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## Service Information Bulletin

SUBJECT	DATE
GHG17 DD8 - Aftertreatment Systems - Diesel Particulate Filter End Cap	April 2018

### Additions, Revisions, or Updates

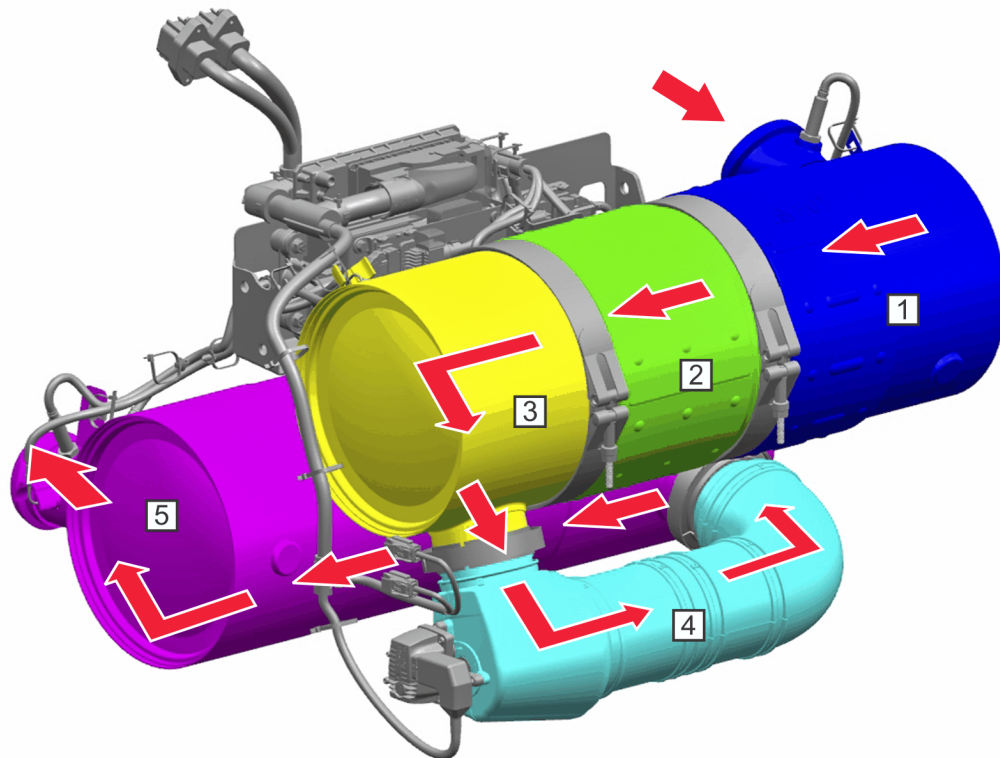
Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0198	GHG17 DD8	Description and Operation of the Diesel Particulate Filter End Cap	New Sections
		Removal of the Diesel Particulate Filter End Cap - Horizontal Configuration	
		Inspection of the Diesel Particulate Filter End Cap	
		Installation of the Diesel Particulate Filter End Cap - Horizontal Configuration	
		Removal of the Diesel Particulate Filter End Cap - Understep Configuration	
		Inspection of the Diesel Particulate Filter End Cap	
		Installation of the Diesel Particulate Filter End Cap - Understep Configuration	



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## 2 Description and Operation of the Diesel Particulate Filter End Cap

The Diesel Particulate Filter (DPF) end cap (3) directs filtered exhaust exiting the DPF in to the Selective Catalytic Reduction (SCR) hydrolysis chamber (4).



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1. Diesel Oxidation Catalyst (DOC)
2. Diesel Particulate Filter (DPF)
3. DPF End Cap

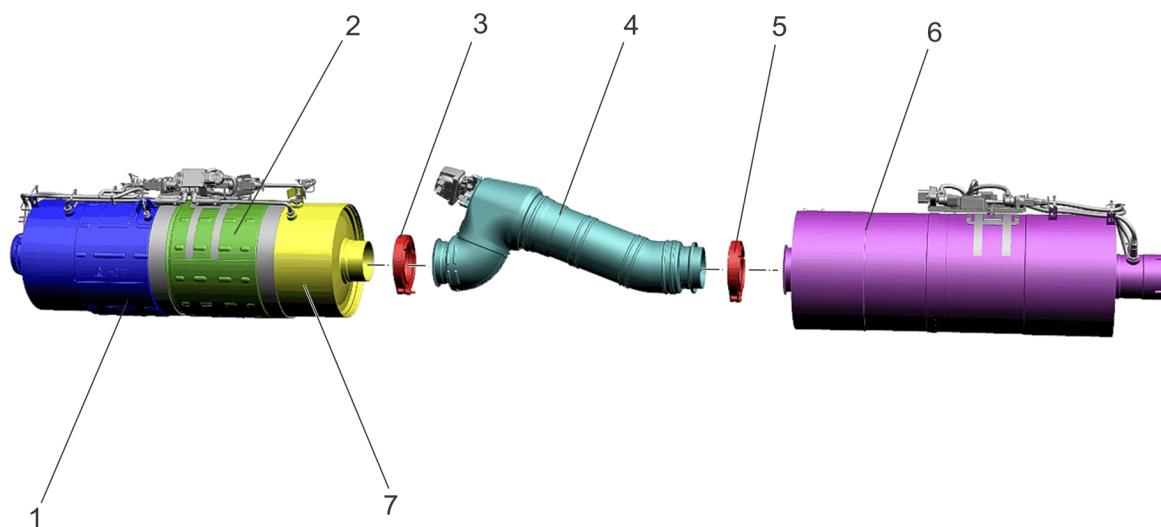
4. Selective Catalytic Reduction (SCR) Hydrolysis Chamber
5. SCR Catalyst

**Figure 1. Diesel Particulate Filter (DPF) End Cap**

### 3 Removal of the Diesel Particulate Filter End Cap - Horizontal Configuration

Table 1.

