

# FREDRIVE-LAB

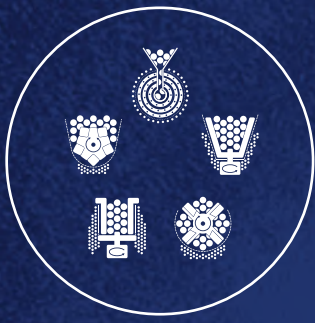
OSCILLOWITT  
CONIWITT  
TURBOWITT  
HAMMERWITT  
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# FREDRIVE-LAB

A REVOLUTIONARY NEW MODULAR LABORATORY MILL SYSTEM,  
FOR THE PROCESSING OF DIFFERENT POWDERS & MATERIALS

**FREWITT**, a world leader in powder size reduction technologies, presents **FreDrive-Lab**, a revolutionary, modular, milling solution for R&D and analytical laboratories in the pharmaceutical, cosmetic, fine chemical and food industries. This patented innovation was developed specifically in collaboration with R&D teams of selected customers in order to meet today's industry challenges.

**MODULARITY** – Employing a ground-breaking design, the FreDrive-Lab integrates five different milling processes in one system, enabling the user to produce a wide variety of particle sizes ranging down to a lower particle size distribution spectrum of  $D_{90} < 10 \mu\text{m}$ .

**FLEXIBILITY** – Incomparable, the FreDrive-Lab enables you to alternate between different milling processes simply and rapidly. The interchangeable heads can be installed as well as removed within seconds and are sealed for cleaning and sterilising.

**PERFORMANCE** – FreDrive-Lab offers unequalled, process scale-up enhancement, allowing for batches of 50g to 1 kg for small-scale, laboratory applications, while ensuring the flexibility of a 30 - 150 kg/h production rate for pilot-scale quantities. Most important, FreDrive-Lab guarantees true scale-up from lab size batches to pilot-scale, and finally to high-volume industrial production.

**COST-EFFECTIVE** – Encompassing a true rationalisation of investment, FreDrive-Lab integrates 5 milling processes in a single platform, allowing you to make substantial savings on your investment costs. This modular solution also allows you to start milling processes required, and to increase your capacities with other milling processes as your needs evolve.

## INNOVATION BRINGS ADVANTAGES

- 5 processes > 5 heads > 1 device
- 5 milling heads, easily interchangeable on a single Tri-Clamp flange
- Simple, flexible and upgradable, due to the device's modular concept
- Processing of small-scale laboratory batches at a rate of 50 g to 1 kg and option of a rate of 30-150 kg/h for pilot-scale quantities (depending on the product being processed)
- Reduction of particle size  $D_{90} < 10 \mu\text{m}$
- Scale-up guarantee with our FreDrive-Production equipment
- Alarm monitoring
- PLC control system with recipe management
- Reports available as an option
- Intuitive colour touchscreen-based multifunction user interface
- Milling heads available in ATEX zone 1-21
- Milling heads are easy to clean and sterilise
- Compact design ensuring simple and efficient integration in a laboratory
- Ensures containment requirements to an OEB 5 level (alpha/beta valves, isolator, etc.)





# OSCILLOWITT-LAB

POWERFUL, MODULAR, INNOVATIVE

The oscillating and rotating OscilloWitt-Lab sieve mill is designed for the milling of difficult-to-process, as well as heat-sensitive products requiring uniform particle-size distribution.

Ideal for processing small-scale laboratory batches of 50 g to 1 kg, the flexibility of the OscilloWitt-Lab permits itself to be used for pilot-scale quantities due to its production rate of 30 -100 kg/h and the scale-up guarantee to our FreDrive-Production equipment.

The device's compact design facilitates easy integration and a quick set-up in any laboratory.

## THE CHARACTERISTICS OF THE OSCILLOWITT-LAB

- Very broad scope of application for all types of dry and wet powders
- Different rotor and sieve types for dry and wet milling
- Scale-up guarantee to FreDrive-Production equipment
- Milling heads easily interchangeable on a single Tri-Clamp flange
- Light, compact milling head (~ 10 kg)
- Quick, efficient, simple cleaning of the milling heads
- Possibility of sterilising the milling heads
- Milling head available in ATEX indoor zones 1 and 21

## PROCESS CHARACTERISTICS

Particle size range		20 mm – 250 µm
Throughput	OscilloWitt-Lab	50 g – 100 kg/h*
Density		up to 2 kg/dm <sup>3</sup>
Temperature range product		from -20 °C to +60 °C

\* The flow rate depends on product characteristics and particle size





# CONIWITT-LAB

FLEXIBLE, COMPACT, EFFICIENT

The ConiWitt-Lab is a high-performance, conical sieve mill that is used for the sizing and des-agglomerating of all types of dry and wet powder products to a fineness of 150  $\mu\text{m}$ .

Ideal for processing small-scale laboratory batches of 50 g to 1 kg, the flexibility of the ConiWitt-Lab permits itself to be used for pilot-scale quantities, due to its production rate of 30 - 120 kg/h, while providing a scale-up guarantee to our-Production equipment.

The device's compact design facilitates easy integration and a quick set-up in any laboratory.

