Micro Meter - Jackal

ORIGINAL OPERATING MANUAL & PARTS LIST

Read carefully before installation and operation

MADE IN BRITAIN
EST.1977

Stocks Ag Limited.
Cromwell Road, Wisbech, Cambridgeshires, PE14 0SD, UK
01945 464909 sales@stocks-ag.co.uk www.stocks-ag.co.uk

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E.C. DECLARATION OF CONFORMITY

Machine Type:	Mounted Agricultural Implement - Pellet and Seed application broadcasters	
Model(s):	Fan Jet Pro	All Variants and Versions
	Fan Jet Plus	All Variants and Versions
	Fan Jet Mini	All Variants and Versions
	Fan Jet Duo	All Variants and Versions
	Maxi Jet	All Variants and Versions
	Turbo Jet	All Variants and Versions
	Rotor Meter	All Variants and Versions
	Rotor Jet	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:

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

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

Signed on behalf of Stocks Ag Ltd

Name:..... J Woolway

Date: 06th August 2020

Position: Managing Director

CE

t. +44 (0) 1945 464909 f. +44 (0) 1945 464985 e. sales@stocks-ag.co.uk

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UKCA. DECLARATION OF CONFORMITY

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Signed on behalf of Stocks Ag Ltd

Name:..... J Woolway

Date: 01st December 2020

Position: Managing Director

UK CA

t. +44 (0) 1945 464909 f. +44 (0) 1945 464985 e. sales@stocks-ag.co.uk

1.0 General Information

Congratulations on your Micro Meter 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 publication but may be subject to change. This manual is correct at the time of printing but Stocks Ag 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

Dimensions: (W x D x H) 102 x 32 x cm
Boxed 104 x 41 x 54 cm

Operating voltage: 12v

Motor output: 60 watts

Noise level: 65 dB

Power Requirement: 10 amps

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 sectors.

Add-On or Combi Units can be used in conjunction with a Micro Meter Jackal 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 is fitted with a deep groove feed roller, which will 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 purpose other 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 abrasive materials such as sand and grit or for applying salt products.

The operator alone bears the associated risk if used for unintended use.

1.4 Machine Identification

Example Decal Only

On this 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 control system is modified in any way, this will void any warranty claim.

Stocks Ag cannot be held responsible for any claims or injuries to the owner or any third parties while in the operation of Stocks Ag equipment.

On no account can Stocks Ag be held liable for accidental or consequential damages (including loss on anticipated profits) for any impairment due to failure or defect of the machine.

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 60dB.**

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 it functions correctly.

2.0 Safety Continued

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 Decals

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

In the case of an emergency always switch off the main power switch on the control panel and isolate the power supply immediately by disconnecting the power cable.

1. Power down the control system immediately by switching the main power switch to the middle setting marked "O" on the cab mounted control panel.
2. Disconnect the power supply by unplugging the power cable or removing the fuse.

"POWER OFF" SWITCH POSITION

4.0 Storage

Disconnect the power supply by unplugging the power cable or by removing the fuse fitted in the power cable.

It is the responsibility of the operator to ensure the hopper is empty after 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.

Fit the PVC waterproof cover (if available).

Ensure feed blocks are free to turn and all electrical cables checked following periods of storage.

5.0 PVC Waterproof Covers

Heavy-duty white PVC covers fitted with eyelets and bungee cord for easy attachment.

Please contact your local Stocks Ag dealer for more information

6.0 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 and any toxic residue have been removed and put back into a sealed container or disposed of following the manufacturer's 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.

7.0 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 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 regard 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.

7.1 Before use

1. Ensure the machine is securely mounted.

2. Check the power supply.

3. Ensure all feed outlets are clear of any product.

4. Check the feed block is configured correctly and free running before starting work.

7.2 Daily Checks

1. Check the hopper is clean, dry and free of foreign objects.

2. Ensure feed outlets and all hoses are clear of product.

7.3 After Each Use

1. Empty the 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!

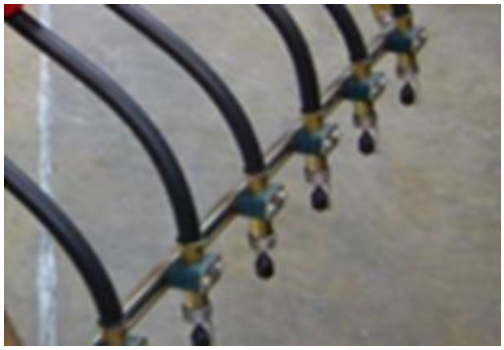
DO NOT JET WASH THIS MACHINE

8.0 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.



9.0 Add-On Unit Mounting

Add-On Units can be bolted directly the end of the a Micro Meter Jackal 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

10.0 Combi Drive 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.

11.0 Spreader Cones

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 the length of feed hoses fitted.

Three blanking plates are 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.

12.0 Machine Components

12.1 Feed Motor

The feed motor can be turned ON or OFF, either manually via the head unit, or automatically by either the tractor 7 pin implement socket, or remote mounted spring finger switch which can be fitted to the linkage or the implement. The feed motor must be switched ON via the head unit for the spring finger switch to work automatically.

