



*Self-Weighing Truck and Trailer Scales™*



***QuickLoad On-Board Scale***

# **INSTALLATION, CALIBRATION AND OPERATION GUIDE**

PN 901-0093-000 R1



## **Please Read Before Installing Limited Warranty**

For product failures due to material or manufacturing defects, Air-Weigh will replace or repair all air suspension components for up to 3 years from shipment date to the end-user Air-Weigh customer. These three-year components include: Displays, ComLinks, Air Sensors, Power Cables, Air Sensor Assemblies, Air Sensor Harnesses, and all other associated external components. Deflection Sensors have a 2-year warranty. Air-Weigh assumes no responsibility for administering warranty claims directly with any third party end users. The responsibility of Air-Weigh under this warranty is limited to the repair, replacement, or credit of the defective part or assembly.

This warranty does not cover incidental or consequential damage to persons or property caused by use, abuse, misuse, or failure to comply with installation or operating instructions. This limited warranty does not apply to any product that has failed due to accident, abuse, alteration, installation not consistent with printed installation instructions, improper maintenance, improper operation, or as a result of system integration or installation not explicitly approved in writing by Air-Weigh.

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May be covered by U.S. Patent Nos. 4832141, 5478974, 5780782, Foreign Patent Nos. 623635, 1305191, 260494, 677998, 2122766, 625697

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## **PROCEDURE FOR WARRANTY CLAIMS**

1. In the event Air-Weigh requests to examine product prior to disposition, OR for repairs or replacements, Air-Weigh requires a Return Material Authorization (RMA) number to be issued before the item is returned. Contact Customer Support Department at (888) 459-3247 for an RMA number. Please reference this RMA number in all correspondence.
2. Claimed items shall be shipped freight pre-paid to: Air-Weigh, Customer Support Department, 1730 Willow Creek Circle, Eugene, Oregon 97402, USA. The Air-Weigh RMA number shall appear on the outside of the return packaging.
3. 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.
4. Air-Weigh Accounting will process a credit memo and notify the Air-Weigh customer by email or fax. The Air-Weigh customer will process a corresponding debit memo and notify Air-Weigh Accounting.
5. 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.



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## ***INTRODUCTION***

The QuickLoad Scale offers many desirable on-board weighing features currently offered by Air-Weigh in an affordably-priced configuration. QuickLoad is designed for use on dedicated tractor-trailer configurations and straight trucks.



Up to four axle groups (including steer, drive and trailer axles) can be monitored on the in-dash display and the scale automatically calculates GVW and net payload. Weight information consisting of steer axle weight, drive axle weight, trailer axle weights, gross vehicle weight, and net payload weight is displayed in the cab. Like other Air-Weigh scales, QuickLoad features two warning and overweight alarm outputs, dual-point calibration, and easy installation. There are several air and axle deflection sensor kits available that allow you to tailor each QuickLoad scale to a variety of truck, tractor, and dedicated tractor trailer configurations.

The QuickLoad on-board scale converts tractor and trailer suspension loads to an accurate on-the-ground weight. By comparing empty and loaded axle group weights with empty and loaded suspension pressures, the scale can be calibrated to display accurate weights at any suspension load. QuickLoad accuracy is not affected by altitude, temperature, or humidity and is easy to operate, install, and calibrate.

## ***TOOLS REQUIRED***

- Screwdrivers – flathead and/or Philips
- Assorted wrenches
- Drill
- 2 1/8" hole saw
- Optional 3/4" hole saw for running air line to dash
- Safety glasses
- Wire cutter
- Crimper

### **For Deflection Sensor Install**

- Sander with 40-grit medium
- Chalk or permanent marker
- Flat blade screwdriver
- 9/16" wrench
- Torque wrench, 20-80 ft-lb range
- 9/16" socket

Optional:

- 3M EPX Plus II Manual Applicator
- KAT'S by Five Star K1153 magnetic heater
- Deflection Sensor Install Test Fixture

***NOTE: The Deflection Sensor (DS) Installation Kit, Air-Weigh P/N 010-0071-000, which can be purchased separately, includes both the EPX Applicator P/N (010-0021-000) and the KAT'S heater P/N (010-0070-000). For installation of the deflection sensor refer to installation manual part number 901-0059-000 which is included in kits 1390 and 1391.***

The Deflection Sensor Install Test Fixture, Air-Weigh P/N 395-0043-000, can be used to measure A/D readings of the deflection sensor mounted on the steer axle without connection to the QuickLoad Display.

***NOTE: A/D refers to the analog-to-digital conversion of the sensor reading.***

## ***QUICKLOAD INSTALLATION PROCEDURE***

**NOTE:** Please reference document 901-0097-000 for parts required for your installation.

### ***Route Air Line from Suspension***

**(Optional; if Tractor Suspension gauge already exists in dash skip to Installing Air Pressure Sensors)**

1. Route a 1/4 inch air line from the suspension air bag to the dash.
2. Use a 1/4 inch brass street-T at the top of a convenient suspension air bag to access air pressure. If you choose to connect in the middle of an existing air line between air bags, remove any paint on the air line and wipe clean before cutting the air line.

**NOTE: Avoid connecting on the supply side of the system.**

3. Route the air line along other wire and air line harnesses into the dash. Do not damage the air line.

**Route Air Line for model 5850 – 5860 Dedicated Tractor/Trailer Scale  
(Optional: if Trailer Suspension gauge already exists in dash skip to Installing Air Pressure Sensors)**

Air-Weigh has an air line kit for dedicated tractor/trailer applications, PN 010-0028-002. This kit includes the air line, coiled air lines, brass couplers and instructions for bringing the trailer suspension air to the truck dash for connection to the sensors. To install this kit:

1. Remove existing air line connection from one trailer air bag. Install street –T (150-4081-000) into the airbag. Install fitting (150-4083-000) into side of street-T and connect to air line (380-0050-000). Reinstall original air line and fitting connection to top of street-T.
2. Run air line to front of trailer. Secure with wire-ties.
3. Drill hole for trailer bulkhead fitting at a convenient point where the existing airlines attach to trailer. Install bulkhead fitting (052-0002-000). Connect air line to rear of bulkhead fitting with (150-4083-000) brass fitting. Attach female coupling (90-610) to face of bulkhead fitting. This fitting **MUST** be connected to the trailer

to keep air in the suspension system.

