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Field Reference Guides GCS900 Grader Version 13.13

SITECH SOUTHEAST TEXAS
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Version: 13.1

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Cut / Fill Left

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Power

Menu

USB Port









Enter








GCS900 Grader Training Display Settings

Version: 13.1


The **Control Box** must be in **Manager's Mode**

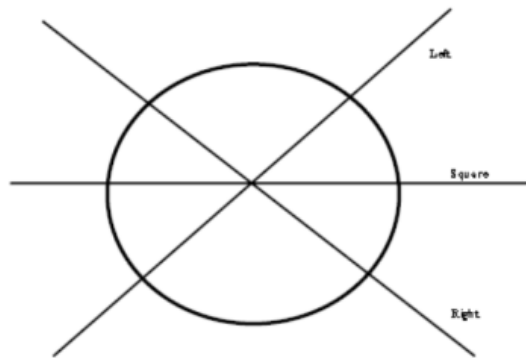
1. Press **"Menu"** 
2. Select **"GNSS Accuracy"** and Press **"OK"**
3. Press and **Hold "F6"** and Press **"F2" Medium Mode**
4. Change **"GPS Horizontal error limit:"** to **"0.30ft or 0.090m"** and Press **"Next"** 
5. Change **"GPS Vertical error limit:"** to **"0.30ft or 0.090m"** and Press **"OK"** Twice
6. Select **"Guidance Method"** and Press **"OK"**
7. Use Arrow to change **Adjust cut to avoid overcut:** to **"NO"** and Press **"OK"**
8. Select **"Increment Switch Adjustment"** and Press **"OK"**
9. Change **Vertical offset increment:** **"0.00"** and Press **"OK"**
10. Select **"Text Items"** and Press **"OK"**
11. Press **"F1"**  and **Uncheck each Item checked**
12. Press **"F1"**  to select **"Cut/Fill Left"**, **"Station"** and **"Cut/Fill Right"** (select in order)
13. Press **"F3" Cross-Section**
14. Press **"F1"**  and **Uncheck each Item checked**
15. Press **"F1"**  to select **"Cut/Fill Left"**, **"Station"** and **"Cut/Fill Right"** (select in order)
16. Press **"F4" Profile View**
17. Press **"F1"**  and **Uncheck each Item checked**
18. Press **"F1"**  to select **"Cut/Fill Left"**, **"Station"** and **"Cut/Fill Right"** (select in order)
19. Press **"F5" Text View 1**

20. Press “F1”  and Uncheck each Item checked
21. Press “F1”  to select “Design Elev.(3D)”, “Design XSlope (3D)”, “Design Mainfall (3D)”
“Satellites (3D)” and “V. GNSS Err (3D)” (select in order)
22. Press “F6” Text View 2
23. Press “F1”  and Uncheck each Item checked
24. Press “F1”  to select “Northing (3D)”, “Easting (3D)”, “Elevation (3D)”, “Cross Slope” and
“Mainfall” (select in order)
25. Press “OK”
26. Select “Save Settings” and Press “OK”
27. Select “Display Settings” and Press “OK”
28. Enter **Operator’s Name** such as “Joe G” and Press “OK”
29. Press “ESC”  twice to return to operating screen

GCS900 Grader Sensor Calibration Test

Version: 13.1



1. **Move Grader to a hard flat surface (concrete or asphalt is preferred)**
2. **Square Blade to and mark ground at each Blade Tip**
3. Press “Next”  until **Cross Slope (%)** is displayed
4. *Square Blade to Chisel Marks*
5. *Lower the blade to the ground and float the hydraulics*
6. Record **Cross Slope (%)**
7. **Rotate Blade** to the right approx. 30° and float the hydraulics
8. **Rotate Blade** to the left approx. 30° and float the hydraulics
9. **Turn Grader** around and repeat the 3 positions
10. **Cross Slope** accuracy should match readings within +/- 0.2%



If the readings are greater than +/- 0.2% a new **Sensor Calibration** is required

