



Reductant Tank Temperature Sensor Troubleshooting Guide (UQLS) - US17 Emissions And Newer



> **Internal Content**

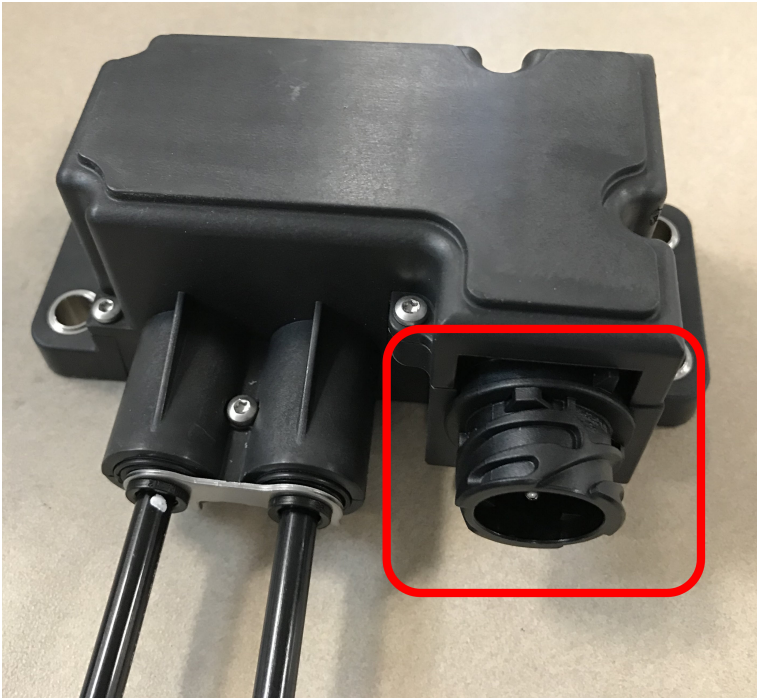
Trouble shooting guide for diagnosing the Reductant Tank Temperature Sensor (UQLS), commonly referred to as the DEF Level Sensor.

Fault Code	Fault Description	Comments
P205B64	Reductant Tank Temperature Sensor Circuit Range/Performance	If active and repeating, then the sensor is faulty.
P203A13	Reductant Level Sensor "A"	Internal sensor faults. If active or confirmed, follow the diagnostic steps below.
P203C00	Aftertreatment Reagent Level Short Circuit Low	
P206A13	Reductant Quality	
P206C00	Reductant Quality Sensor Low	
P206B64	Reductant Quality Sensor Range/Performance	DEF Quality Low or High (Most likely Sensor)
P205A13	Reductant Tank Temperature Sensor, Open Circuit	Internal sensor fault. Replace sensor if sensor is active or confirmed
P205C00	Aftertreatment Reagent Tank Temperature Short Circuit Low	

If any of the above faults (orange or red rows) are present on a DTC read out as active or confirmed follow the steps below. Inactive faults require no further action.

1. Check the sensor wiring harness connection.

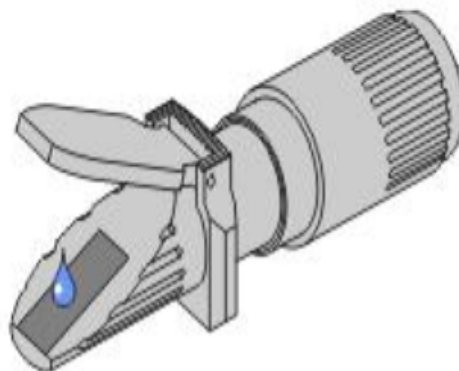
- Disconnect the harness and make sure there is no damage to the wires or pins, corrosion, or water ingress in either of the connectors. If damage is found replace in accordance with FSB 258-040.



2. Verify the DEF quality is at an acceptable value.

NOTE: Use refractometer P/N 88890105 to verify the DEF quality. See illustration below.

