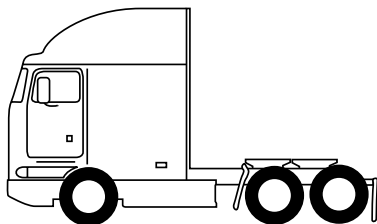
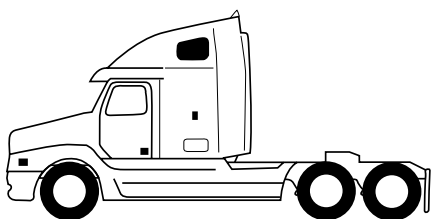


Air-Weigh

The Accurate On-Board Electronic Scale™

AW5700 SERIES ON-BOARD ELECTRONIC SCALE



TRACTOR SCALE

Installation and Operations Manual

August 2001

Air-Weigh

The Accurate On-Board Electronic Scale™

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Air-Weigh

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Air-Weigh

SYSTEM PARTS

Part #	Description	Kit Configuration	
		Tractor Kit 000-5700-001	Tractor Kit w/ Dual Leveling Valves 000-5700-010
010-8205-000	Cable, Tractor Interface, AW5700, Scale Connection, 4'	1	1
010-8204-000	Cable, Tractor Interface, AW5700, ComLink 1/2 Connection, 30'	1	1
010-8203-001	Cable, Tractor Interface, AW5700, T-Connector	1	1
010-9108-000	Sensor Assembly, 10', 5V Absolute, 150 PSI AW5700	1	2
050-5700-000	Tractor Scale Display Module, AW5700	1	1
050-5701-000	Tractor Comlink Module, AW5700, 1/2	1	0
050-5706-000	Tractor Comlink Module, AW5700, 1/2 Dual leveling valve processor	0	1
131-0007-000	Screw, 10-3/4, HEXWHTK, Z, Self-tapping	4	4
131-4020-001	Screw, 10-3/4, PHSMS, Phil, Blk 25	2	2
131-4021-000	Screw, 1/4x1.5 HEXWHTK, Z, Self-tapping	2	2
131-4065-002	Screw, 1/4-20x1.5, HEXMS, Z	2	2
133-5002-001	Washer, flat 1/4 - 5/16 ID x 3/4 OD x 1/16 thick zinc	4	4
145-4552-001	Nylon ties, black 7-inch	25	35
146-0004-000	Grommet, 5/16IDx3/16GWx7/16THx1ODx3/4GD	2	2
149-0011-000	Clamp, cable nylon, 3/8 IDx1/2 wide	4	4
164-2001-001	Decal, Cab, "AIR-WEIGH ON-BOARD TRUCK SCALES"	2	2
901-0003-004	Manual, AW5700 System, Installation and Operation	1	1
NPN	5th Wheel Location-Decals	1	1
Optional			
010-0012-000	Mounting Bracket, AW5700, ComLink, Left Side Mount		

AW5700 Complete Tractor Scale Kit



050-5700



050-5701



010-9108



010-8203



010-8204



010-8205

SCALE SYSTEM OVERVIEW

The AW5700 on-board scale converts tractor and trailer air-suspension pressure to an accurate on-ground weight. By comparing empty and loaded weights with empty and loaded air-suspension pressures, the scale is able to determine accurate weights for any suspension load. The scale will display the actual on-ground weight of each *axle group* to within 200-300 pounds (90-136 kgs.)

An axle group is defined by the Height Control Valves (HCV), or leveling valves, on the suspension. For instance, a tandem drive axle suspension typically has only one leveling valve, so the two drive axles are referred to as a single *axle group* or channel number.

Usually, channel number 1 is assigned to the tractor steer axles, channel number 2 the tractor drive axles, and higher channel numbers to trailer axle groups. The AW5700 is capable of displaying up to six (6) axle groups on one tractor/trailer combination. Once the AW5700 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. Calibrating or observing weight readings with the brakes engaged will result in inaccuracy.

Air-Weigh recommends calibration and weighing be performed on a flat, 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 sufficient) and re-inflated before calibrating and weighing to improve repeatability and accuracy.

Any tractor equipped with an AW5700 scale will display trailer weight data, for scale equipped trailers, when the trailer is connected to the tractor with the 7-wire cord (J-560). Trailer units require complete calibration one time, and then can be used with any tractor equipped with an AW5700 scale.

INSTALLATION

Pre-Installation Overview

Tractor Suspension System

To ensure accuracy with your AW5700 scale system 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.

