



WORLD LEADERS IN SAMPLE PREPARATION EQUIPMENT

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ROCKLABS December 2002...

Christmas Greetings from ROCKLABS, World Leaders in the manufacture of Sample Preparation equipment and Gold Assay Reference Material.

Diavik Diamonds - Mechanised Sample Preparation System.

This System is the 14th Sample Preparation System manufactured by ROCKLABS..

Continuous Flow Ring Mills (CRMs). The Mark VII model is now available with 3 different Options including one with an RSD (Rotating Sample Divider).

Recommendations for all Boyd Crusher Users.

Reference Materials. 8 new values were added recently, increasing the range to 19 values.

Barrick's Goldstrike Mine in USA awards ROCKLABS new order for Automated Sample Preparation Systems. Rocklabs has 3 sample preparation Systems operating in the Goldstrike Laboratory in Nevada. The new order is for equipment to replace existing machines from another manufacturer and extend sample processing to include weighing of rotary splits into test tubes, ready for digestion. If you would like details of any Systems, please contact us at sales@rocklabs.com.

Conferences in 2003. Three Conferences scheduled for 2003 that might be of interest to you.
Society of Mineral Analysts (USA) in April in Elko, Nevada.
Canadian Mineral Analysts in September in Ottawa, Canada.
World Conference on Sampling and Blending (in honour of Pierre Gy) in August in Denmark.

Customer Support: Rocklabs has appointed Franky Kwok to a newly created position of Customer Support Engineer. Franky is a Mechanical Engineer. He will be assisting customers on a technical level, especially with Mechanical and Automated Systems.

Rocklabs Calendar. As a small "thank you" for your support over the past few years, we enclose our Rocklabs desktop calendar. We wish you and your families a Happy Christmas and a prosperous New Year.

Beulah Johnson
Export Sales Manager

DIAVIK MECHANISED SYSTEMS

The Diavik diamond mine in northern Canada is required to monitor its waste rock for the possibility that it will cause acid drainage problems in the future. There will be 100 to 150 of these samples to be processed in one shift, every day.

After drying, each sample is loaded into the System with the electro-hydraulic lift (on the left of the photograph)





Each sample is crushed finely with a Boyd Crusher and the crushed product is fed into a Rotary Sample Divider (RSD). The split from the RSD can be any proportion from 2-25%. The split % is set manually. The split portion falls into a two stage Continuous Ring Mill (CRM) that pulverises the sample and delivers it into a disposable plastic cup. One sample is prepared every three minutes.

There is no automation. All machines operate all the time. The cabinet is sound proofed to 80-82 dBA. The waste material falls from the cabinet into a wheeled bin. It could be removed outside the building on a small belt conveyor. The cabinet is connected to the lab dust extraction system. This simple, mechanised System could be used by many mines.

The Continuous Ring Mill (CRM) is suitable for:

- Pulverising large samples from 1 kg to 1 tonne
 - Coarse pulverising of large samples for mineral separation e.g zircon dating
 - Preparing samples for on-steam analysis, dry or slurries.
- The standard CRM is available in 3 Options.
- Option 1: sample flows into a 10 kg container (as shown below)
 - Option 2: sample flows into a 500 gram plastic pottle/container (not shown)
 - Option 3: sample flows from the CRM into a Rotating Sample Divider (RSD) (as shown below)



– Features –

- Continuous flow through operation
 - High productivity
 - Large sealed, easy clean stainless steel collection bins
 - Samples fed from hopper via a low maintenance variable speed vibrating feeder
 - Built-in ducting of cyclone with external vent for connection to dust extraction system
 - Automatic cleaning cycle for Options 1 and 2
 - Head dismantles easily for cleaning.
 - Quiet operation - less than 80 dB
1. You MUST ensure that your Boyd motor is running in the correct direction. The Mark 3 Boyd operates in the opposite direction to the Mark 2 Boyd. For a Mark 2 Boyd: The front jaw (the one nearest the operator) should move upwards and away from the operator, i.e. towards the other jaw. For a Mark 3 Boyd: The front jaw (the one nearest the operator) should move upwards and towards the operator i.e. away from the other jaw. If you are uncertain, please contact us immediately as operating the crusher in the wrong direction may lead to parts failing or low production rates.
 2. When looking into the crusher jaws from above, it is not easy to see how much wear there is in the cheek plates. If the plate wears more than 2 to 2.5 mm, pieces of sample can fall down the groove worn in the cheek plate, without being crushed properly. If the sample falls into a sample bin in your Crusher, these larger pieces may be seen at the sides of the bin. But, if the sample falls into a vibrating feeder, taking the sample to an RSD, any larger pieces will be mixed with the sample.
If the Boyd product is checked with a screen, the operator will see the larger pieces on the screen and close the jaws to try and prevent this. This will NOT prevent the larger pieces from falling down the cheek plate groove but the production rate will decrease. Therefore we strongly

recommend that the cheek plates be lifted out and inspected once per MONTH. If the groove in the cheek plate is more than 2.5 mm deep, turn the cheek plate over. If the cheek plate is worn right through, replace it IMMEDIATELY or the side plate of the crusher will get worn and could break.

3. In the Mark 3 Boyd, the jaw wear plate is held in place by a wedge bar at the top. The wedge bar is held in place with five caphead screws. If these screws are over-tightened, the jaw may be over-stressed. To ensure a good fit, tighten the screws to 20 Newton metres only and use Loctite on the threads.
4. It is important that the jaws touch the rollers along the whole roller, not just at one end. To check this, push the jaw off the roller, put a piece of copy paper between the jaw and the roller and crush one sample. The paper should be crushed along the whole length. If it is not, adjust the position of the roller with the adjustment bolt and do the "Paper Test" again. Repeat until the jaw touches the roller along its whole length.
5. Most Boyd Crushers are being used to produce finely crushed material e.g. 6 mesh, 10 mesh. For this type of product, the jaws are normally set with a minimum gap of about 2 mm. A small change in the gap can produce a big change in the production rate, so check your samples carefully. If they are being crushed finer than necessary, open the jaws a little e.g. one sixth of a turn of the adjustment bolts. Increasing the gap a little, increases the production rate, decreases the stress on the crusher and increases the life of the wear plates.
6. Boyd Crushers require very little greasing, but grease can very slowly leak from sealed bearings. The bearings may need re-greasing. Have you ever taken your Boyd apart and checked the bearings? Contact us for help.

PLEASE KEEP THIS PAGE WITH YOUR BOYD MANUAL

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