

LAARMANN®

Innovators in Solids

General Catalogue

- Industrial bulk sampling solutions
- Rotary sampling, riffle splitter and manual sampling
- Jaw crushers
- Cuttings mills
- Rolls crusher, disc grinder, lump breaker
- Pulveriser
- Planetary ball mill and bottle rollers
- Ball mills
- Pressure filter and drying oven
- XRF Pellet press
- Bond index testing and TML equipment
- Flotation machine
- Sieveing machine and analytical sieves
- Fire assay
- Benchtop machines
- LAARMANN Engineering



Industrial bulk sampling solutions

Vezein sampler & sample collector



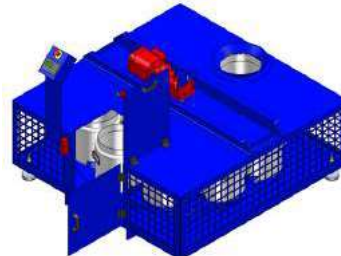
VS200, vezein sampler



stainless steel vezein sampler



VS30, vezein sampler



Sample collector: indexing carousel



sample collector: straight conveyor

Vezein sampler

Vezein samplers are diverse, cost-effective and easily applied samplers that are highly accurate and reliable. They can be used as a primary, secondary, tertiary and quaternary sampling unit. from a free-falling stream of dry bulk material or slurry flow. Vezein Samplers are implemented in a wide variety of applications, from mining to pharma.

Sample collector

The sample collector can be used in combination with an industrial sampling device. When the requested sample is collected the automatic program will rotate a new bucket underneath the sample stream. This allows the operator to pay attention to other topics without having the fear of overflowing material influencing the representativeness of the collected sample.

Big bag sampling solutions



Big bag sampling solutions

The representative sampling of bulk materials is always a critical challenge. Especially when the sample has been transported for some distance (big bag) there is definitely segregation in the content and the chance of impurities is high. Experience shows that the bigger particles will be on top and the smaller particles will be at the bottom (brazil nut effect). We have intergraded a piercing unit to get away from opening the big bag using a knife.

The 8x200 Litres divider module allows the batchwise dividing of:
Material into 8 x 200 litres fractions from a total lump volume of 1600 litres.

Rotary sampling, riffle splitter and manual sampling

Rotary Sample Dividers



Rotary sample divider 30-60L

Material feed size*

≤ 20 mm

Batch size / feed quantity*

≤ 60 liter

Number of divisions

customers requirement*



Rotary sample divider 2 - 10L

Material feed size*

≤ 10 mm

Batch size / feed quantity*

≤ 10 liter

Number of divisions

customers requirement*



Rotary sample divider 0-5L

Material feed size*

≤ 10 mm

Batch size / feed quantity*

≤ 5000 ml

Number of divisions

6 / 8 / 10 / custom



Rotary sample divider 0-12L

Material feed size*

≤ 2.5 mm

Batch size / feed quantity*

≤ 120 ml

Number of divisions

8 (4cm3 & 15cm3)

*depending on feed material and instrument configuration/settings

Riffle splitters and manual sampling



Riffle splitter

For dividing products fast and easily. Various sizes available

Riffle splitter types:

Sample splitter type: RT
6.3mm up to 75.0mm



Large capacity Sample Splitter with variable chute bars of 12mm



sampling shovel (norm)



sampling spear (norm)



sampling grid (norm)

Jaw crushers

Jaw crushers



LMC50 Jaw crusher

Material feed size* < 40 mm
 Final fineness* < 0.5 mm
 Throughput* 3 liter batch collector
 Gap width setting 0 - 11 mm in increments 0.1 mm



LMC200-D Jaw crusher

Material feed size* < 215 x 90 mm
 Final fineness* < 4.0 mm
 Throughput* 1.000 kg/h
 Gap width setting 0 - 30 mm



LMC400 Jaw Crusher

Material feed size* < 350 x 170 mm
 Final fineness* < 6.0 mm
 Throughput* 3.500 kg/h
 Gap width setting 6 - 50 mm



vertical door



horizontal door

LMC100-D jaw crusher

Material feed size* < 120 x 90 mm
 Final fineness* < 2.0 mm
 Throughput* 250 kg/h
 Gap width setting 0 - 30 mm



