



Truckweight Strain Gauge Installation Manual V1.11

A. IMPORTANT SAFETY NOTICES

For your safety, please read this manual thoroughly before operating your Truckweight scale. The safety messages presented throughout this manual are reminders to the operator to exercise care when installing and using this unit. In addition, always refer to and follow the safety messages and applicable service procedures provided by the manufacturer of the vehicle being serviced. Please read, understand, and follow all safety messages and instructions in this manual.

DO NOT OPERATE HANDHELD SCALE WHILE DRIVING.

The Truckweight handheld units and sensors are intrinsically safe and suitable for use in explosive areas.

The Truckweight handheld and sensor (also referred to as the Truckweight wireless truck scale) are acceptable for use in Class I, Divisions 1, Groups A, B, C and D, Class II, Divisions 1, Groups E, F and G, and Class III Division 1 Hazardous Locations. Both the handheld and the sensor are ultra low-energy devices, which include energy limiting circuits and low-voltage batteries (2 X 1.5 V). Both devices feature very low power consumption (less than 18mA/54mJ/s peak).

WARNINGS

- 1. Many suspension systems maintain residual pressure after the engine has been turned off. Please take the following precautions:**
 - Wear safety glasses, chemical resistant gloves, and protective clothing when connecting and disconnecting air lines.
- 2. Beware of the risk of unexpected vehicle movement. Please take the following precautions.**
 - Block the drive wheels before installing the sensors.
 - Ensure the parking brake is set.
 - Do not leave a running vehicle unattended. A moving vehicle can cause injury.
- 3. The engine has moving parts and there is a risk of entanglement. Please take the following precautions:**
 - Do not place tools on fenders or anywhere within the engine compartment.
 - Keep yourself, your clothing, adapters, and service hoses clear of moving parts such as fan blades, belts, and pulleys.
 - Users and bystanders should wear safety goggles when near a running engine. Moving components can cause eye injuries.

4. **Maintain your focus on the road. Do not use the handheld unit while driving.**
5. **Beware the risk of burns. Please take the following precautions:**
 - If at all possible, avoid working near hot truck components, and instead allow the truck to cool off before proceeding. However, if it is absolutely necessary to do so, ensure that protective gloves are worn.
 - Do not touch hot exhaust systems, manifolds, engines, radiators, etc. Hot components can cause injury or severe discomfort.

Getting Started:

Note; do not weld within ¼ inch of radii on axle housing. (See welding specs below).

Note; do not quench with water or coolant after welding.

Note; install the Truckweight Strain Gauge after all welding is complete.

Note, follow handheld instructions below (Section V) and enter sensor number of Strain Gauge into handheld. Observe the number on the top right corner of handheld receiver (may read around 500) before installation to check that it is functioning properly by applying strain using your bare hands, the reading should climb up when strain is applied and return to its original reading when strain is released. Once proper functionality has been check install bolt the strain gauge to the mounting bar prior to removing the jacks. Then remove jack support and observe laden reading on top right corner. Note, it should have climbed to a higher number. If it did not climb, then the sensor most likely, due to improper installation, has too much strain on it and is out of range. Simply remove the Truckweight Strain Gauge and apply strain on it using your hands, to make certain the Strain Gauge is functioning properly. If it is out of range, then you must re-weld bracket(s) to better align the bracket assembly, using the installation bar and following the installation instructions.

Note, to obtain accurate readings in the field you must find a flat level piece of ground to take the weight reading. Strain Gauges are particularly sensitive. Note, some operators load on the same uneven ground each time and load to a particular reading to achieve full load; however, if this is not possible in your application you will have to find a flat level piece of ground to achieve accurate weights.

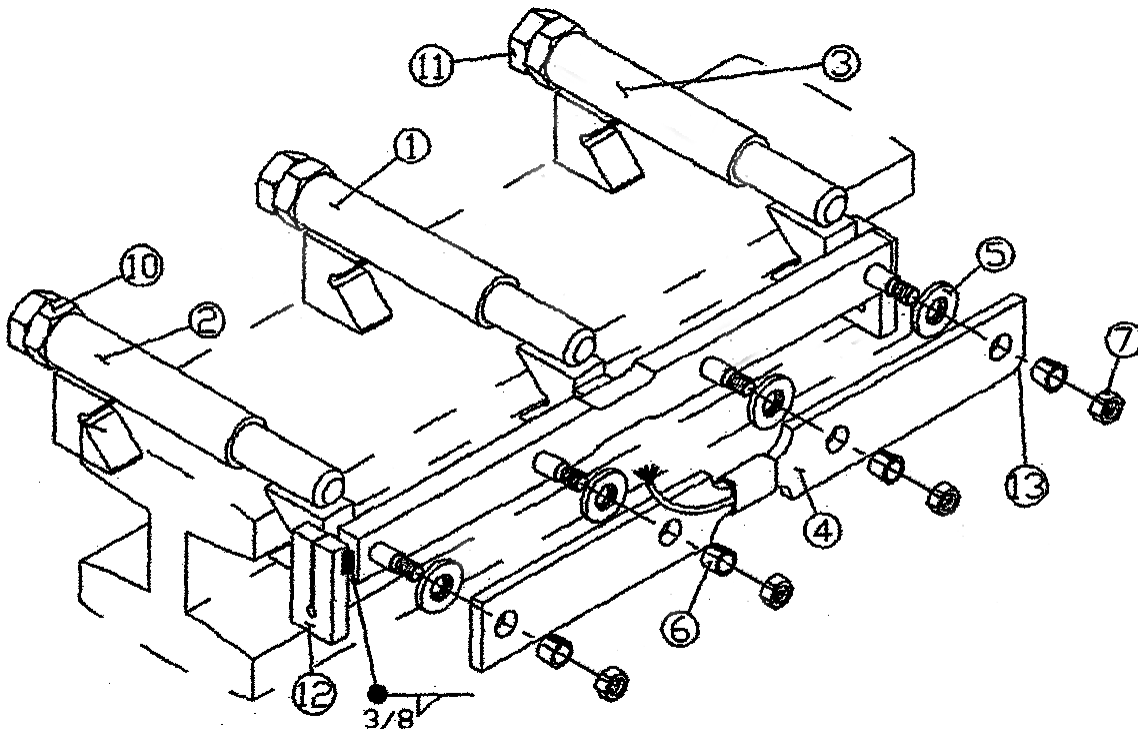
I FRONT AXLE LOAD BEAM INSTALLATION:

Do not weld on front I-beam axle. Use Truck Weight front axle clamps.

