

SAFETY RELATED RECALL

Global Recall Action Number: H468

Subject:

High Voltage (HV) Battery Busbar Fixings

Publication No.: H468

Model: I-PACE (X590)

Model Year: 2019 - 2021

Date of Issue: 20 March 2024

То:	All National Sales Companies (NSCs), importers, retailers and authorized repairers.
For the Attention of:	The approved JLR retailer/authorized repairer.
Important:	NOTE: The information in this campaign is intended for use by professional technicians. If you are not a JLR retailer/authorized repairer, do not assume that a condition described affects a specific vehicle. Contact an authorized JLR retailer/authorized repairer to determine if this campaign applies to a specific vehicle.

FOR THE ATTENTION OF ALL:

DESCRIPTION OF ISSUE AND THE EFFECT ON VEHICLE OPERATION

A potential concern has been identified on specific vehicles within the above vehicle range.

A concern has been identified on a small number of 2019 to 2021 model year I-PACE vehicles where the fasteners for the High Voltage (HV) battery module to module electrical connecting busbars may not be sufficiently secure, which under some circumstances could result in arcing at the busbar to module connection point. Arcing will generate heat which may lead to a thermal overload condition.

A vehicle thermal overload condition such as fire or smoke can result in an increased risk of occupant injury and/or injury to persons outside the vehicle, as well as property damage.

ACTION TO BE TAKEN

JLR has taken the decision to recall affected vehicles to repair the vehicle.

Following procedures appropriate to your market and as required by local legislation, owners of affected vehicles should be contacted requesting that the owner contact their nearest retailer/authorized repairer as soon as possible to arrange for the repair to be completed. The National Sales Companies (NSCs), Importer, Regional Office or Government agency will contact the customers. If you have any questions about this process, contact your NSC/Importer or Regional Office for more information.

Check the JLR Warranty Portal to make sure affected vehicles are correctly identified prior to starting this campaign. The Warranty Portal will be updated to reflect only those vehicles affected.

Retailers/authorized repairers are reminded that they must not sell vehicles identified as affected by this campaign until such time as the repair has been successfully completed.

An owner may indicate that a repair has already been completed for this concern, in which case the full cost of the repair should be reimbursed. Refer to the warranty section of this campaign for details of the Customer Reimbursement and Related Damage Process. At the time of confirming a booking for a vehicle repair, make sure you check the Warranty Portal to confirm if there are any other outstanding campaigns, to make sure the correct parts are available and adequate workshop time is allocated for repairs to be completed in one visit.

For information purposes, a Technical Question and Answer document is attached.

FOR THE ATTENTION OF NORTH AMERICAN TERRITORIES ONLY:

National Highway Traffic Safety Administration (NHTSA) reference number: 24V-086

Visit the British Brands Sales Suite (BBSS) website for a list of affected vehicles at your retailer/authorized repairer. Unsold vehicles must be repaired prior to handover of the vehicle for retail sale.

REGULATORY INFORMATION

Jaguar Land Rover North America, LLC have informed the National Highway Traffic Safety Administration (NHTSA) of their intent to perform a Safety Recall on certain 2019 to 2020 model year Jaguar I-PACE vehicles imported into the United States markets. Information relating to this Safety Recall will be posted on the NHTSA website. United States Federal regulations require that retailers/authorized repairers must be notified within a reasonable time after the manufacturer decides that a defect that relates to motor vehicle safety or a non-compliance exists. United States Federal Law requires retailers/authorized repairers to complete any outstanding Safety Recall before a new vehicle is delivered to the buyer or lessee. Violation of this requirement by a retailer/authorized repairer, in the USA only, could result in a maximum civil penalty of up to the equivalent of \$27,168.00 USD per violation and the equivalent of \$135,828,178.00 USD for a related series of violations. This Safety Recall serves as notification to all

retailers/authorized repairers in the United States and Federalized Territories that any affected new vehicles may not be sold and delivered for customer use until the Safety Recall repair is completed.

Jaguar Land Rover North America, LLC recommends that affected sales demonstrator and loaner vehicles are repaired before use, and that used vehicles are repaired before sale. Retailers/authorized repairers who choose to proceed against this recommendation, where legally permitted, must clearly and conspicuously disclose the open Safety Recall notice to the applicable customers.

Yours faithfully

Steve Oldham

Global Customer Care Quality Director

SERVICE INSTRUCTION - H468

Parts Information

NOTE:

The parts below are for the completion of the Service Inspection only. All other parts that are renewed as a result of the Technical Assistance (TA) must be claimed as related damage through the related damage process.

The parts below should be ordered through JLR in the normal manner.

Description	Part Number	Qty
Busbar bolt	T4K8734	75
Battery Electrical Module (BEM) seal	T4K8513	1
BEM bolt	T4K8733	6
BEM inspection lid seal	T4K8515	1
BEM inspection lid screws	T4K8504	10
BEM to battery lid seal	T4K8516	1
Master service plate to battery lid seal	T4K8519	1
Gasket	T4K8151	8
Gasket	T4K8152	12
Battery lid bolt M5 x 12mm	T4K13071	98
Screw M8 x 20mm	T4K8724	8
Cell Supervisory Circuit (CSC) bracket screw M5 x 8mm	T4K8728	2
Nut M6	T4K8739	2

SROs

NOTE:

The SRO time provided is for the completion of the Service Inspection up to raising the TA and then the re-installation of the components removed up to that point. All repairs completed by the guidance of TA must be claimed as related damage through the related damage process.

