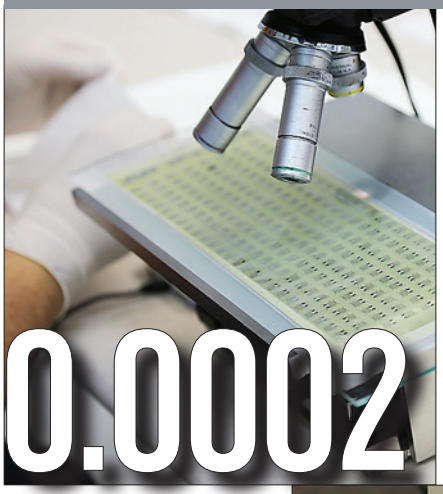
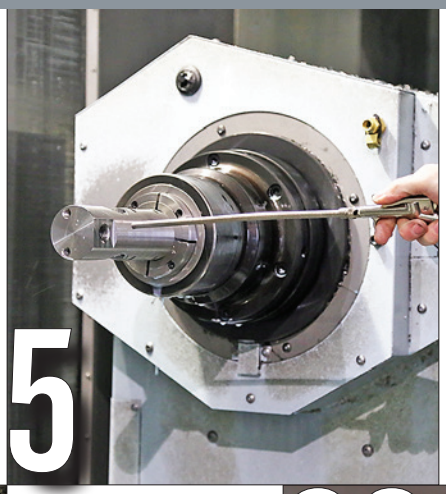
FORGING HIGH-TECH ARMOR®

See the behind-the-scenes manufacturing processes that go into the production of Cardinal Scale's heavy-duty ARMOR® digital truck scale

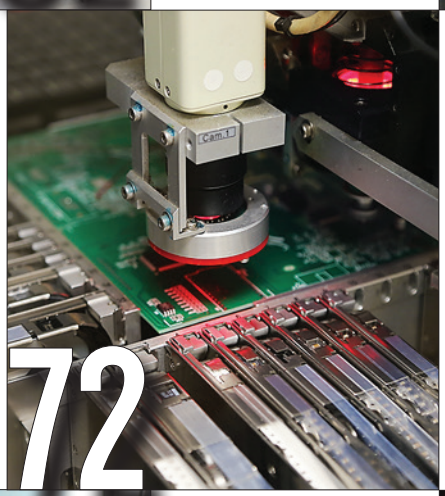


The origin of weight in every ARMOR® truck scale begins on a microscopic level with the SmartCell® load cell's strain gauge. Each strain gauge is constructed with a **foil sensor that is 0.0002" thick.**

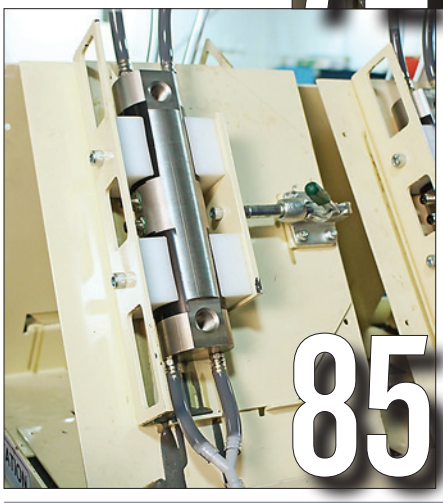


The stainless steel SmartCell® load cell body is produced with manufacturing technology that is capable of **machining in 5 axes.** A complete SCBD load cell body is efficiently machined that is ready to receive electronics.

Cardinal Scale's surface mount technology electronics machinery produces its own circuit boards in-house from American and foreign components. **72 components are added to each raw SCBD board** before it is placed in the load cell. Each individual board takes 144 seconds to complete.



The SmartCell® load cell's **onboard diagnostics can determine 26 different environmental factors.** Items related to weight, temperature, power supply, cell capacity, and millivolt values are just a few of the measurements that can be ascertained by the SmartCell® load cell.



High-quality potting compound is injected into each SCBD load cell to prevent ingress from moisture and sediment. Approximately **85 cubic centimeters of potting** is applied to each SCBD load cell. This patent-pending process completely encapsulates all electrical components within the load cell.

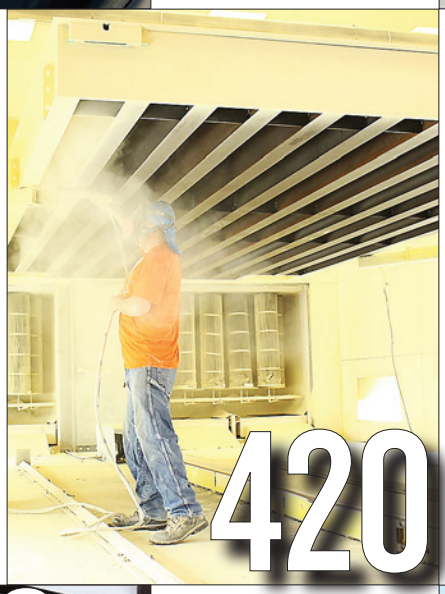
Each ARMOR® checkered steel scale deck is comprised of precisely-cut sections. Cardinal Scale's plasma cutter generates **60,000° Fahrenheit of cutting heat** to cleanly and accurately produce decks that will become the scale industry's "Undisputed Heavyweight Champion."

SEE THE BEHIND-THE-SCENES MANUFACTURING PROCESSES THAT GO INTO THE PRODUCTION OF CARDINAL SCALE'S HEAVY-DUTY ARMOR® DIGITAL TRUCK SCALE

Cardinal Scale's experienced welding team applies **150 tack welds** to hold a 70-foot ARMOR® truck scale weighbridge in place. This large number of carefully-placed welds guarantees final welds that are applied will be completed perfectly.

Twin robotic welders apply the finishing touches to the I-beams welded to the scale deck. On a standard 70-foot ARMOR® deck, **760 MIG welds are applied to complete construction** of the scale deck. I-beams are placed in a tight concentration only 7.5 inches apart which minimizes unsupported deck plate area and ensures that truck tire contact is always directly supported by one I-beam.

The ARMOR's unique powder coat paint is applied and baked on in industrial ovens. Each ARMOR® deck is heated at **420 degrees Fahrenheit for 105 minutes** providing it with an optimal UV-resistant weatherproof coating.



The ARMOR's digital load cell technology is much quicker and easier to use in all facets than standard electronic scales. **Only 2 connections are needed per cell** to transmit digital weighing information. This digital technology alleviates the need for a junction box.

A massive **10,000-lb test weight** is applied to each ARMOR® SmartCell® load cell in its respective quadrant. This test weight is meant to emulate a real-world weighment and prepare the scale for practical accuracy. Every ARMOR® digital truck scale is 100% factory calibrated and tested prior to shipment.

Cardinal Scale offers a fleet of semi-tractor trailers to deliver ARMOR® truck scales. **Cardinal Scale can haul ARMOR® truck scales to the 48 contiguous states and some provinces in Canada** (Third-party shipping is also available).