RIGHT WEIGH

Installation & Operation Manual

ONBOARD LOAD SCALE

EXTERIOR DIGITAL | 201-257-01
201-257-02

Bluetooth®

WELCOME

Thank you for choosing to drive more and scale less! Here at Right Weigh, we are committed to making our products simple to install and easy to use. We understand that installation can vary between vehicles and yours may not be described in this manual. In any event, our technical support team is ready to answer your questions!

(503) 628-0838
(888) 818-2058 - Toll Free (USA ONLY)
+61 418 622840 - Australia & New Zealand

support@rwls.com
leigh@rwlsau.com.au - Australia & New Zealand

www.rwls.com/how-to-calibrate-install/
rightweigh.com.au - Australia & New Zealand

IMPORTANT!

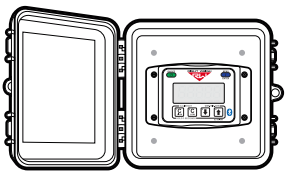
Please read instructions COMPLETELY before installation. Right Weigh, Inc. is not responsible or liable under written warranty for product failure due to improper installation. The installation requirements are outlined in this manual and should be followed thoroughly to avoid inaccuracy or damage to the product.

It is also important to be aware of vehicle manufacturer policies before making modifications to the vehicle. Right Weigh, Inc. is not liable or responsible for issues regarding warranties with other manufacturers. This is the responsibility of the customer.

FOLLOW US!

CONTENTS

Specifications & Overview	4
Scale Installation	6
Remote Trailer Connection	8
Scale Operating Modes	9
Estimated Steer Mode	10
Multiple Calibration Mode	10
Calibration	11
Operating & Weighing	13
Security PIN Code	14
Setting	14
Changing	15
Overweight Warning	16
Right Weigh Bluetooth™ App	17
General Information	17
Connecting To Gauge	19
Details Screen	21
Settings Screen	22
Troubleshooting	23
Appendix A - Additional Parts	25
Appendix B - Wiring Insulation	26
Warranty Statement	30
Return Policy & Repairs	31

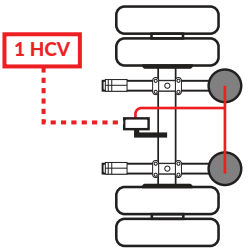


ONBOARD LOAD SCALE

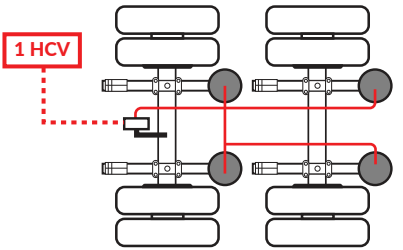
EXTERIOR DIGITAL | 201-257-01
201-257-02

Bluetooth®

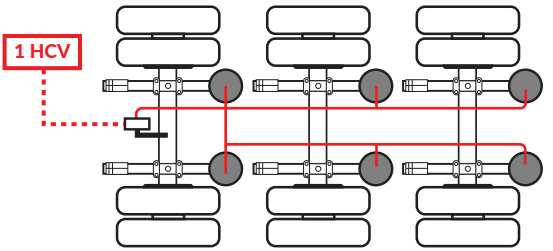
The Right Weigh **201-257-01** digital load scale has one internal air pressure sensor. This scale will monitor a single, tandem, or tridem air suspension drive axle group with one Height Control Valve (HCV).



Single Axle Group

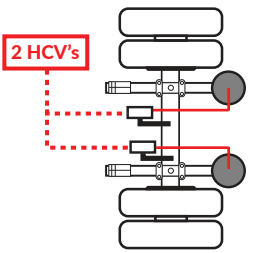


Tandem Axle Group

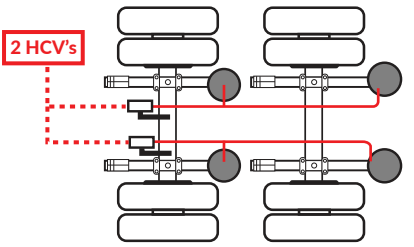


Tri Axle Group

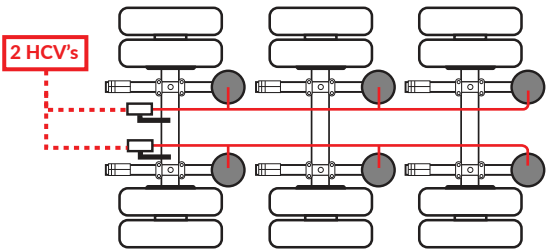
The Right Weigh **201-257-02** digital load scale has two internal air pressure sensors. This scale will monitor a single, tandem, or tridem air suspension drive axle group with two Height Control Valves (HCV's).



