

This Field Service Bulletin replaces FSB 284-068 dated 11.2018

Date	Group	No.	Release	Page
11.2018	284	068	02	1(7)

Exhaust Particulate Sensor, Repair 2016 Models VNL, VNM, VHD

FSB 284-068, Exhaust Particulate Sensor, Repair (2016 Vehicles)

(November 2018)

Some trucks may experience a Particulate Matter (PM) Sensor fault that can result in the MIL lamp illuminating. These faults may be P24DA, "PM Sensor Exhaust Sample Error," or P24D1, "PM Sensor Regen Incomplete." These faults may be caused by contamination of the PM sensor. In order to reduce the likelihood of sensor contamination, new exhaust pipe parts are being made available that contain an internal water management feature along with an integrated drain that will prevent contamination of the sensor. If either of these two faults occur, follow the instructions outlined in this bulletin to clean the exhaust pipes and install a new exhaust pipe with the new contamination prevention measures.

Service personnel: Please circulate, read and initial

Service Manager	Warranty Administrator	Workshop Foreman	Service Technicians						

Required Parts – All Years

Inspect and replace the v-band clamp as needed

A new gasket will be needed when disconnecting the SCR exit.

Note: No gasket needed for vertical SCR.

Part Description	Part Number
SCR Gasket	21095726
V-band Clamp	21021850
Particulate Matter Sensor	22946032

Note: Customer adaptations can change required parts. Check for adaptations before ordering parts.

Parts List – 2016 Vehicles

Under Cab SCR Exhausts

Model	Cab Type	Exhaust Configuration	Pipe 1	Pipe 2	Flex Pipe	Clamp (Qty will vary)
VNL	Day Cab	Single Outlet Right Side Outboard	(Not Bright) 23154798 (Bright) 23154799	23202231	23154829	20961913
VNM VHD	Day Cab	Single Outlet Right Side Inboard	23154809	N/A	23154829	20961913
VNM VHD	430/630 Sleeper	Single Outlet Right Side Inboard	(Not Bright) 23154798 (Bright) 23154799	23202231	23154829	20961913
VNL	430 Sleeper	Single Outlet Right Side Inboard Dual Outlet	(Not Bright) 23154798 (Bright) 23154799	23200555	23154829	20961913
VNL	670/780 Sleeper	Single Outlet Right Side Inboard Dual Outlet	(Not Bright) 23154798 (Bright) 23154799	23200556	23154829	20961913

Under Cab SCR Exhausts Continued

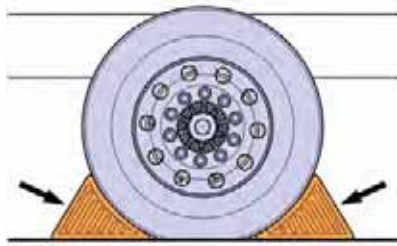
Model	Exhaust Configuration	Pipe 1	Clamp (Qty will vary)
VHD/VNM	Cab Mounted SCR RH Horizontal Forward Mount	23154823	20961913
VHD/VNM	Cab Mounted SCR Horizontal	23154825	20961913
VNL 11/13	Cab Mounted SCR Horizontal	23154827	20961913

Back of Cab SCR Exhausts

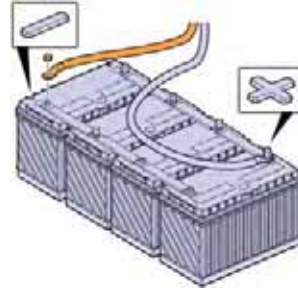
Model	Engine Size	Exhaust Configuration	Pipe	Pipe Insert	Clamp (Qty will vary)
All	16L	12.5 ft Exhaust Stack Right Side	23208705	23296273	23189982
All	11L / 13L	11 ft 8 in Exhaust Stack Right Side	(Not Bright) 23208698 (Bright) 23208699	23176623	23189982
All	11L / 13L	12 ft 6 in Exhaust Stack Right Side	(Not Bright) 23208700 (Bright) 23208701	23176623	23189982
All	11L / 13L	13 ft 5 in Exhaust Stack Right Side	(Not Bright) 23208702 (Bright) 23208703	23176623	23189982

Instructions

- 1 Decommission the vehicle. Install wheel chocks and disconnect the battery.



