LOADRITE L3180 User manual

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Trimble Inc assumes no liability in connection with the use of any LOADRITE branded product.
## Important safety information

**Please read carefully before using the LOADRITE™ weighing system**

<table>
<thead>
<tr>
<th>![Safety Alert Symbol]</th>
<th>This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.</th>
</tr>
</thead>
<tbody>
<tr>
<td>![WARNING]</td>
<td><strong>WARNING</strong> indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.</td>
</tr>
<tr>
<td>![CAUTION]</td>
<td><strong>CAUTION</strong> indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.</td>
</tr>
<tr>
<td>![CAUTION]</td>
<td><strong>CAUTION</strong> used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.</td>
</tr>
</tbody>
</table>

**Warning**

It is your sole responsibility to place, secure and use the LOADRITE Weighing System in a manner that will not cause accidents, personal injury or property damage. Always observe safe operating practices.

Do not install the LOADRITE Weighing System in a way that may interfere with the safe operation of the vehicle, or deployment of safety equipment.

Before you use the LOADRITE Weighing System for the first time, familiarize yourself with the system and its operation.

**Caution**

Do not handle the LOADRITE Weighing System if it is hot. Let the product cool, out of direct sunlight.

Ensure that the LOADRITE Weighing System is connected to a power source with the correct fitting and voltage requirements.

Do not attempt to service the LOADRITE Weighing System as this could result in personal injury.

**Caution**

Removing LOADRITE Weighing System equipment or adding accessories could affect the accuracy of weighing data and your warranty.

Do not install cables over horizontal surfaces where they may be stood on or hit by falling objects.

---

**Failure to adhere to these warnings and cautions may lead to death, serious injury or property damage. Trimble Inc disclaims all liability for installation or use of the LOADRITE Weighing System that causes or contributes to death, injury or property damage, or that violates any law.**
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</tr>
</tbody>
</table>
1.0 Welcome

Thank you for purchasing this LOADRITE Weighing System. Please read this manual carefully before using the Indicator for the first time. Keep this manual in a safe place and use as your first point of reference.

Formatting

The following formatting in this manual identifies specific types of information:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Type of Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bold</strong></td>
<td>Indicates a button on the Indicator, or Indicates an area displayed on-screen, including buttons, headings, field names and options.</td>
</tr>
<tr>
<td><em>Italics</em></td>
<td>Indicates the name of a screen or window, or Indicates an operation mode that the Indicator can be set to.</td>
</tr>
<tr>
<td><strong>Monospace</strong></td>
<td>The exact error message displayed on-screen.</td>
</tr>
</tbody>
</table>

Action Terms

The following terms are used throughout this manual to describe actions:

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Press</strong></td>
<td><strong>Physical buttons:</strong> Push and release a button. <strong>On-screen buttons:</strong> Tap the screen icon (or press the function button directly under the on-screen button).</td>
</tr>
<tr>
<td><strong>Select</strong></td>
<td>Tap the button, menu option or other item on the touchscreen, or Press the function buttons directly under the arrow on-screen buttons to &quot;highlight&quot; an item in a menu or list, or Press the keypad number that corresponds with the number in the menu option.</td>
</tr>
<tr>
<td><strong>Tap</strong></td>
<td>Press and release a button, menu option or other item on the touchscreen.</td>
</tr>
</tbody>
</table>
2.0 Introduction

The LOADRITE weighing system measures the weight of loads lifted by wheel loaders, forklift trucks and similar machines that use hydraulic rams to lift the load. The main parts of the LOADRITE Weighing System are:

- the Indicator installed in the cab of the loader, and
- the connected sensors installed on the lifting arms.

As a load is lifted, the angle sensors and hydraulic pressure transducers send information to the LOADRITE Indicator. This information is converted into a digital weight reading that is displayed on the LOADRITE Indicator.

The LOADRITE Weighing System can add each lifted load to running totals so that Trucks are loaded accurately and daily productivity levels can be tracked.

The LOADRITE Indicator is the main user interface with the LOADRITE Weighing System. It has an internal memory that stores settings and production data even when it is turned off.
2.1 LOADRITE equipped loader

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Remote Add Button (optional)</td>
</tr>
<tr>
<td>2</td>
<td>LOADRITE Indicator</td>
</tr>
<tr>
<td>3</td>
<td>2x Angle Sensors</td>
</tr>
<tr>
<td>4</td>
<td>Pressure Transducer Interface (PTI)</td>
</tr>
<tr>
<td>5</td>
<td>2x Pressure Transducers</td>
</tr>
</tbody>
</table>
## 2.2 Front Features

<table>
<thead>
<tr>
<th>Item</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Speaker</td>
<td>Broadcasts buzzer and other sounds.</td>
</tr>
<tr>
<td>2</td>
<td>Blue light</td>
<td>When lit, indicates that the Indicator has successfully weighed a bucketload of product.</td>
</tr>
</tbody>
</table>
| 3    | Green light | - When lit, indicates that the bucket is below the Weighing Zone and the Indicator is ready to weigh.  
|      |           | - When flashing, indicates that the bucket is in the Weighing Zone.      
<p>|      |           | - When off, indicates that the bucket is above the Weighing Zone.        |</p>
<table>
<thead>
<tr>
<th>Item</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Touchscreen</td>
<td>Displays weighing information and menu options. Tap to select on-screen buttons and menu options.</td>
</tr>
<tr>
<td>5</td>
<td>Function buttons/Soft keys</td>
<td>Press to select the corresponding on-screen button.</td>
</tr>
<tr>
<td>6</td>
<td>Keypad</td>
<td>Used to enter numbers, characters, symbols and commands.</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Adds the current bucketload to the total.</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Clears the short total for the current product. Used as a Backspace to delete the previous character when entering text. Used to delete an access code, when entering one on the Security Code screen.</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>zeroes the empty bucket.</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>When the Total screen is displayed, press to enter Standby mode. When in Standby mode, press to exit Standby mode.</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>Selects a menu option or other item. Accepts changes.</td>
</tr>
</tbody>
</table>
2.3 Rear Features

<table>
<thead>
<tr>
<th>Item</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1    | ![WiFi Icon] | Connection socket for a wireless network antenna. Remove the rubber bung to access.  