A: The front axle suspension is unladen with the frame supported on stands and the wheels free from the ground.

B: Clean off all flashing off the top of the axle and on each side. Place the clamp brackets (1, 2, and 3) (See Illustration 1) with the mounting bar assembly facing aft on the top of the front axle and install the (#10) $\frac{3}{4}$ -16 plain nuts and tighten, placing the center clamp (1) with mounting bar in place first, then position clamps 2 and 3.

Illustration 1



C: Adjust the V-clamps so the mounting bar is parallel to the axle and the split brackets (12) touch the mounting bar equally, then torque the nuts to between 90 & 100 ft. lbs. install and tighten the (11) $\frac{3}{4}$ -16 lock nuts.

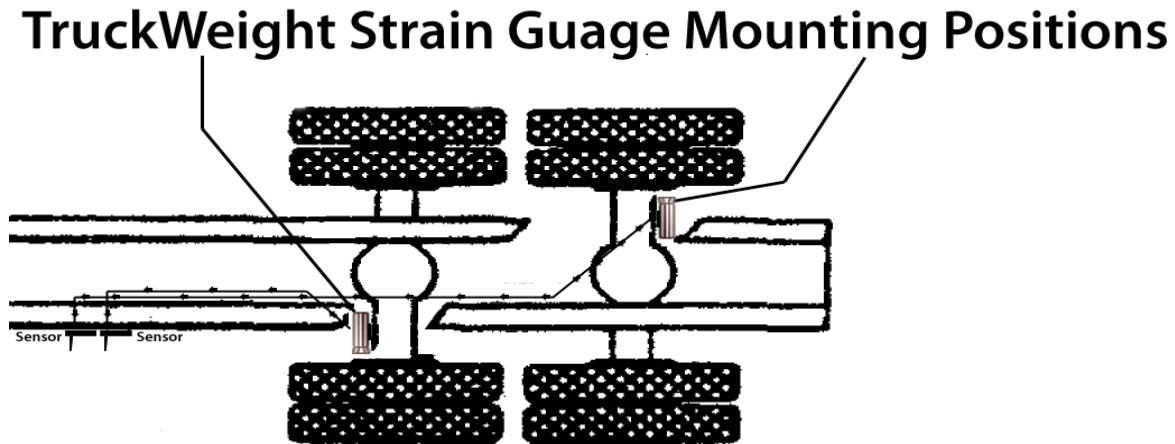
D: Weld the split end brackets (12) to the mounting bar ends. After welding is complete run Strain Gauge to mounting bar.

E: After any weld splatter has been removed, install the (5) spacer washers. Attach the Truckweight Strain Gauge (4) on the mounting bar with the chamfer (13) facing down as shown in the illustration; install the taper shims (6) and the 5/16-18 Locks nuts and torque (7) to 20 ft lbs.

F: Make sure the $\frac{1}{4}$ in hi-temp split loom protective cover, covers the cable along the beam. Mount the Truckweight Transmitter in a suitable location. Route the Strain Gauge cable on the back side of the axle, around the outer shackle nut and up the aft side of the outer shackle U-bolt. Allow some slack between the top of the spring and the bottom of the frame. Secure the wire harness with tie-raps. NOTE: (make sure not to route the wire between the spring and the spring stop pad). In off road logging applications and other applications, where material can potentially hook cable the runs along the axle, take extra measures using extra tie-raps to better secure the cable to the axle.

II REAR DRIVE AXLE INSTALLATION:

Illustration 2



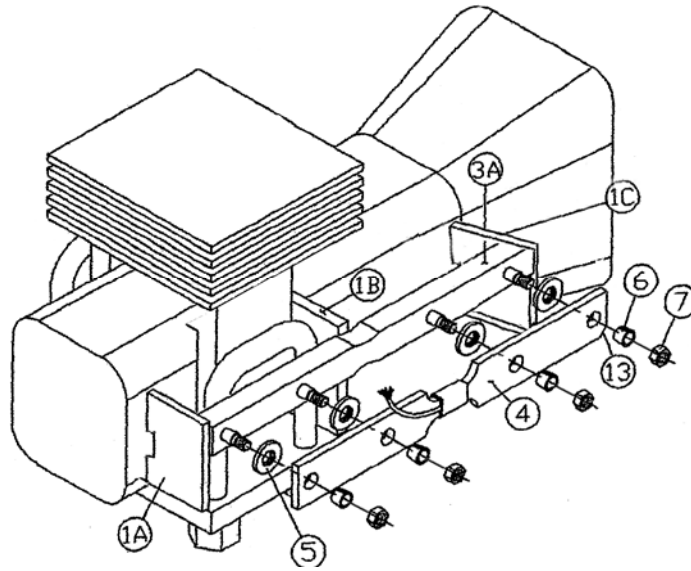
Note, with a Single Drive Axle two strain gauges are required; symmetrically install one strain gauge on the left side and one on the right side of the differential, following the same installation procedures.

A: Make sure that rear suspension is unladed and the frame is supported on stands with the wheels free from the ground.

