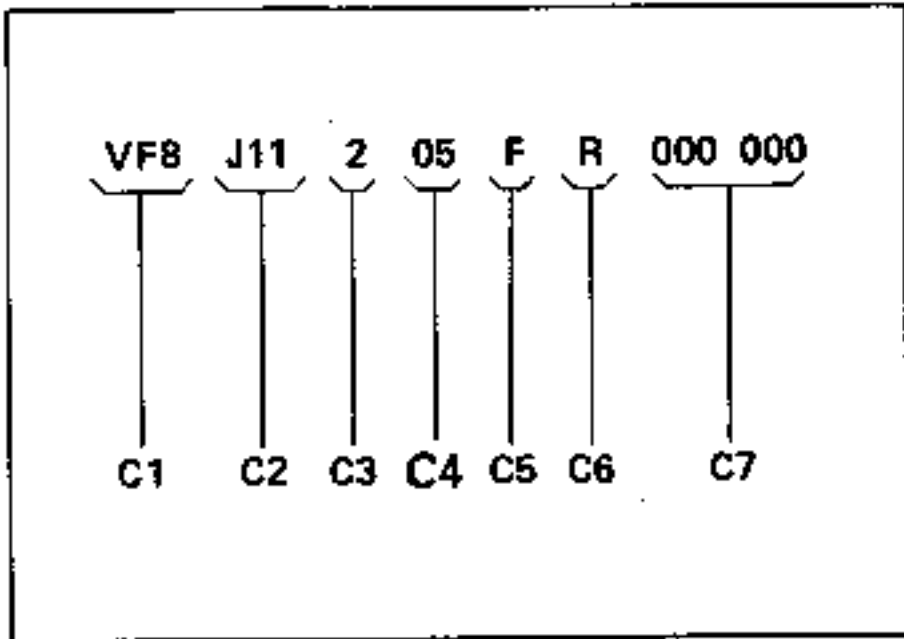
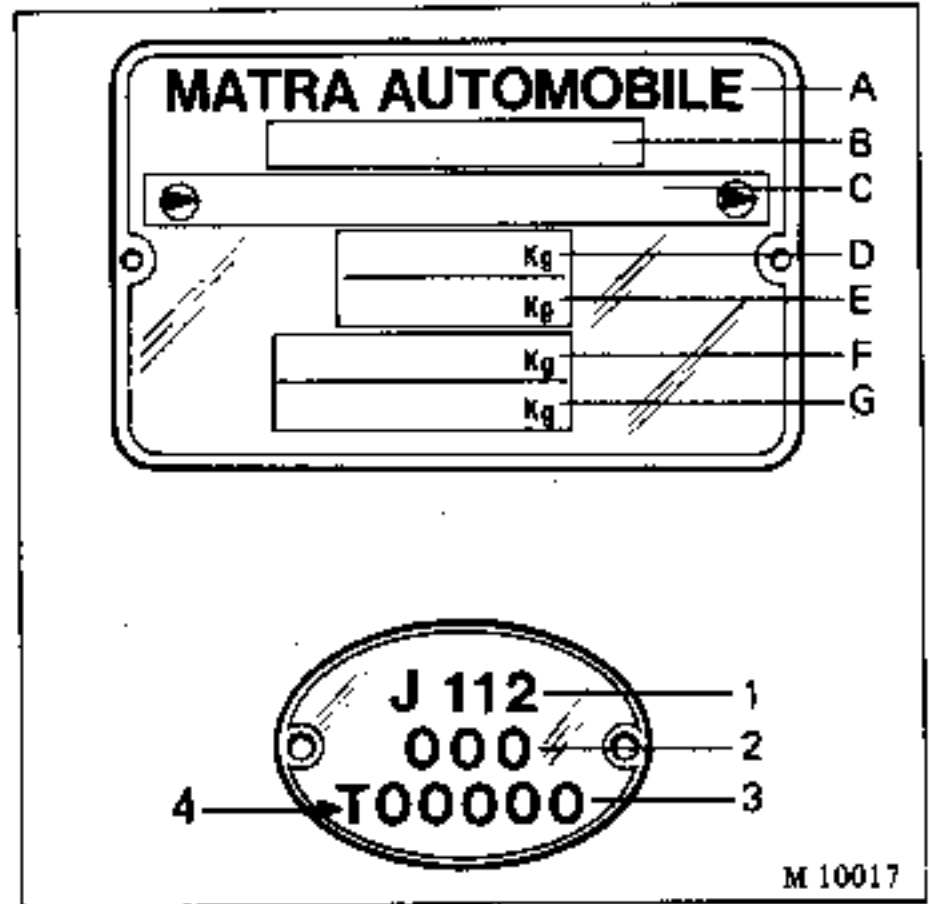


The vehicle is identified by two plates :

- a rectangular plate secured to the right wheel arch, in the engine compartment.
- an oval plate also secured to the right hand wheel arch in the engine compartment.

The rectangular plate carries\* :

- at A : the manufacturer's name.
- at B : the E.E.C. type approval number.
- at C : the French official type reference and the chassis number.



at C1 : the international manufacturer identification code (for example VF8 identifies MATRA AUTOMOBILE),

at C2 : the body configuration code,  
at C3 : the engine type (2 : petrol, 5 : diesel, 6 : fuel injection, 7 : unleaded fuel injection),

at C4 : the gearbox type 05 : type BV5 manual,

at C5 : the model year (F : 1095),

at C6 : the factory of origin (R : ROMORANTIN),

at C7 : the chassis number.

at D : the gross vehicle weight.

at E : the total train weight.

at F : the maximum permissible front axle loading.

at G : the maximum permissible rear axle loading.

The oval plate shows :

- at (1) : the body and engine type
- at (2) : the basic equipment number for the market for which the vehicle is intended.

	STEERING (DRIVE)	
	LH	RH
GOOD ROAD	Series 100	Series 600
POOR ROAD	Series 200	Series 700
SPECIAL EQUIPMENT	Series 500	Series 800

- at (3) : the fabrication number

- at (4) : the factory at which the vehicle was manufactured

T = Romorantin

K = Dieppe

\* Note : for some export markets, certain of these items of information will not be shown. This describes the most comprehensive form the plate can take.

ESSENTIAL SPECIAL TOOLS	
Cha.280-02	Support for fitting to trolley jack
Cha.408-02	Socket for fitting to trolley jack

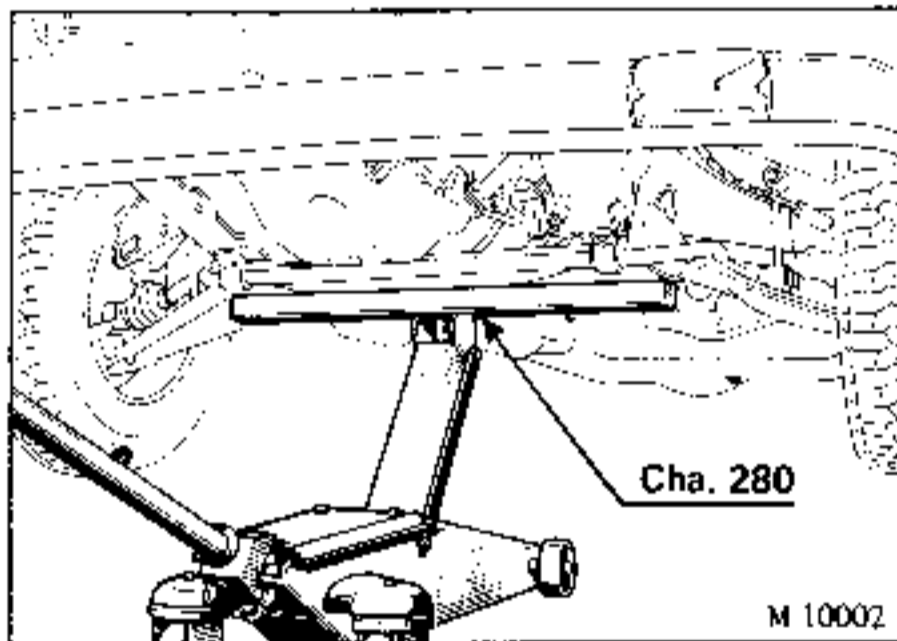
It is forbidden to lift the vehicle by taking the load under the front suspension arm. If the trolley jack used requires it, fit socket Cha.408-02 to locate support Cha.280-02.

**LIFTING, WITH A TROLLEY JACK FROM THE FRONT**

Apply the hand brake and place chocks behind the rear wheels.

Use support Cha.280-02.

Take the load under the front cross member. Ensure that the support does not make contact with the gearbox or the exhaust downpipe.

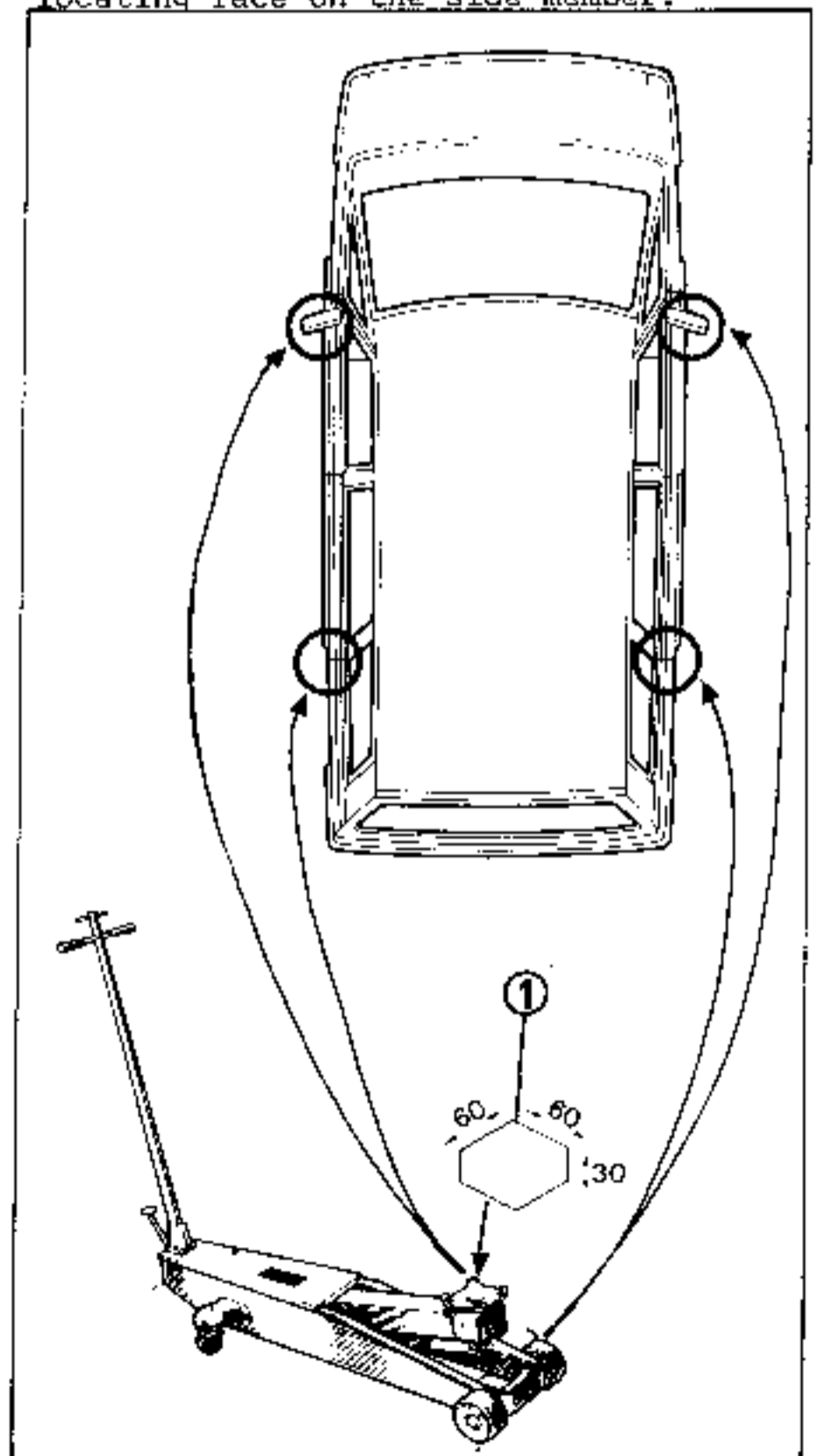


**LIFTING, WITH A TROLLEY JACK FROM THE REAR**

It is FORBIDDEN to lift the rear of this vehicle by taking the load under the centre part of the rear axle. Lift each wheel separately, taking the load under the jacking points provided for the vehicle's own jack.

**ESSENTIAL PRECAUTIONS**

In order not to damage the jacking points (by twisting the metal and thus making it impossible to use the vehicle jack) it is essential to place a pad (1) of the type shown in this diagram, between the head of the trolley jack and the locating face on the side member.

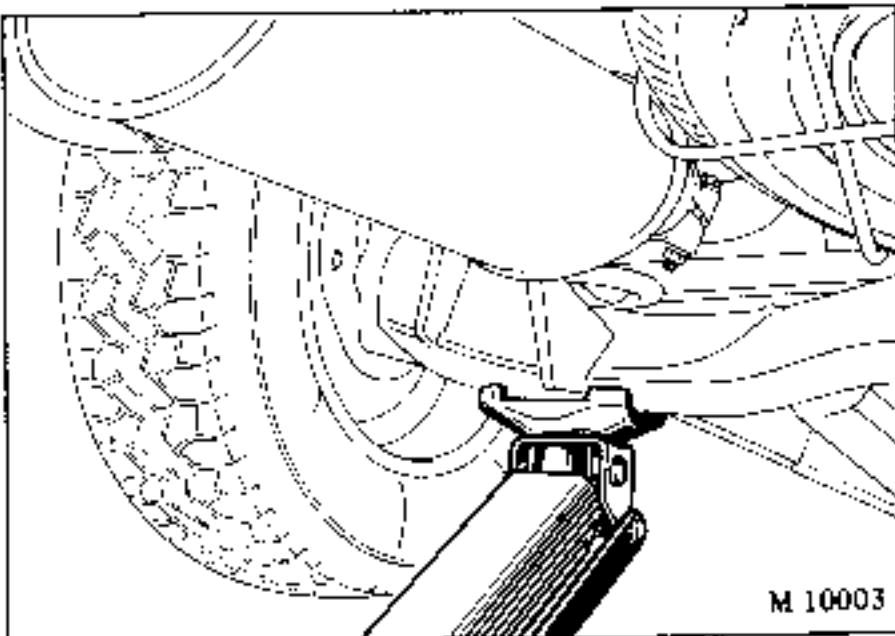
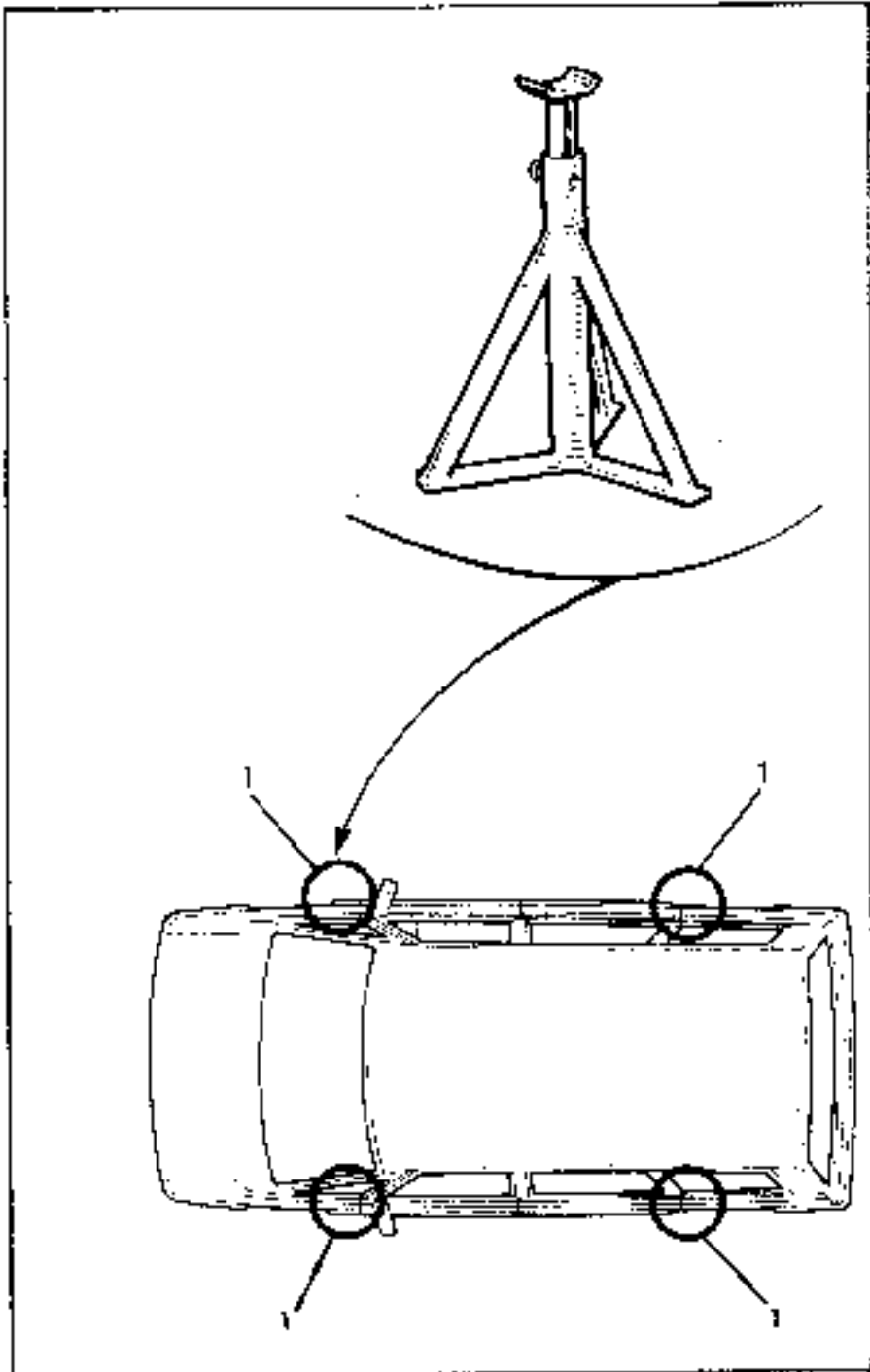


STANDS

It is essential that any stands used to support the vehicle should be placed under the stiffened jacking points (1) provided for lifting the vehicle with its own jack.

To place the stands under the rear jacking points, lift the vehicle under its rear axle at the shock absorber securing points.

WARNING : DO NOT TAKE THE LOAD UNDER THE BODY SILLS. THEY ARE MADE FROM GLASS RE-INFORCED POLYESTER AND MAY SPLIT.

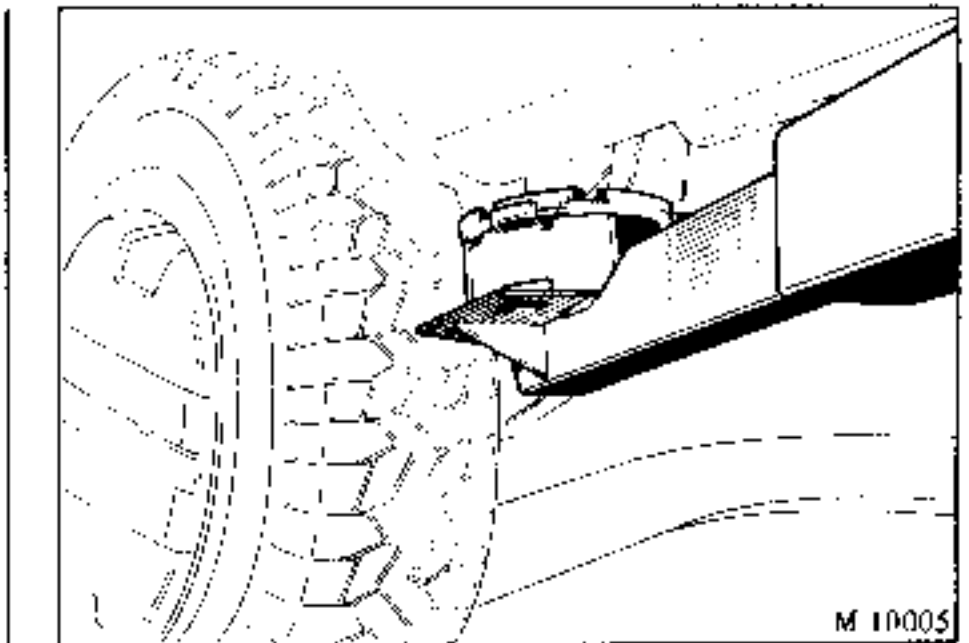
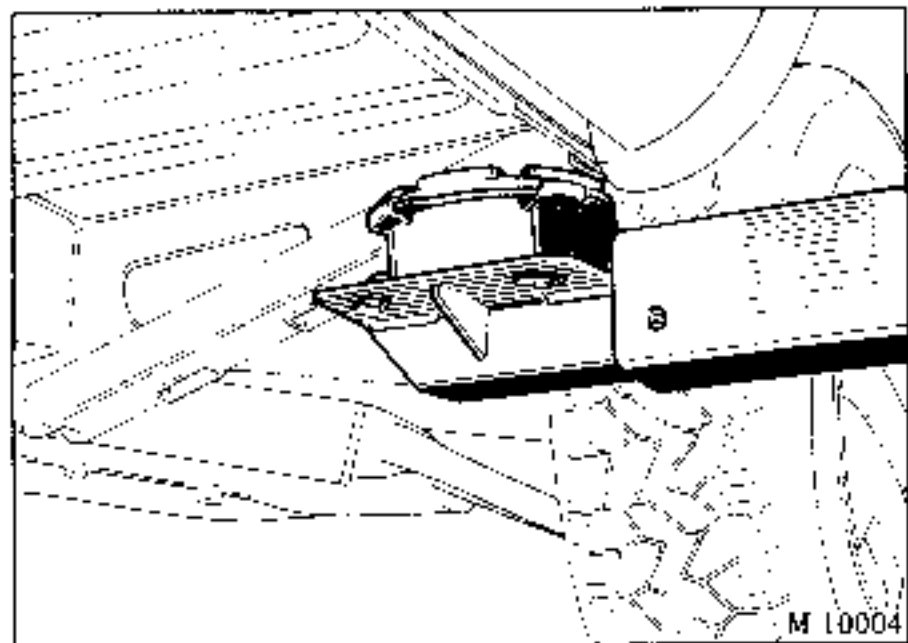


Place the pads of a lift under the jacking points, taking care not to twist the side parts of these jacking points. If these are damaged it will be found impossible to use the vehicle jack.

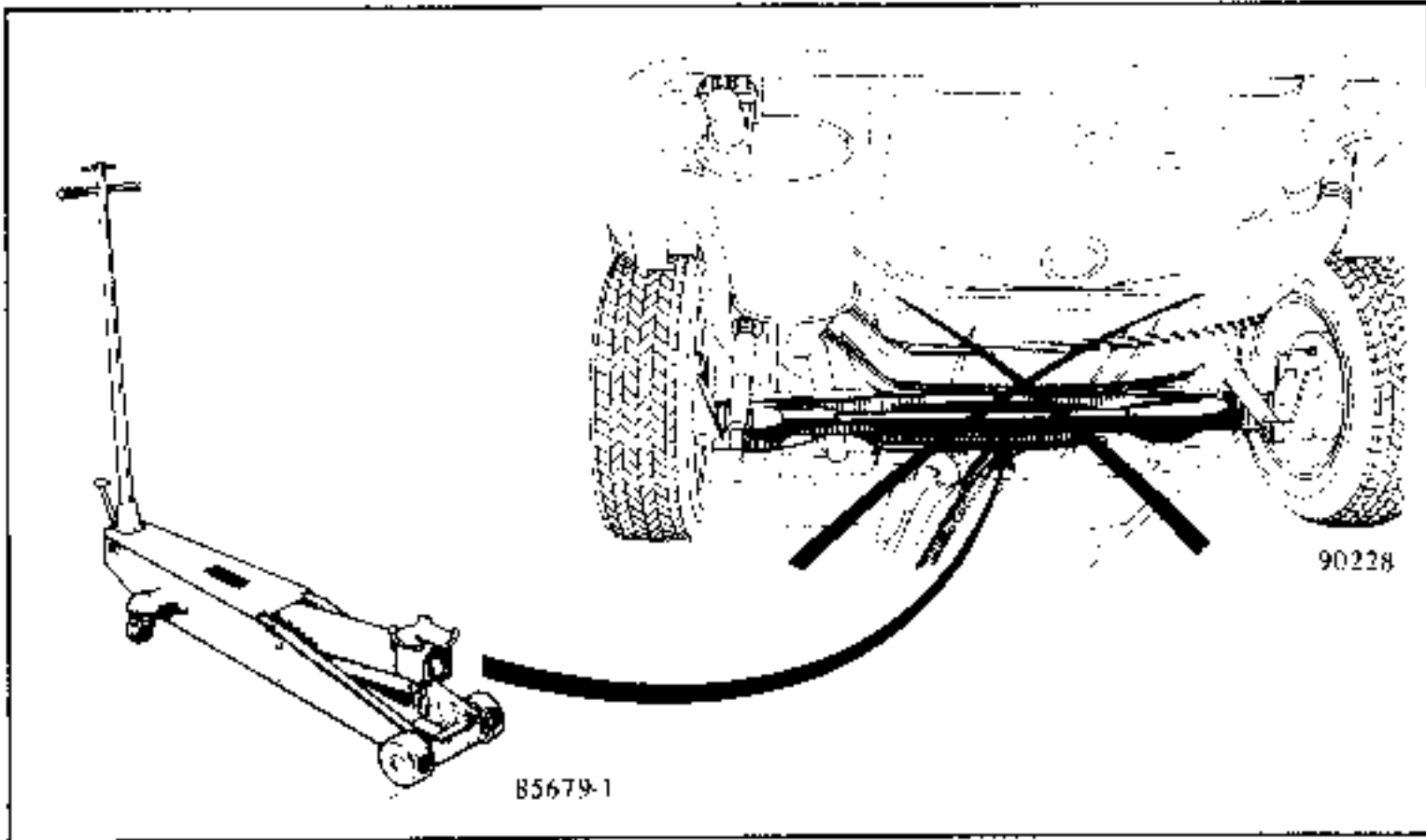
TO AVOID SUCH DISTORTION, USE THE PADS ALREADY DESCRIBED.

FOR YOUR OWN SAFETY

To ensure that the lift pads remain under the jacking points, it is FORBIDDEN to remove any component units which would cause a change in the centre of gravity of the vehicle when the vehicle has been raised by a 2 column lift.



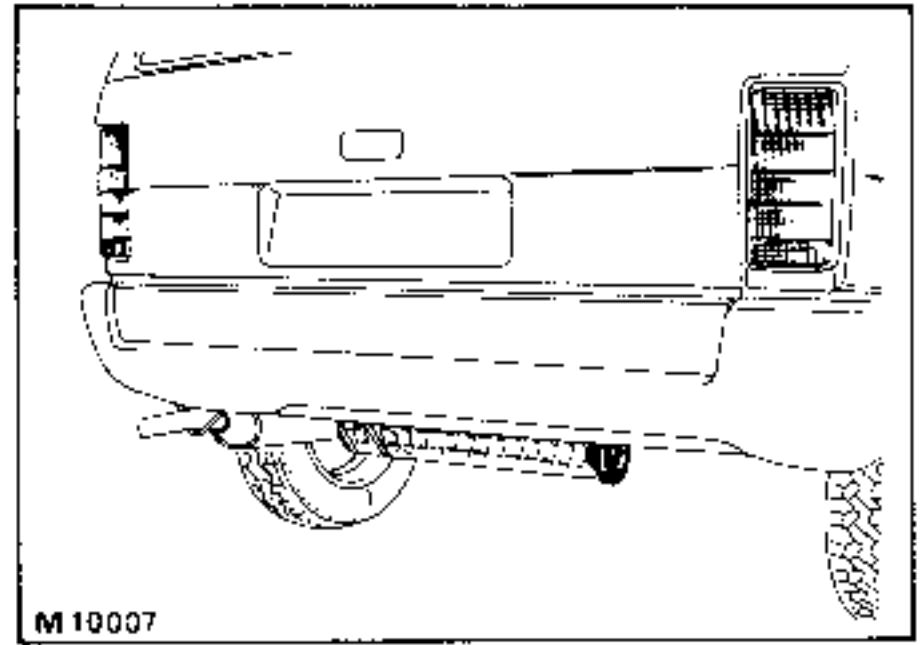
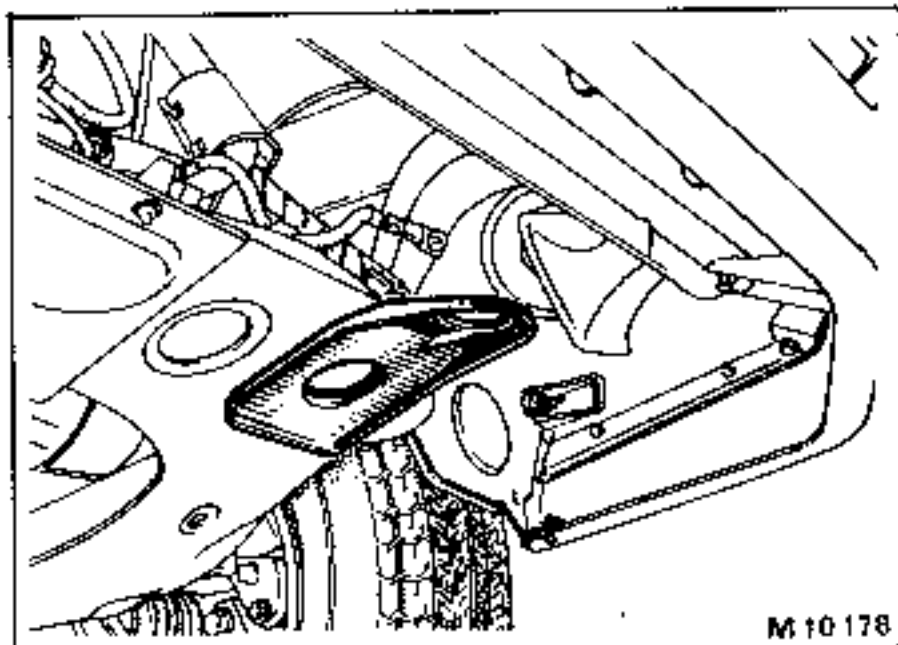
It is FORBIDDEN to take the load under the central part of the rear axle to lift the vehicle.



The towing points are only to be used for towing the vehicle on the road. Under no circumstances are they to be used for pulling the vehicle out of a ditch, or any other emergency operation, or for lifting the vehicle either directly or indirectly.

FRONT

REAR



PLASTIC COMPONENTS

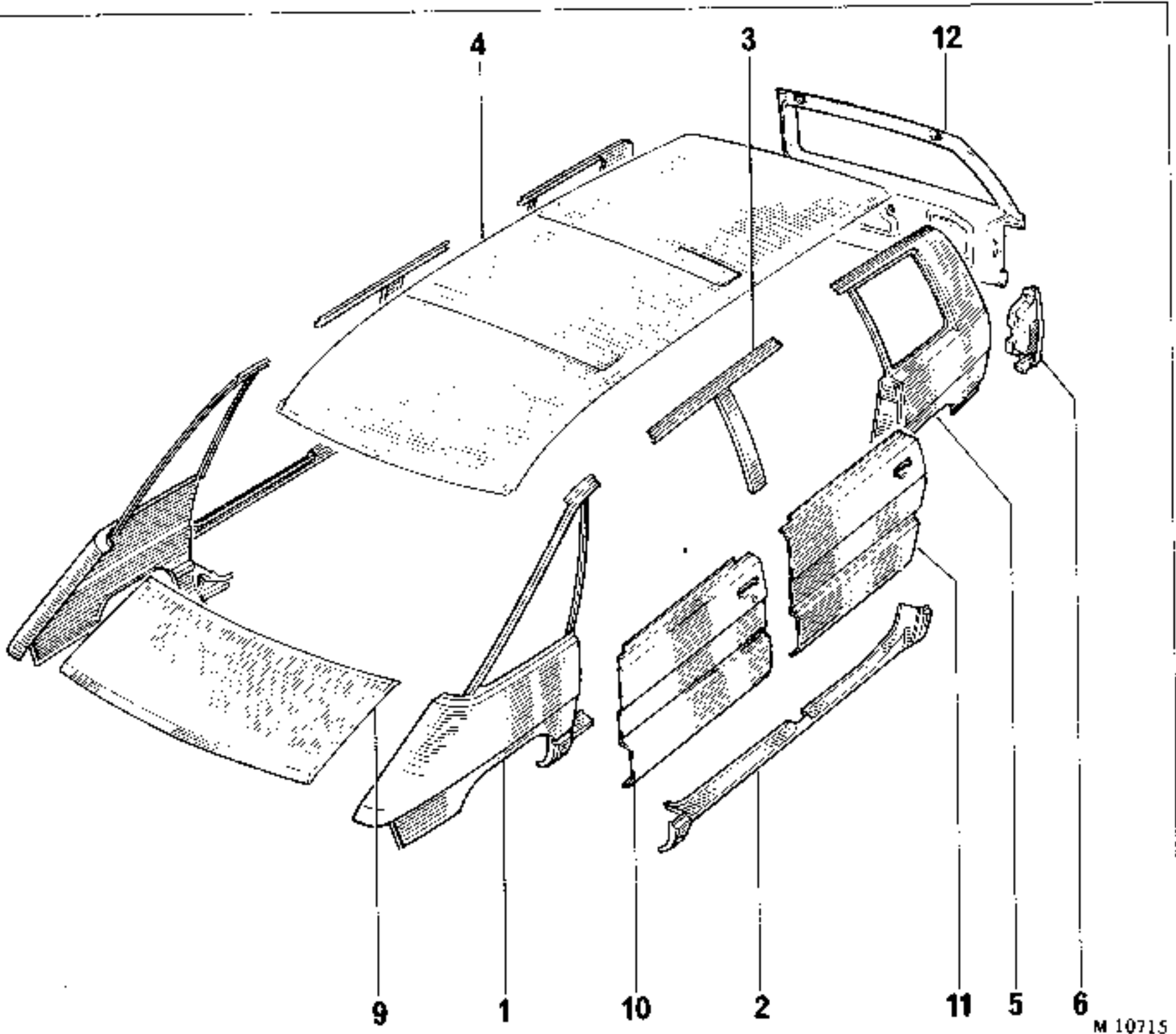
PARTS SECURED TO CHASSIS

- 1 - Front wing,
- 2 - Body sill,
- 3 - Upper body section,
- 4 - Roof,
- 5 - Rear wing,
- 6 - Rear light casing\*.

REMOVABLE PARTS

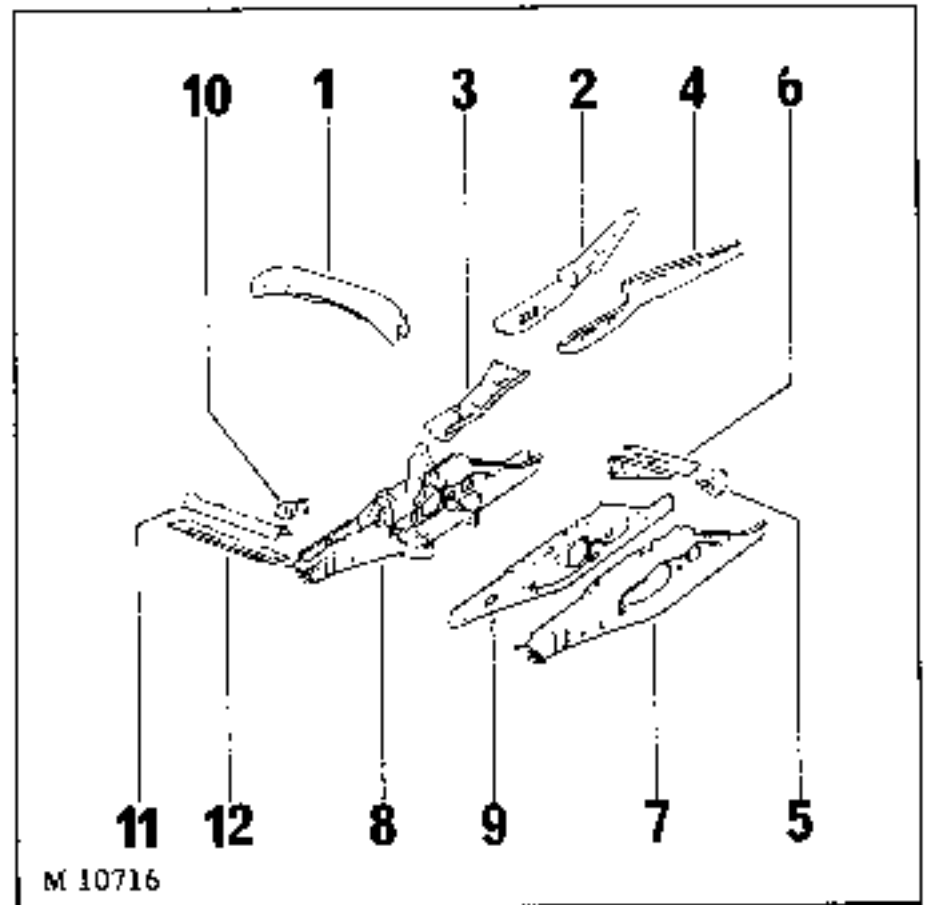
- 9 - Bonnet
- 10 - Front door panel\*,
- 11 - Rear door panel\*,
- 12 - Tail gate (with lining).

\* Parts made from resin pre-impregnated cloth.



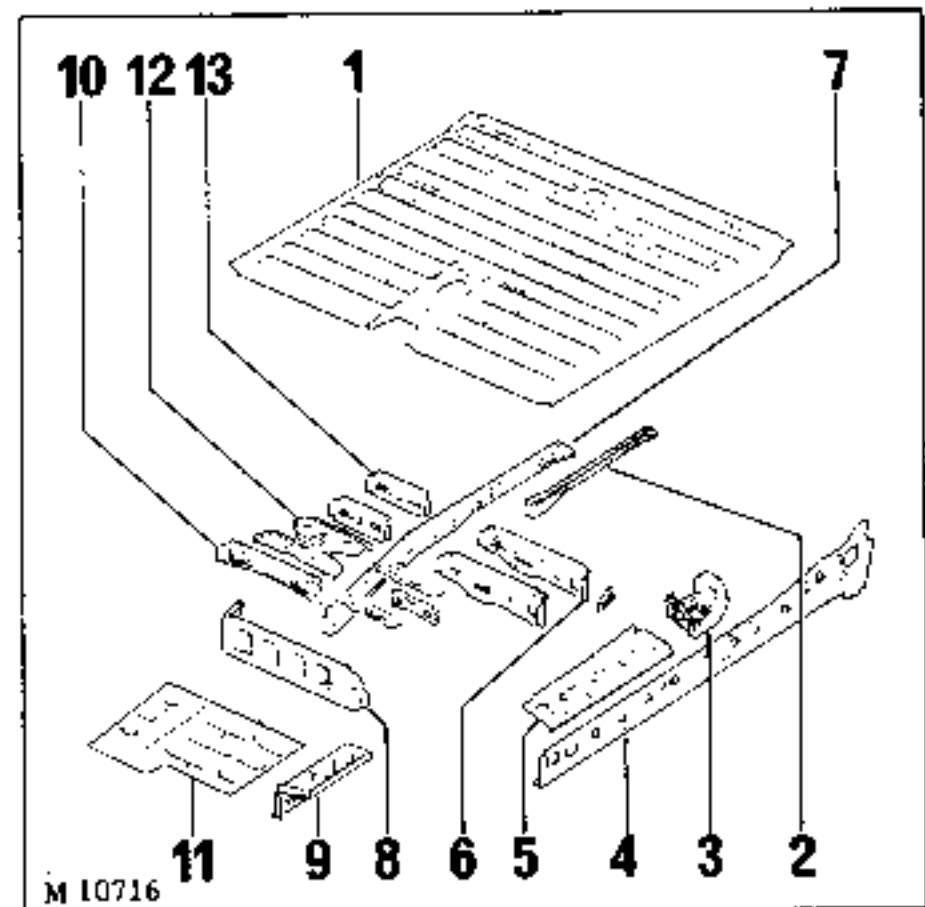
FRONT LOWER STRUCTURE (SUB-FRAME) :

- 1 - Steering cross member,
- 2 - Side member extension, outer part,
- 3 - Side member extension,
- 4 - Side member extension, inner part,
- 5 - Jacking point,
- 6 - Front door pillar side cross member,
- 7 - Side member,
- 8 - Complete side member,
- 9 - Side member cover panel,
- 10 - Cross member gusset,
- 11 - Engine cross member, upper section,
- 12 - Engine cross member, lower section.



CENTRE SECTION

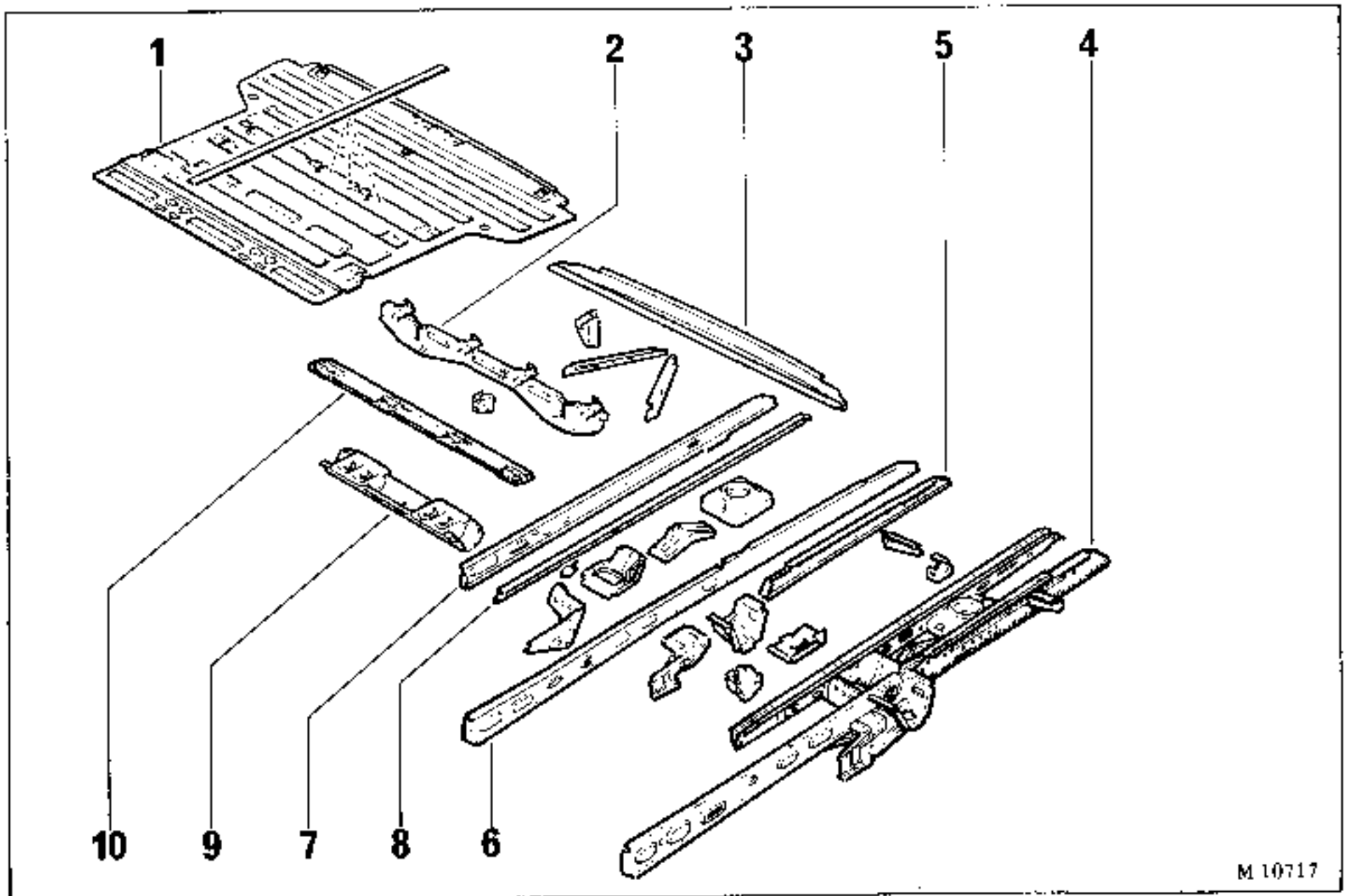
- 1 - Centre floor panel,
- 2 - Centre side member stiffener,
- 3 - Centre door pillar spacer,
- 4 - Body sill panel,
- 5 - Body sill cover panel,
- 6 - Side cross member,
- 7 - Centre side member,
- 8 - Front side cross member,
- 9 - Floor extension,
- 10 - Floor tunnel rear cross member,
- 11 - Front floor panel,
- 12 - Hand brake and seat belt stiffener,
- 13 - Centre cross member.



REAR LOWER STRUCTURE (SUB-FRAME) :

- 1 - Rear floor panel,
- 2 - Cross member between spring dishes,
- 3 - Rear cross member,
- 4 - Complete side member,
- 5 - Side member stiffener,
- 6 - Outer side member,

- 7 - Inner side member,
- 8 - Inner side member stiffener,
- 9 - Centre cross member,
- 10 - Centre seat securing point stiffener.

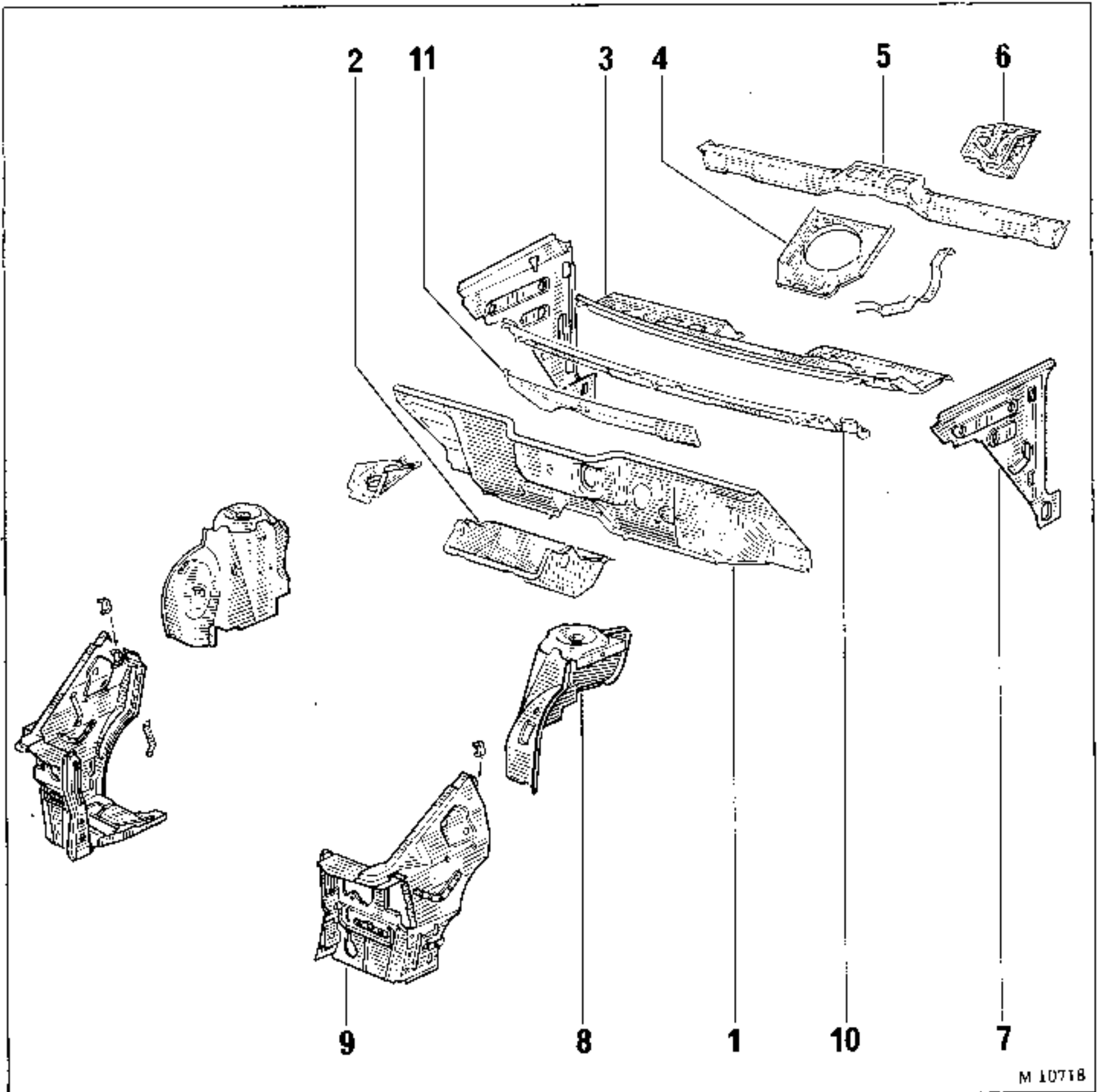




FRONT UPPER STRUCTURE

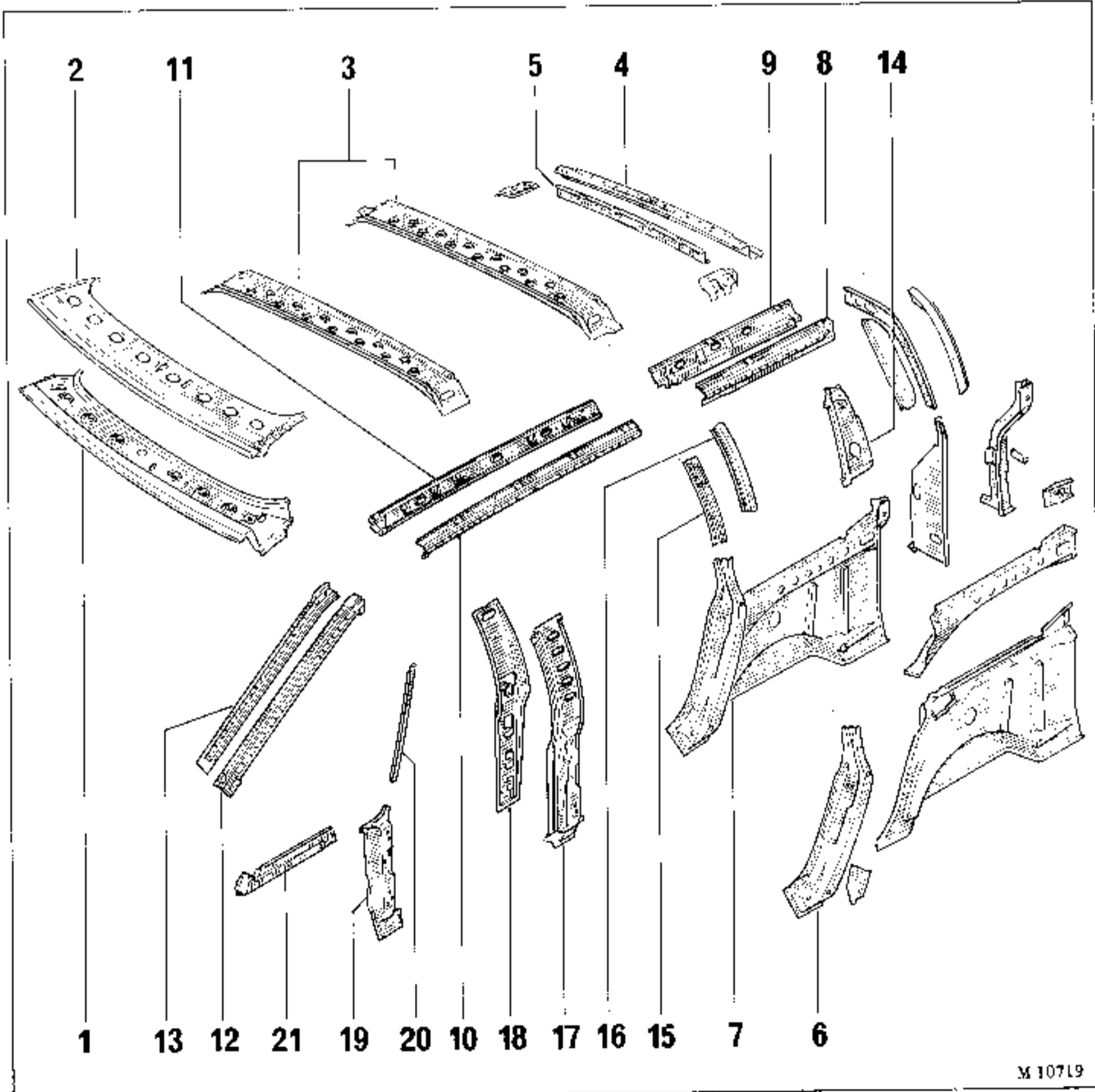
- 1 - Scuttle,
- 2 - Air intake,
- 3 - Engine compartment upper panel,
- 4 - Lower support panel,
- 5 - Cross member between front door pillars
- 6 - Steering column support,

- 7 - Front door pillar lining,
- 8 - Spring turret,
- 9 - Cowl side assembly,
- 10 - Engine compartment upper panel stiffener,
- 11 - Scuttle cover panel.



CENTRE AND REAR UPPER  
STRUCTURE

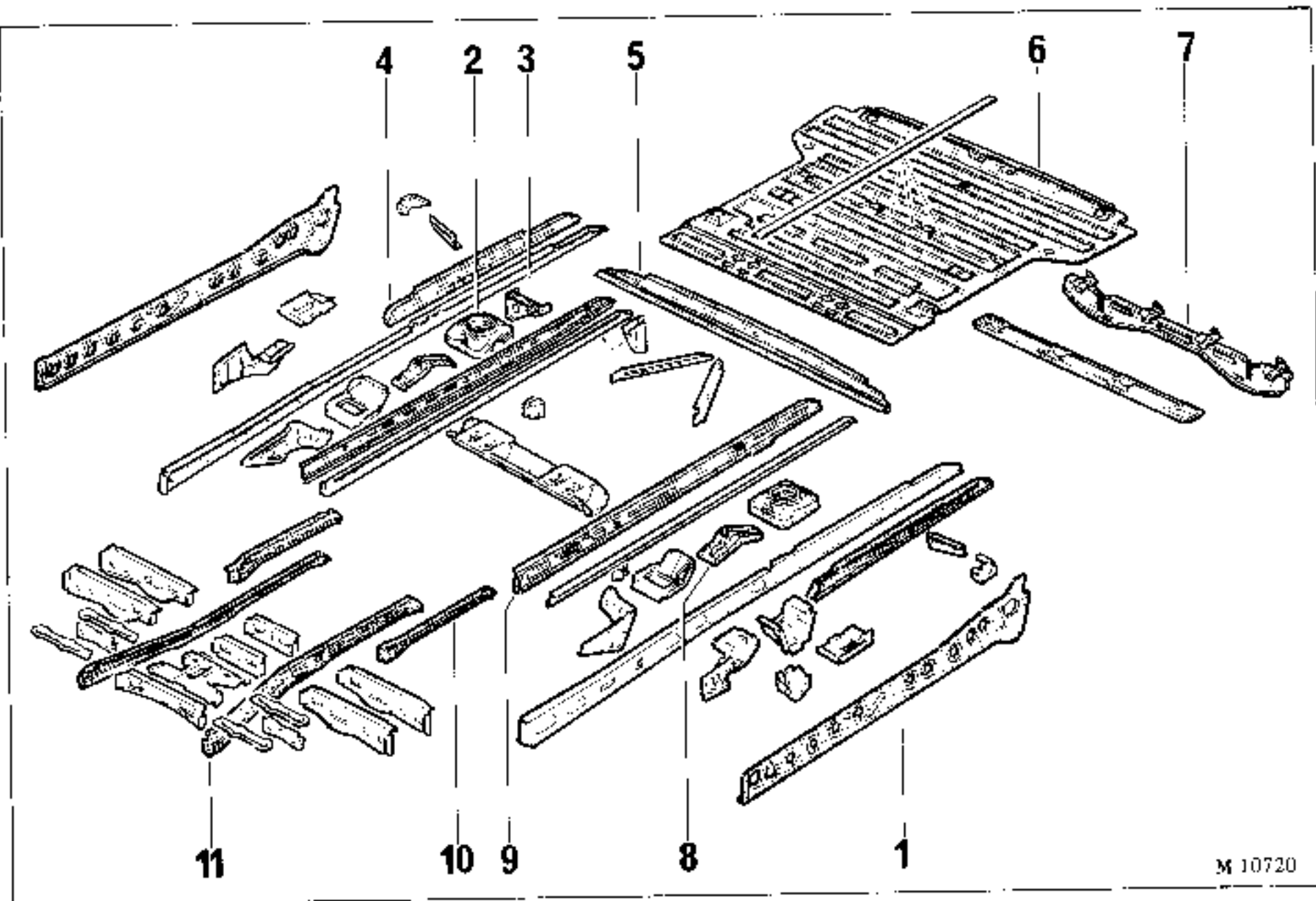
- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>1 - Upper front cross member,</li> <li>2 - Cross member stiffener,</li> <li>3 - Upper centre cross members,</li> <li>4 - Upper rear cross member,</li> <li>5 - Cross member stiffener,</li> <li>6 - Rear door pillar,</li> <li>7 - Wheel arch assembly,</li> <li>8 - Rear cant rail</li> <li>9 - Rear cant rail stiffener,</li> <li>10 - Centre cant rail,</li> </ul> | <ul style="list-style-type: none"> <li>11 - Centre cant rail stiffener,</li> <li>12 - Front cant rail,</li> <li>13 - Front cant rail stiffener,</li> <li>14 - Quarter panel,</li> <li>15 - Quarter panel front pillar,</li> <li>16 - Quarter panel front pillar stiffener,</li> <li>17 - Centre door pillar,</li> <li>18 - Centre door pillar stiffener,</li> <li>19 - Front door pillar,</li> <li>20 - Deflector window pillar,</li> <li>21 - Deflector window cross member.</li> </ul> |
|--|--|

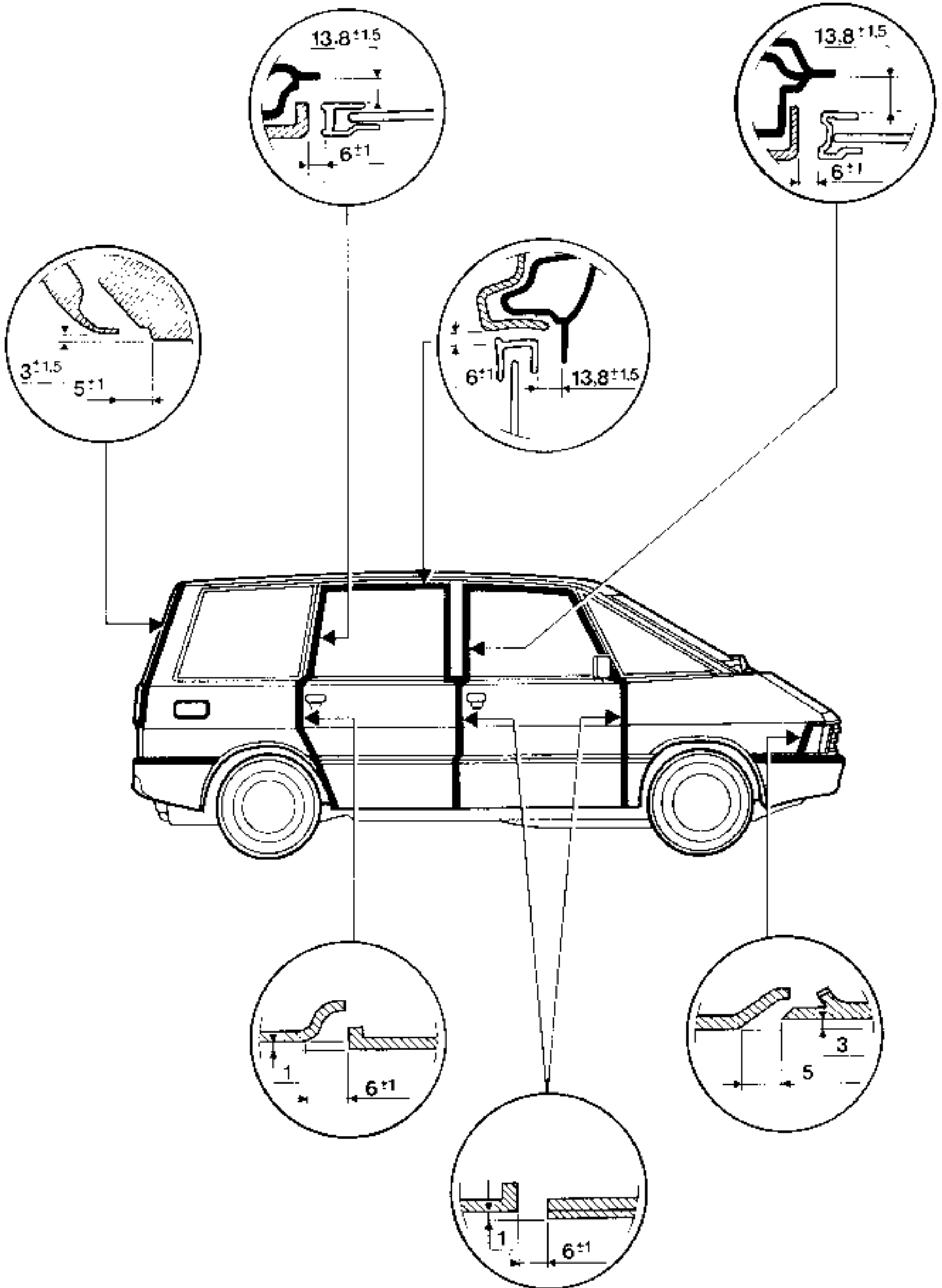


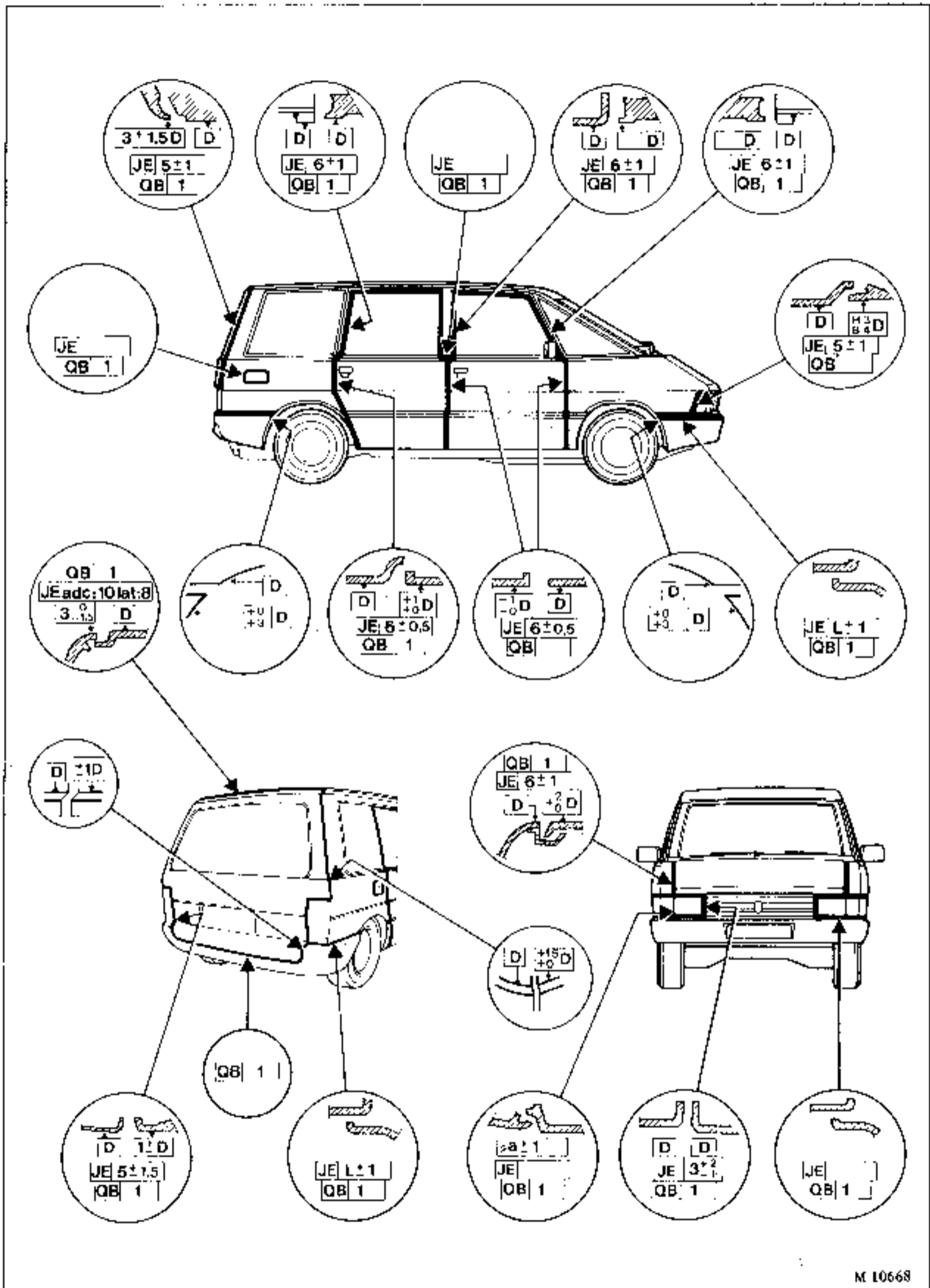
HIGH TENSILE COMPONENTS

- 1 - Body sill panel,
- 2 - Spring dish,
- 3 - Guide bar support,
- 4 - Side member stiffener,
- 5 - Rear cross member,
- 6 - Rear floor panel,

- 7 - Cross member between spring dishes,
- 8 - Shock absorber securing attachment,
- 9 - Rear side member,
- 10 - Centre side member stiffener,
- 11 - Centre side member.










M 10668


D : Height variation,  
 JE : Clearance (adc : body centreline, lat : side),  
 QB : Taper.


CODE

 "Cut with chisel".


 "Cut with saw".  
Pneumatic hack saw.


 "Grind back weld fillet or spots".  
Straight grinder fitted with a plastic impregnated disc  $\phi$  75, th. 1.8 to 3.2 mm.


 "Cut back spot welds".  
Straight grinder, 20,000 rpm, fitted with 10 or 16 mm  $\phi$  burr.


 "Cut out part by grinding off flange" or "Grind back remain-  
pieces of spot weld".  
Angle grinder fitted with rubber backing disc and fibre disc  $\phi$  120 to 180 mm, grit size P 36.


Dimensions and types of electrodes to be used for the operation :

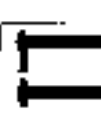
 L = 100


 L = 100 + ball joint


 L = 100 + flat


 L = 250


 L = 350 + ball joint


 L = 330


 Stitch welding under MAG protective gas envelope.


 Note : to obtain a good quality weld, we recommend the use of a gas consisting of Argon + 15% CO<sup>2</sup>. This is considered as an active gas (MAG).


 Plug weld under a MAG protective gas envelope.


 Fillet weld under a MAG protective gas envelope.


 Fill with soft solder.  
Torch with 300 nozzle + stick of soft solder 33% tin + tallow.


 Note : The filler solder goes a long way to compensate for the risk of distortion caused by welding.


 Safety symbol : this means that the welding operation in question affects one or more of the vehicle safety components.

 Apply a fillet of extruded mastic :  
- manual or pneumatic cartridge gun,  
- two pot mastic for crimped or butt joints.

 Spray on a coat of mastic :  
- pressure gun,  
- two pot anti-chipping and anti-corrosion mastic.

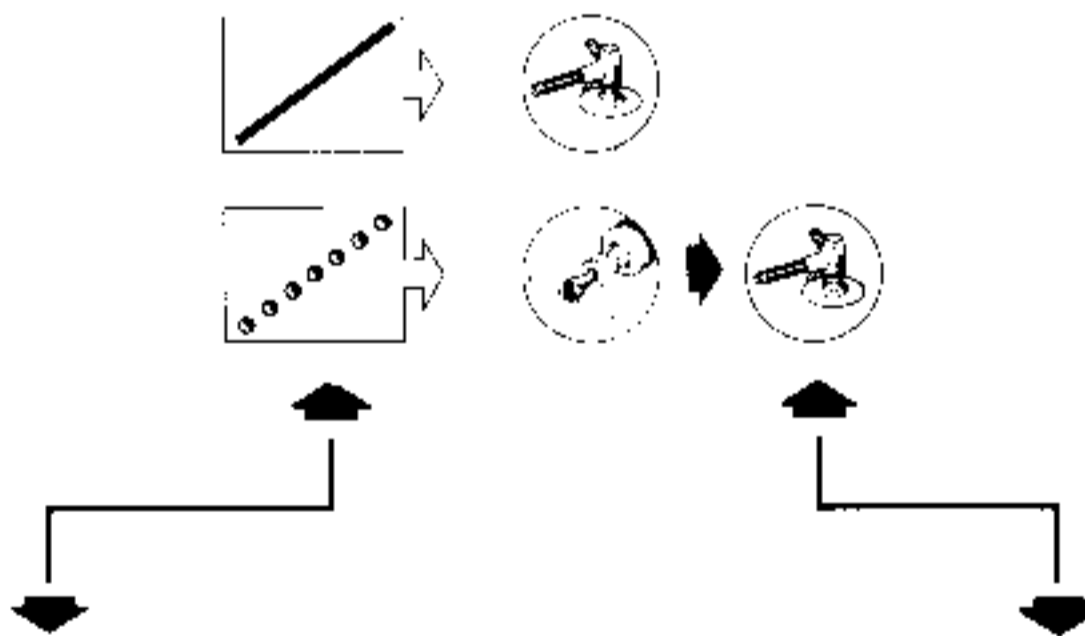
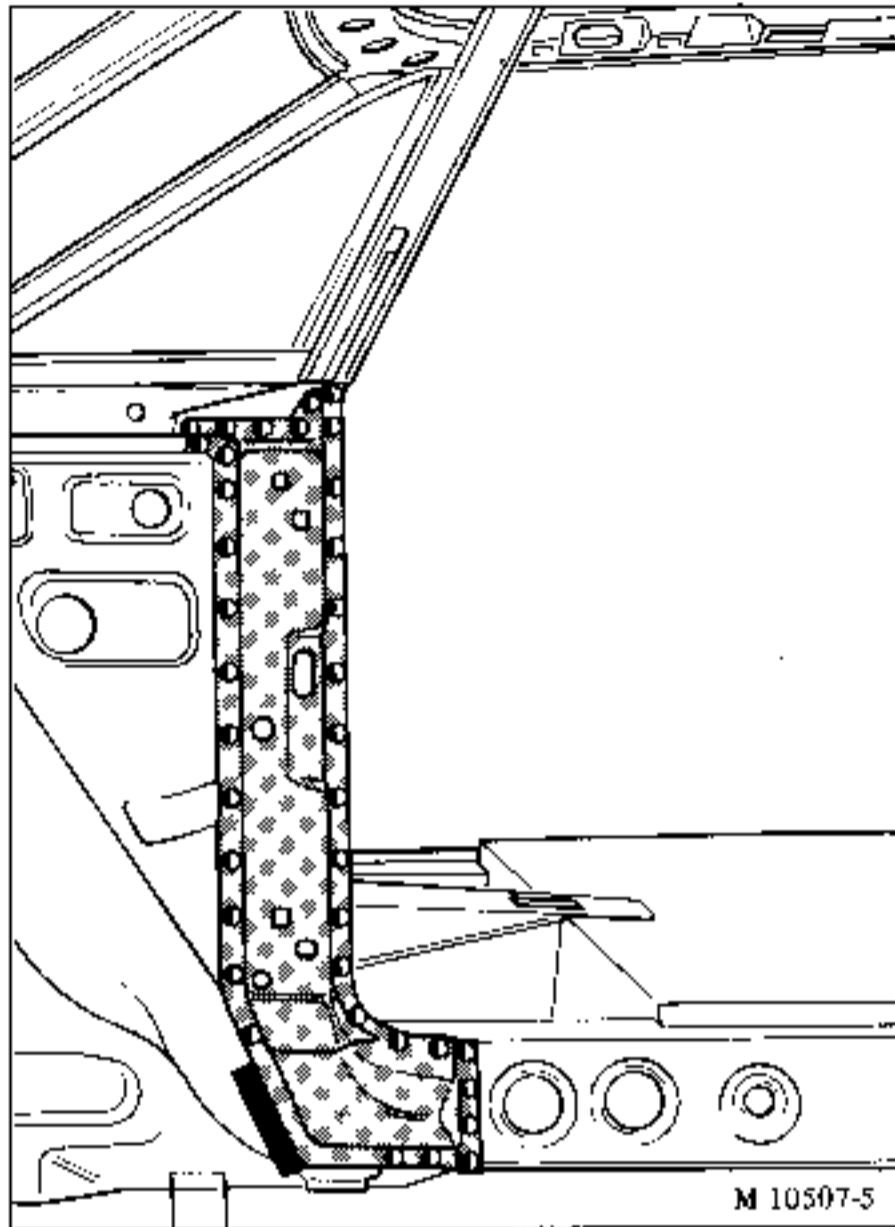
 Inject hollow section protection compound using a cranked nozzle.

 Inject hollow section protection compound using a straight nozzle.

 Pressure gun equipped with flexible hose and various types of nozzle.

EXAMPLE

CUTTING OUT - UNPICKING



Operation symbols

These show the type of operation and the exact points at which they are to be carried out.

Tool symbols

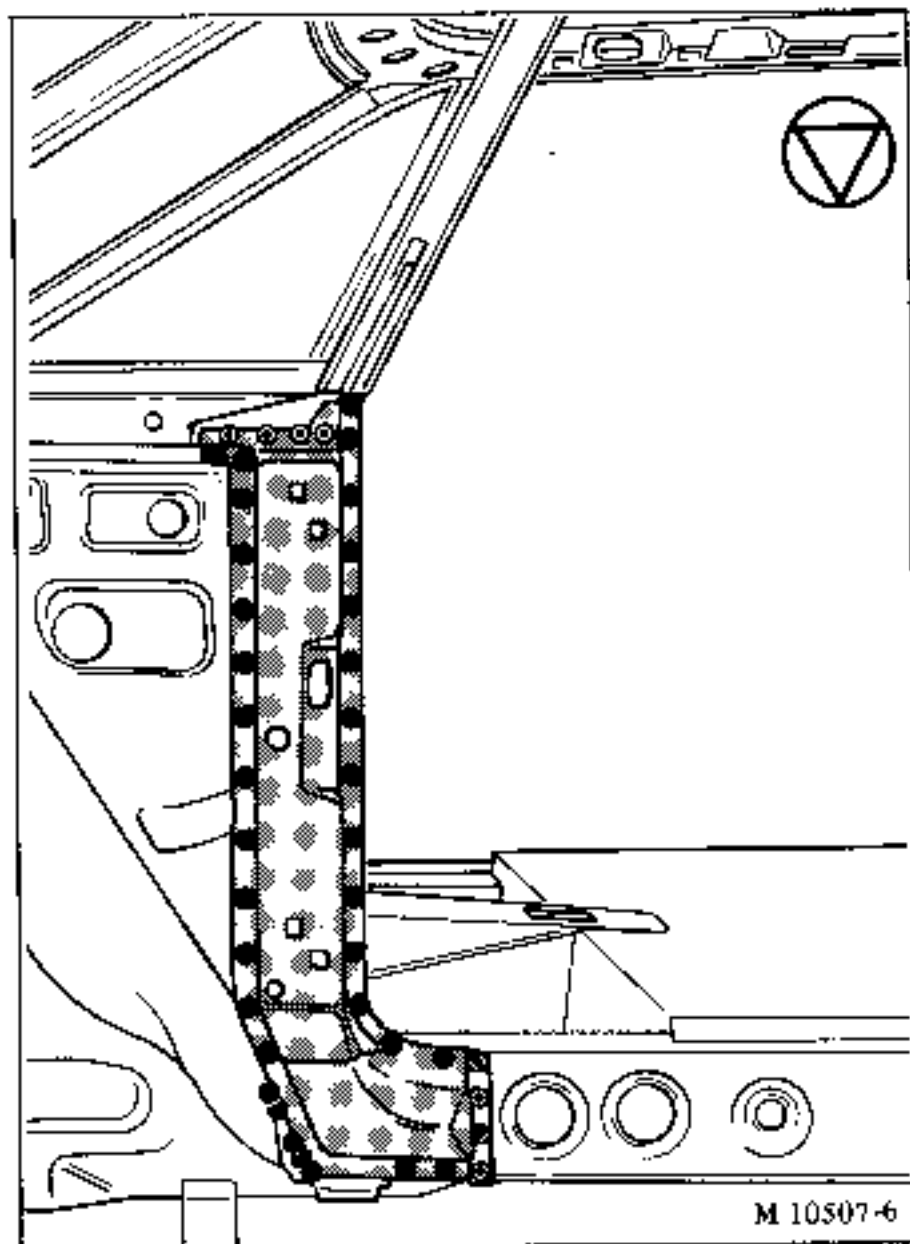
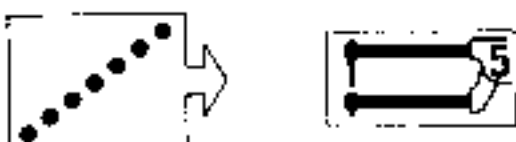
This shows the types of tool and the logical sequence in which they are to be used at the points concerned.

Note : the operation of unpicking the strip of steel remaining in place and grinding back the remaining pieces of spot weld on the support panelling can only be carried out after the part to be replaced has been fully removed.

WELDING



D = 6 mm



Operation symbols

These show the type of operation and the exact points at which they are to be carried out.

Tool symbols

This shows the types of tool and the logical sequence in which they are to be used at the points concerned.

Note : the operations of protecting the spot welds (weldable mastic and zinc based primer) are to be carried out before the new part is fitted.



SAFETY SYMBOL.

Those operations that fulfil current safety legislation requirements are identified by the symbol and this means that the repairer must pay particular attention to these operations when carrying out work on the vehicle.

We would like to draw your special attention to safety classification spot welds.

In fact these spot welds are classified as "safety" welds following impact tests on vehicles and endurance tests on bodywork.

It is therefore important to apply them carefully, when repairing vehicles, in order to obtain the same strength as on the original structure and thus ensure that the repair is of high quality and perfectly safe.

We should like to remind you that all welds on seat belt anchor points are also considered as safety welds.



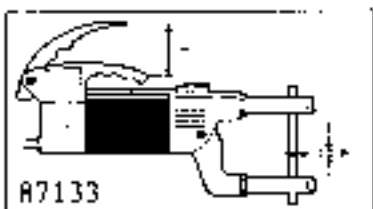
ADJUSTING THE WELDING EQUIPMENT

All these adjustments are to be carried out by trial and error on test pieces made from metal identical to that of the panels to be welded and on the basis of the thinnest of these panels.

ELECTRIC SPOT WELDING

1 - Adjusting the pressure (dimension H)

The values of (e) and (H) are given under each drawing for the operation concerned.



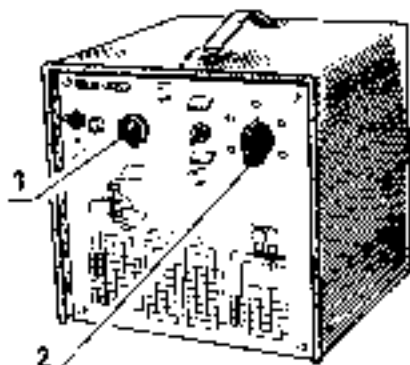
87133

- Dimension H is to be adjusted by placing a thickness (e) between the electrodes equal to the true thickness to be welded. The selection of this dimension H will duly allow for the thickness of the thinnest panel in the assembly to be welded.

- The thickness of the metal (e), when adjusting (H) can be represented by feeler gauges (Ex. : Facom 804).

2 - Adjusting the welding current and time

This adjustment is to be made to suit the electrical supply of your workshop. It is obtained by trial and error on samples of metal identical to that used on the vehicle.



Norme RNUR 01 50 903						
e mm	0,5	0,7	1,0	1,1	1,3	1,5
φ mm	4,5	5	5,5	5,5	6	6,5



86494

Place the welding time knob (1) on its first graduation. Slowly increase the current strength by turning knob (2) until the core of the spot weld "blows" and then move back by one graduation. Then increase the welding time (knob 1) to obtain the correct core φ as shown in this chart.

3 - Note

On this vehicle certain of the parts are made from special "high tensile" steel. The spot welder adjustment required for welding these steels is different from that for normal steel :

- Current strength : - 20%.

The values of H stated allow for these special characteristics.

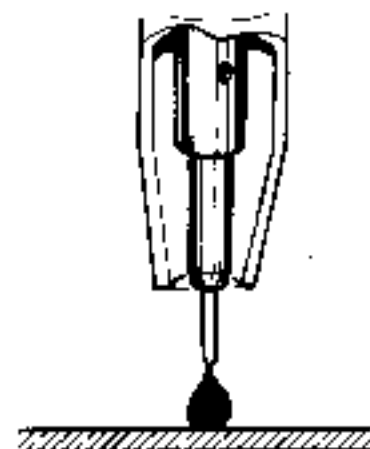
WELDING UNDER AN MAG GAS PROTECTIVE ENVELOPE

1 - Continuous fillets

- Set the current strength knob to a figure estimated to suit the thickness of the panelling.

- By carrying out a series of tests, determine the wire throughput required to obtain a uniform fillet.

- Turn the panelling over to ensure that the penetration is correct. If it is not, adjust the current strength and redetermine the corresponding wire throughput.

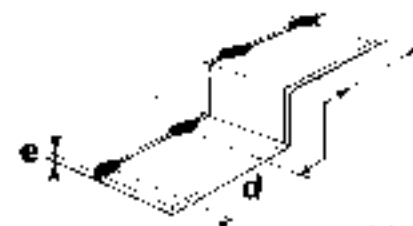


2 - Stitch welding

Adjust the equipment by the same method as for continuous fillets then increase the current strength by one position to facilitate the striking of the arc. Special instructions for butt stitch welds :

Adjusting the positions of the panels :

- Distance between tacks d ≈ 30  
- The distance between the panels is to be the same as their thickness (e).



85124

A better control on the positions of the panels can be maintained by avoiding making tacks on the edges or at the bottom of bent angles.

Welding :

Apply a series of stitches, overlapping one another. Leave 4 to 5 seconds between the application of each stitch to limit the extent of the blued area to 10 mm.

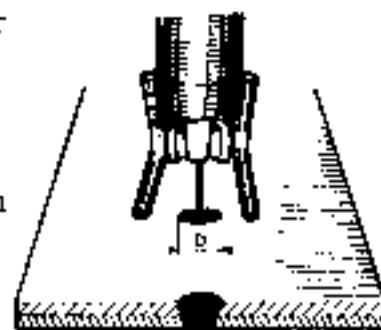


87302

Special instructions for plug welds.

The weld is carried out by drilling the upper of the 2 panels and then plugging the hole with weld. Tests are to be carried out to obtain a flat weld.

*bouchonnage.*



85163

## SPECIAL INSTRUCTIONS FOR WELDING GALVANISED PANELS

All replacement parts for the steel structure of the ESPACE are supplied galvanised. Any welding operations required during repair are to be carried out in a well ventilated area, using, preferably, spot welding equipment or the protective gas envelope welding process (MIG-MAG).

Generally speaking, the stripping back of the areas to be welded is not recommended as this could compromise the original anti-corrosion protection qualities of the vehicle.

### 1 - SPOT WELDING

It is ESSENTIAL to carry out tests on galvanised steel test pieces to determine the current strength and pressure required to obtain a good quality weld (too low a current or too low a pressure will result in a dry weld).

NOTE : For full instructions on adjusting the equipment consult the bodywork manual : "Checking and adjustment dimensions".

### 2 - WELDING UNDER A PROTECTIVE GAS ENVELOPE

- Use steel wire  $\phi$  0.6 or 0.8 and an Atal gas envelope.
- Set the distance between the end of the nozzle and the end of the contact tube at approximately 10 mm.
- The equipment is to be adjusted on ordinary sheet steel of the same thickness as the panelling to be welded.
- Under all circumstances, before starting welding apply an anti-splatter product to the area on either side of the weld and inside the nozzle of the equipment to keep the panelling clean.

### \* BUTT WELDING

- Leave a gap between the panels equal to half their thickness.
- Apply the weld by the "stitch" method.

### \* LAP JOINTS

- Strip back the edges of the panels to be welded.
- Apply the weld by the "stitch" method.

### \* PLUG WELDING

- Drill the upper of the two panels to a  $\phi$  of 4 to 5 mm (allow for this when adjusting the equipment).
- Ensure that the panels are correctly positioned (even the smallest gap can cause perforation and poor quality weld).
- If necessary, apply two plugs, one on top of the other.

We strongly advise against using the OXYACETYLENE (gas torch) process.

Those parts which will be visible (centre door pillar for example) can be finished with SOFT SOLDER without any particular problem, using a hot air gun.

Brazed joints can be made for sealing purposes using low melting point rods (eg. : CASTOLIN XUPER 18 XFC).

Only apply such brazed joints to those points where they are used during original manufacture.

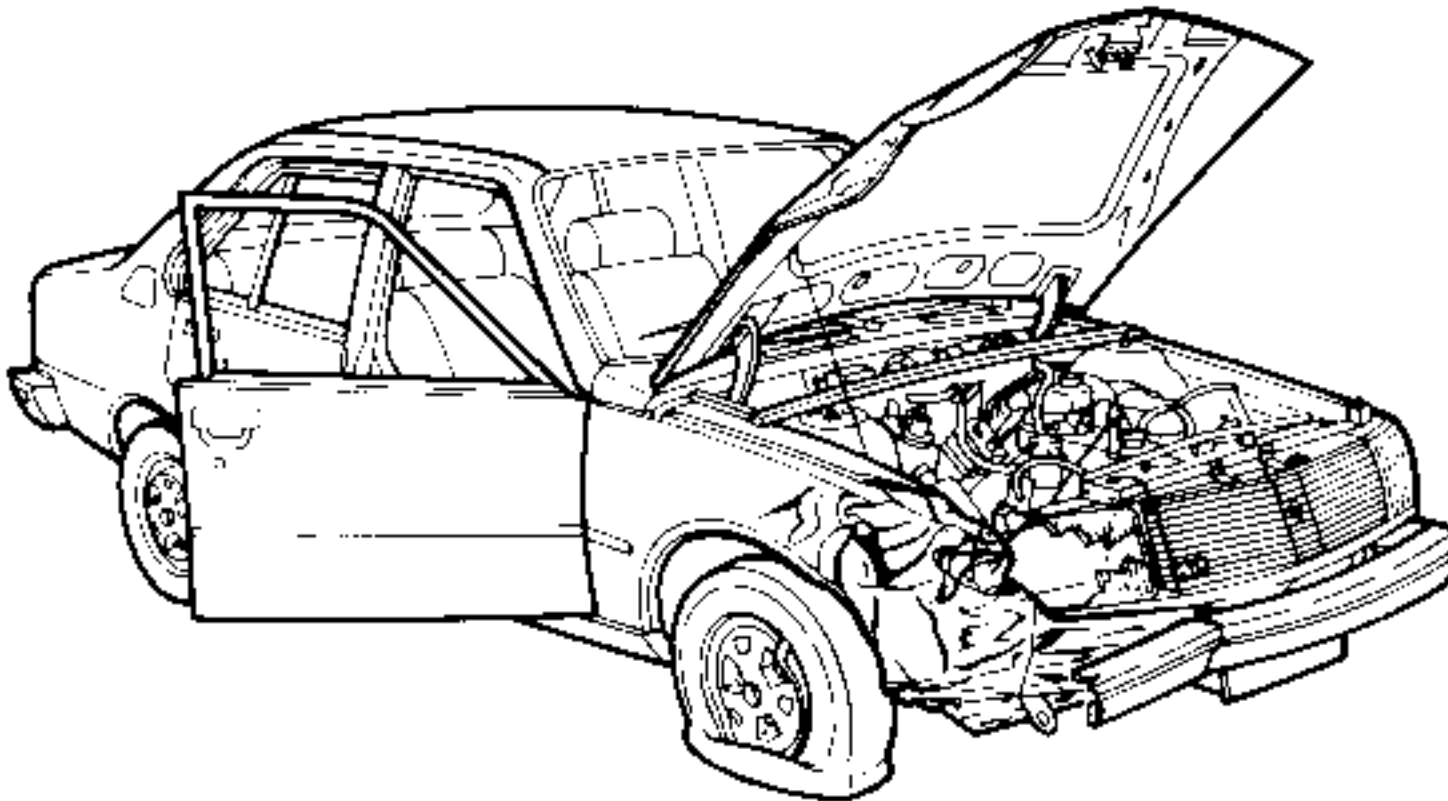
IMPORTANT : In all cases, after completing the weld, the repaired areas must be protected according to the schedules described in this manual, that is to say :

- Zinc paint
- Mastic application
- Injected hollow section protection
- Normal paint.

A - CHECKING BEFORE REMOVING ANY MECHANICAL UNITS

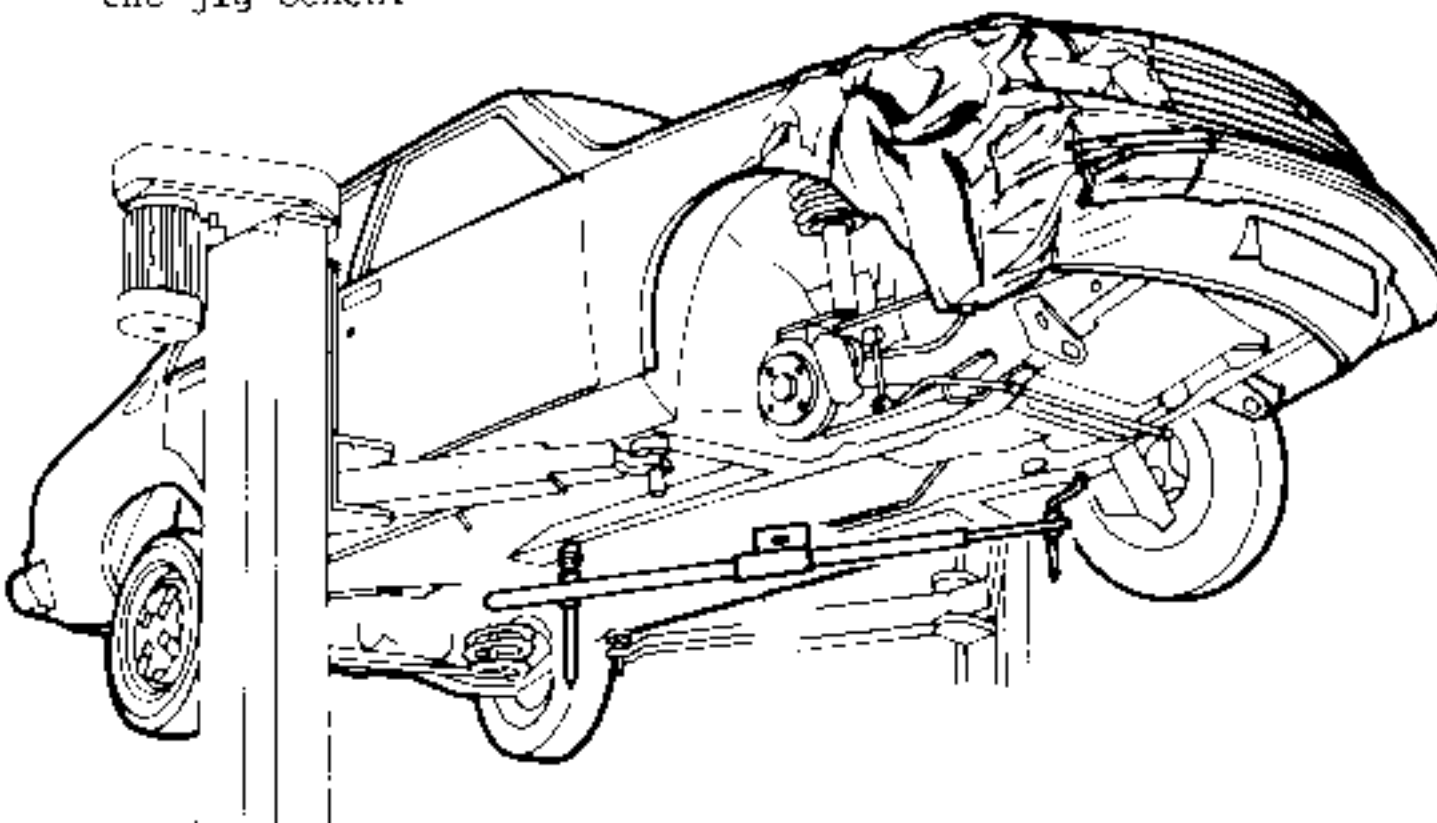
Before undertaking any repairs to the bodywork of a vehicle even if it appears only slightly damaged, one must carry out a series of checks :

VISUAL INSPECTION



CHECKING WITH A TRAMMEL GAUGE

These checks, amongst other things, permit one to determine whether any of the sub-frame components have suffered extensive distortion from their original configuration, as this would make it essential to remove the mechanical components and carry out the body repairs on the jig bench.



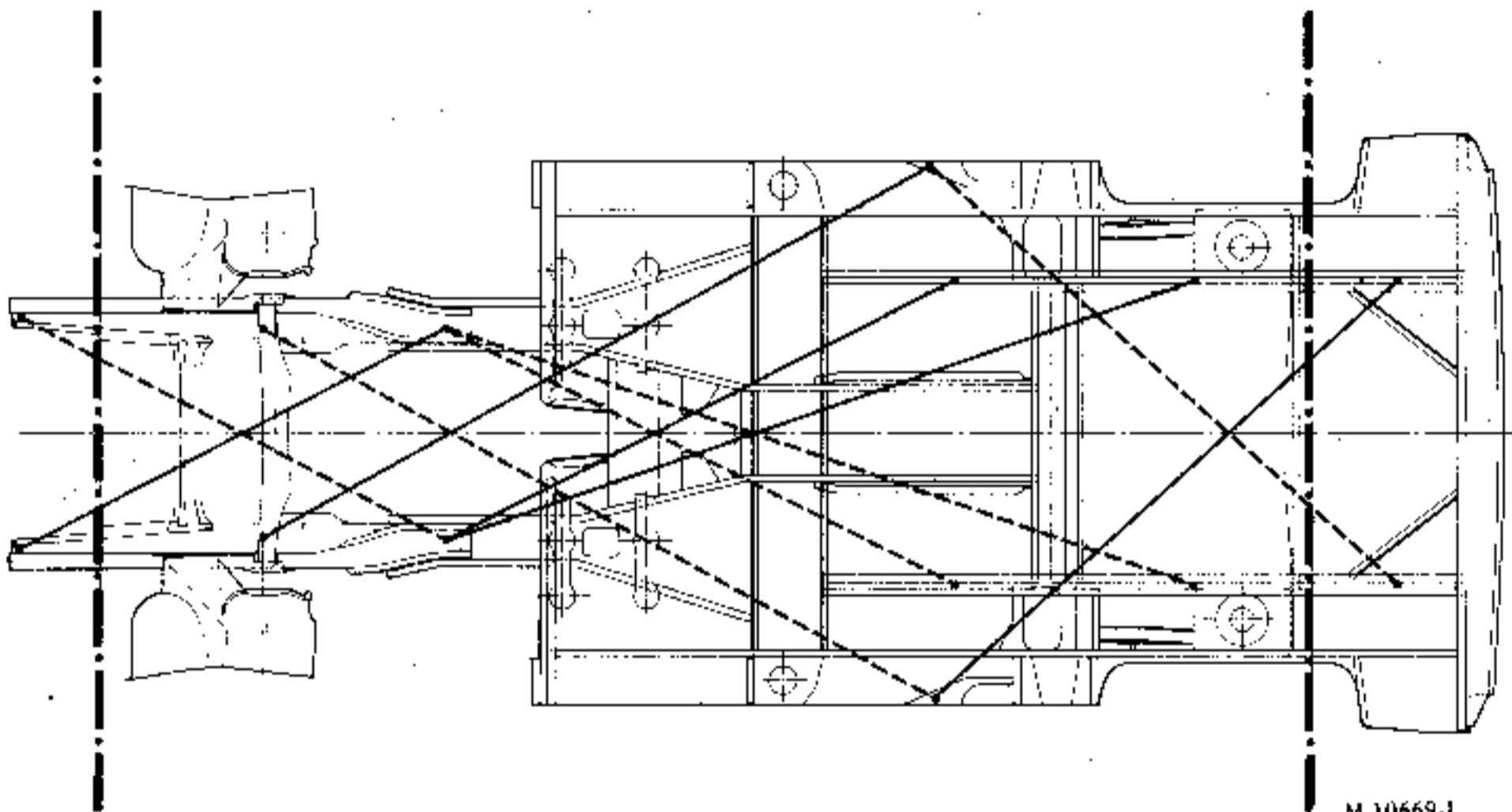
CHECKING THE AXLE GEOMETRIES

If there is any doubt, these inspection operations are to be followed by a check on the front and rear axle geometry.

It is a matter of principle that no welded component on the body shell can be replaced without first ensuring that the sub-frame has not been affected by the impact.

A number of classic methods can be used to carry out the initial check on a damaged vehicle if the visual inspection has left some doubt as to the extent of the damage and the repair to be undertaken.

CHECKING THE PILOT GUIDE POINTS LAID DOWN BY THE DESIGN  
OFFICE FOR THE CONSTRUCTION OF THE BODY SHELL



M 10669-1

IF THERE IS ANY DISTORTION IN THIS AREA  
THE REPAIRS MUST BE CARRIED OUT ON THE JIG BENCH

Note : A damage diagnosis method is described in this manual under the section :  
DETERMINING THE EXTENT OF BODY DAMAGE.

B - STRAIGHTENING - REBUILDING - CHECKING ON THE JIG BENCH

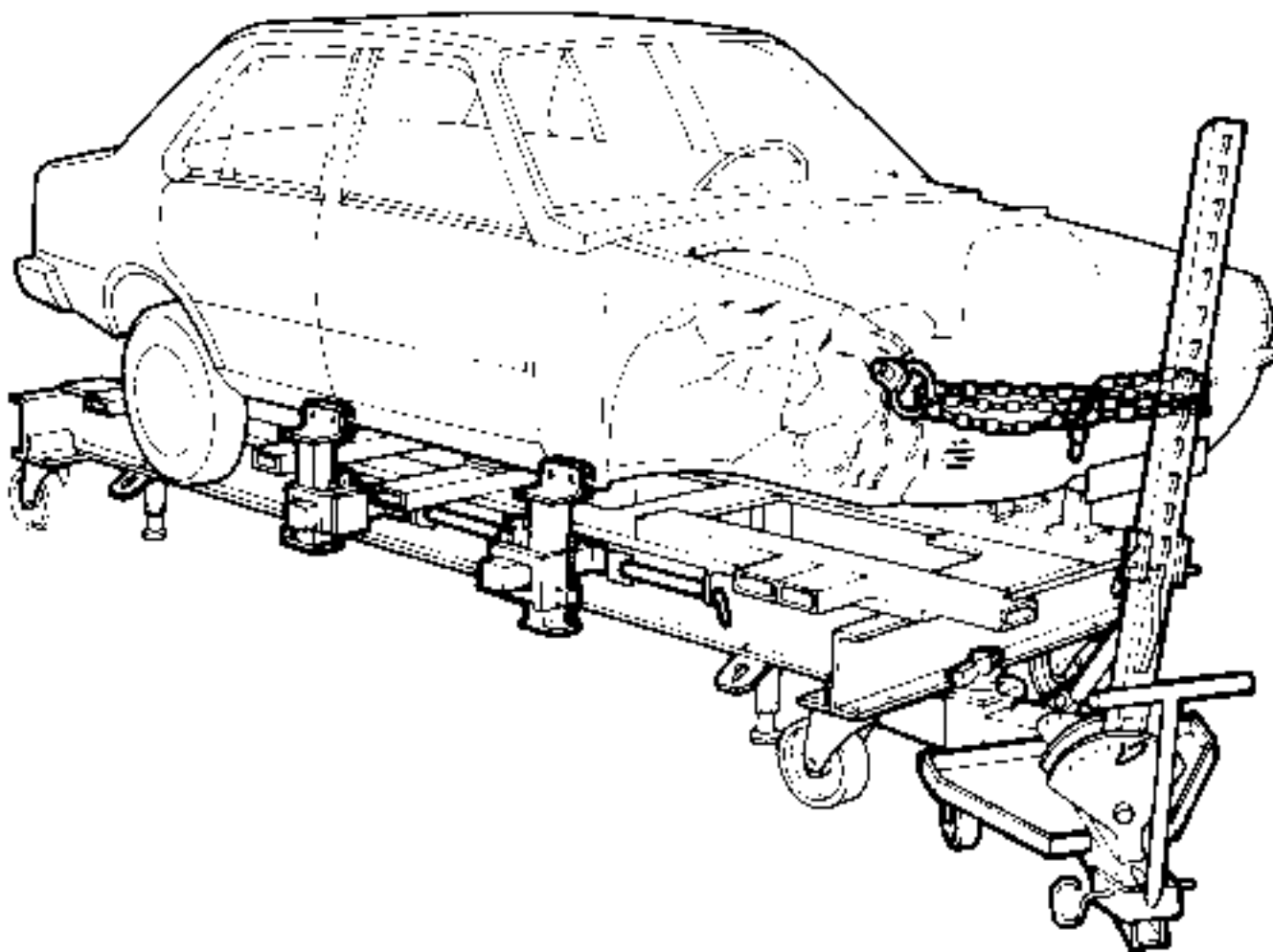
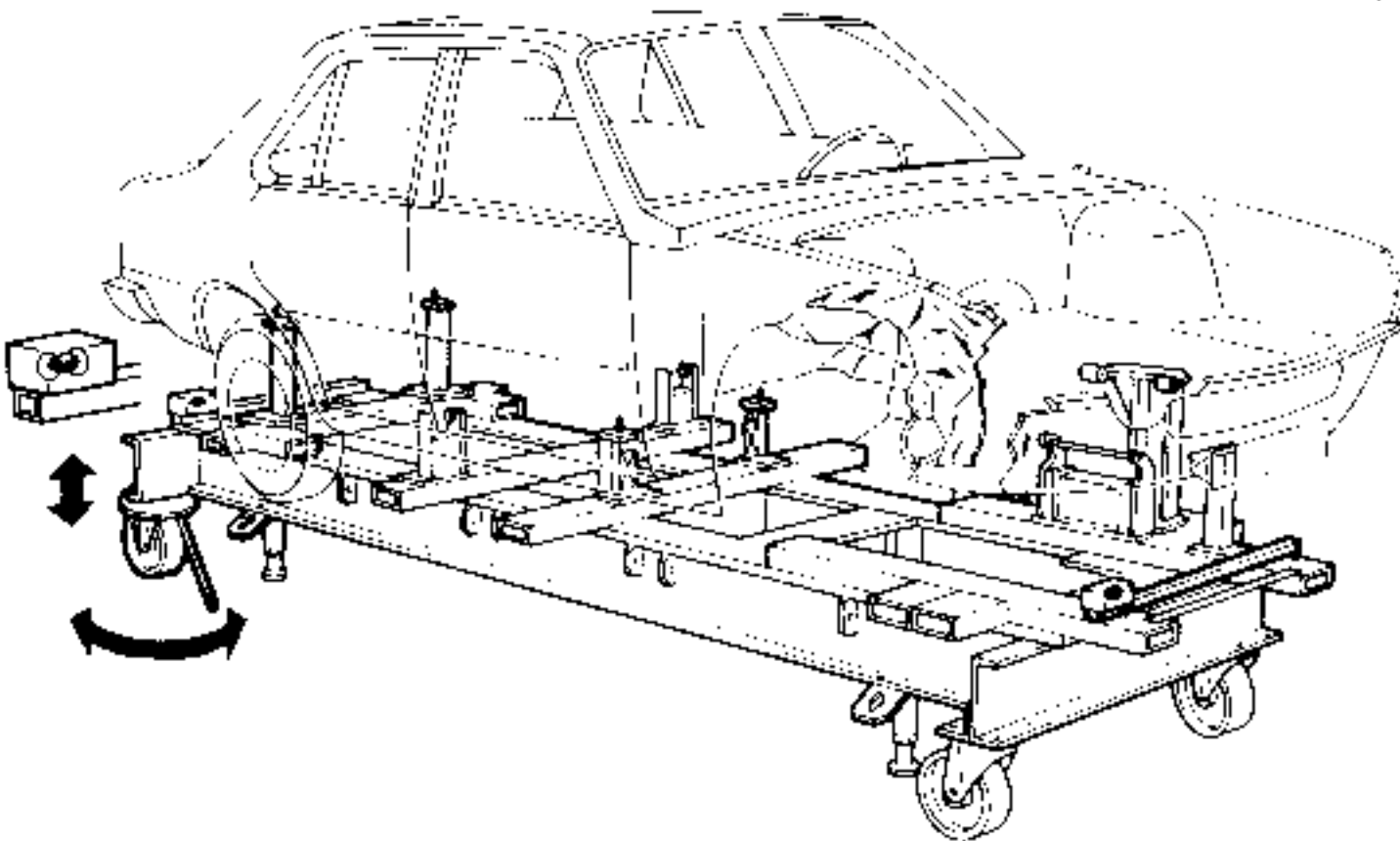
For reasons of SAFETY and to obtain a better QUALITY of repair, it is FORBIDDEN :

- To replace a side member, half unit or complete unit without using the jig bench.

By using the jig bench we ensure that the vehicle is rebuilt to the original manufacturing dimensions and that the front and rear axle assemblies are correctly positioned.

it is FORBIDDEN :

- To carry out pulling operations on a vehicle mounted on the jig bench brackets without first anchoring the vehicle to the jig bench by at least two clamps on the body sill. These clamps are to be as near as possible to the area to be pulled to avoid applying jacking loads to the jig bench brackets as these could distort them.
- It is also very important, when bodywork has suffered damage that involves replacing a welded component, to jack out, before removing it, the component to be replaced to return the bodywork as near as possible to its original shape and thus free the adjacent components from the stresses caused by the damage (see MR 501, F 001).



