

RAVEN

Hawkeye™ Nozzle Control

Navigation “tool”

This Power Point was created to show the Hawkeye Nozzle Control screens. You will not, however, be able to change any settings as *this is used for navigational purposes only*. Please keep in mind that the look may change as the software for the Product Controller II ECU (Hawkeye ECU) is developed and this “tool” will be updated at that time.



Click anywhere on this slide to get started

Add Machine Configuration



[DRAFT] Operator Liability Warning [DRAFT]

Improper or unauthorized use of this equipment may cause property damage, personal injury or death.

By clicking the 'Accept' button, you are accepting all responsibility for the operation of this system.

If you do not agree to these terms, click the 'Shut Down' button.

Accept

Shut Down





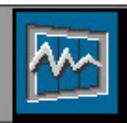
Hawkeye



New Product Config



Job Profile



Nozzle Setup

Total Nozzles

Left Nozzle Count

<< Prev



Next >>

Skip Calibration
for Navigation
Tool



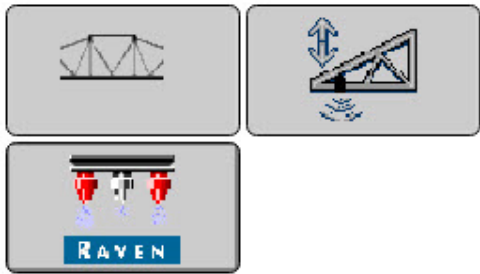
Hawkeye



New Product Config



Job Profile



Nozzle Spacing

in

<< Prev



Next >>

Skip Calibration
for Navigation
Tool



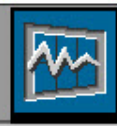
Hawkeye



New Product Config



Job Profile



Tip Size

08

<< Prev

RAVEN

Next >>

Skip Calibration
for Navigation
Tool

Please Make a Selection



| |
|-----|
| NA |
| 015 |
| 02 |
| 025 |
| 03 |
| 04 |
| 05 |
| 06 |
| 08 |
| 10 |
| 125 |

Administrator



Hawkeye



New Product Config



Job Profile



Product Controller

Diagnostic Info

HC Voltage: 13.8 V
Logic Voltage: 4.6 V
Duty Cycle: 0 %
Flow Pulses: 0
ECU Yaw Rate: -1 deg/Sec
Pressure Signal: 0.8 V
Orifice Constant: 0
CAN Errors: 96
Orientation: 0



DTC List

Service Menu

RAVEN

Skip Calibration
for Navigation
Tool

Administrator



Hawkeye



New Product Config

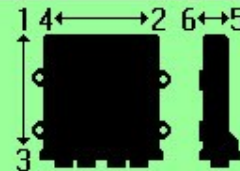


Job Profile



Product Controller
Diagnostic Info

The number displayed in the orientation field is the downward direction depicted in the graphic detected based on how the ECU is mounted.



OK

CAN Errors: 96

Orientation: 0



DTC List

Service Menu

RAVEN

Administrator



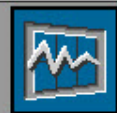
Hawkeye



New Product Config



Job Profile



Product Controller System Information

Hardware Part Number: 0630173704
Hardware Revision: B
Hardware Serial Number: 9999
Software Part Number: 0770171400
Software Version: 1.0.30
Bootloader Version: 2.0.3
Version Hours: 0.0
Total Runtime Hours: 0.0
Total Hours: 0.0
Task Controller: connected
CAN Address: 0x81

Reset
Defaults

RAVEN

Skip Calibration
for Navigation
Tool



Hawkeye



New Product Config



Job Profile



RAVEN

Press Next to begin
auto-indexing nozzles

<< Prev

RAVEN

Next >>

Skip Calibration
for Navigation
Tool





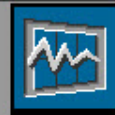
Hawkeye



New Product Config



Job Profile



Fence Row Setup

Enable Fence Row Outputs Yes No

Enable On Screen Buttons

Left Fence Row Switch

Right Fence Row Switch

<< Prev

Next >>

RAVEN

Skip Calibration
for Navigation
Tool

Please Make a Selection



| |
|---|
| 1 |
| 2 |
| 3 |
| 4 |
| 5 |
| 6 |



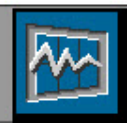
Hawkeye



New Product Config



Job Profile



Section Setup

Number Of Sections

<< Prev



Next >>

Skip Calibration
for Navigation
Tool





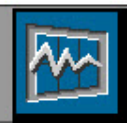
Hawkeye



New Product Config



Job Profile



Section Setup

Section Widths (in) 1 = Far Left 16 = Far Right

| | | | | | | | |
|---|---------------------------------|---|---------------------------------|---|---------------------------------|---|---------------------------------|
| 1 | <input type="text" value="40"/> | 2 | <input type="text" value="40"/> | 3 | <input type="text" value="20"/> | 4 | <input type="text" value="40"/> |
| 5 | <input type="text" value="40"/> | | | | | | |

<< Prev

Next >>

Skip Calibration
for Navigation
Tool





Hawkeye



New Product Config



Job Profile



RAVEN



Switch Mapping

- | | | |
|-----------|--------------------------------|----|
| Section 1 | <input type="text" value="1"/> | ▲▼ |
| Section 2 | <input type="text" value="2"/> | ▲▼ |
| Section 3 | <input type="text" value="3"/> | ▲▼ |
| Section 4 | <input type="text" value="4"/> | ▲▼ |
| Section 5 | <input type="text" value="5"/> | ▲▼ |

<< Prev

Next >>

RAVEN

Skip Calibration
for Navigation
Tool



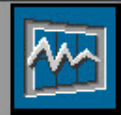
Hawkeye



New Product Config



Job Profile



Boom Pressure Calibration

Transducer Type: Raven (0-250)

*For more detailed pressure calibration options, go into the Pressure Settings menu after completing calibration

