



**DATE:** 04/30/2018

**APPLIES TO:** This service bulletin applies to 2015 through 2018 model year, Gladiator and Metro Star model Emergency Response chassis cabs built between 05/28/2015 and 01/02/2018.

**CONDITION:** Leaking HVAC heater hose connection inside the cab.

**CORRECTION:** Replace rubber heater hose with silicone heater hose

**LABOR ALLOCATION:** 3.5 Hrs.

**CLASSIFICATION:** E

**PARTS NEEDED:**

<u>QTY</u>	<u>Part Number</u>	<u>Description</u>
1	S-2639-001	Kit-Silicone Hose upgrade

**Kit # S-2639-001 Contains:**

<u>QTY</u>	<u>Part Number</u>	<u>Description</u>
1	TSB18-160-001	Instruction Document – English
1	TSB18-160-002	Instruction Document – French
1	TSB18-160-003	Instruction Document – Spanish
1	TSB18-160-004	Instruction Document – Portuguese
18	0182-BB1-001	Clamp, Hose Clamp
1.33ft	0388-FF3	Insulation
25ft	0661-FF2-003	Silicone Hose
4	2494-RR3-001	Cable Ties
6	T-120RO	Cable Ties
1.75ft	0636-GG5-J09	Split Loom
1	3640-RR3-001	Manifold
1	P-0430	P-80 Grip-It (10 ml tube)
1	3M 08688	3M Urethane Dauber

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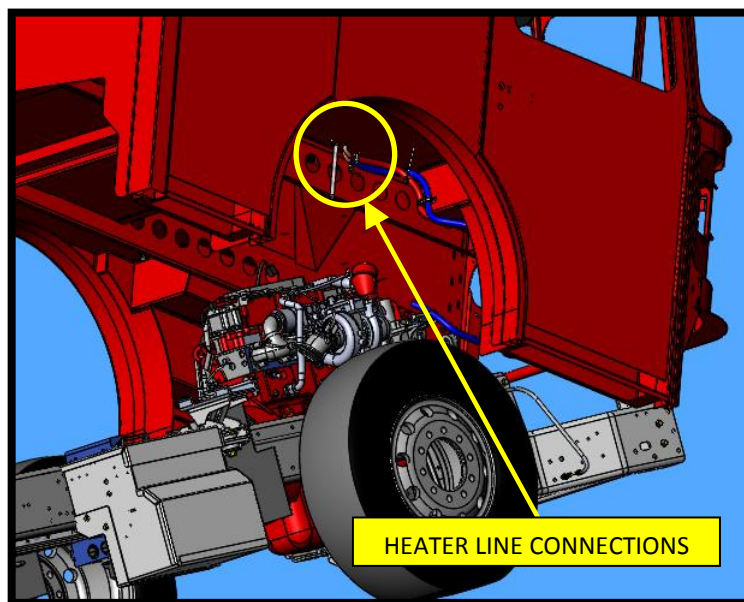
**GENERAL INSTRUCTIONS:**

Thoroughly review entire service bulletin before starting work. If there are questions or concerns with steps defined in this service bulletin, contact Spartan Motors USA, 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. Confirm that all parts have been included in kit.
2. Tilt Cab so safety bar locks into position. This will expose the heater line connections located in wheel well on officer side of cab. Refer to FIG. 2-1.

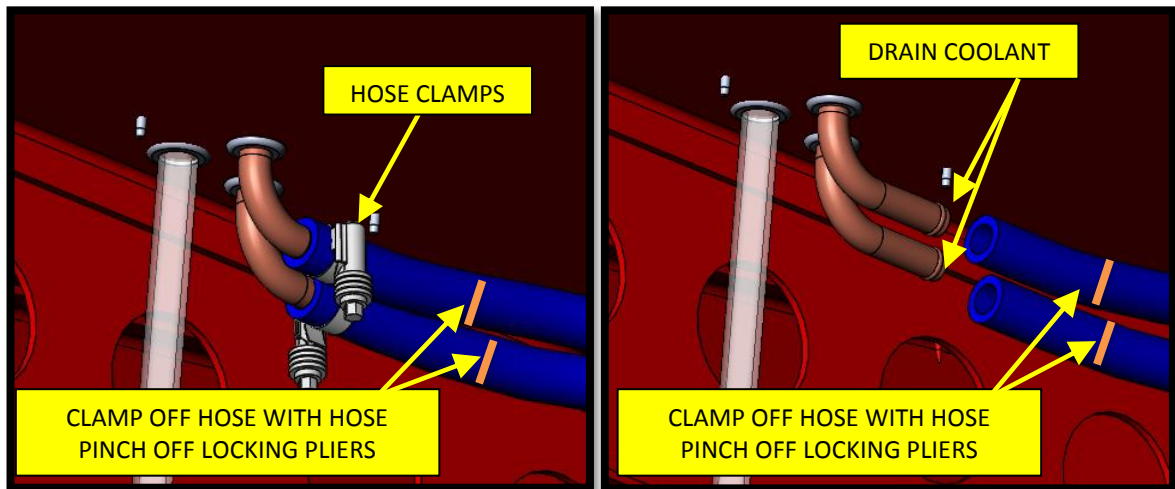


**FIG. 2-1**

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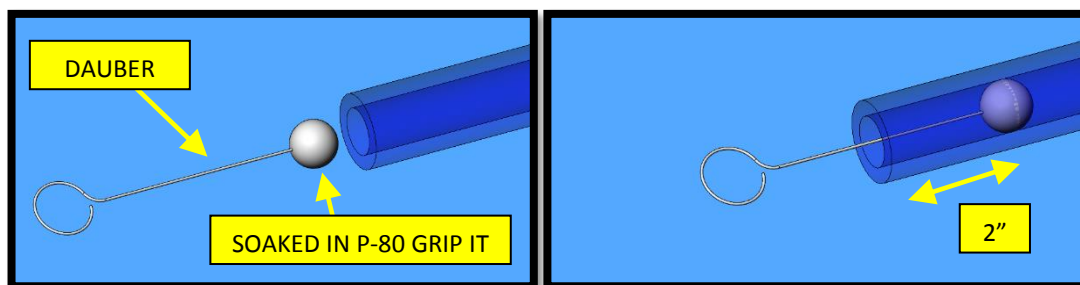


3. **Caution: Engine coolant may be HOT.** Remove hose clamps on heater lines located in officer side wheel well and properly dispose of. Place hose pinch off locking pliers on the heater hoses to prevent coolant from draining out of hoses. Remove heater lines from copper fittings allowing coolant to drain out of HVAC system. Placing a bucket below connections will catch coolant as it drains. Refer to FIG. 3-1.



