

FULLY AUTOMATIC SORTER SET-UP

This is the first x-ray diamond recovery machine that fully automatically sets itself up for optimal diamond recovery efficiency as well as optimal feed rate!

How is this possible??

Well, there is one thing that the sorter has to be “told” up front and that is what the lowest diamond luminescent level that the sorter is expected to recover at a particular installation.

This is how that is done!

1. First we measure with FLOW’S FPA (Fluorescent Particle Analyser) the luminescence level of a diamond sample provided by a customer.
2. We then normalise the low-end diamond luminescence level against FLOW marble tracers.
3. We feed this normalisation factor into the XMS computer.
4. The sorter measured the luminescence level of a FLOW marble tracer whilst it transverses the entire feed chute.
5. From this measurement the sorter adjust the “optical-gain” so that the marble tracer generates exactly the same signal regardless at which position it passes through the sorter.
6. Finally an ejector gate trigger level is set to the point of the normalised (weighted) tracer signal.
7. The result is that any particle with a luminescence level of the lowest diamond luminescent level (as per customer sample point 3. above) will trigger the sorters ejection mechanism, regardless where it physically passes through the sorter.
8. The sorters feed rate is automatically controlled via an automatic feed rete control gate. The criteria being a pre-set maximum feed slide area occupation factor as well as a maximum permissible ejection rate.