AIR-WEIGH
AIR AND MECHANICAL SUSPENSION SCALES

iWeigh®
Installation Guide

For Trailers

Air & Mechanical Suspensions

Air-Weigh Customer Support: 888-459-3247

PN 901-0186-000 R1 **5/13/25**

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Scale Overview

The iWeigh® Scale is an on-board weighing system for air-ride and spring ride suspensions on trucks, tractors and trailers. The sensors in the iWeigh® scale measure the air pressure change or axle flex and converts this into a displayed weight that can be viewed on the optional external display or on the Air-Weigh app.

Scales will show on app only when powered.

Air-Weigh App

The Air-Weigh App User Guide is available on our website at https://www.air-weigh.com/installation-manuals/.

Scan the QR code below to download the Air-Weigh app and view weight data on a compatible Android smart device via the Google Play store.

Download the Air-Weigh App

iWeigh® Registration

Please note: Every effort has been made to ensure that the information in this manual is accurate. Air-Weigh is not responsible for printing or clerical errors that occurred during time of publication.

Scale Platform Overview

The iWeigh® Scale is an on-board weighing system for air-ride and spring ride suspensions on trucks, tractors and trailers. The sensors in the iWeigh® scale measure the air pressure change or axle micro-flex and converts this into a displayed weight that can be viewed on the optional external display or on the Air-Weigh app. Scale(s) will show on app only when powered.

The iWeigh® Web Portal allows for iWeigh units to be registered and administered from a central cloud location, however, the scale will still work with limited functionality while unregistered.

iWeigh® Installation Guides

Please check for the installation guides required for your specific configuration.

iWeigh® Admin and User Guide - Web Portal

901-0187-000 - The guide covering how to use and administer the cloud web portal for the iWeigh® platform.

iWeigh® User and Calibration Guide - App Air and Mechanical Suspensions

901-0187-000 - The guide on how to install the app on a smart device, how to use the app, and how to calibrate the iWeigh® scale units using the app.

iWeigh® for Truck and Tractor - Scale Air and Mechanical Suspensions

901-0189-000 - The guide covering how to install an iWeigh® unit on a truck or tractor for air and/or mechanical suspensions. After installing the iWeigh® unit, to install the deflection sensors for your specific configuration, select from the installation guides listed below.

iWeigh® for Truck and Tractor Mechanical Suspensions - Steer

901-0190-000 - Deflection sensor glued installation.
901-0191-000 - Deflection sensor welded installation.

iWeigh® for Truck and Tractor Mechanical Suspensions - Drive

901-0192-000 - Hendrickson Walking Beam
901-0193-000 - Mack Camelback
901-0194-000 - Volvo T-Ride, M-Ride, TufTrac, F650 & F750

iWeigh® for Trailers Air and Mechanical Suspensions

901-0189-000 - The guide covering how to install iWeigh® on air or mechanical suspensions trailers.

Online Guides and Videos

Air-Weigh is proud to provide multiple online sources for installation guides, user guides, calibration guides, and videos for our products. Please scan the QR codes to visit our website for more detailed information.

Installation Guides

Installation Videos

Calibration Guides

Calibration Videos

User Guides

iWeigh® Page

Best Practices & Support

For best practices when calibrating and using on-board scales for your fleet, please scan the QR code below to visit our website for more information.

Best Practices

To contact our Customer Success Department any time M-F 8AM - 4PM Pacific, excluding holidays.

Phone:
1-888-459-3247

Email:
support@air-weigh.com

Website:
Live chat on www.air-weigh.com

About the iWeigh® Web Portal

Scan the QR Code to reach the connected iWeigh® Web Portal. Please read the User and Administration Guide 901-0200-000 for more information on set-up and use.

iWeigh® Web Portal

Mounting Best Practices

Mounting Hardware

Note: Do NOT over tighten! Secure to 6 in-lbs.

Mounting Location

Note: When choosing a location to mount the scale display, first consider the length of cables in your scale kit. Make sure there is enough length in your power and air line to run from where you are mounting the scale to where you are connecting to power and installing the brackets.

The front face of the iWeigh® scale should face towards the tractor.

Cables

Note: Do not place strain on the cables. If there is a sharp bend in the wires, the environmental seal could fail, allowing water to damage the scale. If the scale mounting unattaches from the trailer, the power cable or air line will not support the weight of the scale.

