

Essa® LM5 Pulverising Mill

Proven since 1985, the large and strong-performing Essa® LM5 pulverising mill has unique safety and operational features to guarantee ease of use and quality sample preparation.

Benefits

- Single stage sample preparation in an enclosed mill.
- Fixed bowl capable of handling up to nominally 5000 cc to produce a well mixed sample with decreased handling.
- User-friendly pneumatic bowl clamping for increased efficiency.
- Stationary 4 kW motor and drive shaft arrangement to provide a reliable drive system and increased motor life.
- Lid safety switch and emergency stop button for improved safety.
- Vacuum gun for efficient and safe removal of pulp residue reducing contamination.
- Millmate air lift crane supplied as standard for safe operation.
- Proven to perform well with continuous use.
- Mineral industry recognised standard used by many major commercial laboratories.

Proven performance and ease of use



Excellent capabilities for large sample sizes

The workhorse LM5 is driven by a powerful 4 kW electric motor and is rated to take sample volumes up to nominally 5000 cc. Its optimal performance is achieved with sample weights of between 2.5 kg and 3.5 kg, at which it can pulverise most rock types to 90% passing 75 microns in only six minutes.

The LM5 mill is used for pulverising larger sample size ores, minerals, metallurgical samples, ceramics, soils, aggregates, chemicals and similar particulate. It is highly suited to the gold mining industry, especially where 'nuggety' samples are more common. Due to its grinding motion the LM5 has an excellent record for producing a suitably blended large pulp sample for analysis.

Operators who benefit most include high volume mineral laboratories that regularly prepare large samples in the unique Essa® single puck style of bowl.

Built to handle high workloads

The Essa LM5 is tried and tested to perform excellently during continuous operation. Samples can be prepared in a single stage enclosed mill, making it highly efficient. It is often used in series with two or three machines and one operator when larger or harder samples require longer grind times to achieve a finer product.

The fixed bowl can handle a high workload of nominally 5000 cc. It also has secure and reliable pneumatic bowl clamping, which means less manual exertion and increased productivity. This combination of high workloads and efficiency is why the LM5 is recognised as a profitable mill with a low cost of operation.

Designed to reduce wear

With a proven Essa design, the drive arrangement of the LM5 pulverising mill differs to traditional integral vibratory motor driven mills. It has a vibratory head driven by a universal shaft powered by vee-belts from a standard, stationary (non-vibrating) 4 kW electric motor. This drive arrangement delivers more power to the grinding bowl and optimises motor life by preventing exposure to direct vibration, like in traditional vibratory mills. The LM5 also features an external control box that helps to accurately control grinding cycles to gain optimum particle reduction and reduced bowl wear.

Refined safety features

The Essa LM5 has been on the market for more than 30 years and has proven its superiority in terms of operation and safety. Over time, it has undergone minor refinements, continuously improving on ease of use and safety. Its valuable safety features include:

- An external control box with motor overload, timer and pneumatic failure protection, preventing the lid from flying out in an uncontrolled manner.
- A lid locking safety switch, which incorporates a time delay, to make the mill platform and chamber inaccessible unless the machine is completely stopped.
- An easily accessible emergency stop button.
- A Millmate pneumatic air lift crane to reduce manual handling.

The benefits of using a large capacity bowl and disc system

For samples containing coarse gold and/or for unusually big or heterogeneous samples, many laboratories prefer to jaw crush the sample followed by pulverising the entire test sample using Essa LM5 mills, avoiding any sample splitting which may compromise the representativeness of large samples. The pulverising takes place in a large bowl and provides a large, well-mixed test sample for suitable subsampling.

The pulverising action in LM5 is based on both impact and grinding. The LM5 is also suitable for pulverising reverse circulation (RC) samples and for percussion drill chip samples, making crushing and splitting unnecessary.

The LM5 has the following distinct advantages:

Sealed system

The mill is totally sealed and therefore minimises any likelihood of sample loss or contamination from airborne dust.

Fine grind size

The LM5 mill is capable of grinding the entire 3.5 kg sample to a nominal 75 microns.

Large sample weight

Samples up to 3.5 kg can be pulverised in a single preparation step.

Sample homogenisation

Because grinding takes place in a large enclosed bowl, the entire sample is both pulverised and blended in a single step. This avoids sampling problems inherent with disc or cone mills, where samples need to be lap mixed or rotary divided to produce a less heterogeneous analytical sub sample.

Single stage preparation

For RC, RAB, percussion drill and soil samples, a large sample can now be prepared in a single stage enclosed mill.

