

# **CROSS BEATER MILL**

The Cross Beater Mill is a robust and versatile machine designed for coarse and fine size reduction in either batch or continuous operations. Capable of processing medium-hard and brittle materials with a Mohs hardness of up to 6, this mill is an essential tool for laboratories, pilot plants, and production facilities. With its adjustable speed settings, wide range of accessories, and optional cyclone unit for improved material discharge, the Cross Beater Mill is the ideal solution for applications across diverse industries.



**VTR-18-001**



# Vector Cross Beater Mill

## Versatile Performance

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### Versatile Performance

The Vector Cross Beater Mill offers a wide speed range of 500–4,000 rpm, making it adaptable for various material types and applications. The combination of impact, friction, and shearing forces ensures effective comminution for both coarse and fine grinding, delivering final fineness of <math><100\ \mu\text{m}</math> depending on the feed material and settings.

### High Throughput and Efficiency

With a throughput of  $\geq 30$  kg/h, the Cross Beater Mill is capable of processing larger sample quantities quickly. An optional cyclone separator enhances material discharge, minimizes thermal buildup, and prevents cross-contamination.

### Easy to Use and Maintain

The grinding insert, cross beater, and sieves are easily exchangeable, allowing for quick cleaning and minimal downtime. A central locking device ensures secure operation, while an electric motor brake provides safety during use.

### Comprehensive Accessories

The Cross Beater Mill supports a variety of collection and feeding systems, rotors, and sieves, with trapezoidal and round hole sizes ranging from 0.12 mm to 10 mm. The optional cyclone separator and 30L collection vessel make it suitable for processing larger sample batches.

### Durable Construction

The grinding chamber and inserts are available in materials like hardened steel, stainless steel, tungsten carbide, and zirconium oxide, ensuring resistance to wear and contamination for heavy-duty applications.

The Cross Beater Mill is suitable for a diverse range of industries, including agriculture, geology, mining, ceramics, plastics, and metallurgy. It efficiently processes materials such as soil, seeds, ores, coal, slag, ceramics, cement clinker, gypsum, glass, and granite, making it an invaluable tool for sample preparation and material evaluation in both research and industrial settings.

### Functional Principle

The Cross Beater Mill employs **impact grinding** as its primary size reduction principle. Feed material enters through the hopper into the grinding chamber, where the rotating cross beater grinds it between the baffle plates and toothed grinding inserts. Once reduced to the desired fineness, the material passes through the bottom sieve into the collecting receptacle.

The optional **cyclone separator** further enhances the system's capabilities by improving material cooling and discharge efficiency, particularly for fine or heat-sensitive samples.

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## At a Glance

- Grinding insert and cross beater made of durable cast iron or stainless steel.
- High throughput of up to 80 L/h with easy-to-clean components.
- Batch or continuous operation for flexibility in various applications.
- Designed for agriculture, geology, mining, ceramics, plastics, and metallurgy.

The Cross Beater Mill is the ultimate solution for laboratories, pilot plants, and industrial production facilities requiring precise, efficient, and versatile size reduction. With advanced customization options and durable construction, it is built to handle the toughest grinding tasks across multiple industries.

## Key Features

- **Versatile Speed Control:** Adjustable speed from 500 to 4,000 rpm, allowing optimization for different materials and applications.
- **Efficient Size Reduction:** Uses impact, friction, and shearing forces to achieve final fineness of <math><100\ \mu\text{m}</math>, suitable for both coarse and fine grinding.
- **High Throughput Capacity:** Processes  $\geq 30$  kg/h, ensuring rapid material preparation for research and industrial use.
- **Interchangeable Grinding Tools:** Available in hardened steel, stainless steel, tungsten carbide, and zirconium oxide, offering durability and contamination resistance.
- **Wide Range of Sieves:** Supports trapezoidal and round hole sizes from 0.12 mm to 10 mm\*\*, allowing flexibility for different particle sizes.
- **Optional Cyclone Separator:** Enhances material discharge, prevents heat buildup, and ensures efficient processing of fine or electrostatically charged materials.
- **Easy Maintenance:** Quickly exchangeable grinding inserts and sieves, along with a \*\*central locking device and electric motor brake for user safety.
- **Batch and Continuous Operation:** Suitable for diverse sample processing needs, from small laboratory batches to larger industrial-scale applications.

## Industries

- **Agriculture:** Grinding soil, seeds, and feed samples for quality analysis.
- **Geology and Mining:** Preparation of ore, coal, slag, and rock samples for mineralogical and chemical analysis.
- **Ceramics and Glass:** Pulverization of clays, cement clinker, and refractory materials for industrial research.
- **Plastics and Polymers:** Processing of polymer compounds and additives for quality control.
- **Metallurgy:** Sample preparation for metallurgical testing and material characterization.

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## *TECHNICAL SPECIFICATION*

Specification	Details
Feed Material Size	<25 mm
Final Fineness	<100 $\mu\text{m}$
Speed Range	500–4,000 rpm
Grinding Tools	Hardened steel, stainless steel, cast iron, zirconium oxide, tungsten carbide
Sieve Sizes	0.12–10 mm
Collector Capacity	5L / Optional: 30L
Drive Power	1.5 kW
Electrical Supply	220V, 50 Hz
Standards	CE