TOPCON

2DXe

Excavator Indicate Systems

Quick Reference Guide

TOPCON
POSITIONING SYSTEMS

2DXe
Quick Reference Guide

Part Number 7010-0856
Rev. A

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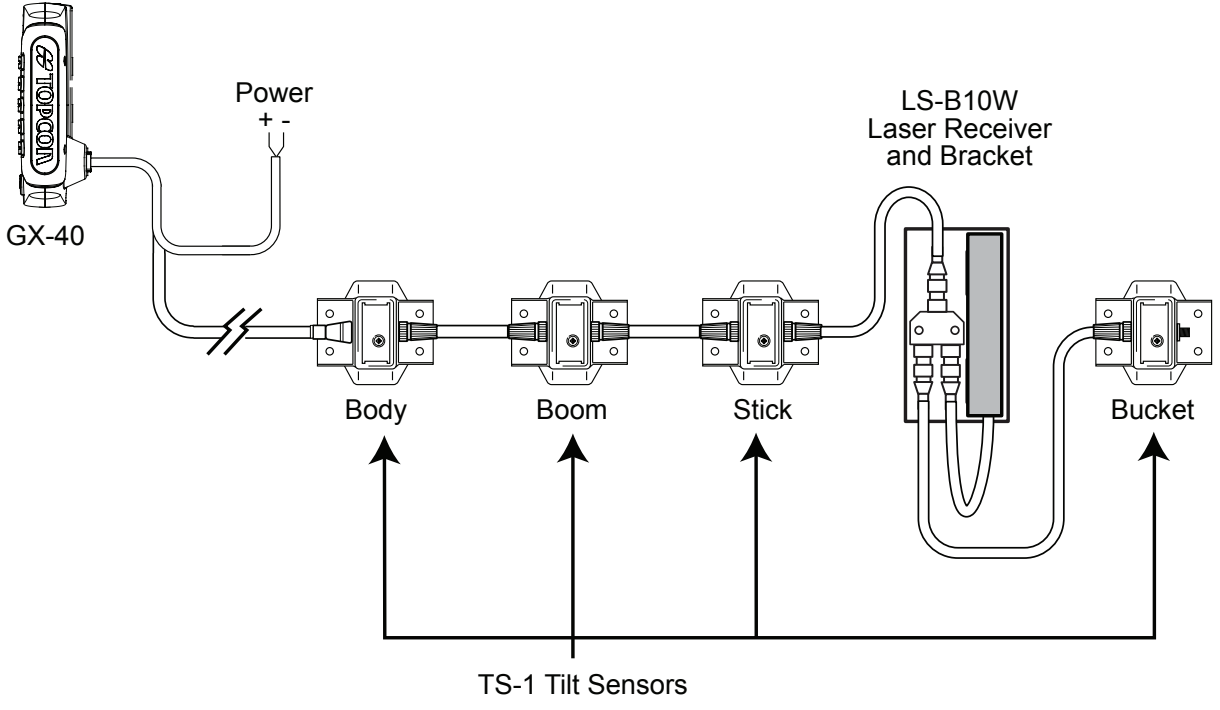
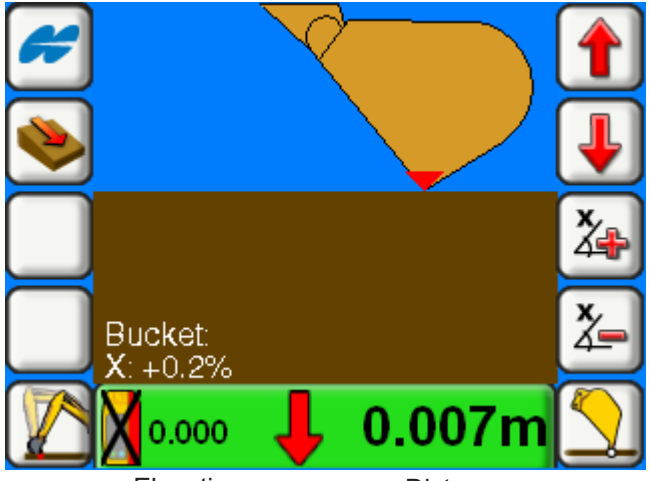
ECO#3243

2DXe Cable Connections



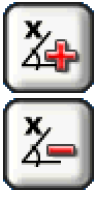
Main Screen


System Configuration
Surface Mode
Transfer Position
Increase Elevation Set Point
Decrease Elevation Set Point
Increase Slope
Decrease Slope
Reference Button
Bucket:
X: +0.2%
0.000
0.007m
Elevation
Set Point
Distance
from Grade

Main Screen

Image	Description
	**System Configuration** allows the user to view the machine configuration, system options, and change the bucket configuration, set the elevation reference point, and view sensor data in real-time.
	**Surface Mode** allows the user to toggle between single slope or to select, edit or create a complex slope profile.
	**Transfer Position** allows the user to set a reference point before moving the machine. After the machine is moved, this point is referenced and the elevation is matched to its previous value.
	**Elevation** applies a cut or a fill to the elevation offset. Press both the Increase/Decrease **Elevation** soft keys together to set the reference point to zero (0).

