



CHCNAV NX510 Installation Guide



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Make your work more efficient

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Preface

Copyright

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Trademarks

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Safety Warnings

The Global Positioning System (GPS) is operated by the U.S. Government, which is solely responsible for the accuracy and maintenance of the GPS network. Accuracy can also be affected by poor satellite geometry and obstructions, like buildings and heavy canopy.

FCC Interference Statement

This equipment has been designed to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules in the Portable Mode. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

CE Interference Statement

Declaration of Conformity: Hereby, Shanghai Huace Navigation Technology Ltd. declares that this NX510 is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. A copy of the Declaration of conformity can be found at Shanghai Huace Navigation Technology Ltd.



1 Pre-installation Preparation

1.1 Introduction to the product package

The NX510 autosteering system is delivered in one box.



NX510 Autosteering System Product Package





First layer



Second layer

(1) NX510 Autosteering System Product Package

Device name	Quantity	Image
CES electrical steering wheel	1	
Universal holder	1	
T-type holder	1	
T-frame fixing splint	2	
Fixed screw pack	1	

Device name	Number	Icon
PA-3 Controller	1	
CB-A10 Tablet Display	1 display with 1 fixed bracket	
GA-Sensor angle sensor	1	
Black Cable Tie	50	
Rear camera	1	
GA Sensor Angle Sensor Cable 3.0	1	

Device name	Number	Icon
Tablet Console Cable V510-A	1	
Camera Cable	1	
Main CableV510-A	1	
Motor Steering Wheel Cable V510	1	

1.2 Vehicle inspection before installation

(1) Steering system inspection

- Whether it will deviate automatically
- Are there any problems with front wheel eccentric wear and excessive front wheel clearance?

-
- Whether the front wheel swings automatically
 - Steering wheel steering weight (requires check of oil pump, steering cylinder, steering machine, etc.): a. The steering wheel is heavy when the vehicle is traveling and stopped. b. The steering is heavy when the vehicle is stopped and not heavy when traveling.
 - Excessive steering wheel bearing clearance
 - Front wheel vibration

(2) Power supply problems: Check the battery for cracks in the case, dry cracks in the sealant, and electrode corrosion.

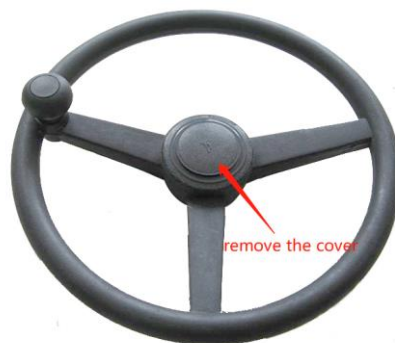
If you find the above problems, please contact the owner of the tractor directly to repair the tractor or replace the battery. If the owner requires the tractor to be installed first and then repair the tractor, you need to clarify the risks to the local businessperson in charge;

2 Hardware Installation

2.1 Steering wheel mount

2.1.1 Steering wheel removal

(1) Remove the protective cover of the original steering wheel



(2) Stabilize the steering wheel, use the sleeve tool to loosen the original tractor spline screws, and remove the original tractor spline screws;



(3) Pull out the steering wheel forcefully. If it does not move, tap the steering wheel spline shaft to loosen it. Be careful when hitting to avoid damage to the steering wheel of the original tractor;

(4) After taking out the steering wheel, keep it yourself;

(5) After inserting the sleeve into the spline, turn to see if it can be tightly engaged. Observe from the top to see if the fixing screw can reveal the proper length. If not, you need to replace the sleeve.



Note:

- Three grips and other special tools can be used to remove down the steering wheel if it cannot be removed by yourself.
- If the steering wheel cannot be removed down can use three grips and other special tools;
 - You can do steering wheel cutting if it cannot be removed but must be careful not to damage the original spline (The premise is to get permission from the owner).

