



ROJ
MECHATRONICS



AGRI Mate

The easy-to-use PCS Agri Mate user interface allows you to configure and monitor the seeding job, providing all the necessary information at a glance.



Key features

- Easy-to-use touch screen display
- Possibility to modify product quantity from the tractor cab
- Distributor pre-fill
- Calibration procedure and seeding test
- Partial and total hectare counter
- Hopper level monitoring
- Electronic rpm sensor with high/low pressure alert
- Tramline function
- Seeding job log on USB key for invoicing and statistical analysis
- Up to 4 motor groups with independent settings

PCS FS

Control system for pneumatic and mechanical seed drills

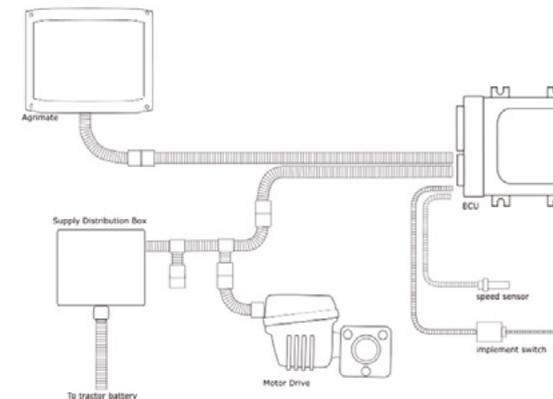
PCS FS is the pneumatic and mechanical seed drill control system developed by ROJ. This system is a new entry in the ROJ agricultural product range and benefits from the experience acquired with the PCS 200 system, developed for pneumatic precision planters.

DMD 0

The PCS FS system is based on the rugged Agri-Motion DMD 0 motor, controlled by the PCS FS ECU. The system can be scaled up adding extra seed distributors units, as well as fertiliser hopper distributors.



Basic system connection diagram





PCS 150

Transplanter control system

PCS 150 is the transplanter control system developed by ROJ. The aim of the system is to **replace the mechanical movement** of the distributor with an **electric motor** to achieve **greater operational flexibility** and provide **new functions** that are not possible with mechanical transmission.

DMD 0

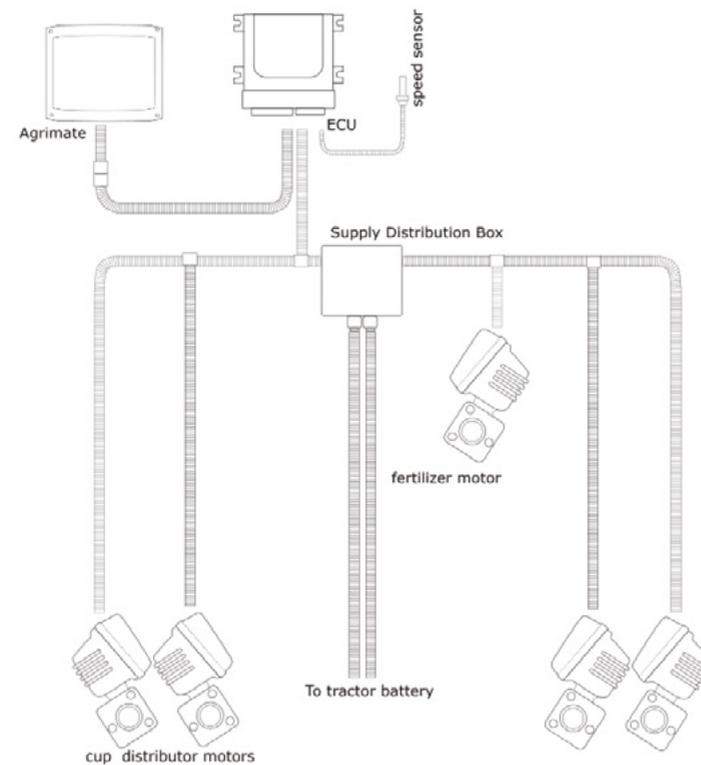
The PCS 150 is based on the rugged **Agri-Motion DMD 0** controlled by the PCS 150 ECU. It can be scaled up adding extra fertiliser hopper distributors.



