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INTRODUCTION

The IntelliAg application controller is a precision farming system that provides communication between the implement and tractor. Because IntelliAg is designed to the ISO 11783 standard, it is interchangeable with other manufacturers' compatible equipment.

The DICKEY-john IntelliAg system can be used with:

- Sprayers
- Fertilizer spreaders
- Anhydrous applicators
- Planters
- Air seeders (strip till/seeding)

FEATURES

- Controls hydraulic valves (pulse-width modulated and servo)
- Variable rate applications
- Logs "as applied" data
- Monitors up to 196 rows of seeding
- Monitors inputs such as hopper level, air pressure, and shaft speed
- Retains information in the event of a power failure
- Full screen alarms identify abnormal or failed operation on all enabled system component/controls

MAIN WORK SCREEN

The Main Work screen is divided into 4 areas ([Figure 1](#)):

1. Enabled system applications
2. Main Work Screen area that displays application control status
3. IntelliAg buttons that perform IntelliAg functions
4. Row Indicators that monitor seed rate

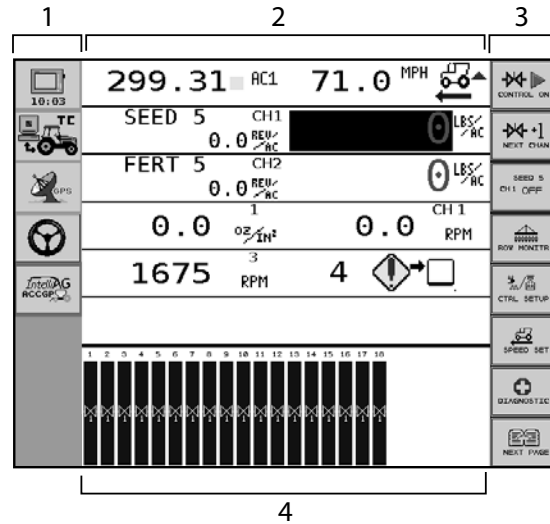
Operations are turned on and off using an installed (optional) Master Switch or utilizing an assigned Master Switch On/Off button on the VT.

The Virtual Terminal (VT) is in Operate mode when the Master Switch is in the ON position and the implement is down. In this mode, all enabled system components and control channels are operational, as well as all monitoring functions and system accumulators.

When the Master Switch is in the OFF position and/or the implement is raised, all control and row monitoring functions cease.



Figure 1
Work Screen



WORK SCREEN SYMBOLS

TARGET RATE



The Target Application Rate displays when Master Switch is off. The actual applied rate appears in bold and larger font during Work mode.

TARGET INCREASE/DECREASE % RATE

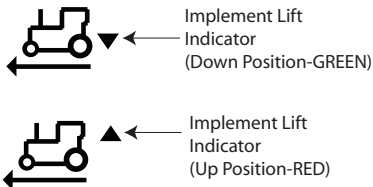


The Increase/Decrease rate is the percentage change being applied each time the **Material Increase/Decrease** button is pressed during Work mode.

TARGET PRESET RATE

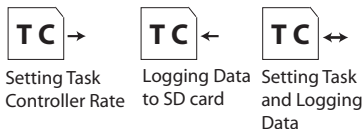
The Preset Rate is the applied rate that was entered at the Material Configuration Setup screen and increases or decreases when the Material **Increase/Decrease** button is pressed during Work mode.

IMPLEMENT LIFT SWITCH



When an implement lift switch is installed, the Main Work screen will identify if the implement is in the up or down position. Using an implement lift switch automatically turns the control channels on and off without turning the master switch off. The Implement Lift Indicator must be in the Down position and the Master Switch on for the control channels to operate. **The Implement Lift Switch box on the Ground Speed Configuration screen must be enabled if an implement lift switch is used.** Refer to the Implement Lift Sensor instructions for installation location.

TASK CONTROLLER



The Task Controller icon appears on the Main Work screen when Task Controller is active and controlling the application rate. Return to Task Controller to stop a task.



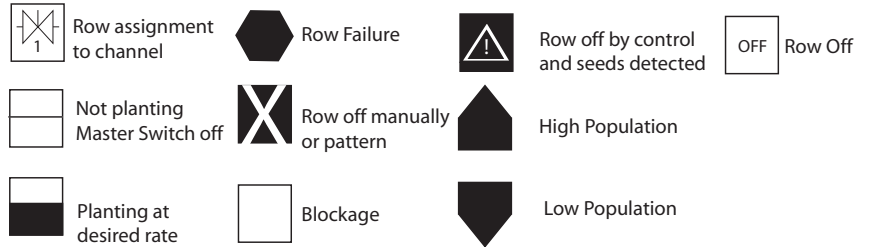
ROW INDICATORS

Row Indicators in the bar graph area on the bottom of the Work screen indicate seed flow rate for each row.

The following symbols illuminate in the bar graph area.

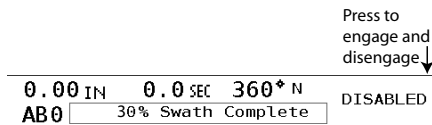
Figure 2

Row Indicator Symbols



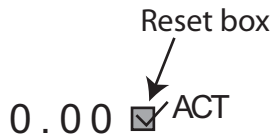
AUTOPILOT STEERING NAVIGATION

Autopilot Steering Navigation can be engaged and disengaged from the Main Work screen and displays swath # (AB0), cross-track error (0.00 IN), age of correction (0.0 SEC), heading direction (360 degrees), and % swath complete.



ACCUMULATORS

Some data item values can be reset to zero from the Main Work screen. An accumulator displays (e.g., Area 1 Field, Seed Count, etc.) on the active screen and can be reset to zero by placing a checkmark in the box next to the data item. Only accumulators on the currently-displayed screen can be reset. Accumulators are reset independently and can only be reset when the master switch is OFF. Once an accumulator has reached its maximum value, it will roll over to 0.0.







SYSTEM OPERATION

START

1. Lower the implement to operating position engaging the implement switch, if present and enabled.
2. With the hydraulic system engaged and the tractor at its normal operating RPM, set the master switch to the On position. All enabled control channels will begin controlling at the current ground speed. All accumulators will begin recording data.

⚠ WARNING

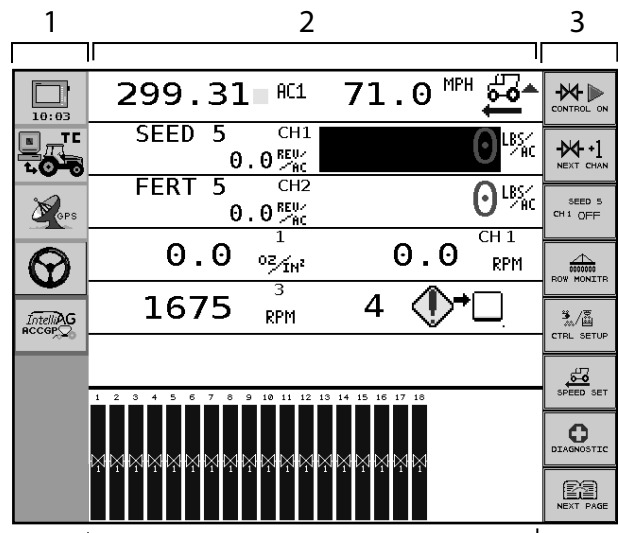
When the implement is down and the master switch is in the On position, the machine is fully operational. All necessary precautions must be taken to ensure user safety. Failure to practice all necessary caution may result in serious injury or death.