 88890105 refractometer



3. Verify that the DEF tank is not frozen.
4. Ensure that the DEF tank is adequately filled.
5. Clear the Fault Codes.
6. Start the engine. Run the engine on high idle for 2 minutes at 1000 rpm or higher.
7. Turn the Engine Off, Key Off for 15 seconds.
8. Start the engine. Run the engine on high idle for 2 minutes a second time.

Evaluate the Results:

- **If any of the faults in red or orange above return active:** Replace the UQLS in accordance with FSB 258-040.
- **If no faults in red or orange above return:** No troubleshooting or replacement of the UQLS is necessary.

If any of the faults in the green chart below are active follow the directions in the Comments column.

DO NOT replace the sensor for any of these codes. None of these codes immediately indicate a faulty component.

Fault Code	Fault Description	Comments
P203F00	Reductant Level Low	DEF level low (Possible derate condition). Commonly low DEF quantity or float stuck.
P203B00	Aftertreatment Reagent Level Warning	System fault. Follow diagnostics.
U02A200	Lost Communication with Reductant Quality Module	Commonly a wiring harness or connection issue.
P245F00	Reductant Temperature Too High	DEF tank temp above 70°C (160°F). Commonly the coolant lines to the DEF tank are swapped.
		DEF quality low and SCR efficiency low

 Live UI

P207F00	Reductant Quality	DEF quality low and SCR efficiency low. Commonly a DEF quality issue.
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 Tags

- mack
- volvo
- p205b64
- def level sensor
- uqls
- def quality
- p206b64
- u02a200
- p203a13
- p206c00
- p203b00
- p24ff00
- p207f00
- p203c00
- p206a13
- p205a13
- p205c00
- p203f00

Related links and attachments

[FSB 258-040](#)

 **Feedback**

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to help improve the content of this article

25068-9 FSB 258-040, Aftertreatment Diesel Exhaust Fluid (DEF) Tank, Level Sensor, Replacement

(May 2021)

On certain Volvo Truck models built before October 21, 2019, equipped with Diesel Exhaust Fluid (DEF) tank, the vehicle may experience water intrusion into the level sensor protection tubing. This may be due, in part, to kinking of electrical routing protective tubes. The solution is to replace the existing level sensor assembly with new level sensor assembly and follow improved electrical routing.

