MTC200 Controller

Operator's Manual

P003741

Effective 6-12-23 through current

Montag Manufacturing, Inc.
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Read manual before operating Montag Equipment

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Introduction

Thank you for purchasing the Montag MTC200 Controller kit. The MTC200 is a simple controller that will give years of reliable and consistent results.

MTC 200 is a simple dry rate controller designed for ease of use and quick installation. MTC200 is designed by Montag Manufacturing to control the 2108, 2208, or Gen 1 Montag Dry Fertilizer Meters used for dry granular fertilizer and/or cover crop application.

MTC200 is a non-ISO controller that will work with any tractor, any color. No need to buy expensive harnesses to make it work. No GPS is required, as it comes complete with speed sensor which should be mounted on the implement. No need for task control or monitor compatibility concerns. MTC200 controls 1 or 2 products at flat rate, with manual section control up to 2 sections. Scales show continuous product weight for operator monitoring. MTC200 requires 12V power source supplied in the cab. Simply plug into cab power source in your tractor cab. Updates to software are done wirelessly through a mobile device with use of a G11 Bluetooth update dongle.

Reading of this manual will ensure proper understanding of the function and use of the MTC200 controller. All users should read and thoroughly understand this manual before operation of this controller and the machine it is controlling. Failure to follow correct set-up can not only lead to misapplied product, but also equipment damage or physical injury or death to operator or bystanders. Follow all safety labels on the machine to help you safely operate your equipment. Keep this manual with machine for frequent reference for operation. Montag Manufacturing reserves the right to make changes and updates to manual at anytime without notice. Please refer to montagmfg.com at any time to find the latest version available.

Operator should read and understand operator’s manual for Montag metering equipment being controlled.

Safety

This Owner's Manual covers the MTC200 controller that controls the particulate metering system produced by Montag Manufacturing. Before operating or servicing the fertilizer applicator, you must read, understand and follow the instructions and safety warnings in this manual, **as well as the operator's manual for your particular machine**. Your fertilizer applicator may not be equipped with some of the optional equipment shown in the illustrations in this manual. Montag Manufacturing urges the consumer to make safety the highest priority when using this machine. Do not attempt to operate this equipment under the influence of drugs or alcohol. Do not use the equipment if alertness or coordination is impaired.

This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible adult familiar with farm machinery and trained in this equipment's operations. Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works.

Operation - Be sure to follow these instructions during operation:

- Fully read and understand the Operating Manual for the machinery you are going to operate with this controller.
- Ensure that all automatic mechanisms are deactivated prior to leaving the vehicle controls.
- Keep children away from the implement and from the ECU.

Maintenance - Keep the system in a functional condition:

- Do not make unauthorized modifications to the product.
- The display and ECU are not field repairable and has no serviceable parts. Do not open product casing. Product should only be repaired by the manufacturer.
- Never remove safety mechanisms or stickers from the product.
- Always disconnect the ECU from the tractor before charging the tractor battery.

Safety

The safety information in this manual is denoted by the safety alert symbol:
This symbol means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**

The level of risk is indicated by the following signal words:

DANGER **Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.**

WARNING **Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.**

CAUTION **Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.**

NOTICE **Indicates a situation that could result in damage to the machine or other property.**

Most Components of the MTC200 are from external sources and are covered by a 1-year warranty. Item 7 below applies to other manufactured components.

MONTAG MANUFACTURING, INC.
LIMITED WARRANTY FOR NEW MONTAG EQUIPMENT

What this Limited Warranty Covers - Montag Manufacturing, Inc. ("Montag") warrants equipment manufactured by it to be free from defects in material and workmanship for the warranty period.

What this Limited Warranty Does Not Cover - Montag is not responsible for, and this limited warranty does not cover: (1) used parts, (2) any part that has been altered or modified in ways not approved by Montag, (3) depreciation or damage caused by normal wear and tear, (4) unauthorized repair or adjustments, (5) reimbursement for work completed by an unauthorized service center, (6) other equipment, crops, or property with which Montag equipment comes into contact, (7) components manufactured and warranted by other manufacturers such as tires and hydraulic equipment, (8) loss of time, loss of use, towing charges, or other incidental or consequential damages, or (9) to equipment which has been damaged as the result of, misuse, abuse, lack of proper protection during storage, accident, failure to follow the operating instructions and perform routine maintenance as provided in the operator's manual, fire, flood, "Acts of God" or other contingencies beyond Montag's control.

Warranty Term and Coverage - This limited warranty provides coverage for three years from the date the equipment is delivered to the first purchaser and extends to the original purchaser and any subsequent owner.

What Montag Will Do – (1) Montag will provide telephone consultation with a trained representative regardless of the location of the equipment. (2) For equipment located in the general geographic area served by a Montag dealer, Montag may, if Montag deems it necessary or expedient, send a trained technician to work on the equipment at the owner's place of business. (3) Equipment that requires service or repair at the Montag manufacturing facility or at an authorized Montag dealership must be transported or shipped to and from the Montag manufacturing facility or Montag authorized dealership at the owner's sole expense.

To Get Warranty Service – To get warranty service the owner must (1) report the defect to an authorized dealer and request repair within the warranty term, (2) present evidence of the warranty start date, and (3) make the product available to the dealer within a reasonable time. The owner can also contact Montag by U.S. Mail at 3816 461st Ave. Emmetsburg, Iowa 50536; by telephone at (712)-852-4572; by facsimile at (712)-852-4574; or by e-mail at support@montagmfg.com

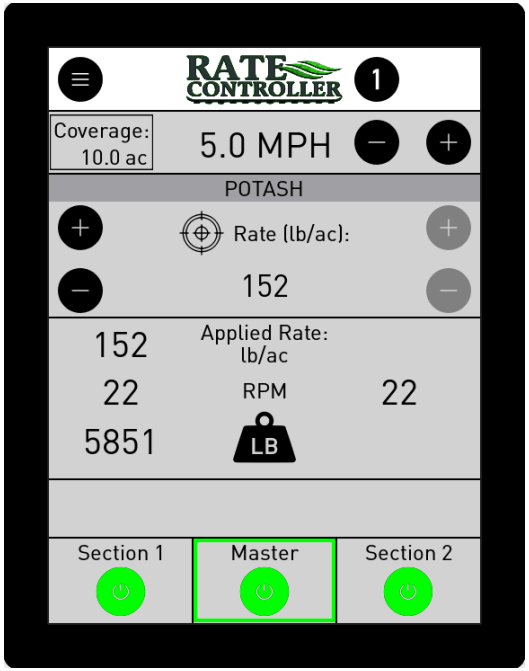
Limitation of Implied Warranties and Other Remedies – To the extent permitted by law, Montag makes no warranties, representations or promises as to the quality, performance or freedom from defect of its equipment covered by this limited warranty. IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE TO THE EXTENT APPLICABLE, SHALL BE LIMITED IN DURATION TO THE APPLICABLE PERIOD OF WARRANTY SET FORTH IN THIS LIMITED WARRANTY. THE OWNER'S ONLY REMEDIES IN CONNECTION WITH THE BREACH OR PERFORMANCE OF ANY WARRANTY ARE SET FORTH IN THIS LIMITED WARRANTY. IN NO EVENT WILL MONTAG OR ANY MONTAG DEALER BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. (Note: Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages so the above limitations may not apply to you.) This warranty gives you specific legal rights, and you have also have other rights which vary from state to state.

No Dealer Warranty – The selling dealer makes no warranty of its own and the dealer has no authority to make any representation on behalf of Montag, or to modify the terms or limitations of this warranty in any way.

Product Page Examples

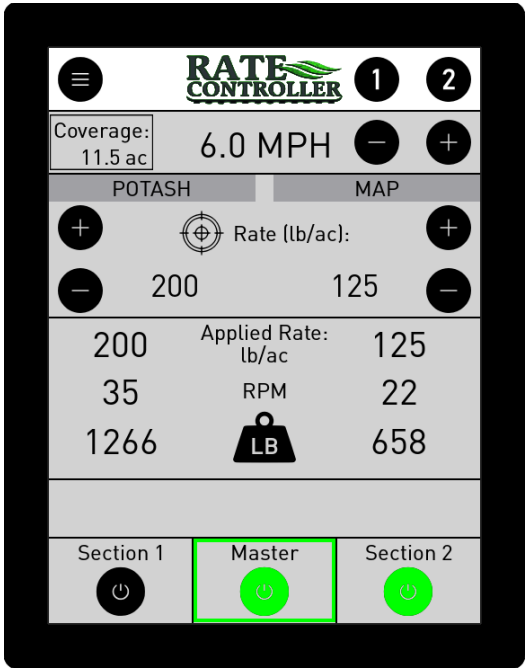
Single Product

Single Section



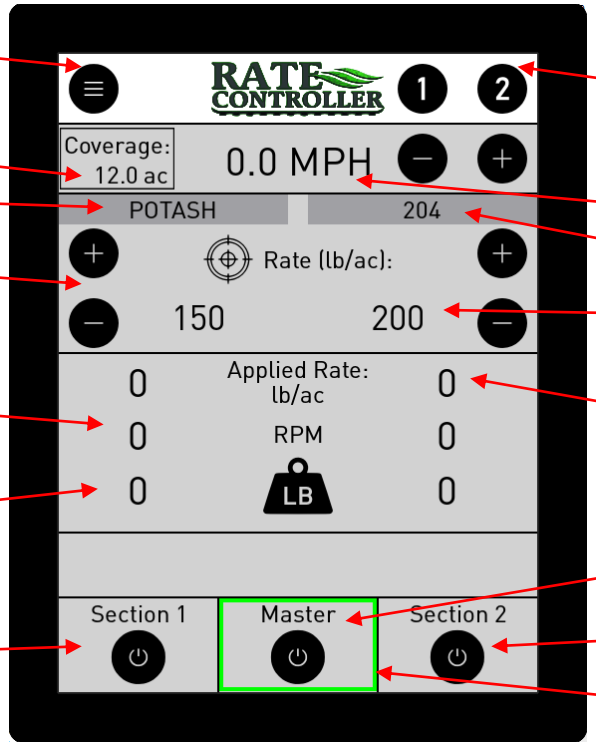
2 Section

2 Product



2 Section

Home Page Screen Layout



Menu Button

Acres Covered

Product 1 (left side)

Manual Rate Adjustment Buttons

Meter Auger RPM

Weight of Product in Bin

Manual Section1 shut off (left section)

Product Page Button

Simulated Speed Control Speed input

Product 2 (right side)

Target Rate

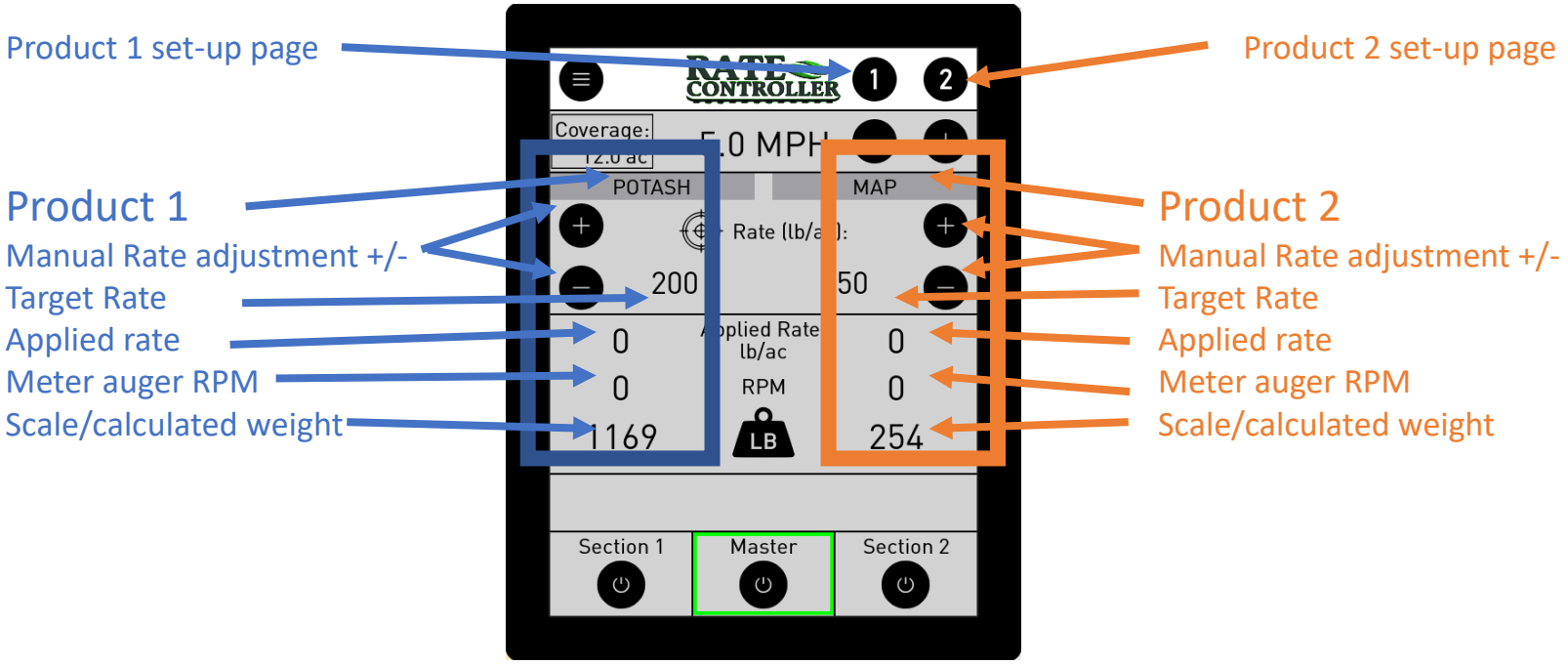
Actual Rate Applied

Master Button/Indicator

Manual Section 2 shut off (right section)

