



TRP Number	Revision Level	Date	Group Number
T1379	A	23-MAY-2014	
Expiration Date (U.S. and Canada)		Expiration Date (International)	
31-OCT-2014		31-OCT-2014	
Engine Family	Fuel System	Plant	Build Date
			From
ISX, QSX15ISX15 ISX11.9 ISX, QSX15ISX15	CM2250		



## Temporary Repair Practice

# ISX12/15 CM2250 DEF Line Re-routing for Fault Code 3569

### Attention

- ε U.S / Canadian Distr./Branches and Div. Offices
- ε U.S / Canadian Dealers

This is to revise and replace TRP 1379, dated 16-Jul-2013. This revision is to:

1. Extend the expiration date to 31-Oct-2014, and
2. Add Part Numbers 286633700 and 288021500 as Optional, and
3. Clarify SRT 99-902.

If additional information is required, contact your Cummins Warranty Operations Group Leader.

### Description

This TRP is being issued to address ISX12/ISX15 CM2250 Fault Code 3569 occurrences on all Peterbilt vehicles with a particular exhaust/aftertreatment configuration (see Attachment B

for more details). This action will mitigate failures caused by urea crystallization inside the diesel exhaust fluid (DEF) dosing valve. By adding a negative slope to the DEF input line in the direction of the valve, the DEF is able to dissolve the crystallization, thereby freeing the valve prior to dosing.

## Action

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In order to qualify for repair under this field action, an engine:

1. will be covered In the Base Engine Warranty period, and
2. **must** be on the attached ESN list, and
3. **must** have come into the shop with an active fault code 3569, and
4. the active fault code 3569 **must** be troubleshot before performing this TRP.

After verifying that the engine meets the above requirements, perform the following actions:

1. Please refer to Attachment B.

## Material Disposition

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Materials removed as a result of this field action **must** be scrapped.

## Reimbursements

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### Parts

**NOTE: Rail Clip and L Bracket can be purchased from a local Peterbilt or Kenworth dealer. The cost for these non-Cummins parts is not to exceed \$25.00. Two gasket part numbers are listed, however both are NOT needed. After determining which of the gasket part numbers is necessary, a quantity of 2 of that gasket part number may be claimed.**

The following parts are covered under this field action:

Part Number	Quantity	Description
09-020-016A	2	PACCAR RAIL CLIP
286633700	2	GSK,AFM - OPTIONAL
288021500	2	GSK,AFM - OPTIONAL
K028-2489-17V	1	PACCAR L BRACKET
TIE	4	ZIP TIE

**NOTE: SRTs to gain access that are required to complete the repair, that are sufficiently explained in the claim narrative, may also be claimed on this action.**

**NOTE: SRT 99-902 is being provided to cover all labor associated with routing the DEF**

and coolant lines according to the TRP procedure. This SRT can be claimed with up to a quantity of 5 or .5 hours.

### Labor using applicable Access Code and Time:

SRT Code	Description	Time (hrs)
00-90X	Administrative time	
11-056	Aftertreatment Decomposition Tube - Remove and Install	
99-902	DEF LINE RE-ROUTE (QTY - 5)	.5

### Travel

Travel is **not** covered under this field action. Towing is **not** covered under this field action.

### Other Claimables

Consumables are covered under this field action.

## Claim Instructions

For Cummins Dealers, claims for this TRP **must** be filed via **RAPIDSERVE™** Web (rsw.cummins.com). For information regarding **RAPIDSERVE™** Web, please reference the "Warranty" tab in QuickServe® Online. If there are additional questions, please contact your local Cummins Distributor.