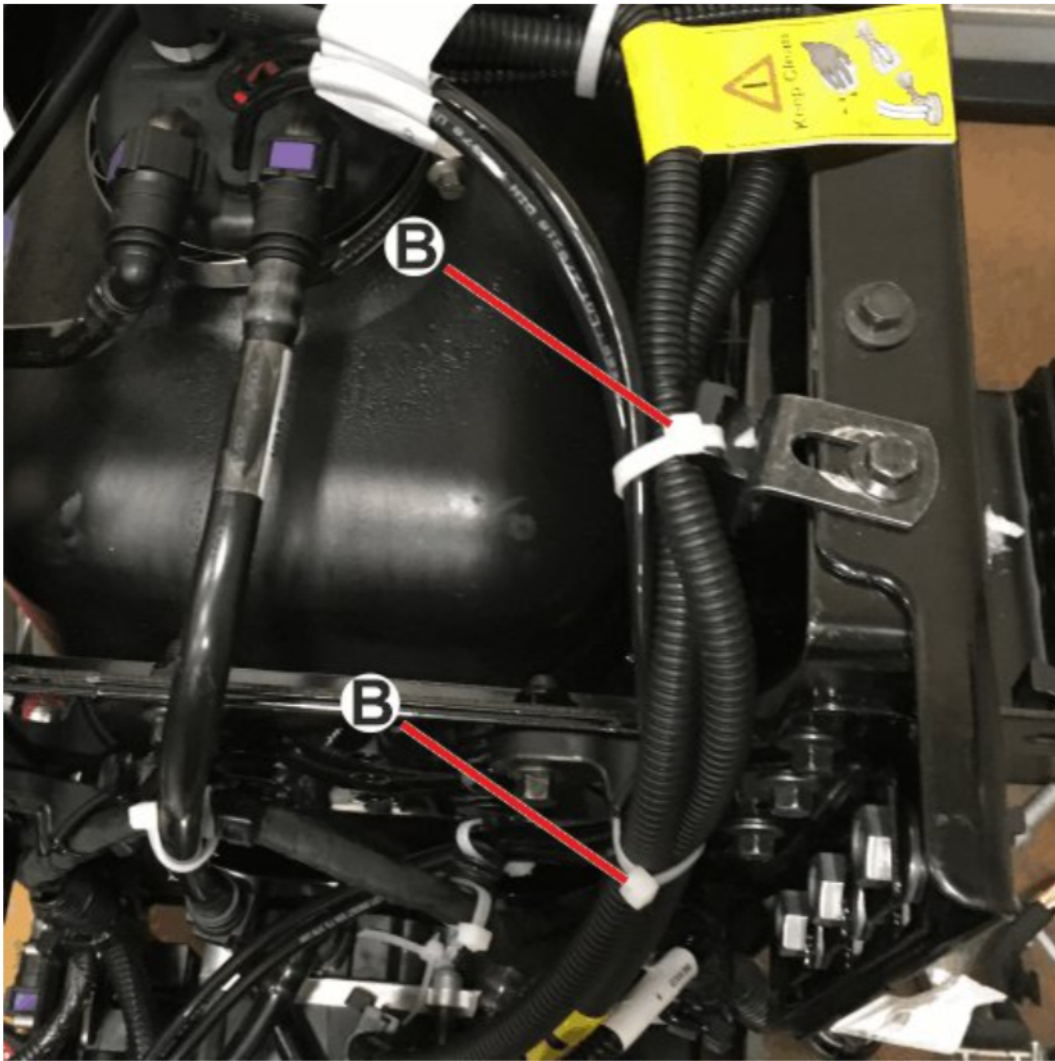
For removal and replacement of the DEF Tank, Level Sensor Follow Impact Operation 2589-03-02-05. During Installation follow electrical routing and clipping guide lines contained in the service bulletin per vehicle configuration.

Required parts			
Description		Old part	New Part
Frame Rail-Mounted Tank	DEF tank, 70-liter Capacity	23045836	23539939
	DEF tank, 45-liter Capacity	23045833	23539937
	DEF tank, 70-liter Capacity (Cummins Only)	23045847	23634011
Combination Mounted Tank	DEF tank 25/33-Liter Capacity	23045822	23539923
	DEF tank 25/33-Liter Capacity	23045830	23539935
	DEF tank 25-Liter Capacity (Cummins Only)	23045843	23634004

