



**PRECISION**  
AGRONOMICS AUSTRALIA

# RC 2000 WIZARD SETUP GUIDE FOR PAA HARNESSING

## Name Profile

Profile\*  
Name

**Airseed 5 bin**

Machine\*  
Type

**Air Cart**

Application\*  
Width

**18.000**

**m**

Software Version Number **1.08B**



Setup Req



## Setup System



Number Of  
Products

5

ECU S/N  
JDRC- 1428

ECU #  
1



Setup Req



PAA HARNESES REQUIRE THE RC2000 TO HAVE 5 PRODUCTS SELECTED NO MATTER HOW MANY BINS ARE BEING USED ON THE MACHINE

## Setup Fan/Spinner RPM

Select the number of spinner or fan RPM sensors installed on the implement used for fan or spinner RPM monitoring or control.

RPM Sensors

Checking the Enable Fan/Spinner RPM Control box allows control of a fan or spinner PWM or fast valve and will reduce the number of products and sections available.

Enable Fan/Spinner RPM Control



 Setup Req

SELECT THE NUMBER OF FAN SENSORS

## Setup Application Type

?

Product	Application Type
1*	Granular Fertilizer
2*	Granular Fertilizer
3*	Granular Seed
4*	Liquid
5*	Liquid

←

→

i Setup Req

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↑

SELECT THE PRODUCTS TO GO IN EACH BIN

**BIN 5 DOES NOT HAVE THE ABILITY TO RUN A VR MAP OR DOCUMENTATION**

IF NOT USING A BIN THE APPLICATION TYPE DOES NOT MATTER

## SECTION CONTROL SETUPS

No section Control

### Setup Application Type



**Product 1 Granular**


Application Mode



\* Granular Full Width Section

Application Mode- Granular Full Width Section

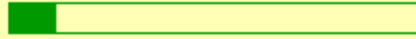
Dry or seed application using a single shutoff section.  
Application rate is entered and documented as Pounds/Acre (Kilograms/Hectare).

 **Setup Req**

## Setup Sections



Number of Sections\*

1

Equal Width  
Sections



Granular Product  
Sections Power to Apply



Master Clutch



Setup Req



No Section Control dry; Section controlled liquid

### Setup Application Type



**Product 1 Granular**


Application Mode



\* Granular Full Width Section

Application Mode- Granular Full Width Section

Dry or seed application using a single shutoff section.  
Application rate is entered and documented as Pounds/Acre (Kilograms/Hectare).

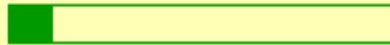
 

 **Setup Req**



## Setup Section Groups



Number of Section Groups

Granular Product Sections Power to Apply

Master Clutch



Setup Req



## Setup Section Groups



Product

Section Groups

1\*

Section Group 1

2\*

Section Group 1

3\*

Section Group 1

4\*

Section Group 2

5\*

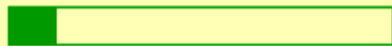
Section Group 2



Setup Req



# Setup Section Groups



Section Groups	* Starting Section Driver	* Number of Sections	Equal Section Widths
1	1	1	<input checked="" type="checkbox"/>
2	2	6	<input checked="" type="checkbox"/>



 Setup Req



## Setup Section Width

Enter the width of the sections (m)

1\* 18.000

7\* 3.000

2\* 3.000

3\* 3.000

4\* 3.000

5\* 3.000

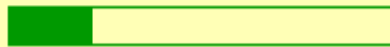
6\* 3.000



Setup Req



# Setup Sections



18.000(m)



Product 1

18
1
1

Product 2

18
1
1

Product 3

18
1
1

Liquid Section Width

Dry Section Width

Wired Signal Driver

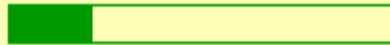
Switch Number



Setup Req



# Setup Sections



18.000(m)

Product 4

3	3	3	3	3	3
2	3	4	5	6	7
2	3	4	5	6	7

Product 5

3	3	3	3	3	3
2	3	4	5	6	7
2	3	4	5	6	7

Liquid Section Width

Dry Section Width

Wired Signal Driver

Switch Number



 Setup Req



Section control wet and dry

### Setup Application Type



**Product 1 Granular**


Application Mode



\* Granular Multi Section (RPM compensated)

Application Mode-Granular Multi-Section RPM Compensated

Dry or seed application using multiple shutoff sections. Meter/conveyor RPM is controlled/compensated based on machine speed and active width as sections turn on and off. Application rate is entered and documented as Pounds/Acre (Kilograms/Hectare).

