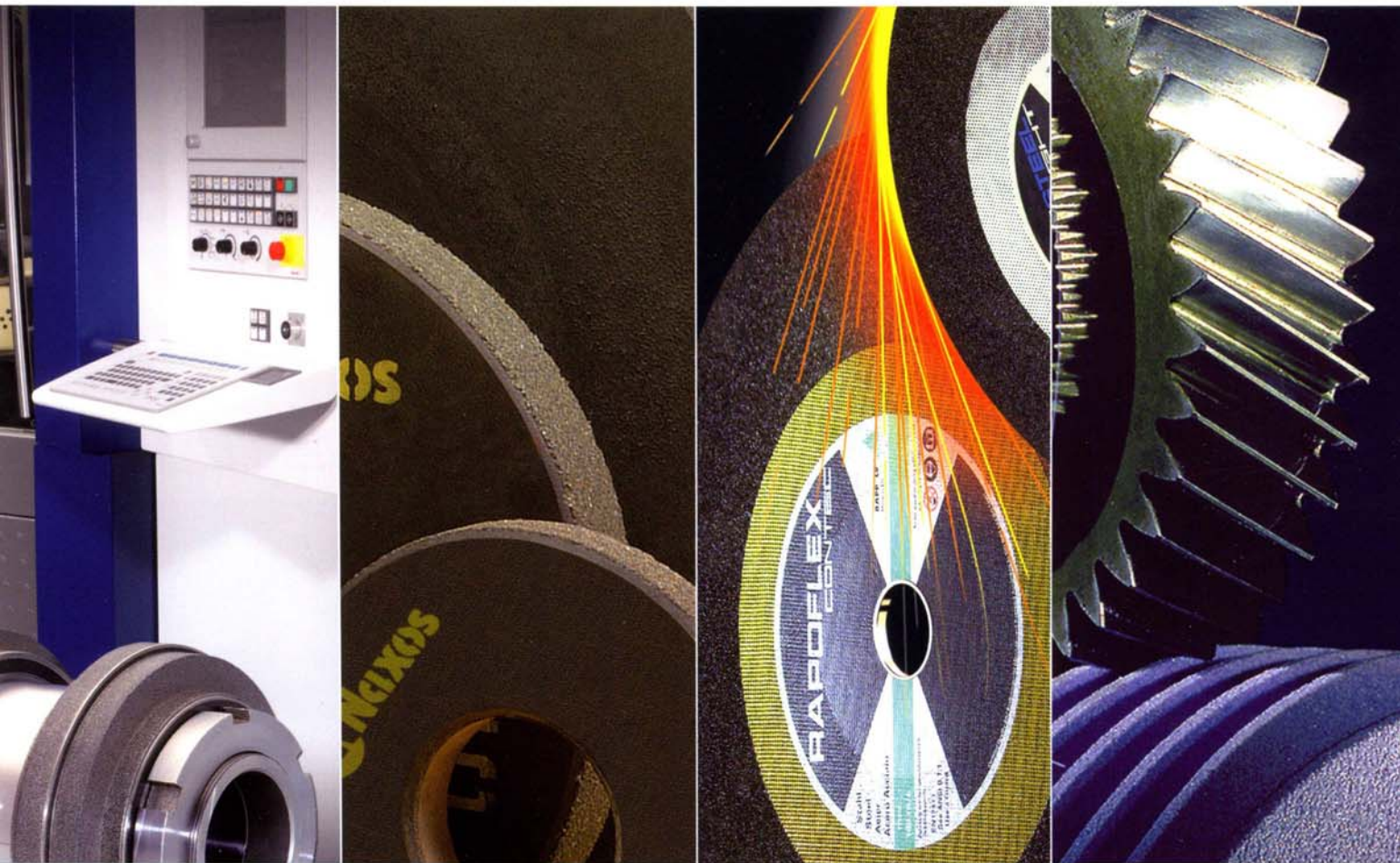




WINTERTHUR  
TECHNOLOGY GROUP

# FOUR BRANDS, ONE VISION

INNOVATIVE GRINDING TECHNOLOGY OF WORLD RENOWN



 **WENDT**

**Slip Naxos**

**RAPDOL**



# GRINDING TECHNOLOGY FROM ONE SOURCE

The integration of the Wendt-Group into the Winterthur Technology Group (WTG) on June 27th, 2007, translates for our customers into an improved presence across the globe, comprehensive technical support and an enlarged product portfolio which covers the full spectrum of grinding technology.

Our customers can profit from a complete system on offer: from technical support to grinding wheels and high precision diamond dressing tools. All of it from one source, geographically close and made strong by the right people.

