Packing list - Speed Limiter kit for:
Polaris Ranger XP 1000 from 2018

QUANTITY: _____

EARLY INJECTOR: □
LATE INJECTOR: □

SPEED LIMIT: _____

STANDARD: □
TAMPER RES: □

SETUP SWITCH: ____

TERMINAL TOOLS: □

SL 2800 FIC P24 kit – Early injector connector – Molex MX150
or
SL 2800a FIC P24 kit – Late injector connector – Bosch Trapez

Pack in small kit carton (MCS 002XS)

Qty	Part Number	Description

NOTE: - Make sure appropriate program is loaded to suit (tick one):

Standard (900)
Tamper Resistant (901)

1	SL 2800C P24	Computer
2		Velcro mounting tape 7cm long (computer mounting)
		Turn ON speed limiter and set to 24 kph (15mph) OR speed selected by customer (place in medium bag)
1	MCS820-160CM	MCS Control Switch for Speed Limiter – OPTIONAL

NOTE: - Make sure appropriate wiring to speed limiter relay to suit program (tick one):

Standard (900)
OR **Tamper Resistant (901)**

1	SL 2801 FIC P24	Ranger XP 1000 speed limiter harness – Early injector □
OR	SL 2802 FIC P24	Ranger XP 1000 speed limiter harness – Late Bosch injector □

fitted with:

2	MCS 091	27 ohm 10 watt power resistor (Injector load resistors)

1	Set up Manual	
1	Installation Manual for Polaris Ranger XP 1000	

Parts bag contents (medium size bag, 150mm x 255mm)

OPTIONAL Terminal extractor tool set Supply tools □

1	15336024	GT150 2-way receptacle housing
2		2 way retainer for above connector (yellow)
2		8g x 3/8” self-tap screws (relay mounting)
1		Dress makers pin (terminal extractor tool)
10		150mm cable ties
10		200mm cable ties
3	X S30L	Tamper Evident Seal

Fuel Injector Cut Speed limiter for Polaris Ranger XP 1000 ©



“SpeedSafe”
ATV Electronic Speed Limiter
Installation Manual ©

POLARIS RANGER XP 1000

Part Number SL 2800 FIC

16 August 2024

MOTORCYCLE CRUISE CONTROLS

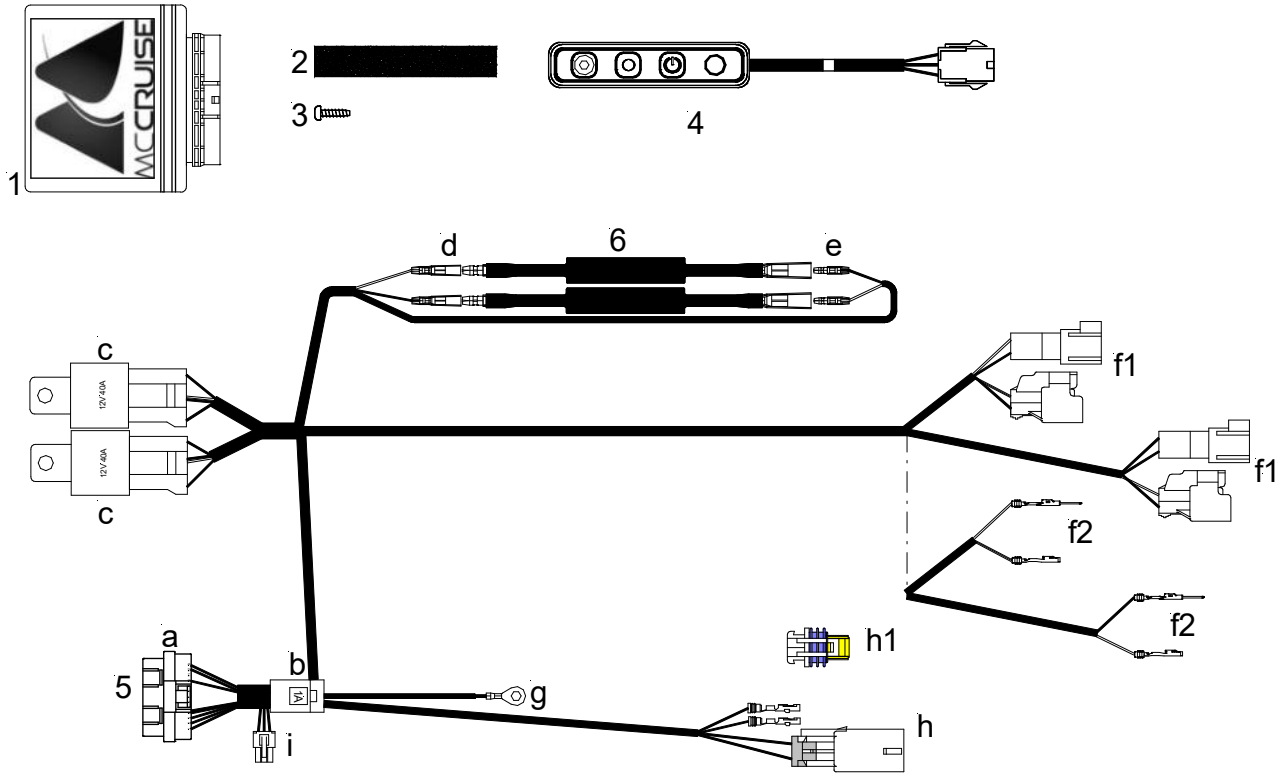
MotorCycle Setup Pty. Ltd.
A.B.N. 94 798 167 654
AUSTRALIA

Fuel Injector Cut Speed limiter kit for:
Polaris Ranger XP 1000

Parts list for **Kit SL 2800 FIC P24.**

Item	Qty	Part Number	Description
1	1	SL 2800C P24	Computer
2	2		Velcro mounting tape 7cm long (computer mounting)
3	2		8g x 3/8” self-tap screw (relay mounting)
Item 4 is optional if more than one vehicle is fitted with the speed limiter			
4	1	MCS 160 - MFJ	Switch assembly for setting up speed limiter
5		SL 2801 FIC	Wiring harness – Early MX150 injector connectors
OR		SL 2802 FIC	Wiring harness – Late Trapez SL injector connectors
a			Computer plug (26 way)
b			Power fuse (1 amp)
c			Speed limiter control relays
d			Relay load resistor connectors
e			Relay load resistor connectors
f1			Injector connectors – MX150
f2			Injector connectors – Trapez SL
g			Ground connector (black wire)
h			Power & Speed Sensor connectors
h1			Receptacle housing + retainer, 2 way
i			Setup switch connector
6	2	MCS 091	Relay load resistor (27 ohm 10 watt)
	1		Dress Makers Pin (terminal extractor tool)
	10		150mm cable ties
	10		200mm cable ties
			Installation Manual for Ranger XP1000
			Setup Manual

Parts list drawing



CAUTION

Your new "Speed Safe" speed limiter has been designed to provide a speed related engine cut out for your ATV.