LMC250 Fine Crusher

Jaw crusher for pre-crushing of extremely hard up to brittle materials down to < 1,6mm in one step

Material feed size* < 110 mm
 Final fineness* < 1.6 mm
 Throughput* 200 kg/h
 Gap width setting 0 - 7 mm



LMC500 Jaw Crusher

Material feed size* < 600 mm
 Final fineness* < 12.0 mm
 Throughput* 15.000 kg/h
 Gap width setting 12 - 50 mm

LAARMANN Jaw crushers have set the industry standard for over 10 years so you can be assured the designs have stood the test of time. They offer fast sample throughput with good reduction ratio and reduced sample contamination. The crushers are easy to maintain and repair, and have hard-wearing parts, such as the long-life roller bearings and strong jaw plates. These decrease downtime and maintenance costs – important factors that affect your bottom line. Additionally, their simple mechanical design makes them easy and safe to operate.

*depending on feed material and instrument configuration/settings

Cutting mills

Cutting mills



CM100 Cutting Mill

Material feed size* <25 mm
 Final fineness* 100µm
 Throughput* > 30kg/h
 Handling capacity* 0.5/1/5/2/30 liter batch collector



CM200 Cutting Mill

Material feed size* <90 mm
 Final fineness* 0.10 - 20 mm
 Throughput* >30kg/h
 Handling capacity* 0.5/1/5/2/30 liter batch collector



CM500 Cutting mill

Material feed size* <90 mm
 Final fineness* 250µm
 Throughput* > 100kg/h
 Handling capacity* 0.5/1/5/2/30 liter batch collector



CM1000 Cutting mill

Material feed size* <110 mm
 Final fineness* 500µm
 Throughput* > 150kg/h
 Handling capacity* collector not included/ custom made



CM2500 Cutting mill

Material feed size* 250mm x 250mm
 Final fineness* 2.0mm
 Throughput* > 200kg/h
 Handling capacity* collector not included/ custom made



CM4000 Cutting mill

Material feed size* 250mm x 385mm
 Final fineness* 2.0mm
 Throughput* >250kg/h
 Handling capacity* collector not included/ custom made

LAARMANN Cutting mills are of the art sample preparation machines for cuttable materials. The system are suitable for the coarse and/or fine grinding of any dry substance because of the availability of several different sizes bottom sieves. The user will benefit from the high rate of homogenized samples which is collected in the various collectors which are available.

*depending on feed material and instrument configuration/settings

Crushers and grinders

Crushers and grinders



Lump breaker

Used for reducing hard or soft, heat sensitive, sticky or wet agglomerates and lumps at high volume

Feed size*	600mm x 350mm
End-fineness*	<12mm
Throughput*	> 1 ton / hour



Disc grinder

Used for preliminary and fine grinding of medium-hard, hard, brittle materials

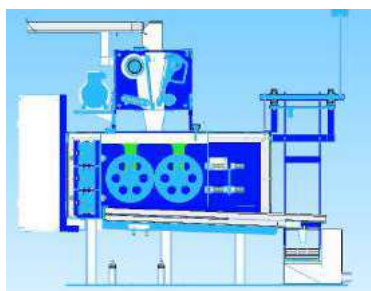
Feed size*	< 12mm
End-fineness*	< 75µm
Throughput*	150kg/h



Rolls crusher

For intermediate size reduction with an adjustable gap setting.

Feed size*	< 35mm
End-fineness*	< 1mm
Throughput*	<1.5 tons/h



Combi mill

Jaw crusher, rolls crusher combination. Used for fast size reduction with a small particle size difference

Feed size*	< 20mm
End-fineness*	< 1mm

*depending on feed material and instrument configuration/settings

Pulverisers

Pulverisers



LM250 Pulveriser ring mill

Feed Size*	< 25 mm
End-fineness*	< 75 µm
Grinding media volume*	20cc – 300cc
Dust Extraction Point Motor	1
Power (3 phase)	0.75 kW
Speed	progr. 1450 rpm
Control display	programmable touchscreen



