

Instructions



WCM500

Windshield Wiper Controller Module
2020 - 2022 Ford F-53, F-59, and Econoline Stripped Chassis
Contact InterMotive for additional vehicle applications.

SPECIAL TOOL NEEDED: APTIV 12094429 terminal removal tool

Introduction

The WCM500 is a windshield wiper controller module for use with the Ford F-53, F-59, and Econoline stripped chassis. It receives the Ford OEM wiper control stalk information and functions the same as the Ford wiper controller, supporting all the intermittent and low and high speed modes with the same timing parameters as the original. It is designed for mounting inside the cab. A harness is provided which plugs into the WCM500 module and goes out through the bulkhead and connects with the OEM wiper control harness.

Due to the lack of a mating connector, the OEM wiper control harness 12 pin connector must be changed. However, the pins on the OEM connector can remain attached to the wires, and inserted into the new connector housings provided in the kit. See the section on changing the wiper controller connector.

Installation Instructions

Disconnect the vehicle battery or ensure the ignition key is off and will remain so during this installation



WARNING
Disconnect the battery to prevent setting a check engine light.

IMPORTANT – READ BEFORE INSTALLATION

It is the installer's responsibility to route and secure all wiring harnesses where they cannot be damaged by sharp objects, mechanical moving parts and high heat sources. Failure to do so could result in damage to the system or vehicle and create possible safety concerns for the operator and passengers. Avoid placing the module where it could encounter strong magnetic fields from high current cabling connected to motors, solenoids, etc. Avoid radio frequency energy from antennas or inverters next to the module. Avoid high voltage spikes in vehicle wiring by always using diode clamped relays and solenoids when installing upfitter circuits.

CAUTION

All electronic products are susceptible to damage from Electrostatic Discharge or ESD. Ground yourself before handling or working with the module and harnessing by first touching chassis ground, such as the barrel of the cigarette lighter.



WCM500 Module

Locate the module in an area away from excessive heat sources (engine, heater ducts, etc.). Ensure when routing harnesses that the tilt steering column does not contact them in the full down position. When installing the harnesses, leave several inches of take-out such that the module can be removed if necessary.

Do not mount the module until all wire harnesses are routed and secure. The last step of the installation is to mount the module.

Instructions

Changing the OEM Wiper Connector

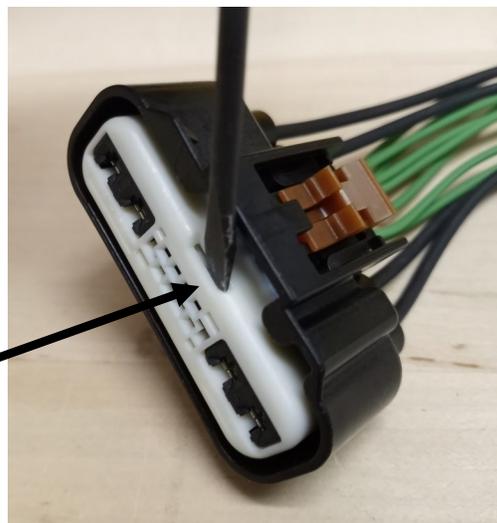
1. Locate the 12-pin OEM wiper connector.

Note that this is a hybrid connector with larger pins on the outer terminals. We need to “de-pin” this connector, preserving all the pins on the original wires. The pins will then be inserted into two different connector housings, provided in the kit.



The following photo's show how to de-pin the connector type used on these chassis. Wire colors and the number of wires in the photo's do not match the OEM harness in question.

2. Pry the White lock from the front of the connector with a small screwdriver and discard the lock.



Instructions

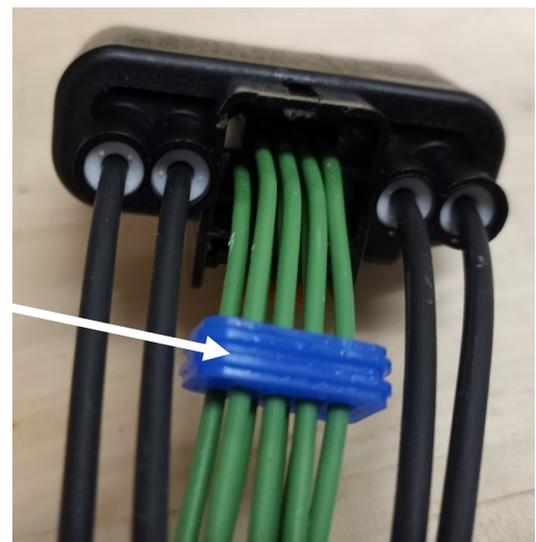
Changing the OEM Wiper Connector (Continued)

*There are two types of terminals used on the OEM 12-pin connector. The following instructions will only apply to the center 8 positions of the connector.

