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|------------|---------------------------|
| REFERENCE: | Nova Bus Manuals |
| SECTION: | 09: Engine cooling system |
| RS N°: | MQR 7621-1960 |

APPLICATION DEADLINE: 2021SE01
CLAIM REFERENCE NUMBER: WB-4840

| | |
|----------------|---|
| SUBJECT: | Charge air cooler (CAC) pipings |
| JUSTIFICATION: | Improved sealing of the joints of the charge air cooler piping. |

| LEVEL | DESCRIPTION | DIRECT CHARGES | | TIME |
|-------|--|----------------|----------|------|
| | | LABOUR | MATERIAL | |
| 1 | Replace the CAC clamps with the new constant-tension clamps. | Nova Bus | Nova Bus | 2h |
| 2 | – | – | – | – |

MATERIAL

| QTY | PART N° | REV. | DESCRIPTION | REPLACES PART N° |
|----------------|---------|------|------------------------|------------------|
| LEVEL 1 | | | | |
| 16 | N99800 | – | Constant-tension clamp | – |
| LEVEL 2 | | | | |
| – | – | – | – | – |

Materials will be available within 38 days once your order has been placed. To order, please contact Prevost Parts by phone at 1-800-771-6682, by fax at 1-888-668-2555 or by email at prevostparts.commandes@volvo.com. Specify document number, quantity of parts required and shipping address.

DISPOSAL OF PARTS

| REMOVED PARTS ARE: | DISCARDED * | RETAINED | * Dispose of the unused parts and the defective parts in accordance with local environmental standards in effect. |
|--------------------|----------------|----------|---|
| | Yes | – | |

REVISION HISTORY

| REV. | DATE | CHANGE DESCRIPTION | WRITTEN BY |
|------|----------|--------------------|-----------------|
| NR | 2020JL02 | Initial release | André Pelletier |

| CLIENT | ORDER | ROAD NUMBER | | VIN (2NVY/4RKY...) | | QTY |
|--|-------|-------------|------|--------------------|---------------|-----|
| | | FROM | TO | FROM | TO | |
| Chicago Transit Authority - CTA - Illinois | L943 | 8200 | 8324 | L82JXG9775225 | L82J3G9775406 | 125 |
| Chicago Transit Authority - CTA - Illinois | LB58 | 8325 | 8349 | L82J7J9776906 | L82J8J9776946 | 25 |
| Calgary Transit - Alberta | LB85 | 8355 | 8362 | L82K9J9776916 | L82K6J9776923 | 8 |
| Calgary Transit - Alberta | LB91 | 8363 | 8394 | L82K3K9777030 | L82K1K9777074 | 32 |

**WARNING**

FOLLOW YOUR INTERNAL SAFETY PROCEDURES.

**WARNING**

This vehicle contains an electrochemical power storage device and high-voltage cables that can cause serious, even fatal, physical harm from electric shock or chemical burns. It is the customer's responsibility to read the manufacturer's documentation and to be aware of the risks associated with the system. See your manual section 10: *BAE Hybrid Propulsion System*. Failure to comply with these instructions and electrical safety measures may result in injury or death, as well as severe damage to the vehicle.

**WARNING**

The starting circuit is cut when the **MODE START** switch on the engine control unit is in the neutral position (center). When servicing the engine compartment, flip the switch to this position to prevent accidental starting of the engine compartment. It is also recommended to lock out the switches to prevent accidental starting.

PROCEDURE

- 1.1. Park the vehicle on an even surface with the transmission on neutral.
- 1.2. Apply the parking brake and set the master control switch to the **stop** position.
- 1.3. Set the battery disconnect switch in the battery compartment to the **off** position.