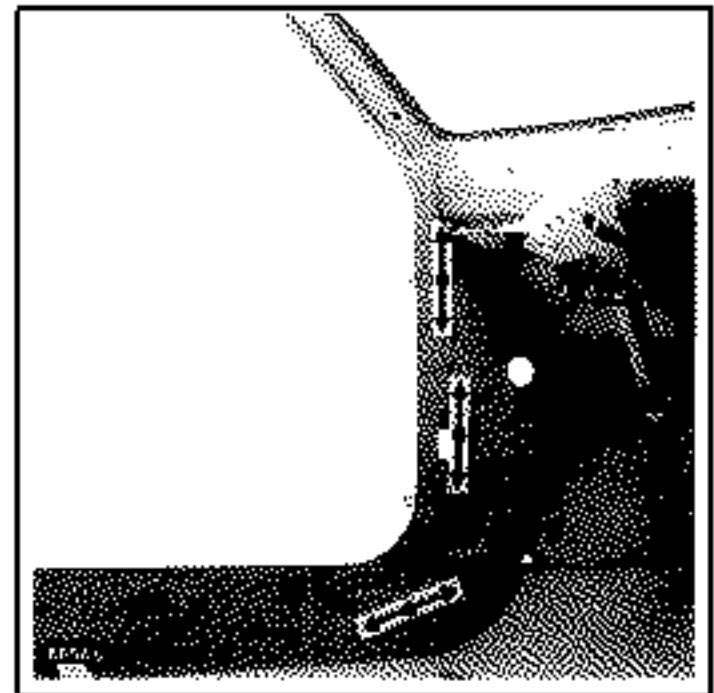
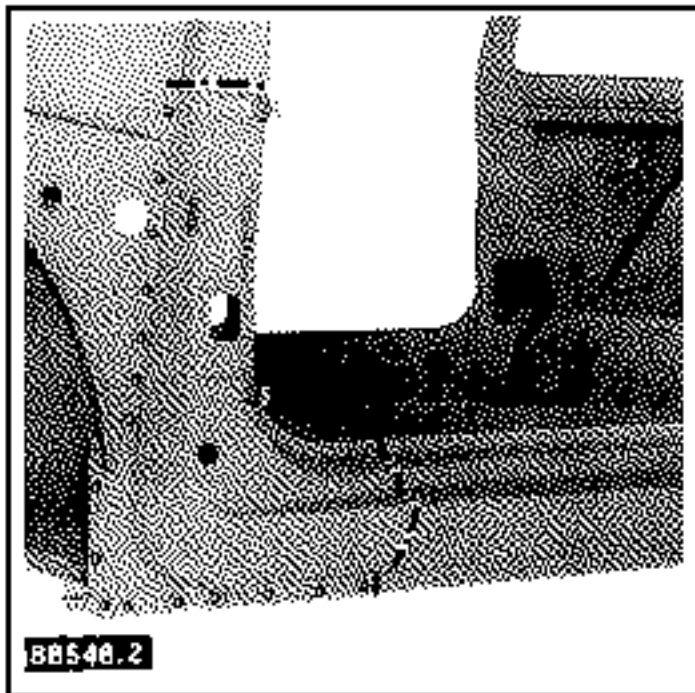
C - REPLACING WELDED COMPONENTS

The operations involved in replacing welded components and the lines along which they are to be cut are defined on the basis of the production engineering requirements of the original parts and the following criteria :

- The avoidance of extensive distortion caused by butt welding.
- The provision of clearance for the tools required to finish the joints and for the application of anti-corrosive protection.

FOR SUB-FRAME COMPONENT PARTS AND OUTER PANELLING STIFFENERS :

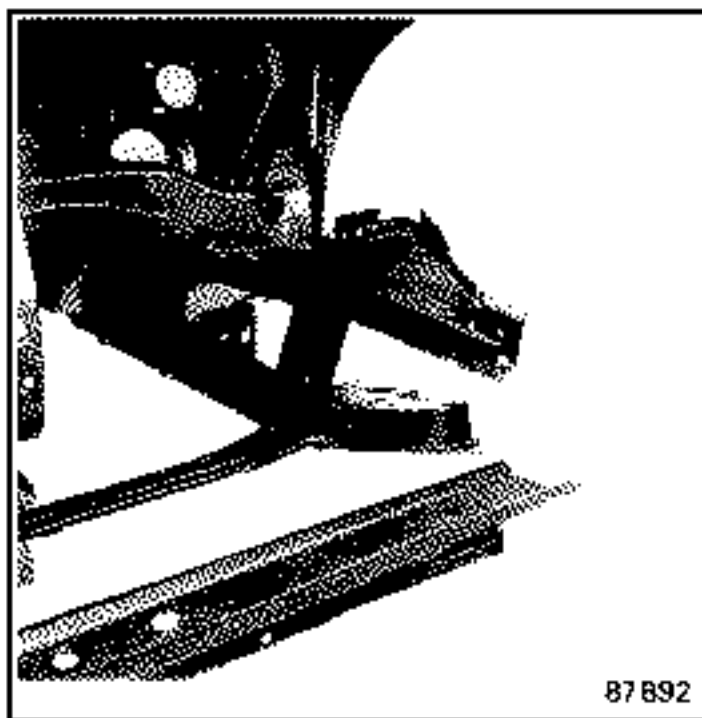
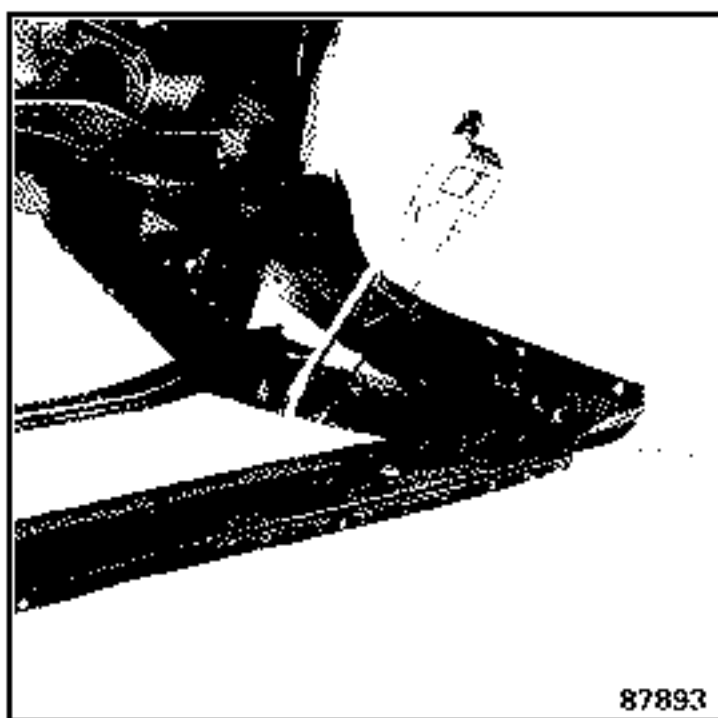
- The positions of the welds are determined to reduce the risk of distortion of the passenger compartment and the side members past the points at which the mechanical components are secured (the extent of this distortion is increased by the heated areas round the welds that act as crumple points).



For reasons of safety, it is FORBIDDEN :

- To cut, and butt weld, or to heat in order to straighten :  
the side members on the sections between the mechanical unit securing points and the passenger compartment (only the extreme ends of the side members, in front of this point, can be replaced by butt welding),  
the door pillars at the seat belt anchor points,  
the steering box cross member (this component is to be replaced as a complete unit).
- To cut and butt weld on the same line any bodywork component and its inner lining or stiffener.

Offset the two cut lines by a few centimetres to separate the soft areas caused by the welding.



- To braze the side members or any other structural component part of the vehicle.

If it is impossible to weld such components together by spot welding, we recommend using welding under a protective gas envelope (MIG or MAG) either in the form of plug welds or stitch welds (see the welding section in the bodywork handbook).

D - PROTECTING REPAIRED AREAS MADE FROM GALVANISED SHEET STEEL.

It is very important, to avoid problems occurring in the future, after repairing or replacing a sheet metal component, carefully to reconstitute an effective internal and external protection to return it to specifications that are identical to the original specifications and thus provide an effective guarantee of the quality of the repair. Various types of protection can be applied, depending on the case :

1 - Butt welds

- Before welding :

Spray anti-splatter compound around the area to be welded (to prevent welding splatter adhering to the zinc).

- After welding :

In enclosed areas that are nevertheless accessible :

After first brushing the repaired section with a nylon brush, protect the welded area with a brushed coat of DRA passivating agent. After it has dried, brush on 2 coats of zinc rich paint.

In enclosed areas which are not accessible :

After painting, inject hollow section protection compound.

Externally, after repair, apply the passivating agent followed by 2 sprayed coats of zinc rich paint.

Then, on visible galvanised panelling (the front compartment), coat the area with aluminium paint.

Under the body, spray anti-chipping mastic on to the repaired area.

2 - Spot welds

After welding areas that have been stripped back to the bare metal, apply the passivating agent followed by 2 coats of zinc rich paint. Spray a strip of anti-chipping mastic over the joint between the parts.

3 - Door panels

To bond the panel to the door structure, use a 2 pot adhesive (TEROSON) after first applying an adherence primer to the panel and protecting the door body against corrosion (see section entitled side collision : doors).

4 - Protection by the application of sprayed anti-chipping mastic :

This is a two pot product (see paint section). It is to be used on those parts originally protected by a compound of this sort (wheel arches) and on all areas that have been subjected to repair (in particular under the body) to guarantee the quality of the repair.

The joint lines between panelling, after welding, are to be sealed with a fillet and then a sprayed coat of this mastic (it is to be applied very carefully to joints in the passenger compartment).



F - EQUIPMENT AND DOCUMENTS

Various methods can be used to cut panelling, depending on the size of the section to be replaced.

The equipment used can be :

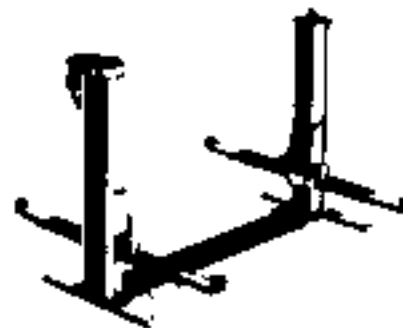
- hand cutters, a pneumatic or hand operated hack saw or a pneumatic nibbler.

You will find all the necessary information on this equipment in MR 500\*\* chapter 10.

Certain of the methods described in this chapter refer to the use of a protective gas envelope (MIG or MAG) set the main points of which are described below (for further details on adjusting this equipment, see the booklet entitled "Bodywork inspection and adjustment data").

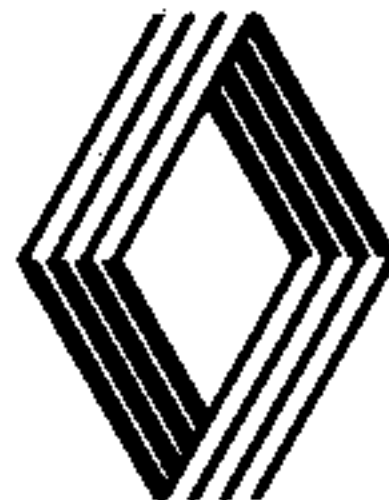
- It is advisable :
  - before welding, to carry out a few tests on offcuts of panelling of the same thickness to obtain the correct settings,
  - to use a gas consisting of argon + 15%  $CO_2$ . This is considered as an MAG gas.
- By using a protective gas envelope welding unit one can, amongst other things, replace sections of components that could only be replaced, up until now, when full access was possible to "blend-out distortion caused by welding". These "blending" or "planishing" operations, which are essential when oxyacetylene butt welds are made, are no longer necessary when the gas envelope method is used.

**M.R. 500 \*\***



SEYERREIN DE GARAGE  
GARAGE EQUIPMENT  
WERKSTÄTTENRÜSTUNG  
VERKSTÄDTUSTV  
MATERIALES DE GARAJ  
MATERIELOREUNA  
GARAGE FERRUTING  
VERKSTEDTUSTV  
VERKSTÄDTUSTUNG

**RENAULT**



**1985**

**M.R. 501**

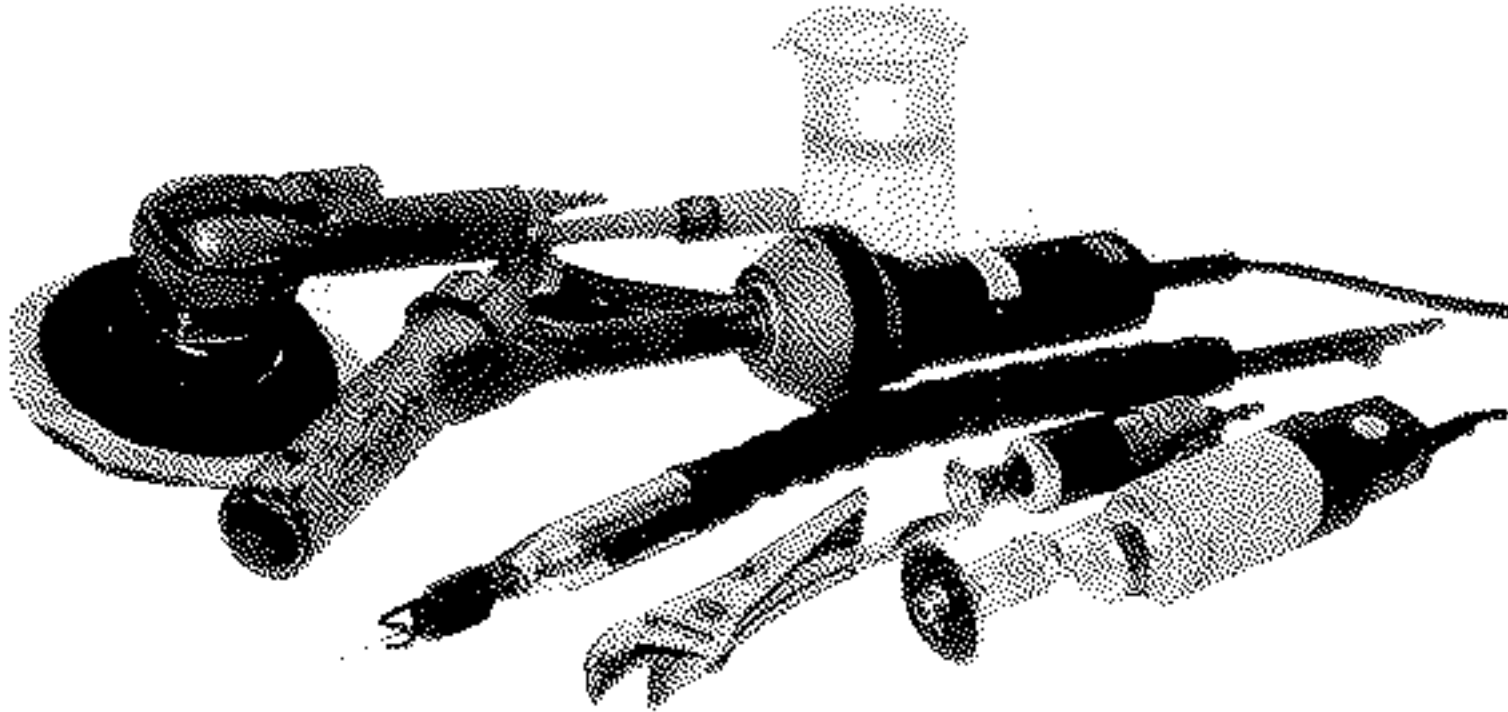


CARROSSERIA (chassis, pintura)  
BODYWORK (panelbeating, paint)  
KAROSSELERE (schleisswerk, lackierung)  
KAROSSELERE (plasterarbeiten, lackierung)  
CARROZERIA (chassis, pintura)  
CARROZERIA (lavori, verniciatura)  
CARROZERIA (plasterwerk, spektive)  
KAROSSE (paint, lack)  
KAROSSE (spektive, lack)

**RENAULT**

## E - REPAIRING REINFORCED POLYESTER COMPONENTS

## SPECIAL TOOLS



M 10645

## Cutting out :

- an electric oscillating saw (of the Desoutter CCJ type with a blade  $\varnothing$  6.35 mm)
- or
- a straight grinder fitted with a 40 mm  $\varnothing$  diamond powder disc
- or
- a pneumatic hack saw (type MIR PLP80 or AIR-OUTILL. SAB) preferably fitted with a diamond powder blade.

## Unsticking :

- a hot air torch.

## Applying fillets :

- gun for extruding adhesive and sealing mastic (in cartridges).

## Assembling component parts

- clamps (or grips of the Sermax AF 52 type).

## Preparing the resin

- graduated glass container (at least 100 ml) of the pouring jug type.

## Accelerating hardening

- mobile infra-red drying panels.

## Finishing

- orbital sander with extraction equipment (type MULLER 3230).

## STANDARD TOOLS



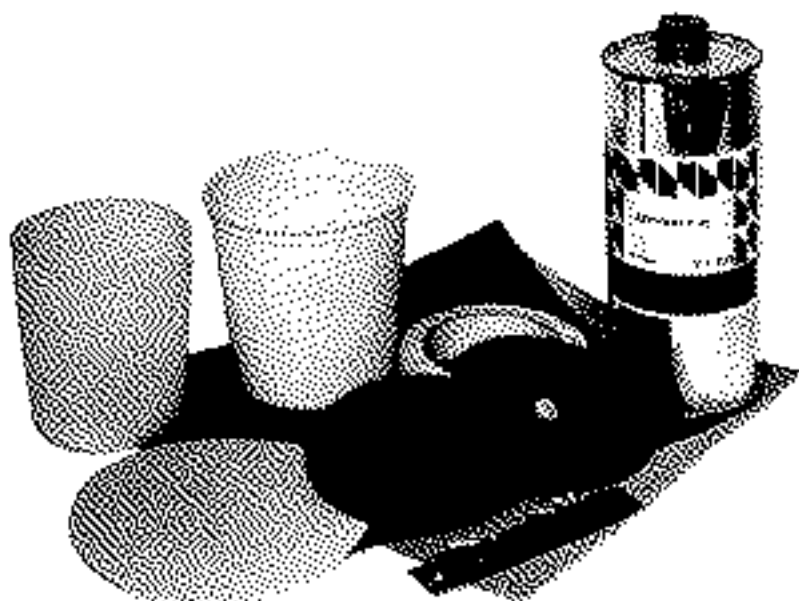
- adhesive tape
- degreasing solvent
- thinners (for cleaning tools)
- sheet steel plates (to be made up by the operator) th = 1 mm x 15 x 100 mm with 4 securing holes
- sheet metal screws (cross head or torx)
- pots for mixing resin (polythene, throw away honey pots etc.)

## PERSONAL PROTECTION - HEALTH

- electric drill (drill  $\varnothing$  1.5 - 3.2 - 5 mm)
- a hack saw
- a grinder (disc grade P36)
- a riveter (of the "Pop rivet" type)
- hand tools such as : spatulas, brushes (short bristle), screwdriver, sanding pads, a blow gun and large scissors (for cutting the fabric).



## CONSUMABLES



- paper masks
- rubber gloves
- paper overalls
- goggles
- a personal extractor nozzle placed near the work area.

- grinding discs, rubbing down paper (P80 to P600).

## PRODUCTS REQUIRED



## POLYESTER RESIN

## EPOXY RESIN

## Small repair kit

1-1/2 litre bottle (pale yellow)

Resin

1-1/2 litre bottle (yellow)

One 60 cm<sup>3</sup> bag of white powder  
with measuring spoon

Hardener

1-1/4 litre bottle (brown)

0.5 m<sup>2</sup>

Glass fibre (Mat)

0.5 m<sup>2</sup>0.5 m<sup>2</sup>

Roving

0.5 m<sup>2</sup>

200 gr

Chopped glass fibres

## Large repair kit

One 1 litre bottle (pale yellow)

Resin

One 1 litre bottle (yellow)

One 120 cm<sup>3</sup> bag of white powder  
with measuring spoon

Hardener

1 1/2 litre bottle (brown)

1 m<sup>2</sup>

Glass fibre (Mat)

1 m<sup>2</sup>1 m<sup>2</sup>

Roving

1 m<sup>2</sup>

400 gr

Chopped glass fibres

each kit includes operating instructions.

FINISHING BODY MASTIC : Polyester 2 pot (Verilac, Supaplast etc. type)

## CHOICE OF RESIN

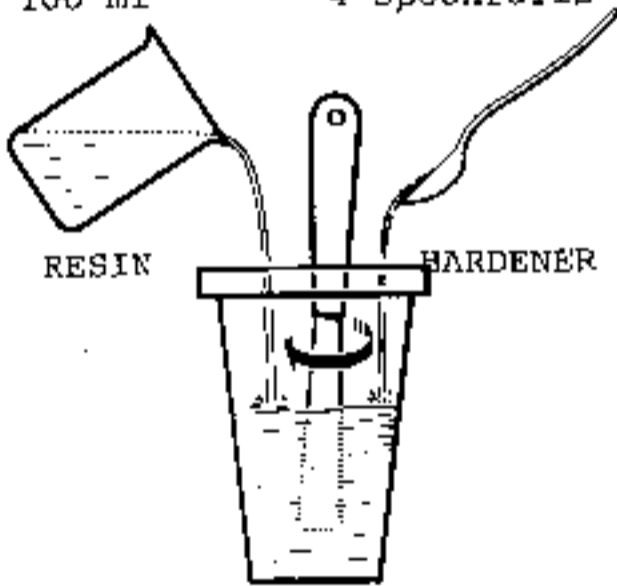
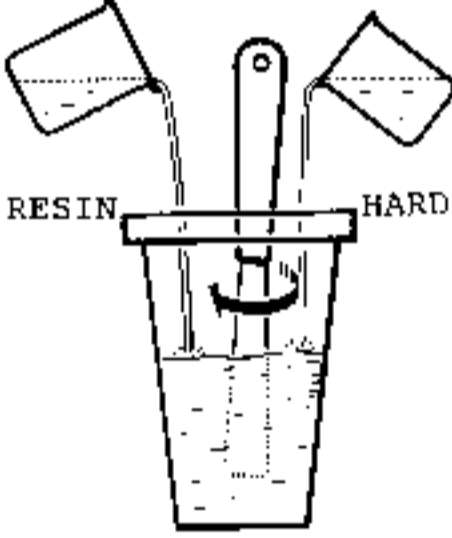
The advantages of polyester resin : - it hardens quicker  
- it is cheaper

The advantages of Epoxy resin : better adherence and higher mechanical strength.

## WARNING :

ALL COMPONENTS MADE FROM PRE-IMPREGNATED RESIN : such as bumper shields, door panels, rear light casings, can only be repaired with EPOXY RESIN and only, at that, when the damage is limited to CRACKS, SMALL HOLES AND BROKEN AREAS.  
Any more extensive damage makes replacing the entire component ESSENTIAL.

## PREPARING - MEASURING OUT THE RESIN

	POLYESTER RESIN	EPOXY RESIN
Quantities for 100 ml (0.1 litre)	<p>100 ml      4 spoonfulls</p>  <p>RESIN      HARDENER</p>	<p>66 ml      33 ml</p>  <p>RESIN      HARDENER</p>
Loading agent	Depending on the type of repair, add chopped fibres to the resin or silicone powder for finishing operations. Bonded joints between panels must be made with resin loaded with chopped fibre (to prevent the resin running).	
Operating temperatures	Do not work with these resins at temperatures of less than 15°C Important : for given proportions and temperatures, the larger the quantity of resin prepared the shorter the time taken for initial hardening.	
Hardening time at 20°C	POLYESTER 1 hr 30 min	EPOXY 5 hr
Accelerating the hardening time	<p>- Either in a stoving oven. - Or under a mobile infra-red drying panel (keeping it a minimum of 0.70 m from the repaired area). WAIT FOR 15 to 20 MINUTES BEFORE SUBJECTING THE REPAIR TO THE MAXIMUM PERMISSIBLE TEMPERATURE OF 60°C.</p>	

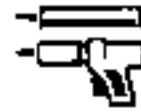
## DETAILS OF THE SYMBOLS USED IN THE REPAIR INSTRUCTIONS



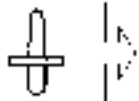
SAW

SAW OVERLAPPED  
COMPONENTS

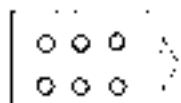
Identify the cut lines with adhesive tape.



EXTRUDE : A FILLET OF SEALING MASTIC ON TO THE STRUCTURE  
Degrease the galvanised support panel before applying.

DRILL OUT RIVETS  
Ø 5 mm

PREPARE THE RESIN  
Measure out and load the resin to suit the type.

DRILL THROUGH  
BACKING PIECES  
Ø 5 mm pitch 40 mm

RIVET

THIS OPERATION MAKES FOR EFFECTIVE BONDING.



ALIGN THE COMPONENTS  
Make up sheet metal plates  
th = 1 mm - 20 x 100 mm.  
Align them from the outside (secured in place with sheet metal screws) especially in complex areas.



RELEASING A BONDED JOINT ON A STRUCTURAL COMPONENT  
Heat the areas to be unbonded with a hot air torch and cut the bonding fillet with a sharpened spatula.  
Clean the area.



ACCELERATE HARDENING  
In a stoving oven or with an infra-red panel 60°C max. In the last case keep the panels 0.70 m from the repair. Do not heat the repair before 15 to 20 minutes.



CUTTING OUT BACKING PIECES.  
From an unused part of the new section or from an undamaged part of the damaged section, cut one or more backing pieces of a shape similar to that of the area to be repaired. Do not place backing pieces under sharply radiused areas.



CHAMFER  
From the outside with a disc grinder.



ROUGHEN AND DEGREASE THE AREAS TO BE BONDED  
Roughen the surface with a disc grinder and degrease it with DEROCHIM P42.  
FIT THE BACKING PIECE



FILL THE CHAMFER  
Use resin loaded with chopped fibres or silicone powder.  
Important : thoroughly "consolidate" the repair to limit the formation of air bubbles.



- Using a sheet metal screw length 10 to 15 mm. Align the component parts.  
- Remove the screws.



RUB DOWN thick areas :  
1st rubbing down operation.  
With a sanding pad or an orbital sander P80 to P180.



APPLY MASTIC  
Use polyester body mastic. Fill in holes and blend in the surface.



RUB DOWN  
2nd rubbing down operation : P180 to P 280. Finishing operation : P 280 to P 600.

## PLASTIC COMPONENT REPAIR SEQUENCE No. 1 : CRACKS

Definition : small cracks that do not go right through the laminate.

## A : PREPARATION



- grind back the crack to its source

- chamfer the area round it for a radius of 20 to 30 mm



- grind back the paint around the chamfer

- degrease the area

## B : REPAIRING



- prepare the resin

- wet the chamfer with a brush dipped in the resin

- add the silicone powder



- fill the chamfer with a resin and silicone powder mixed



- after 15 minutes accelerate hardening with an infra-red panel placed a minimum of 0.7 m away

- rub down

## C : FINISHING



- apply the polyester body mastic



- rub it back, dry

## PLASTIC COMPONENT REPAIR SEQUENCE No. 2 : HOLES

Definition : hole right through the panel less than 60 mm in diameter.

## A : PREPARATION



- grind back the edge of the hole to a neat finish
- chamfer around the hole to a radius of 30 to 40 mm

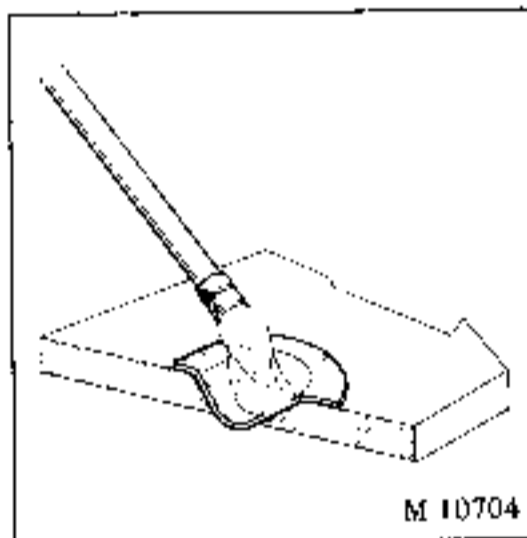


- grind back the paint around the chamfer
- degrease.

## B : REPAIRING



- prepare the resin
- wet the chamfer with a brush dipped in the resin
- cut a piece of mat large enough to cover the chamfer and form a pocket



- wet this with resin. Place it in position and allow it to dry (accelerate it if necessary with an infra-red panel)



- prepare more resin
- add short glass fibres to the resin
- fill the pocket and allow it to dry (accelerate it if necessary with an infra-red panel)
- rub it down

## C : FINISHING



- apply the polyester body mastic



- rub it back, dry



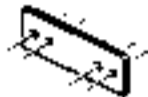
## PLASTIC COMPONENT REPAIR SEQUENCE No. 3 : BREAKS

Definition : a single break less than 150 mm long (the laminate being broken right through).

## A : PREPARATION



- grind back the edge of the break to obtain a neat finish. Open it up to a gap 10 mm wide.



- using plates and sheet metal screws, align both edges of the part

- chamfer the area around the break to a width of 30 to 40 mm

- grind back the paint around the chamfer



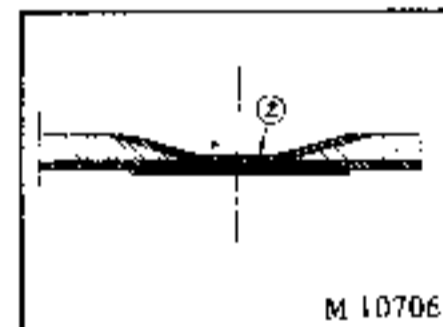
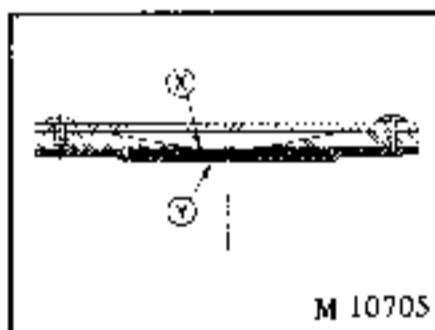
- from inside, roughen the area around the break to a width of 100 mm

- degrease both sides

## B : REPAIRING



- prepare the resin
- wet both the inside and outside chamfers with a brush dipped in resin



Cut 2 pieces of mat the same length as the repair  
 (x) the 1st 50 mm wide  
 (y) the 2nd 100 mm wide  
 and wet them with resin. Fit them from the inside and allow them to dry (accelerate drying if necessary)

Remove the sheet steel plates  
 Cut a piece of mat (Z) to cover the chamfer. Wet it with resin and place it in position, avoiding air bubbles forming at the joints between the pieces of mat.



- add chopped glass fibre to the resin
- fill the chamfer. Leave it to dry (accelerate if necessary)
- rub it down

## C : FINISHING



- apply the body mastic



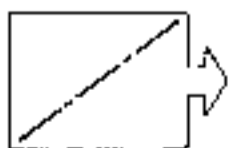
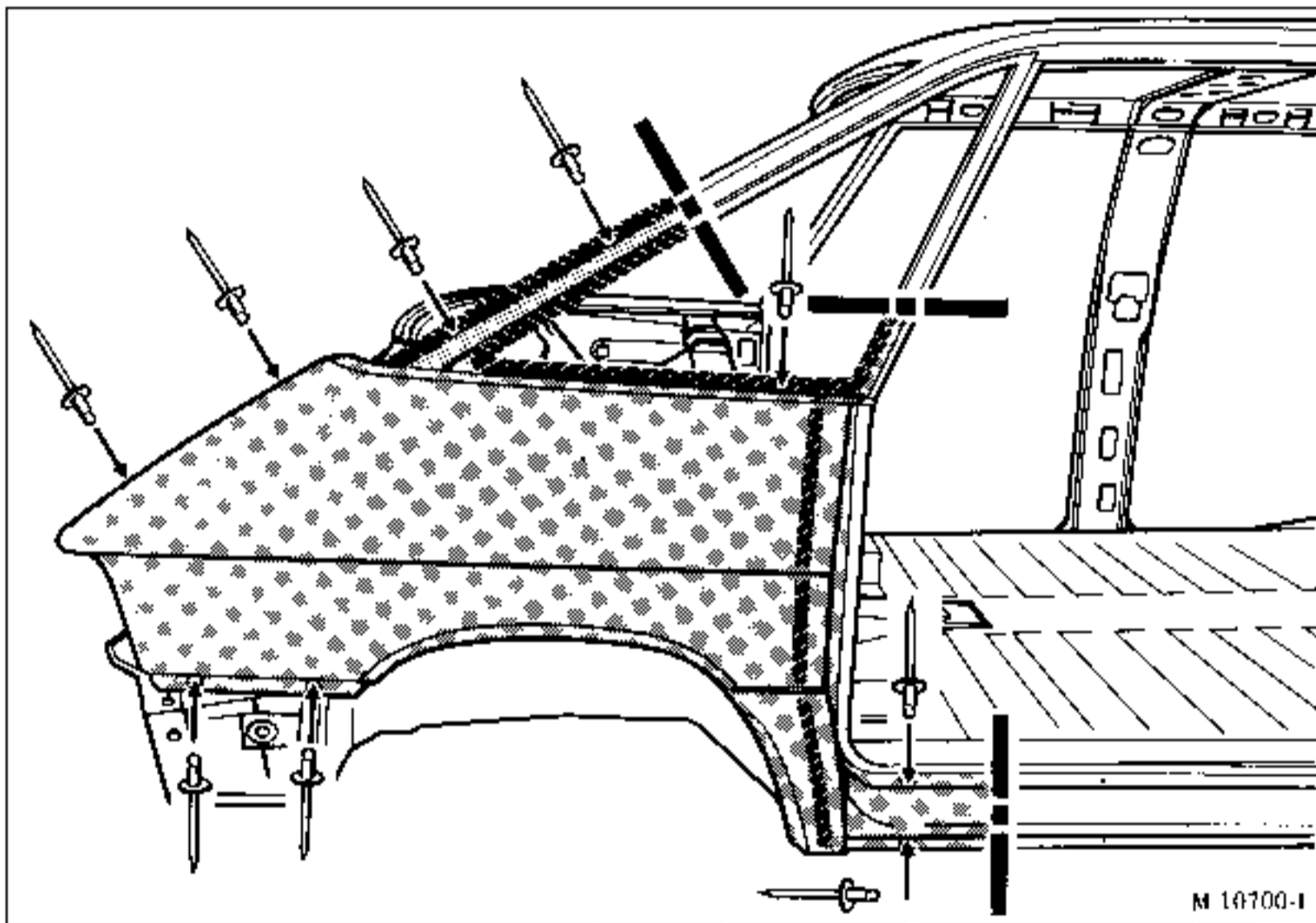
- rub it down, dry

## PLASTIC COMPONENT REPAIR SEQUENCE No. 4 : PARTIALLY REPLACING A COMPONENT

Definition : the partial replacement of a laminate component. The new section is cut from a replacement part.

## A : PREPARATION

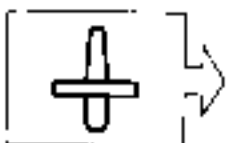
- Remove the section to be replaced.



- saw



- free the component from the structure

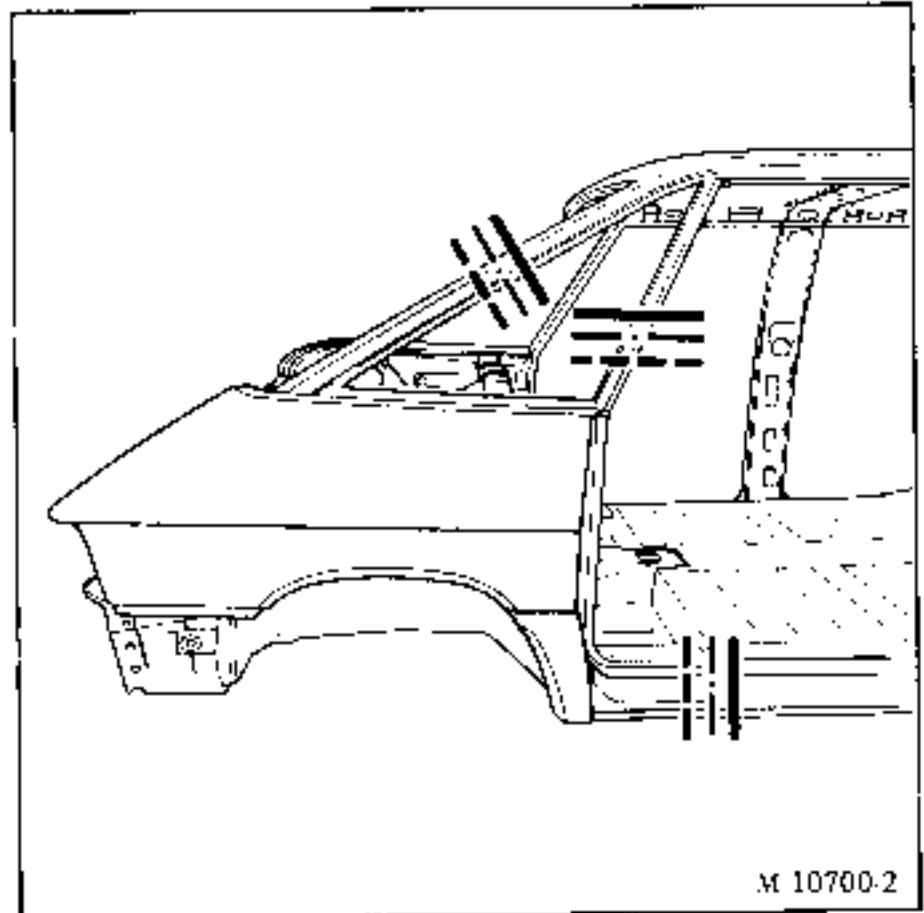


- drill out the rivets

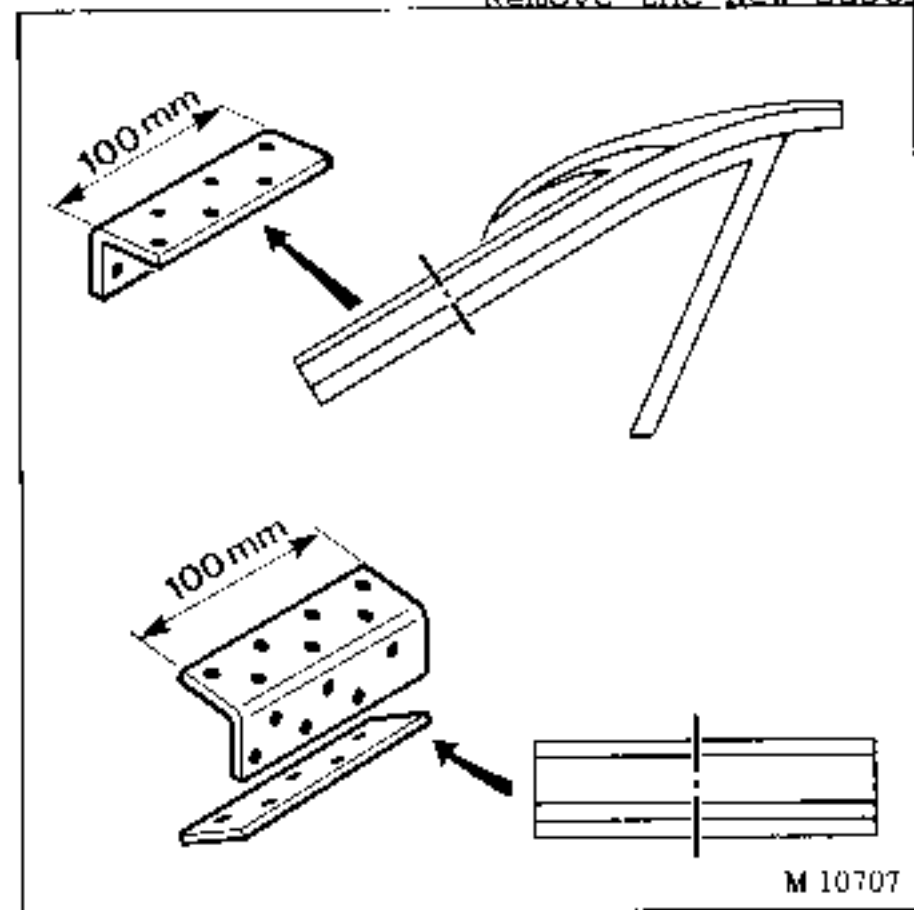
- Preparing the components before assembly



- Cut out the section to be replaced and remove it.
- Offer up the new part, secure it with clamps and saw through the original and new parts at the same time.
- Adjust the sections to fit.
- Remove the new section.



M 10700-2



M 10707



- from an unused part of the new component, cut backing pieces so that they overlap by 50 mm on either side of the cut line.
- Drill through the backing pieces at a  $\phi$  of 5 mm (every 40 mm).

- Fit backing pieces.
- Secure them to the components still on the body with sheet metal screws.
- Offer up the new section.
- Secure it to the backing pieces with sheet metal screws.
- Align all the parts.
- Remove the new section and the backing pieces.

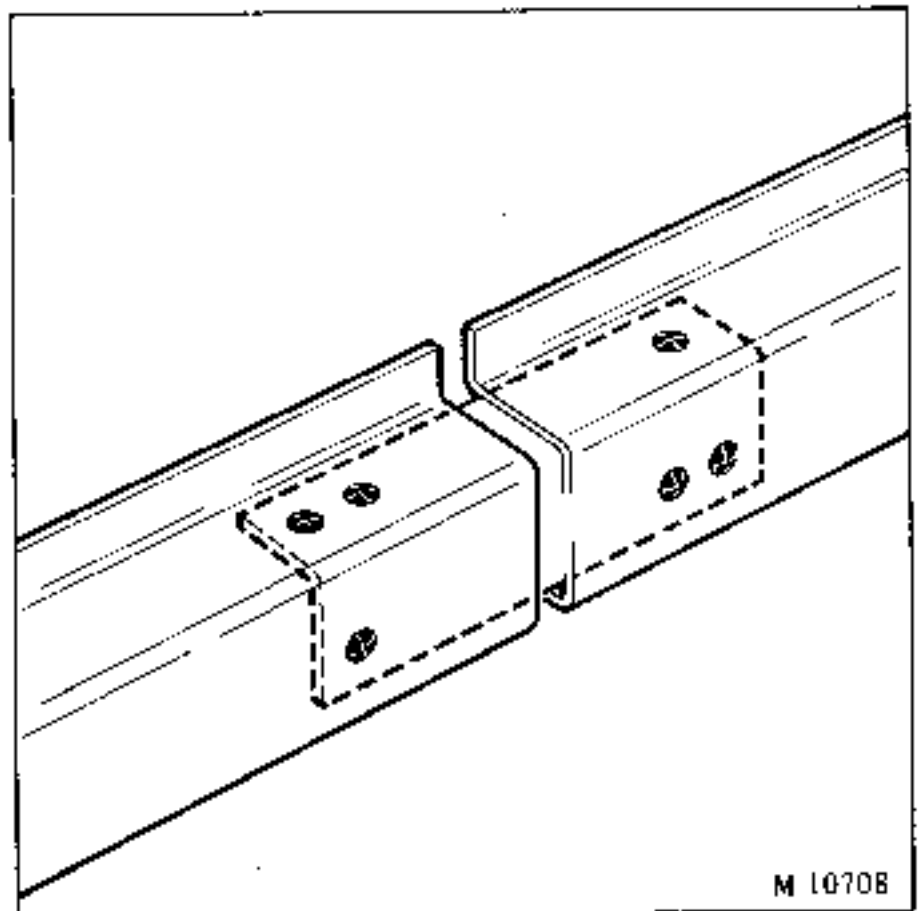


If necessary :

- Degrease the galvanised areas on the chassis to which a fillet of mastic is to be applied.

Extrude a fillet of mastic on to these areas.

(See the sections of the manual concerned).



M 10708

## B : REPAIRING



- roughen the surface of the backing pieces, blow them clean and degrease them.

- roughen the areas to be bonded on the parts still on the vehicle and on the new part (over a width of approximately 60 mm). Blow clean and degrease these areas.

- prepare the resin.



- wet the bonding areas on the components and the backing pieces with a brush dipped in resin.

- add chopped fibres to the resin.

- coat the backing pieces with this mix.

- secure the backing pieces to the components still on the vehicle.



- offer up the new section and secure it to the backing pieces.

- rivet the components to the chassis.

- leave the resin to dry (after 20 minutes accelerate drying).

- remove the screw securing the backing pieces and countersink the holes.



- grind back the joints to leave a gap 10 mm wide.

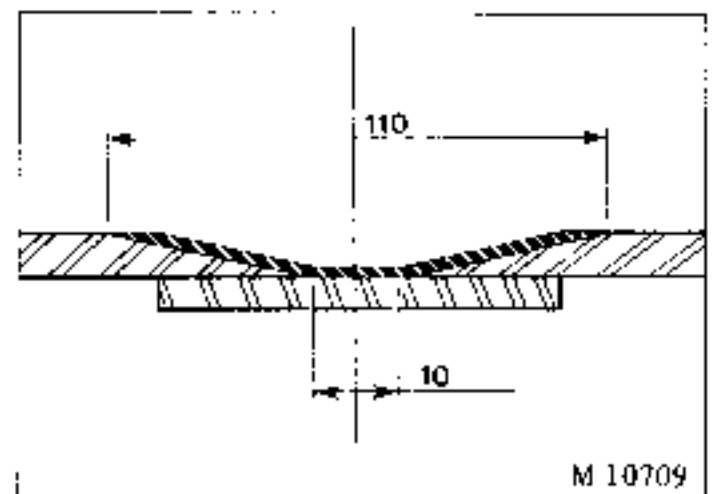
- apply a chamfer 30 to 40 mm wide to each side

- cut pieces of mat to fill the total width of the chamfer.



Note : in those areas where there are no backing pieces, the mat should form a pocket.

- blow clean the chamfers and degrease them.



M 10709

- prepare the resin.



- wet the chamfers with a brush dipped in resin.

- wet the pieces of mat with resin and lay them in place, avoiding air bubbles forming between them and the backing pieces.

- leave them to dry (accelerate if necessary).

- prepare the resin.

- add the chopped fibres to the resin.



- fill the chamfers and the securing holes in the backing pieces.

- leave it to dry (accelerate if necessary).

- grind back or blend in the joint.



## C - FINISHING

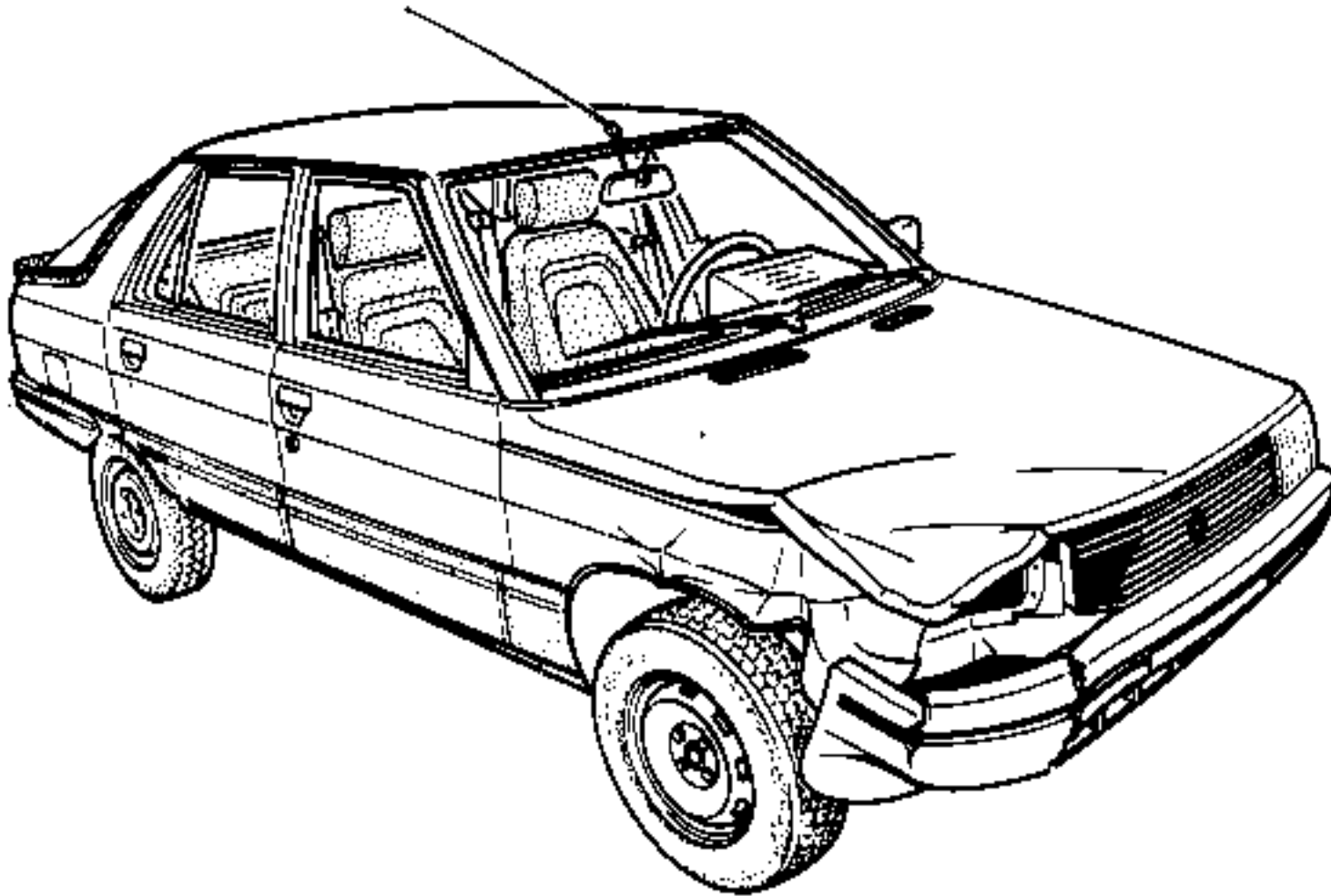


- apply the polyester body mastic.



- rub it down, dry.

OPERATION	PRODUCT	REF.	REMARKS
Protecting galvanised areas on either side of welds.	Anti-splatter aerosol (silicone-free)	Type DAVO SPRAY (charledave).	Can also be used for spraying on gas protected welding nozzles.
Protection of hollow sections.		Products officially approved by RENAULT	
Repairing polyester components.	<ul style="list-style-type: none"> <li>- Degreasing agent DEROCHIM P42.</li> <li>- Polyester kit                             <ul style="list-style-type: none"> <li>.small repair.</li> <li>.large repair.</li> </ul> </li> <li>- Epoxy kit                             <ul style="list-style-type: none"> <li>.small repair.</li> <li>.large repair.</li> </ul> </li> <li>- Polyester body mastic</li> </ul>	60 25 070 314  60 25 070 322 60 25 070 323  60 25 070 318 60 25 070 319 77 01 395 513	
Bonding outer door panels Preparing (Phosphate Door (primer Body (primer Preparing (Adherence Door panel(	Chrome phosphate primer 253. Primer surfacer 883. Gurit glass primer.	77 01 404 364 77 01 406 912 60 25 070 330	Dilute 100% with reaction thinners. Dilute 100% with reaction thinners. Supplied with the degreasing agent.
Bonding.	TEROSON 6322 2 pot adhesive.	60 25 070 328	Mixed in proportions of 50% of each. 7 mm Ø fillet.
Bonding fixed polyester components to chassis components.	310 cm <sup>3</sup> cartridge of adhesive mastic (Bostik 2638).	60 25 001 684	Degrease the galvanised support before applying the bonding.
Sealing and sound deadening hollow sections.	Polyurethane aerosol can.	60 25 070 326	To be injected at points shown on the repair schedules.



#### THE POSSIBILITIES OPENED BY DEFECT DIAGNOSIS

Effective defect diagnosis permits :

- a rapid estimate to be made of the cost of repairing the bodywork,
- the possibility of informing the customer of how long his vehicle is going to be off the road,
- the correct orientation of the necessary work,
- the efficient work loading of the body shop.

#### THE USERS OF BODY DEFECT DIAGNOSIS ARE

- The receptionist
- The estimator
- The panel beater
- The foreman or section leader
- The person responsible for buying in used vehicles

#### THE PEOPLE ULTIMATELY CONCERNED

- The insurance company inspectors
- The customer

#### HOW TO CARRY OUT AN EFFECTIVE BODY DEFECT DIAGNOSIS OPERATION

There are 3 ways of going about this depending on the degree of accuracy required :

- 1 - VISUAL INSPECTION
- 2 - CHECKING WITH A TRAMMEL GAUGE (Car. 759-02)
- 3 - A CHECK ON THE AXLE GEOMETRY (see the mechanical manual)

Note : The areas of distortion of the sub-frame that can be detected by visual inspection are given in the rebuilding operations described in each section.

CHECKING WITH A TRAMMEL GAUGE :

CHECKING THE POSITIONS OF THE FRONT SIDE MEMBERS

1 - Check the positions of the pilot holes (1 and 2) under the front side members.

- Compare the diagonals and the length dimensions

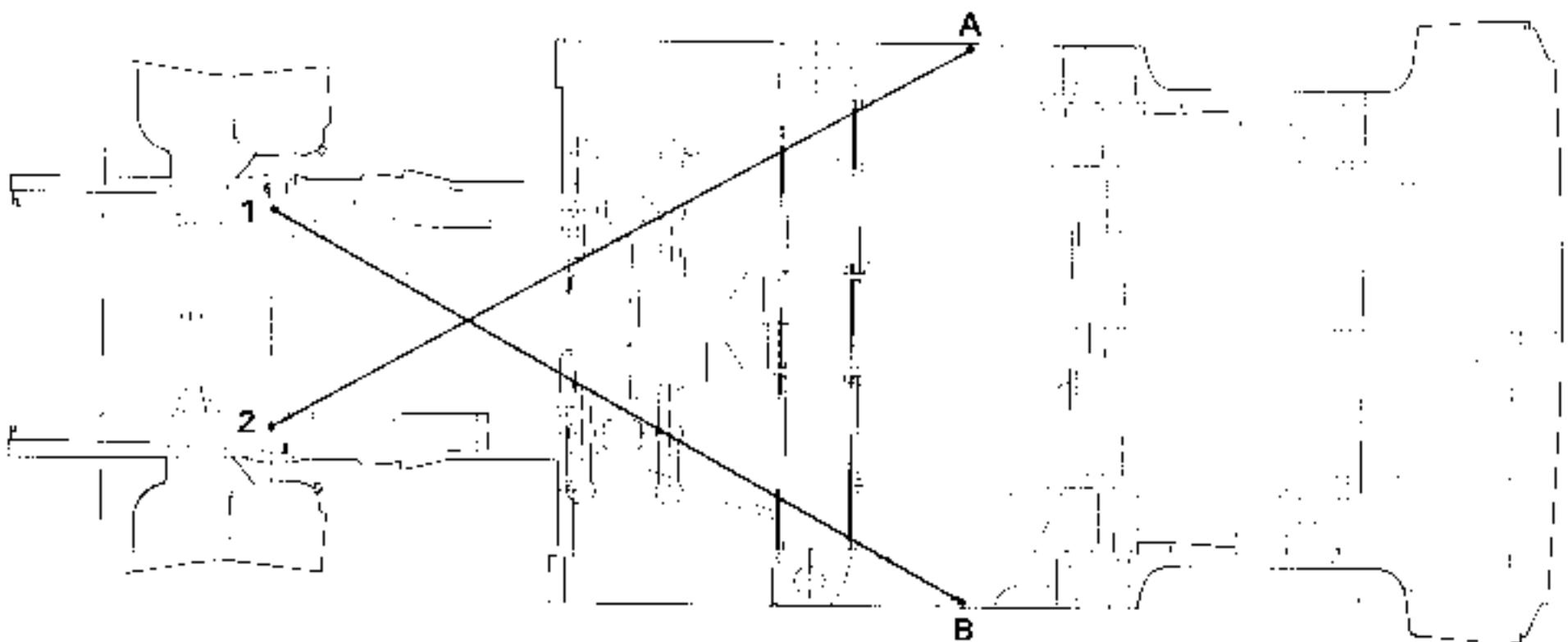
$$B1 = A2 \text{ and } B2 = A1$$

- If a difference is noted during this check, the vehicle will have to be placed on the jig bench.

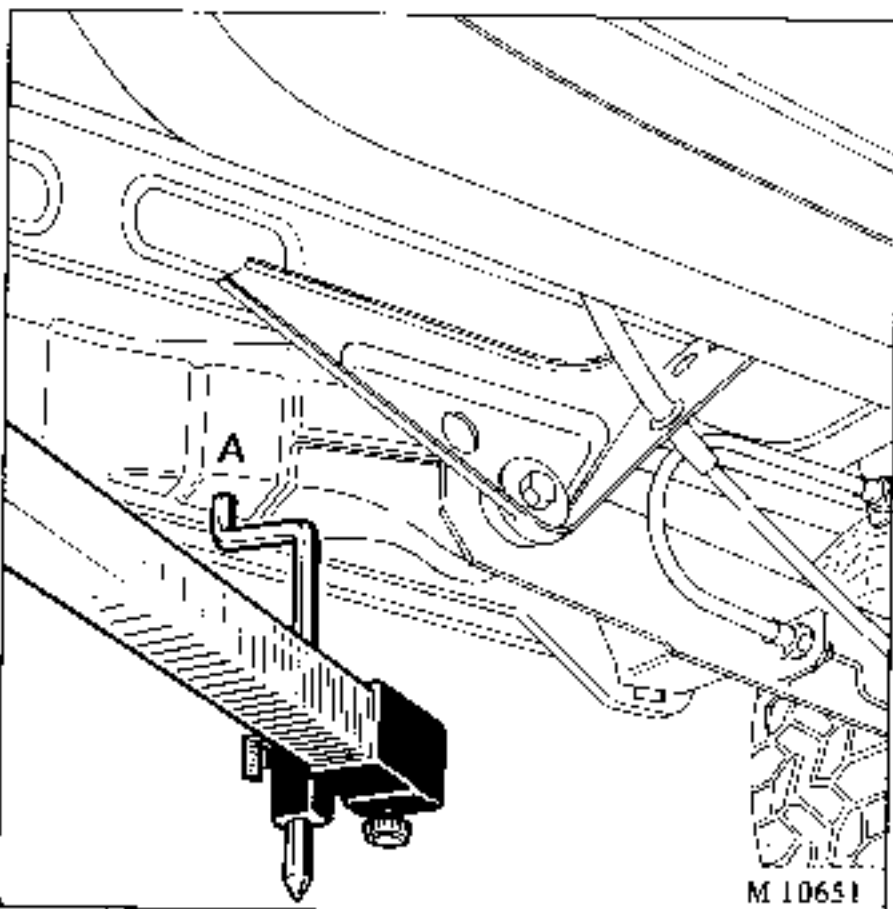
MOUNTING THE VEHICLE ON THE JIG BENCH FOLLOWING A FRONT END IMPACT DOES NOT INVOLVE REMOVING THE MECHANICAL UNITS FROM THE REAR END.

Supports specially designed for this purpose are to be placed under the corresponding points (see the section entitled : using the jig bench brackets).

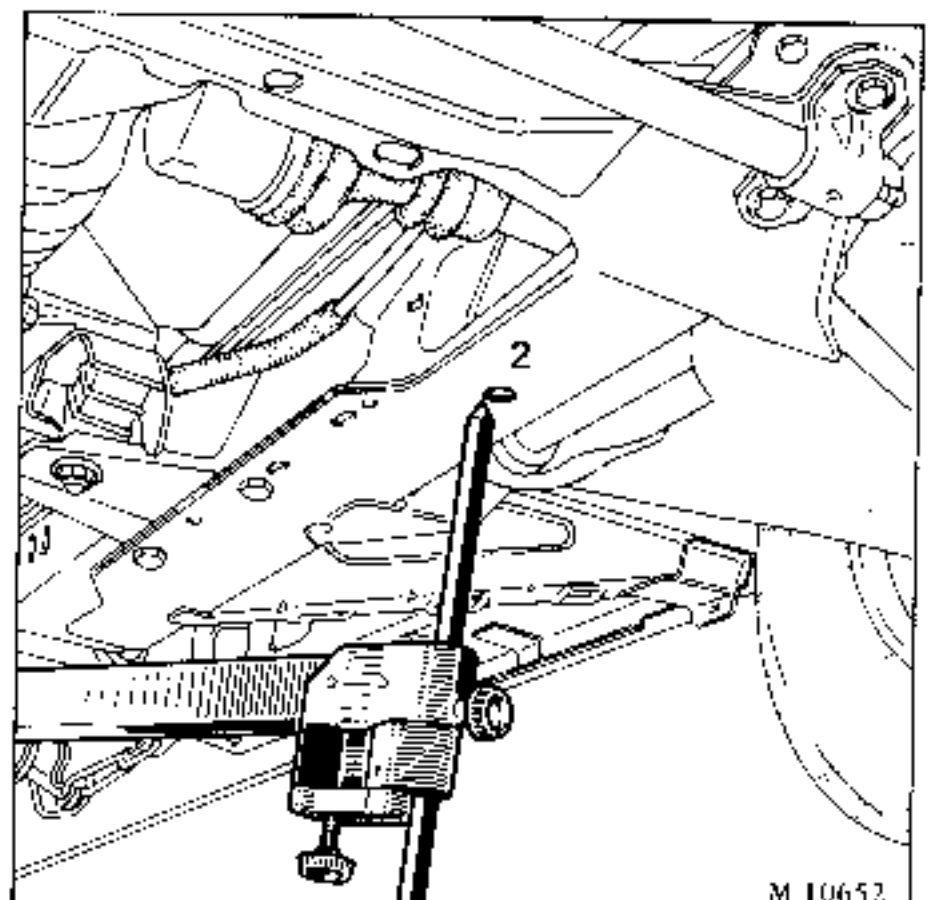
If no differences in these dimensions are noted, check the front axle geometry. If any of the geometry angles is defective, a full check must be carried out with a view to carrying out the repair on the jig bench.



M 10669-2



M 10651



M 10652

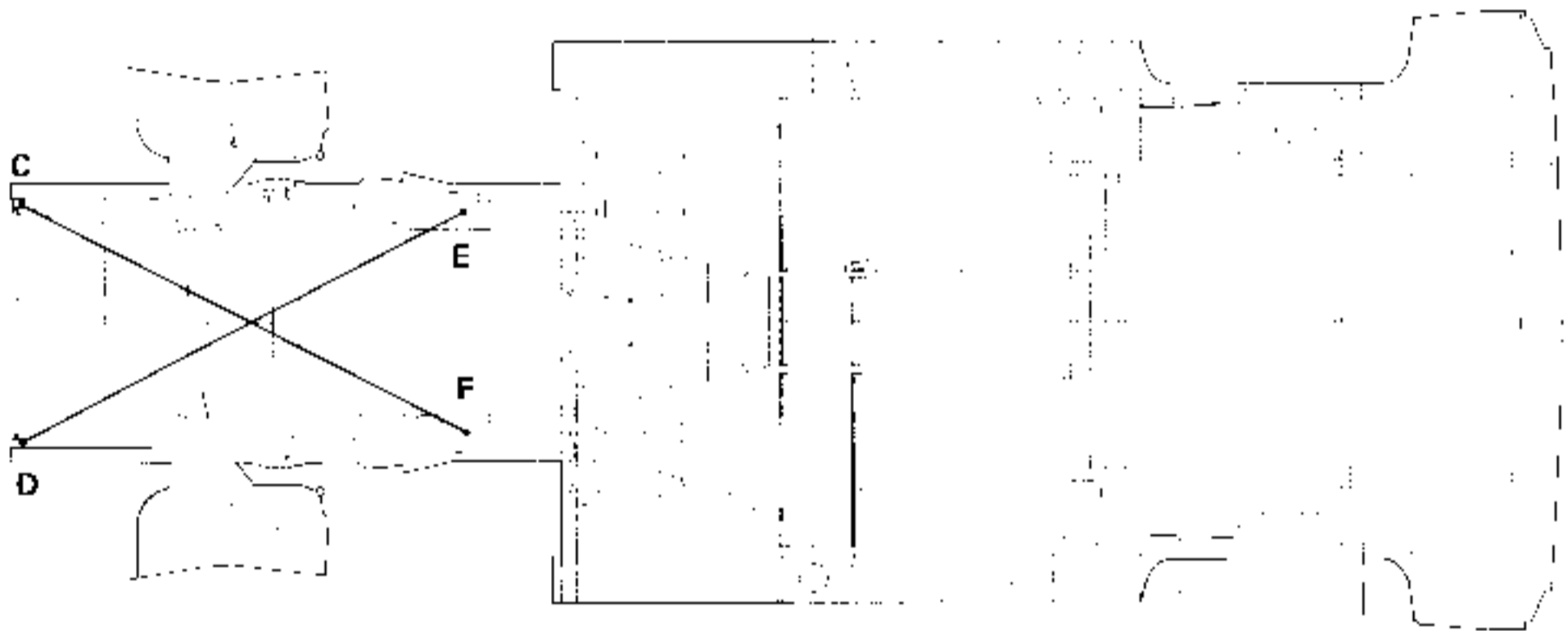


2 - Checking the front ends of the side members (C and D) :

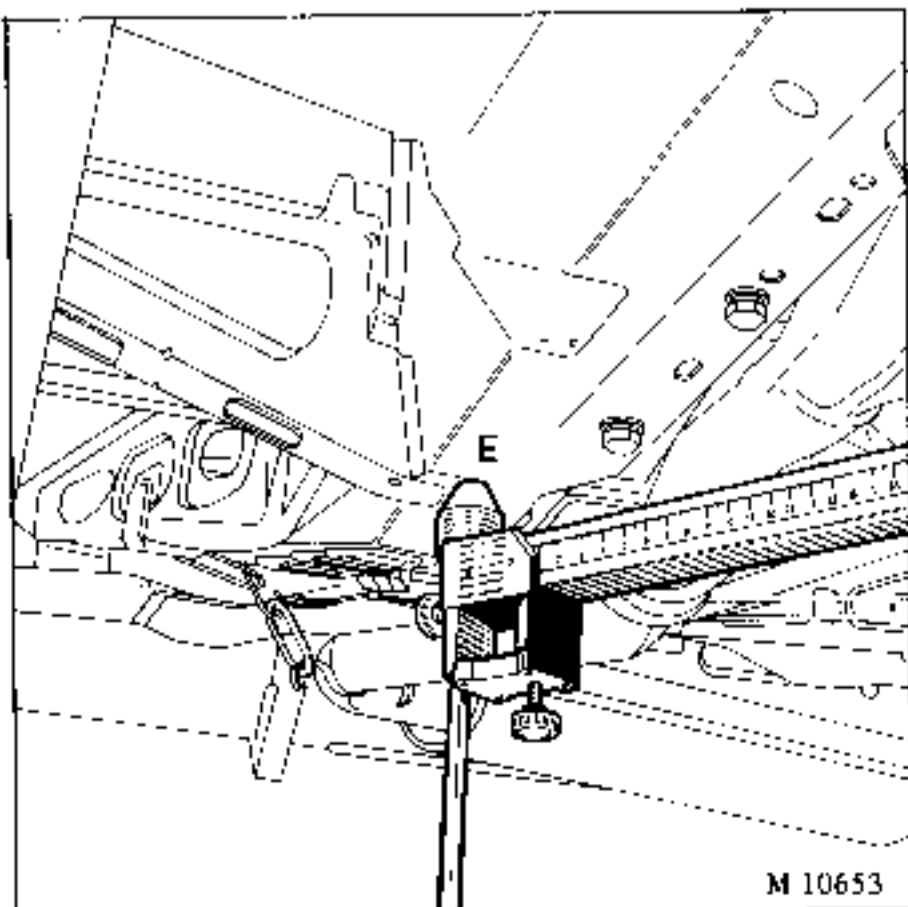
- Compare the diagonals and the length dimensions :

$$CF = ED \text{ and } FD = EC$$

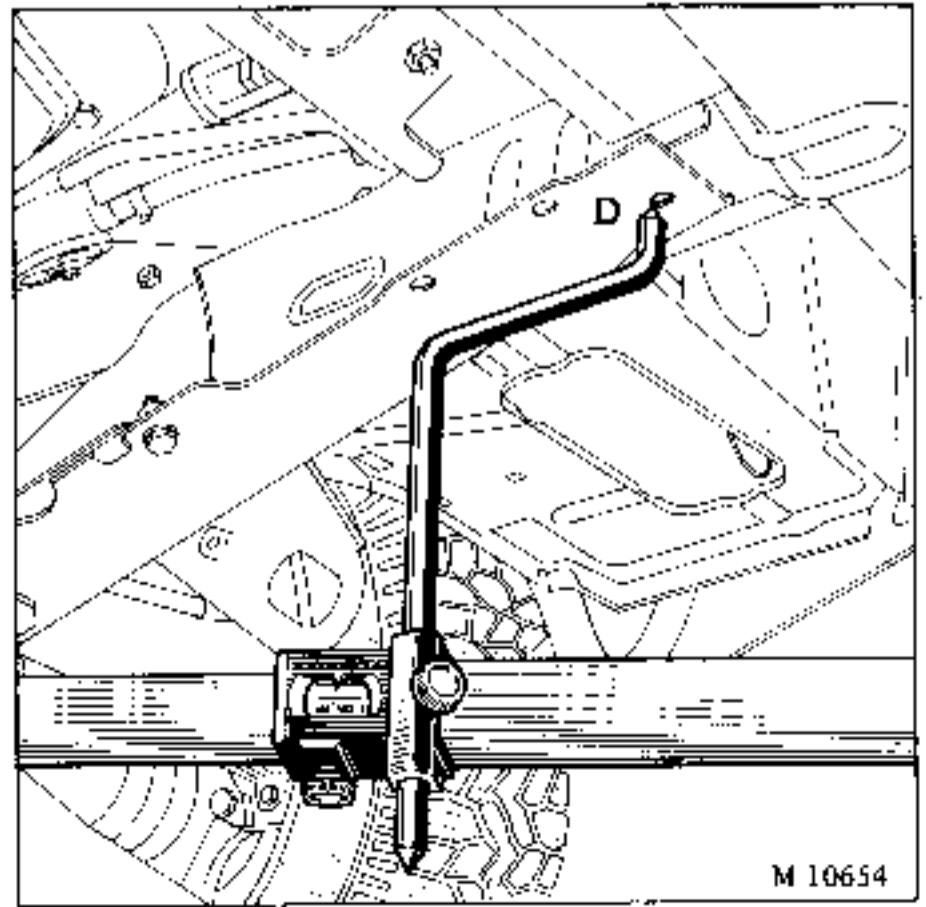
- If a difference is noted during this check, but there are no folds in the metal past the point at which the front axle assembly is secured, the front ends of the side members can be partially replaced (it is preferable to carry out this operation on the jig bench).
- If no difference is noted, it means that the sub-frame has not been affected by the impact.



M 10669-3



M 10653



M 10654

**CHECKIGN THE POSITION OF THE REAR AXLE**

- Compare the diagonals and the length dimensions :

$F4 = E3$  and  $F3 = E4$

- If a difference is noted during the check, the vehicle will have to be mounted on the jig bench. It may be necessary to replace a complete side member.

MOUNTING THE VEHICLE ON THE JIG BENCH FOLLOWING A REAR END IMPACT DOES NOT NECESSITATE REMOVING THE FRONT MECHANICAL UNITS.

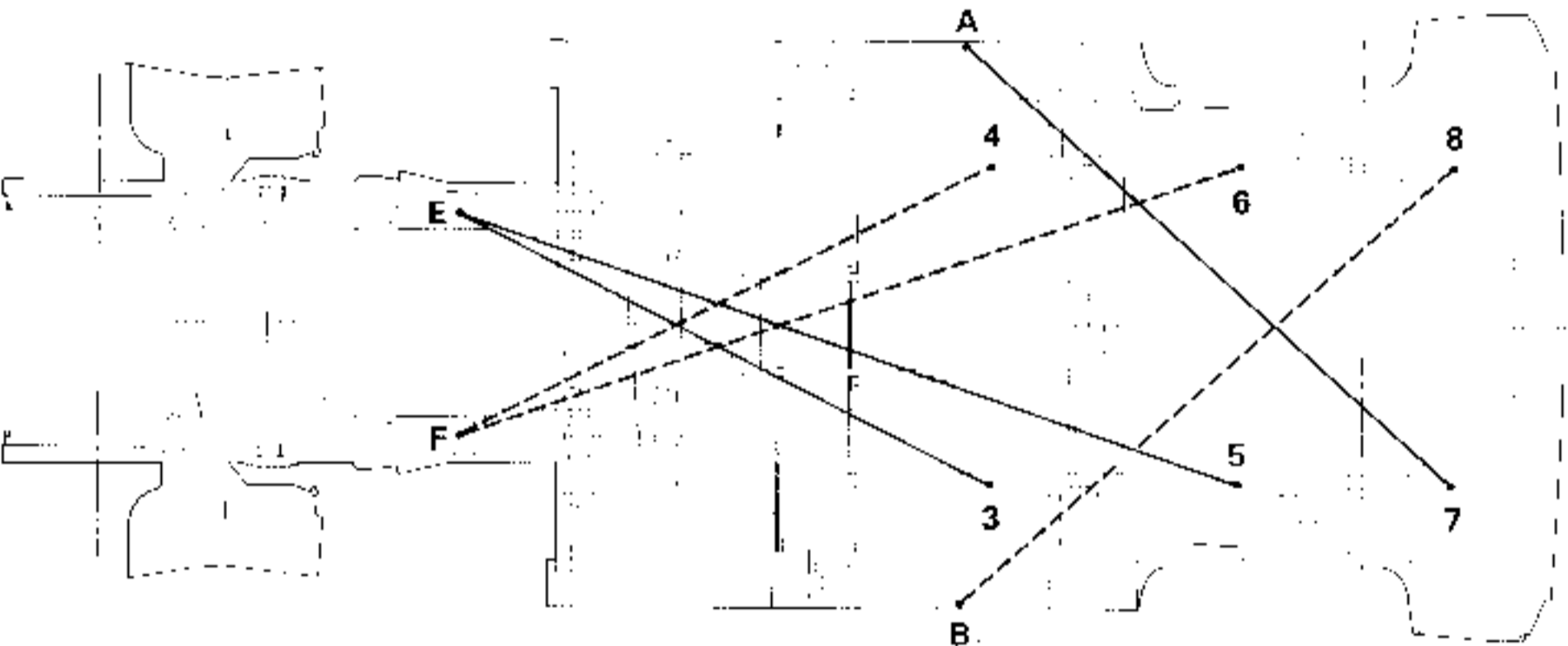
Supports specially designed for this purpose are to be placed under the corresponding points (see the section on using the jig bench brackets).

- If no difference is noted, continue by checking the diagonals and length dimensions:

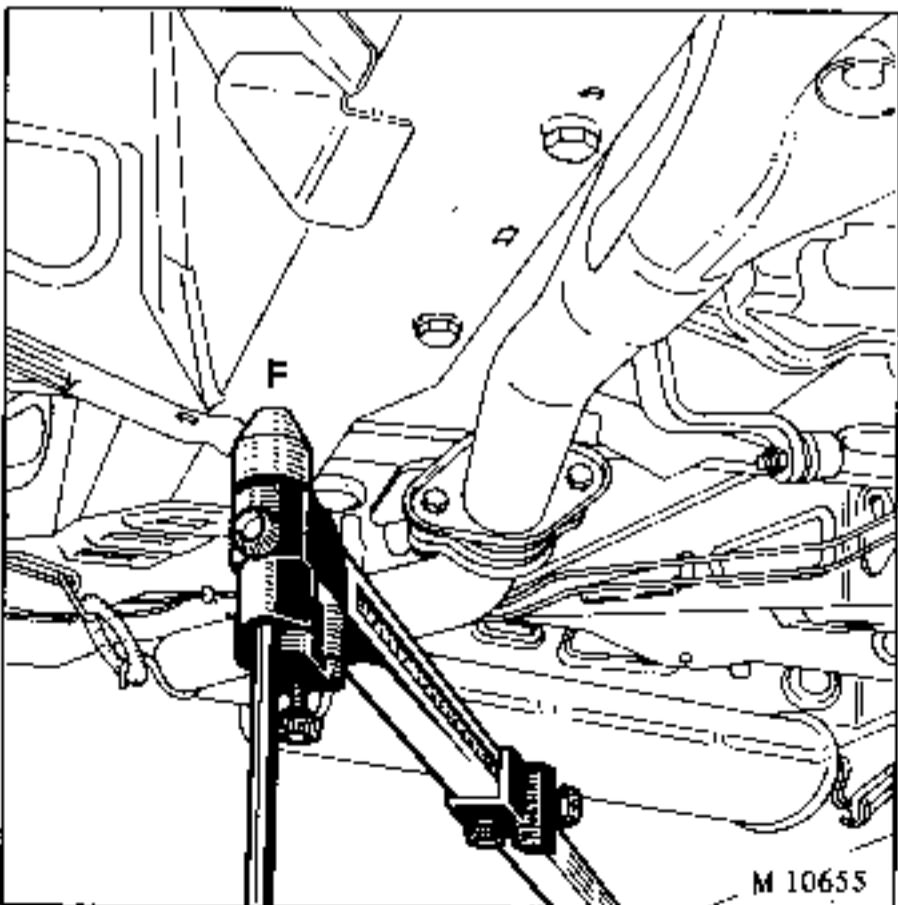
$F6 = E5$  and  $F5 = E6$

Any difference is an indication that the shock absorber anchor point and the spring dish are distorted :

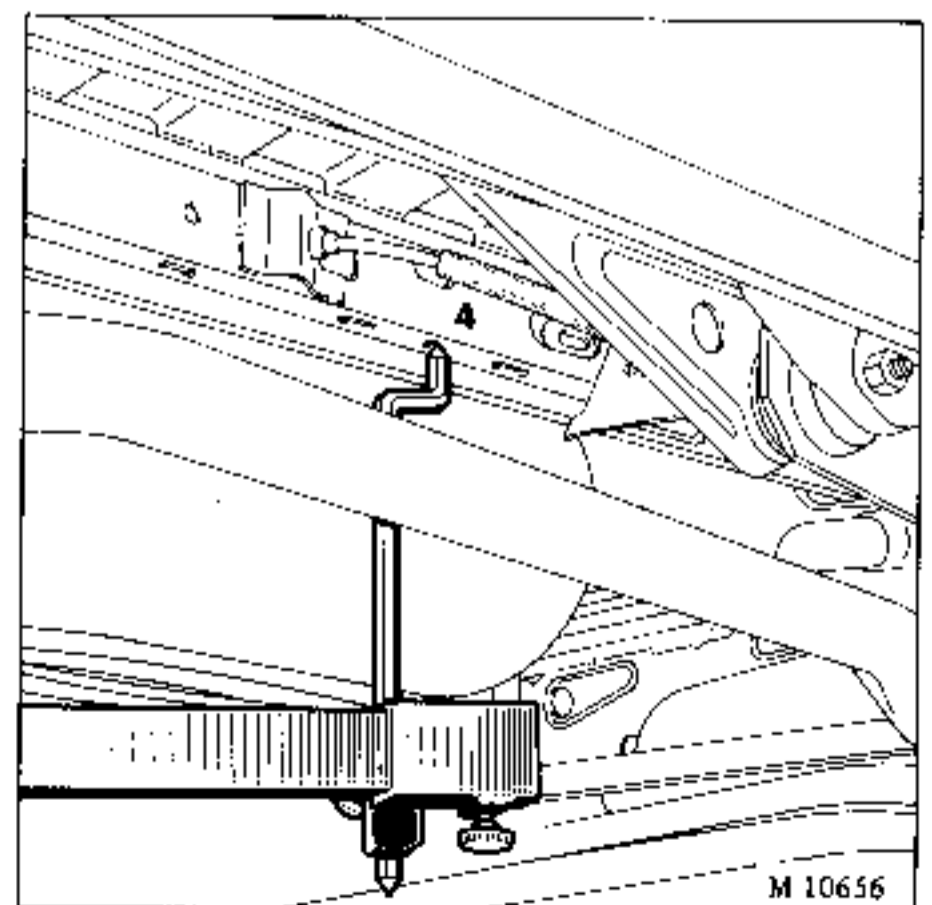
- Check the condition of the suspension arms,
- Check the axle geometries,
- CARRY OUT THE REPAIR OPERATIONS ON THE JIG BENCH.



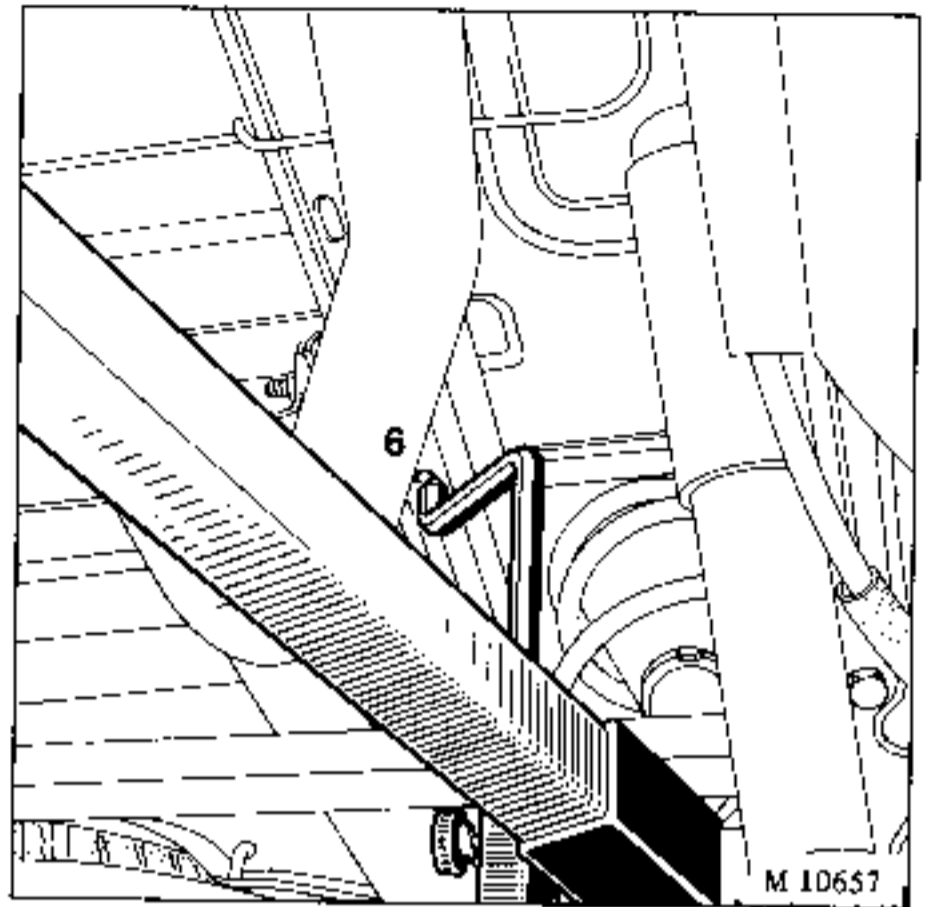
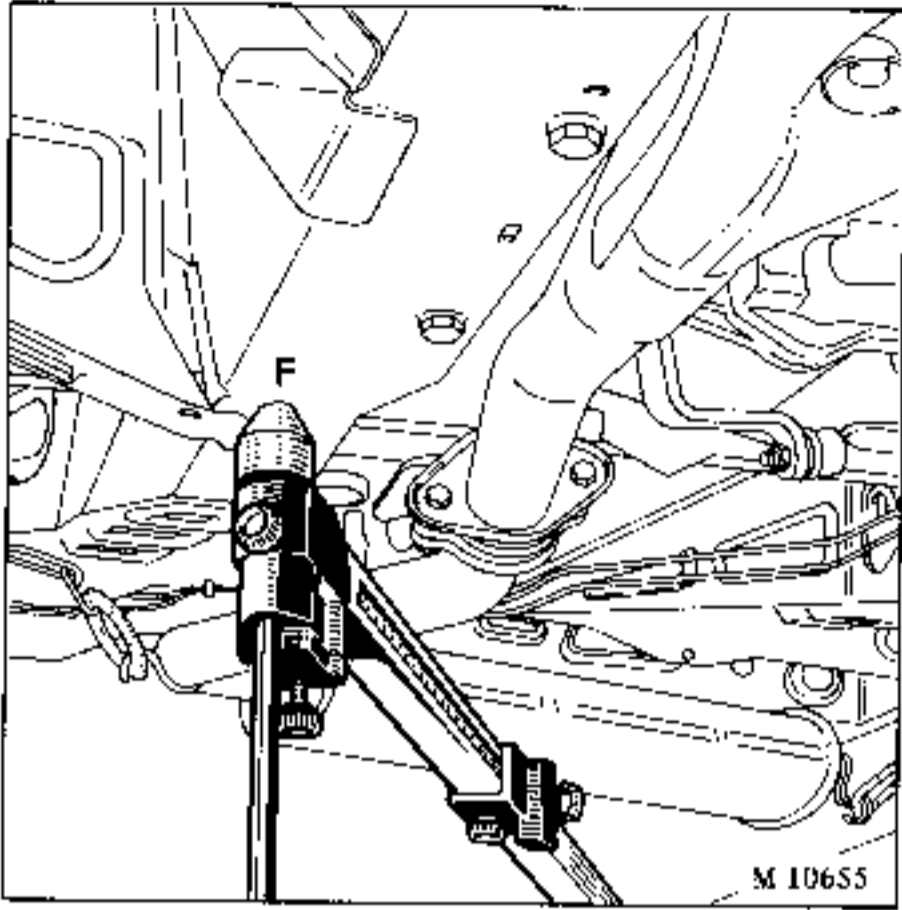
M 10669-4



M 10655

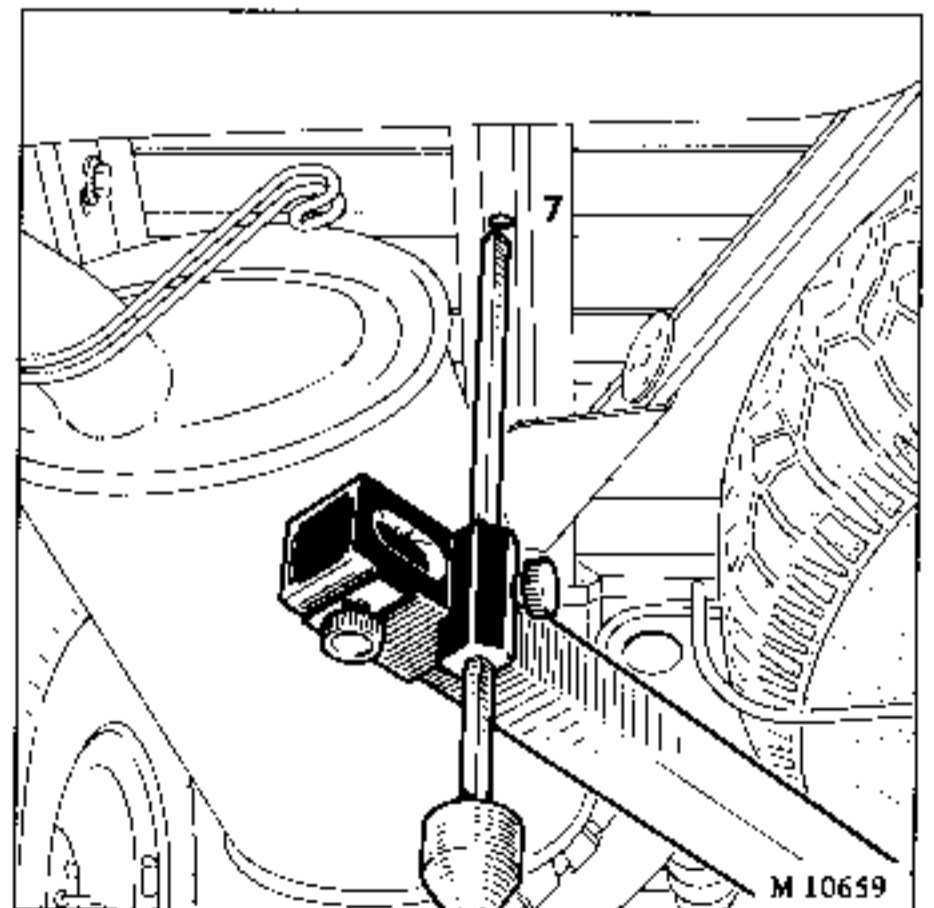
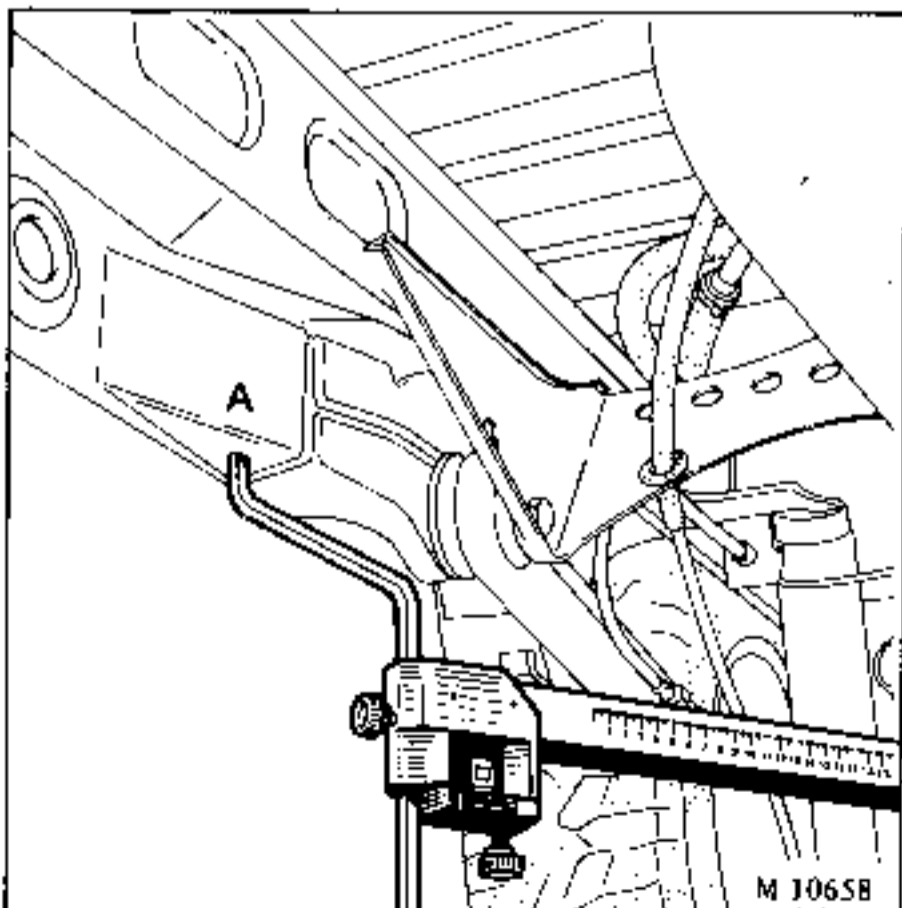


M 10656



CHECKING DIAGONALS F6 = E5

The ends of the rear side members are checked by comparing diagonals A7 = B8

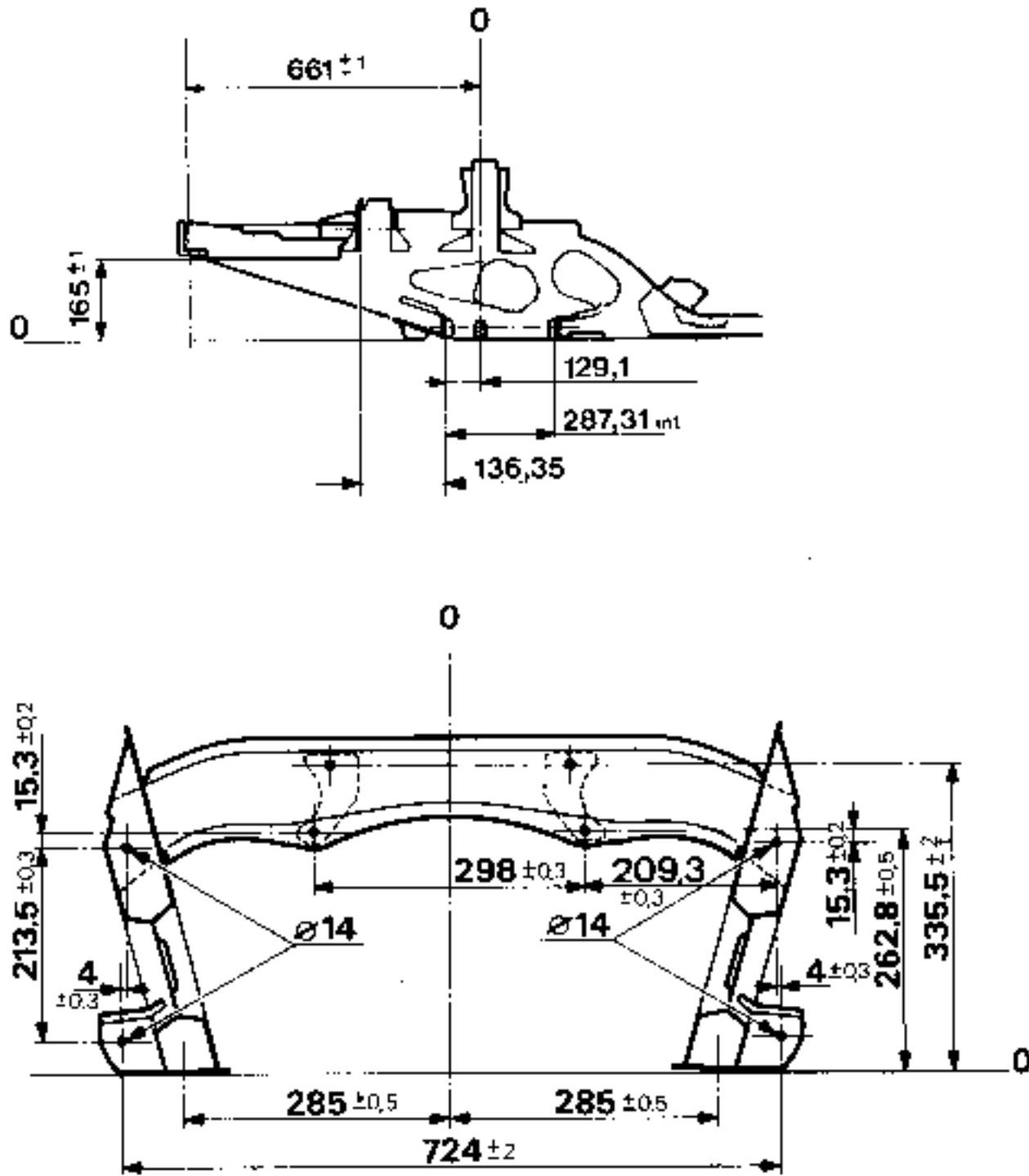


CHECKING DIAGONALS A7 = B8

The geometry of the floor section framing must be checked with the trammel gauge Car. 759-02 followed, when applicable, by a check on the front and rear axle geometries.

The aim of these checks is to determine, without removing any mechanical components, the extent of the distortion that the floor section may have suffered in particular at the mechanical unit securing points.

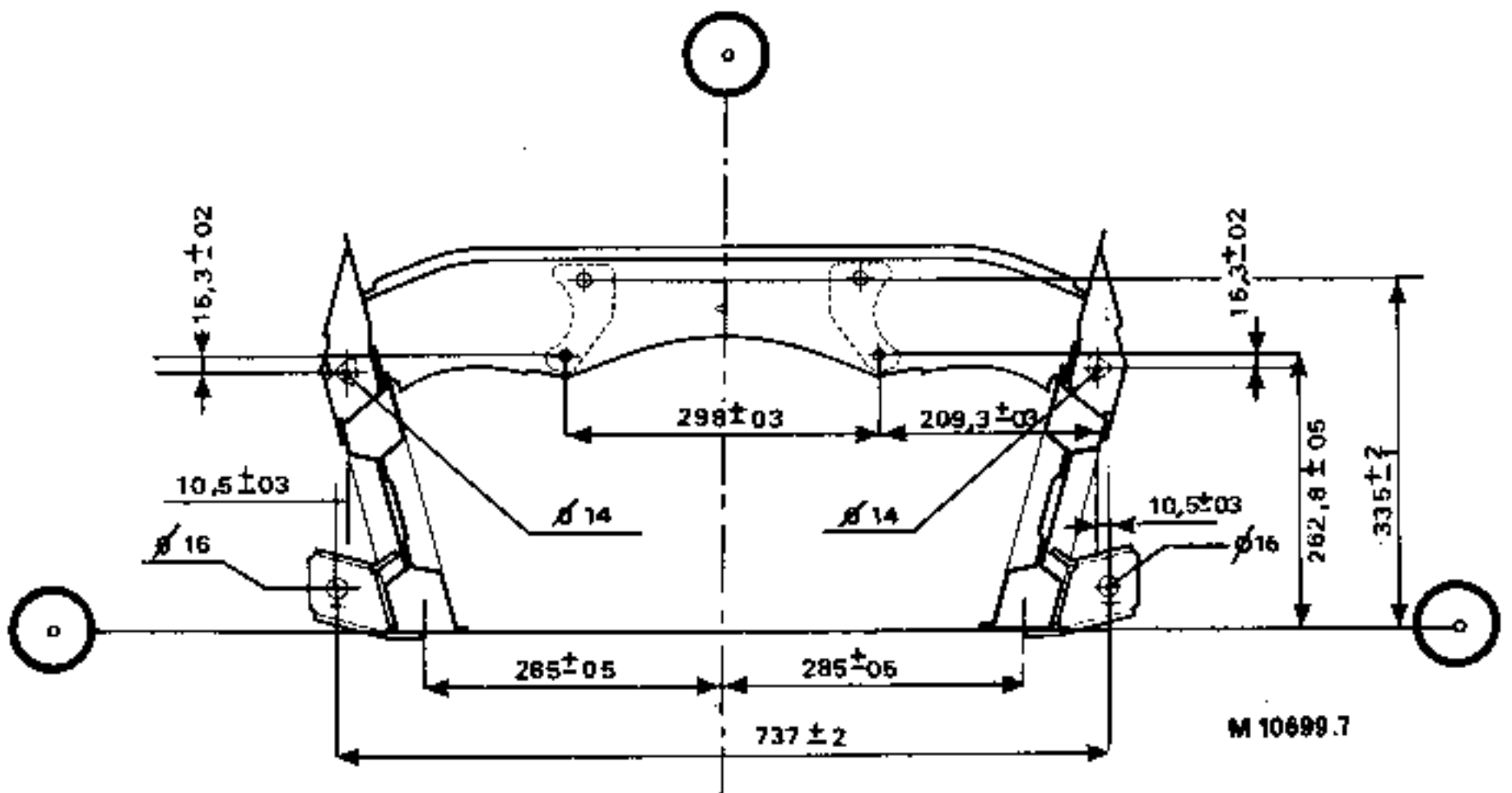
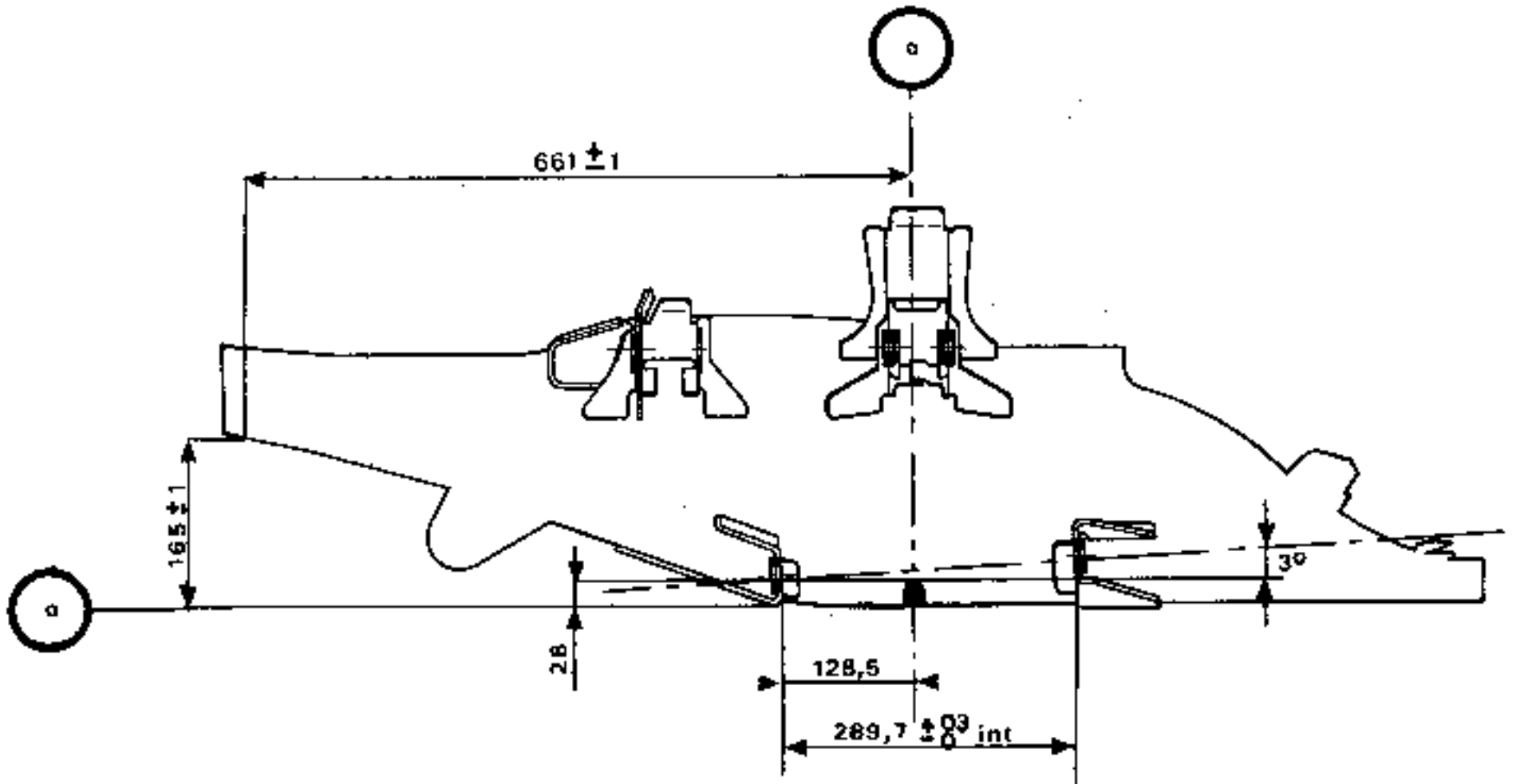
PHASE I - early front axle



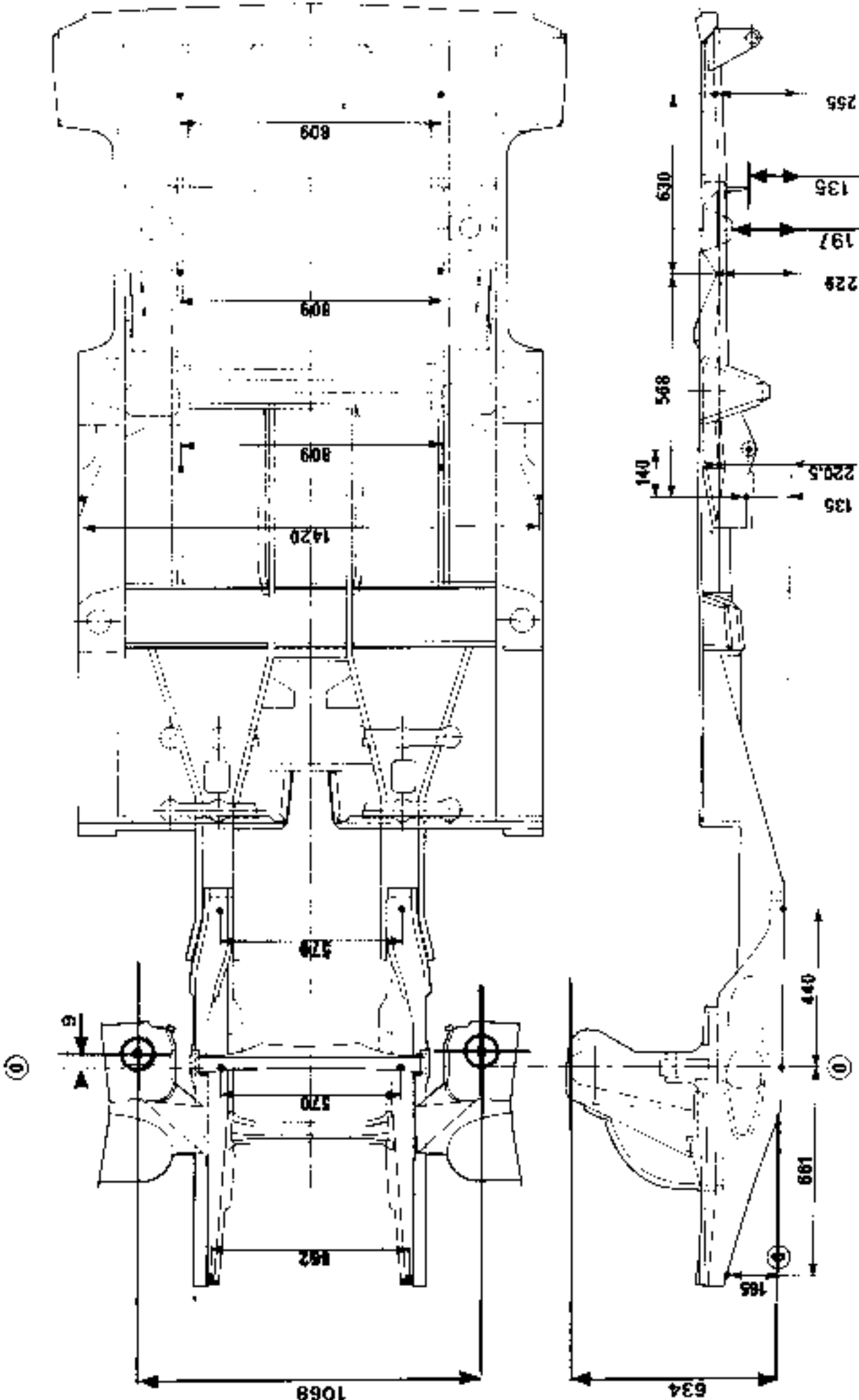
Sub-frame dimensions : Steering cross member and front axle.

The steering cross member can be checked or refitted using gauge Car. 838 (originally for the R18). For more details see Note IS 3A which is in MR211.