4. Drill hole for tractor bulkhead fitting (052-0002-000) and mount where existing airlines attach to tractor. Connect one end of the coiled air line into face of bulkhead fitting.
5. Install brass fitting (150-4083-000) into rear of bulkhead fitting. Run air line (380-0050-000) from brass fitting in rear of tractor bulkhead up into dash to within 3' of display location. Secure with wire-ties.
6. Connect sensor to end of air line in dash. Using sensor cable, connect sensor to appropriate port in display (See page 13 for sensor configuration assignment).
7. Attach fitting (90-604BR) to one end of coiled air line and couple to fitting (90-610) at front of trailer.

Alternately, customer purchased DOT approved air line, coiled air line, and connectors can be used.

### **Route Air Lines for model 5840 – 5845 Two Trailer Direct Scale (Optional: if Trailer Suspension gauge already exists in dash skip to Installing Air Pressure Sensors)**

Air-Weigh has an air line kit for 2 trailer direct applications, PN 010-0029-002. This kit includes the air line, coiled air lines, brass couplers and instructions for bringing the trailer suspension air to the truck dash for connection to the sensors. The method is the same as for the dedicated tractor/trailer scale kit, above, with the addition of additional coiled air lines and quick-disconnect set-ups for the second trailer.

### **Installing Air Pressure Sensor(s)**

**NOTE: Avoid dropping the sensors, as this will cause them to fail immediately or shorten the lifespan.**

There are two methods of installing the sensor connectors to the suspension air line under the dash; by T-ing off an existing suspension air gauge line or by terminating the air line in the nickel

plated brass fitting supplied by Air-Weigh. Your Air-Weigh kit includes 2 different air line diameter selections – 5/32", and 1/4". To T-off the existing air line, additional fittings will need to be purchased by the customer. Air-Weigh only supplies the connectors needed for a terminated connection.

1. Connect the sensor to the fitting and tighten to about 8-10 foot-pounds torque.
2. Push the end of the air line(s) into the fitting and insure it is firmly secured.

***NOTE: While the air line can be removed from the fitting by retracting the o-ring while gently pulling the air line out, repeated removal and replacement will weaken the seal.***

1. Connect the 4-pin plug from the sensor cable to the appropriate 4-pin Sensor Input jack on the QuickLoad Display. See the table for sensor input assignments based on your scale kit model number.

***NOTE: See manual 901-0058-000 for instructions to install deflection sensors.***

### **Cutting 2-1/8-Inch Hole In Dash and Mounting the QuickLoad**

1. Select a location for the scale on the dash panel with at least 3" clearance behind the dash for the unit and its connections. A higher dash position provides better visibility.
2. Make a 2-1/8-inch hole at that location. A hole template is in the kit.
3. Remove the nuts at the back of the scale to release the mounting bracket.
4. Position the scale display in the hole so it appears level in the dash.
5. Replace the mounting bracket on the back of the scale, and replace the bracket nuts. Tighten the nuts adequately to secure the scale (about 6 inch-pounds torque). Do not over-tighten, as this will damage the dash panel or the scale.

***NOTE: Do not connect the wiring harness to the scale at this time.***

## Connecting the QuickLoad Wiring Harness

The QuickLoad wiring harness connects the Air-Weigh system to the vehicle's power and ground circuits, and the alarm (if ordered). Those wires with connectors can only be connected to devices in one order, because the connectors are all different. There are two or two bare wires that also need to be connected:

### Power and Ground Table

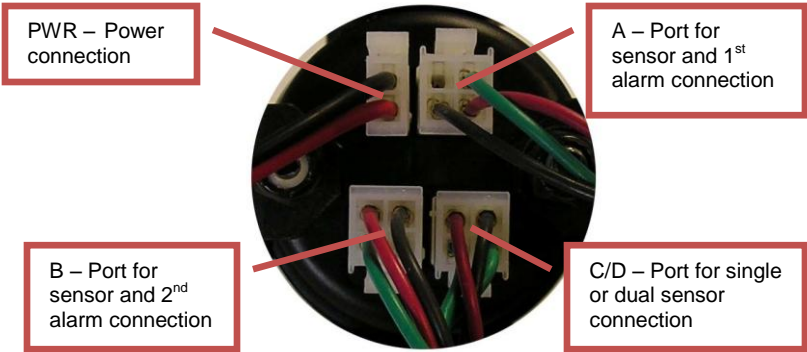
White wire	System common ground
Blue/Black wire with in-line fuse	12V or 24V ignition hot power

1. Connect wiring harness power and ground to vehicle power and ground circuits. See power and ground table above. Power from the fuse panel is ideal.
2. Connect the 2-pin plug of the wiring harness to the QuickLoad.
3. Connect the 4-pin sensor cable(s) to the QuickLoad Sensor Inputs A, B, or C/D, as described in the Sensor Connection, pages 12-13.
4. If you choose to connect an external alarm (kit Part Number 1380), connect the alarm to the specified port first, and then connect the sensor cable to the end of the alarm cable. Connect the alarm light power wire to a 12V/ 24V ignition hot source. Reference: Alarm Kit installation guide provided in the Kit for the External Alarm.
5. Turn on key for system self-test. If system does not successfully complete the self-test, see Troubleshooting Section at the end of this manual.

### Secure Cables and Air Lines. Re-assemble the dash.

1. Excess wire and harness should be coiled and wire tied.
2. Wires, air lines, and sensor assemblies should be wire tied to other secure harnesses to prevent damage due to vibration.
3. Re-assemble the dash.
4. Turn-on the key and perform a final system check. Note that the scale will not display accurate weights until it has been completely calibrated to a certified platform scale by entering empty and loaded axle weights into the Air-Weigh scale.

