



PULVERISETTE 1

premium line

Extra powerful *premium* pre-crushing

- Up to 3 kW drive power for processing higher throughput in shorter times
- Feed size up to 95 mm, final fineness 0.3 – 15 mm
- Clean Design for extra-fast cleaning
- Zero-point and grinding gap adjustment with millimetre accuracy
- Extremely robust, for even ferrous alloys
- Extra low noise and dust-free operation
- Variable crushing jaw kinematics for higher final fineness

The most powerful FRITSCH Jaw Crusher ever: up to 3 kW drive power ensure an exceptionally high throughput during pre-crushing of hard or very hard, brittle materials. For easy cleaning, the crushing jaws can be completely swivelled out or removed. The integrated dust exhaust channels provide optimal working conditions. And with two models, you can choose the Jaw Crusher that is perfect for your feed size and your sample quantity.

The powerful comminution of the sample takes place in the Jaw Crusher under high pressure between one fixed and one movable crushing jaw in an enclosed grinding chamber. The **gap adjustment** is defined with **millimetre accuracy** from the outside, simply by adjusting the distance between the crushing jaws. The ground sample automatically falls downward – into a drawer for batchwise comminution or via a chute into a larger collection container for continuous operation or directly into a FRITSCH Disk Mill PULVERISETTE 13 *premium line* for further comminution.

Extra robust with a solid steel frame designed for even the most demanding applications.

Extra powerful motor with up to 3 kW drive power. Your advantage: faster processing with significantly higher throughput in shorter times.

Perfect dust exhaust with integrated channels for dust-free operation – simply connect the dust exhaust system and control it directly using the start and stop button on the instrument. The button lights up in green when the dust exhaust system is ready for operation.

Outstanding noise reduction due to side walls insulated with foam for significantly quieter operation.

Especially safe as drawer and grinding chamber lid firmly lock automatically – the instrument only starts up when these are locked closed.



Funnel folds away completely for large sample quantities – easy to access and easy to fill.

Visible grinding chamber with extremely heavy-duty plexiglas cover for fast visual inspection of the grinding process.

FRITSCH premium advantage: Automatic short change of the direction of rotation in order to quickly free up any blockages during comminution.

FRITSCH premium advantage: Automatic adjustment of the correct direction of rotation for optimal results for the three-phase versions.

FRITSCH premium advantage: Easy comminution of hardest ferrous alloys

Due to higher grinding pressure between the jaws the PULVERISETTE 1 achieves comminution of even the hardest ferrous alloys in even shorter times.



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Especially easy *premium* work



Easy cleaning: remove fixed crushing jaw, swivel movable crushing jaw upwards. For a complete freely accessible grinding chamber.

As with all of the instruments in the FRITSCH *premium line*, we've put a great deal of thought into how to make your daily work even easier and time-saving. With two new FRITSCH solutions for precise zero-point and grinding gap adjustment, unique kinematics and crushing jaws that are especially easy to exchange!

FRITSCH *premium* advantage: Completely accessible grinding chamber

Only the PULVERISETTE 1 *premium line* has the fixed crushing jaw mounted in a guide and can be removed with a single motion. Also the movable crushing jaw can be swivelled up and locked there. Your advantage: A completely accessible grinding chamber for fast, efficient and safe cleaning. The **Clean Design** of the grinding chamber enables due to its smooth surfaces an easy and thorough cleaning to prevent cross-contamination.

FRITSCH *premium* advantage: Progressive gap adjustment

Precision gap adjustment is only available from FRITSCH: On the PULVERISETTE 1 *premium line*, the zero-point adjustment which can be calibrated, is connected with a progressive grinding gap adjustment. With a single motion, the double eccentric can be used to precisely set the grinding gap in millimetre steps – and for the finer particle range, in correspondingly smaller steps.

FRITSCH *premium* advantage: Zero-point adjustment can be calibrated

For regularly compensating wear on the fixed and movable crushing jaws and for easy precise re-adjustment after turning or replacing the crushing jaws.





FRITSCH premium advantage: Lateral support walls are especially easy to replace

To remove the lateral support walls mounted in the guide of the PULVERISSETTE 1 *premium line*, simply loosen the screws and pull the support walls up and out of the guide – that's it!



