



*Self-Weighing Truck and Trailer Scales™*



## ***Model AW5780/5801 On-Board Scales*** **TRUCK SCALE SYSTEM**

# **Installation, Calibration and Operations Manual**

December 2005  
PN: 901-0045-000



## Limited Warranty

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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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## OVERVIEW

**Truck Scale Kit**—The Air-Weigh AW5780/5800 Truck Scale system consists of the AW5780 aftermarket display, the AW5801 Truck ComLink module, weight sensors, sensor cables, and a Display-to-ComLink-to-Power interface cable. Some operators prefer the AW5780 display because its larger display screen can display up to six axle weights, GVW, and Net Payload without scrolling to other screens. There are several types of Truck Scale kits to account for a variety of suspensions. Using a variety of air, hydraulic, and load cell sensors, the Air-Weigh system can be specified to weigh drive, steer, and lift axle suspensions (in some dedicated applications, the truck scale might be able to weigh a trailer suspension directly). The Air-Weigh system processes and displays weight data for each suspension to which it is connected.

Air-Weigh's reputation as the leading on-board scale company in the trucking industry was earned by pioneering the conversion of air suspension pressure to a very accurate and reliable weight. While the scale system can also include sensors for various mechanical suspensions, this manual will primarily focus on installation, calibration, and operation of scale kits that are specified for vehicles with air suspension. If your kit includes hydraulic or load cell sensors for mechanical suspensions, refer to separate installation instructions in your kit.

### **Specifications**

#### AW5780 Aftermarket Display

Length 6.90 inches, Width 2.70 inches, Depth 1.16 inches

Weight: 3.6 oz.

Operating Temperature range  $-40^{\circ}$  to  $85^{\circ}\text{C}$  ( $-40^{\circ}$  to  $185^{\circ}\text{F}$ )

Input voltage: 9.5V to 32V

#### Truck ComLink

Length 2.84 inches, Width 5.2 inches, Height 1.12inches

Weight: 4.7 oz.

Operating Temperature range  $-40^{\circ}$  to  $85^{\circ}\text{C}$  ( $-40^{\circ}$  to  $185^{\circ}\text{F}$ )

Input voltage: 9.5V to 32V

Alarm output circuit limit : 1.0 amps

## **AW5780/5801 TRUCK SCALE SYSTEM OVERVIEW**

The AW5780/5801 on-board scale converts truck and trailer suspension loads to an accurate on-ground weight. By comparing empty and loaded axle weights with empty and loaded suspension pressures, the scale can be calibrated to display accurate weights for any suspension load.

The scale will display the actual on-ground weight of each axle group to within 300 pounds (140 kgs.) An axle group is defined by the Height Control Valves (HCV), or leveling valves, on the air suspension. For instance, a tandem drive axle suspension typically has only one HCV, so the two drive axles are referred to as a single axle group and the weight displayed will be for the total tandem weight.

The AW5780 Truck Scale can display up to nine axle groups on one tractor/trailer combination. Once the AW5780 is calibrated for weight, it is not necessary to recalibrate unless the suspension characteristics change. For details see "Troubleshooting".

***NOTE: It is important to calibrate the scale system with the tractor and trailer brakes released to release suspension binding. Calibrating or observing weight readings with the brakes engaged will result in inaccuracy.***

Air-Weigh recommends calibration and weighing be performed on a level surface with the vehicle adequately chocked to prevent rolling. When equipped with air-suspension dump valves, it is recommended that the suspension be momentarily exhausted (5-10 seconds of air dump is normally sufficient) and re-inflated before calibrating or weighing. This will improve repeatability and accuracy.

Any tractor equipped with an AW5780 Truck Scale will automatically display trailer weight data from Air-Weigh equipped trailers. No recalibration or trailer ID entry is required. No special tractor-trailer connection is necessary, because trailer weight data is transmitted over the vehicle's existing 7-wire cord (J-560) without any interference.

