CrustBuster® SPEED KING INC.
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DICKEY-john®

ISO Drive Manual for Drills

#615153-2015

Index

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Section 1: Getting Hooked to Tractor

Step 1. Locate ISO plug on back of tractor.

Note: If tractor does not have ISO plug, see dealer to obtain necessary equipment to run implement. *(Figure 1)*

Figure 1

Step 2. Locate hitch cable on front of implement. *(Figure 2)*

Figure 2

Step 3. Plug hitch cable into ISO plug on back of tractor. *(Figure 3)*

Note: Pin location and orientations.

Figure 3

Step 4. Lock hitch cable into ISO receptical.

Note: Some screw on and others have locking lever on side.

Step 5. Turn on VT in tractor and wait for object pools to load into tractor ECU.

Note: This could take anywhere from two (2) minutes to fifteen (15) minutes depending on size of VT. Once initial upload has completed, this time should decrease significantly when powering up unless object pool has been emptied.

Step 6. Once data has uploaded, locate DICKEY-john ACC icon and select. *(Figure 4)*

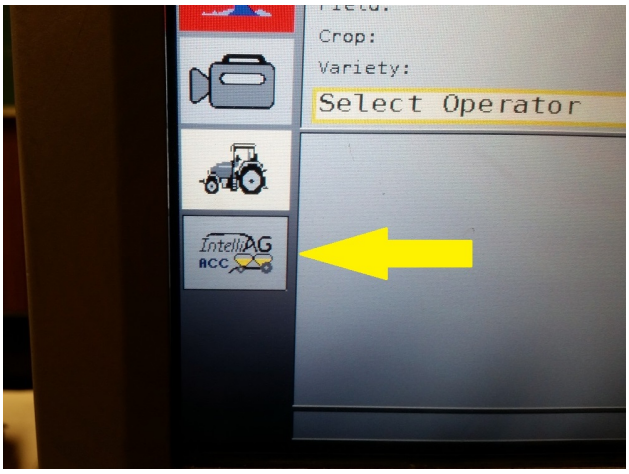


Figure 4

Note: If using DICKEY-john IntelliAg, icon will be located on left side of monitor. On other VT, the icon will be located on page button. Once IntelliAg home page pulls up, you are now ready to start implement setup. *(Figure 5)*

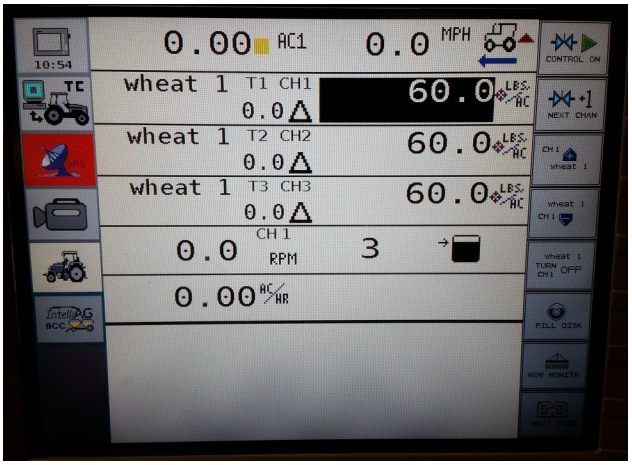


Figure 5

Section 2: Material Setup

Although your implement has come pre-loaded with standard materials, it is still good practice to start with material setup. *(Figure 6)*

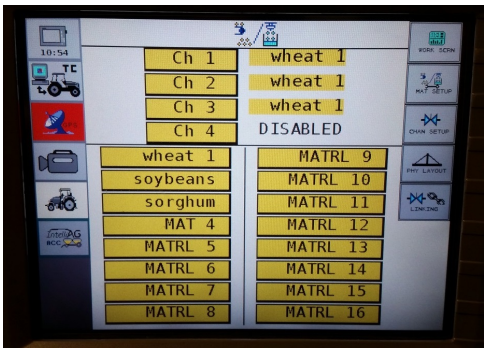


Figure 6

Always begin **Material Setup** from
Main work screen
Next page *(Figure 7)*
Ctrl Setup *(Figure 8)*
Material Setup *(Figure 9)*

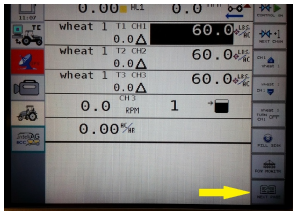


Figure 7

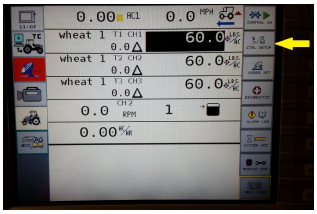


Figure 8

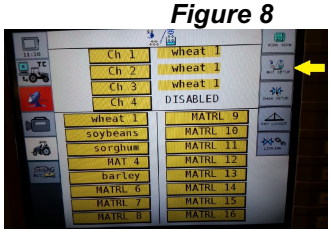


Figure 9

Step 1. Select material you will be applying. If not in list of standard materials, select one that has not been named.
Example: Material 5 - Figure 10

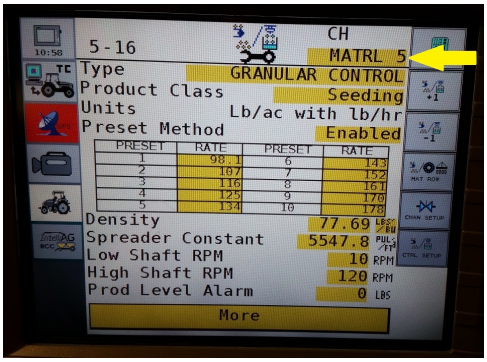


Figure 10

Step 2. Enter name of material, if not using one that has already been named.
Note: You do this by selecting material name on screen. *(Figures 10 &11)*

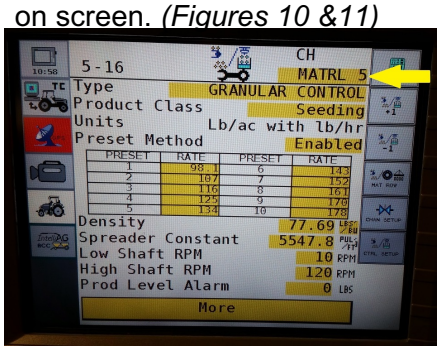


Figure 10

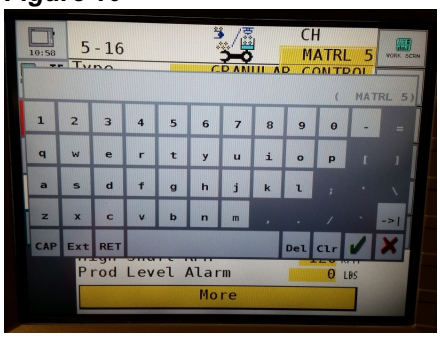


Figure 11

Step 3. Select material type -This will always be **GRANULAR SEED CONTROL** unless setting up liquid channel.

Step 4. Select **Preset Method** (Disabled or Enabled) which is typically set on disabled. Every time you hit plus (+) or minus (-) it goes up or down by the set percentage (%). Disabled mode gives you a target rate, a max rate and a min rate. *(Figures 12 & 13)*

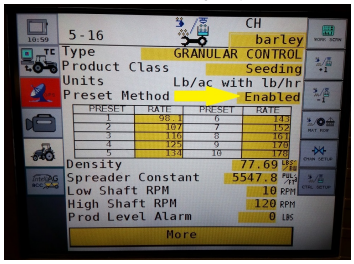


Figure 12

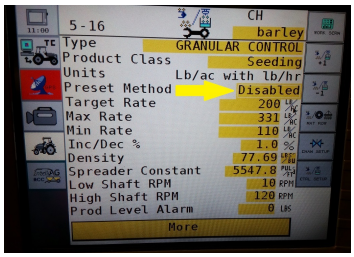


Figure 13

Section 2: Material Setup

Step 5. Set **Target Rate.** Enter the amount of material you wish to apply. *(Figure 14)*

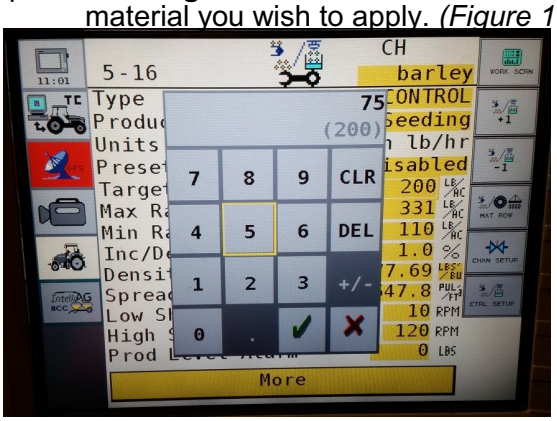


Figure 14

Step 6. Set **Max Rate**. This is a top limit for the plus (+) button as you are operating in field. You cannot adjust rate above this number. *(Figure 15)*

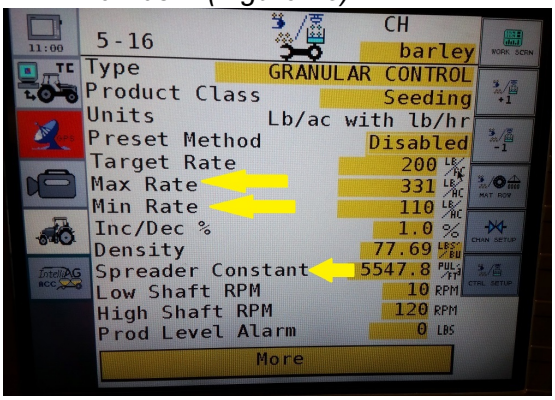


Figure 15

Step 7. Set **Min Rate**. This is the bottom limit for the minus (-) button as you are operating in field. Cannot adjust rate below this number.Step8.Set **Inc/Dec %**. This is the amount rate will go up or down by every time the plus (+) or minus (-) button is pushed while operating in field.

Note: If you have **Target Rate** of 100 lbs., **Max Rate** of 110 lbs., and **Inc/Dec %** of 12% and push plus (+) button rate will not adjust up because **Max Rate** is set too close to **Target Rate**.

Step 8. Select **Spreader Constant** from table at bottom of page for the material you will be applying and enter. *(Figure 13)*

Step 9. Set **Low Shaft RPM**. This is an alarm setting. If shaft RPM drops below this number, an alarm will sound. It should be set at 1 RPM.

Step 10. Set **High Shaft RPM**. Like the Low Shaft RPM, this is a warning if shaft goes above this setting. It typically will be set to 120 RPM.

The rest of changeable data are population alarm settings and do not apply unless your implement is equipped with every row population monitoring.

HYDRAULIC DRIVE METER CALIBRATION NUMBERS

These are starting calibration values. They can be refined for your drill and seed by using the seed calibration process.