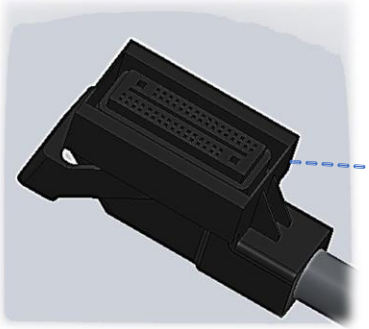
Work Switch Indicator

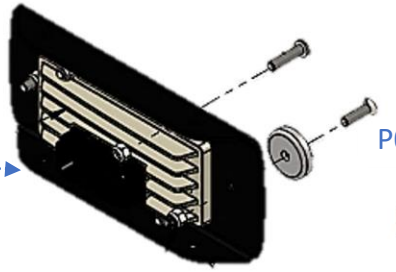
Home Page Product Settings



Assembly of Controller and Harnessing

See Pages 37-45





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P003025

IF USING SCALES

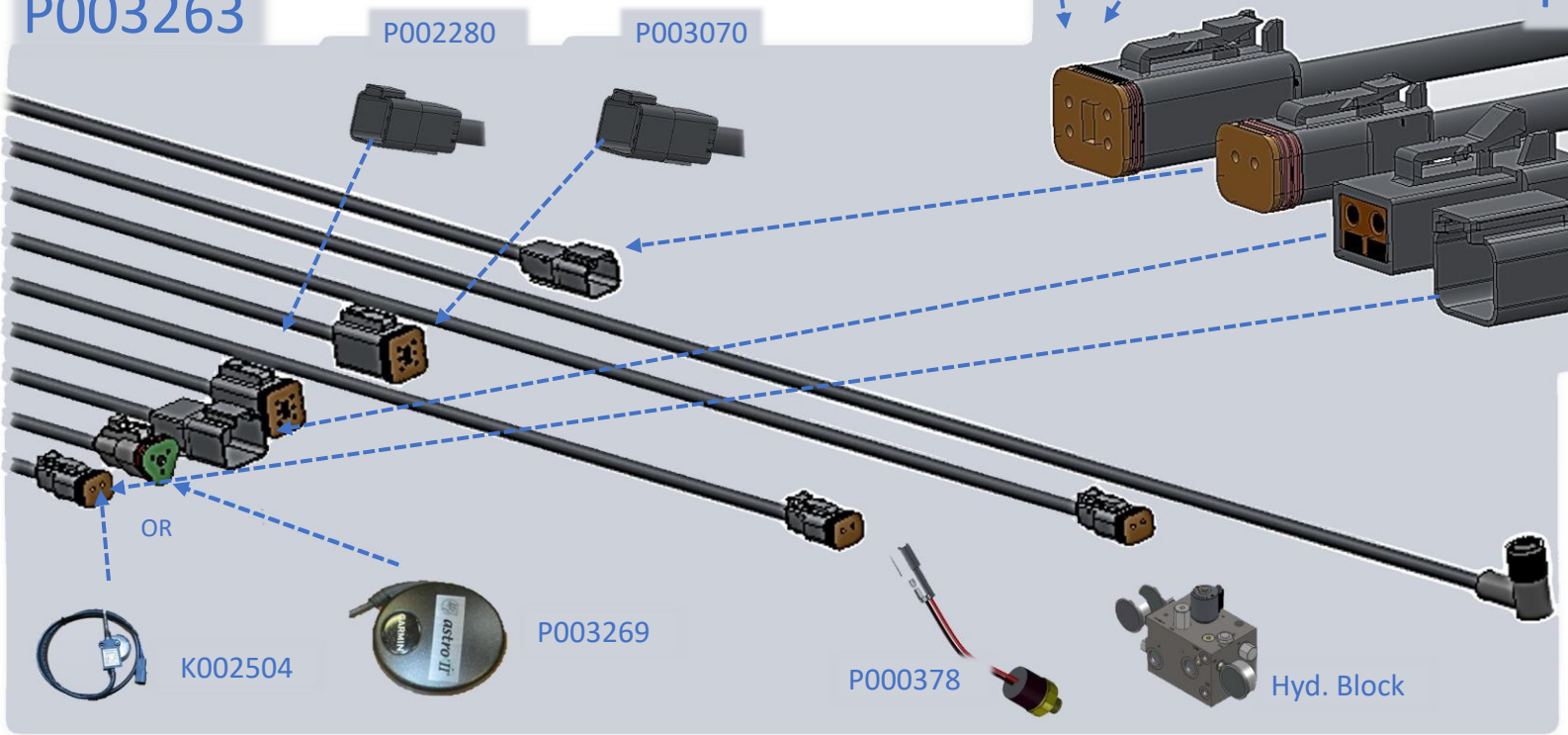
OR

P003263

P002280

P003070

P003264



OR

K002504

P003269

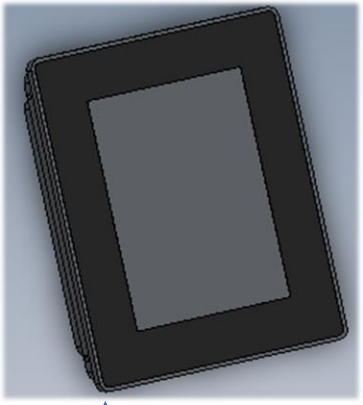
P000378

Hyd. Block

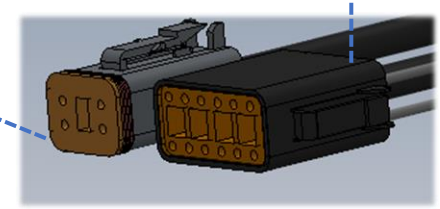
Speed Sensor Motor

Assembly of Controller and Harnessing

P003018
IQAN G11 Bluetooth
Update Dongle



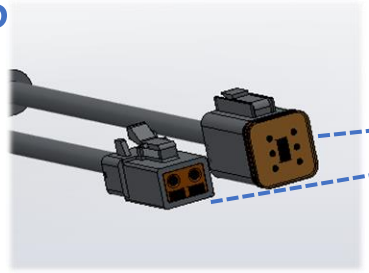
Display P003267

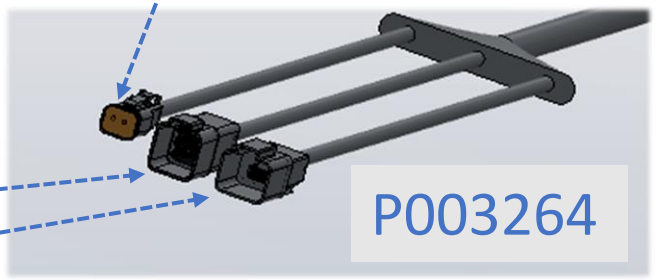


P003265

Footswitch
(Optional) P002340

Power connection
In Cab



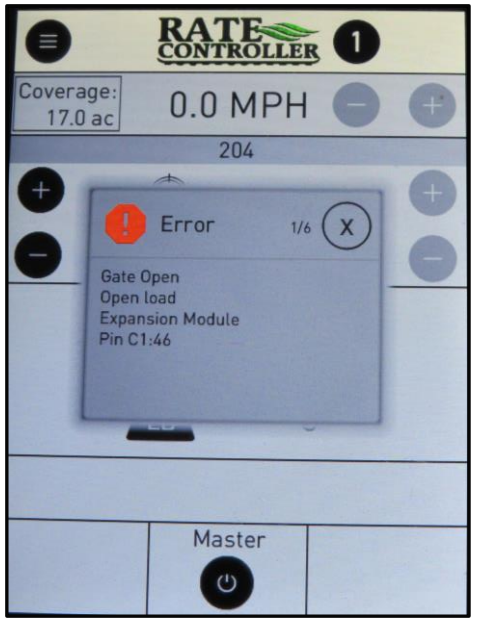


P003264

When securing harness to equipment, look for pinch points and folding strain points to prevent damage to harnesses.

Powering on Controller

The MTC200 is powered from the power outlet in the tractor using the switched power terminal (12V) and 0V terminal.



When first powered on, the home page may have some errors. This is normal as the controller has functions that may not be used on your machine. This warning indicates some input options are not on your particular machine. The operator should just X through these and then complete the implement set-up, the product set-up and any options being used set up. Instruction for set-up are detailed in following pages. After set-up, power down controller and re-start. The machine should be run empty to verify set-up before filling with product. After verifying speed is working, it can be tested with speed simulation so testing can be done without driving tractor.

Navigation Buttons

Menu Button

Product 1 set-up Page Button

Product 2 Set-up Page Button

Returns to previous Page

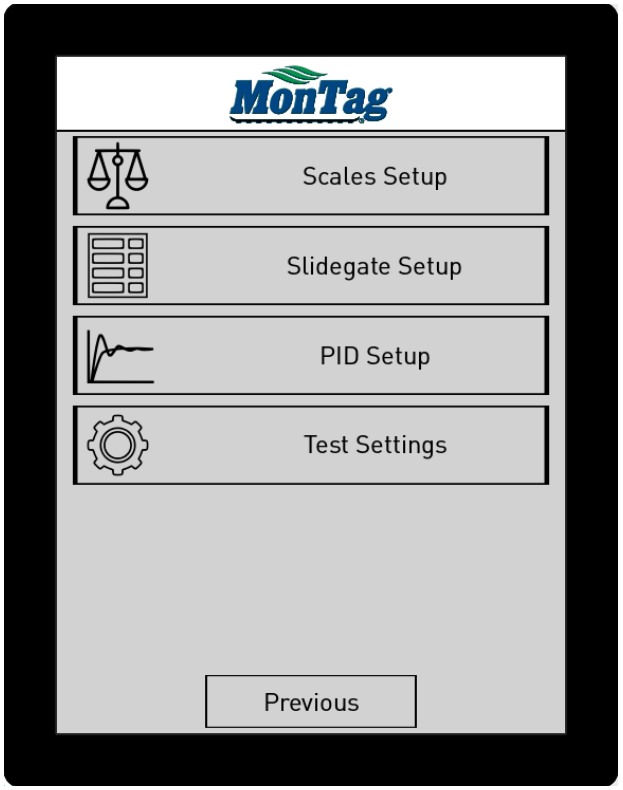
Returns to Home page

Scrolls to the next menu page

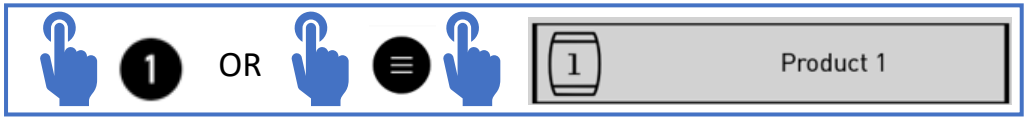
Scrolls to the previous menu page

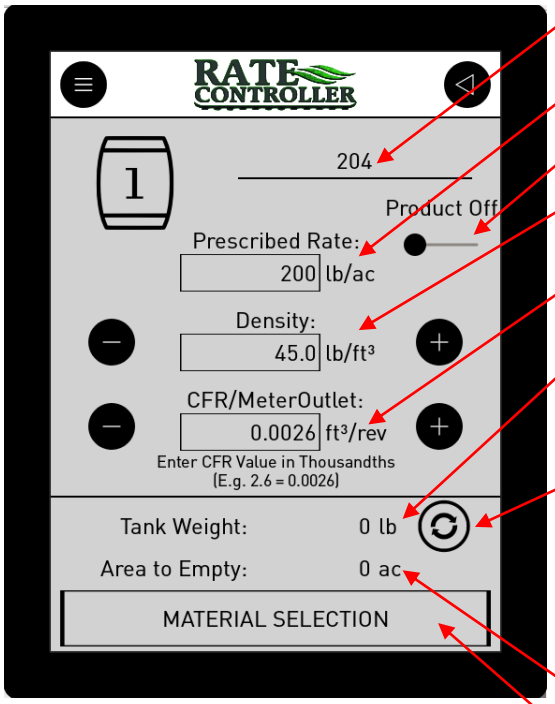
Menu Pages

See page 25
See page 26
See pages 15-17
See page 47
See pages 19-21
See pages 22-23
See page 24



Product Set-up Pages





Product Name

Product Rate

Product Off Button

Product Density

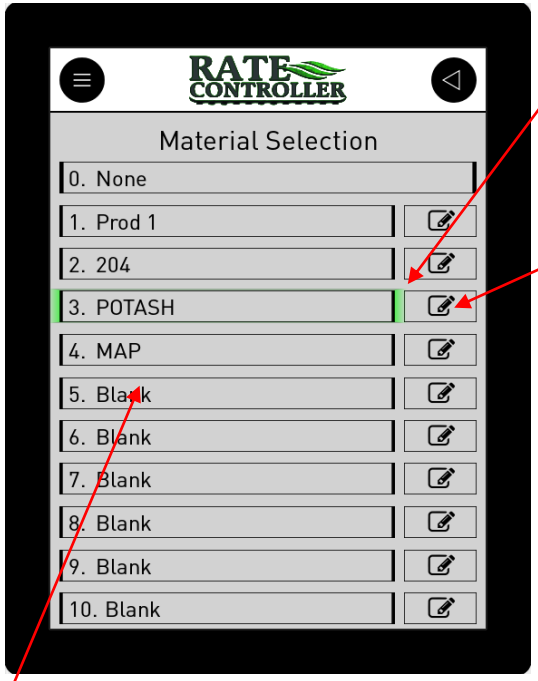
CFR #

Product weight in tank (Either from scale or entered manually)

Refresh button when adding weight manually. This should be entered after every fill when not using scales

Acre to empty counter

Product List

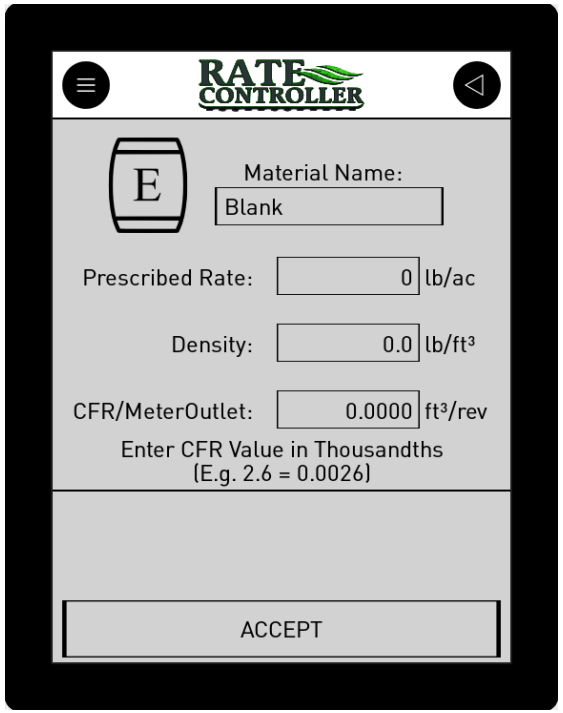


Green Highlight shows selected product

Edit Product Page

If using 2 product system, and 1 product would be desired to be shut off, toggle Product off button on product page instead of taking rate to 0.

