THE STANDARD

CONNECTING THE GLOBAL WEIGHING, DIMENSIONING AND PROCESS CONTROL COMMUNITIES

MEASURING GREATNESS WITH THE GREEN BAY PACKERS

ASK THE EXPERT

Logistics Operations and Dimensional Weight

SMITH OASIS CATTLE RANCH BENEFITS FROM ONSITE WEIGHING

SUMMER 2022

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Welcome to The Standard

Weight plays a role in virtually every industry on earth, from farming to manufacturing, from your doctor's office to the grocery store you shop in. Whether you are a veteran in the scale business or someone exploring the use of weight and dimensional data for the first time, we think you'll glean valuable information from the pages of this new publication.

At Rice Lake Weighing Systems, we provide weighing and dimensioning solutions for an infinite array of measurement and automated process control applications. Our products are used everywhere. Our truck and rail scales weigh goods being transported, indicators control sophisticated weight-based routines, calibration weights certify equipment and dimensioning devices measure incoming and outgoing parcel and freight shipments.

This magazine features interesting applications that depend on Rice Lake products. While the applications in these stories are very different from one another, a string of consistency ties them all together. Customers use our products in innovative ways that become a new standard.

We hope you enjoy The Standard. By showcasing interesting, unusual and highly successful applications, our goal is for this magazine to connect the global weighing, dimensioning and process control communities.

If you have any feedback or would like to be featured in a future story, please reach out to our team at magazine@ricelake.com.

Sincerely,

MARK JOHNSON, JR.
President

Measuring Greatness with the Green Bay Packers

The Green Bay Packers use Rice Lake's iDimension® dimensioning systems to cost-effectively ship online orders.

"It could have added up to thousands of dollars per week if we didn't stay under the $2 adjustment average. With Rice Lake's iDimension, we now know the exact measurements of each custom box and can avoid these chargebacks."

TIM SCHROEDER,
Manager of the Green Bay Packers
Retail Distribution Center

The Green Bay Packers are one of the most successful teams in the National Football League's history. Dating back to the team's 1919 origin in small-town Green Bay, Wisconsin, United States, the Packers' long list of achievements can be attributed to taking a different approach than the opposition. They zag where other teams zig. The Packers are based in a small city rather than a large metropolis, owned by fans instead of a wealthy individual and are a nonprofit organization—the only one of its kind in professional sports. These unique qualities, along with strong performance on the field, have endeared the team to the community. Following this trend, rather than choosing the same massive company almost every other team uses to manage their Pro Shop's online orders, the Packers employ local residents and use Rice Lake's iDimension parcel dimensioners to ensure cost-effective shipping.

The Packers boast the NFL®'s* largest Pro Shop at 21,500 square feet, a far cry from the original 17-foot by 17-foot space first opened in 1989. The store offers everything from jerseys and hats to cheeseheads, tailgating accessories and collectables. For fans who cannot visit Lambeau Field in person, the online Pro Shop serves as a virtual shopping smorgasbord of over 15,000 items, accompanied by one of the most active shipping departments in the league.

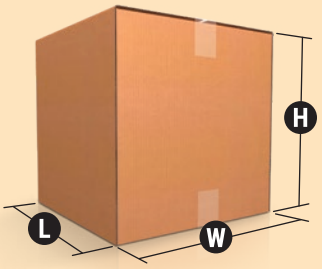
"We stay pretty busy all year," says Tim Schroeder, manager of the Packers' retail distribution center, "but it really ramps up in April through September and the holiday season. Especially when the team is winning" as he gives a wink. "We ship significantly more orders in a playoff season." Good thing the Packers have been winning a lot over the past several decades, as it keeps the Pro Shop's shipping center busy fulfilling orders.

As each order is picked from the warehouse, it is packed in a poly bag or cardboard box, depending on the material and size of items in the order. "The goal is to ship items safely in as small of a package as possible to save on shipping costs," Schroeder explains. "We try to utilize our UPS SurePost® contract whenever possible

**National Football League and Green Bay Packers are the respective property of their trademark owners. Use of these names, trademarks and brands does not imply endorsement.*

Offering over 15,000 items, the Packers Pro Shop uses Rice Lake's dimensioners and bench scales to streamline their shipping process.

Dim Weight Calculation



Continental United States Formula

IMPERIAL	METRIC
$\frac{(L \times W \times H \text{ in})}{166}$	$\frac{(L \times W \times H \text{ cm})}{6{,}000}$

International Formula

IMPERIAL	METRIC
$\frac{(L \times W \times H \text{ in})}{139}$	$\frac{(L \times W \times H \text{ cm})}{5{,}000}$

The dim weight divisor is determined by individual carriers. These examples use the FedEx® and UPS® shipping rates.

because it offers additional discounts." UPS SurePost is the economy method of using the United States Postal Service (USPS) for packages not exceeding 108 inches in total dimensions. However, optimizing these shipments is easier said than done, which is where Rice Lake's iDimension steps in as the process' MVP: Most Valuable Product.

The shipping department was using eight pre-set cardboard box sizes, each falling within UPS SurePost regulations. While having these standard box offerings enabled them to guarantee the shipment could mail via SurePost, each worker boxes slightly differently, which resulted in "dead" space within each box and inefficient shipments. Furthermore, UPS notified them they were going to begin a new charging process based on dimensional weights.

The Packers needed a new game plan. They switched from purchasing individually sized boxes to a corrugate machine that cuts boxes to the exact size needed for their products. They also implemented iDimension dimensioners and BenchPro™ bench scales to verify exact dimensions and weights since they no longer utilized standard box sizes. Because UPS' new charging process included significant chargebacks, Rice Lake's total dimensioning and weighing solution was able to save the Packers a significant amount of money each week.

For example, if a box was shipped with an actual weight of four pounds but had a dimensional weight of eight pounds, UPS would calculate the cost difference at each instance, summarize the weekly total and divide it by the number of adjustments. This provided an average adjustment cost which, if it exceeded $2, would be charged back to the Packers at full price.

"It could have added up to thousands of dollars per week if we didn't stay under the $2 adjustment average," Schroeder estimates. "With Rice Lake's iDimension, we now know the exact measurements of each custom box and can avoid these chargebacks. iDimension with the BenchPro scales reaffirms to us that 'Yes, this one can go SurePost.' or 'This one is a massive box such as a golf bag, which might be three pounds but have an adjustment of $8.' Now, we have the dimensions and we won't have any adjustment on that. Weekly, I go through to see how many corrections we have compared to the total dollar amount, and we are staying well below the $2 average adjustment threshold."

The iDimension dimensioner worked so well they added a second installation to further streamline shipping. With the original process, there was the possibility for manual errors which could bump a shipment from UPS SurePost to UPS Ground. When this occurred, the contract's discount was lost and there was an additional fee.