# QUICKLOAD CONNECTIONS



## Sensor Connection

### Air Sensor Kits – Model Numbers

1 Air Sensor Kits – 5800  
5803

Sensor in port A



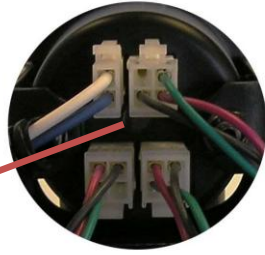
2 Air Sensor Kits – 5801,  
5805,  
5826  
5850  
5851

Sensors in ports A, B



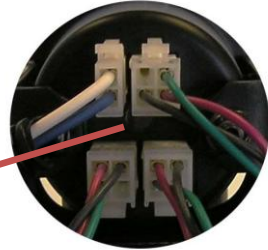
3 Air Sensor Kits – 5806,  
5840 (B-train),  
5841 (B-Train),  
5852,  
5854,  
5855

Sensors in ports A, B, C



4 Air Sensor Kits – 5815  
5842  
5844  
5845  
5856  
5856

Sensors in ports A, B, C/D

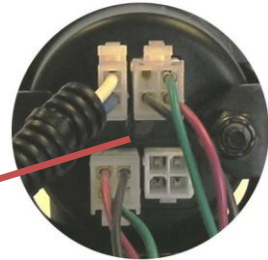


Steer Deflection Sensor/Air Sensor Kits – Model Numbers

1 Air Sensor/1 Deflection Sensor:

5807

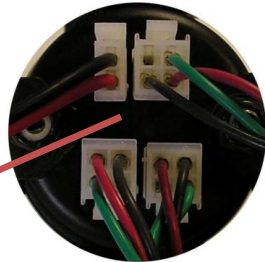
DRV air sensor in port A  
STR Deflection sensor in port B



2 Air Sensors/1 Deflection Sensor:

5808

Dual DRV sensors in ports A, B  
Deflection sensor in port C



## ***HOW TO CONFIGURE THE QUICKLOAD***

***NOTE: Please reference document 901-0097-000 for the sensor configuration required for your installation.***



Press <ESC> until VIEW WEIGHTS is flashing.

Down arrow <▼> to SETUP, DIAGN and press <ENT>.

SYSTEM SETUP is flashing, press <ENT>.



Down arrow <▼> to SYS CONFIG and press <ENT>.  
Down arrow <▼> to MODEL NUMBER, press <ENT>.

Caution message will display, press <ENT> to continue.



The model number will be flashing, use up arrow <▲> to change to the correct type (see pages 16-18 for model numbers) and press <ENT>.

Scale will flash ACCEPTED momentarily, and the model number will be established.



Press <ESC> repeatedly to return to the main menu.

Next, your Air-Weigh QuickLoad scale will need to be calibrated.

## ***CALIBRATION***

There are two methods of calibrating the QuickLoad Scale. The traditional method is by entering the EMPTY weights into the scale system when the vehicle is empty and entering the HEAVY weights into the scale system when the vehicle is fully loaded.

When selecting this calibration method it is imperative to enter empty weights when the vehicle is empty and heavy weights when the vehicle is loaded heavy. Failing to do so will result in inaccurate weights.

Alternatively, for those with identical suspensions and 5<sup>th</sup> wheel locations on several vehicles, it may be more convenient to enter the RATIO and OFFSET calibration data directly, if these are known.

Use only one of these methods to calibrate the scale.

Once calibrated, if a suspension's weight is always incorrect by the same amount on the empty and heavy weights, it is easy to adjust the scale to correct it by using the ADJUST function.

### **Preliminary Considerations**

The accuracy of the QuickLoad Scale depends on the accuracy of the certified scale used to calibrate or check-weigh. Ensure that the in-ground scale is reliable, recently certified and in good repair. It is preferable to obtain all weight tickets from the same certified scale. This ensures comparative accuracy. Segmented scales, those that provide individual axle group weights, are preferred. When segmented scales are not available, take extra precaution in calculating weights.

For the best calibration results, the tractor and trailer should be:

- **Parked on level ground**
- **Tractor brakes released**
- **Engine running**
- **If possible, deflate the suspension for 5 to 10 seconds, and then re-inflate to factory-specified ride height**

Once the QuickLoad Scale is calibrated, it is not necessary to re-calibrate unless the suspension characteristics change.

Assigning a PIN number during the system set-up process will protect the calibration procedure from tampering. Normally a PIN number is not

assigned until AFTER the scale has been calibrated. See page 28 for PIN # information.

### **5th Wheel Location Details**

If your truck scale system uses the Air-Weigh "calculated steer weight" method, the steer axle weight is determined by the amount of air pressure in the drive suspension and the position of the 5th wheel. In that case, the 5th wheel must be in the same position to weigh as it was when calibrated. The kit includes 5th wheel decals to remind the driver where the calibration/weighing position is located.

The 5th wheel location only affects steer axle weights. The drive axle weights will always be accurate.

Once you have positioned the 5th wheel in the notch that is used most often, apply these decals when you are about to calibrate the Air-Weigh truck scale. Be sure the surface is clean and free of any grease, so the decals will stick permanently. One decal should be on the 5th wheel slider assembly and the other should be on the frame mounting with the points of the triangles together when calibrating and weighing.

### **Separate left and right side Height Control Valves**

For tractor and trailer suspensions with dual Height Control Valves (air suspension with both right and left height control valves on the same axle group), kits with dual sensor processors must be specified when ordering.

### **Air-suspension Steer**

For tractor suspensions that have an air-suspension steer, kits with a sensor for the steer suspension must be specified when ordering. These kits do not use the "calculated steer weight" method, and will be accurate when the 5<sup>th</sup> wheel is moved. Single and dual Height Control Valve kits are available.

## CALIBRATING THE TRACTOR SCALE OVERVIEW

For traditional calibration the EMPTY and HEAVY axle weights must be entered manually. When calibrating using this method the EMPTY weights **must** be entered while the vehicle is empty, and the HEAVY weights **must** be entered while the vehicle is fully loaded. Failure to calibrate scales when vehicle is actually empty and when it has a true heavy load will result in inaccurate weights. It is recommended that both empty and full weights be taken on the same reliable, certified scale, preferably a segmented scale that will provide axle weights. The order of calibration — EMPTY or HEAVY — is not important; however, both EMPTY and HEAVY must be properly entered before the weight display is accurate. Once the calibration procedure is properly completed one time, the EMPTY or HEAVY weights can be updated or re-calibrated individually.