**FIG. 3-1**

4. Once coolant has drained completely from HVAC system through copper fittings, thoroughly clean exterior of copper fittings and interior of previously removed heater lines using isopropyl alcohol. Inspect the fittings for deformity, damage, burrs and scratches; replace as necessary.
5. Soak application dauber supplied in the kit in the P-80 Grip-It emulsion, also supplied in kit and apply a small amount of P-80 Grip-It to inside of heater hoses, pushing dauber in about 2" then remove. Refer to FIG. 3-2.

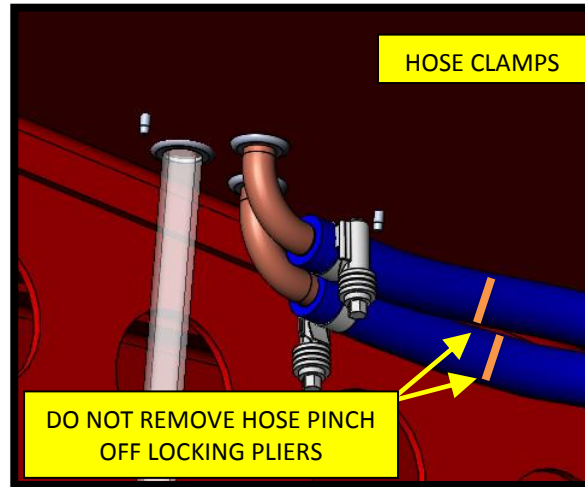


**FIG. 3-2**

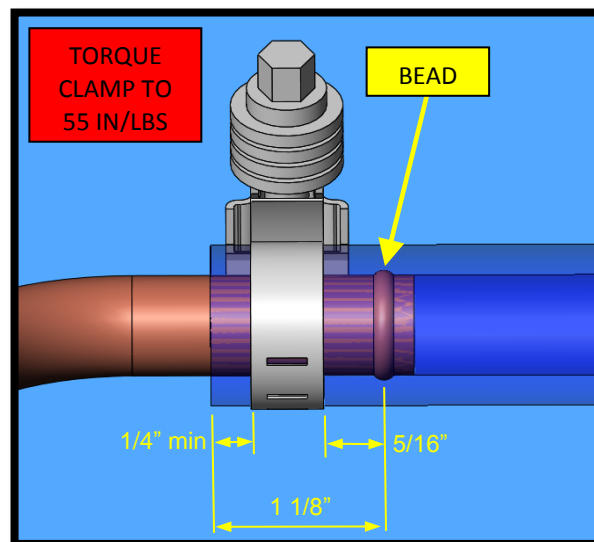
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- Loosely install new hose clamps on heater hoses, and then push heater hoses back onto copper fittings making sure location of heater hoses, beads on copper pipes and hose clamps are in the correct location. Torque clamp as indicated. **Do not remove hose pinch off locking pliers.** Refer to FIG. 4-1 and FIG. 4-2.



**FIG.4-1**

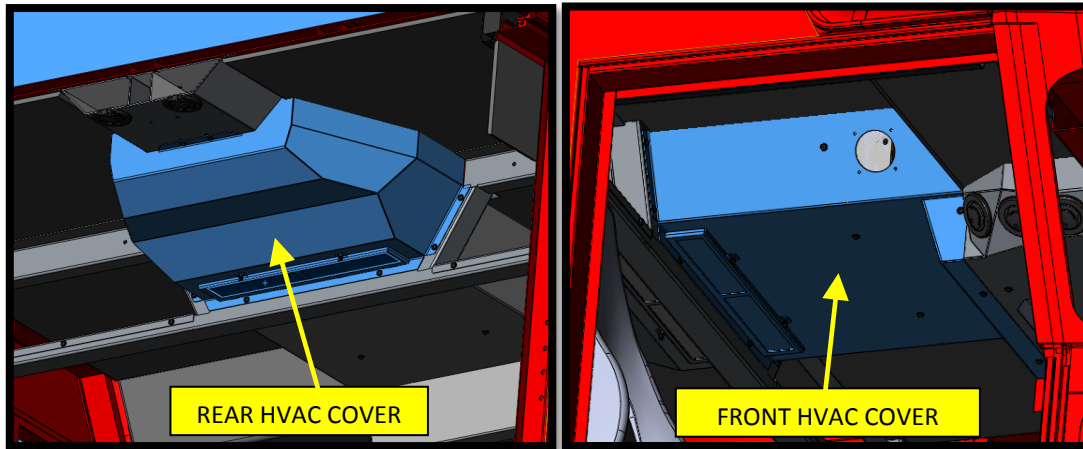


**FIG.4-2**

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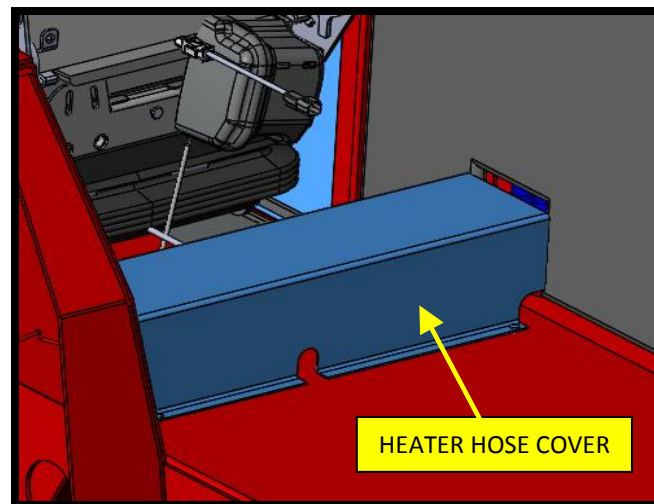


7. Disengage the safety bar and lower the cab until the rear lockdowns fully engage.
8. Remove the front and rear interior HVAC covers and retain along with all hardware for later reinstallation. Refer to FIG. 5-1.



**FIG. 5-1**

9. Remove Heater hose cover which is located behind officer seat and retain along with all hardware for later reinstallation. It may be necessary to remove seats and other equipment to gain access to heater hose cover. Refer to FIG. 5-2.