STOP

1. Set the master switch to the Off position. All control channels will cease operation and all data accumulation will halt.
2. Operation will immediately stop when the ground speed is 0 or when the implement is raised to disengage.

Figure 3

Main Work Screen Functions





USING THE VT BUTTONS

Virtual buttons located on the right side of the display are used to interact with the IntelliAg system. Buttons will display differently on the screen when in Operate and Nonoperate mode.

OPERATE MODE BUTTONS

MASTER SWITCH ON/OFF

The Master Switch On/Off button is available only when no physical master switch is installed and assigned.



NEXT CHANNEL

The Next Channel button selects the next available channel for changes of rate or to turn channel off. A channel can also be selected by touching the channel on the screen. The active channel can be set to ON or OFF by selecting the On/Off Channel button described below. The active channel is displayed in reverse video display in a multiple channel configuration. The Target Rate for a channel can be adjusted by using the Inc/Dec buttons described below. The channel's Inc/Dec buttons, as well as the ON/OFF buttons, display the current channel label. This key is visible only when multiple channels have been configured.



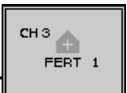
NEXT SCREEN

The Next Screen button displays the next configured work screen. The number to the left of the graphic identifies the current screen. The number on the right identifies the next screen to display. Only displays if multiple screens are configured.



INCREMENT

The Increment button increases the active channel's target rate by the amount specified in the Inc/Dec % or rate table setup for that material. Increment can be pressed several times to increase the target rate by the specified amount for every actuation until the maximum rate value or preset value is reached. The active channel/material is displayed in the button text.



DECREMENT

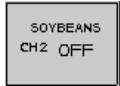
The Decrement button decreases the active channel's target rate by the amount specified in the Inc/Dec % or rate table setup for that material. Decrement can be pressed several times to reduce the target rate by the specified amount for every actuation until the minimum rate value or preset value is reached. The active channel/material is displayed in the button text.



INC/DEC RESET TO TARGET

The Inc/Dec Reset to Target button is used to return the active channel to the original material target rate. This button is only available for channels that are active and have preset disabled. The active channel displays in the button text.





TURN ON/OFF CHANNEL

The Turn On/Off Channel buttons turn the active channel ON and OFF, respectively. Channels that are set to OFF will not operate when the master switch is set to the ON position. Turning a channel OFF is not the same as disabling a channel in Channel Setup mode. The active channel/material is displayed in the button text. If the key text is OFF, this is the action that will be performed when the key is pressed.

NON OPERATE MODE BUTTONS

The following buttons appear when the Master Switch is OFF and are available when the system is not operating.



NEXT PAGE

The Next Page button displays additional buttons used to interact with the IntelliAg system in a nonoperating mode.



DIAGNOSTICS

The Diagnostics button accesses the Diagnostics screen. Various system operating parameters are displayed on this screen. There is no user-entered data on this screen.



ALARM LOG

The Alarm Log button accesses the Alarm log screen. An account of the previous alarms issued is stored here. There is no user-entered data on this screen. Not all alarms are recorded in the alarm log.



SUMMARY

The Summary button accesses the Summary screen and provides an overview of system configurations for enabled channels. Specific setup screens can be accessed (Level 2 and 3 Users only) by pressing inside the yellow boxes for Channel, Material, Row, Module, Speed Set, and Accessory Sensor screens.



ADDITIONAL OPERATING FUNCTIONS

IMPORTANT: Precharge Time, Delay Time, and Flush Enable are features used for hydraulic drive systems only and not applicable for ground drive systems. These functions are configured in Setup in User Level 2 mode.

PRECHARGE TIME

Precharge Time is typically used in applications that have significant distance between the storage bulk tank and the implement row unit. This is where seed placement takes several seconds due to the travel time of the seed/fertilizer from the bulk tank to the ground. When the precharge feature is activated, material will dispense at the rate at which the precharge ground speed is set.

The precharge feature will operate until the precharge timer expires or the precharge ground speed has been exceeded. If ground speed stops while in precharge mode, the feature will abort.

A precharge alarm will display any time the preset feature is established or changed and the master switch is turned on.

The precharge feature is applicable to granular seeding and fertilizer control channels.

NOTE: Master switch must be turned ON to activate a precharge state.

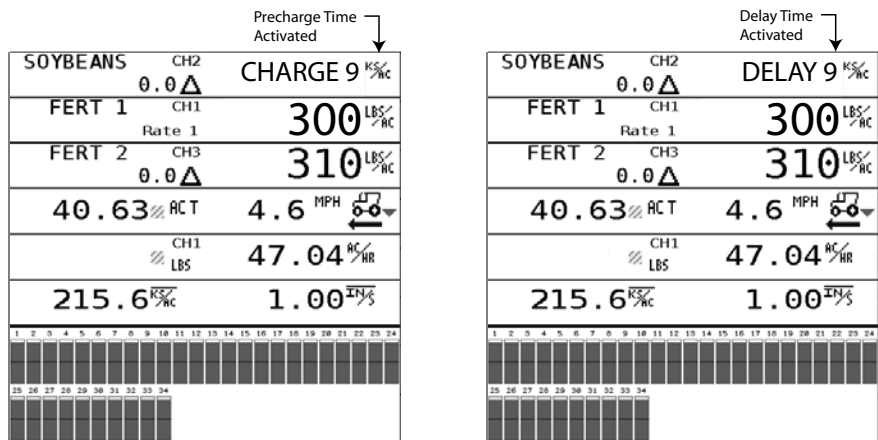
Operating the Precharge function:

1. Turn the master switch on.
2. The precharge feature will automatically initiate when the master switch is turned on and the ground speed is less than the precharge ground speed but greater than 0.

The rate instrument will populate with the word "CHARGE" and the countdown timer. The timer indicates how much precharge time is left before precharge will abort.

Figure 4

Precharge Time and Delay Time





DELAY TIME

Delay Time determines the length of time before a control channel will start after the master switch has been turned ON.

- The system will immediately shutdown the channel when the ground speed is less than the shutoff speed.
- The system will delay the channel shutdown if the master switch is turned OFF and the ground speed is greater than the shutoff speed.

The rate instrument will populate with the word "DELAY" and the countdown timer appears on the screen indicating when the channel will turn ON (Figure 4).

FLUSH ENABLE

The Flush Enable feature is typically used to begin dispensing material at a higher rate when the tractor is below shutoff speed, i.e. during startup or turn around conditions. Material will dispense at the target rate for the speed under the Ground Speed Setup screen.

