



User Guide

FOR LOADRITE™ L-2180
WHEEL LOADER WEIGHING SYSTEMS





LOADRITE™

L-2180 User Guide

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E info@loadritescales.com

W www.loadritescales.com

A solution of



www.actronictechnologies.com

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LOADRITE™

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1 GENERAL INFORMATION

1.1 INTRODUCTION

The Loadrite 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 system are the console installed in the cab of the loader and connected sensors installed on the lifting arms.

As the load is lifted, the trigger and hydraulic pressure transducers send information to the console. This information is converted into a digital weight reading which appears on the Loadrite console.

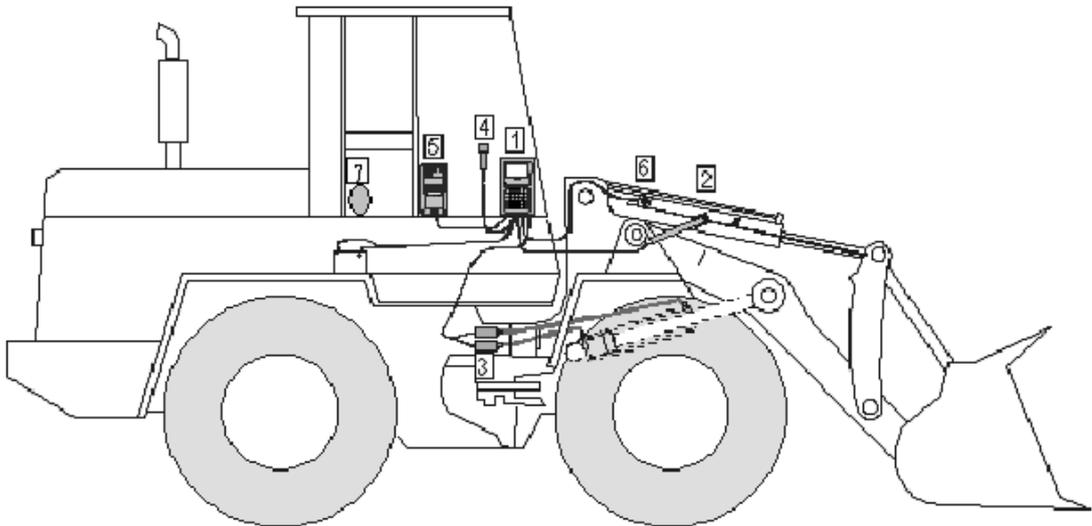
The Loadrite system can add each load lifted to running totals so that trucks can be loaded accurately and daily productivity levels can be tracked.

The Loadrite console has an internal memory that stores settings and production data even when it is switched off. Below is a schematic diagram of a typical console. This is the main user interface with the system.



1.2 LOADRITE EQUIPPED LOADER

1. Loadrite console
2. Trigger
3. Pressure transducers
4. Remote Add key (optional)
5. Printer (optional)
6. Interlock switch (Legal for Trade application)
7. Ground slope sensor (optional)



1.3 CONSOLE FEATURES

ICON	NAME	DESCRIPTION
	Trigger Indicator Light	Illuminates when a load is lifted past the trigger point. When this light is on the load may be added.
	Add	Adds the current load to the total. Also used to turn Auto Add on or off.
	Clear	Clears the short total for the current product.
	Update Zero	Zeroes the empty bucket.
	Data Menu	Accesses the Data menu. This menu is used to access and amend data on products.
	Target	Selects the weighing mode e.g. Target mode.
	Split	Activates Split mode weighing.
	Tip-Off	Activates Tip-off weighing.
	One	Used to enter the number 1.
	Two	Used to enter the number 2 and the letters ABC.
	Three	Used to enter the number 3 and the letters DEF.
	Four	Used to enter the number 4 and the letters GHI.
	Five	Used to enter the number 5 and the letters JKL.
	Six	Used to enter the number 6 and the letters MNO.
	Seven	Used to enter the number 7 and the letters PQRS.
	Eight	Used to enter the number 8 and the letters TUV.
	Nine	Used to enter the number 9 and the letters WXYZ.

	Zero	Used to enter the number 0
	Back/Recall /Subtract	This key is context sensitive. Used to recall the last load or subtract the current load from the total. Also used to move back a screen in the menus.
	Settings Menu	Accesses the Settings menu.
	Up Arrow	Scrolls up a list.
	Down Arrow	Scrolls down a list.
	Enter	Enter key for accepting data or changes.

1.4 ACCURATE WEIGHING

For maximum accuracy, ensure that:

- Check zero is performed regularly.
- The bucket is fully rolled back.
- Load lifting motion is steady and smooth, with no acceleration or bounce. (Weighing during lift is otherwise fine.)
- The loader is on level ground.

Note: If the Ground Slope Compensation module is installed, the loader does not have to be level when lifting.

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.

Trigger point

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

Note: It is recommended that there are at least two seconds of lift before the trigger point.

Bounce

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

To minimise the effect of bounce, always operate the lift lever before accelerating the engine and start the lift well below the trigger point.

Centre of gravity

The hydraulic pressure in the lifting cylinders depends on where the centre of gravity of the load is. It is important that the bucket is always in the same position – fully rolled back.

2 THE WEIGHING PROCESS

This section sets out the basic weighing process.

2.1 SWITCHING ON

The Loadrite console powers up automatically when the ignition of the loading machine is switched on.

2.2 LOGIN

If the Login option has been selected during configuration, the login screen will display.



1. Press the Down Arrow key  or the Up Arrow key  to move through the login names.
2. When the correct name is displayed press the Enter key .
3. Use the keypad to enter the password (see page 16).
4. Press the Enter key .

Note: The login screen will also display when the Loadrite console is taken out of Standby mode (see page 13).

2.3 WARM UP

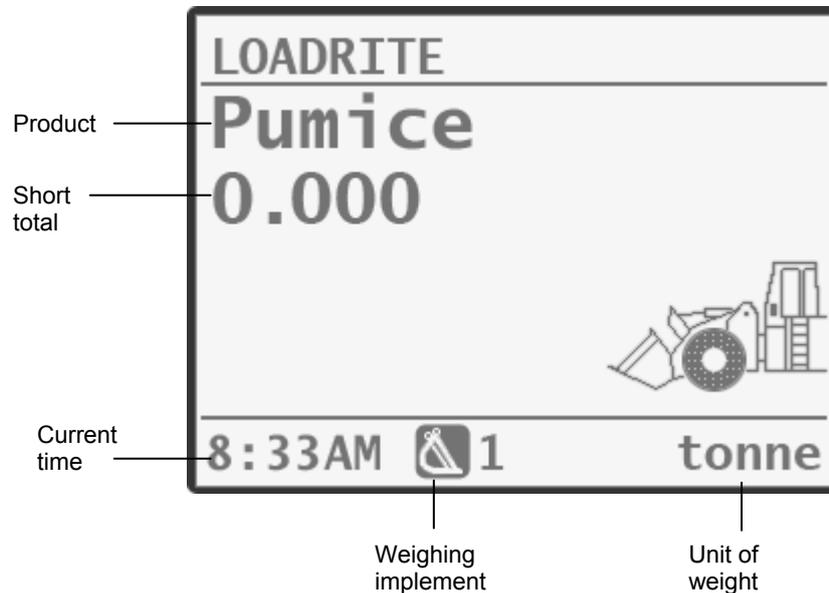
For best weighing accuracy, the hydraulic fluid in the lift cylinders should be at normal operating temperature. This is achieved by raising and lowering the empty bucket.

If the Loadrite console has been switched off for more than 1 hour, it displays the Warm Up prompt when powered up. This prompts the user to raise the empty bucket or forks past the trigger point three times. The Warm Up screen will countdown 3, 2, 1 as the lifts occur.



Once the warm up has been completed the Total screen will display.

2.4 THE TOTAL SCREEN



2.5 ZERO THE EMPTY BUCKET

It is necessary to zero the equipment because small zero errors can occur due to a build-up of material in the bucket. If the Check Zero prompt displays at the top of the screen the empty bucket must be zeroed.

The Friction and Ambient Compensation Technology (FACT) feature is also updated as part of this process.

This process should be repeated whenever Check Zero displays on the console screen.



1. Check that the loader is level and the bucket is empty.
2. Raise the empty bucket.
3. Press the Check Zero key . The lifting speed will be displayed followed by the **Lower Arms** message.

Note: There is an option that allows the FACT update to be skipped. If this option is enabled press the Check Zero key twice to complete the zero update.

It is only possible to skip the FACT update a fixed number of times. After this the update must be completed.

4. At the Lower Arms prompt, lower the empty bucket. The lowering speed will be displayed.
Note: The same speed must be maintained for lifting and lowering. The difference between speeds is too large the console will prompt to try again.
5. The **Zero Complete** message will display, then return to the Total screen.

If the FACT feature is not activated the **Zero Complete** message will be displayed after step 3.

The Check Zero Prompt function automatically reminds the operator to check zero from time to time. The Check Zero Prompt is an optional function that is selected during installation.

When the Loadrite system is first turned on (if it has been off for more than one hour) the console will remind the operator to perform a check zero. This will occur:

- Every 15 minutes for the first hour.
- Every 30 minutes thereafter (15-180 minutes).