<< Prev

RAVEN

Next >>

Skip Calibration
for Navigation
Tool

Please Make a Selection



Raven (0-250)

Other (0-150)

Custom



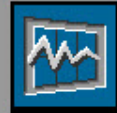
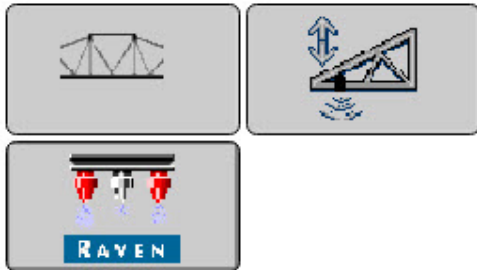
Hawkeye



New Product Config



Job Profile



Meter Cal

Meter cal

*Standard Raven flow meters use 10 gal setting

<< Prev

Next >>

RAVEN

Skip Calibration
for Navigation
Tool

Please Make a Selection



| |
|---------|
| L |
| 10 L |
| gal |
| 10 gal |
| I Gal |
| mL |
| fl oz |
| I fl oz |

Administrator



Hawkeye



New Product Config



Job Profile



RAVEN

Target Rate

15.0 gal/ac

<< Prev

RAVEN

Next >>

Skip Calibration
for Navigation
Tool



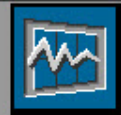
Hawkeye



New Product Config



Job Profile



Target Pressure

60.0 psi

<< Prev

RAVEN

Next >>

Skip Calibration
for Navigation
Tool

Administrator



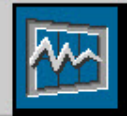
Hawkeye



New Product Config



Job Profile



DTC List

Active

ID #: Count:

| ID # | Count | |
|------|-------|---|
| | | ▲ |
| | | ■ |
| | | ▼ |

Inactive

ID #: Count:

| | | |
|-----------|---|---|
| 630.13 | 0 | ▲ |
| 5200.02 | 0 | ■ |
| 523009.02 | 0 | ■ |
| 523008.02 | 0 | ■ |
| 3132.13 | 1 | ▼ |

Not Calibrated

Clear

RAVEN

Back



Administrator



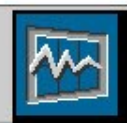
Hawkeye



New Product Config



Job Profile



Product Controller
Diagnostic Info

HC voltage: 13.8 V
Logic voltage: 4.6 V

Please enter a Service Code to continue.

P or

DTC List

Service Menu

RAVEN



Administrator



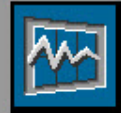
Hawkeye



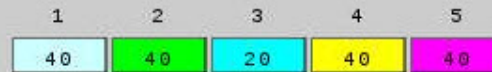
New Product Config



Job Profile



Total Width in



Fence Rows Left Fence Row Right Fence Row

Total Nozzles Tip Size

Nozzle Spacing Enable Nozzle Control

Calibration Wizard

RAVEN



Administrator



Hawkeye



New Product Config



Job Profile



Switch mapping setup is indicated by highlighting the section widths using the colors in the legend below:

| | | | |
|----------|--|-----------|--|
| Switch 1 | | Switch 9 | |
| Switch 2 | | Switch 10 | |
| Switch 3 | | Switch 11 | |
| Switch 4 | | Switch 12 | |
| Switch 5 | | Switch 13 | |
| Switch 6 | | Switch 14 | |
| Switch 7 | | Switch 15 | |
| Switch 8 | | Switch 16 | |

OK

Control
Calibration Wizard

RAVEN



Administrator



Hawkeye



New Product Config



Job Profile



Reset Cal Wizard

Are You Sure?



Total

Nozzle Spacing

20

Enable Nozzle Control



Calibration Wizard

RAVEN



Administrator



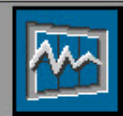
Hawkeye



New Product Config



Job Profile



System Settings

Self Test(MPH)

User Settings

Presets Setup

Tank Fill Settings

Product Control Settings

Alarm Settings

Pressure Settings



Administrator



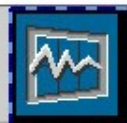
Hawkeye



New Product Config



Job Profile



Product Controller
Diagnostic Info

HC Voltage: 13.8 V
Logic Voltage: 4.6 V
Duty Cycle: 0 %
Flow Pulses: 0
ECU Yaw Rate: -1 deg/Sec
Pressure Signal: 0.8 V
orifice Constant: 0
CAN Errors: 96
Orientation: 6



DTC List

Service Menu

RAVEN



Administrator



Hawkeye



New Product Config



Job Profile



Product Controller System Information

Hardware Part Number: 0630173704
Hardware Revision: B
Hardware Serial Number: 9999
Software Part Number: 0770171400
Software Version: 1.0.30
Bootloader Version: 2.0.3
Version Hours: 0.0
Total Runtime Hours: 0.0
Total Hours: 0.2
Task Controller: connected
CAN Address: 0x81

Reset
Defaults

RAVEN



Administrator



Hawkeye



New Product Config



Job Profile



User Settings

Display Smoothing

Override Seconds

Section Control

Rx Control

PWM High Side Drive

Enable Turn Compensation

Calibrate Inertial Sensors

OK



Click setting label for more details.

Administrator



Hawkeye



New Product Config



Job Profile



Calibrate Inertial Sensors?

Ensure System is on a flat surface and is not in motion.

Enable Turn Compensation

Calibrate Inertial Sensors

OK

5
774



Administrator



Hawkeye



New Product Config

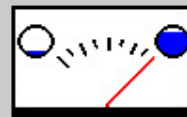


Job Profile



Tank Fill Config

Full Refill



Tank Capacity gal

Current Tank Volume gal

Low Tank gal

Fill Meter Cal

OK



Click setting label for more details.