End users have a partner at their side who can supply the full range of products while also assuming responsibility for the proper functioning of the grinding wheels and the diamond dressing tool.

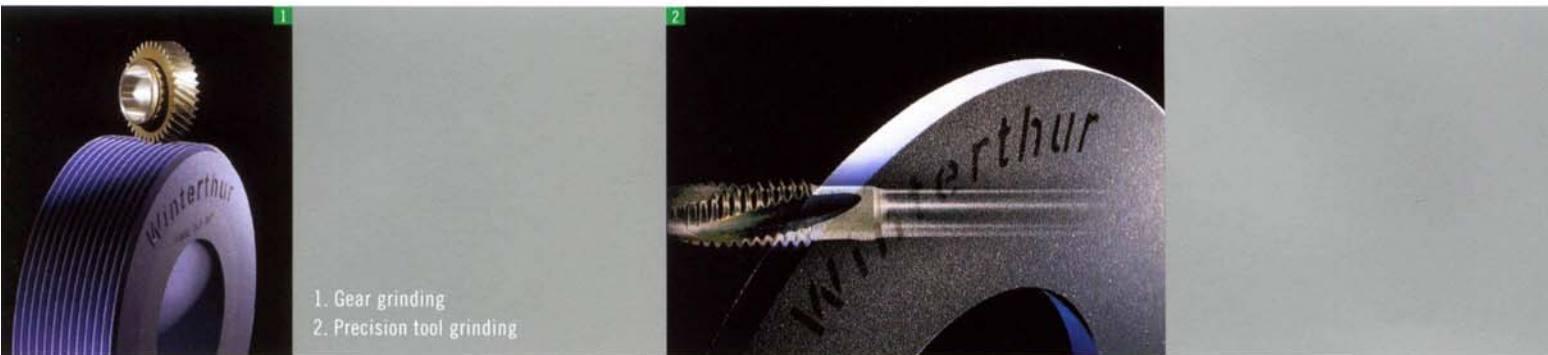
Furthermore, WTG has not only state-of-the-art technology in tooling but also highly specialised grinding machine tools on offer. These machines are specifically dedicated to the grinding of ultra hard materials such as tungsten carbide, polycrystalline diamond, ceramics and boron nitride (CBN).

## Product overview

Winterthur	Rappold	SlipNaxos	Wendt
Gear grinding wheels	Cut-off wheels up to 2000 mm	Hot pressed wheels for grinding slabs and billets	CBN and diamond tools for the machining of ultra-hard materials
OD and ID cylindrical grinding wheels	Gear grinding wheels	Roll grinding wheels	VIT-CBN high-speed grinding wheels for automotive applications
Centerless grinding wheels	OD and ID cylindrical grinding wheels	Centerless grinding wheels	CBN electro-plated grinding wheels for high-performance grinding
Surface and creep-feed grinding wheels	Centerless grinding wheels	Diamond wheels for grinding tungsten carbide inserts	Diamond tools for the grinding of glass
Thread and worm grinding wheels	Surface and creep-feed grinding wheels	Grinding wheels for the ball and roller bearing industry	Precision grinding machine tools for grinding steel and ultra-hard materials
Diamond and CBN grinding wheels	Thread and worm grinding wheels	Grinding wheels for crank and camshaft grinding	Diamond dressing rolls and dressing units

## PRECISION GRINDING TECHNOLOGY FROM SWITZERLAND

Winterthur Schleiftechnik AG is second to none in terms of grinding wheels for high precision machining. The company looks back on a long tradition of innovation, and maintains a strong international position in the automotive, gas turbine and jet engine industries.



1. Gear grinding  
2. Precision tool grinding

Winterthur Schleiftechnik specialises in the manufacture of vitrified grinding wheels for high precision grinding. For grinding tasks such as grinding automotive gears, creep-feed applications for the gas turbine or aerospace industries, the cylindrical grinding of fuel injection parts etc., high quality precision grinding wheels are a must. In this field the Winterthur brand stands for competence and innovation.

### Tradition leads to know-how

Winterthur Schleiftechnik was founded in 1906 in the city of Winterthur, near Zurich, as Schweizerische Schmirgelscheibenfabrik AG (Swiss Emery Wheel Works Ltd). As part of its business policy, Winterthur Schleiftechnik has always worked closely with the main Swiss machine tool builders (OEMs). Through this and other collaborations Winterthur has taken part in many important developments in precision grinding, and close collaboration with OEMs is still a key part of Winterthur's overall business strategy.

