Autopilot

AUTOMATED STEERING SYSTEM

INSTALLATION INSTRUCTIONS

Case IH

- AFS Connect Steiger 370
- AFS Connect Steiger 420
- AFS Connect Steiger 470
- AFS Connect Steiger 500
- AFS Connect Steiger 540
- AFS Connect Steiger 580
- AFS Connect Steiger 620

New Holland

- T9.435 Wheeled
- T9.480 Wheeled
- T9.530 Wheeled and SmartTrax
- T9.565 Wheeled and SmartTrax
- T9.600 Wheeled and SmartTrax
- T9.645 Wheeled and SmartTrax
- T9.970 Wheeled and SmartTrax

Version 8.00
Revision A
February, 2021
P/N 54036-157-E08

Legal Notices

Agriculture Business Area

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USA
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This is the February 2021 release (Revision A) of the Autopilot Automated Steering System Installation Instructions, part number 54036-157-E08. It applies to version 8.00 of the Autopilot automated steering system.
The following limited warranties give you specific legal rights. You may have others, which vary from state/jurisdiction to state/jurisdiction.

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Class B Statement – Notice to Users. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This

equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes and modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commission rules.

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Or
Mail a request for recycling instructions to:
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c/o Menlo Worldwide Logistics
Meerheide 45
5521 DZ Eersel, NL



Safety Information

Always follow the instructions that accompany a Warning or Caution. The information they provide is intended to minimize the risk of personal injury and/or damage to property. In particular, observe safety instructions that are presented in the following format:

⚠ **WARNING –** This alert warns of a potential hazard, which, if not avoided, can cause severe injury.

⚠ **CAUTION –** This alert warns of a hazard or unsafe practice which, if not avoided, can cause injury or damage.

NOTE – An absence of specific alerts does not mean that there are no safety risks involved.

Warnings

⚠ **WARNING –** When you are working on the vehicle's hydraulic systems, vehicle attachments that are suspended can drop. If you are working around the vehicle, you could suffer serious injury if an attachment dropped on you. To avoid this risk, lower all vehicle attachments to the ground before you begin work.

⚠ **WARNING –** If someone else attempts to drive the vehicle while you are working on or under it, you can suffer serious or fatal injuries. To avoid this possibility, install a lockout box on the battery terminal to prevent the battery from being reconnected, remove the key from the vehicle's ignition switch, and attach a "Do not operate" tag in the cab.

⚠ **WARNING –** Agricultural chemicals can pose serious health risks. If the vehicle has been used to apply agricultural chemicals, steam clean the vehicle to remove any chemical residue from the areas of the vehicle where you will be working.

⚠ **WARNING –** Vehicle cabs can be quite high in the air. To avoid potentially serious injury through falling from this height, always use the steps and handrails, and face the vehicle, when you enter or exit it.

Cautions

⚠ **CAUTION –** When the vehicle has been running, parts of the vehicle, including the engine and exhaust, can become extremely hot and can cause serious burns. To avoid burns, allow hot machine parts to cool before you begin working on them.

⚠ **CAUTION –** The system installation may bring you into contact with chemical substances, such as oil, which can cause poisoning. Wash your hands thoroughly after you finish working on the system.

⚠ **CAUTION –** Battery posts, terminals, and related accessories contain lead and lead compounds, which can cause serious illness. To avoid ingesting lead, wash your hands thoroughly after touching the battery.

⚠ **CAUTION –** Always wear protective equipment appropriate to the job conditions and the nature of the vehicle. This includes wearing protective glasses when you use pressurized air or water, and correct protective welder's clothing when welding. Avoid wearing loose clothing or jewelry that can catch on machine parts or tools.

⚠ **CAUTION –** Parts of the vehicle may be under pressure. To avoid injury from pressurized parts, relieve all pressure in oil, air, and water systems before you disconnect any lines, fittings, or related items. To avoid being sprayed by pressurized liquids, hold a rag over fill caps, breathers, or hose connections when you remove them. Do not use your bare hands to check for hydraulic leaks. Use a board or cardboard instead.

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Introduction

- Technical assistance
- Manual system upgrade to Autopilot
- Required components
- Antenna mounting kits
- Preparing the vehicle for installation

This manual describes how to install the Trimble® Autopilot™ automated steering system.

Even if you have used other Global Positioning System (GPS) products before, Trimble recommends that you spend some time reading this manual to learn about the special features of this product. If you are not familiar with GPS, visit the Trimble website (www.trimble.com) for an interactive look at Trimble and GPS.

Technical assistance

If you have a problem and cannot find the information you need in the product documentation, contact Trimble technical support:

1. Log into http://agpartners.trimble.com.
2. Click the **Feedback** link at the right of the screen. A form appears.
3. Complete the form and then click **Submit Feedback**.

Manual system upgrade to Autopilot

Displays

Retain
TMX-2050™ integrated display: P/N 96500-xx
CFX-750™ display: P/N 94110-xx
Antenna to receiver cable: P/N 50449
Power cable: P/N 67258 & 66694
GFX-750™/XCN-1050™: P/N 121000-XX
Power cable GFX-750/XCN-1050: P/N 110551
Base power cable: P/N 67258
NAV-900 guidance controller: P/N 108993-05
GFX-750 to NAV-900 Comms cable: P/N 110540

Required components

Kits required	Special tools
Platform kit: P/N 54036-157	¾" and $1^{5}/_{8}$" hole saw
TMX-2050/CFX -750 installations: P/N 64425-07	$^{5}/_{16}$" drill bit
GFX-750 Installations: P/N 64425-08	Allen wrench set (metric and SAE)

Antenna mounting kits

Antenna options
Antenna V plate mount and *Ag*GPS 262 receiver magnetic mount: P/N 62388-01 (includes magnets for quick release of the *Ag*GPS 262 receiver).
Optional spar mounts (must measure application for proper part number):
• P/N 64898: Bracket, GPS Spar 16.5"– 28.5"
• P/N 55349: Bracket, GPS Spar 27.5"– 37.5"
• P/N 53676: Bracket, GPS Spar 36.5"– 46.5"
• P/N 55348: Bracket, GPS Spar 45"– 55"
• P/N 66774: Bracket, GPS Spar 54"– 64"
NOTE – For quick release mounting of the NAV-900 to a Spar mount, use P/N 110308: Bracket, NAV-900, Spar Quick Release Adapter
For vehicles with the CNH 262/372 factory mount, you may optionally mount the NAV-900 with P/N 111339: NAV-900, Mount, CNH Quick Release Adapter

Preparing the vehicle for installation

Step 1

Park the vehicle on a hard, level surface. Block the front and rear wheels.

Step 2

Align the steering straight ahead. On an articulated vehicle, install the articulation locks.

Step 3

Remove all dirt and debris from the areas of the vehicle where the Autopilot system will be installed.

Step 4

Open all kit boxes and check the contents of the box against the packing list/s. Lay all of the parts out on a clean workbench.

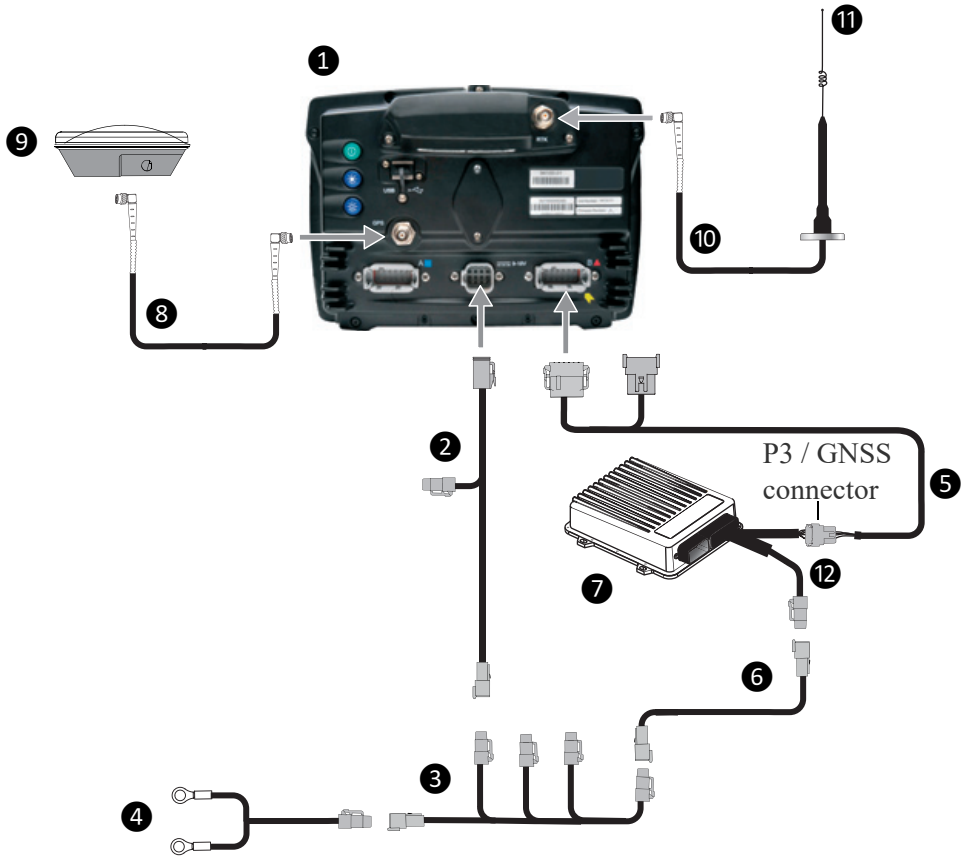
NOTE – The left and right sides of the vehicle are referenced while standing behind the unit, facing the normal direction of travel.