12.2 Main 12v Power Connection

The power for the gravity fed Micro Meter is supplied via a 3 pin COBO type 3, D plug. The 3 pin COBO D plug sockets are commonly fitted into tractor cabs.

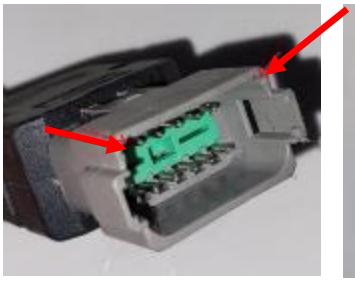
12.3 Instrument Lead

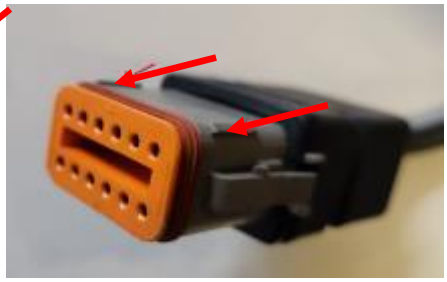
The 6m instrument lead connects the applicator to the control box of the Rotor Meter.

NOTE: Extension instrument cable available, if required.

Please contact your local Stocks Ag dealer for more information.

Ensure the multi-pin connector on the instrument cables are connected the correct way around, as shown.





12.4 Control System Operation

1. Power On/Off button

Power is turned on by pressing the **ON/OFF** button for 1 second.

Power is turned off by holding the **ON/OFF** button for 2 seconds.

2. Run/Hold button

The **RUN/HOLD** button has a dual function.

Press **RUN/HOLD** once to place the 'Metering unit ON HOLD'.

Press **RUN/HOLD** again to resume operation.

The **RUN/HOLD** state is indicated in the top left-hand corner of the screen. When the metering unit is in **RUN** mode, the unit displays **RUN** to signify that the metering unit is active (turning).

When the metering unit is in **HOLD** mode the unit displays the word "**HOLD**" & "beeps" every 2 seconds.

3. Page button

The **PAGE** button is used to scroll through function screens.

4. Select buttons

The Jackal has 3 buttons placed directly under the LCD. These buttons will change function in different menus.

The function of the button is indicated at the bottom of the screen directly above the button.

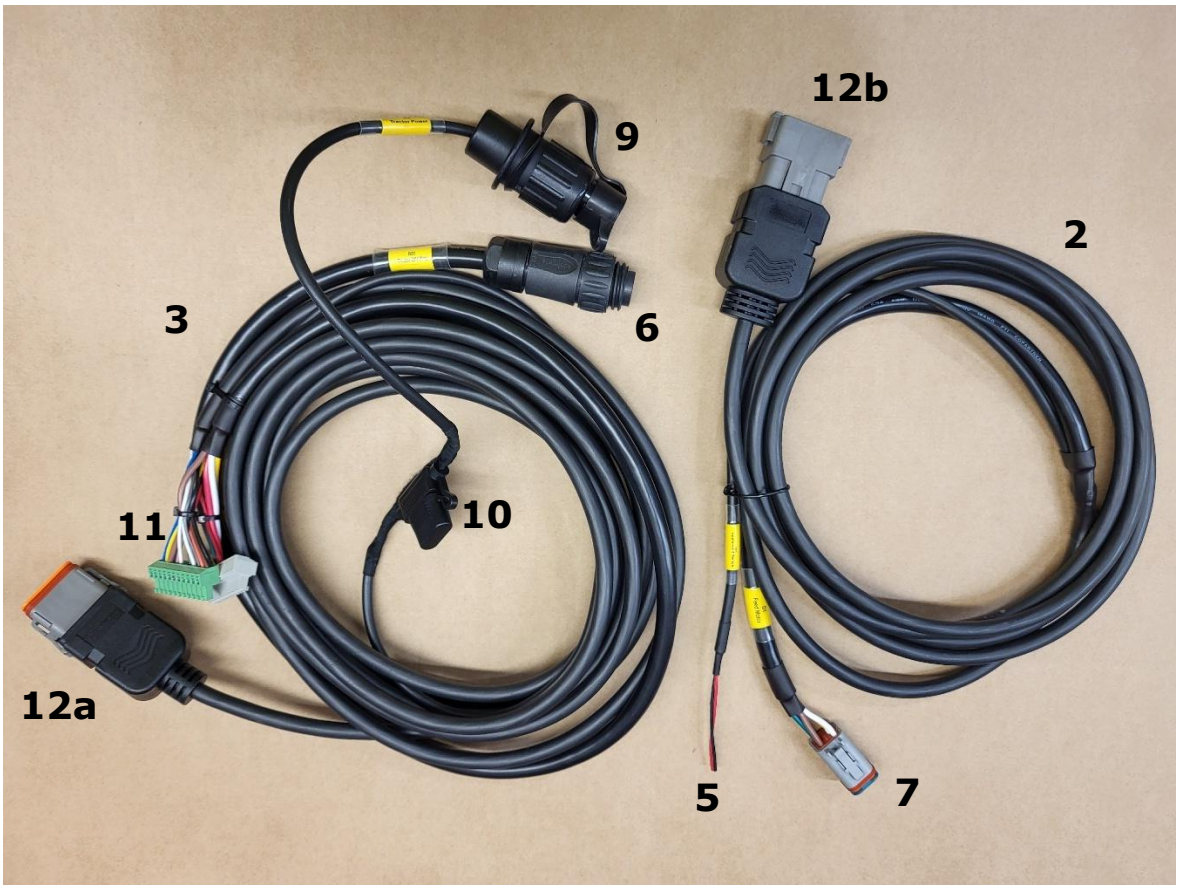
5. Navigation button (Up, Down, Left, Right, Enter)

