



# **StocksAG**

## **Micro Meter - Vari Speed and i-CON**

### **ORIGINAL OPERATING MANUAL & PARTS LIST**



#### **Read carefully before installation and operation**

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#### **Stocks Ag Limited.**

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## E.C. DECLARATION OF CONFORMITY

**Machine Type:** Mounted Agricultural Implement - Pellet and Seed application broadcasters

<b>Model(s):</b>	Fan Jet Pro	All Variants and Versions
	Fan Jet Pro Plus	All Variants and Versions
	Fan Jet Twin	All Variants and Versions
	Fan Jet Mini	All Variants and Versions
	Fan Jet Duo	All Variants and Versions
	Turbo Jet	All Variants and Versions
	Rotor Meter	All Variants and Versions
	Rotor Meter Air Force	All Variants and Versions
	Micro Meter	All Variants and Versions
	Maxi Meter	All Variants and Versions

**Serial No.** .....

**Manufacturer:** Stocks Ag Ltd  
Cromwell Road  
Wisbech  
Cambridgeshire PE14 OSD  
United Kingdom

This is to declare that the above machine conforms to the relevant Essential Health and Safety Requirements of the Machinery Directive 2006/42/EC, implemented in the United Kingdom by Statutory Instrument 2008 No. 1597 – The Supply of Machinery (Safety) Regulations 2008 as amended.

The following standards have been applied in the design and construction of this machine:

<b>BS EN ISO 12100:</b>	<b>2010</b>	<b>Safety of machinery – General principles for design – Risk assessment and Risk reduction.</b>
<b>BS EN ISO 4254-1:</b>	<b>2015</b>	<b>Agricultural machinery – Safety - General requirements.</b>
<b>BS EN ISO 4254-8:</b>	<b>2018</b>	<b>Agricultural machinery. Safety - Solid fertilizer distributors</b>
<b>BS EN ISO 13854:</b>	<b>2019</b>	<b>Safety of machinery – Minimum gaps to avoid crushing of parts of the human body.</b>
<b>BS EN ISO 13857:</b>	<b>2019</b>	<b>Safety of machinery – Safety distances to prevent hazard zones being reached by the upper and lower limbs.</b>

The manufacturer stated above holds the technical file for this machine.

Signed on behalf of Stocks Ag Ltd

  
**Name:**..... **J Woolway**

**Date:** 06<sup>th</sup> August 2020

**Position:** Managing Director



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## UKCA. DECLARATION OF CONFORMITY

Machine Type: Mounted Agricultural Implement - Pellet and Seed application broadcasters

Model(s):	Fan Jet Pro	All Variants and Versions
	Fan Jet Pro Plus	All Variants and Versions
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Signed on behalf of Stocks Ag Ltd

Name:  J Woolway

Date: 01<sup>st</sup> December 2020

Position: Managing Director

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# 1.0 General Information

Congratulations on your Micro Metre purchase:

Please check the machine for any transport damage upon receipt and advise your supplier of any problems immediately. Late claims regarding any damage may be rejected.

Specifications descriptions and illustrations in this manual are accurate at the time of this publication but may be subject to change this manual are correct at the time of printing but we reserve the right to change and improve them. This machine is designed with safety in mind. Maintenance and servicing in accordance with this manual will ensure safe operation and reliability of your machine for many years.

**This Operating Manual forms part of the machine and must be readily available for the operator who must read and follow the points covered before use.**

## 1.1 Technical Data

**Model:** Micro Meter Add-On & Combi

**Hopper Capacity:** 60 litre

**Net weight:** 30kg -36kg (Depending on model)

**Dimensions (W x D x H)** 102 x 32 x 48 cm (boxed 104 x 41 x 54 cm)

**Noise level:** 65dB

**Power requirement:** 12 volts with a minimum continuous 30amp supply

## 1.2 Intended Use

This machine has been designed to be mounted onto any non folding parent implements such as power harrows, seed drills, planters, and vineyard interrow equipment to safely apply a large variety of seeds such as OSR, grass, clover, kale, stubble turnips and can also be used to apply slug pellets, granular products such as Avadex ® and low rate application of prilled or starter fertilisers for the agricultural, horticultural and amenity sector.

Add-On or Combi Units must be used in conjunction with a Micro Meter Vari-Speed or Micro Meter i-CON Drive Unit. One Add-On Unit can give up to 1.5m working width for an even broadcast effect or to a wider width if band sowing. For grass seed application our high output machine fitted with deep groove feed. rollers may be required.

Any other use is considered to be non-intended and the manufacturer will not be liable for any resulting damage.

The manufacturer is not liable for any resulting damage if the machine is used for any other purpose than the intended use and also includes compliance with the conditions for operation, maintenance, and repairs prescribed within this instruction manual.

The applicable accident prevention regulations as well as the other generally safety-related, occupational health and road traffic regulations must also be observed.

**NOTE:** Do not operate this machine during adverse weather conditions.

## 1.3 Unintended Use

This machine is not designed to apply large seeds, abrasive materials such as sand & grit, or salt products. Machines are not designed to be tipped when in work.

**The operator alone bears the associated risk if used for non-intended use.**

\*Avadex ® is a Trademark used under licence by Gowan Crop Protection Ltd.

## 1.4 Machine Identification

**Example Decal Only**



The machine the serial number decals are mounted on the steel chassis to one side of the hopper

## 1.5 Warranty

We provide a 12 month warranty from the date of invoice (the invoice for the machine will serve as a warranty certificate).

This warranty is applicable for cases of material or construction faults and does not include parts that are damaged by normal or excessive wear.

Warranty expires if damage is caused by external forces, operator error, modifications, jet washing or if the machine has been used for unintended use.

In the event of any problems, or before attempting any repair please contact the company from where the machine was purchased. If the base machine or the controls system are modified in any way this will void any warranty claim.

Please see our conditions of sale for full details, a copy of which available upon request.

Please record the machine serial number here:                    S/N .....

Purchase date: .....                    Dealer .....

## 2.0 Safety

**Ensure care is taken when lifting the machine. Safe lifting practice to be observed when handling as the net weight is over 25kg**

- We advise safety shoes and protective gloves are worn when handling the machine.
- Assistance will be required when lifting or lowering the machine.
- Care to be taken to avoid crushing due to the weight of the machine.
- When lifting or fitting the machine on to a parent vehicle or implement ensure work is performed on level ground or flat surface to avoid slipping, stumbling or falling.



### PERSONAL PROTECTION EQUIPMENT

It is the responsibility of the operator or maintenance engineer to ensure safe handling of the machine and the appropriate personal protection equipment must be worn for the material being applied and to prevent contamination to the machine or the environment.

**⚠ WARNING! Ear protection required if working in close proximity to the machine as it exceeds 80dB.**

### PRODUCT APPLIED

If applying slug pellets or other toxic material and the parent vehicle has a closed cab the operator must ensure the cabin is always closed and the air filter system is in good order. If fitted to a UTV vehicle ensure the stability of the parent vehicle is not affected when the machine is in use. If in doubt contact the vehicle manufacturer for more information. After working the machine ensure that any unused product is returned safely to its original packaging. Stocks AG Ltd. does not accept any liability for the storage and use of the material being applied.

