



SIEBTECHNIK TEMA



Jaw crushers and roller mills

Crushing brittle materials

Jaw crushers

Jaw crushers are used for coarse grinding brittle, medium-hard to hard materials up to a Mohs' hardness of approx. 8.5. Here reduction ratios of up to 1:100 are possible depending on the actual model concerned.

Comminution in the jaw crusher takes place in a wedge-shaped crushing chamber between a fixed and flexible crushing jaw. In the upper suspension, the flexible crushing jaw is driven via an eccentric shaft and supported underneath by an infinitely lockable eccentric shaft. This special geometry enables the crushing jaw to execute an elliptically rotary movement, both in the upper suspension, as well as at the discharge opening. As an upshot of this sequence of movements, the crushing chamber is reduced in size with each rotation, which leads to material comminution, but enlarged as well, so that the material is loosened up and can slide down.

The crushing chamber's wedge shape and the lift specified by the eccentric shaft facilitate the material sliding deeper down into the crushing chamber with each rotation until it can be crushed to conform to the opening set.

At the same time, the set-up of the flexible crushing jaw makes a high throughput rate and high attainable fineness of the finished product possible, while this set-up – apart from the design - is dependent on the size of the discharge opening set on the crusher and the size reduction behaviour of the crushed material.

The crushing jaws are executed by us in two versions: In a laboratory model with integrated control system, feeding funnel and collecting tank, and a version for installation in plants. Omitted from this latter version are the feeding funnel, collecting tank and the control system.



EB 200 x 125



Crushing of Ferro-Alloy, feed and final-product

The following features are of special merit:

- Fixed crushing jaw designed as a door, so that this door can be opened without tools, and fast and easily controllable cleaning of the crushing chamber is possible.
- Reduction ratios of 1:100 and more, with fineness of the finished products of $d_{85} < 2$ mm, are possible depending on the particular type concerned.
- The infinitely variable crushing opening can be easily read off the scale attached to the housing and facilitates zero setting depending on the wear of the crushing jaws.
- Crushing jaws that can be turned through 180°, enabling further utilisation in the principal wear area of the smallest opening, and thus almost halving the costs of parts subject to wear.
- Product contamination is reduced by sealed bearings lubricated for life for Types EB 50x40 to EB 200x125.
- Tamper-proof feeding funnel with connection flange for a dedusting plant provided by the customer.
- The laboratory version is designed as a ready-for-connection model with a control system integrated into the housing. This also contains a safety monitor for the sample collecting box.
- Crushing jaws are available in high-carbon steel casting, tungsten carbide, zirconium oxide or stainless steel.

Jaw crushers



EB 300 x 250 - L



Jaw crusher		EB 50x40-L	EB 100x80-L	EB 150x100-L	EB 200x125-L	EB 300x250-L
Dimensions (W x H x D)	mm	325 x 630 x 620	470 x 951 x 773	615 x 1150 x 938	663 x 1340 x 1192	972 x 1874 x 1716
Weight	kg	95	250	380	795	2255
Motor	kW	1.1	2.2	4	7.5	18.5
Feed Opening (W x D)	mm	50 x 40	100 x 80	150 x 100	200 x 125	300 x 250
Discharge opening	mm	0 - 10	0 - 12	0 - 15	0 - 28	0 - 30
Min. lift in the discharge opening	mm	0.5	1.2	1.4	1.4	2.0
Max. feed size with manual feed	mm	30	70	90	110	240
Throughput	kg/h	10-50	50 - 350	75 - 500	250 - 2000	400 - 3500
The throughput is dependent on the size of the discharge opening and the size reduction behaviour of the crushed material. Fineness is decisively determined by the discharge opening set. Subject to technical changes.						