The round navigation (**NAV**) buttons are used to navigate **UP/DOWN/LEFT/RIGHT** in calibration screens as well as scrolling through the display lines on the main screen.

ENTER is used to select the option highlighted onscreen.

13.0 Electrical Components

1



1. Cab control panel
2. Machine Loom
3. Control panel cable
4. GPS sensor connection - Optional (not shown)
5. Cut out switch connection - Optional
6. 7 pin tractor plug
7. Feed motor connection
8. 6m control extension cable (not shown)
9. 12v power (3 pin type 3 COBO D Plug)
10. 10amp fuse
11. Control box plugs
12. a & b Cable connector plug and socket

13.1 Run Hold/Cut Out Switch – Optional

This optional switch can be mounted in a suitable place on the implement or linkage on the tractor. Deflecting the spring, and automatically switching the feed motor off or on accordingly, as the circuit is made or broken.

Part No: 47TJT50025

Position the optional finger switch so that the tip of the spring comes into contact with the moving part of the implement or linkage when lifted out of work and remains deflected until the implement is lowered back into work.

NOTE: Ensure that there is sufficient and positive deflection on the spring to prevent accidental switching ON or OFF if the implement moves slightly up or down in work. The standard wiring as supplied for this switch is when the spring is at rest and the feed motor is normally off. If required the switch can work in the opposite mode by changing the setting on the head unit, see manual page 24 (section 12.1).

13.2 Hopper Level Sensor – Optional

There is an optional hopper level sensor available. This option is useful when the hopper of the applicator is out of view of the operator. The alarm will sound once the product in hopper drops below the level of the sensor.

For more information please contact your local Stocks Ag dealer.

Hopper level sensor - Part No: 47TJT5037

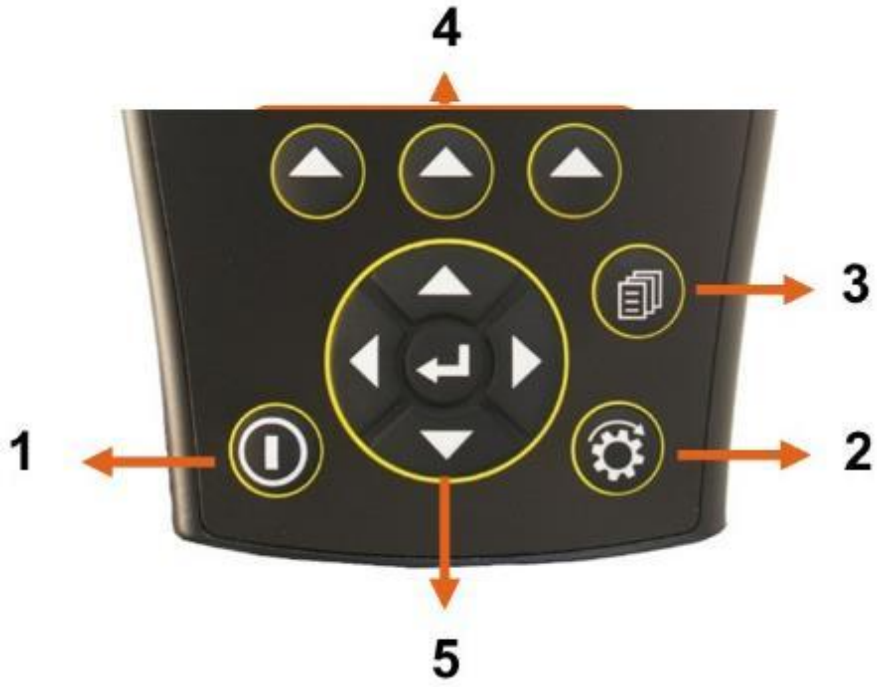
13.3 GPS Speed Sensor Kit – Optional

When a tractors 7 pin implement socket is not available for a forward speed signal, the Jackal can be fitted with this optional GPS sensor kit. This will give speed proportionate metering of product whilst maintaining the pre-set application rate in line with changes in forward speed. The fly lead is required to connect the GPS receiver to the plug on the back of the head unit.

GPS receiver - Part No: 47TJT5036

GPS fly lead - Part No: 97APC0048

13.4 Instrument Button Functions



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3. **Page button**

   The **PAGE** button is used to scroll through function screens.

