

VM-2500/VM-2500 SE Troubleshooting

Including the following consoles

DICKEY-john Seed Manager
Vanguard VM-2500
Agco SM-4000

Agri Motive Products
Division of The Daugherty Companies, Inc.
P.O. Box 306
Warren, IN 46792
260-375-2415

Check Monitor Version in Customer Setup Parameters Current version should read 0699 or 0700. If anything lower, contact Agri Motive Products for a free upgrade.

Monitor Troubleshooting Tips

VM-2500

Unit does not power up

Make sure monitor is hooked directly to 12 v. battery

Check fuse on battery cable

Inspect touch switch for possible damage

Setup

Constants are changed in setup mode by using the “set” and “select” keys. Select chooses the digit and set changes it.

Distance calibration fails to generate a number. Make sure a 400 ft course has been driven. Verify that a distance sensor is connected to the monitor, and if using a radar Y cable, that it is properly connected to the tractor system.

Check in the “Customer Setup Parameters” to be sure speed is set to “d1” when using a distance sensor such as radar, magnetic wheel sensor or the Vanguard digital sprocket sensor. If using a 2 wire reluctance sensor, setting should be “r1”.

Distance sensor calibration does not produce correct speed or match tractor console. Check to see if either monitor is in metric. Verify the tractor is correct. Many tractor dash units have not been calibrated for years and could be wrong. If using a magnetic wheel sensor, make sure all 60 magnets are in use and that they alternate line/no-line.

I don't have an RPM sensor, what do I enter as a constant

Enter 0000 and this will disable this feature.

I can't get into setup mode

When the monitor does a self test and detects errors or insufficient sensors, etc, an error code is displayed – EO:64 for example. This must be cleared by pressing the population key to release the keyboard. Any failure or alarm must be acknowledged by pressing either the alarm key or population key.

Monitor fails to display population

Population is a function of seed count and speed. Distance sensor problems can be determined by watching speed on the readout. A wiring harness problem

would cause the monitor not to see seed dropping. Check to see if bar graphs are indicating seed drop. If so, speed could be the problem.

Population is wrong

Check setup area for correct row spacing entry. Row spacing is exactly that... not sensor spacing. If the rows are 8" apart, that is the number to enter, not the distance to the next sensor.

Speed reading is wrong. Check speed and verify that it is correct. Incorrect speed of a fluctuating speed could be caused by a faulty distance sensor and would cause population swings.

If operator has verified his correct population by measuring a section of field and calculated the seed use, this monitor may be calibrated by changing the sensor gain adjustment. Normally this comes set at 100. For a number of drills, this number is set at 110. Slight increases or decreases in this number will be reflected in increased or decreased population displayed. By properly setting this sensor gain, the monitor can be made to read out actual population readings. See setup instructions for proper setting of these numbers in the Customer setup parameters.

Erratic Population

When using Ultra High Rate Sensors on soybeans, erratic population numbers may appear. This is caused by the sensors seeing the variation between the high and low pulses in the seed stream caused by the fluted meters. By increasing the "pop avg" number in the customer setup parameters, a longer window of averaging will smooth out the readings.

A defective speed sensor can also cause erratic population. Watch the speed display to determine if the speed is fluctuating.

Acre count is wrong

Check the entry for overall implement width. This must be in inches. Example, a 20 ft. implement is entered as 240.0 inches in the setup mode. Follow above instructions for row spacing. Speed problems can also produce wrong acre counts.

How do I shut off acre counts on the ends while turning?

It is done automatically when seed flow stops.

All rows do not appear when unit is powered up

The monitor does a self-test when powered up, and as sensors are recognized and tested, bar graphs appear in the lower area of the window of the monitor indicating the presence of the sensor and the row number associated with it. If a row fails to appear, it means that the monitor has not seen the sensor, or an incorrect IMP code is entered. Check IMP code listing to verify the code you are

using. If a sensor problem is indicated, move the sensor to another row, then shut the monitor down and power up again. If the problem moved, the sensor is defective and needs to be replaced. If the sensor is good, check for correct voltages at the sensor connector (see below), and check for broken, pinched or cut cables.

All Rows Failed

Make sure monitor is connected to implement harness

Check implement harness to verify it is for Dj style wiring. Power and ground wires are on 24, 25, 26 and 27. Not on 27-28.

Check Sensor Voltage – 7.5-8.5v. between Red and Black/ negative 12v. between Green and Black. If not present, check at 37-pin connector coming from the monitor. 7.5-8.5v. between pins 24 and 26. Negative 12v. between pin 26 and individual row pins. (1, 2, 3, 4 etc.)

Alarm does not work

Blows continuously even with monitor turned off... look for backfeed of voltage from some other source. Check tractor ground.

Fails to blow – Check volume level by holding alarm down as it cycles from high to low volume. If it still does not work, unit must be repaired.

Alarm is too loud

Follow above procedure to cycle through levels until a satisfactory level is reached.

Monitor is in Metric

Check setup mode for the “units” screen.

Monitor does not scan rows

Check to see if you are in MIN-MAX-AVG mode at the top of the keyboard. Pressing this switch will toggle between scan and M-M-A modes.

Using Manual Speed

If no distance sensor is used, or in the event of a failure of a distance sensor, the monitor has the ability to work from a manual speed entry. When seeds begin to drop, and no speed signal is present, the monitor will go into a manual setup mode. A speed setup screen will appear, and enter the normal travel speed as for example: 5.7 mph. As long as the tractor is traveling close to this speed, the population numbers generated will be quite accurate.

How do I clear my acre count?

Press the Area key to the area level you want to clear, press and hold “clear” until it resets to “0”. Clearing one level will not affect the other levels.

Can I record my populations using Precision Agriculture equipment.