**NOTE:** If unsure contact your seed or product supplier for more information.

**⚠ WARNING! Always observe all application standards and guidelines provided by the product manufacturer as some seed dressings and granular products may be toxic.**

### OPERATION AND MAINTENANCE

The machine may only be used, maintained and repaired by persons who have relevant experience or a machinery dealer who is aware of any risks involved. The applicable accident prevention regulations as well as the other generally safety related, occupational health and road traffic regulations must also be observed. The manufacturer is not liable for any damage resulting from unauthorised modifications and the use of components and auxiliary parts. The machine must be checked regularly by the operator (before each use) for any damage, loose bolts or electrical connections, vibrations, unusual sounds, and to ensure they function correctly.

The machine must not be operated in wet weather conditions or during thunderstorms. Observe the generally applicable safety and accident prevention regulations. Always empty the hopper of toxic materials to prevent harm to humans and animals after each use and prior to storage.

**⚠ WARNING! Do not put your hands inside the hopper when the agitator motor is turning as the agitator shaft inside the hopper rotates at high speed and is sharp and dangerous.**

**⚠ WARNING! Always isolate the power supply if servicing or leaving the machine unattended.**

## 2.1 Safety Warning Decals

**Important:** Be aware of the safety warning below which are all relevant to this machine



**⚠ WARNING!**

Read and understand the Operators Manual instructions before operating this machine.

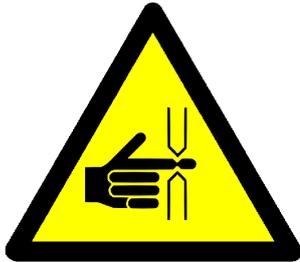
Operator errors can result in serious injury.



**⚠ WARNING!**

Danger due to thrown or flying objects.

Always maintain a safe distance whilst the machine is in operation.



**⚠ WARNING!**

Risk of injury. Possible trapping point when tipping hopper.



**⚠ WARNING!**

Risk of injury.

Be aware the feed mechanism is powerful and can cause serious injury.



**⚠ WARNING!**

Keep Clear!

Maintain a safe distance from the machine when in operation.

Wear the appropriate protective personal equipment.



**⚠ WARNING!**

Do Not Jet Wash This machine is not designed to withstand Jet Washing.

## 3.0 Emergency Stop Instructions

If powered by a Vari-Speed Drive Unit.

1. Power down the control system immediately by switching the main power switch on the left hand side of the cab control panel to the upper position A
2. Disconnect the power supply by unplugging the power cable or removing the inline fuse.



If powered by ani-CON Drive Unit

1. Power down the control system immediately by pressing and holding down the left-hand rubber end cap on the instrument control panel for approx. 2 seconds — then release to power off.
2. Disconnect the power supply by unplugging the power cable or removing the inline fuse.



## 4.0 Storage

Disconnect the power supply by unplugging the power cable or removing the inline fuse from the power cable if storing the machine for long periods.

It is the responsibility of the operator to ensure the hopper is empty after each use and cleaned thoroughly before storage.

Store in dry conditions to protect the machine and control system from moisture  
Always clean and spray electrical connectors with a moisture repellent spray when not in use for long periods.

## 5.0 Clearing a Blockage

Disconnect the main power supply.

Ensure the parent machine is stationary, switched off, and parked on level ground.

Ensure the main power switch on the control panel is off and unplug the power supply cable or is connecting the power cable from the vehicle battery.

**Ensure appropriate personal protection equipment is worn for the product being applied.**

**Ensure any product removed is put back into its original container**

**Care to be taken not to spill any product that could contaminate the environment.**

Empty the hopper of any remaining product - industrial vacuum recommended.

Investigate and unblock as required.

## 6.0 Optional PVC Waterproof Covers

Heavy duty white PVC covers fitted with eyelets and bungie cord for easy attachment available for all machines. Available through your local dealer.

To order quote part number: **MMT5010**.

## 7.0 Optional Nematicide Kit

Safe handling of nematicides is essential and an optional nematicide kit is available if required.

**⚠ WARNING!** In no circumstances should a machine be used for nematicide or any other toxic material without this kit fitted.

**For more information please contact your local Stocks Ag dealer or product supplier.**

## 8.0 Disposal

**Ensure that any persons handling the machine are aware that the machine may have been used to apply toxic chemicals and so the appropriate personal protection equipment should be worn.**

Ensure the hopper contents have been removed and any toxic residue removed and put back into a sealed container or disposed of in accordance with the manufacturers guidelines to eliminate any possible contamination of others or the environment.

**Always adhere to the local disposal regulations paying particular attention to the plastics, rubber, and electrical components.**

## 9.0 General Maintenance

**⚠ WARNING!** Always ensure the power supply is disconnected before any maintenance work or cleaning of this machine by unplugging the power cable or removing the 40amp fuse in the power cable.

Ensure the parent machine is stationary and parked on level ground before working on the machine.

The machine must be checked regularly by the operator for any damage loose bolts or electrical connections, vibrations, unusual sounds, and to ensure they function correctly.

**⚠ WARNING!** Protective clothing must be worn when applying or handling toxic products.

Always observe all guidelines provided by the product manufacturer with regards to handling, storage and disposal of products. Take care not to spill any product that could contaminate the machine or the environment ensuring any product removed from the machine is put back into its original container.

### 9.1 Before Use

1. Ensure the machine is securely mounted.
2. Check the power supply and ensure the power cable is connected direct to the vehicle battery.

### 9.2 Daily Checks

1. Check the feed motor is working correctly.
3. Check feed hoses for any blockages and all hose clips are tight.
4. Check the spreader plates are positioned correctly.

### 9.3 After Each Use

1. Empty hopper and clean the machine thoroughly.
2. Disconnect the power supply.
3. Replace the PVC waterproof cover (if applicable).
4. Store in dry conditions to protect the machine and control system from moisture.

**⚠ WARNING!**

**DO NOT JET WASH THIS MACHINE.**



## 10.0 Machine Mounting

It is not practical to supply tailored mounting brackets for every implement on the market, and so the final attachment of the Micro Meter to the implement is the responsibility of the supplying dealer or end user.

As Micro Meters are gravity fed machines hoses must be routed downhill with sufficient fall to allow the product to flow freely.

Hoppers may face forwards or backwards, whichever offers the easiest mounting and best flexible tube run.

### 10.1 Add-On Unit Mounting

One additional Add-On Unit can be bolted directly the end of the a Micro Meter Vari-Speed or Micro Meter i-CON hopper unit using the fixing kit supplied. Or alternatively use the optional 45cm feed shaft supplied (which can be cut to length if required) leaving a gap between the hopper units



### 10.2 Combi Unit Mounting

Positioning of hopper units, "C" section mounting rail, spreader plates and hoses will depend upon the type of application required.

Select a strong, rigid position to bolt to the hopper units to your implement or parent vehicle. Fabricate and fit a work platform and steps, complete with handrails if necessary ensuring there is sufficient room to access the hopper.