Description	SRO	Time
High Voltage (HV) battery busbar - Inspection	99.03.26	15.5
Drive in/drive out	10.10.10	0.2

NOTE:

Repair procedures are under constant review, and therefore times are subject to change; those quoted here must be taken as guidance only. Always refer to TOPIx to obtain the latest repair time.

Warranty Information

Warranty claims should be submitted quoting program code H468 with the relevant option code from the table below. As option codes are used there is no requirement for you to enter SROs or parts, these are included for information only.

Program Code	Option	Description	SRO	Time	Part Number	Qty
H468	Α	HV battery busbar - Inspection	99.06.26	15.5	T4K8734 T4K8513	75 1
					T4K8733 T4K8515	6
					T4K8504	10
					T4K8516	1

Program Code	Option	Description	SRO	Time	Part Number	Qty
					T4K8519 T4K8151 T4K8152 T4K13071 T4K8724 T4K8728 T4K8739	1 8 12 98 8 2 2
H468	В	HV battery busbar - Inspection Drive in/drive out	99.06.26 10.10.10	15.5 0.2	T4K8734 T4K8513 T4K8733 T4K8515 T4K8504 T4K8516 T4K8519 T4K8151 T4K8152 T4K13071 T4K8724 T4K8728 T4K8739	75 1 6 1 10 1 1 8 12 98 8 2 2

NOTE:

The option that contains the drive in/drive out allowance may only be claimed when the vehicle has been brought back into the workshop for this action alone to be undertaken.

Warranty claims should be submitted in accordance with the current JLR Global Warranty Manual, and its amendments, unless stated otherwise in this bulletin.

Customer Reimbursement and Related Damage Process

NOTE:

If there is a requirement to claim for related/consequential damage or customer reimbursement, refer to the related instruction that can be found in TOPIx (in the Search box, search for 'Related Damage Claim' and open the related bulletin link).

SERVICE INSPECTION

WARNINGS:

- · This procedure must be completed in the exact sequence shown. Failure to do so could result in serious personal injury.
- It is the responsibility of the Electric Vehicle Senior Authorised Person (EVSAP) to make sure they comply with any local legislation regarding working with High Voltage HV within this procedure.
- This procedure requires the use Class 1 Personal Protective Equipment (PPE), all persons involved in this procedure must have read
 and understood the PPE requirements as detailed in section 414-01B Electric Vehicle Safety Rules.
- The approved PPE must be worn where indicated by the orange PPE icons within this procedure, all persons involved in this
 procedure must have read and understood section 100-00 About This Manual before continuing.
- All PPE equipment must be checked for wear or damage prior to use and replaced if required.
- · All safety locking device keys must be kept in the designated key lock box at least 5 meters away from the vehicle

NOTES:

- All Permit To Work (PTW) and Live Work Certificate (LWC) documents must be kept for a minimum of 5 years.
- This procedure contains illustrations showing certain components removed to provide extra clarity.
- This procedure contains some variation in the illustrations depending on the vehicle specification, but the essential information is always correct.

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WARNING:

1.

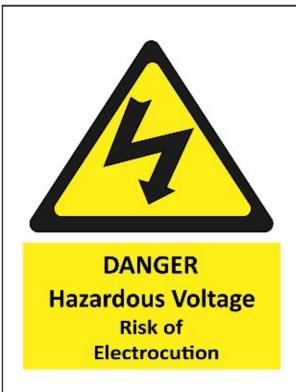
R EVSAP trained technicians only.

s procedure involves **live working** on <u>HV</u> battery components. Only nicians qualified to <u>EVSAP</u> level or higher are allowed to perform this bedure. It is mandated that all technicians involved with the steps in this bedure **must** have read and understood the <u>Electric Vehicle</u> (EV) Safety es (see TOPIx workshop manual section 414-01B: Battery, Mounting and bles - High Voltage System - Description and Operation - Electric Vehicle ety Rules).

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- 2. Remove the HV battery (see TOPIx workshop manual section 414-01B: Battery, Mounting and Cables High Voltage System Removal and Installation Electric Vehicle Battery).
- 3. Position the <u>EV</u> safety barrier around the <u>HV</u> battery at a minimum distance of 1 meter to all points on the <u>HV</u> battery.

4.

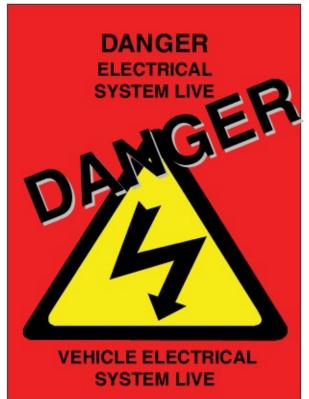


CAUTION:

ıе Hazardous Voltage sign **must** be placed on the safety barrier.

ce the Hazardous Voltage sign on the safety barrier.

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CAUTION:

ne Danger sign **must** be clearly visible to anyone outside of the live orking area.

be the Danger sign on the HV battery, the Danger sign **must** be clearly be to anyone outside of the live work area.

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- 6. The <u>EVSAP</u> must issue a <u>LWC</u> before any further work can commence (see TOPIx workshop manual section 414-01B: Battery, Mounting and Cables High Voltage System Description and Operation Live Working Certificate).
- Remove the BEM baseplate (see TOPIx workshop manual section 414-01B: Battery, Mounting and Cables - High Voltage System - Removal and Installation - Battery Electrical Module Base Plate).

