



X-Ray Sorting System XSS



Mixed metals • ore • coal • plastics • wood refuse incinerator ash • metal slag

The X-Ray Sorting System XSS creates exciting new possibilities for automated sorting of mixed material. The STEINERT XSS uses a "Dual Energy" system to determine material density while overcoming the effects of thickness and shape. It "sees" through the pieces, recognizing different

material densities, different metals, components containing halogens, and organics. Composite materials and internal items (screws, nails) can also be recognized. This x-ray sensing enables light metals to be sorted from heavy metals, PVC from plastics, stone from scrap wood.

Applications

One important application of X-Ray Sorting System is the separation of mixed light and heavy metals after the iron content has been removed by magnetic separators, such as the mixed non-ferrous product from eddy current separators. The XSS makes it possible to separate aluminium and magnesium from the heavy metals fraction such as copper, bronze, zinc and lead. It is also possible to separate cast aluminium from wrought aluminium-based alloys. When processing minerals, metal-bearing rock can be separated from metal-poor rock or coal from field stone. This saves large amounts of energy in the area of fine milling and



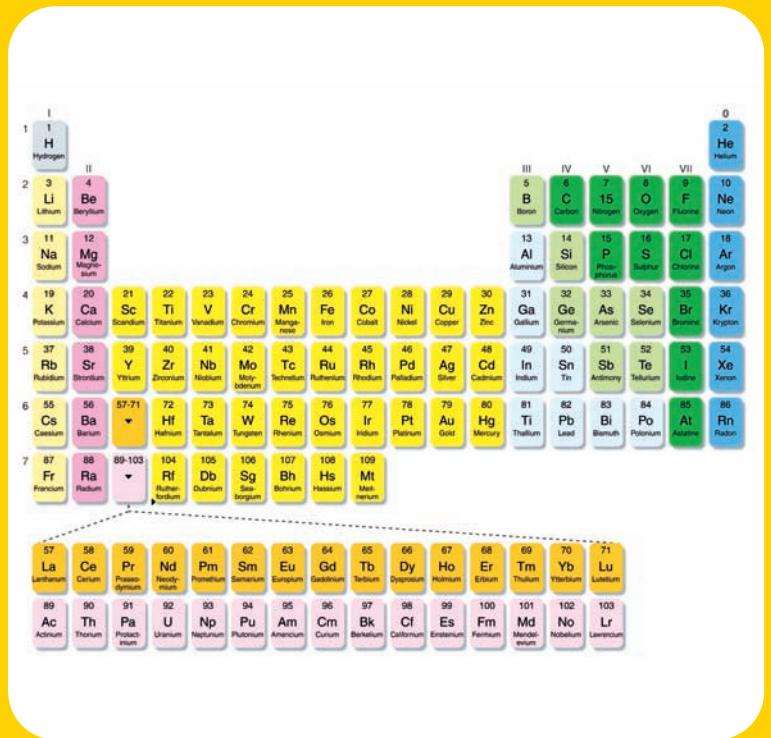
fine-grain sorting, thus substantially improving the economics of current mineral processing operations. Composite material systems and even surface details in organic materials can also be recognized and separated by the X-ray Sorting System. Even plastics and wood can be separated. The detecting principle reacts to the

atom mass of each chemical element. The technology at the heart of the X-ray Sorting System XSS is based on the transmission of X-rays, i.e. X-rays are transmitted through the material to be sorted and an X-ray sensitive camera determines the intensity of the radiation. A computer determines the difference between the incidental and the transmitted radiation. The resulting intensity difference - the absorption - can be used to draw conclusions about the atomic composition of the scanned material. The system creates a near reality image-sufficient to enable subtle evaluations to be carried out. The absorption depends on both the solid density and the material thickness. The larger the atomic mass and the thicker the material, the greater the absorp-