GCS900 Check Blade Wear

Version: 13.1

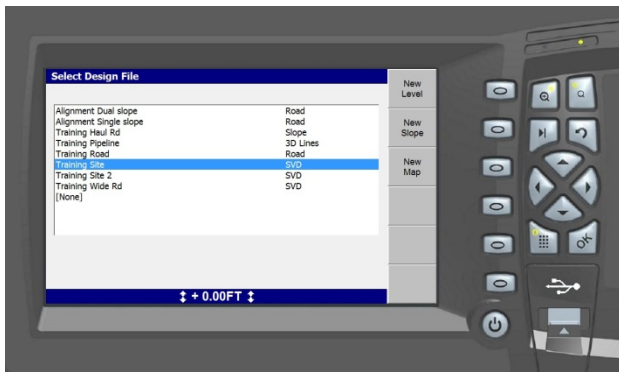
1. Press “Menu” 
2. Select “Blade Wear” and Press “OK”
3. Measure from **Center of Cutting Edge Bolts** to **Bottom of Blade**
4. Do not use **Bolt at Blade Tip**
5. Enter **Distance** and Press “OK”
6. Press “ESC”  to return to operating screen




GCS900 Load Design

Version: 13.1

1. Press “Menu” 
2. Select “Select Design” and Press “OK”
3. Use Arrows  to highlight **Design** and Press “OK”




4. Press “ESC”  to return to the operating screen

GCS900 Verify Grader System Accuracy


Version: 13.1

Verify the system accuracy at the start of each work day using a Permanent Bench Point





1. Move machine to **Bench Point** with the **Blade low to the ground**
2. Position **Blade Tip** over **Bench Point**
3. Press “Next”  until **Text Screen 2** is displayed
4. Verify correct **Blade Tip** is selected Press “F1” to change **Blade Tip**



5. Verify **Northing**, **Easting** and **Elevation** are correct (**add distance above Bench Point**)
6. See Supervisor if **Northing** and **Easting** do not match
7. See Supervisor if **Elevation** does not match Press “Next” 

GCS900 Vertical Offset

Version: 13.1

1. Press “F4”  to enter **Horizontal** and **Vertical Offset**
2. Press “F6” until **Vertical Offset** is displayed at the top left of screen
3. **Enter Vertical Offset** and Press “F2”  to select above or below **Design**




4. Press “OK” to return to operating screen
5. **Vertical Offset** is displayed at the bottom of the screen



GCS900 Horizontal Offset


Version: 13.1

1. Press “F4”  to enter **Horizontal and Vertical Offset**
2. Press “F6” until **Horizontal Offset** is displayed at the top left of screen



3. Press “F1” **Alignment:**

4. Use Arrows  to Select **[Plan Line]** if list is displayed and Press “OK”

5. Use Arrows  to Select **Line Offset** and Press “F1” **Select**




6. Press “OK” and enter **Offset distance**





7. Press “F2” Select Offset to be **Left** or **Right** of the line (**-3.00 is Left**)
8. Press “OK” to return to operating screen

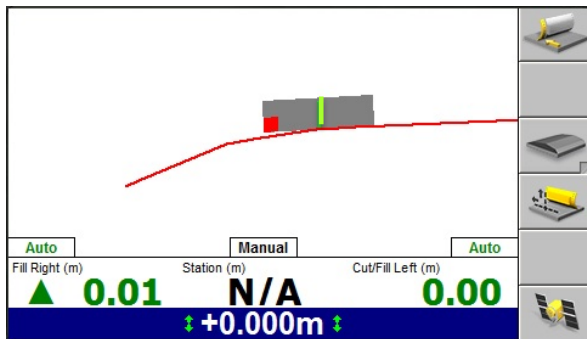


9. **Horizontal Offset** is highlighted in red
10. Press “F1”  to change **Blade Left** or **Right**

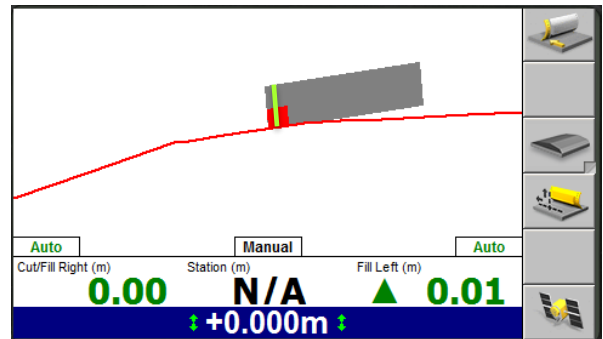
GCS900 Vertical Guidance

Version: 13.1

1. Press “Menu” 
2. Press “Guidance Method” and Press “OK”
3. Change **Adjust cut to avoid overcut:** to “NO”
4. Press “F1” for **Change Method**
5. Select **Method** from list and Press “OK”
6. Press “OK” to accept change
7. Press “ESC”  to return to operating screen







One Point Center is the default setting used for long or wide surfaces. It also allows for shaping crowns by holding the slope past the crown- point.



