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BODY REPAIRS - CORROSION PROTECTION

CORROSION PROTECTION (G2394450)

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GENERAL

The corrosion protection provided in production must be carefully maintained and/or reproduced during and after body repair work. It is only then that the long-term warranty against penetrative corrosion damage can be assured.

Only Jaguar Land Rover (JLR) original bodywork components and JLR approved repair materials, (sealer, paint etc.), are to be used for bodywork repairs.

Jaguar Land Rover Original Parts

All Jaguar Land Rover (JLR) bodywork components have a cathodic base coating. Individual bodywork components are coated on one or both sides, (in different areas depending on vehicle model).

Together with elastic paint coating, this guarantees an optimum, highly resistant protection against corrosion caused by the impact of small objects such as gravel.

NOTE:

If possible, the individual protective layers, (cathodic base coat), on Jaguar Land Rover (JLR) bodywork components must not be damaged or destroyed by sanding or other mechanical operations.

If hairline cracks at "bodywork connection areas" appear after reshaping work, (e.g. at door hinges), make sure that the corrosion protection provided in production is recreated. The complete paint covering must be re-created if necessary. Renew or touch-up the paint coating, sealing beads and underbody protection as necessary.

GALVANIC CORROSION

The application of additional corrosion protection following body repair is not necessary and not recommended. However, it is important to be aware of galvanic corrosion and take steps to prevent its occurrence.

Galvanic corrosion is the cross-contamination of dissimilar metals, in this case aluminum and steel. Avoidance of galvanic corrosion is an important issue to be considered in the repair of aluminum bodied vehicles. Precautions to prevent the contamination of exposed bare aluminum surfaces should be taken. Good housekeeping and cleanliness should be adopted throughout repairs and especially prior to welding, pre-treatment and adhesive bonding. The repair environment requires control and protection from dust and debris from conventional steel body repairs. All equipment must be clearly identified and used solely on aluminum. Tools should be kept clean and in good order. Steel fastenings are coated to prevent galvanic corrosion. Fastenings should be examined during repairs and where damaged must be renewed. The use of graphite, penetrating oil, or copper based anti-seize compounds upon the steel fixings is not recommended. Where the original equipment surface protection (paint), is removed it must be repainted to the recommended standard. Only Jaguar Land Rover (JLR) original bodywork components and JLR approved repair materials, (sealer, paint, etc.), are to be used for bodywork repairs.

NEW COMPONENTS

All new components must be inspected for transport or storage damage such as scratches or dents. The following operations may be necessary, depending on the extent of damage:

Undamaged New Component

- Do not grind the cathodic primer.
- Thoroughly clean with silicone remover and rub dry.

Slightly Damaged New Component

- Sand out scratches.
- Finely sand the surrounding surface.
- Thoroughly clean with silicone remover and rub dry.
- Apply corrosion protection primer to bare areas.

Damaged New Components (bumps and dents)

- Beat out the dented area and sand down substrate.
- Apply filler.

- Lightly sand the whole component.
- Thoroughly clean with silicone remover and rub dry.
- Apply corrosion protection primer to bare areas.

The clinched flanges on the hood, doors and tailgate must be sealed with clinched flange sealer, if this is not already applied.

PARTIAL RENEWAL

The main difference when components are partially, rather than completely renewed, concerns the preparation of butt or lap joints.

- When bodywork components are cut through, attention must be paid to the adequate removal of the paint and coatings on inner areas. This specially applies to areas which are difficult to access internally.
- It is important for the weld quality that the inner area is bare metal. Zinc and paint residues in the weld area burn and cause serious hole formation during welding.
- If the zinc layer and the paint coating are not removed, the zinc and paint will burn during welding. The soot produced prevents satisfactory cavity protection.

Procedure



NOTE:

A flat scraper or a wire brush can be used instead of the rotating brush if the cavity is small. Do not use an angle grinder, which would weaken the structure.

- The paint layer must be removed for a width of 30 mm from the line of the weld using a rotating tress wire brush.
- This operation must be completed on both the new and the old parts of the bodywork.
- Depending on the bodywork component, a 10 mm width of the underlying zinc layer must also be removed along the weld line.