PHASE II - later front axle



Sub-frame dimensions : Steering cross member and front axle



Using the jig bench

Note : for : the description of the various jig benches,  
the identification of the various holes,  
the conversion of old type jig benches to the modular system,  
the anchoring and jacking components,

SEE MR 501 bodywork chapter, section F001

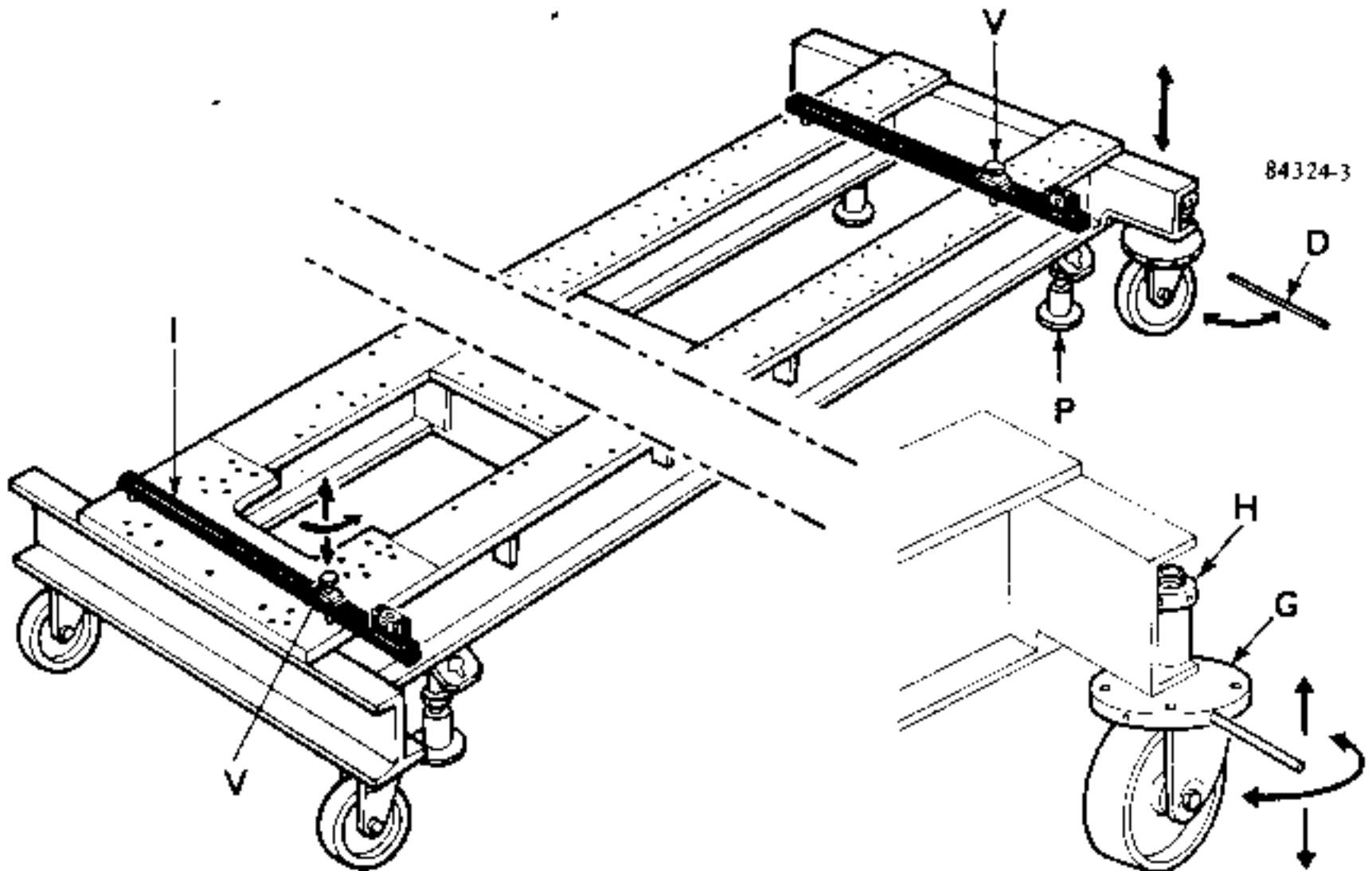
### SETTING UP THE JIG BENCH BEFORE USE

#### Important note

Before carrying out any inspection, checking or rebuilding operation on a vehicle mounted on the jig bench, it is very important to first level the bench.

#### 1 - PREPARATION

- Place the jig bench brackets to be used for the repair operation in question on the jig bench.
- Mount the vehicle on the brackets. The mechanical units only need to be removed from the areas to be straightened.
- Fit the anchor clamps.

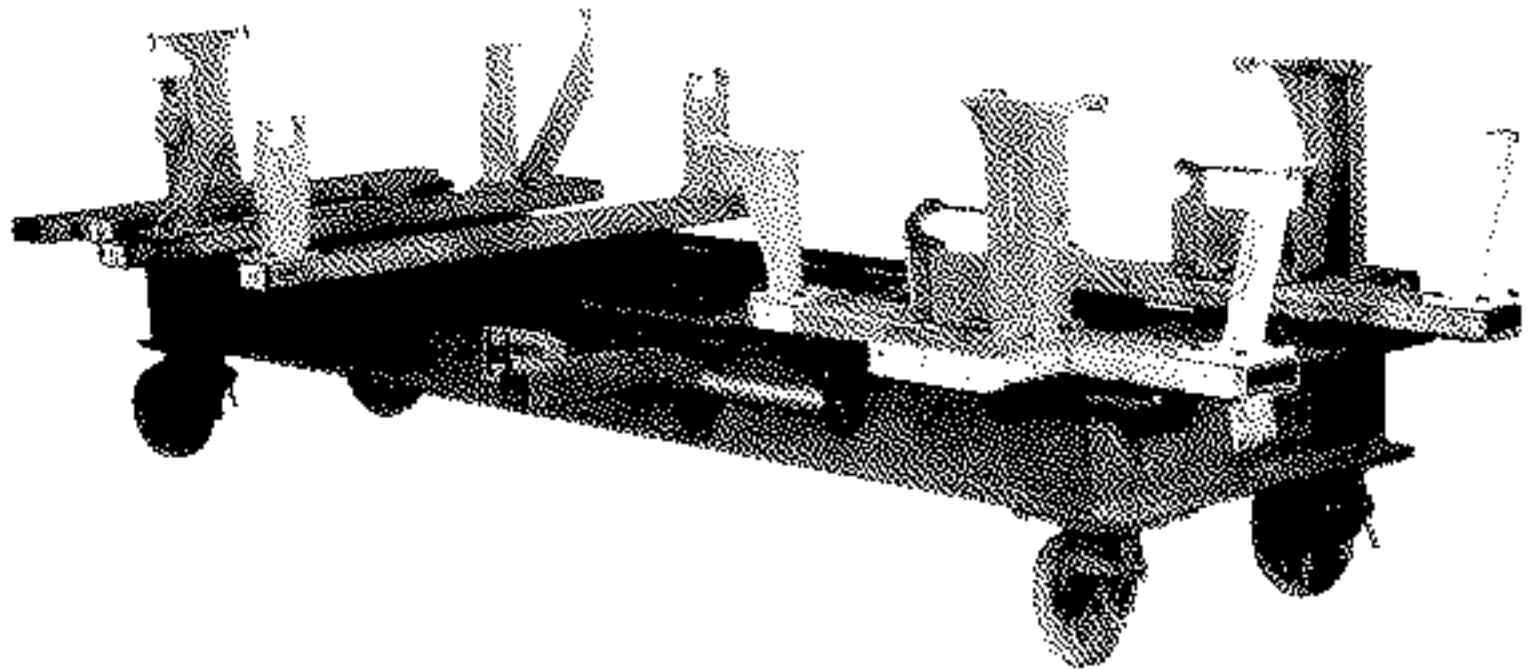


- 2 - LEVEL THE JIG BENCH  
(See section F 001 of M.R. 501)

#### 3 - CARRYING OUT THE REPAIR

Secure the anchor clamps to the body sills.  
Proceed with the actual repair operation by straightening the distorted areas.  
When the jig bench brackets are used, a permanent check is maintained.  
The body is rebuilt by using the jig bench brackets to position the components being replaced.

Jib bench brackets Car. 1024



M10S27

Initially, the jig bench brackets Car. 1024 were designed for Espace vehicles equipped with the Renault 18 Fuego front axle (Espace phase I). This set of brackets carries the references :

RENAULT Car 1024  
Celette 407300  
Blackhawk REN 91232 MMS

For Espace phase II vehicles (vehicles equipped with Renault 25 front lower suspension arms) one must obtain the set of supports no. 2.

This set is additional to the original jig bench bracket set Car. 1024.

Note : Body shops that do not already possess the original set are to order the complete updated set to permit the repair of Espace vehicles phase I and II.

Celette : the complete set of system MZ heads carries the reference 539300. To be able to use them, one must already have the MZ bases : 2 bases MZ 080 : 4 bases MZ 140 : 4 bases MZ 200 : 3 bases MZ 260.

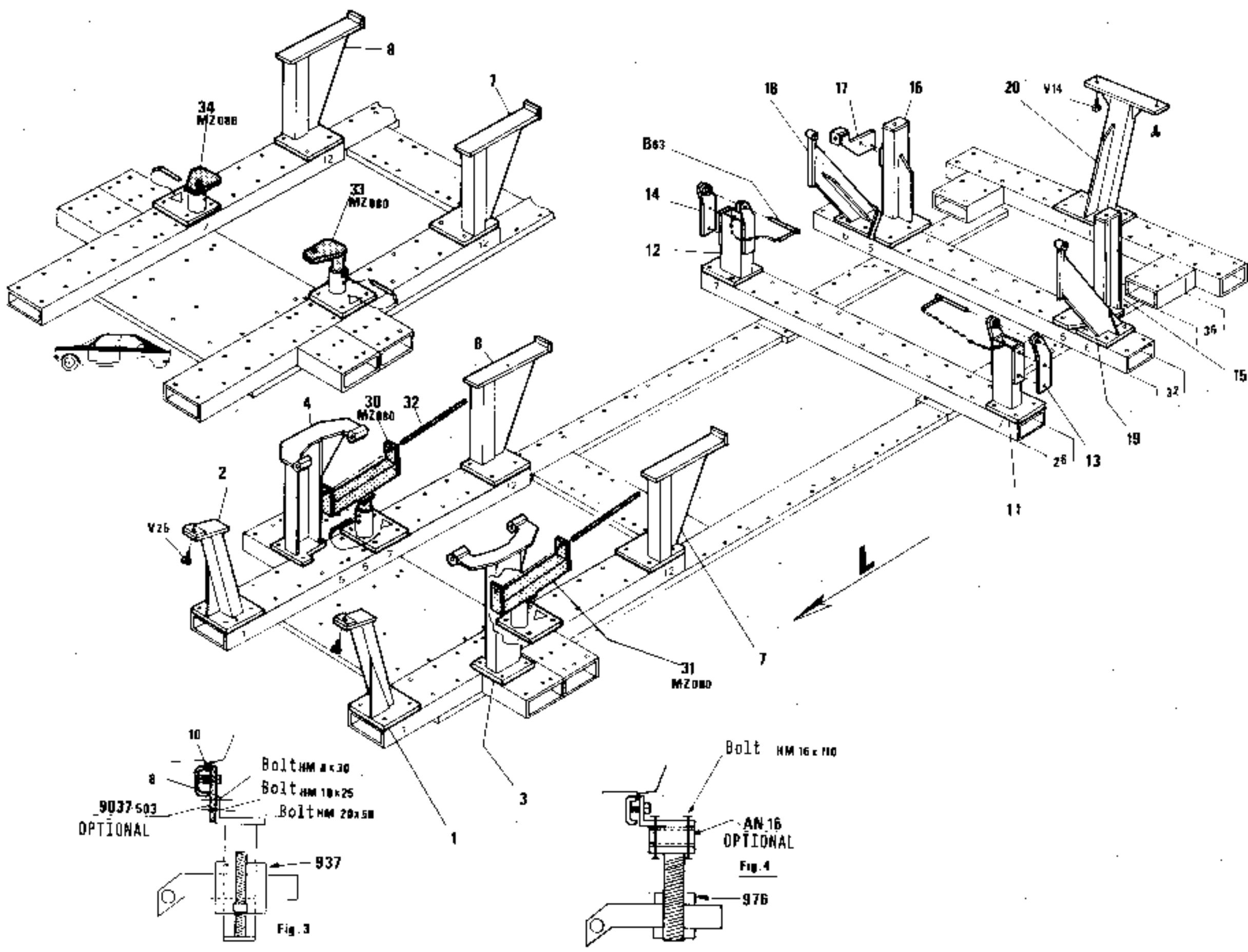
Blackhawk : the complete set of body jig benches carries the reference : REN 87326 MMS.



Brackets

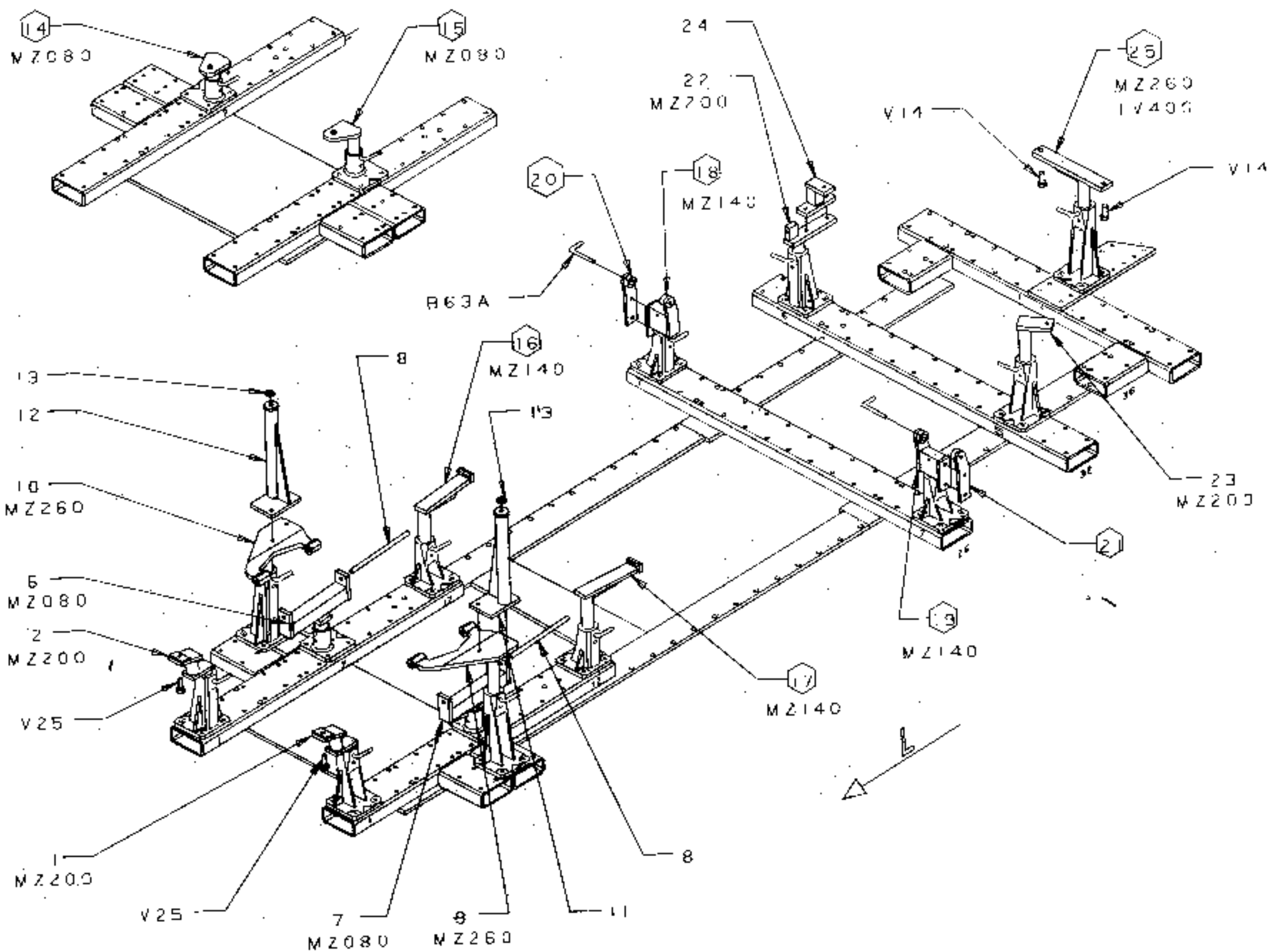
CELETTE : Additional items 407308

PHASE II : Additional items for RENAULT Car. 1024  
CELETTE 407300



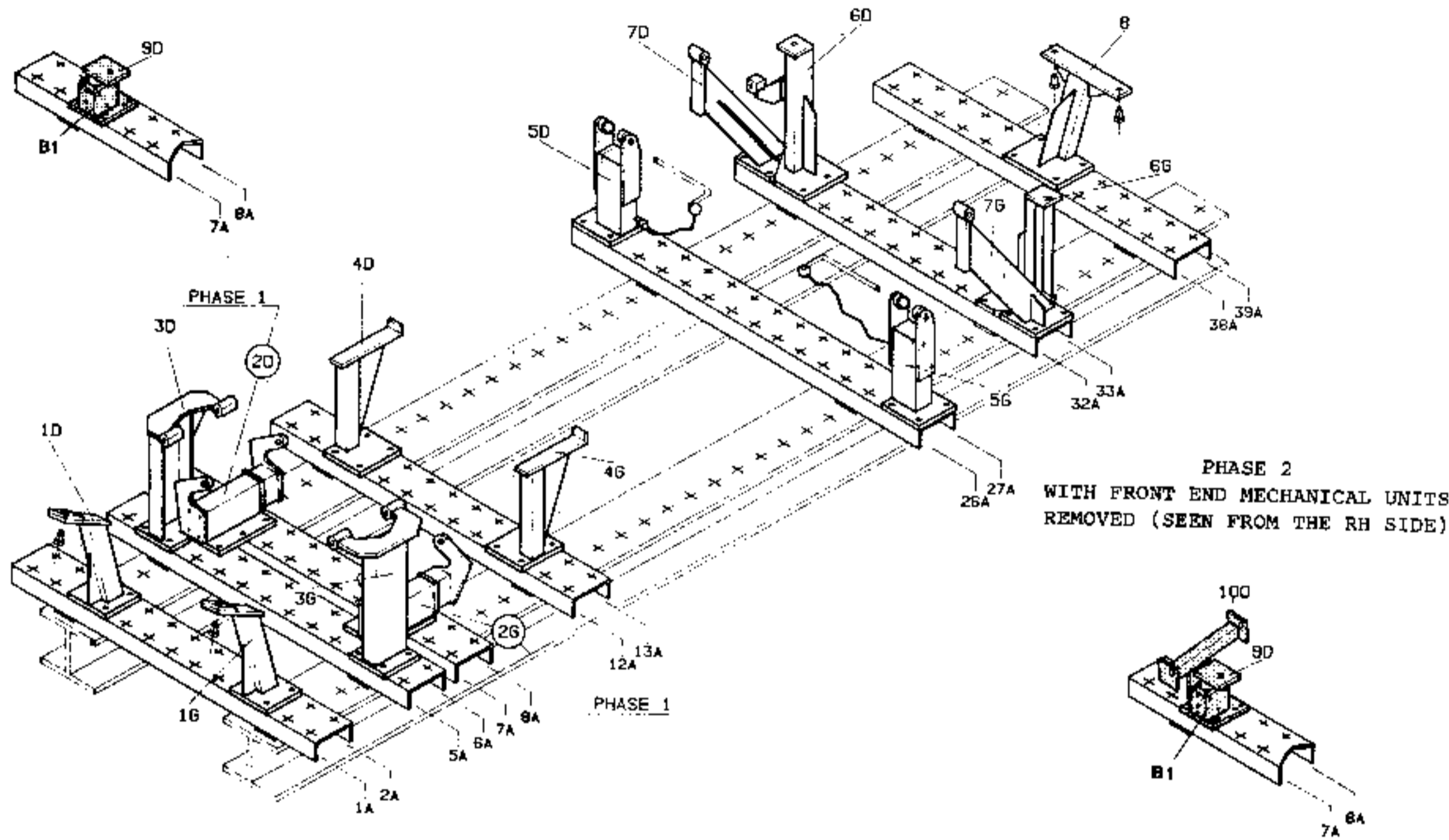
CELETTE : Complete set, System MZ : 539300

PHASE I - PHASE II



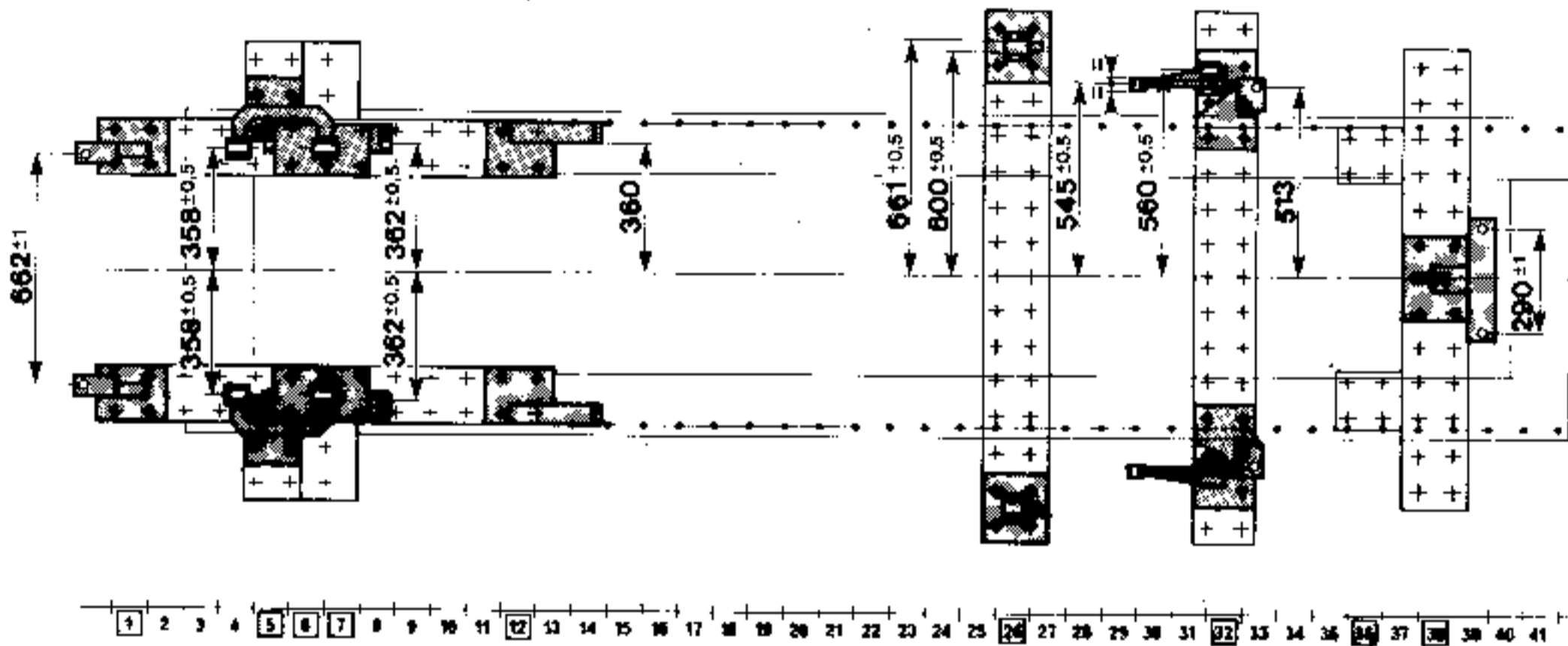
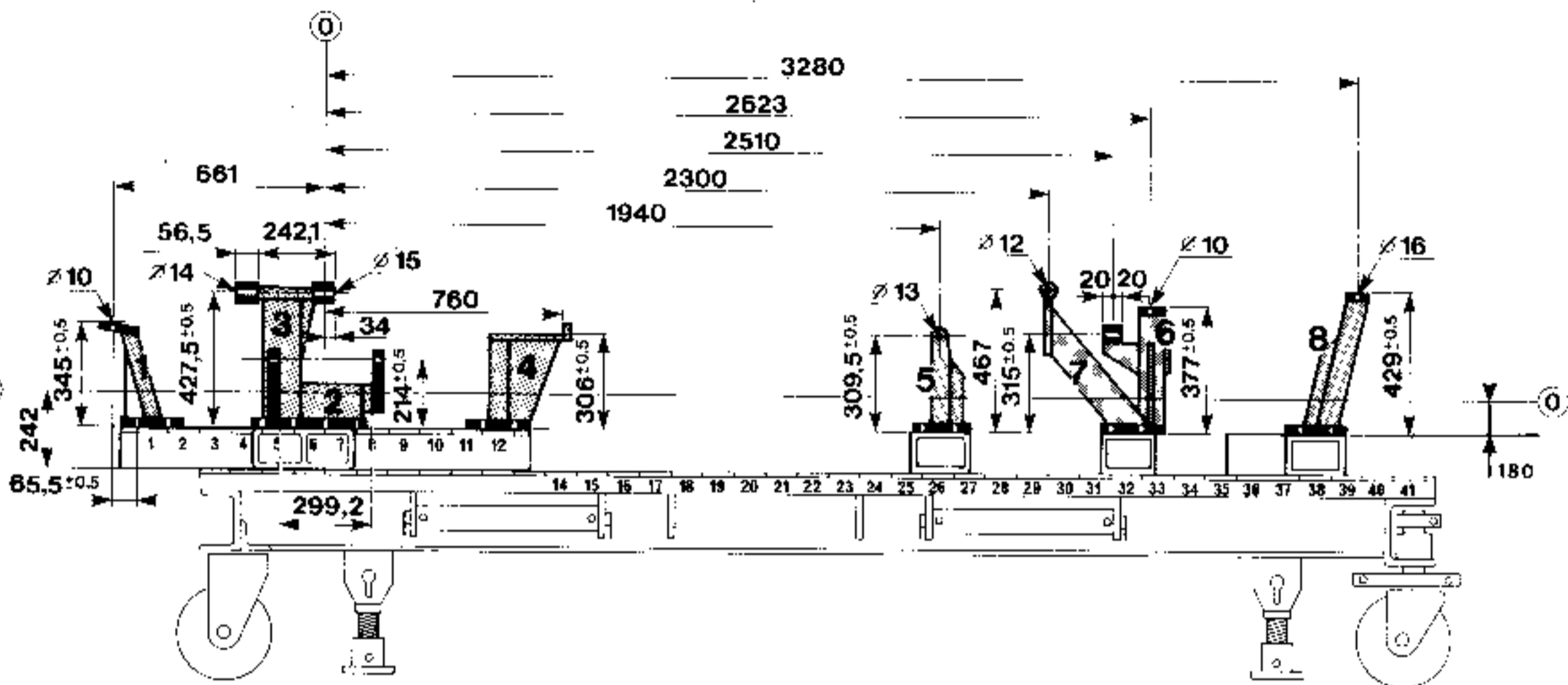
Brackets

BLACKHAWK : Complete set Phase I - Phase II : REN 87326 MMS



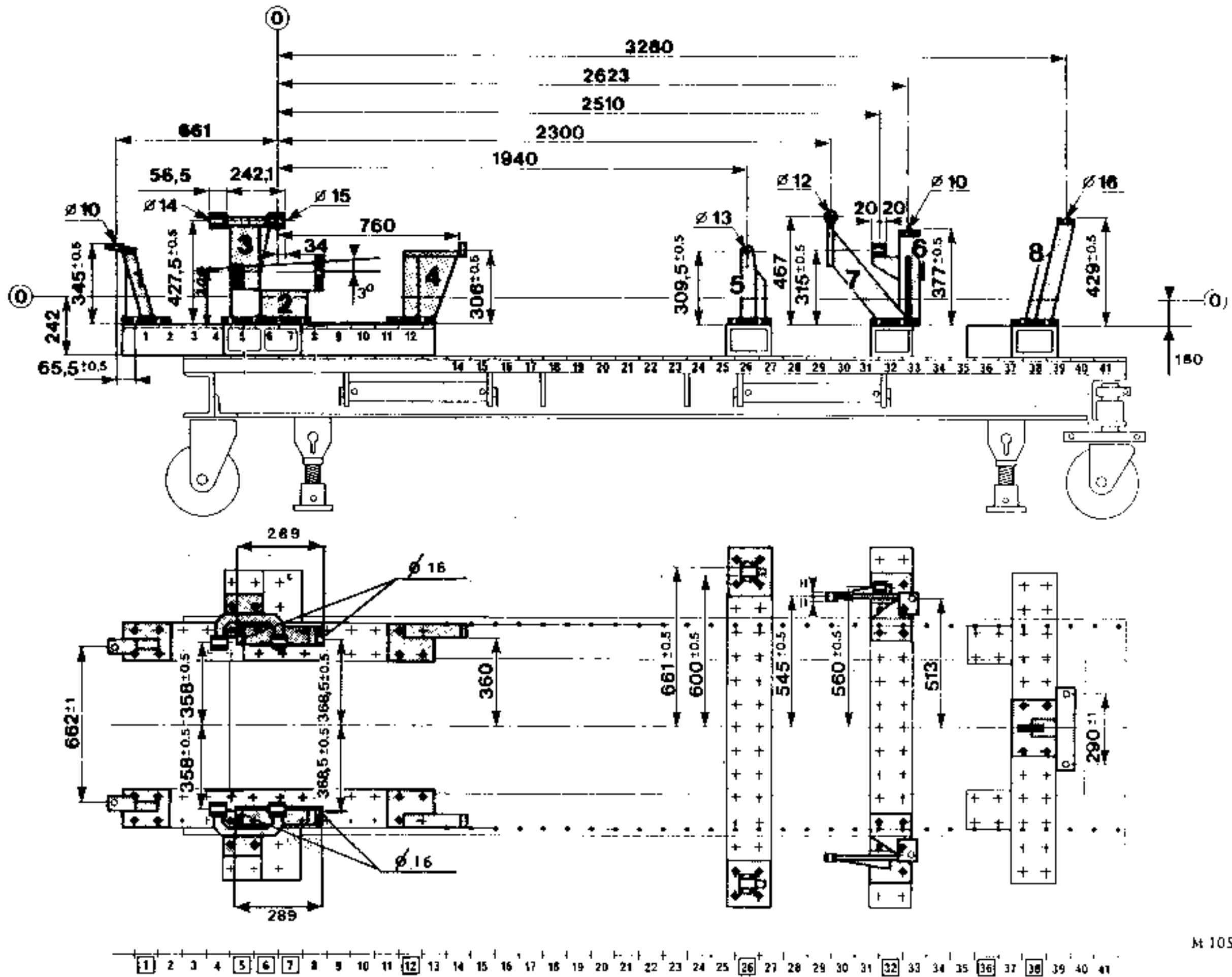
Positioning the brackets and checking dimensions

PHASE I



Positioning the brackets and checking dimensions

PHASE II



USING THE JIG BENCH BRACKETS

To make repair operations easier, we have designed jig bench brackets that permit the vehicle to be mounted on the jig bench without removing its FRONT or REAR mechanical units, depending on the nature of the operation to be carried out.

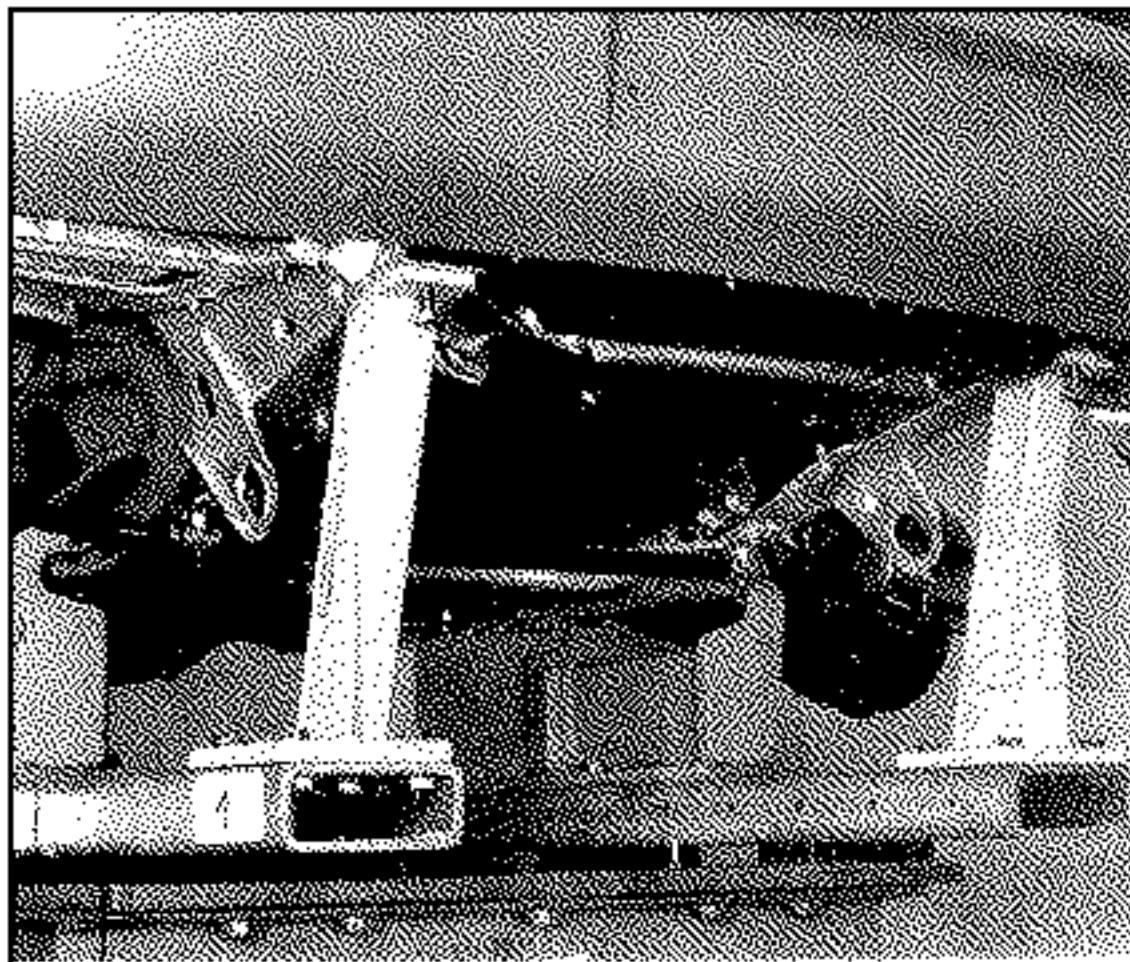
These brackets are designed to fit over the heads of the bolts or the nuts on the FRONT end and REAR end mechanical unit securing points when the mechanical units are left in place and, furthermore, to locate the reference points that define the original geometry and dimensions when the mechanical unit has been removed.

They can be used :

- 1 - on CELETTE or RENAULT-CELETTE jig benches MUF 6 R.C. and MUF 7 R.C. equipped with CELETTE modular cross members.
2. - on BLACKHAWK jig benches with modular drillings equipped with BLACKHAWK modular cross members.

BRACKET No. 1 : COMMON TO BOTH PHASE I AND PHASE II.

- It is fitted after taking off the removable front cross member.  
The bracket positions for height and width spacing the removable front cross member on the ends of the front side members.



M10528

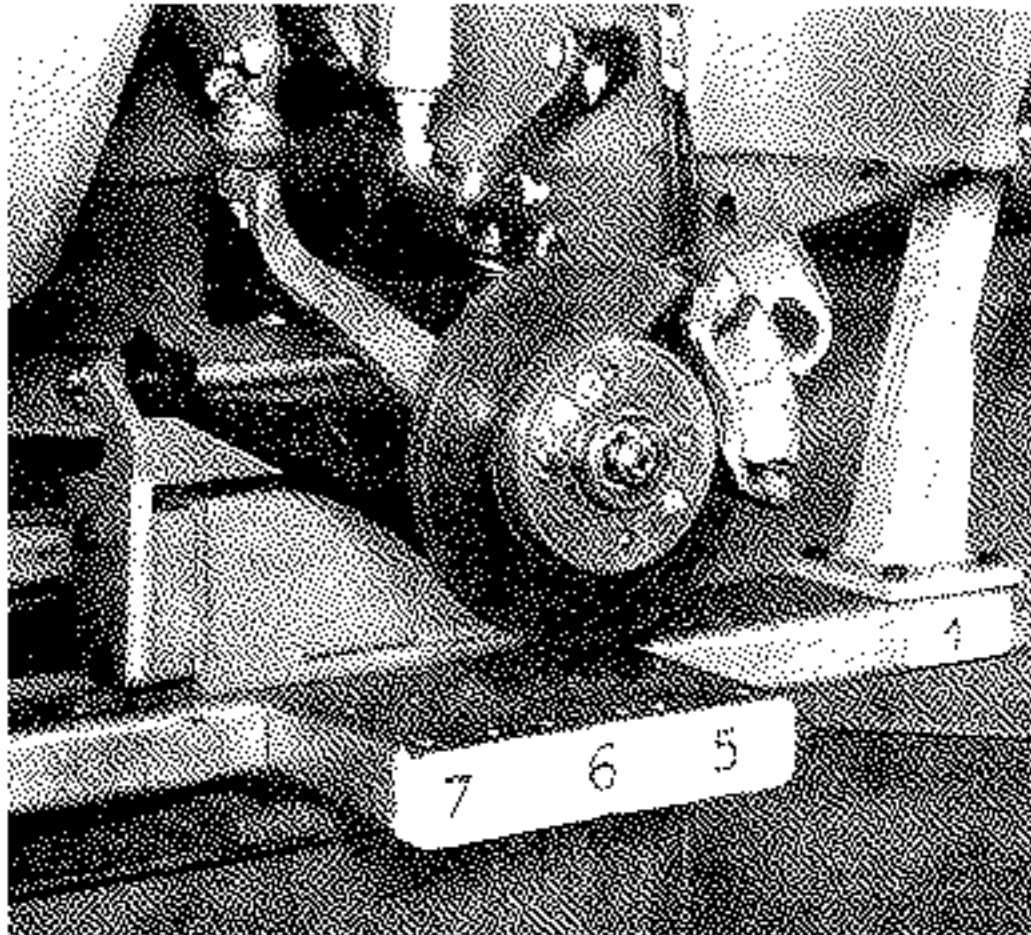
- On the CELETTE modular system, this support is secured to the end of the front cross member at space no. 1.

- On the BLACKHAWK modular system, this support is secured to holes 3 and 4 of the front cross member when positioned at holes 1A and 2A on the BLACKHAWK modular hole system.

BRACKET No. 2 (identical to the Renault 18 - FUEGO/CELETTE bracket). For PHASE I with the old type front axle.

- It can be used whether or not the mechanical units are removed.
- With the mechanical units in position.

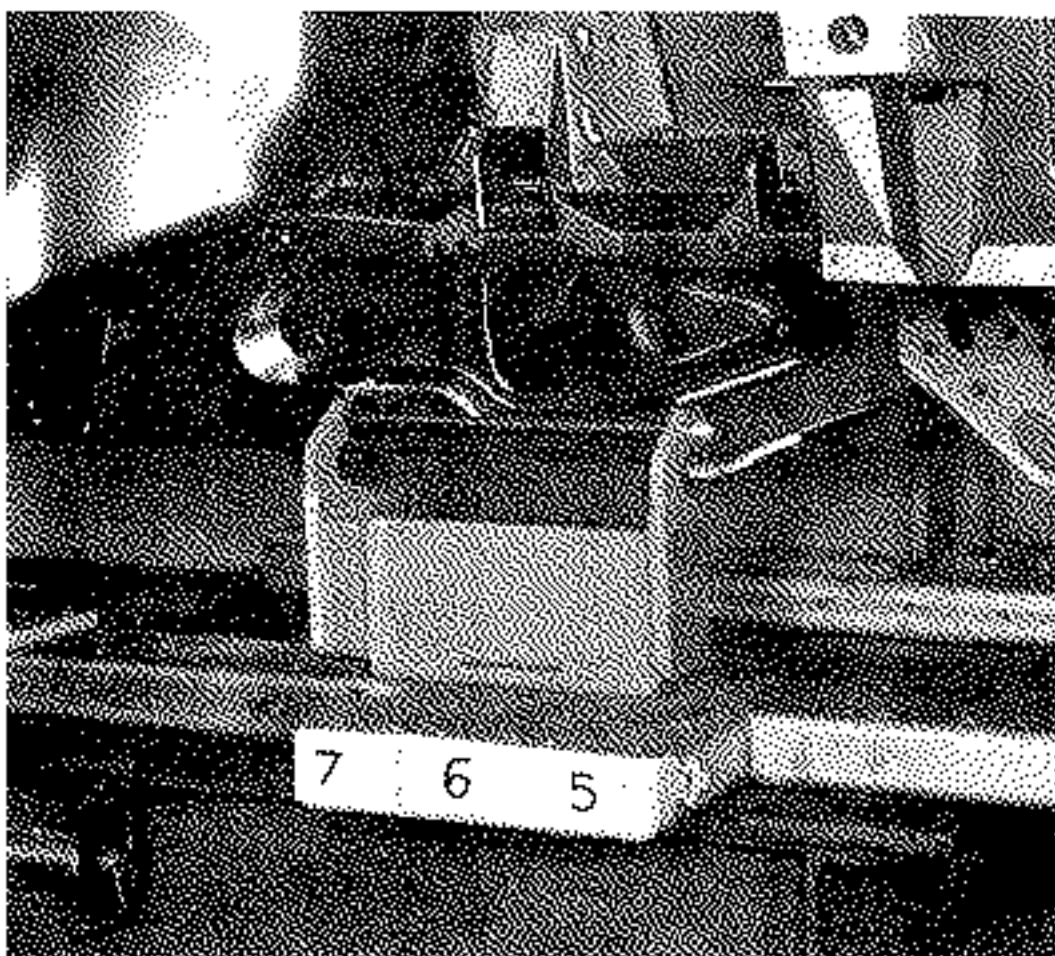
It makes it possible to mount the vehicle on the jig bench in cases of rear end impact, without removing the front axle. The support is fitted directly to the vehicle in that the removable flanges fit over the nuts and the lower suspension arm hinge pin, a stud directly secured to the modular cross member locates the position of the vehicle.



M10529

- On the CELETTE modular system it is secured by 3 bolts to the flanges on the front cross member, at spaces 6 and 7.

- On the BLACKHAWK modular system it is secured to holes 3 and 4 of the cross member mounted at modular system holes nos. 7A and 8A.



M10530

- With the front end mechanical units removed, it permits a check to be carried out on the lower suspension arm hinge pin securing holes using the pin provided with the bracket.

Using the brackets

BRACKET No. 2 : ESPACE PHASE II, new type front axle.

This consists of :

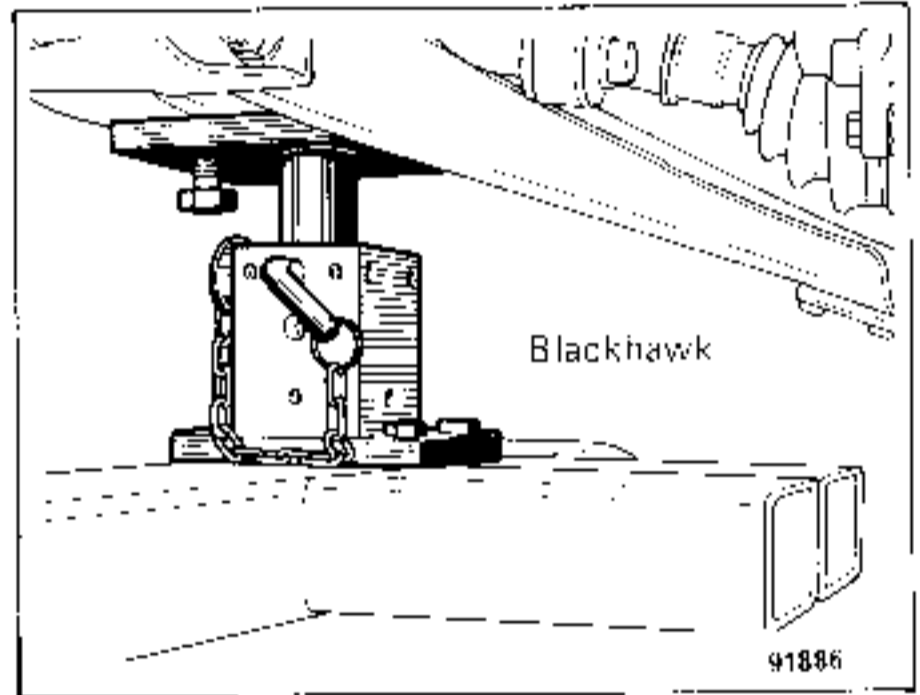
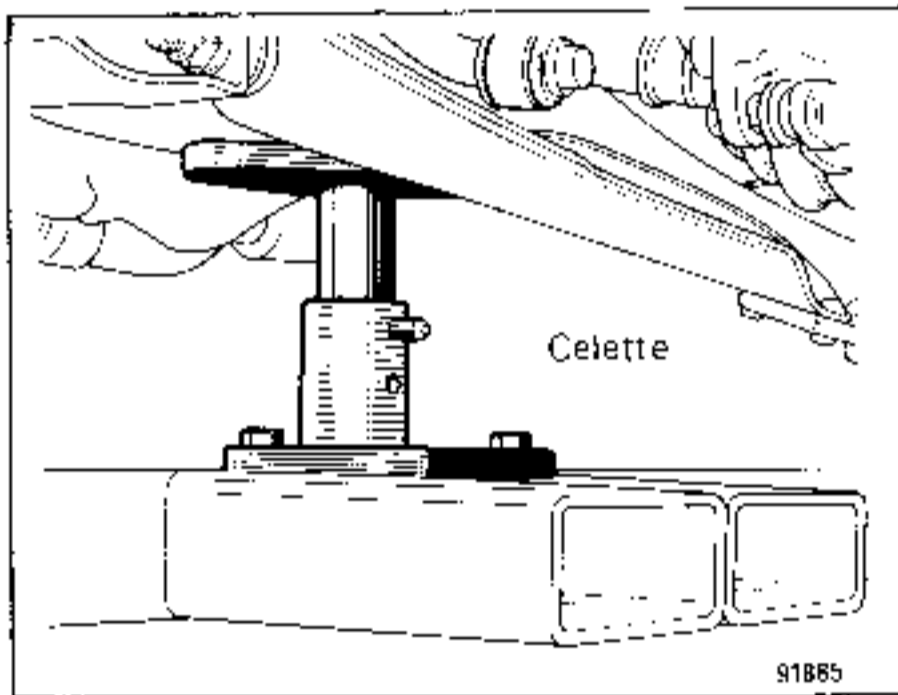
- 2 bases
- 2 heads for positioning and checking the references on the lower side member
- 2 heads for positioning and checking the lower front suspension arms

This set carries the reference :

- 407308 in the case of the Celette equipment
- REN 87327 in the case of Blackhawk equipment

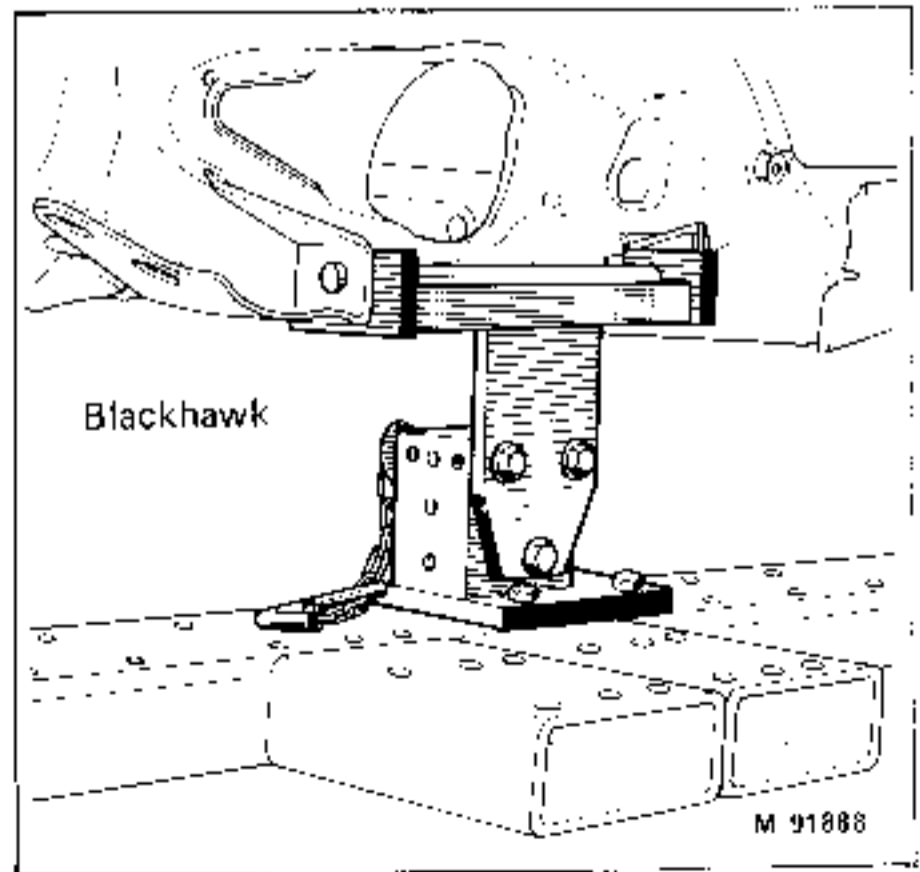
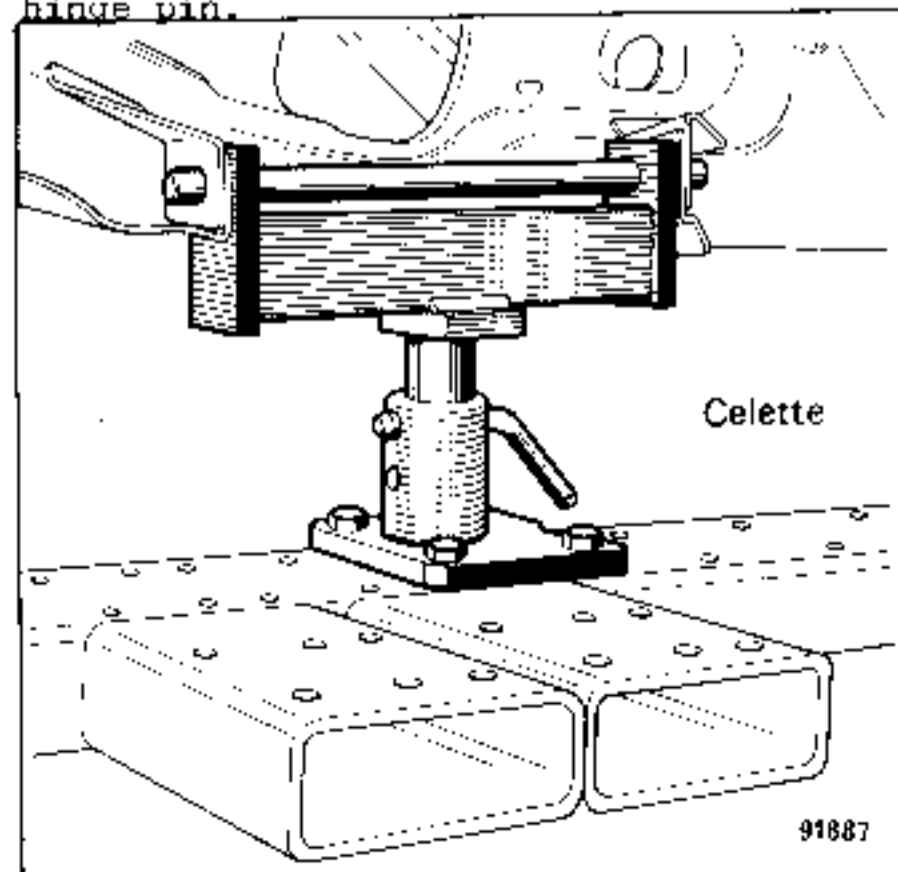
a) Front axle references on the lower side members

- It can be used with the mechanical units in position or removed.
- It permits the location of the front end of the vehicle in cases of rear end impact.
- It can be used to position the side member when replacing it.



b) Front axle lower suspension arms

- For this it is used only with the front end mechanical units removed, following front end impact.
- It permits one to check and align the front axle lower suspension arm hinge pin.

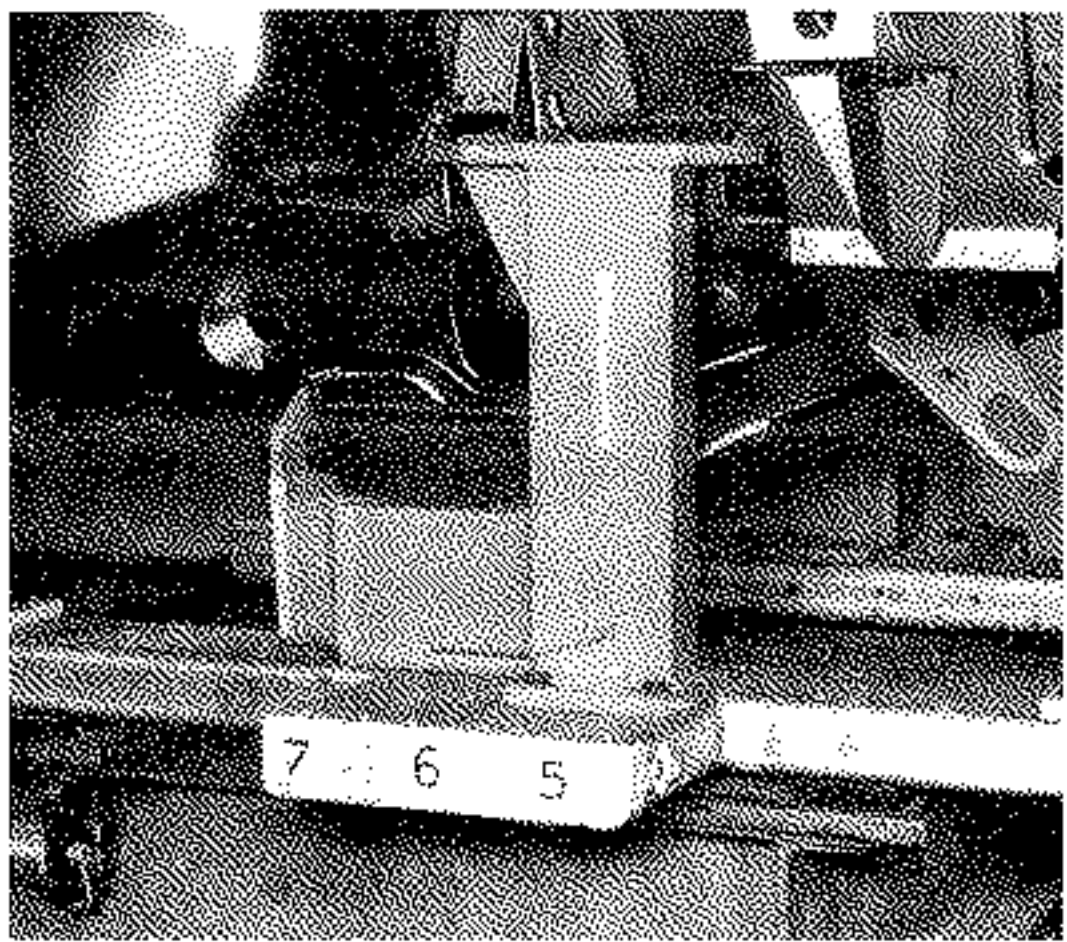


Note : The positions of the brackets and the direction in which the bases can be fitted are shown on each of the data sheets accompanying the set of brackets.



BRACKET No. 3 (identical to the Renault 18 - Fuego/CELETTE bracket)  
COMMON TO PHASE I AND PHASE II

- This is only used after removal of the mechanical units.  
It permits one to check the height and distance between the front upper suspension arm hinge pin and the position of the castor tie rod.



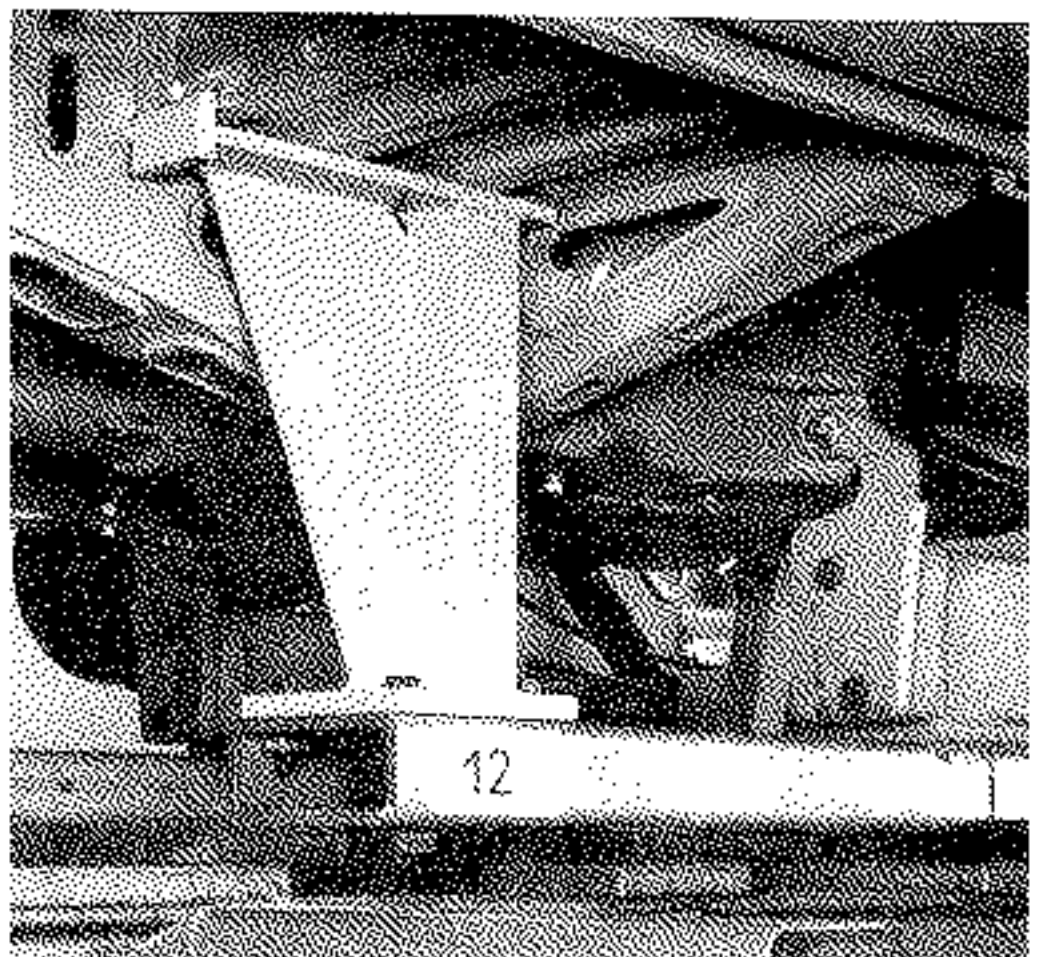
M 10531

- On the CELETTE modular system, it is secured by 3 bolts to the front cross member flanges at space 5.

- On the BLACKHAWK modular system, it is secured to holes 4 and 5 in the cross member which has been previously positioned at modular holes Nos. 5A and 6A.

BRACKET No. 4  
COMMON TO PHASE I AND PHASE II

- Used both with and without the mechanical units in position.  
It acts as a support under the floor panel.



M 10532

- On the CELETTE modular system, it is secured to space no. 12 in the front cross member.

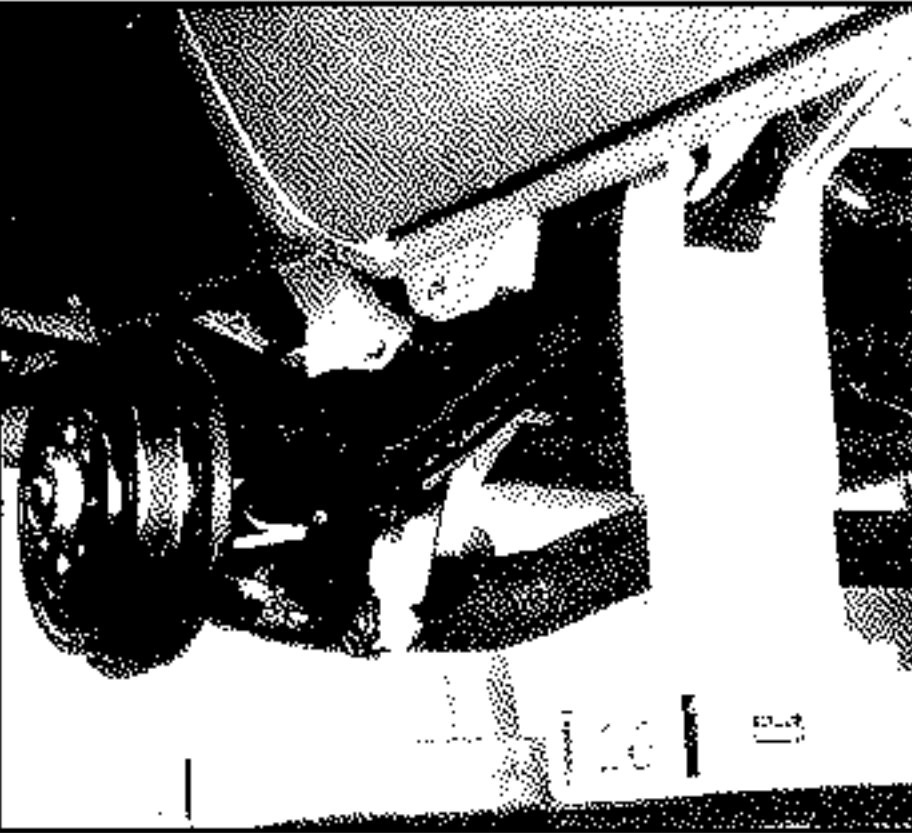
- On the BLACKHAWK modular system, it is secured to holes 3 and 4 in the cross member which has been previously positioned at modular holes 12A and 13A.

USING THE BRACKETS

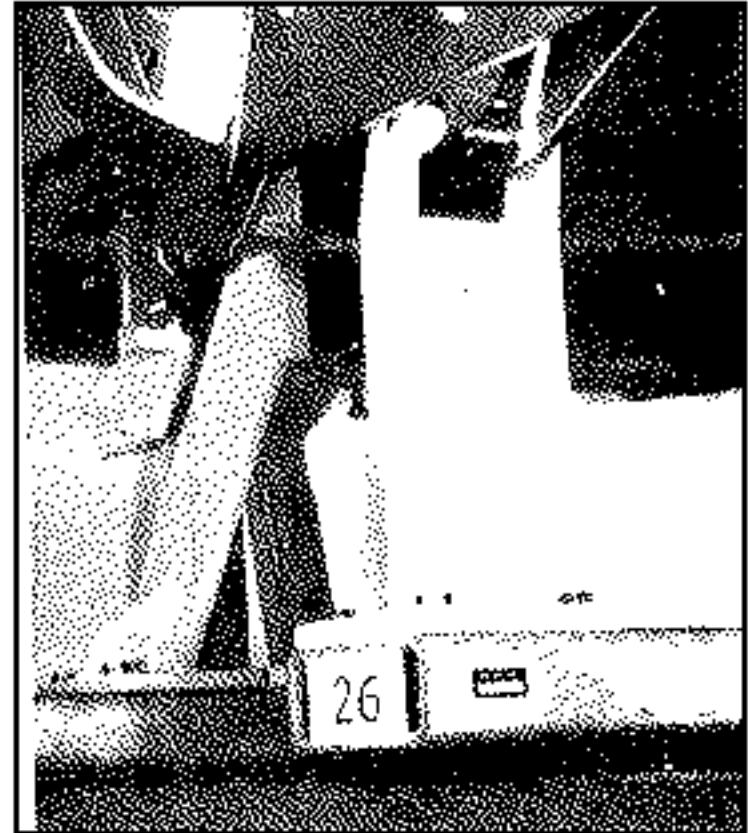
BRACKET No. 5 : COMMON TO PHASE I AND PHASE II

- It is used both with and without the mechanical units in position.

The two stands, fitted with a removable flange, are used to check the position of the side suspension arm hinge points.



M10533-1



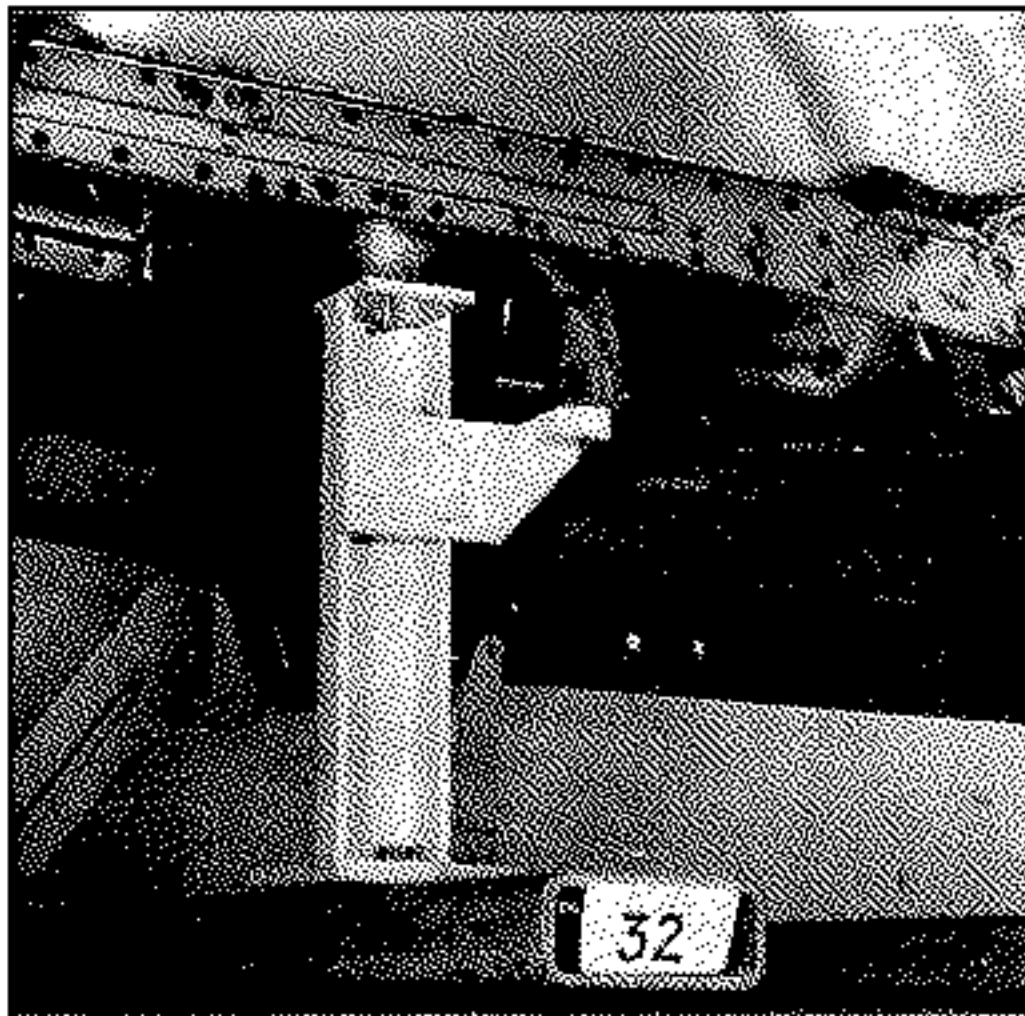
M10533-2

- On the CELETTE modular system, it is secured to space no. 7 on the cross member which is fitted at space no. 26 on the jig bench.

- On the BLACKHAWK modular system, it is secured to holes 6 and 7 of the cross member which is fitted to holes 26A and 27A on the jig bench.

BRACKET No. 6  
COMMON TO PHASE I  
AND PHASE II

- This is used after removal of the mechanical units and acts as a support and a positioning point for the spring dishes. The removable flange dimension D permits one to check the position of the connecting bar securing point.



M10534

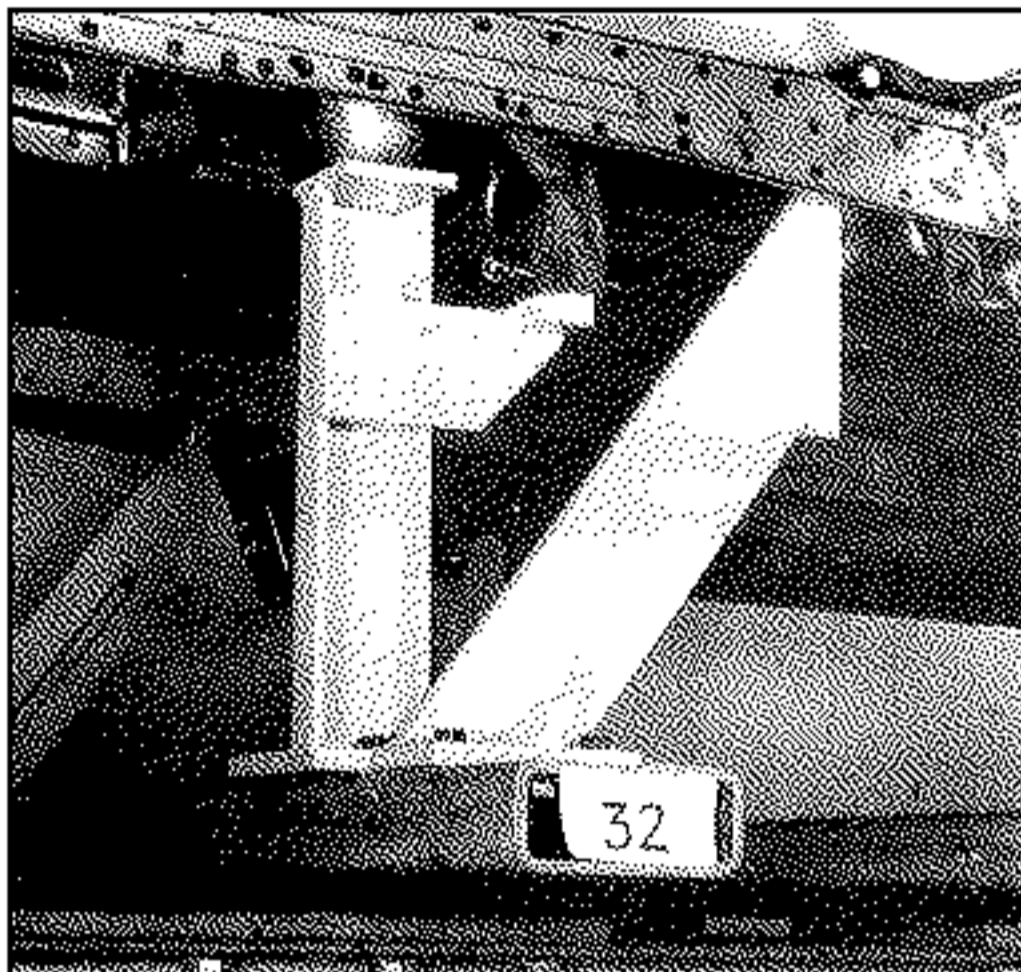
- On the CELETTE modular system, it is secured to space no. 5 on the cross member which is positioned at space no. 32 on the jig bench.

- On the BLACKHAWK modular system, it is secured to holes 4 and 5 on the cross member which is positioned at modular holes 32A and 33A on the jig bench.

Using the brackets  
BRACKET No. 7

COMMON TO PHASE I  
AND PHASE II

- Used only after removal of the mechanical units.  
It is only to be fitted when replacing part of a rear side member.  
It permits the correct positioning of the shock absorber securing point.



M10535

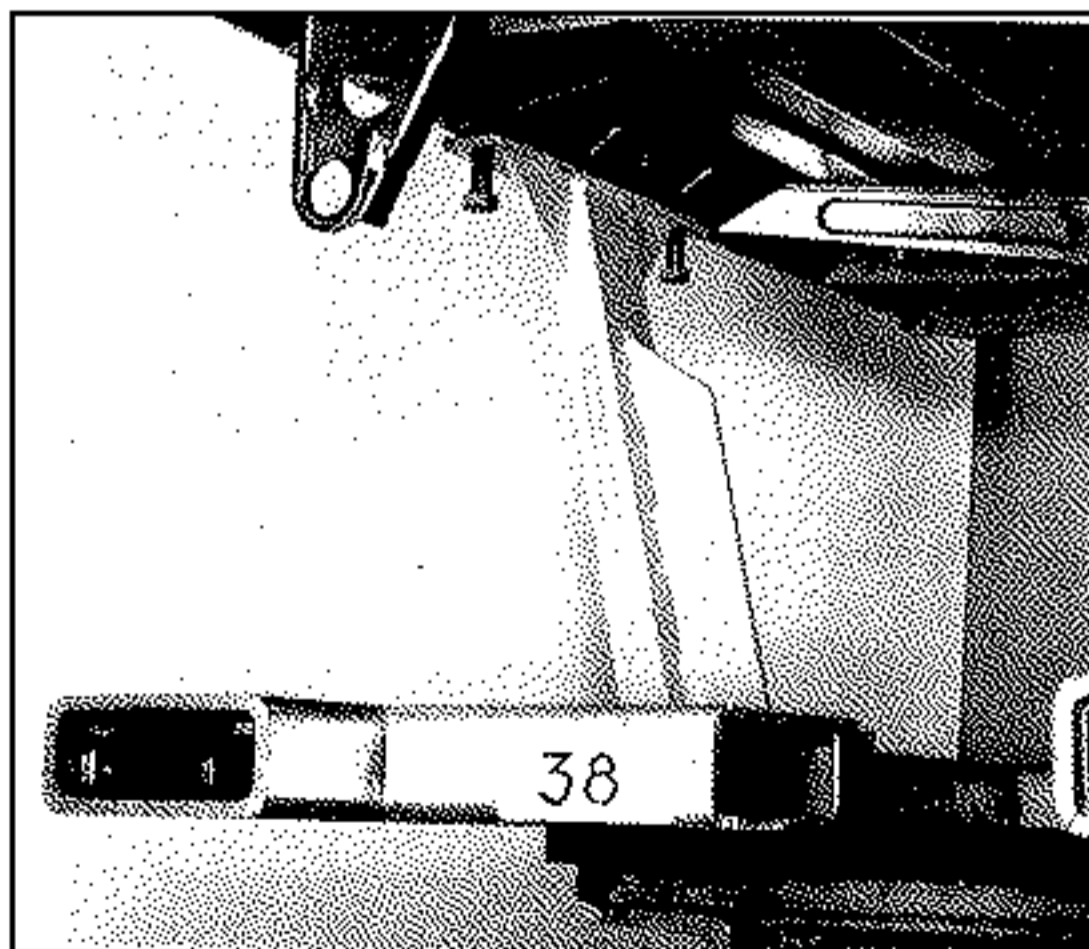
- On the CELETTE modular system, it is secured to space no. 6 on the cross member positioned at space no. 32 on the jig bench.

- On the BLACKHAWK modular system, it is secured to holes 5 and 6 on the cross member which is positioned at holes 32A and 33A on the jig bench.

BRACKET No. 8

COMMON TO PHASE I  
AND PHASE II

- Used with the mechanical units in position or removed.  
It permits one to check the height and position of the rear cross member.



M 10536

- On the CELETTE modular system, it is secured to either side of space no. 1 on the cross member which is positioned at space no. 38 on the jig bench.

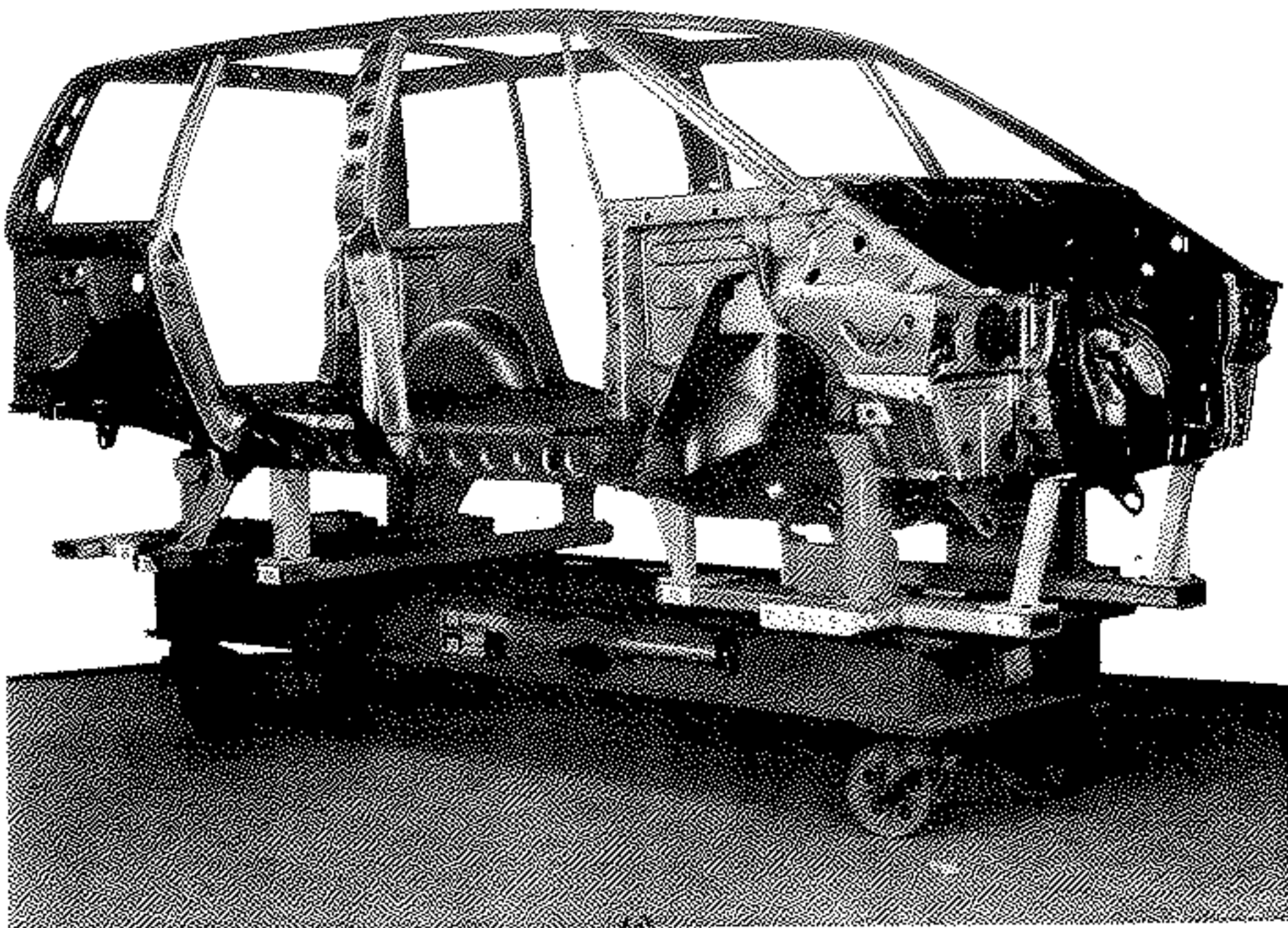
- On the BLACKHAWK modular system, it is secured to holes 01 and 01 on the cross member which is positioned at holes 38A and 39A on the jig bench.

STRAIGHTENING BODYWORK

REMINDER

When a straightening operation is carried out on a vehicle body using a quadrant or a ram, it is essential to secure the bodywork to the base of the jig bench to avoid distorting the brackets when the loads are applied.

- The bodywork is to be secured by at least two clamps.
- The clamps are to be placed as near as possible to the distorted area.
- They are to be adjustable in three dimensions (height, length and width).



M10537

- When the jacking or tensioning equipment is not secured to the jig bench, the load between the jig bench and the floor must be taken by the jacks or feet provided to avoid applying the jacking loads to the jig bench wheels.

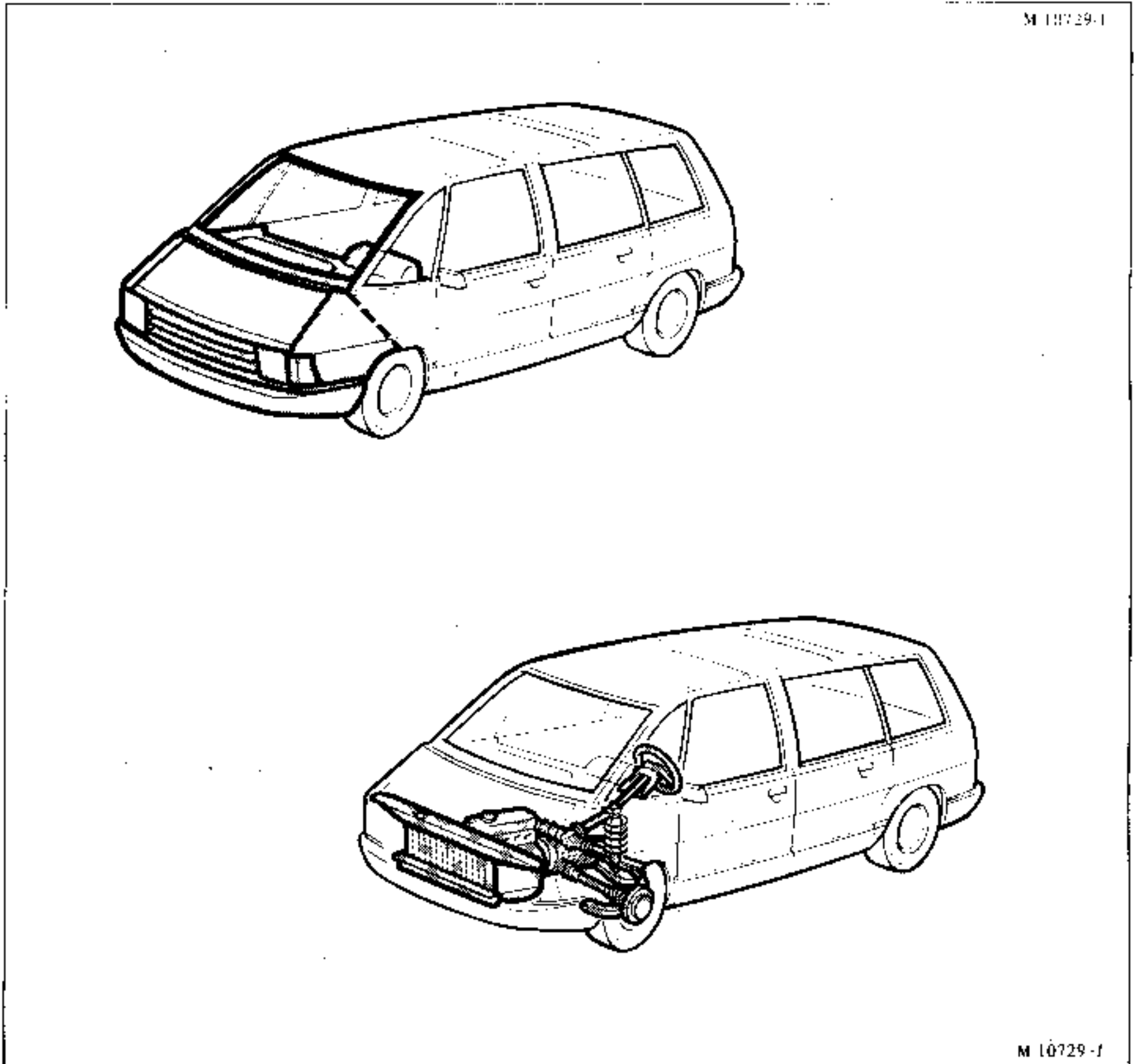
THE ADAPTATION OF THE CELETTE CLAMPS

To be able to clamp the body sills of this vehicle (which are higher than on the other models), an adaptation kit supplied by the CELETTE Company must be fitted to the original clamps.

Set of 2 clamps	Set of 2 adaptors
937.900	9037.503
976.900	AN16

This operation is carried out on the jig bench and involves removing the following components:

STRIPPING



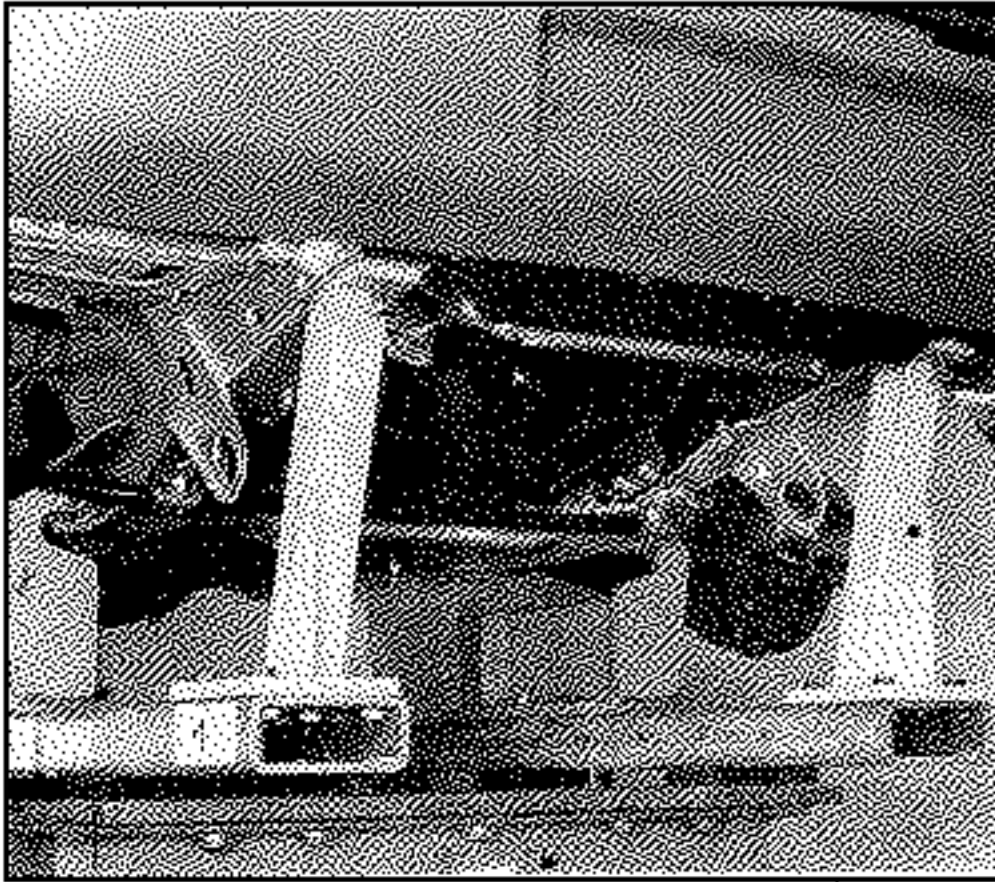
See the operations described for the simplified cowl assembly and the wheel arch, for the items to be removed plus :

- the front axle,
- part of the front floor section trim and soundproofing,
- the front wings, depending on the extent of the damage (see plastic components).

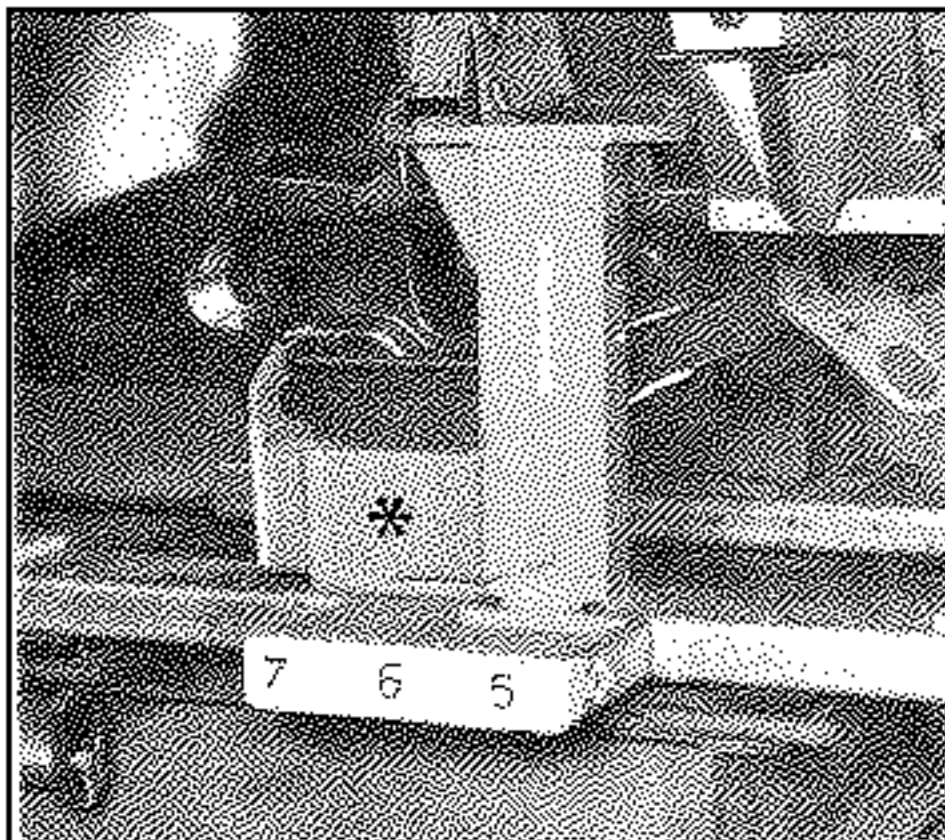
For these various operations see the relevant operation descriptions.

This operation is carried out on the jig bench.

FRONT SECTION



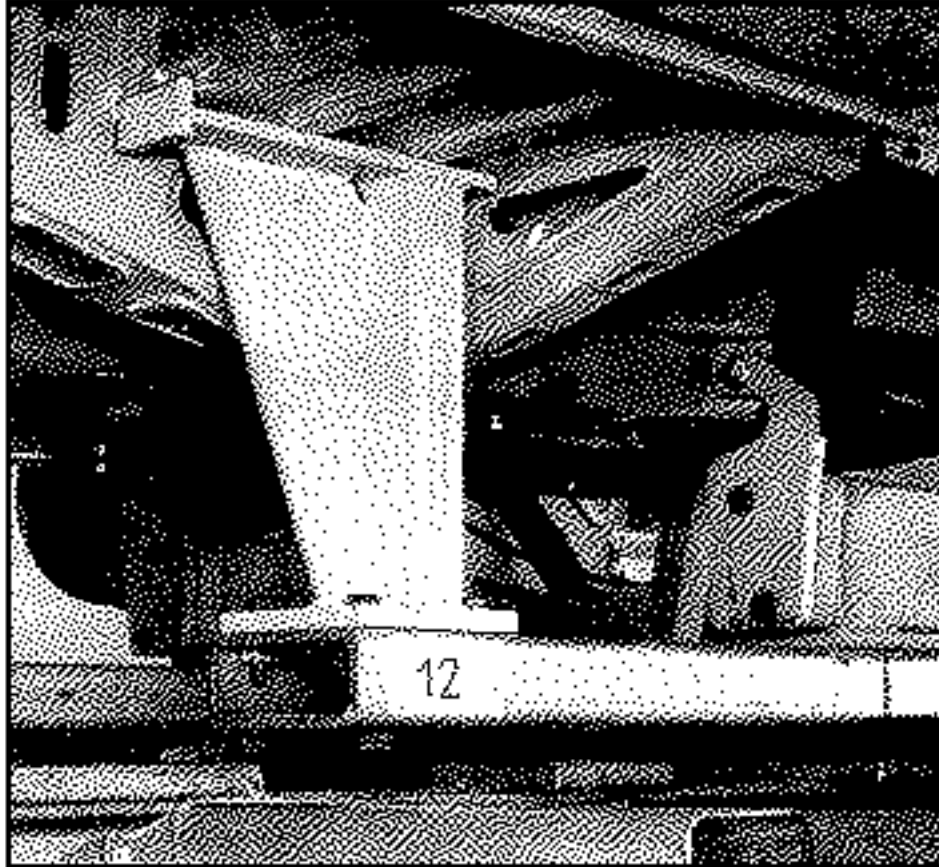
M10528



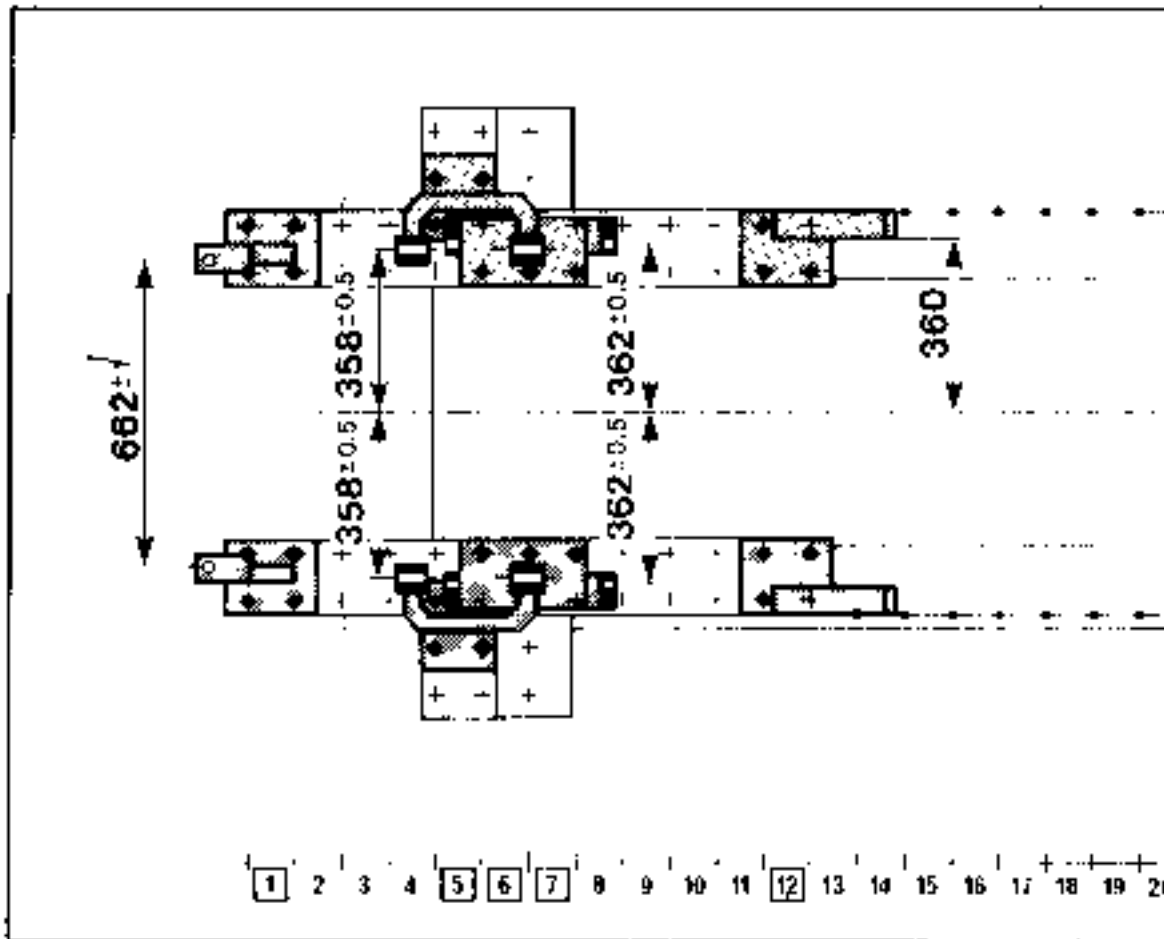
M 10531

\* Use the phase I or phase II bracket depending on the vehicle type.