Service Tools Used in the Procedure		
Tool Number	Tool Name	Picture
Locally Sourced	ATD Lifting Device	



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- |   |                 |
|---|-----------------|
| 1. Diesel Oxidation Catalyst (DOC)                        | 5. SCR Clamp    |
| 2. Diesel Particulate Filter (DPF)                        | 6. SCR Catalyst |
| 3. DPF End Cap Clamp                                      | 7. DPF End Cap  |
| 4. Selective Catalytic Reduction (SCR) Hydrolysis Chamber |                 |

Removal as follows:

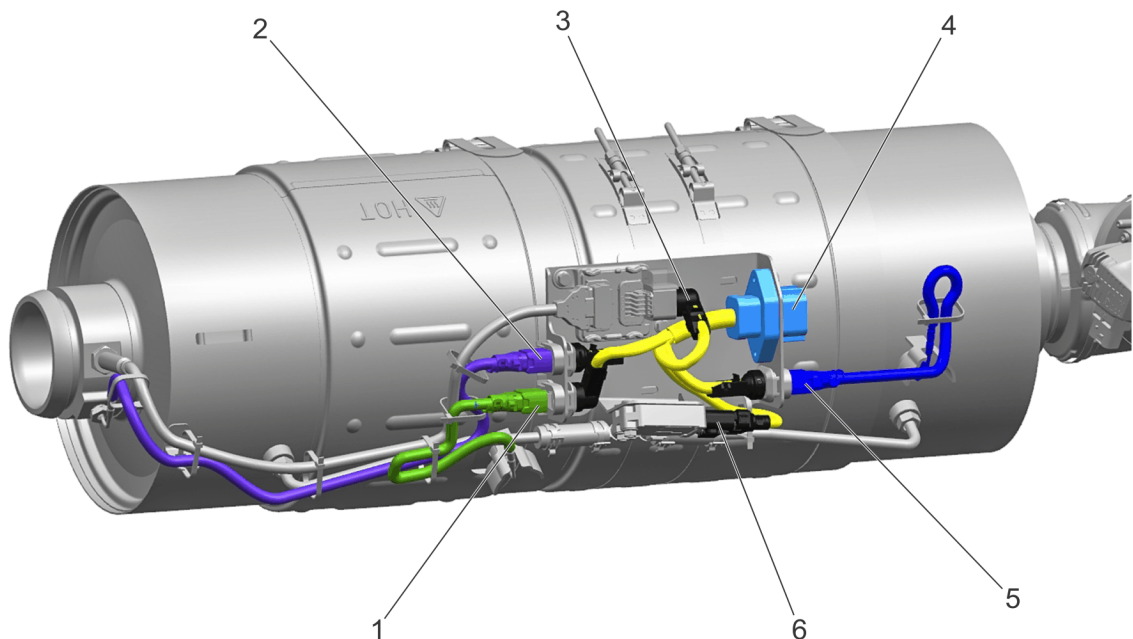
1. Shut off the engine, apply the parking brake, chock the wheels, and perform any other applicable safety steps.



**CAUTION: ELECTRICAL SHOCK**

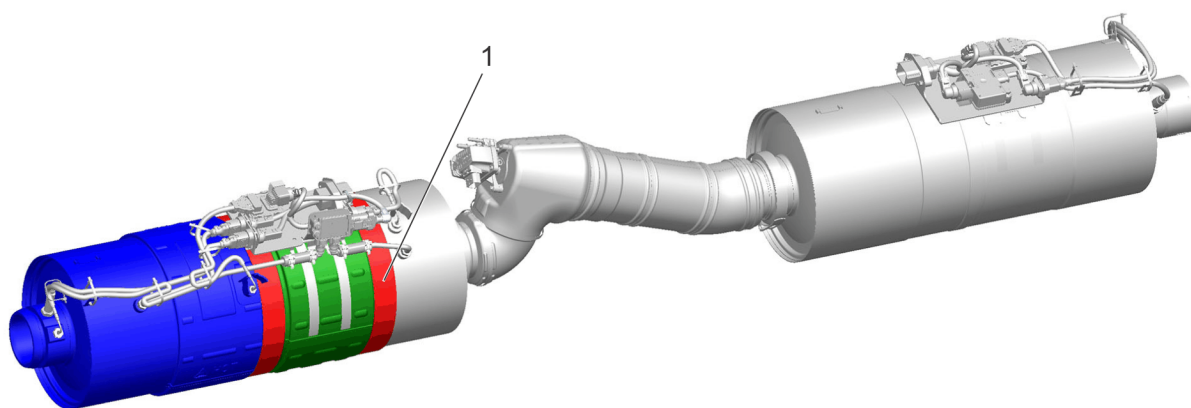
To avoid injury from electrical shock, use care when connecting battery cables. The magnetic switch studs are at battery voltage.

2. Disconnect the batteries.
3. Allow the Aftertreatment System (ATS) time to cool.
4. Disconnect the exhaust system inlet pipe by loosening the clamp and relocating the inlet pipe away from work area.
5. Remove the Diesel Particulate Filter (DPF) outlet temperature sensor. Refer to section "Removal of the Diesel Particulate Filter Outlet Temperature Sensor".
6. Remove the DPF outlet pressure tube. Refer to section "Removal of the Diesel Particulate Filter Outlet Pressure Tube".
7. Note the orientation of the DOC, DPF, DPF end cap and associated clamps to ensure proper installation.
8. Disconnect the 18-pin chassis harness electrical connector (4) from the DPF mounted aftertreatment harness.



