

REFERENCE:	Nova Bus Manuals
SECTION:	16: 24-Volt Electrical System
RS N°:	MQR 7621-2780
EFFECTIVE IN PROD.:	LF27 (2023AL)
TC RECALL N°:	N/A
NHTSA RECALL N°:	24V174

APPLICATION DEADLINES: N/A CLAIM
REFERENCE NUMBER: SR5566

SUBJECT:	Engine electric starting circuit
JUSTIFICATION:	With the Battery Disconnect Switch in the OFF position the engine may be started, increasing the risk of injury to anyone nearby the engine compartment during maintenance operations.

LEVEL	DESCRIPTION	DIRECT CHARGES		TIME
		LABOUR	MATERIAL	
1	Modify the engine electrical circuit with additional wiring and relay. This modification of the electrical circuit will provided the intended operation of the Battery Disconnect Switch.	Nova Bus	Nova Bus	6h
2	-	-	-	-

MATERIAL REQUIRED PER VEHICLE

QTY	PART N°	REV.	DESCRIPTION
LEVEL 1			
1	N632001301	-	Wire kit
1	N49576175	-	Circuit Breaker assembly
4	N32018	B	Screw M6 X 12
4	N11183	C	Flat washer M6
4	N17904	X	Lock washer M6
LEVEL 2			
-	-	-	-

Materials will be available within 106 days once your order has been placed.

To order, please contact novabus.parts@volvo.com

Or by phone for CANADA 1-800-771-6682, for USA 1-877-999-8808

Specify document number, quantity of parts required and shipping address.

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	2024MA15	Initial release	Luc Carignan

APPROVED BY:

Jose David Montoya

Signature numérique de Jose David

Montoya

Date : 2024.05.15 09:37:55 -04'00'

PAGE 1 OF 18

CLIENT	ORDER	ROAD NUMBER		VIN (2NVY/4RKY...)		QTY
		FROM	TO	FROM	TO	
██████████	LE92	2221	2247	██████████	██████████	27
██████████	LF26	2301	2309	██████████	██████████	9

**WARNING**

FOLLOW YOUR INTERNAL SAFETY PROCEDURES.

PROCEDURE

- 1.1. Park the vehicle on an even surface with the transmission on neutral.
- 1.2. Open the battery compartment access door.
- 1.3. Set the battery disconnect switch in the battery compartment to the **off** position.
- 1.4. Open all the engine compartment access door.
- 1.5. Apply the parking brake and set the master control switch to the **Run** position.
- 1.6. Make sure no one is around the engine area and start the vehicle.
- 1.7. Let the vehicle run until the super capacitor runs out of charge (approximately 30 seconds before the vehicle stop).
- 1.8. Set the master control switch to the **stop** position.
- 1.9. Open IB compartment access door. See Figure 1.

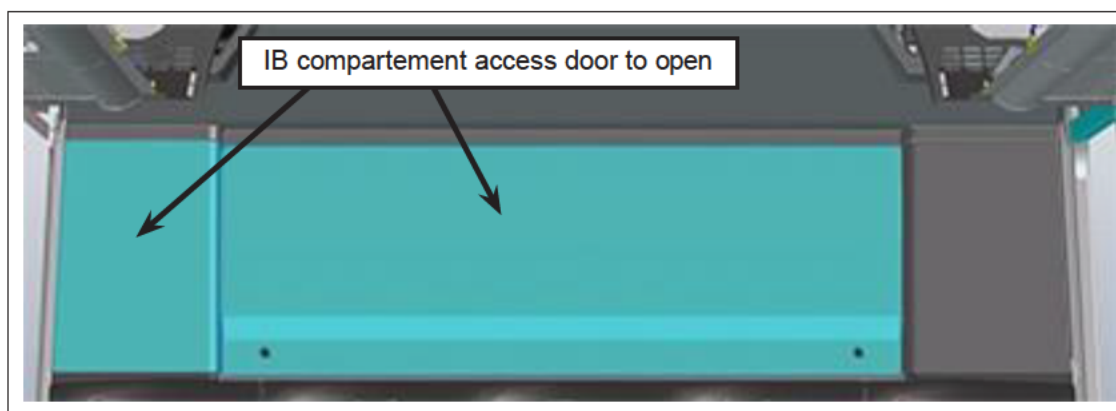


Figure 1 - IB Compartment Access Door to open

- 1.10. Disconnect connector IB-X99QB from the Super Capacitor. See Figure 2.

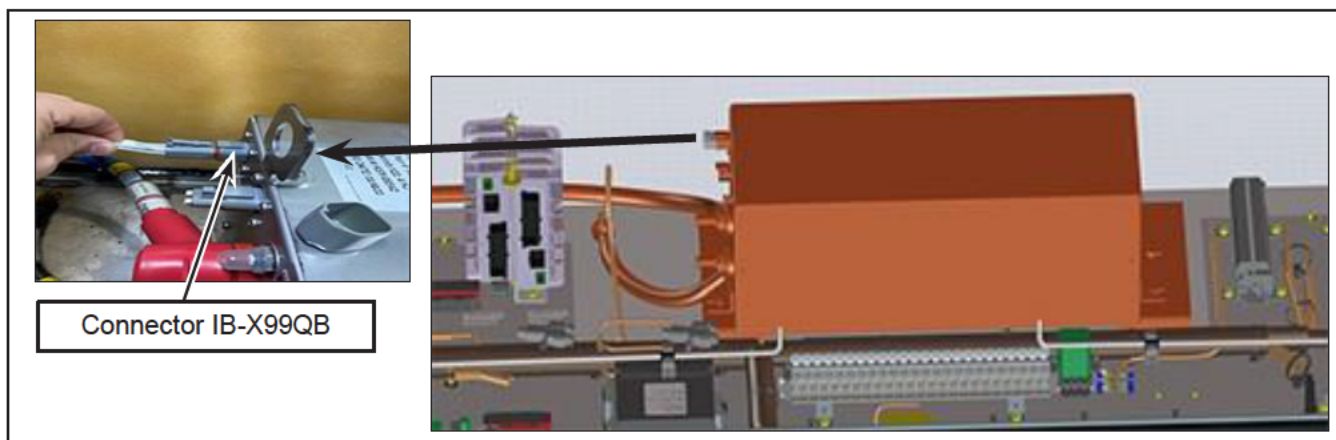


Figure 2 - Super Capacitor Connector IB-X99QB

- 1.11. Install the N49576175 circuit breaker assembly on the IB electrical panel using N32018 M6 screws, N11183 M6 washer and N17904 M6 lock washer. See Figure 3.

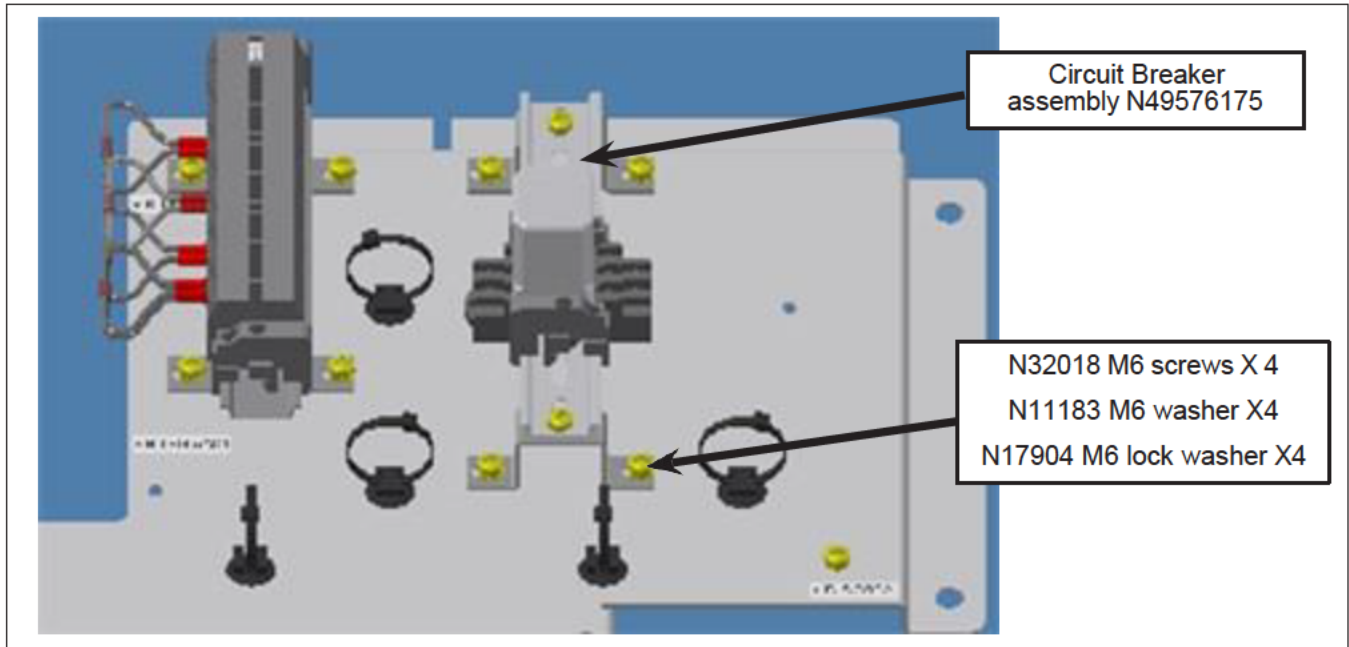


Figure 3 - N49576175 Circuit Breaker Assembly Installation

- 1.12. Disconnect connector IB-X6499A.
- 1.13. Remove and tapeback wire 99-224/RD from connector IB-SC99E and IB-X6499A. See Figure 4.

