Introducing Cardinal Scale’s hydraulic load cell

Cardinal’s American-made Guardian hydraulic compression load cells are the most reliable load cell on the market. Constructed to last a lifetime from stainless steel and designed to keep weighing accurate in even the harshest environments, these cells require no electricity within the scale itself. All of this extreme-duty protection translates to tremendous savings over the life of your weighing equipment.

10 Reasons to Consider Hydraulic Load Cell Technology:

1. **Immunity to Lightning Damage**—Unlike other load cell technologies, including both digital and analog strain gauge load cells, hydraulic load cells are immune to damage resulting from lightning strikes or other electrical surges. Hydraulic load cells have neither strain gauges nor wiring like other load cell technologies, thus making them unaffected by lightning strikes; one of the most common reasons for load cell failure.

2. **Immunity to Water Damage**—Hydraulic load cells are constructed using stainless steel components welded together then pressure tested to ensure there are no leaks. Keeping the hydraulic fluid inside the load cell also keeps water out. Hydraulic load cells will operate when continuously submerged in water for an extended period.

3. **Wide Range of Temperatures**—Hydraulic load cells are capable of operating over a wide range of temperatures. Using proprietary grades of aircraft hydraulic fluid, hydraulic load cells can and do operate at temperatures of –60 degrees C (-76 degrees F). Several hydraulic vehicle scales are located across Canada.

4. **Hydraulic Load Cells not Single Source Components**—Unlike digital load cells, hydraulic load cells are currently available from at least two sources. Because there is no standard protocol for digital load cell outputs, you cannot replace a digital load cell with another digital load cell from a different manufacturer. Each manufacturer of digital load cells has their own proprietary output for the cell that works only with their weight indicators and other digital load cells.

GET TO KNOW US...

It’s always nice to know a little about the people with whom you do business. To help everyone know just who we are, we will introduce and profile a staff member in each newsletter.

**Natalee Carby**
**Vice President—Operations**

**Birthplace:**
Louisville, KY

**Currently:**
Louisville, KY

**Education:**
University of Louisville, Bachelor of Arts

**Family:**
Natalee and her husband Trey have two young sons, Conner and Hudson.

**How long have you been in the scale business?**
Since birth! My father started American Scale the year I was born. I grew up learning all about scales.

**When did you become involved with American Scale?** I never thought I would work in the family business. However, in 2011, when I determined teaching wasn’t the right path for me and was thinking of becoming a ski bum in Montana, Dad offered me a position at ASC. The rest is history.

**What do you do when you’re not working?** Sun and fun on Barren River Lake during the Summer with family. Other times include family hiking trips and wearing out our Louisville Zoo membership.

**What are some of the other jobs you have had throughout your career?** I was a Latin teacher at Christian Academy in Louisville, a nanny, and support staff at Joseph’s Salon.

**What do you like most about your job?** I enjoy the tight community and family of ASC. Working in a small business allows you to connect with co-workers on more than a working level. Working with my father is a blessing. It’s not easy, especially when you need a raise, but I can’t imagine working anywhere else.

**What do you find most challenging about your position?** Steel-toed boots! Worst and most uncomfortable shoes I’ve ever worn. My closet is full of heels, so I know something about uncomfortable shoes. Seriously though, it’s not easy being a woman in this male-dominated business. But I have received lots of encouragement and help along the way.
5. **Offers Same Advantages of Digital Load Cell**—Advantages of a digital load cell are its ability to display weight data from each load cell in a multiple load cell scale (like a vehicle scale) and the ability to alert the scale operator or service technician of a potential problem before the scale weights are affected. Hydraulic load cell systems are available with load cell system controllers that perform these same functions. These controllers digitize each hydraulic load cell output independently allowing the operator to view the outputs of each load cell. Further, software is included to alert the operator when an excessive shift in the no-load output of one or more cells is detected prior to affecting the accuracy of the scale. Automatic calibration can be another feature of hydraulic load cell systems provided with a load cell controller.

6. **Meets Same Legal & Metrology Performance Standards**—The hydraulic load cells available in today’s scales have been thoroughly evaluated and have been found to be in compliance with NIST Handbook 44 requirements for class III multiple load cells with 10,000 divisions, just like their digital counterparts.

7. **Long History of Use**—Hydraulic load cells have a long history of being used in scales; much longer than either the strain gauge load cell or digital load cell. They have not been as popular as the less expensive strain gauge versions but, when comparing the costs of ownership including cell damage, the hydraulic load cell is clearly less expensive to own.

8. **Comes with Lifetime Warranty**—Most manufacturers of hydraulic load cells offer a lifetime warranty on their load cells against damage from voltage surges (lightning) and water damage; the two most common reasons for failure of strain gauge and digital load cells.

9. **Safe for Operation in the most Hazardous Areas**—Because hydraulic load cells contain no electrical circuitry, there is no source of ignition when used in an explosive atmosphere. Hydraulic load cells are regularly used in hazardous areas where explosive materials are present. Fuel or other flammable materials leaking from a vehicle or collecting in the scale pit cannot be ignited by hydraulic load cells making them a safer alternative than strain gauge or digital load cell.

10. **Offer Lowest Possible Maintenance Cost**—A lifetime warranty on impervious, non-conductive environmentally-sealed stainless steel hydraulic load cells that are waterproof, shockproof, explosion-proof, and resistant to both caustic and corrosive environments means Cardinal is extremely confident in their hydraulic load cells. You will never have to replace these due to damage or malfunction out of your own pocket, ever. That is Cardinal’s promise and a testament to the extreme durability of their hydraulic load cells.

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**GET TO KNOW US... (Natalee Carby—Continued)**

**What do you do when you’re not working?** I am a fixer-upper…always remodeling or redecorating something at home and finding innovative ways to save money while doing so. I love spending time with our extended family and enjoy cooking Sunday dinners as often as possible for everyone. I also love playing games with my youngest daughter and making creative projects.

**What do you like most about your job?** The challenge to get my work done on a daily basis. My responsibilities have increased since I was hired, but I enjoy the challenge of keeping up with all the inspections and learning new and interesting things.

**If you could visit anywhere in the world, all expenses paid, where would it be and why?** New Zealand because of their dramatic scenery. I would love to hike the mountains, visit the rainforests, lakes, beaches, glaciers, volcanos and go caving.

**If you could in any other time, when might that be and why?** Early America during the 1700s—I think it would be great to witness and participate in the birth of a new nation. In addition, I find the women’s fashions of that time period fascinating.

**If you could have dinner with a famous person (live or dead), who would that be and why?** Tom Hanks because he is an amazing actor.

“Sometimes you will never know the value of a moment until it becomes a memory.” — Dr. Seuss