Mounting the Scale

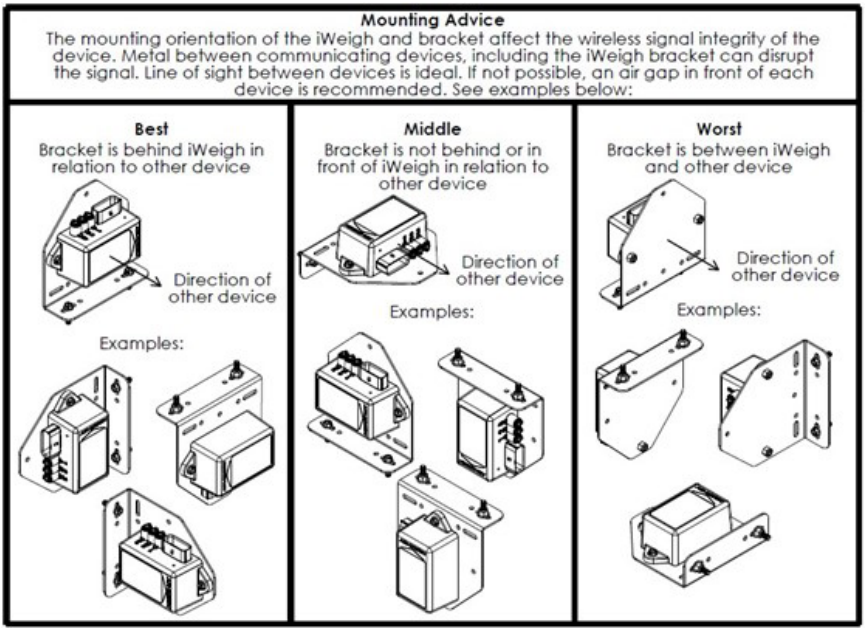
You can mount the scale using the optional mounting bracket or directly to trailer chassis.

If using the mounting bracket - follow the below instructions:

1. Secure the scale to the mounting bracket with the provided nuts and bolts. Tighten to 6 in-lbs. Do NOT over tighten!
2. Hold the mounting bracket in the location you plan to install the scale and mark where the screws will be placed. Drill tapping holes where you have marked and install the installation bracket and scale to the vehicle.

As a best practice, the front face of the iWeigh® scale should face towards the front of the vehicle configuration.

Mounting Location Advice:



Connecting Power to the Scale

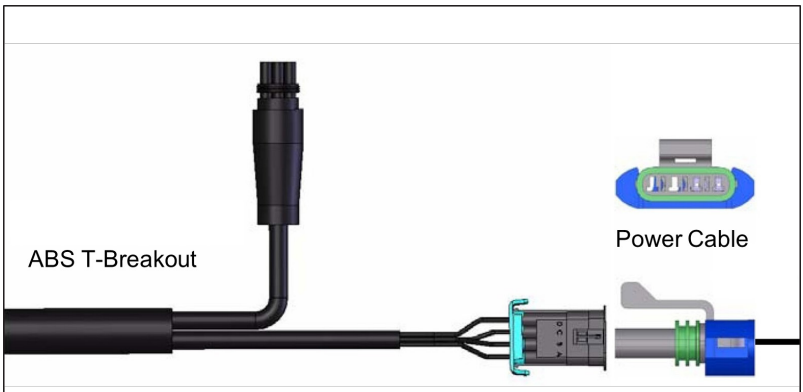
5-Pin ABS Connection

Air-Weigh provides an optional 5-pin ABS T-breakout that does not require splicing or soldering and does not interrupt power to the ABS system.

Locate the ABS system harness. Trace the ABS harness to where the T-breakout connection will be connected.

Recommended iWeigh® mounting location will be approximately 3 feet from T-breakout inside the channel of trailer framing.

1. Disconnect the 5-pin breakout connection. **If your system is 6-pin, you cannot use this option.**
2. Connect the supplied ABS T-breakout connector to both ends of the ABS harness breakout. Make sure the locking tabs are locked securely.
3. Connect the scale's power extension cable to the T-breakout connector.



ABS T-Breakout Example:

Installation for Air Suspensions

The scale works using sensors that measure air pressure changes in the trailer's suspension; it then converts those numbers into weight. The weight is displayed on the trailer display and displays weight per axle group. Weights are accurate to within 300 pounds (140 kilograms) and are displayed in 20-pound or 20-kilogram increments.

Installation Overview

There are three major components of the trailer scale that you will install:

- Trailer scale display
- Power interface and extension cables
- Air lines and brass T fittings

Tools Required - Air Suspensions

You will need the following tools to install the scale on a trailer with an air suspension.

