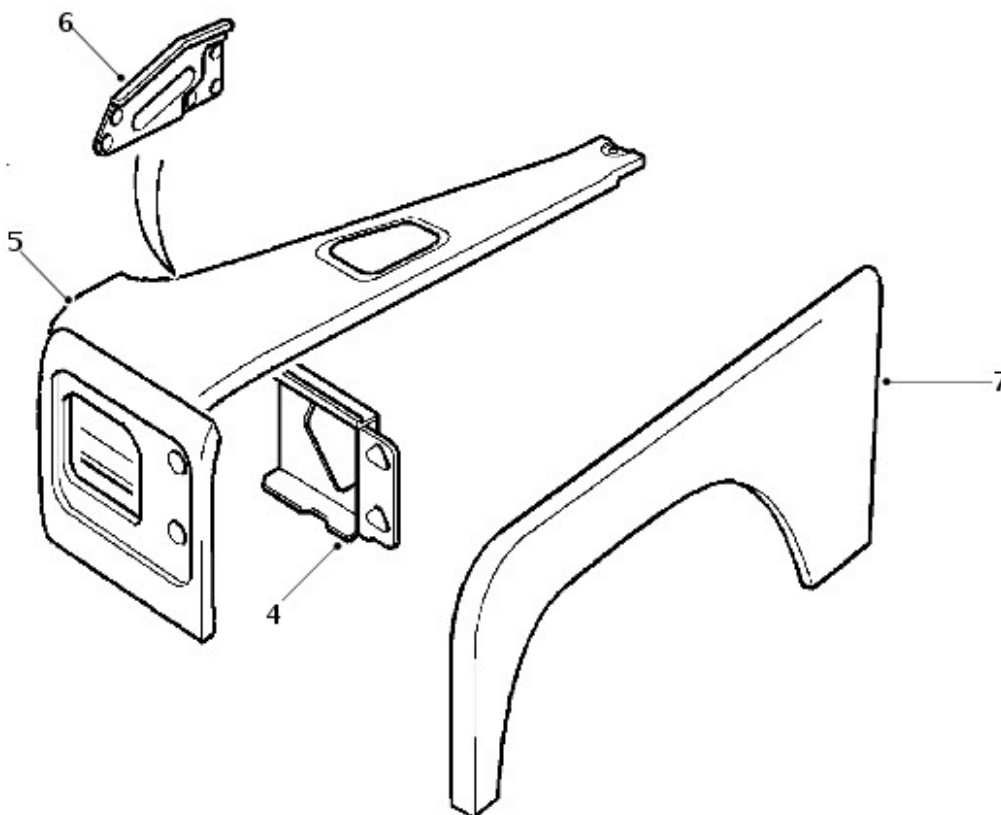


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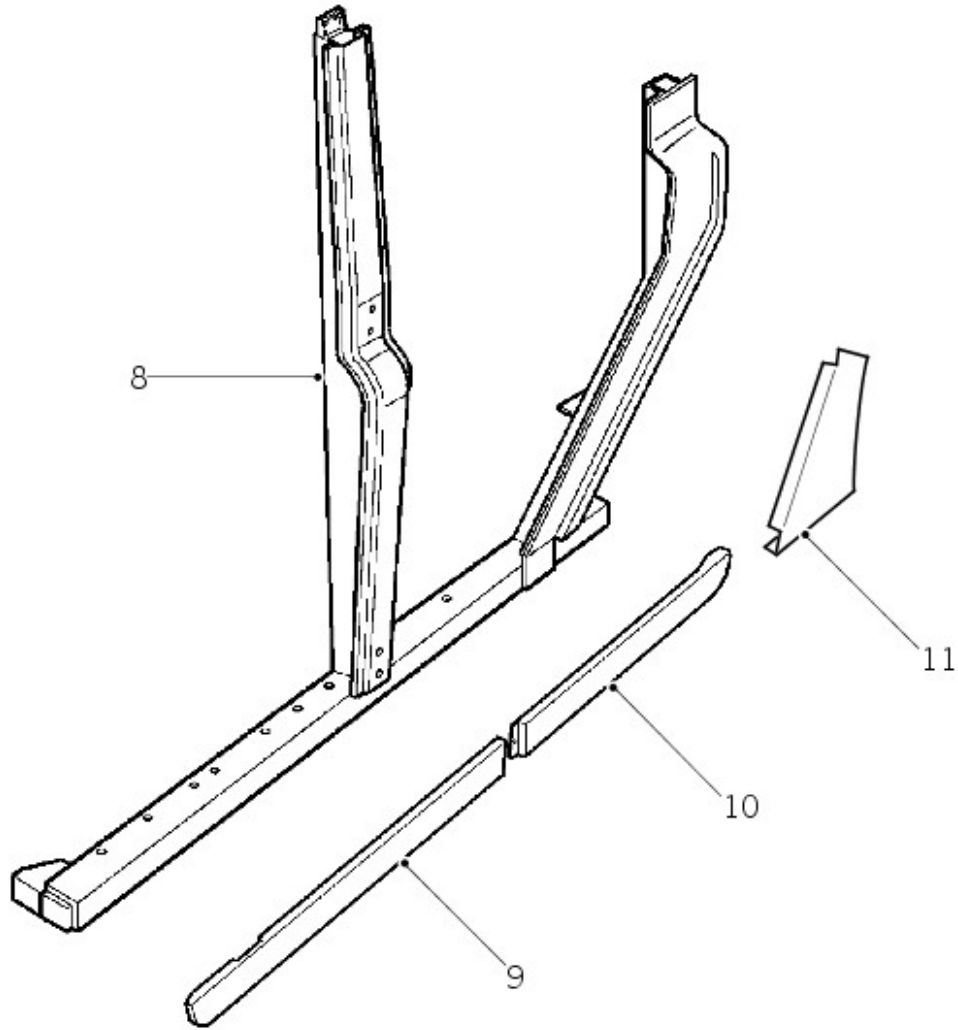
Item	Part Number	Description
3.	-	Bulkhead