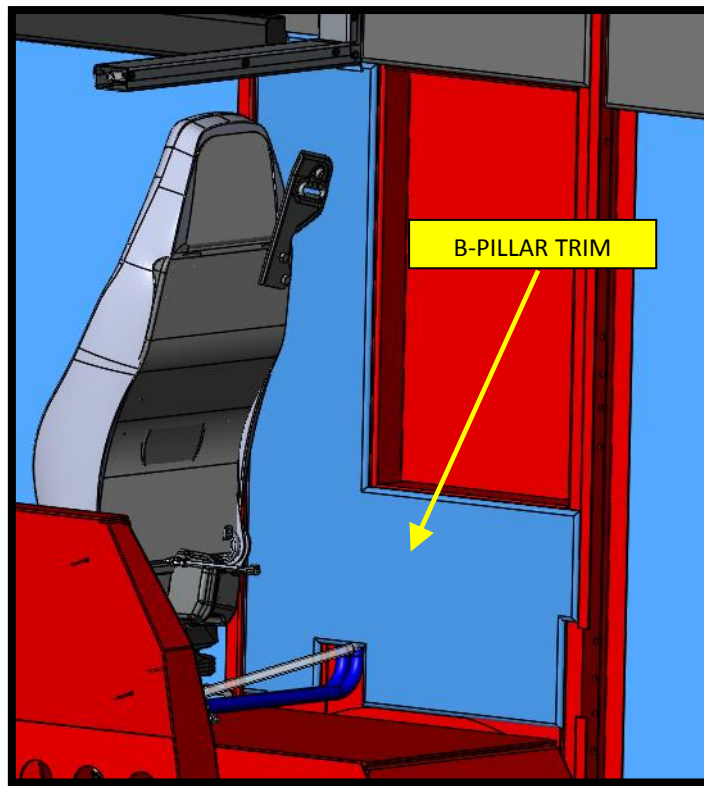


**FIG. 5-2**

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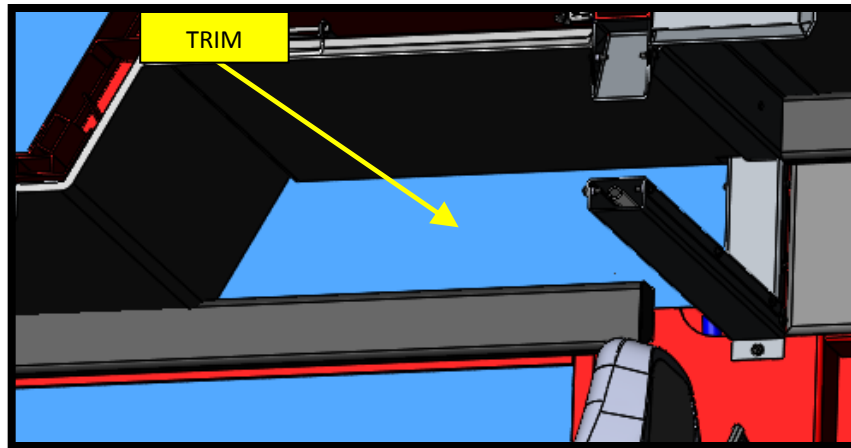
10. Remove B-Pillar trim located behind officer seat and retain along with all hardware for later reinstallation. Refer to FIG. 6-1.



**FIG. 6-1**

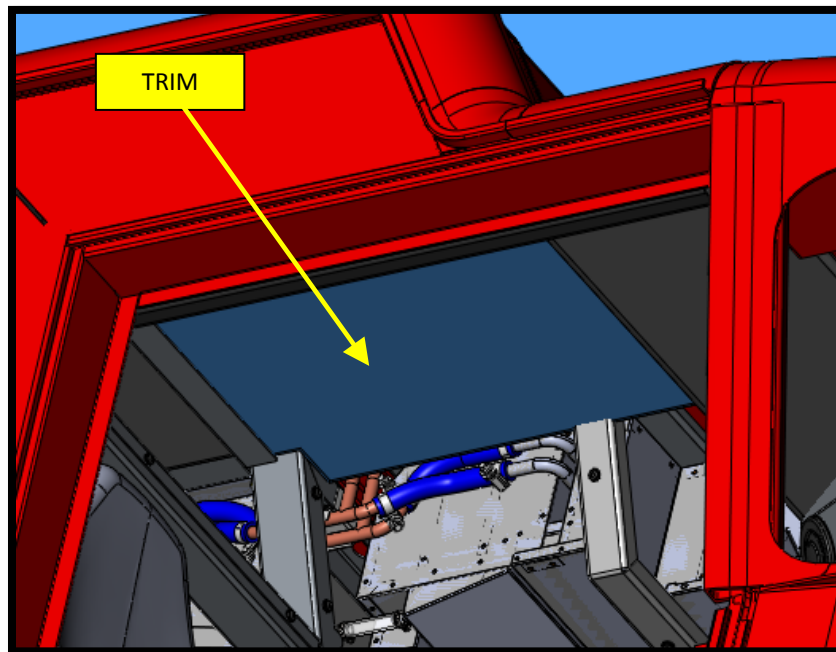
11. Remove trim located above officer side front door and retain along with all hardware for later reinstallation. Refer to FIG. 7-1.

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**FIG. 7-1**

12. Remove trim located above officer side, front seat and retain along with all hardware for later reinstallation. Refer to FIG. 7-2.

