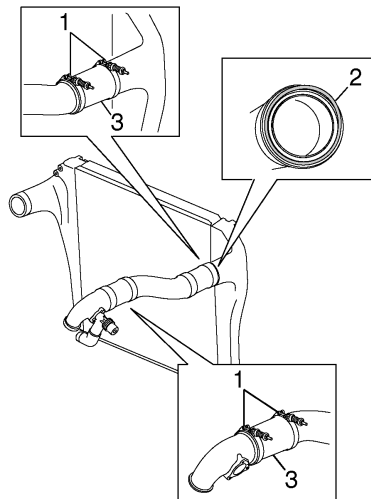


Hose Clamps, Charge Air Cooler,
Replacement
D11F, D13F and D16F
Cummins ISX

Hose Clamps, Charge Air Cooler, Replacement



W2006474

- 1 T Bolt Clamp
- 2 Sealing Ring
- 3 Coupling Hose

A method for replacing the crimped hose clamps on the Charge Air Cooler (CAC) piping has been developed. The crimped clamps can be replaced with T-bolt clamps making it possible to replace individual pieces of the CAC pipe rather than replacing the entire assembly. This information covers replacing the crimped hose clamp on the D11F, D13F and D16F Volvo engines, plus the Cummins ISX engines.

Contents

- "Hose Clamps, Charge Air Cooler, Replacement" page 2

Note: Information is subject to change without notice.
Illustrations are used for reference only and may differ slightly from the actual vehicle being serviced. However, key components addressed in this information are represented as accurately as possible.

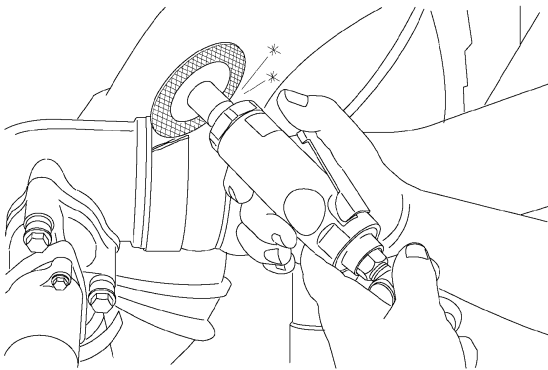
Service Procedures

2651-03-03

Hose Clamps, Charge Air Cooler, Replacement

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

Replacement Instructions for Charge Air Cooler (CAC) Hose at Discharge Recirculation Valve (DRV) Elbow



W2006467

1

At the rear CAC hose clamp location (next to the DRV), carefully cut through the crimped-on clamp. Cut the clamp at a slight diagonal angle to avoid damaging the DRV housing. Use a high speed cut-off wheel/tool to perform the cut.

! DANGER

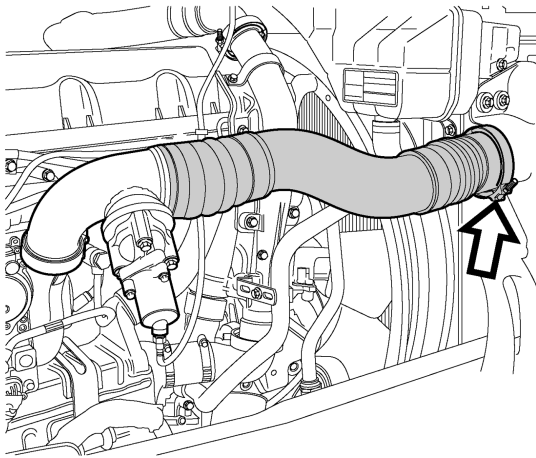
Wear proper eye protection during cut-off wheel/tool operation to prevent eye injury.

2

Using pliers, loosen the crimped-on hose clamp to allow it to separate from the DRV housing.

! WARNING

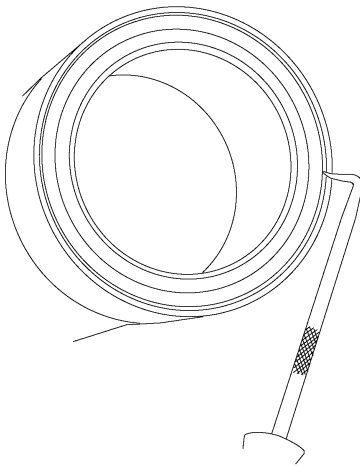
Cutting the crimped-on clamp with a cut-off wheel/tool may produce extremely sharp edges. Use care when removing the clamp to avoid injury.