As the department moves to new computer software, the second iDimension dimensioner with BenchPro bench scale will capture measurements and weight and, through a PC interface, automatically select the best value shipping method and print a label. All in a matter of seconds with NTEP Legal for Trade verified measurements.

Such an efficient system is champion of the shipping world and it seems fitting the NFL's most prolific championship-winning team would also achieve greatness in their retail distribution center. It would have been easier to follow the path of almost every other team by hiring an outside company to manage e-commerce but that's not the Packers' way.

"When you spend your money at the Packers Pro Shop, whether physically at Lambeau Field or through our website," Schroeder concludes, "it truly is going to us. With the Packers, it supports the team and entire community of Green Bay." As a like-minded company deeply invested in the surrounding community, Rice Lake is the perfect partner for measuring success.

The Standard in Dimensioning

Problem:

The Green Bay Packers Pro Shop wanted to optimize outgoing shipments to use the least amount of material and increase accuracy to avoid chargebacks.

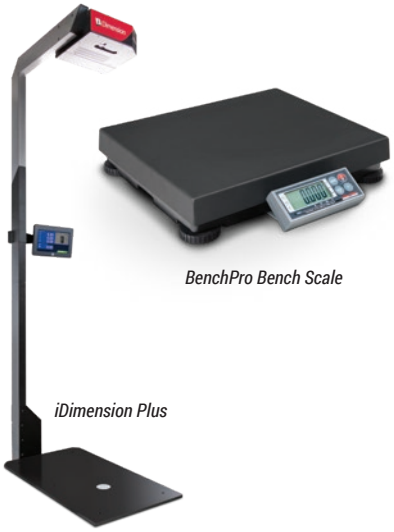
Solution:

Automated dimensioning equipment increased speed and provided exact dimensions without the possibility of human error. The iDimension Plus provides accurate measurement of customized boxes. Paired with the BenchPro bench scale for weight and integrated software, the best shipping method is automatically selected. Accessories for the iDimension Plus include bar code scanners and printers.

Two iDimension® units with BenchPro Bench Scales

Integrated with PC Software to automatically select the best shipping method

Bar Code Scanner and Printer



BenchPro Bench Scale

iDimension Plus

Scan to learn more about iDimension Plus

Ask the Expert

Logistics Operations and Dimensional Weight

John Lawn, Strategic Business Unit Director of Dimensioning for Rice Lake Weighing Systems, answers common dimensional weight questions.

What challenges are logistics departments facing?

Shipping frequency has increased in the last few years and it isn't slowing down. Many providers have struggled to ensure they have enough resources to accommodate this growth, so they're seeking additional methods to increase efficiency and optimize the resources they currently have.

Carriers are investing in dimensioning and weighing equipment to ensure the Bill of Lading (BOL) submitted by shippers is accurate. Carriers will verify weight and dimensions of the shipment and, if an error is found, shippers will receive a chargeback.

Because most carriers rely on dimensional weight (dim weight) to determine prices, it is critical for logistics personnel to accurately determine dim weight. Dim weight is the amount of space, or the volume, that a parcel or pallet occupies in relation to its actual weight. Using dim weight to plan truck loading also ensures carriers are optimizing truckload potential.

While carriers have been increasing fees to help enforce compliance, shippers need to have evidence that proves a parcel or pallet was properly weighed and dimensioned. Without an image of the shipment captured by a dimensioning system, it is very difficult for a shipper to contest chargeback fees.

How do dimensioning systems help?

Dimensioning systems, or dimensioners, can calculate precise shipment dimensions, ensuring logistics personnel correctly determine package or freight class and shipping rates. Not only are automatic dimensioners more accurate than manually determining dim weight, but some dimensioners can provide measurements in less than 2 seconds, giving logistics operations a big efficiency boost.

What should someone look for when they're ready to integrate dimensioning with their material handling operations?

Key features to look for in a dimensioner include speed, accuracy, installation flexibility, automatic scanning, full data capture, API integration and network connection. Ultimately, the dimensioning system needs to integrate with existing operations without creating extra work.

Capturing dimensions, weight and shipment images, and storing that data in internal databases gives managers greater data visibility. Stored shipment images can also assist with any damage claims by allowing shippers to verify shipment condition when it left their facility.

What if someone is unsure whether they are meeting shipping guidelines?

If you're unsure about meeting shipping guidelines, your carriers have the answers to your questions. Even for facilities not utilizing a dimensioning system, it's important to talk to your carrier about their dim weight guidelines and how to document dim weight measurements. They can also help you understand how to dispute inaccurate chargebacks and may have additional tips on shipping items more efficiently.

What types of dimensioning systems are available?

There are a variety of dimensioning systems available today designed for different shipment needs, including parcel dimensioners, pallet dimensioners and systems that combine a scale with a dimensioner.

Rice Lake's iDimension Series includes two pallet dimensioners designed for Less Than Truckload (LTL) freight. Both LTL dimensioners can be paired with floor scales or used in conjunction with forklift scales. The freight model is designed to accurately capture measurements of long freight, up to 12 feet long and 8 feet wide.

The iDimension® Series also has three different parcel dimensioners to fit a variety of facilities, including a mobile version for greater flexibility. All three options can be paired with a postal scale and easily capture dimensions of tubes, flats and irregular packages.

Finally, Rice Lake's iDimension PWD is a dimensioner and scale system—providing shippers with the measurements of palletized shipments ranging from 6 feet cubed to just 6 inches tall. It's available in multiple configurations and mounting assemblies to fit nearly any logistics department.

We are seeing more frequent requests for dimensioner integration with other automation equipment, such as mounting the dimensioner over a conveyor or stretch wrapper. We can also mount the sensors in non-standard locations to satisfy unique application requirements, such as needing to measure extra-long, thin boxes.

Rice Lake's team of dimensioning experts are available to answer questions and help logistics managers find the best solution for their processes. All of Rice Lake's dimensioning solutions can also be viewed at www.ricelake.com/idimension

The Expert

John is the Strategic Business Unit Director of Dimensioning for Rice Lake Weighing Systems with more than 20 years of experience in the measurement industry. In his role with Rice Lake, John helps build a strong product development team while bringing high-quality products to a variety of industries.

Scan to learn more about dimensioning systems

Smith Oasis Cattle Ranch

Benefits from Onsite Weighing

Rice Lake Weighing Systems' MAS-LC stationary livestock scale has increased safety and maximized profits for this Texas ranch.

Choosing the MAS-LC

Weighing cattle on a reliable, certified scale is essential to monitor animal growth and determine profits at the time of sale. For many ranchers, offsite weighing is the established, traditional process of selling cattle. However, onsite livestock scales offer the powerful benefits of maximizing profits and minimizing animal stress.

