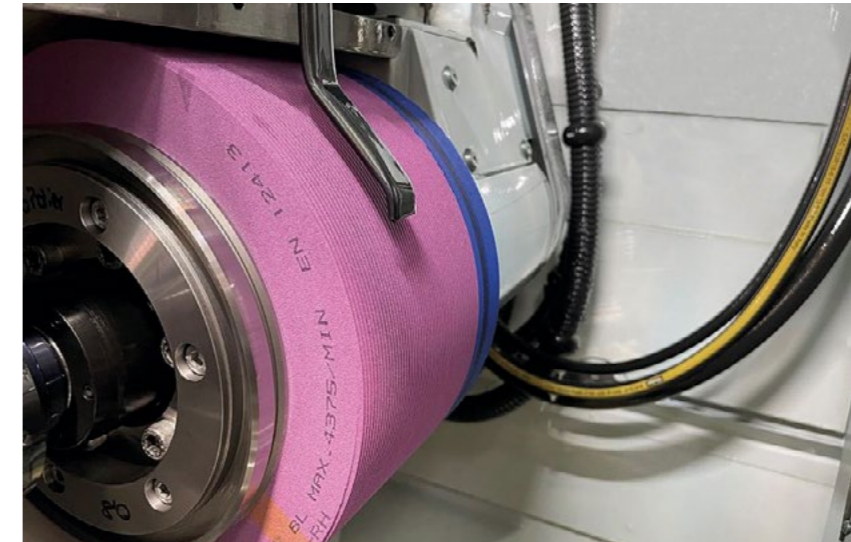
lengths, the tool is subjected to particularly high thermal loads. By using a highly porous grinding wheel, cooling can be improved and the profile stability of the tool can be maximized thanks to an extremely wear-resistant bond.

### Special gearing and other gear cutting processes



If standard grinding processes and the corresponding tools cannot be used, have reached their limits or the target parameters cannot be achieved, we will work with you to find solutions outside the "standard".

## GET EVEN MORE OUT OF IT TEST PROGRAM FOR GRINDING WORMS



Benefit from this uncomplicated and fast way to optimize your continuous generating gear grinding processes and increase your performance. Hermes offers a program of grinding worms for testing for all common machine types from the major manufacturers that are profiled and ready to dispatch in a few days.

To make the process as efficient as possible, our specifications are available in the following performance classes:

**CLASSIC** is the right choice if you are looking for a cost-effective solution and do not require the highest surface quality or productivity.

If you are looking at larger batches and need a tool that allows for a better quality, our **PERFORMANCE** wheels are the right choice for you.

When you have very high demands regarding surface roughness, process performance and power density, the **PREMIUM** grinding tools achieve the desired values. They are ideal for grinding modern gears in the fields of e-mobility, wind power, commercial vehicles and other demanding industries.

Do you want to push the limits? Then **PREMIUM+** offers you maximum productivity. Even extreme infeeds and one stroke gear grinding is possible with those tools.





Of course, our application engineers will personally accompany your test series at all times in order to achieve the set goals together.

	GLEASON		
<b>Machine</b>	130 / 160TWG	245 / 300TWG	220 / 260GX
<b>Dimension</b>	240 x 125 x 120	220 x 180 x 90	300 x 160 x 160
<b>CLASSIC</b> EDE   EWD	EDE 80   EDE 100	on request	
<b>PERFORMANCE</b> FP   RSK	on request	RSK 80	RSK 80
<b>PREMIUM</b> RSK	on request		

	LIEBHERR		
<b>Machine</b>	LCG 180/280	LCS 180 / 280 / 300	LCS 380
<b>Dimension</b>	220 x 200 x 76,2	240 x 200 x 76,2	240 x 230 x 110
<b>CLASSIC</b> EDE   EWD	on request		
<b>PERFORMANCE</b> FP   RSK	RSK 80	RSK 80	RSK 80
<b>PREMIUM</b> RSK	on request		

	KAPP	
<b>Machine</b>	KX 160 / 300P	
<b>Dimension</b>	240 x 160 x 115	280 x 160 x 115
<b>CLASSIC</b> EDE   EWD	on request	
<b>PERFORMANCE</b> FP   RSK	RSK 80   RSK 120	RSK 80   RSK 120
<b>PREMIUM</b> RSK	on request	RSK 120

	REISHAUER			
<b>Machine</b>	RZ 60 / 150 / 160 / 260	RZ 400 / 550	RZ 303 / 1000	
<b>Dimension</b>	275 x 125 x 160	275 x 160 x 160	300 x 125 x 160	300 x 145 x 160
<b>CLASSIC</b> EDE   EWD	EWD 90	EDE 80	on request	
<b>PERFORMANCE</b> FP   RSK	RSK 120	RSK 80   RSK 120	RSK 80   RSK 120	RSK 120
<b>PREMIUM</b> RSK	on request			

In addition, a premium specification is available as a semi-finished product for combination grinding worms.



## LET'S GET STARTED HOW WE GET IN TOUCH

Contact us at any time so that we can find the right solution for you.

In case you have not yet established contact with Hermes, you will find the right contact person on our website.



[hermes-schleifwerkzeuge.com/en/contacts](https://hermes-schleifwerkzeuge.com/en/contacts)





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