

LM/LX-100 Sitelink3D

Onboard Weighing

Configuration Manual



LM/LX-100 Sitelink3D Onboard Weighing Configuration Manual

Part Number 1071470-01 Revision A

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Manual Conventions

This manual uses the following conventions:

Convention	Description	Example
Bold	Menu, or dropdown list selection	File > Exit (Select the File menu and select Exit)
	Name of a dialog box or screen	From the Connection screen
	Button or key commands	Select Finish.
Mono	User supplied text or variable	Type guest, and click Enter.
Italic	Reference to another manual or help document	Refer to the Topcon Reference Manual.

TIP

Notification that one or more steps may be taken to reduce effort, time, and/or expense.



NOTE

Further information to note about system configuration, maintenance, or setup.



NOTICE

Supplementary information that if disregarded can have an adverse effect on system operation, system performance, data integrity, or measurements.



CAUTION

Notification that an action has the potential to result in minor personal injury, system damage, loss of data, or loss of warranty.



WARNING

Notification that an action has the potential to result in personal injury or property damage.



DANGER

Notification that an action has the potential to result in severe personal injury or death.

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Introduction

System Overview

Topcon Sitelink3D is a cloud-based database application used to track the material moved on a work site. It stores data from the machines working on the site to the site managers which can be pushed to the LM/LX-100 load weighing display and archived in the cloud. Managers can view real-time data generated by the application. Live statistics widgets can be configured to monitor live shift productivity to make sure that daily targets are met. The same data are used to generate weight reports.

The LM-100 and LX-100 systems include the configurable option to save a list of machine operators. An operator can select their name from the list upon login. When selected, the operator name is linked to all weighing activity and sent to Sitelink3D until another operator logs in. The purpose of this feature is to annotate data. Refer to the LM-100 and LX-100 operators manuals for detailed information.

Load Weighing Display Description

The LM-100 or LX-100 load weighing display is the device used to run the Loadex and Loadmaster applications. The load weighing display can be joined with the Sitelink3D website and synchronizes at startup when connected.

The Loadex and Loadmaster applications can be configured to automatically select loading and dumping regions with GPS positioning, which lets Sitelink3D track the movement of materials around the site.

Technical Documents

The following documents will help to use LM/LX-100 with Sitelink3D:

- LM-100 Operation Manual
- LM-100 On-board Weighing System (WM-L1) Installation Manual
- Loadex 100/LX-100 Operation Manual
- LX-100 Installation Manual

1-1 P/N: 1071470-01 System Overview

Settings and Connections

Settings

LM-100 and LX-100 join with the Sitelink3D cloud service through Ethernet, Wi-Fi, or mobile internet (SIM) and send relevant data from the machine.

GPS Settings

The load weighing display must be configured to get access to Sitelink3D. A PIN is required to access the **Technician Level Settings** menu to configure the interface.



PIN is the abbreviation for personal identification number, an identifying number allocated to an individual by the application that is used to validate electronic transactions. The default technician level settings PIN is 1234.

- 1. Select **Setup** to open the **Setup** menu.
- 2. Select **Technician Level Settings** to open the **Enter Password** dialog (Figure 2-1).
- 3. Enter a valid PIN using the virtual keypad.
- 4. Select **ENT** to open the **Technician Level Settings** menu (Figure 2-2 on page 2-2).

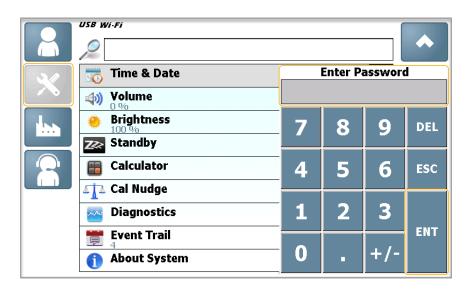


Figure 2-1: Load Weighing Display Technician Level Settings Enter Password

Settings P/N: 1071470-01 **2-1**

5. Select **Printer and Serial Output Setup**, then select **OK** to open the **Printer and Serial Output Setup** screen.

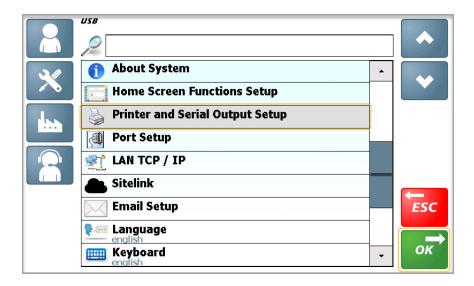


Figure 2-2: Load Weighing Display Technician Level Settings Menu

6. Select GPS, then select Edit to open the GPS Options screen (Figure 2-4 on page 2-3).

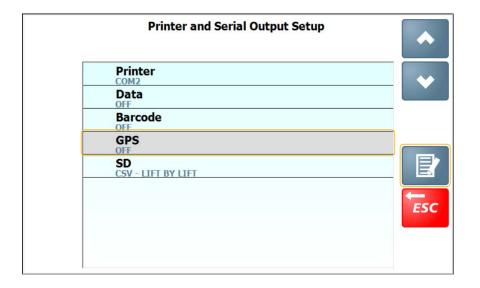


Figure 2-3: Load Weighing Display Printer and Serial Output Setup

The **Sync UTC Time** option is enabled by default.

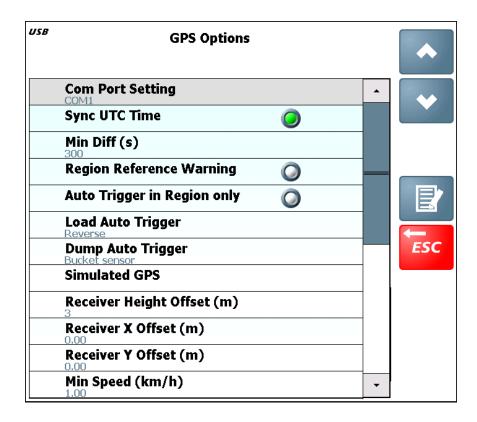


Figure 2-4: Load Weighing Display GPS Options

Com Port Setting

- 1. If the GPS receiver is connected, set the **Com Port Setting** to COM1:
 - a. Select GPS on the Printer and Serial Output Setup screen (Figure 2-3 on page 2-2).
 - b. Select Edit on the Printer and Serial Output Setup screen.
 - c. Select **Com Port Setting** on the **GPS Options** screen (Figure 2-4).
 - d. Select Edit on the GPS Options screen to open the Mode dialog (Figure 2-5 on page 2-4).

- e. Select COM1.
- f. Select **OK**.
- 2. Select ESC.

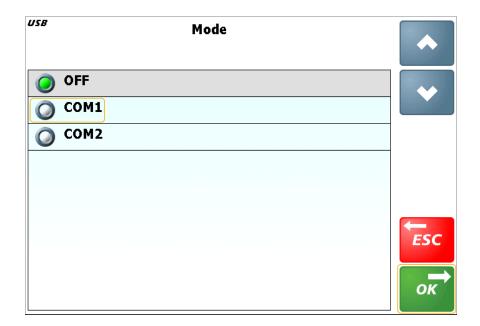


Figure 2-5: Com Port Mode



If the GPS receiver is not connected, see "Simulated GPS" on page 2-9.

Time and Date Setting

- 1. Select Time & Date on the Technician Level Settings menu (Figure 2-2 on page 2-2).
- 2. Select **OK** to open the **Time & Date** screen (Figure 2-6 on page 2-5).

3. Make sure that the time zone is correct on the **Time & Date** screen.

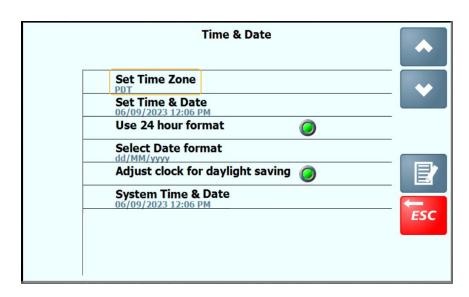


Figure 2-6: Load Weighing Display Time & Date



Sync UTC Time (Figure 2-4 on page 2-3) must always be enabled because the time and date must always be correct.

Region Reference Warning

The region reference warning warns the operator when the machine is detected inside a region where the material is different than the material that was just lifted or manually selected. This prevents a load or dump action in the incorrect region. The region reference warning is disabled by default.

There are two ways to use the warning:

- Select Region Reference Warning on the GPS Settings screen to enable it (see Figure 2-4 on page 2-3). After the material is picked or loaded, the product is automatically selected on the load weighing display. The operator drives to the dump region. If the dump region has the same material assigned, the box is green (Figure 2-7 on page 2-6). If the dump region has a different material assigned, the box is red (Figure 2-8 on page 2-6).
- The operator can manually select the material from the references list. When the material is selected manually, the region reference warning can be used in the region where the material was picked up or loaded. Upon arrival in the dump region, if the same material is assigned, the box is green. If the dump region has a different material assigned, the box is red.



Figure 2-7: Load Weighing Display Dump Region Green



Figure 2-8: Load Weighing Display Dump Region Red

• Clear the **Region Reference Warning** on the **GPS Settings** screen (Figure 2-4 on page 2-3) to disable it and automatically select the region name and the product when the auto trigger is enabled (see "Auto Triggers" on page 2-7).

Auto Triggers

When the machine enters a geofence region with an auto trigger enabled and the system senses the auto trigger, it tells the system that either a load or dump event is about to occur. There are multiple auto trigger options for the selection of the products, loading regions, and dumping regions.

Table 2-1:Load and Dump Auto Triggers

Auto Trigger	Description
Reverse	Selects the loading region when the reverse gear is engaged (if the reverse gear is connected, Figure 2-9 on page 2-7).
Bucket Sensor	Selects the dump region when the bucket is tipped (if a bucket sensor is fitted, Figure 2-10 on page 2-8).
Add to Total	Selects the dump location as the load is weighed. This option is for the applications without the bucket sensor.
Timer	This option is adjustable and represents the duration (in seconds) in which a machine must be in a region before it is selected. It is based on the Usage setting in Metadata > Regions on the Sitelink3D website (see "Automatic Mode" on page 4-1).
Manual	This trigger is for dump trucks. It lets the operator manually select the regions in which the load has been picked and dumped.

	NOTE
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The **Add to Total** auto trigger cannot be used with a bucket sensor. To correctly select the geofence regions and products, material must only be weighed at the destination.



A geofence is a virtual geographic boundary.