2

Display Installation

- CFX-750 display: Components
- CFX-750 display: Preparation
- CFX-750 display: Installation
- CFX-750 display: Installing the wiring harness
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- CFX-750 and TMX-2050 displays: Installing the GNSS antenna and plate
- CFX-750 and TMX-2050 displays: Installing the RTK radio antenna

CFX-750 display: Components



⚠ **CAUTION –** Connecting the Port Replicator on the CFX-750 display to NavController II cable ❺ to the P4 or P12 connector of the NavController II harness ⓬ will result in damage to the display, and will void the warranty.

Item	Description	Trimble part number
1	CFX-750 display **NOTE –** RTK password required.	93100-02
2	CFX-750 power cable	66694
3	CFX-750 power cable with relay and switch (power bus)	67259
4	Basic power cable	67258
5	CFX-750 to NavController II cable with port replicator	75741
6	2 pin DTM to 2 pin DT power adaptor	67095
7	NavController II	55563-00
8	8 m GNSS TNC/TNC RT angle cable	50449
9	AG25 GNSS antenna	77038-00
10	NMO to TNC 20ft antenna cable and base	72122
11	900 MHz radio antenna kit	22882-10
12	Main NavController II cable	54601

CFX-750 display: Preparation

Step 1

Locate the CFX-750 display, the RAM mount, and the RAM mount clamp.



Step 2

Use the provided metric hardware to attach the RAM mount to the rear of the display.



Step 3

Attach the RAM mount to the rear of the display.



CFX-750 display: Installation

⚠ **WARNING –** To avoid potentially serious personal injury or illness, and to prevent damage to equipment, make sure that you read and understand the Safety Information.

Step 1

Decide where you will mount the display in the vehicle cab and then use the provided bolts to attach the bar mount to the rail.

Attach the free end of the RAM mount to the bar mount and then tighten the clamp on the RAM mount so that the display is secure.

Step 2

Connect the cable to the B port of the CFX-750 display.

To connect power to the CFX-750 display, see Chapter 4, Controller Installation.



CFX-750 display: Installing the wiring harness

Step 1

Locate the cable that connects the CFX-750 display to the NavController II.

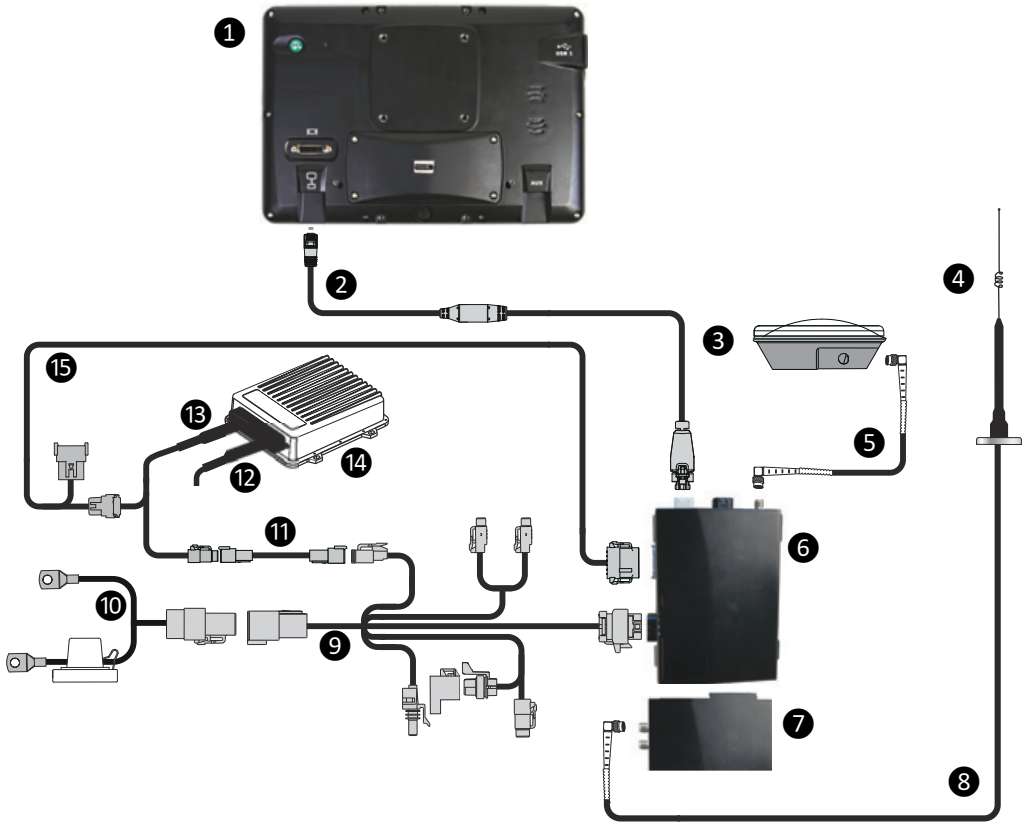
Step 2

Connect the cable to the P3 connector on the NavController II main harness and then route the cable from the NavController II to the mounting location on the CFX-750 display.



TMX-2050 display: Components

This graphic shows how to connect the TM-200 Module and the Autopilot system for after-market installations.



Item	Description	Trimble part number
1	TMX-2050 display	96700-00
2	TM-200 Module to display cable	93843
3	AG-25 GNSS antenna	77038-00
4	900 MHz radio antenna kit	22882-10
5	8 m GNSS TNC/TNC RT angle cable	50449
6	TM-200 Module	95060-00
7	AG-815 radio	
8	NMO-to-TNC 20 ft antenna cable and base	72122
9	TM-200 Module power and I/O cable	92676
10	Cable, battery	92905
11	2-pin DTM to 2-pin DT power adapter cable	67095
12	Cable, NavController diagnostic	54602
13	Main NavController cable	54601
14	NavController	55563-00 55566-00
15	TM-200 Module to NavController cable with port replicator	75741

TMX-2050 display: Preparation

The display mount attaches to a rail in the cab of the vehicle. The TMX-2050 display connects to the display mount.

The TM-200 Module connects to the display with a single cable.

Additional components to install depend on your connection and correction services, and the features you are using.

⚠ **CAUTION –** Make sure the vehicle power is off when you are connecting system components.

Installing the display and mount

Use the mounting hardware supplied in the display kit to mount the display in the vehicle cab.

⚠ **CAUTION –** Make sure the vehicle power is off when you are connecting system components.

Before completing installation steps, select a position in the cab where the bar mount (4) can be attached to a rail. Hold the display in the selected location and make sure that it:

- Is easy to see, but does not block the driver's view.
- Is within the driver's reach so that the USB drive is easy to remove and replace.
- Does not interfere with the driver getting in or out of the cab, or any other activities.

.

Item	Description
1	Mounting plate
2	Zirkona mount
3	Tightening arm
4	Bar mount



Step 1

Locate the TMX-2050 display and the Zircona mount and mounting hardware.



Step 2

Use the provided hardware to attach the Zircona mount to the display as shown





Step 3

Decide where you will mount the display in the vehicle cab and then use the provided bolts to attach the rail mount of the Zircona display mount to the rail of the vehicle.



Step 4

The Zircona mount has a tightening arm ❸. Loosen the arm to let the display move on the mount.

Step 5

Adjust the TMX-2050 display until it is positioned where you want it.

Turn the tightening arm clockwise to tighten the Zircona mount and lock the display in the desired position.

Step 6

Connect the display cable to the display.



Step 7

Route the other end of the display cable to the TM-200 Module and then connect it to the TM-200 Module.



TMX-2050 display: Installing the wiring harness

⚠ **WARNING –** To avoid potentially serious personal injury or illness, and to prevent damage to equipment, make sure that you read and understand the Safety Information.

Step 1

Connect the P5 and P2 connectors on the harness, P/N 106111, to the TM-200 Module.

Step 2

On the TM-200 Module locate the display connection point.



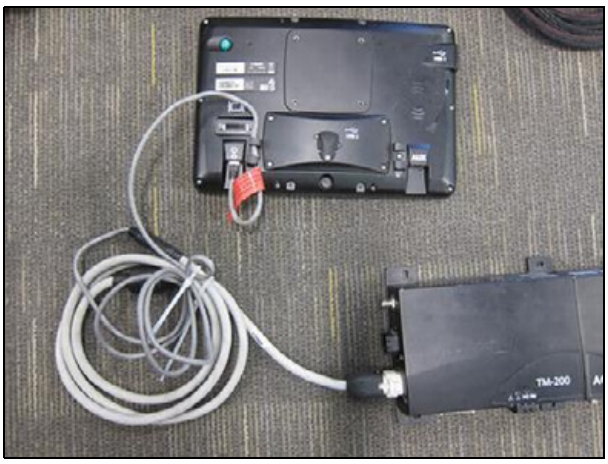
Step 3

Connect the display cable P/N 93843 to the TM-200 Module.



Step 4

Route the cable between the TMX-2050 display and the TM-200 Module.



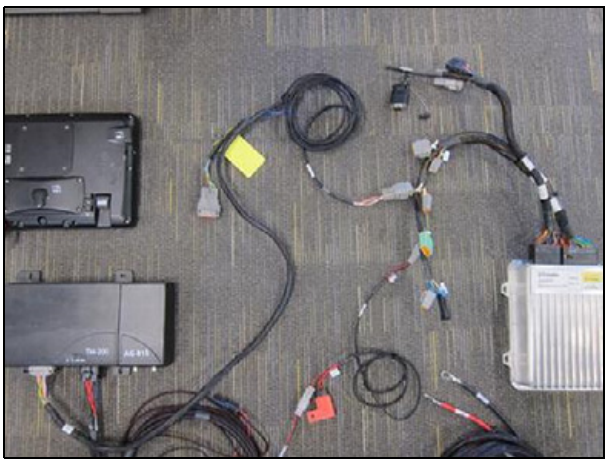
Step 5

Locate the Port labeled **A** on the TM-200 Module and then connect NavController connection cable, P/N 75741.



