



Subject: Converting Dual Fuel Tank (NSQ) to a Single Fuel Tank System (N2L/NVK)

Models Affected: Chevrolet Silverado
4500HD, 5500 HD and 6500 HD

Model Years: 2019 and beyond

Date: January 29, 2019

Revision Date: March 1, 2022

ADVISORY:

Condition/Concern:

Some vehicle upfits of the Chevrolet Silverado 4500HD 5500 HD and 6500 HD Chassis Cabs required the removal/deletion of the front fuel tank to install upfit equipment. The following will provide instructions on the removal/addition of the necessary hardware to reconfigure the vehicle's fuel system from a dual (NSQ) to a single Rear mounted (N2L) fuel tank system. Be advised that following the fuel system reconfiguration certain modules on the vehicle must be reprogram for the fuel system components to function properly

Warning: Refer to Safety and Glasses and Compressed Air Warning

Warning: Vehicle is drivable only after front tank is removed, hoses and pipes and fuel tank module replaced, and ECM software update is done.

DUAL TANKS TO REAR ONLY (N2L) INSTRUCTIONS:

1. Drain the fuel tank.

Fuel Tank Draining Diesel

Recommended special tools

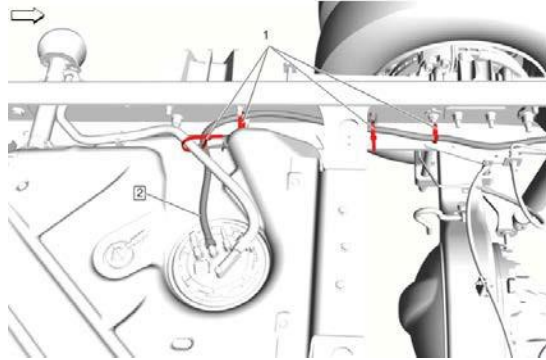
CH-45004 Fuel Tank Siphon Hose or equivalent

- A. Disconnect the negative battery cable.**
- B. Remove the fuel fill cap.**
- C. Insert the Fuel Tank Siphon Hose into the tank.**
- D. Attach the Fuel Tank Siphon Hose to a hand or air operated pump device.**
- E. Using a hand or air operated pump drain as much fuel from the tank as possible.**

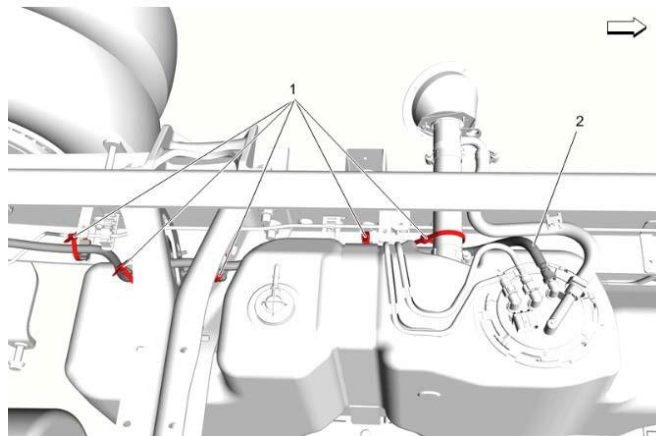


Fuel Feed Rear Hose removal

1. Raise and support the vehicle. Refer to Lifting and jacking in service manual



2. Tie Strap (1) » Remove and DISCARD [4x]
3. Fuel Feed Rear Hose (2) » Disconnect –Refer to Plastic Collar Quick Connect Fitting Services

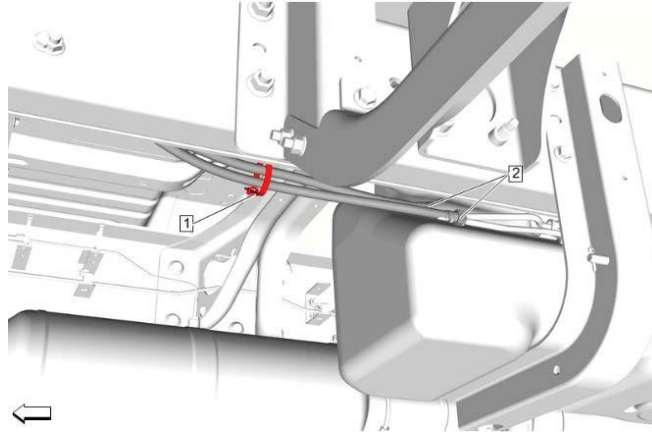


4. Tie Strap (1) » Remove and DISCARD [5x]
5. Fuel Feed Rear Hose (2) » Disconnect –Refer to Plastic Collar Quick Connect Fitting Services
6. Fuel Feed Rear Hose (2) » Remove

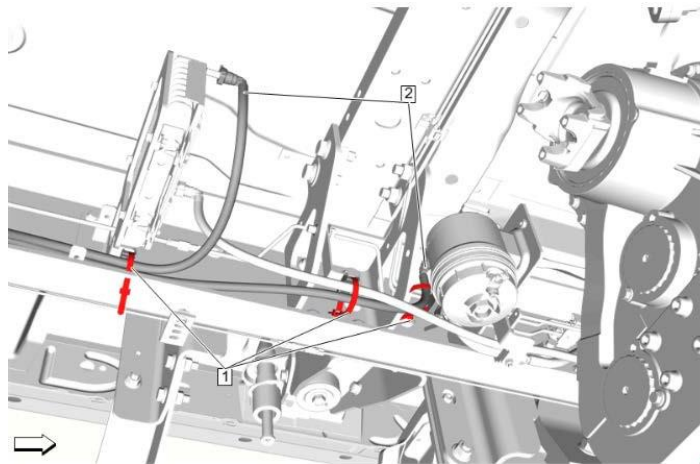


Fuel Feed and Return Front Hose removal

1. Raise and support the vehicle.



2. Tie Strap (1) » Remove and DISCARD
3. Fuel Feed and Return Front Hose (2) » Disconnect [2x] –Refer to Plastic Collar Quick Connect Fitting Services