Jaw crusher		EB 100x80	EB 150x100	EB 200x125	EB 300x250
Dimensions (W x H x D)	mm	470 x 578 x 773	615 x 701 x 938	663 x 874 x 1192	973 x 1610 x 1639
Weight	kg	215	335	735	2160
Motor	kW	2.2	4	7.5	18.5
Feed opening width (W x D)	mm	100 x 80	150 x 100	200 x 125	300 x 250
Discharge opening	mm	0 - 12	0 - 15	0 - 28	0 - 30
Min. lift in the discharge opening	mm	1.2	1.4	1.4	2.0
Max. feed size with continues feed	mm	35	50	65	100
Throughput	kg/h	50 - 300	75 - 400	250 - 2000	400 - 3500

Double-roller mills

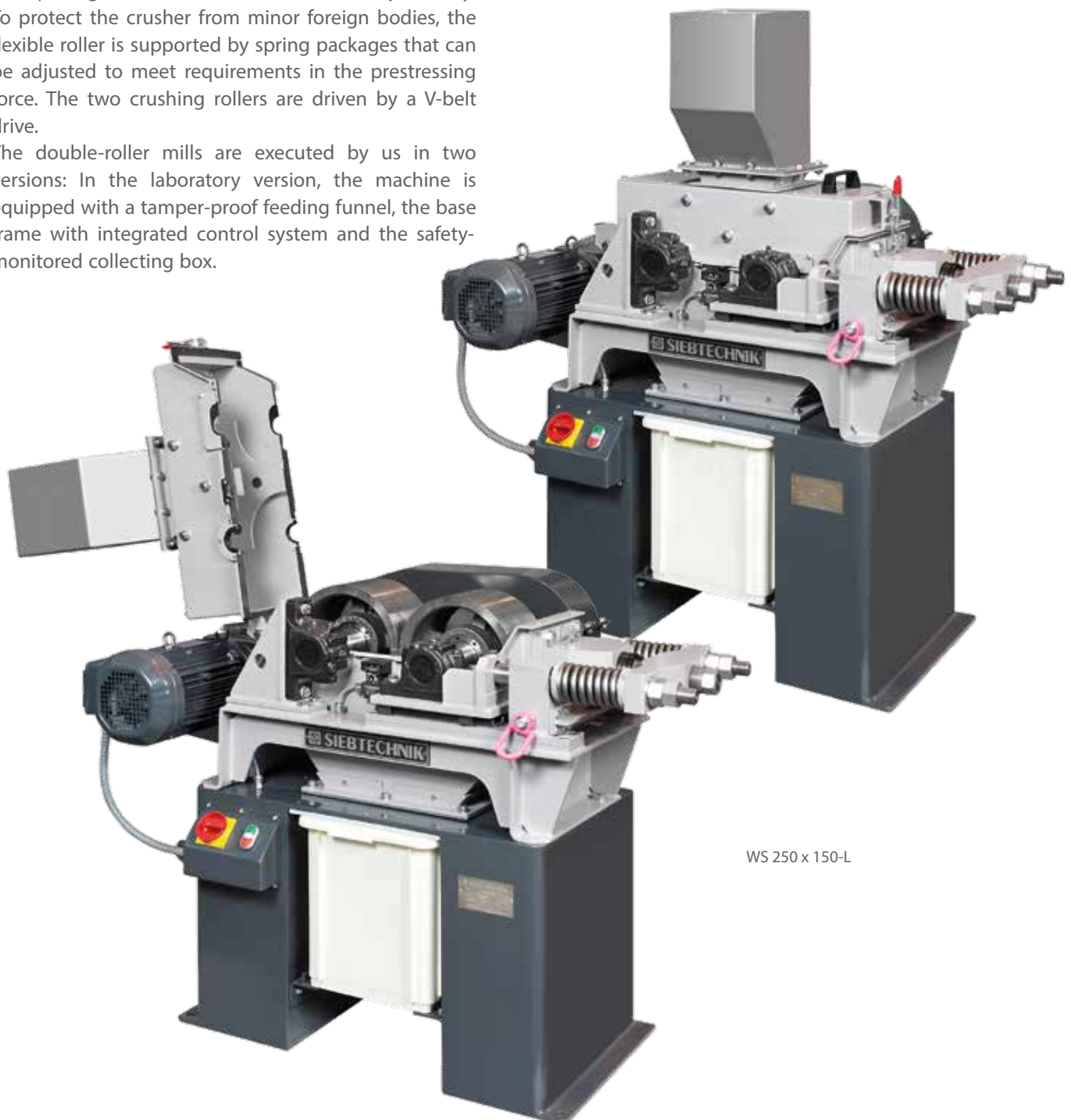
With the double-roller mill, all brittle materials, such as, for example, ores, clinker, limestone, gypsum, aluminium oxide, glass, ... can be reduced in size up to a Mohs' hardness of approx. 8.5 with a reduction ratio from 1:2 to 1:5.