CROP	SLOT WIDTHS					
	3/16"	1/4"	3/8"	1/2"	5/8"	3/4"
Alfalfa	38091	21770				
Barley				14125	11448	9540
Canola	28529	21230	14264			
Corn				30040	22252	17669
Cotton				12715	10728	8582
Fescue			15735	11801	9078	
Millet	40637	26125	19250			
Milo	40638	28447	14971			
Oats				19080	14502	10822
Pinto Beans				27088	20459	18075
Rice				16740	13334	11402
Rye				12959	10129	7867
Soybean			30455	20981	15736	12588
Wheat				12380	9905	8254

Section 3: Channel Setup

Your implement has been setup from factory and channels have been setup and ran prior to delivery. The only field that will need to be changed is Material Name. Change to the material that you will be applying. *(Figure 16)*

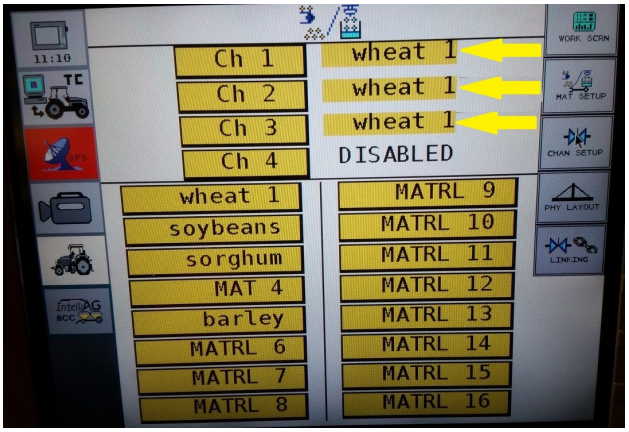


Figure 16

Always begin **Channel Setup** from
Main work screen
Next page *(Figure 17)*
Ctrl Setup *(Figure 18)*
Channel Setup *(Figure 19)*

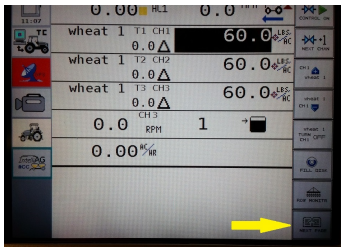


Figure 17

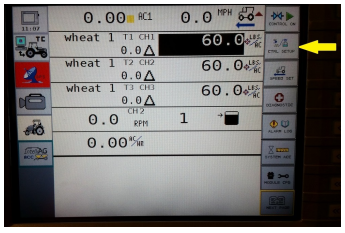


Figure 18

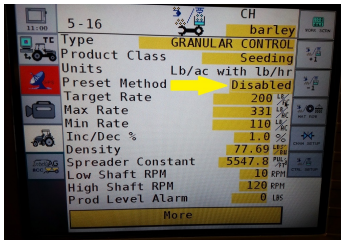


Figure 19

Step 1. Verify that the type is set to Granular Seed Control. All products currently using a DICKEY-john drive will be Granular Seed Control unless setting up a liquid channel.

Step 2. Set **Material Name**. Change this to the material that you will be applying.

Step 3. Verify **Sensor Constant**. All grain drills will have a **Sensor Constant** of 60 pulses per Rev. All planters and air delivery equipment will have a **Sensor Constant** of 360 pulses per Rev.

Step 4. Verify **Gear Ratio** is set to 1.000. We monitor shaft RPM at end of meter shaft which allows us to run a gear ratio of 1:1 on all of our products.

Step 5. Set **# of Seed Rows**. This is only used with every row monitoring. Set to zero (0) if not equipped with every row monitoring.

Step 6. Set **Channel Width**. This data is the width in inches of the section you are setting.

Example:
A 45' 3-section drill would have a channel width of 180 inches in all 3 channels being used.

The implement is now setup and ready for a **Valve CAL** and **Spreader CAL** to be performed. Refer to the next sections for those procedures.

Section 4: Control Channel Valve Calibration

A valve calibration has been performed at the factory prior to delivery. However, it is suggested that it be done with the tractor that you will be using to ensure optimal performance of the drives. This should be done every time a different tractor is used.

Always begin **Control Channel Valve Calibration** from
Main work screen
Next page *(Figure 20)*

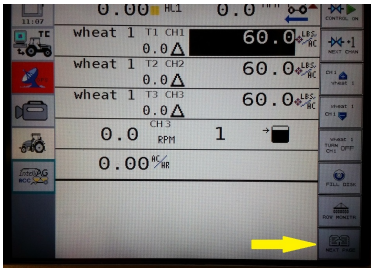


Figure 20

Step 1. Select **Control Setup**. *(Figure 21)*

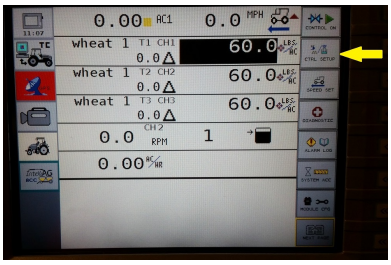


Figure 21

Step 2. Select **Channel Setup**. *(Figure 22)*

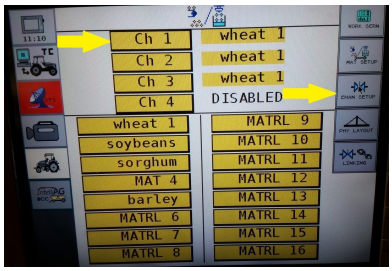


Figure 22

Step 3. Select **Channel**. *(Figure 23)*

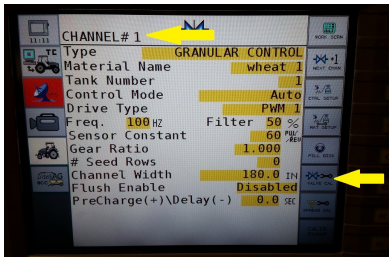


Figure 23

Step 4. Select **Valve Cal** icon on right hand side of screen. *(Figure 24)*

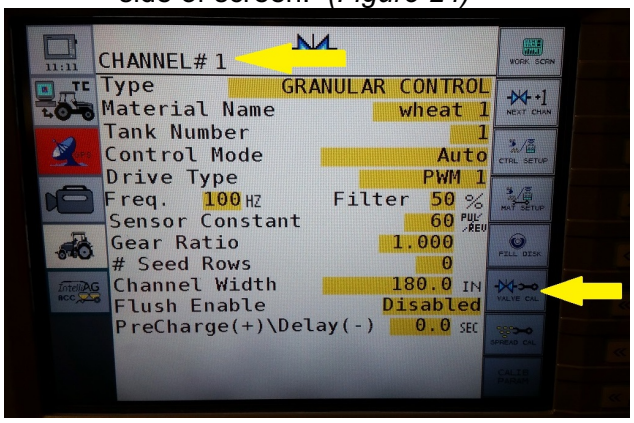


Figure 24

Step 5. Start tractor and engage hydraulics.

Step 6. Press **Start** icon. *(Figure 25)*

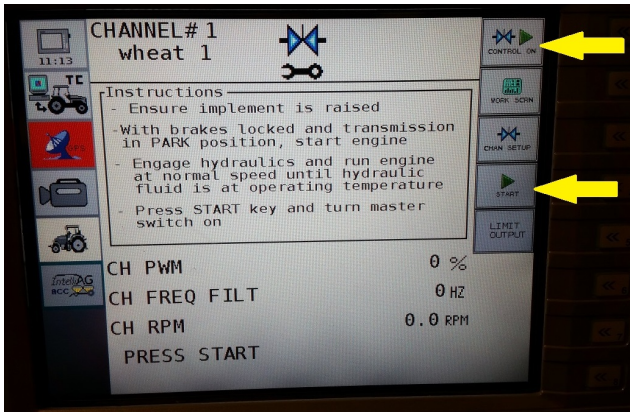


Figure 25

Step 7. Turn **Control Channel** on. *(Figure 25)*

Note: If this is the first time performing this, you will get a warning stating to turn control channel on. *(Figure 26)*

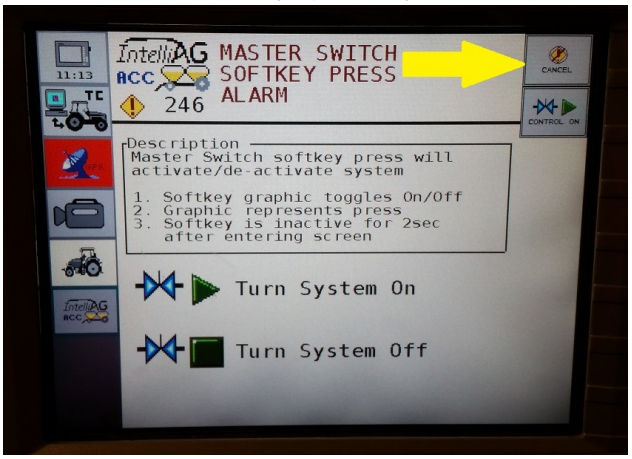


Figure 26

Section 4: Control Channel Valve Calibration

Cancel warning and restart. It should start running. The drive will go through fifteen (15) start and stop cycles. Let run until it says it is complete. *(Figure 27)*

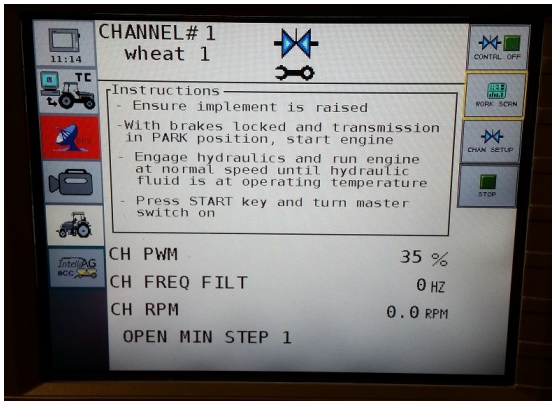


Figure 27

Step 8. Turn **Control Channel** off.
Select **Channel Setup**. *(Figure 28)*

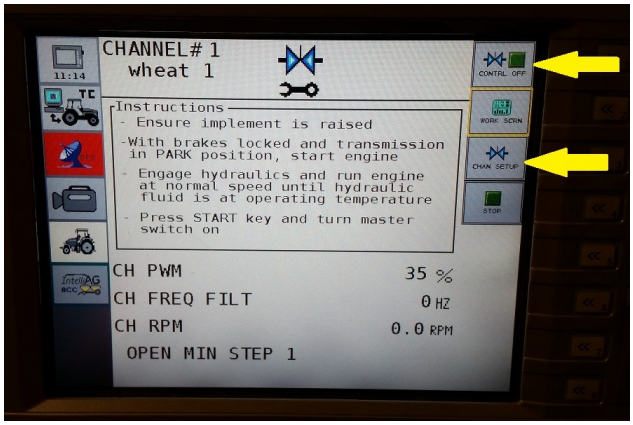


Figure 28

Select **Next Channel**. *(Figure 29)*

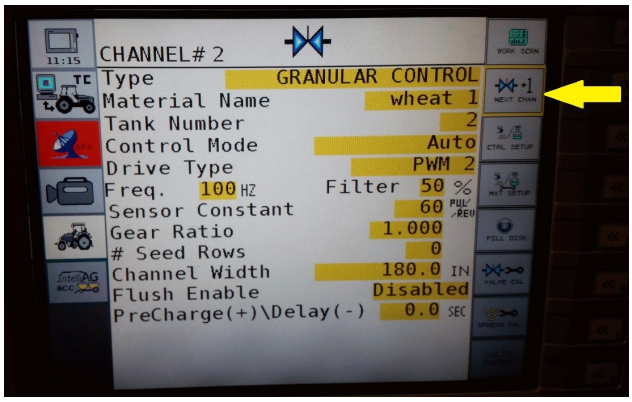


Figure 29

Repeat steps 2 through 7 on remaining channels.