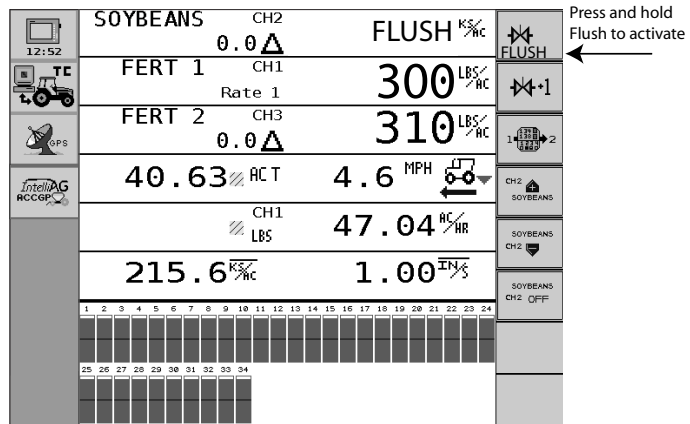
Flush enable is applicable to granular seeding and fertilizer control channels.

NOTE: *Flush Enable will abort if the button is pressed during a Precharge state.*



Figure 5

Flush Enable (Main Work Screen)



NOTE: *Precharge Time, Delay Time, and Flush Enable are features used for hydraulic drive systems only and not applicable for ground drive systems. These functions are configured in Setup in User Level 2 mode.*

Operating the Flush Enable function:

1. Ensure the master switch is turned ON.
2. Press and hold the **Flush Enable** button to dispense material.
3. Release the **Flush Enable** button to stop dispensing material. Once speed is above shutoff speed, flush is aborted and ground speed based control will take over.





SYS INFOR AND DIAGNOSTICS

In order to view the following information and diagnostics screens, the master switch must be set to the OFF position.

DIAGNOSTICS

The Diagnostics screen provides various information from feedback sensors, valve output, and system voltages of the WSMT module. The control valve can be manually opened on this screen when necessary.

Each channel has its own Diagnostics screen. None of the items on the screen can be edited. However the Channel Pulse Count data can be reset. The system may be active while the Diagnostic screen is displayed.

Press the **Diagnostics** button to access the Diagnostics screen.



Figure 6

Diagnostics Screen

	07:58	CHANNEL # 1		
		SEED 5		
	TC	CH SETPOINT	0.0000	
		CH TARGET	60.0	
		CH ACTUAL RATE	0.00	
	GPS	CH RPM		
		CH PULSE COUNT	0	
		CH FREQ FILT	0	
		FREQ REL GSPD	228	
	IntelliAg RCCGSPD	FREQ DIG GSPD	228	
		IO IMP LIFT	0	
		APP ID	0.52	
		SOL PWR VOLT	14.62	
		ECU PWR VOLT	14.64	
		SNSR PWR VOLT	8.02	
		GND VOLT	0.00	

CH SETPOINT

The Channel Setpoint value is calculated by the system. It displays the expected feedback frequency of the application rate sensor or flowmeter used for that channel's feedback.

CH TARGET

The Channel Target value is the current channel's rate as entered into the Target Rate constant on the Channel Configuration screen.

CH ACTUAL RATE

The Channel Actual Rate value is the current channel's actual controlled rate with the system active.



CH RPM/GPM

The Channel RPM/GPM value is the current revolutions per minute (RPM)/gallons per minute (GPM). The sensor constant and gear ratio parameters entered on the Channel Configuration screen allow the RPM/GPM to be calculated.

CH PWM

The Channel PWM value is the current pulse width modulation (PWM) output drive signal to the solenoid valve. The higher the number, the further the valve opens.

CH PULSE COUNT

The Channel Pulse Count value is the accumulated pulse count detected from the channel feedback sensor. This value may be reset by pressing the Reset Channel Pulse Count button.

CH FREQ FILT

The Channel Frequency's Filtered value is the filtered frequency output from the channel feedback sensor.

FREQ REL GSPD

The Frequency Reluctance Ground Speed value is the reluctance sensor output signal in hertz (hz). This value is present when ground speed is provided by a reluctance sensor connected to the actuator harness.

FREQ DIG GSPD

The Frequency Digital Ground Speed value is the digital sensor output signal in hertz (hz). This value is present when ground speed is provided by a radar sensor or other digital speed sensor connected to the actuator harness.

NOTE: In some instances, FREQ REL GSPD and FREQ DIG GSPD read the same values simultaneously depending upon the sensor used. This is normal and does not impact operation.

FREQ PRESS 1

The Frequency Pressure value is the output frequency signal of the air pressure sensor in hertz (hz). This value will typically fall between 200 hz and 1100 hz.

IO HOPPER 1

The IO Hopper 1 value is the current state of the hopper sensor. If the sensor is not blocked, the value will be "1". A blocked sensor's value will be "0".



NOTE: *If the values are reversed and the value displays a “1” when the implement is raised, the wiring for the implement switch will need to be reversed so that an accurate readout is achieved.*

IO IMP LIFT

The IO Implement Lift value displays the current state of the implement status switch. This value will be “1” when the implement is down. The value will be “0” when the implement is raised.

APP ID

Hardware identification only. Not applicable to the end user.

SOL PWR VOLT

The Solenoid Power Voltage value displays the detected solenoid power voltage. This voltage level is the high current voltage leg of the system which is used to power high current solenoids and valve actuators. This value will generally be equal or nearly equal to the tractor battery voltage.

ECU PWR VOLT

The Electrical Control Unit (ECU) Power Voltage value is the detected ECU voltage. This voltage level is the low current voltage leg of the system and is used to power modules and sensors. This value will generally be equal or nearly equal to the tractor battery voltage.

SNSR PWR VOLT

The Sensor Power Voltage value is the detected output voltage to the seed sensor on the Working Set Master (WSMT) module. This value is typically +8 VDC.

GND VOLT

If the system is properly grounded, this value is typically 2.50V on software versions older than 2.7. Software versions newer than 2.7 and WSMT software is 0V.

DIAGNOSTICS MANUAL VALVE POSITION

Manual opening of a selected channel's valve is used for calibration or troubleshooting purposes in the case of system failure.

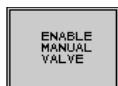
Press the **Diagnostics** button to access the Diagnostics screen.

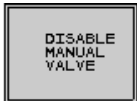
1. The Diagnostics screen will show Channel 1 as a default.
 - If a channel other than Channel 1 needs to be selected, press the **Next Channel** button until the appropriate channel displays. The **Next Channel** button only displays when more than one channel is configured.

MANUAL OPEN OF CHANNEL

1. Press the **Enable Manual Valve** button to run the current selected channel. This allows for manual open and close of valve position.

IMPORTANT: The Enable feature will only operate on the Diagnostics screen.





