



| | |
|---|-----------|
| Safety Notices | 1 |
| Introduction | 3 |
| System Overview | 3 |
| Installation and Setup | 5 |
| Console Mounting | 5 |
| Console Harness Installation | 6 |
| Power Connection | 7 |
| Implement Harness/Module Connection | 9 |
| Module Order | 9 |
| Module Installation | 9 |
| Module Setup Examples | 12 |
| Connecting Sensors to Modules | 14 |
| Hopper Level Sensors | 15 |
| Harnesses | 18 |
| 12 Row Harness | 18 |
| 16 Row Harness | 18 |
| Shaft Speed Module Harness | 19 |
| RS485 Extension Harness | 19 |
| Startup | 21 |
| Switchpad Overview | 21 |
| On/Off | 21 |
| Alarm | 21 |
| Setup | 21 |
| Min Avg Max Scan | 21 |
| Select Row | 21 |
| Select | 22 |
| Set | 22 |
| Start Stop Reset | 22 |
| Back | 22 |
| Operate 1 | 22 |
| Operate 2 | 23 |
| Operate 3 | 23 |
| Setup Mode | 24 |
| Setup Constants | 24 |
| Seed Flow Alarm Adjustment | 26 |
| Population Hi Limit | 27 |
| Population Lo Limit | 27 |
| Row Width | 27 |
| Implement Width | 28 |
| Ground Speed Source | 28 |
| Distance Calibration | 28 |
| Automatic Configuration | 29 |
| Split Row Configuration | 30 |
| Number of Seed Modules | 31 |
| Row Status | 32 |
| Total Number Of Rows Configured | 33 |
| Number of Fan Speed Sensors | 33 |
| Number of Shaft Speed Sensors | 35 |



| | |
|--------------------------------------|-----------|
| Setup Mode Continued | 37 |
| Number of Hopper Level Sensors | 37 |
| Number of Pressure Sensors | 38 |
| Blockage Mode Configuration | 39 |
| Population Filter | 40 |
| Population Scaling Factor | 41 |
| Sensor/Module Self-Test | 41 |
| English/Metric Units | 42 |
| Customer Setup Constants | 42 |
| Operation | 45 |
| Operate Mode | 45 |
| Run Hours | 45 |
| Population | 46 |
| Population Scan | 46 |
| Population Min Avg Max | 47 |
| Population Select Row | 47 |
| Seed Spacing | 48 |
| Ground Speed | 48 |
| Fan Speed | 49 |
| Shaft Speed | 49 |
| Pressure | 50 |
| Area Accumulator | 50 |
| Seed Count | 51 |
| Distance Accumulator | 51 |
| Speed Area Mode | 52 |
| Alarms | 53 |
| All Rows Failed | 54 |
| Rows Failed | 54 |
| Distance Sensor Failed | 54 |
| Population Hi Limit Warning | 55 |
| Population Lo Limit Warning | 56 |
| Fan Speed Hi Limit Warning | 56 |
| Fan Speed Lo Limit Warning | 57 |
| Shaft Speed Hi Limit Warning | 57 |
| Shaft Speed Lo Limit Warning | 58 |
| Pressure Hi Limit Warning | 58 |
| Pressure Lo Limit Warning | 58 |
| Hopper Lo Warning | 59 |
| Battery Voltage Warning | 60 |
| Self Test Error Codes | 61 |
| Connector Pinouts | 65 |
| Setup Record Sheet | 66 |
| Setup Record Sheet | 67 |
| Warranty | 69 |



SAFETY NOTICES

Safety notices are one of the primary ways to call attention to potential hazards.



This Safety Alert Symbol identifies important safety messages in this manual. When you see this symbol, carefully read the message that follows. Be alert to the possibility of personal injury or death.

WARNING

Use of the word **WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Use of the word **CAUTION** with the Safety Alert Symbol indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION

Use of the word **CAUTION** without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in equipment damage.





INTRODUCTION

SYSTEM OVERVIEW

The Seed Manager[®] SE System monitors up to ninety six (96) seed rows, two (2) fan (RPM) inputs, three (3) shaft speed (RPM) inputs, two (2) pressure inputs, seven (7) hopper level inputs, and (1) ground speed input.

It is compatible with DICKEY-john standard and Hi-Rate seed sensors. Implement configuration data is stored in nonvolatile memory retaining information even when disconnected from the tractor battery.

Figure 1

SeedManager[®] SE Console







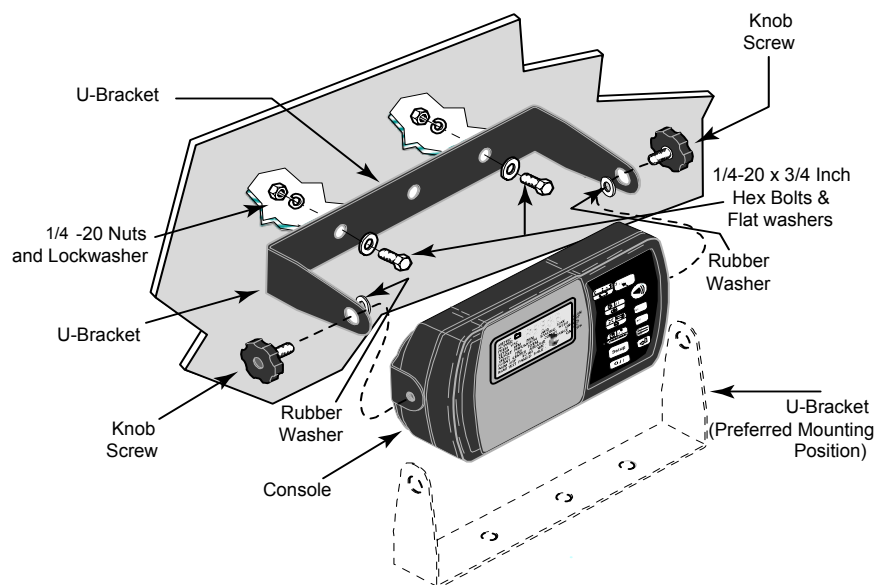
INSTALLATION AND SETUP

CONSOLE MOUNTING

The console should be mounted inside the tractor cab in a location accessible to the operator but does not obstruct the driving view. (Figure 2) depicts a typical console mount.

Figure 2

Typical Console Mounting using the U-bracket and hardware



MOUNTING STEPS

1. Verify the rear side of the selected mounting surface is free of wiring or other obstructions and is accessible for inserting and tightening the mounting bolts.
2. Use the U-shaped mounting bracket as a template to mark the two outside holes of the bracket on the selected location and drill two 9/32 inch holes. An alternate mounting method that allows the console to swivel, requires drilling the center bracket hole only.
3. Attach the mounting bracket to the mounting surface using the 1/4 - 20 x 1/2 inch bolts, lockwashers, flatwashers, and nuts.
4. Secure the console to the mounting bracket using the two knob screws.
5. Insert the two rubber washers between the bracket and console.
6. Tilt console so that the J1 connector on the rear of the console is accessible.
7. Temporarily tighten the two knob screws.



CONSOLE HARNESS INSTALLATION

The J1 connector on the back of the console connects all input and output signals to the Seed Manager® SE console. The primary tractor harness is shown in (Figure 3).

Harness contains connectors for

- Ground speed sensor (digital)
- Ground speed sensor (reluctance)
- System power
- P1 and P2 Bus connectors. A secondary module harness is used to connect to P1 and/or P2.

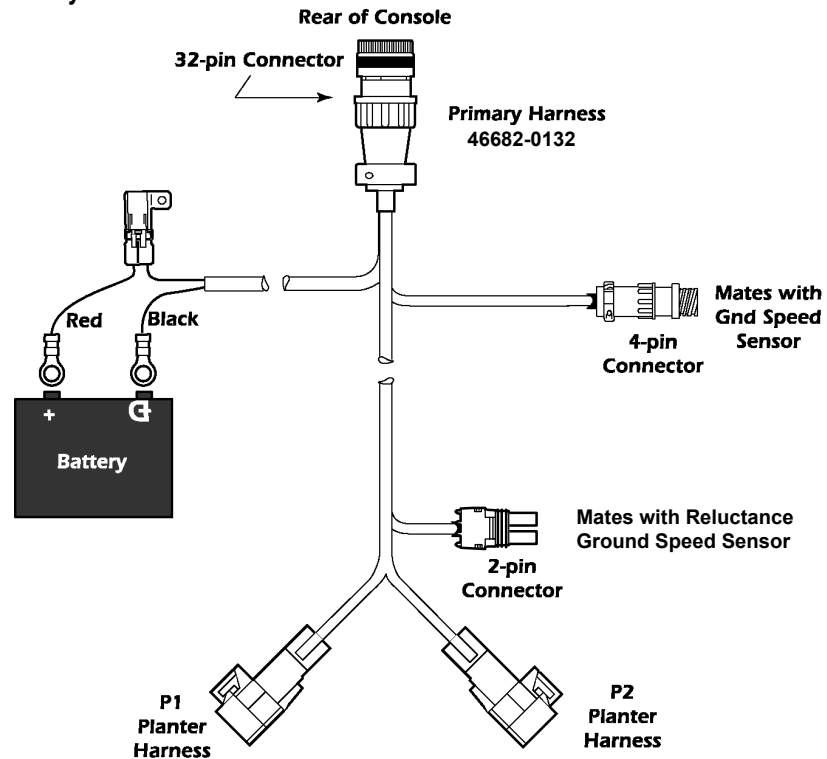
For systems that contain a J2 connector, a separate accessory harness will contain a RS-232 connector for PC/GPS applications.

Figure 3

Primary Tractor Harness

Note:

Due to the power requirements for the Seed Manager® SE system, the battery connections must be made directly to the tractor battery.





Install the primary (J1) harness from the rear of the console to the tractor hitch as follows:

Note:

Due to the power requirements for the Seed Manager® SE system, the battery connections must be made directly to the tractor battery.

1. Route the primary harness from J1 on the console rear to the rear of the tractor, near the hitch. Route on the side of the tractor opposite the alternator and spark plugs.
2. Locate the harness to prevent being pinched, cut, or stepped on and secure it with wire ties.
3. Install or connect an existing ground speed sensor. The ground speed sensor may be one of three types – radar, reluctance, or Hall Effect. A radar sensor or reluctance sensor connects directly to the designated connector on the primary harness. A Hall Effect sensor may require an adapter harness to connect to the primary harness. Sensor mounting instructions accompany the sensor. Select the mounting location and install as the instructions describe.
4. Refer to Implement Harness instructions on page 9 to install Module and Sensor Harnessing.

CAUTION

Power connections should be made last to avoid accidental shorts during harness installation.

POWER CONNECTION

The Seed Manager® SE System operates on 12 volts DC only. The battery connections on the primary harness consist of two wires, each terminated with a ring terminal.

Before making the battery connections, determine the tractor battery arrangement from Figures 4, 5, and 6.

After the 12 volt source is known:

1. Connect the black wire directly to the negative (-) terminal of the battery.
2. Connect the red wire (containing the fuse link) to the positive (+) battery terminal.
3. Ensure the connections are clean and tight. Do not route these wires in close proximity to the existing battery cables.
4. Secure the battery wires with wire ties.

CAUTION

If the tractor battery arrangement differs from that shown or if any doubt exists about how to connect to the battery, use a volt meter first. Verify 11 to 14 volts across the battery connection points. On tractors using two batteries, be sure to make connections to the grounded battery.



Figure 4

12V Battery Source Connections

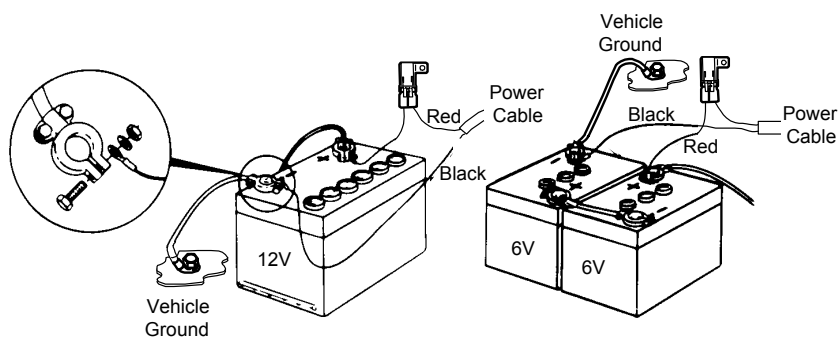


Figure 5

24V Battery Source Connections

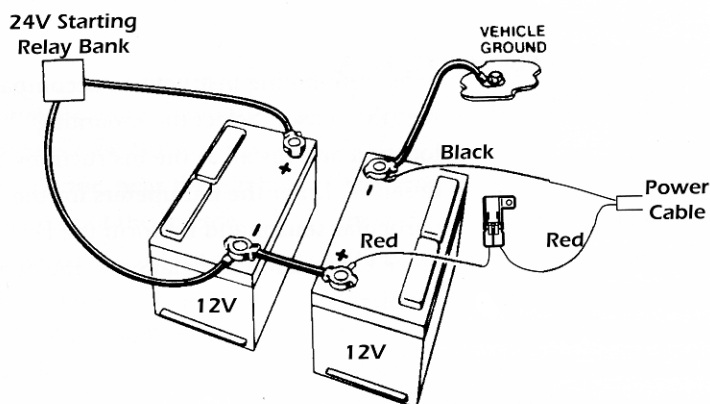
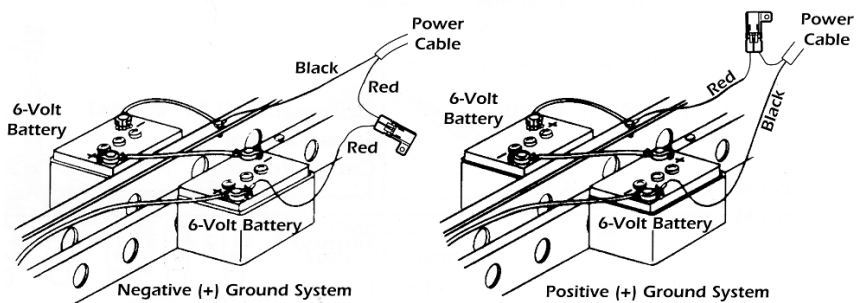


Figure 6

Negative or Positive Source Connections



IMPORTANT: Before welding on the frame or chassis, be certain to disconnect battery leads. Failure to do so could result in damage to the Seed Manager® SE.



IMPLEMENT HARNESS/MODULE CONNECTION

The Seed Manager® SE System uses any combination of three basic module types each with specific harness configurations.

Module Types:

- 12 Row Material Flow
- 16 Row Material Flow
- Shaft Speed

The following requirements must be observed when connecting modules to the bus:

- A maximum of six Material Flow Modules can be connected to the bus.
- Only one Shaft Speed Module can be connected to the bus.
- The Shaft Speed Module can be connected anywhere on the bus that is convenient and can be connected to either P1 or P2.
- A maximum of three Material Flow Modules can be connected to P1 or P2.
- Any combination of 12 Row or 16 Row Material Flow Modules can be used.

MODULE ORDER

IMPORTANT: The order in which Material Flow Modules are connected and their position on the toolbar or implement is important. The Material Flow Modules are identified by the console as b1, b2, ...bn (where *n* is the total number of Material Flow Modules connected). The order in which the console identifies the modules depend on how they are connected to the bus. Refer to (Figure 10) that shows example system configuration setups.

A single Bus cable connects to each module then serially (daisy chains) connects to following modules. The primary harness divides into two halves at the implement hitch (P1 and P2).

MODULE INSTALLATION

1. Select an area on the implement to mount the member that allows for easy hookup and access. Extensions can be used to reach members installed on remote areas of the implement.

