FIELD MATE® 3

Seed Drill
Electric Drive System

DESIGNED FOR...

- PLOT SEEDERS
- PRECISION PLANTERS
- AIR SEEDERS
- GRAVITY DRILLS
- SIDE DRESSERS
- FERT BINS
  MORE......

Users Guide
and
Installation Manual   Rev4

FIELD MATE® 3

FieldMate Warranty

IMPORTANT - PLEASE READ BEFORE PURCHASING.
Please ensure you agree to the warranty conditions before purchasing this product.
The details of the FieldMate Warranty are as follows. The warranty details apply to all
new FieldMate products purchased through any purchasing channel which may include
our OEM service, dealer network and direct sales to end users in any country.

By purchasing this product you have agreed with the terms of the FieldMate warranty.

The FieldMate warranty is a **One Year** return to factory Warranty as outlined below.

Gtech New Zealand Limited does not offer on site support for the FieldeMate product.

What we cover under warranty:
If a part fails we will ship new parts or loan parts at our cost.
We will decide if a failed item will be fixed or replaced.
All failed parts must be returned to us at your cost.
Any repaired parts will be returned to you at our cost.
Any loan parts must be returned to us with in 14 days of replacement parts being
sent to you.
Failure to return loan parts will result in an invoice being issued to you for the loan parts.

What we do not cover or will not accept:
We do not cover the costs incurred to replace FieldMate parts.
We do not cover the costs incurred to fault find FieldMate parts.
We do not cover the costs incurred to remove or fit FieldMate Parts.
We do not cover the shipping costs for any FieldMate Parts that are returned to us. We
do not cover wear and tear on sensors or AN**Y** connectors used on the system.
We do not cover installation wiring that is used to power the fieldmate system. *Please
ensure your power supply system wiring is suitable to supply power to the fieldmate
System. If you are not sure if the power supply system is suitable for the FieldMate
system please ask for assistance from your FieldMate supplier.*

NOTE: Gtech New Zealand Limited is in no way liable or responsible for any mishaps,
planting irregularities that result from using the FieldMate System.
It is the sole responsibilty of the operator or dealer to:
   - Correctly set up the Field Mate system ensuring it is operating with out issue.

   - Ensure that the FieldMate system is fit for the entended purpose.
   - Test the FieldMate system after installation to ensure it operates
     as expected and is fit for use.

Operator requirements :
The operator should understand the FieldMate E-drive system and if needed drill test runs with
a bag on the metering system to ensure the correct amounts is being released by the system.

"FIELD MATE" EXPRESS LIMITED WARRANTY AND LIMITATION OF LIABILITY AGREEMENT

Where the word "FIELD MATE™" Area Meter appears it means the "FIELD MATE™" Area Meter circuit board which includes a hard ware component and a leased Firmware component and/or Field Mate Download Application, enclosure and wiring assembly only. Does not refer to any additional wiring added to the "FIELD MATE™" Area Meter system during installation. The Firmware running in the "FIELD MATE™" Area Meter and/or Field Mate Download Applicationis a zero fee leased copy and is not part of the "FIELD MATE™" Area Meter purchase agreement. The Firmware and/or Field Mate Download Application lease runs for the life of the product. G-Tech NZ Ltd remains the sole owner of the Firmware running in the "FIELD MATE™" Area Meter and/or Field Mate Download Application.

Express Limited warranty.

G-TECH NZ LTD warrants the "FIELD MATE™" Area Meter to be free from defects in materials and workmanship for a period of 12 months from the original date of sale to the end user or for a period of eighteen months from the date of factory shipment, whichever is sooner. If the product fails, customers should at their cost return the "FIELD MATE™" Area Meter to G-TECH NZ LTD. At the exclusive option of G-TECH NZ LTD , to either :

    (a)   Repair the "FIELD MATE™"Area Meter .

    (b)   Replace the "FIELD MATE™" Area Meter .

    (c)   If G-TECH NZ LTD is unable to replace / repair or correct firmware or hardware errors, G-TECH NZ LTD will refund the price paid for the "FIELD MATE™"Area Meter .

These are your sole remedies for any breach of warranty.

The warranty does not apply to "FIELD MATE™" Area Meter's which have been improperly installed, subjected to extremes beyond the limits of G-TECH NZ LTD specifications, or which have been physically damaged. Nor does it apply to "FIELD MATE™" Area Meter's found to be defective due to abuse, electrical discharge, under temperature, over temperature, improper power application , damage resulting from acts of war or any damage incurred due to acts of nature, salt or fresh water immersion or spray, or improper or unauthorized repair. Freight charges for products returned to G-TECH NZ LTD should be pre-paid by the customer. G-TECH NZ LTD will prepay freight charges for returning the "FIELD MATE™" Area Meter to the customer, provided that the "FIELD MATE™" Area Meter proved defective under the terms and conditions of the warranty.

Note:
Non G-TECH NZ LTD authorized individuals are discouraged from performing repairs on G-TECH NZ LTD products. Opening of the product by unauthorized individuals will void the product warranty. Damage incurred as a result of non G-TECH NZ LTD service attempt will be considered abuse and repairs will not be covered under warranty or standard repair pricing by G-TECH NZ LTD .

Limitation of liability

In no event will G-TECH NZ LTD or any person involved in the creation, production or distribution of the G-TECH NZ LTD "FIELD MATE™" Area Meter be liable to you on account of any claim for any damages including any lost of profits , lost savings, or other special, incidental, consequential, or exemplary damages, including but not limited to any damages assessed against or paid by you to any third party, rising out of the use, liability to use, quality or performance of the G-TECH NZ LTD "FIELD MATE™" Area Meter , even if G-TECH NZ LTD or any such person or entity has been advised of the possibility of damages or for any claim by any other party. ***G-TECH NZ LTD total liability under any provision of this agreement is in any case limited to the amount actually paid by you for the "FIELD MATE™" Area meter.***

Description of other rights and limitations.

Limitations on reverse engineering, Decompilation and Disassembly. You may not reverse engineer, decompile, disassemble or upload the Firmware.

Rental. You may not rent or lease the "FIELD MATE™"Area Meter .

Copyright. All title and copyrights in and to the "FIELD MATE™"Area Meter , the accompanying printed material and copies of the firmware are owned by G-TECH NZ LTD. You may not copy the printed material accompanying the "FIELD MATE™" Area Meter . All rights not specifically granted under this agreement are reserved by G-TECH NZ LTD.

ACCEPTANCE OF TERMS

I the under signed Purchaser of the "FIELD MATE™" Area Meter computer have read the above Warranty and Limitations of liability Agreement and agree to the conditions and limitations as stated above.

Unit Serial Number   :   ....

Start Date of Agreement   :   ....

Purchaser Company Name   :   ....

Purchaser Address   :   ....

                                   ....

Purchaser Name Printed   :   ....

Ver 1.**6**

FIELD MATE_{tm} USER MANUAL

If you Need to Call Customer Service
Please complete the following information for future reference:

Field Mate Model* :..

Serial Number * :...

Date Purchased :..

Place of Purchase:..

 * The Serial/Model Number is displayed in the
    Information Screens of the meter.

FIELD MATE® 3

> **IMPORTANT:**
> **To obtain the highest Precision Surface Area / Work done Measurement:**
>
> - The Speed sensor must be mounted on a wheel that is not subject to slip or spin during the Surface Area Measurement mode. ie: When not in Hold mode.
> - Straight line operation (if a radar or GPS spped pulse is NOT used) is best suited for surface area measurement as tight turns of implement / vehicle will result in a lesser or greater number of wheel turns. High precision mesurement is best achieved by working to straight lines.
> - Wheel size and implement working width should be measured as required to ensure the sizes used by the meter, reflect the real world sizes of the implement / vehicle. It is the users responsiblity to ensure the sizes in the meter are correct.
> - When Work is not being measured, the meter must indicate this by going into Hold mode.ie: Hold light on, "HOLD" flashing on working screen.

Introduction:

Air Seeders – Plot Seeders – Gravity Drills – Precision Seeders

The FIELD MATE Electric drive system has been developed to replace the mechanical drive system on 'any' seed drill. The system allows for fast seed drill calibration, taking all the hassel out of setting up the drilling rate of the drill, allowing you to get the job done!

The system is supplied with a drive motor that this connected to the seed drills metering shaft. The system can take a speed pulse from any of the following, ground wheel – Radar (either mounted on drill or the tractor radar) or a GPS speed sensor.

The system uses a HOLD signal to instruct the drive motors to operate. The HOLD signal can come from a sensor mounted on drill or from a user operated switch in the case of a roller drill. The HOLD signal can even be supplied from a GPS system that will control the electric drive operation from a given drilling map.

The system supports up to 4 drive motors. If any of the motors or metering units develop a fault the user is informed of the issue via the in cab mounted FieldMate III monitor.

The state of art electronic drive hardware continuously monitors the power supplied to the drive motors. In the event that a metering unit jams (EG: due to an obstruction in the metering unit) the power will be limited to the motor and the user will be informed of a motor STALL event. The power limiting feature prevents the fuses from blowing , the message on the monitor alerts the user to the issue so a fix can be implemented and drilling operations can continue.

Warranty :

1 Year return to factory Warranty on Electric Drive components, sensors and Downloading support hardware. Please ensure you agree to the warrantry conditions before proceeding to purchase this product, read the warranty form at the end of this user guide. Installation wiring to sensors and wear and tear on connectors not covered.

NOTE: Gtech New Zealand Limited is in no way liable or responsible for any mishaps, planting irregularities that result from using this product.
It is the sole responsibilty of the operator or dealer to set the Electric drive system up correctly and to monitor the system to ensure it is operating with out issue.
The operator should understand the system and if needed drill test runs with a bag on the metering system to ensure the correct amounts is being released by the system.

We are here to help. Call your dealer support 'Anytime' if you have even the smallest question.

EMI Emmisssion Certification:

Electro magnetic interference emmission certification are a series of tests that required to be passed beforean electronic device can be sold. These test are related to how much electron magnetic radiation is emmitted by an electronic device.

The Area meter has the following certifications and is suitable for sale in the following countries:

Certification	Countries
C-Tick Z874 Class B	New Zealand, Australia
FCC	USA
CE	Europe

FIELD MATE® 3

Specifications:

Supply volts	:	5 – 15 Volts
Monitor Current	:	75ma
Temperature	:	-5 to 55 degree/C
Supply Voltage	:	5 to 15 Volts
Max Width	:	99.99 Meters
Distance	:	999.99 km
Max Speed	:	20 km/Hr
Wheel Size	:	999.9 cm
Max Motor Amps	:	20 amps per motor

Features:

- Up to 4 metering unit motors.

- Fan speed monitoring.

- Hardware fault monitors on all motor channels.

- Real time motor RPM displayed to give real world performance measurment

- Fast and simple drill calibration.

- Instant feed back on system operation when setting the drilling rate.

- Can be set up to work in KG/Hect mode or precision seeding or Plot Seeder control mode.

- Prestart mode available for air seeder.

- Low bin feature available.

- Auto greaser control available.

- All information retained on monitor.

- Report feature available.

- All inputs high voltage protected.

- Adjustable cell wheel (seed singulator) prime speed for Plot seeder.

Protect the motor from water.

- Do NOT steam clean the motor -

- Protect from driving rain -

Water Damage is NOT covered by warranty

FIELD MATE®
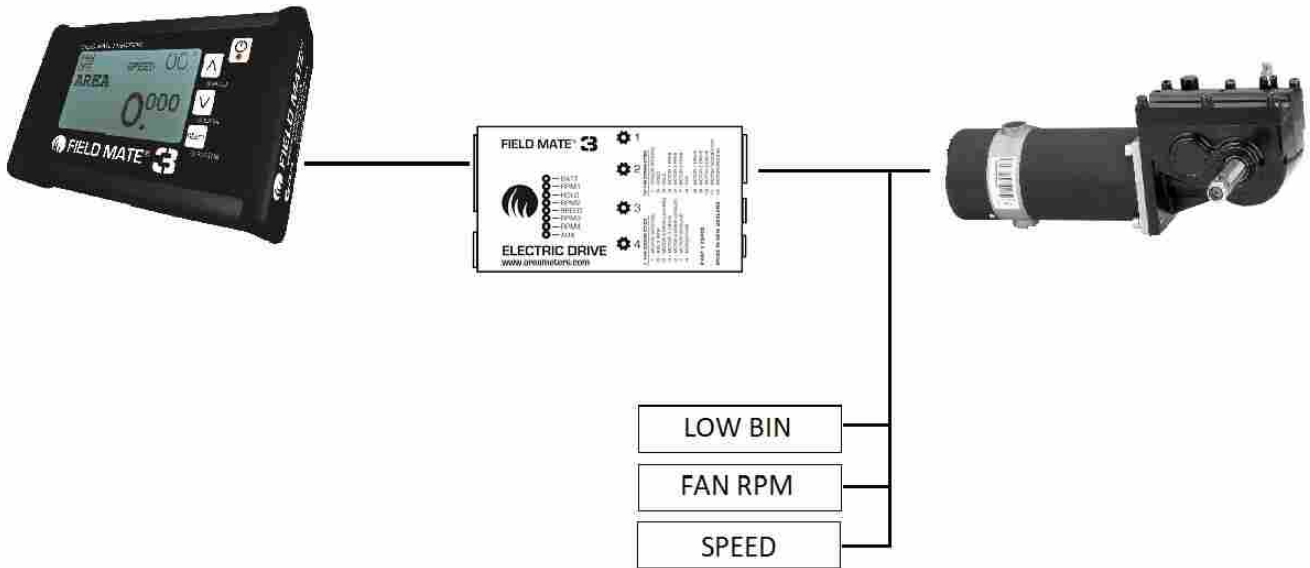
1 MOTOR SYSTEM

LOW BIN

FAN RPM

SPEED

Wiring Connections:
12 Pin Connector

1-	Ground	Black	Ground signal to all sensors
6-	Speed	Yellow	Speed pulse
5-	Hold	White	Hold signal
3-	RPM 1	Green	Motor 1 rpm pulse
2-			
7-	Low Bin	Red	Low Bin Signal (optional)
4-	Fan	Blue	Fan rpm Pulse (optional)
8-	Drive 1	Brown Green	PWM motor 1 power
9-			
10-	Drive 3	Blue	Auto Greaser power (optional)
11-	Power	Brown Red	Power for sensors, prime motors
12-	Ground	Black Yellow White	Motor Ground

FIELD MATE®
PRECISION

FIELD MATE III 1 MOTOR SYSTEM
+ AUTO GREASE + FAN + LOW SEED

NOTES

WIRES 1-7
5AMP, 7 CORE
+ PIN 11 SENSOR FEED

WIRES 8-2 CORE
9- 10 AMP
10- 1 CORE
11- 1 CORE
12- 3 CORE

NOTE: IF NO AUTO GREASER,
THEN NO CONNECT = 5AMP BROWN
= 10 AMP BLUE

Fan is input "SPARE"
Low bin is "REU4 INPUT"
or
"REU3 INPUT"
Make SOFTWARE SELECTABLE

AUTO GREASE PLUG

Signal wires
5AMP

GND	BLACK	**1**	
SPEED	YELLOW	**6**	
HOLD	WHITE	**5**	
REV 1	GREEN	**3**	
		2	
LOW BIN	RED	**7**	
FAN	BLUE	**4**	
Pwm + MOT1	BROWN	**8**	
		9	
Pwm + MOT 3 AUTO GREASE POWER	BLUE	**10**	
+12V SENSOR +12V PRIME	RED	**11**	
Motor GND	BLACK YELLOW WHITE	**12**	

REV 1

M1

LOW BIN

FAN

PRIME

NOTE: Make AUTO GREASE able to OutPut on "MOT 3" or "MOT 4"
NOTE: Make LOWBIN SELECTABLE on "REV 3" or "REV 4"

Grant Sullivan 08/17

2 MOTOR SYSTEM

Wiring Connections:
12 Pin Connector

1-	Ground	Black	Ground signal to all sensors
6-	Speed	Yellow	Speed pulse
5-	Hold	White	Hold signal
3-	RPM 1	Green	Motor 1 rpm pulse
2-	RPM 2	Brown	Motor 2 rpm pulse
7-	Low Bin	Red	Low Bin Signal (optional)
4-	Fan	Blue	Fan rpm Pulse (optional)
8-	Drive 1	Brown Green	PWM motor 1 power
9-	Drive 2	White Blue	PWM motor 2 power
10-	Drive 3	Black	Auto Greaser power (optional)
11-	Power	Brown Red	Power for sensors, prime motors
12-	Ground	Black	Motor Ground 8mm

FIELD MATE®

PRECISION

2 MOTOR + FAN + BIN

Signal wires
5AMP

GND	1	BLACK
SPEED	6	YELLOW
HOLD	5	WHITE
REV 1	3	GREEN
REV 2	2	
LOW BIN	7	RED
FAN	4	BLUE
MOTOR 1	8	GREEN / BROWN
MOTOR 2	9	BLUE / WHITE
	10	
+12V SENSOR	11	RED
Motor GND	12	BLACK

REV 1   M1   REV 2   M2

LOW BIN   FAN

3 MOTOR SYSTEM

FIELD MATE 3

ELECTRIC DRIVE
www.areamotors.com

LOW BIN

FAN RPM

SPEED

Wiring Connections:

12 Pin Connector

1-	Ground	Black	Ground signal to all sensors
6-	Speed	Yellow	Speed pulse
5-	Hold	White	Hold signal
3-	RPM 1	Green	Motor 1 rpm pulse
2-	RPM 2	Brown	Motor 2 rpm pulse
7-	RPM 3	Red	Motor 3 rpm pulse
4-	Fan	Blue	Fan rpm Pulse (optional)
8-	Drive 1	Brown Green	PWM motor 1 power
9-	Drive 2	White Blue	PWM motor 2 power
10-	Drive 3	Black Yellow	PWM motor 3 power
11-	Power	Brown Red	Power for sensors, prime motors
12-	Ground	Black	Motor Ground 8mm

FIELD MATE® 3

FIELDMATE®

PRECISION

3 MOTOR + FAN + BIN

Signal wires

GND	1	BLACK 5AMP
SPEED	6	YELLOW
HOLD	5	WHITE
REV 1	3	GREEN
REV 2	2	
REV 3	7	RED
FAN	4	BLUE
MOTOR 1	8	GREEN BROWN
MOTOR 2	9	BLUE WHITE
MOTOR 3	10	BROWN BLACK
+12V SENSOR	11	RED
Motor GND	12	BLACK 6MM

REV 1   M1
REV 2   M2
REV 3   M3
FAN

FIELD MATE® 3

4 MOTOR SYSTEM

Wiring Connections:

12 Pin Connector

1-	Ground	Black	Ground signal to all sensors
6-	Speed	Yellow	Speed pulse
5-	Hold	White	Hold signal
3-	RPM 1	Green	Motor 1 rpm pulse
2-	RPM 2	Brown	Motor 2 rpm pulse
7-	RPM3	Red	Motor 3 rpm pulse
4-	Fan	Blue	Fan rpm Pulse (optional)
8-	Drive 1	Brown Green	PWM motor 1 power
9-	Drive 2	White Blue	PWM motor 2 power
10-	Drive 3	Black Yellow	PWM motor 3 power
11-	Power	Brown Red	Power for sensors, prime motors
12-	Ground	Black	Motor Ground 8mm

7 Pin Connector

1-	Ground	Black	Motor ground
6-			
5-	RPM4	White	Motor 4 rpm pulse
3-			
2-	Drive 4	Yellow Green Brown	PWM motor 4 power
7-	Ground	Black	Motor Ground

3 MOTOR + FAN + BIN

FIELD MATE® PRECISION

GND 1
6
RPM4 5
3
MOTOR 4 2
7
GND 4

REV 4 M4 RPM4

REV 1 M1 REV 2 M2 REV 3 M3 FAN RPM4

Signal wires 5AMP

GND 1 BLACK
SPEED 6 YELLOW
HOLD 5 WHITE
REV 1 3 GREEN
REV 2 2
REV 3 7 RED
FAN 4 BLUE
MOTOR 1 8 GREEN, BROWN
MOTOR 2 9 BLUE WHITE
MOTOR 3 10 BROWN BLACK
+12V SENSOR 11 RED
Motor GND 12 BLACK 6MM

Accord Metering unit Adaptor Plate

The FieldMate to Accord Metering unit plate allow the FieldMate Motor to be connected the accord unit drive shaft.

The FieldMate Motor adaptor kit comes with a motor shaft coupling and an adaptor plate.

Important Note: Either a "left" or "right" shaft motor can be fitted to this adaptor to suit your seed drill setup.
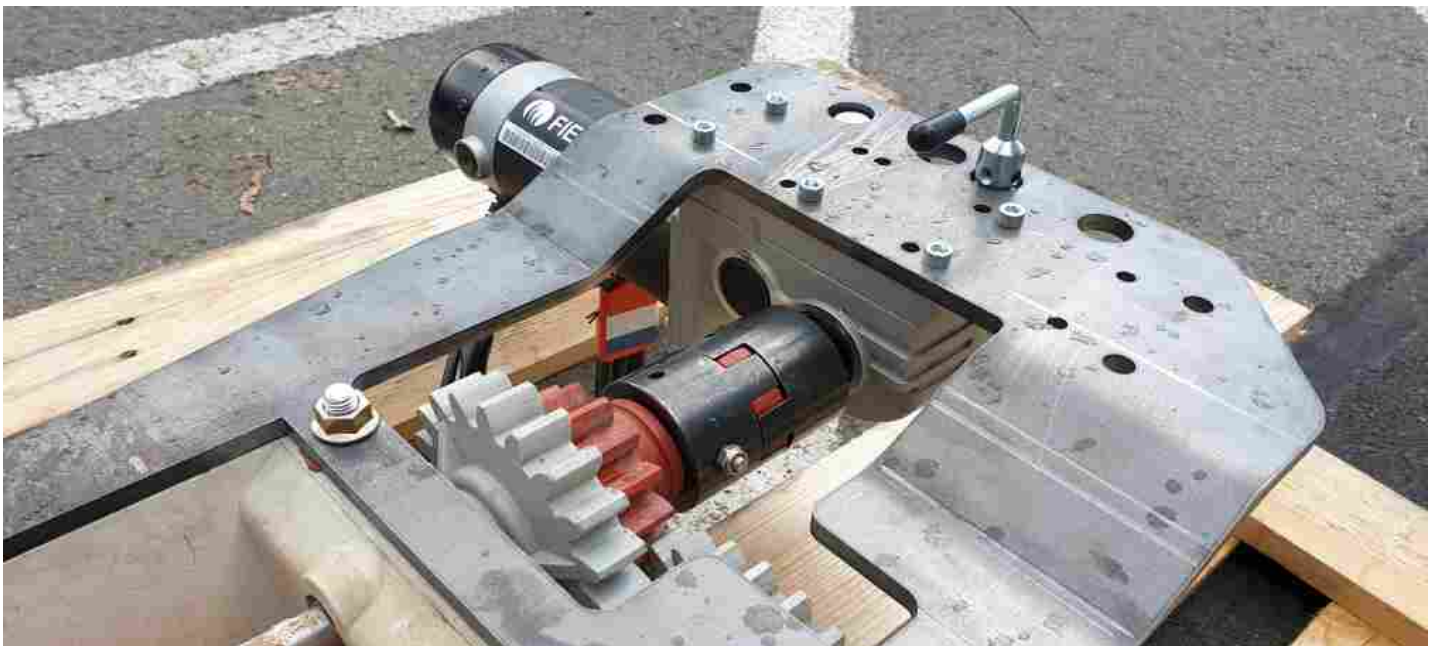
More Adaptor place pics.

438.5

8

SCALE 1 : 4

290
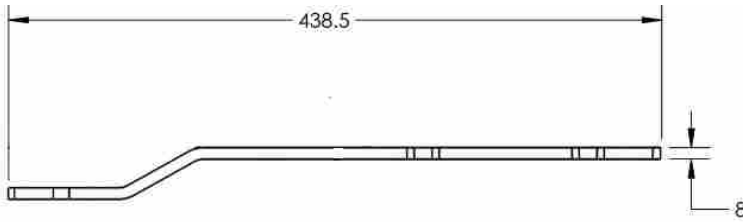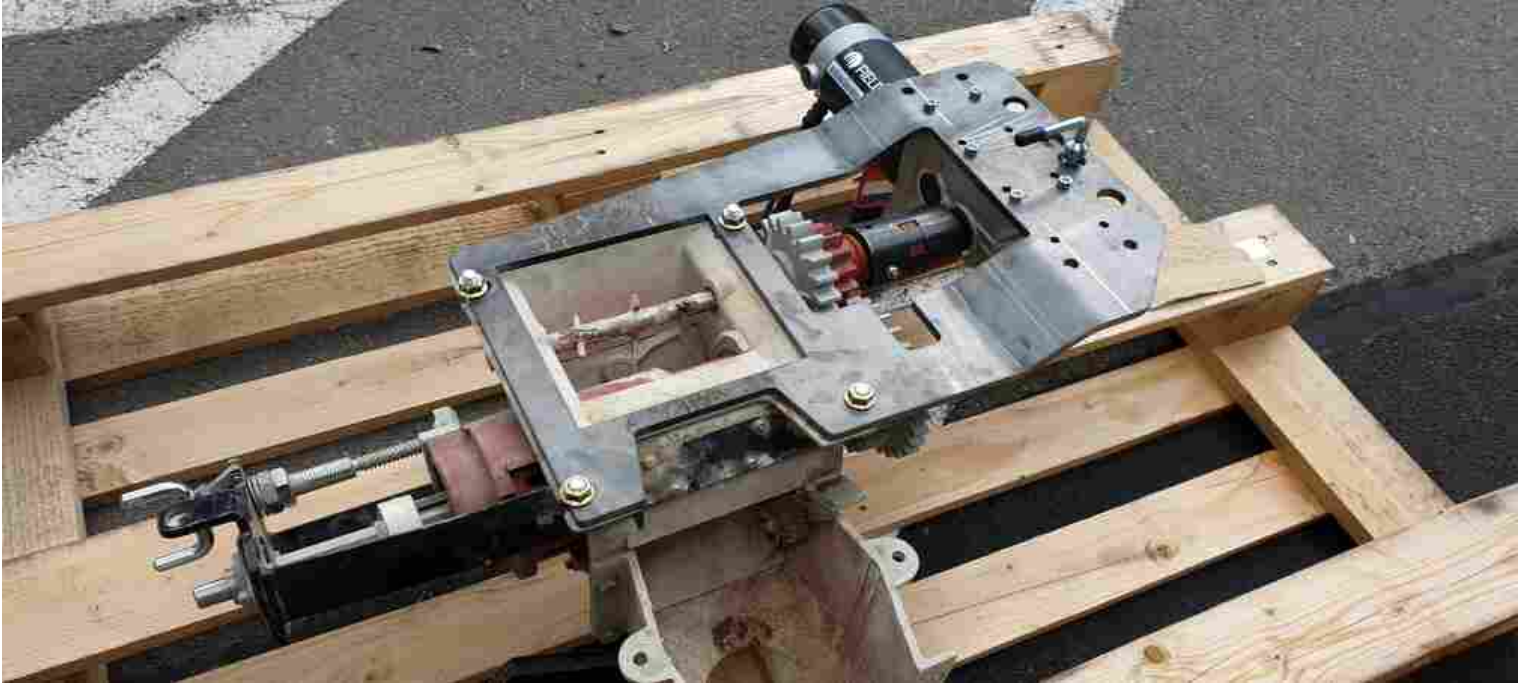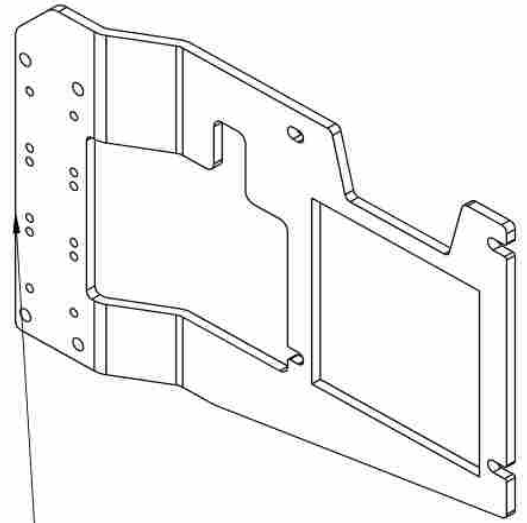
FRONT VIEW
SCALE 1 : 4

**STANDARD PLATE HAS NO
LEVER HOLES**

Main Screen

1 Motor system

FAN SPEED

GROUND SPEED

MOTOR RPM BAR GRAPH

RATE REDUCTION MODE ON

TARGET MOTOR RPM

TRUE MOTOR RPM

2,3 or 4 Motor system
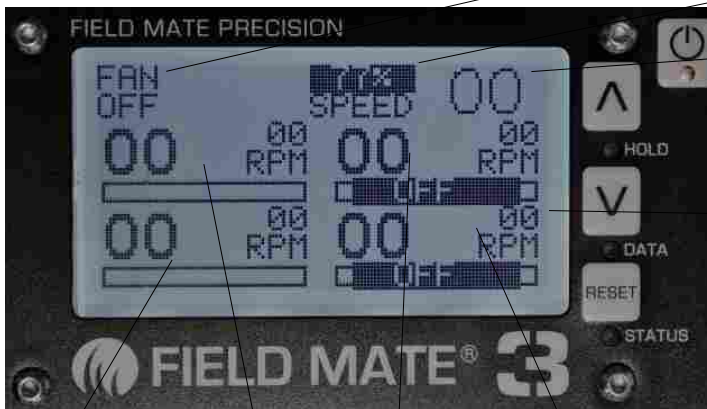
FAN SPEED

RATE REDUCTION MODE ON

GROUND SPEED

TARGET MOTOR RPM

BIN3 RPM

BIN2 RPM

BIN1 RPM

BIN4 RPM

'NEXT' Main Screen
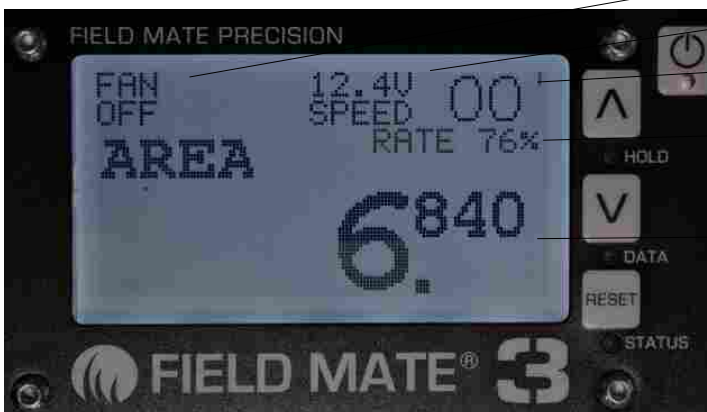
FAN SPEED

SYSTEM VOLTAGE

GROUND SPEED

RATE REDUCTION MODE ON

AREA DRILLED

Edit BIN1 Screen

BIN1 NAME

CALIBRATION WEIGHT

DRILLING RATE

To 'change' any of these setting hold down ant ARROW key when the item is selected.

Other BIN set up screens...

(Move to any of these screens by quick pressing the Arrow keys.)

BIN2 NAME

CALIBRATION WEIGHT

DRILLING RATE

BIN3 NAME

CALIBRATION WEIGHT

DRILLING RATE

BIN4 NAME

CALIBRATION WEIGHT

DRILLING RATE
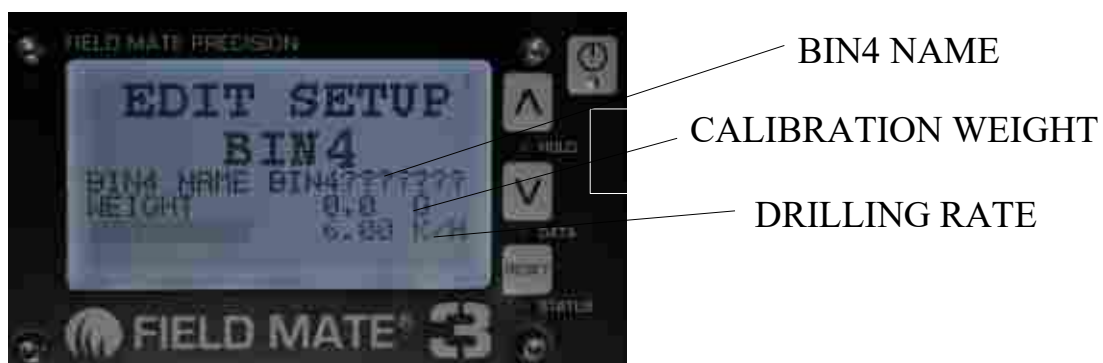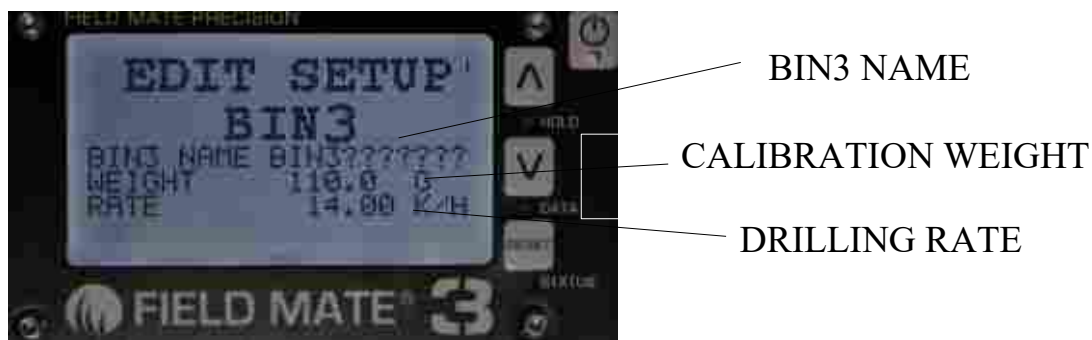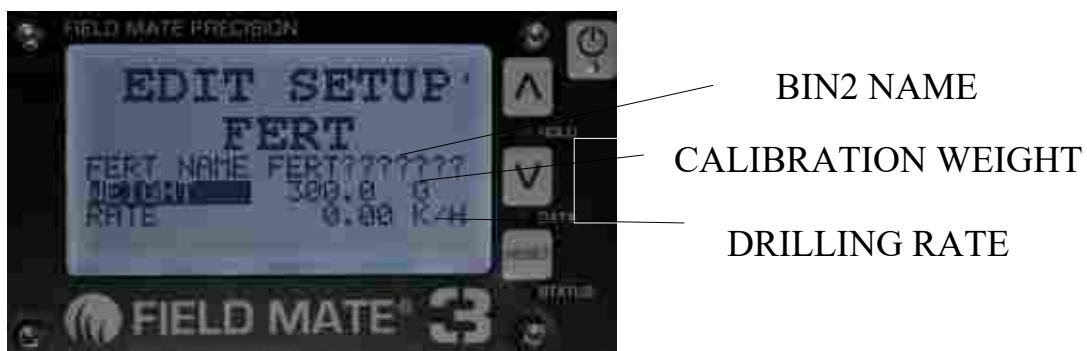
Edit Screen details for WEIGHT and RATE (kg/hect).