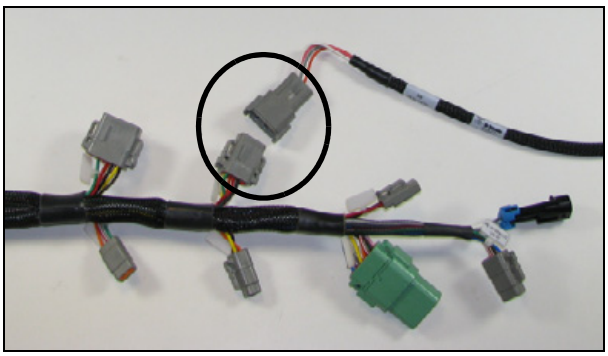
Step 6

Route the other end of the P/N 75741 cable to the plug on the P/N 54601 harness labeled **GPS**.



Step 7

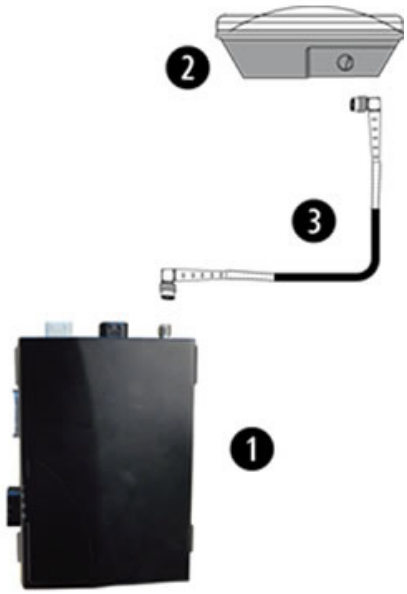
Connect the cable to the P3 connector on the NavController main harness.



TMX-2050 display: AG-25 GNSS antenna

The AG-25 GNSS antenna is required for all correction services. It enables the GNSS receiver in the TM-200 Module to receive GPS / GNSS corrections. The antenna connects to the antenna connector on the TM-200 Module

⚠ **CAUTION –** Wireless cellular radio and GNSS signals can interfere with each other. For best performance, mount antennas at least 1 meter away from each other.



Item	Description
1	TM-200 Module
2	AG-25 GNSS antenna
3	AG-25 antenna to TM-200 Module cable

The AG-25 GNSS antenna has integrated magnets for easy installation. To attach the antenna to a non-metal surface, use the mounting plate.

NOTE – If you are using the AG-25 GNSS antenna with a steering system, refer to the installation instructions for the steering system to determine the correct location for mounting the antenna.

CFX-750 and TMX-2050 displays: Installing the GNSS antenna and plate

⚠ **WARNING –** To avoid potentially serious personal injury or illness, and to prevent damage to equipment, make sure that you read and understand the Safety Information.

NOTE – The V plate antenna bracket is available on the Autopilot price list. See Antenna mounting kits, page 9.

Use one of the following methods:

- Spar mount
- VHB adhesive

Spar mount method

Trimble recommends that you use this method for RTK and OmniSTAR operations.

Use a ⅝" bolt to attach the AG25 antenna to the spar, as shown.

Measure the length between the bolts on the roof of the vehicle and order the appropriate spar:

- Spar 36.5" - 46.5": P/N 53676
- Spar 54" - 64": P/N 66774



VHB adhesive method

Standard 4" x 6" plates are provided in most kits. You can use Very High Bond (VHB) to attach either a 4" x 6" plate or a V plate.

- **GLONASS, RTK, OmniSTAR, DGPS applications** – To use this method for high accuracy, the surface must be rigid and free of "oil panning". For RTK or OmniSTAR HP corrections, the spar method is recommended. The V plate provides repeatable positioning of the antenna.
- **WAAS, EGNOS, OmniSTAR VBS, Beacon applications** – Use a 4" x 6" plate for simplified installation in applications where high accuracy is not critical.

Step 1

Clean the antenna location on the roof of the cab with a light solvent to remove oil and dust.

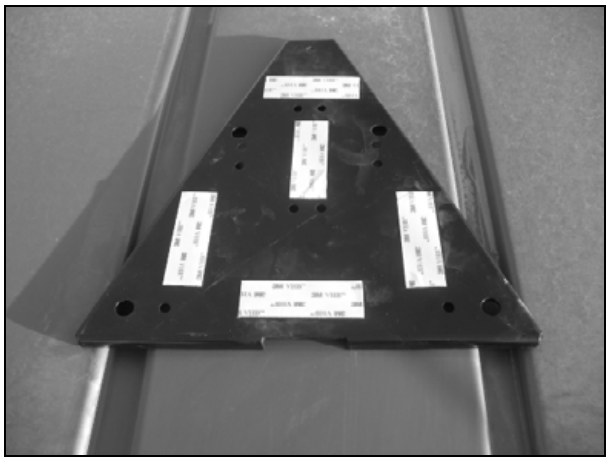


Step 2

V plate only

Remove the backing from one side of the VHB strips provided and then apply the strips to the plate.

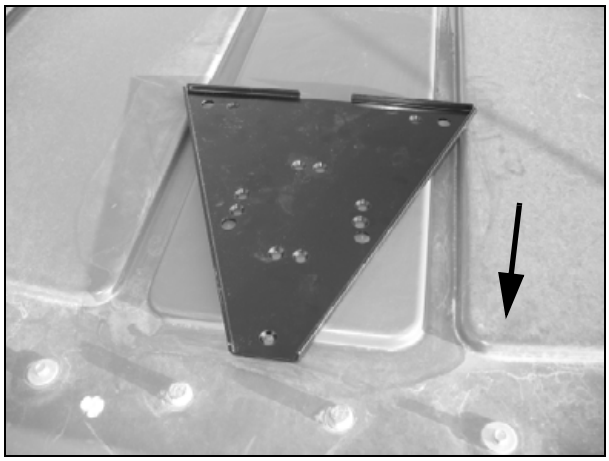
NOTE – The VHB strips are pre-applied to the 4" x 6" plate.



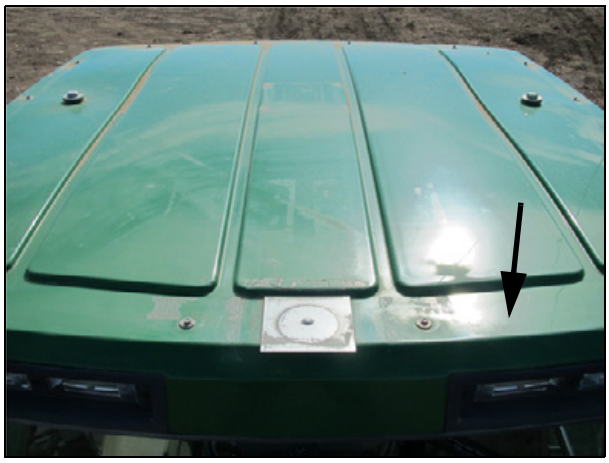
Step 3

Remove the backing from the other side of the VHB strips and then apply the plate to the cab roof. The narrow end points forward. Ensure that the VHB strips make even contact with the surface. Apply pressure and then leave for approximately 30 minutes to adhere.

NOTE – The arrow in this figure points to the front of the vehicle.



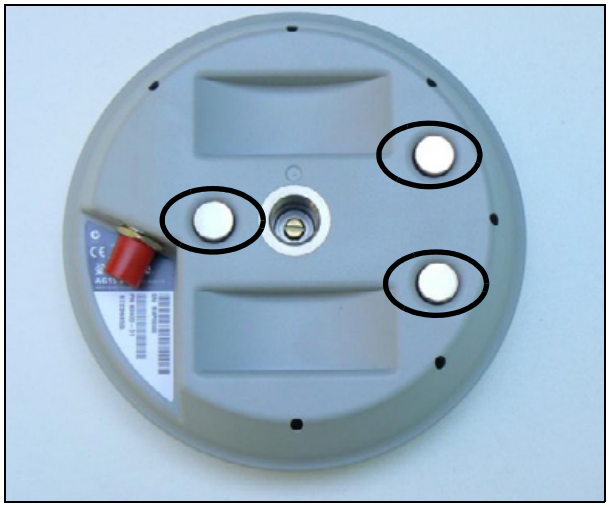
V plate



4" x 6" plate

Step 4

If the antenna has magnets built in, omit this step.



Otherwise, attach the large magnet with a ⅝" stud to the GNSS antenna.



Step 5

GLONASS, RTK, OmniSTAR, DGPS, applications

For repeatable positioning, place the antenna against the lip at the narrow end of the V plate.



WAAS, EGNOS, VBS, Beacon applications

Attach the antenna to the center of the 4" x 6" plate.



Step 6

Both models

Attach the antenna/receiver cable to the antenna and then route the cable into the cab through the rubber grommet at the base of the rear window. Secure the cable along the way.



CFX-750 and TMX-2050 displays: Installing the RTK radio antenna

⚠ **WARNING –** To avoid potentially serious personal injury or illness, and to prevent damage to equipment, make sure that you read and understand the Safety Information.

Step 1

Connect the radio antenna to the magnetic antenna base.



Step 2

Attach the magnetic radio antenna base to the rear of the V plate on the roof. If the cable does not reach the V plate, use the 4" x 6" plate with the VHB provided to relocate the antenna.



Step 3

Attach the magnetic radio antenna base to the rear of the V plate on the roof. If the cable does not reach the V plate, use the P/N 62034 plate with the VHB provided to relocate the antenna.

Step 4

Route cable from the vehicle roof into the cab, and connect the radio cable to the display.

