

REFERENCE:	Nova Bus Manuals
SECTION:	14: Heating and Ventilation
RS N°:	MQR 7621-2662
EFFECTIVE IN PROD.:	LE84 (2022NO)
TC RECALL N°:	N/A
NHTSA RECALL N°:	23V763

APPLICATION DEADLINES: N/A
CLAIM REFERENCE NUMBER: SR5508

SUBJECT:	BCC - A/C Roof Unit - High Voltage Box
JUSTIFICATION:	The brackets retaining the A/C Roof Unit High Voltage Box to the roof could fail due to high mechanical loads. The High Voltage Box may separate from the vehicle, increasing the risk of injury or crash.

LEVEL	DESCRIPTION	DIRECT CHARGES		TIME
		LABOUR	MATERIAL	
1	Contact your BCC (Bus Climate Control) representative to have the Corner Bracket Stiffener Installation (Y66-14212) repair performed.	BCC	BCC	1.5 h
2	–	–	–	–

MATERIAL REQUIRED PER VEHICLE

QTY	PART N°	REV.	DESCRIPTION
HOUSTON			
1	Y19-RET20-00*	nd	BCC - Kit, Corner Bracket Stiffener Installation WHITE
TRIMET			
1	Y19-RET20-00*	nd	BCC - Kit, Corner Bracket Stiffener Installation WHITE
NYCT			
1	Y19-RET20-01*	nd	BCC - Kit, Corner Bracket Stiffener Installation BLUE

*KIT WILL BE SUPPLIED BY BCC, DO NOT ORDER.

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	2023-12-19	Initial release	Annie St-Jacques

APPROVED BY:

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CLIENT	ORDER	ROAD NUMBER		VIN (2NVY/4RKY...)		QTY
		FROM	TO	FROM	TO	
Houston Texas - Metro	LC91	2500	2501	L82J4L977	L82J0L977	2
Houston Texas - Metro	LC92	2502	2534	L82J3L977	L82J3L977	33
New York City Transit - NYCT - New York	LD06	8755	8758	L82J3L977	L82J3L977	4
New York City Transit - NYCT - New York	LD08	8759	8963	L82J5M977	L82J8N977	205
New York City Transit - NYCT - New York	LE84	8964	8966	L82J7N977	L82J7N977	3
New York City Transit - NYCT - New York	LE84	8972	8972	L82J7N977	L82J7N977	1
New York City Transit - NYCT - New York	LE84	8977	8979	L82J7N977	L82J7N977	3
New York City Transit - NYCT - New York	LE84	8985	8985	L82J7N977	L82J7N977	1
New York City Transit - NYCT - New York	LE84	8987	9005	L82J7N977	L82J7N977	19
New York City Transit - NYCT - New York	LE84	9007	9010	L82J7N977	L82J7N977	4
New York City Transit - NYCT - New York	LE84	9012	9014	L82J7N977	L82J7N977	3
New York City Transit - NYCT - New York	LE84	9017	9017	L82J7N977	L82J7N977	1
New York City Transit - NYCT - New York	LE84	9019	9020	L82J7N977	L82J7N977	2
New York City Transit - NYCT - New York	LE84	9022	9022	L82J7N977	L82J7N977	1
New York City Transit - NYCT - New York	LE84	9024	9025	L82J7N977	L82J7N977	2
New York City Transit - NYCT - New York	LE84	9027	9029	L82J7N977	L82J7N977	3
New York City Transit - NYCT - New York	LE84	9031	9031	L82J7N977	L82J7N977	1
New York City Transit - NYCT - New York	LE84	9033	9038	L82J7N977	L82J7N977	6
New York City Transit - NYCT - New York	LE84	9040	9046	L82J7N977	L82J7N977	7
New York City Transit - NYCT - New York	LE84	9048	9049	L82J7N977	L82J7N977	2
New York City Transit - NYCT - New York	LE84	9051	9051	L82J7N977	L82J7N977	1
New York City Transit - NYCT - New York	LE84	9060	9061	L82J7N977	L82J7N977	2
New York City Transit - NYCT - New York	LE84	9063	9063	L82J7N977	L82J7N977	1
New York City Transit - NYCT - New York	LE84	9067	9067	L82J7N977	L82J7N977	1
Trimet - Portland, Oregon	LD14	4501	4501	S92J3M977	S92J3M977	1
Trimet - Portland, Oregon	LD15	4502	4531	S92J6M977	S92J7N977	30


**NOTE**

The Corner Bracket Stiffener Installation Instructions in Annex A was published and transmitted to Nova Bus by BCC (Bus Climate Control). Nova Bus cannot be held responsible for its content.