This is achieved by momentarily cutting the fuel injector and then turning it back on again. The speed limiter function is achieved by doing this rapidly so the engine appears to be misfiring. The duration and frequency of the 'misfire' can be tailored to suit your needs. It can be a 'fixed' cut when the limiting speed is reached or a variable cut that increases the severity of the misfire with increased speed to achieve a 'soft' speed limiter.

While this function has been tested on the ATV listed, we cannot guarantee that long term operation with the speed limiter operating (continuous running with the speed limiter limiting the vehicle speed) will not result in damage to the vehicle fuel injection system, ignition system, engine, transmission or exhaust system.

To discourage this behaviour from the operator, there is also a 'penalty mode' that may be enabled that causes the vehicle to be slowed if the operator runs at a speed that has the speed limiter operating continuously for more than 5 seconds. The amount that the vehicle is slowed and the period of time it is slowed is selectable.

MotorCycle Setup P/L offers NO warranty for damage to the vehicle caused by use of the speed limiter. Fitment and use of the speed limiter is at the vehicle owner's risk.

MotorCycle Setup Pty. Ltd.
Speed Limiter Kit Installation Manual ©

To suit Polaris Ranger XP1000 – 2018 on

WARNING: - This speed limiter will function properly only if your vehicle has resistor type (radio suppression) ignition wires (spark plug leads). The speed limiter may not function properly if aftermarket SOLID CORE spark plug wires are installed.

If, after reading these instructions, you feel you are not competent to install this kit, we strongly urge you to seek the assistance of one of our authorised dealers and installers. Please phone or e-mail us to obtain the name of your nearest outlet.

CONTENTS

Chapters 1 to 5 and 8 to 11 are contained in the separate Information, Set up and Operation manual.

6. PREPARING THE VEHICLE FOR SPEED LIMITER INSTALLATION
7. INSTALLATION

This manual contains several **cautions**, **warnings** and **notes,** which are prominently displayed. The convention used is:

A **warning** applies whenever injury could result from ignoring the warning;
A **caution** applies whenever damage to the vehicle or speed limiter could result from ignoring the caution; and
A **note** applies where other aspects should be considered before any action to do with installation is undertaken.

EXAMPLES:

WARNING: - Always ensure the vehicle is properly supported on stands and cannot accidentally fall off.

CAUTION: - Before drilling any holes, make sure there are no components that may be damaged on the other side of the surface being drilled. Double check for any wiring harness that might be easily damaged by a drill bit.

NOTE: - Lay the wiring harness in place and connect the components before cable tying the harness in place.

PARTS LIST

Check that all components depicted in the parts list are included in the speed limiter kit. Please phone (03) 9808 2804 within Australia, international (61 3) 9808 2804 or e-mail sales@mccruise.com for advice, if any parts are missing;

6. PREPARING THE VEHICLE FOR SPEED LIMITER INSTALLATION

Special Tools required for this installation: - You will need a set of jeweller's screwdrivers to release electrical terminals from their housings.

The following disassembly operations must be performed to prepare the vehicle for cruise installation:

- Disconnect the negative terminal from the battery;
- Raise the rear cargo tray.

The following instructions are included to perform these operations.

Disconnect the negative terminal of the battery.

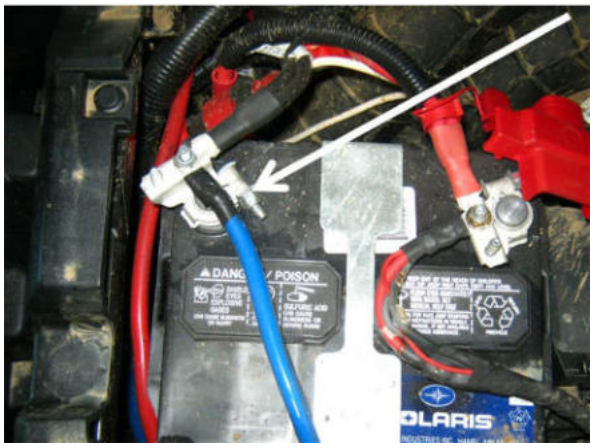
Lift the seat base (squab) on the passenger's seat.



Lift out the battery cover panel.

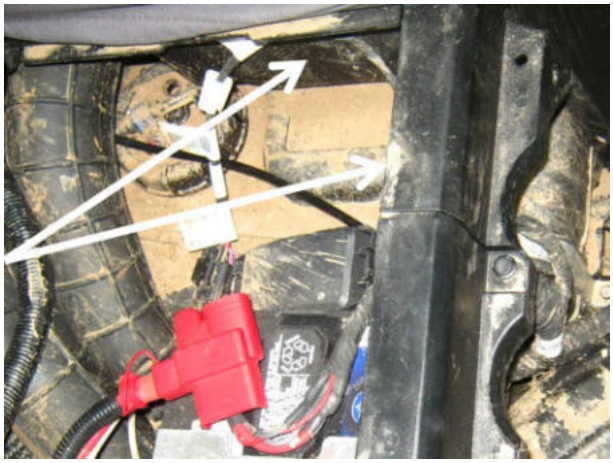


Loosen the battery clamp bolt on the negative terminal of the battery, and disconnect the cable/s from the battery.



7. INSTALLATION

Mounting the Speed Limiter relays.



The speed limiter relays should be mounted under the passenger seat of the vehicle, near the battery.

They should be mounted as high as possible to prevent flooding during water crossings.

We suggest mounting either on the plastic panel or the vehicle's frame (lower arrow) or on the side of the compartment under the driver's seat (upper arrow).

NOTE: - Remove the driver's seat first to ensure that there are no components in the compartment that will be damaged by the mounting screws.



In this case, the relays are mounted on the back of the panel below the seat (lower arrow in the previous photo).

Use the supplied self-tapping screws and/or cable ties to mount the relays.

Make sure they are mounted with the mounting tabs uppermost and the connectors pointing down.

Routing the wiring harness.



Identify the injector connectors. This branch has four 2-way connectors. One pair of connecters has red, black & black/white wires. The other pair has red, white & white/black wires.

Identify the power/speed sensor branch. This branch has a two way plug and two bare terminals with orange and green/red wires.

Route these branches into the engine compartment at the rear of the vehicle to the left side of the engine.

Route these branches with the vehicle's harness to the left side of the engine and around the air duct.



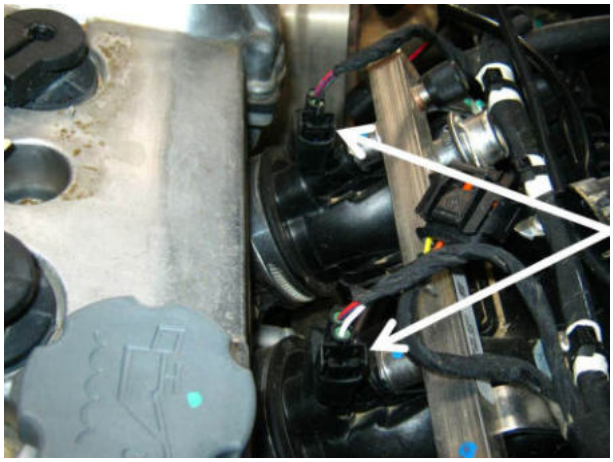
Route these branches with the vehicle's harness to the left side of the engine and around the air duct, then across the top of the throttle bodies with the vehicle's harness to the fuel injectors.