Frame-mounted DEF tank with Volvo engine

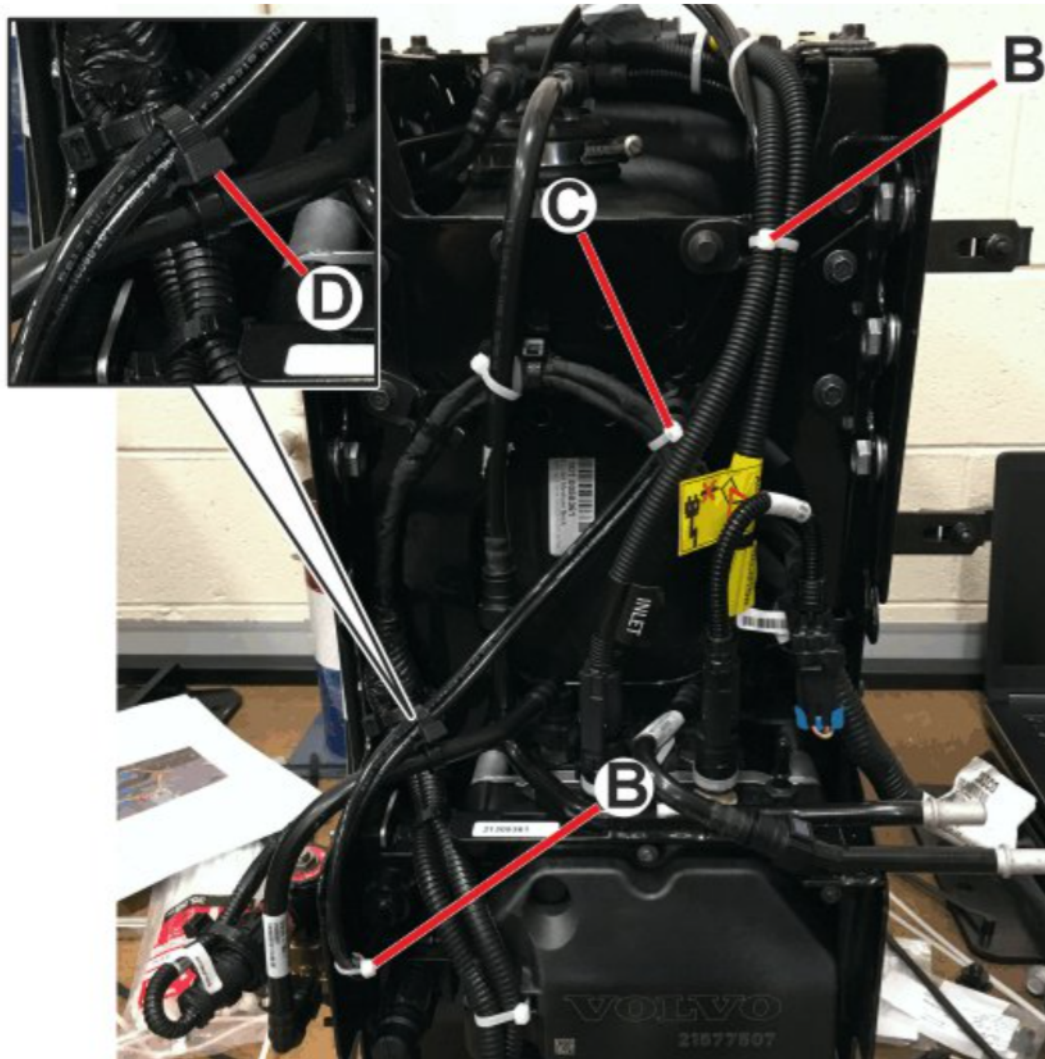
1. Maintain minimum 40 mm bend radius of UQLS (Urea Quality and Level Sensor) control module routing (A) at sensor head.

Note: Do not kink the UQLS control module routing.



2. Route and tie the UQLS control module routing with the urea harness.

Note: Use regular cable tie (B).