B: The rear mounting brackets are to be located on each side of the rear drive axles opposite the brake chamber assembly. Make sure the mid section of the mounting bracket (# 1B) is located as close to the center line of the spring pad or the trunnion support bracket as possible. Mount the bracket assembly so the mounting bar is parallel to the horizontal axis of the drive axle. It may be necessary to grind the pre-welded mounting bar vertical stand-off brackets (1A, 1B) to assure a flush fit on the axle housing with no gaps and the cutout in the brackets located over the axle weld seam.

Illustration 3

- Brackets 1A, 1B, and 1C, Mounting Bar 3A, Strain Gauge 4, Chamfer (Flat Edge) on Strain Gauge 13, Spacer Washer (bored hole facing Strain Gauge) 5, Taper Shim 6, Lock nut 7



C: Position the third bracket (1C) on the open end of the mounting bar for welding to the axle first and then to the mounting bar. When welding, be sure to follow the welding specifications as called for in this manual below.

D: After the weld cools and the weld splatter has been removed, mount the spacer washers (5) over the mounting studs with the large opening out and then the Strain Gauge (4) with the chamfer (13) down as shown in Illustration 3. Install to the studs and install the tapered shims, the flat washers, the 5/16-18-lock nuts, and torque (7) to 20 ft. Lbs.

E: Place the cable in the Hi-temp ¼ in. split loom protective cover and route them toward the center and back side of the drive axles using tie-raps to secure them to the axle breather and brackets, and then across to a suitable location where you are mounting the transmitter. **NOTE** do not tie the cable harness to the hydraulic piping.

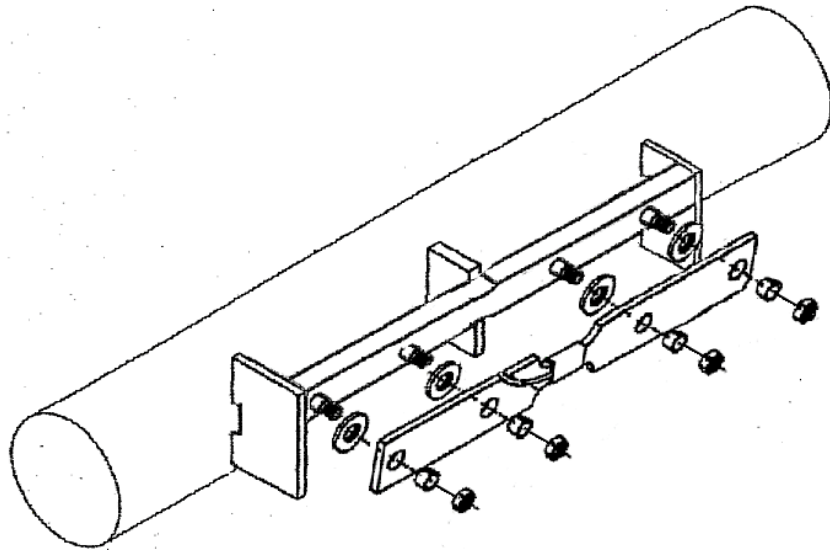
Note, that grinding of brackets may be necessary to fit flush and parallel to the horizontal axis.

III TRAILER OR TUBE AXLE INSTALLATION

Unlade trailer axles, using proper safety procedures. Place the mounting bracket assembly in the center of the axle; mark the location of each weld bracket. Grind off the paint in these areas. Mount the bracket assembly so the mounting bar is parallel to the horizontal axis. Tack weld one end and centre brackets in place. After tack welding, finish the welding by completing a bead no more than $\frac{1}{4}$ inch up each side of the brackets. Place last end bracket tack on axle first then on mounting bar top and bottom to secure, then place $\frac{1}{4}$ inch bead. Select a suitable location for the Truckweight Transmitter and run the Truckweight Strain Gauge bar and cable to the mounting bracket assembly. Install to Strain Gauge to the studs and with the flat corner down. Install the taper-locks, the flat washers, the 5/16-18-lock nuts, and torque to 20 ft. Lbs. Install the $\frac{1}{4}$ in. hi temp split loom cover over the rest of the cable. Use the tie-raps to properly secure the cable. Leave some slack between axle and frame.

Illustration 5

Note, with 5 inch diameter trailer axles it is recommended, but not necessary, to mount the Strain Gauge using the Extension Arms (2A and 2B in illustration 6) and grind brackets to fit flush with axle surface while keeping the Strain Gauge parallel with the horizontal plain. The extension arms will magnify deflection and provide greater accuracy. Note, the mounting bar is normally mounted to the side of the axle, if there is an obstruction you may move brackets further up or down, but not on top or bottom of the axle, then grind the brackets so the mounting bar is parallel to the axle and perpendicular to the ground.