Setting the WEIGHT after a calibration. Use the ARROW keys to adjust the number.

RPM of the BIN motor when the drill is working at 10km/Hr.

Note: We recommend this number should be around 20 RPM.. But the motor is happy to run from 3 RPM to 100RPM when using the standard 21:1 gearbox ratio..

This is the Power applied to the motor during a calibartion run.

Note: A PWM level of 25% is a smooth runing motor. PWM above 40% suggest a tight metering unit could exist and may need a service.

Seed WEIGHT. Adjust using the ARROW keys.

Exit this screen by quick pressing the POWER key once. Exit t to the Main screen by pressing the POWER key twice.

Setting the RATE after a calibration. Use the ARROW keys to adjust the number.
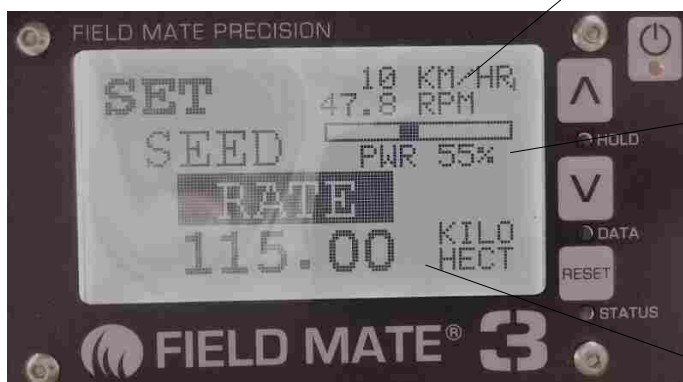
RPM of the BIN motor when the drill is working at 10km/Hr.

Note: We recommend this number should be around 20 RPM.. But the motor is happy to run from 3 RPM to 100RPM when using the standard 21:1 gearbox ratio.

This is the Power applied to the motor during a calibartion run.

Note: A PWM level of 25% is a smooth runing motor. PWM above 40% suggest a tight metering unit could exist and may need a service.
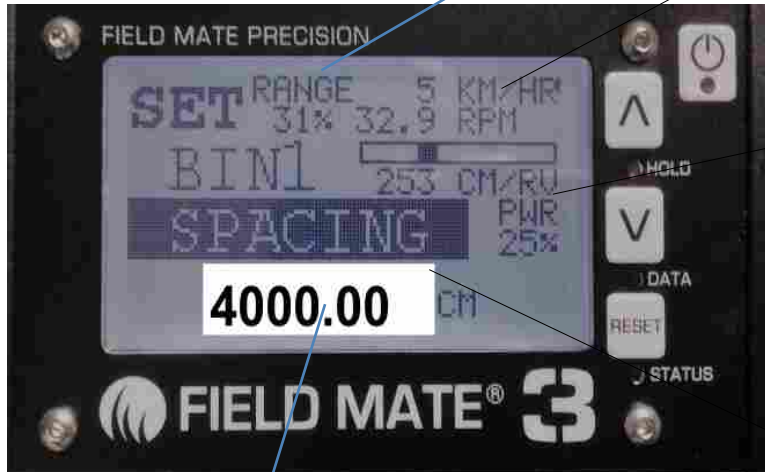
Seed RATE. Adjust usingthe ARROW keys.

Exit this screen by quick pressing the POWER key once. Exit to the Main screen by pressing the POWER key twice.

Edit Screen details for PRECISION CONTROL.

Setting the CELL Count number. Use the ARROW keys to adjust the number.
CELL count multiplied by the SPACING is the distance travelled for 1 rev of the cell wheel (CONE).

-RANGE% is the range of the motor RPM at the CELL Setting.
-RPM of the BIN motor when the drill is working at 5km/Hr.
Note: Motor RPM limits 3 to 100RPM. when using a 21:1 gearbox ratio.

-This is the Power applied to the motor during a calibartion run.
Note: A PWM level of 25% is a smooth runing motor. PWM above 40% suggests a tight metering unit and may need a service.

-CELL Count. Adjust using the ARROW keys.
**Exit this screen by quick pressing the POWER key once. Exit to the Main screen
by pressing the POWER key twice.**

Setting the SPACING . Use the ARROW keys to adjust the number.
SPACING could be 6.50CM for Onions with a 40 cell seed wheel... OR
SPACING could be 100.00CM for plot Seeders, where adjust the CELL count to 4 would be a 4meter plot,
or adjusting the CELL to 40 would be a 40 meter plot.

-RANGE% is the rage of the motor RPM at the SPACING Setting.
-RPM of the BIN motor when the drill is working at 5km/Hr.
Note: Motor RPM limits 3 to 100 RPM.

-This is the Power applied to the motor during a calibartion run.
Note: A PWM level of 25% is a smooth runing motor. PWM above 40% suggest a tight metering unit could exist and may need a service.

-SPACING between seeds. Adjust using the ARROW keys.
Exit this screen by quick pressing the POWER key once. Exit to the Main screen by pressing the POWER key twice.

FIELD MATE 3

Edit Screen details for a PLOT SEEDER

Setting the CELL Count number to 1. Use the ARROW keys to adjust the number.
CELL count multiplied by the SPACING is the distance travelled for 1 rev of the cell wheel (CONE).

-- Description of bin or material being planted.

- For Plot seeding this is always set to 1. This means the cone or cell wheel is rotated 1 rev for the length of the plo**t.**

-Plot length

-Spacing between the plot length. Set this number for the gap between each plot. If using this use the CONE-ALT option as a control for a un-used bin chanel to drive the cone refill solenoid.
 NOTE**: After the plot length is changed. Check this setting is correct, as is will change when the plot length is changed.**

-RANGE% is the rage of the motor RPM at the CELL Setting.
-RPM of the BIN motor when the drill is working at 5km/Hr.
Note: Motor RPM limits 3 to100RPM, when using a 21:1 gearbox ratio.

-This is the Power applied to the motor during a calibartion run.

Note: A PWM level of 25% is a smooth runing motor. PWM above 40% suggest a tight metering unit could exist and may need a service.
 -CELL Count. Adjust using the ARROW keys. Set to 1 for a PLOT SEEDER.
Exit this screen by quick pressing the POWER key once. Exit to the Main screen by pressing the POWER key twice.

Edit Screen details for a **PLOT SEEDER**

-RANGE% is the range of the motor RPM at the PLOT LENGTH.

-RPM of the BIN motor when the drill is working at 5km/Hr.
Note: Motor RPM limits 3 to 100RPM.

-This is the Power applied to the motor during a calibartion run.
Note: A PWM level of 25% is a smooth runing motor. PWM above 40% suggest a tight metering unit could exist and may need a service.

-SPACING is the PLOT LENGTH.
 Adjust using the ARROW keys.

Exit this screen by quick pressing the POWER key once. Exit to the Main screen by pressing the POWER key twice.

SET THE PLOT LENGTH.

If the PLOT length is   8 meters.... then enter   800.00CM
If the PLOT length is 40 meters.... then enter 4000.00CM

- Change the gap between plots.

Spacing between the plot length. Set this number for the gap between each plot. If using this use the CONE-ALT option as a control for a bin drive channel to drive the cone refill solenoid.
NOTE: After the plot length is changed. Check this setting is correct, as is will change when the plot length is changed.

Job Screen details

Inside the JOB menu...

Change the job
Hold ARROW key to select

Bin1 libary select .
Currently set to 1

Bin2 libary select .
Currently set to 1

Move to new job if
required

Current JOB. To reset
or view details hold any
ARROW key.
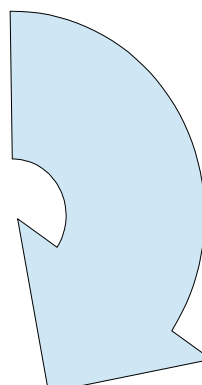
RESET Job1

Start Job1

View Job1 Report

15

Option Screen details

Quick Press the POWER key to enter the OPERATE mode.

Inside the OPERATE menu...

(Move through the OPERATE screens using the ARROW keys - Quick Press!)

Area Drill for the current job
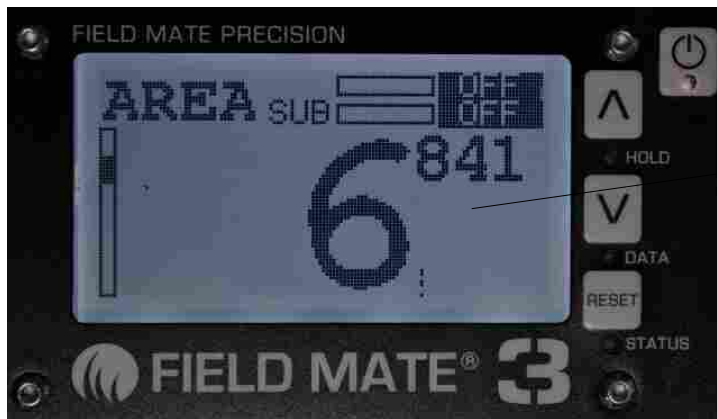
SUB AREA drilled for this job. This total can be cleared by holding down any ARROW key. If reset no other totals are effected.
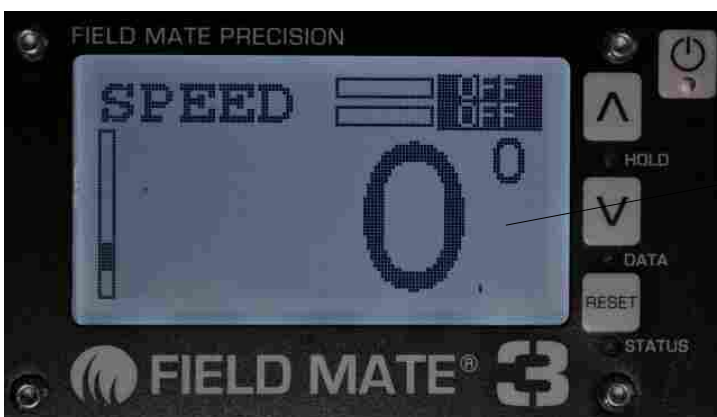
Speed of the drill in KM/HR.

NOTE!! get this number right so the true speed of teh drill is seen here!!

If the monitor is not displaying the true ground speed then the drilling rates will not be as expected.

IT IS THE SOLE RESPONSIBILTY OF THE USER TO GET THIS RIGHT.!
FIELDMATE SUPPORT IS HERE TO HELP,
CONTACT US ANYTIME FOR SETUP SUPPORT.

FIELD MATE® 3

Inside the OPERATE menu. More..
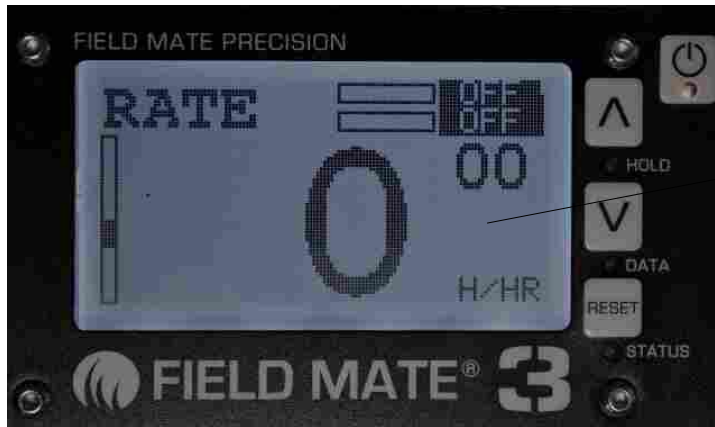
Working RATE of the Drill. Displayed in Hectare/Hour.
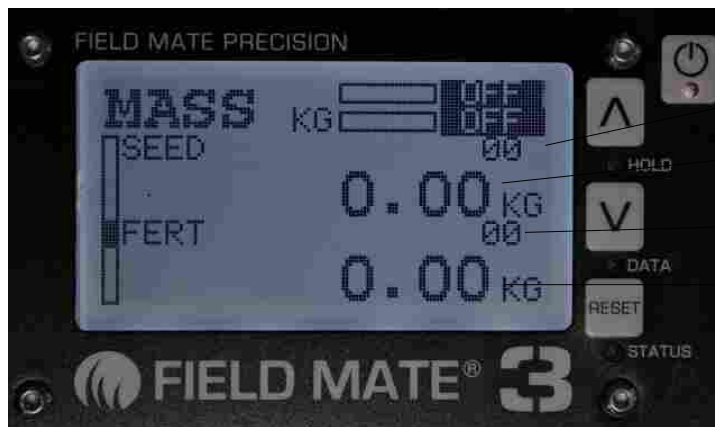
Bin1 shaft rotations

Bin1 KG's drilled

Bin2 shaft rotations

Bin2 KG's drilled

Bin3 shaft rotations

Bin3 KG's drilled

Bin4 shaft rotations

Bin4 KG's drilled

Reduce rate mode % on

Real time Drilling Rate Motor controlstate

Real RPM of motor

Target RPM of motor

Drill speed KM/Hr

PWM correction

% of PWM power applied to motor

Inside the OPERATE menu. More..
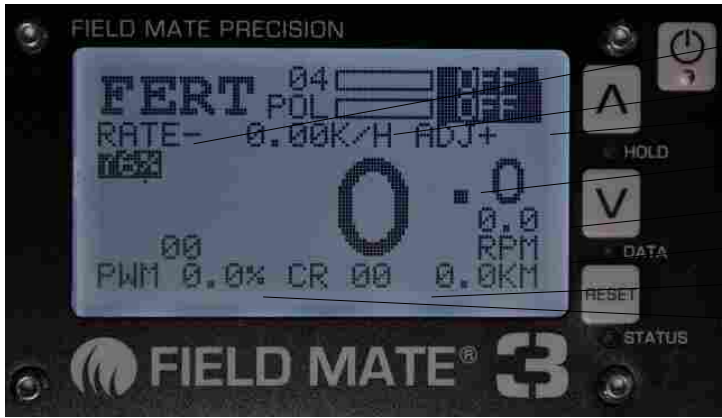
- Reduced rate mode % on
- Real time Drilling Rate
- Motor control state
- Real RPM of motor
- Target RPM of motor
- Drill speed KM/HR
- PWM Correction
- %of PWM Power applied to motor
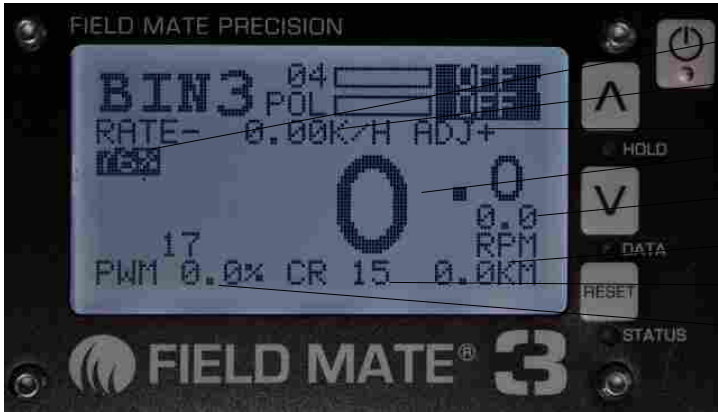
- Reduced rate mode % on
- Real time Drilling Rate
- Motor control state
- Real RPM of motor
- Target RPM of motor
- Drill speed KM/HR
- PWM Correction
- %of PWM Power applied to motor
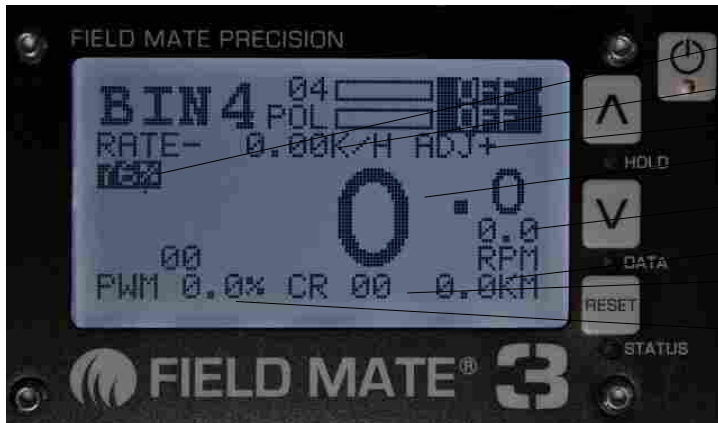
- Reduced rate mode % on
- Real time Drilling Rate
- Motor control state
- Real RPM of motor
- Target RPM of motor
- Drill speed KM/HR
- PWM Correction
- %of PWM Power applied to motor
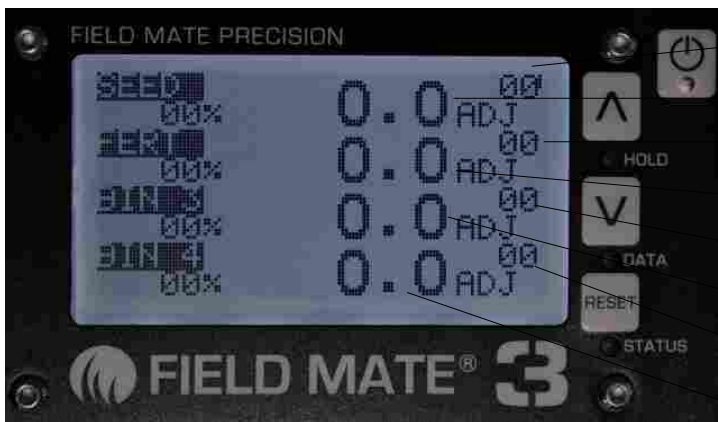
Target RPM bin 1

