



# Spartan Motors Chassis, Inc.

SERVICE BULLETIN

RSB14-270-005

NHTSA Id: 14V-664

1/16/2015

Transport Canada Id: TC14-555

**SUBJECT:** Engine cooling fan cracks

**CONDITION:** The engine cooling fan is subject to vibration characteristics that exceed the material strength of the engine cooling fan.

**APPLIES TO:** This bulletin applies to certain emergency response chassis cabs manufactured between March 25, 2010 and December 11, 2014.

**CORRECTION:** Replacement of engine cooling fan.

**LABOR ALLOCATION:** 2.0 hrs.

**PARTS NEEDED:**

<u>QTY</u>	<u>Part Number</u>	<u>Description</u>
1	S-2423-001	Kit-Service, Fan 2010/13 ISX 15L ERC

**Kit # S-2423-001 Contains:**

<u>QTY</u>	<u>Part Number</u>	<u>Description</u>
1	2628-FF1-001	Fan
4	1905-AA3-406	Constant Torque Clamp
6	06FWSAE8Y	Washer
6	0624HSNZ	Nut
1	RSB14-270-005	Instruction Document

**GENERAL INSTRUCTIONS:**

Please thoroughly review entire work procedure before starting work. If there are questions and/or concerns with steps defined in this procedure, contact Spartan Motors Chassis, Inc. Customer & Product Support Group.

All applicable industry safety standards must be followed when performing work identified in this procedure.

Technical Service Bulletins are intended for use by Professional Technicians only. They are written to guide Professional Technicians in performing service to vehicles of product specific nature in conjunction with industry standards. Professional Technicians are appropriately trained on industry standards and have the tools and equipment to perform procedures safely and properly.



**STEP-BY-STEP INSTRUCTIONS:**



Coolant is toxic. Keep away from children and pets. If not reused, dispose of in accordance with local environmental regulations.



Coolant components and other engine components can be very hot if serviced shortly after operation. Serious personal injury can occur if hot components are touched.



Never remove radiator cap while coolant is hot. Remove cap slowly when coolant is at ambient temperature. A sudden release of pressure from a heated cooling system can result in serious personal injury from burst of hot coolant.



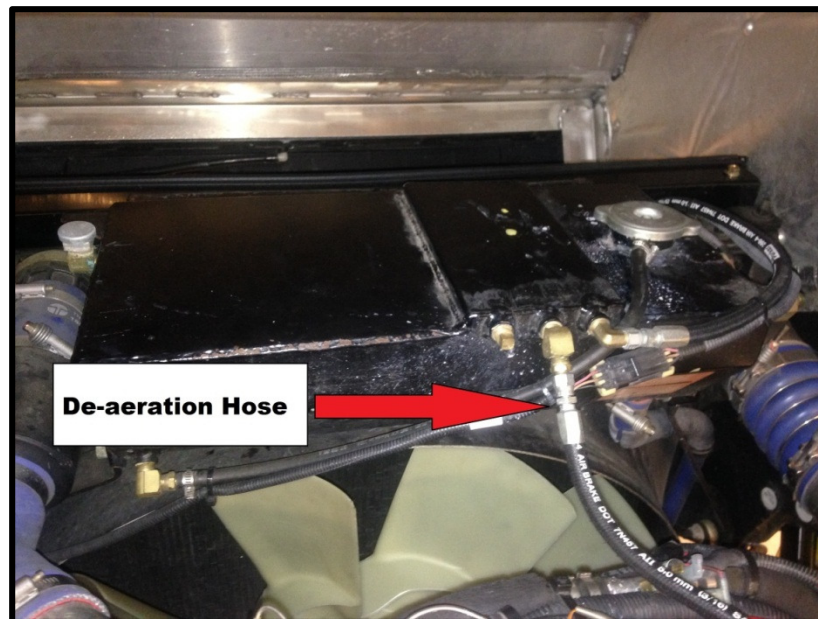
Contamination of the charge air cooler during service or replacement may result in loss of performance and engine damage.



Master Switch and Ignition Switch must be in the “OFF” position before removal of any components; it must remain in “OFF” position during this entire process. Serious personal injury can occur.