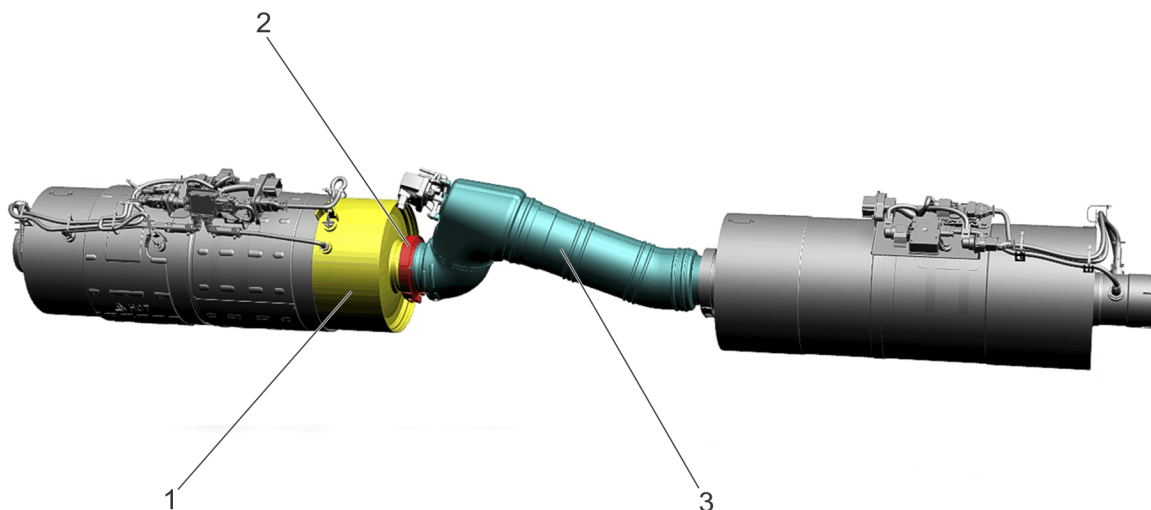
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9. Lightly position the ATD lifting device under the DOC and DPF without enough force to lift the DOC, DPF or the vehicle. Attach the safety strap to the lifting device.
10. Loosen the clamps securing the DOC, DPF and DPF end cap to the frame rail mounting bracket.
11. Remove the DPF clamp (1) and gasket securing the DPF to the DPF end cap. Discard the clamp and gasket.



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12. Carefully slide the DOC and DPF away from the DPF end cap.
13. Remove the DPF end cap clamp (2) and gasket securing the Selective Catalytic Reduction (SCR) hydrolysis chamber (3) to the DPF end cap (1). Discard the clamp and gasket.



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14. Carefully remove the DPF end cap from the SCR hydrolysis chamber.


## 4 Inspection of the Diesel Particulate Filter End Cap

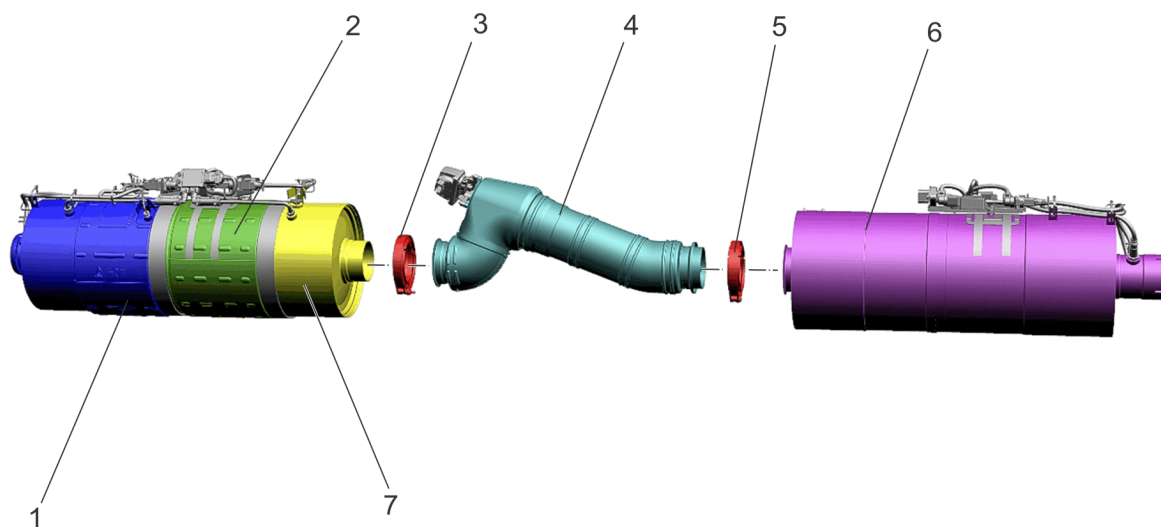
Inspect as follows:

1. Inspect the Diesel Particulate Filter (DPF) end cap for damage. Replace as necessary.

## 5 Installation of the Diesel Particulate Filter End Cap - Horizontal Configuration

Table 2.