- Screwdriver
- Flush wire cutter and wire stripper
- Driver & drill bit (1/4" bolts)
- Teflon tape

Installing the Air Line and Brass T Fitting

1. Detach the air line connection from the top of the most convenient air bag.
2. Apply Teflon tape, then thread the brass T fitting into the top of the air bag and tighten securely.
3. Apply Teflon tape, then thread the existing air line fitting into the top of the Air-Weigh brass T fitting.
4. Connect the air line fitting to the side of the brass T fitting and tighten securely.
5. Remove the end cap and compression band from the air line(compression) fitting.
6. Slide the end cap and the compression band onto the fitting for the air line.
7. Slide the air line onto the T fitting as far as it will go.
8. Securely tighten the end cap. Check that the air lines are secure.
9. Route the blue air line to the installaed iWeigh® location. Cut the air line to the desired length. The cut end must be flush and perpendicular to the hose or air leaking can occur.
10. Insert the air line into the open end of the quick release air port in the back of the iWeigh® unit as far as it will go. Tug on the air line to ensure it is properly installed.
11. Secure the air line to existing wiring beneath the vehicle using plastic zip ties provided in your installation kit. Make sure to not overtighten zip ties or kink the air line.
12. After finishing installing your scale, power up trailer. Open the Air-Weigh app and confirm you see the unit on the scan screen.

Installation - Mechanical Suspensions

Installation Overview

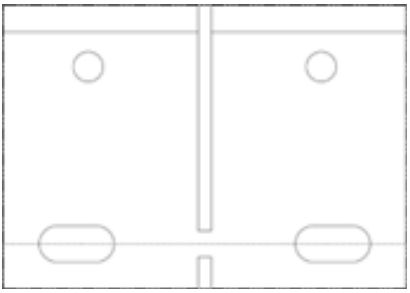
Listed below are the components of the scale that you will install:

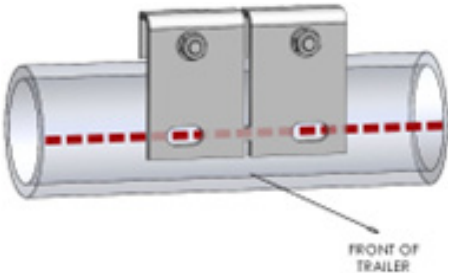
- Sensor interface and extension cables
- Deflection sensors (x2)
- Brackets (x2)

Note: When installing this kit on a three axle trailer, the first sensor is to be installed on the forward facing side of the center axle and the second sensor is to be installed on the forward facing side of the rear axle.

Before calibrating, note that there is a required break-in period of 100 miles. First verify that your A/D readings are set in the required range. See Setting the A/D Values further in this installation guide for more information.

Note: Use the bracket template that has been provided with your trailer kit and follow directions on the template to double check that the bracket will fit.





Note: Bracket is installed on the front and rear axles for tandem trailers and on the middle and rear axles for tri-axle trailers.

Tools Required - Mechanical Suspensions

You will need the following tools to install the scale and deflection sensors on a trailer with a mechanical suspension.

- Standard wrench set or adjustable wrench
- Drill with ¼-inch drill bit, or larger if flush mounted
- Flush wire cutter
- Needle nose pliers
- Grinder
- Chalk or permanent marker
- MIG or ARC welder
- Torque wrench
- 22mm socket
- Enamel spray paint, any color
- Tape measure
- C -clamps (2)

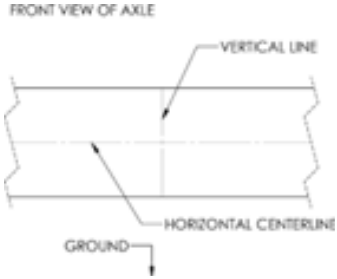
Optional Tool

- Deflection sensor text box, P/N 1001.

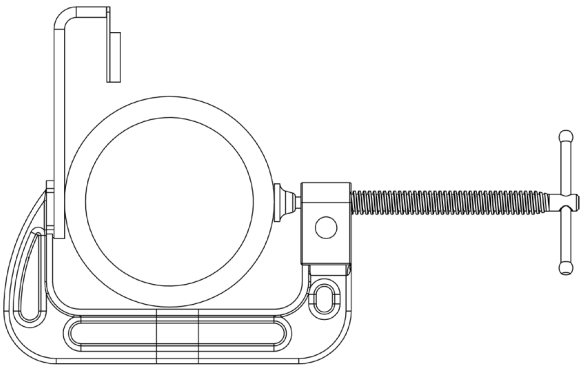
Welding the Deflection Sensor Brackets

Note: Air-Weigh takes no responsibility for damage or failure of the trailer axle due to improper welding or failure to follow these instructions.