On the basis of these technological partnerships, much of the Group's know-how regarding vitrified high precision grinding wheels is concentrated in Winterthur. The strong service component is made up of application-oriented grinding seminars for end users, and the development of grinding software also plays a key service role.

### Central geographical location in Europe

From a logistical point of view the Winterthur site is in an ideal position: Zurich's international airport is only 20 minutes away by car, and the outstanding road and railway system ensures optimal accessibility. For these reasons the principal grinding wheel stock has been placed in Winterthur. Grinding wheel blanks stored in Winterthur are machined and profiled within a very short lead time, and then shipped at short notice to wherever customers' factories may be.

### Product range

Winterthur's product range encompasses, among others, grinding wheels made of conventional abrasives, and grinding wheels made of superabrasives such as diamond and CBN for the following fields of application:

- Gear grinding
- OD, ID cylindrical and centerless grinding
- Surface, profile and creep-feed grinding
- Thread and worm grinding

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### Facts and Figures

Founded in: 1906  
Number of employees: 78  
Production surface: 1300 m<sup>2</sup>



## COMPLETE SOLUTIONS FOR DIFFICULT-TO-GRIND MATERIALS

WENDT is a leading manufacturer of diamond and CBN tools as well as precision grinding machines and dressing devices for the grinding of difficult-to-machine materials.



1. Superabrasive grinding wheels
2. Precision grinding machine tool
3. Diamond dressing rolls

WENDT has grown from a small trading company to a worldwide leading supplier of high precision grinding systems and diamond and CBN grinding and dressing tools. The product range is destined for system solutions in grinding technology in the field of hard material grinding, such as tungsten carbide, ceramic, CBN and PCD, precision grinding of workpieces made of steel or heavy duty alloys as well as grinding of all forms of glass, such as optical glass, automobile glass, technical glass, hollow and flat glass.

### Product Range

#### Tools for Grinding Hard Materials

- Grinding wheels for WENDT machines
- Diamond and CBN grinding wheels
- VIT-DIA grinding wheels for PCD/PCBN grinding
- ID saws

#### Tools for Precision Steel Grinding

- VIT-CBN grinding wheels for high speed applications in the automotive industry
- CBN grinding wheels in galvanic bond for high performance grinding
- CBN precision profile grinding wheels, e.g. for gear grinding
- Diamond rotary dressers and dressing devices
- CBN wheels for lapping

#### Tools for Glass Grinding

- Diamond profile grinding wheels for glass edge grinding of construction and furniture glass
- Diamond profile grinding wheels for glass edge grinding of automobile glass
- Hollow drills and core drills for flat glass
- Cut-off wheels for glass

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#### Facts and Figures

Founded in: 1920  
Number of employees: 1000  
Production: 11 production sites



## LARGE SIZE INNOVATION

Rappold has the largest production capacity within the Winterthur Technology Group. Its unique recycling system for large size cut-off wheels has given new impetus to steel making.

# RAPPOLD

1. Large diameter cut-off wheel in action  
2. Large diameter cut-off wheel with recyclable core



Rappold Winterthur was founded in 1876 in Austria as Rappold Schleifmittel Industrie. From the beginning the company profited from its geographical proximity to, and collaboration with, the most technologically advanced steel rolling and forging plants in the region. The merger with Winterthur in 1992 created one of Europe's leading manufacturers of abrasive tools, and the state-of-the-art plant in Villach has the highest production capacity within the Winterthur Group.

### Innovative large diameter cut-off wheels

Apart from the manufacture of vitrified precision grinding wheels, the company specialises in the manufacture and marketing of large diameter cut-off wheels, a field in which Rappold-Winterthur has established a world leading position within the steel industry. Rappold-Winterthur is the only European manufacturer of large diameter cut-off wheels with diameters of up to 2000 mm.

With the introduction of the large cut-off wheel called Raposteel®, the company has entered new territory. This product combines higher technical performance with lower environmental impact, and therefore serves as a good example of the company's overall philosophy. The compound material based tool is furnished with a steel body, which after use is shipped back to the factory for refitting with abrasive material. The steel body, with its higher rigidity than

mere resin bonded wheel cores, also offers substantial process optimisation.

### Ideal logistical location

Located close to the Italian border, the factory has excellent international road connections. Additionally, within the immediate vicinity is the main plant of one of the largest European manufacturers of loose abrasives, with whom a technological collaboration has existed for many years.