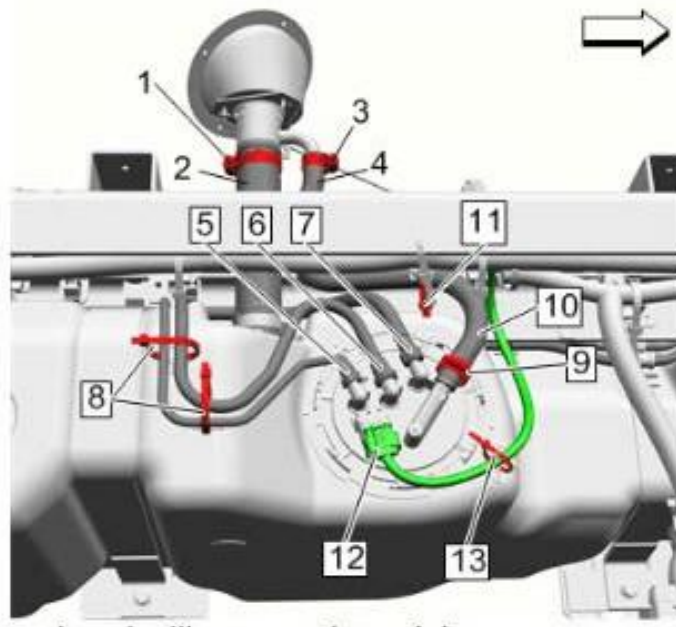


4. Tie Strap (1) » Remove and DISCARD [3x]
5. Fuel Feed and Return Front Hose (2) » Disconnect [2x] –Refer to Plastic Collar Quick Connect Fitting Services
6. Fuel Feed and Return Front Hose (2) » Remove

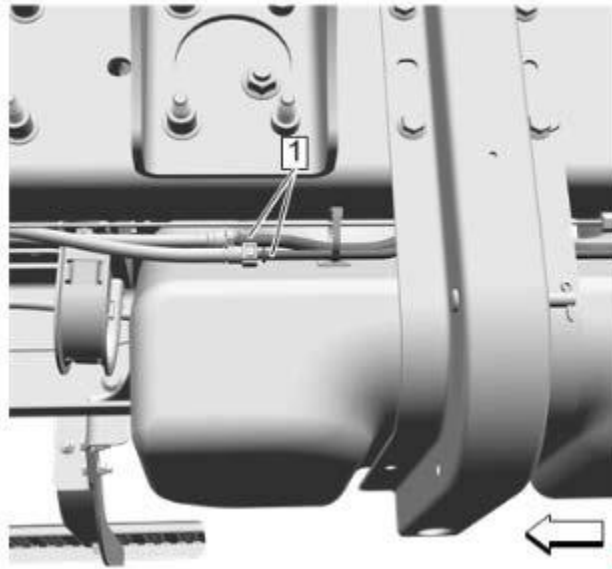


Front Fuel Tank Removal

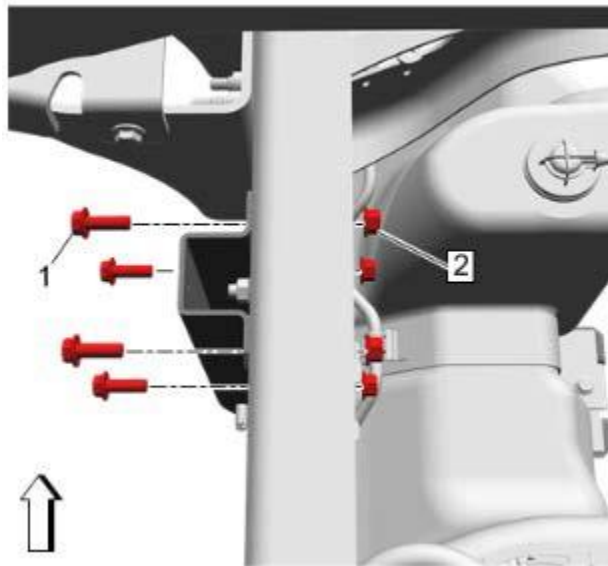
1. Drain the fuel tank. Refer to Fuel Tank Draining in service.



