This manual is based on a reducer installation.
Pictures from a complete eVP-500 installation & bracket are welcome.

Installation manual

PART 2/2

MANUFACTURER		GM
TYPE		(Install based on Chevrolet Silverado 2014 L83/L86)
ENGINE DISPLACEMENT		5328cc / 6162cc
NUMBER OF VALVES:		16V
ENGINE CODE / NUMBER:		GM V8 - EcoTec3 – L83 / L86 / LT1
ENGINE OUTPUT		L83 – 261kW / L86 – 309kW / LT1 – 339kW
FIRING ORDER		1-8-7-2-6-5-4-3
TRANSMISSION TYPE (MT / AT)		AT
VEHICLE CATEGORIES M or N		M
TYPE VSI INJECTOR		KN9 - 82CC
TYPE INJECTION MODULE		2x Gen2 Type 1
VERSION		AFC-2.1 DI LPG
MODEL YEAR		2017 - 2019
PETROL ECU MANUFACTURER / CODE	L83/L86:	GM Serv# 12674052,12686383, 12686027, 12692070
	LT1:	GM serv# 12686430
SYSTEM APPROVAL NUMBER (R115)		E4- #115R-000028 / VSI-LPG 48
LOCATION SYSTEM STICKER		If applicable : right side, centre door post
ENGINE SET NUMBER		338/120013/A (reducer) // 338/120037/A (eVP-500)
MANUAL NUMBER		076/3301600-3
DATE		2020-07-22

Revision: 3

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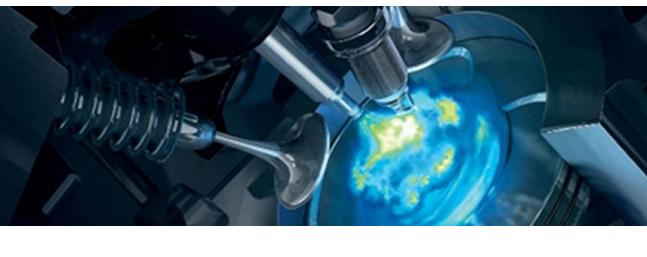

Manual updates / revision

Rev. nr	Rev. Date	Subject update
-	2019-06-25	Start revision management
1	2019-12-11	Added plug&play wiring & connections
2	2020-05-12	Added LT1 (based on Camaro), pictures from LT1 manifold are wanted
3	2020-07-22	Added eVP-500 specs & set number (pics wanted!)

General instructions

- The installation of the system shall be done in accordance with the installation manual provided by Prins Autogassystemen.
- This manual is based on Dutch regulations, always install the system in accordance to the local regulations.
- Always download the “general manual 1/2 “ from our website for basic instructions and diagrams.
- Always disconnect the battery when installing the LPG system. Make sure the ignition key is outside the car. Be aware of central door locking, radio / telephone memory code, alarm system.
- Do not place the main fuse into the fuse holder before having completed the installation of the VSI system.
- The VSI computer has to be activated by means of the diagnosis software.
- In the unlikely event the VSI computer fails, it will automatically switch over to petrol. Never disconnect the VSI computer connector, unless you have removed the main fuse.
- When installing the VSI wiring harness, ensure that it does not run near any of the ignition components.
- Solder and insulate all electrical connections.
  The wires in the loom are provided with numbers and text.
  The text on the wire explains the function of the wire.
  The wire harness is not model specific, therefore it may be necessary to adjust the length of the wires.
  Ensure maximum care is taken when connecting the wiring.
  Make professional joints using solder and shrink sleeve. Do not stretch the wiring harness.
- No component of the LPG-system shall be located within 100 mm of the exhaust or similar heat source, unless such components are adequately shielded against heat.
- Remove any internal burrs after having shortened the LPG pipe.
  (This guarantees the maximum flow through the pipe without pollution.)
- If holes have to be drilled (wear safety glasses) for installing brackets, etc., the drilled holes must always be treated with an anti-corrosion agent, after the chips have been removed (especially when mounting an exterior filler into body work).
- After having completed the installation, check the whole system for gas leakage; use a gas leak detection device. Also check for any leak of engine coolant, petrol and air.
- Fitting and maintenance is only allowed by Prins Autogassystemen selected LPG engineers.
- Failure to follow the instructions in this manual can result in a poor or non-working LPG-installation or a dangerous situation.
- For maintenance instructions and filter registration see owner’s manual.
- Prins Autogassystemen is not responsible for any damages to people or objects as a result of changes to Prins products.
- Check our website regularly for diagrams, certificates, updates, info-bulletins and product information.

Please fill in the warranty portal completely within 14 days after installation.
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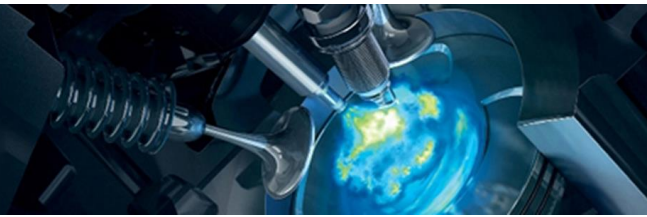


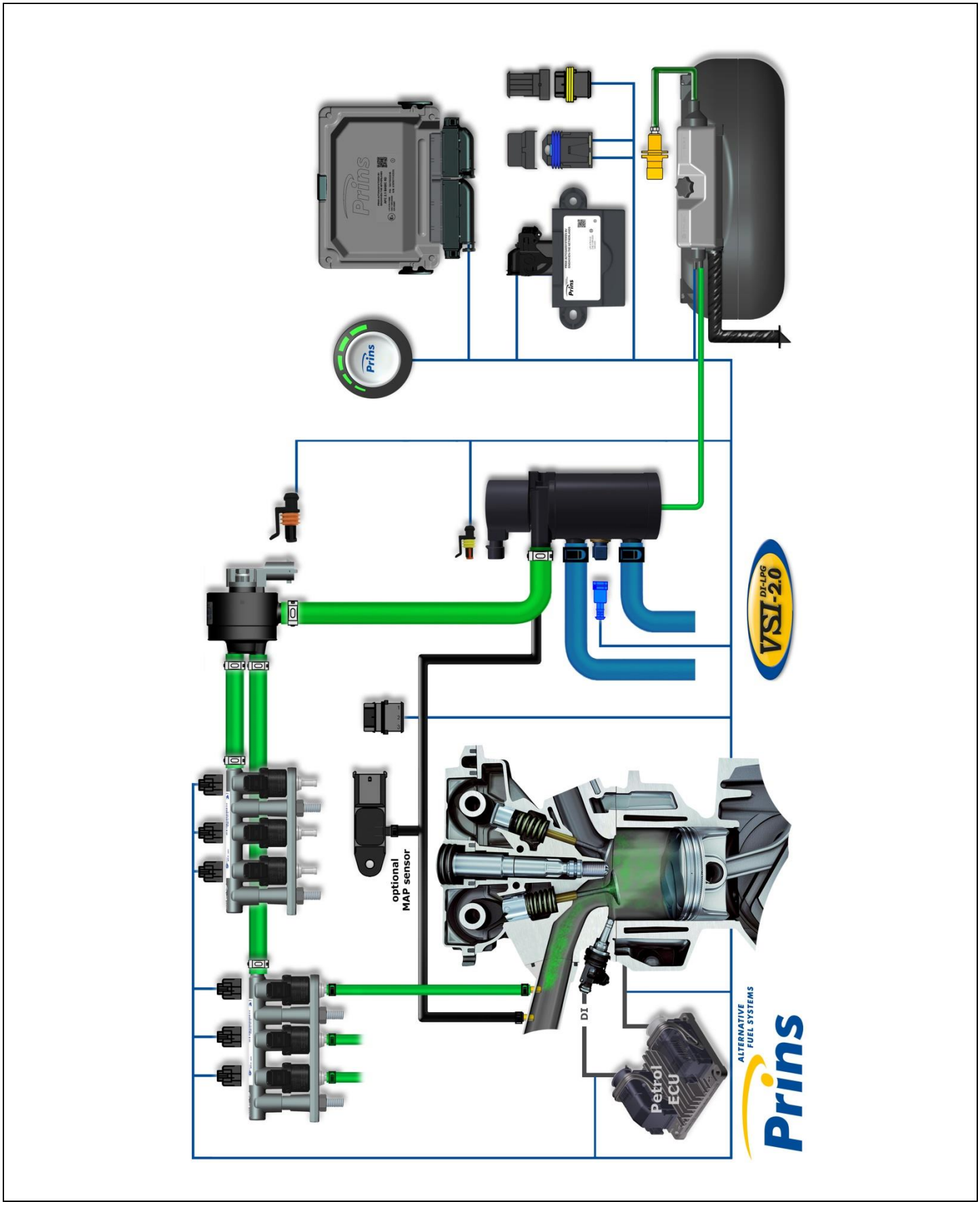
Required equipment / tools / materials for installing a complete system

- Complete workshop toolbox (wrenches, screwdrivers, cutters, pliers, ratchet, sockets)
- Car lift
- Portable computer
- Vehicle fuel system scan tool or OBD scan tool Prins (part nr. 099/99928)
- Exhaust gas analyser
- Multimeter
- Oscilloscope
- Prins VSI diagnostic software
- Prins VSI serial interface
- Prins VSI break out box (part nr. 080/70090)
- Torque wrench (25Nm)
- Portable light
- Assortment drill bits 4 to 12 mm
- Assortment cutters (ø 20, 30, 50, 70 mm)
- Punching tool ø 70 mm
- Threading device M10x1 / M6x1
- Round file
- Portable drill or pneumatic drill
- Air gun
- Vacuum cleaner
- Hot air gun
- Allan spanner for inlet couplings 3,5mm (part nr. 099//9970)
- Molex extraction tool for VSI switch connector (part nr. 090/9929)
- Soldering iron, soldering tin
- Wire-stripping pliers
- Adhesive tape
- Adhesive sealant
- Thread locking compound
- Anti-corrosion agent / black body coating
- Gas leak detection device or foam leak spray
- Shrink sleeves
- Engine coolant

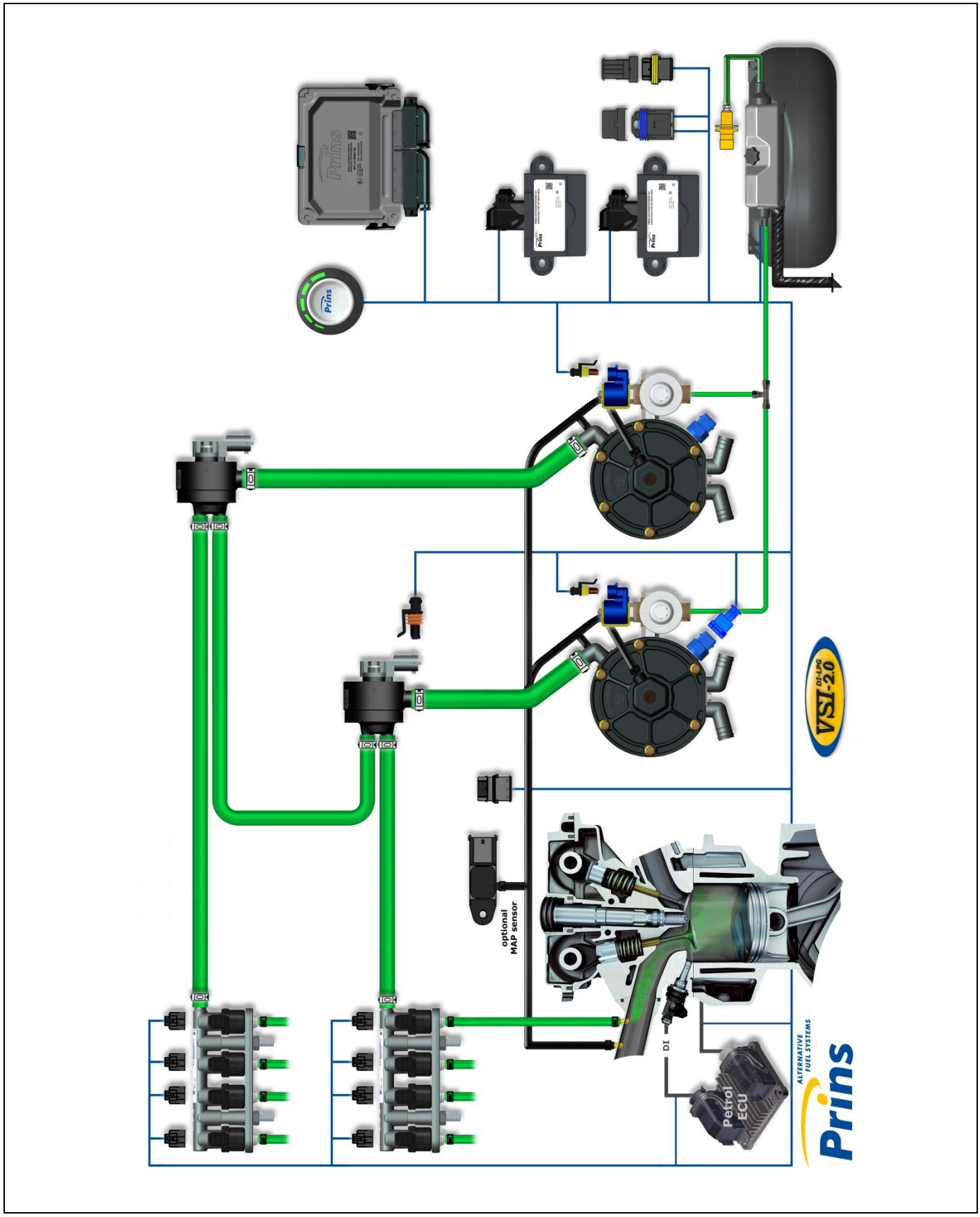
Vehicle check

- Check the vehicle drivability on petrol
- Check the fuel system for error codes (scan tool)
- Check if the catalytic converter is in good condition (exhaust gas analyzer)
- Check the condition of the ignition system (spark plugs, cables, coil)

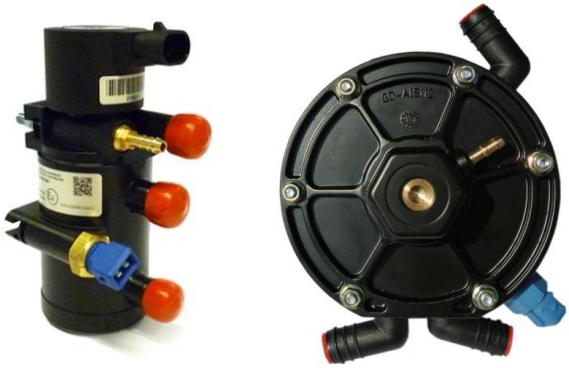
Basic System Overview eVP-500



Basic System Overview Reducer



VSI approval numbers



Reducer VSI LPG Prins : E4-67R-010054
Reducer eVP-500 : E4-67R-010358
Lock-off valve OMB : E8-67R-014327
Lock-off valve Valtek : E4-67R-010041