8.



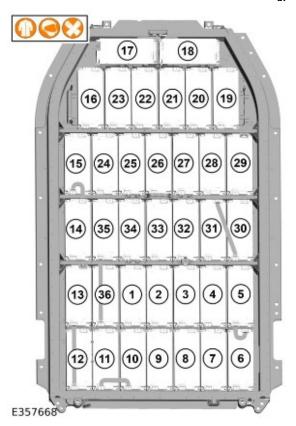
ie safety accompanying person must sign onto the LWC.

following steps require the safety accompanying person with the safety k **outside** the live working area, this person **must** remain in position until ructed otherwise.



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WARNING:

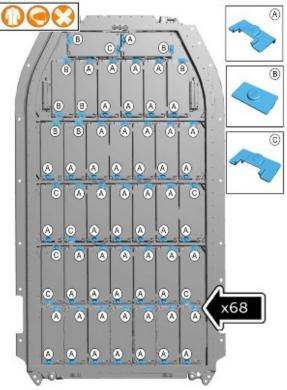
ass 1 PPE must now be worn in addition to the Class 0 1000 volt sulated rubber gloves.

CAUTION:

se the illustration to note the installed position of the busbars as they e removed

illustration shows the location of the 36 $\[\underline{HV} \]$ battery modules in the $\[\underline{HV} \]$ ery.

- When removing the busbars you must make a note of their installed positions and provide this information to TA when reporting your inspection findings.
- Use the illustration as a guide to note the HV battery modules that each busbar connects between.



10.

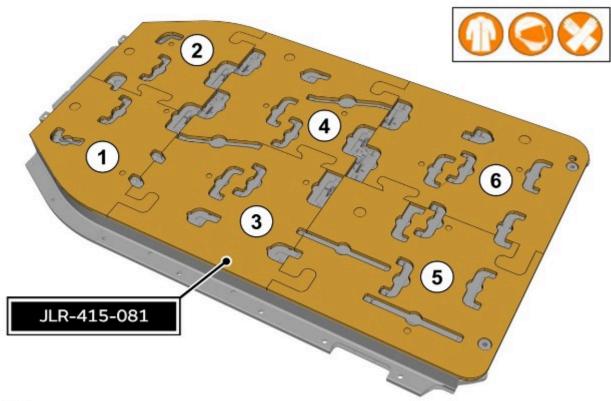
CAUTIONS:

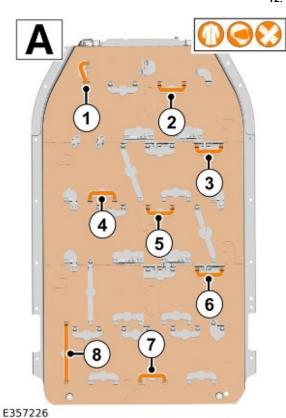
- Make a note of the installed position of the busbar caps, there are 3 types of caps as shown in the illustration.
- · Care must be taken not to damage the busbar caps.

nove the 68 busbar caps.

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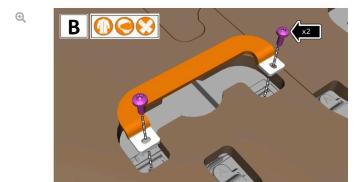


WARNINGS:

- Before removing the busbars make a note of their installed locations and orientations in the HV battery.
- The busbars **must** be removed in the sequence shown in the illustration marked 'A'.

nove the 8 busbars in the sequence shown in the illustration marked 'A'. Illustration marked 'B' shows the process to remove each busbar.

- Using the insulated 3/8 drive wrench and insulated T30 torx socket, remove and discard the 2 bolts. Repeat this for all 8 busbars.
- Install the battery module terminal blanking caps, JLR-415-016, to all exposed module terminals.



13.

WARNING:

Class 0 PPE must still be worn.

When step 12 has been completed Class 1 PPE can be removed until stated otherwise. Class 0 PPE must still be worn.



14 When step 12 has been completed, the safety accompanying person itioned outside the live working area can sign off the LWC and leave the working area.

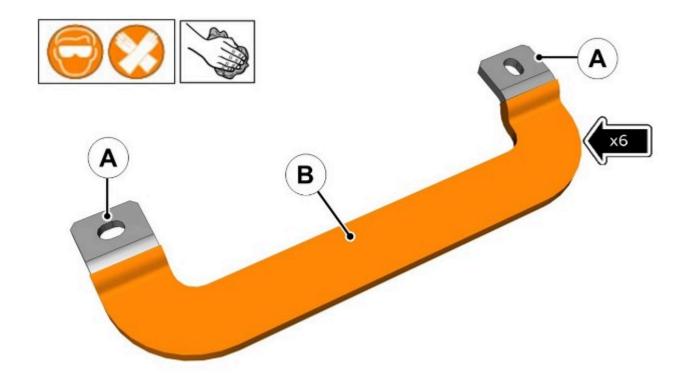
CAUTIONS:

- Make a note of all damage found and the installed position of the damaged busbar within the HV battery.
- All findings must be reported to TA.
- The images marked with a **RED 'X'** show an example of busbar damage caused by overheating, make a note of all damage found.