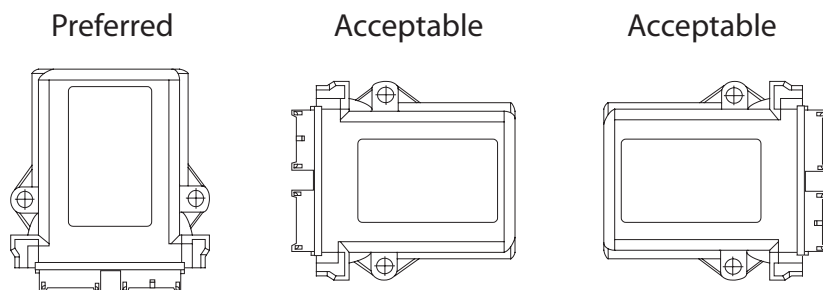
CAUTION

Do not install the module in any orientation other than illustrated in (Figure 7). The connection wires must NOT be mounted upward as moisture can collect inside the unit and damage the circuits. Ensure that module connectors do not face upward in a folded position as well.



Figure 7

Material Flow Module



2. Mount with the label side of the module facing out.
3. To bolt the member to a frame:
 - Use the enclosure as a template to mark the location of the mounting holes.
 - Drill two 9/32 inch diameter holes where marked.
 - Attach to frame using 1/4 x 20 bolts or other fastening devices as illustrated in [\(Figure 8\)](#).

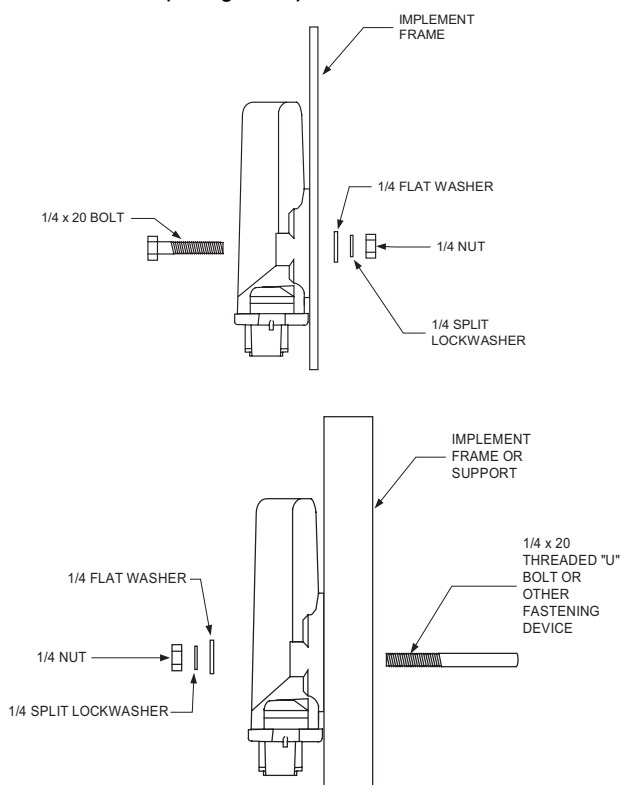
⚠ CAUTION

Do not use the enclosure as a guide when drilling. Do not overtighten nuts as this may damage the mounting tabs on the enclosure.



Figure 8

Material Flow Modules (using bolts)

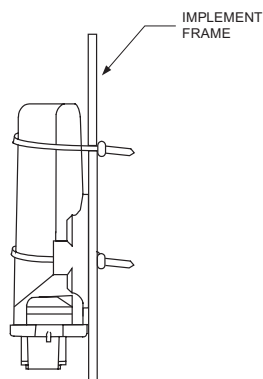


4. To tie strap the member to a frame:

- Use one long tie-strap to loop around the member body and through both mounting holes as illustrated in (Figure 9).
- If necessary, drill mounting holes following the procedure described above.
- Securely tighten tie strap.
- Install a second tie strap toward the label end of the enclosure for additional support.

Figure 9

Material Flow Module Installation (Tie Strap)





5. Lay out each module harness along the frame of the implement to each of the seed rows (or appropriate sensors).
6. Secure the harness to the toolbar with a minimum of 3" straight wire exiting the module before bending and attaching with tie straps.
7. Install and/or connect each of the seed sensors (or appropriate sensor). Sensor mounting instructions accompany the sensor. Select the mounting location and install as described in the instructions.
8. Connect each module together with a bus harness.

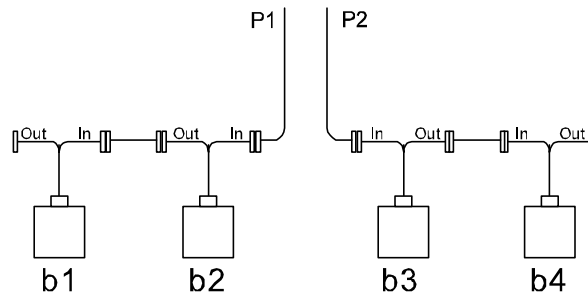
IMPORTANT: Be sure the locking tabs engage when inserting the connectors. The connection is sealed when the locking tabs have fully engaged.

9. Connect the tractor harness P1 and P2 connectors to the bus harness.
10. Coil and secure existing cables with wire ties to avoid pinching or damage to the harness.

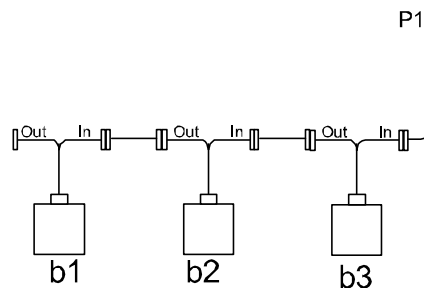
MODULE SETUP EXAMPLES

Figure 10

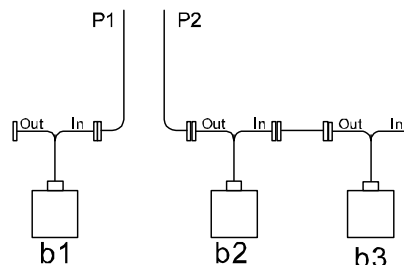
Four Module Setup (two modules are connected to P1 and two to P2)



Three Module Setup (All modules connected to P1)

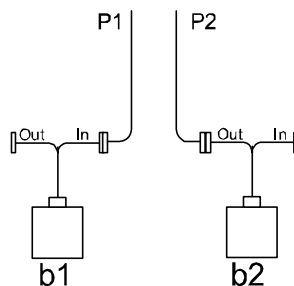


Three Module Setup (one module connected to P1 and 2 connected to P2)

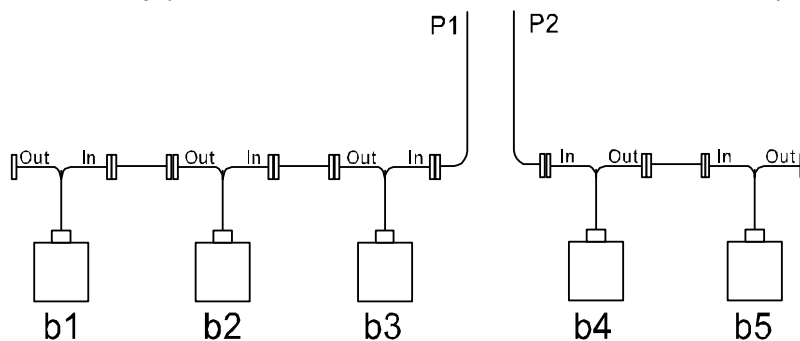




Two Module Setup (one module connected to both P1 and P2)



Two Module Setup (three modules connected to P1 and 2 connected to P2)



As the previous examples show, b1 is always identified as the LAST module connected to P1. The remaining modules on P1 are numbered sequentially, along with any modules connected to P2.



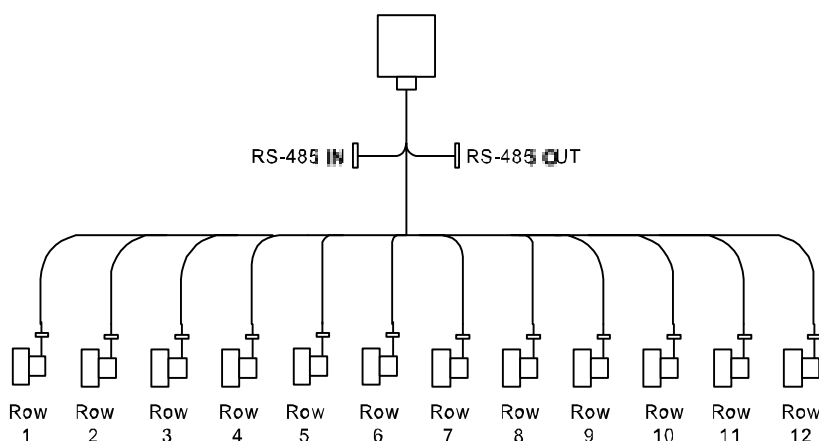
CONNECTING SENSORS TO MODULES

IMPORTANT: When connecting sensors to the Material Flow Modules, all seed sensors installed on a Material Flow Module must be connected sequentially starting with Row 1 as shown below.

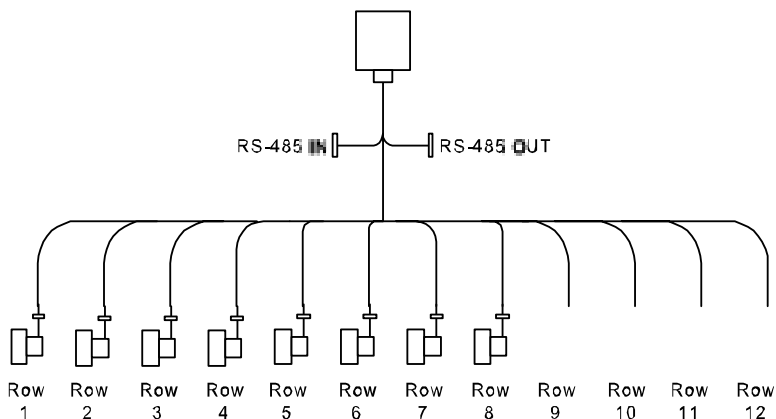
When correctly connected, row 1 sensor should be connected to the Row 1 input on **b1**. The monitor will then number the sensors from 1 to *n* starting on **b1**, then **b2**, and so on.

Figure 11

Correct Install



Correct Install



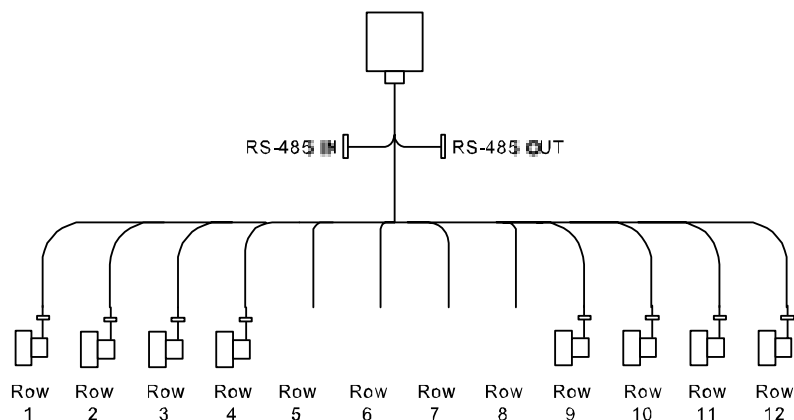


The following illustration shows eight row modules installed incorrectly.

IMPORTANT: There can be no skips in the row inputs on a Material Flow Module.

Figure 12

Incorrect Install



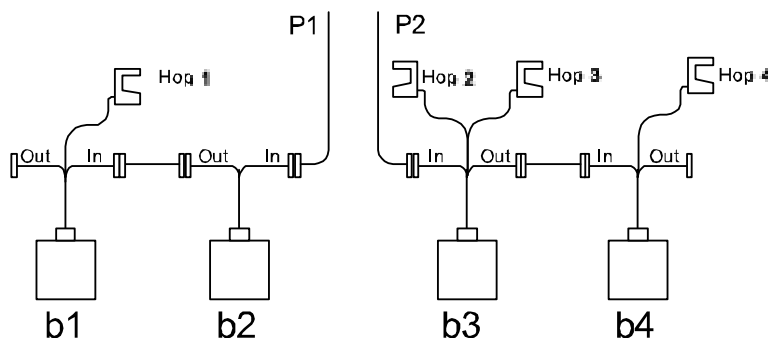
HOPPER LEVEL SENSORS

Hopper level sensors can be connected to 12 Row Material Flow Modules. Hopper sensors can be connected to either of the hopper inputs on a Material Flow Module. The monitor will identify the number of hopper sensors connected to each Material Flow Module and will number them from 1 to n starting with any sensors connected to **b1**. If no sensors are connected to **b1**, the number starts from **b2** and so on.

In the event that two hopper sensors are connected to a given module, the sensor connected to input 1 is numbered before the sensor connected to input 2. The following shows an example configuration with hopper sensors connected and how they would be identified by the console.

Figure 13

Hopper Sensor Connection to 12 Row Material Flow Module

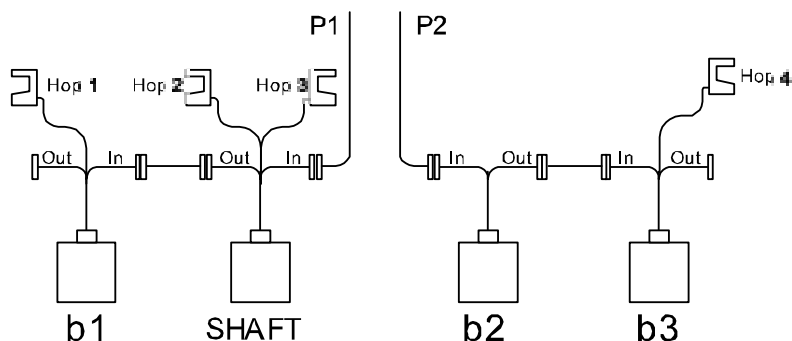




When hopper level sensors are connected to a Shaft Speed Module, they are numbered relative to the position of the Shaft Speed Module on the bus. If the Shaft Speed Module is connected to the RS-485 out of **b1**, the numbering of the hopper sensors starts with this module, then continues with any hopper sensors connected to **b1**, **b2**, etc. If the Shaft Speed Module is connected between Material Flow Modules, any hopper sensors connected are numbered in the order in which they are detected as shown below.