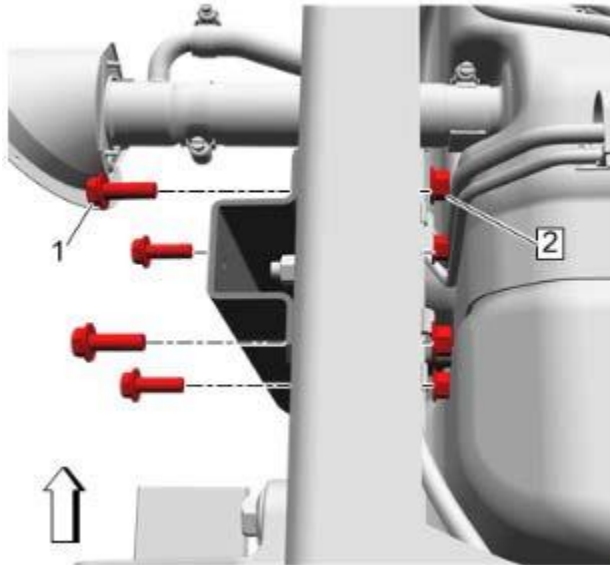
2. Fuel Tank Filler Hose Clamp (1) » Loosen
3. Fuel Tank Filler Hose (2) » Remove
4. Fuel Tank Vent Hose Clamp (3) » Loosen
5. Fuel Tank Vent Hose (4) » Remove
6. Fuel Return Line (5) » Disconnect –Refer to Plastic Collar Quick Connect Fitting Services
7. Fuel Supply Line (6) » Disconnect –Refer to Plastic Collar Quick Connect Fitting Services
8. Fuel Transfer Line (7) » Disconnect –Refer to Plastic Collar Quick Connect Fitting Services
9. Tie Strap (8) » Remove and DISCARD [2x]
10. Fuel Tank Vent Hose Clamp (9) » Loosen
11. Fuel Tank Vent Hose (10) » Remove
12. Tie Strap (11) » Remove and DISCARD
13. Electrical Connector (12) » Disconnect
14. Tie Strap (13) » Remove and DISCARD



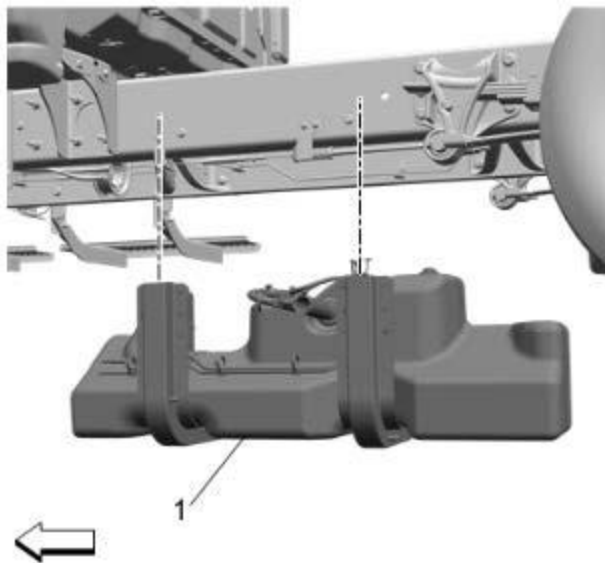
15. Fuel Feed and Return Front Hose (1) » Disconnect –Refer to Plastic Collar Quick Connect Fitting Services [2x]



16. Place a suitable adjustable jack under the fuel tank.
17. Fuel Tank Support Bolt (1) » Remove [4x]
18. Fuel Tank Support Nut (2) » Remove [4x]



- 19. Place a suitable adjustable jack under the fuel tank.
- 20. Fuel Tank Support Bolt (1) » Remove [4x]
- 21. Fuel Tank Support Nut (2) » Remove [4x]



- 22. Fuel Tank (1) » Remove



Rear Fuel Tank Fuel Pump Module Replacement

Special Tools

CH 45722 Fuel Sender Lock Ring Wrench or EQUIVALENT

1. Auxiliary Fuel Tank» Remove



2. Fuel Pump Lock Ring(1)»Remove—CH 45722 Wrench or EQUIVALENT



3. Fuel Tank Fuel Pump Module (1)» Remove
4. O-Ring (2)»Remove and DISCARD



Installation Procedure



1. O-Ring (2)» Install NEW for Rear Fuel Tank only
2. Fuel Tank Fuel Pump Module (1)» Install Part Number 84212966 (Rear Fuel pump Module kit)