Connecting the Electrical System

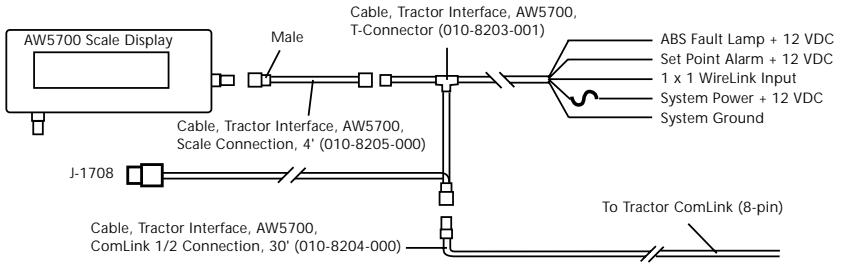
The AW5700 scale series communicates between tractor and trailers using a multiplexing technology to “piggyback” its signals over the vehicle’s existing electrical system without any interference. No additional J-560 disconnect is required between tractor and trailer. The Scale Display and its ComLink Module are wired directly to Common Ground and Power of the truck’s electrical system at a convenient access point.

Installation Overview

- Determine routing of the Scale Display harness before making connections.
- Identify power and ground sources and where the ComLink disconnect cable will meet with the Scale Display harness.
- Connect the Scale Display harness white wire to Common Ground.
- Connect the Scale Display harness blue w/black in-line fuse wire to power. Any reliable power source within the tractor will work.

Preferred Installation Method

The preferred option for power 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. (See fig. 1) See page 6 for color codes.

Fig. 1: Cable Tractor Interface Harness

5th Wheel Location Decals

Apply these decals to the 5th wheel (turntable) assembly 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.

The points of the triangles should be pointed together when calibrating and weighing. One decal should be on the 5th wheel slider assembly and the other should be on the frame mounting, so you can always tell when the 5th wheel is in the calibrating and weighing position.

**Fig. 2**

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 Leveling Valve Processors are required.

Installing Pressure Sensor

The pressure sensor may be installed in the air line near any airbag in the suspension system, so choose the one easiest to work with. Not all disconnect cables are the same length, so determine where each cable will be installed prior to proceeding with the installation. If you do not have enough cable to complete the installation, contact your Air-Weigh distributor or contact Air-Weigh Customer Support to order the cable you need.

Each tractor and trailer has unique characteristics that should be considered when you install your Air-Weigh scale system. Most importantly is access to the vehicle's existing electrical system. Some tractors have under-dash accessibility. Many wiring harnesses are now "plug and play"; so drop plugs can be inserted at the backs of light sockets.

Installing Scale Display in the Cab

1. Select a location for the Scale Display with adequate clearance for cables.
2. Use the mounting bracket as a template to mark the location of two 1/8" holes for the self-tapping mounting screws.

NOTE: Do not mount the Scale Display in the bracket until after cables are attached to the Scale Display.

3. Attach Scale Display tractor interface cable (010-8205-000) cable to the display and connect to harness (010-8203-001). Connect discreet wires on harness (010-8203-001) according to chart below.
4. Mount the scale to the bracket.

Wiring Harness Color Codes

NOTE: Decide where all cables are to be routed before connecting the harness.

<i>Required Connections</i>		
Color	Function	Connect to:
1. White	Ground	Connects to any reliable ground source.
2. Blue w/Black in-line fuse	12 VDC Power	Connects to any ignition hot power source. (Recommended)
<i>Optional Connections</i>		
Color	Function	Connect to:
3. Purple	WireLink Input Trailer WireLink Output Detects power or ground	Connects to the open end of a switch. The other side of the switch can be connected to either a power or ground source. When switch is activated, connection is closed.

Optional Connections continued

4. Gray	Set Point alarm Output (Dash)	Connects to any noise or light indicator desired. Set Point for alarm activation will be chosen through Scale Display functions. 2 amp output max.
5. White/Green	Trailer ABS Fault Indicator	Connects to an indicator light mounted within the cab.
6. Green (+) Orange (-)	J-1708 Databus	Connects to J-1708 harness with a 2-pin Metri-Pack connector. Plugs into slots provided at a J-1708 breakout location. See your tractor manual to find those locations.
7. Purple at 8-pin connection	Set Point alarm Output (Frame)	Connects to alarm. Operates with in-cab output.