Section 5: Pre-Season Test

Step 1. From Main Menu *(Figure 30)*

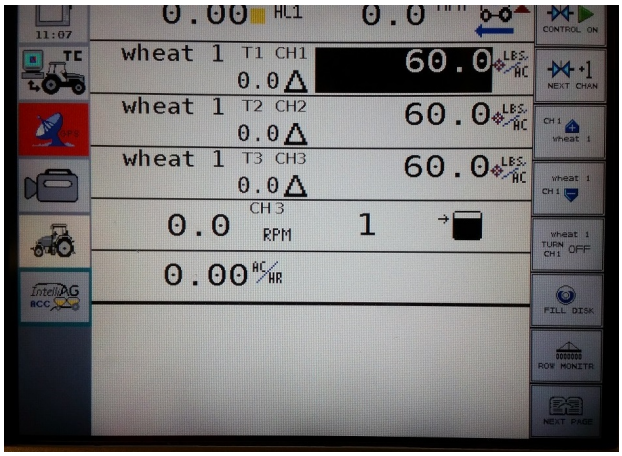


Figure 30

Step 2. Select **Next Page** *(Figure 31)*

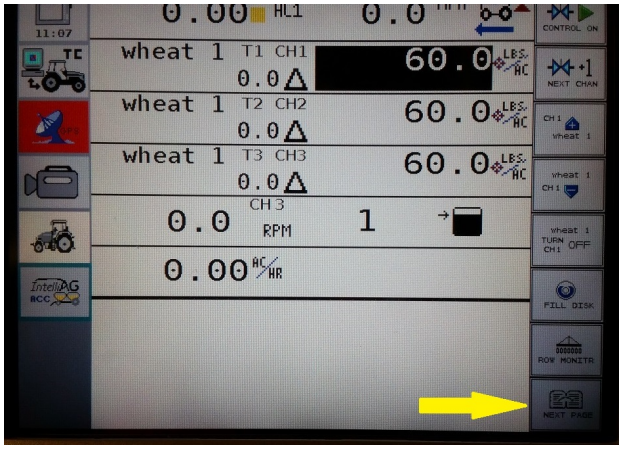


Figure 31

Step 3. Select **Speed Set** *(Figure 32)*

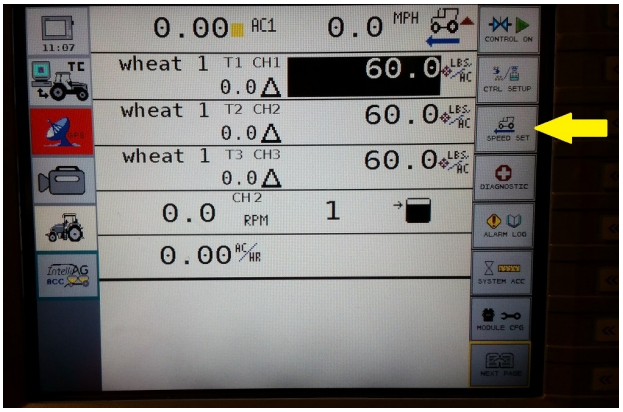


Figure 32

Step 4. Change digital frequency to manual *(Figure 33)*

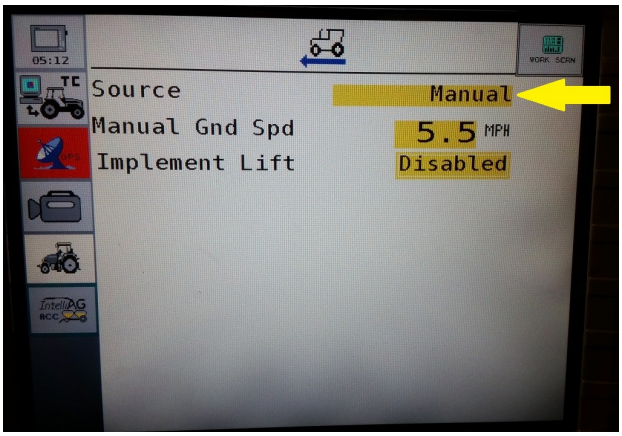


Figure 33

Step 5. Set a test speed of 5.5 mph

Step 6. Disable implement lift switch *(Figure 34)*

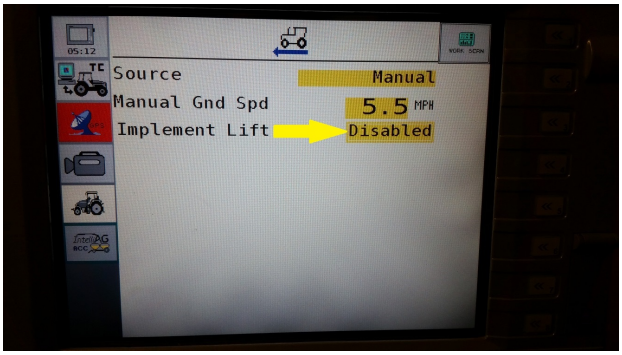


Figure 34

Step 7. Return to Main Menu *(Figure 35)*

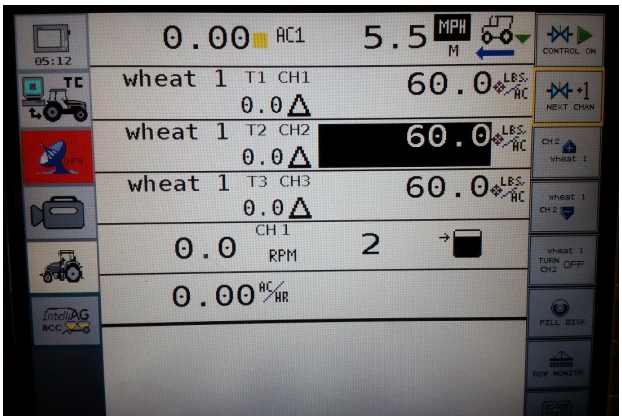


Figure 35

Step 8. Start tractor.

Step 9. Activate hydraulics.

Section 5: Pre-Season Test

Step 10. Select **Control ON** *(Figure 36)*

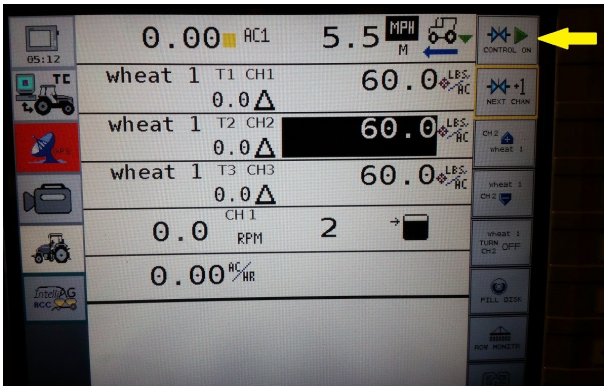


Figure 36

Step 11. Drive should now be running. If you do not get any alarms, drive is working correctly. You should get hopper level warning.

If you get an alarm, refer to troubleshooting and alarm codes starting on *page 15* of this manual.

Step 12. Turn **Control Channel** off *(Figure 37)*

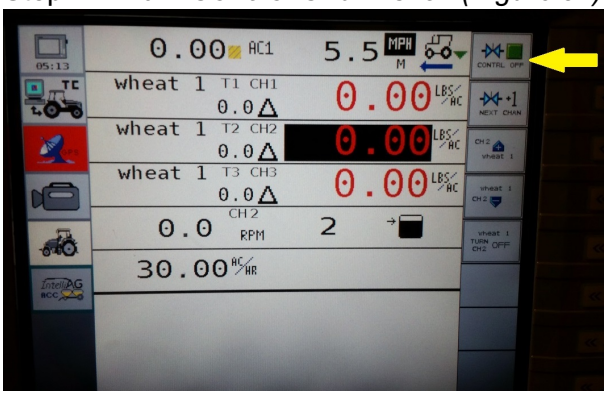


Figure 37

Step 13. Select **Next Page** *(Figure 38)*

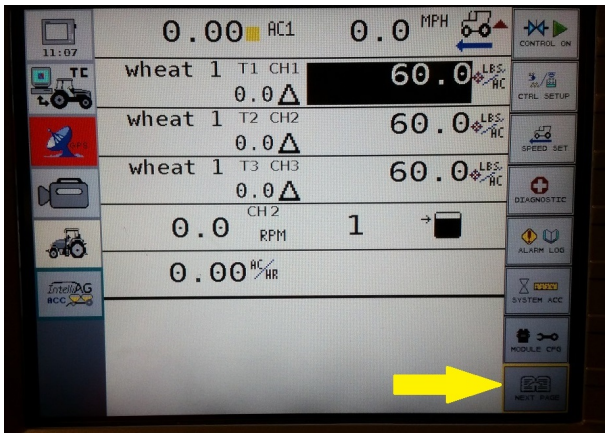


Figure 38

Step 14. Select **Speed Set** *(Figure 39)*

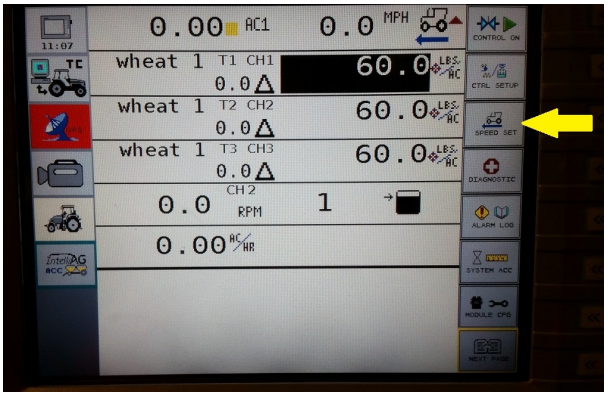


Figure 39

Step 15. Change **Digital Frequence** *(Figure 40)*

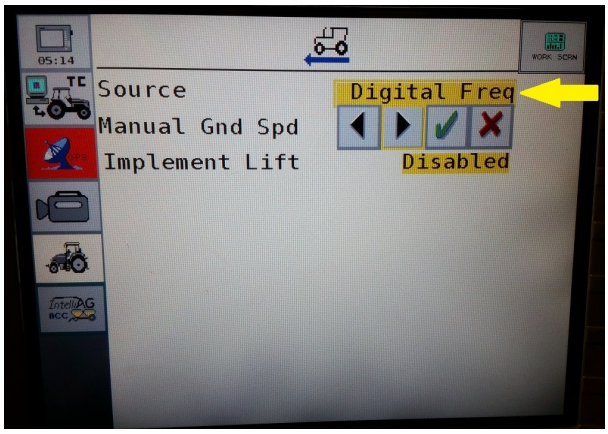


Figure 40

Step 17. Enable **Implement Lift** *(Figure 41)*

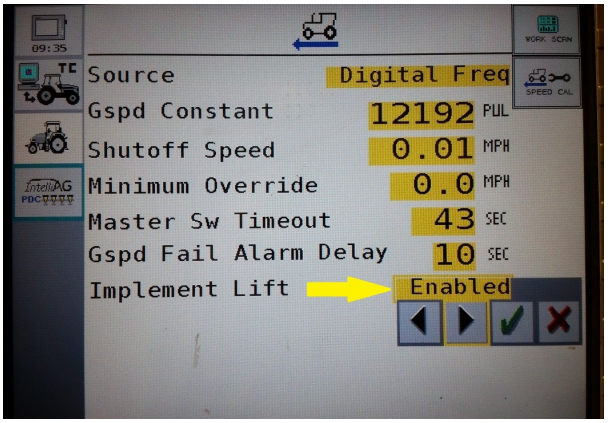


Figure 41

You are now ready to go to the **Spreader CAL** procedure.

Section 6: Spreader CAL Test Procedure - Grain Drill

1) Select suggested wobble slot width for material you intend to apply from chart in manual on *page 4*.

2) Remove at least four (4) upper seed tubes on Box 1 *(or left wing)*.

Note: The more rows caught, the bigger the sample size and the more accurate the test.

3) Place enough material over the rows with tubes removed to perform an accurate test.