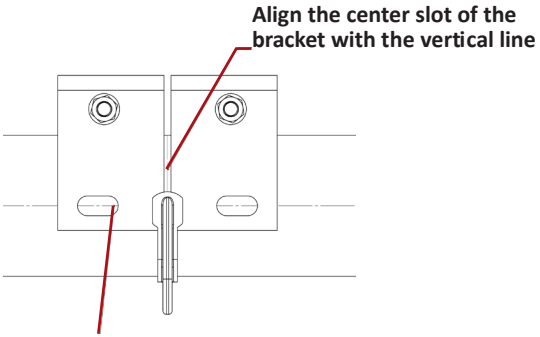
1. Find and mark the center of the trailer axle(s), front and rear for tandems or middle and rear for tri-axles, on the forward facing surface(s).
2. Hold the bracket assembly on the forward side of the trailer axle centered on the mark. Use C-clamps to hold it in place.



Orient the bracket vertically as shown



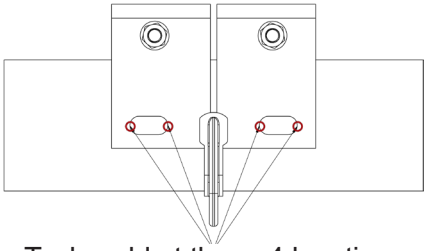
3. Using a permanent marker, mark the inside circumference of the bracket slots on the axle.
4. Remove the C-clamp and bracket. Remove the paint on the axles to bare metal where indicated by the marker. Make sure there is no paint remaining where the bracket will be welded.
5. Remark the vertical and horizontal center marks.
6. Replace the bracket over the sanded area and secure it in place with C-clamps.



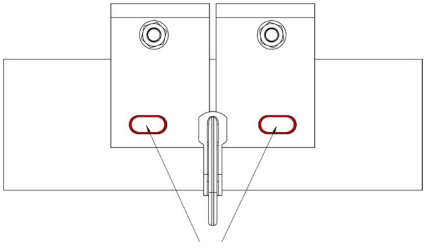
Fix bracket to axle with a clamp so that center of weld slot sits over the horizontal center line

7. Using a MIG or ARC welder, tack-weld the left and right ends of each slot and then weld the entire length of the slot.

Do not weld in any other location.



Tack weld at these 4 locations



After tack welding, make a 1/4 fillet weld around the entire perimeter of both slots

8. Repeat steps 1-5 for the other axle.
9. When the welds are completely cooled, remove the C-clamps.

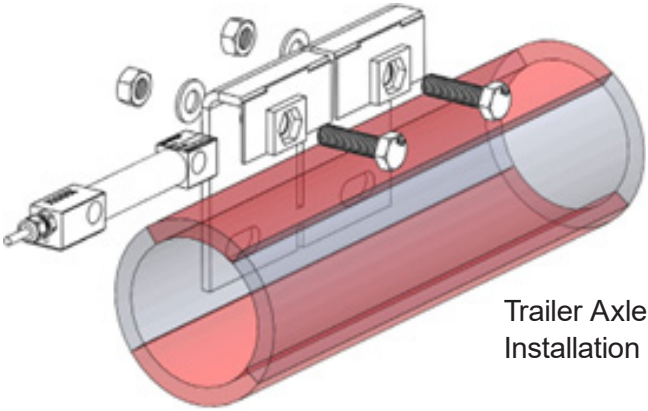
Installing the Deflection Sensors

Repeat the below steps for both front and rear deflection sensor install.

Note:

1. Use two bolts, nuts and washers to install the deflection sensor inside each bracket.
2. Insert the deflection sensor into the sensor bracket with the engraved lettering facing up and its cable extending toward the side of the trailer where you will route the sensor extension cable from the trailer scale display.

NOTE: Use the SHORTER cable for the Front (Tandem) or Middle (Tri-axle) axle. Use the LONGER cable for the Rear axle. You can determine the cable length by the middle four digits of the part number on the cable (ex: 2500 = 25 feet).