Editing/Adding Products

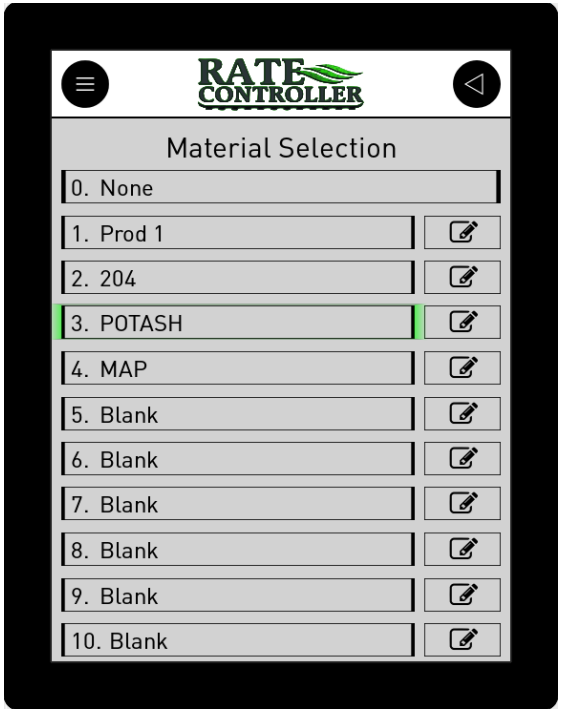


To add a new product, push edit button next to a blank product and fill in all the selection as show in picture, including entering Material Name, target rate, Density measured with a density scale, and CFR value. The CFR is the displacement of product per row measured in cubic feet per revolution of metering auger. The CFR will need to be calibrated once running in the field. The starting CFR numbers for Gen 1 HO and Gen 2 are:

Gen 1 Displacement/Row = HO Meter (2.5” hoses) 0.0032 Cubic Ft
Gen 2 Displacement/Row = 0.0026 Cubic Ft./Rev.
Gen 2 would be entered as 2.6

To edit a product, press edit button next to the product to be edited and change desired values.

Changing Products

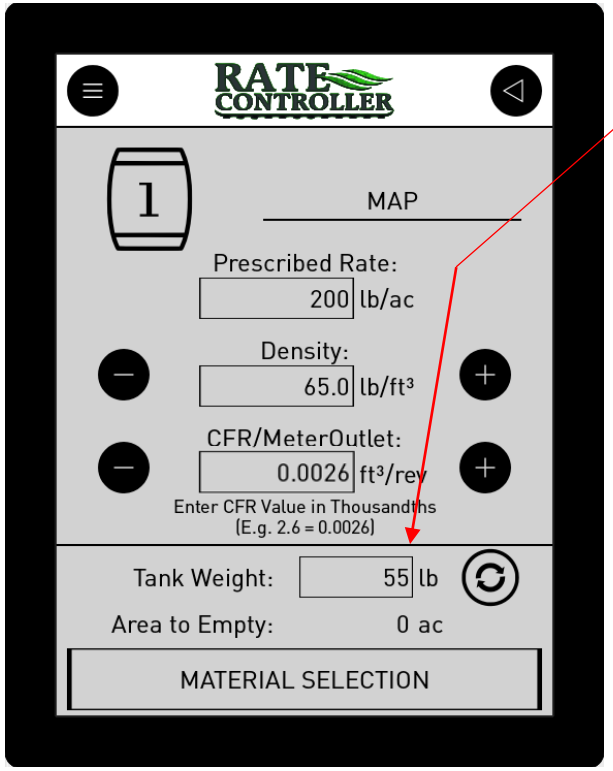


To change to a different product in a hopper, select that product. Whichever product is selected will be highlighted in green as example shows Potash is selected.

If running the same product in both tanks, set rate to half in each tank to apply product.

Manually Entering Weight

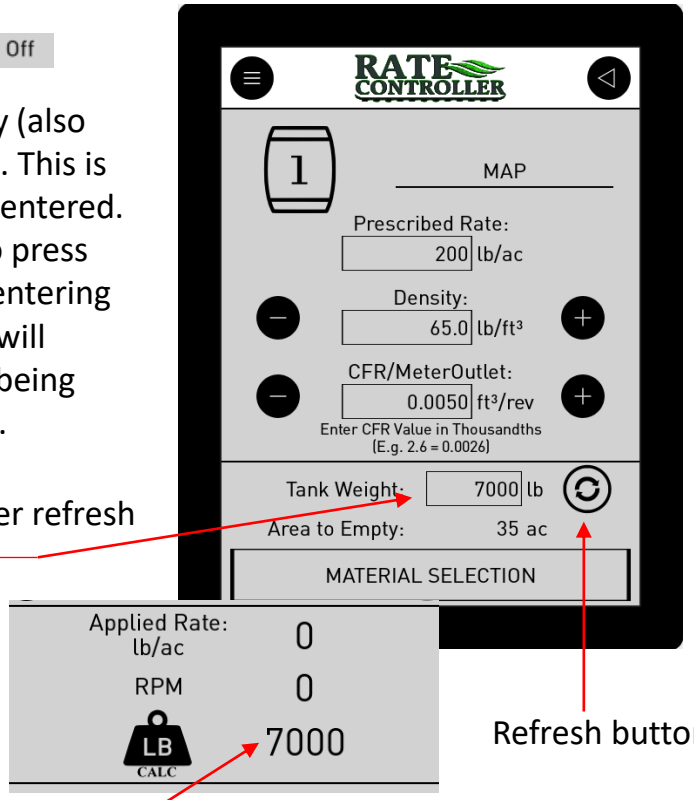
The use of scales are highly recommended since better control and accuracy is achieved. However, when scales are not being used, it is possible to add weight manually. This should be updated after every fill.



Scales (CAN) Off

Shows tank almost empty (also displayed on home page). This is where the new weight is entered. Operator will the need to press the refresh button after entering new weight. This weight will decrement as product is being applied according to rate.

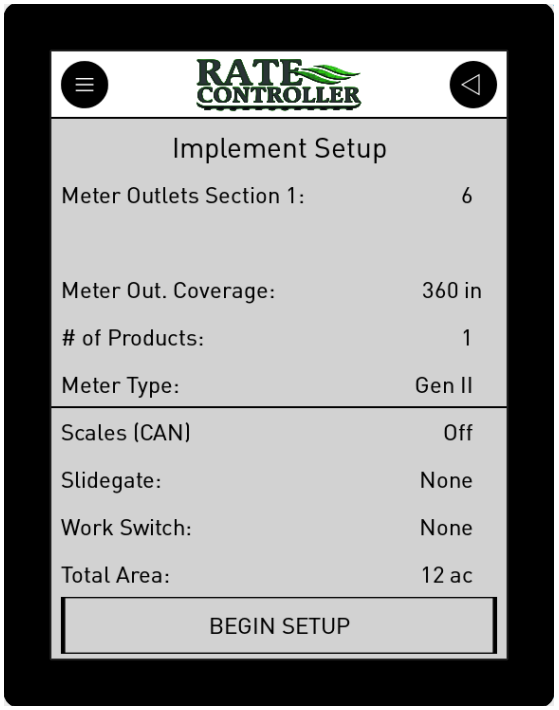
Shows refilled weight after refresh button pushed



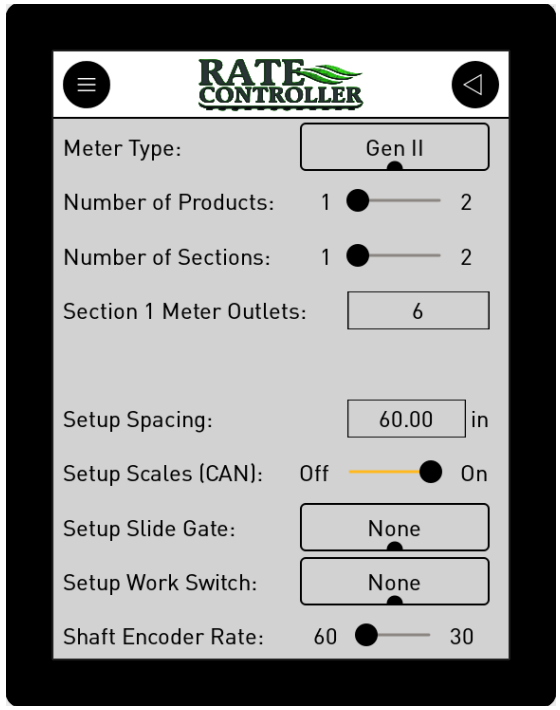
Refresh button

New weight on home screen

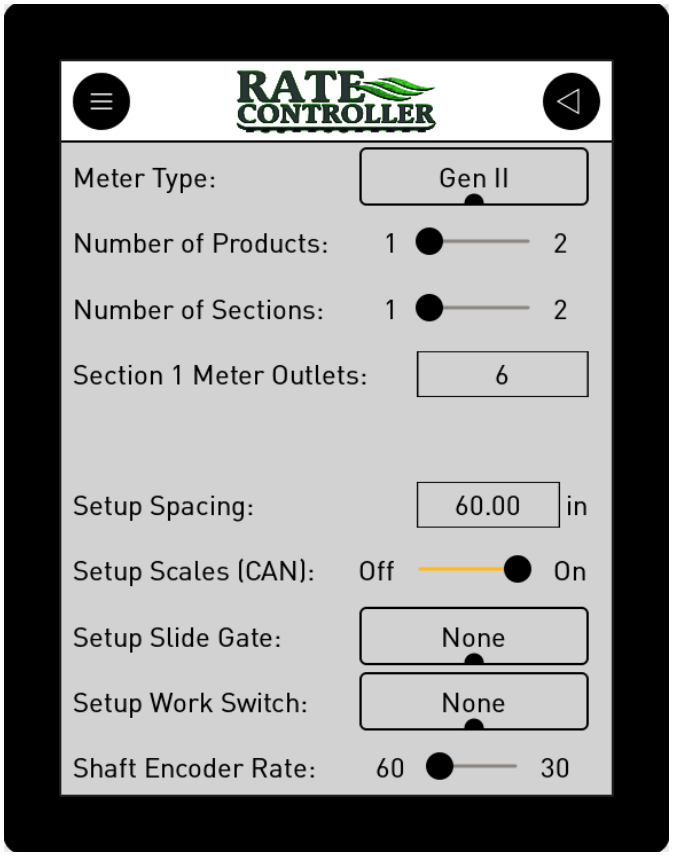
Implement Set-up



This page gives defaults on implement set-up. This is number of outlets/section, number of sections, total working width, meter type, options including scales, hydraulic slide gate, and work switch. Total acre is not resettable. To make changes press Begin Setup Button.



Implement Set-up



Select either Gen 1 or Gen 2 meter

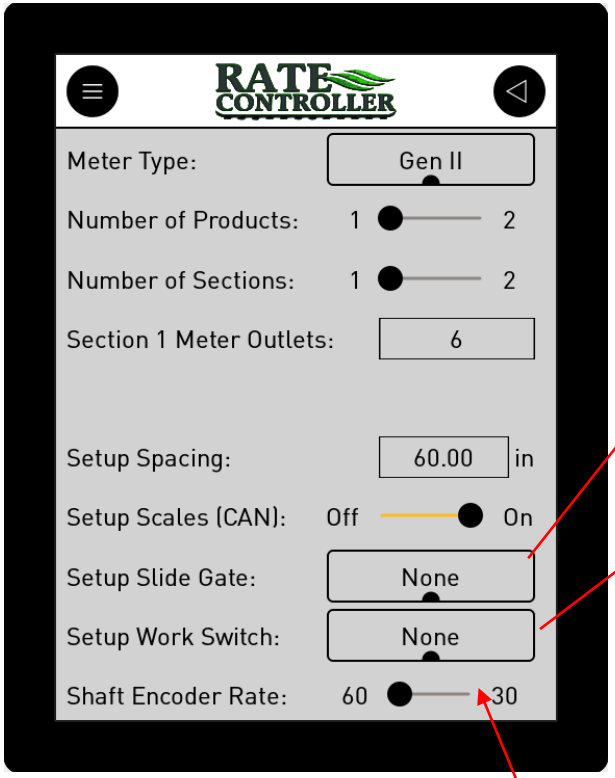
Select Number of Products and Section on machine by sliding the marker

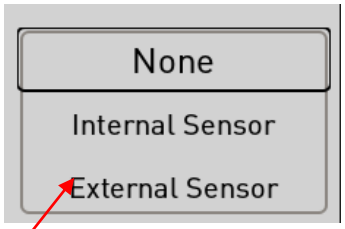
Enter the number of hoses leaving the Montag Meter per section

Enter spacing one meter outlet covers. If using splitters, measure entire area. The number of meter outlets times the spacing is the total width of toolbar (application)

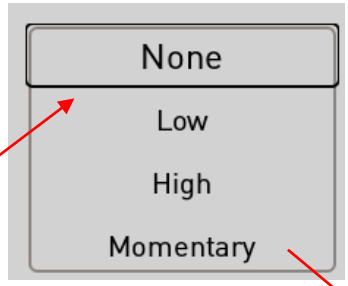
Select if using MTC 200 Can scales. This will be connected to the CAN B harness on implement if selected on.