## THE CHARACTERISTICS OF THE CONIWITT-LAB

- Very broad scope of application for all types of dry, wet and heat-sensitive powders
- Different rotor and sieve types for dry and wet milling
- Scale-up guarantee to our FreDrive-Production equipment
- Milling heads easily interchangeable on a single Tri-Clamp flange
- Light and compact milling head (~ 10 kg)
- Quick, efficient, simple cleaning of the milling heads
- Possibility of sterilising the milling heads
- Milling head available in ATEX indoor zones 1 and 21

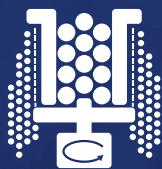


## PROCESS CHARACTERISTICS

Particle size range		10 mm – 150 $\mu\text{m}$
Throughput	ConiWitt-Lab	50 g – 120 kg/h*
Density		up to 2 kg/dm <sup>3</sup>
Temperature range product		from -20 °C to +60 °C

\* The flow rate depends on product characteristics and particle size





# TURBOWITT-LAB

PERFORMING, MODULAR, INNOVATIVE

The TurboWitt-Lab is a cylindrical mill with a rotating sieve drum designed for the des-agglomeration and homogenisation of all types of dry and wet powders to a fineness of 150  $\mu\text{m}$ .

Ideal for processing small-scale laboratory batches of 50 g to 1 kg, the flexibility of the TurboWitt-Lab permits itself to be used for pilot-scale quantities due to its production rate of 30 - 150 kg/h, while providing a scale-up guarantee to our FreDrive-Production equipment.

The device's compact design facilitates easy integration and a quick set-up in any laboratory.

## THE CHARACTERISTICS OF THE TURBOWITT-LAB

- Very broad scope of application for all types of wet and dry powders
- Different rotor and sieve types for dry and wet milling
- Scale-up guarantee to our FreDrive-Production equipment
- Milling heads easily interchangeable on a single Tri-Clamp flange
- Light, compact milling head (~ 10 kg)
- Quick, efficient, simple cleaning of the milling heads
- Possibility of sterilising the milling heads
- Milling head available in ATEX indoor zones 1 and 21



## PROCESS CHARACTERISTICS

Particle size range		10 mm – 150 $\mu\text{m}$
Throughput	TurboWitt-Lab	50 g – 150 kg/h*
Density		up to 2 kg/dm <sup>3</sup>
Temperature range product		from -20 °C to +60 °C

\* The flow rate depends on product characteristics and particle size





# HAMMERWITT-LAB

PERFORMING, FLEXIBLE, PRECISE

The HammerWitt-Lab is a high-performance hammer mill, designed for the milling and pulverization of hard, crystalline, as well as fibrous products to a fineness of 30  $\mu\text{m}$ .

Ideal for processing small-scale laboratory batches of 50 g to 1 kg, the flexibility of the HammerWitt-Lab permits itself to be used for pilot-scale quantities due to its production rate of 30 -120 kg/h and the scale-up to our FreDrive-Production equipment.

The device's compact design facilitates easy integration and a quick set-up in any laboratory.

## THE CHARACTERISTICS OF THE HAMMERWITT-LAB

- Very broad scope of application for all types of dry powders
- Different rotor and sieves types for dry milling
- Volumetric dosing system directly integrated at the inlet of the milling head
- Scale-up guarantee to our FreDrive-Production equipment
- Milling heads easily interchangeable on a single Tri-Clamp flange
- Light, compact milling head (~ 10 kg)
- Quick, efficient, simple cleaning of the milling heads
- Possibility of sterilising the milling heads
- Milling head available in ATEX indoor zones 1 and 21

## PROCESS CHARACTERISTICS

Particle size range		10 mm – 30 $\mu\text{m}$
Throughput	HammerWitt-Lab	50 g – 120 kg/h*
Density		up to 2 kg/dm <sup>3</sup>
Temperature range product		from -20 °C to +60 °C

\* The flow rate depends on product characteristics and particle size





# PINMILL-LAB

PERFORMING, MODULAR, PRECISE

The PinMill-Lab is a high-performance pin mill designed for pulverizing hard or crystalline products to a particle down to D90 of 10 µm.

Ideal for processing small-scale laboratory batches of 50 g to 2 kg. The PinMill-Lab lends itself to be used for pilot-scale production.

The device's compact design of the PinMill-Lab facilitates an easy integration and a quick set-up in any laboratory as well as an integration into a Glove-Box.

## THE CHARACTERISTICS OF THE PINMILL-LAB

- Very broad scope of application for all types of powders
- Possibility of integration of the milling head in a rigid or flexible isolator
- Volumetric dosing system directly integrated at the inlet
- The light and compact milling head is easily interchangeable on a single Tri-Clamp flange
- Quick, efficient, simple cleaning
- Possibility of sterilising the milling heads
- Available in ATEX zones 1 and 21
- Cooling of the milling head
- Ability to integrate an inertisation system with O<sub>2</sub> level control
- Product recovery up to 99% thanks to the innovative geometry of the milling housing
- Cryogenic milling available



## PROCESS CHARACTERISTICS

Particle size range		2 mm – 10 µm
Throughput	PinMill-Lab	50 g – 45 kg/h*
Density		up to 2 kg/dm <sup>3</sup>
Temperature range product		from -20 °C to +60 °C

\* The flow rate depends on product characteristics and particle size







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