Figure 14

Hopper Sensor Connection to Shaft Speed Module

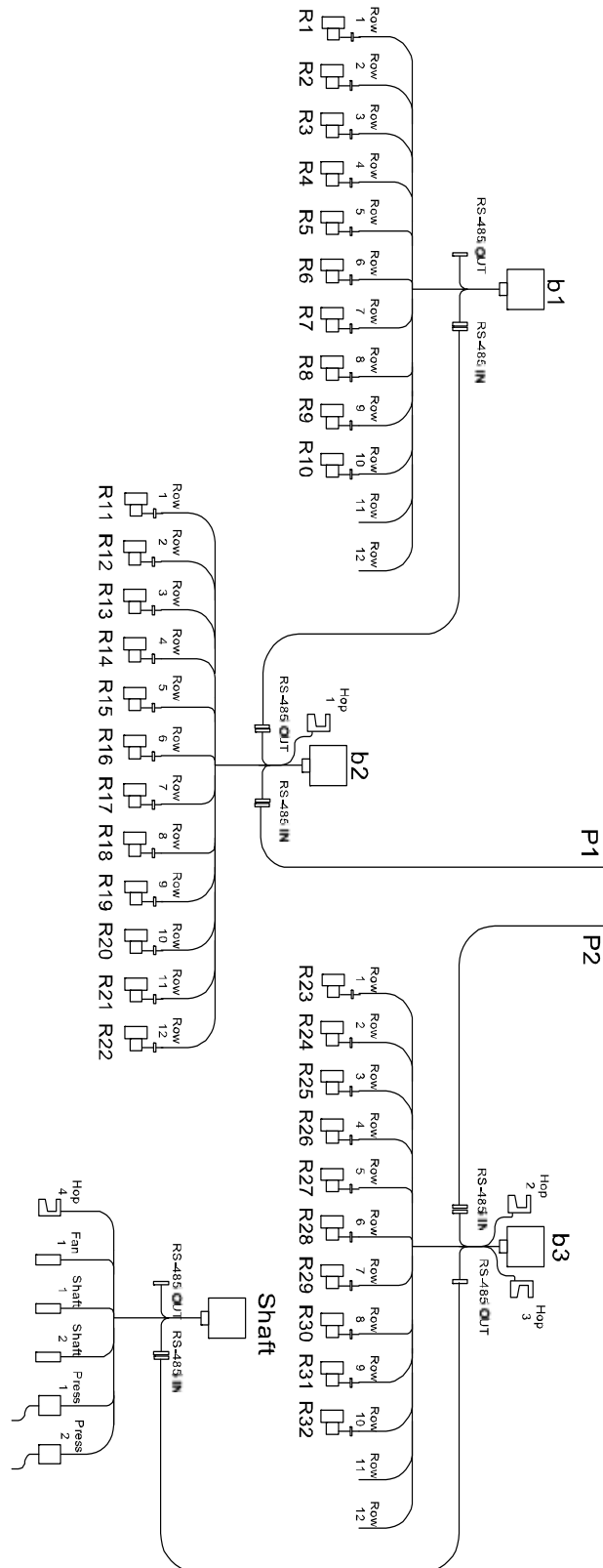




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CORPORATION

NOTE: Shaft, fan, and pressure sensors can only be connected to the Shaft Speed Module. These sensors are identified by the monitor according to what input they are connected to regardless of the position of the Shaft Speed Module on the bus. (Figure 15) shows a complete example of a system setup and how each connected sensor would be identified.

Figure 15

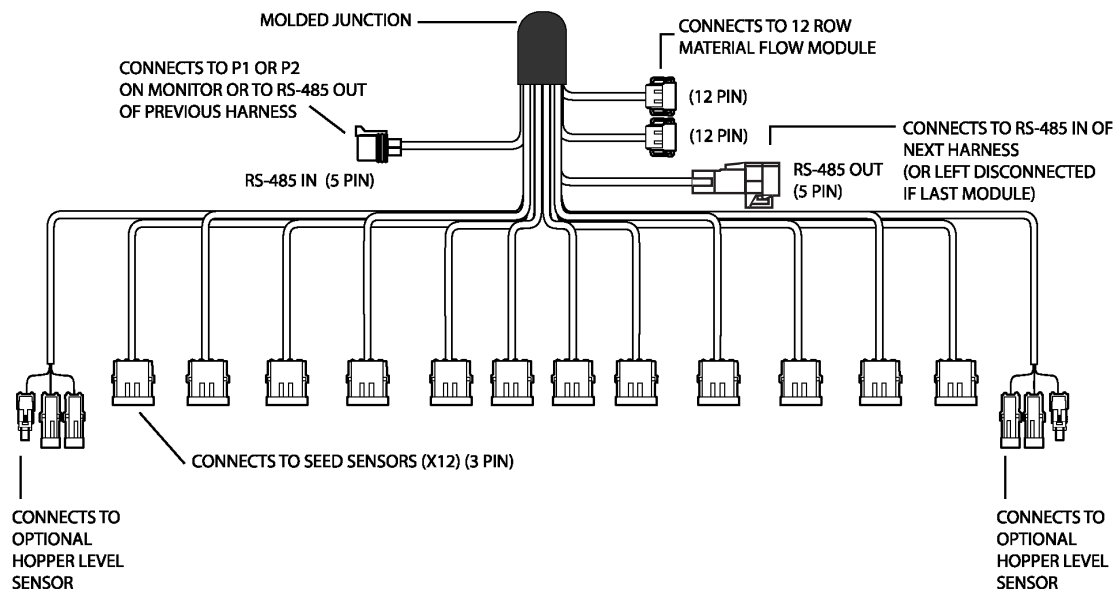




HARNESSES

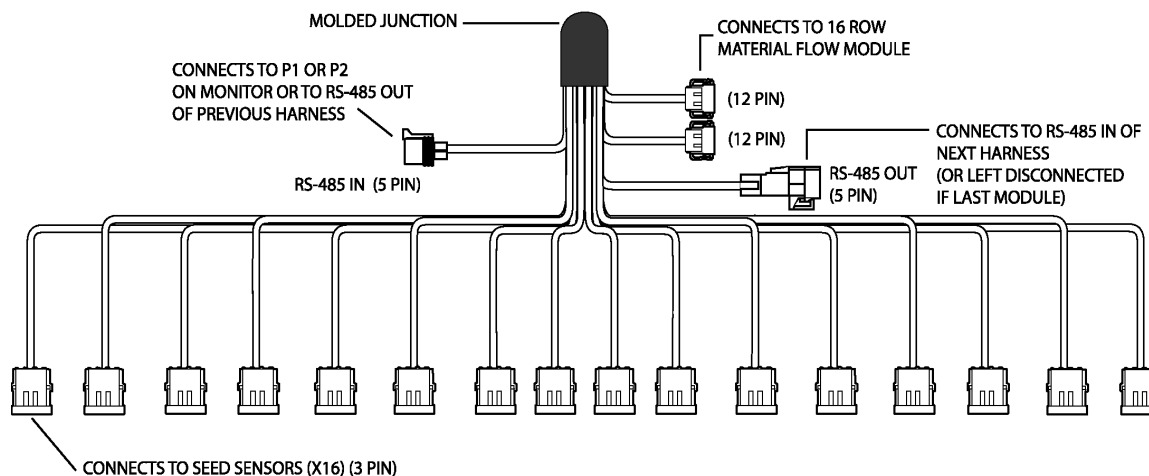
12 ROW HARNESS

46775-1041 7.5", 46775-1042 15", 46775-1043 30"



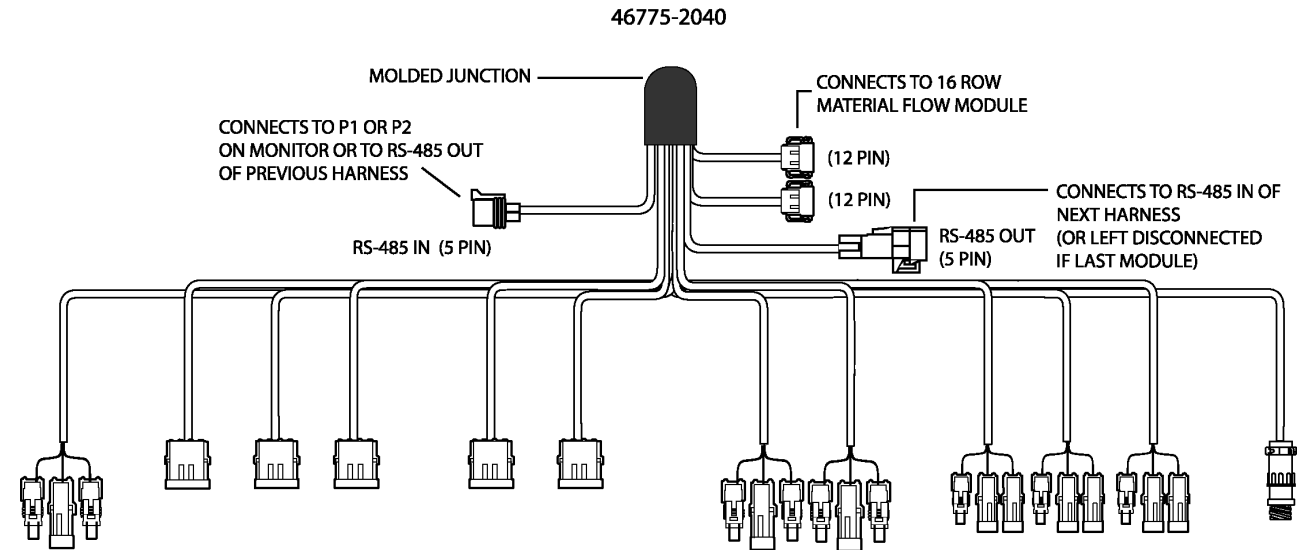
16 ROW HARNESS

46775-1140

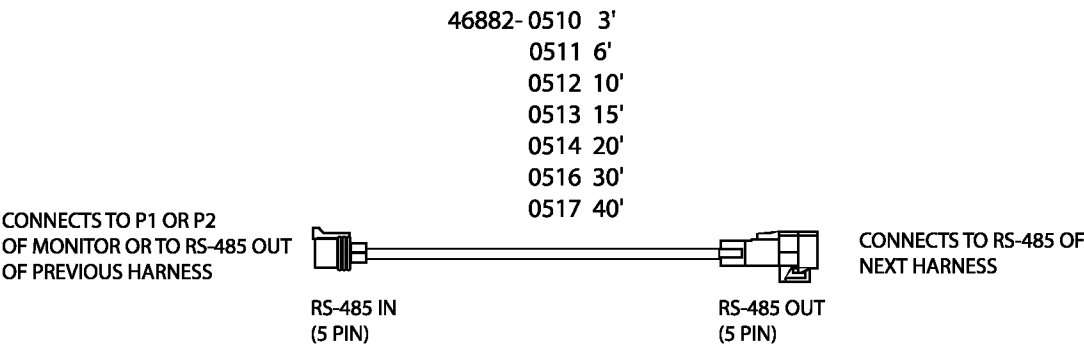




SHAFT SPEED MODULE HARNESS



RS485 EXTENSION HARNESS





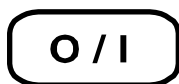


STARTUP

SWITCHPAD OVERVIEW

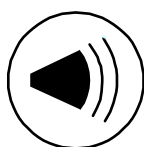
The control pad buttons on the switchpad are used to control system power, select the mode of operation, and enter implement configuration constants. An overview of the switches follows:

ON OFF



Pressing this switch applies power to the monitor. Upon power up, the monitor performs internal diagnostic checks, illuminates all segments of the LCD, sounds the alarm, and determines what sensors are connected to the system. Pressing the ON OFF switch for at least one (1) second causes the system to power down.

ALARM



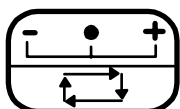
Momentarily pressing this switch silences the alarm and acknowledges the alarm condition. Additionally, holding the switch pressed for more than one (1) second allows the volume level of the alarm to be adjusted. As the switch is pressed, the alarm sounds continuously and the volume level slowly decreases to a minimum, then increases to a maximum. Releasing the switch establishes the desired volume level.

SETUP



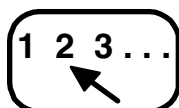
Press for one (1) second to enter the Setup Mode and to step from one Setup constant to the next as detailed in the Setup Mode section.

MIN AVG MAX SCAN

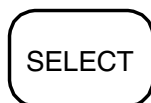


Press to toggle between the MIN AVG MAX and SCAN options for Population and Spacing.

SELECT ROW



Pressing this switch while in Population or Spacing functions freezes the display on the current row data. Successive depressions then cause stepping from one row to the next. In the Setup Mode, this switch allows stepping through the rows while entering Row Status.



SELECT

The Select button changes constants in the Setup Mode as explained in the Setup Mode section. To move the selected digit to the next digit, press the SELECT switch.



SET

The Set button changes constants in the Setup Mode as explained in the Setup Mode section. To increase the selected digit by one, press the SET switch. SET can also toggle a selection between ON and OFF for example.



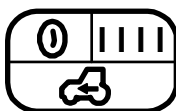
START STOP RESET

This switch is used in multiple modes for multiple purposes. Some examples are as follows. Used in the Operate Mode Seed Count and Distance Accumulator functions to start or stop the accumulations. It is also used in Setup Mode Distance Calibration, Automatic Configuration, and Sensor Self Test functions to start or stop the test. Other functions include Clearing the Run Hours, Area Accumulators, Seed Count, Distance Accumulator, and simply clearing digits when editing Setup constant values.



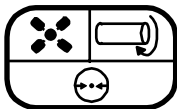
BACK

This switch is used in multiple modes for several purposes. Some examples are as follows. Used in the Operate Mode Population and Spacing functions to step to the previous row display. It is also used in Setup Mode to return to the previous Setup Mode screen.



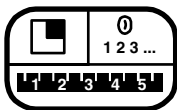
OPERATE 1

This switch is used to select Population, Spacing, or Ground Speed Mode. Successive presses of the switch will change to the next mode.



OPERATE 2

Selects Fan Speed, Shaft Speed, or Pressure Mode (if available on system). Successive presses of the switch will change to the next mode.



OPERATE 3

Selects Area, Seed Count, or Distance Accumulator Mode. Successive presses of the switch will change to the next mode.



SETUP MODE

SETUP CONSTANTS

The Setup Mode is used to enter the implement configuration constants which are listed in (Figure 16), in the order of their presentation.

Pressing the Setup switch for one (1) second places the console in the Setup Mode which is identified by the SETUP message on the display. Additional messages uniquely identify the constant displayed and available for editing at any given time.

Each constant has a fixed number of digits. Leading zeroes will display. To change the value of a constant, use the SELECT, SET, and START STOP RESET switches as follows:

- Initially the left most digit flashes on and off indicating it is the "selected digit".
- Pressing the SET switch increases the selected digit by one count. After reaching the maximum value of nine (9), the digit rolls over to zero (0).
- Press the START STOP RESET to set the digits to zero.
- Pressing the SELECT switch makes the next digit to the right the selected digit.
- When the desired value is entered (or there is no change from the original value), press the Setup switch to store the value and advance to the next constant on the list.
- To return to the previous constant on the list, press the BACK switch. If a value is entered which exceeds the minimum or maximum shown for that constant in (Figure 16), the alarm sounds for one (1) second, the value of the exceeded limit appears on the screen, and the advance to the next constant is aborted.

NOTE: To allow rapid recovery from an entry error, it is important to record all values of constants on the SETUP RECORD sheet on the last page of this manual immediately after console entry.



IMPORTANT:

If the Number of Seed Modules, Number of Fan Speed Sensors, Number of Shaft Speed Sensors, or Number of Pressure Sensors is set to "0" or another value below the maximum, the appropriate subcategory screens will not display.