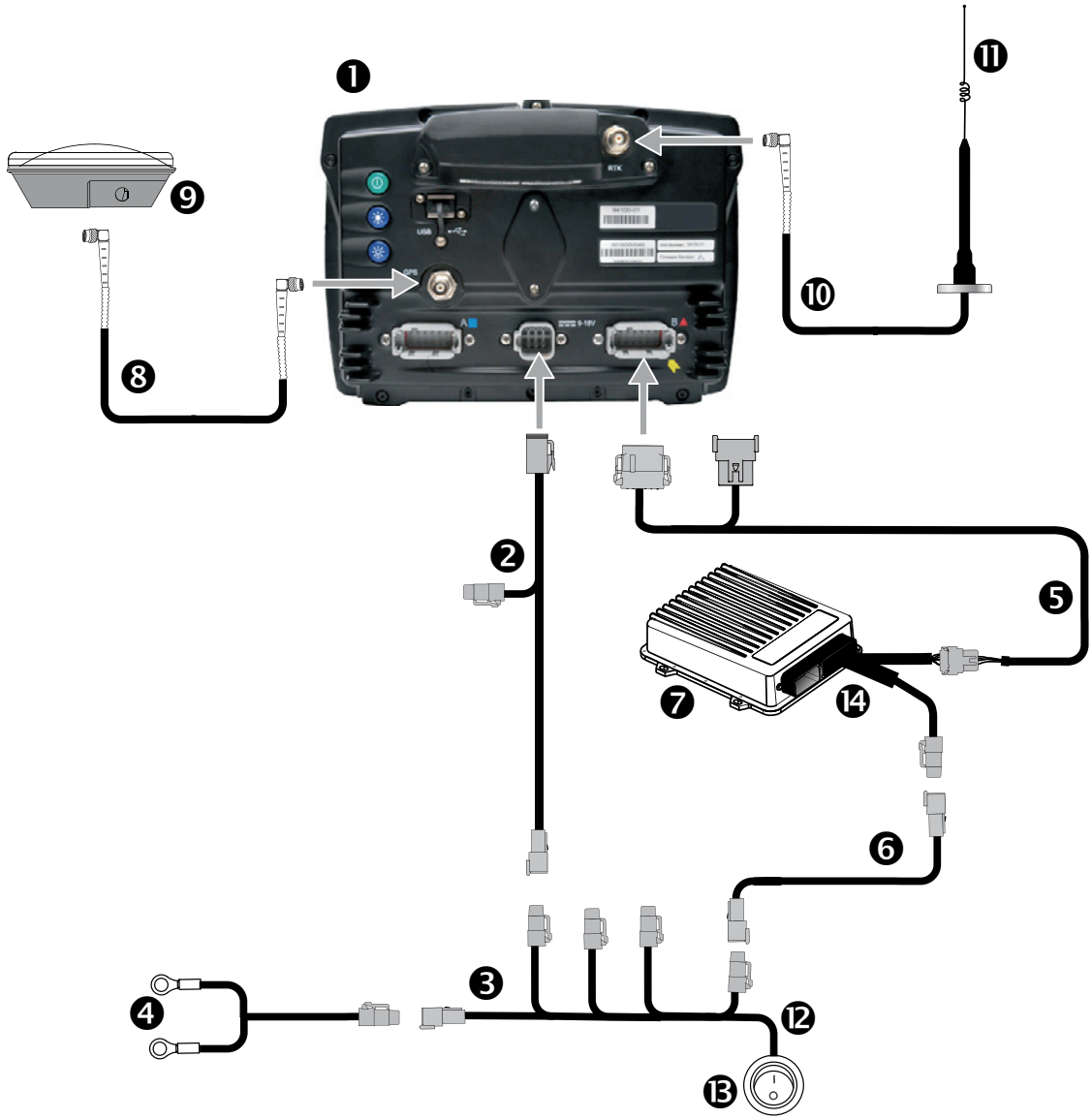


3

Power Harness Installation

- CFX-750 display: Components
- GFX-750/XCN-1050 display: Components
- CFX-750 and GFX-750 displays: Installing the power harness
- CFX-750 and GFX-750 displays: Configuring the power bus options
- TMX-2050 display: Components
- TMX-2050 display: Installing the power harness
- TMX-2050 display: Configuring the power options

CFX-750 display: Components



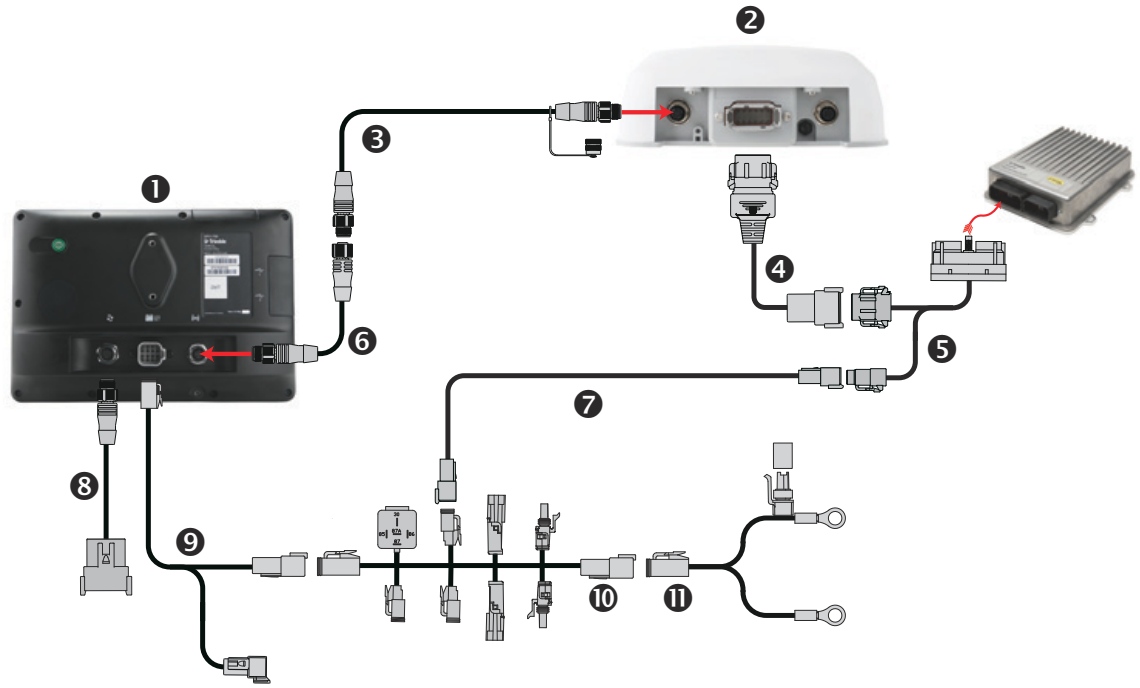
⚠ **CAUTION –** Connecting the Port Replicator on the CFX-750 display to NavController II cable ❺ to the P4 or P12 connector of the NavController II harness ⓮ will result in damage to the CFX-750 display and will void the warranty.

Item	Description	Trimble part number
1	CFX-750 display **NOTE –** RTK password required.	94100-02
2	CFX-750 power cable	77282
3	CFX-750 power cable with relay and switch (power bus)	67259
4	Basic power cable	67258
5	CFX-750 to NavController II cable with port replicator	75741

Item	Description	Trimble part number
6	2 pin DTM to 2 pin DT power adaptor	67095
7	NavController II	55563-00
8	8 m GPS TNC/TNC RT angle cable	50449
9	AG25 GNSS antenna	77038-00
10	NMO to TNC 20ft antenna cable and base	62120
11	900 MHz radio antenna kit	22882-10
12	External switch cable included with kit	Part of P/N 67259
13	External switch included with kit	Part of P/N 67259
14	Main NavController II cable	54601

GFX-750/XCN-1050 display: Components

This graphic shows the Autopilot system using NAV-900 as an external guidance device.



Item	Description	Trimble part number
1	GFX-750/XCN-1050 display, with PIQ App	121000-XX
2	NAV-900 Guidance controller	108993-05
3	Cable Assy, GFX-750/XCN-1050 to NAV-900, Power/Ethernet (BRR), 5 m	110540
4	Cable Assy, NAV-900 to Nav II/III, Autopilot	110547
5	Cable, NavController II/III, Main	54601
6	Cable Assy, GFX-750/XCN-1050 to NAV-900, Power/Ethernet (BRR) Extension, 2.5 m. Optional extension for large vehicles	112082
7	Cable Assy, 2 PIN DTM to 2 PIN DT Power Adapter	67095
8	Cable Assy, GFX-750/XCN-1050, Expansion Port Basic, RS-232, Dig I/O, 2.5 m	110545
9	Cable Assy, GFX-750/XCN-1050, Power to display, CAN, 2.5 m	110551
10	Cable Assy, GFX-750/CFX-750/FM-750™/XCN-1050/FmX®/FM-1000 Power with Relay and Switch (Acc)	67259
11	Cable Assy, GFX-750/CFX-750/FM-750/XCN-1050/FmX/FM-1000 Basic Power, 4 m	67258

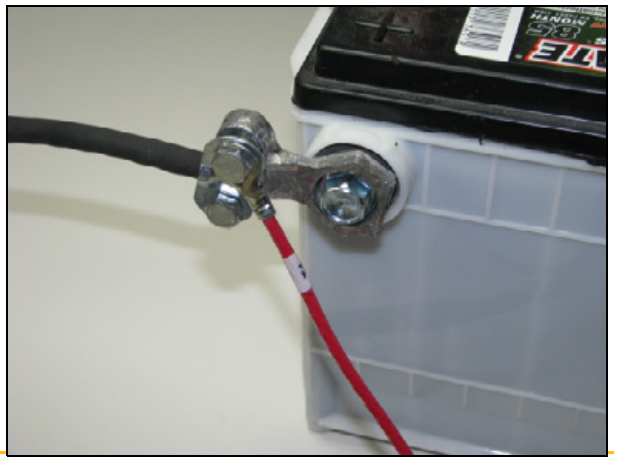
CFX-750 and GFX-750 displays: Installing the power harness

NOTE – Unless otherwise stated, instructions for "the display" refer to either the CFX-750 display or the GFX-750 display.