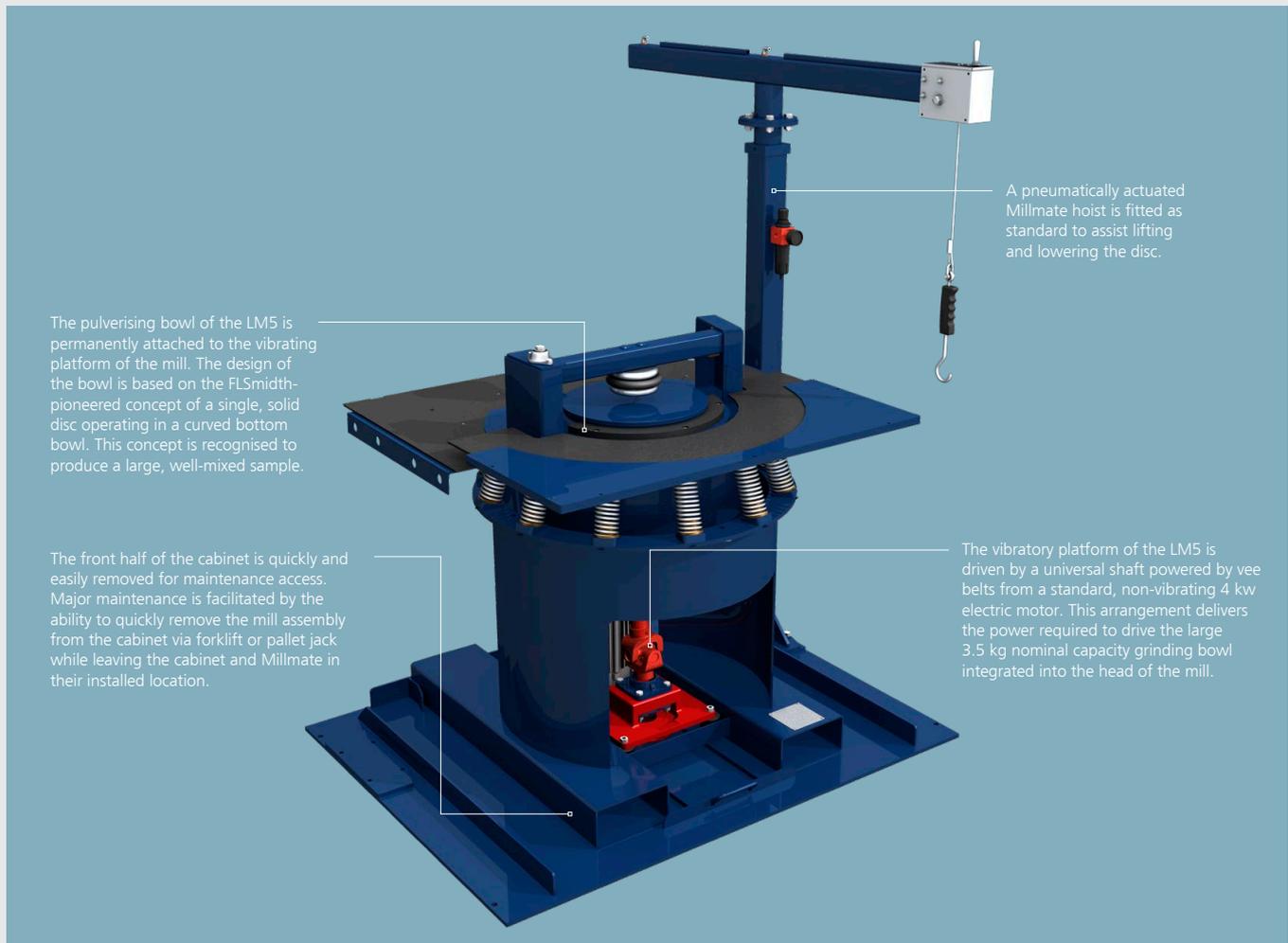
Ease of cleaning

By removing the lid of the LM5 between samples, the entire grinding surface is exposed for inspection and cleaning, thus eliminating any sample 'hang up' and contamination of the next sample.



The LM5 is uniquely placed to prepare large samples in one step

The pioneer of large-capacity sample pulverising



Specifications

Feed size	<20 mm	Compressed air requirements	Clean, dry air service required for pneumatic bowl clamping: 700 kPa supply with a minimum flow of 1 L per minute
Grinding capacity	1000 g to 3500 g	Mill dimensions (W x D x H)	1530 mm x 1535 mm x 1550 mm
Compatible grinding bowls	B5000 (nominally 5000 cc)	Working mass	585 kg
Grinding bowl material	Standard Steel	Shipping dimensions (W x D x H)	1400 mm x 1500 mm x 1600 mm
Timer settings	1 sec to 60 hr	Shipping mass	775 kg (approximate)
Motor power	4 kW		
Electrical requirements	380–415 V 50 Hz three phase AC or other power configurations as required		

www.flsmidth.com/spa
automation@flsmidth.com

Copyright © 2018 FLSmidth A/S. ALL RIGHTS RESERVED. FLSmidth and Essa are registered trademarks of FLSmidth A/S. This brochure makes no offers, representations or warranties (express or implied), and information and data contained in this brochure are for general reference only and may change at any time. The figures quoted are nominal only performance expectations that can vary according to the physical characteristics of the material being prepared, the condition of the equipment, the gap adjustment and the method of feeding the equipment. FLSmidth are able to conduct tests at their workshop to determine how the sample preparation equipment will perform when processing your material. Alternatively, check with FLSmidth at the time of ordering whether the equipment is suitable for your intended application.