Single Axle Group



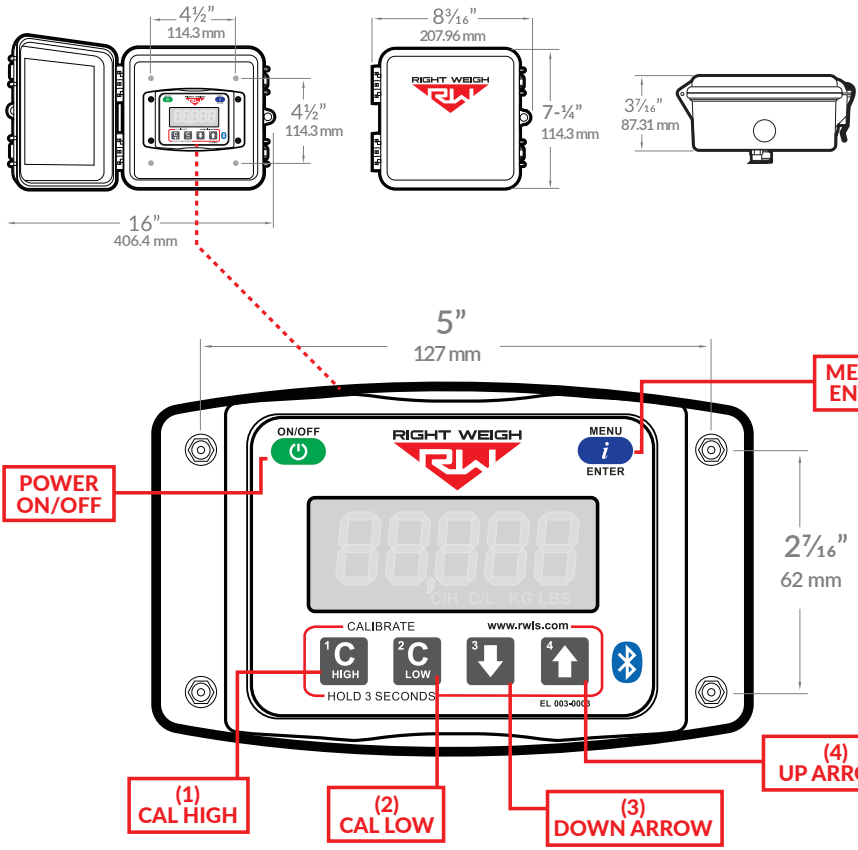
Tandem Axle Group



Tri Axle Group

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 (Switched)
Units: Pounds (LBS) or Kilograms (KG)
Housing: High impact polycarbonate blend
Display: 0.8" LCD sunlight readable



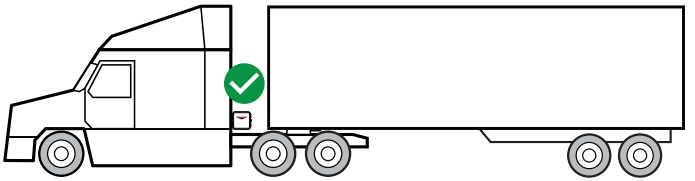
Estimated Steer Axle:

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

SCALE INSTALLATION

The 201-257-01 and 201-257-02 scales are designed to be mounted on the outside of a truck. A protective enclosure and mounting bracket are included with the scales.

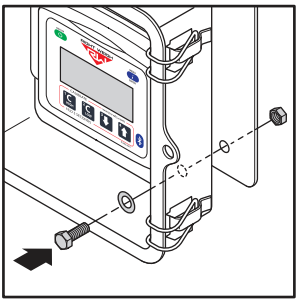
The following steps will walk you through how to correctly mount and install the scale. Be sure to choose a location that is easily accessible and safe from potential damage (forklift posts, tire caps, etc.)