# INSTALLATION

## Pre-Installation Overview

Each tractor and trailer has unique characteristics that should be considered when you install your Air-Weigh scale system. Most important is access to the vehicle's existing electrical system. The AW5801 Truck ComLink should be located under the dash and connected to the vehicle's 12V or 24V power and common ground.

Access to suspension air pressure is also important. If suspension air lines are located under the dash, they can be directly connected to pressure sensor(s) at that point. Otherwise, you must install an air line from the suspension to the dash. In the past, Air-Weigh routed electrical sensor cables from the suspension to the dash, but installers now prefer the easier and less-expensive air line method.

## The Suspension System

To ensure your Air-Weigh scale's accuracy, it is imperative that your tractor suspension is in proper working condition. Check for leaks anywhere within the suspension. Ensure the Height Control Valve (HCV) is functioning properly. Ride height must be set at factory specification.

## The Electrical Connection

The AW5800 scale series communicates between tractor and trailers using a multiplexing technology to "piggyback" its signals over the vehicle's existing electrical system without any interference. No additional tractor-to-trailer electrical connection is required. The Truck ComLink is wired directly to the truck's Common Ground and Power at a convenient under-dash access point. If your vehicle requires a specialized connection, instructions are included in that connector package.

## Preferred Power Source

The preferred source for system power on the truck is the blue wire auxiliary circuit, because all new North American tractors are now wired full-time, ignition-hot to service trailer ABS systems. However, any ignition-activated circuit will work.

## 5th Wheel Location Decals

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

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



Once you have positioned the 5<sup>th</sup> wheel in the notch that is used most often, apply these decals when you are about to calibrate the Air-Weigh truck scale (see fig. 2). 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), tractor or trailer scale kits with Dual Sensor Processors must be specified when ordering.

## Display Mounting Options

A universal mounting bracket is also included for mounting the display to any surface in any position. Favored positions include on top of the dash, suspended under the dash, or mounted on the face of the dash itself. The display must be mounted within 5-feet of the ComLink, so check position with the ComLink-to-display cable connected.

## Overview of Basic Installation Steps

1. If necessary, route ¼-inch air line from suspension to dash
2. Attach air pressure sensor(s) to the air line(s) and connect the sensor cable(s)
3. Mount the display module
4. Connect wiring harness power and ground to vehicle power and ground circuits
5. Connect wiring harness to the ComLink and the display module
6. Connect the sensor cable(s) to the ComLink
7. Turn on key and self-test system
8. Mount ComLink under dash
9. Secure cables and air lines with wire ties

### Route Air Line from Suspension (optional)

1. If there are no suspension air gauge air lines under the dash panel, route a ¼-inch air line from the suspension to the dash. Air line and brass fittings are available from Air-Weigh or from any truck parts supply source.
2. Use a ¼-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.
3. Route the air line along other wire and air line harnesses into the dash. Do not damage the air line.

### Installing Air Pressure Sensor(s)

There are two methods of installing the sensor brass to the air line under the dash: By terminating the air line in the brass fitting or by T-ing off an existing air gauge line. Your Air-Weigh kit includes several DOT-approved push-in fittings for terminating directly to the air line. If you wish to T-into the existing air line and leave your existing air gauge connected, you will need to source the appropriate-sized T-brass locally.

1. Push the end of the air line(s) into the street-T fitting and insure it is firmly secured.

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

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

**KIT CONFIGURATION SENSOR ASSIGNMENT**

<b>Model number (See Part Number)</b>	<b>Suspension Characteristics</b>	<b>ComLink Sensor Jack Input</b>
5800, 5803	Drive	Sensor A
5801, 5816	Drive, dual Height Control Valves or other dual sensors	Sensor A, Sensor B
5805, 5807	Drive	Sensor A
	Steer	Sensor B
5806, 5808, 5814	Drive, dual Height Control Valves or other dual sensors	Sensor A, Sensor B
	Steer	Sensor C
5809, 5810	Drive	Sensor A
	Steer	Sensor B
	Lift	Sensor C
5811, 5812, 5813	Drive, dual Height Control Valves or other dual sensors	Sensor A, Sensor B
	Steer	Sensor C
	Lift	Sensor D
5815	Drive, dual Height Control Valves or other dual sensors	Sensor A, Sensor B
	Steer, dual Height Control Valves or other dual sensors	Sensor C, Sensor D
5850, 5851	Drive	Sensor A
	Trailer	Sensor B
5852, 5853	Drive	Sensor A
	Steer	Sensor B
	Trailer	Sensor C
5854, 5855	Drive, dual Height Control Valves or other dual sensors	Sensor A, Sensor B
	Trailer	Sensor C
5856, 5857	Drive	Sensor A, Sensor B
	Steer	Sensor C
	Trailer	Sensor D

