Spartan Motors Chassis, Inc.

SERVICE BULLETIN

RSB14-270-004A

NHTSA Id: 14V-022 **8/7/2014**

Transport Canada Id: TC14-027

SUBJECT: Engine cooling fan vibration and material strength.

Bulletin # RSB14-270-004 is superseded by bulletin RSB14-270-004A due to a clarification of part numbers. Any vehicle repaired under bulletin RSB14-270-004 will not require any additional work.

CONDITION: Engine cooling fan may come apart.

APPLIES TO: This bulletin applies to certain Gladiator model emergency response chassis cabs equipped with a CAT® C9 engine, direct drive fan, and built between August 18, 2008 and September 7, 2011

CORRECTION: Install new engine cooling fan and clutch activation.

SPECIAL EQUIPMENT: PC equipped with CAT Electronic Technician Software.

LABOR ALLOCATION: 4.0 hrs.

CAT AUTHORIZED SERVICE CENTER IS REQUIRED TO PERFORM THE ENGINE PARAMETER UPDATE.

PARTS NEEDED:

QTY	Part Number	Description
1	S-2453-001C	Kit-Service, Fan/Clutch 2007 C9-ERC

Kit # S-2453-001C Contains:

QTY	Part Number	Description
1	1342-FF1-007	Fan-30", ACS #39325A-30
1	M08125SNZ	Nut-M8X1.25 STD
4	05FWSAEY	Washer-Flat 5/16
2	0518LNZ	Nut-Lock 5/16-18
2	05180100H5Z	Bolt-5/16-18X1.00 GR5
1	0716-MM5-B02	Fitting-Brass 90D. Elbow 4-4
1	0716-MM5-C02	Fitting-Brass 45D. Elbow 4-4
1	0716-MM5-H02	Fitting-Brass Hex Nipple -4
1	0716-MM5-J05	Fitting-Brass Bushing 8-4
1	0716-MM5-P04	Fitting-Brass 90D. Elbow 8-8
1	0716-MM5-Y02	Connector-Brass M 4-2
1	0716-MM5-Y03	Connector-Brass M 4-4
1	04B-04DA04SB031	Hose ASM 266, #4 ST-90, 31"
1	1483-LL2-001	Plate-Solenoid Mount

NHTSA Id: 14V-022 **8/7/2014**
Transport Canada Id: TC14-027

Continued

1	1621-MM5-002	Valve-Pressure Protection
15 ft.	2517-MM5-002	Nylon Tube-1/4" Black
1	2729-MM5-002	Valve-Solenoid 3-Way/12V
10	06FWSAE8Y	Washer-Flat 3/8 GR8
4	M10150040H7Y	Bolt-M10 X 1.50 X 40 GR10.9
2	M10150035SCS12B	Bolt-M10 X 1.50 X 35 Socket Cap GR12.9
2	M10150020SCS12B	Bolt-M10 X 1.50 X 20 Socket Cap GR12.9
6	0624HSNZ	Nut-3/8-24 GR8
1	RSB14-270-004A	Document Instructions

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.

STEP-BY-STEP INSTRUCTIONS:

1. Tilt cab up following instructions on placard.

WARNING **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.**

WARNING **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.**

WARNING **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.**

2. Remove charge air pipe from cooler to engine on passenger side. Retain pipe and clamps for re-use.

CAUTION **Do not allow dirt or debris in pipe, cooler or engine intake.**

3. Remove hardware securing fan blade to clutch. Properly dispose of hardware.

4. Slide fan blade forward in shroud out of the way. If spacers come off with fan, note order to re-install. Refer to FIG. 3-1.

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

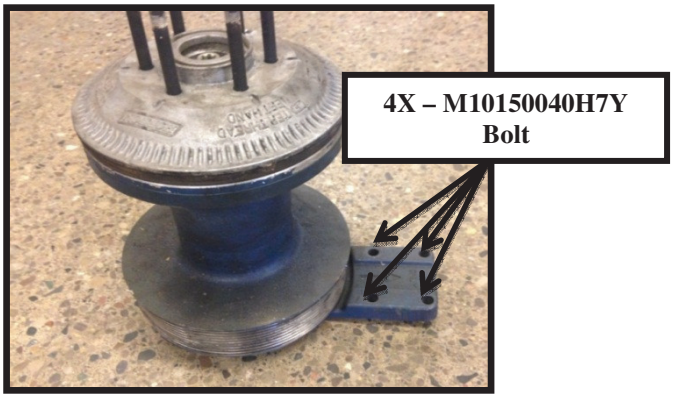
FIG. 3-1

5. Relieve tension and remove serpentine belt. Inspect belt and replace if needed, otherwise retain belt for re-use.

6. Remove fan clutch hardware consisting of 4 to 6 fasteners. There could be three types of mounting depending on options or when the unit was built.

    a. The first mounting configuration utilizes four exposed hex head fasteners. Refer to FIG. 3-2. Properly dispose of hardware.