Service Tools Used in the Procedure		
Tool Number	Tool Name	Picture
Locally Sourced	ATD Lifting Device	

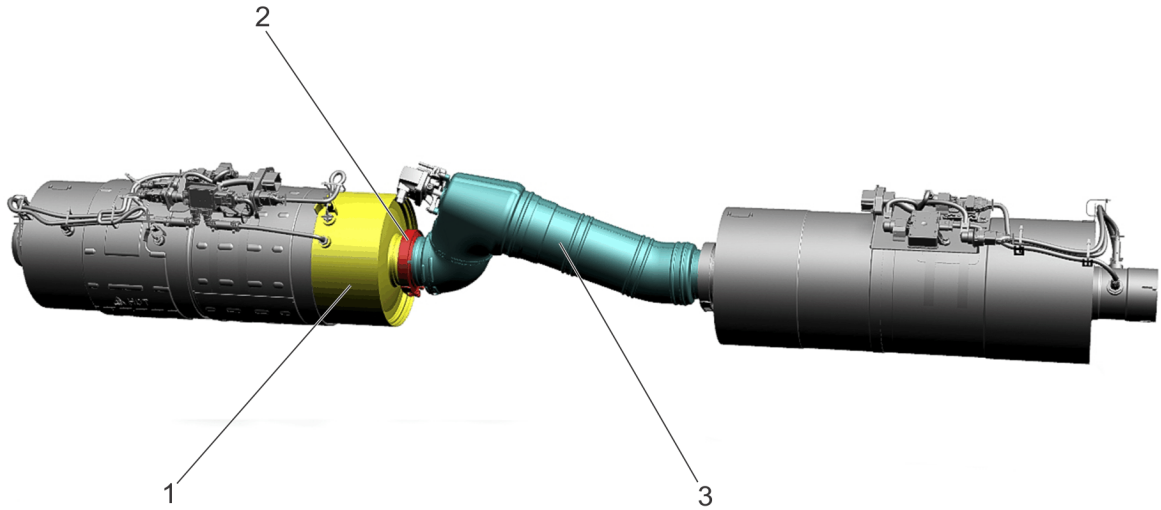


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- |   |                 |
|---|-----------------|
| 1. Diesel Oxidation Catalyst (DOC)                        | 5. SCR Clamp    |
| 2. Diesel Particulate Filter (DPF)                        | 6. SCR Catalyst |
| 3. DPF End Cap Clamp                                      | 7. DPF End Cap  |
| 4. Selective Catalytic Reduction (SCR) Hydrolysis Chamber |                 |

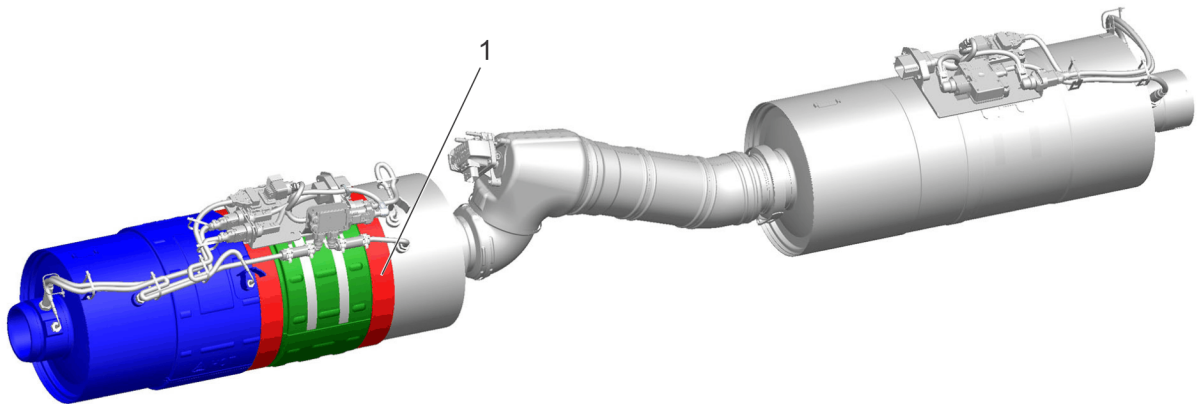
Install as follows:

1. Clean the mating surfaces of the Diesel Particulate Filter (DPF) end cap.
2. Using a new DPF end cap clamp (2) and gasket, install the DPF end cap (1) into the Selective Catalytic Reduction (SCR) hydrolysis chamber (3). Torque the clamp to 20 N·m (15 lb·ft).



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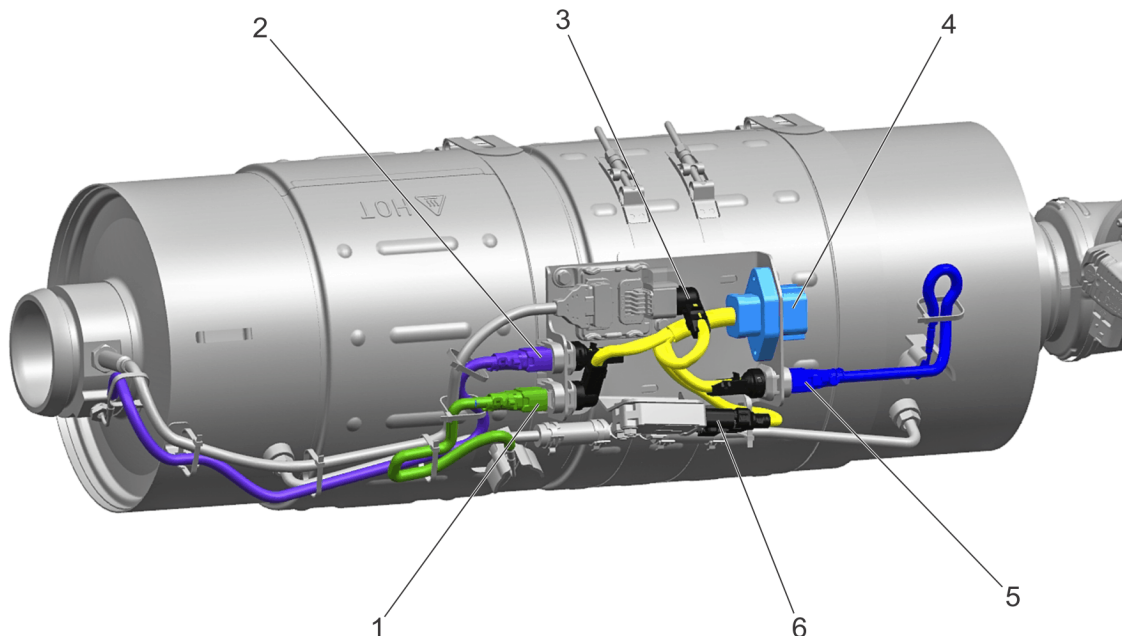
3. Install a new DPF clamp (1) and gasket onto the outlet side of the DPF.