**NOTE** – Ensure that the rubber bung is replaced when not in use so that the environmental integrity of the Indicator is maintained.  

**CAUTION** – The Indicator must be turned off when connecting or disconnecting an antenna.
<table>
<thead>
<tr>
<th>Item</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td><img src="image" alt="Connection socket for an Ethernet network cable. Lift the rubber bung to access." /></td>
<td>Connection socket for an Ethernet network cable. Lift the rubber bung to access.</td>
</tr>
<tr>
<td>3</td>
<td><img src="image" alt="Connection socket for a GPS antenna. Remove the rubber bung to access." /></td>
<td>Connection socket for a GPS antenna. Remove the rubber bung to access.</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Mounting bracket" /></td>
<td>Bracket for mounting the Indicator in a loader.</td>
</tr>
<tr>
<td>5</td>
<td><img src="image" alt="Not used." /></td>
<td>Not used.</td>
</tr>
<tr>
<td>6</td>
<td><img src="image" alt="Connection socket for the POWER CONTROL cable." /></td>
<td>Connection socket for the POWER CONTROL cable.</td>
</tr>
<tr>
<td>7</td>
<td><img src="image" alt="Light sensor" /></td>
<td>Not used.</td>
</tr>
<tr>
<td>8</td>
<td><img src="image" alt="Two USB 2.0 sockets. Lift the rubber bung to access." /></td>
<td>Two USB 2.0 sockets. Lift the rubber bung to access.</td>
</tr>
</tbody>
</table>
2.4 Total screen

The Total screen is the first screen that you will see when you turn on the Indicator. From this screen, you can weigh a bucketload, undo a bucketload, access the Main Menu, and switch to Target Weighing mode or Split Weighing mode.

<table>
<thead>
<tr>
<th>Item</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Data List Display</td>
<td>Displays the current value of the four (4) customizable data list fields.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ To configure the Data List Display, see &quot;Data List Display&quot; on page 36.</td>
</tr>
<tr>
<td>2</td>
<td>Short total</td>
<td>The current short total of product that has been loaded.</td>
</tr>
<tr>
<td>3</td>
<td>Weighing progress bar</td>
<td>Indicates the position of the boom while weighing a bucketload, by changing color from gold to orange.</td>
</tr>
<tr>
<td>4</td>
<td>Main Menu</td>
<td>Displays the Main Menu.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ For more information, see &quot;Main Menu&quot; on page 31.</td>
</tr>
<tr>
<td>5</td>
<td>Target weighing</td>
<td>Activates Target Weighing mode.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ For more information, see &quot;Target Weighing mode&quot; on page 27.</td>
</tr>
<tr>
<td>6</td>
<td>Split weighing</td>
<td>Activates Split Weighing mode.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ For more information, see &quot;Split Weighing mode&quot; on page 29.</td>
</tr>
<tr>
<td>7</td>
<td>Undo</td>
<td>Undoes the previous bucketload or discarded weight.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ For more information, see &quot;Undo/Redo&quot; on page 21.</td>
</tr>
<tr>
<td>8</td>
<td>Notification bar</td>
<td>GPS status</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ White: A GPS fix has been obtained</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Gray: No GPS fix.</td>
</tr>
<tr>
<td>Item</td>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>InsightHQ connection status</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- White: Connected to InsightHQ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Gray: Not connected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WiFi connection status</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- White: Connected to network via WiFi</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Gray: Not connected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Auto-Add status</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- White: Auto-Add is enabled</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Gray: Auto-Add is disabled</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- No icon: Auto-Add functionality is not available.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unit of measurement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- kg: kilograms</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- lb: pounds</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- t: tons or tonnes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Current time</td>
</tr>
<tr>
<td>9</td>
<td>Bucketloads</td>
<td>The number of bucketloads that have been added to the short total.</td>
</tr>
</tbody>
</table>
2.5 Accurate weighing

For maximum accuracy, ensure that:

- Check Zero is performed regularly.
- Load lifting motion is steady and smooth, with no acceleration or bounce.
- The bucket is fully rolled back during the lift.
- The loader is on level ground.

2.5.1 Obtaining the Best Weighing Results

Lifting speed

For best results, operate the lift lever before accelerating the engine so that the machine does not rock as it lifts, i.e. use normal revs.

Weighing Zone

Start the lift well below the Weighing Zone. This ensures that all acceleration and load bounce has been eliminated well before the weighing sequence begins.

NOTE – We recommend that there are at least two seconds of lift before entering the Weighing Zone.

Bounce

Most loaders have pneumatic tires which can cause the machine to bounce when lifting.

To minimize the effect of bounce, always operate the lift lever before accelerating the engine and start the lift well below the Weighing Zone.