Claim Codes	
Description	Code
Account Code:	65
Pay Code:	Distributor = X
Pay Code:	Dealer = D
Pay Code:	International = I
Failure Code:	WUSDVS

## Attachments

[Click here to see t1379\\_esn-list.xls](#)

[Click here to see t1379\\_def\\_hose\\_re-route\\_procedure-attach-b.pdf](#)

[Click here to see t1379\\_def\\_line\\_routing\\_procedure-attach-c.pdf](#)

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**Last Modified: 23-May-2014**

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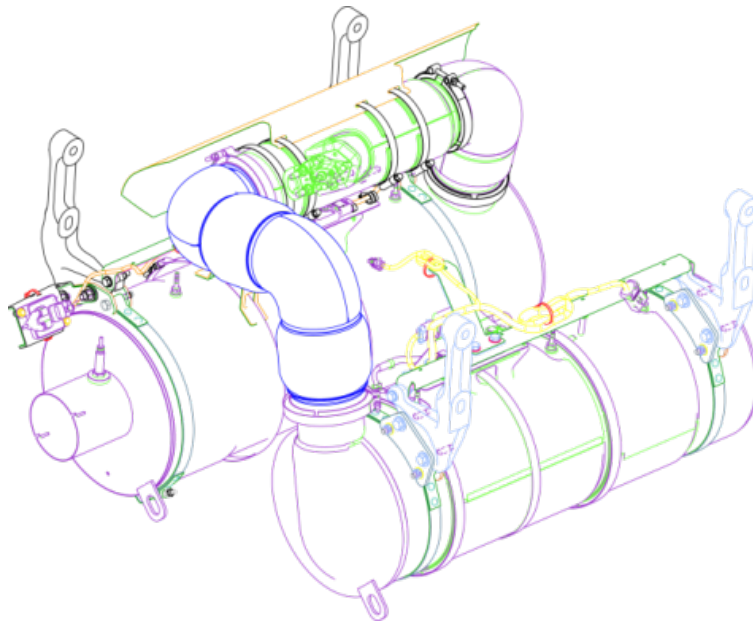
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# Reroute DEF doser hoses

## *Applies to vehicles with “Crossover” Exhaust configurations*

Crossover style exhaust refers to an arrangement of the DPF and the SCR which are mounted on frame rail brackets. The DPF and SCR are mounted just below the frame rail. The interconnecting piping routes the exhaust stream from the DPF, over the driveline through the DEF doser and into the SCR. The DEF doser (decomp tube) is mounted in between the frame rails.

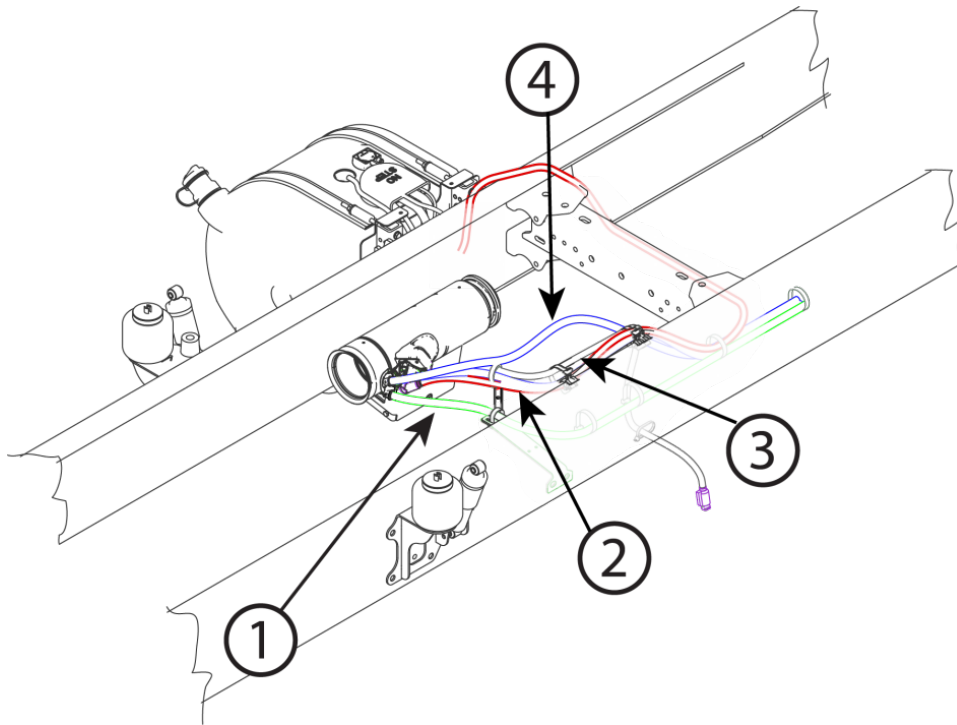
**Figure 1 Crossover exhaust (frame rails not shown)**