Step 1. Begin from **Main Work Screen**

Step 2. Select **Next Page** *(Figure 42)*

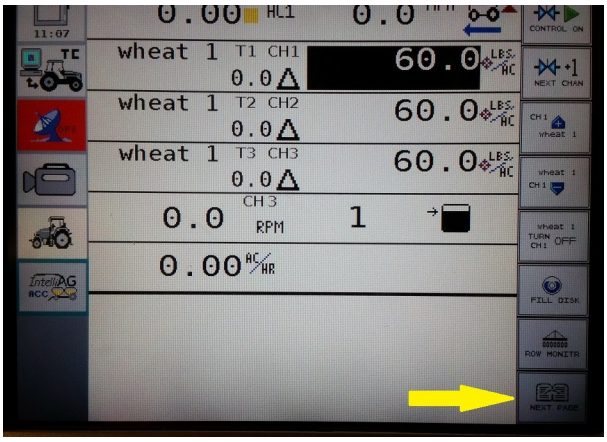


Figure 42

Step 3. Select **Control Setup** *(Figure 43)*

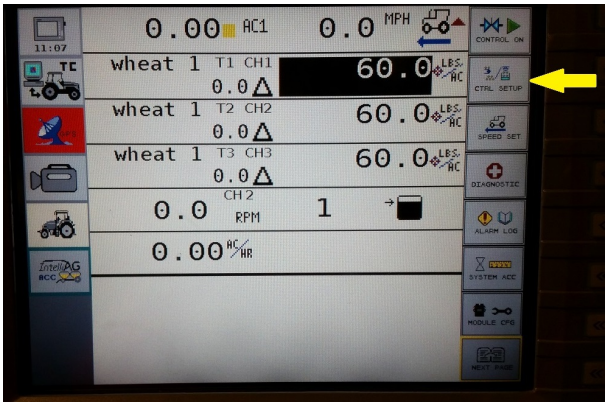


Figure 43

Step 4. Select **Channel 1** or **Channel Setup** from soft keys *(Figure 44)*

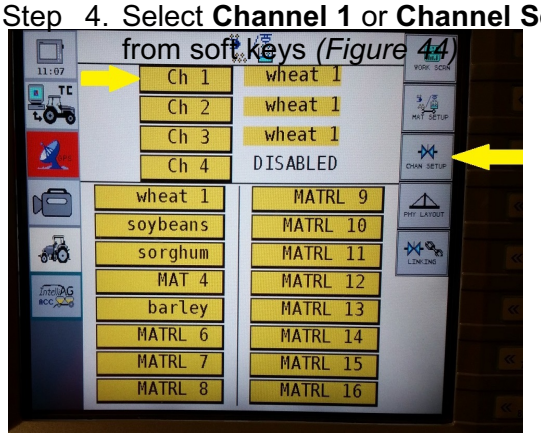


Figure 44

Step 5. Select **Spreader CAL** *(Figure 45)*

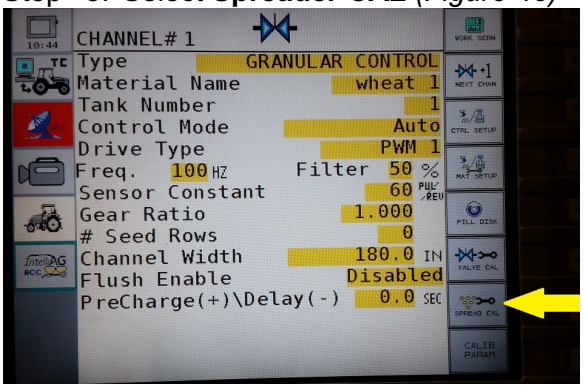


Figure 45

From chart below select # of revolutions you want the shaft to turn and RPM you want shaft to turn at.

Material	# of Revs	RPM	Slot Width
Alfalfa	120	25	
Barley	80	45	
Canola	135	20	1/4" wobble slot
Corn	132	20	1½ AVG seed size
Cotton	111	30	
Fescue	178	20	
Millet	173	20	
Milo	169	20	
Oats	151	20	1½ AVG seed size
Pinto Beans	113	30	
Rye	60	50	1½ AVG seed size
Soybeans	116	30	1½ AVG seed size
Wheat	69	50	½" wobble slot

Note: Suggested slot widths are for good clean seed. Only a wider slot width may be needed if seed is dirty, or if the desired rate cannot be achieved.

Section 6: Spreader CAL Test Procedure - Grain Drill

Step 6. Enter # of Revolutions into # Meter Revs. *(Figure 46)*

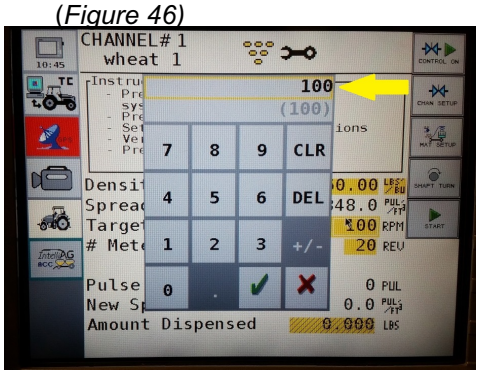


Figure 46

Step 7. Enter RPM into Target Meter RPM. *(Figure 47)*

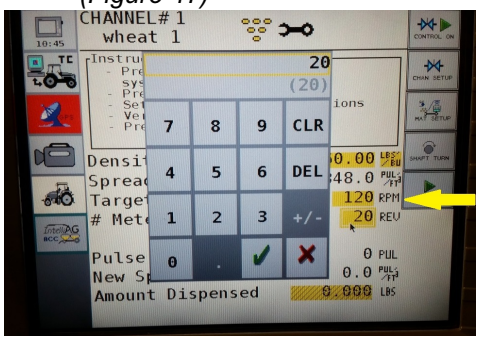


Figure 47

Step 8. To start test, push **Start.** *(Figure 48)*

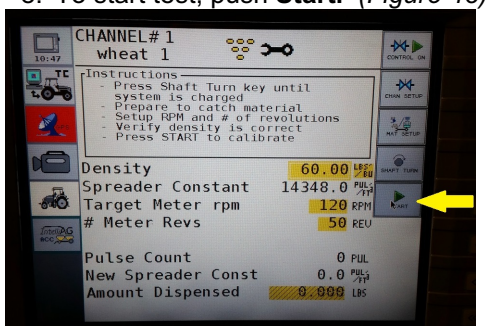


Figure 48

Step 9. Push Control **On**. *(Figure 49)*

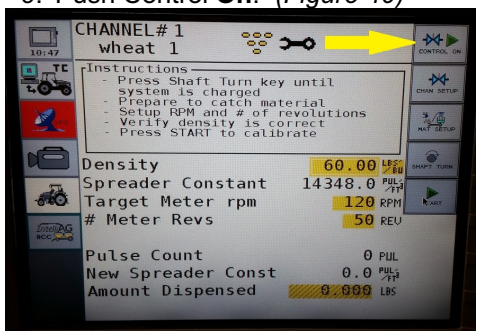


Figure 49

Left box or Channel (1) should be running. It will stop on its own when desired revolutions have been achieved.

4) Weigh samples caught with scale that came with drill.
Note: **Make sure Scale Mode is in lbs.**

5) Average the samples caught and multiply by the # of rows in that channel. Enter into **Amount Dispensed**.

Once you have entered the **Amount Dispensed** field, the VT will automatically figure a new **Spreader CAL #**. At this point, you can either push **Save** to save new **Spreader CAL #** to material you are using, or run again and average **Spreader CAL #**'s.

6) Rerun test to verify test.
Note: CAL # may change a little, but we are more concerned with sample size being the same as first test. Make note of sample size as this information will be used later.

7) Remove at least four (4) upper seed tubes from Box 2.

8) Place enough material over rows with removed tubes to perform accurate test.

9) Perform Spreader CAL procedure as you did on Box 1.

10) Weigh samples caught and multiply by # of rows in channel. DO NOT ENTER INTO THE CONTROLLER.

11) If the sample caught in Box 2 test is not the same as Box 1 sample, we will adjust the slot width to make it the same as Box 1.
Ex: If sample is larger, we will decrease slot width.
Note: It takes very little movement of slot width to change sample size.

12) Rerun test until Box 1 and Box 2 are the same.

13) Now perform same procedure on Box 3 (if available) as you did on Box 2.

14) Your drill should now be calibrated and ready to go to the field.
Note: This test procedure takes into account seed size and density, but DOES NOT replicate in the field conditions. It is suggested that you weigh seed before it is put in box to allow adjustments to be made in the field.

Section 7: In Field Operation

1) Return to Main Work Screen, if you are not there already.

2) Turn on hydraulics.

3) Turn Control Channel **ON**. *(Figure 50)*

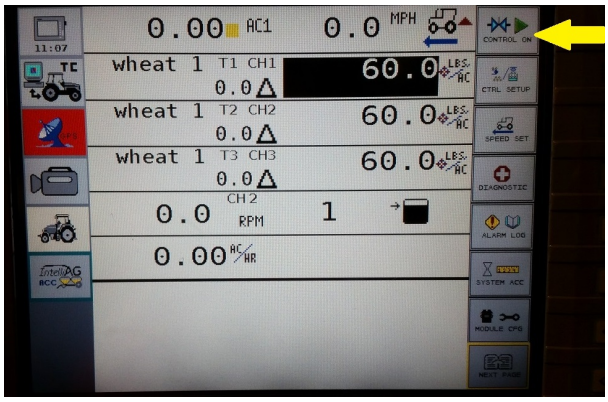


Figure 50

Note: Any time you get out of tractor, remember to turn control channel **OFF**, or you will get a warning.

4) Once opener bars are down and tractor starts to move, the drive should start to run.

Section 8: Speed Calibration Process

Please note:

In order for **Rate and/or Population** to be applied accurately, the implement speed and the tractor speed need to be the same. If they are not the same, a speed calibration needs to be performed on the DICKEY-john side.

Step 1. Begin from **Main Work Screen.**

Step 2. Push **Next Page**. *(Figure 51)*

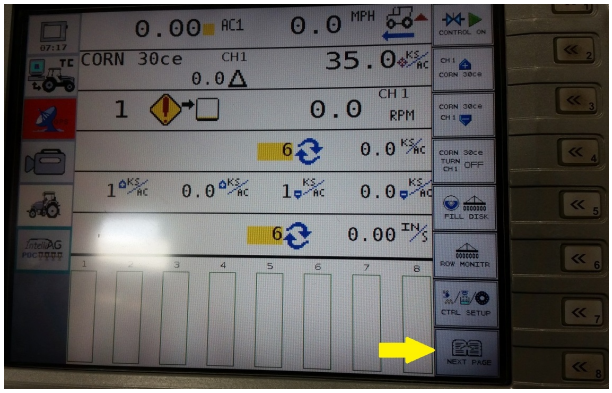


Figure 51

Step 3. Push **Speed Set**. *(Figure 52)*

Figure 52

Step 4. Push **Speed Cal**. *(Figure 53)*

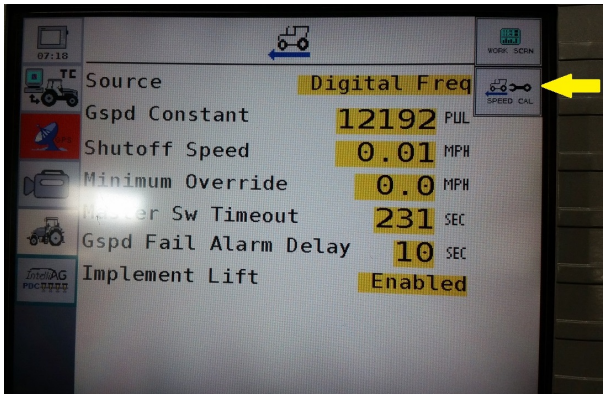


Figure 53

Step 5. Mark out a 400 ft course that tractor can safely travel down and maintain a steady speed through the full 400 ft.

