

DUNCAN

Duncan now offers a world class electric drive system for its full range of tine, disc and roller drills.

Whether it's an air seeder or a gravity drill, Duncan's new Smart Ag electric drive system provides a range of features that will improve performance and reduce costs. These include push button calibration and GPS mapping.

Duncan's South Island area manager Matt Moodie says the biggest advantage Smart Ag offers is push button calibration.

Matt explains that to calibrate the drill using Smart Ag, the operator selects the seed rate in the control screen and then sets up the drill as usual, making sure the metering units are in the correct configuration.

Once the calibration tray or container is in place, the operator starts the calibration process with the push of a button. The metering units dispense the sample amount, which in most cases is 1-2 kg.

The seed sample is weighed and its weight is put into the screen. The computer calculates that the drill either needs to spin the seed shaft faster to achieve a higher rate or slower

to put out less.

When the process is repeated, the motors spin at a different speed to achieve the correct rate.

"In most cases two calibration rounds will be sufficient to achieve 100 percent accuracy +/- 1-3 percent. When the drill is working, the rate can be adjusted on the run. This is a good way to use up all the seed at the end of a job or cut the rate back so you don't run out," Matt says.

The Smart Ag system comes with a colour touchscreen that is laid out nicely and simple to navigate.

The screen that the operator uses when the drill is working shows the hoppers or boxes. It displays whether they are turned on, the rate they are set at, hectares completed, and the fan speed (if it is an air seeder).

"If you know how much seed you have put into the drill, you can input this amount into the screen. Then it will monitor the weight and give you an accurate calculation of how much is left in the drill.

"The Smart Ag system also uses bin level sensors that set off an alarm when it is about to run out."

The seed metering shaft is con-



nected to a reduction gearbox that is driven by a high-torque electric motor. The lift rams on the drill have a sensor attached so when the drill is lifted out of the ground the motors stop.

Matt says Duncan drills come standard with a GPS antenna which relays the ground speed to the computer. The electric motors will speed up or slow down according to the speed you drive. This ensures the drill constantly maintains an accurate seeding rate.

"GPS also creates a map in the background that the operator can export using a USB stick. The map can be converted into a usable format with Google Earth.

"The map doubles as a proof of placement record when you are putting fertiliser down. It provides information such as paddock, date, drilling rate and product used."

Duncan's electric drive system

is tucked away neatly behind guards to protect it from dust and moisture but is also easy to access for inspection and maintenance. All looms and sensors are clearly labelled.

Smart Ag can support up to four boxes or hoppers and can work in conjunction with the APV range of air seeders sold by Duncan.

If you require your drill to be operated via an ISOBUS terminal, then Duncan offers a slightly different system manufactured by Topcon. It allows the tractor's own screen to serve as the display for the drill. Its calibration system is very similar to the Smart Ag system.

Both the Smart Ag and Topcon systems can be retrofitted to most current model Duncan drills. Talk to Duncan today about their electric drive technology and how it can add value to your operation. **RC**

RDS SYSTEMS LTD

ARTEMIS ISOCAN / ISOBUS

In this day and age of precision seeding, drilling has certainly changed, and the RDS Artemis is the ideal interface to provide intuitive control of the functions required on today's seed drills.

The Artemis variable rate control and monitoring system gives simple and fast calibration at the press of the priming button. Seed is dispensed into a container, and the operator weighs the sample and then enters the weight into the screen and updates the calibration.

Operators can also make manual adjustments to the sowing rate on the move via the instrument screen.

With Artemis, the operator can control the pre-start function, which primes the seed mechanism before drilling. Simply press

the pre-start button on the Artemis screen, wait a few seconds and pull away. This eliminates unsown areas in awkward places such as corners or narrow headlands.

VARIABLE RATE CONTROL

For variable rate control, the RDS Artemis operates the metering units with electric motors, which removes the need for a mechanically-driven land wheel.

Artemis controllers monitor the drill's working speed so that the sowing rate is proportional to the forward speed. Or it can adjust sowing rates according to precision farming yield maps.

The motor speed is automatically regulated as forward speed varies, to ensure that the actual application rate constantly matches a preset target rate. The



application rate can be manually nudged up or down from the target rate as required.

An Artemis system can be retrofitted to most ground-driven drills so that they can make use of the latest electric motors, electronic control units (ECUs) and motor control modules (MCMs).

Once set up, you can use the Artemis screen to control up to four motors.

ISOBUS & GPS

Now Artemis gives operators the option to use ISOBUS to connect to an ISOBUS compatible tractor using a power cable and