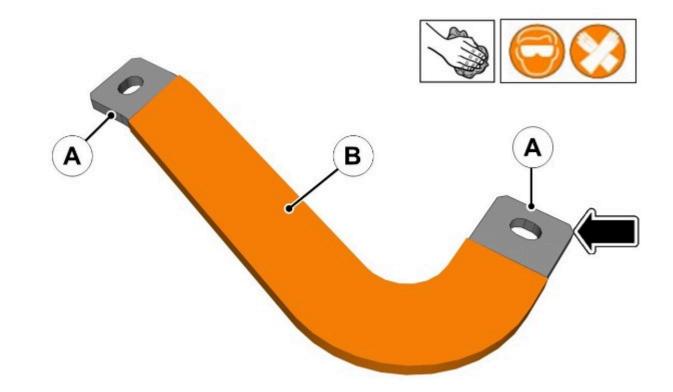
Throughly inspect the 8 busbars removed for safe voltage reduction.

- Clean the busbar contact areas (A) with alcohol based cleaning fluid and a lint free cloth.

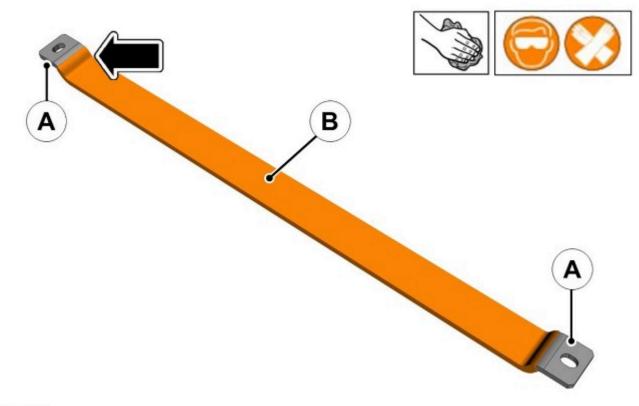
- Visually inspect the contact areas (A) for signs of damage.
 Visually inspect the protective insulation for damage (B).
 If there ARE any signs of damage as shown in the images marked with a RED 'X', make a note of the installed position of the busbar in the HV battery. Continue to step 16, do not reinstall the busbars..
- If there ARE NOT any signs of damage, continue to step 16, do not reinstall the busbars..



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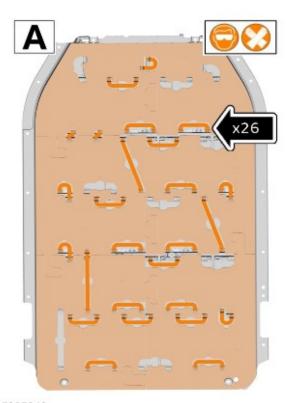




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Here for the busbars make a note of their installed locations and ientations in the \underline{HV} battery.

nove the 26 busbars as shown in the illustration marked ${\bf 'A'}.$ The stration marked ${\bf 'B'}$ shows the process to remove each busbar.

- Using the insulated 3/8 drive wrench and insulated T30 torx socket, remove and discard the 2 bolts. Repeat this for all 26 busbars.
- Install the battery module terminal blanking caps, JLR-415-016, to all exposed module terminals.



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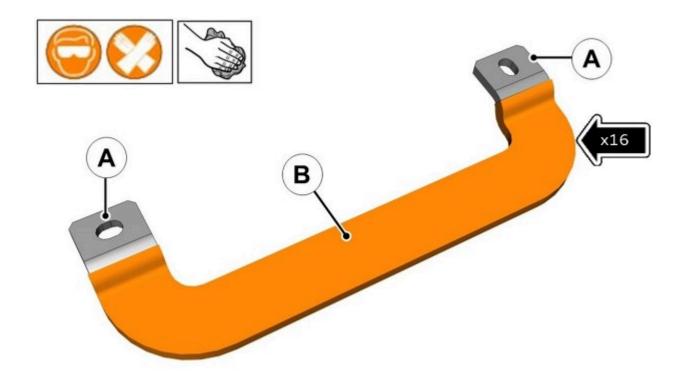
CAUTIONS:

- Make a note of all damage found and the installed position of the damaged busbar within the HV battery.
- All findings must be reported to TA.
- The images marked with a **RED 'X'** show an example of busbar damage caused by overheating, make a note of all damage found.

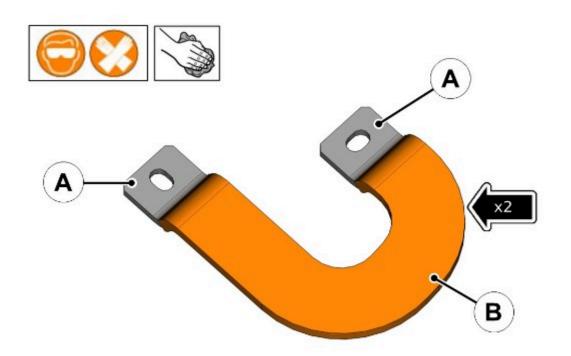
Throughly inspect the 26 busbars.

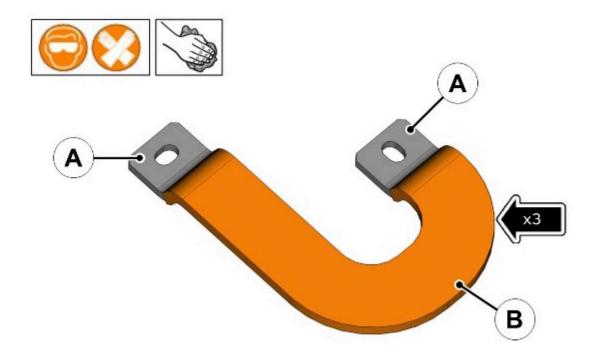
- Clean the busbar contact areas (A) with alcohol based cleaning fluid and a lint free cloth.

