



Spreader V2 Variable Rate

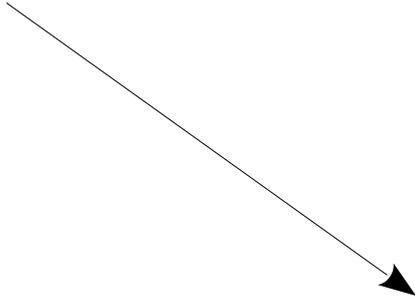


PRECISION
AGRONOMICS AUSTRALIA

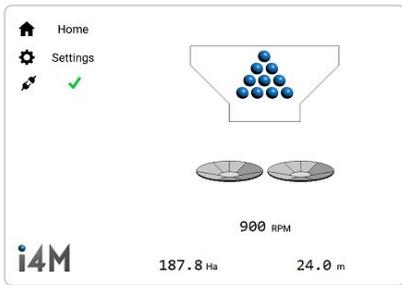
www.i4m.tech

admin@precisionag.com.au

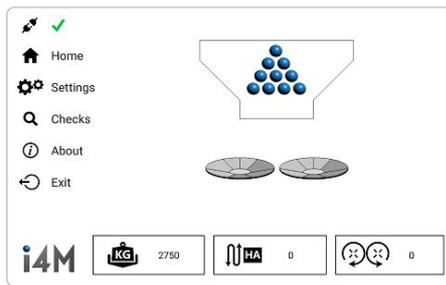
**Operators Guide i4M Controller Variable Rate
Marshall Multispread Hydraulic Drive
Tablet Type Android
Version 213**



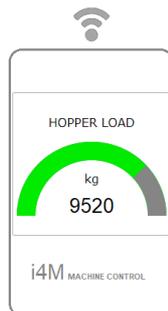
Tacho
Spinner RPM
Hectare Counter



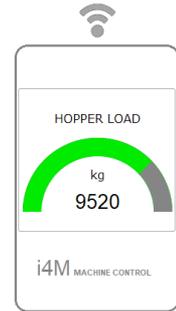
Monitor
Loadcells
Spinner RPM
Hectare Counter



Control
Variable Rate and Mapping
Coverage and Auto Shutoff
Loadcells and Counters



Show Hopper Kg on Phone



Show Hopper Kg on Phone

Foreward

This is a basic guide for the i4M Control System only. Important Safety and Operating information is contained in the Spreader Operators Manual, and must be read prior to operating this equipment. This guide provides supplementary information only.

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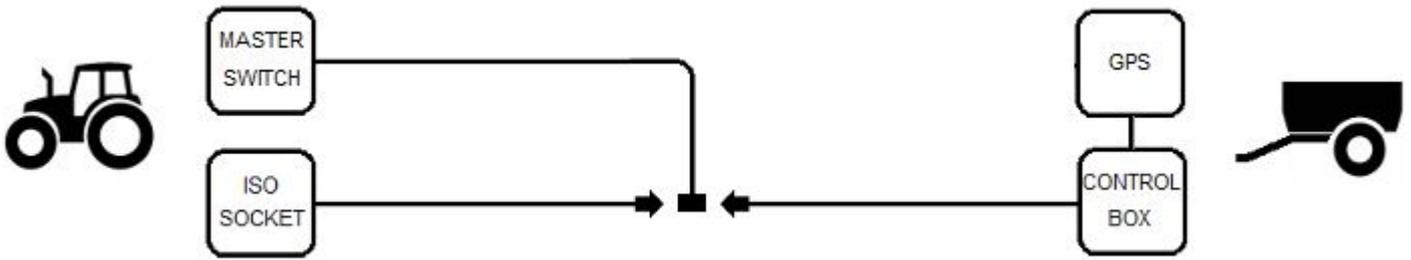