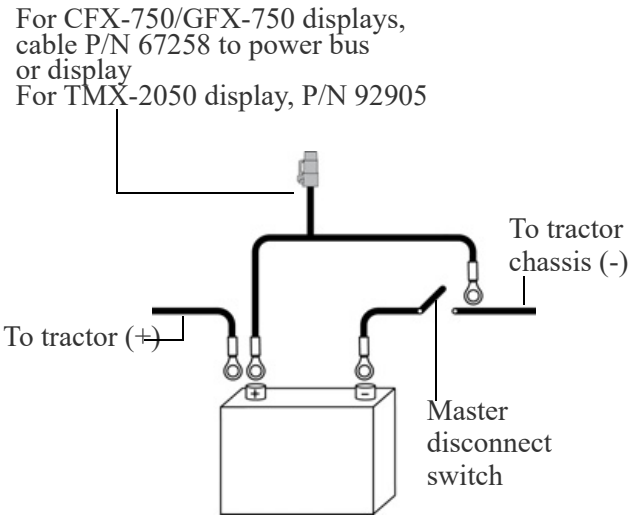
⚠ **WARNING –** To avoid potentially serious personal injury or illness, and to prevent damage to equipment, make sure that you read and understand the Safety Information chapter.

Step 1

Connect the basic power cable to the vehicle battery and then route the cable into the cab.

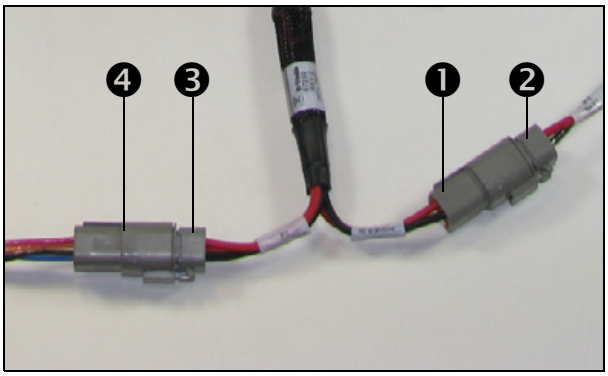


CAUTION – If the vehicle has a master electrical disconnect, make sure the basic power cable (P/N 67258 / 92905) is not directly attached to the battery terminal that is disconnected by the master switch - the negative pole in this example.
Attach this terminal side just past the main disconnect so that it is as close as possible to the battery but still gets disconnected when the master disconnect is turned off. Failure to do so can result in damaging the display.



Step 2

Locate and connect the 4-pin Deutsch DTP receptacle on the power bus ❶ to the 4-pin Deutsch DTP plug ❷ on the basic power cable and then remove the protective cap from the 4-pin Deutsch DTP plug ❸ on the power bus and connect the plug to the 4-pin Deutsch DTP receptacle ❹ on the display power adapter.



Step 3

Route the display power adapter to the display mounting location and then connect it to the display.



CFX-750 display

CFX-750 and GFX-750 displays: Configuring the power bus options

NOTE – Unless otherwise stated, instructions for "the display" refer to either the CFX-750 or the GFX-750 display.

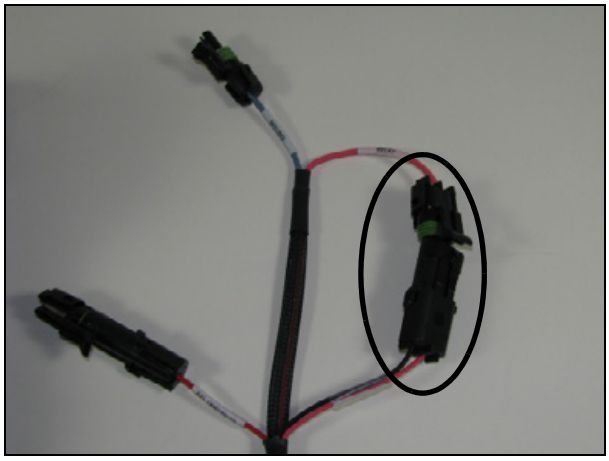
⚠ **WARNING –** To avoid potentially serious personal injury or illness, and to prevent damage to equipment, make sure that you read and understand the Safety Information chapter.

When you use the power bus cable, use one of the following configuration methods to turn on the Autopilot system:

- Display power button is used to turn on the Autopilot system
- External switch is used to turn on the Autopilot system
- Ignition is used to turn on the Autopilot system

Display power button is used to turn on the Autopilot system

Connect the 2 pin connectors labeled **R2** and **P2** on the power bus.

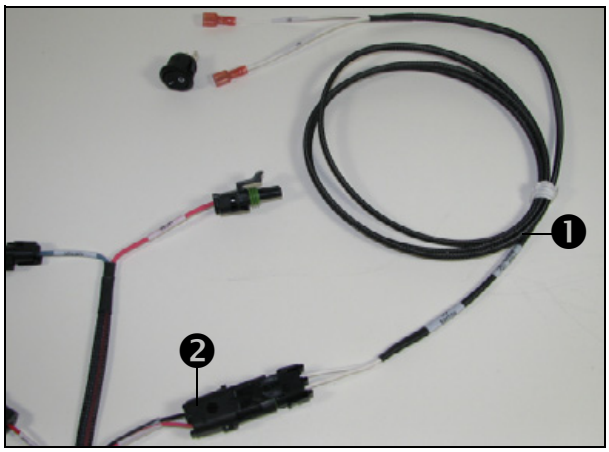


External switch is used to turn on the Autopilot system

Step 1

Connect the cable labeled **R7** switch ❶ (included with the power bus) to connector labeled **P2** on the power bus ❷ and then route the cable labeled **R7** to a switch location.

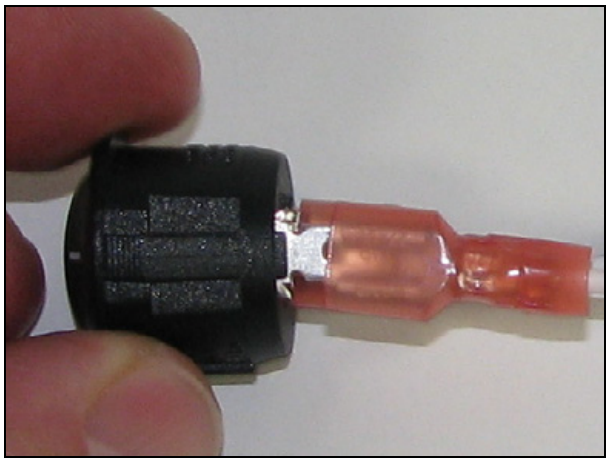
NOTE – To install the switch provided, drill a ¾" hole.



Step 2

Connect the cable labeled **R7** to the switch pins.

NOTE – Polarity is not important.

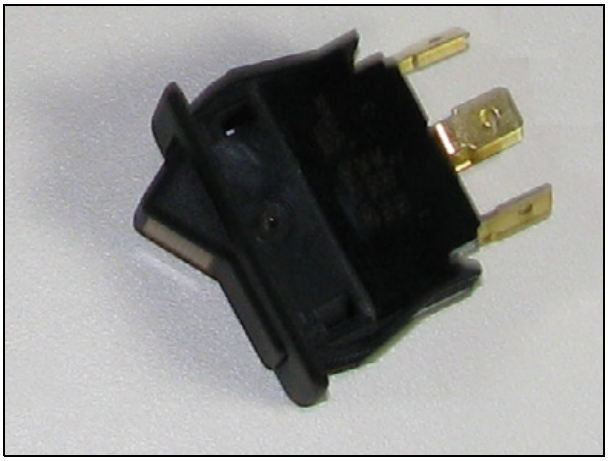


Installing the optional illuminated full or standard Euro switch

Step 1

Find an available knockout location on the vehicle console.

NOTE – An alternative location is required for the switch provided.

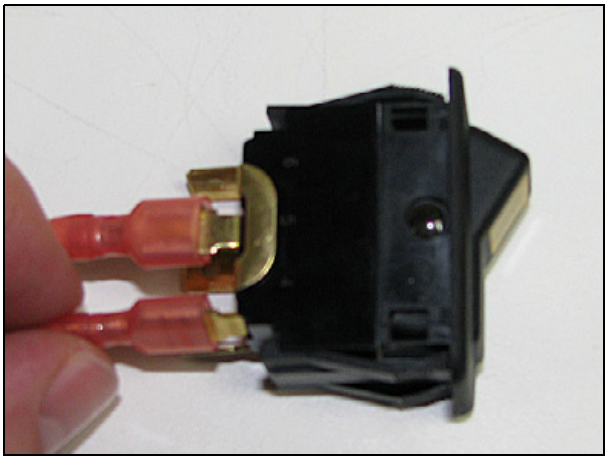


Step 2

Route the cable labeled **R7** to the switch location and then connect the cable to the illuminated switch.

Connect the wire labeled **S1** to pin 5 on the switch and then connect the wire labeled **S2** to pin 4 on the switch.

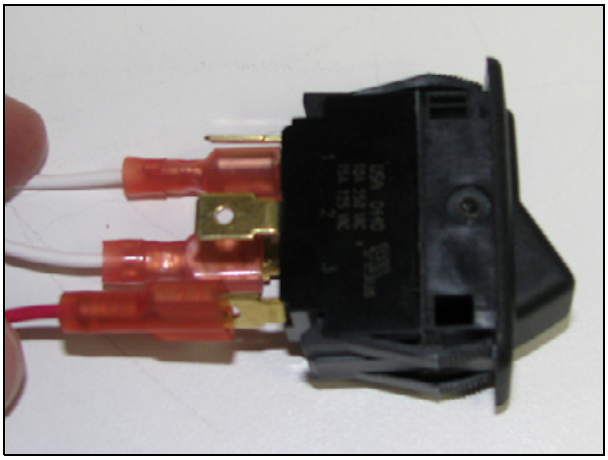
NOTE – Polarity is important.



Step 3

Connect a separate wire to pin 3 on the switch using a spade connector. Route the wire and then connect it to the vehicle switched power.