Implement Set-up





If using Gen 1 or Gen 2 manual slide gates select **None.**
If Gen 2 with hydraulic cylinder with sensor inside select **Internal Sensor**. If Gen 2 hydraulic cylinder has white sensor box with LED lights, select **External Sensor**.

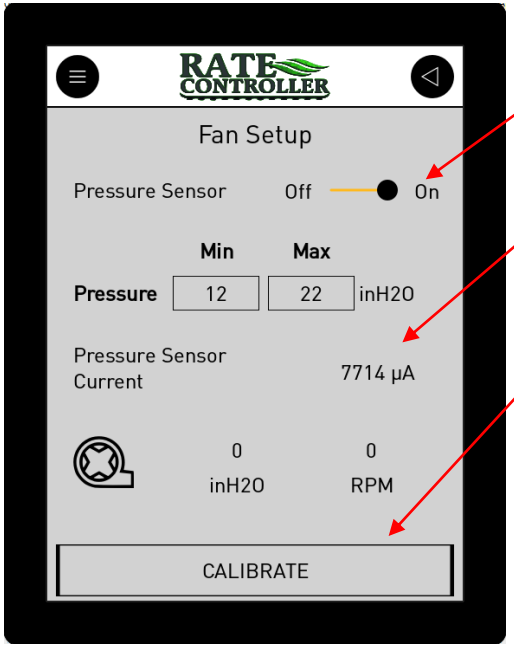


Work switch can be either footswitch or implement switch on toolbar. The harness permits that the switch can be electronically connected by cab or by meter. If connected by cab, 2 pin Deutsch connectors by meter must be joined together also to bring power up to cab.

The green box on the home screen around Master button indicates position of work switch. If no green box the workswitch is in off position

Gen 1 uses 30 pulse rate, Gen 2 uses 60 pulse rate

Fan Set-up



If Fan Pressure sensor is installed, select **On**. The mA current reading will be displaying sensor output. This is a good place to look for future fan sensor troubleshooting.

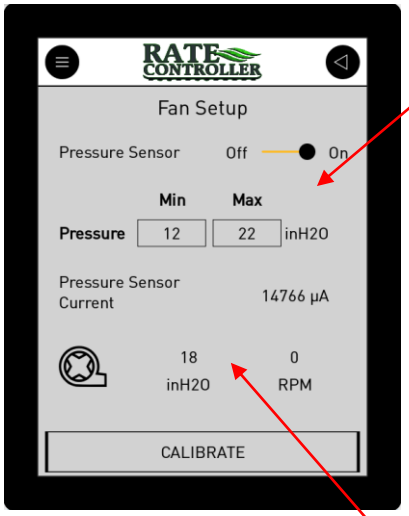
Fan pressure must be calibrated to show correct pressure, displayed in inches of water column.

1. Low point calibration screen. Have hydraulics off at this step.

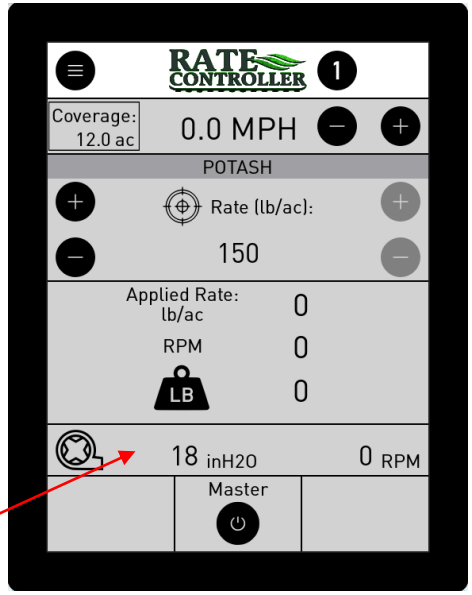
2. High point calibration screen. Hydraulics must be on with fan pressure reading 18-20 inches H2O using analog pressure gauge. Enter analog pressure reading here.

Fan Set-up

Field adjustable settings for fan pressure outside range alarm. Fan pressure is adjusted by tractor SCV hydraulic valve setting.



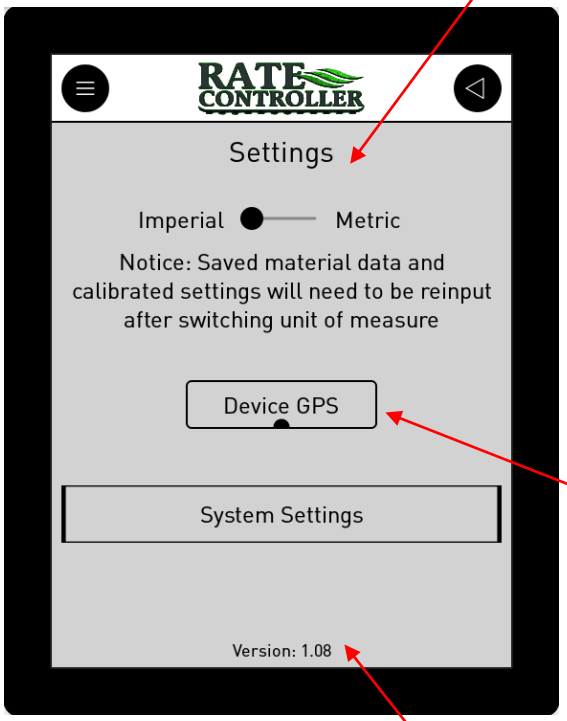
After calibration fan pressure is displayed



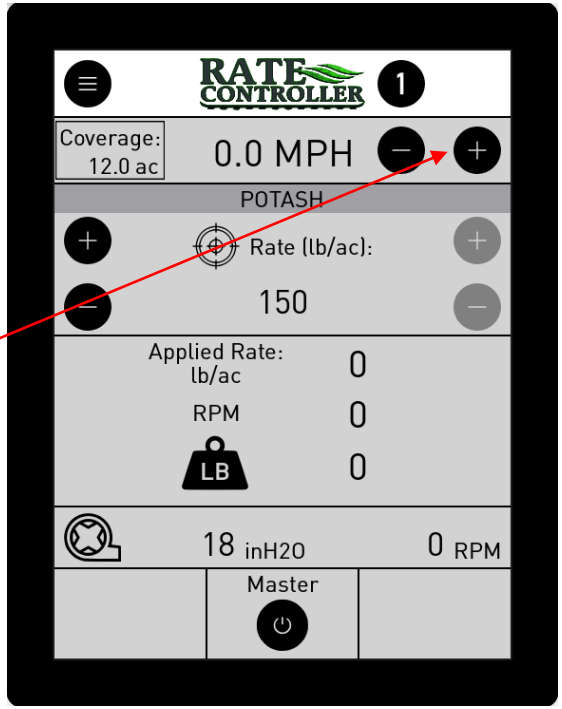
After Calibration turn fan pressure to desired pressure for application. Higher rates and higher ground speed require more fan pressure. It is best to start with a higher fan pressure and lower to final setting. Too low of a pressure will cause product plugging in the hoses resulting in shearing couplers. Higher pressure will cause premature hose failure and increase power consumption and reduce fuel efficiency. Most Gen 2 machines will run 15-18 inches of H2O. Gen 1 machines will generally run 20-25 inches of H2O. See more on Operation of Montag Page.

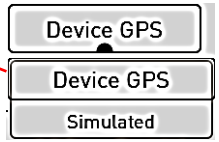
Speed Set-up

Units can be switched from Imperial to Metric



Speed can be switched from Device GPS to Simulated speed. Device is speed sensor mounted on implement. When in simulated speed, MPH is adjusted on main screen with +/- buttons.

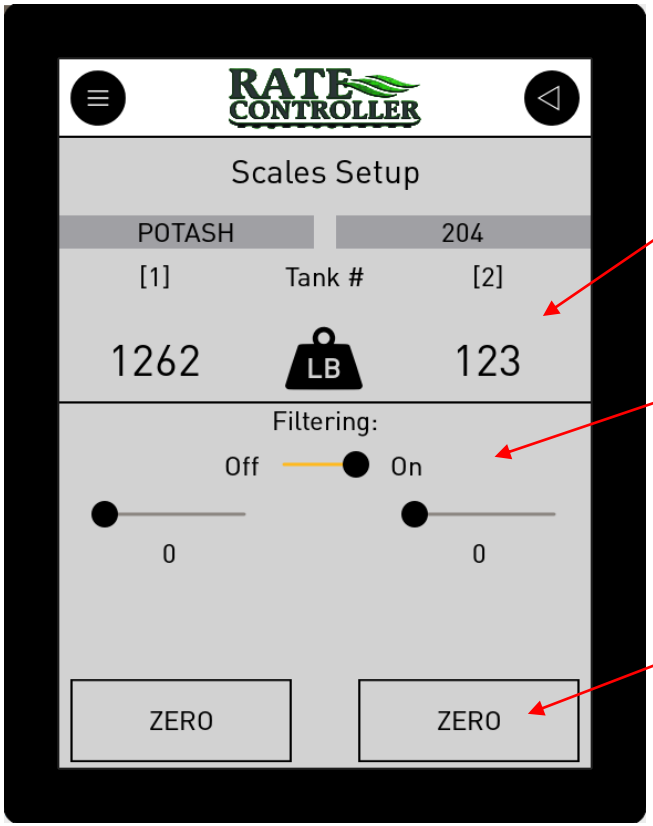




When in Device GPS, the adjust buttons are grayed out.

Setting page displays the current version on software on controller

Scale Set-up

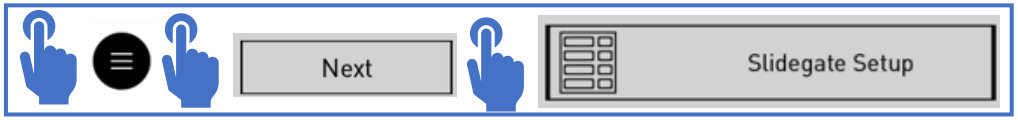


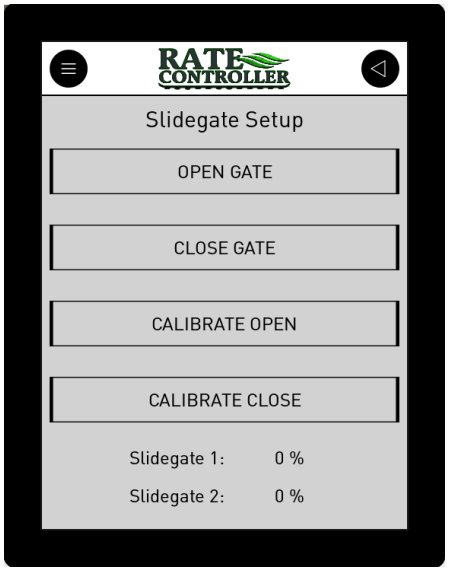
Shows bin product and weight of each product

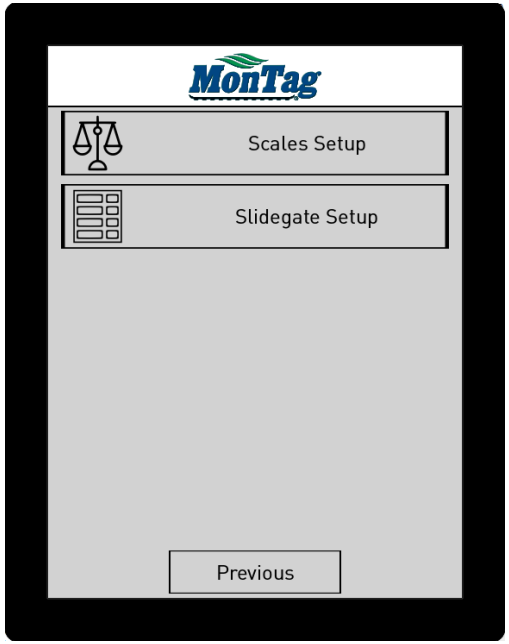
Filtering of raw load cell readings can be turned on or off. Filtering should be on for smoothing. A higher filtering setting will give additional filtering and a slower response time.

Each tank can be zeroed independently

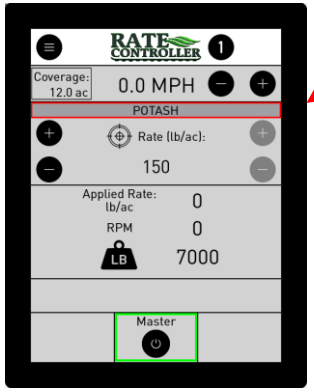
Slide Gate Operation







If using a 2218, 2208, or 2108 Gen 2, it is best to shut the slide gates when moving from field to field, or if machine will not be running for a time. If your machine has hydraulic slide gates, they can be opened and closed on this screen. If using manual slide gates, shut the gates, then empty auger cartridges by running augers for approximately 10 seconds. Before operation the first time, the slide gates must be calibrated open and close. This will be done at the factory before shipment. This screen also shows the position of the slide gate with percentage shown.



Red box around product indicates hydraulic slide gates are shut. If manual gates are on equipment, no indication will be shown.

Operation of Montag Implement

1. It is recommended to set-up machine and run hydraulics before product is added to hoppers.
2. An Android application calculator can be downloaded from Google play store named MontagCalc. This will allow the operator to calculate auger speed based on machine size, rate, and ground speed. This tool allows operator to verify settings are correct in controller.
3. Setting proper fan pressure by adjusting hydraulic pressure of SCV on tractor. For a 12 row Gen 2 machine, when total combined auger speeds are 10-60 RPM the fan speed can be set at 12-15 inches of water. For total auger RPM 60 -120, fan speed can be set at 15-18 inches water column. For total auger RPM 120 and greater the fan speed can be 18-21 inches of water. As the machine size (8, 16, 18 row) changes the fan pressure can be adjusted according. These starting recommendations are based on standard hose routings, density of 65 lbs., and no splitters. See Fan pressure page for more information. For a Gen 1 air pressures are generally between 20 and 25 inches of water column based on auger speed needed for rate being applied. Refer to machine operator's manual for more detail.