**SAVE YOUR MONEY
LEAVE THE HOPPER EMPTY UNTIL SETUP IS DONE**



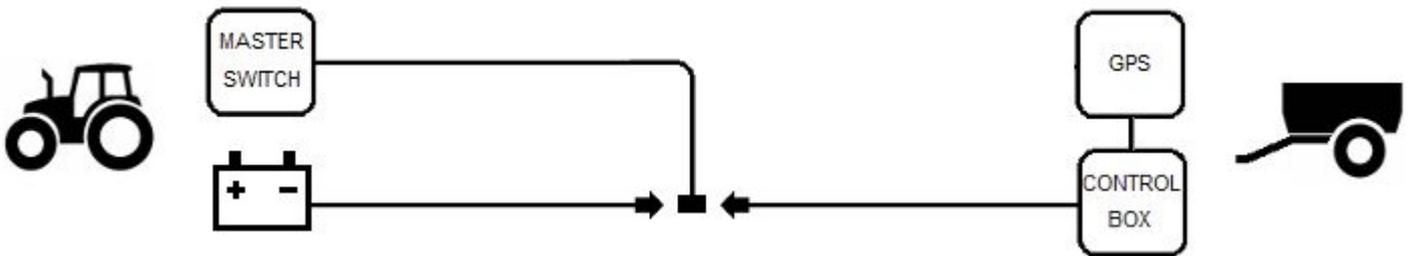
**WANT THE FASTEST SETUP?
FOLLOW THIS GUIDE FROM START TO FINISH**

Installation – Tractors with ISO Socket



- Install the master switch in the tractor cab
- Connect the harness to the ISO socket
- The ISO socket is used for power only, it is not connected to the tractor CANBUS
- Connect the GPS box power cable to the control box harness
- The GPS automatically communicates to the control box using WIFI

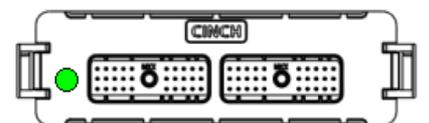
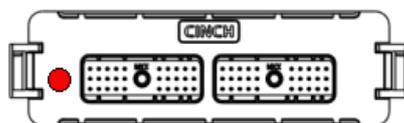
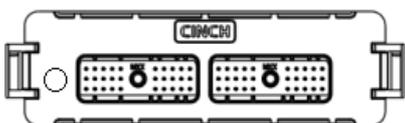
Installation – Tractors without ISO Socket



- Install the master switch in the tractor cab
- Connect the power harness to 12volts and ground
- If possible use a switched power source (power is off when the tractor key is off)
- Connect to power located after the battery isolator (prevent the tractor battery going flat)
- Power source should be capable of supplying 20amps
- If connecting direct to the battery, unplug the spreader cable when not using the spreader
- Connect the GPS box power cable to the control box harness
- The GPS automatically communicates to the control box using WIFI

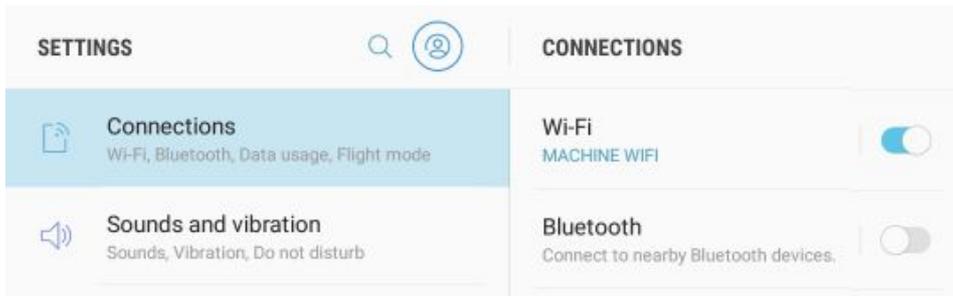
Power On

- The i4M controller and GPS unit take 5 seconds to boot up
- There is a diagnostic LED on the boxes
- Control Box LED: Red is booting up, Green is on solid when ready to use



Android App

- Install the i4M Spreader V2 app on your tablet
- After the app is installed, connect the tablet to the controller
- Open the wifi settings and connect to MACHINE WIFI