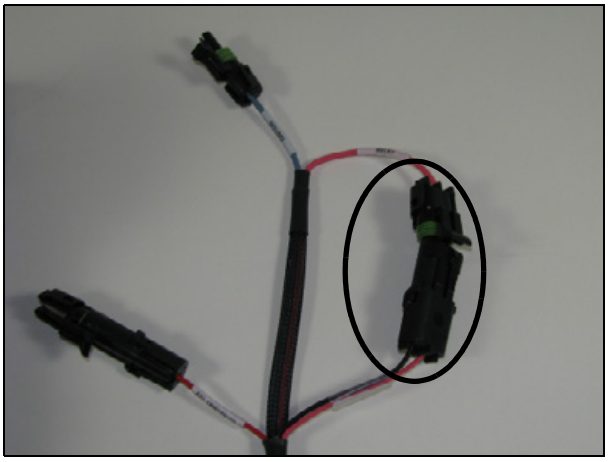
NOTE – This additional wire is required to allow the switch to illuminate.



Ignition is used to turn on the Autopilot system

Step 1

Connect the 2-pin connectors labeled **R2** and **P2** on the power bus.

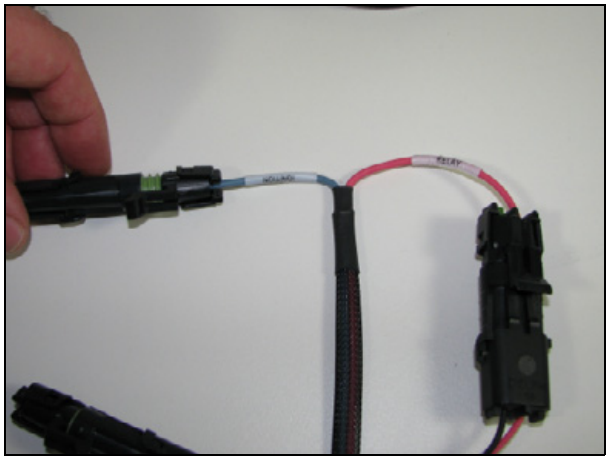


Step 2

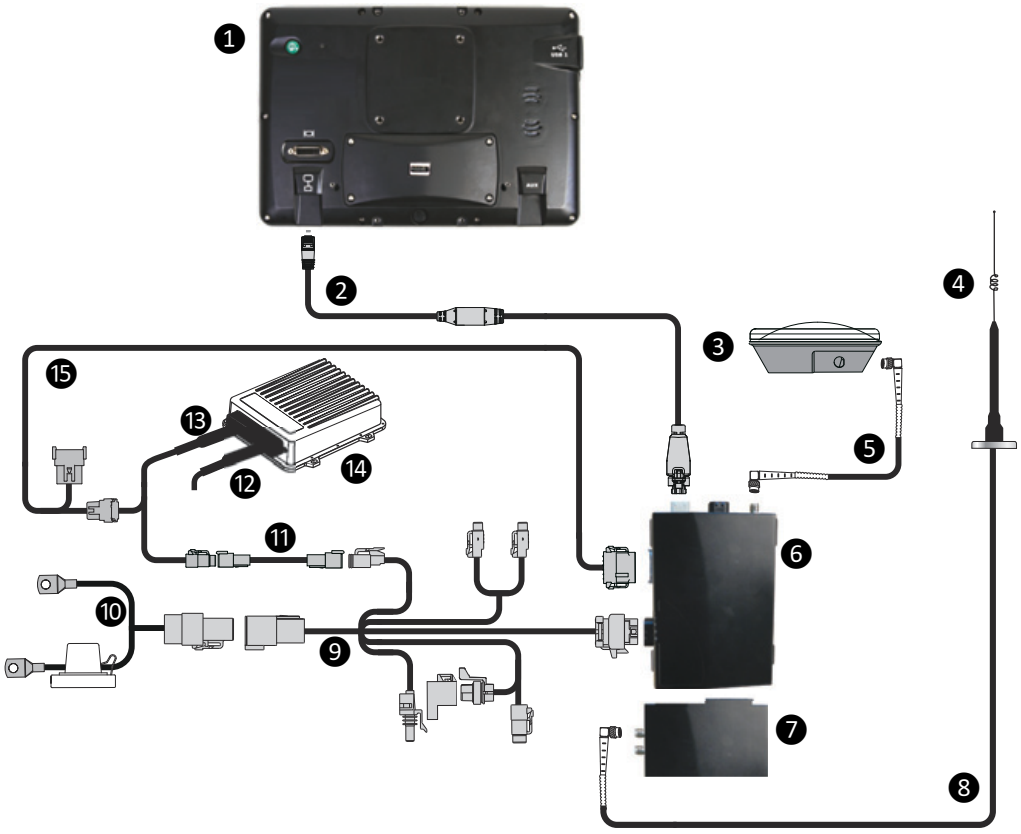
Connect the cable labeled **R8 Ignition** (included with the power bus) to connector **P3 Ignition** on the power bus.

Step 3

Route the cable to the vehicles ignition.



TMX-2050 display: Components



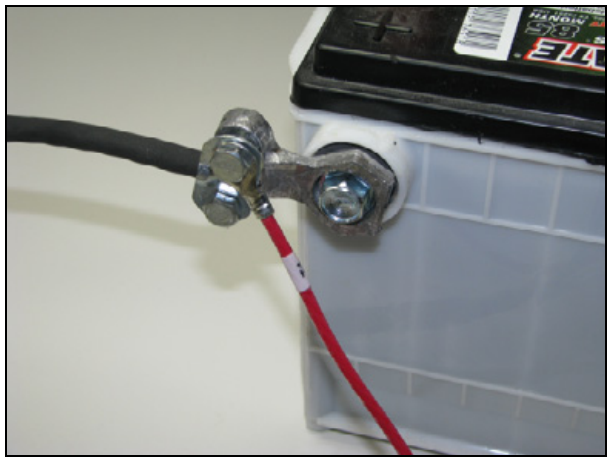
Item	Description	Trimble part number
1	TMX-2050 display	96700-00
2	TM-200 Module to display cable	93843
3	AG-25 GNSS antenna	77038-00
4	900 MHz radio antenna kit	22882-10
5	8 m GNSS TNC/TNC RT angle cable	50449
6	TM-200 Module	95060-00
7	AG-815 radio	
8	NMO-to-TNC 20 ft antenna cable and base	72122
9	TM-200 Module power and I/O cable	92676
10	Cable, battery	92905
11	2-pin DTM to 2-pin DT power adapter cable	67095
12	Cable, NavController diagnostic	54602
13	Main NavController cable	54601
14	NavController	55563-00 55566-00
15	TM-200 Module to NavController cable with port replicator	75741

TMX-2050 display: Installing the power harness

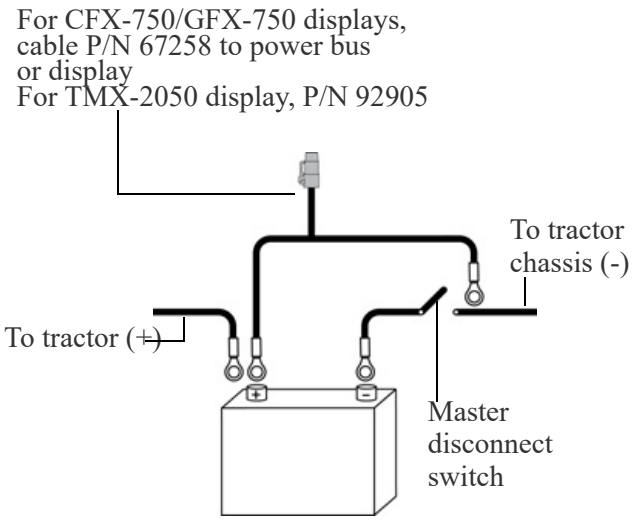
⚠ **WARNING –** To avoid potentially serious personal injury or illness, and to prevent damage to equipment, make sure that you read and understand the Safety Information.

Step 1

Connect the basic power cable to the vehicle battery and then route the cable into the cab.



⚠ **CAUTION –** If the vehicle has a master electrical disconnect, make sure the basic power cable (P/N 67258 / 92905) is not directly attached to the battery terminal that is disconnected by the master switch - the negative pole in this example.
Attach this terminal side just past the main disconnect so that it is as close as possible to the battery but still gets disconnected when the master disconnect is turned off. Failure to do so can result in damaging the display.



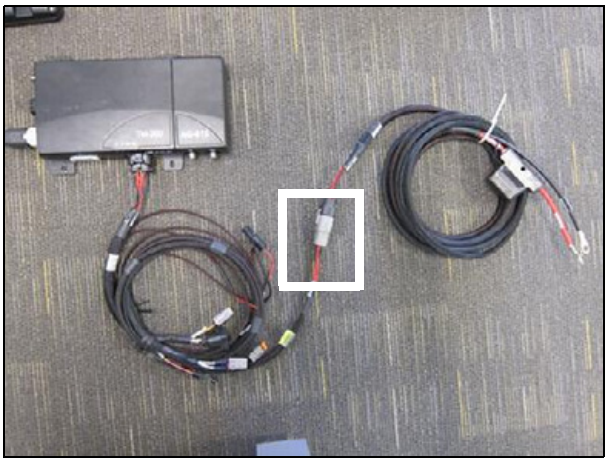
Step 2

Connect the power I/O cable P/N 92676 to the power port on the TM-200 Module.



Step 3

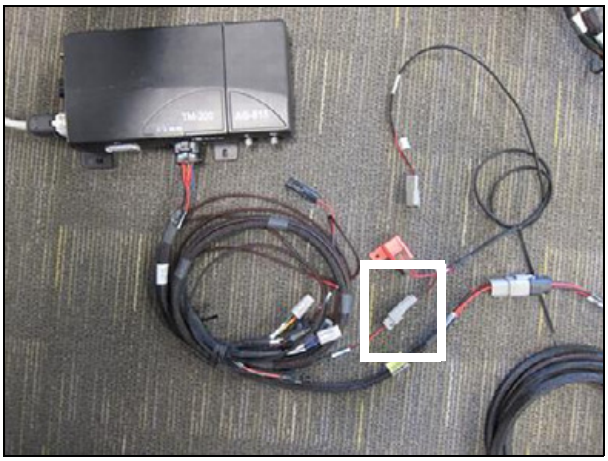
Route the power cable P/N 92905 that you previously connected to the battery and connect it to the R3 power in plug on the P/N 92676 cable.