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   The Jackal has 3 buttons placed directly under the LCD. These buttons will change function in different menus.

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   The round navigation (**NAV**) buttons are used to navigate **UP/DOWN/LEFT/RIGHT** in calibration screens as well as scrolling through the display lines on the main screen.

   ENTER is used to select the option highlighted onscreen.

14.0 Initial Instrument Setup

This display is called the **RUN** screen and displays the information required when the machine is in normal use.

It displays on a scrolling list:

Application Rate

Forward Speed

Hopper Level sensor

SCROLL DOWN TO VIEW

Fan Current (as a % of battery voltage)

Area Meter

Setting the Working Width

Using the **PAGE** button scroll through until the **SETUP** option displays over the select buttons.

Press the SELECT button to enter the SETUP Menu.

Using the DOWN Arrow on the Navigation key pad, scroll down to **Other Settings.**

Using either the ENTER button on the Navigation key pad or the right hand **SELECT** button, with SELECT above it, to confirm.

14.0 Initial Instrument Setup Continued

Using the navigation keys, scroll down to implement width.

Press the left navigation button to highlight the numerical value to be adjusted.

Press **EDIT.**

On the next screen enter the working width in metres.

To adjust the value, use the navigation up and down buttons to change the value.

Use the left and right buttons to select to the unit to be adjusted.

The example across shows a working width of 8.5 metres being entered.

Press **EXIT** to save and go back to settings menu.

14.1 Run/Hold Automatic Switch

The Jackal has 3 main methods of switching the metering roller on and off. On is referred to as **Run** to apply product and off is referred to as **Hold** to stop the metering roller.

The **Run** or **Hold** button on the bottom right of the control box can be used to manually switch the metering motor on and off.

When using an implement attached to the 3 point linkage, the 7 pin implement socket in the cab can be used to provide an on/off signal for the **Run/Hold** function.

To use the 7 pin input as the **Run/Hold** function, the **Input#** must change from 5 to be set to **9**.

Note: This input may require changing, please contact Stocks for technical assistance to unlock this function.

There is also an optional cut out finger switch available.

This is set from factory to be in the **Hold** position when not activated (in its central rest position) and when the finger is moved, the metering motor will start or **Run**.

The set up for this function is displayed in **SET UP/Other Settings**, scroll down to **Extern.Run/Hold**

This will be shown on the screen as **Normally Off**

If required, the operation of the **Run/Hold** can be made to operate the opposite way round to suit a particular tractor or position of the optional finger switch.

Finger switch and 7 pin implement switch setting:

In **Set Up, Other Settings, Extern.Run.Hold.**

By changing the setting to **Normally On**, the machine will meter product with the **Run/Hold** finger switch in the rest position and then switch off when the **Run/Hold** finger switch is moved.

15.0 First/New Product Calibration

From the front screen, select **SETUP**, by pressing the arrow directly below.

Then select **Inputs** by pressing **SELECT** or the Enter button in the middle of the navigation keys.

15.0 First/New Calibration continued

Important! – On the first ever calibration run or when changing product types. Leave the target set to 0.000kg, do not enter a target weight.

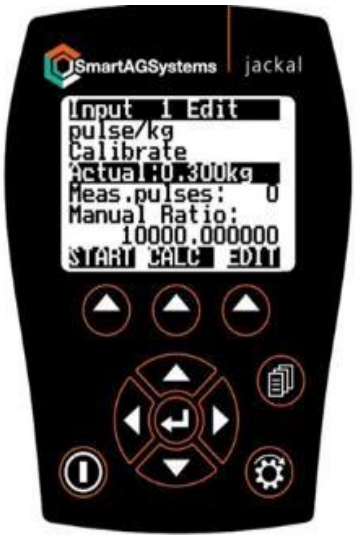
To prime, first place a suitable calibration container underneath all of the outlet hoses.

Press and hold the arrow button below **START** on the Jackal Instrument or the button on the applicator junction box.

Once product is dispensed, release the button. The screen will AUTO RESET for the calibration run.

To start calibration, press and hold the arrow button under the word **START** on the screen.

15.0 First/New Calibration continued



Combine all of the product that was metered in to the individual containers into one.

Weigh the product dispensed with scales that weigh in grams or kgs to 3 decimal places.

The TARGET line will now read **Actual.**

With **Actual** highlighted. Press the arrow key below **EDIT** and enter the weight of the product dispensed.

A new screen opens to allow you to enter the weight of product dispensed.

Example: If you weighed 256 grams, you need to enter this as 0.256kg on the screen.

Using the left and right navigation key pad to highlight the figure that needs adjusting, use the up and down to change the figure.

To save and exit, press the arrow below **EXIT.**

DEL is to delete a digit and **INS** is to insert a digit.

To confirm the actual weight that has been entered, now press **CALC** to work out the new ratio.

Note: *This ratio is the number of pulses from the encoder on the metering motor per kg of product.*

For reference, the calculated ratio can be recorded along with the product type and feed roller set. This ratio can be entered manually to quickly change between products in the future.