Center of gravity

The hydraulic pressure in the lifting cylinders depends on where the center of gravity of the load is. It is important that the bucket is always in the same position: fully rolled back.
3.0 The day-to-day weighing process

The following is the basic process for day-to-day weighing with the LOADRITE Weighing System:

1. Turn on the Indicator.
2. Perform a warm-up.
3. Zero the empty bucket.
4. Select a product to weigh (optional).
5. Select the customer associated with the product (optional).
6. Weigh and add each bucketload.
7. When you have finished loading the truck, clear the short total.
8. When you have finished using the LOADRITE Weighing System, put the Indicator into Standby mode.
3.1 How do I turn on the Indicator?
The LOADRITE Indicator will turn on automatically when you start the loader.

3.2 How do I perform a warm-up?
For best weighing accuracy, the hydraulic fluid in the lift cylinders should be at normal operating temperature. This is achieved by raising and lowering the empty bucket.

![Warm Up Lift 3]

The above message will display if the Indicator has been turned off for more than one hour. If you see the above message, you need to raise and then lower the empty bucket past the Weighing Zone three times:

1. Raise the bucket past the Weighing Zone.
2. Lower the bucket past the Weighing Zone.
3. Repeat two more times until the message disappears.
   When the warm-up has completed, the Total screen will display.

3.3 How do I zero the empty bucket?

![Check Zero]

The Check Zero functionality is only available if selected at installation.

It is necessary to periodically "zero" the Indicator because small errors can occur due to a build-up of material in the bucket.

If you see the above message, you need to zero the empty bucket. The message will display:
- Every 15 minutes for the first hour, and
- Every 30 minutes thereafter.

**NOTE** – When zeroing the Indicator, the bucket must be empty and kept fully-rolled back.

1. Ensure that the loader is level and the bucket is empty.
2. Raise the empty bucket.
3. Press  

   **The Zero Updated** message will display, before the Total screen is displayed.
3.4 How do I select a product to weigh?

You can only select a product if the Product Data List has been configured and enabled at installation.

**NOTE** – If your Indicator is configured to use Data Prompt functionality, then after selecting an item, you will be prompted to also select from all other Data Lists that have been configured to allow selection.

1. Ensure the **Total** screen is displayed.

2. Press 📈. The **Main Menu** will display.

3. Select **Product**, then press 📊. The **Product screen** will display.

4. Press ⬆️ or ⬇️ to scroll up or down the list of products, then press ✔️.

   The Indicator will beep and the **Main Menu** will display. All bucketloads will be recorded as the selected Product until a different Product is selected.
3.5 How do I select a customer?

You can only select a customer if the Customer Data List has been configured and enabled at installation.

**NOTE** – If your Indicator is configured to use Data Prompt functionality, then after selecting an item, you will be prompted to also select from all other Data Lists that have been configured to allow selection.

1. Ensure the Total screen is displayed.

2. Press .
   The Main Menu will display.

3. Select Customer, then press .
   The Customer screen will display.

4. Press or to scroll up or down the list of customers, then press .
   The Indicator will beep and the Main Menu will display. All bucketloads will be assigned to the selected customer until a different customer is selected.
3.6 How do I weigh and add a bucketload?

When the Total screen is displayed, bucketloads can be weighed.

**NOTE –** When weighing a bucketload, the bucket must be kept fully-rolled back.

1. Ensure that the Green light is lit, which means that the bucket is below the Weighing Zone and the Indicator is ready to weigh.

2. Raise the bucketload smoothly through the Weighing Zone using constant engine revs. The Green light will flash. The Weighing message will display.

   When the bucketload has been weighed, the Indicator will beep, the Blue light will illuminate and the Live Weight screen will display the following:

   - the current bucketload weight,
   - the weight of the short total,
   - the new short total if the bucketload is added.

3. Press \( + \) to add the bucketload to the short total.

**NOTE –** If \( + \) is not pressed within 8 (eight) seconds of the load being lifted past the Weighing Zone, the Indicator will beep and the Weight Discarded message will display. The weight will then be discarded and the Total screen will display.

When the load has been added, the Total screen will display with the new short total and the number of added bucketloads.

4. Empty the bucketload into the truck.
3.6.1 Remote Add button

The LOADRITE Weighing System has an optional Remote Add button which is normally mounted on or near the lift lever. If the Remote Add button is installed in your loader you can use it interchangeably with the button on the Indicator.

3.6.2 Auto-Add

The Auto-Add functionality is only available if enabled at installation.

The LOADRITE Weighing System can be set to automatically add a bucketload when lifted past the Weighing Zone for a specified number of seconds. This means that you don’t need to press after lifting each load. If Auto-Add is enabled, an icon will display on the Total screen.

The following may apply depending on how Auto-Add functionality was configured at installation:

- Bucket loads may not be added if under a specified amount
- Auto-Add may be turned on or off (toggled) via the Preferences option on the Main Menu.

3.6.2.1 Auto-Add Toggle

The Auto-Add toggle functionality may or may not be available depending on the configuration of your Indicator.

You can toggle between using Auto-Add or manually adding lifted weights by completing the following:

1. When the Total screen is displayed, press . The Main Menu screen will display.
2. Select Preferences.
3. Select Auto-Add. Auto-Add will be turned On or Off.
3.6.3 Undo/Redo

The Undo function allows you to correct mistakes by “undoing” the previous bucketload and removing it from the Short Total. You can then “redo” the bucketload if you need to, in effect toggling between “undo” and “redo”.

You can also “undo” a discarded weight. For example, if you lift a bucketload but take more than 8 seconds to press +, the weight will be discarded; but if you then press −, the Live Weight screen will reappear and you will have the option to add the weight again.