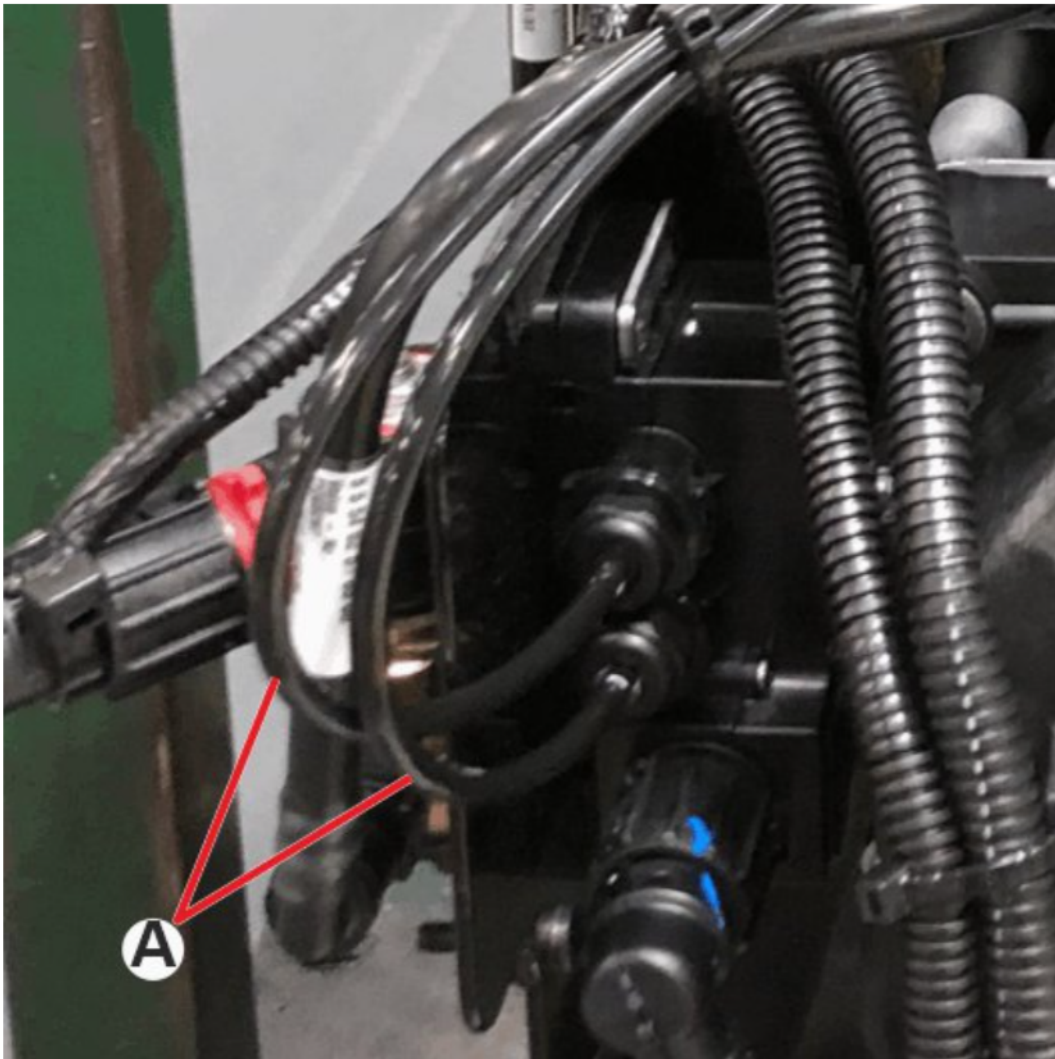


3. Route and tie the UQLS control module routing with the electrical harness.

Note: Use helicopter cable tie (C).

