System Specifications
AP1000R Robotic System

The AP1000R Robotic System is capable of processing up to 800 samples per day. The sample weights can vary from 800g to 10kg or more. The final particle size after processing through the Automated Batch Mill (ABM 3000) is 95% - 75 microns.

Requirements/Specifications

The specifications for the Commercial Laboratory in New Caledonia were as follows
10% = 800g
70% = 5 - 7kg
20% = 8 - 10kg
Particle size up to 60mm

Requirements/Specifications cont...
Throughput up to 800 samples per day
Output particle size: 95%, -75 microns
Approx complete cycle 1.5 to 2 minutes
1 x 300g sample
1 x 300g retained sample
Balance to waste.

System contains the following equipment
2 x Boyd Crushers and 2 x LSDs feeding 4 x Auto Batch Mills
15 x large Bins for loading into Boyd Crushers
15 x bins pairs (15 for loading into Auto Batch Mill and 15 for retained sample)
ABB Robot, roller conveyor systems, PLCs, weight scale

Cleaning System:
Boyd Crushers: Compressed air jaw clean of jaws between each sample plus a mechanical blockage clearing device which can detect any remaining blockages.
Automated Batch Mill: Sand wash clean, hot air blast and suction clean out clean out between each sample (note an option is available for a water clean instead of sand wash).

ROCKLABS

World Leaders in Sample Preparation Equipment
Automated Systems and Certified Reference Materials

AP1000R
Robotic Automated System

*For more information please contact us on the details below or visit the website for a list of international agents.

AP1000R Robotic Automated System

Automated preparation, Robotic precision

Introduction

The AP1000R Robotic System was designed for a commercial laboratory in New Caledonia. The specification was to process up to 800 samples per day with an input sample weight varying from 800g to 10kg and a maximum particle size of 60mm. The final product required was a 300g sample (particle size of 95% -75microns) plus a 300g retained sample with the balance to waste.

ROCKLABS universally accepted products including the Boyd Crusher, LSD (Linear Sample Divider) and Automated Batch Mill with automated cleaning cycle are utilised in this System. An ABB Robot is used to load and retrieve the sample bins from the various positions within the System.
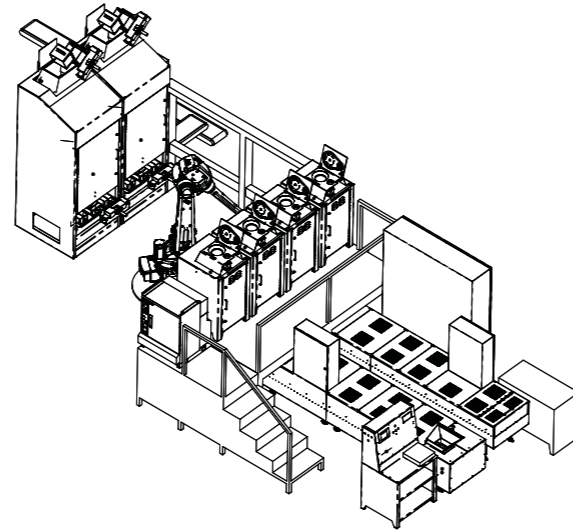
Process

- Sample placed on scale and weighed, bar coded and data entered.
- Sample travels on roller conveyor to robot pick up point.
- Robot retrieves bin & loads into Boyd Crusher for crushing.
- LSD located beneath Boyd Crusher divides sample into 3 way split: 1 x 300g sample & 1 x 300g retained sample (which are loaded into two smaller bins. The balance is captured in the retained waste drawer or bypassed to waste conveyor for easy removal.
- Robot retrieves the 2x 300g bins from under Boyd Crusher & places in a station beneath Batch Mill. Robot then lifts and empties 1 x 300g sample bin into Batch Mill for pulverising and places empty bin next to retained sample bin.
- Processed sample from Batch Mill loaded into empty sample bin.
- Robot lifts the 2 x bins containing 300g sample and Retained sample and places onto return conveyor.
- This process is repeated.
- The crushing time in the Boyd Crusher will vary depending on the sample weight. The Robot is programmed to take into account the varying crushing times in the Boyd which will thus determine the loading sequence of the Batch Mills