

REFERENCE:	Nova Bus Manuals
SECTION:	09: Engine and Cooling
RS N°:	MQR 7621-2169
EFFECTIVE IN PROD.:	N/A
TC RECALL N°:	2021-057
NHTSA RECALL N°:	20V568

APPLICATION DEADLINE: NA
CLAIM REFERENCE NUMBER: SR-4963

SUBJECT:	Power Steering
JUSTIFICATION:	Certain power steering pipes may separate at the connection joint. This may cause a power steering assist lost and power steering fluid spillage from the ceiling in the cabin.

LEVEL	DESCRIPTION	DIRECT CHARGES		TIME
		LABOUR	MATERIAL	
1	Inspection of pipes N81042-01 & N81043-01	Nova Bus	–	1 h
2	Replacement of 1 or 2 pipes	Nova Bus	Nova Bus	10.5 h

MATERIAL LIST ON PAGE 2

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	2021MR23	Initial release	Annie St-Jacques

APPROVED BY:

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MATERIAL

QTY	PART N°	REV.	DESCRIPTION	REPLACES PART N°
LEVEL 1				
-	-	-	-	-
LEVEL 2				
1	N85023	A	INSULATION PIPE 7/8" I.D. SLIT	-
1	N64786	A	INSULATION PIPE 1-5/8" I.D. SLIT	-
2	N43011	A	BOLT M6X60 YZ TRIV 96H 8.8	-
2	N20996	X	WASHER FLAT SUPOVS M6 SS	-
2	N17904	X	WASHER LCK CURV M6 YZ TRIV 96H	-
1	N80788	B	SUPPORT WOOD BLOCK UPPER	-
1	N81042-01		PIPE HYDRAULIC ASSY SUPPLY P/S	-
5	G5007996		CABLE TIE (0657558)	-
1	N81043-01		PIPE HYDRAULIC ASSY SUPPLY P/S	-
1	N20397	C	SIKAFLEX 221 WHITE (310ml) (1 container of 310ml per vehicle)	-
2	N21720	A	FIRESTOP (810ml) (2 containers of 810ml per vehicle)	-
13	N37749	B	DUAL CLAMP TIE	-

Materials will be available within 47 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.

CLIENT	ORDER	ROAD NUMBER		VIN (2NVY/4RKY...)		QTY
		FROM	TO	FROM	TO	
Academy Busline - New Jersey	LC95	—	—	L82J2L9777559	L82J9L9777560	2
Brampton Ontario	LD18	2007	2007	L82J5L3752614	L82J5L3752614	1
Houston Texas - Metro	LC92	2502	2507	L82J8L9777585	L82J3L9777590	6
Houston Texas - Metro	LC92	2509	2509	L82J8L9777592	L82J3L9777592	1
Houston Texas - Metro	LC92	2511	2513	L82J8L9777594	L82J3L9777596	3
San Antonio Texas	LC70	801	806	L82K3L9777577	L82K3L9777584	6
San Antonio Texas	LD11	726	738	L82K1L9777562	L82K8L9777574	13
San Antonio Texas	LD12	988	989	L82KXL9777575	L82K1L9777576	2
San Juan Puerto Rico	LD01	2020-01	2020-01	L82J0L9777561	L82J0L9777561	1

**WARNING****FOLLOW YOUR INTERNAL SAFETY PROCEDURES.**

PROCEDURE

LEVEL 1

HYDRAULIC PIPES INSPECTION

- 1.1. Park the vehicle on a level surface with the transmission on neutral.
- 1.2. Apply the parking brake and set the master control switch to the **stop** position.
- 1.3. Locate hydraulics pipes N81042-01 and N81043-01 (Figure 1).

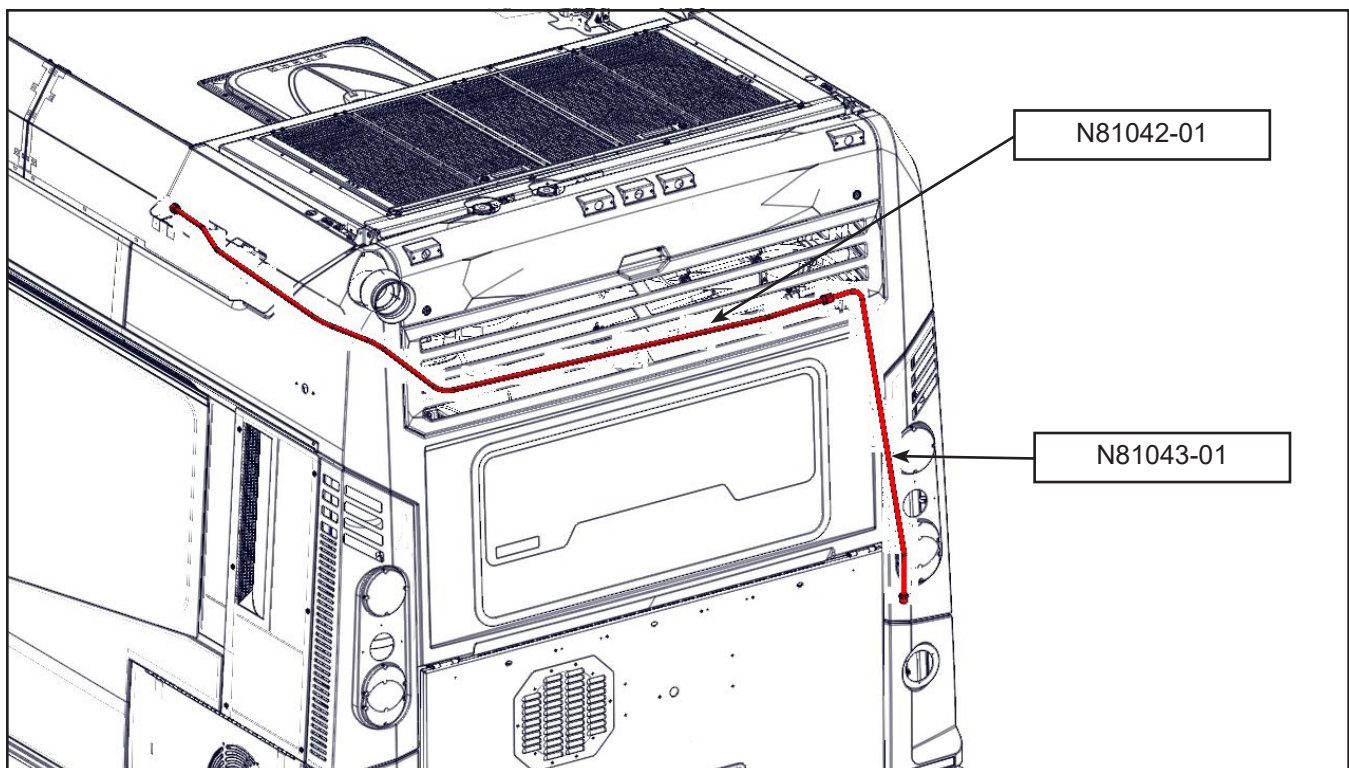


Figure 1 - Hydraulic Pipes N81042-01 & N81043-01

- 1.4. On both pipes N81042-01 and N81043-01 search for manufacturers label:
- If the label looks like the label shown in Figure 2, the pipe does **NOT** have to be replaced.
 - If the label looks like the label shown in Figure 3, the pipe **must be replaced**.
 - If no label is visible, the pipe **must be replaced**.