FIG. 3-2



b. The second mounting configuration utilizes four exposed hex head fasteners and two 8mm Allen socket head cap screws accessed through a machined hole in the pulley. Refer to FIG. 4-1. Properly dispose of hardware.

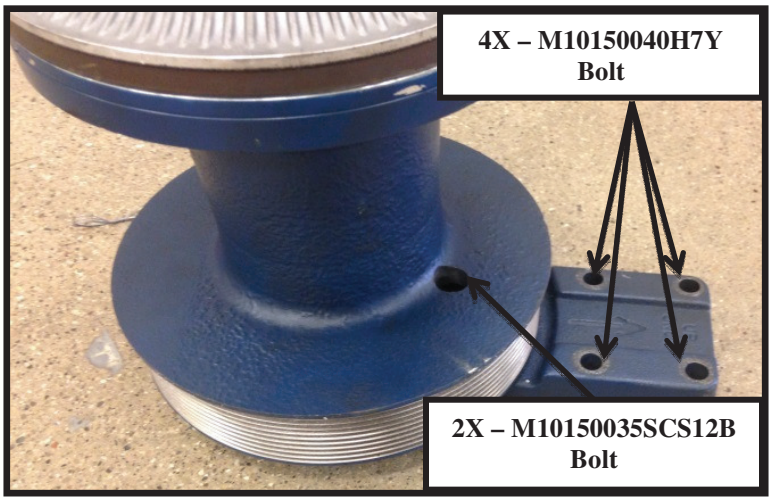


FIG. 4-1

c. The third mounting configuration utilizes two exposed hex head fasteners and four 8mm Allen socket head cap screws accessed through a machined hole in the pulley. The top cap screws can be accessed through the hole shown in FIG. 4-2. The bottom cap screws can be accessed through the hole shown in FIG. 5-1. Properly dispose of hardware.

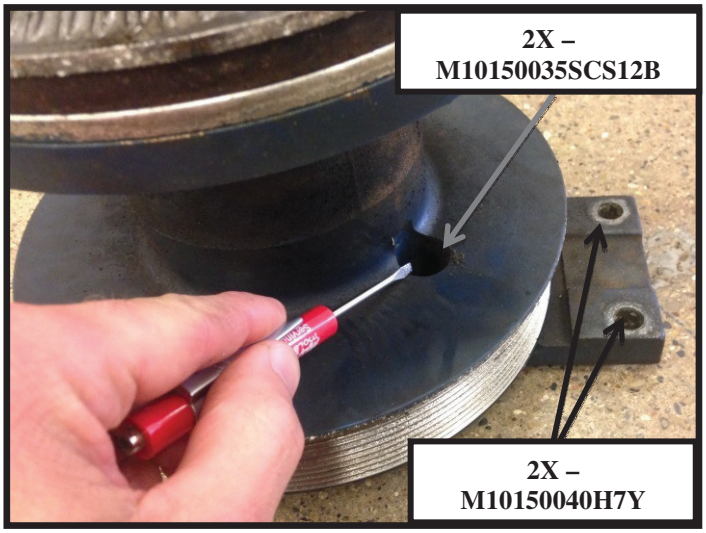


FIG. 4-2

NHTSA Id: 14V-022 **8/7/2014**
Transport Canada Id: TC14-027

FIG. 5-1

7. Remove fan drive and retain for re-use.

8. Remove fan from shroud and properly dispose of.

9. Carefully place new fan in shroud.

10. Apply 81801 pipe sealer w/Teflon or equivalent to pipe threads only on the supplied 0716-MM5-Y02 fitting and install in the actuation port on the top of the clutch. Refer to FIG. 7-1. Be sure to remove plastic insert installed by the manufacturer. Refer to FIG. 5-2.

