



Controlled Motion Dynamics Inc.

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Examples of Industries Served

- Centrifuge Manufacturers
- Pellet Mill Manufacturers
- Heavy Machine Manufacturers
- Irrigation Equipment Manufacturers
- Tool and Die Manufacturers
- Food Service Companies
- Medical Equipment Manufacturers
- Medical Researchers



Case Study

Opportunity:

Controlled Motion Dynamics worked with a local irrigation equipment manufacturer to develop a one-time-use center pivot stress test fixture to evaluate the structural integrity of the center pivot framework. This project required a small power unit and a control scheme to consistently move the center pivot forward a predetermined distance and then back again on a continuous basis until fracturing and ultimately complete breakage of the unit occurred. Both distance and pressure would be needed to fulfill the required test parameters set up by the quality assurance team in charge of this project.

Solution:

- A stock Vickers power unit suitable for this test was selected and a control package developed that would allow for the desired parameters. The control concept utilized proximity sensors located on a Sheffer cylinder and adjustable Deltrol pressure switches to obtain the desired limitations. In order to reduce the effect of the spiking action of the hydraulic system, time delay relays were incorporated into the control hardware, with the resulting motion very smooth and repeatable.
- After the unit was built and shipped to the customer, CMDI personnel worked in conjunction with the customer and finely tuned the system to meet the customer defined requirements of an operating pressure of 1200 psi and a distance of 33 inches. This system operated non-stop for over three months before destruction of the center pivot equipment occurred. The data obtained by the customer from this test was used to evaluate and enhance structural designs for their product allowing them to provide their customers with a high quality center pivot.

Controlled Motion Dynamics designed and developed all of the logic and provided all of the hardware necessary to make this project a success for their customer. An additional bonus to the customer was that at the end of the test, they had a power unit that could be easily adapted to another test project, which saved the customer additional money.