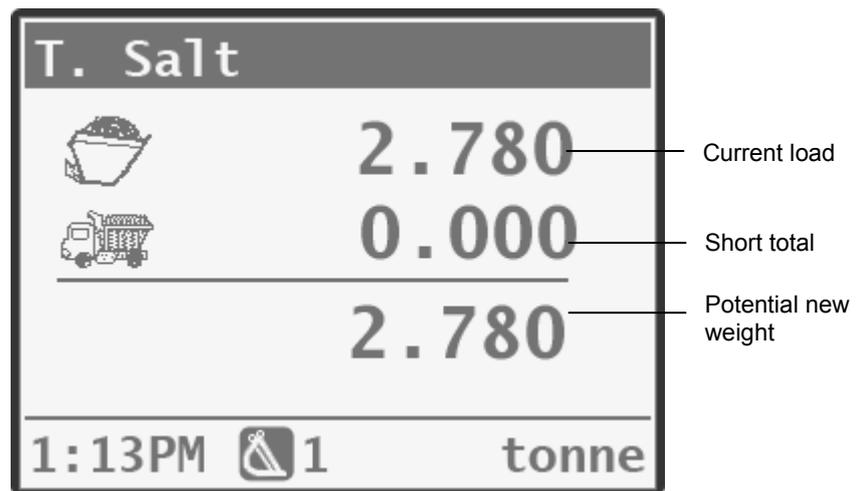
Note: After the first hour, the Check Zero Prompt interval can be set to anywhere between 15 and 180 minutes. The default setting is 30 minutes.

Note: For the Legal for Trade application, zero must be checked when prompted.

2.6 WEIGH A LOAD

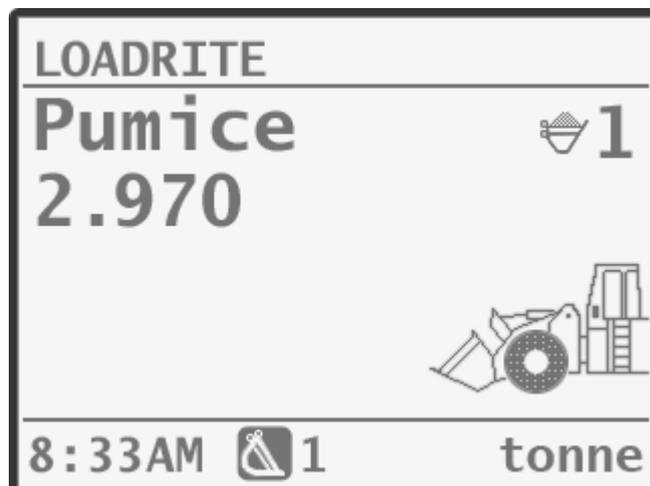
When the Total screen appears, loads can be weighed. Before weighing it is important to check that the bucket is empty and that the loader is level (if applicable).

1. Raise the load smoothly past the trigger point using normal engine revs. The **Weighing** message will display.
2. The console will beep, the Trigger light will illuminate and the weight of the current load, the short total and the potential new weight will display.



2.7 ADD A LOAD

1. Press the Add key .
2. A message will display the number of buckets added to the current load, eg **Bucket Add #1**.
3. The console will return to the Total screen. The short total and the number of buckets will have been updated.



If the Add key is not pressed within 8 seconds the console will beep and the **Time Out** message will display. The weight is discarded and the Total screen displayed.

2.8 AUTO ADD

Auto Add is an optional feature that is selected during installation. When it is enabled the Loadrite system can automatically operate the ADD function every time a load is lifted past the trigger point.

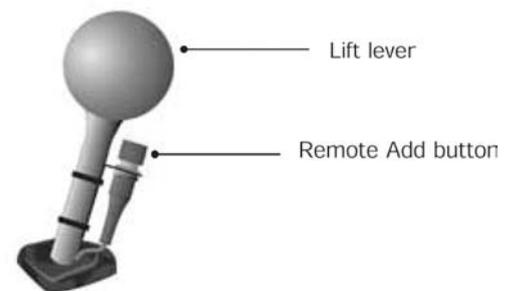
2.8.1 Turn Auto Add On or Off

1. Press the Add key. If Auto Add is off the **Auto Add On?** message will display.
2. Press the Enter key. The message will change to **Auto Add On** and the Total screen will be displayed.

The same action is used to turn Auto Add off again.

2.9 REMOTE ADD KEY

The Loadrite system has an option to use a Remote Add key. If this feature is fitted, it is normally mounted near the lift lever. The Remote Add key can be used interchangeably with the Add key on the keypad.



2.10 SUBTRACT A LOAD

This function can be useful when only part of a final load of loose material is required. Lift a full load and tip the amount required into the truck. Then re-weigh and subtract the amount remaining.

1. Raise the load smoothly past the trigger point.
2. The console will beep, the Trig light will illuminate and the weight of the current load, the short total and the potential new weight will display.
3. Press the Subtract key . The **Bucket Subtract** message will display.
4. The amount will be subtracted from the short total. The Total screen will display.

2.11 RECALL THE LOAD

The Recall function is equivalent to lifting the same load again and can be used to correct mistakes. The last load can be recalled if it has been:

- added
- subtracted
- timed out (ignored)

To recall a previously lifted weight:

- Press the Recall key

The last weight lifted will be displayed:



- If the last action was an “add” the Subtract key can be pressed to subtract the load.
- If the last action was a “subtract” the Add key can be pressed to add the load.

2.12 CLEAR THE SHORT TOTAL

The Loadrite system keeps a total of the load weights. For each product, two independent totals are stored: the short total and the long total.

2.12.1 Short and long totals defined

Short Total	<p>Generally used to display the total weight lifted onto an object (e.g. truck or carriage)</p> <p>As successive loads are added, the console displays the updated Short Total (sum of the loads so far) on the Total screen</p>
Long Total	<p>This keeps track of the total weights lifted over a longer period, for example a shift or a day</p>

The short total keeps accumulating until it is cleared. Clear the short total after a load has been completed, eg after each truck or carriage load.

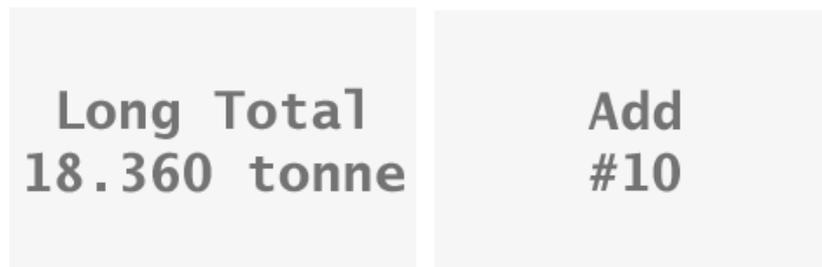
- Press the Clear key .
- The Total will display briefly then the **Total Cleared** message will display. The system will then return to the Total screen.

Note: If the Loadrite system has a printer connected, the totals are printed before being cleared.

2.13 VIEW AND CLEAR THE LONG TOTAL

It is possible to view the long total for the current product at any time.

1. Ensure the Total screen is showing then press the Data Menu key .
2. Scroll down until Long Total is selected.
3. Press the Enter key . The long total will display. Then the number of buckets added will display.



4. After a few seconds, the console automatically returns to the Total screen.

2.13.1 Clear the long total for the current products

1. Ensure the Total screen is showing then press the Data Menu key .
1. Scroll down until Long Total is selected.
2. Press the Enter key . The long total for the current product is displayed along with the number of buckets added.
3. Press the Clear  key. The **Long Total Clear?** message will display.
4. Press the Enter key again to clear the long total. The **Long Total Cleared** message will display. If the Loadrite system has a printer connected, the total will be printed.

5. Press the Back key  to cancel the clearing of the long total. The **Clear Aborted** message will display.

Note: If no key is pressed the clear command will automatically be cancelled.

2.13.2 Clear the long total for all products

1. Ensure the Total screen is showing then press the Data Menu key .
2. Scroll down until ClearAll is selected.
3. Press the Enter key . The **AllTotals Clear?** message will display.
4. Press the Enter key again to clear the long total. The **AllTotals Cleared** message will display. If the Loadrite system has a printer connected, the total will be printed.
5. Press the Back key  to cancel the clearing of the long total. The **Clear Aborted** message will display.

Note: If no key is pressed the clear command will automatically be cancelled.

2.14 STANDBY

The Loadrite console will automatically go into Standby mode if it is not used for two hours. It is also possible to put the console into Standby mode if it is not going to be used for some time.

1. Press the Setting Menu key .
2. Scroll down using the Arrow keys until **Standby** is selected.
3. Press . The console will now be in Standby mode.

Press any key to reactivate the Loadrite console. The login screen will display.

Note: for more information on using the Setting menu see page 47.

3 PRODUCT MANAGEMENT

The Loadrite system can be used to track multiple products (materials). Each product is associated with a product number, product name, Short Total, Long Total and add-bucket counter.

Producer management is controlled via the Data menu.

3.1 DATA MENU

The Data menu provides access to functions primarily related to products. It also provides access to print options.

The following are the default options listed in the Data menu.

Product	Selects products
Long Total	Displays the long total
Clear All	Clears all totals
Print Menu	Accesses the Print menu
Internal Storage	Accesses the Internal Storage menu

Depending on how the system has been set up, there may be additional data fields listed in the Data menu. The following are typical examples.

Customer	Customer names
Docket	Docket numbers
Truck	Truck names
Target	Target weights for trucks

3.2 ACCESS MENU ITEMS

- Press the Data Menu key 
- Press the Down Arrow key  to move down the menu list.
Use the Up Arrow key  to move up the list. (This is referred to as scrolling.)
- Press the Enter key  to select an item.

- When an option has been selected successfully, the Loadrite system returns to the Total screen.
- To step back through the menu or exit the menu, press the Back key .

3.3 SELECT A DIFFERENT PRODUCT

1. Ensure the Total screen is displayed.
2. Press the Data menu key .
3. With Product selected press .
4. Scroll down until the correct product is selected or use the numerical keypad to enter the product's number (if known).
5. Press Enter. The console will display the name of the product selected for loading.