- Step 1. Read this guideline
- Step 2. Proceed to the vehicle. Resolve any Non-emissions related pending codes that are on the truck.
- Step 3. Unfasten the DEF injector hose, upper and lower coolant hose from any brackets and other harnesses
- Step 4. Loosen the Marmon clamps on each side of the DEF doser (decomp tube) (do not remove)
- Step 5. Install standoff bracket and frame clips (*DEF Injector hose page 4*)
- Step 6. Secure hoses in proper routing (*DEF Injector hose 4 and Coolant hoses page 5*)
- Step 7. Rotate DEF doser (decomp tube) if required (*DEF doser orientation page 6*)
- Step 8. Tighten Marmon clamps on DEF doser (decomp tube).

**DEF doser hose identification:**

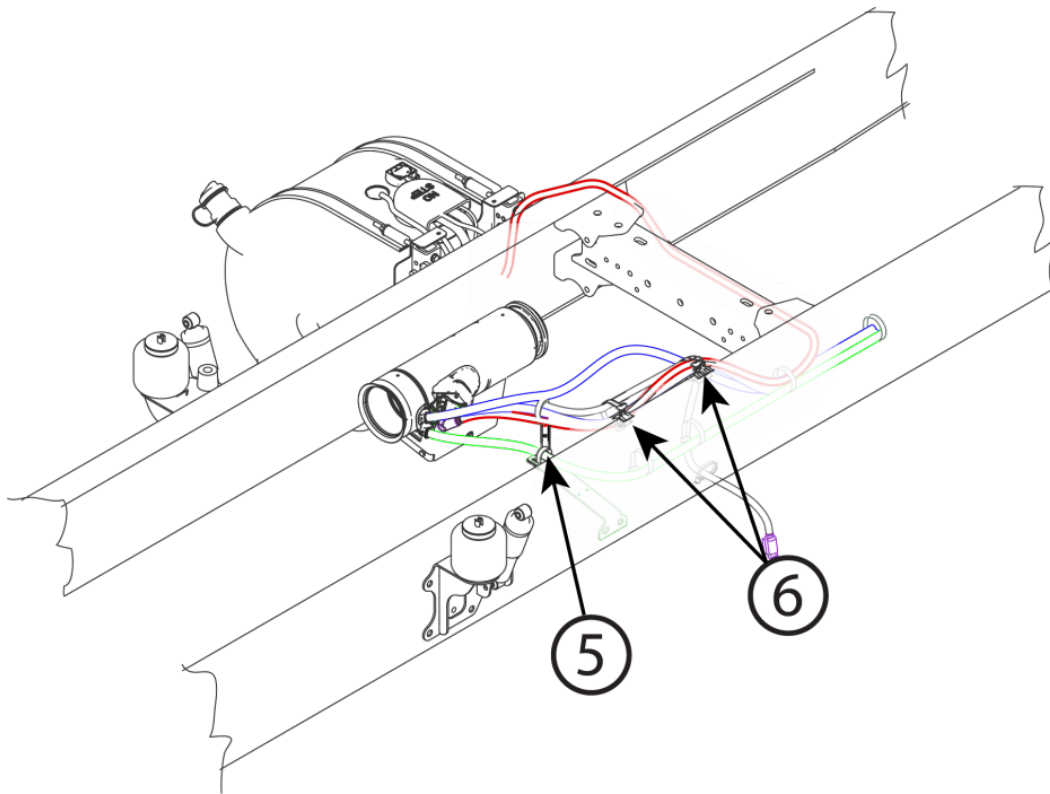
Figure 2 Hose identification



- |           |                      |
|-----------|----------------------|
| 1 (Green) | Lower coolant hose   |
| 2 (red)   | DEF injector hose    |
| 3 (gray)  | DEF injector harness |
| 4 (blue)  | Upper coolant hose   |

**DEF hose field installed bracket identification:**

Figure 3 bracket identification



- |   |                                  |
|---|----------------------------------|
| 5 | Standoff bracket (see reference) |
| 6 | Frame clips                      |