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- 2 Remove the PM sensor and module.
- 3 Remove all exhaust pipes up to the SCR outlet pipe.
- 4 Pressure wash the inside of each pipe that will be reused.
- 5 Reassemble the exhaust system using the new parts referenced in the table above.
- 6 Mark the SCR outlet pipe 1.5" from the end also mark the new pipe (not flex) 1.5" from its inlet.
- 7 Slip the flex pipe as far over the SCR outlet pipe as possible.
- 8 Install the new exhaust pipe.
- 9 Using a new clamp assemble the new exhaust pipe to the new flex pipe using the 1.5" mark to get the correct amount of overlap.
- 10 Slide the assembly into place using the 1.5" mark on the SCR outlet as a reference point and to ensure the correct amount of overlap, once in both pipes are in place use clamps to secure.

Note: Correct installation is achieved when the flex pipe is in a "relaxed" state, there should be no compression or expansion visible on opposing sides of the pipe after installed.

- 11 Install the new PM sensor and module.

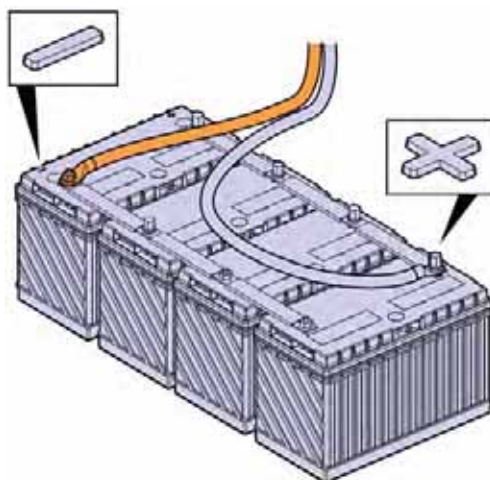
Note: Do not use any lubricant of any kind on the PM sensor threads.

Note: Align the tab on the sensor with the slot.

- 12 Torque the sensor to 35 +/- 5 Nm (26 +/- 4 Ft lb)
- 13 Install the sensor module.
- 14 Torque the nuts to
M6: 10 +/- 5 Nm (88 +/- 3 in lb)
M8: 24 +/- 4 Nm (17.1 +/- 3 ft lb)
- 15 Install the wire ties and clamps.

Note: Use high temperature cable ties.

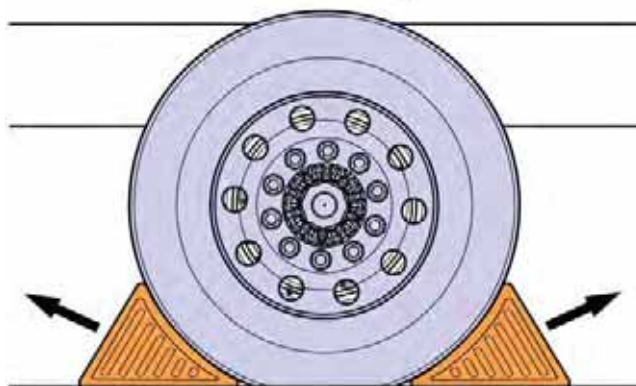
16 Connect the battery.



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17 Clear any DTC codes.

18 Remove the wheel chocks.



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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.	UCHP Reimbursement
Claim Type (used only when uploading from the Dealer Bus. Sys.)	W
Labor Code	
Primary Labor Code (Exhaust Particulate Sensor, Repair)	2846-16-09-01 See table for times.
Causal Part	22946032

Labor Times Reference – 2016 Vehicles

Model	Cab Type	Exhaust Configuration	Pipe 1
VNL	Day Cab	Single Outlet Right Side Outboard	2.1
VNM VHD	Day Cab	Single Outlet Right Side Inboard	2.1
VNM VHD	430/630 Sleeper	Single Outlet Right Side Inboard	3.0
VNL	430 Sleeper	Single Outlet Right Side Inboard Dual Outlet	3.5
VNL	670/780 Sleeper	Single Outlet Right Side Inboard Dual Outlet	3.5

Under Cab SCR Exhausts Continued

Model	Exhaust Configuration	Pipe 1
VHD/VNM	Cab Mounted SCR RH Horizontal Forward Mount	1.7
VHD/VNM	Cab Mounted SCR Horizontal	1.7
VNL 11/13	Cab Mounted SCR Horizontal	1.7

Back of Cab SCR Exhausts

Model	Engine Size	Exhaust Configuration	Pipe
All	16L	12.5 ft Exhaust Stack Right Side	0.8
All	11L / 13L	11 ft 8 in Exhaust Stack Right Side	0.8
All	11L / 13L	12 ft 6 in Exhaust Stack Right Side	0.8
All	11L / 13L	13 ft 5 in Exhaust Stack Right Side	0.8