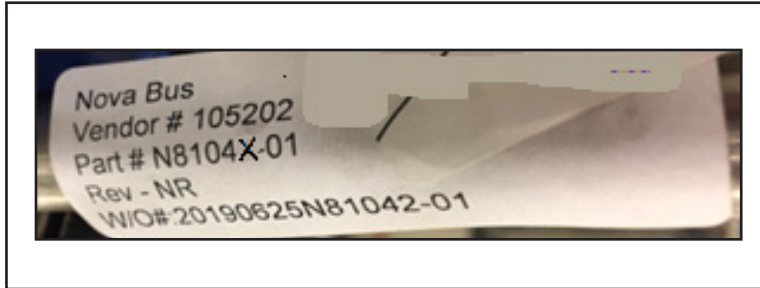


Figure 2 - Example of Label - DO NOT REPLACE PIPE

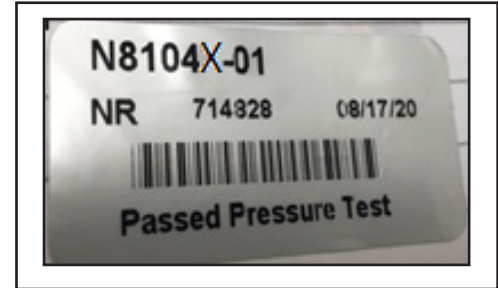


Figure 3 - Example of Label - REPLACE PIPE

- 1.5. According to the inspection result, if 1 or 2 pipe have to be replaced, order replacement parts and proceed with procedure in LEVEL 2.
- 1.6. If the pipe does not need be replaced: this service document is completed. The vehicle can return in service.

LEVEL 2

MATERIAL

For the replacement of pipe N81042-01

MATERIAL			
QTY	PART N°	REV.	DESCRIPTION
1	N85023	A	INSULATION PIPE 7/8" I.D. SLIT
1	N64786	A	INSULATION PIPE 1-5/8" I.D. SLIT
2	N43011	A	BOLT M6X60 YZ TRIV 96H 8.8
2	N20996	X	WASHER FLAT SUPOVS M6 SS
2	N17904	X	WASHER LCK CURV M6 YZ TRIV 96H
1	N80788	B	SUPPORT WOOD BLOCK UPPER
1	N81042-01		PIPE HYDRAULIC ASSY SUPPLY P/S
1	N20397	C	SIKAFLEX 221 WHITE (310ml) (1 container of 310ml per vehicle)
2	N21720	A	FIRESTOP (810ml) (2 containers of 810ml per vehicle)
3	N37749	B	DUAL CLAMP TIE

For the replacement of pipe N81043-01

MATERIAL			
QTY	PART N°	REV.	DESCRIPTION
5	G5007996		CABLE TIE (0657558)
1	N81043-01		PIPE HYDRAULIC ASSY SUPPLY P/S
10	N37749	B	DUAL CLAMP TIE

PROCEDURE TO APPLY

STEP TO DO	Replacement of N81042-01	Replacement of N81043-01	Replacement of N81042-01 & N81043-01
2.1 Drain Fluids	x	x	x
2.2 Replace N81042-01	x		x
2.3 Replace N81043-01		x	x
2.4 Fill Fluids	x	x	x
2.5 Closing	x	x	x



Your configuration may differ

2.1. DRAIN FLUID

- 2.1.1. Park the vehicle on a level surface with the transmission on neutral.
- 2.1.2. Apply the parking brake and set the master control switch to the **stop** position.
- 2.1.3. Set the battery disconnect switch in the battery compartment to the **off** position and lock out the switch.
- 2.1.4. Drain the hydraulic oil.



Refer to the maintenance manual, section 09: *Engine and Cooling*, for the **HYDRAULIC OIL DRAIN PROCEDURE**.

- 2.1.5. If **REPLACING N81042-01**. Drain the engine coolant (**do not drain the cabin coolant**).



Refer to the maintenance manual, section 09: *Engine and Cooling*, for the **ENGINE COOLANT DRAIN PROCEDURE**.

2.2. REPLACE PIPE N81042-01



Unless otherwise specified, retain removed hardware during procedure for later reinstallation.

GET ACCESS

- 2.2.1. Inside the vehicle, to access and be able to remove the pipe N81042-01, remove the following components (see Figure 4):
 - a. The two rear access panels, streetside and curbside.
 - b. The two rear fluorescent lights, streetside and curbside.
 - c. The two rear ceiling rails streetside and curbside. Depending on your configuration, it may be required to remove stanchions, stanchion cups or grabrails.
 - d. The rear ceiling panel. Depending on your configuration, it may be required to remove the escape hatch trim.
 - e. The tunnel.