When Currie Smith, owner and operator of Smith Oasis Cattle in Hemphill County, Texas, wanted to add a new livestock scale to his ranch, several factors led his decision-making process in the search for the best equipment: safety, accuracy and durability. He considered several different manufacturers but ultimately worked with Express Scale Services and chose Rice Lake Weighing Systems' MAS-LC stationary livestock scale for its safety features, reliable performance and superior build quality. With the addition of the MAS-LC, Smith Oasis uses a total of four scales to weigh cattle. "The MAS-LC is hands-down better than the two beam-type scales we use and the other electronic scale," Currie states.

"The scale will pay for itself pretty quickly. I can't imagine ever weighing offsite again."

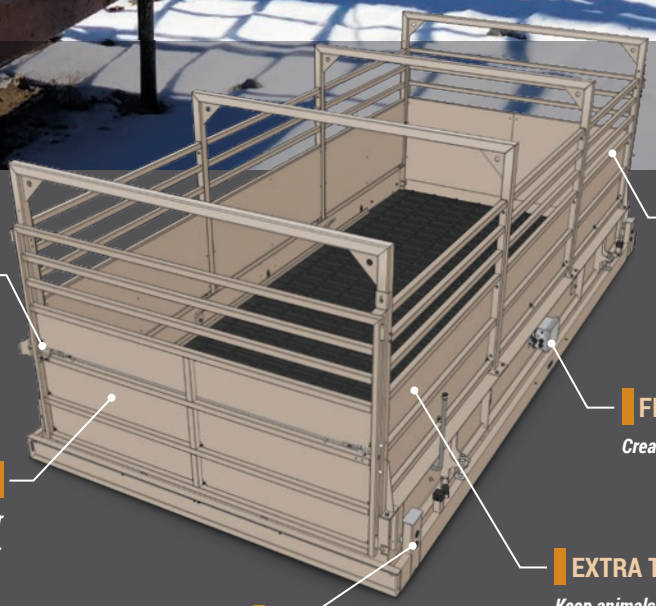
CURRIE SMITH,
Owner and Operator of Smith Oasis Cattle

Safety Is Key

"Above all else is the safety of our cattle and operators," Currie explains. "When we're weighing, I need to be confident when the gate is closed, it will stay closed and not add more stress. The flooring is more stable and less slick than other scales."

The MAS-LC uses a heavy-duty latch assembly and 48-inch, 11-gauge steel kick panels on side walls and gates to prioritize operator protection. It also includes a unique floor

Currie Smith chose the MAS-LC livestock scale for its durability and safety features.



REVERSIBLE GATE

Swinging gate that opens left or right. Pull cord opening latch for operation on either end of the scale gate.

ADJUSTABLE KICK PLATE

Ensure animal safety by preventing their hooves being trapped under a gate's open area.

SIDE-MOUNTED LOAD CELLS

Provide ease of access and serviceability.

SILICONE BUFFER

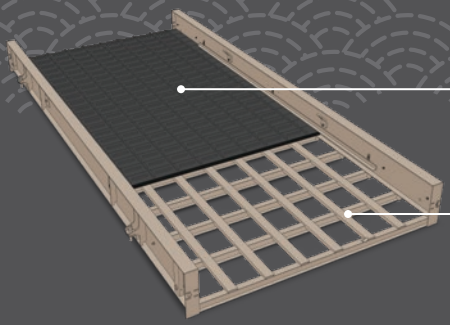
Reduce noise and vibrations for improved animal welfare.

FIBERGLASS JUNCTION BOX

Create easy exterior access.

EXTRA TALL SIDE PANELS

Keep animals calm as they move through the weighing process.



FLOORING

X-Lug or X-Plank rubber flooring made from recycled materials makes it eco-friendly and superior to wooden decks.

WEIGHBRIDGE CONSTRUCTION

Reinforced wide-flanged I-beams make up each side of the weighbridge. Additional wide-flange I-beam cross members topped with heavy gauge C-channel steel stand up to constant heavy loading and provide superior strength and longevity.

design feature to minimize the risk of animal injury. It is not uncommon for cattle to slip on dirty platforms when they are being weighed, which is why Rice Lake's livestock scales use recycled plastic and rubber material in a tread-optimized pattern (X-Lug or X-Plank) to provide superior traction. Along with improved animal safety, this unique flooring material does not rot or harbor moisture, and is simple to maintain. "I really appreciate that it's easy to clean out," Currie adds. "We recently installed Rice Lake's flooring system to replace a wooden floor on one of our old beam-type scales. I am sure the new flooring will outlast the original scale."

Profits of Accuracy

Weighing cattle offsite does not produce favorable results for the seller. Transporting cattle subjects the animals to a tremendous amount of stress, during which they lose weight. This weight loss is known as "shrink," which is a term most ranchers know all too well, as the buyer typically agrees to a predetermined shrink percentage before weighing the cattle.

Additionally, fuel consumption is not accounted for when weighing offsite. The truck will be weighed before visiting the ranch to acquire its tare value, then burn fuel by driving to the ranch and back to the scale with a full load of cattle. Although the truck now weighs less due to the amount of fuel used, its previously acquired tare is used to calculate the sale.

Weighing cattle onsite with a reliable livestock scale ensures a more accurate and "true" weighment by eliminating the guesswork of shrink. The added convenience of printing a Legal for Trade sale ticket means Currie can complete weighments on his own time without relying on any external personnel.

By purchasing the MAS-LC, Currie will see a quick return on his investment. "The scale will pay for itself pretty quickly," explains Currie. "I can't imagine ever weighing offsite again."

Durability Matters

It takes an extraordinary scale to withstand the unique conditions of livestock weighing. Exposure to unpredictable animals as well as extreme weather elements warrants an extreme-duty scale. "I determined Rice Lake's livestock scale was much better than the competition," Currie explains. "It's solid, made the right way. That's important to me."

The MAS-LC uses steel I-beam construction typically found in truck scales, three-inch square tubing for sectional uprights and two-inch horizontal square wall tubing connecting the uprights. Its shipping weight speaks for itself as one of the heaviest in its class with a weighbridge built to last a generation or longer.

Currie also enjoys the MAS-LC's versatility. "I like that I can move the scale. It's not permanent so I can relocate if necessary. It balances very easily and is quick to re-certify if I do move the scale."

There used to be a time when only large ranches had onsite scales. Now, operations of any size, even smaller ranches that sell a few loads of cattle per year, are seeing the rewards. With the long-term price of beef predicted to rise, producers are no longer asking whether they can afford an onsite livestock scale—rather, they must consider the cost of not having one. For Currie, the impact was clear and he is ready for the years ahead.

The Standard in Livestock Scales

Problem:

Smith Oasis Cattle was searching for the best onsite scale to prioritize safety, accuracy and durability. Weighing cattle offsite was not an option because transportation causes animals to lose weight, known as "shrink," which decreases profits.

Solution:

Smith Oasis Cattle selected Rice Lake's MAS-LC livestock scale for its I-beam construction, safety features and unbeatable accuracy.