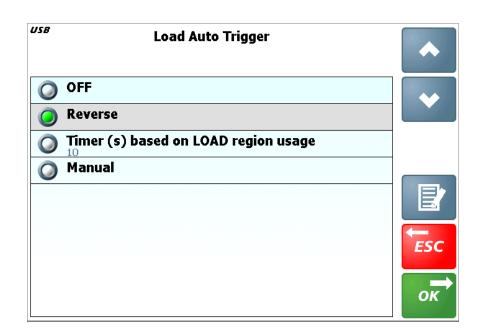


Figure 2-9: Load Weighing Display Load Auto Trigger

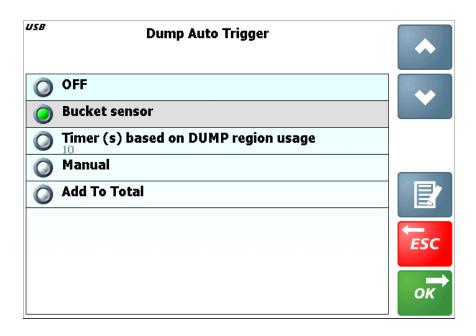


Figure 2-10: Load Weighing Display Dump Auto Trigger

Auto Trigger Selection by the Application

When the machine is within a geofence region and the system senses an auto trigger, it tells the system that either a load or dump event is about to occur.

Table 2-2:Load Auto Trigger Selection

Load Trigger	Loader	Loadex	Dumper	Forklift
Reverse	Yes	No	No	Yes
Timer	Yes	Yes	Yes	Yes
Manual	No	No	Yes	No

Table 2-3:Dump Auto Trigger Selection

Dump Trigger	Loader	Loadex	Dumper	Forklift
Bucket sensor	Yes	No	No	No
Timer	Yes	No	Yes	Yes
Manual	No	No	Yes	No
Add to Total	Yes	Yes	Yes	Yes

Examples of Trigger Use by the Application

Wheel Loader

The default triggers are **Reverse** for loading and **Bucket Sensor** for dumping.

The **Timer** trigger can be used to select load and/or dump regions. The **Usage** must be set in **Sitelink** > **Metadata** > **Regions** to enable this option. The **Timer** trigger selects the loading region only when it has an assigned **Load** usage. The **Timer** trigger selects the dumping region only when it has an assigned **Dump** usage.

To use the **Reverse** and/or **Bucket sensor** triggers to automate the region/product selection process, the following steps must be done:

- 1. Before loading, make sure that the previous job is cleared.
- 2. Load the bucket and reverse the loader.
- 3. Do not weigh the load until the loader has reversed.
- 4. Go to the dumping destination.
- 5. Weigh the bucket, then tip it.



The **Add to Total** trigger can be used to automatically select the dump region when no bucket sensor is attached. In this case, the weighing routine must be done only at the destination region.

Loadex

The default triggers are **Timer** for loading and **Add To Total** for dumping. Selected triggers are sufficient because machines equipped with Loadex 100/200 systems work when stationary.

Dumper

The system must be configured manually to use Loadmaster with the dumper and haul truck (see "Dumper and Haul Truck Configuration" on page 4-1).

Simulated GPS

This is used to simulate a GPS position when no GPS receiver is connected. The machine shows on the globe in a fixed position. To use Simulated GPS, enter the latitude and longitude of the required location and enable it.

Alternatively, set the GPS Com Port setting to OFF (default setting) before joining the site. The system will then automatically assign the site coordinates to the simulated GPS once the device joins Sitelink3D.



The Site Desk Support pairing requires a GPS position (simulated or actual).

Other Configuration Settings

Table 2-4:Other Configuration Settings

Receiver Height Offset	Sets the height of the receiver mounting position for the accurate altitude measurement.
Receiver X Offset (m)	Sets the offset for the GPS receiver in meters on the X-axis. From the operator's point of view, a positive number sets the GPS position to the right, and a negative number to the left.
Receiver Y Offset (m)	Sets the offset for the GPS receiver in meters on the Y-axis. From the operator's point of view, a positive number sets the GPS position forward, and a negative number backward.
Min Speed (km/h)	Sets a minimum speed threshold that must be met before a new position is sent to Sitelink3D. This is to minimize false accumulation of distance due to satellite drift.
Distance Slew Inhibit (Loadex only)	This stops the calculation of the traveled distance above the programmable slew speed.

Join a Site

Load Weighing Display Sitelink3D Settings

- 1. Select **Setup** to open the **Setup** menu.
- 1. Select **Operator** menu to open the **Operator** menu.
- 2. Select **Diagnostics** to open the **Diagnostics** screen (Figure 2-11).
- 3. Select PING.

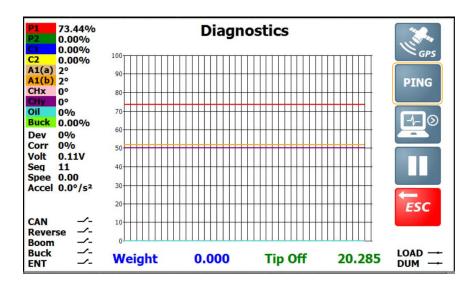


Figure 2-11: Load Weighing Display Diagnostics

If the display has an internet connection, a confirmation dialog opens (Figure 2-12).

4. Select **OK**.

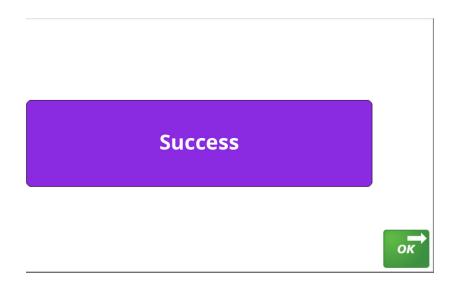


Figure 2-12: Success Message

The load weighing display connects to the internet.

- 5. Select **Setup** to open the **Setup** menu.
- 6. Select **Technician Level Settings** X.
- 7. If necessary, use the keypad to enter a valid PIN, then select **ENT**.

The default technician level settings PIN is 1234.

The **Technician Level Settings** menu opens (Figure 2-13).

8. Select **Sitelink**, then select **OK**.

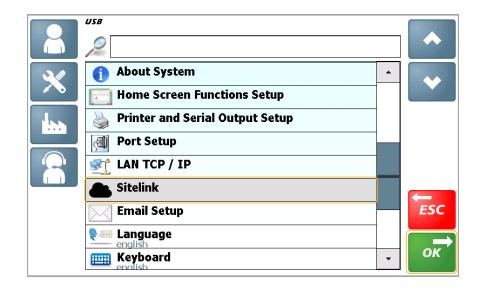


Figure 2-13: Load Weighing Display Technician Level Settings Menu

The **Sitelink Wizard** confirmation dialog opens (Figure 2-14). This dialog only shows when the load weighing display is not joined with the site.

9. Select **SKIP** to skip the wizard, or select **OK** to run the wizard.

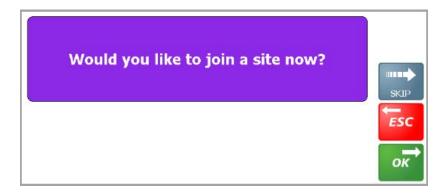


Figure 2-14: Load Weighing Display Sitelink Wizard Prompt

When **OK** is selected, the **Join Site** dialog opens (Figure 2-15).

10. Select the appropriate method, then select **OK**.

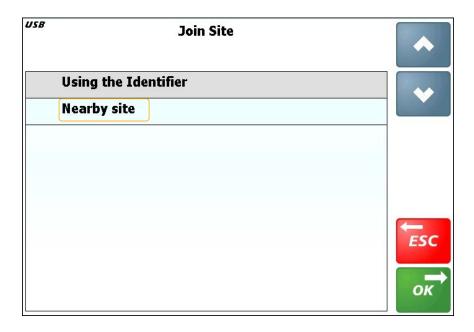


Figure 2-15: Load Weighing Display Join Site

After the wizard is finished, or if **SKIP** is selected, the **Sitelink** screen opens.

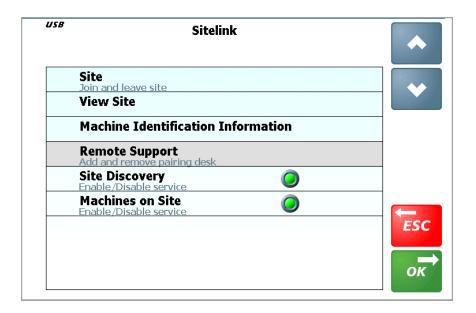


Figure 2-16: Load Weighing Display Sitelink

Load Weighing Display Sitelink Screen Options

Site	Select to join or leave a site.
View Site	Select to view the information about the currently joined site.
Machine Identification Information	Select to view the information about the machine.
Remote Support	Select to configure the Organizational Desk Support.
Site Discovery	Select to enable joining a site by driving into the discoverable region. Note: This feature is only enabled if the device is not joined with any site.
Machines on Site	Select to enable viewing the distance to the other machines or trucks joined with the site, for the ease of identification, that is, correct selection of a truck to load in the proximity.

Ways to Join a Site

The three methods for how to join a site are Site Discovery, Site Identifier, or Nearby Site.

Site Discovery

- 1. Make sure that Site Discovery is enabled (green) on the Sitelink menu (see Figure 2-16).
- Drive into the discoverable region (set in Sitelink > Metadata > Regions) used for site discovery.
 When the load weighing display detects the site, it prompts the operator to join it.
- 3. Do the steps described in "Site Joining Process" on page 2-17.

Site Identifier



Site Discovery is available when the device has not joined any sites.

1. Open the **Site** menu on the **Sitelink3D** website and select **Site Information** to open the **Site Information** dialog (Figure 2-18).

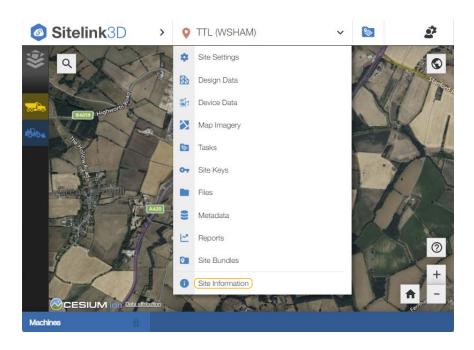


Figure 2-17: Sitelink3D Site Menu

2. Record the Discovery ID.

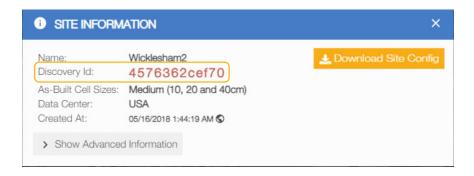


Figure 2-18: Site Information Discovery ID

2-14 P/N: 1071470-01 Join a Site

- 3. Select **Site** on the load weighing display **Sitelink** screen (Figure 2-19).
- 4. Select **OK** on the load weighing display **Sitelink** screen to open the **Join Site** screen (Figure 2-20).