Injector rail Prins : LPG E4-67R-010093
CNG E4-110R-000021

Filter unit T1 / T2 Prins : LPG E4-67R-010096
CNG E4-110R-000028

Injector Keihin KN9 :LPG E4-67R-010310
CNG E4-110R-000295

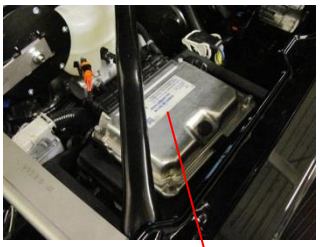
Prins AFC : E4-67R-010098
E4-10R-030507

Tubithor : LPG E13-67R-010145
CNG E13-110R-000017
Rubia : LPG E4-67R-010068
CNG E4-110R-000003
WinLas : LPG E37-67R-010140
CNG E37-110R-000012

Overview

(examples Chevrolet Silverado 2014)

AFC



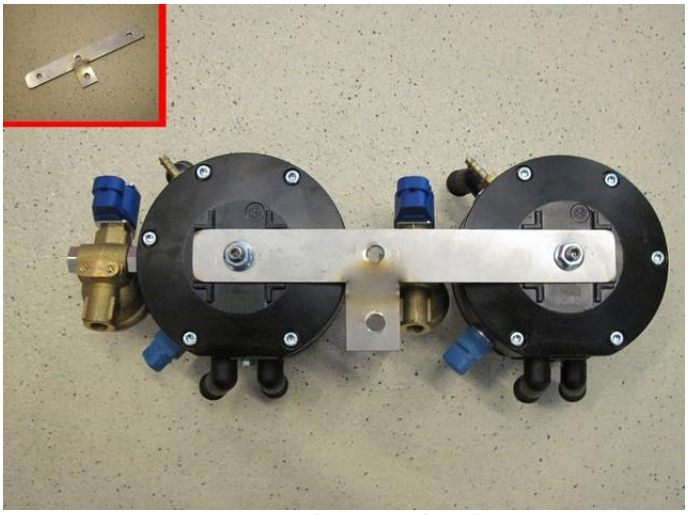
DI -MODULES

Assemblies

A: Reducers assembly	
B: Injector rail assembly - Left side	
C: Injector rail assembly - Right side	

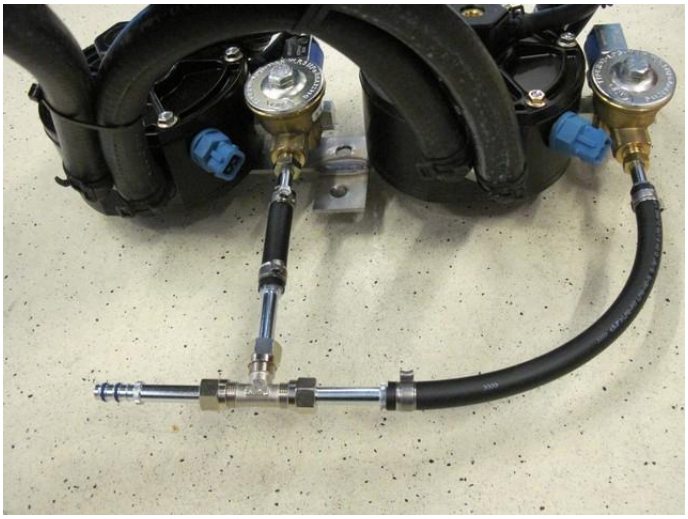
Reducers assembly

(examples Chevrolet Silverado 2014)



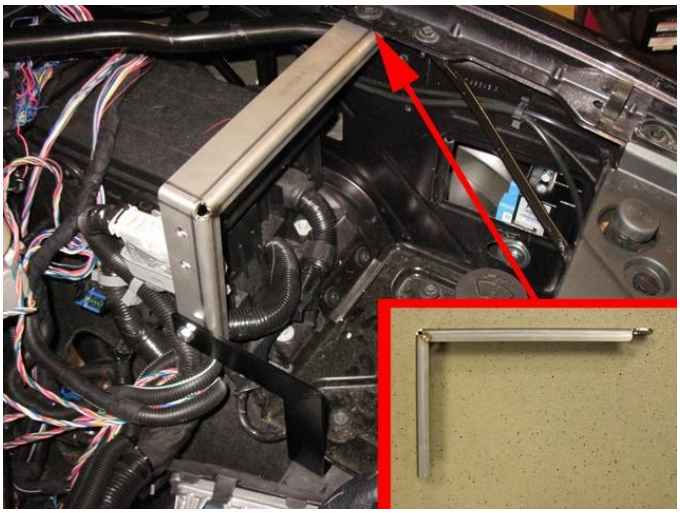
Mount reducers to bracket.

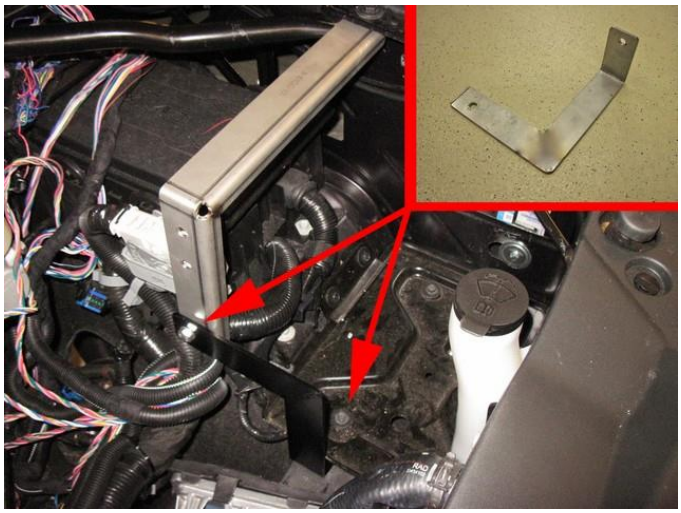
Mount all hoses to reducers.



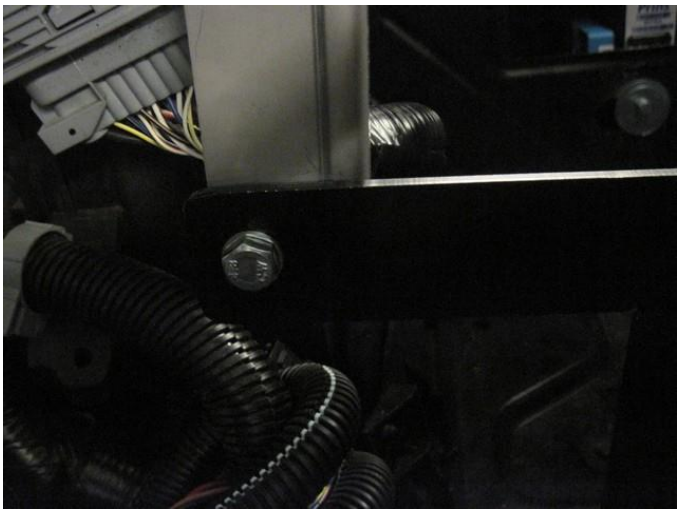
Mounting the reducers

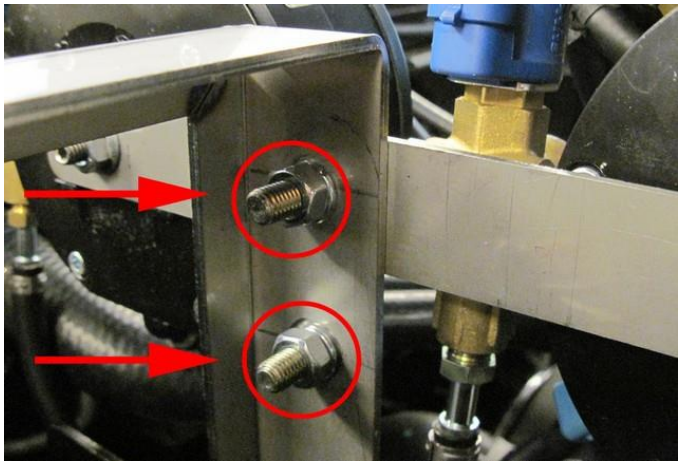
(examples Chevrolet Silverado 2014, the reducers can be located on the other side of the engine)





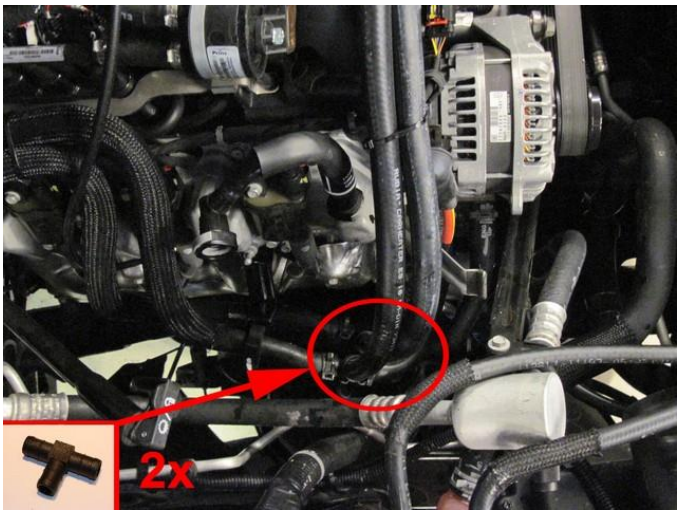
underneath the battery support

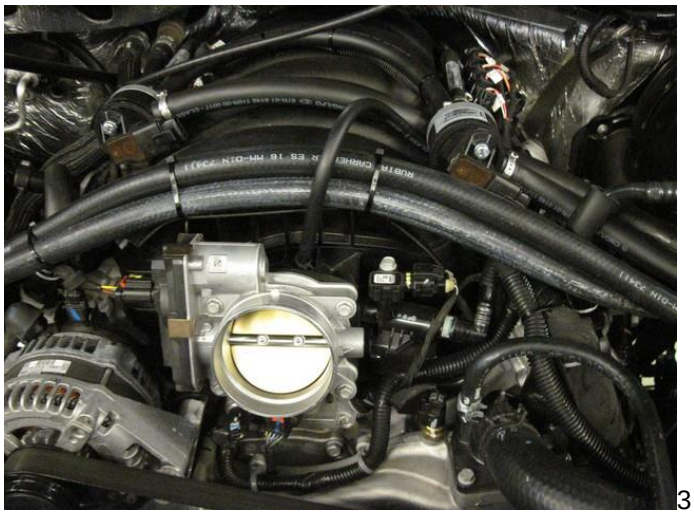




Engine coolant connections

(examples from Chevrolet Silverado 2014 L86, pictures from the Camaro LT1 are welcome)





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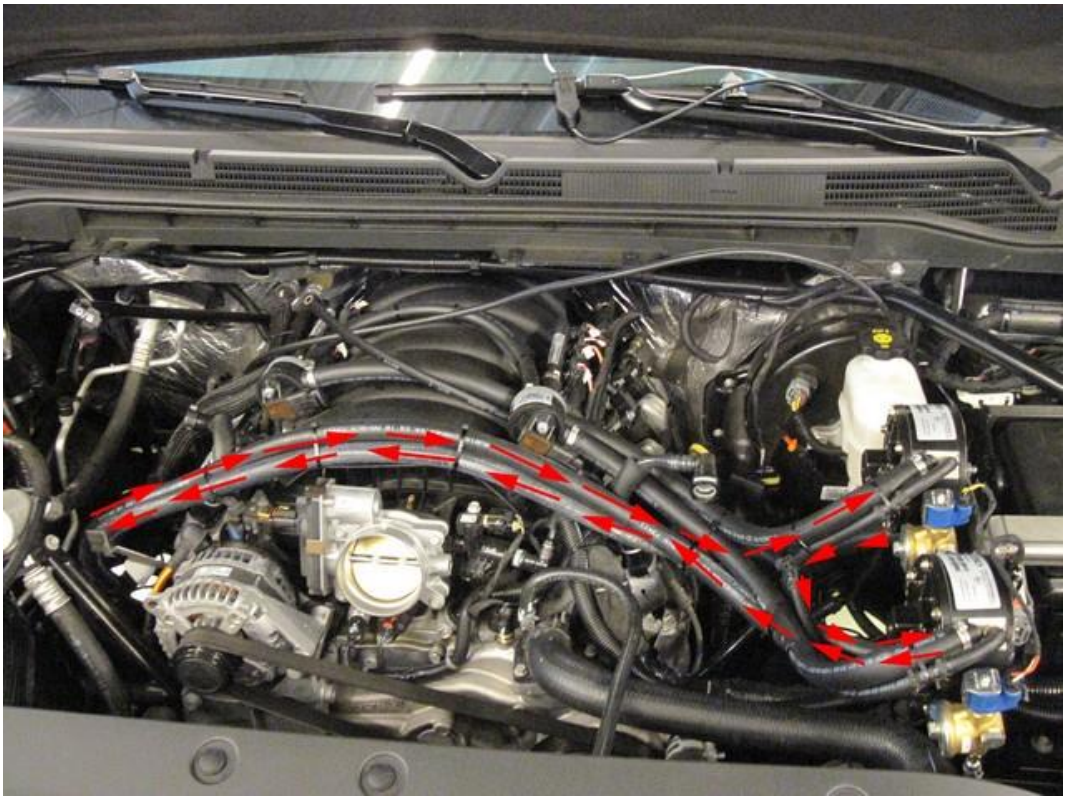

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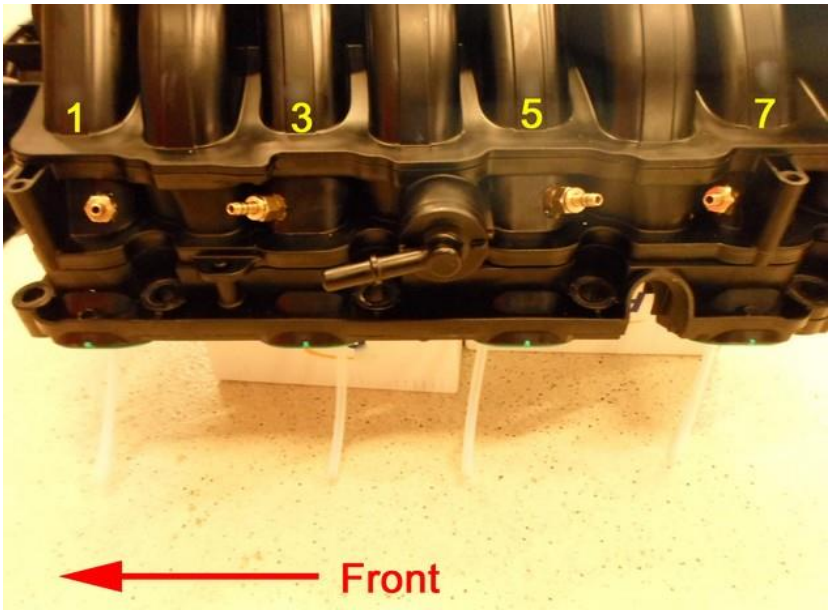
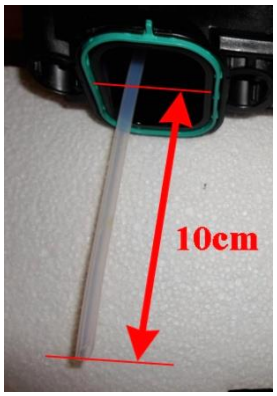
Installation of the inlet couplings cylinder 1-3-5-7

(examples from the L86, pictures from the LT1, with other inlet manifold, are welcome)

Remove the complete inlet manifold.
Drill **4** holes of **9**mm into the inlet manifold. Cut **M10x1** thread in these holes.
Mount the inlet couplings with a locking compound.
Watch out that the lock compound doesn't come inside the inlet couplings.