W2006458

3

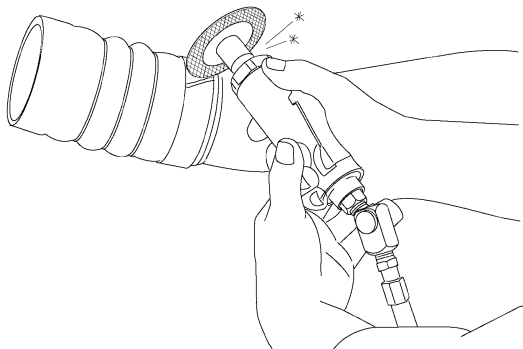
Loosen the V-band clamp at the CAC and remove the CAC hard pipe assembly from the engine.



W2006017

4

Remove and discard the O-ring from the charge air cooler end of the CAC hard pipe.



W2006468

5

Using a high speed cut-off wheel/tool, cut the remaining crimped-on clamp from the rear hose of the CAC hard pipe. Cut the clamp at a slight angle to avoid damage to the CAC hard pipe.



DANGER

Wear proper eye protection during cut-off wheel/tool operation to prevent eye injury.

6

Using pliers, loosen the crimped-on hose clamp to allow it to separate from the CAC hard pipe.



WARNING

Cutting the crimped-on clamp with a cut-off wheel/tool may produce extremely sharp edges. Use care when removing the clamp to avoid injury.

7

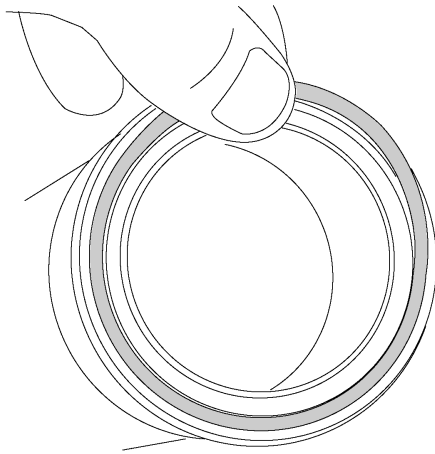
Clean the hose connection areas on the DRV housing and the CAC hard pipe.

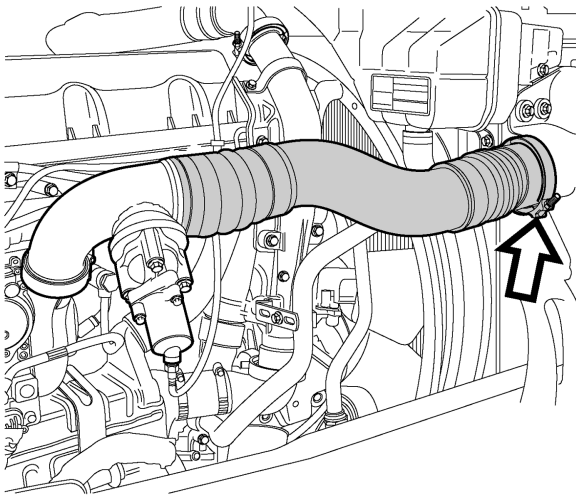
8

Position a new hose with attaching T-bolt clamp onto the CAC hard pipe. Position the remaining end of the CAC hose onto the DRV housing and secure using an additional T-bolt clamp.

9

Place a new O-ring in position on the flange of the CAC hard pipe where it connects to charge air cooler.



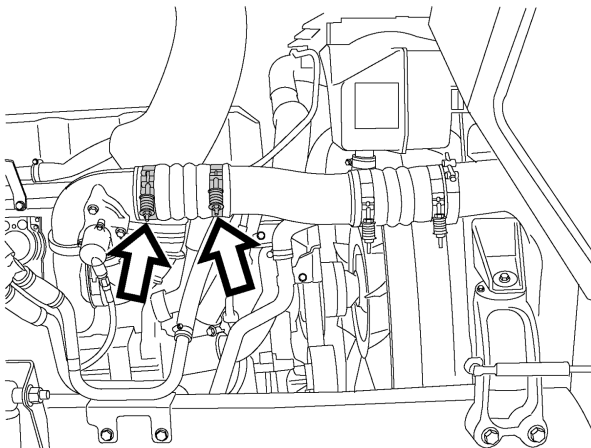


W2006458

10

Inspect the CAC hard pipe V-band clamp for wear or damage, replace as necessary. Position the CAC hard pipe with O-ring against the charge air cooler and secure with the V-band clamp. Lubricate the threads and v-inserts.