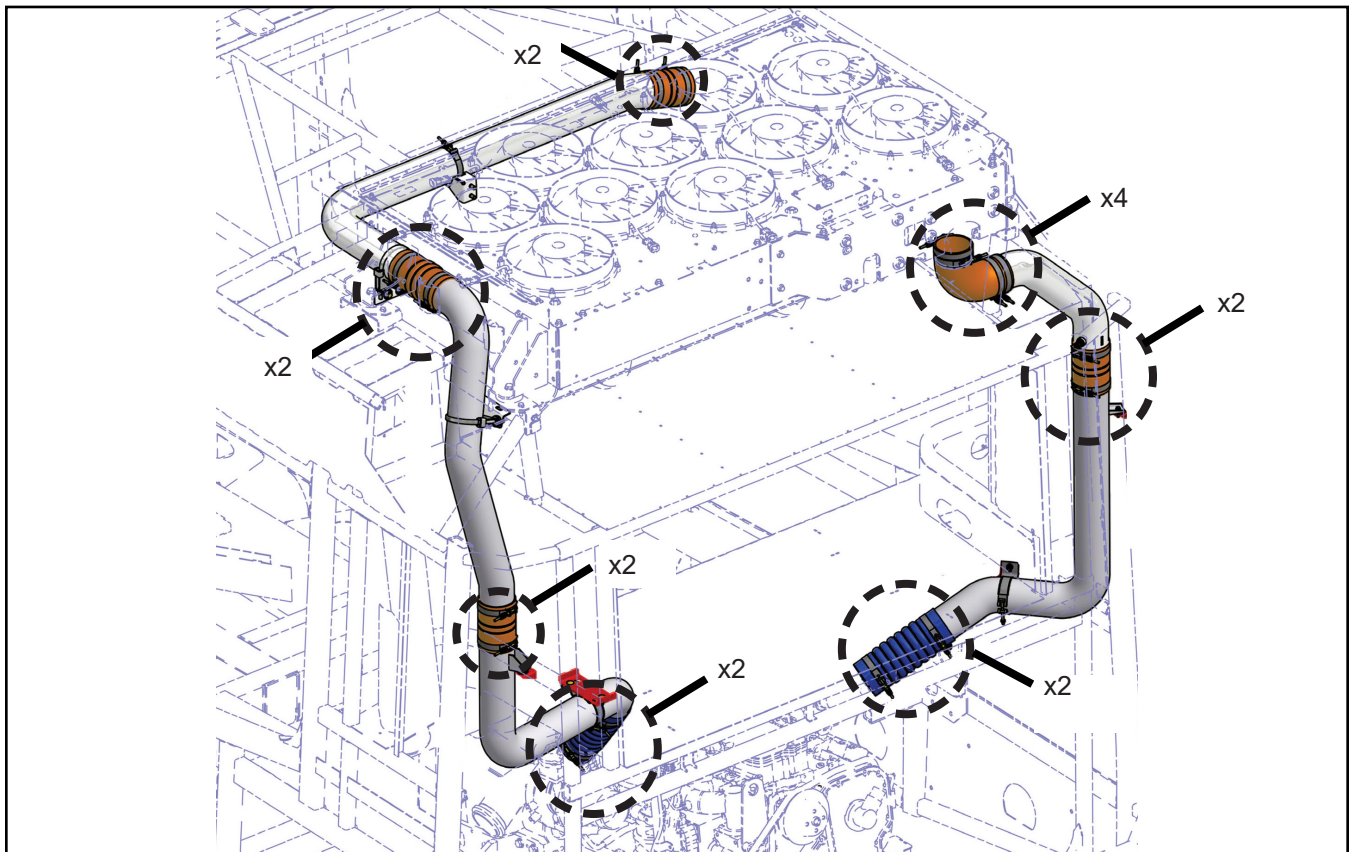


Figure 1 - CAC pipes Clamp Locations



REMARQUE

- Never use an impact wrench to tighten the clamps.
- For the tightening process, the tightening torque (N·m) and speed (rpm) have to be controlled. Avoid high-speed tooling. Increase of tightening speed may lead to seizing/jamming.
- The constant torque hose clamp is designed to automatically adjust its diameter to compensate for the normal expansion and contraction of hose and tubing during vehicle operations and shutdown.
- If clamp is tightened above recommended tightening torque, this will not increase pull-off force and seal ability of the clamp proportionally to the applied torque.
- If the tightening torque is exceeded, there is the danger of permanent damage to the clamp or hose (e.g. failure of the clamp at reassembly or leakage).
- Strongly avoid in any case multiple retightening of the clamp (risk of hose damage).
- Strongly avoid in any case overtightening in means of torque and speed (risk of permanent damage to clamp and systems).
- Strongly avoid in any case fully opening of the clamp and remounting of the band to the housing (if opened, replacing of the clamp is recommended).

- 1.4. Remove a clamp.
- 1.5. Clean the surface of the silicone hose where the new clamp will be installed.
- 1.6. Apply a lubricant such as P-80, N74253, between the new clamp and the pipe. This will prevent the clamp from gripping the hose when tightening and applying the torque properly.
- 1.7. Orient the new clamp to facilitate maintenance and tighten it as close as possible to the raised bead. Apply a torque of $13.5 \pm 2 \text{ N}\cdot\text{m}$ ($10 \pm 1.5 \text{ lb}\cdot\text{ft}$).
- 1.8. Repeat for all clamps shown in Figure 1, for a total of 16 clamps.
- 1.9. Start the vehicle and let it run at fast-idle for 15 minutes.
- 1.10. Apply the tightening torque of $13.5 \pm 2 \text{ N}\cdot\text{m}$ ($10 \pm 1.5 \text{ lb}\cdot\text{ft}$) again.
- 1.11. Install the removed parts to do the work.
- 1.12. Set the battery disconnect switch to the **on** position.
- 1.13. The vehicle can be returned to service.

