

CARDINAL LOAD CELLS

In June of 1976 Cardinal entered the load cell business with a 2500-pound capacity aluminum shear beam load cell. During those early years Cardinal load cell designs were limited to those load cells that had long delivery times from other load cell manufacturers. As Cardinal's knowledge and experience grew, so did the number of load cell models.



Placement of Strain Gauges in Shear Beam Load Cell

The range of load cell capacities increased to include 120,000 pound capacity cells while extending to 2 pounds at the low end of the range. At that time, every load cell that Cardinal built was used in a Cardinal scale.

In January of 1990, Cardinal began designing and building its own line of strain gauges. This action came as a result of the need to maintain a continuous supply of quality strain gauges and to have the ability to have quick access to custom gauge configurations. Since that time, Cardinal has manufactured more than four

million strain gauges. Strain gauge technology continues to advance at Cardinal through the use of advanced manufacturing techniques and improvement in materials and yield.

Today, Cardinal's commitment to load cell manufacturing is perhaps nowhere more apparent than in the new load cell production facility. In late 1999, load cell production was moved into a new 11,000 square foot production facility adjacent to the main production complex. Included in this new production facility are a number of testing machines used to apply a series of known weights to the load cell. Machines with capacities of a few thousand pounds to over 100,000 pounds are used to check the performance of every load cell. Under computer control, the machine applies a series of known loads to the cell while measuring and evaluating its output. Should a load cell fail to meet the strict performance requirements, an operator is immediately notified. Other machines



Load Cell Production Building

are used to test the change in the load cell's output over time (creep) while still others monitor the cell's output over varying temperatures to validate its performance. In spite

of the high degree of automated testing and production, Cardinal load cell technicians are largely responsible for the quality that goes into each load cell. All Cardinal products, including the load cells and strain gauges, are manufactured under strict compliance with ISO 9001 guidelines. As an ISO 9001 registered company, Cardinal strives to maintain customer satisfaction with defect free products.

The majority of Cardinal load cells meet or exceed the performance for NTEP Class III and IIIIL and OIML R60 Class C devices and are listed under both NTEP and OIML R60 Certificates of Conformance.

Cardinal manufactures two basic types of load cells for use in static and in-motion vehicle scales. The SCA series of compression load cell is used both in the CWIM series of in-motion vehicle scale as well as in static truck and railroad track scales. The SCA load cell is a single column stainless steel compression load cell available in capacities of 50,000; 100,000 and 120,000 pounds.



SCA Compression Load Cell

The DB series load cell is an excellent choice for low-profile vehicle scales as well as for portable truck scales.

Not only does Cardinal offer a variety of load cells both in capacity and type but can also provide special designed cells. If you're not certain what cell is best for your truck weighing application, simply call and we'll be happy to evaluate your requirements and recommend the cell that's best for you.



Load Cell Testing Machine

This rugged cell utilizes rocker design which causes the load cell to be self-righting eliminating the effects of side loading. The welded all stainless steel construction makes it immune to water damage. An internal linearization printed circuit board keeps the non-linearity that is associated with columnar force sensors to less than 0.02 percent. The load cell's output of 2 mV/V means that it is equivalent to a 75,000 pound capacity load cell with an output of 3 mV/V. The SCA series load cell is an ideal choice for high volume applications requiring a rigid platform.

The Cardinal DB series double-ended beam load cell is also a 50,000 pound capacity 2 mV/V load cell designed for vehicle weighing applications. Like the SCA compression load cell, the DB series load cell is constructed entirely from stainless steel making it corrosion proof. The double-ended beam load cell is supported in the center while links are used to suspend the weighbridge from each end of the load cell. The end result is a system that is completely free to move in response to lateral