M772095C

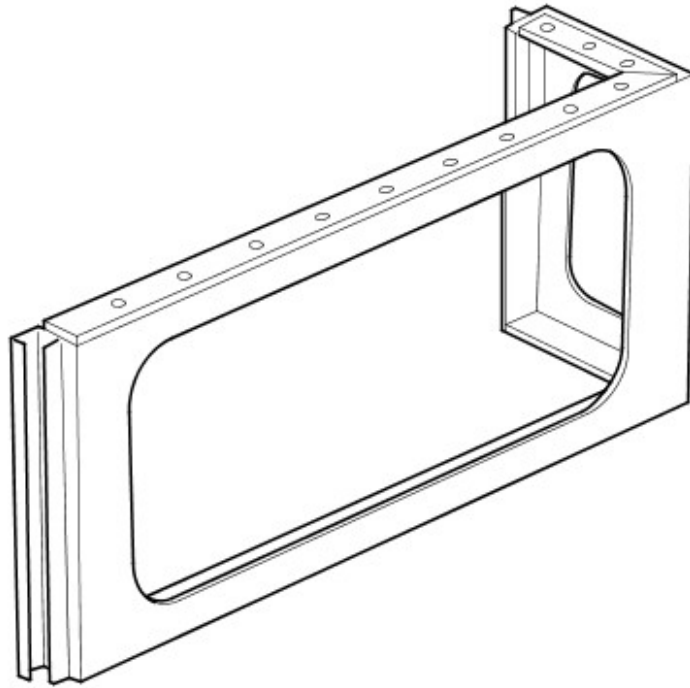
Item	Part Number	Description
4.	-	Headlamp mounting panel - inner
5.	-	Fender upper assembly
6.	-	Headlamp reinforcement panel
7.	-	Fender lower assembly

## Body side panels



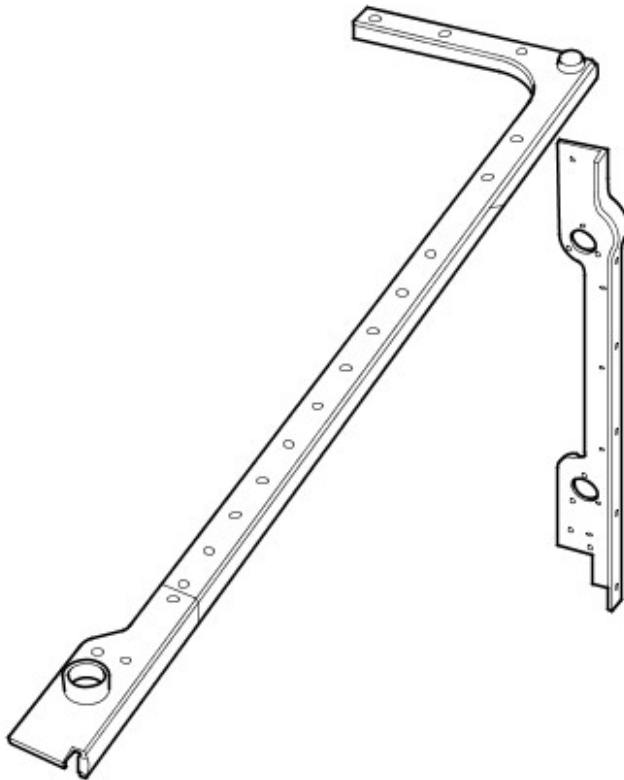
M7721108

Item	Part Number	Description
8.	-	'B/C' and 'D' post assembly
9.	-	Rocker panel - front
10.	-	Rocker panel - rear
11.	-	Dogleg - lower panel



