



**3M** Science.  
Applied to Life.™

3M Precision Grinding & Finishing  
**Solutions for  
Bearing 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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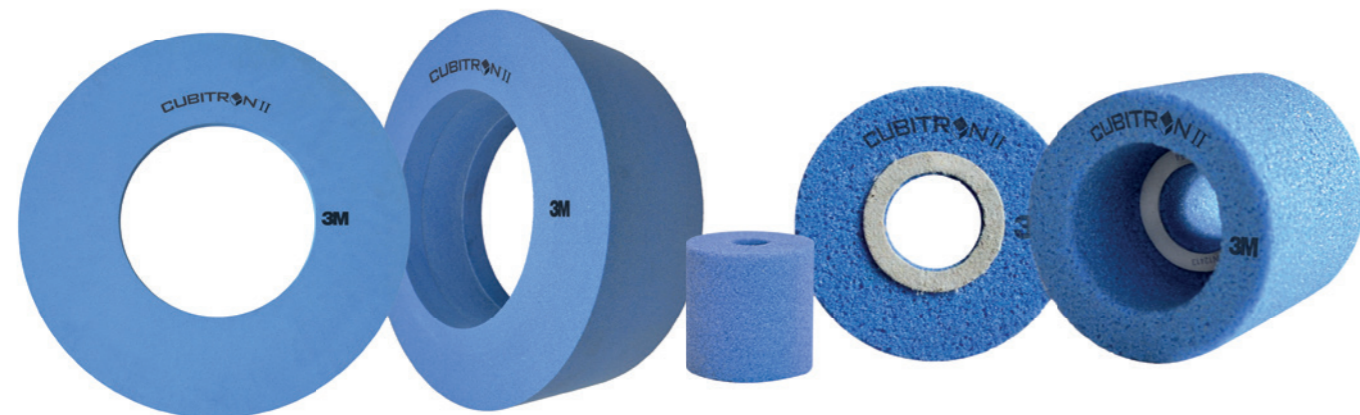
# 3M™ Cubitron™ II

3M™ Cubitron™ II grinding wheels provide perfect functional surfaces for components for Bearing Industry.

- Centerless Grinding
- Cylindrical Grinding
- Surface Grinding

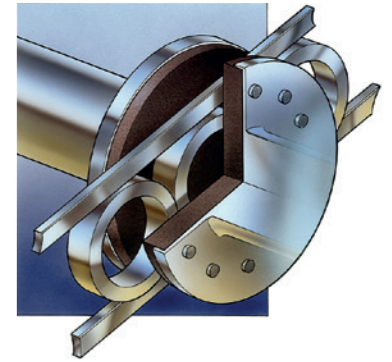
## The advantages at a glance:

- Doubled material removal rate  $Q'_w$
- Up to 45 % faster cycle time per part
- Half the dressing amount
- Perfect surfaces at maximum material removal capacity
- Up to 6 times more parts per dressing cycle
- Minimal risk of burning