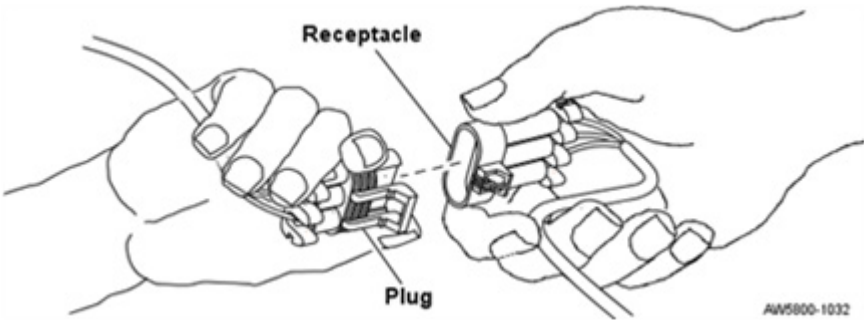
Trailer Axle Sensor Installation

3. Insert both bolts through the bracket holes holding the bolt head.
4. Place a washer and a nut at the end of each bolt and hand tighten the nut.

Routing the Axle Sensor Extension Cables

1. Starting at the trailer display, connect the SHORTER sensor extension cable to Port 1 on the sensor interface cable.
2. Connect the LONGER sensor extension cable to Port 2 on the sensor interface cable.
3. Route the SHORTER sensor extension cable along the frame of the trailer toward the location where the FRONT sensor bracket is installed and the LONGER sensor extension cable along the frame to the location where the REAR sensor bracket is installed. If possible, route along an existing wiring harness. If the trailer has a sliding suspension you must use an existing wiring harness or umbilical to avoid damaging or breaking the cable.
4. Secure the cable loosely to the frame using zip ties.
5. Connect the end of the sensor extension cables to the connector on the deflection sensors. Make sure the cable is under no strain and is not bent.

Note: Make sure there is enough slack in the sensor extension cable to allow for axle movement. Do not tighten or trim zip ties until the full installation is complete.



Assembling the Sensor Connector

Setting the A/D Values

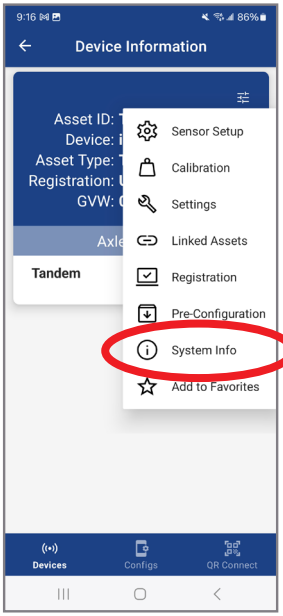
At this point, you have installed both trailer's axle sensors and routed extension cables. You will next adjust the deflection sensors to read weight correctly by setting the A/D values. A/D refers to the analog-to- digital conversion of the sensor reading.

This step will require the use of either the app or the Deflection Sensor Test box (P/N 1001). If using the Deflection Sensor Test box, connect the Deflection Sensor Test box to the deflection sensor connector plug and skip to the Adjusting the A/D Readings section.

If using the app, the scale must be installed and powered, and the Deflection Sensor Extension Cable must be installed.

1. Ensure that the deflection sensor connector is plugged into the sensor extension cable that has been routed from the trailer display.
2. Ensure the locking tabs on the connector plug engage completely.
3. Tighten both nuts on the sensor bracket using a torque wrench. Torque to 60 ft-lbs.
4. Verify the A/D reading via the app, or the deflection sensor test box. If the reading is within range (750- 1250), continue to instructions for the Final Sensor Torque. If the reading is not within range, follow the instructions to adjust the A/D readings on the following page.

How to View Scale Diagnostics in App

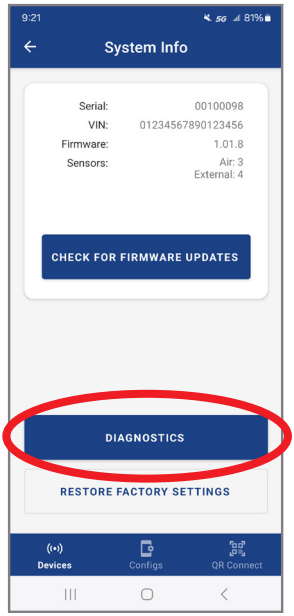


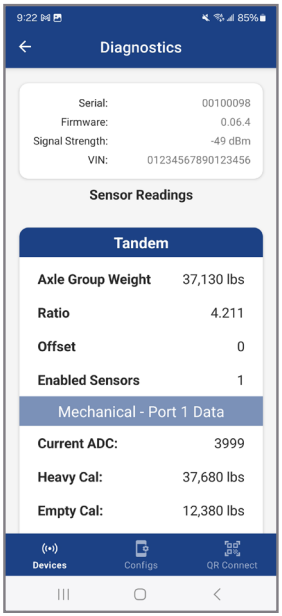
If the reading is within range (750-1250), continue to instructions for the **Final Sensor Torque.** If the reading is not within range, follow the instructions to adjust the A/D readings below.