FRONT SECTION



M 10532

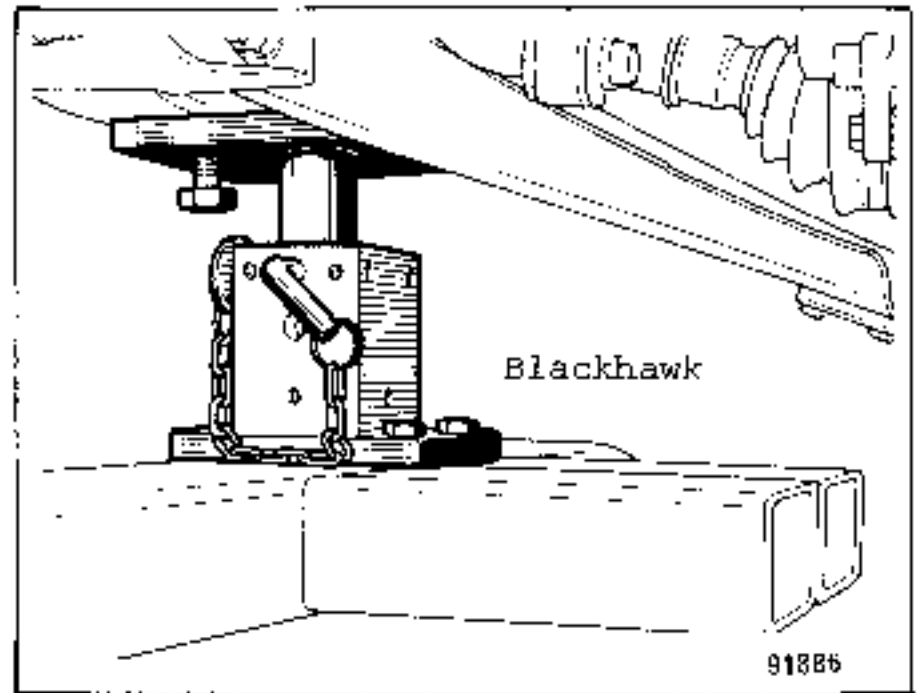
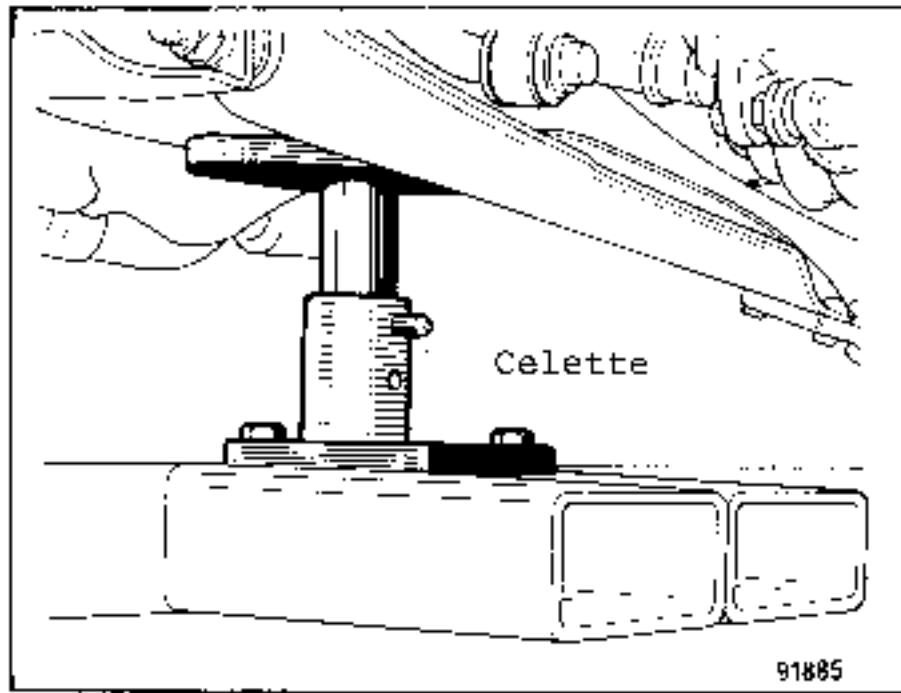


M10525

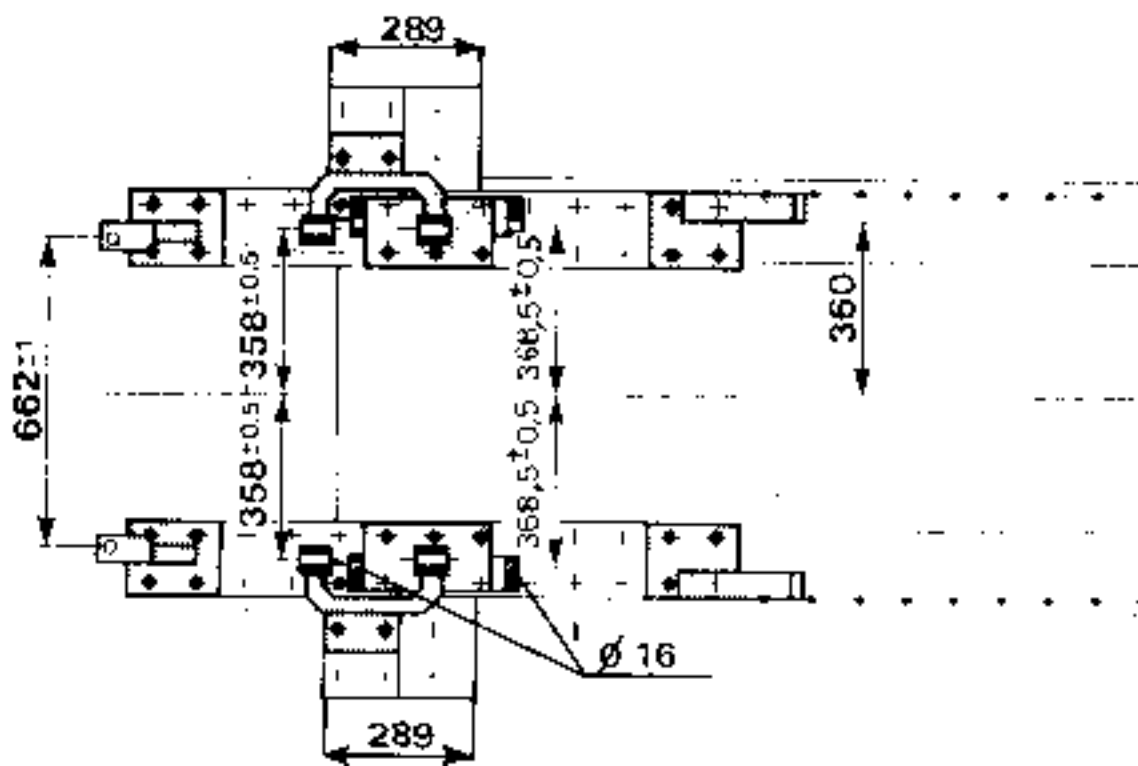
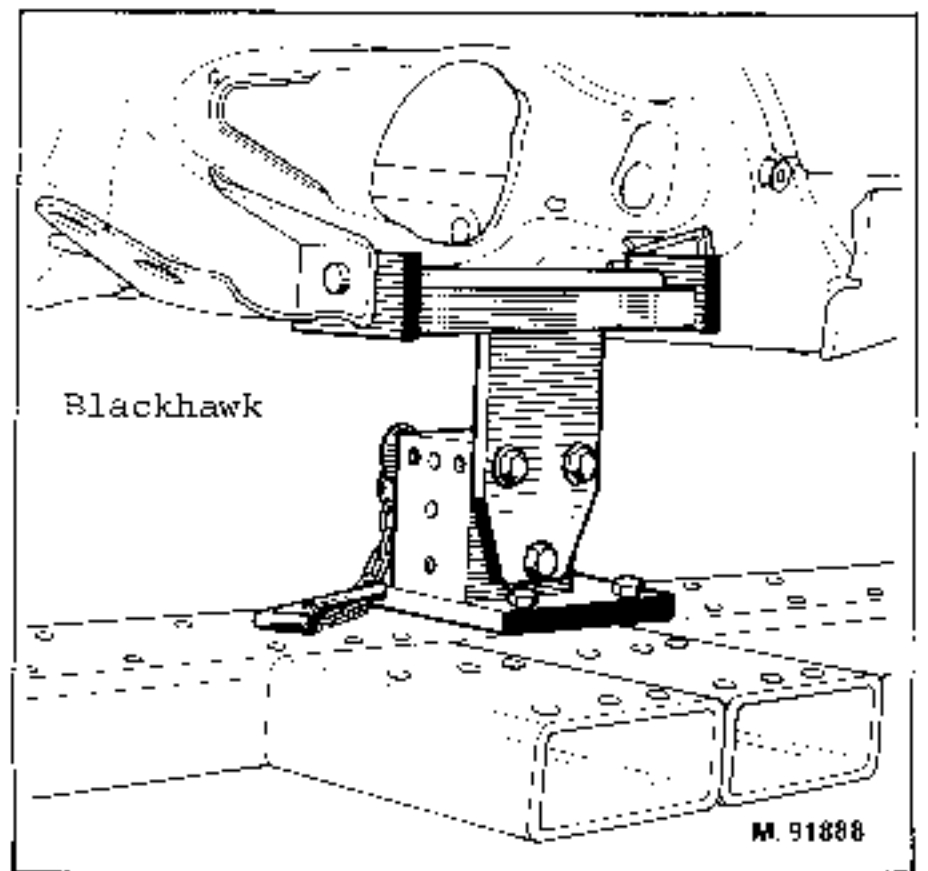
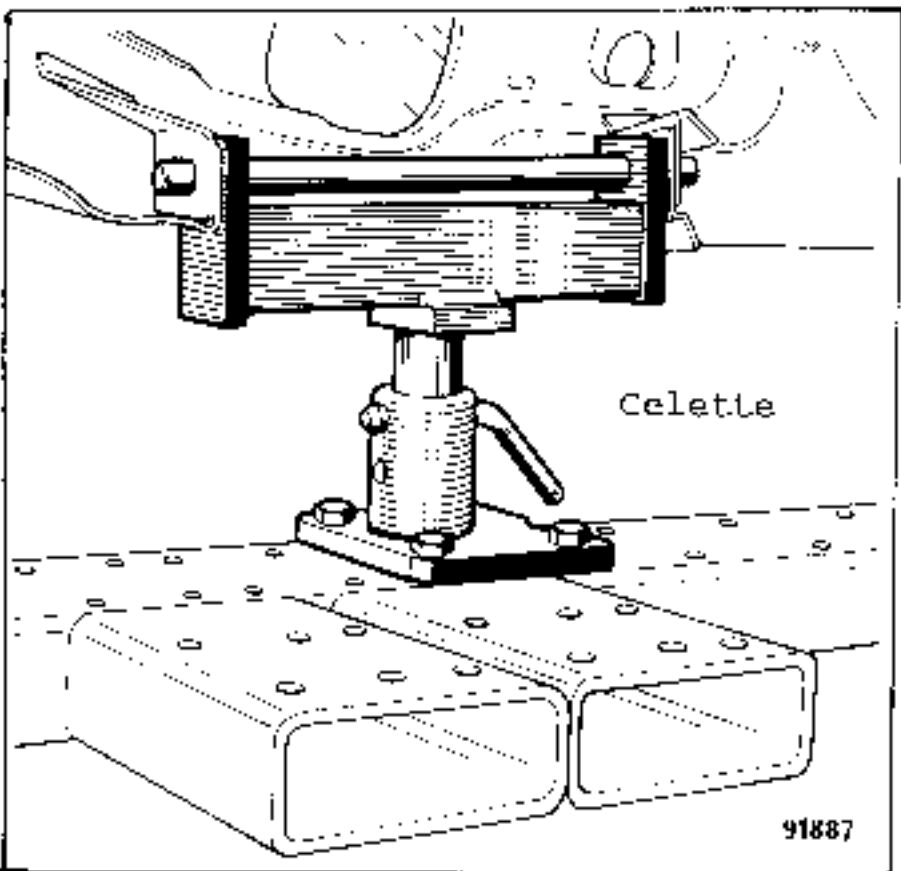
PHASE I

PHASE II

a) Locating the front axle lower sidemember

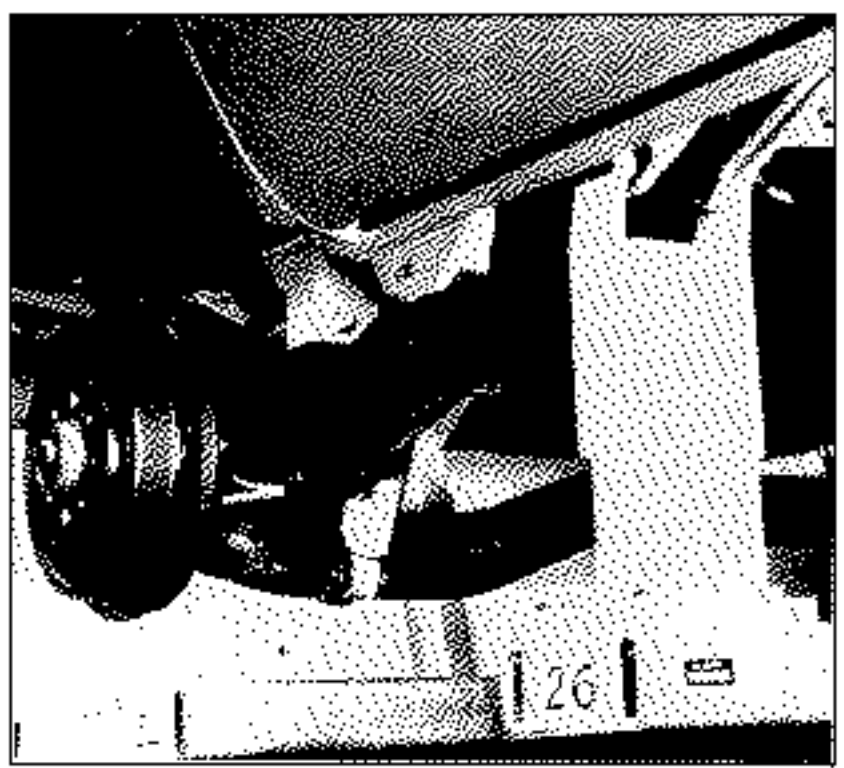


b) Front axle lower suspension arm

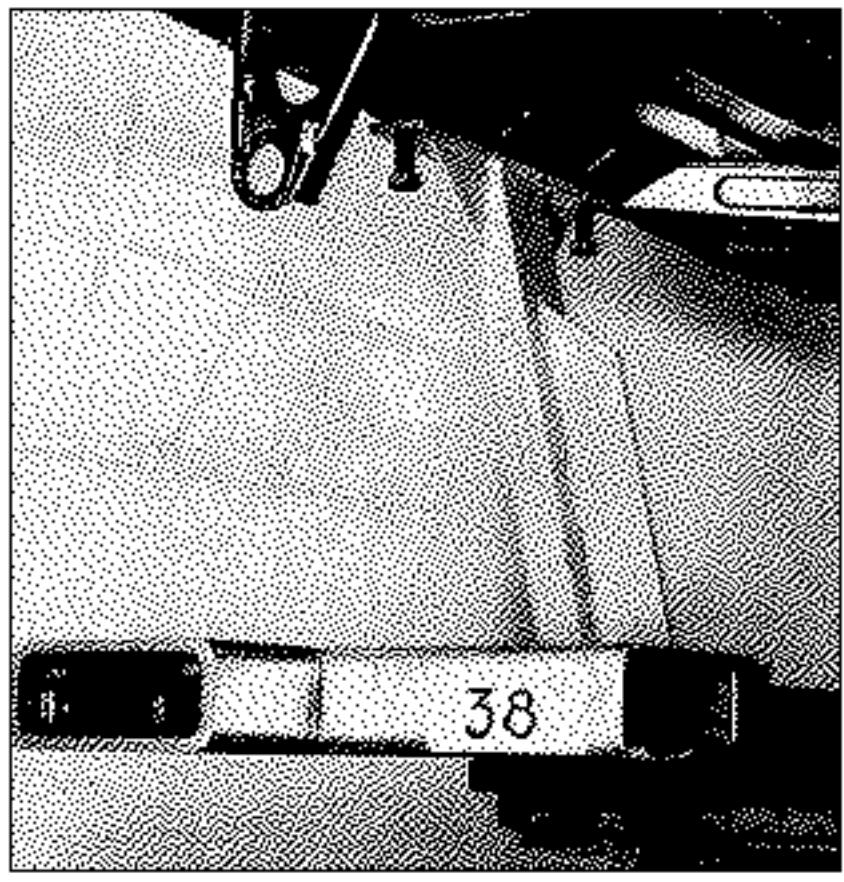




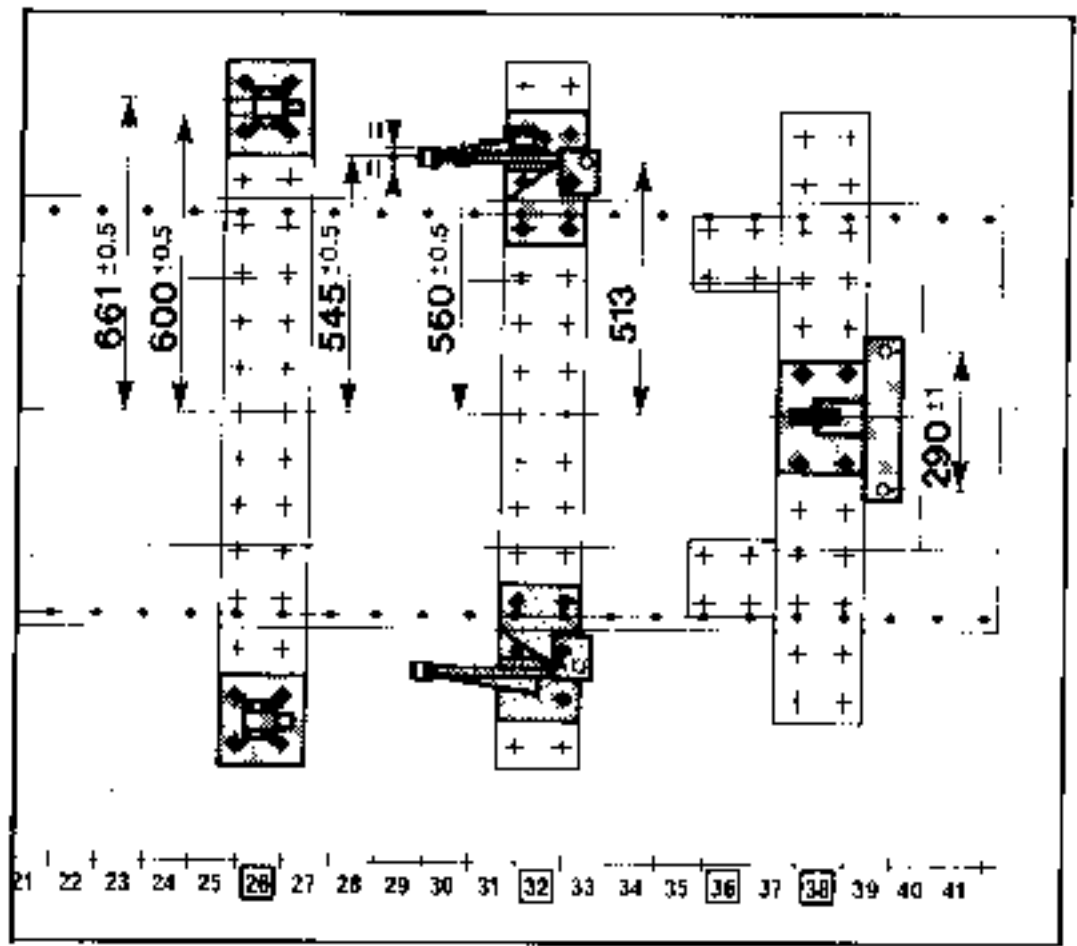
REAR SECTION



M10533-1

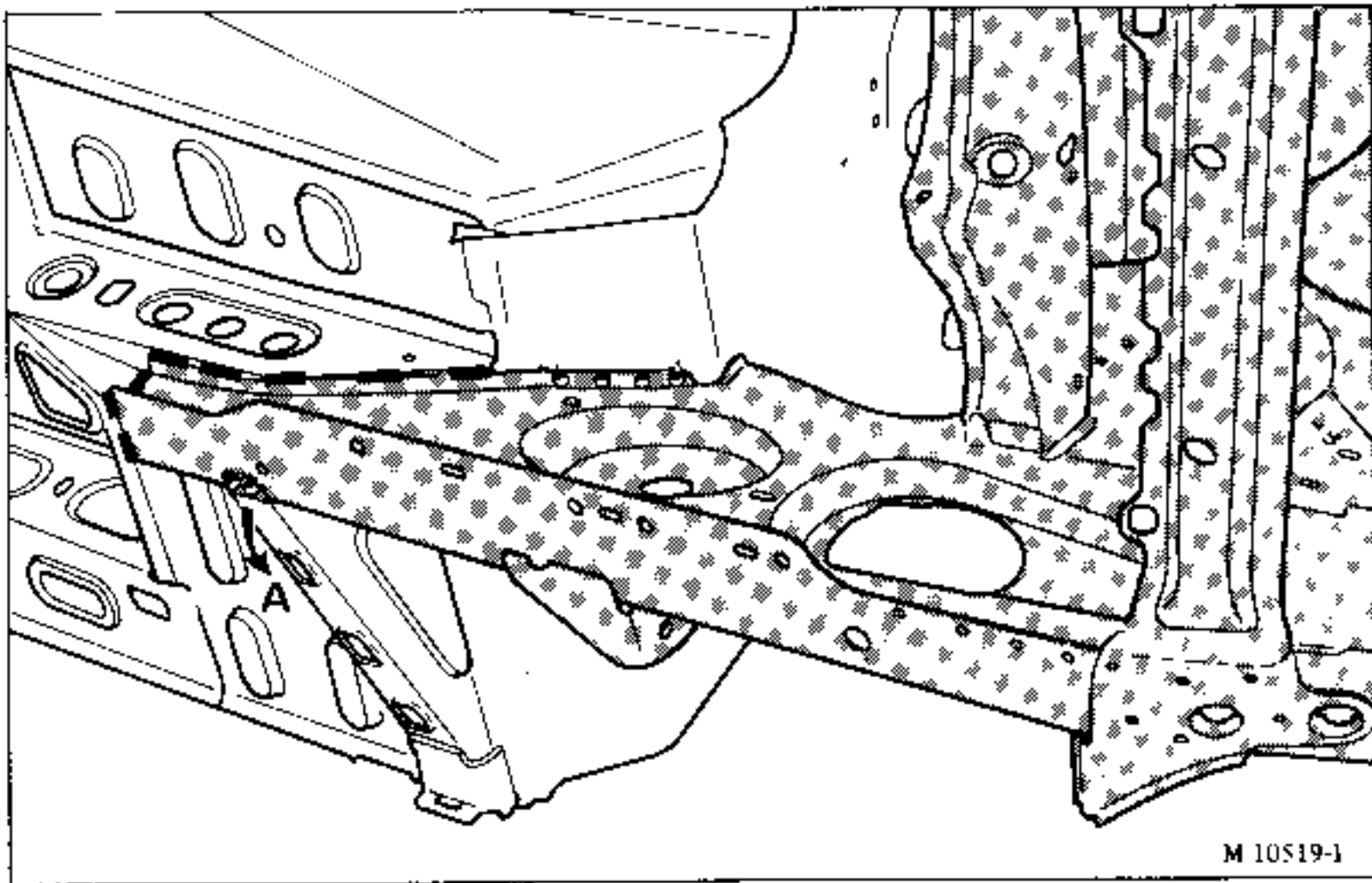
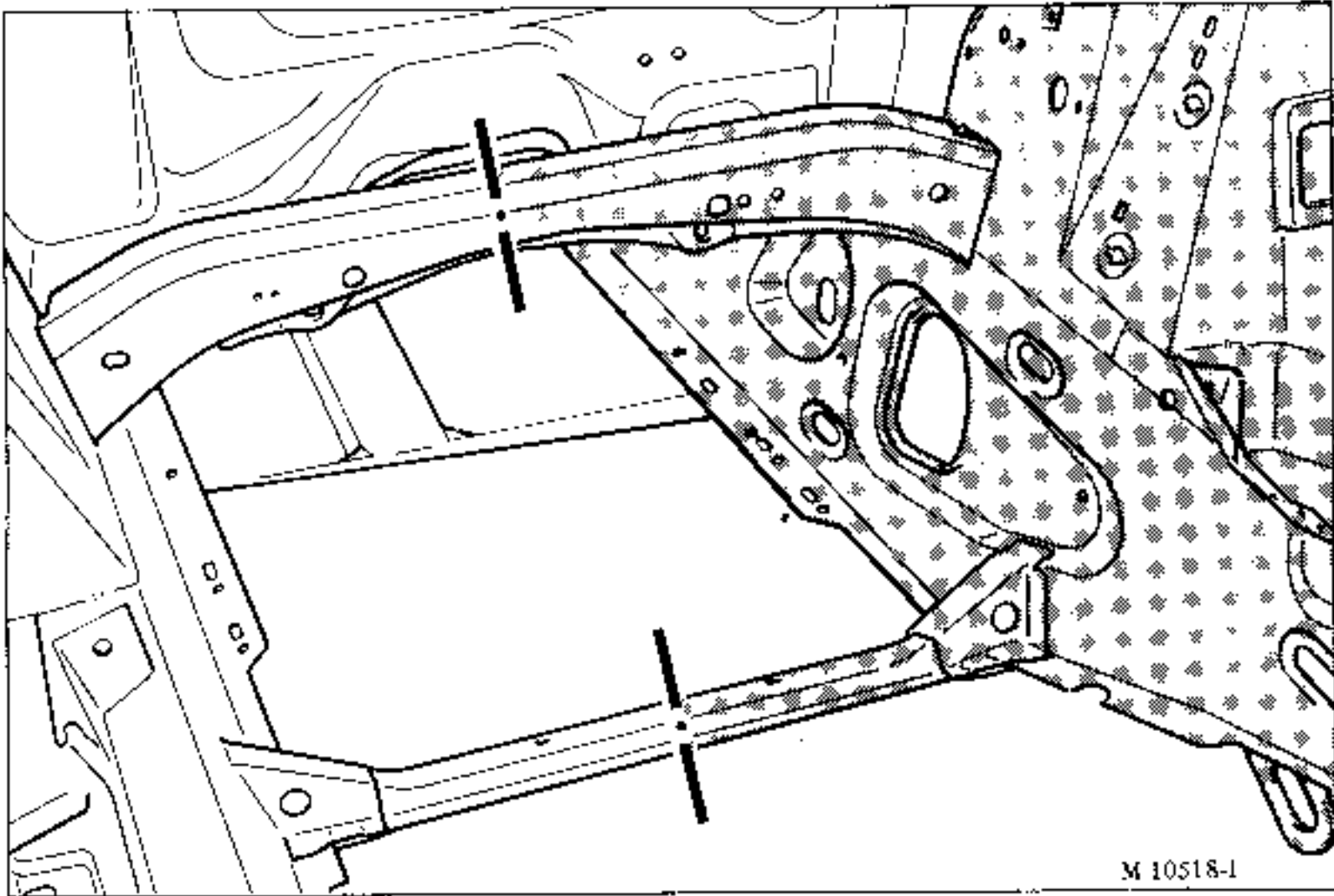


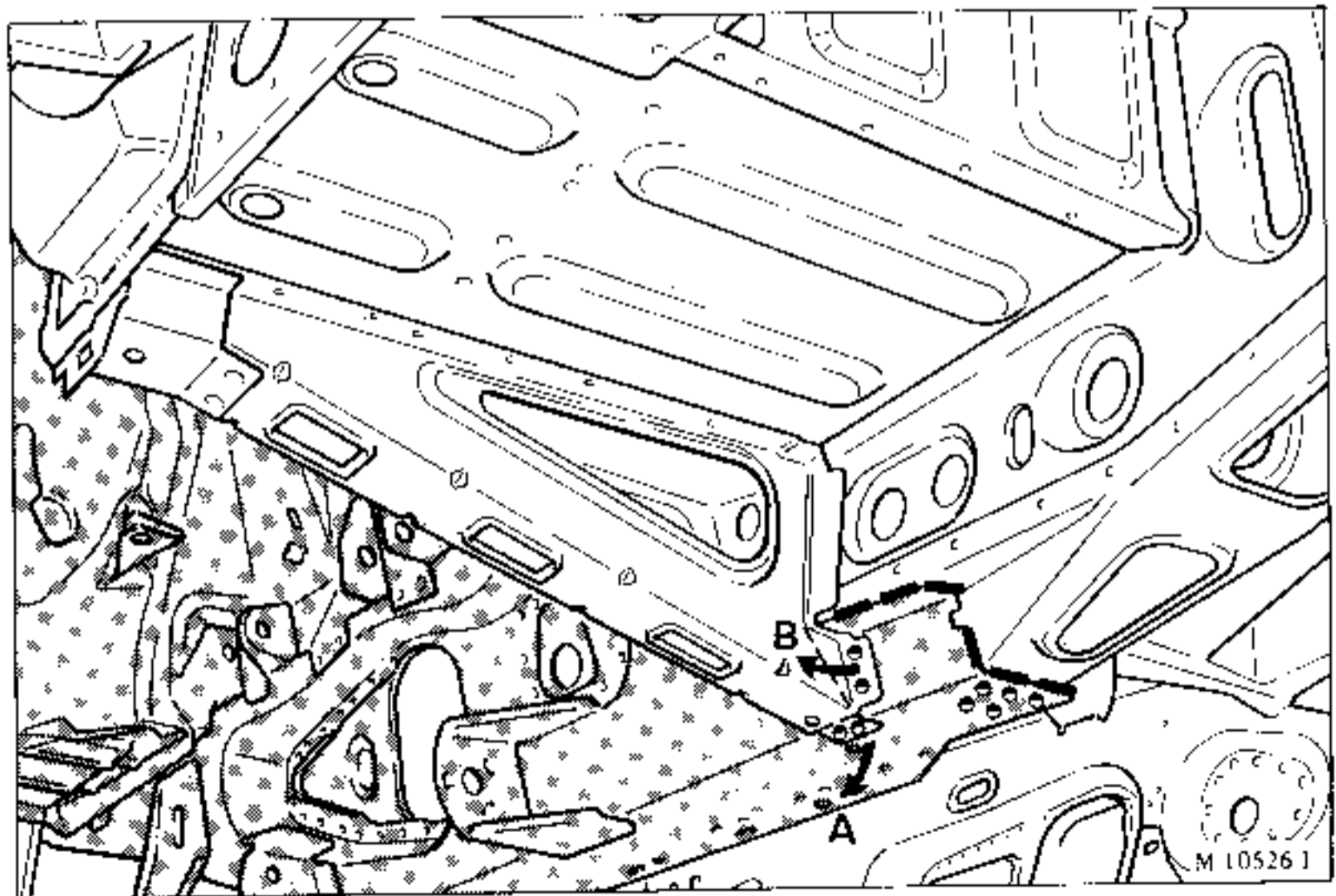
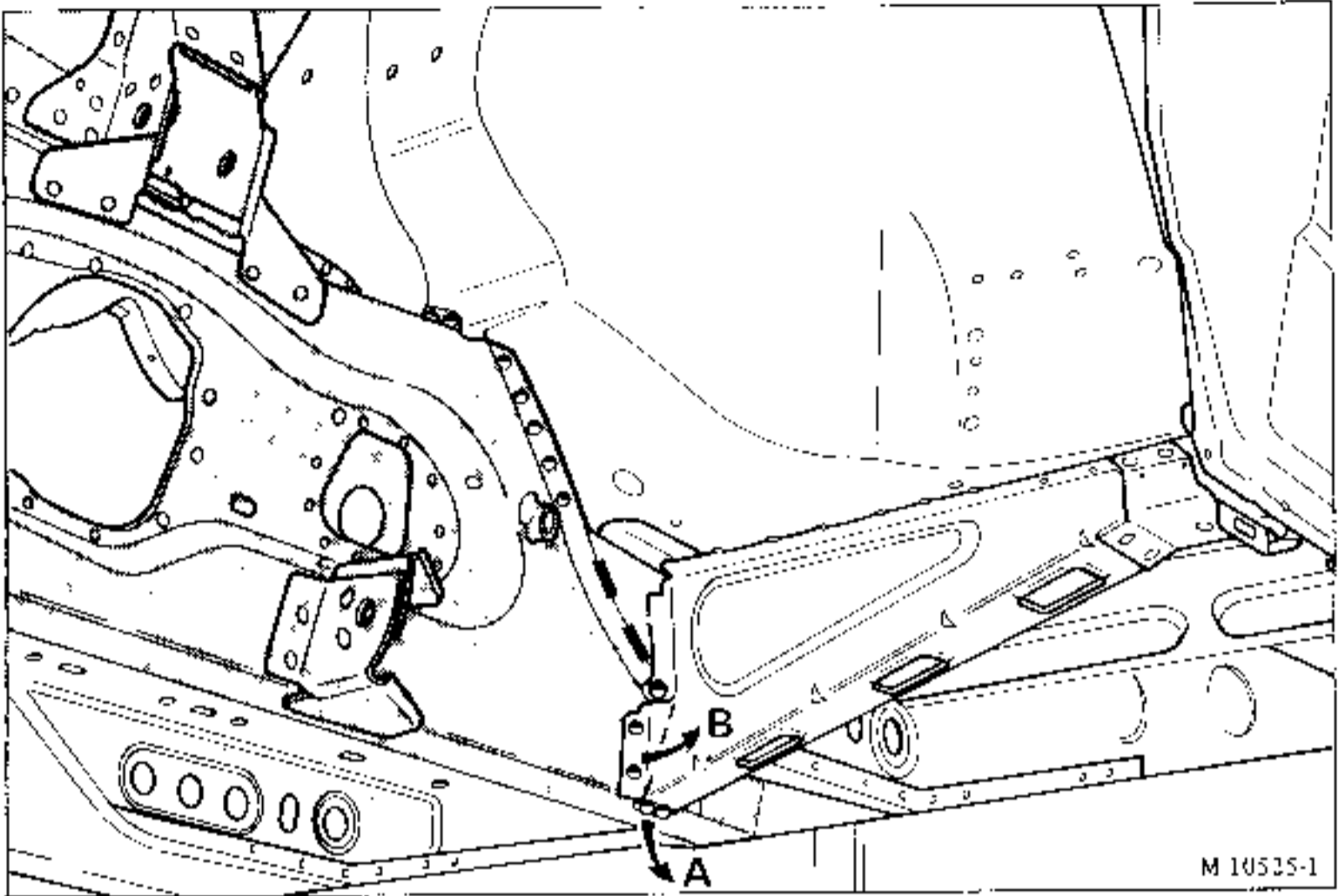
M 10536



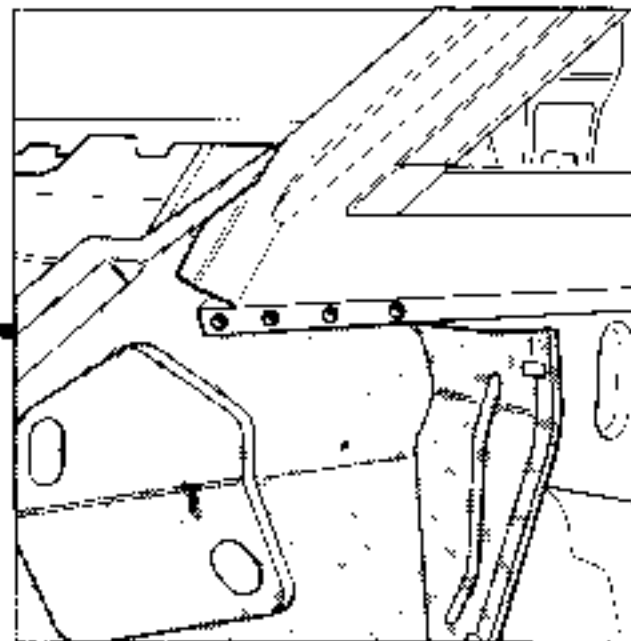
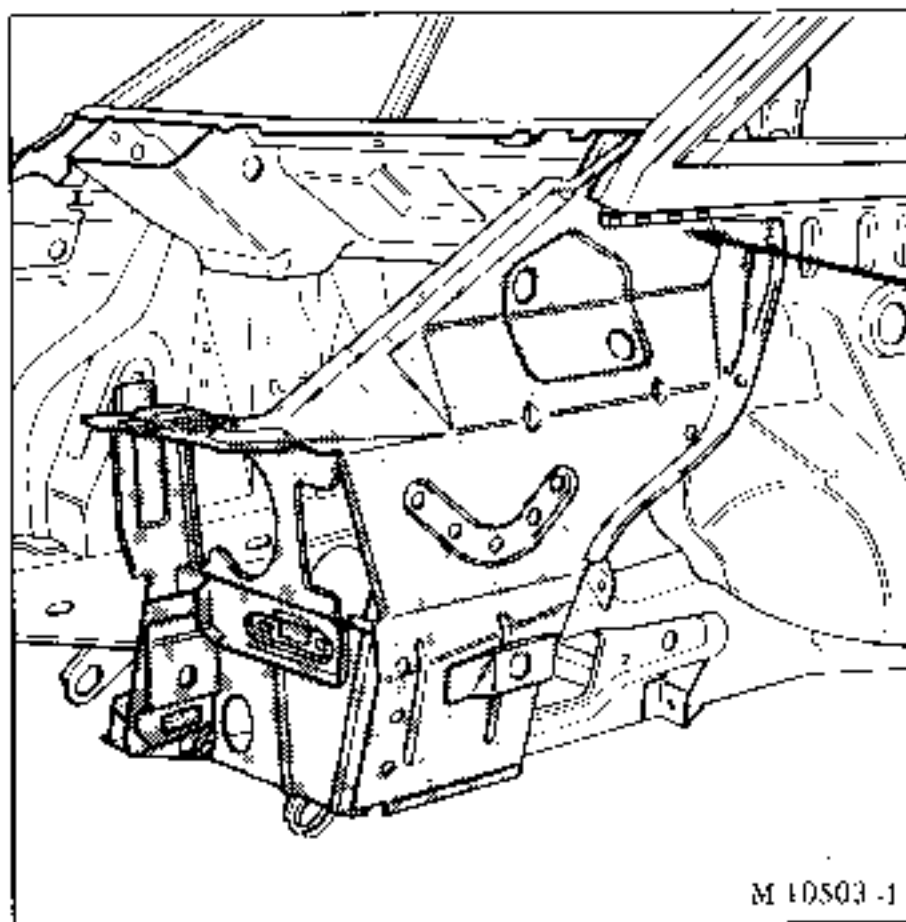
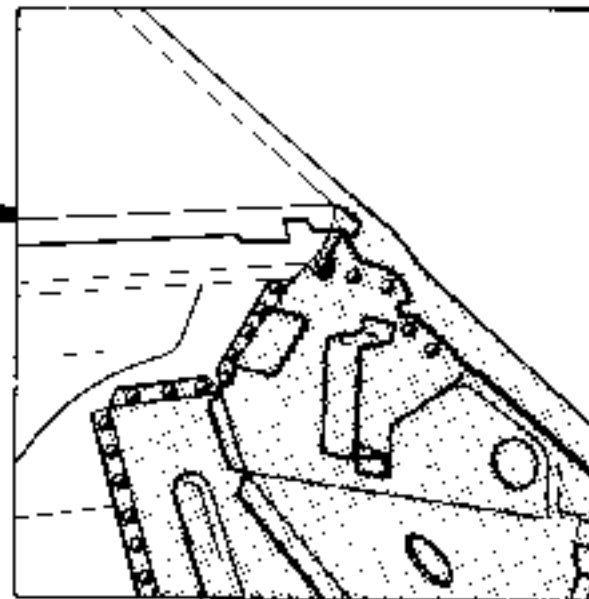
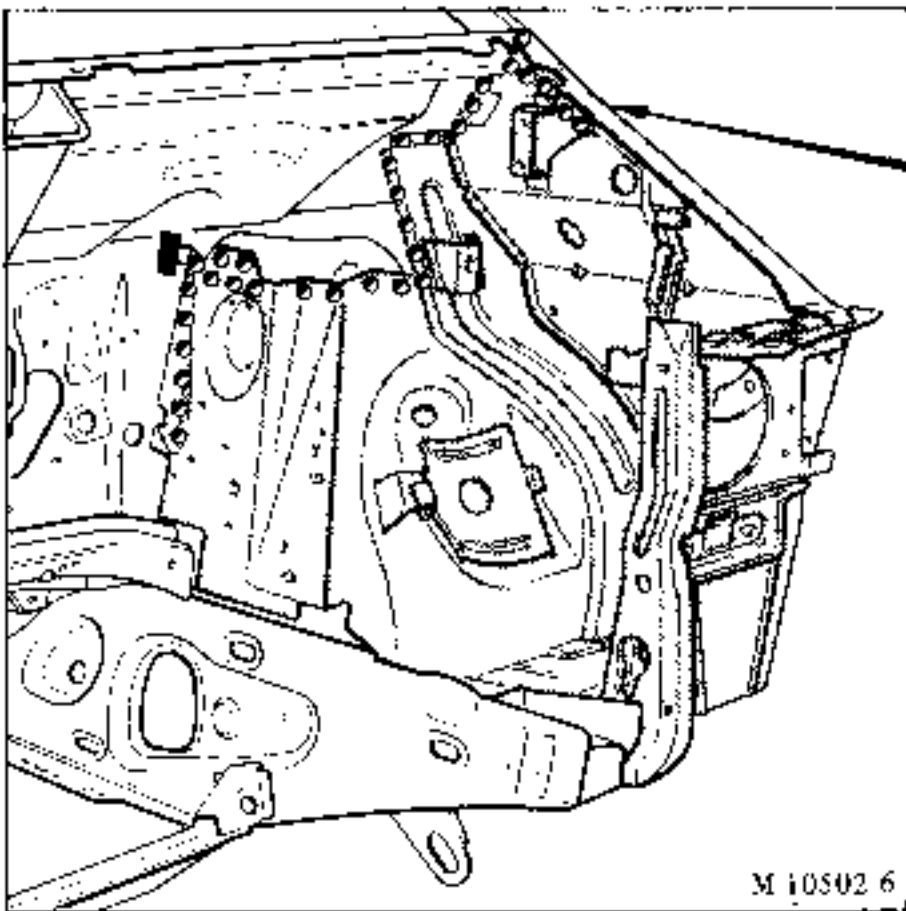
M10525

CUTTING OUT - UNPICKING



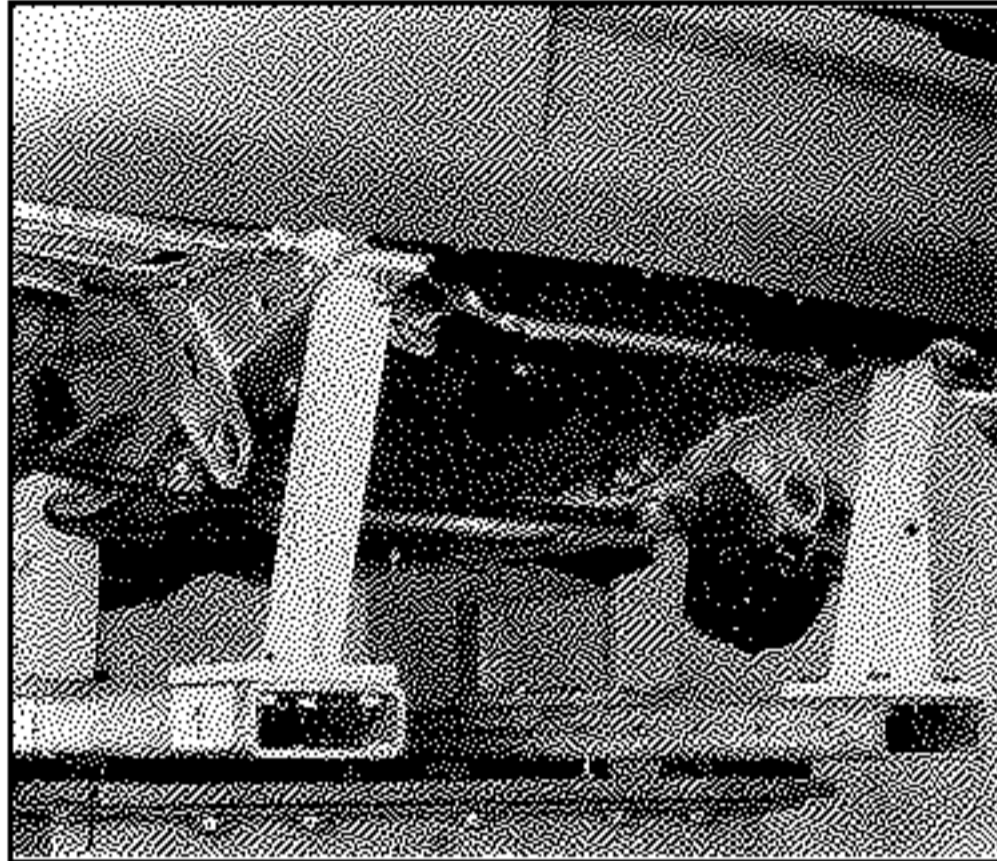


- Lightly bend lugs A and B to be able to remove the sidemembers.



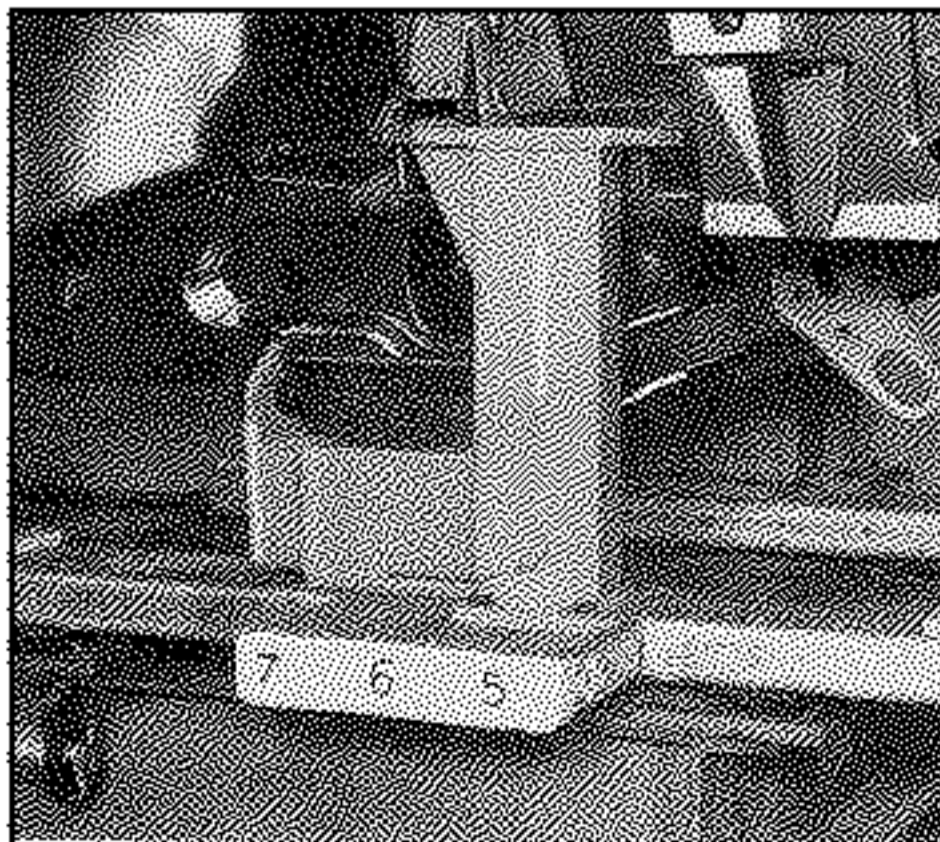
- Remove the damaged section following the instructions given by the above symbols (see descriptions-symbols).
- Grind back the unpicked spot welds on the support panelling.

PREPARATION BEFORE WELDING



M10528

PHASE I



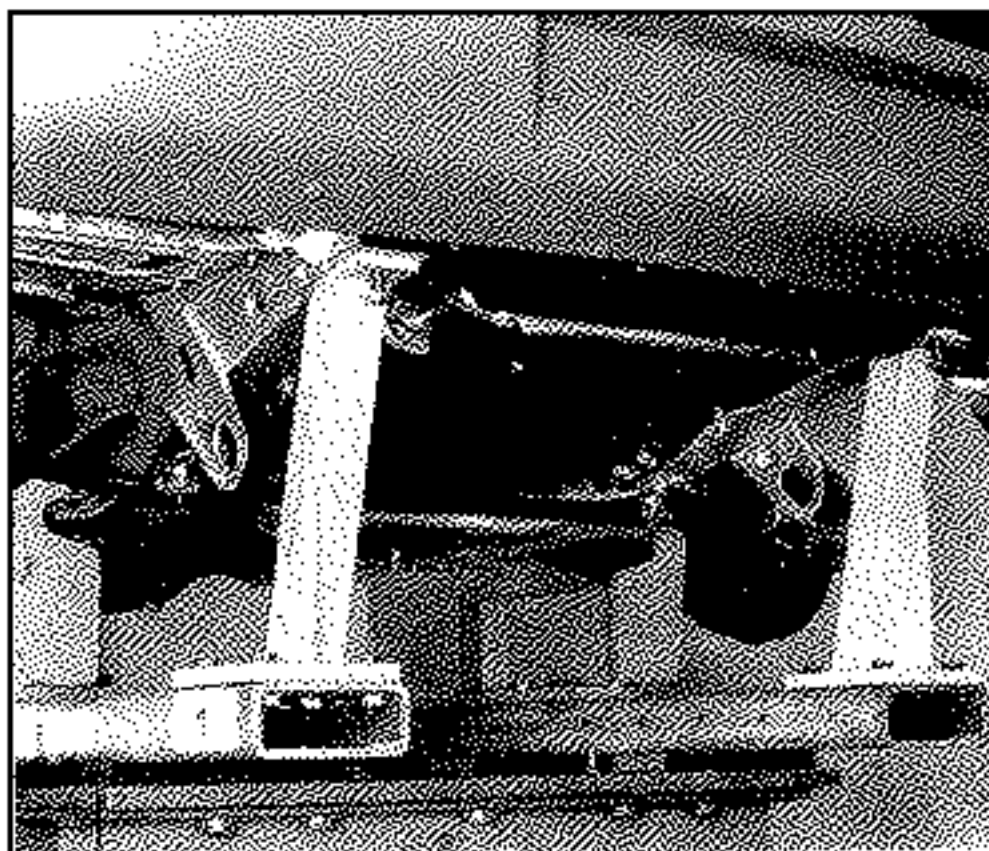
M 10531

The various parts are assembled in two operations :

1 - the fitting of the sidemember assembly and the centre and steering crossmembers,

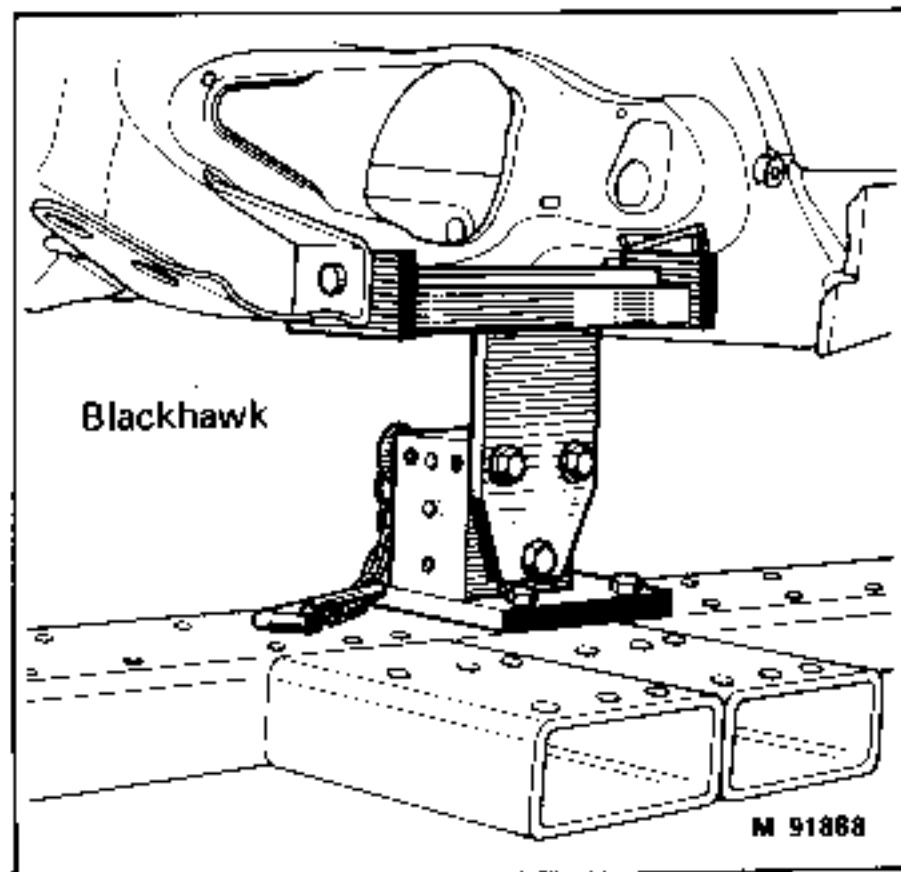
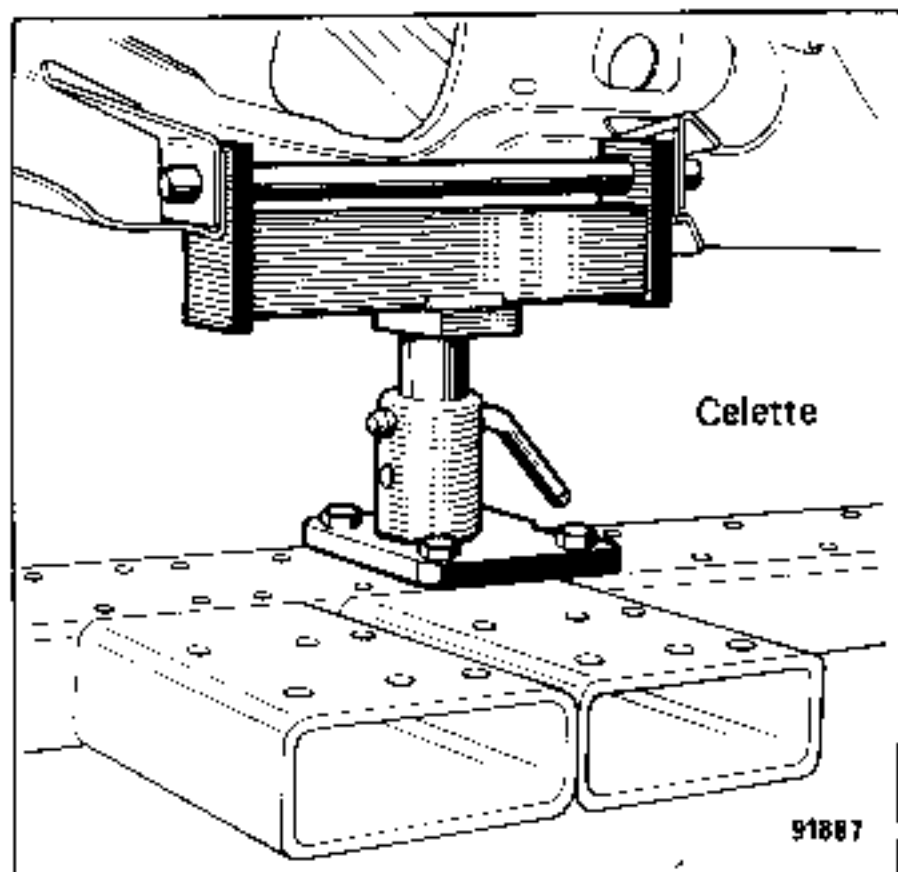
2 - the fitting of the cowl side and the wheel arch followed by welding.

PREPARATION BEFORE WELDING



PHASE II

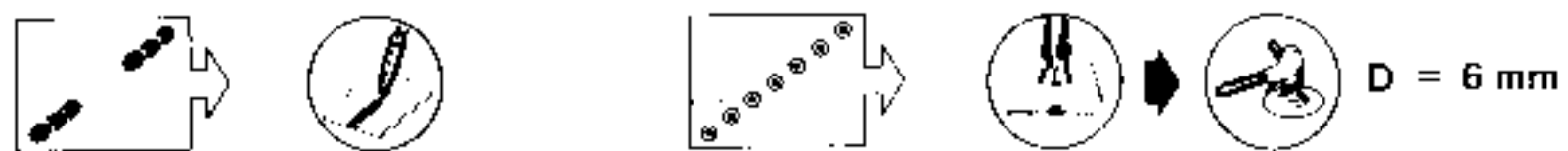
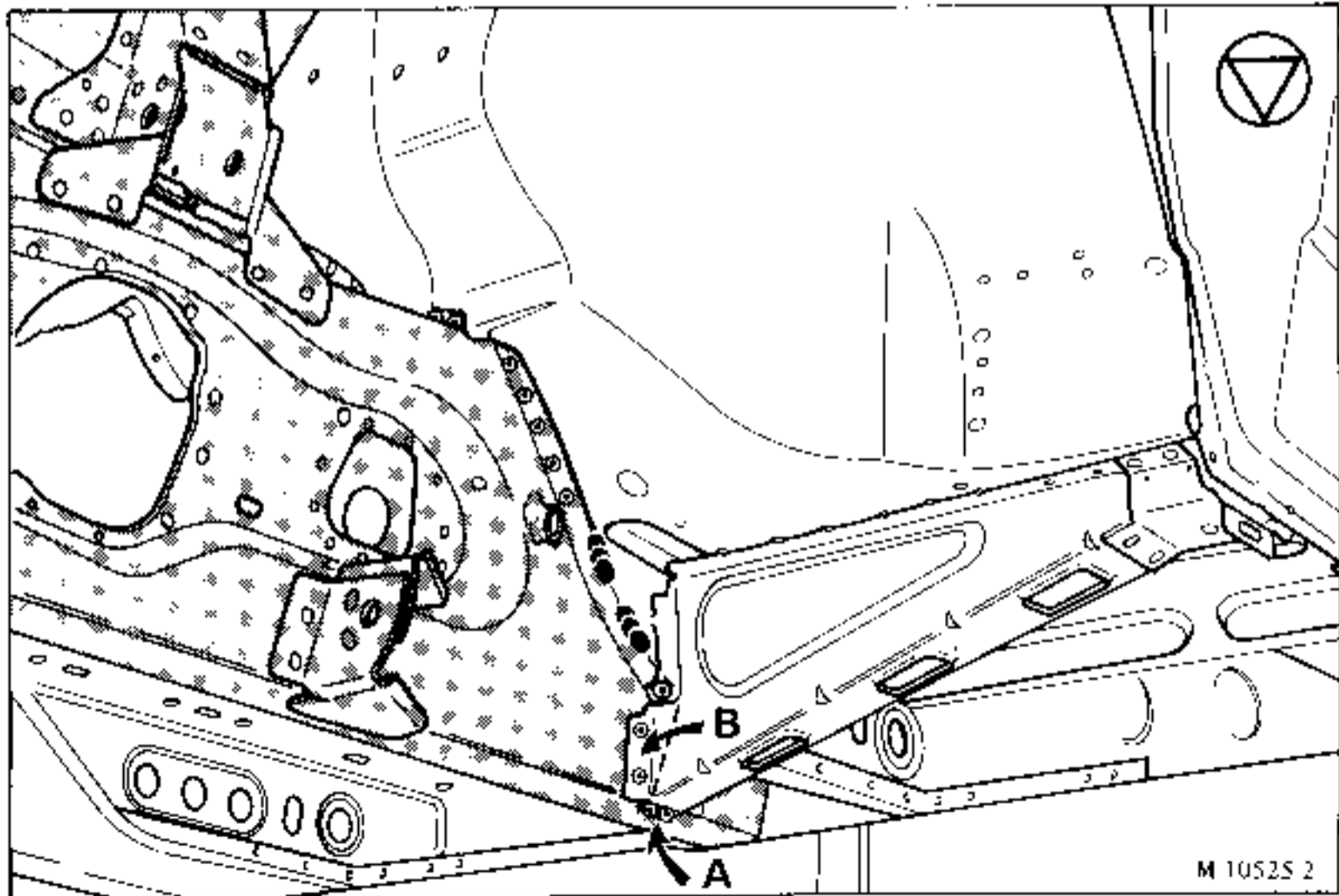
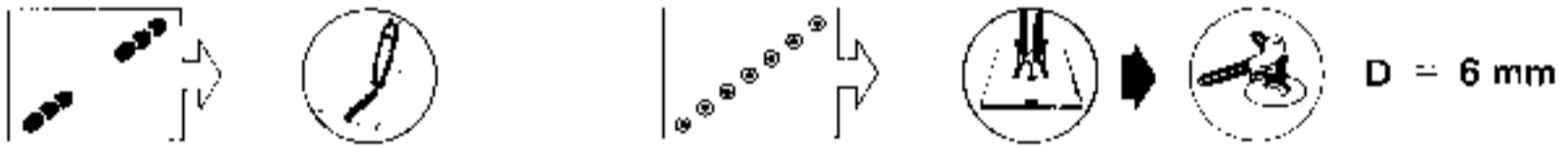
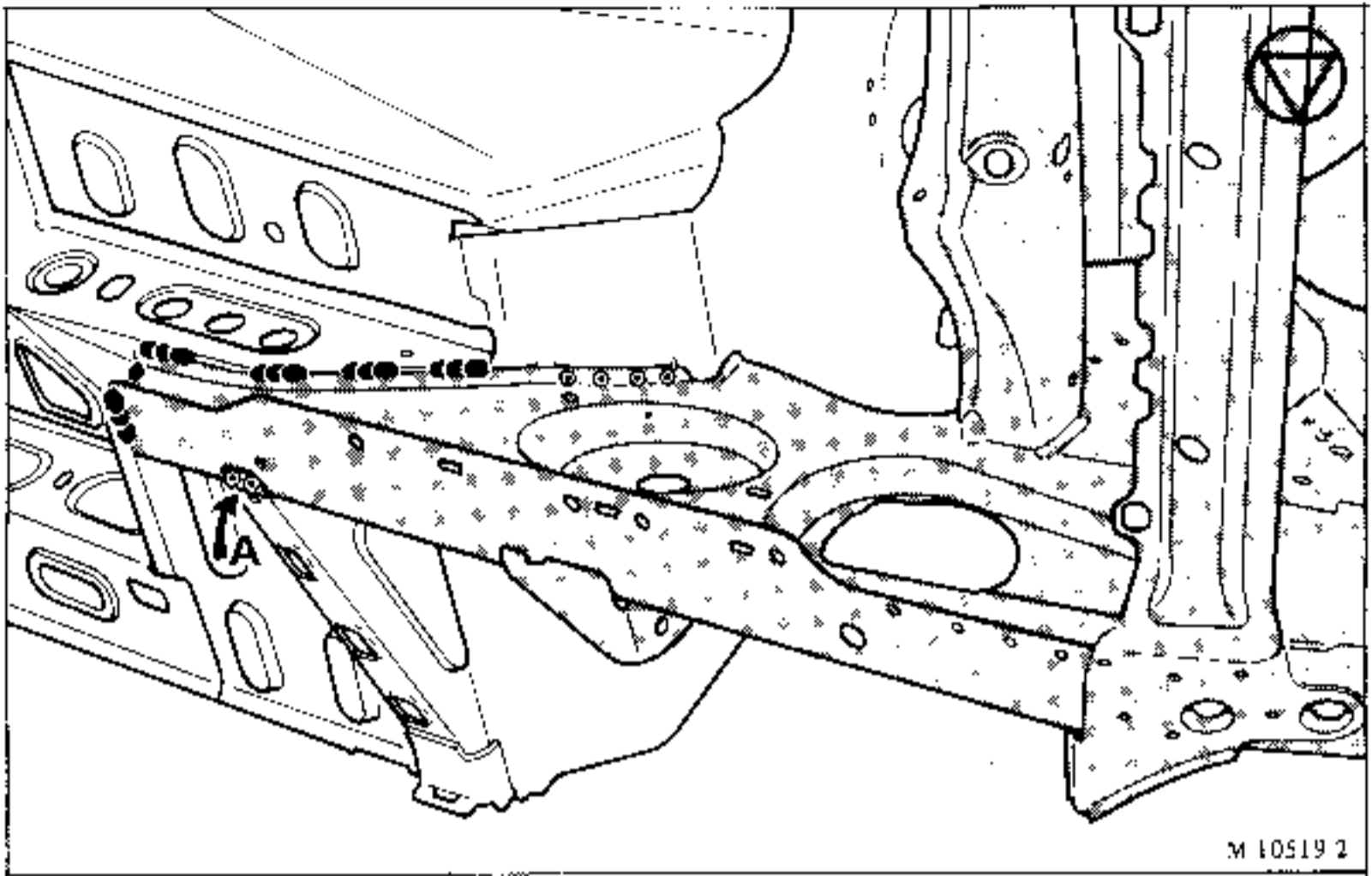
Front lower suspension arm

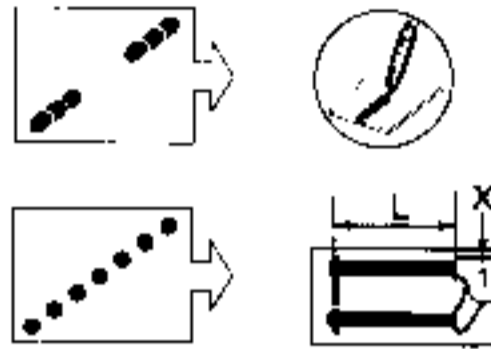
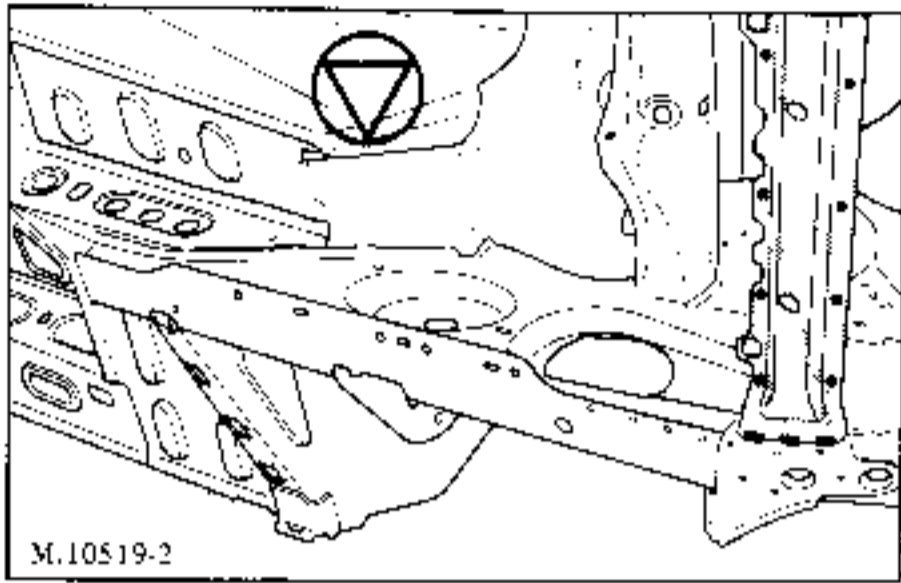


The various components are assembled in two operations :

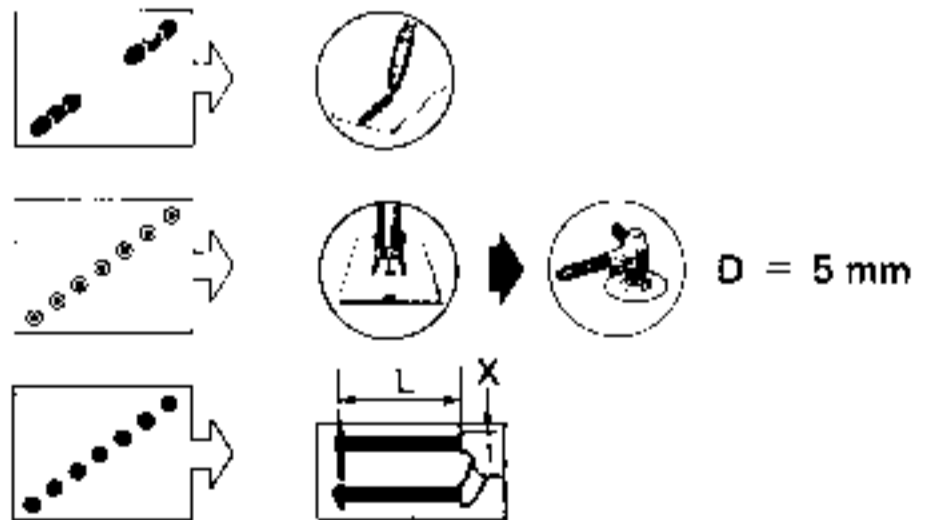
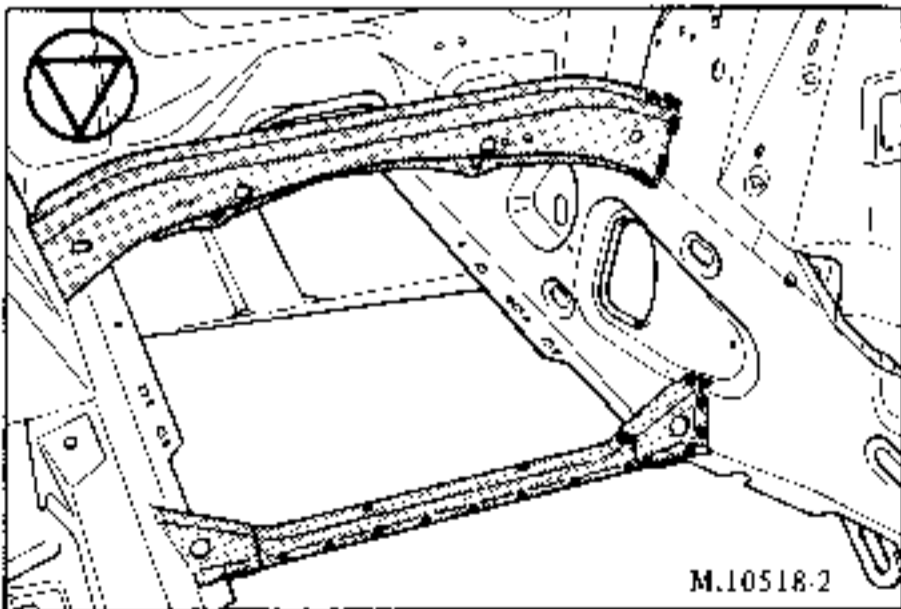
- 1 - fitting the sidemember assembly and the centre and steering crossmembers,
- 2 - fitting the cowl side and the wheel arch followed by welding.

WELDING

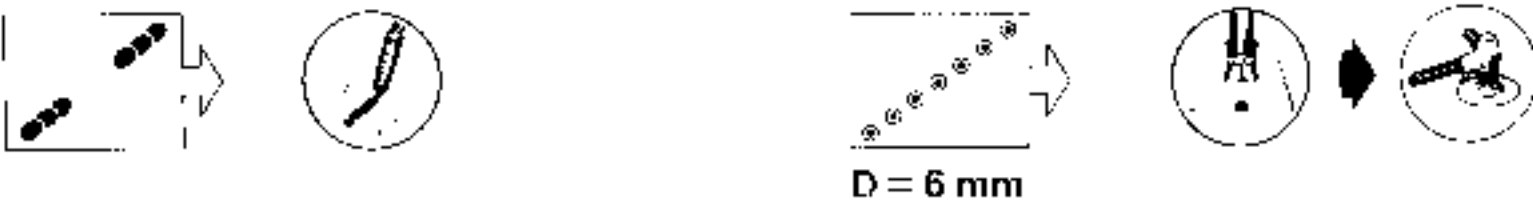
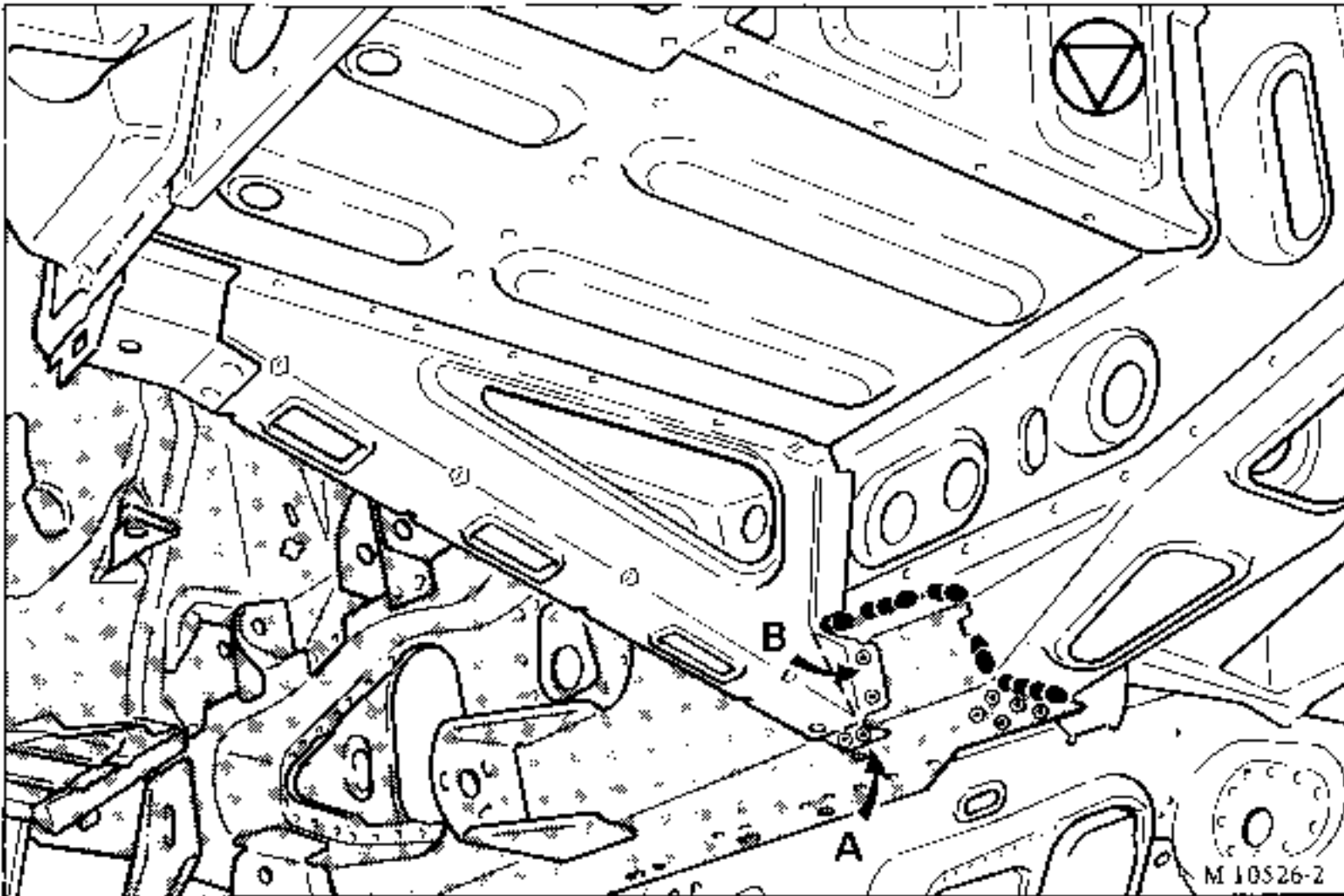




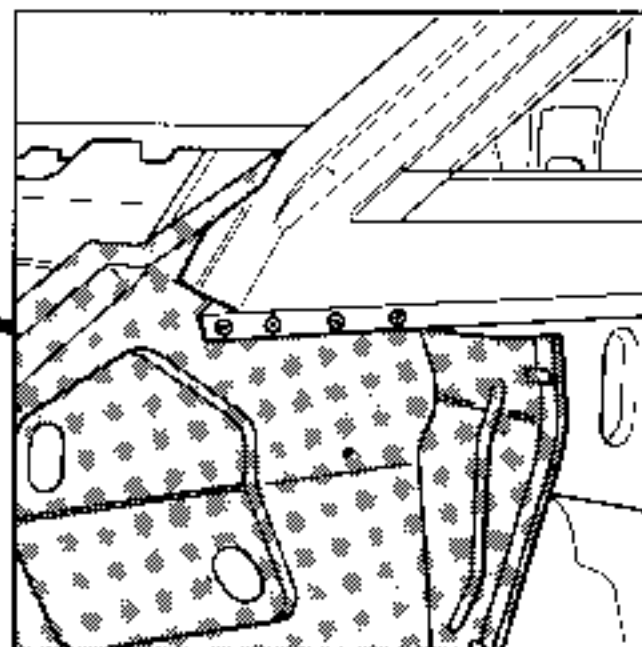
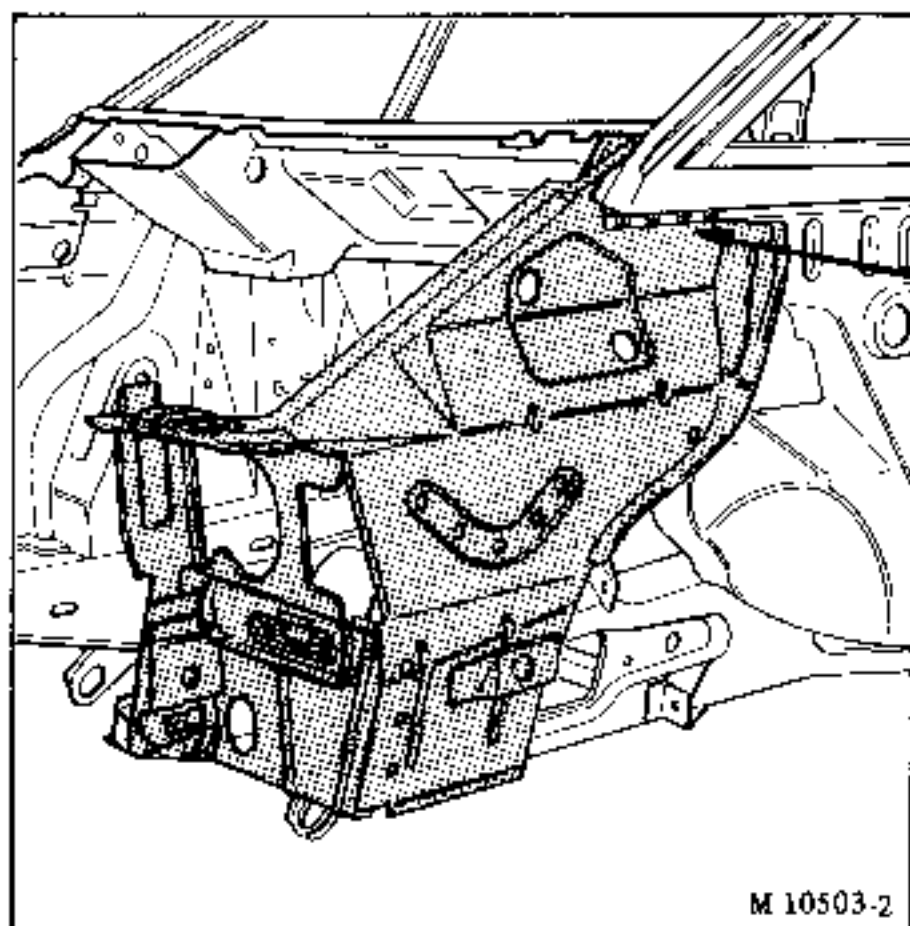
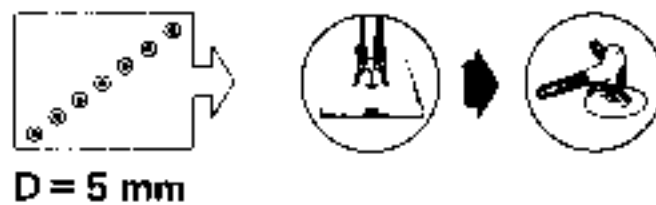
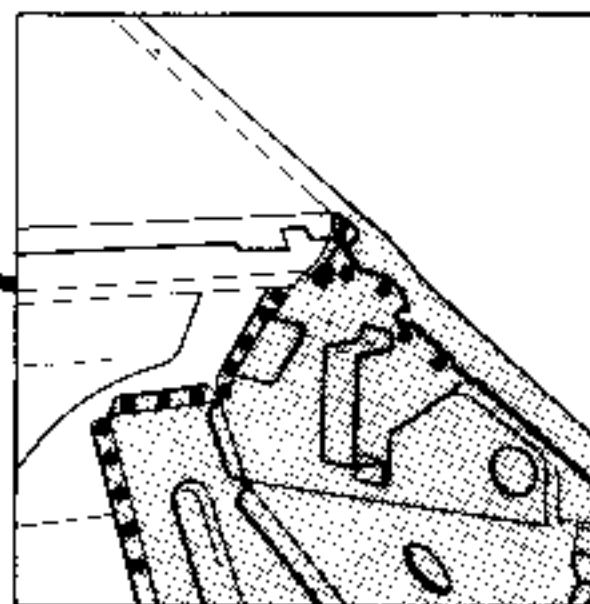
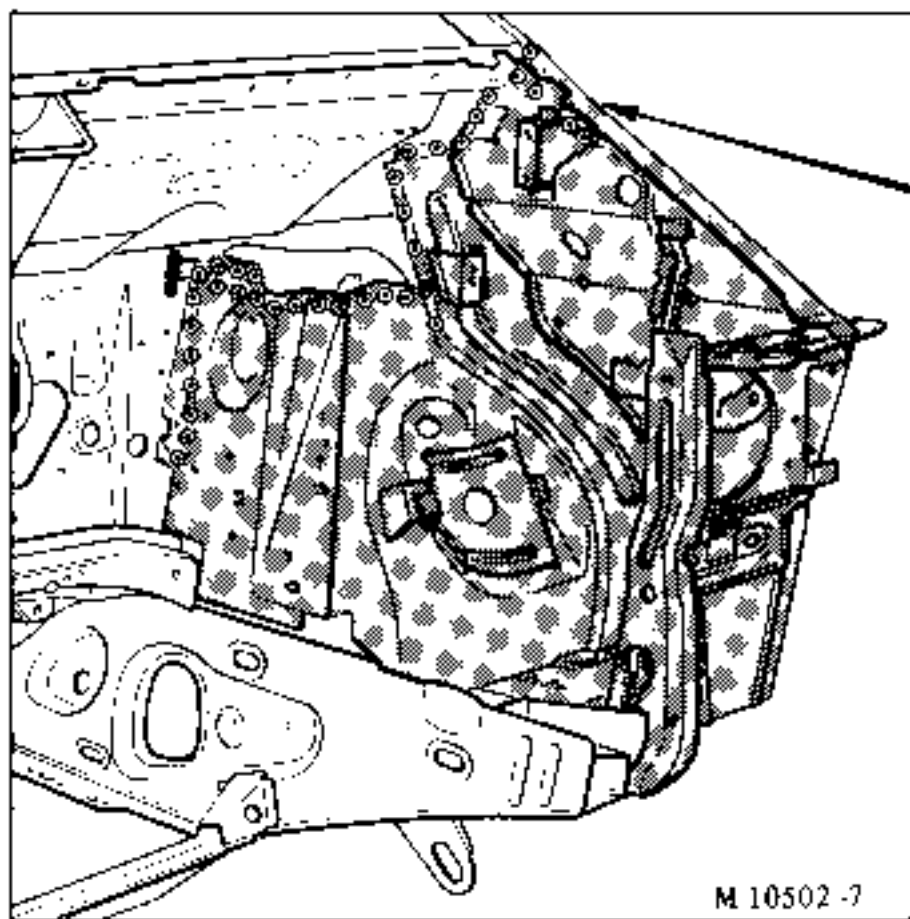
Centralise, under the lower suspension arm attachment point, the lower flange on the crossmember under the engine and weld it in place.





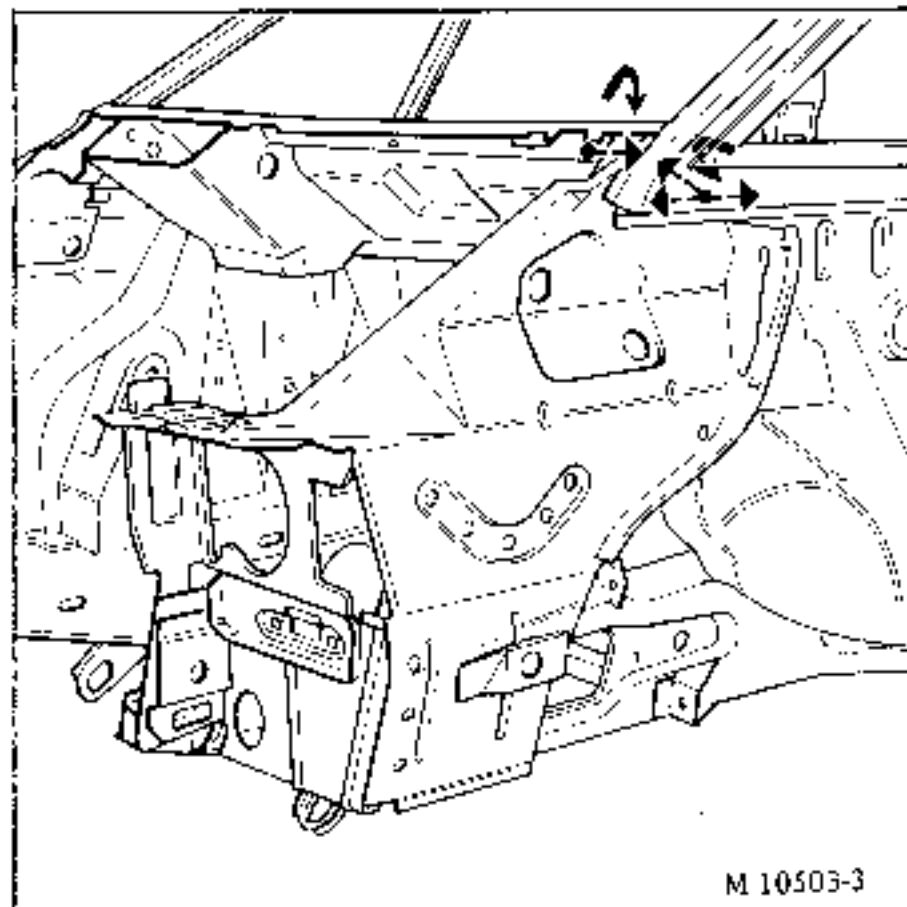
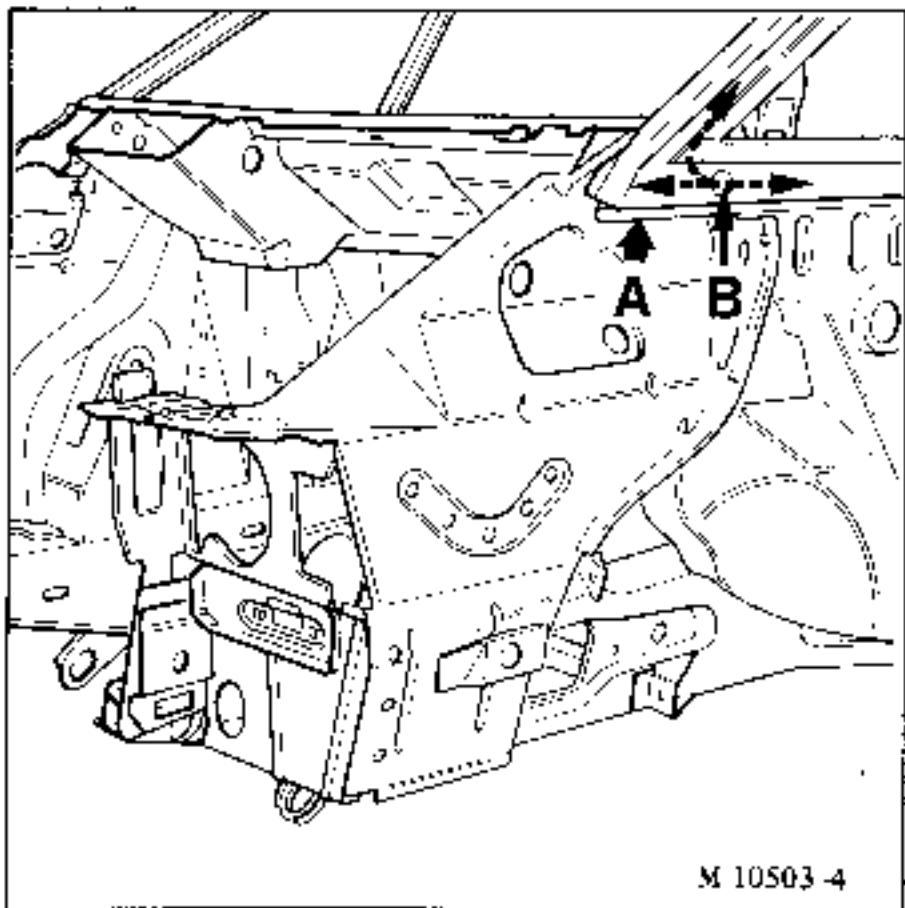


- Fit the sidemember and crossmember assemblies onto the jig bench brackets.
- Fold the lugs A and B back against the sidemembers.
- Apply the stitched fillet welds under a protective gas envelope.
- Apply the plug welds under a protective gas envelope. To do this, drill through the upper panel to the diameter D stated under the symbols.
- Apply the full fillet welds under a protective gas envelope.
- Fit the cowl side, wheel arch, steering crossmember and crossmember under the engine.
- Carry out the spot welds.



All the welds are to be applied in the same way as for when fitting the sidemembers.

After painting, apply the hollow section protective treatment.



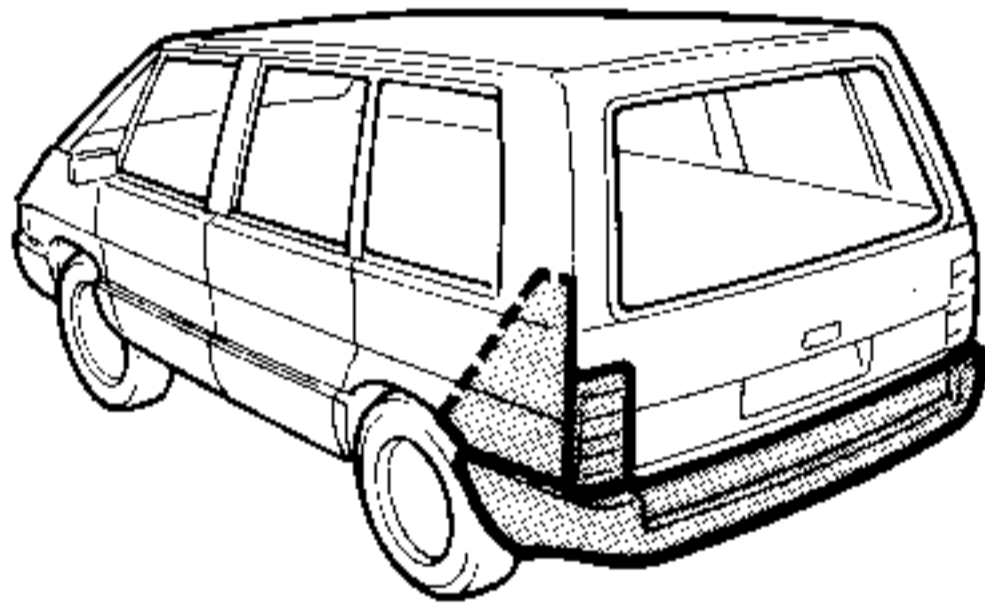
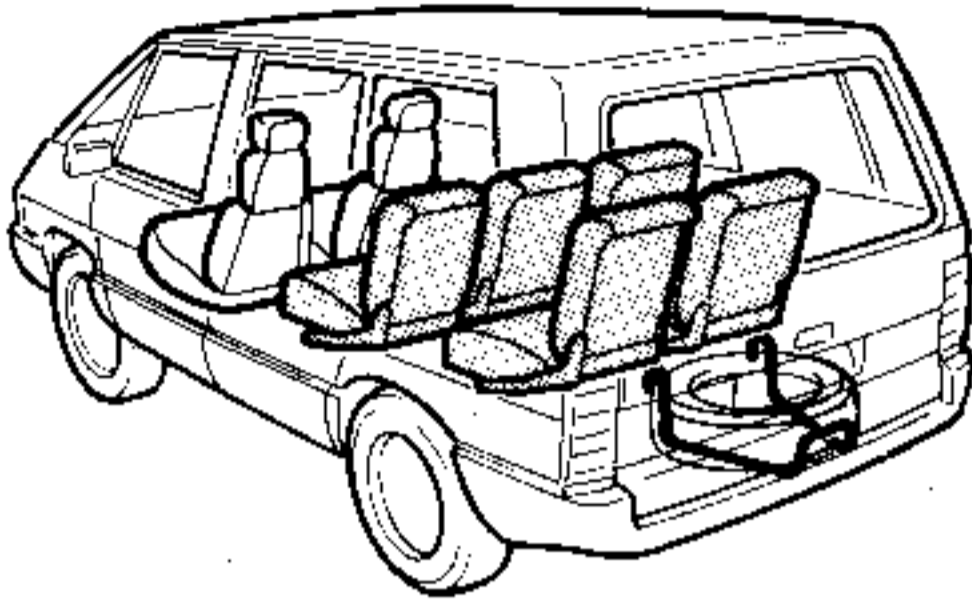
- Apply a pad of foam (60x80x100) at point A.
- Inject polyurethane foam at point B.



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For descriptions of these operations, see section 41 "Complete sidemember" and 42 "Cowl side".

REPLACING :  
STRIPPING



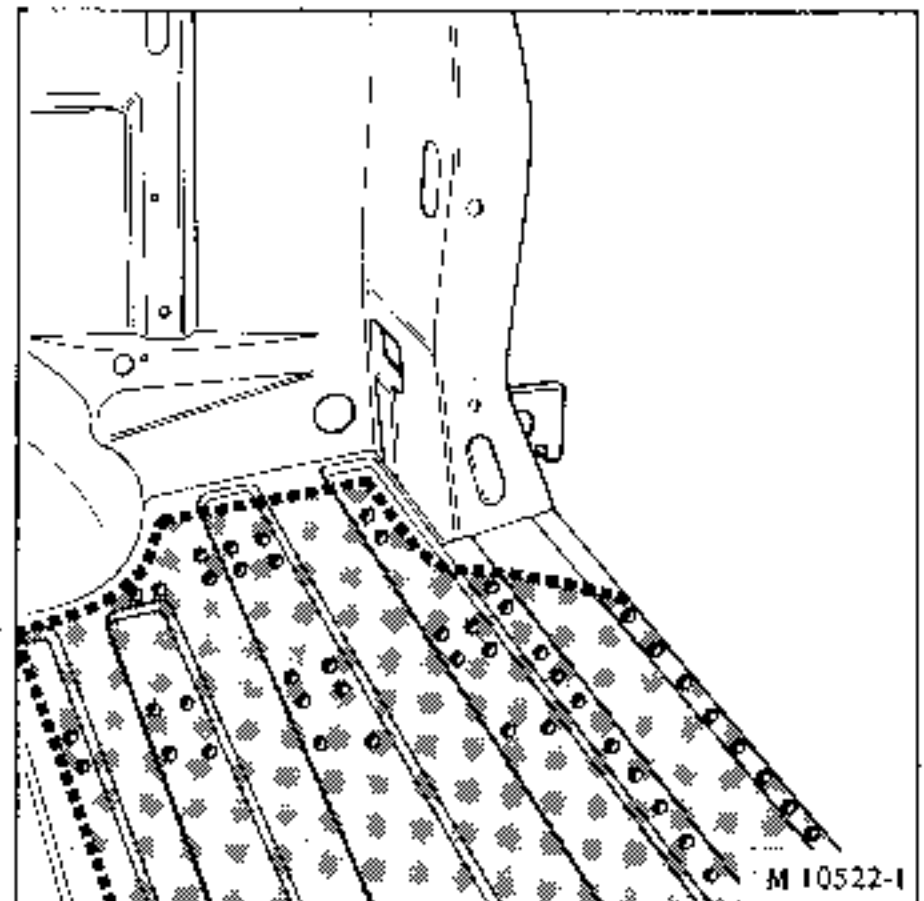
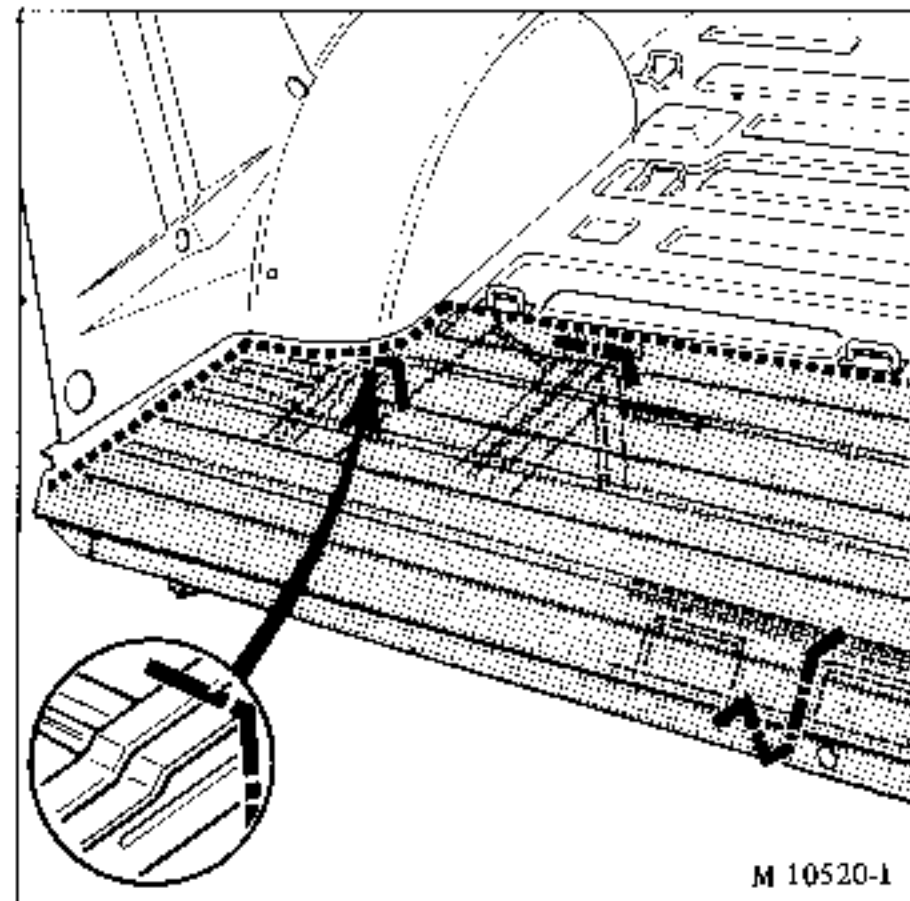
M 10748-1

Remove :

- the rear bumper shield
- the finishing plate
- the rear light
- the rear seats
- part of the tailgate sealing strip
- part of the two upper trim sections
- the two lower trim sections
- part of both wheel arches
- part of the floor trim and sound deadening
- the spare wheel carrier

Cut the rear wing (at a point that will depend on the extent of the damage and the requirements of the plastic panel replacement operation)

CUTTING OUT - UNPICKING

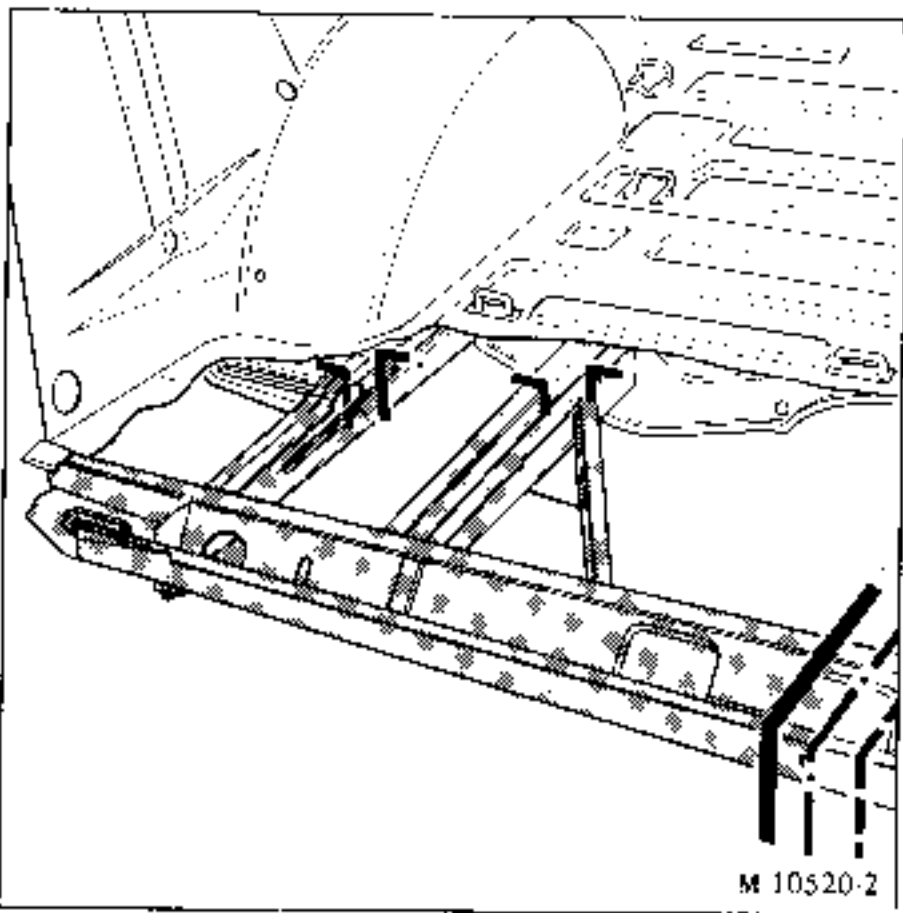


- This operation involves removing either part of or the entire tailgate pillar depending on the extent of the damage.
- Remove the damaged section by following the instructions of the above symbols (see description of symbols).

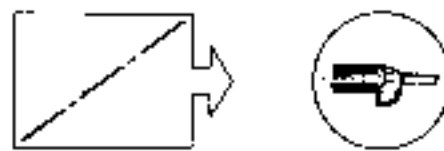
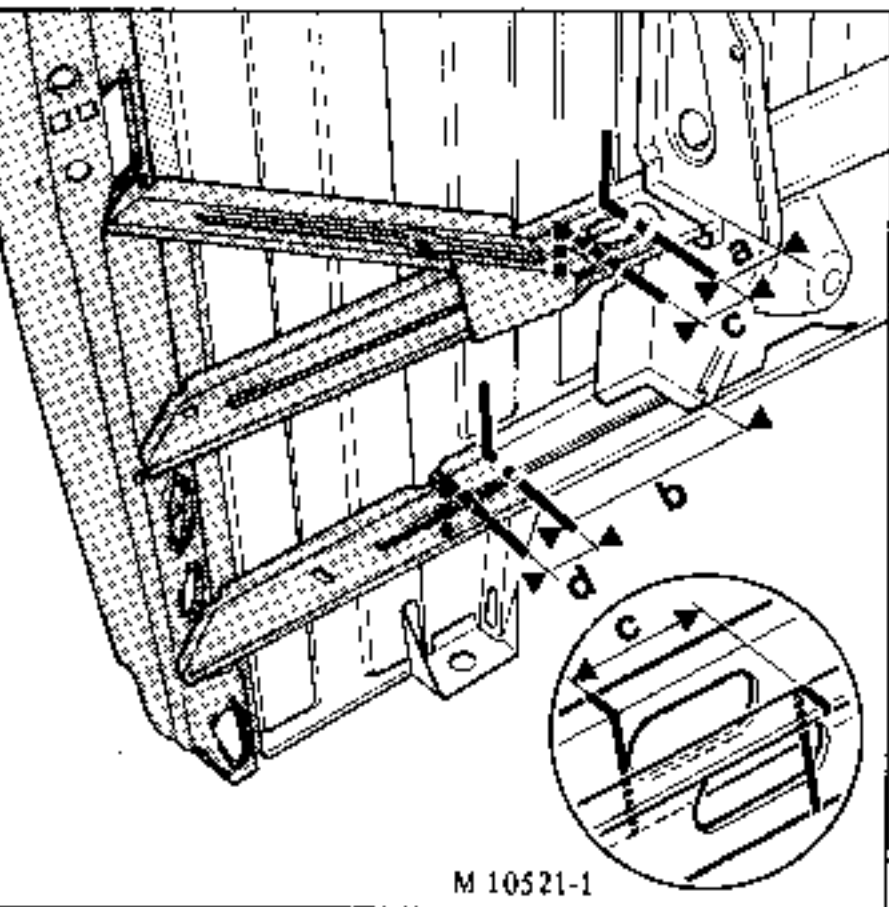
Grind back the unpicked spot welds remaining on the support panelling.

PREPARING THE NEW PARTS

- Cut, from the new part, a section approximately 20mm larger than the section cut out from the vehicle.
- Place the new part on the vehicle so that it overlaps the cut out section and clamp it in place.
- Saw through both thicknesses of panelling simultaneously to obtain a good fit.



PREPARATION BEFORE WELDING

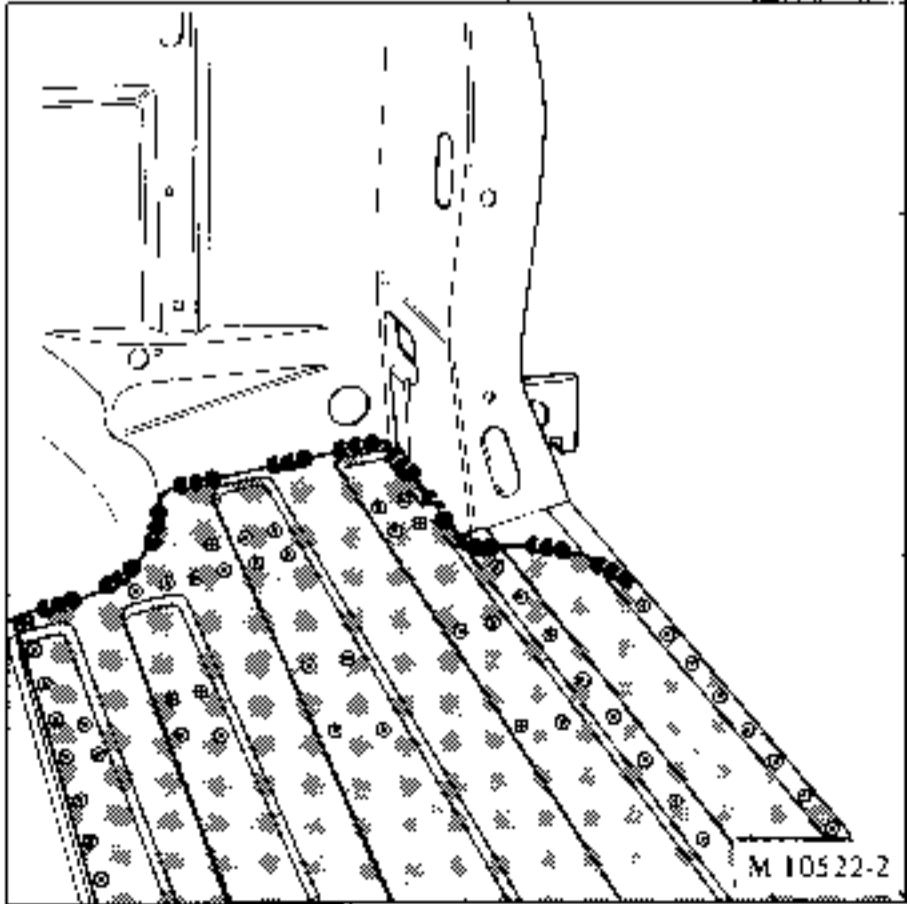
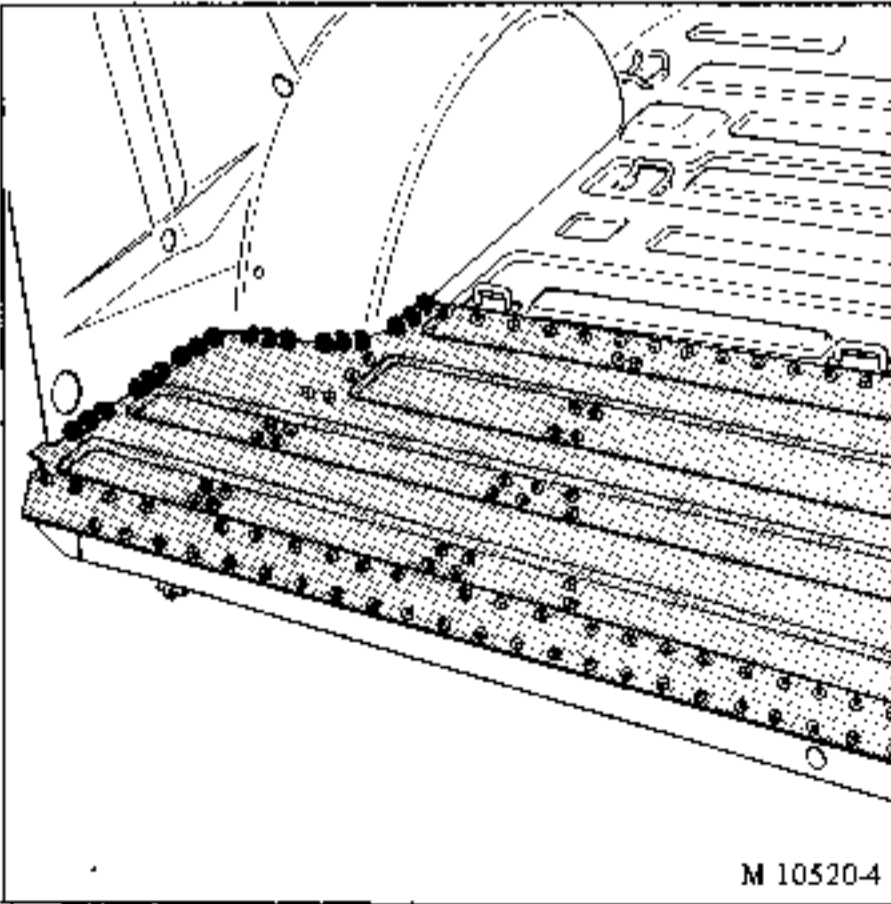
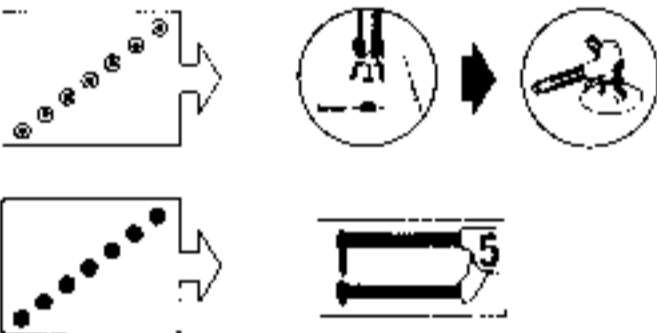
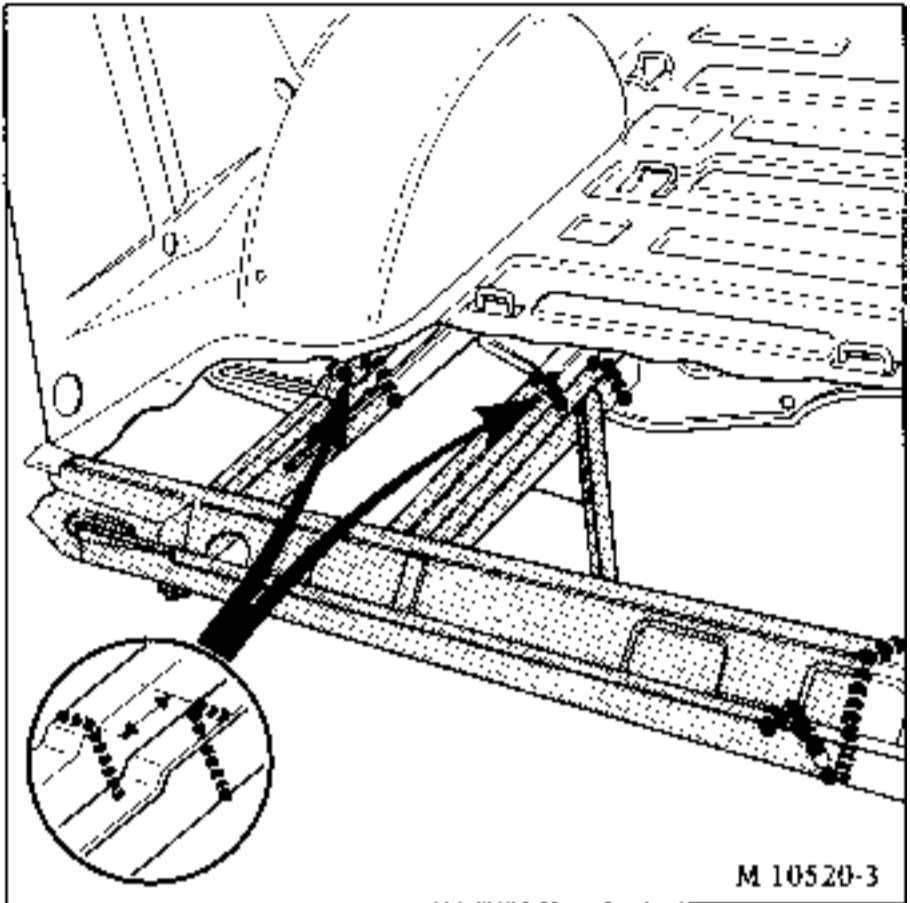
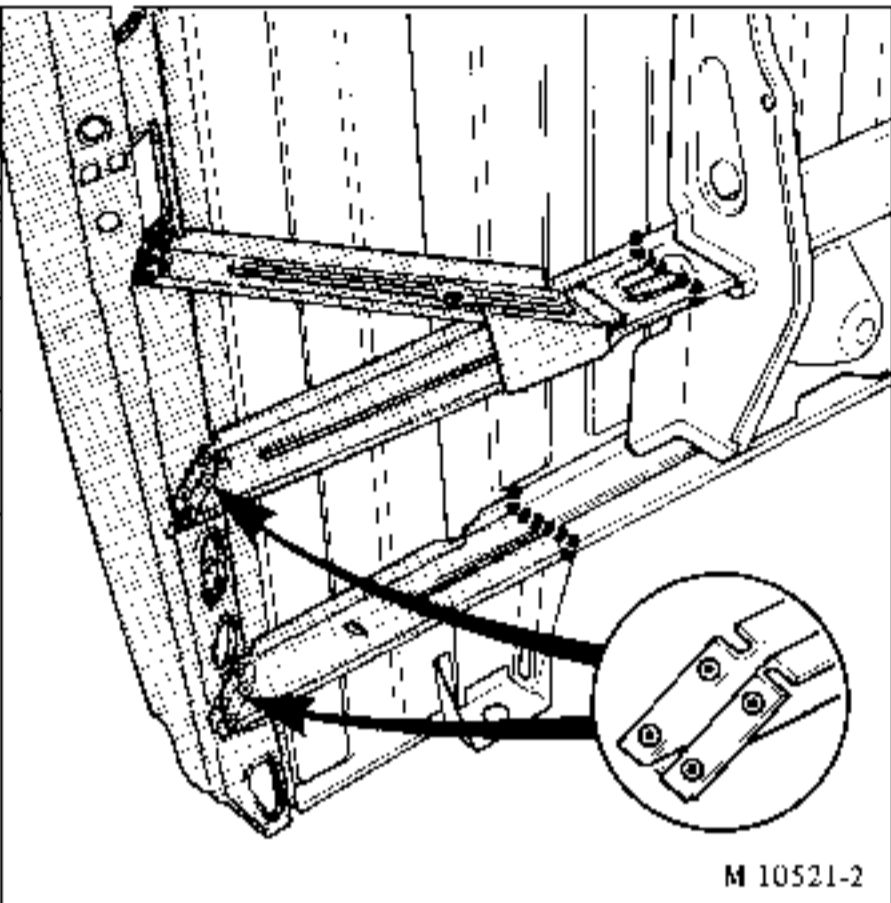


- a = 50 mm
- b = 190 mm
- c = 20 mm
- d = 20 mm

Cut out sections from the two sidemembers to the dimensions shown here, ensuring that the cuts on the sidemembers and their linings are offset by 20mm.

Cut the new parts to fit and clamp them in place.