3.4 DATA

If the data feature is enabled, it is possible to enter up to five customisable data fields (maximum of thirteen characters) that provide additional information. The number of data fields available depends on how the Loadrite console has been set up at installation.

Typical data fields might be:

- Data 1 = Customer (enter a customer name or number)
- Data 2 = Docket (can automatically or manually assign each truck load with a docket number)
- Data 3 = Truck (enter a truck plate number)

This information can be stored in an attached data module and/or printed with the weight data.

This data can then be transferred via modem, stored in the Loadrite data module and/or printed along with the weight data.

3.4.1 Select an existing customer

Customer data can be selected before starting a new load. The following example shows how to select customer data. (It is assumed that the data field Customer has already been added to the system.)

1. Click on the Data Menu key .
2. Scroll down to select **Customer**
3. Press the Enter key .
4. Scroll down to select the required customer name/number.



5. Press . The customer name will display under the short total in the Total screen.



3.4.2 Entering data using the alphanumeric keypad

The Loadrite system has an option to enter alphanumeric data. This option is enabled at installation time. The Loadrite system uses a telephone style keypad to allow letters to be entered.

When a number key is pressed, a digit is displayed. If the same number key is pressed again, the first letter on that key is displayed. If the key is pressed again the second letter is

displayed, and so on. The key will scroll through upper and lower case letters.

For example, if the  key is pressed repeatedly, the characters displayed in sequence are '2', 'A', 'B', 'C', 'a', 'b', 'c', '2', 'A' and so on. In this way, names can be entered for customers, trucks and other data.

Note: Sometimes a name will have two sequential letters on the same key. For example, the letters 'D' and 'E' in the word

'DEAKON'. After the 'D' has been entered by pressing the  key twice, wait a second or two. The cursor will automatically shift and be ready for the next character.

Enter 'E' by pressing the  key again.

3.4.3 Enter a new customer

1. Press .
2. Scroll down to select Customer.
3. Press .
4. Press the Clear key. The Customer entry screen will display.
5. Use the keypad to enter the customer name.
6. Press the . The new customer will automatically be selected for the next load.

Note: The data list can be printed out via the Print Function (see page 39).

3.4.4 Enter docket number

If the docket data field has been added it is possible to enter a docket number for every load. Depending on the configuration of the system this can either be done manually or will be automatic.

If the docket field has been set up to **auto increment** the new docket number will automatically be assigned every time a new load is started. A docket number will not be able to be entered manually.

Enter docket manually

If the auto increment option is not enabled, the docket number can be entered manually for every load.

1. Press the .
2. Scroll down to select Docket.
3. Press .
4. Press the Clear key. The docket entry screen will display.
5. Use the keypad to enter the docket number
6. Press the . The new docket number will automatically be assigned to the next load.

3.4.5 Data Suspend

Data Suspend is a feature that allows the operator to temporarily suspend data values and set them to 0 (zero). Data Suspend is an optional function that is selected during installation.

To suspend data:

1. Ensure the Total screen is showing and press .
2. Select the field to be suspended (e.g. Customer) and press Enter.
3. Press the Clear key.
4. Press the Zero key  and press Enter.

The **Customer 0** message will briefly display and then the Total screen will be displayed. The Customer field will no longer display.

During the suspension period, the Loadrite system will:

- Exclude all suspended data fields in printing, if printer is enabled.
- Override all suspended data fields to 0 in data logging, if MMS data logger feature is enabled.

To resume data (turn off suspend mode):

1. Ensure the Total screen is showing and press .
2. Select the suspended field (e.g. Customer) and press Enter.
3. Select the correct customer name and click on Enter.

As soon as the Data Suspend function is de-activated, the Loadrite system will resume normal operation.

3.5 ADVANCED DATA OPTIONS

3.5.1 Auto Target Look-Up

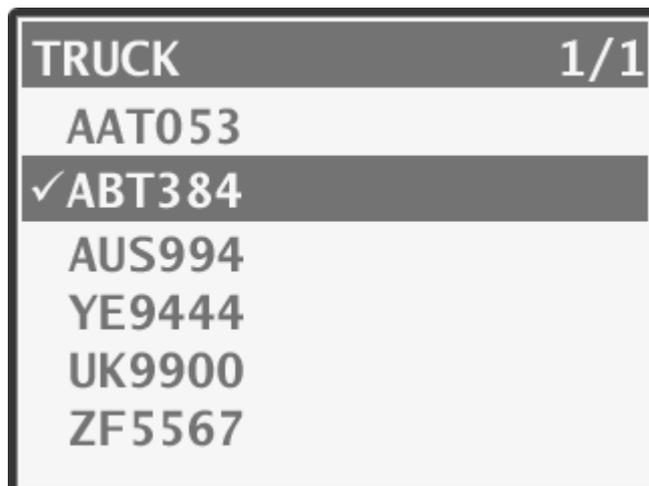
The Loadrite system can be configured so that target weights are stored for each truck. The target weights are configured during the setup of the Loadrite system.

Below is an example of a truck and target list. Data 3 has been configured to store truck plate numbers and Data 4 to store the corresponding target values.

Data 3: Truck	Data 4: Target
AGT477	5000
AUQ887	4000
BQ1001	6000
BQ1002	5000

View and select target weights

1. Press .
2. Scroll down and select Truck. Press .



3. Select the truck required, e.g. ABT384. Press .
4. Target weights will display with the auto-target weight selected by default.

5. Press to confirm the target weight or press to clear the target and enter a new target weight. This new weight will be saved as the new target weight.
6. The Target screen will display.

Index to recall truck target value

The Loadrite system can also be configured so that an index number can be used to look up the target for a particular truck.

Following is an example of an indexed truck and target list. Data 4 has been configured as a target list with the index function enabled. The index numbers are used to identify each truck.

Index	Data 4: Target
1 (AAT053)	25.000
2 (ABT384)	16.000
3 (AUS994)	15.500
4 (YE9444)	22.500
5 (UK9900)	22.000

1. Press .
2. Scroll down and select Target. Press .

TARGET	1/1
25.000	
✓16.000	
15.500	
22.500	

3. Enter the number of the truck and press . Loadrite will display the target for the truck indexed with that number.
4. The Total screen will display.

3.5.2 Auto tare value look up

This function is similar to Auto target value look-up, except that it handles tare values. It is possible to recall the tare value from memory by either entering a number or scrolling through a list of truck names. The procedures are the same as the Auto target value look-up.

3.5.3 Prompt

Prompt is an optional function that is selected during installation. If enabled, the Loadrite console automatically prompts for data field entries when a new product is selected or the current short total is cleared.

3.5.4 Download

Download is a feature that enables the operator to export the current data list to a PC via the Loadrite Toolbox software, where it can be saved and/or modified.

4 OPERATION MODES

The Loadrite console can be operated in different modes as detailed below. The modes available depend on configuration during installation.

Mode	Description
Total	This is the normal mode of operation. As loads are added, the weights are added to the totals. The short total is displayed
Target	In this mode, a target weight is entered into the Loadrite system before loading. As loads are added, the remaining value to reach the target is displayed
Batch	Batch mode allows the weighing and loading of different products according to a predefined recipe that specifies the required proportions. The grand batch target is entered before loading. The Loadrite system will work out individual product weights needed
Blend	Blend mode allows a fixed number of loads of different products, according to a predefined recipe
Mix	This mode is similar to Batch mode except that the grand target is not required. Load the first product to a certain amount and Loadrite console will work out how much of the other products are required based on relative quantities in the predefined recipe
Grand Total	Creates one grand total using short totals for all products. This can be used to ensure that the total across all products does not exceed a specified weight

4.1 CHANGING MODES

Total mode is the default. To change to a different mode, press the Target key



. The **Target Mode?** message will display.

**Target
Mode?**

Use the Up and Down Arrow keys to scroll through the available modes.

Press the Enter key to accept the required mode.

4.2 TARGET MODE

Target mode is typically used when loading a truck to its optimum payload. This feature provides an easy way to load up to a target weight for a product in a series of lifts. In Target mode, the console displays the to load (or target) value, which is the remaining amount to reach the target.

Before loading, the operator enters a target weight. Each time a weight is added, the to load value is reduced by that weight.

4.2.1 To enter Target mode (and input a new target):

1. Clear the previous totals (press .
2. Press the Target key . When the **Target Mode** message is displayed, press . The console displays the last target value used.



3. Use the numeric keys to enter the new target. Press Enter to accept.
4. The **Target Updated** message will display briefly. The console then displays the Target screen.



5. As the weight is lifted the target weight is displayed along with the current lifted weight and the potential weight if the lift is loaded.



6. As the truck is loaded the target amount will decrease. The aim is to get as close to zero as possible. A positive to load value is under the target, a negative to load value is over the target.

4.2.2 Reset the target

Once a load is complete the target must be reset. (This is the equivalent of clearing the total in Total mode). To reset the target press the Clear key. The **Target Reset** message will display briefly and then the Target screen will display.

4.2.3 Return to Total mode

To return to Total mode from Target mode the Target must be set to 0.

1. Clear the target (press ).

2. Press the Target key. When the **Target Mode** message is displayed, press the Enter key.
3. Press the Zero key .
4. Press Enter to accept. The Total screen will display.

4.3 BATCH MODE

Batch mode allows products to be weighed and loaded according to a predefined 'recipe'. Enter the target weight of the batch and the Loadrite system will work out exactly how much of each product is required.

The recipe can contain up to ten products. It specifies the relative amount of each product in a batch.

When it is in Batch mode, the console displays the target value for each product as it is weighed.