Main Screen

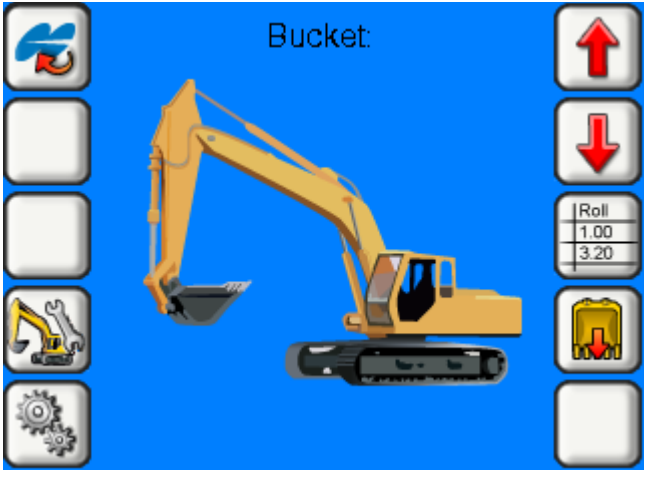
Image	Description
	**Slope** increases or decreases the angle of the slope being cut.
	**Reference** displays the reference type currently used for the vertical reference. The reference type is either bucket/laser, bucket, or laser. Select the reference type in the *System Options Screen*. Press **Reference** to take an automatic reference measurement.

System Configuration Screen

Save Changes
and Return to Main Screen

Machine Configuration

System Options



Bucket Selection

Live Sensor Data View

Elevation Reference Point

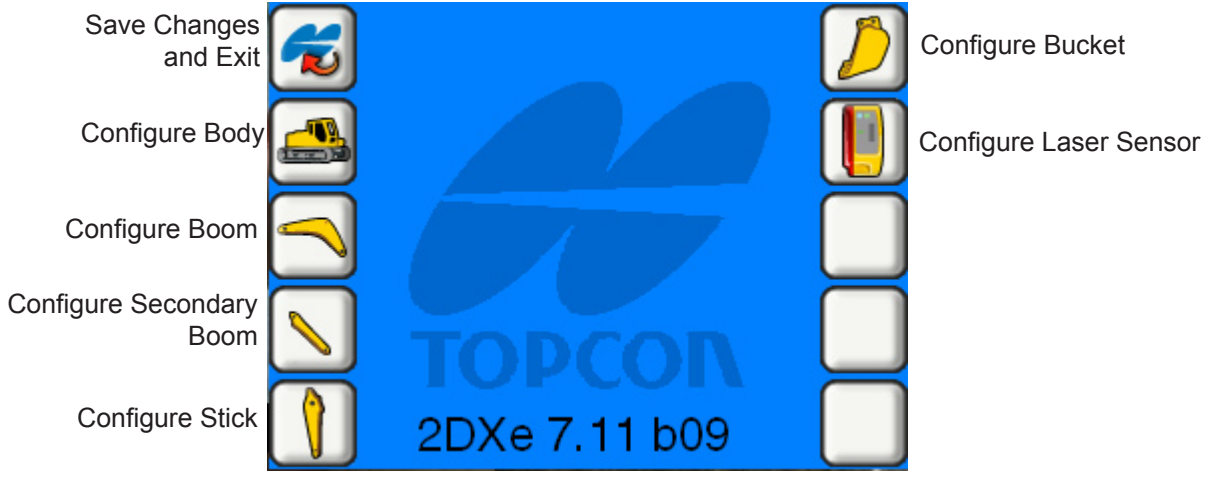
System Configuration Screen

Image	Description
	**Save and Exit** saves changes and returns to the *Main Screen*.
	**Configure Machine Components** allows the user to view the machine measurements, calibrate the sensors, create multiple bucket configurations, and define the laser receiver position.
	**System Options** allows the user to define the location of the lightbar, the lightbar LED extents, global settings (including units display and background color), and serial parameters, as well and selecting system settings such as the language and background color.
 	**Bucket Selection** allows the user to select from defined buckets created in the *Machine Configuration Screen.*

System Configuration Screen

Image	Description
	**Live Sensor Data** displays the pitch and roll values of the sensors in real time.
	**Elevation Reference Point** allows the user to select the reference point of the bucket: Left, Middle, or Right. The reference point is used to calculate the current position of the bucket.

