

DM 200, DM 400 – Grinding Even the Hardest Products

The Disc Mills DM 200 and DM 400 process large batches of hard and abrasive materials and are also suitable for continuous operation. Their rugged design permits use under rough conditions in laboratories and pilot plants as well as in-line for quality control of raw materials. The disc mills achieve an average final fineness of approximately 50 microns, often in a single grinding process. The comfort model DM 400 is particularly convenient and safe to handle. A major advantage of the mill is the large sample feed size, with an edge length of up to 20 mm.

The gap between the grinding discs can be adjusted via a scale with an accuracy of 0.05 mm (DM 400) resp. 0.1 mm (DM 200) which ensures reproducible grinding results. Operation of the RETSCH Disc Mills is very easy. When the grinding process is finished, the hinged grinding chamber can be opened completely, providing easy access for cleaning and changing the grinding discs. The DM 200 and DM 400 may be equipped with an optional connecting piece for a dust extraction.

20 mm
50 µm*



Disc Mill DM 400

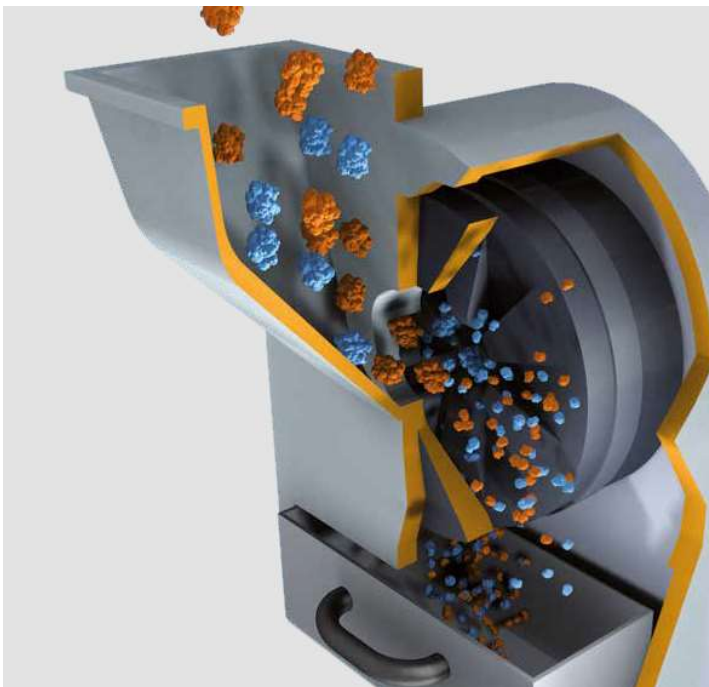
Benefits

- Short grinding times, high final fineness $d_{90} < 50 \mu\text{m}^*$
- Material feed size up to 20 mm
- Accurate gap setting for reproducible grinding results
- Grinding discs made from 4 different materials, with long working life
- Easy access to grinding chamber facilitates cleaning
- Connector for dust extraction
- Maintenance-free 3-phase geared motor
- Combination of DM 200 with Jaw Crusher BB 200 permits pre- and fine grinding in one step

www.retsch.com/dm

Disc Mill Technology:

The feed material falls through the feed hopper into the dustproof chamber and is fed centrally between two vertical grinding discs. A moving grinding disc rotates against a fixed one and draws in the feed material. The necessary size reduction effects are generated by **pressure and frictional forces**. The progressively arranged teeth of the grinding disc first subject the sample to preliminary crushing; centrifugal force then moves it to the outer regions of the grinding discs where fine grinding takes place. The ground sample exits through the grinding gap and is collected in a receptacle. The gap width between the grinding discs is continuously adjustable.



Accessories and Options

A set of grinding discs consists of a fixed and a rotating disc. The material should be selected so that contamination of the sample is avoided and abrasion minimized. 4 different materials are available.

- **Hardened steel**
suitable for standard applications, e.g. minerals with Mohs hardness 3–6.
- **Manganese steel**
suitable for standard applications. The structure of manganese steel is compacted by pressure, thus getting harder with usage (strain hardening).
- **Tungsten carbide (WC)**
suitable for extremely hard products with Mohs hardness > 6.
- **Zirconium oxide**
suitable for heavy-metal-free grinding, e.g. of dental ceramics

After a long period of use the grinding discs will show signs of wear. However, before they need to be replaced, the opposite side of the teeth can also be used by changing the direction of rotation of the motor. This considerably extends the working life of the grinding discs.



Disc Mills at a Glance



Application	preliminary and fine comminution
Fields of application	chemistry / plastics, construction materials, engineering / electronics, geology / metallurgy, glass / ceramics
Feed material	medium-hard, hard, brittle

Performance data

Feed size*	< 20 mm	< 20 mm
Final fineness*	$d_{90} < 100 \mu\text{m}$	$d_{90} < 50 \mu\text{m}$
Hopper volume/Throughput	2.5 l / up to 150 kg/h	2.5 l / up to 150 kg/h
Gap width setting	continuous, 0.1–5 mm	continuous, 0.05–12 mm
Grinding disc speed at 50 Hz	440 min ⁻¹	440 min ⁻¹

Technical data

Drive power	1,500 W	1,500 W
W x H x D	approx. 440 x 400 x 870 mm	approx. 520 x 630 x 1050 mm
Net weight	approx. 140 kg	approx. 240 kg
More information on	www.retsch.com/dm200	www.retsch.com/dm400

*depending on feed material and instrument configuration

Typical Sample Materials

Disc mills are suitable for grinding very hard materials like bauxite, dental ceramics, ores, gypsum, glass, dried soil, sewage sludge, coal, coke, quartz, slag, sintered ceramics, steatite, etc.



Application example:
Clinker