For additional support contact:

United States, Canada and All Other Countries:
Right Weigh, Inc.
Tel: (888) 818-2058
www.rwls.com
rwls@rwls.com

Australia and New Zealand:
Smart Truck Solutions
Tel: 0418 622840

PP-003-0011 Rev C
December 2016

Right Weigh, Inc.
Hillsboro, Oregon, USA
www.rwls.com

Exterior Digital Load Scale

201-EDG-02(B)

Installation and Operation Manual

Please read carefully before installation

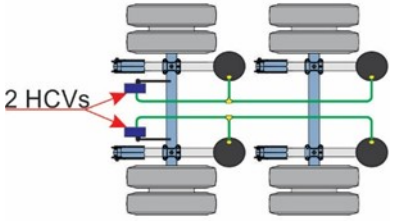
Exterior Digital Load Scale

201-EDG-02(B)

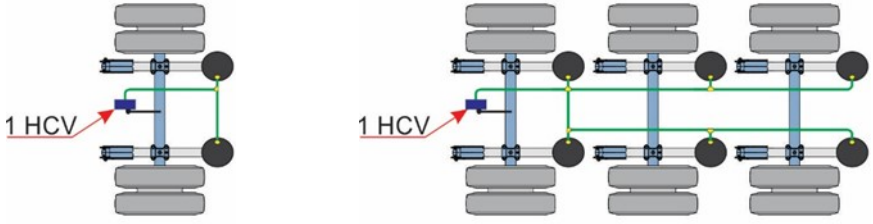
Table of Contents

The Right Weigh 201-EDG-02(B) digital load scale has **two** internal air pressure sensors. This scale will monitor one air suspension axle group with two Height Control Valves (HCVs) or 2 axle groups with one HCV each. An axle group can be either a single, tandem, or triple set of axles on the truck or trailer.

One axle group with 2 HCV's



Two axle groups with 1 HCV each



Technical Specifications

Operating Temperature: -22° F to +185° F (-30° C to +85° C)
Storage Temperature: -40° F to +185° F (-40° C to +85° C)
Power Requirement: 9 VDC to 32 VDC
Units: Pounds (LBS) or Kilograms (KG)
Housing: High impact polycarbonate blend
Display: 0.8" LCD sunlight readable

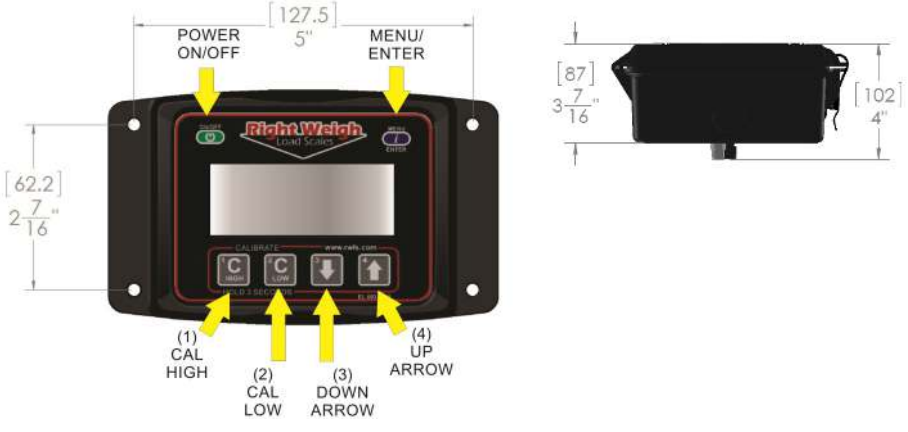
Return Policy and Authorization

Before returning any product, please obtain a Return Merchandise Authorization number (RMA#) by calling Customer Service at 888-818-2058 or e-mailing rwls@rwls.com. Include the RMA# and information regarding the reason for the return with the returned product. Shipping costs for returns must be prepaid by the customer. For your protection, items must be carefully packed to prevent damage in shipment and insured against possible damage or loss. Right Weigh, Inc. will not be responsible for damage resulting from careless or insufficient packing or loss in transit.

An RMA# must be obtained by the original purchaser before any product can be returned. Only new, unused products may be returned. Installed, used, damaged, modified or customized products can not be returned for credit. Credit will be issued to the original purchaser after evaluation by Right Weigh, Inc.