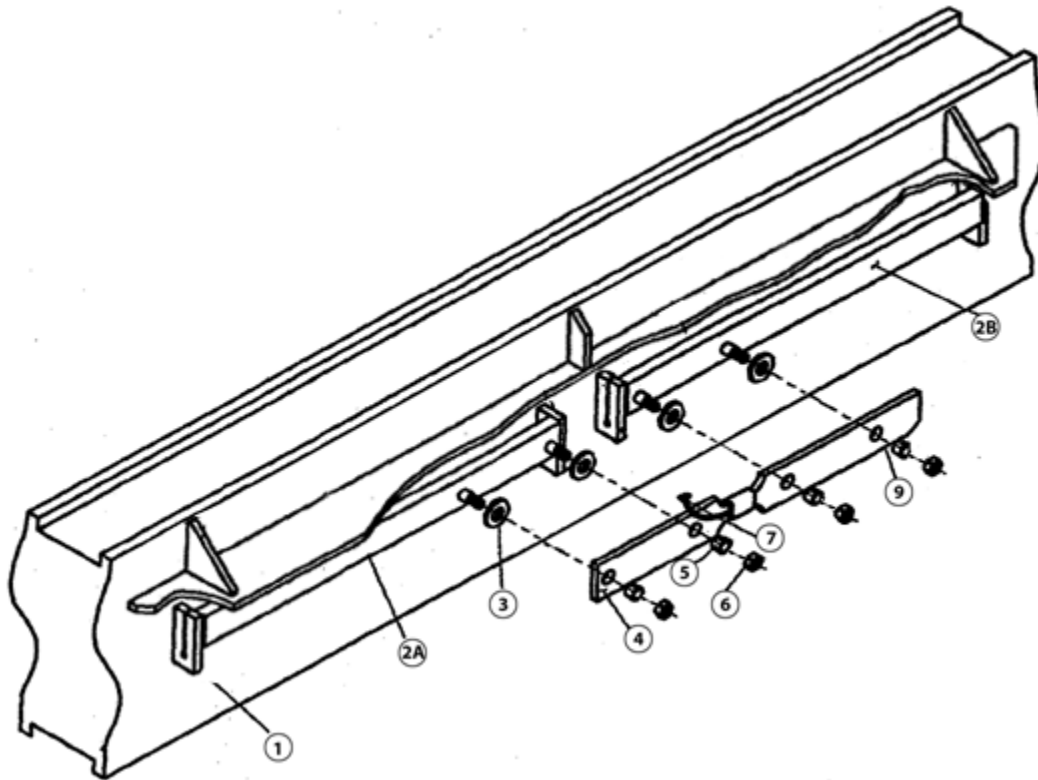


IV FRONT FORK ARM RAFFUSE, CRANE AND PAY LOADER INSTALLATION:

The general layout is of generic dimensions and can be applied to all loader arms. To achieve the maximum bending action on the Truckweight Strain Gauge followed the layout parameters as close as possible. Install to the studs and install the taper-shims, the spacer washers, the 5/16-18-lock nuts and washer, and torque to 18 In. Lbs. Make sure all mounting brackets (1) are all facing the same direction.

Illustration 6

Note, front end loader refuse trucks and pay loaders require one strain gauge for each arm (left and right) mounted on same position. Make sure load being used for calibration is evenly spread out from left to right and level when calibrating, as the load will be split equally between the left and right side for calibration of the two strain gauges.



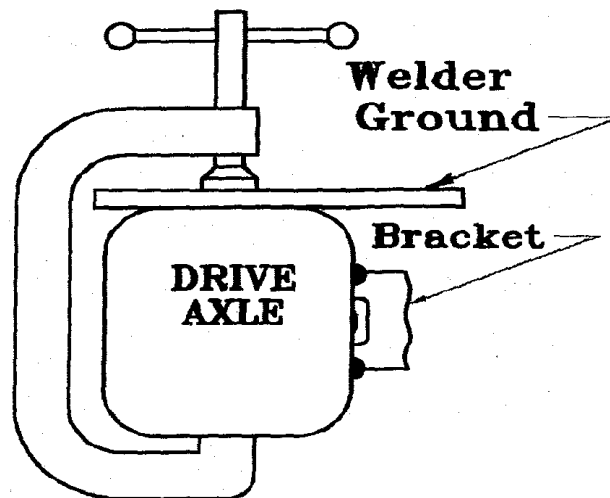
Using the layout located on the ($\frac{1}{2}$ Length) center line. The horizontal axis should be as close as possible to the ($\frac{1}{2}$ Width) line. Locate the mounting bar assembly and mark the location for welding. If not already pre-welded, weld brackets (1) on each end should fit flat against the fork arm with no rocking or end gaps. The brackets can be lightly ground to clear weld seams if there are any minor obstacles. Start by tacking the two pre-welded brackets on each end of 2A and 2B to the arm fork arm surface. Tack weld the two inner split mounting brackets to the fork arm but not to the beam mounting bar assembly. Finish welding the end brackets $\frac{1}{4}$ in. on each side and on each ends. After the two end brackets have been welded finish welding the two inner brackets to the fork arm and to the mounting bar assembly. This welding sequence will help avoid miss-aligning the mounting bar due to weld pull. After all welding is completed and has cooled install the spacer washer, Truckweight Strain Gauge to the studs, taper-shims, flat washers and the 5/16-18-lock nuts. Torque (6) to 20 ft. Lbs. Install the $\frac{1}{4}$ in. hi-temp split loom protective cover over the cable. Use the tie-raps to attach the cable to the mounting bars and to fork hydraulic lines. Mount the transmitter in a suitable location.

REAR AXLE WELDING SPECIFICATIONS

Do not weld on front I-beam axle. Use Truck Weight front axle clamps. We are referring Illustration 3 for this instruction, but it also applies to other axle types. This welding specification covers procedures that should be followed when attaching the Truckweight Strain Gauge mounting brackets to the rear axles of tractors, trailers, fork arms, pay loaders etc....

Unlade the rear suspension by jacking up the frame and support it on stands with the heels free from the ground. Locate the mounting bar assembly on each side of the rear axle housing on the opposite side from the brake cylinder chamber housing. In the case of trailer axles locate the mounting bar assembly at the centre of the axle and on the side. Make sure the mounting bar is parallel to the horizontal axis of the axle. It may be necessary to grind the vertical pre-welded mounting bar stand-offs to archive weld gap and fit the contour of the axle housing to assure proper fit. Remove the paint on the axle housing in the areas to be welded. Do not grind on any axle seam welds. Before any welding is done attach a welding grounding bar to the axle housing to be welded on as shown in Illustration 7. **NOTE,** the Truckweight Strain Gauge should not be mounted to the four studs until all welding is complete.