Installing ComLink Module to Chassis

Mounting Instructions

Locate the ComLink to your best advantage. It should be visible by the driver during loading. Module may be flush mounted with bolts. (See fig. 3)



Typical Installation without bracket



Fig. 3

Typical Installation using bracket

Optional Mounting Bracket (010-0012-000)



Installing Air Pressure Sensor

1. Locate the suspension air lines. The best location to mount the sensor is between any two air bags where the sensor will not contact any metal.
2. Remove any paint on the air line and wipe clean. Cut the air line.
3. Slide the brass ferrules and nuts onto the air line and insert the T-fitting into the lines. Tighten the compression nuts. (See fig. 4)

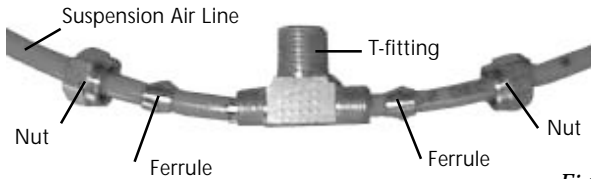


Fig. 4

4. Connect both ComLink power and sensor cables along existing air line and wiring harnesses. Secure cable to air line and wiring harness with wire ties to prevent vibration and damage. Be sure the connector locking tab is securely snapped in place. (See fig. 5)

5. NOTE: Do not install sensor directly onto airspring or where sensor body is electrically grounded. Grounding of sensor body will result in fluctuating weight and/or pressure readings. Insulate sensor from frame rail or wire-tie sensor so it does not touch metal. Secure the ComLink cable from vibration using wire ties. (See fig. 6)

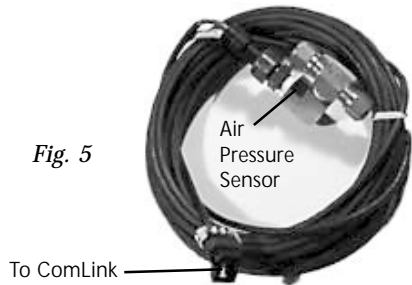


Fig. 5



*Fig. 6:
Air Pressure
Sensor
Completed
Installation*

OPERATIONS

Tractor Scale Display Module

Front Panel Switches

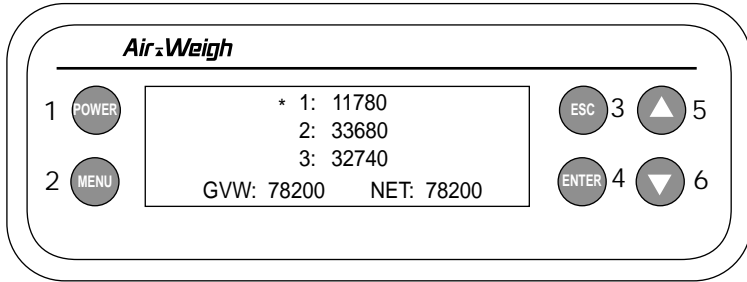


Fig 7: Front of display module showing WEIGHT screen

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 AW5700 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.

Rear Connections

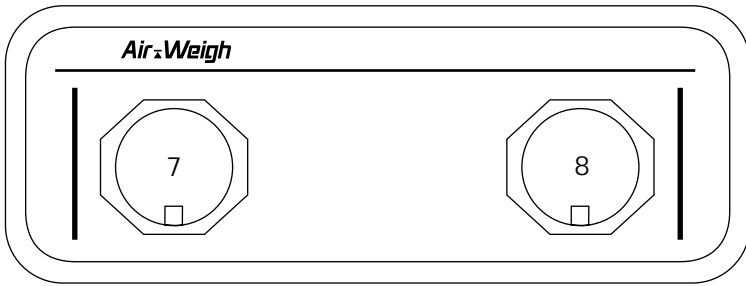


Fig. 8: Back of display module

7. COMLINK POWER-GROUND — connect the system harness cable to this port. Align the ConXall™ connectors and turn the locking collar clockwise to secure. You will feel the detent engage when the connector is properly secured. See page 6 for pin-out identification.
8. PRINTER-COMMS PORT — connect the printer cable to the port (when using a printer). Align the ConXall™ connectors and turn the locking ring clockwise to secure. You will feel the detent engage when the connector locking collar is properly secured. Printer-Comms Port is an RS232 serial port.

See Quick Reference Menu Directory on page 25.

WEIGHTS MENU AND USING THE SCALE

From the main menu, select Weights to view the axle weight readings, gross vehicle weight (GVW), and net payload. Once calibrated, the scale displays on-the-ground weight to within 200-300 lbs. (90–135 kgs.) of an accurate platform scale. Weight will be displayed in 20 lb. increments. To some extent, accuracy depends on weighing the vehicle on a flat and level surface and the physical characteristics of the air suspension itself. The vehicle's air suspension system must be operating properly and its height control, or leveling, valve must be set at factory-specified ride height.

NOTE: Chock the tires, if necessary, to keep the vehicle from rolling, and when exiting the cab while the brakes are released.