 Setup Req

SELECT THE TYPE OF SECTION CONTROL YOUR USING

## Product 1 Granular

Application Mode

\* Granular Multi Section (RPM compensated)



-----

Granular Full Width Section

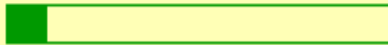
Granular Multi Section (RPM compensated)

Granular Multi Section (RPM maintained)

Granular Split Belt / Dual Encoder



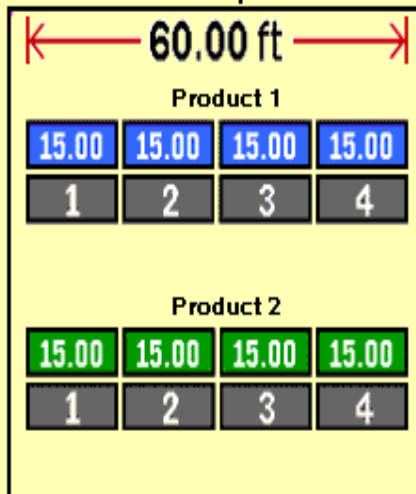
## Setup Section Groups



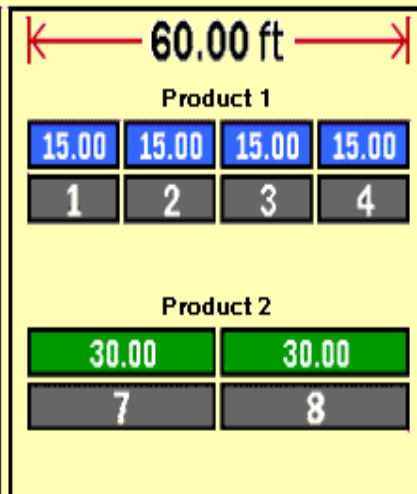
Are section drivers shared between all products in a product harness?

Yes

Yes  
Example



No  
Example

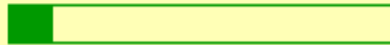


Setup Req



SELECT YES IF YOU ARE SHARING THE SECTION WIRES BETWEEN THE DRY AND LIQUID. (TO DO THIS THE DRY BINS WILL NEED POWER ON WHEN SECTION DRIVERS ARE ON)

## Setup Sections



Number of Sections\*

6

Equal Width  
Sections



Granular Product  
Sections Power to Apply



Master Clutch



Setup Req



TO SHARE DRIVERS YOU WILL NEED TO TICK  
GRANULAR PRODUCT SECTIONS POWER TO  
APPLY

ONLY SELECT CLUTCH IF THE MACHINE IS  
RUNNING ONE

## Setup Section Width

Enter the width of the sections (m)

1\* 3.000

2\* 3.000

3\* 3.000

4\* 3.000

5\* 3.000

6\* 3.000



Setup Req



# Setup Sections

18.000(m)

Product 1

3	3	3	3	3	3
1	2	3	4	5	6
1	2	3	4	5	6

Product 2

3	3	3	3	3	3
1	2	3	4	5	6
1	2	3	4	5	6

Product 3

3	3	3	3	3	3
1	2	3	4	5	6
1	2	3	4	5	6

Liquid Section Width

Dry Section Width

Wired Signal Driver

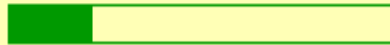
Switch Number



Setup Req



# Setup Sections



18.000(m)