- Visually inspect the contact areas (A) for signs of damage.
 Visually inspect the protective insulation for damage (B).
 If there ARE any signs of damage as shown in the images marked with a RED 'X', make a note of the installed position of the busbar in the HV battery. Continue to step 18, do not reinstall the busbars.
- If there ARE NOT any signs of damage, continue to step 18, do not reinstall the busbars.

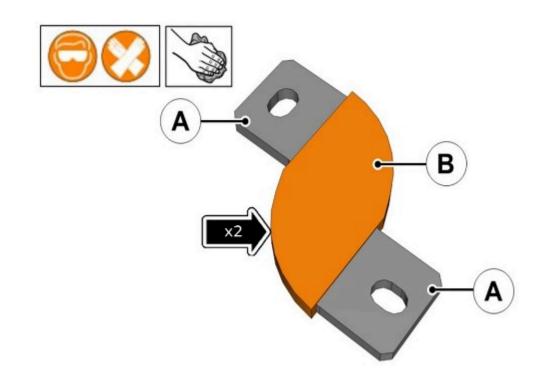


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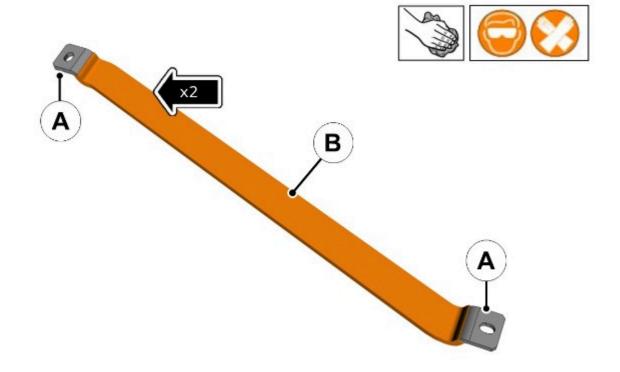




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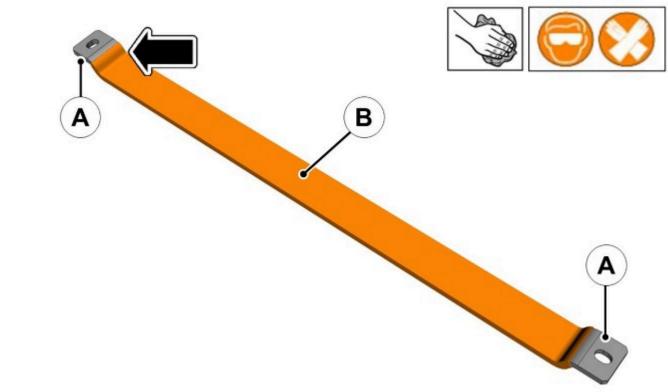


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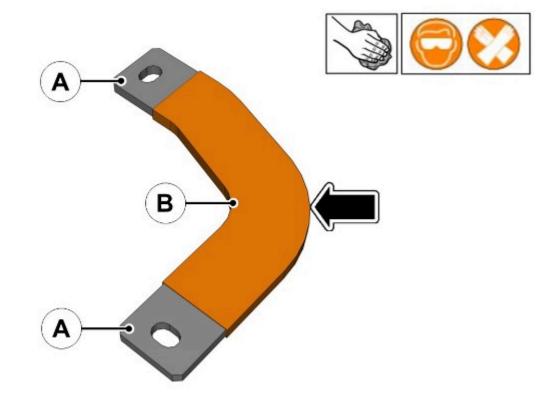
CAUTIONS:

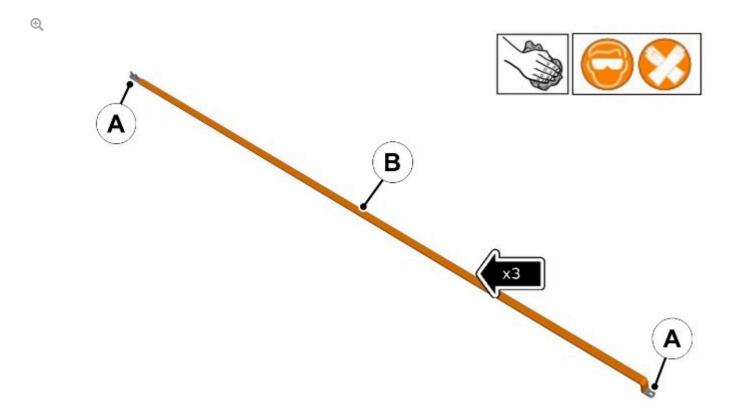
- Make a note of all damage found and the installed position of the damaged busbar within the HV battery.
- All findings must be reported to TA.
- The images marked with a **RED 'X'** show an example of busbar damage caused by overheating, make a note of all damage found.

Thoroughly inspect the 4 busbars removed during **BEM** baseplate removal.

- Clean the busbar contact areas (A) with alcohol based cleaning fluid and a lint free cloth.

- Visually inspect the contact areas (A) for signs of damage.
 Visually inspect the protective insulation for damage (B).
 If there ARE any signs of damage as shown in the images marked with a RED 'X', make a note of the installed position of the busbar in the HV battery. Continue to step 19.
- If there ARE NOT any signs of damage, continue to step 19.