Figure 16

Setup Mode Parameters

| Order | Setup Mode | Default | Minimum | Maximum |
|-------|---------------------------------|---------|---------|---------|
| 1 | Seed Flow | 00 | 00 | 10 |
| 2 | Population Hi Limit | 0034.0 | 0000.0 | 9999.9 |
| 3 | Population Lo Limit | 0026.0 | 0000.0 | 9999.9 |
| 4 | Row Width | 030.0 | 001.0 | 999.9 |
| 5 | Implement Width | N/A | 0001.0 | 9999.9 |
| 6 | Ground Speed Source | d1 | N/A | N/A |
| 7 | Distance Calibration | 6096 | 250 | 9999 |
| 8 | Automatic Configuration | N/A | N/A | N/A |
| 9 | Split Row Configuration | 00 | 00 | 20 |
| 10 | Number of Seed Modules | 1 | 1 | 6 |
| 10A | Number of Seed Sensors Module 1 | 01 | 01 | 16 |
| 10B | Number of Seed Sensors Module 2 | 01 | 01 | 16 |
| 10C | Number of Seed Sensors Module 3 | 01 | 01 | 16 |
| 10D | Number of Seed Sensors Module 4 | 01 | 01 | 16 |
| 10E | Number of Seed Sensors Module 5 | 01 | 01 | 16 |
| 10F | Number of Seed Sensors Module 6 | 01 | 01 | 16 |
| 11 | Row Status | ON | N/A | N/A |
| 12 | Total Number of Rows Configured | N/A | 01 | 96 |
| 13 | Number of Fan Speed Sensors | 0 | 0 | 2 |
| 13A | Fan Speed Sensor 1 Constant | 000.0 | 000.0 | 999.99 |
| 13B | Fan Speed Sensor 1 Hi Limit | 00065 | 00000 | 99999 |
| 13C | Fan Speed Sensor 1 Lo Limit | 00045 | 00000 | 99999 |
| 13D | Fan Speed Sensor 2 Constant | 000.0 | 000.00 | 999.99 |
| 13E | Fan Speed Sensor 2 Hi Limit | 00065 | 00000 | 99999 |
| 13F | Fan Speed Sensor 2 Lo Limit | 00045 | 00000 | 99999 |
| 14 | Number of Shaft Speed Sensors | 0 | 0 | 3 |
| 14A | Shaft Speed Sensor 1 Constant | 000.00 | 000.00 | 999.99 |
| 14B | Shaft Speed Sensor 1 Hi Limit | 00065 | 00000 | 99999 |
| 14C | Shaft Speed Sensor 1 Lo Limit | 00045 | 00000 | 99999 |
| 14D | Shaft Speed Sensor 2 Constant | 000.00 | 000.00 | 999.99 |
| 14E | Shaft Speed Sensor 2 Hi Limit | 00065 | 00000 | 99999 |
| 14F | Shaft Speed Sensor 2 Lo Limit | 00045 | 00000 | 99999 |
| 14G | Shaft Speed Sensor 3 Constant | 000.00 | 000.00 | 999.99 |
| 14H | Shaft Speed Sensor 3 Hi Limit | 00065 | 00000 | 99999 |
| 14I | Shaft Speed Sensor 3 Lo Limit | 00045 | 00000 | 99999 |
| 15 | Number of Hopper Sensors | 0 | 0 | 7 |
| 16 | Number of Pressure Sensors | 0 | 0 | 2 |
| 16A | Pressure Sensor 1 Hi Limit | 000.0 | 000.0 | 999.9 |
| 16B | Pressure Sensor 1 Lo Limit | 000.0 | 000.0 | 999.9 |
| 16C | Pressure Sensor 2 Hi Limit | 000.0 | 000.0 | 999.9 |
| 16D | Pressure Sensor 2 Lo Limit | 000.0 | 000.0 | 999.9 |
| 17 | Blockage Mode Configuration | 0 | 0 | 2 |
| 18 | Population Filter | 00 | 00 | 99 |
| 19 | Population Scalar | 100 | 001 | 999 |
| 20 | Sensor/Module Self-Test | N/A | N/A | N/A |
| 21 | English/Metric Units | English | N/A | N/A |

To exit the Setup Mode, press any of the three Operate switches. Exiting automatically stores the last constant changed.



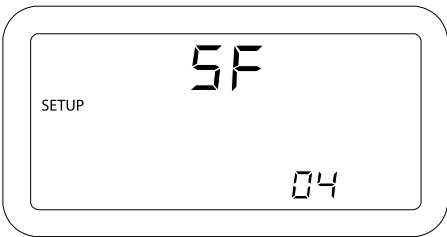
NOTE: Use (Figure 16) Setup Mode Parameters as reference for the following items numbered 1-21.

Definitions and considerations when entering values for each constant are as follows:

1. SEED FLOW ALARM ADJUSTMENT

The first parameter displayed after entering the Setup Mode is Seed Flow Alarm Adjustment identified as “SF” on the top of the display. The Seed Flow Alarm Adjustment establishes how many seeds per time interval must flow past the sensor before the alarm is activated identifying a row failure. The default value is 00 which requires a minimum seed flow of at least 2 seeds per second before row failure alarm activates. The maximum value allowed is at least 1 seed every 10 seconds. (Figure 17) indicates a minimum of 1 seed every 4 seconds before row failure alarm will sound. Below Seed Flow Alarm Values table lists the values and the relative time intervals. Any number higher than 10 will default to the maximum value of 10.

Figure 17
Seed Flow Alarm Adjustment Display



Seed Flow Alarm Values

| | |
|----|------------------------------|
| 00 | 2 seeds per second (default) |
| 01 | 1 seed per second |
| 02 | 1 seed every 2 seconds |
| 03 | 1 seed every 3 seconds |
| 04 | 1 seed every 4 seconds |
| 05 | 1 seed every 5 seconds |
| 06 | 1 seed every 6 seconds |
| 07 | 1 seed every 7 seconds |
| 08 | 1 seed every 8 seconds |
| 09 | 1 seed every 9 seconds |
| 10 | 1 seed every 10 seconds |

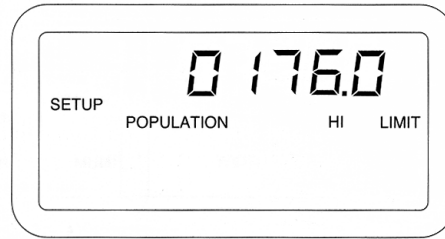


2. POPULATION HI LIMIT

When the population on any row exceeds the value entered for this constant, in thousands of seeds per acre (hectare), the alarm sounds as indicated under the heading ALARMS, POPULATION HI LIMIT WARNING. (Figure 18) shows the display for a limit of 176,000 seeds/acre.

Figure 18

Population Hi Limit Display

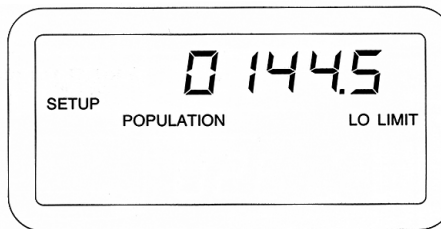


3. POPULATION LO LIMIT

When the population on any row falls below the value entered for this constant, in thousands of seeds per acre (hectare), the alarm sounds, as indicated under the heading ALARMS, POPULATION LO LIMIT WARNING. (Figure 19) shows the display for a limit of 144,500 seeds/acre.

Figure 19

Population Lo Limit Display

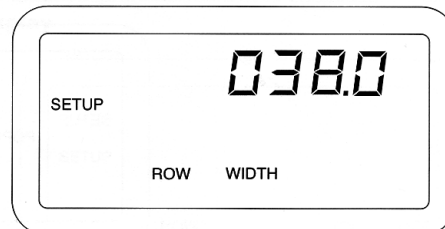


4. ROW WIDTH

This is the distance in inches (centimeters) between rows with a resolution of 0.1. (Figure 20) shows a row width of 38.0 inches.

Figure 20

Row Width Display





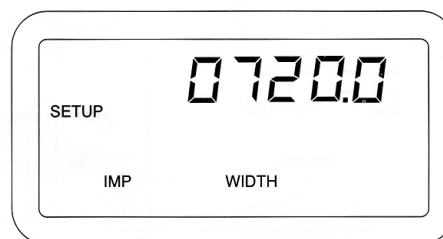
5. IMPLEMENT WIDTH

This is the seeding width of the implement in inches (centimeters) with a resolution of 0.1. It is automatically calculated when either the Number of Modules, Number of Rows per Module, or the Row Width is changed and can be edited for special applications such as skip row seeding. (Figure 21) shows an implement width of 720.0 inches.

NOTE: Use (Figure 16) Setup Mode Parameters as reference for the following items numbered 1-21.

Figure 21

Implement Width



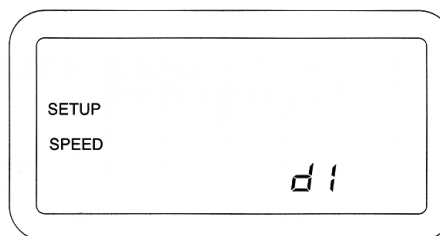
6. GROUND SPEED SOURCE

Pressing the Set switch causes the lower right display to toggle between “d1”, “r1”, or “d2”. If a digital (radar or Hall Effect) type ground speed sensor is used and is connected directly to the Seed Manager® Console, press the SET switch until “d1” appears.

If a digital (radar or Hall Effect) type ground speed sensor is used and is connected to a Shaft Speed Module, press the SET switch until “d2” appears. If a reluctance type ground speed sensor is used, press the SET switch until “r1” appears. (Figure 22) shows a configuration for a digital 1 ground speed source.

Figure 22

Ground Speed Sensor Type Display



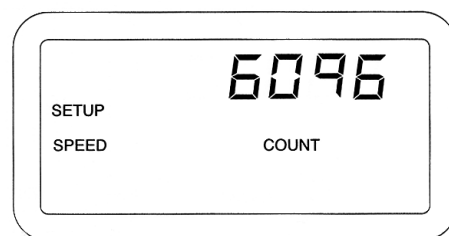
7. DISTANCE CALIBRATION

The Distance Calibration constant is the number of pulses generated by the ground speed sensor while traveling a distance of 400 feet (122 meters). (Figure 23) shows the display with the SETUP, SPEED, and COUNT messages and the default value of 6096 which is the nominal pulse count for the radar ground speed sensor. A smaller number, typically 3100, results with a reluctance ground speed sensor.



Figure 23

Distance Calibration Display



To Perform the Distance Calibration:

1. Carefully measure a 400 foot (122 meter) course plainly marking the start and finish points.
2. With the tractor moving between 2 and 5 MPH (3.2 and 8 Km/h), press the START STOP RESET switch when the tractor is exactly even with the start marker. The display showing the Distance Calibration Constant zeroes, then counts the ground speed pulses.
3. When even with the finish marker, press the START STOP RESET switch.
4. To ensure best accuracy, perform this procedure at least three (3) times. Record the count each time, then enter the average as the Distance Calibration Constant, using the SELECT and SET switches.

8. AUTOMATIC CONFIGURATION

To Begin the Automatic Configuration:

1. Press the START STOP RESET switch. The TEST message flashes while the Automatic Configuration is running.
2. Configuration is complete when the TEST message disappears.
3. The Automatic Configuration will automatically detect how many seed modules, seed sensors, hopper sensors, and pressure sensors are connected in the system.

IMPORTANT: Fan Speed Sensors and Shaft Speed Sensors are not automatically configured and will need to be setup manually.

4. Verify the detected configuration by reviewing the setup constants for the number of seed modules, seed sensors, hopper sensors, and pressure sensors before beginning implement operation. (Figure 24) shows the Automatic Configuration screen.



Figure 24
Automatic Configuration Display



9. SPLIT ROW CONFIGURATION

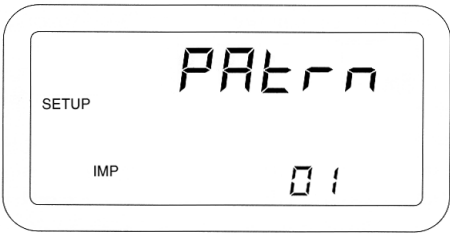
For split, twin, or skip row type seeding implements, this feature allows easy configuration for setting up the correct row pattern that is used. Reference (Figure 25) for a listing of all of the row patterns that can be applied to the system. When a row pattern is selected all of the rows are automatically turned ON or OFF according to the pattern. Individual rows can be edited in the Row Configuration Screen, but that must be done after a pattern is selected. (Figure 26) shows a row pattern of 01 being selected.

Figure 25
Split Row Configuration

| Split Row Configuration | Description/Example |
|-------------------------|---|
| 00 | All Row s On |
| 01 | Every other row OFF with first row ON (OXOXOX) |
| 02 | Every other row OFF with first row OFF (XOXOXO) |
| 03 | Every 3rd row ON (OXXOXXOXX) |
| 04 | Every 3rd row ON (XXOXXOXXO) |
| 05 | Every 3rd row ON (XOXOXXOXX) |
| 06 | Every 3rd row OFF (OOXOOXOOX) |
| 07 | Every 3rd row OFF (OXOOXOOXOO) |
| 08 | Every 3rd row OFF (XOOXOOXOO) |
| 09 | Every 4th row ON (OXXXOXXXOXXX) |
| 10 | Every 4th row ON (XXXOXXXOXXXO) |
| 11 | Every 4th row ON (XXOXXXOXXXOXXX) |
| 12 | Every 4th row ON (XOXXXOXXXOXXX) |
| 13 | Tw in row s (OOXXOOXXOOXX) |
| 14 | Tw in Row s (OXXOOXXOOXXOO) |
| 15 | Tw in Row s (XXOOXXOOXXOO) |
| 16 | Tw in Row s (XOOXXOOXXOOXX) |
| 17 | Every 4th row OFF (OOOXOOOXOOOX) |
| 18 | Every 4th row OFF (OOXOOOXOOOXOOO) |
| 19 | Every 4th row OFF (OXOOOXOOOXOOO) |
| 20 | Every 4th row OFF (XOOOXOOOXOOO) |



Figure 26
Pattern Select Display

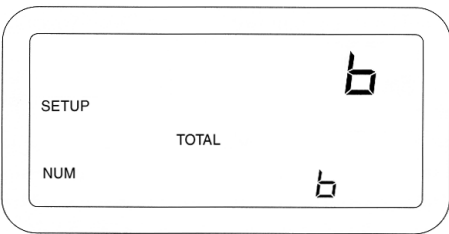


NOTE: Use (Figure 16) Setup Mode Parameters as reference for the following items numbered 1-21

10. NUMBER OF SEED MODULES

This is the actual number of seed modules that are connected to the system. Note: This does not include the shaft speed module if one is available on the system. This parameter will be checked as part of the Sensor/Module Self-Test and error codes generated if this value does not match the actual number of seed modules. (Figure 27) shows a configuration for six (6) modules.

Figure 27
Seed Modules Display

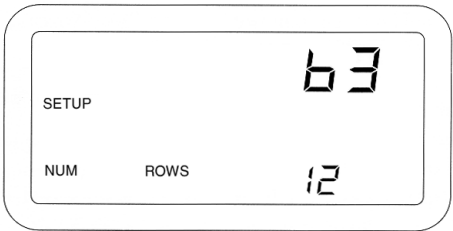


10A-E. Number of Seed Sensors Per Module

For each seed module that is configured on the previous Setup screen, there will be a Number of Seed Sensors per Module screen. This is the actual number of seed sensors that are connected to the particular module. The modules are numbered from the far left of the implement (end of P1) to the far right of the implement (end of P2). This parameter will be checked as part of the Sensor/Module Self-Test and error codes will be generated if this value does not match the actual number of seed sensors. (Figure 28) shows twelve (12) seed sensors configured on module 3.



Figure 28
Sensors Per Module Display

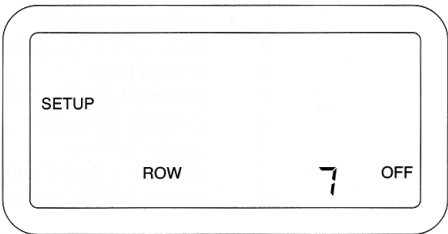


11. ROW STATUS

This parameter allows placing individual seed sensors in ON or OFF status. For those situations where it is necessary to turn off certain rows on the implement, OFF status turns off the related sensors so alarms do not occur.

The display initially shows the messages SETUP, ROW 1, and the status of row 1. (Figure 29) shows row 7 status set to OFF. Press the SET switch to toggle between ON and OFF for standard and Hi-Rate seed sensors. Press the SELECT ROW switch to advance to the next row. When the status of all rows is correctly entered, press SETUP to advance to the next Setup constant.