Scroll down to highlight Manual Ratio press **EDIT** and enter the recorded figure.

To save and exit, press **EXIT.**

16.0 Product Calibration

From the front screen, to select **SETUP** press the arrow directly below.

Then select **Inputs** by pressing **SELECT** or the Enter button in the middle of the navigation keys.

Once the first calibration run has been completed and calculated, the manual ratio will change.

A target rate can now be entered.

Using the Navigation keys, scroll down to highlight **Target.**

Press the arrow key below **EDIT.**

16.0 Product Calibration continued

This is the weight you want to dispense during your calibration. This is usually 0.100kg (100 grams) up to around 0.800kg (800 grams).

Example: Set to 300 grams or 0.300 kg.

To prime, first place a suitable calibration container underneath all of the outlet hoses.

Press and hold the arrow button below **START** on the Jackal Instrument or the button on the applicator junction box. Once the product is dispensed, release the button. The screen will auto reset for the calibration run.

To START the calibration, you can either press and hold the arrow button under **START** or press and hold the button on the side of the applicator junction box.

The calibration run will stop when the target rate is reached or when the button is released.

14.0 Product Calibration continued

Combine all of the product that was metered in to the individual containers into one.

Weigh the product dispensed with scales that weigh in grams or kgs to 3 decimal places.

The TARGET line will now read **Actual** with **Actual** highlighted. Press the arrow key below **EDIT** and enter the weight of product dispensed.

Example: If you weighed 256 grams, you need to enter this as 0.256kg on the screen.

To save and exit, press the arrow below **EXIT.**

14.0 Product Calibration continued

To confirm the actual weight that has been entered, now press **CALC** to work out the new ratio.

***Note**: This ratio is the number of pulses from the encoder on the metering motor per kg or product.*

For reference, the calculated ratio can be written down along with the product type. This ratio can be entered manually to quickly change between products in the future.

Scroll down to highlight **Manual Ratio** press **EDIT** and enter the recorded figure.

To save and exit, press **EXIT.**

17.0 Applying Product

For the machine to operate, the **RUN/HOLD** in the top left of the screen, must display **RUN.**

This is either switched by the linkage position switch/sensor. (This is either on the 7 pin plug or external finger switch, if supplied).

Alternatively, if there is no 7 pin input or external finger switch, the **RUN/HOLD** button on the bottom right of the keypad can be used to switch the metering unit on and off.

As the machine is about to start work, set the application rate required. This can be done by selecting one of the two preset "**quick rate**" buttons, as highlighted opposite.

See Quick Rate section to adjust the preset rates.

Until the machine is moving, **STOP RATE** will be displayed in the top right of the screen.

Alternatively, the rate can be set manually on the **RATE+** or **RATE–** page.

Once the machine starts to move, the forward speed will be displayed and the **STOP** message will change to **OK**.

The applicator should now be applying product.

18.0 Simulated Speed

Simulated speed is used when no forward speed input is available, or if you need to run the machine while stationary for testing.

If simulated speed is switched on, it will override any external speed input.

Select the Other Settings page by selecting **SETUP** then **Other Settings**, scroll down to **SimulSpeed**.

The simulated speed can be switched on or off by highlighting **YES** or **NO** and pressing the arrow key below **EDIT** or the Enter Button.

To return to the Run/Home screen press **EXIT** to save and **EXIT** each screen.

When simulated speed is turned on, this function is now available when scrolling through the screen functions using the **PAGE** button.

The simulated speed function must be switched off to allow an external forward speed input to alter the application rate as the tractors speed changes.

The speed can be adjusted on the move and the feed rate will adjust accordingly.

19.0 Alarms and Trip Functions

ALARMS

The Alarms page is accessed from the home screen, using the left hand select arrow.

The Alarms are listed and show which alarms are active.

The alarm function should be set to AUTO.

=AUTO: As soon as the value moves back within the min and max range the monitor will automatically reset the alarm.

=ON: When the alarm is activated it will remain ON until you enter the ALARM menu and manually reset.

=OFF: You can disable the alarm altogether.

TRIPS

The Trips page allows accumulating area (hectare) values to be saved and recalled at a later time.

From the front-page press **TRIP,** the screen opposite allows you to SAVE/RESET individual trips or view SAVED TRIPS.

By pressing the **SAVE/RESET** you have the ability to Reset Trip | Save Trip | Reset All.

By pressing **2. Save Trip** it will be stored in the SAVED TRIPS option.

You can now view the **SAVED TRIPS**. You also have the ability to **EDIT** and name the Trip or **DEL ALL** (Delete All Trips).

When you return to the TRIPS page the Trip will continue to accumulate.
You will need to SAVE/RESET the trip if you want to start from Zero (0) again

20.0 Quick Rate and Step Size Adjustment

The preset quick rates can be set to whatever is required.

From the front screen settings, the size of the step rate can be adjusted.

To get to the Front Screen, use the page button until SETUP is displayed. Select SETUP, then scroll down to Front Screen and select.