One Point Focus is used for narrow surfaces such as shoulders or slopes.

GCS900 Cut and Fill Site Map

Version: 13.1

1. Press “Menu”  and select “Mapping/Recording Settings” Press “OK”
2. Change “Mapping for the main screen views” to “Yes” scroll down list
3. Change “Blade tip mapping” to “Auto + forward” and Press “OK”
4. Select “Main Screen views” and Press “OK”
5. Under **Active views** select **Cut/Fill “Yes”**
6. Under **Main Screen Softkeys** select **Softkey 5 “Mapping On/Off/Auto”** and Press “OK”
7. Press “Esc”  to Main Screen
8. Press “F5” until  Mapping only in Automatic is displayed
9. Press “Next”  until **Plan View with Cut/Fill Scale** is displayed



GCS900 Lane Guidance

Version: 13.1

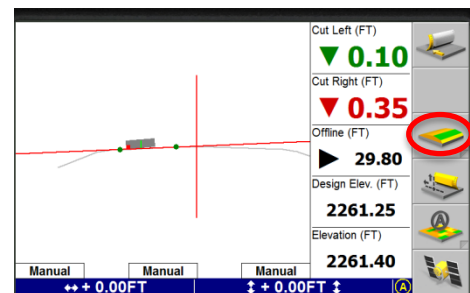
1. Move **Blade Tip with Focus** over Lane to be Extended



2. Press "F3" for Lane Guidance







3. "F3" turns Lane Guidance Off and On



GCS900 GPS + Sonic Set-Up








Version: 13.1

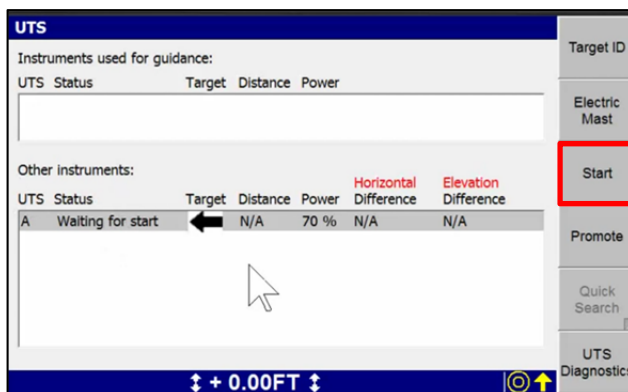
1. Connect Sonic Tracer to Machine
2. Press “Menu” 
3. Press “F4” repeatedly until “Mode: 3D UTS + Sonic” is displayed
4. Press “ESC”  to return to operating screen
5. Press and Hold “F5”  to enter **Sonic Setup**
6. Lower Blade to finished grade and position **Sonic Tracer** over reference
7. Place 3D side of Blade in **Auto**
8. Press “F4” until **Sonic On** is displayed
9. Press “F5” to **Bench Sonic Tracer**
10. Press “ESC”  to return to operating screen



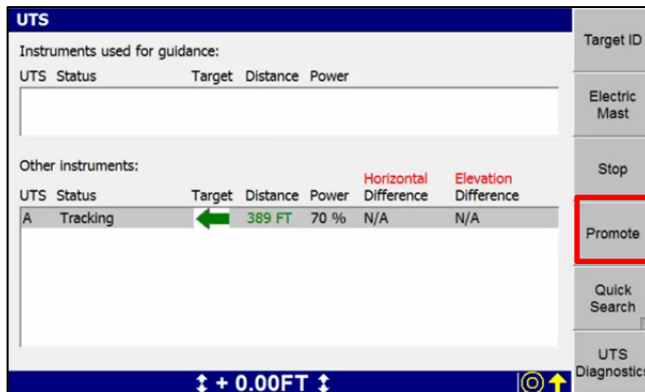
GCS900 UTS Set-up

Version: 13.1

1. Press “Menu” 
2. Press “F4” Mode select “3D UTS” and Press “ESC” 
3. Select “Calibrate Sensors” and Press “OK”
4. Select Electric mast(s) and Press “OK”
5. Press “F6”  to Calibrate Mast
6. Press “F6”  to Finish
7. Press “ESC”  to return to Configuration screen
8. Press “F2” “Installation”
9. Select “Connectivity Settings” and Press “OK”
10. Select “Select Radio Band” and Press “OK”
11. Select “2400 MHz” and Press “OK”
12. Select “Machine Radio Configuration” and Press “OK”
13. Change “Channel” and “Network ID” to match UTS and Press “OK”
14. Press “ESC”  twice to operating screen
15. Press “F6”  to Start UTS
16. With only one UTS set up, you will see one UTS highlighted in the lower window. Press “F3” to Start the UTS