Administrator



Hawkeye



New Product Config



Job Profile



Alarms Setup

Enabled

- | | | |
|--------------------------|---------------------|-----------------------------------|
| <input type="checkbox"/> | Low Tank | <input type="text" value="0"/> |
| <input type="checkbox"/> | Off Rate | <input type="text" value="20"/> % |
| <input type="checkbox"/> | Off Pressure | <input type="text" value="20"/> % |
| <input type="checkbox"/> | Min Pressure Enable | |

OK



Click setting label for more details.

Administrator



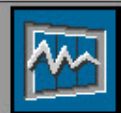
Hawkeye



New Product Config



Job Profile



Rate 1 gal/ac

12.0

Rate 2 gal/ac

15.0

Rate +/-

2.0

Pressure 1

40.0

Pressure 2

60.0

Press. +/-

5.0

Main Screen Quick Key Setup

Rate



+/-



Pressure



Use Gauges to toggle Rate/Pressure soft keys

OK

Click setting label for more details.



Administrator



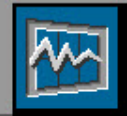
Hawkeye



New Product Config



Job Profile



Product Control Settings

Valve Type

Min (0-100)

Max (0-100)

Nozzle Min (0-100)

PWM Frequency

Response Rate ?

Deadband ?

Meter cal

OK

Click setting label for more details.



Administrator



Hawkeye



New Product Config



Job Profile



Product Control Settings

The Response Rate has a range of 1 to 100 and the setting determines how aggressively the target rate is controlled to. Increasing this value will cause the system to respond more quickly. Decreasing it will cause a slower response. If the flow is slow to reach the target value consider increasing it.

OK

Response Rate

50



Deadband

1



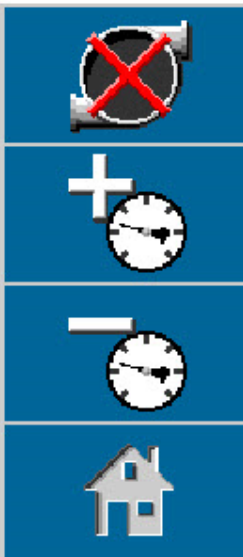
720

Meter
cal

10 gal



OK



Administrator



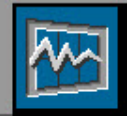
Hawkeye



New Product Config



Job Profile



Product Control Settings

The deadband is the allowable difference between the target rate and the actual application rate. The values range from 1 to 9, where 1 equals 1% difference and 9 equals 9% of the difference.

OK

Response Rate ?

Deadband ?

Meter
cal

OK



Administrator



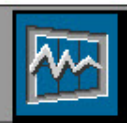
Hawkeye



New Product Config



Job Profile



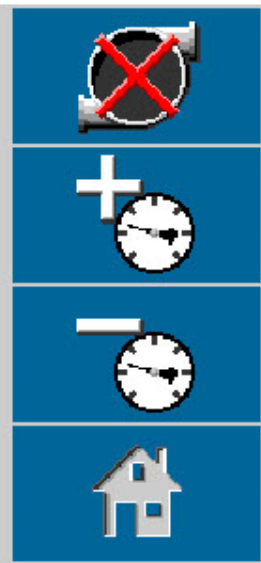
Pressure Settings

| | | | | |
|-------------------|---------------------------------|--|------------------|---------------------------------|
| Response Rate | <input type="text" value="35"/> | | Minimum Pressure | <input type="text" value="15"/> |
| Sensitivity | <input type="text" value="2"/> | | Maximum Pressure | <input type="text" value="80"/> |
| Boom Pressure Cal | <input type="text" value="0"/> | | | |

Advanced Transducer Cal

OK

Click setting label for more details.



Administrator



Hawkeye



New Product Config



Job Profile



Pressure Settings

The Response Rate has a range of 1 to 100 and the setting determines how aggressively the target pressure is controlled to. Increasing this value will cause the system to respond more quickly. Decreasing it will cause a slower response. If the pressure is slow to reach the target value consider increasing it.

OK

Boom
Pressure Cal

Advanced
Transducer Cal

OK



Administrator



Hawkeye



New Product Config



Job Profile



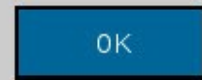
Pressure Settings

The sensitivity sets how sensitive the readings from the pressure transducer are. If this value is too high the user may experience unstable pressure readings.



Boom Pressure Cal

Advanced Transducer Cal





Hawkeye



New Product Config



Job Profile



Advanced Pressure Calibration

Pressure Type:

Boom

Transducer Type:

Raven (0-250)

60 psi

Back



Please Make a Selection



Boom

Sparge

Please Make a Selection



Raven (0-250)

Other (0-150)

Custom

Administrator



Hawkeye



New Product Config



Job Profile



DTC List

Active

ID #:

Count:

| ID # | Count | |
|------|-------|---|
| | | ▲ |
| | | ■ |
| | | ▼ |

Inactive

ID #:

Count:

| | | |
|-----------|---|---|
| 630.13 | 0 | ▲ |
| 5200.02 | 0 | ■ |
| 523009.02 | 0 | ■ |
| 523008.02 | 0 | ■ |
| 3132.13 | 1 | ▼ |

Not Calibrated

Clear

RAVEN

Back



Administrator



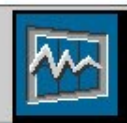
Hawkeye



New Product Config



Job Profile



Product Controller
Diagnostic Info

HC voltage: 13.8 V
Logic voltage: 4.6 V

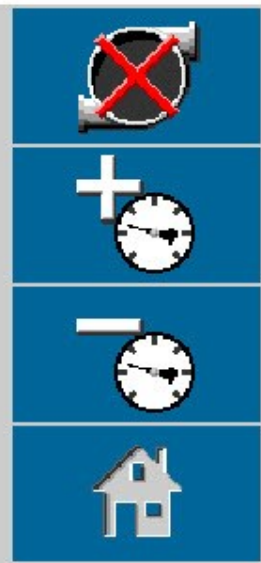
Please enter a Service Code to continue.