LM1000 Pulveriser ring mill

Feed Size*	< 25 mm
End-fineness*	< 75 µm
Grinding media volume*	20cc – 1000cc
Dust Extraction Point	1
Motor Power (3 phase)	0.75 kW
Speed	progr. 1450 rpm
Control display	programmable touchscreen



LM2000 Pulveriser ring mill

Feed Size*	< 25 mm
End-fineness*	< 75 µm
Grinding media volume*	20cc – 2000cc
Dust Extraction Point	1
Motor Power (3 phase)	2.2 kW
Speed	progr. 1450 rpm
Control display	programmable touchscreen



LM5000 Pulveriser ring mill

Feed Size*	< 25 mm
End-fineness*	< 75 µm
Grinding media volume*	5000cc
Dust Extraction Point Motor	1
Power (3 phase)	4.0 kW
Speed	progr. 1450 rpm
Control display	programmable touchscreen



LM continuous

Feed Size*	< 25 mm
End-fineness*	< 75 µm
Throughput*	continuous 300cc
Dust Extraction Point	1
Motor Power (3 phase)	0.75 kW
Speed	progr. 1450 rpm
Control display	programmable touchscreen



Various grinding materials:

- Chrome steel
- Standard steel
- Tungsten carbide
- Zirconium oxide
- Agate
- Polyurethane coated

4 x 100ml adapterplate

Liftboy for ergonomic handling

programmable touch screen

*depending on feed material and instrument configuration/settings

Planetary ball mill and bottle rollers

planetary ball mills



LMPM4000, planetary ball mill

Maximum feed size*	10mm
End-fineness*	<1µm
Max volume grinding jar	≤500ml
Max operation volume	≤4000 ml
Grinding ball diameter	≤40mm
Minimal sample quantity	≤10ml
Grinding bowl sizes	≤500 ml



LMPM2000, planetary ball mill

Maximum feed size*	10mm
End-fineness*	<1µm
Max volume grinding jar	≤500ml
Max operation volume	≤2000ml
Grinding ball diameter	≤40mm
Minimal sample quantity	≤10ml
Grinding bowl sizes	≤500 ml



LMPM500, planetary ball mill

Maximum feed size*	10mm
End-fineness*	<1µm
Max volume grinding jar	≤500ml
Grinding bowl sizes	≤500 ml
Grinding ball diameter	≤40mm
Minimal sample quantity	≤10ml
Grinding bowl sizes	≤500 ml



Stackable jar 2 x 500ml



Various grinding materials:

- Stainless steel
- Hardened steel
- Tungsten carbide
- Zirconium oxide
- Agate
- Polyurethane coated

LAARMANN Planetary ball mills are used whenever the highest degree of fineness is required. Apart from the classical mixing and size reduction processes. The planetary ball mills meet all the technical requirements for colloidal grinding and have the energy input necessary for mechanical alloying processes. The centrifugal forces of planetary ball mills result in very effective pulverization energy and therefore short grinding times. LAARMANNs' grinding media can be used or adapted to fit in similar machines from competitive suppliers.

Bottle rollers



LMBR5 Bottle roller

Max diameter bottle	205mm
Max length bottle	318mm



LMBR2000, bottle roller

Max diameter bottle	350mm
Max length bottle	1900mm

LAARMANN bottle rollers are used for ultra-fine grinding and mixing for laboratory and small batch production. The machine is preferred equipment for scientific research, education, experiment and production due to its advantages such as, easy operation, high efficiency, and uniform granularity.

*depending on feed material and instrument configuration/settings

Ball Mills

Ball and Rod Mills



LMBR5, ball mill

Max diameter drum 205mm
Max length drum 318mm



LMBM1000 Ball mill

Max diameter drum 365mm
Max length drum 610mm



Ball Mill LMBM 150L

Diameter drum 550mm
Length drum 600mm

The grinding process within the LAARMANN ball mills is performed either in dry or wet conditions. The ball mill can be operated either as a Ball or as a Rod Mill by using the corresponding drum. A sufficient number of balls or rods is required for an effective grinding process. Typically, a final fineness below 20 microns is obtained.