## DEF Injector hose

Figure 4 DEF injector hose angle

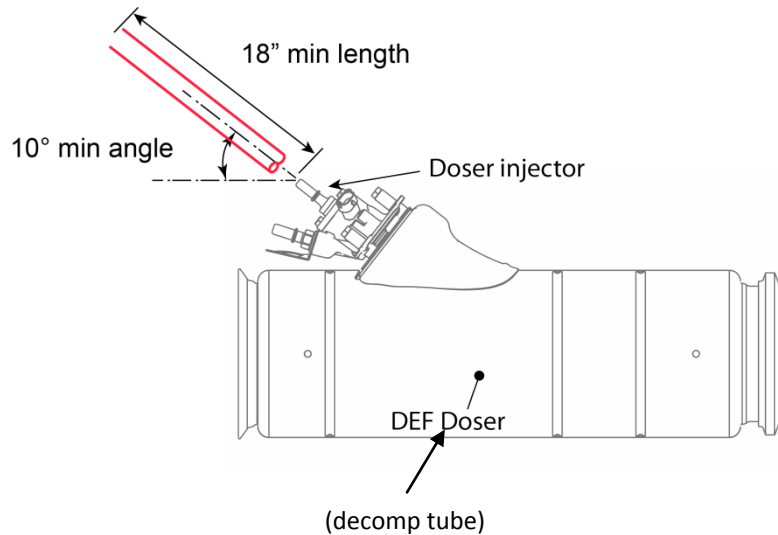
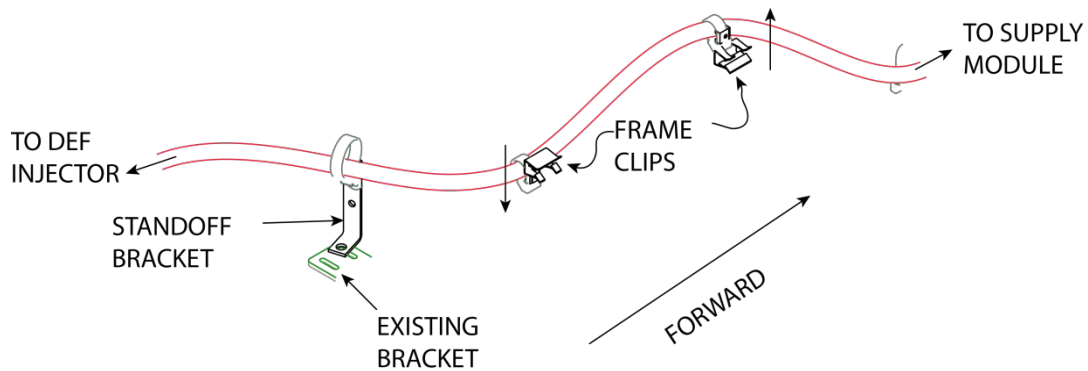