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CAUTIONS:

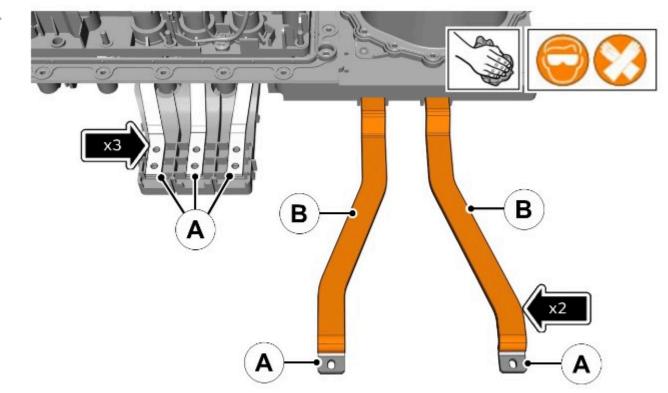
- Make a note of all damage found and the installed position of the damaged busbar within the HV battery.
- All findings must be reported to TA.
- The images marked with a **RED 'X'** show an example of busbar damage caused by overheating, make a note of all damage found.

Thoroughly inspect the 5 **BEM** baseplate busbars.

- Clean the busbar contact areas (A) with alcohol based cleaning fluid and a lint free cloth.

- Visually inspect the contact areas (A) for signs of damage.
 Visually inspect the protective insulation for damage (B).
 If there ARE any signs of damage as shown in the images marked with a RED 'X', make a note of the installed position of the busbar in the HV battery. Continue to step 20.
- If there ARE NOT any signs of damage, continue to step 20.





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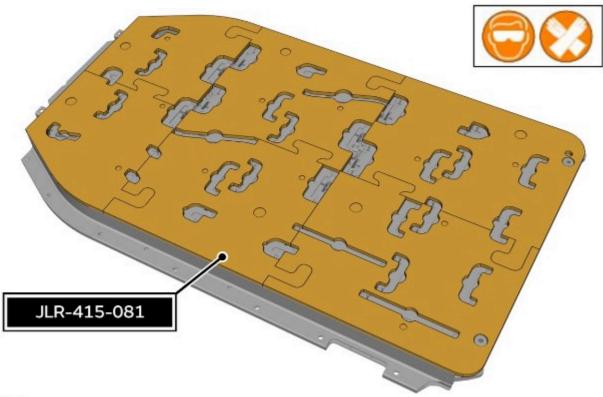




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CAUTIONS:

- Make a note of all damage found and the installed position of the damaged busbar within the HV battery.
- All findings must be reported to TA.
- The images marked with a **RED 'X'** show an example of busbar damage caused by overheating, make a note of all damage found.

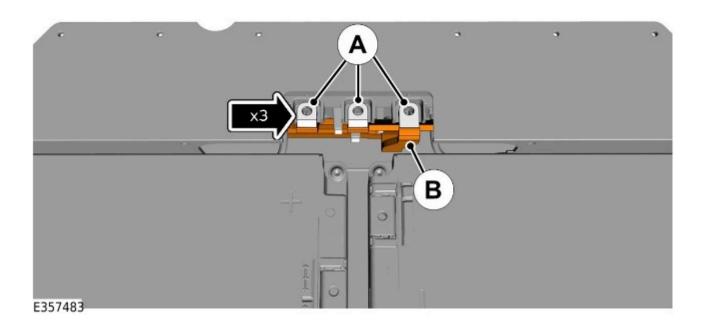
Thoroughly inspect the 3 HV connector busbars.

- Clean the busbar contact areas **(A)** with alcohol based cleaning fluid and a lint free cloth.

- Visually inspect the contact areas (A) for signs of damage.
 Visually inspect the protective insulation for damage (B).
 If there ARE any signs of damage as shown in the images marked with a RED 'X', make a note of the installed position of the busbar in the HV battery. Continue to step 22.
- If there ARE NOT any signs of damage, continue to step 22.















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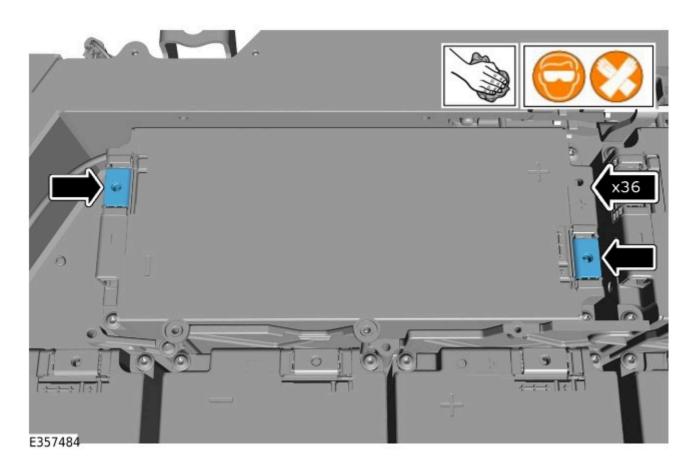
CAUTIONS:

- Each HV battery module has 2 contact areas, all contacts areas **must** be thoroughly inspected.
- All findings **must** be reported to <u>TA</u>.
- The image marked with a RED 'X' show an example of HV battery module damage caused by overheating, make a note of all damage found.

Thoroughly inspect the 36 HV battery module contact areas.