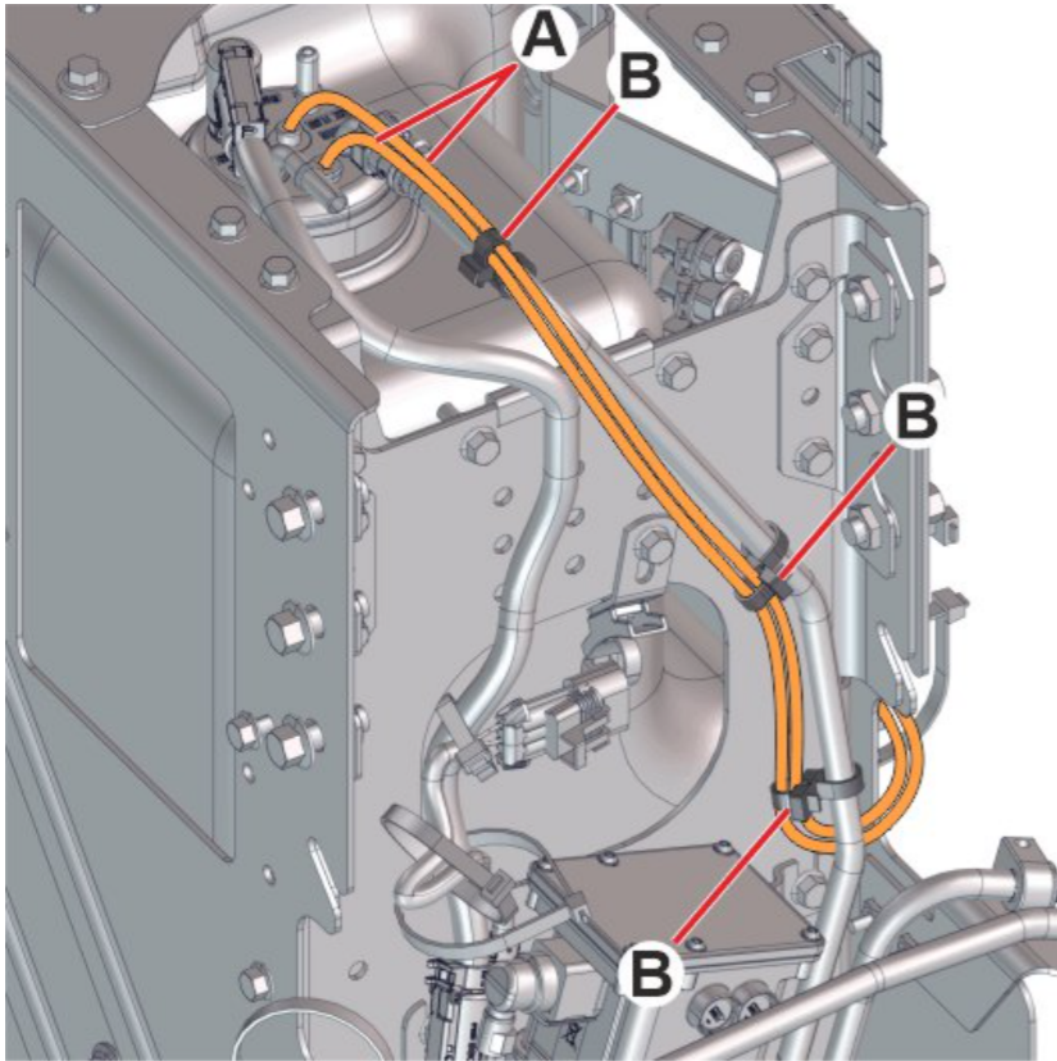
4. Route and tie UQLS control module routing with the coolant lines.

Note: Use double head cable tie (D).



5. Maintain minimum 40 mm bend radius of UQLS control module routing(A) at electrical junction box.

Note: Do not kink the UQLS control module routing.