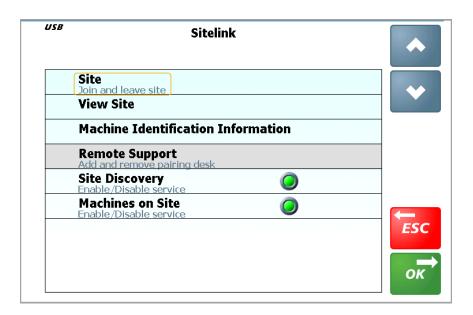


Figure 2-19: Load Weighing Display Sitelink

- 5. Select Using the Identifier.
- 6. Select **OK**.

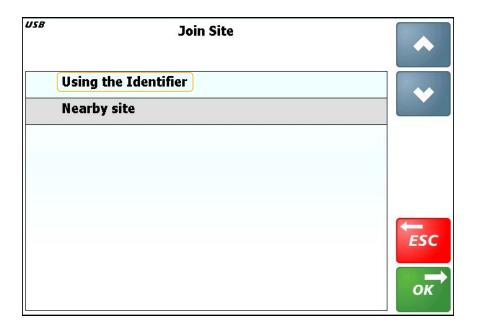


Figure 2-20: Load Weighing Display Join Site

When the load weighing display detects the site, it prompts the operator to join it.

7. Do the steps described in "Site Joining Process" on page 2-17.

Nearby Site

This method is the same as "Site Discovery" on page 2-13, except that it can also be used when the load weighing display is already joined with a site.

- 1. Make sure that **Site Discovery** is enabled (green) on the **Sitelink** menu (see Figure 2-16 on page 2-13).
- 2. Drive a machine into a discoverable region of the site.
- 3. Select **Site** on the load weighing display **Sitelink** screen.
- 4. Select **OK** on the load weighing display **Sitelink** screen to open the **Site** screen (Figure 2-22).

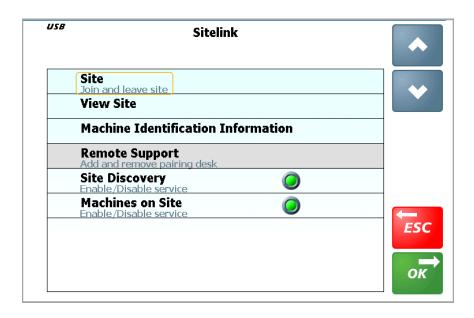


Figure 2-21: Load Weighing Display Sitelink

5. Select Add 🚹.

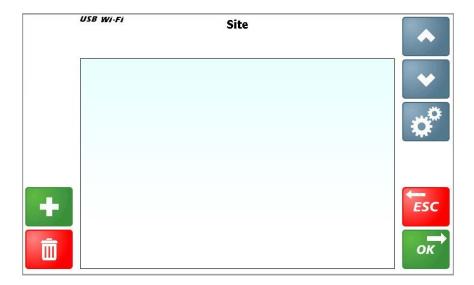


Figure 2-22: Load Weighing Display Site

The Join Site screen opens (Figure 2-23).

- 6. Select Nearby site.
- 7. Select **OK**.

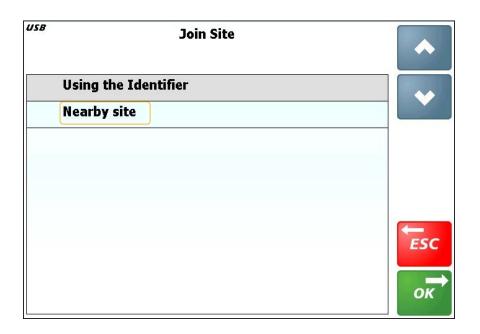


Figure 2-23: Load Weighing Display Join Site

When the load weighing display detects the site, it prompts the operator to join it.

8. Do the steps described in "Site Joining Process" on page 2-17.



Nearby Site can be used at any time. **Site Discovery** is only available when no site has been joined.

Site Joining Process

After the site joining method is detected (see "Ways to Join a Site" on page 2-13), the LM-100/LX-100 load weighing display guides the operator through the steps to join the site in Sitelink3D. After successfully joining a site, it is possible to view data on Sitelink3D or via API protocol.

The load weighing display prompts the operator to either backup or clear all the stored data. Reference data from all the products, regions, and trucks stored on the load weighing display are cleared after a site change or a site is joined for the first time.



All reference data for systems joined with Sitelink3D are stored in the cloud. All local data are deleted during the site joining process. Backing up local data prior to joining Sitelink3D is *highly recommended*. The backed up data can then be imported after the joining process is complete.

A confirmation dialog opens.

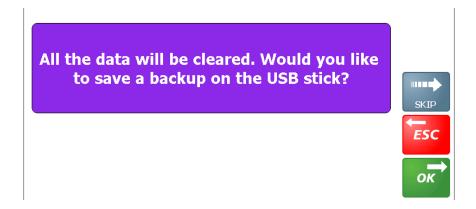


Figure 2-24: All Data Will Be Cleared Dialog

1. Select **OK** to backup, or select **SKIP** to continue without backing up.

If **OK** is selected, the LM-100 or LX-100 exports a *.json file to the USB memory stick.

The Machine Identification Information screen opens (Figure 2-25 on page 2-18).



NOTE

The necessary information is in the **Metadata** dialog in Sitelink3D.

- 2. Enter the machine identification information on the Machine Identification Information screen.
- 3. Select the Asset Class:
 - Wheel Loader (Loadmaster A100)
 - Truck (Loadmaster A100 for dump trucks)
 - **Excavator** (Loadex 100, 200)

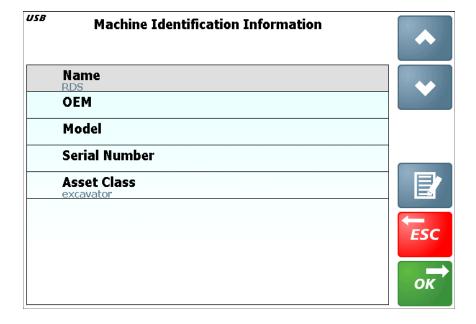


Figure 2-25: Load Weighing Display Machine Identification Information

4. If the **Site Identifier** method was used, enter the **Discovery ID** that was recorded in Step 2 on page 14 in the **Enter Site Identifier** dialog.

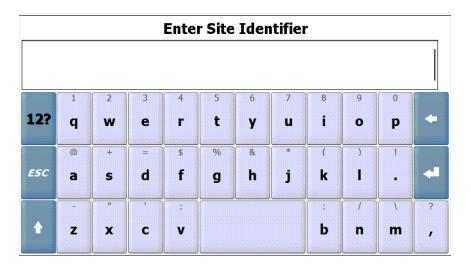


Figure 2-26: Enter Site Identifier

The **Enter Site Access PIN** dialog opens (Figure 2-27).

5. Enter the Site Access PIN in the Enter Site Access PIN dialog using the virtual keypad.

The Site Identifier and Site Access PIN can be created in the Sitelink3D Site Key Manager.

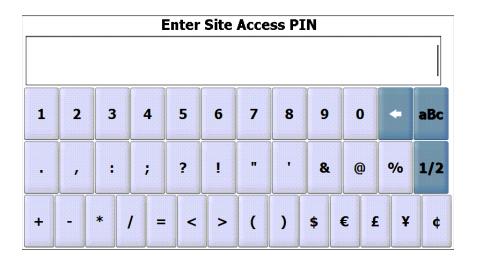


Figure 2-27: Enter Site Access PIN

After a site is joined, a cloud icon appears on the top bar to show that Sitelink3D is connected to the load weighing display.



Figure 2-28: Sitelink3D Connected Icon

Leave a Site

- 1. Select **Setup** to open the **Setup** menu.
- 2. Select **Technician Level Settings** X.
- 3. If necessary, use the keypad to enter a valid PIN, then select ENT.

The default technician level settings PIN is 1234.

The **Technician Level Settings** menu opens.

- 4. Select Sitelink, then select OK to open the Sitelink screen (Figure 2-29).
- 5. Select Site.
- 6. Select **OK** to open the **Site** screen (Figure 2-30 on page 2-21).

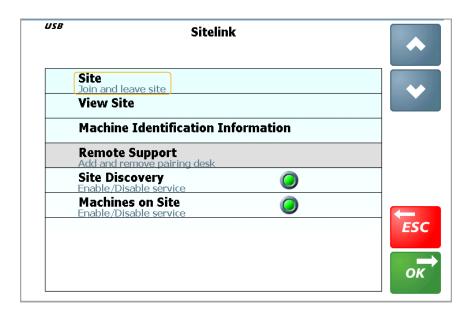


Figure 2-29: Load Weighing Display Sitelink

2-20 P/N: 1071470-01 Leave a Site

- 7. Select the site to leave, then select **Delete**
- 8. Select **OK**.

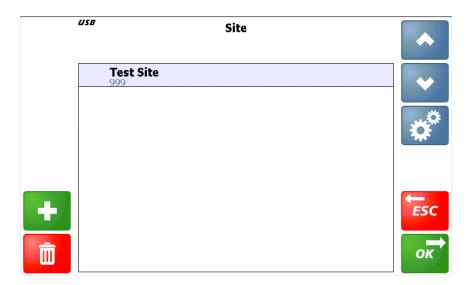


Figure 2-30: Load Weighing Display Site



It is possible that more than one site will show, depending on the environment in which the machine is working.

Get Support

Two Sitelink3D Support Desk options are available from the load weighing display.

Site Desk Support	Provides remote view and control of the load weighing display when paired with the specific site
Organizational Desk Support	Provides remote view, remote control, file transfer, and software update for the load weighing display when paired with the organization

Site Desk Support

Site Desk Support is automatically available when the load weighing display joins the site.

1. Select the Machines tab in Sitelink3D.



Figure 3-1: Sitelink3D Machines Tab

- 2. Select the required option:
 - Remote View
 - Remote Control

The **Remote View** option lets the remote operator see a live feed from the load weighing display on the computer screen.



Figure 3-2: Site Desk Remote View

The **Remote Control** option lets the remote operator control the load weighing display from the computer screen.