⚠WARNING

4. Any maintenance or adjustment should be performed with hydraulics, controller and tractor power off and key removed. Failure to follow safety instructions and warnings can result in serious injury or death. Follow maintenance procedures in equipment operator's manuals.
5. When transporting equipment on public roadways, hydraulics should always be off to prevent controller from starting meter. All instruction in equipment manual should also be followed.

Calibrating the Meters

1. Calibration will have to be done for each product and it is recommended for each time a new load of fertilizer is being used. The first calibration can be around 1000-2000 lbs. of product. Additional calibrations should be 5000 lbs. or more. The more product, the higher the accuracy.
2. Starting and ending weights should be taken on as level of ground as possible with all the same variables as toolbar in same position (lowered), the fan on, and ground speed zero.
3. Most the time field calibration is sufficient to get accurate results. However, if a catch test is desired, the simulated speed can be used to run meters. The acre counter can also be zeroed.

Example of calibrating CFR: If using starting CFR of .0026 ft3/rev and running 100 lbs./acre, after 10 acres 1000 lbs. should have been applied. If only 950 lbs. have been applied a CFR adjustment is advised using below formula.

New CFR Cal# = (Actual Rate / Desired Rate) X Current CFR
= (950/1000) x .0026
= .0025

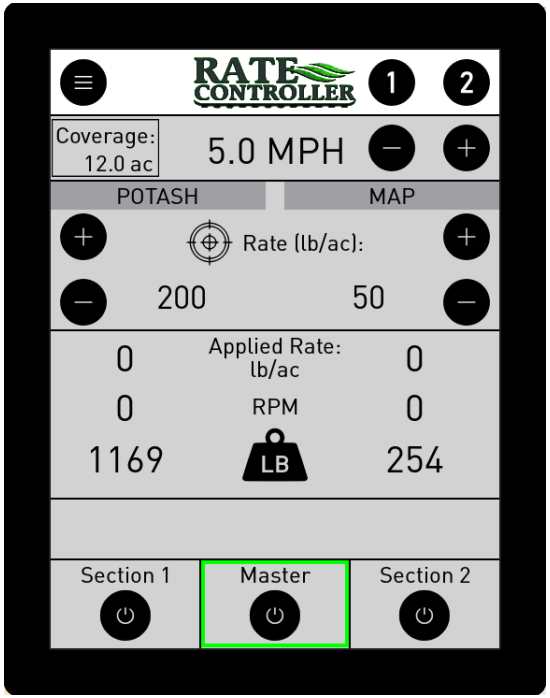
Rule: If more product needs applied, the CFR number is lowered.

Meter Controlling Indicators

⚠WARNING

Operator must ensure safety of others before starting hydraulics and augers.

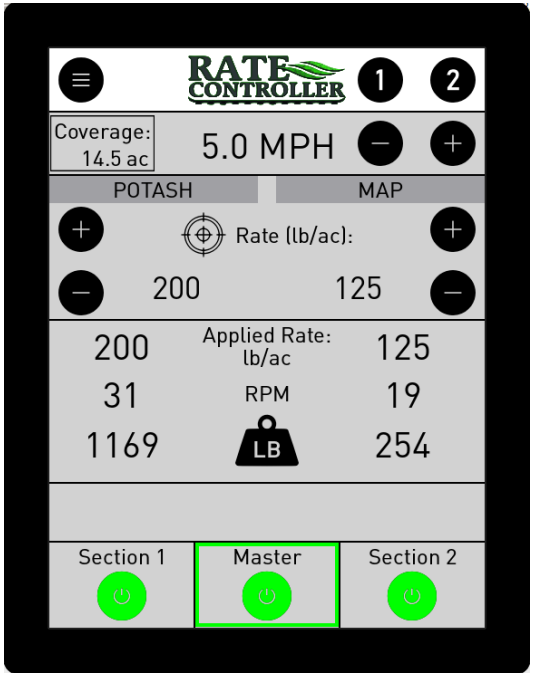
Master control is on when Master button is green, buttons are gray when off. Product will only be applied when the master is on (green). Hydraulics must also be on and fan running for augers to run product to be applied.



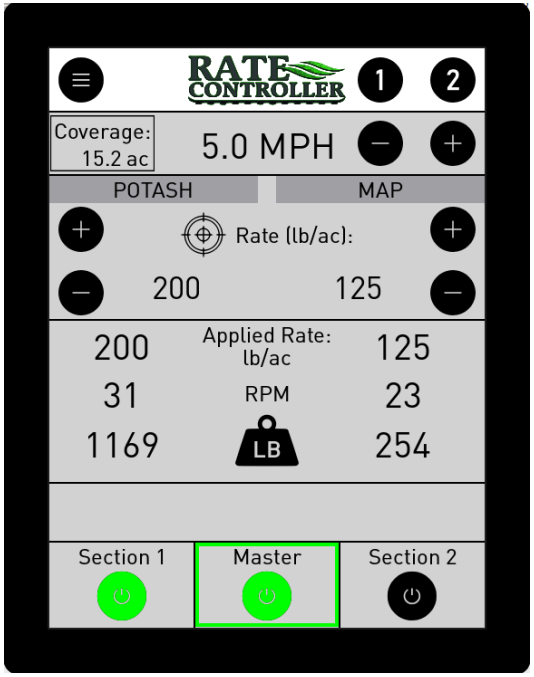
If using a work switch to control meter starting and stopping, the green box around the master indicates the switch is in apply mode. A work switch can be a foot switch, toggle switch in the cab, or a limit implement switch on the toolbar. An implement switch is a magnetic mounted switch to put by a linkage on toolbar that is activated when toolbar is lower and deactivated when toolbar is raise, automatically starting and stopping the augers.

This example shows master is off, sections are off, and workswitch is on. To apply product, the master and sections and workswitch must all be on and must have ground speed.

Meter Controlling Indicators



To apply product, the master and sections and workswitch must all be on and must have ground speed. This example shows all conditions met and product being applied. When either the workswitch or master is off, the sections will be grayed out

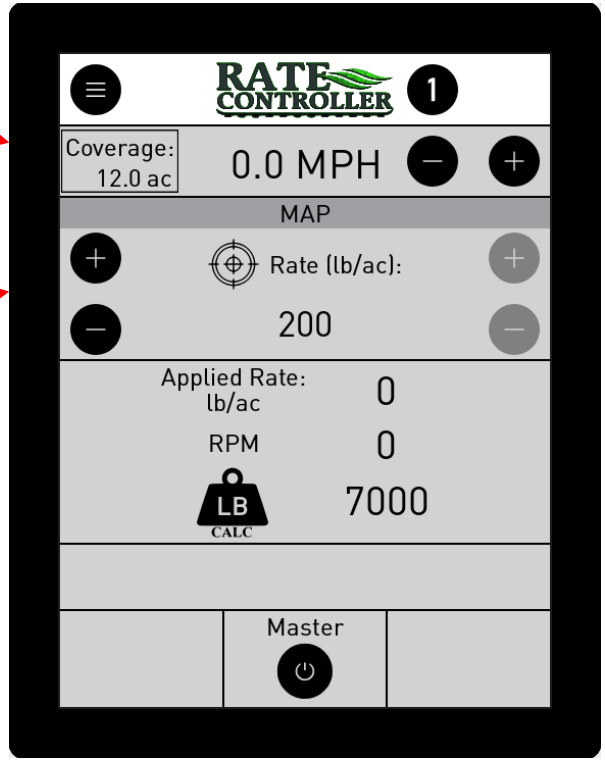


Sections are manually turned on and off by touching the section buttons. The green buttons indicates the sections are on and are applying if applied rate shows rate. The controller will control only up to 2 sections. If only 1 section the section buttons will not be displayed. This example shows section 2 is shut off.

Acre Counter

By pressing Coverage button for 3 seconds, acre counter is reset to 0.

Rate can be changed on the home screen. This will override the rate entered on the product page. To reset the rate from product page, a different product needs to be selected on product page, and then reselect the desired product. Another way is to set the rate on home page back to product page rate.

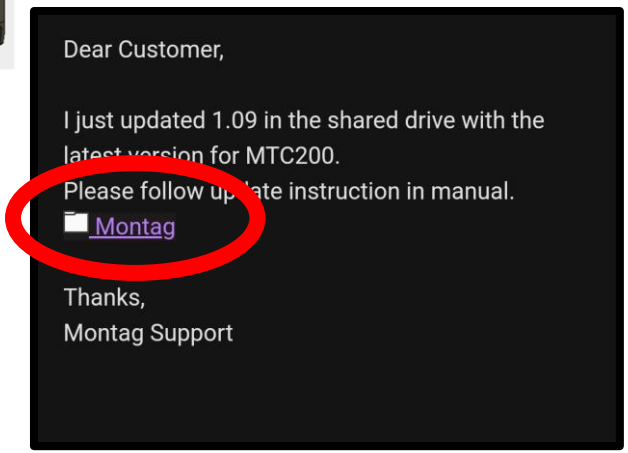


Updating Software

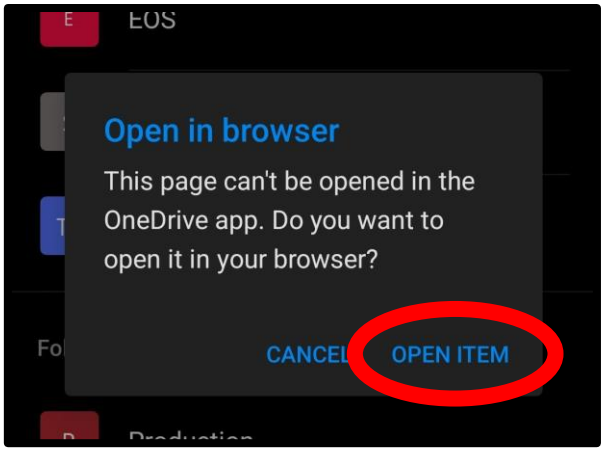
(Screen images may differ slightly from those shown here.)

1. Download IQANgo from Google Play store onto device.
2. Need G11 download dongle, plugged into cab harness, See Pg 48. →
3. Request software update from Montag Sales or tech support.
4. Turn phone Bluetooth on.
5. Power on Controller.
6. Follow instructions in order as shown (steps A-N):

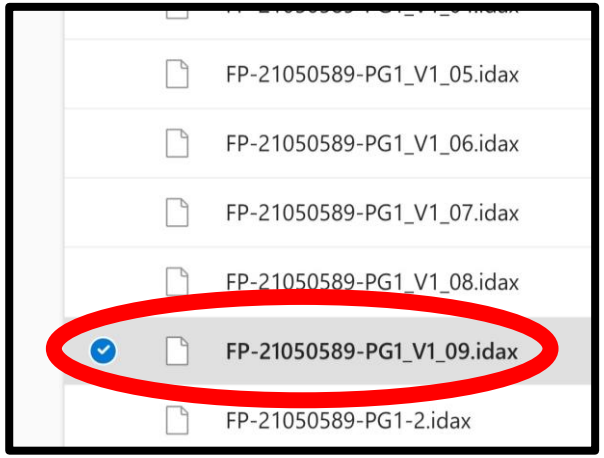
(Be patient, each step may take several seconds to perform each task. Selecting multiple times may result in issues.)



A. Open email and find attachment.

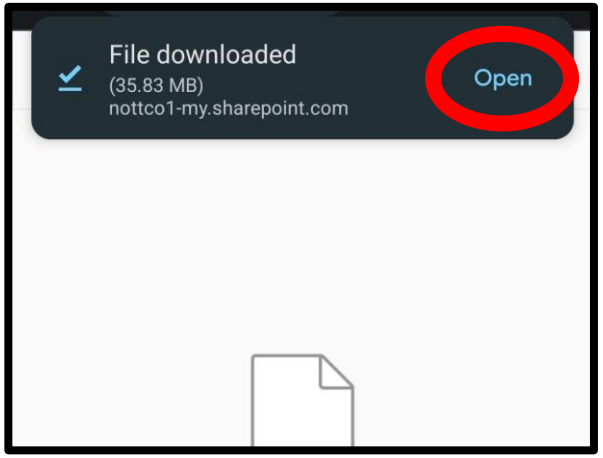


B. Open attachment.



C. Find the latest update file.

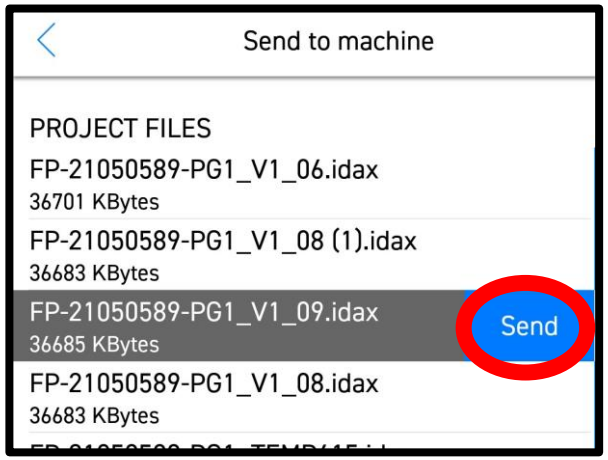
D. Download that file.



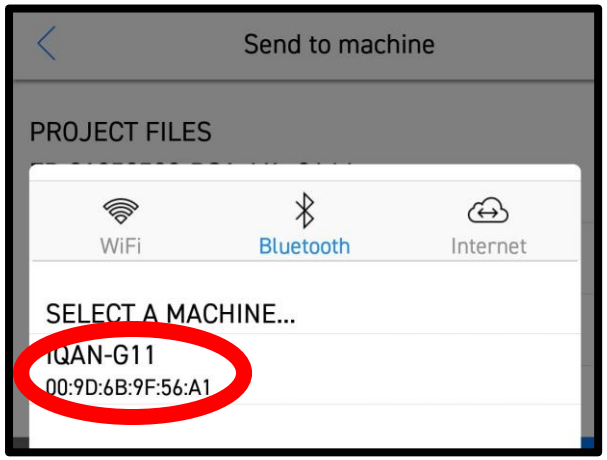
E. After download, open file.