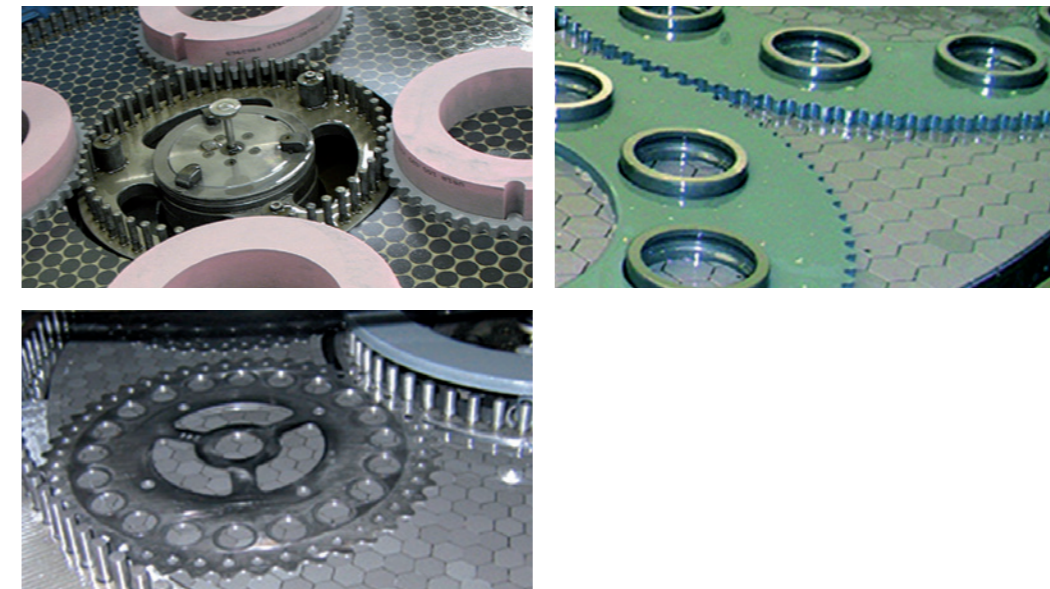
# Face & Fine Grinding

Several grinding operations are required to manufacture bearing rings. 3M has many years experience from all these types of operations, and we constantly develop new abrasive tools for them.



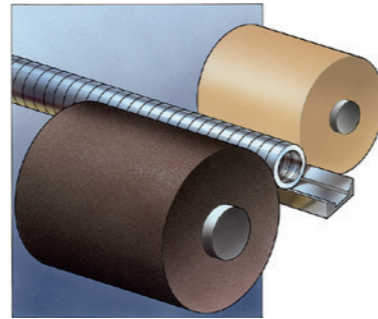
## 3M™ CBN Fine Grinding Wheels

3M Product ID	Operation Type	Specification
1TVB	Face grinding of inner ring & outer ring	B46-VB
1TVU	Face grinding of inner ring & outer ring	B46-VT



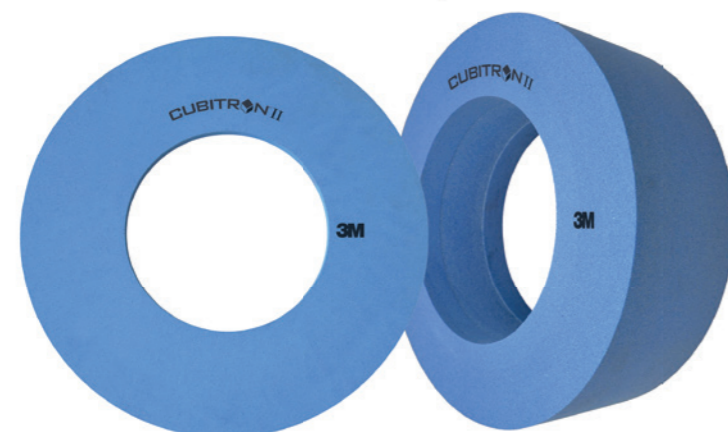
# Centerless Grinding & Finishing

3M supplies both: resinoid and vitrified centerless grinding wheels, which are tailored to suit the ring type and the grinding method utilised, for example several or single pass, separate or combined roughing and finishing, throughfeed speed etc. The abrasives and bonds are chosen to fit the ring dimensions, and to give maximum performance, combined with a long wheel life.



## 3M™ Vitrified Conventional Grinding Wheels

3M Product ID	Operation Type	Specification
92VC	Roughing	93DA80/80 H15VPMF601W
	Finishing	93DA80/80 L6V901W 93DA120/120 L6V901W
33VK	Roughing	31A80 L6V301W
	Finishing	31A120 L6V301W
91VY 91VY 91VY 33VB 33VB	Roughing	220NA60 G15V722A 220NA60 H15V722A 220NA80 I15V722A 41A80 H9V722 41A80 I9V722
91VY 91VY 33VB 33VB	Finishing	22NA120 I12V722A 220NA120 J9V722 41A120 I9V722 41A120 K9V722



# Bore Grinding

Internal grinding of inner rings, bore grinding, involves the typical problems of internal grinding.

A relatively small wheel with few cutting edges, a large contact arc and the risk of non-rigidity in the grinding spindle create the demand for a very cool-cutting abrasives. 3M manufactures bore grinding wheels with conventional abrasives as well as vitrified CBN.



## 3M™ Vitrified Conventional Grinding Wheels

3M Product ID	Operation Type	Specification
92VC	Roughing	93DA46/60 F15VPH901W
92VC 93VE	Finishing	93DA120/120 J7V601W 99DA80/80 J7V901W
92VC	Finishing	93DA120/120 J7V601W 93DA120/120 J7V601W
92VA	Finishing	93A80 H8V601W 93A120H8V601W
33VC	Finishing	54A80 H8V604W 54A120 H8V604W

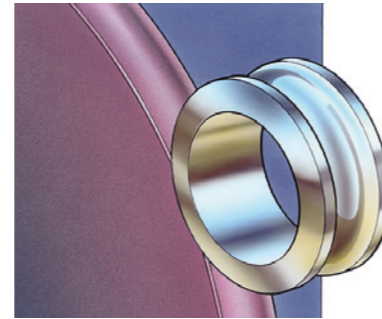
## 3M™ Vitrified CBN Grinding Wheels

3M Product ID	Operation Type	Specification
1PVZ	Roughing	div.
1PVZ	Finishing	div.