Repairs/Replacements

An RMA# must be obtained before any product can be returned. Right Weigh, Inc. will evaluate returned products at no charge. If Right Weigh, Inc. determines that the returned product is under warranty it will repair the product or parts thereof at no charge, or if unrepairable, replace it with the same or functionally equivalent product whenever possible. Right Weigh, Inc. will return the product at its expense via a shipping method (carrier to be at sole discretion of Right Weigh, Inc.) equal to or faster than the method used by the customer. Products or parts thereof not covered by warranty will be repaired or replaced at customer expense upon authorization by the customer. Right Weigh, Inc. will return the repaired product at customer expense via a shipping method (carrier to be at sole discretion of Right Weigh, Inc.) equal to or faster than the method used by the customer.



Drop Axle:

This load scale can be used to monitor an axle group with an air ride lift axle if the lift axle air bags are controlled by the same height control valve as the other axles in the group. The scale will need to be setup using 2 CAL mode. Refer to the 2 CAL Mode section for more information.

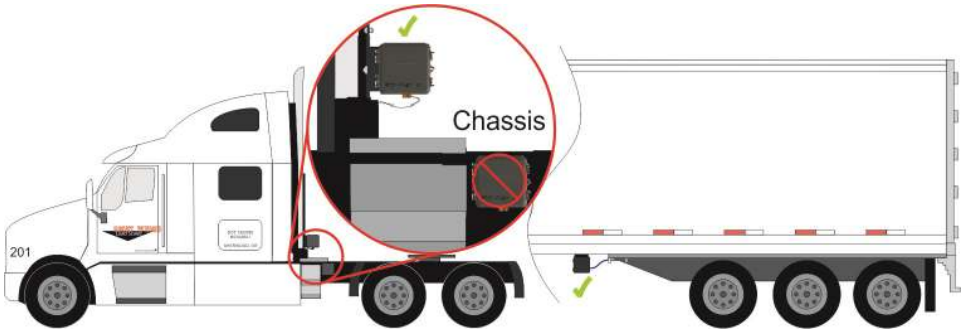
Independent lift axles cannot be considered part of an axle group.

Estimated Steer Axle:

The weight of the steers can be estimated if this scale is used to monitor only the drive axle group. Refer to the Estimated Steer Mode section for more information.

Scale Installation and Electrical Connections

The 201-EDG-02 is designed to be mounted on the outside of a truck or trailer, however the 201-EDG-02 should still be mounted in a protective enclosure. A protective box and mounting bracket are included with the 201-EDG-02B. Choose a location on the vehicle to mount the scale that is easily accessible and safe from potential damage (forklift posts, tire caps, etc.).



⚠ **DO NOT mount the scale directly to the chassis or any other main beam unless it is approved by the vehicle manufacturer. Doing so may void the warranty with the vehicle manufacturer.**

1: Mount the supplied bracket in the chosen location and install the protective box to the bracket using the supplied hardware.

2: Dump the air from the suspension system. Locate and remove the suspension air line fitting from the top of one of the air bags connected to the height control valve.

Warranty Statement

Warranty Statement

Right Weigh is committed to providing quality products that function as intended, and we always stand behind our workmanship. Our industry-leading warranty is our best effort to express this commitment. Products manufactured or sold by Right Weigh, Inc. are warrantied to be free from significant defects in material and workmanship 3 years from date of purchase. During this time, and within the boundaries set forth in this warranty statement, Right Weigh, Inc. will, at its sole discretion, correct the product problem or replace the product.

This warranty shall not apply to product problems resulting from: (1) Improper application, installation, incorrect wiring, or operation outside of the approved specifications of the product. (2) Accidents, faulty suspension parts or power surges (3) Inadequate maintenance or preparation by the buyer or user (4) Abuse, misuse, or unauthorized modification. (5) Acts of God, lightning strike, floods, fire, earthquake, etc.

Right Weigh, Inc. assumes no responsibility or liability for any loss or damages resulting from use of Right Weigh, Inc. products.

In no event shall Right Weigh, Inc. be liable for direct, indirect, special, incidental or consequential damages (including loss of profits or loss of time) resulting from the performance of a Right Weigh, Inc. product. In all cases, Right Weigh, Inc. liability will be limited to the original cost of the product in question. Right Weigh, Inc. reserves the right to make improvements in design, construction, and appearance of products without notice. Right Weigh, Inc. may at its sole discretion discontinue support, warranty, or repair of products which it deems are obsolete or for which repair parts are no longer available. No employee or agent of Right Weigh, Inc. has the authority to modify the terms of this warranty in any manner whatsoever without the express written permission of Right Weigh, Inc.