Updating Software

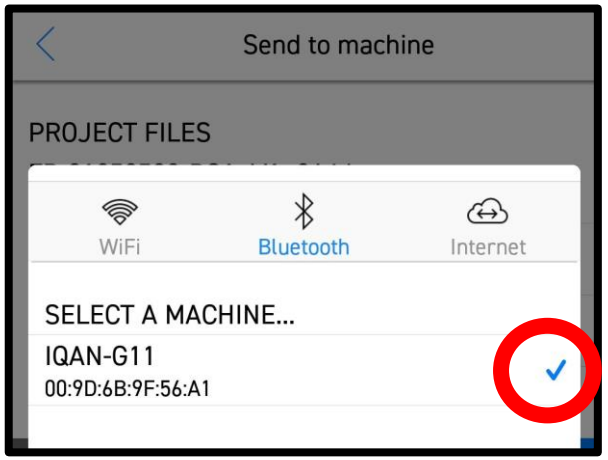
(Screen images may differ slightly from those shown here.)



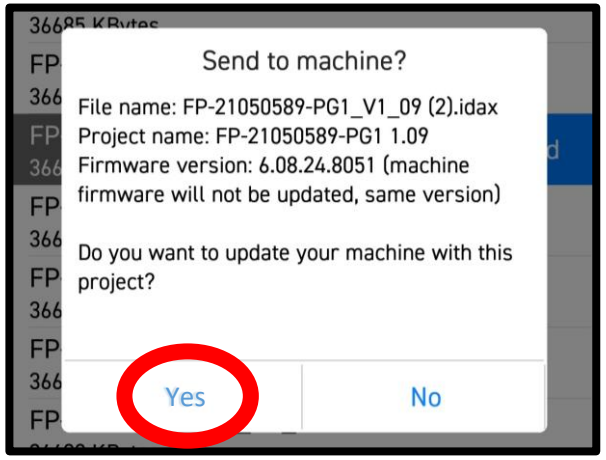
F. Find file, select send.



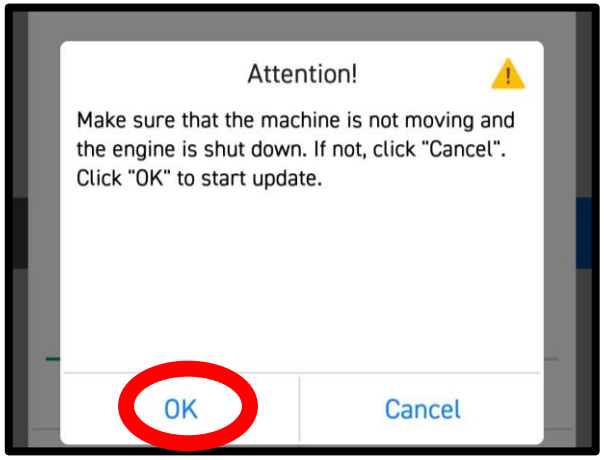
G. Find the IQAN-G11 controller.



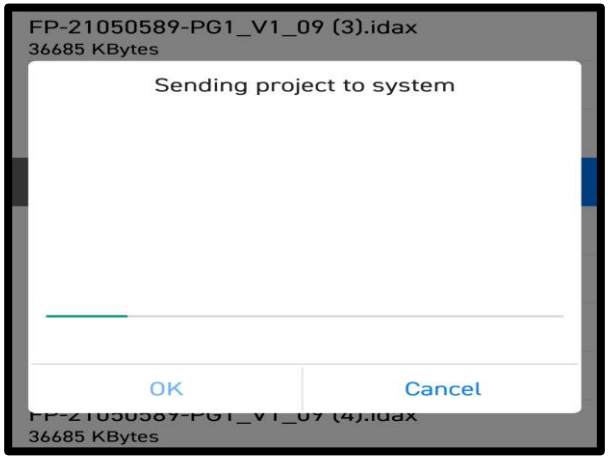
H. Select controller.



I. Verify transfer.



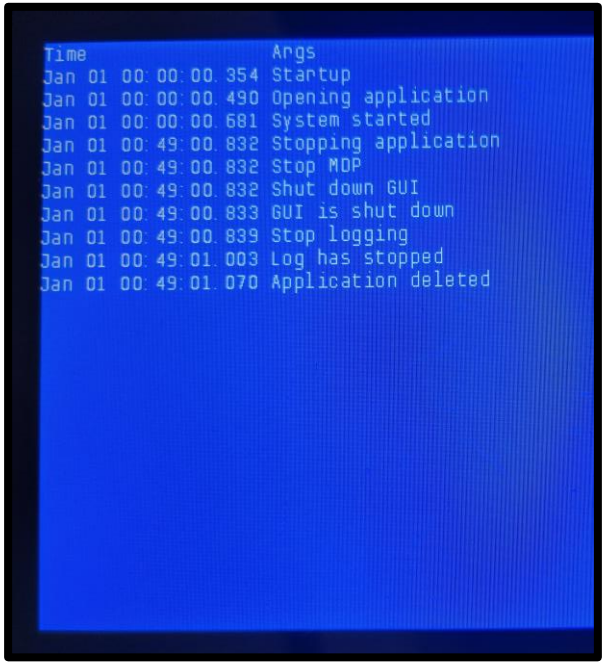
J. Verify machine is stopped and off.



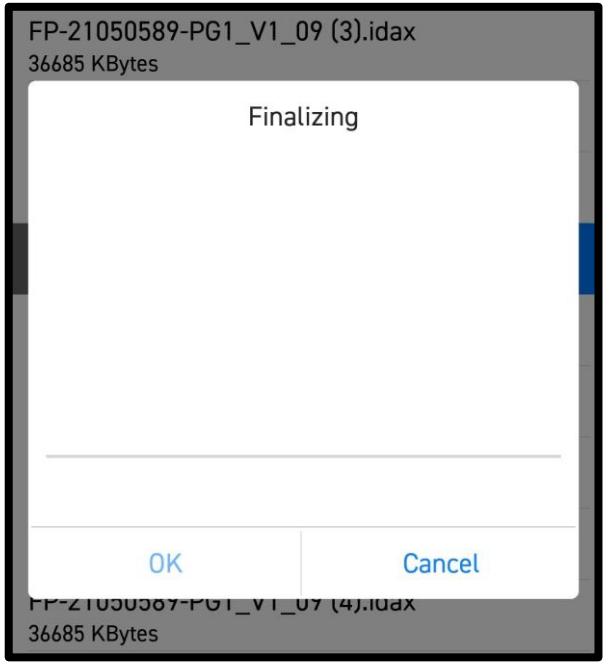
K. Transfer in progress.

Updating Software

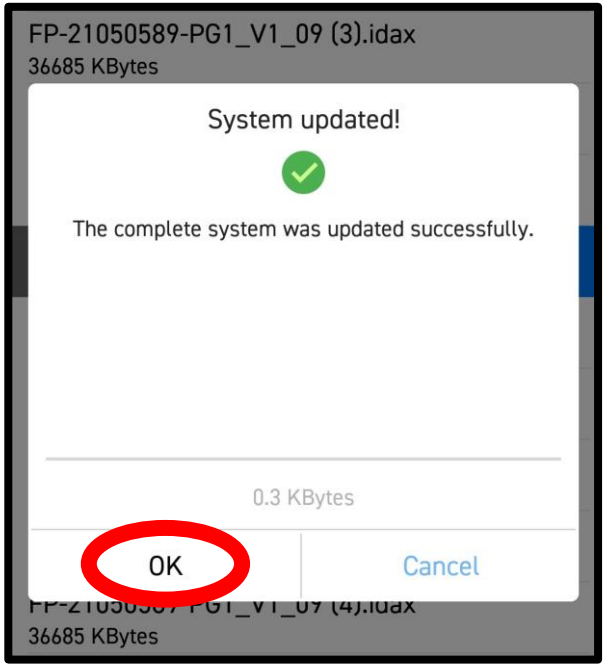
(Screen images may differ slightly from those shown here.)



L. Controller screen will display logging. This may take several minutes. (image is turned 90°)



M. Almost finished.



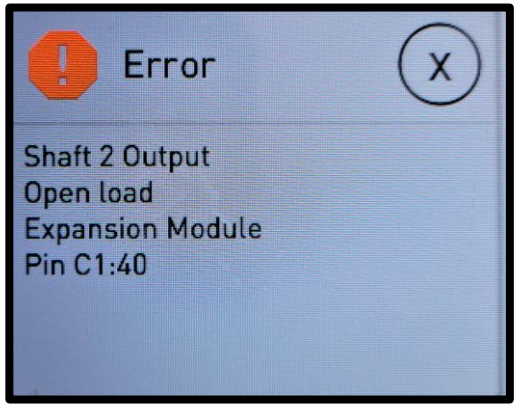
N. Select OK to complete update.

Maintenance

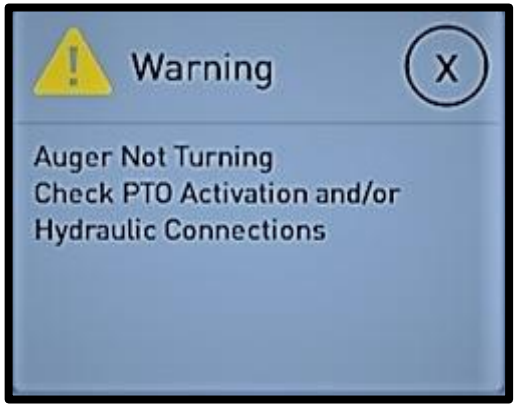
Inspect MTC200 kit for damage of harnesses including checking for pinch points and strain of harnesses. Inspection after storage periods, at the end of the season, and during season as needed. At end of season, unplug power connection from tractor. After season cleaning care should be taken not to damage controllers, connectors or wires by high pressure spray. After cleaning, check connections for water ingress and dry with air any water pooling.

Troubleshooting

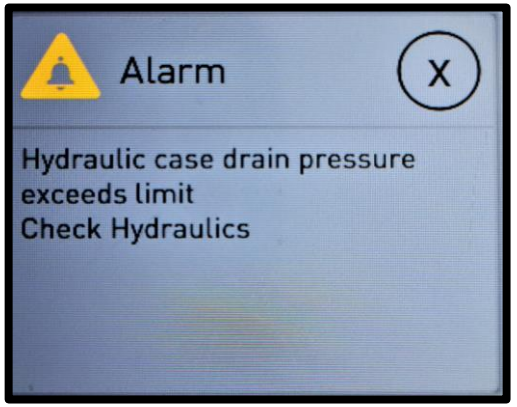
(Screen images mages may differ slightly from those shown here.)



PWM 2 is not connected. Check harness connections. Do voltage test at connector. Check solenoid coil for continuity.



Hydraulic circuit is not functioning. Check hose connections. Fan needs to be running for augers to function.



Excess oil pressure in case drain line. Check hose connections and quick disconnect blockage.

Troubleshooting

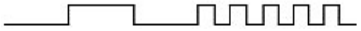
I/O diagnostics chart

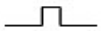
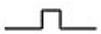
Error codes, messages and actions

If one of the following error is detected, a message will be presented with an error code on the module. In some cases, the module will turn off or at least shut down the outputs, to increase safety.

WARNING

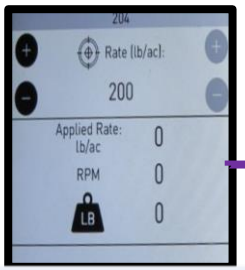
Don't use the machine if an error message or error code is activated. LED indicator showing different MC4x modes

Status	Flash (yellow)
Normal operation	
Application not loaded	
No application available	
Waiting for restart	
Settings overflow	
Version mismatch	

Error code	Error	Primary Flash (red) Error category	Secondary Flash (yellow) Error description
1:1	Output		
1:2	Input		
1:3	VREF		
1:4	Expansion unit error		
2:1	Power supply		
2:2	Temperature		
3:1	CAN, no contact		
3:2	IDtag error		
3:3	System mismatch		
3:4	CAN error (bus off)		
4:1a	Stopped, critical		
4:2b	Stopped, critical		
4:3c	Stopped, critical		

a.-c. Followed by a longer sequence of flashes, contact Parker.

