

FINE-GRINDING/ FIXED-ABRASIVE PLATES

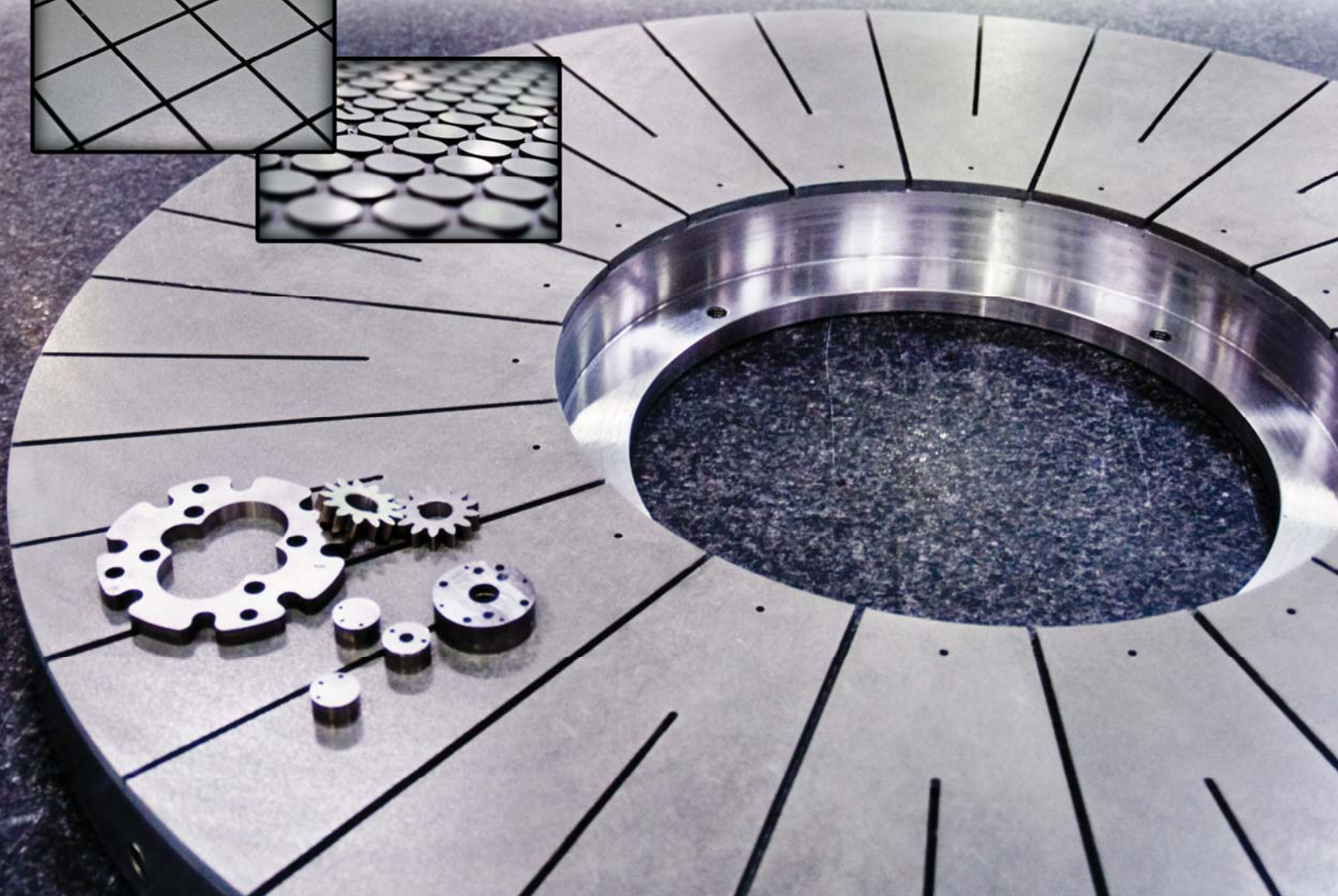
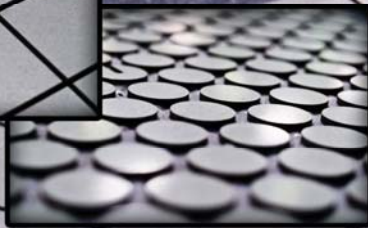
APPLICATIONS

Used on double and single-sided fine-grinding, flat-honing & converted lapping machines for precision stock removal of flat workpieces. Especially suitable for hard to grind materials, including:

- Hardened Steels
- Tungsten Carbide
- Powdered Metals
- Ceramics
- Quartz
- Sapphire
- Silicon
- Composites (graphite, laminates)
- Fuel & Hydraulic components

BENEFITS

- Up to 10 times reduction in cost per part compared to loose-abrasive lapping
- Excellent surface finish
- Significantly reduces cleaning costs since no slurry is used
- Very consistent, high stock removal rates
- Excellent plate wear characteristics
- Used for both roughing and finishing operations
- Standard and custom bond formulations
- Wide range of crystal sizes & types
- Uniform part thickness



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FEATURES

- Abrasives are permanently bonded to the plates, versus lapping which uses free abrasives in a slurry
- Workpiece motion is cycloidal using toothed carriers, similar to lapping
- Easier part cleanup due to use of water or oil as lubricant (versus abrasive slurry)
- Standard and custom plate sizes and configurations are available for use on equipment by
 - Stahli
 - Peter Wolters
 - Lapmaster
 - others
- Plates available for custom applications up to 1200 mm diameter
- To create the best solution for your application, we can provide an unlimited number of combinations of plate segment geometries, bond hardness and matrix structures
- Abrasive crystals available as small as 500 grit (13 μm) and as large as 80 grit (260 μm), with tightly controlled particle size distribution (PSD)
- Abrasive crystals can be diamond (natural and synthetic), CBN or conventional silicon carbide or aluminum oxide
- Standard plate abrasive patterns include
 - Segmented
 - Full-faced
 - Hexagonal
 - Square
 - Round

ENGINEERED SOLUTIONS

ITI can support your process development using our in-house fine grinding resources. In addition, sample fine grinding plates may be provided for customers' evaluations. ITI has standard solutions for many applications, and can custom formulate bonds and plate designs to maximize your throughput and surface finish. Stock removal rates can be enhanced by as much as four to ten times that of conventional loose-abrasive lapping processes.

ITI has been producing high-precision tooling since 1961. ITI products are manufactured at our 65,000 square foot facility in Oxnard, California, USA. Only the highest quality diamond, CBN and bond materials are used. Critical properties of crystals such as friability, size, shape, concentration, along with bond strength and structure are all carefully considered during the design stage to ensure optimized performance. ITI's engineering staff is proficient in working with customers to provide the best solution for each application.



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