Yes, Ag Leader and other devices may be attached to the monitor through an RS-232 cable to record populations in conjunction with a GPS system.

VM2500 ALARMS & ERROR CODES

BATTERY SYMBOL APPEARS ON DISPLAY

Probable Cause

1. Low Battery Voltage
2. Intermittent Harness Short to Ground
3. Poor Battery Connections

Corrective Action

1. Recharge or replace battery
2. Locate short and repair by splicing, soldering, and sealing the wire
3. Clean and Tighten Battery Connections

ERROR CODE HOPPER FAILURE – Hopper sensor missing

Probable Cause

1. Hopper sensor is not connected
2. Tractor or planter harness is pinched or cut
3. Hopper sensor harness is pinched or cut

Corrective Action

1. Connect Hopper sensor to planter harness
2. Locate short or cut and repair by splicing, soldering, and sealing wire
3. Locate short or cut and repair by splicing, soldering, and sealing wire

ERROR CODE PRESSURE FAILURE – Pressure sensor is missing

Probable Cause

1. Pressure sensor is not connected
2. Tractor or planter harness is pinched or cut
3. Pressure sensor harness is pinched or cut

Corrective Action

1. Connect Pressure sensor to planter harness

2. Locate short or cut and repair by splicing, soldering, and sealing wire
3. Locate short or cut and repair by splicing, soldering, and sealing wire

ERROR CODE E 020 – Indicates sensor supply voltage is shorted to ground

Probable Cause

1. Tractor or Planter Harness is pinched or cut

Corrective Action

1. Locate Short or Cut and repair by splicing, soldering, and sealing the wire

ERROR CODE E 021 – Sensor Supply voltage is shorted to the battery

Probable Cause

1. Tractor or Planter Harness is pinched

Corrective Action

1. Locate Short or Cut and repair by splicing, soldering, and sealing the wire

ERROR CODE E 060 – Seed Smart sensor under-counted during self-test

Probable Cause

1. Seed tube is dirty
2. Self-test performed while planting

Corrective Action

1. Clean seed tube with dry bottle brush
2. Redo sensor self-test

ERROR CODE E 062 – Seed Smart sensor over-counted during self-test

Probable Cause

1. Seed tube is dirty

2. Self-test performed while planting

Corrective Action

1. Clean seed tube with dry bottle brush
2. Redo sensor self-test

ERROR CODE E 063 – Seed Smart sensor tube is blocked

Probable Cause

1. Seed tube is clogged
2. Seed treatment build up on seed tube
3. Wires under sensor sheath are cut or shorted
4. Faulty sensor

Corrective Action

1. Clean seed tube to remove any obstruction
2. Clean seed tube with mild cleanser and wet bottle brush
3. Repair wires by splicing, soldering, and sealing the wire
4. Contact DICKEY-john Service Department to replace sensor

ERROR CODE E 064 – No sensors are connected

Probable Cause

1. Planter harness not connected to tractor harness
2. Tractor harness not connected to console
3. Harness not connected to first Seed Smart sensor
4. Tractor and/or planter harness cut or pinched
5. Console setup for sensors that are not installed
6. Defective console

Corrective Action

1. Check tractor harness and planter harness connection
2. Check Console tractor harness connection
3. Check connection at sensor. Connect a Seed Smart sensor directly to P1 of the tractor harness and reapply power to console. If E 064 occurs again, the tractor harness or Console is defective.
4. Locate the fault and repair wires by splicing, soldering and sealing the wire
5. Check customer setup constants and disable unused sensors
6. Contact DICKEY-john Service Department to replace sensor

ERROR CODE E 065 – More sensors connected than Console expects

Probable Cause

1. Implement Type Configuration constant incorrect
2. Console not setup correctly for installed sensors

Corrective Action

1. Check Implement Type Configuration constant against Planter Configuration Instruction 11001-1107
2. Check Customer Setup Constants and enable sensors

ERROR CODE E 066 – Fewer Seed Smart Sensors connected to Console than expected

Probable Cause

1. Implement Type Configuration constant incorrect
2. Seed Smart sensor harness disconnected
3. Cut or pinched harness
4. Defective sensor

Corrective Action

1. Check Implement Type Configuration constant against Planter Configuration Instruction 11001-1107
2. Check harness connection after sensor associated with NUMBER of ROWS displayed with E 066
3. Locate fault and repair wires by splicing, soldering, and sealing wire
4. Exchanged sensor after NUMBER of ROWS sensor with an upstream sensor and reapply power. If same NUMBER of ROWS displays, the sensor associated with NUMBER of ROWS is defective. If NUMBER of ROWS changes, then next sensor in daisy chain is defective.

ERROR CODE E 067 – More than 18 Sensors connected to either P1 or P2

Probable Cause

1. Too many sensors connected on one line
2. The planter configuration does not match the configuration of the VM2500

Corrective Action

1. Distribute sensors evenly between P1 and P2
2. Verify the configuration of the planter versus the configuration of the VM2500

ERROR CODE E 080 – Bus fault

Probable Cause

1. Embedded software

Corrective Action

1. Note the 2 digit display and report results to factory service

ERROR CODE E 081 – Power interrupt**Probable Cause**

1. Cut or pinched harness
2. +12 Seed Smart Sensor power wire shorted to ground
3. Console power not directly connected to battery

Corrective Action

1. Locate short or cut and repair by splicing, soldering, and sealing wire
2. Locate short or cut and repair by splicing, soldering, and sealing wire
3. Run Seed Manager power directly from battery. Do not supply console power off of accessory power or through the ignition switch

ERROR CODE E 082 – LCD Fault**Probable Cause**

1. Embedded software

Corrective Action

1. Note the 2 digit display and report results to factory service.