# Inner Ring Track Grinding & Finishing

3M supplies raceway grinding wheels with specifications chosen to grind as efficient as possible. They are designed to meet the form and surface finish requirements of the raceway, to the specific machining parameters, and with a maximised dressing interval.



## 3M™ Vitrified Conventional Grinding Wheels

3M Product ID	Operation Type	Specification
92VC	Roughing	93DA80/80 J7V601W 93DA80/80 L6V901W
92VC	Finishing	93DA120/120 J7V601W 93DA120/120 L6V901W
92VC	Large bearing	93DA80/80 H15VPMF601W
92VC	Large bearing	93DA120/120 H15VPMF601W
92VA	Roughing	93A80 J7V601W
92VA	Finishing	93A120 J7V601W
33VC	Roughing	54A80 J7V604W
33VC	Finishing	54A120 J7V604W
91VO	ID Profile	73A100 J9V722
33VB	ID Profile	41A80/3 I9V722

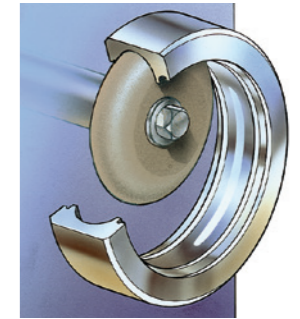
## 3M™ Vitrified CBN Grinding Wheels

3M Product ID	Operation Type	Specification
1PVZ	Roughing	Upon request
1PVZ	Finishing	Upon request



# Outer Ring Track Grinding & Finishing

Outer ring tracks have many different shapes. Consequently the operation types and the tooling solutions vary a lot. The cool-cutting abrasives and bonds of 3M wheels are chosen to give optimum stock removal rate, combined with a high dressing interval and a long wheel life.

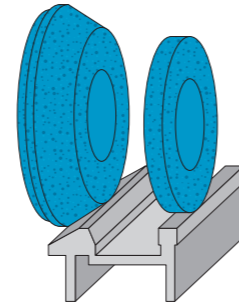


## 3M™ Vitrified Conventional Grinding Wheels

3M Product ID	Operation Type	Specification
92VC	Roughing	93DA80/80 J7V601W
92VC	Finishing	93DA120/120 J7V601W
91VY	Roughing	220NA80/8 H15V722A
92VA	Roughing	93A80 J7V601W
92VA	Finishing	93A120 J7V601W
33VC	Roughing	54A80 J7V604W
33VC	Finishing	54A120 J7V604W

# Linear Guide Rail Grinding

3M supplies high performance of grinding tools to meet tight surface finish and geometrical straightness requirements for linear guide way component which is very challenging grinding operation as the length of component is reaching 4 meters or more.



## 3M™ Vitrified Conventional Grinding Wheels

3M Product ID	Operation Type	Specification
92VC	Rail	93DA80/80 F15VPH601W

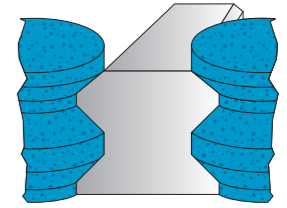
## 3M™ Diamond Rotary Dressers

3M Product ID	Operation Type	Specification
6JGN	Rail	div.
6HMI	Rail	div.



# Linear Guide Carrier/Block Grinding

3M supplies high performance of grinding tools to meet tight surface finish and geometrical straightness requirements for linear guide way component which is very challenging grinding operation as the length of component is reaching 4 meters or more.



## 3M™ Vitrified Conventional Grinding Wheels

3M Product ID	Operation Type	Specification
92VC	Carrier	93DA46/60 F15VPH901W 93DA80/80 J7V601W
93VE	Carrier	99DA 120/120 H8V901W

## 3M™ Vitrified Grinding Wheels

3M Product ID	Operation Type	Specification
1PVZ	Carrier	div.
1PVY	Carrier	div.

## 3M™ Diamond Rotary Dressers

3M Product ID	Operation Type	Specification
6JGN	Rail	div.
6HMI	Rail	div.





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