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Stainless Steel "LaserScreens" for continuous centrifugals

Increasing numbers of sugar mills and refineries are using chromium coated stainless steel laser-drilled screens (LaserScreens) in place of the traditional chromium coated soft nickel (electroformed) screens, in high and low grade continuous centrifugals.

LaserScreens, produced exclusively by ActionLaser Pty Ltd, were initially developed in co-operation with the Australian sugar industry to overcome the problems associated with all chromed nickel screens:

- distortion over the coarse backing screen due to a lack of tensile strength, causing the slots to widen;
- loss of the abrasion resistant chromium coating due to both galvanic corrosive action and generally poorer adhesion, causing the slots to widen;
- inadequate service life and resistance to damage, particularly in the newer, large centrifugals.

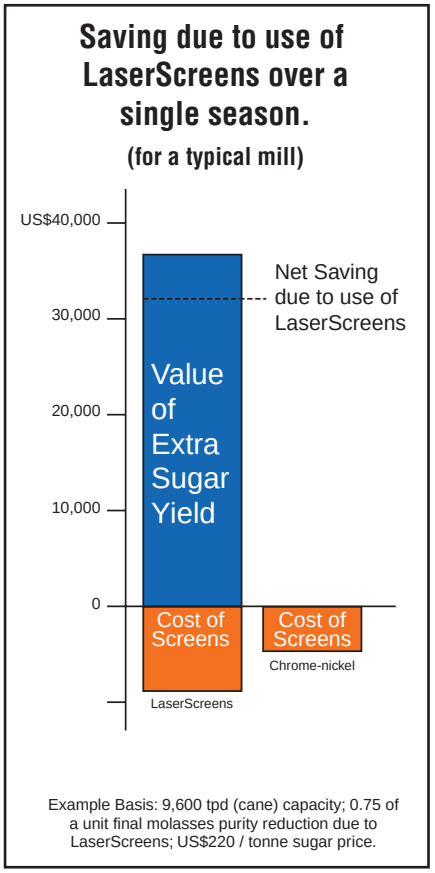
An additional concern with chromed nickel screens is the occurrence of nickel and chromium contamination in the sugar as the screens deteriorate.

These problems exist with chromed nickel screens regardless of recent modifications such as increasing the screen thickness to increase strength. The base material is soft nickel and these screens remain markedly weaker than stainless steel screens despite such increases in thickness and changes to slot geometry. Also, reducing the initial slot width in chrome nickel screens offers little overall improvement due to the relatively rapid wear and distortion that takes place progressively during operation.

All these problems are eliminated or substantially reduced with LaserScreens, which have up to ten times the tensile strength of nickel screens, and which exhibit very strong adhesion of the chromium coating.

LaserScreens should not be seen as a commodity like nuts, bolts and other consumable items. Rather, LaserScreens represent an investment in improved production yield and efficiency.

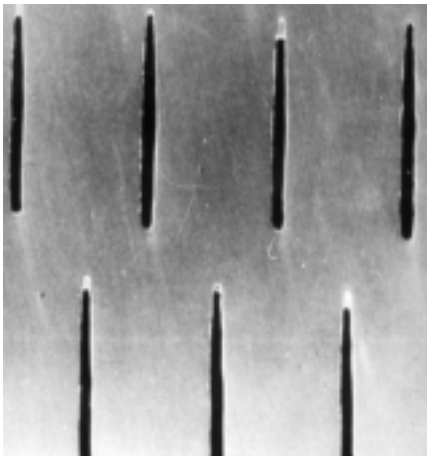
Despite the higher initial screen cost, LaserScreens are well justified in replacing electroformed nickel screens due to: 1) the significant reduction in sugar lost to molasses, particularly in low grade centrifugals, and 2) a screen life at least 2 or 3 times greater than that of nickel screens.



It has been shown in Australia, for example, that a mill crushing one million tonnes of cane will save in the order of US$ 30,000 in reduced sugar losses alone, by using LaserScreens (see diagram).

Independent trials in the UK, South Africa and Mexico have established similar results to those in Australia with regard to sugar savings and screen lifetime.

Chrome nickel screen showing slot distortion over the backing screen and loss of chrome.



LaserScreen.

ActionLaser is a long-established Sydney based manufacturer using unique laser technology to produce screening materials and industrial filter components and is a Quality Endorsed Company complying with ISO 9001:2000.

LaserScreens are manufactured under licence from the Australian CSIRO and the Bureau of Sugar Experiment Stations.