Crushing is done between two counter-rotating rollers mainly through compressive and shear stress. The smooth crushing rollers are arranged on opposite sides, one of them being fixed to the housing and the other arranged flexibly. The flexibly appointed crushing roller can be moved via a spindle in order to thus set the opening between the two rollers infinitely variably. To protect the crusher from minor foreign bodies, the flexible roller is supported by spring packages that can be adjusted to meet requirements in the prestressing force. The two crushing rollers are driven by a V-belt drive.

The double-roller mills are executed by us in two versions: In the laboratory version, the machine is equipped with a tamper-proof feeding funnel, the base frame with integrated control system and the safety-monitored collecting box.

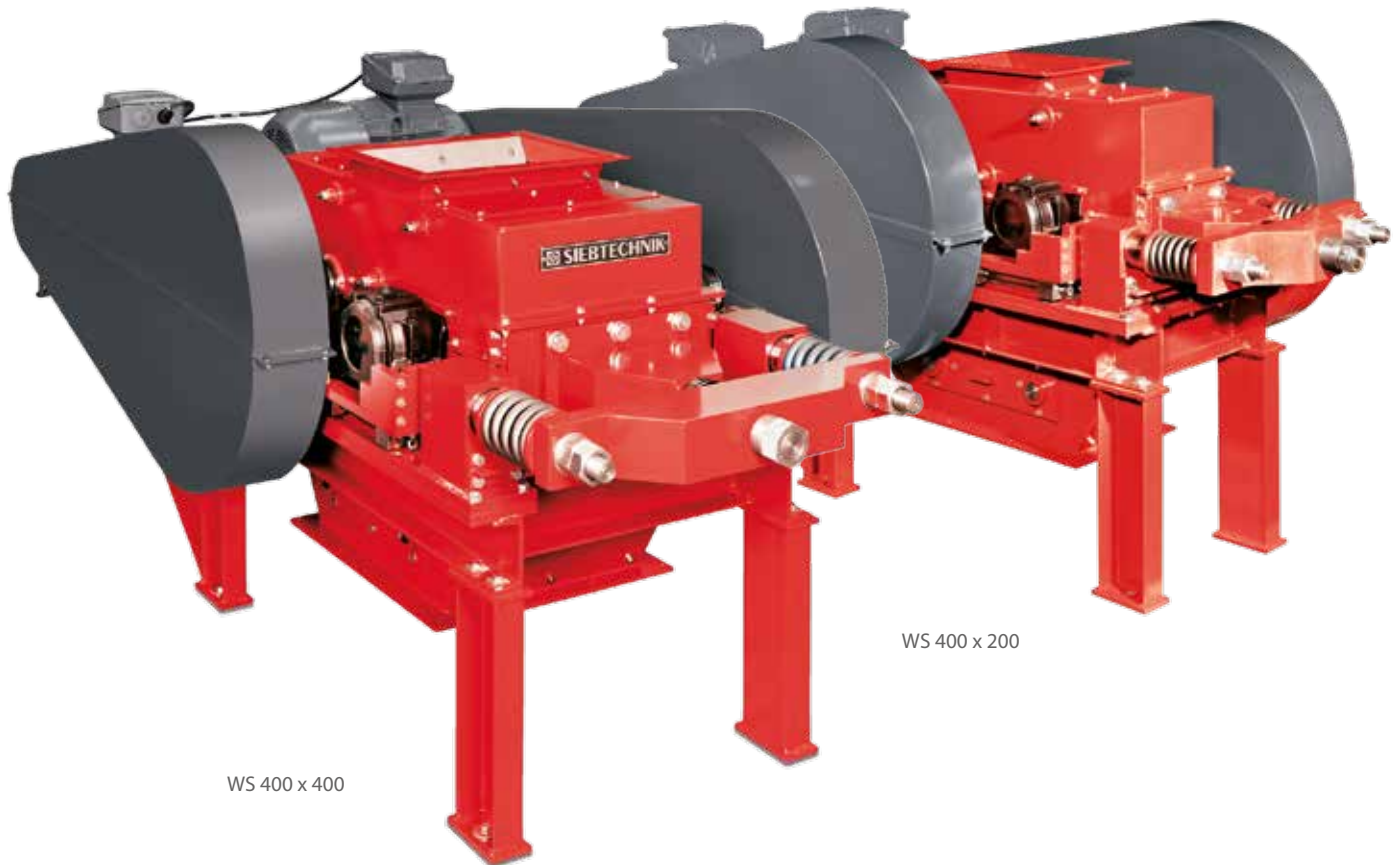
For installation of the double-roller mills in plants, there is also a version available without these additional attachments, so that simple integration is possible.