Real RPM bin 1

Target RPM bin 2

Real RPM bin 2

Target RPM bin 3

Real RPM bin 3

Target RPM bin 4

Real RPM bin 4

Setup Screen details
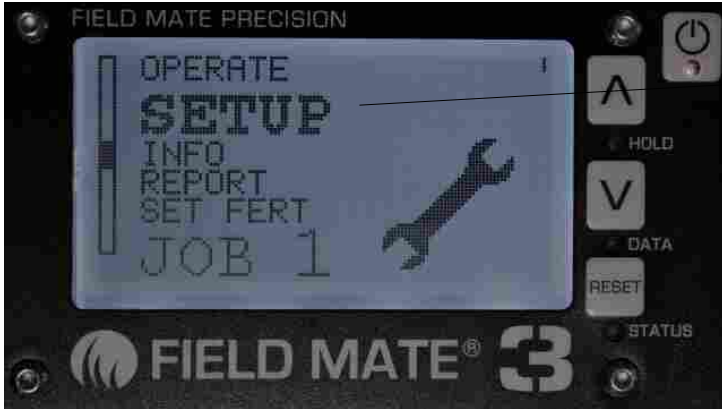
Quick Press the
POWER key to enter
the SETUP mode.

NOTE: When exiting SETUP turn the
monitor OFF then ON. If not done
"CYCLE POWER" will flash and the
motors will not run.

Inside the SETUP menu...

(Move through the SETUP screens using the ARROW keys - Quick Press!)
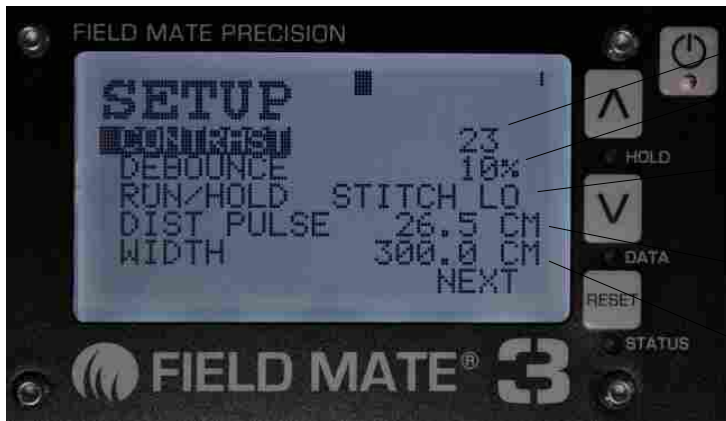
- Set the LCD Contrast
- Set the Debounce for the
  Speed sensor.
- HOLD Mode. Extern LOW for
  Lift switch. Use STITCH LO
  when using the rate Reducer.
- The distance travelled for ever
  Speed sensor pulse.
- Working width of the drill.
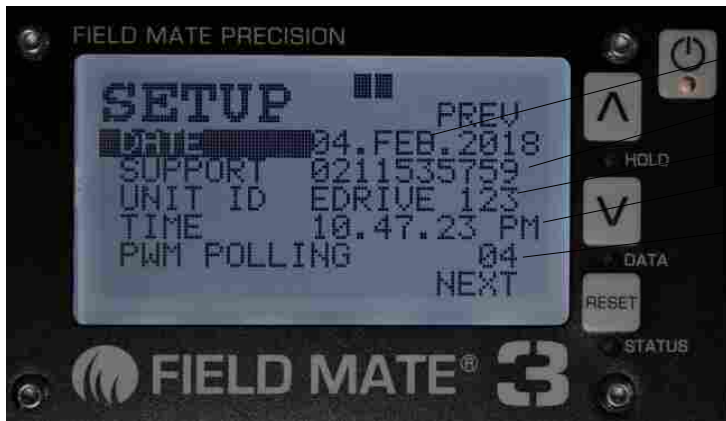
- Set Date used by REPORTS
- Support Phone number.
- Unit ID for REPORTS
- Set Time used by REPORTS
- PWM POLLING is the power
update rate for Motors. Setting
'04' is recommended.
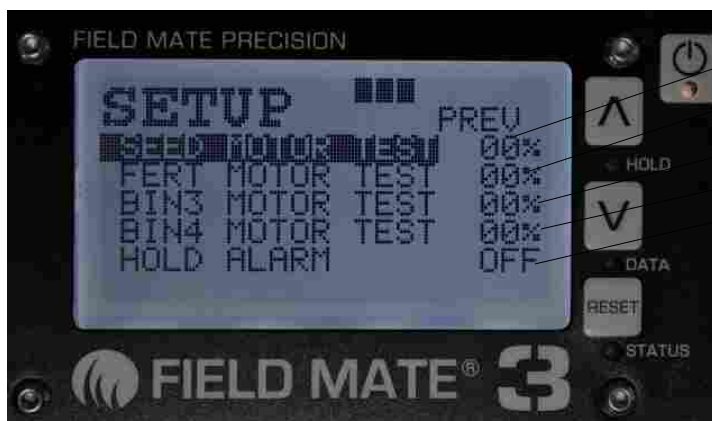
- Use to TEST the BIN1 Motor
- Use to TEST the BIN2 Motor
- Use to TEST the BIN3 Motor
- Use to TEST the BIN4 Motor
- HOLD ALARM when enabled
   will sound the alarm when
   drill is moving and the Edrive
   is in HOLD Mode.

Inside the SETUP menu. More..
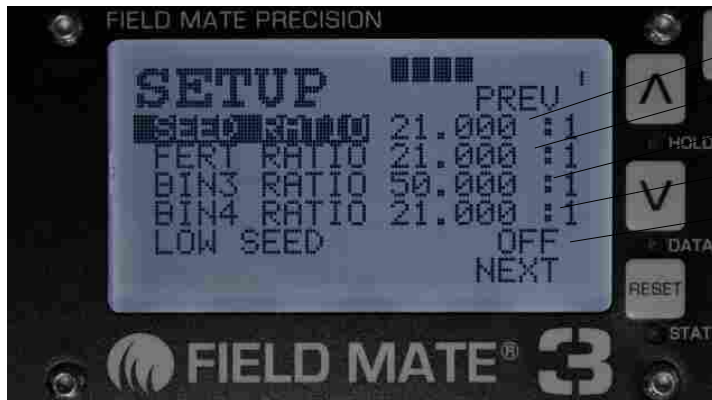
- BIN1 Motor drive ratio
- BIN2 Motor drive ratio
- BIN3 Motor drive ratio
- BIN4 Motor drive ratio
- Low Bin Level sensor enable.
  (Multiple bins can be monitored. Connect
  The sensor to RPM 3 or 4 RPM input).
NOTE: All FieldMate motors have a ratio of 21:1.
Stocks Ag motors have a ratio of 50:1.
NOTE: For Precicion plaanting adjust this ratio to
match the gear reduction to the seed singulator.

- If fan speed drops below this
  RPM setting the alarm will go
- Turn off/on the alarm buzzer
- Enable Auto Greaser or Spinner
  or fan motor Channel 4 or
Channel 3
- Number of speed pulses to
  occur before the DIST PULSE
  number is used to calc the speed.
-:Power level for the
 "SPIN-LUBE-FAN" output.
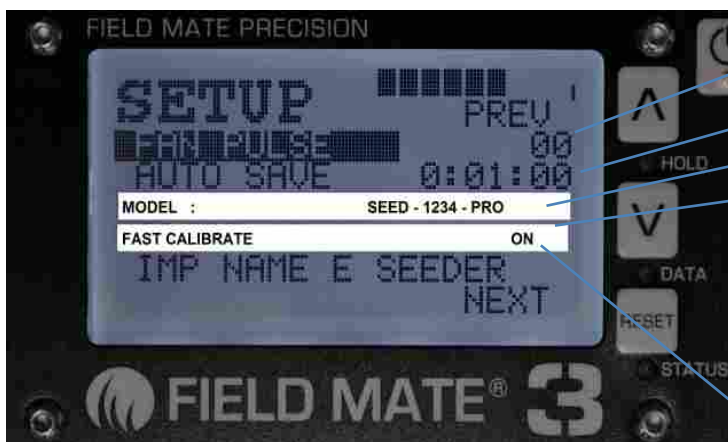
- Fan puses per FAN rev
- System back time in minutes
- Select 1 of 4 motor monitor
- Fast access to calibrate screen
  Selecting Bin setup will:
  * go directly to PRIME
    calibrate mode at the DRILL.
  * exiting PRIME mode will go
    directly to ENTER WEIGHT
- Machine name for REPORTS

- Start up power level for BIN1
- Start up power level for BIN1
- Start up power level for BIN1
- Start up power level for BIN1
- Time the PRESTART feature
  will run the motors for to
  prime the seed pipe for an Air
  Seeder.
Note: If the Drill moves while the
PRESTART is working, the
PRESTART cancels and normal
drill operation resumes.

Inside the SETUP menu. More..
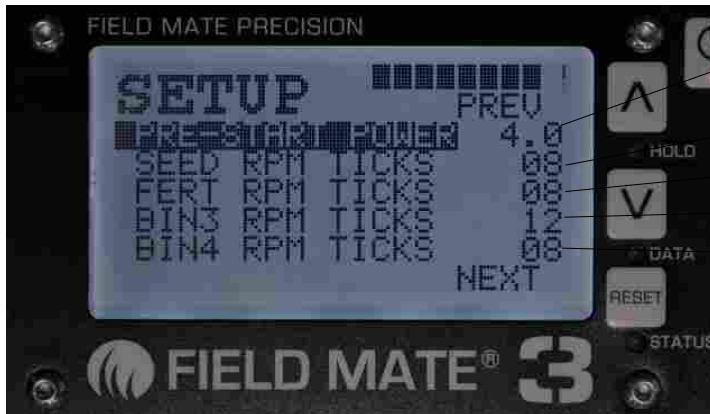
- The motors will run at the RPM in PRESTART mode.
- Pulses per rev of BIN1 motor
- Pulses per rev of BIN2 motor
- Pulses per rev of BIN3 motor
- Pulses per rev of BIN4 motor

NOTE: All FieldMate motors run a 8 pulse rev counter. Stocks Ag motors run a 12 pulse
Rev Counter.
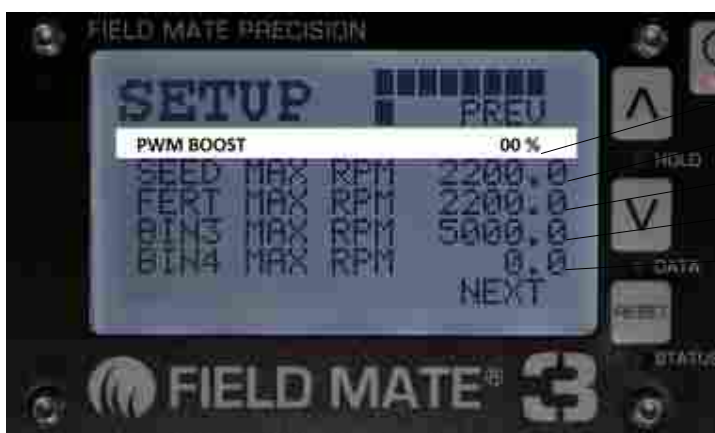
- Extra PWM motor boost
- Max RPM of the BIN 1 motor
- Max RPM of the BIN 2 motor
- Max RPM of the BIN 3 motor
- Max RPM of the BIN 4 motor

NOTE: All FieldMate motors have a max RPM of 2200. Stocks Ag motors have a max RPM of 5000.

- Bin 1 setting copy to all bins
- Minumin RPM of BIN1 motor
- Minumin RPM of BIN2 motor
- Minumin RPM of BIN3 motor
- Minumin RPM of BIN4 motor

NOTE: All FieldMate motors have a min RPM of 20. Stocks Ag motors have a min
RPM of 100
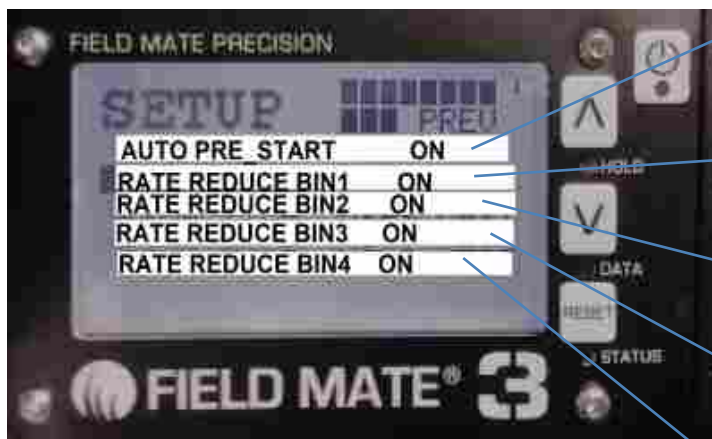
Auto Pre Start enable. Use to auto prime the air seeder pipes when moving out of the HOLD state (starting a new row). Use with the PRE

Instant Rate reduction Enable of 25%, 50% or 75% of the set RATE at the flick of a switch on BIN1.

Instant Rate reduction Enable of 25%, 50% or 75% of the set RATE at the flick of a switch on BIN2.

Instant Rate reduction Enable of 25%, 50% or 75% of the set RATE at the flick of a switch on BIN3.

Instant Rate reduction Enable of 25%, 50% or 75% of the set RATE at the flick of a switch on BIN4.
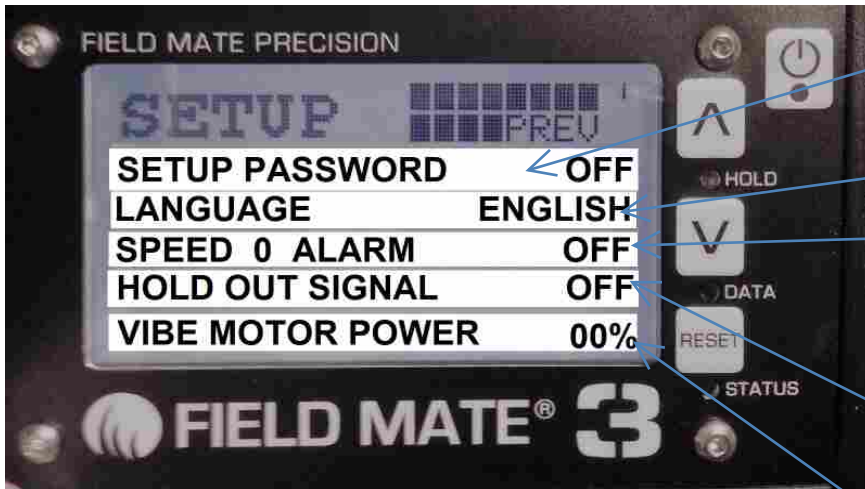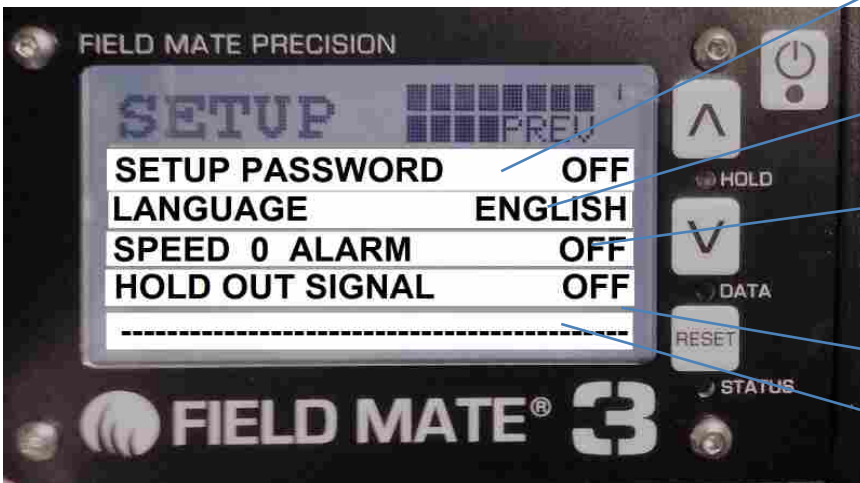
- Enter the SETUP screen password enable. The password is always "1234"

- Laguage selection of mains screens in the moniotor. Options: English, Spainish, German, Italian.