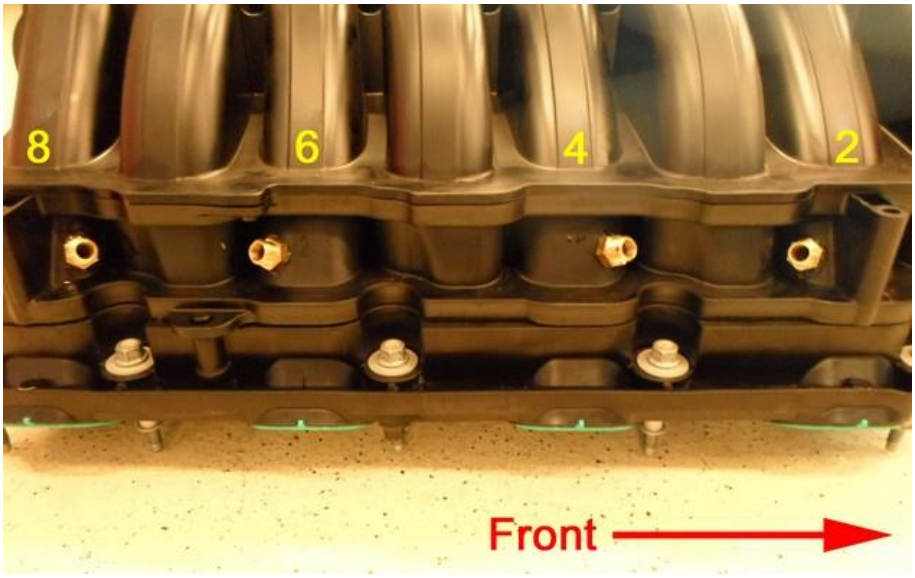


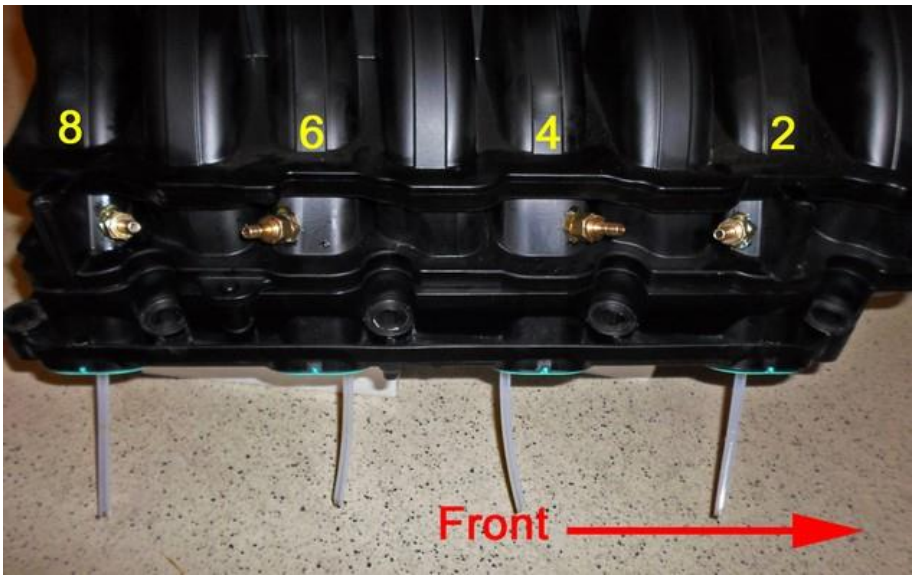
PTFE hoses 4x 20cm, cut on length when mounted.

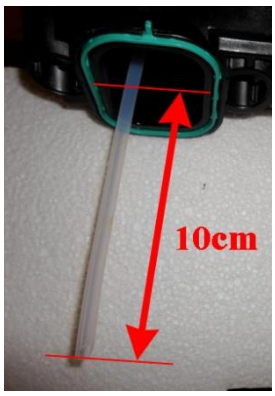
Installation of the inlet couplings cylinder 2-4-6-8

(examples from the L86, pictures from the LT1, with other inlet manifold, are welcome)

Remove the complete inlet manifold.
Drill **4** holes of **9**mm into the inlet manifold. Cut **M10x1** thread in these holes.
Mount the inlet couplings with a locking compound.
Watch out that the lock compound doesn't come inside the inlet couplings.

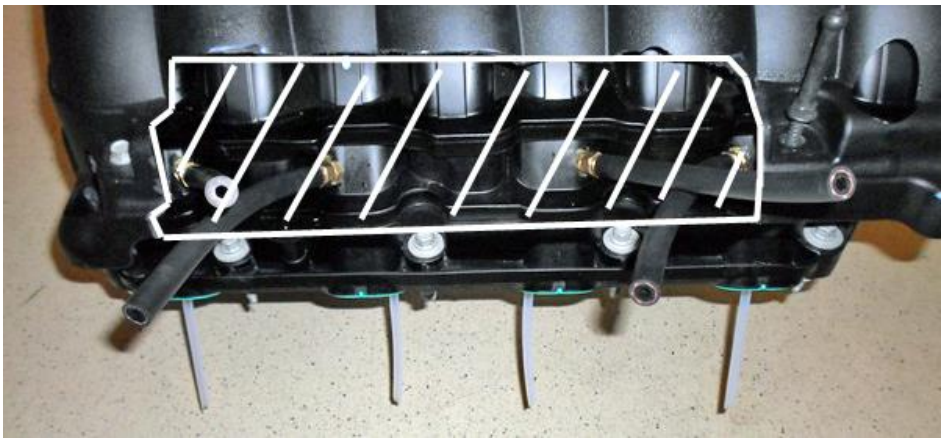


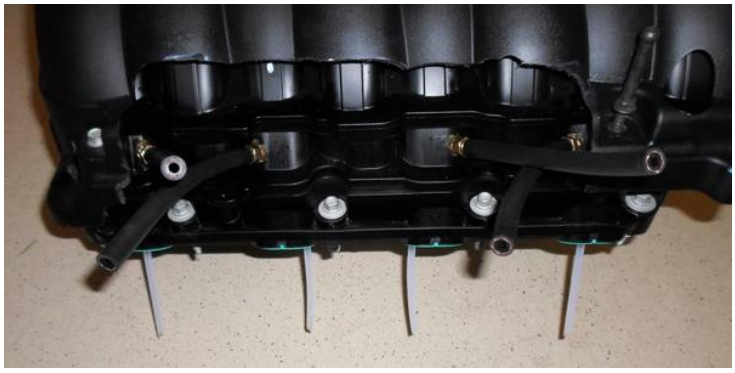




Modify intake manifold cover

(examples from the L86, pictures from the LT1, with other inlet manifold, are welcome)

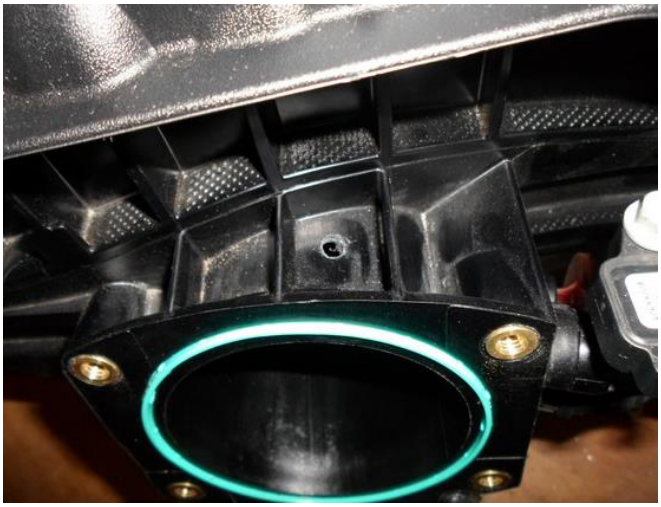


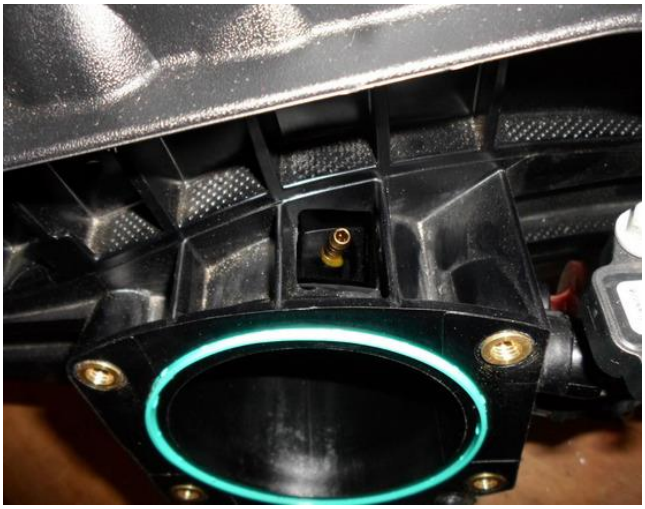


Vacuum / overpressure coupling

(examples from the L86, pictures from the LT1, with other inlet manifold, are welcome)

Drill **1** hole of **5**mm into the inlet manifold. Cut **M6** thread in this hole.
Mount the inlet coupling with a locking compound.
Watch out that the lock compound doesn't come inside the inlet coupling.





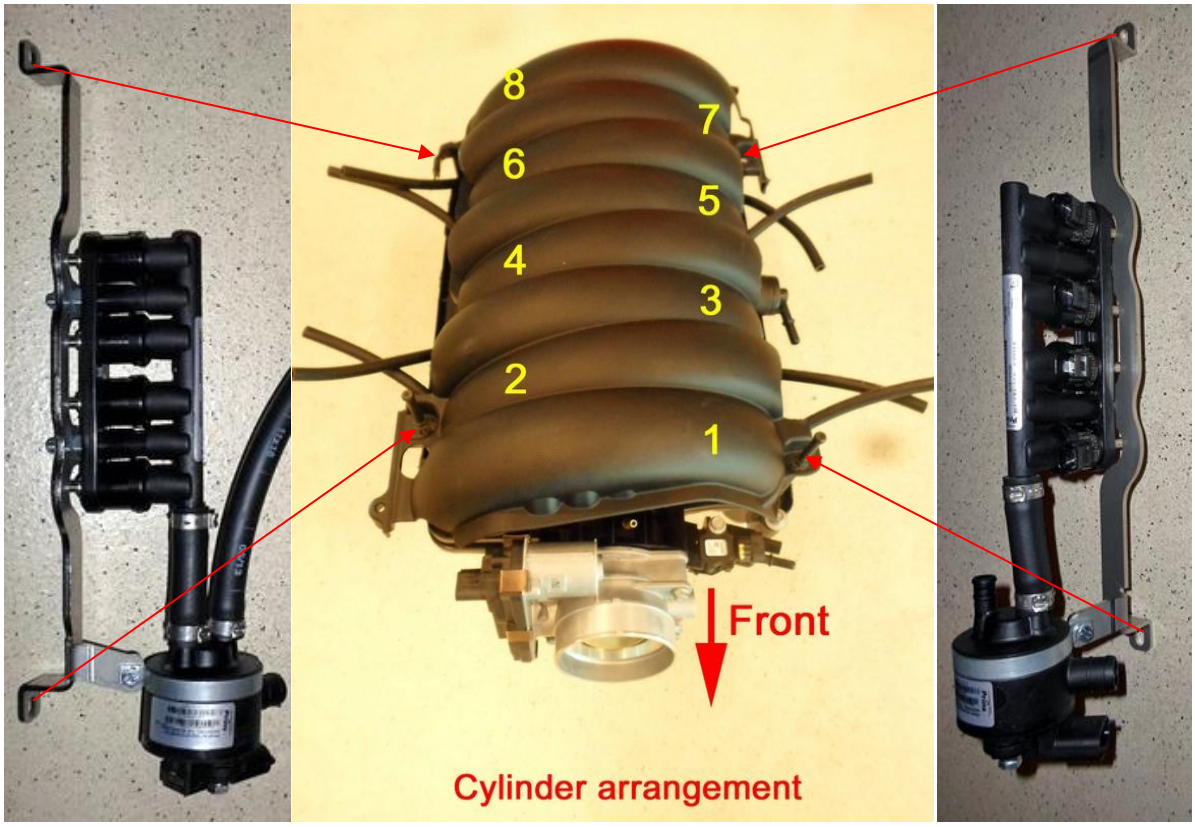
Drill **1** hole of **5**mm into the inlet manifold. Cut **M6** thread in this hole

Mount the coupling with a locking compound.

Mounting the inlet manifold with both rails

(examples from the L86, pictures from the LT1, with other inlet manifold, are welcome)

When using a dedicated wiring loom: connect the wiring loom to the petrol injector connectors before mounting the manifold!!

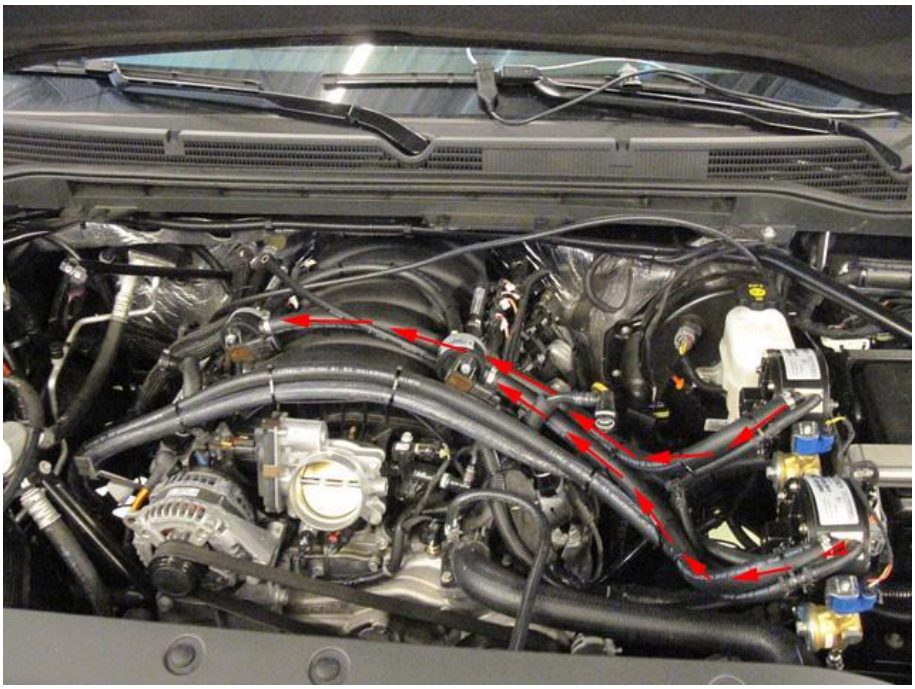


Mounting points for the injector brackets

Overview

LPG hoses - Reducers to filters

(examples Chevrolet Silverado 2014)



Routing LPG hose from reducers to the filter units

Routing vacuum/overpressure hoses.