Figure 29
Row Status Display



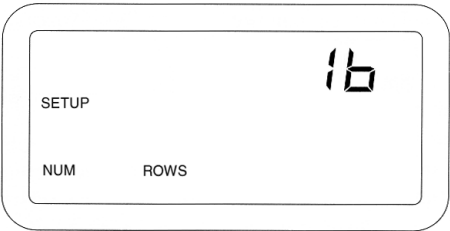


12. TOTAL NUMBER OF ROWS CONFIGURED

This parameter is used to calculate implement width and is used in checking the number of seed sensors detected upon system power up. This value is displayed for confirmation only and can only be altered by changing the Number of Seed Modules or Number of Seed Sensors per Module parameters. (Figure 30) shows the display for sixteen (16) rows.

NOTE: Use (Figure 16) Setup Mode Parameters as reference for the following items numbered 1-21

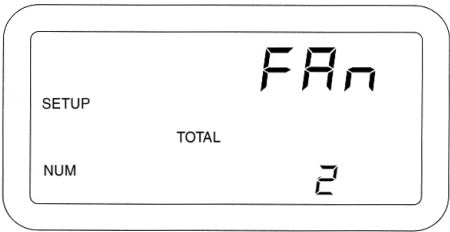
Figure 30
Rows Configured Display



13. NUMBER OF FAN SPEED SENSORS

This is the actual number of fan speed sensors that are connected to a shaft speed module on the system. For each fan speed sensor that is configured, there will be an operate screen generated. Fan speed sensors are not self tested and will not generate any error codes except for operational error codes for hi and lo limit warnings. (Figure 31) shows a configuration of two (2) fan speed sensors.

Figure 31
Fan Speed Sensor Display



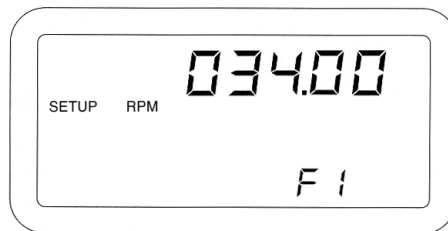


13A and 13D. Fan Speed Sensor Constant

The Fan Speed Constant is the number of pulses the fan speed sensor generates in one revolution of the monitored fan. This is typically the number of teeth (sense points) on the fan. The fan speed constant can be entered as a decimal with 0.01 resolution. Entering a value of zero (000.00) disables the fan speed function. The Fan Speed Sensor Constant is accessible only if the Number of Fan Speed Sensors has a value other than 0. (Figure 32) shows the display with a Fan Speed Constant of 34.00 pulses per revolution.

Figure 32

Fan Speed Constant Display

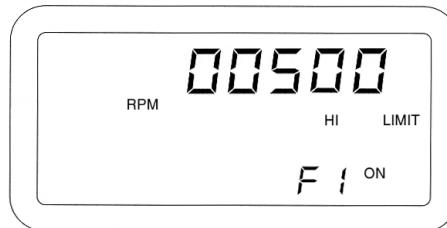


13B and 13E. Fan Speed Sensor Hi Limit

This constant is the highest fan speed (RPM) allowed before sounding a warning alarm. The hi and lo warning limits are accessible only if the Number of Fan Speed Sensors has a value other than 0. The warning is enabled or disabled by selecting the ON or OFF message. Use the SELECT switch to advance one step to the right of the right most digit, then press the SET switch to toggle between ON and OFF. (Figure 33) shows a limit of 500 RPM with the warning enabled.

Figure 33

Hi Limit Fan Speed Display



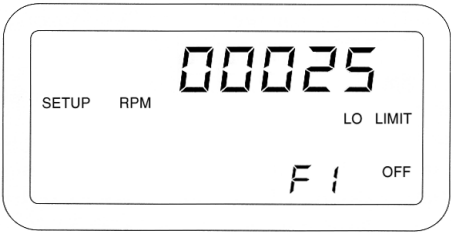


13C and 13F. Fan Speed Sensor Lo Limit

This constant is the lowest fan speed (RPM) allowed before sounding a warning alarm. The hi and lo warning limits are accessible only if the Number of Fan Speed Sensors has a value other than 0. The warning is enabled or disabled by selecting the ON or OFF message. Use the SELECT switch to advance one step to the right of the right most digit, then press the SET switch to toggle between ON and OFF. (Figure 34) shows a limit of 25 RPM with the warning disabled.

NOTE: Use (Figure 16) Setup Mode Parameters as reference for the following items numbered 1-21

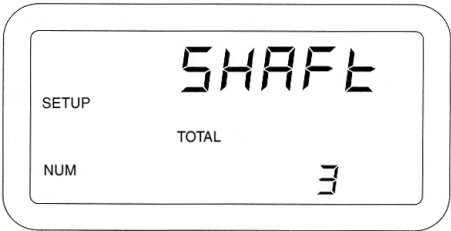
Figure 34
Lo Limit Fan Speed Display



14. NUMBER OF SHAFT SPEED SENSORS

This is the actual number of shaft speed sensors that are connected to a shaft speed module on the system. For each shaft speed sensor that is configured there will be an operate screen generated. Shaft speed sensors are not self tested and will not generate any error codes except for operational error codes for Hi and Lo Limit warnings. (Figure 35) shows a configuration of three (3) shaft speed sensors.

Figure 35
Shaft Speed Sensor Display





14A, 14D, and 14G. Shaft Speed Sensor Constant

The Shaft Speed Constant is the number of pulses the shaft speed sensor generates in one revolution of the monitored shaft. This is typically the number of teeth (sense points) on the gear attached to the monitored shaft. The Shaft Speed Constant can be entered as a decimal with 0.01 resolution. Entering a value of zero (000.00) disables the shaft speed function. The Shaft Speed Sensor Constant is accessible only if the Number of Shaft Speed Sensors has a value other than 0. (Figure 36) shows the display with a Shaft Speed Constant of 26.00 pulses per revolution.

Figure 36

Shaft Speed Constant Display

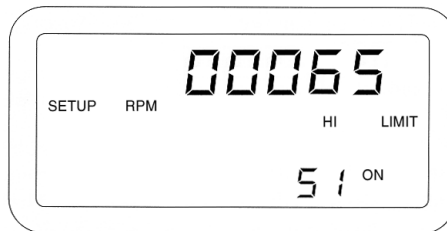


14B, 14E, and 14H. Shaft Speed Sensor Hi Limit

This constant is the highest shaft speed (RPM) allowed before sounding a warning alarm. The hi and lo warning limits are accessible only if the Number of Shaft Speed Sensors has a value other than 0. The warning is enabled or disabled by selecting the ON or OFF message. Use the SELECT switch to advance one step to the right of the right most digit, then press the SET switch to toggle between ON and OFF. (Figure 37) shows a limit of 65 RPM with the warning enabled.

Figure 37

Hi Limit Shaft Speed Display





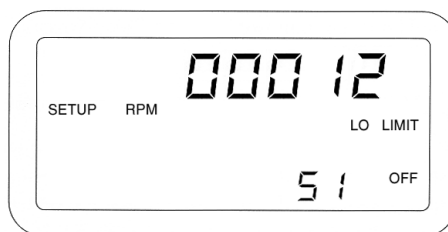
14C, 14F, and 14I. Shaft Speed Sensor Lo Limit

This constant is the lowest shaft speed (RPM) allowed before sounding a warning alarm. The hi and lo warning limits are accessible only if the Number of Shaft Speed Sensors has a value other than 0. The warning is enabled or disabled by selecting the ON or OFF message. Use the SELECT switch to advance one step to the right of the right most digit, then press the SET switch to toggle between ON and OFF. (Figure 38) shows a limit of 12 RPM with the warning disabled.

NOTE: Use (Figure 16) Setup Mode Parameters as reference for the following items numbered 1-21.

Figure 38

Low Limit Shaft Speed Display



15. NUMBER OF HOPPER LEVEL SENSORS

This is the actual number of hopper level sensors that are connected to all modules in the system. This parameter will be checked as part of the sensor/module self test and error codes will be generated if this value does not match the actual number of hopper level sensors. (Figure 39) shows a configuration of five (5) hopper sensors.

Figure 39

Hopper Level Display



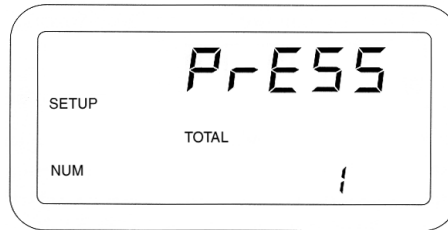


16. NUMBER OF PRESSURE SENSORS

This is the actual number of pressure sensors that are connected to a shaft speed module on the system. This parameter will be checked as part of the Sensor/Module Self-Test and error codes will be generated if this value does not match the actual number of pressure sensors. (Figure 40) shows a configuration of one (1) pressure sensor.

Figure 40

Pressure Sensor Display

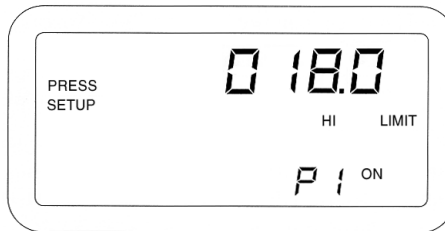


16A and 16C. Pressure Sensor Hi Limit

The Pressure Sensor Hi Limit Warning is entered in oz/in² (kPa). The hi and lo warning limits are accessible only if the Number of Pressure Sensors has a value other than 0. Setting the Pressure Sensor Hi Limit will cause the audible alarm to sound when the pressure exceeds the value that has been entered. Use the SET and SELECT switches to adjust the Pressure Sensor Hi Limit value. The Pressure Sensor Hi Limit can be enabled or disabled by selecting the ON or OFF symbol after the rightmost digit. Pressing the SET switch will toggle the status of the warning between ON and OFF. (Figure 41) shows a Pressure Sensor Hi Limit of 18.0 with the warning enabled.

Figure 41

Hi Limit Pressure Display





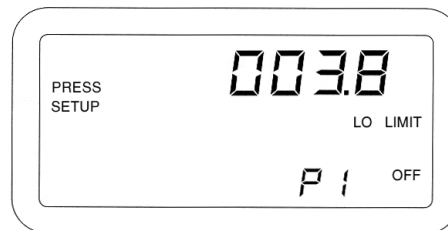
16B and 16D. Pressure Sensor Lo Limit

The Pressure Sensor Lo Limit Warning is entered in oz/in² (kPa). The hi and lo warning limits are accessible only if the Number of Pressure Sensors has a value other than 0. Setting the Pressure Sensor Lo Limit will cause the audible alarm to sound when the pressure falls below the value that has been entered. Use the SET and SELECT switches to adjust the Pressure Sensor Lo Limit value. The Pressure Sensor Lo Limit can be enabled or disabled by selecting the ON or OFF symbol after the rightmost digit. Pressing the SET switch will toggle the status of the warning between ON and OFF. (Figure 42) shows a Pressure Sensor Lo Limit of 3.8 with the warning disabled.

NOTE: Use (Figure 16) Setup Mode Parameters as reference for the following items numbered 1-21

Figure 42

Lo Limit Pressure Display



17. BLOCKAGE MODE CONFIGURATION

This configuration will select one of three different modes according to the Table in (Figure 43). If Mode 0 or Mode 1 is selected, the Operate screens will cycle through the Population Rows only. If Mode 2 is selected, the Population and Spacing Operate screens will show a series of 5 dashes to represent no data. In all modes, row failures will display according to the details in the ALARMS section of this document. (Figure 44) shows a Blockage Mode Configuration of 0.

Figure 43

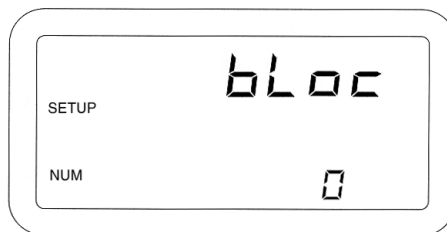
Blockage Configuration

| Blockage Mode | Description |
|---------------|---|
| 0 | All Rows are configured for displaying Population |
| 1 | First Row of each Module is configured for displaying Population- All other rows are configured for Blockage Only |
| 2 | All Rows are configured for Blockage Only |



Figure 44

Blockage Mode Display

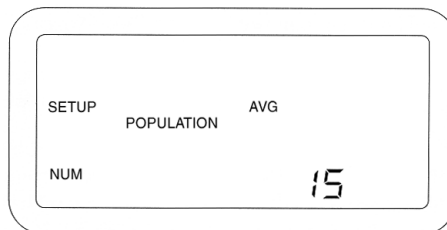


18. POPULATION FILTER

In certain applications the Seed Manager® SE, due to its rapid update rate, might exhibit fluctuations in population and spacing that are undesirable. The population filtering option applies an averaging filter to the population and spacing calculations. The filter values range from 0 to 99, with 0 having no filtering effect, and 99 being the maximum filtering value. Use the SET and SELECT switches to adjust the filtering value. (Figure 45) shows a population filter of 15.

Figure 45

Population Filter Display



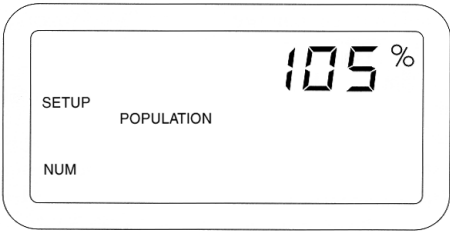


19. POPULATION SCALING FACTOR

The population scaling factor allows fine adjustments to be made in the readout of population and spacing on a percentage basis. This value is adjustable from 1% to 999% with the factory default being 100%. Use the SET and SELECT switches to adjust to the desired population scaling factor. (Figure 46) shows a Population Scalar of 105%.

NOTE: Use (Figure 16) Setup Mode Parameters as reference for the following items numbered 1-21

Figure 46
Population Scaling Display

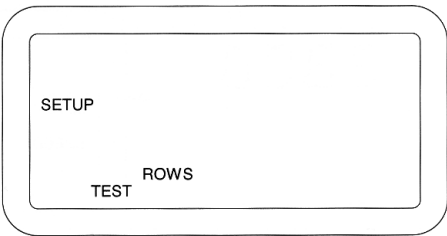


20. SENSOR/MODULE SELF-TEST

Start the test by pressing the START STOP RESET switch. The TEST message flashes while the test is executing (Note: This is the same test that is performed automatically during console power up). When the test is complete the display will show either PASSED (and scroll through all available seed rows) or show FAILED and display the appropriate error code(s). If multiple errors exist, the E in the error code will be flashing. To view the next error code, press the Alarm switch. (Figure 47) shows the Sensor/Module Self Test screen.

NOTE: For a full description of all the error codes and their meanings, see the ERROR CODES section.

Figure 47
Sensor Self Test Display



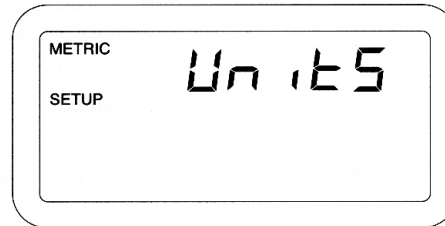


21. ENGLISH/METRIC UNITS

Selects the system of units with this constant. The SET switch is used to toggle between English and Metric units. (Figure 48) shows the display when Metric units are selected. The METRIC message is absent when English units are selected.

Figure 48

Units Selection Display

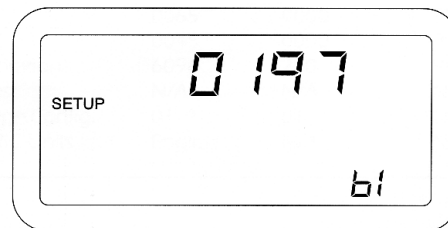


CUSTOMER SETUP CONSTANTS

The Customer Setup Constants are entered by holding the SETUP switch depressed while powering on the console and continuing to press until the Display Test begins. A flashing SETUP message indicates the console is in the Customer Setup Constants. Press the SETUP switch to advance to the next Customer Setup Constant. To exit the Customer Setup Constants, power off the console. The different Customer Setup Constants are listed as follows:

Figure 49

Boot Number Display



Boot Version Number

DICKY-john's Service Department may request the customer to observe and record the four (4) different 4-digit numbers (to identify the "boot memory" software version) in the unlikely event field problems occur.