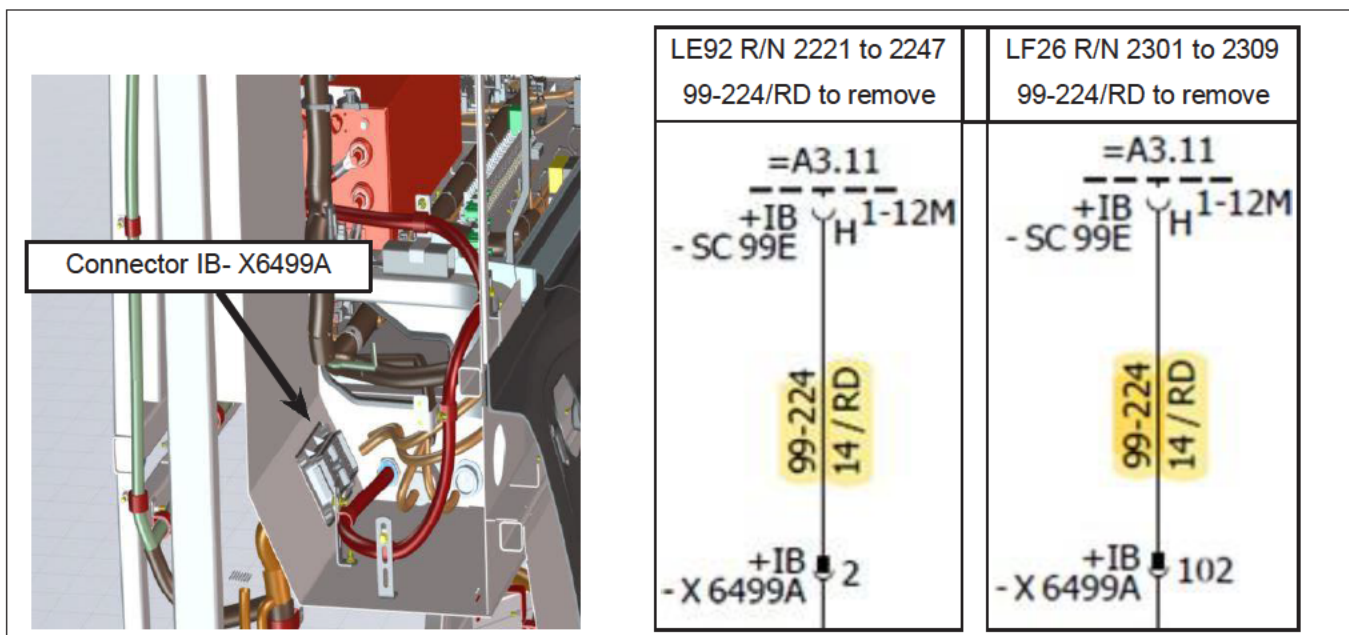


Figure 4 - Wire 99-224 to remove

1.14. Remove and tapeback wire 99-2345/WH from connector IB-X99QB and IB-X6499A. See Figure 5.

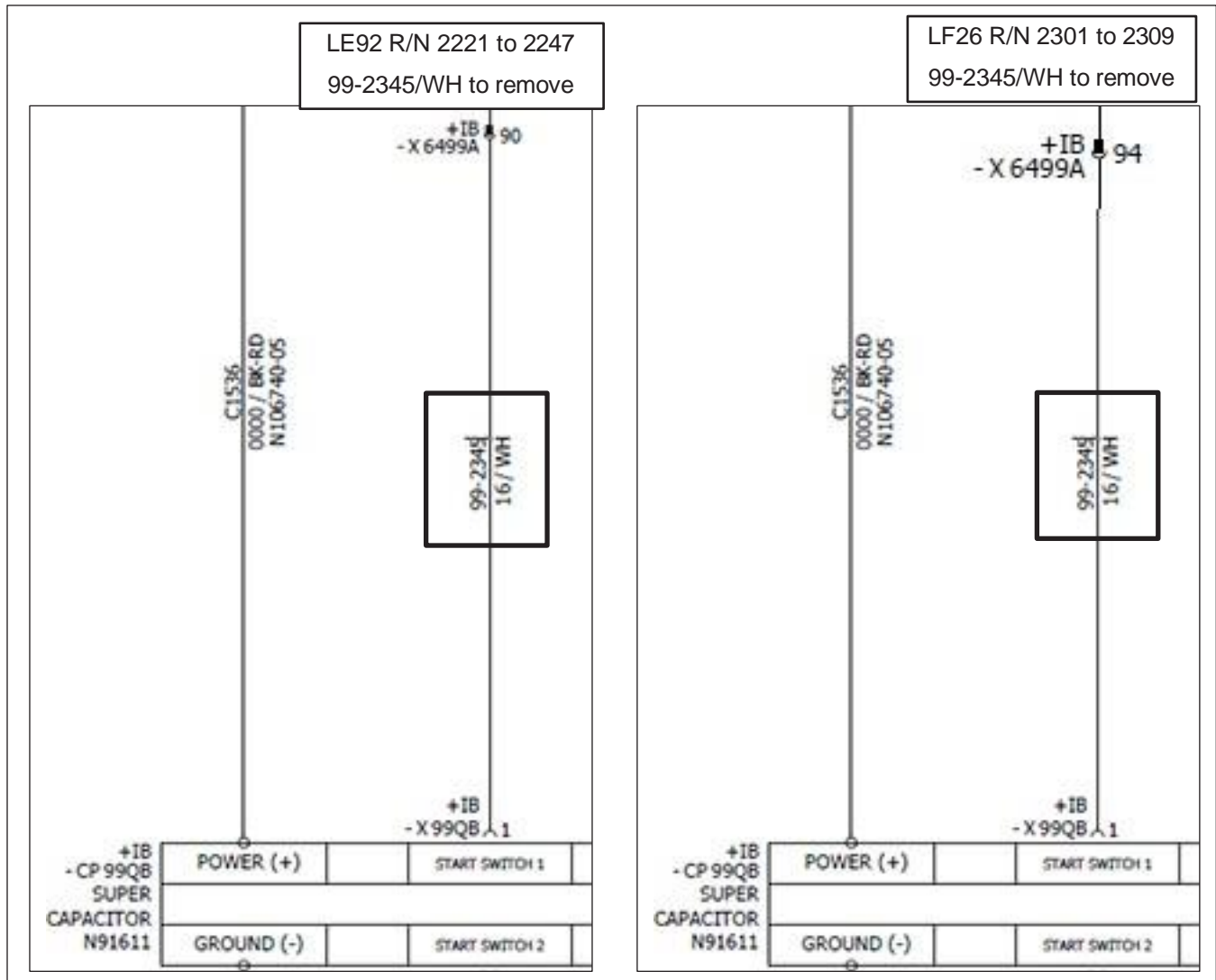


Figure 5 - Wire 99-2345 to remove

- 1.15. Connect wire 99-3688/RD (available in wire kit N632001301) in terminal block IB-TB99A and new relay base IB-X99FN2 (N49576175 circuit breaker ass). See Figure 6.
- 1.16. Connect wire 99-3689/WH (available in wire kit N632001301) in terminal block IB-TB99A and new relay base IB-X99FN2 (N49576175 circuit breaker ass). See Figure 6.
- 1.17. Install Diode N27488-03 in terminal block IB-TB99A. See Figure 6 for position.



NOTE

Route and secure the wires by fixing them to the harness with tie wraps.