1. Tilt cab per instructions on placard.
2. Remove and plug the de-aeration hose from the surge tank. Refer to FIG. 2-1.

**FIG. 2-1**



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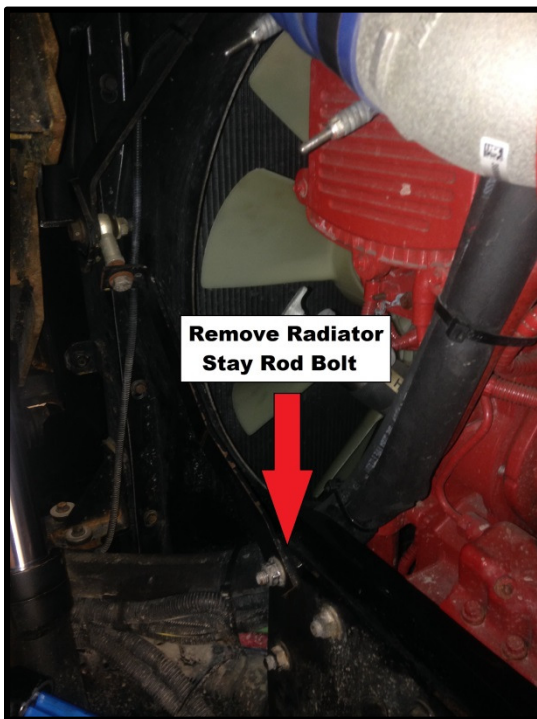


3. Remove both hot and cold charged air cooling (CAC) tubes, properly discard the hose clamps.

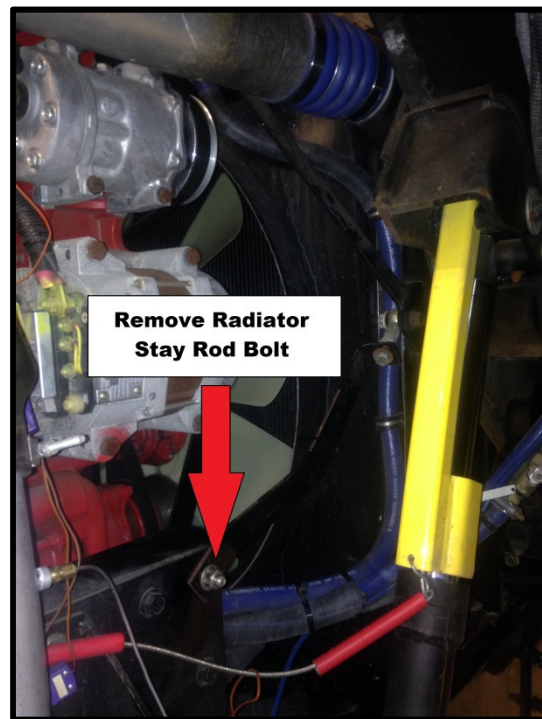
**CAUTION**

Open ports of the CAC system, pipes and engine connections must be capped to prevent the introduction of dirt and other contaminants which could result in equipment damage.

4. Remove the bolt connecting each radiator stay rod to the frame rail on both sides of the chassis, retain hardware for reuse. The bolt that attaches the radiator stay rod to the frame rail may attach a P-clip on the inside of the frame rail. Ensure this clip is reinstalled in the proper orientation on step 10. Refer to FIG. 3-1 and 3-2.



**FIG. 3-1**



**FIG. 3-2**

5. For chassis equipped with certain air conditioning systems, the compressor **must** be moved out of the way; however, there is no need to evacuate the refrigerant.
  - a. Release the tension on the belt.
  - b. Remove the belt from compressor and retain for reuse.
  - c. Unplug the electrical connectors.
  - d. Remove the four bolts securing the compressor and retain for reuse.