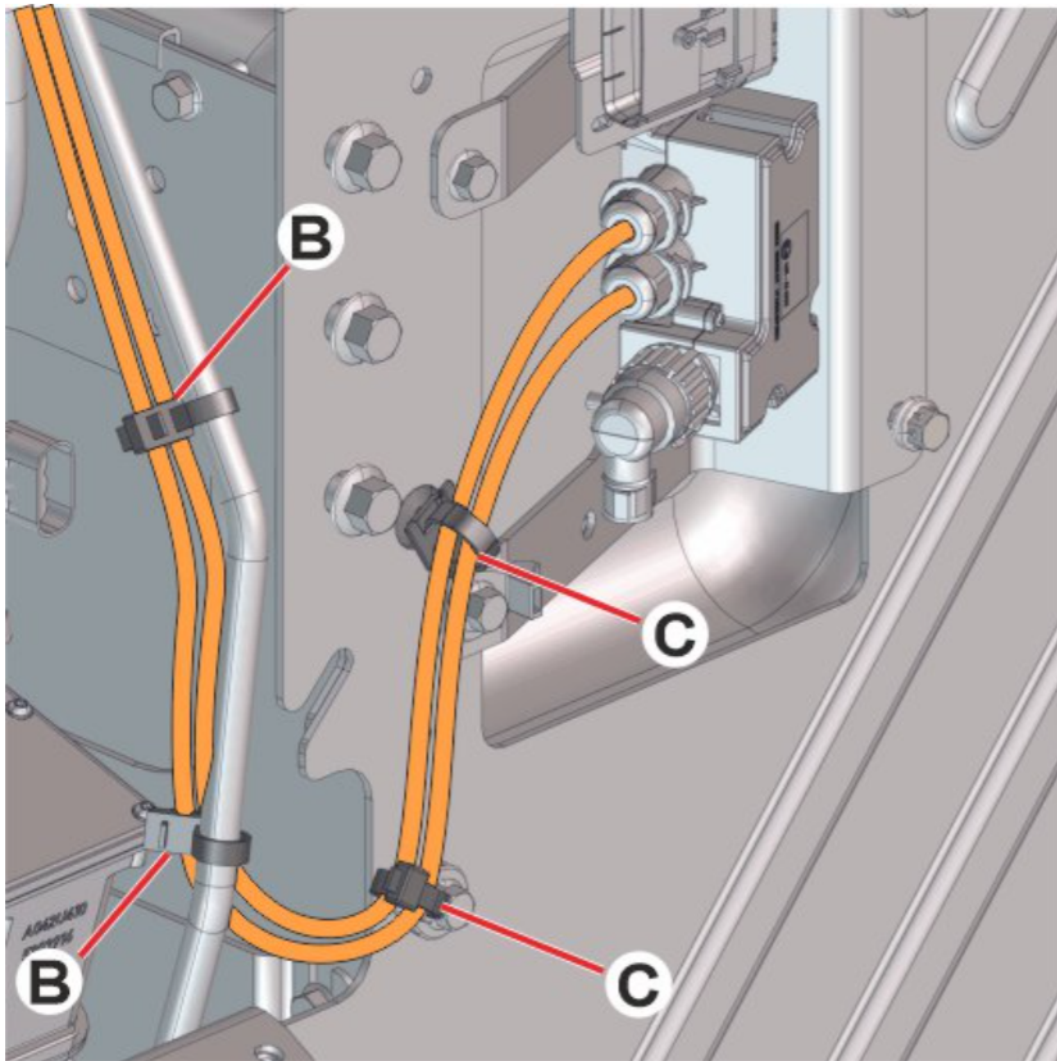
Frame-mounted DEF tank with Cummins engine

1. Maintain minimum 40 mm bend radius of UQLS (Urea Quality and Level Sensor) control module routing (A) at sensor head.

Note: Do not kink the UQLS control module routing.