- Remove the battery module terminal blanking caps, JLR-415-016, from the module terminals.
- Clean the HV battery module contact areas with alcohol based cleaning fluid and a lint free cloth.
- Visually inspect the HV battery module contact areas for signs of damage.
- If there ARE any signs of damage as shown in the images marked with a RED 'X', make a note of the installed position of the busbar in the HV battery. Continue to step 23.
- If there ARE NOT any signs of damage, continue to step 23.





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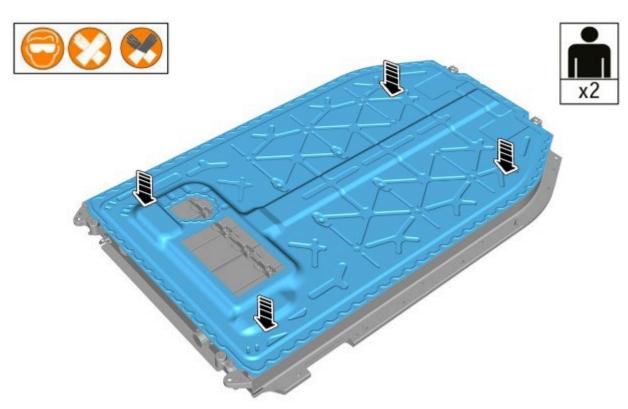


WARNINGS:

- Before raising a TA you must follow steps 23 to 25 to make the live working area safe.
- This step requires the aid of an assisting person to help the <u>EVSAP</u> inside the live working area.
- The assisting person must be qualified to Electric Vehicle Competent Person (EVCP) or higher and be signed onto the <u>LWC</u>.

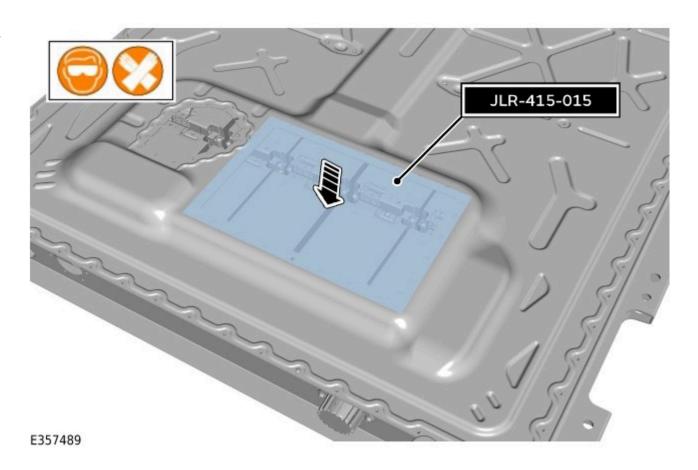
With the aid of an assisting person, install the HV battery cover.

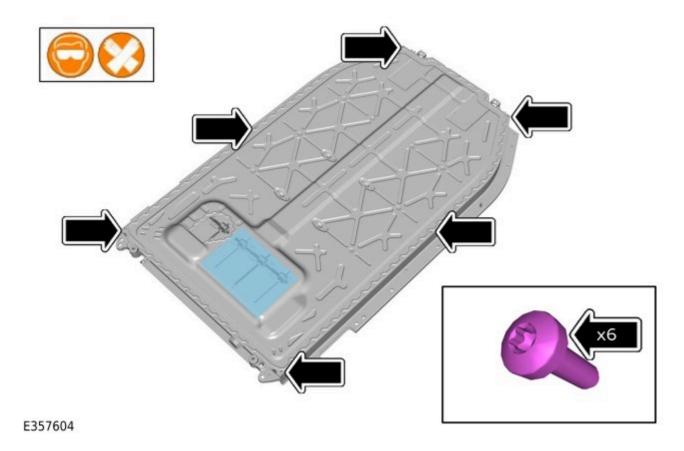
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26.

CAUTIONS:

- All findings must be reported to TA, this includes if damage is not found.
- Include images of all damage found and the location of the damaged components inside the <u>HV</u> battery.
- TA will provide confirmation of the repairs that are required for the HV battery.
- All additional parts and labour required to complete the repair guided by TA must be claimed as related damage through the related damage process.

Following the thorough inspection of all busbars and HV battery modules, raise a TA stating the campaign number H468.

- Provide evidence of all busbar damage found.
- Provide evidence of all HV battery module contact area damage found.
- When providing evidence, include the location of each busbar and HV battery module within the HV battery.
- Await further instruction from TA.

SAMPLE CUSTOMER LETTER - FOR INFORMATION ONLY

Name Address line 1 Address line 2 Address line 3 Post Code

Vehicle Identification Number (VIN):

Registration Number: Program Number: H468

Date: month/year

SAFETY RELATED RECALL - I-PACE - High Voltage (HV) Battery Busbar Fixings

Dear

JLR Limited would like to advise you that during ongoing quality assessment of our product it has been identified that a possible safety related problem may occur on certain I-Pace vehicles within a specific production range. Read the information below, this will explain the actions that we intend to take and what you will need to do.

Why are we contacting you?

A concern has been identified on a small number of I-PACE vehicles where the fasteners for the High Voltage (HV) battery module to module electrical connecting busbars may not be sufficiently secure, which under some circumstances could result in arcing at the busbar to module connection point. Arcing will generate heat which may lead to a thermal overload condition.

A vehicle thermal overload condition such as fire or smoke can result in an increased risk of occupant injury and/or injury to persons outside the vehicle, as well as property damage.

What will your JLR retailer/authorized repairer do?

At your visit, your preferred JLR retailer/authorized repairer will inspect the busbar fixings and install new components, as required.

How long will it take?

