



Exhaust Catalyst Inlet Cummins ISL-G LEU

SC0376, Exhaust Catalyst Inlet

(April 2014)

The exhaust catalyst inlet pipe may become disconnected from the catalyst on MACK LEU trucks built between May 14, 2009 and September 24, 2013 equipped with a Cummins ISL-G engine. If this occurs the vehicle operator may be exposed to high carbon monoxide levels that may cause personal injury. A new lengthened exhaust flex pipe and a turbocharger outlet pipe have been designed to reduce rigidity of the exhaust to address this condition.

Note: The exhaust clamps should **NOT** be reused as they are one time use only parts. The correct torques can not be reproduced once loosened.

To order parts, call 877-602-0270.

All three exhaust pipes need to be installed together for correct installation.

Part Number	Description	Quantity
22216909	Exhaust Pipe (LEU Catalyst Inlet)	1
22216925	Hose Exhaust (Flex Pipe)	1
22216977	Exhaust Pipe (Turbocharger Outlet)	1
21380071	Clamp	2
25020944	Clamp (Catalyst Inlet)	1
21465729	Clamp (Turbocharger Outlet)	1

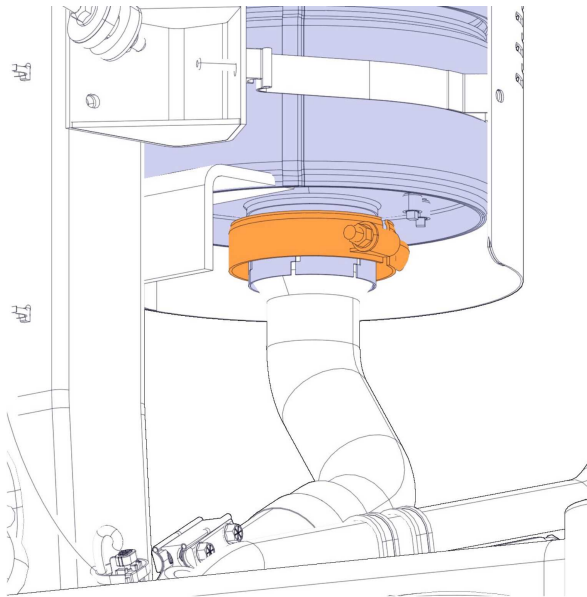
Note: The following parts are only required if exhaust catalyst inlet inspection does not meet specification.

Part Number	Description	Quantity
85142901	Clamp, V-Band	1
85142902	Gasket	1
85142903	Catalyst Inlet Housing	1
20477610	Clamp, Diffuser	1

You must read and understand the precautions and guidelines in Service Information, Function Group 20, "Engine Safety Practices" before performing this procedure. If you are not properly trained and certified in this procedure, ask your supervisor for training before you perform it.

Procedure

- 1 Secure the vehicle for service by parking it on a flat level surface, applying the parking brake, chocking the rear wheel, and placing the transmission in neutral.
- 2 Disconnect all cables from the negative (ground) and positive battery terminals to prevent personal injury from electrical shock and prevent damage to electrical components.
- 3 Disconnect sensor connector from sensor in turbocharger outlet pipe.
- 4 Secure any loose items in the cab to prevent damage to the dash or windshield when the cab is tilted. Unlock the pump and tilt the cab forward.
- 5 Remove the V-band clamp at the turbocharger outlet pipe and separate pipe from turbocharger.
- 6 Mark the clamp bolt location on the exhaust catalyst inlet.
- 7 Loosen the clamp bolt and disconnect the exhaust pipe from the exhaust catalyst inlet. Discard the band clamp.



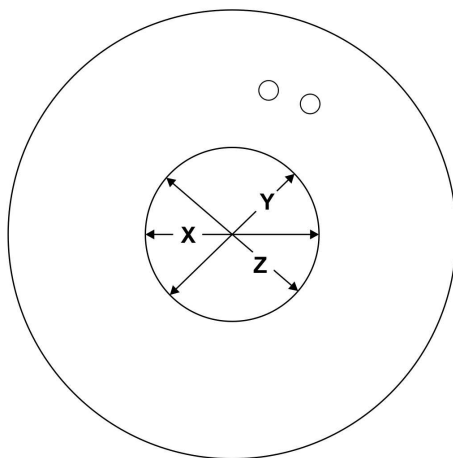
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- 8 Remove the exhaust pipe assembly and set aside.

- 9 Inspect the exhaust catalyst inlet flange by measuring the inside diameter at three locations (X, Y and Z). The inside diameter must be 101.7 – 102.7 mm (4 – 4.04 in).

If inside diameter of flange is damaged or does not meet specification, the exhaust catalyst inlet must be replaced. Continue to Step 10.

