



INSTRUCTION TO SERVICE

ITS:6339

SECTION:

219 Engine and Transmission

WRITTEN BY:

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SUBJECT:

Rework Heat Exchanger Cabin Loop Line and Routing

ITS6339

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NEW FLYER

PROCEDURE:

1. Turn the main battery disconnect switch to the “OFF” position.
2. Open the surge tank fill door.
3. Relieve the cooling system pressure by lifting the vent lever on the cabin heat surge tank pressure relief cap. See Figure 1.

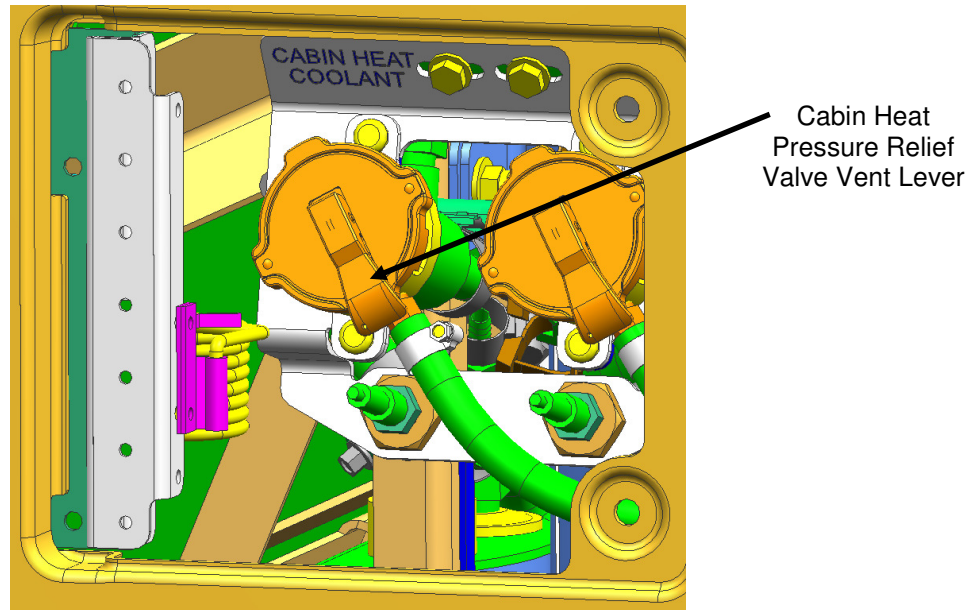


Figure 1: Cabin Heat Surge Tank Pressure Relief

NOTE: If coolant is to be recovered, make sure container is clean and chemical free. If not, used coolant must be recycled or disposed of in accordance with municipal, state and federal government regulations.

4. Place a suitable container under the heat exchanger cabin loop drain plug. Remove and save the drain plug and drain cabin heat coolant circuit. See Figure 2.
5. If necessary, raise the coach in accordance with the New Flyer Service Manual.
6. Remove and save the existing tube clamp and mounting hardware supporting the heat exchanger cabin loop SST tube to the degas frame as shown in Figure 2.
7. Remove and discard the existing tube clamp and mounting hardware supporting the heat exchanger cabin loop SST tube to the engine mount as shown in Figure 2.
8. Remove and save the existing hose clamp from the silicone elbow on the booster pump line to the SST cabin loop tube, see Figure 2.
9. Remove and save the existing hose clamps (x4) from the silicone hose connecting the heat exchanger 90° SST elbow to the SST tube to the booster pump, see Figure 2.
10. Remove and discard the existing silicone hose and SST cabin loop tube, see Figure 2.
11. Locate and grind off the clamp support bracket welded to the engine mount, see Figure 2.
12. Apply zinc primer to the exposed metal left by the grinding process to prevent corrosion.