When the Front screen is displayed, as opposite, select **1: SEED** by highlighting and press **EDIT**.

Scroll down until **Step:** is visible.

To adjust the Step size, scroll down to highlight **Step.**

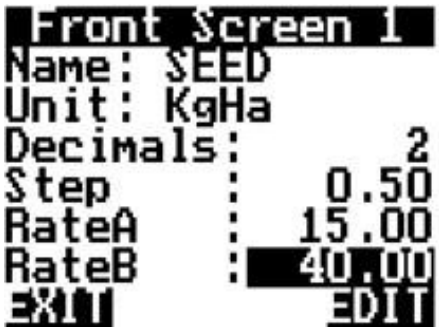
Press **EDIT** and set the required **Step** size in kg/ha (screen opposite shows steps of 0.50 kg/ha).

Press **EXIT** to save and exit.

0.50000 is a 500 grams or 0.5 kg step size.

To adjust **RateA** and/or **RateB**, scroll down and highlight the one to be altered. Then press **EDIT**.

Enter the required rate and press **EXIT** to save and exit.



21.0 Flush/Hopper Empty

The Jackal has a Flush or Hopper Empty function.

Use the Page button to scroll through the function until **SEED** and **Flush** are displayed above the arrow buttons.

Open the calibration door and place a suitable bucket or container underneath.

To begin emptying, press the arrow button under Flush.

The Flush icon will begin to flash and the metering unit turns.

Press again to stop.

22.0 Diagnostics

The Diagnostics page is accessed from the **SETUP** page and scroll down to Diagnostics.

This page will display supply voltage and current being drawn.

Each input and output set up on the Jackal is displayed. When switched on or operated it will show a voltage or hertz reading.

23.0 Ready for Work

Once calibrated your machine is ready for work

1. Remove the calibration tray and store away safely.
2. Check all outlet pipes are seeding correctly.
3. Ensure that you are travelling at the correct chosen speed if not using the optional GPS Kit.
4. Stop after a few metres – check for even distribution, spread and application rate.
5. Commence work checking periodically to ensure the machine is working correctly.

If you are unable to calibrate correctly or you have any other questions about the machine please contact us.

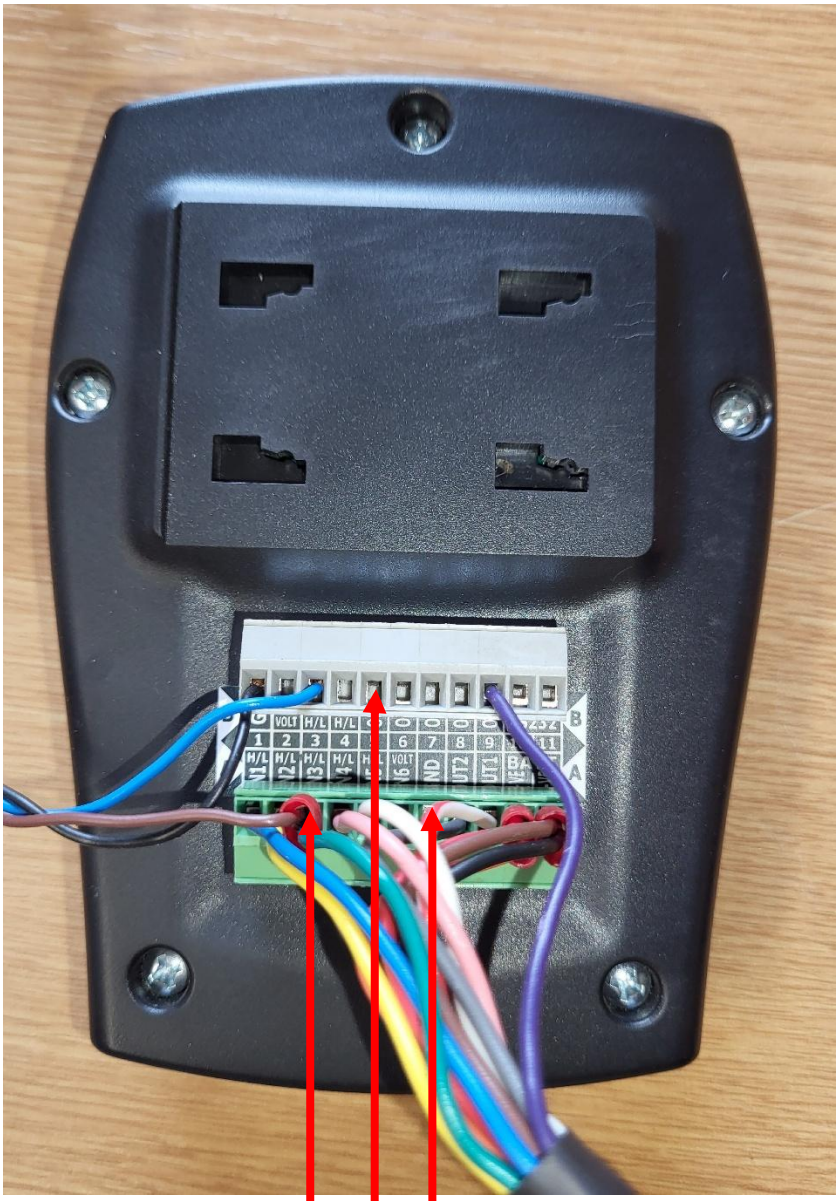
CAUTION. The feed rollers could pull in hair or loose clothing. The motor is so powerful that you will be unable to stop it.