Continuous ball mill



collector hopper

vibratory feeder

Continuous Ball Mill

The LMCBM is a (continuous) process and laboratory machine, which is suitable for milling and homogenizing soft, fibrous, hard and brittle materials in the dry and wet state.

The ball mill can be fed using the optionally available vibratory feeder. The vibratory feeder is an individual item which can also be used for several other machines.

The optionally available collector hopper contains an air-driven membrane pump which can be used to empty the collector and feed the next machinery.

pressure filters and drying ovens

Pressure filters



LMPF-PED, LAARMANN Pressure filter PED certified

LAARMANN's PED Certified Pressure Filter works quickly and safely filters slurry samples, reducing sample preparation time and increasing productivity. The filter can be mounted on the table, making it stable and reliable. LAARMANN's PED pressure filter is mainly used in general laboratories and plant operations.

LAARMANN's PED pressure filter can be build up to 13liter.

The see through plexiglas lid needs to be closed in order to operate the filter. Opening the lid will directly release all pressure within the filter resulting in a safe to operate situation. As an additional safety measure the top of the filter contains an overpressure release valve. This valve is adjustable from 3 to 7 bar.



LMPF, pressure filter 4 - liter table model



LMPF, pressure filter 13 - liter table model



LMPF, pressure filter 13 - liter floor model

LAARMANN Pressure Filters are designed to give you the highest standard of compliance and precision. They come in various standard sizes to suit either small or large volume test work and batch processing. On demand the tailor made volumes can be produced. LAARMANN pressure filters are recognised for filtering samples quickly and for being easy to load, unload and operate. They're cleverly designed to reduce risk of contamination or loss of sample. We believe these to be one of the most superior pressure filters on the market today. LAARMANN produces pressure filter either made from stainless steel or (coated) standard steel

Drying Oven



Drying Oven HAD 2500

2,5m³
1 trolley included



Drying Oven HAD5000

5,0m³
2 trolley's included



Drying Oven HAD10000

10,0m³
4 trolley's included

LAARMANN hot air drying ovens (HAD) are mostly used for easy drying of wet mineral samples for chemical analysis. The spacious and easy to operate the HAD-range will certainly impress you. The ovens are well proven and suit a range of application and sample loads, cores to granular and filter cake (coming from the pressure filter). They are cost effective and can be used ahead of crushing and pulverising, saving you valuable time. LAARMANN offers 3 sizes, 2,5m³, 5,0m³ and 10,0m³. We can recommend the best option for you based on your operational requirements.

BOND index testing and TML equipment

Test Machines



BOND impact tester, BIT1000,



BOND abrasion tester, BAT1000



BOND ball and rod mill



adjustable scale impact hammers



calibrated BAT paddles



rod mill wave structure

When planning the lay out of a processing plant detailed knowledge of the characteristics of a raw material is of utmost importance. In order to minimize all possible risks extensive trials are necessary to obtain information on the properties of the raw materials. A clear definition of the required crushing capacities and the desired product quality can be precisely determined by using the Bond Index test methods. Using the Bond Index test procedures it is possible to calculate crushing / abrasion behavior of mineral samples. This knowledge is for example essential to define the required ball mill or rod mill layout, production capacity, energy consumption and exploration explosive needs.

TML (transportable moisture limit)



TML Penetration test



manual and motorized table available



pneumatic tamper



TML proctor/fagerberg test

Three methods of testing for the transportable moisture limit are currently in general use:

- 1 flow table test;
- 2 penetration test;
- 3 Proctor/Fagerberg test.

As each method has its advantages, the selection of the test method should be determined by local practices or by the appropriate authorities.

Flotation machine

Flotation machine



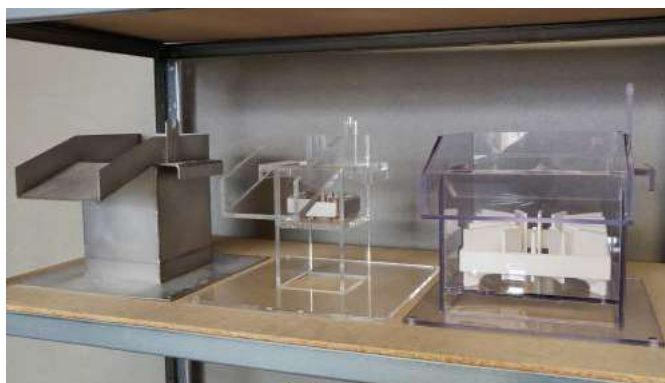
left: optional pH meter ; right: optional level indicator.