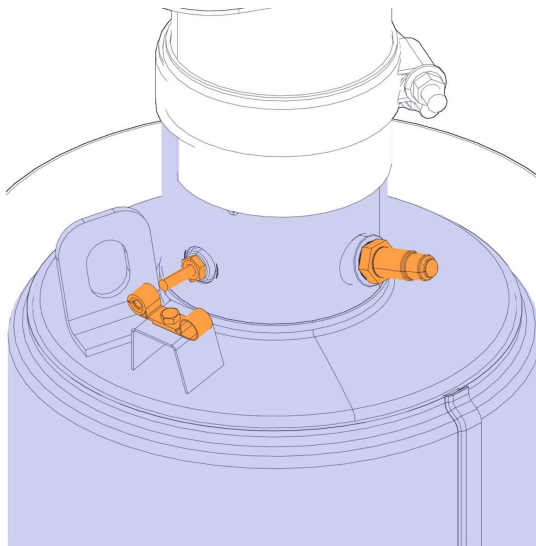
If inside diameter of flange is not damaged and meets specification, proceed to Step 26.



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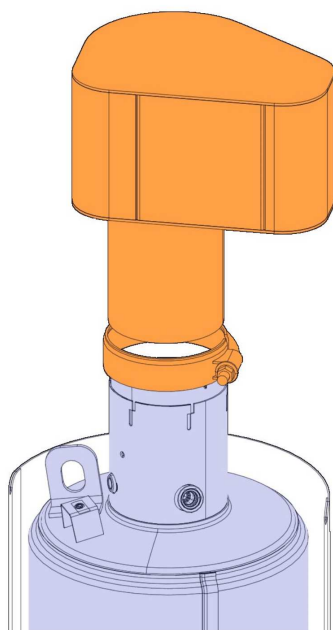
- 10 Remove the P-clamps securing the sensor wiring harnesses at the top of the exhaust catalyst. Remove the sensors from the catalyst. Position the sensors to the side and protect from damage.

Note: Note the position of the sensor mounting holes to aid in alignment of the replacement exhaust catalyst.



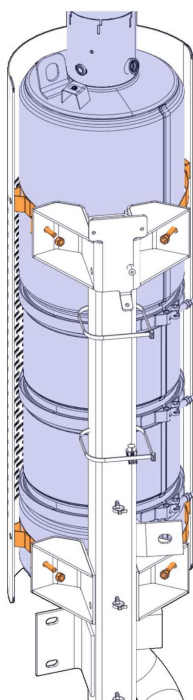
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- 11 Loosen the clamp fastener and remove the diffuser and clamp from the exhaust catalyst outlet. Discard the band clamp.



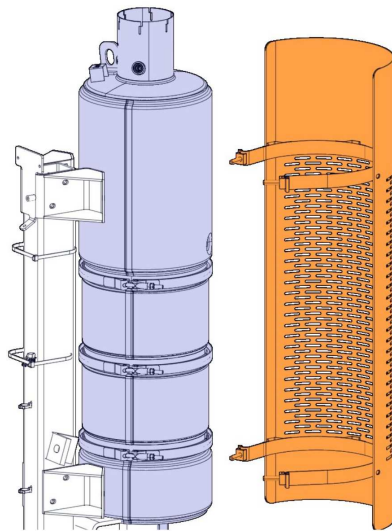
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- 12 Position and attach a lifting device to the eyelets at the top of the exhaust catalyst. Use the lifting device to support the weight of the catalyst.
- 13 Remove the fasteners securing the exhaust catalyst mounting straps to the mounting bracket.



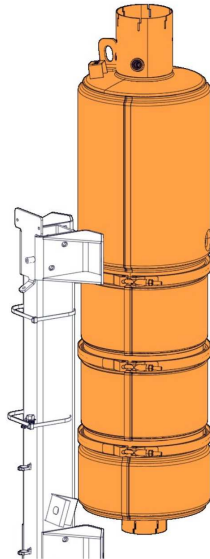
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14 Remove the mounting straps and heat shield as a unit and position out of the work area.