M772104A

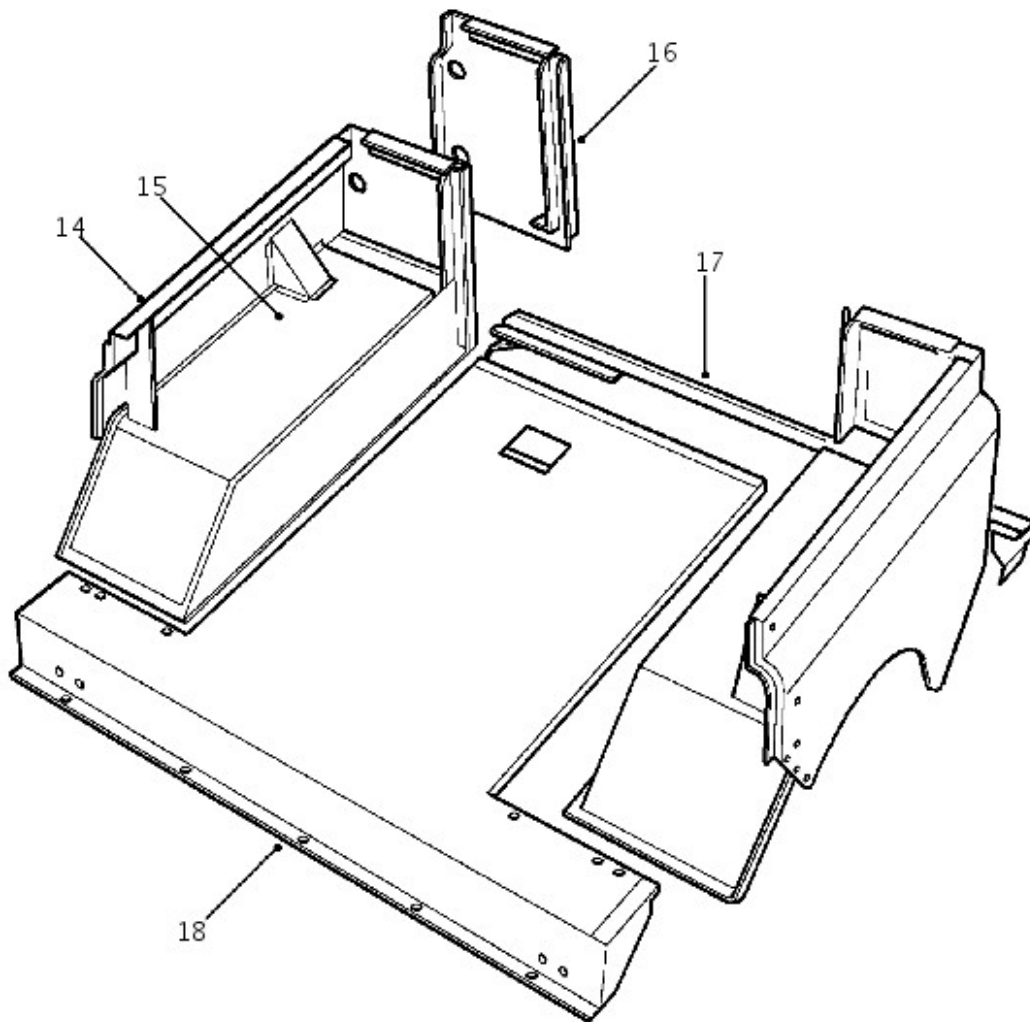
Item	Part Number	Description
12.	-	Body side rear - upper