Batch mode is an optional feature of the Loadrite system and is selected during installation.

Example

A recipe of three products has been entered as follows:

Product	Proportion
Sand	4
Gravel	2
Pumice	1

Specify the total load required, e.g. 7000kg. The Loadrite system automatically calculates the amount of each product required:

Product	Amount
Sand	4000kg
Gravel	2000kg
Pumice	1000kg

As products are loaded, the Loadrite system maintains the target amount for each product in a similar way to Target mode. It is

possible to change from one product to another at any time in order to mix the products.

4.3.1 To enter the Batch screen:

1. Press and scroll until **Batch Mode?** is displayed. Press to select.
2. The **Batch Recipe** message will display and the Recipe screen will display listing the current recipe.

Recipe	1/1
Rubble	3.0
T. Salt	2.0
Iron Ore	1.0

Note: if a recipe has not been added before, the **Recipe Empty** message will display. A new recipe will need to be added (see the following page).

At this point there are two options: to accept the current recipe, or to enter a new recipe.

Hint: Press twice to return to Total mode from this screen.

4.3.2 Accept the recipe

1. Press the Enter key . The **Recipe ENT: OK** message will display.
2. Press again. The Target screen will display.

Target?

0.000

3. Enter the target weight and press . The Target screen will display.

4.3.3 Clear the recipe

Before a new recipe can be entered, the old one must be cleared.

1. Enter the Batch screen and display the batch recipe.
2. Press . The **Recipe ENT: OK** message will display.
3. Press the Clear key . The **Recipe Clear?** message will display.
4. Press  to clear the recipe. The **Empty** message will display.

4.3.4 Enter a new recipe

The list of products will display, ready to be selected for the new recipe.

1. Select the required product and press .
2. Enter the required proportion and press .
3. The Loadrite system automatically moves on to the next product number in sequence. If this is not the next product required, select the correct one and press . Add the required proportion.
4. Repeat the process until all required products and proportions have been added.
5. When the recipe is complete, press the Back key . The **Recipe Updated** message will display. The recipe will be displayed.
6. Press . The Target screen will display.
7. Enter the target weight and press .

The Loadrite beeps and returns to the Target screen with the target value for the first product displayed.

4.3.5 Operating in Batch mode

In Batch mode, a batch total needs to be entered before loading. The Loadrite system then maintains a to Load target for each product in the recipe. Each time a weight is added, the Load value is reduced by that weight.

The console displays the Batch screen with the target value for the first product. As each load is lifted the target and the weight of the current lift are displayed along with the potential new weight. (See Target mode page 23.)

It is possible to load products in any order and switch between products at any time, as the Loadrite system maintains the

individual totals for each product. To change product, press , select Product and select the product required.

4.3.6 Clear the Batch totals

Once all products have been loaded press the Clear key . The Loadrite system clears the totals for all the products in the recipe and automatically returns to the Total screen.

4.3.7 Return to Total mode

To return to Total mode from Batch, Mix or Blend modes, press



When in Batch, Mix and Blend modes, clearing the grand total or selecting a product that is not in the recipe will automatically return the system to Total mode.

4.4 MIX MODE

Mix mode is similar to Batch mode except that a target value for the mix is not required.

The recipe can contain up to ten products. It specifies the relative amount of each product in a batch. Load the first product to a certain amount and when the next product is selected, the Loadrite system will work out exactly how much is needed based on the recipe.

When the system is in Mix mode and the primary product* is being loaded, the console displays the short total. When the next product in the recipe is selected, the console displays the Load value for that particular product.

Mix mode has to be selected during installation.

Example

A recipe of three products has been entered as follows:

Product	Proportion
Sand*	4
Gravel	2
Pumice	1

* First item in the recipe is the primary product

4000 kg of the primary product (sand) is loaded. The Loadrite system automatically calculates the amount of other product required, which in this case would be:

Sand	4000
Gravel	2000
Pumice	1000

The Loadrite system maintains the to Load amount for each product in a similar way to Target mode. It is possible to change from one product to another at any time during weighing in order to mix the products.

4.4.1 To enter the Mix screen:

1. Press The Target key and scroll until **Mix Mode?** is displayed. Press the Enter key to select.
2. The **Mix Recipe** message will display and the Recipe screen will display listing the current recipe.

Recipe	1/1
Sand	10.0
Pumice	6.0
Gravel	6.0

Note: if a recipe has not been added before, the **Recipe Empty** message will display. A new recipe must be added.

At this point there are two options: to accept the current recipe or to enter a new recipe.

Accepting and changing the recipe functions are performed in the same way as for Batch mode (see page 26). No target weight is entered.

4.4.2 Operating in Mix mode

In Mix mode, the Loadrite system maintains a to load target for each product (except the primary product) in the recipe. Each time a weight is added, the Load value is reduced by that weight.

1. Once Mix mode is entered and the recipe accepted the Total screen will display for the first product.
2. Load the required amount of the first product.
3. Change to the second product. Loadrite calculates the amount of this product required and displays the Target screen.
4. Enter the required amount as in Target mode.
5. Repeat with all other products in the mix. Change product at any time (the Loadrite maintains the individual totals for each product).

4.4.3 Clear the Mix totals

Once all products have been loaded press the Clear key . The Loadrite system clears the totals for all the products in the recipe and automatically returns to the Total screen in Total mode.

4.5 BLEND MODE

Blend mode is similar to Batch mode except that the recipe contains the total number of loads of each product rather than a target load. The recipe can contain up to ten products.

When weighing, the Loadrite console tracks the number of lifts of each product and automatically changes to the next product when the required number of lifts has been achieved.

Blend mode is selected during installation.

Example

A recipe of three products has been entered as follows:

Product	Loads
Sand	6
Gravel	10
Pumice	10

During weighing, the Loadrite console guides the operator through the process that will result in a total of 26 loads.

4.5.1 To enter the Blend screen:

1. Press The Target key and scroll until **Blend Mode?** is displayed. Press  to select.
2. The **Blend Recipe** message will display and the Recipe screen will display listing the current recipe.

Recipe	1/1
Sand	2
Pumice	3
Gravel	3

Note: if a recipe has not been added before, the **Recipe Empty** message will display. A new recipe must be added.

The current recipe can be accepted or a new one entered.

Accepting and changing the recipe are performed in the same way as for Batch mode (see page 26). Remember that the Blend recipe contains the actual number of loads of each product rather than a proportion of the whole load. No target weight is entered.

4.5.2 Operating in Blend mode

In Blend mode, the Loadrite console will use bucket counts to guide the operator through the blend process.

1. With the Blend screen displayed press  twice to accept the recipe or press  to enter a new recipe.
2. The console displays the first product and how many buckets need to be added along with the short total.



3. Lift and add the load as normal. The screen will count down the number of loads to be lifted.
4. After the last bucket of the first product has been loaded, the console automatically displays the second product ready for loading.
5. Once all products have been loaded, press **C** to clear totals.

4.6 SPLIT MODE

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

Split mode is selected during installation. Split mode can be used in conjunction with Total or Target modes.

Example

A truck with a trailer requires loading. The truck can carry 10,000 tonnes and the trailer 15,000 tonnes, the total therefore being 25,000 tonnes.



4.6.1 Split mode within Total mode

1. The truck is loaded as per normal. From within Total mode, add 10,000.
2. Once the truck has been loaded with the required amount, press the Split key . The subtotal will briefly display, then

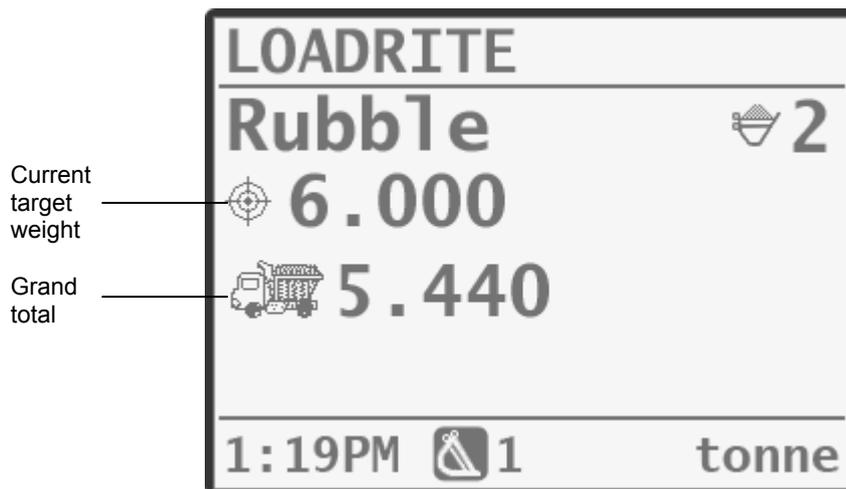
the Split screen will display. The grand total of the entire vehicle is shown along with the short total for the trailer.



3. Add the required weight to the trailer. The Grand total will update along with the total number of buckets.
4. It is possible to split the load between more trailers. Press  each time to start filling a new trailer.
5. Once all trailers have been filled press  to clear totals.

4.6.2 Split mode within Target mode

1. Enter Target mode and enter the target weight for the truck (e.g. 10,000).
2. Load the truck as normal up to the target weight.
3. Once the target weight is reached, press the Split key .
4. Press the Target key  and select Target mode. Enter the target weight for the trailer. The Split screen will display showing the current target weight for the trailer and the grand total for the whole vehicle.