MAS-LC Stationary Animal Scale

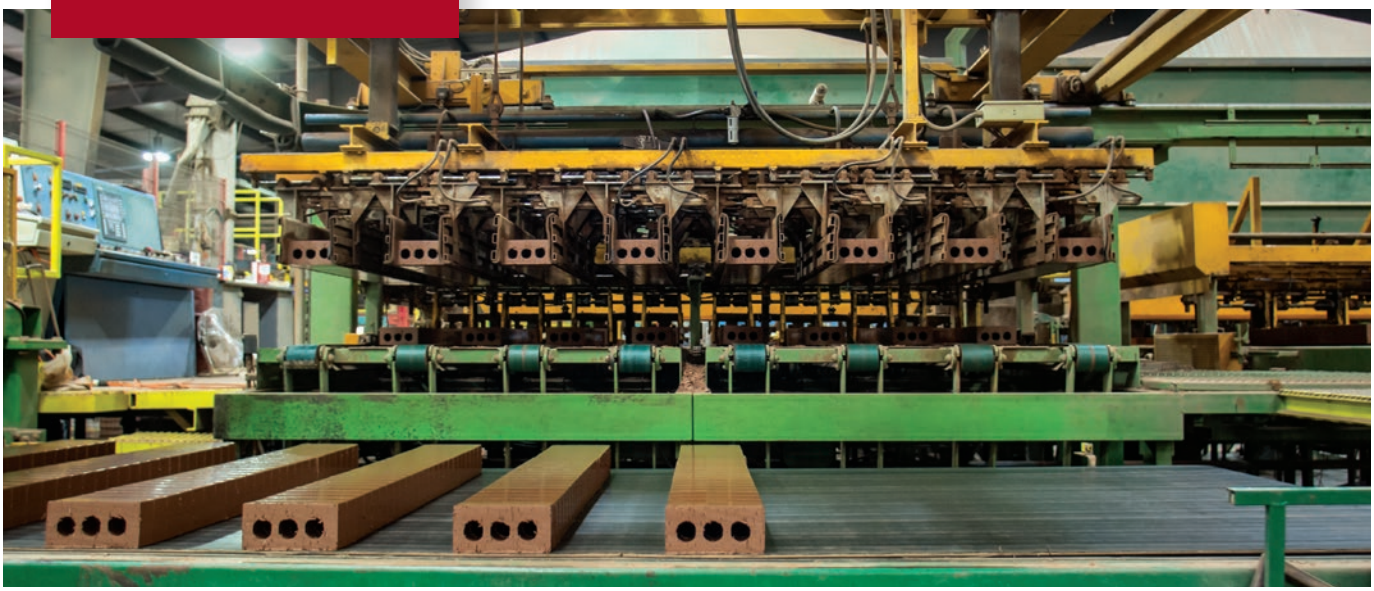
Scan to view detailed information on the MAS-LC Stationary Animal Scale


Building
Legacies
FROM THE GROUND UP

Rice Lake's durable RoughDeck® AX-1 axle scale helps Endicott Brick optimize truckloads of their industry-leading products that build legacies from the ground up.

The construction industry is at an all-time high with record numbers of renovations, expansions and new construction needs around the world. The 2021 construction boom was sudden and unexpected, and continues today—resulting in material scarcity and greatly increased costs. It remains to be seen how high the crest can rise or how long it will last but inevitably, the craze is bound to subside. While Endicott Brick has seen countless peaks and valleys come and go over the past 100+ years, they are not in the business of anything temporary. Endicott manufactures the highest quality of brick products, built to last for generations and never go out of style. When the company decided to upgrade their 40-year-old mechanical axle scale, they chose a solution which mirrors their own durable products—Rice Lake's RoughDeck AX-1 axle scale.

Endicott Brick manufactures architectural brick for schools, churches, businesses, high-rises and stadiums across North America.



Founded in 1920, Endicott Brick is headquartered in Endicott, Nebraska, United States. The company specializes in architectural brick—primarily utilized by schools, churches, businesses, high-rises and stadiums across North America. Their prestigious sports clients include the Atlanta Braves (Truist Park), University of Minnesota Golden Gophers (Huntington Bank Stadium), Indianapolis Colts (Lucas Oil Stadium), Green Bay Packers (Lambeau Field) and just about every other team playing in a classic-style brick residence.

Endicott's unmatched brick quality is a result of uncompromising dedication to excellence as well as their unique geographic location. Positioned on land rich with clay, Endicott owns and operates four mines—allowing them to secure brick's main ingredient themselves. Not only is the clay deposit plentiful, but "The clay has a natural ironspot color, which is usually the preferred aesthetic for most architects and designers," explains Russ Slater, mining supervisor for Endicott Brick.

After it is mined, clay enters Endicott's hammer mill, which grinds it into a fine and consistent powder. Next, a pugmill forms and shapes the material which is cut to size before entering a dryer for approximately two days. During this time, any remaining

"That scale is out in the elements. It's used year-round and needs to be up to the challenge. That's the main thing out here. It has to perform... and it does."

RUSS SLATER,
Mining Supervisor, Endicott Brick

moisture is removed. Once complete, bricks are fired at 2,200 °F (1,204 °C) to complete the manufacturing process. Before leaving the factory, bricks are strapped to pallets and loaded onto flatbed trucks. However, it is sometimes challenging to optimize truckloads that are close to, but do not exceed, the 80,000-pound highway weight limit. This was becoming increasingly difficult due to an aging mechanical axle scale that had far exceeded its prime.

"We reached out to Scale Sales and Service," Slater remembers. "They have done our scale maintenance in the past and are always great to work with. When they recommended Rice Lake's AX-1 axle scale, I didn't need to look any further because their recommendations are always what we need for the long run."

Scale Sales and Service proposed the AX-1 axle scale because of its durable construction and space limitations at Endicott. The area where the scale was needed could not accommodate a full truck scale due to nearby brick storage. Also, because Legal for Trade certification was not needed, the more economical AX-1 was a perfect fit for the application.

Endicott constructed approaches and an 18-inch cleanout area beneath the scale to remove any gravel or debris buildup. "It was easy to put in and has been trouble-free," Slater says. "There are a lot fewer moving parts than our old scale. One thing I found interesting is we can pick up and move the scale to another location if we ever need to. We could just add portable ramps to use it in a temporary location. It's an appealing option. Although I don't foresee moving it anytime soon, our company is always evolving and adapting. As soon as I say we don't need to move it, I'll probably get a call tomorrow saying we need to move the scale."

Southern Nebraska sees a wide array of weather, from above 100 °F (38 °C) to below 0 °F (-17 °C). The AX-1's heavy duty steel construction is designed to ensure performance under even the harshest conditions. "That scale is out in the elements." Slater remarks. "It's used year-round and needs to be up to the challenge. That's the main thing out here. It has to perform…and it does."