M772100A

Item	Part Number	Description
13.	-	Body side cappings

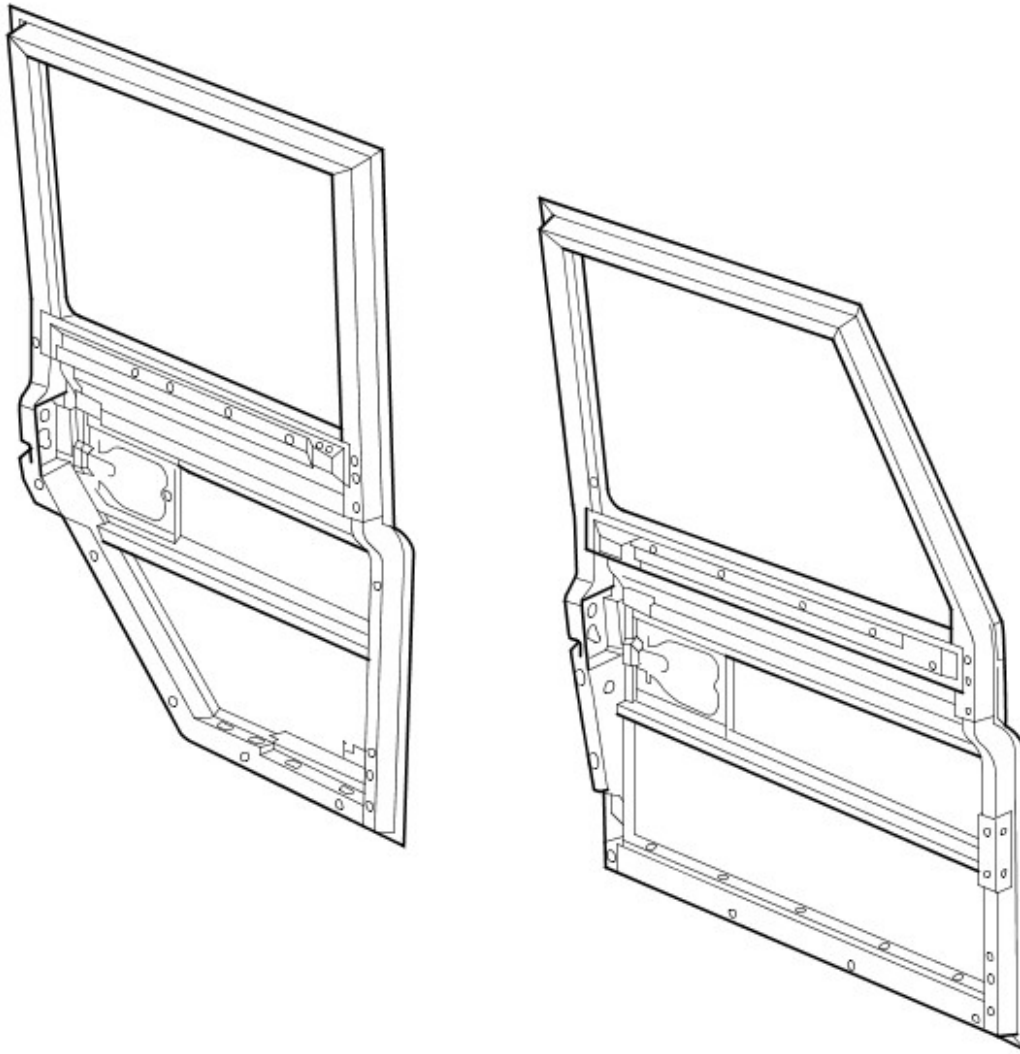
Rear end panels



M772094B

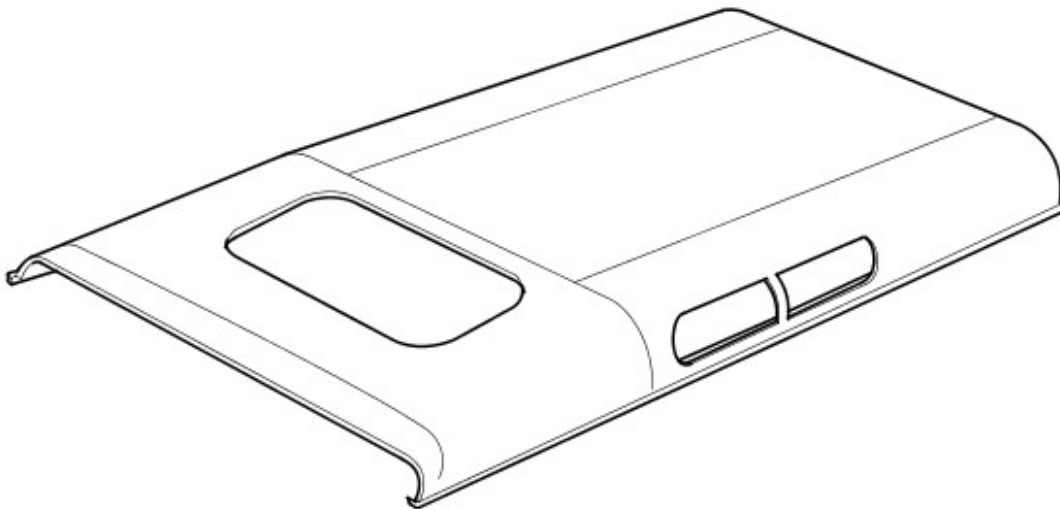
Item	Part Number	Description
14.	-	Body side panel - lower
15.	-	Body side panel - lower - assembly
16.	-	Rear lamp panel
17.	-	Rear panel
18.	-	Rear floor

• NOTE: From 2002 Model year, the taildoor skin is one panel.



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Item	Part Number	Description
19.	-	Door assemblies