Illustration 7

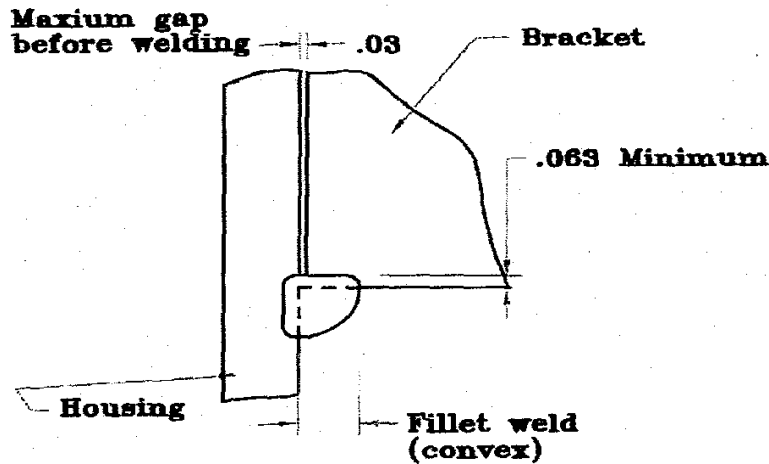


WELDING:

1: The machine settings used are based on an L-Tee Mig Master- 350 with the following setting: feed Wire 035 ER 70S-6 mild steel. Heat Settings (1, Med.) And wire fed (4). These settings are for mild steel 3/16 thickness. Gas flow is automatically controlled based on heat and wire feed settings. Other machines should be set to achieve similar results based on the same metal thickness and feed wire size.

2: The minimum fillet weld depth of the fusion unless otherwise stated applies to both sides of the welding to the bracket and the housing as shown in Illustration 8.

Illustration 8



- 3: The maximum fit up clearance between the axle housing and the stand-off brackets before welding is .032 as shown in Illustration 8.
- 4: Verify that the finished weld is slightly convex or flat with a sufficient depth of the fusion as called out in illustration 8. A concave weld contour is not acceptable.
- 5: After the two pre-welded brackets have been tacked in place, fit the loose bracket (1C illustration 3) described and tack it to the axle only. After the pre-welded bracket and loose bracket have welded, weld the other end of 1C to the mounting bar.
- 6: **NOTE:** Allow the welded axle housing and brackets to air cool until they reach room temperature. Do not quench or use any other cooling method. Artificial cooling could cause the housing or welds to crack or become weakened.
- 7: Note, if the welding job causes too much deflection the bracket 1C may have to be cut loose from the mounting bar and re-welded.
- 8: Clean any weld splatter, **and apply black primer and paint to the welded brackets and mounting bar.**

Note, installing a guard plate to protect the Truckweight Strain Gauge is optional. Truckweight does not supply any guard plating. If Guard plating is being installed DO NOT weld guard plating to the mounting assembly or Strain Gauge.

Note, Truckweight Strain Gauge should be removed prior to any welding as high electric current can destroy the Strain Gauge.

Once proper installation is complete follow the calibration instructions below.

For further information please contact a customer service representative at info@truckweight.com or at the appropriate number listed at www.truckweight.com

V

OPERATING YOUR HANDHELD RECEIVER



Note, the calibration procedure is the same for air or mechanical suspension systems.

1. Place batteries in the handheld and sensors.
2. Turn on the Handheld by pressing any button **Home** screen will appear. (See Fig.1)
3. Press **Center and Right** button for five seconds and release to **change time** using the \updownarrow arrow buttons (Fig. 2). Press the **Center** button in any screen and it will return to the Home screen, where the rig appears.
4. Press **Center and Left** buttons for five seconds to **change the Rig**. Use the \updownarrow arrow buttons to toggle between the twenty six rig types. (Fig. 3, 4, 5)
5. Press **Center and Up** buttons for five second to **enter sensor numbers**. Use \leftrightarrow arrow buttons to toggle between axle groups and the \updownarrow arrow buttons to change the sensor numbers (Fig. 6). Press **Center** button to confirm your selection and return Home screen.
6. Press **Center and Down** buttons together to **enter calibration information**. Press **Center** button to confirm calibration and ret to Home. (Fig. 7)
7. Press **Up and Down** buttons for five seconds only in Home position, and release, to switch back and forth between Kilograms and Pounds.
8. Press the **Down** button for five second until the screen changes to enter the Pay-Loader Mode. Press the **Center** button for five seconds to return to the Home screen.

1. ON/OFF

Hold down any button to turn the unit on. To extend battery life, the power turns off automatically in ten minutes when not in use.



Figure 1

The home screen displays your rig gross weight (on the right) and the weight of each axle group (on the left) from the sensor(s) installed for that axle group. The weight information is normally updated once each minute, but automatically goes into “Quick-Response” mode during loading. In this mode, the weight information is updated every five seconds for fifteen minutes. The vertical bar on the right-hand side indicates how much time remains until the next update.

2. SET TIME

Hold Center and Right button for five seconds until the time appears then release. Change time using the \updownarrow arrow buttons. Note it is a 24:00 hour clock with no AM or PM. Choose the desired time and press the Center button to return to the main truck screen.



Figure 2

3. SELECT A RIG

Hold Center and Left buttons for five seconds to change Rig types by using the \updownarrow arrow buttons.

Example of three of twenty six rigs;



Figure 3



Figure 4



Figure 5

4. ENTER SENSOR NUMBER(S)

Hold Center and Up buttons for five seconds to enter sensor numbers. Use ↔ arrow buttons to toggle between axle groups and use the ↓ arrow buttons to change the sensor number on the select axle group. Press Center button to confirm your selected sensor number(s) for the rig.

You may enter additional sensor(s) by writing over the sensor number already displayed.