**Ensure any potential trapping points are noted, taking care not to trap hands or fingers.**

The spreader cone assemblies can be fixed to the "C" section mounting rail to give the planned spacing by sliding each along the rail and locking into position using the integral bolts. Two 1m lengths of rail supplied with each hopper unit to be cut down or extended to suit the implement width as required or fitted directly under the hopper units with the brackets supplied.

**NOTE:** If the spreader cone assemblies are positioned close behind the tractor wheels, roller or discs be aware of wet soil being thrown up into the spreader causing blockages.

The feed hose needs to be cut to length and pushed onto each feed cup and into each corresponding spreader tube (no hose clips required) ensuring all hose runs are as short as possible whilst giving a smooth downhill route avoiding any kinks or severe bends.



The 6 spreader cones supplied with each hopper unit will distribute seed or product to a maximum overall spread width of 1.5m when spaced equally across the mounting rail.

For a band sowing, the cones and springs may be removed from the steel tubes. Working width will depend upon the height the hoppers are mounted and length of feed hoses fitted.

Three blanking plate supplied with each machine and three with every additional hopper unit to reduce the number of outlets if required.

These fit over any chosen feed opening inside the hopper.



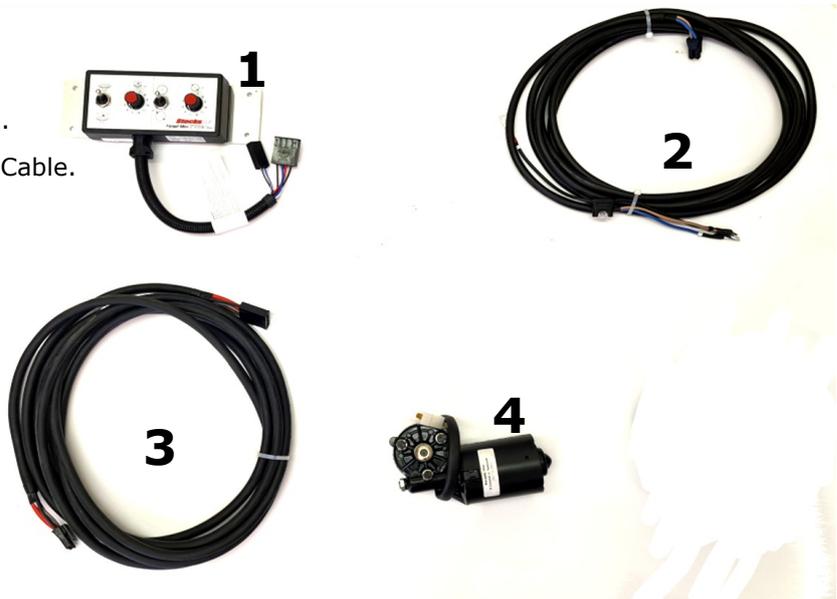
To fit, remove the two feed cup retaining screws, positioning the blanking plate, and then re-tightening the retaining screws.

Extra feed hose, mounting rail and hopper blanking plates are available through your local Stocks Ag dealer.

## 11.0 Vari-Speed Controls

### 11.1 Electrical Components

1. GA115B Control Panel.
2. MM107B 5m Fused Power Cable.
3. MM108B 6m Control Connector Cable.
4. TJ044C Feed Motor.



### 11.2 Electrical Connections

Power requirement is 12 volts with a minimum recommended continuous supply of 15 amps.

The machine is supplied with a control panel and all wiring.

Ensure the power supply cable **(2)** is connected direct to the vehicle battery to ensure maximum power.

Connect the positive wire (fused) to the positive (+) terminal and negative earth connection to the negative (-) terminal.

**NOTE:** Always replace any blown fuse with the same amp rated blade type fuse as the original one fitted.

**Control extension cables available.** If required please contact your local Stocks Ag dealer.

**⚠ WARNING!** Failure to connect to the vehicle battery may result in control function problems and possible damage to the vehicle battery and charging system must be in good condition to achieve the best results.

All cables and controls are fitted with matching plugs and sockets.

**⚠ WARNING!** Any modification to the wiring, fuse holder or controls will invalidate any warranty claim and may affect the performance of the machine.

## 11.3 Control Panel

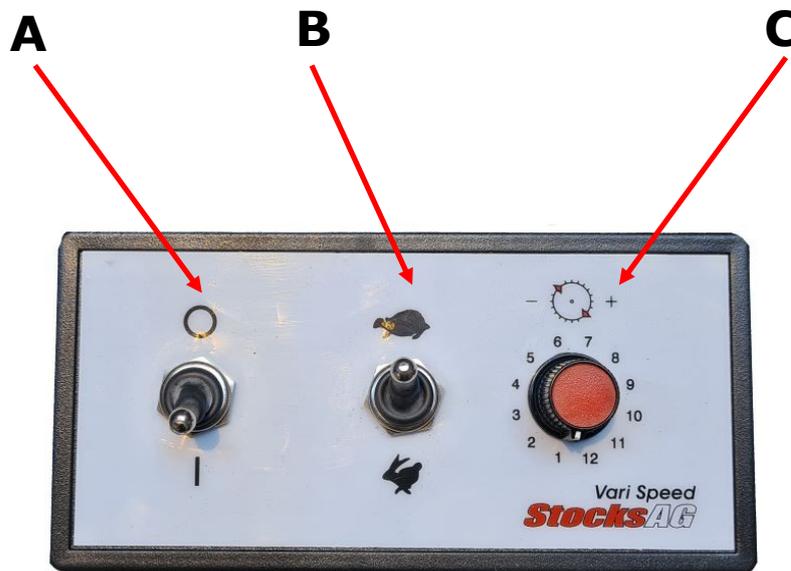
This is a simple and effective low cost manually operated electric control used to instantly start and stop the feed motor at headlands and uses a dial control to set the feed motor speed and thus the application rate.

It is not linked to forward speed, so once calibrated the operator drives at a consistent forward speed, to maintain the rate, or can manually increase or decrease application rates on the move using the dial.

The left hand toggle switch **(A)** is **Power On / Off** and starts and stops the feed motor.

The motor is 2 speed and is switched using the centre toggle switch **(B)** **from Low to High**.

A 12 position rotary dial **(C)** **offers 12 different speeds** in each range, providing a total of 24 different motor speeds. Application rates are increased with higher motor speeds and decreased with lower motor speeds.



## 11.4 Remote Switch Facility

Control Panels have a spare white wire within the wiring harness which can be earthed to negative (-) via a suitable remote switch to switch off the feed motor, an additional switch can be positioned so it is activated when the parent implement is raised and lowered.

**NOTE:** Heavy Duty Cut Out Switch available: For more information please consult your local Stocks Ag dealer.

**⚠ WARNING!** Ensure the position and operation of the control panel does not affect the visibility of the operator or the ability to control the parent machine.

## 11.5 Product Calibration

You will have to perform a catch and weigh test to establish the flow rate of product, and will need a suitable container to collect the product being metered and an accurate set of scales to weigh kilograms and grams, and a timer.