-If the SPEED goes to zero then the alarm will sound. Use when there might be the chance of lossing a Speed signal. EG: froma faulty Radar or GPS coverage lost.

- If the system goes to the HOLD state is output on the "REMOTE" port of the monitor. Use for GPS mapping control.

- Power level for the Vibration motor that will only run on MOTOR 2 output, as used for the Bio Loam product metering unit.

- Enter the SETUP screen password enable. The password is alaways "1234"

- Laguage selection of mains screens in the moniotor. Options: English, Spainish, German, Italian.

- If the SPEED goes to zero then the alarm will sound. Use when there might be the chance of lossing a Speed signal. EG: froma faulty Radar or GPS coverage lost.
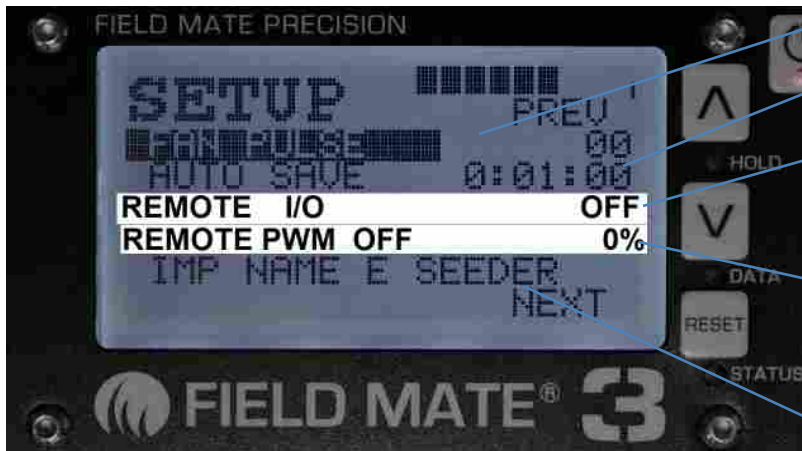
- If the system goes to the HOLD state is output on the "REMOTE" port of the monitor. Use for GPS mapping control.

- SPARE

Extra SETUP SCREENS - PRECISION CONTROL.

These are alternative SETUP screens that are found on a PRECISION CONTROLLED **FieldMate 3 monitor**.

Example: Plot Seeders Control
Seed Singulator planting systems. (Precision Planting)

- fan pulse per REV of the FAN
- Amount of seconds between data backup when not moving
- REMOTE I/O power to apply to any motor. Used for priming plot seeder planter units.

- Amount of power applied tot he planter unit when the remote button is pressed. ONLY work in HOLD mode.

- Label of REPORT screen

- Start up power level for BIN1
- Start up power level for BIN1
- Start up power level for BIN1
- Start up power level for BIN1
- Time the PRESTART feature will run the motors for to prime the seed pipe for an Air Seeder.

Note: If the Drill moves while the PRESTART is working, the PRESTART cancels and normal drill operation resumes.

Extra SETUP SCREENS - PRECISION CONTROL.
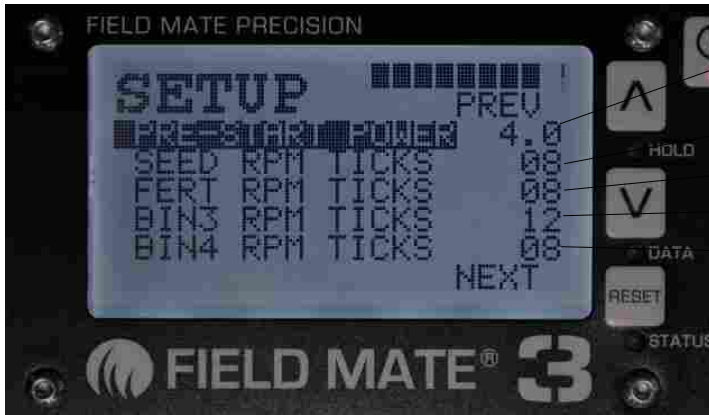
- The motors will run at the RPM in PRESTART mode.
- Pulses per rev of BIN1 motor
- Pulses per rev of BIN2 motor
- Pulses per rev of BIN3 motor
- Pulses per rev of BIN4 motor

NOTE: All FieldMate motors run a 8 pulse rev counter. Stocks Ag motors run a 12 pulse Rev Counter.

- Cone on time. If ALT-CONE mode is selected. Use for Plot Gap control.
- Max RPM of the BIN 1 motor
- Max RPM of the BIN 2 motor
- Max RPM of the BIN 3 motor
- Max RPM of the BIN 4 motor

NOTE: All FieldMate motors have a max RPM of 2200. Stocks Ag motors have a max RPM of 5000.
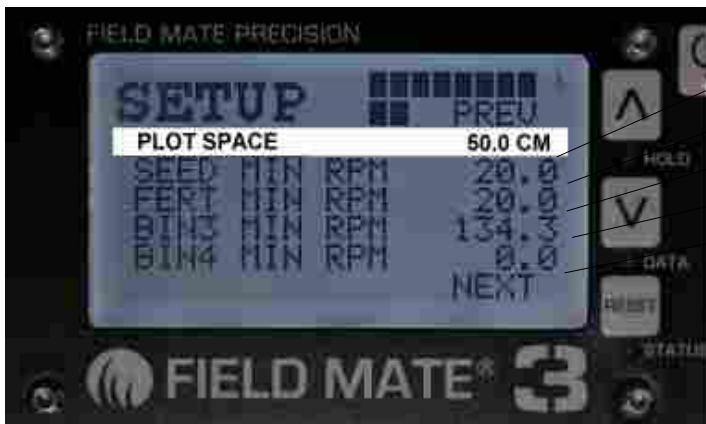
- Gap between plots. Set Bin control to ALT-CONE to use this.
- Minumin RPM of BIN1 motor
- Minumin RPM of BIN2 motor
- Minumin RPM of BIN3 motor
- Minumin RPM of BIN4 motor

NOTE: All FieldMate motors have a min RPM of 20. Stocks Ag motors have a min RPM of 100
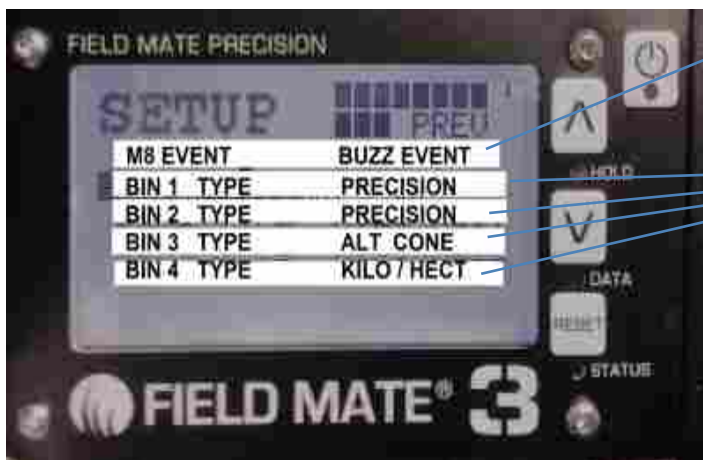
M8 EVENT - This is the output pin of the M8 connector of the montitor. It can output power when:
- When the screen buzzer sounds
- When in HOLD

BIN TYPE Mode. Each bin can be set to be in the following mode:
- PRECISION, The control for the bin is in Precicion planting / PLOT seeder mode.
- KILO / HECT is the bin mode that is used for motor control that requires KG/HECT application of a material.
- ALT CONE , this mode is used in a Plot Seeder control to auto activated a Cone filling soleniod that is programmed to activate at the start of plot in sync with the plot length and plot gap.

Extra SETUP SCREENS - PRECISION CONTROL.
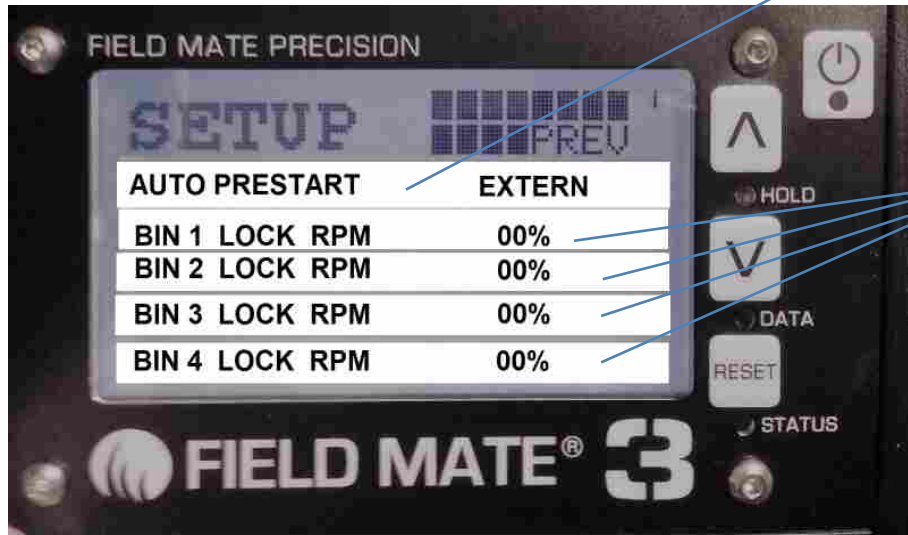
- **AUTO PRESTART .** allows the KG/HECT setup up motor to auto start at a set speed and with a time out. Allowing the fert or seed pipes to pre prime before drilling is to commence. The modes to trigger the prestart are:
   - EXTERN - trigger off the External HOLD (leift) Sensors.
    - SPEEDO - triggers when the speed goes above 0.

- BIN LOCK RPM. This is a setting that will over ride the BIN MOTOR TYPE setting. this setup will set the motor to a set power setting. EG: 30% of the total system power.
Use this if you want to run a spinner, or a fan of a any motor at a set speed. No RPM feed back is linked to this control. This control is open loop.

REPORT Screen details
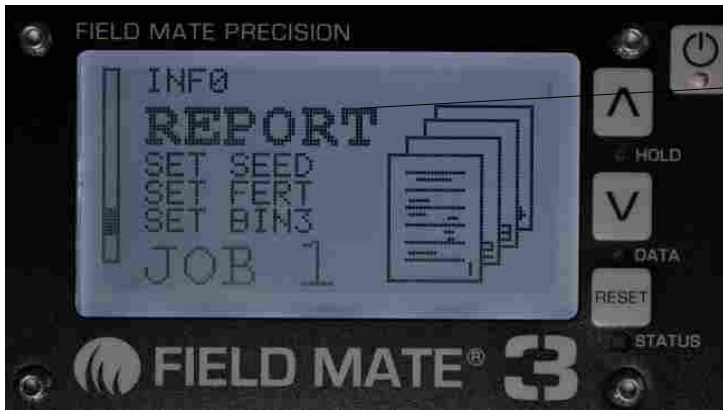
Quick Press the
POWER key to enter
the REPORT mode.

Inside the REPORT menu...

(Move through the REPORT screens using the ARROW keys - Quick Press!)
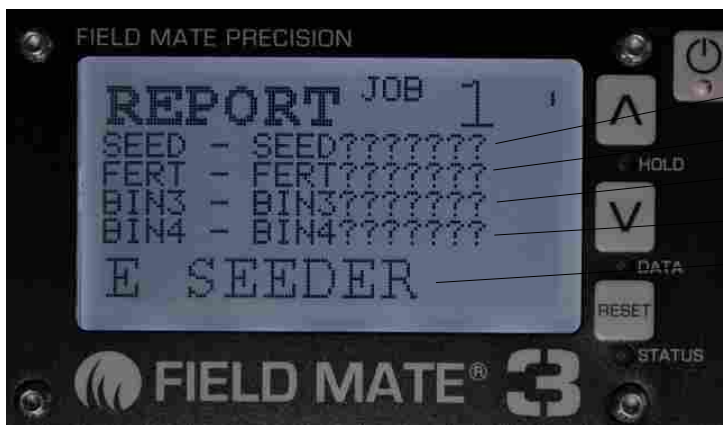
- Name of BIN1
- Name of BIN2
- Name of BIN3
- Name of BIN4
- Name of this monitor

- Area Drilled in Hectares

- Distance drilled
- Distance travelled in HOLD
  mode (Not Drilling)

Inside the REPORT menu. More..

- BIN1 metering shaft rotations
- Weight of material released from BIN1

NOTE: The weight is caluated from the number of turns of the metering shaft and the calibration weight for this bin.

- BIN2 metering shaft rotations
- Weight of material released from BIN2

NOTE: The weight is caluated from the number of turns of the metering shaft and the calibration weight for this bin.

- BIN3 metering shaft rotations
- Weight of material released from BIN3

NOTE: The weight is caluated from the number of turns of the metering shaft and the calibration weight for this bin.

- BIN4 metering shaft rotations
- Weight of material released from BIN4

NOTE: The weight is caluated from the number of turns of the metering shaft and the calibration weight for this bin.

- Time with the drill in RUN mode and Drilling.
- Time with the drill in RUN mode and stationary.

- Time with the drill in HOLD Mode, with the drill moving.
- Time with the drill in HOLD Mode, the drill is stopped.

Inside the REPORT menu. More..

- Total time spent drilling. This time includes all times, moving and stopped.
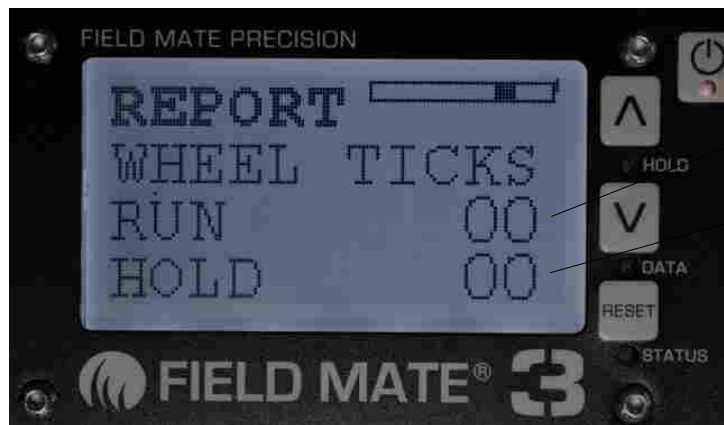
- Number of Speed pulses counted while drilling.
- Number of speed pulses counted while not drilling, in HOLD mode.

- Size of the DISTANCE PULSE number used to calc the area for this job.
- Size of the DRILL WIDTH number used to calc the area for this job.

- Date that the current Drilling Job was started
- Time the current Drilling job was started.

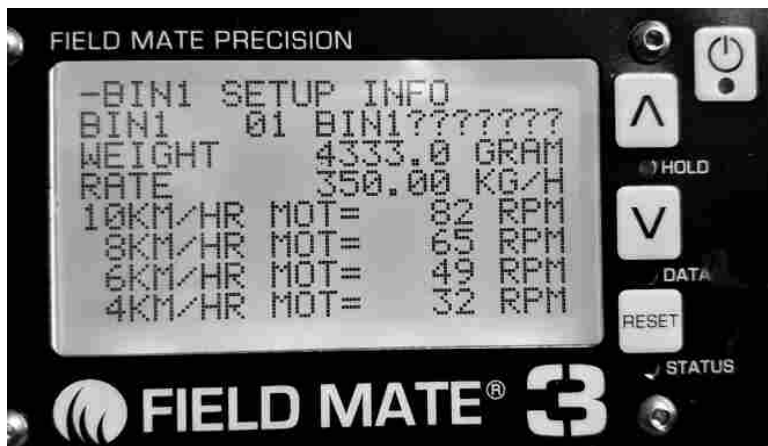# Inside the REPORT menu. More..

- Bin 1 Settings for this JOB
  Name of the BIN1
  Calibartion Weight BIN1
  Drilling Rate BIN1

- Motor speeds for bin 1 with the current calibation. This lets you see the motor RPM at various drilling speeds

BIN 2 - 3 - 4 screens are the same as above

- Total number of Hectares Drilled by this Drill
- Hours that the Monitor was powered on.
- Hours that the drill was drilling.

Note: The Total Area and Hours can only be reset by the FIELDMATE SUPPORT.

INFO Screen

Quick Press the
POWER key to enter
the INFO screen.

Inside the INFO menu...
(Move through the INFO screens using the ARROW keys - Quick Press!)

LOGO

HELP DESKphone number.
Direct dial with in New Zealand.
International callers use
0064211535759

Back ground number to calculation
ground speed of drill.