WELDING





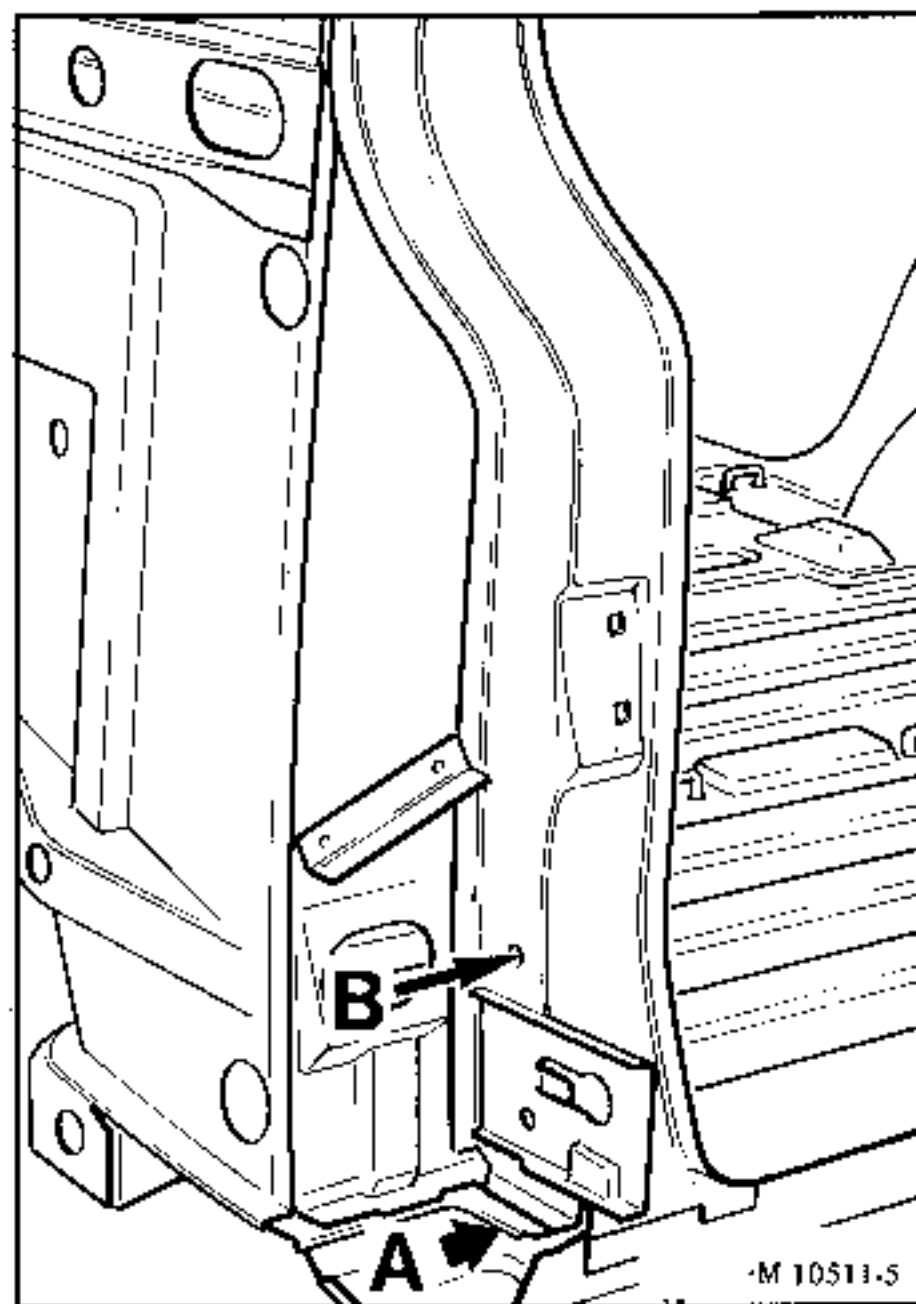
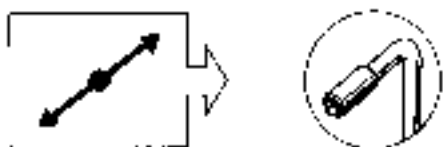
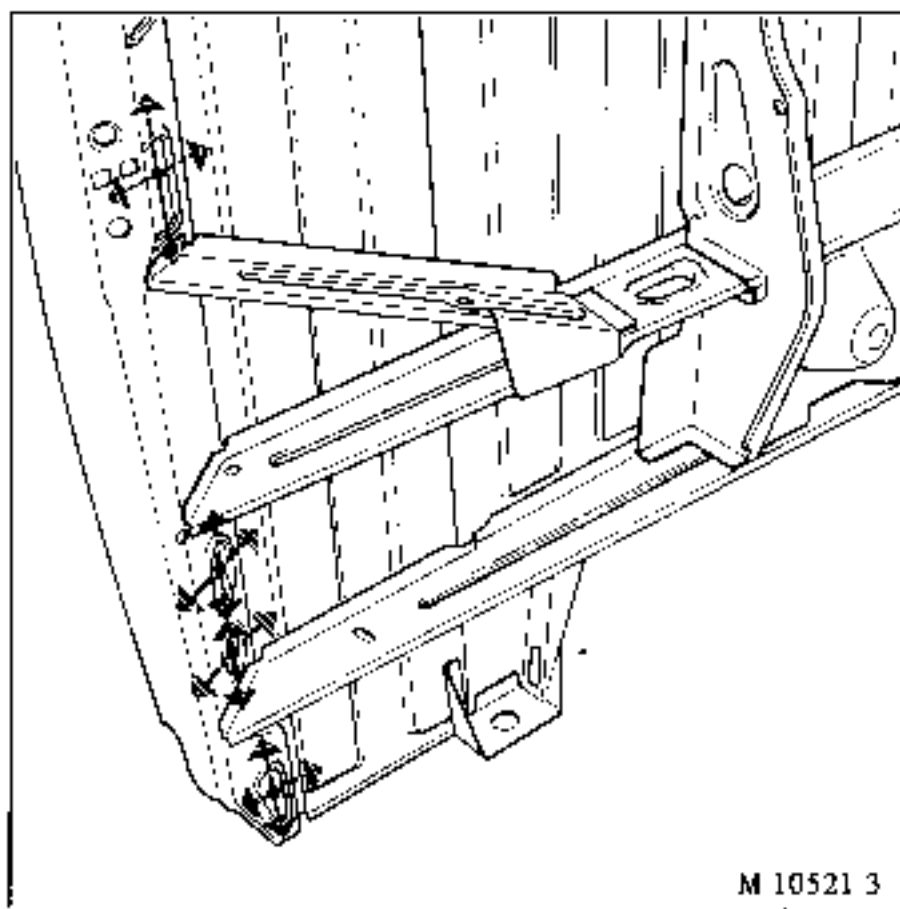
## WELDING

- Apply tack welds along the lines to be butt welded
- Apply the spot welds
- Apply the stitch welds under a protective gas envelope
- Apply the plug welds under a protective gas envelope. To do this, drill through the upper of the two panels to the diameter D stated under the symbol
- Along those lines that have been butt welded, grind back the welding fillet and finish the weld with soft solder if it is visible
- The soft solder can be applied with a hot air torch.

- After painting, carry out the hollow section protection treatment.

Fit a foam pad at A.

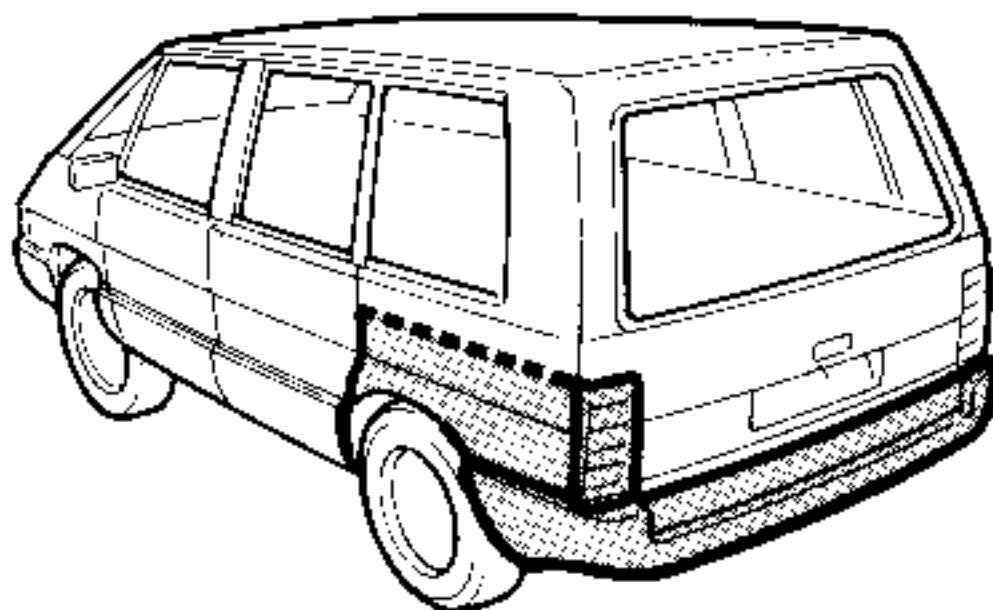
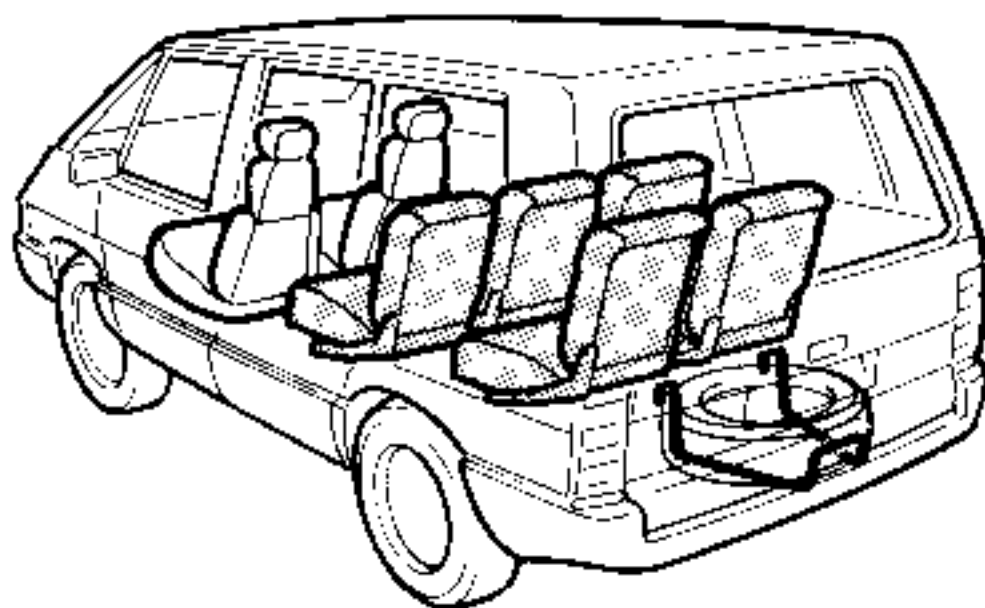
Inject polyurethane foam at B.



REPLACEMENT

STRIPPING

M 10748-1



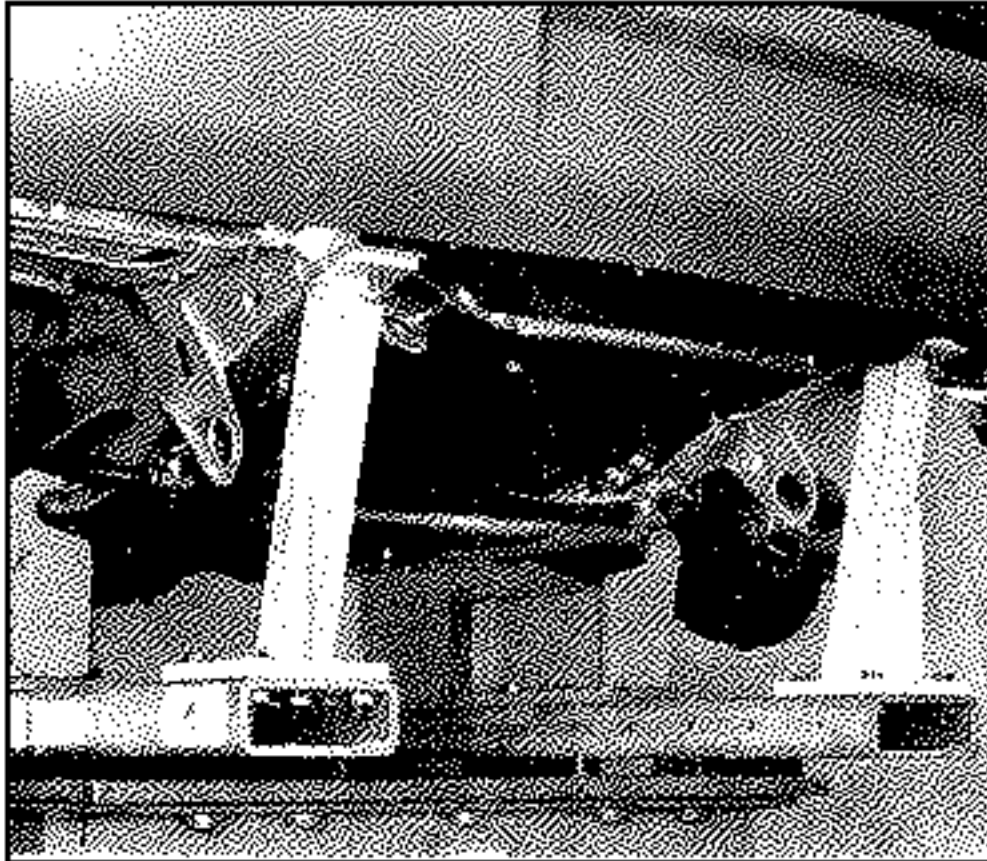
M 10748-1

See the description of the operations of partially replacing the rear crossmember, the wheel arch, the tailgate pillar and the body sill closing panel and, in addition, remove:

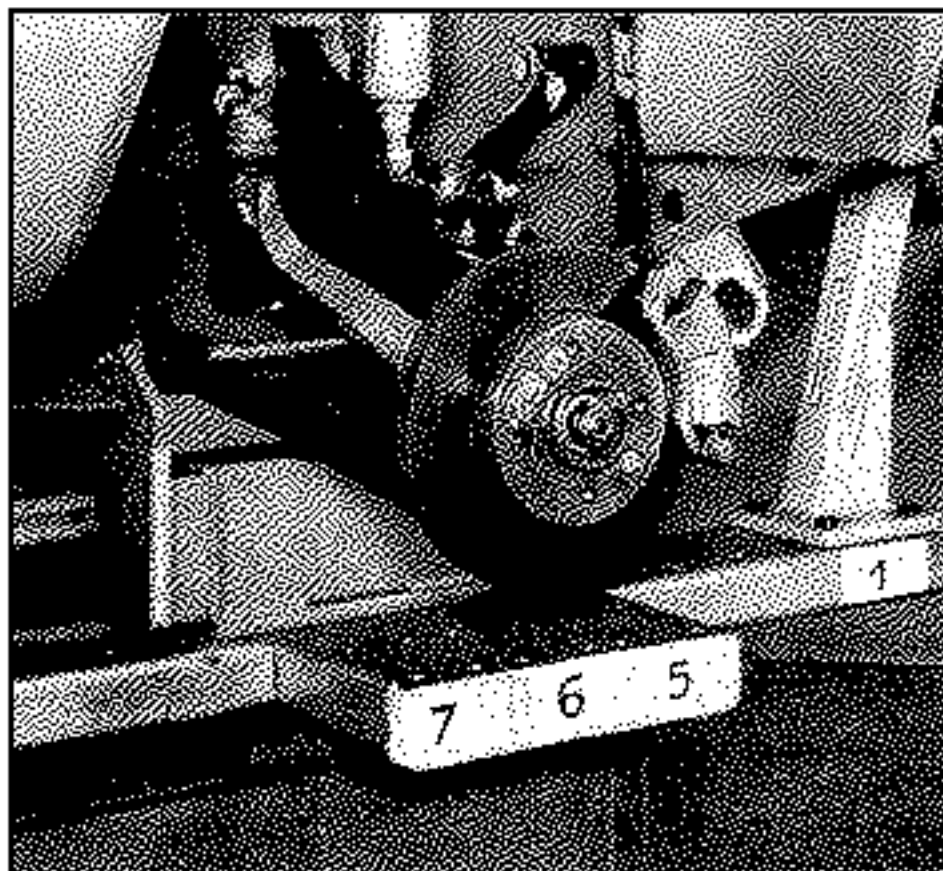
- The entire rear axle assembly.
- The fuel tank.
- The electrical wiring harnesses and the fuel and brake pipes from the damaged section.
- The exhaust piping (from the expansion chamber to the tail pipe).
- The rear wing : cutting it to suit the extent of the damage (see the plastic component repair schedule).
- Protect the items of trim remaining on the vehicle.

FRONT SECTION

- THIS OPERATION IS CARRIED OUT ON THE JIG BENCH
- MOUNTING THE VEHICLE ON THE JIG BENCH FOR THE REPAIR OF REAR END DAMAGE DOES NOT INVOLVE REMOVING THE FRONT MECHANICAL UNITS.

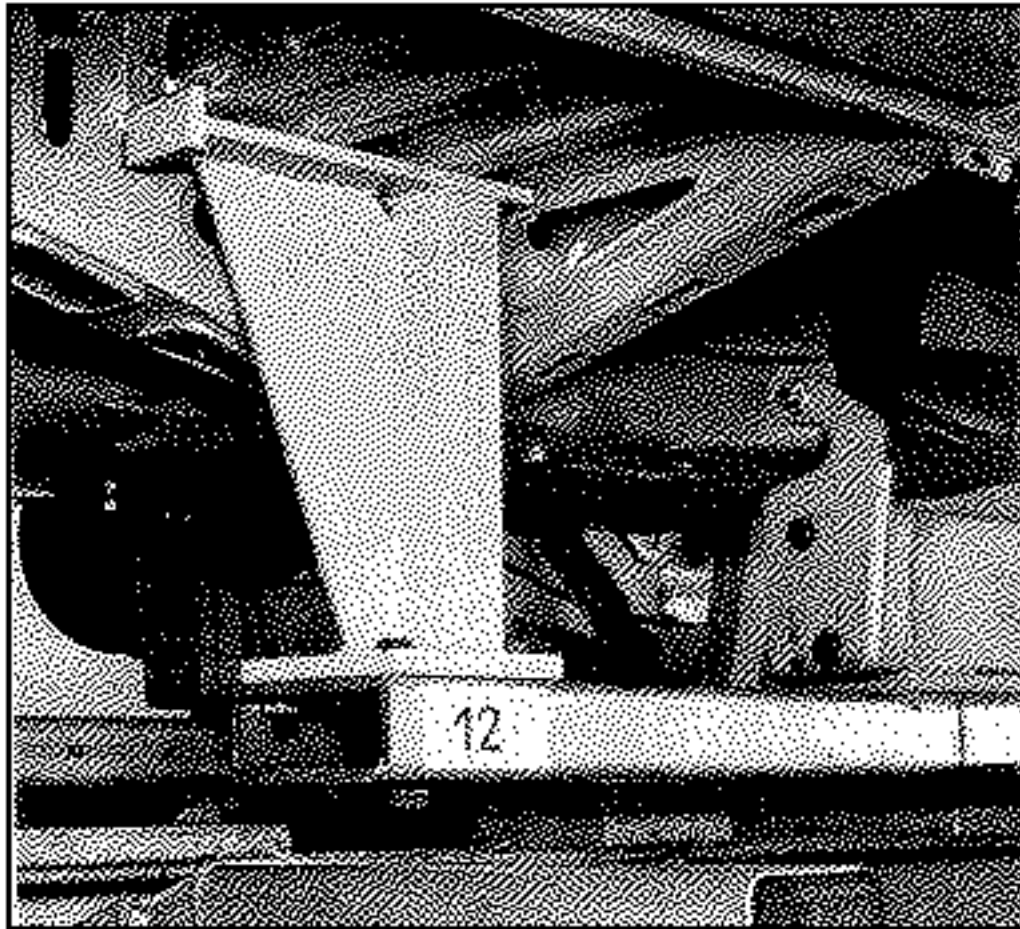


M10528

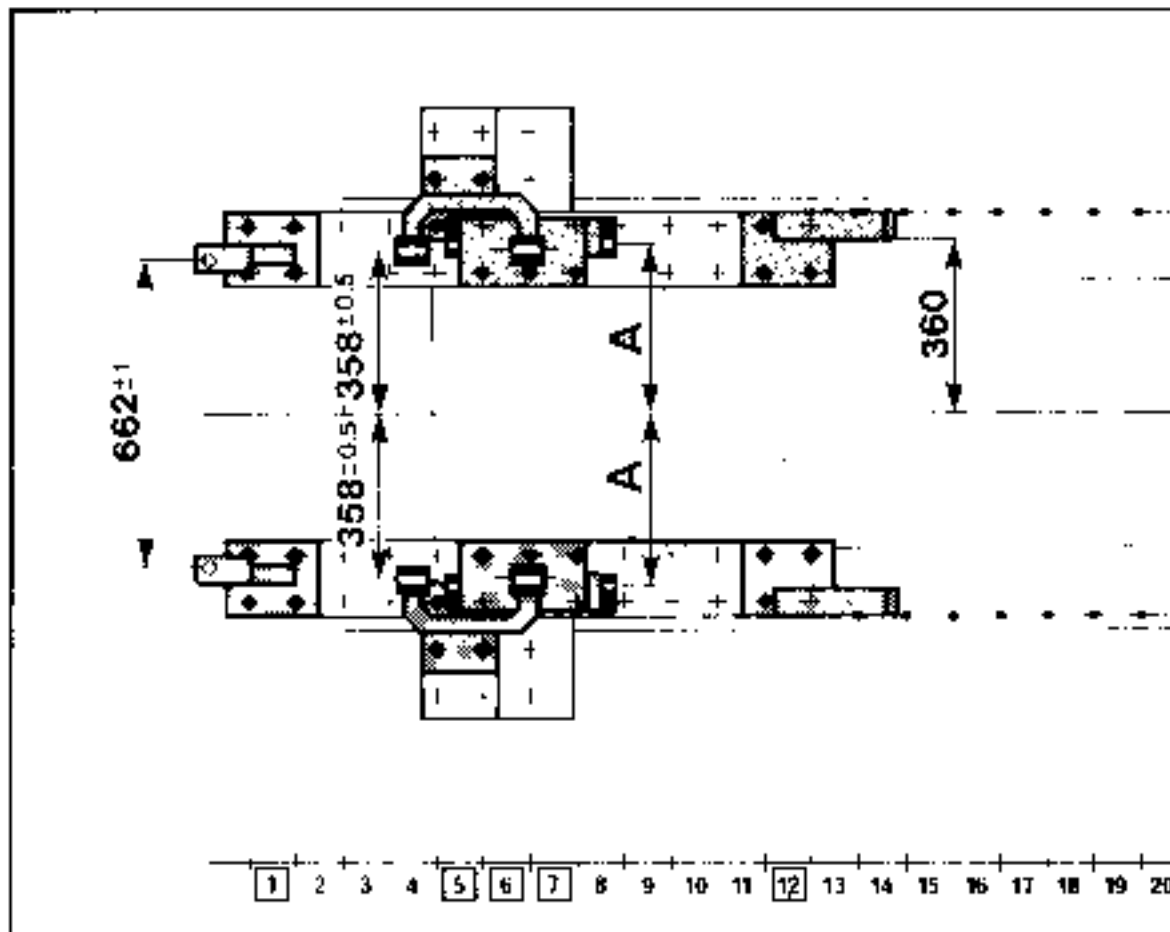


M10529

FRONT SECTION



M 10532



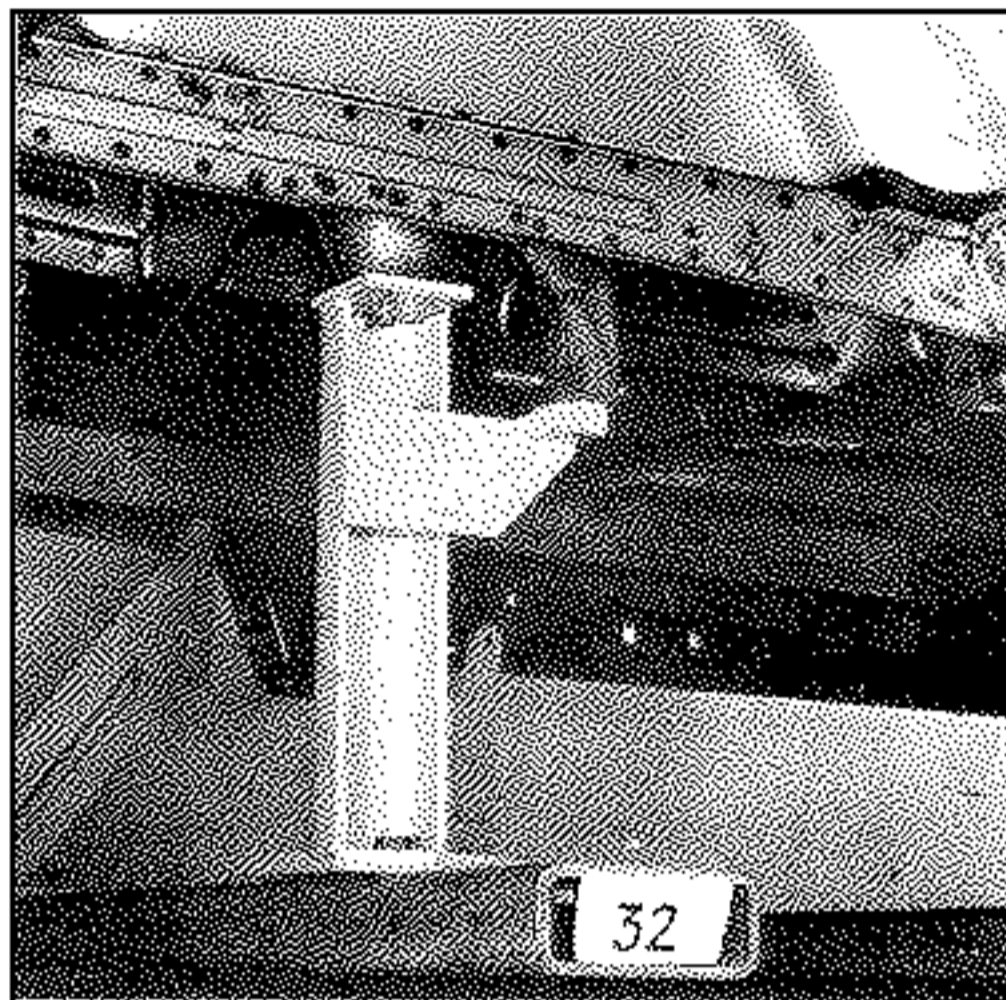
M10525

A :  $362 \pm 0.5$  phase I  
 $368.5 \pm 0.5$  phase II

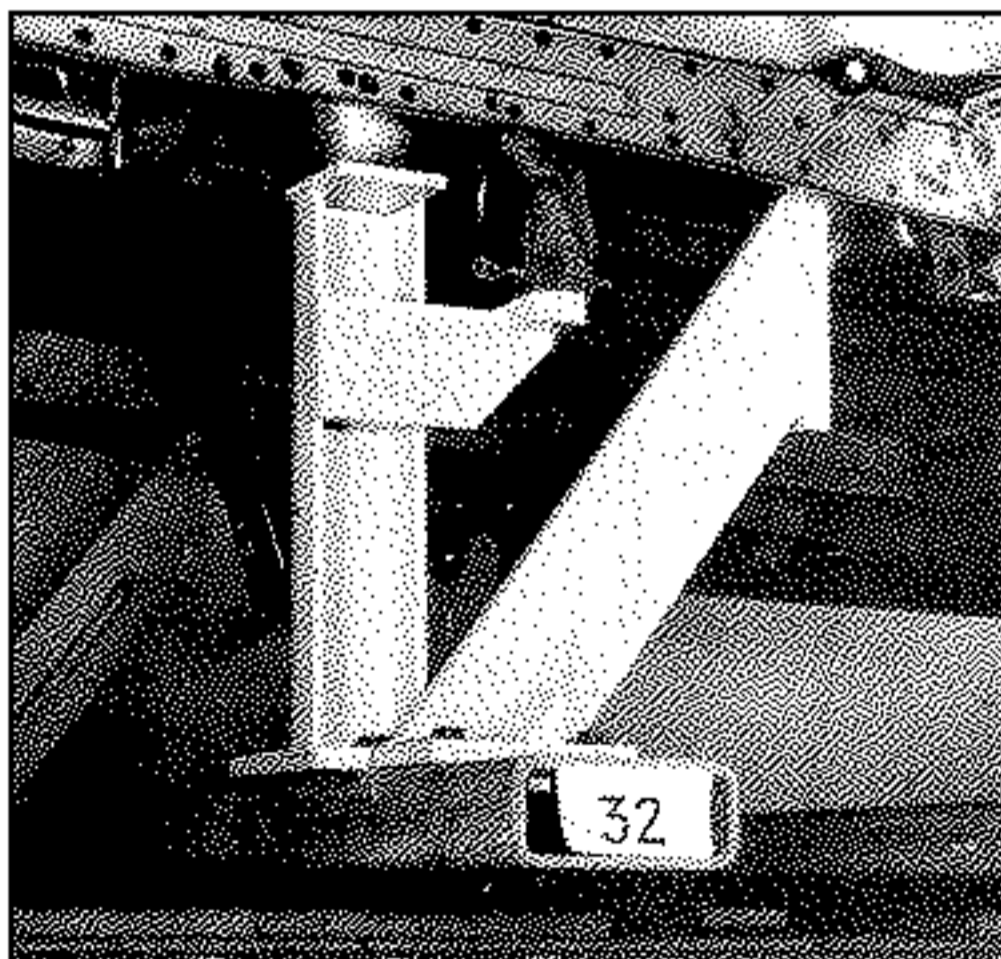
REAR SECTION



M10533-2

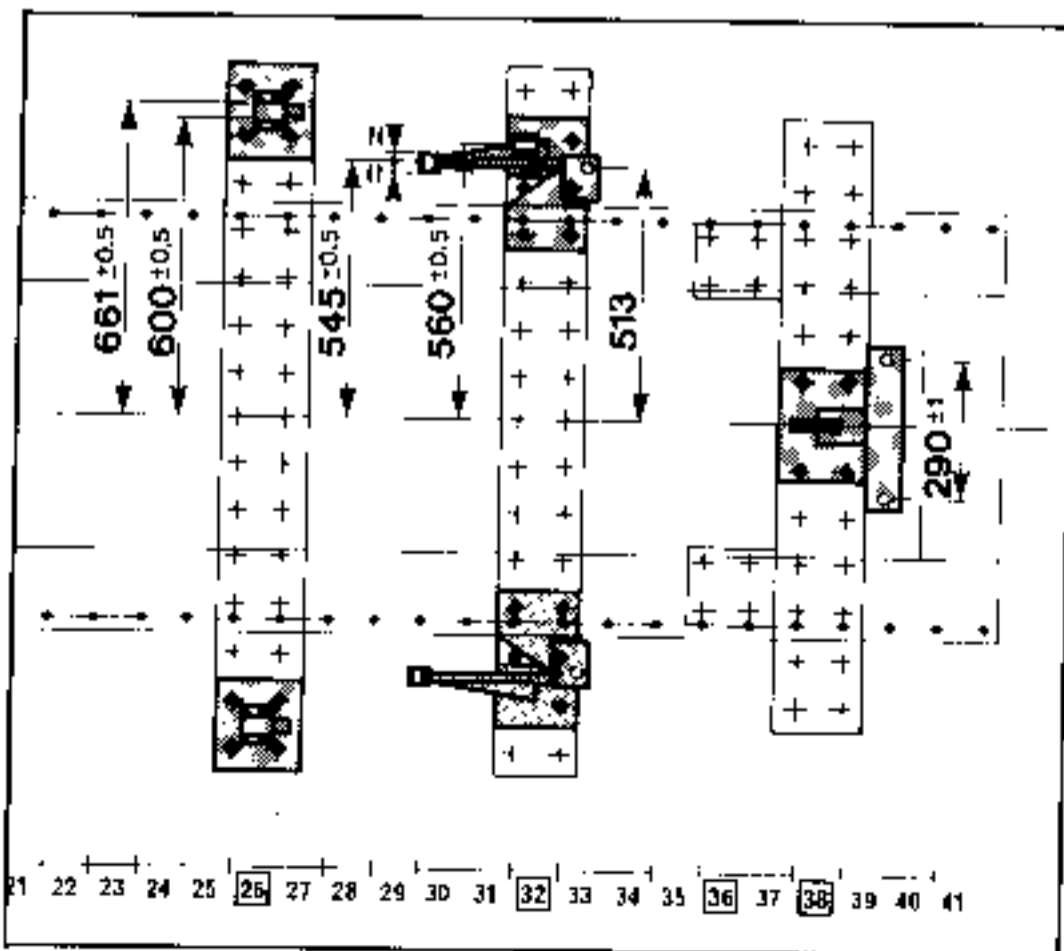
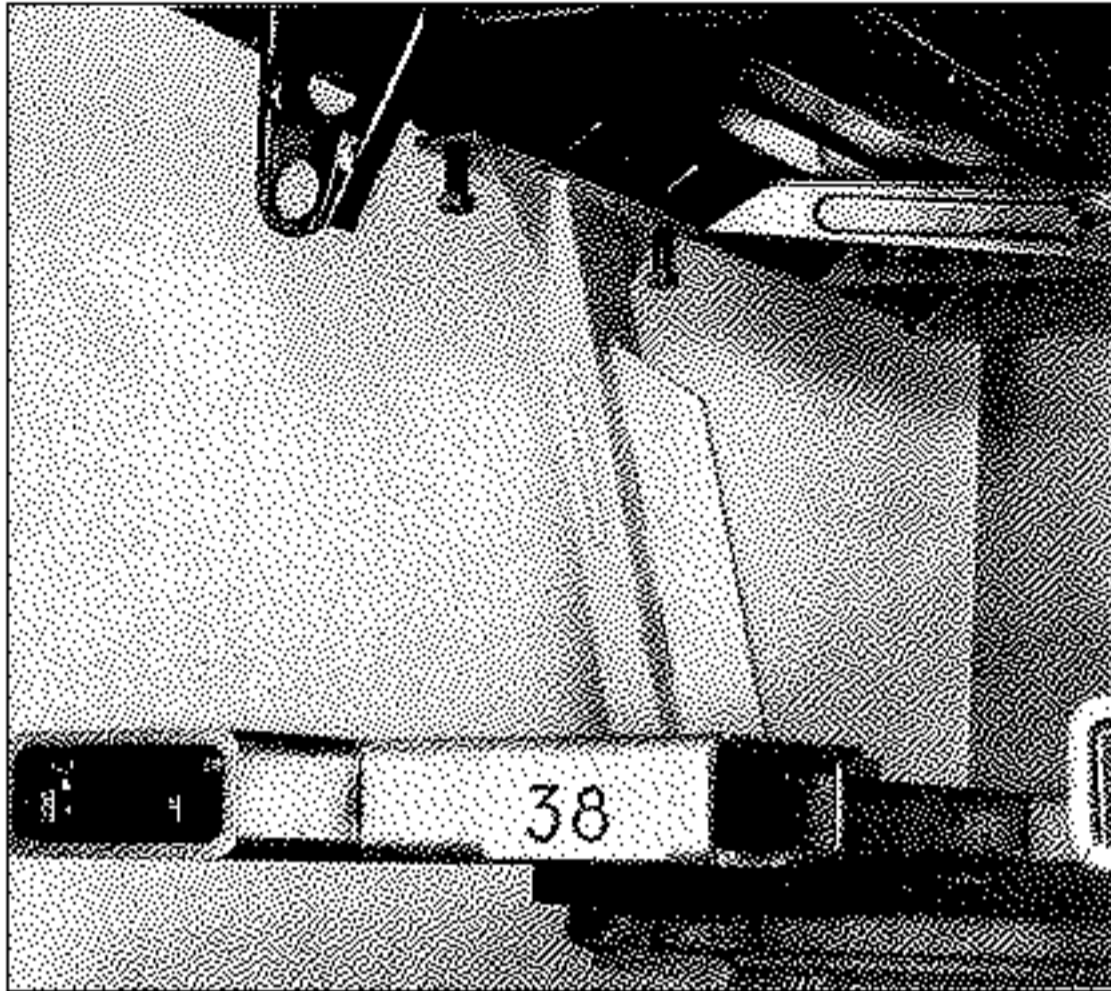


M10534



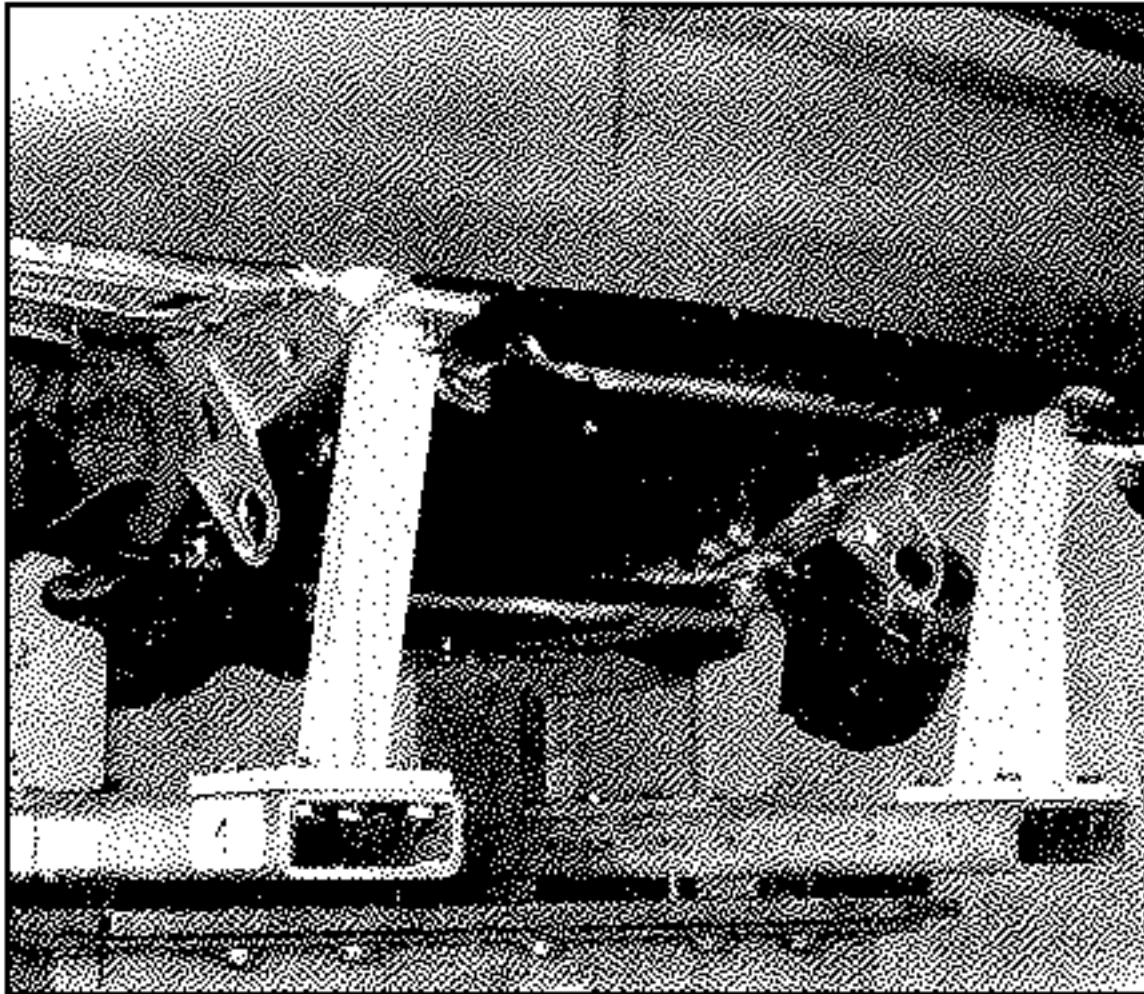
M10535

REAR SECTION

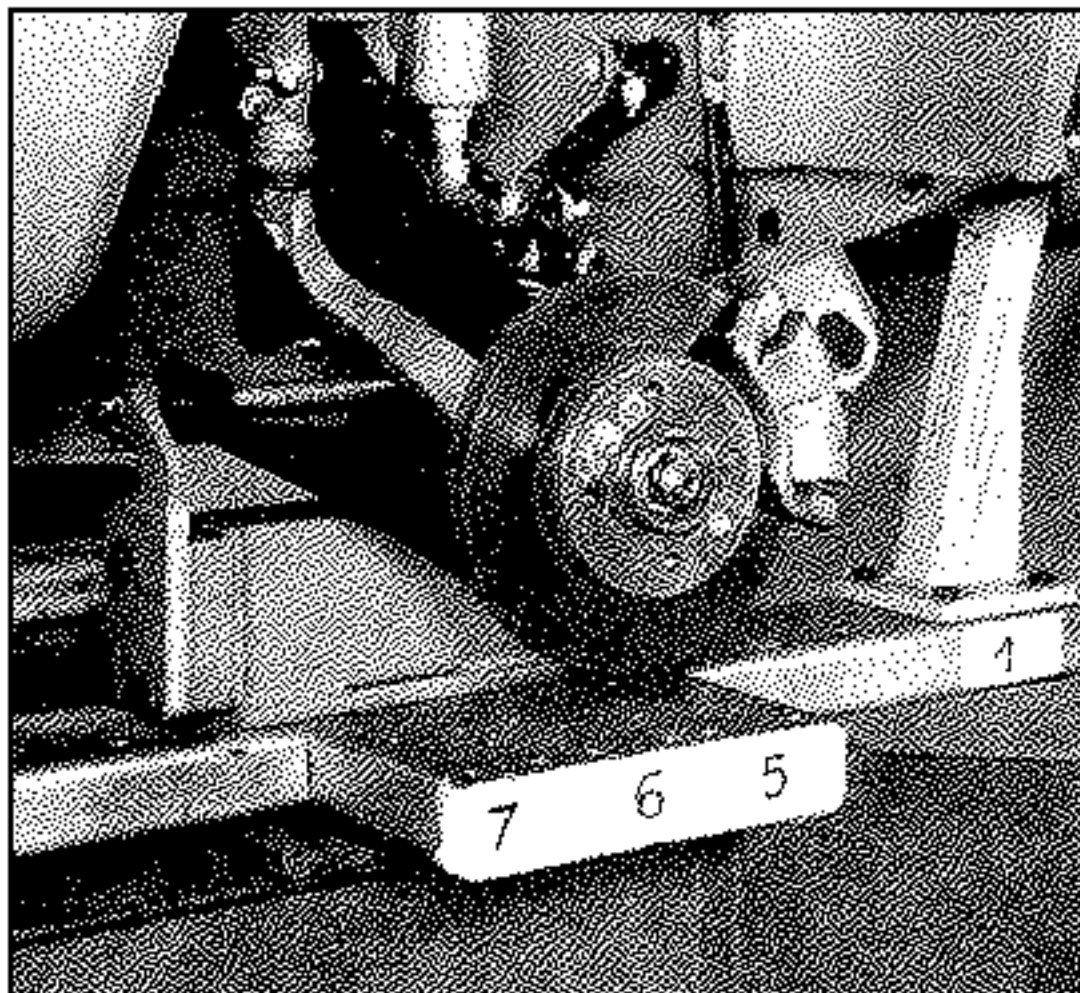


FRONT SECTION

- THIS OPERATION IS CARRIED OUT ON THE JIG BENCH
- MOUNTING THE VEHICLE ON THE JIG BENCH FOR THE REPAIR OF REAR END DAMAGE DOES NOT INVOLVE REMOVING THE FRONT MECHANICAL UNITS.

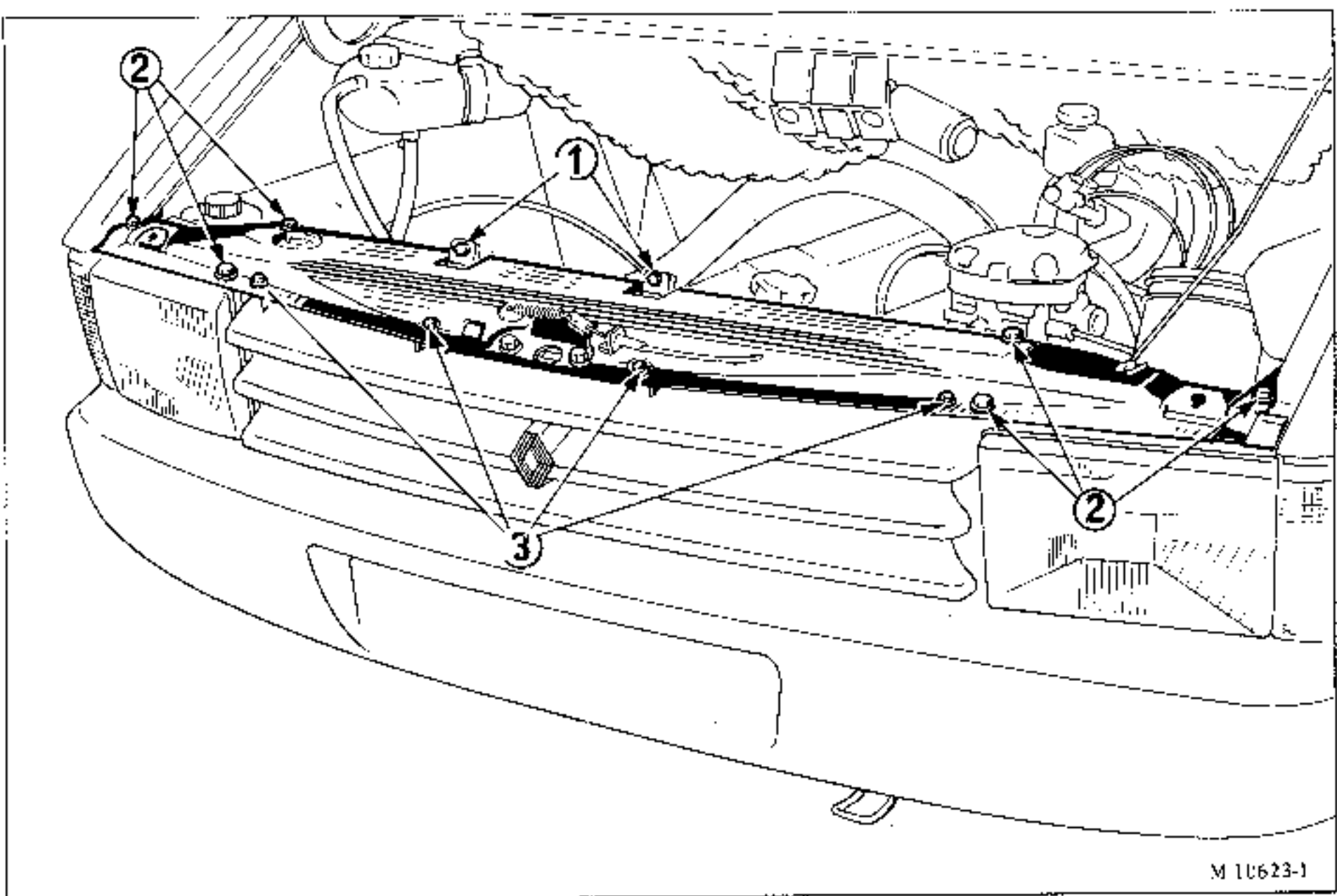


M10528



M10529

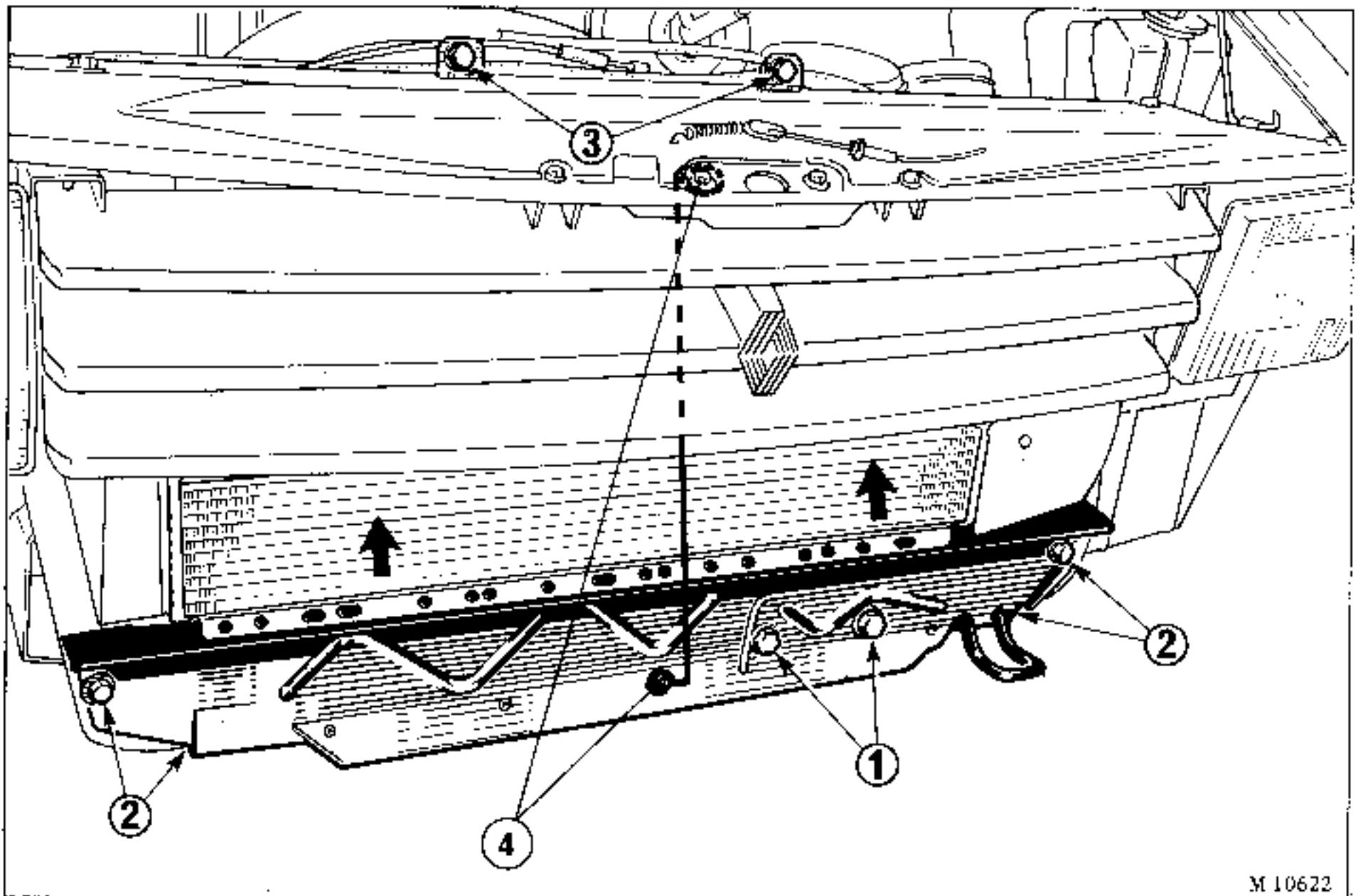
REPLACING



- Remove the 2 radiator upper securing screws (1) (certain models)
- Remove the 6 screws (2) that secure the crossmember to the headlight support panel
- Remove the 4 screws (3) that secure the radiator grill in place (certain models)
- Unclip the electrical wiring harness.
- Disconnect the bonnet latch release.
- Prop the bonnet open.
- Remove the bonnet support strut and its clip.
- Remove the bonnet latch (2 screws).



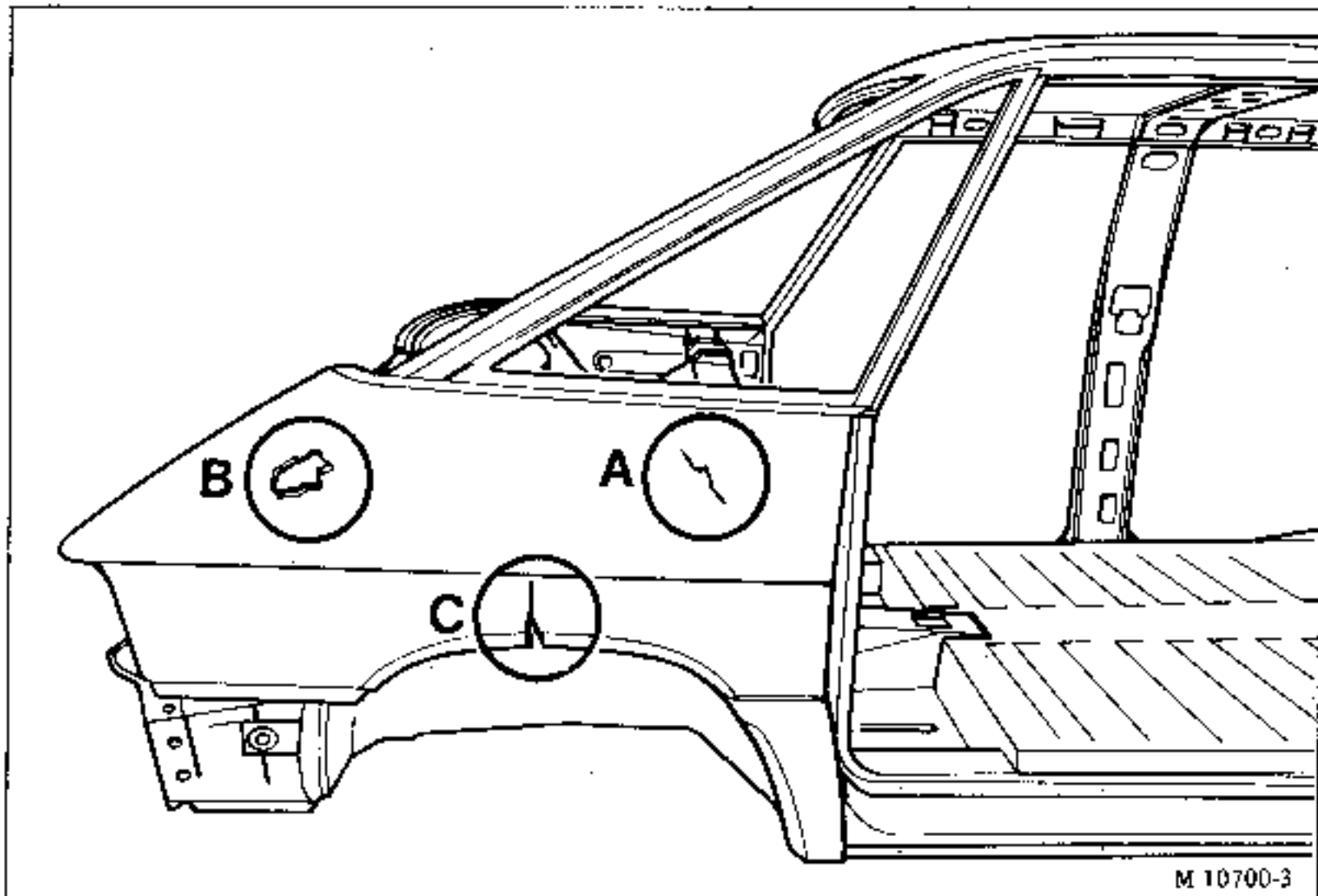
REPLACING



- Remove the front bumper shield.
- Remove the 2 screws (1) that secure the engine torque tie\*
- Remove the 4 screws (2) that secure the crossmember to the sidemembers.
- Remove the 2 screws (3) that secure the upper part of the radiator to the upper crossmember\*
- Remove the 2 bolts (4) that secure the tie to the upper crossmember.
- Remove the crossmember from the radiator securing studs.
- Push the radiator upwards to free the crossmember.
- Remove the crossmember.

\* On certain models.

## REPAIRING



A - CRACKS : Carry out plastic components repair sequence no. 1 (see general section on the repair of polyester components).

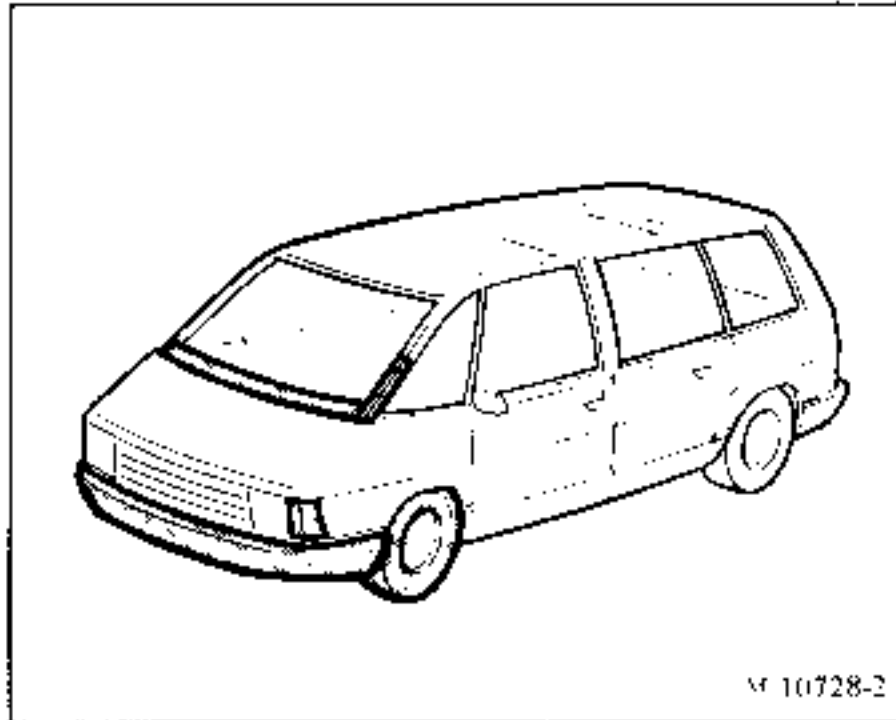
B - HOLES : Carry out plastic component repair sequence no. 2 (see general section on the repair of polyester components).

C - BREAKAGE : Carry out plastic component repair sequence no. 3 (see general section on the repair of polyester components).

Apply paint application sequence no. 3 (see the paint section) for local repairs or paint application sequence no. 1 for more extensive repairs.

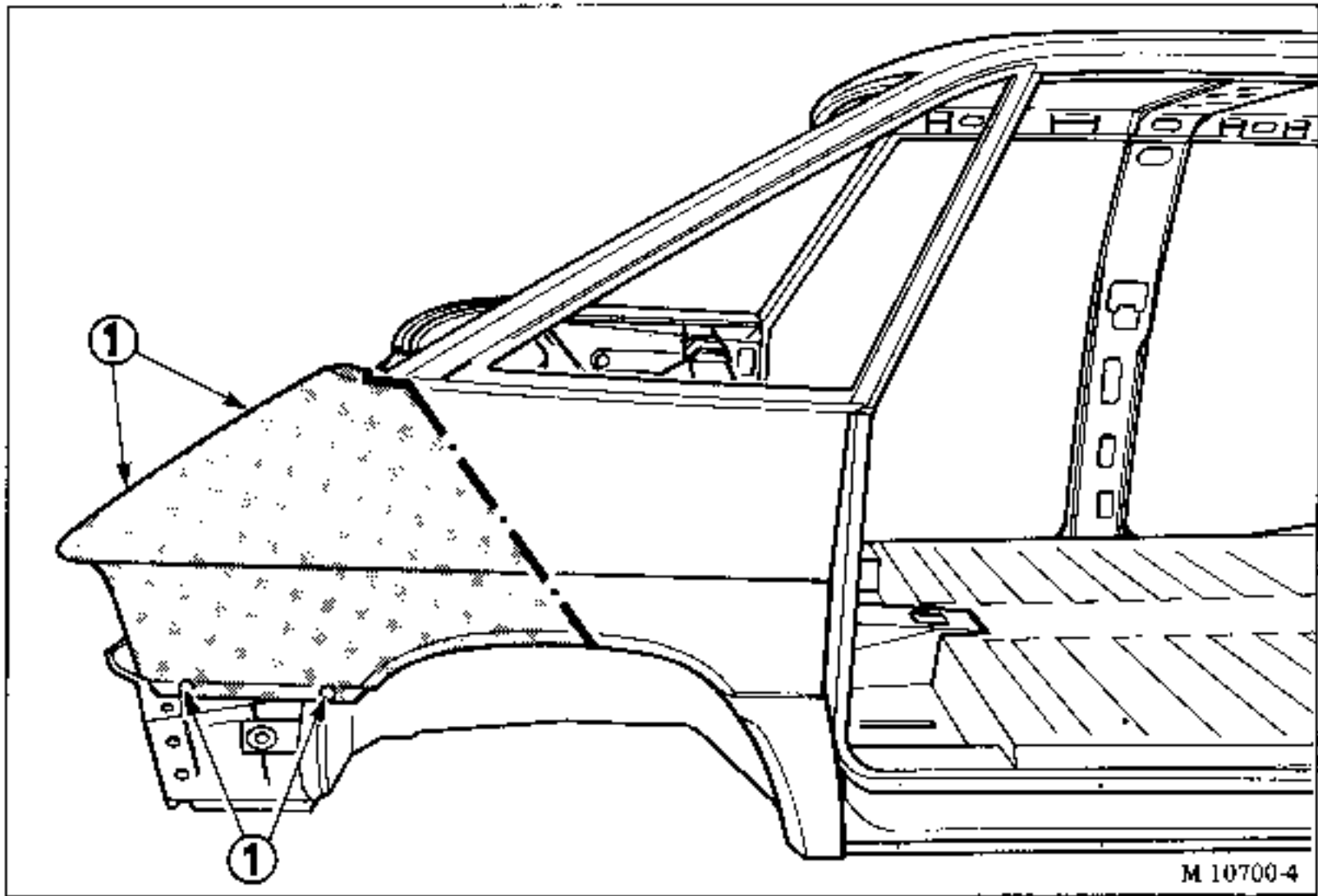
PARTIAL REPLACEMENT :

A - LOWER SECTION (without removing the window)



This operation involves removing :

- the front bumper shield
- the front side light
- the cowl side panel, the corner piece and the crossmember trim
- the wheel.



NOTE :

The line along which the upper cut is made will depend on the extent of the repair (unpicking the panels, welding, etc.).

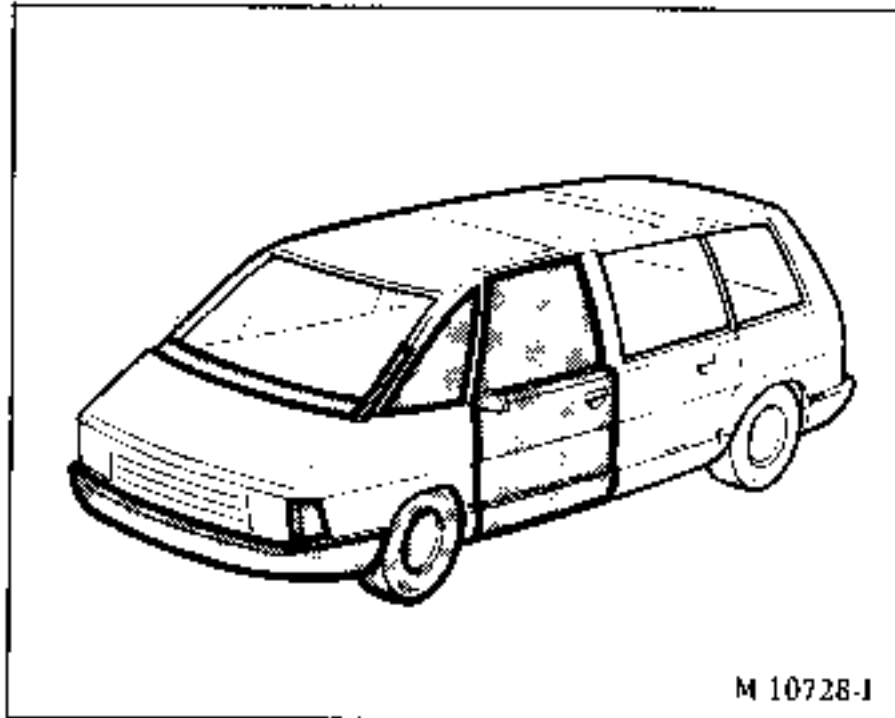
Apply plastic component repair sequence no. 4.

Special feature : The front part of the wing is secured by 4 rivets (1) (2 in the bonnet channel and 2 on the cowl side).

PAINTING :

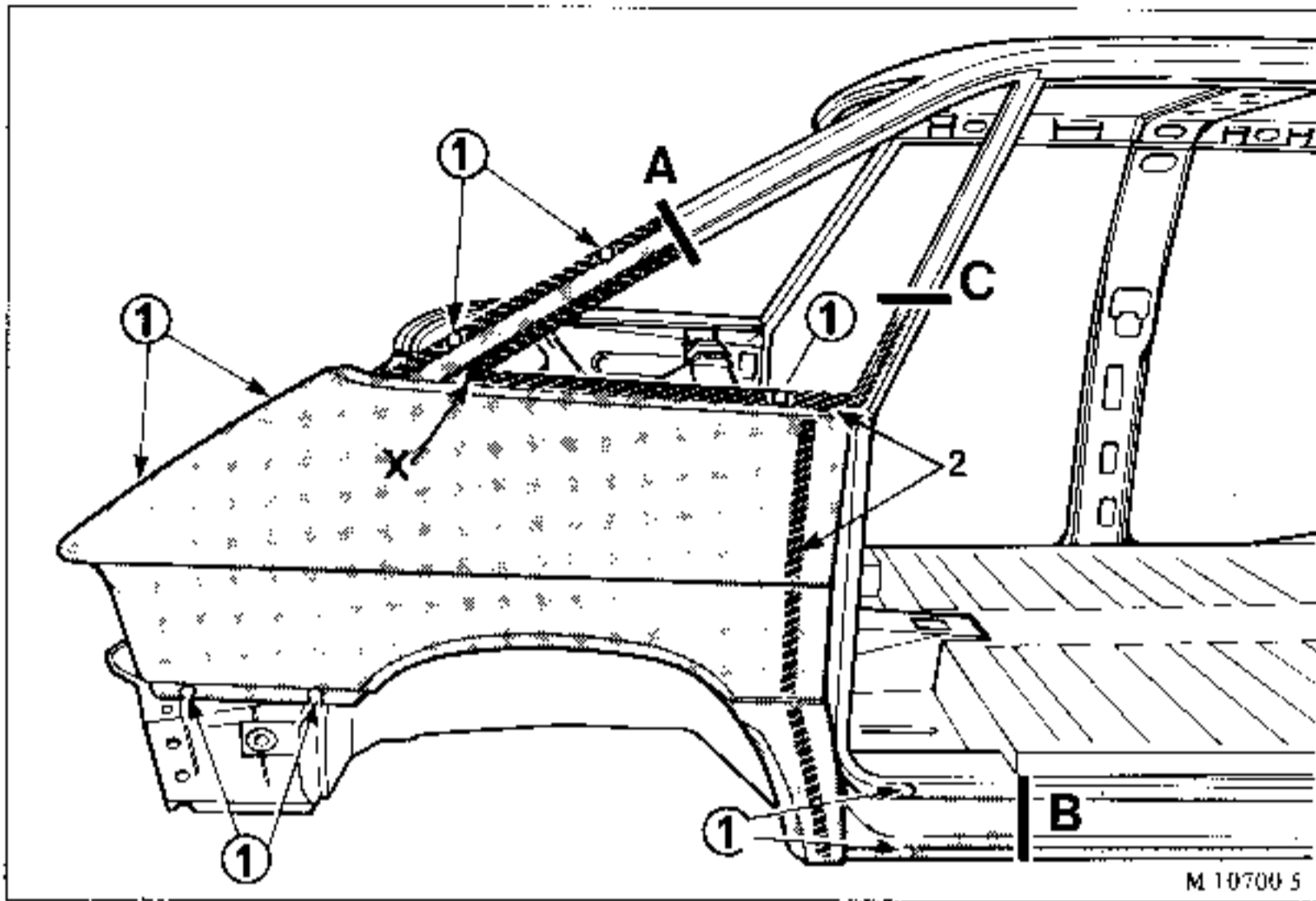
Carry out the paint application sequence no. 1.

B - IN LINE WITH THE WINDOW PILLARS



This operation involves removing :

- the dummy deflector window
- the front bumper shield
- the front side light
- the door
- the cowl side panel, corner piece and crossmember trim
- the body sill moulding
- the front door sealing strip
- the front wheel.



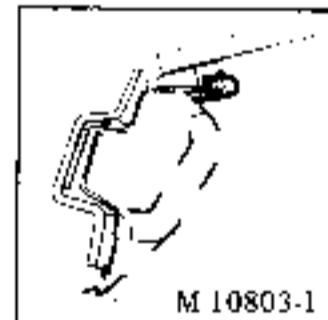
Carry out plastic repair sequence no. 4.

Special features

- The front wing is secured by 9 rivets (1). It is bonded to the chassis by a fillet of mastic (2) 7 mm in diameter. This mastic also acts as a seal

- Backing pieces :

Zone A : To be taken from the section of upright on the unused part of the new wing.



Zone B : To be taken, in 2 pieces, from the unused section of body sill on the new wing.



Zone C : No backing pieces - The repair is to be carried out with glassfibre mat.

- at X, drill a hole 10 mm in diameter after fitting. Through this hole, inject polyurethane foam between the wing and the chassis ( the hole is to be filled with adhesive-sealing mastic when the window is fitted).

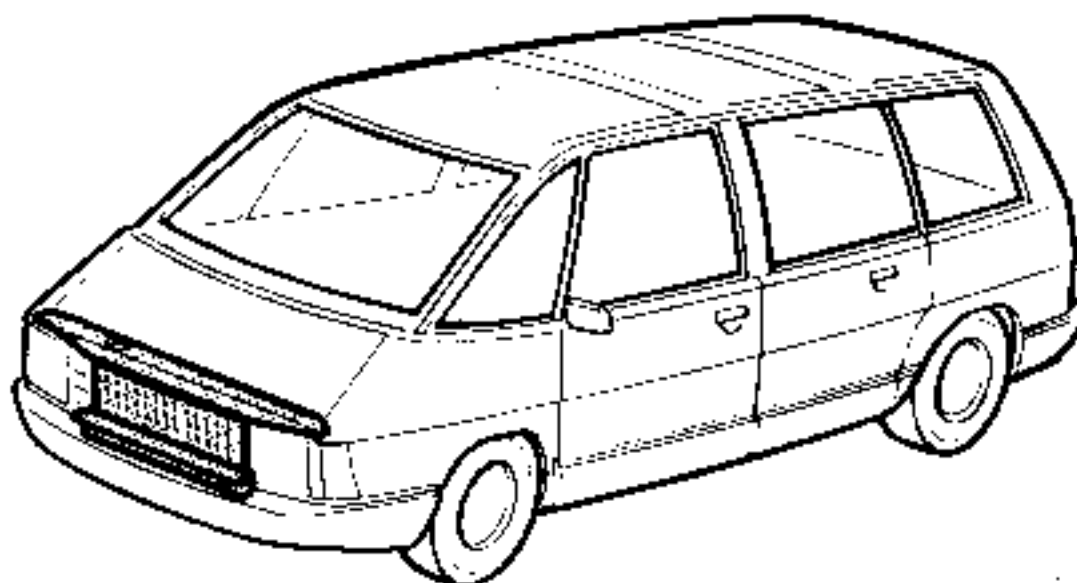
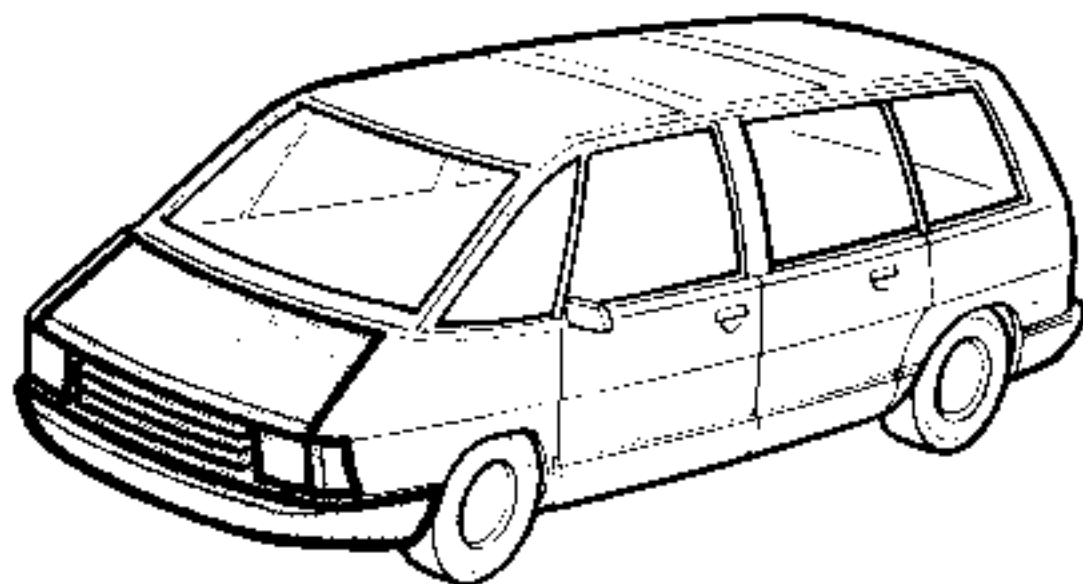
- Check the repair for leaks before refitting the window by spraying water under the wheel arch.

PAINTING

Carry out paint application sequence no. 1.

REPLACING

STRIPPING



M10729.3

Remove :

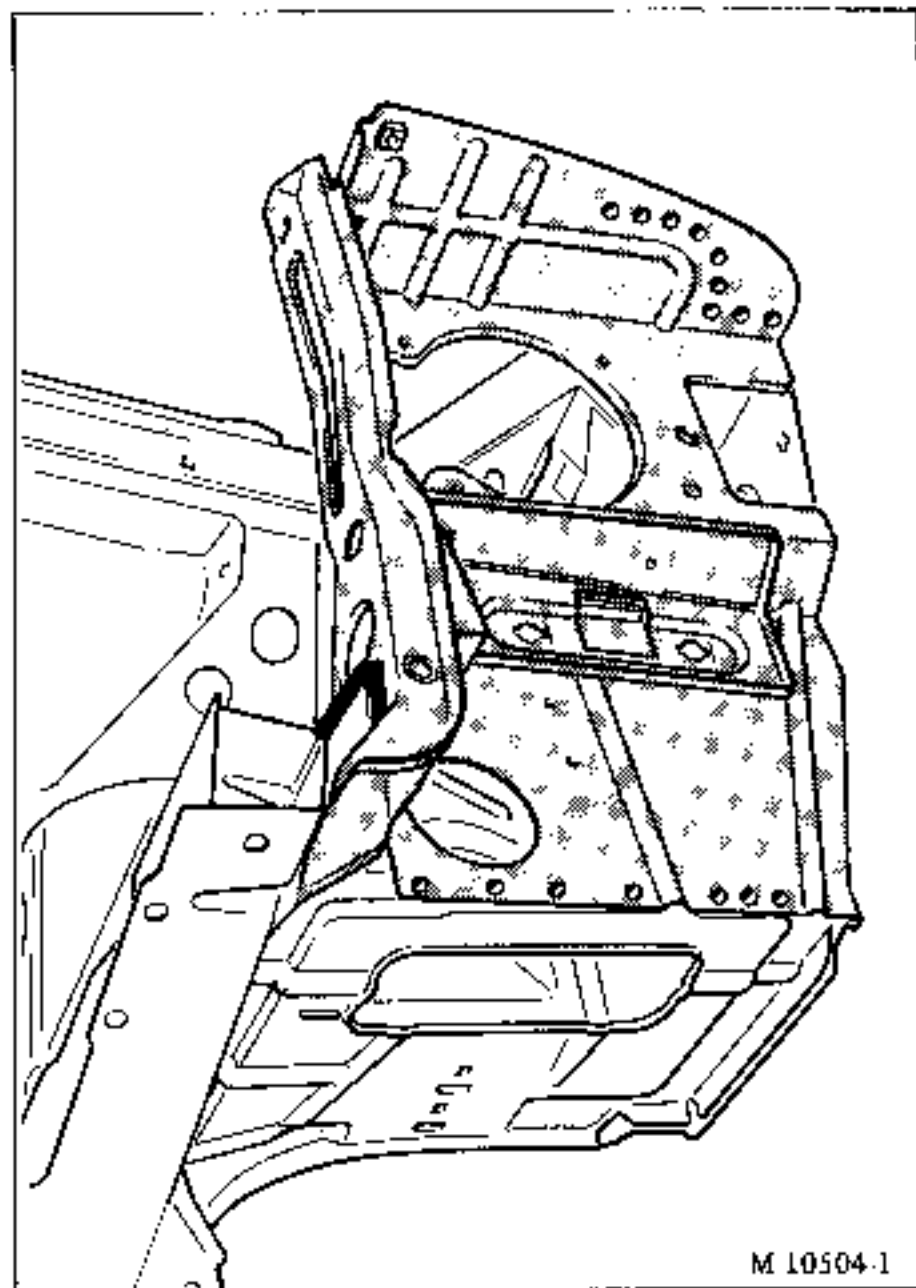
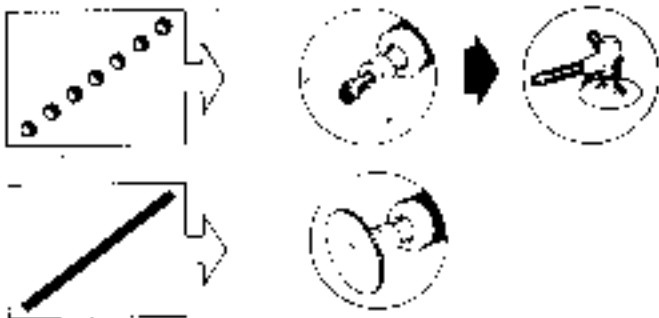
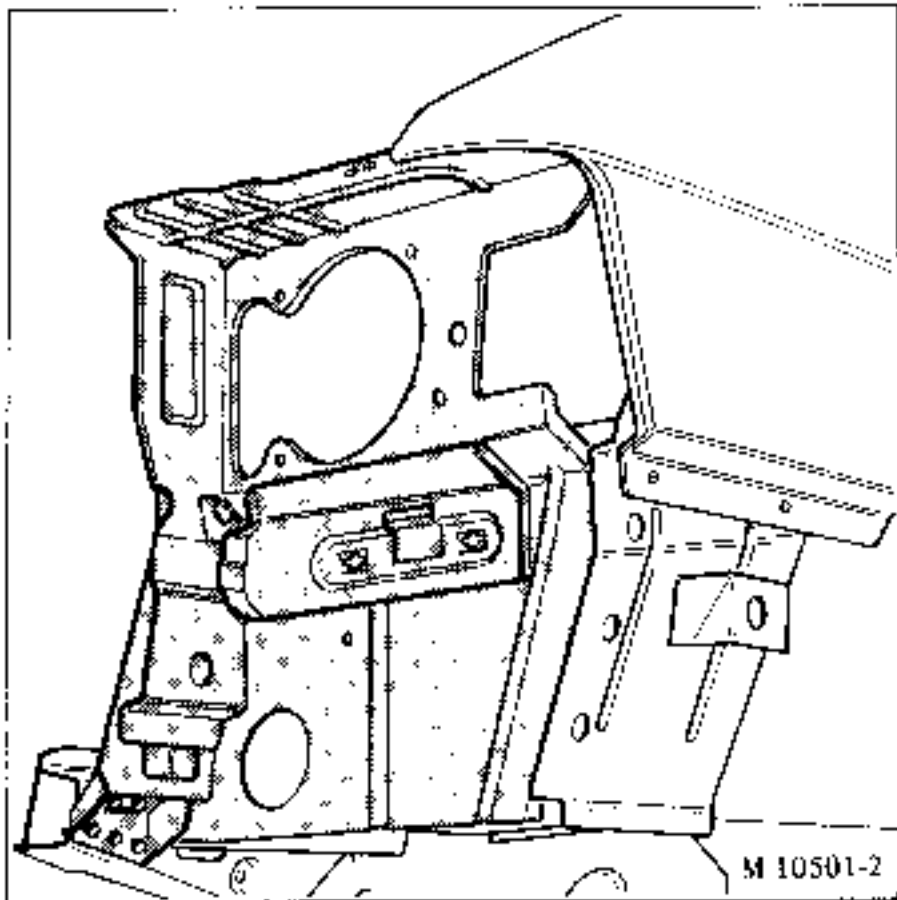
- the bonnet
- the upper crossmember
- the radiator grill
- the bumper shield
- the lower crossmember together with the radiator
- the headlight and the direction indicator
- the electronic unit or the battery
- all accessories mounted on damaged panels.

For details of these various operations consult the relevant section.

**THIS OPERATION DOES NOT INVOLVE REMOVING THE FRONT WING**

However, the 4 rivets that secure the wing at the top and the bottom must be removed so that it can be pulled out of the way to facilitate unpicking and welding operations.

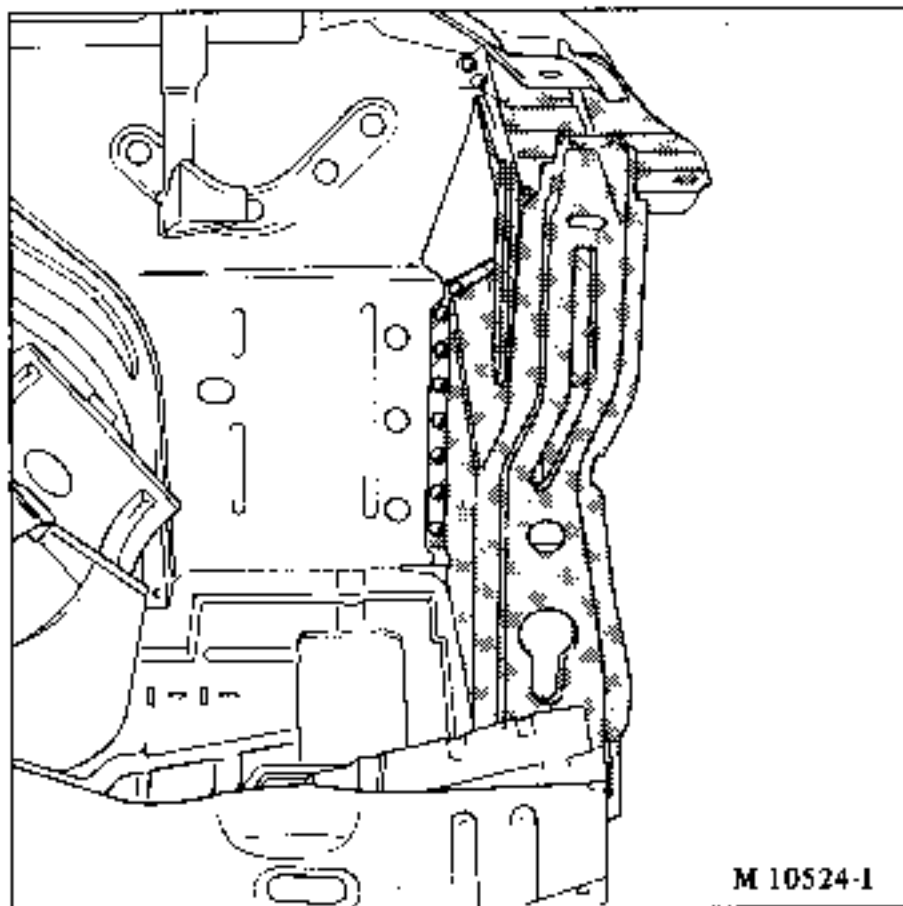
CUTTING OUT - UNPICKING



- Remove the damaged section by following the instructions given by the symbols (see description of symbols).
- Grind back the unpicked spot welds remaining on the panelling.

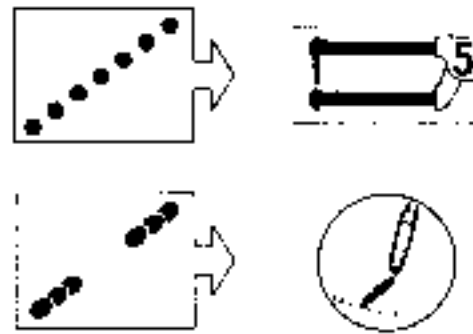
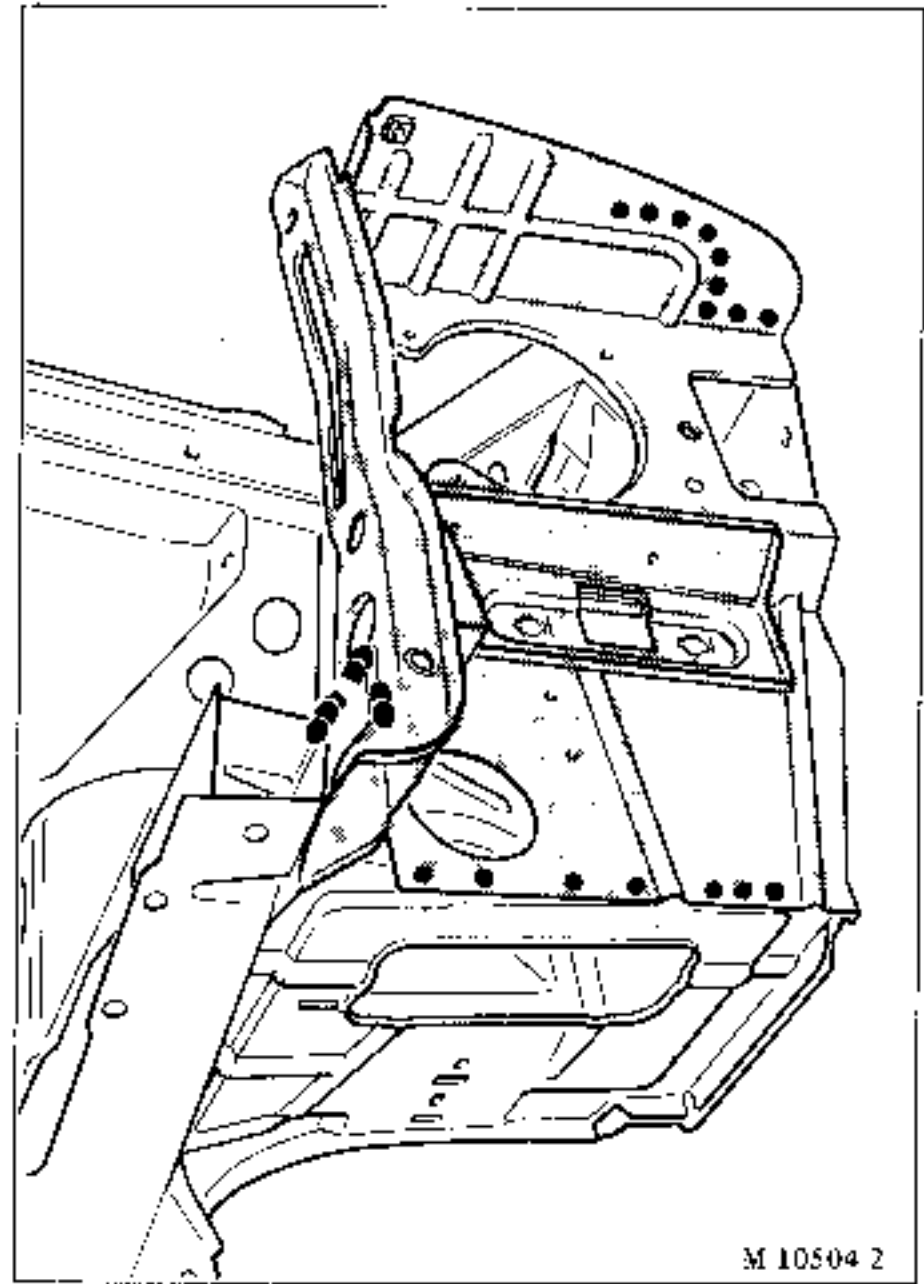
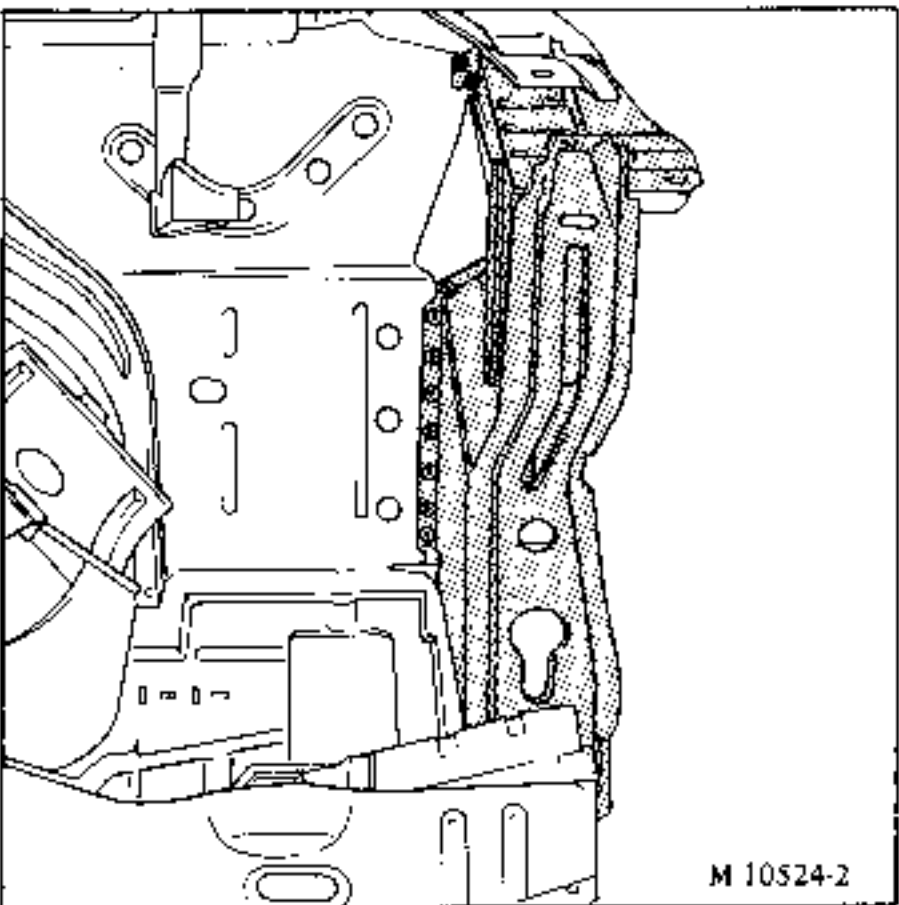
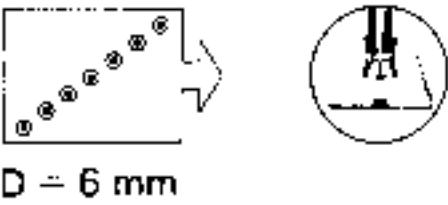
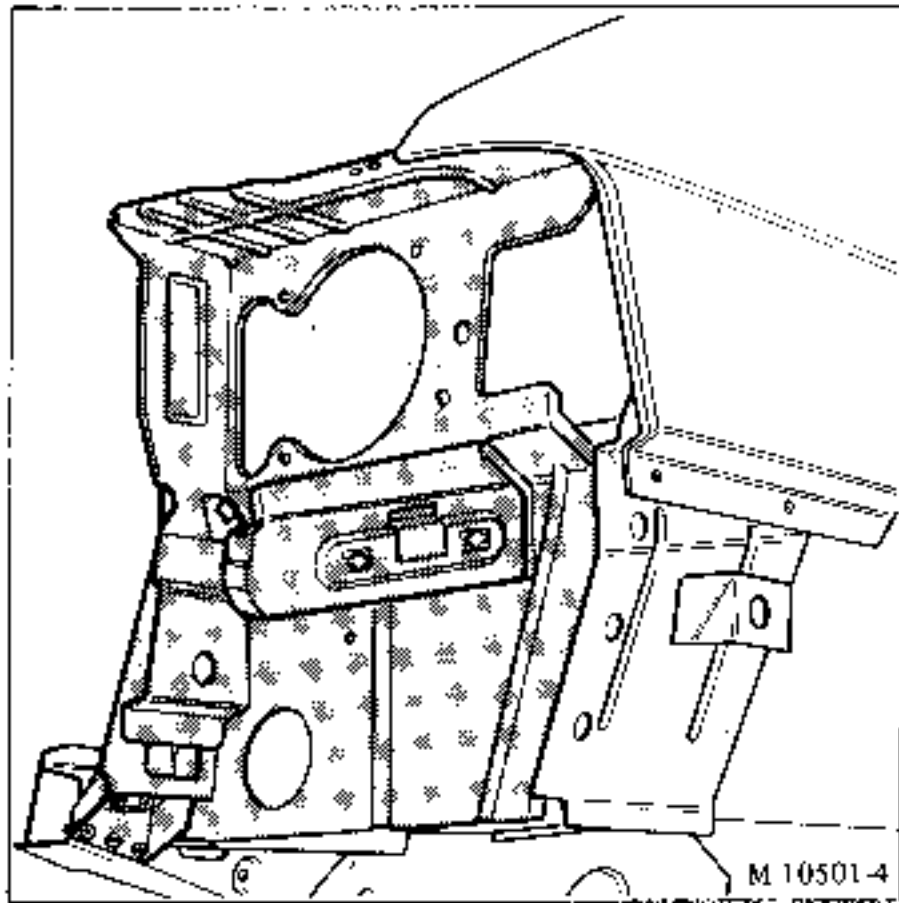
PREPARATION BEFORE WELDING

- Adjust the new part to size and clamp it in place.





WELDING

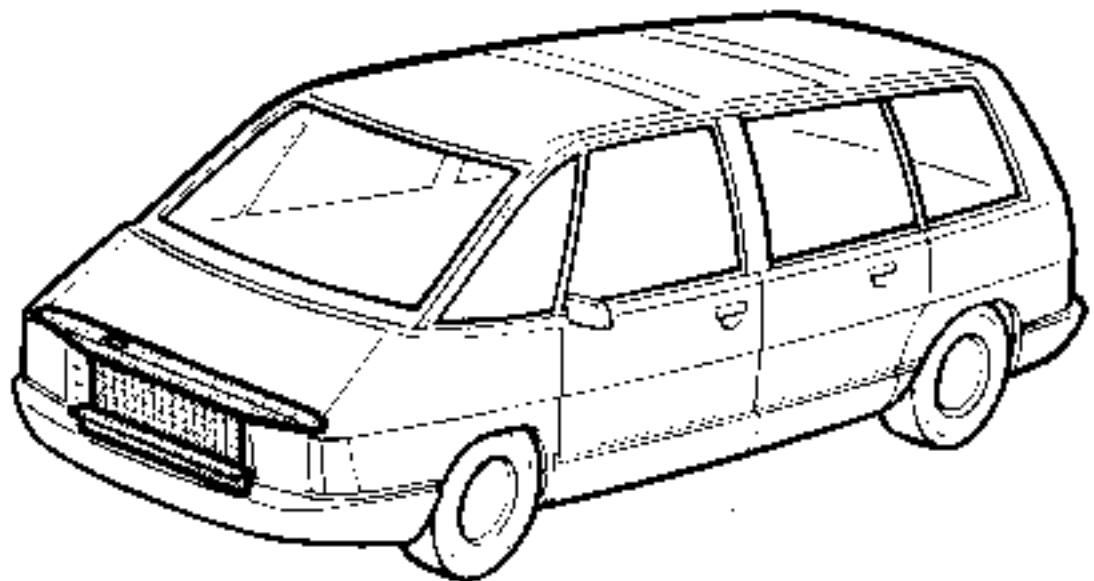
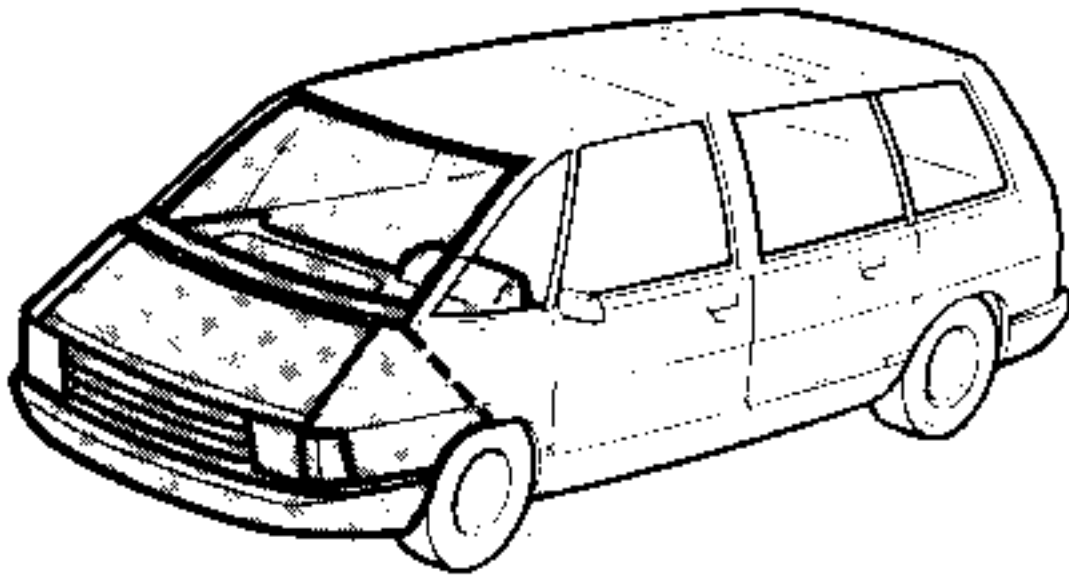


Apply the plug welds under a protective gas envelope. To do this, drill the upper of the two panel to the diameter D stated under the symbols.

Apply the spot welds.

- Apply the fillet welds under a protective gas envelope.

STRIPPING



M 10729-2

Remove :

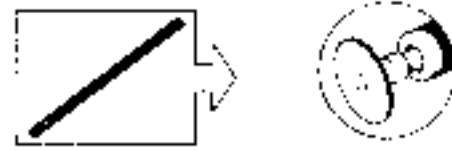
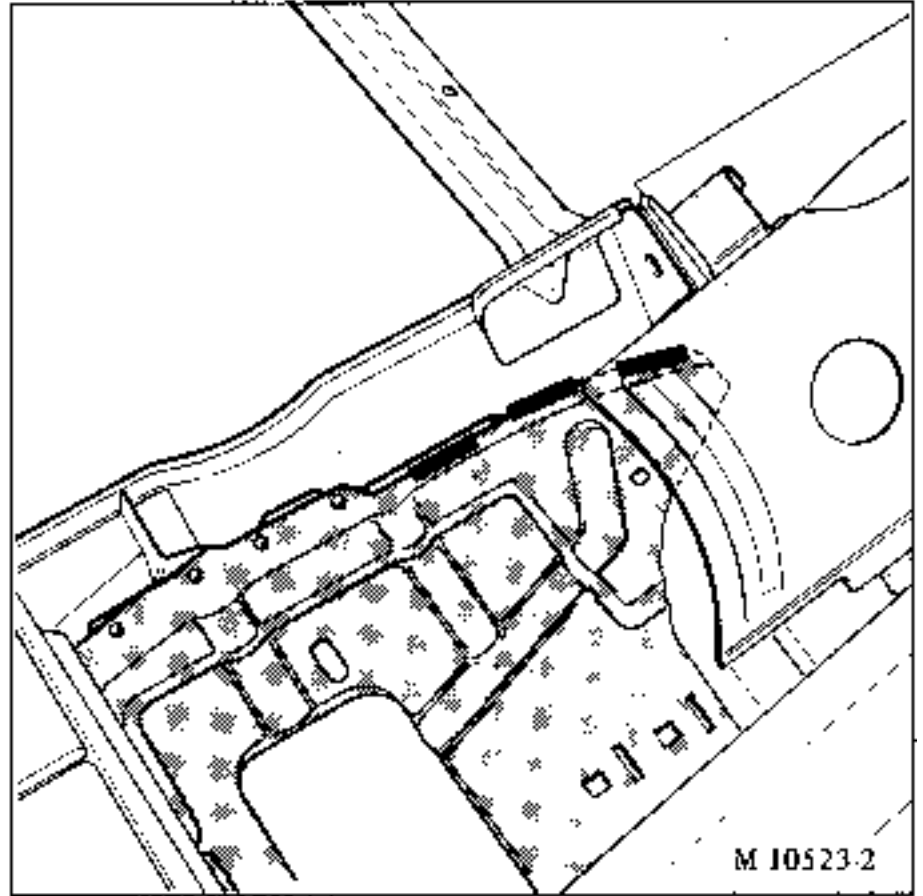
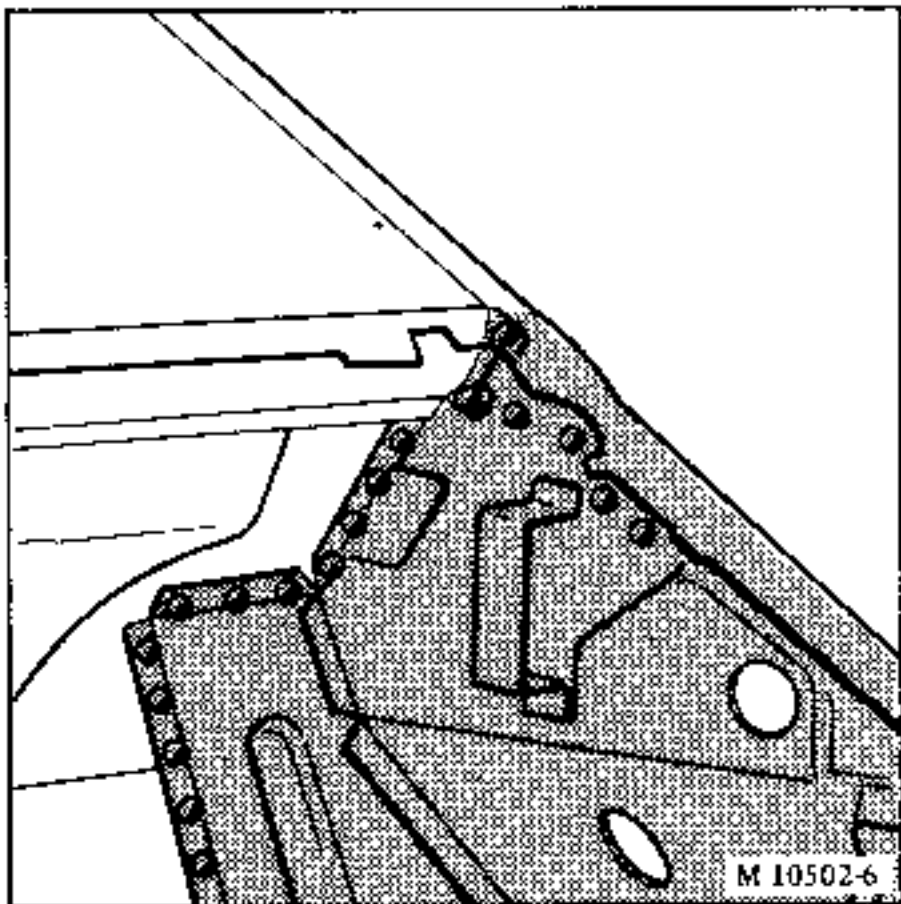
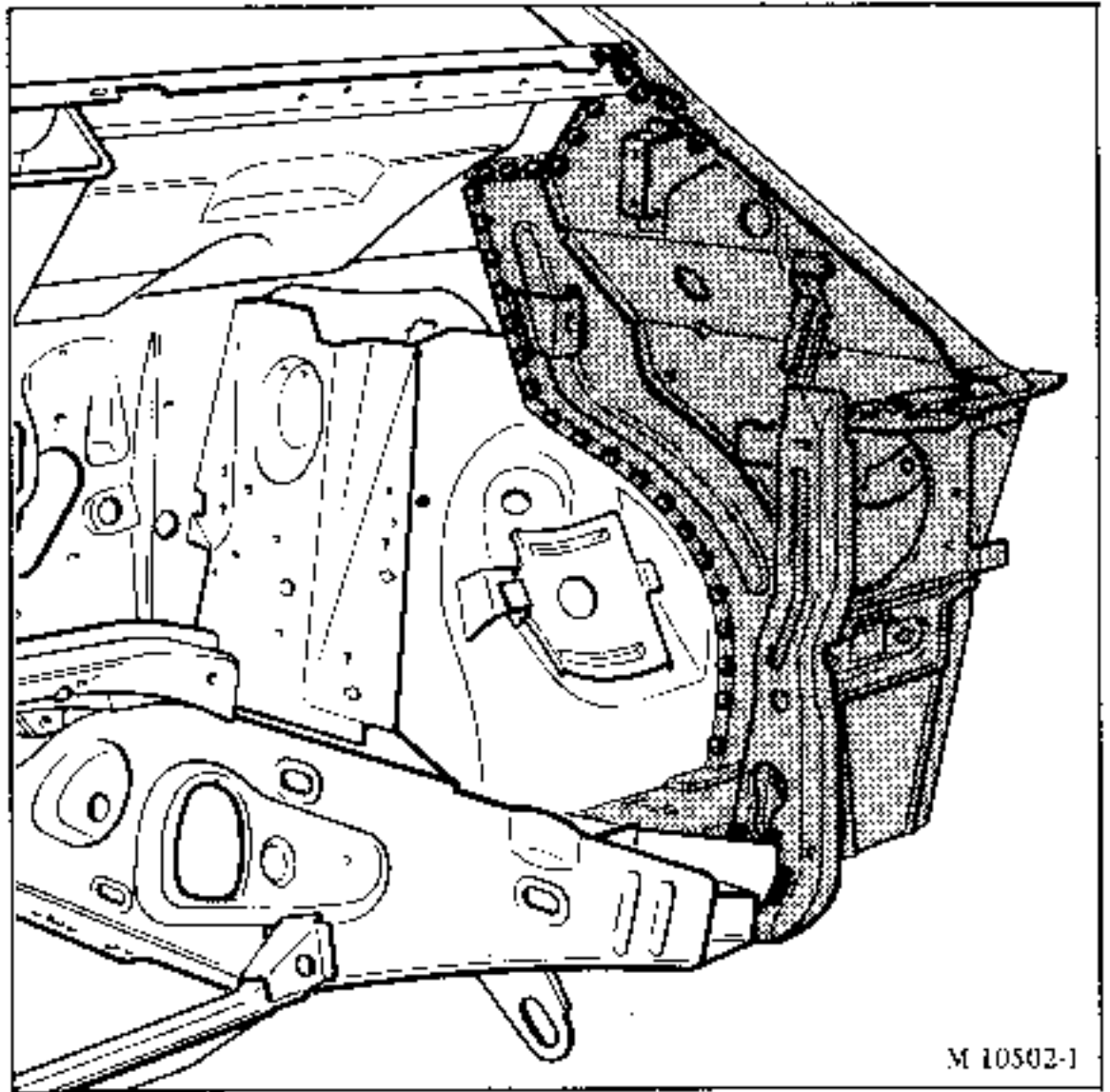
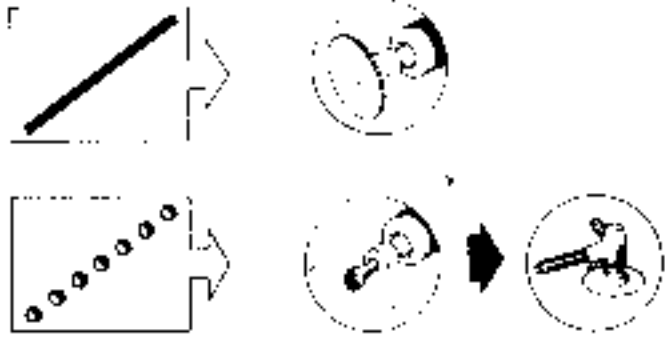
- the bonnet and quadrants
- the upper crossmember
- the radiator grill
- the bumper shield
- the lower crossmember together with the radiator
- the headlight direction indicator
- the electronic unit or the battery
- all accessories secured to damaged panels
- the scuttle cross panel together with the entire windscreen wiper mechanism
- the windscreen
- the fascia panel
- part of the sound deadening from the scuttle

Pull the electrical wiring harness into the passenger compartment.