**To establish the correct flow rate of product being applied for your bout width, forward speed and application rate use the below formula:**

### Method

Use the following formula to establish the flow rate – this is a 1 minute catch test universal for all machines, products, widths and speeds.

$$\frac{\text{Application rate (kgs/ha)} \times \text{forward speed (kph)} \times \text{spread width (metres)}}{600} = \text{Flow rate in kgs per min}$$

### Example 1.

The required application rate is 25 kilograms per hectare. The target forward speed is 10 kilometres per hour. The bout width is 6 metres wide.

$$\frac{25 \text{ kgs/ha} \times 10 \text{ kph} \times 6 \text{ metres}}{600} = 2.5 \text{ kgs per minute flow rate}$$

### Example 2.

The required application rate is 5.5 kilograms per hectare. The target forward speed is 12 kilometres per hour. The bout width is 4.25 metres wide.

$$\frac{5.5 \text{ kgs/ha} \times 12 \text{ kph} \times 4.25 \text{ metres}}{600} = 467 \text{ grams per minute flow rate}$$

## 11.6 Calibration Catch and Weigh Test

1. Position a collection container directly underneath ALL outlet pipes to catch the product being calibrated.
2. Put a small amount of material in the hopper.
3. Perform the catch and weigh test.
  - a. Be ready to time the test - switch on the feed rolls – start timing – stop the feed rolls after 1 minute.
  - b. Accurately weigh the product metered over the timed period, and compare the weight collected to the figure indicated by the calibration chart at the end of manual. Increase or decrease the feed roll speed until you collect the correct amount of product for your rate, width and forward speed.
  - c. Use the cab control to select High or Low motor speed range and in combination with the 12 position motor speed dial adjust until the correct flow rate is obtained over a 1 minute catch test.

**NOTE:** Feed shaft speeds are regulated by the Micro Meter, Vari-Speed or Micro Meter i-CON Drive Unit.

**It is the responsibility of the operator to ensure safe handling of the machine and the appropriate personal protection equipment is worn for the material being applied and to prevent contamination to the machine or the environment.**

## 12.0 i-CON Controls

### 12.1 i-CON Control System

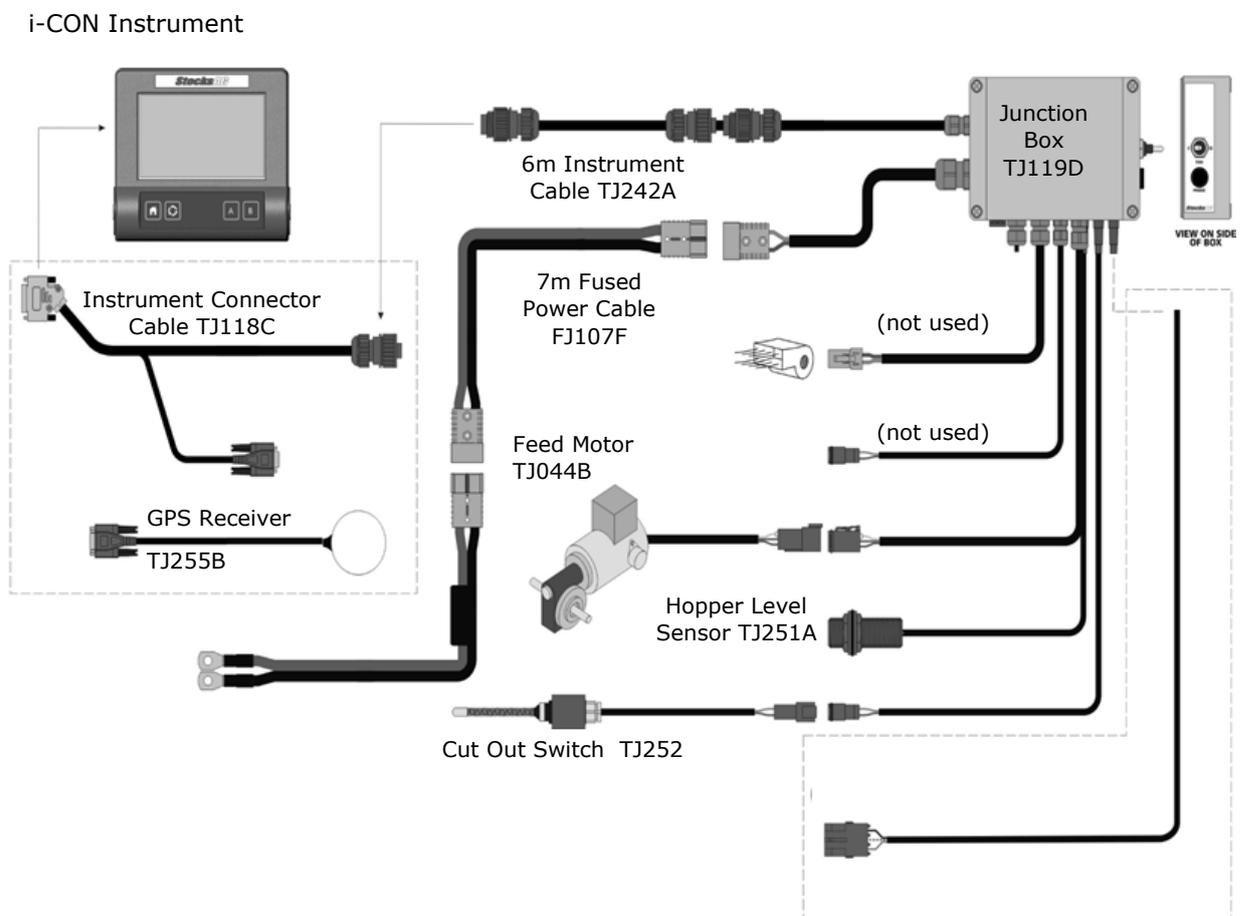
All control system components integral to the applicator unit are factory fitted.

The Instrument has a 4.3" Colour Touch Screen which has 4 basic menu keys.

Separate power cable and head unit leads interconnect the tractor and the Seed Applicator Unit.

- i-Con Instrument: TJ117C
- Instrument cables: TJ118C and TJ242A
- Fused Power Cables: MM107C
- GPS Receiver: TJ255B
- Cut out Switch: TJ252