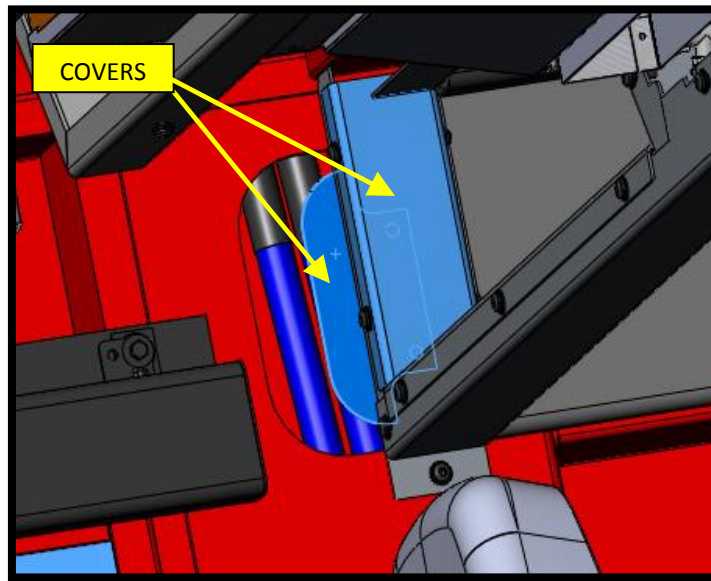


**FIG. 7-2**

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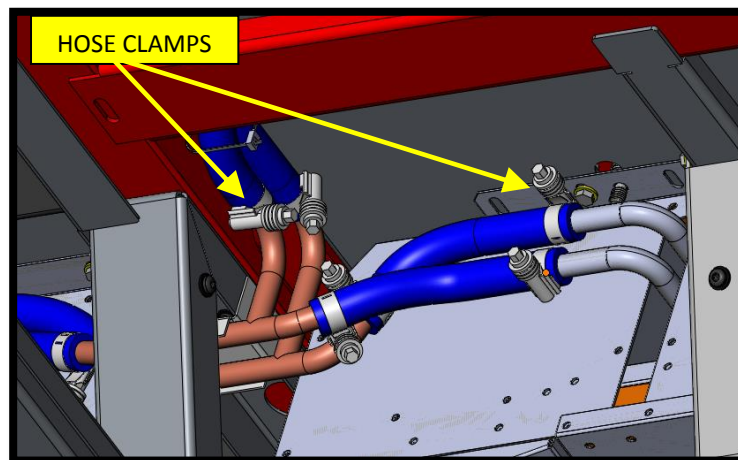


13. Remove aluminum covers located on officer side B-Pillar and retain along with all hardware for later reinstallation. Refer to FIG. 8-1.



**FIG. 8-1**

14. **Caution: Engine coolant may be HOT.** Remove all hose clamps on heater line manifold located in ceiling above officer seat and properly dispose of. Place shop rags below this area to catch any residual coolant still in heater lines and manifold that may leak out. Refer to FIG. 8-2.

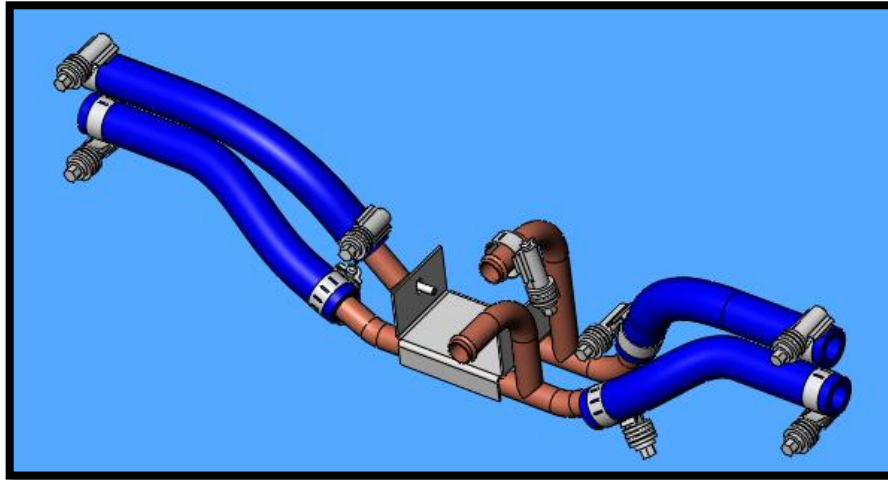


**FIG. 8-2**

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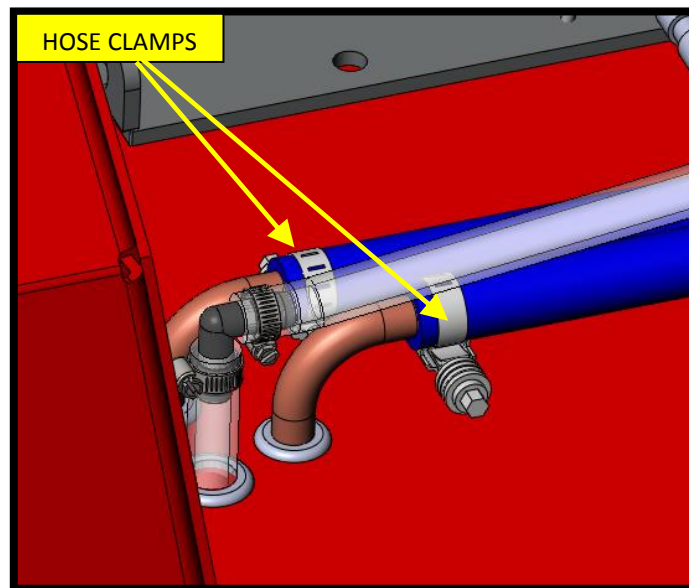


15. Once all clamps have been removed, entire manifold assembly can be removed and properly disposed of. Retain all hardware for later reinstallation. Take great care to prevent damaging the copper lines coming out of front and rear HVAC units. Refer to FIG. 9-1.



**FIG. 9-1**

16. Remove all hose clamps on heater lines connected to copper fittings that are located on floor behind the officer seat and properly dispose of. Refer to FIG. 9-2.