### Manual Calibration Procedure

***NOTE: Remember, EMPTY or HEAVY weight calibrations can be entered in any order, but the HEAVY weights must be entered while the trailer is loaded, and the EMPTY weights must be entered while the trailer is EMPTY. Additionally, the scale must have both EMPTY and HEAVY weights entered before calibration is complete and accurate weights are displayed.***

### Scale Display Overview

With the installation complete, the next step in setting up your Air-Weigh QuickLoad Scale is to calibrate it. Before starting that process it's a good idea to become familiar with the Panel Display on the front of your scale. Below is a definition of what each button is used for. The function and use of these buttons remain the same throughout all operations of the scale.

## Front Panel Buttons

1. ESC — press <ESC> to go to the menu system when displaying weights, or to go to the previous menu selection when within the menu system. Pressing <ESC> before pressing <ENTER> during data entry will make the scale revert to its previous entry like an Undo function. Then pressing <ESC> a second time will return to the previous menu selection.



2. ARROW UP — press <▲> to select a menu option immediately above the flashing selection and to scroll the display to a higher number. Holding <▲> increases the scrolling rate when entering numbers.



3. ARROW DOWN — press <▼> to select a menu option immediately below the flashing selection and to scroll the display to a lower number. Holding <▼> increases the scrolling rate when entering numbers.

4. ENTER — pressing <ENTER> selects the flashing menu item. It is also used to enter weights during calibration.



## *CALIBRATING EMPTY WEIGHTS*

1. **Press <ESC> one or more times until** the “top menu” appears, with VIEW WEIGHTS blinking.
2. Press the down arrow <▼> 2 times until SETUP, DIAGN begins blinking. Press <ENTER>.
3. SYSTEM SETUP is now blinking. Press <ENTER>.
4. CALIBRATION is now blinking. Press <ENTER>.
5. Press the down arrow <▼> 1 time until MANUAL CALIB begins blinking. Press <ENTER>.
6. EMPTY WEIGHT is now blinking. Press <ENTER>.



7. The screen pauses for three seconds with the display, “ENTER EMPTY – VEHICLE MUST BE EMPTY”
8. The screen requests you to pick the axle suspension you wish to calibrate (“PICK AXL”). At first, STR (Steer) is blinking, and DRV (Drive) is also shown. Other axle groups that may be shown are TRL (if only one trailer), TRA (Trailer A) and T B (Trailer B).
9. Use the down arrow <▼> to select the axle whose suspension you wish to calibrate. When it is blinking, press <ENTER>.

***If PIN is needed for access, enter it at this time. (See page 28 for PIN setup instructions)***

10. Using the up/down arrows <▲▼>, scroll to the proper empty weight identified from a certified scale ticket. Press <ENTER>. Press <ESC> to return to axle screen and choose another axle to calibrate. Press <ESC> repeatedly to return to the main menu.



### ***CALIBRATING HEAVY WEIGHTS***

1. Press <ESC> one or more times until the “top menu” appears, with VIEW WEIGHTS blinking.
2. Press the down arrow <▼> 2 times until SETUP, DIAGN begins blinking. Press <ENTER>.
3. SYSTEM SETUP is now blinking. Press <ENTER>.
4. CALIBRATION is now blinking. Press <ENTER>.
5. Press the down arrow <▼> 1 time until MANUAL CALIB begins blinking. Press <ENTER>.
6. Press the down arrow <▼> 1 time until HEAVY WEIGHT begins blinking. Press <ENTER>.
7. The screen pauses for three seconds with the display, “ENTER HEAVY – VEHICLE MUST BE HEAVY”



8. The screen requests you to pick the axle suspension you wish to calibrate (“PICK AXL”). At first, STR (Steer) is blinking, and DRV (Drive) is also shown. Other axle groups that may be shown are TRL (if only one trailer), TRA (Trailer A) and T B (Trailer B).
9. Use the down arrow <▼> to select the axle whose suspension you wish to calibrate. When it is blinking, press <ENTER>.



***If PIN is needed for access, enter it at this time. (See page 28 for PIN setup instructions)***

10. Using the up/down arrows <▲▼>, scroll to the proper heavy weight identified from a certified scale ticket. Press <ENTER>. Press <ESC> to return to axle screen and choose another axle to calibrate. Press <ESC> repeatedly to return to the main menu.

### ***CALIBRATION BY DIRECT ENTRY OF RATIO AND OFFSET VALUES***

To use this method, you must first obtain the RATIO and OFFSET values from another Air-Weigh Scale on a tractor with an identical suspension and 5th wheel position that already has been correctly calibrated. Then you can directly enter these values into the Tractor Scale you wish to calibrate.

#### **OBTAIN THE RATIO AND OFFSET**

1. Press <ESC> one or more times until the “top menu” appears, with VIEW WEIGHTS blinking.
2. Press the down arrow <▼> 2 times until SETUP, DIAGN begins blinking. Press <ENTER>.
3. Press the down arrow <▼> 1 time until DIAGNOSTICS begins blinking. Press <ENTER>.
4. Press the down arrow <▼> 2 times until SENSORS begins blinking. Press <ENTER>.
5. Press the down arrow <▼> 1 time until CALIB DATA begins blinking. Press <ENTER>.
6. Press the down arrow <▼> 2 times until the screen shows STR SYS DATA. Write down the axle name (Steer), the RATIO number, which will have a decimal point, and the OFFSET

- number, which may be negative (preceded by a minus sign) or positive.
7. Press the down arrow <▼> 3 times until the screen shows DRV SYS DATA. Write down the axle name (Drive), the RATIO number, and the OFFSET number, as in the preceding step.
  8. For each additional suspension, including trailer suspensions if desired, press the down arrow <▼> 3 more times until the screen shows [Axle] SYS DATA. Write down the axle name, the RATIO number, and the OFFSET number, as in the preceding step.