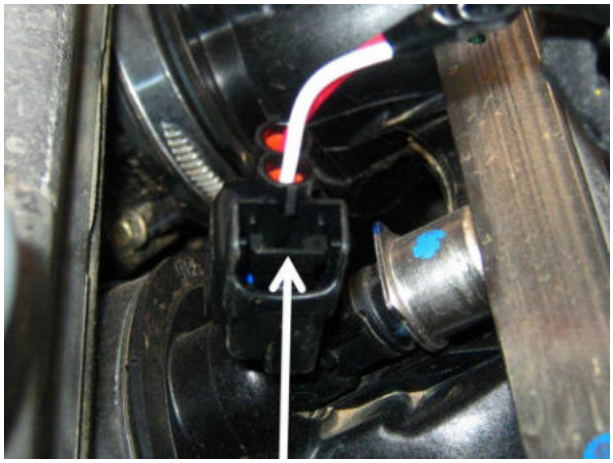
<u>Injector connection – old injector plug type up to 2025?</u>

Disconnect the two electrical connectors on the fuel injectors.

One injector connector has red and white wires, the other red and black.



Depress the release tab on the connector with the red and white wires and pull it up away from the injector

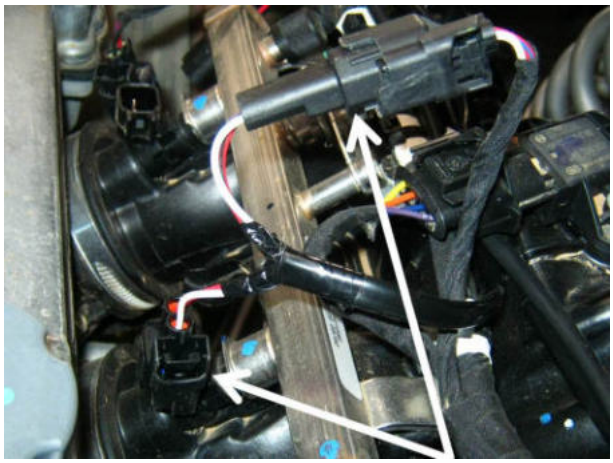


The connector disconnected from the injector.



Connect the speed limiter harness injector plug to the injector (lower arrow).

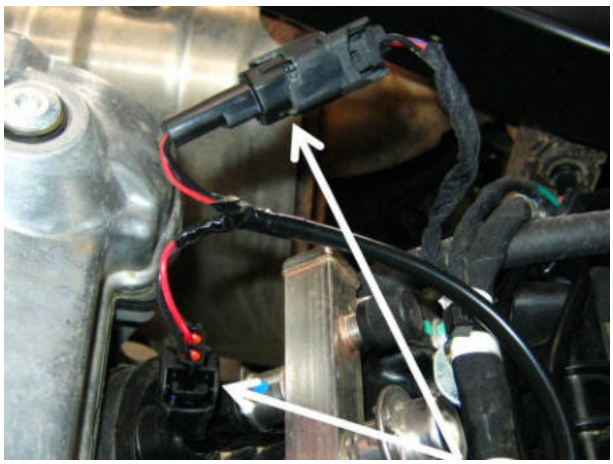
Connect the vehicles injector plug to the matching connector on the speed limiter harness (upper arrow).



Repeat this process on the second injector with the red and black wires.

Connect the speed limiter harness injector plug to the injector (lower arrow).

Connect the vehicles injector plug to the matching connector on the speed limiter harness (upper arrow).

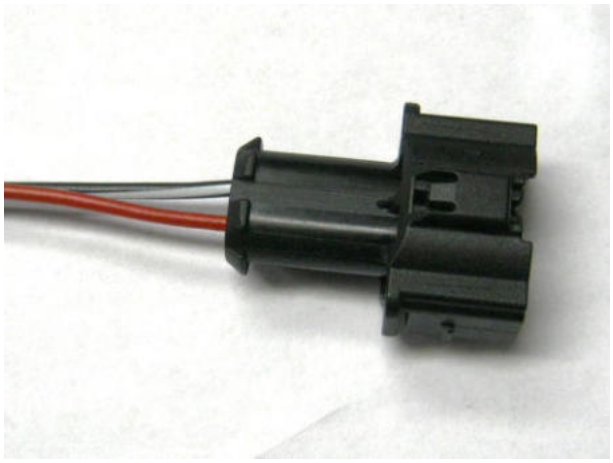


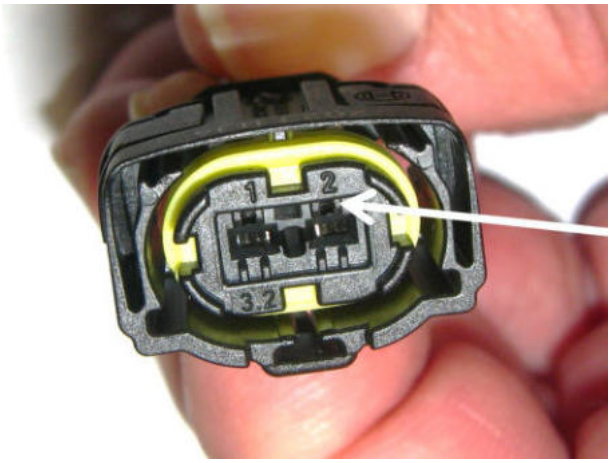
<u>Injector connection – new injector plug type from 2025?</u>

This photo shows the later Bosch injector plug.

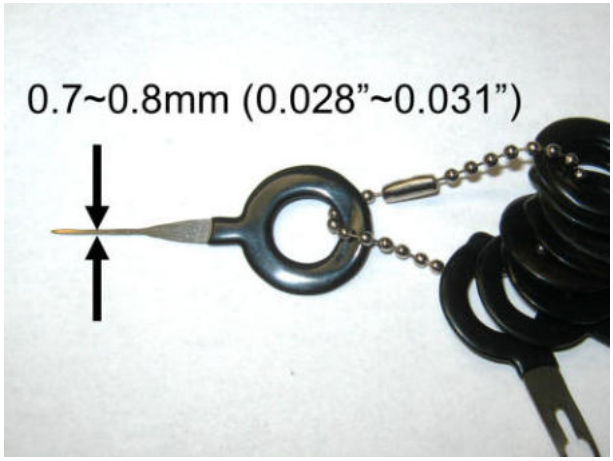
Disconnect the two electrical connectors on the fuel injectors. Squeeze the sides of the plug to release it.

One injector connector has red and white wires, the other red and black.





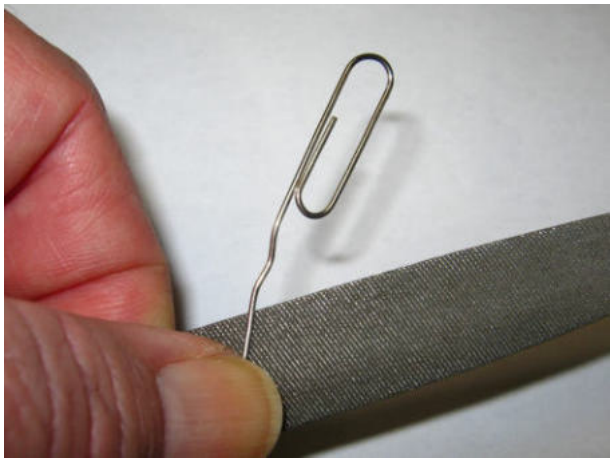
The plug has two small holes above the terminal holes to insert a terminal extractor tool to release the terminal lock.