3.6.3.1 Undoing a bucketload

To undo the previous bucketload, complete the following:

1. Press −.
   The message Undoing previous action will display, then the Total screen will display a new short total that doesn’t include the previous bucketload.

Redoing a bucketload

To redo the undone bucketload, complete the following:

2. Press + again.
   The message Undoing previous action will display, then the Total screen will display a new short total that includes the previous bucketload.

You can continue to press − to toggle between undoing and redoing the bucketload.

3.6.3.2 Undoking a discarded weight

After the Discarded Weight message has displayed, the Total screen will display.

To undo the discarded weight, complete the following:

1. Press −.
   The discarded weight is cancelled and the Live Weight screen will display the following:
   - the current bucketload weight,
   - the weight of the short total,
   - the new short total if the bucketload is added.

2. Press + to add the bucketload to the short total.
3.7 How do I finish the load?
When you have finished adding bucketloads to the truck, you must clear the short total.
To clear the short total, complete the following:

- Press \[ \text{C} \]
  The short total will display briefly, followed by the \textbf{Total Cleared} message, then the \textit{Total} screen.

3.8 How do I put the Indicator into \textit{Standby} mode?
If you are not going to use the LOADRITE Weighing System for a while, you can put the Indicator into \textit{Standby} mode by completing the following:

- When the \textit{Total} screen is displayed, press \[ \text{Power} \].
  The Indicator will enter \textit{Standby} mode and the time and date will display.

\textbf{How do I exit \textit{Standby} mode?}

- Press any button to exit \textit{Standby} mode.
  The \textit{Total} screen will display.

3.9 How do I turn off the Indicator?
The LOADRITE Indicator will turn off automatically when you turn off the loader.
4.0 Customizable Data Lists

The Customizable Data Lists functionality is only available if selected at installation. For information on configuring data lists, refer to the LOADRITE InsightHQ Config Manual.

Your Indicator has nine customizable data lists that are used to record information against each weight to help track and monitor weighing data.

For example, data lists may be configured to record a customer, truck type, or truck ID, against the weight data.

The data can then be transferred to InsightHQ via a modem/LCC.

4.1 Select a data list value

Data field values, such as Product, Truck, Customer, etc., can be changed before starting a new load. The following example assumes that Data 1 represents available products to weigh, and shows how to select a product to record against the weighing data.

NOTE – If your Indicator is configured to use Data Prompt functionality, then after selecting an item, you will be prompted to also select from all other Data Lists that have been configured to allow selection.

1. Ensure the Total screen is displayed.

2. Press .
   The Main Menu will display.

3. Select Product, then press .
   The Product screen will display.

4. Press or to scroll up or down the list of products, then press .
   The Indicator will beep and the Main Menu will display. All bucketloads will be recorded as the selected Product until a different Product is selected.
4.2 Add a new data list value

New values can only be added to a Data List that has been configured to allow them.

If the data list value that you need is not in the data list, then you can add the value using the keypad.

**NOTE** – Data field values can only be entered using specific *Western Latin* characters, such as in English.

The following example assumes shows how to add a new product to the data list.

1. Ensure the *Total* screen is displayed.

2. Press \[\text{ }\].
   The *Main Menu* will display.

3. Select *Product*, then press \[\text{ }\].
   The *Product* screen will display.

4. Press \[\text{ }\].
   The *Enter new Data Item* screen will display.

5. Use the keypad to enter the name of the value, then press \[\text{ }\].
   The *Product* screen will re-display with the new value at the bottom of the list. The new value will be automatically assigned to the next load.
4.3 Delete a data list value

Data List values can only be deleted if the Data List that has been configured to allow it.

You can delete data list value that is no longer required. The following example shows how to delete a product from the data list.

1. Ensure the Total screen is displayed.
2. Press 
   The Main Menu will display.
3. Select Product, then press 
   The Product screen will display.

```
Product  4:49 AM
| PROD01 |
| PROD02 |
| PROD03 |
```

4. Press 
   The message Are you sure you want to delete? will display.
5. Press 
   The Product screen will re-display with the deleted value removed from the list.

**NOTE** – If you delete a data list value that is currently selected for weighing, it will continue to remain selected until a different value is selected.
4.4 Suspend data lists

The *Data Suspend* functionality is only available if enabled at installation.

*Data Suspend* is a feature that allows you to temporarily suspend associating data list values with loads and sending the values to InsightHQ. This is useful if a loader operator is training. Complete the following to suspend or resume data:

1. Ensure the *Total* screen is displayed.
2. Press 
   
   The *Main Menu* will display.
3. Select *Preferences*, then press 
   
   The *Preferences Menu* will display.
4. Select *Data Suspend*, then press 
   
   The *Data Suspend* function will be enabled or disabled.
5.0 Target Weighing mode

Target Weighing mode is only available if enabled at installation.

Target Weighing mode provides a simple way to load a truck to a predefined target weight using a series of bucketloads. It is typically used when loading a truck to its optimum payload.

Before loading, enter a target weight value. Each time a bucketload is added, the target value is reduced by that amount.

- For using Target Weighing with multiple vehicle units (such as truck and trailer), see "Using Split Weighing mode within Target Weighing mode" on page 30.

5.1 How do I enter Target Weighing mode and input a target?

1. Press \( \) to clear the previous short total.

2. Press \( \) .
   The Target screen will display.

![Target screen](image)

Enter the target value using the keypad or scroll through recently used values

25.000

33.000

25.000

3. Use the keypad to enter the target weight value, or use \( \) and \( \) to select a previous target weight value, if available.