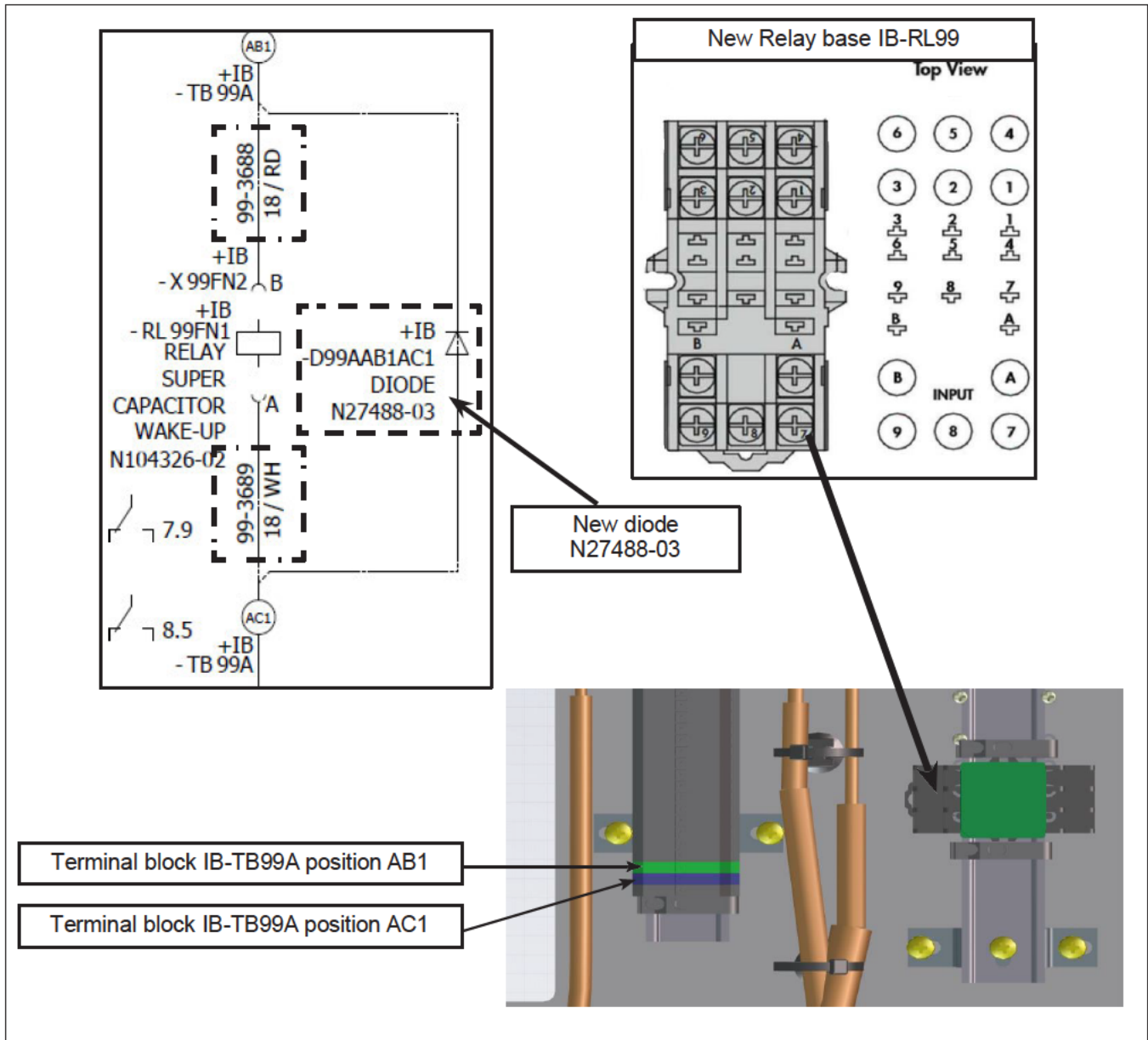


Figure 6 - N27488-03 Diode, New Wires 99-3688 and 99-3689 Installation

- 1.18. Connect wire 99-3690/WH (available in wire kit N632001301) in connector IB-X99QB and new relay base IB-X99FN1 (N49576175 circuit breaker ass). See Figure 7.
- 1.19. Connect wire 99-3691/WH (available in wire kit N632001301) in connector IB-X6499A and new relay base IB-X99FN2 (N49576175 circuit breaker ass). See Figure 7.



NOTE

Route and secure the wires by fixing them to the harness with tie wraps.

- 1.20. Connect connector IB-X99QB to the super capacitor. See Figure 7

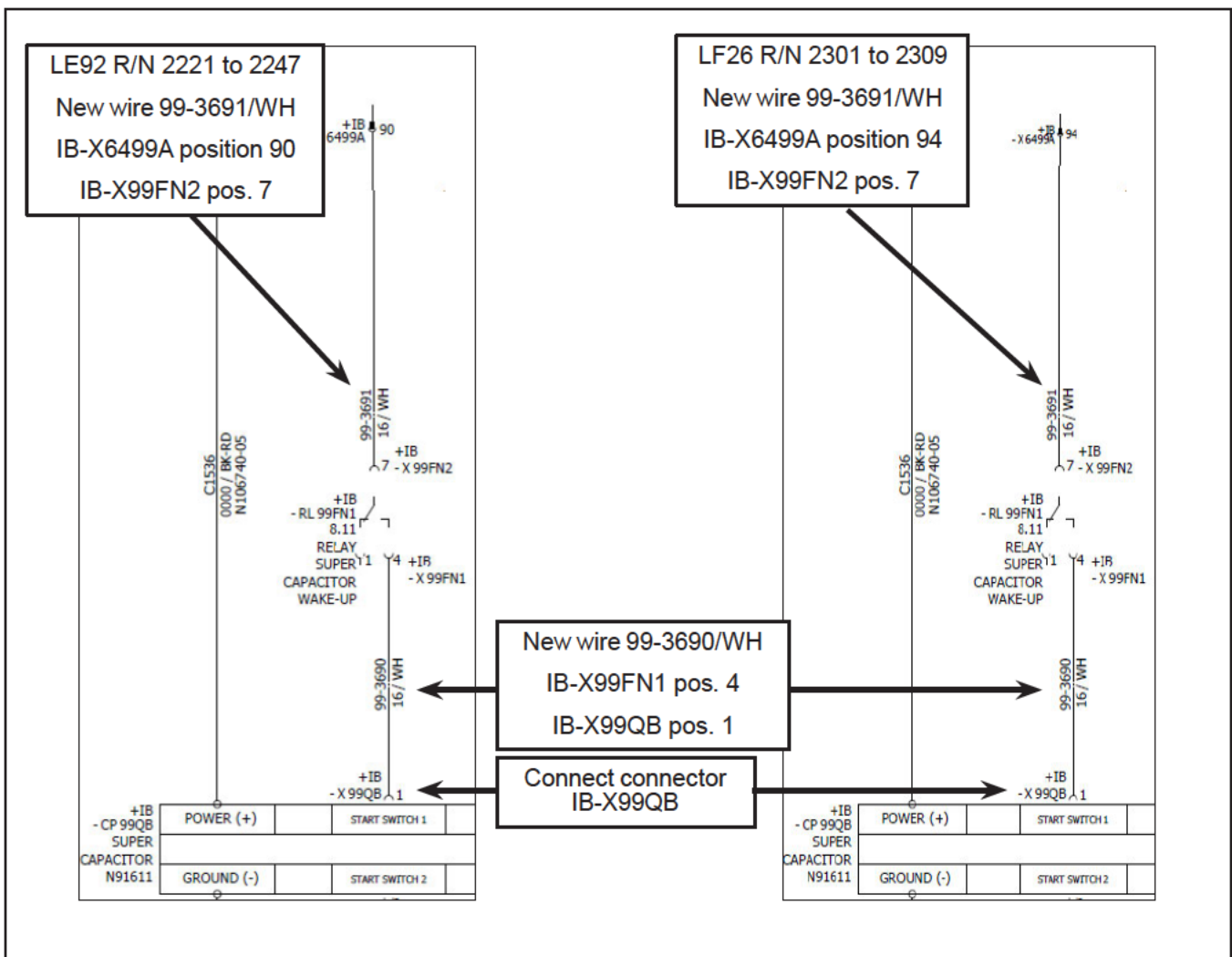


Figure 7 - New Wires 99-3690 and 99-3691 Installation

- 1.21. Connect wire 99-3692/RD (available in wire kit N632001301) in connector IB-X6499A and new relay base IB-X99FN2 (N49576175 circuit breaker ass). See Figure 8.
- 1.22. Connect wire 99-3693/RD (available in wire kit N632001301) in connector IB-SC99E and new relay base IB-X99FN2 (N49576175 circuit breaker ass). See Figure 8.