In the laboratory version, the complete upper section of the housing can be swung open once the quick release has been actuated, so that the crushing chamber can be subjected to rapid inspection/cleaning in order to prevent any cross-contamination between the samples. The crushing rollers are available in various materials (cast steel, tungsten carbide and aluminium oxide).



WS 250 x 150-L

Double-roller mills



Double-roller mill		WS 250x150	WS 400x200	WS 400x400	WS 600x400	WS 600x800
Dimensions (WxHxD)	mm	675 x 500 x 1360	850 x 1100 x 2120	1100 x 1160 x 2300	1300 x 1100 x 3400	1750 x 1100 x 3400
Weight	kg	345	1280	1920	3000	5500
Motor	kW	3	2 x 5,5	2 x 7,5	2 x 15	2 x 22
Roller size (Ø x W)	mm	Ø250 x 150	Ø400 x 200	Ø400 x 400	Ø600 x 400	Ø600 x 800
Gap width, min. – max.	mm	0.2 – 5.0	0.5 - 15	0.5 – 15	0.5 - 15	0.5 – 15
Max. feeding size	mm	12	20	20	50	50
Throughput	kg/h	50 - 2000	75 – 6000	150 - 10000	180 - 10000	360 – 17000
The throughput is dependent on the size of the discharge opening, the bulk weight and the size reduction behaviour of the crushed material. Fineness is decisively determined by the discharge opening set. Subject to technical changes.						

Double-roller mill		WS 250x150-L	WS 400x200-L
Dimensions (WxHxD)	mm	675 x 1360 x 1360	850 x 1500 x 2120
Weight	kg	495	1320
Motor	kW	3	2 x 5.5
Roller size (Ø x W)	mm	Ø250 x 150	Ø400 x 200
Gap width, min. – max.	mm	0.2 – 5.0	0.5 - 15
Max. feeding size	mm	12	20
Throughput	kg/h	50 – 2000	75 – 6000
The throughput is dependent on the size of the discharge opening, the bulk weight and the size reduction behaviour of the crushed material. Fineness is decisively determined by the discharge opening set. Subject to technical changes.			

Single-roller mills

With the single-roller mills brittle, soft to medium-hard materials can be reduced in size with a reduction ratio of approx. 1:5 to 1:15.

Comminution occurs between a rotating roller and a flexibly supported crushing wall mainly through compressive and shear stress. The fed material is drawn in through the rotating roller by means of shear and compressive stress until it can pass through the smallest opening between the roller and crushing wall.

The stepped arrangement of the crushing jaws on the crushing wall enables any material rolling off being minimised, so that, compared to the double-roller mill, coarser material can be drawn in.