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- 15 Use the lifting device to lift and remove the exhaust catalyst from the mounting bracket.
Secure the catalyst on a work bench, mark position of the test ports on the bottom housing

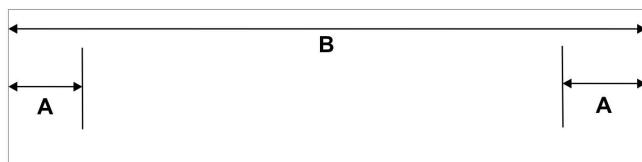


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- 16 Remove the V-band clamp securing the exhaust catalyst inlet to the catalyst assembly and remove catalyst inlet. Discard old gasket
- 17 Clean the exhaust catalyst inlet sealing surface on the catalyst.
- 18 Position the new gasket on the new exhaust catalyst inlet and the new clamp on the catalyst.
- 19 Position the new exhaust catalyst inlet on the catalyst, align ports with previous mark on catalyst. Install V- band clamp and tighten to 20 Nm (15 lb-ft).
- 20 Position and attach a lifting device to the eyelets at the top of the exhaust catalyst.
- 21 Use the lifting device to lift the exhaust catalyst onto the mounting bracket and install the mounting straps (with heat shield attached). Install but do not tighten the fasteners at this time. Make sure the exhaust catalyst is aligned correctly.
- Note:** Align the sensor mounting holes as noted during removal of the exhaust catalyst.
- 22 With the exhaust catalyst correctly aligned, tighten the mounting strap fasteners to 48 ± 3 Nm (35 ± 2 lb-ft). Remove the lifting device.
- 23 Install the diffuser on the exhaust catalyst outlet pipe using a new band clamp. Tighten the clamp fastener to 41 ± 2 Nm (30 ± 1.5 lb-ft).
- 24 Apply anti-seize compound and install the previously removed sensors in the top of the exhaust catalyst. Tighten the sensors to 48 ± 7 Nm (35 ± 5 lb-ft).
- 25 Install the P-clamps and fastener to secure the electrical harnesses.

26 Clean the sealing surfaces on the exhaust catalyst inlet.

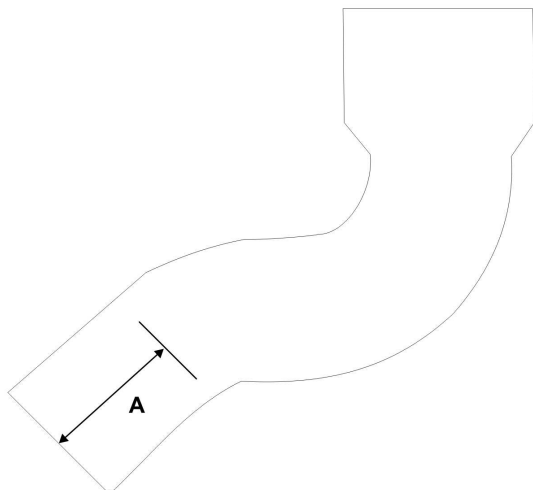
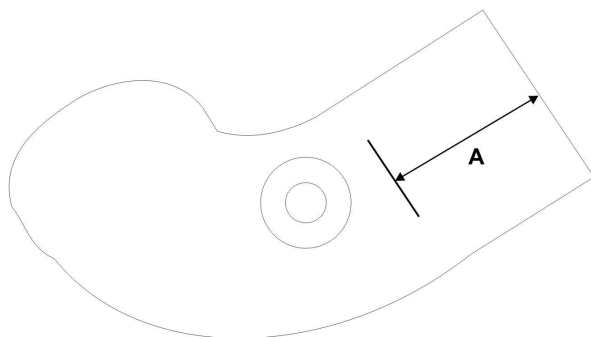
27 Adjust flex pipe to 300 mm (12 in) in length (B). To determine the clamp insertion depth on the flex pipe, mark 35 mm (1.5 in) from either end (A).



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A = 35 mm (1.5 in), B = 300 mm (12 in)

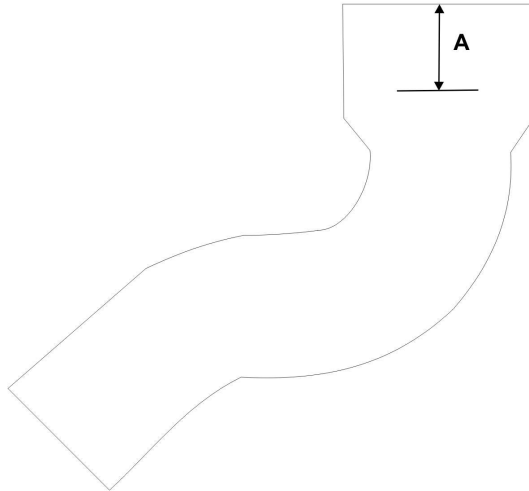
28 To determine insertion depth of piping into clamps, mark the turbocharger outlet pipe and the catalyst inlet pipe 76 mm (3 in) inward from the mating end to the flex pipe.



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A = 76 mm (3 in)

- 29 To determine insertion depth of the inlet pipe into catalyst inlet flange, mark 58 mm (2.25 in) from end of catalyst inlet pipe.