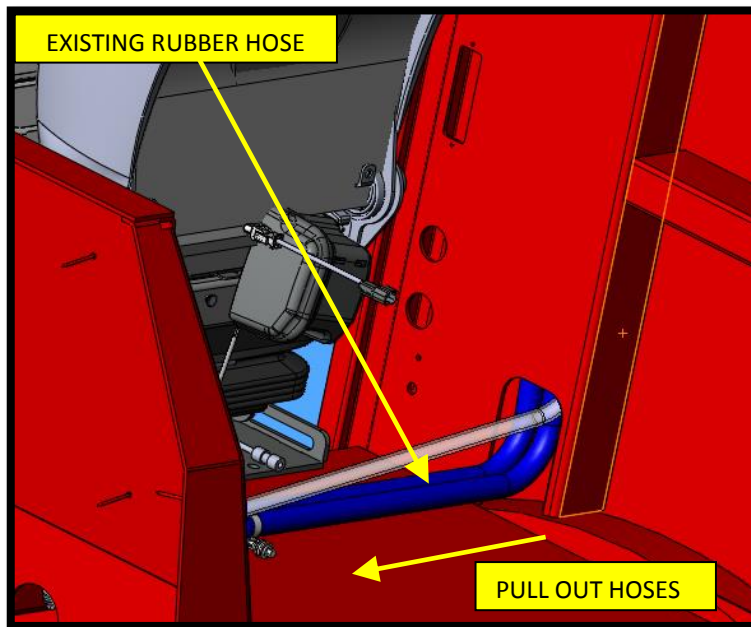


**FIG. 9-2**

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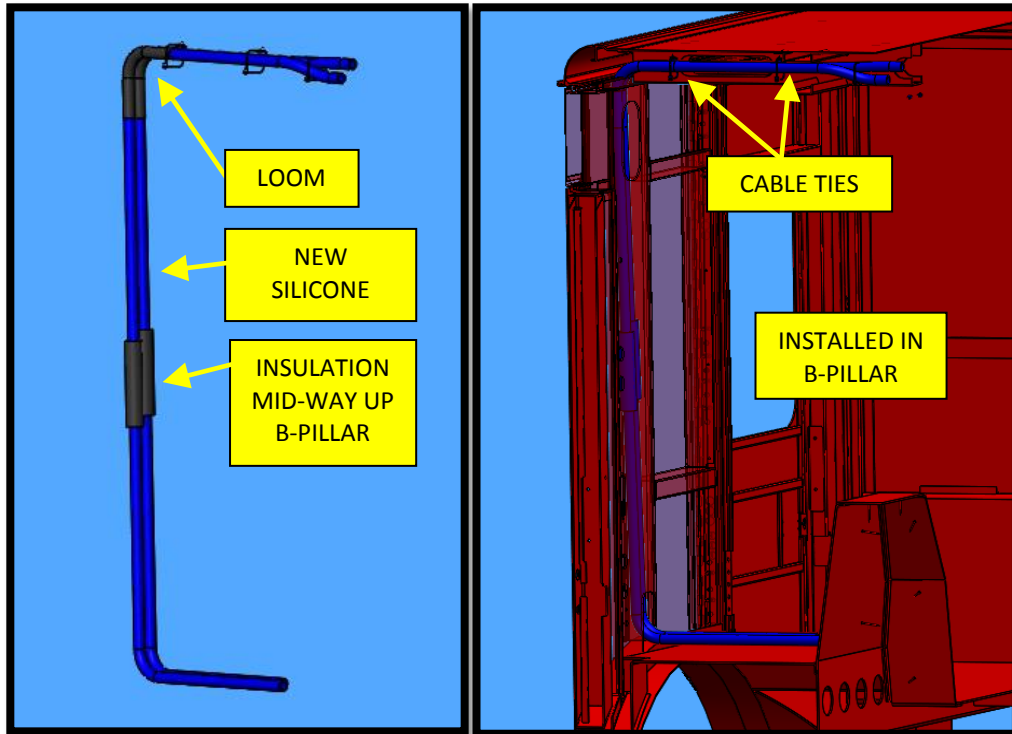
17. Pull existing rubber hoses down and out of B-Pillar taking great care not to damage any wire harnesses and components located in B-pillar and properly dispose of. Refer to FIG. 10-1.



**FIG. 10-1**

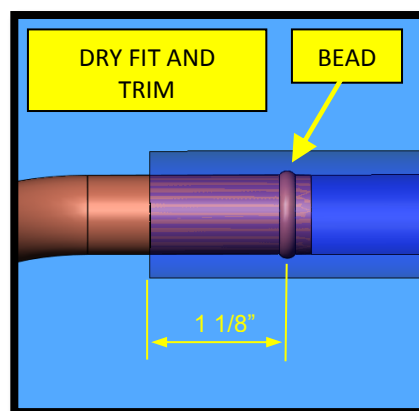
18. Cut appropriate length of NEW Blue Silicone heater hose 0661-FF3-002. This is achieved by measuring length of previously removed rubber hose and adding 6". This will allow a final trim to length once installed. The location of the 10" long x 1" diameter loom 0636-GG5-J09 and 8" long x 2" diameter black insulation 0388-FF3 is important and must be located as indicated. Install hoses, loom and insulation as indicated inside B-pillar. Secure silicone hoses to main bolster using supplied cable ties 2494-RR3-001 and T-120RO. Refer to FIG. 11-1.

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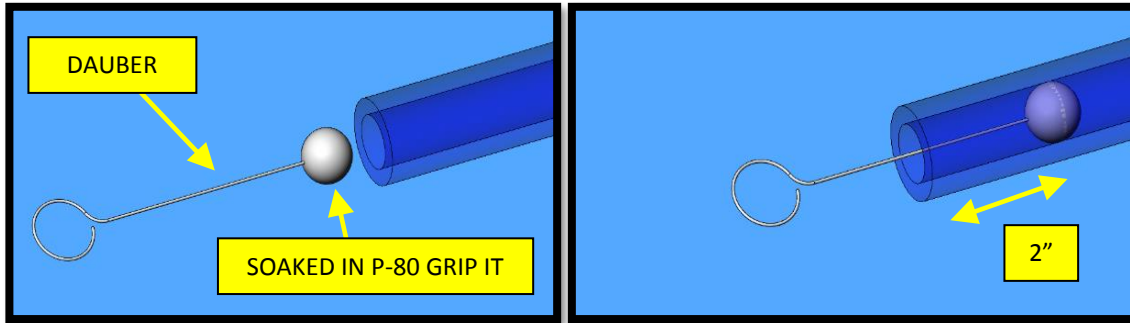
**FIG. 11-1**

19. Thoroughly clean exterior of copper fittings behind officer seat on floor using isopropyl alcohol. Inspect the fittings for deformity, damage, burrs and scratches; replace as necessary. Dry fit the hose onto the copper fittings to determine the exact length, trimming as necessary. Refer to FIG. 11-2. Then remove. Soak application dauber supplied in kit with P-80 Grip-It emulsion, also supplied in kit and apply a small amount of P-80 Grip-It to inside of heater hoses, pushing dauber in about 2" then remove. Refer to FIG. 12-1.