Inside the INFO menu... more

- Monitor Model
- Firmware version
- Time monitor has been powered up
- Time moniotr has been drilling
- Life time hectare drilled
- Backlight volatge and status
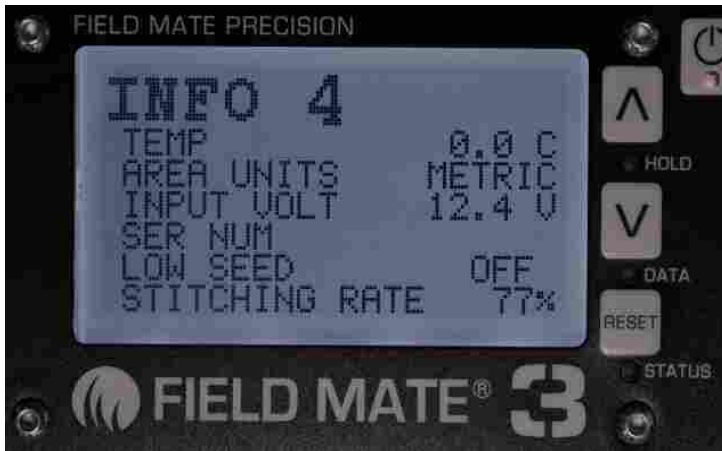
- Monitor temperature
- Measurement units
- Battery voltage into monitor
- Serial number
- Low bin sensor status
- Reduced drill rate % of drilling rate applied
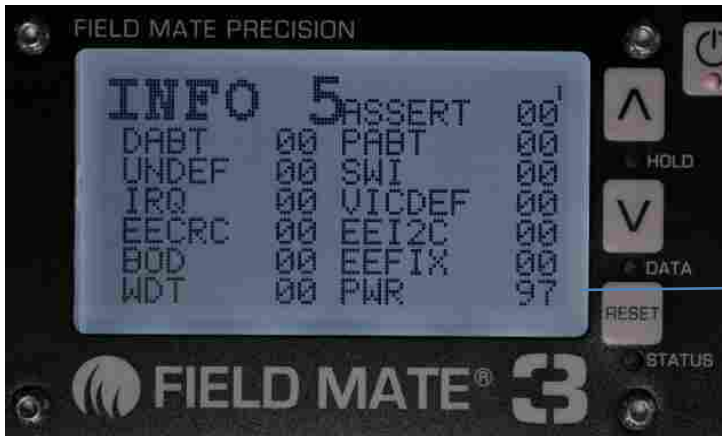
- Soft ware error detection system. These counter will increment every time the software vectors to these error detection or system proformance metrics.

- Power on/off counter.

Back ground calculation numbers for back timer and distance measurement

Inside the INFO menu... more
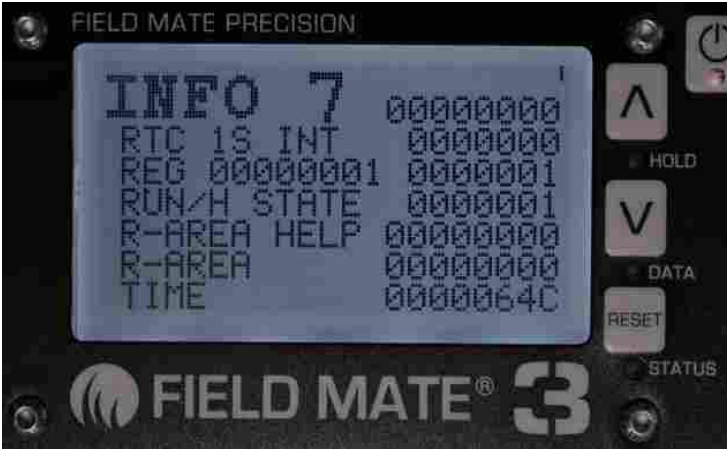
- Real Time Clock status
- Run Hold Status
- Area calculation support
- Time support

- Buzzer status
- Back ground numbers for the AREA calculation
- Total Area support numbers
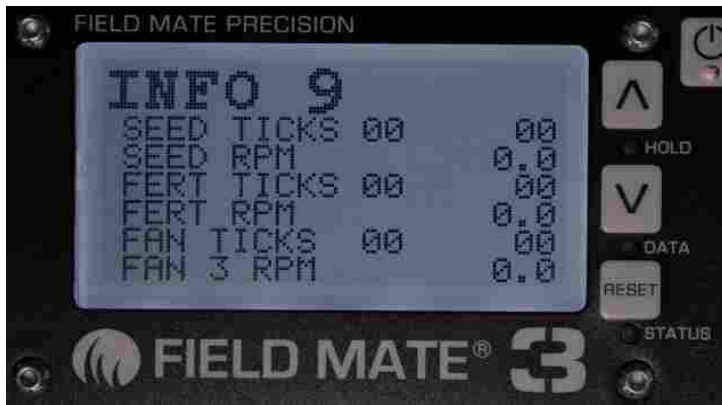
- RPM for BIN1
- RPM for BIN2
- RPM for FAN

Support to Calc RPM and the BIN1 motor

Inside the INFO menu... more

- Background information for calculating the BIN1 motor RPM

INFO 11.   SEED
           R= 77%
SEED RPM   0.0   0.0
SEED TARGET   0.0
PWMMR1   10000
CORRECTION   01
STATE-03   00
        00   00

- Support to Calc RPM and the BIN2 motor

INFO 12.   FERT
           R= 76%
SPEED   0.0   0.0
WEIGHT   300.0
GRAM_SQM   0.0
DRILL_SQM   00
PLANT_MIN   00
FERT RPM   0.0

- Background information for calculating the BIN2 motor RPM

INFO 13   FERT
           R= 76%
FERT RPM   0.0   0.0
FERT TARGET   0.0
PWMMR6   10000
CORRECTION   00
STATE 00   00
        00   00

- Support to Calc RPM and the BIN3 motor

INFO 14   BIN3
           R= 76%
SPEED   0.0   0.0
WEIGHT   110.0
GRAM_SQM   1050.0
DRILL_SQM   00
PLANT_MIN   00
BIN3 RPM   0.0

Inside the INFO menu... more
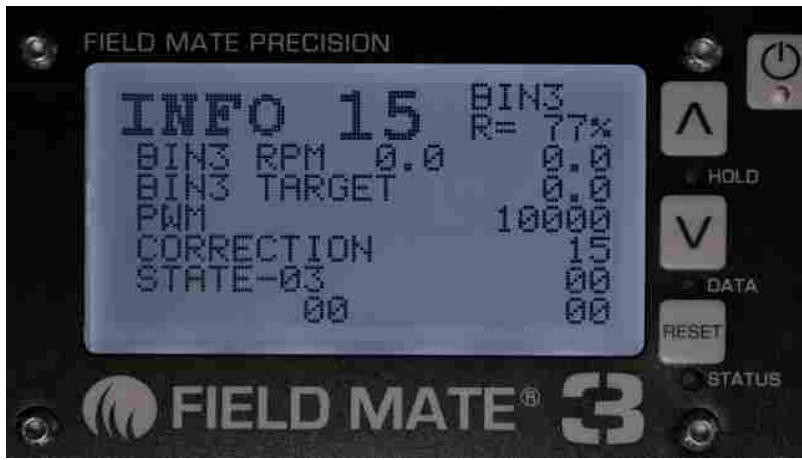
- Background information for calculating the BIN3 motor RPM

```
FIELD MATE PRECISION
INFO 15    BIN3
           R= 77%
BIN3 RPM  0.0    0.0
BIN3 TARGET      0.0
PWM            10000
CORRECTION        15
STATE-03          00
       00         00
FIELD MATE 3
```


- Support to Calc RPM and the BIN4 motor

```
FIELD MATE PRECISION
INFO 16    BIN4
           R= 76%
SPEED     0.0    0.0
WEIGHT           0.0
GRAM_SQM       450.0
DRILL_SQM         00
PLANT_MIN         00
BIN4 RPM         0.0
FIELD MATE 3
```


- Background information for calculating the BIN4 motor RPM

```
FIELD MATE PRECISION
INFO 17    BIN4
           R= 76%
BIN4 RPM  0.0    0.0
BIN4 TARGET      0.0
PWM            10000
CORRECTION        00
STATE-00          00
       00         00
FIELD MATE 3
```


- Rate Reduction feature status

```
FIELD MATE PRECISION
INFO 18          76
RUN/HOLD   STITCH LO
HOLD STATE      RUN
STITCH ADC     2069
RATE REDUCTION    %
FIELD MATE 3
```

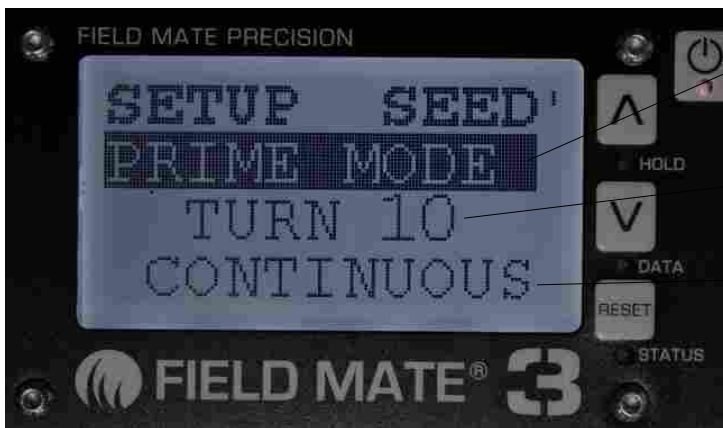FIELD MATE 3

Calibration Screen BIN 1

(Enter the Bin Calibration screen for the selected BIN by quick pressing the POWER key)

Quick Press the POWER key to enter the Calibrate(SET) BIN1 mode.

Inside the SET BIN1 menu...

(Move through the SET BIN1 screens using the ARROW keys - Quick Press!)

- PRIME MODE.. hold any ARROW to select. Press the Switch on the DRILL to make the bin motor rotate 10 bin for getting the calibation weight.

- TURN 10.. hold any ARROW to select. When selected the Motor will "immediately" turn 10 times and stop.

- CONTINUOUS.. hold any ARROW to select. In this mode use the arrows to increase or decrease the bin motor speed. This feature allows the user to empty a bin with ease!
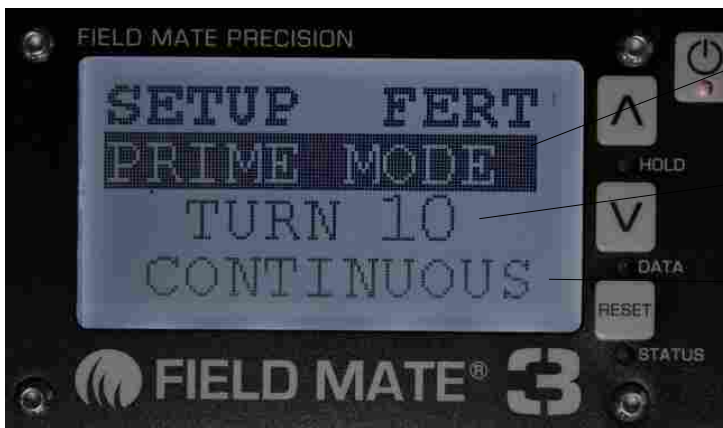
Calibration Screen BIN 2

Quick Press the
POWER key to enter
the Calibrate(SET)
BIN2 mode.

Inside the SET BIN2 menu...

(Move through the SET BIN2 screens using the ARROW keys - Quick Press!)

- PRIME MODE.. hold any ARROW to select.
Press the Switch on the DRILL to make the bin
motor rotate 10 bin for getting the calibation
weight.
- TURN 10.. hold any ARROW to select.
When selected the Motor will "immediately" turn
10 times and stop.
- CONTINUOUS.. hold any ARROW to select.
In this mode use the arrows to increase or decrease
the bin motor speed. This feature allows the user to
empty a bin with ease!

Calibration Screen BIN 3

Quick Press the POWER key to enter the Calibrate(SET) BIN3 mode.

Inside the SET BIN3 menu...

(Move through the SET BIN3 screens using the ARROW keys - Quick Press!)

- PRIME MODE.. hold any ARROW to select.
Press the Switch on the DRILL to make the bin motor rotate 10 bin for getting the calibation weight.

- TURN 10.. hold any ARROW to select.
When selected the Motor will "immediately" turn 10 times and stop.

- CONTINUOUS.. hold any ARROW to select.
In this mode use the arrows to increase or decrease the bin motor speed. This feature allows the user to empty a bin with ease!
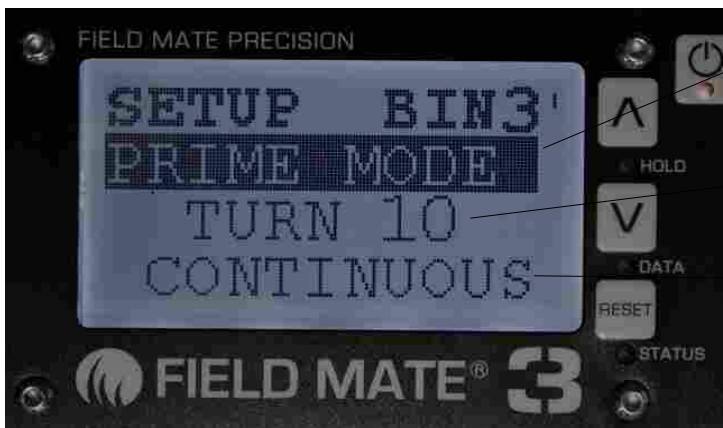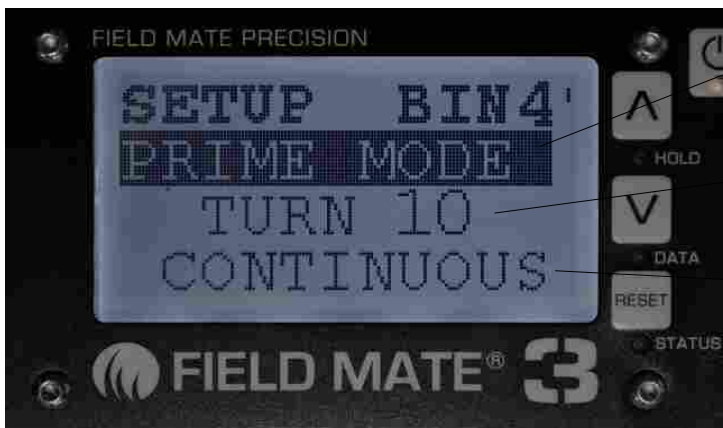
Calibration Screen BIN 4

Quick Press the POWER key to enter the Calibrate(SET) BIN4 mode.

Inside the SET BIN4 menu...

(Move through the SET BIN4 screens using the ARROW keys - Quick Press!)

- PRIME MODE.. hold any ARROW to select. Press the Switch on the DRILL to make the bin motor rotate 10 bin for getting the calibation weight.

- TURN 10.. hold any ARROW to select. When selected the Motor will "immediately" turn 10 times and stop.

- CONTINUOUS.. hold any ARROW to select. In this mode use the arrows to increase or decrease the bin motor speed. This feature allows the user to empty a bin with ease!
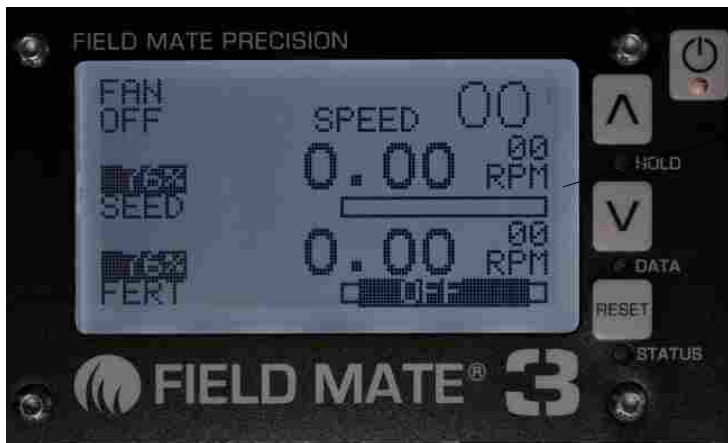
Getting Started...
1.

Start from here.... This is the HOME screen. Below are the 3 options from various E-drive configurations – 1 bin, 2 bins and 3-4Bins.The HOME screen is automatically selected when the FieldMate monitor is started from a battery power on.

HOME screen for a 1 motor system

HOME screen for a 2 motor system.

HOME screen for a 4 motor system

2.

Goto the SET SEED Screen... Keep pressing the down key from this screen until SET SEED is highlighted.Next quick press the power.
(quick press POWER to enter the SET SEED screen).

3.

Select the PRIME MODE. (Highlight PRIME MODE and hold down any Arrow key)

4.

Goto the Motor switch on the drill and press. (The Monitor will take control of the Motor)
  - When motor stops weigh the seed .
  - Repeat motor rotation and catch and weigh seed again if required.
 NOTE: The weight of seed output by the drill in this setup mode, we refer to this as
         the "SEED WEIGHT"!