NOTE

Route and secure the wires by fixing them to the harness with tie wrap

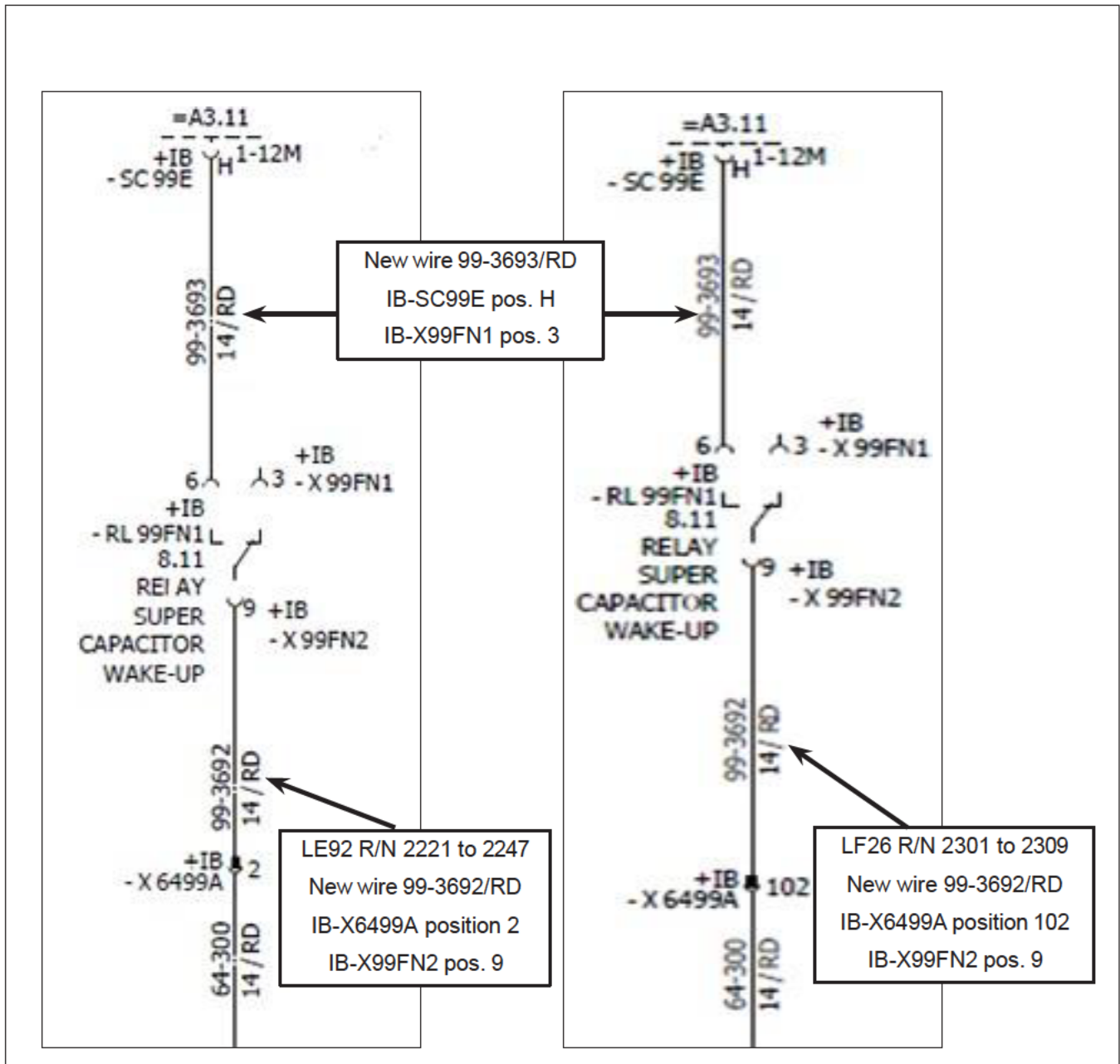


Figure 8 - New Wires 99-3692 and 99-3693 Installation

1.23. Connect wire 99-3694/RD (available in wire kit N632001301) in connector IB-TB99A and in connector IB- X6499A . See Figure 9.



NOTE

Routes and secure the wires by fixing them to the harness with tie wraps.

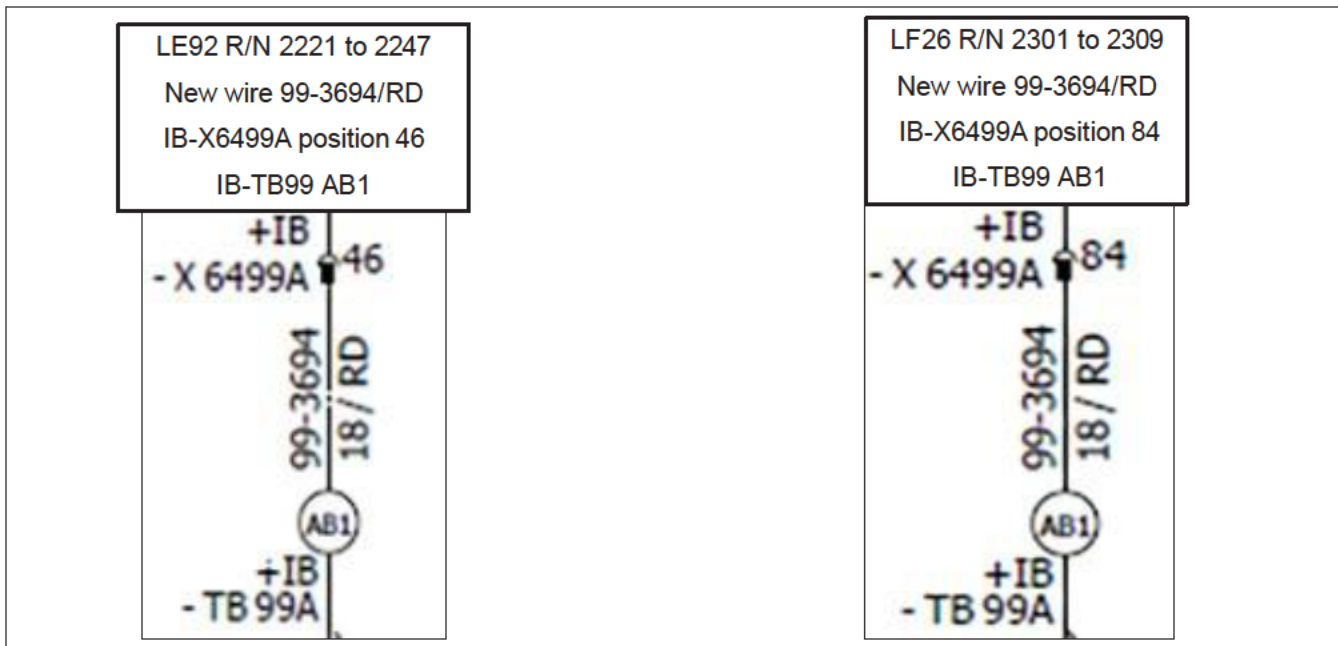


Figure 9 - New Wire 99-3694 Installation

- 1.24. Open all the curbside baselight access panels. See Figure 10.
- 1.25. Disconnect connector BR5-X9911A locate in the 5th curbside baselight area. See Figure 10.
- 1.26. Connect wire 99-3695/WH (available in wire kit N632001301) in connector IB-TB99A and in connector BR5- X9911A. See Figure 10.



NOTE

Routes and secure the wires by fixing them to the harness with tie wraps.