### 12.2 Wiring Diagram



### 12.3 Electrical Connections

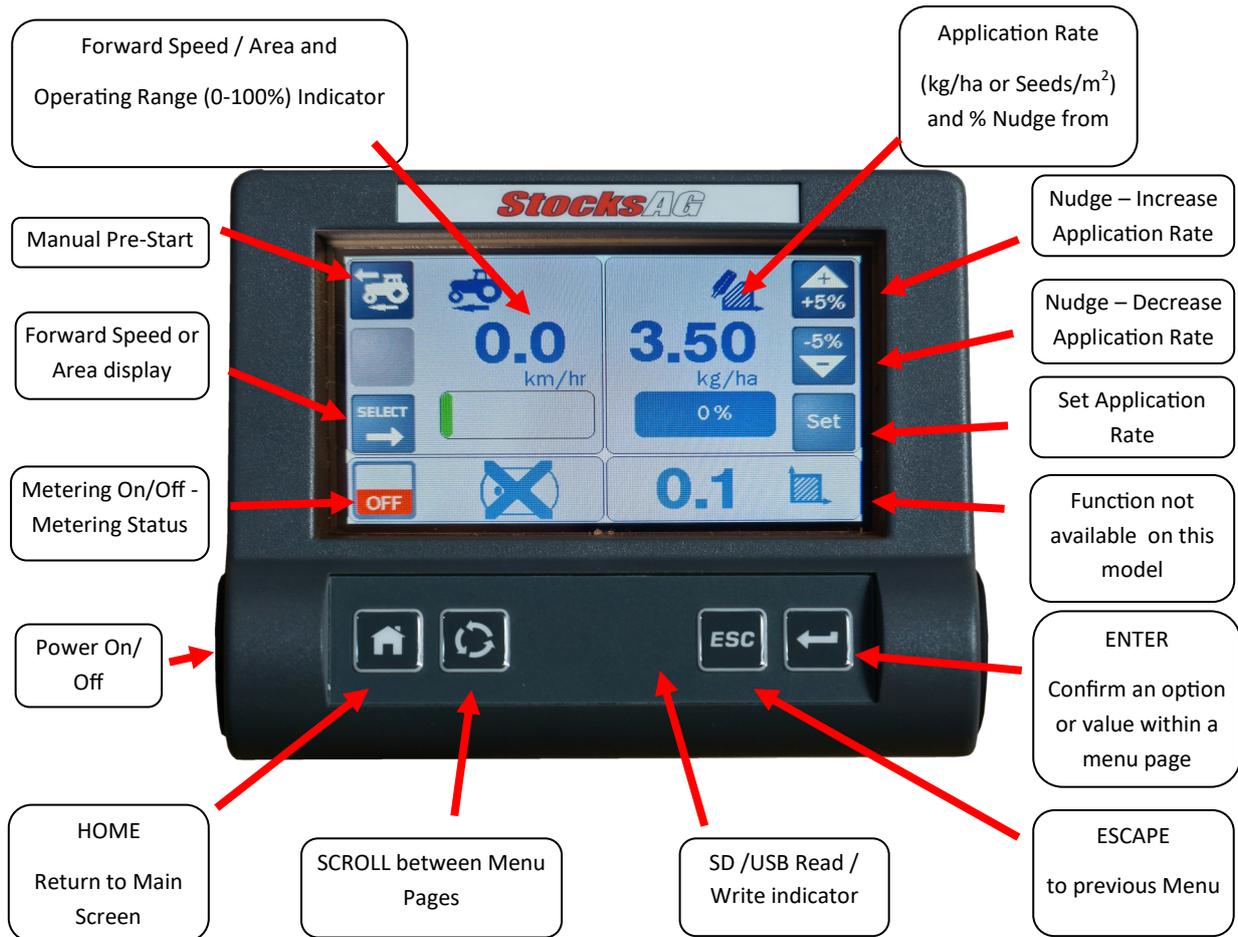
**Ensure the power supply cable is connected directly to the vehicle battery to ensure maximum power.**

Connect the positive wire (fused) to the positive (+) terminal and negative earth connection to the negative (-) terminal.

Failure to connect to the vehicle battery may result in control function problems and possible damage to the vehicle battery and charging system must be in good condition to achieve the best results. All cables and controls are fitted with matching plugs and sockets. Extension cables available.

**Any modification to the wiring, fuse holder or controls will invalidate any warranty claim and may affect the performance.**

## 12.3 i-CON Instrument Functions



- Seed Application Rate (kg/ha or Seeds/m<sup>2</sup>).
- Forward Speed (km/hr).
- Minimum/Maximum Forward Speed indicator with alarms, (beyond which the programmed seed rate cannot be maintained).
- Metering Unit Status (On/Off) and Alarm.
- Fan Status (not applicable)
- Hopper contents (kg) and Low Level Alarm.
- Part and Full (Job) Totals for Area (ha), Product dispensed (kg) and hours worked.
- Grand Total for Area (ha), Product (kg) and hours worked.

Other features include:

- Simple and intuitive touchscreen Alarm codes and diagnostic displays in the event of system malfunction.
- Menus for Forward Speed / Product calibration and adjustment.
- Pre-start - ensures seed delivery begins immediately the drill enters work (user-programmable).
- Rate 'Nudge' – on-the-move rate adjustment in pre-set increments (user-programmable).

**NOTE:** A comprehensive control system user guide also supplied (packed with the i-CON instrument)

## 12.4 Precision farming software -Optional

The instrument can be unlocked to activate the precision farming program as a cost option.

This is something that can be requested when the machine is purchased or can be added at a later date.

**Please contact your local Stocks AG dealer for more details.**

## 12.5 i-CON Calibration

You will need a suitable container to collect the product or seed when calibrating and an accurate set of scales which weighs in grams.

## 12.6 At The Machine

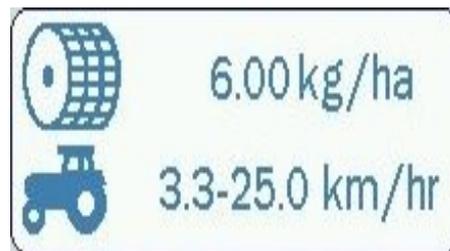
1. Position a suitable collection tray directly underneath each of the feed hoses or outlets to catch the product
2. Place a few kilograms of seed evenly across the hopper

## 12.7 At The i-CON Instrument

1. Switch the spinning disc / fan off at the instrument
2. Switch the head unit ON via the left hand side push button – wait until the start-up routine has finished and displays the main “home screen”
3. Scroll through  to the Setup Menu and select the Applicator Icon.
4. Adjust the implement width accordingly - refer to the RDS manual, Set Implement Width.

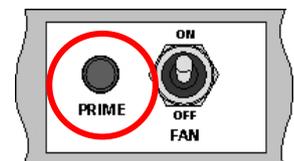


5. Ensure the correct application rate is entered – select and adjust accordingly, refer to the RDS manual, Setting the Application Rate.
6. Ensure the feed roller setup is appropriate for the intended product or seed type, application rate and forward speed range for application.



7. The instrument calculates the calibration factor from the working width, target application rate, and the metered weight delivered whilst calibrating. If however as a result of the calibration routine, you find that you cannot achieve your desired field speed, displayed in the top right corner of the screen, then re-configure the feed roll assembly and repeat the calibration procedure.
8. Prime the feed rolls with product by pressing and holding briefly the prime button on the junction box, this will ensure a higher initial calibration accuracy, empty the contents of the tray back into the hopper.
9. For an **Auto Calibration** from the Product Setup page, touch 
10. Touch  and enter the quantity that you wish to dispense for calibration purposes. You can enter the quantity in grams if preferred. The CAL factor will however, still be calculated in kg/rev.

11. Touch on the screen page 
12. After the  key the motor runs at the calibration speed (calculated from the Simulated Forward Speed, Width, Application Rate and current calibration factor).