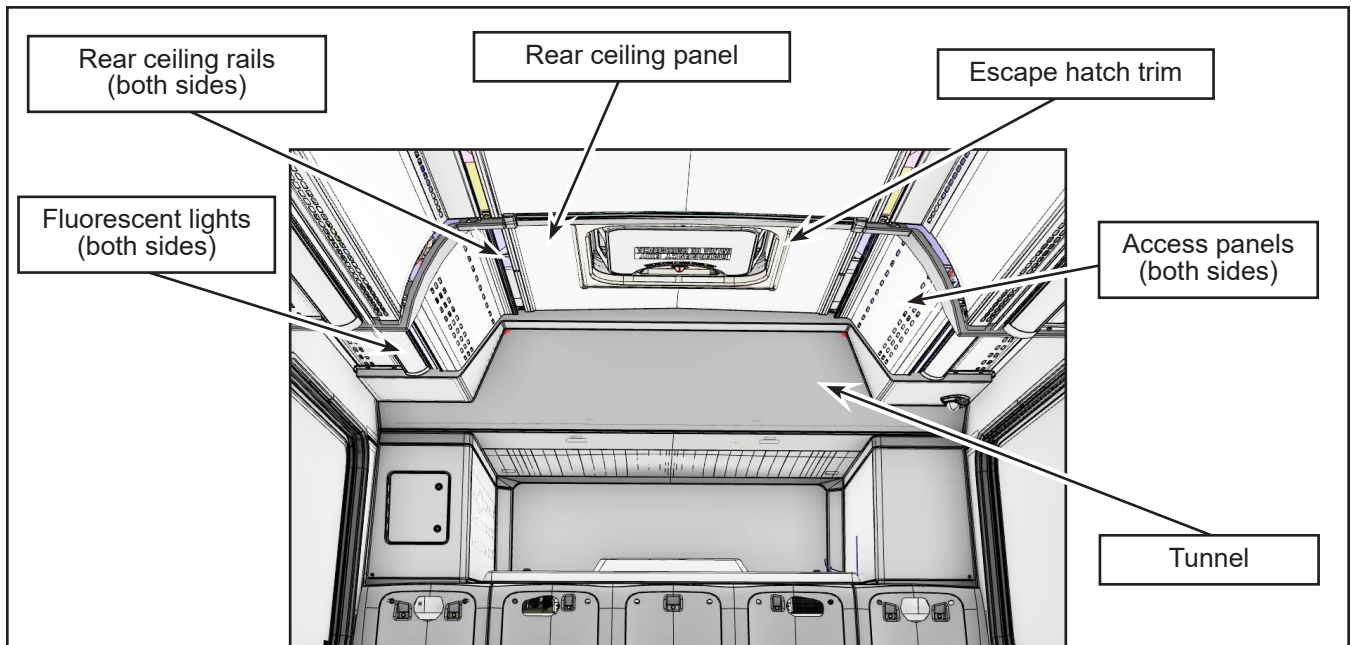


Figure 4 - Components to Remove Inside Passenger Compartment to Access N81042-01

2.2.2. Outside the vehicle, to access and be able to remove the pipe N81042-01, remove the following components (Figure 5):

- a. The radiator canopy and grills.
- b. The rear roof fairing panel, street side.
- c. The lateral air-intake panel.

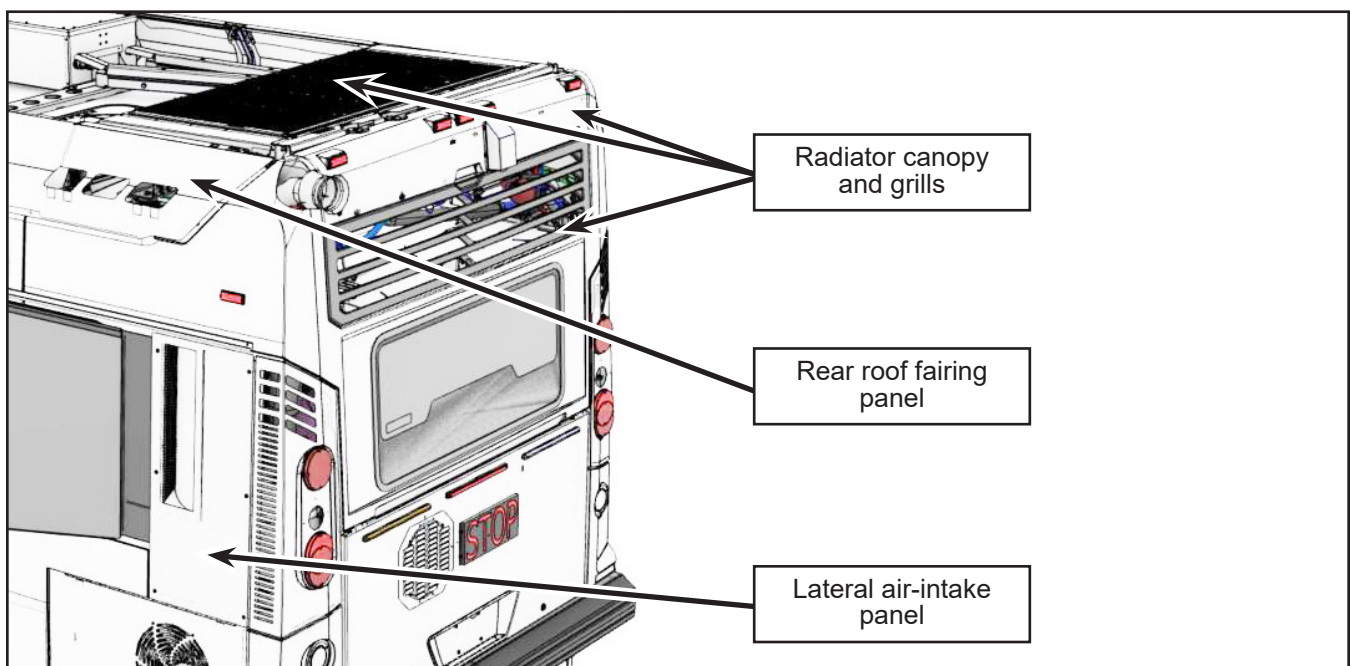


Figure 5 - Components to Remove Outside the vehicle to Access N81042-01

2.2.3. In order to be able to pull out the pipe N81042-01:

- a. In radiator compartment, loosen the two clamps with Belleville washers on the large blue cooling hose and slide down onto the black pipe (Figure 6.a) (**attn: coolant may spill**). Loosen the clamp with Belleville washers on the small blue cooling hose and remove from the pipe (Figure 6.b) (**attn: coolant may spill**).