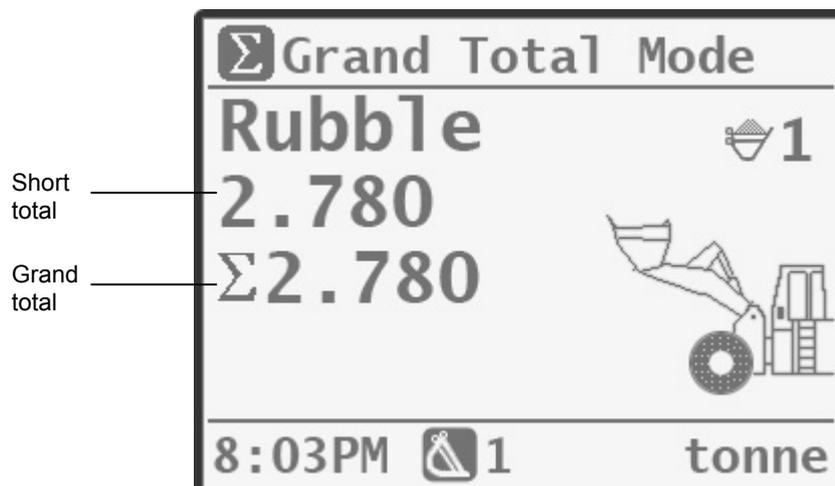
5. Add the required weight to the trailer.
6. Clear the totals.

4.7 GRAND TOTAL MODE

Grand total mode is similar to Split mode in that it facilitates loading into a truck with multiple carriages. Unlike Split mode however, different products can be loaded into each carriage.

In Grand Total mode a grand total is entered for the entire load. A short total is kept for all products which are added together to ensure they do not exceed the grand total.

1. To enter Grand Total mode, press the Target key and scroll until **Grand Total Mode?** is displayed. Press  to select. The Grand Total Mode screen will display.
2. Load the first product as in Total mode. The short total and the grand total will be updated.



- When a new product is selected, the short total is reset to zero, but the grand total will be maintained for all products.



- Once all products have been loaded, press **C** to clear totals.

5 ADVANCED WEIGHING FUNCTIONS

5.1 TIP-OFF

Tip-off weighing is the adjustment of the final load. It is possible to tip a measured amount of the product out of the last bucket to ensure an exact target weight is reached, where the final load would otherwise exceed the truck's capacity. There are two different methods, depending on the way the Loadrite system has been set up:

- Truck tip-off (default)
- Stock pile tip-off

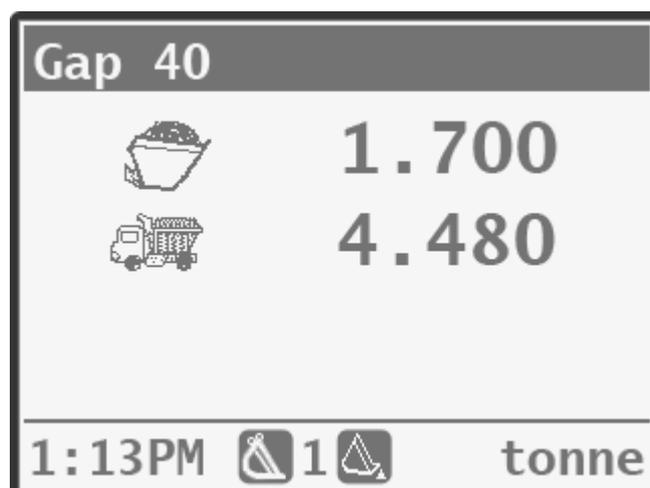
Tip-off is selected and configured during installation. It is only available in Total and Target mode.

5.2 TRUCK TIP-OFF

Using this method, the operator tips a measured amount of product from the bucket into the truck and dumps the rest.

1. Lift the load in the normal way. The console will display the lifted weight.
2. Lift the bucket to a suitable height over the truck. Press the

Tip-off key . The **TipOff Wait** message will display briefly. Then the screen will display two figures, the amount in the bucket and the short total.



3. Roll the bucket partially forward, tipping product into the truck. The console constantly updates the weight as it is tipped into

the truck. Note that the bucket needs to be rolled back for an accurate weight.

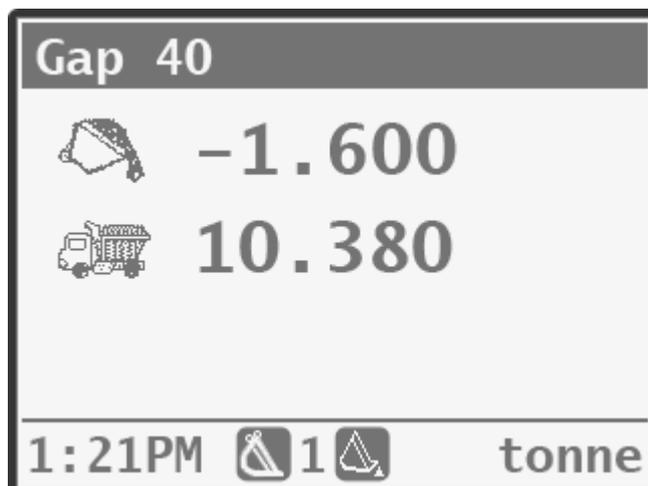
4. When the required truck load weight is reached, press the Add key .
5. Move away from the truck and dump any product remaining in the bucket.

Notes: When tipping product from the bucket, do not raise or lower the lifting arms as this would adversely affect the live weight reading.

5.3 STOCK PILE TIP-OFF

Using this method the operator dumps product from the bucket until it contains the right amount for loading onto the truck.

1. Lift the load in the normal way. The console will display the lifted weight.
2. Lift the bucket. Press the Tip-off key . The **TipOff Wait** message will display briefly. Then the screen will display the amount in the bucket and the short total.
3. Roll the bucket partially forward, dumping the product. The console displays the weight in the bucket and the potential weight of the truck. Note that the bucket needs to be rolled back for an accurate weight.



4. Keep dumping the product until the desired weight has been reached. Press Add.
5. Tip the product in the bucket into the truck.

5.4 TARE

The Loadrite system has two ways of using tare; this is selected at the time of installation. Tare can work either with the lifted weight, or the total weight. This is explained in more detail below.

5.4.1 Tare – lifted weight

An example of the use of Tare on Lifted Weight is when pallets are being lifted. When weighing, the Loadrite system automatically deducts the pallet weight from the lifted weight and displays the net weight of the load.

5.4.2 Tare total

In this mode, the entered tare value is applied to the displayed total value. The Loadrite system automatically adds the total for the currently selected product to the tare value and the console displays this value.

This mode is useful when loading vehicles that display their tare weight and maximum weight. The operator enters the tare value into the console, then loads the vehicle until the displayed total is equal to the vehicle's maximum loaded weight.

5.4.3 Enter a tare value using the keypad

It is possible to enter a tare value using the keypad; when Tare is set to Tare Total, the tare value is normally entered with the keypad.

To enter a tare value using the keypad:

1. Press the Settings Menu key .
2. Select Tare Entry and press .
3. The Tare screen will display



4. Enter the tare value and press . The Total screen will display.

6 PRINT FUNCTION

Data on the Loadrite console can be printed immediately, or stored for delayed printing. There is normally enough storage for up to one week, depending on usage.

6.1 AUTOMATIC PRINTING

When a Loadrite printer is connected, weight data can be printed as loads are weighed. The print options are selected during installation.

The data can be automatically printed when particular functions are performed:

On Power Up	Loadrite sign on	Optional
Add / Subtract performed	Weight & Sequence number	Optional
	Data fields	Optional
	Date/Time	Optional
Clear Short Total	Short total & Product name	Optional
	Data fields	Optional
	ID number (of loader)	Optional
	User title (company name)	Optional
	Standby messages	Optional
	Date/Time	Optional
Clear Long Total	Long total & Product name	Always printed
	Data fields	Optional
	ID number (of loader)	Always printed
	Date/Time	Always printed
Zero performed	Weight zeroed	Always printed

6.2 PRINT MENU

Printing options can also be selected from the Print menu.

- Press the Data menu key .
- Scroll down and select Print Menu.
- Press .
- Select the print option required and press .

The print options in this menu are:

	Docket
	Totals
	Loadout
*	Data Module
	Special
*	Summary
*	Data List
	Copy
	Product Names
*	Volume Conversion Factors
*	Standby
*	Download
*	Usage
*	Reset
*	Print Calibration

* Depending on installation, these options may not be available.

6.3 PRINT DOCKET

The Docket function prints the data stored (e.g., add, subtract) between the last two clear events. If the data is not stored, it will not be printed. For example, if the Loadrite is not configured to log add events, weights added will not be printed. This function requires internal storage to be enabled. All configuration of this function is set during installation.

Note: This function will not work if clear is not used as intended. For example: the operator is loading sand and halfway through, a second truck comes in. The operator switches product to rocks and starts loading the second truck (without clearing the sand total). When this function is run, the added weights of sand plus the added weights and total of rocks will be printed.

6.4 PRINT TOTALS

This function prints the total amount of each product loaded that day (since midnight).

SAND	10320
PUMICE	10180

6.5 PRINT LOADOUT

This function prints out all print data stored in the Loadrite console's memory since midnight (whether it has been turned off at any stage during that time or not).

Depending on configuration, every add, clear, check zero, etc could be included in the printout.

Note: This function requires internal storage to be enabled and configuration set during installation.

Zero	0
Add <1>	5100
Add <2>	5220
Sand	10320
CUSTOMER	SMITH
ID	966
03 MAR 07	07:45AM
-----	-----
PROD03	PUMICE
Zero	0
Add <1>	5080
Add <2>	5100
Pumice	10180
CUSTOMER	ADAMS
ID	966
03 MAR 07	07:45AM
-----	-----

6.6 PRINT DATA MODULE

This function prints out all print data stored in the Loadrite data module since midnight (whether it has been turned off at any stage during that time or not). Depending on configuration, every add, clear, check zero etc could be included in the printout.