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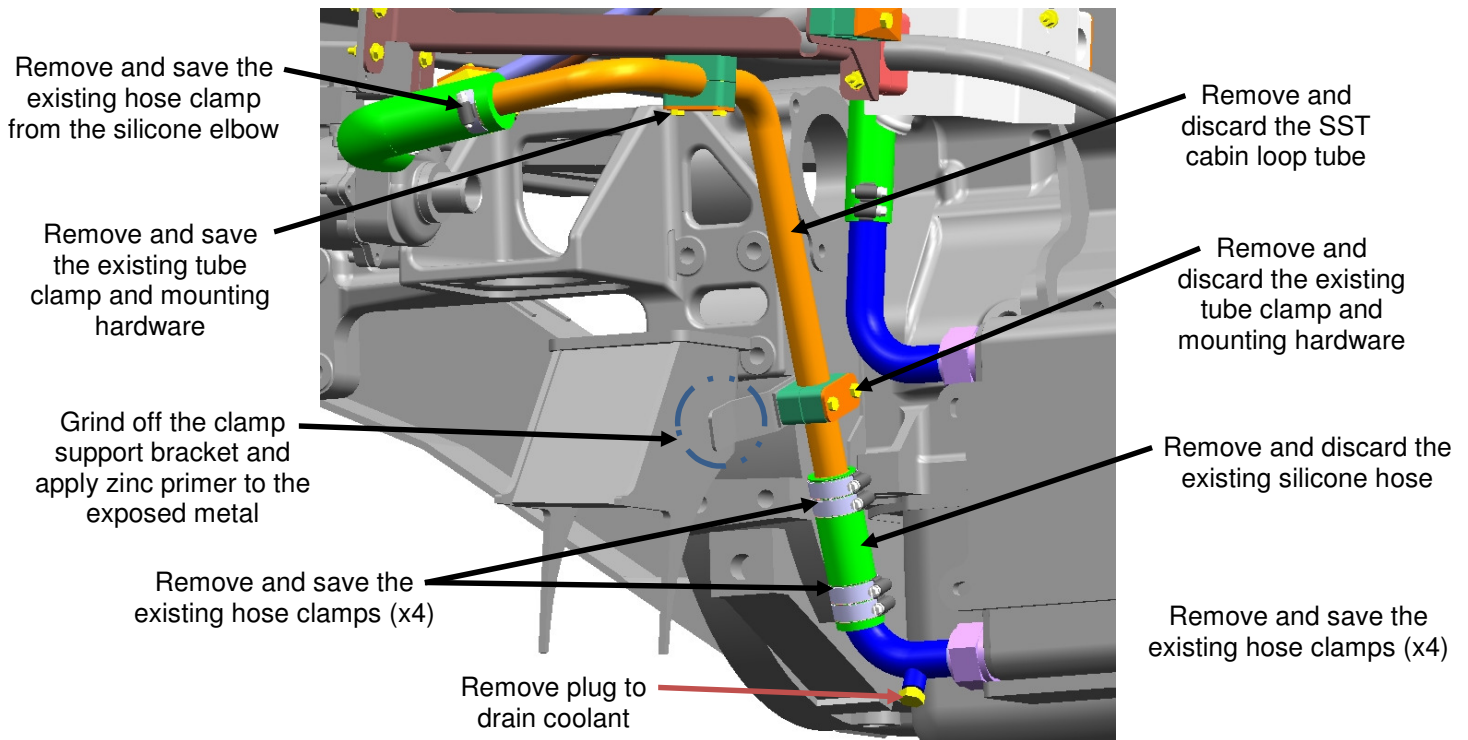


Figure 2: Cabin Heat Coolant Tube Removal

13. Insert the new SST coolant tube p/n 641970 into the silicone elbow at the booster pump. Loosely install the hose clamp removed in Step 7. Use Loctite 243 p/n 081034 on threads of hardware, see Figure 3.
14. Loosely install the existing tube clamp and mounting hardware in the same location as removed in Step in Step 6, see Figure 3.
15. Loosely install approx. 14" of new Venair hose p/n 555447 (trim hose to fit) between existing heat exchanger cabin heat SST elbow and newly installed tube from Step 14 using existing hose clamps removed in Step 9, two (2) at each end of the hose.
16. Ensure the hose and tube is free of kinks and routed in a relaxed state and tighten clamps as follows.
 - a. Tighten existing tube clamp support hardware installed in Step 14.
 - b. Tighten the existing silicone elbow clamp from Step 13 to 80 in*lbs. Dry. Tighten at 75 rpm or less, re-torque to 80 in*lbs. at 75 rpm or less after 30 mins.
 - c. Tighten the existing silicone hose clamps from Step 15 to 80 in*lbs. Dry. Tighten at 75 rpm or less, re-torque to 80 in*lbs. at 75 rpm or less after 30 mins.
17. Install the coolant drain plug removed in Step 4 as per Step 18.
18. Fitting installation:
 - a. Inspect the threads to be sure they are not damaged or contain slivers, burrs, dirt or other contaminants.
 - b. Apply thread sealant p/n 8110442 evenly, without air pockets, around the circumference of the thread, leaving the first ½ to 1 ½ threads unpasted and extend to completely cover a minimum of the next three threads. Ensure that orifices remain unblocked. **Note: Threads supplied with Vibra-Seal coating (red dry seal) do not require additional thread sealant.**
 - c. Install the fitting finger tight.
 - d. Apply two full turns past finger-tight.