Appendix B - Wiring Insulation

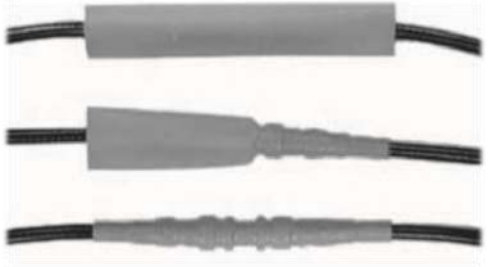
It is very important that all wiring connections be made watertight. Connections which are not watertight will allow moisture to travel through the individual strands of the wires and make it's way into the scale, causing permanent damage to the electronics.

Heat shrinkable splices are included with the 201-SK installation kit.

Crimp each end of the wire into the connector with a wire crimp tool (tool not provided).

With a heat gun or heat torch, heat the connector until it shrinks completely around each wire end. Make sure you do not burn the wire jacket.

After all connections have been made, heat shrink the entire group of splices so that it seals on the outer jacket of both cables

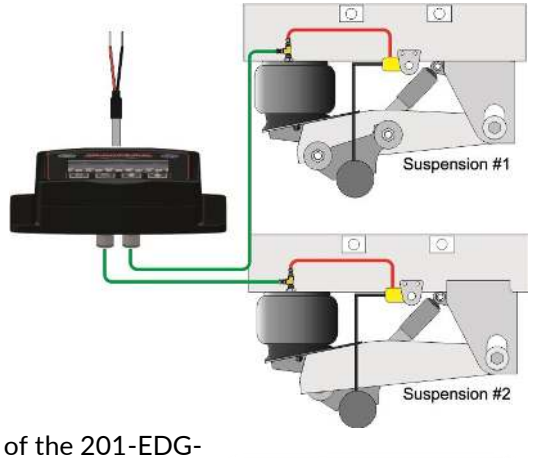


Scale Installation and Electrical Connections

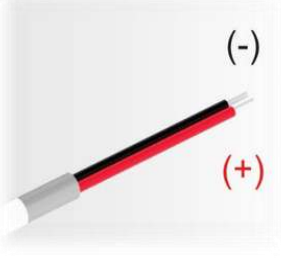
3: Insert a street tee fitting into the top of the air bag. The street tee fitting should match the thread size and type of the vehicle suspension. Reinstall the suspension air line and fitting into the street tee. For a list of recommended hardware, please see Appendix A.

4: Install a new 1/4" air line and fitting to be used with the Right Weigh load scale into the street tee. Run the new air line from the street tee fitting to the mounting location of the scale.

5: Insert the new air line into the push-to-connect fitting on the back of the scale. Repeat steps 2 through 5 for the additional HCV or other axle group. Air up the suspension system and check all air fitting connections for leaks.



6: Attach the RED wire on the back of the 201-EDG-02(B) to a **SWITCHED** positive (+) power source **(DO NOT connect directly to the battery)** and the BLACK wire to chassis ground (-). The required supply voltage must be between 9 and 32 volts DC.



⚠ **Electrical connections must be insulated from weather to protect scale and wiring from damage. See Appendix B**

The 201-EDG-02(B) load scale must be calibrated both empty and loaded to work properly. The scale associates the air pressure in the suspension system to the weight you enter at the time of calibration. You will need to calibrate once while the trailer is empty, and again while the trailer is loaded for each axle group being monitored.

1. Empty Calibration Point:

1: While the vehicle is empty, obtain a weight from a certified in-ground scale for the specific axle group or groups attached to the Right Weigh load scale.

2: Park on a level surface. Shift the transmission to neutral and set the parking brakes. Chock the wheels to prevent unexpected vehicle movement, then release the parking and service brakes.

3: Make sure the height control valve (HCV) has fully inflated the air bags. If needed, briefly dump the air from the suspension and allow the HCV to refill the system. (This may take several minutes depending on the type of HCV.)

4: Press the ON/OFF button to turn on the load scale. Press and hold the 2 C LOW button until the display shows "C/L"

5: Using the 3 and 4 arrow buttons, adjust the Right Weigh load scale until the weight displayed matches the weight from the certified in-ground scale.

6: To save, press and hold the 2 C LOW button again until the "C/L" symbol disappears.