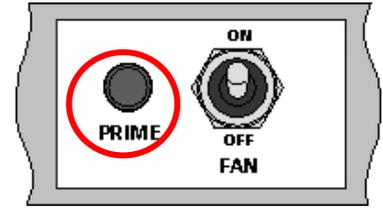
13. The dispensed weight (based on the current calibration factor) is displayed.
14. Weigh the product dispensed and then enter the measured weight, and press 
15. A new calibration factor is then re-calculated and displayed.

16. Your in-field min and max speeds will be displayed as per the image to the right hand side. If you find that you can not achieve your desired field speed, then re-configure the feed roll assembly and repeat the calibration procedure **NOTE:** Recommended min speed 0.8kph - 1.2kph (if not see feed roller configuration).



17. Touch  to save the new factor, it is advised to repeat the calibration two more times to ensure accuracy.

## 12.8 Manual Calibration



1. The estimated dispensed weight (based on the current calibration factor) is displayed.
2. Weigh the product dispensed (in grams) and then enter the measured weight, and press
3. A new calibration factor is then re-calculated and displayed.
4. Your in field min and max speeds will be displayed. If you find that you cannot achieve  your desired field speed, then re-configure the feed roller assembly and repeat the calibration procedure.
5. Touch  to save the new factor, it is advised to repeat calibration two or three more times to ensure accuracy.

## 12.9 GPS Speed

The i-CON control system is automatically configured to run with GPS receiver supplied and is a simple plug and play device. This system only works outside and if you are not receiving a GPS signal an alarm will be displayed on the main screen indicating NO GPS.

## 12.10 Common Calibration Mistakes

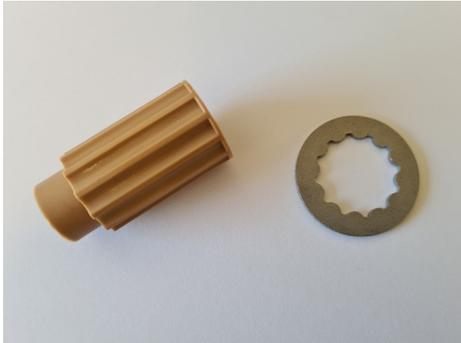
- Ensure you enter the width and required rate correctly – that the decimal point is in the correct position. If the rate is 2.5 kg/ha, enter 2.5. (not 25 - which is 25kg/ha).
- Remember to deduct the weight of the collection bag or bucket – weigh only the contents.
- Ensure you work in grams – not kilograms.
- Ensure you are working in the mode required – either Kilograms per Hectare or Seeds per Square Metre. The standard default mode for the i-CON is in Kgs/Ha and you will have to reconfigure the display if you want to display Seeds per Square Metre. You do not need to enter or change the TGW if working in Kgs/Ha only if working in Seeds per Square Metre - Refer to the RDS manual.
- Ensure you check the minimum and maximum speeds displayed, and that they are sensible for your field operation. This is the speed range that the i-CON can maintain the required application rate, and depends on the width of your machine, the application rate required, and the type and configuration of feed rolls fitted.
- Ensure that the speed range will work for you in the field – ensure that your target forward speed will not be close to either the minimum or the maximum of the range, and that you have some reserve of speed range above and below the in-field forward speed. Ideally your forward speed will be in close to the middle of the range.
- If the minimum is too high, for example 4kph then the feed motor will be running too slowly if your forward speed drops towards the minimum as you set in and lift out of work, and this could result in missed patches (although the alarm will trigger when either the minimum or max speed is reached).
- If the indicated speed range does not work for your operation, you must change the feed roll configuration or the type of feed roll to apply more or less seed, per revolution of the feed mechanism, as required. Once completed, recalibrate and note the new speed range.

## 13.0 Feed Shaft Speed

Feed shaft speed is controlled by the Micro Meter, Vari-Speed or Micro Meter i-CON Drive Unit

Alternatively, if the units are being fitted with a mechanical drive system of some kind the shaft speed will be determined by the design of the system

**If changing feed rollers from Standard to Deep Groove, please contact your local dealer for more information.**



Standard feed roller with matching profile washer

**Part Number MM101B - Washer MM102C**



Deep Groove feed roller with matching profile washer

**Part Number MM101C - Washer MM102A**

## 13.1 Feed Roller Adjustment

Feed rollers slide in their housings to expose between 0-100% of the roller to the material in the hopper.

Adjustment is made by turning the black plastic knob between the fork on the feed shaft. Once set, the adjustments can be locked in position with the hexagonal nut to prevent accidental movement. By hand, run the nut up to the nylon fork and then turn the plastic knob in the opposite direction to lock in position.

**NOTE:** On the Add-On Units each individual hopper has its own adjuster, ensure hoppers are set to the same position.

**NOTE:** When the adjuster reaches the end of its travel and begins to tighten back off one full turn and lock into position.

**Low rate application** for small seeds such as OSR, kale, mustard, stubble turnips, etc. set the feed rollers half open as a starting position for the initial calibration then adjust as required.

**High rate application** as used for most grass and grass mixes. Set the feed rollers fully open as a starting position for the initial calibration then adjust as required.



**⚠ WARNING!** Always observe all application standards and guidelines provided by the product manufacturer as some products may be toxic.

**If unsure contact your supplier for more information.**

## 14.0 Product Calibration for Combi Units

**NOTE:** This machine must be calibrated independently after the Micro Meter Vari-Speed or the Micro Meter i-CON machine the unit is connected to has been calibrated.

A catch and weigh test required to establish the flow rate of product will need a suitable container to collect the product being metered and an accurate set of scales to weigh kilograms and grams and a timer.

**To establish the correct flow rate of product being applied for your bout width, forward speed and application rate use the below formula:**

### Method

Use the following formula to establish the flow rate – this is a 1 minute catch test universal for all machines, products, widths and speeds.

$$\frac{\text{Application rate (kgs/ha)} \times \text{forward speed (kph)} \times \text{spread width (metres)}}{600} = \text{Flow rate in kgs per min}$$

### Example 1.

The required application rate is 25 kilograms per hectare. The target forward speed is 10 kilometres per hour. The bout width is 6 metres wide.

$$\frac{25 \text{ kgs/ha} \times 10 \text{ kph} \times 6 \text{ metres}}{600} = 2.5 \text{ kgs per minute flow rate}$$

### Example 2.

The required application rate is 5.5 kilograms per hectare. The target forward speed is 12 kilometres per hour. The bout width is 4.25 metres wide.

$$\frac{5.5 \text{ kgs/ha} \times 12 \text{ kph} \times 4.25 \text{ metres}}{600} = 467 \text{ grams per minute flow rate}$$