Step 4

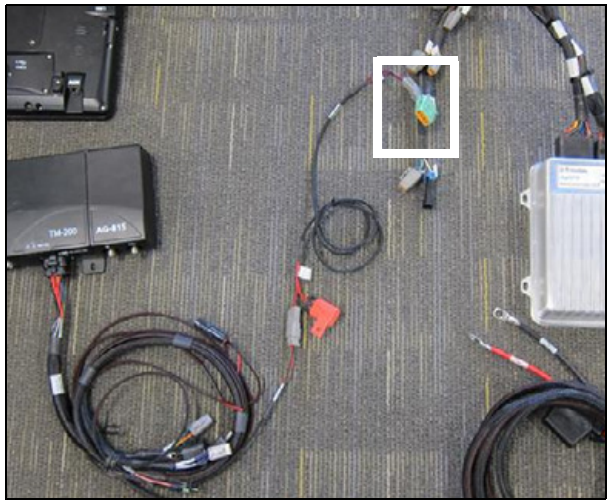
Connect the 2-pin DTM to 2-pin DT power adapter P/N 67095 to the P2 power out connector on the P/N 92676 cable.

Route the other end to the NavController harness P/N 54601.



Step 5

Connect the other end of the P/N 67095 cable to the P2 power plug on the P/N 54601 cable.



TMX-2050 display: Configuring the power options

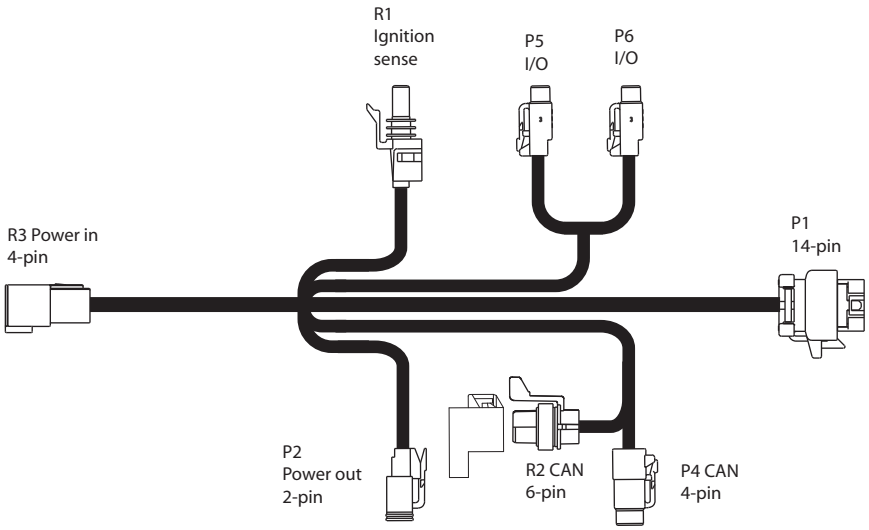
⚠ **WARNING –** To avoid potentially serious personal injury or illness, and to prevent damage to equipment, make sure that you read and understand the Safety Information.

When you use the power bus cable, use one of the following methods to turn on the Autopilot system on the Trimble TMX-2050 displays:

- The display power button. No further changes need to be made to the power cables.
- Ignition sensing. See below.

Ignition sensing

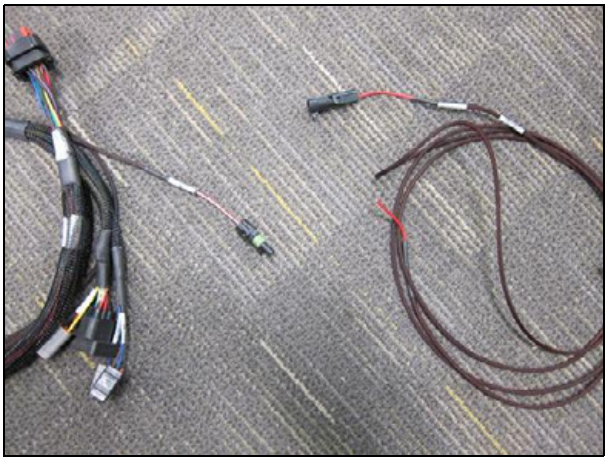
For ignition sensing with the TMX-2050 display, connect the ignition on the power supply to the R1 connector on the harness, P/N 92676.



For more information on how to use the ignition sensing option, refer to the *TMX-2050 Display User Guide*.

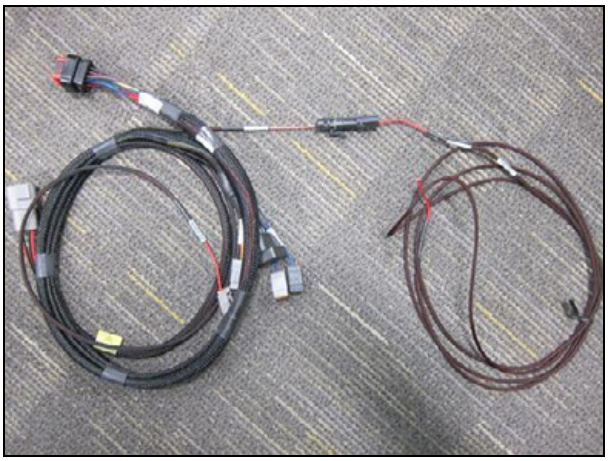
Step 1

Locate the R1 ignition sensing plug on the P/N 92676 cable; also locate the ignition sensing wire provided with the P/N 92676 cable.



Step 2

Connect the red ignition sense wire to the vehicle ignition source then route to the plug on the harness and then connect it.



4

Controller Installation

- Installing the controller
- Controller connections
- Connecting the cables to the controller

Installing the controller

⚠ **WARNING –** To avoid potentially serious personal injury or illness, and to prevent damage to equipment, make sure that you read and understand the Safety Information chapter.

Step 1

Pull back or remove the floormat and the pad below the floormat on the right side of the seat.

Locate the access plate below the floormat. This plate is where the NavController III will be mounted.



Step 2

Use a 10 mm socket to remove the 4 bolts holding the plate in place.



Step 3

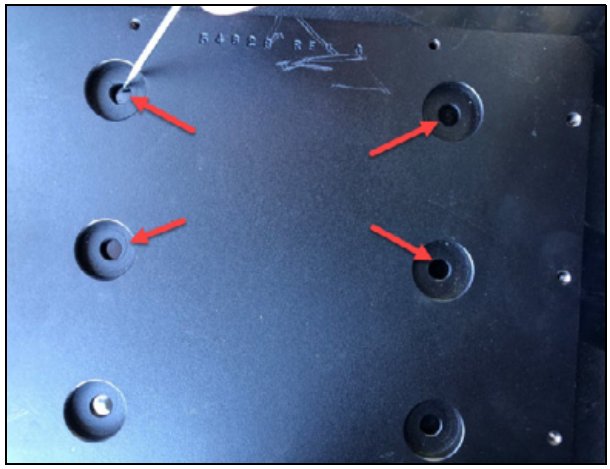
Remove the plate from the floorboard.



Step 4

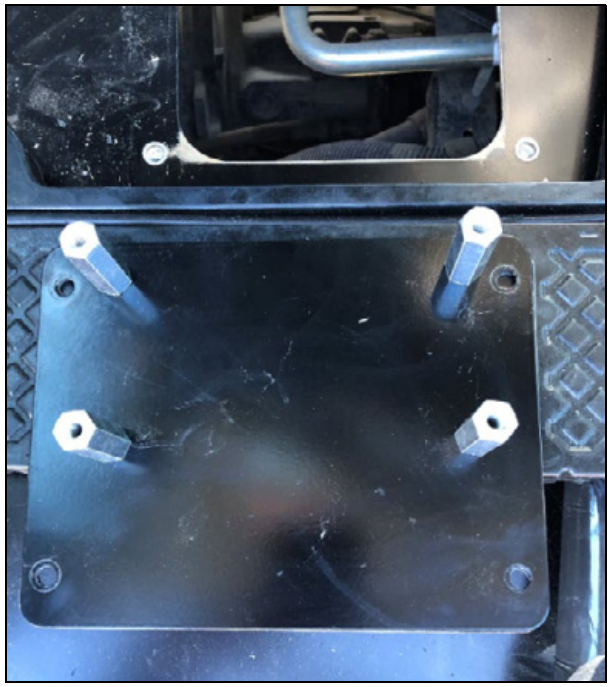
Locate the NavController III mounting plate P/N 116679 and the hardware kit P/N 54809. Align the NavController III mounting plate on the plate removed from the floorboard.

Mark and drill the four holes marked in the picture to the right.



Step 5

Using the hardware provided attach the four standoffs to the floorboard plate.



Step 6

Reattach the plate to the cab floor.

Replace the floorboard mats and then cut out the four holes to allow the standoffs to protrude through the floormats.



Step 7

Using the hardware provided, secure the NavController III mounting plate to the 4 standoffs.



Step 8

Using the hardware provided, secure the NavController III to the mounting plate.