The first 4-digit number shows on the upper numeric display at the same time a "b1" identifier appears on the lower numeric display. Record this number, then press and release the SELECT switch to step to the "b2", "b3", and "bc" numbers, recording each 4-digit number along with its identifier. To return to "b1" again press the SELECT switch. Press SETUP to advance to the next constant. (Figure 49) shows "0197" for "b1", the first Boot Version Number.



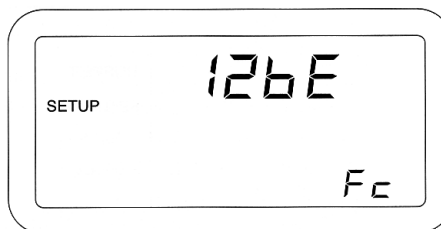
Flash Version Number

DICKEY-john's Service Department may require the four (4) different 4-digit numbers (to identify the "flash memory" software version) if a field problem occurs.

The first 4-digit number shows on the upper numeric display at the same time an "F1" identifier appears on the lower numeric display. Record this number, then press and release the SELECT switch to step to the "F2", "F3", and "Fc" numbers, recording each 4-digit number along with its identifier. To return to "F1" again press the SELECT switch. Press SETUP to advance to the next constant. (Figure 50) shows "12bE" for "Fc", the first Boot Version Number.

Figure 50

Flash Version Number Display







OPERATION

OPERATE MODE

Performance of the following Operate Mode functions assumes the console has been properly installed and setup as detailed in the INSTALLATION and SETUP MODE sections respectively. (Figure 51) lists all Operate Mode functions and shows which are available in Speed Area Mode (defined later in this section). This list includes all the function names on the three (3) Operate Mode switches, plus the Run Hours function which is performed automatically.

Figure 51

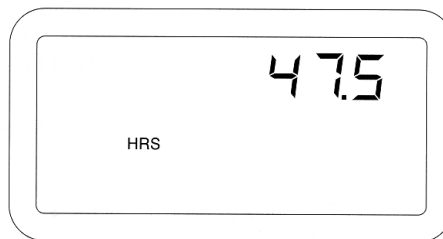
| Operate Mode Function Name | Available in Speed Area Mode |
|----------------------------|------------------------------|
| Run Hours | Yes |
| Population | No |
| Seed Spacing | No |
| Ground Speed | Yes |
| Fan Speed | Yes |
| Shaft Speed | Yes |
| Pressure | Yes |
| Area Accumulator | Yes |
| Seed Count | No |
| Distance Accumulator | Yes |

RUN HOURS

This is defined as the total number of accumulated hours, in 0.1 hour increments, the console has been powered. Run Hours are not accumulated during an ALL ROWS FAILED condition or if a lift switch is installed and the implement is in the up position. The Run Hours total is displayed for five (5) seconds immediately following the power up sequence. The SETUP switch or any of the three Operate Mode switches can be pressed during the display of the Run Hours to advance immediately to the desired function. Otherwise the Population function is automatically selected. To zero the accumulated Run Hours, press the START STOP RESET switch for one (1) second while Run Hours are displayed. (Figure 52) shows Run Hours of 47.5.

Figure 52

Run Hours Display





POPULATION

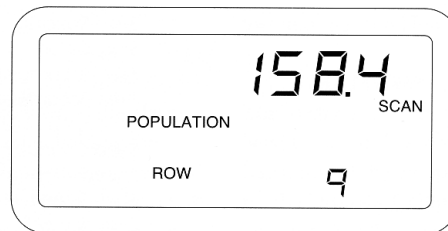
This is the amount of seeds, in thousands of seeds per acre (hectare), shown in a given row, based upon the most recent sampling of the seeding rate for that row. The Population function is selected automatically on power up or by pressing the OPERATE 1 switch until the POPULATION message appears on the display. Only the seed rows that have their row status set to ON will display in the Population function. If the Blockage Mode is set to All Rows Blockage, the upper numeric display will show a series of five (5) dashes and no population values will be available. The Population display has several different modes based upon the Setup configuration and the scan mode that is selected. A short description of each mode is described below.

POPULATION SCAN

This mode displays the population of each valid row for two (2) seconds, then advances to the next row. After the last row population displays, the average seeding population (for all valid population rows) displays, identified by the AVG message. Population Scan mode is selected automatically upon powerup or by pressing the MIN AVG MAX SCAN switch until the SCAN message displays while in Population function. (Figure 53) shows a population of 158,400 seeds/acre on row nine (9) while in Population Scan.

Figure 53

Population Scan Display



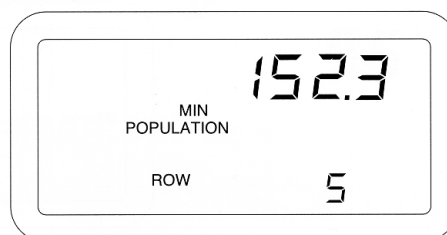


POPULATION MIN AVG MAX

This mode displays the seeding row with the minimum population, the average seeding population, and the seeding row with the maximum population in cyclic fashion, dwelling on each for three (3) seconds. This option is selected by pressing the MIN AVG MAX SCAN switch while in the Population function. (Figure 54) shows a minimum population of 152,300 seeds/acre on row five (5).

Figure 54

Population Min-Avg-Max Display

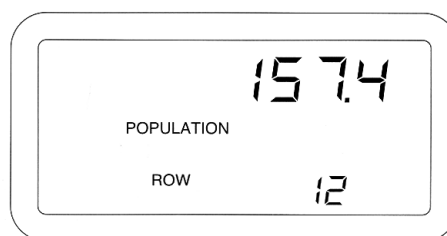


POPULATION SELECT ROW

Depressing the SELECT ROW switch while in either Population Scan or Population Min Avg Max freezes the population display on the current row or the implement average. Pressing the SELECT ROW switch again causes the display to advance to the next valid population row. Pressing the BACK switch will cause the display to return to the previous valid population row. (Figure 55) shows a population of 157,400 seeds/acre on row twelve (12) while in Population Select Row.

Figure 55

Population Select Row Display



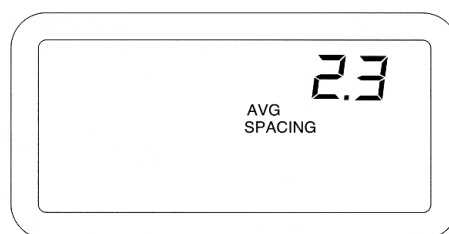


SEED SPACING

Seed Spacing is the calculated average spacing between seeds in the furrow in inches (centimeters). The resolution is in 0.1 inches (centimeters). This function is selected by pressing the OPERATE 1 switch until the SPACING message appears on the display. The Seed Spacing display has several different modes based upon the Setup configuration and the scan mode that is selected, and they are the same modes as in the Population function. (Figure 56) shows an implement average seed spacing of 2.3 inches between seeds.

Figure 56

Seed Spacing Average Display

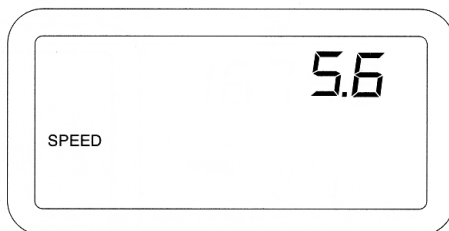


GROUND SPEED

This is the ground speed in MPH (Km/h), with 0.1 resolution, as measured by the ground speed sensor. This function is selected by pressing the OPERATE 1 switch until the SPEED message appears on the display. The ground speed sensor can be either radar, Hall Effect, or reluctance type. (Figure 57) shows a ground speed of 5.6 MPH.

Figure 57

Ground Speed Display



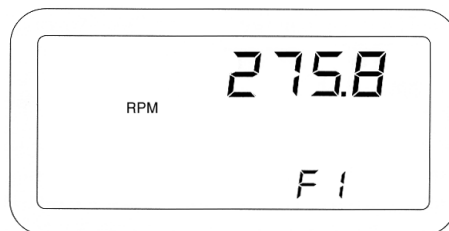


FAN SPEED

Fan Speed displays the fan rotational speed. A Hall-Effect type sensor senses points on a fan to a resolution of 0.1 RPM. This function is selected by pressing the OPERATE 2 switch until "F1" or "F2" displays in the lower numerical display. (Figure 58) shows a fan speed of 275.8 RPM.

Figure 58

Fan Speed Display

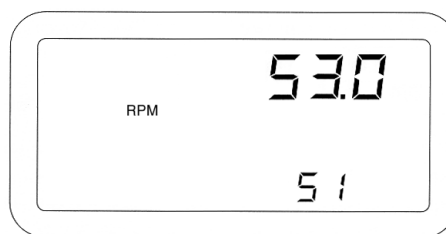


SHAFT SPEED

This is the rotational speed of a shaft. A Hall Effect type sensor senses a multi-toothed gear mounted on the shaft to a resolution of 0.1 RPM. Typically a shaft driving the seeding mechanism is monitored. This function is selected by pressing the OPERATE 2 switch until "S1", "S2", or "S3" displays in the lower numerical display. (Figure 59) shows a shaft speed of 53.0 RPM.

Figure 59

Shaft Seed Display



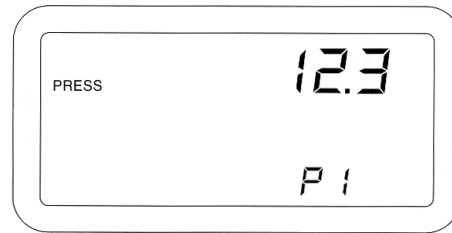


PRESSURE

This is the pressure in oz/in² (kPa), as measured by a pressure sensor, to a resolution of 0.1 oz/in² (kPa). This function is selected by pressing the OPERATE 2 switch until "P1" or "P2" displays in the lower numerical display. (Figure 60) shows a pressure of 12.3 oz/in².

Figure 60

Pressure Display

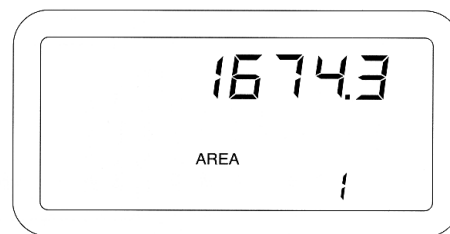


AREA ACCUMULATOR

Area Accumulator 1 and 2 is used as a field area accumulator displaying acres with 0.1 resolution (hectares with 0.01 resolution). Area Accumulator 3 is used as a total area accumulator with the same resolution as Area Accumulator 1 and 2. The area calculations are based on the implement width and distance traveled. Area does not accumulate during an ALL ROWS FAILED condition, i. e., when the implement is raised. This function is selected by pressing the OPERATE 3 switch until the AREA message appears and a "1", "2", or "3" is shown in the lower right corner of the display. Area Accumulator 1 and 2 is reset by pressing the START STOP RESET switch for at least one (1) second. When a total of 9999.9 acres (999.99 hectares) is exceeded, the decimal point shifts to the right one place. When a total area of 99999 acres (hectares) is exceeded, it will roll over to zero (0). (Figure 61) shows Area Accumulator 1 with 1674.3 acres. Area Accumulator 3 is not resettable.

Figure 61

Area Accumulator 1 Display





SEED COUNT

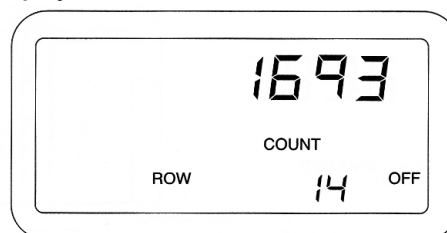
This function counts the number of seeds passing through each seed sensor. This function is selected by pressing the OPERATE 3 switch until the COUNT message appears.

Press the START STOP RESET switch to start the measurement, then press it again to stop. The ON and OFF messages on the display indicate the Seed Count function status. To zero the accumulated seed count on the selected row, press and hold the START STOP RESET switch until a beep occurs (approximately one (1) second). To zero the seed count for all rows, press and hold the START STOP RESET switch for at least three (3) seconds. When a total of 99999 counts is exceeded, the count rolls over to zero (0). Press the SELECT ROW switch to advance the display to the next row. Press the BACK switch to return to the previous row.

Any other Operate Mode function can be selected while Seed Count is running without affecting the actual seed counts. (Figure 62) shows a stopped seed counter with 1693 seeds counted on row fourteen (14).

Figure 62

Seed Count Display



DISTANCE ACCUMULATOR

Distance Accumulator measures distances in feet (meters) with 0.1 resolution. It can only be used after the Distance Calibration Constant has been accurately established (See the SETUP MODE section for details). This function is selected by pressing the OPERATE 3 switch until the DISTANCE and ACC messages appear on the display.

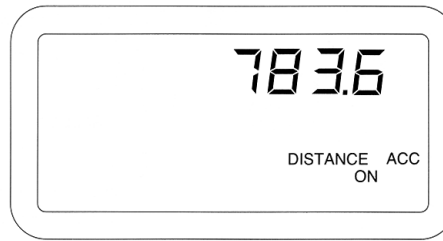
Press the START STOP RESET switch to start the measurement then press it again to stop. The ON and OFF messages on the display indicate the Distance Accumulator function status. To zero the distance accumulator, press and hold the START STOP RESET switch until a beep occurs (approximately one (1) second). When a total of 9999.9 feet (meters) is exceeded the accumulator rolls over to zero (0).

Any other Operate Mode function can be selected while Distance Accumulator is running without affecting the actual distance accumulation. (Figure 63) shows a running distance accumulator with 783.6 feet measured.



Figure 63

Distance Accumulator Display



SPEED AREA MODE

Speed Area Mode monitors non-seeding operations, such as cultivating. Only the Speed, Fan Speed, Shaft Speed, Pressure, Area, and Distance Accumulator functions are available in this mode. (Figure 51) shows this function availability in chart form. The console display for these functions is identical in the Speed Area and Operate Modes.

To Enter Speed Area Mode:

1. A lift switch (implement status switch) must be connected to a shaft speed module that is connected to the system and no seed sensors can be connected.
2. Power off the console.
3. Wait a minimum of 10 seconds before re-powering the system.
4. Power on the console.
5. The alarm will sound momentarily and an E00 (No seed sensors connected) error code will display. Press the OPERATE 2 or OPERATE 3 switch depending on which Speed Area Mode function is desired.

To accumulate area in the Speed Area Mode, the lift switch must indicate the implement is down. Run Hours accumulate only when the implement is down. The Distance Accumulator function is independent of the lift switch status.



ALARMS

Priority levels are assigned to the Seed Manager® SE alarms as shown in (Figure 64) with level one (1) being the highest. If two alarm conditions are detected at the same time only the higher priority alarm displays. If alarms are the same level, both display simultaneously.

NOTE: A Row Failure Alarm will acknowledge the audible alarm only and will not clear the display. To clear a Row Failure Alarm the condition must be fixed or the row must be turned OFF in SETUP MODE.

Unless indicated below, when an alarm condition occurs, the console exits the current Operate Mode function to display the alarm. It returns to that Operate Mode function only after the alarm condition ceases or the ALARM switch has been pressed to acknowledge the alarm condition (except for a Row Failure Alarm).

A “warning” alarm is accompanied by a beeping sound lasting for a fixed time period related to its priority. The higher the priority, the longer the alarm is sounded. Unless otherwise indicated, a “failure” alarm sounds continuously (not beeping) until the failure condition ceases or is acknowledged by pressing the ALARM switch.