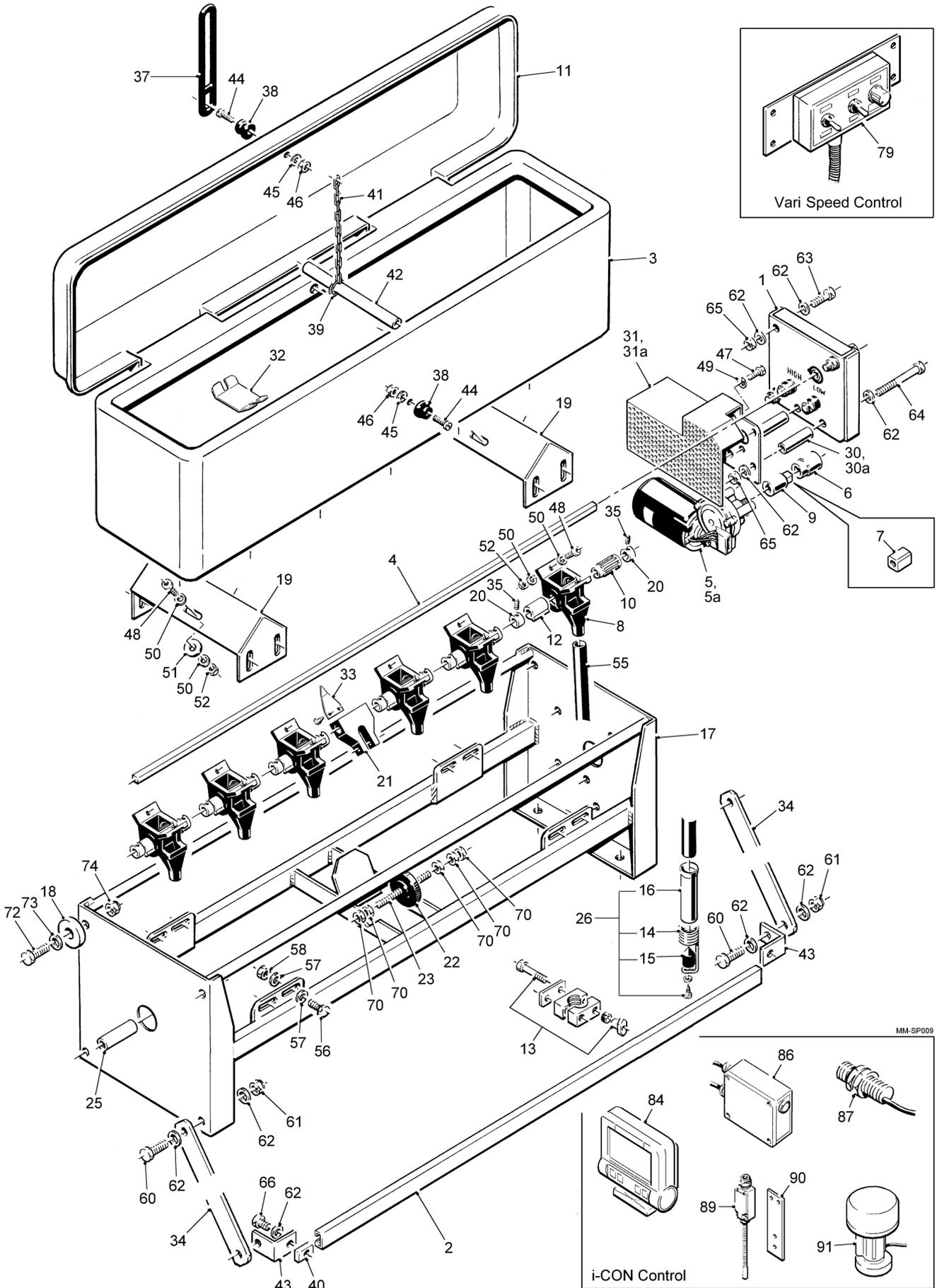
## 14.1 Calibration Catch and Weigh Test

1. Position a collection container directly underneath ALL outlet pipes to catch the product being calibrated.
2. Put a small amount of material in the hopper.
3. Perform the catch and weigh test.
  - a. Be ready to time the test - switch on the feed rolls – start timing – stop the feed rolls after 1 minute.
  - b. Accurately weigh the product metered over the timed period, and compare the weight collected to the figure indicated by the calibration chart at the end of manual. Increase or decrease the feed roll speed until you collect the correct amount of product for your rate, width and forward speed.
  - c. Use the cab control to select High or Low motor speed range and in combination with the 12 position motor speed dial adjust until the correct flow rate is obtained over a 1 minute catch test.

**NOTE:** Feed shaft speeds are regulated by the Micro Meter, Vari-Speed or Micro Meter i-CON Drive Unit.

**It is the responsibility of the operator to ensure safe handling of the machine and the appropriate personal protection equipment is worn for the material being applied and to prevent contamination to the machine or the environment.**