## **ENTER THE RATIO AND OFFSET**

1. Press <ESC> one or more times until the “top menu” appears, with VIEW WEIGHTS blinking.
2. Press the down arrow <▼> 2 times until SETUP, DIAGN begins blinking. Press <ENTER>.
3. SYSTEM SETUP is now blinking. Press <ENTER>.
4. CALIBRATION is now blinking. Press <ENTER>.
5. Press the down arrow <▼> 2 times until ENTER RATIO begins blinking. Press <ENTER>.
6. CALIB RATIO is now blinking. Press <ENTER>.
7. The screen pauses with the display, “USE CAUTION! PUSH ENTER TO CONTINUE.” Press <ENTER>.
8. The screen requests you to pick the axle suspension you wish to calibrate (“PICK AXL”). At first, STR (Steer) is blinking, and DRV(Drive) is also shown. Other axle groups that may be shown are TRL (if only one trailer), TRA (Trailer A) and T B (Trailer B).
9. Use the down arrow <▼> to select the axle whose suspension you wish to calibrate. When it is blinking, press <ENTER>.

***If PIN is needed for access, enter it at this time.  
(See page 28 for PIN setup instructions)***

10. Using the up/down arrows <▲▼> scroll to the proper ratio, obtained as described in the previous section, but without the decimal point. For example, enter 24097 if the ratio is 24.097. Press <ENTER>.
11. The screen pauses for two seconds with the display, “ENTER DECIML.” Using the up/down arrows <▲▼>, move the decimal point to the location in the ratio matching the number you wish to enter. Press <ENTER>.

12. The screen changes automatically to allow direct entry of the Offset. Using the up/down arrows <▲▼> scroll to the proper Offset, obtained as described in the previous section. Press <ENTER>.
13. Press <ESC> repeatedly to return to the main menu.

At this stage the 'Direct Ratio and Offset Entry' set-up is complete. The next step is to confirm that the correct calibration is entered into your scale. Follow the steps given in OBTAIN THE RATIO AND OFFSET, above, to confirm that the scale accepted these values correctly.

Finally, perform a *check-weigh* with a reliable ground scale to compare weights.

In some cases, optional tires, wheels, and axle systems may cause the scale's initial accuracy to be unacceptable. In this case the calibration and weight display can be adjusted to match a reliable certified scale using the ADJUST CALIB function in the CALIBRATE menu. ADJUST should only be used if the empty and heavy weights are off by the same amount. If the difference is more than 300 lbs (140kgs), you may want to fine-tune the calibration using the ADJUST feature. Follow the adjust weights work sheet below to identify amount of weight needing to be adjusted.

NOTE: If the weight needs to be adjusted more than +/-1,500 lbs (680 kgs), then the Manual Calibration must be performed.

### Adjust Weights Worksheet

(Ground Scale Weight)	_____	(A)
(AW Displayed Weight)	- _____	(B) (Subtract B from A. C is the Adjustment weight)
Adjusting Weight	= _____	(C) (It's OK if a negative appears)

#### Adjust Weights

1. Press <ESC> one or more times until the "top menu" appears, with VIEW WEIGHTS blinking.
2. Press the down arrow <▼> 2 times until SETUP, DIAGN begins blinking. Press <ENTER>.
3. SYSTEM SETUP is now blinking. Press <ENTER>.

4. CALIBRATION is now blinking. Press <ENTER>.
5. ADJUST CALIB is now blinking. Press <ENTER>.
6. The screen pauses for three seconds with the display, "ADJUST IF WT ALWAYS OFF BY SAME AMT."
7. The screen requests you to pick the axle suspension you wish to calibrate ("PICK AXL"). At first, STR (Steer) is blinking, and DRV(Drive) is also shown. Other axle groups that may be shown are TRL (if only one trailer), TRA (Trailer A) and TB (Trailer B).
8. Use the down arrow <▼> to select the axle whose suspension you wish to adjust. When it is blinking, press <ENTER>.

***If PIN is needed for access, enter it at this time.  
(See page 28 for PIN setup instructions)***

9. Using the up/down arrows <▲▼> scroll to the proper adjustment identified from the adjust weights worksheet on previous page. Press <ENTER>.
10. After a brief pause, the Weight Gauge will display the adjusted weight.
11. Screen will flash, "Accepted please wait".
12. Press <ESC> repeatedly to return to the main menu.

## ***OPERATIONS***

Once calibrated, your Air-Weigh QuickLoad Scale is ready to display weights in 20lb (20kg) increments, and be accurate to within 300lbs (140kgs) of a certified ground scale. Continued accuracy is established by following a few simple rules before taking weight readings:

1. Park the tractor and trailer on a level surface.
2. Release tractor brakes to relieve any binding in the tractor suspension.  
***Chock wheels to ensure vehicle doesn't roll.***
3. If equipped with a dump valve, dump air in tractor suspension for 5 – 10 seconds, then re-inflate to factory-specified ride height.
4. Accurate weight is displayed when numbers stop blinking.

It may take a few loads to learn how to weigh accurately, but with a little practice you should be able to weigh within 100 lbs. on a regular basis.

With Air-Weigh scales installed on the tractor and trailer suspensions, your entire vehicle becomes the scale. When you want to weigh, remember that you need to weigh the vehicle the same way every time.



## ***FUNCTIONAL OPERATIONS***

### **HOW-TO-WEIGH instructions**

HOW-TO-WEIGH instructions are displayed on the scale display in rotation with the actual weight screen. To turn off these instructions permanently:

1. Press <ESC> one or more times until the "top menu" appears, with VIEW WEIGHTS blinking.
2. Press the down arrow <▼> 2 times until SETUP, DIAGN begins blinking. Press <ENTER>.
3. SYSTEM SETUP is now blinking. Press <ENTER>.
4. Press the down arrow <▼> 1 time until SYS CONFIG begins blinking. Press <ENTER>.
5. DISPLY SETUP is now blinking. Press <ENTER>.
6. Press the down arrow <▼> 1 time until SHOW / HIDE begins blinking. Press <ENTER>.
7. Press the down arrow <▼> 2 times until SHOW HELP begins blinking. Press <ENTER>.
8. HIDE HELP turns off the How-To-Weigh instructions. SHOW HELP turns them on. Press the down arrow <▼> until the desired selection begins blinking. Press <ENTER>.
9. Press <ESC> repeatedly to return to the main menu.