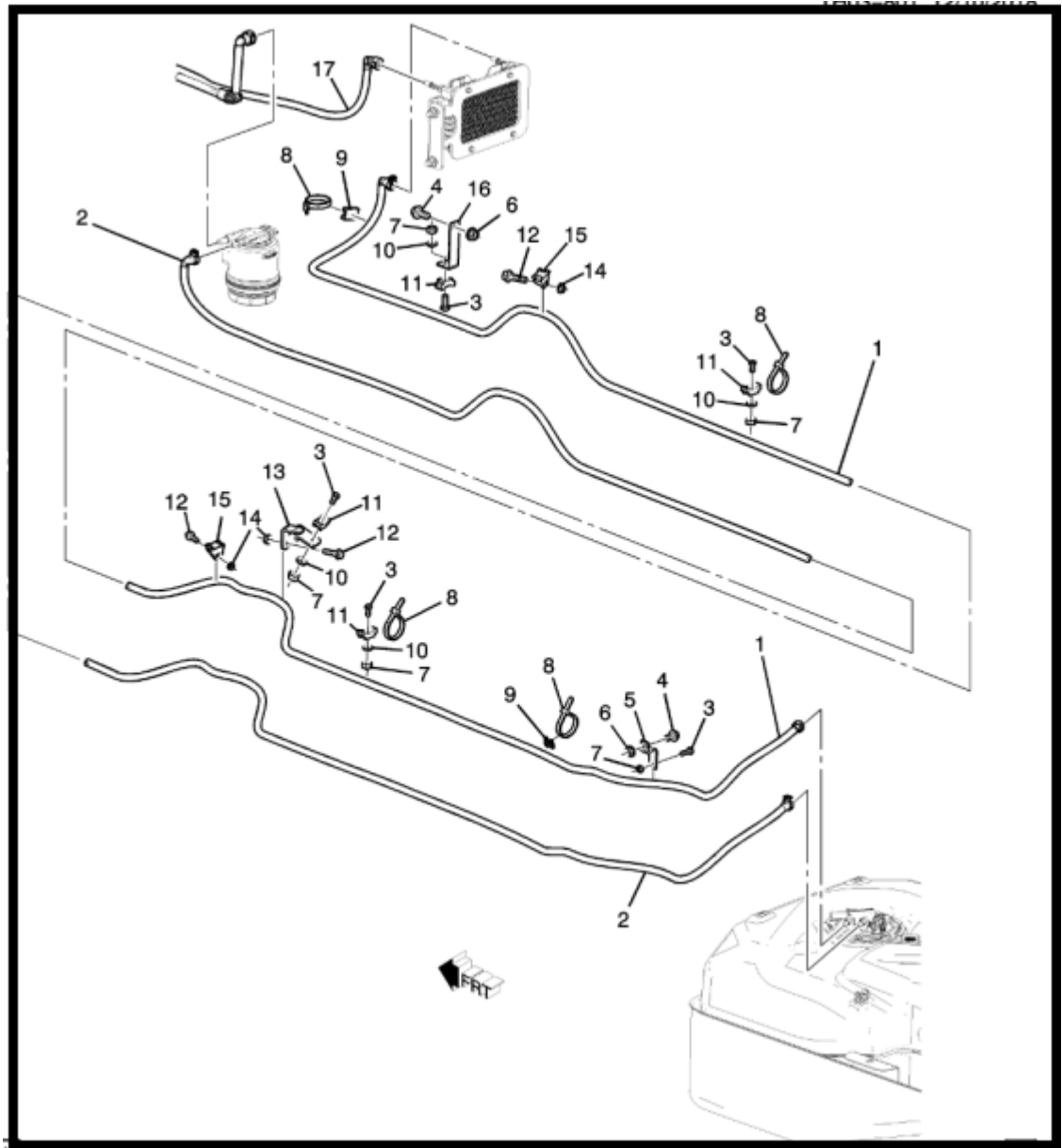
3. Fuel Pump Lock Ring (1)» Install—CH 45722 Wrench or EQUIVALENT
4. Auxiliary Fuel Tank» Install



Rear Tank Fuel Line and return replacement

1. Replace Fuel line and return based on illustration below with part number
2. Install/connect all nuts, bolts, clips, straps accordingly

Rear Tank fuel line and return illustration





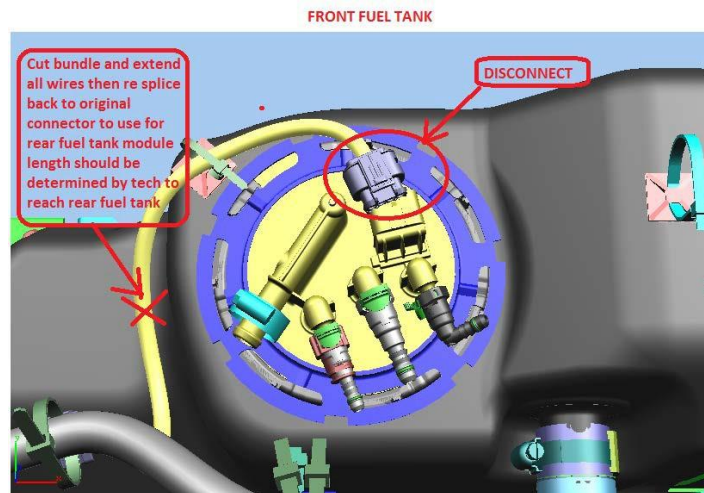
Component part number for fuel lines Rear Tank only

Call	Part #	Group	H	Description	Usage	Year	Qty
1	19404577	03.163		See Pages 17 and 18 for proper fuel line P/N based on wheelbase option – see vehicle build sheet for the wheelbase option			
2	19404538	03.163					
3	19404760	03.162		BOLT, FUEL RTN HOSE CLIP BRKT (16.070)	CK5	2019 - 2019	
4	19404661	03.162		BOLT, FUEL RTN HOSE CLIP BRKT (16.070)	CK5	2019 - 2019	
5	19404767	03.162		CLIP, FUEL PIPE	CK5	2019 - 2019	01
6	19404644	03.162		NUT, FUEL FEED PIPE CLIP (M12) (16.070)	CK5	2019 - 2019	
7	19404750	03.162		NUT, FUEL FEED PIPE CLIP (16.070)	CK5	2019 - 2019	
8	19404772	03.162		STRAP, FUEL HOSE (2.559)	CK5	2019 - 2019	
9	19405261	03.162		CLIP, FUEL FEED & RTN PIPE (2.559)	CK5	2019 - 2019	
10	19404747	03.162		WASHER, FUEL FEED & RTN PIPE BRKT (16.070)	CK5	2019 - 2019	01
11	19404773	03.162		CLIP, FUEL FEED & RTN PIPE (4.686)	CK5	2019 - 2019	
12	19404760	03.162		BOLT, FUEL RTN HOSE CLIP BRKT (16.070)	CK5	2019 - 2019	
13	19404770	03.162		BRACKET, FUEL FEED & RTN PIPE (7.012)	CK5	2019 - 2019	
14	19404761	03.162		NUT, FUEL FEED PIPE CLIP (16.070)	CK5	2019 - 2019	
15	19404768	03.162		CLIP, FUEL FEED & RTN PIPE (4.686)	CK5	2019 - 2019	
16	19404766	07.009		EXTENSION, SECT	CK5	2019 - 2019	
17	19405545	03.163		HOSE, FUEL (4.685)	CK5	2019 - 2019	