4. Press \( \) .
   The Total screen will display in Target Weighing mode.

![Total screen](image)
5. Raise a bucketload of product smoothly past the Weighing Zone using constant engine revs. The message Weighing will display.

When the bucketload has been weighed, the Indicator will beep the Blue light will illuminate and the Live Weight screen will display the following:

- the target weight,
- the current bucketload,
- the new target weight, if the bucketload is added to the truck.

6. Press \( \text{
+}
\) to add the bucketload to the truck.
7. Empty the bucketload in to the truck.
8. Repeat steps 5-7 until the target weight is as close to 0 (zero) as possible.
9. If you would like to split the load to another trailer, press \( \text{
,}
\), then go to step 3. Otherwise, continue to step 5.
10. When all trailers have been filled, press \( \text{
C}
\) to clear the totals.

### 5.2 How do I return to Total mode?

To return to Total mode from Target Weighing mode, the target must be set to 0 (zero).

1. Press \( \text{
,}
\).
2. Use the keypad to enter a target weight value of 0, then press \( \text{
,}
\). The Total screen will display.
6.0 Split Weighing mode

Split Weighing mode is only available if enabled at installation.

Split Weighing mode splits the total weight into multiple sub-totals, providing an easy way to load train wagons, or a truck and trailer. Split Weighing mode is also used to track load distribution over a single vehicle unit, to avoid overloading an axle.

Split Weighing mode can be used in conjunction with Total or Target Weighing modes.

Example

A truck with a trailer requires loading. The truck can carry 10,000 tonnes and the trailer 15,000 tonnes, making a total of 25,000 tonnes. First load the truck, then use Split Weighing mode to load the trailer.

6.1 Using Split Weighing mode within Total mode

1. In Total mode, load the truck with the required amount or product.

2. When the required amount of product for the truck is reached, press . The Total screen will display in Split Weighing mode. The grand total of the entire vehicle is shown, along with the short total for the trailer.

3. Add the required amount of product to the trailer.
   As each bucketload is lifted, the bucket weight, current trailer weight and total trailer weight will display. Between each lift, the Split Mode screen will display showing the new total and number of buckets lifted.

4. If you would like to split the load to another trailer, press , then go to step 3. Otherwise, continue to step 5.

5. When all trailers have been filled, press to clear the totals.
6.2 Using Split Weighing mode within Target Weighing mode

1. In Total mode, load the truck with the required amount or product.

2. When the required amount of product for the truck is reached, press .
   The Total screen will display in Split Weighing mode. The grand total of the entire vehicle is shown, along with the short total for the trailer.

3. Press .
   The Target screen will display.

4. Use the keypad to enter the target weight value for the trailer, or use ↑ and ↓ to select a previous target weight value, if available.

5. Press .
   The Total screen will display in Target Weighing mode for the trailer.

6. Raise a bucketload of product smoothly past the Weighing Zone using constant engine revs.
   The message Weighing will display.

7. When the bucketload has been weighed, the Indicator will beep, the Blue light will illuminate and the Live Weight screen will display the following:
   - the target weight,
   - the current bucketload,
   - the new target weight, if the bucketload is added to the truck.

8. Press + to add the bucketload to the trailer.

9. Empty the bucketload in to the trailer.

10. Repeat steps 3-7 until the target weight is as close to 0 (zero) as possible.
7.0 Main Menu

The Main Menu options that are available depend on options enabled at installation.

The Main Menu provides options for configuring the LOADRITE Weighing System.

- To display the Main Menu, press when the Total screen is displayed.
- Press or to scroll up or down, then press to select an option.
- To exit the Setup Menu, press .

<table>
<thead>
<tr>
<th>Menu Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data List 1: Product</td>
<td>Allows the current product to be changed.</td>
</tr>
<tr>
<td><strong>NOTE</strong> – Product is the default title for Data List 1, but can be customized during installation.</td>
<td></td>
</tr>
<tr>
<td>Data List 2: Customer</td>
<td>Allows the current customer to be changed.</td>
</tr>
<tr>
<td><strong>NOTE</strong> – Customer is the default title for Data List 2, but can be customized during installation.</td>
<td></td>
</tr>
<tr>
<td>Data List 3: Truck</td>
<td>Allows the current truck to be changed.</td>
</tr>
<tr>
<td><strong>NOTE</strong> – Truck is the default title for Data List 3, but can be customized during installation.</td>
<td></td>
</tr>
<tr>
<td>Data Lists 4 to 9</td>
<td>Allows the values for Data Lists 4 to Data List 9 to be changed.</td>
</tr>
<tr>
<td>Metrics</td>
<td>Displays daily weighing metric information.</td>
</tr>
<tr>
<td>Preferences</td>
<td>Displays the Preferences menu for customizing various features.</td>
</tr>
<tr>
<td>About</td>
<td>Displays Indicator hardware, software and network specifications.</td>
</tr>
<tr>
<td>Setup..</td>
<td>Displays the Installer Menu, or other special menus, after entering an access code.</td>
</tr>
<tr>
<td><strong>NOTE</strong></td>
<td>For further information, contact your LOADRITE distributor.</td>
</tr>
</tbody>
</table>

For further information, contact your LOADRITE distributor.
7.1 Product (Data List 1)

The Product option is only available if enabled at installation.

**NOTE** – **Product** is the default title for **Data List 1**, but can be customized during installation.

The **Product** screen is used to select a product to record against loads.

