



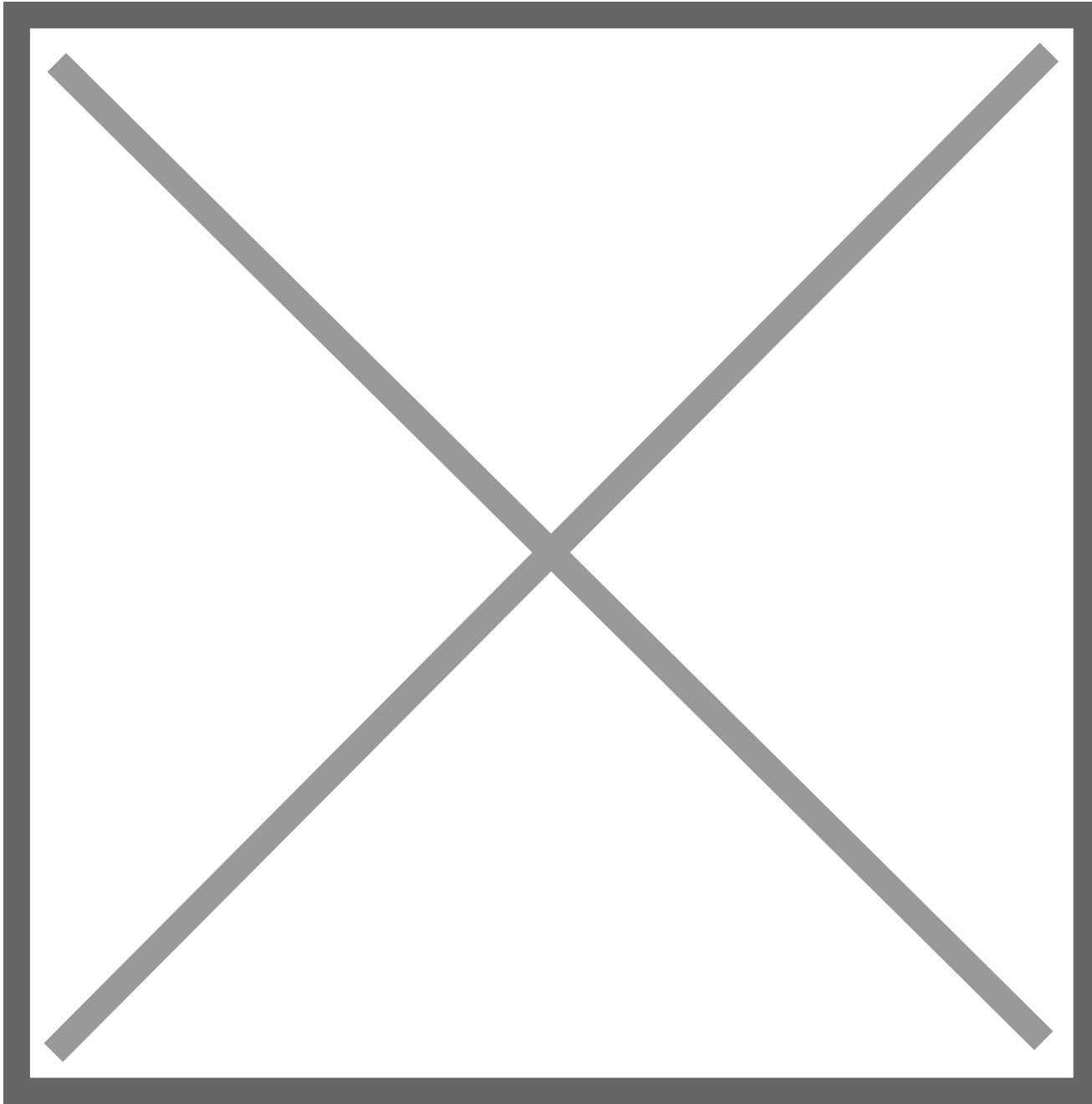
## CRYOGRINDER LM200

- Batch capacity:0.1-100g
- Pre-cooling chamber:400ml
- Grinding chamber:200ml

With the rapid advancement of science and technology, DNA detection and polymer analysis are increasingly vital. To preserve the original components and biological information of samples, low-temperature pulverization is necessary.