Always clean out the machine at the end of the day, use a brush not your hand to sweep out the hopper.

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

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

24.0 Land Wheel Speed – Fly Lead Wiring



Wheel Speed Sensor wire connections

YELLOW / GREEN = Signal (Green 3)

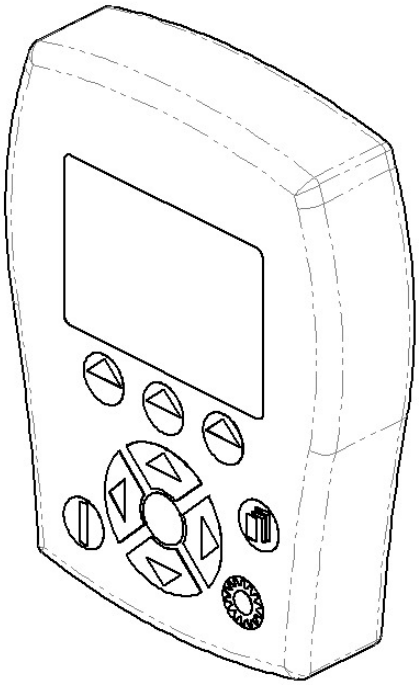
BLUE = GROUND (Green 7)

BROWN = +12V (Grey 5)

The wires in Green 3 will need removing to allow the wheel speed sensor wire to fit.

Warning! Do not over tighten the terminal screws in the grey and green plugs.

25.0 Jackal Control System – Drawing and Parts

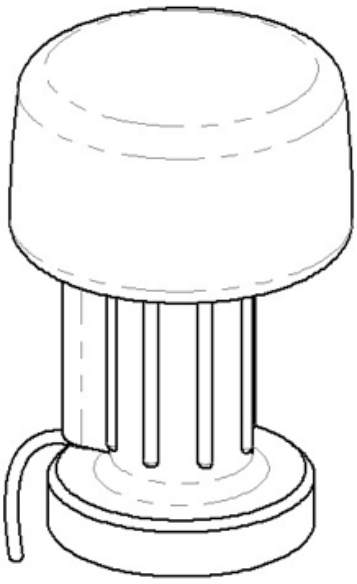


Jackal Control Box

Part number: 97APC0046

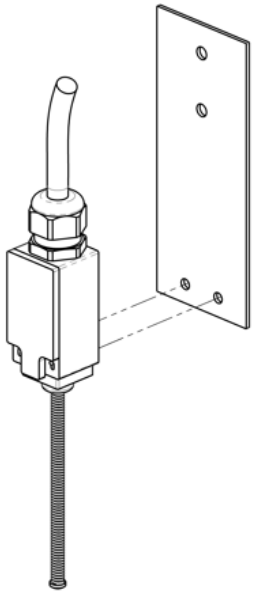
Jackal Basic Wiring Loom

Part Number: 97APC0047



GPS Receiver

Part number: TJ255B



Finger Switch (Cut Out/Run Hold)

Part number: TJ252

5m Fused Power Cable

Part number TJ238 (No Image)

TJ253 Finger Switch Mounting Plate

TJ254 Finger Switch Cable

5m Instrument Cable

Part number 97APC0051 (No Image)

26.0 Electrical Connections

Power requirement is 12 volts with a minimum continuous 15 amp supply for a gravity fed machine.

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

The power for the Micro Meter Jackal is supplied via a 3pin type 3 COBO D plug.

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.**

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

26.1 Control Boxes

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

27.0 Feed Roller Adjustment

The Micro Meter can be ordered with either a standard small seed roller or the optional deep groove larger seed roller.

Standard feed roller with matching profile washer

Deep Groove feed roller with matching profile washer

It is not advisable or straightforward to change the feed roller segments. This is due to the complex level of work and the amount of time taken to undertake this task.

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 hopper has its own adjuster. The adjuster on each hopper must be 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 is 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.