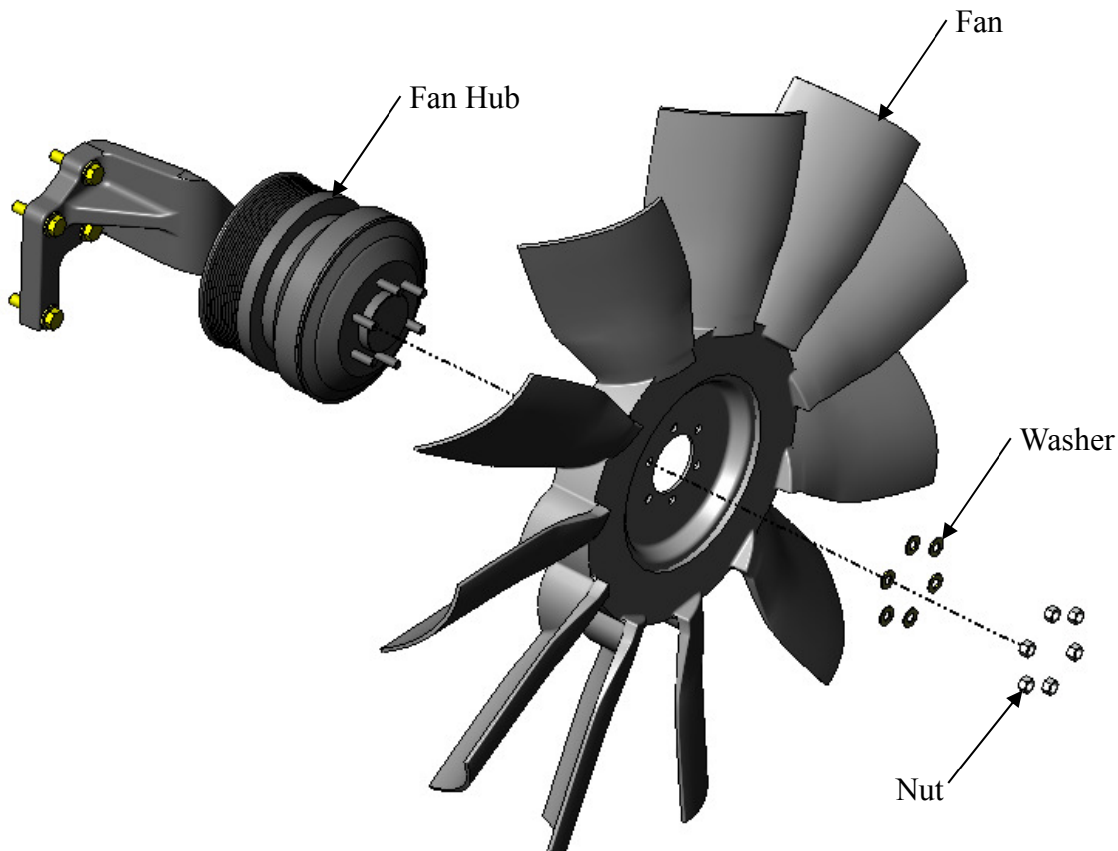
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- e. Carefully swing the compressor out of the way. **NOTE: Ensure the refrigerant lines are not damaged and the compressor is safely secured.**
6. Remove and properly discard the nuts and washers that retain the fan to the fan hub. Refer to FIG. 4-1.



**Ensure nuts, bolts, washers, and other hardware items are not dropped into the fan shroud. Loose items left in, or around, the fan may become projectiles resulting in damage or personal injury.**



**FIG. 4-1**

7. Remove fan from hub and allow to rest in the shroud.



**Ensure the radiator is not damaged by the fan.**

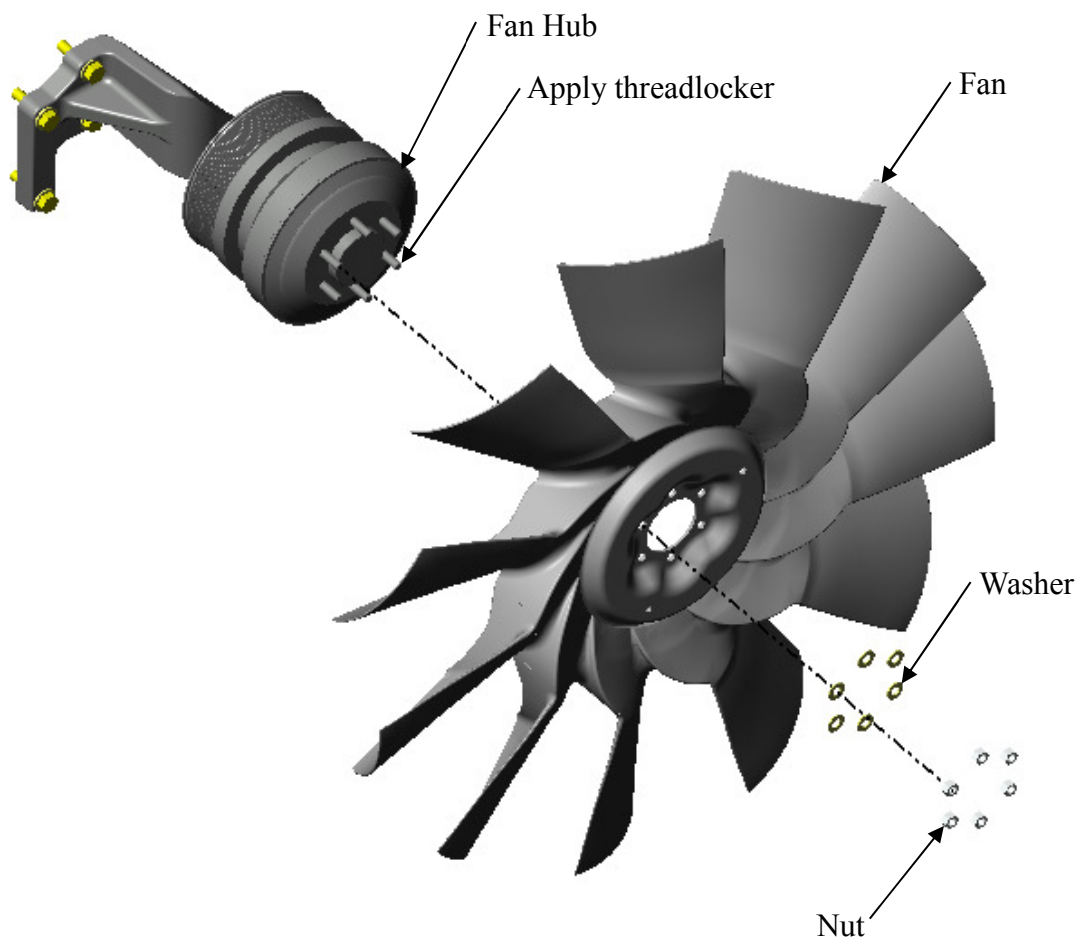
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8. Have a co-worker assist by pushing the cooling pack as far forward as possible. The fan can now be removed from the shroud through the top access between the shroud and engine.