Product 4

3	3	3	3	3	3
1	2	3	4	5	6
1	2	3	4	5	6

Product 5

3	3	3	3	3	3
1	2	3	4	5	6
1	2	3	4	5	6

Liquid Section Width

Dry Section Width

Wired Signal Driver

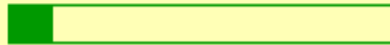
Switch Number



 Setup Req



## Setup Sections



Number of Sections\*

6

Equal Width  
Sections



Granular Product  
Sections Power to Apply



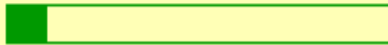
Master Clutch



Setup Req



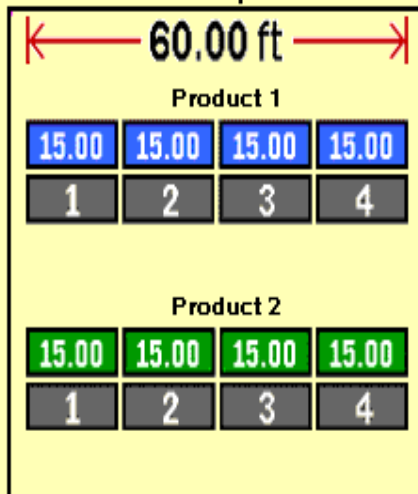
## Setup Section Groups



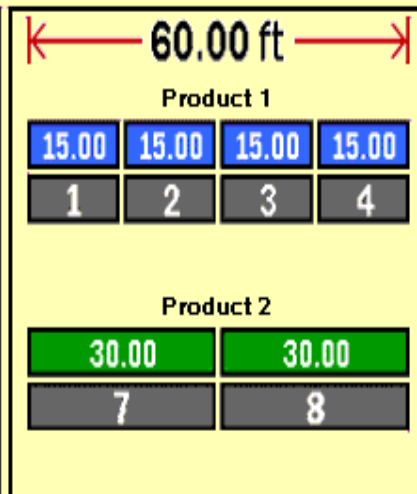
Are section drivers shared between all products in a product harness?

No

Yes  
Example



No  
Example



Setup Req



SELECT NO IF YOU ARE NOT SHARING THE SECTION WIRES BETWEEN THE DRY AND LIQUID. (TO DO THIS THE DRY BINS WILL NEED POWER OFF WHEN SECTION DRIVERS ARE ON)

## Setup Section Groups



Number of Section Groups

Granular Product Sections Power to Apply

Master Clutch



 Setup Req



IF YOU ARE WANTING TO SEPARATE THE SECTION DRIVERS BETWEEN BINS SELECT THE NUMBER OF SECTIONS GROUPS



## Setup Section Groups

Section Groups	* Starting Section Driver	* Number of Sections	Equal Section Widths
1	1	6	<input checked="" type="checkbox"/>
2	7	6	<input checked="" type="checkbox"/>



 Setup Req

YOU NEED TO ALLOCATE THE TWO GROUPS WITH THE NUMBER OF SECTIONS. THE STARTING SECTION DRIVER IS WHERE THE SECTIONS START.

IN THIS EXAMPLE GROUP 1 SSD IS 1 PLUS 6 SECTIONS IS 1-6, GROUP 2 SSD IS 7 PLUS 6 SECTIONS IS SECTIONS 7-12.

THIS IS DETERMINED BY THE WIRING HARNESS PROVIDED. PLEASE CONSULT THE MANUFACTURER IF COMBINATION IS UNKNOWN

## Setup Section Groups



Product

Section Groups

1\*

Section Group 1

2\*

Section Group 1

3\*

Section Group 1

4\*

Section Group 2

5\*

Section Group 2



Setup Req



YOU NEED TO ALLOCATE THE TWO GROUPS. IF DOING A WET/DRY SPLIT ALLOCATE THE DRY GROUPS TO ONE SECTION AND THE LIQUID GROUPS TO THE OTHER SECTION

THIS IS DETERMINED BY THE WIRING HARNESS PROVIDED. PLEASE CONSULT THE MANUFACTURER IF COMBINATION IS UNKNOWN

## Setup Section Width

Enter the width of the sections (m)

1*	3.000	7*	3.000
2*	3.000	8*	3.000
3*	3.000	9*	3.000
4*	3.000	10*	3.000
5*	3.000	11*	3.000
6*	3.000	12*	3.000



Setup Req



# Setup Sections

18.000(m)

Product 1

3	3	3	3	3	3
1	2	3	4	5	6
1	2	3	4	5	6

Product 2

3	3	3	3	3	3
1	2	3	4	5	6
1	2	3	4	5	6

Product 3

3	3	3	3	3	3
1	2	3	4	5	6
1	2	3	4	5	6

Liquid  
Section  
Width

Dry  
Section  
Width

Wired  
Signal  
Driver

Switch  
Number



Setup Req



## Pressure Sensor Setup



Pressure Sensor 1

0-250psi (1-5V)

Pressure Sensor 2

0-250psi (1-5V)

Pressure Sensor 3

0-250psi (1-5V)

Pressure Sensor 4

None

Pressure Sensor 5

None

Calibrate  
Pressure Sensor

Pressure  
Assignment  
Setup

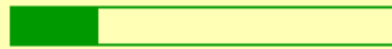
  
Accept

 **Pressure**

THERE ARE 3 PRESSURE SENSORS PROVIDED THE HARNESS. PRESSURE SENSOR IS FOR BIN AIR PRESSURE. PRESSURE 2 AND 3 ARE LOCATED ON THE 4<sup>TH</sup> & 5<sup>TH</sup> BINS RESPECTIVLY AND ARE FOR LIQUID PRESSURE. IF YOU ARENT USING THE PRESSURE SENSOR THEN MAKE SURE IT IS SELCTED TO NONE.

