

		Tesla, Inc. Service Bulletin		<i>Inspect Contactor DC Link Busbar Bolts</i>
SB-20-16-003 December 28, 2023		R1		
Classification		Section/Group	Mobile Service	
Campaign Bulletin		16 - HV Battery System	Cannot Perform	All
Model Year	Model	Country/Region	Build Location	
2018 - 2019	Model 3	North America, Europe, Asia Pacific	Fremont	
The model(s) and model year(s) listed are a general approximation of the affected VIN list. Refer to the VIN/Bulletin Tracker or Customer/Vehicle profile to determine applicability of this bulletin for a particular vehicle.				

Campaign Bulletin: This campaign bulletin addresses a known non-safety-related condition and provides recommended technical diagnosis and repair procedures. Apply this procedure to all vehicles in the affected VIN list.

This Service Document supersedes SB-20-16-003, dated July 14, 2020. This new revision, R1, updates the word "penthouse" to "ancillary". Each content change is marked by a vertical line in the left margin. Discard the previous version and replace it with this one.

Condition

Certain Model 3 high voltage batteries may not have a sufficient quantity of bolts for the contactor DC link busbars, which may prevent the vehicle from charging or powering properly.

Correction

Inspect the vehicle for symptoms related to the condition. If symptoms are present, install a sufficient quantity of bolts, install contactors, or if conditions warrant, escalate a Toolbox session for further instruction.

Correction Description	Correction	Time
SB-20-16-003 Not Applicable	S012016003	0.00
Inspect Contactor DC Link Busbar Bolts; Sufficient Quantity	S022016003	0.85
Inspect Contactor DC Link Busbar Bolts And Install Sufficient Quantity Of Bolts	S032016003	0.95
Inspect Contactor DC Link Busbar Bolts And Replace Negative Contactor	S042016003	1.05
Inspect Contactor DC Link Busbar Bolts And Replace Positive Contactor	S052016003	1.25
Inspect Contactor DC Link Busbar Bolts And Replace Both Contactors	S062016003	1.30
Inspect Contactor DC Link Busbar Bolts And Escalate Toolbox Session	S072016003	0.45

	Part Number	Description	Quantity
Parts Required	1117669-00-A	BOLT,5LOBE,M6x19,[109],ZNNI,MAT,PTP,SEAL	2
	1093060-00-A	NUT&WSHR,M8,STL[9],DOUBLE SEMS	1
	1508009-00-A	BOLT,TE,M6-1.0x14,[88],G1009,CA	5
	1117252-00-A	BOLT,HF,M12x40,STL[109],ZN,ADH,MAT	2
If Necessary	1089334-02-J	ASY,PACK CONTACTORS,SWITCH,HV	1-2
	1104654-00-B	NUT&WSHR[DBL],M8,BRS,SEALER	1-2
	1104475-00-F	DSEMS,HX,M8-1.25x23,[98],G1009,SDOG,WAX	2-4
	1467483-00-A	KIT, PENTHOUSE HV INSULATORS, M3	1

These part numbers were current at the time of publication. Use the revisions listed or later, unless otherwise specified in the [Parts Catalog](#).

Special Tools	1076927-00-A	Resistance meter, microohm, Hioki RM 3548
	1126496-00-B	Wrench, Torque+Angle, 3/8" DR
	1059330-00-B	Skt, 1/4in Dr, 5-Lobe Torx External
	1053600-00-C	Drive Unit Pressure Test Fixture
	1108272-00-B	Cap, Logic Conn, Inv, 3DU
	1133603-00-A	Kit, HV Pyro-disconnect Replacement, BRP
	1131071-00-A	Dummy Disconnect, Pyro, Safety
	1057602-00-A	Ratchet, 1/4" Sq Dr, HV Insulated
	1057603-00-A	Ext Bar, Wobble, 1/4" Dr, HV Insulated
	1057607-00-A	Magnet, Flexible, HV Insulated, 18"
	1133768-00-A	Socket, 1/4" Dr, Deep, 10 mm, Thin Wall, Insul
	1057606-00-A	Skt, 1/4" Sq Dr, 13mm, HV Insulated
	1127845-00-A	Asy, Service Cover, Penthouse, Model 3

Shop Supplies Paint pen

Procedure

1. Prepare the Hioki resistance meter (refer to Service Manual procedure [16300100](#)).
2. Disconnect 12V power (refer to Service Manual procedure [17010200](#)).
3. Perform the vehicle isolation procedure (refer to Service Manual procedure [17010000](#)).
4. Remove the ancillary cover, however do not install insulators at this time (refer to Service Manual procedure [16101002](#)).