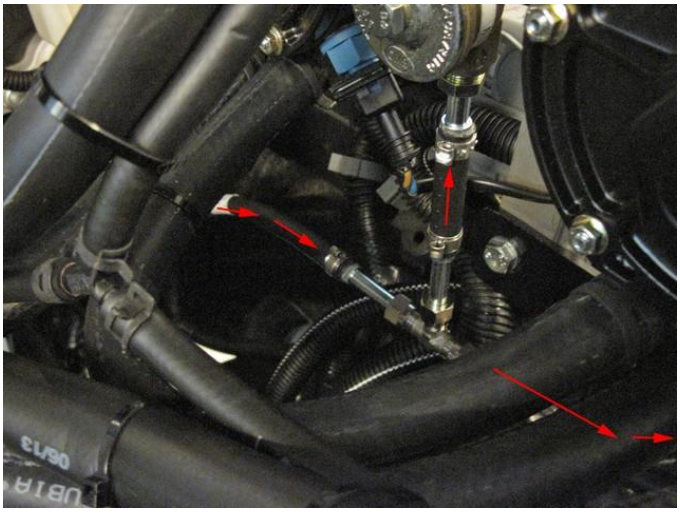
LPG hoses

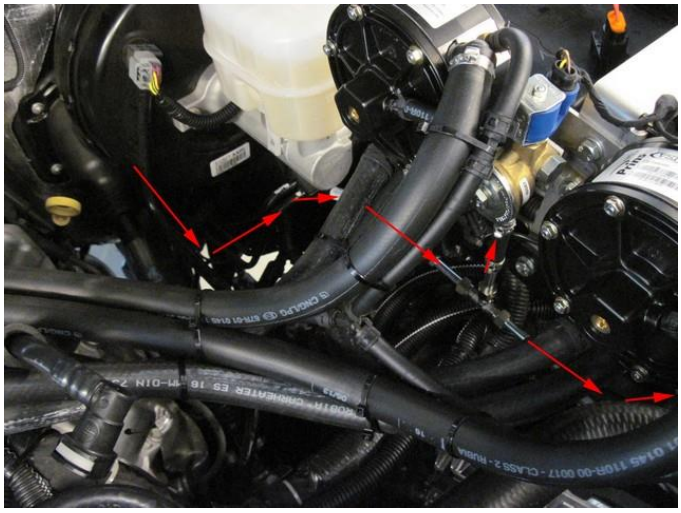
(examples Chevrolet Silverado 2014)

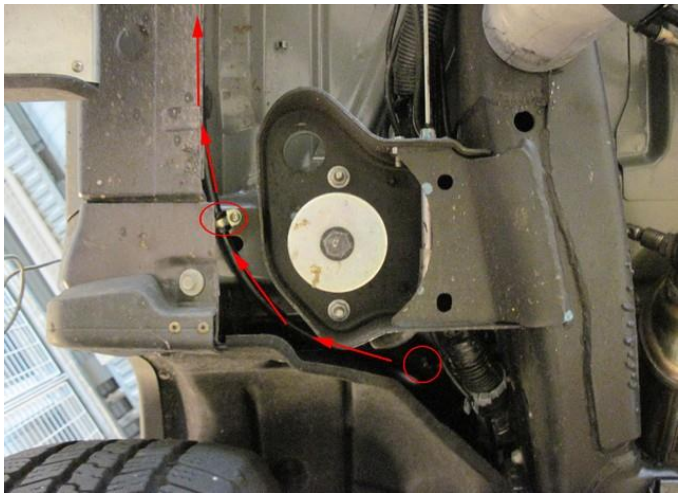
Hose (Ø..mm)	From component	To component	Hose length (cm)
16	Prins Regulator	Prins filter unit	62
16	Prins Regulator	Prins filter unit	80
11	Prins filter unit	Prins filter unit	45
11	Prins filter unit	Injector rail	7
11	Prins filter unit	Injector rail	7
5	Inlet manifold coupling	Y-piece 5x5x5 (vacuum)	64
5	Y-piece 5x5x5 (vacuum)	T-piece 5x5x5 (vacuum)	26
5	Y-piece 5x5x5 (vacuum)	T-piece 5x5x5 (vacuum)	12,5
5	T-piece 5x5x5 (vacuum)	Reducers vacuum	2x 10
5	T-piece 5x5x5 (vacuum)	Reducers overpressure	2x 7
5	VSI injector 1	Inlet manifold coupling cyl.1	14
5	VSI injector 2	Inlet manifold coupling cyl.2	14
5	VSI injector 3	Inlet manifold coupling cyl.3	14
5	VSI injector 4	Inlet manifold coupling cyl.4	14
5	VSI injector 5	Inlet manifold coupling cyl.5	14
5	VSI injector 6	Inlet manifold coupling cyl.6	14
5	VSI injector 7	Inlet manifold coupling cyl.7	14
5	VSI injector 8	Inlet manifold coupling cyl.8	14
6	Inlet manifold coupling cyl.1	PTFE hose cyl.1	20
6	Inlet manifold coupling cyl.2	PTFE hose cyl.2	20
6	Inlet manifold coupling cyl.3	PTFE hose cyl.3	20
6	Inlet manifold coupling cyl.4	PTFE hose cyl.4	20
6	Inlet manifold coupling cyl.5	PTFE hose cyl.5	20
6	Inlet manifold coupling cyl.6	PTFE hose cyl.6	20
6	Inlet manifold coupling cyl.7	PTFE hose cyl.7	20
6	Inlet manifold coupling cyl.8	PTFE hose cyl.8	20

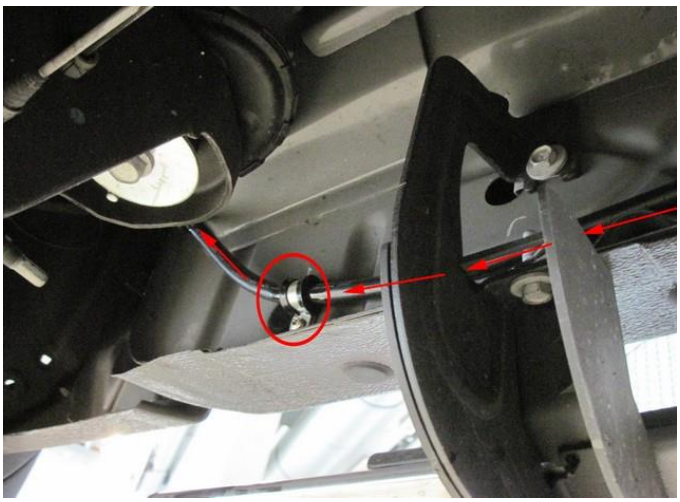
Fuel line & wiring to tank

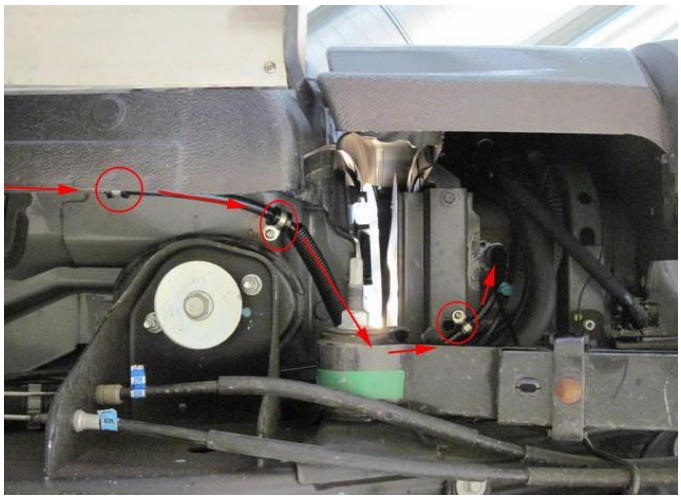
(examples Chevrolet Silverado 2014)





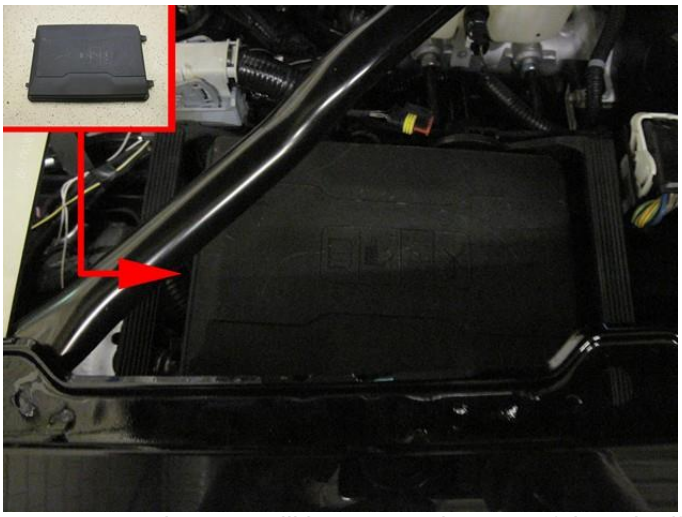




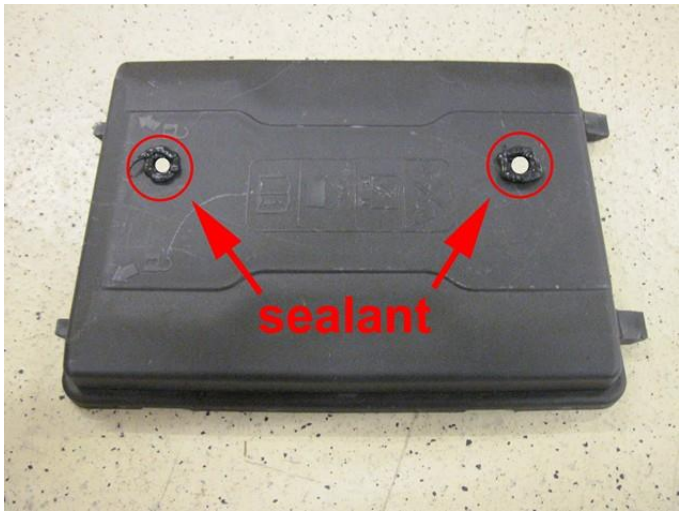


Mounting the AFC

(examples Chevrolet Silverado 2014)



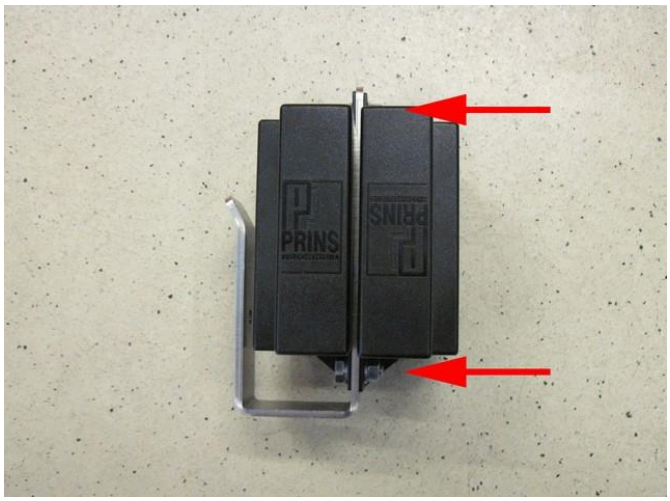
The AFC will be mounted on top of the relay/fuse box on the left side behind the regulators.

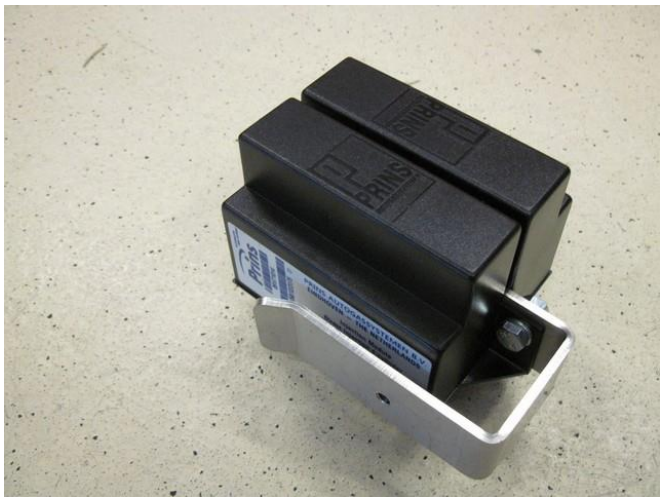


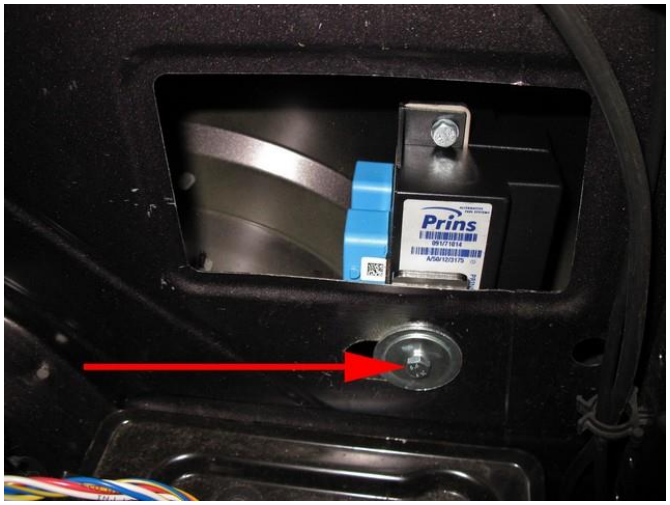
When mounting the AFC-clip, use sealant for a waterproof relay/fuse box lid.