ELECTRICAL

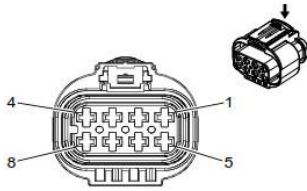
Front Fuel Tank

1. Unplug connector from Fuel tank pump module
2. Extend all wires (5 wires: Ckt GY Cavity 1, YE/GY Cavity2, WH/BN Cavity 3, BU/VT Cavity 5, and BK/GN Cavity 6) by conforming to GM best practices and procedures for splicing, protecting, shrink tubing...
3. Run extended bundle to rear fuel tank module
4. Insert connector in rear fuel pump module





Component Connector End Views
A6C Fuel Pump and Level Sensor Assembly - Primary (N2L)



Connector Part Information
 Harness Type: Chassis Rear Right
 OEM Connector: 4088330C1
 Service Connector: Service by Harness - See Part Catalog
 Description: 8-Way F 2.8 Series, Sealed (GY)

Terminal Part Information

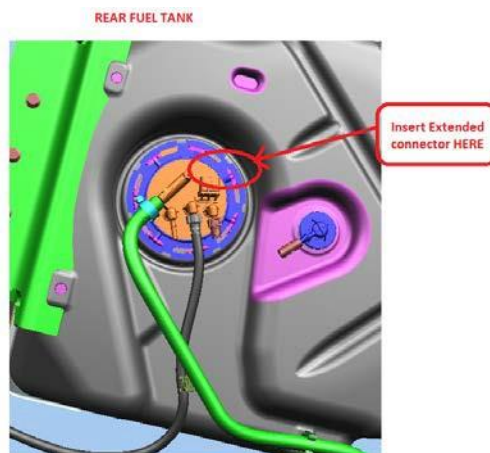
Terminal Type ID	Terminated Lead	Diagnostic Test Probe	Terminal Removal Tool	Service Terminal	Tray Name	Core Crimp	Insulation Crimp
I	Not Required	No Tool Required	No Tool Required	Not Required	Not Required	Not Required	Not Required

A6C Fuel Pump and Level Sensor Assembly - Primary (N2L)

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
1	1.5	GY	120	Fuel Pump Control	I	—
2	1.5	YE/GY	4137	Fuel Pump Supply Voltage Phase 2	I	—
3	1.5	WH/BN	4138	Fuel Pump Supply Voltage Phase 3	I	—
4	—	—	—	Not Occupied	—	—
5	0.5	BU/VT	1589	Primary Fuel Level Sensor Signal	I	—
6	0.5	BK/GN	6281	Fuel Level Sensor Low Reference	I	—
7 - 8	—	—	—	Not Occupied	—	—

Rear Fuel Pump Module:

1. Unplug connector from Fuel tank pump module
2. Cut circuits from connector, and seal every ckt separately using heat shrink tubes, and conforming to GM best practices and procedures.





DUAL TANKS TO FRONT ONLY (NVK) INSTRUCTIONS:

Auxiliary Fuel Tank - Removal Procedure

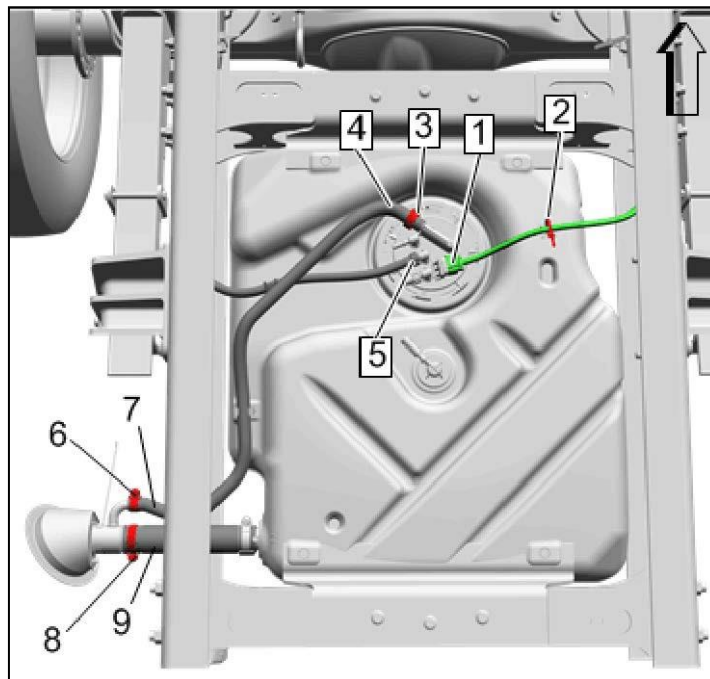
2. Drain the fuel tank.

Fuel Tank Draining Diesel

Recommended special tools

CH-45004 Fuel Tank Siphon Hose or equivalent

- F. Disconnect the negative battery cable.
- G. Remove the fuel fill cap.
- H. Insert the Fuel Tank Siphon Hose into the tank.
- I. Attach the Fuel Tank Siphon Hose to a hand or air operated pump device.
- J. Using a hand or air operated pump drain as much fuel from the tank as possible.