## Setup Sensor Assignment



### Pressure Sensor 1

Product 1

Product 2

Product 3

Product 4

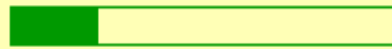
Product 5



Setup Req



## Setup Sensor Assignment



### Pressure Sensor 2

Product 1

Product 2

Product 3

Product 4

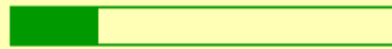
Product 5



Setup Req



## Setup Sensor Assignment



### Pressure Sensor 3

Product 1

Product 2

Product 3

Product 4

Product 5



Setup Req





## Setup Pressure Alarms

	Minimum	Maximum	Alarm?
Pressure 1 (kpa)	2	20	<input checked="" type="checkbox"/>
Pressure 2 (kpa)	2	20	<input checked="" type="checkbox"/>
Pressure 3 (kpa)	2	20	<input checked="" type="checkbox"/>
Pressure 4 (kpa)	0	0	<input type="checkbox"/>
Pressure 5 (kpa)	0	0	<input type="checkbox"/>

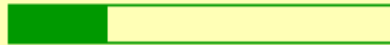


Setup Req



PRESSURE ALARMS SHOULD BE SET ONCE THE PRESSURE SENSOR IS CALIBRATED. THE ALARM MIN AND MAX PRESSURES FOR THE SENSORS ASSIGNED TO LIQUID TANKS WILL HOLD PRESSURE IN LOW SPEED SITUATIONS WHICH MAY ALTER THE TARGET RATE. IF YOU DON'T WANT THIS TURN THE ALARMS OFF OR SET MINIMUM TO 0

## Setup Aux Functions



RPM 1 Calibration  
Pulses/Rev

1

Alarm?

RPM 1  
Low Limit  
(rpm)

10



RPM 1  
High Limit  
(rpm)

5000



Setup Req



SELECT HOW MANY PULSES THE FAN SEE PER REVOLUTION

# Setup RPM Sensor Assignment



## RPM Sensor 1

Product 1


Product 2

Product 3

Product 4

Product 5





 Setup Req



FANS CAN BE ASSIGNED TO BINS. EVERY BIN DOES NOT NEED A FAN ASSIGNED TO IT

### Setup Control Valve



 


**Product 1 Granular**



Control Valve Type **PWM Close**

Valve Response Rate (1-100) **50**

Control Deadband (%) **2**

 **Setup Req**

THERE ARE 2 CHOICES FOR CONTROL VALVE TYPES. HYDRAULIC MACHINES TYPICALLY RUN A PWM CLOSE SYSTEM, WHILST A GROUND DRIVE LINEAR ACTUATOR MACHINE WILL USE THE FAST CLOSE OPTION.

THE RESPONSE RATE AND DEADBAND CAN BE FINE TUNED ONCE THE MACHINE IS OPERATIONAL. THE SETTINGS PROVIDED HERE ARE A GOOD BASE

## Setup PWM

### Product 1 Granular

Coil Frequency (Hz) **122**

High Limit (%) **100.0**

Low Limit (%) **15.0**

PWM Startup (%) **25.0**





Setup Req



MAKE SURE THE PWM SETTINGS ARE SET TO THIS COIL FREQUENCY. THE HIGH LIMIT CAN BE SET TO 100, UNLESS YOU ARE LOOKING AT LIMITING DRIVE SPEED. START THE LOW AND STARTUP ON THESE NUMBERS. **A PWM CALIBRATION FOR EACH BIN IS IMPORTANT ONCE MACHINE IS RUNNING. THIS WILL FINE TUNE THE RESPONSE OF EACH BIN.**

## Setup Rate Sensor

 **Product 1 Granular** 

Pulses/Revolution\*

**36**

Product Density  
(kg/Cubic Meter)

**1000.0**

Calibration  
Weight  
(kg/Revolution)

**0.500**



Setup Req





COUNT HOW MANY PULSES THE METERING SENSOR WILL SEE PER ROLLER REVOLUTION FOR THE PULSES/REVOLUTION NUMBER

THE DENSITY OF THE PRODUCT CAN BE FOUND IN THE MANUFACTURE SPECS OF THE FERTILISER

ENTER A GENERIC CALIBRATION WEIGHT FOR THE PRODUCT (THIS NUMBER WILL CHANGE PER MACHINE AND PER PRODUCT) THIS WILL BE CALIBRATED PROPERLY AFTER THE WIZARD

## Setup Rates

 **Product 1 Granular** 

Preset Rate Values (kg/ha)