Figure 64

Alarm Levels

| Alarm Mode | Priority Level |
|------------------------------|----------------|
| All Rows Failed | 1 |
| Row Failed | 2 |
| Distance Sensor Failed | 3 |
| Population Hi Limit Warning | 4 |
| Population Lo Limit Warning | 4 |
| Fan Speed Hi Limit Warning | 5 |
| Fan Speed Lo Limit Warning | 5 |
| Shaft Speed Hi Limit Warning | 6 |
| Shaft Speed Lo Limit Warning | 6 |
| Pressure Hi Limit Warning | 7 |
| Pressure Lo Limit Warning | 7 |
| Hopper Lo Warning | 8 |
| Battery Voltage Warning | 9 |



ALL ROWS FAILED

All Rows Failed alarm occurs at the end of each row when the implement is lifted from the ground. The alarm sounds continuously for three (3) seconds, the ROWS and FAILED messages appear, and the row numbers display sequentially. After the alarm silences, the console reverts to the previous Operate Mode function.

ROWS FAILED

Rows Failed alarm occurs when two (2) seeds per second or less are detected. The alarm sounds continuously and the row number of the failed sensor appears with the messages ROW and FAILED. If multiple rows fail, the numbers of the failed rows are sequentially displayed at the rate of one per second. This alarm can be acknowledged by pressing the ALARM switch. This will silence the audible alarm, but the display will remain until the condition ceases or the user enters the SETUP MODE Row Status and turns the faulty rows to the OFF status. After the audible alarm is acknowledged, the only functions that are available are in the SETUP MODE (reference the SETUP MODE section for more information).

DISTANCE SENSOR FAILED

If seed flow is detected without a signal from the ground speed sensor and the monitor is not in seed count function for a duration of thirty (30) seconds, the alarm sounds continuously for five (5) seconds and the console automatically enters a mode to manually enter a ground speed value. A manual (simulated) ground speed value, in MPH (Km/h) appears on the display along with the SETUP, SPEED, and FAILED messages.

To continue in the Operate Mode without a functioning ground speed sensor, a suitable manual ground speed value must be entered using the SELECT and SET switches. (Figure 65) shows the above mentioned Setup display with a manual ground speed of 5.3 MPH entered. Press the desired Operate Mode switch to return to seeding.

NOTE: *It is important to maintain ground speed close to the manually entered value to ensure accurate monitoring.*

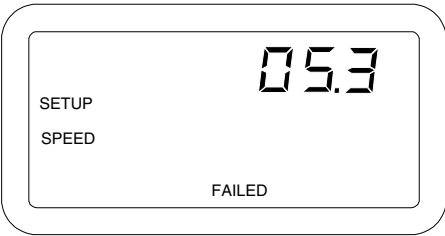
The console will continue to use this manual ground speed until the console is next powered off or the ground speed sensor signal begins to function again. If the damaged ground speed sensor or cable cannot be repaired or replaced before it is desired to continue seeding, the same alarm display will reappear each time power is applied to the console with the manual ground speed value last entered being retained. Again, operation can continue by pressing the switch for the desired Operate Mode.

When the ground speed sensor has been properly repaired or replaced, normal operation will automatically resume without having to deactivate the manual ground speed. However, it is very important to remember to immediately repeat the SETUP MODE Distance Calibration before resuming operation if a different ground speed sensor has been installed. Otherwise, the previously determined Distance Calibration Constant will be



used possibly resulting in ground speed measurement errors which may not be readily detected. Ground speed sensor cable only repairs do not require recalibration.

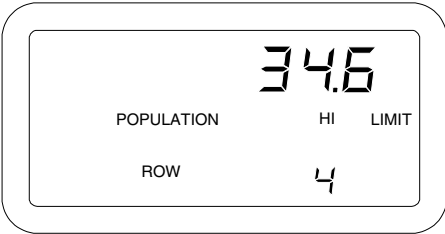
Figure 65
Distance Sensor Failed Display



POPULATION HI LIMIT WARNING

Population Hi Limit Warning occurs when any row population exceeds the value entered for Population Hi Limit in the SETUP MODE. The alarm beeps for four (4) seconds and the row number and actual population, in thousands of seeds per acre (hectare), display. If multiple rows exceed the limit, the row numbers display sequentially along with their respective populations. (Figure 66) shows a Population Hi Limit Warning on row four (4) with a row population of 34,600 seeds per acre.

Figure 66
Population Hi Limit Warning Display



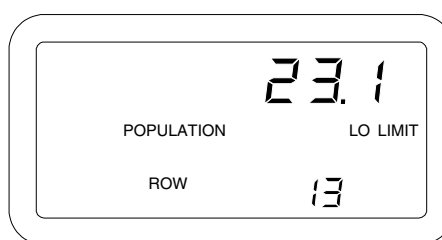


POPULATION LO LIMIT WARNING

Population Lo Limit Warning occurs when any row population falls below the value entered for Population Lo Limit in the SETUP MODE. The alarm beeps for four (4) seconds and the row number and actual population, in thousands of seeds per acre (hectare), display. If multiple rows fall below the limit, the row numbers display sequentially, along with their respective populations. (Figure 67) shows a Population Lo Limit Warning on row thirteen (13) with a row population of 23,100 seeds per acre.

Figure 67

Population Lo Limit Warning Display

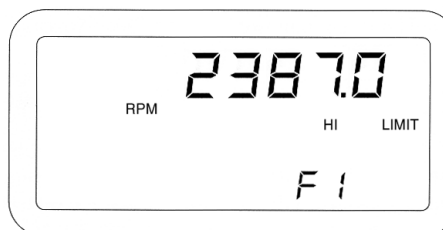


FAN SPEED HI LIMIT WARNING

Fan Speed Hi Limit Warning occurs when any fan speed exceeds the value entered for Fan Speed Hi Limit in the SETUP MODE. The alarm beeps for three (3) seconds and the fan speed sensor number and actual fan speed, in RPM, display. If multiple fan speed sensors exceed the limit, the fan speed sensor numbers display sequentially, along with their respective fan speeds. (Figure 68) shows a Fan Speed Hi Limit Warning on fan speed sensor one (1) with a fan speed of 2,387 RPM.

Figure 68

Fan Speed Hi Limit Warning Display



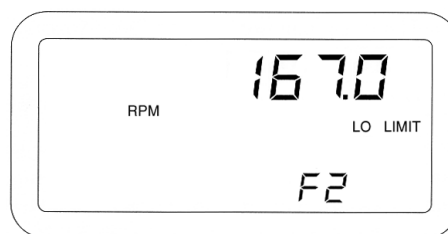


FAN SPEED LO LIMIT WARNING

Fan Speed Lo Limit Warning occurs when any fan speed falls below the value entered for Fan Speed Lo Limit in the SETUP MODE. The alarm beeps for three (3) seconds and the fan speed sensor number and actual fan speed, in RPM, display. If multiple fan speed sensors fall below the limit, the fan speed sensor numbers display sequentially, along with their respective fan speeds. (Figure 69) shows a Fan Speed Lo Limit Warning on fan speed sensor two (2) with a fan speed of 167 RPM.

Figure 69

Fan Speed Lo Limit Warning Display

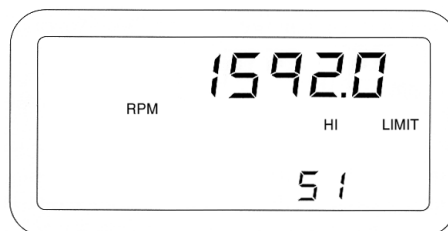


SHAFT SPEED HI LIMIT WARNING

Shaft Speed Hi Limit Warning occurs when any shaft speed exceeds the value entered for Shaft Speed Hi Limit in the SETUP MODE. The alarm beeps for three (3) seconds and the shaft speed sensor number and actual shaft speed, in RPM, display. If multiple shaft speed sensors exceed the limit, the shaft speed sensor numbers display sequentially, along with their respective shaft speeds. (Figure 70) shows a Shaft Speed Hi Limit Warning on shaft speed sensor one (1) with a shaft speed of 1,592 RPM.

Figure 70

Shaft Speed Hi Limit Warning Display



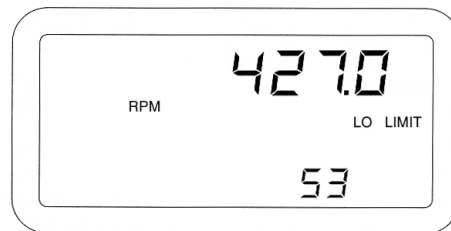


SHAFT SPEED LO LIMIT WARNING

Shaft Speed Lo Limit Warning occurs when any shaft speed falls below the value entered for Shaft Speed Lo Limit in the SETUP MODE. The alarm beeps for three (3) seconds and the shaft speed sensor number and actual shaft speed, in RPM, display. If multiple shaft speed sensors fall below the limit, the shaft speed sensor numbers display sequentially, along with their respective shaft speeds. (Figure 71) shows a Shaft Speed Lo Limit Warning on shaft speed sensor three (3) with a shaft speed of 427 RPM.

Figure 71

Shaft Speed Lo Limit Warning Display

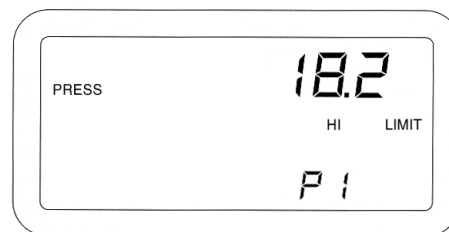


PRESSURE HI LIMIT WARNING

Pressure Hi Limit Warning occurs when any pressure input exceeds the value entered for Pressure Hi Limit in the SETUP MODE. The alarm beeps for three (3) seconds and the pressure sensor number and actual pressure, in oz/in² (kPa), display. If multiple pressure sensors exceed the limit, the pressure sensor numbers display sequentially along with their respective pressures. (Figure 72) shows a Pressure Hi Limit Warning on pressure sensor one (1) with a pressure of 18.2 oz/in².

Figure 72

Pressure Hi Limit Warning Display



PRESSURE LO LIMIT WARNING

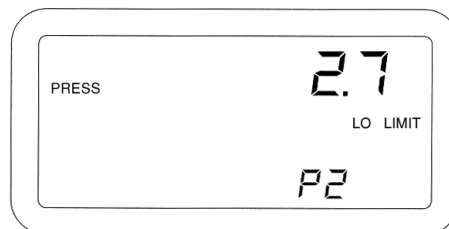
This occurs when any pressure input falls below the value entered for Pressure Lo Limit in the SETUP MODE. The alarm beeps for three (3) seconds and the pressure sensor number and actual pressure, in oz/in² (kPa), display. If multiple pressure sensors fall below the limit, the pressure sensor numbers display sequentially, along with their respective pressures.



(Figure 73) shows a Pressure Lo Limit Warning on pressure sensor two (2) with a pressure of 2.7 oz/in².

Figure 73

Pressure Lo Limit Warning Display

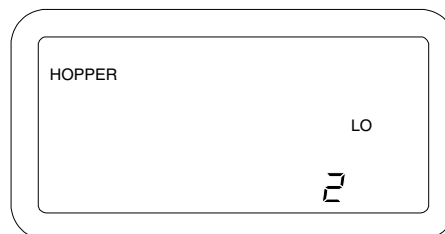


HOPPER LO WARNING

Hopper Lo Warning occurs when any hopper input signals a low material level. The alarm sounds continuously and the hopper sensor number displays along with the HOPPER and LO messages. If multiple hopper sensors signal a low material level, the hopper sensor numbers display sequentially. (Figure 74) shows a Hopper Lo Warning on hopper two (2).

Figure 74

Hopper Lo Warning Display



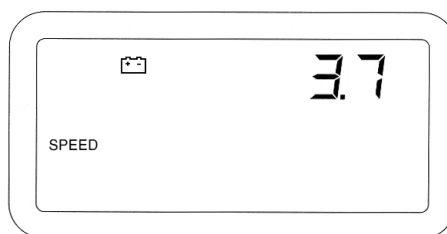


BATTERY VOLTAGE WARNING

To ensure accurate operation of the sensors and modules, the voltage to the console must be at least eleven 11 volts. When the tractor battery voltage falls below this level, regardless of the Operate Mode function, the alarm beeps for three (3) seconds and the battery symbol appears. The battery symbol remains on the display until the low battery condition ceases. The warning beeps reoccur each time the monitor is powered on. (Figure 75) shows the battery symbol in the Operate Mode Speed function with a ground speed of 3.7 MPH.

Figure 75

Battery Voltage Warning Display





SELF TEST ERROR CODES

The Seed Manager® SE Console performs a Self Test upon power up and when selected in SETUP MODE. At the end of the Self Test, the console will either show PASSED and cycle through all of the seed rows or the console displays the appropriate error codes that were detected.

(Figure 76) shows a complete list of all error codes that can display.

Refer to the Troubleshooting table for additional details and recommended recovery procedures.

Figure 76

Self-Test Error Codes

| Error Code | Description |
|------------|---|
| E00 | No Modules Connected |
| E01 | Too Many Modules Connected on P1 or P2 |
| E10 | Too Few Seed Modules Connected |
| E11 | Too Many Seed Modules Connected |
| E20 | Too Few Shaft Modules Connected |
| E21 | Too Many Shaft Modules Connected |
| E30X | Too Few Seed Sensors Connected to Module X |
| E31X | Too Many Seed Sensors Connected to Module X |
| E40 | Too Few Hopper Sensors Connected |
| E41 | Too Many Hopper Sensors Connected |
| E50 | Too Few Pressure Sensors Connected |
| E51 | Too Many Pressure Sensors Connected |
| E70 | Module 8V Power Supply Too Low |
| E71 | Module 8V Power Supply Too High |
| E98 | Internal LCD Driver Failure |
| E99 | Internal Bus Failure |



