pulverisette 1

Jaw Crusher

- Fast pre-crushing of laboratory samples
- Suitable for hard to softbrittle materials
- Iron-free crushing

pre-crushing

sample size reduction preparation for your lab



Jaw Crusher

For intermittent or continuous pre-crushing of coarse materials.

The maximum feed size is approximately 60 mm (model I) or 95 mm (model II). The maximum throughput is 140 kg/h (model I) or 200 kg/h (model II). The optimum fineness depends on the gap setting which is approximately

d₅₀ = 15 mm (maximum gap width)

 $d_{50} = 1 \text{ mm}$ (minimum gap width)

Mining and metallurgy

Niobium-titanium, ferrovanadium, chrome vanadium, tungsten carbide, ores, coal, slag, coke

Chemicals

Wide variety of various raw materials available in the whole spectrum of the chemical industry

Geology and mineralogy Rocks, granite, basalt, barite, silicates

Glass industry Frits, glass, raw materials

Ceramics Steatite, fire-clay, sintered ceramics, electroporcelain

Construction materials Bauxite, clinker, quartz, concrete



pre-crushing sample Jaw Crusher







working principle



gap width setting

adjustment of the eccentric oscillations of the motor

Method of operation

The laboratory sample is crushed under high pressure between two crushing jaws in an enclosed chamber.

A fixed vertical crushing jaw is located between two lateral support walls. A second cam-driven crushing jaw draws the sample between the jaws and presses it against the fixed crushing jaw. The sample pieces are crushed due to the very high pressure between the two jaws.

The crushed material leaves the machine through the gap between the jaws which can be adjusted from outside.

When a discrete sample is processed it can be collected in the drawer supplied. In the case of continuous operation it can be fed via a chute for further processing, such as further comminution with a pulverisette 13 disk mill.

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Jaw Crusher

Advantages

- Final fineness down to d₅₀ < 1 mm</p>
- Very fast, uniform comminution
- Almost loss-free grinding
- Closed grinding chamber with extraction part for dust free operation
- Easy cleaning, minimum contamination between samples
- Analytically pure grinding materials for contamination-free grinding
- 5 different materials for crushing jaws and support walls
- Compact design
- High power 1.1 or 2.2 kW overload protected motor, heavy duty bearings
- Can be combined with pulverisette 13 disk mill
- Safety tested (CE mark)
- 2 year guarantee

Design Characteristics

- Totally enclosed crushing chamber
- Adaptable crushing geometry
- 10 stage gap setting adjustment
- Crushing jaws easily accessed and replaced
- No accessible, moving parts fully interlocked-casing
- Maintenance-free drive motor
- Flywheel of high mass
- Recyclable, compact gray cast-iron housing

intermittent continuous pre-crushing

Jaw Crusher pulverisette 1





grinding chamber

Accessories

Crushing jaws and support walls

The crushing jaws and support walls are available in 5 different materials to ensure that contamination of the samples through abrasion of the grinding parts is avoided during processing.

Normally, the crushing jaws and support walls should be of the same material, but if the lateral walls are not subjected to any great load, it is possible to retain the tempered steel supports which are supplied as standard.

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Material	Density	Abrasion	Material to
	g/cm ³	resistance	be ground
Tempered steel 11-12 % Cr	7.9	good	hard, brittle samples
Stainless steel 16.5-18.5 % Cr + 10.5-13.5 % Ni	7.8	fairly good	medium-hard, brittle samples
Manganese steel 12-13 % Mn	7.9-8	good	hard, brittle samples
Hardmetal tungsten carbide 91 % WC + 9 % Co	14.8	extremely good	hard, abrasive samples
Zirconium oxide * 94.8 % ZrO2	5.7	very good	abrasive, medium-hard samples, for iron- free grinding

* zirconium oxide crushing jaws are only suitable for crushing ceramic materials etc., not for metals at all.

Jaw Crusher

Special Accessories

Equipment for iron-free pre-crushing

A conversion kit for iron-free pre-crushing of mediumhard, brittle materials can be supplied which comprises:

- Crushing jaws of zirconium oxide
- Support walls and crushing jaw holders of special aluminium
- Polyamide funnel

Dust extraction with dust exhaust system

For sucking off fine dust developed during in the grinding process in the top of the grinding chamber. The dust exhaust system can also be used for the cleaning of the grinding parts.



A mounting rack and chute in combination with the Jaw Crusher pulverisette 1 and the Disk Mill pulverisette 13 make it possible to grind 95 mm feed material down to a final product fineness of 100 μ m in a single process. Continuous operation is also possible.