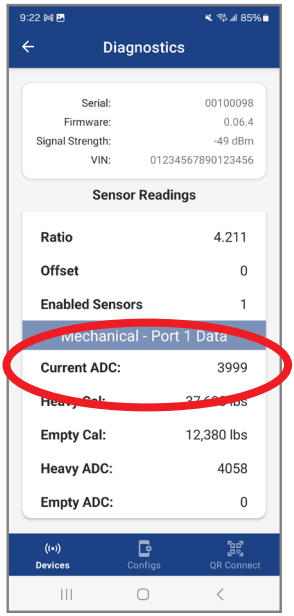
Open app, then select device from device dashboard. Open the main menu and select ‘System Info’ from the options.

On the ‘System Info’ screen, the serial number, VIN, Firmware version, and sensors are displayed. Select ‘Diagnostics’ to view scale diagnostics.

Live AD reading is ‘Current ADC’ field.







Adjusting the A/D Reading

If the A/D reading is above 1250, follow these instructions:

1. Loosen the nuts on both ends of the sensor.
2. At the plastic nut where the cable enters the sensor, exert **DOWNWARD** pressure with your fingers until the A/D reading is between 750 and 1250. Continue to apply pressure to maintain the desired A/D reading during the torque procedures in step 3.
3. Tighten the nut on the cable end of the sensor and torque to 60 ft/lbs. **Continue to apply pressure with your finger to the plastic nut during torquing in order to maintain the desired A/D reading.** If the A/D readings are still within the 750 to 1250 range after the nuts on both sides of the sensor have been torque to 60 ft/lbs, continue to instructions for the **Final Sensor Torque.**

If the A/D reading is below 750, or there is no A/D reading at all, follow the steps below:

1. Loosen the nuts on both ends of the sensor.
2. At the plastic nut where the cable enters the sensor, exert **UPWARD** pressure with your fingers until the A/D reading is between 750 and 1250. Continue to apply pressure to maintain the desired A/D reading during the torque procedures in step 3.
3. Tighten the nut on the cable end of the sensor and torqued to 60 ft/lbs. **Continue to apply pressure with your finger to the plastic nut during torquing in order to maintain the desired A/D reading.** If the A/D readings are still within the 750 to 1250 range after the nuts on both sides of the sensor have been torqued to 60 ft/lbs, continue to instructions for the **Final Sensor Torque.**

Final Sensor Torque

1. Torque both nuts to **120 ft/lbs**.
2. Perform a final check to A/D values using the readings from the app, not from the A/D Box. If A/D readings are not within range, repeat the **Adjusting the A/D reading steps.**

After the system is inspected, Calibrate your Scale per the related Calibration Guide.

The Deflection Sensor has a break-in Period to allow the sensor to adjust to the working environment and the use of the vehicle it is installed on.

We recommend having the Loaded Vehicle taken across the scale for a weight check-up after 100-800 miles. This mileage varies with the Use Case. If your vehicle is for severe duty and off-road, construction sites, etc., the break-in will be shorter. Conversely, if the vehicle is used in an over-the-road application, the break-in period will be slightly longer.

Compare the weight displayed by the system with the weight indicated on the ticket. If the displayed weight is within 3% of the value on the ticket, you are good to proceed.

If the weight falls outside this parameter, re-enter the Heavy Calibration and re-check the AD Values to ensure that they are within the Tension Parameters (750-1200). If they are not, re-tension the Sensor and restart the break-in period.

Adding a Protective Spray Paint Coating

Using any enamel-based spray paint, paint the bracket, the welded sections, and all bare metal around the bracket completely.

Additional Resources

Air-Weigh is proud to provide multiple online sources for installation guides, user guides, calibration guides, and videos for our products. Please scan the QR codes to visit our website for more detailed information.

Installation Guides

Calibration Guides

User Guides

Best Practices

Contact our Customer Success Department:

Monday through Friday,
8AM - 4PM Pacific, excluding holidays.

Phone:
1-888-459-3247

Email:
support@air-weigh.com

Website:
Live chat on www.air-weigh.com

Air-Weigh App & Web Portal

Download the Air-Weigh app.