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 CHOOSE LOCATION

Choose a location to mount the scale that is easily accessible and safe from potential damage (forklift posts, tire caps, etc.). Mount the bracket in the chosen location and install the gauge box to the bracket using supplied hardware.

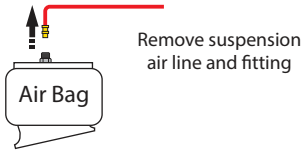


Make sure to use BOTH supplied mounting bolts to secure the bracket to the vehicle. Using only one bolt can result in a cracked bracket and the scale falling off the vehicle.

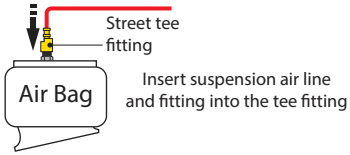
2 DUMP AIR FROM SUSPENSION SYSTEM

3 INSTALL NEW STREET TEE FITTING

Remove the suspension air line fitting from the top of one of the air bags.



Insert a street tee fitting into the top of the air bag that matches the thread size of the vehicle suspension. Reinstall the suspension air line and fitting into the street tee. For more information on the parts needed for air line installation, see Appendix A.



4 INSTALL NEW 1/4” AIR LINE

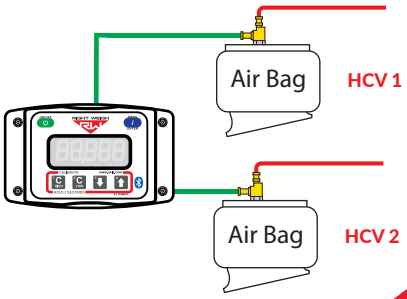
Install a new 1/4” air line and fitting into the remaining port on the tee.

5 ROUTE AIR LINE TO GAUGE

Route the new 1/4” air line from the tee fitting assembly to the gauge. Secure air line with zip ties. Insert the air line into the push-to-connect fitting on the back of the gauge. DO NOT ROTATE THE AIR FITTING!

6 REPEAT FOR SECOND HCV (201-257-02 ONLY)

For 201-257-02 installations, repeat steps 3-5 on an air bag attached to the second HCV.

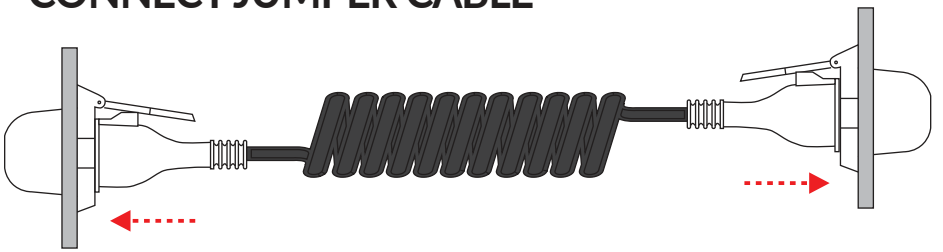


REMOTE TRAILER CONNECTION

The 201-RTS series load scale has the option of being connected to any Right Weigh remote trailer sensor. When connected to the remote trailer sensor, the load scale displays the weight of the trailer axle group based on calibration data that is saved to the remote trailer sensor itself.

In order to connect to the trailer, follow the manual instructions in the RTSK-01 installation kit to set up the remote trailer socket.

CONNECT JUMPER CABLE



Connect one end of the supplied jumper cable (EL-004-0049) to the remote trailer connection socket on the truck and the other end to the remote trailer sensor socket on the trailer. Once this is connected the scale will display a weight for the trailer axle group. When disconnected from any trailer, the display will read “0” for the trailer axle group.

The next few pages cover the operation modes that are built into the 201-257-01 and 201-257-02. **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.**

- **Sensor Average Mode (AVG):** This is the default mode of the scale. It averages the input from all connected sensors to report a group weight for the axle group it is attached to. Use this mode to display the weight of the drive and trailer axle groups.
- **Sensor Average + Estimated Steer Mode (S-AVG):** This mode is the same as the Sensor Average mode except it also calculates an estimated steer axle weight. Use this mode to display he estimated steer axle weight as well as the weight of the drive and trailer axle groups.