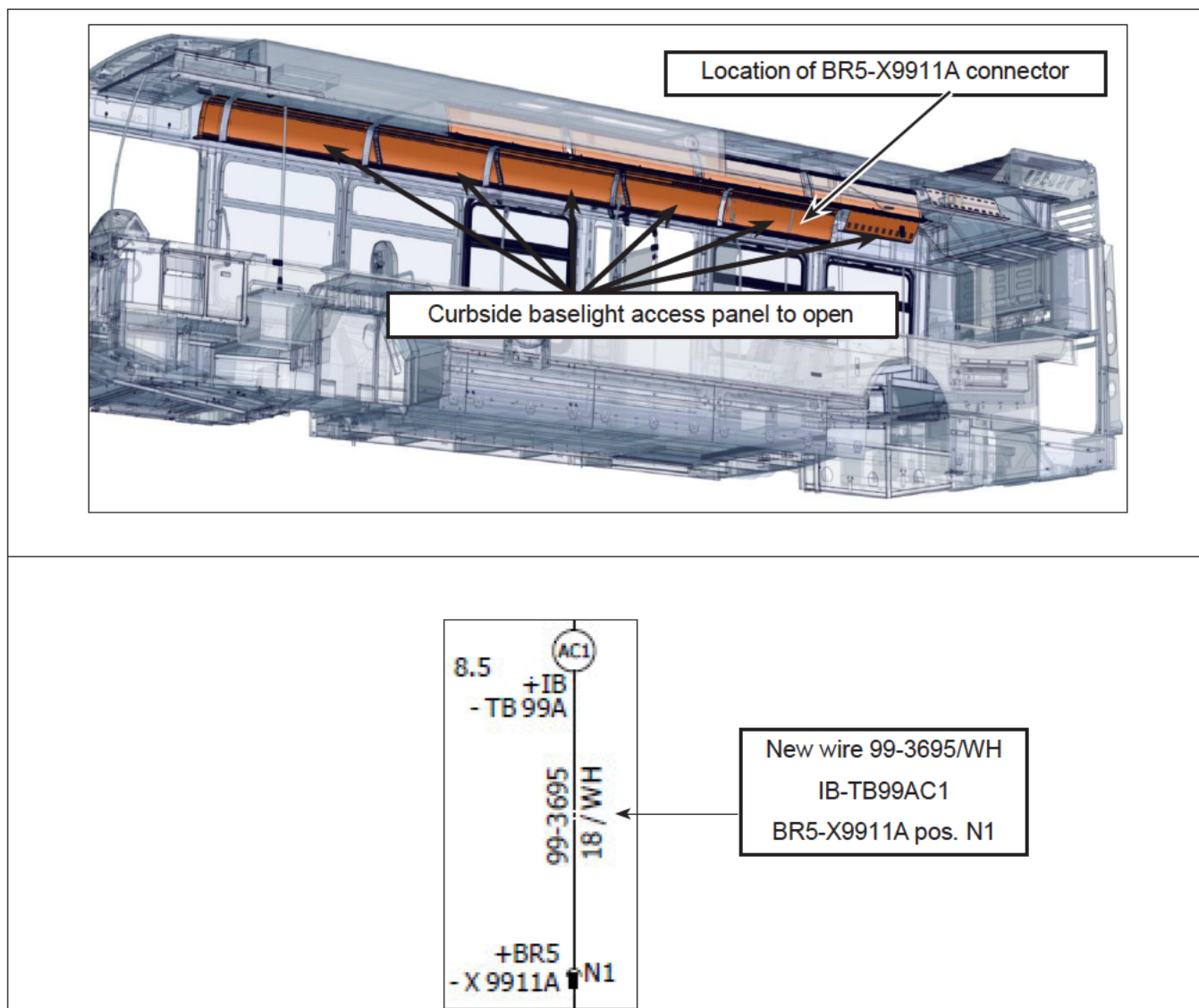


Figure 10 - New Wire 99-3695 Installation

- 1.27. Install the N11690-05 circuit breaker supplied in wire kit N632001301, on the circuit breaker support of the IB panel. See Figure 11.
- 1.28. Connect wire 99-3696/RD (available in wire kit N632001301) on circuit breaker IB-CB99AE2 and in connector IB- X6499A. See Figure 11.



NOTE

Routes and secure the wires by fixing them to the harness with tie wraps.

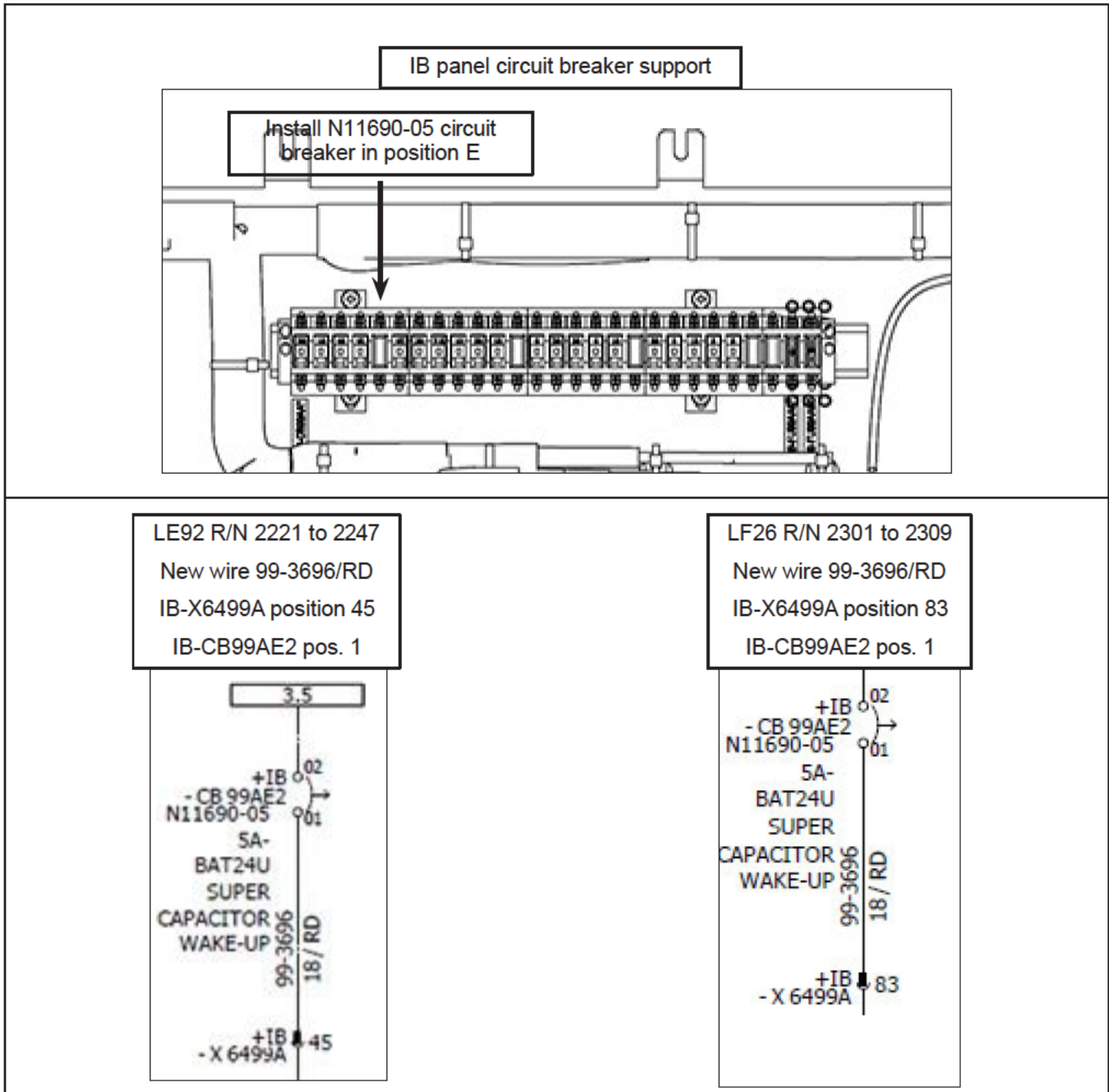


Figure 11 - New Breaker N11690-05 and New Wire 99-3696 Installation

- 1.29. Remove the 3-light panel locate above the driver's seat. Retain the panel and hardware. See Figure 12.
- 1.30. Disconnect connector TP-X1101A (locate on the frame of the RF0 panel).
- 1.31. Connect wire 11-4490/WH (available in wire kit N632001301) in connector BR5-X9911A and in connector TP- X1101A. See Figure 12.
- 1.32. Connect connector BR5-X9911A and apply torque. See Figure 12 for torque value.



NOTE

Routes and secure the wires by fixing them to the harness with tie wraps.