Step 6. Get tractor up to steady speed once you reach beginning of course. Press **Start**. *(Figure 54)*

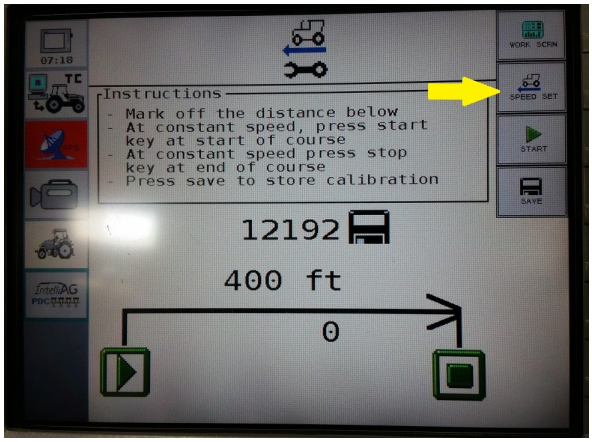


Figure 54

Step 7. Once tractor reaches end of 400 ft course, press **Stop**. *(Figure 55)*

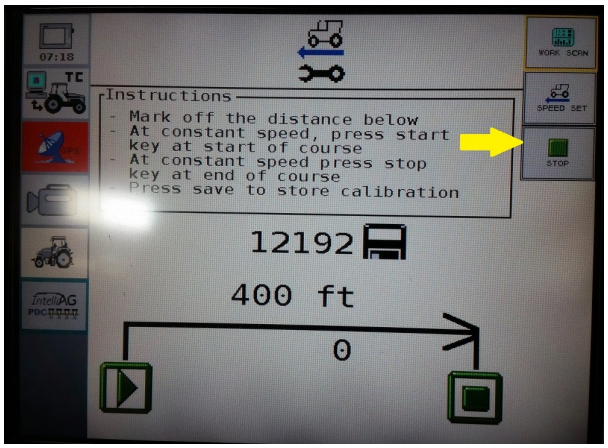


Figure 55

Step 8. Press **Save** once the new **Speed Cal** number comes up.

Note: It is recommended to repeat steps 6-8 as many times as is necessary to ensure accurate test. Also, accuracy will be dependent on where tractor is in relationship to start and stop points of course.

Step 9. Verify that implement and tractor speed match. If so, continue on to In Field Operation. If not, repeat **Speed CAL** procedure again.

Section 9: Replacement Parts and Locations

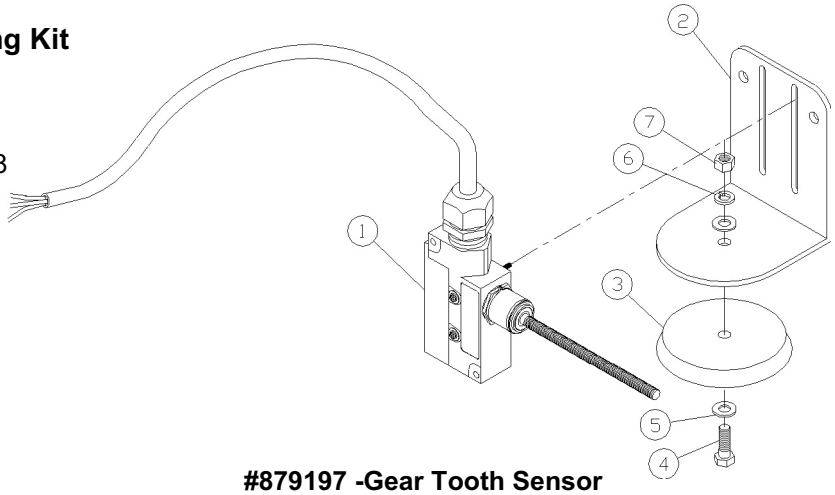
Description	CrustBuster #	DICKEY-john #
Accessory Input ACC harness (2-RPM, 3 HOP)	612739	467980201
Application rate sensor 1" coupler -MTG hard	612812	457141810
Application Rate Sensor 360 x 1'	612804	464360178S1
Astro 4pin round	612390	203-01-01428
CAN BUS Adapter Harness	613950	467988762
Control Harness 4 channel (1-4 PWM, 1-4 feedback)	612721	467980161
Daisy Chain Extension Harness - 6Meter	613919	467988741
Daisy Chain Sensor Extension - 20'	613927	467988756
Daisy Chain Sensor Extension - 10'	613935	467988754
Daisy Chain Sensor Extension - 5'	614107	467988753
Daisy Chain Harness Loop A/B	614065	467988749
Daisy Chain Module ISO 2 Loop	613901	467988730
Daisy Chain Sensor Module	613893	467988690
Daisy Chain Sensor	613885	467988670
Harness WSMT -PM Style	612713	467980852
Hitch Extension - 40'	613414	467980130
Hitch extension - 30'	612689	467980133
Hitch extension - 50'	612697	467980135
Hopper Level Sensor	608521	466820720S3
Intelliag Cab Kit - 5"	612671	IACABKIT5
Intelliag Cab Kit	614768	AI120CABKIT
Mini CAN terminator	613455	467980126
Module ACC-WSMT2	612705	467980821S1
Motor HD4180 Hydraulic w/Pulse Width Modulation Control	612820	467092200S1

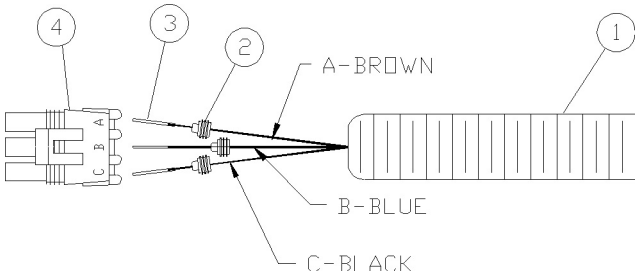
Description	CrustBuster #
Wire Box Assembly -Drills and Air Cart	879361
Gear Tooth Sensor -3 pin weather pack	879197
Wisker Switch Mounting Kit	879114
Extension - 9' 2 pin weather pack	881227
Extension - 6' 2 pin weather pack	881235

Section 9: Replacement Parts and Locations

#879114 -Wisker Switch Mounting Kit

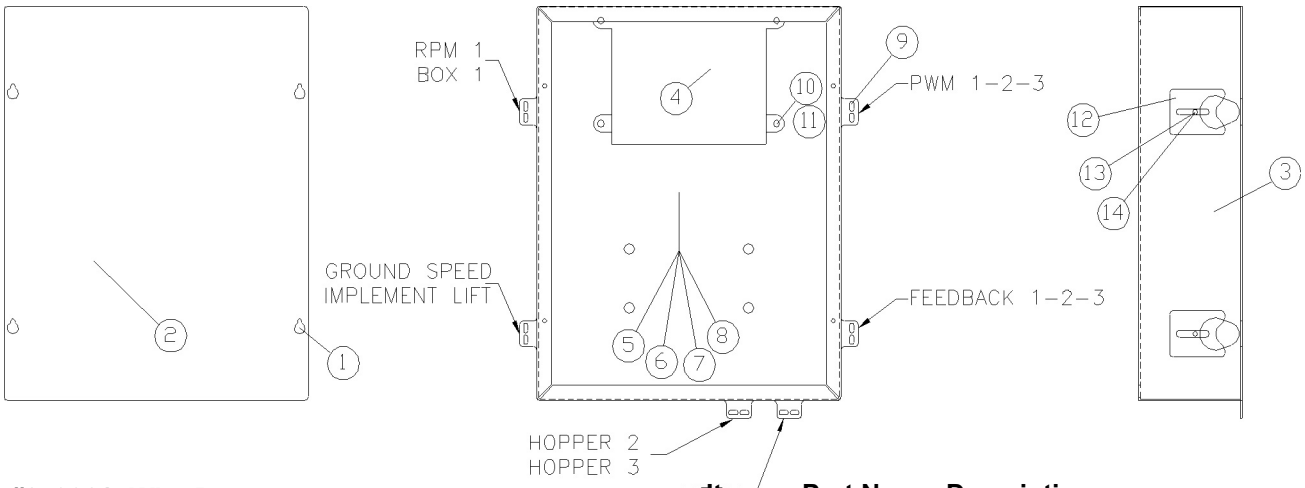
Item	Part No.	Description
1	613463	Wisker Switch
2	271767	Mounting Bracket
3	03742400	Magnet 2 5/8 x 3/8
4	01057900	HHCS 1/4 x 3/4
5	02016400	Flat Washer 1/4
6	330050	Lock Washer 1/4
7	332205	Hex Nut 1/4





#879197 -Gear Tooth Sensor

Item	Part No.	Description
1	609537	Hall Effect Gear Tooth
2	03406600	Cable Seal Green 18-16 ga
3	03409000	Female Terminal 16-14ga
4	03519600	Packard 3 Pin Tower Half



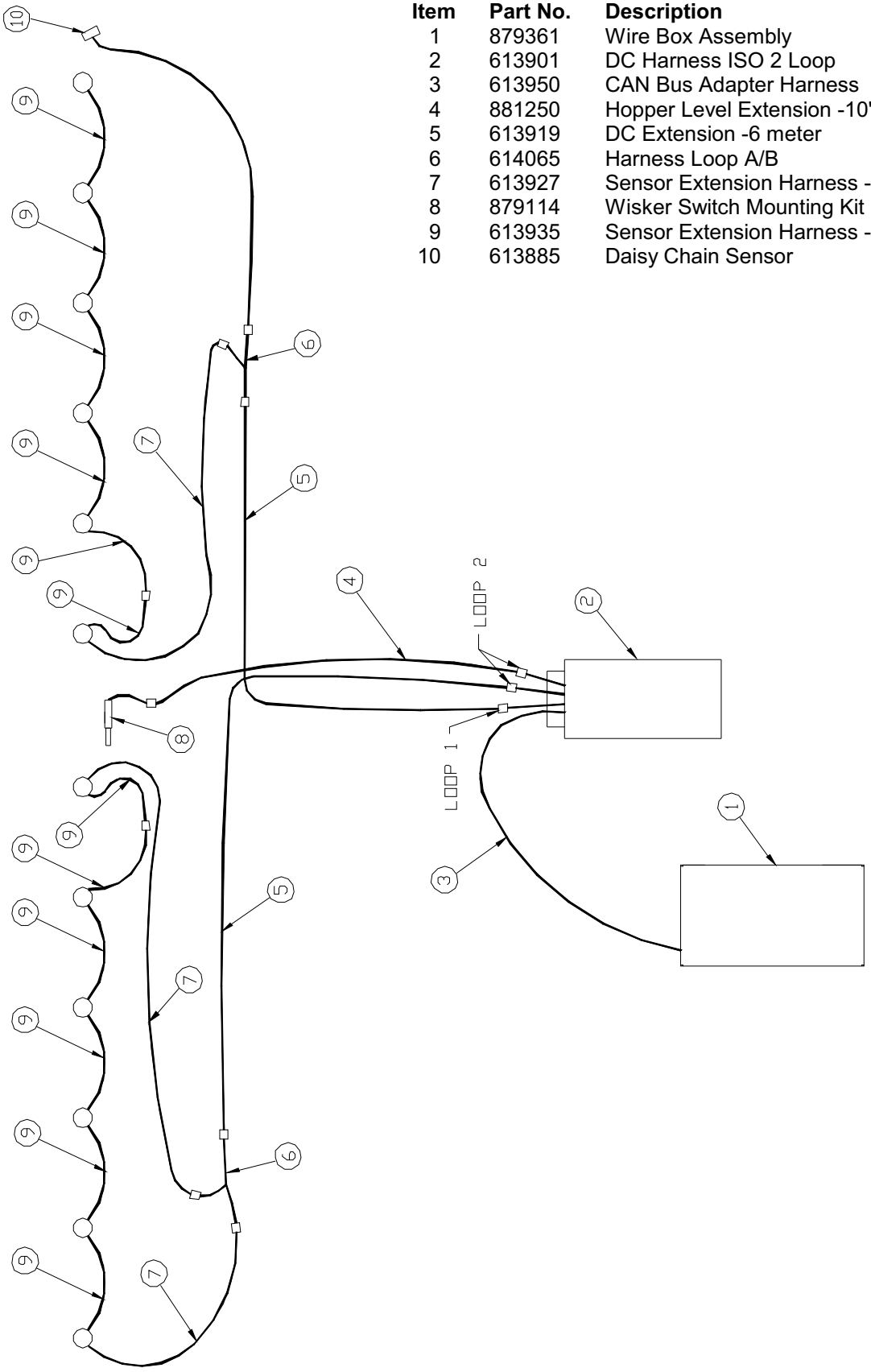
#879361 -Wire Box

Item	Part No.	Description
1	337881	Screw #10 x ½ Self-Tapping
2	275610	Cover
3	976068	Wire Box
4	612705	Module ACC-WSMT2
5	612713	Harness WSMT -PM Style
6	612721	Control Harness 4 Channel 1-4 PWM, 1-4 Feedback
7	612739	Accessory Input Harness 2-RPM, 3 HOP