CHANGING SCALE MODES

With the scale OFF, hold both the UP and DOWN arrow buttons, and press the ON/OFF button. Release all 3 buttons. The scale will display the current mode.

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

SENSOR AVERAGE (AVG)

In Sensor Average mode, a 201-257-01 or 201-257-02 will display a single weight for the drive axle group and a separate weight for the trailer axle group. The small number on the lower left of the display indicates which axle group is being shown. The numbers indicate the following:

1 = Drive Weight
2 = Remote Trailer Weight
1 2 = Drive + Remote Trailer

Use the MENU button to switch the display between the axle groups.

SENSOR AVERAGE + ESTIMATED STEER MODE (S-AVG)

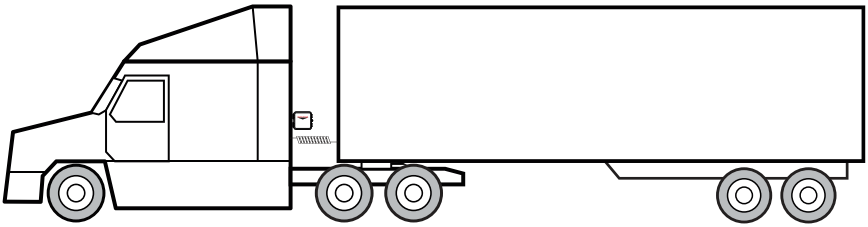
In Estimated Steer mode, a 201-257-01 or 201-257-02 will display a weight for the steer axle group, a weight for the drive axle group, and a weight for the trailer axle group. The small number on the lower left of the display indicates which axle group is being shown. The numbers indicate the following:

1 = Estimated Steer Weight
2 = Drive Weight
3 = Remote Trailer Weight
1 2 3 = Steer + Drive + Remote Trailer

Use the MENU button to switch the display between the axle groups.

Estimated steer relies on a constant/fixed fifth wheel position. Changing the position of a sliding fifth wheel will cause the estimated steer feature to no longer be accurate. To regain an accurate estimated steer reading, return the fifth wheel to its original position used at the time of calibration or recalibrate the scale for a new fifth wheel position.

The 201-257 series 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 vehicle is empty, and again while the vehicle is loaded for each axle group being monitored.



Only enter on-the-ground weight of axle or group being monitored. DO NOT use gross weight, tare weight, etc.

Follow calibration steps on the next page, once these are complete the gauge will be ready to use!

CHANGING UNITS

With the gauge on, hold the UP ARROW and then press the MENU button. This will toggle the settings between pounds and kilograms.

EMPTY CALIBRATION POINT

1: While the vehicle is empty, obtain axle group weights from a certified in-ground 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.

4: Press the ON/OFF button to turn on the Right Weigh load scale.

5: Press the blue MENU button to select the proper axle group.

6: Press and hold the C LOW button until the “C/L” symbol appears.

7: Adjust the value using the UP and DOWN arrows so that it matches your scale ticket for the axle group.

8: To save, press and hold the C LOW button until the “C/L” symbol disappears.

9: Repeat steps 5-8 for all axle groups.

LOADED CALIBRATION POINT

Repeat “empty calibration point” steps 1-3 with the vehicle fully loaded

4: Press the ON/OFF button to turn on the Right Weigh load scale.

5: Press the blue MENU button to select the proper axle group.

6: Press and hold the C HIGH button until the “C/H” symbol appears.

7: Adjust the value using the UP and DOWN arrows so that it matches your scale ticket for the axle group.

8: To save, press and hold the C HIGH button until the “C/H” symbol disappears.

9: Repeat steps 5-8 for all axle groups.

Follow these steps while weighing your vehicle:

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 ON/OFF button to turn on the Right Weigh load scale.

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

6: Press the blue MENU button. Repeat for all axle groups.

7: Press the ON/OFF button to turn off the Right Weigh load scale.

SETTING SECURITY PIN CODE

Adding a security PIN will prevent tampering with the gauge. Once set, the PIN will be required to change calibration data and to change the PIN code.

With the gauge off, hold both the C LOW and C HIGH buttons, then press the ON/OFF button and release all three.