Flotation Machine LMFTM

Designed to provide an accurate reliable means of reproducing test results. It is ideally suited in duplicating plant processes and operations. The flotation machine can be used for: flotation, attritioning, blending, agitating. LAARMANN flotation machine is equipped with a programmable digital touch screen. The operator will have the opportunity to set up programs with various parameters perfectly suitable for each individual product. Representativity and reproducibility will be guaranteed in this way. LAARMANNs' Flotation machine is equipped with a pneumatic slide unit to raise or lower the rotor

Available options

- Automatic froth remover
- peristaltic pump
- level indicator
- pH meter
- Square / round cells
- Various materials



acrylic and stainless steel flotation cells in various volumes



acrylic and stainless steel rotors suitable for different cell volumes.

Sieving machines and analytical test sieves

Sieve Machines and sieves



Sieve Shaker LSM 75/200

The LSM-75/200 is suitable for sieving soft, fibrous, hard and brittle materials in the dry and wet state and is designed for analytical test sieves from 75mm to 203mm diameter (8").



Test Sieves Types and Sizes

- We supply test sieves with a diameter of 75mm up to 450mm
- Sieve mesh made from stainless steel, 20 µm up to 125 mm aperture sizes.
- Perforated round hole sieves, 500= µm up to 125 mm aperture sizes, = perforated square hole sieve, 4 mm= up to 125 mm aperture sizes.



Sieve Shaker LSM 300/450

The LSM-300/450 is suitable for the batch wise and continuous sieving of soft, middle hard, hard and brittle materials in the dry and wet state and is designed for analytical test sieves from 75 to 450 mm diameter.



1. Highest precision and accuracy. Folded rim ensures highest stability for lab and industrial applications.
2. Strong precision frame. Optimum fitting when used in sieve stacks.
3. Free of charge inspection certificate. Each sieve is optically measured.
4. Fillet. Highest representations of the sample due to reduced sticking of the sample at the sieve frame
5. Optimized and permanent tension of the mesh cloth
6. External sealing. Optimum external sealing from sieve to sieve by additional o-ring, which is included without any additional charge.

Air Jet LMAJ200

The air jet machine is used for sieving powder and dry grain products by obtaining sieving results between 5 to 4000 microns. Comes with aa vacuum cleaner



sieve clamp with inlet funnel



Fire Assay

Fire assay furnaces



Fusion furnace

LM-25PFF, 25 pot fusion furnace
LM-50PFF, 50 pot fusion furnace



Cupellation furnace

LM-50PCF, 25 pot fusion furnace
LM-100PCF, 50 pot fusion furnace

Fire assay tools



Hot pot trolley



pouring mould



Pouring trolley with mould



Work station



Slag plate



Knock up bench



Pot trolley



Pot bench



Crucible cooling rack



crucibles



Cupel cooling rack



cupels



Tool rack



Multi-pot pouring tong



Furnace shovel



Furnace brush



Furnace rake

During fire assay, the furnace will reach more than 1000°C. The high temperature radiation and pernicious gas volatilization can be a serious threat operator's health. We provide full range of fire assay tools which can reduce manual work intensity, improve work efficiency and avoid high temperature radiation. All fire assay tools can be tailored for clients' specific requirements.

final product might vary from the pictures above

Benchtop machines

Table models



Available grinding media

- Stainless steel
- Standard steel
- Tungsten carbide
- Zirconium oxide
- Agate

LM-MG100 Mortar Grinder

LAARMANN Mortar Grinder MG100 is used to grind, homogenize and mix a wide range of samples with dry/wet or cryogenic condition, which can grind hard, soft, brittle and pasty samples. They have extraordinary performance on the processing capacity, as well as easy and safe to operating.