Figure 5 DEF injector hose route

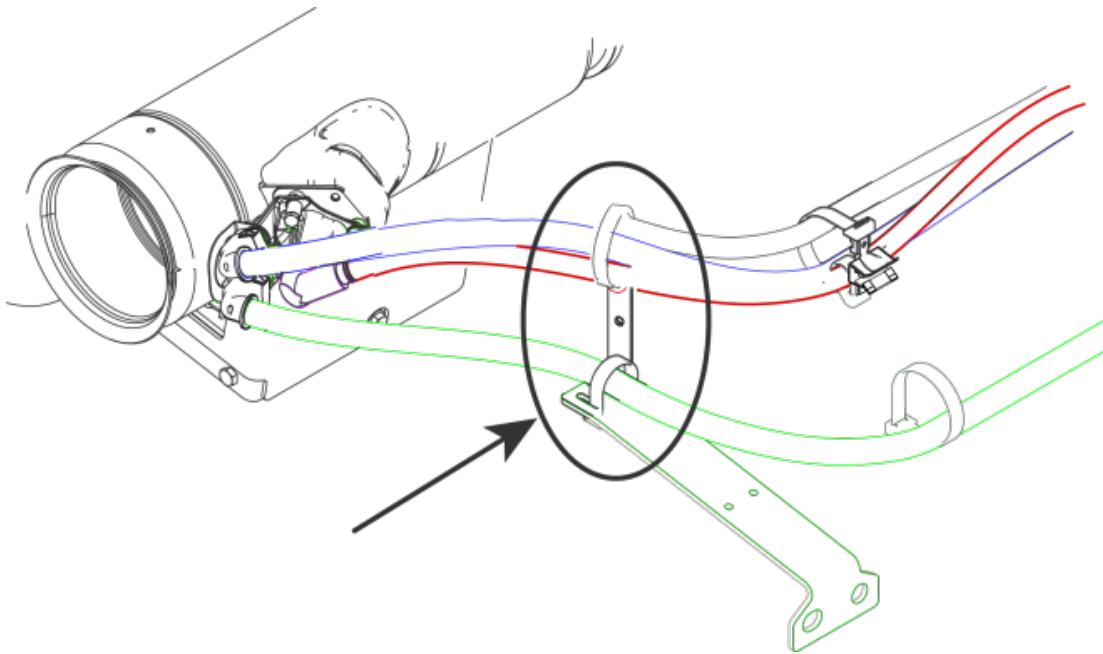


### DEF injector hose

1. Maintain a 10 degree upward slope from the horizontal
2. Maintain a continuous downward slope to the doser injector of at least 18"
3. Tie strap DEF doser injector hose to top of the standoff bracket with the upper coolant hose
4. Tie to frame clips, make sure that the forward frame clip is pointing up and the rear clip is pointing down.

## Coolant hoses

Figure 6 Separate coolant hoses



### Upper coolant hose

1. Route this hose vertically up from the injector as much as possible.
2. Maintain at least 35 degrees upward slope from horizontal
3. Maintain a minimum of 10" of hose rising before routing in a different direction.
4. Tie strap this to the upper portion of the standoff bracket to ensure good separation from the lower coolant hose.

### Lower coolant hose

1. Route this hose horizontal or pointing down.
2. Maintain a minimum of 10" of hose horizontal or pointing down before routing in a different direction.
3. Tie strap this to the frame bracket (not the standoff bracket) to ensure good separation from the upper coolant hose.



## DEF doser orientation

The DEF doser injector may be rotated to help position the hoses.

- Optimum position is 80 degrees from vertical, or 10 degrees from horizontal.
- It should not point up less than 45 degrees of vertical.
- Do not point the injector horizontal or facing down.

Figure 7 Rotate DEF doser

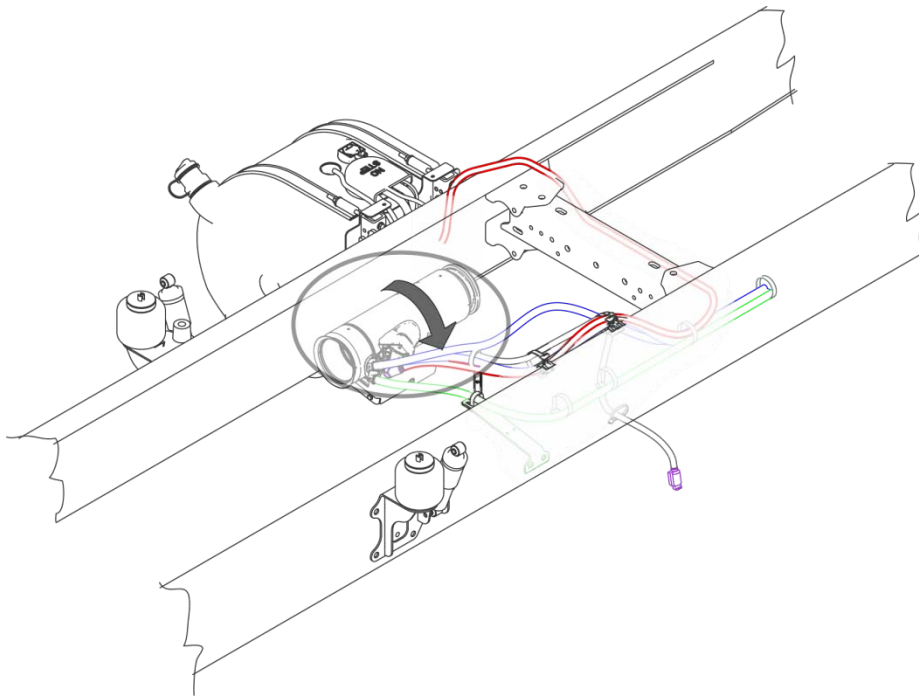
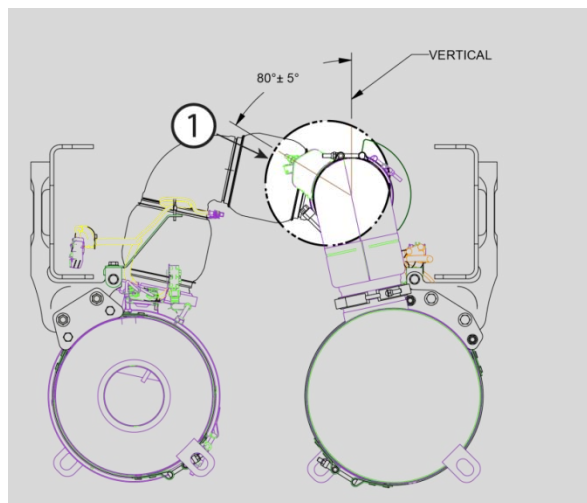