1. Press or to select a product.

2. Press 

   The Indicator will beep and the **Main Menu** will display. All bucketloads will be recorded as the selected Product until a different Product is selected.

**NOTE** – If your Indicator is configured to use **Data Prompt** functionality, then after selecting an item, you will be prompted to also select from all other Data Lists that have been configured to allow selection.
7.2 Customer (Data List 2)

The Customer option is only available if enabled at installation.

**NOTE** – **Customer** is the default title for **Data List 2**, but can be customized during installation.

The Customer screen is used to select a customer to record against loads.

1. Press ↑ or ↓ to select a customer.
2. Press ⊗

   The Indicator will beep and the Main Menu will display. All bucketloads will be assigned to the selected customer until a different customer is selected.

   **NOTE** – If your Indicator is configured to use Data Prompt functionality, then after selecting an item, you will be prompted to also select from all other Data Lists that have been configured to allow selection.

7.3 Truck (Data List 3)

The Truck option is only available if enabled at installation.

**NOTE** – **Truck** is the default title for **Data List 3**, but can be customized during installation.

The Truck screen is used to select a truck to record against loads.

1. Press ↑ or ↓ to select a truck.
2. Press ⊗

   The Indicator will beep and the Main Menu will display. All bucketloads will be assigned to the selected truck until a different truck is selected.

   **NOTE** – If your Indicator is configured to use Data Prompt functionality, then after selecting an item, you will be prompted to also select from all other Data Lists that have been configured to allow selection.
7.4 Data List 4 to Data List 9

These options are only available if enabled at installation.

Values for Data List 4 to Data List 9 can be selected in the same way as for Data List 1 to Data List 3.

- Refer to the procedure in "Product (Data List 1)" on page 32.

7.5 Metrics

The Metrics menu allows you to view daily operator metrics and totals.

7.5.1 Daily Operator Metrics

The Daily Operator Metrics screen displays your KPI metrics from the current workday:

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>The total weight of all bucketloads added today.</td>
</tr>
<tr>
<td>Avg. weight/hr</td>
<td>The average weight lifted per hour for today.</td>
</tr>
<tr>
<td>Load count</td>
<td>The number of bucketloads successfully added today.</td>
</tr>
<tr>
<td>First load time</td>
<td>The time that the first bucketload was added today.</td>
</tr>
<tr>
<td>Last load time</td>
<td>The time that the last bucketload was added today.</td>
</tr>
</tbody>
</table>

7.5.2 Daily Totals

The Daily Totals screen displays the total amount of each product weighed during the current workday:

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Loaded</td>
<td>The total weight of all bucketloads added today.</td>
</tr>
<tr>
<td>Loaded Since</td>
<td>The date and time that the first bucketload was added.</td>
</tr>
<tr>
<td>Last load time</td>
<td>The date and time that the last bucketload was added.</td>
</tr>
<tr>
<td>Products</td>
<td>Each product loaded today with the total weight and total time taken to load.</td>
</tr>
</tbody>
</table>
7.6 Preferences

The Preferences menu allows you to customize various functionality.

7.6.1 Auto-Add

Controls whether Auto-Add functionality is enabled or disabled. If enabled, you do not have to press after each bucketload has been weighed.

- For information on Auto-Add, refer to "Auto-Add" on page 20.

**Available options**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>On</td>
<td>Auto-Add is enabled, so the Indicator will automatically add each bucketload to the total.</td>
</tr>
<tr>
<td>Off</td>
<td>Auto-Add is disabled, so must be pressed after each bucketload has been weighed.</td>
</tr>
</tbody>
</table>

7.6.2 Data Suspend

The Data Suspend functionality is only available if enabled at installation.

Data Suspend is a feature that allows you to temporarily suspend associating data list values with bucketloads and sending the values to InsightHQ. This is useful if a loader operator is training.

**Available options**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>On</td>
<td>Data Suspend is enabled, so no data is associated with each bucketload.</td>
</tr>
<tr>
<td>Off</td>
<td>Data Suspend is enabled, so no data is associated with each bucketload.</td>
</tr>
</tbody>
</table>
### 7.6.3 Data List Display

*Data List Display* allows you to customize the data list and metric information displayed in the four (4) *Data List Display* fields of the *Total* screen. The *Data List Display* section can display up to four (4) pieces of information, specified from left to right (L-R) as *Data List Display 1* to *Data List Display 4*.

1. Press ↑ or ↓ to select a *Data List Display* field to configure, then press →.

2. Press ↑ or ↓ to select the type of information to display in the selected *Data List Display* field:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Default for Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data List 1: Product</td>
<td>Displays the currently selected product.</td>
<td>Data Field 1</td>
</tr>
<tr>
<td><strong>NOTE</strong> – <em>Product</em> is the default title for <em>Data List 1</em>, but can be customized during installation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data List 2: Customer</td>
<td>Displays the currently selected customer.</td>
<td></td>
</tr>
<tr>
<td><strong>NOTE</strong> – <em>Customer</em> is the default title for <em>Data List 2</em>, but can be customized during installation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data List 3: Truck</td>
<td>Displays the currently selected truck.</td>
<td></td>
</tr>
<tr>
<td><strong>NOTE</strong> – <em>Truck</em> is the default title for <em>Data List 3</em>, but can be customized during installation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Lists 4 to 9</td>
<td>Displays the currently selected value for the Data List.</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Displays the total weight of all bucketloads added today.</td>
<td></td>
</tr>
<tr>
<td>Avg. weight/hr</td>
<td>Displays the average weight lifted per hour for today.</td>
<td>Data Field 2</td>
</tr>
<tr>
<td>Load count</td>
<td>Displays the number of bucketloads successfully added today.</td>
<td>Data Field 3</td>
</tr>
<tr>
<td>Previous Bucket Weight</td>
<td>Displays the weight of the last bucketload to be successfully added.</td>
<td>Data Field 4</td>
</tr>
<tr>
<td>None</td>
<td>The Data Field does not display any information.</td>
<td></td>
</tr>
</tbody>
</table>

3. Press →. The *Data List Display* screen will display and the *Data List Display* field will now display the selected information on the *Total* screen.
7.6.4 Brightness

The Brightness screen is used to adjust the brightness level of both the touchscreen and the keypad.