Harness Layout Diagram



Display P003267

Power connection
In Cab

P003265
Cab Harness

P003264
Cab to Implement Harness

P003018
IQAN G11 Bluetooth
Update Dongle

= Harness connection

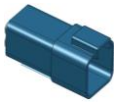
Footswitch (Optional) P002340

Harness Layout Diagram

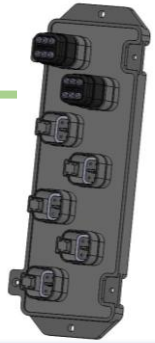
P003269
Speed
Receiver

P003264
Cab to Implement Harness

P003263
Implement harness



P003025 Axiomatic
Scale Harness
-OR-
P003268 Terminator

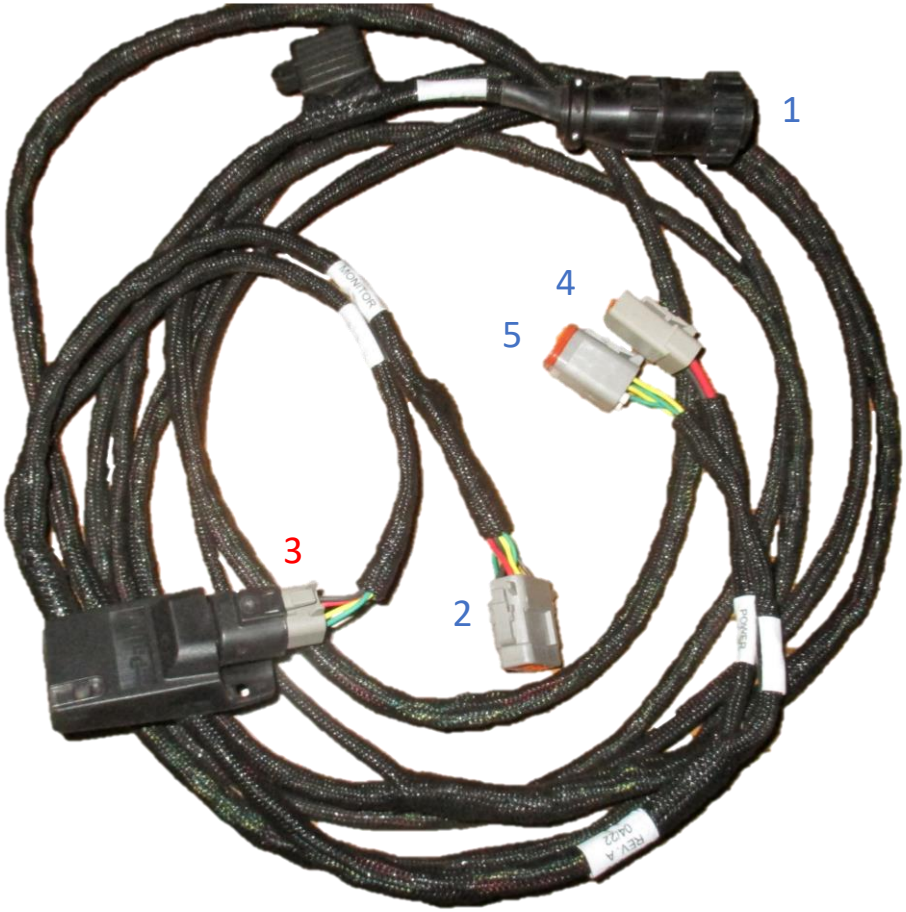


Scale Junction Block

A002645 ECU I/O

A002504 Work
Switch (Optional)

P003265 In Cab Harness Pinout



Optional connections 3 Used when updating software

1

Power Tractor Connection		
Cavity	*Description*	*Wire Color*
1	Switched 12 V	Red
3	0 V	Black

2

Monitor		
Cavity	*Description*	*Wire Color*
1	0 V	Black
2	Can L A	Green
3	Can L B	Green
10	Can H B	Yellow
11	Can H A	Yellow
12	12 V	Red

3

G11 Update Dongle		
Cavity	*Description*	*Wire Color*
1	0 V	Black
2	12 V	Red
3	Can L A	Green
4	Can H A	Yellow

4

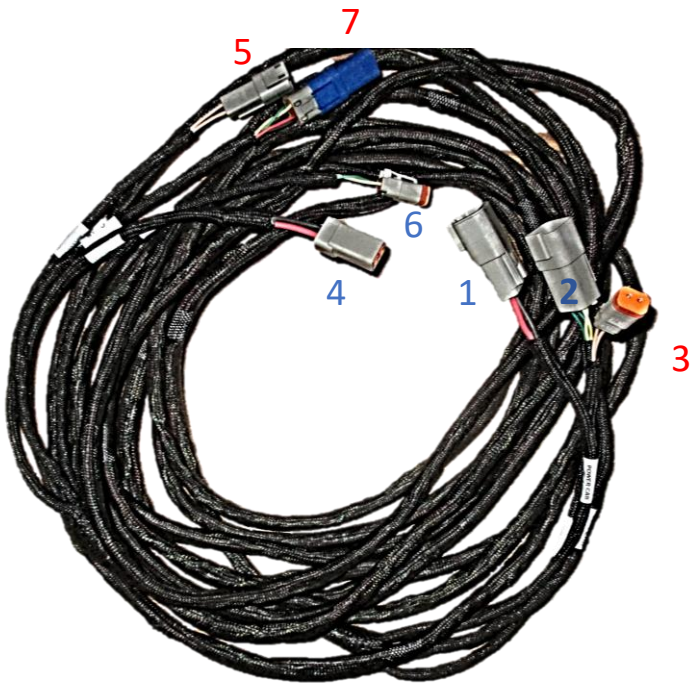
Power Connection		
Cavity	*Description*	*Wire Color*
1	Switched 12 V	Red
3	0 V	Black

5

Can		
Cavity	*Description*	*Wire Color*
1	Can L A	Green
2	Can L B	Green
5	Can H B	Yellow
6	Can H A	Yellow

Connectors 4 & 5 connect to harness P003264

P003264 Cab to Implement Harness Pinout



1

Power Cab		
Cavity	*Description*	*Wire Color*
1	12 V	Red
2	0 V	Black

2

Can Cab		
Cavity	*Description*	*Wire Color*
1	Can L A	Green
2	Can L B	Green
5	Can H B	Yellow
6	Can H A	Yellow

3

Work Switch Cab		
Cavity	*Description*	*Wire Color*
1	Work Switch	Tan
2	Work Switch	Tan

4

Power Implement		
Cavity	*Description*	*Wire Color*
1	12 V	Red
2	0 V	Black

5

Work Switch Implement		
Cavity	*Description*	*Wire Color*
1	Work Switch	Tan
2	Work Switch	Tan

6

Can A		
Cavity	*Description*	*Wire Color*
1	Can L A	Green
2	Can H A	Yellow

7

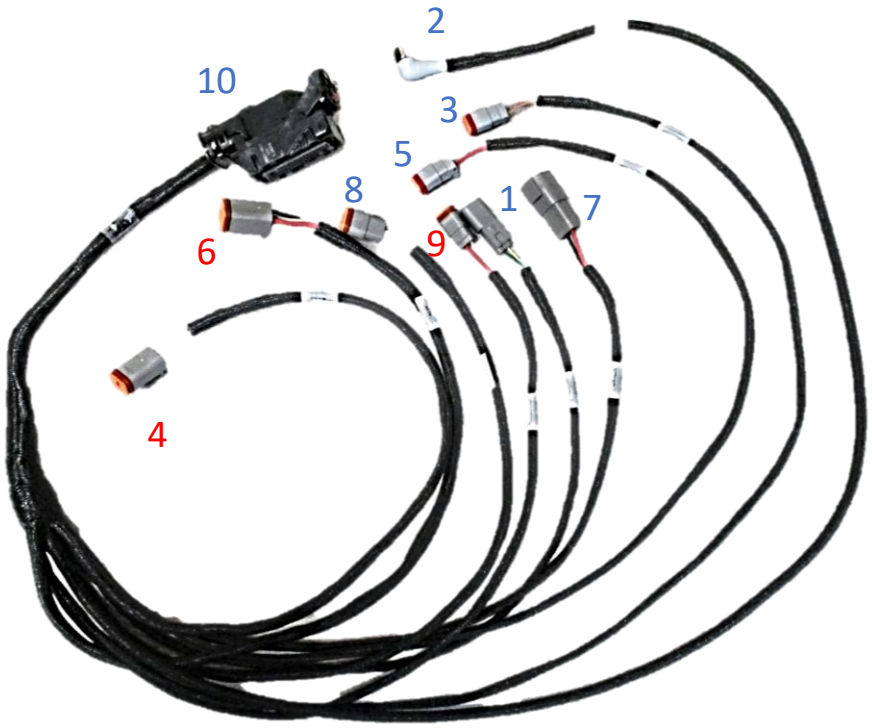
Can B		
Cavity	*Description*	*Wire Color*
1	0 V	Black
2	12 V	Red
3	Can L B	Green
4	Can H B	Yellow

Connectors 1 & 2 connect to harness P003265
Connectors 4 & 6 connect to harness P003263

Optional connections:

- 3 - Connected to foot switch
- 5 - Connected to implement harness connector
  - 9 - if using foot switch
- 7 - Must plug into either scale can (P003025) or terminator (P003268)

P003263
Implement Harness Pinout



1

Can A		
Cavity	*Description*	*Wire Color*
1	Can L A	Green
2	Can H A	Yellow

2

Encoder 1		
Cavity	*Description*	*Wire Color*
1	12 V	Red
3	0 V	Black
4	Encoder 1 Signal	Gray

3

PWM 1		
Cavity	*Description*	*Wire Color*
1	PWM 1	Tan
2	PWM 1	Tan

4

Sections		
Cavity	*Description*	*Wire Color*
1	Section 1	Tan
2	0 V	Black
3	Section 2	Tan
4	12 V	Red

5

Case Drain		
Cavity	*Description*	*Wire Color*
1	Case Drain	Gray
2	12 V	Red

6

Auxillary		
Cavity	*Description*	*Wire Color*
1	PWM 2	Tan
2	PWM 2	Tan
3	12 V	Red
4	0 V	Black
5	Encoder 2 Signal	Gray
6	Fan Pressure	Gray

7

System Power		
Cavity	*Description*	*Wire Color*
1	12 V	Red
2	0 V	Black

8

Speed		
Cavity	*Description*	*Wire Color*
A	12 V	Red
B	Speed	Gray
C	0 V	Black

9

Imp Switch		
Cavity	*Description*	*Wire Color*
1	Implement Switc	Gray
2	12 V	Red

10

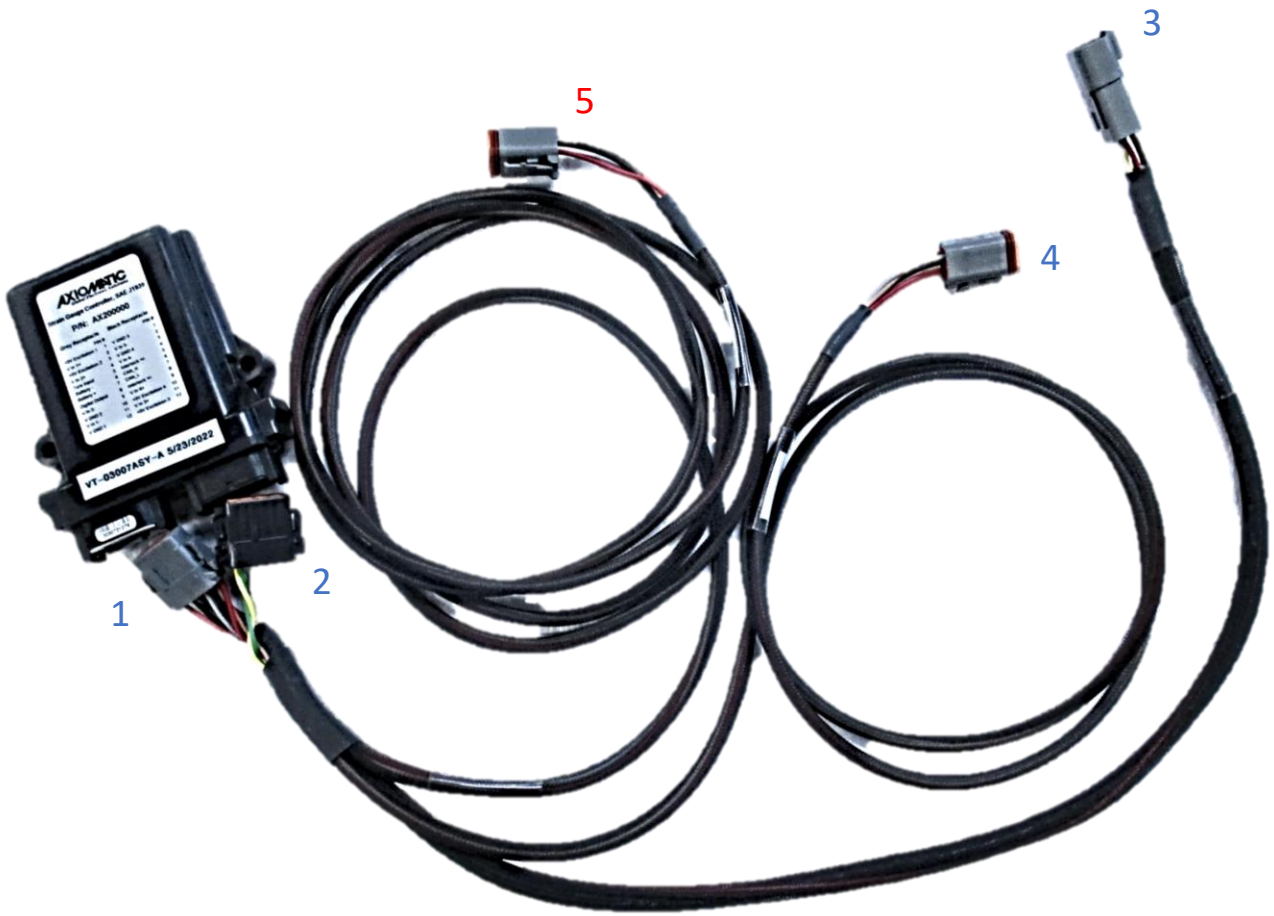
I/O Connector		
Cavity	*Description*	*Wire Color*
2	Can L A	Green
4	Tag	Black
11	Encoder 1	Gray
12	Encoder 2	Gray
14	PWM 1	Tan
15	PWM 2	Tan
18	Can H A	Yellow
20	Tag	Black
27	Speed	Gray
28	Case Drain	Gray
29	Implement Switc	Gray
37	Fan Pressure	Gray
39	PWM 1	Tan
40	PWM 2	Tan
47	Section 1	Tan
48	Section 2	Tan
65	12 V	Red
66	0 V	Black

Optional connections:

- 4 - For section control
- 6 - For second product or fan sensor
- 9 - Used for implement work switch

Connectors 1 & 7 connect to Harness P003264
Connector 2 connects to hydraulic motor
Connector 3 connects to hydraulic block
Connector 5 connects to hydraulic pressure switch
Connector 8 connects to Garmin speed puck

Scale Controller (P003005) and Harness (P003025)



1

Gray Scale Controller		
Cavity	*Description*	*Wire Color*
1	+5V Excitation	Red
2	In 1 +	Tan
3	+5V Excitation 2	Red
4	In 2 +	Tan
6	0 V	Black
7	12 V	Red
9	In 2 -	Gray
10		Black
11	In 1 -	Gray
12		Black

2

Black Scale Controller		
Cavity	*Description*	*Wire Color*
6	CAN H	Yellow
7	CAN L	Green

3

Power		
Cavity	*Description*	*Wire Color*
1	0V	Black
2	12V	Red
3	CAN L	Green
4	CAN H	Yellow

4

Tank 1 Loadcell		
Cavity	*Description*	*Wire Color*
1	+5V Excitation 1	Red
2	Ground 1	Black
3	In 1 +	Tan
4	In 1 -	Gray

