

Title:

Special Dual-Axis Load Cell for Field R&D Testing

Overview:

Research and development testing for OEM equipment manufacturers is often an extremely specialized endeavor. The machinery needs to be evaluated as close to its salable condition as possible under normal operating conditions, or worse.

FEA analysis is one means by which testing can be performed, but it's only as good as the data used to generate it. Field testing under normal conditions can provide OEM's with the quality data they need to make their FEA analysis more effective and accurate. However, off-the-shelf load cells are often not suited to allow Engineers to integrate them in the right positions and measure loads in the desired directions.

In one such application, Northstar Load Cell and Scale worked closely with a customer to develop a highly-specialized dual-axis load cell which met all of the requirements for fit-and-function on their machinery. Some of the criteria that needed to be met in order to make the customer's testing a success were:

- The cells needed to be installed directly to the machine without any extra structural modifications.
- Given the harsh field testing environment and the duration of the test, the cells needed to be designed to be robust and well protected.
- The material costs need to be kept in-check thru 'creative' part and material sourcing.
- Structurally, the cells needed to be able to withstand extreme shock-loading.
- Most importantly, the cells had to be able to measure loading in the horizontal and vertical directions independently.

The final result, as seen below, resulted in a well-crafted and effective solution that provided extremely valuable test data for the customer, and will continue to do so in future tests.



References:

www.northstarloadcell.com