Press the MENU button and “00000” will display on the screen. Enter a 5 digit PIN code using the 1, 2, 3, and 4 buttons. Press the MENU button again to save the code.

If the display shows “-----”, then there is already a code set. See next page to change existing PIN code

CHANGING SECURITY PIN CODE

With the gauge off, hold both the C LOW and C HIGH buttons, then press the ON/OFF button and release all three.

Press the MENU button and "-----" will display on the screen. Enter the previous PIN code. If the code entered is correct, the display will show "Good".

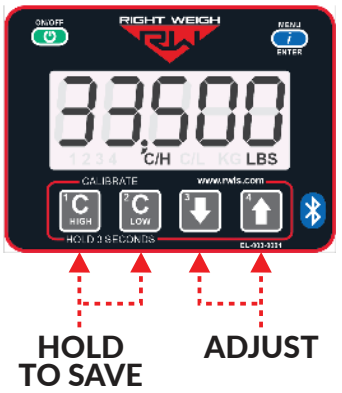
Press the MENU button and enter the new 5-digit PIN code using the 1, 2, 3, and 4 buttons. Press the MENU button again to save the code.

OVERWEIGHT WARNING

The overweight warning can be added as a visual warning to the driver to flash anytime the gauge reads above a set weight.

With the scale turned on, press and hold both the C HIGH and C LOW buttons until the “C/H” symbol appears.

The default display will show “0”. Setting this to “0” will turn off the overweight feature.

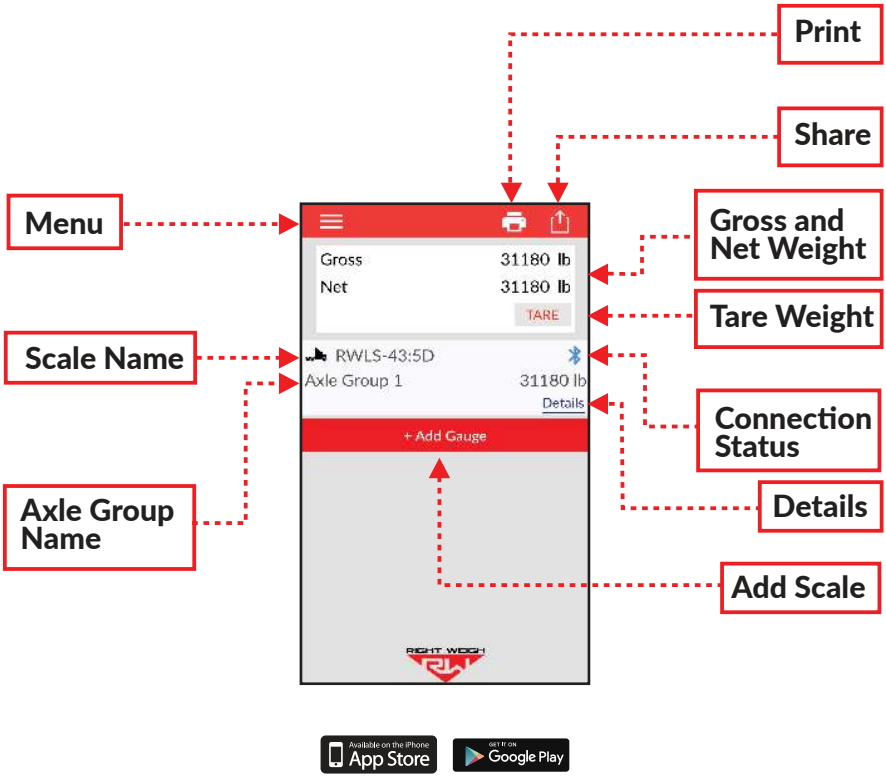


Use the UP and DOWN arrows to set the desired warning weight.
Press and hold the C HIGH and C LOW buttons to save.

Setting the warning value to “0” will disable the overweight warning feature

RIGHT WEIGH LOAD SCALES APP

Go to the Google Play or App Store and download the Right Weigh Load Scales App!



MENU

The menu icon will give you the option of displaying your weight data (storage frequency dependent on save settings), seeing the app settings, and will take you to a support page for more information on how to contact Right Weigh, Inc.

SCALE NAME

Once you have connected the gauge to your phone app, the scale name will display here.