Use the smallest tool in the terminal extractor kit we supply, if the speed limiter was purchased with these tools.

Ideal width is 0.7mm wide (0.028”) wide to 0.8mm wide (0.031”).

The tool should be 0.5 to 0.7mm thick (the material thickness the tool is made of).



A standard paper clip will also work, we suggest use a fine flat file to file a small flat area on 4 sides to reduce the thickness to 0.8mm or a bit less. Only a small amount of material needs to be removed. If you don’t file the flats on all 4 sides it can take some force to push it into the hole, which may damage the plug housing or the terminal.

Do NOT use a tool bigger than 0.8mm wide.



While inserting the tool, push the wire INTO the connector to ensure the terminal lock is not under load.

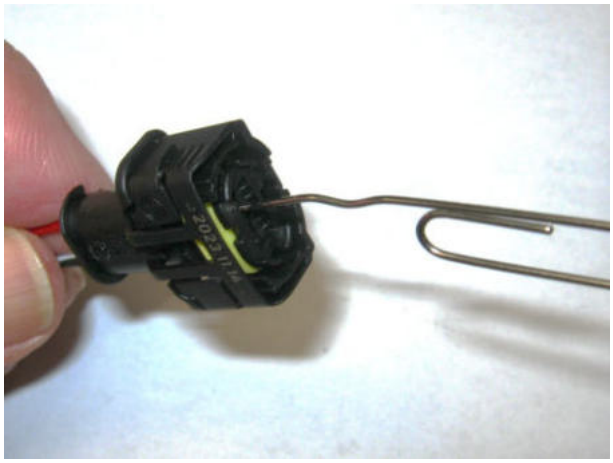
Insert the tool into the hole that has the WHITE or BLACK wire, not the red wire.

Insert the tool in the orientation shown in the photo.

<u>While inserting the tool, push the wire INTO the connector to ensure the terminal lock is not under load.</u>

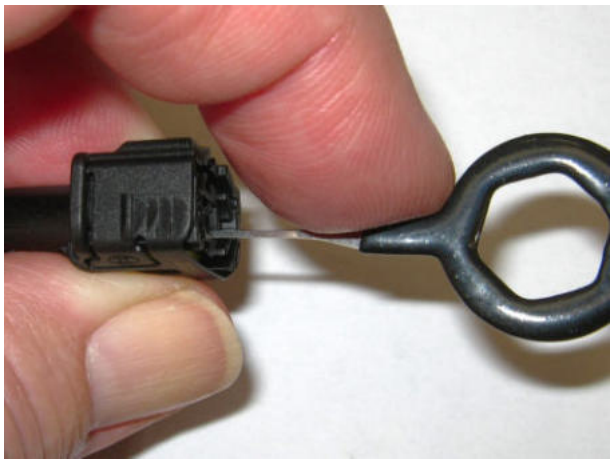
Insert the tool into the hole that has the WHITE or BLACK wire, not the red wire.

The paper clip inserted into the release hole.

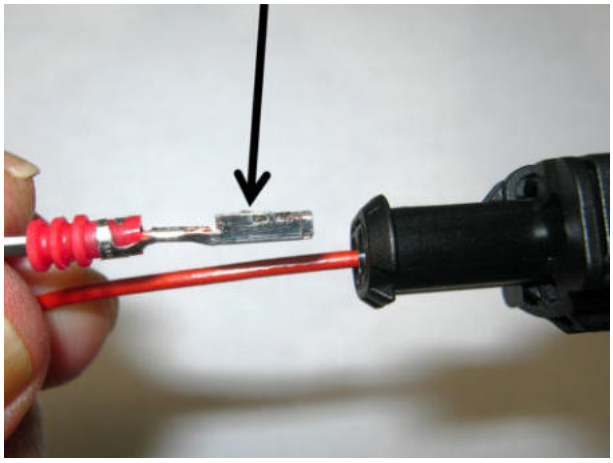


Pull gently on the wire to see if the terminal is released.

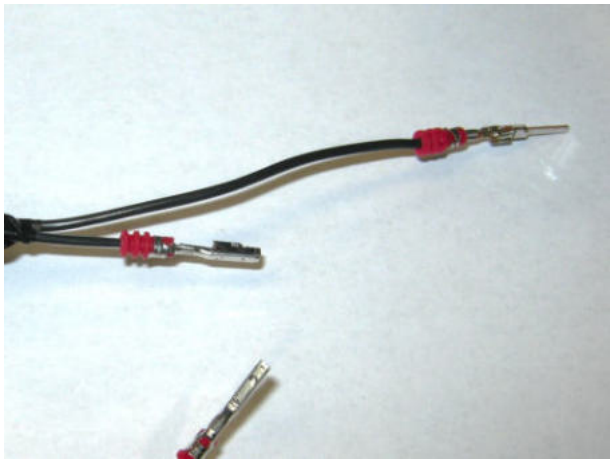
If it is NOT released, push the wire back in, then push gently on the tool, away from the terminal as shown, this will help to push the end of the tool into the latch on the terminal and release the terminal.



Pull the wire and terminal out of the connector, there will be some drag from the wire seal. Note the orientation of the terminal, the small latch is on the same side as the hole for the extractor tool.

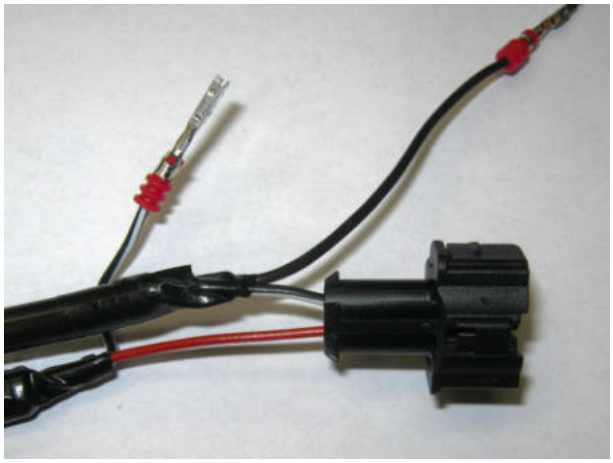


Route the speed limiter wires to the injector plug.

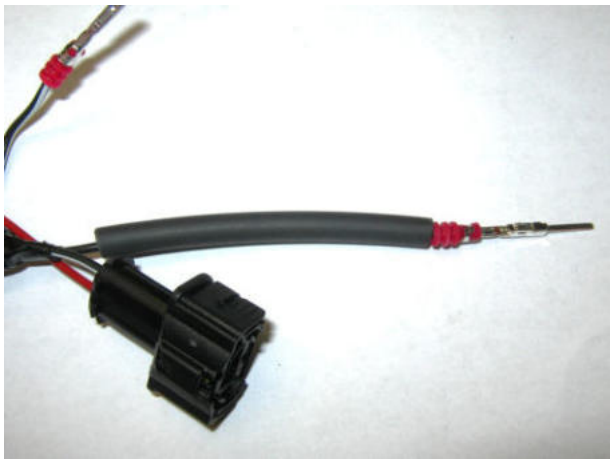


Insert the receptacle terminal on the speed limiter wires into the empty hole in the injector plug.