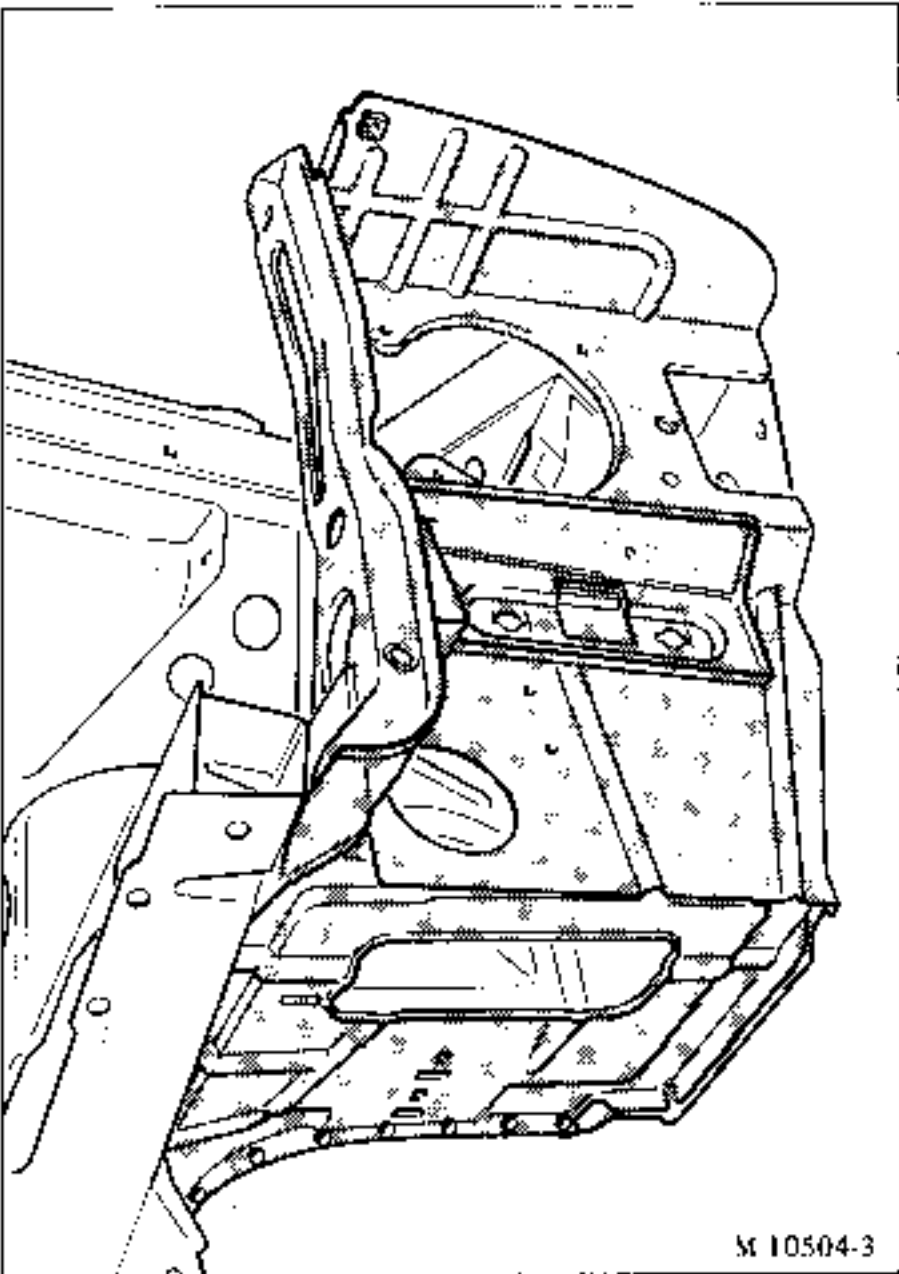
- part of the front wing (cutting the wing to suit the extent of the damage)  
(see repair of plastic components).

For details of these various operations see the relevant sections.

CUTTING OUT - UNPICKING

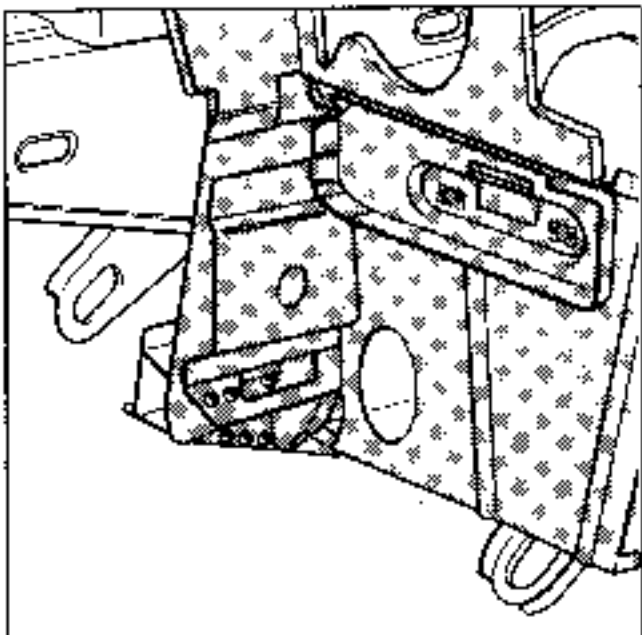
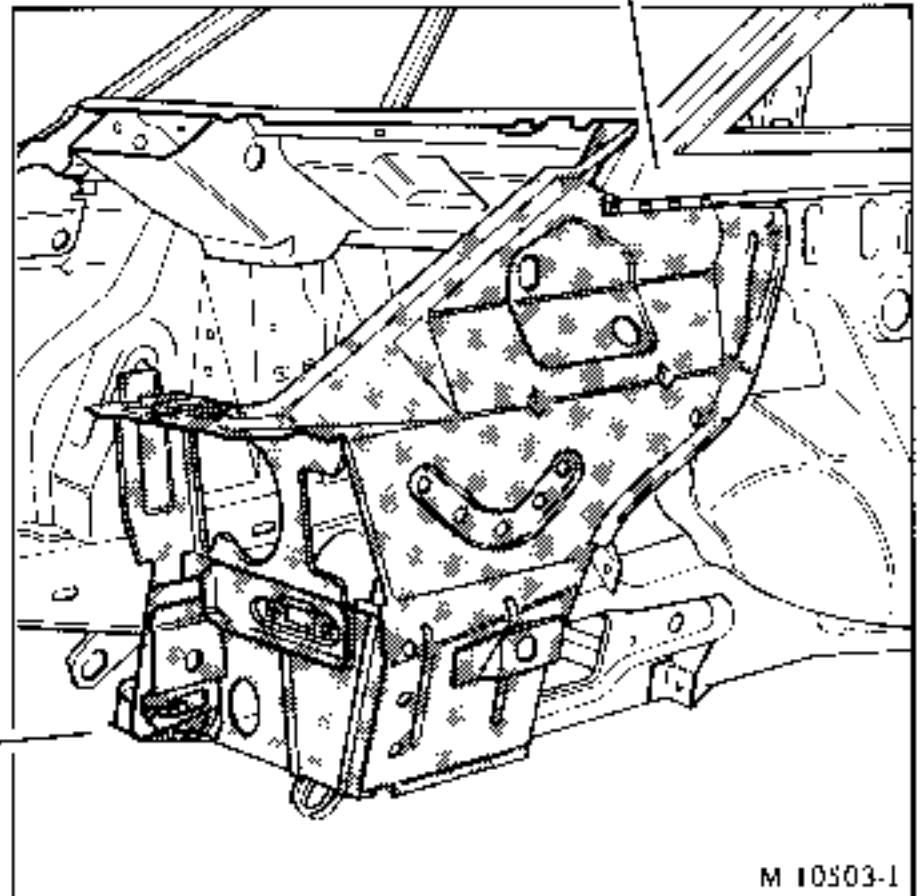
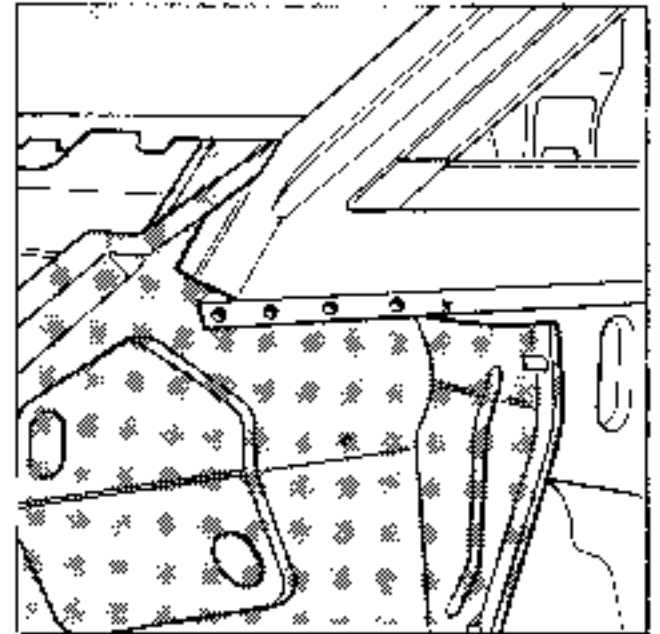


CUTTING OUT - UNPICKING

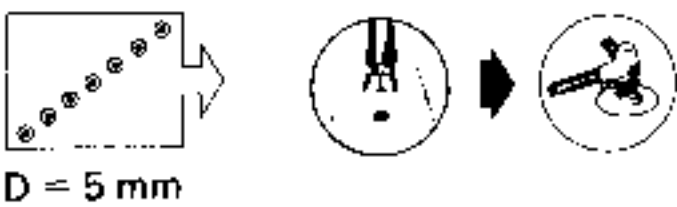
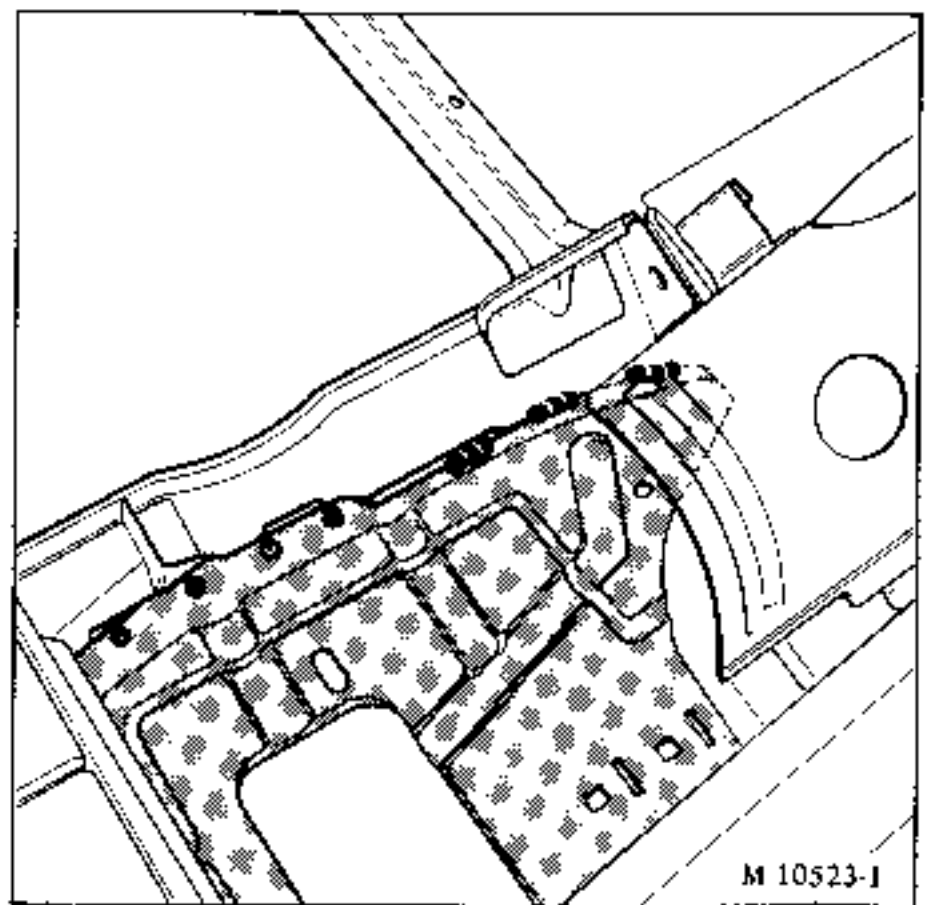
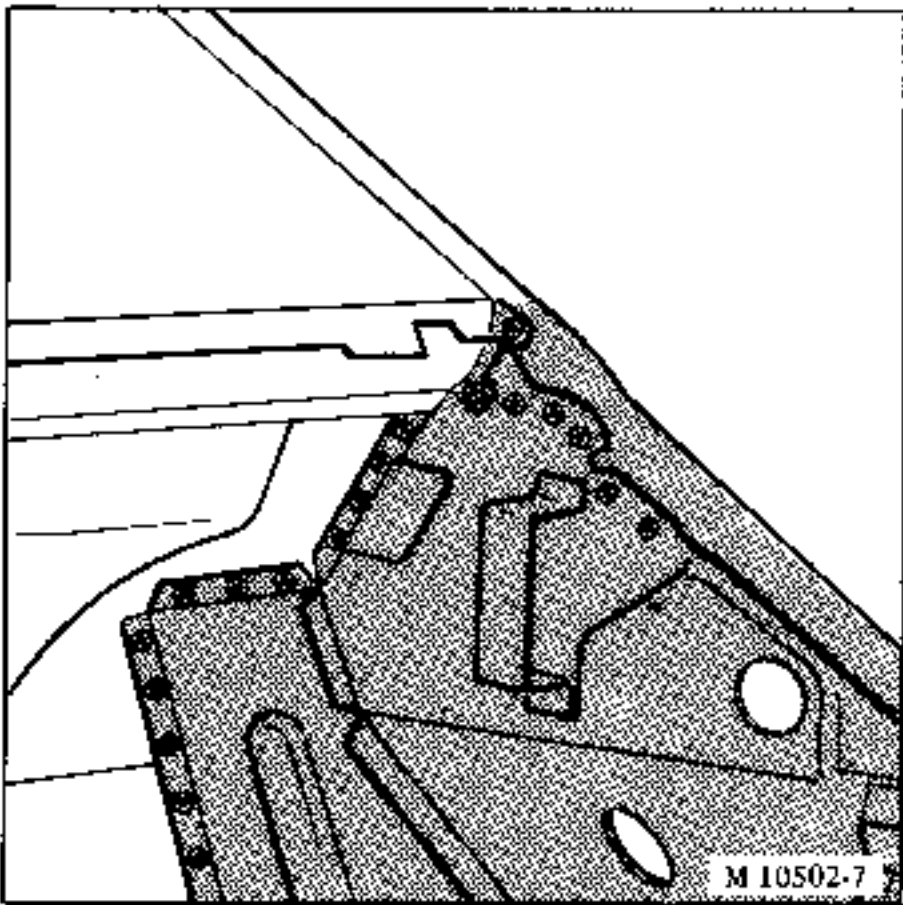
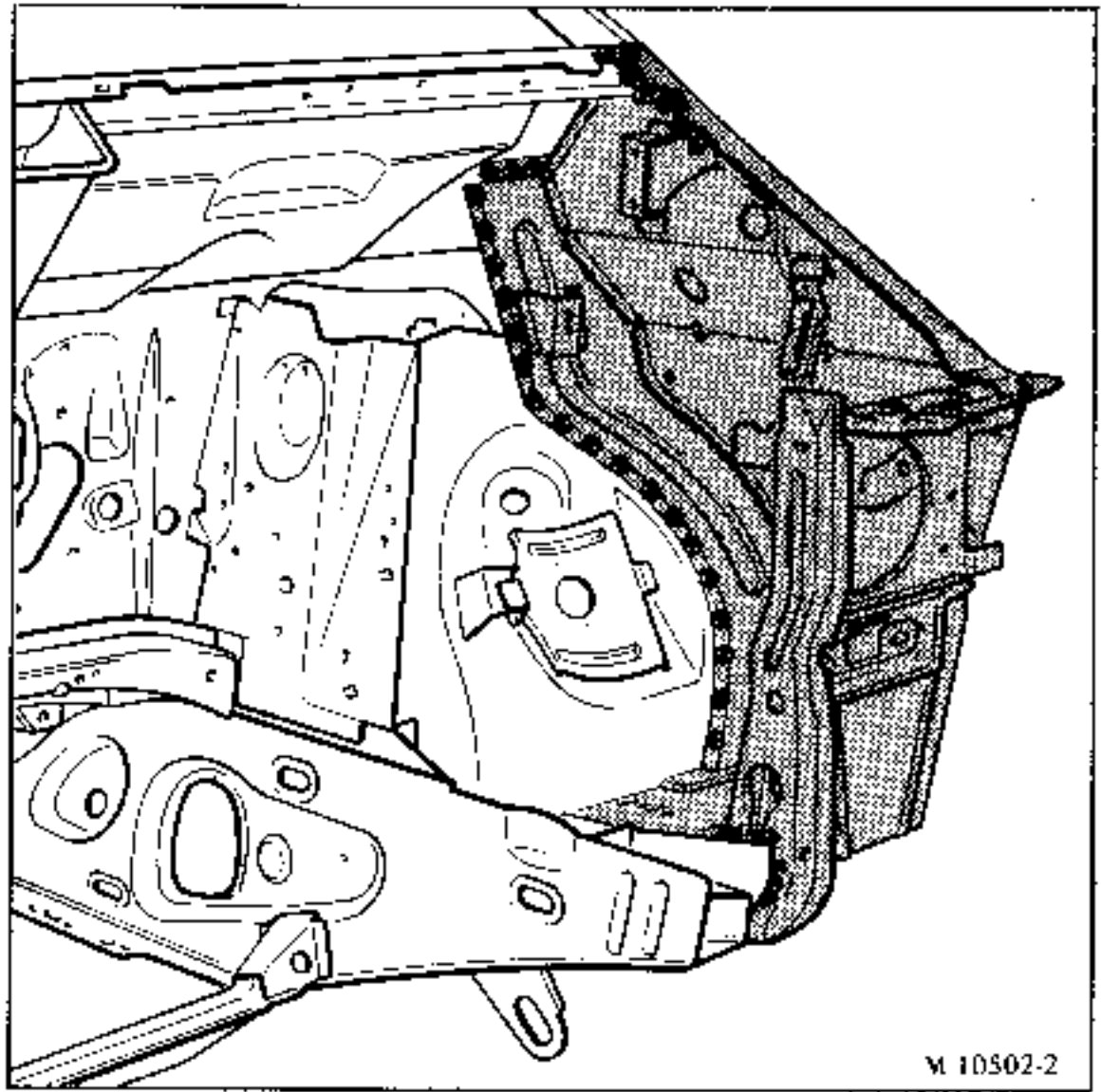
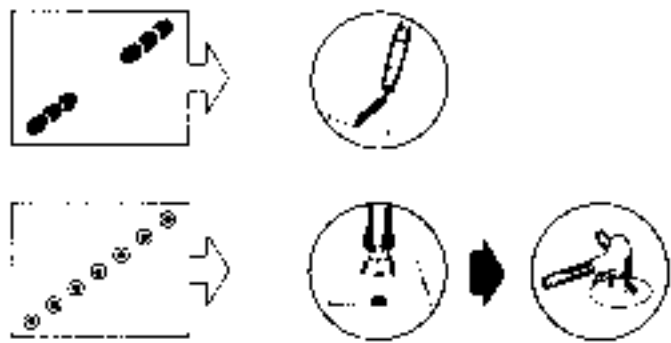


Remove the damaged section by following the instructions shown by these symbols (see description of symbols).

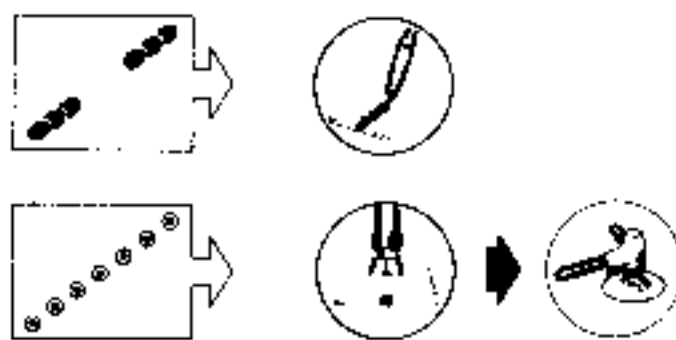
Grind back the unpicked spot welds remaining on the panelling.



WELDING

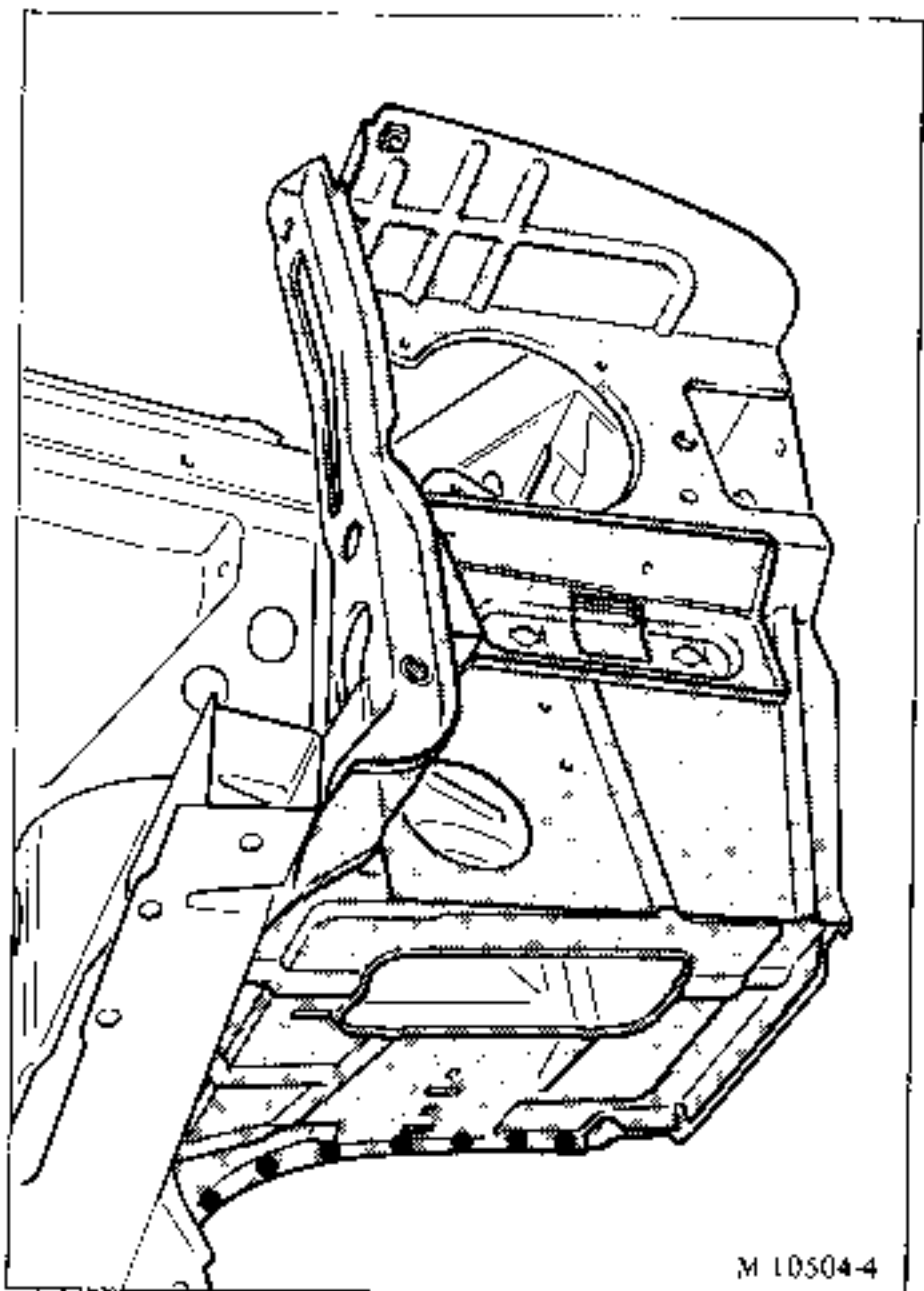


D = 5 mm



D = 6 mm

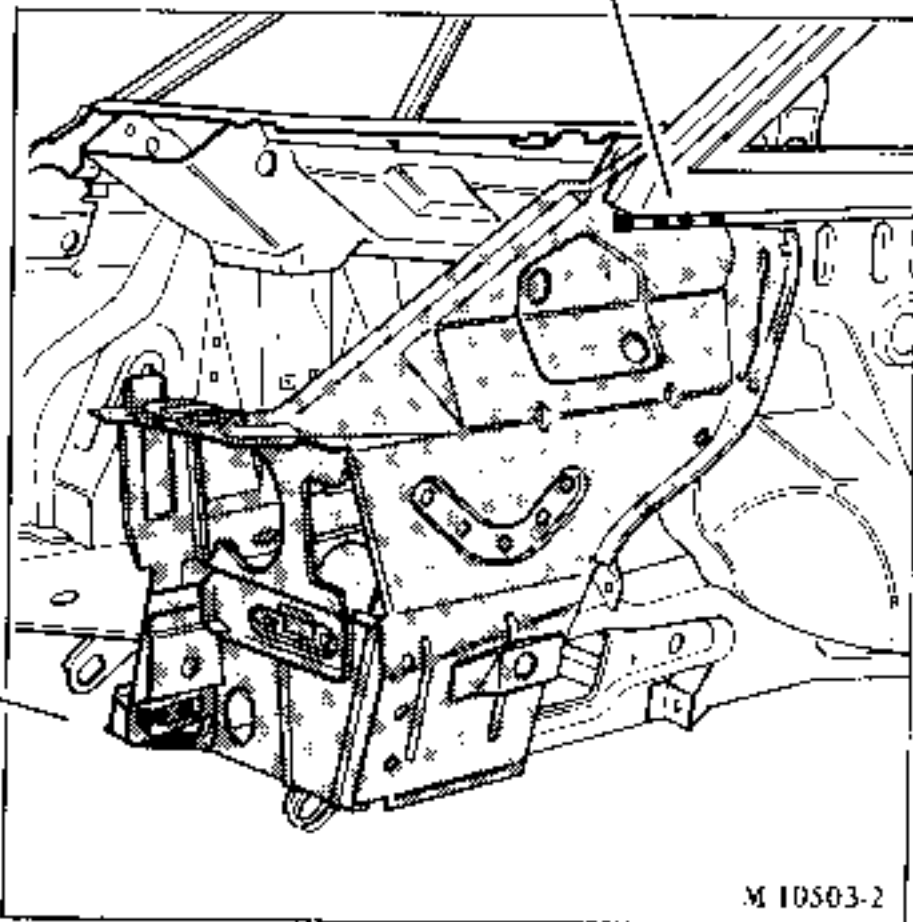
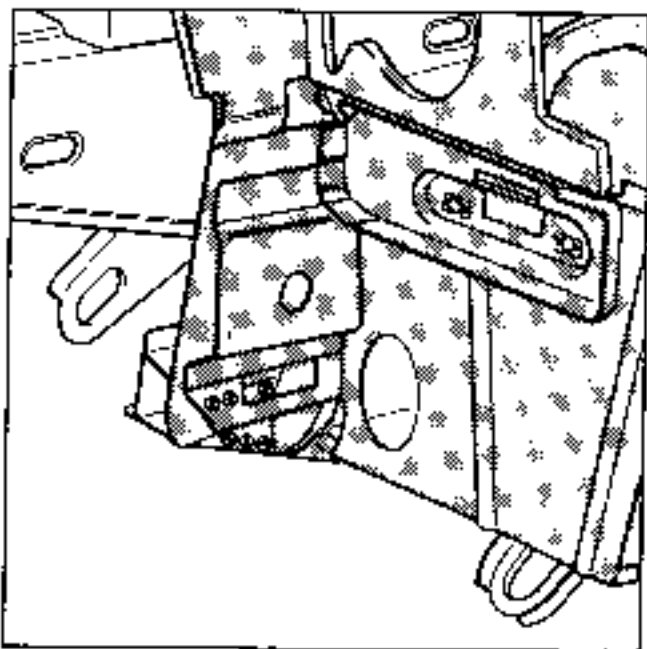
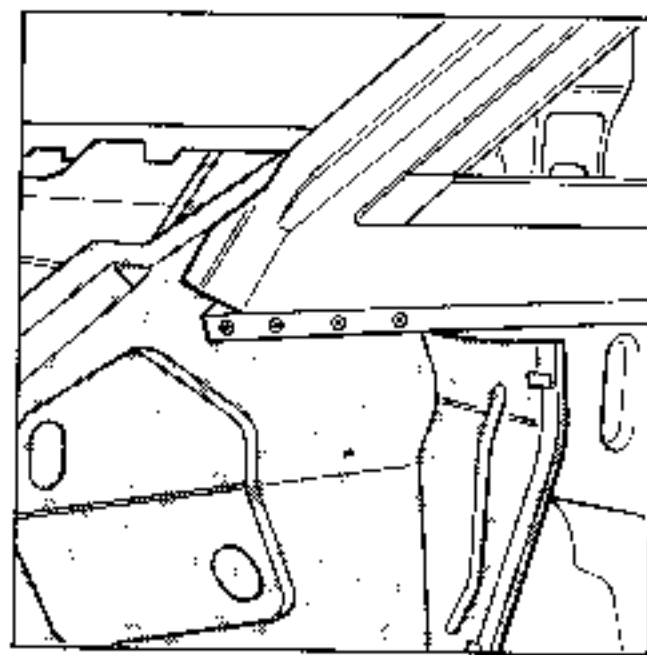
WELDING



Apply the plug welds under a protective gas envelope. To do this, drill the upper of the two panels to the diameter D stated under the symbol.

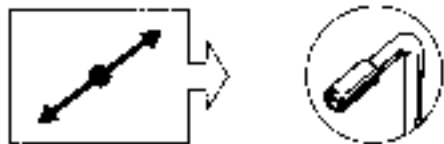
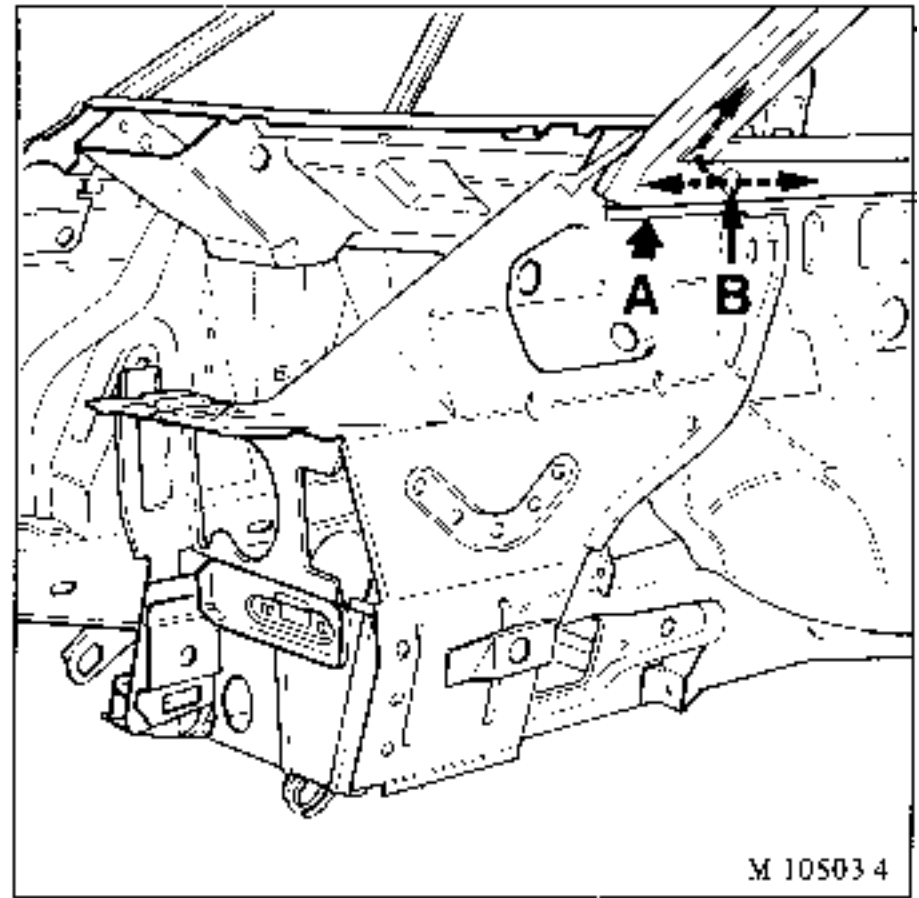
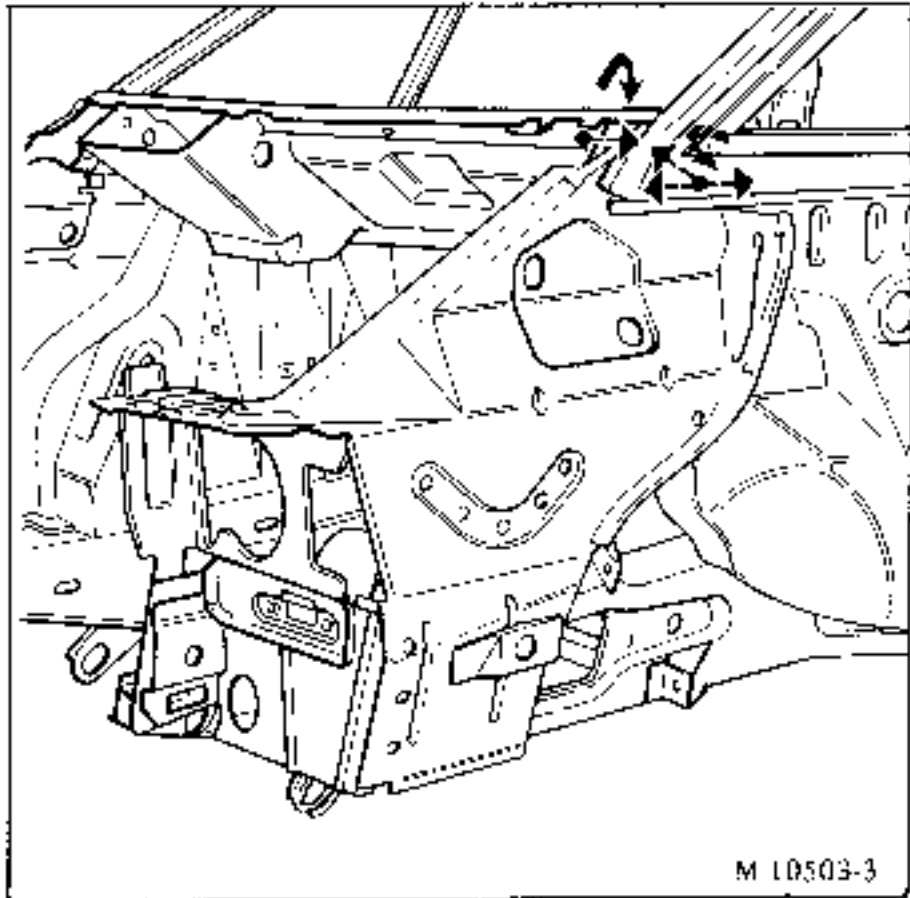
Apply the spot weld.

Apply the fillet welds under a protective gas envelope.



D = 6 mm

After painting, apply the hollow section protective treatment.

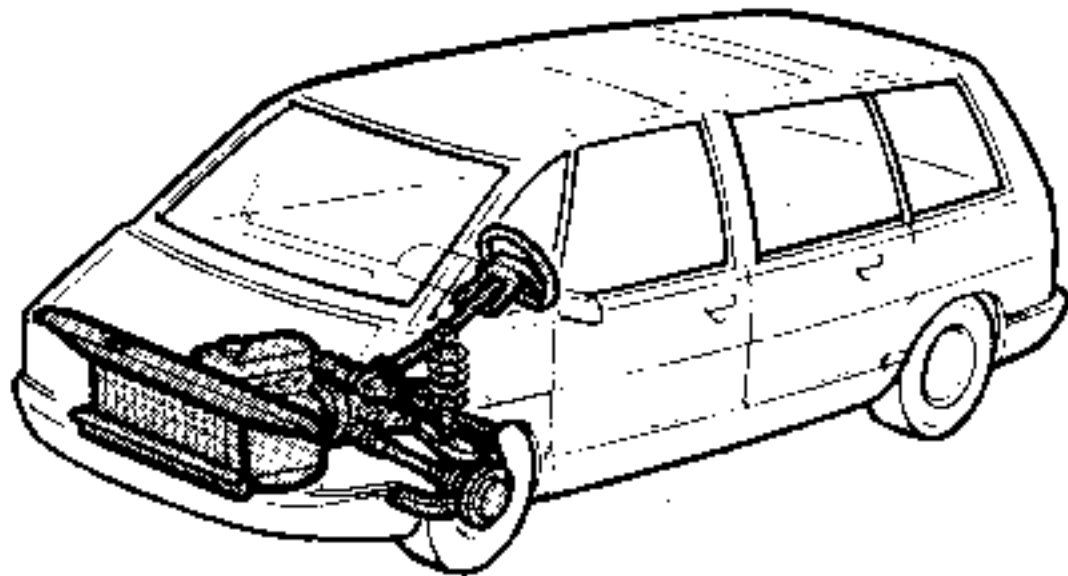
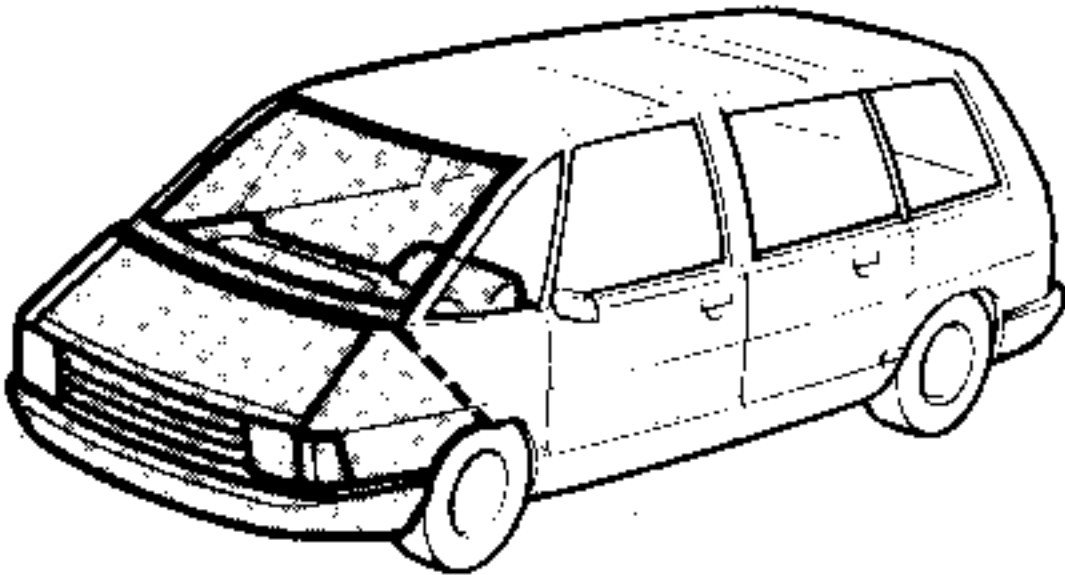


Apply a foam pad at A (60 x 80 x 100 mm)

Inject polyurethane foam at B.

REPLACING :

STRIPPING



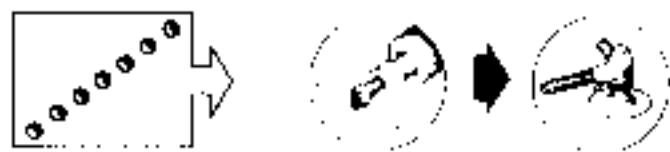
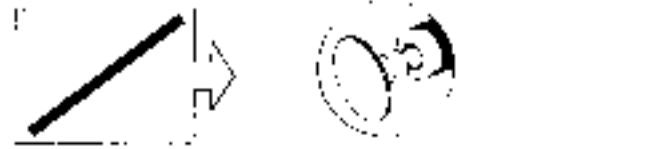
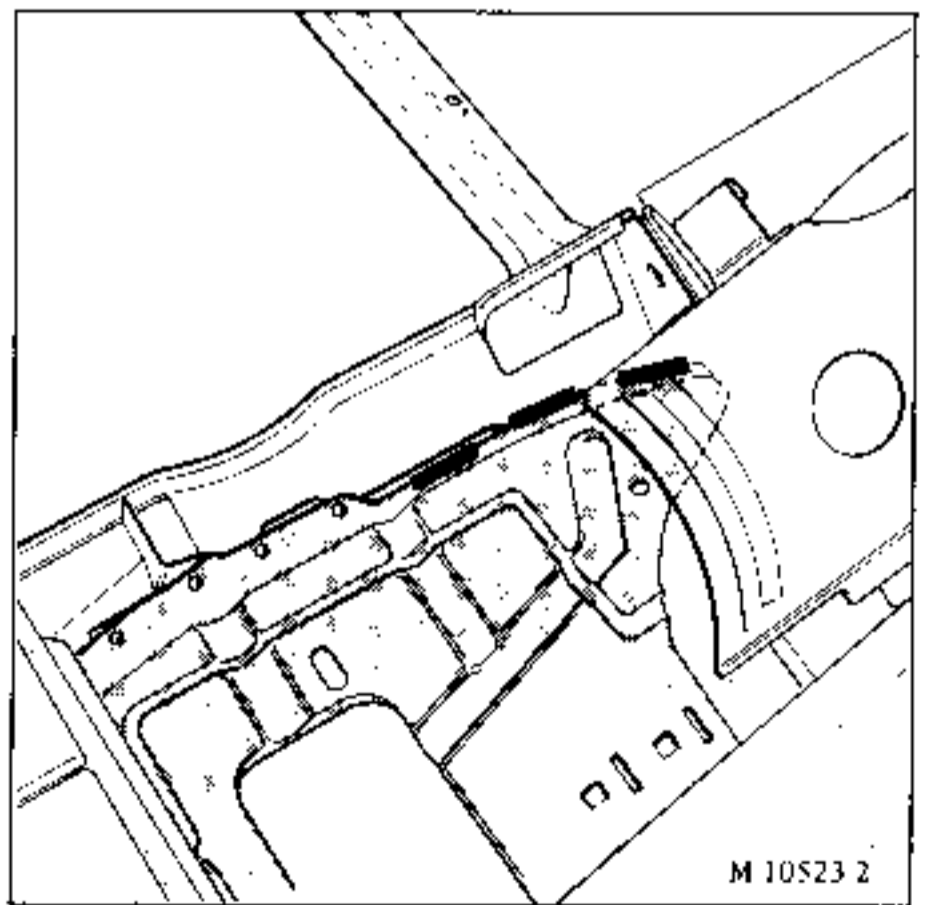
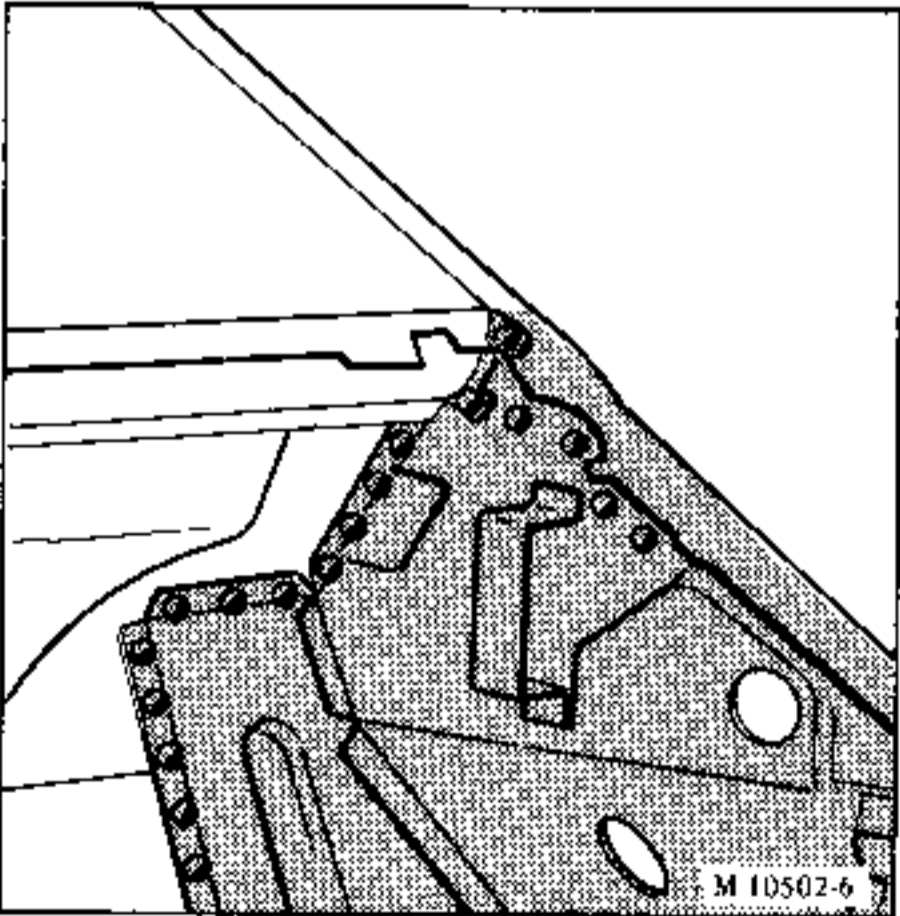
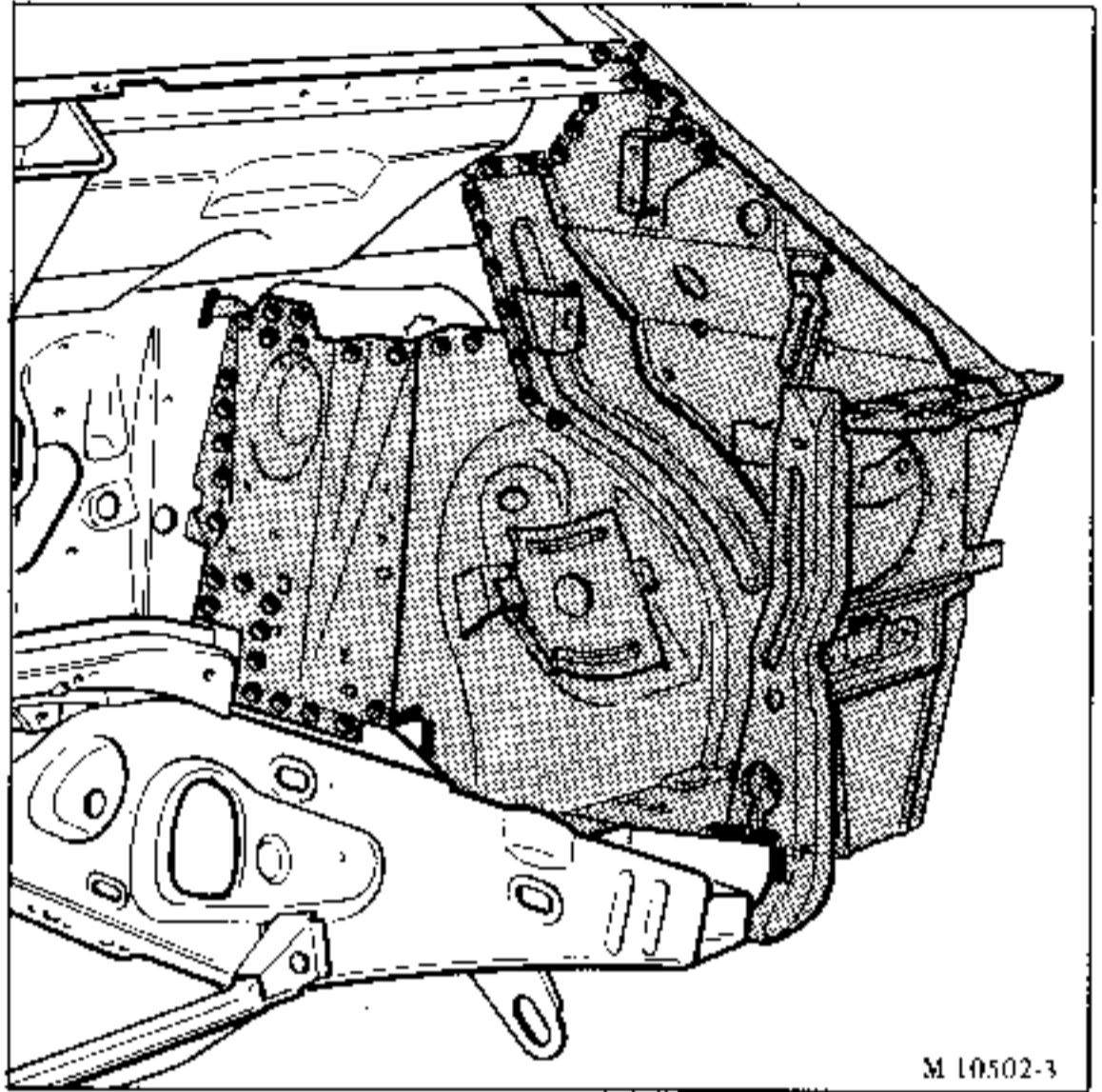
M 10729-1

- For the items to be removed see the description for the simplified cowl side assembly then :

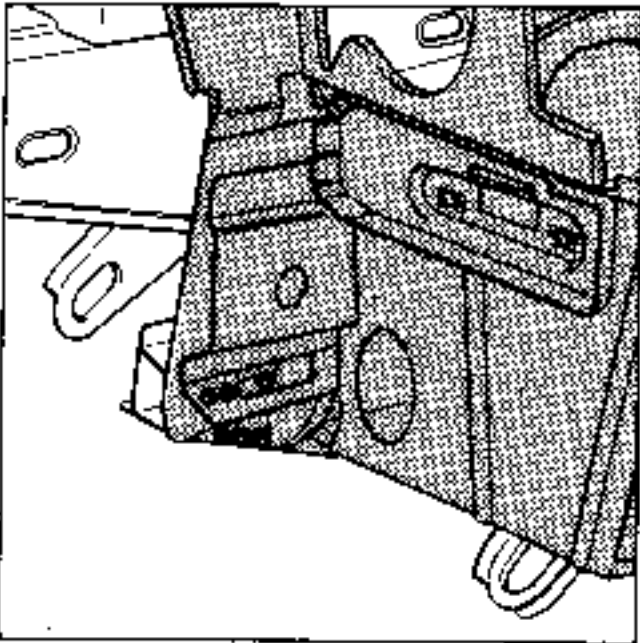
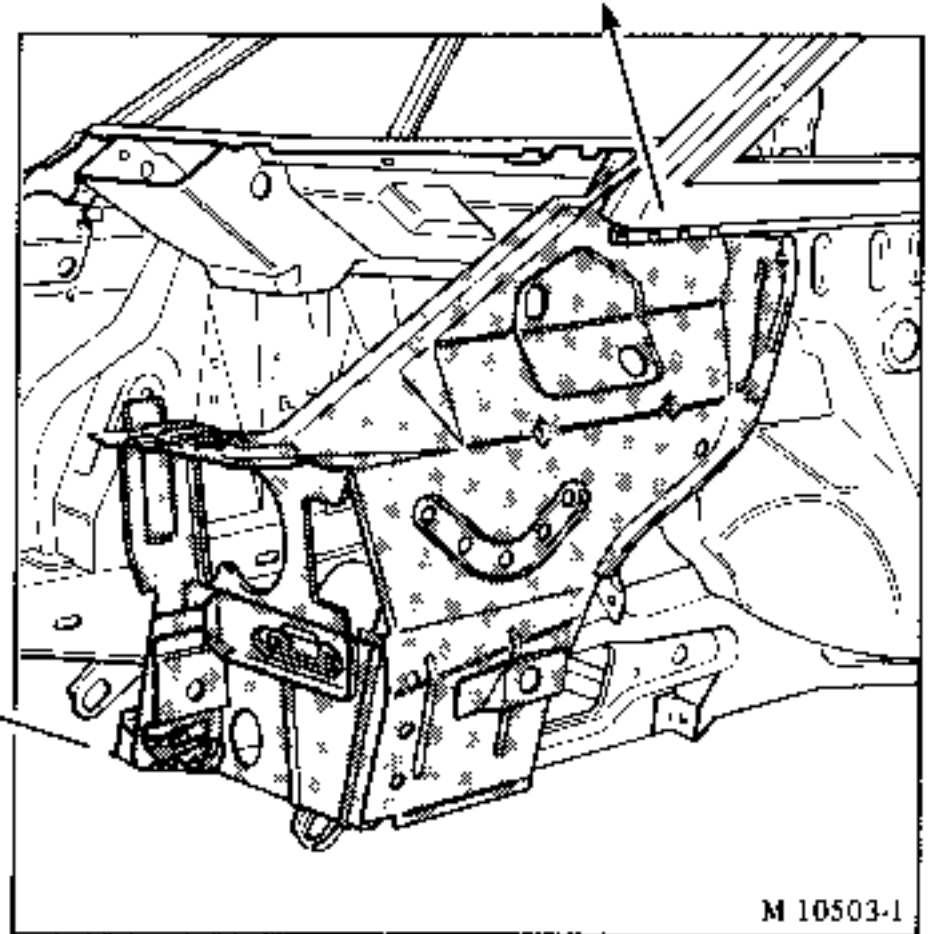
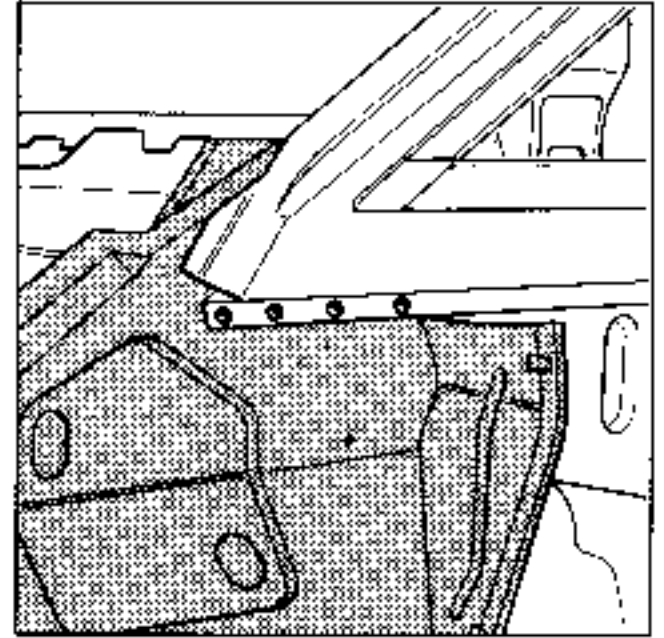
- Remove
- the engine
  - the steering box
  - the brake servo
  - the pedal assembly



CUTTING OUT - UNPICKING



CUTTING OUT - UNPICKING



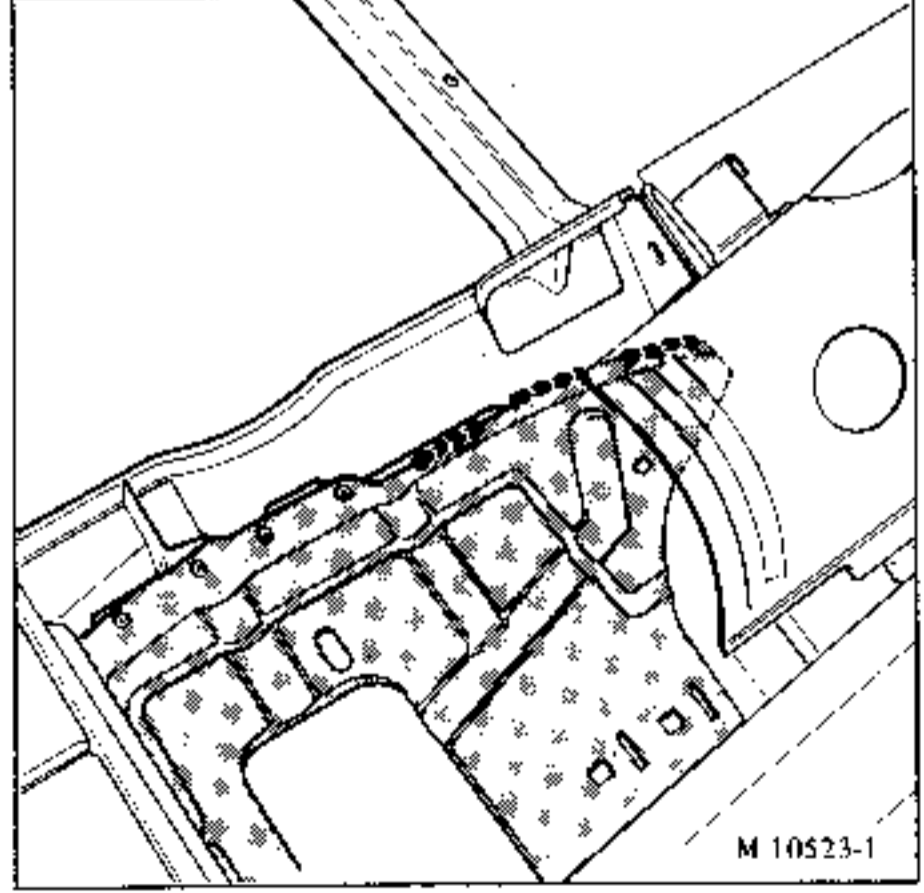
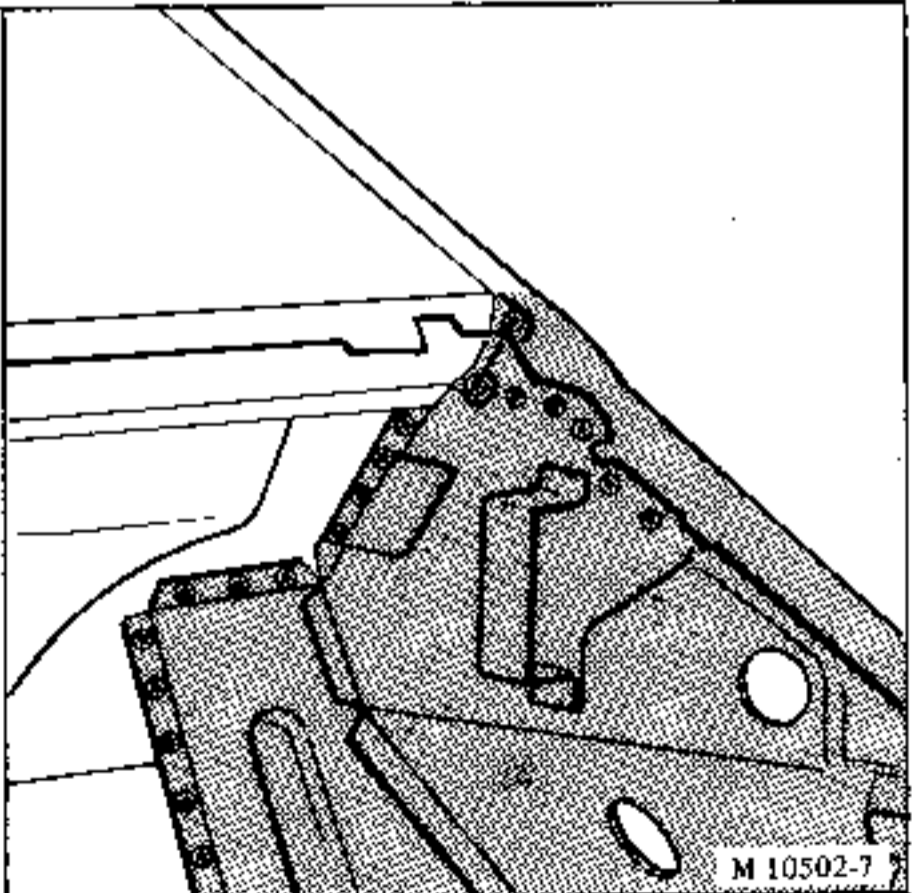
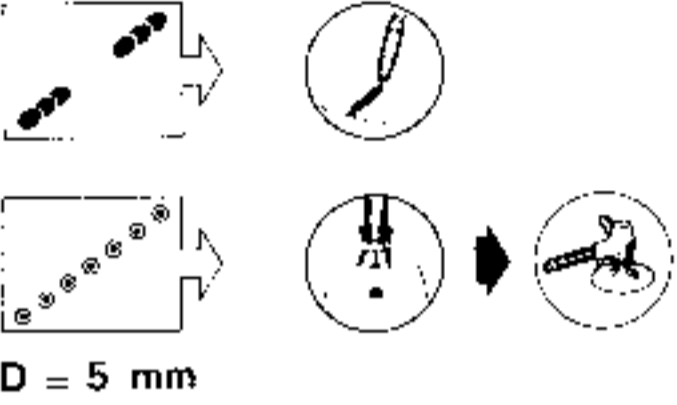
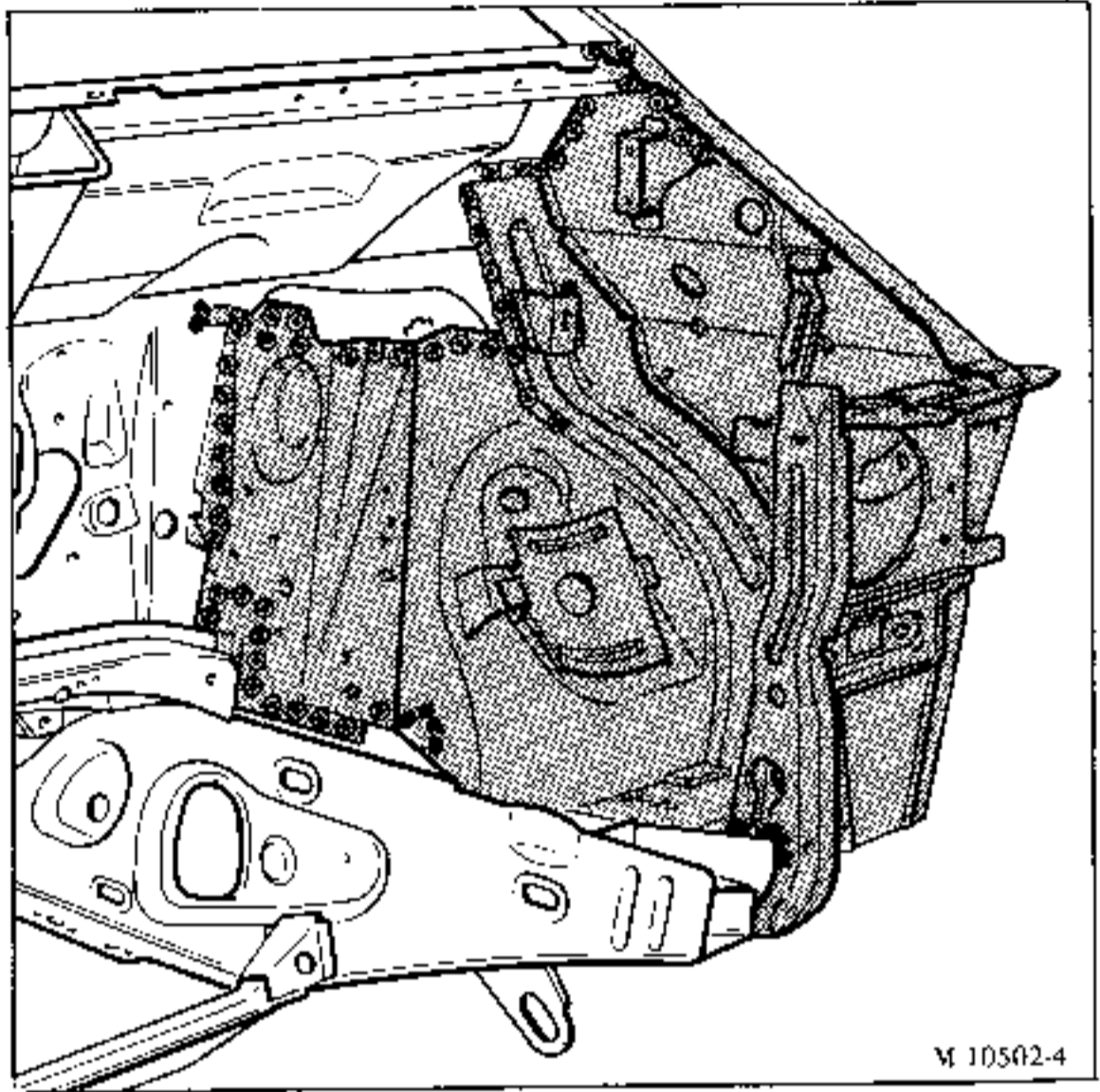
Remove the damaged section as instructed by the symbols (see description of symbols).

Grind back the unpicked spot welds remaining on the panelling.

PREPARATION BEFORE WELDING

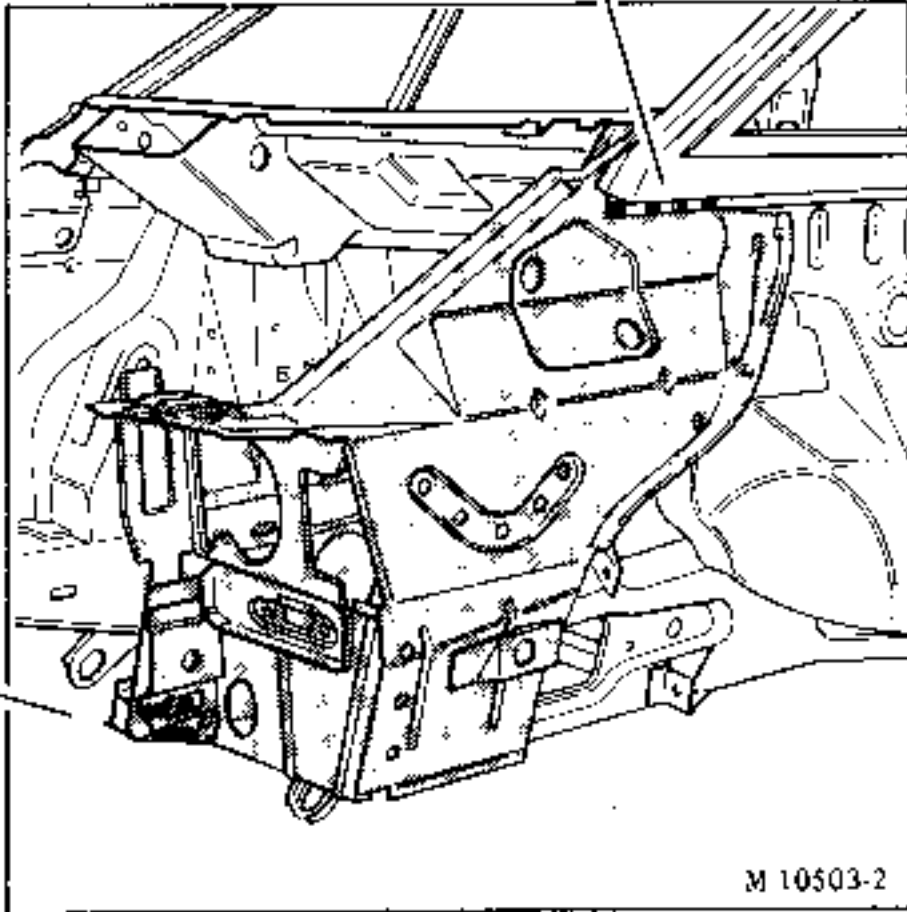
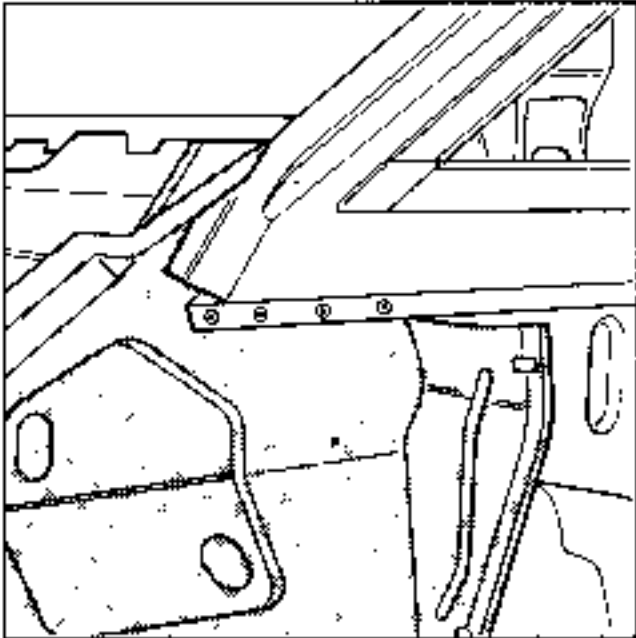
Adjust the new parts to size and then clamp them in place.

WELDING



D = 5 mm

WELDING



M 10503-2



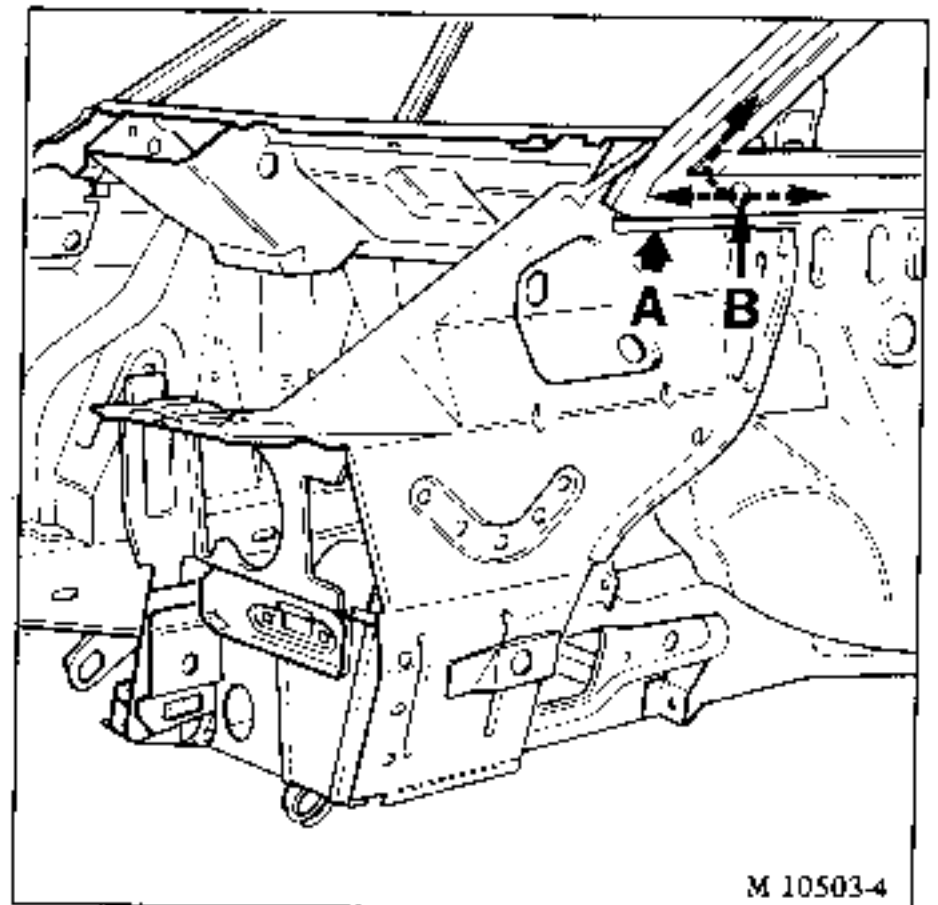
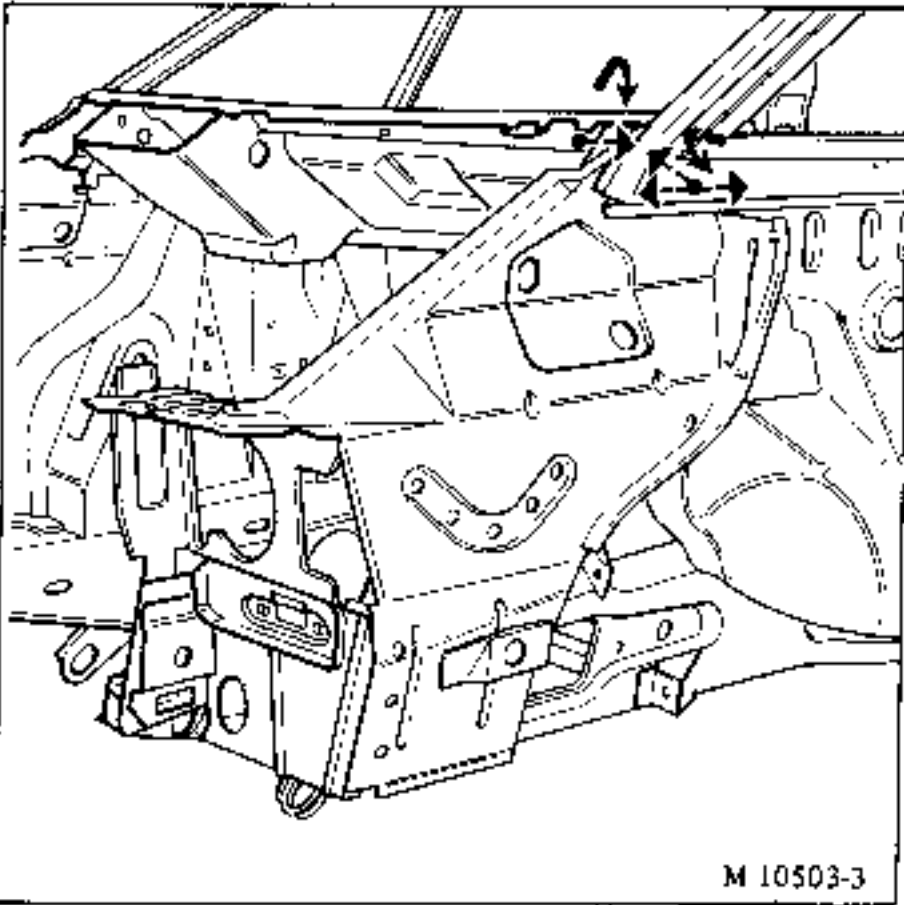
D = 6 mm

Apply the plug welds under a protective gas envelope. To do this, drill the upper of the two panels to the diameter D stated under the symbol.

Apply the fillet welds under a protective gas envelope.

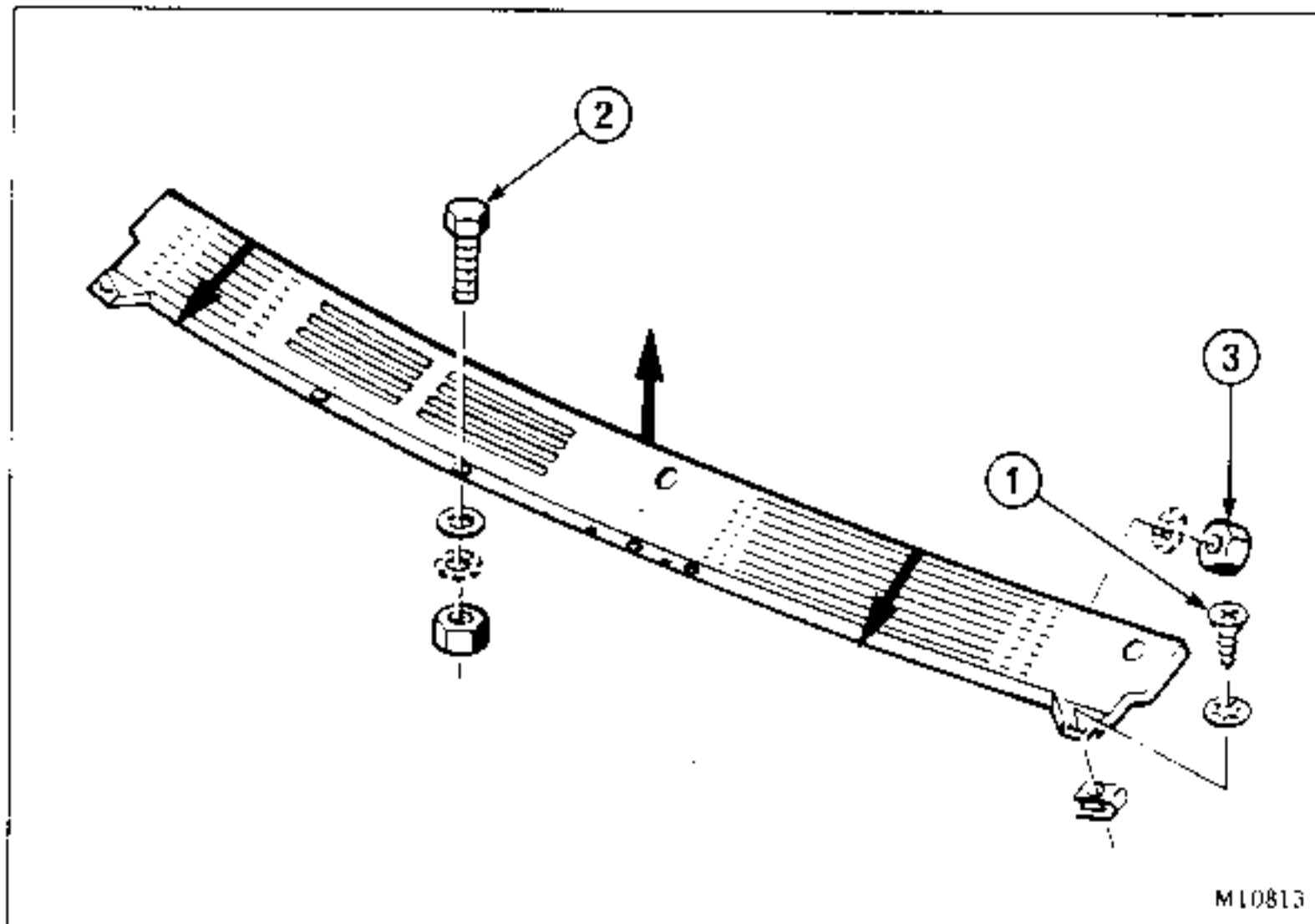
PAINTING

Carry out paint application sequence no. 2 (see paint section).  
After painting carry out the hollow section protection treatment.



Apply a foam pad at A (60 x 80 x 100 mm).  
Inject polyurethane foam at B.

REPLACING



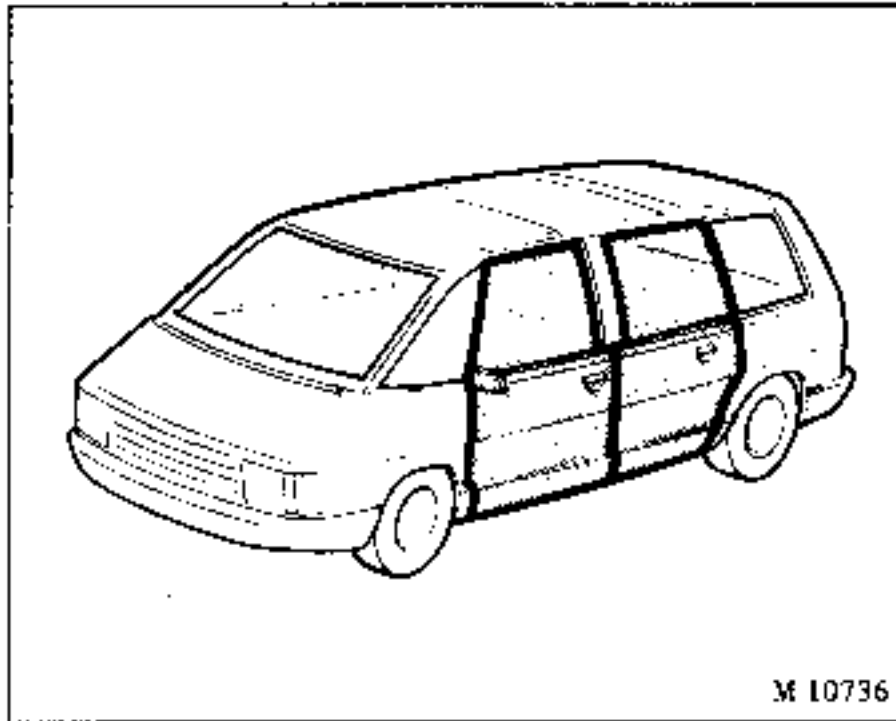
- Open the bonnet.
- Remove the 2 windscreen wiper arms.
- Remove the 2 nuts from the windscreen wiper shafts.
- Remove the 2 screws (1).
- Remove the 4 screws (2) (that secure the air intake and windscreen wiper motor).
- Remove the 3 nuts from the inside (3).
- Remove the scuttle cross panel as shown in the drawing.

Remark : when refitting, re-apply a self-adhesive trim strip to the panel on the windscreen side.

PAINTING : Apply black struc-coat

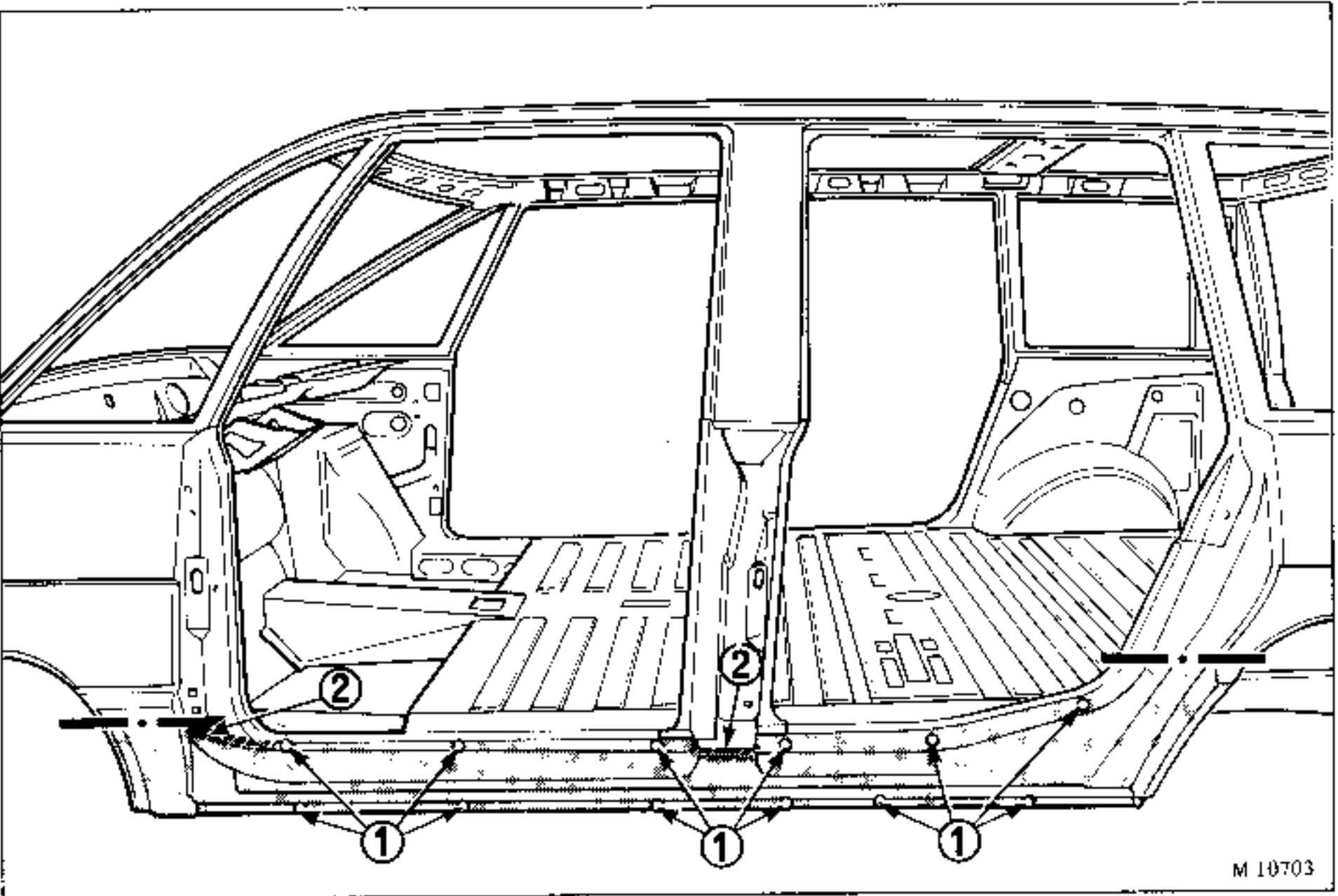
Carry out paint application sequence no. 2.

REPLACING :



This operation involves removing :

- the strip under the body sill,
- the doors,
- the door sealing strips.



Carry out plastic component repair sequence no. 4.

Special features

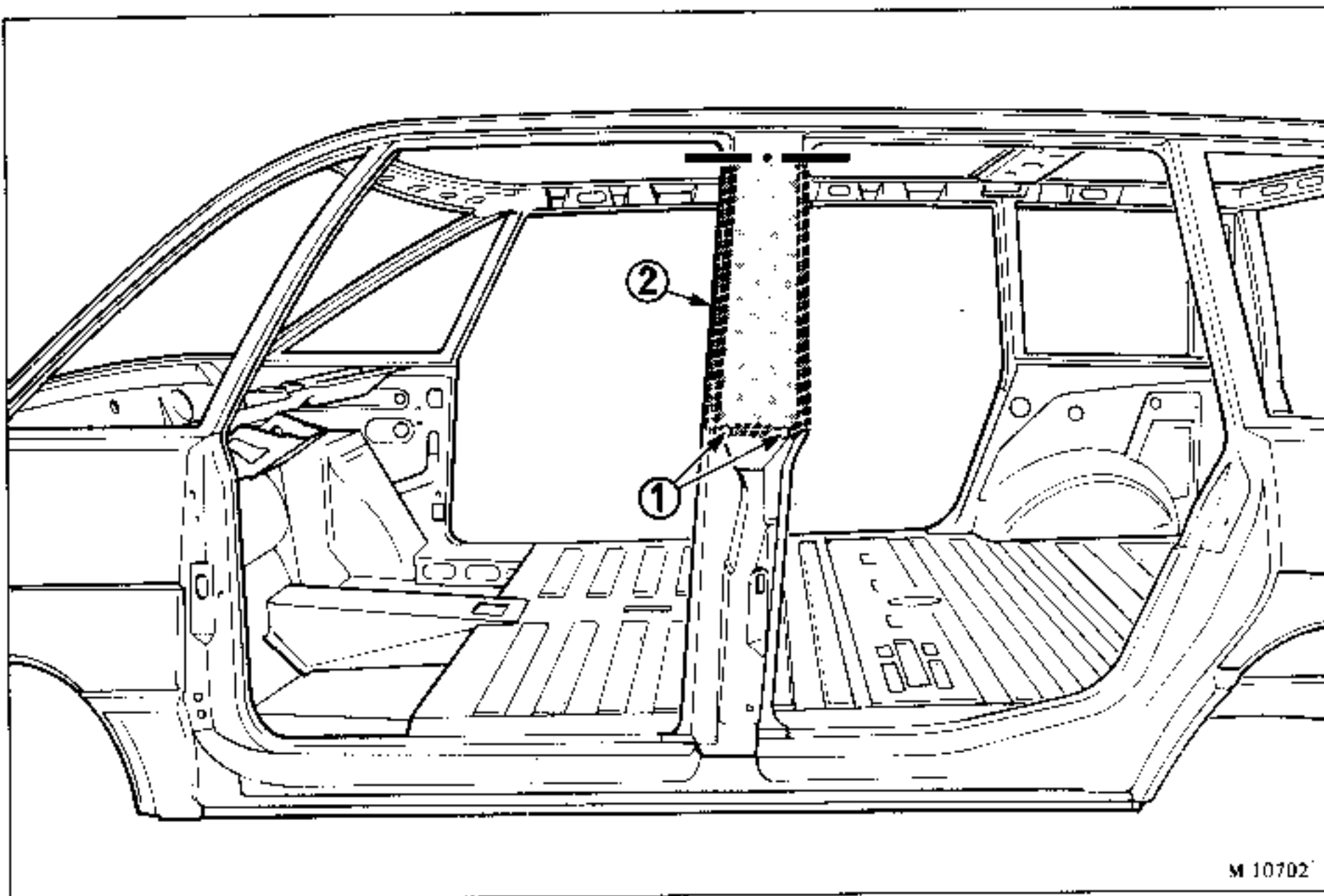
- the body sill is secured to the body shell by 12 rivets (1). It is bonded to the front door pillar and the centre door pillar by fillets of adhesive mastic (2).
- the backing pieces are to be taken from the unused part of the new body sill.

PAINTING : struc-coat

Carry out paint application sequence no. 1.



REPLACING :



NOTE

The point at which the upper part is cut can be altered to suit the requirements of the person carrying out the repair (unpicking the panelling, welding).

Carry out plastic component repair sequence no. 4.

Special features : the upright is secured to the door pillar by 2 rivets (1). It is bonded to the door pillar by a fillet of adhesive mastic (2) 7 mm in diameter.

The backing piece is to be taken from the unused part of the new upright.

Painting :

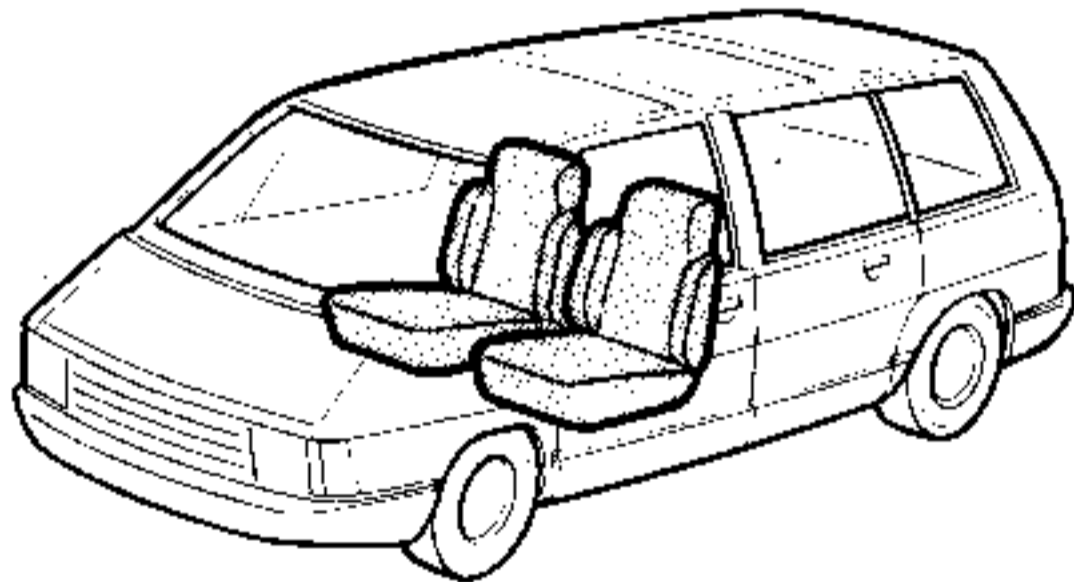
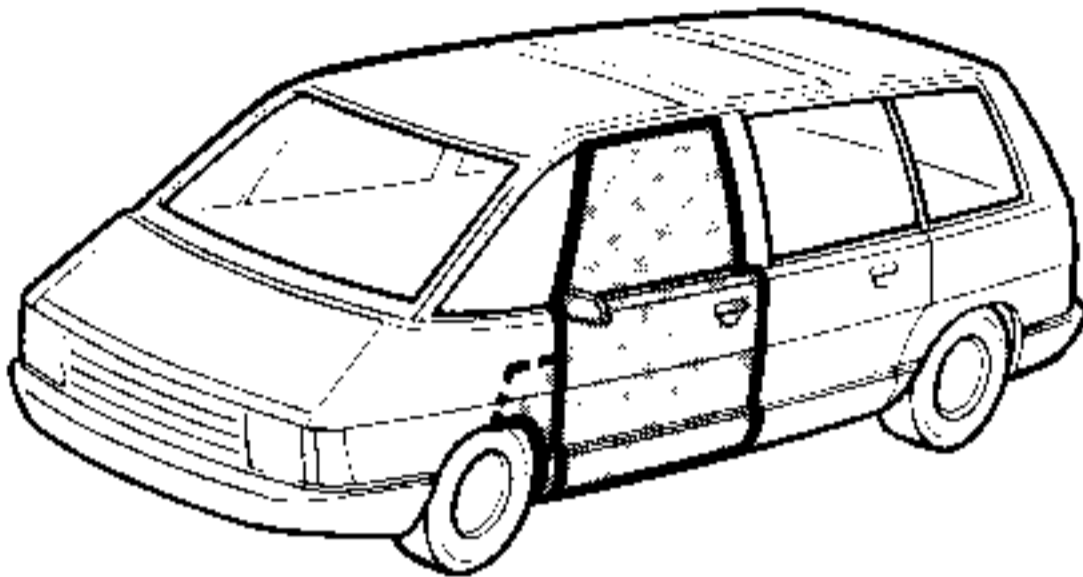
Basic model : struc-coat

De luxe model : (85-86 Models) finish coat

Carry out paint application sequence no. 1.

REPLACING :

STRIPPING



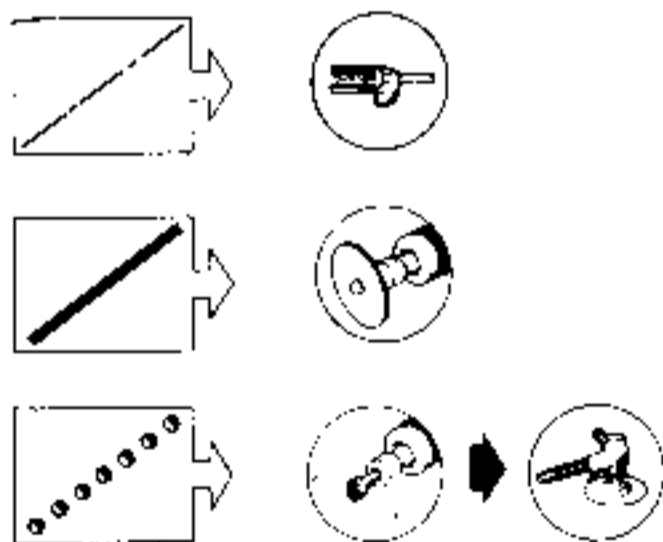
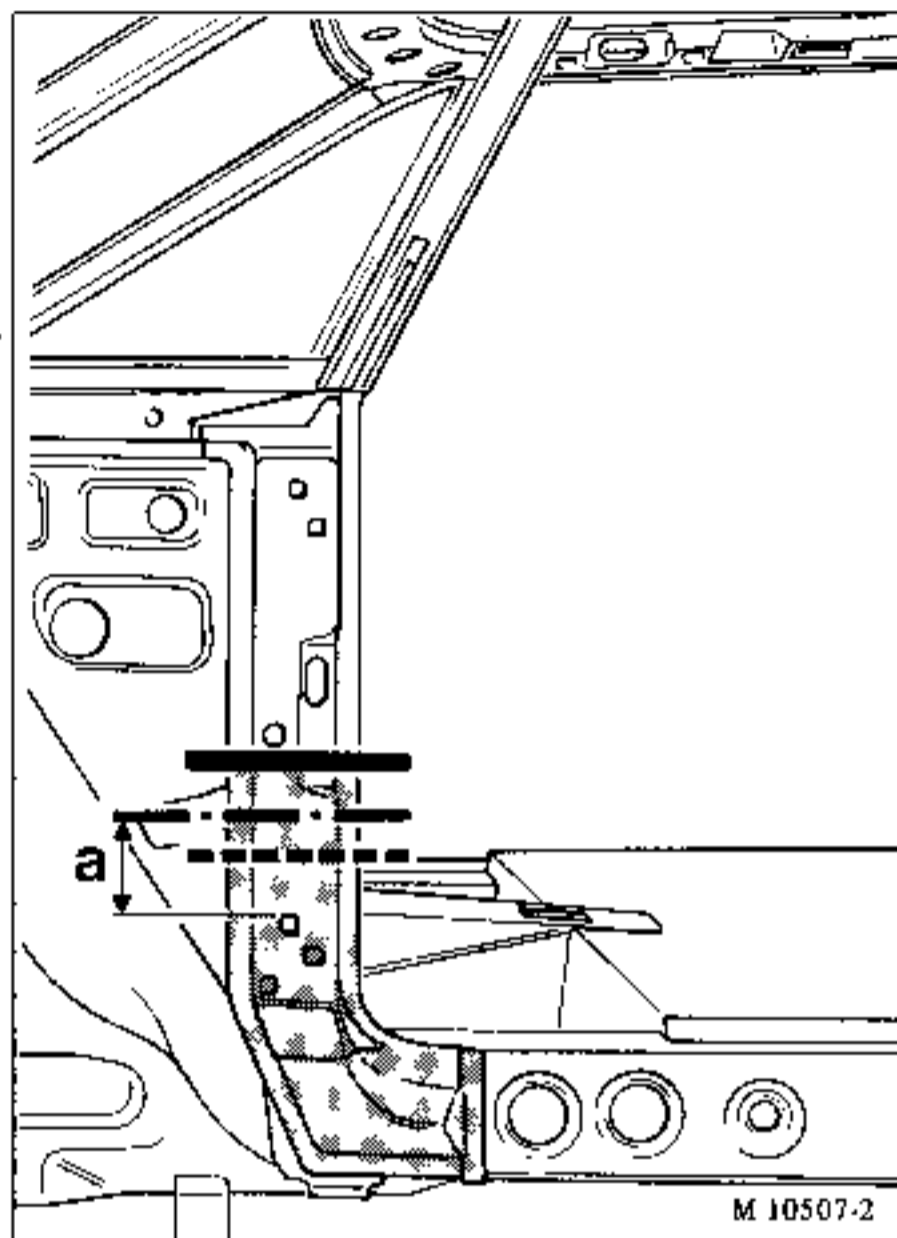
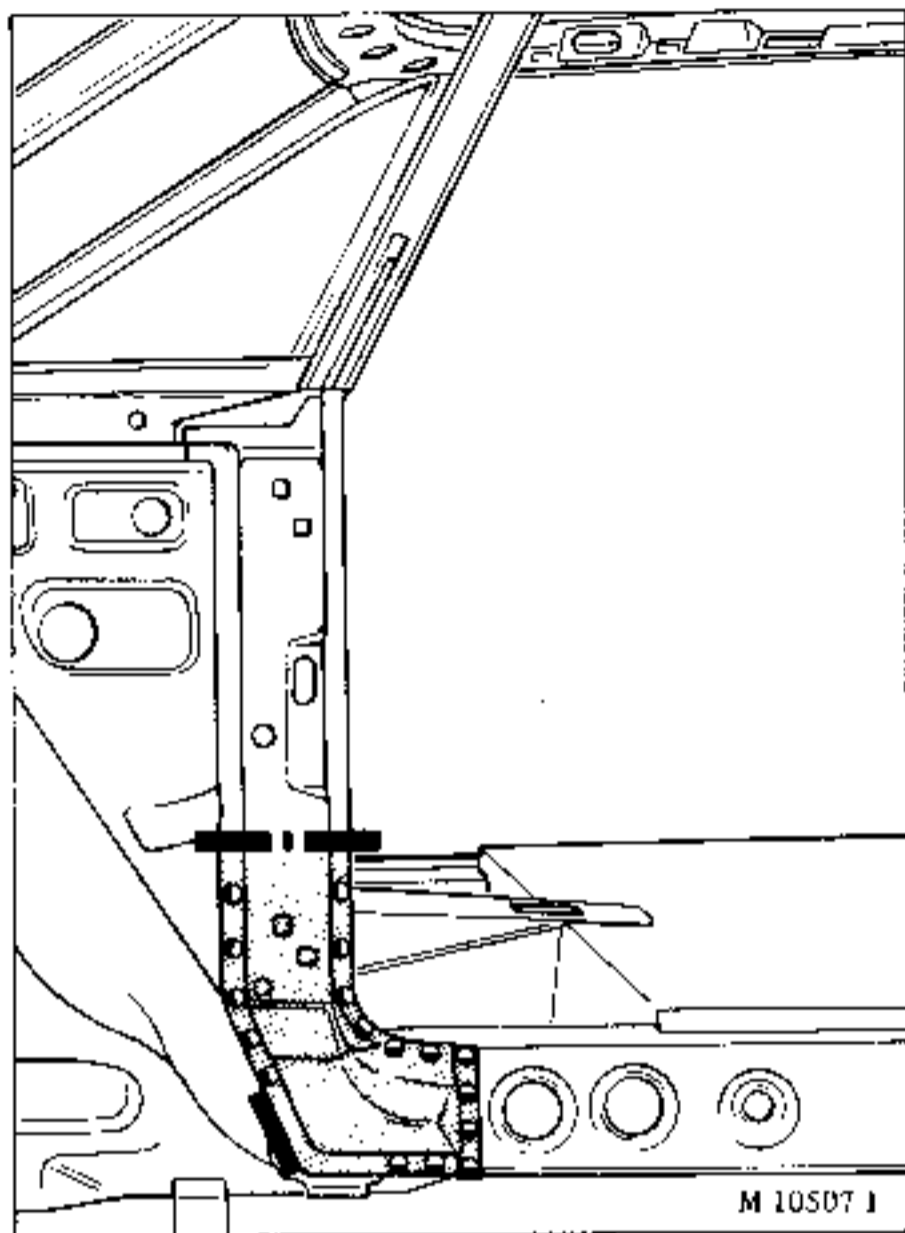
M 10737-2

Remove :

- the glove compartment,
- the bonnet latch if on the left-hand side or the accessories connection plate on the right-hand side,
- the door sealing strip,
- the front door pillar lower trim,
- the floor trim and sound deadening,
- the front seat,
- the door,
- part of the wing and the body sill (cut to suit the extent of the damage and the requirements of the plastic component repair sequence).

CUTTING OUT - UNPICKING

PREPARING THE NEW PART



a = 70 mm

From the new part, cut out a section that is higher than that cut out from the vehicle.

Place the new part so that it overlaps that on the vehicle and clamp it in position. Cut through the two pieces of panelling together to obtain an exact fit.

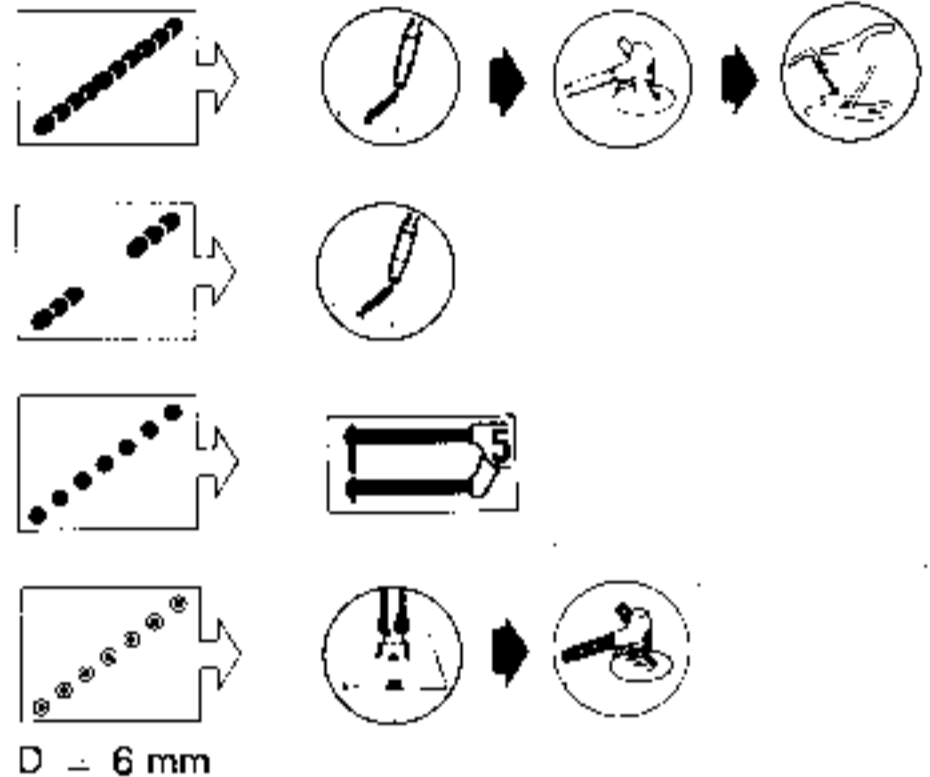
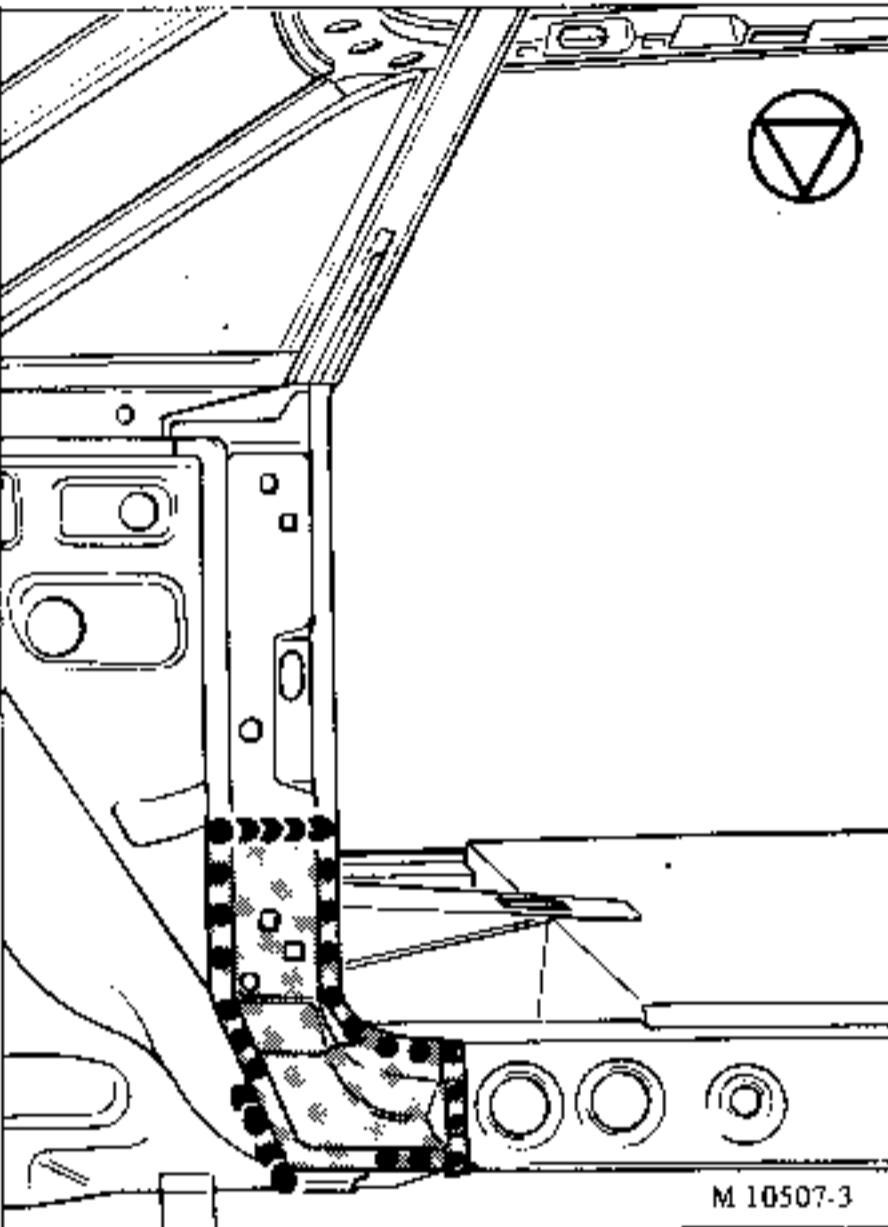
Remove the damaged section by following the instructions of the symbols (see descriptions of symbols).