## Installing the Scale Display in the Cab

3. Select a location for the scale display with adequate clearance for the cables. The display needs to be seen during loading, but not while driving.
4. Use the mounting bracket as a template to mark the location of two 1/8" holes for the self-tapping mounting screws.
5. Connect the wiring harness to the display and route the cable to the ComLink.

**NOTE: Do not connect the display to the bracket until after the wiring harness is attached to the display.**

6. Mount the display to the bracket.

## Connecting The ComLink Wiring Harness

The ComLink wiring harness connects the Air-Weigh system to the vehicle's power and ground circuits, the ComLink to the Display module, and the alarm output to a customer-provided warning device. Those wires with connectors can only be connected to devices in one order, because the connectors are all different. There are three bare wires that also need to be connected:

White wire	System common ground
Blue/Black wire with in-line fuse	12V or 24V system power
Gray wire	Alarm output (same voltage as vehicle power)

1. Connect wiring harness power and ground to vehicle power and ground circuits.
2. Connect the 8-pin plug of the wiring harness to the ComLink.
3. Connect the 7-pin round plug of the wiring harness to the Scale Display.
4. Connect the 4-pin sensor cable(s) to the ComLink Sensor Inputs A, B, C, or D, as described in the System Configuration that came with your Air-Weigh scale kit.
5. If you choose to connect an alarm, connect the alarm output wire to any self-grounded alarm device (buzzer, horn, light, etc.).
6. Turn on key for system self-test. If system does not successfully complete the self-test, see Troubleshooting Section at back of this manual or call Customer Support.

## Mount ComLink Under Dash

Once the system has been connected and completes its self-test, you can mount the ComLink to a secure position under the dash.

1. Select a location for the Tractor ComLink ensuring adequate access to the Scale Display, electrical connections, and air lines.
2. The Tractor ComLink may be installed by any of the following methods:
  - Use wire ties through the holes in the ComLink's mounting ears to secure it to any appropriate wire harness under the dash.
  - Find a flat location where ComLink can be attached using the 2-sided adhesive tape already in position on the back of the ComLink. Remove any dust, grease or debris from the flat location with the alcohol pad in the kit. Remove one or both of the red strips from the back of the ComLink, exposing a powerful adhesive. Place the ComLink against the cleaned flat area and push it hard enough to ensure adhesion. For best results, push the Tractor ComLink into place using 15 PSI or more, being careful not to crack its case. Using this method will make it more difficult to remove.
  - Use self-tapping screws or bolts through the mounting holes.
3. Now that the ComLink has been mounted, once again turn on the key and self-test the system.

## 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

**Note: If your scale system includes the optional printer, the printer cable is in two parts. One part connects to the Printer Port on the ComLink and leads to a connector hole in the dash**

***(see Printer installation instructions in your Printer Kit package). The other part of the cable connects from the printer to the dash connector. This 2-part cable is so you can easily disconnect the printer and store it in a clean, dry place when not in use.***

## AW5780 Aftermarket Display Module

With the installation complete, the next step in setting up your Air-Weigh Truck 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. **POWER**—press <POWER> once to turn on display, once more to turn off display. Depending on how the scale is installed, power to the display may be constant and not controlled by the ignition switch. When supplied by power continuously, the AW5750 scale system will maintain its memory. To clear the memory of recorded faults, it may be necessary to disconnect the display from the power harness.
2. **MENU**—press <MENU> once to display menu selections. See below "Operation and Menu Selections" for details.
3. **ESC**—press <ESC> to go to previous menu selection. Press <ESC> on weights screen to turn off alarm.
4. **ENTER**—pressing <ENTER> selects the flashing menu item. It is also used to enter weights during calibration. Press <ENTER> twice to zero-out the NET payload display on the WEIGHT screen.
5. **ARROW UP**—press <▲> to select menu option immediately above the flashing selection and to scroll the display to a higher number. Holding <▲> down increases the scrolling rate on numeric entry.