Rate 1*	Rate 2	Rate 3
<input type="text" value="50"/>	<input type="text" value="60"/>	<input type="text" value="80"/>

Rate Bump (kg/ha)  Rate Selection

Rate Smoothing   %



Decimal Shift



SELECT A PREDEFINE RATE, HOW THE RATE SELECTION WILL BE MADE AND THE AMOUNT OF SMOOTHING YOU WOULD LIKE (3-5% SHOULD BE ENOUGH)

ALL THESE SETTINGS CAN BE CHANGE IN THE CONTROLLER AFTER THE WIZARD

## Setup Alarms

  
**Product 1 Granular** 

Off Rate Alarm  
(% off target rate)

20

Alarm?



Shaft Sensor Alarm



Setup Req



THE OFF-RATE ALARM WILL ALERT IF APPLIED RATE DROPS BELOW TARGET RATE. THIS CONTROLLER CAN MONITOR 2 SHAFT SPEEDS. THE SECONDARY CAN BE USED ON THE METERING WHEEL WHILE THE PRIMARY CAN BE PUT ON A HIGH-SPEED SHAFT FOR SMOOTHER RATES. IF USING THIS OPTION, TICK THE SHAFT SENSOR ALARM



## Setup Control Valve



**Product 5 Liquid**

Control Valve  
Type

**Fast Close**

Valve Response Rate  
(1-100)

**50**

Control Deadband  
(%)

**2**

Control Effort  
(%)

**25**



**Setup Req**



USE THE FAST CLOSE OPTION ON LIQUID REG VALVES AND LINEAR ACTUATORS. USE AROUND 25% FOR LIQUID VALVES AND AROUND 75% FOR LINEAR ACTUATORS. THESE NUMBERS CAN BE FINE TUNED IN THE CONTROLLER BASED ON IN FIELD OPERATIONS

## Setup Rate Sensor



**Product 5 Liquid**

Flowmeter\*  
Calibration

Flowmeter  
Pulse/Units





 Setup Req



USE THE CALIBRATION PROVIDED ON THE FLOWMETER. IF NOT USE CLOSE ESTIMATE AND CALIBRATE IN THE RATE CONTROLLER. MAKE SURE THE UNITS ARE SELECTED TO L

# Setup Rates

  
**Product 5 Liquid** 

Preset Rate Values (L/ha)

Rate 1*	Rate 2	Rate 3
25.0	0.0	0.0

Rate Bump (L/ha)  Rate Selection

Rate Smoothing   %

Decimal Shift





 Setup Req



SETUP PRESET RATES THE SAME AS DRY BINS

## Setup Alarms

### Product 5 Liquid

Off Rate Alarm  Alarm?

(% off target rate)

If Pressure Sensor 1 has a minimum pressure alarm enabled the system will not drop below that pressure to maintain spray pattern