The cryoGrinder LM200 cools the samples using liquid nitrogen and pulverizes them with a magnetically driven impactor. This process renders the samples brittle while preserving volatile components at low temperatures, ensuring effective grinding.

The automatic control function for liquid nitrogen content eliminates the need for manual handling, reducing contact and potential risks.



## APPLICATIONS

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It is utilized for samples exhibiting high toughness and thermal sensitivity that are challenging to grind and crush at room temperature. Examples include rubber, plastic, food, minerals, animal and plant tissue analysis, drug testing, biochemical DNA analysis, cell disruption, and related fields.

### Typical Samples

Polymers, rubber, textile materials, grain particles, hair, nails, skin, bones, muscle tissue, and more.

## FEATURES

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- Electromagnetic vibration impact ensures rapid grinding, high precision, excellent uniformity, and repeatability.
- The automatic liquid nitrogen filling system replenishes consumed liquid nitrogen during the sample freezing and grinding process to ensure stability and safety.
- An industrial touch screen control panel allows for the adjustment of impact frequency, pre-cooling time, impact grinding time, and cycle grinding times. It's easy to operate and reliable.
- Safety features: The instrument cannot be started when the instrument cover is open. It can only be started when the instrument cover is closed and locked.
- Streamlined and ergonomic design for straightforward and convenient operation.
- When the liquid nitrogen level falls below the set value, the liquid sensor triggers an alarm and automatically replenishes the liquid nitrogen. Additionally, the instrument stops running to protect the electromagnetic coil from damage.
- A variety of grinding jar and impactor specifications are available, suitable for a wide range of applications.
- Different-sized grinding jars are provided to accommodate the grinding of hard, medium-hard, soft, brittle, elastic, and fibrous samples.
- For optimal grinding results, it's recommended to select the appropriate size of the grinding jar based on the amount of the sample being ground. Typically, the sample filling amount should be between 5% and 25% of the volume of the

grinding jar (depending on the specific sample characteristics).