***NOTE: You can turn off the How-To-Weigh instructions temporarily, until the next time you turn the truck off and on, by pushing either of the up/down arrows <▲ ▼> when the instructions are visible.***

## ***CREATING A PIN#***

When the trailer scale PIN# is set to 0, the operator will not need to enter a PIN # to access the PROGRAM menu functions. Setting a PIN # into

the AW5800 Tractor Scale will eliminate tampering with that scale's CALIBRATION, SCALE TYPE, and PIN# settings. After calibration, fleets with both tractor and trailer scales should develop a fleet PIN# policy to protect the calibration settings from tampering.

To set a PIN:

1. Press <ESC> one or more times until the "top menu" appears, with VIEW WEIGHTS blinking.
2. Press the down arrow <▼> 2 times until SETUP, DIAGN begins blinking. Press <ENTER>.
3. SYSTEM SETUP is now blinking. Press <ENTER>.
4. Press the down arrow <▼> 2 times until SET PIN # begins blinking. Press <ENTER>.

***If PIN is needed for access, enter it at this time.  
A "0" entry will result in no PIN number***

5. Using the up/down arrows <▲▼> scroll to the desired PIN#. Press <ENTER>.
6. Press <ESC> repeatedly to return to main menu.

The new PIN# is now entered into the scale. To later establish a new PIN #, go back through these instructions and change the setting. Setting the PIN back to ZERO will reset the scale to its original status of NO PIN needed.

## ***ALARM FUNCTION***

The Air-Weigh QuickLoad Scale has two output alarms. To install the external alarm, refer to kit PN 1380, QuickLoad Alarm Kit. Attach the alarm output connector to the QuickLoad Display following the instructions in the kit.

To activate the internal display alarm, see the procedure below.

After programming the alarm, it will activate when the programmed *warning weight* or *alarm weight* limit is reached. The limits activating this feature are set by the user. *Warning weight* output is pulsing voltage, while *alarm weight* output is continuous voltage.

To deactivate and reset an active *warning* or *alarm weight* alarm, simply press the Enter button <ENTER> once while one of the weight displays for tractor or trailer (but not the GVW screen) is displayed on the scale display screen. This will stop power from flowing to the alarm output wire.

Once the displayed weight readings fall below the programmed alarm settings, the alarm function resets. The alarm feature is now ready for the next load.

## **Alarm Function Programming Procedure**

### **ALARM WEIGHTS**

1. Press <ESC> one or more times until the “top menu” appears, with VIEW WEIGHTS blinking.
2. Press the down arrow <▼> 1 time until ALARMS begins blinking. Press <ENTER>.
3. SET ALARMS is now blinking. Press <ENTER>.
4. ALARM 1 is now blinking. Press <ENTER> to select, or press the down arrow <▼> 1 time until ALARM 2 begins blinking. Press <ENTER>.
5. Depending on the previous step,
  - select from GVW, NET ALARM 1 or 2;
  - or from TRCTR ALARM 1 or 2, or TRLER ALARM 1 or 2;
7. Using the up/down arrows <▲▼> scroll to the desired ALARM. Press <ENTER> to select.
8. Using the up/down arrows <▲▼> scroll to WARN or ALRM WT. Press <ENTER> to select.
9. Using the up/down arrows <▲▼> scroll to the desired weight. Press <ENTER>. ACCEPTED will display for a moment and programmed weight will be flashing.
10. Press <ESC> to return to alarm selection screen.
11. Continue in this manner until desired alarms have been programmed. Press <ESC> repeatedly to return to the main menu.

### **TURNING ON THE ALARM FEATURE**

1. Press <ESC> one or more times until the “top menu” appears, with VIEW WEIGHTS blinking.
2. Press the down arrow <▼> 1 time until ALARMS begins blinking. Press <ENTER>.
3. Press the down arrow <▼> 1 time until TURN ON/OFF begins blinking. The next line gives the state of the alarm feature, “(Now ON)” or “(Now OFF).” Press <ENTER> to change this state.

Turning the alarm feature completely off requires going back to the TURN ON/OFF portion of the ALARMS menu and changing the (Now ON) back

to a (Now OFF) (reference TURNING ON THE ALARM FEATURE, above). This completely disables the alarm.

**NOTE: Remember, to deactivate and reset an active warning or alarm weight, simply press the Enter button <ENTER> once while alarms are active, while weights are being displayed (other than on the GVW/Net screen). To turn the alarm function completely off go back to the TURN ON/OFF portion of the ALARMS menu and change the (Now ON) back to a (Now OFF).**

## ***LANGUAGES***

The QuickLoad offers a choice of language display:

1. Press <ESC> one or more times until the “top menu” appears, with VIEW WEIGHTS blinking.
2. Press the down arrow <▼> 2 times until SETUP, DIAGN begins blinking. Press <ENTER>.
3. SYSTEM SETUP is now blinking. Press <ENTER>.
4. Press the down arrow <▼> 1 time until SYS CONFIG begins blinking. Press <ENTER>.
5. Press the down arrow <▼> 2 times until LANGUAGE begins blinking. Press <ENTER>.
6. Press the <▲▼> buttons to select the desired language and press <ENTER>. ENGLISH, SPANISH and OTHERS are the first menu level choices. Press the down arrow <▼> 2 times and press <ENTER> at OTHERS to choose FRENCH or GERMAN. Press <ESC> repeatedly to return to the main menu.

## ***DISPLAY BACKLIGHT AND SET-UP***

Like other gauges, the scale display is “key-on” powered, so it is always operating. Pressing any key will automatically turn on the display backlight. The display screen will automatically drop into its programmed “sleep mode” with the backlight turned off after one to 30-minutes from the last keystroke operation. The factory-set default time is 5 minutes.