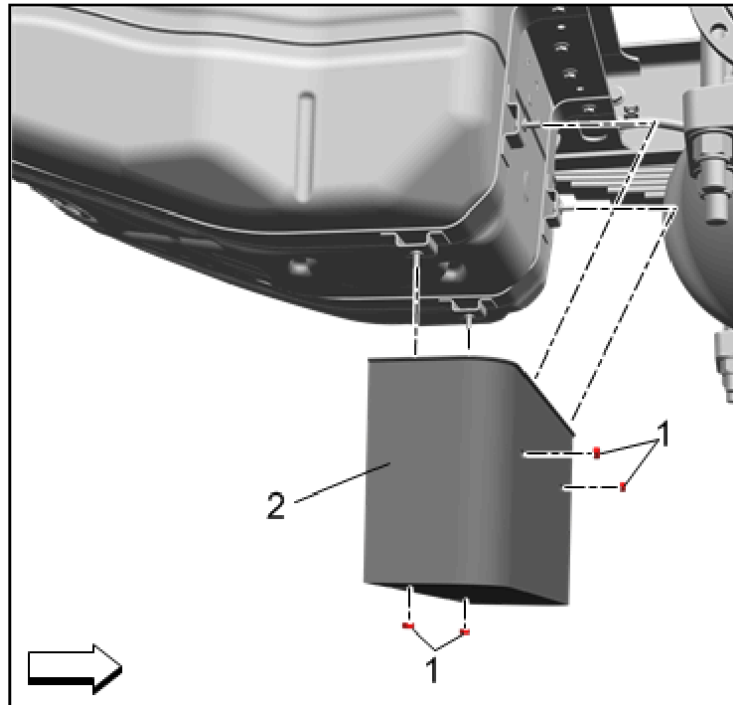


- 3. Electrical Connector (1) Disconnect
- 4. Tie Strap (2) » Remove and DISCARD
- 5. Fuel Tank Vent Hose Clamp (3) » Loosen
- 6. Fuel Tank Vent Hose (4) » Remove
- 7. Supply Fuel Line (5) » Disconnect

General Motors Upfitter Integration
www.gmupfitter.com



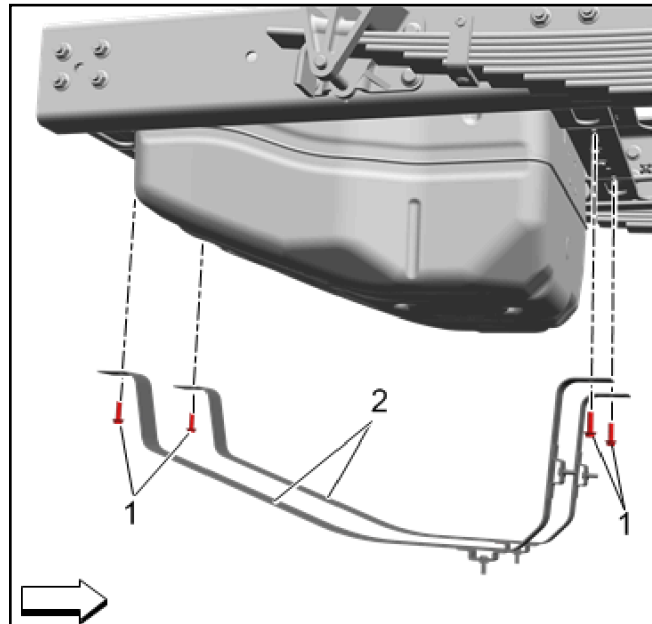
- 8. Fuel Tank Vent Hose Clamp (6) » Loosen
- 9. Fuel Tank Vent Hose (7) » Remove
- 10. Fuel Tank Filler Hose Clamp (8) » Loosen
- 11. Fuel Tank Filler Hose (9) » Remove



- 12. Fuel Tank Shield Nut (1) » Remove [4x]
- 13. Fuel Tank Shield (2) » Remove



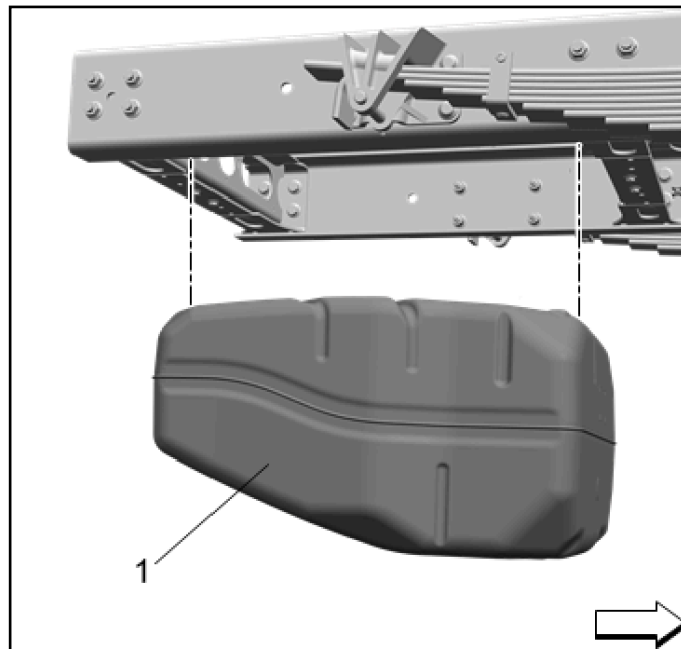
UI Bulletin #149c



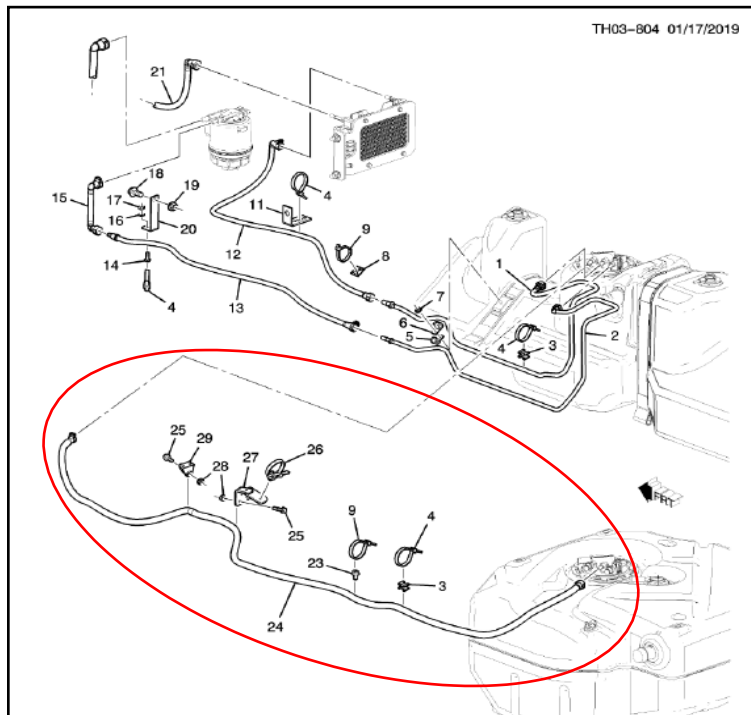
14. Place a suitable adjustable jack under the fuel tank.

15. Fuel Tank Strap Bolt (1) » Remove [4x]

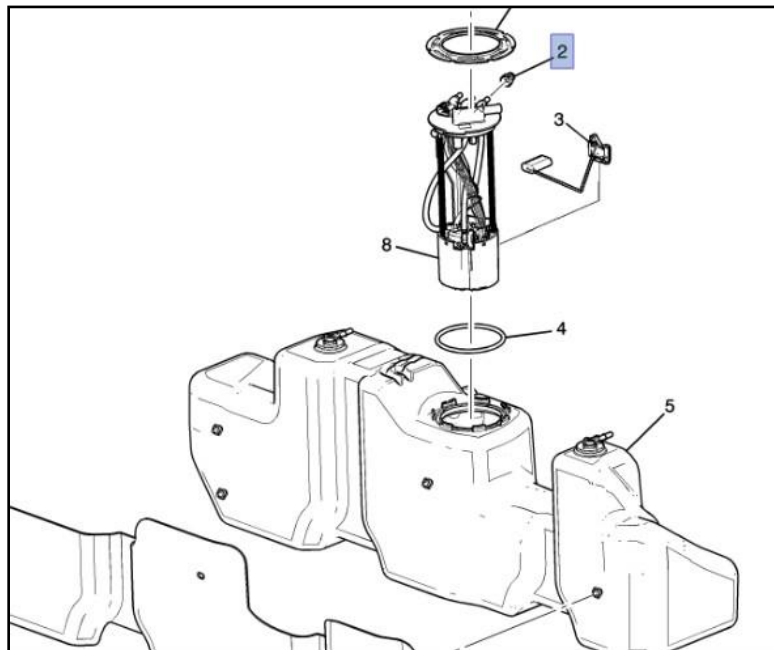
16. Fuel Tank Strap (2) » Remove [2x]



17. Fuel Tank (1) » Remove



18. Remove Fuel Transfer Supply line (24) from the rear to front tank and all attaching hardware.



19. Install a cap (P/N 23287870) [2] on the now unused inlet port.

20. Bundle and secure the electrical connector and harness.



Additional Information:

Upon completion of the fuel system hardware reconfiguration, it is necessary to reprogram the vehicle's Engine Control Module (ECM) by a GM dealer to enable proper fuel gauge operation and level indication.

GM DEALERS: Contact Techline Customer Support and request the vehicle configuration string be modified, replacing the dual fuel tank option (NSQ) with the single Rear fuel tank option (N2L) OR with the Single Front Tank option (NVK). Be sure to check for and clear any DTCs that may be present following the vehicle reconfiguration

Part #	Description/Fuel Line Item #1	Usage	Year
19405917	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=4450MM)	CK564 (03) (ER2,N2L,G40,GP1,GP8)	2019 - 2022
19405917	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=4450MM)	CK564 (03) (ED5,N2L,GR3,GR4,FU7)	2019 - 2022
19405915	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=3750MM)	CK560 (43) (FNV,N2L,GR3,GR4,FU7)	2019 - 2022
19405913	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=3500MM)	CK5 (ED9,N2L,GR3,GR4,FU7)	2019 - 2022
19406418	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=4100MM)	CK564 (03) (ER2,N2L,GR3,GR4,FU7)	2019 - 2022
19406421	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=5400MM)	CK564 (03) (FRP,N2L,GR3,GR4,FU7)	2019 - 2022
19406416	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=2850MM)	CK564 (03) (FQT,N2L,GR3,GR4,FU7)	2019 - 2022
19406723	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=4800MM)	CK560 (43) (EM1,G40,GP1,N2L)	2019 - 2022
19406672	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=5250MM)	CK564 (03-43) EQB,G40,GP1,GP8,N2L)	2019 - 2022
19406672	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=5250MM)	CK564 (03-43) FPN,FRP,N2L,GR3,GR4, FU7)	2019 - 2022
19406719	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=4900MM)	CK564 (03) (EQB,N2L,GR3,GR4,FU7)	2019 - 2022
19406419	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=4400MM)	CK560 (43) (EM1,N2L,GR3,GR4,FU7)	2019 - 2022
19406721	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=5550MM)	CK564 (03) (FPN,N2L,G40,GP1,GP8)	2019 - 2022
19406721	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=5550MM)	CK564 (03) (FBC,N2L,GR3,GR4,FU7)	2019 - 2022
19406951	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=3800MM)	CK564 (03) (ED9,G40,GP1,GP8,N2L)	2019 - 2022
19407010	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=4850MM)	CK564 (03) (ED5,G40,GP1,GP8,N2L)	2019 - 2022
19407083	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=5900MM)	CK564 (03) (FBC,N2L,G40,GP1,GP8)	2019 - 2022
19407253	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=5700MM)	CK5 (N2L,FRP,G40,GP1,GP8)	2019 - 2022
19406721	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=5550MM)	CK564 (03) (FBC,N2L,GR3,GR4,FU7)	2019 - 2022
19406951	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=3800MM)	CK564 (03) (ED9,G40,GP1,GP8,N2L)	2019 - 2022
19407010	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=4850MM)	CK564 (03) (ED5,G40,GP1,GP8,N2L)	2019 - 2022
19407083	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=5900MM)	CK564 (03) (FBC,N2L,G40,GP1,GP8)	2019 - 2022
19407253	HOSE, FUEL CLR OTLT (SILVER) (7/16" L=5700MM)	CK5 (N2L,FRP,G40,GP1,GP8)	2019 - 2022

Part #	Description/Fuel Item #2	Usage	Year
19405914	TUBE, FUEL/WAT SEP RTN (BLACK) (7/16" L=3850MM) (3.163)	CK560 (43) (FNV,N2L,GR3,GR4,FU7)	2019 - 2022
19405912	TUBE, FUEL/WAT SEP RTN (BLACK) (7/16" L=3550MM) (3.163)	CK564 (03) (ED9,N2L,GR3,GR4,FU7)	2019 - 2022
19405916	TUBE, FUEL/WAT SEP RTN (BLACK) (7/16" L=4500MM) (3.163)	CK564 (03) (ED5,GR3,GR4,FU7,N2L)	2019 - 2022
19405916	TUBE, FUEL/WAT SEP RTN (BLACK) (7/16" L=4500MM) (3.163)	CK560 (43) (EM1,N2L,GR3,GR4,FU7)	2019 - 2022
19405916	TUBE, FUEL/WAT SEP RTN (BLACK) (7/16" L=4500MM) (3.163)	CK564 (03) (ER2,N2L,G40,GP1,GP8)	2019 - 2022
19406718	TUBE, FUEL/WAT SEP RTN (BLACK) (7/16" L=4950MM)	CK564 (03) (EQB,N2L,GR3,GR4,FU7)	2019 - 2022
19406722	TUBE, FUEL/WAT SEP RTN (BLACK) (7/16" L=4850MM)	CK560 (43) (EM2,N2L,G40,GP1,GP8)	2019 - 2022
19406417	TUBE, FUEL/WAT SEP RTN (BLACK) (7/16" L=4150MM)	CK564 (03) (ER2,N2L,GR3,GR4,FU7)	2019 - 2022
19406671	TUBE, FUEL/WAT SEP RTN (BLACK) (7/16" L=5300MM)	CK564 (03) (FPN,N2L,GR3,GR4,FU7)	2019 - 2022
19406671	TUBE, FUEL/WAT SEP RTN (BLACK) (7/16" L=5300MM)	CK564 (03) (EQB,N2L,G40,GP1,GP8)	2019 - 2022
19406720	TUBE, FUEL/WAT SEP RTN (BLACK) (7/16" L=5600MM)	CK564 (03) (FPN,N2L,G40,GP1,GP8)	2019 - 2022
19406720	TUBE, FUEL/WAT SEP RTN (BLACK) (7/16" L=5600MM)	CK564 (03) (FBC,N2L,GR3,GR4,FU7)	2019 - 2022
19406420	TUBE, FUEL/WAT SEP RTN (BLACK) (7/16" L=5400MM)	CK560 (43) (FRP,GR3,GR4,FU7,N2L)	2019 - 2022
19406950	TUBE, FUEL/WAT SEP RTN (BLACK) (7/16" L=3800MM) (3.163)	CK564 (03) (ED9,N2L,G40,GP1,GP8)	2019 - 2022
19407009	TUBE, FUEL/WAT SEP RTN (BLACK) (7/16" L=4900MM)	CK564 (03) (ED5,N2L,G40,GP1,GP8)	2019 - 2022
19407082	TUBE, FUEL/WAT SEP RTN (BLACK) (7/16" L=5900MM)	CK564 (03) (FBC,N2L,G40,GP1,GP8)	2019 - 2022
19407252	TUBE, FUEL/WAT SEP RTN (BLACK) (7/16" L=5700MM) (5.544)	CK5 (N2L,FRP,G40,GP1,GP8)	2019 - 2022