Connecting the NavController III to the tractor CAN system

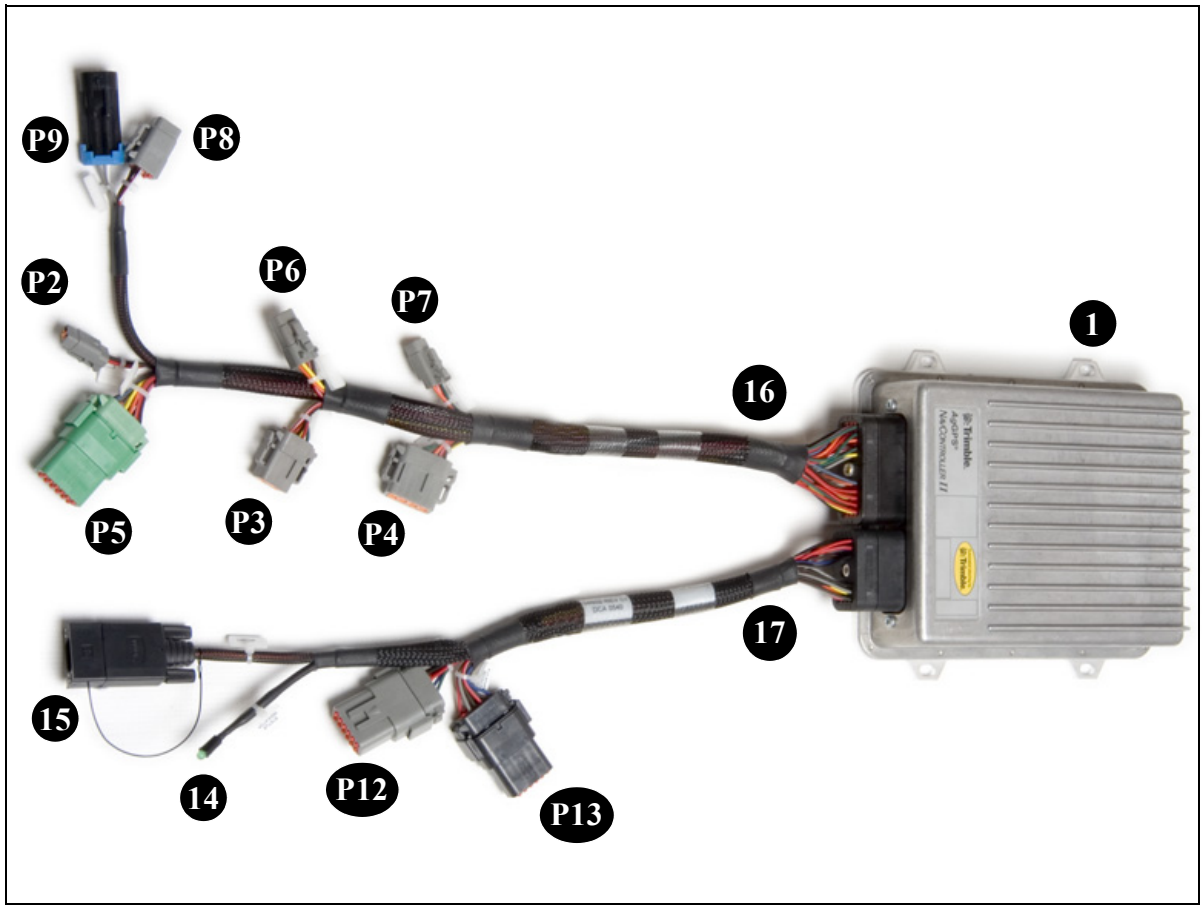
Step 1

Locate the 9-pin ISO connector below the right side of the seat.

Connect P1 of cable P/N 85037 to the 9-pin ISO connector and then route the R4 connector to the NavController III.



Controller connections



Item	Description
1	NavController II controller
P2	Power connector
P3	GPS connector
P4	Display connector
P5	Vehicle sensors connector
P6	Steering sensor connector
P7	Manual override connector
P8	Hydraulic valve connector

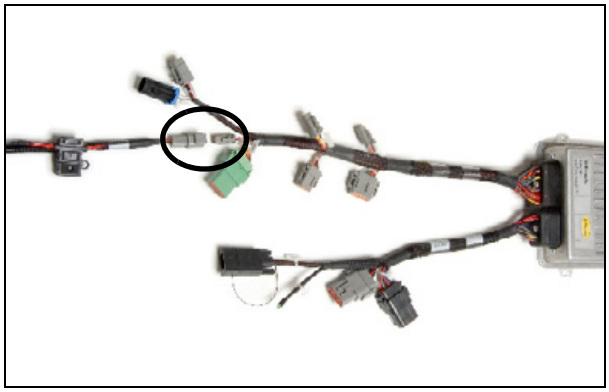
Item	Description
P9	Sonalert connector
P12	Lightbar/spare connector
P13	Spare sensors connector
14	Status indicator
15	Laptop connector
16	Main harness
17	Auxiliary harness

Connecting the cables to the controller

Step 1

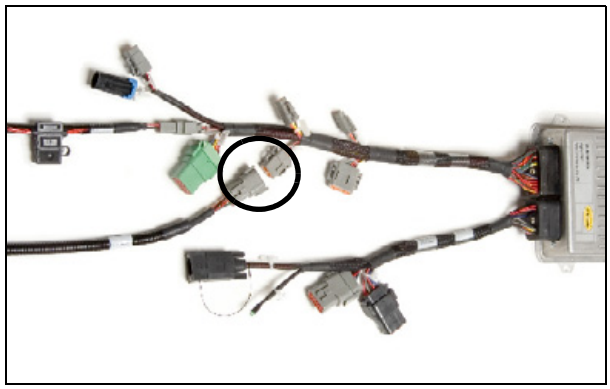
Connect the power cable connection to P2, which is labeled **Power**. P2 is located on the main wiring harness.

NOTE – The power connection supplies power through the controller to all connected devices, including GNSS and displays.



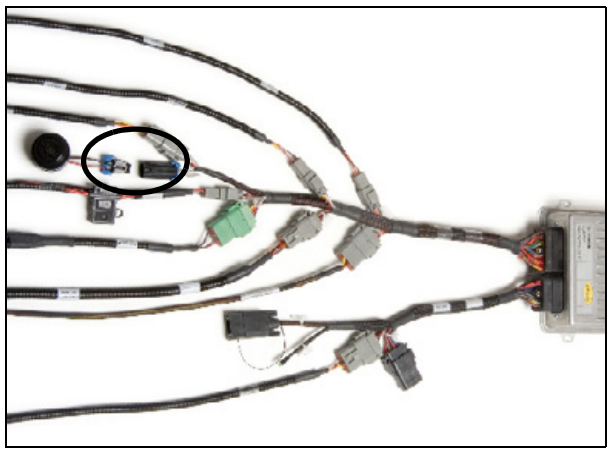
Step 2

Connect the CFX-750 display to P3, which is labeled **GPS**. P3 is located on the main wiring harness.



Step 3

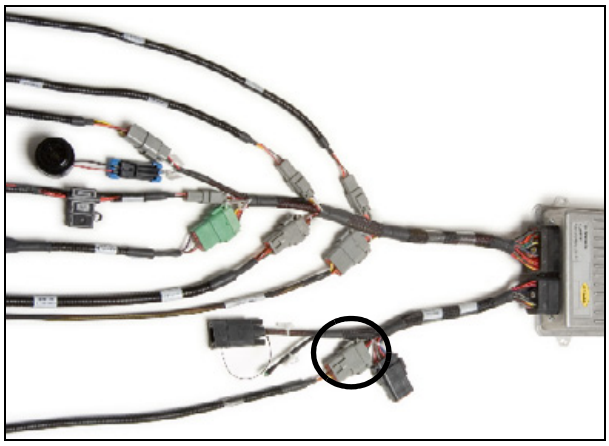
Connect the Sonalert P9 to the 2-pin Delphi connector on the main wiring harness. Route the cable so the Sonalert warning device is in a position that is audible to the operator.



Step 4

Connect the R4 connector on the CAN cable P/N 85037 to the P12 connector.

Route the LED and laptop lead, which is located on the auxiliary wiring harness, to a location that allows the operator to determine the controller status. See controller LED status for status determination. Six flashes per second indicates a correctly functioning controller.



Step 5

Use the provided sleeving to secure the harness cables with tie wraps. Cover and route the cable bundle to avoid damage to connectors and strain on wire connections.

5

Final Machine Check

- Checking the system
- Enabling the steering

> ⚠ **WARNING –** To avoid potentially serious personal injury or illness, and to prevent damage to equipment, make sure that you read and understand the Safety Information chapter.

Checking the system

Step 1

Connect the battery.

Step 2

Start the machine and check for hydraulic leaks. Correct as needed.

Step 3

Connect and run the *Ag*GPS Autopilot Toolbox II software for system setup and calibration. For more information, refer to the *AgGPS Autopilot Toolbox II Software User Guide*.

Step 4

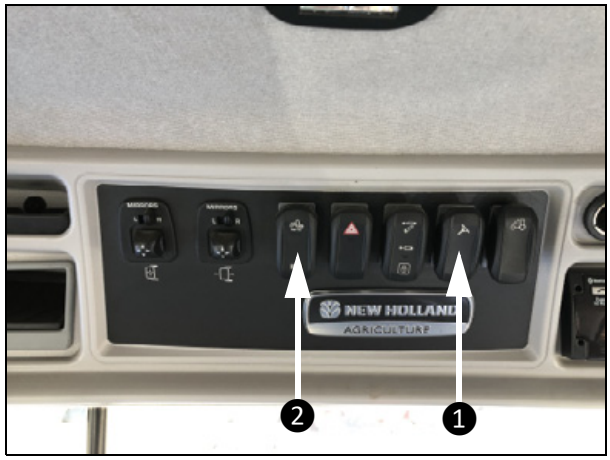
Open the **Diagnostic** page of the *Ag*GPS Autopilot Toolbox II software and ensure that all signals from the tractor CAN system are active.

Enabling the steering

Step 1

To enable steering, push the field mode switch to the up position ❶.

Then press and hold the ISO switch up for 3 seconds to enable the Class 3 ISO Guidance ❷.



Step 2

The Auto enabled indicator in the top right of the Pro 1200 display should turn 3/4 Green, indicating that the system can be engaged.