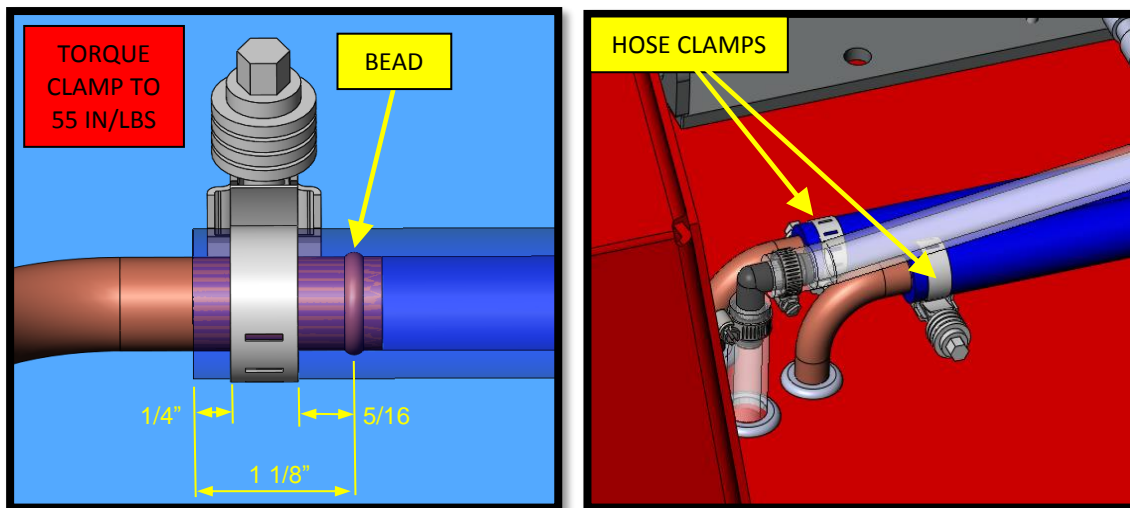
**FIG. 11-2**

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**FIG. 12-1**

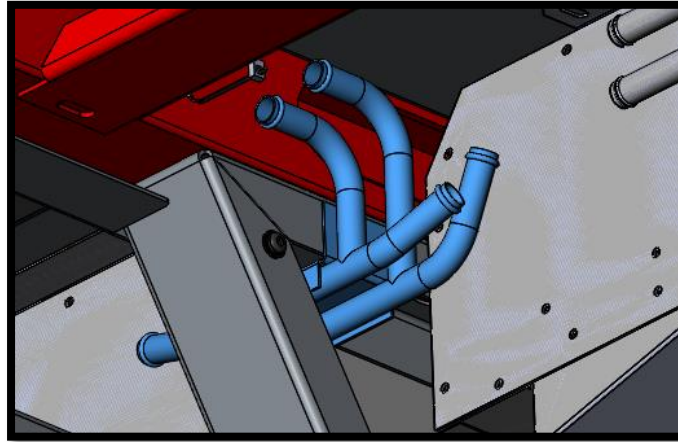
20. Loosely install new hose clamps 0182-BB1-001 on heater hoses behind officer seat on floor, and then push heater hoses onto copper fittings making sure location of heater hoses, beads on copper pipes and hose clamps are in the correct location. Torque clamp as indicated. Refer to FIG. 12-2.



**FIG. 12-2**

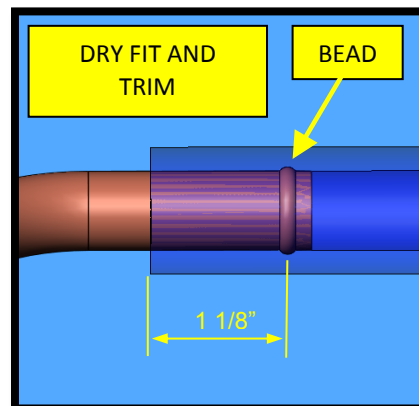
21. Install NEW heater hose manifold 3640-RR3-001 using retained hardware. Refer to FIG. 13-1.

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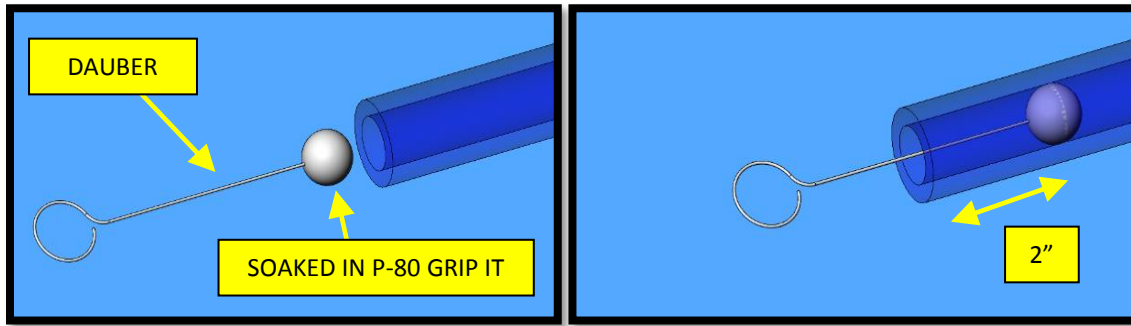
**FIG. 13-1**

22. Cut appropriate length of NEW Blue Silicone heater hose 0661-FF3-002. This is achieved by measuring lengths of previously removed rubber hoses from manifold and adding 1". This will allow a final trim to length while being installed. Thoroughly clean exterior of copper fittings on front and rear HVAC units using isopropyl alcohol. Inspect the fittings for deformity, damage, burrs and scratches; replace as necessary. Dry fit the hose onto the copper fittings to determine the exact length, trimming as necessary. Refer to FIG. 13-2. Then remove. Soak application dauber supplied in kit in the P-80 Grip-It emulsion, also supplied in kit and apply a small amount of P-80 Grip-It to inside of heater hoses, pushing dauber in about 2" then remove. Refer to FIG. 14-1.



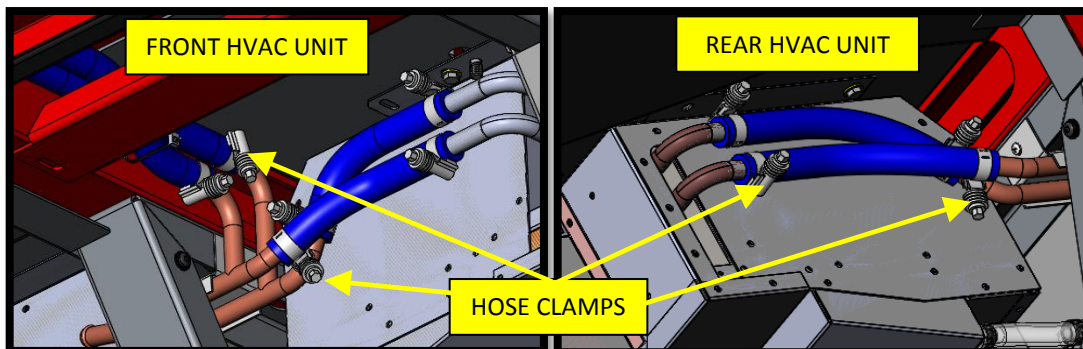
**FIG. 13-2**

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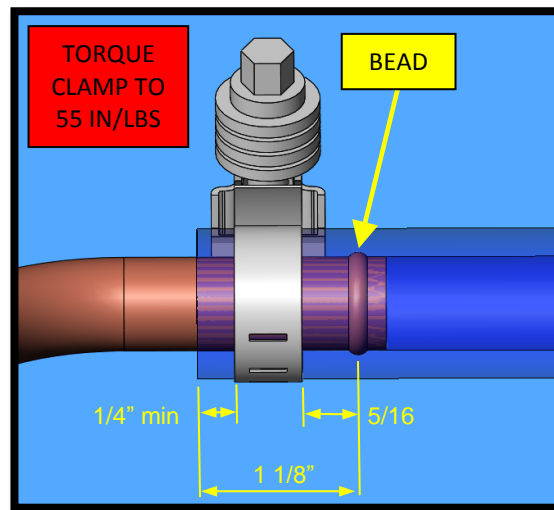
**FIG. 14-1**