Item	Part No.	Description
8	613455	Mini CAN Terminator
9	57129	Wire Tie -8½
10	02919900	Screw #10-24 x 1 Hex Head
11	333393	Lock Nut #10-24
12	275594	Mount Plate
13	01150200	HHCS 1/4 x ½
14	330522	Nylock 1/4

Section 9: Replacement Parts and Locations

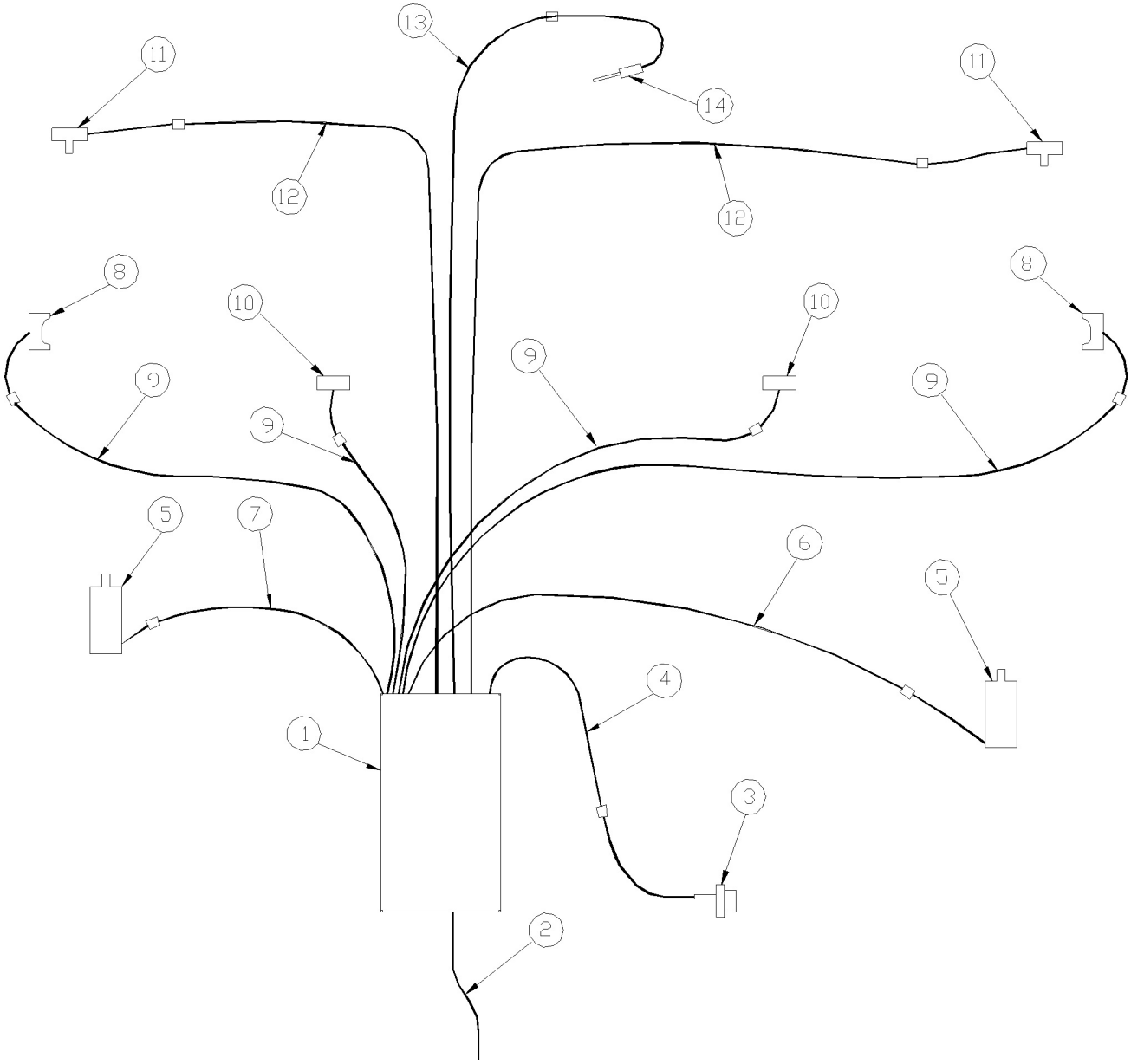
4560 DC Harness Locations



Item	Part No.	Description
1	879361	Wire Box Assembly
2	613901	DC Harness ISO 2 Loop
3	613950	CAN Bus Adapter Harness
4	881250	Hopper Level Extension -10' -12 pin
5	613919	DC Extension -6 meter
6	614065	Harness Loop A/B
7	613927	Sensor Extension Harness -20'
8	879114	Wisker Switch Mounting Kit
9	613935	Sensor Extension Harness -10'
10	613885	Daisy Chain Sensor

Section 9: Replacement Parts and Locations

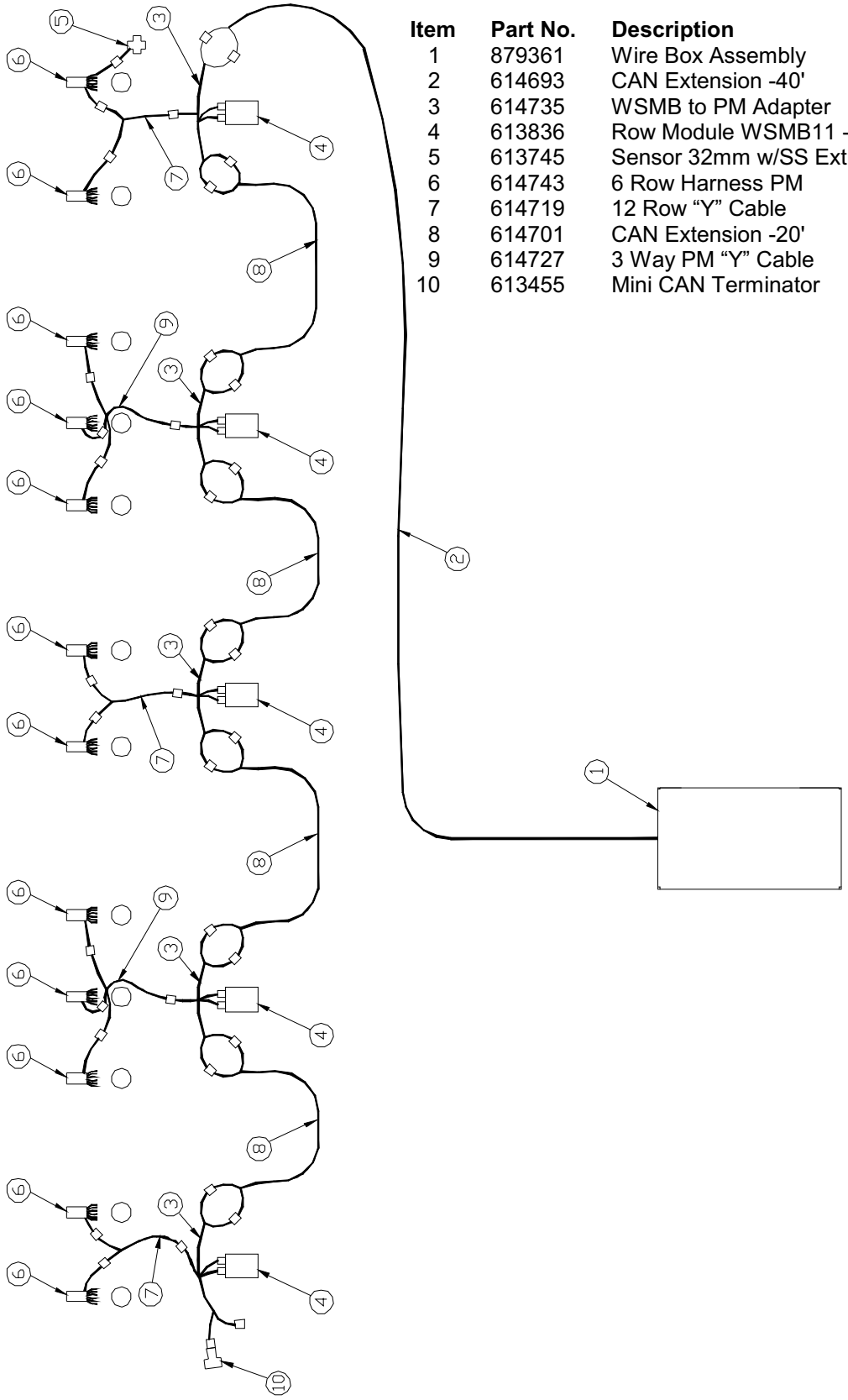
4560 Drive Parts Locations



Item	Part No.	Description
1	879361	Wire Box Assembly
2	613414	40' Hitch Extension
3	879197	Gear Tooth Sensor -3 Pin
4	613778	3' Extension -3 Pin
5	612820	Hydraulic Motor HD4180 w/PWM
6	881227	9' Extension -2 Pin
7	881235	6' Extension -2 Pin
8	608521	Hopper Sensor
9	613422	Hopper Level Extension -5'
10	613976	Air Pressure Sensor
11	612804	Application Rate Sensor
12	613968	6' Extension -3 Pin
13	881250	10' Hopper Level Extension -12 Pin
14	879114	Wisker Switch Mounting Kit