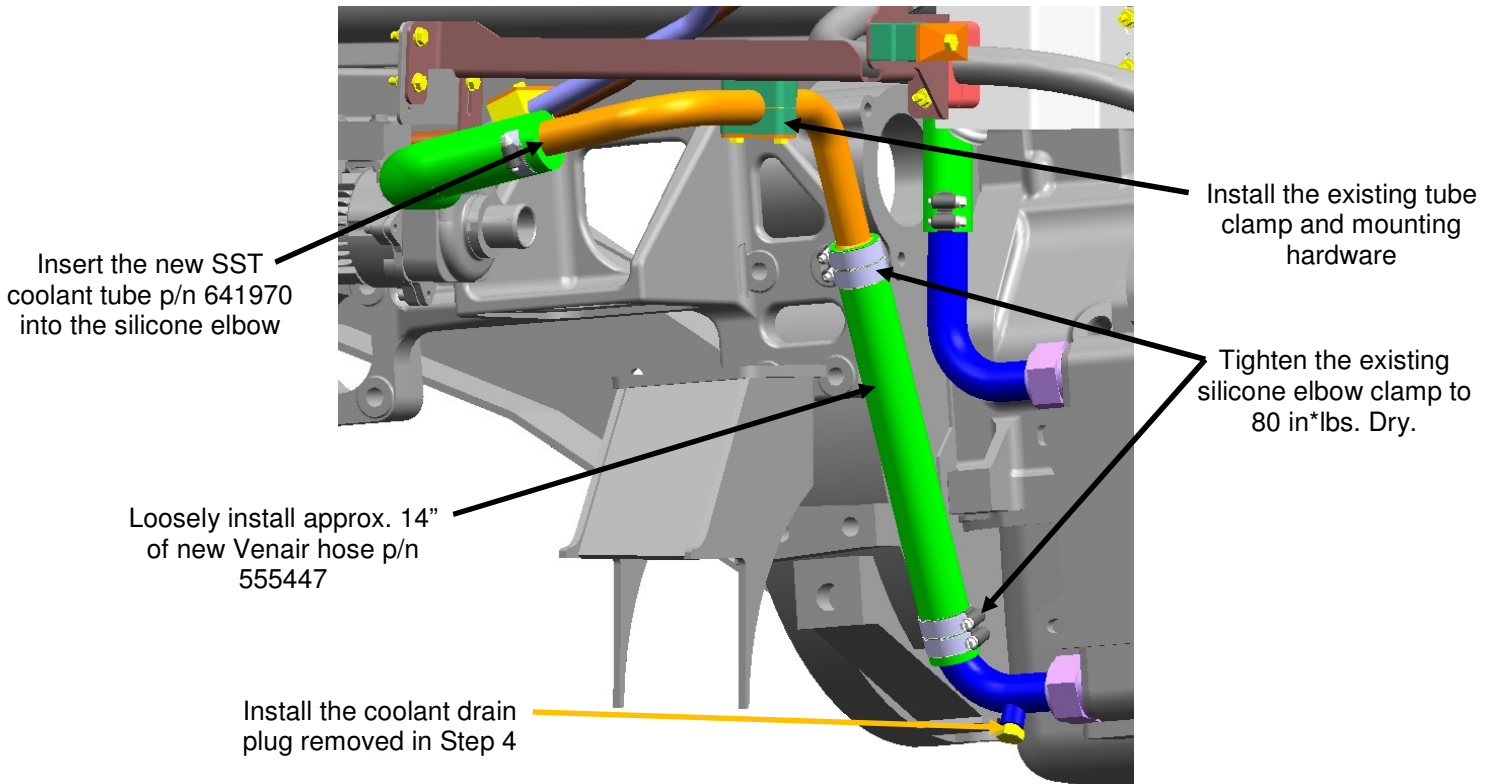


Figure 3: Cabin Heat Coolant Tube Installation

19. If necessary, lower coach in accordance with the New Flyer Service Manual.
20. Remove all tools and debris and return the bus to service condition.
21. Close the surge tank access door.
22. Turn the main battery disconnect switch to the "ON" position.

NOTE: It will be necessary to perform a cooling system deaeration procedure prior to starting the engine if any other maintenance activity is performed on the heating system that could have introduced a significant amount of air into the cooling system. Refer to New Flyer Drawing p/n 608544 "Cabin System Coolant Fill Procedure" or Section 2.4.4. Filling and Deaeration in the New Flyer Service Manual.



NEW FLYER

LABOUR ESTIMATE

	Operation	Men	Hours	Labour Time M X HR
1	Rework Heat Exchanger Cabin Loop Line and Routing	1	2.0	2.0

PARTS REQUIRED

Item	Part Number	Description	Qty. per Coach	Units	Notes
1	641970	Tube-1.125 Dia SST	1	EA	
2	555447	Hose-Venair 31 mm ID	0.33	EA	
3	081034	Loctite 243-Medium 10 ml	0.01	EA	