Machine Configuration Screen



Machine Configuration Screen

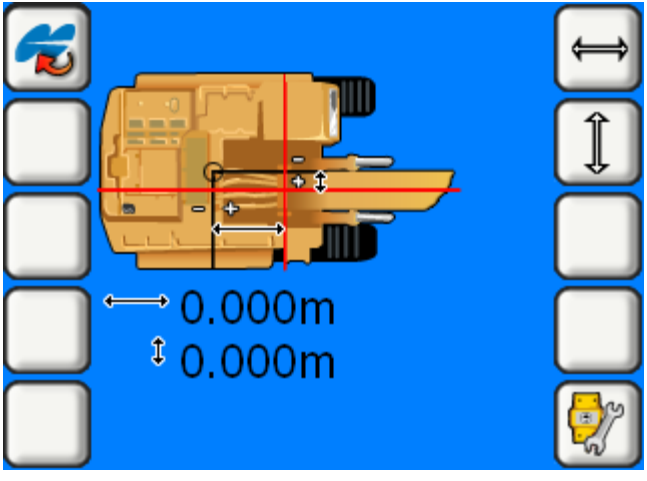
Image	Description
	**Save and Exit** saves changes and returns to the previous screen.
	**Configure Body** allows the user to turn the sensor on or off, edit body measurements, and configure the body sensor.
	**Configure Boom** allows the user to turn the sensor on or off, edit boom measurements, and configure the boom sensor.
	**Configure Secondary Boom** allows the user to turn the sensor on or off, edit secondary boom measurements, and configure the secondary boom sensor.
	**Configure Stick** allows the user to turn the sensor on or off, edit stick measurements, and configure the stick sensor.

Machine Configuration Screen

Image	Description
	**Configure Bucket(s)** allows the user to edit, add, and delete bucket configurations, scroll through bucket configurations, and configure the bucket sensor.
	**Configure Laser Sensor** allows the user to select the referencing method, edit laser sensor measurements, calibrate the laser sensor, and turn the laser sensor on and off.

Body Configuration Screen

Save Changes and Exit

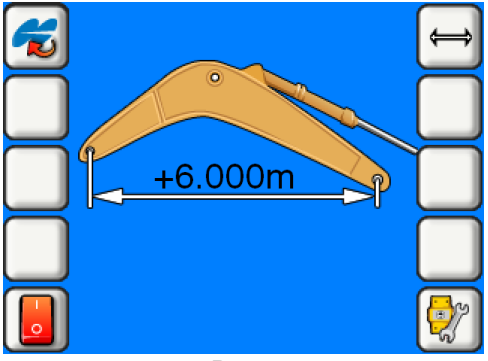


Edit Length of Body

Edit Width of Body

Configure Sensor

Boom, Secondary Boom, Stick Configuration Screens



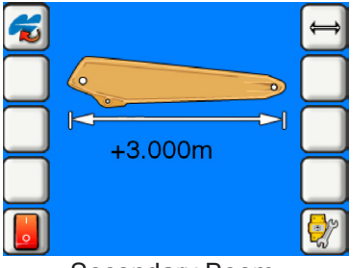
Save Changes and Exit

Edit Length of Boom or Stick

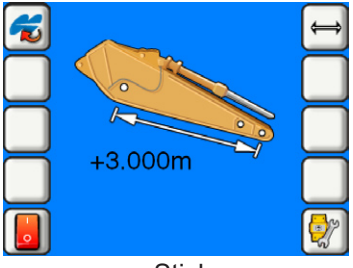
Turn Sensor On or Off

Configure Sensor

Boom

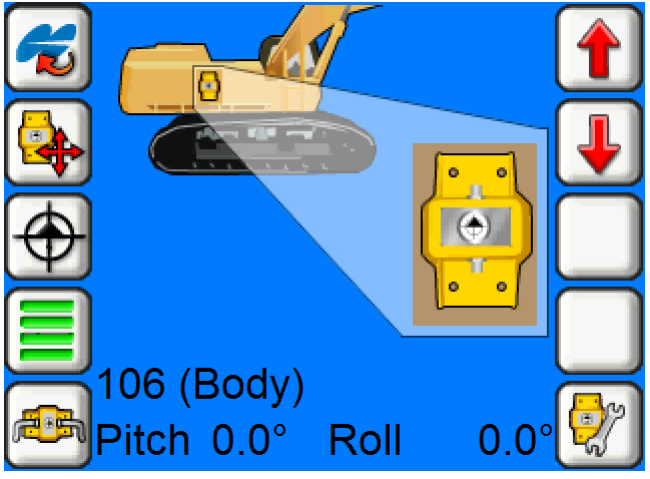


Secondary Boom



Stick

Sensor Configuration Screen (Body/Boom/Secondary Boom/Stick)



Save Changes and Exit

Select Sensor Location

Select Sensor Orientation

Adjust Sensor Filtering

Sensor Termination

Select Sensor ID

Calibrate Sensor

Sensor Configuration Screen (Body/Boom/Secondary Boom/Stick)

Image	Description
	**Save and Exit** saves changes and returns to the previous screen.
	**Select Sensor Location** scrolls through the location options for the sensor: top, bottom, left, right, front, or back.
	**Select Sensor Orientation** scrolls through orientation options for the sensor: forward, right, or top.
	**Adjust Sensor Filtering** selects the amount of reaction for the sensor. A high value (4) dampens the sensor reaction. A low value (1), or no value causes faster sensor reaction.
	**Sensor Terminated or NOT Terminated** allows the user to open or close the communication loop between the body and the last sensor used.