AXLE GROUP NAME

These names represent the axle group the gauge is monitoring and is dependent on the set-up of the scale itself.

PRINT

The print icon will allow you to print a weight receipt to most Bluetooth "POS" receipt printers with your weight data and location on it.

SHARE

The share icon will allow you to send your weight data via email or text message.

GROSS AND NET WEIGHT

Here you can see your gross weight and net weight. Gross weight is the total weight of all axle group readings from the gauge and the net weight can be zeroed by pressing the "TARE" button. All axle groups must be monitored for a correct gross or net weight.

TARE

Pressing the "TARE" button will zero the net weight. This can be done to see how much load you are carrying by pressing this button before loading up the vehicle. See page 23 for more information.

CONNECTION STATUS

A blue icon means the scale is connected. If the icon is gray, the scale has been disconnected or is out of range and pressing the refresh icon will allow the app to attempt to reconnect.

DETAILS

Clicking on the Details button will send you to a details page with more information on the scale status.

ADD SCALE

Once your scale has been connected to power, you can click the "+ Add Gauge" button to find each scale on your vehicle. Be sure to add them in the order they appear on your vehicle

1

With the gauge off, hold down the MENU button, press the ON/OFF button, and release both simultaneously.

2

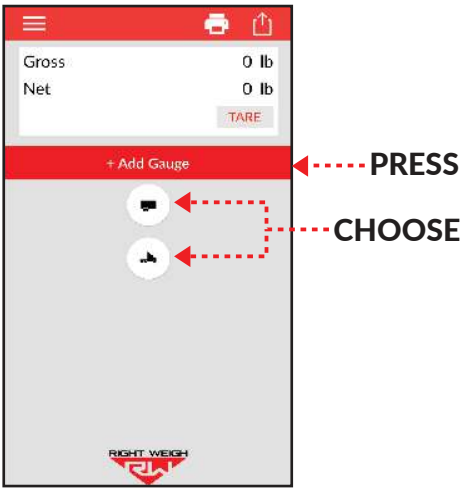
Press the MENU button twice to see the unique identifier.

3

Once the app has been downloaded and opened, you will see the home screen with no gauge connected to it and a gross weight of “0”.

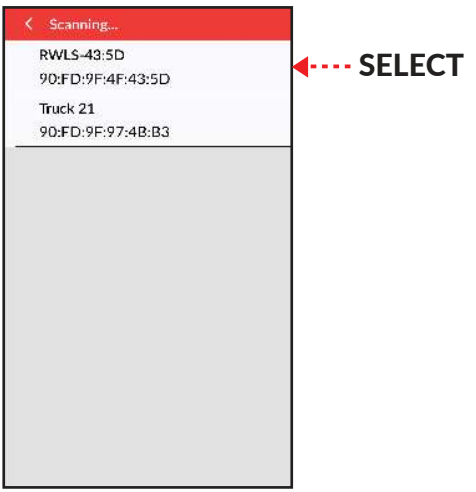
4

On the app home screen, press the "Add Gauge" button and choose whether or not the gauge is connected to the truck or trailer.



5

Select the gauge that matches the unique identifier name from step 3 to add the gauge to your home screen.



To get to the scale details screen, press on “Details” from the home page. This page will display information for that specific scale and includes the ability to rename the scale.

DELETE SCALE FROM APP

RENAME THE SCALE

To re-name the scale, select the pencil icon. When finished, press “OK” to save. If the name doesn’t change, try deleting the scale and re-adding it on the app

SCALE INFORMATION

Under the scale name, you can find the scale’s unique identifier, connection status, and weight information

RAW SENSOR INFORMATION

Here you can find the psi value for each air sensor.

WARNING AND OVERLOAD WEIGHTS

These weights are typically set in the “Settings” menu on the app but can be overwritten for each scale individually

SCALE FIRMWARE VERSION

RWLS APP - Settings Screen

To get to the settings screen, press the menu button on the top left of the home screen and navigate to “Settings”

CHANGING UNITS

Change the units to either pounds (LB) or kilograms (KG)

SET WARNING AND OVERLOAD WEIGHTS

Set warning and overload weight limit defaults

NET WEIGHT

Toggle the net weight feature on/off. Net weight is the net change in weight since the last time the “TARE” button was pressed. This feature is useful to track how much your total monitored axles have changed since you last pressed “TARE”.