### Product range

Rappold Winterthur focuses on the manufacture of vitrified grinding wheels in the small to medium diameter range for the following fields of application:

- Gear grinding
- OD, ID cylindrical and centerless grinding
- Surface, profile and creep-feed grinding
- Thread and worm grinding

Grinding processes in the steel industry:

- Cut-off processes
- Slab and billet grinding with hot-pressed (HP) Wheels
- Roll grinding
- Centerless grinding

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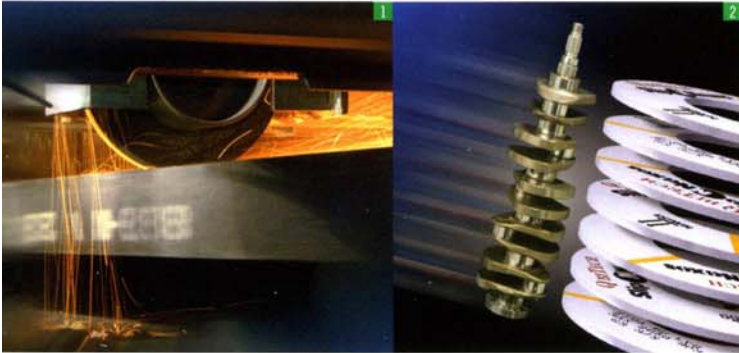
### Facts and Figures

Founded in: 1876  
Number of employees: 340  
Production surface: 20000 m<sup>2</sup>



## TOP QUALITY FOR THE STEEL INDUSTRY

A Swedish success story: through competency and innovation, SlipNaxos has established a strong presence in the international steel Industry.



1. Hot pressed wheel in action  
2. Wheel set for crank and cam shaft grinding

In 1920, three Swedish grinding wheel makers joined forces in Västervik and founded SlipNaxos AB. The resulting company maintains a pole position with grinding wheels for the steel industry. By entering into an alliance with Rappold-Winterthur in 1999, important synergies have opened up for SlipNaxos and their customers.

Today, SlipNaxos focuses specifically on the manufacture of hot-pressed grinding wheels for applications in the steel industry for the grinding of slabs and billets. Västervik is now home to the largest and most modern production site for such products.

### High level of development

SlipNaxos' dominant international position is based on a close collaboration with the technologically leading Swedish steel companies, which has given SlipNaxos its advantage in roll and centerless grinding.

Superabrasive diamond grinding wheels for the manufacture of carbide inserts are another product speciality. The world's leading manufacturer of tungsten carbide inserts is located in Sweden, and SlipNaxos, due to its high level of product development, is one of its main suppliers.

SlipNaxos' grinding wheels also play a dominant international role in the field of ball and roller bearing manufacture.

### Product range

SlipNaxos focuses its production on the following key products:

- Hot pressed wheels for the grinding of slabs and billets
- Roll grinding wheels
- Centerless grinding wheels
- Diamond grinding wheels for the manufacture of tungsten carbide inserts
- Grinding wheels for the ball and roller bearing industry

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### Facts and Figures

Founded in: 1920  
Number of employees: 168  
Production surface: 43000 m<sup>2</sup>



## SYNERGIES WITH A FUTURE

Using a common strategy, the four companies have focussed their know-how and competency. The Winterthur Technology Group is therefore a process-oriented partner supplying custom-made solutions to industry across the globe.

The Winterthur Technology Group is one of Europe's three leading manufacturers of bonded abrasives for industrial applications. The 14 production sites of the Winterthur Technology Group have sufficient capacities to play a decisive role on a global scale in their area of activity.

The most important users of the Group's abrasives are the automotive, aerospace, machine tool, glass, automotive ball and roller bearing, tool and steel making industries.

### **To our customers' advantage**

The Group's common strategy, technical know-how and geographical presence in Europe offer our customers significant advantages. We maintain all production sites at state-of-the art level and place a high value on the individual brands. And our purposely chosen overlap of production capacity ensures uninterrupted worldwide supply to all our customers.

### **High Standards**

All production sites operate according to international quality standards, in both production and environmental protection (ISO 9001 und 14001).

Continuous and practically oriented research and development are the cornerstone of the Group's business philosophy, and the Group reinvests 5% of turnover for such activities. One third of vitrified precision grinding wheels have been developed within the last three years. Product innovation continually enlarges and cements the market position of the Group and safeguards its future.

Although the Winterthur Technology Group is mainly active in Europe, it has maintained a dominant niche position in the United States through its two US production plants and local sales organisation. The Asian market is also covered by production plants in China and India, and actively pursued and supported by carefully selected agencies which continually grow the Group's business, particularly in China, Japan, Korea, Thailand and India.

## WORLDWIDE CUSTOMER SUPPORT

Apart from the 14 production sites the Winterthur Technology Group also offers comprehensive support through their own sales offices and other representatives. We look forward to hearing from you.

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