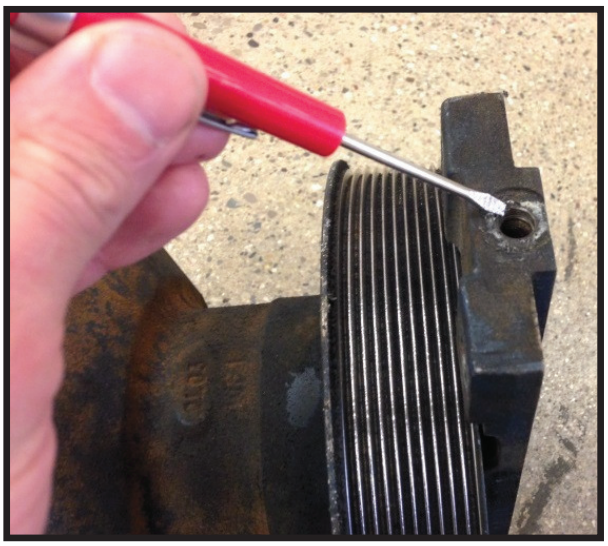


FIG. 5-2

11. Clean the back of the fan clutch mounting surface from oil/cosmolene.

12. Clean the mounting surface on the engine and the mounting holes with brake cleaner. Be sure to wear proper personal protective equipment.

Note: For the following instructions apply Loctite® 242® Threadlocker to the bolt on the first five threads from end of bolt.

13. Install fan drive. Be sure to mount in previously used holes utilizing correct hardware as shown in FIG's. 3-2, 4-1, 4-2, and 5-1. Torque fasteners to 41 lbs. ft.

14. Install serpentine belt. Align in grooves of all pulleys.

15. Install the spacers in the same order removed and supplied fan.

16. Install the supplied six (6) fasteners and washers and torque in a crisscross pattern to 33-37 lbs. ft. Refer to FIG. 6-1.

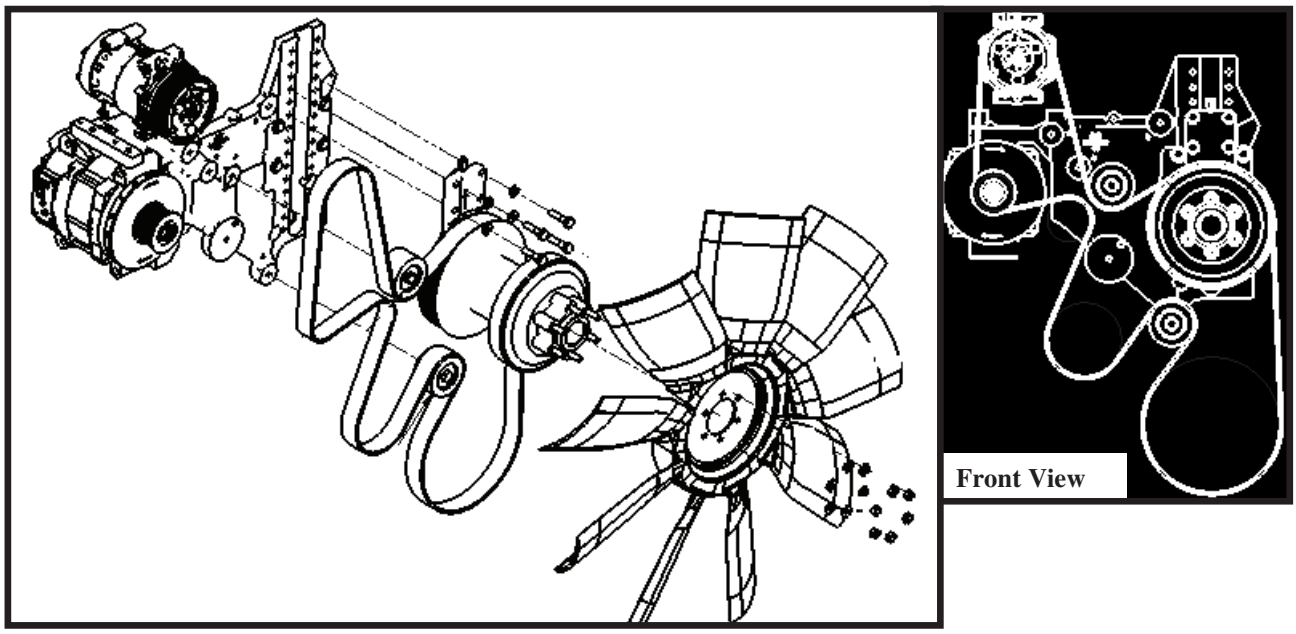


FIG. 6-1

17. Re-install retained charge air pipe and clamps. Torque to 90 lbs. in.

18. Assemble actuation solenoid as shown in drawing. Be sure to apply 81801 pipe sealer w/Teflon or equivalent to pipe threads only on NPT fittings. Refer to FIG. 7-1.

NOTE: Pay close attention as the solenoid can rotate, that the 90° fitting goes in the port labeled "IN" and the straight fitting goes to "CYL."