M772092A

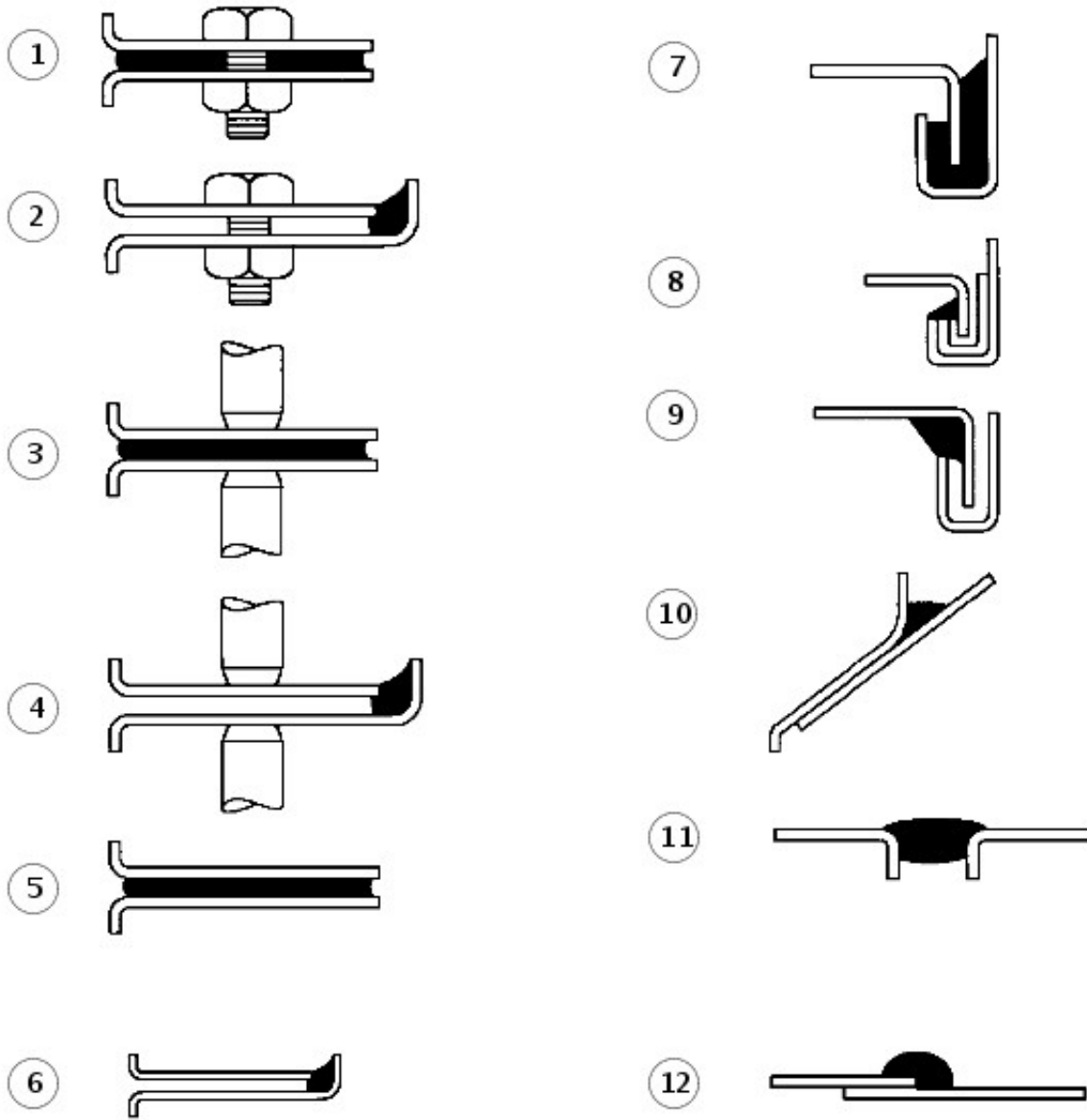
Item	Part Number	Description
20.	-	Roof

# Body Repairs - Corrosion Protection - Corrosion Protection

Description and Operation

## APPROVED MATERIALS

### Joint types



77M1584

Item	Part Number	Description
1.	-	Between bolted panels
2.	-	Between bolted panel edges
3.	-	Between spot welded panels
4.	-	Between spot welded panel edges
5.	-	Between bonded panels
6.	-	Between bonded panel edges
7.	-	Clinch joints (type a)
8.	-	Clinch joints (type b)
9.	-	Clinch joints (type c)
10.	-	Gaps between panels (type a)
11.	-	Gaps between panels (type b)