Figure 6

TESTING RADIO SIGNAL

Once the sensor numbers have been entered into the handheld, the radio signal for each sensor can be checked on the Home screen (it takes one minute for the sensor to transmit a signal to the Handheld receiver, unless your loading and the sensor transmits every three seconds. Place the sensor in the planned mounting location. Check the signal in the cab of the tractor and/or on a loader and/or other locations where you will want to receive a signal. You know that you are receiving a signal when you see the pressure and temperature reading on the Home screen for each sensor (axle group) use the ↔ arrow buttons to toggle between axle groups. If the signal is not received you will see **** on the top right hand corner instead of the pressure and temperature reading for the selected axle group. Change the sensor mounting location to a location where you will receive the signal consistently. Note, the bar to the right of the home screen is a timer. It takes one minute to go from the top to the bottom of the screen. When the bar moves to the bottom of the screen a new signal is sent from the sensor. When the sensor is in Quick response the bar appears solid and a Q is visible at the bottom of the screen. Some sensors will transmit their signal farther than others. If you are not obtaining a signal from a sensor in a particular location you may try repositioning the sensor and/or switching the tractor sensor with the trailer sensor.

5. CALIBRATION

After your sensor(s) are installed, drive to an accurate set of in ground scales and record either the loaded or empty weight of each axle group (sensor) on your truck from the in-ground scale, as well as, the corresponding calibration reading from the top right hand corner of your handheld screen. Toggle between each axle group and record the reading from the top right corner of the Handheld screen for each axle group (sensor). Keep a written record of the ground scale weight and the Handheld calibration reading. This process will be repeated when your truck is loaded or empty – it doesn't matter which is recorded first, the empty or loaded values. As well, it doesn't matter whether your fuel tank is empty or full during the calibration process. Brakes should be off and when calibrating drive axles with air sensors dump air bags then refill before taking calibration reading.

Hold the Center and Down buttons together for five second and the Calibration screen will appear. Use the ↔ arrow buttons to hi-light the loaded weight and pressure and the empty weight and pressure. Use the ↑ arrow buttons to change the value of the selected field. Press the Center button to confirm the Calibration information you have entered.



Figure 7

The sensor number that you are entering for the calibration information will appear on the top right corner.

NOTE: For the calibration weight only, ensure that your load is not heavier than 65,000 lbs. or 29,710 kg. per axle group. You can read up to 100,000 lbs under normal operation. ALSO: while on the in-ground scale, it is recommended that the brakes are off, if safe to do so, prior to recording the calibration number on the top right corner of the handheld screen. Applying the brakes during the calibration process can place a slight torque on the suspension system, which may affect the accuracy of the calibration reading. While your truck is on the scales write down the calibration reading for each sensor from the Home screen, also write down the in ground scale weights, and enter the calibration reading and scale weight into the handheld (figure 7) at a convenient time. Make sure the calibration reading in the air bags or in the axle strain has settled prior to recording the calibration reading for each sensor while on the scale.

If you are installing more than one sensor, repeat the above process for the other axle group(s). Your wireless Smart Scale is now calibrated and ready for operation. **Note to obtain accurate readings in the field you must find a flat level piece of ground to take the weight reading. Strain Gauges are particularly sensitive. Note, some operators load on the same uneven ground each time and load to a particular reading to achieve full load; however, if this is not possible in your application you will have to find a flat level piece of ground to achieve accurate weights.**

Note, that the front axle (steer) requires no sensor for most tractor and trailer set ups. We have created the virtual sensor or dummy sensor serial number 10001 that may be entered on the front axle. It is not a real sensor but will calculate your steer axle weight. Input the loaded front axle weight and the empty front axle weight. It works as the front axle weight will adjust in proportion to the drive axle weight.

Calibration only needs to be performed once; however, if you change components of your air suspension system, you may be required to perform a second calibration to retain the same high level of accuracy.

6. SWITCHING BETWEEN LBS & KGS

While at the home screen, hold Up and Down buttons for five seconds to switch between Kilograms and Pounds.

7. SWITCHING TRAILERS

Enter all the serial numbers of your trailer fleet's sensors into your handheld by holding the Center and Up buttons. You may wish to write the sensor number on the side of the trailer for convenience. When switching trailers, simply enter the serial number of the new trailer's sensor(s). Hold Center and Up buttons for five seconds to enter sensor numbers. Use ↔ buttons to toggle between axle groups, placing the bar on the trailer axle group, and the ↑ to change the sensor number to the selected trailer. Press Center button to confirm your selection.

8. DELETING SENSOR(S)

Hold the Left and Up button for five seconds and the Erase sensor screen will appear.



Figure 8

Use the ↔ keys to locate the sensor you wish to delete. Press the ↓ key once to highlight “ERASE”, and press the → key to confirm deletion. **CAUTION** this is a complete deletion of the sensor from memory and you will lose your calibration information. Write down the calibration information prior to deletion if it may be required at a future time.

9. PAY-LOADER MODE

Press the “Down arrow” for 5 seconds until the screen changes.

Press the Left and Right arrows at the same time to “0” (tare) out your loaded weight (as seen on the top line) and your accumulative weight (as seen on middle line).

Press the Up arrow to add the current load (as seen on the top line) to your accumulative weight (as seen on the middle line).

Take on another load and press the Down arrow (to reset) before hitting the up arrow to add the load to your accumulative weight (as seen on the middle line). Note, hitting the Down arrow before hitting the Up arrow to add the second, third etc... lifts is necessary and prevents accidentally hitting the up arrow.

Press the Center button for 5 seconds to go back to your main screen. Note, if the unit powers off while in Pay-loader Mode, it will remain in pay-loader mode when powered on.

Note, the bottom line on the pay-loader screen shows the total weight. If the handheld is set for a truck this will include the empty weight of the truck and the total weight will equal the gross vehicle weight. If the handheld is set for a forklift or pay-loader the bottom line total will equal the accumulated total as seen on the middle line.