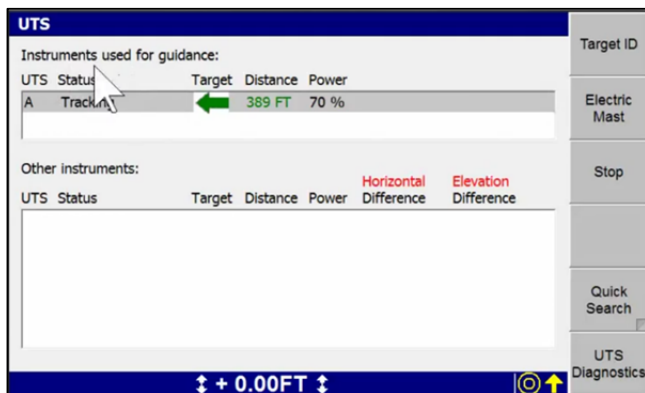


- Wait a few seconds for the UTS to start up, search and begin tracking. When the Target arrow and Distance value turn green, press “F4” to **Promote**.



This moves the UTS into the upper window on the screen.

- Check to make sure the UTS now appears in the Instruments used for guidance window:



- Press “OK” to return to the main Plan view.

- Press and Hold  to open **Bench UTS** screen

Follow instructions to position Blade over Bench Point





- Enter **Elevation of Bench Point**

- Press “F5 Left or F6 Right” to **Bench Blade**

Drive to end of work area and check Blade Elevation on a Bench Point to verify Setup

GCS900 UTS + Sonic Set-Up

Version: 13.1


1. Connect Sonic Tracer to Machine
2. Press “Menu” 
3. Press “F4” repeatedly until “Mode: 3D UTS + Sonic” is displayed
4. Press “ESC”  to return to operating screen
5. Lower Blade to finished grade and position **Sonic Tracer** over reference
6. Place 3D side of Blade in **Auto**
7. Press and Hold “F5”  to enter **Sonic Setup**
8. Press “F4” until **Sonic On** is displayed
9. Press “F5” or “F6” to **Bench Sonic Tracer**
10. Press “ESC”  to return to operating screen



GCS900 Grader Sensor Calibration

Version: 13.1

The **Control Box** must be in **Manager's Mode**

1. Press "Menu" 
2. Select "Blade Roll" and Press "OK"
3. Select "Yes" to allow **Blade Roll** operation and Press "OK"
4. Select "Calibrate Sensors" and Press "OK"
5. Select "Mainfall, Blade slope, Rotation sensors" and Press "OK"


Follow the instructions on each screen

6. **Position** and **Mark Blade/Tires** of the Grader

Use Float Function when positioning blade on ground

7. Press "Finished" when complete
8. Select "Blade Pitch Sensor" and Press "OK"




Vertically Plumb the Mast and Level Blade with a Spirit Level, Smart Level or Cell Phone App

9. Press "F6" or "OK" to calibrate
10. Press "ESC"  twice to return to operating screen

GCS900 Grader Lift Valve Calibration

Version: 13.1

The **Control Box** must be in **Manager's Mode** to perform a **Valve Calibration**
Machine hydraulic oil must be at normal operating temperature and RPMs





1. Press **"Menu"** 
2. Press **"F2"** for **Installation**
3. Select **"Valve Calibration"** and Press **"OK"**
4. Select **Lift valves** and Press **"OK"** (only required if auto Side Shift is installed)
5. Select **"Left"** valve and Press **"OK"**
Follow the instructions on each screen
6. Press **"OK"** when complete
7. Select **"Right"** valve and Press **"OK"**
Follow the instructions on each screen
8. Press **"OK"** when complete Press **"ESC"** 
9. Press **"F1" Config**
10. Select **"Save Settings"** and Press **"OK"**
11. Select **"Machine Settings"** and Press **"OK"**
12. Verify **"Name"** of Grader such as **"120M 4403162 GPS"** if **01** is added to the name **erase 01**
13. Press **"OK"** and Press **"ESC"**  twice to return to operating screen