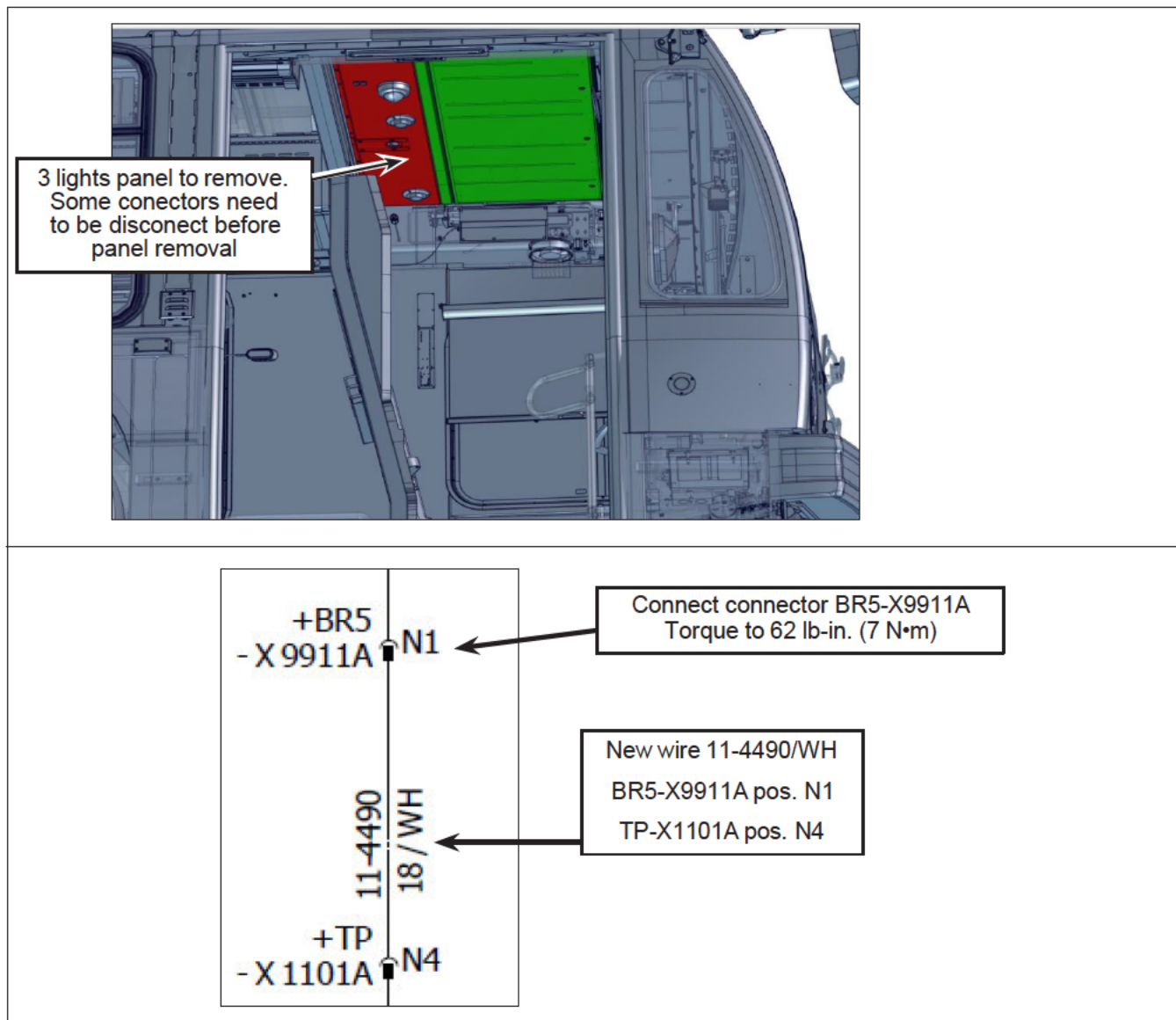


Figure 12 - Panel to Remove and New Wire 11-4490 Installation and connector BR5-X9911A torque value

- 1.33. Remove the driver's partition panel. Retain the panel and hardware. See Figure 13.
- 1.34. Remove the lateral console panels. Retain the panel and hardware. See Figure 13.

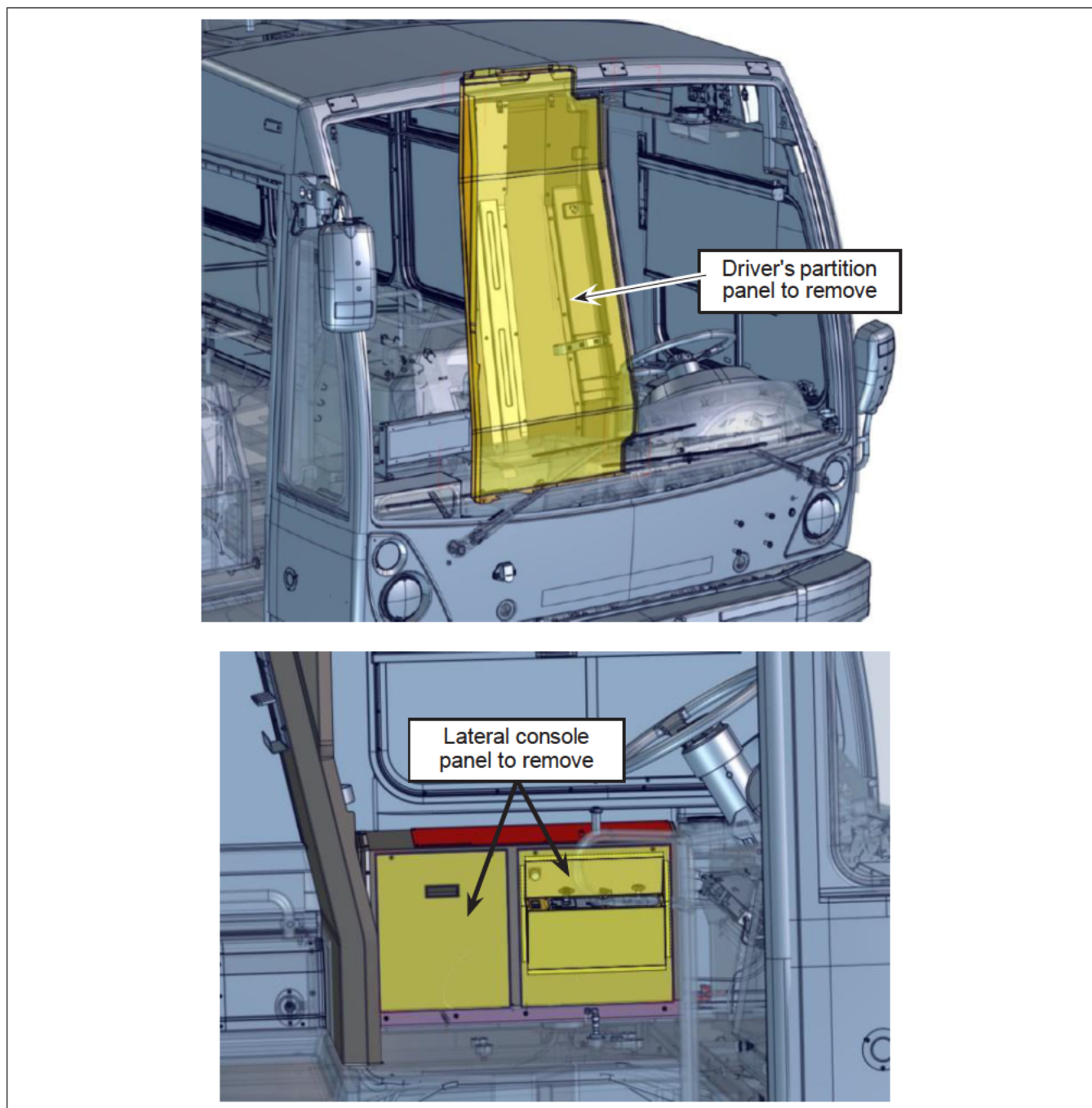


Figure 13 - Driver's Partition and Lateral Console Panel to Remove

- 1.35. Disconnect connector CSP-X0189A in lateral console compartment.
- 1.36. Connect wire 01-6721/WH (available in wire kit N632001301) in connector TP-X1101A and in connector CSP- X0189A. See Figure 14.
- 1.37. Connect wire 89-3768/WH (available in wire kit N632001301) in connector CSP- X0189A and in connector CS- SC89Y1. See Figure 14.
- 1.38. Connect connector TP-X1101A and CSP-X0189A. See Figure 14 for torque value.

**NOTE**

Routes and secure the wires by fixing them to the harness with tie wraps.