Figure 3-3: Site Desk Remote Control

- 3. Enter a message for the remote operator.
- 4. Select **Support** to pair.

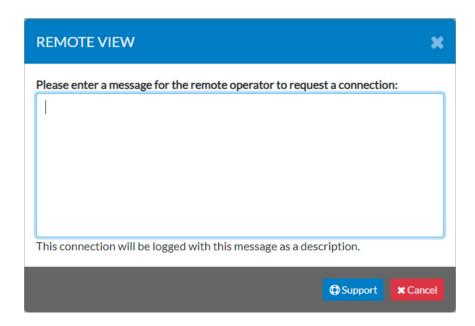


Figure 3-4: Remote Support Connection



When Site Desk Support is automatically paired, the message is not sent to the operator when Remote View is used.

When Remote Control is used, an optional message can be included that shows on the load weighing display.

Configure Organizational Desk Support

Load Weighing Display

- 1. Select **Setup** to open the **Setup** menu.
- 2. Select **Technician Level Settings** X.
- 3. If necessary, use the keypad to enter a valid PIN, then select ENT.

The default technician level settings PIN is 1234.

The **Technician Level Settings** menu opens.

- 4. Select Sitelink, then select OK to open the Sitelink screen (Figure 3-5).
- 5. Select Remote Support.
- 6. Select **OK**.

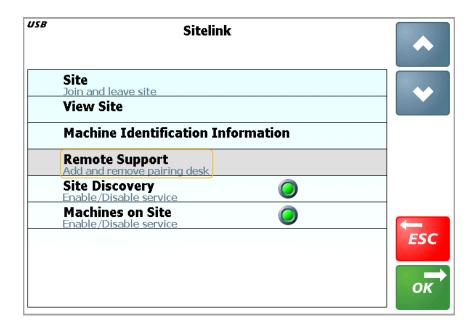


Figure 3-5: Load Weighing Display Sitelink Screen Remote Support

The Remote Support screen opens (Figure 3-6).

- 7. Select Support Desks Configuration.
- 8. Select **OK**.

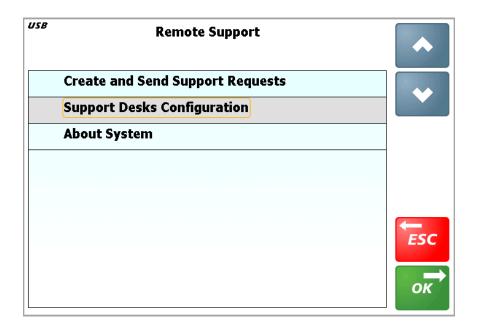


Figure 3-6: Load Weighing Display Remote Support Screen

The **Support Desks Configuration** screen opens (Figure 3-7).

9. Select Add 🚹.

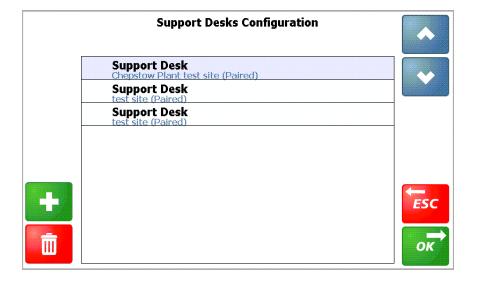


Figure 3-7: Load Weighing Display Support Desks Configuration Screen

The virtual keypad shows on the **Support Desks Configuration** screen (Figure 3-8).

10. Enter the support desk number.

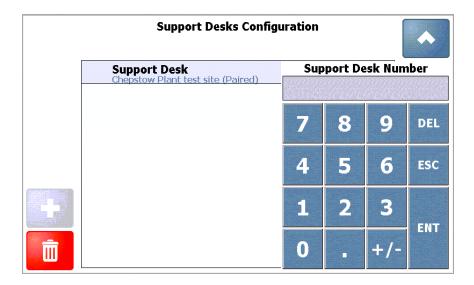


Figure 3-8: Load Weighing Display Support Desks Configuration Enter Support Desk Number

The **Desk Information Policy** screen opens (Figure 3-9).

11. Select the desk information policy for Remote Control, Remote View, and File Transfer.

Yes	Pairing is done without the consent of the machine operator
No	Disables the option
Ask	The operator must accept the pairing

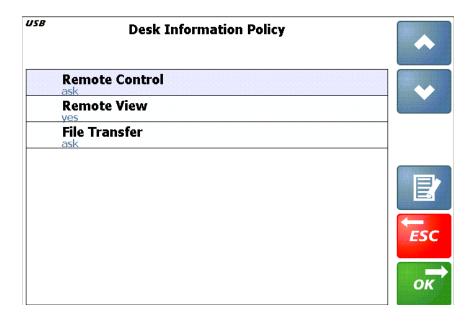


Figure 3-9: Load Weighing Display Desk Information Policy

12. Select OK.

Sitelink3D

 Select Sitelink3D > Support Desk on the Sitelink3D website to open the Sitelink3D Support Desk dialog (Figure 3-11).

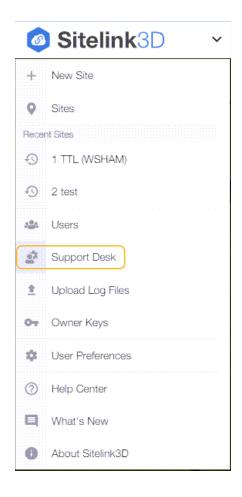


Figure 3-10: Sitelink3D Support Desk on Menu

2. Select Options 🐉.



Figure 3-11: Sitelink3D Support Desk Dialog

The Edit Support Desk dialog opens (Figure 3-12).

3. Enter an Auto-Pair PIN and select Save.

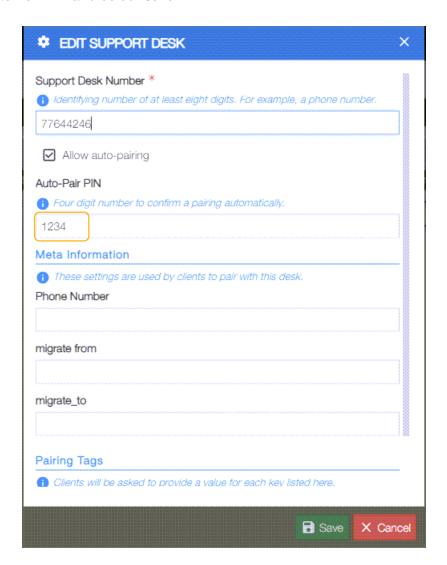


Figure 3-12: Sitelink3D Edit Support Desk Dialog

A confirmation dialog opens on the load weighing display (Figure 3-13).

• Select **Skip** to send a pairing request to the remote support operator for approval.



The status of the pairing request is pending until it is acknowledged on the Sitelink3D website.

a. Select **OK** to enter an auto-pair PIN.



Figure 3-13: Load Weighing Display Auto-Pair PIN Dialog

When **OK** is selected, the **Auto-Pair PIN** screen opens (Figure 3-14).

b. Enter the Auto-Pair PIN.



Figure 3-14: Load Weighing Display Auto-Pair PIN Screen

A confirmation dialog opens (Figure 3-15).

c. Select **OK**.



Figure 3-15: Load Weighing Display Auto-Pair PIN Created and Approved

Make a Remote Support Request

- 1. Select **Setup** to open the **Setup** menu (Figure 3-16).
- 2. Select Remote Support R.

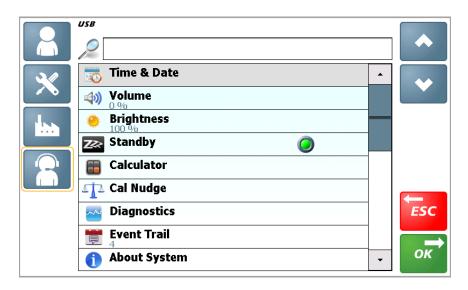


Figure 3-16: Load Weighing Display Setup Menu

The Priority screen opens (Figure 3-17).

3. Set the request priority, then select **OK**.

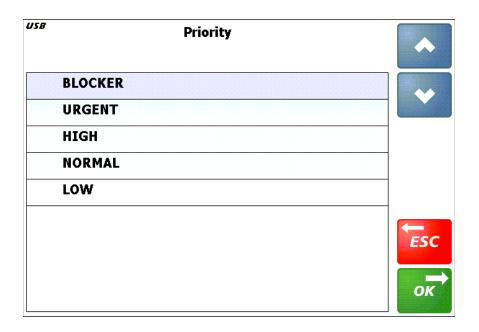


Figure 3-17: Load Weighing Display Priority Screen

The **Message** dialog opens (Figure 3-18).

4. Enter a brief description of the request using the virtual keyboard.

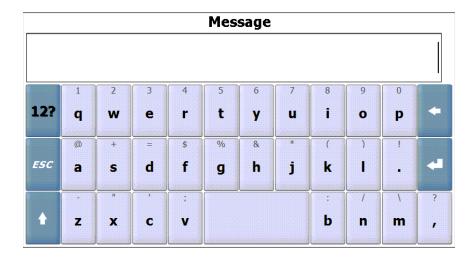


Figure 3-18: Load Weighing Display Message Dialog

The **Phone Number** dialog opens (Figure 3-19).

5. Enter a contact number using the virtual keyboard.

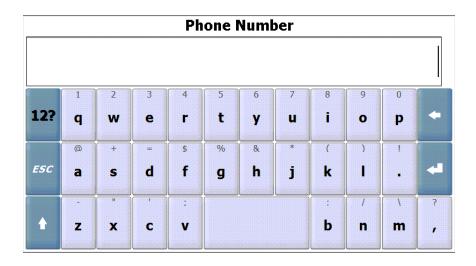


Figure 3-19: Load Weighing Display Phone Number Dialog

Dumper and Haul Truck Configuration

LM-100 can be configured for use with dumpers and haul trucks on the load weighing display.

The weighing procedure is the same as for a wheel loader. However, automatic region and product selection triggers were designed for the following actions:

Table 4-1:Load and Dump Auto Triggers

Load Trigger	Dumper and Haul Truck	
Reverse	No	
Timer	Yes	
Manual	Yes	
Dump Trigger	Dumper and Haul Truck	
Bucket Sensor	No	
Timer	Yes	
Manual	Yes	
Add to Total	Yes	

Automatic Mode

To fully automate the load and/or dump actions, select a **Timer** auto trigger (see "Auto Triggers" on page 2-7).