- Either use the keypad, or press \( \text{↑} \) or \( \text{↓} \), to select your preferred brightness level from 1 (dimmest) to 5 (brightest), then press \( \text{✓} \).

7.6.5 Date and Time

The Date and Time functionality is only available if enabled at installation.

The Date and Time functionality is used to set the date, time and time format used on the Indicator.

7.6.5.1 Setting the Date and Time

Complete the following to set the time and date:

- Use the keypad to type the Hours, Minutes, Day, Month and Year, one digit at a time. The cursor will move to the next digit after each key is pressed.

- Press \( \text{↑} \) or \( \text{↓} \) to move the cursor between the time and date.

- When the time and date are correct, press \( \text{✓} \) to return to the Date and Time screen.
7.6.5.2 Changing the Time Format

Controls whether the clock in the Notification Bar displays the time in 12-hour format or 24-hour format.

**Available options**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>On</td>
<td>The time is displayed in 24-hour format, for example 13:06.</td>
</tr>
<tr>
<td>Off</td>
<td>The time is displayed in 12-hour format, for example 1:06 PM.</td>
</tr>
</tbody>
</table>

7.7 About

Displays system information about the LOADRITE Indicator, including hardware, software and network specifications.

7.8 Setup..

Displays the Security Code screen for entering an access code. The Installer Menu and a range of other menus can be accessed, depending on the access code that is entered.

- For further information, contact your LOADRITE distributor.
8.0 Appendix A: System Specifications

8.1 Weighing accuracy
Typical accuracy is within 1% for most bucket loaders. This may vary with different machine types, installation options, and the operating environment.

8.2 Minimal weighing delay
Weighing delay is minimal, because the weighing function is carried out during a normal lift.

8.3 Power requirements

<table>
<thead>
<tr>
<th><strong>Supply voltage</strong></th>
<th>12V or 24V DC vehicular supply.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supply current</strong></td>
<td>700mA at 12V; 20mA standby; 1A maximum.</td>
</tr>
<tr>
<td><strong>Transient withstand</strong></td>
<td>ISO 7637-2 and ISO 16750-2.</td>
</tr>
<tr>
<td><strong>Transient generation</strong></td>
<td>37A for 800µs peak current.</td>
</tr>
<tr>
<td><strong>Power supply protection</strong></td>
<td>Protected from reverse connection, transient over-voltage and load dump in accordance with ISO 7637-2 and ISO 16750-2</td>
</tr>
</tbody>
</table>

8.4 Physical specifications

<table>
<thead>
<tr>
<th><strong>LCD display</strong></th>
<th>5.7” backlit TFT screen with 5-wire resistive-touch capability; 640x480 pixels (VGA).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Keypad</strong></td>
<td>19 off tact switches with backlit silicone membrane.</td>
</tr>
<tr>
<td><strong>Standby button</strong></td>
<td>Carbon-pill power button with red/green illumination.</td>
</tr>
<tr>
<td><strong>LEDs</strong></td>
<td>Green and blue application-defined LEDs.</td>
</tr>
<tr>
<td><strong>Temperature sensor</strong></td>
<td>Internal temperature sensor -40°F to 185°F (-40°C to 85°C).</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>2.87lb (1.3kg) without bracket.</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>W6.5 x H10.6 x D3.2 inches (W166 x H270 x D81mm).</td>
</tr>
</tbody>
</table>
### 8.5 Environmental Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating temperature</strong></td>
<td>-10°C to 50°C (14°F to 122°F).</td>
</tr>
<tr>
<td><strong>Storage temperature</strong></td>
<td>-50°C to 100°C (-58°F to 212°F).</td>
</tr>
<tr>
<td><strong>Ingress protection</strong></td>
<td>- Indicator: IP54.</td>
</tr>
<tr>
<td></td>
<td>- Sensors: IP69K (water-jet cleaner).</td>
</tr>
<tr>
<td><strong>Chemical resistance</strong></td>
<td>ISO 16750-5</td>
</tr>
</tbody>
</table>