 Setup Req

## Setup Summary

Profile Name Airseed 5 bin

Machine Type Air Cart

Number Of Products 5

Number of Sections 12

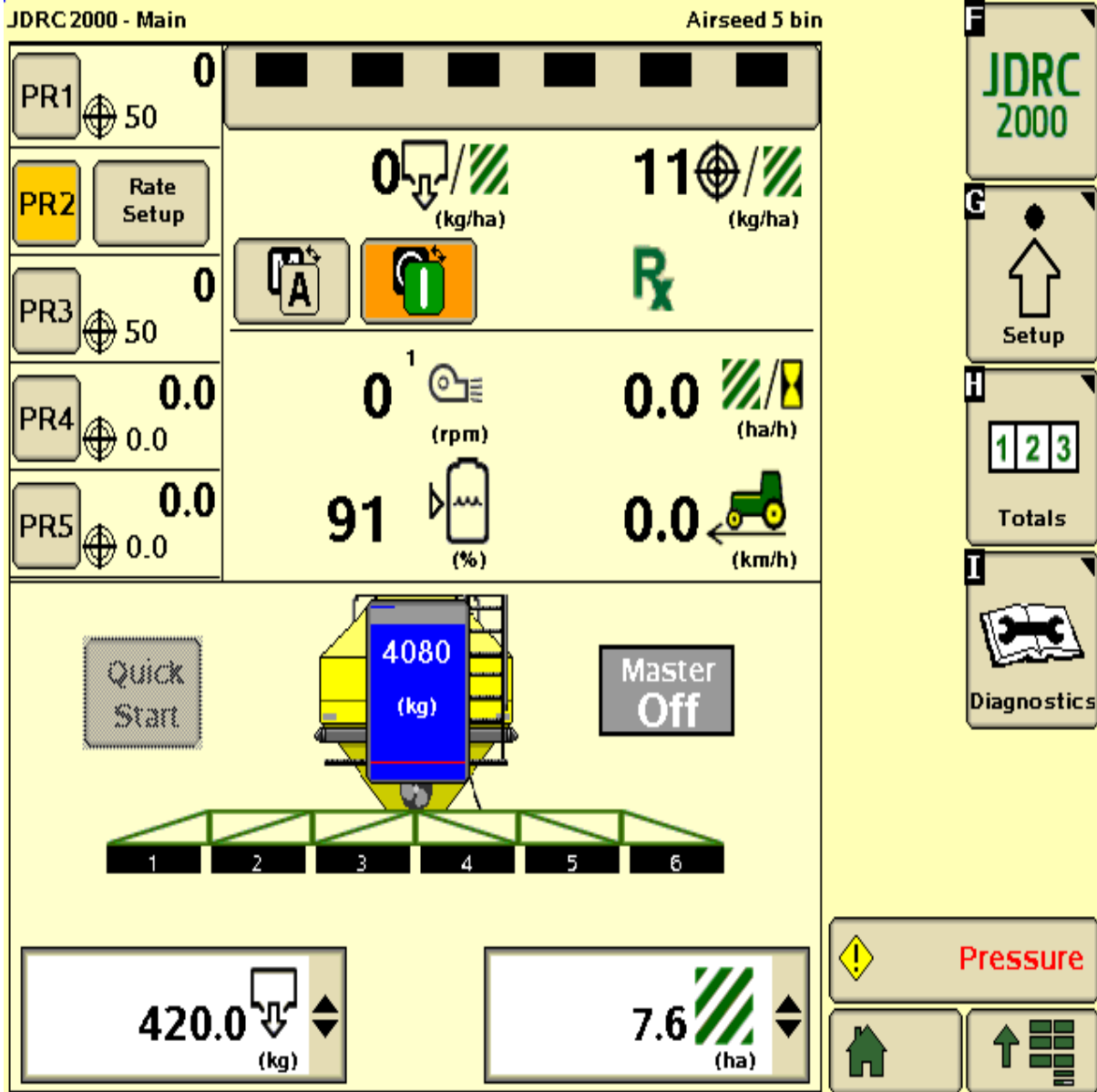
Application Width (m) 18.000

Switchbox Present No

Master Clutch No

Granular Product  
Sections Power to Apply No





CLICK ON EACH BIN ON THE LEFT HAND SIDE. CLICK THE RED CIRCLE TO TURN ON THE BIN, IT SHOULD GO GREEN AS PICTURED. IF NOT USING ALL 5 BINS ONLY TURN ON THE ONES YOU ARE USING.

YOU NEED TO HAVE FAN SPEED AND METERING SPEEDS FOR ALL BINS TO RUN. IF THE CONTROLLER DOES NOT SEE A SPEED ON A BIN THE IT WILL SEND A WARNING AND THE MASTER SWITCH WILL TURN ORANGE

Readings Tests System Summary Product Summary

# Calibrate PWM Limits

## Calibrate PWM Limits

1. Turn Master Switch ON.
  2. Press the Start button.
  3. Adjust setting until minimum acceptable belt/meter RPM is achieved, and press Set Low Limit.
  4. Adjust setting until maximum acceptable belt/meter RPM is achieved, and press Set High Limit.
- Note: Turn Master Switch OFF or leave Diagnostics at any time to cancel test

Master Off Start  
- +  
Set Low Limit Set High Limit

0.0 DC (%)  
0 (kg/min)

F JDRC 2000

G Setup

H 1 2 3 Totals

I Diagnostics

! Pressure

Home ↑

CALIBRATE EACH BINS PWM LIMITS. FOLLOW THE INSTRUCTIONS ON THE TEST.

## Control Valve Setup

Product-2



Control Valve Type **PWM Close**

Valve Response Rate (1-100) **50**

Control Deadband (%) **2**

PWM Setup



Pressure



THESE SETTINGS FOR THE VALVE SHOULD WORK WELL. IF THE VALVE IS SLOW TO MOVE BETWEEN RATES YOU MAY WANT TO PLAY WITH THE RESPONSE RATE. FURTHER UNDERSTANDING OF WHAT THIS DOES CAN BE FOUND BY CLICKING ON THE





