

FJD AUTOSTEERING KIT



Nice
and
Straight!

Consistently straight
with an accuracy of
2.5 cm.



“ This is the First Time
we’ve worked this late in the night! ”

Endorsed by farmers from 100+ countries over the past year

FJDynamics has been committed to precise agriculture. We research and develop agribots with the vision of “Creating a better world”, and help farmers reduce cost and increase efficiency. Up to now, FJDynamics Autosteering Kit has served farmers in more than 100 countries around the world over the past year.

What do we do to help farmers?

FJDynamics auto-steering kit is compatible with the majority of tractor models, harvesters, and agri-machines in the market. It can be used for a variety of agricultural operations, such as harrowing, sowing, spraying and harvesting. We offer **smart operation for the whole category of farming management.**

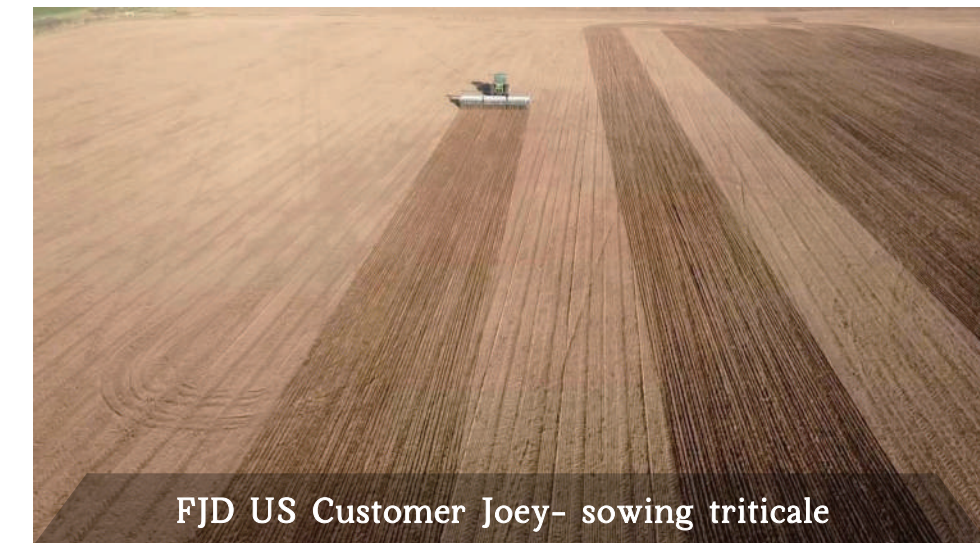


In Poland, a tractor with FJD Autosteer Kit is running on a Sha field for harrowing.



Vineyard spraying in the UK.

“Sun’s out and it’s time for spraying. Not only does this steer for you but it also shows which rows you have worked. So nice having more time to monitor the operation.”



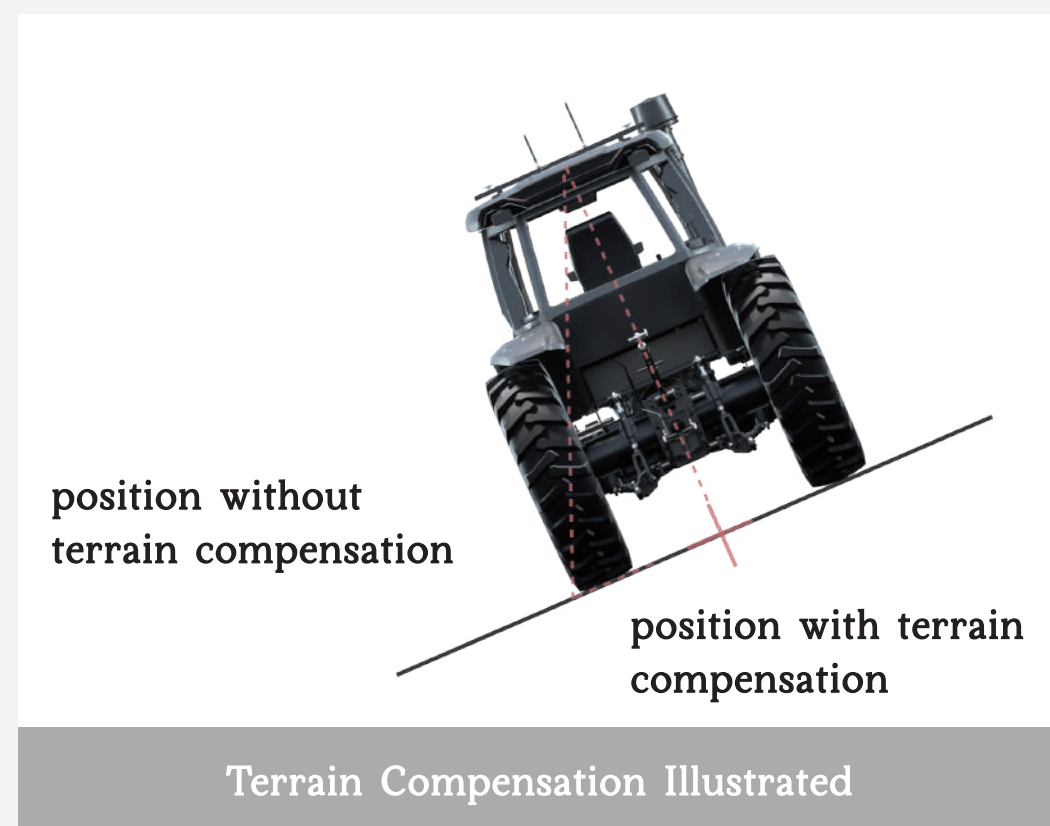
FJD US Customer Joey- sowing triticale

In the United States, our customer Joey applied FJD Autosteering Kit to his tractor and crust buster drill. Without much effort, he was sowing triticale that served as cover crops. He said, “The sub-inch accuracy puts overlap at bay, saves time and money on seed, and makes tractor work a lot less stressful.”



Harvesting barley in France with FJD Autosteering Kit

“The autosteer was appreciated by the farmer because on a long field, with a length of around 800m, it’s really difficult to go straight. If the tractor were driven manually, it’s easy to make overlaps and waste seeds at the end of the day.”
For some steep terrain farmlands, even experienced farmers find it hard to get straight lines.
With an IMU sensor, one can calculate the actual position of the vehicle to help minimize skips and overlaps in areas characterized by rolling terrain, slopes, and rough ground.



Terrain Compensation Illustrated

3 key problems farmers do face today

1. A growing global population with less available land.
2. The impact of global economic fluctuations.
3. Factors outside your control, such as extreme weather and plant disease

With sensor modules and GNSS centimeter-level positioning technology, FJDynamics Autosteering Kit ensures precise agricultural operation in diverse landscapes.

“In South Africa, center pivot irrigation is used because the rainfall is low. Farmers can not drive on pivot tracks because the tracks are too rough.”



Center pivot irrigates farmland in South Africa

“Without GPS, we wasted a lot of seeds and fertilizers and sometimes we also missed pieces (of land). With GPS, we don’t have that anymore. Also I work with less fatigue but longer hours at a time.”



FJD Customer Drew from South Africa sowing maize with Pivot mode

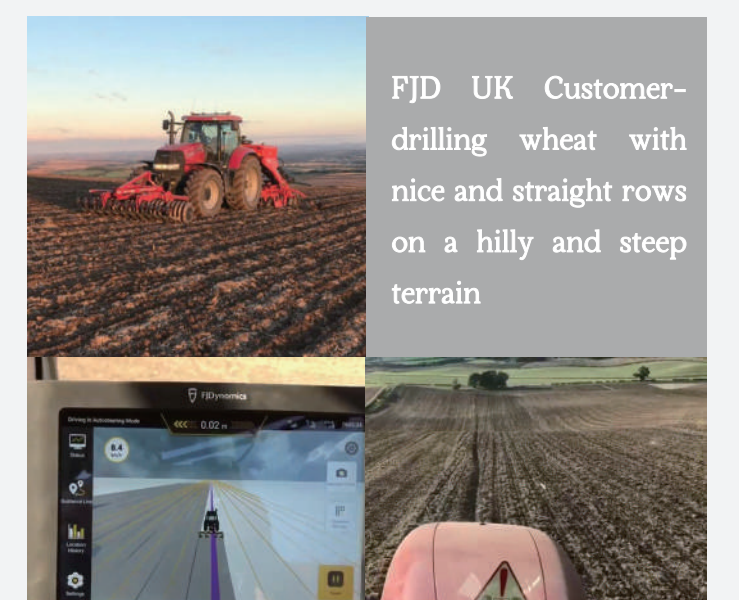
With FJD autosteering kit onboard and a spiker behind, the tractor is **running in a straight line on a lawn in the UK**, aerating the hard ground to produce stronger and healthier grazing land.

Fun fact: Aeration alleviates the compactness of the ground, so the grass roots can get more air, water, and nutrients.



FJD UK customer- running in a straight line on a lawn to aerate the compactness of the ground

“Nice and straight, with auto steer, he was doing his farm work in a more efficient and cost-effective manner. The technology also gave him time to look around and monitor the drill rather than looking forward to steer.”



FJD UK Customer- drilling wheat with nice and straight rows on a hilly and steep terrain

We care greatly about farming cost

Good news comes that the EU gas prices have fallen dramatically since December 21st, 2021, thanks to the additional natural gases re-routed to Europe. The wholesale gas price peaked at 180.27 euros fell to 87.97 euros on December 30th. Despite the fall, the price remains three times higher than last year. Fertilizer price may have fallen, but farmers are still looking. Due to the reduced production capacity, fertilizer availability may still pose as a threat for European farmers in the coming spring. They fear buying in at a high price.

"In a 600m-long-40-acre field this year, using auto steer as compared to working by eye, I had 4m less to sow, spray and fertilize. That's over half an acre less," said Ali Craig, a FJD customer who has been managing a 500-acre farm land in Northern Ireland.



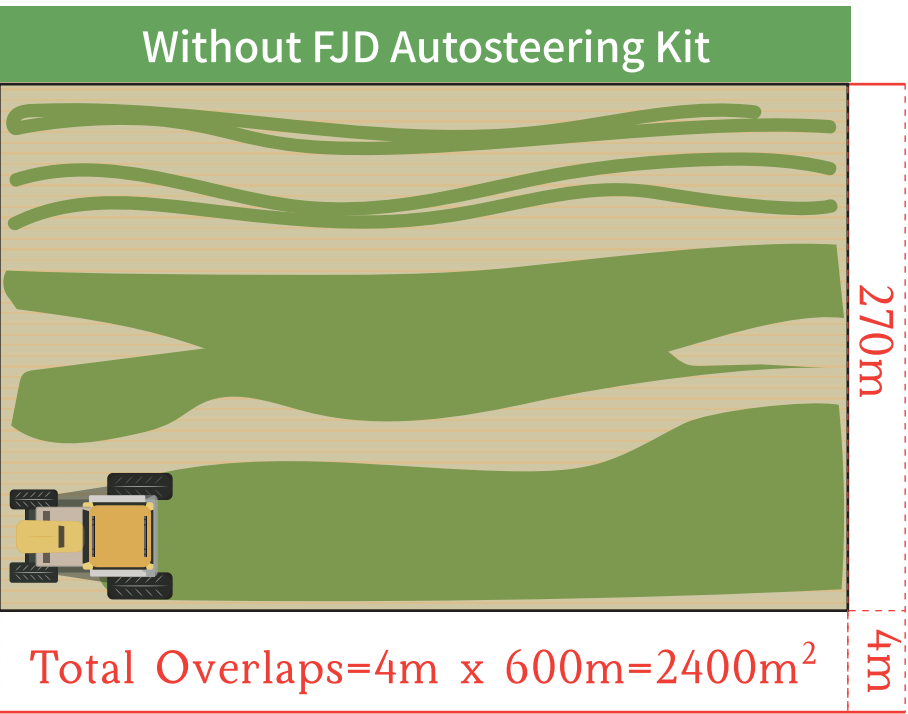
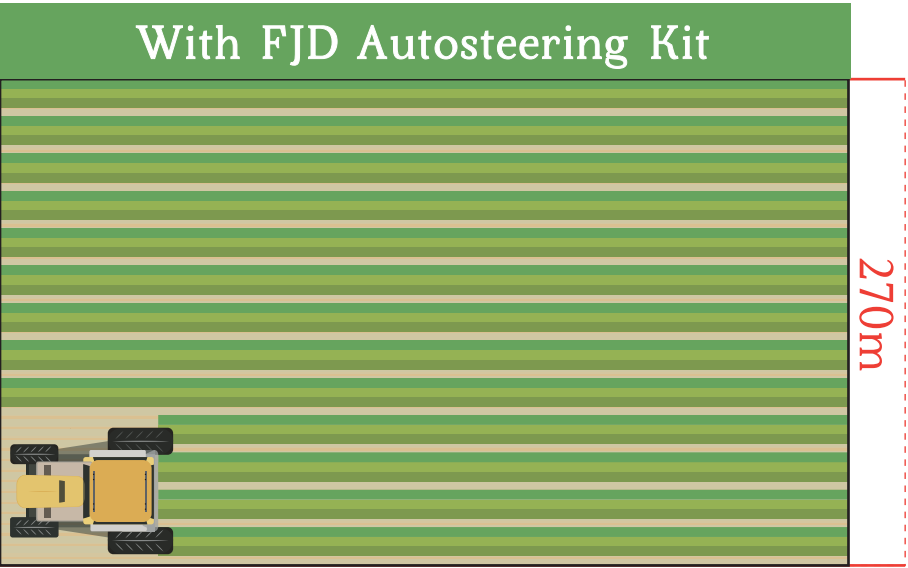
For every acre of barley he grew, seeds costed him £40, spray £70, fertilizer £200, cultivating/sowing £25, spraying £5, fertilizer spreading £5. Summing up, we arrive at £203.55 as the saved cost. $(40+70+200+25+5+5) \times 0.59 \text{ acre} = \text{£}203.55$.



Simply by using autosteer to avoid overlaps, Ali was able to save £203.55 in this case.



"I drive up and down along the longest part of the field." He was able to avoid overlaps of 2,400m²/0.59 acre (600m*4m=2400m²).



Nitrogen-based fertilizers rely heavily on natural gas. As the world is recovering from the pandemic, demands for fertilizers have been increasing sharply, so has been the fertilizer prices. This has prompted farmers to consider switching crops. According to a USDA report on November 4th, 2021, the price of diammonium phosphate shot up by 78% --- a concerning figure --- compared to last year. Anhydrous ammonia and urea, two nitrogen-based fertilizers, more than doubled over the same period in Illinois. As a result of globalization, things were not looking good in Europe either. "Last year, the fertilizer was priced at 170 euros per ton, but this year it's over 600. It's booming here. As a consequence, the cereal price also goes up, but not as dramatically as the fertilizer price," said Julien, a French FJD customer who is also a fifth-generation farmer.

FJD Your experienced assistant in precision farming

AUTOSTEERING KIT

FJDynamics Autosteering kit is the world's pioneering auto driving assistance system. It can be installed onto agro-vehicles to enable them to run automatically in curve, pivot and straight lines.

Multiple Operating Mode Options

The world's pioneering auto driving assistance system. It supports straight-line and curve modes, fit for any weather, anytime, and anywhere.



GIS Information Import/Export

Field information can be edited and imported into FJD devices. Previous operation data from other devices can be imported as well.

U-Turn Auto-driving

Under the low speed U-turn auto-driving mode, the operator only needs to step on the brake while reaching the turning point. The vehicle will automatically turn around without any manual operation.


Field Management

Produces and manages the information of field, boundary, task type, and guidance lines to batch manage the farm fields.

Digital Operation

Calculates the area of auto and manual operation respectively. The corresponding operation tracks will be shown by different colour shading, which leads to more targeted and accurate calculations of the operation area.


Core Components



Control Terminal

Displays real-time working path, vehicle position and RTK status;
Displays history and saved datum lines;
Sends out control signals to automate straight-line driving.


Size (mm)	300×190×43
System	Android 5.1
Network Module	4G, compatible with 2G/3G
Screen	10.1 inch, 1280 × 800 pixels, LED backlight
Protection Level	IP65
Power Supply	10V-30V
Access Port	Camera×2, Radio×1, 4G×1, GNSS×2, Image transmission×2



Electric steering wheel

High-torque electric wheel;
Max torque: 30 N·M, capable even in demanding scenarios;
Inter-changeable between self-driving and manual control.


Size (mm)	370×370×123
Protection Level	IP66
Power Input	12V/24V VDC



GNSS antenna

Dual GNSS antennas receive info of positioning and orientation for a better control of the autonomous driving.


Size (mm)	152×63
Frequency	GPS L1/L2, GLONASS L1/L2, BDS B1/B2/B3
Protection Level	IP67
Operating Temperature	-20°C ~ +70°C



IMU

Installed horizontally in the cab to measure the vehicle's pitch angle and roll angle etc. to correct and assist autonomous straight-line driving.

IMU	Accelerometer Gyro Electronic Compass
Power Input	5V



Angle sensor

Installed on the steering axle to sense and turn the steering angle into voltages that are recognizable by sensors, which determines if the vehicle is driving straightly.

Operating Temperature	-40°C ~ +85°C
Protection Level	IP67

Does Precision Farming Have to be Costly?

"I think you have the most important element and that is good-quality signal. And the motor is excellent as well." "The signal quality is EXCELLENT 10/10. I moved (away) from the RTK about 5km, turn(ed) off the RTK base, turn(ed) off the system, came back an hour later, turned it on again, and it was exactly in the same place, without any skips."



Price? Surely affordable. "The goal of autosteering my tractor is to deliver precise farm work with no overlaps, less fuel cost, and less fatigue." Accuracy down to 2.5cm.

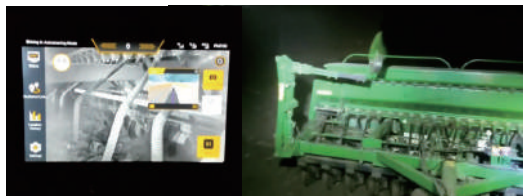


"This is the First Time We've Worked this Late in the Night!"

Your operation is not limited to daytime and good weather, especially when short farming window occurs.



"This is the first time we've worked this late in the night. This would be impossible without FJD auto steering kit."



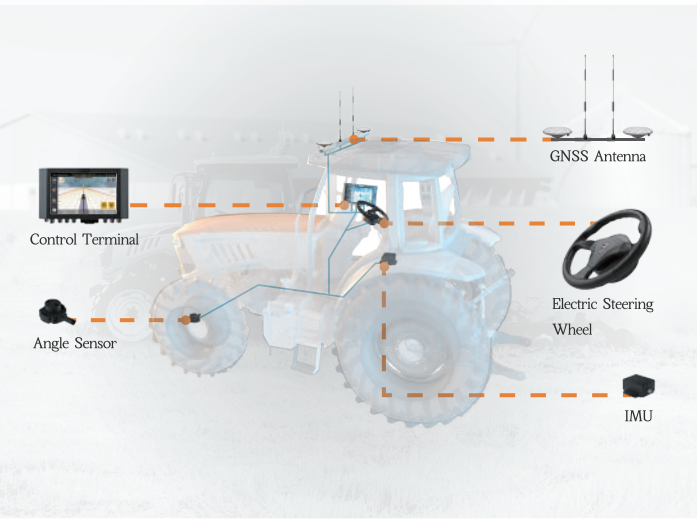
FJD Mexican Customer- "With the portable RTK station and strong signal, I can work my land anytime, in any weather, and under any lighting condition before the rain comes."



"Work my land anytime, in any weather, and under any lighting condition."

"I was shocked using FJD Autosteering Kit with My Old 1976 800 versatile

Currently I have used on an old 1976 800 versatile. I was shocked it made it sub 1 inch accuracy with being an old articulating tractor, and the smoothness and accuracy is unreal. "



For All Fieldwork Operations



Recommended Accessory



About FJDynamics

FJDynamics is a robotics company focusing on automation, digitalization and green energy. We are dedicated to using our technology to enable a carbon-neutral society and to improve working environment. Our technology has been applied to sectors including agriculture, gardening, construction, surveying and facility service. With global coverage of business, we are delighted to work with our partners and customers to bring a better future to our world.

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