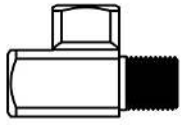
Weigh the entire axle group being monitored. Do not use values such as gross weight, tare weight, or just a single axle weight from a tandem etc. When entering the loaded weight value, be sure that your vehicle is as close to the maximum legal weight limit as possible.

The following is a list of additional parts needed for air line installation. This list is just a suggestion and may not be all of the parts needed for your specific vehicle. Check with your Right Weigh dealer for optional installation kits.

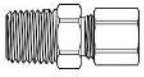
- Approximately 20 to 30 feet (6 to 9 meters) or more of 1/4" rigid air line.
- Street tee fitting. The thread size should match the air bag fitting. (1/4" NPT or 3/8" NPT)
- Male straight air line fitting for 1/4" air line, with a thread size to match the street tee fitting.
- 20 or more zip ties.

1/4 Inch Air Line

Street Tee Fitting



Male Straight Fitting



20 or More Zip-Ties

Scale does not power on:

Scale is not connected to a switched power source of between 9 and 32 volts	If there is a bad connection in the circuit which causes voltage to drop below 9 volts, the scale will not power on. Test the power source with a voltmeter.
Scale Connected Directly to Battery	The scale is active anytime it is connected to power, even if the display is off. To reset it, disconnect and reconnect the power source, wait 10 seconds, then try again to turn the display on.
Polarity is incorrect	The red wire must be connected to positive, and the black to negative.

Scale Display is Blinking

Current weight is above the alarm limit programed by the user	With scale on, press and hold the 1 & 2 buttons simultaneously. The display will show the alarm limit weight. To remove the alarm weight, set this number to 0 using the down arrow, and then hold 1 & 2 again until the display is cleared.

Cannot Change Calibration Data

The scale has an active user-defined security PIN.	If the scale is protected with a passcode, the PIN number must be entered before calibration data can be changed. The scale will display "CodE" and the previously set 5 digit PIN number must be entered to change the data.

Scale will not Calibrate Low

Air Pressure in system is not changing	To enter low cal mode, the 201-EDG-02(B) load scale must see a measurable change in air pressure from when you calibrated high. • Make sure you calibrate high while your trailer is near the legal limit, and cal low when the trailer is empty. • Be sure the air line is connected directly to an air bag and not connected to the main air supply or air brake system.

2. Loaded Calibration Point:

1: While the vehicle is fully loaded, obtain a weight from a certified in-ground scale for the specific axle group or groups attached to the Right Weigh load scale.

2: Park on a level surface. Shift the transmission to neutral and set the parking brakes. Chock the wheels to prevent unexpected vehicle movement, then release the parking and service brakes.

3: Make sure the height control valve (HCV) has fully inflated the air bags. If needed, briefly dump the air from the suspension and allow the HCV to refill the system. (This may take several minutes depending on the type of HCV.)

4: Press the ON/OFF button to turn on the Right Weigh load scale. Press and hold the 1 C HIGH button until the "C/H" symbol appears.

5: Using the 3 and 4 arrow buttons, adjust the Right Weigh load scale until the weight displayed matches the weight from the certified in-ground scale.

6: To save, press and hold the 1 C HIGH button until the "C/H" symbol disappears.

Once both empty and loaded calibration has been performed, the scale is ready to use! If you have any trouble entering calibration data, refer to the troubleshooting section of this manual.

1: Park on a level surface. Shift the transmission to neutral and set the parking brakes.

2: Chock the wheels to prevent unexpected vehicle movement, then release the parking and service brakes.

3: Make sure the height control valve (HCV) has fully inflated the air bags. If needed, briefly dump the air from the suspension and allow the HCV to refill the system. (This may take several minutes depending on the type of HCV)

4: Press the 

button to turn on the load scale.

5: Adjust the trailer suspension or the load itself until the load scale displays a weight value below your legal limit.

6. If multiple axle groups or configurations are being monitored, press the 

to switch between them.

7. To change the units between LBS and KG, Press the 

button. If the scale is in 2 Cal, Estimated Steer, or Independent mode, hold 

and press 

simultaneously.