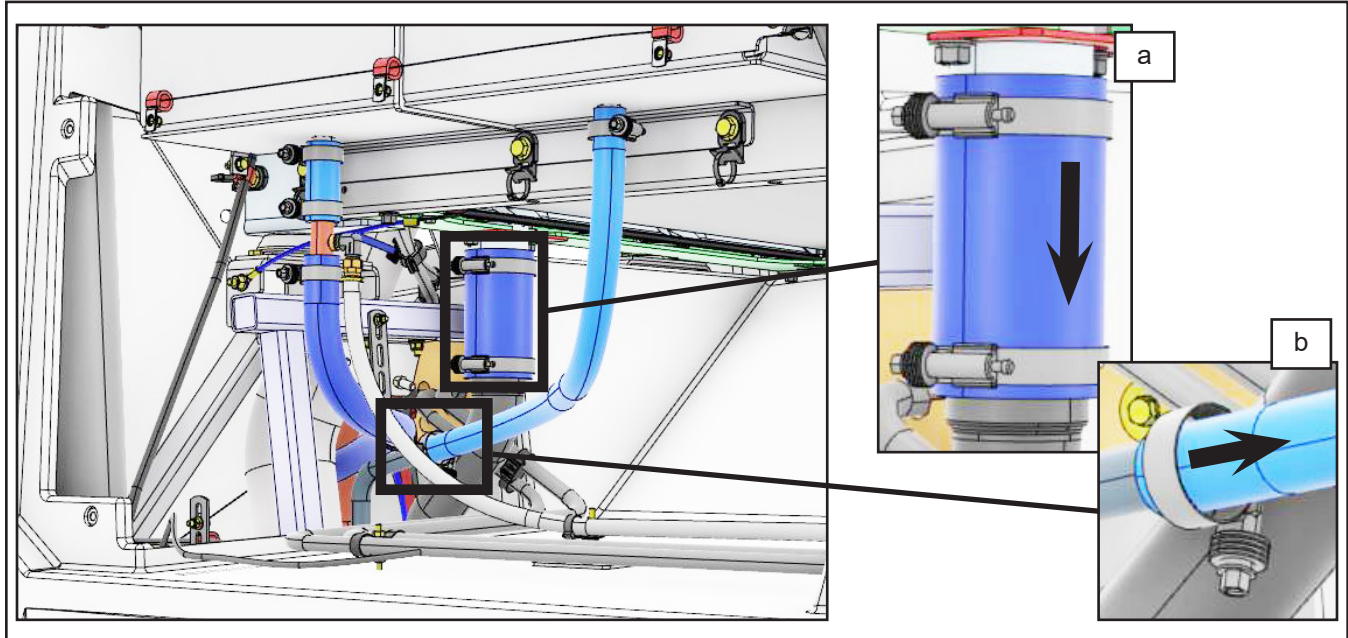


Figure 6 - Cooling Hoses to Disassemble

- b. Move away Charge Air Cooler pipe from structure by remove the 2 nuts holding the pipe mount to the structure (Figure 7).

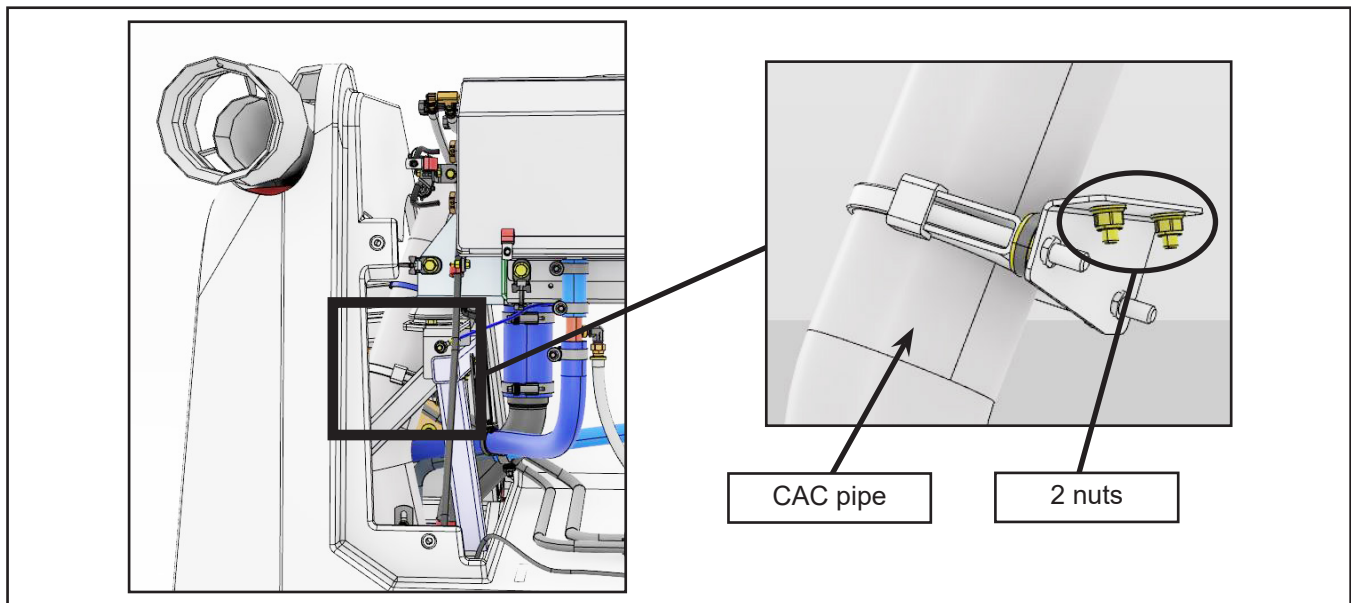


Figure 7 - Remove 2 Nuts Holding CAC Pipe to the Structure

- c. Finally, on the right side of the vehicle, remove the P-clamp to free the cooling pipe (Figure 8).