1. Select the **Site** menu > **Metadata** > **Regions** on the Sitelink3D website.

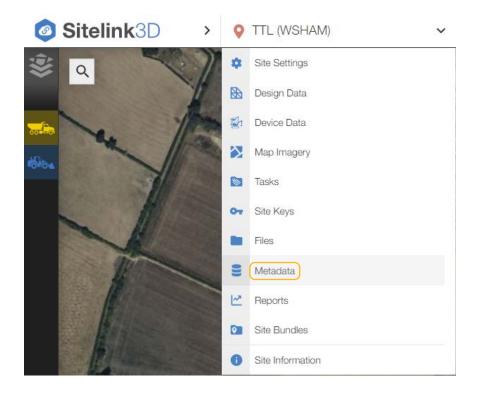


Figure 4-1: Sitelink3D Site Menu

The Metadata screen opens with the Regions tab active.

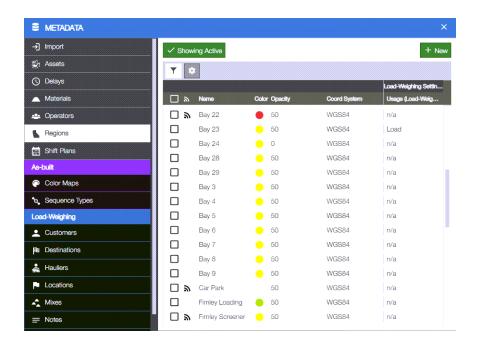


Figure 4-2: Sitelink3D Metadata Regions

- 2. Select the appropriate region checkbox (Figure 4-3).
- 3. Select Edit /

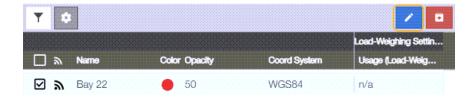


Figure 4-3: Sitelink3D Region Selected

The **Edit Region** dialog opens (Figure 4-4). Each region used with the timer must have the **Usage** assigned either to **Load** or **Dump**.

4. Select the **Usage** for the region.

Load	When a machine is detected in a region with this usage assigned, a Timer auto trigger automatically selects the region and the associated product.
Dump	When a machine is detected in a region with this usage assigned, the timer starts when the machine is in the region but the dump region is selected after the system weighs the load.
n/a	This is not a load or dump region.

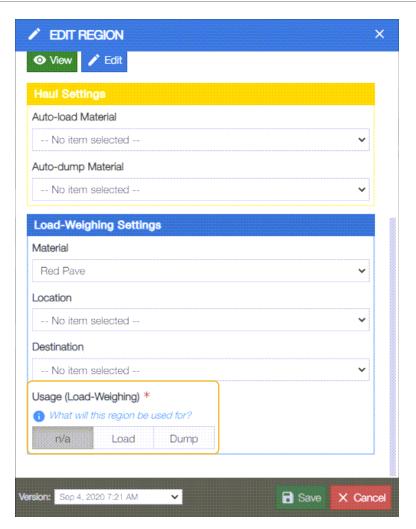


Figure 4-4: Sitelink3D Edit Region



The **Timer Load** auto trigger does not work in a region with the usage set to **Dump**. Likewise, the **Timer Dump** auto-trigger does not work in a region with the usage set to **Load**.

Manual Mode

In **Manual** mode, the operator manually selects where the truck is loaded and where the material is dumped for the **Manual** auto-trigger to select the region and the product.

1. Select the Manual auto-trigger for Load and/or Dump (see "Auto Triggers" on page 2-7).

When the machine is detected in any region, **Load** shows on the left side of the screen.

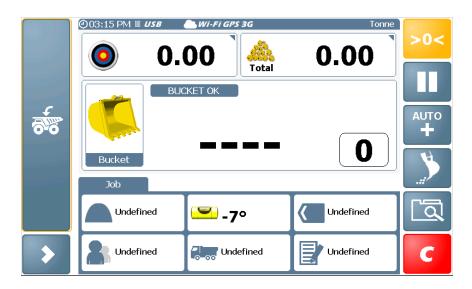


Figure 4-5: Load Weighing Display Load Active

Table 4-2:Load and Manual Dump Images

600 Load OK	After selecting Load , the region and product associated with the load action are selected. The text "Load OK" shows momentarily under the Load image.
800	When the machine is detected in another region, Load is active. This lets the operator select it if the prior selection was in error.
	If the region is correct, the load can be tipped. After the weighing action, Manual Dump is active on the left side of the display.
Dump OK	After selecting Manual Dump , the text "Dump OK" shows momentarily under the Manual Dump image. The dump region is selected.

4-4 P/N: 1071470-01 Manual Mode

Manual Mode with Regions Selection

When the machine operates within a region with the **Region Usage** assigned, **Load** is only active when the machine is detected inside the load region.

After entering the dump geofence region, **Manual Dump** is active after the weighing action.



The **Manual Load** image does not show in the region when the **Usage** is set to **Dump**.

Add to Total Auto Trigger

The **Add To Total** trigger automatically selects the dump geofence region after the weight is added to the total (see "Auto Triggers" on page 2-7).



For cases in which the machine operates in regions that have the **Usage** set to **Dump** and the material must be dropped onto the load region, the **Add To Total** auto-trigger overrides the **Usage** setting and correctly selects the region.

Reports

Weight Load Report

The Sitelink3D Report tool lets the user create reports for the completed jobs. The reports can be filtered by the time period and the reference data.

The Metadata database on the Sitelink3D website and the Reference Store on Loadmaster/Loadex systems contain the items listed on Table 5-1.

Table 5-1:Reference Data

Sitelink3D Metadata Item	Sitelink3D Metadata Group	Notes
Materials	Assets	Products in the LM-100/LX-100 Reference Store
Operators	Assets	Drivers in the LM-100/LX-100 Reference Store
Regions	Assets	Only editable on Sitelink3D
Shift Plans	Assets	Only editable on Sitelink3D
Customers	Load-Weighing	
Destinations	Load-Weighing	
Hauliers	Load-Weighing	Can be linked to one or more trucks
Locations	Load-Weighing	
Mixes	Load-Weighing	Two or more products
Notes	Load-Weighing	
Trucks	Load-Weighing	

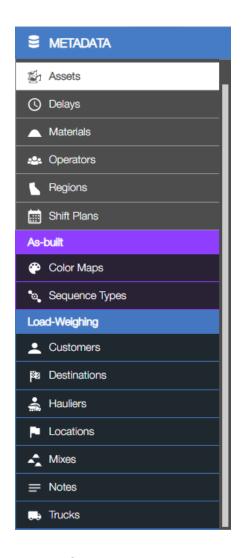


Figure 5-1: Sitelink3D Metadata

Reference data can be created, edited, or deleted in the **Metadata** dialog on the Sitelink3D website. Reference data can be added and deleted on Loadmaster/Loadex systems only when the load weighing display is not connected to Sitelink3D. After a connection is made, reference data can only be added on Loadmaster/Loadex systems.

References are automatically synchronized between Sitelink3D and the load weighing display (see "Data Cloud Synchronization" on page 7-1).



Data cannot be deleted from the load weighing display after the connection to Sitelink3D is established.

Create a Weight Load Report

1. Select **Site** menu > **Reports** on the Sitelink3D website to open the **Reports** dialog (Figure 5-3).

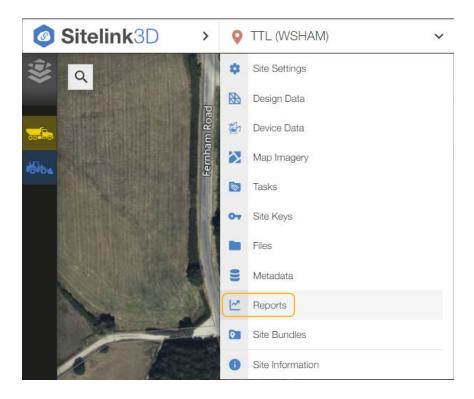


Figure 5-2: Sitelink3D Site Menu

2. Select New Report, then select Weight Load Report.

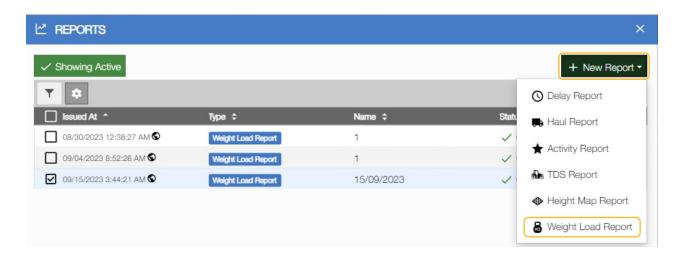


Figure 5-3: Sitelink3D Reports Menu

The New Weight Load Report dialog opens (Figure 5-4).

3. Enter a name and select the time period for the generated report.

The filters are disabled by default.

- 4. If necessary, select the radio button(s) to add filters.
- 5. Select **Edit** to edit a filter.

The filters are Machines, Materials, Mixes, Operators, Customers, Trucks, Hauliers, Load Regions in, Dump Regions Out, Destinations, Locations, and Notes.

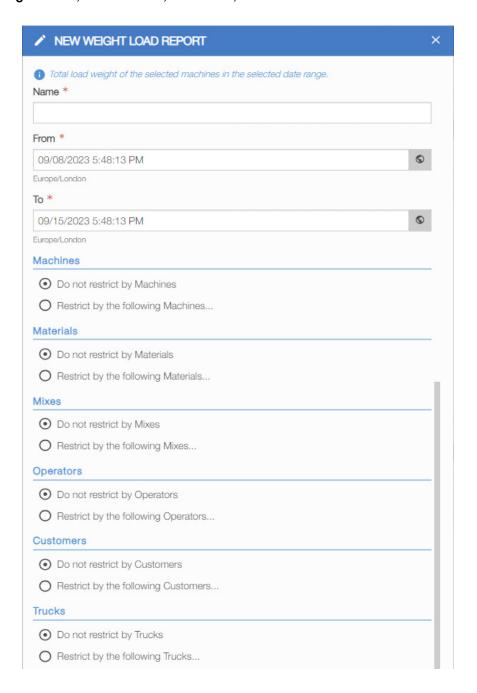


Figure 5-4: New Weight Load Report Dialog (Top)

A dialog with the name of the filter and available parameters opens (Figure 5-5).