Erratic or inaccurate readings

The vehicle is not parked on a level surface	Parking on sloped or banked surfaces will cause the vehicle weight distribution to shift between the axle groups.
The vehicle's brakes are on	When the vehicle brakes are set, they could apply additional pressure or torque on the suspension air bags. This will cause the suspension to have a different air pressure than what is actually needed to hold up the
The vehicle is parked on an uneven or rough surface	If one or more of the vehicle's wheels are in a pothole, that could result in additional pressure or torque on the suspension air bags. This will cause the suspension to have a different air pressure than what is actually needed to hold up the given weight.
The Height Control Valve(s) (HCVs) are malfunctioning or broken	If the HCV is not functioning correctly, the air pressure applied to the suspension system could be inconsistent and/or erratic. To test for an HCV problem, acquire a weight reading from the Right Weigh load scale and write it down (refer to scale operating instructions for proper procedure). Drive the vehicle around the block and return to the same location. Acquire a second reading from the Right Weigh load scale. If the two readings are significantly different, then the HCV might be malfunctioning.
There is a significant air leak in the suspension system	This could cause the HCV to refill the suspension at regular intervals to maintain the vehicles ride height. If there is a significant leak, the scale display will slowly decrease in value and then quickly increase in value when the HCV refills the suspension system.

Overweight Warning

As an added visual warning, the display can be set to flash the weight on and off when a user is over a predefined weight. For example, you may choose to have the display flash any time the weight on the axle group goes above 33,500 pounds.

Setting an Overweight Warning

Step 1: With the scale turned on, press and hold 2 C LOW and 1 C HIGH. The "C/H" symbol will appear.

Step 2: The display will show the warning value. "0" is the default setting and the display will not flash the weight at any time if it is set to "0".

Step 3: Use the 3 and 4 arrow buttons to set the desired warning weight. Press and hold 2 C LOW and 1 C HIGH to save.

Setting the warning value to "0" will disable the overweight warning feature.

Scale Operating Modes

The next few pages cover the operation modes that are built into the 201-EDG-02(B). **The load scale can only be setup in one operating mode at a time. If the mode is changed, the calibration data will be reset to factory defaults, requiring re-calibration.**

Average Mode (AVG): This is the default mode of the scale. Both air inputs are averaged for monitoring a dual height control valve axle group.

Independent Mode (Idp) : The inputs are separated for monitoring 2 axle groups with 1 HCV each, such as a dedicated tractor and trailer set.

Estimated Steer Mode (ESTr): A scale which is monitoring the drive axle group weight will also estimate the steer axle weight based on the weight ratio between the drive axle group and the steer axle.

2 CAL mode (2CAL): Two sets of calibration data can be stored for use when the axle group is weighed under different conditions, such as when an integrated air ride lift axle is in use which uses the same HCV.

Changing Scale Mode:

1: With the scale **OFF**, hold the 4 and 3 buttons, and press the ON/OFF button. The scale will display the current mode.

2: Press the 4 button to cycle through the configuration modes. To confirm your selection, turn the scale off by pressing the ON/OFF button.

Independent Mode (Idp)

In Independent mode, a 201-EDG-02(B) can monitor the drive and trailer axle groups of a dedicated tractor-trailer set with single HCV drives and single HCV trailer. In this mode, a number will appear in the lower left of the display, either 1, 2, or 1 & 2 simultaneously. This is to let you know which axle group is being displayed. Use the MENU i ENTER button to switch the display between the axle groups.

Looking at the back of the scale, Axle Group 1 input is on the left, and Axle Group 2 input is on the right. In a typical installation, Axle Group 1 should be connected to a drive axle airbag, and Axle Group 2 to a trailer axle airbag. If you are unsure, dump air from just the truck or trailer and see which weight value drops.

Independent Mode Calibration Steps

The scale must be calibrated both empty and loaded for both axle groups. When calibrating in this mode, you must obtain separate weights for both the drive axle group and trailer axle group from the certified in-ground scale. During calibration and weighing, the truck and trailer must be on flat level ground with the brakes off and wheels chocked. Refer to pages 8 and 9 for more information.

Security PIN Code

A security PIN code can be added to the scale to prevent tampering. It will need to be entered to change the calibration values, or to change the PIN code. Keep a copy of the PIN code for future use.

Setting a PIN Code

Step 1: With the scale off, press ON/OFF while holding 1 C HIGH and 2 C LOW

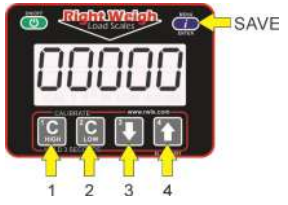
Step 2: Press MENU i ENTER. The display will show "00000". If the display shows "- - - - -" it means there is already a code set. Enter in a 5 digit PIN code using buttons 1, 2, 3 and 4. Press the MENU i ENTER button again to save the PIN.