23. Loosely install new hose clamps 0182-BB1-001 on heater hoses at manifold and front/rear HVAC units located in ceiling above officer seat. Push heater hoses onto copper fittings making sure location of heater hoses, beads on copper pipes and hose clamps are in correct location. **Caution: interference between hose clamps and main cover is possible; orient the clamps to prevent contact with cover.** Torque clamp as indicated. Refer to FIG. 14-1 and FIG. 15-1.



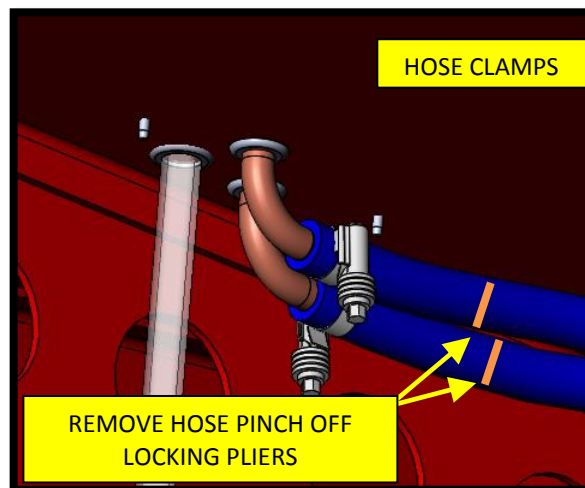
**FIG. 14-1**

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**FIG. 15-1**

- 24. Remove hose pinch off locking pliers from heater lines located in officer side wheel well. Refer to FIG. 15-2.



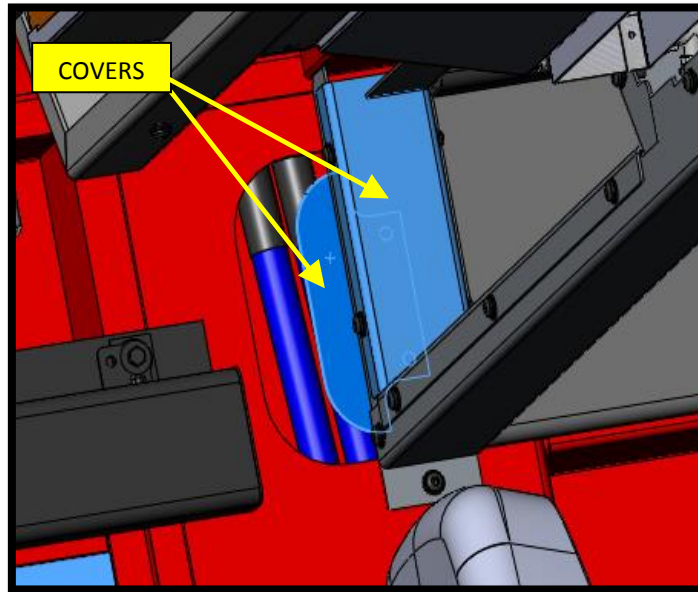
**FIG. 15-2**

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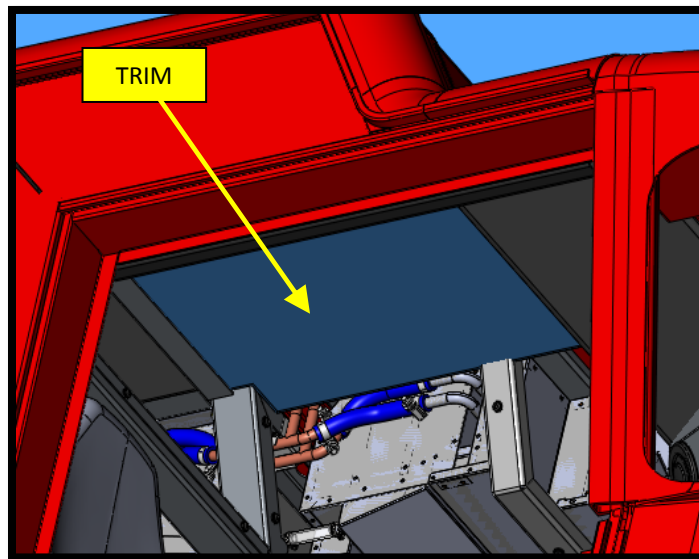
25. Start engine and set throttle to HIGH IDLE, set temperature on HVAC units to HIGH HEAT with full blower fan. Open all vents on HVAC system allowing air to flow unobstructed. Allow the engine to run for several minutes, this will reduce the possibility air bubbles in the cooling system.
26. Turn off engine.
27. **Caution: Engine coolant may be HOT.** Tilt cab to gain access to radiator cap and insure that coolant system has appropriate amount of coolant. Top off system as necessary using appropriate coolant. Refer to owner's manual.
28. Disengage the safety bar and lower the cab until the rear lockdowns fully engage. Start engine and set throttle to HIGH IDLE, set temperature on HVAC units to HIGH HEAT with full blower fan. Open all vents on HVAC system allowing air to flow unobstructed. Allow engine coolant temperature to reach a minimum of 180 degrees; this may take approximately 1 hour. Once desired temperature is achieved, turn off HVAC units and turn off engine. Allow engine coolant to cool down to ambient temperature. This is typically overnight. This activity allows new heater hose joints to go thru a full heat cycle insuring that joints are robust. Once cooled to ambient, all NEW clamps need to be re-torqued to a NEW value of 35 in/lbs. checking for any coolant leaks. If coolant leaks are discovered, please contact service department at Spartan Motors. If no leaks are observed please continue.
29. Reinstall aluminum covers located on officer side B-Pillar using retained hardware. Refer to FIG. 17-1.