Mounting the DI injection modules / Fuse & diagnostic connector

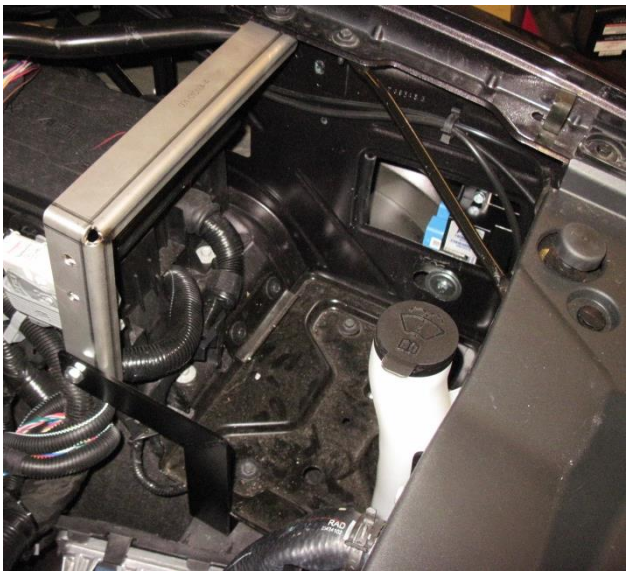
(examples Chevrolet Silverado 2014)

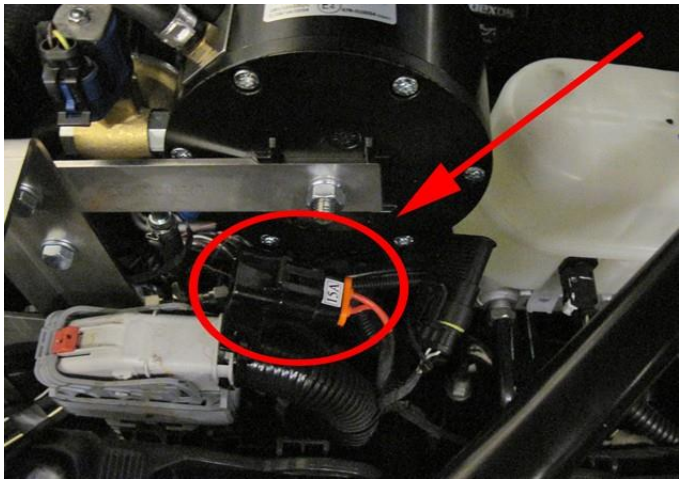






Mount both DI injection modules to the bracket and mount to vehicle with M6x12 bolt.





Injection modules have to be installed at the end of the battery support, on the driver side.
Location of the fuse and the diagnostic connector.

Wiring routing

(examples Chevrolet Silverado 2014)

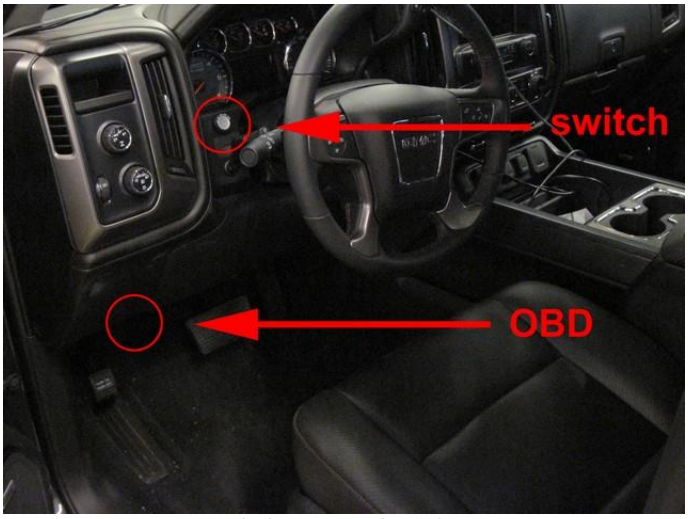
Mount the second regulator wiring parallel with the first regulator connection from the wiring loom.

Fuel selection switch / EOBD CAN wiring

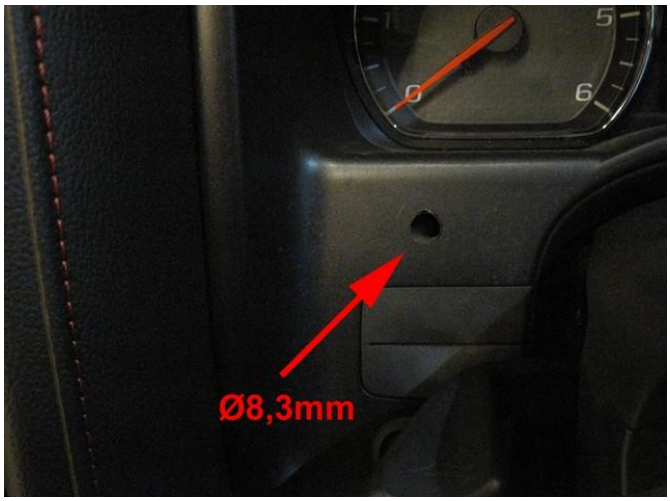
(example from Chevrolet Silverado / GMC Sierra)

When mounting the switch, only push on its sides.
Pushing the switch in the centre may result in damage to the switch.

use big harness rubber , move fuse panel under the dash board to have access

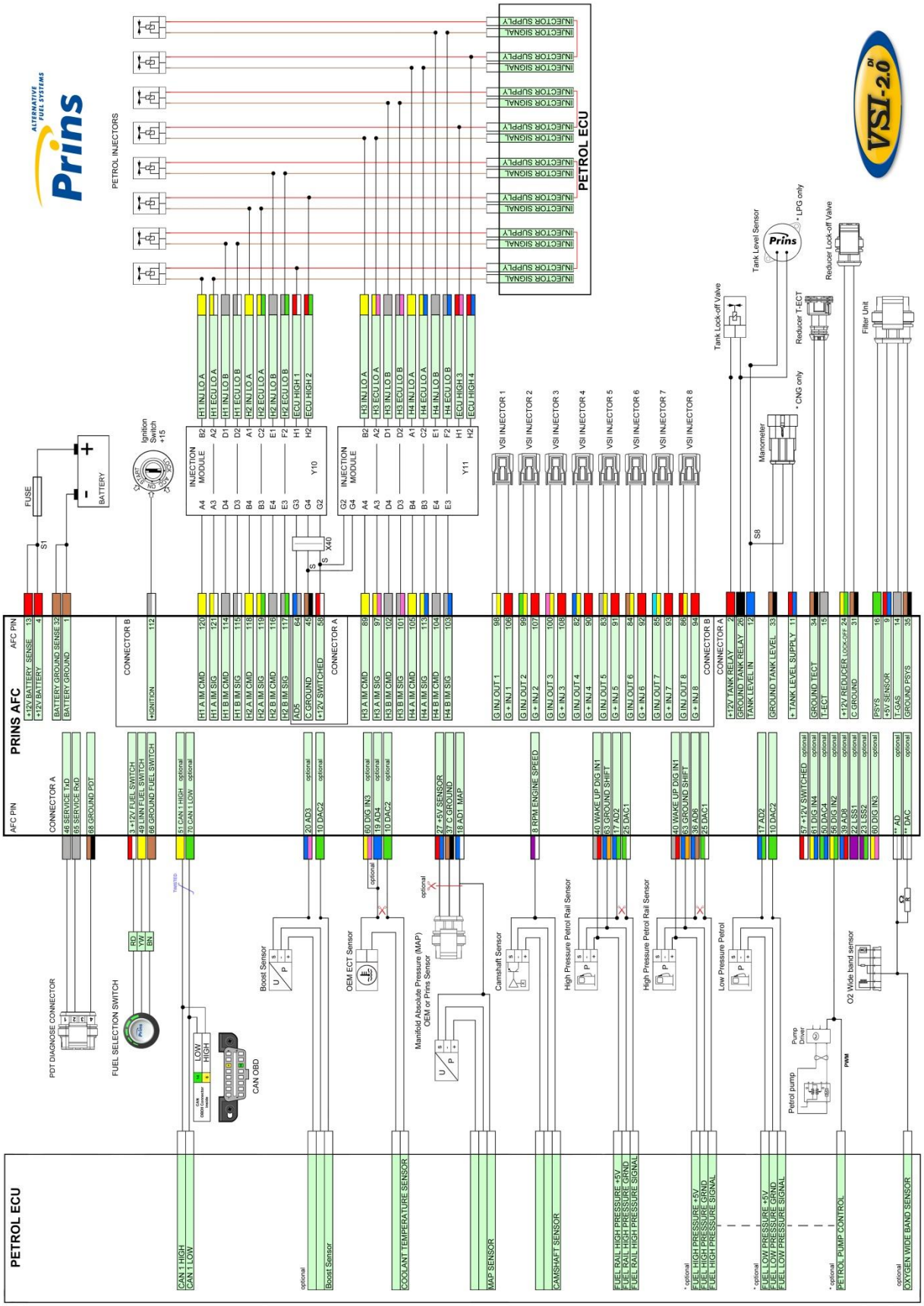


Switch & OBD location.

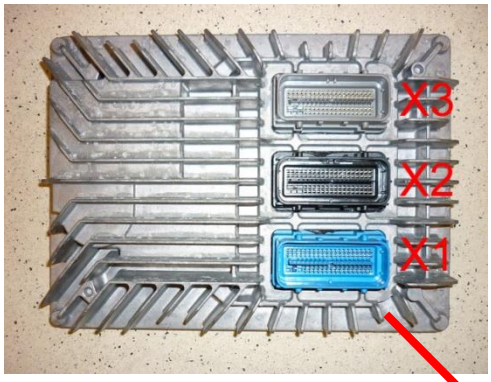


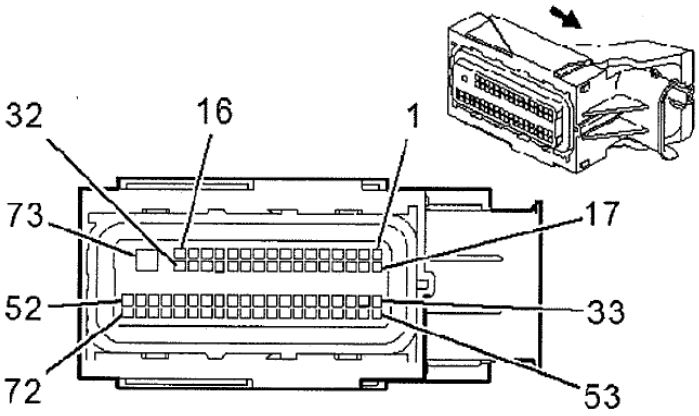
Drill the hole Ø8,3mm for the switch. Mount switch.

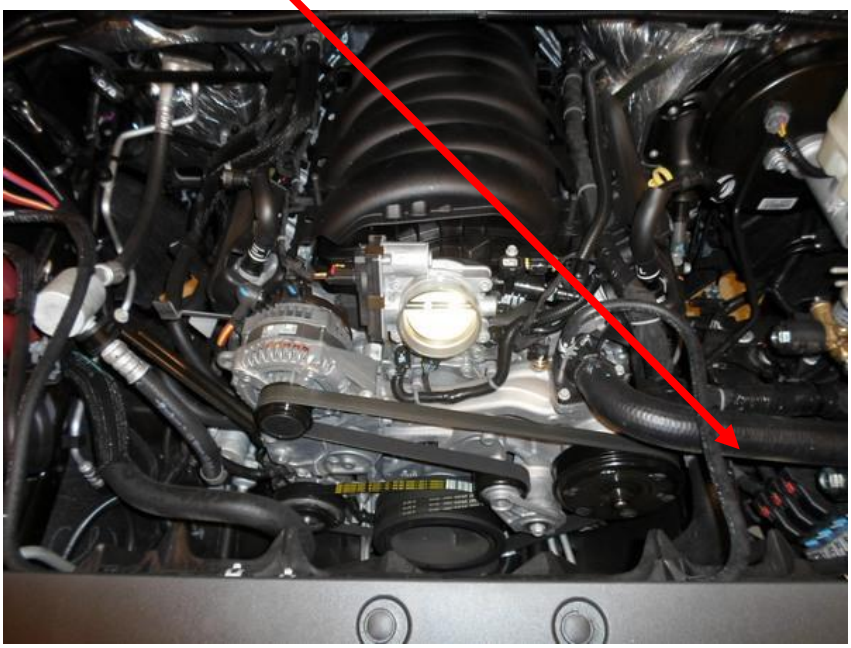
Basic Wiring Diagram



Petrol ECU location / connectors







Universal Wiring - Electrical Connections (remarks)

Before mounting the wiring to the AFC and/or the vehicle:

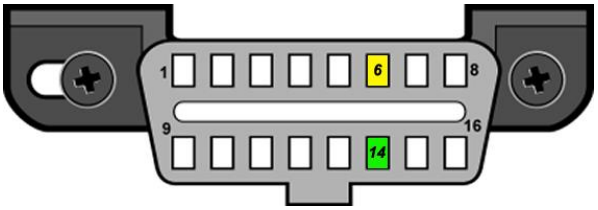
- **Mount the extra wiring module on pin 29 & 71 from the AFC connector.**
- **Remove the MAP connector and add the wiring from the MAP connector to the rest of the wiring connected to the ECU.**

- **L83/L86 - Extend wire 56 DI2** → connecting to Fuel Pump Driver below vehicle (Silverado/Sierra)
- **LT1 - Extend wire 56 DI2, 17 AD2 and 10 DAC2** → connecting to Fuel Pump Driver in trunk (Camaro)

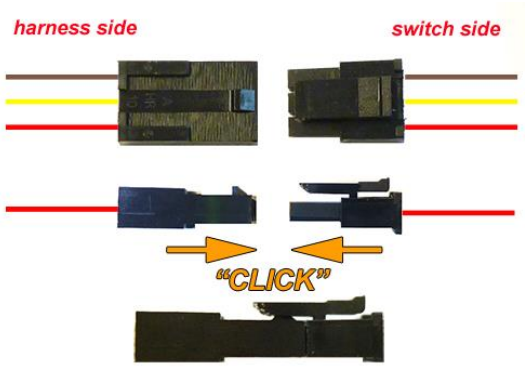
Electrical connections

Driver room

				Connect to EOBD diagnose connector.
51	CAN1 High		Yellow	Pin : 6
70	CAN1 Low		Green	Pin : 14



3-pole micro connector				*Connect to* the Prins fuel selection switch
66	Ground fuel switch		Brown-black	
3	+12V fuel switch		Red-white	
49	LIN fuel switch		Yellow	