Each element of Endicott Brick is key to its enduring success, from the equipment and materials to their hard-working employees. Indeed, Endicott has many similarities to the bricks they produce: When all the pieces come together, it is nearly indestructible. Just as one brick relies on another for overall strength, Endicott relies upon the AX-1 axle scale. Together, they are ready for whatever the future holds.

The Standard in Axle Scales

Problem:

Endicott Brick's 40-year-old mechanical scale had reached its end of life. The company had limited space but needed a vehicle scale to weigh outgoing brick shipments and withstand a wide array of weather conditions.

Solution:

Rice Lake's AX-1 was installed to optimize truckloads—ensuring they are close to, but do not exceed, the 80,000-pound highway weight limit. The RoughDeck AX-1 is designed with a top and bottom steel plate that provides structural strength, creating a more rigid weighing scale and leading to more accurate weighing.

With driver safety in mind, the AX-1 top plate is diamond tread and the wide, one-piece design makes it easier to drive vehicles on and off. The RoughDeck AX-1 is offered in three standard sizes with custom sizes available for unique applications.

RoughDeck® AX-1 Axle Scale

Scan to view detailed information on the RoughDeck AX-1 Axle Scale

VIRTUlink™ Optimizes Uptime for TriRX Pharmaceutical Services

In the pharmaceutical industry, reputation and integrity are critical, and patient safety is at the forefront of every facet of the business. From research and development to manufacturing and packaging, the highest standards of accuracy and quality must be maintained. When TriRX Pharmaceutical Services was searching for new technology to improve their production environment and overall responsive capabilities, they implemented Rice Lake's VIRTUlink Internet of Things (IoT) gateway system and web application into their everyday processes.

"A quality scale system is essential for the effectiveness of our products and most importantly, the safety for our customers," explains Christy Pinkerton, TriRx project engineer. "Our industry is regulated by the FDA and DEA, so any opportunity to improve our processes and strengthen our authenticity is always welcomed. We saw an opportunity to leverage VIRTUlink on our 1,000-, 2,000- and 5,000-gallon tanks to see how our load cells were performing in real-time. It turned out to be a game-changer that helped all groups involved."

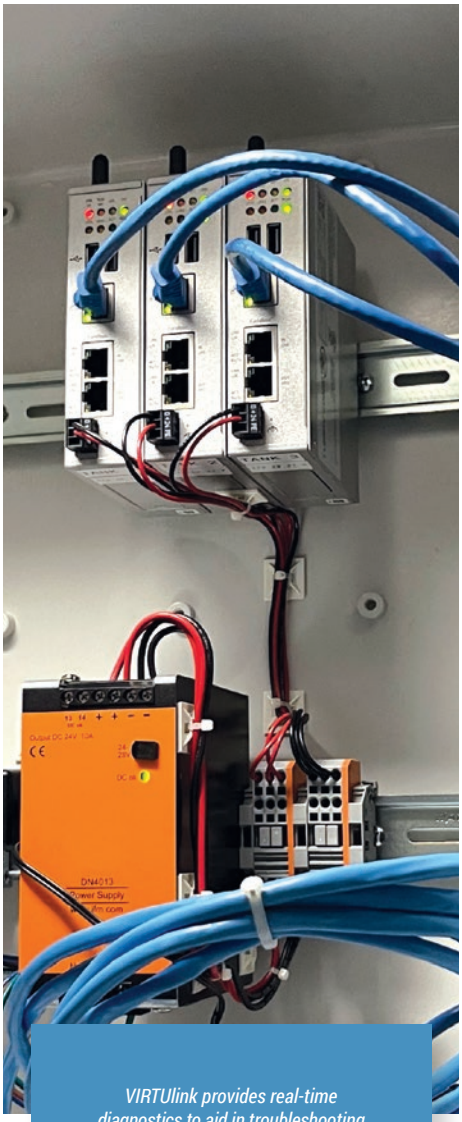
If one of the load cells begins to fail, it may produce an out-of-tolerance result for the finished product. This can negatively impact the pharmaceutical's overall effectiveness and result in lost business or diminished confidence in the company as a whole.

VIRTUlink constantly monitors the health and performance of connected equipment. By connecting to Rice Lake's iQUBE²® digital diagnostic junction box, the VIRTUlink IoT gateway enables remote diagnostics, automated maintenance alerts and advanced analytics. A junction box brings multiple load cells together so they can function as a single scale.

"VIRTUlink has been very beneficial," continues Pinkerton. "It has proven itself numerous times, including an event where one port would not register any readings. We determined the ground wires were missing and possibly the nearby electrical outlet had shorted out. Once remedied, the port was back online and we received an automated notification."

Another occasion involved one of the tank scales providing erratic readings. By remotely checking the alert logs, operators determined the errors occurred during the same time the team was cleaning the tank. They discovered only one load cell was having the issue and suspected a nick in the cable, which was allowing water ingress. After identifying the damage and replacing the cable, the issue was resolved. "We are very impressed with how quickly the system alerts us there is a problem," Pinkerton concludes. "Our group knew there was an issue before the production group caught it."

As a quickly growing company, TriRX relies on the best equipment to maintain reliability in the demanding and highly regulated pharmaceutical field. With Rice Lake's VIRTUlink as a constant and efficient tool, TriRX looks forward to many years of future success in serving customers.



VIRTUlink provides real-time diagnostics to aid in troubleshooting and routine maintenance.

> *"We saw an opportunity to leverage VIRTUlink on our 1,000-, 2,000- and 5,000-gallon tanks to see how our load cells were performing in real-time. It turned out to be a game-changer that helped all groups involved."*
>
> **CHRISTY PINKERTON,**
> Project Engineer, TriRX Pharmaceutical Services

The iQUBE² digital diagnostic junction box interfaces with VIRTUlink to display data in a web-accessible portal.

The Standard in Weight-based IoT Technology

Problem:

TriRX wanted to increase production responsiveness and remotely monitor scale data.

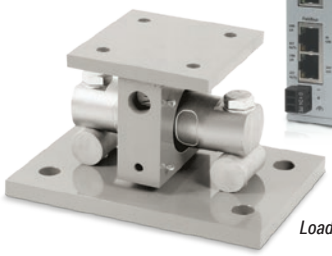
Solution:

The VIRTUlink IoT gateway system and web application were interfaced with load cells on large-capacity tanks and the iQUBE² digital junction box. With the ability to review system alerts, troubleshooting was streamlined and efficiency boosted.

- *VIRTUlink™ IoT Gateway System*
- *Web Application*
- *Load Cells Mounted on Large-capacity Tanks*
- *iQUBE²® Digital Junction Box*

iQUBE² Digital Junction Box

VIRTUlink IoT Gateway



Load Cell

Scan to learn more about VIRTUlink

Belt Weighing at Jansen Recycling

In the Netherlands, Jansen Recycling (of A. Jansen BV) specializes in infrastructure demolition and remediation, debris recycling and a variety of concrete production. With multiple sites and installations using belt scales, maintenance and data collection are critical to success. Jansen Recycling turned to ACB-Transportbanden and Rice Lake Weighing Systems for their system maintenance and renovation.