2.2.1 Steering wheel installation

(1) Before you install the sleeve into the steering wheel, please try it on the spline first. Check whether the size fits



(2) If the size can fit the spline well. Unscrew the protective cover of the electrical steering wheel, place the sleeve in it, and fix the sleeve with M5 * 11 (6 pcs) countersunk screws;



(3) Install the bottom fixing bracket of the motor, find two holes and fix the T2 fixing bracket or the universal fixing bracket on the bottom of the motor with M5 * 16 screws. You don't need to tighten it for later searching position;



(3) The steering wheel is installed well, make sure that the steering wheel wiring port is in the front or right front to facilitate later wiring;



(4) Hold the steering wheel by hand and tighten the spline screws of the original tractor with tools;



(5) After confirming the position, fix the T1 frame with M8 * 40 hex screws, pay attention to install flat pads and spring pads, and then fix the T1 frame with plywood;

Fix the T-shaped bracket with U-shaped clamp



(6) Shake the steering wheel, check whether the electric steering wheel is tight, and check again whether the steering wheel bearing clearance is too large;



2.2 Controller Installation

(1) The PA-3 receiver needs to be installed on the roof of the vehicle, and the installation direction should be as parallel to the tractor as possible, and should be installed on the central axis of the tractor as much as possible;

(2) After confirming the installation position, adjust the receiver base mounting bracket. Make sure that the PA-3 receiver is placed horizontally and has no inclination.

(3) Wipe the roof clean and make sure that the bracket installation is spotless. To fix the receiver to the bracket, the arrow of the receiver must be in the direction of the front of the tractor.



- ◆ Keep it as level as possible (The level can be obtained by adjusting the screws on the four legs)



2.3 Display installation

- (1) The display needs to be installed in a convenient position;
- (2) Fix the RAM mount of display with a dovetail nail. The RAM mount needs three dovetail nails (at least two dovetail nails), otherwise the vehicle will easily fall off after a long period of work;



- (3) After the installation of the monitor is completed, if you feel that the operating angle is not appropriate, you can loosen and adjust the monitor bracket to a suitable position;



2.4 GA-Sensor angle sensor installation

- (1) It is recommended to choose the fixed position of the host on the right front axle;
- (2) The installation location of the host should be selected to avoid collision with the vehicle body, and the installation should be as horizontal as possible;
- (3) Pay attention to install flat pad when fixing the mainframe fixing frame.



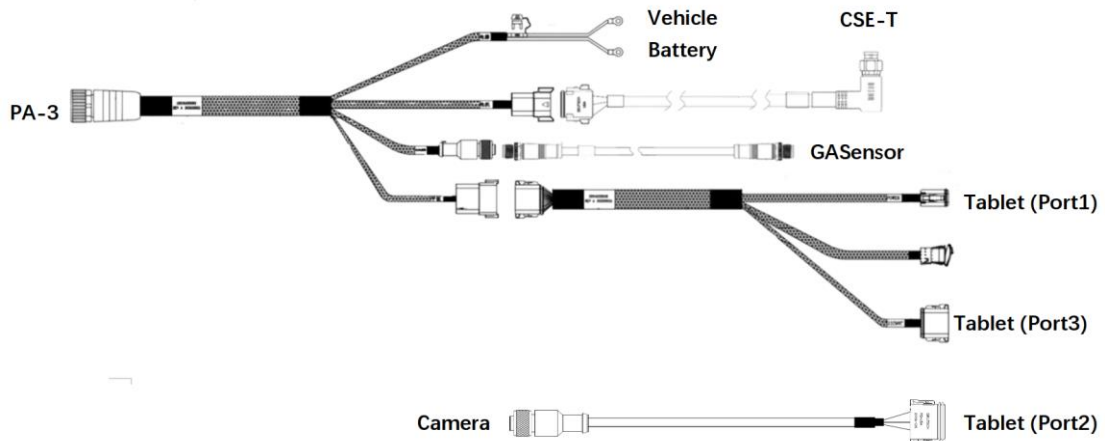
2.5 Camera installation

The camera can be installed anywhere you want (within the wire harness length range).