5.
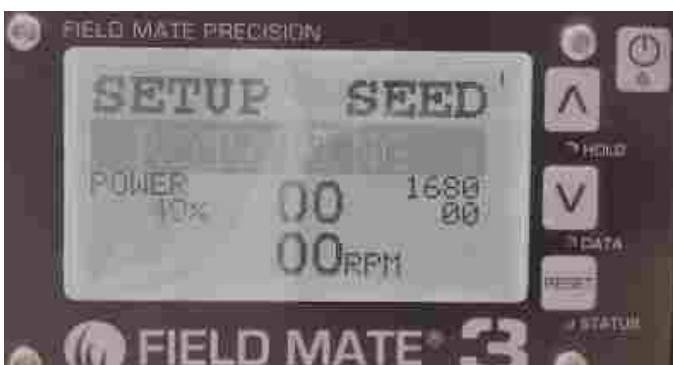
Enter the Seed weight into the Monitor.
- Goto the Main screen.
- Hold down any ARROW key
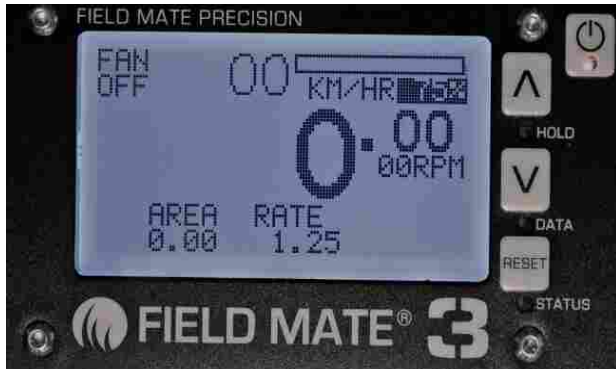
Main Screen

Holding the arrow key

Setup screen for Seeding Rate, BIN1.

6.

Enter the Seed weight (highlight WEIGHT and hold any arrow key)

7.

Exit the above screen by quick pressing the POWER key.
Next... Enter the Seed Rate (highlight RATE and hold any arrow key)

NOTE: !!
We recommend at target RPM at 10KM/hr as seen on the top
left of the LCD screen bar graph between 20 - 30 RPM.
Please note: the motor can run from 3 to 100 RPM with the
standard 21:1 ratio.
IF NOT SURE JUST ASK YOUR LOCAL DEALER.

8.

Setup complete. Press the power key twice to return to the Main menu.

Repeat this process to set the rate for the BINS 2, 3 or 4.

SET UP is now complete for the Drilling rate for the bins you selected.

SETUP SUMMARY

www.areameters.com

1. Goto the SET SEED Screen. (quick press POWER to enter)

2. Select the PRIME MODE. (Highlight PRIME MODE & hold down any Arrow key)

3. Goto the Motor switch on the drill and press.
   (The Monitor will take control of the Motor)
     - When motor stops weigh the seed .
   - Repeat motor rotation and catch & weigh seed again if required.

   We refer to this as the "SEED WEIGHT"!
   NOTE: the weight of seed output by the drill in this setup mode.

4. Enter the Seed weight into the Monitor.
     - Goto the Main screen.
     - Hold down any ARROW key

5. Enter the Seed weight (highlight WEIGHT & hold any arrow key)

6. Exit the above screen by quick pressing the POWER key.
   Next...
   Enter the Seed Rate (highlight RATE and hold any arrow key)

7. Setup complete. Press the power key twice to return to the Main menu.

FIELD MATE®

FIELD MATE® 3

<table>
<tr><td colspan="2">
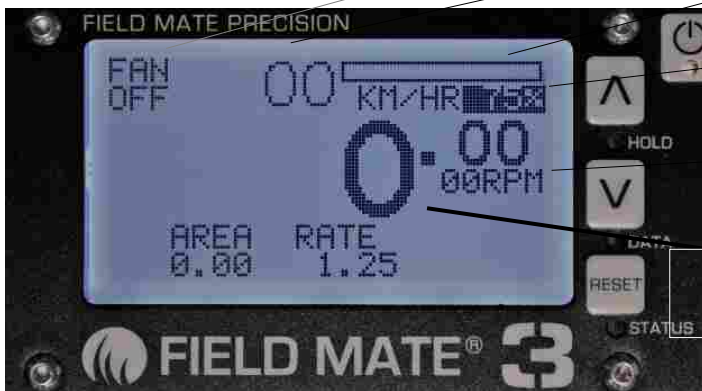
LETS START DRILLING !!!!

NOTE: When we drill observe the RPM bar graphs on the main scrren. If the black dot is not floating is the graph box then the motor will be running at its top or lowest RPM limits.
If this is the case re calibrate the drill again with a higher or lower seed calibration weight.
IDEAL RPM is 20-30 RPM (Suggestion)

</td></tr>
</table>

Main Screen
1 Motor system

FAN SPEED

GROUND SPEED

MOTOR RPM BAR GRAPH

RATE REDUCTION MODE ON

TARGET MOTOR RPM

TRUE MOTOR RPM

2,3 or 4 Motor system
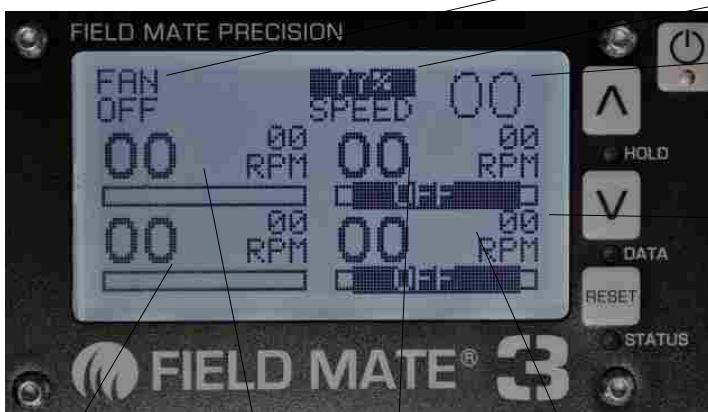
FAN SPEED

RATE REDUCTION MODE ON

GROUND SPEED

TARGET MOTOR RPM

BIN3 RPM

BIN2 RPM

BIN1 RPM

BIN4 RPM

NOTE!!
KEEP AN EYE ON THESE GRAPHS WHEN YOU ARE DRILLING. ENSURE THE BLOCK IS IN A GOOD PART OF THE GRAPH.
In the case of the seed graph, we have options....
1. Increase drill speed as this will make the motor go faster.
2. **Decrease** the amount of seed weight output in the 10 TURN operation setup.

FIELD MATE® 3

Install Kit

Battery Power Cable.

Connect to battery supply capable of supplying 30amp of Current

FieldMate Motor Driver.

Mount in the tractor cab. This unit will get warm when driving the motors, so allow ventalation.

FieldMate Computer.

Available with a velcro mount or optional Window Mount. Mount in the Tractor Cab.

Motor and Sensor Cable.

Cable to power motors and sensors and gather drill status.

Installation Instructions.

1: Connect the Power.
Locate a circuit on the tractor that can deliver at least 30amp DC power at 12 or 24 volts. When connecting to this power suuply please ensure that it is fused witha 30 amp fuse.
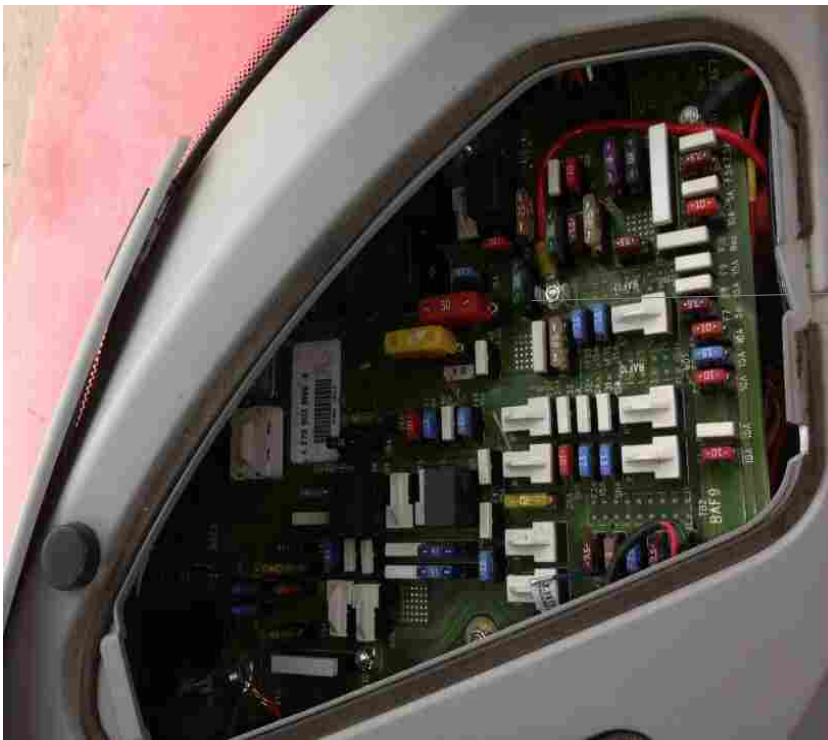
Power cable is connected to a Fused!! 30 amp supply. Very important to fuse the power cable to the system. 30 amp fuse is recommended.

The earth cable should be a solid connection capable of passing up to 30 amps.

FIELD MATE® 3

2: Mount the Computer.

Locate the computer where it is easy to see and use by the driver. With the Computer in a safe visual location please attach the DB15 cable to it and run it to the FIELD MATE MOTOR DRIVER.

Mount computer in easy to see and use location. A Velcro mount is the standard mounting method. Optional mounting method is a high quality window mount.

3: Mount the MOTOR DRIVER.

Locate the motor driver box is a place that will allow the device to cool as it will get a little warm when running the motors. Connect the power to this box and the DB15 cable from the computer.

The motor drive unit is mounted in this cab behind the drivers seat. Mounted here with a velcro mount to the inspection window behind the drivers seat. This unit may get warm so allow air flow to prevent unit from over heating.

The motor drive unit has a cable that connects with the other cable from the drill . Ensure these two cables can connected ok from with in the tractor cab.

4: Wire the Drill. - Run the Power cable to the Drill.

Ensure the power cable can safely connect to the power cable plug of the power box mounted in the tractor. And then with a little cable still in the cab run the rest of the cable down to the main body of the drill.

The cable from the drill plugs into the back of the tactor. This cable should connect inside the tractor cab.

5: Wire the Motor.

If a single motor system wire one motor. If a double motor system connect two motors.

Note: You will have to make a bracket up to mount the motor.

Note: You will have to make a small shaft to go from the motor output to the colter shaft end of the drill. Or you can run a chain and sprocket from the end of the motor.

Note: The motor has a min RPM of 1 and a max RPM of 100, bear this in mind if using a geared sproket system.

Note: The motor is able to rotate in any direction. Please check the motor direction is correct for your colter setup. If the direction of rotation of the motor is not correct reverse the power wires controlling the motor.

Special note: To simply and slowly make the motors rotate with out moving the drill follow these instructions:

           - SETUP Screen

           - Go to the 6th setup screen

           - Enter into option "SEED STOPPED" to make seed motor slowly start

           or

           - Enter into option "FERT STOPPED" to make fert motor slowly start

NOTE!!! When finished in these screen return the value to 10000. As this will ensure the motors are off when not being used.


With the motor mechanically mounted to the colter shaft. (note you will have to build a suitable bracket and shaft connector for your drill. However do contact us as we may have a kit for your drill all ready to go!!) Wire the power wires to the motor and the sensor wiring to the RPM sensor of the motor.

Note: Once the motor have the heavy power wires connected. Use the below procedure to work out if the motor rotational direction is the correct one for your colter. If the motor is going backwards, simply reverse the power wire to the motor. The below procedure allows you to slowly rotate the motor, checking for motor jams in you mechanical work and direction of colter shaft rotation.
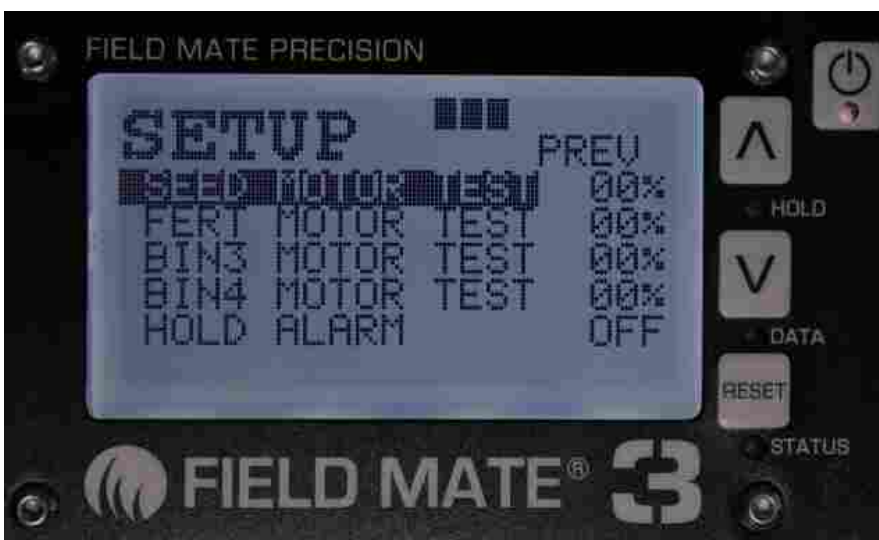
1: Goto the Setup Screen in main menu.
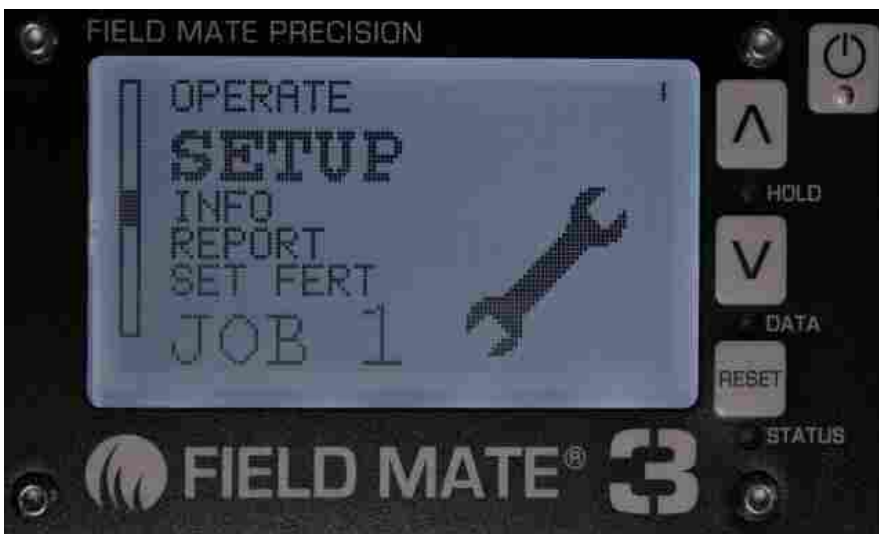
2: 7th Set up screen. See:

BIN1 MOTOR TEST
BIN2 MOTOR TEST
BIN3 MOTOR TEST
BIN4 MOTOR TEST

When highlighted hold the arrow key to select.

3: Adjusting the BIN 1-2-3-4 Motor speed by changing the PWM (pulse width modulation) setup.
Decrease the number to slowly start the motor. The motor will start to hum when this number is at 10%,
- If no hum check wiring.
- If at 70% there is no rotation but have hum, check for jam in the motor / colter shaft
- When the rotation is correct, return this number to 0% and exit the screen using a quick press of the power button.
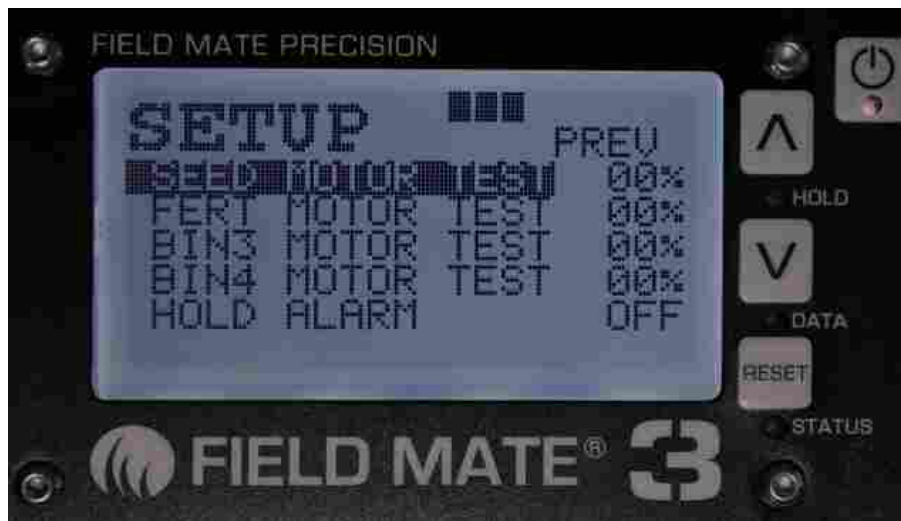
Wiring the motor RPM sensor.
The sensor has 3 wires connects as follows.
1- Sensor BROWN wire to Battery +
2- Sensor BLUE wire to Battery -
3- Sensor BLACK wire to either the Seed RPM pulse wire or the Fert RPM pulse wire. Depending on which motor is used.

Mounting the motor.

We have a DXF file of the motor mount holes. Call us and we can send this file to you to as assist in any CAD work you may be doing.

The motor shaft should line up with the colter shaft 100%. Use a suitable shaft connection assembly to join the motor to the colter shaft.

For motor mounting ideas, see the pictures below. Call us any time to talk through any ideas if you need to.
Also we may have a bracket to suit your drill, enquire today.