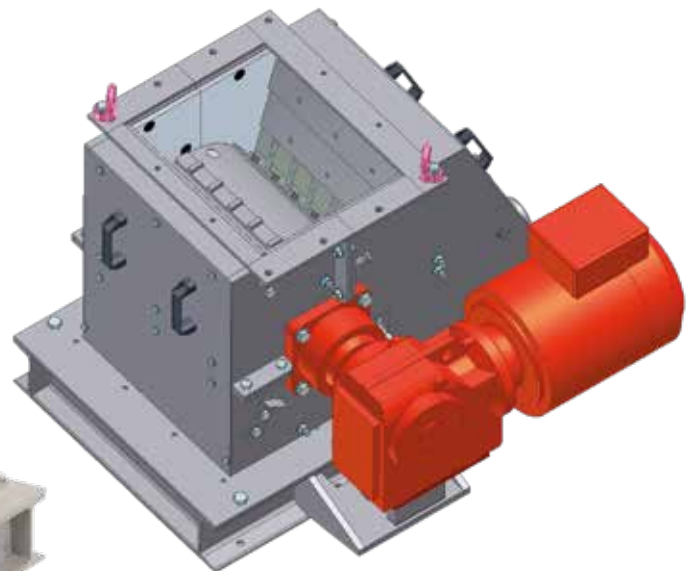
In the model with toothed crushing strip, the feeding behaviour is additionally improved by appropriately formed crushing strips, especially with moist feed materials.

The throughput of the single-roller mill is determined decisively by the final grain size required and thus by the gap width between the rollers.

The single-roller mill has a crushing roller provided with crushing strips. The crushing strips can be lined to improve the feeding behaviour, which additionally improves the throughput with a final product that becomes coarser. The crushing wall with mounted crushing jaws is supported by springs, so that protection is ensured against overloading and minor foreign bodies. It can also be adjusted via threaded spindles to set the end product fineness.