P or

DTC List

Service Menu

RAVEN



Administrator



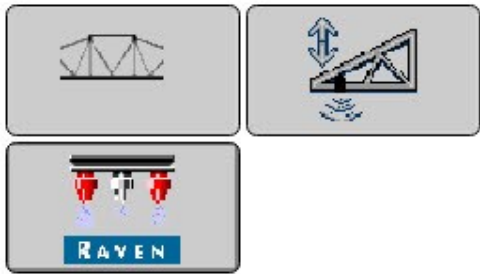
Hawkeye



New Product Config



Job Profile



Product Controller
Diagnostic Info

The number displayed in the orientation field is the downward direction depicted in the graphic detected based on how the ECU is mounted.

OK

CAN Errors: 96
Orientation: 0



DTC List

Service Menu

RAVEN

Administrator



Test



New Product Config



Job Profile



Product controller
System Information

Reset Default
Values?



Reset
Defaults

RAVEN



Administrator



Test



New Product Config



Job Profile



Product controller
System Information

Reset Default
Values?



Reset
Defaults

RAVEN



Administrator



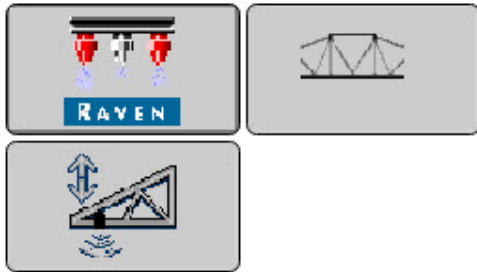
Test



New Product Config



Job Profile



Rates
Target gal/ac

12.0

Speed 6.8 - 19.7
0.0 MPH

Pressure
Target psi

60.0

Rate
0.0 gal/ac

Boom
0.0 psi

Product
0.0 gal

Area
0.0 ac

1000 gal



Click boom switches to turn Enable.

Currently - Disabled



Administrator



Test



New Product Config



Job Profile



Rates

Target gal/ac

12.0



Speed 6.8 - 19.7

0.0 MPH



Pressure

Target psi

60.0

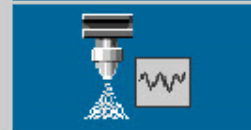


Click to go back to Pressure Presets

Product

0.0 gal

Area 0.0 ac



Administrator



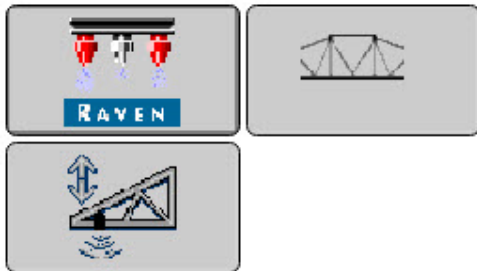
Test



New Product Config



Job Profile



Rates
Target gal/ac

12.0

Speed 6.8 - 19.7
0.0 MPH

Pressure
Target psi

60.0

Rate gauge: 0-40 gal/ac, needle at 0.0

Boom gauge: 0-150 psi, needle at 61

Product: 0.0 gal

Area: 0.0 ac

1000 gal tank

Navigation: Left arrow with red X, Right arrow with red X



Click boom switches to turn Enable.

Currently - Disabled

Administrator



Test



New Product Config



Job Profile



Click to go back to Rate Presets

Rates

Target gal/ac

12.0



Speed 6.8 - 19.7

0.0 MPH



Pressure

Target psi

60.0



Product

0.0 gal

Area

0.0 ac



1000 gal



Administrator



Test



New Product Config



Job Profile



| | | Totals Data | | | |
|----------|-----------|-------------|----------------------------------|---------|--|
| Task | Area | | <input type="text" value="0.0"/> | ac | |
| | Product | | <input type="text" value="0.0"/> | gal | |
| Lifetime | Area | | <input type="text" value="0.0"/> | ac | |
| | Product | | <input type="text" value="0.0"/> | gal | |
| Distance | | | <input type="text" value="0"/> | mi | |
| | | | <input type="text" value="0"/> | ft | |
| Device | Area | | <input type="text" value="0"/> | ac | |
| | Product | | <input type="text" value="0"/> | gal | |
| | Flow Rate | | <input type="text" value="0.0"/> | gal/min | |
| | Area/Hour | | <input type="text" value="0.0"/> | ac/h | |



Administrator



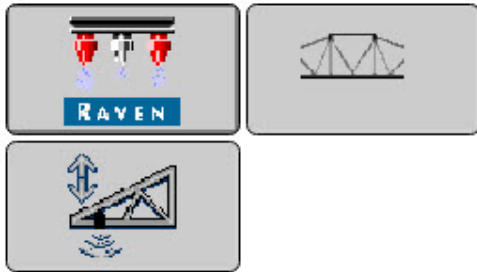
Test



New Product Config



Job Profile



Booms currently – Enabled and OFF

Fence Rows currently – Disabled and OFF

Fence rows tied to switch #6. Click to enable fence rows

Rates
Target gal/ac

12.0

Auto

Speed 6.8 - 19.7

15.0 MPH

Pressure
Target psi

60.0

Rate

Boom

psi

Product

0.0 gal

Area

0.0 ac

1000 gal

The main dashboard features several gauges and controls. On the left, a 'Rate' gauge shows a needle at 12.0 gal/ac. In the center, a speed gauge shows 15.0 MPH. On the right, a 'Boom' gauge shows a needle at 60.0 psi. Below these are input fields for 'Product' (0.0 gal) and 'Area' (0.0 ac), and a large blue tank icon labeled '1000 gal'. At the bottom, there are five boom icons and two navigation arrows with red 'X' marks over them.