DESCRIPTION USAGE	SUPPLIER	PART NUMBER
<b>CAVITY WAXES</b>		
Inner cavity wax (transparent)	3M	(08909, 08919, 08929)
Inner cavity wax (amber)	3M	(08901, 08911, 08921)
Cavity wax	Croda	(PW57)
<b>ENGINE BAY WAXES/LACQUERS</b>		
Atrolan engine bay wax and cosmetic wax	Astors	DA3243/1
Engine bay cosmetic wax/lacquer	Croda	PW197
Engine bay cosmetic wax/lacquer	Dinal	4010
<b>MISCELLANEOUS MATERIALS</b>		
Flexible parts repair - rubber modified polypropylene parts	3M	(05900)
Aerosol Auto adhesive (trim) - impact adhesive for trim parts	3M	(08080)
Water shedder repair	Teroson	
Sound dampening foam	Gurit Essex	Betacore 7999
<b>SEAM SEALERS</b>		
Body caulking - type (b) gaps between panels	3M	08568
Drip Chek Clear - bolted, spot welded and bonded panel edges; type (a) and (b), gaps between panels; type (c) clinch joints	3M	08401
Drip Chek Heavy - type (b), gaps between panels; type (c) clinch joints	3M	08531
Flexseal Polyurethane Seam Sealer - bolted, spot welded and bonded panel edges; type (a) and (b), gaps between panels; type (c) clinch joints	3M	(08684, 08689, 08694)
Polyurethane Sealer (sachet)	3M	(08703, 08783, 08788)
Sprayable sealer - type 12 lap joints	3M	(08800, 08823)
Super seam sealer - type 12 lap joints	3M	(08357)
Weld Thru Sealer - between spot welded panels	3M	(08625)
Betafill Clinch and Brushable Sealer (Black, Grey, White)	Gurit Essex	10211/15/20
Clinch joint and underbody coating (Grey, Beige)	Gurit Essex	(10101, 10707)
Leak-Chek Clear - between bolted panels; spot welded and bonded panel edges; type (c) clinch joints	Kent industries	(10075)
Putty - type (a) and (b) gaps between panels	Kent industries	
Polyurethane seam sealer - between bolted panels, spot welded and bonded panel edges; type (a) and (b), gaps between panels	PPG	(6500)
Polyurethane seam sealer - between bolted panels, spot welded and bonded panel edges; type (a) and (b), gaps between panels	Teroson	92
Terolan Light seam sealer - bolted, spot welded and bonded panel edges; type (a) and (b), gaps between panels; between bonded panels; type (c) clinch joints	Teroson	
Terosan Special Brushable Seam sealer - lap joints 12	Teroson	
Terostat Sprayable seam sealer - bolted, spot welded and bonded panel edges; type (a) and (b), gaps between panels	Teroson	9320
Terostat 1K PU seam sealer (SE20) - type (a) and (b), gaps between panels, spot welded and bonded panel edges;	Teroson	
Sealing compound - bolted, spot welded and bonded panel edges; type (b), gaps between panels	Wurths	8901001/-/6
<b>STRUCTURAL ADHESIVES</b>		
Automotive structural adhesive - between bonded panels; type 5 and 7	3M	08122
Two part structural Epoxy - between bonded and spot welded panels; type (a) clinch joints	Ciba Geigy	XB5106/7
<b>UNDERBODY SEALERS</b>		
Body Schutz	3M	08861
Spray Schutz	3M	08877
Crodapol Brushable Sealer	Croda	PV75
Terotex Underseal (CP02)	Terosan	9320
<b>UNDERBODY WAXES</b>		
Stone chip coating (smooth)	3M	08158/9
Underbody wax	Croda	PW61

Underbody wax	Dinol	Tectacote 205
<b>WELD-THRU PRIMERS</b>		
Weld-thru coating	3M	05913
Zinc spray	3M	09113
Zinc rich primer	ICI	P-565 634

## APPLICATION EQUIPMENT

### SATA Schutz Gun Model UBE

Specifications	
Air consumption	200 litres/min (7 ft <sup>3</sup> /min) @ 45 psi
Weight	660 grams (23.3 oz)

Manufactured and supplied by:

Sata Gmbh

Minden Industrial Ltd.

16 Greyfriars Road

Moreton Hall

Bury St. Edmunds

Suffolk IP32 7DX

Tel. (01284) 760791

The Sata Schutz Gun is approved for the re-treatment of vehicle underbody areas with protective coatings as supplied in 1-litre (1.76pt.), purpose-designed, 'one-way' containers. The screw thread fitting (female on the gun) will fit most Schutz-type packs.

- **NOTE:** Always clean gun after use with the appropriate solvent.

Full operating details are supplied with the equipment.

### Sata HKD1 Wax Injection Equipment

The Sata HKD1 is approved by Land Rover for use in all cavity wax re-treatment operations. The equipment comprises a high quality forged gun with 1-litre capacity pressure feed container, a flexible nylon lance, 1100 mm (43.3 in) straight steel lance and hooked wand lance. A quick-change coupling is a standard fitting to enable lances to be easily interchanged. The lances each have their own spray pattern characteristics to suit the type of box section to be treated.

The Sata HKD1 is covered by a 12 month warranty. All replacement parts and service are obtainable from the suppliers.

### Cooper Pegler Falcon Junior Pneumatic (Airless)

Manufacturer and supplier:

Cooper Pegler and Co. Ltd.

Burgess Hill

Sussex RH15 9LA

Tel. 04 446 42526

Intended primarily for applying transit wax, the Falcon Junior pneumatic sprayer has a 5-litre (1 gal.) container with integral hand pump. This high quality unit provides a simple and effective means of wax spraying without the need for compressed air or additional services.

A selection of nozzles, lances and hoses together with a trigger valve assembly incorporating a filter enable the sprayer to be used in a variety of applications. These include general maintenance, wax injection and paint application. All parts are fully replaceable and include a wide range of nozzle configurations.

The Falcon Junior is fitted with Viton seals and is guaranteed for 12 months.

### 3M Application Equipment

Manufacturer:

3M UK PLC

Automotive Trades Group

3M House



PO Box 1

Market Place

Bracknell

Berks. RG12 1JU

Tel. (01344) 858611

All 3M equipment is available from local trade factors or 3M refinishing factors.