Sensor Configuration Screen (Body/Boom/Secondary Boom/Stick)

Image	Description
	**Select Sensor ID** selects the serial number of the sensor being configured.
	**Calibrate Sensor** displays the *Sensor Calibration Screen* for entering the pitch/roll offsets.

Sensor Calibration Screen (Body/Boom/Secondary Boom/Stick)

Bucket Configuration Screen

Save Changes and Exit

Edit Bucket Configuration

Add Bucket Configuration

Delete Bucket Configuration

Select Bucket Configuration

Configure Sensor

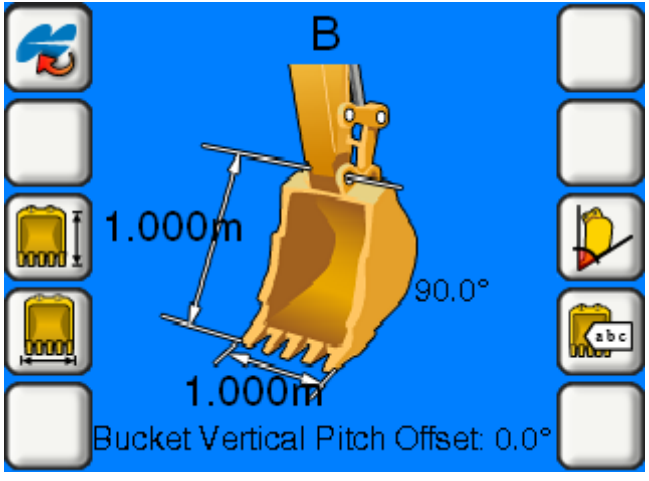
Bucket Configuration Screen

Image	Description
	**Save and Exit** saves changes and returns to the previous screen.
	**Edit Bucket Configuration** displays the *Bucket Configuration Screen* for the selected bucket.
	**Add Bucket Configuration** displays the alpha-numeric entry screen for entering the name of a new bucket configuration. After entering a new bucket name, the *Bucket Measurement Screen* appears. See Bucket Measurement Screen section on page 20.
	**Delete Bucket Configuration** deletes the selected bucket configuration.

Bucket Configuration Screen

Image	Description
	**Select Bucket Configuration** scrolls through the bucket configurations.
	**Configure Sensor** displays the sensor configuration screen for entering the location, orientation, filter state, and other settings.

Bucket Measurement Screen



Save Changes and Exit

Edit Height of Bucket

Edit Width of Bucket

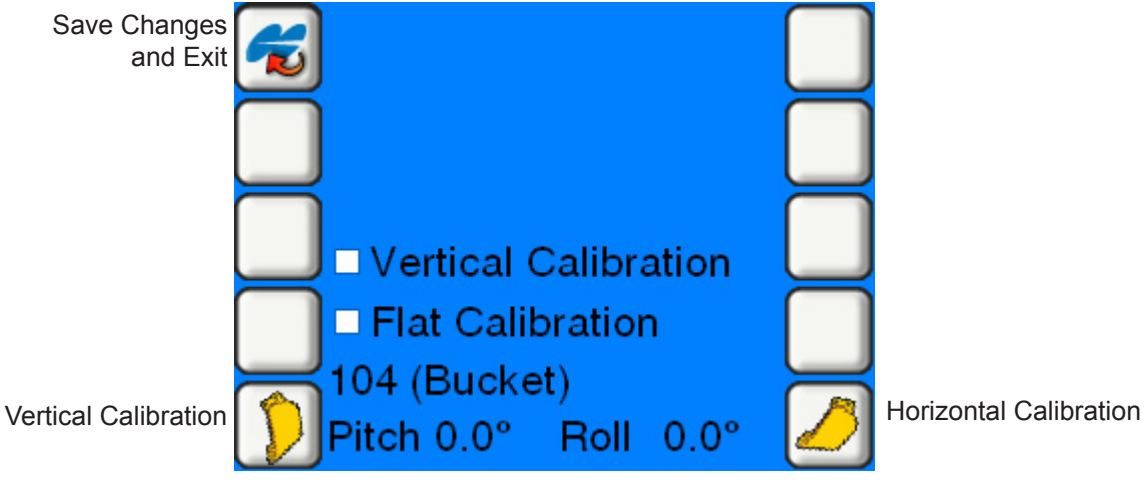
Calibrate Bucket

Edit Bucket Name

Bucket Measurement Screen

Image	Description
	**Save and Exit** saves changes and returns to the previous screen.
	**Bucket Height** displays the numeric entry screen for entering the measured height of the bucket.
	**Bucket Width** displays the numeric entry screen for entering the measured width of the bucket.
	**Calibrate Bucket** displays the *Vertical/Horizontal Calibration Screen* for the bucket.
	**Edit Bucket Name** displays the numeric entry screen for editing the name of the bucket.