5. Inspect the negative contactor for the negative DC link busbar bolt, and the positive contactor for the positive DC link busbar bolt (Figures 1 and 2).
- If both bolts are present, skip to step 13.
 - If any bolt is missing (Figures 3 and 4), take very close up photos of the contactor and DC link busbar joint where the bolts are missing, and then upload the photos to the Repair Order. Continue to the next step.



Figure 1 — Negative DC link busbar bolt present

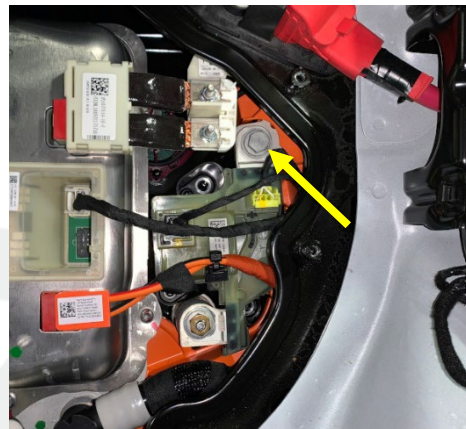


Figure 2 — Positive DC link busbar bolt present

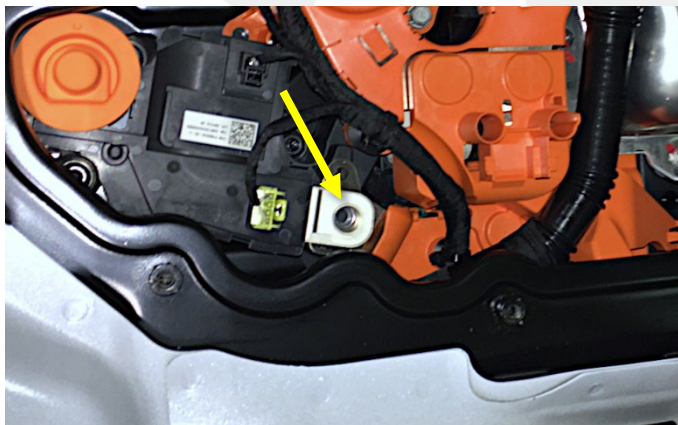


Figure 3 — Negative DC link busbar bolt missing



Figure 4 — Positive DC link busbar bolt missing

6. Closely inspect the contactors and DC link busbar joints where the bolts are missing for discoloration (Figure 5), melting (Figure 5), or burn marks evident of arcing (Figures 5 and 6).
- If both contactors appear in good condition, without burn marks, skip to step 8.
 - If either contactor appears discolored or melted, but without burn marks, skip to step 7.
 - If there are any burn marks, regardless of discoloration or melting, escalate a toolbox session and wait for further instruction.

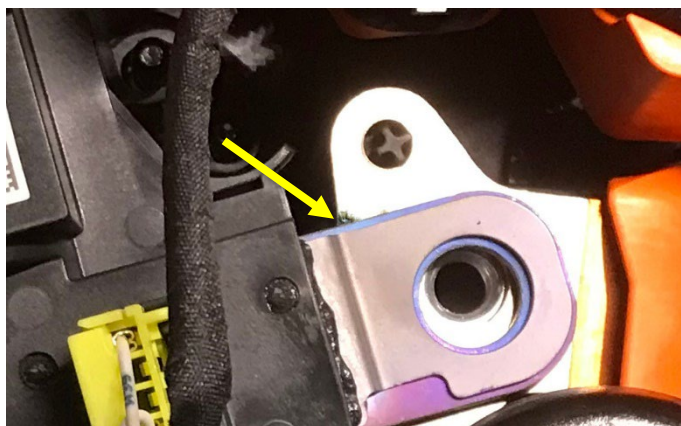


Figure 5 — Discoloration, melting, and arcing burn at negative DC link busbar joint