Note: This function requires the Loadrite data module to be selected for logging. All configuration of this function are set during installation.

```

Zero                0
Add <1>             5100
Add <2>             5220

Sand                10320

CUSTOMER           SMITH
ID                 966
03 MAR 07         07:45AM
.....
PROD03            PUMICE
Zero              0
Add <1>           5080
Add <2>           5100

Pumice            10180

CUSTOMER           ADAMS
ID                 966
03 MAR 07         07:45AM
.....

```

6.7 PRINT SPECIAL

The Special print function allows various reports to be printed from the stored data. A series of options are presented and the report is built from the options selected.

Select Special from the menu and press . The Format options will be displayed.

Format Options

Summary	Prints a summary of the selected data
History	Prints all the selected data

Use the Arrow keys to select the option required and press . The Period options will be displayed.

Period Options

Today	Prints the report based on data recorded since midnight
All	Prints the report based on all the data stored (this may be meaningless unless start time is known)

Use the Arrow keys to select the option required and press . If Today was selected, the Group options will display. If All was selected the Port options will display (see next page).

Group Options

Totals	The printout is grouped and summarised by product total
Customer	The printout is grouped and summarised by Data field 1 (Customer)
Docket	The printout is grouped and summarised by Data field 2 (Docket)
Truck	The printout is grouped and summarised by Data field 3 (Truck)
Target	The printout is grouped and summarised by Data field 4 (Target)

Use the Arrow keys to select the required option and press . If Totals was selected Port option will display (see below). Otherwise if Customer, Docket, Truck or Target were selected the Match options will display.

Match Options

Match All	All values are used on the printout
Match One	Only one of the grouped values is reported on. For example, if the printout is grouped by Customer, a report can be generated on one Customer

If Match All was selected the Load options will display.

If Match One was selected, the specific customer (for example) must now be selected. Use the Arrow keys to scroll through the

customer names and press  to select the required customer.

Once the Match Option has been selected the Load Options will display.

Load Option

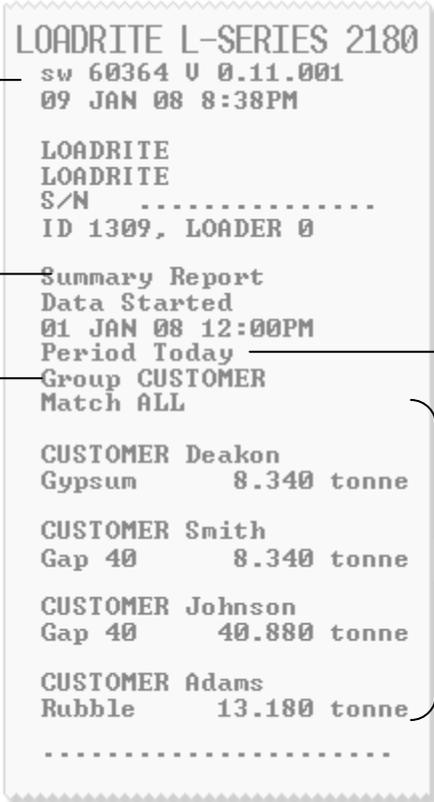
The Load option determines whether the printout will display the number of loads per product. The options are On or Off.

Once the Load Screen Option has been selected the Port Options will display.

Port Options

Printer	Prints to the Loadrite printer
EDP	Captures data to a laptop

Once the port has been selected, the report will print.



The screenshot shows a report printout with the following content:

```

LOADRITE L-SERIES 2180
SW 60364 U 0.11.001
09 JAN 08 8:38PM

LOADRITE
LOADRITE
S/N .....
ID 1309, LOADER 0

Summary Report
Data Started
01 JAN 08 12:00PM
Period Today
Group CUSTOMER
Match ALL

CUSTOMER Deakon
Gypsum      8.340 tonne

CUSTOMER Smith
Gap 40      8.340 tonne

CUSTOMER Johnson
Gap 40      40.880 tonne

CUSTOMER Adams
Rubble      13.180 tonne
.....

```

Annotations on the left side of the printout:

- Report Header: points to the top section (SW 60364 U 0.11.001, 09 JAN 08 8:38PM).
- Format: Summary: points to the Summary Report section.
- Group: Customer: points to the Group CUSTOMER section.

Annotations on the right side of the printout:

- Period: Today: points to the Period Today section.
- Match: All: points to the Match ALL section and the list of customer data.

6.8 PRINT SUMMARY

This function prints out a summary report that is grouped and summarised by Data1. If Data1 is a customer field, this function generates a customer total report using the data stored in the memory since midnight.

CUSTOMER SAND	SMITH 10320
CUSTOMER PUMICE	ADAMS 10180

6.9 PRINT DATA LIST

This function prints out a list of all the Data1 names (e.g. Customers) configured in the Loadrite system. This function is normally only used to check the names when the list has been updated.

6.10 PRINT COPY

This function sets the number of docket copies to be printed at each clear event.

6.11 PRINT PRODUCT NAME

This function prints out a list of all the product names configured in the Loadrite system. This function is normally only used to check the names when the list has been updated.

6.12 PRINT VOLUME CONVERSION FACTORS

This function prints out a list of all the product conversion factors configured in the Loadrite system. This is normally only used when the list has been updated.

Note: This print option is available if the volume conversion function is enabled during installation.

6.13 PRINT STANDBY

The Loadrite system normally displays the service contact details of your local Loadrite distributor when the console is put into Standby mode (see page 13). These details can also be printed if required by using the Print Standby function.

6.14 INTERNAL STORAGE MENU

The Loadrite console stores data in an internal storage buffer to use for generating the reports described in the previous sections. The Internal Storage menu provides functions to download, view and clear the internal storage on the Loadrite console.

6.14.1 Download

This function downloads the internal storage buffer so that it can be imported into Loadrite MMS (Material Management Software) using the Loadrite Toolbox software.

6.14.2 Usage

This function displays the current usage of the internal storage buffer. The percentage of storage space still available will be displayed.

6.14.3 Reset

The Reset function allows all data in the internal storage buffer to be deleted. It is recommended this reset function be run regularly after other reports have been generated. This prevents duplicate information being included in later reports.

7 SETTING MENU

The Setting menu provides options for configuring the Loadrite system. Press the Setting Menu key .

Setup...		Installation functions
Auto Add	*	Auto add setting
Tare Entry	*	Allows a tare value to be entered
Unit Toggle	*	Toggles between two weighing units
Trig Screen	*	Switches trigger position graphic on or off
Language	*	Selects console language
Edit Password	*	Edits the password for the current operator
Scale#	*	Changes scale
Module	*	Data module sub-menu
Data Edit	*	Edits data settings. Useful for overriding auto-increment number
Data List	*	Edits data lists
Clock	*	Clock setting
Display		Changes backlight, contrast and console interface images
Self Test		Runs a system self test
Uplink		Allows Loadrite to communicate with the PC-based Loadrite Toolbox application
Standby	*	Puts the console into Standby mode

* Depending upon the configuration during installation, some options may not be available.

Note: Pressing the Back key  will move back one step. Pressing the Menu key again will return to the menu.

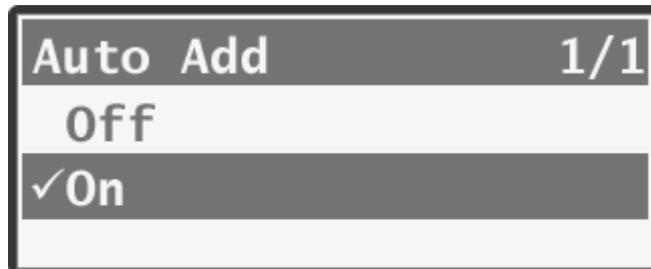
7.1 SETUP

The Setup menu provides options for configuring the Loadrite console. A security code is required to access these functions. These options are outside the scope of this manual.

7.2 AUTO ADD

Allows the Auto Add feature to be turned on or off. (This is an alternative to the method described on page 10.)

1. Select Auto Add and press .



2. Select either On or Off and press  to select.

7.3 TARE ENTRY

Enter a tare value as described on page 38.

7.4 UNIT TOGGLE

This allows the operator to switch between two weighing units (e.g. tonne, ton, lbs). The weighing units are defined during installation.

1. To switch weights, select Unit Toggle and press



The weight is displayed in the currently selected unit and in the newly selected unit.

11.560tonne
12.742ton

2. Press  to confirm the change. (Or  to cancel). The new weighing unit will be used until the first unit is toggled back.

7.5 TRIG SCREEN

The loader position graphic can be switched on or off. Select the required option and press .

7.6 LANGUAGE

Provides a list of languages for the Loadrite console to present data in. Select the required language and press .

7.7 EDIT PASSWORD

Allows the password of the current operator to be changed. Enter the new password and press .

7.8 SCALE#

This function enables use of different load bearing implements (e.g. bucket or forks) on a vehicle. It is available only if the multiple scale feature has been enabled during installation. Once enabled, the operator needs to select the correct scale for the attached implement.

7.9 MODULE

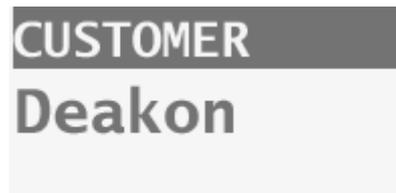
Provides access to the Data Module menu. This is only available when the data module is connected. The following menu items are available:

Property	Lists the properties of the data module
Backup	Saves the product list and data lists to the module
Restore	Loads data stored on the data module into the Loadrite system. This can be used to share data between loaders
Clear	Clears all data on the data module
Format	Formats the data module, removing all data

7.10 DATA EDIT

Data Edit allows the currently selected value of a data field to be edited. The main use is to change the initial value of an auto increment data type (eg docket number) or a fixed data type.