Jansen Recycling has two installations in Helmond for sorting construction material and debris. The first is an extractive installation to sieve soil contaminated by oil or chemicals so it can be sorted into different types. Sand extracted in this process is immediately processed in the concrete mortar plant on the same site. The second installation is an Aquamotor used to clean contaminated rubble, concrete and glass before the material goes back into the recycling circuit.

When Jansen Recycling wanted to update their material dosing systems, they worked with Rice Lake Weighing Systems' team to understand their options and select the best system for their needs.

Conveyor Belts and Scales

Jansen Recycling uses multiple conveyor belts at their Helmond sites, and site manager John van Hout trusts ACB-Transportbanden for maintenance of these conveyors. ACB is located in Horst aan de Maas and they sell, install and service a variety of conveyor belt components in the Netherlands.

Many of the conveyor belts are also paired with belt scales, and these systems must operate reliably in rough conditions. John van Hout wasn't satisfied with the maintenance performed by their previous belt scale supplier and, in 2017, he asked ACB if they could perform the scale and conveyor maintenance.

Belt scale maintenance is a specialized service area so ACB approached Rice Lake Weighing Systems about performing this maintenance. ACB had worked with the experts at Rice Lake's Heteren location (formerly Master Engineering) for 10 years already, making the partnership a clear choice.

Belt Scale Maintenance and Renovation

Rice Lake's service department in Heteren has many years of experience working with belt scales across Europe and they had no problem providing maintenance for the non-Rice Lake belt scales that were installed at Jansen Recycling. After a few maintenance visits, however, Rice Lake's experts determined that in many cases incorrect weighing frames were being used for the conveyor belt speeds. There were also numerous mechanical issues negatively impacting the accuracy of belt scales.

After speaking with van Hout, ACB and Rice Lake worked together to create a plan for conveyor belt and scale renovation. Jansen Recycling also wanted access to data from the belt scales on the network, which meant expanding the plan with new electronics and a belt weigher registration software package.

Belt Weigher Registration (BWR) Software

Jansen Recycling wanted more insight into their production data, including tonnage, flow, operating hours and down-time. Rice Lake integrated data loggers into each of the belt scale electronics to collect and record this information.

BWR software was created by ACB to integrate with Rice Lake equipment. The software was installed on existing computers where a web client is also hosted. The software application runs 24/7 and checks for new data every minute, processing information to be saved in Jansen Recycling's database, including:

- *Machine number and name*
- *Belt weigher number and name*
- *Date/time*
- *Flow*
- *Tonnage*
- *Material specifications*
- *Shift data*
- *Production or standstill*

Day-to-Day Practice

Jansen Recycling has now been working with the belt weighers for a few years since the renovation, and they are very satisfied.

John van Hout said, "We now know for sure what to do in terms of input for the installations and per output flows. The belt weighers are accurate enough and the BWR software package provides really good insights into what's happening at the installations. Our management can also see and analyze what is happening at the plant from their offices."

The Standard in Recycling

Problem:

Multiple conveyor belts paired with belt scales required maintenance at Jansen Recycling's sites in the Netherlands. They were not satisfied with their previous belt scale supplier and needed to find reliable technicians, equipment and service.

Solution:

Jansen Recycling turned to ACB-Transportbanden, who worked with experts at Rice Lake's Heteren location. ACB and Rice Lake determined that, in many cases, incorrect weigh frames were being used for the conveyor belt speeds. There were also mechanical issues negatively affecting belt scale accuracy.

ACB and Rice Lake worked together to create a plan for conveyor belt and scale renovation. To accommodate Jansen's request for networked scales, new electronics and a belt weigher registration software package were installed. Rice Lake integrated data loggers into each of the belt scale electronics to collect and record information.

- *Master Belt Scales*
- *Integrated Data Loggers*
- *Belt Weigher Registration Software*

Scan to learn more about belt scale systems

A Golden Opportunity

When Golden Harvest Foods in Saint Paul, Minnesota reopened after a fire that caused significant damage to their building, they outfitted their store with equipment that would help them remain a community staple for generations to come.

Shua Xiong is building long-term relationships with his customers and chose retail equipment to support these relationships.

Saint Paul, Minnesota, United States is one half of the Twin Cities, growing metropolises with diverse groups of people. In Saint Paul is a unique store that is a source for community connection and delicious foods. Golden Harvest Foods is a hidden treasure in the Twin Cities—thriving after they upgraded their retail equipment.

In 1988, Shua Xiong saw a gap in the niche market of Asian grocery stores and knew he and his family could make a change. They opened Golden Harvest Foods to create a better Hmong grocery store that would serve families and generations to come. But they were building more than a grocery store; they were helping build their community.

For 20 years, Golden Harvest Foods was a community staple, serving families as they built lives together. In early 2018, however, a fire closed Golden Harvest Foods. Shua sadly recalled they were closed for "one year, one month and three weeks" before reopening in March 2019.

While the fire was devastating, it gave Shua the opportunity to remodel and upgrade to completely new equipment. He knew the Golden Harvest team would be weighing and wrapping meat and produce as well as weighing prepared food at their deli counter. To boost efficiency in product packaging, automatic wrappers were a necessity. When choosing new equipment, Shua said "we went with the most up-to-date technology and equipment we could find so we could prepare for the next generation."

He wanted equipment that would be easy for all of his employees to use and products that would stand the test of time as they welcomed their third generation of customers. Customers they knew as children are bringing their children to Golden Harvest. Shua is starting to see the grandchildren of his customers, and with the right equipment, his store is set to last their lifetime as well. The scales Golden Harvest used before the fire were from a manufacturer who wasn't locally based

"Efficiency is very important, cost is something we're concerned with."

SHUA XIONG,
Owner of Golden Harvest Foods

and Shua wanted to work with a company closer to Saint Paul, which is why he chose Rice Lake Retail Solutions.*

Shua also wanted to work with a supplier who could offer local service if something went wrong with their equipment. Working with DM&P Equipment & Supplies, Inc. gave them exactly the support they needed. Anne and Domingo Contreras opened DM&P in 2004 after working with a similar retail equipment company for over 30 years. Their son, Domingo Jr., joined them in 2015 to help provide sales and service to butcher shops, delis and international food stores in the Saint Paul area.