Changing your PIN Code

Step 1: With the scale off, press ON/OFF while holding 1 C HIGH and 2 C LOW

Step 2: Press MENU i ENTER the display will show "- - - - -". Enter the previous PIN code. If the correct code was entered, The display will show "Good".

Step 3: Press MENU i ENTER and enter the new 5 digit PIN code using buttons 1, 2, 3 and 4. Press MENU i ENTER again to save the new PIN.



In “2CAL” mode, you can store two sets of calibration points for an axle group. Typically this is used for an **integrated** air ride lift axle using the same HCVs. The 201-EDG-02(B) stores two separate sets of calibration data, an empty and loaded for Configuration 1, and an empty and loaded for Configuration 2.

Operation

When the scale is in this mode, the MENU i ENTER button is now used to choose between Configuration 1 and Configuration 2. To change between LBS and KG press and hold the 4 button, then press MENU i ENTER

Calibration

Follow the same calibration steps that you would for AVG mode, but pay attention to which set of calibration data you are using when you calibrate and view the scale. Pressing the MENU i ENTER button toggles between Configuration 1 and Configuration 2.

1. Empty Calibration Point

1: Obtain separate empty weight values for the drive axle and trailer axle groups from a certified in-ground scale.

2: Press the MENU i ENTER button until the scale is in Axle Group 1 mode. Hold 2 C LOW for 3 seconds until the “C/L” symbol appears.

3: Adjust the value using the 4 and 3 arrows so that it matches your scale ticket for the axle group associated to Axle Group 1. Hold 2 C LOW again until the “C/L” symbol disappears.

4: Press the MENU i ENTER button to change to Axle Group 2 mode, and repeat the process for the other axle group.

2. Loaded Calibration Point

1: After the truck has been fully loaded, obtain separate loaded weight values for the drive axle and the trailer axle groups from an in-ground scale.

2: Press the MENU i ENTER button until the scale is in Axle Group 1 mode. Hold 1 C HIGH until the “C/H” symbol appears.

3: Adjust the value using the 4 and 3 arrows so that it matches your scale ticket for the axle group associated to Axle Group 1. Hold 1 C HIGH again until the “C/H” symbol disappears.

4: Press the MENU i ENTER button to change to Axle Group 2 mode, and repeat the process for the drive axle group.

In Estimated Steer mode, a 201-EDG-02(B) which is installed on a dual leveling valve tractor to monitor the drive axle group, can also estimate the steer axle weight. In this mode, there is a small number in the lower left of the display, either 1, 2, or 1 & 2 simultaneously. This is to let you know which axle group is being monitored. Axle Group 1 mode displays the estimated steer axle weight, Axle Group 2 mode is the drive axle group weight, and 1 & 2 are the two weights combined. Use the MENU i ENTER button to switch the display between the axle groups.

Estimated Steer Mode Calibration Steps

The scale must be calibrated both empty and loaded. When calibrating in this mode, you must obtain separate weights for both the drive axle group and steer axle from a certified in-ground scale. During calibration and weighing, the truck and trailer must be on flat level ground with the brakes off and wheels chocked. Refer to pages 8 and 9 for more information.

1. Empty Calibration Point

1: Obtain separate empty weight values for the steer axle and drive axle group from an in-ground scale.

2: Press the MENU i ENTER button until the scale is in Axle Group 1 mode. Hold 2 C LOW until the “C/L” symbol appears.

3: Adjust the value using the 4 and 3 arrows so that it matches your scale ticket for the steer axle. Hold 2 C LOW again until the “C/L” symbol disappears.

4: Press the MENU i ENTER button to change to Axle Group 2 mode, and repeat the process for the drive axle group.

2. Loaded Calibration Point

1: After the truck has been fully loaded, obtain separate loaded weight values for the steer axle and the drive axle group from an in-ground scale.

2: Press the MENU i ENTER button until the scale is in Axle Group 1 mode. Hold 1 C HIGH for three seconds until the words “C/H” symbol appears.

3: Adjust the value using the 4 and 3 arrows so that it matches your scale ticket for the steer axle. Hold 1 C HIGH again for three seconds until the “C/H” symbol disappears.

4: Press the MENU i ENTER button to change to Axle Group 2 mode, and repeat the process for the drive axle group.