### 3M Caulking Gun 08002

A lightweight, robust metal skeleton gun designed to accommodate 325 mm (12.8 in) cartridge for dispensing sealants etc. This gun facilitates rapid cartridge loading and features a quick-release lever for accurate material ejection and cut-off control.

### 3M Pneumatic Cartridge Gun 08012

An air line fed gun for application of 3M cartridge products. Excellent ease of application for a smooth sealant bead, and incorporates a regulator valve for additional control.

Other 3m applicator equipment available:

### 3M Pneumatic Applicator Guns

Air line fed gun for application of 3M sachet sealers (Part No. 08006 for 200 ml (6 fl oz) and 310 ml (9 fl oz) sachets, and Part No. 08007 for all size sachets including 600 ml (18 fl oz).

### 3M Applicator Gun 08190

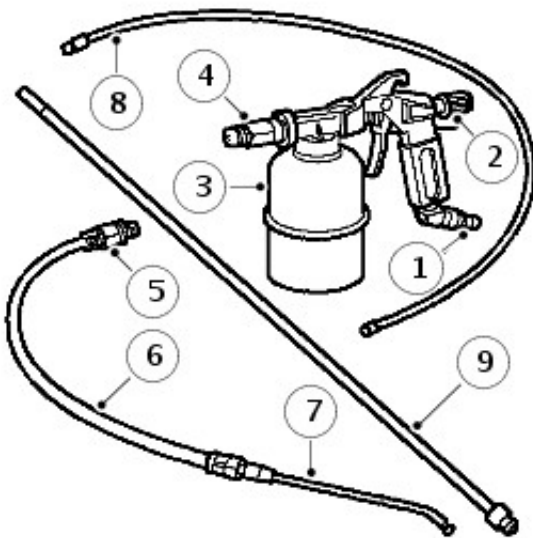
For application of 3M Structural Adhesive 08120.

### 3M Inner Cavity Wax Applicator Gun

Features 750 mm (29.6 in) flexible tube and using 1-litre (1.76 pt) canisters, this approved equipment is available from all 3M refinishing factors.

### Heavy Duty Manual Gun

### Cavity wax application equipment and techniques



77M1383

Item	Part Number	Description
1.	-	Air inlet
2.	-	Flow control (spray pattern adjustment)
3.	-	Pressure cup (1 litre [1.7 pt] capacity). Maximum pressure 140 psi (9.7 bar, 9.8 kg/cm <sup>2</sup> ).
4.	-	Gun connector
5.	-	Lance nipple connection
6.	-	Flexible lance
7.	-	Rigid directional hook wand (forward cone spray pattern)
8.	-	Flexible nylon 1100mm (43.3in.) lance with 360° spray pattern
9.	-	Rigid 1100mm (43.3in.) lance with 360° spray pattern

When re-treating wax-injected areas which have been disturbed during repairs, it is necessary to use a compressed air spray gun with integral pressure cup and a selection of interchangeable lances.

The following points must be observed during use, according to the attachments fitted:

- Use the rigid or flexible lance attachments with 360° spray dispersal when treating enclosed areas, to ensure maximum coverage.
- Where openings are restricted, use the hook nozzle to provide a more directional spray

**1100 mm (43.3in.) Rigid Lance:** The nozzle on the rigid lance produces a 360° circular spray pattern combined with a forward-directed spray. Although wax is distributed to all box section surfaces in a single stroke, effective and complete coverage is best achieved in long, straight structures and box section cavities by spraying on both outbound and return strokes of the lance.

The rigid lance also provides the positional accuracy required in shaped sections, by allowing visual assessment.



**CAUTION:** Do not force the lance into access holes when using this attachment.

**1100 mm (43.3in.) Flexible Nylon Lance:** This lance is similar in pattern to the rigid version, but provides the additional penetration needed for curved sections or in places where access is difficult. Its main limitation is a lack of positional accuracy inside box sections.

Carry out spraying on the outward stroke of the lance. Withdraw the lance slowly to ensure sufficient coverage. **DO NOT withdraw the lance too quickly.**

Keep the nylon tube of the lance away from the edges of the access hole to eliminate abrasion and extend the life of the tube. Take care to ensure that spraying ceases just before the nozzle emerges from the access hole. To assist this process, apply RED paint to the final 30mm (1.2in.) of the nozzle.

**Hook Nozzle on Flexible Lance:** The rigid hook produces a highly atomised, forward-directed, fully conical spray pattern having long range and good dispersion characteristics. This combination has good directional capabilities for the treatment of short, narrow sections and may also be used for direct spraying of inner wheel arches etc.

Position the flat area at the end of the lance at 180° to the nozzle spray direction. This will help to guide the spray more accurately when it is concealed in a box section or access hole.

• **NOTE:** Keep all wax injection/application equipment clean. Use white spirit for this purpose immediately after wax injection operations.

For general spraying move the nozzle in an arc from side to side, to ensure full coverage.