Working with Domingo Jr., Shua carefully considered Golden Harvest's options before making a decision. For the Golden Harvest meat packaging room, Shua chose an Ishida WM-Ai automatic wrapper and two IP-Ai-P labelers with remote scale bases. This boosted efficiency while still allowing them to hand-wrap large or oddly shaped cuts of meat. They also streamlined the produce processing room by adding a WM-Nano automatic wrapper and a hand-wrapping station to handle their variety of produce. A Uni-7 price computing scale with label printer was installed at the deli counter to help serve up delicious items such as eggrolls, chicken and Lao sausage. The Uni-7 has a bright, customer-facing display with weight and price information in addition to dual-range weighing technology. This provides more precise container tare weights for deli products, creating more accurate pricing.

When discussing his choices, Shua said "Efficiency is very important, cost is something we're concerned with. Using auto or semi-auto equipment saves work and saves time. The younger employees are able to do things more efficiently and understand the technology." One of the biggest time-saving benefits has been programming preset PLUs and SKUs, allowing them to quickly weigh, wrap and label products with the push of a button.

Shua also said the WM-Ai is fast, easy to use, and essentially hassle-free. The WM-Nano is also fast and both units wrap products consistently, saving time and giving the items secure, appealing packaging. They have appreciated not only the speed, Shua added, but also how accurate, durable and easy to clean all of the Rice Lake retail equipment is.

Domingo Jr. helped those at Golden Harvest ensure the software they needed was integrated with the scales, making operation simple for everyone currently working there, or who might work there in the future. Shua says Domingo has been very reliable. He worked closely with the staff to ensure everyone was trained on using the equipment and is always willing to answer questions if they arise.

"We believe in the interpersonal relationship we have with our customers," Shua said when he talked about the future of Golden Harvest. He is building long-term relationships with his customers and chose retail equipment to support these relationships. With reliable, technologically advanced equipment from Rice Lake Retail Solutions and local support from DM&P, Golden Harvest will provide traditional Hmong groceries and community connection for many generations to come.

**Rice Lake Weighing Systems is the exclusive distributor of Ishida retail equipment in the United States.*

The Standard in Retail Wrapping

Problem:

When Golden Harvest Foods prepared to reopen after a fire, they wanted to ensure the equipment they chose would be easy to use while preparing them for the future of their store.

Solution:

By working DM&P Equipment & Supplies, Inc. and Rice Lake, Golden Harvest Foods chose Ishida automatic wrappers, hand-wrapping stations and price computing scales that will allow them to provide traditional Hmong groceries for many years.

- *Ishida WM-Ai Automatic Wrapper*
- *Ishida IP-Ai-P Labelers and Remote Scale Bases*
- *Ishida Uni-7 Price Computing Scale*
- *Ishida WM-Nano Tabletop Wrapper*

Ishida WM-Nano Tabletop Wrapper

Ishida WM-Ai Automatic Wrapper

Ishida IP-Ai-P Labeler

Ishida Uni-7 Price Computing Scale

Scan to learn more about retail wrapping solutions

Rice Lake Weighing Systems

SCALE TALK

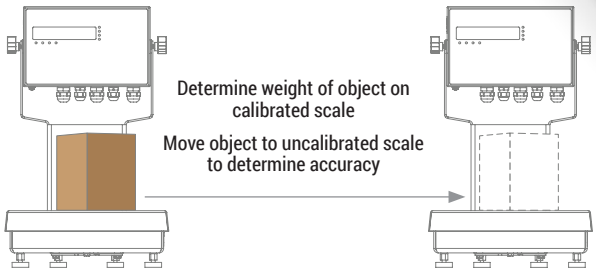
Welcome to ScaleTalk, which will be a recurring section of The Standard. *In each magazine issue, ScaleTalk will present an educational topic related to the scale industry, product tutorial or best practice. From beginning technicians to seasoned veterans, we hope every scale professional will find this section to be interesting and valuable. In our first installment, we will explain the four methods of scale calibration.*

4 Methods of Scale Calibration

Using Calibration Weights

Using certified calibration weights is the most accurate method for calibrating a scale and should be your first choice. This is also the only Legal for Trade method you can use to calibrate scales. It's important to review NIST Handbook 44 to ensure you're using the correct class and amount of weight for the capacity of your scale during calibration procedures. Generally, you will need weights that equal at least 12.5% of the scale's capacity, though some lower capacity scales may require weights equal to the full capacity. For example, if you have a scale with a 50-pound capacity, Handbook 44 recommends using calibration weights equal to 50 pounds to calibrate the scale.

1



2

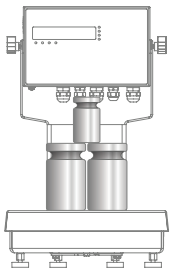
Using an Object from a Calibrated Scale

3

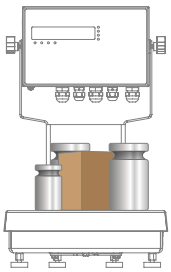
Using Material to Substitute for Weights

This method is not as accurate as using certified calibration weights but can be used if you don't have enough weights to meet the minimum requirement of 12.5% of the scale's capacity. After you perform an initial calibration with the weights you have, you would remove the weights and replace them with products or material, then add the calibration weights back to see if the scale is returning the expected amount of weight.

For example, if you have a grain hopper scale with a 100,000-pound capacity but have only 4,000 pounds in calibration weights, you can perform an initial calibration with those weights. Then fill the hopper with 4,000 pounds of grain and add the calibration weights back to the hopper. The scale reading should display 8,000 pounds. You would continue this build-up process until you are beyond the 12.5% required to calibrate the scale, although you could continue the process to check accuracy at higher weights.



Uncalibrated scale with test weights



Uncalibrated scale with product and test weights

4

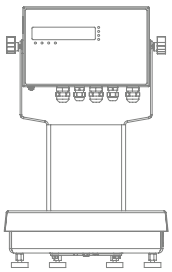
Calibrating with a Simulator or Theoretical Calibration

The final method is using a simulator, or theoretical calibration. This method should be used only when you don't have any calibration weights. This is the least accurate calibration method and should never be used in a Legal for Trade application. After using this method, you should return to the scale with test weights to perform a full calibration as soon as possible.

This is a complex process with room for error because there are numerous calculations involved. You will also need additional information about the system, such as excitation voltage from the indicator and millivolt output of the load cells. Because you're using a simulator connected to the weight indicator, you won't be able to properly exercise the scale or account for environmental factors during calibration. You will also need to "re-zero" the system after the calibration to account for the weight of the top plate on the load cells, further adding to the inaccuracy of this calibration method.

While it is recommended to use certified calibration weights to calibrate your scales, and necessary to do so in Legal for Trade applications, there are some instances when calibration weights may not be available. If you have a scale known to be accurately calibrated, you can use it to help calibrate another scale. To compare the scales, you would place an object on the calibrated scales and record the exact weight. Then place the same object on the uncalibrated scale to check that it produces the same weight reading. The object works as a temporary substitution for calibration weights to quickly check accuracy.

This method is very useful for large capacity scales, such as truck scales. A truck could drive onto a calibrated scale, record the weight, then drive onto an uncalibrated second scale to check the accuracy.