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4. Using the aftertreatment lifting device, carefully raise the Diesel Oxidation Catalyst (DOC) and DPF into place.
5. Carefully slide the DOC and DPF onto the DPF end cap.
6. Ensure the DOC, DPF, DPF end cap and associated clamps are installed in the correct orientation.
7. Torque the DPF clamp securing the DPF to the DPF end cap to 32 N·m (24 lb·ft).
8. Torque the clamps securing the DOC, DPF and DPF end cap to the vehicle frame to 40 N·m (30 lb·ft).
9. Carefully lower the ATD lifting device away from the DOC and DPF.

10. Connect the 18-pin chassis harness electrical connector (4) to the DPF mounted aftertreatment harness.



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11. Install the DPF outlet pressure tube. Refer to section "Installation of the Diesel Particulate Filter Outlet Pressure Tube".
12. Install the DPF outlet temperature sensor. Refer to section "Installation of the Diesel Particulate Filter Outlet Temperature Sensor".
13. Connect the exhaust system inlet pipe by installing the clamp. Torque to 25 N·m (18 lb·ft).



**CAUTION: ELECTRICAL SHOCK**

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

14. Connect the batteries.



**WARNING: PERSONAL INJURY**

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

- Always start and operate an engine in a well ventilated area.
- If operating an engine in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system or emission control system.



**WARNING: PERSONAL INJURY**

To avoid injury before starting and running the engine, ensure the vehicle is parked on a level surface, parking brake is set, and the wheels are blocked.

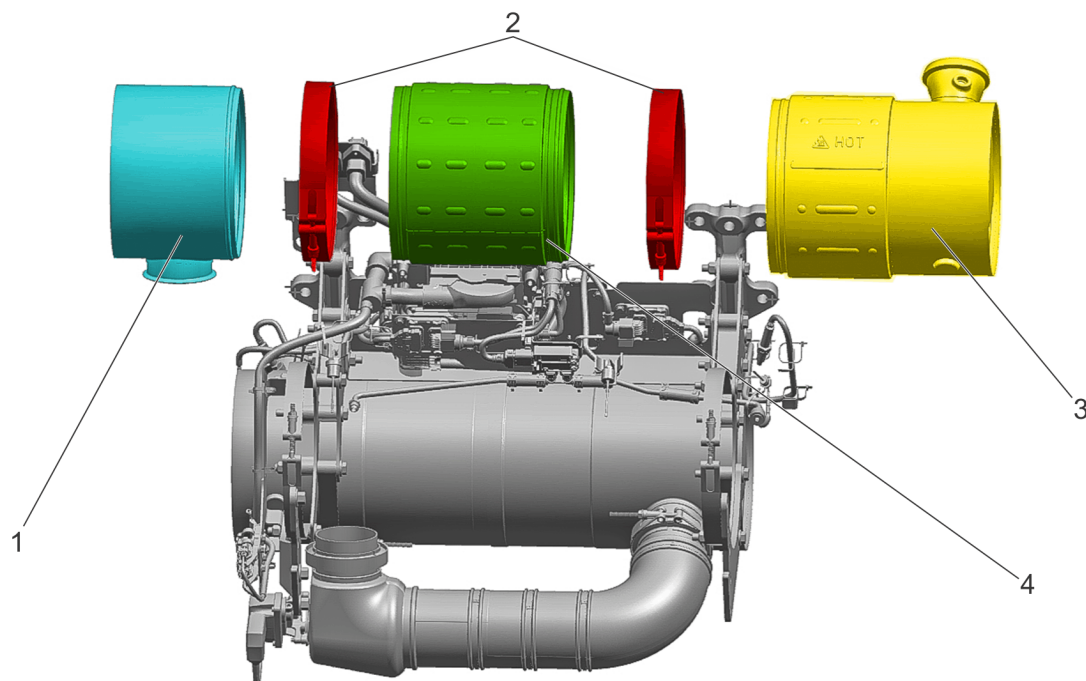


**WARNING: ENGINE EXHAUST**

To avoid injury from inhaling engine exhaust, always operate the engine in a well-ventilated area. Engine exhaust is toxic.

15. Start the engine.
16. Check for any exhaust leaks.

## 6 Removal of the Diesel Particulate Filter End Cap - Understep Configuration



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- |  |                                    |
|--|------------------------------------|
| 1. Diesel Particulate Filter (DPF) end cap | 3. Diesel Oxidation Catalyst (DOC) |
| 2. DPF Clamps                              | 4. DPF                             |

Removal as follows:

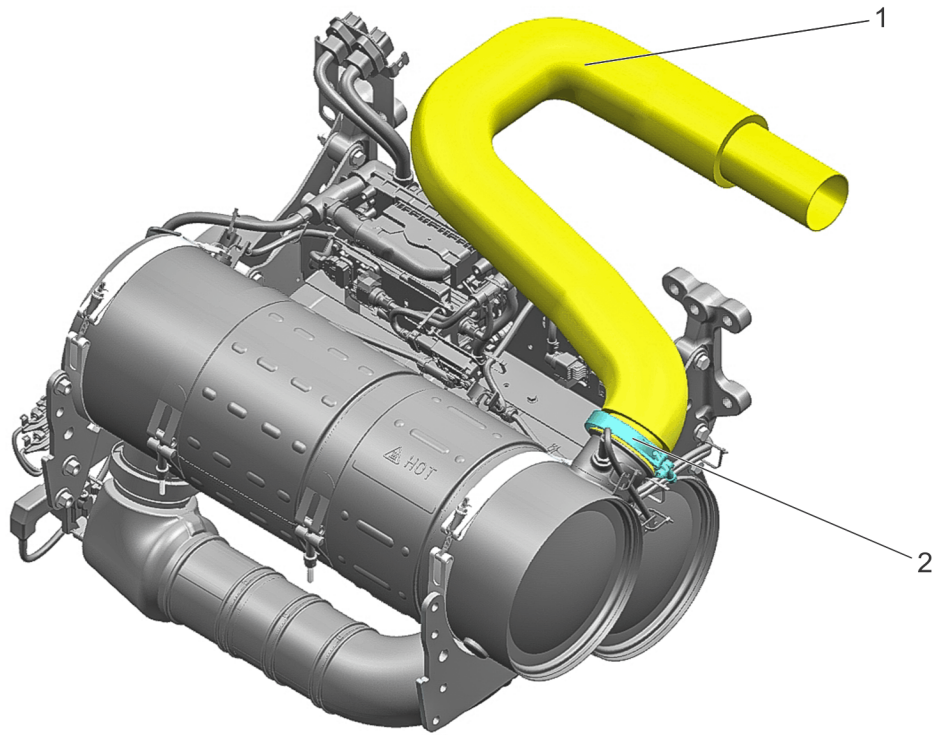
1. Shut off the engine, apply the parking brake, chock the wheels, and perform any other applicable safety steps.



### CAUTION: ELECTRICAL SHOCK

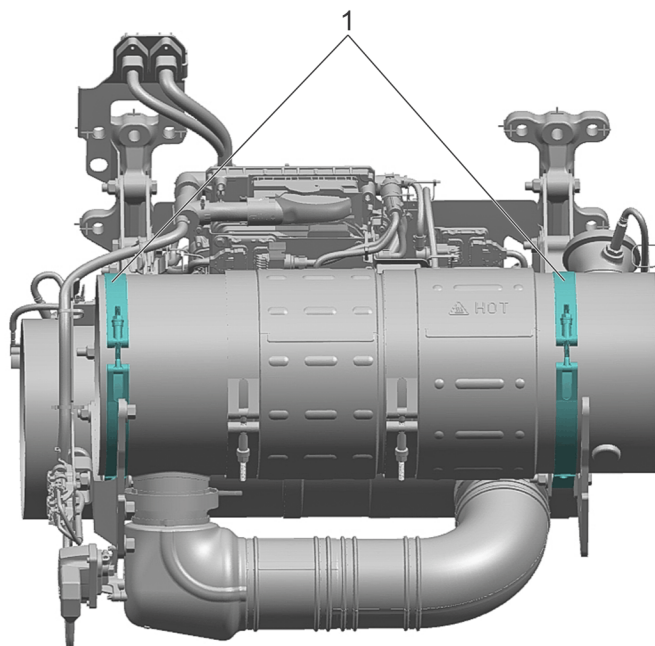
To avoid injury from electrical shock, use care when connecting battery cables. The magnetic switch studs are at battery voltage.

2. Disconnect the batteries.
3. Remove the right side fairing. Refer to the Original Equipment Manufacturer (OEM) procedures.
4. Remove the right side steps and mounting brackets.
5. Allow the Aftertreatment System (ATS) time to cool.
6. Disconnect the exhaust system inlet pipe (1) by loosening the clamp (2) and relocating the inlet pipe away from work area.



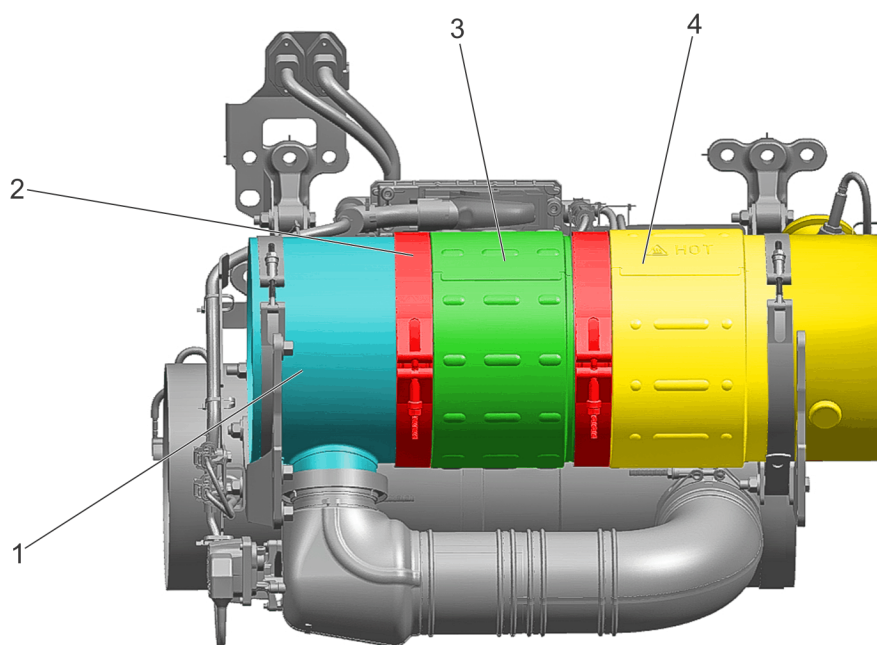
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7. Remove the Diesel Particulate Filter (DPF) outlet temperature sensor. Refer to section "Removal of the Diesel Particulate Filter Outlet Temperature Sensor".
8. Remove the DPF outlet pressure tube. Refer to section "Removal of the Diesel Particulate Filter Outlet Pressure Tube".
9. Remove the Diesel Oxidation Catalyst (DOC) inlet pressure tube. Refer to section "Removal of the Diesel Oxidation Catalyst Inlet Pressure Tube".
10. Note the orientation of the DOC, DPF, DPF end cap and associated clamps to ensure proper installation.
11. Loosen the clamps (1) securing the DOC, DPF and DPF end cap to the frame rail mounting bracket.



