StocksAG

Turbo Jet & Rotor Jet

Index

Technical Specifications

Specifications below are subject to change and are based on a fully unlocked Jackal Controller.

Power Requirements	10 – 18 VDC @ 250mA
Max Current (Total)	10A
Display	128 x 64 Mono Graphic LCD
Operating Temperature	0 to 50˚c
Storage Temperature	-5 to 65˚c
Dimensions	135mm H x 100mm W x 30mm D
Sensor Inputs	9
Inputs 1-5 & 8-9 (Square Wave)	Up to 400 pulses per second (On/Off/Freq)
Inputs 6-7	Analog Voltage 0 – 5V
GPS	RS232 TX/RX
Ground	2
Output PWM	2
Output +12v	1
Output's	4
ax current (Per channel)	5A Output [1]

Power Connection

Power connection must come direct from the battery terminals. **WARRANTY IS VOID** if power is not connected as described in this section.

1. Connect power cable supplied **DIRECTLY TO BATTERY**
2. Ring terminals are used for battery connection and the bare end used to connect to the rear Jackal. (Refer above image for power connection)
3. Connect Ground to BATT -VE, **Terminal A11** using the **RED** with **BLACK** stripe wire
4. Connect **+12** Volts (+battery terminal) to BATT +VE, **Terminal A10** using the **RED** wire
5. Ensure that the battery connection to the Jackal is +**12 Volts**
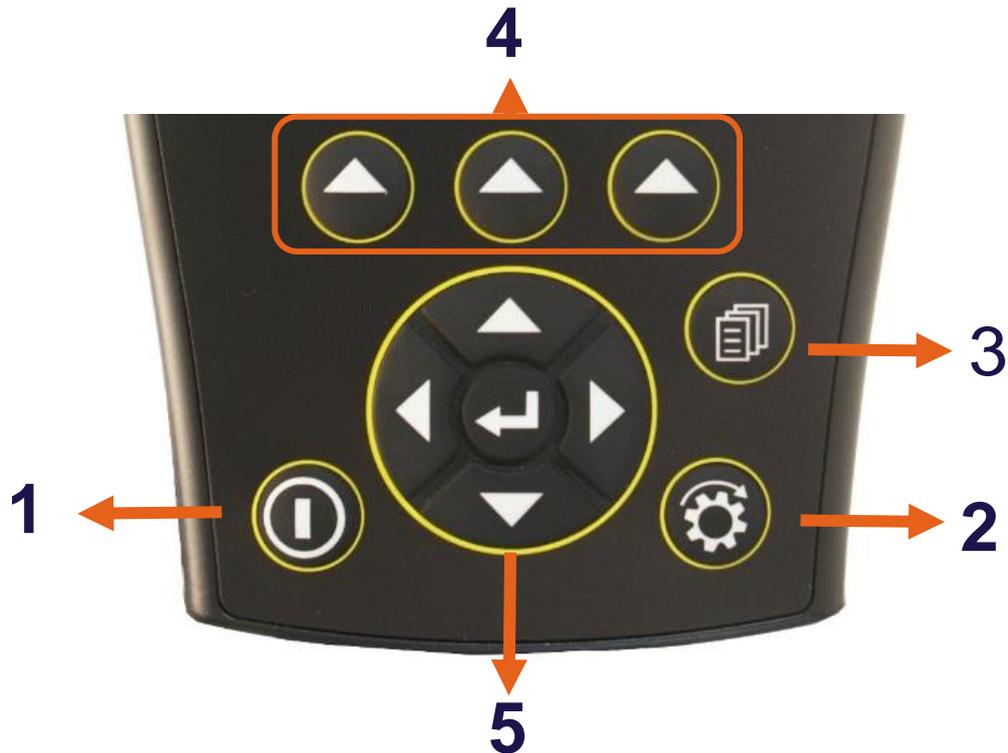