Uncalibrated Scale

Simulator

Online Resources

ScaleTalk is a series of short instructional videos from Rice Lake Weighing Systems. A popular feature on our YouTube channel, the ScaleTalk playlist serves as a valuable resource for scale technicians of all experience levels. This library continues to grow as Rice Lake uses video format to answer frequently asked questions received by our support department, from introductory topics to advanced troubleshooting techniques.

In addition to ScaleTalk, Rice Lake offers a full line of resources on our website, including articles, white papers and additional videos. Visit www.ricelake.com to find support for your needs, and if you have suggestions for future topics, contact multimedia@ricelake.com.

Scan to watch our ScaleTalk playlist

Global Locations

Rice Lake Weighing Systems is a family-owned company that was established in 1946 as a scale service shop in Rice Lake, Wisconsin, USA.

Rice Lake's corporate headquarters, original metrology laboratory and central manufacturing plant are still located in Rice Lake, Wisconsin, but the service network has grown to include offices and support facilities across North and South America, Europe, Asia and Oceania.

AMERICAS

Corporate Headquarters
Rice Lake, Wisconsin
Jasper, Alabama
Fernley, Nevada
Kent, Washington
Concord, California
Newtown, Connecticut
Charlestown, Massachusetts
Monterrey, Mexico
Panama Pacifico, Panama

EUROPE

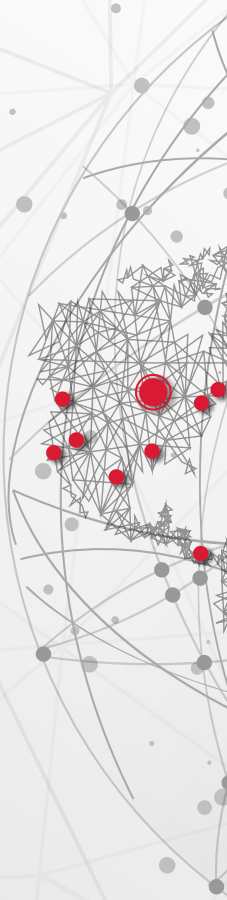
Modena, Italy
Milan, Italy
Bristol, United Kingdom
Heteren, The Netherlands
Paris, France

ASIA

Shanghai, China
Chennai, India

OCEANIA

Sydney, Australia



In Our Next Issue of The Standard

Join us as we travel to the Grand Canyon and describe how the CB-3 concrete batcher was used to renovate the Visitor Center. Our retail equipment helps Sun Food and Dragon Star Supermarkets thrive in the grocery business. RoughDeck floor scales monitor the weight of rescued goats, ensuring their rehabilitation is a success. These stories complement several other interesting and effective uses of Rice Lake products.

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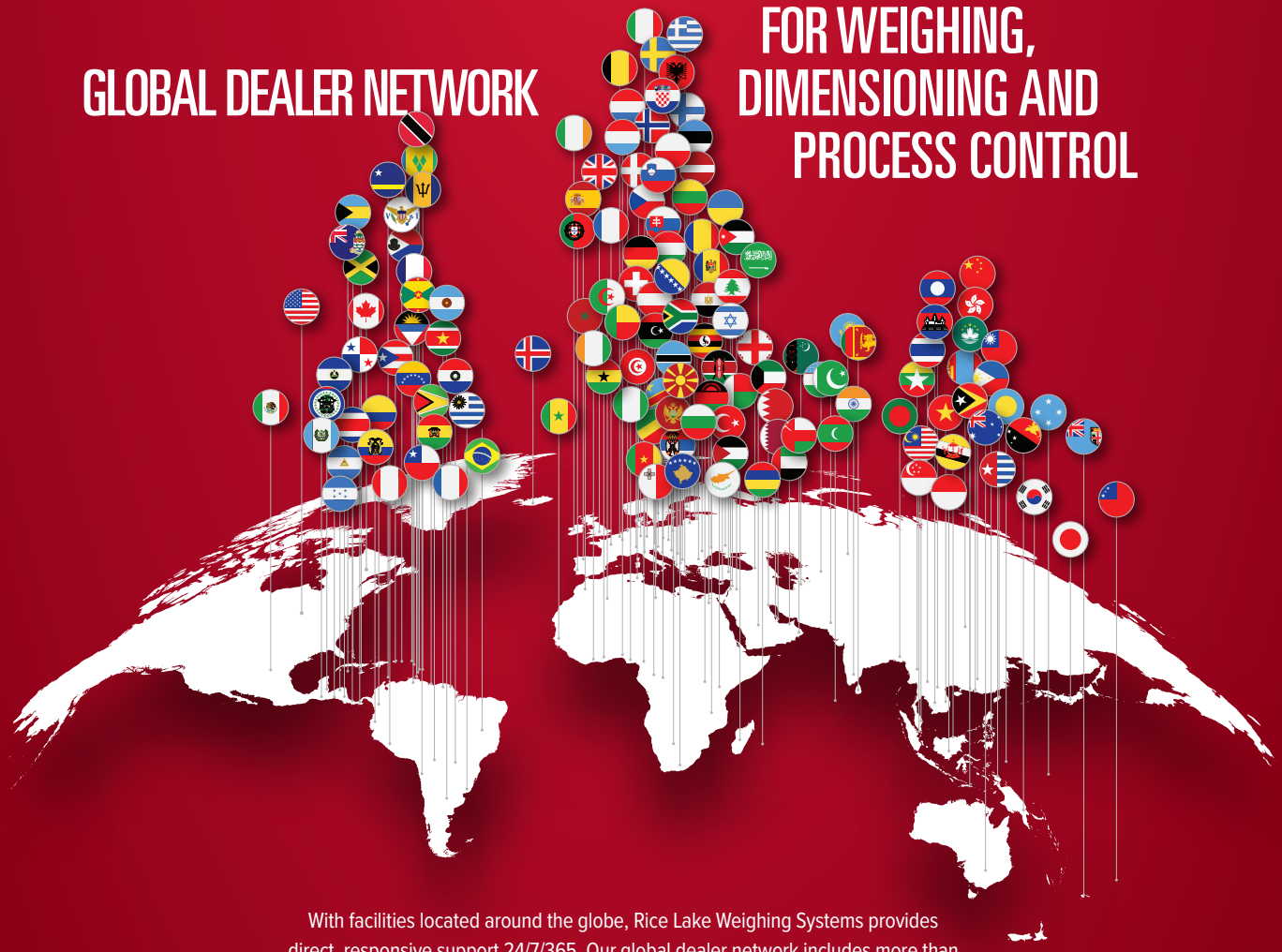

With facilities located around the globe, Rice Lake Weighing Systems provides direct, responsive support 24/7/365. Our global dealer network includes more than 2,500 distributors in 130 countries—ensuring weighing equipment, trained technicians and the finest technical expertise in the industry are available at your location.

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