GCS900 Grader Side Shift Valve Calibration

Version: 13.1




The **Control Box** must be in **Manager's Mode** to perform a **Valve Calibration**

Machine hydraulic oil must be at normal operating temperature and RPMs

1. Press **"Menu"** 
2. Press **"F2"** for **Installation**
3. Select **"Valve Calibration"** and Press **"OK"**
4. Select **Sideshift valves** and Press **"OK"**
5. **Read Safety Warning** and Press **"OK"**
6. Put **Side-Shift and Lift** to **"Auto"** Press **"OK"**
7. Press **"F1" Left** and Press and Hold **"F6" Test** and record how far the bladed shifted per second
8. Use **Right Arrow to increase speed** and **Left Arrow to decrease speed** 
9. Adjust values until Blade shifts **Left** and **Right** at **25mm** or **1" per second**
10. Press **"OK"** when complete Press **"ESC"**  return to **Configuration Menu**
11. Press **"F1" Config**
12. Select **"Save Settings"** and Press **"OK"**
13. Select **"Machine Settings"** and Press **"OK"**
14. Verify **"Name"** of Grader such as **"120M 4403162 GPS"** if **01** is added to the name **erase 01**
15. Press **"OK"** and Press **"ESC"**  twice to return to operating screen





Connect to WiFi GCS900

Version: 13.1

1. Press “**Menu**” 
2. Press “**F2**” Installation
3. Select “**Connectivity Settings**” then press “**OK**”
4. Select “**Wi-Fi Network**” then press “**OK**”
5. Press “**F1**” New
6. Select the Wi-Fi you wish to connect to press “**OK**”
7. Enter “**Pass Phrase**”
8. Press “**F6**” 
9. Press “**F6**” Finish
10. Select the Wi-Fi to connect to Press “**OK**”
11. Press  2 times to return to the main menu



TCC Settings GCS900

Version: 13.1

1. Press “**Menu**” 
2. Press “**F2**” Installation
3. Select “**Connectivity Settings**” then press “**OK**”
4. Select “**Connected Community Settings**” then press “**OK**”
5. Enter “**Device Password**” then press “**Next**” 
6. Enter “**Organization**” then press “**Next**” 
7. “**Filespace and Work Group Folder**” should be left to default
8. Press “**OK**”
9. Press  2 times to return to them main screen



Configure Remote Assistant GCS900

Version: 13.1

1. Press “**Menu**” 
2. Press “**F2**” **Installation**
3. Select “**Connectivity Settings**” then press “**OK**”
4. Select “**Remote Assistant Configuration**” then press “**OK**”
5. Enter “**Support Number**”
6. Press “**F1**” Force Upgrade
7. Press “**OK**”
8. Press  2 times to return to them main screen




Wireless Data Sync GCS900

Version: 13.1

1. Press “**Menu**” 
2. Press “**F2**” Installation
3. Select “**Connectivity Settings**” then press “**OK**”
4. Select “**Wireless Data Sync**” then press “**OK**”
5. Press “**F1**” Start
6. When synchronization is complete Press “**ESC**”  3 times to operating screen

Start Remote Assistant GCS900



Version: 13.1

1. Press “**Menu**” 
2. Select “**Remote Assistant**” then press “**OK**”
3. Press “**F1**” Start
4. Once  icon appears at the bottom of the screen the machine is connected
5. Press “**ESC**” 2 times  to return to them main screen

Connect to IBSS Base Station GCS900

Version: 13.1

The Control Box must be in Manager's Mode

1. Press **"Menu"** 
2. Press **"F2"** Installation
3. Select **"Connectivity Settings"** then press **"OK"**
4. Select **"GNSS Base Configuration"** then press **"OK"**
5. Select **"IBSS-Remote Base"**
6. Press **"F1"** Create New
7. Device Password and Organization should be populated if not see (TCC Settings Sheet)
8. Press **"F6"**
9. Select the Base from list and Press **"F6"**
10. Review **IBSS Base Name** and Press **"F6"** Finish
11. Select **"IBSS - Remote Base"**
12. Use left or right arrow keys to select correct base name and Press **"OK"**
13. Press  2 times to return to operating screen