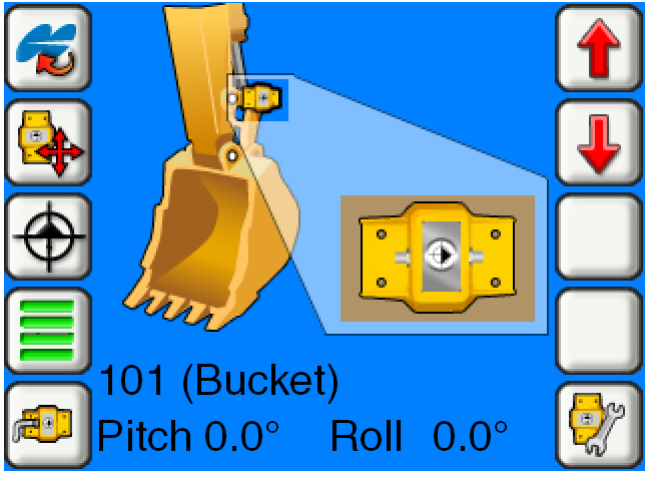
Bucket Vertical/Horizontal Calibration Screen



Bucket Vertical/Horizontal Calibration Screen

Image	Description
	**Save and Exit** saves changes and returns to the previous screen.
	**Vertical Calibration** calibrates the vertical orientation of the bucket sensor with the bucket at 90°.
	**Horizontal Calibration** calibrates the horizontal orientation of the bucket sensor with the bucket at 0°.

Bucket Sensor Configuration Screen



Save Changes and Exit

Select Sensor Location

Select Sensor Orientation

Adjust Sensor Filtering

Sensor Termination

Select Sensor ID

Calibrate Sensor

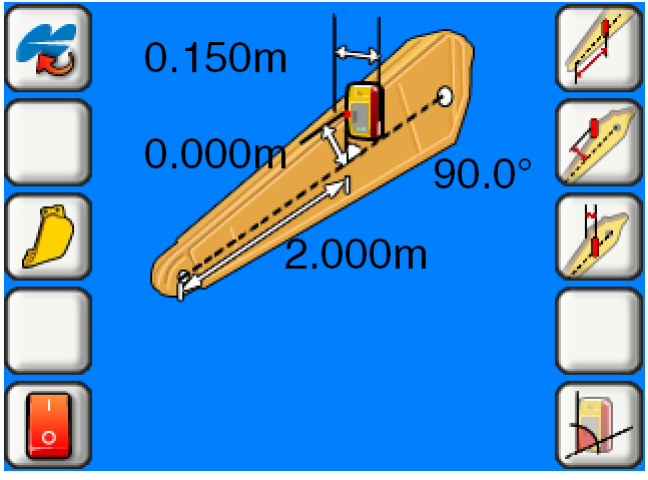
Bucket Sensor Configuration Screen

Image	Description
	**Save and Exit** saves changes and returns to the *Calibration Screen*.
	**Select Sensor Location** scrolls through the location options for the sensor: top, bottom, left, right, front, or back.
	**Select Sensor Orientation** scrolls through orientation options for the sensor: forward, right, or top.
	**Adjust Sensor Filtering** selects the amount of reaction for the sensor. A high value (4) dampens the sensor reaction. A low value (1), or no value causes faster sensor reaction.
 	**Sensor Terminated or NOT Terminated** allows the user to open or close the communication loop between the body and the last sensor. ***Notice: The user must terminate the bucket sensor for optimal performance.***

Bucket Sensor Configuration Screen

Image	Description
	**Select Sensor ID** selects the serial number of the sensor being configured.
	**Calibrate Sensor** displays the *Sensor Calibration Screen* for entering the pitch/roll offsets.

Laser Sensor Configuration Screen



Save Changes and Exit

Select Referencing Method

Turn Sensor On or Off

Enter Sensor Location Measurement

Enter Sensor Location Measurement

Enter Light Cells Location Measurement

Calibrate Sensor

Laser Sensor Configuration Screen

Image	Description
	**Save and Exit** saves changes and returns to the *Calibration Screen*.
	**Select Referencing Method** sets the referencing method used to determine the cutting edge location to a known reference point: bucket, laser, or bucket and laser. ***Notice: When using the bucket and laser referencing method, the bucket reference takes priority over the laser reference.***
	**Sensor On/Off** allows the user to turn the sensor on or off.
	**Enter Sensor Location Measurement** sets the sensor distance from the bucket pivot point to the laser location along the pivot line.

Laser Sensor Configuration Screen

Image	Description
	**Enter Sensor Location Measurement** sets the distance square off the pivot line to the sensor.
	**Enter Measurement for Light Cells Location** sets the distance light cells to the center of the stick.
	**Calibrate Sensor** calibrates the angle of the laser sensor.