FRITSCH premium advantage: Unique kinematics with fast change

Only the FRITSCH Jaw Crusher PULVERISSETTE 1 *premium line* offers easy, fast and convenient change of the kinematics without altering the gap adjustment. Simply select between the settings specified on the instrument "Eccentricity normal" provides the fastest possible comminution due to the approximately circular oscillation of the crushing jaws. Choose "Eccentricity small" to achieve a narrow particle size range through up and down shearing motions. As a result, the PULVERISSETTE 1 *premium line* can be adapted to the breaking characteristics of the respective sample with one simple motion.

FRITSCH premium advantage: Both crushing jaws are especially easy to remove

To turn around or replace the fixed crushing jaw of the PULVERISSETTE 1 *premium line*, simply pull out the retaining bolt; the jaw is held securely for simple removal. Now, take the turned around or replacement crushing jaw and slide it back into the guide as far as it will go and push-in the retaining bolt – that's it! As a result of its fastening mechanism, the movable crushing jaw can be just as quickly and safely turned around or replaced: Simply lift it, fix it horizontally, and remove it.

Your advantage: double service life due to simple turning of both of the crushing jaws – and anytime fast and simple exchange of the crushing jaws.



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METAL-FREE PRE-CRUSHING

For absolute protection against metal contamination, for example for crushing dental ceramics, select crushing jaws made of zirconium oxide and lateral support walls made of polyamide, zirconium oxide or aluminium and a special polyamide-coated funnel and drawer.

Select the right material combination!

The crushing jaws and support walls of the FRITSCH Jaw Crusher PULVERISETTE 1 *premium line* are available in 6 different materials to prevent undesired contamination due to material abrasion. The standard version is equipped with fixed and movable crushing jaws as well as lateral support walls made of tempered steel. Normally, crushing jaws and support walls of the same material are used. Since the lateral support walls are subject to low stresses, however, the standard lateral support walls made of tempered steel can often be retained.

MATERIAL DATA FOR CRUSHING JAWS AND SUPPORT WALLS

Material	Main component of the material*	Abrasion resistance	Use for material to be ground
Tempered steel	Fe – Cr	Good	Brittle, hard samples
Stainless steel	Fe – Cr – Ni	Fairly good	Medium-hard, brittle samples
Chromium-free steel	Fe	Good	Medium-hard samples
Manganese steel	Fe – Mn	Good	Hard, brittle samples
Hardmetal tungsten carbide	WC	Very good	Very hard, abrasive samples
Zirconium oxide ¹⁾	ZrO ₂	Good	Medium-hard, brittle samples, metal-free grinding
Aluminium	Al	Fairly good	Brittle samples, metal-free grinding
Polyamide	PA	Fairly good	Metal-free grinding

* At www.fritsch.de you can find the corresponding element analyses with detailed information about the materials.

¹⁾ Crushing jaws of zirconium oxide are only suitable for crushing ceramic materials, minerals, etc. and never for hard-tough samples, such as metals.

RoHS (restriction of the use of certain hazardous substances)

For the comminution of RoHS samples – such as for the XRF analysis – crushing jaws and support walls made of chromium-free steel are particularly well suited.

Metal-free pre-crushing

For complete metal-free pre-crushing of medium-hard, brittle samples, for example in the ceramics industry, we can equip your PULVERISETTE 1 *premium line* with crushing jaws made of zirconium oxide, lateral support walls made of polyamide, zirconium oxide or aluminium and a special polyamide-coated funnel and drawer. (Other coatings available on request.)

Steel crushing jaws with a grooved surface

If desired, we can equip your PULVERISETTE 1 *premium line* model II with fixed and movable crushing jaws in steel with a lengthwise grooved surface. These have a different effect on the particle shape and particle size distribution. The structured surface ensures that the length-to-width ratio of the ground sample is nearly the same. At the same time, the positioning of the crushing jaws makes it possible to achieve a higher share of fine particles.



