

# REMOTE DIAGNOSTICS REPAIR INSTRUCTIONS



DTC: P2047-13

Bulletin: RD24-036 Date: December 17, 2024

**Description:** Reductant Injection Valve Control Bank 1 Unit 1 – Circuit Open

**Applies to:** US24 Emissions VN (4) B1

For Spanish click here: [ESPAÑOL](#) For French click here: [FRANÇAIS](#).

## General Information

These repair instructions are intended to address the following fault(s):

| DTC      | Description                                                    | Possible Cause                                                                                                                                  | Possible (Observable) Symptoms                      |
|----------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| P2047-13 | Reductant Injection Valve Control Bank 1 Unit 1 – Circuit Open | <ul style="list-style-type: none"><li>Connector</li><li>Wiring harness</li><li>Aftertreatment diesel exhaust fluid (DEF) dosage valve</li></ul> | No aftertreatment diesel exhaust fluid (DEF) dosage |

## Required Parts

| Part Number | Description      | Quantity |
|-------------|------------------|----------|
| 22757148    | DEF Dosage Valve | 1        |

## Additional Resources

These repairs are the most likely fix for the identified fault, if this does not fix the issue, Tech Tool will need to be used for more detailed diagnostics. If filing a warranty claim, please include the ASIST case number.

| Labor Code                      |          |
|---------------------------------|----------|
| 2589-03-02-19                   | 0.8      |
| 3100-09-01-05 and 3100-09-01-06 | 0.2 each |
| Causal Part                     | 22757148 |

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## Repair Instructions

### 2589-03-02-19 Aftertreatment Diesel Exhaust Fluid (DEF) Dosing Valve, Replacement



Illustrations may differ slightly from the actual vehicle being serviced. However, key components addressed in this information are represented as accurately as possible.



Colors used in illustrations are for highlighting purposes only and do not correspond to the actual colors of the vehicle.



All threaded fasteners that do not have a tightening torque specification in the information are tightened to a standard torque. Standard torques are available in the following specification. ➔ [Standard Tightening Torques](#)



#### **CAUTION** Risk of material damage.

Reagent (Diesel Exhaust Fluid) oxidizes metal and the capillary action creeps through lines at a speed of approx. 0.6 meters per hour.

- Do not spill reagent (Diesel Exhaust Fluid) on disassembled connectors. If this occurs, replace the connectors immediately. Do not clean with water or compressed air.



#### **CAUTION** Risk of chemical burn.

Reagent (Diesel Exhaust Fluid) may splash up if the system is pressurized.



Switch off the ignition. Wait at least two minutes before disconnecting the batteries or removing the hoses in order to allow the automatic draining of the exhaust aftertreatment system.



#### **CAUTION** Risk of material damage.

Deficient reagent (Diesel Exhaust Fluid) can cause failure to the exhaust aftertreatment system.



Use only the reagent (Diesel Exhaust Fluid) approved by the manufacturer.



#### **WARNING** Risk of burn injuries.

The coolant may be hot.

- The cooling system is under pressure and can reach a temperature sufficient to cause

burns. Allow the coolant temperature to reach a safe level before starting the work.

- Remove the coolant tank cap carefully. Use appropriate protective equipment.



#### **CAUTION** Risk of material damage.

Liquids can enter the unit.

- Cover electrical connectors with the protection provided.



#### **WARNING** Risk of serious injury.

Physical injury.