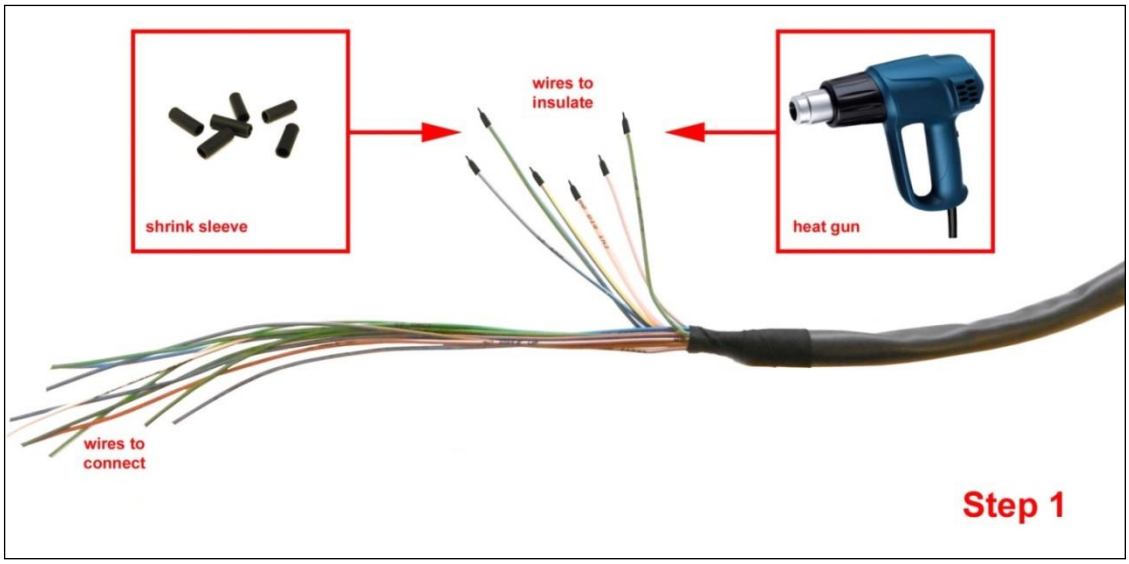


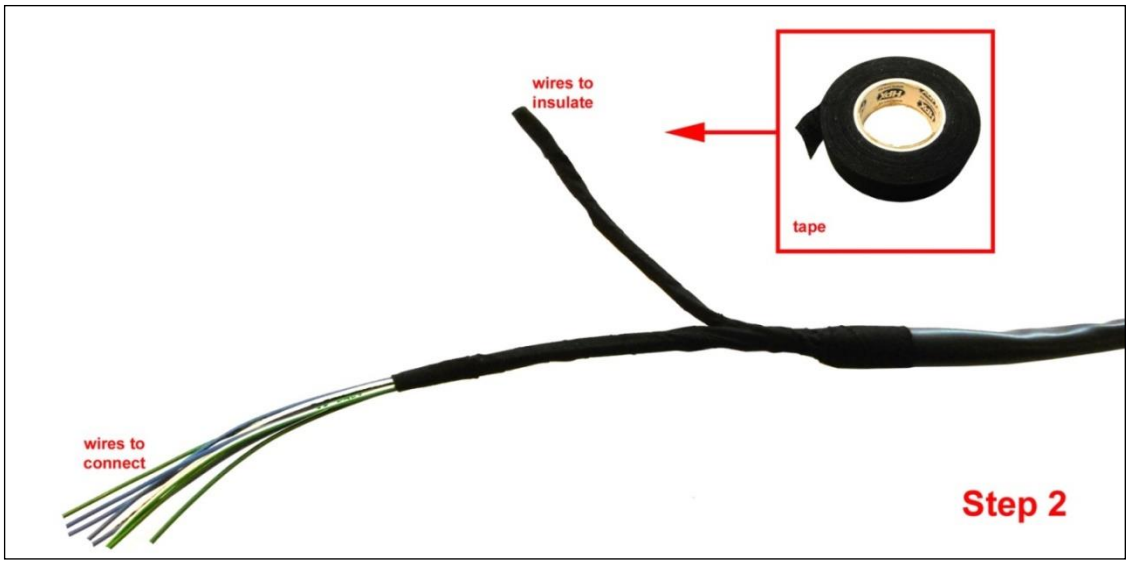
Universal Wiring - Electrical connections – Not used wires to insulate

19	AD 4		Blue	
20	AD 3		Blue-pink	
22	LSS1		Purple	
23	LSS2		Purple-green	
25	DAC 1		Green-white	
36	AD 6		Blue-brown	
38	AD7		Blue-light Blue	
39	AD8		Blue-red	
43	+12 Valve 2		Red-white	
50	DAC4		Green-blue	
61	DIG IN4		Yellow-blue	
62	C Ground		Brown-black	
74	DAC3		Green-pink	

Insulate not used additional wires

Electrical connections – How to insulate not used wires

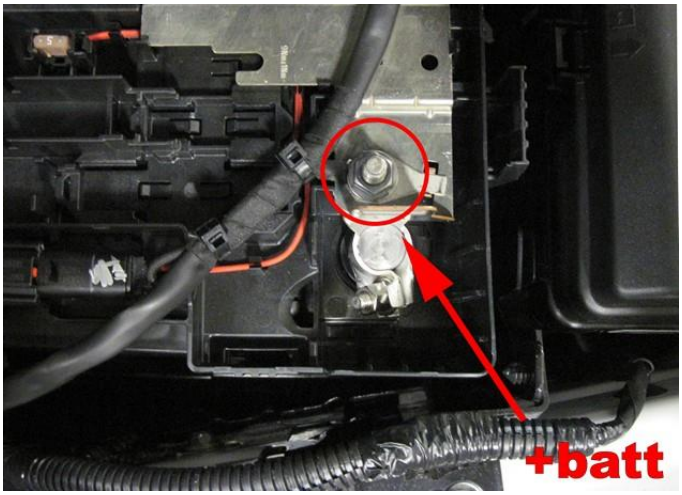




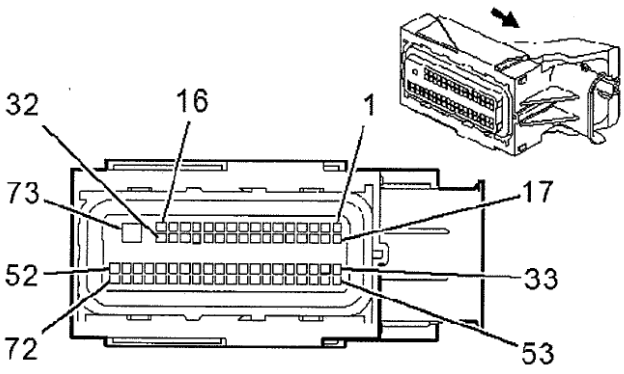
Universal Wiring - Electrical connections

Check and measure the wiring in case of changes in the cars wiring colours.
Insulate all not used wires.

4 +12V Battery 13 +12V battery sense	Red	Do not place the fuse in the holder before having completed the installation of the LPG system. Wire colour : **Red** Wire location : **+ Battery**



Wire number / code	Wire colour	Connection
32 Ground sense 1 Ground battry	Brown Brown	*Ground battery and ground sense.* Wire colour: **Black-white** Wire location: Petrol ECU - Grey Connector **X3** - pin **73**

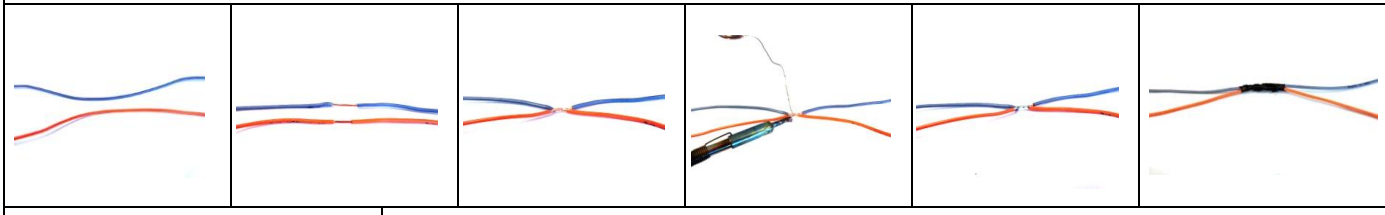


DO NOT CONNECT TO THE BATTERY GROUND !

Universal Wiring - Electrical connections

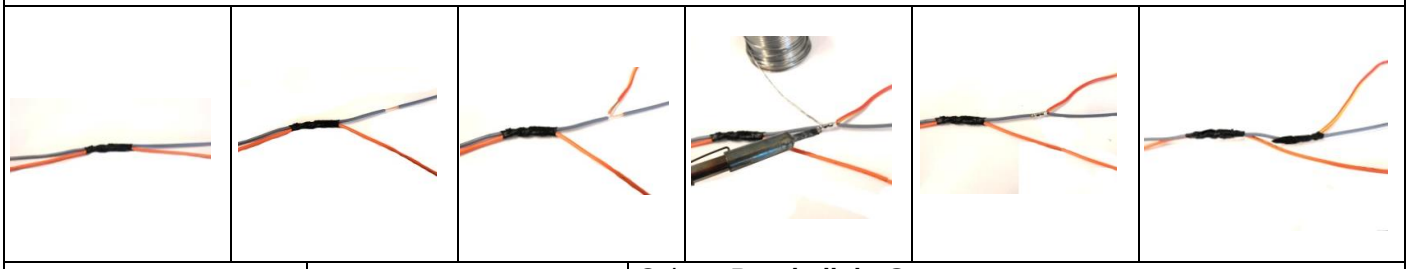
When mismatching colours: Pin numbers/positions are leading !

⚠ Join the injector supply connections of the petrol injector groups

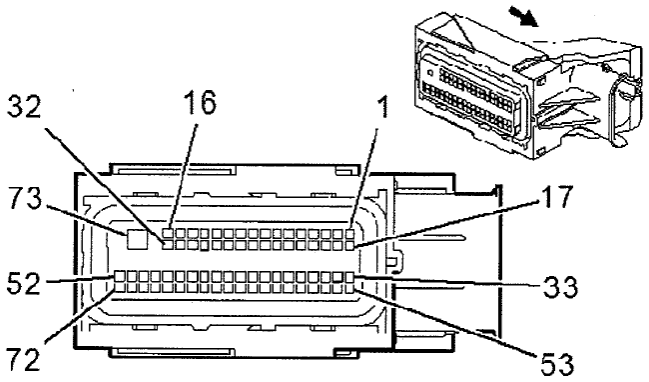


Join +inj.1 and +inj. 6	Grey Connector **X3** - pin **67** with pin **72**
Join +inj.2 and +inj. 3	Grey Connector **X3** - pin **66** with pin **69**
Join +inj.4 and +inj. 7	Grey Connector **X3** - pin **65** with pin **70**
Join +inj.5 and +inj. 8	Grey Connector **X3** - pin **71** with pin **68**

Connect AFC wiring to ECU_High_1, 2, 3 & 4 (H1, H2, H3 & H4) to just joint wires



Petrol inj. High 1 H1 (ECU_HIGH_1)	Red-White	Colour: **Purple-light Green** Location: Petrol ECU, grey connector **X3**, inj. 1 - pin **67**
Petrol inj. High 2 H2 (ECU_HIGH_2)	Red-Green	Colour: **Blue-Yellow** Location: Petrol ECU, grey connector **X3**, inj. 2 - pin **66**
Petrol inj. High 3 H3 (ECU_HIGH_3)	Red-Pink	Colour: **Blue-White** Location: Petrol ECU, grey connector **X3**, inj. 4 - pin **65**
Petrol inj. High 4 H4 (ECU_HIGH_4)	Red-Blue	Colour: **Green-White** Location: Petrol ECU, grey connector **X3**, inj. 5 - pin **71**



Universal Wiring - Electrical connections

Check and measure the wiring in case of changes in the cars wiring colours.

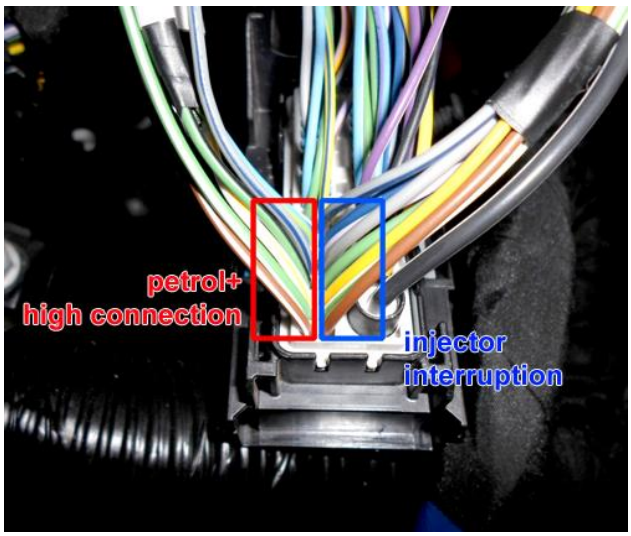
⚠ For measuring the petrol injectors :

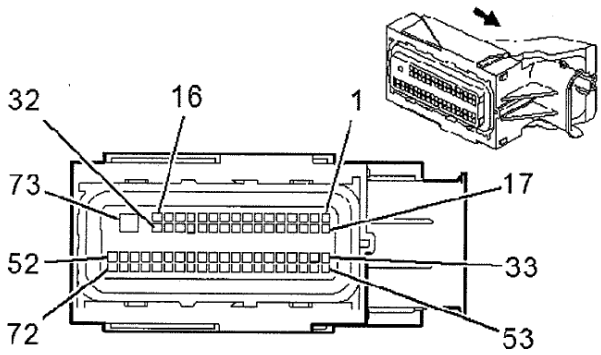
Interrupt each petrol injector control wire (injector min/ground).

Connect the **bicoloured** VSI measuring wire to the **ecu side**, (wire code: *ECU LO*).
Connect the **corresponding full coloured** VSI wire to the **petrol injector side** (wire code: *INJ LO*).
See diagrams: Installation manual general part 1 / 2.

Attention:
Each bicoloured measuring wire corresponds to a specific LPG injector and petrol injector / cylinder number.
Do not interchange the wires.

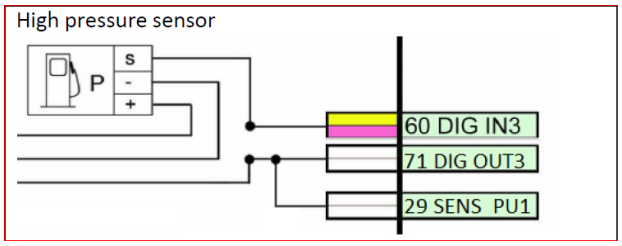
VSI measure wire nr.	Full coloured / Bicoloured Module position	Interrupt petrol injector wire
H1 (INJ LO A) / **H1** (ECU LO A) *Petrol injector cyl. **1***	Yellow / Yellow-White B2 / A2	Colour : **Brown** Location : Petrol ECU, **X3** , pin **52**
H1 (INJ LO B) / **H1** (ECU LO B) *Petrol injector cyl. **6***	Grey / Grey-White D1 / D2	Colour : **Pink-green** Location : Petrol ECU, **X3** , pin **47**
H2 (INJ LO A) / **H2** (ECU LO A) *Petrol injector cyl. **2***	Yellow / Yellow-Green A1 / C2	Colour : **Dark blue** Location : Petrol ECU, **X3** , pin **46**
H2 (INJ LO B) / **H2** (ECU LO B) *Petrol injector cyl. **3***	Grey / Grey-Green E1 / F2	Colour : **Green** Location : Petrol ECU, **X3** , pin **49**
H3 (INJ LO A) / **H3** (ECU LO A) *Petrol injector cyl. **4***	Yellow / Yellow-Pink B2 / A2	Colour : **Grey-Blue** Location : Petrol ECU, **X3** , pin **45**
H3 (INJ LO B) / **H3** (ECU LO B) *Petrol injector cyl. **7***	Grey / Grey-Pink D1 / D2	Colour : **Yellow-grey** Location : Petrol ECU, **X3** , pin **50**
H4 (INJ LO A) / **H4** (ECU LO A) *Petrol injector cyl. **5***	Yellow / Yellow-Blue A1 / C2	Colour : **White-green** Location : Petrol ECU, **X3** , pin **51**
H4 (INJ LO B) / **H4** (ECU LO B) *Petrol injector cyl. **8***	Grey / Grey-Blue E1 / F2	Colour : **Grey** Location : Petrol ECU, **X3** , pin **48**





Universal Wiring - Electrical connections

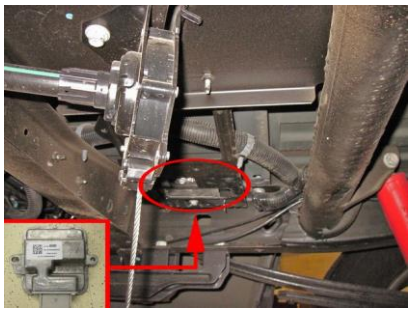
Check and measure the wiring in case of changes in the cars wiring colours.