The home screen will show all Air-Weigh iWeigh® and QuickWeigh® scales within broadcast range. Prior to naming your scale, it will show as **QuickWeigh® or iWeigh® and the serial number of your scale. For iWeigh®, the serial number of your scale is below the QR code on the face of the scale.**

For more details using the Air-Weigh app, please review our Air-Weigh App User guide, available on our website at https://www.air-weigh.com/installation-manuals/.

Scan the QR code below to download the Air-Weigh app and view weight data on a compatible Android smart device via the Google Play store.

To register your new scale, scan the QR code below or on your scale. For details on how to use the web portal, please read the User and Administration Guide 901-0200-000 for more information on set-up and use.

Scales will show on app only when powered.

Download the Air-Weigh App
Google Play Store (Android)

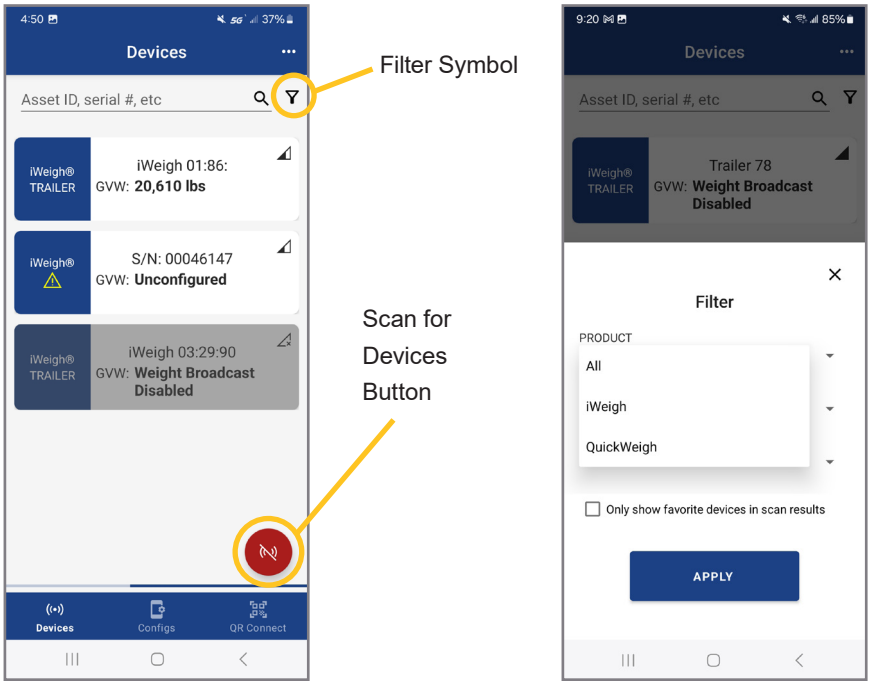
iWeigh® Registration
(Web Portal)

Using the Air-Weigh App

The initial start of the app will show the ‘Devices’ screen. All Air-Weigh app compatible Air-Weigh iWeigh® and QuickWeigh® scales within broadcast range will appear in the Devices menu.

Prior to configuring your scale, it will show as **QuickWeigh® or iWeigh® and the serial number of the scale. For iWeigh®, the serial number of your scale is below the QR code on the face of the scale.**

To filter iWeigh®, QuickWeigh® scales, or set favorite scales, click the filter symbol on the upper right. Select filtering options, then hit the ‘Apply’ button. **Scales will show on app only when powered.**



Limited Warranty

Air-Weigh warrants (the “Limited Warranty”) that the Products will be free from defects in material and workmanship under normal use and service with proper maintenance for the following time periods:

(a) for new Scale kits, the Limited Warranty period will be 3 years;

(b) for new parts and accessories sold separately, the Limited Warranty period will be 1 year; and

(c) for repaired or refurbished items, including repaired or refurbished Scale kits and repaired or refurbished parts and accessories sold separately, the Limited Warranty period will be 90 days.

If any Product is determined to not conform to this Limited Warranty during its applicable Limited Warranty period, Air-Weigh will, at its exclusive option, either repair or replace the Product.

Limitations of Limited Warranty. Air-Weigh will have no obligation under the Limited Warranty with respect to any product if (a) Buyer fails to notify Air-Weigh in writing during the warranty period of a non-conformity, or (b) Buyer or any other person, entity, or governmental authority uses, misuses, or neglects the product in a manner inconsistent with the product’s specifications or directions for use or maintenance, modifies the product or improperly installs, handles, or maintains the product.