Weigh with brakes released and the engine running. If the suspension is equipped with a dump-valve, exhaust the suspension system

momentarily and re-inflate. Allow adequate time for the suspension to fully inflate before observing the axle weights on the scale display.

Axle weights are displayed by channel number:

- Channel 1 represents steer axle weight.
- Channel 2 represents drive axle weights.

Trailer axle weights are displayed by successive channel numbers from front to back (3, 4, 5, 6).

GVW represents gross vehicle weight, or the sum of all the axle groups being weighed. The NET function displays the change in payload since the last time it was reset to zero. See Utilities Menu section for further details on NET payload.

Weighing a leaf spring steer axle.

Even though the steer axle may have a leaf spring suspension, the AW5700 scale can still predict its weight by determining how much weight is transferred from the drive axles to the steer axle.

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.

How Air-Weigh Works

Your Air-Weigh Truck Scale determines accurate on-the-ground weight by sensing the change of air pressure in the air suspension and the change in actual weight of the vehicle. The more weight on the vehicle, the more air pressure required to maintain the vehicle at factory-specified ride height.

Depending on 5th wheel position, a certain percentage of the weight on the drive axles is transferred on and off the steer axle. Air-Weigh can calibrate the change of the steer axle weight to the change of air

pressure in the drive axle suspension to determine a very accurate steer axle weight.

However, an accurate steer axle weight display requires the 5th wheel to be in the same position (or notch) as when the scale was first calibrated. When the 5th wheel is slid to a different position (see fig. 12), the drive axle weights continue to be accurate, but the steer axle weight will actually display more or less weight than has actually been transferred. If you slide forward and the Air-Weigh says the drive axle weight went down by 1,000 lbs., then you know that you just shifted 1,000 lbs. onto the steer axle, even though the steer axle weight display may show the weight to have gone down.

Air-Weigh has a legalization mode in the menu (MENU/UTILITIES/LEGALIZATION) that will adjust the scale to display an accurate steer axle weight for that particular load, but you must always start the weighing process with the WEIGHING POSITION decals pointing towards each other.

Calibrate channel #1 with the steer axle weights and channel #2 with the drive axle weights for a standard installation.

UTILITIES MENU

ZERO NET (Payload)

NET payload displays the change in weight since last resetting. Reset the NET function when the trailer is empty to display added payload. Conversely, reset the NET function when the trailer is loaded to display any weight removed (displayed as a negative number).

- There are two ways to zero out NET payload. The quickest method is to press <ENTER> two times from the WEIGHTS screen. This will reset the NET function to zero (0).
- The other method of zeroing NET payload is from menu function. Press <MENU> and use the arrow keys <▲ ▼> to select Utilities. Pressing <ENTER> while ZERO NET is flashing resets NET function to zero (0), and the screen will display ZEROED NET WEIGHT.

LEGALIZE (Moving/Sliding Fifth Wheel)

Use the LEGALIZE function to slide the 5th wheel and distribute the weight between the steer axle and drive axles. When using this function, it is important that you begin with the 5th wheel in the position in

which it was calibrated. If you slide your 5th wheel, Air-Weigh recommends that you mark the position of where the 5th wheel setting was calibrated.

5th Wheel Location Decals

Apply these decals to the 5th wheel (turntable) assembly when you are about to calibrate the Air-Weigh truck scale (see fig. 9). Be sure the surface is clean and free of any grease, so the decals will stick permanently.



Fig. 9

The points of the triangles should be pointed together when calibrating and weighing. One decal should be on the 5th wheel slider assembly and the other should be on the frame mounting, so you can always tell when the 5th wheel is in the calibrating and weighing position.

When you select the LEGALIZE function, the scale measures how much of the load is being shifted from the drive axles to the steer axles. Do not change the position of the payload after selecting the LEGALIZE function. You must always load and weigh the vehicle with the scale in normal operation (5TH WHEEL AT CAL POINT) and the 5th wheel in the calibration/weighing position.

The first step in legalizing the suspension is to load the trailer and establish a baseline weight. *The weight of the steer axle plus the drive axles should not exceed the maximum weight legally allowed for the combination.*

Enter LEGALIZE mode by selecting <LEGALIZE> from the UTILITIES screen. The scale then prompts to select 5TH WHEEL AT CAL POINT or MOVING 5TH WHEEL. Press <▼> to indicate moving the 5th wheel. (See Fig. 10)