DATA SAVING

Specify data saving and where to send the information to

DEMO MODE

Turn on demo mode to see all the app features without connecting to a gauge

PROBLEM WITH THE GAUGE?

Below is a list of problems we have seen with a simple fix. If you don't see your problem listed here or our troubleshooting doesn't fix your problem, call Right Weigh Tech Support listed on page 2 for further assistance!

ERRATIC / 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 airbags. This will cause the suspension to have a different air pressure than what is actually needed to hold up the given weight.

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 airbags. This will cause the suspension to have a different air pressure than what is normally needed to hold up the given weight.

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 vehicle's ride height. If there is a significant leak, the gauge display will slowly decrease in value and then quickly increase in value when the HCV refills the suspension system.

The Height Control Valve (HCV) is 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 gauge and write it down (refer to gauge 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 gauge. If the two readings are significantly different, then the HCV might be malfunctioning.

SCALE DISPLAY IS BLINKING

Current weight is above the alarm limit programmed 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.

APP WON'T CONNECT TO THE GAUGE

Scale is connected to a constant power source:
The gauge should never be connected to a constant power source, rewire so that it is connected to a switched power source. If the gauge is powered too long it can stop transmitting a Bluetooth signal and may need to be disconnected and reconnected to work again.

Scale is already connected to another device:
The scale can only connect to one device at a time

Phone needs to be re-set:
To reset your phone - close the app, turn off Bluetooth, and wait 10 seconds. Then open the app and turn the Bluetooth back on. Try rescanning for the scale. If this still doesn't work, in some cases it is necessary to restart the phone completely.

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.

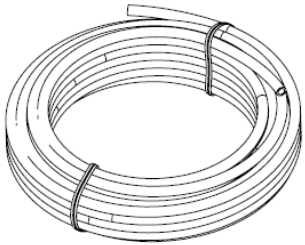
CANNOT CHANGE CALIBRATION DATA

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

GAUGE WILL NOT CALIBRATE LOW/HIGH

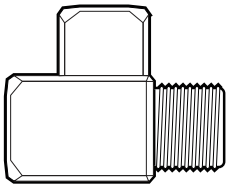
Air pressure in the system is not changing:
To enter low or high cal mode, the gauge must see a measurable change in air pressure. Make sure you calibrate high when the vehicle is near the legal limit and calibrate low when the truck is empty. Also, be sure the air line is connected directly to an air bag NOT the main air supply or brake system.

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.



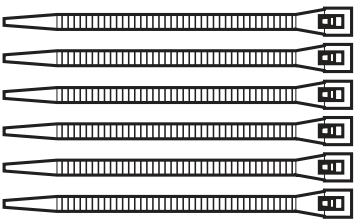
1/4 Inch Air Line

Approximately 20 to 30 feet (6 to 9 meters)

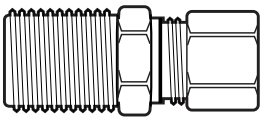


Street Tee Fitting

The thread size should match the air bag fitting. (1/4” NPT or 3/8” NPT)



20 or more Zip Ties



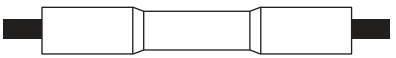
Male Straight Fitting

Air line fitting for 1/4” air line, with a thread size to match the street tee fitting.

APPENDIX B

It is very important that all wiring connections be made watertight. Connections which are not watertight can 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 in the 201-SK Installation Kit.



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

After crimping and heat shrinking

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.

Add heat shrink

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

After heat shrinking

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.

Return Policy and Authorization

Before returning any product, please obtain a Return Merchandise Authorization number (RMA#) by calling Customer Service at 503-628-0838 or e-mailing support@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.

For additional support contact:

United States and Canada:

Right Weigh, Inc.

(503) 628-0838

(888) 818-2058 - Toll Free (USA ONLY)

www.rwls.com

support@rwls.com

Australia and New Zealand:

Smart Truck Solutions

+61 418 622840

rightweigh.com.au

Right Weigh, Inc.

Hillsboro, Oregon USA

PP-003-0029 Revision C

February 2020