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AUTOMATIC FEED-RATE CONTROL SYSTEM

One of the most important operating parameters of our Flow Sort X- Ray diamond recovery machines is the feed presentation to these sorters.

Poor feed preparation will lead, without fail, to poor diamond recovery efficiency.

Feed preparation starts with proper feed material sizing and feed material cleaning.

For appropriate size range refer to the relevant sorter model specifications.

Please note that “dirty” feed water, excessive “free” water flow to the sorter with the feed material will most definitely effect the diamond recovery efficiency of our diamond recovery machines!

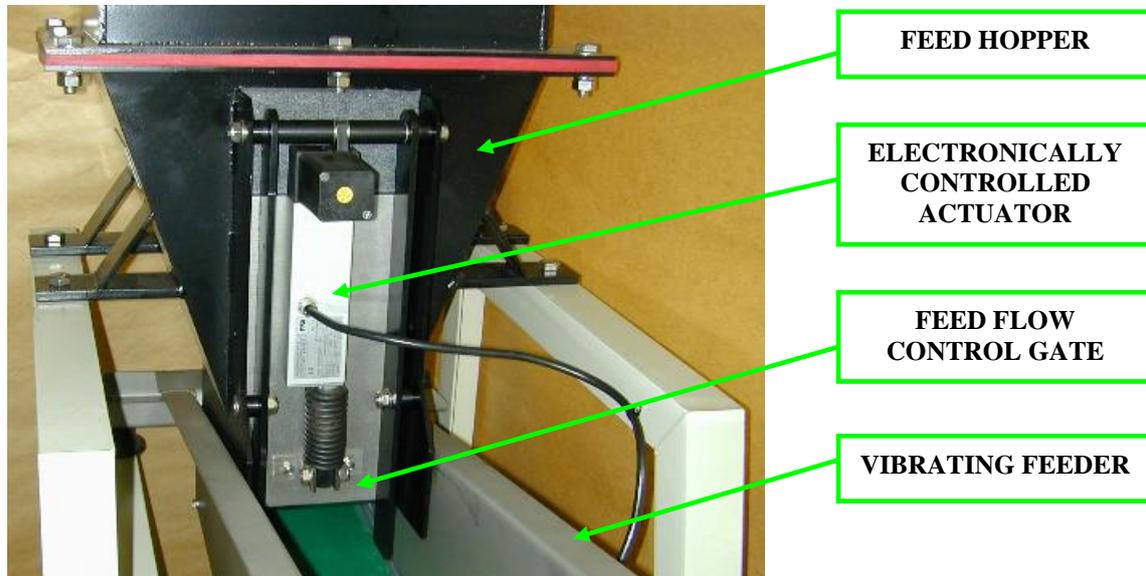
Besides correct material sizing ensuring clean feed material and avoiding excess water in the feed stream to the sorter it is of utmost importance that only a **SINGLE LAYER** of material passes down the feed slide of the sorter.

As soon as particles start to lie on top of one another the sorters maximum feed rate has been exceeded and a drop in diamond recovery efficiency will occur.

It follows that in order to get maximum diamond recovery the feed flow to a diamond recovery machine must be carefully controlled at all times to avoid over feeding.

Many devices have been tried over the years to achieve “ the prefect” feed presentation to an X- Ray diamond recovery machine. Some worked better than others. All such devices were based on controlling the feed flow (feed rate) by means of altering the vibration amplitude of the sorters vibrating feeder.

Our new approach of feed control regulates the material flow by means of an automatic (computer controlled) feed gate located at the feed hopper discharge. The vibrating feeder is kept running at maximum amplitude at all times. This high vibration amplitude ensures a fast, well spread out material flow from the feed hopper into the sorter.



This way we can ensure an even and regular material flow being delivered to the top of the sorters feed slide. Here the feed flow is mixed with a fast flowing stream of feed water, which in turn accelerates the feed particles on their way down the feed slide. By the time the material flow (gravel mixed with water) reaches the sorting zone (x-ray and optic) the material has spread out into a monolayer ensuring maximum diamond recovery efficiency.