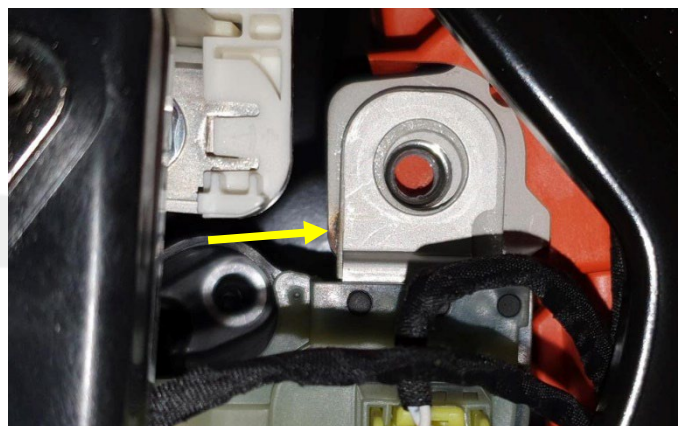


Figure 6 — Arching burn at positive DC link busbar joint

7. Replace the discolored/melted contactors with new components, and then skip to step 9:

- Negative contactor – Refer to Service Manual procedure [16302002](#)
- Positive contactor – Refer to Service Manual procedure [16302102](#)

 **NOTE:** Use a paint pen to mark “SB-20-16-003” on the affected contactors, and then return the contactors to MRB.

8. Remove the pyrotechnic battery disconnect (refer to Service Manual procedure [16300002](#)).
9. Install a new bolt where one is missing from a contactor DC link busbar joint, and then mark the bolt with a paint pen after it is torqued (torque 9 Nm).

10. Use the Hioki resistance meter to measure the contactor DC link busbar joint resistance where a missing bolt was installed (Figure 7):

⚠ CAUTION: The acceptable resistance is between 0.020 mΩ (20 μΩ) and 0.060 mΩ (60 μΩ).

- If the resistance is greater than 0.060 mΩ (60 μΩ), stop work and escalate a Toolbox session.
- If the resistance is less than 0.020 mΩ (20 μΩ), reposition the probes and measure again.
- If the resistance is repeatedly between 0.00 mΩ and 0.020 mΩ (20 μΩ), proceed to next step.

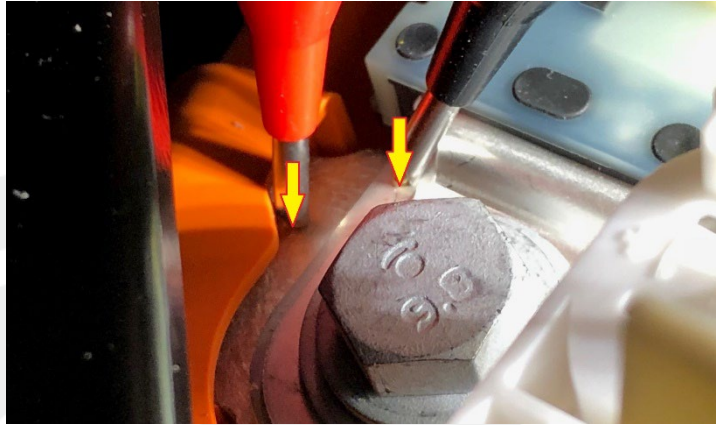


Figure 7

11. Repeat steps 9 and 10 for the other joint, if necessary.
12. Install the pyrotechnic battery disconnect (refer to Service Manual procedure [16300002](#)).
13. If missing, install the HV battery insulators (refer to Service Manual procedure [16302001](#)).
14. Install the ancillary cover (refer to Service Manual procedure [16101002](#)).
15. Connect 12V power (refer to Service Manual procedure [17010200](#)).