6. **ARROW DOWN**—press <▼> to select menu option immediately below the flashing selection and to scroll the display to a lower number. Holding <▼> down increases the scrolling rate on numeric entry.

## CALIBRATION

Calibration of the AW5780 Truck Scale is done by entering the certified EMPTY weights into the scale system when the vehicle is empty and entering the certified HEAVY weights into the scale system when the vehicle is fully loaded.

You can also calibrate Air-Weigh Trailer Scales in the same manner by using the Truck Scale keypad.

### Preliminary Considerations

The accuracy of the AW5780 Truck 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 your calibration 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 axle weights.

For the best calibration results, the truck 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 AW5780 Truck 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. Air-Weigh Trailer Scales also have a PIN lock-out to prevent tampering when the trailer is parked, however any Air-Weigh equipped tractor will still have access to the Trailer Scale's calibration function through the in-cab truck scale. See page 21 for additional PIN # information.

## CALIBRATING THE TRUCK SCALE

For 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. 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.

### ***NOTE: Here's a Fast and Easy Way To Calibrate a Truck Scale.***

***With a fully loaded trailer, go to a reliable, certified scale and weigh the steer axle and the drive axles separately. Move the rig to a level spot close by where you can coast to a stop without the brakes and not roll. Briefly exhaust the air suspension for 5 or 10-seconds, and then re-inflate the suspension to factory ride-height. Enter your heavy axle weights into the Air-Weigh scale according to the calibration procedure.***

***Now, drop the trailer in a convenient spot and return the bobtail tractor to the scale to re-weigh the steer and drive axles. Return to your level parking spot, no brakes, re-inflate the suspension, and then enter the empty axle weights into the Air-Weigh scale. Once you've entered both heavy and empty axle weights, the scale should be displaying the actual on-the-ground weight to within 300 lbs. Double check the loaded weights when you've hooked up the trailer again.***

***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.***

If the suspension is equipped with a dump-valve, momentarily exhaust the suspension and re-inflate before calibrating. Ensure that the suspension returns to the proper ride height before calibrating.

***NOTE: Fuel level WILL affect steer axle weight accuracy for scales not equipped with a steer axle sensor. Calibrate the scale with fuel level at least 1/2 tank, full is preferred.***

### ***5th Wheel Position Calibration and Weighing Considerations***

To maximize your weight-carrying GVW capacity and your Air-Weigh scale accuracy, your 5th wheel location should be in the notch that allows you to maximize both your drive axle and steer axle weights.

There is only one notch that will do that when the vehicle is fully loaded, the fuel tanks are full, and the driver and personal belongings are on board. Air-Weigh recommends that you calibrate and weigh with the 5th wheel in this “sweet spot” notch to maximize weight and accuracy. On a 5-axle tractor and trailer, maximum weight is 12,000 lbs. on the steer, 34,000 lbs. on the drives and 34,000 lbs. on the trailer tandems.

## **Calibration Procedures**

### **Calibrating the Scale**

1. Press <MENU>.
2. Press <▼> three times until CALIB *flashes*, press <ENTER>. (If PIN requested, it must be entered here.)

3. In the CALIB IN LBS screen use the up/down <▲▼> arrows to select EMPTY WT or FULL WT. (Note: To calibrate and weigh in kilos, select LBS/KGS.)

**NOTE: Enter empty weights while truck is empty and full weights while truck is loaded.**

4. After selecting EMPTY WT/FULL WT you'll need to select an axle group. Use the arrow keys <▲▼> to choose which axle group number and press <ENTER>.