2. If the **Disable Manual Valve** button is displayed, the selected channel has already been enabled for manual valve position operation.
3. Set the Master Switch to the ON position.
4. Press the **Increment** button to open the channel's valve. The Channel Pulse Width Modulation (PWM) data item displays the current PWM signal that is being output to the valve.
5. The **Increment** button must be pressed repeatedly to increase the PWM signal to the valve. Each press will increase the signal by 2 PWM. The Channel Pulse Count and Channel Frequency Filter values will display the current output of the feedback sensor.
6. Press the **Decrement** button to decrease the PWM signal and close the valve. The **Decrement** button must be pressed repeatedly to decrease the PWM signal to the valve. Each press will decrease the signal by 2 PWM.
7. The active channel is displayed in the button text.
8. Turn the master switch off to shutdown control channel.

INFORMATION SCREEN

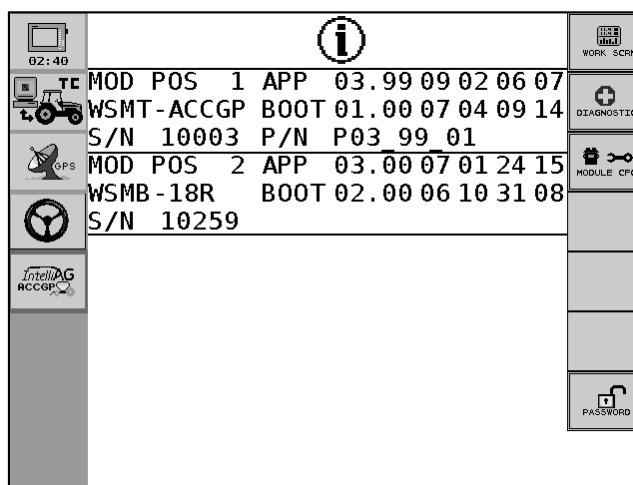
The Information screen displays the module software versions connected to the system and is typically used for service and troubleshooting. No information on this screen can be edited.

Each module connected is identified by module type, module position, and serial number. Module position cannot be altered on this screen and can only be established on the Module Configuration screen.

Press the **Information** button to access the Information screen.

NOTE: The Password button on the Information screen provides access to the Password screen to change User Levels. Passwords are available to Great Plains' authorized users.

Figure 7
Information Screen





ACKNOWLEDGING ALARM CONDITIONS

Various alarm conditions may be presented whenever the system encounters an abnormal condition or detects a specific alarm. Alarms are typically in a full screen display describing the alarm and, dependent upon the alarm type, may give instructions on how to fix the alarm. Each alarm type has an associated alarm number which can be cross-referenced in the Troubleshooting and Alarms section.

Some alarms (such as the Master Switch alarm) require a specific action before the alarm condition will cease. In these cases, instructions are indicated on the alarm display.

Other alarms can be acknowledged by pressing the **Alarm Cancel** button of **ESC** key.

Alarm details can only be cleared by a Level 2 or Level 3 User.



ALARM LOG

The Alarm Log screen provides a list of specific alarms that have been issued during system operation. Information displayed on the Alarm Log screen is informational only and cannot be edited.

Each time specific alarm conditions are detected it is logged and communicated to the WSMT.

To View Alarm Log:

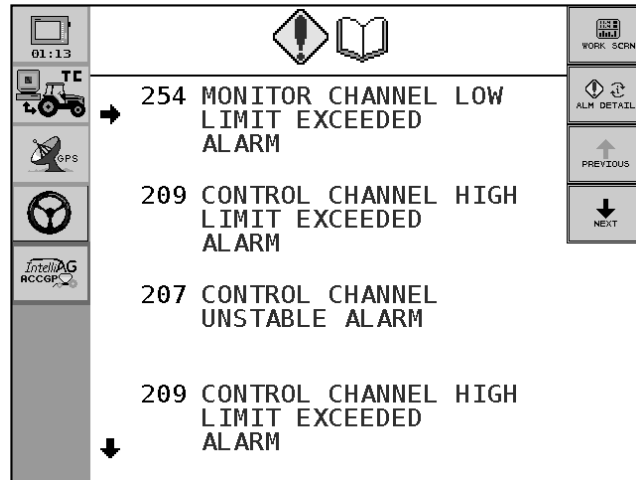
1. Press the **Alarm Log** button to access the Alarm Log screen.
 - The number of the alarm, along with the alarm description displays.
 - Up to 20 alarms can be recalled.
 - Each alarm occurrence can have up to 5 instances of the alarm tagged with a date and time stamp.
2. To select specific alarm details, press the **Previous** or **Next** buttons to move the small display arrow next to the desired alarm number.
3. Press the **Alarm Detail** button to view all of the occurrences of the selected alarm.
 - The down arrow in the lower left at screen bottom signifies that more alarms are present and accessible by pressing the **Previous** or **Next** buttons.





Figure 8

Alarm Log Screen



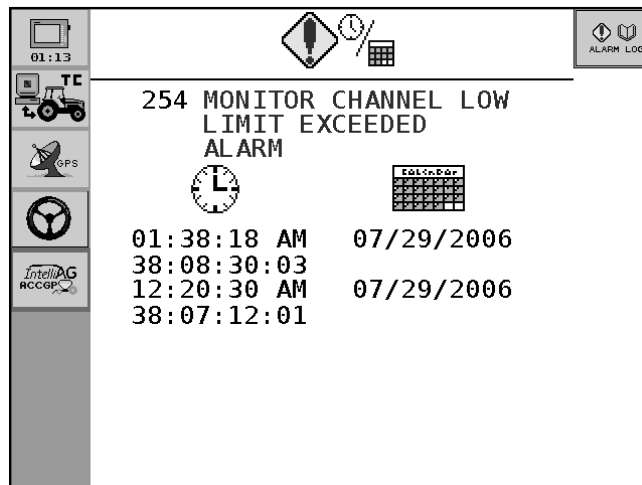
ALARM DETAIL



- To view specific alarm details, press the **Alarm Detail** button.
 - The time and date of the selected alarm displays for each occurred instance.
 - The Alarm Log will save up to 5 instances of the selected alarm.

Figure 9

Alarm Detail Screen





TROUBLESHOOTING & ALARMS

Alarms are indicated on the Virtual Terminal with the following graphic, as well as with a continuous, audible alarm. The audible alarm is terminated by pressing the **Alarm Cancel** button or ESC key. In addition, detailed descriptions of the current alarm can be viewed by pressing the **Alarm Detail** button. Some of the alarm conditions display instructions on correcting the situation.

IntelliAG



Alarms are presented in a full screen display that will describe the alarm and, depending upon the alarm, may give instructions on how to fix the alarm. Each alarm type has an associated alarm number that can be cross-referenced in this section.

Some alarms will require a specific action before the alarm condition will cease. In these cases, the instructions to proceed are indicated in the alarm display.

The following table describes the possible alarm conditions, causes, and remedies.