System Options Screen

System Options Screen

Image	Description
	**Save and Exit** saves changes and returns to the previous screen.
	**Lightbar Configuration** allows the user to configure the lightbar extents, on-grade location, intensity, location, and orientation and to turn the lightbar on and off.
	**Display Configuration** allows the user to configure the display orientation, language, background color, and units.
	**Select Reference Method** sets the reference method used to determine the cutting edge location to a known reference point. The user can select laser, bucket or bucket and laser.
	**Configure Data Output** allows the user to configure the data output rate, baud rate, bit rate, parity, and stop bits, and to turn Data Output on or off. The default setting is off.

Lightbar Configuration Screen

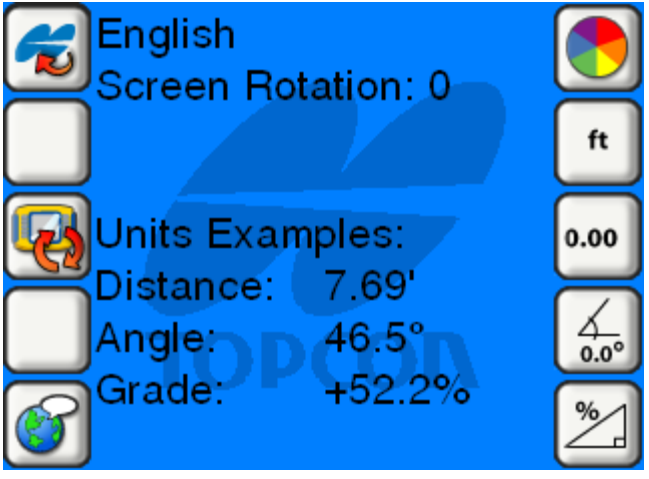
Lightbar Configuration Screen

Image	Description
	**Save and Exit** saves changes and returns to the previous screen.
	**Lightbar LED Intensity**
	**Set Lightbar On-grade Location**
	**Lightbar On/Off**

Lightbar Configuration Screen

Image	Description
	**Adjust Extents of Each LED**
	**Adjust Extents of Deadband**
	**Lightbar on Display** indicates that the lightbar is connected to the display.
	**Lightbar on Hotshoe** indicates that the lightbar is connected to the hotshoe.
 	**Lightbar Location in Cab, Left/Right** selects the location of the lightbar to ensure that it will show the same light pattern - red on the top and green on the bottom.

Display Configuration Screen



Save Changes and Exit

Portrait/Landscape

Language

Screen Background Color

Display Units, Feet/Meters

Display Units, Decimal Place

Select Angular Units

Select Grade Units

Display Configuration Screen

Image	Description
	**Save and Exit** saves changes and returns to the previous screen.
	**Portrait/Landscape Mode**
	**Select Language**
	**Screen Background Color**
	**Display Units, Meters/Feet**

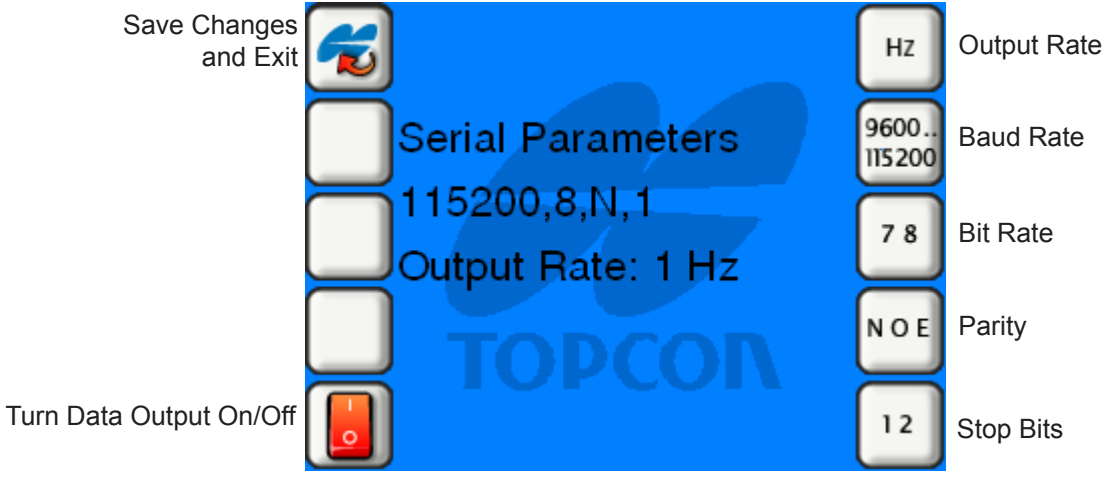
Display Configuration Screen

Image	Description
	**Display Units, Decimal Place**
	**Display Units in Decimal Places, DMS, or GONS**