5. Before entering the correct weight a safety screen will appear. You must press <ENTER> to continue.

6. With the number to the right of the selected axle group *flashing* use the up/down arrow <▲▼> keys to scroll in the correct weight for that axle group.

7. Once at the correct weight press <ENTER>. The words "Weight Accepted" will *flash* at the bottom of the screen. When flashing stops that axle will be complete and the screen returns to step 4.

8. To continue with other axle groups, repeat steps 4 through 7.

9. When completed press the ESC or MENU keys to exit the calibration process.

**NOTE: Remember to start from the beginning (step 1) when shifting from EMPTY WTs to FULL WTs.**

### **Lbs/kg (default = LBS)**

This function changes the units in which the scale and ComLink displays weight. The AW5750 scale will correctly convert pounds to kilograms and back to pounds once the unit is calibrated completely.

When calibrating, you must use the same units in which the calibrating (or certified) scale is operating.

## OPERATIONS

Once calibrated, your Air-Weigh AW5780 Truck Scale is ready to display weights in 20lb (20kg) increments, and be accurate to within 300lbs (140kgs) of a certified ground scale when operated properly. 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 truck and trailer don'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. Your Air-Weigh scale will only be accurate if your suspension is in good repair and the height control valves are set at factory-specified ride heights.

With Air-Weigh scales installed on the truck 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.

### **Weighing a Leaf Spring Steer Axle**

Even though the steer axle may have a leaf spring suspension, the AW5750 scale can still calculate its weight by accurately determining how much weight is transferred from the drive axles to the steer axle.

### **Weighing at Off-Road Sites**

When planning to load and weigh at an off-road site, where the ground may be uneven, position the vehicle BEFORE LOADING in such a manner that the EMPTY weights are *accurate*. THEN, once loading is complete, the loaded weights should also be accurate. If the empty weights are inaccurate before loading, you can guarantee the loaded weights will be inaccurate.

## FUNCTIONAL OPERATIONS

**NOTE:** *Air-Weigh Truck Scales can program and calibrate a AW5802 Trailer Scale without knowing the trailer scale's PIN#, so PIN# access should be used to protect both your tractor and trailer scales.*

### Print Function

The second option within the MAIN MENU is the **PRINT** function. This is used in conjunction with a printer accessory (000-5898-000). Using the arrow down key <▼> select PRINT, then press the <ENTER> button. At the bottom of the screen "Printing Weights" will appear and a report will be printed on your printer.

### Alarm Function

The Air-Weigh AW5800 Truck Scale has a 12V-24V 1.0 amp output alarm. To use the alarm feature, attach the gray alarm output wire stemming from the Tractor ComLink harness to a user-supplied alarm. It will activate when a 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. Remember, it is OK to program in an *alarm weight* while leaving the *warning weight* at zero. However, if a *warning weight* is programmed in, a higher setting *alarm weight* must first be entered.

To deactivate and reset an active *warning* or *alarm weight* alarm, simply press the <ESC> button once while the weight screen is displayed. 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.

**<ENTER> clears Net. <ESC> stops Alarm.**

**NOTE:** *Remember, to deactivate and reset an active warning or alarm weight, simply press the <ESC> button once while alarms are active, while weights are being displayed. To turn the alarm function completely off go*

***back to the TURN ON/OFF portion of the ALARMS menu and change the (ALARMS ON) back to (ALARMS OFF).***

## **SET-UP MENU**

The SET-UP MENU is the area where defaults of the system can be changed and customization of your scale occurs. From here you can adjust the Weight/PSI readings, the Time/Date, the Model configuration, the Language, enter a PIN and manipulate the main display screen.

### **Weights/Pressure**

**Weights/Pressure** (default = WEIGHTS): This function allows the operator to select what unit is displayed on the AW5700 model Trailer ComLinks. Select <SHOW WEIGHT> to display the axle weight in hundred pounds or kilograms, and <SHOW PRESSURE> to display air pressure in the trailer suspension in PSI.