To change the amount of time the display is lit

1. Press <ESC> one or more times until the “top menu” appears, with VIEW WEIGHTS blinking.

2. Press the down arrow <▼> 2 times until SETUP , DIAGN begins blinking. Press <ENTER>.
3. SYSTEM SETUP is now blinking. Press <ENTER>.
4. Press the down arrow <▼> 1 time until SYS CONFIG begins blinking. Press <ENTER>.
5. DISPLY SETUP is now blinking. Press <ENTER>.
6. Press the down arrow <▼> 2 times until BACKLIGHT begins blinking. Press <ENTER>.
7. Press the <▲▼> buttons to select the desired time period. Press ENTER. Press <ESC> repeatedly to return to the main menu.

This backlight will automatically dim to the “sleep mode” after the selected operation time period. To turn on the backlight, press any button.


## ***MENU OPERATIONS AND DEFINITIONS***

Press the <ESC> button one or more times to reach the Top Menu. Use the <▲> and <▼> buttons to scroll to new selections. Refer to the Quick Reference Menu Directory above for the entire menu structure.

### **Weight Display Overview**

Use the up/down arrows <▲▼> to scroll between the various weight displays showing tractor, trailer, and GVW/Net weights. Clear the Net Weight on the GVW screen by pressing <ENTER> twice while GVW and NET are displayed. The first time, the Net Weight flashes slowly. The second time, it goes to zero.

On the other Weight Displays, pushing Enter stops the alarm. See “Alarm Function,” above, for full details.

On all Weight Displays, if a particular axle (or GVW or Net) is over the alarm or warning weight, causing an alarm, a bell icon  flashes rapidly between the axle name (or GVW or Net) and its weight.

On all Weight Displays, when a weight is changing, it flashes rapidly until it stabilizes.

### **TOP MENU**

Press <ESC> to enter the Top Menu from the Weights Display. From all other displays, press <ESC> one or more times to reach the Top Menu.

**VIEW WEIGHTS** - Press <ENT> to observe the first weights screen, showing at least the STEER and DRIVE axle weights, and possibly the TRLR weight. Press the <▼> to scroll to additional weight screens for trailer, GVW, and Net Payload weights.

**ALARMS** – See the ALARM FUNCTION section, page 29.

**SETUP, DIAGN** – Press <ENT> to access the system setup and diagnostic menus

### SYSTEM SETUP MENU

**CALIBRATION** – See the CALIBRATION MENU section, above.

**SYS CONFIG** – See the SYS CONFIG MENU subsection, below.

**SET PIN #** – See the CREATING A PIN # section, above.

### SYS CONFIG MENU

**DISPLY SETUP** – See the DISPLY SETUP MENU subsection, below.

**SCALE TYPE** – See the SCALE TYPE MENU subsection, below.

### DISPLY SETUP MENU

**LBS/KG** - Changes the weight display and data entry modes to pounds or kilograms. Changing this selection will also automatically convert any calibration values previously entered to the new unit of measure.

**SHOW / HIDE** – See the SHOW / HIDE subsection, below.

**BACKLIGHT** – Changes the amount of time the display is backlit from last keystroke. Factory default is 5 minutes. Duration can be selected from one to 30 minutes.

### MODEL NUMBER MENU

**MODEL NUMBER** – Used to change the QuickLoad Scale configuration. For instance, when adding an additional sensor at a later date. See the

section on Installing an Air Pressure Sensor for the model numbers that are used at this menu. Note that otherwise identical configurations will have different model numbers depending on whether or not the sensor operates with air pressure. Consult Air-Weigh Customer Support before changing MODEL NUMBER.

SHOW / HIDE MENU

**SHOW GVW** – Causes the GVW / Net screen to be visible or not, depending on whether the scale is configured to show trailer weight. SHOW GVW lets the GVW / Net screen be visible even without a trailer. HIDE GVW requires the trailer weight to be configured in order to access the GVW / Net screen.

**SHOW STEER** – SHOW STEER causes the Steer Axle to be visible on the first Weights Display. HIDE STEER removes the Steer Axle from the first Weights Display, and also prevents access to the GVW / Net screen. SHOW / HIDE STEER is changed automatically with some changes in the Scale Type (see under SYS CONFIG subsection, above). For example, a 5800 model number is identical with a 5803 model number, except that a 5800 has SHOW STEER and the 5803 defaults to HIDE STEER.

**SHOW HELP** – See the How-To-Weigh Instructions section, above.

DIAGNOSTICS MENU

**SYSTEM STATUS** - Use this menu to obtain Weight Gauge system status, including weight units (Lbs or Kgs), error status, software version numbers, and serial number. Use the up/down arrows <▲▼> to scroll between the two displays which together show this information.

DIAGNOSTICS: ALARM MENU

**ALRM WEIGHTS** – Shows the 2 sets of programmed warning and alarm weights for each axle group, GVW and Net. Values are shown on a different display for each axle group (or GVW or Net). Use the up/down arrows <▲▼> to scroll between the axle groups.

**TEST ALARM** – Causes the alarm to be actuated for three seconds.

DIAGNOSTICS: SENSORS

**A/D READINGS** – Shows the sensor reading for each axle group in A/D (electronic) values, PSI and Bars. Values are shown on a different display

for each axle group. Use the up/down arrows <▲▼> to scroll between the axle groups. A reading of 409 indicates a sensor fault, sensor cable unplugged, no sensor, etc. For model numbers with averaged dual sensor readings, 'A/D' will flash. By pressing the <ENTER> button, you will be able to view the individual AD readings.

**CALIB DATA** – Each axle group has values shown on three different displays. The first two are considered User Data, while the third is considered System Data. Use the up/down arrows <▲▼> to scroll between the different displays and axle groups.

The first display per axle group shows the Empty and Heavy A/D values at the time the user entered Empty and Heavy weights, respectively (unless calibration was performed by direct ratio and offset entry). The second display per axle group shows the Empty and Heavy Weights that the user entered (unless calibration was performed by direct ratio and offset entry).

The third display per axle group shows the Ratio and Offset that either the system calculated after user entered Empty and Heavy weights, or the Ratio and Offset that the user entered.

