

CBN | VITRIFIED BOND

CBN grinding tools for bearing rings

Vitrified-bond grinding wheels for ring machining

EHWA offers vitrified-bond CBN grinding wheels for bearing ring machining. Tool design combines abrasive, bond and body with the requirements of the machining surface. Component geometry and machine determine the appropriate design.

Bearing component	Machining surface shown
Inner ring	Bore and raceway
Outer ring	Raceway, ribs and end faces



CBN grinding tools and bearing rings

Process benefits

The EHWA catalogue describes high stock removal rates and lower grinding forces, and reduced mechanical and thermal loading of the workpiece. A suitable design can support short machining times and lower loading of the workpiece and spindle.

Surface finish, cylindricity and dimensional accuracy are central considerations. Grinding wheel and dressing process are coordinated to maintain the required profile and working surface of the wheel throughout machining.

Tool features

Feature	Catalogue designs
Abrasive	CBN
Bond type	Vitrified bond
Body	Ceramic, steel or aluminium
Further designs	With spindle or threaded spindle
Tool design	Based on drawing, machining surface, mounting and process

Body and bond are different tool features. The designs shown provide the basis for selecting a suitable combination for your application.

Catalogue example: bore grinding

Feature	German EHWA catalogue value
Wheel peripheral speed	30-80 m/s
Workpiece stock allowance	Ø 0.1-1.0 mm, diametrical
Dressing stock removal	3-30 µm total
Dressing tool	Rotary dressing tool
Grinding fluid	Oil or emulsion

Source: German EHWA grinding catalogue, page 28. These values describe the application example shown there. The original English bearing catalogue gives partly different stock allowance and dressing values. For your process, source, tool and machine are considered together; the permissible speed is determined by the marking on the specific grinding wheel.

From the example to your tool solution

The following details support the technical assessment of your tool solution:

Area	Your information
Component	Bearing type, ring, drawing and machining surface
Material	Designation, hardness and heat treatment condition
Requirements	Dimensions, form tolerances and surface parameters
Existing process	Allowance, existing surface and tool
Machine	Model, process and tool mounting
Dressing and cooling	Dressing tool, process data and grinding fluid

When stating the allowance, identify the direction of stock removal: for example, diametrical or radial for bores and raceways, or axial for end faces. To assess dressing, provide the total removal, infeed per step and number of dressing steps.

Also state your objective: replacing an existing wheel, improving a surface, or developing machining time and tool life. Start with the information available; open points can be clarified during the discussion.

Your contact

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Please mention "CBN grinding tools for bearing rings" and the relevant machining surface.