Technology

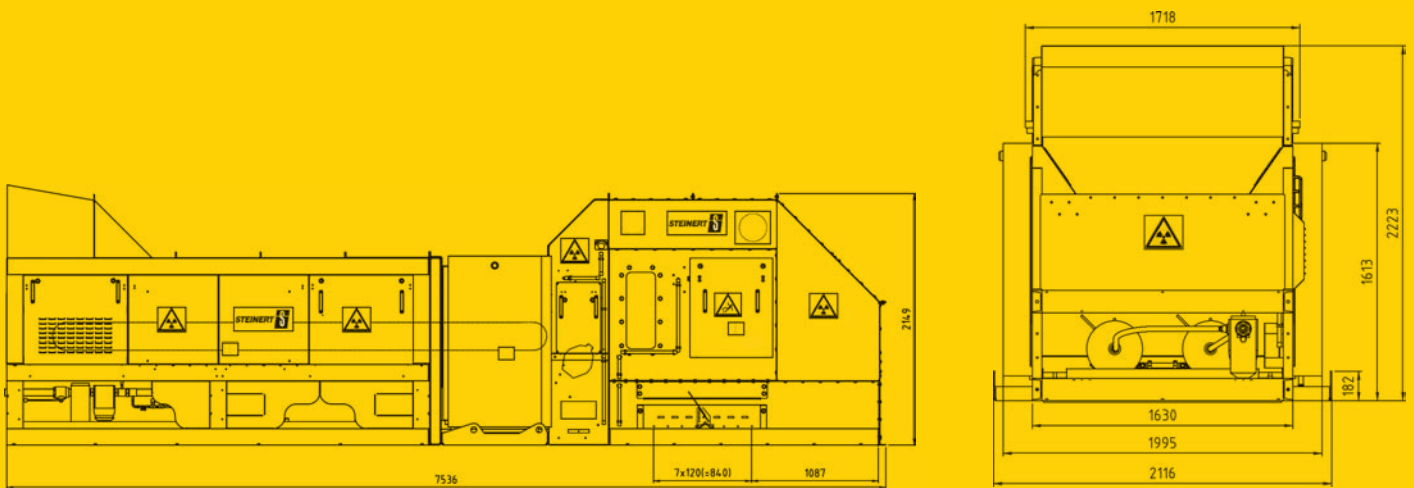
tion. In order to compensate, the thickness the material to be sorted it is analysed on two different energy levels known as "Dual-Energy". This allows the software to measure the absorption specific for the material. On the one hand the X-Ray Sorting System XSS from STEINERT is based on the Induction Sorting System ISS platform, which has been in use in materials processing systems with great success for several years, on the other hand the X-ray component is already proven in many scanning systems throughout the world. These two systems are brought together in the STEINERT XSS to produce a robust piece of equipment. The common feature of all Steinert sorting systems is that every individual



particle in the material flow is recognized and classified. The long, fast-running belt ensures that the particles are singulated and homogeneously distributed. While they pass the X-ray source and camera, they are recognized and classified in a fraction of a second according to preset criteria programmed in the flexible system software. If the

classification matches the previously defined criteria, the particle is ejected by a powerful blast of compressed air out of reliable, fast-action compressed air valves. The sensitivity of the X-ray recognition can be set to just a few square millimetres. The resolution of the present compressed air valve array makes it possible to achieve resolutions of less than 12.5 mm on the blow-out bar.

Models



Suspension Magnet



Magnetic Drum



Magnetic Head Pulley



High Gradient Magnetic Separator



Eddy Current Separator



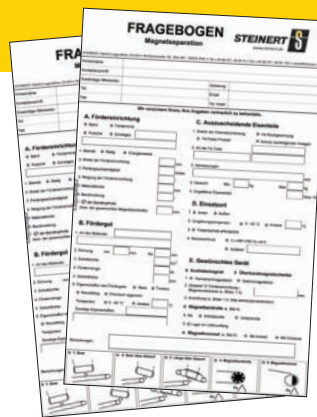
Induction Sorting System



X-Ray Sorting System



Colour Sorting System



Interested?

Download our questionnaire!

Our R&D department is glad to conduct tests of your material.

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