TECHNICAL DATA

Electrical details

Model I, 400 V/3~, 50-60 Hz, 1450 watt
 Model I, 230 V/1~, 50-60 Hz, 1570 watt
 Model I, 115 V/1~, 50-60 Hz, 1900 watt
 Model II, 400 V/3~, 50-60 Hz, 3540 watt

Motor shaft power in accordance with VDE 0530, EN 60034

Model I, 1.1 kW
 Model II, 3 kW

Weight

Model I, net 305 kg, gross 340 kg
 Model II, net 320 kg, gross 355 kg

Dimensions w x d x h

Model I and model II, bench top instrument 55 x 90 x 106 cm

Packaging w x d x h

Model I and model II, wooden case 60 x 105 x 100 cm

Emissions value of workplace

according to DIN EN ISO 3746:2005

approx. 83 dB(A)

(depending on the material to be crushed)

Order no.	400 V/3~	230 V/1~	115 V/1~
Model I	01.1030.00	01.1020.00	01.1010.00
Model II	01.2030.00		



Comminution of ferrous alloys with the Jaw Crusher PULVERISETTE 1 premium line – 6.5 mm gap width

APPLICATION EXAMPLES

Mining and metallurgy	Niobium-titanium, ferrovanadium, chrome vanadium, tungsten carbide, ores, coal, slag, coke
Chemistry	Wide variety of raw materials
Geology and mineralogy	Granite, basalt, barite, silicates and other rocks
Glass industry	Frits, glass, raw materials
Ceramics industry	Dental ceramics, steatite, fire-clay, sintered ceramics, electrotechnical porcelain
Rocks and soils	Bauxite, clinker, quartz, concrete

FACTS AND ADVANTAGES

Model I resp. model II

Working principle	Pressure
Bearings	Needle and spherical roller bearings
Standard equipment	Instrument with fixed and movable crushing jaws and lateral support walls made of tempered steel
Optimal for material type	Hard, medium-hard, brittle
Max. feed size (depending on the material)	60 mm resp. 95 mm
Min. sample quantity	20 ml
Max. continuous throughput (depending on the material and gap width)	140 kg/h resp. 250 kg/h
Final fineness	0.3–15 mm
Feeding	Batchwise/continuous
Grinding parts	Fixed and movable crushing jaws
Eccentric oscillations	308 movements/min
Conformity	CE mark
Guarantee	2 years



PULVERISETTE 1 / 13

premium line

premium combination for integrated pre- and fine-grinding

- Powerful continuous pre- and fine-grinding
- Compact in a single instrument with integrated Riffle Sample Splitter
- High throughput for production of small amounts
- Maximum feed size 95 mm
- Minimum final fineness 0.05 mm

For especially fast continuous *premium* pre- and fine-grinding of large quantities of coarse material, the combination of the Jaw Crusher PULVERISETTE 1 *premium line* and the Disk Mill PULVERISETTE 13 *premium line* is the ideal solution. Together, they form an efficient, heavy-duty, high-performance grinding instrument with integrated Riffle Sample Splitter. This gives you the full range of opportunities for optimal sample preparation with a feed size of up to 95 mm and final fineness of down to 0.05 mm – all in a single step.

Select the appropriate grinding parts and the desired configuration from the options available for the PULVERISETTE 1 and 13 *premium line* on pages 4–9 and 10–15.

Integrated representative sample division

After the comminution in the Jaw Crusher PULVERISETTE 1 *premium line*, the ground material falls directly into the Riffle Sample Splitter integrated in the collecting vessel and is automatically divided into representative samples. The division ratio can be set as desired, from 1:1 to 1:6.

METAL-FREE PRE- AND FINE-GRINDING

The combined FRITSCH *premium* high-performance grinding instrument can also be configured for completely metal-free pre- and fine-grinding (see pages 8 and 14).



Pre- and fine-grinding, with granite as an example

- ① Size of the material filled into the **PULVERISETTE 1**
Feed size up to 95 mm
- ② Intermediate result of the **PULVERISETTE 1**
Final fineness of down to 1 mm
- ③ Final result of the **PULVERISETTE 13**
Final fineness of down to 50 µm



APPLICATION EXAMPLES

Mining and metallurgy	Ores, coal, coke, slags, niobium-titanium, ferrovanadium, chrome vanadium, tungsten carbide
Geology and mineralogy	Granite, basalt, barite, silicates and other rocks
Glass industry	Frits, glass, raw materials
Ceramics industry	Steatite, fire-clay, sintered ceramics, electrotechnical porcelain, dental ceramics
Rocks and soils	Bauxite, slags, quartz, clinker, gypsum, chalk