EW 30/40 in stainless steel



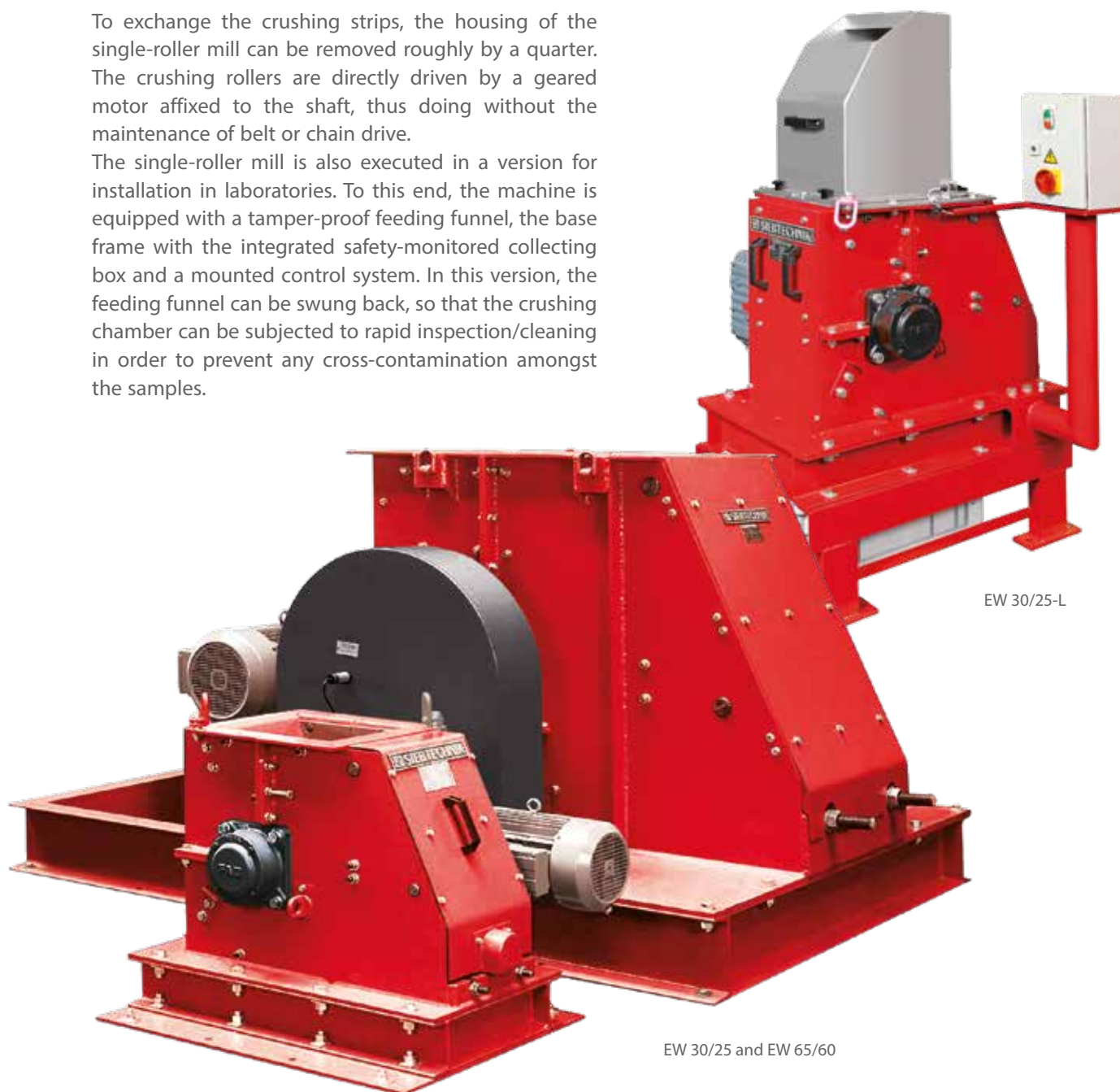
EW 30/40 with toothed crushing strips

Single-roller mill		EW 30/25	EW 30/25-L	EW 30/40	EW 30/60
Dimensions (W x H x D)	mm	675 x 500 x 1360	1000 x 1500 x 925	850 x 1100 x 2120	1100 x 1160 x 2300
Weight	kg	480	570	590	820
Motor	kW	5.5	5.5	7.5	9.2
Roller size (Ø x W)	mm	Ø300 x 250	Ø300 x 250	Ø300 x 400	Ø300 x 600
Gap width, min. – max.	mm	5 – 30	5 – 30	5 - 30	5 - 30
Max. feeding size	mm	120	120	120	120
Throughput	kg/h	500 - 2500	500 - 2500	750 - 3500	1000 - 4500
The throughput is dependent on the size of the discharge opening, the bulk weight and the size reduction behaviour of the crushed material. Fineness is decisively determined by the discharge opening set. Subject to technical changes.					

Single-roller mills

To exchange the crushing strips, the housing of the single-roller mill can be removed roughly by a quarter. The crushing rollers are directly driven by a geared motor affixed to the shaft, thus doing without the maintenance of belt or chain drive.

The single-roller mill is also executed in a version for installation in laboratories. To this end, the machine is equipped with a tamper-proof feeding funnel, the base frame with the integrated safety-monitored collecting box and a mounted control system. In this version, the feeding funnel can be swung back, so that the crushing chamber can be subjected to rapid inspection/cleaning in order to prevent any cross-contamination amongst the samples.