## ***SYSTEM TROUBLE SHOOTING***

The Air-Weigh AW5800 Tractor Scale system is extremely self-sufficient. To operate correctly, power and ground are the only tractor electrical connections needed. Ensure all connectors (male/female) make a good connection and at least 9.5 volts is entering the system. When troubleshooting, initially check for power at the connecting plugs. If the system used to power up, but now doesn't, double-check the circuit being used to power it. If there is no power to the scale, use a voltmeter and test the power and ground circuits using a bracketing method to isolate where power is lost. Once the break in the power circuit is found, make the proper repairs.

All other faults can be identified internally through the DIAGNOSTICS display on the scale display.

- Press <ESC> one or more times until the "top menu" appears, with VIEW WEIGHTS blinking.
- Press the down arrow <▼> 2 times until SETUP, DIAGN begins blinking. Press <ENTER>.
- Press the down arrow <▼> 1 time until DIAGNOSTICS begins blinking. Press <ENTER>.

- With SYSTM STATUS *flashing*, press <ENTER> one more time. If MODEL with software configuration (e.g. 5800) and Now Lbs or Now Kgs displays on the screen, the QuickLoad is functioning normally. Reference this chart for all fault code problems and solutions.

<b>Troubleshooting Chart</b>		
<b>Code</b>	<b>Problem Description</b>	<b>Solution</b>
BAD EEPROM	EEPROM error	Memory failure. Send to Air-Weigh for repair.

### **INCORRECT WEIGHT READINGS**

If weights are always off by the same amount, see the subsection ADJUST WEIGHTS in the CALIBRATION section, above.

If weights are otherwise incorrect, including 0 (zero) or unstable, ensure that the sensor is connected to the QuickLoad correctly. You may use the A/D readings to observe sensor faults.

Step 1) Press <ESC> one or more times until the “top menu” appears, with VIEW WEIGHTS blinking.

Step 2) Press the down arrow <▼> 2 times until SETUP, DIAGN begins blinking. Press <ENTER>.

Step 3) Press the down arrow <▼> 2 times until DIAGNOSTICS begins blinking. Press <ENTER>.

Step 4) Press the down arrow <▼> 2 times until SENSORS begins blinking. Press <ENTER>.

Step 5) A/D READINGS is now blinking. Press <ENTER>. Press the down arrow <▼> to view the different sensor readings for each axle group. A reading of 409 indicates a sensor fault; sensor cable unplugged or severed, no sensor, etc.

## **SUSPENSION TROUBLESHOOTING**

Your Air-Weigh QuickLoad's accuracy is dependent on your suspensions being in good mechanical repair and in factory-specified adjustment.

Once the scale is installed and functioning properly, the degree of accuracy will be affected by the proper operation and setting of the suspension. Three major suspension factors affect the degree of accuracy and repeatability:

1. Proper setting of ride height.
2. Proper setting of a high quality height control valve (HCV).
3. Proper adjustment of the HCV linkage.

Follow these guidelines to ensure your scale is as accurate and repeatable as possible:

### **RIDE HEIGHT**

**Symptoms:** Scale readout accuracy varies from certified weight, by varying amounts.

**Solution:** Proper ride height is the most important factor in ensuring accuracy. Ride height is normally defined as the vertical distance from the center of the axle to the bottom of the frame rail. This varies by vehicle and suspension make, so check the proper manual. Most heights are specified +/- 1/8", so the proper setting is critical.

### **LINKAGE**

**Symptoms:** Scale accuracy varies from a certified weight, usually consistently lower.

**Solution:** Play in the linkage or bushings will detract from scale accuracy since the proper ride height is not always maintained.

#### **Height Control Valve**

**Symptoms:** Scale readout is higher or lower than a certified weight, but consistently by the same amount.

**Solution:** Ensure your HCV has minimum dead-band. This is the play in the valve where the ride height changes without actuating the valve. Quality HCVs that demonstrate less than three degrees of total dead-band provide most accurate weight readings. Replace defective valve with either Hadley or Barksdale valves.

## ***MAINTENANCE***

**Scale Display:** The Air-Weigh QuickLoad electronic scale display should be maintenance-free under normal operation. Keep the scale in a protected environment and treat as any electronic component.

Gently use a clean, soft cloth, slightly damp with water, to wipe away dust from the display.

## ***CUSTOMER SUPPORT***

If you cannot correct a problem, or you suspect you have a malfunctioning part, please contact Air-Weigh Customer Support at (888) 459-3247, Monday through Friday, 7 AM–5 PM Pacific Time.

From outside the US and Canada, please call (541) 343-7884.

## ***QUICK REFERNECE MENU TREE***

VIEW WEIGHTS

ALARMS

    SET ALARMS

        ALARM 1

            GVW,NET ALM1

                GVW ALARM

                NET ALARM

        TRCTR ALRMS1

            STEER ALARM

            DRIVE ALARM

        TRLER ALRMS1

        ALARM 2

            GVW,NET ALM2

                GVW ALARM

                NET ALARM

- TRCTR ALRMS2
  - STEER ALARM
  - DRIVE ALARM
  - TRLER ALRMS2
- TURN ON/OFF
  - SELECTED ON or OFF (flashes)
  - (Now ON or Off) (displayed)
- SETUP, DIAGN
  - SYSTEM SETUP
    - CALIBRATION
      - ADJUST CALIB
        - PICK AXL: STR, DRV, TRL (on some model s)
      - MANUAL CALIB
        - EMPTY WEIGHT
          - PICK AXL: STR, DRV, TRL (on some model s)
        - HEAVY WEIGHT
          - PICK AXL: STR, DRV, TRL (on some model s)
      - ENTER RATIO
        - CALIB RATIO
          - PICK AXL: STR, DRV, TRL (on some model s)
        - CALIB OFFSET
          - PICK AXL: STR, DRV, TRL (on some model s)
    - SYS CONFIG
      - DISPLY SETUP
        - LBS / KGS
        - SHOW / HIDE
        - BACKLIGHT
      - MODEL NUMBER
      - LANGUAGE
      - SET PIN #
    - DIAGNOSTICS
      - SYSTEM STATUS
      - ALARMS
      - SENSORS
        - A/D READINGS
        - CALIB DATA

## ***Air-Weigh***

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