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12. Remove the DPF clamp (2) securing the DPF (3) to the DPF end cap (1). Discard the clamp and gasket.



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13. Carefully slide the DOC (4) and DPF (3) away from the DPF end cap (1). Ensure the DOC and DPF are still secured to the frame rail mounting bracket.
14. Remove the clamp and gasket securing the Selective Catalytic Reduction (SCR) hydrolysis chamber to the DPF end cap. Discard the clamp and gasket.
15. Carefully remove the DPF end cap from the SCR hydrolysis chamber.


## 7 Inspection of the Diesel Particulate Filter End Cap

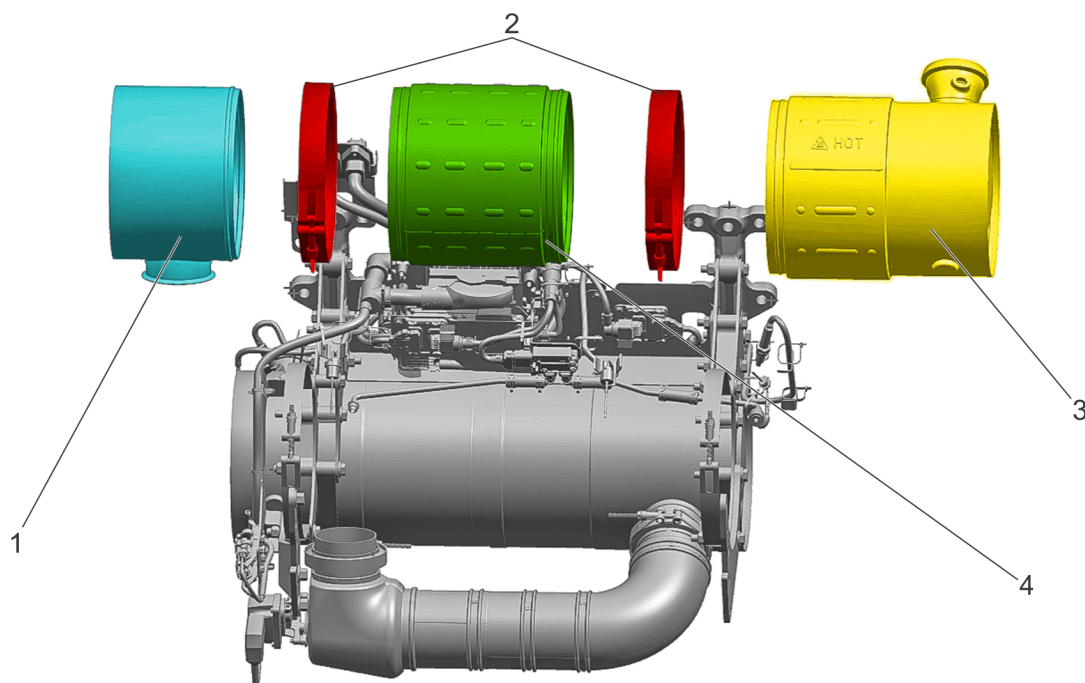
Inspect as follows:

1. Inspect the Diesel Particulate Filter (DPF) end cap for damage. Replace as necessary.

## 8 Installation of the Diesel Particulate Filter End Cap - Understep Configuration

Table 3.

Service Tools Used in the Procedure		
Tool Number	Tool Name	Picture
Locally Sourced	ATD Lifting Device	

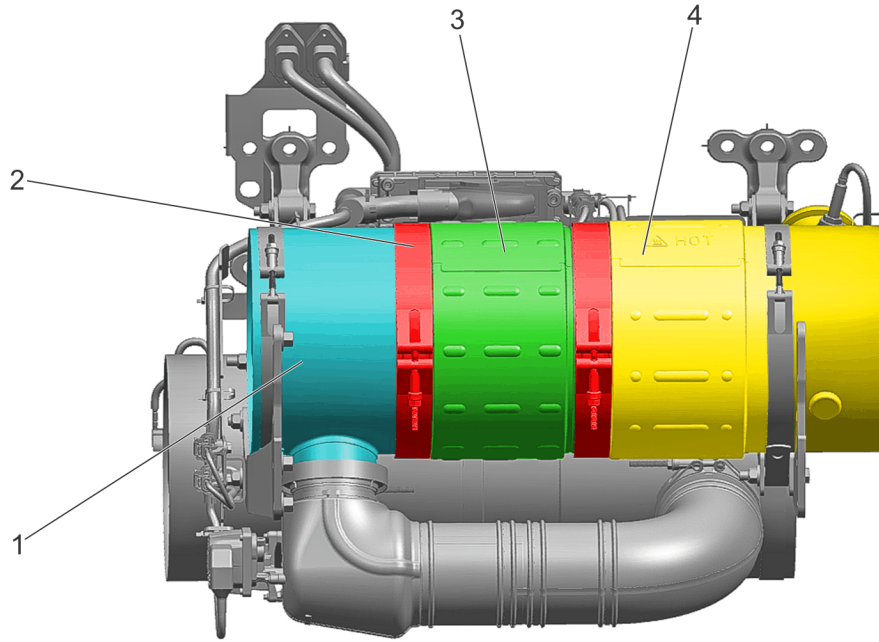


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- |  |                                    |
|--|------------------------------------|
| 1. Diesel Particulate Filter (DPF) end cap | 3. Diesel Oxidation Catalyst (DOC) |
| 2. DPF Clamp                               | 4. DPF                             |