Display Configuration Screen

Image	Description
	**Display Units in Percentage, Rise-Run, or Run-Rise**

Data Output Configuration Screen



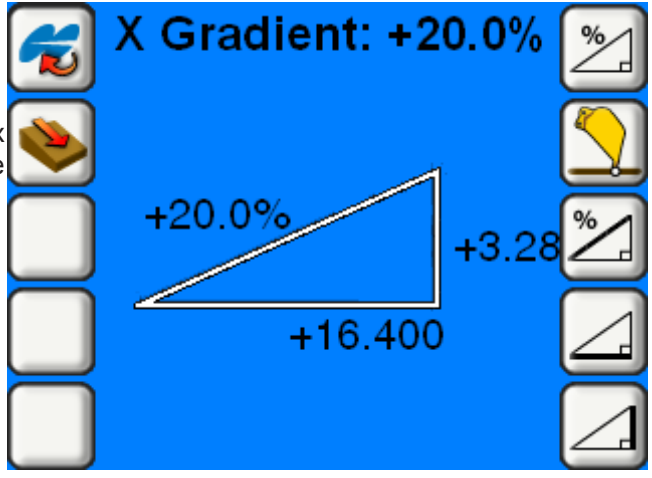
Data Output Configuration Screen

Image	Description
	**Save and Exit** saves changes and returns to the previous screen.
	**Turn Data Output On or Off**
	**Output Rate** 1,5, or 10 Hz; default is 10. 10 Hz = 10 sec.
	**Baud Rate** 9600, 19200, 38400, 57600, 115200; default is 115200.
	**Bit Rate** 7, 8; default is 8.

Data Output Configuration Screen

Image	Description
	**Parity** None (N), Odd (O), Even (E); default is N.
	**Stop Bits** 1, 2; default is 1.

Single Grade Mode Screen



Save Changes and Exit

Switch between Complex and Single Slope Profile

Grade Units

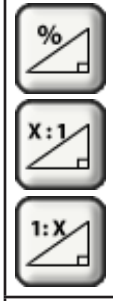
Measure Grade

Edit Slope of Grade

Edit Horizontal Distance of Grade

Edit Vertical Distance of Grade

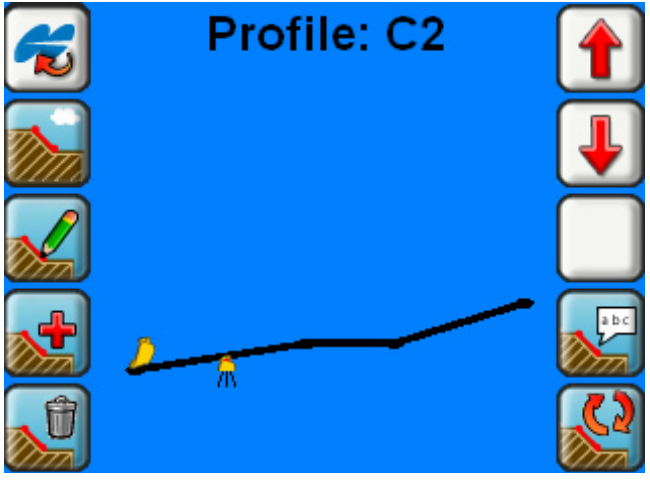
Single Grade Mode Screen

Image	Description
	**Save and Exit** saves changes and returns to the previous screen.
	**Grade Units** allows the user to display the grade units in percentage, rise-run, or run-rise.
	**Measure Grade** allows the user to measure the first point of grade, and then measure the second point of grade.

Single Grade Mode Screen

Image	Description
	**Enter Slope of Grade** allows the user to enter the slope of grade.
	**Enter Horizontal Distance of Grade** allows the user to enter the horizontal distance of grade.
	**Enter Vertical Distance of Grade** allows the user to enter the vertical distance of grade.

Complex Profile Mode Screen



Save Changes and Return to Main Screen

Change to Single Grade Mode

Edit Current Profile

Add New Profile

Delete Current Profile

Select Profile

Edit Current Profile Name

Mirror Current Profile

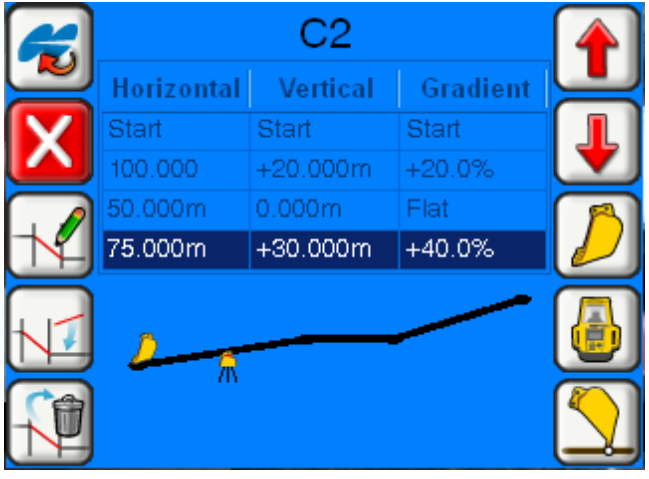
Complex Profile Mode Screen

Image	Description
	**Save and Exit** saves changes and returns to the previous screen.
	**Change to Single Grade Mode** allows the user to switch to single grade mode.
	**Edit Current Profile**
	**Add New Profile**
	**Delete Current Profile**