Administrator



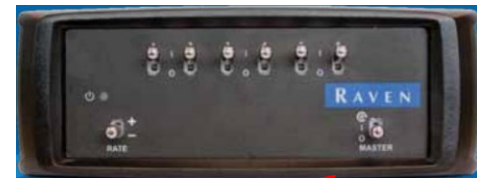
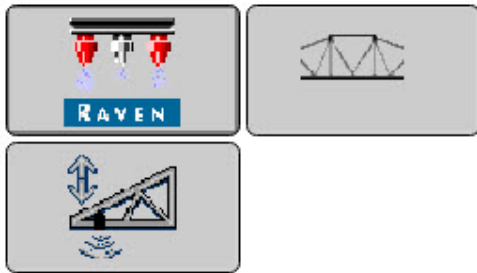
Test



New Product Config



Job Profile



Booms currently – Enabled and OFF

Fence Rows currently – Enabled and OFF

Click Master Switch to turn Sections ON.

Rates
Target gal/ac

12.0

Auto

Speed 6.8 - 19.7

15.0 MPH

Pressure
Target psi

60.0

Rate

Boom

psi

Product

0.0 gal

Area

0.0 ac

1000 gal

The main dashboard contains several gauges and controls. On the left is a 'Rate' gauge with a needle pointing to 0.0 and a scale from 0 to 40. In the center is a speed control box with 'Auto' mode and a '15.0 MPH' display. On the right is a 'Boom' gauge with a needle pointing to 61 and a scale from 0 to 150. Below these are 'Product' and 'Area' input fields, both set to 0.0. A large blue oval displays '1000 gal'. At the bottom, there are five trapezoidal shapes representing boom sections and two navigation arrows.

Administrator



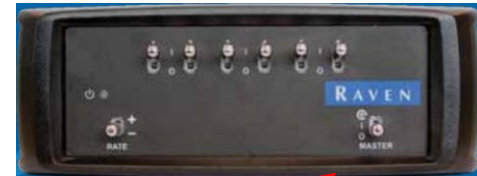
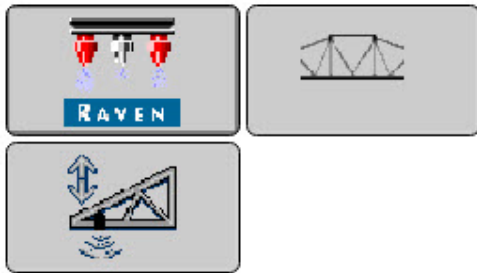
Test



New Product Config



Job Profile



Booms currently – ON

Fence Rows currently – ON

Click Master Switch to turn system OFF

Rates
Target gal/ac: 12.0

Auto
Speed 6.8 - 19.7
15.0 MPH

Pressure
Target psi: 60.0

Rate gauge: 0.0 gal/ac

Boom gauge: 61 psi

Product: 0.0 gal

Area: 0.0 ac

1000 gal tank

A diagram of a tractor boom with five booms, each with a blue triangle below it. Navigation arrows are at the bottom.

Administrator



Test



New Product Config

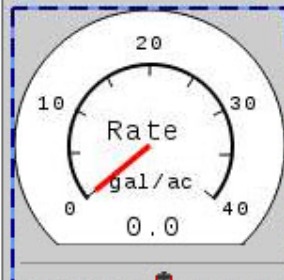


Job Profile



Pump PWM

0.0



Manual

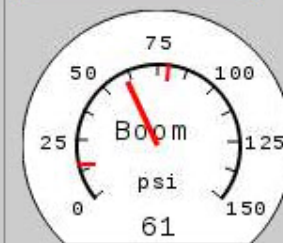
Speed 6.8 - 19.7

15.0 MPH



Nozzle PWM

0.0

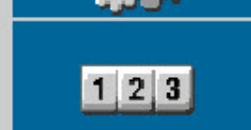


Product

0.0 gal

Area

0.0 ac



Administrator



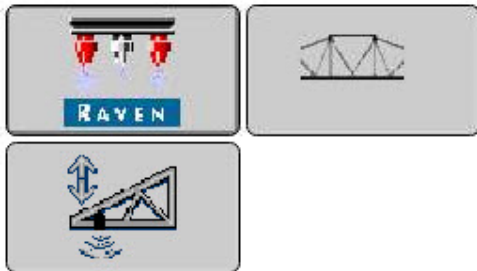
Test



New Product Config

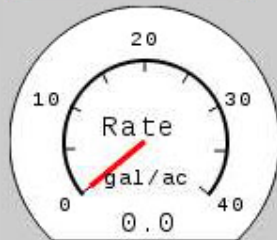


Job Profile



Pump PWM

0.0



Manual

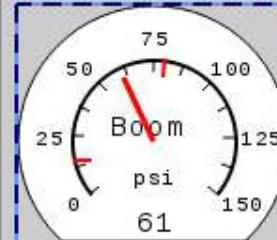
Speed 6.8 - 19.7

15.0 MPH



Nozzle PWM

0.0



Product

0.0 gal

Area

0.0 ac







Administrator



Test



New Product Config



Job Profile



Section 1

Nozzle Spacing

Tip Size Enable Nozzle Control

1 2

Product gal

Area ac

1000 gal



Administrator



Test



New Product Config



Job Profile



Section 2

Nozzle Spacing

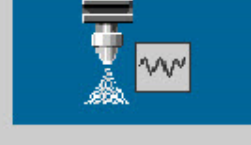
Tip Size Enable Nozzle Control

3 4

Product gal

Area ac

1000 gal



Administrator



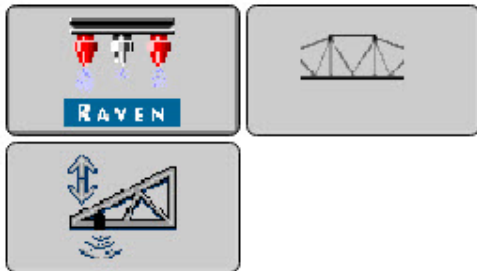
Test



New Product Config



Job Profile



Section 3

Nozzle Spacing

Tip Size Enable Nozzle Control

5

Product gal

Area ac

1000 gal



Administrator



Test



New Product Config



Job Profile



RAVEN



Section 4

Nozzle Spacing

Tip Size Enable Nozzle Control

6 7

Product gal

Area ac

1000 gal

Navigation: Left arrow with red X, Right arrow with red X



Administrator



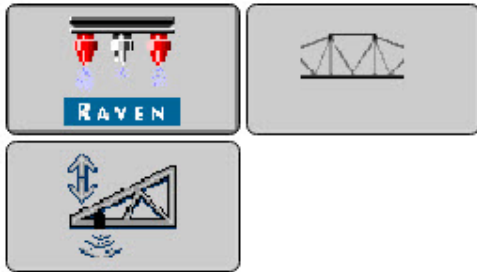
Test



New Product Config



Job Profile



Section 5

Nozzle Spacing

Tip Size Enable Nozzle Control

8 9

Product gal

Area ac

1000 gal

Navigation buttons: back with red X, forward with red X.