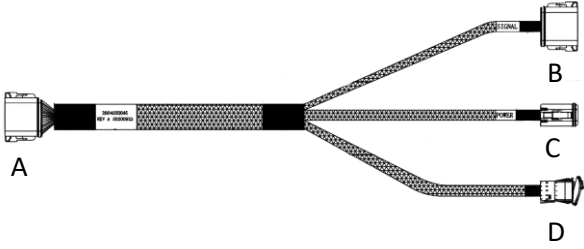

3 Wiring

3.1 Wiring harness and connection method



3.1.1 Wiring connection

Name	Cable diagram	Connection
Main cable		A → PA-3 B → Battery C → Steering wheel cable D → Angle sensor E → Console
Steering wheel cable		A → Electric steering wheel B → Main cable

<p>Console cable</p>	 <p>A</p> <p>B</p> <p>C</p> <p>D</p>	<p>A → Console Port1</p> <p>B → Main cable</p> <p>C → Power</p> <p>D : Power Rocker Switch</p>
<p>Angle sensor wiring cable</p>	 <p>A</p> <p>B</p>	<p>A → Main Line C Port</p> <p>B → GA-Sensor host</p>

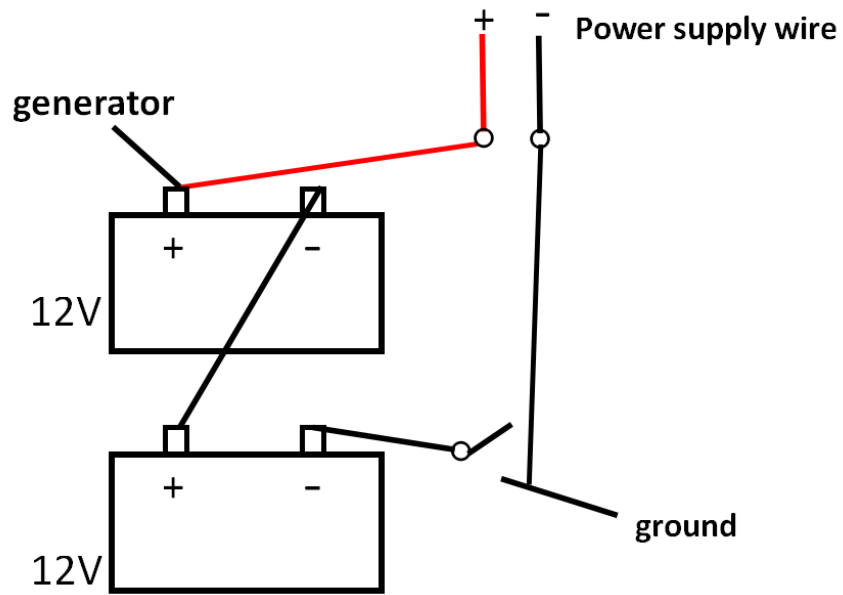
3.2 Wiring Precautions

- When wiring, first confirm the position of the threading holes, and route the wiring harnesses that need to be arranged outside the cabling out of the threading holes in order. When wiring, first arrange the wiring harnesses outside the cabling, and then arrange the wiring harnesses in the cab;
- When wiring, pay attention to avoid high temperature, oily, scratch-prone areas, fans, exhaust pipes and other nearby areas;
- When wiring, keep a certain length to avoid over-tightening and loosening; the wiring harness layout should be smooth and natural and cannot be twisted into a twist;
- The GA-Sensor host will rotate along with the rotating shaft. When wiring, leave enough length and try to kill the left and right directions after installation.
- After the wiring harness is arranged, cut off the excess length of cable ties. After the installation is completed, the removed original tractor accessories are properly stored and the garbage generated from loading is cleaned up.

3.3 Electrical connection method and precautions

- In the process of connecting the power cord to the battery, first connect to the positive electrode and then to the negative electrode;
- Before starting the wiring work, you should connect the power supply. After the power cord is connected, you can connect the controller, monitor, and steering wheel power harness connector to avoid damage caused by direct power-on or multiple power-offs;
- In the process of connecting the power cord to the battery, first connect to the positive electrode and then to the negative electrode;
- Pay attention to the use of the wrench when connecting the positive electrode, and it is strictly forbidden to **bonding**; (when the wrench contacts the positive electrode of the battery, the other end of the wrench is strictly prohibited from touching any conductive items, especially the metal parts of the original tractor)
- 12V / 24V battery, when the positive of original tractor battery is cut off or the original tractor has no switch, the power is directly connected to the positive and negative poles of original tractor battery;
- 12V / 24V battery, when the original tractor battery is negative, the positive electrode is connected to the positive electrode of the battery, and the negative electrode must be connected to the switch disconnection. When the original tractor switch is disconnected,

the equipment power line negative electrode is also disconnected with the battery.





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