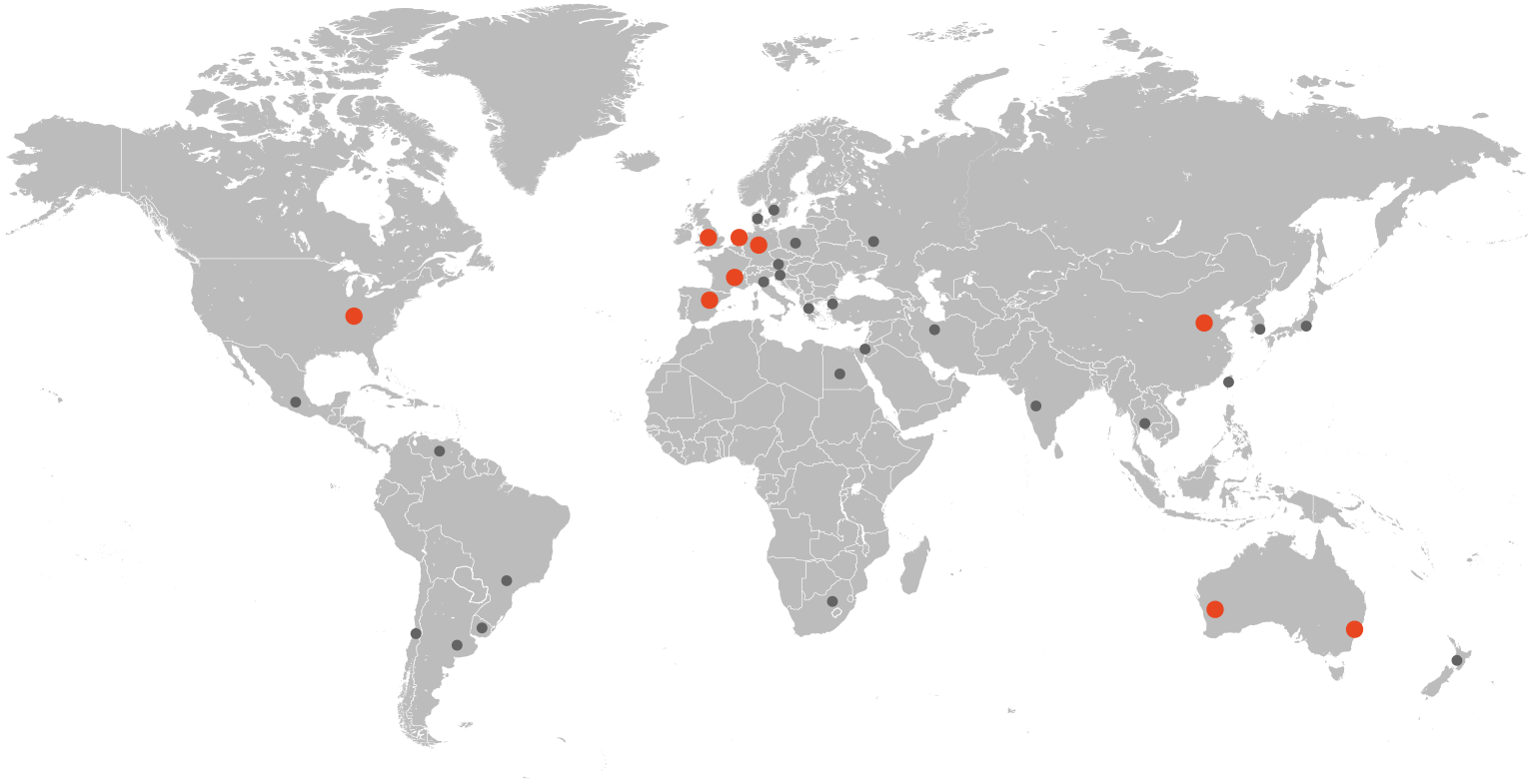


EW 30/25-L

EW 30/25 and EW 65/60

Single-roller mill		EW 50/40	EW 50/60	EW 65/40	EW 65/60
Dimensions (W x H x D)	mm	1300 x 1100 x 3400	1750 x 1100 x 3400	1300 x 1400 x 1620	1660 x 1400 x 2480
Weight	kg	1410	2150	2450	3720
Motor	kW	11	15	15	18.5
Roller size (Ø x W)	mm	Ø500 x 400	Ø500 x 600	Ø650 x 400	Ø650 x 600
Gap width, min. – max.	mm	5 - 60	5 - 60	5 - 60	5 - 60
Max. feeding piece size	mm	200	200	300	300
Throughput	kg/h	750 - 5500	1000 - 7500	750 - 5500	10007- 500
<p>The throughput is dependent on the size of the discharge opening, the bulk weight and the size reduction behaviour of the crushed material. Fineness is decisively determined by the discharge opening set. Subject to technical changes.</p>					

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