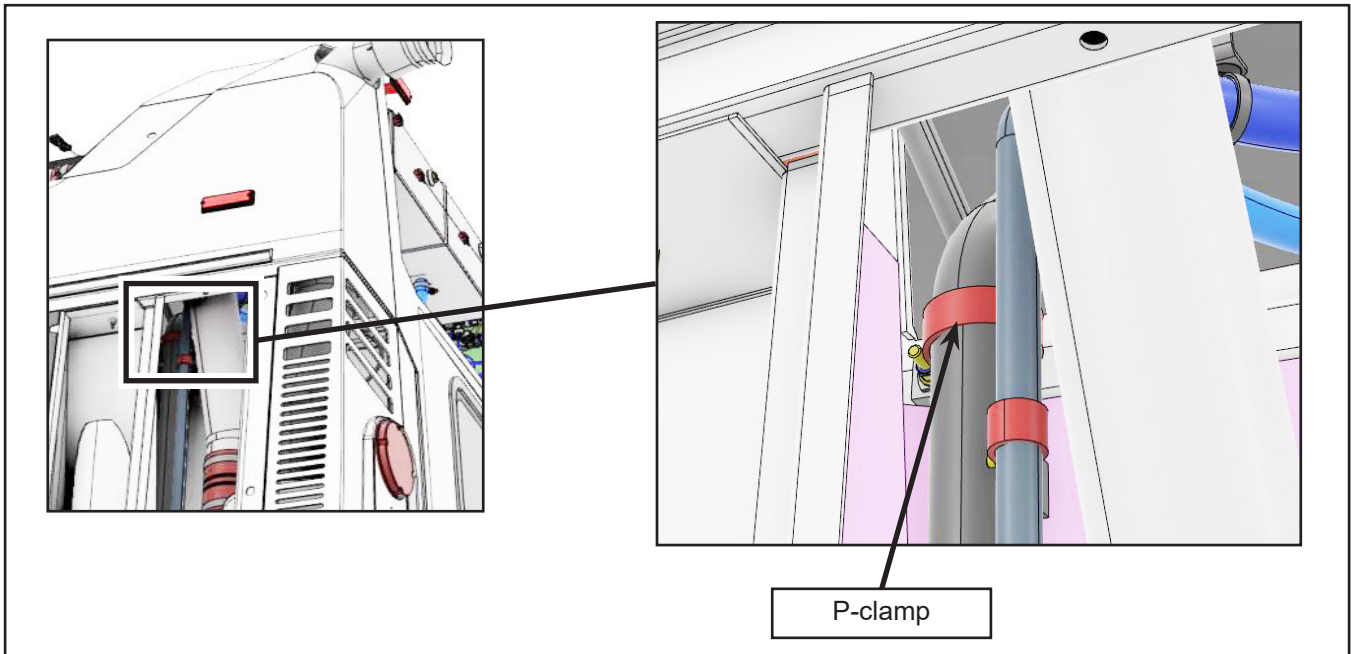


Figure 8 - Remove P-clamp Holding Cooling Pipe

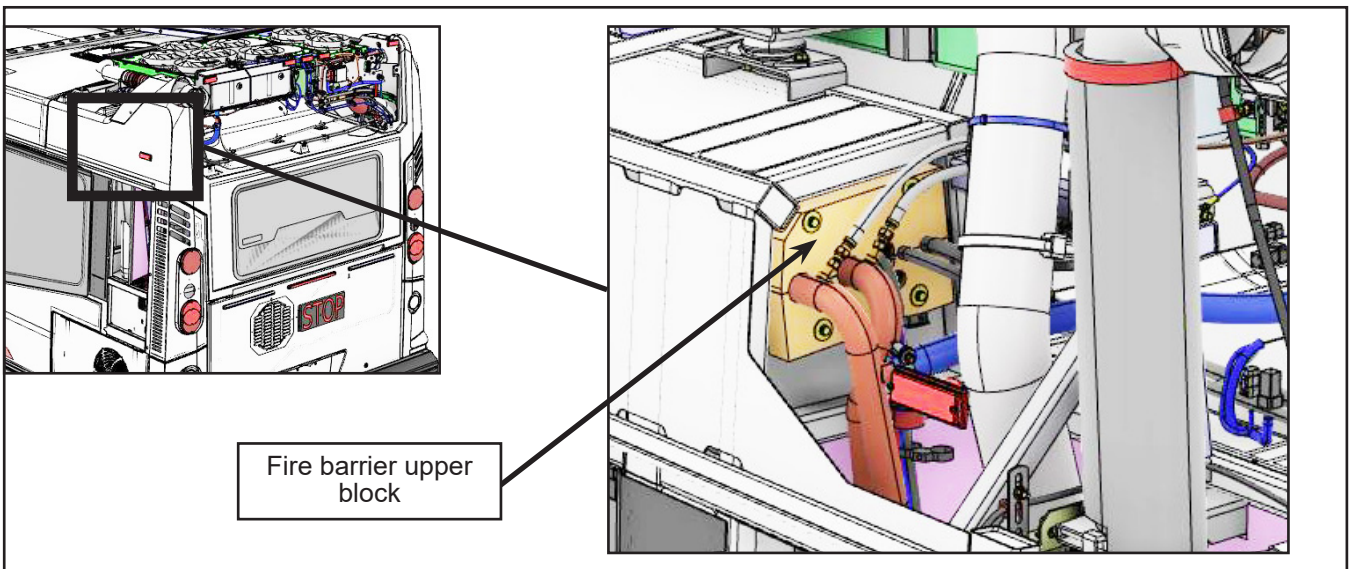


Figure 9 - Fire Barrier Upper Block Location in Radiator Compartment

FIRE BARRIER OPENING

2.2.4. In order to pull out N81042-01, an opening must be done in the fire barrier. Locate the fire barrier between the radiator compartment (Figure 9) and the cabin (Figure 10).

- a. The barrier is sealed on both sides and made of 2 blocks. Access the upper block by removing/cutting the Fire Stop sealant on the radiator side and the white Sikaflex sealant on the cabin side. **Be careful not to damage any hoses, pipes or electrical components.**

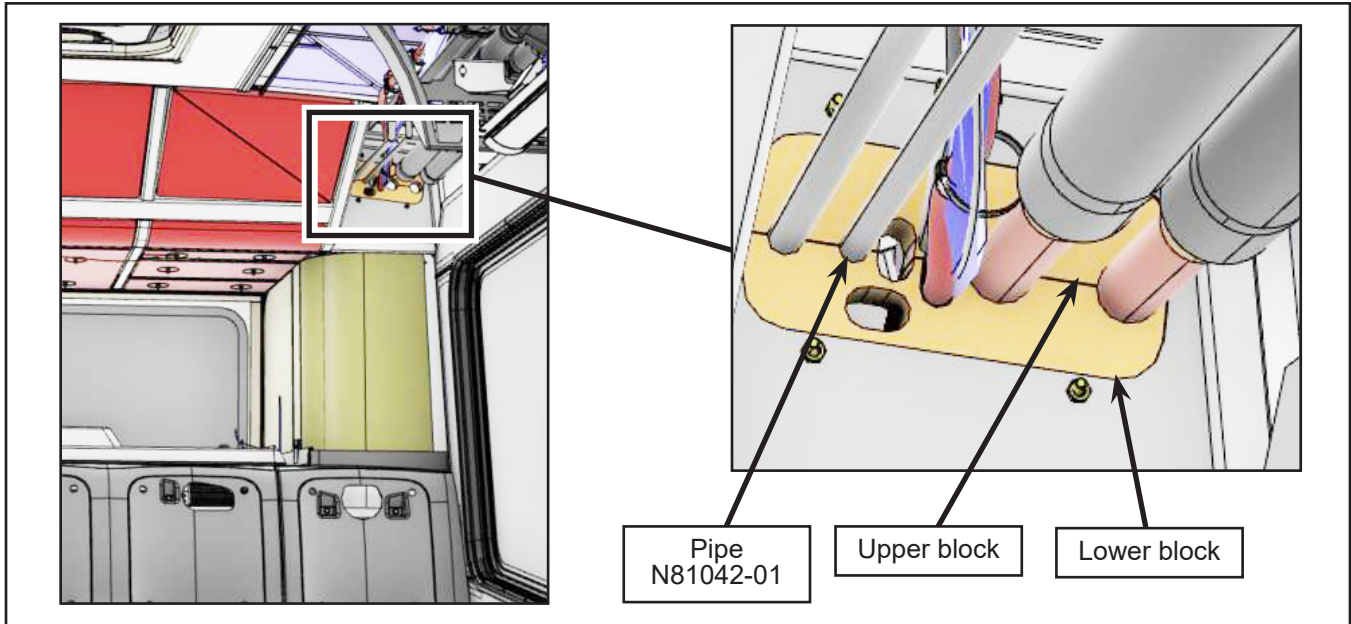


Figure 10 - Fire Barrier Upper Block Location in the Passenger Compartment

- b. Remove the upper block by removing the 2 bolts, 2 lock washer and 2 flat washers (Figure 11). The block will be hard to remove and may break. Discard block and hardware.