Grind back the unpicked spot welds remaining on the support panels.

PREPARATION BEFORE WELDING

Adjust the new part to fit and clamp it in place.

WELDING



Apply tack welds to the butt joint lines.

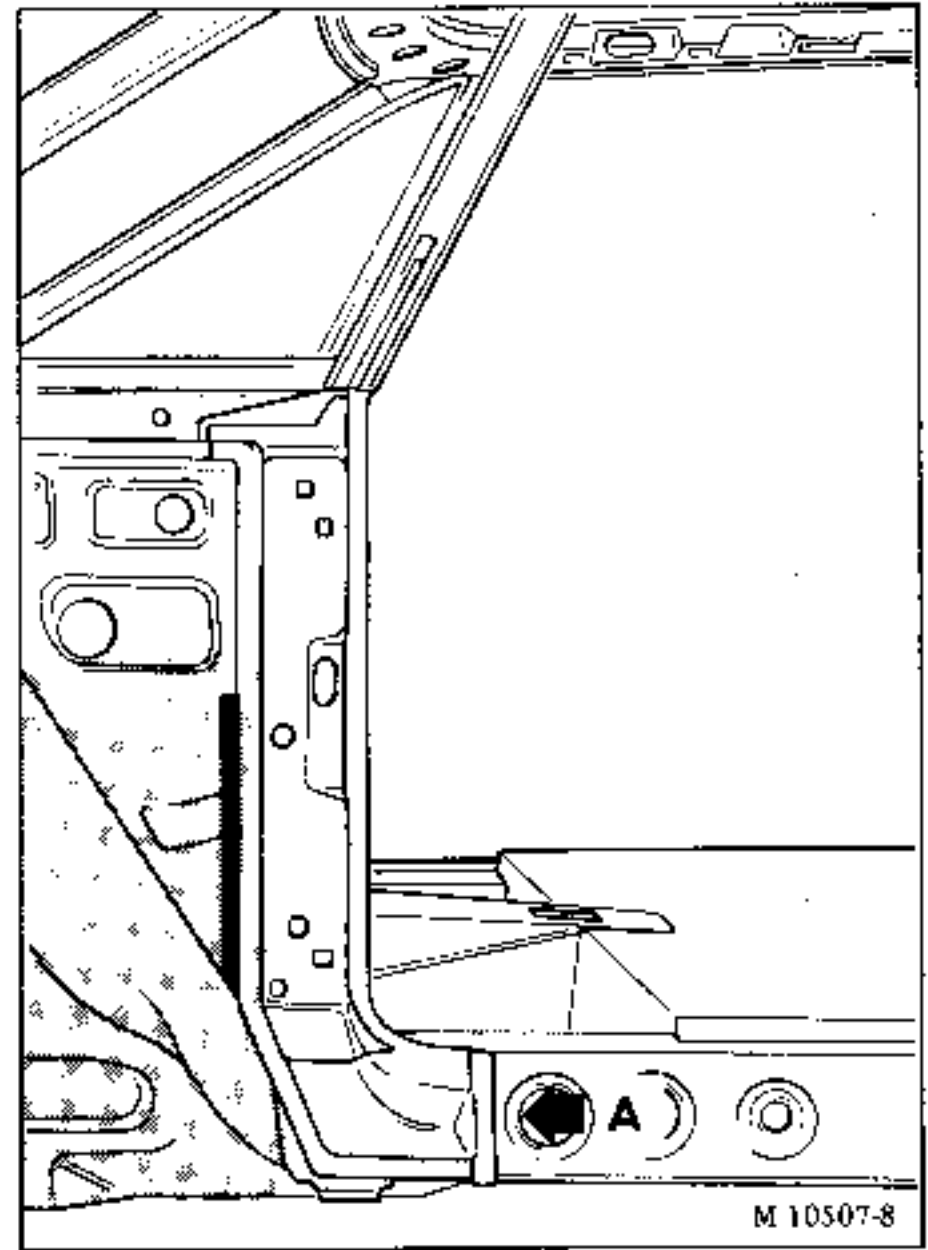
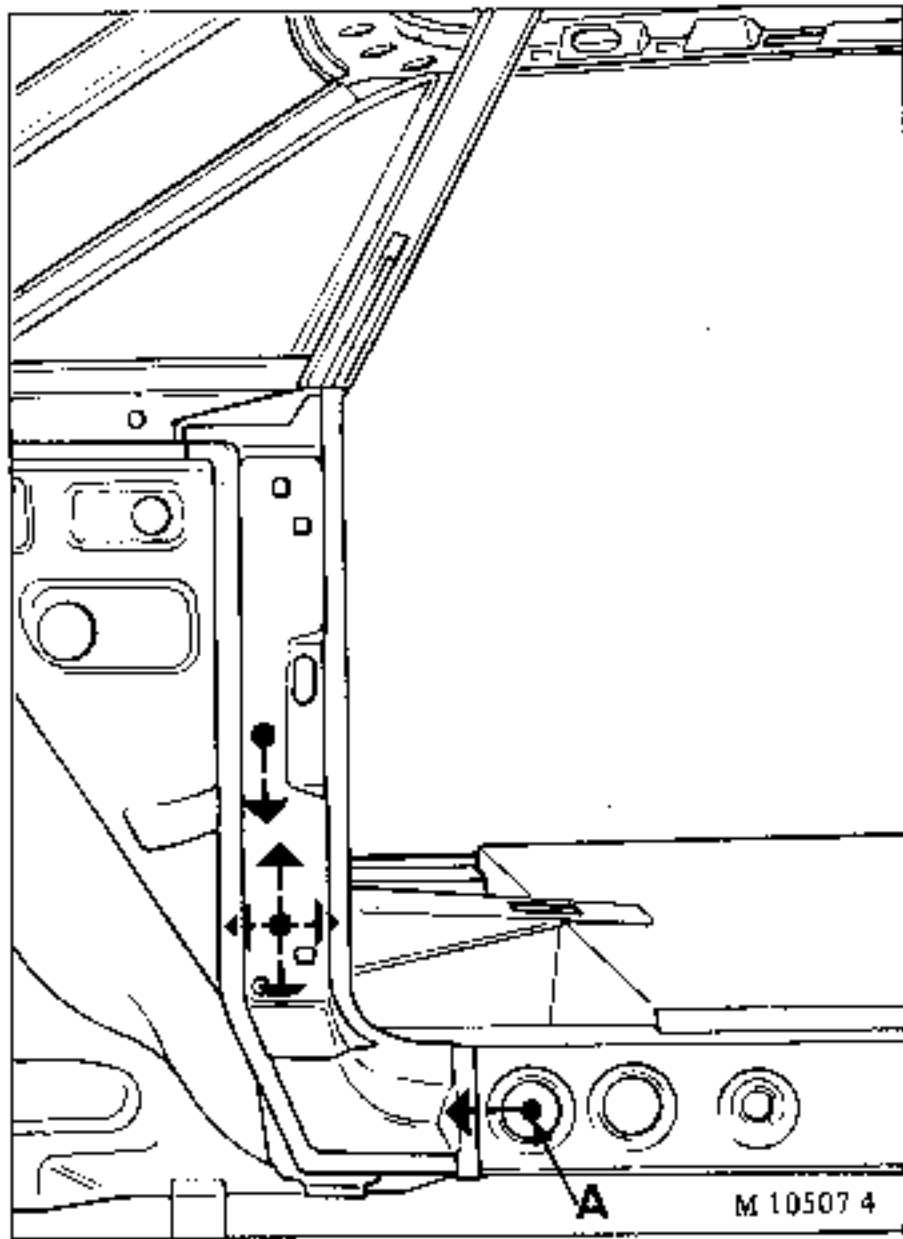
Apply the spot welds.

Apply the stitch welds under a protective gas envelope.

Carry out the plug welds under a protective gas envelope. To do this drill through the upper of the two panels to the diameter D stated under the symbol.

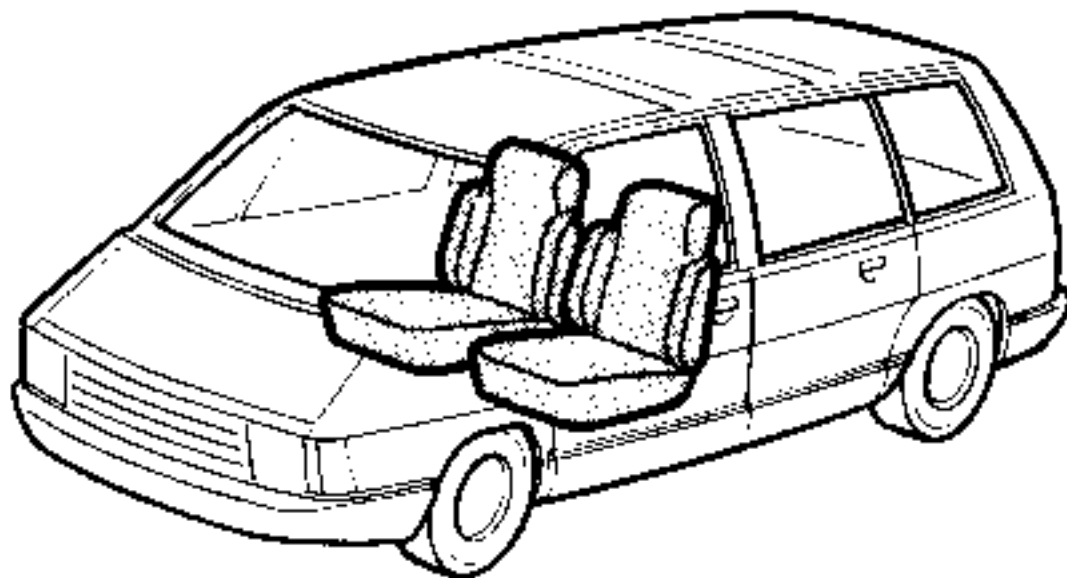
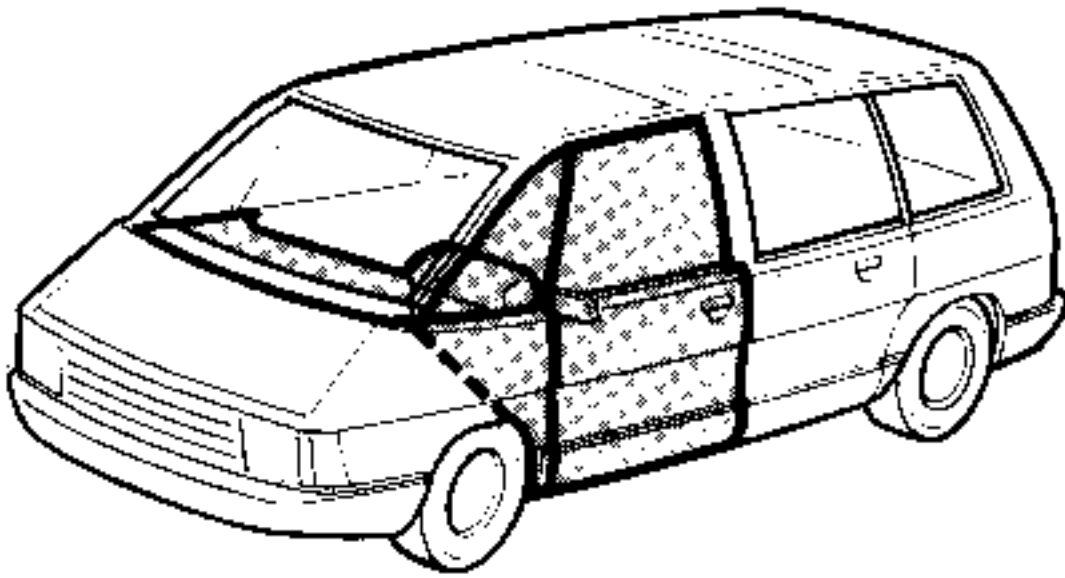
On all the butt joints, first grind back the welding fillet and then fill the joint with soft solder using a gas torch fitted with a 300 nozzle.

After painting, carry out the hollow section protection treatment.



- Apply a pad of foam at A, in the body sill in line with the lower end of the front door pillar.

REPLACING :  
STRIPPING

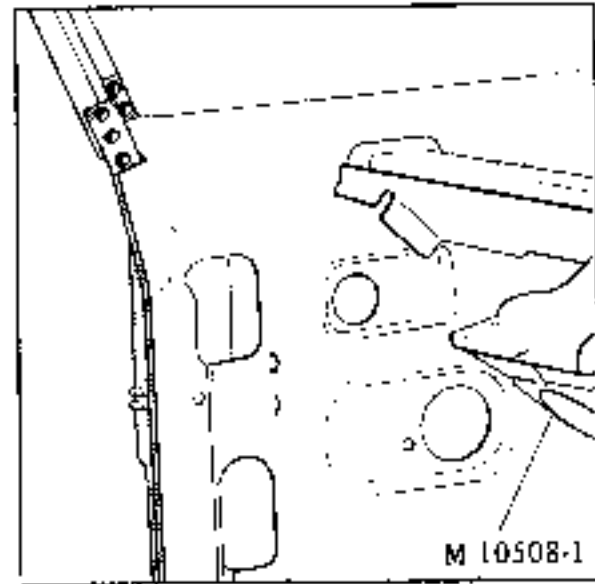
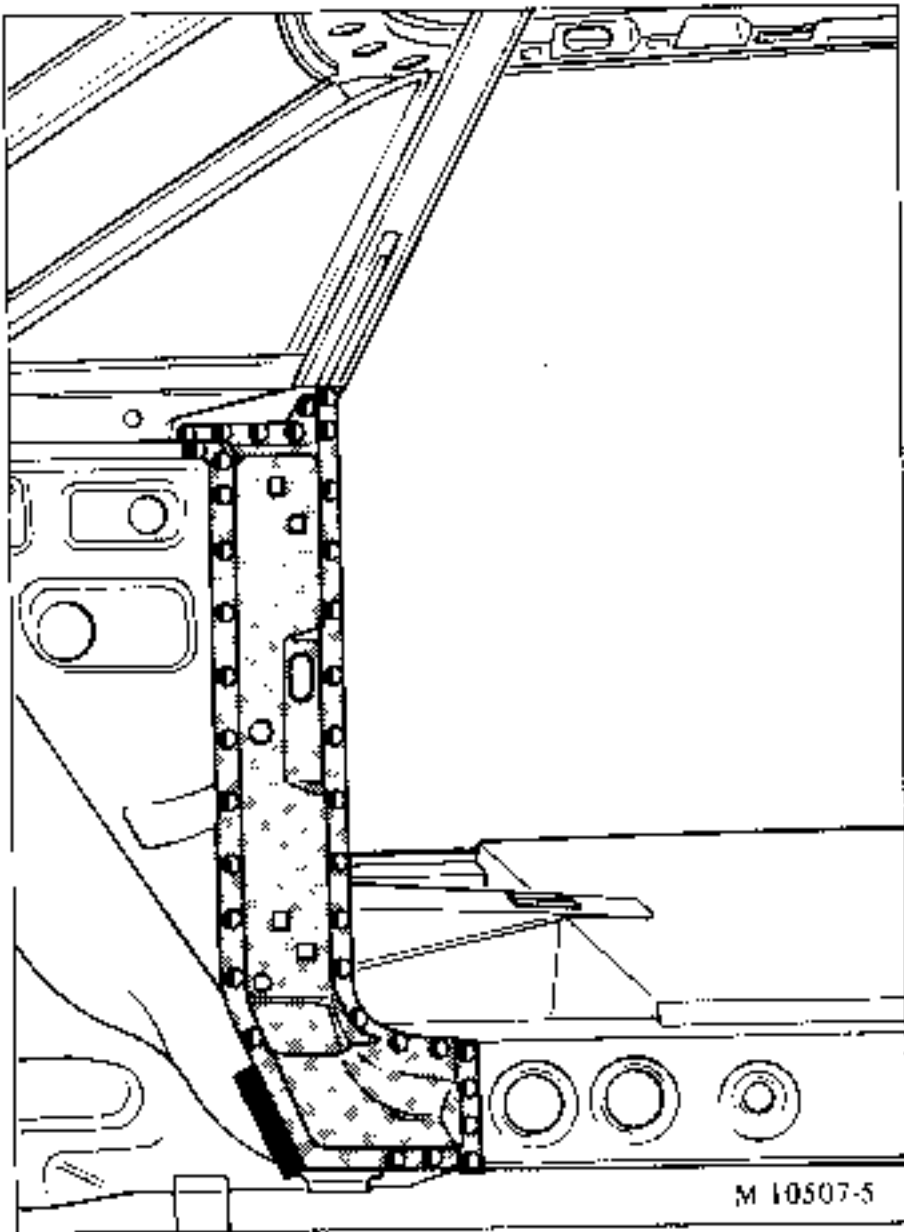


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Remove :

- the glove compartment,
- the bonnet latch on the left-hand side and the accessories supply plate on the right-hand side,
- the door sealing strip,
- the front door pillar trim,
- the fascia panel,
- the dummy pivoting window,
- part of the dummy pivoting window trim,
- the floor trim and sound deadening,
- the front door,
- the front wing (cutting it to suit the extent of the damage and the requirements of the plastic component repair sequence).

CUTTING OUT - UNPICKING



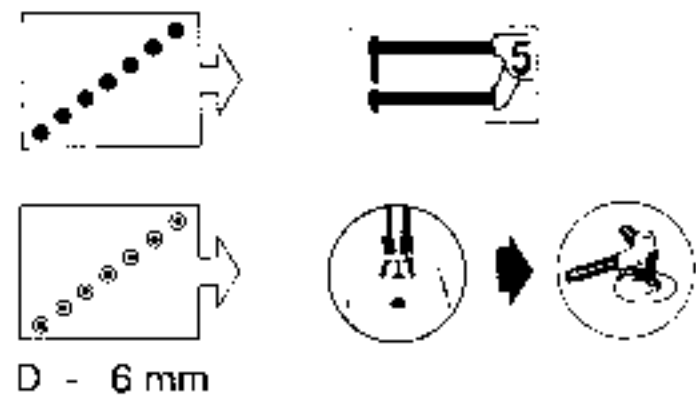
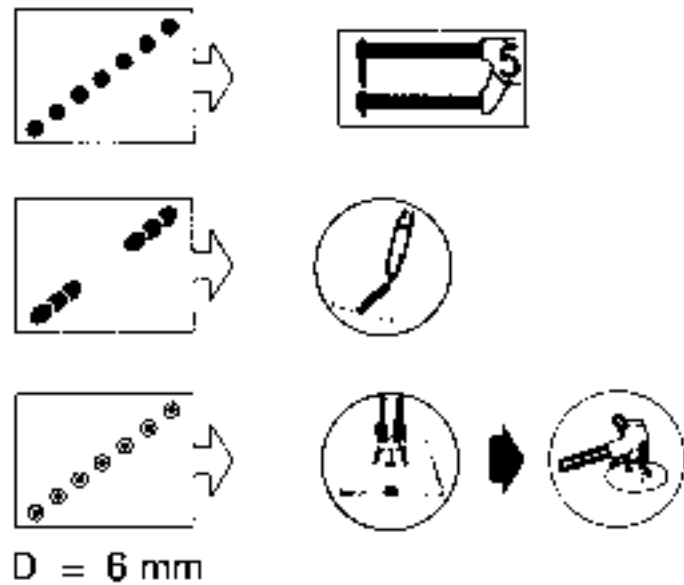
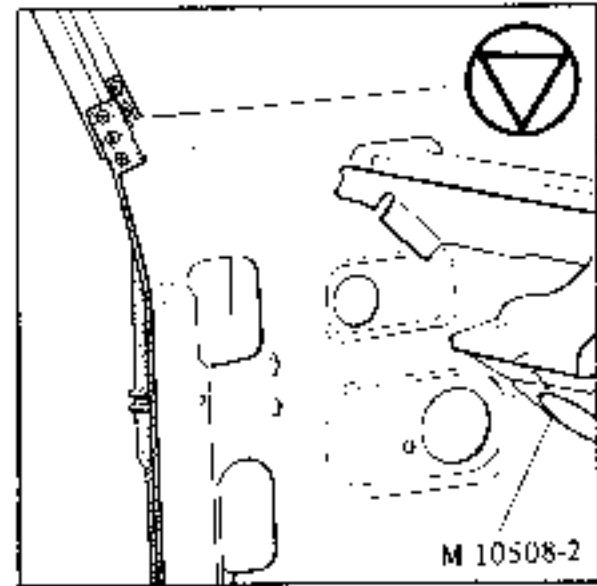
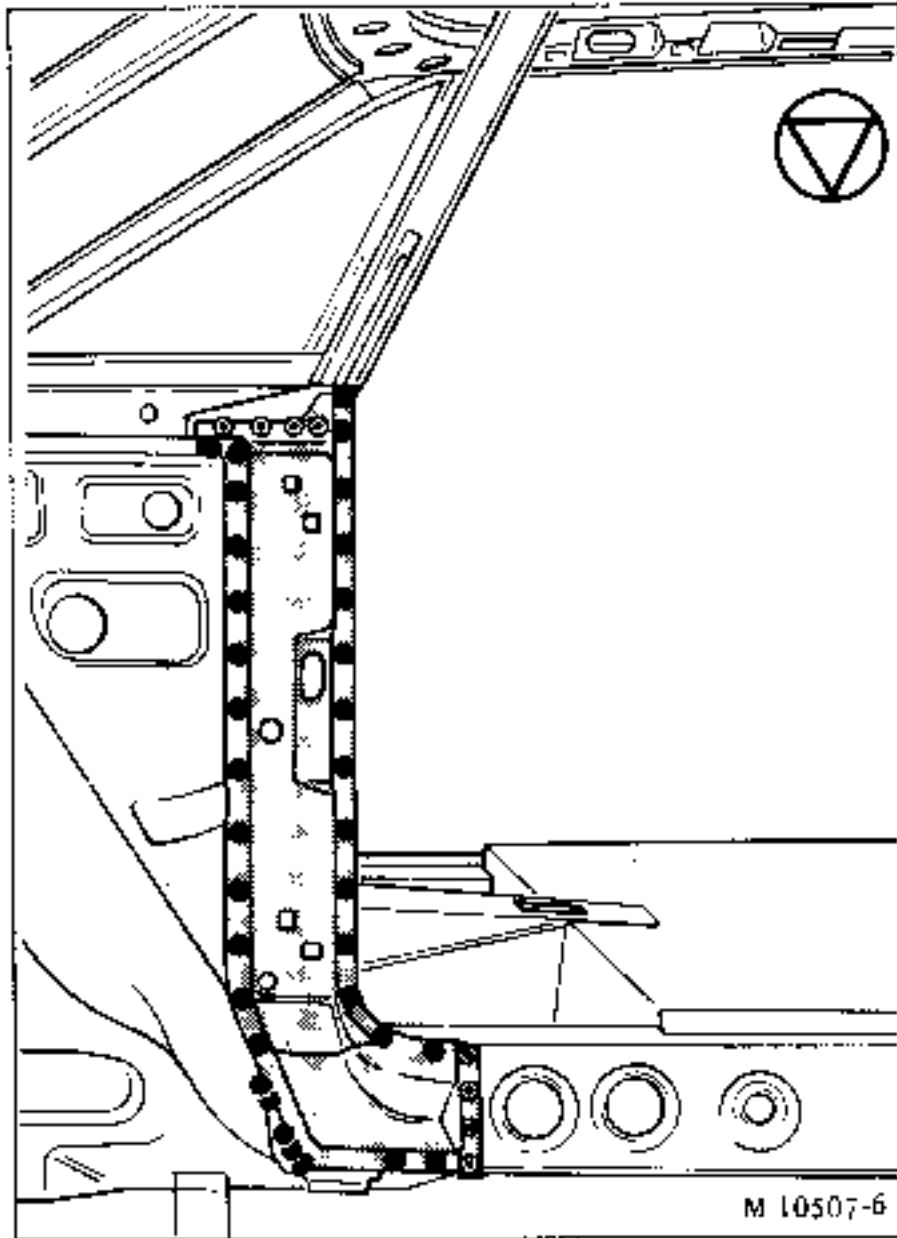
Remove the damaged section by following the instructions shown by the symbols (see description of symbols).

Grind back the unpicked spot welds remaining on the support panels.

PREPARATION BEFORE WELDING

Cut the new part to size then clamp it in place.

WELDING

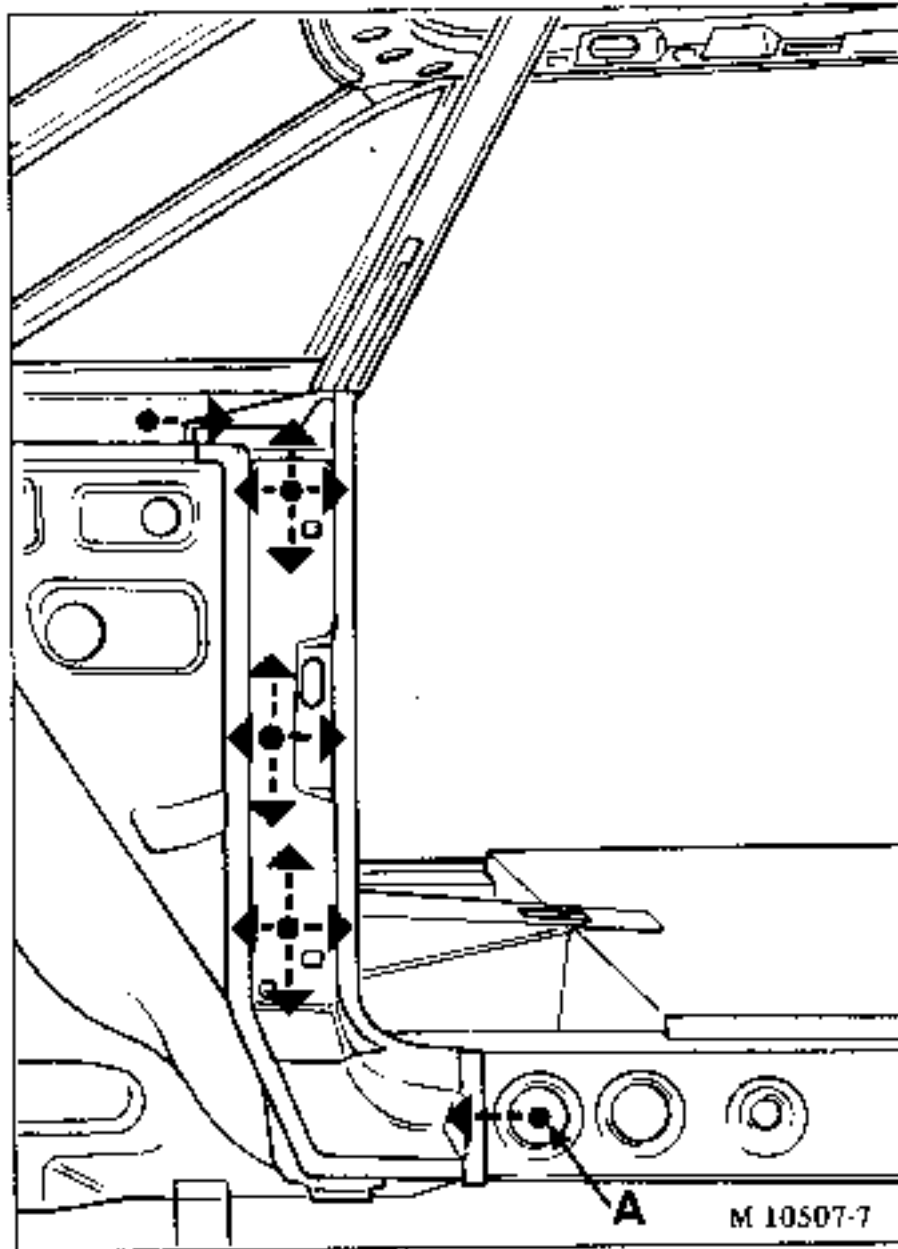


Apply the spot welds.

Apply the plug welds under a protective gas envelope. Do do this drill through the upper of the two panels to the diameter D stated under the symbol.



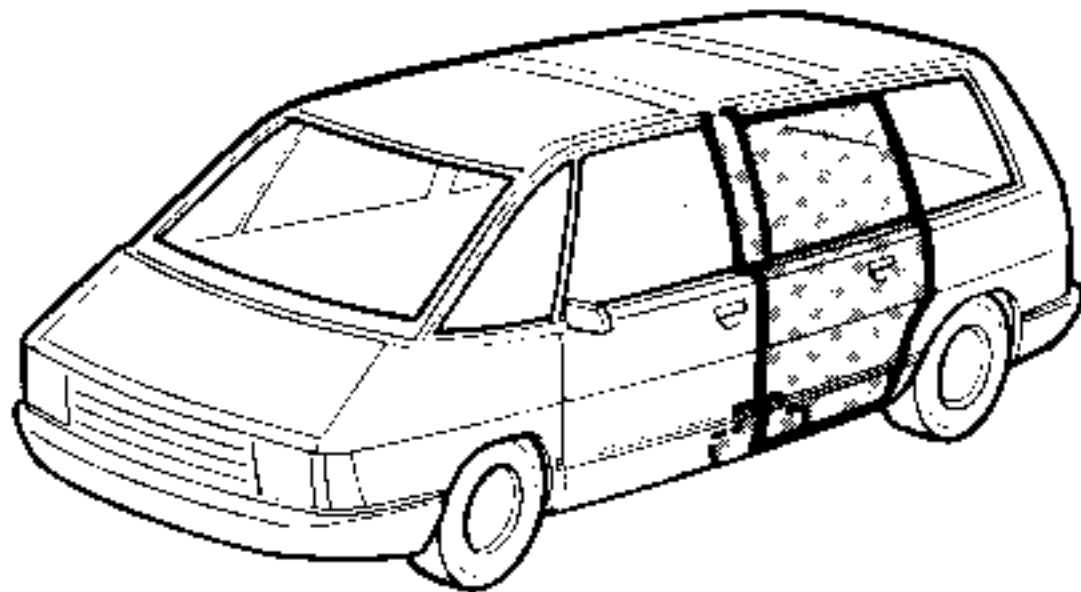
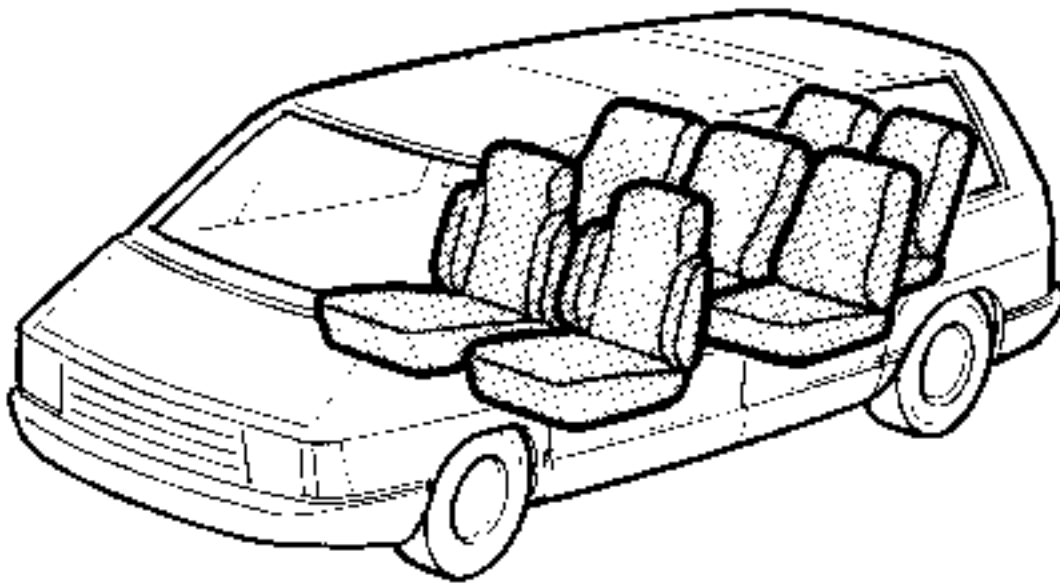
After painting apply the hollow section protection treatment.



Apply a pad of foam at (A) in the body sill in line with the bottom end of the front door pillar.

REPLACING

STRIPPING

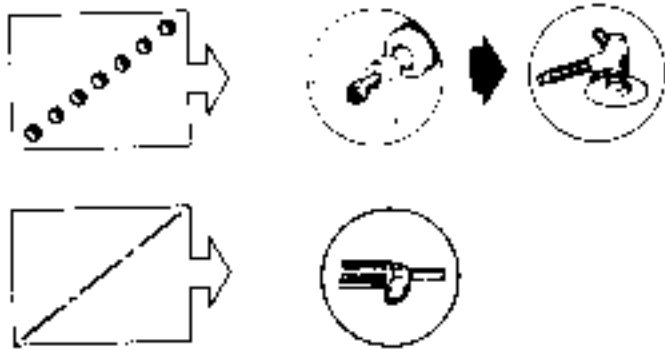
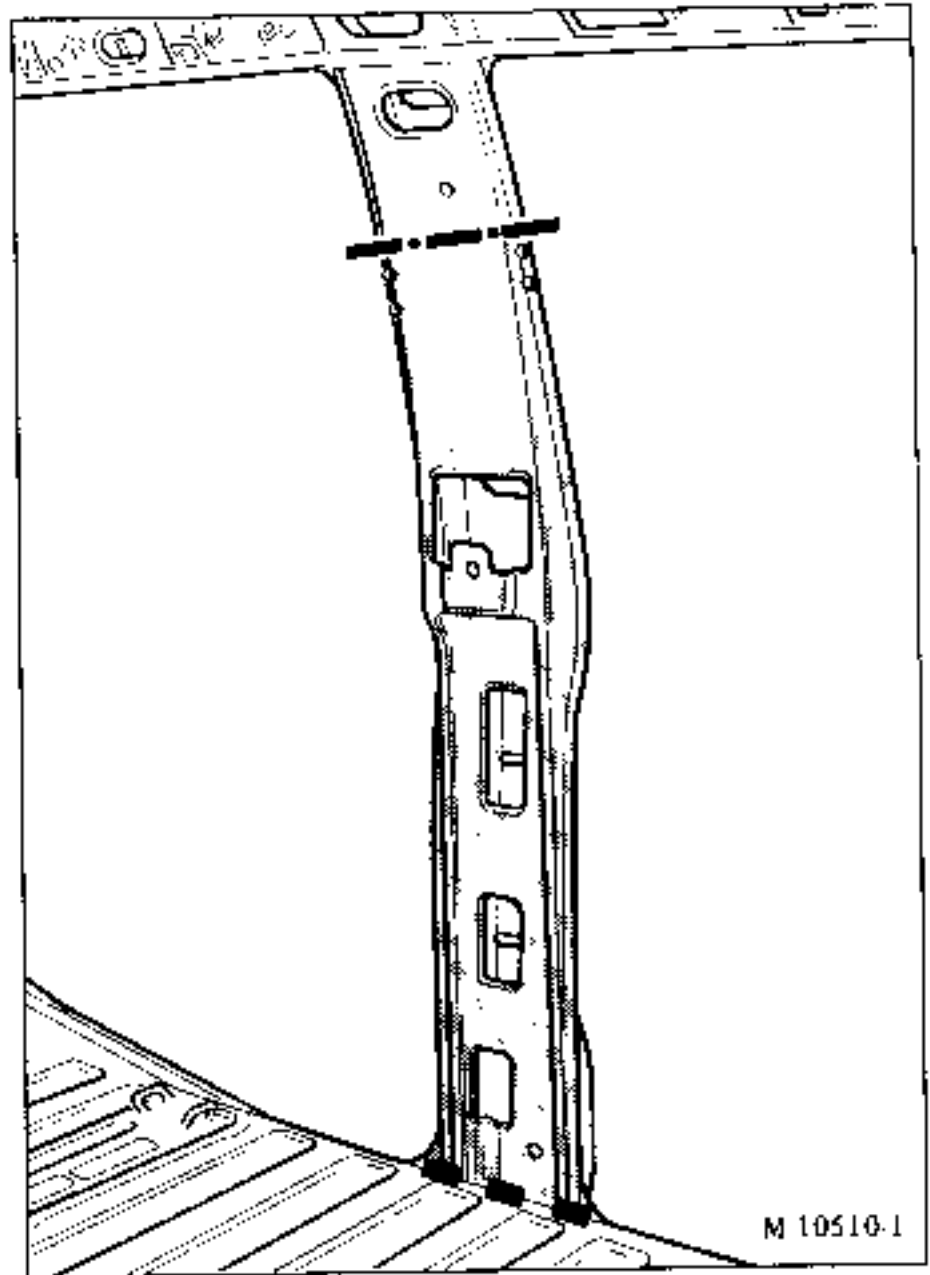
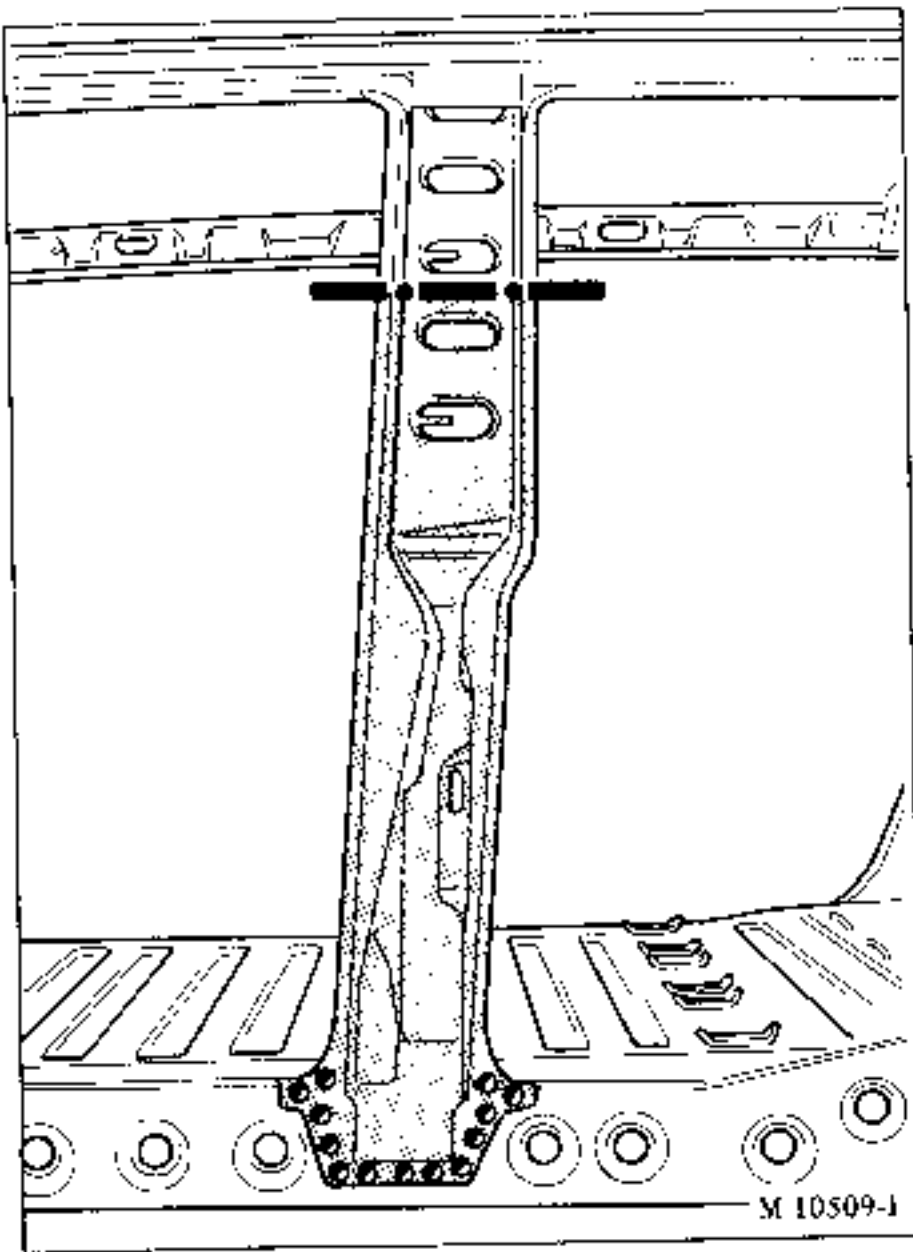


M 10738

Remove :

- the front and rear door sealing strips,
- the seat belt upper and lower anchor points,
- the upper and lower door pillar trim,
- the seat belt inertia reel,
- the front and rear seats (on the damaged side),
- part of the floor trim and sound deadening (on the damaged side),
- the rear door,
- the upright between the doors and the body sill (cutting it to suit the extent of the damage and requirements of the plastic component repair sequence).

CUTTING OUT - UNPICKING



Grind back the unpicked spot welds remaining on the support panels.

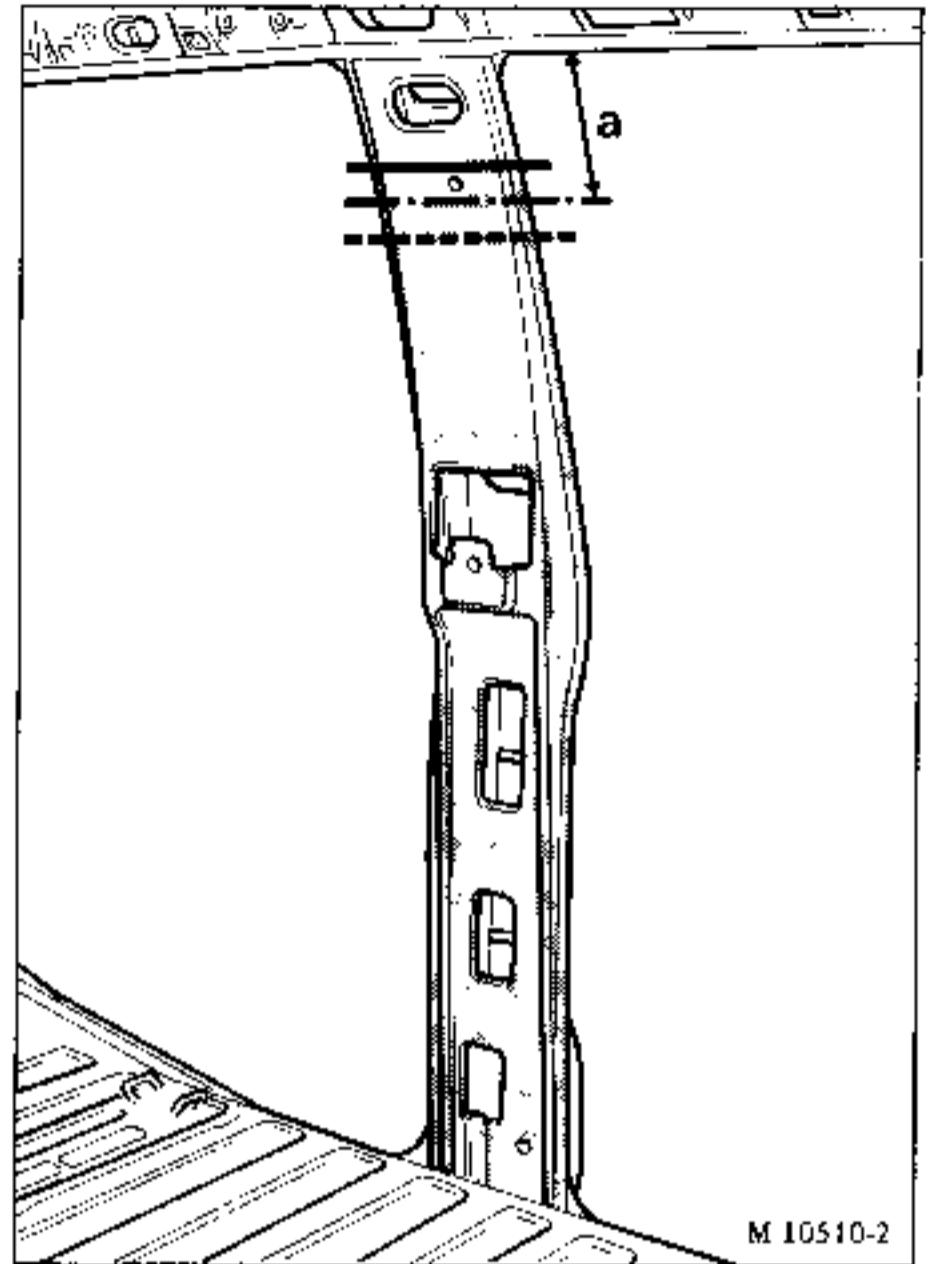
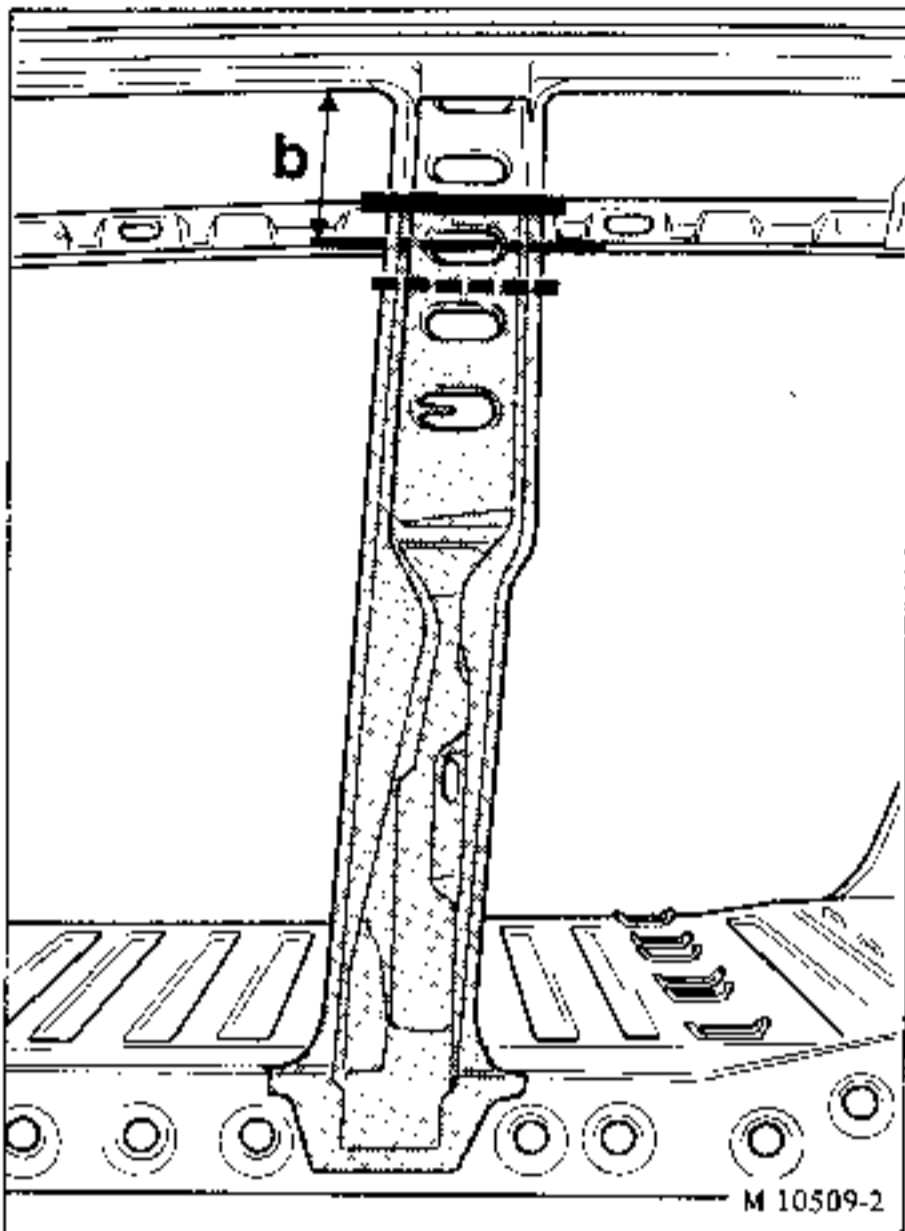
Remove the damaged section by following the instructions shown by the symbols (see the description of the symbols).

PREPARING THE NEW PARTS

Cut out sections from the new parts approximately 20 mm larger than those cut out on the vehicle.

Fit the new parts overlapping those on the vehicle and clamp them in place.

Saw through both thicknesses of panelling at the same time to obtain an exact fit.



b = 220 mm



a = 170 mm

**PREPARATION BEFORE WELDING**

Adjust the new parts to fit then clamp them in place.

**WELDING**

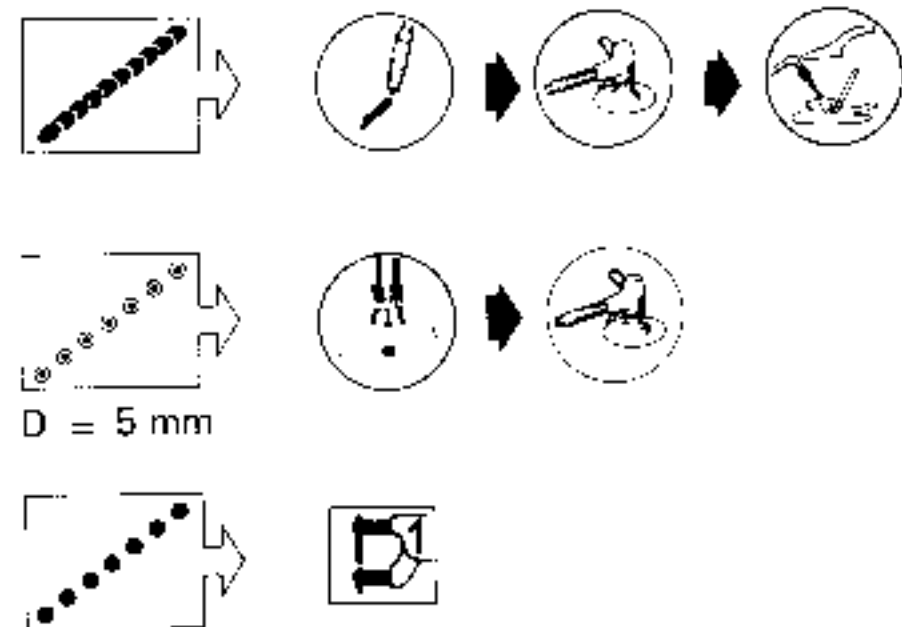
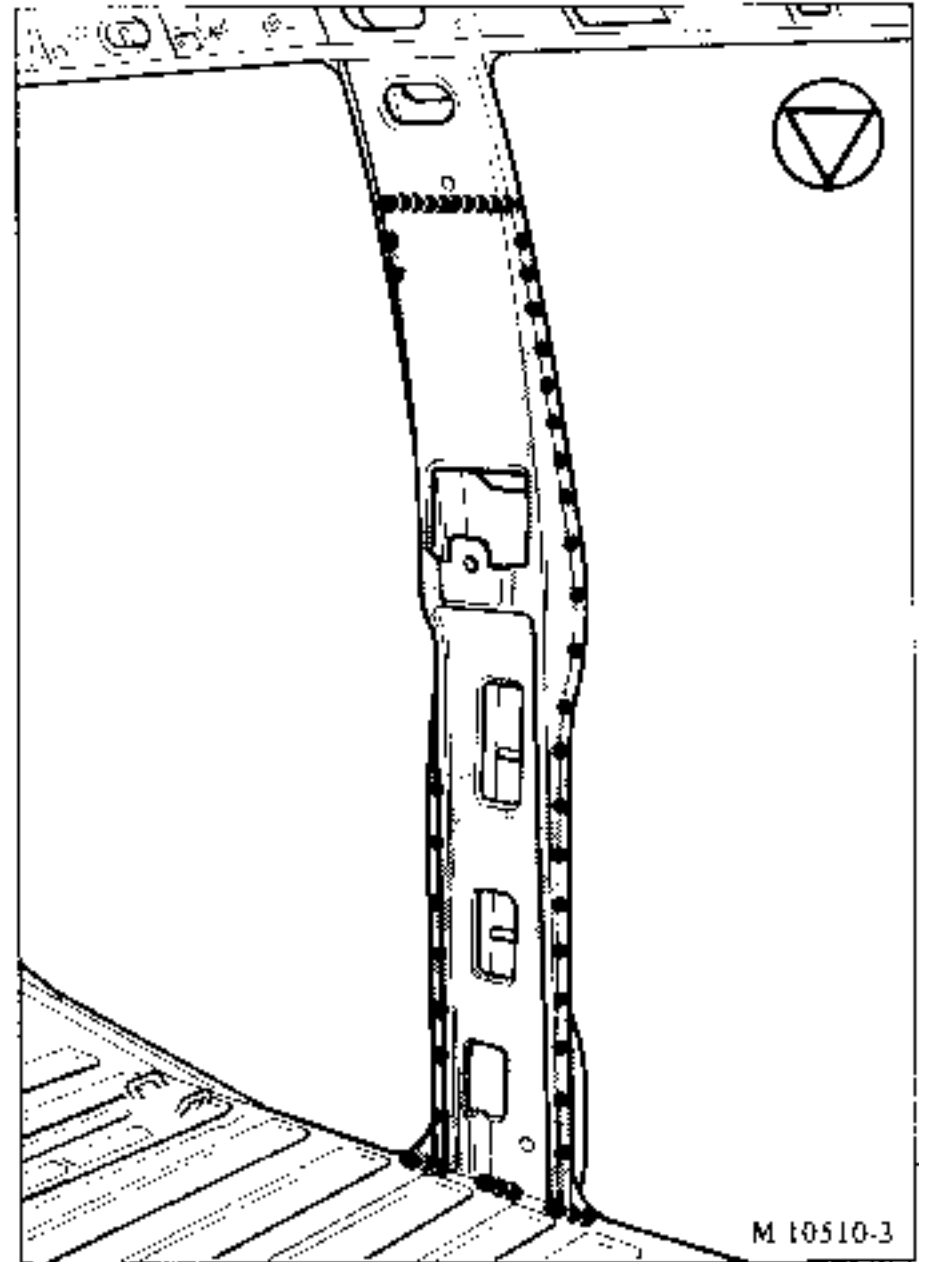
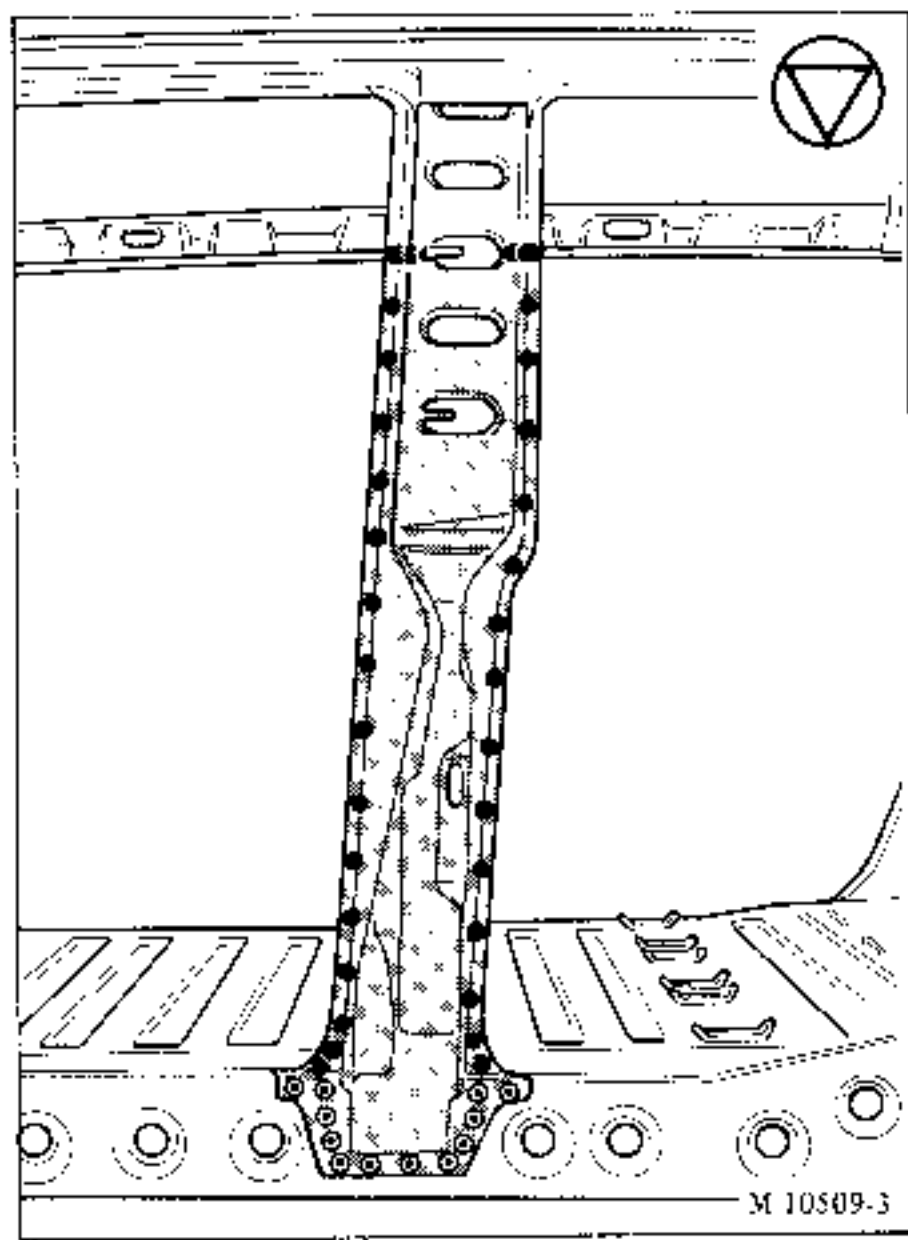
Apply tack welds to the areas to be butt welded.

Apply the spot welds.

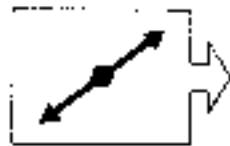
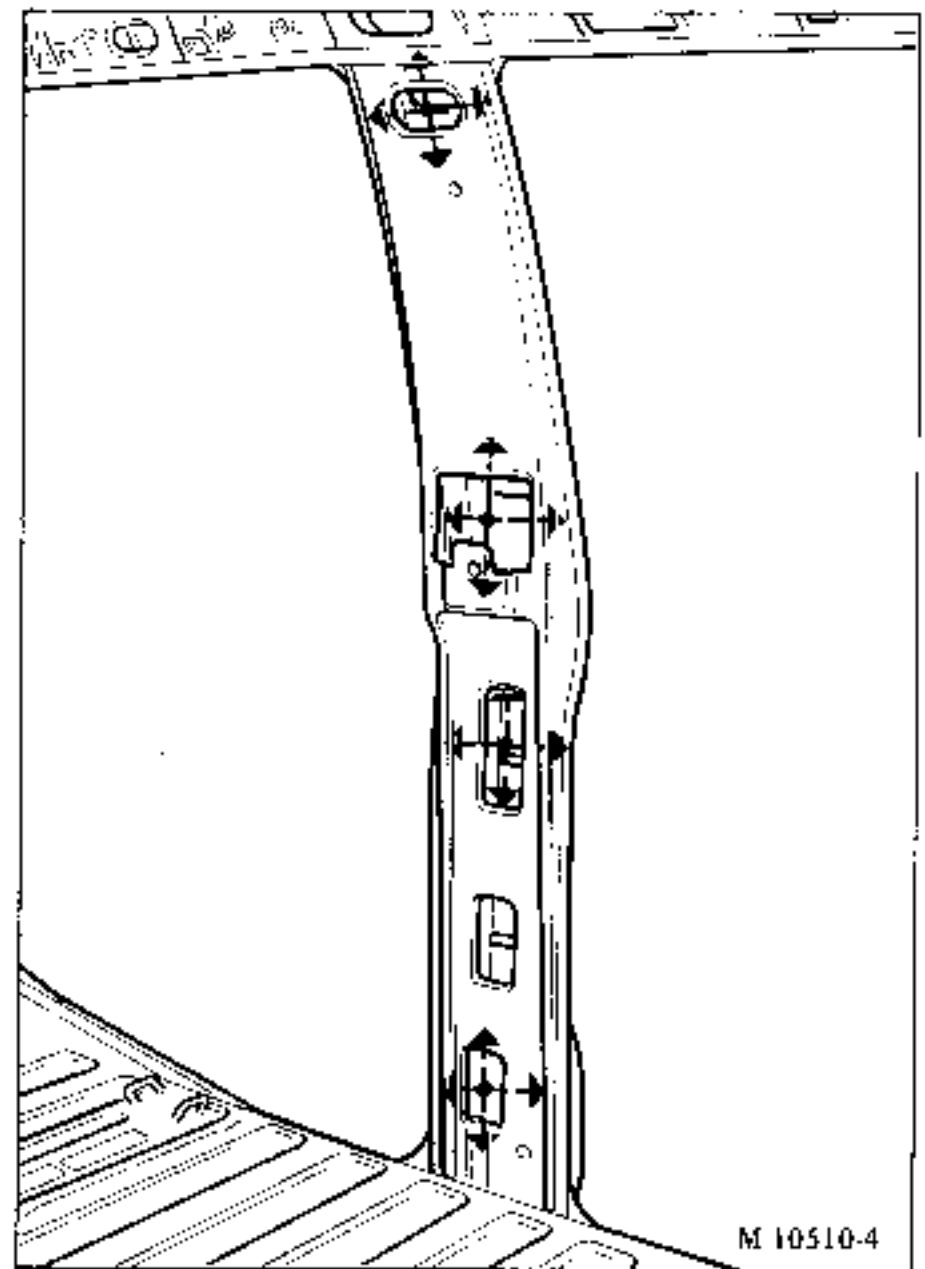
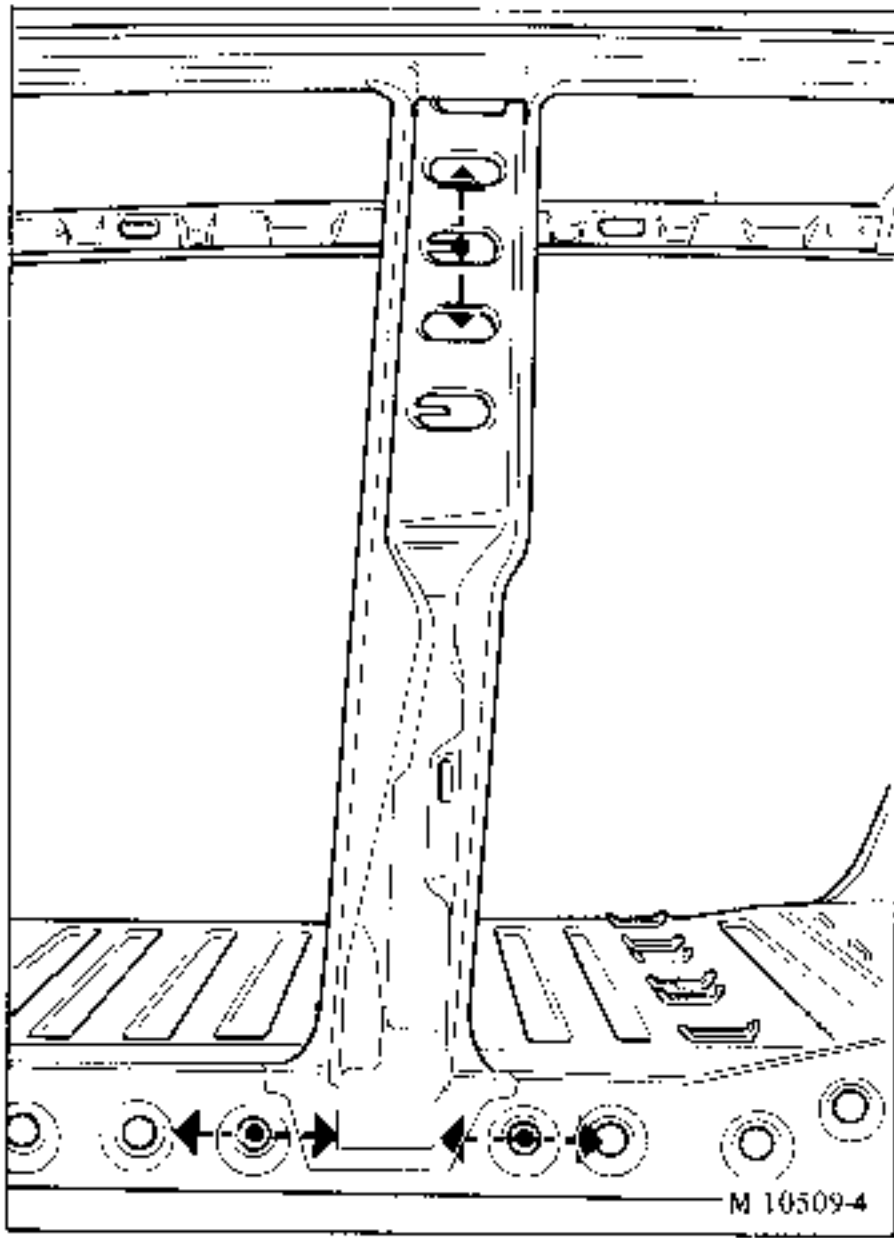
Apply the stitch welding fillets under a protective gas envelope.

Apply the plug welds under a protective gas envelope. To do this, drill through the upper of the two panels at the diameter D stated under the symbol.

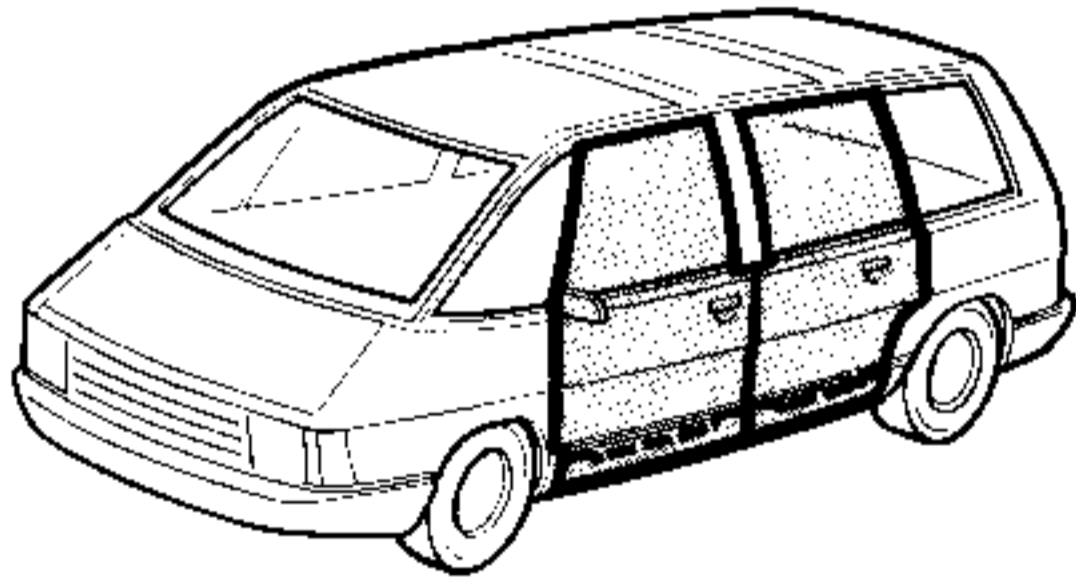
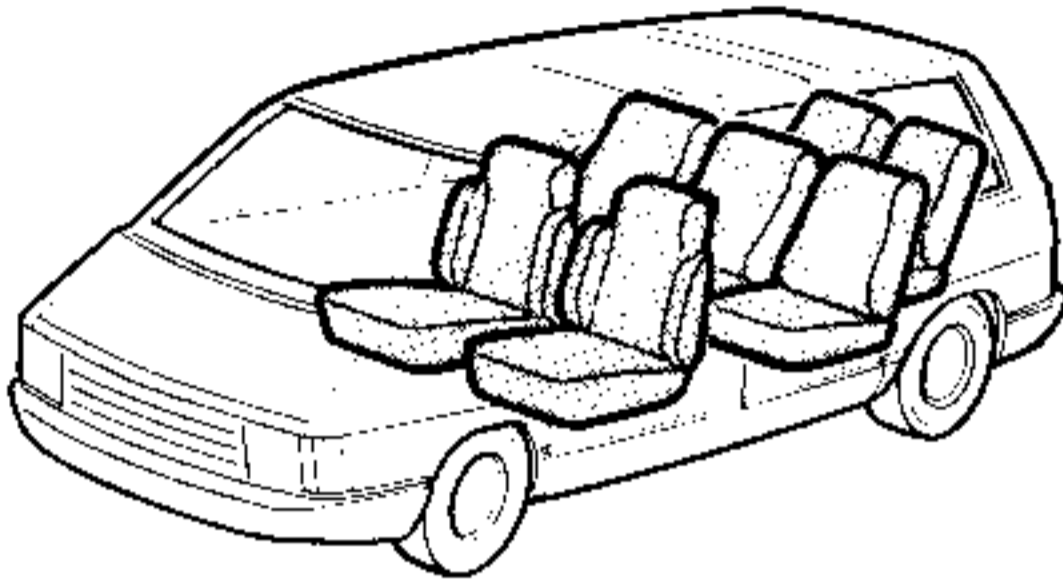
Grind back the butt welds and fill them with soft solder using a torch equipped with a 300 nozzle.



After painting, carry out the hollow section protection treatment.



REPLACING  
STRIPPING

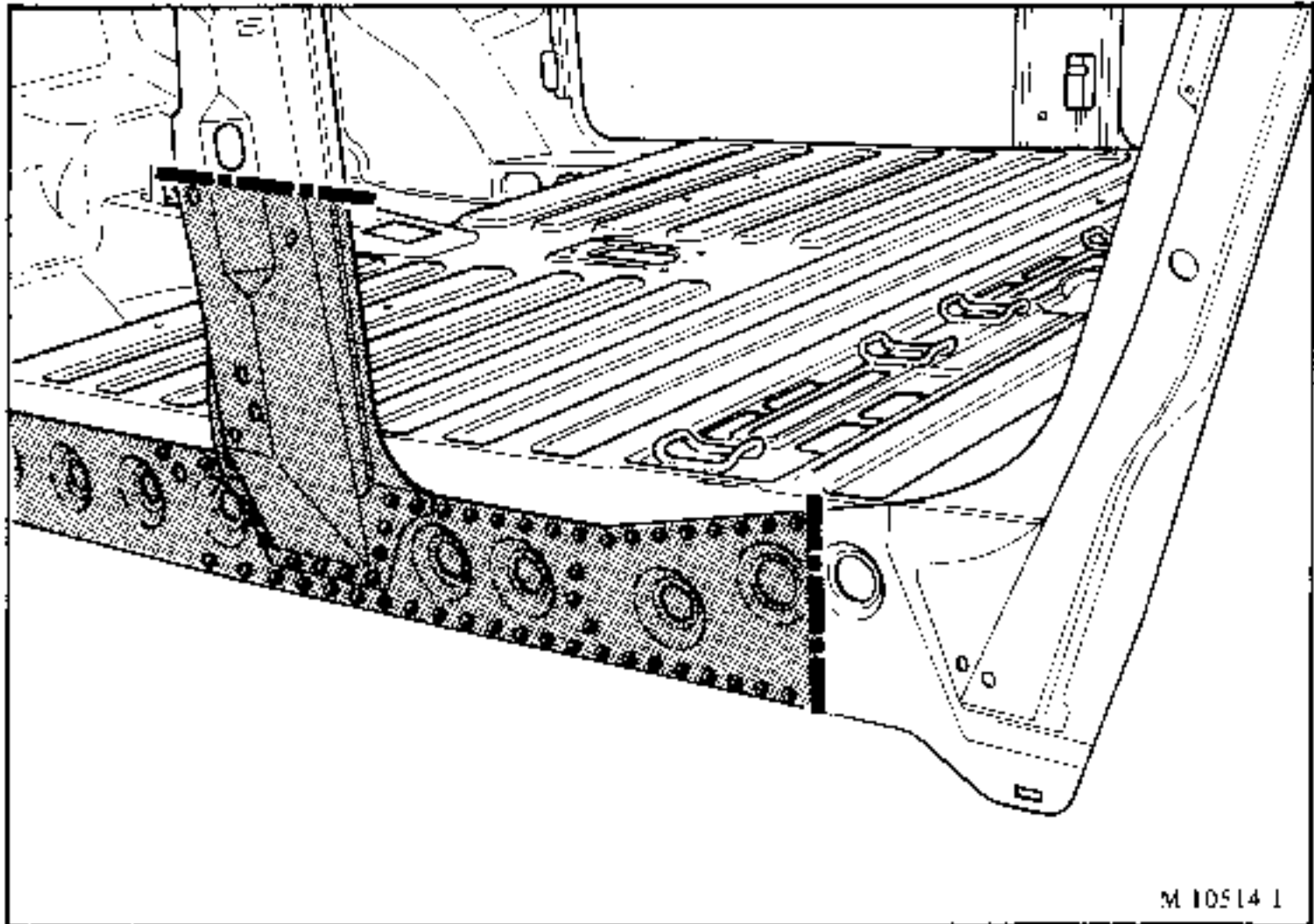
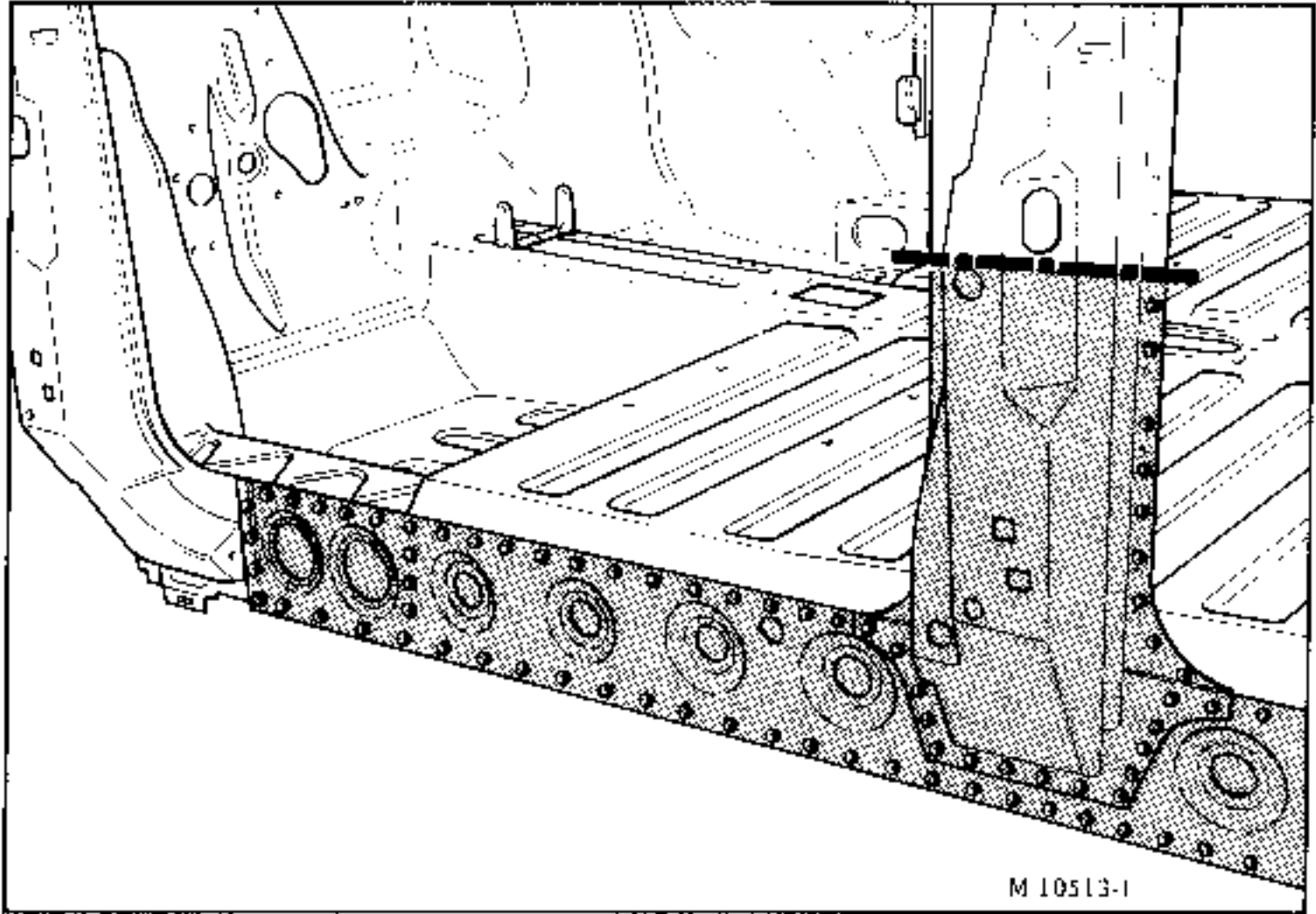


M 10739

Remove :

- the front and rear seats (on the same side as the impact),
- the front and rear door sealing strips,
- the seat belt upper and lower anchor points,
- the front door pillar lower trim,
- part of the upper trim and the complete lower trim from the door pillar,
- the seat belt inertia reel,
- part of the door trim and sound deadening (on the same side as the impact),
- the front and rear doors,
- the body sill (cut to suit the extent of the damage and the requirements of the plastic component repair sequence).

CUTTING OUT - UNPICKING

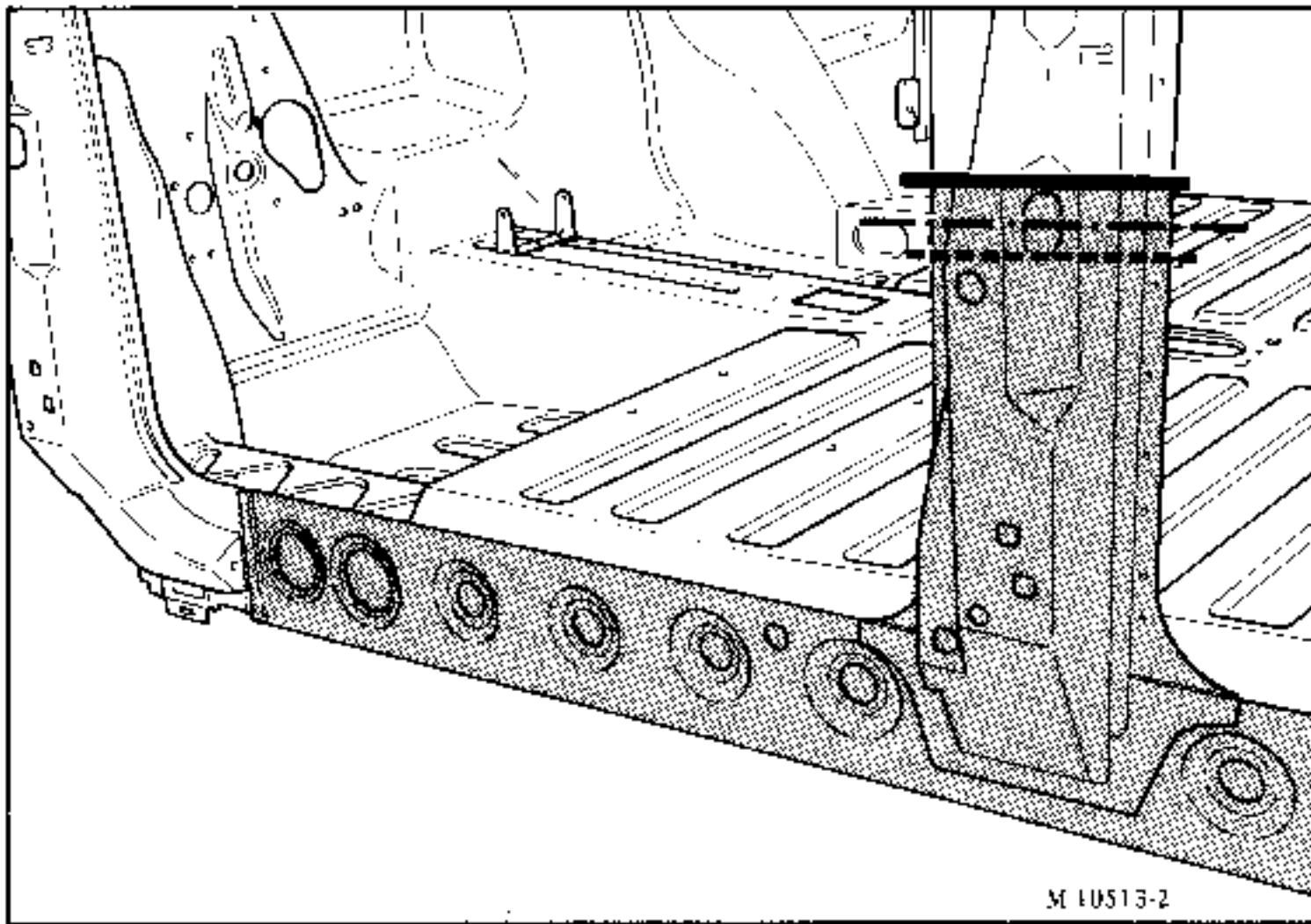


Remove the damaged section by following the instructions symbols (see description of symbols).

Grind back the unpicked spot welds remaining on the support panels.



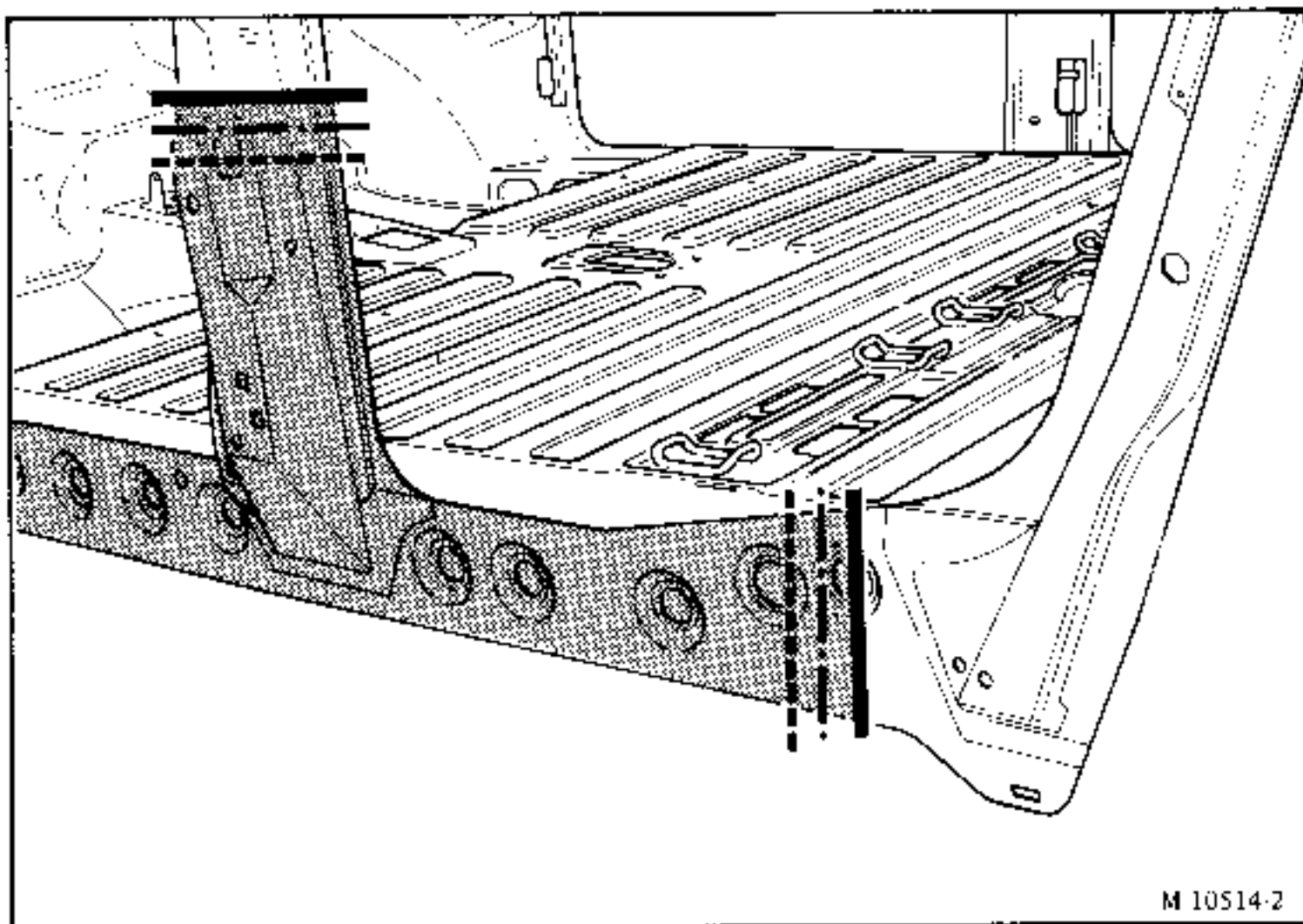
PREPARING THE NEW PARTS



Cut sections from the new part approximately 20 mm bigger than those cut from the vehicle.

Position the new parts so that they overlap those on the vehicle and clamp them in place.

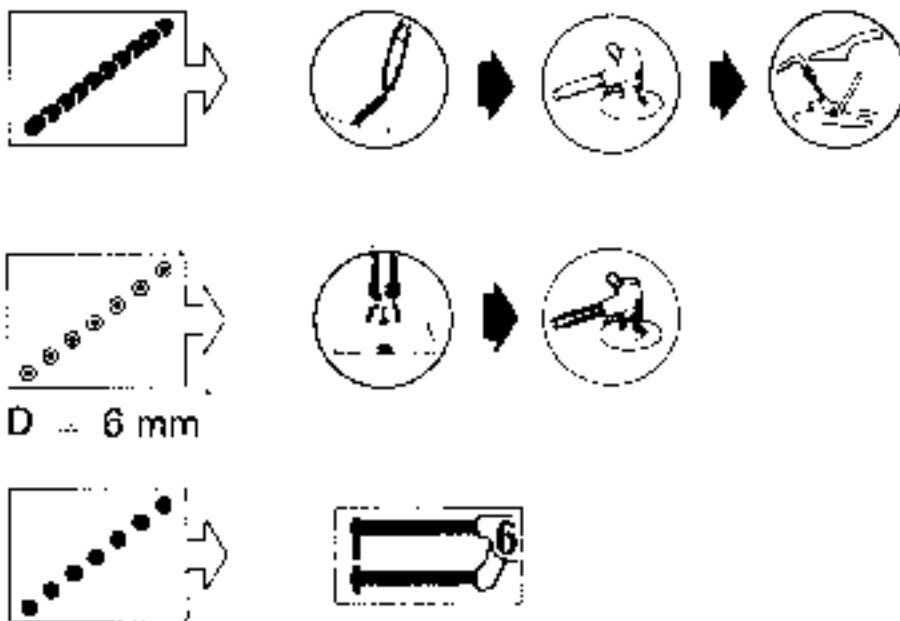
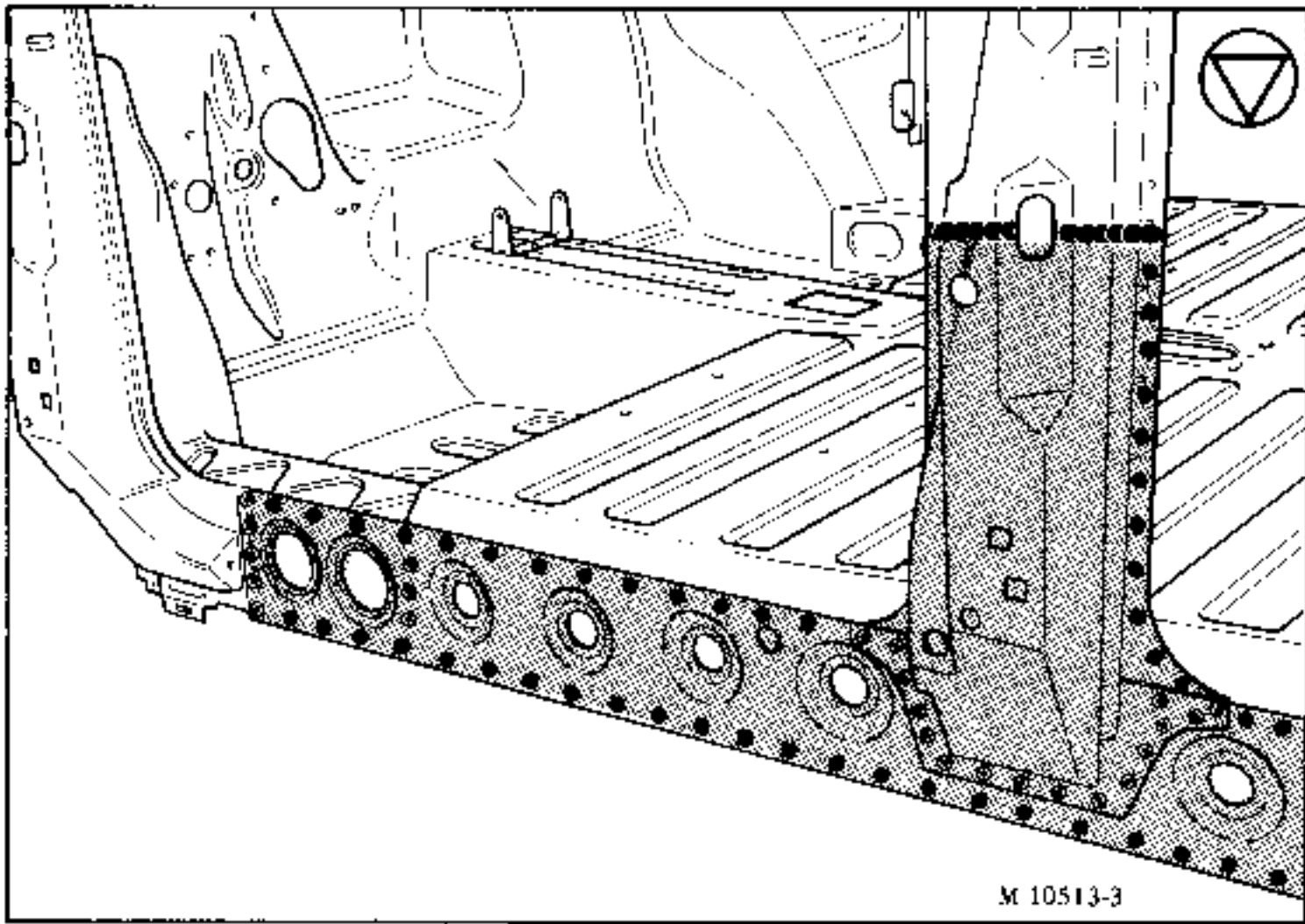
Saw through both panels at the same time to obtain an accurate fit.



PREPARATION BEFORE WELDING

Adjust the new parts to fit and then clamp them in place.

WELDING



D = 6 mm

Apply tack welds to the areas to be butt welded.

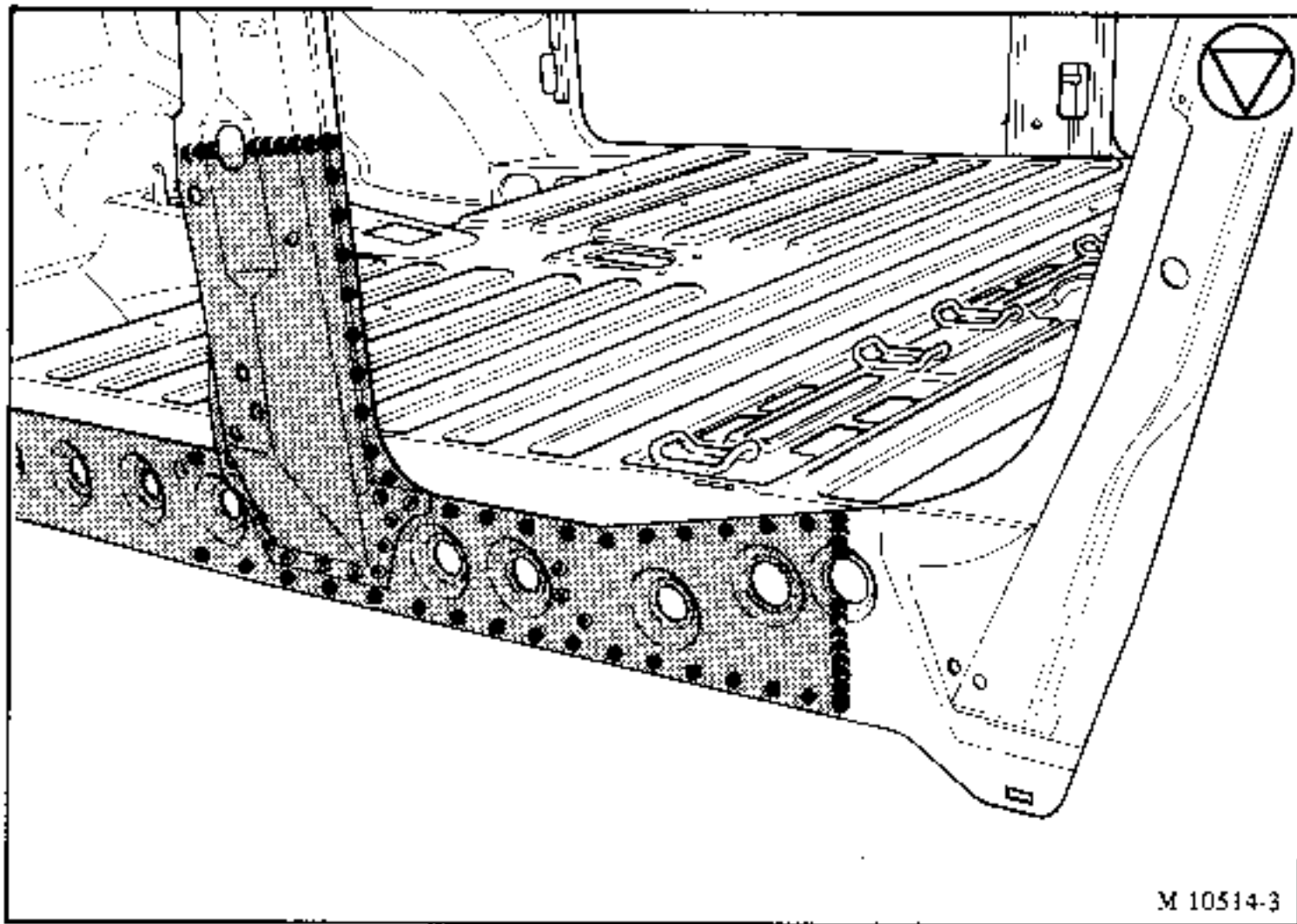
WELDING

Carry out the spot welds.

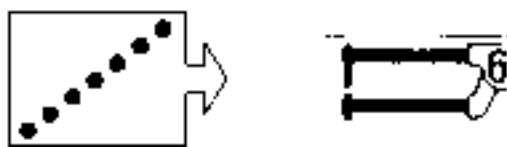
Apply the stitched fillets under a protective gas envelope.

Carry out the plug welds under a protective gas envelope. To do this, drill through the upper of the panels and the diameter D stated under the symbol.

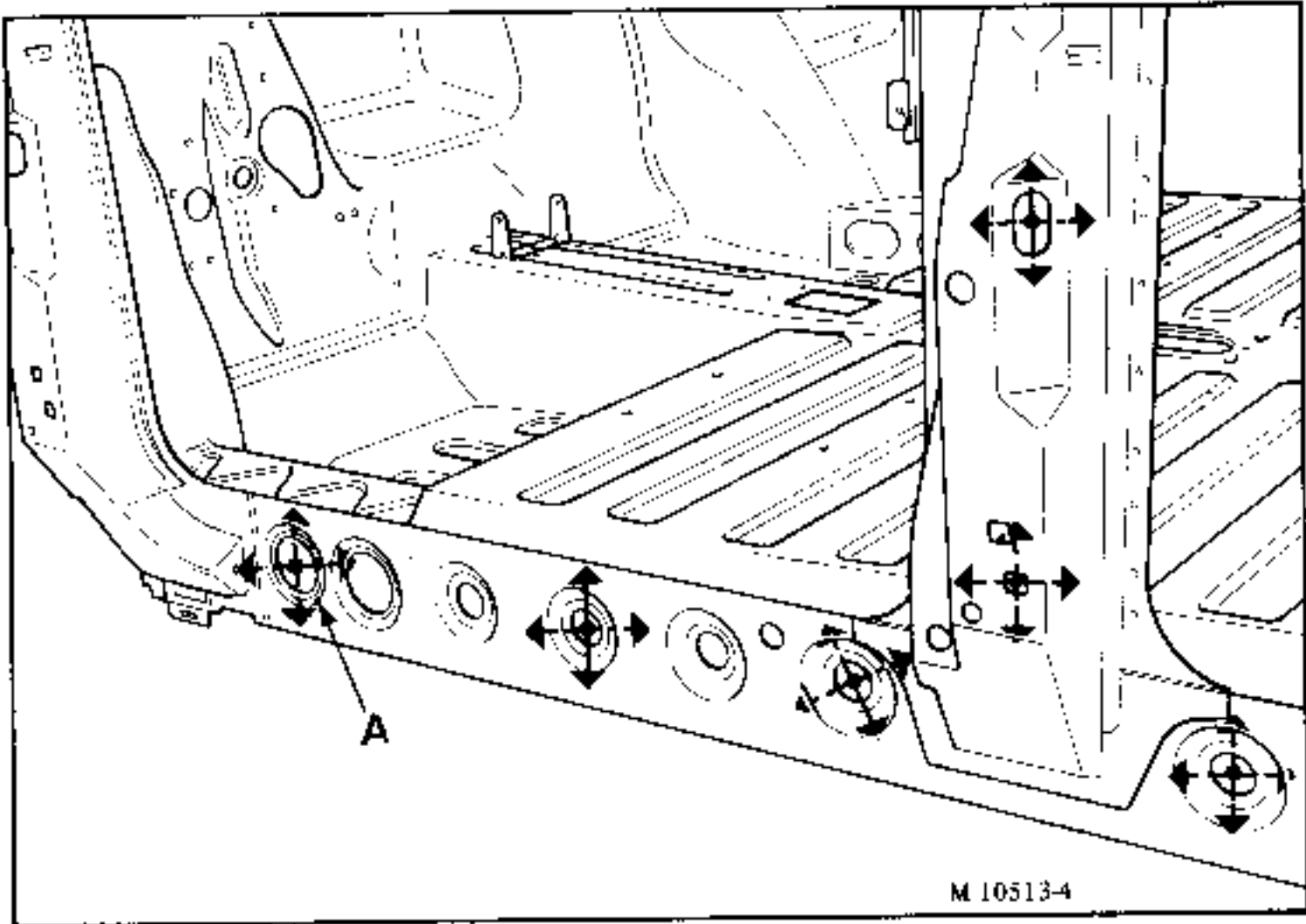
Grind back the welding fillets and fill them with soft solder using a torch fitted with a 300 nozzle.



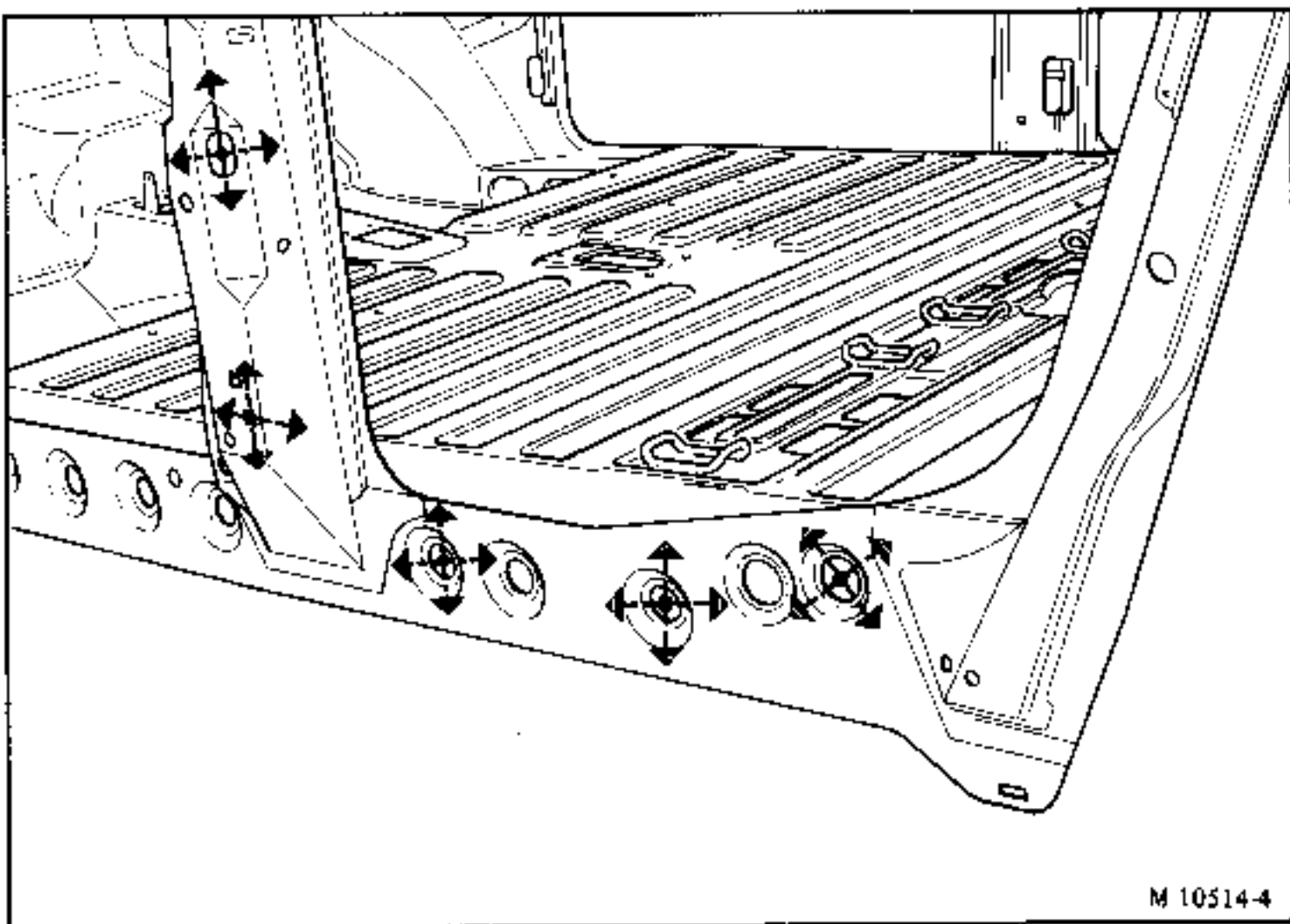
D = 6 mm



After painting, carry out the hollow section protection treatment.



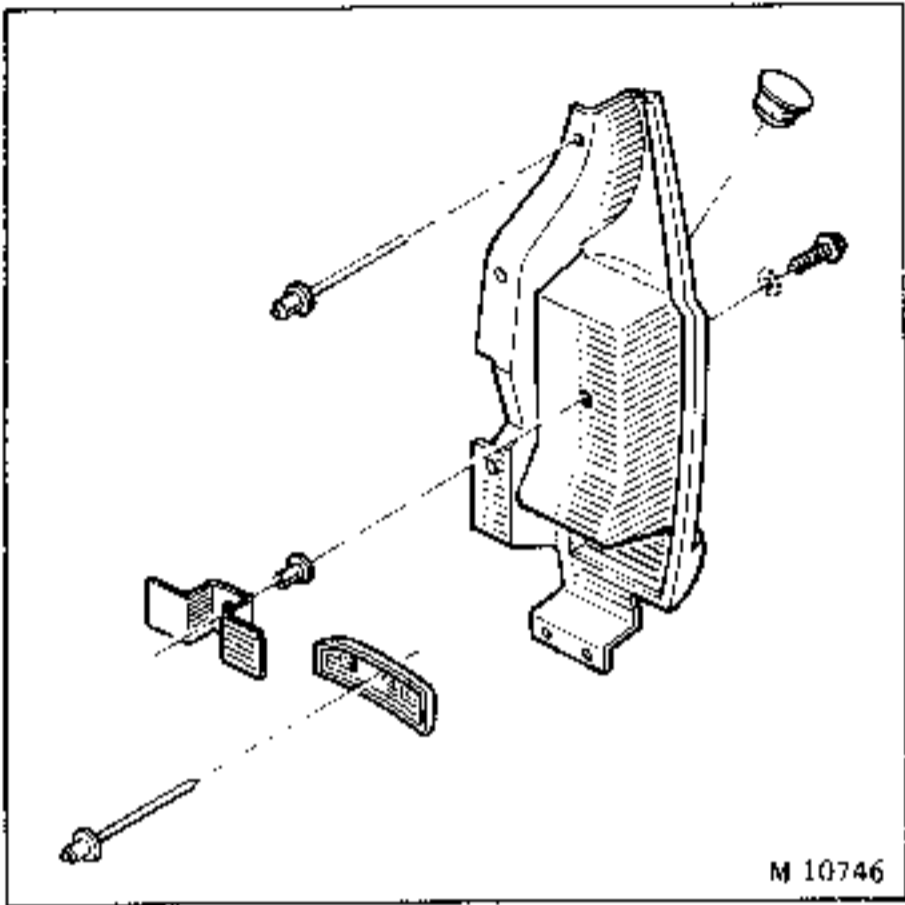
Fit a foam pad at A.