Key features

- Cam profile movement to make it easier to place the plant on the distributor
- USB key log for invoicing and statistical analysis
- Fertiliser and micro-granular management
- Support for alternator and battery use with high number of rows
- Optional plant counter and presence sensor

Basic system connection diagram





PCS 200

Pneumatic precision planter control system

PCS 200 is the ROJ pneumatic precision planter control system. It allows you to **replace the mechanical transmission** of seeding discs with an electric motor to achieve **greater machine flexibility** and provide **new functions** which are not possible with the mechanical transmission.

DMD 0

The PCS 200 system, based on the rugged **Agri-Motion DMD 0** motor, is controlled by the PCS 200 ECU. The system can be scaled up adding extra seed distributors units as well as fertiliser hopper distributors, **covering virtually any machine configuration**.



PCS 200 can be also applied to **vegetable planters**. Thanks to the **individual row population settings**, it is possible increase seed population on external rows and achieve higher yields.

DMD 2

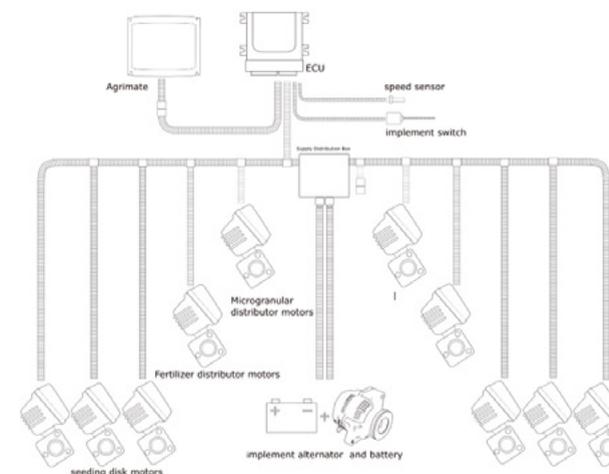
Possibility of mixed installation with DMD 2 motor.



Key features

- Easy-to-use colour touch screen display
- Manual section control
- Individual row population setting
- Seed monitoring
- Vacuum pressure sensor control
- Tramline function
- Seed job log on USB key

Basic system connection diagram



Agri Mate



ECU



PCS W1

Wireless controlled hopper motor kit

The PCS W1 is the innovative hopper motor kit. The system is a new entry in the ROJ agricultural product portfolio and benefits from the experience acquired with the PCS 200 system, developed for pneumatic precision planters.

DMD 0

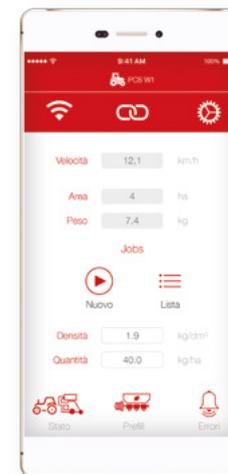
PCS W1 is based on the Agri-Motion DMD 0 system, a highly reliable brushless 12V motor with integrated drive board and gear unit, specifically developed for agricultural applications.



Installation

The ready-to-use kit can be rapidly installed, allowing the hopper to be controlled via mobile phone or tablet. Thanks to a miniaturised WiFi access point which provides a wireless connection to the motor, it is possible to configure and monitor hopper operations in real time.

The configuration menu allows you to calibrate the speed sensor and the distributor volume. The main screen displays the operating speed, quantity of product distributed and per hectare, as well as the hopper status.



Agri-Motion PCS W1 App



Key features

- Easy-to-use app for iOS and Android devices
- Possibility of changing the quantity and density of the product being distributed
- Operating speed indicator
- Speed sensor calibration
- Partial hectare counter
- Estimate of quantity of product distributed



Applications

- Front hopper
- Granule distributors
- Mechanical seed drills



Application portfolio

The **PCS MD 0** is a rugged brushless motor with integrated electronics and gearbox, developed specifically for agricultural applications.

Thanks to its robustness and its compact design, it can be used on any type of agricultural application where it is necessary to dynamically control a mechanical shaft, a hopper distributor or a seeding disk.

The motor can be controlled through a PCS ECU control unit and the AgriMate touch-screen terminal, or through a mobile device, thanks to the **Agri-Motion PCS W1 App**.

Its great flexibility has allowed to use it in many applications, often carried out independently by our customers. Here are some examples.



Belt potato planter

Developed by **Kramer (Netherlands)**, it allows to plant potatoes by controlling the distance directly from the terminal of the **PCS 150** system.

KRAMER



3 row, wireless controlled precision planter

Designed by **Martin Wiethaler (Germany)**, allows to control the planting job by means of the **PCS W1 wireless hopper kit**.

Biogemüsebau
WIETHÄLER



Vegetable precision planter

Another application from **Kramer (Netherlands)**. It allows to control the whole planting and fertilization process directly from the terminal of the **PCS 200** system. The control of the **individual planting distance** for each planter row allows to maximize the production.

KRAMER



Kongskilde front hopper

Integration carried out by **Zusso Diego S.r.l (Italy)**, it allows to control by smartphone the distribution of granular fertilizer, thanks to the use of the **PCS W1** system.

ZUSSO DIEGO



Sulfur System

This system, developed thanks to the partnership with the company **FertiSystem (Brazil)**, allows to distribute a special sulfur-based fertilizer in an **extremely accurate way**.

FertiSystem[®]
by AGROMAC



Lindenhof Gemüse

The farm **Lindenhof Gemüse** produces and sells seasonal vegetables in Cantone San Gallo, in Switzerland.

The production includes salad, radishes, asparagus, potatoes and strawberries, cultivated with dedication by the family Good, who is divided between the planting activities and the management of the shop and of the home delivery service.

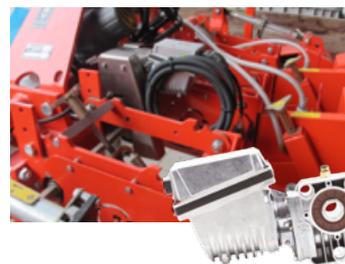


There are many activities to follow and the time is never enough. For this reason the Good brothers, Markus and Christoph are focused to the **optimization** and **efficiency** of field activities.

The project

The **PCS150** system applied to their three lines transplanter **Checchi & Magli Baby** allowed to reduce the machine set-up time, reducing downtime and their **work more efficient**.

The installation of the system on the machine has been entirely made by the customer, demonstrating its easy integration and the possibility of achieve retrofit on existing machines.



Installation

The **PCS MD 0** motor has been coupled to the transmission shaft of the distributors. Thanks to the high torque of the **PCS MD 0**, only one motor has been necessary to automate the three lines, containing the overall costs of the installation.



A **magnetic encoder** fixed to one of the transplanter wheels, provides an accurate speed reference to the motor, ensuring the precision even at low speeds.



AGRI Mate

The **Agri Mate** terminal, located in the tractor cab, allows the operator to set the transplantation distance and to control the **transplantation speed**, to ensure the operators to work in the optimal conditions.



Aldo Givone

In the hills of Zimone in the Italian province of Biella, the “Aldo Givone” farm cultivates a wide range of crops. There are numerous bee-keeping businesses in the surrounding hill area. To survive the winter, bees require a plant or a flower that can withstand the cold and provide the nutrition they need. As a result, it was decided to sow purple tansy, a plant which flowers several times a year.



Agri-Motion PCS W1 system technology was used to sow this plant with outstanding results given the difficulties of sowing such small seeds. It was also used later to spread organic stimulants for soy and wheat.

The project

The main reason behind the decision to purchase the Agri-Motion PCS W1 systems was the ease-of-use of the machine and the annual savings on sowing which is essential in areas where the fields are generally medium-small. The system was installed on a Maschio Gaspardo M 250 seed drill.



Installation

The installation was carried out by the farm machinery distributor “Daniele Fabrizio”. Connecting the electric motor was very simple, even with the introduction of two toothed wheels to increase the torque on the main shaft of the machine.



To read the machine travel speed, the magnetic sensor supplied was used and a 4-mm thick phonic wheel was created.



The seed quantities required and product density were entered as indicated by the app for controlling the Agri-Motion PCS W1 system. After calibration of the sensor for speed and the cubic centimetres of the distributors per revolution, the work was completed without any problems because the quantities deposited on the ground had been pre-set.

Driving precision agriculture



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