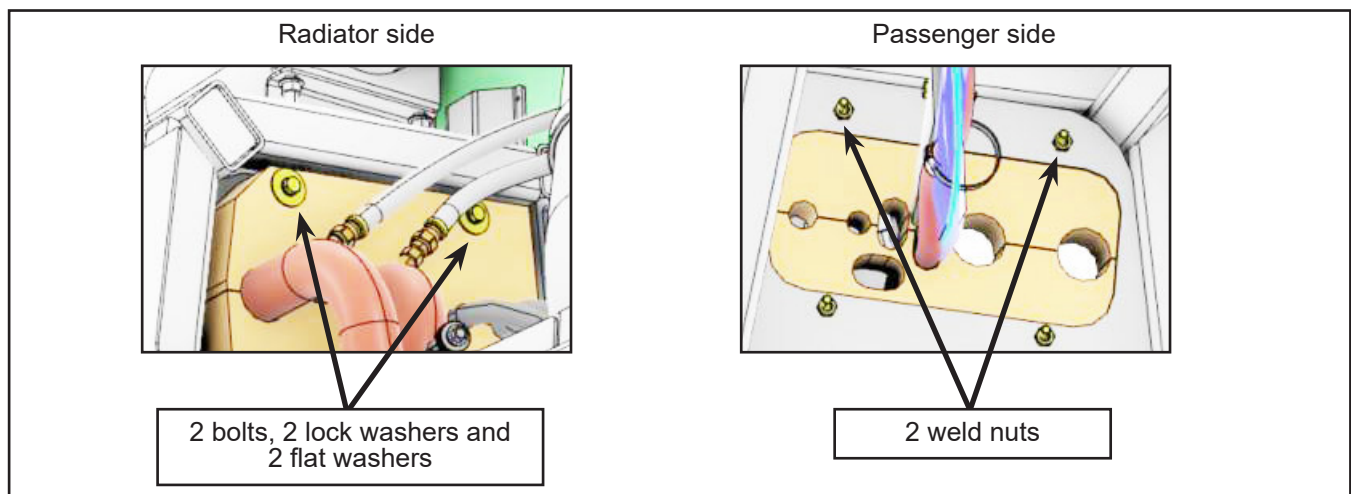


Figure 11 - Remove Upper Block

PIPE N81042-01 REPLACEMENT

2.2.5. Replace the pipe N81042-01:

- a. In the radiator compartment, cut the 3 dual clamp ties to free the pipe N81042-01 (Figure 12).

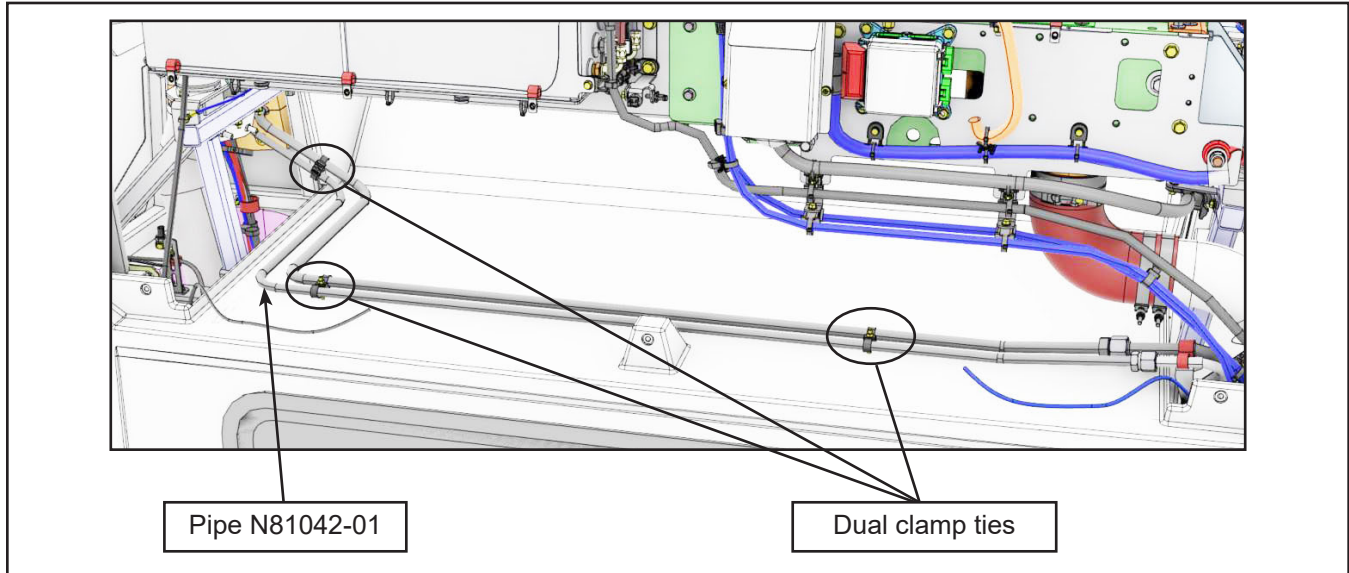


Figure 12 - Remove 3 Dual Clamp Ties

- b. In the cabin, if needed, remove insulation on pipe and unscrew the 2 fittings at both ends of pipe N8142-01 and remove from the vehicle (**hydraulic oil may spill**). Discard the removed pipe.
- c. Install the new pipe N81042-01 and torque at the torque value of 48 ft-lb (65 N·m).



NOTE

Refer to the maintenance manual, section 99: *General Practices*, for **ORS-TYPE FITTING INSTALLATION**.

- d. Reinstall new insulation N85023 / N64786 over pipes.
- e. Secure the new pipe N81042-01 in the radiator compartment with 3 new dual clamp ties N37749 (refer to Figure 12).

FIRE BARRIER CLOSING

2.2.6. To properly seal the fire barrier, ensure that all surfaces are clean and free of dust or debris on both sides and follow the procedure:

- a. On the side of the radiator compartment, put the pipes, hoses and cables back in place on the lower wood block and apply white sealant SikaFlex 221 N20397 on top of the block and around and between each pipe, hose or electrical cable. **Be sure to fill every gap** (Figure 13).

- b. Apply also white sealant SikaFlex 221 on stainless steel plate where the upper block will sit (See green area in Figure 13).



Figure 13 - Apply White Sealant SikaFlex 221

- c. Install the new upper block N80788 with 2 new bolts N43011, 2 new lock washers N17904 and 2 new flat washers N20996 (refer to Figure 11). Use a pry bar (or similar tool) between the superior block and the structure to help properly sit the upper block on top of the lower block and be able to insert the bolts into the stainless steel plate weld nuts (Figure 14). Tighten bolts.