Machine Setup

- Open the i4M Spreader app

Work Screen

Maps

Machine TAP HERE

About

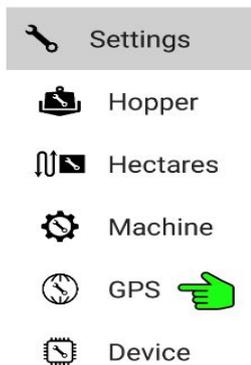
Exit

Home

Product

Settings TAP HERE

Checks



GPS Settings

Change i4M GPS Receiver is installed
Distance from GPS to coverage area in metres
6.0 Adjust to prevent coverage gaps

Check these settings

i4M GPS is Optional Equipment, it may not be installed

i4M GPS Receiver is required for Coverage and Auto Shutoff

Make this number smaller to reduce coverage gaps

Increase this number to prevent coverage overlaps

Machine Setup

- Settings
- Hopper
- Hectares
- Machine
- GPS
- Device

Machine Settings

0.231	Diameter of the belt drive roller in metres
0.730	Width of the door opening in metres
560	Belt sensor, pulses for one revolution of the drive roller
0.605	Distance cal, adjust so this matches your tractor speed 0.0 km/h
<input type="button" value="Change"/>	Door actuator is installed

Check these settings

800 Series = 0.181
900 Series = 0.231
916T = 0.281

All Models = 0.730

Factory hydraulics = 560
Ground drive conversion = 784

For machines without GPS
Drive the machine and adjust
this until the km/h matches
your tractor speed

Change if required

Auto Door Control - Door Actuator

- Electrical actuator that automatically sets the height of the door
- Optional equipment, it may not be installed
- The actuator contains a position sensor that requires calibration

- Checks
- Loadcells
- Belt
- Door

Item	Value	Unit	Description
Open	?	Status	Actuator retract command
Close	?	Status	Actuator extend command
Target Height	?	mm	Desired door height or opening
Actual Height	?	mm	Actual door height or opening
Door Sensor	?	mV	Door position sensor voltage reading

Door Control

Set door to the target height for spreading

Reset Actuator

- 1 Check the door is not jammed or blocked
- 2 Tractor running
- 3 Tap OPEN, wait for it to stop
- 4 Tap CLOSE, wait for it to stop
- 5 Tap SET, door should move to the correct spreading height

Calibrate Door Sensor

This will improve the door accuracy

Follow these steps
Reset Actuator will clear faults
with the sensor and motor

Calibrate the sensor if you
have replaced the Actuator or
the i4M Controller

Products

Product

Settings

Checks

Current Product

Previous Next

Urea Name

24.00 Spread width (m)

100 Door height (mm)

811.70 Calibration factor

There are 20 products, tap Previous / Next to select one
Tap any box to edit

Tap to choose a product
There's 20 stored products

Edit the name if you want
Enter the width
Enter your desired door height

Changing the Spread Width

- After the product is calibrated, you can change the Spread Width anytime, you don't need to calibrate again

Changing the Door Height

- After the product is calibrated, you can change the Door Height anytime, you don't need to calibrate again

Hopper Kilograms – Machines with Loadcells

- Electrical weigh scales to show the amount of product in the hopper
- Optional equipment, they may not be installed
- Loadcells do not work until they are calibrated

Settings

Hopper

Hectares

Machine

GPS

Device

Loadcell Zero / Tare

Zero This will zero the readout, it won't change the calibration

Advanced Loadcell Settings

Advanced Tap to show / hide Advanced Settings and Calibration

Calibrate Loadcells

Empty Tap this when the hopper is empty

kg When there is product in the hopper, enter the kilograms

Loadcell Settings

Input channel 0

Input channel 1

Input channel 2

Input channel 3

Turn off unused channels

Calibrate the loadcells
Follow both these steps

Machines with 3 loadcells – turn on the first 3 channels

Machines with 4 loadcells – turn on all 4 channels

Display Hopper Kilograms on your Phone

- You can see the hopper kilograms while you are filling up the spreader
- Connect your phone to MACHINE WIFI
- Open a web browser
- Enter this in the address bar: 192.168.50.50

Operating the Spreader

- When first using the spreader, do not fill the hopper (save your money, test it empty)
- Go to the app Main Menu

 Work Screen

 Maps 

 Machine

 About

 Exit

Would you like to use a Map or Preset values?