OPERATOR'S MANUAL



ALARM #	ALARM	PROBABLE CAUSE	CORRECTIVE ACTION
1	Software Task Stack Overflow Alarm	1. Internal system software error.	1. Cycle system power OFF/ON. If condition persists, contact DICKEY-john Technical Support (1-800-637-3302) or DICKEY-john Europe (011-33-141-192189).
2	Software System Stack Overflow Alarm	1. Internal system software error.	1. Cycle system power OFF/ON. If condition persists, contact DICKEY-john Technical Support (1-800-637-3302) or DICKEY-john Europe (011-33-141-192189).
3	VT Out of Memory Alarm	THE ECU MEMORY REQUIREMENTS ARE GREATER THAN THE VIRTUAL TERMINAL CAN HANDLE.	1. Remove any unnecessary ECU's 2. Contact DICKEY-john Technical Support (1-800-637-3302) or DICKEY-john Europe (011-33-141-192189) for updated hardware.
4	Software Version Does Not Support this Configuration Alarm	1. Occurs if new software is loaded and does not support the configuration of the hardware it is loaded on.	1. Record software and model information listed below. 2. Contact dealer for software update.
202	Ground Speed Failure Alarm	ONLY ACTIVE IN PLANTER MONITOR MODE. SEEDS ARE DETECTED WHEN THERE IS NO GROUND SPEED. 1. Incorrect speed source setting or calibration. 2. Defective speed sensor or harness. 3. Defective module or virtual terminal.	1. Verify correct speed source setting and speed calibration on the Ground Speed Calibration screen. 2. Inspect speed sensor/harness for damage or replace speed sensor. 3. Replace module or virtual terminal.
203	Continuous Test Failure Alarm	CONTROL CONDITIONS EXCEED THE DISK RPM LIMITS. 1. Test speed setting is set too high or low. 2. Disk Hi and/or Disk Low settings are incorrect.	1. Enter an appropriate Test Speed. 2. Verify or enter appropriate Disk Hi and/or Disk Low values.
204	5 Revolution Test Failure Alarm	CONTROL CONDITIONS EXCEED THE DISK RPM LIMITS. 1. Test Speed setting is set too high or low. 2. Disk Hi and/or Disk Low settings are incorrect.	1. Enter an appropriate test speed. 2. Verify or enter appropriate Disk Hi and/or Disk Low values.
205	Channel Failure Alarm	1. Defective control valve. 2. Defective feedback sensor. 3. Defective module harness or module harness fuse. 4. Defective module.	1. Inspect control valve for damage or replace. 2. Inspect feedback sensor for damage or replace. 3. Inspect module harness for damage. Replace harness fuse. 4. Inspect module for damage or replace.
206	Channel Unable to Control Alarm	1. Incorrect channel settings. 2. Incorrect feedback sensor installation. 3. Defective feedback sensor.	1. Verify correct setup constants on the Channel Configuration screen. Perform a valve calibration. 2. Verify correct installation of the feedback sensor. 3. Inspect feedback sensor for damage or replace.

OPERATOR'S MANUAL



ALARM #	ALARM	PROBABLE CAUSE	CORRECTIVE ACTION
207	Channel Unstable Alarm	<ol style="list-style-type: none"> 1. Incorrect channel settings. 2. Incorrect feedback sensor installation. 3. Defective feedback sensor. 	<ol style="list-style-type: none"> 1. Verify correct setup constants on the Channel Configuration screen. Perform a valve calibration. 2. Verify correct installation of the feedback sensor. 3. Inspect feedback sensor for damage or replace.
208	Channel Saturation Exceeded Alarm	<ol style="list-style-type: none"> 1. Excessive speed. 2. Incorrect channel settings. Desired rate too high for implement. 3. Target rate too high 	<ol style="list-style-type: none"> 1. Reduce speed. 2. Verify correct setup constants on the Channel Configuration screen. Perform a valve calibration and a Calibration constant. 3. Reduce target rate.
209	Channel High Limit Exceeded Alarm	<p>CONTROL LIMITED BY HIGH LIMIT. UNDER APPLICATION IS OCCURRING. NOTE: System will not run faster than High Limit Value.</p>	<ol style="list-style-type: none"> 1. Check and/or reduce speed. 2. Verify Channel setup (high RPM) 3. Perform new valve calibration. 4. Check and/or reduce target rate. 5. Inspect feedback sensor for damage. 6. Inspect control valve for damage. 7. Inspect harness/module for damage. 8. Decrease target rate.
210	Channel Low Limit Exceeded Alarm	<p>CONTROL RATE LIMITED BY LOW LIMIT. OVER APPLICATION IS OCCURRING.</p>	<ol style="list-style-type: none"> 1. Increase speed. 2. Verify correct setup constants (low RPM). 3. Perform valve calibration. 4. Increase target rate.
211	All Rows Failed Alarm	<ol style="list-style-type: none"> 1. Seed meter drive malfunction. 2. Rows are not assigned to channel and channels are turned off. 	<ol style="list-style-type: none"> 1. Check seeding drive(s). 2. Assign rows to channel.
212	Row Failure Alarm	<p>SEED RATE HAS FALLEN BELOW THE ROW FAIL RATE SETTING ON THE SEED MONITOR SETUP SCREEN.</p> <ol style="list-style-type: none"> 1. Seed meter malfunction. 2. Dirty or defective seed sensor. 3. Damaged planter harness. 4. Defective module harness or module 5. Out of seed 	<ol style="list-style-type: none"> 1. Verify proper planter operation. 2. Inspect seed sensor for dirt or damage. Replace if necessary. 3. Inspect planter harness for damage. Repair or replace. 4. Inspect harness and module for damage. Replace if necessary. 5. Fill with seed
213	High Population Limit Exceeded Alarm	<p>SEED RATE HAS EXCEEDED THE HIGH ALARM SETTING ON THE SEED MONITOR SETUP SCREEN.</p> <ol style="list-style-type: none"> 1. Seed meter malfunction or incorrect setup. 2. Defective seed sensor. 3. Defective module. 	<ol style="list-style-type: none"> 1. Verify proper planter options/setup. 2. Inspect seed sensor for damage. Replace if necessary. 3. Inspect module for damage. Replace if necessary.
214	Low Population Limit Exceeded Alarm	<p>SEED RATE HAS DROPPED BELOW THE LOW ALARM SETTING ON THE SEED MONITOR SETUP SCREEN.</p> <ol style="list-style-type: none"> 1. Seed meter malfunction or incorrect setup. 2. Defective seed sensor. 3. Defective module. 4. Running out of seed. 	<ol style="list-style-type: none"> 1. Verify proper planter operation/setup. 2. Inspect seed sensor for damage. Replace if necessary. 3. Inspect module for damage. Replace if necessary. 4. Fill with seed.