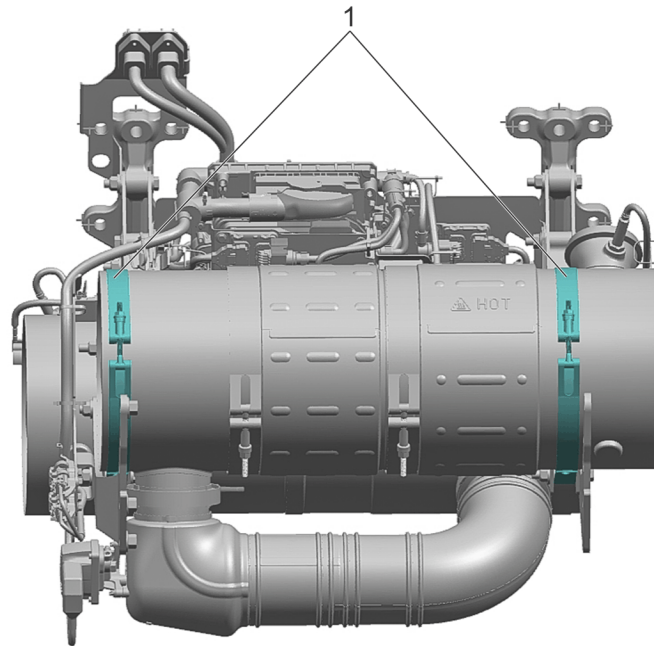
Install as follows:

1. Clean the mating surfaces of the Diesel Particulate Filter (DPF) end cap.
2. Install a new clamp and gasket on the outlet of the Diesel Particulate Filter (DPF) end cap.
3. Slide a new DPF clamp and gasket inward on the DPF.
4. Carefully install the Diesel Particulate Filter (DPF) end cap onto the Selective Catalytic Reduction (SCR) hydrolysis chamber.
5. Install the clamp securing the DPF end cap to the SCR hydrolysis chamber. Hand-tighten the clamp.
6. Carefully slide the Diesel Oxidation Catalyst (DOC) (4) and DPF (3) on to the DPF end cap (1).



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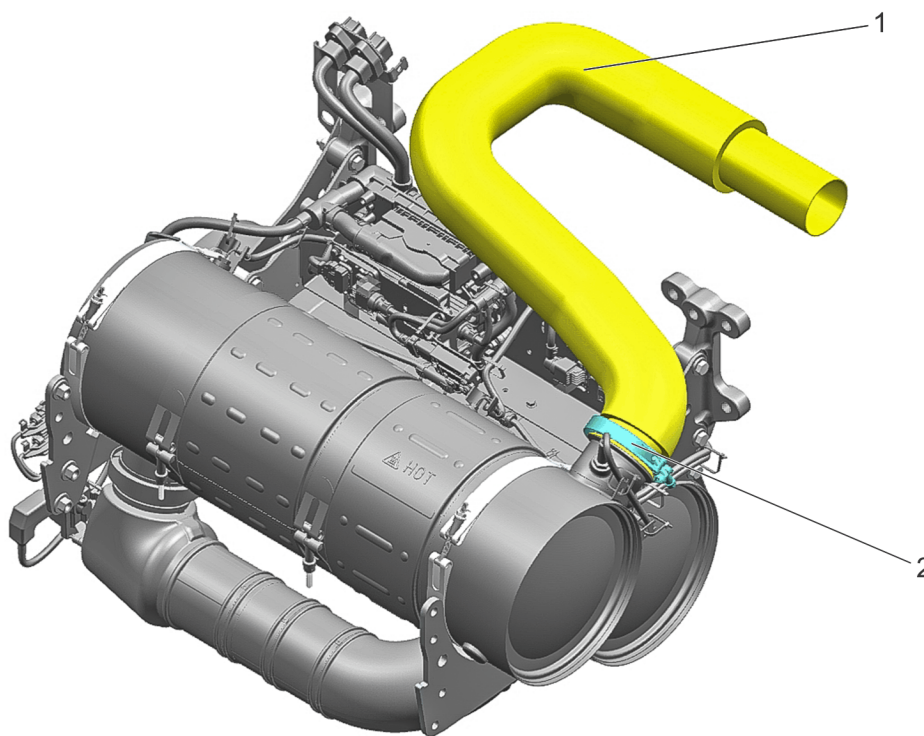
7. Ensure the DOC, DPF, DPF end cap and associated clamps are installed in the correct orientation.
8. Install the DPF clamp (2) and gasket securing the DPF (3) to the DPF end cap (1). Torque the clamp to 32 N·m (24 lb·ft).
9. Torque the clamp securing the DPF end cap to the SCR hydrolysis chamber to 20 N·m (15 lb·ft).
10. Torque the clamps (1) securing the DOC, DPF and DPF end cap to the vehicle frame to 40 N·m (30 lb·ft).



d140854

11. Install the DOC inlet pressure tube. Refer to section "Installation of the Diesel Oxidation Catalyst Inlet Pressure Tube".

12. Install the DPF outlet pressure tube. Refer to section "Installation of the Diesel Particulate Filter Outlet Pressure Tube".
13. Install the DPF outlet temperature sensor. Refer to section "Installation of the Diesel Particulate Filter Outlet Temperature Sensor".
14. Connect the exhaust system inlet pipe (1) by installing the clamp (2). Torque to 25 N·m (18 lb·ft).



d140824

15. Install the right side steps and mounting brackets. Refer to the Original Equipment Manufacturer (OEM) procedures.
16. Install the right side fairing. Refer to OEM procedures.

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