PROCEDURE

Contact your BCC representative to have the Corner Bracket Stiffener Installation (Y66-14212) repair performed. ❖


ANNEX A

 <p>Bus Climate Control</p>	<p>Drawing No. Y66-14212</p>	<p>Rev. 4</p> <p>Page 1 of 9</p>
<p>Title: Corner Bracket Stiffener Installation Instructions</p>	<p>Initial ECN# WF-665883</p>	<p>ECN Date: 20NOV2023</p>

Subject: Y66-14212 Corner Bracket Stiffener Installation Instructions

Tool List:

- Cordless drill
- 17/64" drill bit
- Clamp
- Wrench
- Socket Set
- Torque Wrench (not Shown)




Labor:

Allowable Labor Time
1.5 hrs.


Safety: SPECIFIC WARNINGS AND CAUTIONS

The first step towards reducing the fall hazard is by installing a fall protection system overhead to stop a worker from falling and hitting the ground. The typical solution is a rigid fall arrest system with a self-retracting lifeline. This includes a steel track with a trolley mounted overhead down the center or spine of the bus. This gives a maintenance worker access to maintain equipment on the roof of the bus without the risk of falling off the side and being injured or worse killed from the fall.

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WARNING

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Title: Corner Bracket Stiffener Installation Instructions	Initial ECN# WF-665883	ECN Date: 20NOV2023

⚠ DANGER

Insulation resistance test involves working with high voltage levels which can be dangerous if not performed properly and safely. The personnel performing the test must have been properly trained and aware of the risks involved. During this test there should always be at least two trained persons present. It is important to make sure nobody is inside the bus or touching the bus outside during this test. Proper personal protective equipment should be worn. After required connections and/or modifications are made to the electrical system, it is suggested that this test be performed at lower safe voltage levels (such as 50V) once, to make sure everything is connected properly before applying the required high voltage of 1000V.

Compressor drive is powered by 3 phase, 460 VAC supply.

Be aware of **HIGH VOLTAGE VAC/VDC** supplied to this equipment from the vehicle high voltage system and that the equipment may start automatically. Do not attempt to service this equipment without proper training.

Electrical power within this equipment is sufficiently high enough to cause serious injury or death.

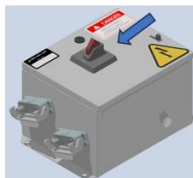
⚠ DANGER


Before servicing this equipment:

1. Refer to OEM manuals/Procedures to properly ensure the main disconnect from the vehicle high voltage power source is OFF, vehicle engine/drive shaft system is locked out.
2. Both AC and DC power is used in this equipment. Verify both AC and DC voltage to confirm there is no power before working on any circuit or electrical component.
3. Apply lockout tagout device. Once the Bus is fully powered down, open the back latch and locate the disconnect box. This is the lockout device that will hold the energy isolating device in a SAFE/OFF position. Once the rotary switch on the disconnect box is rotated to an OFF position, use a tagout device (padlock) and secure it on the rotary switch. Also, the tag on the tagout device should include the name of the employee who tagged it. That way, if anyone has questions as to why the equipment is locked out, they know who to ask.

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Rotary switch on the disconnect box



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⚠ DANGER

Some areas of the HIGH VOLTAGE Troubleshooting procedures may require system power to be “ON”. DO NOT ATTEMPT TO SERVICE THIS EQUIPMENT WITHOUT PROPER TRAINING. Electrical power within this equipment is sufficiently high enough to cause serious injury or death. Compliance of all local safety guidelines, as well as local electrical codes MUST be followed.

Some areas of the HIGH VOLTAGE Troubleshooting procedures may require system power to be “ON”. DO NOT ATTEMPT TO SERVICE THIS EQUIPMENT WITHOUT PROPER TRAINING. Electrical power within this equipment is sufficiently high enough to cause serious injury or death. Compliance of all local safety guidelines, as well as local electrical codes MUST be followed.

During all high voltage tests, at least two properly trained persons should be present. Properly rated Personal Protective Equipment (PPE) such as electrical shock resistant safety shoes, arc flash safety glasses, electrical insulating safety gloves, protective helmets and flame resistant (FR) clothing should be used.

During all high voltage tests, at least two properly trained persons should be present. Properly rated Personal Protective Equipment (PPE) such as electrical shock resistant safety shoes, arc flash safety glasses, electrical insulating safety gloves, protective helmets and flame resistant (FR) clothing should be used.

⚠ WARNING

Since proper operation of contactors cannot be guaranteed, service personnel must always test accessible terminals of high voltage devices using appropriate diagnostic tools before executing service procedures. Use a voltage measuring device to verify that high voltage (>60VDC or 30VAC RMS) is not present at the terminals of the device to be serviced.