BATTERY CONNECTION

ONE 12 VOLT BATTERY   TWO 6 VOLT BATTERIES   TWO 12 VOLT BATTERIES
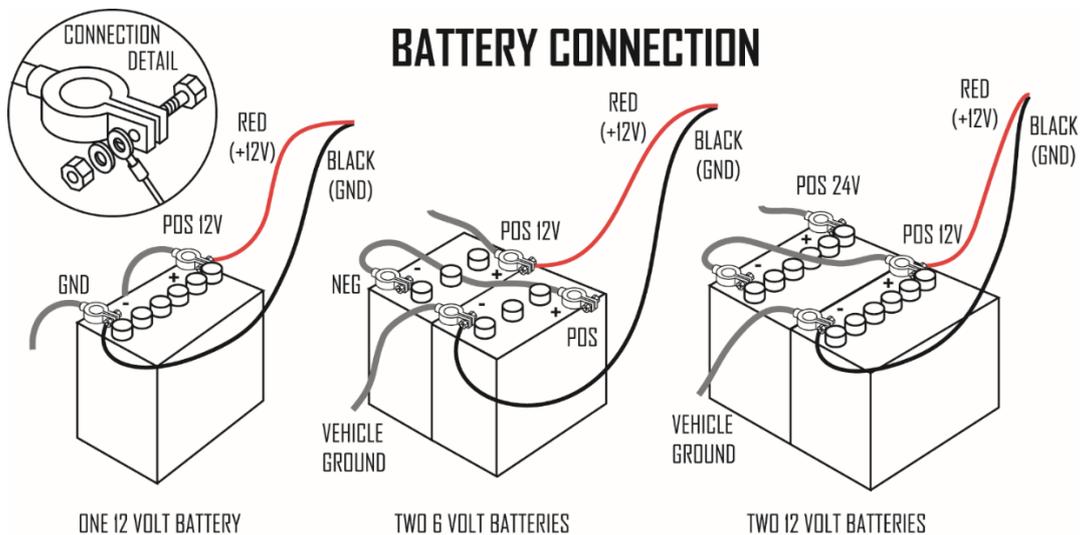
Connecting 24V to the Jackal will VOID WARRANTY

⚠️ **WARNING**

Disconnect the terminal plugs from the Jackal if ARC WELDING on machinery

Button Functions

1. **Power On/Off button**

   a. Power is turned on by pressing the **ON/OFF** button for 1 second.
   b. Power is turned off by holding the **ON/OFF** button for 2 seconds.

2. **Run/Hold button**

   a. The **RUN/HOLD** button has a dual function.
       a. Press **RUN/HOLD** once to place the 'Metering unit ON HOLD'.
       b. Press **RUN/HOLD** again to resume operation.
   b. The **RUN/HOLD** state is indicated in the top left-hand corner of the screen. When the metring unit is in RUN mode, the unit displays RUN to signify that the metring unit is active (turning).
   c. When the metering unit is in **HOLD** mode the unit displays the word "**HOLD" & "BEEPS"** every 2 seconds

3. **Page button**

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

4. **Select button (3 of)**

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

   a. 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.

Initial Set Up

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

Fan Current (as a % of battery voltage)

Area Meter

Setting the Working Width

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

Press the SELECT button to enter the SETUP Menu.

Setting the Working Width

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.

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Using the navigation keys, scroll down to the implement width.

Press EDIT.

One the next screen enter the working width in Meters.

Press exit to save and go back to settings menu.

Run Hold Automatic Switch

As standard, the Jackal automatic metering unit on/off or Run Hold, is switched by the tractors linkage position sensor via the 7-pin plug. The switch point signal varies from one tractor manufacturer to another. But typically switch on/off or RUN/HOLD switches at around 80% linkage height.

There is optional, cut out finger switch or Run/Hold switch available. Both of these are set from factory to be in the RUN position when not activated and then when the spring (finger) is moved with switch the metering unit off.

This can be adjusted in Other Settings to be "Normally Off"; this will switch on when activated.

First/New 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.

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 release the calibration door on the bottom of the machine and place the calibration tray underneath.

Press and hold the arrow button below START on the Jackal 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 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 (see opposite).

The calibration run will stop when the finger is released from the button.

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 256grams, you need to enter this as 0.256kg on the screen

To save and exit, press the arrow below EXIT

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 and feed roller set. This ratio can be entered manually for quick changing between products in the future.

Just scroll down to highlight Manual Ratio, press EDIT and enter the recorded figure.

To save and exit, press EXIT

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.

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

Example: Set to 300grams or 0.300kg

To Prime, first release the calibration door on the bottom of the machine and place the calibration tray underneath.

Press and hold the arrow button below START on the Jackal 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 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 finger is released from the button.

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 256grams, you need to enter this as 0.256kg on the screen

To save and exit, press the arrow below EXIT

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 and feed roller set. This ratio can be entered manually for quick changing between products in the future.

Just scroll down to highlight Manual Ratio, press EDIT and enter the recorded figure.

To save and exit, press EXIT

Spreading/Applying Product

From the HOME screen, using the PAGE button, scroll through until FAN is displayed.

Press the arrow button directly below FAN to switch the fan on.

When FAN is highlighted, the fan should be running.

Using the down arrow on the navigation key pad, scroll down to see the FAN% display.

This display shows the 12v electric current being supplied to the fan.