# 15.0 Micro Meter Parts Drawing



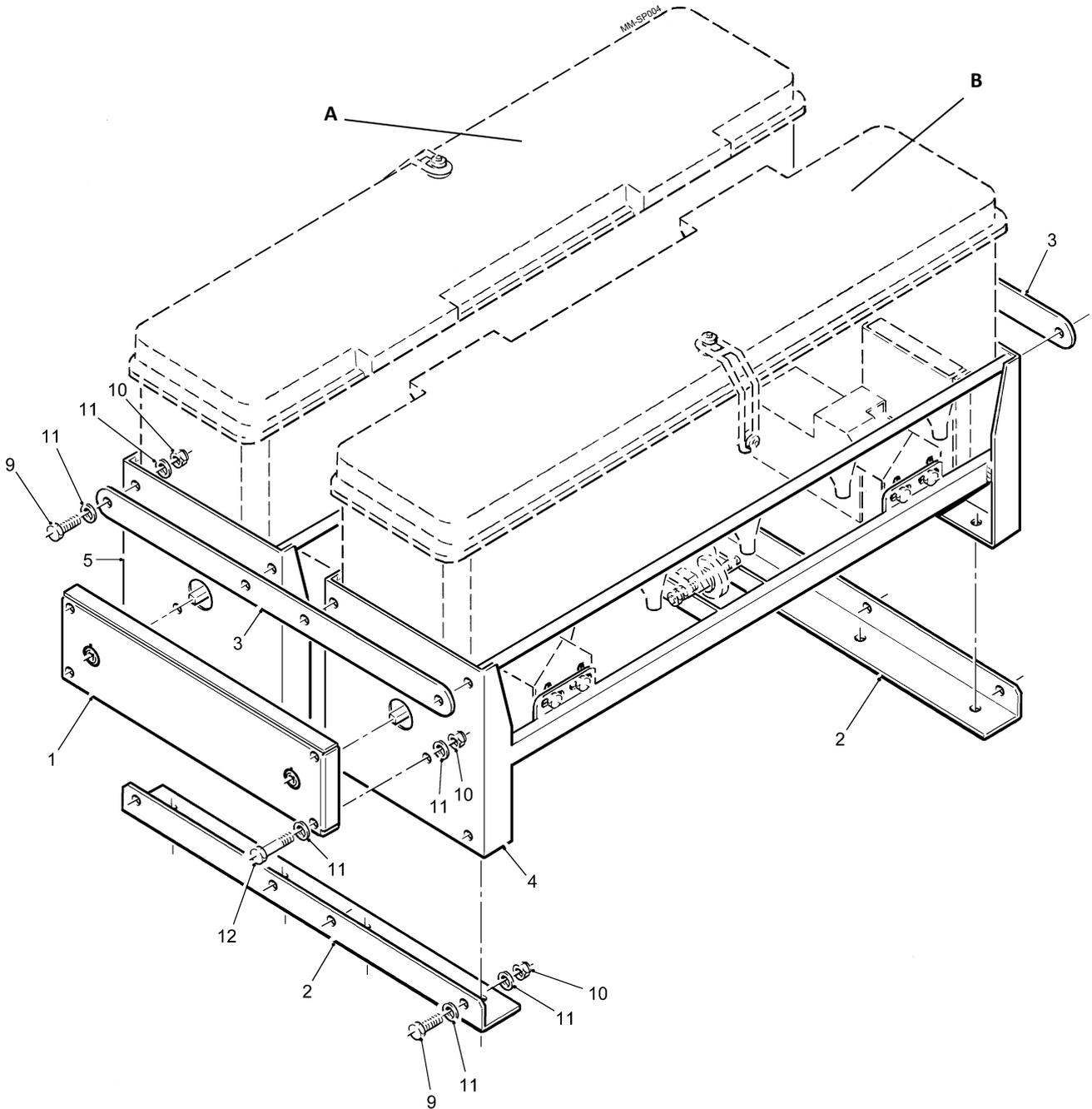
## 15.1 Micro Meter Parts List

Item	Part #	Description	Qty	Remarks
1	MM002G	Gearbox Complete	1	(Vari-Speed & i-CON only)
2	MM150	C' Rail	2x1m	
3	MM021	Hopper (60Ltr)	1	
4	MM024	Feed Drive Shaft	1	
5	MM044C	Feed Motor	1	(Vari-Speed only)
5a	TJ044B	Metering Motor	1	(i-CON only)
6	MM048	Drive Socket	1	
7	TJ043	Feed Motor Drive Coupler	1	(i-CON only)
8	MM100	Feed Cup	6	
9	TJ043	Coupler	1	(i-CON only)
10	MM101C	High Rate Feed Roller (Optional)	6	(not shown MM102A Washer)
10a	MM101B	Standard Feed Roller	6	(not shown MM102C Washer)
11	MM022	Hopper Lid	1	
12	MM102B	Feed Cut Off Sleeve	6	
13	MM223	Clamp Complete	6	
14	MM225	Spring	6	
15	MM226	Spreader Cone	6	
16	MM227	Steel Outlet Tube	6	
16a	MM224	Spreader Assembly	6	
17	MM300B	Micro-Meter Chassis	1	
18	MM314A	Chassis Spacer	4	Add On Unit only
19	MM315A	Hopper Support Bracket	2	
20	MM517	Locking Collar	12	
21	MM519	Feed Adjuster Fork	1	
22	MM520	Feed Adjuster Wheel	1	
23	MM521	M12x130 Threaded Rod	1	
25	MM531	Drive Shaft Connector (85mm)	2)	(per MM534)
26	MM224	Spreader Cone Assembly	1	(Vari-Speed only)
30	MM047	Motor Mounting Bush	2	
31	MM060A	Motor Guard	1	(i-CON only)
31a	MM050A	Motor Guard	1	(Vari-Speed only)
32	MM318	Blanking Plate	1	(3 per Add On & Combi Unit)
33	MM523	Pointer	1	
34	MM228A	Mounting Arm	2	
35	FJ008A	M6x6 Grub Screw	12	
37	FJ103A-1	Rubber Tensioner	1	
38	FJ104A-1	Bobbin	2	
39	FJ418A	Split Ring	1	
40	TJ151	Channel Nut	2	
41	MM019	Chain	1	
42	MM020	PVC Spacer	1	
43	MM227A	Mounting Angle	2	
44	M5-012	M5 x 25 Slot Head CSK Screw	4	
45	M5-014	M5 Flat Washer	4	
46	M5-017	M5 Nyloc Nut	4	
47	M6-004	M6x16 Hex Head Setscrew	3	
48	M6-006	M6x20 Button Head Setscrew	16	
49	M6-015	M6 Flat Washer	3	
50	M6-016	M6 Flat Washer	32	

## 15.2 Micro Meter Add-On Parts List

Item	Part #	Description	Qty	Remarks
51	M6-018	M6 Repair Washer	4	
52	M6-023	M6 Nyloc Nut	16	
55	MM222	5/8"ID Rubber Feed Hose	10m	
56	M8-003	M8x20 Hex Head Setscrew	8	
57	M8-010	M8 Flat Washer	16	
58	M8-019	M8 Nyloc Nut	8	
59				
60	M10-006	M10x30 Hex Head Setscrew	4	
61	M10-022	M10 Nut	4	
62	M10-016	M10 Flat Washer	20	
63	M10-009	M10x40 Bolt	3	
64	M10-015	M10x130 Bolt	2	
65	M10-024	M10 Lock Nut	5	
66	M10-001	M10x16 Bolt	2	
70	M12-010	M12 Half Nut	5	
72	M10-009	M10x40 Bolt	(4)	(Add On Unit only)
73	M10-016	M10 Flat Washer	(4)	(Add On Unit only)
74	M10-024	M10 Nyloc Nut	(4)	(Add On Unit only)
79	GA115B	Vari-Speed Control Panel	1	(Vari-Speed only)
80	MM534	45cm Drive Shaft Extension	1	(Add On Unit only)
81	FJ107F	7m Fused Power Cable	1	(not shown)
82	TJ118C	Instrument Connector Cable	1	(not shown) (i-CON only)
83	TJ242A	6m Instrument Cable	1	(not shown) (i-CON only)
84	TJ117C	i-Con Instrument	1	(i-CON only)
85	TJ235	Instrument Mounting Bracket	1	(not shown) (i-CON only)
86	TJ119D	Junction Box	1	(i-CON only)
87	TJ251A	Hopper level Sensor	1	(i-CON only)
89	TJ252	Finger Cut Out Switch	1	(i-CON only)
90	TJ253	Mounting Plate	1	(i-CON only)
91	TJ255B	GPS Receiver	1	(i-CON only)
95	n/a	Decal "Serial No. / CE UKCA Mark"	1	(not shown)
96	MD002	Decal "Stocks AG"	1	(not shown)
97	MD020	Decal "Stocks MICRO-METER"	1	(not shown)
98	MD052	Warning Decal Kit	1	(not shown)
99	MD024	Decal "Made in Britain"	1	(not shown)
100	MD022	Decali-CON	1	(not shown)

# 16.0 Micro Meter Combi Parts Drawing



## 16.1 Micro Meter Combi Parts List

Item	Part #	Description	Qty	Remarks
A		Combi Unit	1	
B		Micro Meter - Vari-Speed/i-CON Unit	-	Reference only
1	MM303A	Gearbox Assembly	1	
2	MM301	Angle Support Bar	2	
3	MM302	Brace Bar	2	
4	MM300A	Vari-Speed/i-CON Chassis	-	Reference only
5	MM300B	Combi Chassis	1	
9	M10-004	M10 x 25 Bolt	16	
10	M10-024	M10 Nyloc Nut	20	
11	M10-016	M10 Flat Washer	40	
12	M10-009A	M10 x 45 Bolt	4	

**For more information please contact your local Stocks AG dealer**