Section 9: Replacement Parts and Locations

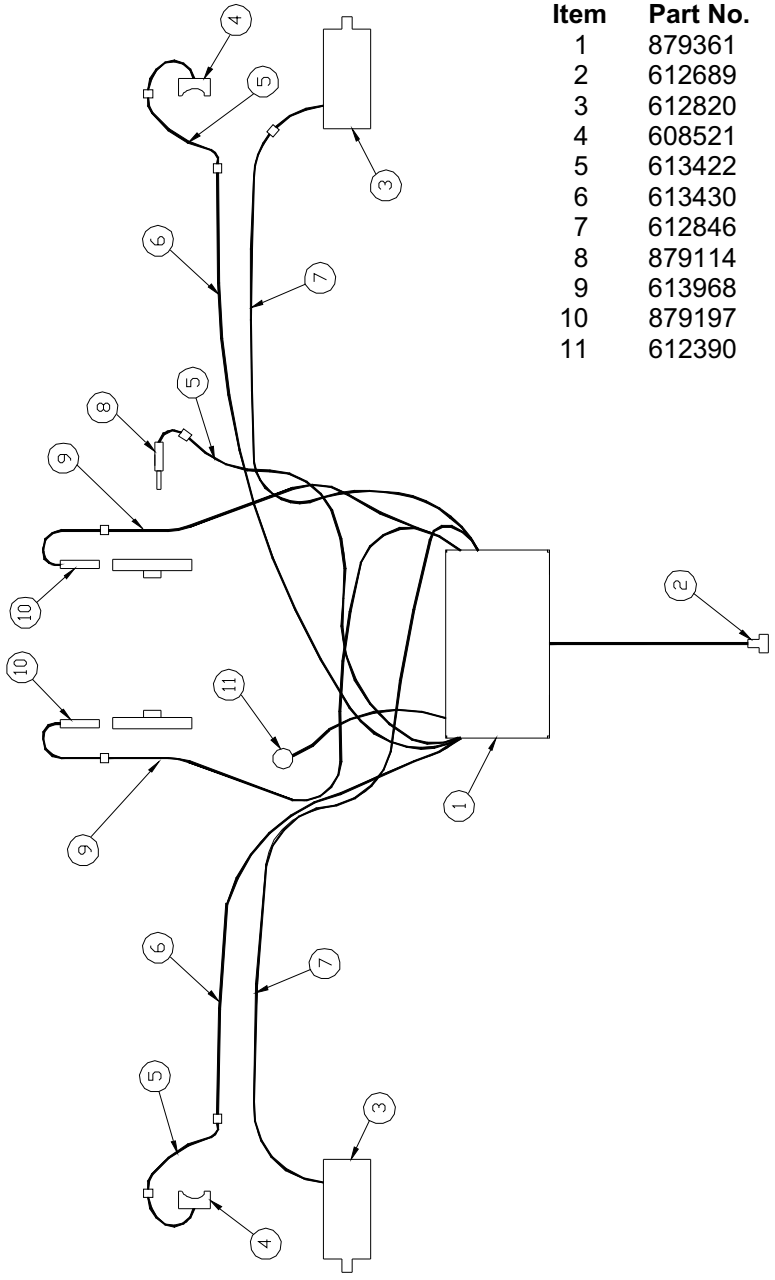
4560 Drive Parts Locations -Every Row Monitoring



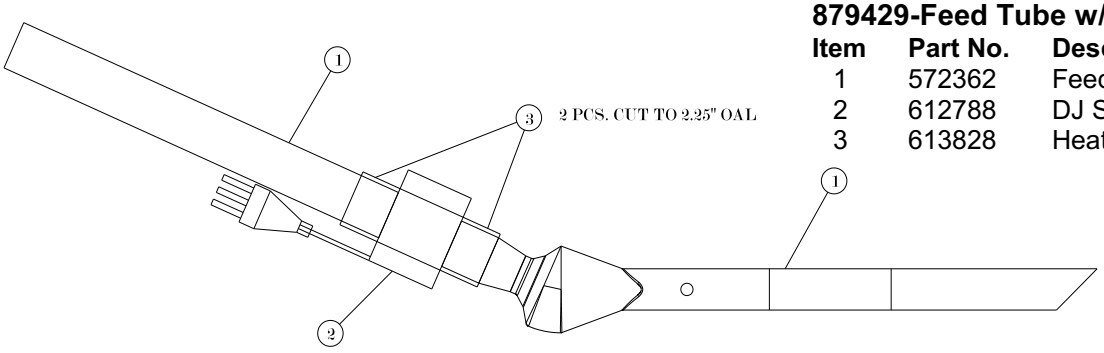
Item	Part No.	Description
1	879361	Wire Box Assembly
2	614693	CAN Extension -40'
3	614735	WSMB to PM Adapter
4	613836	Row Module WSMB11 -18 Seed
5	613745	Sensor 32mm w/SS Extrusion
6	614743	6 Row Harness PM
7	614719	12 Row “Y” Cable
8	614701	CAN Extension -20'
9	614727	3 Way PM “Y” Cable
10	613455	Mini CAN Terminator

Section 9: Replacement Parts and Locations

4000 Drive Parts Locations



Item	Part No.	Description
1	879361	Wire Box Assembly
2	612689	30' Hitch Extension
3	612820	Hydraulic Motor HD4180 w/PWM
4	608521	Hopper Sensor
5	613422	5' Hopper Level Extension
6	613430	10' Hopper Level Extension
7	612846	15' Extension -2 Pin
8	879114	Wisker Switch Mounting Kit
9	613968	6' Extension -3 Pin
10	879197	Gear Tooth Sensor -3 Pin
11	612390	Speed Sensor Astro V GPS -4 Pin

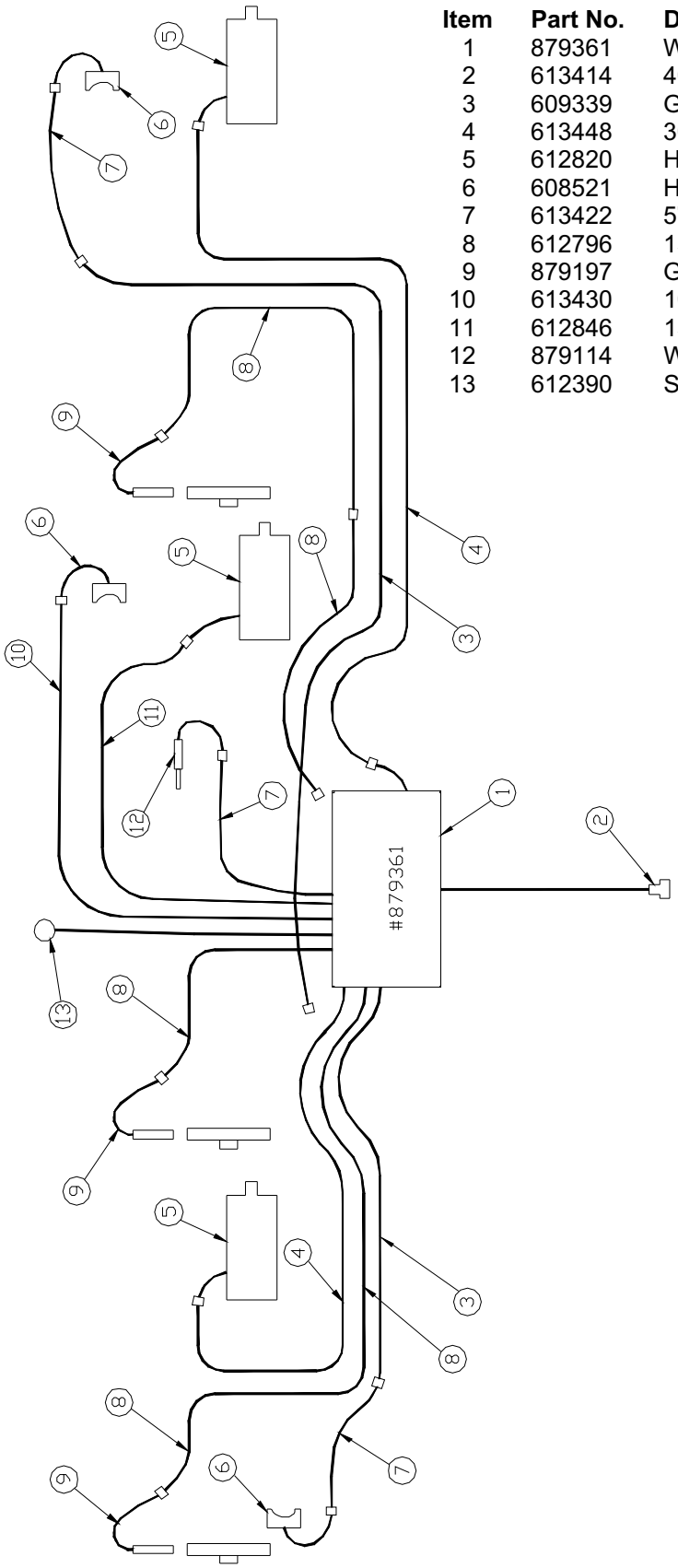


879429-Feed Tube w/ Sensor

Item	Part No.	Description
1	572362	Feed Tube for Sensor
2	612788	DJ Sensor
3	613828	Heat shrink 2" to .65" x 9"

Section 9: Replacement Parts and Locations

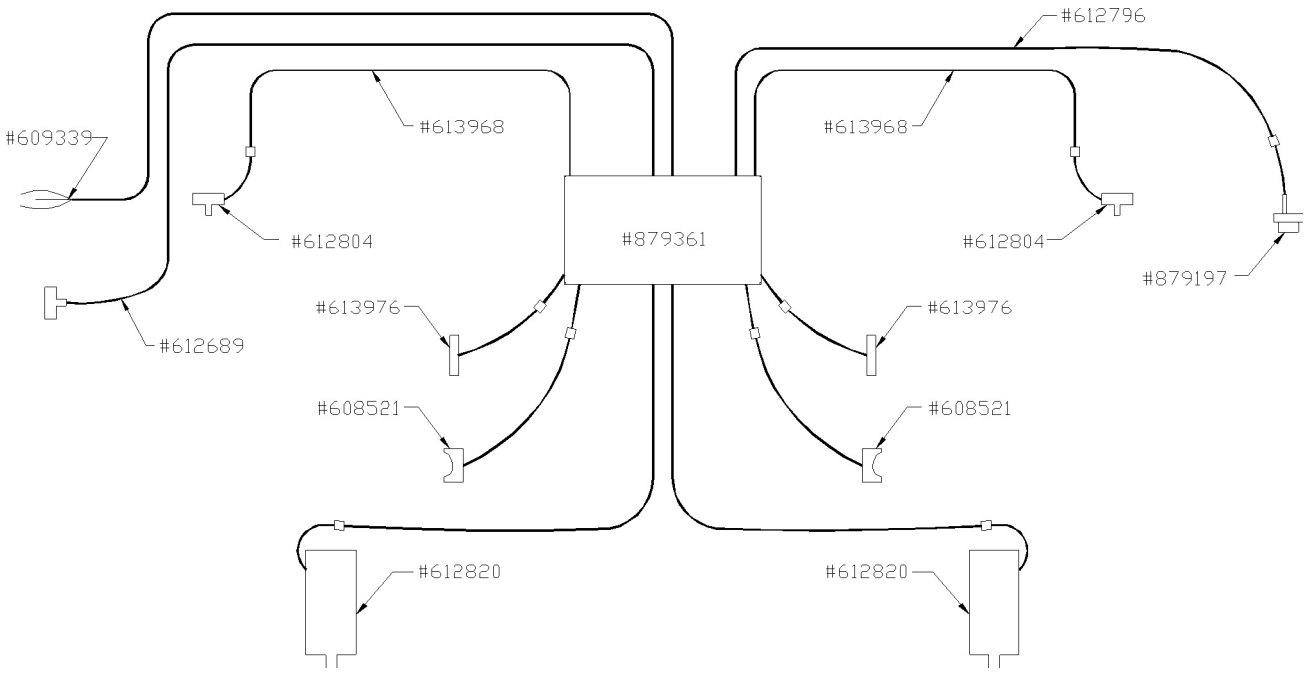
4700 Drive Parts Locations



Item	Part No.	Description
1	879361	Wire Box Assembly
2	613414	40' Hitch Extension
3	609339	Gear Tooth Sensor -3 Pin
4	613448	30' Extension -2 Pin
5	612820	Hydraulic Motor HD4180 w/PWM
6	608521	Hopper Sensor
7	613422	5' Hopper Level Extension
8	612796	15' Extension -3 Pin
9	879197	Gear Tooth Sensor -3 Pin
10	613430	10' Hopper Level Extension
11	612846	15' Extension -2 Pin
12	879114	Wisker Switch Mounting Kit
13	612390	Speed Sensor Astro V GPS -4 Pin

Section 9: Replacement Parts and Locations

350 Air Cart Drive Parts Locations

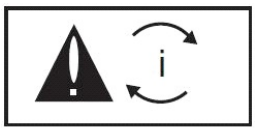


Item	Part No.	Description
1	879361	Wire Box Assembly
2	612820	Hydraulic Motor HD4180 w/PWM
3	608521	Hopper Sensor
4	613976	Air Pressure Sensor
5	879197	Gear Tooth Sensor -3 Pin
6	612804	Application Rate Sensor
7	613968	6' Extension -3 Pin
8	612796	15' Extension -3 Pin
9	612689	30' Hitch Extension
10	609339	Hopper Harness Extension A/S

Section 10: Troubleshooting and Alarm Codes

Alarm Cancel softkey

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** softkey or ESC key. In addition, detailed descriptions of the current alarm can be viewed by pressing the **Alarm Information** softkey. Some of the alarm conditions display instructions on correcting the situation.