6. Select the checkbox(es) of the parameters to edit.

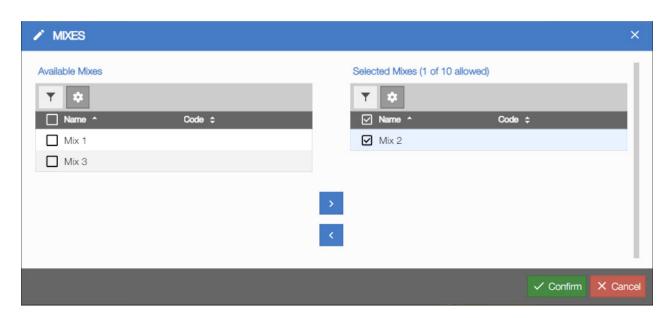


Figure 5-5: Edit Filter

- 7. Select **Add** to add the parameter.
- 8. Select **Remove** to remove the parameter.
- 9. Select Confirm to close the Edit Filter dialog.
- 10. Select Save in the New Weight Load Report dialog.

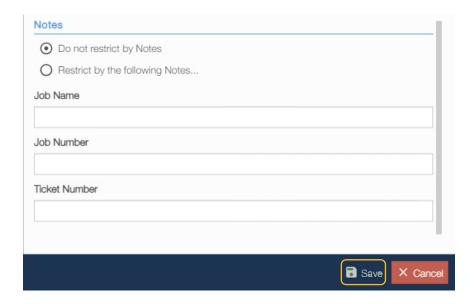


Figure 5-6: New Weight Load Report Dialog (Bottom)

Sitelink3D generates the new report and the **Reports** dialog opens.

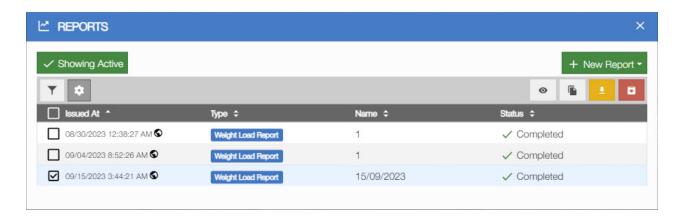


Figure 5-7: New Weight Load Reports Dialog

Work With Weight Load Reports

To use the report action options:

- 1. Select the appropriate checkbox on a report row.
- 2. Select the appropriate action:
 - Select View o to see the report (Figure 5-8).
 - Select **Expand** > to expand the report.
 - Select **View Material** to see material load and dump locations and the machine movement trail on the map for the selected job.
 - Select **Copy to** copy the report (with a new name).
 - Select **Download** to download the report on a spreadsheet.
 - Select Archive to archive the report.

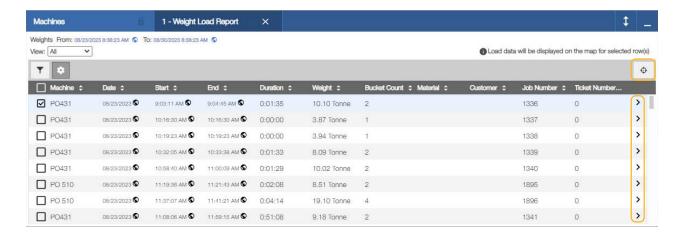


Figure 5-8: View Weight Load Report

The report view expands.

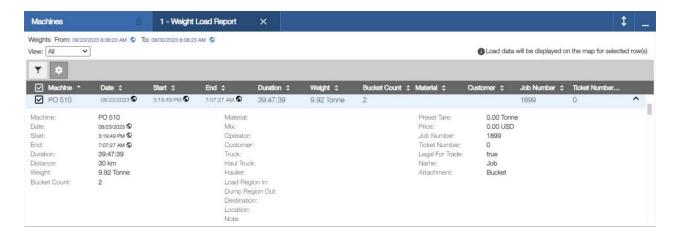


Figure 5-9: Expanded Weight Load Report View

The material load and dump locations and machine movement trail show on the map.

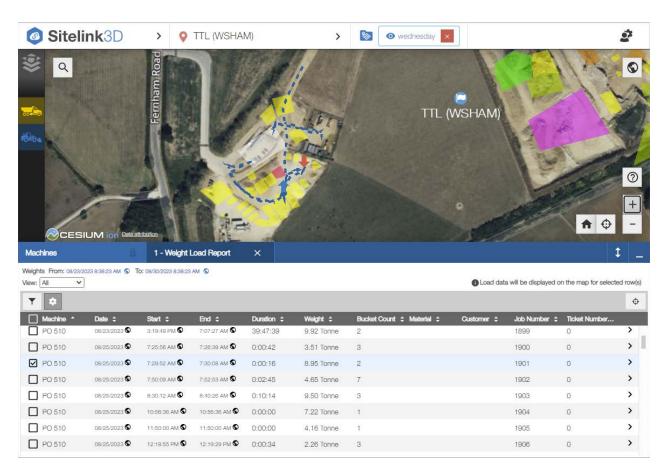


Figure 5-10: Machine Movement, Load, and Dump Locations

3. If necessary, select **Summaries** to see a summary of the report.

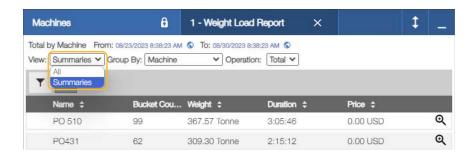


Figure 5-11: Weight Load Report Summary

Live Statistics Loader Widgets

Live statistics loader widgets are used to monitor the machine performance and product movement.



A widget is an element of a graphical user interface that shows information or provides a specific way for a user to interact with the operating system (OS) or an application.

1. Select **Loader** on the Sitelink3D website to open the **Live Statistics** pane (Figure 6-2).



Figure 6-1: Select Loader Widget

2. Select New.

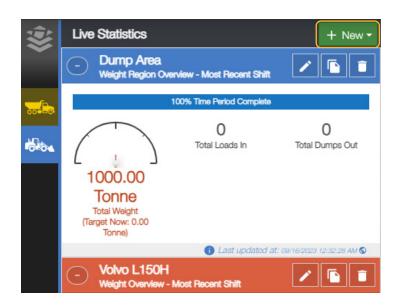


Figure 6-2: Select New Loader Widget

The New Loader Widget menu opens (Figure 6-3).

3. Select the appropriate widget type.

Weight Region Summary	Summarizes the region, survey weight, the desired shift plan, and the desired target for the widget (refer to "Weight Region Summary Widget Creation" on page 6-2)
Weight Summary	Summarizes all or a selection of the machines, materials, customers, destinations, hauls, hauliers, locations, mixes, notes, operators, trucks and/or reporting range for the widget (refer to "Weight Summary Widget Creation" on page 6-5)
Weight Contract Summary	Summarizes all or a selection of the weight contract, destinations, notes, reporting range, and/or targets for the widget (refer to "Weight Contract Summary Widget Creation" on page 6-9)



Figure 6-3: New Loader Widget Menu

Weight Region Summary Widget Creation

1. Select Weight Region Summary from the New Loader Widget menu to open the New Weight Region Summary Widget screen (Figure 6-4 on page 6-3).

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- 2. Enter a **Title** for the widget.
- 3. Select a Region from the dropdown list.
- 4. Enter a **Survey Weight** for the region.
- 5. Select a **Shift Plan** for the generated widget.
- 6. Select the radio button for the type of **Shift Plan**:
 - Most recently started shift.
 - Shifts starting since:

Select the starting date from the dropdown list.

Shifts starting between:

Select the start date and the end date.

- 7. Select the target (Total Weight, Total Loads In, and Total Loads Out).
- 8. Select the Color Band Type (Asymmetric or Symmetric).

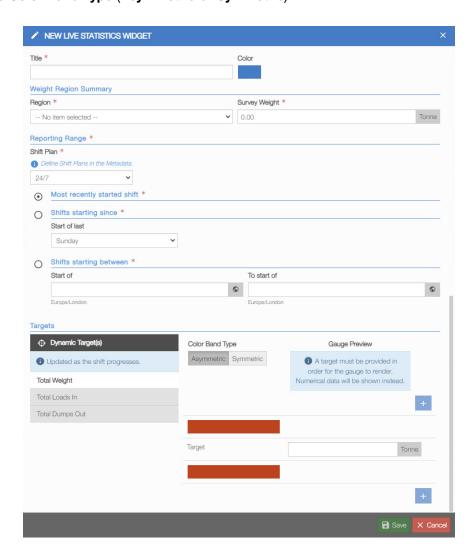


Figure 6-4: New Weight Region Summary Widget

If the **Color Band Type** is Asymmetric, the **Gauge Preview** shows (Figure 6-5 on page 6-4).

9. Set the target value using the **Increment/Decrement** control.



The target value must be set for the **Add** + to become active.

10. Select **Add** + to set tolerances.

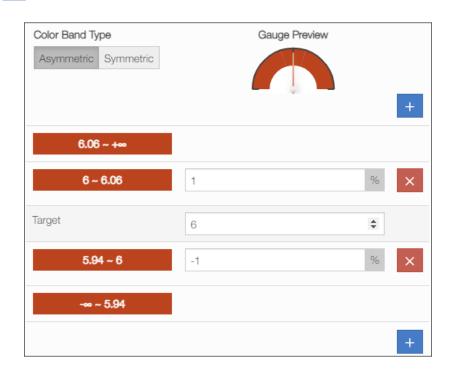


Figure 6-5: Gauge Preview

NOTE

Enter a **Survey Weight** of 0 to monitor an initially empty region/bay.

11. Select **Save** on the **New Weight Region Summary Widget** screen (Figure 6-4 on page 6-3).

The new Weight Region Summary widget opens.

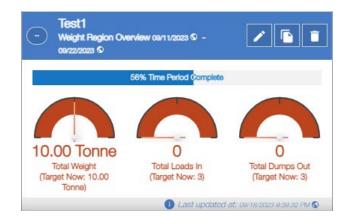


Figure 6-6: Weight Region Summary Widget

Weight Summary Widget Creation

- 1. Select **Weight Summary** from the **New Loader Widget** menu to open the **New Weight Summary Widget** dialog (Figure 6-7).
- 2. Enter a **Title** for the widget.

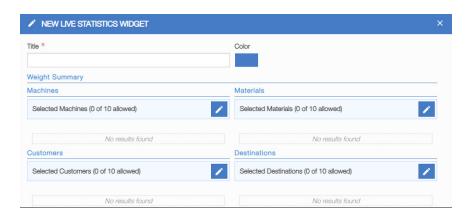


Figure 6-7: New Weight Summary Widget (Top)

- 3. Select **Select Filter** to select filters (Figure 6-8):
 - In the Weight Summary group, select up to ten Machines and Materials filters.
 - In the Customers, Destinations, Hauls, Hauliers, Locations, Mixes, Notes, Operators, and Trucks groups, select up to ten filters.
- 4. Select Confirm.