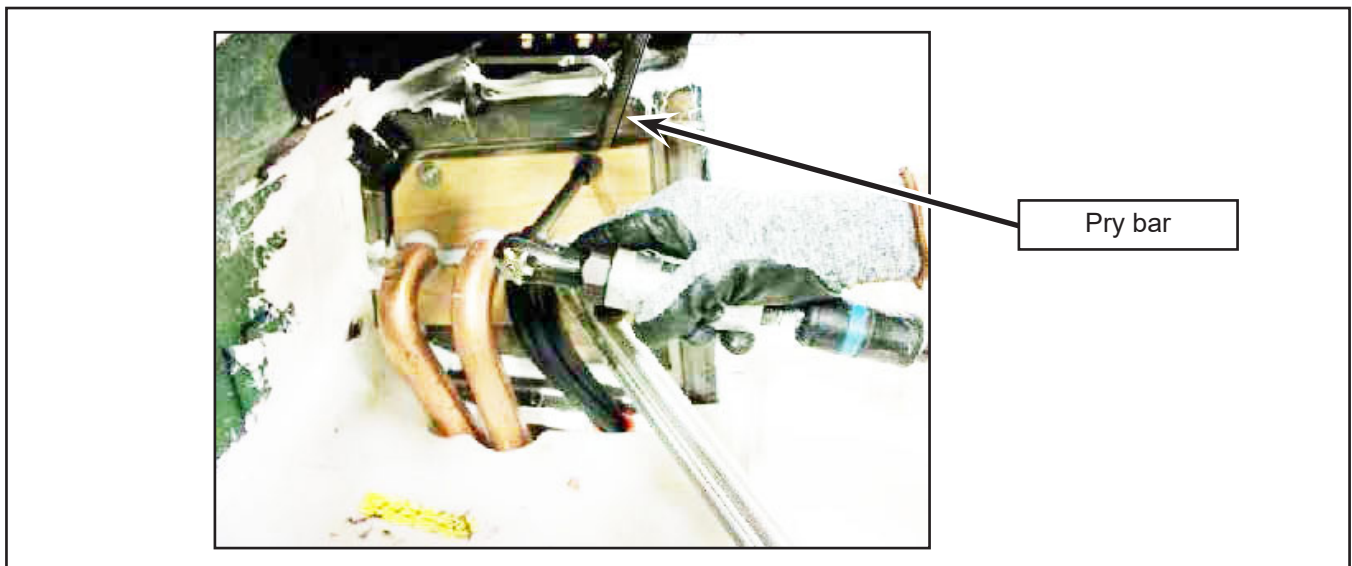


Figure 14 - Force the seat on the inferior block with a pry bar and tighten bolts

- d. Verify the application of the sealant between the wood blocks, around pipes, hoses and electrical cables. Add white sealant SikaFlex 221 if necessary (Figure 15).



Figure 15 - Verify the Sealant Application

- e. Inside the cabin, cover blocks, bolts and weld nuts with white sealant SikaFlex 221 (Figure 16). Smooth the surface.



Figure 16 - Cover Blocks with White Sealant SikaFlex 221

- f. In the radiator compartment, cover blocks, bolts and washers with sealant Fire Stop N21720 (Figure 17). Be sure to apply around and between pipes, hoses and electrical cables. Smooth the surface.



Figure 17 - Cover Blocks with Fire Stop Sealant

REINSTALLATION

2.2.7. Reinstall cooling pipes and CAC pipe:

- On the right side of the vehicle, install the P-clamp removed in **step 2.2.3.c** to secure the cooling pipe.
- In the radiator compartment, install the 2 nuts removed in **step 2.2.3.b** to secure the Charger Air Cooler pipe to the structure. Torque at the torque value of 24.4 ± 1.5 ft-lb (33 ± 2 N·m).
- Install the 2 blues cooling hoses removed in **step 2.2.3.a** with the 3 clamps with Belleville washers.



NOTE

Refer to the maintenance manual, section 99: *General Practices*, for **CLAMP WITH BELLEVILLE WASHERS INSTALLATION**.

2.3. REPLACE PIPE N81043-01

**NOTE**

Unless otherwise specified, retain removed hardware during procedure for later reinstallation.

2.3.1. Outside the vehicle, to access pipe N81043-01, remove the following components (see Figure 18):

- a. The radiator canopy and grills.
- b. The rear left side panel.
- c. The rear left corner panel.