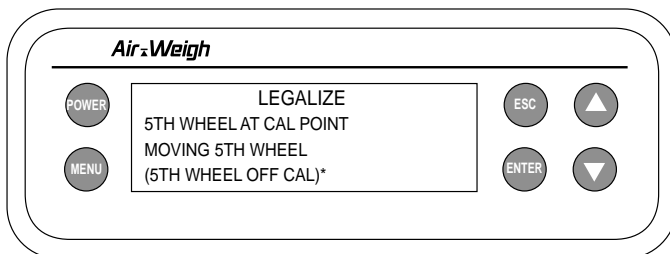


Fig. 10

Select the weights screen by pressing <MENU> and <ENTER>. The AW5700 scale will remind you that you are in LEGALIZE mode by placing an asterisk (*) in front of steer axle channel #1. (See fig. 11)

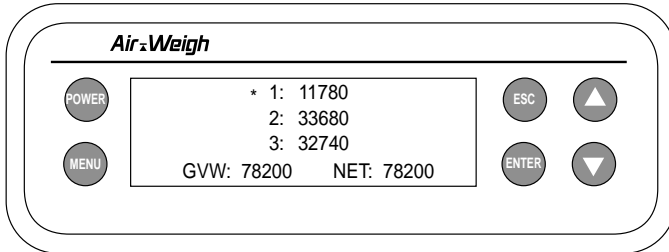


Fig. 11

As weight is transferred to or from the drive axles, the scale will change the steer axle weights accordingly.

NOTE: The load itself cannot change, only the 5th wheel position. Move the 5th wheel until the weight is properly distributed.



Fig. 12

To exit LEGALIZE mode and prepare for the next load, select <LEGALIZE> from the UTILITIES screen and reset the scale to 5TH WHEEL AT CAL POINT. The scale now weighs each axle group based on the 5th wheel being in the calibrated position. The asterisk (*) is no longer displayed on the weights screen.

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.

This is a new feature for scales sold after August, 2001. Scales with this feature will default to Hide GVW and NET. To turn off this feature, select Show GVW and NET by pressing the MENU button, selecting UTILITIES and Hide GVW, then choose Show GVW and NET. The GVW and NET readings will then be displayed even when there is no trailer scale weight readings.

Trailer

Some applications require specific channelization of trailer units, defeating the “auto-assignment” of multiple trailer units. Heavy haul trailers with jeeps and stinger units, or B-train configurations with pup trailers are examples of when trailer channel assignment may be required. This is accomplished by assigning each trailer ComLink unit a specific channel number from the Scale Display module.

Once a trailer ComLink is assigned a specific channel, it will display that channel identification on the ComLink when powered but not connected to a scale-equipped tractor.

If multiple trailer units assigned the same channel are connected together, the scale system will de-assign channels and reset some units to “auto-assign.” If this occurs, it may be necessary to re-assign trailer ComLinks to correct channel order. Resetting all trailer ComLink units to “auto-assign” mode will return the units to normal operation.

This is a new feature for scales sold after August, 2001. Scales with this feature will default to “auto-assign.” Earlier versions of scale systems do not support this feature, and the operator will get a “Not Available” message on the scale display if non-supported units are selected for channel assignment. The scale system will also automatically de-assign channel assignments when mixed revisions of scale systems are connected together.

To use this feature, press the MENU button, select UTILITIES and Trailer # (See fig. 13). The next screen provides original trailer channel selection (See fig. 14). Verify the channel number displayed on the trailer ComLink to ensure correct selection. Use the arrow keys to select the desired channel number to re-assign and press ENTER. Use the arrow keys again to select the new channel assignment and press ENTER to assign. The scale display will display “Currently Assigned” or “Auto-Assigned” to indicate the current mode. Select channel “0” to return the unit to auto-assign mode.

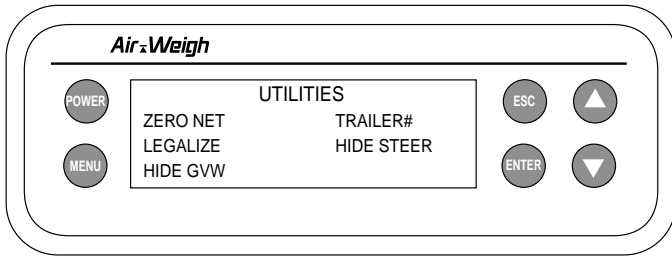


Fig. 13

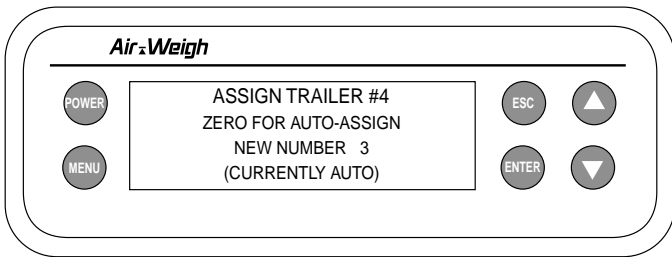


Fig. 14

NOTE: The scale system will not accept menu commands for approximately 20 seconds while it is assigning the new selections to the trailer ComLinks.