Colter to motor shaft connection. A nylon tube. Keyed to the shaft and pinned at the other end to connect to the colter shaft.

Bracket . Built strong to support the motor. Note that the mount bolts holding the motor to the bracket should be loctited and lock washers fitted.

FIELD MATE® 3

Mounting the Speed sensor.

The speed sensor is supplied with 4 magnets. Mount the magnets on a ring on a wheel that has constant ground contact. Mount the senor to be triggered by the magnets. Space between all magnet MUST BE TE SAME!
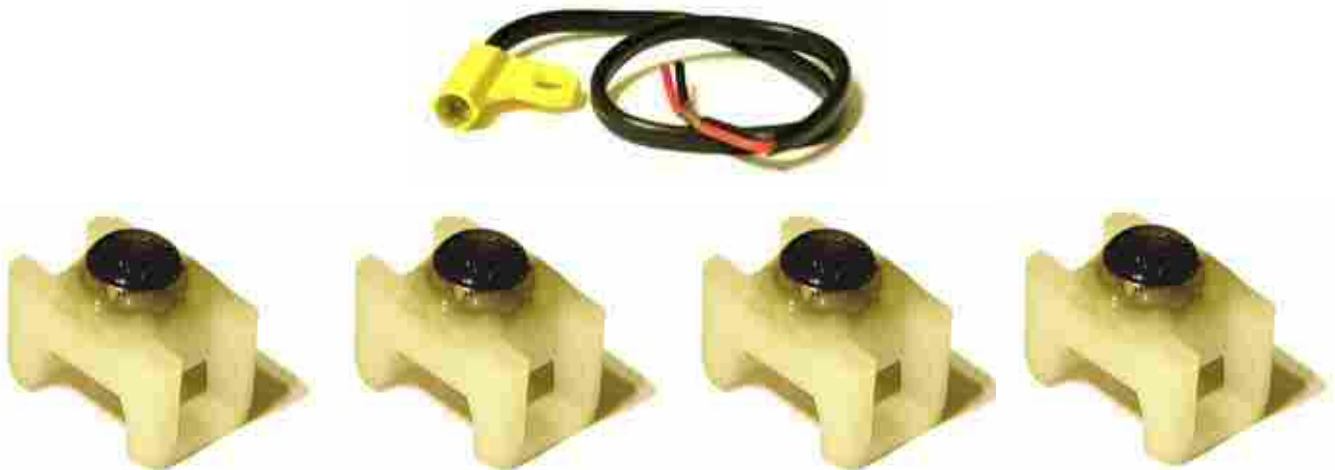
Setting up the distance travel for each wheel pulse.

This sensor is used to measure the distance travelled by the drill. This sensor when triggered lets the meter know that a defined distance has been travelled, from this signal the meter will compute speed, area, rate ,distance drilled and most importantly motor RPM.

<u>Measure the distance travelled by the drill for one distance sensor pulse.</u>

Distance pulse calibration instruction:

After the Distance Pulse sensor and magnet have been installed we now need to enter the distance travelled by the drill each time the distance sensor magnet passes the distance sensor. Follow the below instructions to enter the distance travelled pulse distance.

Step 1:   Power up the meter.
Step 2:   Scroll down to the SETUP screen.
Step 3:   Enter the SETUP screen and scroll down to the PULSE DIST setting.
Step 4:   Enter the PULSE DIST screen.
> In this screen each time the Magnet passes the Distance Sensor the meter will beep. This beep is used to set up the distance measurement.
> A: Drive the tractor forward with drill attached and drill drilling and stop immediately the first beep is heard. When the beep is heard, mark where the drill is currently positioned.
> B: Drive forward until the meter beeps a second time and stop immediately.
> C: Measure the distance travelled by the drill between the 2 beeps.

Step 5: Enter this distance into the DIST PULSE screen.
> Note: a recommended distance pulse of between 20 and 40 CM is recommended.

Distance pulse sensor calibration complete.

Example of measuring the drill pulse distance

Drilling width.Entered into the WIDTH setup screen.

Distance travelled by the drill per drill pulse. Enter into the DIST PULSE setup screen.
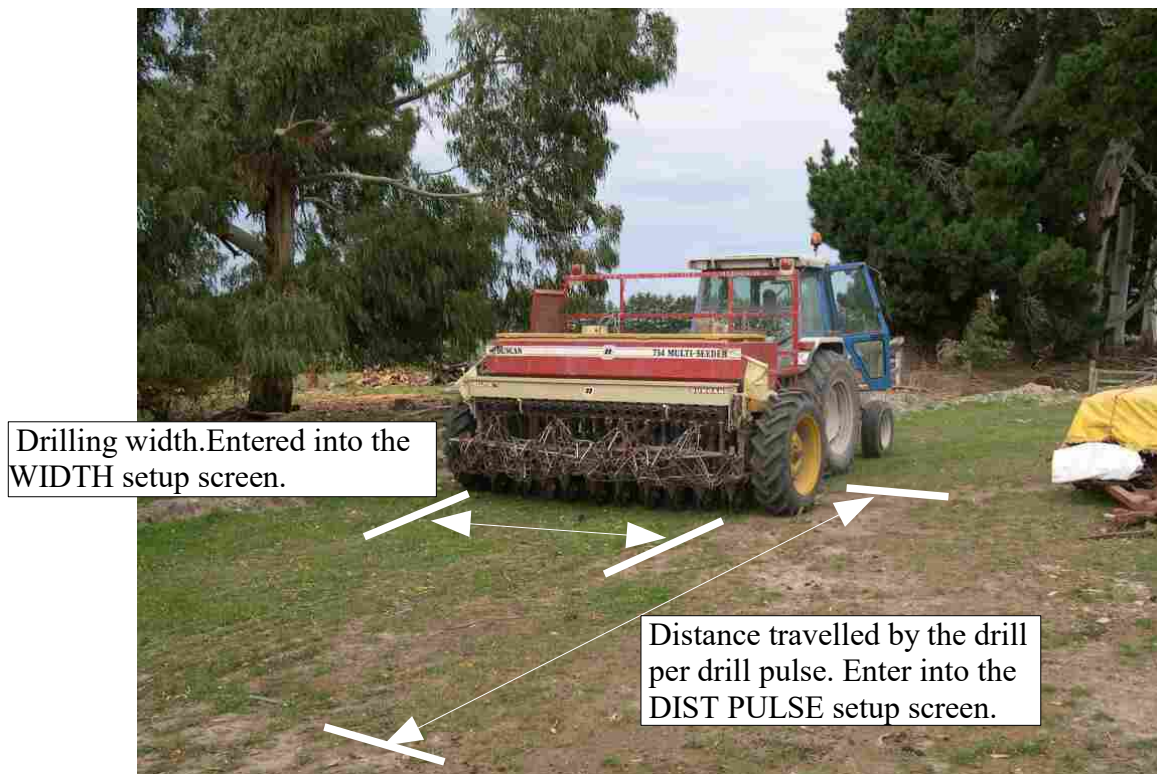
Distance travelled by the drill per drill pulse. Measure this distance accurately with a tape measure and enter this number into the meter.

Mounting the RUN / HOLD sensor.

This sensor when triggered and the drill is moving instructs the motors to start, hence drilling begins.

This sensor is mounted on the drill so and magnet triggers the sensor when the drill is at a position to start the drilling operation.

See picture below...

Distance pulse number goes in here....

Sensor

Magnet

RUN HOLD OPTION SHOULD BE EXTERN HIGH.

Setup Complete!

For support contact you local dealer.

For more information

www.areameters.com or www.fieldmate.co.nz

FIELD MATE®

Job Menu:

Allows us to manage what Job we are on.

Selecting a JOB:

This is done when a job is to be reset or restarted. A PRO has 16 jobs and there fore selecting
any of these jobs can be done by this method. A Job that has a "XX.XXX.XX" in the date location is an un allocated
job.

1: In the Main Menu scroll to JOB.
2: Quick Press "ON" to enter a JOB. Scroll to JOB using the ▲ or ▼ keys.
3: Hold ▲ or ▼ to select the job for adjusting.
4: Scroll to SELECT in the JOB SETUP screen Using ▲ or ▼. At SELECT hold ▲ or ▼ to select the job.
   This job will be the current Job that work is logged to. Date and Time renewed . Job Totals and Job Name remain
   untouched.

Reset a JOB:

1: In Main Menu scroll to JOB.
2:Quick Press "ON" to enter JOB. Scroll to JOB using the ▲ or ▼ keys.
3: Hold ▲ or ▼ to select the job for adjusting.
4:Scroll to RESET in the JOB SETUP screen Using ▲ or ▼.
5: At RESET hold ▲ or ▼ to reset the job. All Totals, Date, Time and Name for this job will be cleared.
Caution: Data cannot be recovered after this event.

Name a JOB:

1: In Main Menu scroll to JOB.
2: Quick Press "ON" to enter JOB. Scroll to JOB using the ▲ or ▼ keys.
3: Hold ▲ or ▼ to select the job for adjusting.
4: Scroll to NAME in the JOB SETUP screen Using ▲ or ▼. At NAME hold
   ▲ or ▼ to name the job.
5: At the NAME job screen ▲ will change letter, ▼ will goto the next letter
   space. A maximum of 11 letters can be entered.
6: Quick press "ON" to exit.

View a JOB:

1: In Main Menu scroll to JOB.
2: Quick Press "ON" to enter JOB. Scroll to JOB using the ▲ or ▼ keys.
3: Hold ▲ or ▼ to select the job for adjusting.
4: Scroll to VIEW in the JOB SETUP screen Using ▲ or ▼. At VIEW hold
   ▲ or ▼ to select the job. Report screen will be displayed.
5 : Use ▲ or ▼ to scroll through the job report.
6: Quick press "ON" to exit. Viewing job does not unset the selected job.
7: When exiting to the Main Menu, the Job Report is set back to the Current Selected Job Number.

Clearing the Meter.

*Hold the Reset key down for 5 seconds to delete the current job information.

Reset all Jobs:

1: Turn FIELD MATE tm Off.

2: Hold down the ▼ key, "RESET ALL JOBS" is displayed and a scroll bar
counts across at the bottom of the screen.

3: Repeat step 2, 3 times to reset all the job totals.

4: The reset is complete when "RESET ALL JOBS DONE" is displayed.

Using the "FieldMate Reporter" software.

Use this application to down load Job information from any PRO series Meter.

    1: Connect the Meter to the down load cable attached to the office PC.

        A : The Meter should connect to a DB15 cable

        B : The DB15 cable connects to a USB serial converter with DB15 adaptor fitted.

        C : The USB coverter is connected to the USB port of the office PC.

    2: Start the FieldMate Reporter software by double clicking on the icon.

        Note: *If the reporter software is not installed, install from the factory supplied CD, or*
                down load the install files from www.areameters.com .

    3: Ensure that the FM-DRILL PRO is turned on. This software will automatically detect that a PRO version
       FieldMate area meter is connected. When this occurs the "DOWN LOAD *READY*" button is displayed.

    4: With the FM-DRILL PRO connected to the computer. Press the "DOWNLOAD READY" button. The
       data is instantly returned fromthe meter. At this point the "PRINT" and "SAVE" buttons will be enabled.

        Note 1 :   *If a " DOWNLOAD READY " button is not observed, check that the comm port that is*
                connected to the FM-DRILL PRO is the correct port. If required select the correct comm
                port using the "Connect Port" button.

    5: Once the job info is down loaded, click on the job buttons to display the work done for each job.

    6: To save the job info to a file press the "File Save" button.

    7: Any or all job data can be printed at any time, using the "Print" button..

    8: The Field Mate Reporter Application will only operate with the PRO.
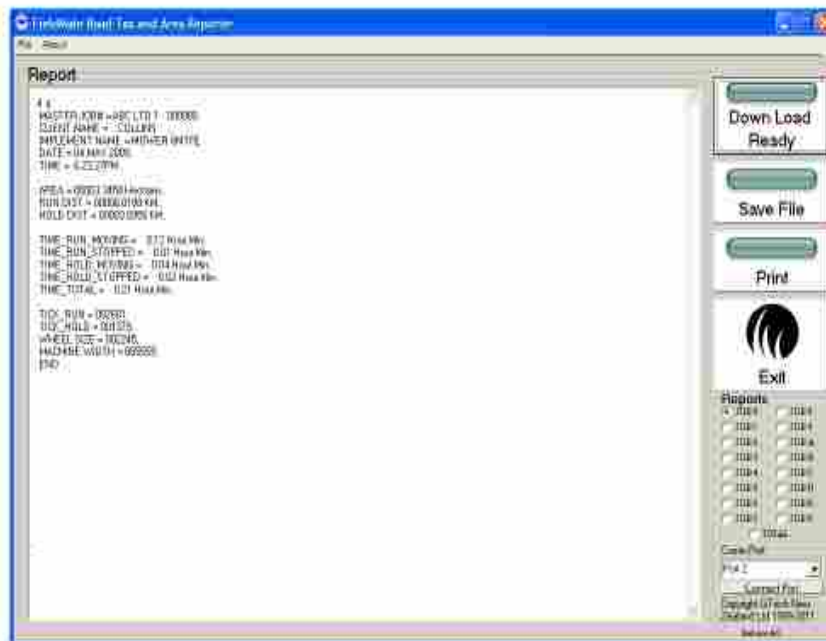
**The FieldMate Area Meter can record all your machine based agricultural activites,
making invoicing and job tracking a breeze.**

Example of A job report

```
0
MASTER JOB# = EDRIVE 123  - 000001,
CLIENT NAME =              ,
IMPLEMENT NAME = E SEEDER   ,
DATE = 04.FEB.2013,
TIME =  8.50.47PM,
,
 AREA = 00000.0000 Hectares ,
,
SEED DRILLED WEIGHT = 0000000.00 KG ,
,
FERT DRILLED WEIGHT = 0000000.00 KG ,
,
 RUN DIST = 00000.0000 KM,
 HOLD DIST = 00000.0000 KM,
,
TIME_RUN_MOVING =     0.00 Hour.Min,
TIME_RUN_STOPPED =    0.00 Hour.Min,
TIME_HOLD_MOVING =    0.00 Hour.Min,
TIME_HOLD_STOPPED =    0.00 Hour.Min,
TIME_TOTAL =    0.00 Hour.Min,
,
TICK_RUN = 000000,
TICK_HOLD = 000000,
WHEEL SIZE = 000200,
MACHINE WIDTH = 003000,
SEED MOTOR PULSES = 000008,
SEED COLTER RATIO = 021000,
FERT COLTER RATIO = 021000,
,
 Seed.,
 Seed Number = 000001,
Name = SEED???????,
 SEED WEGHT = 00150.0 GRAMS,
 SEED RATE = 0005.00 KG/HA,
,
 Fert.,
 Fert number = 000004,
Name = FERT???????,
 FERT WEGHT = 00750.0 GRAMS,
 FERT RATE = 0100.00 Kg/HA,
 END
```

Special job tracking number

Date and time of job

Area drilled, plus weight of material planted

Break down of hours spent on this job ...

Configuration of seed drill use to generate this report

Seed details of type, weight and rate.

Fert details of type, weight and rate.

Example of configuration

(Press any arrow key during boot up while connected to the "Field Mate Reporter" application to obtain this report)

```
 GENERAL SYSTEM DATA:,
wheel_circumference = 000200,
speedo_debounce_limit = 000015,
run_hold_sensor = 000001,
drill_width = 003000,
backlight_mode = 000001,
unit_type = 000001,
lcd_contrast = 000022,
PWM_Enabled = 000000,
motor_1_connected = 000000,
motor_2_connected = 000000,
drill_wheel_pulse_rev = 000003,
Reference_speed = 000004,
reference_rpm = 000005,
machine_model = 000052,
speed_hours_moving = 000006,
speed_hours_run_stopped = 000735,
speed_hours_hold_moving = 000000,
speed_hours_stopped = 000000,
Support number = 0211535759 ,
,
,
SEEDER SETUP VARIABLES:,
seed rate = 000500,
fert rate = 010000,
drill_width = 003000,
shaft_1_rpm_limit = 000300,
seed max rpm = 022000,
seed min rpm = 000010,
seed max colter rpm = 000000,
seed min colter rpm = 000000,
fert max rpm = 022000,
fert min rpm = 000010,
seed motor to colter ratio = 021000,
fert motor to colter ratio = 021000,
speedo_pulse_count_per_distance = 000001,
shaft_1_rev_pulse (seed) = 000008,
shaft_2_rev_pulse (fert)= 000008,
seed_stopped_pwm = 010000,
chain_stopped_pwm = 010000,
shaft_update_time = 000001,
seed_motor_pwm_update_rate = 000005,
fert_motor_pwm_update_rate = 000004,
max fert motor rpm = 022000,
max seed motor rpm = 022000,
,
SEED PRODUCT SETTINGS:,
,
 Seed Material #000001,
 Name = SEED???????,
 Seed Weight = 00150.0 GRAMS,
 RATE = 0005.00 KG/HA,             ....................... reports all 20 seed types stored in the system
,
 FERT PRODUCT SETTINGS:,
,
 Fert Material #000001,
 Name = FERT???????,
 Fert Weight = 00200.0 GRAMS,
 FERT RATE = 0005.00 KG/HA,        ....................... reports all 20 fert types stored in the system
```

FIELD MATE® 3