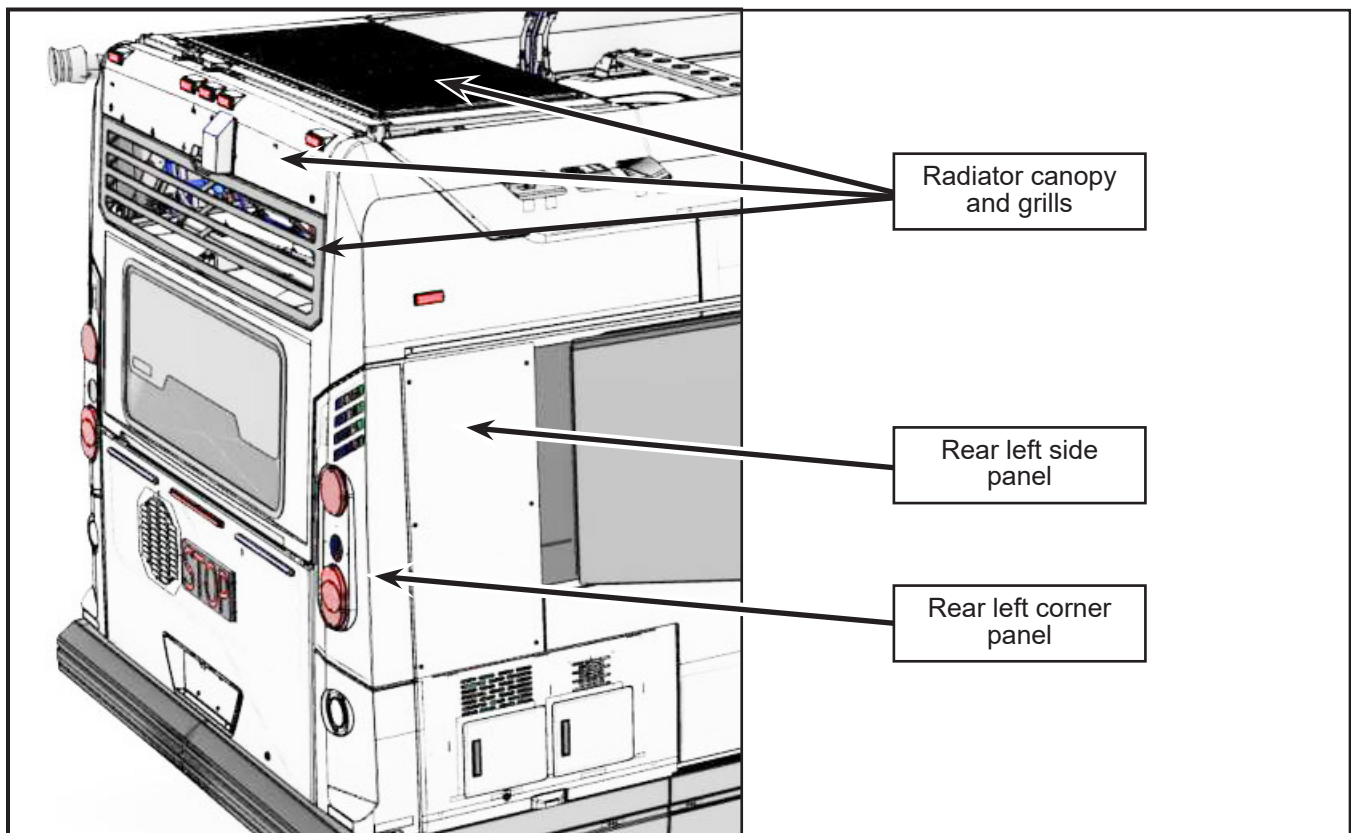


Figure 18 - Components to Remove to Access Pipe N81043-01

2.3.2. Remove the 2 P-clamps securing the pipe N81043-01 (Figure 19).

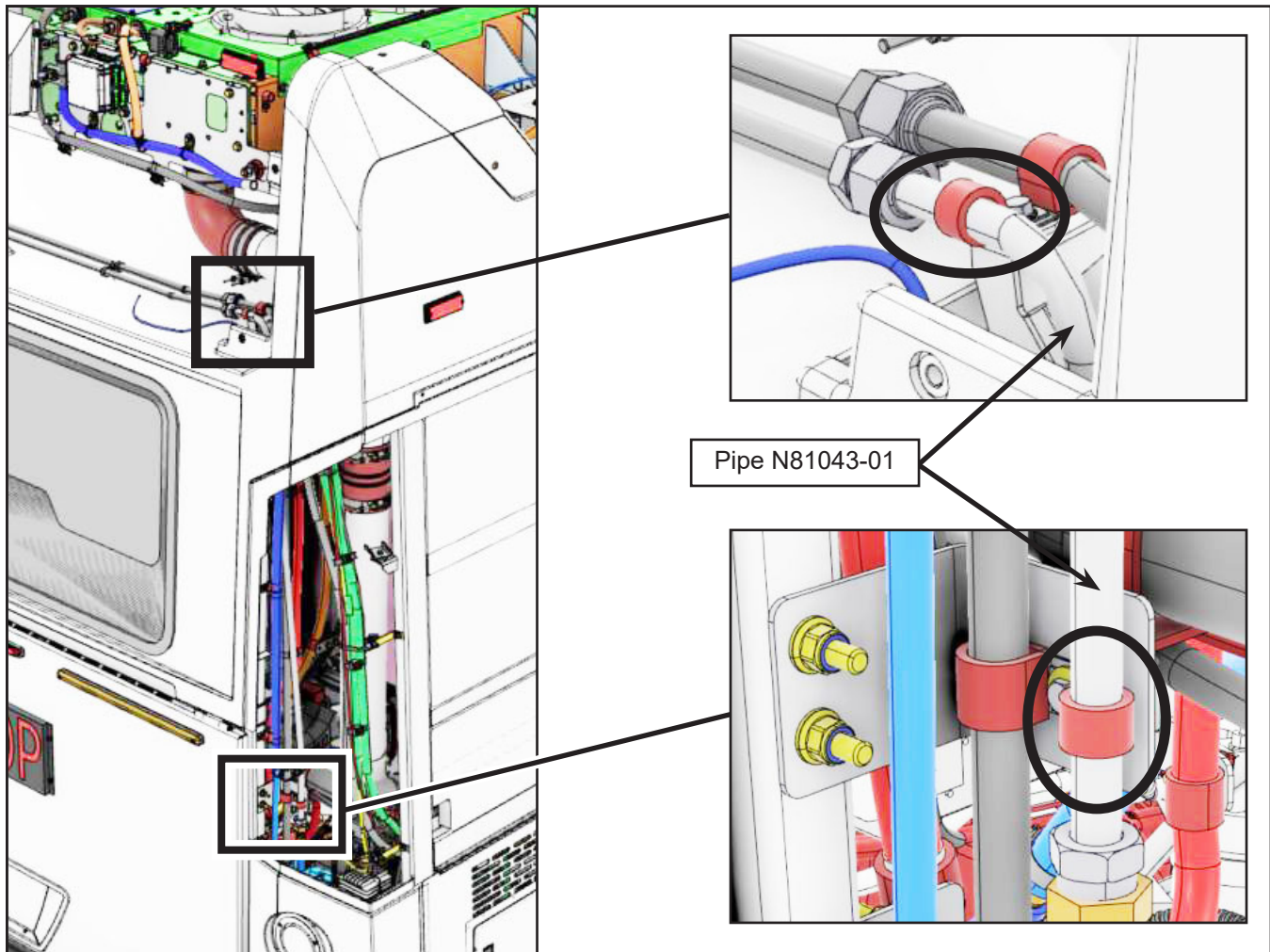


Figure 19 - Remove P-clamps to Free Pipe N81043-01

2.3.3. Replace the pipe N81043-01:

- Cut any cable ties or dual cable ties securing surge tank hoses on pipe N81043-01. Note their position for reinstallation.
- Unscrew the 2 fittings at both ends of pipe N8143-01 and remove from the vehicle (**hydraulic oil may spill**). Discard the removed pipe.
- Install the new pipe N81043-01 and torque at the torque value of 48 ft-lb (65 N·m).



NOTE

Refer to the maintenance manual, section 99: *General Practices*, for **ORS-TYPE FITTING INSTALLATION**.

- Install P-clamps removed in **step 2.3.2**.
- Secure surge tank hoses on the new pipe N81043-01 with 10 new dual clamp ties N37749 replacing the ones removed in **step 2.3.3.a**. Use also cable ties G5007996 as needed.

2.4. FILL FLUIDS

- 2.4.1. Fill the engine coolant if it was drained at **step 2.1.5**.



Refer to the maintenance manual, section 09: Engine and Cooling, for ENGINE COOLANT FILLING PROCEDURE.

- 2.4.2. Fill the hydraulic oil.



Refer to the maintenance manual, section 09: Engine and Cooling, for HYDRAULIC OIL FILLING PRECEDURE.

- 2.4.3. Start the engine and check for engine coolant or hydraulic oil leaks.
2.4.4. Stop the engine.

2.5. CLOSING

- 2.5.1. Depending on your situation, close the inside and/or the outside of the vehicle by installing all removed components in:
- step 2.2.1**
 - step 2.2.2**
 - step 2.3.1.**
- 2.5.2. The vehicle can return in service. ❖