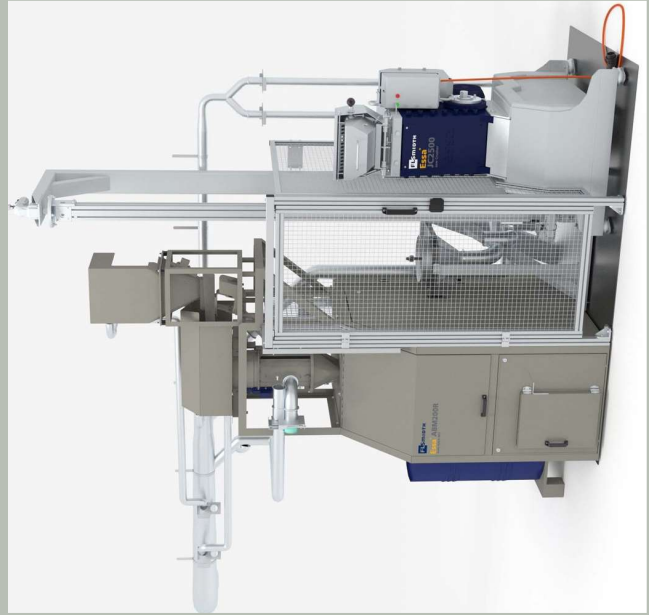


Essa® LAS402 Linear Automation System

4 Stage Sample Preparation System:

1. Fine Crush
2. Divide
3. Fine Pulverise
4. Divide



A Simple, Robust and Cost Effective Automation Solution

FLSmidth's linear automation systems link high capacity sample preparation equipment with proven mechanical sampling devices using reliable sample transfer mechanisms.

Simply load your dried field sample into a crusher and collect the assay portion at the other end.

Linear automation systems offer many of the benefits associated with more flexible robot-based automation cells but at a fraction of the cost.

Greater consistency, improved traceability, better hazard management, increased throughput and insulation from labour availability and cost fluctuations are benefits from automating sample preparation processes.

These systems are specifically designed for medium throughput mineral laboratory sample preparation requirements. They are ideal for processing mineral ores such as gold, nickel and iron ore.

They are well suited for use at remote mining and exploration sites, in transportable laboratories and do not require skilled labour to operate.

System Features

- Up to 10 kg of lump ore can be fed into the system
- Rapid crushing to 2 mm from 110 mm prior to dividing
- System output of 75 micron with selectable pulp weight and number of collected portions
- Coarse reject either collected or discarded via optional reject conveyor
- In built air blast cleaning minimises contamination
- Small footprint
- Readily transportable and ideal for remote location work
- Simple and fast installation
- Manual handling of samples greatly reduced
- Less risk of human error - skilled labour not needed
- Designed for easy maintenance as major equipment items positioned at floor level
- Modular design incorporating proven Essa® equipment

Description and Capabilities

The LAS402 linear automation system includes an Essa® Model JC2501 Jaw Crusher, an Essa® RTS034V variable split rotary tube sampler and a fine pulverising Essa® ABM200R Autobatch Mill with an in-built rotary divider.

An in-feed load cell is also supplied as standard. The system's PLC determines the appropriate coarse split ratio based on initial sample mass to ensure the required sample weight for fine pulverising.

The JC2501 accepts lump ore and core up to 110 mm and produces a fine crushed material, 85% passing 2 mm, suitable for division and pulverising.

The crusher features a simple self feeding mechanism. This prevents the crusher being choke fed with an excess of fine or compactable material that may overstress the crusher. In addition, it completely prevents operator exposure to the crushing chamber whilst sample is being crushed.

The variable split rotary tube sampler delivers a coarse split of between 5% and 48% of 2 mm material.

Coarse material reject from the sampler is discharged directly from the side of the ABM200R cabinet. If the reject is not be collected then it is recommended that it is removed via a reject conveyor.

The ever reliable ABM200R mill, fitted with a 2000 cc bowl, pulverises up to 1,2 kg to 75 micron. Typically 800 g is selected.

The rotary divider after the ABM200R divides the sample to selectable portions. This is done by placing one or more segments into a standard rotary sample divider.

A trouble-free bucket lifter moves samples from the crusher to the rotary tube sampler keeping all major equipment items on ground level for easy maintenance.

The bucket lifting system includes an air blast cleaning station, with dust extraction point, for keeping the bucket free of residual sample material.

The RTS034V and ABM200R both incorporate in-built air blast clean and dust removal systems to minimise sample cross-contamination.

Method of Operation

The system is controlled by a single operator weighing and feeding samples at the in-feed point.

Typically samples are crushed to 2 mm and then fed to the RTS034V, a coarse split of 800 g is taken and introduced to the ABM200R where it is pulverised to 75 micron before being fine split to configurable segments.

Up to three samples are processed in the system at any one time.

Skilled labour is not required to operate this system.

Typical Throughput

If crushing 2 kg to 10 kg of sample and fine pulverising nominally 0.8kg you can achieve up to a maximum of ten (10) prepared samples per hour.

Please note that the figures quoted in this document 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.

System Availability

These reliable systems will achieve typical throughput specifications in 22 hours with a recommended 2 hours allowed for cleaning and planned maintenance per day.

Safety Features

Improved operator safety is a major benefit of this system.

In-built dust extraction minimises operator exposure to noise and dust.

A mechanical lifter transfers the sample between the crusher and sampler. It is recommended the coarse reject is removed via conveyor. Manual handling is limited to simply loading the crusher and collecting up to 1.2kg of finely pulverised sample.

The system includes protective guarding and emergency stops. Locked safety switches are incorporated into the main operator access points to ensure operator safety.

Both the sample in-feed and out-feed are at comfortable heights for the operator's use.

By keeping major equipment at ground level the ergonomics for both operators and maintenance personnel is greatly improved over other systems on the market.

Process Stage	1	2	3	4
	Jaw Crush	Lift to RTS Hopper	Coarse Division	Fine Pulverise
Equipment	Essa® JC2501 Jaw Crusher	Bucket Lifter	Essa® RTS034V Variable Rotary Tube Sampler	Essa® ABM200R Autobatch Mill ABM Rotary Sample Divider
Typical Input Size	Up to 110 mm	-	2 mm	2 mm
Typical Input Mass	10 kg	10 kg	10 kg	0.8 kg
Typical Output	85% < 2 mm	-	0.8kg Split	95% <0.075 mm
Typical Reject	-	-	9.2 kg	Selectable
Typical Throughput	Up to ten (10) samples per hour (with up to 3 samples in system at one time)			
Operating Flexibility	Up to 10 kg	Up to 10 kg	5% to 48% Split	0.2 kg to 1.2 kg
Standard Features	Load Cell	Air Blast Bucket Cleaner	Vibratory Feeder Air Blast Clean	Bowl and Disc Air Blast Clean Three Sample Segments

Essa® LAS402 Linear Automation System Scope of Supply

- Log in station with balance
- Essa® JC2501 Jaw Crusher
- Bucket lifter—sample transport from JC2510 to RTS
- Essa® RTS034V Variable Rotary Tube Sampler with vibratory feeder
- Essa® ABM200R Autobatch Mill
- Rotary sample divider, with three sample segments, at the ABM200R discharge
- Control PLC and MCC cabinet
- Software
- Safety fencing
- Documentation

System Requirements

Power

- 18 kW three phase

Compressed Air

- 390 m³/hr FAD at 800-1200 kPa clean, dry, oil free

Dust Extraction

- 1500 m³/hr