It is not necessary to assign every channel. If there are two trailer ComLinks present, only one unit must be assigned a channel, as the other will automatically be assigned. Likewise, if three units are present, only two must be assigned.

NOTE: It is not possible to assign a trailer ComLink a channel number greater than the total number of channels present, nor is it possible to assign a trailer a channel number reserved for the tractor ComLink.

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 air-ride steer axles, Hide Steer is not available and will result in a "Selection not Available" message when selected.

This is a new feature for scales sold after August, 2001. Scales with this feature will default to Show Steer Axle. To turn on this feature, select Hide Steer Axle by pressing the MENU button, selecting UTILITIES and Hide Steer, then choose Hide Steer Axle. The steer axle, GVW and NET readings will not be displayed.

ACCESSORY MENU

Alarms

The AW5700 includes several user-defined warnings and alarms, which allow the driver to be notified when a pre-set weight is reached. Each setting includes a warning and alarm. The 12-volt output will cycle one second on and one second off when the warning set point is reached. When the alarm setting is reached, the output is constantly on. Both warnings and alarms can be set for each available axle group, as well as for the GVW and NET functions. From the weights display menu, press <ESC> to turn an alarm or warning off. The set point alarm wire can be connected to any light or buzzer that operates using 12-volt DC. Alarm messages will also display on Scale Display Module.

NOTE: Stopping a warning for a particular axle group may be followed by the activation of an alarm for that axle group or a warning for another. The <ESC> key must be pressed each time an alarm is indicated to turn off the output signal.

Setting Alarms

Select Alarm Axle: This screen allows the operator to select which channel the warning or alarm is to be set or adjusted. Select the desired channel, or the GVW or NET.

Warning Weight: The warning weight is typically set at least 1000 pounds below the alarm weight. Once the warning weight for any channel is reached, the output will cycle on and off in one second intervals.

Alarm Weight: Enter the desired alarm weight for the selected channel. Once the weight threshold is achieved for any channel, the output will remain on until the operator stops it.

Activating Alarms

Turn Alarms On/Off: Turning the alarms off prevents the alarm output from functioning. Turn the alarms off when the alarm function is not desired, or when operating the vehicle, since road conditions may cause alarm set points to trigger repeatedly.

Stop Alarm: Selecting <STOP ALARM> turns any active warning or alarm signal off. Once a warning or alarm is stopped, another trigger event will cause a different warning or alarm to activate. Press <ESC> from the WEIGHTS display as a shortcut to stop an alarm.

Selecting Pressure

Pressure: Selecting <PRESSURE> allows the operator to view the air pressure in PSI for each channel on the scale display. This is used primarily for diagnostics during set-up and calibration. When Spanish and Metric units are both selected, pressure is displayed in bars.

SET-UP MENU

Calibration Overview

The AW5700 must be completely calibrated before the displayed weights are accurate. The complete calibration includes entering weight data for every axle group while empty, and while fully loaded.

It is recommended that the EMPTY tractor calibration be performed without a trailer attached (i.e. bobtail), and the FULL calibration be performed with the maximum load on the suspension. A common mistake is entering the EMPTY and FULL weights with the same suspension load (either heavy or full).

NOTE: The EMPTY weights MUST be entered while the suspension is light, and the FULL weights MUST be entered while the suspension is heavy.

Preliminary Considerations

The accuracy of the AW5700 depends on the accuracy of the scale used to calibrate. Ensure that the in-ground scale is reliable, recently certified and in good repair. It is preferable to weigh both EMPTY and FULL vehicle on the same certified scale to ensure comparative accuracy.

All mechanical weighing devices are subject to wear and tear, and their accuracy may not remain constant over a period of time. Segmented scales, those that provide individual axle group weighings, are preferred. When segmented scales are not available, take extra precaution in adding and subtracting gross weights from drive axle weights to obtain steer axle weights.

The order of calibration — EMPTY or FULL — is not important; however, both parts of the calibration process must be properly performed before the weight display is accurate.

Once the calibration procedure is properly completed one time, the EMPTY or FULL weights can be updated or re-calibrated individually. Weigh the vehicle with an in-ground scale to obtain individual axle weights.

Calibrate on level ground, with the brakes released and the engine running. Chock the wheels to prevent the vehicle from moving during

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

NOTE: Fuel level WILL affect steer axle weight accuracy, but not drive axle accuracy. Calibrate the scale with fuel level at least 1/2 tank, full is preferred.