OPERATOR'S MANUAL



| ERROR CODE | ISSUE | PROBABLE CAUSE | CORRECTIVE ACTION |
|------------|---|--|--|
| | Monitor dead. | <ol style="list-style-type: none"> 1. Blown console fuse. 2. Poor battery connections. 3. Cut or broken battery cable. 4. Low battery voltage. 5. Defective console. | <ol style="list-style-type: none"> 1. Check console fuse. If it blows again, contact DICKEY-john Technical Support to replace console at 1-800-637-3302. 2. Clean and tighten battery connections. 3. Repair by splicing, soldering, and individually heat shrinking each wire. Use only Rosin Core Solder. 4. Verify battery voltage is at least 12 volts. If not, recharge or replace battery. 5. Contact DICKEY-john Technical Support at 1-800-637-3302. |
| | Battery symbol appears on display. | <ol style="list-style-type: none"> 1. Low battery voltage. 2. Intermittent harness short to ground. 3. Poor battery connections. | <ol style="list-style-type: none"> 1. Recharge or replace battery. 2. Locate short and repair by splicing, soldering, and sealing the wire. 3. Clean and tighten battery connections. |
| E00 | No modules have been detected by the console. | <ol style="list-style-type: none"> 1. Implement harness not connected to tractor harness. 2. Implement harness not connected to first module on P1 or P2 line. 3. Harnessing cut and/or pinched. 4. Defective console or defective module. | <ol style="list-style-type: none"> 1. Check tractor harness and implement harness connections. 2. Check connection at P1 and bus harness to the first module. Re-apply power to the console. If E00 occurs again, the tractor harness, module, or console is defective. 3. Locate the fault and repair wires by splicing, soldering, and sealing wires. 4. Contact DICKEY-john Technical Support at 1-800-637-3302 for assistance. |
| E01 | Too many modules are connected to either P1 or P2 line. | <ol style="list-style-type: none"> 1. More than 4 modules are connected to either P1 or P2 bus lines on the implement harness. | <ol style="list-style-type: none"> 1. Distribute modules evenly between P1 and P2 bus lines. |
| E10 | Too few seed modules are connected. | <ol style="list-style-type: none"> 1. Number of Seed Modules Configuration is incorrect. 2. Implement harness not connected to all seed modules. 3. Harnessing cut and/or pinched. 4. Defective module. | <ol style="list-style-type: none"> 1. Check the Number of Seed Modules Configuration in Setup Mode with the actual number of modules connected. 2. Check the harness connection after the module number associated with the number in the lower display. 3. Locate the fault and repair wires by splicing, soldering, and sealing wires. 4. Exchange module after the module number associated with the number in lower display and re-apply power to the console. If the same exact error code and lower digit number displays then the module number associated with the lower display is defective. If the lower digit changes then the module that was replaced was defective. |
| E11 | Too many seed modules are connected. | <ol style="list-style-type: none"> 1. Number of Seed Modules Configuration is incorrect. | <ol style="list-style-type: none"> 1. Check the Number of Seed Modules Configuration in Setup Mode with the actual number of modules connected. |
| E20 | Too few shaft modules are connected to the system. | <ol style="list-style-type: none"> 1. Number of Fan Shaft or Pressure Sensors Configuration is incorrect. 2. Ground speed input source is set incorrectly to D2. 3. Implement harness not connected to shaft speed module. 4. Harnessing cut and/or pinched. 5. Defective module. | <ol style="list-style-type: none"> 1. Check the Number of Fan, Shaft, and Pressure Sensor Configuration in Setup Mode with the actual number of sensors connected. 2. Check the Ground Speed Sensor Configuration in Setup Mode with the actual ground speed sensor connected. 3. Check harness connection before and after the shaft speed module. 4. Locate the fault and repair wires by splicing, soldering, and sealing wires. 5. Contact DICKEY-john Technical Support at 1-800-637-3302 for assistance. |
| E21 | Too many shaft modules are connected to the system. | <ol style="list-style-type: none"> 1. System contains incorrect parts (multiple shaft modules). | <ol style="list-style-type: none"> 1. Disconnect any additional modules that are connected. Disconnect one module at a time to determine which module is incorrect. |

OPERATOR'S MANUAL



| ERROR CODE | ISSUE | PROBABLE CAUSE | CORRECTIVE ACTION |
|------------|--|---|---|
| E30 X | Too few seed sensors are connected to module X (X is the number of the module, and modules are numbered from the far left side of the implement to the far right side of the implement). | <ol style="list-style-type: none"> 1. Failed seed sensors. 2. Number of Seed Sensors for Module X Configuration is incorrect. 3. Seed sensors not connected sequentially. 4. Implement harness is not connected to all seed sensors. 5. Harnessing cut and/or pinched. | <ol style="list-style-type: none"> 1. Contact DICKEY-john Technical Support at 1-800-637-3302 for a replacement sensor. 2. Check the Number of Seed Sensors for Module X Configuration in Setup Mode with the actual number of seed sensors connected. 3. Seed sensors on each module must be connected from the lowest to highest row inputs without skipping rows. 4. Check harness connection to sensor number that corresponds with the number in the lower display. 5. Locate the fault and repair wires by splicing, soldering, and sealing wires. |
| E31 X | Too many seed sensors are connected to module X (X is the number of the module and modules are numbered from the far left side of the implement to the far right side of the implement). | <ol style="list-style-type: none"> 1. Number of Seed Sensors for module X configuration is incorrect. 2. Implement harness is connecting the wrong seed sensors to module X. | <ol style="list-style-type: none"> 1. Check the Number of Seed Sensors for Module X Configuration in Setup Mode with the actual number of seed sensors connected. 2. Check harness connection to sensor number that corresponds with the number in the lower display. |
| E40 | Too few hopper sensors are connected to the system. | <ol style="list-style-type: none"> 1. Number of Hopper Sensors Configuration is incorrect. 2. Hopper sensors failed. 3. Implement harness is not connected to all hopper sensors. 4. Harnessing cut and/or pinched. | <ol style="list-style-type: none"> 1. Check the Number of Hopper Sensors Configuration in Setup Mode with the actual number of hopper sensors connected. 2. Contact DICKEY-john Technical Support at 1-800-637-3302 for assistance. 3. Check harness connection to sensor number that corresponds with the number in the lower display. 4. Locate the fault and repair wires by splicing, soldering, and sealing wires. |
| E41 | Too many hopper sensors are connected to the system. | <ol style="list-style-type: none"> 1. Number of Hopper Sensors Configuration is incorrect. | <ol style="list-style-type: none"> 1. Check the Number of Hopper Sensors Configuration in Setup Mode with the actual number of hopper sensors connected. |
| E50 | Too few pressure sensors are connected to the system. | <ol style="list-style-type: none"> 1. Number of Pressure Sensors Configuration is incorrect. 2. Pressure sensors failed. 3. Implement harness is not connected to all pressure sensors. 4. Harnessing cut and/or pinched. | <ol style="list-style-type: none"> 1. Check the Number of Pressure Sensors Configuration in Setup Mode with the actual number of pressure sensors connected. 2. Contact DICKEY-john Technical Support at 1-800-637-3302 for a replacement sensor. 3. Check harness connection to sensor number that corresponds with the number in the lower display. 4. Locate the fault and repair wires by splicing, soldering, and sealing wires. |
| E51 | Too many pressure sensors are connected to the system. | <ol style="list-style-type: none"> 1. Number of Pressure Sensors Configuration is incorrect. | <ol style="list-style-type: none"> 1. Check the Number of Pressure Sensors Configuration in Setup Mode with the actual number of pressure sensors connected. |
| E70 | Module supply voltage is too low (shorted to 5V or to ground). | <ol style="list-style-type: none"> 1. Harnessing cut and/or pinched. 2. Module is defective. | <ol style="list-style-type: none"> 1. Locate the fault and repair wires by splicing, soldering, and sealing wires. 2. Contact DICKEY-john Technical Support at 1-800-637-3302 for a replacement module. |
| E71 | Module supply voltage is too high (shorted to 12V) | <ol style="list-style-type: none"> 1. Harnessing cut and/or pinched. 2. Module is defective. | <ol style="list-style-type: none"> 1. Locate the fault and repair wires by splicing, soldering, and sealing wires. 2. Contact DICKEY-john Technical Support at 1-800-637-3302 for a replacement module. |
| E98-E99 | Internal console error. | | <ol style="list-style-type: none"> 1. Contact DICKEY-john Technical Support at 1-800-637-3302 for a replacement module. |

OPERATOR'S MANUAL



CONNECTOR PINOUTS

Console

| Seed Manager SE Non RS-232 Version | | Seed Manager SE RS-232 Version | | | |
|------------------------------------|-------|--------------------------------|-------|----------|-------|
| J1 | | J1 | | J2 | |
| FUNCTION | PIN # | FUNCTION | PIN # | FUNCTION | PIN # |
| PROGRAM OUT 1 | aa | PROGRAM OUT 1 | aa | TxD | 11 |
| PROGRAM OUT 2 | bb | PROGRAM OUT 2 | bb | RxD | 12 |
| RS-485A | A | RS-485 A | A | DTR | 13 |
| RS-485B | B | RS-485 B | B | DSR | 14 |
| +12VDC SW OUT-MODULE | 1 | +12 VDC SW OUT-MODULE | 1 | GND | 15 |
| GND-MODULE | 2 | GND-MODULE | 2 | | |
| +12VDC SW OUT-AUX | V | +12 VDC SW OUT-AUX | V | | |
| GND-AUX | W | GND-AUX | W | | |
| AUX SENSOR SIGNAL | ff | AUX SENSOR SIGNAL | ff | | |
| +V BATTERY | 3 | +V BATTERY | 3 | | |
| GND BATTERY | 4 | GND BATTERY | 4 | | |

MODULES

| | Gray Connector | | Black Connector | |
|------------------------------------|----------------|------------------|-----------------|------------------|
| | PIN | FUNCTION | PIN (B) | FUNCTION |
| Material Flow Module 12 Row | 1 | Sensor 1 Signal | 1 | Program line in |
| | 2 | Sensor 2 Signal | 2 | Program line out |
| | 3 | Sensor 3 Signal | 3 | RS-485 A in/out |
| | 4 | Sensor 4 Signal | 4 | RS-485 B in/out |
| | 5 | Sensor 5 Signal | 5 | Hopper Level 1 |
| | 6 | Sensor 6 Signal | 6 | Hopper Level 2 |
| | 7 | Sensor 7 Signal | 7 | Not Used |
| | 8 | Sensor 8 Signal | 8 | Not Used |
| | 9 | Sensor 9 Signal | 9 | Sensor 8VDC out |
| | 10 | Sensor 10 Signal | 10 | Sensor ground |
| | 11 | Sensor 11 Signal | 11 | Module 12VDC in |
| | 12 | Sensor 12 Signal | 12 | Module ground |
| Material Flow Module 16 Row | Gray Connector | | Black Connector | |
| | PIN | FUNCTION | PIN | FUNCTION |
| | 1 | Sensor 1 Signal | 1 | Program line in |
| | 2 | Sensor 2 Signal | 2 | Program line out |
| | 3 | Sensor 3 Signal | 3 | RS-485 A in/out |
| | 4 | Sensor 4 Signal | 4 | RS-485 B in/out |
| | 5 | Sensor 5 Signal | 5 | Sensor 13 signal |
| | 6 | Sensor 6 Signal | 6 | Sensor 14 signal |
| | 7 | Sensor 7 Signal | 7 | Sensor 15 signal |
| | 8 | Sensor 8 Signal | 8 | Sensor 16 signal |
| | 9 | Sensor 9 Signal | 9 | Sensor 8VDC out |
| | 10 | Sensor 10 Signal | 10 | Sensor ground |
| | 11 | Sensor 11 Signal | 11 | Module 12VDC in |
| | 12 | Sensor 12 Signal | 12 | Module ground |
| Shaft Monitor Module | Gray Connector | | Black Connector | |
| | PIN | FUNCTION | PIN | FUNCTION |
| | 1 | Ground Speed | 1 | Program line in |
| | 2 | Shaft Speed 1 | 2 | Program line out |
| | 3 | Shaft Speed 2 | 3 | RS-485 A |
| | 4 | Shaft Speed 3 | 4 | RS-485 B |
| | 5 | Pressure 1 | 5 | Fan Speed 1 |
| | 6 | Pressure 2 | 6 | Fan Speed 2 |
| | 7 | Hopper Level 1 | 7 | Not Used |
| | 8 | Hopper Level 2 | 8 | Not Used |
| | 9 | Hopper Level 3 | 9 | Sensor 8 VDC out |
| | 10 | Lift Switch-NC | 10 | Sensor ground |
| | 11 | Lift Switch-NO | 11 | Module 12VDC in |
| | 12 | Not Used | 12 | Module ground |

OPERATOR'S MANUAL



SETUP RECORD SHEET

| |
|---------------------------------|
| Parameter Name |
| Population Hi Limit |
| Population Lo Limit |
| Row Width |
| Implement Width |
| Ground Speed Source |
| Distance Calibration |
| Split Row Configuration |
| Number of Seed Modules |
| Number of Seed Sensors Module 1 |
| Number of Seed Sensors Module 2 |
| Number of Seed Sensors Module 3 |
| Number of Seed Sensors Module 4 |
| Number of Seed Sensors Module 5 |
| Number of Seed Sensors Module 6 |
| Row Status |
| Total Number of Rows Configured |
| Number of Fan Speed Sensors |
| Fan Speed Sensor 1 Constant |
| Fan Speed Sensor 1 Hi Limit |
| Fan Speed Sensor 1 Lo Limit |
| Fan Speed Sensor 2 Constant |
| Fan Speed Sensor 2 Hi Limit |
| Fan Speed Sensor 2 Lo Limit |
| Number of Shaft Speed Sensors |
| Shaft Speed Sensor 1 Constant |
| Shaft Speed Sensor 1 Hi Limit |
| Shaft Speed Sensor 1 Lo Limit |
| Shaft Speed Sensor 2 Constant |
| Shaft Speed Sensor 2 Hi Limit |
| Shaft Speed Sensor 2 Lo Limit |
| Shaft Speed Sensor 3 Constant |
| Shaft Speed Sensor 3 Hi Limit |
| Shaft Speed Sensor 3 Lo Limit |
| Number of Hopper Sensors |
| Number of Pressure Sensors |
| Pressure Sensor 1 Hi Limit |
| Pressure Sensor 1 Lo Limit |
| Pressure Sensor 2 Hi Limit |
| Pressure Sensor 2 Lo Limit |
| Blockage Mode Configuration |
| Population Filter |
| Population Scaling |

OPERATOR'S MANUAL



SETUP RECORD SHEET

| |
|---------------------------------|
| Parameter Name |
| Population Hi Limit |
| Population Lo Limit |
| Row Width |
| Implement Width |
| Ground Speed Source |
| Distance Calibration |
| Split Row Configuration |
| Number of Seed Modules |
| Number of Seed Sensors Module 1 |
| Number of Seed Sensors Module 2 |
| Number of Seed Sensors Module 3 |
| Number of Seed Sensors Module 4 |
| Number of Seed Sensors Module 5 |
| Number of Seed Sensors Module 6 |
| Row Status |
| Total Number of Rows Configured |
| Number of Fan Speed Sensors |
| Fan Speed Sensor 1 Constant |
| Fan Speed Sensor 1 Hi Limit |
| Fan Speed Sensor 1 Lo Limit |
| Fan Speed Sensor 2 Constant |
| Fan Speed Sensor 2 Hi Limit |
| Fan Speed Sensor 2 Lo Limit |
| Number of Shaft Speed Sensors |
| Shaft Speed Sensor 1 Constant |
| Shaft Speed Sensor 1 Hi Limit |
| Shaft Speed Sensor 1 Lo Limit |
| Shaft Speed Sensor 2 Constant |
| Shaft Speed Sensor 2 Hi Limit |
| Shaft Speed Sensor 2 Lo Limit |
| Shaft Speed Sensor 3 Constant |
| Shaft Speed Sensor 3 Hi Limit |
| Shaft Speed Sensor 3 Lo Limit |
| Number of Hopper Sensors |
| Number of Pressure Sensors |
| Pressure Sensor 1 Hi Limit |
| Pressure Sensor 1 Lo Limit |
| Pressure Sensor 2 Hi Limit |
| Pressure Sensor 2 Lo Limit |
| Blockage Mode Configuration |
| Population Filter |
| Population Scaling |



Dealers have the responsibility of calling to the attention of their customers the following warranty prior to acceptance of an order from their customer for any DICKY-john product.

DICKY-john® WARRANTY

DICKY-john warrants to the original purchaser for use that, if any part of the product proves to be defective in material or workmanship within one year from date of original installation, and is returned to DICKY-john within 30 days after such defect is discovered, DICKY-john will (at our option) either replace or repair said part. This warranty does not apply to damage resulting from misuse, neglect, accident, or improper installation or maintenance; any expenses or liability for repairs made by outside parties without DICKY-john's written consent; damage to any associated equipment; or lost profits or special damages. Said part will not be considered defective if it substantially fulfills the performance expectations. THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES OF MERCHANTABILITY, FITNESS FOR PURPOSE, AND OF ANY OTHER TYPE, WHETHER EXPRESS OR IMPLIED. DICKY-john neither assumes nor authorizes anyone to assume for it any other obligation or liability in connection with said part and will not be liable for consequential damages. Purchaser accepts these terms and warranty limitations unless the product is returned within fifteen days for full refund of purchase price.

**For DICKY-john Service Department, call
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