



HarvestMaster™

by Juniper Systems, Inc.

High-Capacity GrainGage with Bulk Density Sensor Quick Reference Sheet

FRS Main Menu

1. Collect
2. Maps
3. Setup
4. Diagnostics

Collect

1. Spatial
2. Form
3. List
4. Navigation
5. Map Traits
6. Map Identifiers

Maps

1. Add
2. Edit
3. Delete
4. View

Setup

1. System
2. Traits Management
3. Database Tools
4. Hardware Setup

Diagnostics

1. Load Cells
2. Moisture
3. Test Weight
4. Level Detect Sensor
5. Actuators
6. Version Information
7. Print Calibrations

System

1. Manage Devices
2. Define Standard Units
3. Define Backup Location
4. Label Printer
5. Preferences
6. About

Traits Management

1. Master Traits List
2. Trait Template

Database Tools

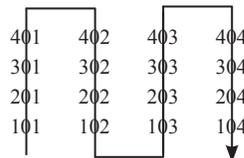
1. Export data to CSV
2. Import data from CSV

Hardware Setup

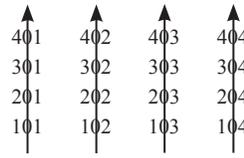
1. Weight Calibration
 - a. Load Cell
 - b. Edit Weight Calibration
 - c. Slope and Motion
 - d. Set Tare Warning
2. Moisture Curve
3. Test Weight
4. Level Sensor
5. Timers
6. Actuators
7. Setup File
8. GPS Setup

Harvest Setup

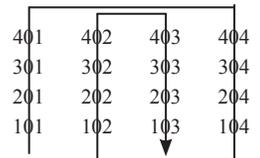
1. Select desired *Activity* – *Harvest Plot* or *Harvest Strip*.
2. Select desired *Field Map*.
3. Select desired harvest *Trait Template*.
4. Select *Collect*.
5. Select desired *Moisture Curve*.
6. Select *Form* or *Nav*.
7. Select Navigation Type – *Serpentine*, *Sequential*, *Circular*, or *Random*.
8. Select the *Left Range* and *Left Row* (starting plot).
9. Select the primary and secondary *Direction of Travel*.
10. Select *Save*.
11. Select *Form*.
12. Start harvesting.



Serpentine



Sequential



Circular



Load Cells—Calibration

1. Select *Setup > Hardware Setup > HCGG Setup > Weight Calibration*
Slope and Motion Sensor needs to be turned OFF during calibration.
2. Follow instructions on handheld screen.

BDS Test Weight Calibration

1. Select *Setup (F3) > Hardware Setup > HCGG Setup > Test Weight*.
2. Enter diagnostics screen by selecting *Diag (F3)*.
3. Tare the BDS load cell by selecting *Tare LC (F2)*.
4. Place BDS weight in cup.
5. Use the formula below to figure out how much to adjust the Load Cell Multiplier.
$$\text{New Load Cell Multiplier} = \text{Actual Weight} / \text{BDS Measured Weight} * \text{Load Cell Multiplier}$$
6. Enter new Load Cell Multiplier and save.

BDS Cup Volume Adjustment

1. Select *Setup (F3) > Hardware Setup > HCGG Setup > Test Weight*.
2. Enter diagnostics screen by selecting *Diag (F3)*.
3. Tare the BDS load cell by selecting *Tare LC (F2)*.
4. Pour a grain sample with a known test weight into the weigh bucket.
5. Press *Level (F3)* to level the grain to the top of the cup. Observe the Test Weight reading in the diagnostics.
6. If the test weight reading of the BDS does not match the known test weight of the grain sample, adjust cup volume using the formula below.

$$\text{New Cup Volume} = \text{BDS Measured TW} / \text{Actual TW from Standard} * \text{Cup Volume}$$

HCGG Maintenance Checklist	
Item	Process
Start System	First, start the combine. Next, turn on HarvestMaster System Console (Handheld should turn on automatically). Finally, load FRS.
Air Pressure	Air pressure should be set 60 –80 psi.
Air Leaks	If you have a reservoir air tank, turn off the combine after filling the tank. Check for air leaks on all cylinders and solenoids. Also check solenoid exhaust port plugs for any build-up of oil or debris. If they are caked in debris, take the exhaust port out and clean with Brake & Parts Cleaner.
Cable Connections	Ensure all cable connections are tight and there is not any debris in the connections. Be careful when reconnecting the cables not to bend or damage any connector pins.
Debris	Blow out the Graingage at the end of every day. DO NOT use high pressure washer to clean system.
Bucket Clearance	The plot bucket should be sitting firmly on the load cell tracks. Check to ensure that all cables and air hoses are not touching the bucket. Also, check the clearance around the bucket.
Actuators Cycle Smoothly	Make sure all cylinders open and close smoothly.
Weight System	Place a known weight into the weight bucket. Verify that the system reads the weight accurately. Remove the weight and verify the system zeros out.
Calibrate Bulk Density Sensor (BDS)	Procedure is in the manual (HCGG pg. 67).
Calibrate Test Weight	Procedure is in the manual (HCGG pg. 48).
Calibrate Slope and Motion	Procedure is in the manual (HCGG pg. 29).
Calibrate Moisture Curve	Procedure is in the manual (HCGG pg. 38).

For questions, concerns, or comments

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