10. DUAL-LEVELING VALVES

If you have left/right level valve for your air suspension follow these calibration steps. When at the scale record the pressure reading from both sensors on the drives, empty and loaded. Record the scale weight for the drives empty and loaded. Then do the following four step calculation:

Example:

Empty Calibration: Left Sensor 11.4 PSI, Right Sensor 8.7 PSI, Empty Weight 6870 kgs.

1. Add the two pressures together: $11.4+8.7= 20.1$
2. Divide the weight by the total pressure: $6870/20.1= 341.79 \text{ kg/PSI}$
3. Multiply the Left Sensor by that number for the left weight: $11.4 \text{ PSI} \times 341.79 \text{ kg/PSI} = 3896.4 \text{ kg} = 3896 \text{ kg}$
4. Multiply the Right Sensor by the number for the right weight: $8.7 \text{ PSI} \times 341.79 \text{ kg/PSI} = 2973.6 \text{ kg} = 2974 \text{ kg}$

Therefore, your empty calibration information is;

Left Sensor	3896 kg	11.4 PSI
Right Sensor	2974 kg	8.7 PSI

Do the same step for the Hi weight and enter the information into the handheld.

If you have any questions please send them via email to info@truckweight.com or call toll free at 1-877-757-7888 or direct at 1-902-404-3450 and speak with one of our customer service representatives.

WARRANTY AND CONDITIONS OF SALE

All quotations and sales by Truckweight, its subsidiaries, affiliates, dealers or distributors are subject to these terms and conditions, unless there is a binding superseding written signed contract in place with Truckweight.

1. Terms of payment are cash or equivalent; prices are CIF; and wireless truck scale prices do not include any taxes, insurance, handling, duty or other similar charges, payment of which will be the sole responsibility of customer unless otherwise specified on Truckweight's valid invoice.

2. Truckweight may select a carrier. Truckweight's responsibility for any loss or damage ends, and title passes, when Wireless Truck Scales are delivered to the carrier, to customer, or to customer's agent.

3. The Truckweight Wireless Truck Scale is warranted against defects in material or workmanship for 2 years from the date of the original purchase (unless an extended warranty is purchased. If the Truckweight Wireless Truck Scale, which, because of a manufacturing mistake or malfunction, proves to be defective within the 2 year warranty period, it will be repaired or replaced at Truckweight's option, provided it is returned to Truckweight with a Return Case Number issued by Truckweight. Once a Case# is obtained MAIL the product back to Truckweight marked "goods originate in Canada". There is a \$50.00 handling fee for warranty exchanges in North America. Handling fees in other regions outside North America may change at Truckweight's discretion and must be confirmed with Truckweight prior to shipping. This warranty does not cover incidental or consequential damage to persons or property caused by use, abuse, misuse, failure to comply with installation or operating instructions, or damage caused by battery malfunction. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above warranty does not apply in those states. This warranty gives you specific legal rights and you may also have other rights, which vary state to state.

4. TRUCKWEIGHT SHALL HAVE NO RESPONSIBILITY FOR OVERLOAD FINES RECEIVED WHILE USING THIS WIRELESS TRUCK SCALE.

5. Wireless Truck Scales are deemed accepted by customer unless customer notifies Truckweight in writing within 10 days of delivery of Wireless Truck Scale shortages, damage or defect. No returns may be made for any reason without obtaining Case Number issued by Truckweight. If customer refuses to accept tender or delivery of any Wireless Truck Scales or returns any Wireless Truck Scales without authorization from Truckweight, such Wireless Truck Scales will be held by Truckweight awaiting customer's instruction for 20 days, after which Truckweight may deem the Wireless Truck Scales abandoned and dispose of them as it sees fit, without crediting customer's account. Any and all Wireless Truck Scales that are returned as stated herein are subject to a 20% restocking charge.

6. Truckweight will not be liable for any failure or delay in its performance or in the delivery or shipment of Wireless Truck Scales, or for any damages suffered by customer by reason of such failure or delay, when such failure or delay is caused by, or arises in connection with, any fire, flood, accident, riot, earthquake, severe weather, war, governmental interference or embargo, strike, shortage of labor, fuel, power, materials or supplies, delay in delivery by Truckweight's suppliers or any other cause or causes beyond Truckweight's reasonable control. Truckweight reserves the right to cancel without liability any order, the shipment of which is or may be delayed for more than 30 days by reason of any such cause. Truckweight reserves the right to allocate in its sole discretion among customers or potential customers, or defer or delay the shipment of, any Wireless Truck Scale which is in short supply.

7. All quotations and sales are made only upon these terms and conditions and those on the invoice. The invoice and not any purchase order or other customer document (which, if construed to be an offer is hereby rejected), will be deemed an offer or counter-offer and is a rejection of any other terms or conditions. Customer, by accepting any Wireless Truck Scales, making any payments or ordering any Wireless Truck Scales accepts these terms and conditions and will be deemed to have assented to these terms and conditions, notwithstanding any terms contained in any prior or later communication from customer and whether or not Truckweight will specifically or expressly object to any of customer's terms. Truckweight's failure to object to any document, communication or act of customer will not be deemed a waiver of any of these terms and conditions. Any addition or change to these terms and conditions must be specifically agreed to in writing by a duly authorized officer of Truckweight before becoming binding on Truckweight.

8. Unless specifically otherwise agreed in writing by Truckweight, customer acknowledges that Wireless Truck Scales sold by Truckweight are not intended for and will not be used in life support systems, human implantation, nuclear facilities or systems or any other application where Wireless Truck Scale failure could lead to loss of life or catastrophic property damage. Customer will indemnify and hold Truckweight harmless from any loss, cost or damage resulting from customer's breach of the provisions of this paragraph.