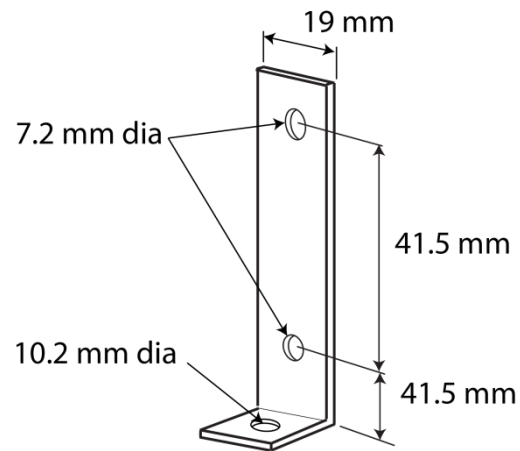
Figure 8 DEF doser position specification



1 DEF doser injector orientation

## Reference: Standoff bracket dimensions (K028-2491-1)

The important dimension to maintain is the 41.5 mm between the lower and the upper hole. This distance provides the proper separation from the upper and lower coolant hose to the DEF injector.



Interim Cross-Over Exhaust Field Fix to Address the following fault codes.

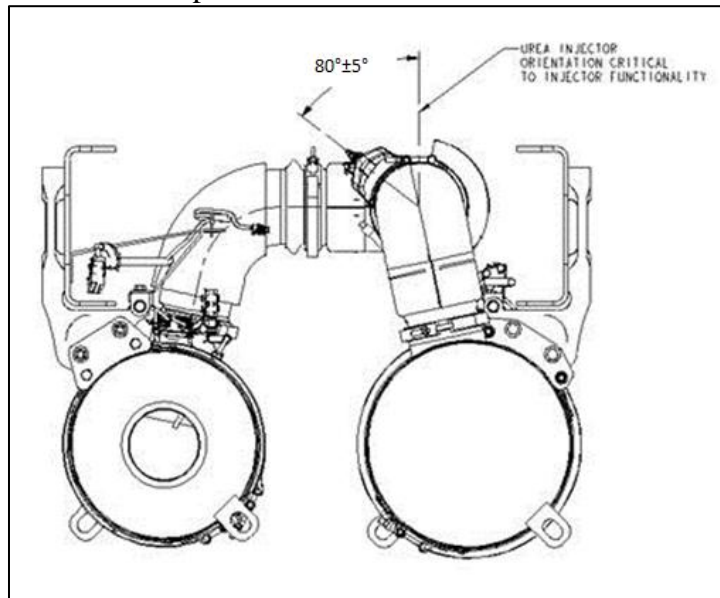
<b>Configuration</b>	<b>Fault Code</b>
2010 Cummins	3569
2013 Cummins	3568