Note: The fan will quickly get up to speed, the % counter takes longer to count up. The % must be at 70% or above before the feed rollers can be turned on

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.**

NOTE, if using an external finger switch or 7 pin as the RUN/HOLD operation. If the RUN/HOLD button on the key pad is pressed once the implement is lowered, it will switch it off.
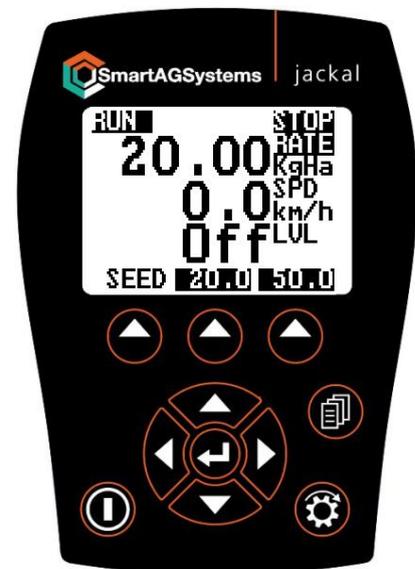
As the machine is about to start work, set the application rate required. This can be done by selecting one of the two pre set "quick rate" buttons.

See Quick Rate section to adjust the pre set rates.

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

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

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

The applicator should now be applying product.

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 the Other Settings, scroll down to SimultSpeed:.

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 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 will override and speed input that jackal is fitted with, or provide a speed input when no input is available.

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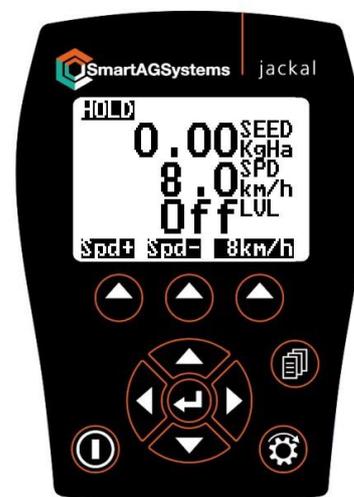
Alarms

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

The Alarms are listed and shows which alarms are active.

The alarm function should be set to AUTO.

=AUTO: As soon as the value moves back within the Min & 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. (Like above)
You will need to SAVE/RESET the trip if you want to start from Zero (0) again
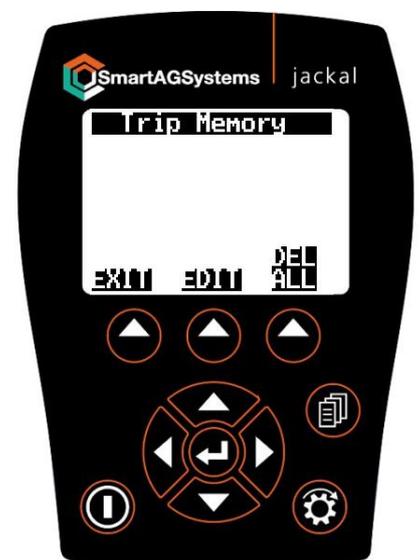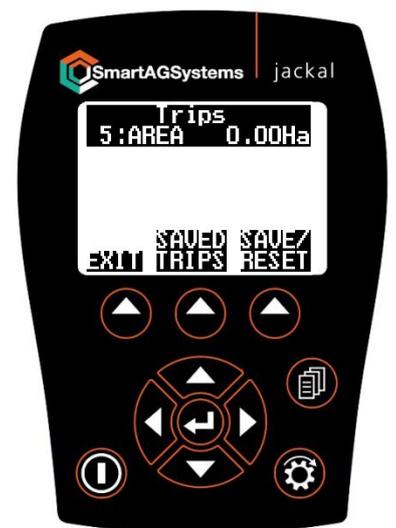
Quick Rate and Step Size Adjustment

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

On the Manual Rate adjust screen, the size of the step the rate increase or decreases by is also adjustable from the Front Screen settings.

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

The Front screen is displayed opposite, select 1: SEED by highlighting and press EDIT.

Scroll down until Step: RateA: and RateB are visible.

To adjust the Step size, scroll down to highlight Step: Press EDIT and set the required Step size in Kgs.

Press EXIT to save and exit.

0.50000 is a 500gram or 0.5kg step size.

To adjust RateA or RateB, just highlight and press EDIT.

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

Flush/Hopper Empty

The Jackal has a Flush or Hopper Empty function.

Use the Page button to scroll through the function until SEED Flush is 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 will begin to flash and the metering unit turns.

Press again to stop.

Diagnostics

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

This page will display supply voltage, the machine current being drawn.

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