**NOTE: For the following instructions apply Loctite® 242® Thread locker to the threaded stud on the first five threads from end of stud.**

9. Install new fan, six (6) washers and six (6) nuts. Torque nuts in crisscross pattern to 24-28 lbs.-ft. Refer to FIG. 5-1.



**FIG. 5-1**

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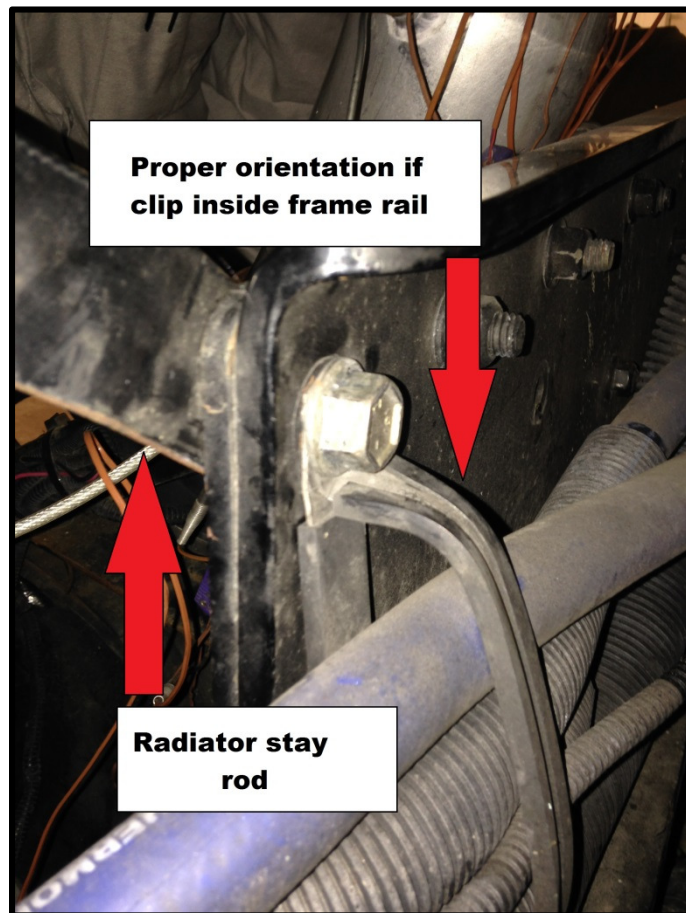


10. Remove caps from the CAC system components and install CAC tubes using new constant torque hose clamps. Torque clamps to 80-100 lbs.-in.

**CAUTION**

Care must be taken to ensure dirt and other contaminants are not allowed to enter any portion of the engine or the CAC system which could result in equipment damage.

11. Install the bolt connecting each radiator stay rod to the frame rail on both sides of the chassis using the hardware retained in step 3. **NOTE: Re-attach P-clip if removed in step 3. Ensure this clip is reinstalled in the proper orientation.** Torque from the bolt side to 84-102 lbs.-ft. Refer to FIG. 6-1.



**FIG. 6-1**

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12. If removed, reinstall the refrigerant compressor.

- a. Carefully swing the compressor back into its proper position. **NOTE: Ensure the refrigerant lines are not damaged and the compressor is safely secured.**

**NOTE: For the following instructions apply Loctite® 242® Thread locker to the bolt on the first five threads from end of bolt.**

- b. Install the four bolts securing the compressor that were retained in step 6d. Torque to 26-32 lbs.-ft.
- c. Plug in the electrical connectors.
- d. Install the belt over the compressor pulley ensuring it's properly aligned.
- e. Secure wires and refrigerant lines.

13. Connect the de-aeration line to the surge tank.

14. Fill the surge tank to the cold fill line with the appropriate coolant.

15. Run the engine to verify no coolant leaks exist and proper operation of the refrigerant compressor and engine cooling fan.

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