UNDERBODY SEALER



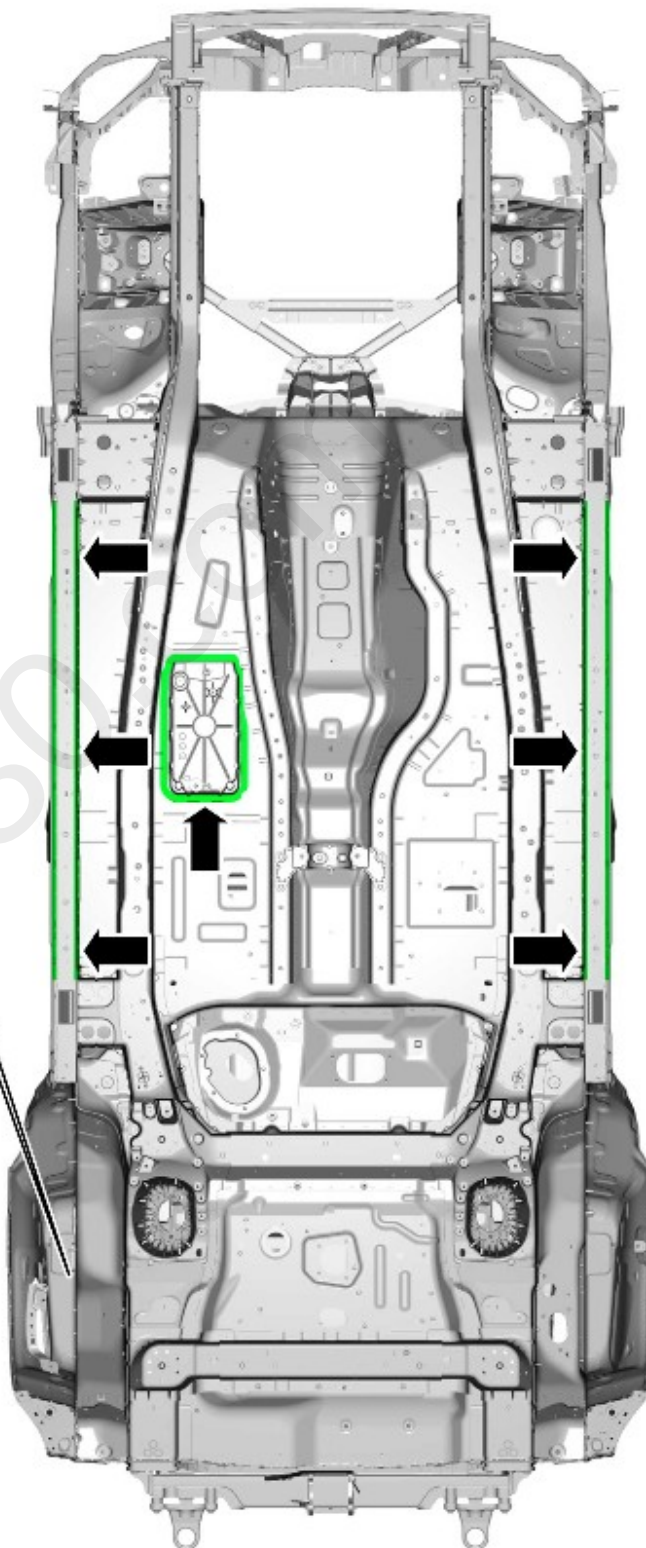
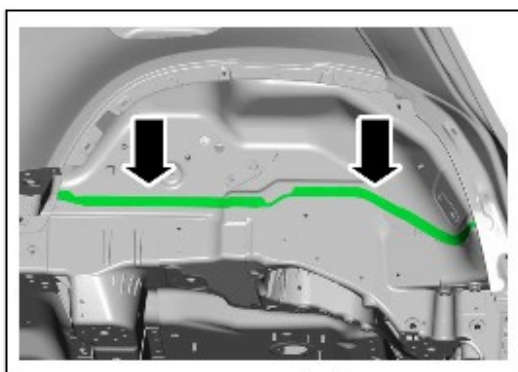
CAUTION:

Make sure that suspension units, wheels, tires, power unit, drive shafts, exhaust and brakes, (including all mounting points), are shielded prior to application of fresh underbody sealer.

Under floor areas are treated with a Jaguar Land Rover (JLR) approved PVC underbody sealer. This material is not suitable for re-treatment. When repairing areas of underbody sealer, strip the factory-applied underbody sealer back to a suitable break point. Make sure that a clean metal surface is exposed and that the edge of the existing adheres soundly to the panel.

Apply seam sealer as necessary before application of underbody sealer. Make sure that blanking plugs and grommets in the floorpan (except those used for wax injection) are installed before underbody sealer application. Refit any heat-fusible plugs which have been disturbed in repair with the aid of a hot air blower, or replace with rubber grommets.

Area of Underbody Sealer Application



PRECAUTIONS DURING BODY REPAIRS AND HANDLING

Take care when handling the vehicle in the workshop. Underbody sealers, seam sealers, underbody wax and body panels may be damaged if the vehicle is carelessly lifted.

PROPRIETARY ANTI-CORROSION TREATMENTS

The application of proprietary anti corrosion treatments in addition to the factory-applied treatment could invalidate the corrosion warranty and should be discouraged. This does not apply to approved, compatible, preservative waxes which may be applied on top of existing coatings.

FITTING APPROVED ACCESSORIES

When fitting accessories make sure that the vehicle corrosion protection is not affected, either by breaking the protective coating or by introducing a moisture trap.

STEAM CLEANING

Due to the high pressure/temperature generated by steam cleaning equipment, there is a risk that certain adhesives and corrosion prevention material may become softened or liquified.

CAUTION:

Do not remove wax or lacquer from underbody areas during repairs.

Take care not to allow the steam jet to dwell on one area, and keep the nozzle at least 300 mm from the panel surface.

INSPECTION DURING MAINTENANCE SERVICING

It is a requirement of the corrosion warranty that the vehicle is inspected for corrosion by a Jaguar Land Rover (JLR) Authorized Repairer during a routine service, to make sure that the factory-applied protection remains effective.

Rectify any bodywork damage or evidence of corrosion found during inspection as soon as is practicable, both to minimize the extent of the damage and to make sure the long term effectiveness of the factory-applied corrosion prevention treatment.

UNDERBODY PROTECTION REPAIRS

Whenever body repairs have been completed, make sure that full sealing and corrosion protection treatments are reinstated. This applies both to the damaged areas and also to areas where protection has been indirectly impaired, as a result either of accident damage or repair operations.

⚠ CAUTION:

Do not use naked flames to remove corrosion prevention material. Large volumes of fumes and gases are liberated by these materials when they burn.

This applies in particular to panels coated with wax, PVC underbody sealer, sound deadening pads etc.

STRUCTURAL ADHESIVE

⚠ CAUTION:

When separating a joint where adhesive is used, it is important to avoid distortion.

Adhesive is applied to critical joint areas during factory assembly. The material used is a high temperature, heat cured, nitrile phenolic which serves to bond the panel surfaces and also to seal the joint against ingress of dust, moisture and fumes. This material is not suitable for service use and, during repair, should be substituted by an approved structural adhesive. For panel specific information and to identify the areas of structural adhesive application in repair, refer to the relevant sheet metal removal and installation procedure.

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