28.0 Product Calibration for Combi Unit

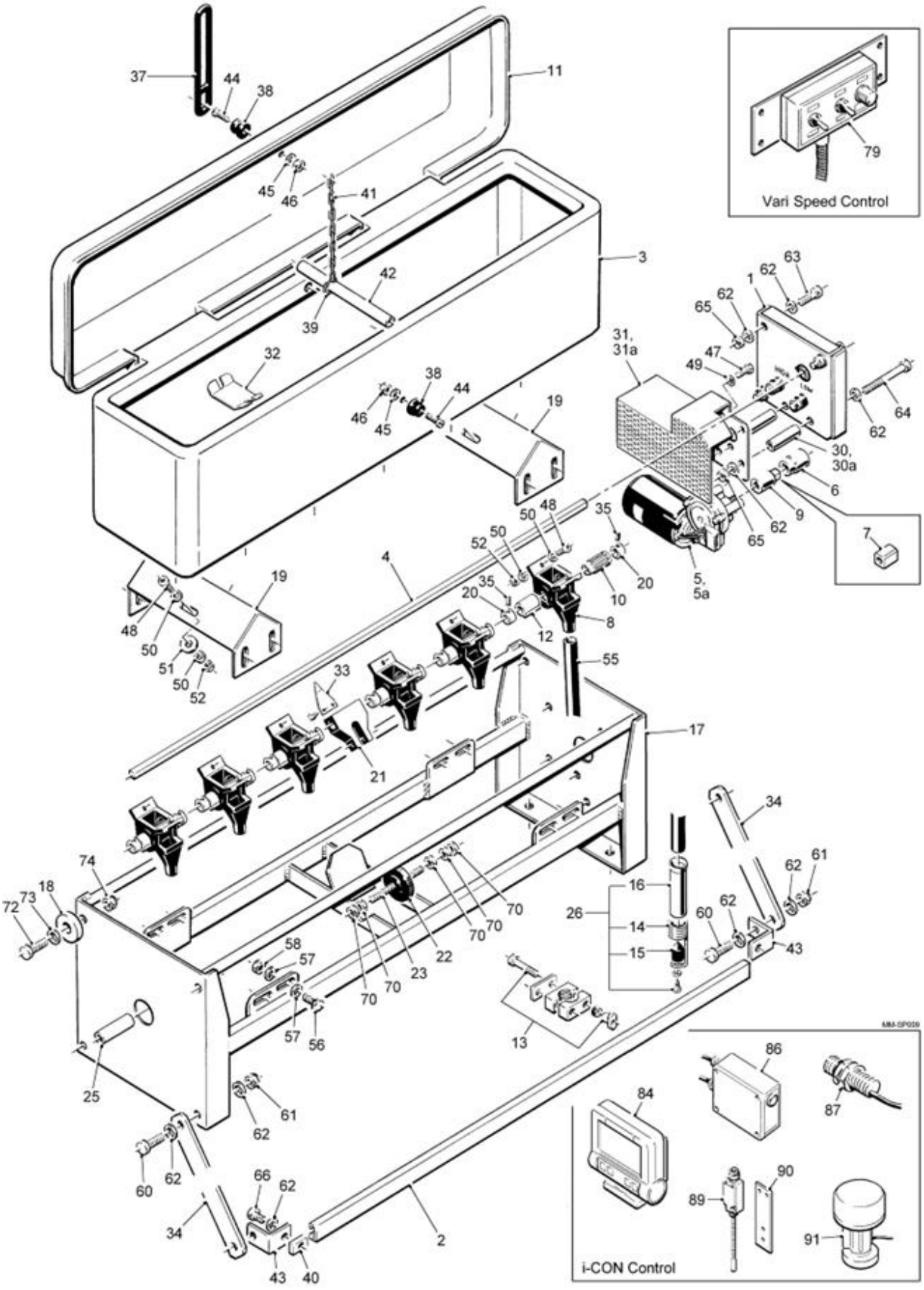
If the second hopper on the Combi Unit is applying the same product at the same application rate. The settings can be copied from the base unit calibration. A repeat catch and weigh calibration is recommended to check the adjuster is in the correct position.

When the Combi unit is applying a different product to the base unit, a calibration must be carried out independently, one the base unit is set up. The control box settings obtained during the setup of the base unit, must not be altered. Only the adjuster can be altered to achieve the required application rate.

Run the calibration as described on page 28, section 16. Enter a target weight, run the calibration and weigh the product. But rather than input the measured weight as normal, use the adjuster to increase or decrease the amount dispensed.

It is important to remember that during this process not to change the calibration on the screen. For each calibration run for the Combi drive unit, the actual weight entered after the calibration run must always match the target weight entered.

29.0 Micro Meter Parts Drawing



29.1 Micro Meter Jackal Parts List

Item	Part #	Description	Qty	Remarks
1	MM002G	Gearbox Complete	1	
2	MM150	C' Rail	2x1m	
3	MM021	Hopper (60Ltr)	1	
4	MM024	Feed Drive Shaft	1	
5a	TJ044B	Metering Motor	1	
6	MM048	Drive Socket	1	
7	TJ043	Feed Motor Drive Coupler	1	
8	MM100	Feed Cup	6	
9	TJ043	Coupler	1	
10	MM101C	High Rate Feed Roller	6	(not shown MM102A 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	
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	

29.1 Micro Meter Jackal – Parts List Continued

Item	Part #	Description	Qty	Remarks
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	
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	
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)
80	MM534	45cm Drive Shaft Extension	1	(Add On Unit only)
87	TJ251A	Hopper level Sensor	1	
89	TJ252	Finger Cut Out Switch	1	
90	TJ253	Mounting Plate	1	
91	TJ255B	GPS Receiver	1	
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)

NOTES