High voltage electronic components are to be removed and replaced but not modified in the field.

⚠ WARNING


Fall hazard is present while working with high voltage equipment on a scaffolding or ladder. Proper fall protection as well as adequate space between test equipment/Unit Under Test (UIT) and surrounding objects/areas.

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⚠ WARNING

⚠ WARNING

⚠ WARNING

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Parts:

BCC PART NO.: Y19-RET20-00			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	Y24-01421-00	BRACKET, BOX CORNER
2	1	Y24-01422-00	BRACKET, BOX CORNER
3	2	Y24-01422-01	BRACKET, BOX CORNER
4	8	34-00655-08	SCREW, CAP HEX HEAD 1/4-20 S.S. - 1.00 in
5	8	34-00667-11	NUT, SELF-LOCKING 1/4 - 20UNC, STEEL
6	16	34-00662-11	WASHER, PLAIN, MEDIUM, 1/4
7	1	Y66-14212	CORNER STIFFENER BRACKET INSTALL IN
10	AS REQD	02-00067-00	SEALANT, CAULKING

WHITE

BCC PART NO.: Y19-RET20-01			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	Y24-01421-02	BRACKET, BOX CORNER
2	1	Y24-01422-02	BRACKET, BOX CORNER
3	2	Y24-01422-03	BRACKET, BOX CORNER
4	8	34-00655-08	SCREW, CAP HEX HEAD 1/4-20 S.S. - 1.00 in
5	8	34-00667-11	NUT, SELF-LOCKING 1/4 - 20UNC, STEEL
6	16	34-00662-11	WASHER, PLAIN, MEDIUM, 1/4
7	1	Y66-14212	CORNER STIFFENER BRACKET INSTALL INSTRUCTIONS
10	AS REQD	02-00067-00	SEALANT, CAULKING

BLUE

Part


APPLY SIKAFLEX BETWEEN BRACKET AND BOX, WITH SOME SIKAFLEX GOING INTO THE BOLT HOLE

P/N	Y24-01421-00 White	Y24-01422-01 White	Y24-01422-03 White
	Y24-01421-02 Blue	Y24-01422-03 Blue	Y24-01422-02 Blue

*Ensure kit received includes brackets with correct color to match the HV Box installed.

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APPLY SIKAFLEX BETWEEN BRACKET AND BOX, WITH SOME SIKAFLEX GOING INTO THE BOLT HOLE

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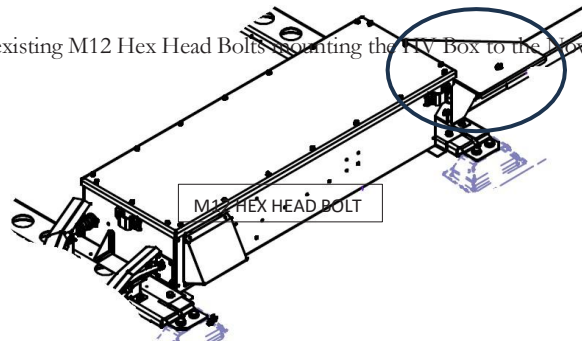
Procedure:

1. Verify unit and HV is powered off and lockout system is in place (refer to Operation and service Manual for important General Safety Notices and Operating/Maintenance Precautions)
2. Remove HV Box cover by removing M6 Hardware (P/N 34-60068-20) to gain internal access to the inside of the box. (qty of 20, retain hardware)

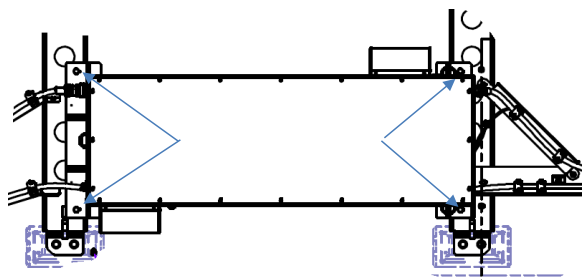



3. (Optional) Remove and retain the OEM cable cover in the front of the HV box (compressor side). If necessary, remove external brackets and retain hardware.