Alarm Information softkey

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 (for instance a Master Switch alarm) 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.

Section 10: Troubleshooting and Alarm Codes

	ALARM	PROBABLE CAUSE	CORRECTIVE ACTION
1	**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 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)
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
200	Master Switch Timeout Alarm	1. Master Switch ON at power up. 2. Master Switch ON after leaving a setup screen 3. Shorted or damaged tractor harness 4. Defective Master Switch	1. Move Master Switch to the OFF position 2. Move Master Switch to the OFF position 3. Check for damage on the tractor harness at the Master Switch connector 4. Inspect Master Switch for damage or replace
201	Master Switch Assignment Alarm	1. External Master Switch is not assigned to the Auxiliary Input	1. Assign Master Switch to the Auxiliary Input. Refer to Auxiliary Input/Function Assignment 2. Decline use of Auxiliary Input Switch
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	Control 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

Section 10: Troubleshooting and Alarm Codes

ALARM #	ALARM	PROBABLE CAUSE	CORRECTIVE ACTION
206	Control Channel Unable to Control Alarm	1. Incorrect control 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
207	Control Channel Unstable Alarm	1. Incorrect control 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
208	Control Channel Saturation Exceeded Alarm	1. Excessive speed 2. Incorrect control channel settings. Desired rate too high for implement 3. Target rate too high	1. Reduce speed 2. Verify correct setup constants on the Channel Configuration screen. Perform a valve calibration and a spreader constant calibration. 3. Reduce target rate
209	Control Channel High Limit Exceeded Alarm	CONTROL LIMITED BY HIGH LIMIT. UNDER APPLICATION IS OCCURRING. NOTE: System will not run faster than High Limit Value	1. Check and/or reduce speed 2. Verify Control 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	Control Channel Low Limit Exceeded Alarm	CONTROL RATE LIMITED BY LOW LIMIT. OVER APPLICATION IS OCCURRING.	1. Increase speed 2. Verify correct setup constants (low RPM) 3. Perform valve calibration 4. Increase target rate
211	All Rows Failed Alarm	1. Seed meter drive malfunction 2. Rows are not assigned to channel and channels are turned off.	1. Check seeding drive(s) 2. Assign rows to channel.
212	Row Failure Alarm	SEED RATE HAS FALLEN BELOW THE ROW FAIL RATE SETTING ON THE SEED MONITOR SETUP SCREEN 1. Seed meter malfunction 2. Dirty or defective seed sensor 3. Damaged planter harness 4. Defective module harness or module 5. Out of seed	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	SEED RATE HAS EXCEEDED THE HIGH ALARM SETTING ON THE SEED MONITOR SETUP SCREEN 1. Seed meter malfunction or incorrect setup 2. Defective seed sensor 3. Defective module	1. Verify proper planter options/setup 2. Inspect seed sensor for damage. Replace if necessary 3. Inspect module for damage. Replace if necessary

Section 10: Troubleshooting and Alarm Codes

ALARM #	ALARM	PROBABLE CAUSE	CORRECTIVE ACTION

214	Low Population Limit Exceeded Alarm	SEED RATE HAS DROPPED BELOW THE LOW ALARM SETTING ON THE SEED MONITOR SETUP SCREEN 1. Seed meter malfunction or incorrect setup 2. Defective seed sensor 3. Defective module 4. Running out of seed	 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
215	High Pressure Limit Exceeded Alarm	SENSED PRESSURE EXCEEDS THE HIGH ALARM SETTING ON THE PRESSURE SETUP SCREEN 1. Implement malfunction or incorrect setup 2. Defective pressure sensor 3. Defective module	 1. Verify proper planter operation/setup 2. Inspect seed sensor for damage. Replace if necessary 3. Inspect module for damage. Replace if necessary
216	Low Pressure Limit Exceeded Alarm	SENSED PRESSURE BELOW THE LOW ALARM SETTING ON THE PRESSURE SETUP SCREEN 1. Implement malfunction or incorrect setup 2. Defective pressure sensor 3. Defective module harness or module	 1. Verify proper planter operation/setup 2. Inspect seed sensor for damage. Replace if necessary 3. Inspect module and/or module harness for damage. Replace if necessary
217	Member module Detection Alarm	NUMBER OF MEMBER MODULES DOES NOT MATCH THE SYSTEM CONFIGURATION 1. Too few modules connect to system 2. Too many modules connected to system 3. Defective CAN/module harness 4. Blow module harness fuse 5. Defective module 6. New module has been added to system	 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

Section 10: Troubleshooting and Alarm Codes

ALARM #	ALARM	PROBABLE CAUSE	CORRECTIVE ACTION
218	Pressure Sensor Detection Alarm	NUMBER OF PRESSURE SENSORS CONNECTED DOES NOT AGREE WITH THE NUMBER OF SENSORS CONFIGURED ON THE PRESSURE SENSOR CONFIGURATION SCREEN 1. Defective sensor 2. Defective module or damaged module harness 3. Additional pressure sensor detected	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	NUMBER OF SEED SENSOR CONNECTED DOES NOT AGREE WITH THE NUMBER OF SENSORS CONFIGURED ON THE SEED SENSOR CONFIGURATION SCREEN 1. Defective seed sensor 2. Defective module or damaged module harness 3. Additional seed sensor detected	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
220	Row Sensors Installed Incorrectly Alarm	ROWS ARE NOT DETECTED SEQUENTIALLY ON A MODULE 1. Incorrect seed row connections 2. Defective seed sensor 3. Defective module or damaged module harness	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	Control Channel Invalid State 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 (011-22-141-192189)
222	Control Channel Setup Height Error Alarm	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	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	Control Channel Max Feedback Unreachable Alarm	1. Limit Max Output set too low 2. Incorrect feedback sensor installation 3. Defective feedback sensor	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

Section 10: Troubleshooting and Alarm Codes

ALARM #	ALARM	PROBABLE CAUSE	CORRECTIVE ACTION
224	No Control Channel Gain Steps Calculated Alarm	1. Implement hydraulic system malfunction 2. Defective control valve 3. Incorrect feedback sensor installation 4. Defective feedback sensor	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	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	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	SENSED RPM EXCEEDS THE HIGH ALARM SETTING ON THE RPM SETUP SCREEN 1. Implement malfunction or incorrect setup 2. Defective RPM sensor 3. Defective module	1. Verify proper implement operation/setup 2. Inspect RPM sensor for damage. Replace if necessary 3. Inspect module for damage. Replace if necessary
227	RPM Sensor Low Limit Exceeded Alarm	SENSED RPM BELOW THE LOW ALARM SETTING ON THE RPM SETUP SCREEN 1. Implement malfunction or incorrect setup 2. Defective RPM sensor 3. Defective module harness or module	1. Verify proper implement operation/setup 2. Inspect RPM sensor for damage 3. Inspect module for damage. Replace if necessary
228	Hopper Sensor Detection Alarm	NUMBER OF HOPPER SENSORS CONNECTED DOES NOT AGREE WITH THE NUMBER OF SENSORS CONFIGURED ON THE HOPPER SENSOR CONFIGURATION SCREEN 1. Defective hopper sensor 2. Defective module or damaged module harness 3. Additional hopper sensors detected	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	HOPPER SENSORS ARE NOT INSTALLED SEQUENTIALLY ON A MODULE 1. Incorrect hopper sensor connections 2. Defective hopper sensor 3. Defective module or damaged module harness	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

Section 10: Troubleshooting and Alarm Codes

ALARM #	ALARM	PROBABLE CAUSE	CORRECTIVE ACTION

230	Pressure Sensors Installed Incorrectly Alarm	PRESSURE SENSORS ARE NOT INSTALLED SEQUENTIALLY ON A MODULE 1. Incorrect pressure sensor connections. 2. Defective pressure sensor 3. Defective module or damaged module harness	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
232	RPM Sensor Low Limit Exceeded With Control Channel Shutdown Alarm	RPM HAS DROPPED BELOW THE DISABLE CONTROL ON LOW ALARM SETTING ON THE ACCESSORY SETUP SCREEN 1. Defective RPM sensor 2. Damaged module harness 3. Defective module 4. Low RPM	1. Inspect RPM sensor for damage. Replace if necessary 2. Inspect module harness for damage. Repair of replace 3. Inspect module for damage. Replace if necessary 4. Increase RPM
233	Control Channel Activation Alarm	CHANNEL DELAY OR PRECHARGE IS ENABLED. DURING THIS THE CONTROL WILL RUN WITHOUT GROUND SPEED OR WITHOUT THE IMPLEMENT DOWN	1. Acknowledge alarm to activate control channels. 2. Acknowledge alarm and disable Delay or Precharge to stop control
234	Control Channel Precharge Activation Timeout Alarm	CONTROL CHANNEL PRECHARGE TIME HAS EXPIRED WHILE THE SYSTEM IS STATIONARY. CONTROL CHANNEL HAS STOPPED. 1. Ground speed is at zero. 2. Ground speed is less than Precharge Speed after precharge time is expired	1. Acknowledge alarm and increase ground speed.
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. Control 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	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
602	8 Volt Supply Failure Alarm	8V SUPPLY VOLTAGE IS BELOW 7.2V OR HIGHER THAN 16V 1. Damaged module harness 2. Defective seed or hopper sensor 3. Defective module	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

Section 10: Troubleshooting and Alarm Codes

ALARM #	ALARM	PROBABLE CAUSE	CORRECTIVE ACTION
603	Member Module Communication Falied Alarm	COMMUNICATION WITH AN ACTIVE MODULE HAS FAILED 1. Damaged CAN or module harness 2. Blown module harness fuse 3. Defective module	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	ECU VOLTAGE IS BELOW 11V OR HIGHER THAN 16V 1. Damaged CAN or module harness 2. Defective module	1. Inspect CAN/module harness of the identified module for damage. Repair or replace harness 2. Inspect identified module for damage or replace
605	Solenoid Voltage out of Range Alarm	SOLENOID VOLTAGE IS BELOW 11V OR HIGHER THAN 16V 1. Damaged CAN or module harness 2. Blown module harness fuse 3. Defective module	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	1. Damaged/shorted Actuator Harness 2. Defective PWM valve driver or Servo valve driver 3. Defective module	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

Appendix

System Configuration Worksheet -Module Setup

Module Type	Module Address	# of Rows	Row #	# of Hoppers	# of RPM	RPM #
Hopper Configuration		**RPM Configuration**		**Pressure Configuration**		
		High Alarm		High Alarm		
		Low Alarm		Low Alarm		
		High Alarm Delay		High Alarm Delay		
		Low Alarm Delay		Low Alarm Delay		
		RPM Constant		Pressure Filter		
		RPM Filter				
		Disable Control Low Alarm				
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						
Pre Charge Time						
Delay Time						
Flush Enable						
K Factor						
Valve Lock						
Seed Monitor Configuration		**Row Configuration**		**Ground Speed Configuration**		
		Row Width		Source		
High Alarm		Auto Update Width		Ground Speed Constant		
Low Alarm		Imp Width		Shutoff Speed		
Population Adjust		On/Off Pattern		Minimum Override		
Population Filter		Pop/Block Pattern		Alarm Delay		
Row Fail Rate				PreCharge Ground Speed		
				Flush Ground Speed		

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