9. Any or all Wireless Truck Scales may be subject to export or resale restriction or regulation, and customer acknowledges that it will comply with such regulations or restrictions. Any or all Wireless Truck Scales may have been imported. Country of origin information is as provided to Truckweight by its suppliers and is, where applicable, located on the Wireless Truck Scales themselves or the supplier's innermost packaging thereof.

10. Except for the warranty coverage referenced in paragraph 3, above, NEITHER TRUCKWEIGHT NOR ITS SUPPLIERS WILL HAVE ANY LIABILITY OR OBLIGATION TO CUSTOMER OR ANY OTHER PERSON FOR ANY CLAIM, LOSS, DAMAGE, OR EXPENSE CAUSED IN WHOLE OR IN PART, DIRECTLY OR INDIRECTLY, BY THE

INADEQUACY OF ANY WIRELESS TRUCK SCALES FOR ANY PURPOSE, BY ANY DEFICIENCY OR DEFECT IN ANY WIRELESS TRUCK SCALE (WHETHER OR NOT COVERED BY ANY WARRANTY), BY THE USE OR PERFORMANCE OF ANY WIRELESS TRUCK SCALES OR BY ANY FAILURE OR DELAY IN TRUCKWEIGHT'S PERFORMANCE HEREUNDER, OR FOR ANY SPECIAL, DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL, EXEMPLARY OR PUNITIVE DAMAGES, HOWEVER CAUSED, INCLUDING, WITHOUT LIMITATION, PERSONAL INJURY OR LOSS OF BUSINESS OR PROFIT, WHETHER OR NOT CUSTOMER WILL HAVE INFORMED TRUCKWEIGHT OF THE POSSIBILITY OR LIKELIHOOD OF ANY SUCH DAMAGES.

11. Truckweight may assign accounts receivable to a Truckweight affiliate. In order to defray the cost of customer account administration, any credit balance or other sum owed to customer who remains unclaimed by customer for a period of eighteen months will become the property of Truckweight.

12. No order may be cancelled, rescheduled or reconfigured without Truckweight's prior written authorization and, in such event; customer will be liable to Truckweight for any additional costs and expenses incurred by Truckweight.

13. Prices are subject to change by Truckweight upon customer rescheduling or reconfiguration of orders. Prices are also subject to change in response to supplier price increases, whereupon, customer may cancel the undelivered portion of any affected order by delivering written notice to Truckweight prior to the shipment thereof and within 10 days of its receipt of notice of the price increase.

TRUCKWEIGHT

Contact Information:

Call: 1-877-757-7888 or direct 1-902-404-3450

Fax: 902-431-9587

email: info@truckweight.com

Returns with a Case# should be shipped to:

Truckweight,
1600 Bedford Highway
Suite 100-177
Halifax, Nova Scotia
Canada B4A 1E8



TRUCKWEIGHT INC.

Declaration of Conformity

According to EN 45014

TruckWeight, hereby, declares that the following product:

Product Name: *Onboard Wireless Truck Scale*

Product Model Number(s): *MS01* and *HH1.74-177*

Product Type: *Sensor* and *Handheld*

Conforms to the appropriate country standards and governing regulations listed below. We, as the manufacturer, are fully responsible for the design and production of the above mentioned equipment.

EN 300 220-3 v1.1.1: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1 000 MHz frequency range with power levels ranging up to 500 mW; Part 3: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive"

EN 301 489-3 v1.4.1: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 40 GHz"

Supplementary Information:

The product herewith complies with the following provisions of normative European Council Directives and carries the CE marking accordingly:

R&TTE Directive 1995/5/EC

This product was tested in a typical configuration.

Peter Panagapko May 12, 2008

President

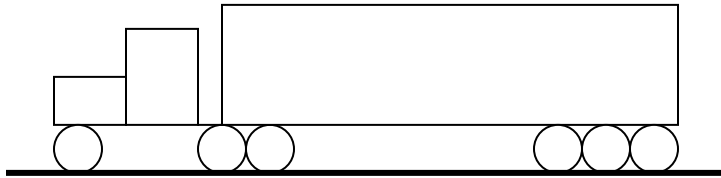
TruckWeight

Calibration Steps on Platform Scale

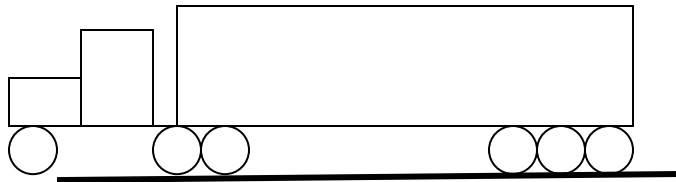
Obtain Pressure readings from the Handheld Empty and Loaded for each sensor using the following method.

Note, brakes should be off and air bags should be dumped then refilled at the scale before taking pressure if air suspension. Take all readings while the truck is completely on scale (#1) and only weights in #2 and #3. Below.

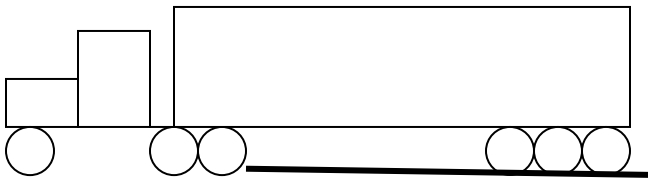
1. Gross Vehicle Weight



2. Front Axle off the Scale



3. Drive Axles off the scale.



Front Axle Weight = 1-2

Trailer Axle Weight = 3

Drive Axle Weight = 1 – Front Axle – Trailer

Note: If calibrating three axle spring trucks or trailers, with the axle group of two or three axles as one group, weigh the whole group and then divide the weight by 2 or 3 respectively to obtain the weight for each axle.