Continuous operation

With mounting rack and delivery chute the jaw crusher pulverisette 1 can be used for continuous operation.



pulverisette 1 in combination with pulverisette 13

fine grinding preparation pulverisette 1



gap setting and connection for dust exhaust system

Jaw Crusher pulverisette 1



Technical data

	Model I	Model II
working principle	pressure	pressure
funnel opening	65 x 65 mm	100 x 100 mm
max. feed size (depending on the material)	approx. 60 mm	approx. 95 mm
min. sample quantity	20 ml	20 ml
max. continuous throughput	140 kg/h	200 kg/h
gap width/final fineness	1 - 15 mm	1 - 15 mm
standard equipment	crushing jaws and lateral support walls of tempered steel	crushing jaws and lateral support walls of tempered steel
additional materials of the grinding parts	stainless steel, manganese steel, hardmetal tungsten carbide, zirconium oxide	stainless steel, manganese steel, hardmetal tungsten carbide, zirconium oxide
eccentric oscillations	308/min	308/min
bearings	needle and spherical roller bearings	needle and spherical roller bearings
electrical details	400 V/3~, 50-60 Hz, 1450 watt 230 V/1~, 50-60 Hz, 1570 watt 115 V/1~, 50-60 Hz, 1900 watt	400 V/3~, 50-60 Hz, 2780 watt
motor-shaft-power according to VDE 0530, EN 60034	1.1 kW	2.2 kW
weight	net: 177 kg, gross: 202 kg	net: 205 kg, gross: 230 kg
dimensions w x d x h	table instrument: 40 x 80 x 80 cm	table instrument: 40 x 80 x 80 cm
packing details	case: 56 x 90 x 87 cm	case: 56 x 90 x 87 cm

Special Accessories

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Order-No.	Description
04 5 400 00	Accessories for "iron-free" pre-crushing for model I
01.5400.00	conversion kit with crushing jaws made of zirconium oxide*
	Accessories for "iron-free" pre-crushing for model II
01.7400.00	conversion kit with crushing jaws made of zirconium oxide*
	Accessories for model I + II
	Dust Exhaust System
43.9020.00	dust exhaust system for 230 V/1~, 50-60 Hz, 1000 watt
43.9530.00	set dust filters for exhauster (set = 5 pieces)
	For continuous crushing from 95 mm to 0.1 mm in a single process and for continuous operation
43.5100.00	mounting rack for combined use of pulverisette 1 with the Disk Mill pulverisette 13 and for continuous operation. Detailed brochure of the Disk Mill pulverisette 13 available on request.

* Zirconium oxide crushing jaws are only suitable for crushing ceramic materials etc., not for metals at all.

pulverisette 1

Ordering data

Order no.	Description
	Jaw Crusher pulverisette 1 including fixed and movable crushing jaw and lateral support walls made of tempered steel * included in the basic price of the machine
01.5030.00	model I , for 400 V/3~, 50-60 Hz, 1450 watt Attention: The pulverisette 1 with voltage of ",3/~" can <u>only</u> be operated on a three phase supply network!
01.5020.00	model I. for 230 V/1~, 50-60 Hz, 1570 watt
01.5010.00	model I. for 115 V/1~. 50-60 Hz. 1900 watt
01.7030.00	model II , for 400 V/3~, 50-60 Hz, 2780 watt Attention: The pulverisette 1 with voltage of ",3/~" can <u>only</u> be operated on a three phase supply network! Other voltages on request.
	Accessories for model I
	Crushing jaws
43.0010.09*	fixed crushing jaw made of tempered steel
43.0020.09*	movable crushing jaw made of tempered steel
43.0030.10	fixed crushing jaw made of stainless steel
43.0040.10	movable crushing jaw made of stainless steel
43.0130.23	fixed crushing jaw made of manganese steel
43.0140.23	movable crushing jaw made of manganese steel
43.0050.08	fixed crushing jaw made of hardmetal tungsten carbide
43.0060.08	movable crushing jaw made of hardmetal tungsten carbide
43.0100.27	fixed crushing jaw made of zirconium oxide
43.0110.27	movable crushing jaw made of zirconium oxide
	Lateral support walls
43.0070.09*	1 pair of lateral support walls made of tempered steel
43.0080.10	1 pair of lateral support walls made of stainless steel
43.0090.08	1 pair of lateral support walls made of hardmetal tungsten carbide
	Accessories for model II
	Crushing jaws
43.3010.09*	fixed crushing jaw made of tempered steel
43.3020.09*	movable crushing jaw made of tempered steel
43.3030.10	fixed crushing jaw made of stainless steel
43.3040.10	movable crushing jaw made of stainless steel
43.3130.23	fixed crushing jaw made of manganese steel
43.3140.23	movable crushing jaw made of manganese steel
43.3050.08	fixed crushing jaw made of hardmetal tungsten carbide
43.3060.08	movable crushing jaw made of hardmetal tungsten carbide
43.3100.27	fixed crushing jaw made of zirconium oxide
43.3110.27	movable crushing jaw made of zirconium oxide
	Lateral support walls
43.3070.09*	1 pair of lateral support walls made of tempered steel
43.3080.10	1 pair of lateral support walls made of stainless steel
43.3090.08	1 pair of lateral support walls made of hardmetal tungsten carbide



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