## PWM Setup

Coil Frequency (Hz) **122**

High Limit (%) **100.0**

Low Limit (%) **15.0**

PWM Startup (%) **25.0**



  
Accept

 **Pressure**



ONCE CALIBRATED YOU CAN PLAY WITH THE START UP PWM. IT IS BEST TO SET IT 10-15% ABOVE THE LOW LIMIT TO KICKSTART THE VALVE

## Flow/Rate Sensor Setup

Product-2



Pulses/Revolution **36**

Product Density  
(kg/Cubic Meter) **1000.0**

Calibration  
Weight  
(kg/Revolution) **0.500**

Catch Test Calibration

Applied Product  
Calibration

  
Accept

 **Pressure**



GO TO THE FLOW/RATE SENSOR SETUP TO  
CALIBRATE THE PRODUCT

## Calibrate Rate Sensor

Enter the values below.  
Test time must be between 10 seconds and 10 minutes.

Calibration Weight **0.500**  
(kg/Revolution)

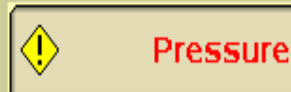
Product Density **1000.0**  
(kg/Cubic Meter)

Test Speed **10.0**  
(km/h)

Test Rate **50**  
(kg/ha)

Desired Weight **25**  
(kg)

Estimated Test Time **01:39**  
(mm:ss)



CALIBRATE EACH PRODUCT UNTIL YOU MATCH THE DESIRED WEIGHT. THESE NUMBERS WILL WORK FOR MOST PRODUCTS. THE DESIRED WEIGHT TO MEASURE IS UP TO THE OPERATOR. MOST SEED AND FERT PRODUCTS ARE LIMITED BY THE AMOUNT YOU CAN MEASURE. THE MORE THE BETTER IF POSSIBLE

## Tank/Bin Setup

Product-1

Tank Capacity (kg) 4500

Current Level (kg) 4140

Low Tank Level (kg) 500

Low Bin Level Sensor

Alarm?



THE BIN/TANK SETUP ALLOWS YOU TO MAKE CHANGES FROM THE WIZARD

## Display Data

The data fields selected on this page will be displayed on the top half of the Main Run screen as well on the Soft Key region Home screen.

Only 1, 2, and 3 will be displayed on the Soft Key region Home screen

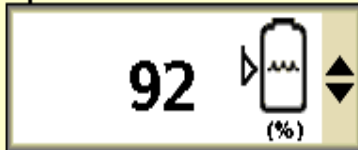
### Space 1 Information



### Space 2 Information



### Space 3 Information



### Space 4 Information



THE DISPLAY DATA IS IMPORTANT. EACH TANK CAN HAVE A DIFFERENT PIECE OF DATA. WE SUGGEST HAVING THE FAN SPEED ON AT LEAST ONE OF THE BINS FOR MONTORING.

## Pressure Sensor Setup



Pressure Sensor 1

0-250psi (1-5V)

Pressure Sensor 2

0-250psi (1-5V)

Pressure Sensor 3

0-250psi (1-5V)

Pressure Sensor 4

None

Pressure Sensor 5

None

Calibrate  
Pressure Sensor

Pressure  
Assignment  
Setup

  
Accept

 **Pressure**

YOU CAN MAKE CHANGES FROM THE WIZARD AS WELL AS CALIBRATING THE SENSORS IF NEED BE

## Pressure Assignment Setup

Sensor-1

Pressure sensors can only be assigned to products in the Setup Wizard. To change products to pressure sensor assignments user must edit profile.

Product 1 Assigned

Product 2 Unassigned

Product 3 Unassigned

Product 4 Unassigned

Product 5 Unassigned



## Auxiliary Features Setup

RPM 1 Calibration  
Pulses/Rev

1

?

RPM 1  
Low Limit  
(rpm)

10

Alarm?



RPM 1  
High Limit  
(rpm)

5000



RPM Sensor  
Assignment



Pressure



THE AUX FEATURES IS WHERE YOU CAN CHANGE FAN ALARM SPEEDS AND THE CAIBRATION. YOU CAN ONLY CHANGE THE NUMBER OF FANS RUNNING IN THE SETUP WIZARD. BY EDITING THE PROFILE



## RPM Assignment Setup

RPM Sensor 1

RPM sensors can only be assigned to products in the Setup Wizard. To change products to RPM sensor assignments user must edit profile.

