



Science.
Applied to Life.™

3M Precision Grinding & Finishing
**Solutions for
Turbine Industry**

Your partner with a century of grinding experience

3M Precision Grinding & Finishing bundles the know-how and experience of the Winterthur, Slip-Naxos and WENDT brands under the umbrella brand 3M. As a part of the 3M Abrasive Systems Division, 3M Precision Grinding & Finishing is your committed and competent supplier for abrasives, tools, service and support.

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3M™ Cubitron™ II

Grinding Wheels for Surface & Creep-Feed Grinding

Surface grinding processes are continuing to develop their capabilities with ever-increasing demand for high-performance grinding wheels. Wheels which will remove material faster at exacting tolerances but without metallurgical damage.

Correct implementation of 3M™ Cubitron™ II grinding wheels results not only in higher material removal rates (Q'_w), longer time between dressing cycles, but also in reduction of cycle time and thus, reduction of cost per part.

Application examples:

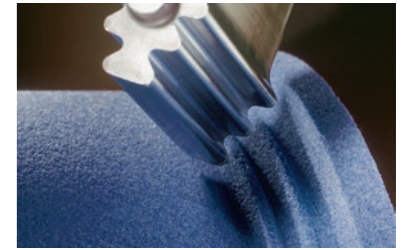
- Grinding of turbine blades
- Components for industrial gas turbines
- Hirth coupling

The advantages at a glance:

- Up to 2 – 3 times higher material removal rate Q'_w
- Up to 3 – 5 times longer service life between two dressing cycles
- Cycle times improved up to a factor of 2
- Perfect surfaces at maximum material removal capacity
- Significantly reduced risk of grinding abuse



Turbine/Compressor Blade Root Grinding



3M supplies grinding wheels with profile dressers which are tailored to suit the blade type and the grinding method utilised for example several or single pass, separate or combined roughing and finishing. The abrasives and bonds are chosen to fit materials, and to give maximum performance, combined with a long grinding wheel life.

3M™ Vitrified Grinding Wheels

3M Product ID	Operation Type	Specification
92VJ	Fir tree root profile & dovetail profile grinding	93DA60/80 F15VPH601W 93DA80/120 F15VPH601W
33VB	Fir tree root profile & dovetail profile grinding	29A60-2 E15VPH450W

3M™ Diamond Rotary Dressers

3M Product ID	Operation Type	Specification
6JGN	Plunge dressing	Upon request
6HMI	CNC dressing	Upon request



Vane Grinding

3M supplies grinding wheels with profile dressers which are tailored to suit vane and segment grinding utilised for multiple or single pass, separate or combined roughing and finishing. The abrasives and bonds are chosen to suit various materials, and to give maximum performance, combined with a long grinding wheel life.

3M™ Vitrified Grinding Wheels

3M Product ID	Operation Type	Specification
91VJ 92VJ	Vane profile grinding	91DA60/80 H15VPH901W 93DA80/80 F15VPH901W
33VB	Vane profile grinding	29A60-2 E15VPH450W

Fins & Wedge Face Grinding

3M supplies grinding wheels with profile dressers which are tailored to suit shrouds fins & wedge face grinding utilised for multiple or single pass, separate or combined roughing and finishing. The abrasives and bonds are chosen to suit various materials, and to give maximum performance, combined with a long grinding wheel life.

3M™ Vitrified Grinding Wheels

3M Product ID	Operation Type	Specification
92VJ	Shroud fin profile grinding	93DA80/80 F15VPH601W
92VJ	Wedge face profile grinding	93DA80/80 F15VPH601W

Notch Grinding

3M supplies grinding wheels with profile dressers which are tailored to suit notch grinding utilised for multiple or single pass, separate or combined roughing and finishing. The abrasives and bonds are chosen to suit various materials, and to give maximum performance, combined with a long grinding wheel life.

3M™ Vitrified Grinding Wheels

3M Product ID	Operation Type	Specification
92VJ	Notch profile grinding	93DA80/80 F15VPH601W

Hirth Coupling Grinding

3M supplies grinding wheels with profile dressers which are tailored to suit hirth coupling grinding utilised for multiple or single pass, separate or combined roughing and finishing. The abrasives and bonds are chosen to suit various materials, and to give maximum performance, combined with a long grinding wheel life.

3M™ Vitrified Grinding Wheels

3M Product ID	Operation Type	Specification
92VJ	Roughing	93DA80/80 H15VPMF601W
93VJ	Finishing	99DA80/80 H15VPH901W

Shaft & Spline Grinding

3M supplies grinding wheels which are suitable for outer grinding, internal grinding and spline grinding of main engine shafts utilised for multiple or single pass, separate or combined roughing and finishing. The abrasives and bonds are chosen to suit various materials, and to give maximum performance, combined with a long grinding wheel life.

3M™ Vitrified Grinding Wheels

3M Product ID	Operation Type	Specification
92VJ	OD/ID grinding	93DA80/80 H15VPMF601W
93VJ	Spline grinding	93DA120/120 H8V601W

3M™ Diamond Rotary Dressers

For every Profile

3M offers a wide variety of designs of our diamond dressing tools for use in a large number of different areas of application. We would be happy to help you with proven recommendations regarding the applications and operating conditions of our diamond profile dressing rollers and our diamond form dressing rollers.

3M Product ID	Operation Type	Specification
6JGN	Plunge dressing	Upon request
6HMI	CNC dressing	Upon request



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