### 8.6 Electrical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sensor power output</strong></td>
<td>Regulated, boosted 12.5V supply, short circuit current limited to 1A continuous and peak.</td>
</tr>
<tr>
<td><strong>Pressure interface</strong></td>
<td>12.5V supply; CAN signal; protected up to ±24V.</td>
</tr>
<tr>
<td><strong>Pressure transducers</strong></td>
<td>Two off share a 12.5V supply; 4mA - 20mA; protected up to ±24V.</td>
</tr>
<tr>
<td><strong>Angle sensors</strong></td>
<td>9~30V supply; CAN signal; protected up to 36V.</td>
</tr>
<tr>
<td><strong>Digital I/O</strong></td>
<td>Three off bi-directional ports pull-up to 12.5V with open collector outputs; protected up to ±24V at up to 200mA each.</td>
</tr>
<tr>
<td><strong>Ignition switch input</strong></td>
<td>Input only, pull down to 0V; protected up to ±24V.</td>
</tr>
<tr>
<td><strong>USB communications</strong></td>
<td>Two USB2.0 High-speed ports share one 500mA supply; protected from 0V to +5V; ports have ingress-protection bungs.</td>
</tr>
<tr>
<td><strong>Ethernet communications</strong></td>
<td>10/100 BASE-T, IEEE 802.3 Ethernet port; RJ45 8P8C modular connector; ingress-protection bung.</td>
</tr>
<tr>
<td><strong>Buzzer</strong></td>
<td>2.8kHz±500Hz 80dBA at 1m; 2.6kHz to 3kHz 70dBA at 1m.</td>
</tr>
<tr>
<td><strong>Clock</strong></td>
<td>CR2032 battery-backed real-time clock; Century, year, month, date, day, hour, minute, second, and tenths/hundredths of a second; stable to 8 seconds per day.</td>
</tr>
</tbody>
</table>
9.0 Appendix B: Span Calibration Adjustment

This function allows small changes to be made to the LOADRITE Weighing System calibration if the bucket is modified, or if no accurate test weight was available when the LOADRITE Weighing System was calibrated at installation time.

The adjustment is carried out by entering the total weight recorded at a weighbridge (scale house) and the corresponding total provided by the LOADRITE Indicator.

To perform the adjustment, a security access code must be obtained from your LOADRITE installer.

**CAUTION –** The LOADRITE Weighing System alters its calibration every time this function is used. It is important that this function is only used once with a given set of data. If the same weights are entered again, the LOADRITE Weighing System will over-correct and its accuracy will be seriously impaired.

1. Press 📞.
2. Select Setup..., then press 📞.
3. Enter the security access code provided by the LOADRITE installer, then press 📞.
   The Span Adjust screen will display.

   ![Span Adjust Screen](image)

   **0.25 t**

   ![Check mark box]

4. Enter the total weight provided by the LOADRITE Indicator, then press 📞.

   ![Span Adjust Screen](image)

   **0.23 t**

   ![Check mark box]
5. Enter the total weight provided by the weighbridge, then press \[+\].
   The LOADRITE Indicator briefly displays the **Calibration Saved** message, then returns to the *Main Menu*.

### 9.1 Checking the adjustment

The *Span Calibration Adjustment* can be checked by obtaining and comparing new LOADRITE and weighbridge values. If necessary, the *Span Calibration Adjustment* can be performed again using the new data.

**NOTE** – All trucks and trailers should have tare weights confirmed for all loads to be checked. This ensures that a true weight can be established. Avoid split-weighing the truck and trailer.
10.0 Appendix C: Legal Information

Disclaimer

Trimble Inc operates a policy of on-going development. Please note that while every effort has been made to ensure that the data given in this document is accurate, due to continued product development, the information, figures, illustrations, tables, specifications, and schematics contained herein are subject to change without notice. Trimble Inc does not warrant that this document is error-free. The screenshots and other presentations shown in this manual may differ from the actual screens and presentations generated by the actual product. All such differences are minor and the actual product will deliver the described functionality as presented in this document in all material respects. If you find any errors in the document, please report them to us in writing.

Trimble Inc assumes no liability in connection with the use of any LOADRITE branded product.

Trimble Inc is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

Compliance

<table>
<thead>
<tr>
<th>Domain</th>
<th>Policy</th>
<th>Description</th>
<th>Top-Level Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia / New Zealand</td>
<td>Radiocommunications(EMC Standards) Notice 2004 No. 2</td>
<td>Emissions (industrial)</td>
<td>EN 61000-6-4:2012</td>
</tr>
<tr>
<td>Canada</td>
<td>ICES-003:2012 Issue 5</td>
<td>Emissions (industrial)</td>
<td>EN 61000-6-4:2012</td>
</tr>
<tr>
<td></td>
<td>Restriction of Hazardous Substances Directive 2002/95/EC</td>
<td>Hazardous Substances</td>
<td></td>
</tr>
<tr>
<td>United States of America</td>
<td>FCC Part 15 Subpart B - Radio Frequency Devices</td>
<td>Unintentional</td>
<td>15.107(b) and 15.109(b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Emission (industrial)</td>
<td></td>
</tr>
</tbody>
</table>

This LOADRITE product is fully EMC (Electro-Magnetic Compatibility) compliant and is CE marked accordingly. A Declaration of Conformity, in accordance with the EMC Directive 89/336/EEC (and as amended) is available from Trimble Inc on request: info@loadritescales.com

Trimble Inc cannot be held responsible for modifications made by the User and the consequences thereof, which may alter the conformity of the product with CE marking.

This LOADRITE product is explicitly excluded from the scope of EU RoHS 2 Directive 2011/65/EU in article 2, section (4), paragraphs: (d), (e), (f) and (g).

This device complies with part 15 of the FCC Rules and Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This Class A digital apparatus complies with Canadian ICES-003 (A) / NMB-003 (A).

WARNING – This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. This Notice is being provided in accordance with California's Proposition 65.

Disposing of LOADRITE electronic equipment

This electronic product is subject to the EU Directive 2002/96/EC for Waste Electrical and Electronic Equipment (WEEE) which requires the separate collection, treatment, recycling and environmentally-sound final disposal of waste of electrical and electronic equipment. As such, this product must not be disposed of at a municipal waste collection point.

Please refer to local regulations for directions on how to dispose of this product in an environmentally-friendly manner.

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Notes