



FJD ATS ULTRA

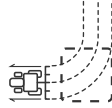
PWM SPRAY TIP CONTROL SYSTEM

SINGLE-NOZZLE PRECISION. LESS PESTICIDE.

The FJD ATS Ultra is a precision spraying system featuring independent control for up to 160 nozzles. Using PWM and alternating nozzle technology, it maintains stable pressure and spray rates during turns or speed changes, greatly reducing overlaps, skips, and boundary errors. By syncing with prescription maps and ground speed, it delivers precise single-nozzle application to reduce pesticide waste and boost efficiency, making it ideal for large-scale professional farming.



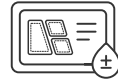
Consistent
Rate Control



Turn
Compensation



Alternating
Nozzle Operation



Variable-Rate
Application



Precise Row
Alignment



Sprayed
Area Record



Quick Mode
Switching



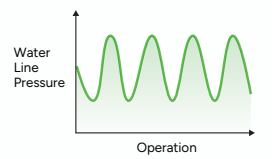
Real-Time
Spraying Monitoring

ALTERNATING NOZZLE OPERATION

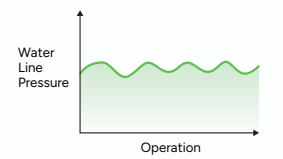
Optimize spray performance via high-frequency alternating control of neighboring nozzles. Instead of turning all nozzles on/off at once, it keeps the hydraulic pressure steady and stops the spray from pulsing, delivering smoother spraying flow and better coverage across the entire field.



Without Alternate Nozzle Operation

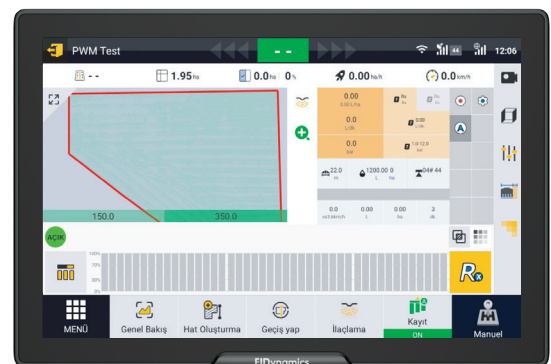


With Alternate Nozzle Operation



CONSISTENT RATE CONTROL

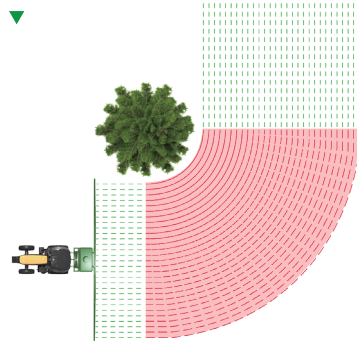
Adjust spray rates in real time based on vehicle speed, with nozzles switching at up to 20 Hz and a duty cycle of 30%–70%. This ensures uniform coverage regardless of tractor speed. By reading imported prescription maps, the system applies the exact prescribed rate to each zone, greatly reducing waste while boosting future yields.



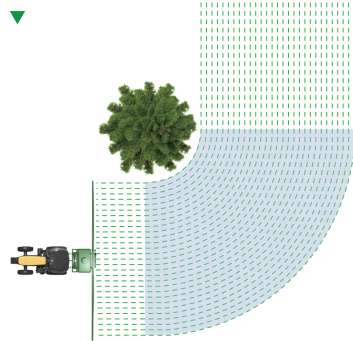
TURN COMPENSATION

Eliminate uneven coverage caused by overspray at inner nozzles and underspray at outer nozzles during turns. Using flow compensation algorithms, the system automatically adjusts individual duty cycles to ensure precise, consistent application across every inch of the field.

Traditional Sprayer

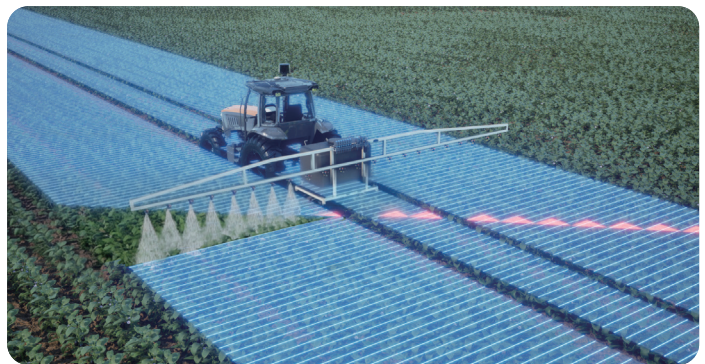


PWM Sprayer



BOUNDARY OPERATION CONTROL

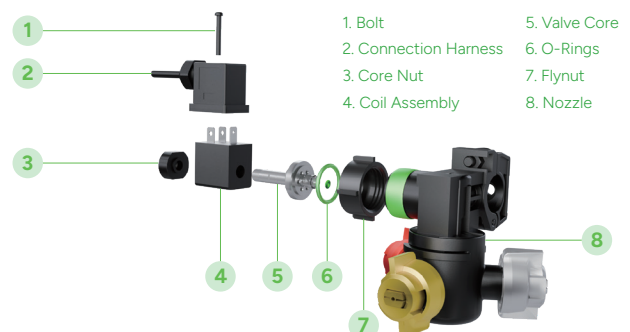
Turn off each nozzle individually to stay perfectly within field boundaries. This prevents spraying outside the crop area or over the edges. Unlike section control that turns off a group of nozzles at the same time, individual nozzle control achieves cleaner edges, cutting down on chemical waste and improving operational efficiency at boundaries.



PWM SPRAY TIP CONTROL SYSTEM

How It Works: Pulse Width Modulation (PWM) adjusts the duty cycle of the nozzle's solenoid valves to control spray flow rates without changing the pressure.

Key Features: High-frequency electromagnetic control ensures fast response and high precision, and duty cycle adjustment keeps constant pressure for consistent flow rates.



QUICK SPECS



Sprayer Controller

Rated Voltage	9–36V
Electric Control Valves	3A/12V
Pressure Signal	Voltage Type: 0–10V; Current Type: 0–20 mA
Flow Signal	0–10 kHz
Communication Protocol	CAN
IP Rating	IP67



PWM Spray Tip

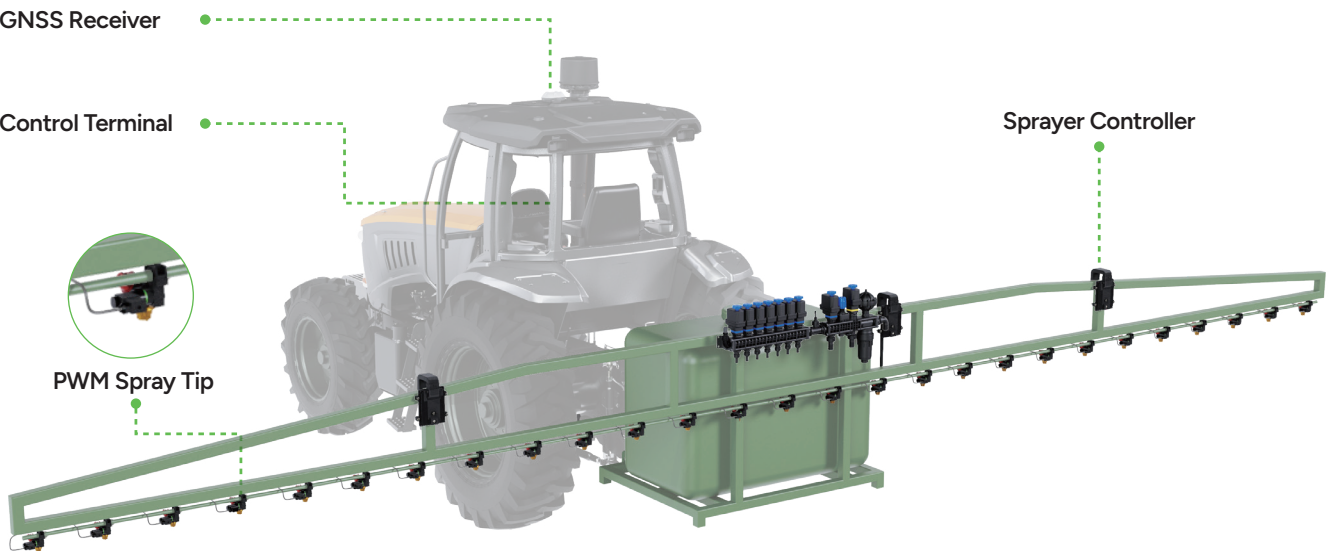
Supply Voltage	12V
Max Current Consumption	0.5A
Duty Cycle	20 Hz
Nozzle Mounting Port	3/4"
PWM Control Frequency	1Hz–1KHz

GNSS Receiver

Control Terminal

Sprayer Controller

PWM Spray Tip



Compatible FJD Navigation Kits: AT2, AT2 Max, AT2 Lite, AT1, AH2, and AS2.



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[FJDynamics.com](https://www.fjdynamics.com)



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