OPERATOR'S MANUAL



ALARM #	ALARM	PROBABLE CAUSE	CORRECTIVE ACTION
215	High Pressure Limit Exceeded Alarm	<p>SENSED PRESSURE EXCEEDS THE HIGH ALARM SETTING ON THE PRESSURE SETUP SCREEN.</p> <ol style="list-style-type: none"> 1. Implement malfunction or incorrect setup. 2. Defective pressure sensor. 3. Defective module. 	<ol style="list-style-type: none"> 1. Verify proper implement operation/setup. 2. Inspect pressure sensor for damage. Replace if necessary. 3. Inspect module for damage. Replace if necessary.
216	Low Pressure Limit Exceeded Alarm	<p>SENSED PRESSURE BELOW THE LOW ALARM SETTING ON THE PRESSURE SETUP SCREEN.</p> <ol style="list-style-type: none"> 1. Implement malfunction or incorrect setup. 2. Defective pressure sensor. 3. Defective module harness or module. 	<ol style="list-style-type: none"> 1. Verify proper implement operation/setup. 2. Inspect pressure sensor for damage. Replace if necessary. 3. Inspect module and/or module harness for damage. Replace if necessary.
217	Member module Detection Alarm	<p>NUMBER OF MEMBER MODULES DOES NOT MATCH THE SYSTEM CONFIGURATION.</p> <ol style="list-style-type: none"> 1. Too few modules connect to system. 2. Too many modules connected to system. 3. Defective CAN/module harness. 4. Blown module harness fuse. 5. Defective module. 6. New module has been added to system. 	<ol style="list-style-type: none"> 1. Verify correct module configuration setup on the Module Configuration screen. 2. Verify correct module configuration setup on the Module Configuration screen. 3. Identify missing module in the Module Configuration list. Inspect CAN/module harness of the missing module for damage. Repair or replace harness. 4. Inspect module harness fuse of the identified module. Replace if necessary. 5. Identify missing module in the Module Configuration list. Inspect missing module for damage or replace. 6. Verify correct module configuration setup on the Module Configuration screen.
218	Pressure Sensor Detection Alarm	<p>NUMBER OF PRESSURE SENSORS CONNECTED DOES NOT AGREE WITH THE NUMBER OF SENSORS CONFIGURED ON THE PRESSURE SENSOR CONFIGURATION SCREEN.</p> <ol style="list-style-type: none"> 1. Defective Sensor. 2. Defective module or damaged module harness. 3. Additional pressure sensor detected. 	<ol style="list-style-type: none"> 1. Inspect pressure sensor for damage or replace. 2. Inspect module and/or module harness for damage. Replace if necessary. 3. Verify correct# ACC setting for each module.
219	Row Sensor Detection Alarm	<p>NUMBER OF SEED SENSORS CONNECTED DOES NOT AGREE WITH THE NUMBER OF SENSORS CONFIGURED ON THE SEED SENSOR CONFIGURATION SCREEN.</p> <ol style="list-style-type: none"> 1. Defective seed sensor. 2. Defective module or damaged module harness. 3. Additional seed sensor detected. 	<ol style="list-style-type: none"> 1. Inspect seed sensor for damage or replace. 2. Inspect module and/or module harness for damage. Replace if necessary. 3. Verify correct # ROWS setting for each module.

OPERATOR'S MANUAL



ALARM #	ALARM	PROBABLE CAUSE	CORRECTIVE ACTION
220	Row Sensors Installed Incorrectly Alarm	<p>ROWS ARE NOT DETECTED SEQUENTIALLY ON A MODULE.</p> <ol style="list-style-type: none"> 1. Incorrect seed row connections. 2. Defective seed sensor. 3. Defective module or damaged module harness. 	<ol style="list-style-type: none"> 1. Verify seed sensors are connected sequentially on all modules as instructed in installation. 2. Inspect seed sensor for damage or replace. 3. Inspect module and/or module harness for damage. Replace if necessary.
221	Channel Invalid State Alarm	<ol style="list-style-type: none"> 1. Internal system software error. 	<ol style="list-style-type: none"> 1. Cycle system power Off/On. If condition persists, contact DICKEY-john Technical Support (1-800-637-3302) or DICKEY-john Europe (011-22-141-192189).
222	Channel Setup Height Error Alarm	<ol style="list-style-type: none"> 1. Implement hydraulic system malfunction. 2. Defective control valve. 3. Incorrect feedback sensor installation. 4. Defective feedback sensor. 5. Limit Max Output set too low. 	<ol style="list-style-type: none"> 1. Verify implement hydraulic system operation. 2. Inspect control valve for damage. Replace if necessary. 3. Verify correct installation of the feedback sensor. 4. Inspect feedback sensor for damage or replace. 5. Set Limit Max Output to a higher PWM% on the Valve Calibration screen. Perform a new valve calibration.
223	Channel Max Feedback Unreachable Alarm	<ol style="list-style-type: none"> 1. Limit Max Output set too low. 2. Incorrect feedback sensor installation. 3. Defective feedback sensor. 	<ol style="list-style-type: none"> 1. Set Limit Max Output to a higher level on the Valve Calibration screen. Perform a new valve calibration. 2. Verify correct installation of the feedback sensor. 3. Inspect feedback sensor for damage or replace.
224	No Channel Gain Steps Calculated Alarm	<ol style="list-style-type: none"> 1. Implement hydraulic system malfunction. 2. Defective control valve. 3. Incorrect feedback sensor installation. 4. Defective feedback sensor. 	<ol style="list-style-type: none"> 1. Verify implement hydraulic system operation. 2. Inspect control valve for damage. Replace if necessary. 3. Verify correct installation of the feedback sensor. 4. Inspect feedback sensor for damage or replace.
225	Hopper Sensor Low Alarm	<ol style="list-style-type: none"> 1. Incorrect logic level setting on the Hopper Setup screen. 2. Dirty or defective hopper sensor. 3. Defective module harness or module 4. Hopper empty 	<ol style="list-style-type: none"> 1. Verify correct logic level setting on the Hopper Setup screen. 2. Clean/inspect hopper sensor. Replace if necessary. 3. Inspect harness and module for damage. Replace if necessary. 4. Fill hopper.
226	RPM Sensor High Limit Exceeded Alarm	<p>SENSED RPM EXCEEDS THE HIGH ALARM SETTING ON THE RPM SETUP SCREEN.</p> <ol style="list-style-type: none"> 1. Implement malfunction or incorrect setup. 2. Defective RPM sensor. 3. Defective module. 	<ol style="list-style-type: none"> 1. Verify proper implement operation/setup. 2. Inspect RPM sensor for damage. Replace if necessary. 3. Inspect module for damage. Replace if necessary.