Make sure it ‘clicks’ into the plug and is locked in.

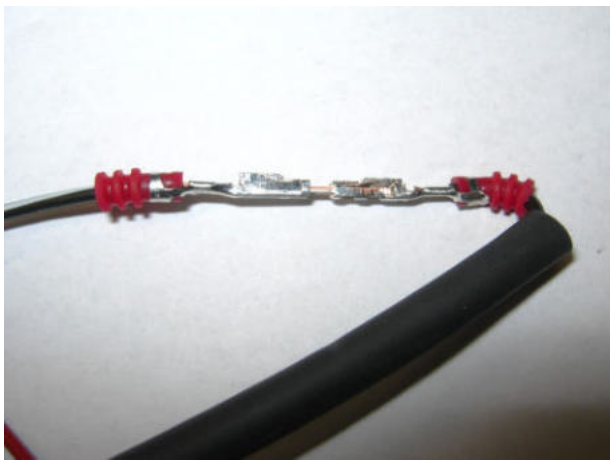


Cut a length of the supplied heat shrink tube over the tab terminal and wire on the speed limiter wire.



Connect the tab terminal on the speed limiter wire to the receptacle terminal on the vehicle’s injector wire.

Make sure they are fully connected.



Slide the heat shrink tube over the terminals.

Make sure they are fully connected.



Use a suitable heat source such as a hot air electrical paint stripping gun to shrink the tube over the terminals.



Reconnect the plug to the injectgor, position the heat shrink covered terminals beside the injector plug and fit a cable tie to hold them in place. Do NOT pull the cable tie very tight, to prevent damage to the terminals.

Repeat on the process on the other injector.



Power and Speed sensor connection.

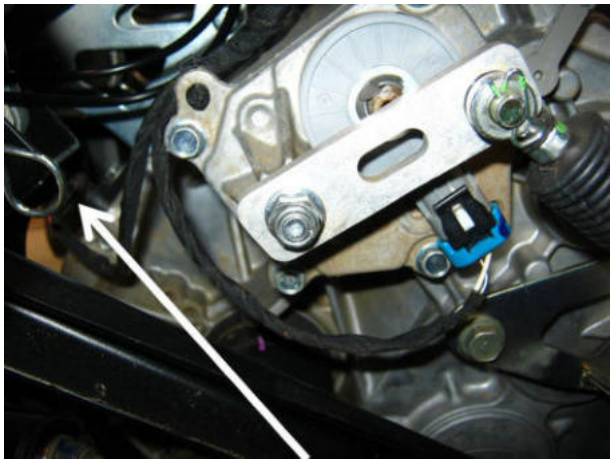
Route remaining branch across to the right side of the vehicle above the injectors and inlet manifold, then down on the right side to the gear position sensor on the right side of the transmission.

Route the wires with the vehicle's harness.



The speedometer sender (left arrow) and gear position sensor (right arrow) plugs on the right side of the transmission.

Route the wires to the speed sender plug (left arrow) with the vehicle's harness.

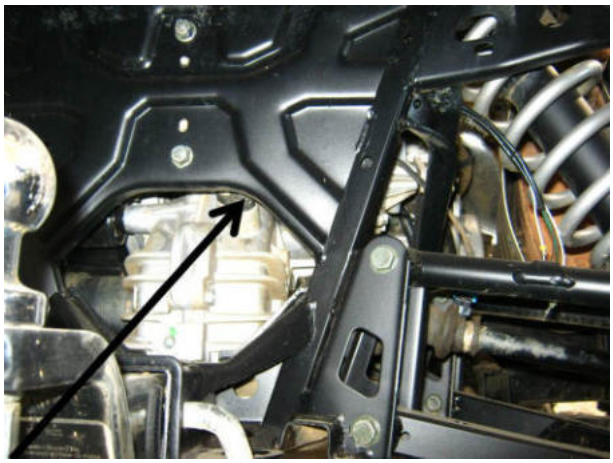


The speedometer sender is at the rear of the transmission, on the right side.



The sender and plug is just visible from the rear of the vehicle.

Disconnect the plug from the sender.

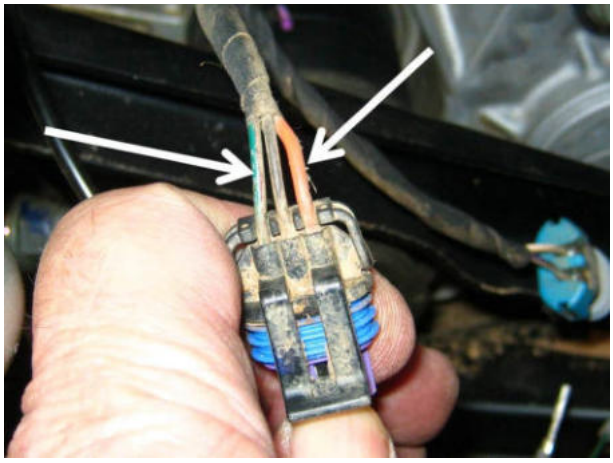


Draw the plug out in front of the spring/shock unit, near the gear position sensor.

The green/red wire is the speed signal wire.

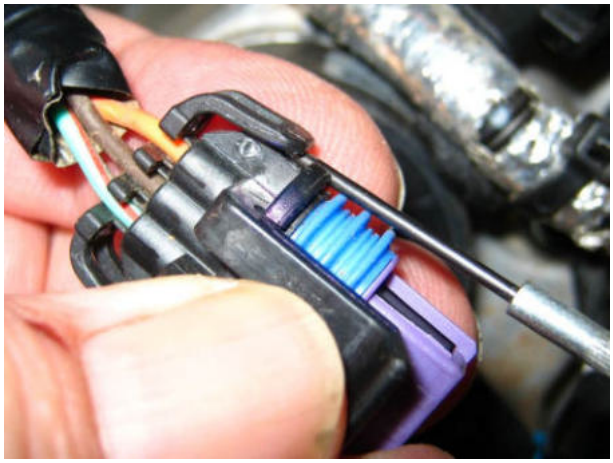
The orange wire is the power to the speedo sender.

These two wires and terminals must be backed out of the plug.

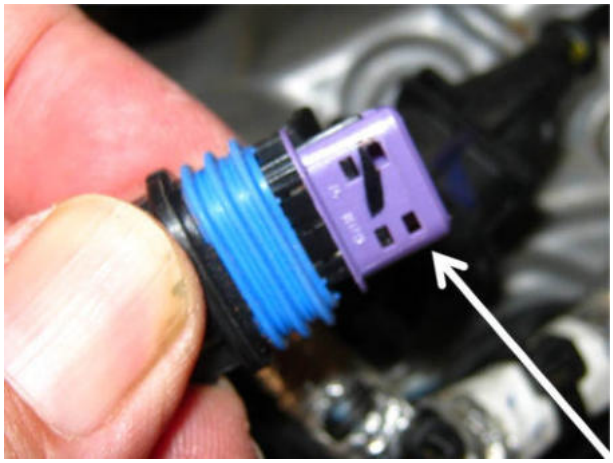


Note: - These photos are from another vehicle, but the process is identical.

