Specifications and Models of Grinding Wheels for Ceramic Fuse Inserts

Overview

Paradigm wheels for insert radius and plunge form grinding are available for all common machine wheel sizes including 200mm, 250mm, 350mm, and 400mm diameters in 2A2 and 11A2 wheel shapes.

Key Takeaways

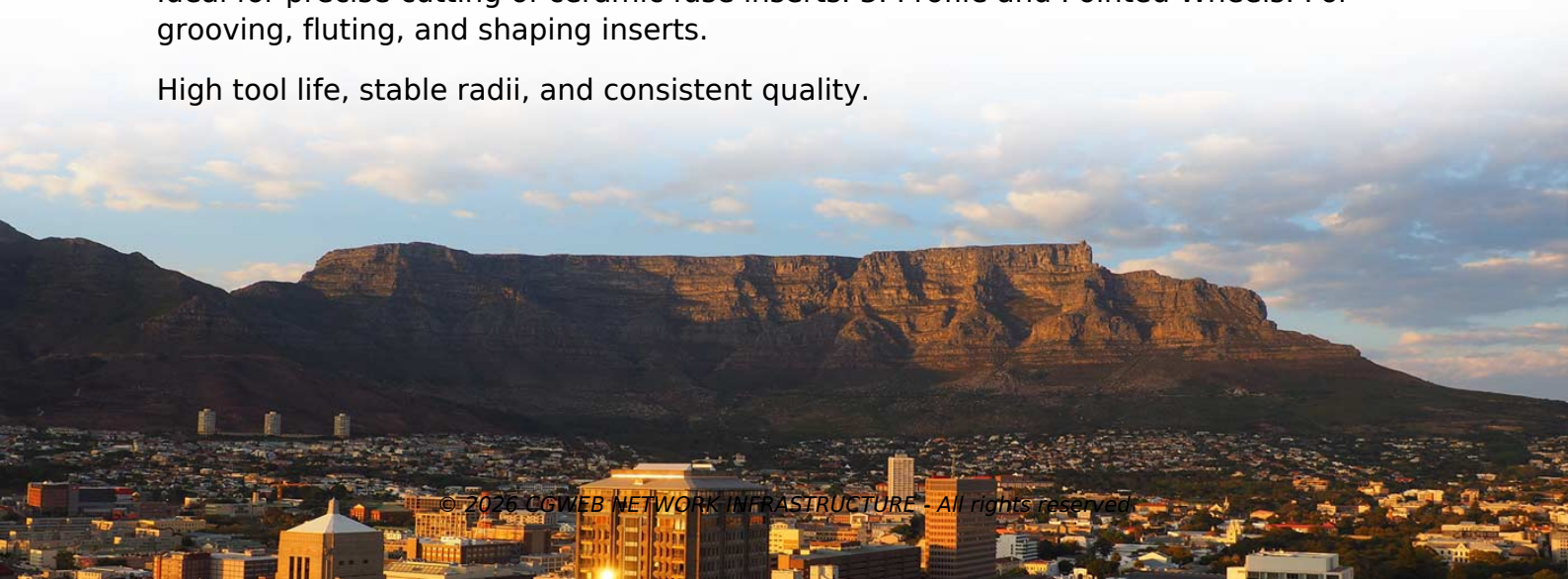
Ceramic fuse inserts are typically ground using high-performance ceramic or diamond grinding wheels with vitrified or resin bonds, available in various shapes, sizes, and grit levels for precision and durability. Types of Grinding Wheels1. Peripheral Grinding Wheels: Used for flat and cylindrical surfaces of ceramic inserts.

Bond types: resin ceramic bond, metal hybrid bond, or resin hybrid bond. Diameter range: 75 mm to 400 mm. Features: low grinding pressure, cool grinding, high stock removal, suitable for CNC creep feed grinding.

2. Cut-off Wheels: Steel body or continuous abrasive layer. Characteristics: free-cutting, thin wheels, wet or dry grinding.

Ideal for precise cutting of ceramic fuse inserts. 3. Profile and Pointed Wheels: For grooving, fluting, and shaping inserts.

High tool life, stable radii, and consistent quality.



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Abrasive Materials

Ceramic Alumina (Al_2O_3): High toughness, suitable for hard ceramics and carbide inserts. Silicon Carbide (SiC): Needle-shaped grit, ideal for fine grinding of ceramics and high-alloy materials. Zirconia Alumina: Strong, wear-resistant, suitable for high-speed grinding.

Diamond or CB

N: For extremely hard ceramic or PCD/PCBN inserts, providing fast stock removal and long life.

Bond Types

Vitrified Bond: High precision, stable shape, suitable for high-speed grinding. Resin Bond: Cooler grinding, high stock removal, suitable for regrinding and CNC applications. Hybrid Bonds: Combine bite and cooling properties for aggressive yet controlled grinding.

Wheel Shapes and Sizes

Shapes: Parallel, cup, saucer, column, bowl, peach, trapezoid, concave (single/double-sided), cuboid, cone, and custom shapes. Diameter: 10 mm to 1500 mm depending on application. Grit Size: P36 to 3000, allowing coarse to ultra-fine finishes.

Colors: Grey, red, blue, pink, black, yellow, white, khaki, indicating different abrasive types or bonds.

Applications

Grinding of ceramic fuse inserts, carbide tools, PCD/PCBN inserts. Precision operations: coordinate grinding, profile grinding, double-sided face grinding, honing. Industries: automotive, aerospace, electronics, home appliances, hardware, and stone processing.

Key Considerations

Thermal Management: Ceramic grinding wheels generate heat; resin or hybrid bonds help reduce thermal stress. Brittleness: Ceramic wheels are hard but brittle; low-speed operation is recommended for safety. Custom Solutions: Many manufacturers offer custom-shaped wheels for specific insert geometries or high-precision requirements.

By selecting the appropriate abrasive type, bond, grit size, and wheel shape, manufacturers can achieve precise, efficient, and durable grinding of ceramic fuse inserts.

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Article Content

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Ceramic Grinding Wheels 101: Types, Functions, and

Looking for a ceramic grinding wheel? Find out everything you need to know about ceramic grinding wheels, including types, uses, and benefits, in this

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SG (Sol Gel) Grinding Wheel Grinding wheel made of ceramic abrasive with has a higher durability and longer life, which is 5-10 times than the grinding wheel

Grinding Wheel Grit Chart | Find the Perfect Match

Learn how to select the right grinding wheel with our complete grit chart. Compare wheel types, grit, grades, and bonds for stainless steel, cast iron,

Grinding and Cutting Wheels Guide

Grinding and Cutoff Wheels Technical Information: Types and Selection Grinding and cutoff wheels are used in industrial applications to remove, shape, and finish materials. Available in various sizes,

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Grinding Wheel Types & Different Specifications

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The grinding wheel is the most essential attachment in abrasive machining, used to achieve high-precision cuts, specific geometries, and fine surface finishes. A wheel is an engineered

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