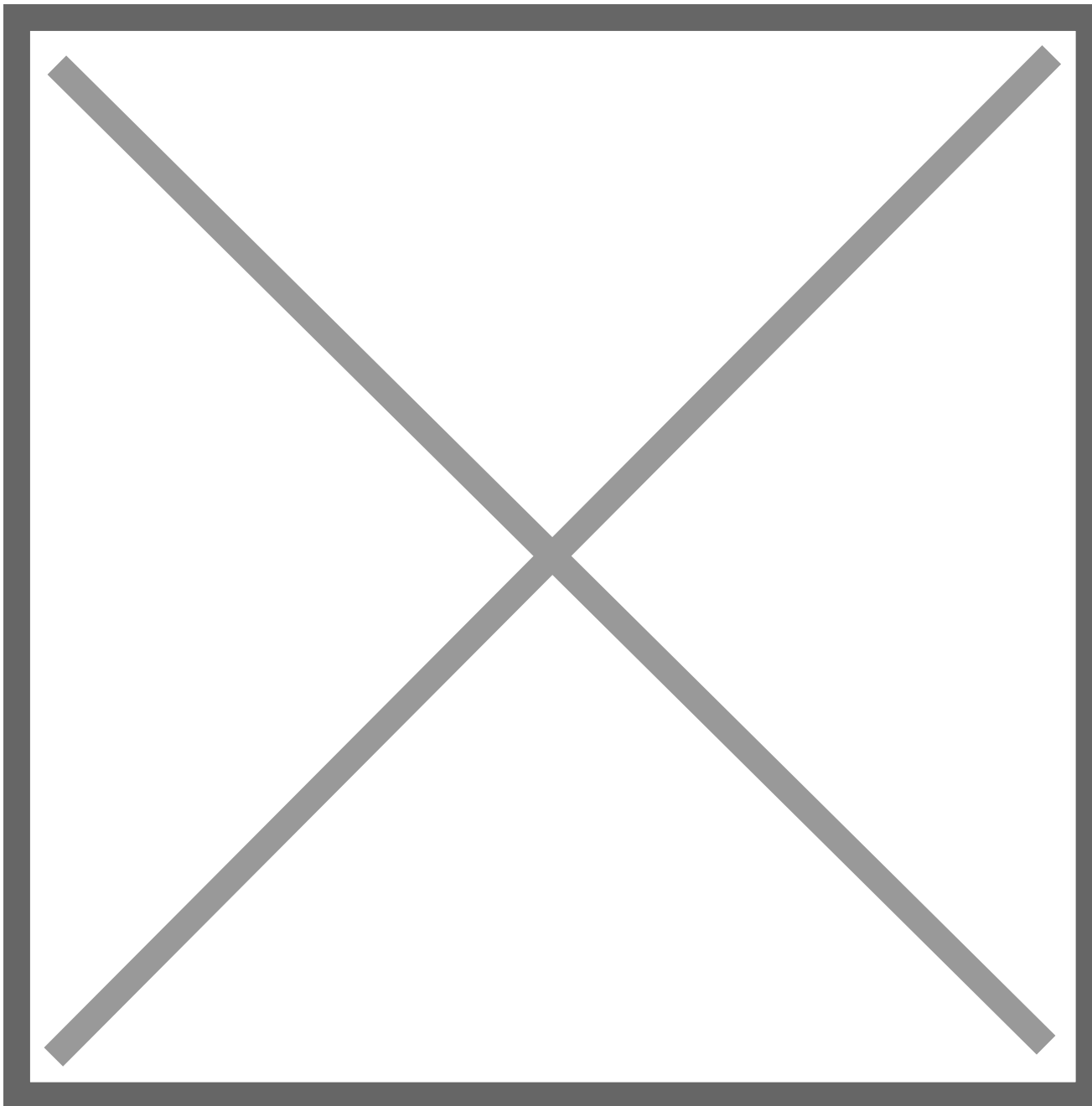
## **THEORY & METHOD**

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### **Working Principle**

Size reduction occurs through the impact of electromagnetic oscillations. The sample and the metal impactor are loaded together into the grinding jar, which is then sealed at both ends with plug heads. This sealed jar is placed within the electromagnetic vibration drum coil.

The grinding jar, along with the sample, is pre-cooled by immersing it in liquid nitrogen. The entire grinding process takes place within the liquid nitrogen environment, at a temperature of  $-196^{\circ}\text{C}$ . The magnetic force generated by the coil drives the impactor to move horizontally, continuously impacting and grinding the frozen and embrittled sample.



## TECHNICAL SPECIFICATIONS

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|                               |                                                                                      |                                |                                                        |
|-------------------------------|--------------------------------------------------------------------------------------|--------------------------------|--------------------------------------------------------|
| single grinding time          | 2min                                                                                 | Liquid nitrogen filling system | Manual/automatic optional                              |
| The shortest pre-cooling time | 4.5min                                                                               | Impact frequency               | 5-15Hz                                                 |
| Batch capacity                | 0.1-100g                                                                             | Rated power/power supply       | 1.9KW/220V□ 50/60Hz (110V Also available upon request) |
| pre-cooling chamber           | 400ml                                                                                | Instrument size                | 510*440*450mm                                          |
| Grinding chamber              | 200ml                                                                                | package size                   | 870*720*750mm                                          |
| Grinding jars                 | 4groups□ 4x3: 12pieces□ jars of 3ml/4 jars of 20ml /one jar of 100ml/one jar of 200m |                                |                                                        |



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