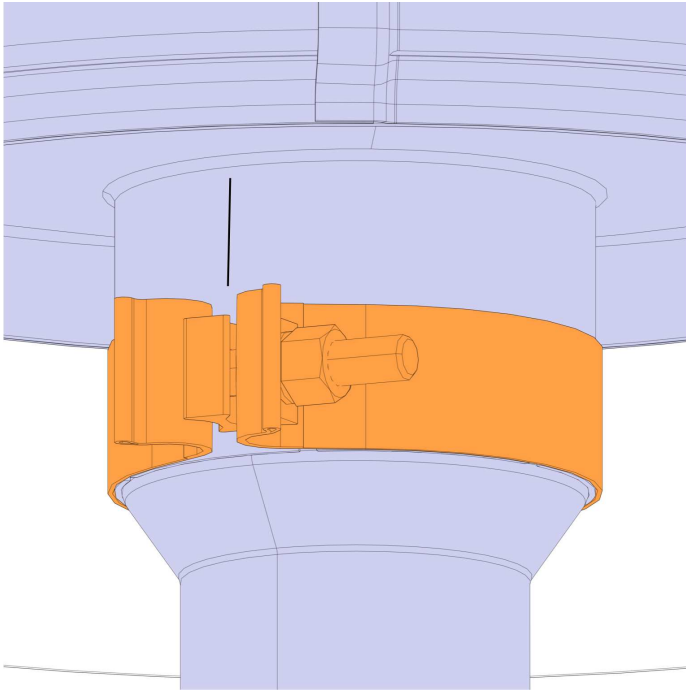


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A = 58 mm (2.25 in)

- 30 Loosen and remove the band clamp/heat shield assembly from the old exhaust catalyst inlet pipe.
- 31 Position the heat shield on the new exhaust catalyst inlet pipe.
- 32 Install the band clamp securing the flex pipe to the exhaust catalyst inlet pipe and tighten the band clamp to 48 ± 7 Nm (35 ± 5 lb-ft).
- 33 Install the band clamp securing the turbocharger outlet pipe to the flex pipe.
- Note:** Only hand tighten the band clamp at this time to allow the turbocharger outlet pipe to be rotated into position during the installation of the exhaust pipe assembly. Use the alignment marks as guides.
- 34 Install the exhaust pipe assembly into position. Use the alignment mark as a guide.

- 35 Position clamp so that top of all slots are covered by clamp and clamp spacer block is between slots. Ensure exhaust catalyst inlet flange aligns with previously indicated mark on inlet pipe. Position and tighten the band clamp at the catalyst inlet to 60 ± 7 Nm (45 ± 5 lb-ft).



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- 36 Install a new V-band clamp at the turbocharger outlet and tighten to 48 ± 7 Nm (35 ± 5 lb-ft).
- 37 Tighten the band clamp at the turbocharger outlet pipe to flex pipe to 48 ± 7 Nm (35 ± 5 lb-ft). Use the alignment marks as guides.
- 38 Position the heat shield on the exhaust catalyst inlet pipe and tighten to 9 ± 1 Nm (84 ± 12 lb-in).
- 39 Connect sensor connector to sensor in turbocharger outlet pipe.
- 40 Lower the cab to the closed and locked position.
- 41 Install all previously removed cables to the negative (ground) battery cables.
- 42 Start the engine, check for leaks and proper operation. Use Guided Diagnostics to read and clear any diagnostic trouble codes (DTC).

Reimbursement

This repair is covered by an authorized Safety Recall. Reimbursement is obtained via the normal claim handling process.	
Claim Type (used only when uploading from the Dealer Bus. Sys.)	41
Recall Status	
Vehicle inspected, repair not required	1- Inspected OK
Vehicle repaired per instruction	2- Modified per instruction
Labor Code	
Time to take charge and determine campaign status	101AA-0A-00 — 0.3 hrs
Time to perform exhaust pipe replacement	2344P-ZV-95 — 0.9 hrs
Time to perform exhaust catalyst inlet and exhaust pipe replacement	2344Q-ZV-95 — 1.9 hrs
Causal Part	21380823
Authorization Number	SC0376

Note: Take Charge Time is not included in the Labor Code for this operation. Take charge may be eligible but can only be used once per repair visit. If vehicle is having other warranty repairs performed, take charge should be charged to the warranty repair, otherwise take charge can be charged to this Safety Recall campaign.

Note: Dealers are to perform Safety Recall Campaigns on all subject vehicles at no charge to the vehicle owner regardless of mileage, age of vehicle or ownership (original purchaser or subsequent purchasers). Whenever vehicles are subject to a safety recall are brought to your dealership for service, or taken into your dealership vehicle inventory, it is strongly recommended that every effort be made to perform the recall correction before the vehicle is sold or released to the owner.