4. Remove and retain existing M12 Hex Head Bolts mounting the HV Box to the Nova Roof Mounting Rails (qty of 4).

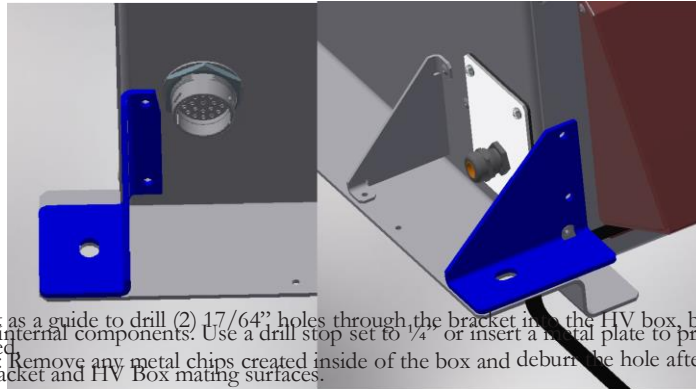


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- Install corner bracket as shown, align stiffener bracket slot to existing HV Box Mounting slot, bolt in place using M12 hardware (removed in step 4 above) and partially tighten to ensure proper positioning and alignment. Note alternative clamping devices (locking pliers, C clamps, etc.) can be used to hold stiffener brackets in place during this step.



- Use the bracket as a guide to drill (2) 17/64" holes through the bracket into the HV box, being careful not to damage any internal components. Use a drill stop set to 1/4" or insert a metal plate to protect harness in area being drilled.
IMPORTANT: Remove any metal chips created inside of the box and deburr the hole after drilling. Verify and or clean bracket and HV Box mating surfaces.

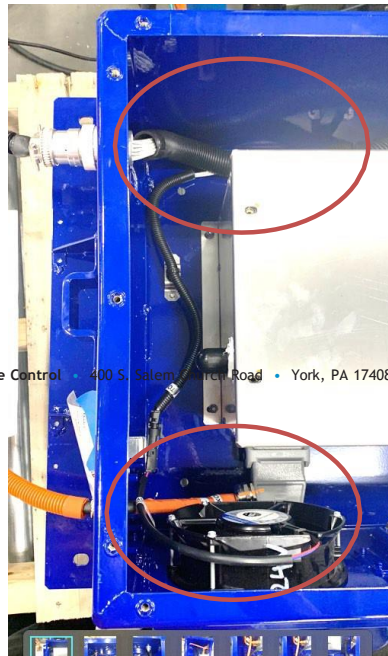


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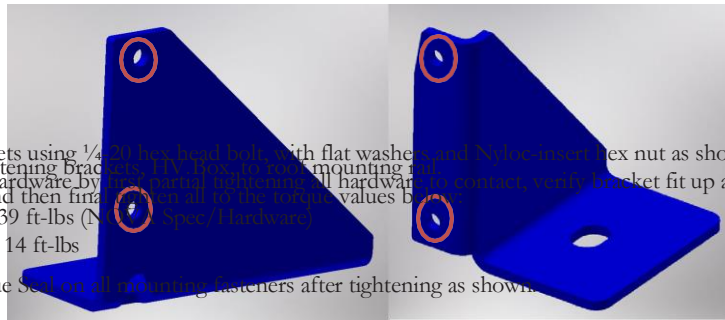
Special Note: Must take caution during drilling holes into HV enclosure to prevent damage to harness or other components. Verify no interferences after bracket installation.



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- Apply Sikaflex P/N 02-00067-00 on stiffener bracket surface that mates to HV Box and newly drilled bolt hole(s). Approx 3/16" [\sim 4.7 mm] bead around perimeter of holes as shown below (red circle).




- Install brackets using 1/4-20 hex head bolt with flat washers and Nylon insert hex nut as shown. Install HV box to bolt mounting flange.
- Tighten all hardware by hand. Tighten all hardware by contact, verify bracket fit up and adjust if necessary, and then finish tightening all to the torque values below.
 - M12 – 39 ft-lbs (NOVA Spec/Hardware)
 - 1/4-20 – 14 ft-lbs
- Apply Torque Seal on all mounting fasteners after tightening as shown.

- Add sika inside box to seal new stiffener bracket hardware cover and spread to ensure seal.
- Reinstall BCC HV box cover qty of 20 and torque to 7.5 ft-lbs.
- Reinstall NOVA provided HV Box/harness cover and hardware, torque to 11 Ft-Lbs [15 Nm] per NOVA spec.
- Remove Lockout-Tagout and return unit back into service.



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REVISION BLOCK						
REV	DESCRIPTION	DATE	BY	CHK'D BY	APP'D BY	AUTH. NO.
1	INITIAL RELEASE	3-Jul-2023	SJP	FAM	FAM	WF-665883
2	ADDED CORNER BRACKET DETAILS	15-Oct-2023	SJP	FAM	FAM	WF-665883
3	REVISED PER FIELD SERVICE INPUT	20-Nov-2023	SJP	FAM	FAM	ECN-15291
4	REVISED SECOND PILOT FEEDBACK	8-Dec-2023	FM/KS	FM	FM/KS	ECN-15291