 Maps

 Preset 

- Enter some rates

 Home

 Coverage

Enter kg/ha to use on the Work Screen

500

1000

2000

Enter a Rate (in kg/ha)

You can enter more rates if you want to change them on the run

- Open the work screen

 Home 

 Coverage

 Work Screen 

 Maps

 Machine

 About

 Exit

Operating the Spreader

The screenshot shows the main control interface for the spreader. On the left, there are navigation icons: a home icon, a 'KG' icon for Hopper Kilograms (0), a 'HA' icon for Hectares (0), a 'GPS' icon for Tablet status, a green checkmark for Wifi Connected to Controller, a red warning triangle for Alerts, and a gear icon for Map and coverage settings. The right side features a 'Spreading' toggle (currently off, indicated by a red 'X'), a '500' value field with a 'SET' button, a '0' value field with a 'KG' icon, another '0' value field with a 'KG' icon, a 'Spinner Speed RPM' field, an 'Unblock' button, a 'Clear Door Blockage' button, and a 'View Controls' button. Callout boxes provide instructions for each of these elements.

Home

Hopper Kilograms (0)

Hectares (0)

Tablet

GPS in use
Coverage is disabled when using Tablet GPS

Wifi Connected to Controller

Tap to see Alerts

Map and coverage settings

Tap to turn Spreading ON/OFF
Or press the Master Switch

WARNING: The door will move!
WARNING: The belt will move!

Spreading **X**

500 **SET**

Target Rate kg/ha
Tap to change rates, if you entered more than one Preset Rate

0 **KG**

Actual Live Rate kg/ha

0 **KG**

Spinner Speed RPM

Unblock **!**

Clear Door Blockage
Hold down to raise door
Release to set door again

View Controls

Tractor **Map** **Zoom In** **Zoom Out**

- The controller is ready to use
- If the hydraulics are already setup, you can start spreading
- If hydraulics need to be setup, see the Hydraulics Section

Calibrating Products

 Work Screen

 Maps

 Machine 

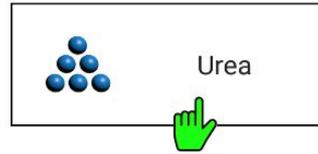
 About

 Exit

 Product

 Settings

 Checks



Current Product

Previous

Next

Urea Name

24.00 Spread width (m)

100 Door height (mm)

811.70 Calibration factor

There are 20 products, tap Previous / Next to select one

Tap any box to edit

Increasing the cal factor will put out less product

Use default cal for existing products
Enter bulk density for new products

You can manually adjust this to fine
tune the output

Calibration Sample

New

Start a new sample

512.4 Amount dispensed kg

1 Start a new sample

2 Go spreading, or manually run out some product

3 Come back to this page, enter the actual kg that went out

Follow these steps to calibrate
More kilograms will be more accurate

Useful Tip:
If you have loadcells, read the kg
before and after, to get the amount
dispensed

Hydraulics

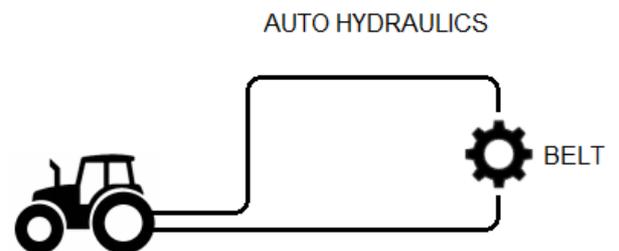
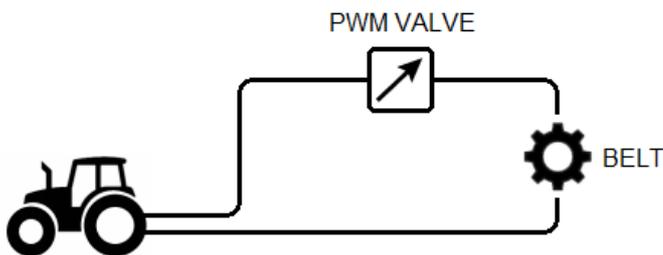
- **IMPORTANT:** Low engine RPM will cause Spinner and Belt issues
- Tractor hydraulic pumps are coupled to the engine (low engine revs = low hydraulic flow)
- Tractor hydraulic specs are taken at high engine RPM (2000RPM or more)
- Auto transmissions that throttle back the engine can cause low flow issues
- Disable engine throttling, set to 1600RPM or more, as required