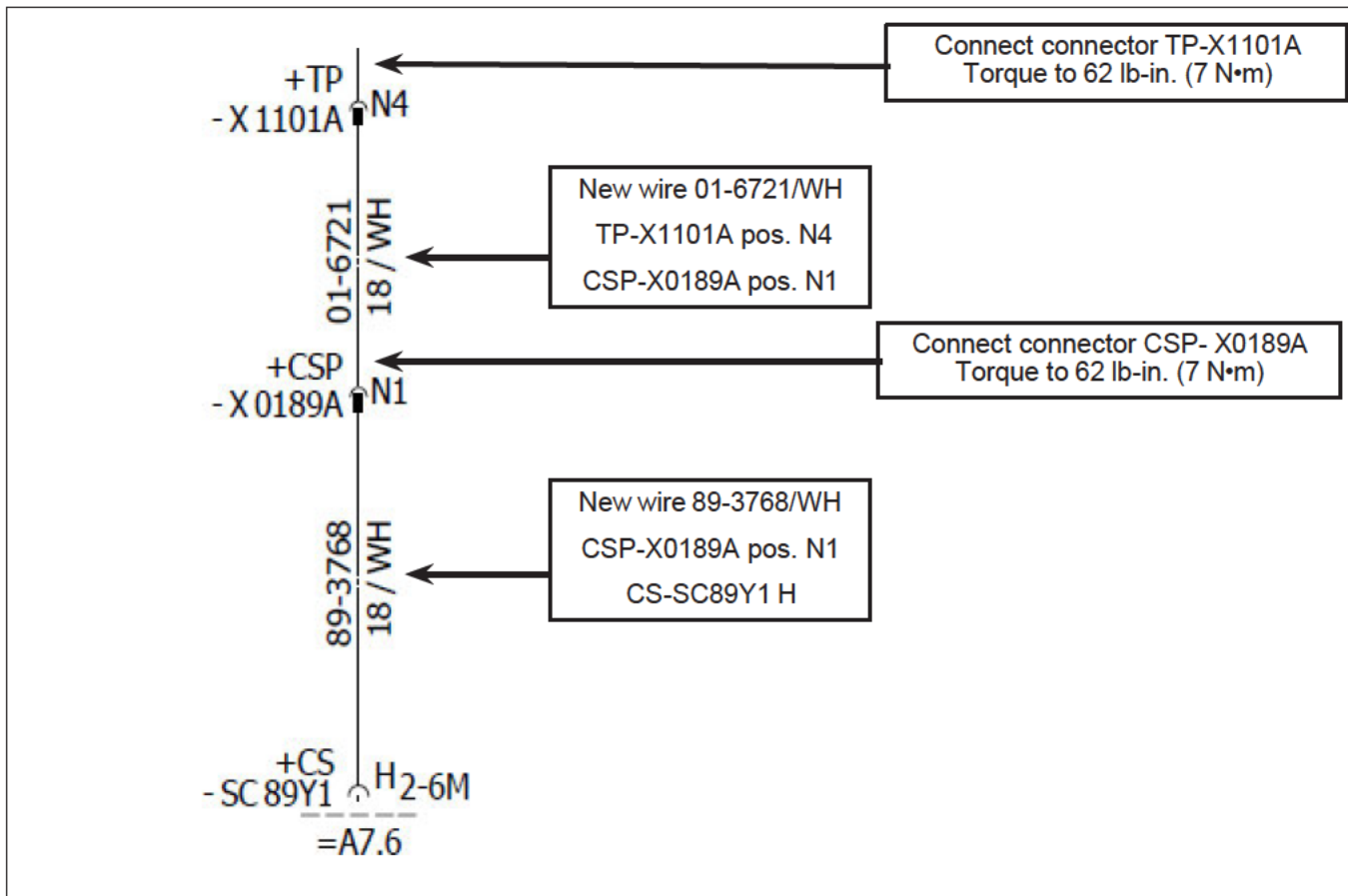


Figure 14 - New Wire 01-6721 and 89-3768 Installation, and connectors torque value

- 1.39. Install the removed driver's partition panel with the retained hardware. See Figure 13.
- 1.40. Install the removed lateral console panels with the retained hardware. See Figure 13.
- 1.41. Install and connect the removed 3 lights panel with the retained hardware. See Figure 12.
- 1.42. Close all the curbside baselight access panel. See Figure 10.

- 1.43. Disconnect connector BCR-X64B locate behind the battery disconnect switch in the battery compartment. See Figure 15.
- 1.44. Remove and tapeback wire 64-2258/RD from connector BCR-X64B and EN-SC64BE. See Figure 15.
- 1.45. Remove and tapeback wire 64-2422/WH from connector BCR-X64B and BCR-MS64B (Voltage Regulator). See Figure 15.

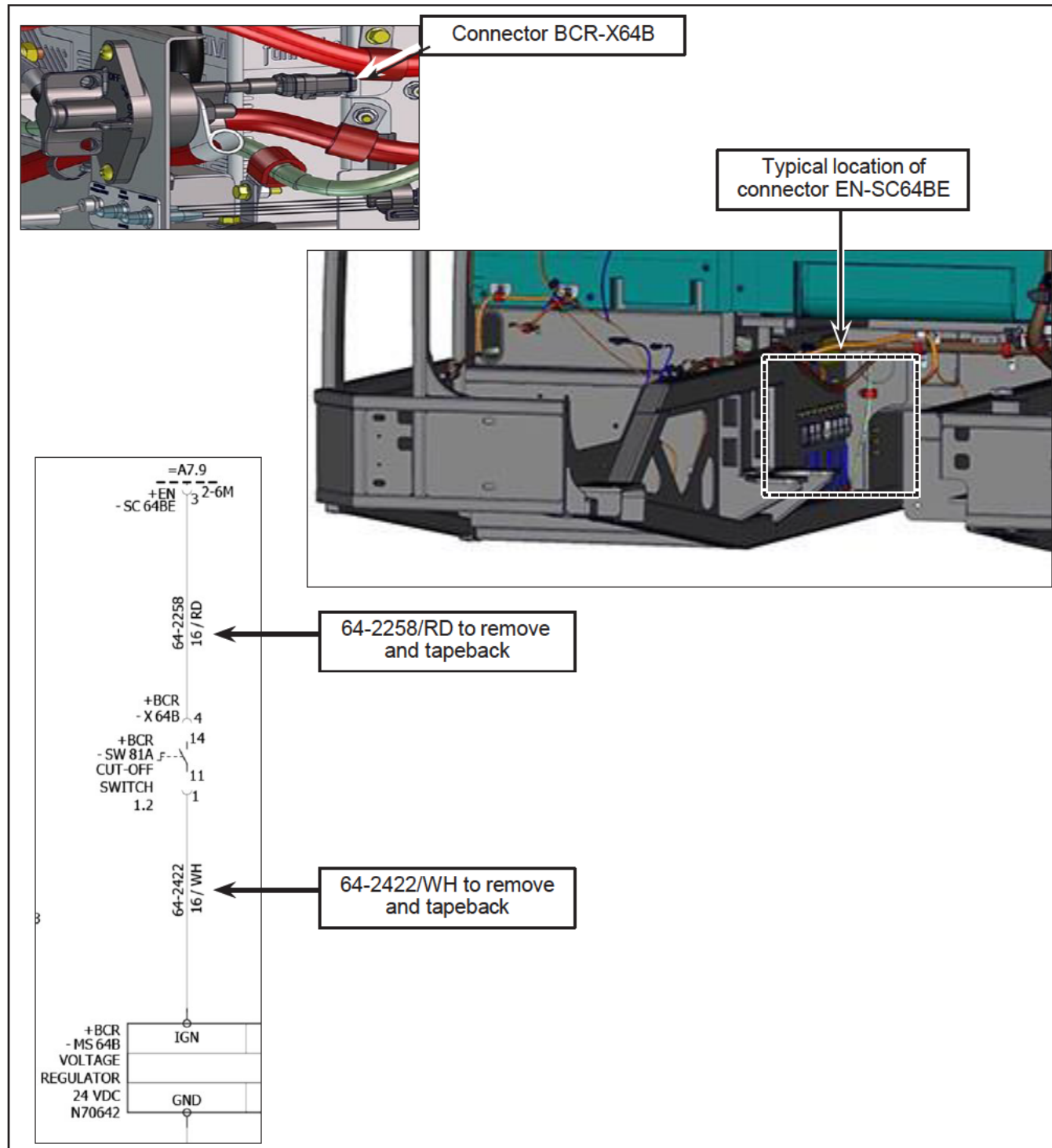


Figure 15 - Wire 64-2258 and 64-2422 to Remove

- 1.46. Connect wire 64-5774/RD (available in wire kit N632001301) in connector IB- X6499A and in connector BCR- X64B. See Figure 15.
- 1.47. Connect wire 64-5775/RD (available in wire kit N632001301) in connector IB- X6499A and in connector BCR- X64B. See Figure 15.
- 1.48. Connect connector BCR-X64B with the battery disconnect switch.



NOTE

Routes and secure the wires 64-5774/RD and 64-5775/RD by fixing them to the harness with tie wraps.