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ALARM #	ALARM	PROBABLE CAUSE	CORRECTIVE ACTION
227	RPM Sensor Low Limit Exceeded Alarm	<p>SENSED RPM BELOW THE LOW ALARM SETTING ON THE RPM SETUP SCREEN.</p> <ol style="list-style-type: none"> 1. Implement malfunction or incorrect setup. 2. Defective RPM sensor. 3. Defective module harness or module. 	<ol style="list-style-type: none"> 1. Verify proper implement operation/setup. 2. Inspect RPM sensor for damage. Replace if necessary. 3. Inspect module for damage. Replace if necessary.
228	Hopper Sensor Detection Alarm	<p>NUMBER OF HOPPER SENSORS CONNECTED DOES NOT AGREE WITH THE NUMBER OF SENSORS CONFIGURED ON THE HOPPER SENSOR CONFIGURATION SCREEN.</p> <ol style="list-style-type: none"> 1. Defective hopper sensor. 2. Defective module or damaged module harness. 3. Additional hopper sensors detected. 	<ol style="list-style-type: none"> 1. Inspect hopper sensor for damage or replace. 2. Inspect module and/or module harness for damage. Replace if necessary. 3. Verify correct # HOPP setting for each module.
229	Hopper Sensors Installed Incorrectly Alarm	<p>HOPPER SENSORS ARE NOT INSTALLED SEQUENTIALLY ON A MODULE.</p> <ol style="list-style-type: none"> 1. Incorrect hopper sensor connections. 2. Defective hopper sensor. 3. Defective module or damaged module harness. 	<ol style="list-style-type: none"> 1. Verify hopper sensors are connected sequentially on all modules as instructed in INSTALLATION. 2. Inspect hopper sensor for damage or replace. 3. Inspect module and/or module harness for damage. Replace if necessary.
230	Pressure Sensors Installed Incorrectly Alarm	<p>PRESSURE SENSORS ARE NOT INSTALLED SEQUENTIALLY ON A MODULE.</p> <ol style="list-style-type: none"> 1. Incorrect pressure sensor connections. 2. Defective pressure sensor. 3. Defective module or damaged module harness. 	<ol style="list-style-type: none"> 1. Verify pressure sensors are connected sequentially on all modules as instructed in INSTALLATION. 2. Inspect pressure sensor for damage or replace. 3. Inspect module and/or module harness for damage. Replace if necessary.
231	Seeding Detected on a Tramlined Row Alarm	<p>Occurs if a tramlined row does not shut off the row unit and seeds continue to be detected. (Only possible if system supports tramlining).</p> <ol style="list-style-type: none"> 1. Output to row mapping is assigned incorrectly. 2. Seed sensor malfunction. 	<ol style="list-style-type: none"> 1. Check output row mapping. 2. Check seed sensor to ensure no false triggering. 3. Inspect and verify Tramline output is shutting off seeds correctly.
232	RPM Sensor Low Limit Exceeded With Control Channel Shutdown Alarm	<p>RPM HAS DROPPED BELOW THE DISABLE CONTROL ON LOW ALARM SETTING ON THE ACCESSORY SETUP SCREEN.</p> <ol style="list-style-type: none"> 1. Defective RPM sensor. 2. Damaged module harness. 3. Defective module. 4. Low RPM 	<ol style="list-style-type: none"> 1. Inspect RPM sensor for damage. Replace if necessary. 2. Inspect module harness for damage. Repair or replace. 3. Inspect module for damage. Replace if necessary. 4. Increase RPM.

OPERATOR'S MANUAL



ALARM #	ALARM	PROBABLE CAUSE	CORRECTIVE ACTION
233	Channel Activation Alarm	CHANNEL DELAY OR PRECHARGE IS ENABLED. DURING THIS THE CONTROL WILL RUN WITHOUT GROUND SPEED OR WITHOUT THE IMPLEMENT DOWN.	<ol style="list-style-type: none"> 1. Acknowledge alarm to activate control channels. 2. Acknowledge alarm and disable Delay or Precharge to stop control.
235	New Member Module Detected Alarm	1. New member module has been found.	1. Assign sensors to the new module at the Module Configuration Setup screen and its position.
236	Intermittent Member Module Detected Alarm	1. A member module that had previously failed communication has come online.	1. Inspect harness connections to this module.
237	Product Level Low Alarm	1. Calculated product level has dropped below alarm level.	1. Fill product bin and reset level.
240	Seeding Detected on a Control Off Row Alarm	1. Channel turned off and seed continues to be detected.	1. Check seed dispensing unit for proper shut off.
241	Control Not Active With Implement Lowered and Speed	1. Control will not operate while on a setup screen.	<ol style="list-style-type: none"> 1. Navigate to the Work Screen to activate the control. 2. Raise implement and stop forward speed to clear alarm.
246	Master Switch Softkey Press Alarm	1. Warning of action associated with keypress.	1. Press Control Start key to activate control.
249	Control Channel Activation Alarm	1. Controls will run without ground speed or without implement lowered. Channel Manual Mode or Precharge is enabled. During this the control will run without ground speed or without the implement down.	<ol style="list-style-type: none"> 1. Acknowledge alarm to activate control channels. 2. Acknowledge alarm and disable manual or precharge to stop control.
251	New Hardware Detected Alarm	1. New hardware detected that requires system to be rebooted to acknowledge hardware.	1. Cycle system power to complete hardware install.
253	Monitor Channel High Limit Exceeded Alarm	<ol style="list-style-type: none"> 1. High limit set incorrectly. 2. Transmission not set correctly. 	<ol style="list-style-type: none"> 1. Verify high limit. 2. Verify transmission setting.
254	Monitor Channel Low Limit Exceeded Alarm	<ol style="list-style-type: none"> 1. Low limit set incorrectly. 2. Transmission not set correctly. 	<ol style="list-style-type: none"> 1. Verify low limit. 2. Verify transmission setting.
255	Channel Invalid Material Alarm	1. There is no material defined with a type that matches the selected control channel type.	1. Create a material with the channel type.
260	Control Channel Failure Alarm	1. Control channel is not responding.	<ol style="list-style-type: none"> 1. Cycle Master Switch or implement switch to restart the control channel. 2. Verify drive is connected and engaged. 3. Check feedback sensor for damage. 4. Check harness for damage. 5. Check module for damage.
261	Control Channel Unable to Control Alarm	1. Control Channel cannot control to the specified rate.	<ol style="list-style-type: none"> 1. Inspect control channel setup. 2. Perform new valve calibration. 3. Check feedback sensor for damage. 4. Check control valve for damage. 5. Check harness for damage. 6. Check module for damage.
262	RPM Control Channel is off Alarm	1. RPM Channels are off. System may not operate properly.	<ol style="list-style-type: none"> 1. Acknowledge alarm to leave RPM control channels off. 2. Press "CHAN ON" to turn all RPM channels on.