No Repair or Modification of the products. Except as explicitly authorized or in a separate written agreement with Air-Weigh, Buyer will not service, repair, modify, alter, replace, reverse engineer, or otherwise change any of the products.

Disclaimer of All Other Warranties. EXCEPT FOR THE LIMITED WARRANTIES SET OUT ABOVE, NEITHER AIR-WEIGH NOR ANY PERSON OR ENTITY ON AIR-WEIGH’S BEHALF HAS MADE OR MAKES FOR BUYER’S BENEFIT ANY EXPRESS OR IMPLIED REPRESENTATION OR WARRANTY WHATSOEVER, INCLUDING ANY WARRANTIES OF: (i) MERCHANTABILITY; (ii) FITNESS FOR A PARTICULAR PURPOSE; (iii) TITLE; OR (iv) NON-INFRINGEMENT; WHETHER ARISING BY LAW, COURSE OF DEALING, COURSE OF PERFORMANCE, USAGE OF TRADE OR OTHERWISE, ALL OF WHICH ARE EXPRESSLY DISCLAIMED. BUYER ACKNOWLEDGES THAT IT HAS NOT RELIED ON ANY OTHER REPRESENTATION OR WARRANTY MADE BY AIR-WEIGH, OR ANY OTHER PERSON OR ENTITY ON AIR-WEIGH’S BEHALF.

Limitation of Liability.

IN NO EVENT WILL AIR-WEIGH BE LIABLE FOR CONSEQUENTIAL, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, PUNITIVE, OR ENHANCED DAMAGES, LOST PROFITS OR REVENUES, OR DIMINUTION IN VALUE, ARISING OUT OF OR RELATING TO ANY BREACH OF THESE TERMS, REGARDLESS OF WHETHER OR NOT THE DAMAGES WERE FORESEEABLE, WHETHER OR NOT AIR-WEIGH WAS ADVISED OF THE POSSIBILITY OF THE DAMAGES, OR THE LEGAL OR EQUITABLE THEORY (CONTRACT, TORT, OR OTHERWISE) ON WHICH THE CLAIM IS BASED.

IN NO CASE WILL AIR-WEIGH’S AGGREGATE LIABILITY ARISING OUT OF OR RELATED TO THESE TERMS, WHETHER ARISING OUT OF OR RELATED TO BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE), OR OTHERWISE, EXCEED THE TOTAL OF THE AMOUNTS PAID TO AIR-WEIGH FOR THE PRODUCTS.

THE FOREGOING LIMITATIONS APPLY EVEN IF BUYER’S REMEDIES UNDER THESE TERMS FAIL OF THEIR ESSENTIAL PURPOSE.

Procedure For Warranty Claims

ALL customers should first contact Air-Weigh Customer Support Department at (888) 459-3247 for questions regarding the use, operation, repair or return of any Air-Weigh product.

In the event Air-Weigh requests to examine the product prior to disposition OR for repair or replacement, Air-Weigh requires a Return Material Authorization (RMA) number be issued before the item is returned. Customer Support will issue the RMA number. Please reference this RMA number in all correspondence.

Claimed items shall be shipped freight pre-paid to:

Air-Weigh
Customer Support Department
1720 Willow Creek Circle, Suite 510
Eugene, Oregon 97402, USA

The Air-Weigh RMA number **must** appear on the outside of the return packaging. Air-Weigh shall examine returned material within 30 days after receipt, or sooner if mutually agreed upon. If Air-Weigh determines that the part or assembly was defective in material or workmanship and within the warranty period, Air-Weigh will repair or replace the part or assembly and return freight pre-paid. In the event Air-Weigh determines that the part or assembly cannot be repaired or replaced and is within the warranty period, a credit not to exceed the purchase price will be issued to the Air-Weigh customer.

For our customers using purchase orders Air-Weigh will process a credit memo and notify the customer by e-mail or fax. The customer will process a corresponding debit memo and notify Air-Weigh accordingly.

If the part or assembly received by Air-Weigh does not meet the requirements of the warranty program set forth above, at the Air-Weigh customer's request the part or assembly will either be discarded, returned freight collect, or repaired or replaced at the Air-Weigh customer's expense and returned freight collect.

AIR-WEIGH

AIR AND MECHANICAL SUSPENSION SCALES

1720 Willow Creek Circle • Eugene, OR 97402-9152 USA
P.O. Box 24308 • Eugene, OR 97402-0437 USA

Telephone (888) 459-3444
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