Use a small screw driver to gently lever the terminal retainer off the plug.

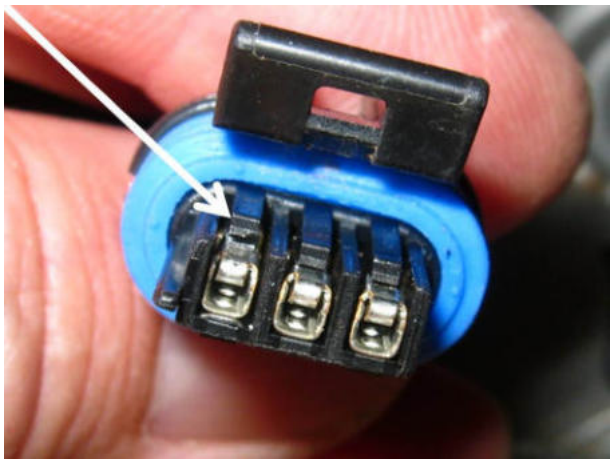


Pull the purple cover off the terminal end of the plug.

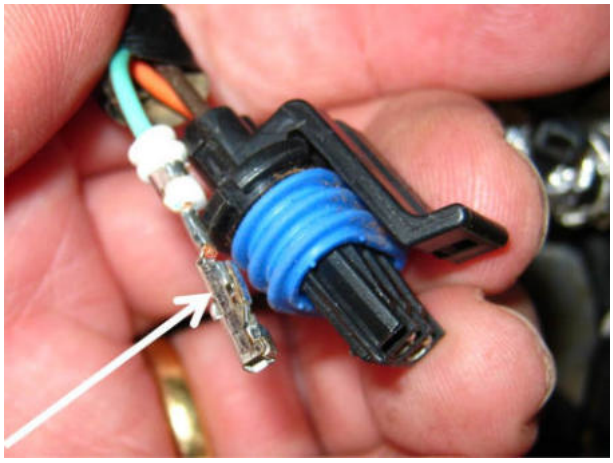


Lift the latch above the terminal (arrowed) on the light green/red wire, and gently pull on the wire and terminal to remove it from the plug.

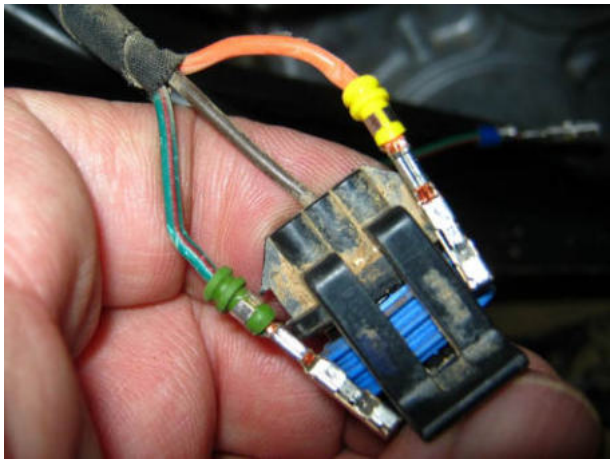
Use a small jeweller's screwdriver or the pin supplied in the kit to lift the latch.



The terminal on the light green/red wire out of the plug.

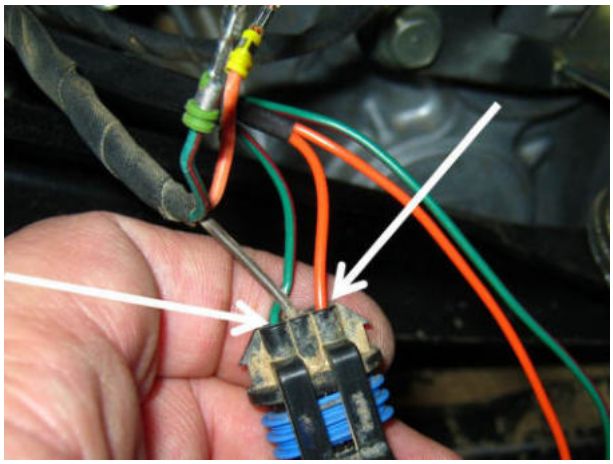


Repeat the operation to the back out the orange wire and terminal.



Route the speed limiter wires to the plug.

Take care with the routing, as the wires have to follow the vehicle's wires to the speedometer sender unit.

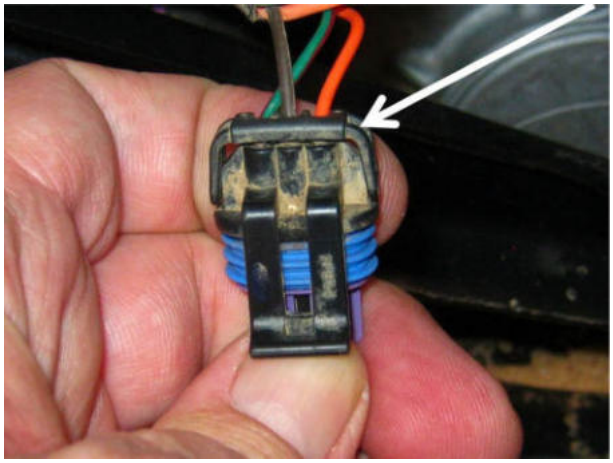


Insert the receptacle terminal on the speed limiter's green/red wire into the empty hole in the plug where the green/red wire came from (left arrow).

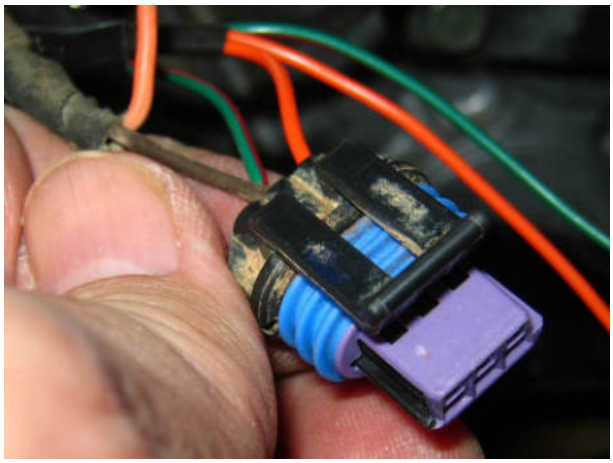
Make sure it 'clicks' into the plug.

Insert the receptacle terminal on the speed limiter's orange wire into the empty hole in the plug where the orange wire came from (right arrow).

Make sure it 'clicks' into the plug.



Replace the terminal retainer on the plug.