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ALARM #	ALARM	PROBABLE CAUSE	CORRECTIVE ACTION
264	Ground speed Calibration Configuration Alarm	Current ground speed calibration exceeds the max number of ground speed pulses of 50000 that can be entered as a ground speed constant.	<ol style="list-style-type: none"> 1. Probable that the marked off course limits were exceeded. Verify course length of 400 ft (100m). 2. Ground speed sensor has too high resolution of pulses. Check speed sensor for damage.
602	8 Volt Supply Failure Alarm	<p>8V SUPPLY VOLTAGE IS BELOW 7.2V OR HIGHER THAN 16V.</p> <ol style="list-style-type: none"> 1. Damaged module harness. 2. Defective seed or hopper sensor. 3. Defective module. 	<ol style="list-style-type: none"> 1. Inspect module harness for damage. Repair or replace harness. 2. Inspect seed or hopper sensors connected to the identified module for damage. Replace sensors if necessary. 3. Replace identified module.
603	Member Module Communication Failed Alarm	<p>COMMUNICATION WITH AN ACTIVE MODULE HAS FAILED</p> <ol style="list-style-type: none"> 1. Damaged CAN or module harness. 2. Blown module harness fuse. 3. Defective module. 	<ol style="list-style-type: none"> 1. Identify missing module in the Module Configuration list. Inspect CAN/module harness of the missing module for damage. Repair or replace harness. 2. Inspect module harness fuse, replace if necessary. 3. Identify missing module in the Module Configuration list. Inspect missing module for damage or replace.
604	ECU Voltage Out of Range Alarm	<p>ECU VOLTAGE IS BELOW 11V OR HIGHER THAN 16V.</p> <ol style="list-style-type: none"> 1. Damaged CAN or module harness. 2. Defective module 	<ol style="list-style-type: none"> 1. Inspect CAN/module harness of the identified module for damage. 2. Inspect identified module for damage or replace.
605	Solenoid Voltage Out of Range Alarm	<p>SOLENOID VOLTAGE IS BELOW 11V OR HIGHER THAN 16V.</p> <ol style="list-style-type: none"> 1. Damaged CAN or module harness. 2. Blown module harness fuse. 3. Defective module. 	<ol style="list-style-type: none"> 1. Inspect CAN/module harness of the identified module for damage. Repair or replace harness. 2. Inspect module harness fuse or replace. 3. Inspect identified module for damage or replace.
606	Ground Offset Voltage Out of Range Alarm	<ol style="list-style-type: none"> 1. Damaged/shorted Actuator Harness. 2. Defective PWM valve driver or Servo valve driver. 3. Defective module. 	<ol style="list-style-type: none"> 1. Inspect Actuator Harness for damage around the WPM and Servo valve connections. Repair or replace harness. 2. Inspect PWM or Servo valve drivers for damage and replace if necessary. 3. Inspect identified module for damage and replace if necessary.
607	Task Controller Task Stopped Alarm	<ol style="list-style-type: none"> 1. Control rates no longer set by Task Controller. 	<ol style="list-style-type: none"> 1. Press TC RATE to keep the last target rate from the Task Controller. 2. Press MAT RATE to use the target rate from the material setup.
608	Task Controller Data Logging Error	<ol style="list-style-type: none"> 1. Task Controller is setting target rates without logging the data. 	<ol style="list-style-type: none"> 1. Restart Task Controller task. 2. Cycle power to entire system.





APPENDIX

SYSTEM CONFIGURATION WORKSHEET - MODULE SETUP

Module Type	Module Address	# of Rows	Row #	# of Hoppers	Hopper #	# of RPM	RPM #
	1	2	3	4			
Hopper Configuration							
Logic Level							
Alarm Delay							
Channel							
RPM Configuration	1	2	3				
High Alarm							
Low Alarm							
High Alarm Delay							
Low Alarm Delay							
RPM Constant							
RPM Filter							
Disable Control on Low Alm							
Pressure Configuration	1	2	3	4			
High Alarm							
Low Alarm							
High Alarm Delay							
Low Alarm Delay							
Pressure Filter							

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SYSTEM CONFIGURATION WORKSHEET - CHANNEL CONFIGURATION

Channel Configuration	1	2	3	4
Type				
Material Name				
Control Mode				
Drive Type				
Drive Frequency				
Input Filter				
Gear Ratio				
Sensor Constant				
# Seed Rows				
Channel Width				
Precharge (+) Delay (-)				
Meter Gear Range				
Flush Enable				
Row Configuration				
Row Width				
Auto Update Width				
Imp Width				
On/Off Pattern				
Pop/Block Pattern				
Ground Speed Configuration				
Source				
Manual Speed				
Ground Speed Constant				
Shutoff Speed				
Minimum Override				
Master Sw Timeout				
Ground Speed Fail Alarm Delay				
Implement Lift				
Precharge Speed				
Flush Speed				



SYSTEM CONFIGURATION WORKSHEET - WORK SCREEN

Work Screen 1

Large Bargraphs	

Work Screen 2

Work Screen 3

OPERATOR'S MANUAL



WORK SCREEN WORKSHEET - MATERIAL SETUP (INC/DEC)

	1	2	3	4	5	6	7	8
Material Name								
Type								
Units								
Preset Method								
Target Rate								
Max Rate								
Min Rate								
Inc/Dec %								
Density								
# Towers								
Calibration Constant								
Variable Cal Constant								
Shaft RPM High								
Shaft RPM Low								
Product Level Alarm								

	9	10	11	12	13	14	15	16
Material Name								
Type								
Units								
Preset Method								
Target Rate								
Max Rate								
Min Rate								
Inc/Dec %								
Density								
# Towers								
Calibration Constant								
Variable Cal Constant								
Shaft RPM High								
Shaft RPM Low								
Product Level Alarm								

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WORK SCREEN WORKSHEET - MATERIAL SETUP (INC/DEC)

	1	2	3	4	5	6	7	8
Material Name								
Type								
Units								
Preset Method								
Target Rate								
Max Rate								
Min Rate								
Inc/Dec %								
Density								
# Towers								
Calibration Constant								
Variable Cal Constant								
Shaft RPM High								
Shaft RPM Low								
Product Level Alarm								

	9	10	11	12	13	14	15	16
Material Name								
Type								
Units								
Preset Method								
Target Rate								
Max Rate								
Min Rate								
Inc/Dec %								
Density								
# Towers								
Calibration Constant								
Variable Cal Constant								
Shaft RPM High								
Shaft RPM Low								
Product Level Alarm								

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WORK SCREEN WORKSHEET - MATERIAL SETUP (PRESET)

	1	2	3	4	5	6	7	8
Material Name								
Type								
Units								
Preset Method								
Rate 1								
Rate 2								
Rate 3								
Rate 4								
Rate 5								
Rate 6								
Rate 7								
Rate 8								
Rate 9								
Rate 10								
Density								
# Towers								
Calibration Constant								
Var. Calib Constant								
Shaft RPM Low								
Shaft RPM High								
Product Level Alarm								

	9	10	11	12	13	14	15	16
Material Name								
Type								
Units								
Preset Method								
Rate 1								
Rate 2								
Rate 3								
Rate 4								
Rate 5								
Rate 6								
Rate 7								
Rate 8								
Rate 9								
Rate 10								
Density								
# Towers								
Calibration Constant								
Var. Calib Constant								
Shaft RPM Low								
Shaft RPM High								
Product Level Alarm								

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 DICKEY-john product.

DICKEY-john® WARRANTY

DICKEY-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 DICKEY-john within 30 days after such defect is discovered, DICKEY-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 DICKEY-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. DICKEY-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 DICKEY-john Service Department, call
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