Product 1 Assigned

Product 2 Unassigned

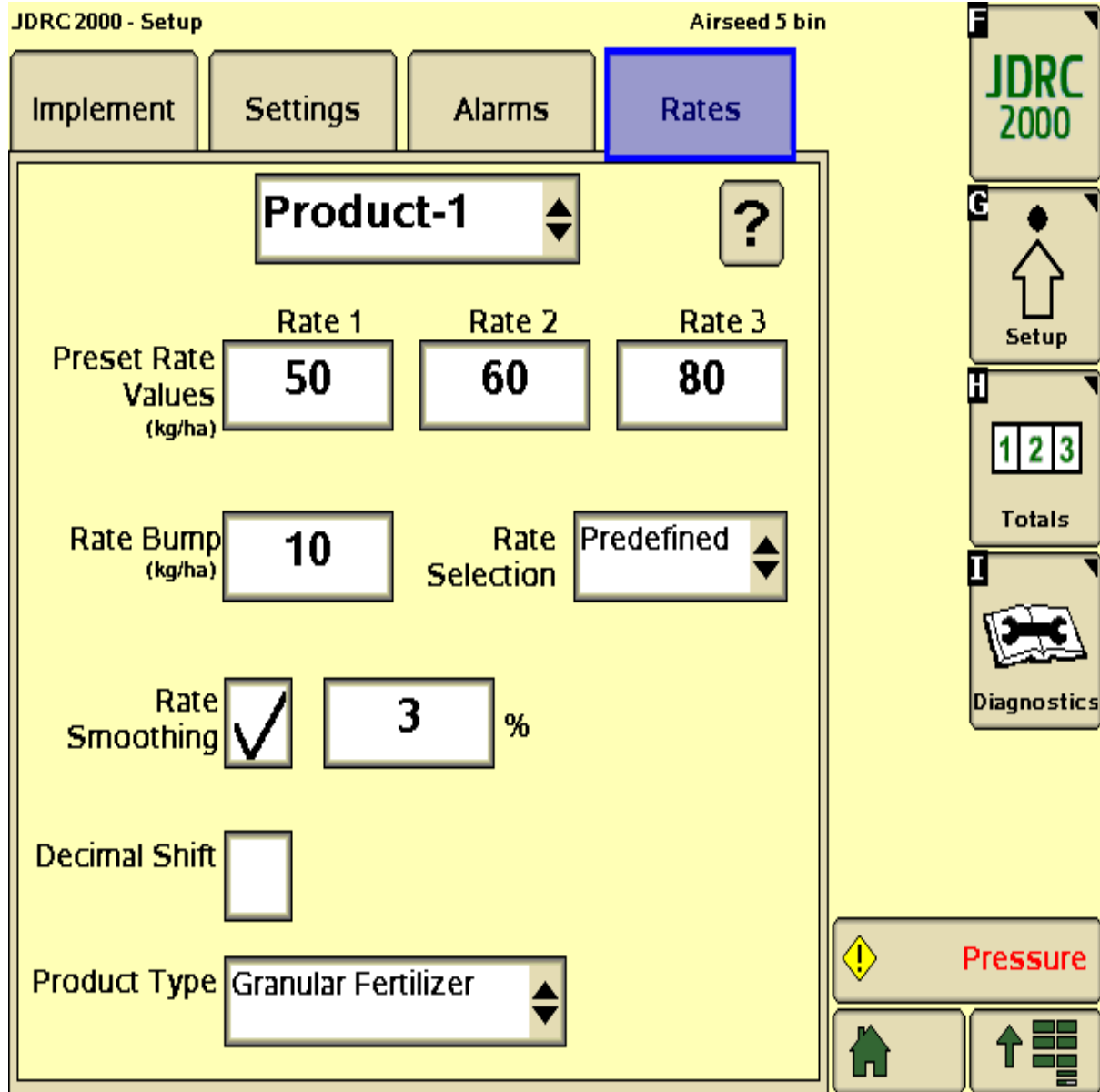
Product 3 Unassigned

Product 4 Unassigned

Product 5 Unassigned



SENSOR ASSIGNMENTS CAN BE CHANGED IN THE AUX FEATURES SETUP



RATES AND RATE SELECTION CAN BE CHANGED UNDER THE SETUP MENU. THE RATE SELECTION ALLOWS YOU TO RUN A MAP BASED RATE. THE PRODUCT TYPE WILL AFFECT THE DOCUMENTATION SETUP. IF YOU RUN A SEED TYPE YOU WILL NEED TO SETUP THE CROP IN THE DOCUMENTATION MENU.

ONLY THE FIRST 4 BINS CAN RUN PRESCRIPTION MAPS. DUE TO A DOCUMENTATION LIMIT ON THE GS3 SCREEN. IF YOU WANT A PRODUCT ASSOCIATED WITH EACH BIN IT WILL NEED TO BE SETUP IN DOCUMENT