The work on your vehicle will be completed as quickly and efficiently as possible in order to minimize inconvenience to you. Your retailer/authorized repairer will be able to advise how long your vehicle will be required for when a booking is made.

What we are asking you to do

Contact your preferred JLR retailer/authorized repairer without delay. To book your vehicle in for this action you will need to provide the retailer/authorized repairer with the following which are detailed at the beginning of this letter:

- · The VIN for your vehicle
- · Vehicle registration number of your vehicle.
- · The program code for the action.

If you do not have a retailer/authorized repairer, access www.jaguar.co.uk or www.jaguar.com for contact details.

If you no longer own the vehicle could you complete the 'Change of Ownership' slip attached to this letter, returning the slip to JLR Limited immediately in the enclosed 'Freepost' envelope. This will enable us to make contact with the new owner.

If you have concerns

If you experience any concerns relating to this Recall, contact the Service Manager at the retailer/authorized repairer for assistance or contact the JLR Limited Customer Experience Centre on 0345 303 2303 or (enter phone number).

This bulletin is being issued in accordance with the legislative or industry requirements concerning vehicle defects. The authorities will closely monitor the response rate of this bulletin.

Treat this matter with the urgency it requires, JLR Limited apologize for any inconvenience this bulletin may cause and thank you, in advance, for your co-operation.

Yours sincerely

Head of Business

Technical Questions And Answers	JAGUAR
FOR USE ON ENQUIRY	
JLR Recall H468	
I-PACE High Voltage (HV) Battery Loose Busbar Fixings	

A concern has been identified on a small number of I-PACE vehicles where the fasteners for the HV battery module to module electrical connecting busbars may not be sufficiently secure. Under some circumstances this condition could result in arcing at the busbar to module connection point. Arcing will generate heat which may lead to a thermal overload condition.

Question 1

Who do I contact if a member of the press contacts me about this recall?

Answer

Make sure that any press enquiries are referred to the JLR Corporate Affairs office.

Question 2

Why is JLR recalling certain models?

Answer

JLR is conducting a voluntary safety recall involving certain 2019 to 2021 model year Jaguar I-PACE vehicles where data has shown that the busbar fasteners within the high voltage battery may not be sufficiently secure.

Question 3

Can you tell me more about what is wrong with the vehicles?

Answer

Engineering analysis of the HV battery pack data received through the Diagnostic Over the Air route has shown that, in a small number of vehicles, there is an abnormal resistance at the busbar fixings within the HV battery pack. The elevated resistance is due to insecure busbar fixings. Insecure busbar fixings could lead to arcing which could in turn lead to a thermal overload condition. A thermal overload condition such as fire or smoke can result in an increased risk of occupant injury and/or injury to persons outside the vehicle, as well as property damage.

Question 4

How would the customer become aware of potentially having this concern?

Answer

Vehicles may suffer from a decrease in range, or in some cases owners may notice a burning smell, smoke or fire.

Question 5

Does this concern affect vehicle safety?

Answer

JLR has determined that the potential for arcing to occur could pose a risk to vehicle safety due to the risk of a fire developing.

Question 6

Has JLR received many complaints?

Answer

JLR has received a small number of complaints which have been attributed to this issue.

Question 7

Have there been any accidents or injuries?

Answer

There have been no reports of accidents or injuries relating to this concern of which JLR is aware.

Question 8

How was the condition discovered?

Answer

The condition was identified through JLR's field reporting process.

Question 9

How long has JLR known about this problem?

Answer

Investigations relating to unusual battery module resistance readings commenced in late August 2023.

Question 10

Is the defect leading you to any concerns regarding the reliability of a system, which is supposed to be designed and engineered for the passengers' safety? What type of measures are you planning to take?

Answer

JLR has no concerns with the overall reliability of the vehicle. JLR carefully monitors field data to make sure that any matters relating to safety and compliance are rigorously investigated.

Question 11

What has JLR done in production?

Answer

The battery pack supplier has introduced controls relating to the installation of the busbar fixings such that assurance of correct installation is provided.

Question 12

What will JLR Retailers/Authorized Repairers do to the vehicles?

Answer

Vehicles will have their HV battery busbar fixings inspected, and new components installed as required.

Question 13

Which vehicles are affected by this recall?

Answer

A small number of Jaguar I-PACE vehicles manufactured between 08 June 2018 and 17 September 2020 are affected.

Question 14

Are other JLR models affected by these actions?

Answer

No other models are known to be affected by this condition.

Question 15

Are parts available to rework vehicles?

Answer

Parts are available for JLR Retailers/Authorized Repairers to conduct this repair.

Question 16

How much will the recall cost JLR?

Answer

Cost was not a factor in deciding to recall these vehicles.

Question 17

How do I know if my vehicle is affected?

Answer

All owners of potentially affected vehicles will shortly receive a letter inviting them to contact a JLR Retailer/Authorized Repairer for the work to be completed.

Question 18

How long does it take for the car to be inspected and repaired?

Answer

The work will be completed out as quickly and efficiently as possible in order to minimize inconvenience to customers and is expected to take around 18 hours to complete. Naturally, due to retailer schedules, vehicles may be required for longer.

Question 19

Can I continue to drive my vehicle safely until it has been recalled?

Answer

Customers are advised to contact a JLR Retailer/Authorized Repairer should they have any concerns

Note:

Make sure that any press enquiries are referred to the JLR Corporate Media office on +44-(0)2475-361000 or jlrmedia@jaguarlandrover.com