1. Select Data Edit and press . The current customer name will be displayed.

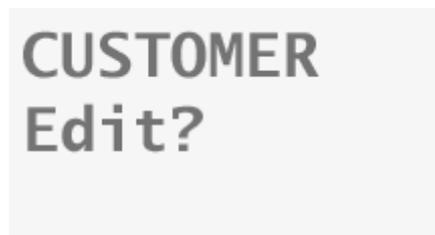


2. This name can be edited by typing the required name. Or use the Arrow keys to scroll to the required name.
3. Press  to move to the next data field (eg docket).
4. Use the Arrow keys to select the correct docket number and edit as required.
5. Press  to move through all data fields (e.g. Truck, Target).

7.11 DATA LIST

The Data List function allows the data fields to be edited. E.g. a customer name can be changed; new customers can be added.

1. Select Data List and press . The screen will display as shown below:



2. To edit the Customer data list press . The first customer name will display.
3. Otherwise press the Down arrow to scroll through the other data list options (e.g. Docket, Truck, Target).

To edit an existing customer name:

1. Use the Arrow keys to scroll to the required customer name.

2. Press . A flashing cursor will display.
3. Use the numeric keypad to enter the updated customer name.
4. Press .
5. Press  to return to the Data List menu.

To add a new customer name

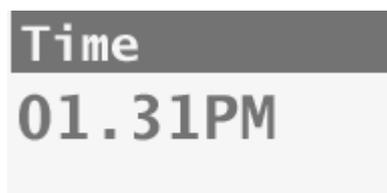
1. Press the Add key . A flashing cursor will display.
2. Use the alphanumeric keypad to enter the new customer name.
3. Press .
4. Press  to return to the Data List menu.

7.12 CLOCK

Allows the time, date and alarm to be set.

7.12.1 Setting the time

1. From the clock menu ensure Time is selected and press . The time will display. The cursor will flash over the first digit.



2. Use the number keys to enter the time.
3. Use the Arrow keys to select either AM or PM.
4. Press  to confirm the new time.

7.12.2 Setting the date

1. From the Clock menu select Date and press .
2. Use the number keys to enter the month and day. (Enter 1-9 for January to September, 00 for October, 01 for November and 02 for December). Alternatively, use the Arrow keys to scroll through the months.

3. Press  to confirm the new date.
4. To set the year select Year and press . Type the last two digits of the year (e.g. 09 for 2009). Press . Alternatively, use the Arrow keys to scroll through the years.

7.12.3 Alarm clock on/off

This option turns the alarm clock on or off. When the alarm time is reached the Loadrite console sounds an alert tone, the **Alarm Clock** message is displayed, and the Trigger Indicator Light flashes. The alarm will stop after a few seconds, or push any key to stop it.

The alarm clock will alert when the Loadrite system is in either Ready or Standby mode. The alarm clock will not alert if the Loadrite console is powered off.

7.12.4 Alarm time set

This option changes the alarm time.

With Alarm set to 'On' change the alarm time as per setting the time instructions (see page 51).

7.13 DISPLAY

Allows the display to be configured. The following menu items are available:

Backlight	Allows the backlight of the console screen to be changed
Contrast	Allows the contrast of the console screen to be changed
User Interfac Enhanc	Allows the Classic Loadrite screen to be selected to replace the newer enhanced screen
Arm Graphic Loader	Allows the selection of a bar graph in place of the loader graphic

7.13.1 Changing the backlight

1. From the Display menu select Backlight and press .

2. Use the Up Arrow to increase the backlight and Down Arrow to decrease the backlight.
3. Press .

7.14 SELF TEST

The Self Test function tests various devices and internal memory. All tests are run automatically when this option is selected.

7.15 UPLINK

Uplink allows the console to communicate with a PC using Loadrite Toolbox (optional PC application). In this mode, Loadrite Toolbox can be used to program product names and data lists (e.g. a customer list).

7.16 STANDBY

The Loadrite console will automatically go into Standby mode if it is not used for two hours. It is also possible to put the console into Standby mode if it is not going to be used for some time.

1. Select the **Standby** option.
2. Press . The console will now be in Standby mode.

Press any key to reactivate the Loadrite console. The login screen will display.

8 ERROR MESSAGES

Error messages will be displayed for a variety of reasons. Error messages are explained below.

8.1 BOUNCING LOAD

If the lift arms are bouncing significantly while weighing, an error occurs. This can happen if, for example, the loader is driven over uneven ground while lifting the load.

Depending on the installation of the particular Loadrite system, there are two possibilities:

1. No weight is displayed and hence there is no weight to add. Repeat the lift.
2. Weighing Error is turned off and a weight is displayed. Add the weight to the total (bearing in mind that the weight measurement is not reliable) or ignore this weight and repeat the lift smoothly.

8.2 BUCKET EMPTY?

If the bucket is zeroed and there is some residue in the bucket, the Loadrite system will detect how much is in the bucket. If the contents are less than 5% of the full bucket capacity, the Loadrite system will zero the bucket. If the weight of material in the bucket is within 5-10% of full bucket capacity, the console will display the **Bucket Empty?** Message to confirm the zero.

To zero the bucket press the Enter key .

8.3 CHECK POWER

The power supply has reached an unstable level. Check that the power source is stable and between +12V and +32 V.

8.4 CHECK TRANSDUCER

There is an error in the pressure transducer signal input. This indicates a fault in either the pressure transducer or the cable that connects the transducer.

8.5 CHECK ROTARY

There is a fault in the rotary trigger or the cable that connects the trigger. Check the trigger is still securely mounted and the trigger finger has not been damaged.

8.6 CHECK MAG/OPT

There is a fault in the magnetic or optical trigger or the cable that connects the trigger. If using an optical trigger check that the lens is clear and dust-free.

8.7 CHECK TILT

There is a fault in the tilt sensor used for ground slope compensation or the cable that connects the sensor. Check the tilt sensor is still securely mounted and the cable has not been damaged.

8.8 CHECK ZERO

The operator is automatically reminded to check zero. See zero the empty bucket (page 7).

8.9 LIFT UNDER RANGE

The lift pressure was too low. This indicates a fault in either the pressure transducer or the cable that connects the transducer.

8.10 MODULE DATA LOST

The Loadrite console has an ability to store data internally in the event that the data module is absent or full. The Loadrite console will generate this message when the internal data storage is full and some data has been lost as a result. Install a new data module immediately to avoid further loss of data.

8.11 MODULE ERROR

There was an error when writing to the data module. Check that the module is securely connected to the Loadrite console.

8.12 MODULE FULL

The data module is full. The full module should be removed for data transfer to the MMS software.

8.13 NO LOCK

The interlock was not closed when lifting the load. The interlock must be closed (or the bucket must be fully rolled back) while lifting the load. No weight is displayed and hence there is no weight to add.

8.14 OVER TARGET

Adding the lifted weight will exceed the target value. The lifted weight can still be added by pressing the Add key.

Note: the Auto add function will not automatically add over-target weight.

8.15 OVERLOAD

The lifted weight exceeds the full scale (capacity) setting. If the Overload Error is set during installation, overloaded weight cannot be added.

8.16 PITCH TOO HIGH

The angle of the loader is at an unsafe pitch (front/back tilt) while weighing. If this message is displayed the weight cannot be added. The safe pitch angle is set during installation.

Note: This message should only be displayed if the ground slope compensation module is installed

8.17 POOR LIFT

If a weighing error is close to but not greater than the tolerance limit, the Loadrite console displays this warning message. The weight can be added as usual.

8.18 PRINTER DISABLED

Print function has been disabled at installation.

8.19 PRINTER ERROR

There is a fault in the printer. Check that the printer is on-line and not out of paper.

8.20 RETURN UNDER RANGE

The return pressure was too low. This indicates a fault in either the pressure transducer or the cable that connects the transducer.

8.21 SPEED CHANGED

For accurate measurement, the speed of raising the lift arms must be smooth, without acceleration or deceleration. The Loadrite system can detect changing speed as the arms go past the trigger point. If this occurs, the Loadrite console displays the message **Speed Changed**. Depending on the installation of the Loadrite system, there are two possibilities:

1. No weight is displayed, and hence there is no weight to add. Repeat the lift and avoid accelerating and decelerating at or near the trigger sequence.
2. A weight is displayed. Add weight to the total (bearing in mind that the weight measurement is not reliable) or ignore this weight and repeat the lift smoothly.

8.22 TOO HEAVY, ZERO ABORTED

If the weight of material in the bucket is greater than 10% of full bucket capacity when the check zero key is pressed, the screen displays the **Too heavy, zero aborted** message and does not alter any settings. This prevents any accidental zeroing of valid weights.

Note: If the bucket is empty and the **Too Heavy** message still occurs, there may be a fault in the system. The Loadrite system should be checked and, if necessary, re-calibrated.

8.23 WARM UP LIFT

This message appears if the Loadrite console has been switched off for more than 1 hour, prompting a warm-up lift (see page 6).

9 SYSTEM SPECIFICATIONS

9.1 WEIGHING ACCURACY

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

9.2 MINIMAL WEIGHING DELAY

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

9.3 POWER REQUIREMENTS

Supply Voltage	12 to 32 VDC
Supply current	Loadrite indicator: 160mA typical, 350mA max. Loadrite printer: 50mA standby, 4A peak

Automatic transient suppression. Exceeds relevant SAE specifications for DC automotive power supply transients.