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**FIG. 17-1**

30. Reinstall trim located above officer side front seat, using retained hardware. Refer to FIG. 17-2.

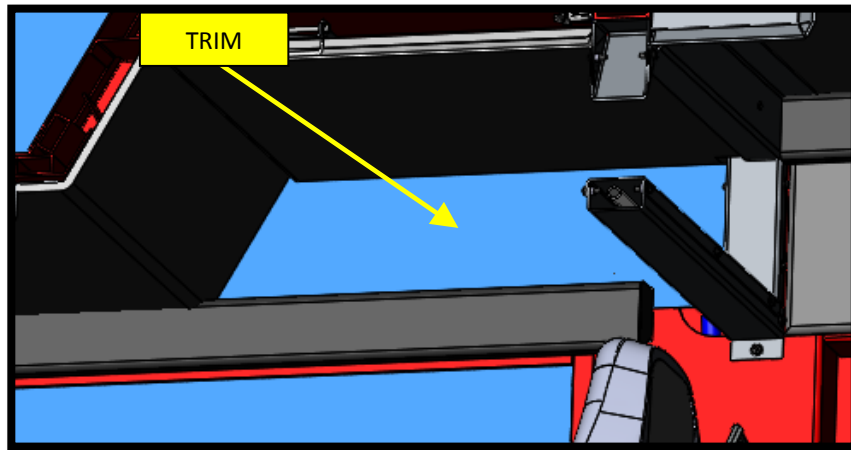


**FIG. 17-2**

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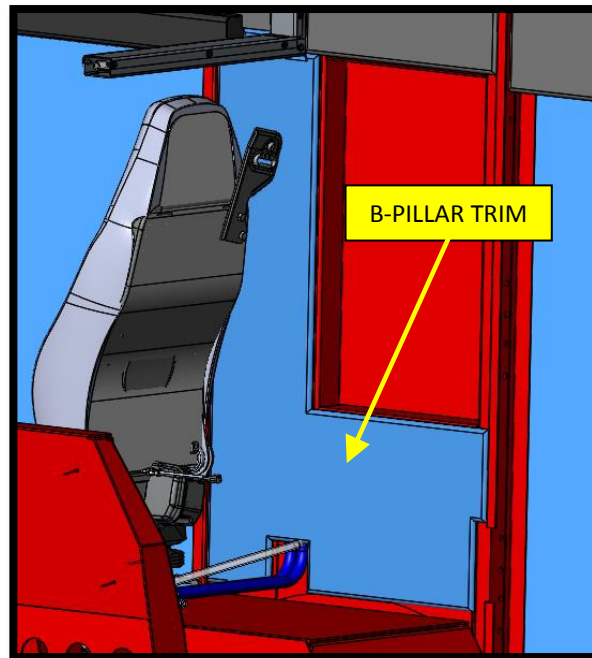


31. Reinstall trim located above officer side front door using retained hardware. Refer to FIG. 18-1.



**FIG. 18-1**

32. Reinstall B-Pillar trim located behind officer seat using retained hardware. Refer to FIG. 18-2.

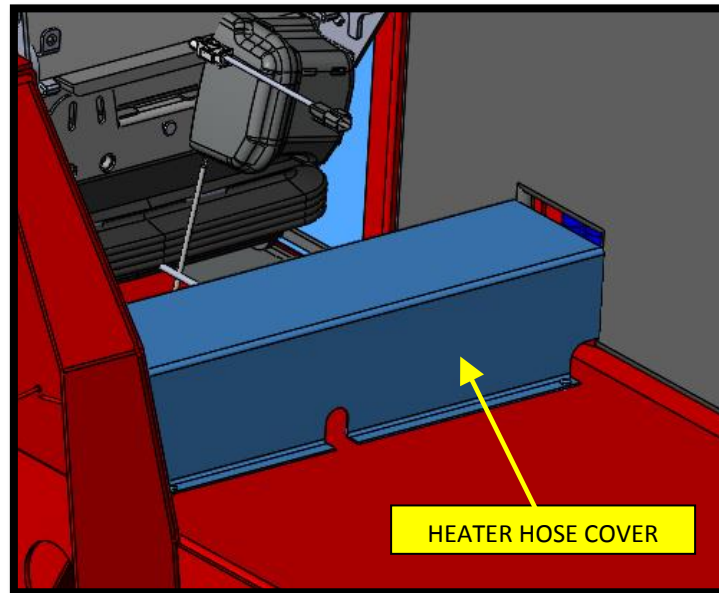


**FIG. 18-2**

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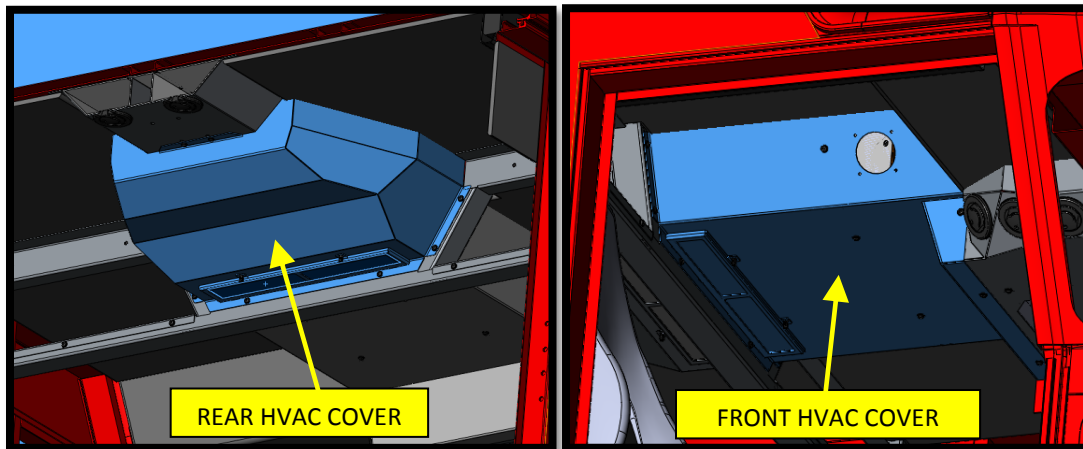


33. Reinstall Heater hose cover, which is located behind officer seat using retained hardware. Refer to FIG. 19-1.



**FIG. 19-1**

34. Reinstall front and rear interior HVAC covers using retained hardware. Refer to FIG. 19-2.



**FIG. 19-2**

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35. Clean all surfaces contaminated with coolant or coolant residue using one of the following cleaning agents: Simple Green, Dawn dish soap or 3M citrus cleaner.

36. END

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