5

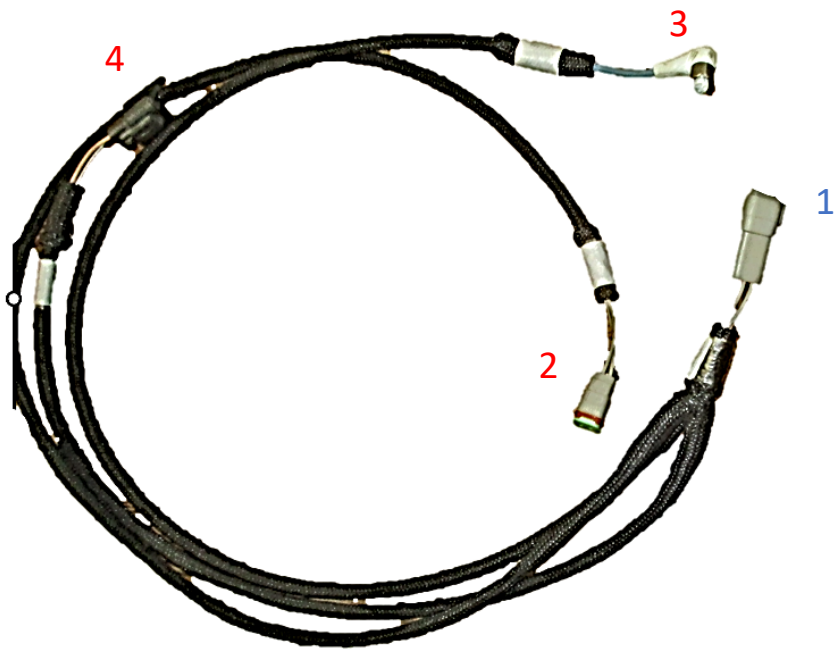
Tank 2 Loadcell		
Cavity	*Description*	*Wire Color*
1	+5V Excitation 2	Red
2	Ground 2	Black
3	In 2 +	Tan
4	In 2 -	Gray

Optional connections:

5 - For 2nd Product scale

Connectors 1 & 2 connect to scale controller
Connectors 3 connects to P003264 harness
Connector 4 connects to scale Junction block

P003070 Harness 2nd Product and Fan



1

Auxillary Connector		
Cavity	*Description*	*Wire Color*
1	PWM 2 +	Gray
2	PWM 2 -	Gray
3	12 v	Red
4	0 v	Black
5	Encoder 2	Tan
6	Fan Pressure	Tan

2

PWM 2		
Cavity	*Description*	*Wire Color*
1	PWM 2 +	Gray
2	PWM 2 -	Gray

3

Encoder 2		
Cavity	*Description*	*Wire Color*
1	12 V	Red
3	0 V	Black
4	Encoder 2 Signal	Tan

4

Fan Pressure		
Cavity	*Description*	*Wire Color*
A	12 V	Red
B	Fan Signal	Tan
C	0 V	Black

Optional connections:

2 & 3 - For second product

4 - For fan sensor

Connector 1 connects to harness P003263
Connector 2 connects to hydraulic block
Connector 3 connects to 2nd product hydraulic motor
Connector 4 connects to fan pressure sensor

Parts List

MTC200 Parts List	
Part	Component Description
P000376	DT 2 Pin Extension (10') Harness
P000375	DT 2 Pin Extension (25') Harness
P002280	Gen 2 Section 2 Harness
P002340	Foot Switch
P002731	Fan Pressure Sensor
P003005	Axiomatic CAN Scale
P003018	IQAN G11 Bluetooth Update Dongle
P003020	25 Amp ECU Power Extension 25' Harness
P003025	Axiomatic Scale Harness
P003070	Dual Product Aux Harness
P003263	MTC200 1 Product Implement Harness
P003264	MTC200 Cab to Implement Harness
P003265	MTC200 Cab Harness
P003267	MTC200 Display MD4-5
P003268	DT 4 Pin Can Terminator
P003269	ASTRO II GPS Speed only Receiver
P003272	MTC200 Controller I/O Module XC41
P003708	#0 Resistor
P003709	#0 Resistor
P003710	MTC200 Can Extension 25' Harness
K002307	Axiomatic Scale Kit
K002504	Implement Switch
K002646	MTC200 1 Product RC (2x08 + Gen 1) w/o Hyd Slidegate
K002647	MTC200 2 Product RC (2x08 + Gen 1)

Parts (Optional)

P002340

Foot Switch

P002731

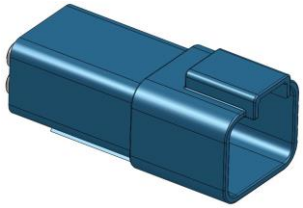
Fan Pressure Sensor

P003018

IQAN G11 Bluetooth Update Dongle

P003268

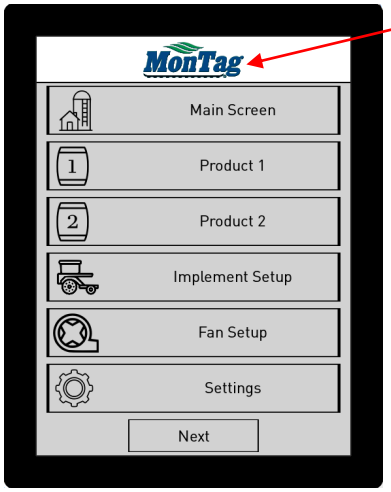
DT 4 Pin CAN Terminator



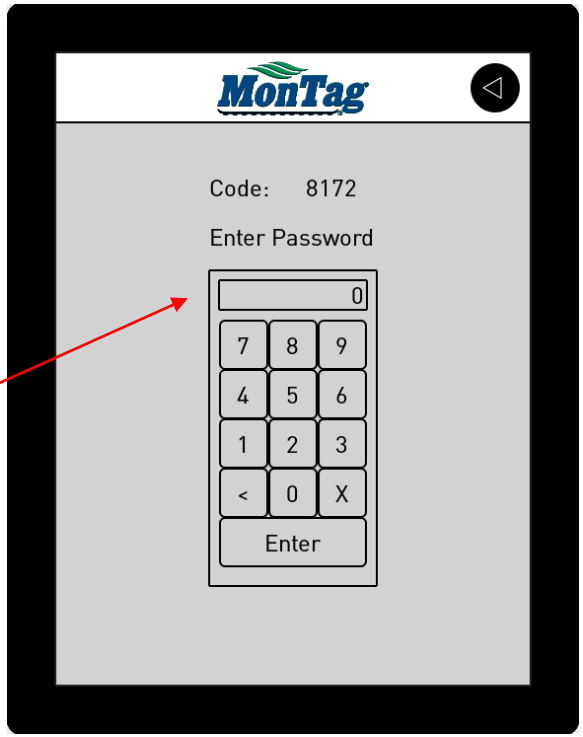
K002504

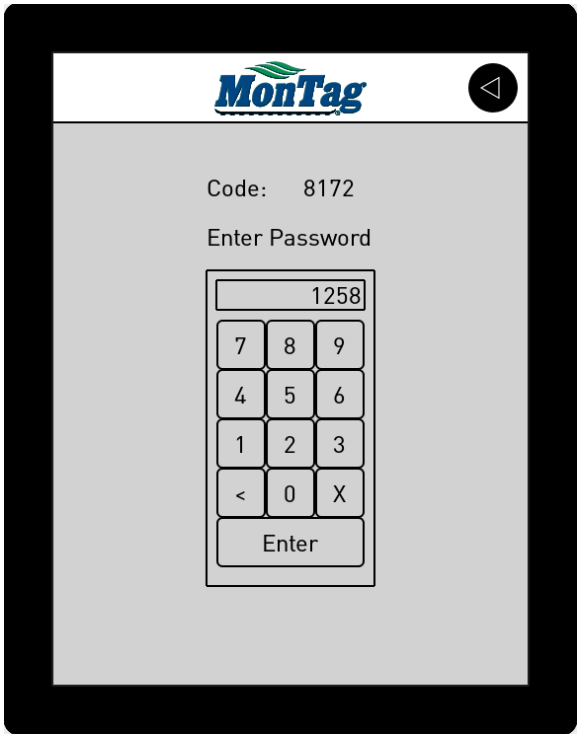
Implement Switch

Engineering Level



Tapping Montag fast 3 times getting into engineering menu



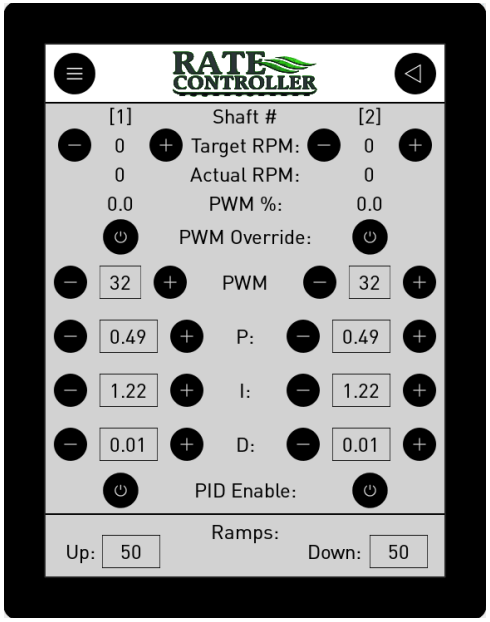


Must use password generator to enter engineering level.

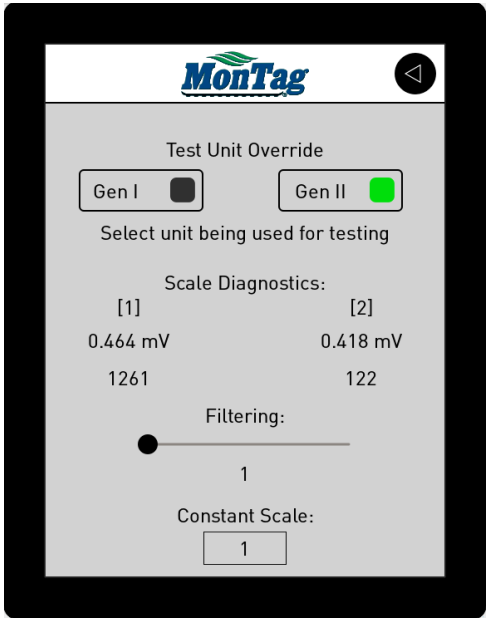
Enter code given (8172) and generator gives correct password (1258).

Engineering level allows access to PID page and testing page.

Engineering Level



This shows current PID values used on all machines. PWM override can control PWM outputs from this page and see output responses. Ramp filters PID, higher ramp is more reactive, lower ramp less reactive.



A Gen 1 can be used to test Gen 2 software by selecting Gen 1 here. Likewise, a Gen 2 can be used for testing Gen 1 software. Scale mV is raw data coming from load cells Scale filtering slows down the voltage displayed, has no impact on machine function.

Weight Scalar is added to scale setup page when in engineering level.

Installation

P003018 - IQAN-G11 Bluetooth Update Dongle

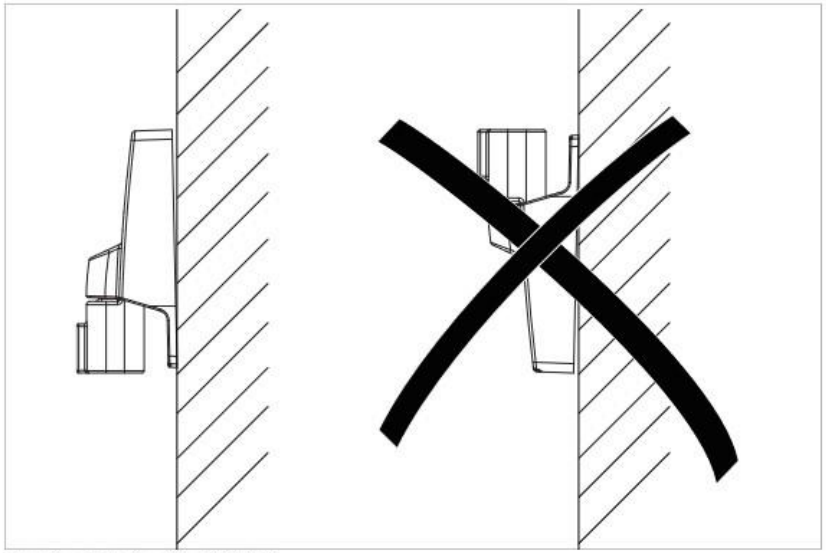
Mounting the IQAN-G11

The IQAN-G11 should be mounted with the connector facing down. Fastening method is flange mounting with 2 bolts.

NOTICE

The IQAN-G11 module should be mounted according to the following instructions:

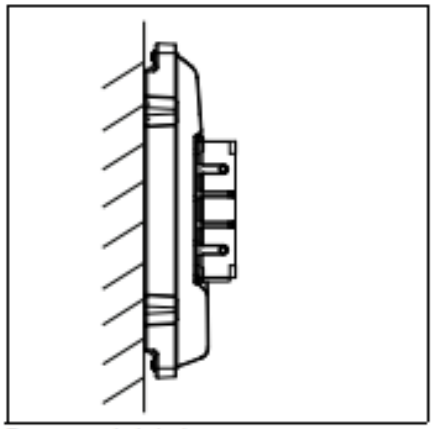
- Locate the module eliminating the risk for the cabling to be folded, crushed or damaged in any way. Ensure the cabling cannot pull, twist or induce sideload on the connector.
- Locate the module so that physical impact is avoided.
- Locate the module so that air can circulate to eliminate excess heat. Ensure that no external heat, e.g. from the engine or heater, is transferred to the module.
- Locate the module to protect it from pressure washing and water directly spraying on the connector or similar.
- Locate the module so the LED is visible.



Mounting orientation of the IQAN-G11.

A002645 - ECU I/O

- For maximum cooling, mount the module on a vertical surface.



Recommended placing.

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Training videos at
www.montagmfg.com