9.4 PHYSICAL SPECIFICATIONS

LCD display	Back lit
Tactile keypad	Backlit. Numeric and special functions
Weight	1.5 kg (3.2lb)
Dimensions	W145 x L240 x D110mm (5.7 x 9.4 x 4.3 in)

9.5 ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-10°C to 50°C (14°F to 122°F)
Storage temperature	-30°C to 80°C (-22°F to 176°F)
Protection	Water and dust protected to IP54
Vibration	Qualifies to MIL-STD-810D
Pressure transducer	Protected to IP67
Position sensor	Protected to IP67

9.6 SIGNAL INPUTS AND OUTPUTS

Pressure transducer input	4 - 20mA (0-100%)
Trigger	Trigger 1: Magnetic or Optical. Pull-up resistor requiring switch to ground
	Trigger 2: Rotary. Pulse width modulated: 0 - 5V
Serial communications	RS232C protocol to printer and data logger

9.7 CLOCK

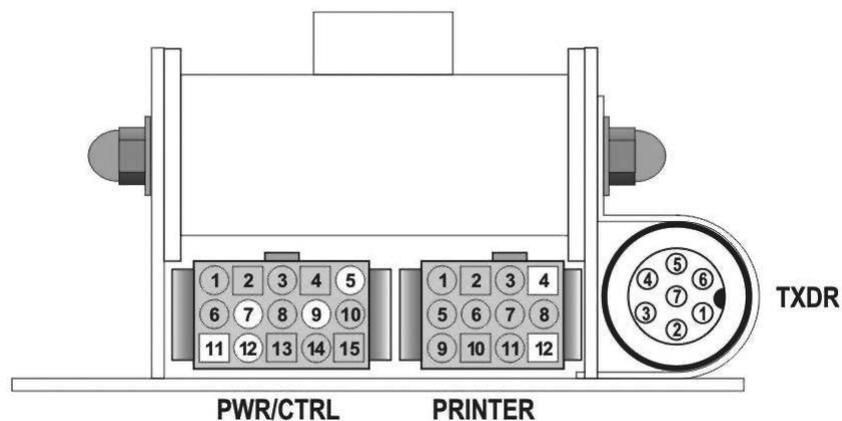
Built-in clock	Hours, minutes, day, month, year
----------------	----------------------------------

9.8 AVAILABLE ACCESSORIES

Loadrite printer	Dot matrix, 24 character columns
Data module	Provides electronic data collection
Remote add button	For operator convenience
Interlock system	To disable weighing under defined machine conditions

A number of additional operating features can be enabled at installation time.

9.9 OUTPUT / INPUT CONNECTIONS



9.10 TRANSDUCER (TXDR)

- | | |
|-----------------------------|--------------------------|
| 1. +12V | 2. Return pressure input |
| 3. Transducer current input | 4. +10 volt excitation |
| 5. Lift pressure input | 6. Shield |
| 7. Ground | |

9.11 POWER/CONTROL (PWR/CTRL)

- | | |
|-----------------------------|--------------------------|
| 1. Negative supply (ground) | 2. Positive supply |
| 3. Remote button 2 (clear) | 4. Remote button 1 (add) |
| 5. Tilt sensor 1 | 6. Tilt sensor 3 |
| 7. Tilt sensor 2 | 8. +V aux |
| 9. Digital out | 10. Boom position |
| 11. Stick position | 12. CAN hi |
| 13. CAN lo | 14. +V raw |
| 15. Ground output | |

9.12 PRINTER/LOGGER

- | | |
|-------------------------------|-------------------------------|
| 1. Negative supply to printer | 2. Positive supply to printer |
| 3. +12V output | 4. RX2 |
| 5. TX2 | 6. Printer RS232 output |
| 7. Printer busy input | 8. EDP RS232 input |
| 9. EDP RS232 output | 10. Ground output |
| 11. Boot | 12. N.C. |

10 APPENDIX A: LOADRITE TERMINOLOGY

The following table lists a range of terms and definitions that are used to describe Loadrite products, features and processes.

Auto add	Automatically adds the lifted weight to the total every time a load is lifted
Auto tare	A feature that allows tare weights to be pre-programmed. The operator can then select a truck from memory and the Loadrite will automatically display the tare weight for that truck
Auto target	A feature that allows target weights to be pre-programmed. The operator is able to select a truck from memory and the Loadrite will display the target weight for that truck
Batch mode	Batch mode allows the weighing and loading of different products according to a predefined recipe that specifies the required proportions
Blend mode	Blend mode allows a fixed number of loads of different products, according to a predefined recipe
Bucket	Is used to describe the weighing implement that holds the load while it is being transferred (e.g. could also be forks)
Console	The visible Loadrite hardware that operators interface with in the loader cab
Data field	Customisable fields providing additional data, e.g. customer, docket, truck
Data module	A memory device which can be attached to the Loadrite console to store data
Display	An LCD screen with adjustable backlighting for night and low light operations. Used to display weight information and operator messages

Grand Total mode	Grand total mode can be used when loading a different product into each trailer of a truck. A grand total of the whole truck is maintained
Ground slope sensor	A slope detection sensor that measures the tilt angle of the loader. This is used in Legal for Trade applications, where the weight is not qualified if the loader is on a steep angle
Interlock	Bucket back and bucket forward position detection sensors. Used in Legal for Trade applications, where the bucket must be fully rolled back for weighing and rolled forward for emptying
Keypad	The set of keys which operate the Loadrite console
Legal for Trade	Certification by a local weights and measures authority to legally sell product from the loader
Load	One discrete weigh lot or 'scoop'
Loader	The machine responsible for lifting the load e.g. wheel loader, forklift
Loadrite system	Refers to the entire Loadrite system including the console, transducers, sensors, etc
Long total	The long total is typically used to accumulate the weights loaded over a long period, for example a shift or a day
MMS	Material Management Software. Site management software used to track productivity for the whole site.
Modem	Used to transfer payload data, live, from the Loadrite console, to the office
Operation mode	Any mode that relates to the running total of the accumulated weights e.g. Total or Target mode
Pressure transducer	A pressure sensor that is connected to the loader's hydraulic system to measure the hydraulic pressure required to lift the load

Primary product	The first item in a recipe is referred to as the primary product
Printer	The printer is mounted in the loader cab. It provides a paper record of the weighing information collected by the Loadrite system. It is an optional accessory
Product/material	Material that comprises a load
Recipe	Different quantities of materials which make up the product when working in some operation modes (e.g. Mix mode, Blend mode)
Remote add button	An additional add button which is mounted in close proximity to the loader controls. This feature enables the operator to use this frequently used button without having to take their hands away from the controls used to operate the loader
Short Total	The Loadrite keeps a total of bucket weights added. As successive loads are lifted, the Loadrite displays an updated total; the sum of what has been loaded so far
Split mode	Split mode can be used when loading a truck with trailers. It gives the operator the ability to run individual totals for the truck and each trailer
Standby	The Loadrite can be put into standby mode in which the console is deactivated. This feature is used when the operator is moving the loader around and does not need to weigh
Tare mode	Tare mode provides different options to work with the tare weights. The Loadrite system can calculate the net weight of a pallet, for example, or notify when the maximum vehicle weight is reached
Target mode	A predetermined target weight is entered and the Loadrite deducts each subsequent lift from the total until that target weight is reached

Tip-off	Final bucket load adjustment, which allows a measured amount of the product from the last bucket to be tipped out to ensure an exact target weight is reached
Transducer	(see pressure transducer)
Trigger	A position sensor responding to the position of the lift arms, which informs the system when to take a weight reading. Loadrite systems have three types of trigger, optical, rotary and magnetic
Trigger point	A point in the position of the arms where a weight reading is taken
Weighbridge	A platform scale for weighing vehicles. Also referred to as scale house and truck scale
Weigh mode	Any mode that gives the operator different options to weigh the material in the bucket e.g. tip-off or tare mode
Zero	Zeroing is required to zero the bucket from time to time. This is to avoid inaccurate readings due to build up of material in the bucket, which can occur when operators are dealing with wet or sticky materials

11 APPENDIX B: SPAN CALIBRATION ADJUSTMENT

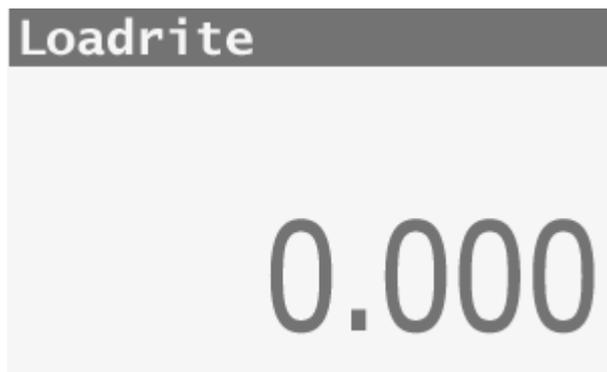
This function allows small changes to be made to the Loadrite system calibration if the bucket or forks of the loader are modified or if no accurate test weight was available when the Loadrite system is calibrated at installation time.

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

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

WARNING The Loadrite 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 system will over correct and its accuracy will be seriously impaired.

1. Click on .
2. Select Setup and press .
3. Enter the security access code provided and press .
4. The **Adjust Span** message will display briefly and then the Adjust Span screen will display.



5. Enter the total weight provided by the Loadrite console and press .
6. Key in the weighbridge total and press .

7. The Loadrite console briefly displays the **Calibration Updated** message and then returns to the menu.
8. Press  to exit the Setting menu.

11.1 CHECKING THE ADJUSTMENT

The Calibration Adjustment can be checked by obtaining and comparing new Loadrite and weighbridge values. If necessary, the 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.

www.loadritescales.com