### **Time/Date**

**Time Date:** The AW5750 scale display incorporates an internal clock. The time and date is also recorded when a ComLink is calibrated.

### **Model #**

**Model #** (default = vehicle configuration for which the scale kit was specified, i/e/, 5801, 5807, etc.) While the kit has been factory configured for a specific truck scale application, this feature allows it to be reconfigured to support a different set of sensors if the operator transfers the scale to a different truck or changes the sensor configuration. See page 9 for a selection of configurations.

### **Language**

**Language** (default = ENGLISH): The AW5750 is capable of displaying the menu screens in either English or Spanish.

## **Personal Identification Number (PIN)**

**PIN Number** (default = 0): Use the PIN number to limit or control access to scale calibration, and vehicle ID. Once the PIN number is set, the user must enter it to change these settings. ***Air-Weigh recommends completing the initial calibration before setting a PIN number.***

Resetting the PIN number back to zero ("0") will remove the need to enter a PIN number to access any menu function. Contact Air-Weigh Customer Support for help in resetting the PIN number if the access code is lost or forgotten.

## **Display Set-Up Menu**

Within this menu selection you can hide the GVW and/or Steer weights from the main display, or adjust the weight sensitivity and display brightness.

### ***Hide GVW***

Use the Hide GVW when there are no trailers present, or when the trailer is not equipped with an Air-Weigh Scale. This will help eliminate confusion about GVW readings when only tractor weight data is displayed. The NET payload feature is also hidden with the GVW readings. Scales with this feature will default to Hide GVW and NET.

To turn off this feature press the MENU button, select SET-UP/DISPLAY and Hide GVW, and then choose Show GVW and NET. The GVW and NET readings will then be displayed even when there are no trailer scale weight readings.

### ***Hide Steer***

The Hide Steer axle menu selection is similar to the Hide GVW command. When chosen, the readings for the steer axle are not displayed on the scale. Selecting this display mode automatically hides the GVW and NET payload readings because these calculations are not possible without steer axle weights. Hiding the steer axle is appropriate when the tractor is not equipped with an air-ride steer axle and when there is no fifth wheel.

On scale systems specifically designed for direct-sensing of steer axle weight, Hide Steer is not available and will result in a "Selection not Available" message when selected. Scales with this feature will default to Show Steer Axle. To turn on this feature, press the MENU button, select SET-UP/DISLAY and Hide Steer, and then choose Hide Steer Axle. The steer axle, GVW and NET readings will not be displayed.

***Sensitivity***

Sensitivity (default = 200 pounds): The Sensitivity function controls how the scale system responds to small changes in air pressure in the suspension. Changing the sensitivity does not change the accuracy of the Air-Weigh scale, only how the measured weight is displayed.

Decreasing the sensitivity causes the display to react to smaller changes in air pressure, and display a changing weight. In some applications, the weight display can be affected by wind or shifting loads, such as liquids or livestock. Increasing sensitivity will "smooth out" these smaller fluctuations and cause the display to be more stable.

Once the sensitivity is set, the weight display will not change until the load on the suspensions changes by that amount. For instance, when the setting is 200 pounds, the weight must increase or decrease by more than 200 pounds before the display changes.

***Brightness***

Brightness (default = HIGH): The Brightness function changes the intensity of the display backlight. Two settings are available: LOW and HIGH.

## **DIAGNOSE**

From the bottom right hand side of the MAIN MENU the DIAGNOSE MENU can be chosen. Use the up/down arrow key

<▲▼> until DIAGNOSE is *flashing* and press <ENTER>. This menu is where software, serial number and calibration information of the scale is displayed.

### **SYS DATA**

The Sys Data screen displays the scale model number, including the software revisions. Additionally, the serial number of the display unit is shown.

### **USER DATA**

The User Data screen displays user-defined information, including the units of measure, pounds or kilograms and the sensitivity setting.