Calibrating the Scale

1. Press <MENU>.
2. Press <▼> three times until SET-UP flashes, press <ENTER>.
3. In the SET-UP screen, press <ENTER> while CALIBRATE is flashing.
4. In the CALIBRATION MENU, press <ENTER> while CALIBRATE is flashing.
5. Use the arrow keys <▲ ▼> to select axle number, press <ENTER>. (See fig. 15)

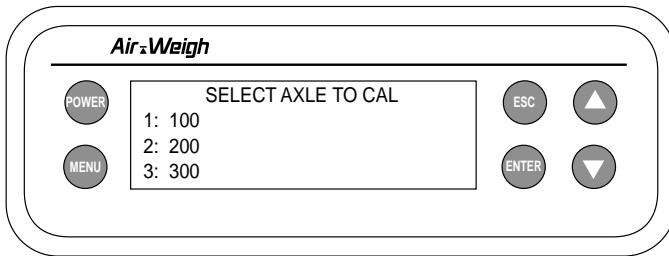


Fig. 15

6. Use the arrow keys <▲ ▼> to select either EMPTY WEIGHT or FULL WEIGHT, as appropriate, press <ENTER>. (See fig. 16)

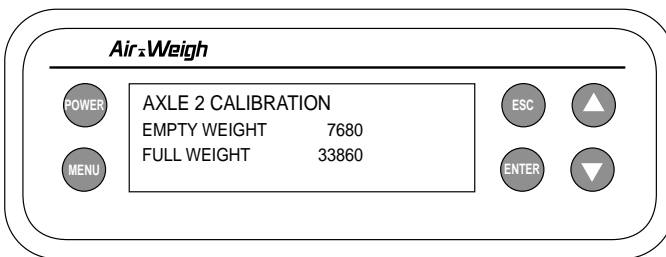


Fig. 16

- Use the arrow keys <▲ or ▼> to scroll up to the correct axle group weight, then press <ENTER>. The scale is not calibrated until <ENTER> is pressed. (See fig. 17)

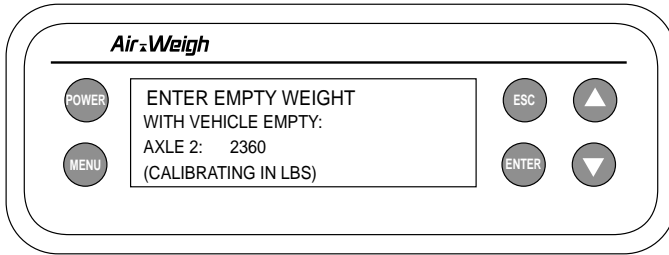


Fig. 17

- Press the <ESC> or <MENU> key to exit the CALIBRATION screen. Complete steps 1-7 for both EMPTY and FULL weights.

Weighing a leaf spring steer axle.

Even though the steer axle may have a leaf spring suspension, the AW5700 scale can still predict its weight by determining how much weight is transferred from the drive axles to the steer axle.

For calibration, Air-Weigh recommends setting the 5th wheel to the position used most often. This is usually the point where both the steer and drive axle weights can be maximized legally, or where the 5th wheel is used most often.

Calibrate channel #1 with the steer axle weights and channel #2 with the drive axle weights for a standard installation.

Defaults Overview

You can change the way the AW5700 scale operates, displays information on the screen and allows access to calibration. To go to the Default screen, press <MENU>, <▼> three times to SET-UP, press <ENTER>, and <▼> once to DEFAULTS, press <ENTER>. Default settings and how each setting operates are described below:

- 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 setting. *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.

2. Lb/kg (default = LB): This function changes the units in which the scale and ComLink displays weight. The AW5700 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.
3. 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 scale 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.

4. Home Page (default = WEIGHTS screen): The screen that appears on the display upon start-up. The options are either the MENU screen or the WEIGHTS screen.
5. Brightness (default = HIGH): The Brightness function changes intensity of the display backlight. Three settings are available: LOW, MEDIUM, and HIGH.

Weights/Pressure

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

Time/Date

Time Date: The AW5700 scale display incorporates an internal clock which is used with an optional printer. The time and date is also recorded when a ComLink is calibrated.

Language

Language (default = ENGLISH): The AW5700 is capable of displaying the menu screens in either English or Spanish.

SYSTEM INFORMATION

The System Information menu provides information about the scale model and serial numbers, calibration data, and diagnostic information. Press MENU and <▲ or ▼> until SYSTEM is flashing and press <ENTER>.

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, the sensitivity setting, and the vehicle ID, if established.

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

entered for both 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.