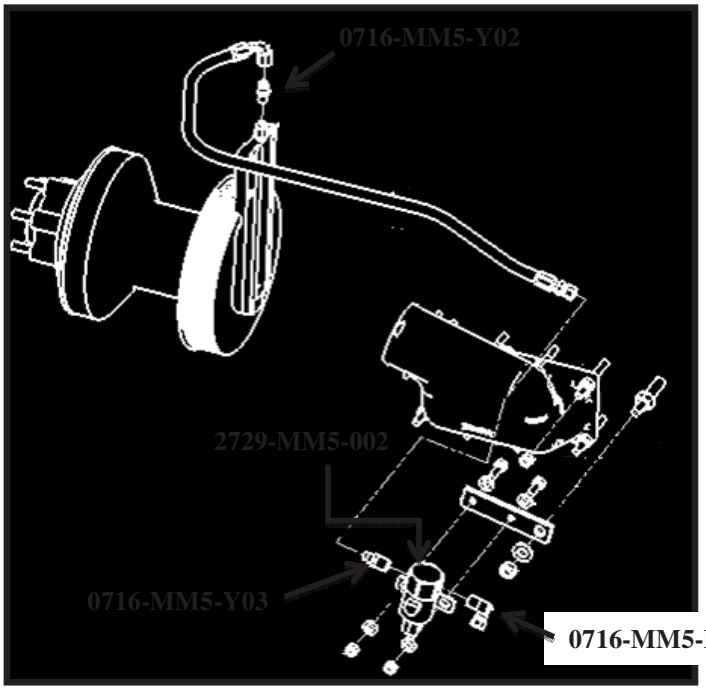


FIG. 7-1

19. Route the braided airline to the clutch so that it does not rub or chafe on engine components. Tighten both ends by hand then tighten by wrench two flats.

20. Locate fan clutch connector by the rear engine mount on the driver's side. It is a two pin weather pack that is labeled "fan clutch" containing wires EN018-Pink and SP006-Black. Plug this connector into the connector for the solenoid.

21. Locate the secondary air tank and drain out all air. Locate an empty port and remove plug. Install fittings and pressure protection valve (PPV). Refer to FIG. 8-1.

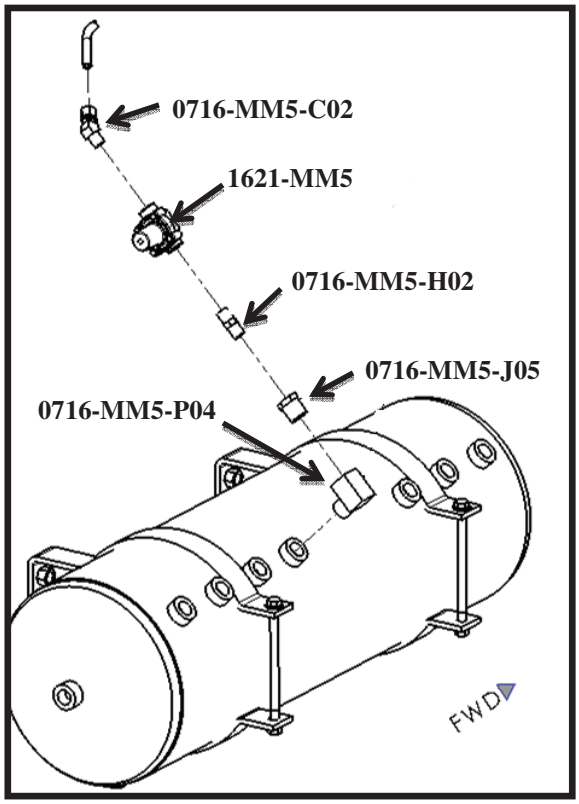


FIG. 8-1

22. Route supplied 1/4" black air line from PPV to fan control solenoid and cut to length as required. Route as to not rub or chafe and properly secure. Connect line to PPV and fan solenoid.

23. The engine will have to be re-programmed for fan control on/off (non-modulated) by a facility with CAT Electronic Technician software.

CAT PROGRAMMING INSTRUCTIONS:

1. For Cat Engine Programming Connect PC (with Electronic Technician) to the engine diagnostic port.

2. Refer to FIG. 9-1. Locate the parameters indicated in the table and set to the appropriate values.

3. Send change to engine and follow appropriate procedures to disconnect from the diagnostic port.

Parameter Description	Parameter Value
Fan Control Type	On/Off DC
Fan Override Switch	None
Fan with Engine Retarder in High Mode	Yes
PTO Activates Cooling Fan	Normal
A/C Switch Fan On-Time	2 seconds
A/C High Pressure Switch	J1939 Instrument Cluster

FIG. 9-1

24. Start engine and ensure proper fan operation.

25. Tilt cab down following instructions on placard.