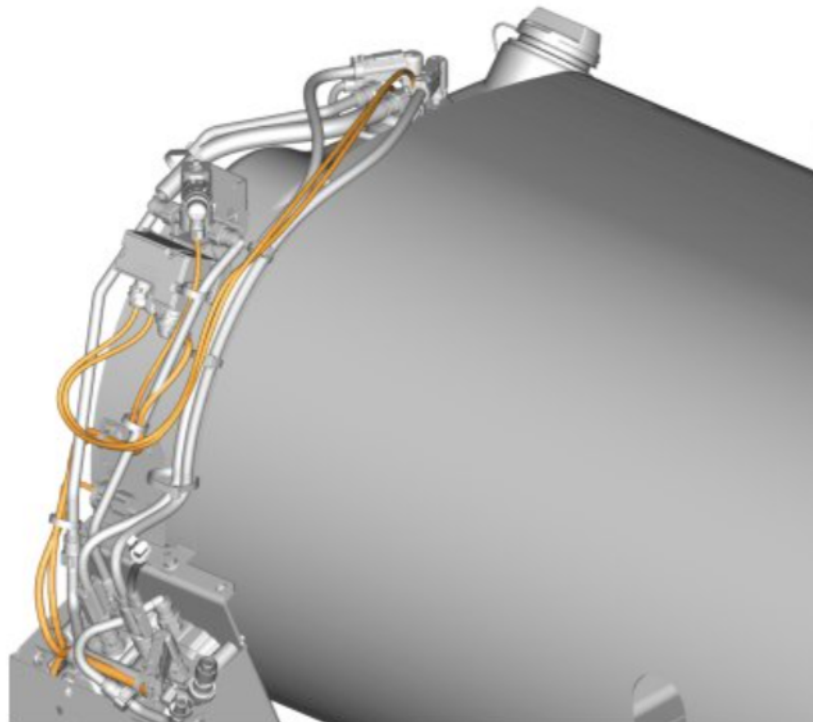
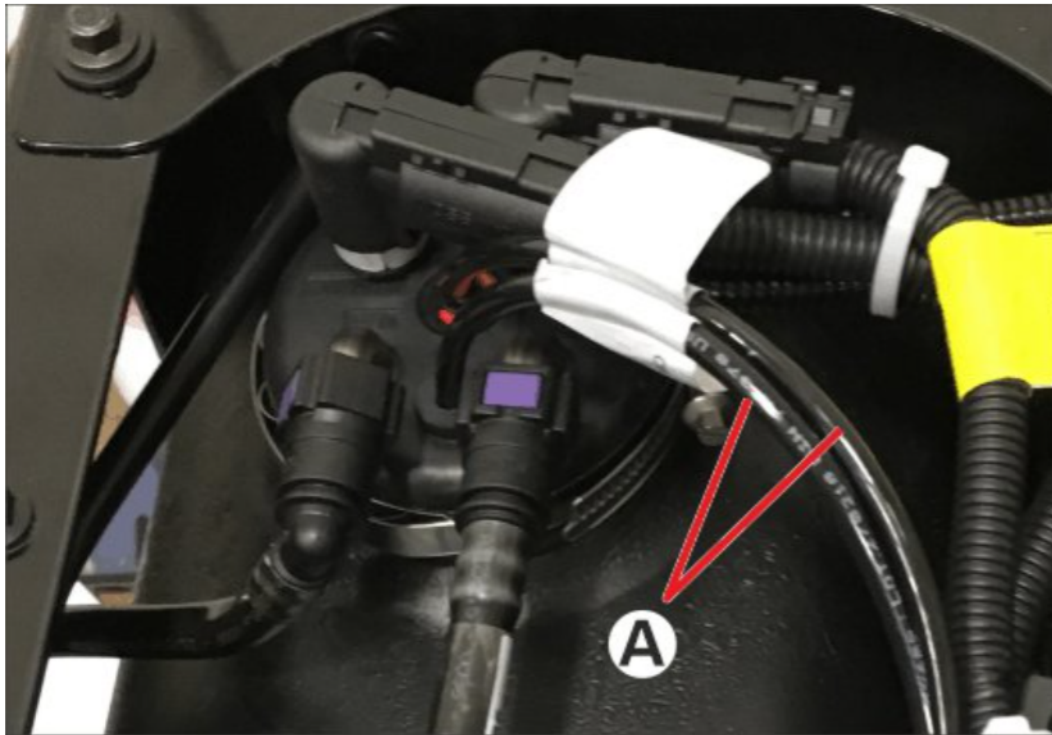
2. Route and tie the UQLS (Urea Quality and Level Sensor) control module routing with the coolant pipe.

Note: Use double head tie (B).



3. Route and tie the UQLS control module routing with the bracket.

Note: Use cable tie (C).



Reimbursement

This repair may be eligible for reimbursement if a product failure was experienced within time and mileage limits of the applicable Warranty coverage. Reimbursement is obtained via the normal claim handling process.

Claim Type (used only when uploading from the Dealer Bus. Sys.)	01
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Labour Code	
Primary Labour Code Level sensor, tank, replace (includes harnesses routing)	2589-03-02-05 0.2 –2.0 hrs (Time varies per model)
Causal Part	23539939, 23045833, 23045847

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