**Background:**

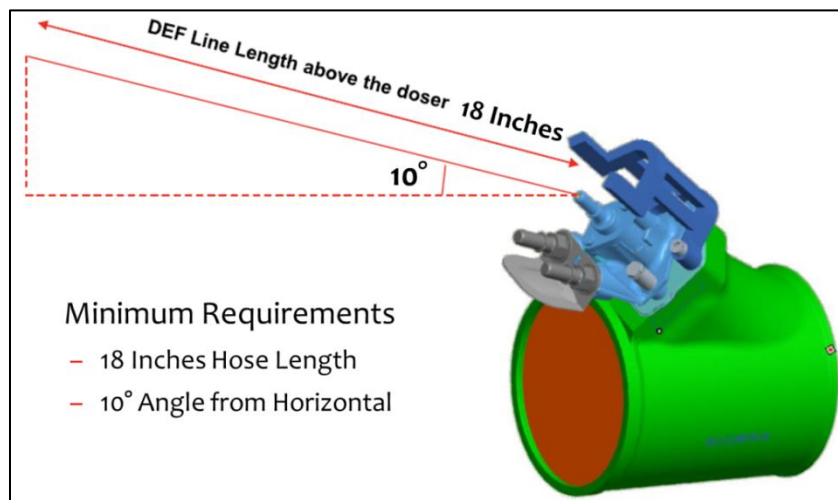
The cross-over exhaust DEF line routing has been shown to contribute to blockage of the DEF dosing valve tip as a result of DEF crystallization during hot shutdown. A production routing change has been implemented to reorient the DEF dosing valve and line to maintain a pool of DEF at the dosing valve head as protection against evaporation and subsequent crystallization. Vehicles produced prior to that change will utilize the actions presented here.

**Action:**

For any PACCAR EPA 2013 or 2010 equipped truck (Cummins power) the mixing pipe (or decomposition tube) needs to be oriented as shown in the picture below.



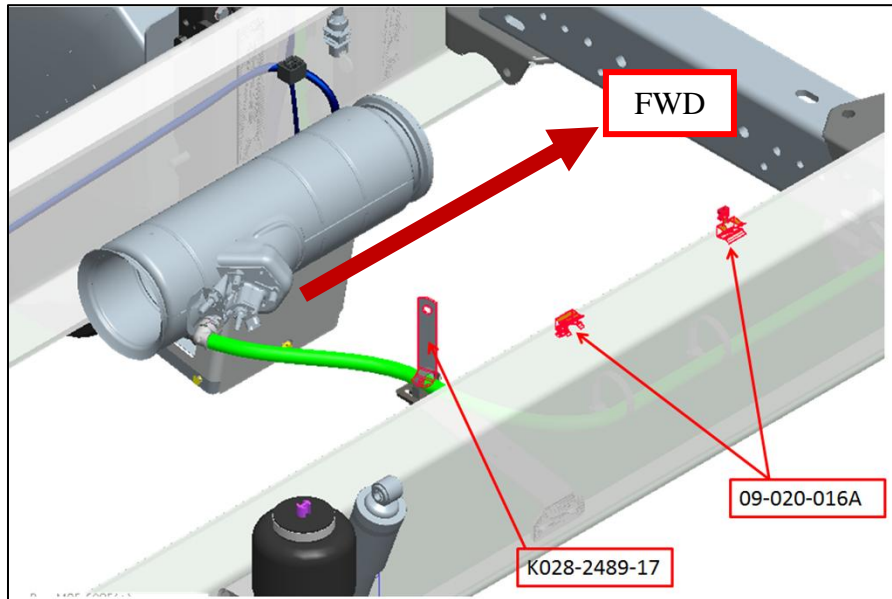
Any PACCAR EPA 2013 or 2010 equipped truck (Cummins power) that has a DEF fault from the above list should have the DEF doser line routing modified to achieve the following result:



This can be achieved utilizing the following parts:

- K028-2489-17 Qty 1
- 09-020-016A Qty 2

In the following location:



The Tinnerman clips are to be located generally in the location shown such that the 18" length requirement can be achieved for the DEF doser line.

The following image shows the DEF doser line routed on the added clips and bracket. The second coolant line (Blue line in picture below) should be tied to the DEF doser line. **The key is to ensure the Blue line is routed up and green line is routed down.**