### **Precautions during Body Repairs and Handling**

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

Always follow the correct lifting, jacking and towing procedures as shown in GENERAL INFORMATION DATA, Information section, paying particular attention to the following points:

### **Steam Cleaning and Dewaxing**

Due to the high temperatures generated by steam cleaning equipment, there is a risk that certain trim items could be damaged and some adhesives and corrosion prevention materials softened or liquified.

Adjust the equipment so that the nozzle temperature does not exceed 90°C (194°F). Take care not to allow the steam jet to dwell on one area, and keep the nozzle at least 300mm (11.8in.) from panel surfaces.

Do NOT remove wax or lacquer from underbody or underbonnet areas during repairs. Should it be necessary to steam clean these areas, apply a new coating of wax or underbody protection as soon as possible.

## **CORROSION PROTECTION**

The following information details the materials that are applied during manufacture for corrosion protection.

### **Factory Treatments**

The Defender is treated with the following anti-corrosion materials in production:

- A PVC based underbody sealer material which is sprayed onto the underfloor, wheel arches and undersill areas.
- An application of cavity wax which is sprayed into enclosed cavities and box sections.
- A final coating of underbody wax to cover the complete underfloor including components but excluding brake discs, exhaust system and propeller shafts.
- A coat of protective lacquer applied to the whole body.
- A coat of protective wax applied to the engine bay and wheel arch areas.

• **NOTE:** Do not apply wax to engine bay of Td5 models.

In addition to the above measures, all steel parts are zinc-coated both sides.

## Underbody Sealer

Underfloor areas and outer sill panels are treated with a Plastisol PVC underbody sealer. This material is not suitable for re-treatment.

When repairing areas of underbody sealer, strip the factory-applied material back to a suitable break point, ensuring that a clean metal surface is exposed and that the edge of the existing material adheres soundly to the panel.



**CAUTION:** Ensure that suspension units, wheels, tyres, power unit, driveshafts, exhaust and brakes (including all mounting points) are shielded prior to application of fresh underbody sealer

• **NOTE:** Application of new underbody sealer must be carried out between primer and surfacer paint operations. Areas where seam sealer is used should be re-treated as necessary before application of underbody sealer.

Blanking plugs and grommets in the floor pan (except those used for wax injection) **MUST** be fitted before underbody sealer application. Heat-fusible plugs which have been disturbed should either be refitted with the aid of a hot air blower or replaced with rubber grommets.

## Cavity Wax

Cavity wax is applied to certain box sections. The information given on the following pages is intended as a guide and shows the areas to be treated with cavity wax, as well as the access holes used during manufacture.

## Underbody Wax

A coat of underbody wax is applied to the entire underbody inboard of the sill vertical flanges, and covers all moving and flexible components **EXCEPT** for wheels and tyres, brakes and exhaust. The wax is applied over paints and underbody sealers.



**CAUTION:** Old underbody wax must be completely removed from a zone extending at least 200 mm (7.9 in) beyond the area where new underbody sealer is to be applied.

The underbody wax must be reinstated following all repairs affecting floor panels.

## Engine Bay Wax

Reinstate protective engine bay wax disturbed during repairs using the approved material.

## Wheel Arch Wax

Reinstate protective wheel arch wax disturbed during repairs using the approved material.

## Stone Chip Resistant Paint/Primer

Re-treat all areas protected with factory-applied anti-chip primer with suitable approved material in repair.

## Inspections during Maintenance Servicing

It is a requirement of the Land Rover Corrosion Warranty that the vehicle body is checked for corrosion by an authorised Land Rover dealer at least once a year, to ensure that the factory-applied protection remains effective.

Service Job Sheets include the following operations to check bodywork for corrosion:

• **NOTE:** Wash the vehicle and ensure that it is free from deposits prior to inspection. It is part of the owner's responsibility to ensure that the vehicle is kept free of accumulations of mud which could accelerate the onset of corrosion. The Dealer **MUST** wash the vehicle prior to inspection of bodywork if the customer has offered it in a dirty condition, and pay special attention to areas where access is difficult.

• **NOTE:** The checks described above are intended to be visual only. It is not intended that the operator should remove trim panels, finishers, rubbing strips or sound deadening materials when checking the vehicle for corrosion and paint damage.

With the vehicle on a lift, and using an inspection or spot lamp, visually check for the following:

• **NOTE:** The presence of small blisters in PVC underbody sealer is acceptable, providing they do not expose bare metal.

Special attention must be paid to signs of damage caused to panels or corrosion material by incorrect jack positioning.

It is essential to follow the correct jacking and lifting procedures. See GENERAL INFORMATION DATA, Information section.

With the vehicle lowered, visually check for evidence of damage and corrosion on all painted areas, in particular the following:

Where bodywork damage or evidence of corrosion is found during inspection, rectify this as soon as is practicable, both to minimise the extent of the damage and to ensure the long term effectiveness of the factory-applied corrosion protection treatment. Where the cost of rectification work is the owner's responsibility, the Dealer must advise the owner