Note: Make sure O-ring remains in place while positioning the pipe.



W2006459

11

Torque-tighten both T-bolt hose clamps to specification of 10 ± 1.5 Nm (7.4 ± 1.1 ft-lb).

10 ± 1.5 Nm
(7.4 ± 1.1 ft-lb)

12

Torque-tighten the V-band clamp at the charge air cooler to specification of 7 ± 1 Nm (5.2 ± 0.7 ft-lb).

7 ± 1 Nm
(5.2 ± 0.7 ft-lb)

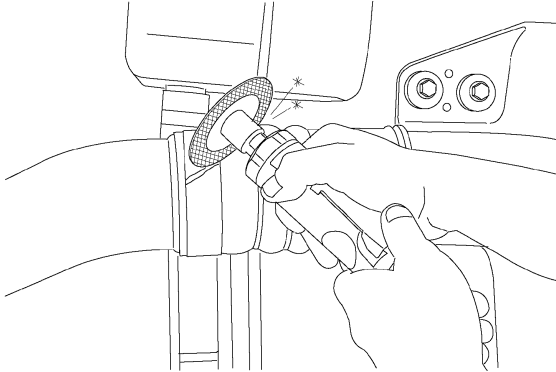
13

Start the engine, check for leaks and proper operation.

Replacement Instructions for CAC Hose at Charge Air Cooler

1

On the CAC hard pipe assembly at the front hose location (next to the hard pipe connection), carefully cut through the crimped-on clamp. Cut the clamp at a slight diagonal angle to avoid damaging the CAC hard pipe connection. Use a high speed cut-off wheel/tool to perform the cut.



W2006469



DANGER

Wear proper eye protection during cut-off wheel/tool operation to prevent eye injury.

2

Using pliers, loosen the crimped-on hose clamp to allow it to separate from the CAC hard pipe.

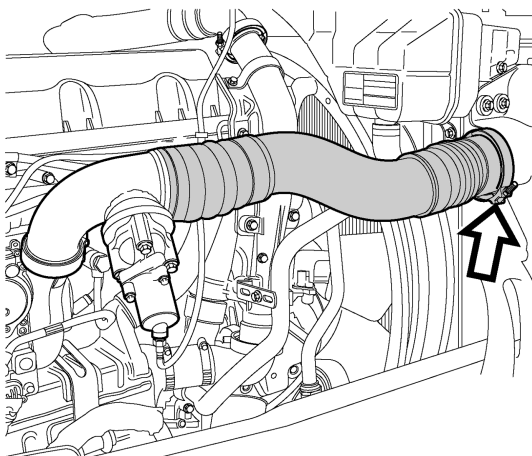


WARNING

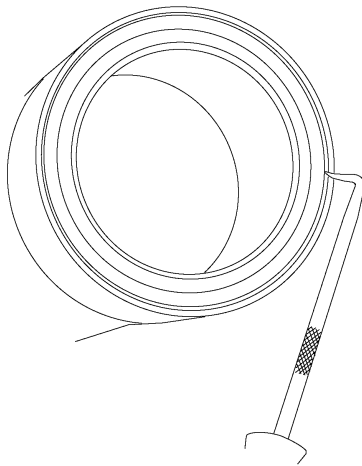
Cutting the crimped-on clamp with a cut-off wheel/tool may produce extremely sharp edges. Use care when removing the clamp to avoid injury.

3

Loosen the V-band clamp at the charge air cooler inlet and remove only the hose and V-band clamp connection portion of the hard pipe assembly.



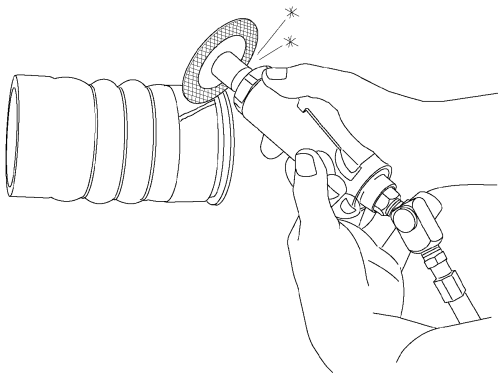
W2006458



W2006017

4

Remove and discard the O-ring from the charge air cooler end of the CAC hard pipe.



