



HarvestMaster™

by Juniper Systems, Inc.

Generic Harvest Module 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. Actuators
4. Version Information
5. 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

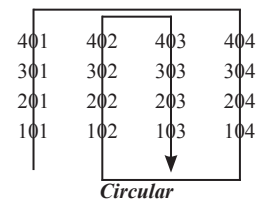
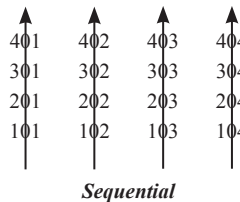
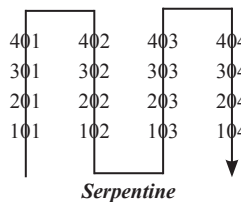
1. Export data to CSV
2. Import data from CSV

Hardware Setup

1. Weight Calibration
 - a. Edit Weight Calibration
 - b. Set Tare Warning
2. Moisture Sensor
3. GHM Config
4. Timers
5. Actuators
6. Setup File

Harvest Setup

1. Select desired Activity – *Harvest Strip* or *Harvest Plot*.
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.

Generic Harvest Module Calibrating Guide – All Load Cells

Load Cells—Calibration

1. Select *Setup>System>Define Standards Units*. Select English or Metric and number of decimal places. Select *Save*.
2. Select *Setup>Hardware Setup>GHM Setup>GHM Config*.
User must specify the number of loadcells in use.
3. Select *Diag > Load Cell*.
4. Place a known weight near load cell A. Write down the measured weight. Do the same for other load cells used in the system.
5. Adjust the weight calibration using the following equation:

$$\text{New Weight Cal Coefficient} = \text{Actual Weight} / \text{Measured Weight} * \text{Current Coefficient}$$

6. If system has non-matching loadcells, repeat calculations for all load cells until weights match when moving weight near each loadcell.
7. Select *Setup > Hardware Setup > GHM Setup > Weight Calibration > Edit Weight Calibration*.
8. Enter new weight coefficients and press *Save*.

Test Weight Chamber Volume



1. Select *Setup > Hardware Setup > GHM Setup > GHM Config*.
2. Determine the volume of the chamber in either cubic inches or cubic cm.
3. Verify the test weight accuracy by cycling a grain sample with a known test weight through the system. If the test weight measured by the system doesn't match the test weight from a standard, the chamber volume can be adjusted.
4. Calculate the new test weight chamber volume by using the following the formula:
New Chamber Volume = Measured Test Weight / Actual Test Weight * Chamber Volume
5. Enter the new Chamber Volume value and press F4 "Save".

Timer Settings

1. Select *Setup > Hardware Setup > GHM Setup > Timers*.
 - Hopper Open—The amount of time the hopper door remains open before beginning the close process. Set this value to zero if there is no hopper.
 - Plot Open—The amount of time the plot door remains open before starting the close process.
 - Settle Time—The amount of time the grain is allowed to settle in the plot bucket after the preceding gate closes before it starts weighing the grain.
 - Weigh Time—The amount of time data is collected and averaged to determine the actual weight reading.
 - Countdown Timer—The amount of time from when the enter key is pressed until the system starts to cycle. Usually equal to the time it takes for the combine to clean out or the time it takes for the grain to travel from the head of the combine to the hoppers.

Actuators

1. Select *Setup > Hardware Setup > GHM Setup > Actuators*.
2. Select the appropriate actuator type from the drop-down menu for each actuator.
3. If limit switches are being used, check the boxes accordingly.
4. If limit switches are not being used, adjust the *Open* and *Closed Transition* time in seconds needed for the stroke of the actuator to fully extend or retract.

Generic Harvest Module Maintenance Checklist

Item	Process
Start System	First start the combine. Next turn on HarvestMaster System Console (Handheld should turn on automatically). Finally start FRS
Cable Connections	Ensure all cable connections are tight and there isn't 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 a high-pressure washer to clean system.
Actuators Cycle Smoothly	Make sure all actuators and gates open and close smoothly.
Weight System	Place a known weight in bucket. Verify that they system reads the weight accurately. If calibration is needed, refer to the Manual (GHM pg. 19).
Bucket Stabilizers	Ensure that both load cells and weigh bucket are hanging straight and bucket is not leaning against stabilizer arms. Ensure hoses and/or cables are not placing any vertical pressure on bucket. Only use dry lubricant on stabilizer bars.
Calibrate Moisture Curve	Procedure is in the Manual (GHM pg. 32).