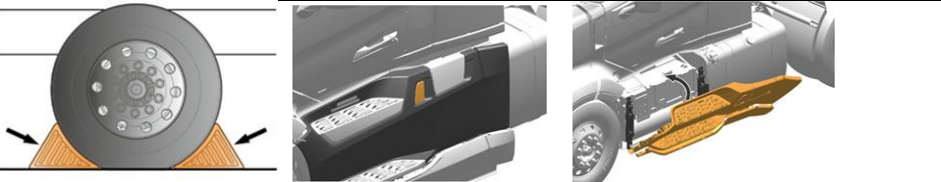
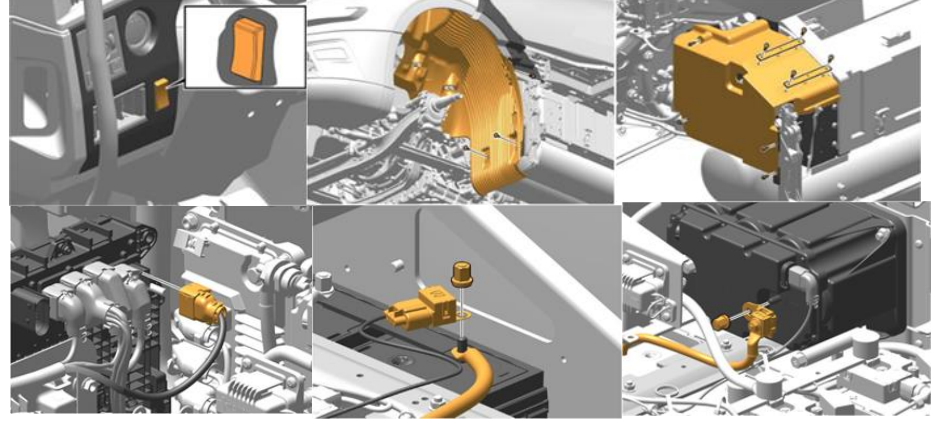
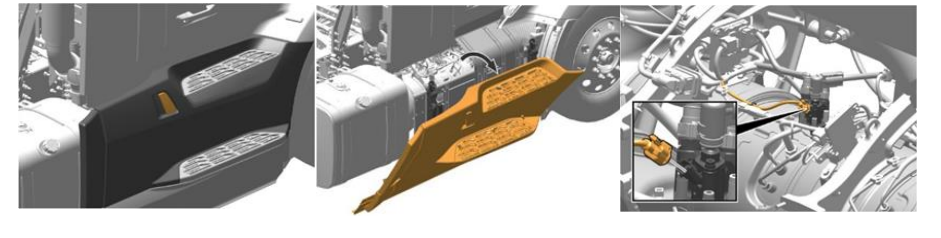
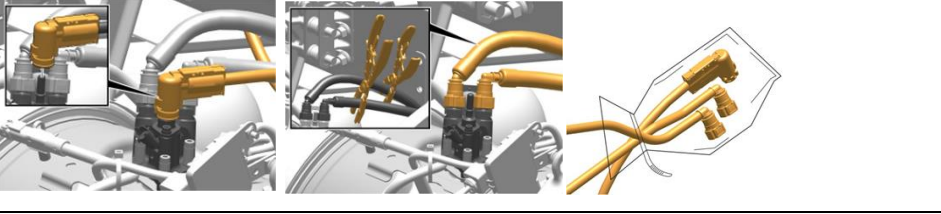
- Wear appropriate safety equipment.

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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <p>Park the vehicle on a level surface. Apply the parking brake. Place the gear lever in neutral.<br/>Install the wheel chocks.<br/>Unlatch the LH fairing. Remove the tether.<br/>Remove the fairing.</p>                                                                                                                                                                                                                                                                                                                                                                                                                        |    |
| <p><b>Decommission the low voltage system.</b><br/>1 Turn the dash mounted battery switch to the (OFF) position or (if equipped) press the LOCK button twice.<br/>2 Remove the screws and move the splash shield out of the way.<br/>3 Remove the nut, screws, and brackets. Remove the battery switch cover.<br/>4 Turn the battery disconnect switch to the (OFF) position.<br/>5 Disconnect the connector.<br/>6 Unlatch the battery cover and remove.<br/>7 Remove the nut, fuse, and the battery negative cable.<br/>8 If equipped with Ultra Capacitor. Remove the nut and battery negative cable from ultra capacitor.</p> |    |
| <p>Unlatch the RH fairing, remove the tether, remove the fairing.<br/>Remove the cable tie, disconnect the electrical connector, move aside the cable.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |
| <p>Disconnect the DEF connector.<br/>Install the suitable pliers on coolant hoses. Remove the hoses. Protect the hose connectors.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |

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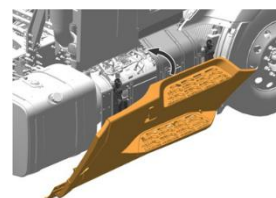
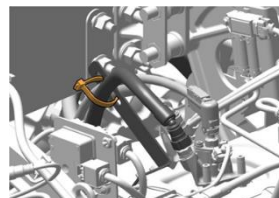
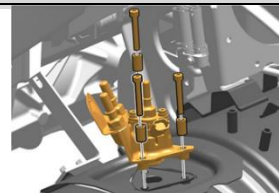


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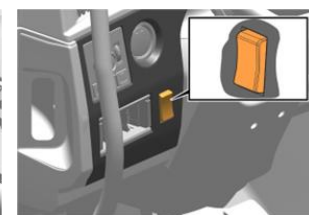
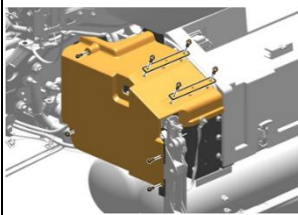
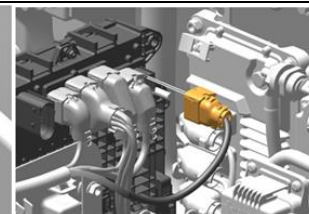
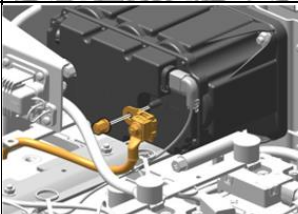
Date: October 1, 2024

Remove the screws. Remove the spacers. Remove the dosage valve. Remove the gasket. Remove the sealing plate.  
 Note: Discard the gasket and sealing plate.  
 Clean the contact surfaces. Install new sealing plate. Install new gasket. Install the dosage valve.  
 Install the spacers. Install the screws. Tighten the screws. Tightening torque dosage valve, screw  $8 \pm 2$  Nm ( $6 \pm 1$  lbf·ft).  
 Remove hoses from the bag. Install the coolant hoses. Remove the pliers. Connect the DEF connector. Position the cable.  
 Connect the electrical connector. Install the cable tie.  
 Install the RH fairing. Install the tether. Close and latch the fairing.



## Commission the low voltage system.

- 1 Install the battery negative cable from ultra capacitor if equipped. Install the nut.
- 2 Tighten the nut to torque. Tightening torque cable terminal, nut  $20 \pm 2$  Nm ( $15 \pm 1$  lbf·ft)
- 3 Install the battery negative cable. Install the fuse. Install the nut.
- 4 Tighten the nut to torque. Tightening torque battery, terminal, nut  $20 \pm 2$  Nm ( $15 \pm 1$  lbf·ft)
- 5 Install the battery cover. Latch the battery cover. Connect the connector. Turn the switch to the (ON) position.
- 6 Install the battery switch cover. Install the brackets. Install the screws. Install the nut.
- 7 Position the splash shield. Install the screws.
- 8 Turn the dash mounted battery switch to (ON) position or (if equipped) push the Unlock button twice.



Install the LH fairing. Install the tether. Latch the fairing.  
 Connect the diagnostic tool (Premium Tech Tool).  
 Delete the diagnostic trouble codes according to the diagnostic tool (Premium Tech Tool) instructions.  
 Disconnect the diagnostic tool (Premium Tech Tool).  
 Start the engine. Check for leakage.  
 Stop the engine. Remove the wheel chocks.