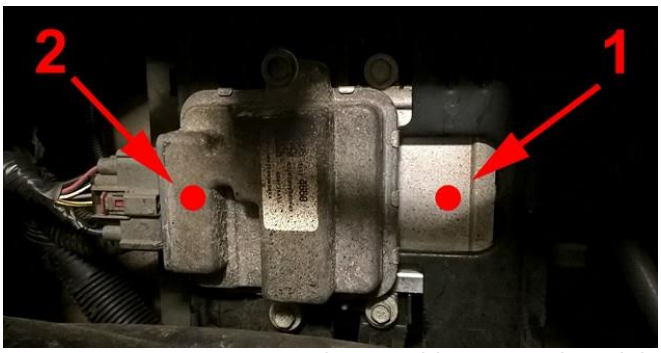
60, 71 & 29		*Fuel rail pressure sensor signal interruption* Wire colour : **Dark blue-White** Wire location : Petrol ECU, **X1**, pin **41** ***Add wiring module for pin 29 & pin 71***
60 DIG IN3	Yellow-pink	Sensor side
71 **Wiring module**	**White**	ECU side
29 **Wiring module**	**White**	Connect wire **29** to wire **71**, see picture below
		

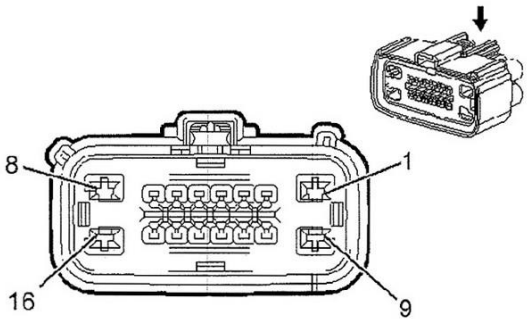
Fuel line pressure signal & PWM L83/L86 (Silverado/Sierra)

17 & 10		*Fuel line pressure sensor signal interruption* Wire colour : **Dark Blue-White** Wire location :Petrol ECU, **X1**, pin **2**
17 AD2	Blue-green	Sensor side
10 DAC2	Green	ECU side

56 DI2 *Extend the wire with the supplied extension wire. (Split tube for protection).*	Yellow-green	*Fuel pump supply voltage PWM* Wire colour: **Grey** Wire location : Fuel pump driver control module **Pin 8** ***Fuel pump module above spare wheel***







1 = Fuel pump driver control module / 2 = Tow bar control module

Fuel line pressure signal & PWM LT1 (Camaro 2018)

17 & 10 *(Extended wires)*		*Fuel line pressure sensor signal interruption* Wire colour: **Dark Blue-White** Wire location: Fuel pump driver control module, **Pin 10**
17 AD2	Blue-green	Sensor side
10 DAC2	Green	ECU side

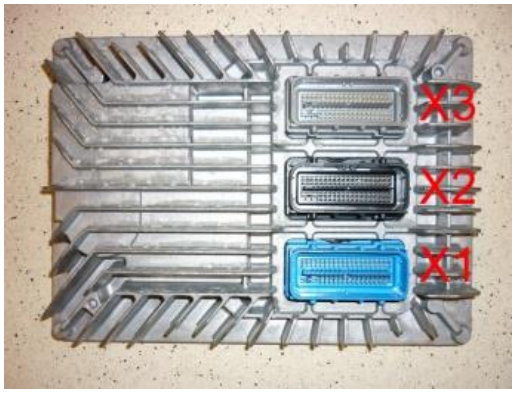
56 DI2 *(Extended wires)*	Yellow-green	*Fuel pump supply voltage PWM* Wire colour: **Grey** Wire location : Fuel pump driver control module, **Pin 13**

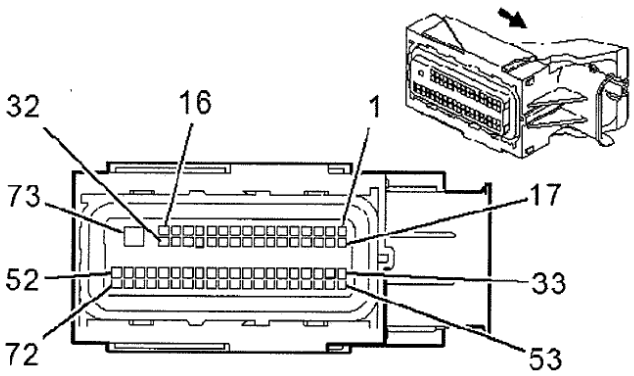
The fuel pump driver control module is located in the trunk on the left side.

Universal Wiring - Electrical connections

Check and measure the wiring in case of changes in the cars wiring colours.

3-pole black connector 27 +5V Sensor 37 C ground 18 AD1	Red – blue (not used) Brown - black (not used) Blue - white	*For measuring the inlet manifold pressure (MAP).* *Cut off connector and insulate not used wires.* Wire colour : **Light green-White** Wire location : Petrol ECU, **X2,** pin **43**
2-pole blue connector 34 Ground T-ECT 15 T-ECT	Brown – black Grey	*For measuring the engine coolant temperature (Tect)* Connect the connector to the reducer temperature sensor. Choose one of the two reducers.
63 Ground shift	Blue – orange	*Make a connection to high pressure petrol sensor ground* Wire colour : **Black-Light Green** Wire location : Petrol ECU, **X2,** pin **63**
40 Wake-up	Grey - red	*High pressure petrol sensor 5Volt supply / car wake-up* Wire colour : **Brown-Red** Wire location : Petrol ECU, **X2,** pin **18**
8 RPM engine speed	Purple - white	*For measuring the engine speed.* Wire colour : **Yellow-Purple** Wire location : Petrol ECU, **X3,** pin **33**
112 + Ignition	Red - grey	*Make a connection to ignition + / contact +.* Do not place the fuse in the holder before having completed the installation of the LPG system. Wire colour : **Purple-Blue** Wire location : Petrol ECU, **X1,** pin **73**





Dedicated Wiring - Electrical connections

32 Ground sense 1 Ground battery		Brown	*Ground battery and ground sense.* Wire colour: **Black** Location: To original petrol ECU ground on the left side of the engine. Easy accessible from below.

Mount the ring terminal to the original bolt from the ground point on the left side of the engine, easy accessible from below.

			For measuring the engine speed signal. Wire colour: **Yellow-Violet** Location: Next to the pulley from the crankshaft, easy accessible from below.
8 RPM		Purple-white	

Mount the connectors to the camshaft position sensor next to the pulley from the crankshaft, easy accessible from below.

Dedicated Wiring - Electrical connections

Connect the wiring loom to the petrol injector connectors before mounting the manifold!!

Mount the connectors to the petrol injector main connectors at the back side of the engine.
After this, mount the manifold back to the engine as shown in the manual.

Only for info:

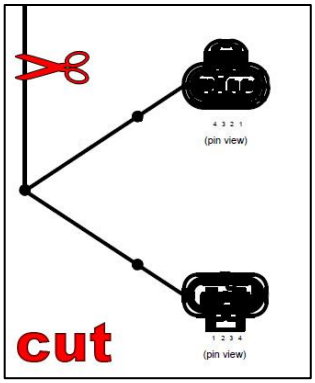
The following wires are already connected in the petrol injector connectors, there is no need to connect something extra:

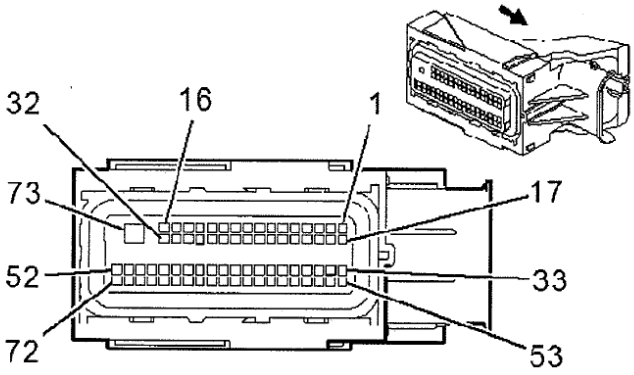
40 & 63				*Petrol fuel rail high pressure sensor.* Location: **In the petrol injector connectors**
40	Wake-up		Grey-red	*High pressure petrol sensor supply 5V.*
63	Ground Shift		Blue-orange	*High pressure petrol sensor ground.*

60, 71 & 29				*Petrol fuel rail high pressure sensor signal interruption.* Location: **In the petrol injector connectors**
60	DIG IN3		Yellow-pink	*High pressure petrol sensor signal sensor side*
71	Wiring module		White	*High pressure petrol sensor signal petrol ecu side*
29	Wiring module		White	*High pressure petrol sensor signal petrol ecu side*

Dedicated Wiring - Electrical connections

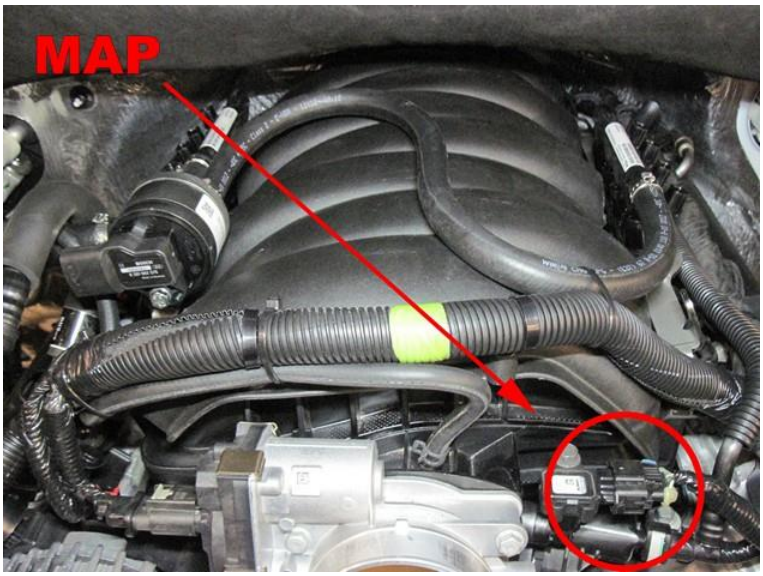
112			*Make a connection to ignition + / contact +.* Do not place the fuse in the holder before having completed the installation of the LPG system. Wire colour : **Purple-Blue** Wire location : Petrol ECU, **X1,** pin **73**
112 + Ignition		Red-grey	





Cut off the connectors wire 112 +ignition (red-grey) and connect to the petrol ECM

			For measuring the inlet manifold pressure (MAP). Wire colour: **Light green-White** Location: To the MAP sensor left front of the engine.
18 AD 1		Blue-white	

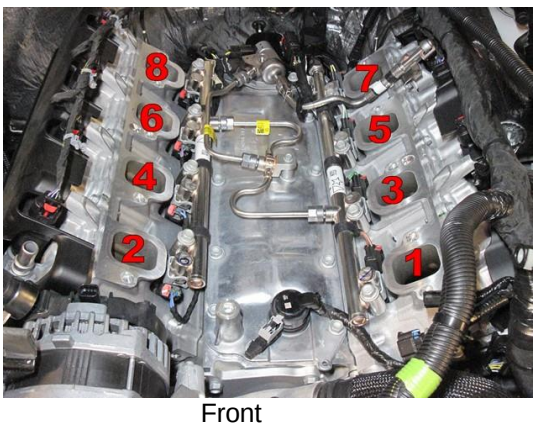


Mount the connectors to the MAP sensor at the left front of the engine, next to the throttle body.

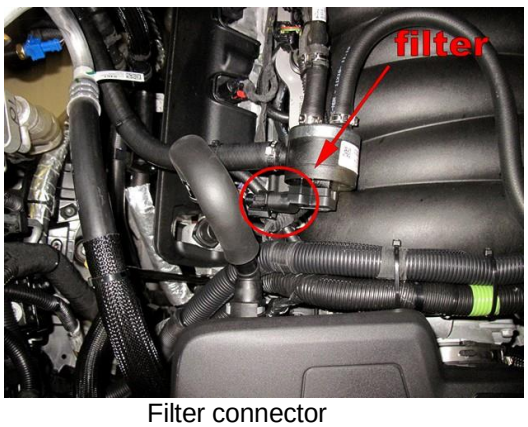
Dedicated Wiring - Electrical connections

Wire number / code	Wire colour	Connection
98 98 G INJ OUT **1**	**White-yellow**	Connector VSI-injector to cylinder **1**. (**front left side)**
106 106 G + INJ 1	**red**	
99 99 G INJ OUT **2**	**Green-yellow**	Connector VSI-injector to cylinder **2**.
107 107 G + INJ 2	**red**	
100 100 G INJ OUT **3**	**Pink-yellow**	Connector VSI-injector to cylinder **3**.
108 108 G + INJ 3	**red**	
82 82 G INJ OUT **4**	**Blue-yellow**	Connector VSI-injector to cylinder **4**.
90 90 G + INJ 4	**red**	
83 83 G INJ OUT **5**	**Grey-yellow**	Connector VSI-injector to cylinder **5**.
91 91 G + INJ 5	**red**	
84 83 G INJ OUT **6**	**Brown-yellow**	Connector VSI-injector to cylinder **6**.
92 91 G + INJ 6	**red**	
85 85 G INJ OUT **7**	**LBlue-yellow**	Connector VSI-injector to cylinder **7**.
93 93 G + INJ 7	**red**	
86 86 G INJ OUT **8**	**Red-yellow**	Connector VSI-injector to cylinder **8**.
94 94 G + INJ 8	**red**	

The pictures are from a newer engine, the connectors from the injectors and the filter are at the same location.