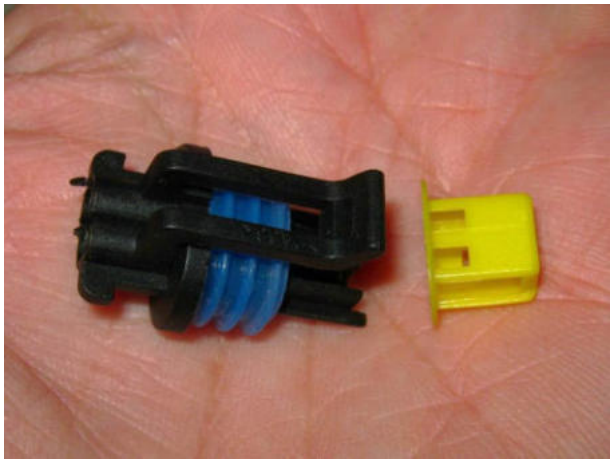


Replace the purple end cap on the plug.

NOTE: - This cap will not fit if the terminals are not fully inserted.

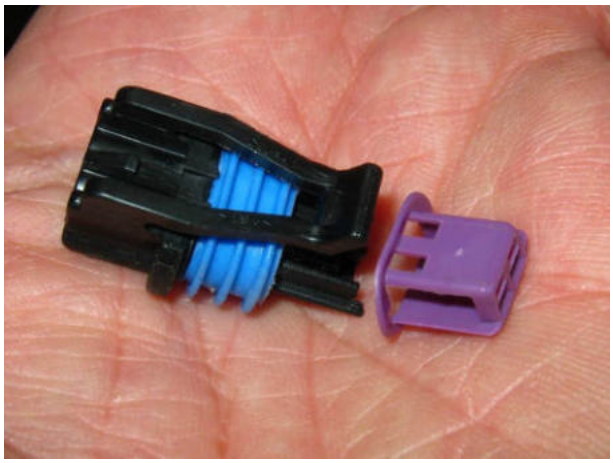
Locate the two-way housing in the parts bag.

This may be this design with a yellow retainer.



Or it may be this design with a purple retainer.

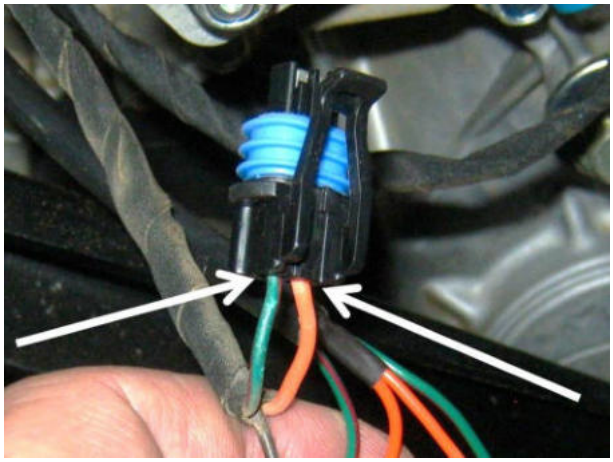
Either will work fine.



Insert the vehicle's wires into the 2-way housing.

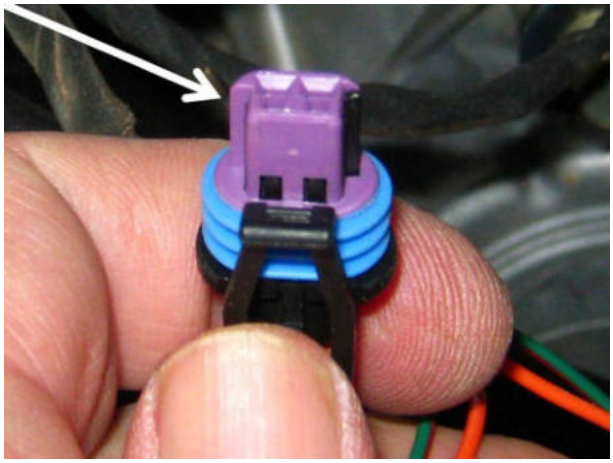
Insert the green/red wire into the left position (left arrow).

Insert the orange wire in to the right position (right arrow)

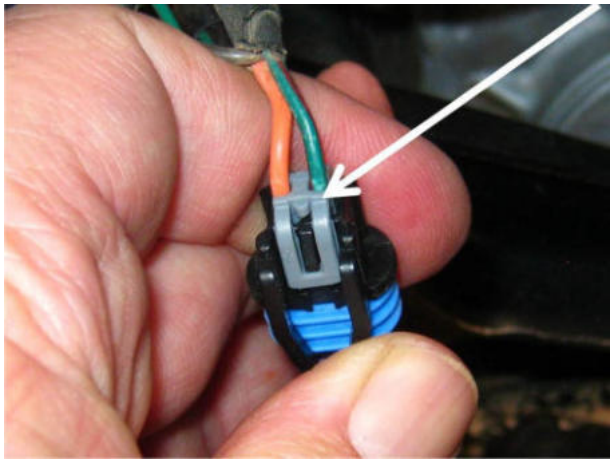


Fit the end cap on the plug (purple cap shown here).

NOTE: - This cap will not fit if the terminal is not fully inserted.



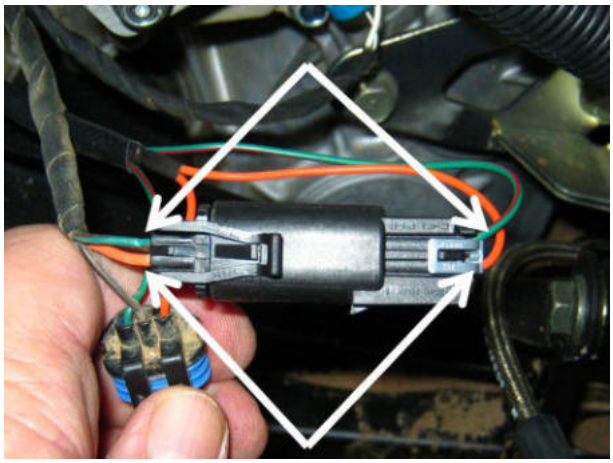
If you are supplied with the grey rear secondary retainer (purple connector only), fit it to the rear of the plug.



Connect the new 2-way plug to the plug already fitted to wires on the speed limiter harness.

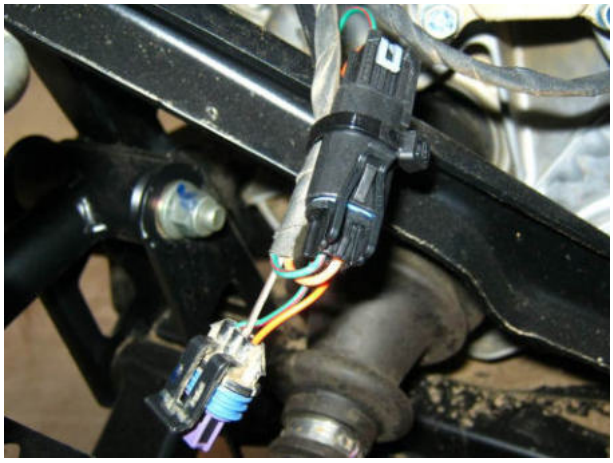
Check that the orange wires connect to each other.

