

**Mack Models**

Mack Model CHU - Pinnacle, Axle back , CXU - Pinnacle, Axle front , GU - Granite , TD - Titan

Emission Standard

Emission Standard US14+OBD16

**** SOLUTION ****

Title Mack Chassis - FSB 284 - 069, Exhaust Particulate Sensor, Repair (2017 Vehicles)

Cause Some trucks may experience a Particulate Matter (PM) Sensor fault that can result in the MIL lamp illuminating.

Solution For more information regarding FSB 284 - 069, Exhaust Particulate Sensor, Repair (2017) refer to [Impact](#) for the latest updated document.

Solution visibility [Dealer distribution](#)

Function(s)/component(s) affected

Function affected 1 1 0 EMS , Diagnostic tool , FSB

Function Group

Function Group 2846 Sensor

Customer effect

Main customer effect soot , regeneration , efficiency/abnormal behavior , fault code/display

Lights/Messages on information display message on display , - - - - , - - / - -

Fault code(s)

OBD 2013 Diagnostic Trouble Codes P24D1 , P24DA

Conditions

Vehicle operating mode when driving , when stationary

Administration

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Dealer ID A241298

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Status Published



	Date	Group	No.	Release	Page
This documents replaces FSB 284-069, Exhaust Particulate Sensor, Repair (2017 Vehicles) dated Nov 2018.	12.2018	284	069	02	1(6)

Exhaust Particulate Sensor, Repair
2017 Models
CXU, CHU, GU

FSB 284-069, Exhaust Particulate Sensor, Repair (2017 Vehicles)

(December 2018)

Some trucks built between 1/1/2017 and 11/14/2017 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.

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 – 2017 Vehicles

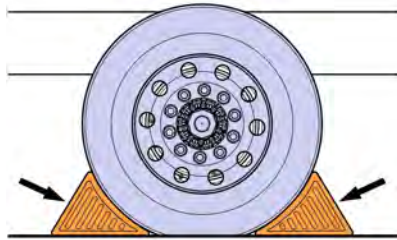
Model	Cab Type	Exhaust Configuration	Pipe 1 Part Number	Pipe 2 Part Number	Flex Pipe Part Number	Clamp Part Number (Qty will vary)
CX/CH/ GU8	Day Cab	Single Outlet Right Side Outboard	(Not Bright) 23155759 (Bright) 23155760	N/A	23154829	20961913
GU7	Day Cab without front body attach- ment plate	Single Outlet Right Side Inboard	(Not Bright) 23155764 (Bright) 23155765	N/A	23154829	20961913
GU7	Day Cab with front body attach- ment plate	Single Outlet Right Side Outboard	(Not Bright) 23155766 (Bright) 23155767	N/A	23154829	20961913
CX/CH	Day Cab	Single Outlet Right Side Inboard	(Not Bright) 23155769 (Bright) 23155770	N/A	23154829	20961913

GU7	Day Cab	Dual Outlet	(Not Bright) 23155776 (Bright) 23155777	(Not Bright) 23189087 (Bright) 23189089	23154829	20961913
CX/CH/ GU8	Day Cab	Dual Outlet Outboard	(Not Bright) 23155779 (Bright) 23155780	N/A	N/A	N/A
CX/CH	Day Cab	Dual Outlet Inboard	(Not Bright) 23155782 (Bright) 23155783	N/A	N/A	N/A
All	All Sleepers	All	(Not Bright) 23154798 (Bright) 23154799	N/A	N/A	N/A
Twin Steer GU7 GU8	All	All	(Not Bright) 23181996 (Bright) 23181995	N/A	N/A	N/A

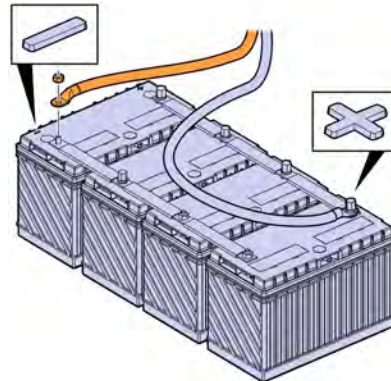
Model	Exhaust Configuration	Pipe Part Number	
GU8	Cab Mounted Vertical Stack	23155787	
GU7	Cab Mounted Vertical Stack	23155789	23204566

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.

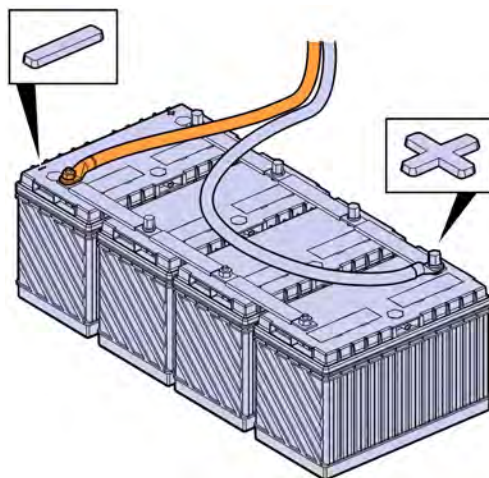
Note: Do not use any lubricant of any kind on the PM sensor threads.

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.

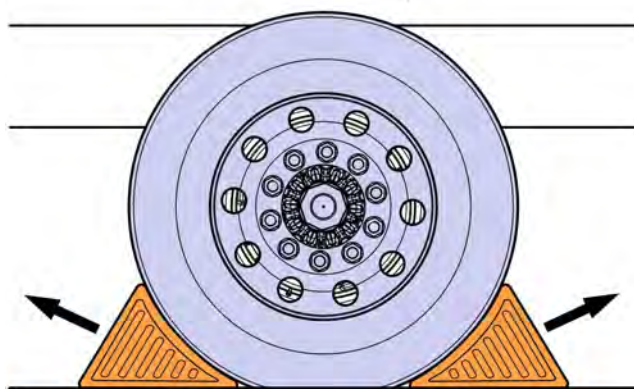
16 Connect the battery.



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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)	2846-16-09-02 See table for times.
Causal Part	22946032

Labor Times Reference – 2017 Vehicles

Model	Cab Type	Exhaust Configuration	Pipe 1 Part Number
CX/CH/GU8	Day Cab	Single Outlet Right Side Outboard	1.5 hr
GU7	Day Cab without Transmission Plate	Single Outlet Right Side Inboard	1.5 hr
GU7	Day Cab with Transmission Plate	Single Outlet Right Side Outboard	1.5 hr
CX/CH	Day Cab	Single Outlet Right Side Inboard	1.5 hr
GU7	Day Cab	Dual Outlet	2.9 hr
CX/CH/GU8	Day Cab	Dual Outlet Outboard	2.9 hr
CX/CH	Day Cab	Dual Outlet Inboard	2.9 hr
All	All Sleepers	All	2.8 hr
Twin Steer GU7 & GU8	All	All	1.7 hr
GU7		Cab mounted vertical stack	1.2 hr
GU8		Cab mounted vertical stack	1.2 hr