BELT TECHNOLOGIES, INC.

Precision on the Move

BELT TECHNOLOGIES CREATES OUT-OF-THIS-WORLD SOLAR PANEL SOLUTION

PURESTEEL® VACUUM CONVEYORS PROVIDE AN EFFICIENT AND ACCURATE SOLUTION FOR SATELLITE SOLAR PANEL PRODUCTION.

In recent years, the production of solar panels has expanded significantly as the world adapts to an increased need for 21st-century infrastructure technology. While many of these solar cells are used in arrays around the globe as a renewable energy resource—some of those created on our PureSteel® conveyors and belts are serving an out-of-this-world purpose. When a customer required a faster method of assembly for panels in a satellite array, they turned to Belt Technologies for a solution.

THE COMPANY:

An American manufacturer that operates a satellite communications service providing internet access to a rapidly expanding global subscriber base.

THE PROBLEM:

After experiencing slower-than-desirable production, the customer asked Belt Technologies for a conveyor that could accurately move solar cells into place and maintain positioning for electrical testing.

THE SOLUTION:

Belt Technologies supplied a vacuum conveyor and perforated stainless steel belt with an applied friction coating to accurately position the cells and electrically isolate them from the belt during testing.

THE RESULTS:

Belt has provided the customer with three conveyor systems, which made the production process more efficient. The success has led to the opportunity for an ongoing partnership.

THE PROBLEM

The customer is an American manufacturer that operates a satellite communications service and provides internet access to a rapidly expanding global subscriber base. To create the necessary panels for all these satellites, the customer incorporated a production line consisting of small stringer conveyors to assemble the cells--each of which use several of our stainless steel belts—and multiple six-axis robots to lift them, turn them and place them in a central area for electrical testing. This last step, which was originally completed by hand, proved to be a bottleneck for the overall operation.

THE SOLUTION

The customer reached out to our team for a conveyor that could accurately move cells into place and maintain positioning for electrical testing, before ushering them down the line. They also required a quick turnaround for delivery. The process began when the customer provided Belt with their required specifications for acceleration, speed, cycle-time and duty-cycle.

After an exchange of ideas, our team first created a vacuum conveyor with a perforated belt which helped to maintain the position of the cells during the test. Although the initial belt and vacuum system met all of the customer's design specifications, it was not achieving their desired performance results. Accordingly, we proceeded to rework the original design, ultimately replacing the vacuum system with one that used a belt with an applied friction coating. This conveyor system proved to be even more successful in achieving the cell position, because in addition to accurately positioning the cells, it also electrically isolates them from the belt for testing.

THE RESULT

Our experienced engineers collaborated with the customer to provide a solution that was easy to install and maintain while surpassing production goals. So far, we have provided three conveyor systems, with plans to provide at least two more.

This customer, like many others, benefitted from our custom, perforated PureSteel® belts that operate in tandem with our vacuum systems to deliver smooth and precise movements. Due to the inherent benefits of stainless steel, the belts won't stretch over time and can maintain an accurate index for years to come. The success of the project has opened up the opportunity for future projects and partnerships the customer.