Administrator



Test



New Product Config



Job Profile



Section 1

Nozzle Spacing

Tip Size Enable Nozzle Control

1 2

Nozzle 1

| | |
|--------------------------|-------------------------|
| Current: 0.0 A | System Pressure: 61 psi |
| Voltage: 13.8 V | Hardware Rev: D |
| Duty Cycle: 0 % | Nozzle S/N: 438 |
| Estimated Flow: 0 oz/min | Program Ver: 1.0.38 |
| Target Flow: 0 oz/min | CAN Address: 0x36 |
| Driver Temp: 31 °C | Runtime Hours: 0 |
| Micro Temp: 29 °C | |

1 / 9 Nozzle Duty Cycle %



Administrator



Test



New Product Config



Job Profile



Section 1

Nozzle Spacing

Tip Size Enable Nozzle Control

1 2

Nozzle 2

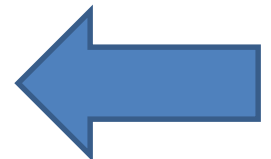
| | |
|--------------------------|-------------------------|
| Current: 0.0 A | System Pressure: 61 psi |
| Voltage: 13.9 V | Hardware Rev: D |
| Duty Cycle: 0 % | Nozzle S/N: 421 |
| Estimated Flow: 0 oz/min | Program Ver: 1.0.38 |
| Target Flow: 0 oz/min | CAN Address: 0x25 |
| Driver Temp: 32 °C | Runtime Hours: 0 |
| Micro Temp: 29 °C | |

2 / 9 Nozzle Duty Cycle %



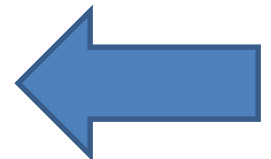
User Settings

- Display Smoothing
 - Enable the Display Smoothing feature to allow the device to smooth the rate display during field operations. When enabled, the target rate will be displayed as the actual rate as long as the actual rate is within $\pm 10\%$ of the desired target rate. If the actual rate does not reach $\pm 10\%$ of the target rate within 10 seconds, the actual rate will be displayed. This only smooths the value displayed in the object pool and not anything displayed by the task controller.



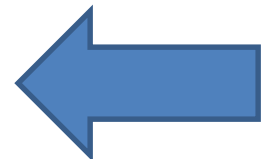
User Settings

- Zero Speed Shutoff
 - Note: The zero speed shutoff feature is only available if the nozzle control system is disabled for conventional spray mode.
 - Enable the zero speed shutoff feature to allow the Hawkeye system to automatically shut off product application if the vehicle speed is slower than 0.5 mph [0.8 km/h]. If the zero speed shutoff feature is engaged during a job, a zero speed alert will be displayed for the operator.
 - Note: The zero speed shutoff feature only affects products set to automatic control. Products controlled manually will continue to be applied even if the zero speed shutoff feature is engaged. To restart product application after the zero speed shutoff feature has been engaged, cycle the master switch 'Off' and then back 'On.' The zero speed shutoff feature will reactivate if the vehicle does not achieve a speed greater than 0.5 mph [0.8 km/h] and maintain that speed for more than 10 seconds.



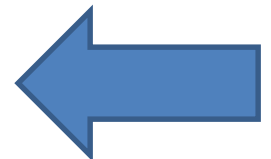
User Settings

- Section Control
 - Allows Hawkeye to automatically control sections in reference to coverage maps. When enabled, section control will automatically turn off an active section as it enters an area where product has been previously applied. As the section leaves the previously applied area, the section control feature turns the section back on.
 - Note: A task controller or VT capable of automatic section control is required to allow the Hawkeye system to control sections automatically. Refer to the manufacturer operation guides and materials for information on utilizing this feature. • If the VT is capable of automatic section control and the section control feature is available in the Raven ISOBUS product control screen, select the feature to place a check mark in the corresponding box to enable the feature. • If the VT is capable of automatic section control, but the section control feature is not available in the Raven Hawkeye Tools Menu, the feature must be enabled from a different VT menu. Review the VT operation manual for assistance with the section control or task controller options. • If the VT is not capable of automatic section control, Raven Hawkeye will not automatically control sections regardless of the state of the section control feature on this screen. It is recommended to de-select or disable this feature when operating the Hawkeye system.



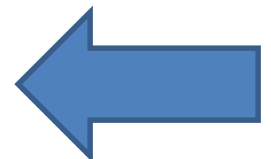
User Settings

- Prescription (Rx) Control
 - Enable the Rx control option to allow the task controller to send prescription rate information to the Hawkeye system for automatic rate control according to a prescription map available on the VT. Refer to the VT operation manual for assistance with loading and selecting prescription rate information for field applications.



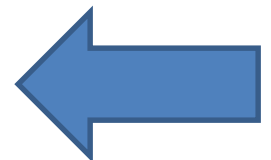
User Settings

- Enable Turn Compensation
 - The turn compensation feature allows Hawkeye to automatically adjust the application rate across the implement width when applying through curves and corners in the field area. Select the Turn Compensation option to allow Hawkeye to automatically adjust the application rate during field applications.
 - Turn Compensation Calibration. If the product controller II ECU mounting position is modified or adjusted, the Hawkeye turn compensation feature should be recalibrated to ensure the turn compensation feature correctly adjusts nozzle rates during applications and ensure that the ECU orientation is configured properly.



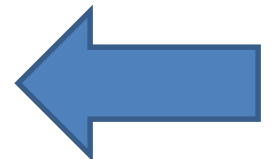
User Settings

- **Override Seconds**
 - Use the override seconds value to set the time which the system should override automatic section commands and keep sections on. This feature may be used when starting application with the equipment at a complete stop, or to manually override all sections on for the set number of seconds.
 - Note: The default on override value is five seconds. The override will only activate sections set for automatic section control. Any sections configured for manual control, or set on or off manually, will not be affected by the AccuBoom Override feature.



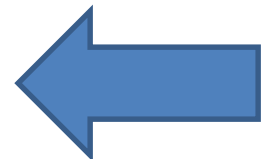
User Settings

- PWM High Side Drive
 - Details coming soon.



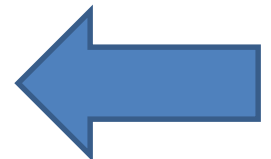
Tank Fill Settings

- Refill Button
 - Select to reset the current tank volume to the configured tank capacity. Use this button to quickly reset the tank volume when refilling tanks during field operation.



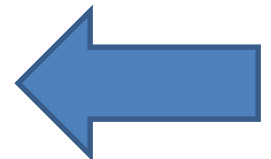
Tank Fill Settings

- Tank Capacity
 - The tank capacity should be entered as the normal volume of product used to fill the tank. Using the tank capacity and current tank volume values, the tank indicator on the home screen will display the level of product remaining for the current application.



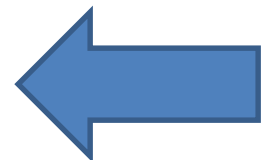
Tank Fill Settings

- Current Tank Volume
 - Enter the product level to manually set or adjust the tank level during field applications. This feature may be used to manually set the tank level at a level different from the capacity value, adjust the product volume if products are added through the top of the tank, or to correct the tank volume for a known volume of product added to the tank.



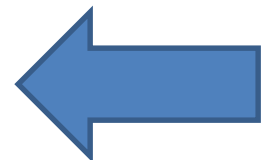
Tank Fill Settings

- Low Tank Threshold
 - Note: To provide low tank alarms during field applications, ensure the Low Tank option is enabled on the Alarms Setup screen.
 - The low tank threshold value may be adjusted on the Tank Fill Config prompt if desired.



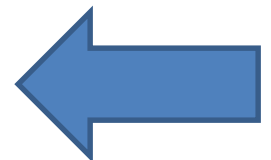
Tank Fill Settings

- Fill Meter Calibration Value and Units
 - The fill meter calibration, or meter cal, value and units may be found on the tag attached to the flow meter installed in the tank fill system. Be sure to select the appropriate units for the flow meter calibration to ensure proper calibration of the tank fill system.
 - Note: Raven flow meters use a meter cal in pulses per 10 gallons [37.9 L]. Copy the information from the tag for future reference as tags may fade or be lost during operation



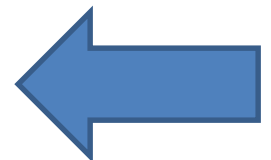
Alarm Settings

- Low Tank Threshold
 - Enable the Low Tank feature and enter a non-zero value to set the volume threshold at which to alert the operator to a low tank condition during field applications. This feature requires the operator to enter a product volume when refilling tanks to allow the Hawkeye system to calculate the remaining tank level during the operation.



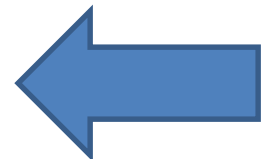
Alarm Settings

- Off Rate Percent
 - The off rate percent sets the allowable difference between the target and actual product application rates. Enable the off rate feature and enter a non-zero value to set the allowable difference between target and actual rates during field operations. If the difference between the actual and target rate exceeds the set percentage for more than five seconds, the system will display an off rate alarm.



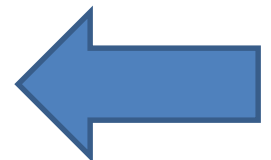
Alarm Settings

- Off Pressure Percent
 - The off pressure percent sets the allowable difference between the target and actual pressures. Enable the off pressure feature and enter a non-zero value to set the allowable difference between target and actual pressures during field operations. If the difference between the actual and target pressure exceeds the set percentage for more than five seconds, the system will display an off pressure alarm.



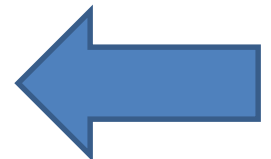
Preset Settings

- Rate 1 and 2 Presets
 - Enter non-zero rate presets to allow the equipment operator to quickly switch between the set rates during field operations in the automatic product control mode.



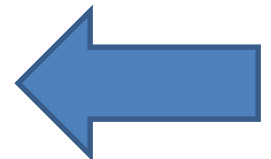
Preset Settings

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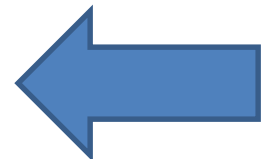
Preset Settings

- Rate and Pressure +/- Bump Values
 - Sets the increment by which either the target rate or target pressure will increase or decrease when using the bump softkeys during an active application.



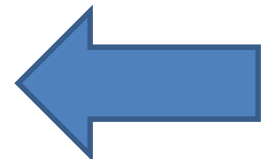
Preset Settings

- Quick Key Setup Options
 - Select the following quick key options to set the softkey options available during operation:
 - Rate. Toggle the quick key option to “Rate” to display the Rate preset softkeys when viewing the home screen.
 - \pm (Bump). Enable the \pm bump softkeys when viewing the home screen.
 - Pressure. Toggle the quick key option to “Pressure” to display the Pressure preset softkeys when viewing the home screen.