3. Pry the Black lock located on the back of the connector and slide it up the wires approximately 4 inches.



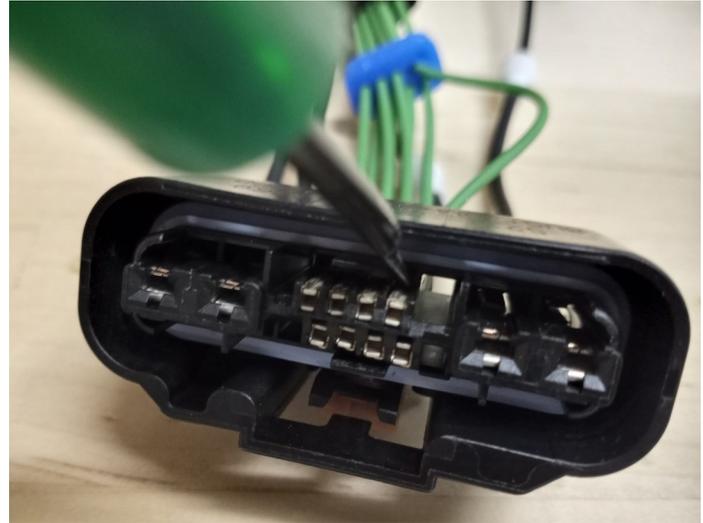
4. Pry the Blue seal from the back of the connector and slide it up the wires to the previously removed Black lock.



Instructions

Changing the OEM Wiper Connector (Continued)

- Using the APTIV 12094429 terminal removal tool, gently pry up on the small plastic locking tab and pull the wire from behind to remove the terminal and wire. Repeat this for all of the remaining center wires.



*There are two types of terminals used on the OEM 12-pin connector. The following instructions will only apply to the outer 4 positions of the connector.

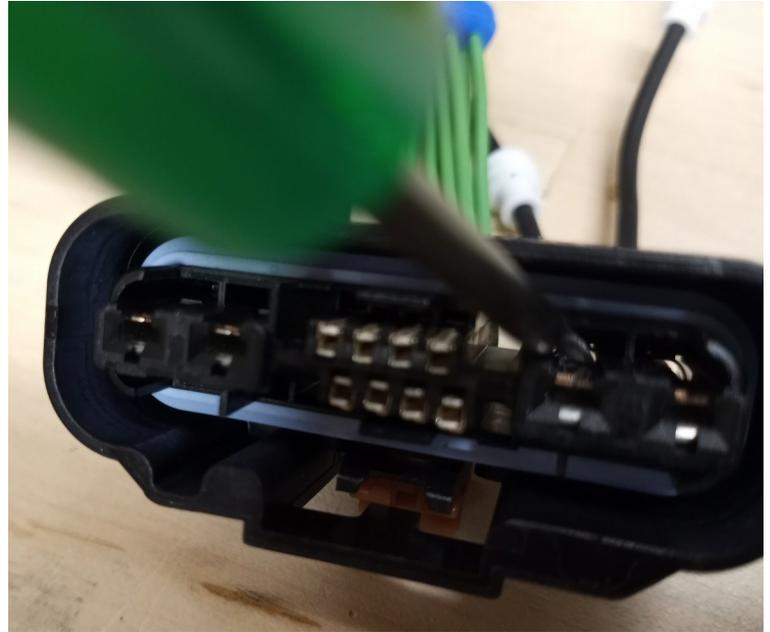
- Pry the White seals from the outer wires on the OEM connector and slide them approximately 4 inches up the wires.



Instructions

Changing the OEM Wiper Connector (Continued)

7. Using the APTIV 12094429 terminal removal tool, gently pry up on the small plastic locking tab and pull the wire from behind to remove the terminal and wire. Repeat this for the remaining outer wires.



8. Once all of the wires have been removed from the OEM connector, the connector can be discarded.

Instructions

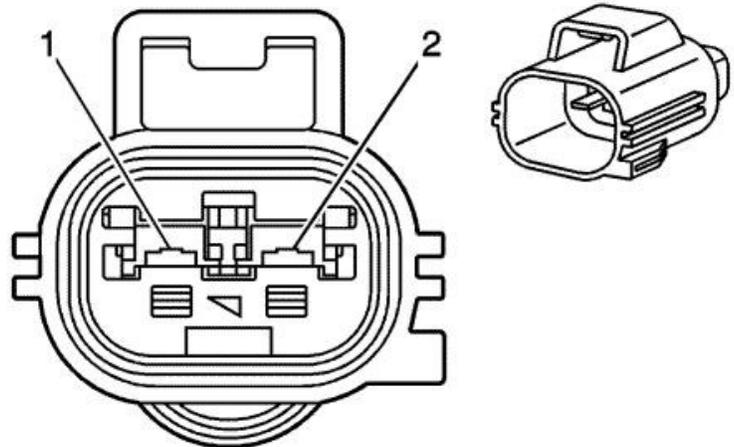
2020 - 2022 Ford F-53 and F-59 Installing the new 2-Pin Connector

* The 2 terminals that were previously removed from the outer portion of the OEM connector will need to be installed in the provided 2-pin connector following the instructions below.



1. Locate the **Green/Orange** wire and insert it into **pin #1** of the provided 2-pin connector.

2. Locate the **Black** wire and insert it into **pin #2** of the provided 2-pin connector.

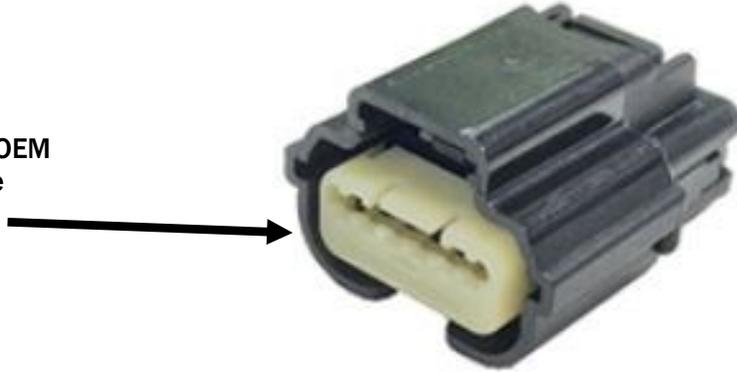


Front of Connector

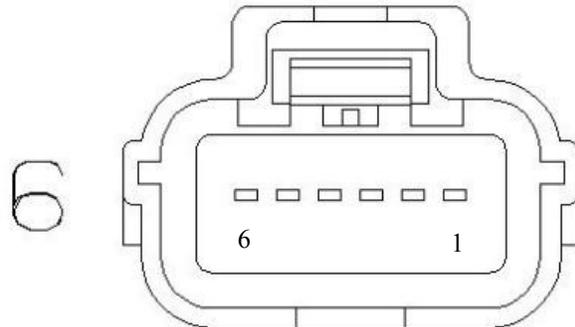
Instructions

2020 - 2022 Ford F-53 and F-59 Installing the new 6-Pin Connector

* The 6 terminals that were previously removed from the center portion of the OEM connector will need to be installed in the provided 6-pin connector following the instructions below.



1. Locate the **Brown/White** wire and insert it into **pin #1** of the provided 6-pin connector.
2. Locate the **Yellow/Grey** wire and insert it into **pin #2** of the provided 6-pin connector.
3. Locate the **Grey** wire and insert it into **pin #3** of the provided 6-pin connector.
4. Locate the **Blue/Grey** wire and insert it into **pin #4** of the provided 6-pin connector.
5. Locate the **Green/Violet** wire and insert it into **pin #5** of the provided 6-pin connector.
6. Locate the **Green/Blue** wire and insert it into **pin #6** of the provided 6-pin connector.



Front of Connector

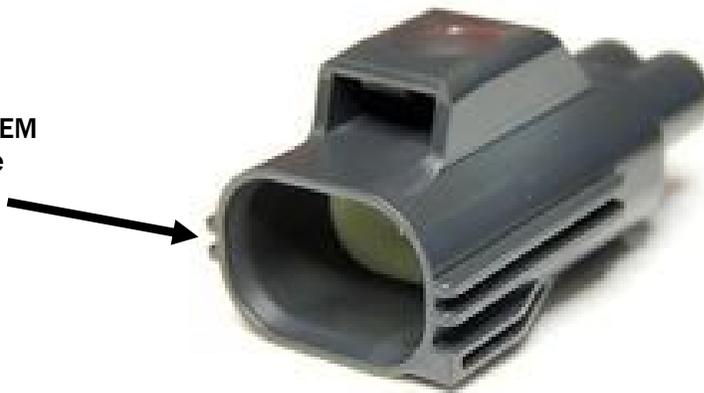
- 6- Green/Blue
- 5- Green/Violet
- 4- Blue/Grey
- 3- Grey
- 2- Yellow/Grey
- 1- Brown/White

Instructions

2020 - 2022 Econoline Stripped Chassis

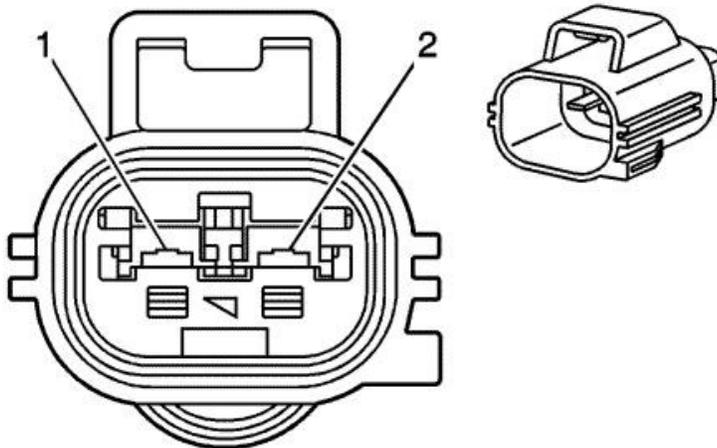
Installing the new 2-Pin Connector

* The 2 terminals that were previously removed from the outer portion of the OEM connector will need to be installed in the provided 2-pin connector following the instructions below.



1. Locate the **White** wire and insert it into **pin #1** of the provided 2-pin connector.

2. Locate the **Black** wire and insert it into **pin #2** of the provided 2-pin connector.

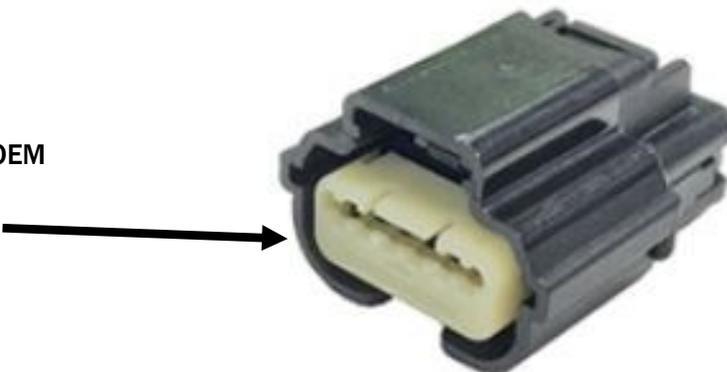


Front of Connector

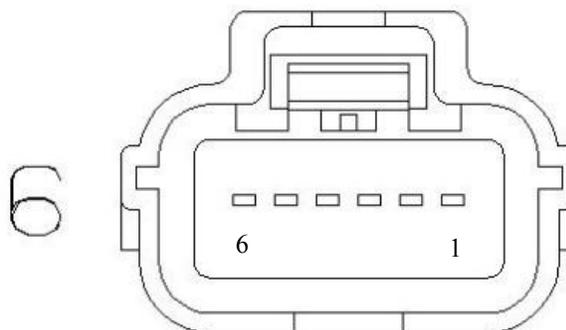
Instructions

2020 - 2022 Econoline Stripped Chassis Installing the new 6-Pin Connector

* The 6 terminals that were previously removed from the center portion of the OEM connector will need to be installed in the provided 6-pin connector following the instructions below.



1. Locate the **Brown/White** wire and insert it into **pin #1** of the provided 6-pin connector.
2. Locate the **Yellow/Grey** wire and insert it into **pin #2** of the provided 6-pin connector.
3. Locate the **Grey** wire and insert it into **pin #3** of the provided 6-pin connector.
4. Locate the **Blue/Grey** wire and insert it into **pin #4** of the provided 6-pin connector.
5. Locate the **Green/White** wire and insert it into **pin #5** of the provided 6-pin connector.
6. Locate the **Green/Blue** wire and insert it into **pin #6** of the provided 6-pin connector.



Front of Connector

- 6- Green/Blue
- 5- Green/White
- 4- Blue/Grey
- 3- Grey
- 2- Yellow/Grey
- 1- Brown/White

Instructions

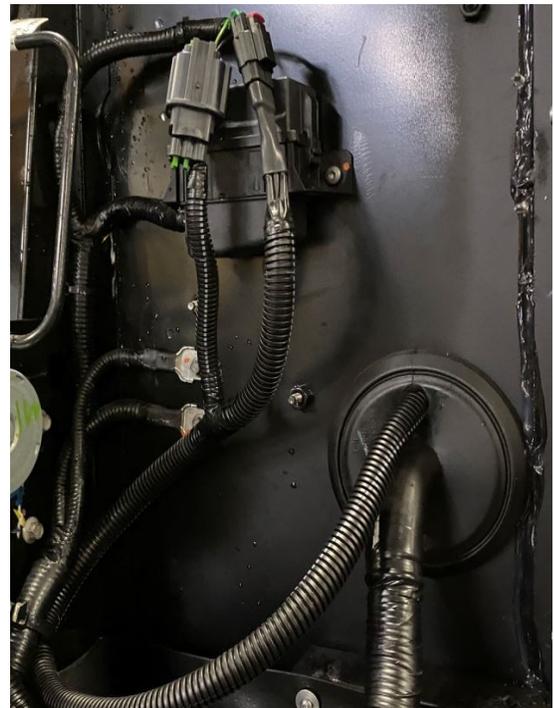
Harness Installation

1. Plug the 6-pin and 2-pin connectors into the mating connectors on Intermotive 840-22046 harness.



Connectors shown in picture may not exactly match those used in production.

2. Route the harness through the rubber passthrough boot in the bulkhead and secure the harness with zip ties.



3. Plug the 3 connectors into the mating headers on the WCM500 module and mount the module following the instructions on page 1.



Instructions

Post Installation Check Out

1. With battery connected and key in Run, push and hold the washer button on the end of the wiper control stalk for a few seconds. The washer pump should run, squirting liquid on the windshield. The wiper motor should also run after a short delay, moving the wipers throughout their arc of travel.

a. Does liquid squirt? If no, things to check:

- Is windshield washer liquid present in reservoir?
- Can you hear the pump run when you hold down the button?
- With a Voltmeter, probe WCM500 output pin 5, J3, Grey wire. It should be at 0V when the washer button is held down. This signal activates the coil on a relay on the chassis which drives the washer pump. See Ford's documentation
- Does the WCM500 have power and ground? Power is on pin 1, J1, Green/Orange wire. Ground is on pin 3, J1, Black wire. Should be powered with Key in Run.

2. Turn on wipers through the intermittent settings. Slowest setting is over 20 seconds between wipes.

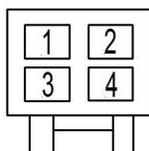
a. Do wipers activate? If no, things to check:

- WCM500 output pin 7, J3, Green wire should pulse to ground for about one second every time the wipers activate/move. This drives the ground side of a relay coil in the OEM Auxiliary Relay Box.
- Ensure the Yellow wire in the small 4 pin connector J4 is plugged in. This is the 0-12V serial communication line from the vehicle's wiper stalk module.