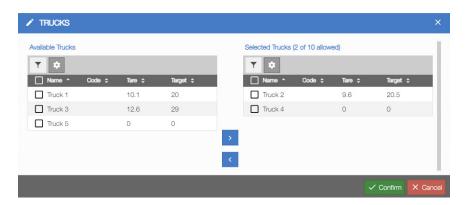


Figure 6-8: New Weight Summary Widget Filter Selection

- 5. Select the radio button for the type of **Shift Plan** (Figure 6-9 on page 6-6):
 - Most recently started shift.
 - Shifts starting since:

Select the starting date from the dropdown list.

Shifts starting between:

Select the start date and the end date.

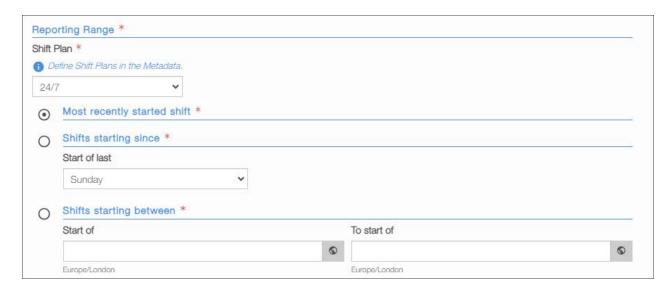


Figure 6-9: New Weight Summary Widget Shift Plan

- 6. Select the dynamic target (**Total Active Loaders**, **Weight**, **Total Bucket Count**, **Total Loads Completed**, **Total Distance**, and **Total Duration**) (Figure 6-10 on page 6-7).
- 7. Select the static target (Ave Weight per Bucket Count, Ave Weight per Load, Ave Bucket Count per Load, Ave Distance per Load, Ave Duration per Load, Ave Weight per Hour, Ave Load per Hour, and Ave Bucket Count per Hour).

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If the widget is saved with no filters selected, the default is to select all filter entries. See "Weight Load Report" on page 5-1 for filtering options.

8. Select the **Color Band Type** (**Asymmetric** or **Symmetric**).

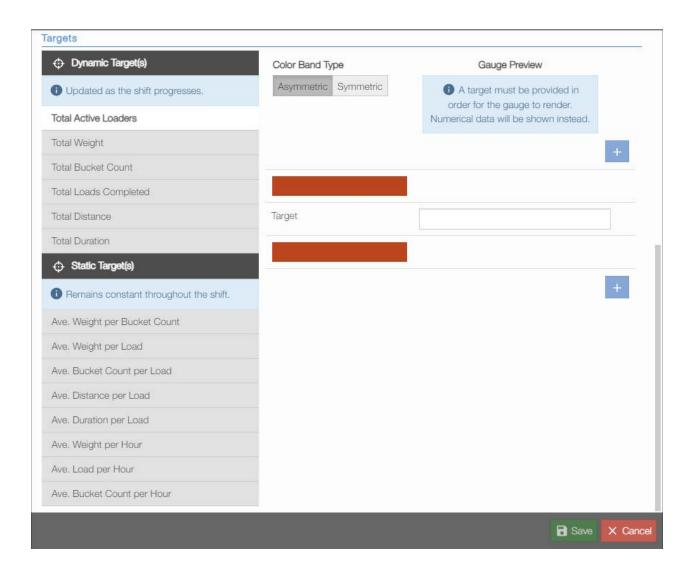


Figure 6-10: New Weight Summary Widget (Bottom)

If the Color Band Type is Asymmetric, the Gauge Preview shows (Figure 6-11).

9. Set the target value using the **Increment/Decrement** control.



The target value must be set for the **Add** + to become active.

10. Select **Add** + to set tolerances.

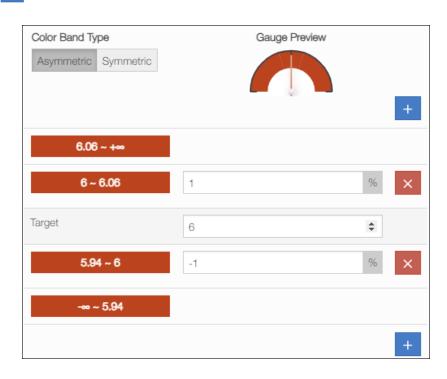


Figure 6-11: Gauge Preview

NOTE

Enter a Survey Weight of 0 to monitor an initially empty region/bay.

11. Select Save (Figure 6-10 on page 6-7).

The new Weight Summary widget opens.

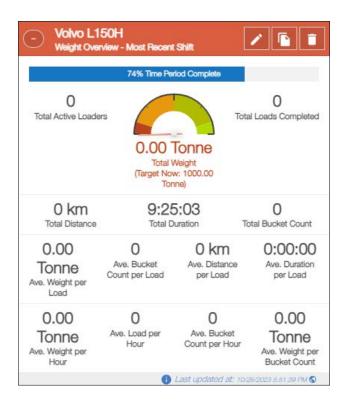


Figure 6-12: Weight Summary Widget

Weight Contract Summary Widget Creation

- Select Weight Contract Summary from the New Loader Widget menu to open the New Weight Contract Summary Widget dialog (Figure 6-13).
- 2. Enter a **Title** for the widget.
- 3. Enter the Contract Weight.
- 4. Enter the **Average Weight per Truck**.

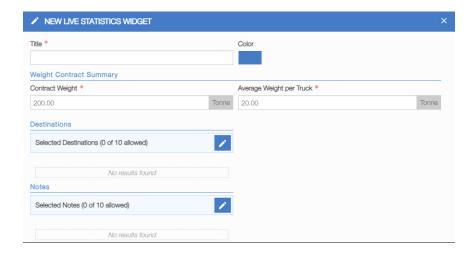


Figure 6-13: Weight Contract Summary Widget (Top)

- 5. Select **Edit** to select filters (Figure 6-14):
 - In the **Destinations** and **Notes** groups, select up to 10 filters.
- Select Confirm.

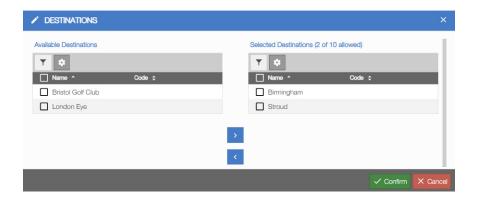


Figure 6-14: Weight Contract Summary Filter Selection

- 7. Select the radio button for the type of shift plan (Figure 6-15):
 - Most recently started shift.
 - Shifts starting since:

Select the starting date from the dropdown list.

Shifts starting between:

Select the start date and the end date.

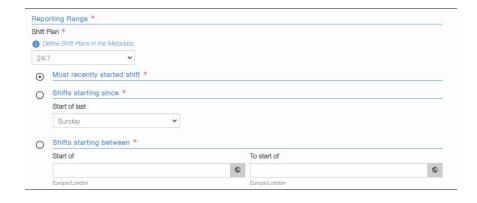


Figure 6-15: New Weight Summary Widget Shift Plan

- 8. Select the dynamic target (**Total Bucket Count**, **Total Loads Completed**, and **Total Load Duration**) (Figure 6-16).
- 9. Select the static target (Ave Number of Trucks to Load).



If the widget is saved with no filters selected, the default is to select all filter entries. See "Weight Load Report" on page 5-1 for filtering options.

10. Select the Color Band Type (Asymmetric or Symmetric).

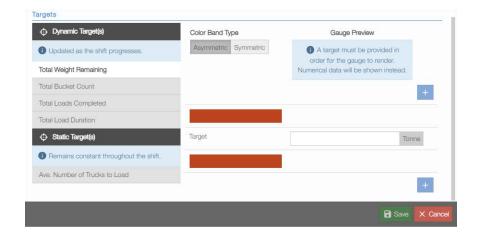
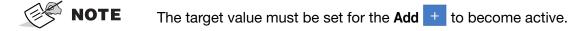


Figure 6-16: Weight Contract Summary Widget (Bottom)

If the Color Band Type is Asymmetric, the Gauge Preview shows (Figure 6-17).

11. Set the target value using the Increment/Decrement 🗦 control.



12. Select Add + to set tolerances.

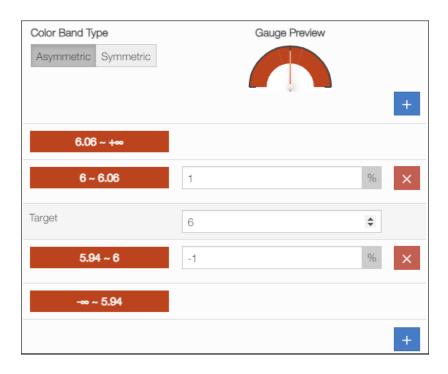


Figure 6-17: Gauge Preview

Enter a Survey Weight of 0 to monitor an initially empty region/bay.

13. Select **Save** (Figure 6-16 on page 6-11).

The new Weight Contract Summary widget opens.



Figure 6-18: Contract Weight Summary Widget

Live Statistics Haul Summary Widget Creation

The live statistics Haul Summary widget is used to monitor the machine performance and product movement.

- 1. Select **Haul Summary** from the **New Hauler Widget** menu to open the **New Hauler Widget** dialog (Figure 6-19).
- 2. Enter a Title for the widget.

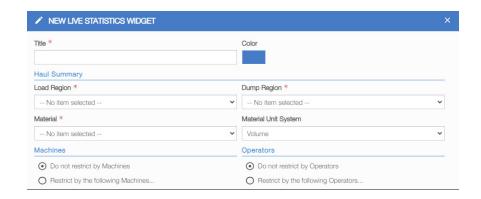


Figure 6-19: New Haul Summary Widget (Top)

- 3. Select **Edit** to select filters (Figure 6-20 on page 6-13):
 - In the Haul Summary group, select the Load Region, Dump Region, Material, and Material Unit System (optional) filters.

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4. Select the appropriate **Machines** radio button.

The default selection is **Do not restrict by Machines**.

- If Restrict by the following Machines... is selected, select Edit to select up to 10 Machines.
- 5. Select the appropriate **Operators** radio button.

The default selection is **Do not restrict by Operators**.

- If Restrict by the following Operators... is selected, select Edit to select up to 10 Operators.
- 6. Select Confirm.