Check that the green/red wires connect to each other.



Cable tie the connector to the vehicle's harness.

Re-connect the 3-way plug to the vehicle's speedometer sender.

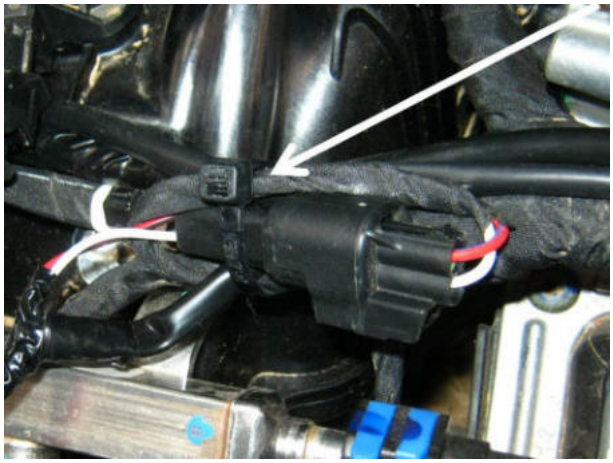


Return to the injector conenctors.

Cable tie the extra connectors firmly to the vehicle's harness.

Ensure the wires to the speedo sender are also cable tied in place.

This photo shows the connectors on the red and white wires.



Repeat on the other set of connectors.

Cable tie the extra connectors firmly to the vehicle's harness.

This photo shows the connectors on the red and black wires.



The finished job with the injector connectors firmly cable tied and the harness branch to the speedometer sender firmly cable tied.



<u>Fitting the speed limiter computer.</u>

The speed limiter computer is to be fitted to the panel on the 'tub' under the driver's seat.

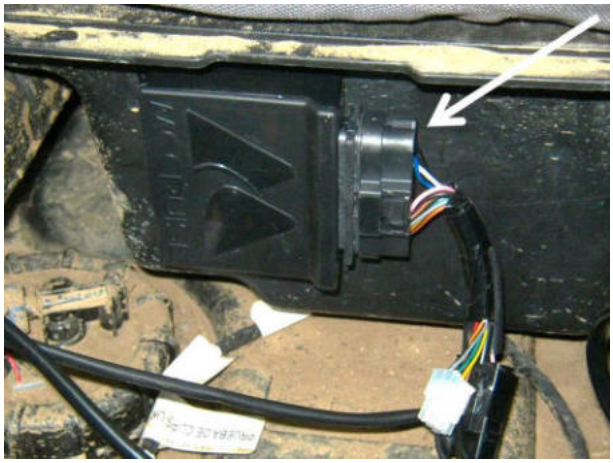
Clean this area with suitable solvent such as methylated spirits or denatured alcohol.



Fit the speed limiter computer to the wall of the 'tub' with the supplied Velcro mounting tape.



Connect the main harness plug to the computer.



Load resistor mounting.

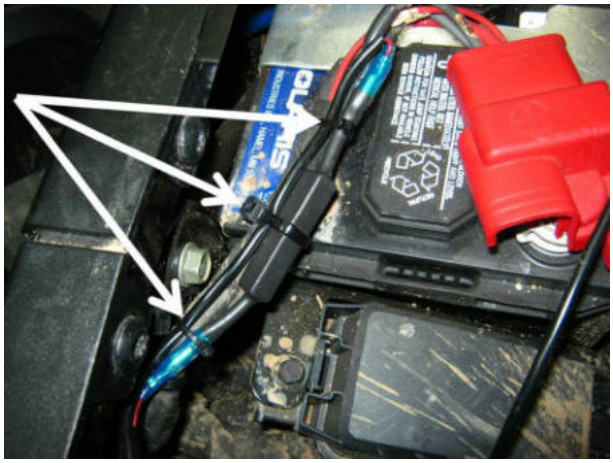
The last components to be mounted are the load resistors.

This photo shows one resistor only, your installation will have two resistors.

Cable tie the resistors to the vehicles harness or to the chassis.

Place at least one cable tie around the body (the square part) of the resistor (middle arrow).

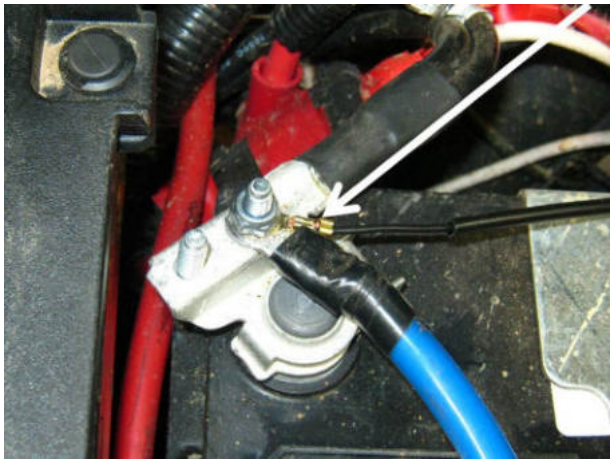
Place two more cables ties at each end on the bullet connectors (upper and lower arrows). This is to prevent the leads of the resistors moving. The leads to the resistors are solid copper and must be held effectively to prevent the leads moving a fracturing.



Ground connection.

Route the last branch, the single black wire across to the negative terminal of the battery.





Connect the speed limiter ground wire to the cable for the negative battery terminal.

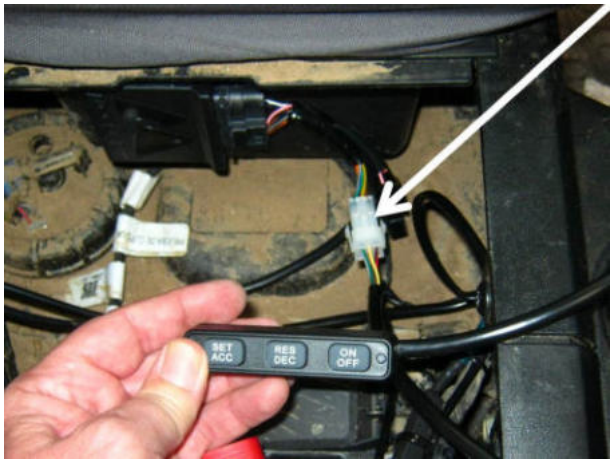
Carefully check that all connections are compete and fit cable ties where necessary.

Re-connect the negative terminal to the battery.

8. DIAGNOSTIC MODE OPERATION

Refer to Chapter 8, Diagnostic Mode Operation, in the Set Up Manual.

We suggest that you re-assemble the vehicle AFTER the diagnostic test is complete.



For diagnostic testing and setup, connect the plug on the setup switch to the six-way plug on the speed limiter harness at the computer.

Your speed limiter is now ready for testing and configuration. In most cases, the speed limiter will be turned ON and set to 25kph (15mph) or the speed requested when the unit was ordered.

Instructions for turning on and configuring the speed limiter are contained in the Speed Limiter Setup Manual.

Speed limiter enable/disable and configuration modes.

Refer to page number 8 of the separate Setup Manual.

The manual has this title:

"SpeedSafe"
ATV Electronic Speed Limiter
Set up Manual ©

NOTES: