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Service Information Bulletin

SUBJECT	DATE
Aftertreatment	May 2018

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0190	GHG17 DD HD	Installation of the DEF Pump Module	Updated to run three ADS self-check routines instead of one to prime the DEF.
		Installation of the DEF Dosing Unit	
		Installation of the Diesel Exhaust Fluid Dosing Unit Inlet Screen	
		Installation of the Diesel Exhaust Fluid Lines	
		Installation of the Six-Gallon Diesel Exhaust Fluid Tank	
		Installation of the 13- and 23-Gallon Diesel Exhaust Fluid Tank	
		Installation of the 13- and 23-Gallon Diesel Exhaust Fluid Tank Header Unit	
		Installation of the Six-Gallon Diesel Exhaust Fluid Tank Header Unit	
DDC-SVC-MAN-0083	GHG14 DD HD	Installation of the GHG14 DEF Pump Module	
		Installation of the GHG14 DEF Dosing System Doser	
		Installation of the GHG14 Diesel Exhaust Fluid Lines	



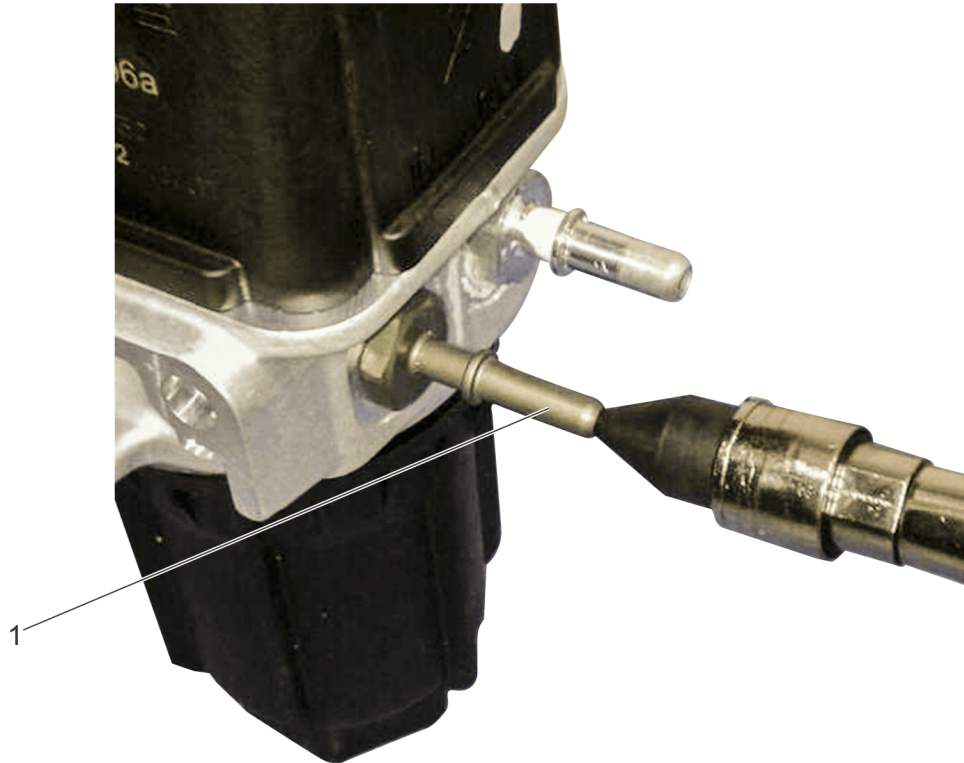
13400 Outer Drive, West, Detroit, Michigan 48239-4001
Telephone: 313-592-5000
www.demanddetroit.com

2 Installation of the Diesel Exhaust Fluid Pump Module

Install as follows:

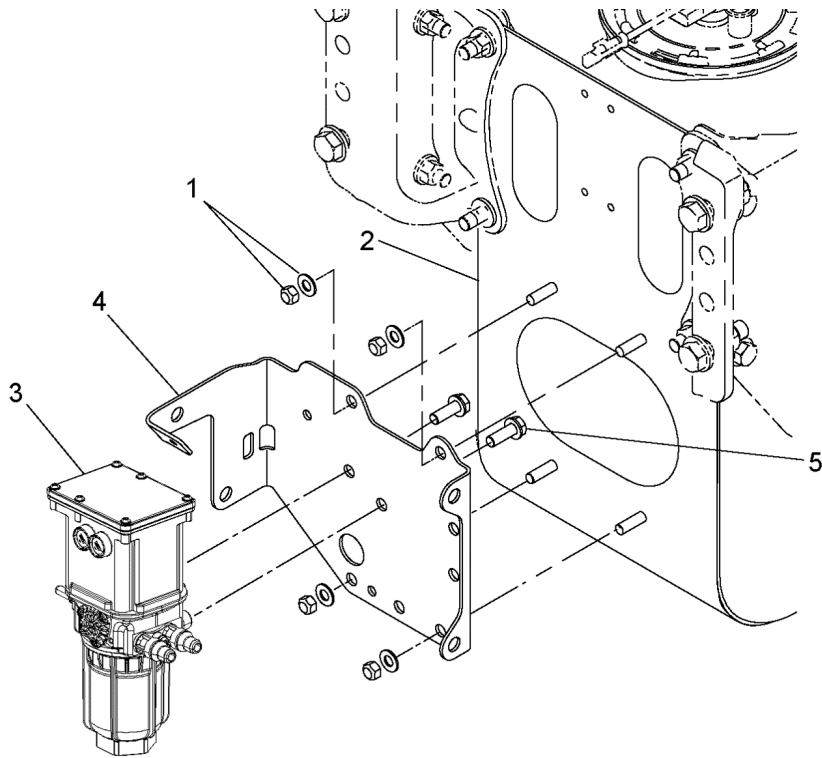
NOTE: If air pressure is greater than 620 kPa (90 psi), use a pressure regulator.

1. Using a rubber tipped air gun to seal around the DEF pump inlet fitting, apply clean regulated shop air to the DEF pump inlet fitting (1) for three to five seconds.



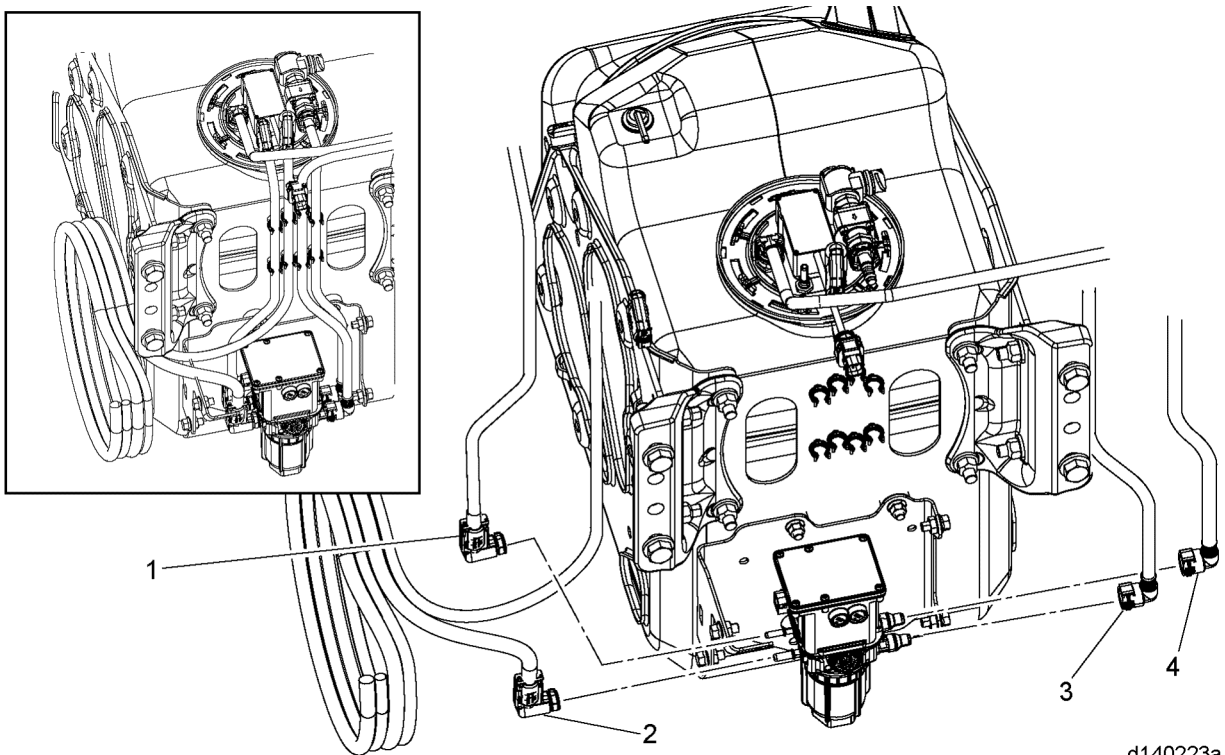
d140723

2. Install the two bolts (5) that fasten the Diesel Exhaust Fluid (DEF) pump (3) to the mounting bracket (4). Torque to 18 N·m (13 lb·ft).



d140230a

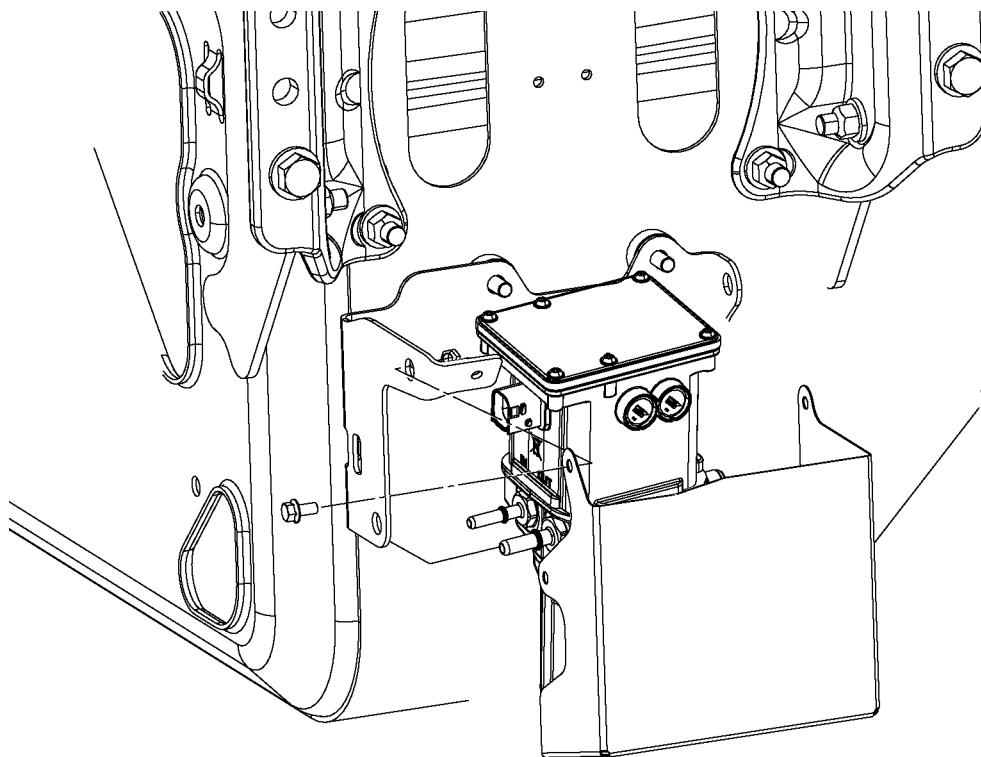
3. Install the DEF pump and mounting bracket onto the mounting studs and install nuts and washers (1). Torque to 31 N·m (23 lb·ft).
4. Connect the DEF pump electrical harness connector.
5. Verify the DEF lines and connection fittings are clean; connect the DEF suction line (1) and pressure line (2).



d140223a

NOTICE: To connect a DEF coolant line, push the line coupling onto the DEF port male connector, then pull back gently on the coupling to engage the holding clip in the locked position.

6. Verify that the coolant lines and connectors are clean and then install the coolant lines (3 and 4) to the pump.
7. Install the protective cover (1). Install and torque bolts to 50 N·m (37 lb·ft).



d140222a

8. Fill the cooling system.



CAUTION: ELECTRICAL SHOCK

To avoid injury from electrical shock, use care when connecting battery cables. The magnetic switch studs are at battery voltage.

9. Connect the batteries.

NOTE: Opening the DEF system can cause DEF from the lines to drain back to the DEF tank. Running three consecutive SCR ADS self-check routines will prime the DEF system and restore proper system operation.

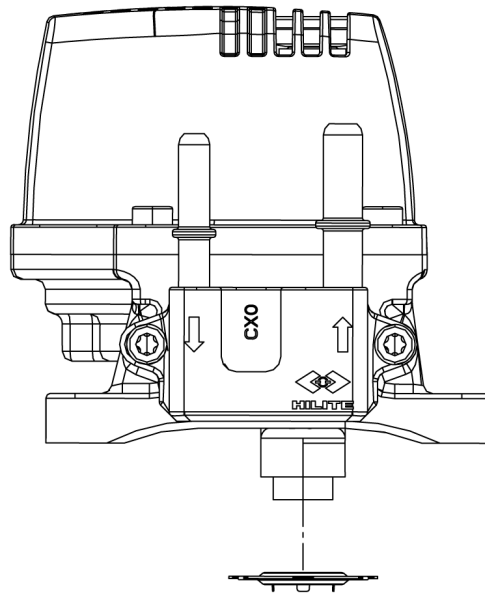
10. Run three consecutive SCR ADS self-check routines to prime the DEF system and check for leaks.

3 Installation of the Diesel Exhaust Fluid Dosing Unit

Install as follows:

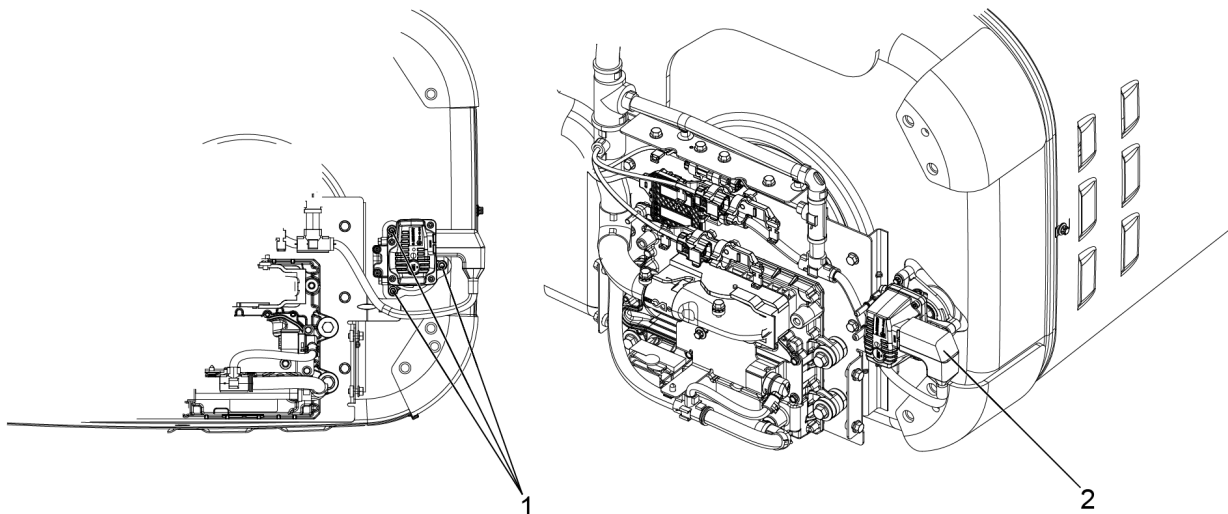
NOTICE: The Diesel Exhaust Fluid (DEF) doser gasket and bolts are one-time-use items. Over-torquing the DEF doser bolts will crush the gasket, causing exhaust leaks.

1. Install a new gasket with the gasket legs facing outward.



d140413

2. Install the DEF dosing unit to the mounting plate by installing the three new bolts (1). Torque to 10 N·m (7 lb·ft).



d140512

3. Connect the DEF doser electrical connector (2) (see figure above).
4. Connect the DEF pressure and return lines to the DEF dosing unit.



CAUTION: ELECTRICAL SHOCK

To avoid injury from electrical shock, use care when connecting battery cables. The magnetic switch studs are at battery voltage.

5. Connect the batteries.

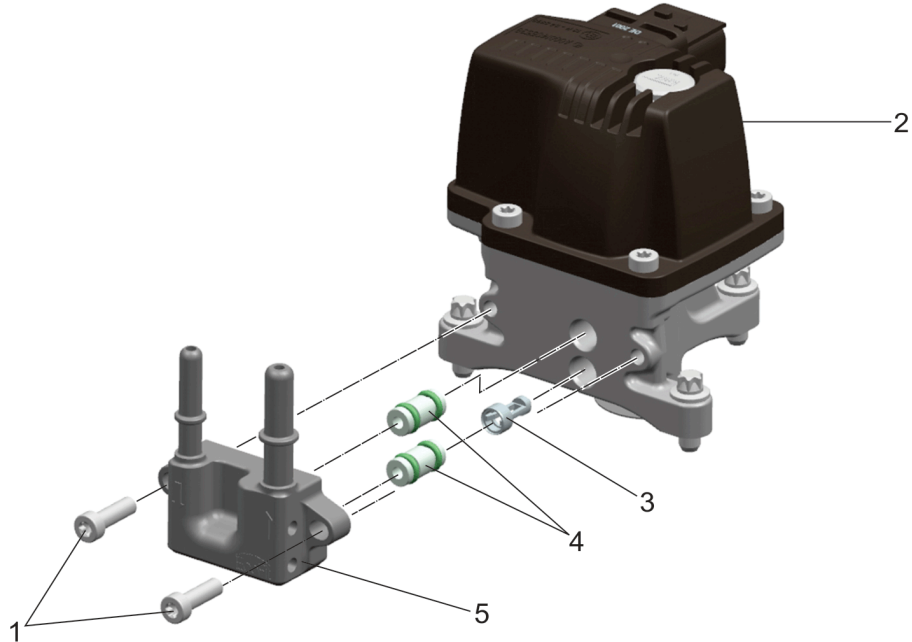
NOTE: Opening the DEF system can cause DEF from the lines to drain back to the DEF tank. Running three consecutive SCR ADS self-check routines will prime the DEF system and restore proper system operation.

6. Run three consecutive SCR ADS self-check routines to prime the DEF system and check for leaks.
7. If removed, install the side fairing. Refer to OEM procedures.

4 Installation of the Diesel Exhaust Fluid Dosing Unit Inlet Screen

Install as follows:

1. Install the Diesel Exhaust Fluid (DEF) dosing unit inlet screen (3).



d140651

NOTICE: Wet the DEF flange connector O-rings (4) with DEF before installing into the DEF flange (5) or dosing unit (2) to prevent seal damage.

2. Install two new DEF flange connectors (4) into DEF flange (5).
3. Install the DEF flange (5) to the DEF dosing unit (2).
4. Install two new bolts (1) to fasten DEF flange and torque to 7 to 8 N·m (5 to 6 lb·ft).
5. Connect the DEF supply and return lines to the DEF dosing unit.



CAUTION: ELECTRICAL SHOCK

To avoid injury from electrical shock, use care when connecting battery cables. The magnetic switch studs are at battery voltage.

6. Connect the batteries.

NOTE: Opening the DEF system can cause DEF from the lines to drain back to the DEF tank. Running three consecutive SCR ADS self-check routines will prime the DEF system and restore proper system operation.

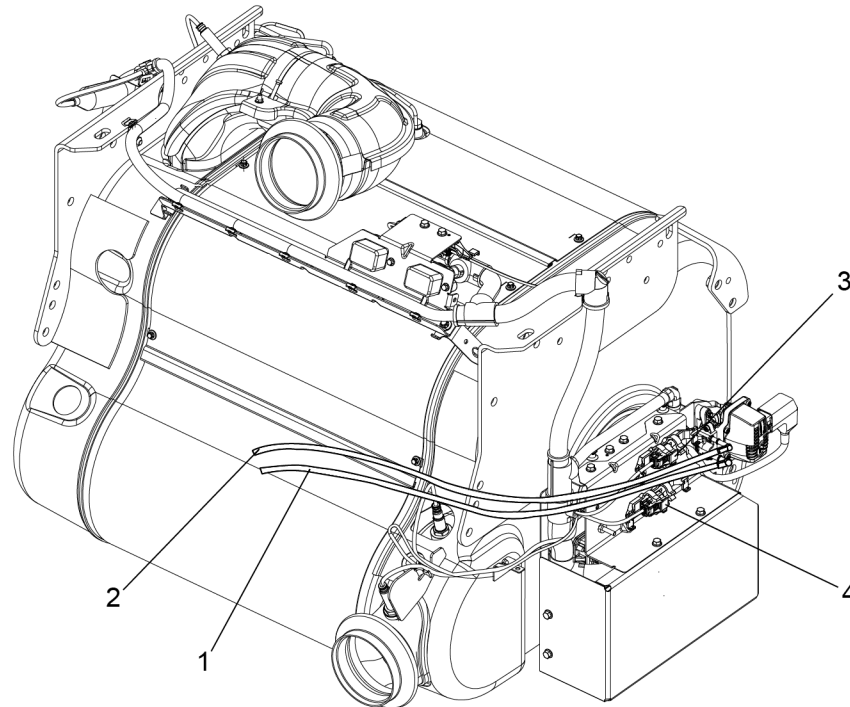
7. Run three consecutive SCR ADS self-check routines to prime the DEF system and check for leaks.

5 Installation of the Diesel Exhaust Fluid Lines

Install as follows:

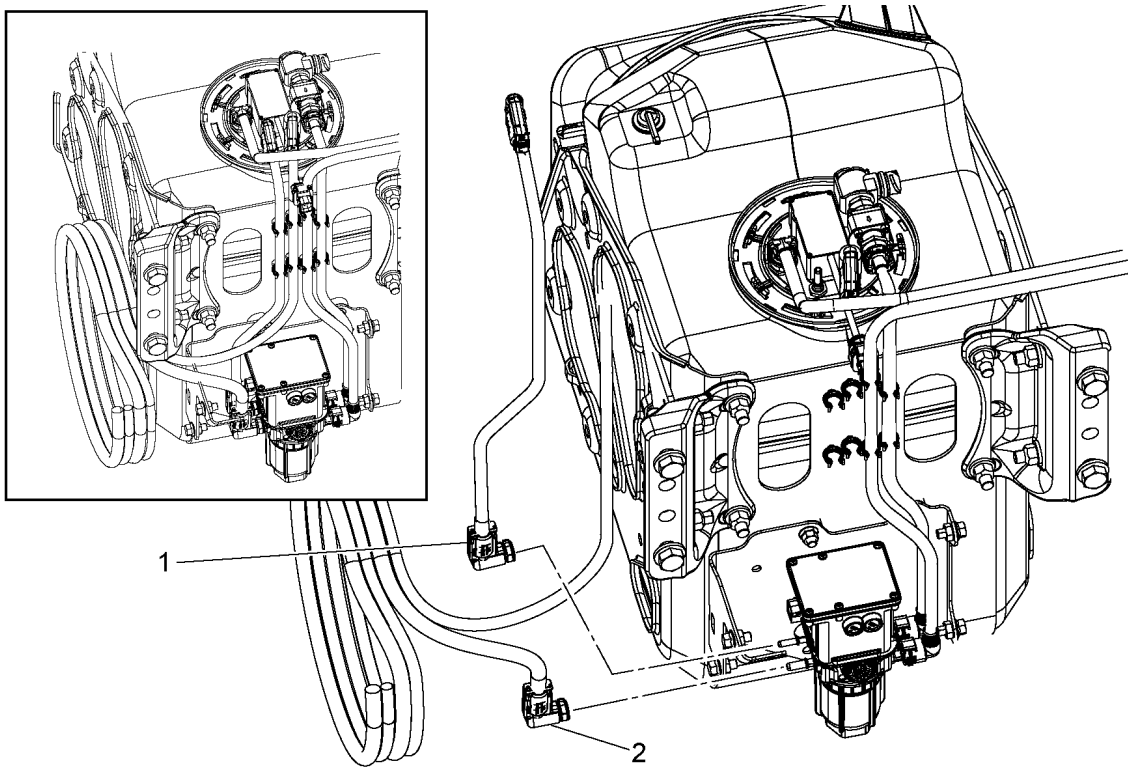
NOTICE: To connect a Diesel Exhaust Fluid (DEF) line, push the line coupling onto the DEF port male connector, then pull back gently on the coupling to engage the holding clip in the locked position.

1. Ensure the new DEF lines are undamaged and free of dirt and debris.
2. Remove any white DEF crystals from the DEF ports on the tank header, DEF pump, and dosing unit.
3. Connect the new DEF pressure line (2) and the new DEF return line (1) to the DEF dosing unit.



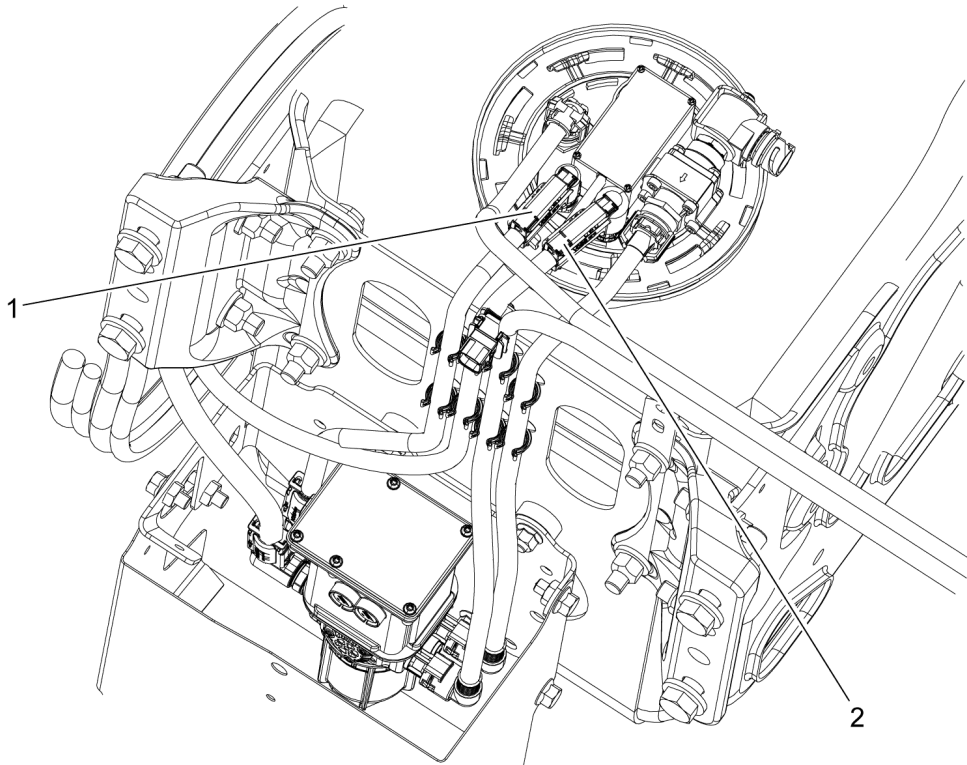
d140529

4. Connect the DEF pressure (3) and return (4) line heater electrical connectors at the DEF dosing unit and install into the mounting brackets.
5. Connect the DEF suction line (1) and the DEF pressure line (2) to the DEF pump.



d140223b

6. Connect the DEF suction line (1) and DEF return line (2) to the DEF tank header.



d140382d

7. Connect the DEF line heater wiring harnesses at the tank and DEF pump.
8. Install all removed DEF line mounting points, making sure the DEF lines are properly secure.

**CAUTION: ELECTRICAL SHOCK**

To avoid injury from electrical shock, use care when connecting battery cables. The magnetic switch studs are at battery voltage.

9. Connect the batteries. Refer to OEM procedures.

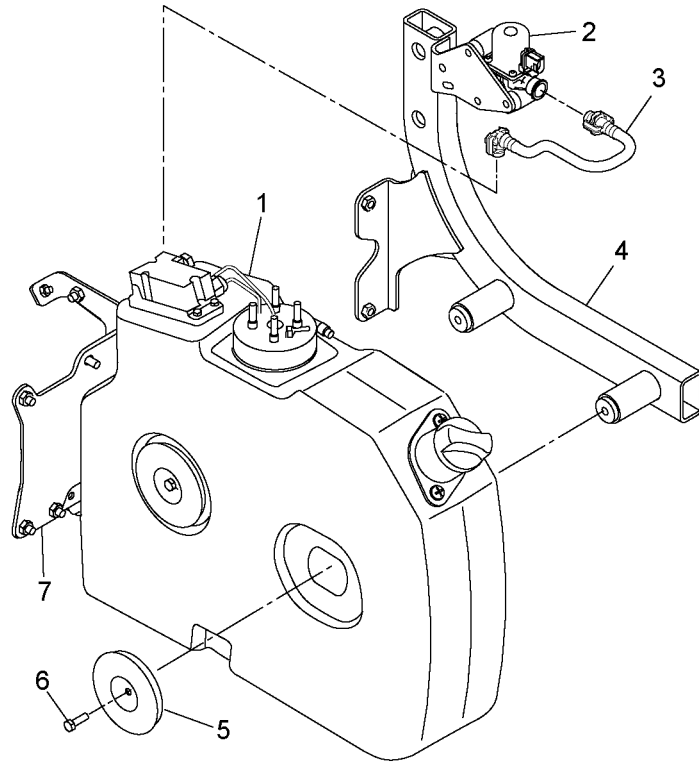
NOTE: Opening the DEF system can cause DEF from the lines to drain back to the DEF tank. Running three consecutive SCR ADS self-check routines will prime the DEF system and restore proper system operation.

10. Run three consecutive SCR ADS self-check routines to prime the DEF system and check for leaks.
11. If removed, install the side fairing. Refer to OEM procedures.

6 Installation of the Six-Gallon Diesel Exhaust Fluid Tank

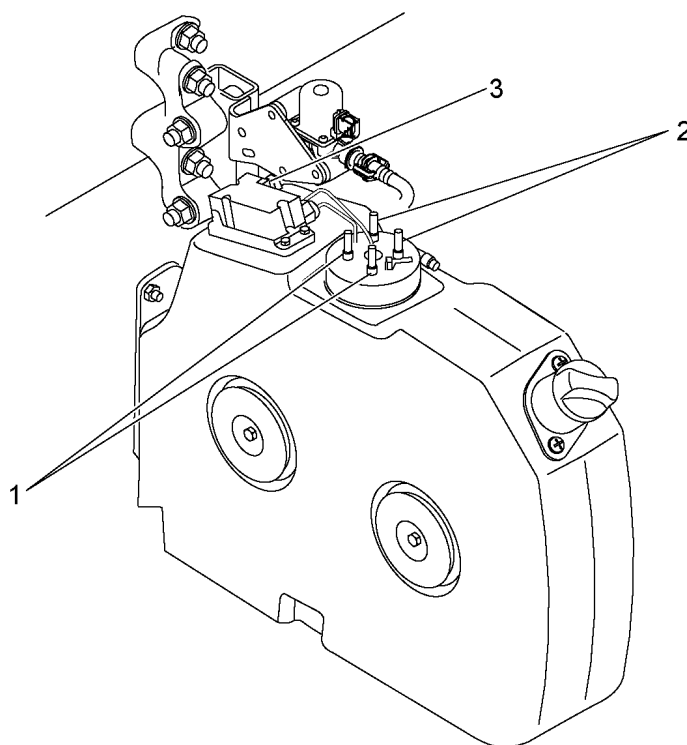
Install as follows:

1. Slide the tank (1) onto the mounting studs.



d140412

2. Install the two tank retaining washers (5) on the tank mounting studs.
3. Install two cap screws (6) onto the mounting studs, securing the tank and retaining washers on the tank mounting studs. Torque from 15 to 25 N·m (11 to 18 lb·ft).
4. Connect the coolant supply and return lines to the coolant ports (1) on the Diesel Exhaust Fluid (DEF) tank header.



d140411

5. Remove any white DEF crystals from the DEF ports on the tank header and the DEF line couplings.
6. Connect the DEF supply and return lines to the DEF ports (2) on the DEF tank header.
7. Connect the wiring harness (3).
8. Fill DEF tank to the appropriate level using saved DEF or new DEF, if fluid was contaminated.
9. Fill the cooling system and check for leaks. Refer to section "Cooling System Fill Procedure".



CAUTION: ELECTRICAL SHOCK

To avoid injury from electrical shock, use care when connecting battery cables. The magnetic switch studs are at battery voltage.

10. Connect the batteries.

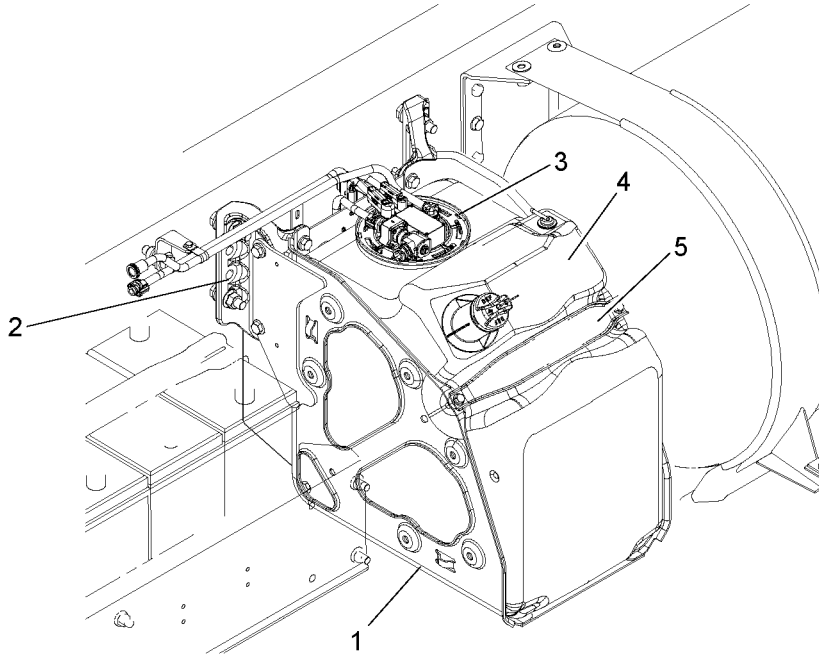
NOTE: Opening the DEF system can cause DEF from the lines to drain back to the DEF tank. Running three consecutive SCR ADS self-check routines will prime the DEF system and restore proper system operation.

11. Run three consecutive SCR ADS self-check routines to prime the DEF system and check for leaks.

7 Installation of the 13- and 23-Gallon Diesel Exhaust Fluid Tank

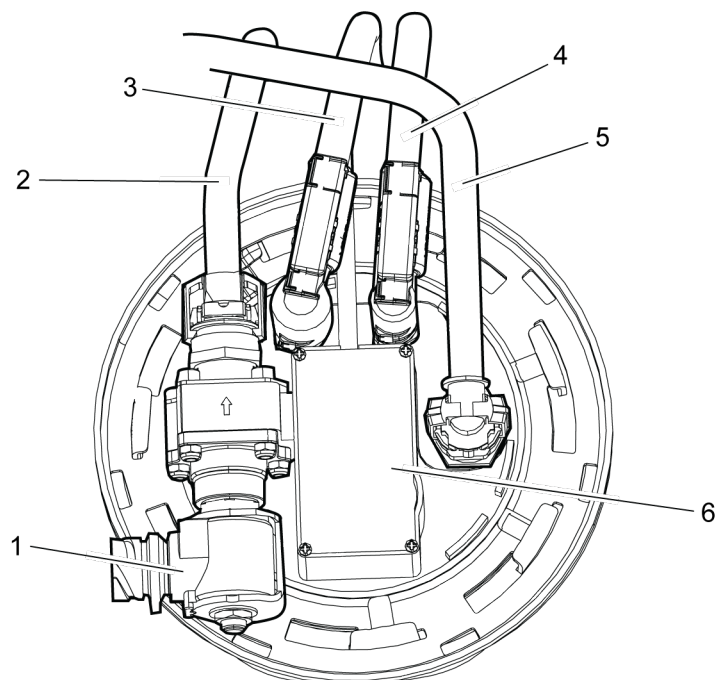
Install as follows:

1. Install the Diesel Exhaust Fluid (DEF) tank (4) into the mounting cage (1).



d140229a

2. Install the tank retaining bracket (5) on the tank mounting cage studs. Install two nuts on the tank retaining bracket and tighten the nuts to 16 N·m (12 lb·ft).
3. Remove any white DEF crystals from the DEF ports on the header unit and the DEF line couplings.



d140228a

NOTICE: To connect a DEF line, push the line coupling onto the DEF port male connector, then pull back gently on the coupling to engage the holding clip in the locked position.

4. Connect the DEF supply line (4) and return line (3) to the tank header unit.
5. Connect the DEF line heater wiring harnesses to the DEF lines at the tank.
6. Connect the coolant lines (2, 5) to the tank header unit.
7. Connect the coolant valve (1) and DEF level and temperature sensor wiring harness (6) to the tank header unit.
8. Fill the DEF tank.
9. Install the beauty cover, if equipped.
10. Fill DEF tank to the appropriate level using saved DEF or new DEF, if fluid was contaminated.
11. Fill the cooling system and check for leaks. Refer to section "Cooling System Fill Procedure".



CAUTION: ELECTRICAL SHOCK

To avoid injury from electrical shock, use care when connecting battery cables. The magnetic switch studs are at battery voltage.

12. Connect the batteries. Refer to OEM procedures.

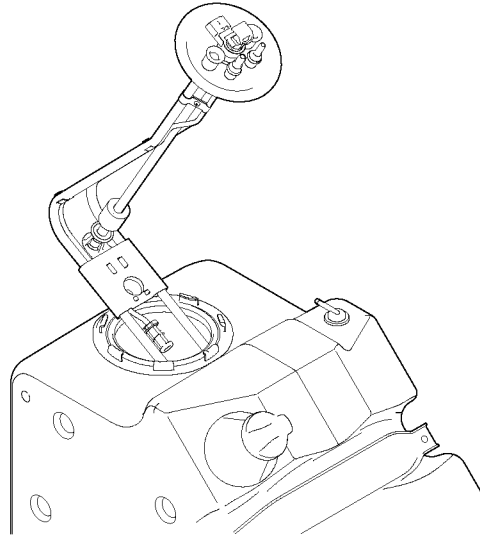
NOTE: Opening the DEF system can cause DEF from the lines to drain back to the DEF tank. Running three consecutive SCR ADS self-check routines will prime the DEF system and restore proper system operation.

13. Run three consecutive SCR ADS self-check routines to prime the DEF system and check for leaks.

8 Installation of the 13- and 23-Gallon Diesel Exhaust Fluid Tank Header Unit

Install as follows:

1. Install a new header unit by tilting it to insert the horizontal end into the tank. Once the horizontal segment is inside the tank, tilt the header unit back to vertical to settle the bracket on top of the tank.



d140233

2. Ensure that the header is situated securely on the raised lip of the tank, and not tilted to the side.
3. Using tool W001589000700, install the header lock ring on the tank and rotate it clockwise to secure it to the tank.
4. Remove any white Diesel Exhaust Fluid (DEF) crystals from the DEF ports on the header unit and the DEF line couplings.
5. Install the DEF tank. Refer to section "Installation of the 13- and 23-Gallon Diesel Exhaust Fluid Tank".



CAUTION: ELECTRICAL SHOCK

To avoid injury from electrical shock, use care when connecting battery cables. The magnetic switch studs are at battery voltage.

6. Connect batteries. Refer to OEM procedures.

NOTE: Opening the DEF system can cause DEF from the lines to drain back to the DEF tank. Running three consecutive SCR ADS self-check routines will prime the DEF system and restore proper system operation.

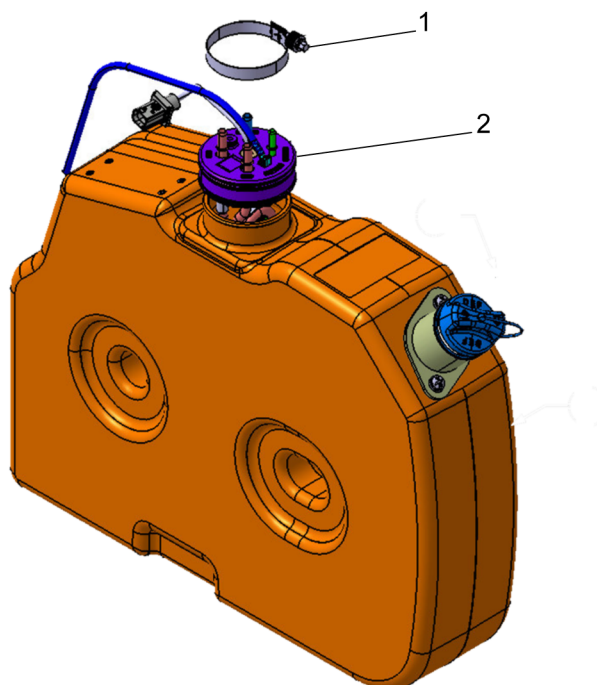
7. Run three consecutive SCR ADS self-check routines to prime the DEF system and check for leaks.

9 Installation of the Six-Gallon Diesel Exhaust Fluid Tank Header

The DEF header unit on vehicles with a six-gallon DEF tank is secured to the top of the tank, and contains the DEF level sensor, DEF temperature sensor and coolant and DEF lines.

Install as follows:

1. Install the header (2) by tilting it to insert the horizontal end into the tank. Once the horizontal segment is inside the tank, tilt the header unit back to vertical.



d140428

2. Ensure that the header unit is situated securely on the raised lip of the tank, and is not tilted to the side.
3. Install the mounting clamp (1) (see figure above) over the header. Tighten to 7 N·m (5 lb·ft).
4. Install the DEF tank. Refer to section "Installation of the Six-Gallon Diesel Exhaust Fluid Tank".



CAUTION: ELECTRICAL SHOCK

To avoid injury from electrical shock, use care when connecting battery cables. The magnetic switch studs are at battery voltage.

5. Connect the batteries. Refer to OEM procedures.

NOTE: Opening the DEF system can cause DEF from the lines to drain back to the DEF tank. Running three consecutive SCR ADS self-check routines will prime the DEF system and restore proper system operation.

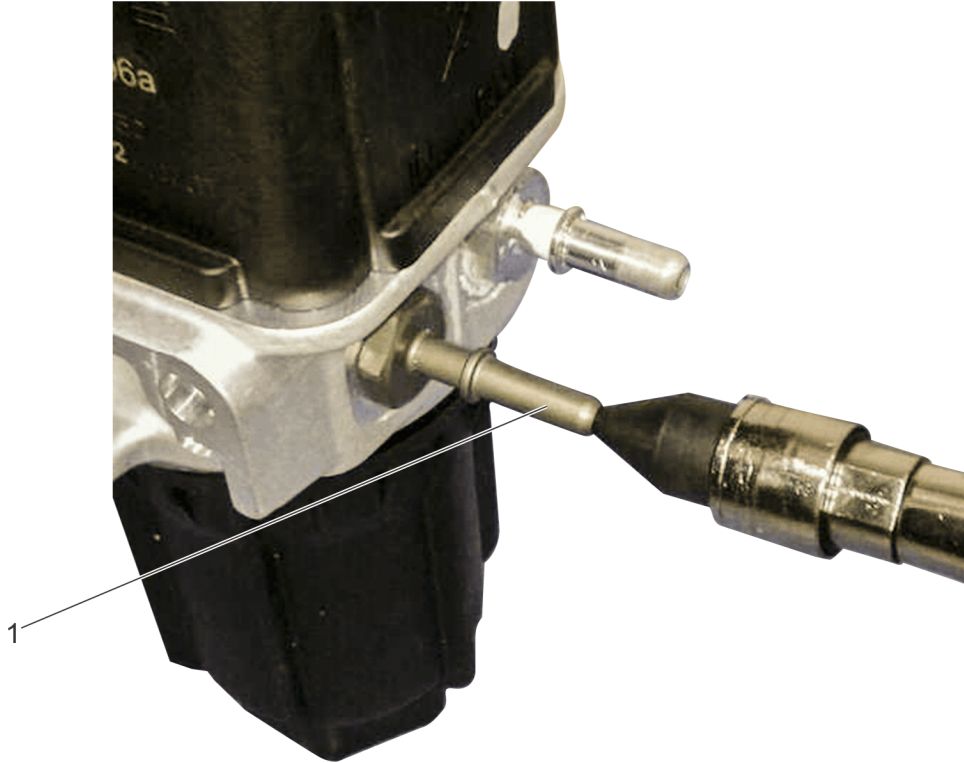
6. Run three consecutive SCR ADS self-check routines to prime the DEF system and check for leaks.

10 Installation of the GHG14 Diesel Exhaust Fluid Pump Module

Install as follows:

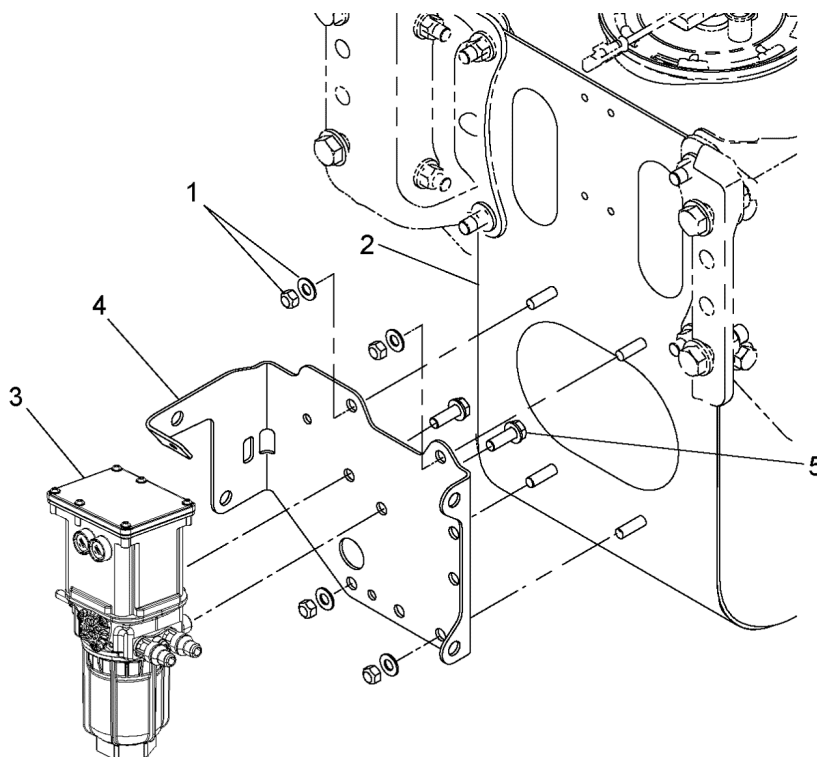
NOTE: If air pressure is greater than 620 kPa (90 psi), use a pressure regulator.

1. Using a rubber tipped air gun to seal around the DEF pump inlet fitting, apply clean regulated shop air to the DEF pump inlet fitting (1) for three to five seconds.



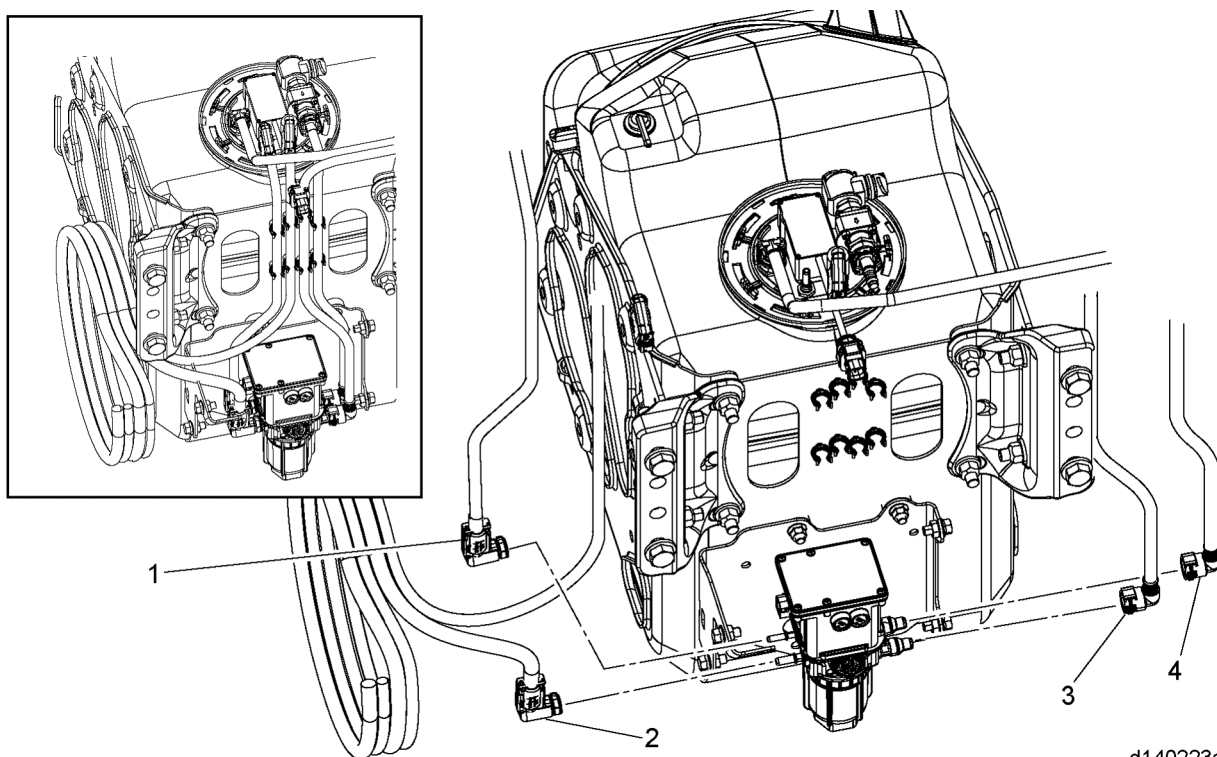
d140723

2. Install the two bolts (5) that fasten the Diesel Exhaust Fluid (DEF) pump (3) to the mounting bracket (4). Torque to 18 N·m (13 lb·ft).



d140230a

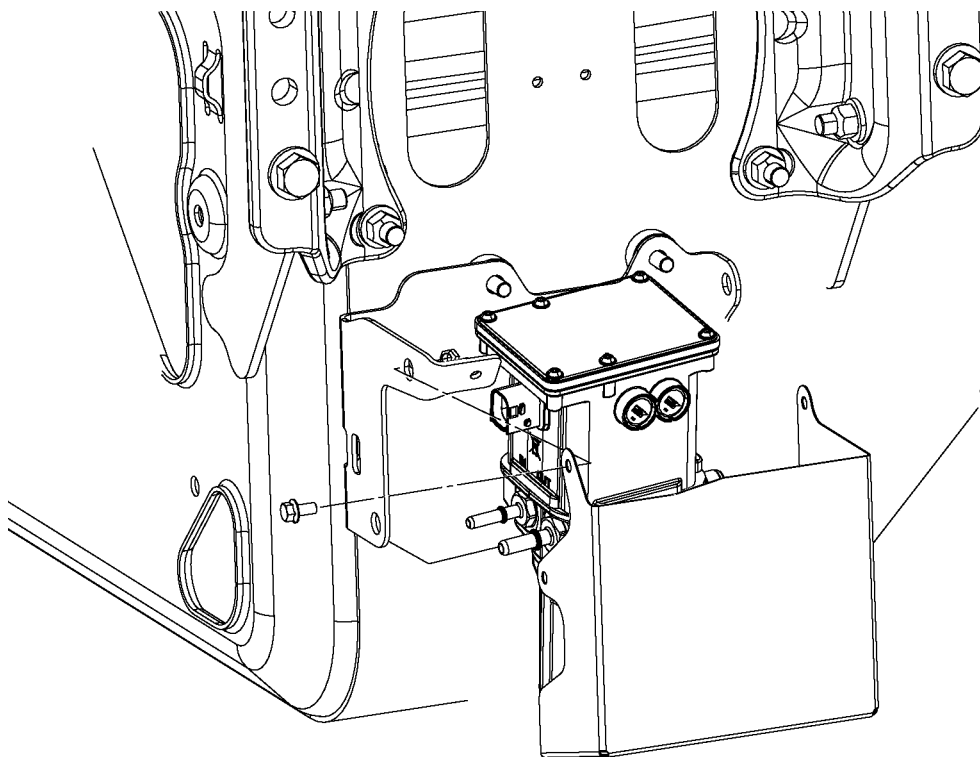
3. Install the DEF pump and mounting bracket onto the mounting studs and install nuts and washers (1). Torque to 31 N·m (23 lb·ft).
4. Connect the DEF pump electrical harness connector.
5. Verify the DEF lines and connection fittings are clean; connect the DEF suction line (1) and pressure line (2).



d140223a

NOTICE: To connect a DEF coolant line, push the line coupling onto the DEF port male connector, then pull back gently on the coupling to engage the holding clip in the locked position.

6. Verify that the coolant lines and connectors are clean and then install the coolant lines (3 and 4) to the pump.
7. Install the protective cover (1). Install and torque bolts to 50 N·m (37 lb·ft).



d140222a

8. Fill the cooling system.



CAUTION: ELECTRICAL SHOCK

To avoid injury from electrical shock, use care when connecting battery cables. The magnetic switch studs are at battery voltage.

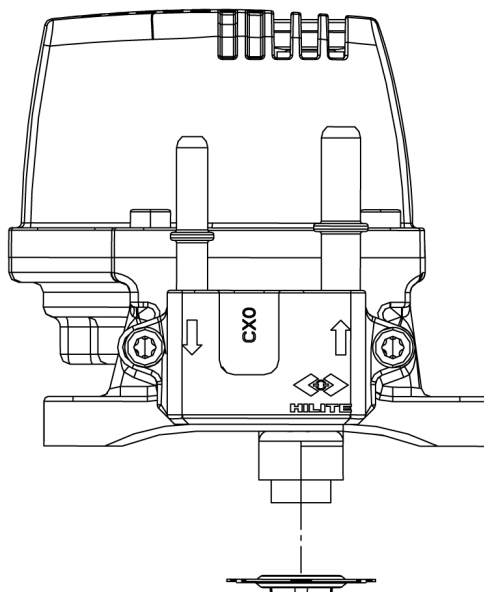
9. Connect the batteries.
10. Run three consecutive SCR ADS self-check routines to prime the pump and check for leaks.

11 Installation of the GHG14 Dosing System Doser

Install as follows:

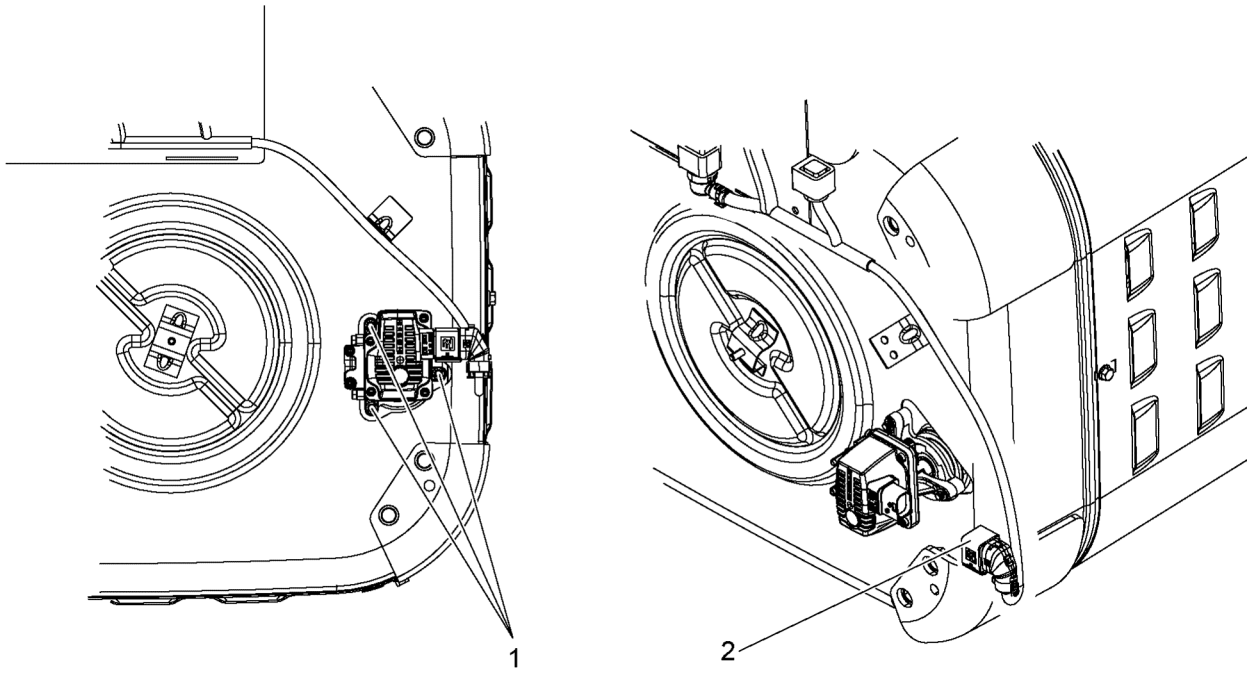
NOTICE: The Diesel Exhaust Fluid (DEF) doser gasket and bolts are one-time use items. Over torquing the DEF doser bolts will crush the gasket, causing exhaust leaks.

1. Install a new gasket with the gasket legs facing outward.



d140413

2. Install the DEF Dosing Unit to the mounting plate by installing the three new bolts (1). Torque to 10 N·m (7 lb·ft).
3. Connect the DEF doser electrical harness connector (2).
4. Connect the DEF pressure and return lines to the DEF Dosing Unit.
5. Ensure the DEF feed line is routed correctly under the frame rail of the vehicle and is properly connected to the mounting tabs on the 1-BOX™ configuration.
6. Connect the batteries.
7. Run three consecutive SCR ADS self-check routines to prime the system and check for leaks.



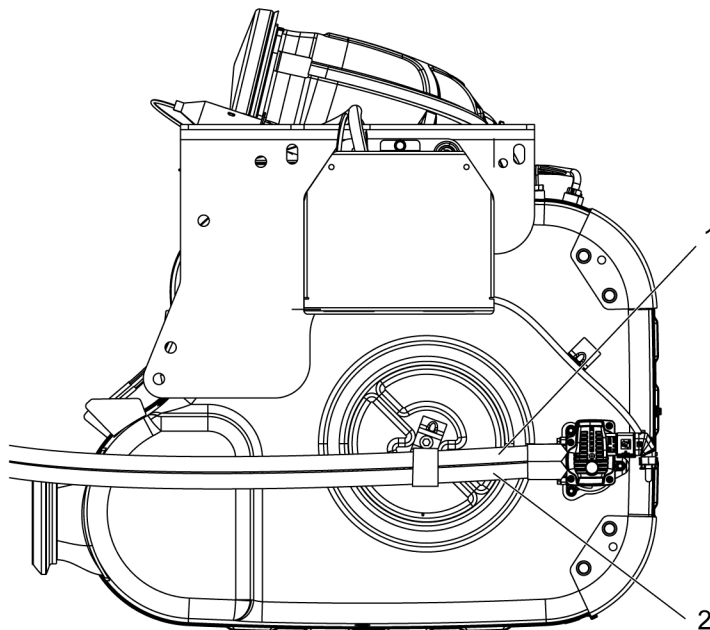
d140384

12 Installation of the GHG14 Diesel Exhaust Fluid Lines

Install as follows:

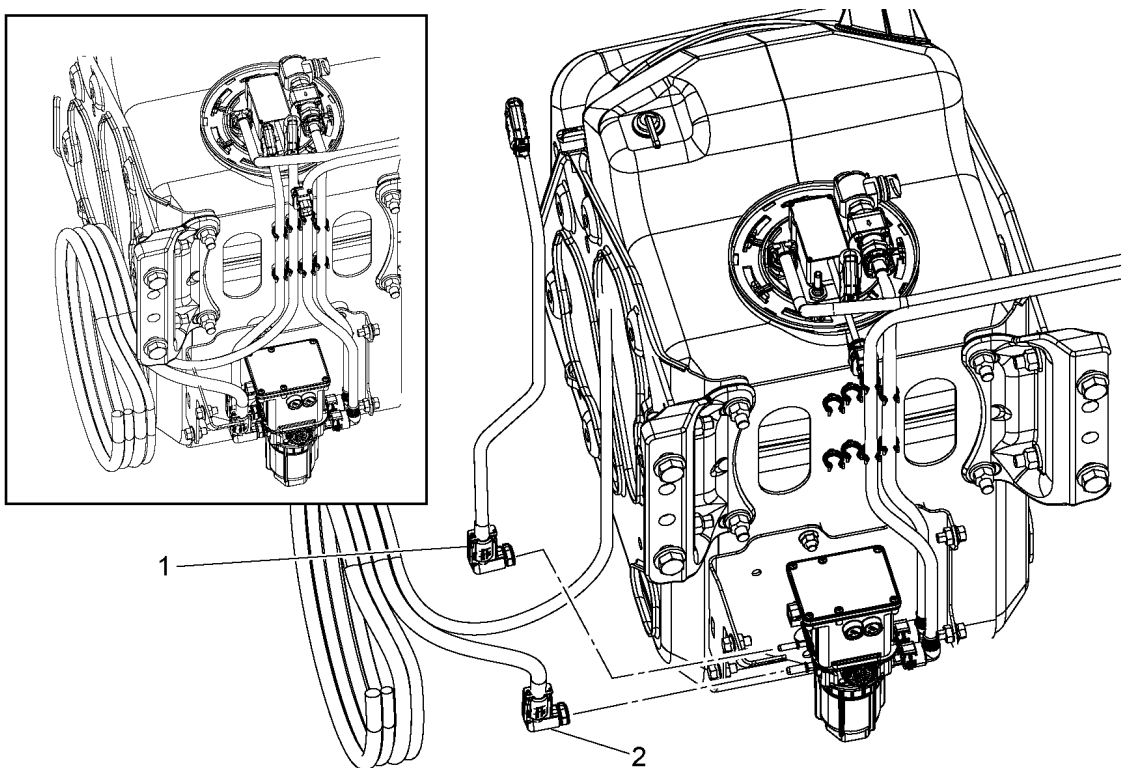
NOTICE: To connect a Diesel Exhaust Fluid (DEF) line, push the line coupling onto the DEF port male connector, then pull back gently on the coupling to engage the holding clip in the locked position.

1. Ensure the new DEF lines are undamaged and free of dirt and debris.
2. Remove any white DEF crystals from the DEF ports on the tank header, DEF pump, and dosing unit.
3. Connect the new DEF pressure line (1) and the new DEF return line (2) to the DEF dosing unit.



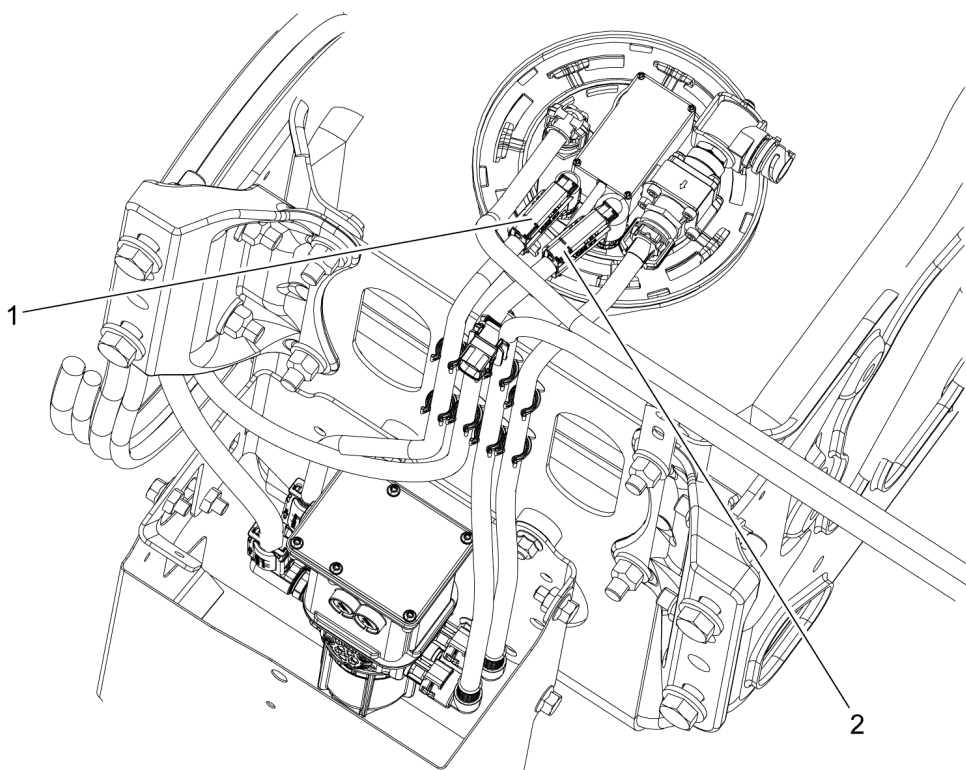
d140414a

4. Connect the DEF suction line (1) and the DEF pressure line (2) to the DEF pump.



d140223b

5. Connect the DEF suction line (1) and DEF return line (2) to the DEF tank header.



d140382d

6. Connect the DEF line heater wiring harnesses at the tank and DEF pump.
7. Install all removed DEF line clipping points, making sure the DEF lines are properly secure.

**CAUTION: ELECTRICAL SHOCK**

To avoid injury from electrical shock, use care when connecting battery cables. The magnetic switch studs are at battery voltage.

8. Connect the batteries.
9. Connect to DiagnosticLink®.
10. Run three consecutive SCR ADS self-check routines to prime the system and check for leaks.