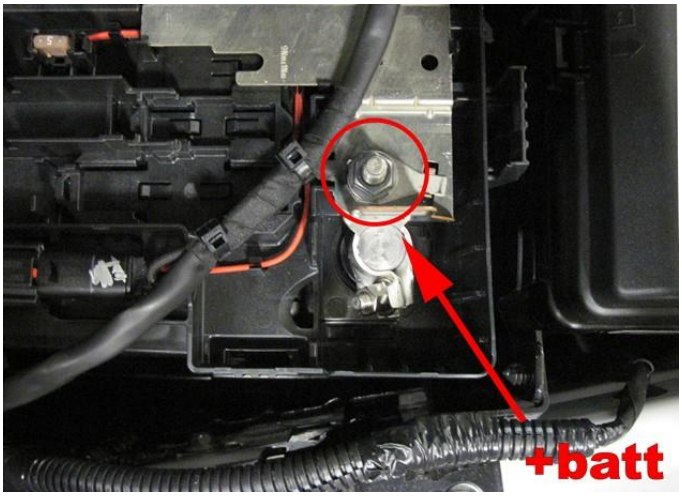
Front



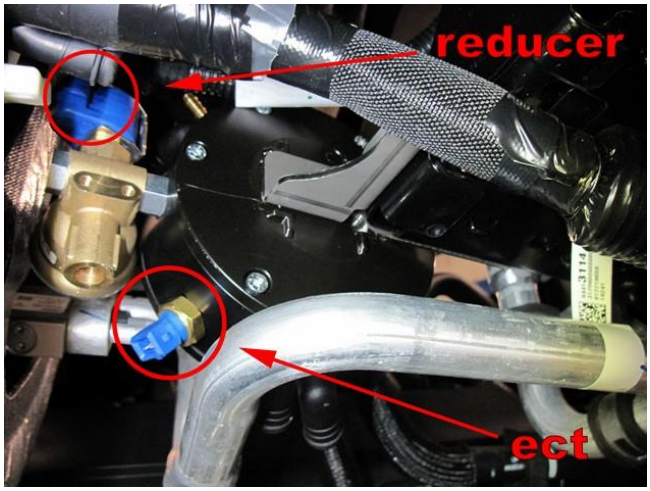
Filter connector

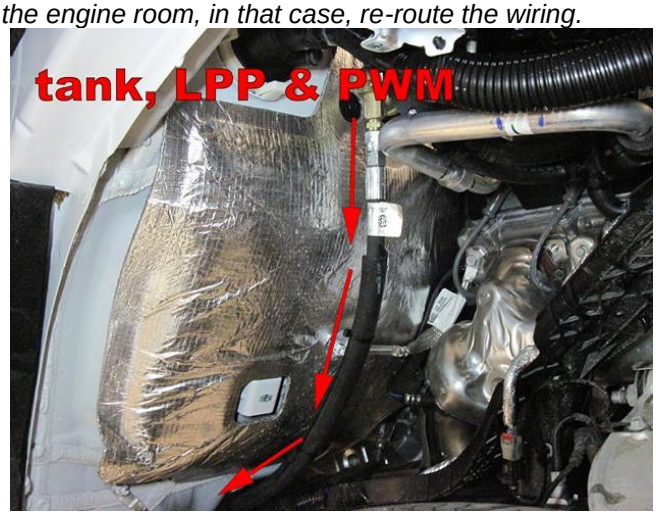
Dedicated Wiring - Electrical connections

4 +12V Battery		Red	*Connect to the '+' of the battery; use the ring terminal.* Wire colour: **Red** Wire location: **+ Battery**



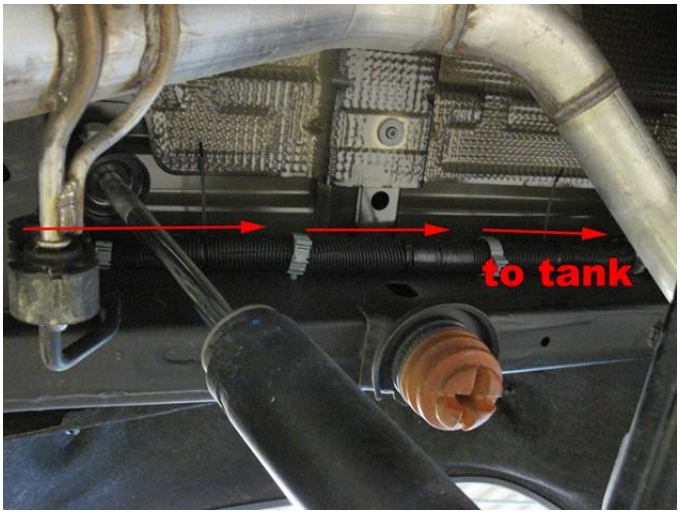
The reducers can be located on the other side in the engine room, in that case, re-route the wiring.





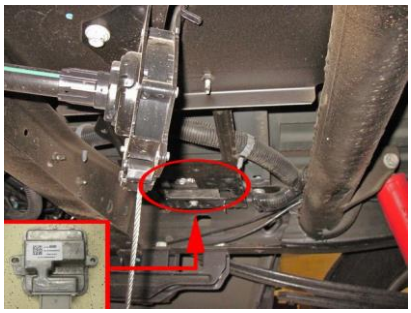
Mount the connectors to the ECT sensor & the reducer. Wiring routing to the tank, LPP & PWM.

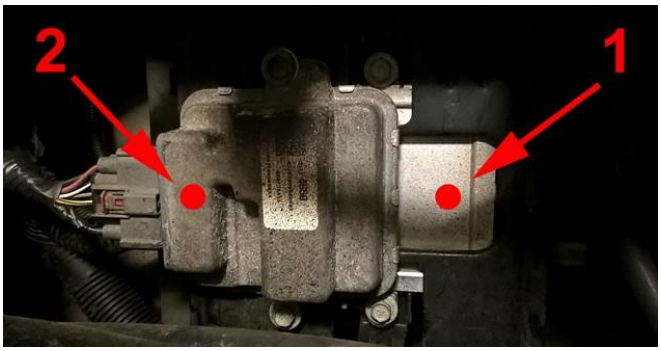
Dedicated Wiring - Electrical connections

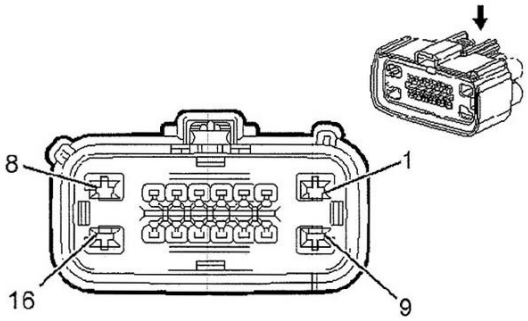


Dedicated Wiring - Electrical connections L83/L86 Silverado/Sierra

56 DI2 *Extend the wire with the supplied extension wire. (Split tube for protection).*	Yellow-green	*Fuel pump supply voltage PWM* Wire colour: **Grey** Wire location : Fuel pump driver control module **Pin 8** ***Fuel pump module above spare wheel***



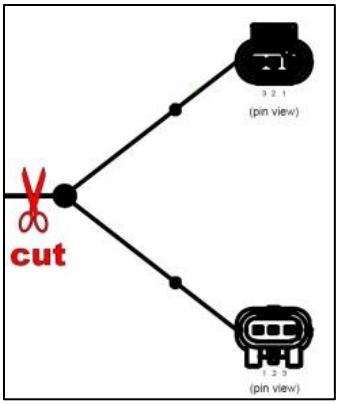




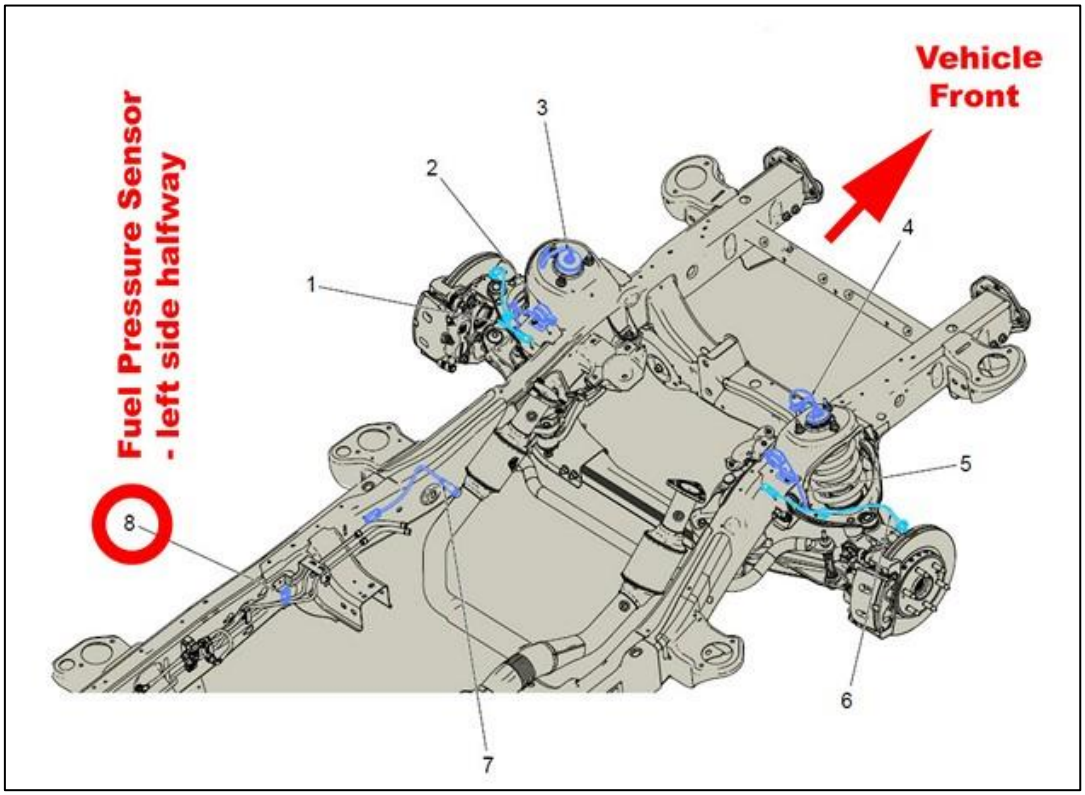
1 = Fuel pump driver control module / 2 = Tow bar control module

Dedicated Wiring - Electrical connections L83/L86 Silverado/Sierra

17 & 10			*Fuel line pressure sensor signal interruption.* Wire colour: **Dark Blue-White** Location: **See picture, pin 1 of the sensor connector**
17 AD 2		Blue-green	Sensor side
10 DAC 2		Green	Petrol ecu side



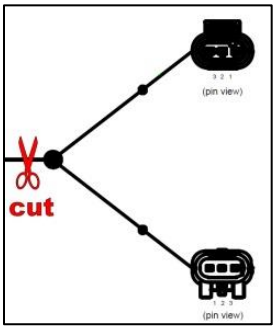
Cut off the connector with the 17 AD2 (Blue-green) and 10 DAC2 (Green) wires.



Number 8 → Petrol Low Pressure Sensor location

Dedicated Wiring - Electrical connections LT1 (Camaro 2018)

17 & 10 *(Extended / reroute wires)*		*Fuel line pressure sensor signal interruption* Wire colour: **Dark Blue-White** Wire location: Fuel pump driver control module, **Pin 10**
17 AD2	Blue-green	Sensor side
10 DAC2	Green	ECU side



Cut off the connector with the 17 AD2 (Blue-green) and 10 DAC2 (Green) wires and extend / reroute to the trunk together with 56 DI2.

56 DI2 *(Extended / reroute wires)*	Yellow-green	*Fuel pump supply voltage PWM* Wire colour: **Grey** Wire location : Fuel pump driver control module, **Pin 13**

The fuel pump driver control module is located in the trunk on the left side.

Electrical connections

Connectors in wiring loom

2-pole blue connector 15 T-ECT 34 Ground T-ECT	 Grey Brown - black	For measuring the engine coolant temperature (Tect) Connect the this to 1 of the 2 the reducer temperature sensors.
4-pole connector 35 Ground Psys 14 T-Gas 9 +5 Volt sensor 16 Psys	 Brown - black Grey Red - blue green	For measuring gas pressure and temperature. Connect the connector to the filter unit sensor.
2-pole connector 24 +12V reducer lock-off 31 C Ground	 Yellow - green Brown - black	Connect the connector to the reducer lock-off valve.
4-pole connector 46 Service TxD 65 Service RxD 68 Ground PDT	 Grey Grey Brown - black	Diagnose connector.
Tank wiring loom 2 +12V Tank relay 12 Tank level IN 26 Ground tank relay	 red blue black	 Connect to the tank lock-off. Connect the tank level gauge. Connect to the tank lock-off.

Wiring loom link 45 C ground 58 +12V switched 64 AD5	 Brown – black Red – white Blue - grey	Connection from AFC connector A to connector B The wiring loom link is a grey connector on both sides, one is caped other one is loose , connect each other.

Optional:

3-pole connector 11 + manometer 12 tank level in 33 ground manometer	 red blue brown	***Cut off connector and insulate wires***

Checklist after installation

1. Connect the serial interface wire and run the VSI diagnosis program.
   Install the VSI fuse, and program the switch.
   Turn the ignition key in the accessory position.
   When working on the car, beware of moving and rotating parts in the engine compartment.

2. When commissioning the LPG system, you must activate the VSI computer with the diagnosis software.
   When the VSI computer has not been activated, it will keep generating error code 160. To activate the VSI computer, select function F11 (activate ECM).

3. Check whether the program in the VSI computer matches with the car (dedicated engine set):
   Refer with F2 to the box number and car description in the diagnosis software and compare these with the set number.

4. The system will switch over to LPG as soon as the temperature of the coolant (T-ect)
   becomes higher than the parameter T-min set and when the TSO-cold time is expired.

5. Check all components and connections for any gas leakage (use a LPG leak detector device or a fluid detection like soap. Caution for moving and rotating parts in the engine compartment !

6. Let the engine run warm on petrol >80°C.
   Check if the evaporator heats up.
   Check the engine signals, petrol injection time, RPM, ECT, lambda, MAP signal, petrol pressure signal.
   Let the engine run idle on LPG.
   Adjust the evaporator pressure. Refer to the parameter list (or F2 : ID box) for the idle level value set.
   Adjust the evaporator pressure in such a way that the pressure measured (P-sys) equals the idle level value.
   Turn the socket-head screw at the front of the evaporator to adjust the pressure.
   An error code will be generated whenever the pressure variation is to high.
   Seal the evaporator with the sticker included in the delivery after having adjusted the pressure.

7. Use the diagnosis software to check again all input and output signals.

8. Check the system for error codes and solve these, if required.
   Check the petrol MMS for EOBD error codes.
   Place the protection connector on the VSI communication connector.

9. Make a test drive and check the drivability on LPG and petrol.

ALTERNATIVE FUEL SYSTEMS
Prins