CHCNAV

NX510 Hydraulic

AUTOMATED STEERING SYSTEM



Precision Agriculture

CHCNAV

HYDRAULIC CONTROL SEAMLESS INTEGRATION ENHANCED STABILITY

The NX510 Hydraulic Automated Steering System provides a reliable solution for precision farming, integrating seamlessly with tractors without replacing the original steering wheel. Its compact hydraulic module ensures precise direction control and steering stability, even on challenging terrain. With the steering wheel remaining stationary, operators can easily handle demanding tasks, particularly with high-horsepower tractors. Featuring integrated connectivity modules and GNSS+INS terrain compensation technology, the NX510 delivers reliable navigation and sub-inch accuracy, making it a powerful system for precision agriculture.

RESPONSIVE AND ACCURATE HYDRAULIC STEERING CONTROL

The NX510 Hydraulic provides precise steering control by dynamically adjusting hydraulic actuator flow. The hydraulic system ensures that tractors respond quickly and accurately to steering commands, providing stability, reliability and consistent performance in a variety of agricultural operations. It supports both open-center and closed-center hydraulic systems for compatibility with a wide range of agricultural machinery.

2.5 CM PASS-TO-PASS ACCURACY

Even in challenging environments and terrain, the NX510 Hydraulic ensures absolute accuracy. Using multiple correction sources and five satellite constellations - GPS, GLONASS, Galileo, BeiDou and QZSS - the system achieves centimeter-level steering accuracy. Its built-in 4G and UHF modem seamlessly connects to industry-standard DGPS and RTK corrections. In addition, terrain compensation technology maintains high accuracy on uneven or sloping terrain.

ENHANCED CONNECTIVITY STEERING CONTROLLER

The NX510 Hydraulic seamlessly integrates with your preferred RTK corrections via 4G GNSS networks or UHF base stations, minimizing costly downtime. The system features advanced built-in connectivity, including multiple CAN ports, serial ports, WiFi, Bluetooth, a 4G modem and an on-board UHF radio modem. ISOBUS compatibility further enhances flexibility to streamline automation for your farm operation.

FAST, EASY-TO-USE AND RUGGED DISPLAY

The intuitive, multilingual AgNav software puts complete control at your fingertips. AgNav software runs on a 10.1-inch industrial display and supports multiple guidance patterns, including AB Line, A+ Line, Circle Line, Irregular Curve and Headland Turn, to manage all common farming tasks. Designed for simplicity and efficiency, AgNav enhances the user experience and enables fast and accurate field operations.

RUGGED DESIGN AND PROVEN RELIABILITY

Built for durability in agricultural environments, the NX510 Hydraulic features an industrial design with dust and waterproof components rated to IP65 or higher for reliable performance in harsh conditions. Its rugged hydraulic valve provides precise control and enables fast, reliable line acquisition.

HYDRAULIC AUTOMATED STEERING SYSTEM



Display



PLC





Receiver



Rear Camera



Hydraulic Valve



Receiver

All-in-one smart receiver.



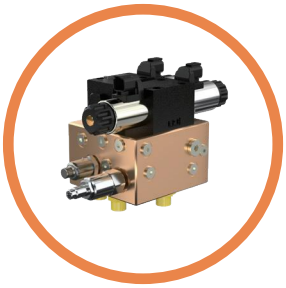
Display

Rugged to adapt to a harsh working environment.



PLC ECU

Control the steering valve over PWM.



Hydraulic Valve

Compatible with open center and close center module

SPECIFICATIONS

Positioning Accuracy	
Real time kinematics (RTK)	Horizontal: 8 mm + 1 ppm RMS Vertical: 15 mm + 1 ppm RMS Initialisation time: < 5 s Initialisation reliability: > 99.9%
Velocity accuracy	0.03 m/s RMS
Performance	
Pass-to-pass accuracy	≤ ±2.5 cm
Physical	
External power	9 V DC to 36 V DC
Environment	Operating: -20°C ~ +70°C Storage: -40°C ~ +85°C
Hydraulic Valve	
Rated pressure(Closed center valve)	170 bar
Pressure class(Closed center valve)	315 bar
Rated flow(Proportional valve)	15 L/min
Rated flow(Open center valve)	40 L/min
Rated pressure(Open center valve)	170 bar
Pressure class(Open center valve)	315 bar
External power	12 V
Working temperature	-30°C ~ 50°C
Dustproof and Waterproof	IP67
Display	
Display	10.1'' touch screen 281 mm x 181 mm x 42 mm Android 6.01 Dust and Waterproof: IP65
Rear Camera	
Pixel	1280 x 720 pixels
Camera angle of view	120°
Receiver	
Size	220 mm x 205 mm x 60 mm
weight	< 2 kg
Power	9 V DC to 36 V DC
Dustproof and Waterproof	IP67

Constellations	
GPS	L1/L2/L5
BDS	B1I/B2I/B3I/B1C/B2a/B2b
Galileo	E1/E5a/E5b/E6
GLONASS	L1/L2
SBAS	L1
QZSS	L1/L2/L5/L6
Communication and Data	
WiFi/Bluetooth	YES
Serial port	RS232 x 2
CAN ports	2
NMEA Output	1/2/5/10Hz
Correction Formats	RTCM 3.0/3.1/3.2/3.3
4G Network modem	Integrated in receiver and in display
UHF module	Frequency: 410-470 MHz Protocol:TT450S/Transparent/CHC/ CHCAG/SATEL 3AS
Output interface	3 x LEDs (power, satellite, RTK correction) 1 × UHF antenna connector

* Specifications are subject to change without notice.

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