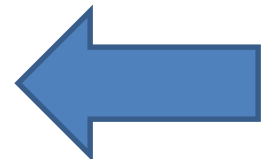
Preset Settings

- Use Gauges to toggle Rate/Pressure Softkeys
 - Enable this option to use the rate or pressure gauges displayed on the home screen to toggle between the \pm bump and preset softkeys when viewing the home screen. This option allows the operator to quickly toggle between softkey functions without leaving the main operation display. Note: The default selection for this feature is disabled.



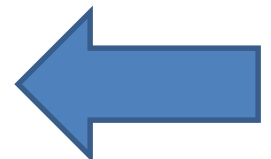
Product Control Settings

- Valve Type
 - A PWM type control valve is required for proper operation of the Hawkeye nozzle control system. When operating with the Hawkeye system, the valve type setting cannot be modified.



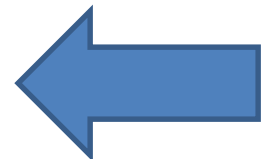
Product Control Settings

- Min PWM Percent
 - Enter a minimum PWM percent to set the minimum desired output (zero point or shutoff point) for a pulse width modulated (PWM) hydraulic control valve. With the machine master switch in the on position, decrease this value until the minimum desired pressure is reached in a liquid system.



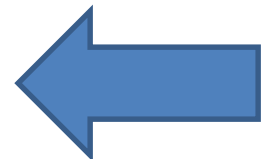
Product Control Settings

- PWM Frequency
 - Used to set the coil frequency of the PWM valve (default is 122 Hz). Refer to the PWM control valve manufacturer specifications for recommended PWM frequency.



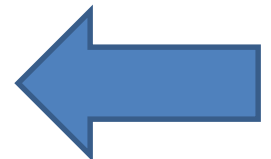
Product Control Settings

- Max PWM Percent
 - Enter a maximum PWM percent to set the maximum desired output for a pulse width modulated (PWM) hydraulic control valve. This setting limits how far the PWM valve will open. The maximum pressure the Hawkeye nozzles can withstand is 80 PSI. With the machine master switch in the on position, increase this value until the maximum desired pressure is reached in a liquid system.



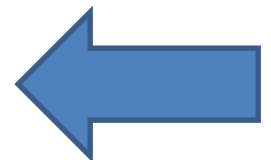
Product Control Settings

- Response Rate
 - Set to calibrate how aggressively the system will adjust to achieve or maintain the target rate. Higher response rates will cause the system to react quickly while lower values will slow the system response. The default product control response rate is 90. If the system overshoots or oscillates around the desired target rate, decrease the response rate to help stabilize the system.



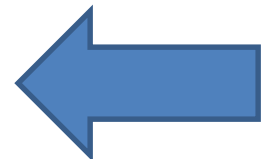
Product Control Settings

- Deadband
 - Sets the allowable tolerance between the target rate and the actual application rate. Enter a value between 1 and 9. A value of 1 equals a $\pm 1\%$ tolerance between the target and actual application rates where a value of 9 equals a $\pm 9\%$ tolerance.



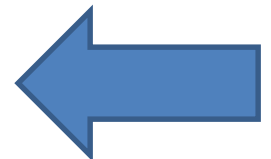
Product Control Settings

- Meter Calibration Value and Units
 - Enter the calibration value for the flow meter used to monitor the Hawkeye system product flow. This value is generally available on the flow meter. Be sure to select the units used by the flow meter to monitor flow. Note: Raven flow meters use a meter cal in pulses per 10 gallons [37.9 L].



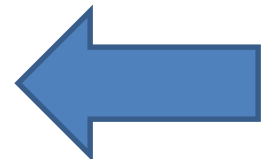
Pressure Settings

- Response Rate
 - Set to calibrate how aggressively the system will adjust to achieve or maintain the target pressure. Higher response rates will cause the system to react quickly while lower values will slow the system response. The default product control response rate is 35. If the system overshoots or oscillates around the desired target pressure, decrease the response rate to help stabilize the system.



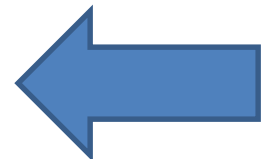
Pressure Settings

- Sensitivity
 - Enter the desired pressure transducer sensitivity to changes in the flow system. If this value is too high, the operator may observe unstable pressure displays during operation.



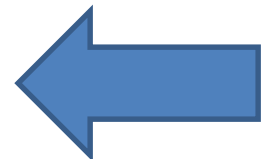
Pressure Settings

- Minimum Pressure
 - The minimum pressure feature requires a pressure transducer to monitor product pressure during application and will allow the operator to set the lowest tolerable pressure during field operations. If the application system reaches the minimum pressure, the VT will display an alert and application system will maintain the flow rate to keep the monitored pressure consistent and to maintain the spray pattern. The minimum pressure feature may result in higher than desired application rates. If the minimum pressure feature will be used during field operations, be sure to enter a value that will not interfere with normal target rates during field application.



Pressure Settings

- Maximum Pressure
 - Enter the maximum desired pressure at the pressure transducer location. If the monitored pressure goes above the set value, the VT will display an alert for the equipment operator.
 - Note: The product control valve will stop opening when the maximum pressure setting is reached.
 - The maximum pressure feature requires a pressure transducer to monitor product pressure during application and will allow the operator to set the highest allowable pressure during field operations. If the application system reaches the maximum pressure, the VT will display an alert and application system will maintain the flow rate to keep the boom pressure consistent. The maximum pressure feature will result in lower than desired application rates. If the maximum pressure feature will be used during field operations, be sure to enter a value that will not interfere with normal target rates during field application.



Pressure Settings

- Boom Pressure Calibration
 - This option will only appear if a transducer is detected. An optional sparge transducer may be installed to monitor the sparge or agitation system.