W2006470

5

Using a high speed cut-off wheel/tool, cut the remaining crimped-on clamp from the hose of the CAC pipe V-band clamp connector. Cut the clamp at a slight angle to avoid damage to the CAC pipe connection.



DANGER

Wear proper eye protection during cut-off wheel/tool operation to prevent eye injury.

6

Using pliers, loosen the crimped-on hose clamp to allow it to separate from the CAC inlet V-band clamp connector.



WARNING

Cutting the crimped-on clamp with a cut-off wheel/tool may produce extremely sharp edges. Use care when removing the clamp to avoid injury.

7

Clean the hose connection areas on the CAC hard pipe and V-band clamp connector.

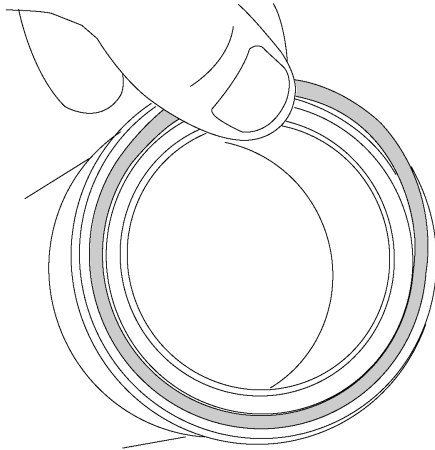
8

Position a new hose with attaching T-bolt clamp onto the CAC hard pipe. Position the remaining T-bolt clamp followed by the V-band clamp connector onto the CAC hard pipe assembly.

Note: Make sure the threads on both T-bolt clamps are pointing down to prevent interference with hood splash shields.

9

Place a new O-ring in position on the flange of the CAC hard pipe where it connects to charge air cooler.

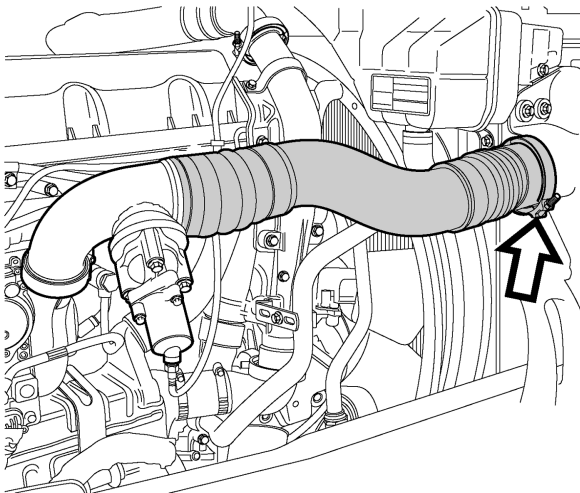


W2005959

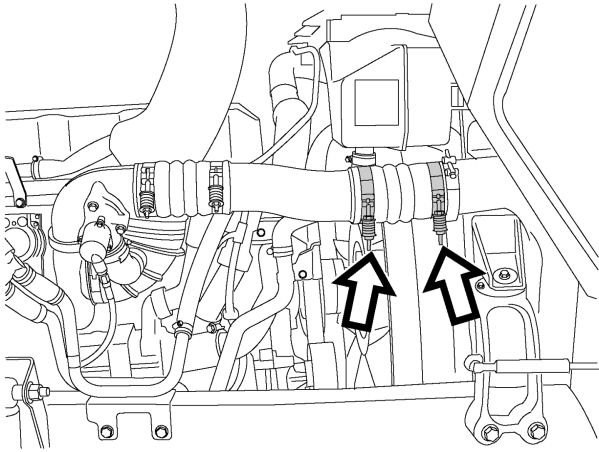
10

Inspect the CAC hard pipe V-band clamp for wear or damage, replace as necessary. Position the CAC hard pipe with O-ring against the charge air cooler and secure with the V-band clamp. Lubricate the threads and v-inserts.

Note: Make sure O-ring remains in place while positioning the pipe.



W2006458



W2006464

11

Torque-tighten both T-bolt hose clamps to specification of 10 ± 1.5 Nm (7.4 ± 1.1 ft-lb).

10 ± 1.5 Nm
(7.4 ± 1.1 ft-lb)

12

Torque-tighten the V-band clamp at the charge air cooler to specification of 7 ± 1 Nm (5.2 ± 0.7 ft-lb).

7 ± 1 Nm
(5.2 ± 0.7 ft-lb)

13

Start the engine, check for leaks and proper operation.