

Tower 2000 replaces horizontal extraction in the Allscott sugar factory, Great Britain

At present, BMA is fabricating the well-proven extraction tower for the sugar factory at Allscott / British Sugar which will be commissioned during the 2004/2005 beet campaign.

This extraction tower represents the successfully advanced Tower 2000 and will be the sixth installation since the introduction of the new generation into the market.

The new extraction tower ($\text{\O} 7.6 \times 22.43 \text{ m}$), designed for a nominal beet slice rate of 6,000 t/d, replaces an obsolete and under-designed RT drum. The existing countercurrent cossette mixer can still be used.

The screen section, conveying flights and stops are manufactured from solid stainless steel. The internal wall and the conveying shaft are lined with stainless steel.

One of the special features of the new tower generation 2000 is that the juice at the tower base is drawn only through newly designed side screens. These side screens are completely incorporated into the outer tower shell, allowing conventional juice chambers to be eliminated. The screens are flush with the outer shell. There is no need to open the juice chambers after the campaign any more.

The bottom screens of the former generations have been eliminated. The design of the juice collecting chambers inside and outside the screens allows for a full flow, thus preventing sediments and infections. The tower base is now provided with a solid stainless steel plate. There are no damaged bottom screens and bottom screen scrapers caused by foreign matter any more. Consequently, the maintenance cost could be considerably reduced. Another decisive advantage of the new generation is the greatly reduced infection hazard thanks to the absence of the juice zones below the bottom screens and the new design of the screen section.

The extraction tower conveying shaft is driven by 5 variable-speed drive units. The driving pinions rotate in flexible bearings, which ensures absolute flank parallelism with the bull gear. High torque can be safely and smoothly transmitted to the bull gear, also when operating at high filling ratios. Moreover, the drives are protected against excessive overloads by torque-limiting couplings.

In this context, the extremely tight time schedule is worth mentioning. It requires a precisely coordinated workflow of manufacture and erection. The change-over from the old RT extraction to the new tower within an extremely short time period during the 2004/2005 campaign represents a special challenge to be mastered.

Christian Madert

Tower 2000

