

DSI SANDWICH SHOP

FULLY EQUALIZED IDLERS

SPECIALIZED IDLERS THROUGH THE INFLECTION ZONE



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BACKGROUND

The inflection zones, between the alternating convex curves of the DSI Sandwich belt high angle conveyor profile, present a special challenge. Through these zones the top and bottom belts must reverse roles from troughed carrying belt to the radial hugging belt in one case and the reverse in the other. Through these zones, special 5-roll, vari-troughing idlers have been used. The idlers are positioned and the wing rolls are adjusted for the best continuity of support whether the system is running

empty or loaded. In fact, the idler positioning and wing adjustment can only be ideal for the chosen running condition, at design load. It is thus a compromise for other running conditions, such as lightly loaded and overloaded. The ideal idler positions and wing-roll adjustments result in unfavorable pressure point and wear patterns on the rolls.

In order to easily handle overloads, the center rolls to either side of the inflection are not typically in contact with the belt when running at the lower rates even up to design load. The arrangement has been successful for many years at many Dos Santos Sandwich Belt systems.



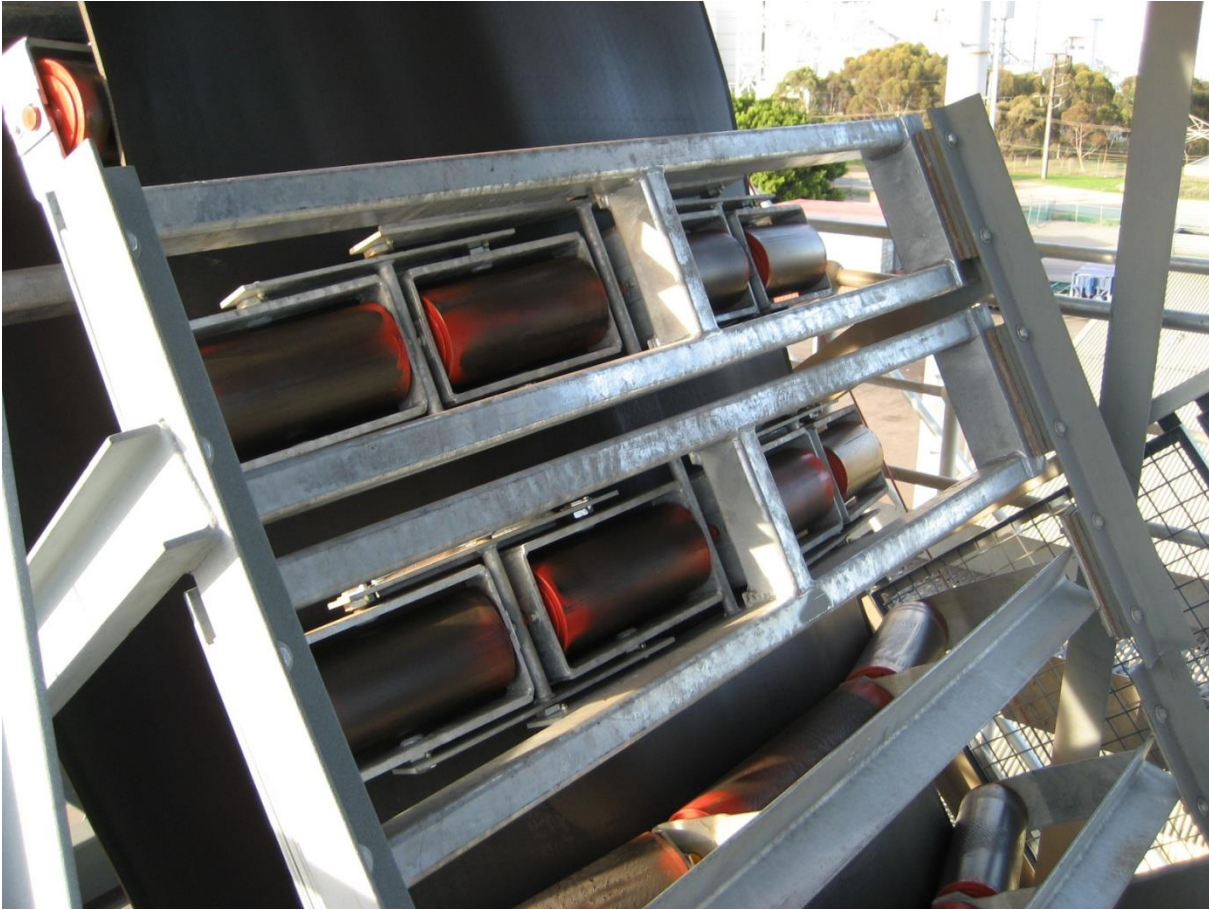
FEI's (Fully Equalized Idlers) at the inflection zones ensure continuity of hugging regardless of the conveying rate.

NEW CHALLENGE

An especially difficult DSI Sandwich conveyor application ultimately challenged the capability of this arrangement. Necessity being the mother of invention, it led to the development of a better system. That application was quite unforgiving, and any minor lapse in the hugging pressure, even at the lowest conveying rates, resulted in material movement and leakage. The transition system through the inflection zone, must hug the material without lapse just as it is along the convex curves.



THE OLD WAY



The better system that we developed, at DSI, is shown in Figure 2. Four FEI's (fully equalized idlers) by the manner in which they are arranged, using pivoting brackets and frames. The rolls of each FEI are able to flex and move to accommodate the changing shape of the material cross-section always applying equal roll loads and always orienting each roll against the belt for maximum contact. This avoids any unfavorable pressure points.

This improved design was prompted by a most difficult application. Since its development we have been using it exclusively on all new DSI Sandwich belt conveyors.

We strongly recommend the use of the new FEI's at all of the inflection zones of all DSI Sandwich belt conveyors that precede the development.

CALL THE EXPERTS TODAY!