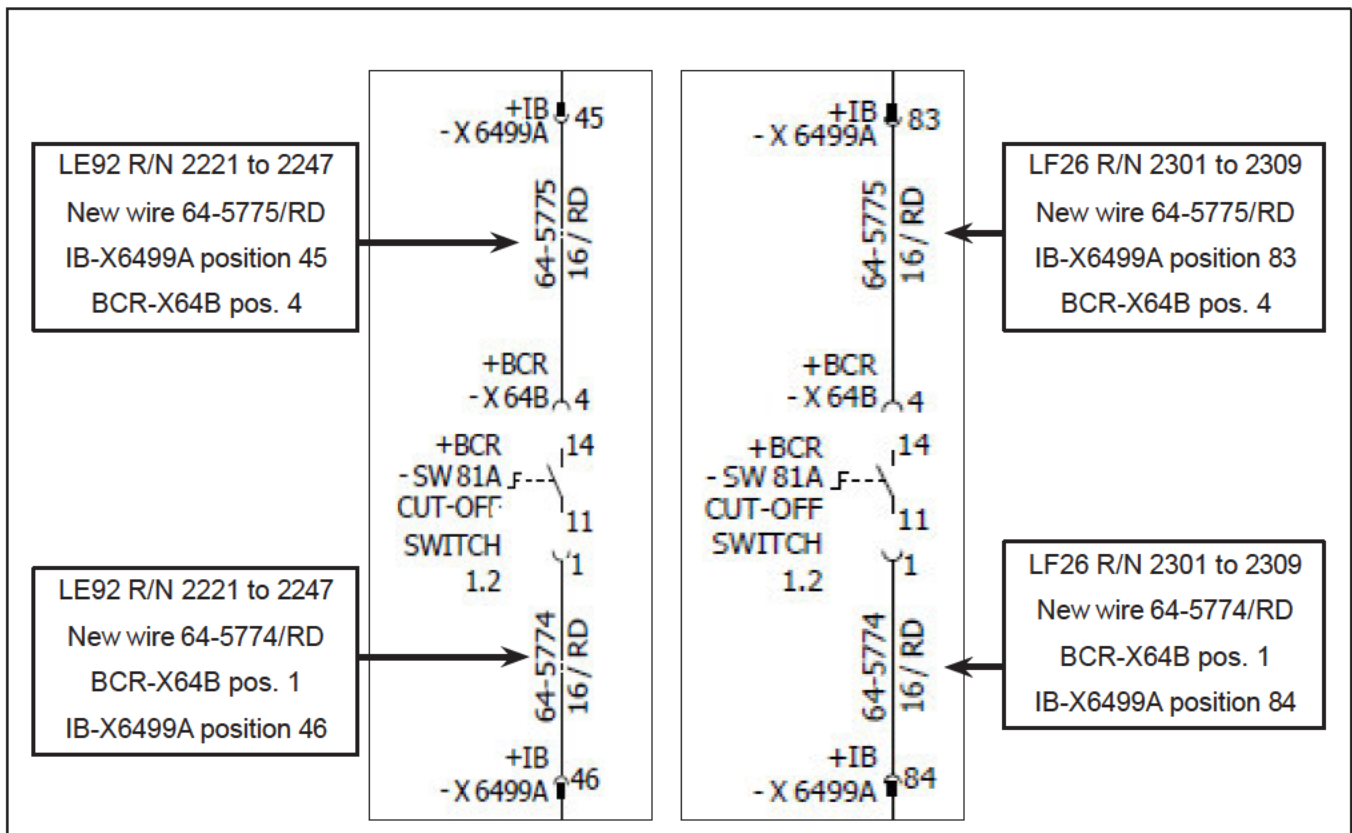


Figure 16 - New Wire 64-5774 and 64-5775 Installation

- 1.49. Connect wire 64-5773/RD (available in wire kit N632001301) in connector EN- SC64BE and in connector BCR- MS64B (Voltage Regulator). See Figure 16.



NOTE

Routes and secure the wires 64-5773/RD by fixing it to the harness with tie wraps.

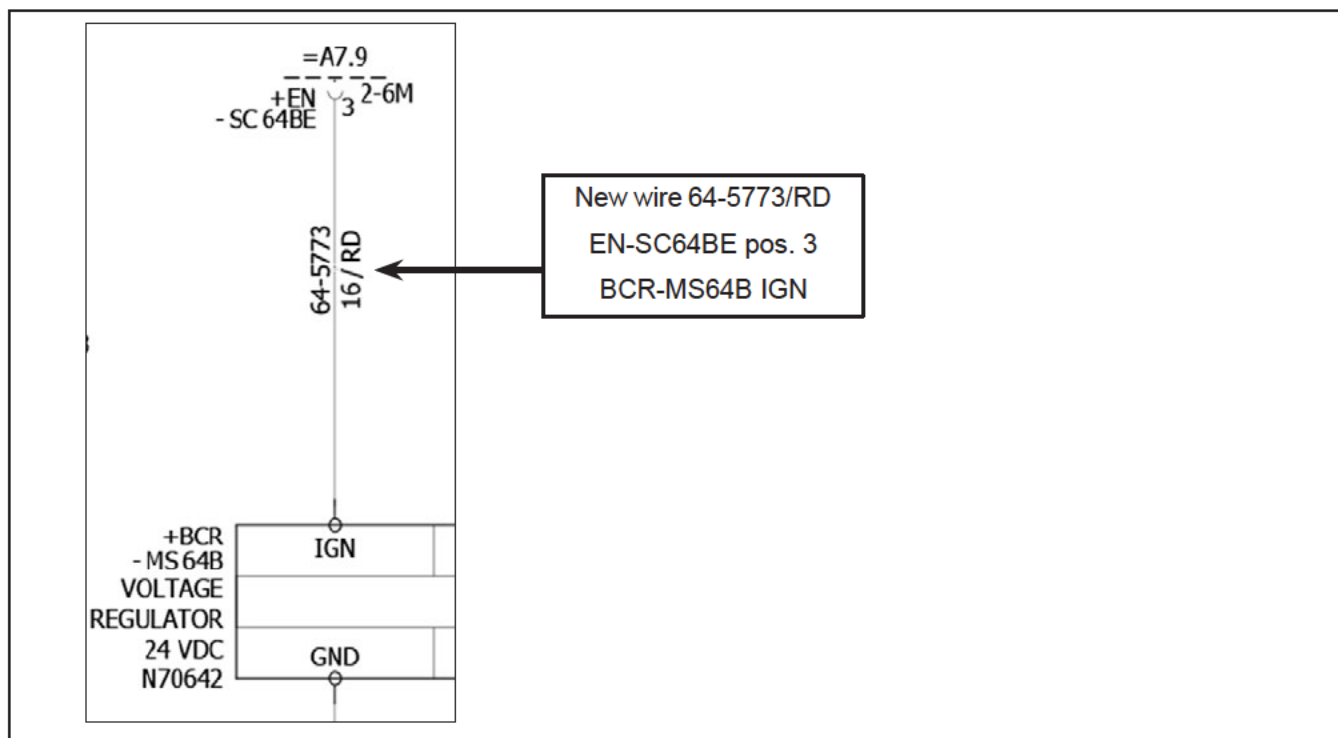


Figure 17 - New Wire 64-5773 Installation

1.50. Connect connector IB- X6499A. See Figure 17 for torque value.

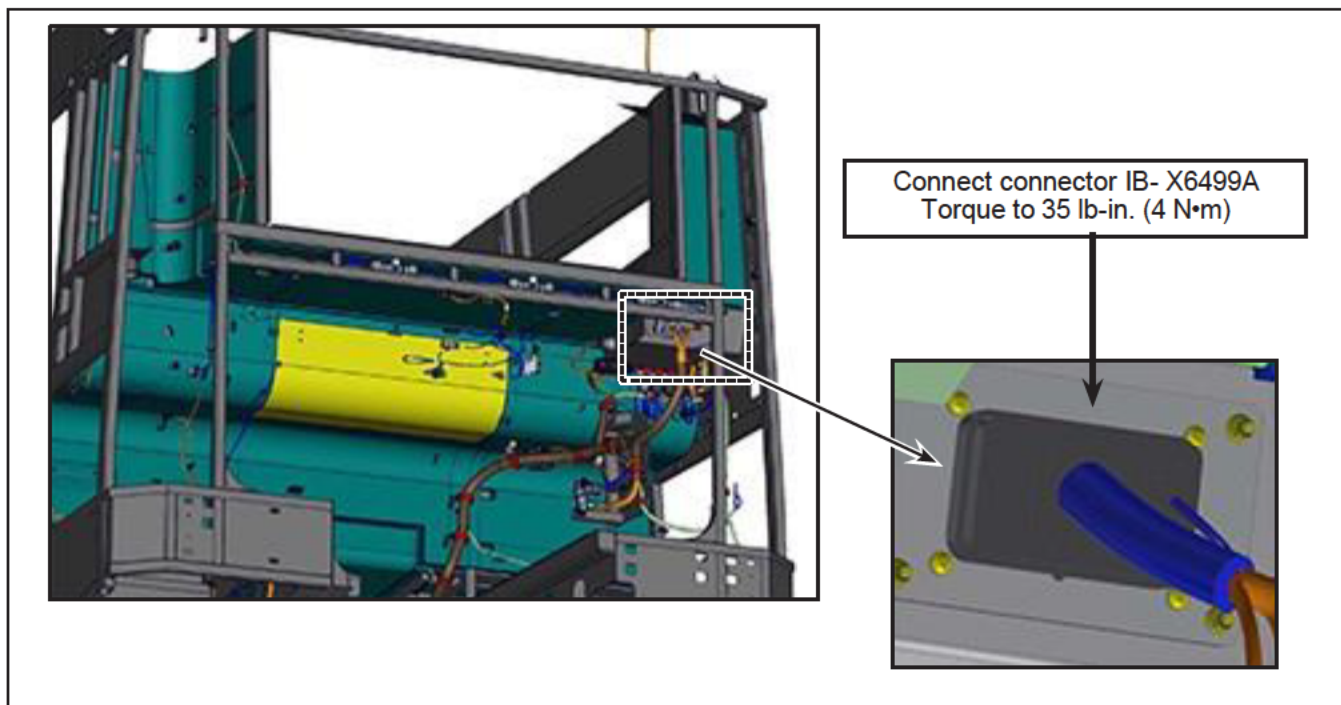


Figure 18 - Connector IB-X6499A Torque Value

- 1.51. Close all the engine compartment access door.
- 1.52. Close the IB compartment access door. See Figure 1.
- 1.53. Set the battery disconnect switch in the battery compartment to the **On** position.
- 1.54. Set the master control switch to the **Run** position.
- 1.55. Start the vehicle and leave the engine running for 10 minutes.
- 1.56. Set the master control switch to the **Stop** position.
- 1.57. Set the battery disconnect switch in the battery compartment to the **Off** position.
- 1.58. Set the master control switch to the **Run** position and try to start the engine.
 - a. If the engine doesn't start proceed, with the rest of the procedure
 - b. If the engine start, troubleshot the electric system to find the problem. If required contact your customer support manager for technical support.
- 1.59. Close the battery compartment access door.
- 1.60. Return the vehicle in service. ❖