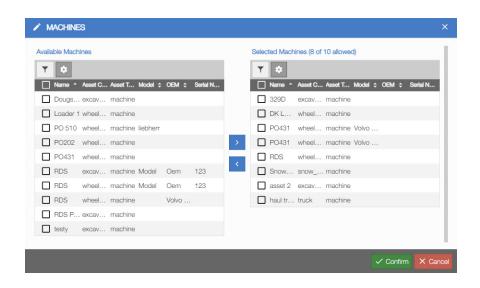


Figure 6-20: New Haul Summary Filter Selection

- 7. Select the radio button for the type of **Shift Plan** (Figure 6-21):
 - Most recently started shift.
 - Shifts starting since:

Select the starting date from the dropdown list.

• Shifts starting between:

Select the start date and the end date.

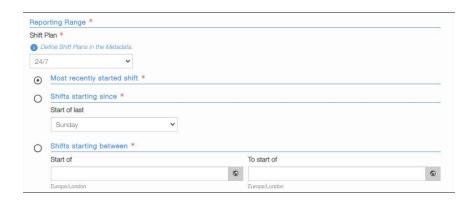


Figure 6-21: New Haul Summary Widget Shift Plan

- 8. Select the dynamic target (Bed Loads, Bed Dumps, and Total Material Hauled) (Figure 6-22).
- 9. Select the static target (Ave Time Loaded, Ave Distance Loaded, Ave Time Empty, Ave Time Cycle, and Ave Distance Cycle).
- 10. Select the Color Band Type (Asymmetric or Symmetric).

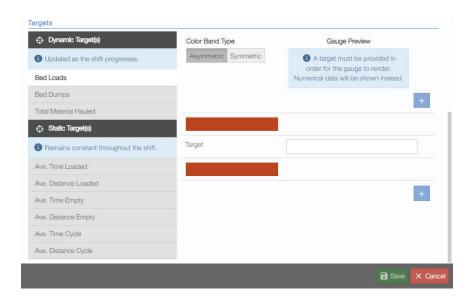


Figure 6-22: New Haul Summary Widget (Bottom)

If the **Color Band Type** is Asymmetric, the **Gauge Preview** shows (Figure 6-5 on page 6-4).

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11. Set the target value using the Increment/Decrement 🖹 control.



NOTE

The target value must be set for the Add + to become active.

12. Select Add + to set tolerances.

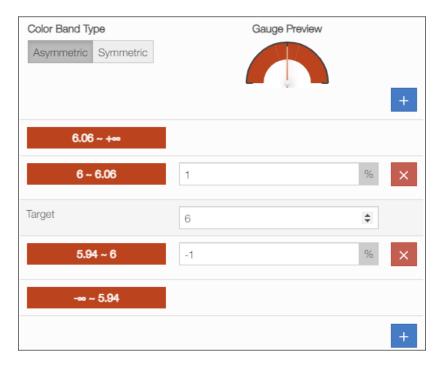


Figure 6-23: Gauge Preview

Enter a **Survey Weight** of 0 to monitor an initially empty region/bay.

13. Select **Save** (Figure 6-22 on page 6-14).

The new Haul Summary widget opens.

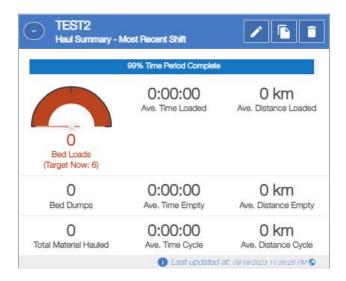


Figure 6-24: Haul Summary Widget

Data Cloud Synchronization

Automatic References Synchronization

Metadata references that were created, amended, or deleted on the Sitelink3D website are automatically synchronized each time the load weighing display joins a new site using any of the three methods described in "Ways to Join a Site" on page 2-13. Once the device has joined the site, a progress bar shows while the references are downloaded.

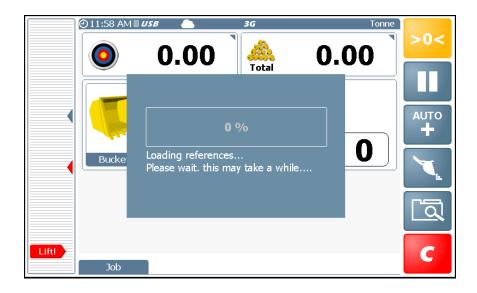


Figure 7-1: Load Weighing Display Synchronization

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After the initial references update, the system automatically updates them each time the system reconnects to the internet. This can take longer than the typical bootup process after the power is turned ON. The progress bar shows briefly twice. It is possible to select specific references to be synchronized at startup or to disable synchronization.

- 1. Select **Setup** to open the **Setup** menu.
- 2. Select **Technician Level Settings** X.
- 3. If necessary, use the virtual keypad to enter a valid PIN, then select ENT.

The default technician level settings PIN is 1234.

The **Technician Level Settings** menu opens.

- 4. Select **Sitelink**, then select **OK** to open the **Sitelink** screen (Figure 7-2).
- 5. Select Metadata auto-pull, then select OK.

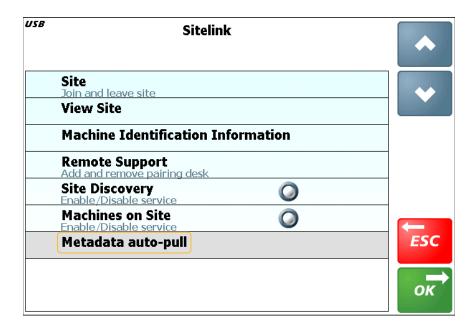


Figure 7-2: Load Weighing Display Sitelink Screen

The **Metadata auto-pull** screen opens (Figure 7-3).

6. Select the appropriate reference categories, then select **OK**.

If none are selected, the references are not synchronized at startup.

Any changes made to the Sitelink3D Metadata are automatically uploaded to online Loadmaster/Loadex systems during the synchronization at startup. This captures Metadata changes made while the load weighing display was OFF.

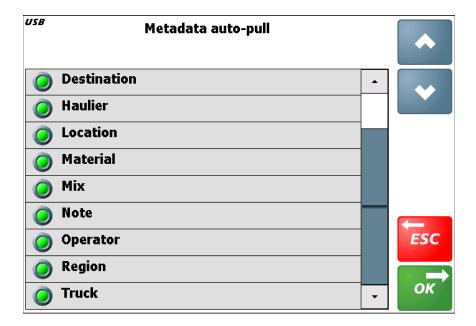


Figure 7-3: Load Weighing Display Sitelink Metadata Auto-Pull

Manual Reference Synchronization

- 1. Open the load weighing display main screen (Figure 7-4).
- 2. Select the appropriate reference(s).

For example, select **Products**, **Trucks**, **Regions**, and etc., to manually synchronize references.



Figure 7-4: Load Weighing Display Main Screen

The **Product** screen opens (Figure 7-5).

3. Select **Refresh** 5.

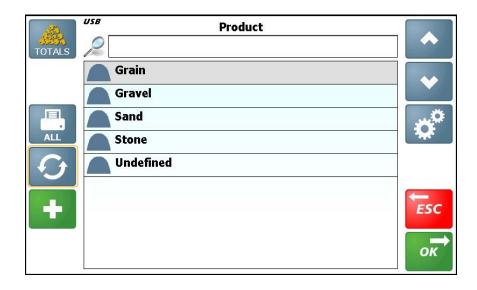


Figure 7-5: Load Weighing Display Product Screen

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Add Reference Data on the Load Weighing Display

When a new reference is created in Loadmaster/Loadex, it automatically synchronizes with the cloud when the load weighing display is on-line.

- 1. Open the load weighing display main screen.
- 2. Select the appropriate reference to open the **Product** screen (Figure 7-6).
- 3. Select Add

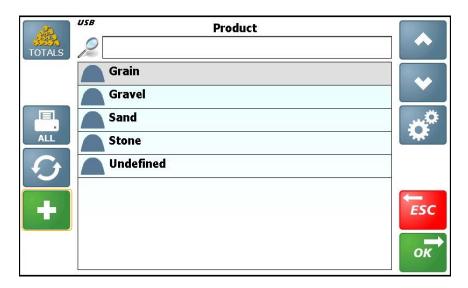


Figure 7-6: Load Weighing Display Product Screen

Site Key Expiration

The maximum number of days of Site PIN validity is 365. After the set period expires, the **Enter Site Access PIN** dialog shows on the load weighing display (Figure 7-7).

If **ESC** is selected, the device will start normally but it will not connect to the cloud. All weighing activity will be saved and synchronized with Sitelink3D when the device is reconnected. The **Enter Site Access PIN** dialog shows at every startup until a valid PIN is entered.

If the operator selects **OK**, the operator must then enter a valid site PIN to connect the device to Sitelink3D.



Figure 7-7: Load Weighing Display Enter Site Access PIN

Safety Warnings

General Warnings

- 1. Read and become familiar with the machine manufacturer's operator's manual, including safety information, before installing or using Topcon components.
- 2. Use extreme caution on the job site. Working around heavy construction equipment can be dangerous.
- 3. DO NOT attach Topcon brackets, cables, or hose connections while the machine is running.
- 4. DO NOT allow any Topcon components to limit the visibility of the operator.
- 5. Use cable ties to keep hoses and cables secured, and away from possible wear or pinch points.
- 6. Use eye protection when welding, cutting, or grinding on the machine.
- 7. Protect yourself at all times, and wear protective clothing when working on or near hydraulic lines. Hydraulic lines can be under extreme pressure, even when the machine is turned off.

DANGER	Relieve all pressure in the hydraulic lines before disconnecting or removing any lines, fittings, or related components. If injury occurs, seek medical assistance immediately.		
CAUTION	When welding, use appropriate precautions and practices. After welding, all affected areas should be painted with a rust inhibitor.		
DANGER	Disconnect all Topcon system electrical cables prior to welding on the machine.		
DANGER	DO NOT weld near hydraulic lines or on any equipment when in operation.		
CAUTION	All mounting bracket welds must be secure and strong to prevent the sensor equipment from vibrating excessively, or from detaching at the weld during operation.		
	This product should never be used:		
	 Without the operator thoroughly understanding the Operator's Manual and Quick Reference Guide. 		
CAUTION	 After disabling safety systems or altering the product. 		
	With unauthorized accessories.		
	 Without proper safeguards at the job site. 		
	Contrary to applicable laws, rules, and regulations.		
WARNING	TPS products should never be used in dangerous environments. Use in rain or snow for a limited period is permitted.		

General Warnings P/N: 1071470-01 **8-1**



Tampering with the unit by the operator or non-factory authorized technicians will void the unit's warranty:

- Do not attempt to open the unit and modify any of its internal components.
- Do not short circuit.



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