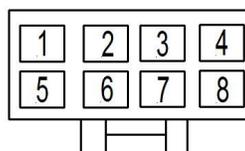
3. Turn the wipers on Low, and then High

a. Do the wipers operate at the two different continuous speeds? If no, check the following:

- With a voltmeter, probe pin 3, J3, Green/Blue wire. It should go low in the high speed setting, and be around 12V in the low speed setting



J1 connector

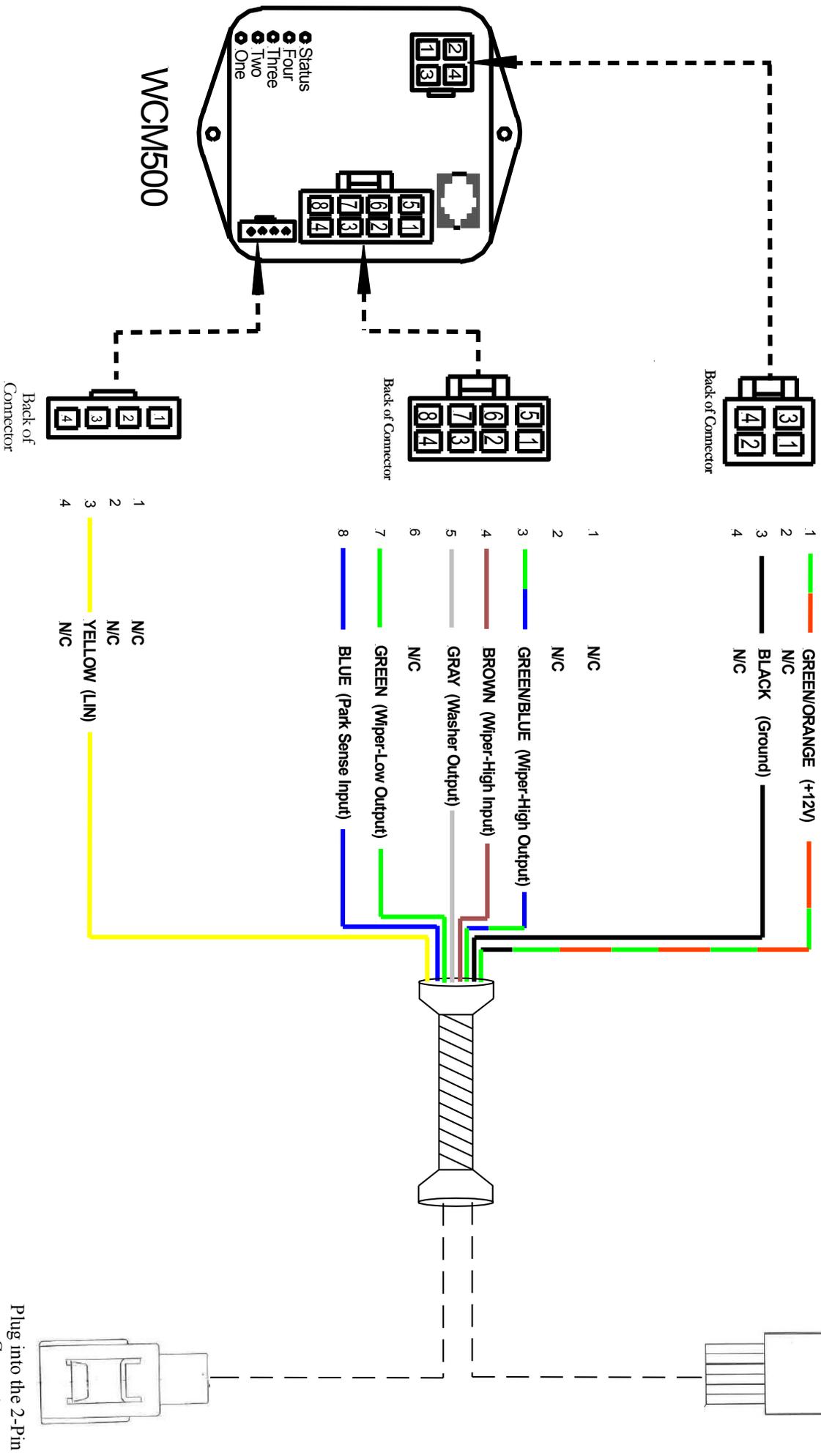


J3 connector

WCM500 connector pin designations, looking down on the backside of the connectors where the wires exit the housings

The most common issue is improper repinning the connector wires in the correct cavities when swapping the OEM connector. Recheck the wires for proper insertion in the 6 and 2 pin connectors.

If necessary, call InterMotive Technical Support at (530) 823-1048.



Plug into the 6-Pin Connector

Plug into the 2-Pin Connector

Submit product registration at www.intermotive.net

If the WCM500 fails any step in the Post Installation Check List, review the installation instructions and check all connections.
If necessary, call InterMotive Technical Support at (530) 823-1048.