Setup Hydraulic Spinners

- Spinners are operated manually
- Connect hoses to tractor remote number 1 (or priority remote)
- Connect to standard remotes, Do not use high flow return, Incorrect return will damage the tractor
- If the tractor has hydraulic flow controls
 - Set flow to 50% (adjust this later to set the spinner speed)
 - Set time to continuous
 - On the spreader, set the manual flow control to full open
- If tractor does not have hydraulic flow controls
 - Use the manual flow control valve on the spreader to set your spinner speed

Setup Hydraulic Belt

- Two types of Hydraulic Belt Drives
- PWM Valve has a solenoid valve on the Spreader
- AUTO Hydraulics controls the tractor hydraulic flow (Deere CNH only)



PWM Valve Setup

- Connect hoses to any tractor remote
- Connect to standard remotes, Do not use high flow return, Incorrect return will damage the tractor
- Set the tractor hydraulic flow to 50% (**IMPORTANT:** Too much oil will starve the Spinners)
- Set time to continuous
- Engage the remote before you start spreading

Quick Manual Test

- Engage the remote
- On the tablet go to MACHINE > CHECKS > BELT and send a Manual Command of 50
- Tap Cancel when done

AUTO Hydraulics Setup – DEERE Tractors

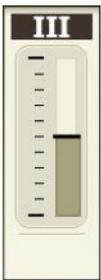
- Connect the AUTO Hydraulics cable (WARNING: key and battery isolator must be off)
- Connect the hoses to tractor remote number 3
- Set the hydraulic flow to 70%
- Push remote 3 forward slowly, belt must turn correctly (swap hoses if it turns backwards)



AUTO
CONNECTOR

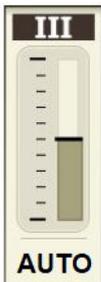
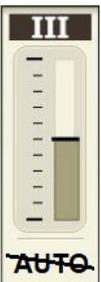


- Check the tractor hydraulic display shows AUTO below remote number 3



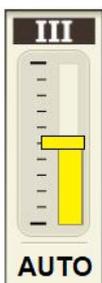
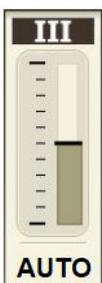
If AUTO is missing

- Turn tractor off, kill battery isolator
- Unplug the auto hydraulics connector at the front of the spreader
- Start the tractor
- Move remote lever 3 forward for 5 seconds
- Turn tractor off, kill battery isolator
- Plug in the auto hydraulics connector
- Start the tractor, check the display shows AUTO



If AUTO is crossed out

- Quickly click the lever forward and release it
- The line should disappear
- Don't click too far forward, that will engage float



If AUTO is showing

- The hydraulics will run automatically when you start spreading
- Display will turn yellow when oil is flowing
- The tractor must be moving (this is a tractor safety feature, cannot be changed)

Quick Manual Test

- Drive the tractor slowly
- On the iPad go to MACHINE > CHECKS > BELT and send a Manual Command of 50
- Tap Cancel when done

AUTO Hydraulics Setup – CNH Tractors

- Connect the AUTO Hydraulics cable (WARNING: key and battery isolator must be off)
- Connect the hoses to tractor remote number 3
- Set the hydraulic flow to 70%
- Push remote 3 forward slowly, belt must turn correctly (swap hoses if it turns backwards)