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 TIME and DATE of the last calibration activity.

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 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 $\pm 1/8"$, 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. Order part number 401-0501-001 for a Hadley™ Linkage Assembly.

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 deadband. 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 deadband provide most accurate weight readings. Air-Weigh recommends the Hadley 500. Order part number 401-0500-001 for the valve only, or part number 000-0500-000 for the valve with linkage. The Barksdale™ line of HCVs are also recommended, but not sold by Air-Weigh.

Blink Codes

The ComLink displays diagnostic codes to identify its status. It will indicate error conditions by blinking an error code on its LED light. The message is similar to Morse code. The LED will flash a “dash” (–) with a 1.5 second red or green light. It will flash a “dot” (•) with a brief 0.2-second red (◦) or green light (◐). All error messages consist of a set of four flashes.

Tractor Blink Codes

Normal Operating Codes

Code	Mode
Solid Green	Idle.
◦◦◦◦◦◦ Flashing green	One or more inputs on the tractor have been activated.

Error Codes

Code	Cause	Solution
◦◦◦◦◦◦ Alternating red and green	Trailer is reporting an ABS fault.	Ensure wiring is connected correctly. Start trailer ABS troubleshooting procedures.
◦◦◦— Flashing red	Low voltage to tractor ComLink.	Make sure supply power is charged. Ensure connections are solid and clean.
◦◦—◦ Flashing red	Low voltage on the sensor wire along sensor wires.	Unplug sensor and test supply voltage to sensor. Test for good continuity. Exchange sensors and re-examine ComLink fault codes.

Trailer Blink Codes *(if equipped)*

Normal Operating Codes

Code	Mode
Solid Green	Idle.
••••••••	One or more inputs on the tractor have been activated.
Flashing Green	

Error Codes

Code	Cause	Solution
Solid Red	Trailer is sensing an ABS fault.	Start trailer ABS troubleshooting procedures.
○○○ — Flashing red	Input voltage is too low.	Check power source and connections to the ComLink.
○○ — ○ Flashing red	ComLink internal voltage is too low or too high.	Remove and replace the ComLink.
— ○○○ Flashing red	Tractor cannot read the trailer's transmission.	Connect trailer to different tractor unit ensuring that the ComLink is working correctly and start troubleshooting the tractor unit.
• — • — Flashing green	No communication with the tractor.	Ensure the power circuit for the tractor is active. If no tractor is found, the blink status stops after 3 1/2 minutes.
— — • • Flashing green	Tractor isn't a 1 x 1 device, but reads the trailer's 1x1 communication.	No input commands are being communicated from the tractor, however another tractor WireLink device is reading the trailer's ABS fault lamp status. Stops three minutes after system power up.

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 (541) 343-7884.

QUICK REFERENCE MENU DIRECTORY

WEIGHTS

UTILITIES

ZERO NET
 LEGALIZE
 5TH WHEEL AT CAL PNT
 MOVING 5TH WHEEL
 HIDE GVW
 SHOW GVW AND NET
 HIDE GVW AND NET
 TRAILER #
 (TRAILER CHANNEL
 SELECTION)
 ASSIGN NEW #
 HIDE STEER
 SHOW STEER AXLE
 HIDE STEER AXLE

ACCESSORIES

PRINTER
 WEIGHT REPORT
 SET-UP REPORT
 ALARM
 SELECT ALARM AXLE
 (AXLE GROUP
 SELECTION)
 TURN ALARMS ON/OFF
 STOP ALARM
 PRESSURE

SET-UP

CALIBRATE
 CALIBRATE
 (AXLE GROUP
 SELECTION)
 EMPTY WEIGHT
 FULL WEIGHT
 COPY
 (AXLE GROUP
 SELECTION)
 COPY
 RESTORE

SET-UP (continued)

DEFAULTS

PIN #
 LB/KG
 POUNDS
 KILOGRAMS
 SENSITIVITY
 HOME PAGE
 WEIGHTS DISPLAY
 MAIN MENU
 VEHICLE ID
 BRIGHTNESS
 HIGH BRIGHTNESS
 MEDIUM

BRIGHTNESS

 LOW BRIGHTNESS
 WEIGHTS/PRESSURE
 SHOW WEIGHT
 SHOW PRESSURE
 TIME/DATE
 LANGUAGE
 ENGLISH
 SPANISH

SYSTEM

SYS DATA
 USER DATA
 COMLINKS
 (AXLE GROUP
 SELECTION)
 SYS DATA
 USER DATA
 COMLINK ID
 SELF TEST

Air-Weigh

The Accurate On-board Electronic Scale™

Patents #5,478,974; #623,635; #4,832,141

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