Complex Profile Mode Screen

Image	Description
	**Select Profile** scrolls through saved profiles.
	**Edit Current Profile Name**
	**Mirror Current Profile**

Profile Configuration Screen



Save Changes and Exit

Cancel and Exit

Edit Current Segment

Add New Segment

Delete Segment

Select Segment

Select Bucket Reference Point

Select Laser Reference Point

Measure Segment Point

Profile Configuration Screen

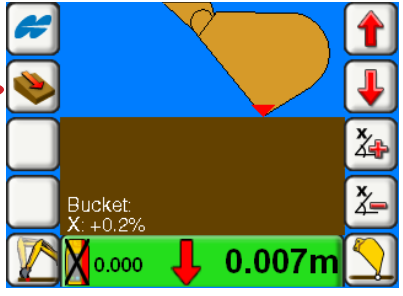
Image	Description
	**Save and Exit** saves changes and returns to the previous screen.
	**Cancel and Exit**
	**Edit Current Segment** allows the user to edit the current segment.
	**Add Segment** allows the user to add a new segment.
	**Delete Segment** allows the user to delete the current segment.

Profile Configuration Screen

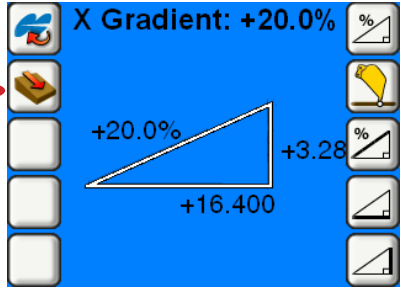
Image	Description
	**Select Segment** scrolls through the line segments.
	**Select Bucket Reference Point** allows the user to select the reference point of the bucket.
	**Select Laser Reference Point** allows the user to select the reference point of the laser.
	**Measure First and Second Point of Segment**

Create a Complex Slope

Step 1

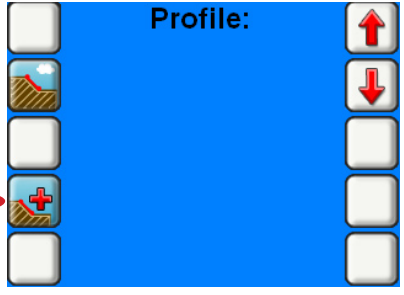


Step 2

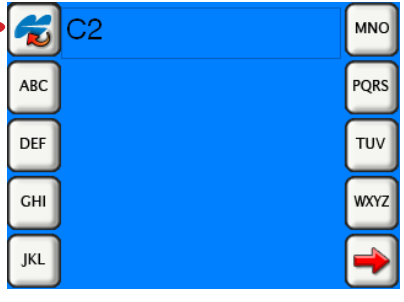


Step 3

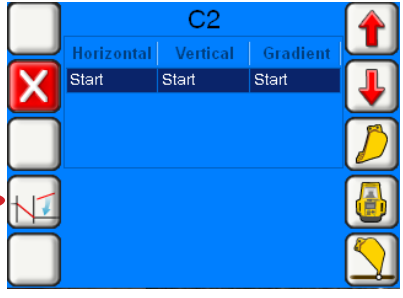
Add Profile



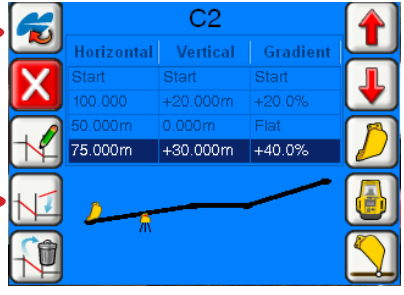
Step 4



Create a Complex Slope

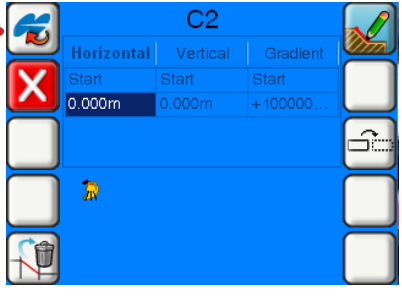


Step 5
Add Segment



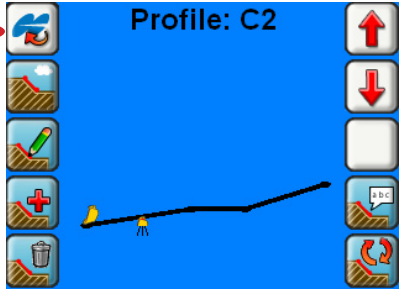
Step 9

Step 8
Add More Segments



Step 7
Save and Return

Step 6
Edit Segment



Step 10
Save and Exit

Notes:

Notes:

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ISO 9001:2000
FM 68448

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