- Check the tractor cornerpost display shows AUTO 1 3
- If not, you need to activate AUTO mode
- Steps may be different for some tractors, please contact your tractor dealer

Key off

Press the PROG button, do not release it

Key on

Wait 5 seconds

Release PROG button

Cornerpost shows CONFIG MENU

Select AUX/HITCH/PTO option from the list

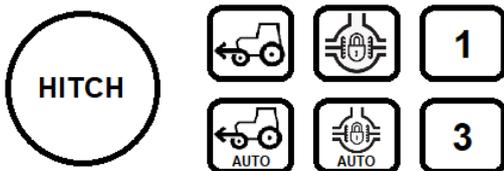
Select EHR from the list (Electronic Hyd Controller)

Select AUX SETUP from the list

Set the SCRPR option to: 2 LASER

Select EXIT

- Press button 3 to put the remote in auto mode



Quick Manual Test

- Drive the tractor slowly
- On the tablet go to MACHINE > CHECKS > BELT and send a Manual Command of 50
- Tap Cancel when done

Fine Tune Hydraulic Belt

- All tractors require fine tuning
- Changing products may also require fine tuning
- On the tablet go to MACHINE > SETUP

Settings

Hydraulic Drive

Hopper 80 Valve jump start 1 to 100

Hectares 30 Valve speed 1 to 100

Machine 20 Valve damping 1 to 100

Device 20 Green zone 1 to 100

Valve Jump Start - Increase this to make the belt start up quicker
 Valve Speed - How fast the valve reacts to rate/speed changes
 Valve Damping - Increase this to dampen the valve when it's close the target rate
 Green Zone - The area close to the target where the valve stops adjusting

Adjust these settings
See helpful tips below

Helpful Tips

- Valve Jump Start
 - Used when you tap Spreading ON
 - Increase this if it takes too long for the belt to start turning
 - Decrease this if it jumps to a high rate, then slows down to the correct rate
- Valve Speed
 - The valve adjusts to match your speed and rate
 - A large number will make large adjustments to the valve, too big will make the rate jump up and down
 - A small number will make small adjustments to the valve, too small will take a long time to reach the rate
 - Increase this if it is very slow to reach the desired rate
 - Decrease this if the rate is hunting up and down, also increase the Valve Damping
- Valve Damping
 - When it's close to the desired rate, the adjustments are dampened (they are very gentle)
 - A large number will dampen more, if it's too large the valve won't adjust
 - Increase this if the rate is hunting up and down, also decrease the Valve Speed
- Green Zone
 - When the rate is in the green zone, the valve will stop adjusting
 - If the number is too large, it will stop before it reaches the target
 - If it's too small, it will never stop adjusting
 - Increase this if the rate adjust ok but overshoots the desired rate
 - Decrease this if the rate stops adjusting before it reaches the desired rate

Using Multiple Machines

- When using multiple machines nearby, set different network names for each machine
- If an external GPS is installed, confirm it is connected, go to CHECKS > GPS
- Then follow steps below

Settings

Device Settings

Factory Setup Load the setup that was installed at the factory

Reset All Reset all settings, products and calibrations

WI-FI Network

MACHINE WIFI 1 Current WI-FI network name

MACHINE WIFI 1 Select new WI-FI network name

Save

Each machine must use a different network
 Select a name from the dropdown list then tap SAVE, device will reboot
 If GPS installed, check it is connected before changing networks

Change network name and save

Prescription Maps

- Go to the app Main Menu
- Go to Maps page, and login with your i4M username and password

 Work Screen

 Maps 

 Machine

 About

 Exit

 Maps 

 Preset

 Home

 User 

 Download

- Download your maps
- Select the map you want to use

 Home Select a Map below

 User World Sample Map

 Download Burns Ltd Harvey Block Lime Spreading

Burns Ltd Nuclear Lime Spreading

Springfield Inc Tavern Urea 

- Go to Work Screen, your map will be loaded

 Home Spreading 

 0 0 

 0 0 

 Tablet 0 