micro vial adapters

Jar holder with key and jars

Lab Wizz 320 Micro Ball Mill

Micro Ball Mill for soft, hard and brittle materials of 2 or more samples with a volume of the jar each between 0,2 and 100 ml



6 -12 - 24 push fit rotor
* suitable for competitor machines



accessories and spares



ring sieve available
in various mesh
sizes

Ultra centrifugal mill UCM100

LAARMANN Ultra centrifugal mill UCM200 is a high speed rotor mill like no other. It is used for the rapid size reduction of soft to medium-hard and fibrous materials. The comprehensive range of accessories including a large variety of ring sieves and rotors makes the Ultra Centrifugal Mill a multidimensional instrument that can be easily adapted to various applications.



optional available on a frame



stainless steel mixing bottle

LM-TM100 Tumbler mixer

LAARMANN TM100 tumbler mixer is suitable for mixing the particulate solid and liquid samples. It is an ideal choice for quality control and R & D to ensure reliable analysis results by rotating evenly. The main features of LMTM100 are simple operation and high capacity for sample treatment

Laarmann engineering

Ferroalloy crusher for sample preparation

With this system less material is needed to be send out for external analysis. This provides a mayor saving in material costs.

The system simplifies the preparation process in a way that the amount of samples can be increased resulting in a quality improved of the production process.

Incorrect taken samples or samples processed in an incorrect way will lead to false analyses, resulting in goods being approved (false positive) or declined (false negative) wrongly.

Outsourcing this process creates many expenses, just think about the amounts of product that are lost during the process.



Sampling installation at recycling company

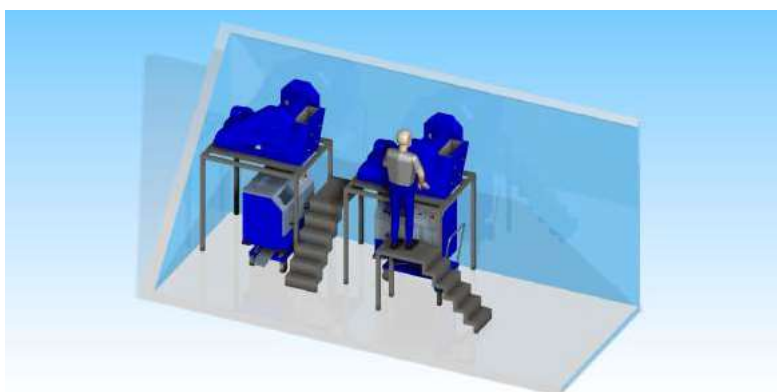
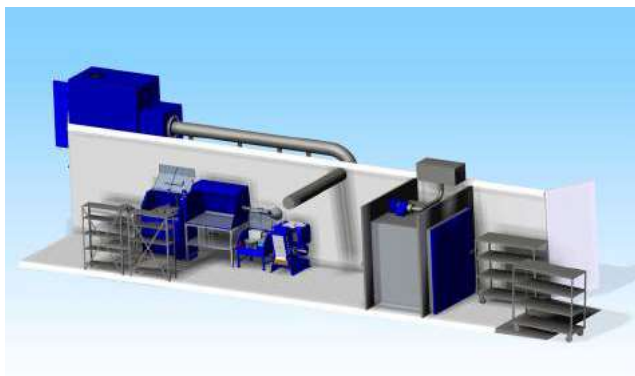
the laarmann sampling installation is a multi-ton system designed to take a representative sample from a large stream while filling big bags for later processing

The system has a large bunker where the material is loaded using a bulldozer. This material comes often directly from the delivery to be sampled and packed in big bags for further processing.

To process the stored material a bucket elevator brings it up to the vibratory feeder which creates an even flow to the LAARMANN Vezin Sampler 200. The Vezin takes a subsample of the large stream, the amount of samples can be set in the parameters. The sample either goes directly to the sample box or stored in a second bunker for another round of sampling.

The reject will be dispersed into the left or right big bag station, when a station is full the stream will be redirected to the unfilled station.

Container labs



Potencial set ups for container labs

LAARMANN

Innovators in Solids

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