### **COMLINKS**

The COMLINKS screen provides calibration data stored in the tractor ComLink and any trailer units connected. When selected, the COMLINKS screen displays a value (called A-to-D values, for Analog to Digital) representing the air pressure currently monitored by the scale for all channels. To view calibration data, select a channel and press <ENTER>, and then select <USER DATA>. The ComLink display is useful when trying to troubleshoot calibration problems because it will display the weights and pressures recorded from the Empty and Full calibration steps.

Additional system data is also available on the COMLINKS menu:

**Sys Data:** This screen allows the operator to view the RATIO and OFFSET values for the selected channel. These values are automatically established during the calibration process, and are important in troubleshooting and diagnosis. The TIME and DATE of the last calibration activity is also logged here.

**User Data:** This screen allows the operator to inspect the EMPTY and FULL Weights entered during calibration, and a measure of the air pressure in the suspension at that time (called A-to-D values, for Analog to Digital).

**ComLink ID:** This screen provides information on the software revisions of the ComLink unit, and the serial and model numbers.

**Status:** This screen provides the rank number of the tractor and trailer axle weight assignments as they appear on the screen. The serial and model numbers are also logged here.

**Pressure:** This screen provides A-to-D (Analog to Digital) data and air pressure PSI.

## MAINTENANCE

**Scale Display:** The Air-Weigh 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.

**ComLink:** The Air-Weigh ComLink should be maintenance-free under normal operation. Ensure the ComLink is mounted properly and keep the drain holes free of obstruction.

**Connections:** Periodically spray the 7-pin J-560 sockets and plugs with electrical cleaner. A good electrical connection is vital for proper operation. Make every effort to keep moisture out of the disconnect socket while the system is in operation.

## TROUBLESHOOTING

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, or "slop" 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.

## **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, 8 AM–5 PM Pacific Time. From outside the US and Canada, please call 1 (541) 343-7884.

# QUICK REFERENCE MENU DIRECTORY

## AW5780 Aftermarket Scale Display

### With AW5801 ComLink Processor

<p>RELEASE BRAKES AND REINFLATE SUSPENSION TO WEIGH     &lt;PRESS ENTER TO CONTINUE&gt;         (FLASHING)</p> <p><b>WEIGHTS</b></p> <p><b>PRINT</b>     (PRINTS WEIGHT TICKET)</p> <p><b>ALARM</b>     SELECT ALARM AXLE         (1:, 2:, ...9:, GVW:, NET)     TURN ALARMS ON/OFF</p> <p><b>CALIB</b> EMPTY WT     SELECT AXLE TO CAL         (1:, 2:, ...9:)     ENTER EMPTY WEIGHT     WITH VEHICLE EMPTY!     &lt;PRESS ENTER TO CONT&gt;     ENTER EMPTY WT</p> <p>FULL WT     SELECT AXLE TO CAL         (1:, 2:, ...9:)     ENTER EMPTY WEIGHT     WITH VEHICLE EMPTY!     &lt;PRESS ENTER TO CONT&gt;     ENTER FULL WT</p> <p>LBS/KGS     POUNDS     KILOGRAMS</p>	<p><b>SET-UP</b> WEIGHTS/PSI     SHOW WEIGHT     SHOW PRESSURE</p> <p>TIME/DATE     SELECT WHICH DATE OR     TIME TO CHANGE</p> <p>MODEL #</p> <p>LANGUAGE     ENGLISH     SPANISH</p> <p>PIN #     (SET PIN NUMBER)</p> <p>PIN #</p> <p>DISPLAY     HIDE GVW         SHOW GVW AND NET         HIDE GVW AND NET</p> <p>    HIDE STEER         SHOW #1 STEER AXLE         HIDE #1 STEER AXLE</p> <p>    SENSITIVITY         SHOW WEIGHT         CHANGES BIGGER THAN:</p> <p>    BRIGHTNESS         HIGH BRIGHTNESS         LOW BRIGHTNESS</p> <p><b>DIAGNOSE</b> SYS DATA USER DATA COMLINKS     (AXLE GROUP SELECTION)         SYS DATA         USER DATA         COMLINK ID         STATUS         PRESSURE</p> <p>SELF TEST</p>
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