REPAIRING :

EARLY TYPE

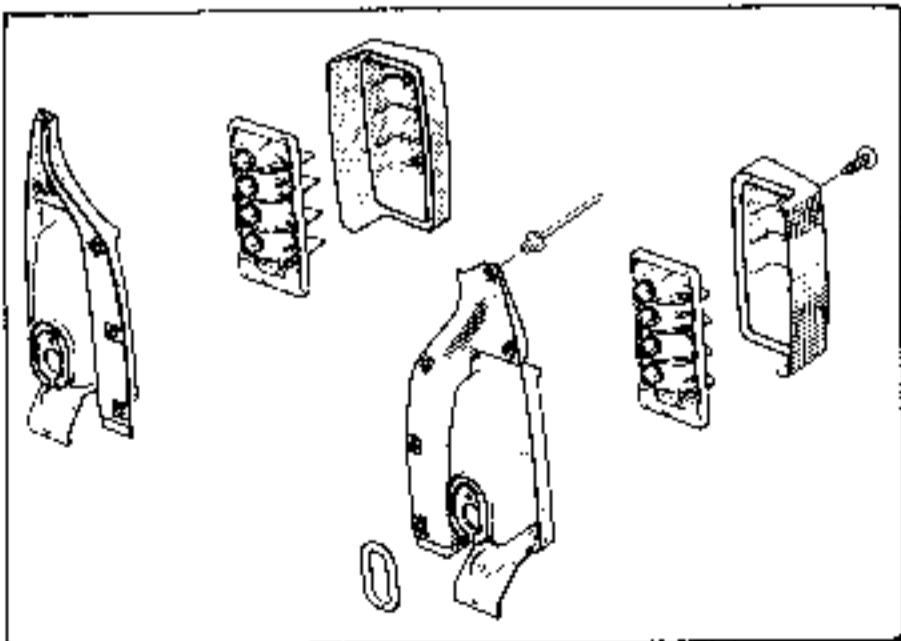
This part is made from pre-impregnated glassfibre. Consequently, only cracks, small holes and small broken areas can be repaired with epoxy resin and polyester body filler.



These cracks, holes and small broken areas are to be repaired according to the plastic component repair sequence 1, 2 or 3.

LATER TYPE

The ABS casing cannot be repaired, it being self-coloured.



PAINTING

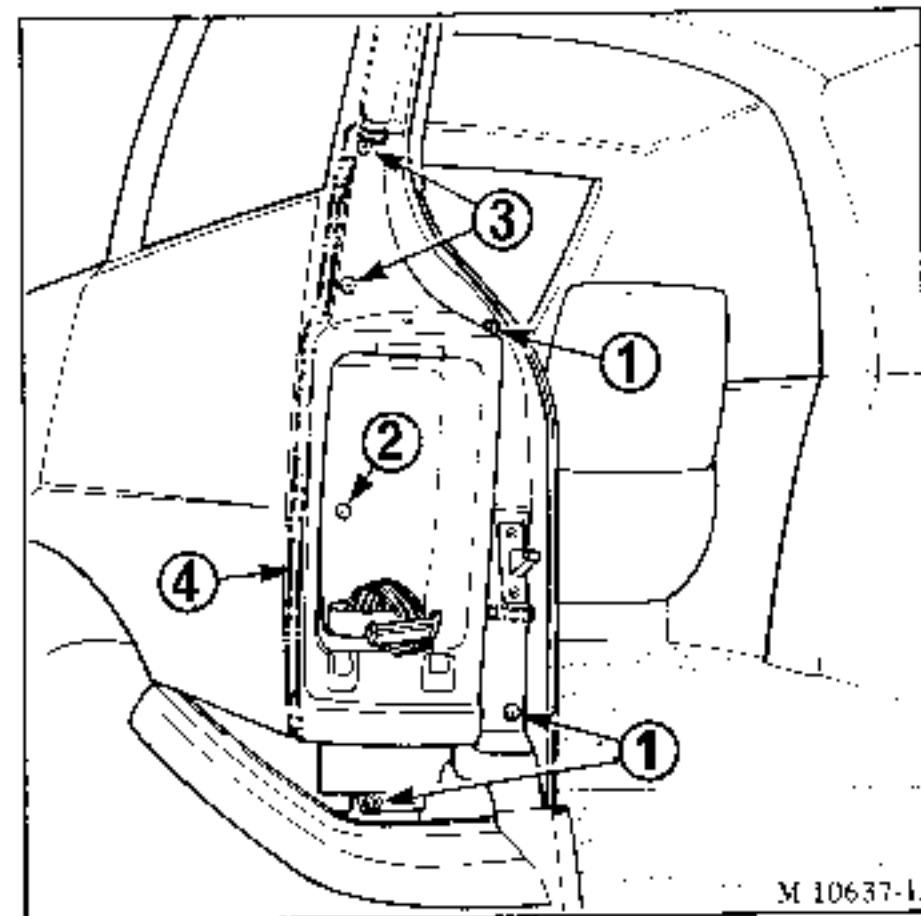
Carry out paint application sequence no. 3.

REPLACING :  
EARLY TYPE

This operation involves removing :

- the rear light
- the rear bumper shield
- the tailgate sealing strip
- the tailgate switch (on the RH side).

Pull the sleeving and the wiring harness to one side.



The rear light casing is secured to the chassis by 3 rivets (1) and 1 screw (2).  
It is secured to the wing by 2 rivets (3).  
It is bonded to the rear wing by a fillet of adhesive mastic (4) 4 mm in diameter.

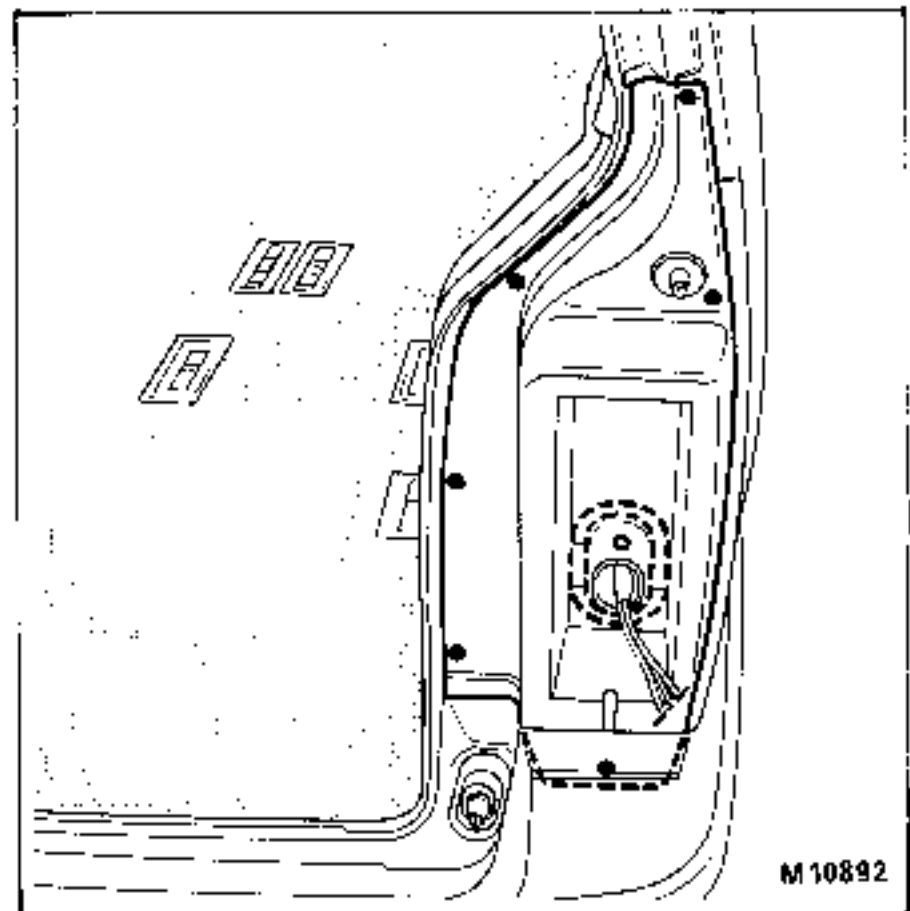
PAINTING

Carry out paint application sequence no. 1 (only on those areas that are visible).

LATER TYPE

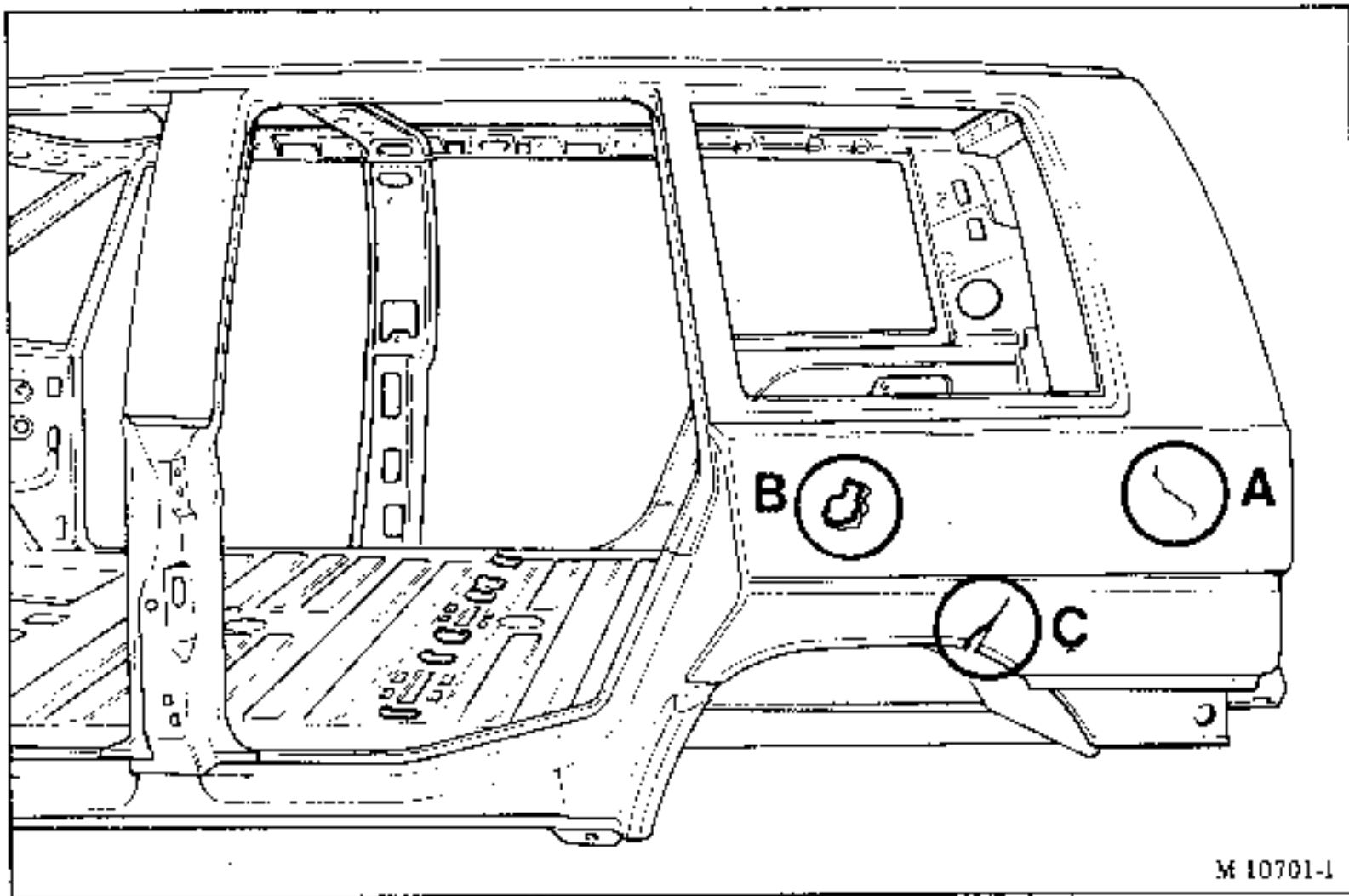
This operation involves removing :

- the rear light
- the rear bumper shield
- the tailgate sealing strip
- the tailgate light switch (on the RH side).



The rear light casing is secured to the chassis by 6 rivets (1) and 1 screw (2).  
It is sealed by a fillet of butyl rubber 12 mm in diameter.

REPAIRING



A. CRACKS : carry out plastic component repair sequence no. 1 (see the general section on the repair of polyester components).

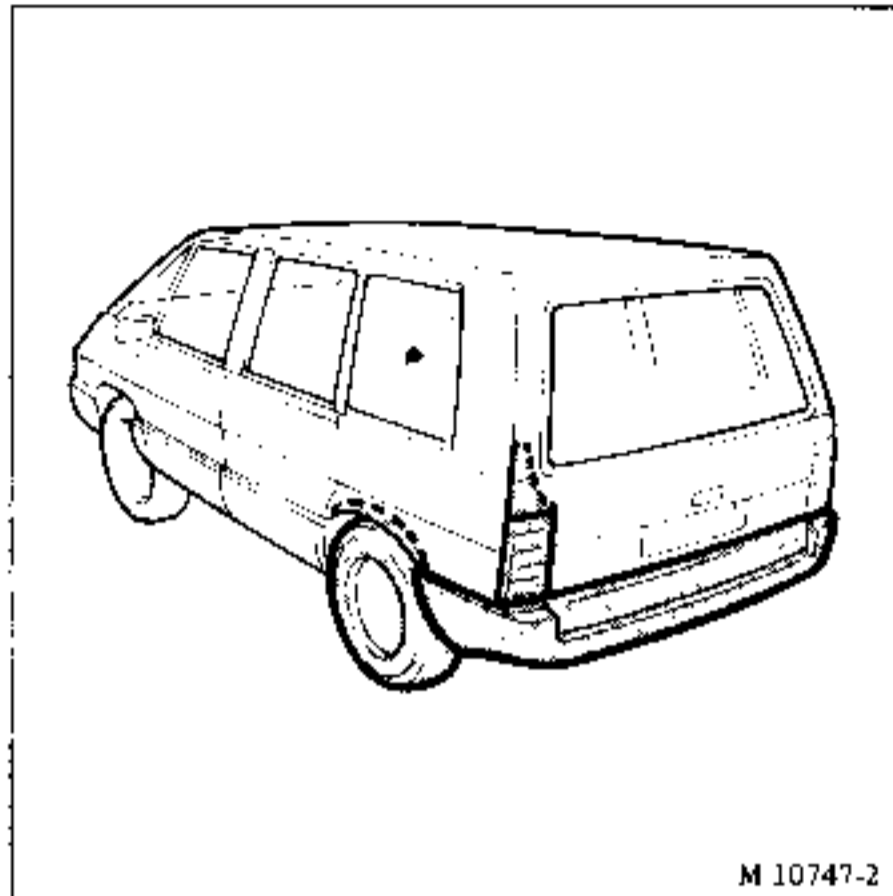
B. HOLES : carry out plastic component repair sequence no. 2 (see the general section on the repair of plastic components).

C. BROKEN AREAS : carry out plastic component repair sequence no. 3 (see the general section on the repair of polyester components).

Carry out paint application sequence no. 3.

PARTIAL REPLACEMENT

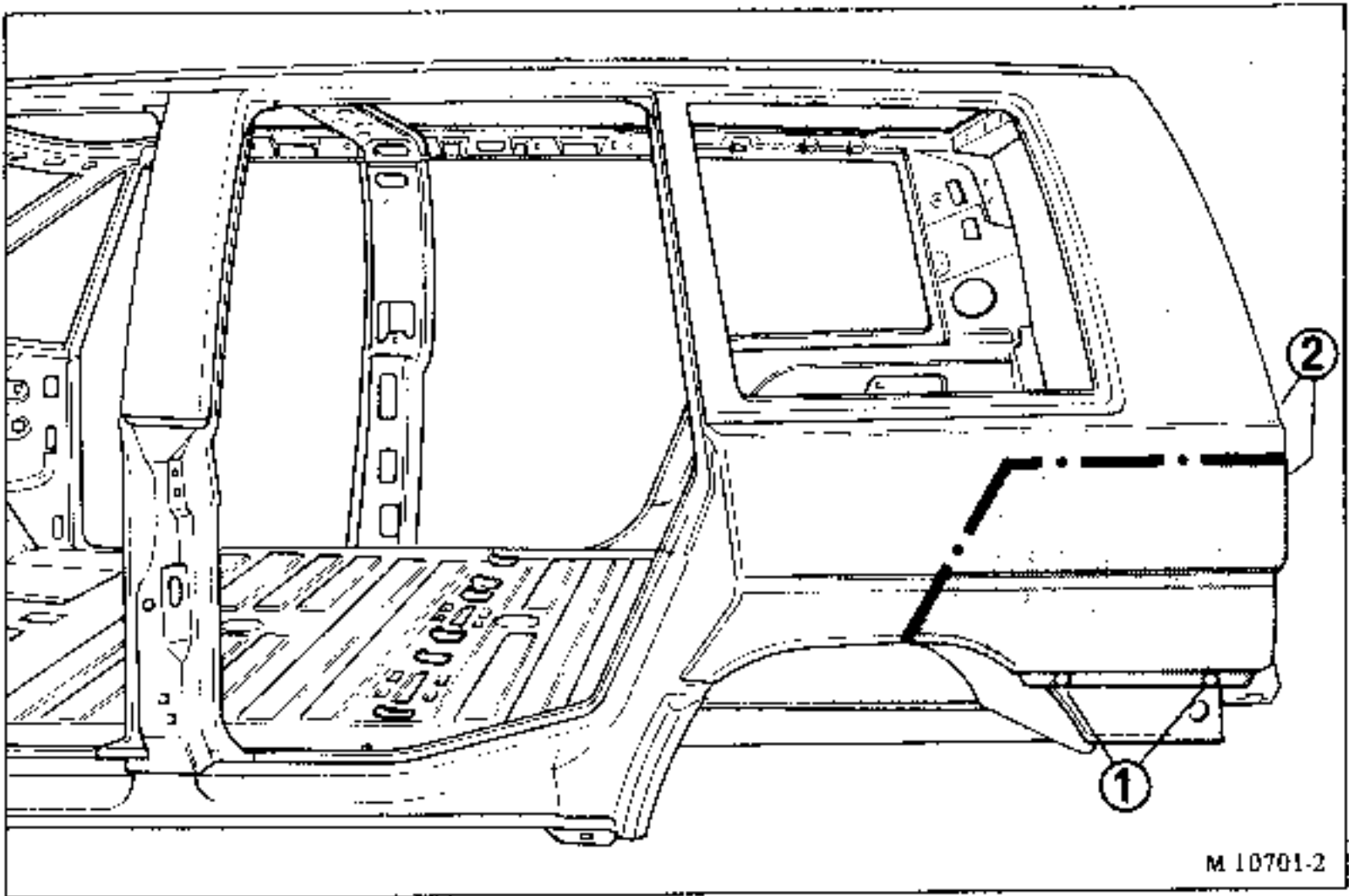
A - OF THE LOWER SECTION (without removing the window)



This operation involves removing :

- the rear bumper shield
- the rear light
- the rear light casing
- the wheel
- the wheel arch mud baffle (5 rivets)





Note : the upper cut can be made at the position that best suits the requirements of the repair (unpicking the panelling, welding, etc.).

Carry out plastic component repair sequence no. 4.

Special features :

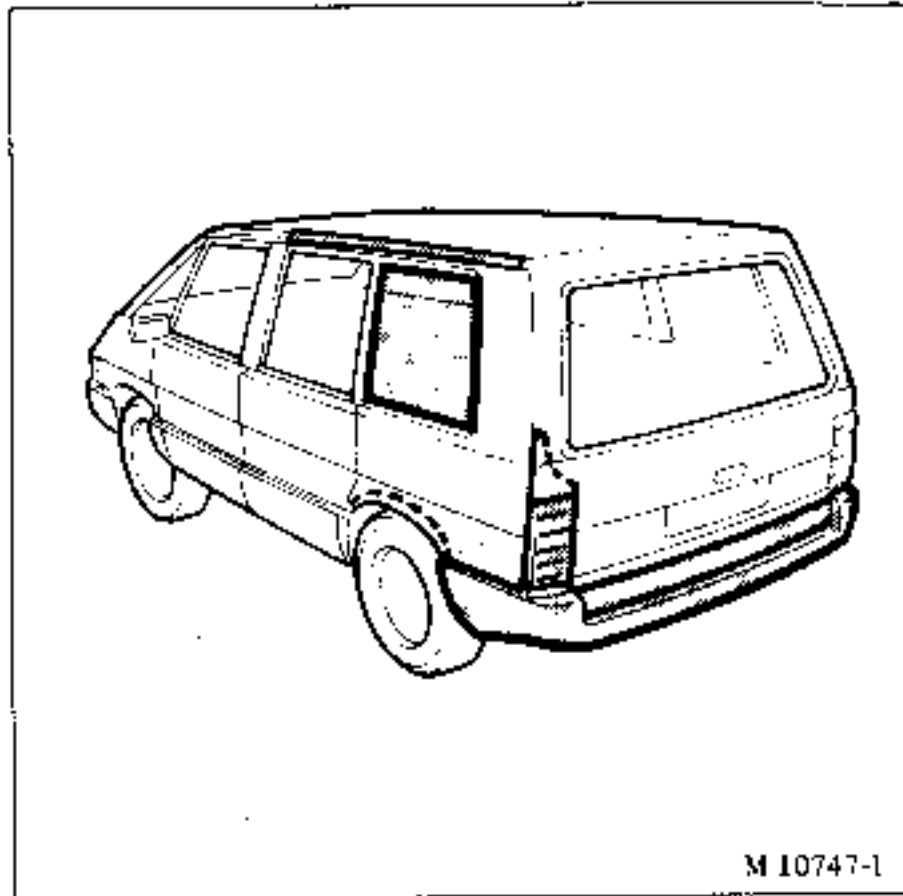
The rear wing is secured to the chassis by 2 rivets (1). The rear light casing is secured to the wing by 2 rivets (2). It was bonded by one fillet of adhesive mastic up to the beginning of phase II ; 1988.

On phase II vehicles - 1988, the rear wing is still secured in the same way but the rear light casing is secured to the wing by 6 rivets and 1 screw.

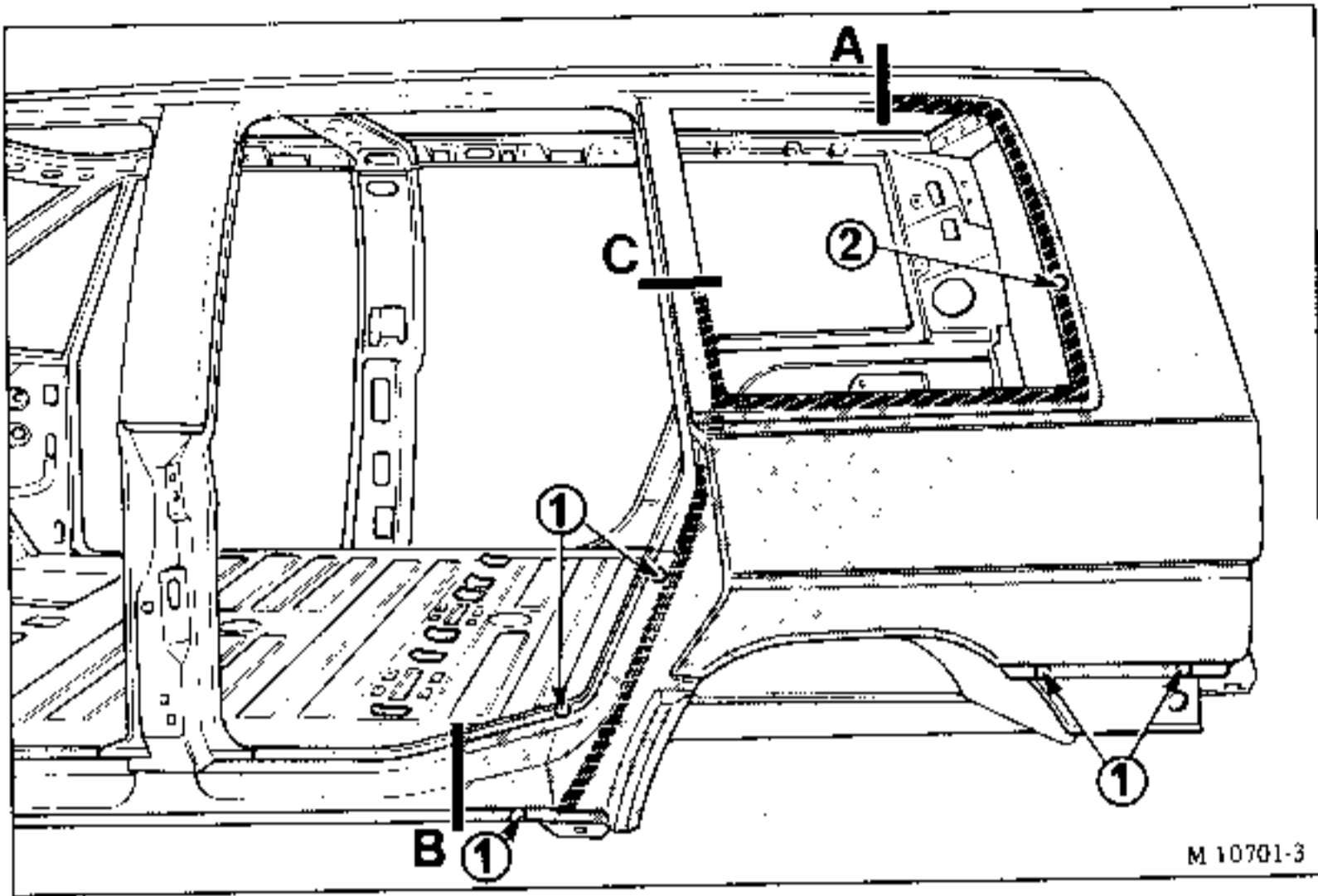
PAINTING

Carry out paint application sequence no. 1.

B - CUTTING AT THE WINDOW UPRIGHTS



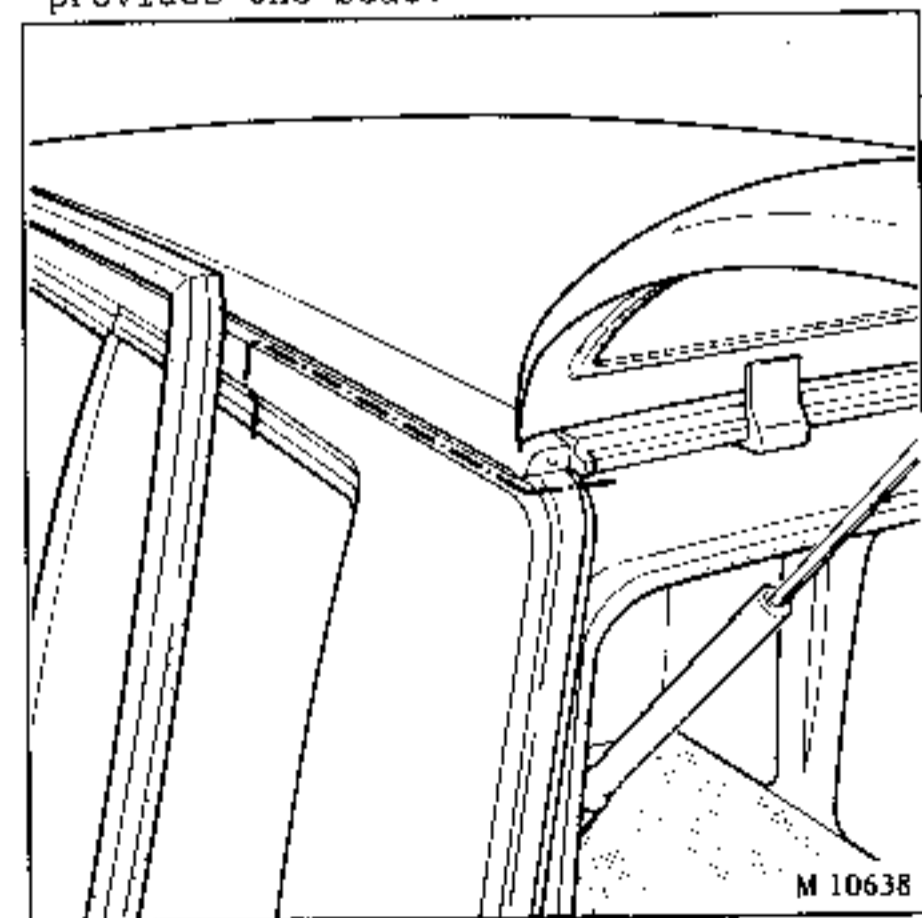
- This operation involves removing :
- the quarter light window
  - the rear bumper shield
  - the rear light
  - the rear light casing
  - the rear door sealing strip
  - the crosspiece finishing strip
  - the body sill moulding
  - on the right hand side : disconnect the fuel filler pipe (and plug it to prevent dust entering the tank). Also disconnect the filler pipe trap electrical locking system (on models equipped with one).



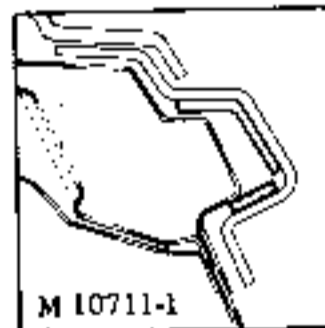
Carry out plastic component repair sequence no. 4.

Special features :

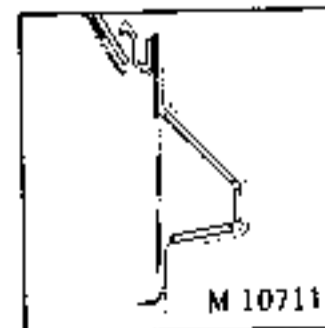
- the rear wing is secured to the chassis by 5 rivets (1). It is bonded to the chassis by a fillet of adhesive mastic (2) 7 mm in diameter. This mastic also provides the seal.



Backing pieces :



Zone A : take them from the unused crosspiece section on the new rear wing (2 parts)



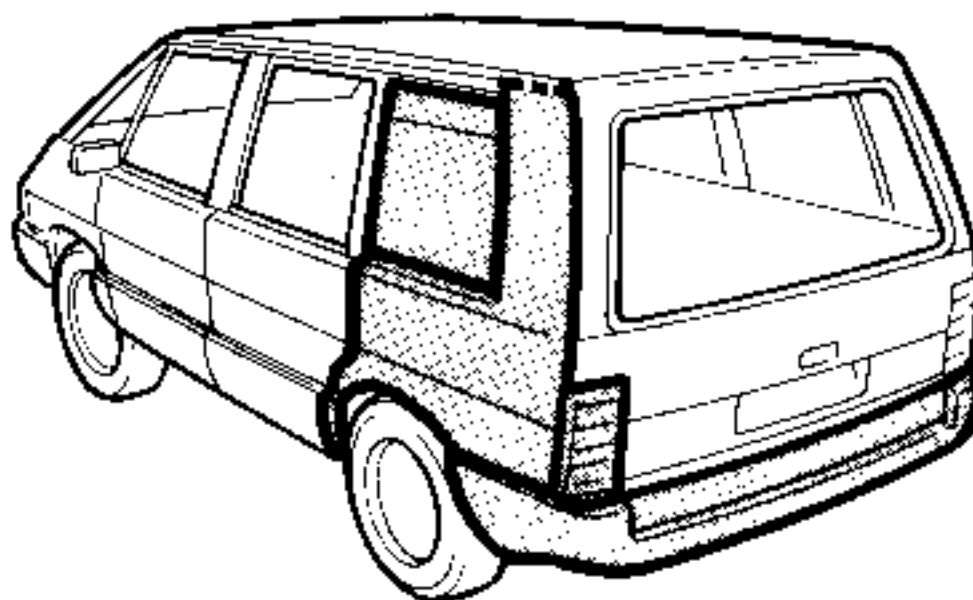
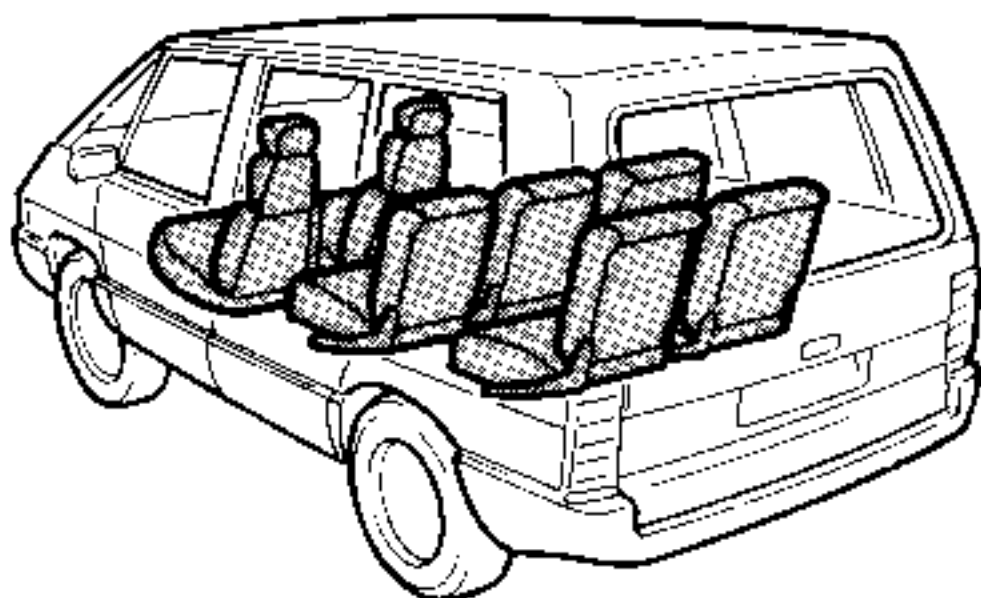
Zone B : take them from the unused body sill section remaining on the new wing (3 parts)

Zone C : no backing piece is used here. The repair is made with glassfibre mat.

Cut the wing section at the upper crosspiece.

- Check the repair for leaks, before refitting the quarter light window, by spraying water under the wheel arch.

STRIPPING

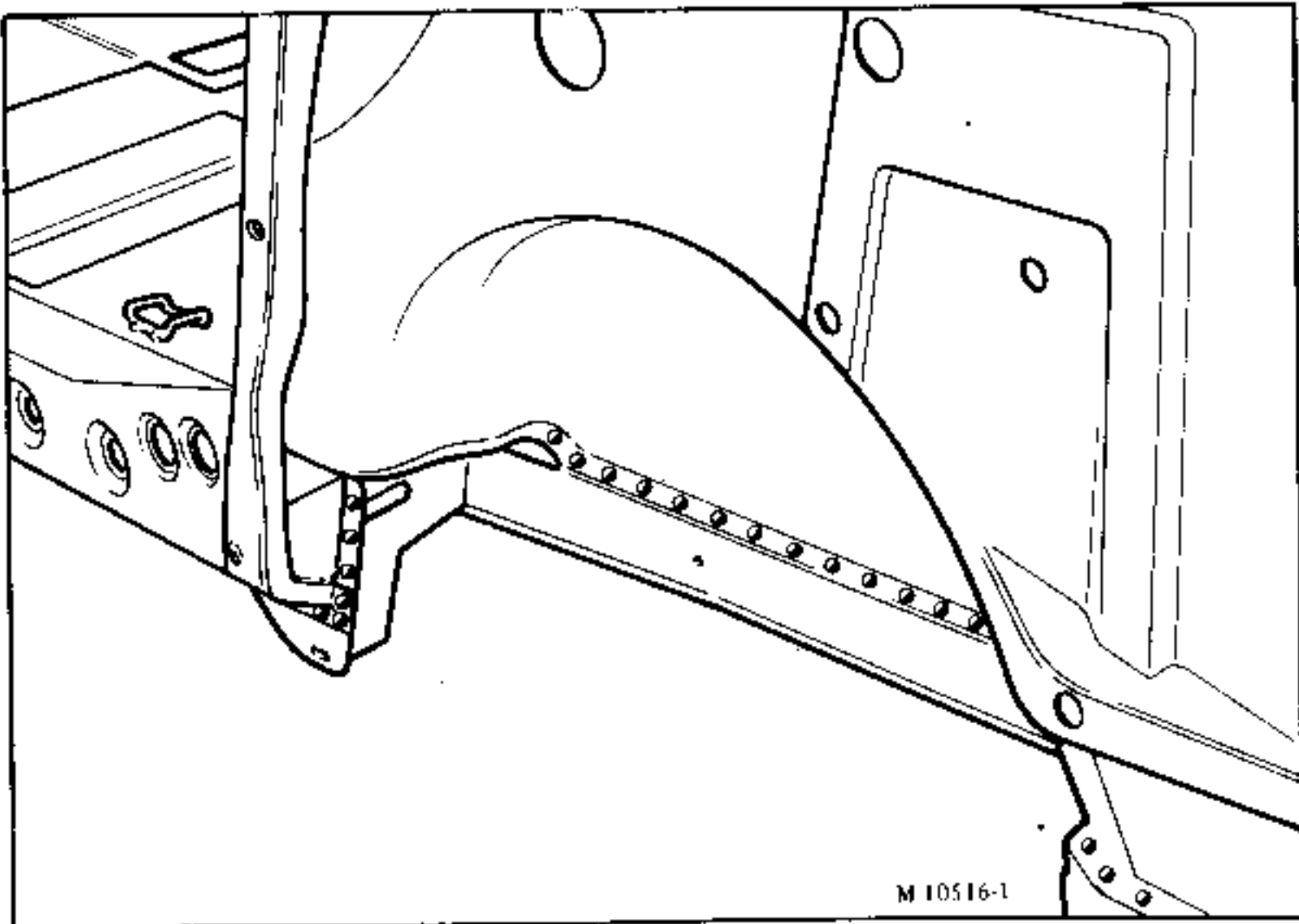
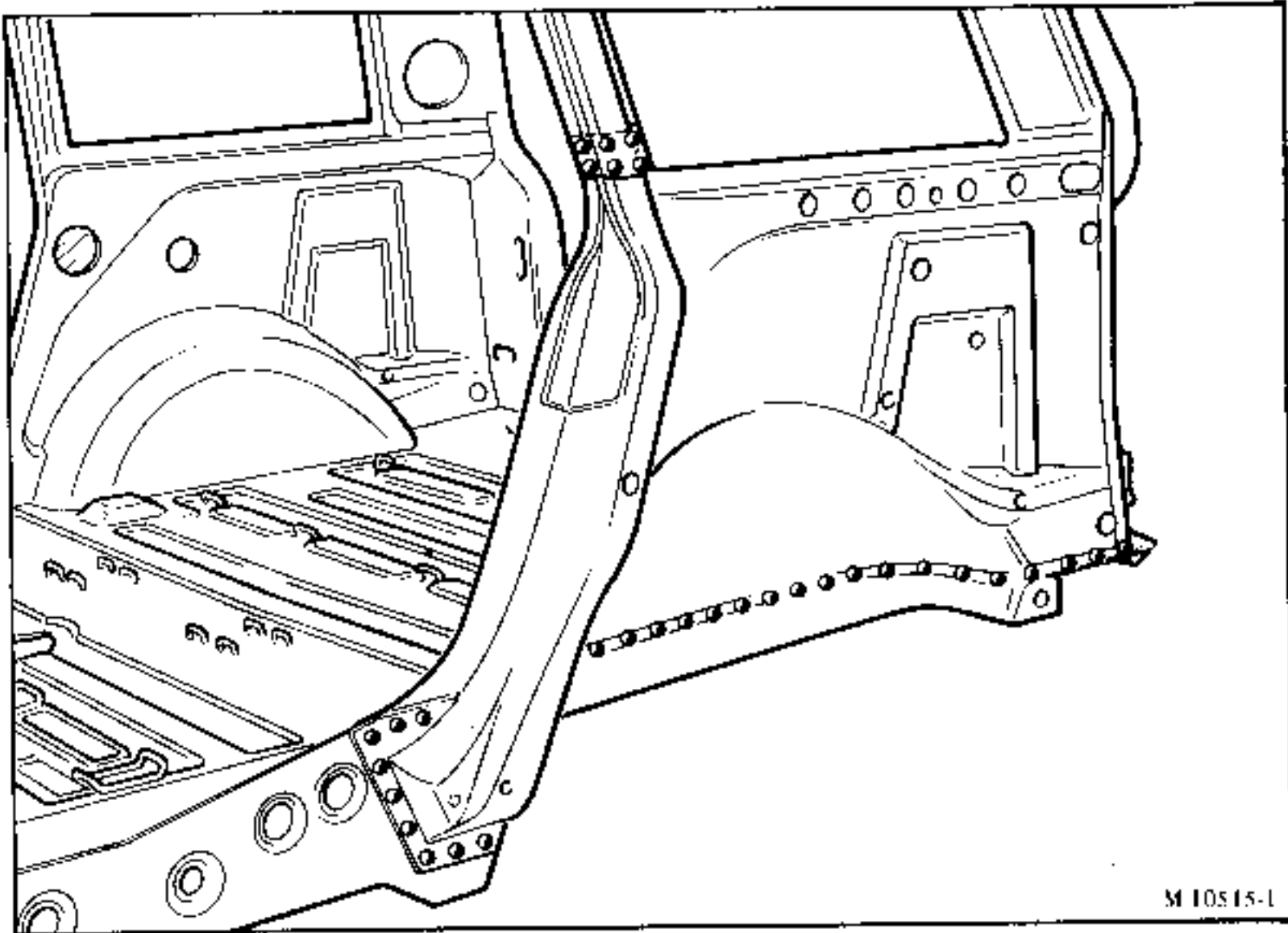


M 10748-2

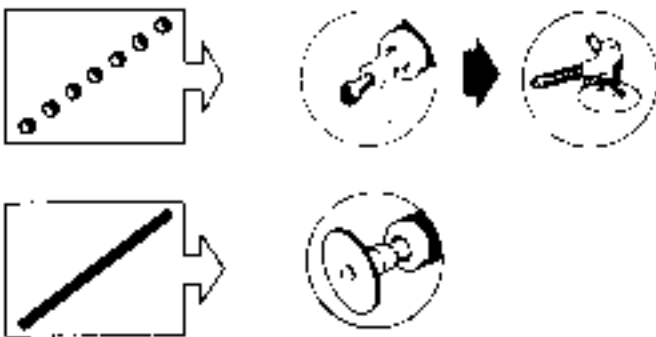
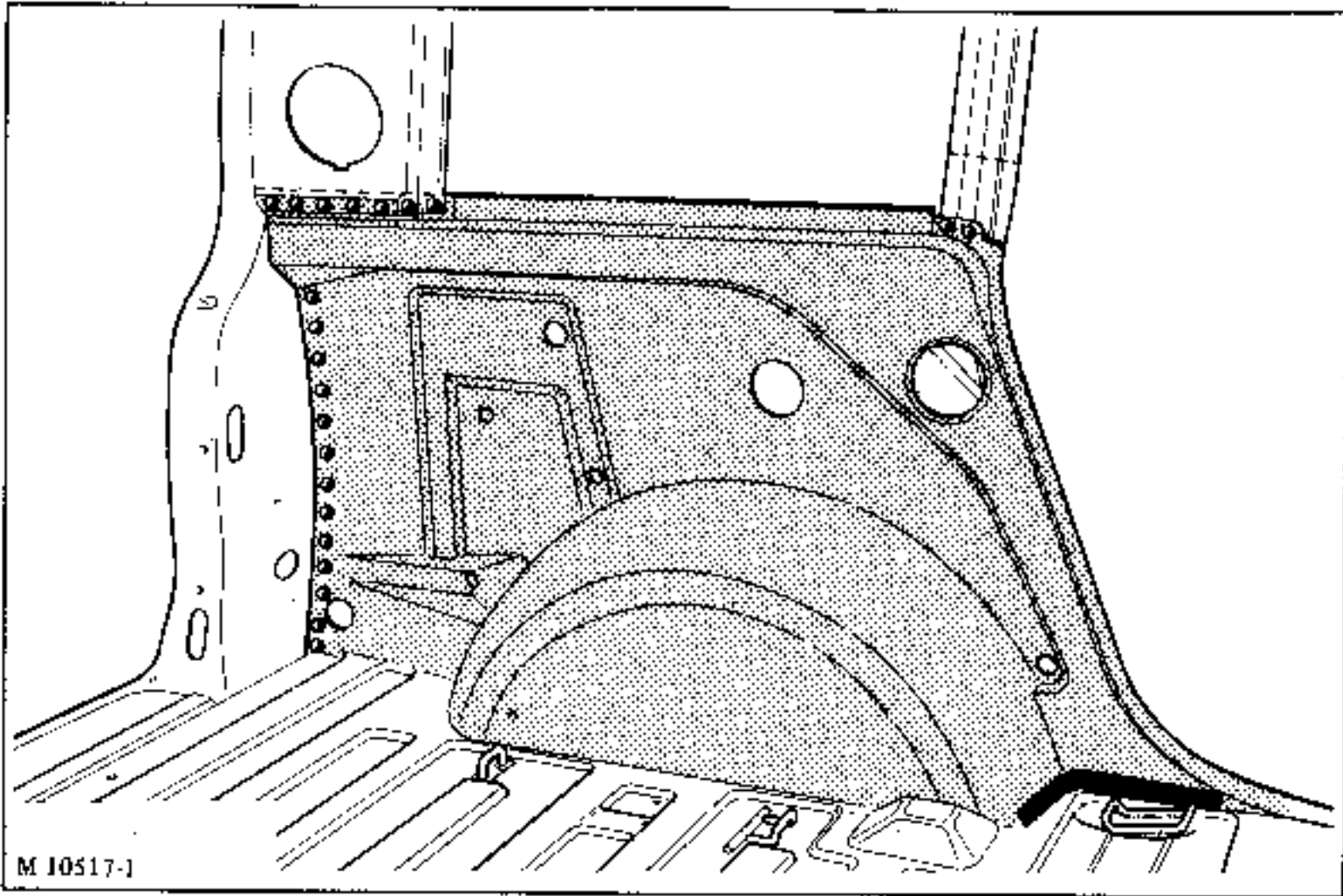
Remove :

- the rear wheel
- the rear bumper shield
- the rear light
- the rear finishing piece
- the rear seats
- the quarterlight window
- the rear door and tailgate sealing strips
- part of the upper trim from the front and rear quarter pillars
- the wheel arch trim
- part of the floor covering and sound deadening
- the fuel filler neck and flap (RH side)
- the rear wing (cutting it to suit the extent of the damage and the requirements of the plastic component repair sequence)

CUTTING OUT - UNPICKING



CUTTING OUT - UNPICKING



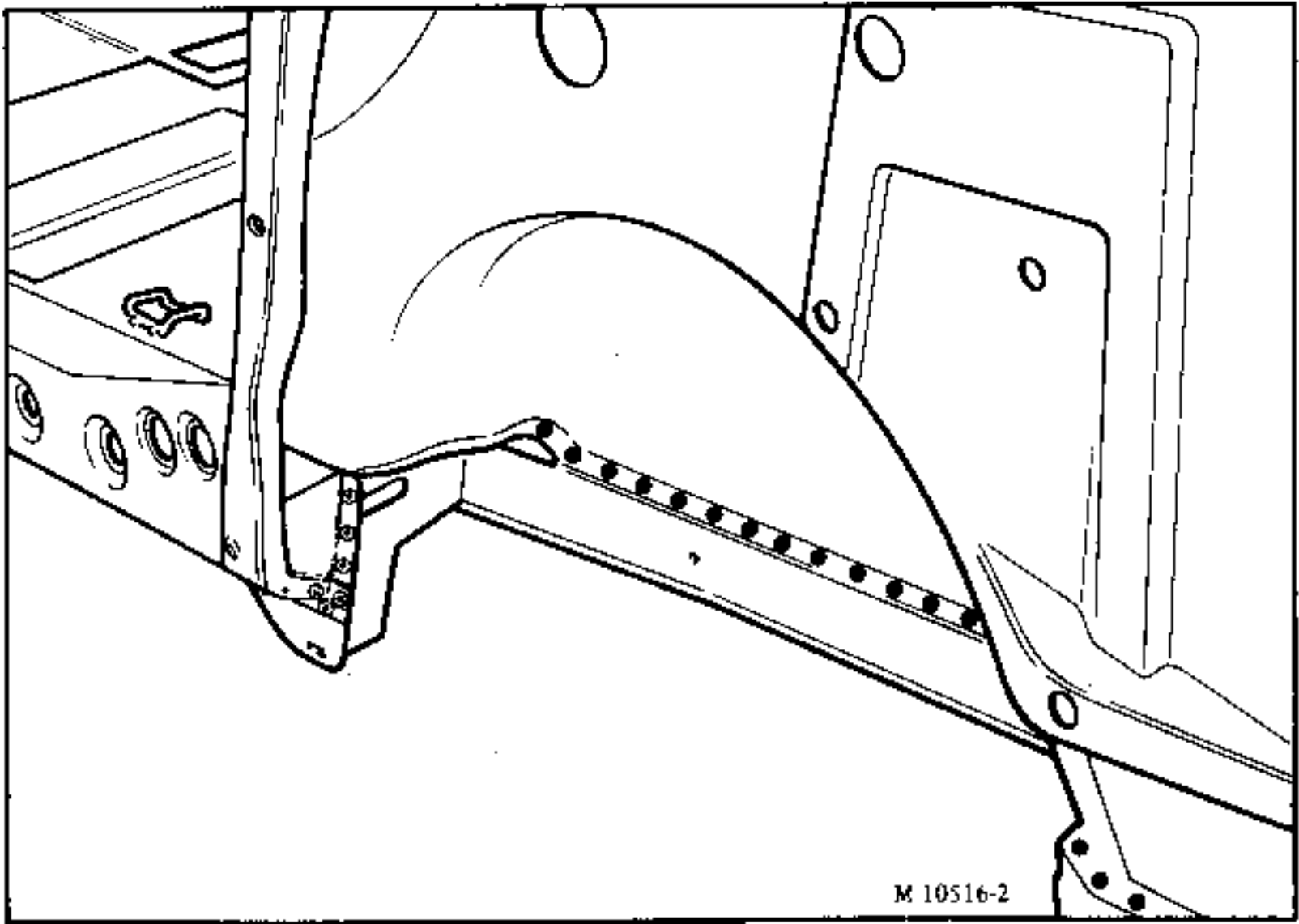
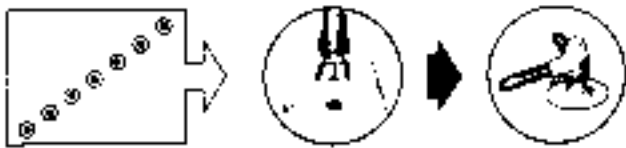
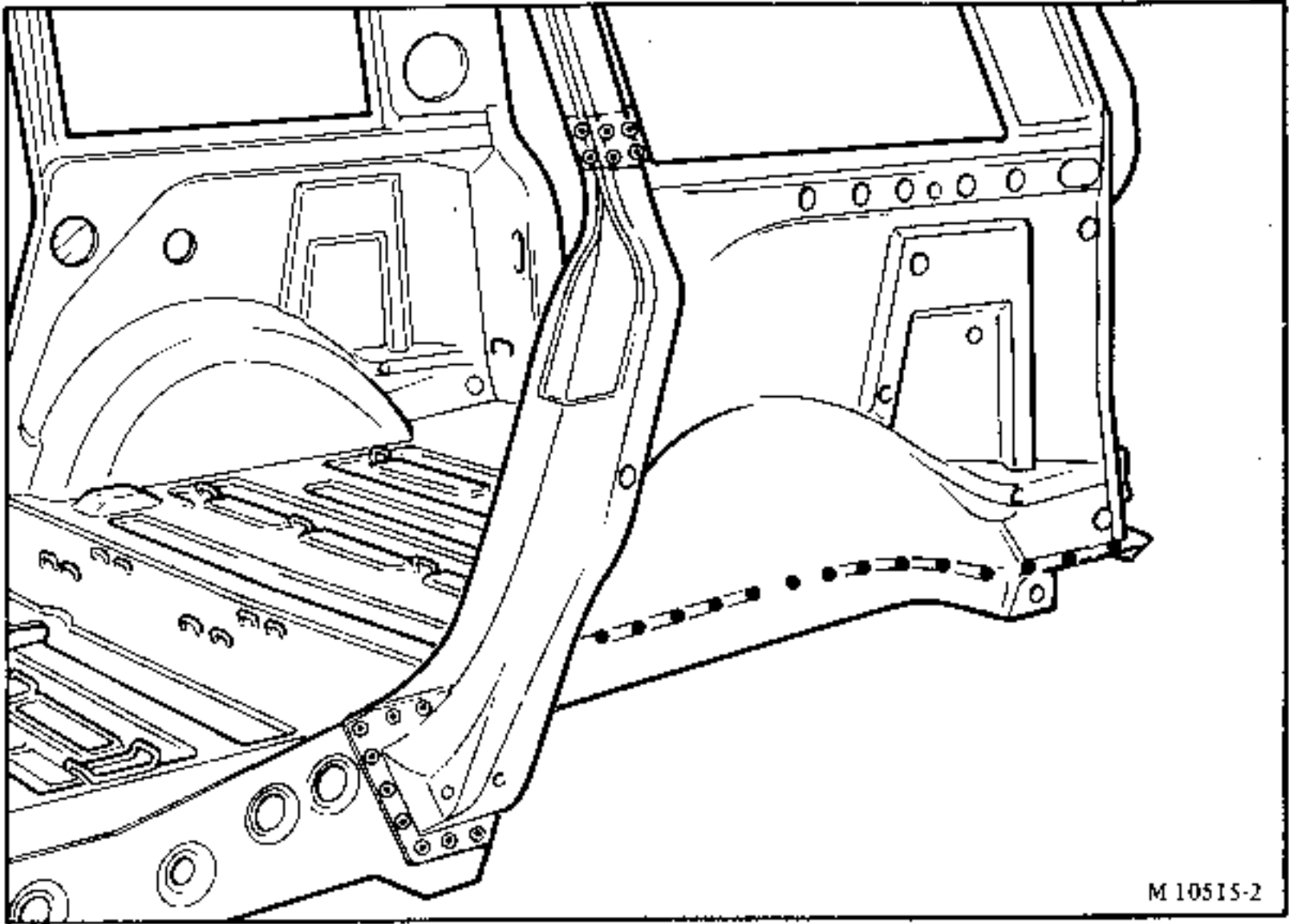
Remove the damaged section by following the instructions of the symbols (see description of symbols).

Grind back the unpicked spot welds remaining on the support panels.

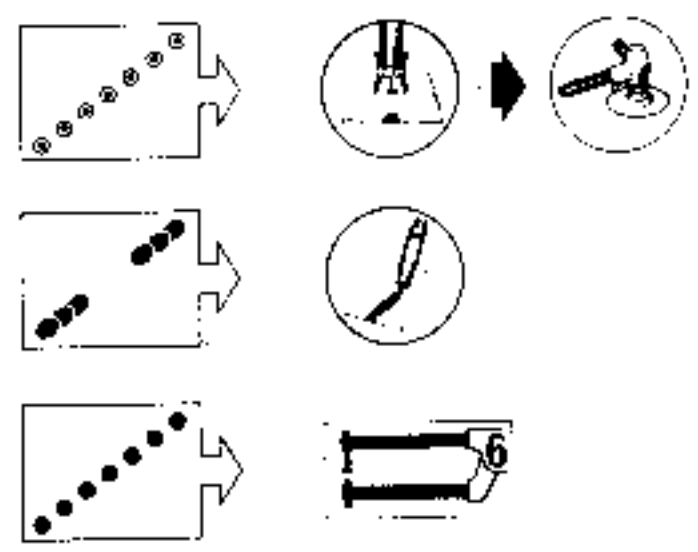
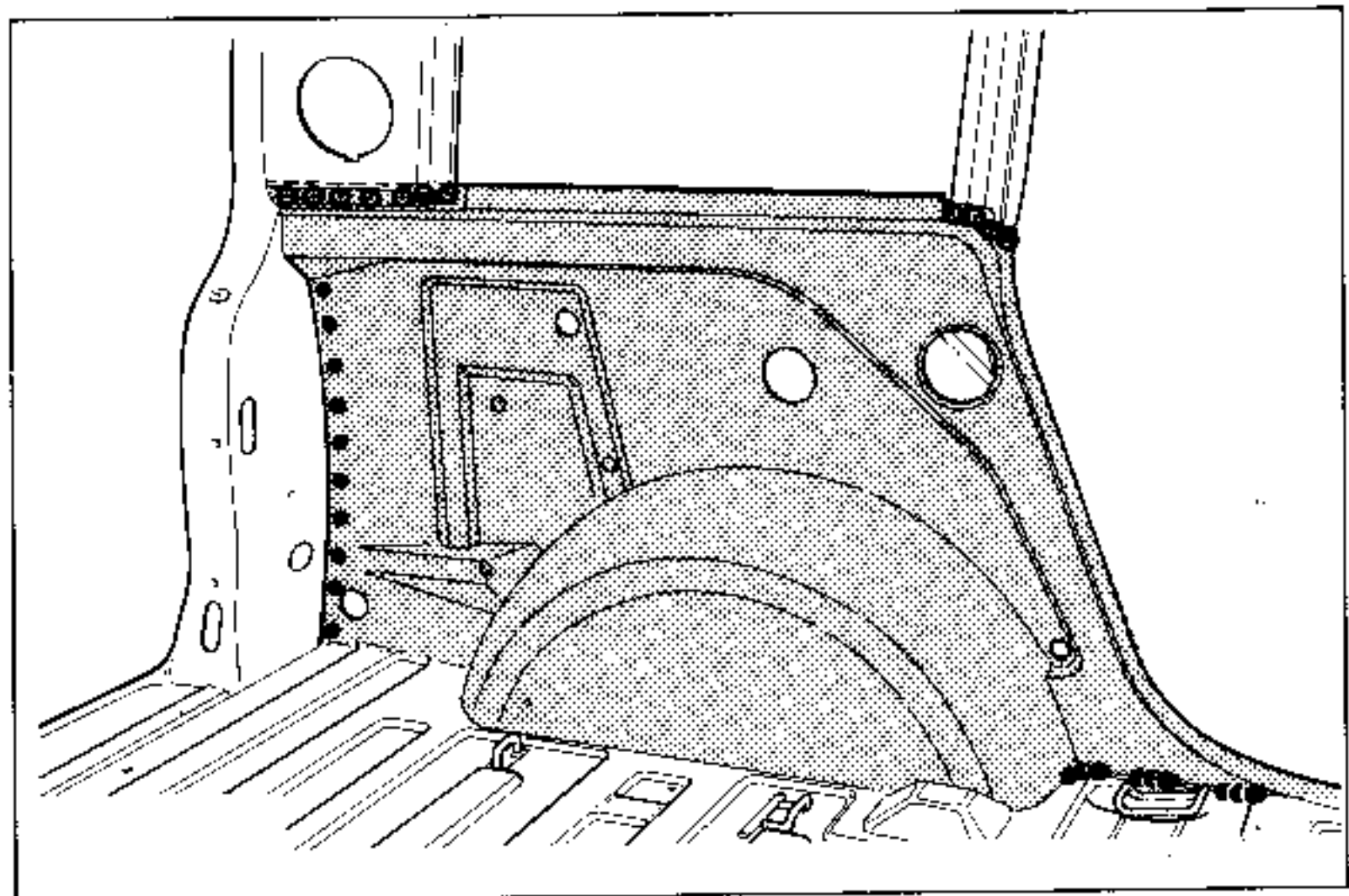
PREPARATION BEFORE WELDING

Fit the new parts to size and clamp them in place.

WELDING



WELDING



Carry out the spot welds.

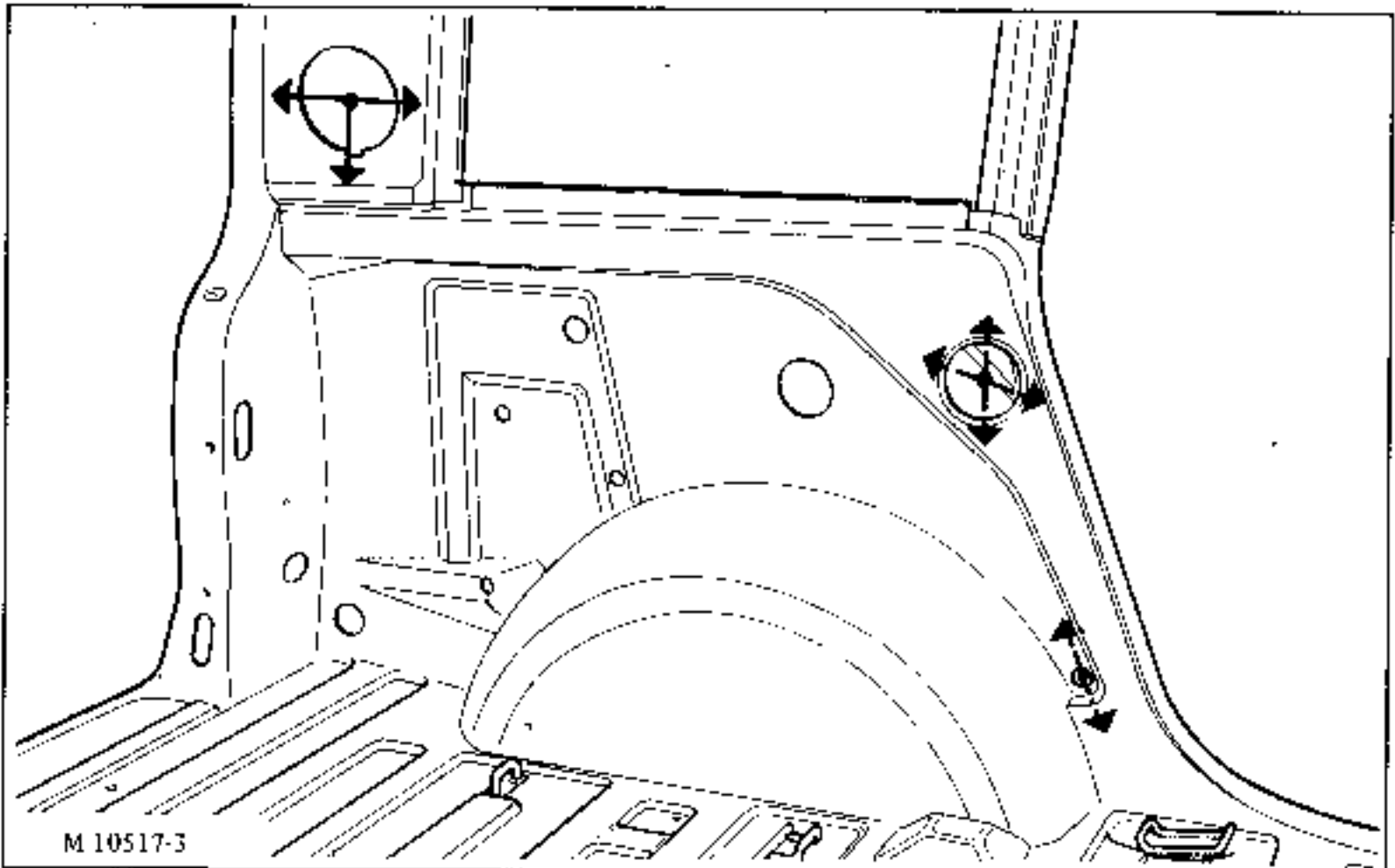
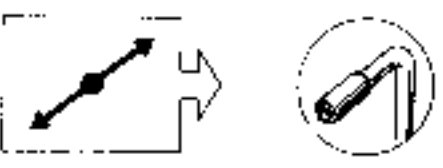
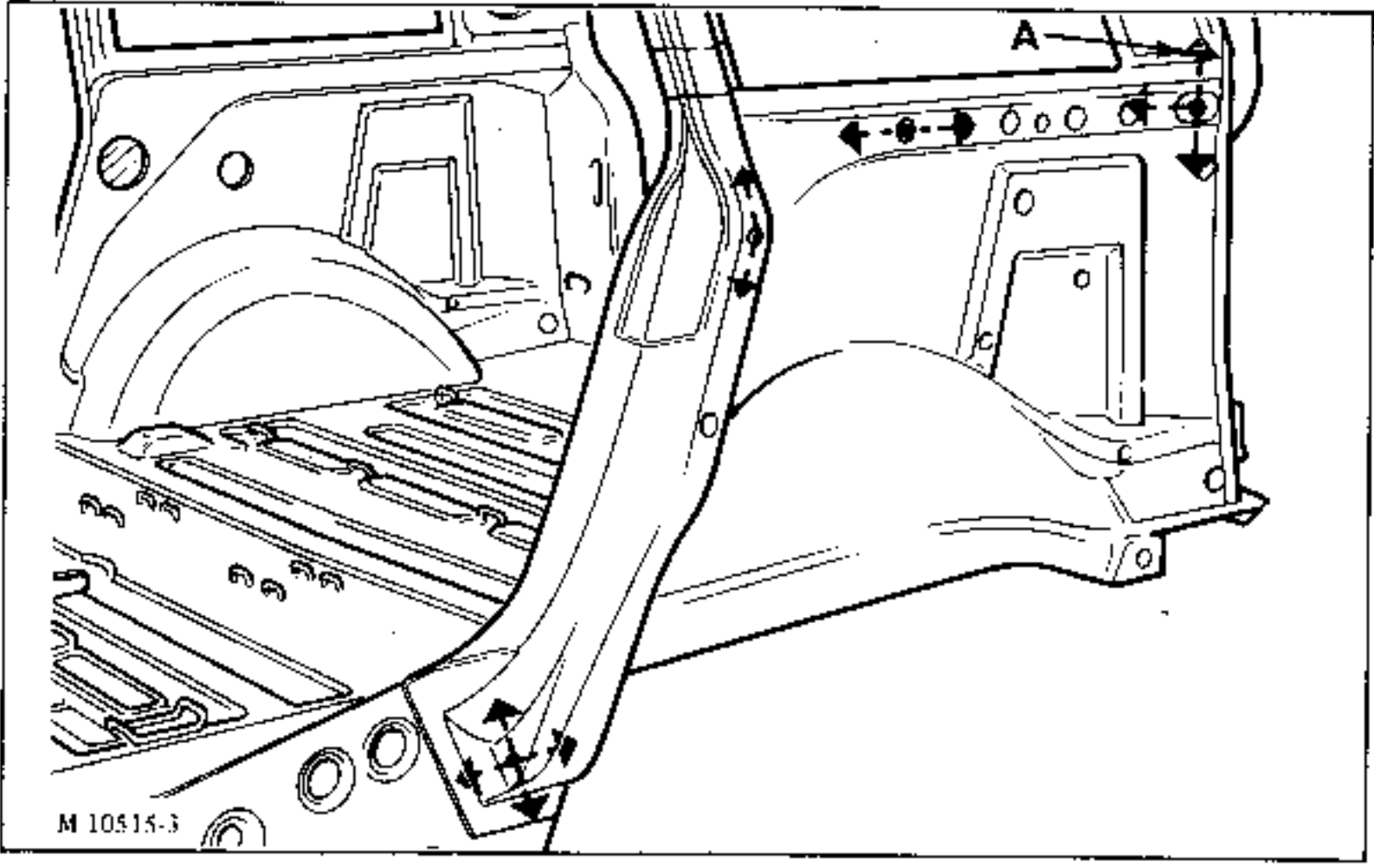
Carry out the plug welds under a protective gas envelope. To do this, drill through the upper panel to the diameter D shown under the symbol.

Apply the fillet welds under a protective gas envelope.

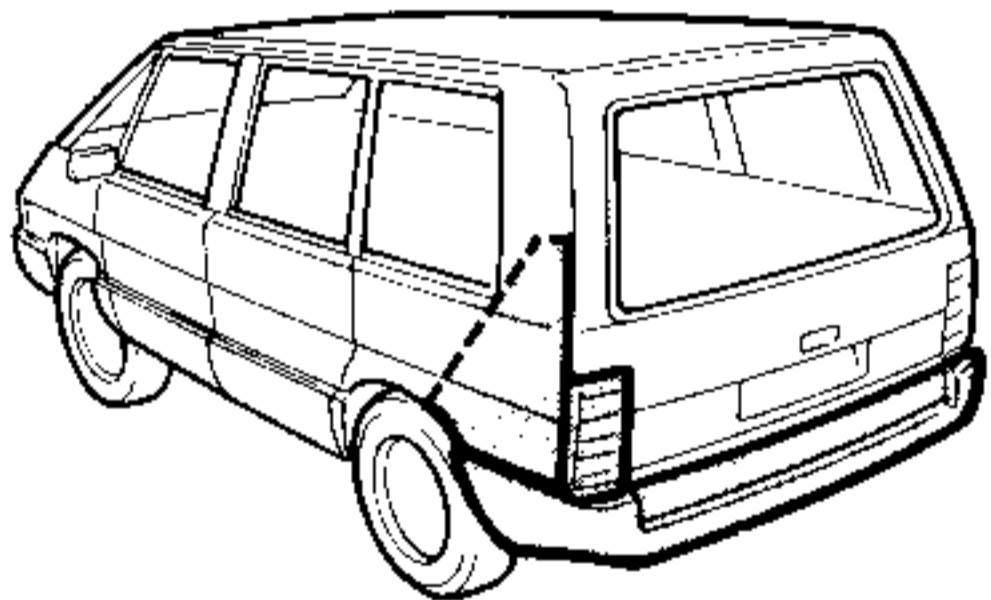
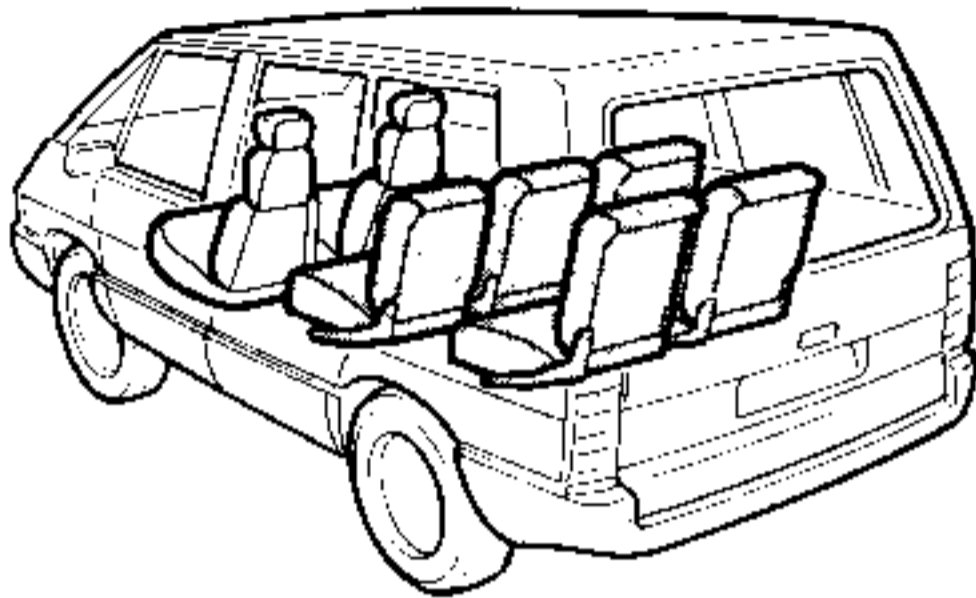


PAINTING

Carry out paint application sequence no. 2 (see paint section).  
After painting carry out the hollow section protection treatment.  
Apply a pad of foam at point A.



REPLACING  
STRIPPING

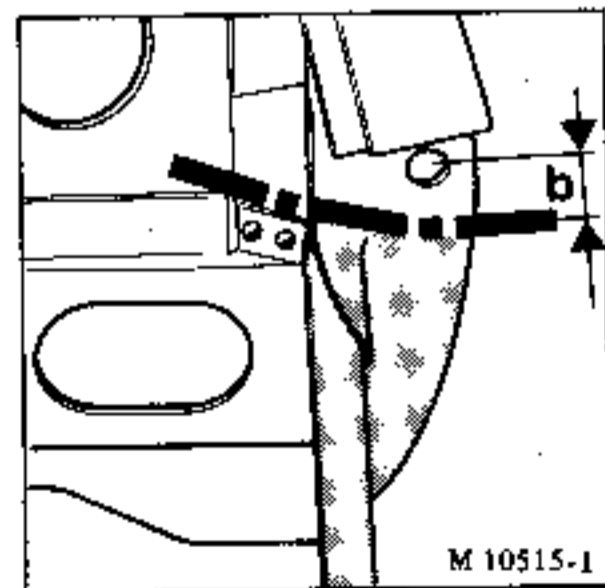
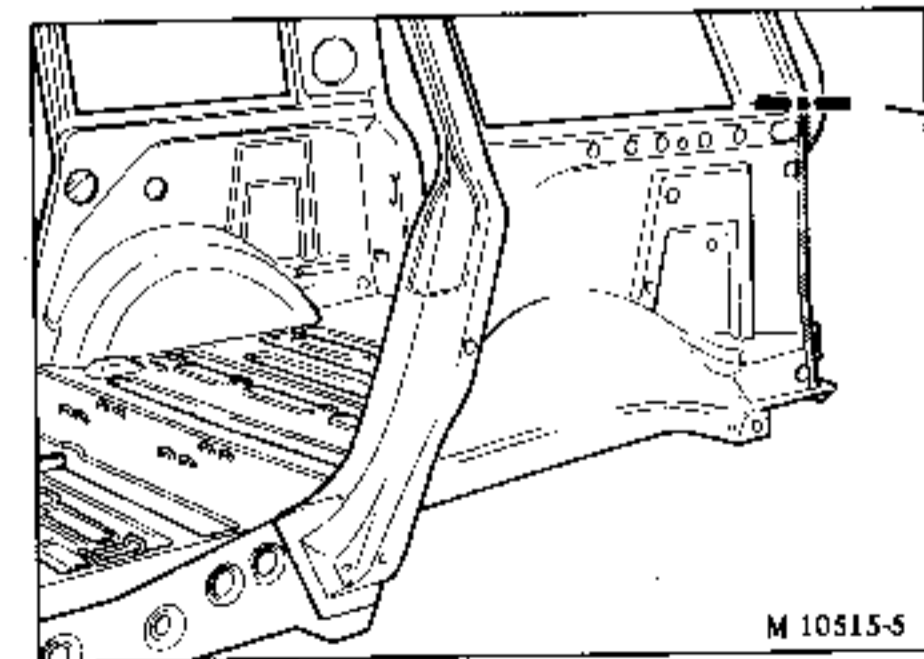
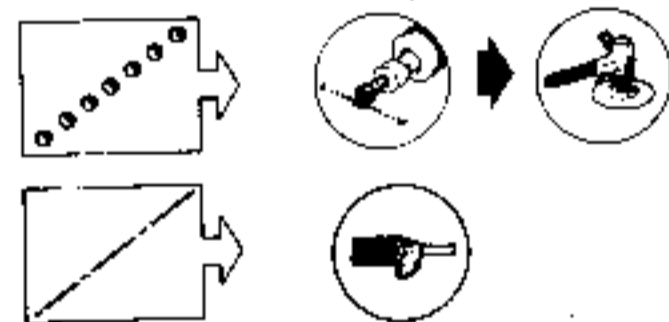
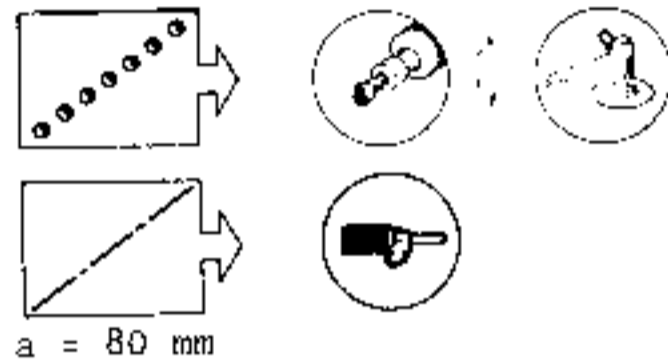
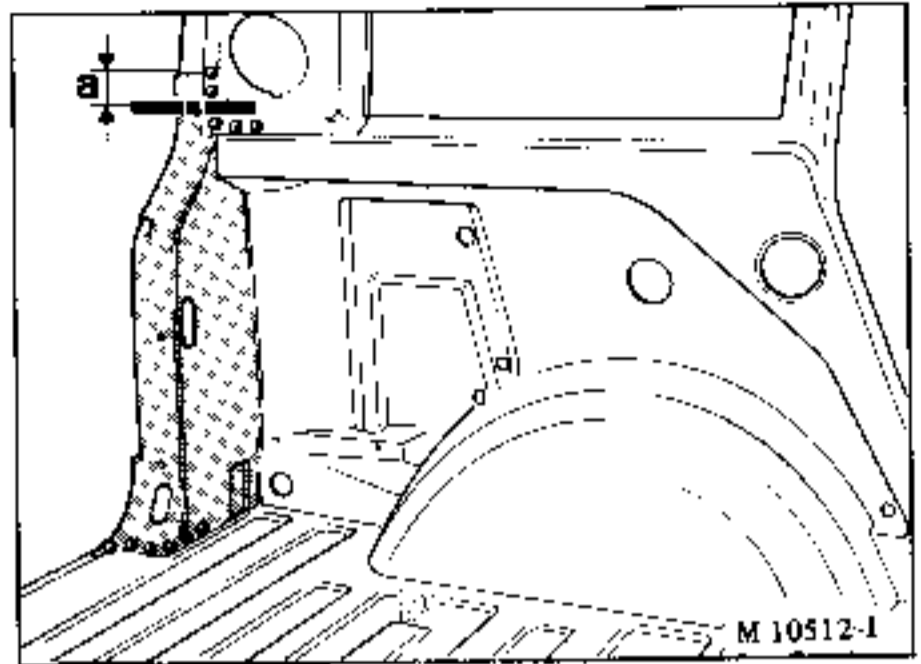
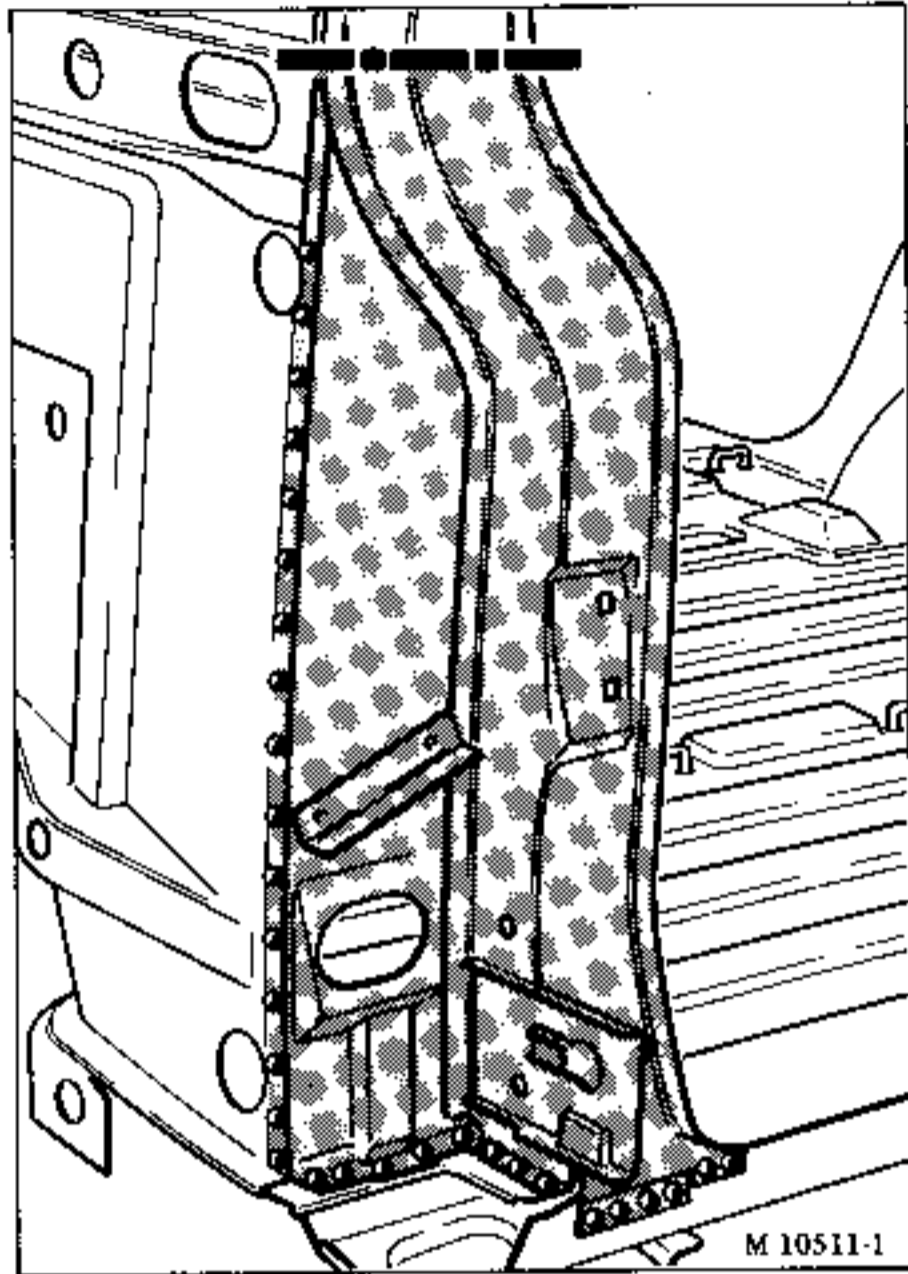


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Remove :

- the rear bumper shield
- the rear light
- the finishing piece
- the rear seat
- part of the tailgate sealing strip
- part of the upper pillar trim
- the lower pillar trim
- part of the rear wheel arch trim
- part of the rear wing (cutting it to suit the extent of the damage and the requirements of the plastic component repair sequence)

CUTTING OUT - UNPICKING



b = 25 mm

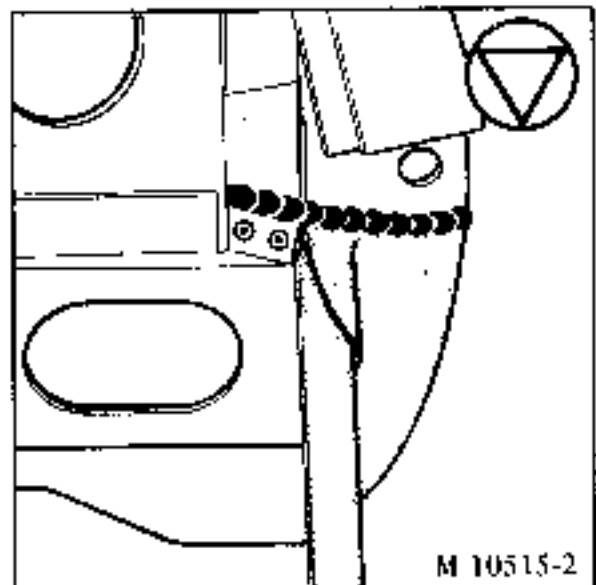
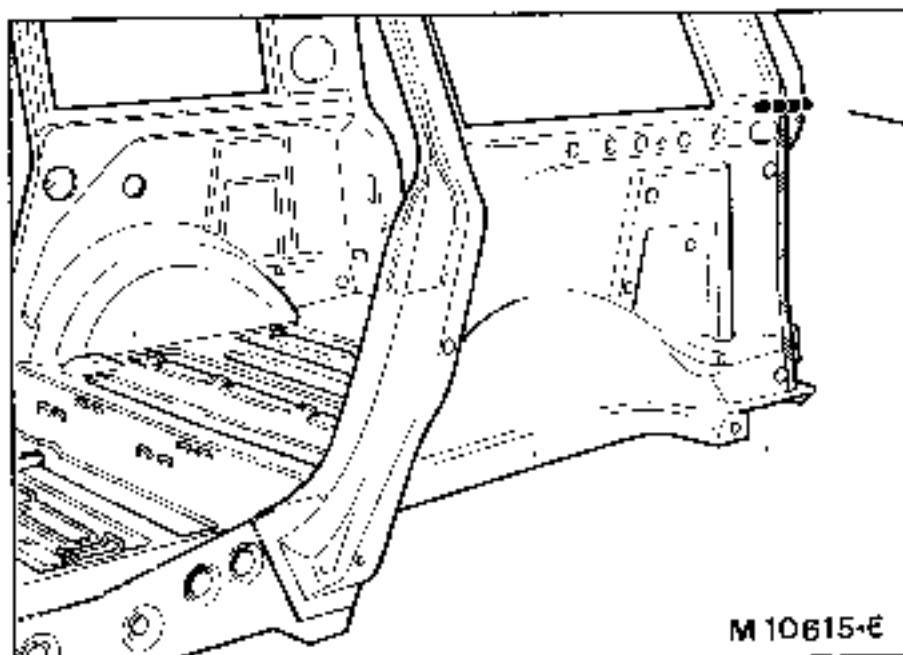
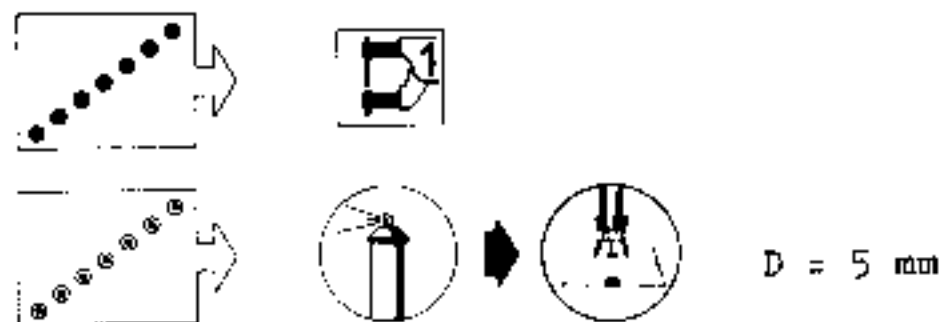
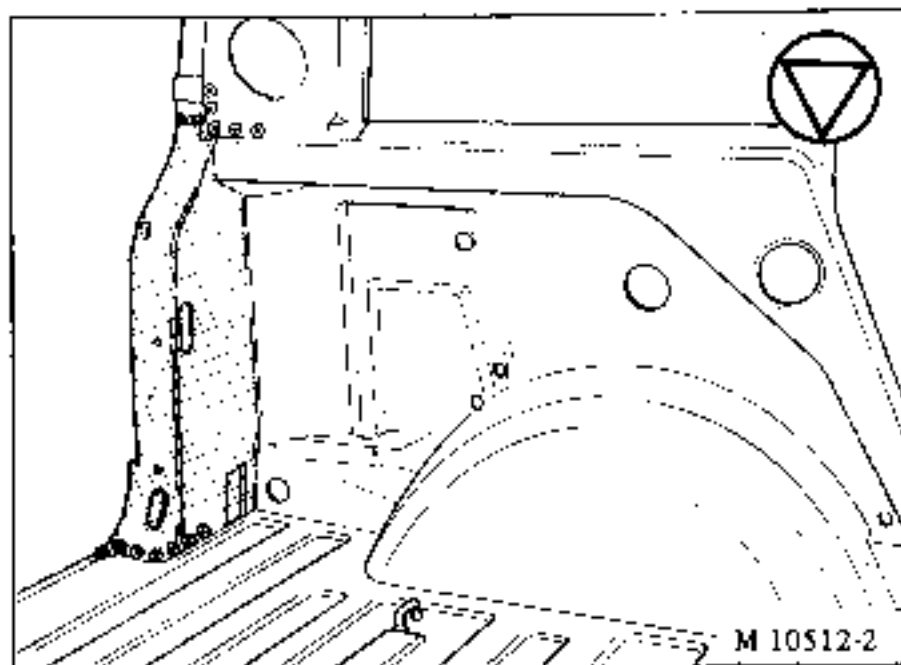
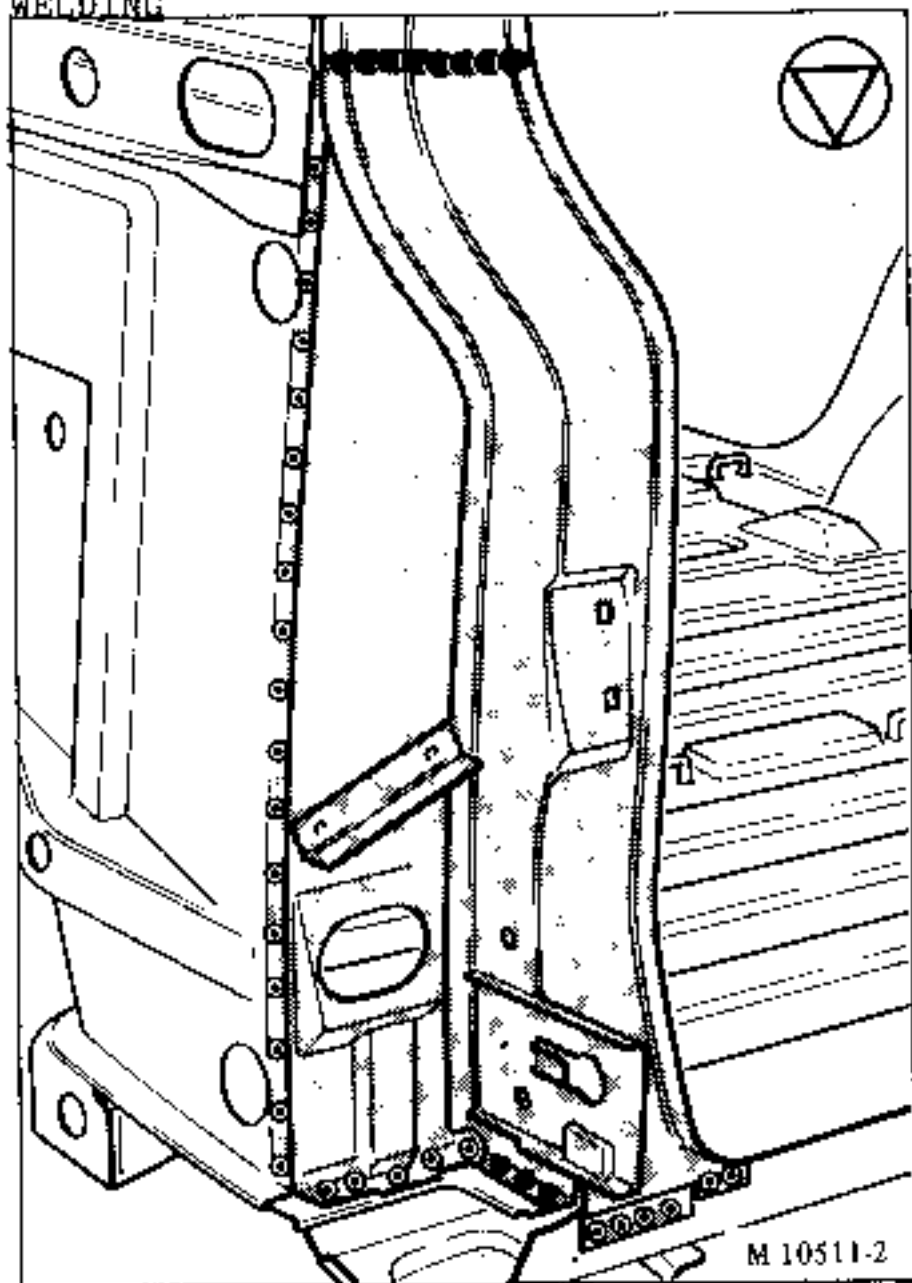
Remove the damaged section by following the instructions shown by the symbols (see description of symbols).

Grind back the unpicked spot welds remaining on the support panels.

PREPARATION BEFORE WELDING

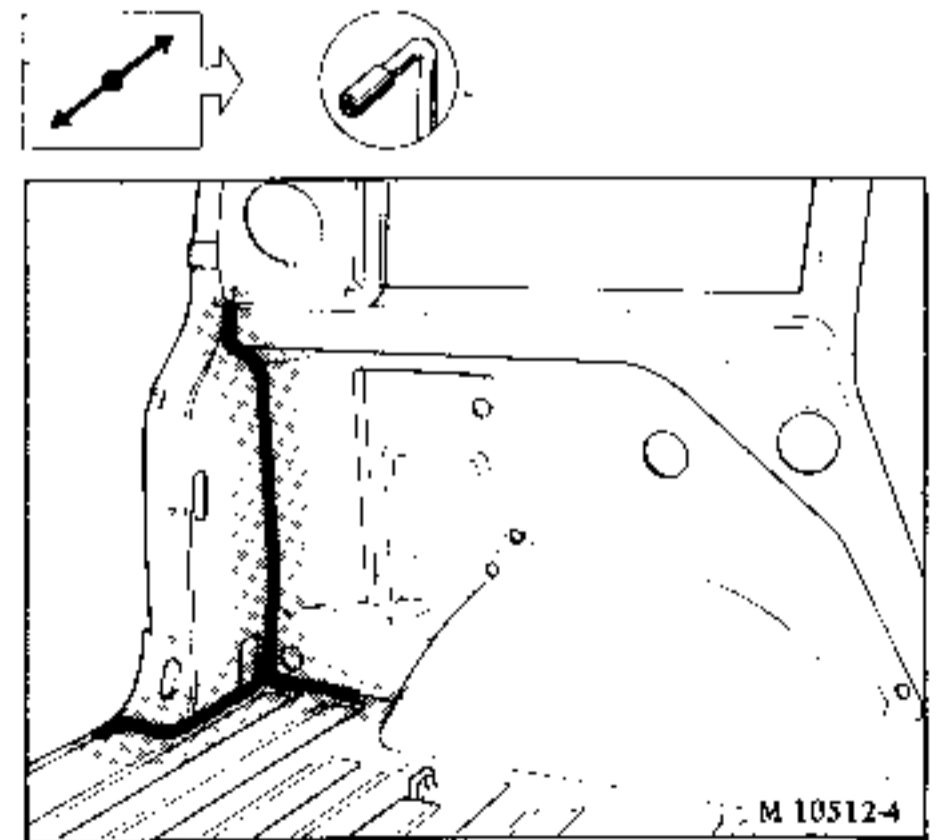
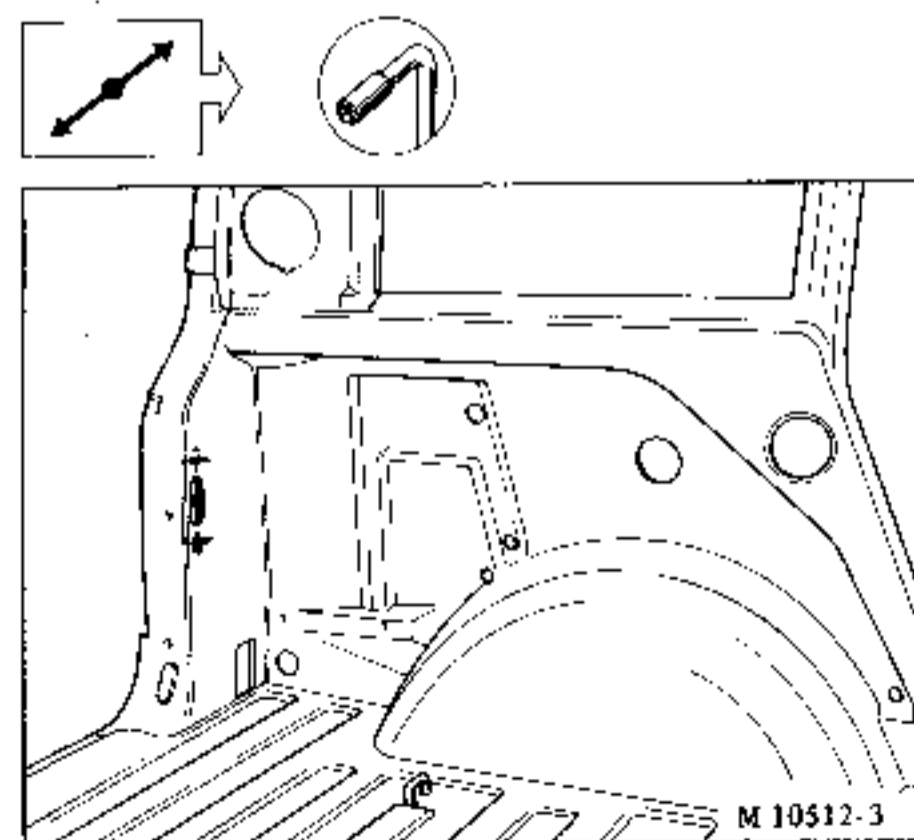
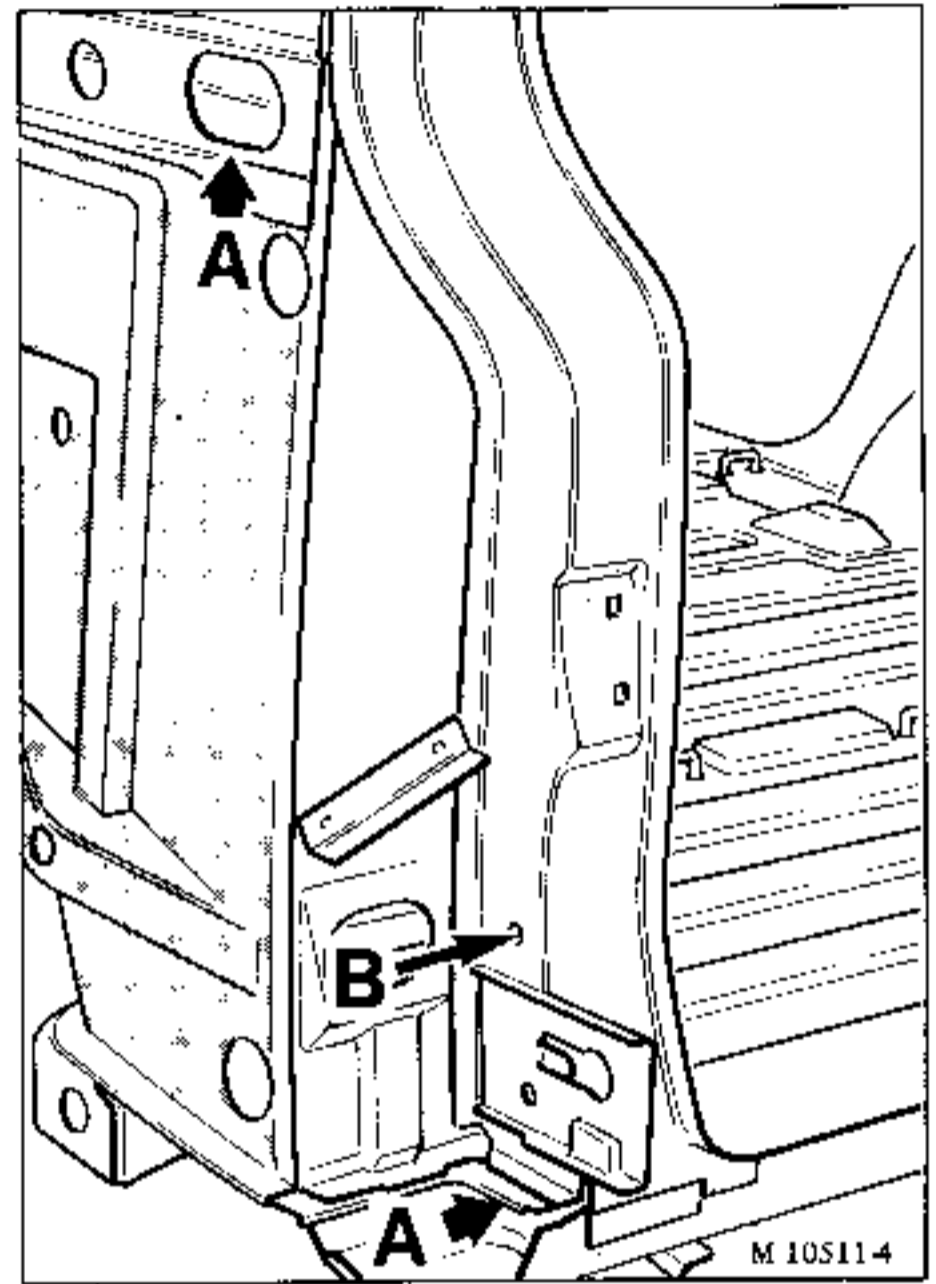
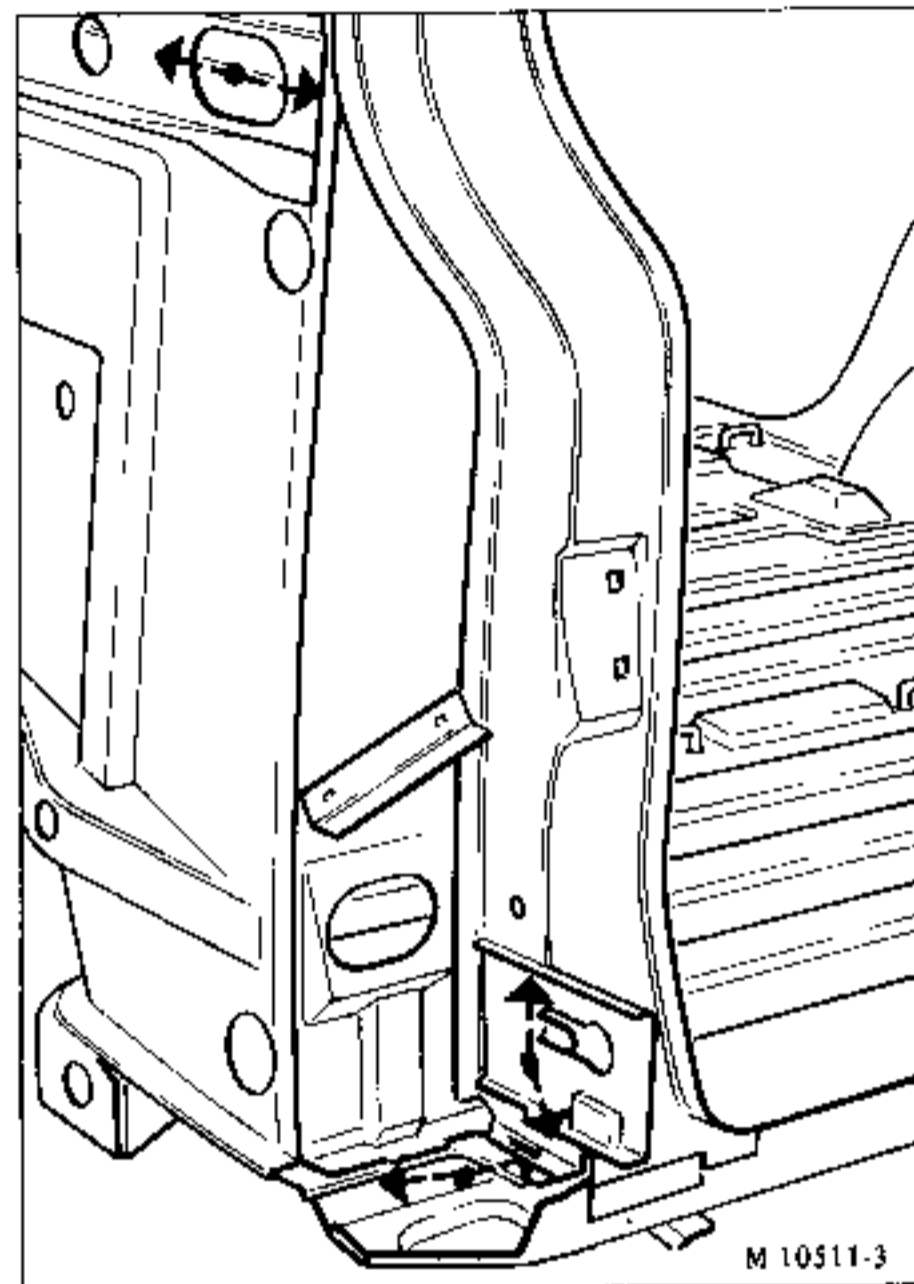
Fit the new part to size and clamp it in place.

WELDING



- Apply tack welds to the areas to be butt welded.
- Apply the stitched fillets under a protective gas envelope and grind back the weld and fill it with soft solder.
- Apply the plug welds under a protective gas envelope. To do this, drill through the upper panel to the diameter D stated under the symbol.

After painting apply the hollow section protection treatment.



Apply a pad of foam at point A



Inject polyurethane foam at point B

## REPLACING

- Remove the 2 cant rail and windscreen trim pieces.
- Remove the windscreen.
- Remove the roof aerial, the roof rack or the sunroof panels if the vehicle is equipped with them.
- Remove the door and tailgate sealing strips at the top, the interior grab handles, the interior lights, the sun visors, the door lock control plate the the alarm sound detector if the vehicle is equipped with one.

## Removing the head lining

- . Early type (85-86 models)
  - Remove the trim from the tops of the door apertures and the tailgate aperture.
  - Swing the stretchers forward to loosen the head lining.
- . Later type (From 87 models onwards)
  - Remove the trim from the upper parts of the door and tailgate apertures.
  - Release the cloth trim around the entire periphery inside the structure and the crossmembers.
  - Remove the 3 pads that are bonded to the roof panel.

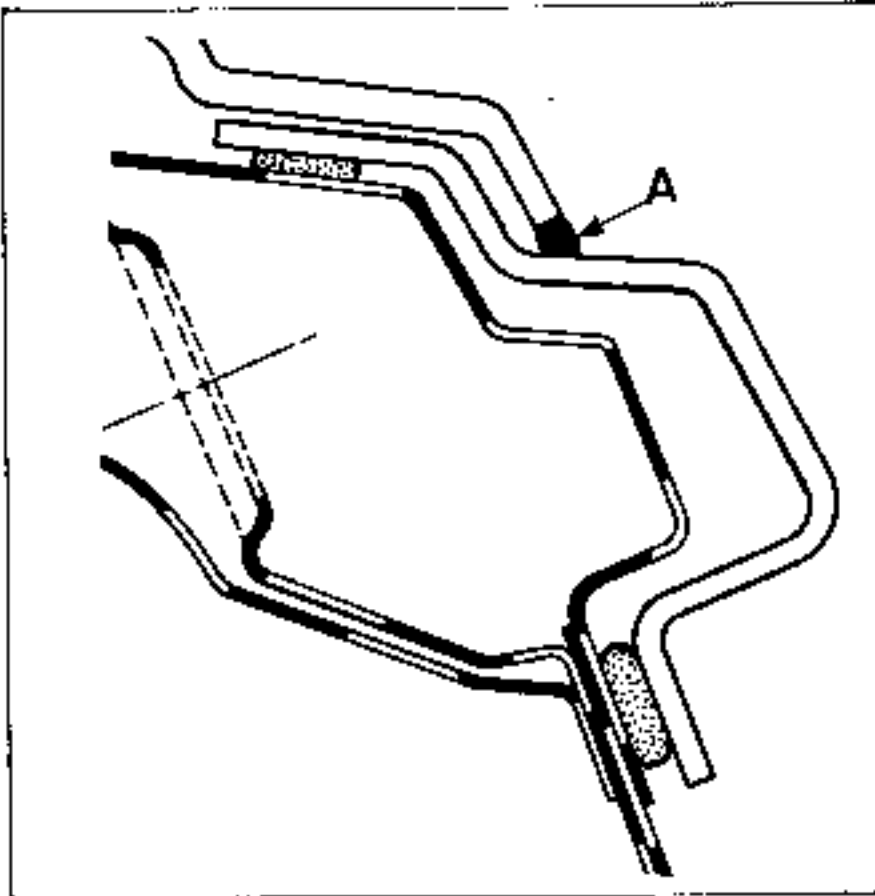
## Removing the roof panel

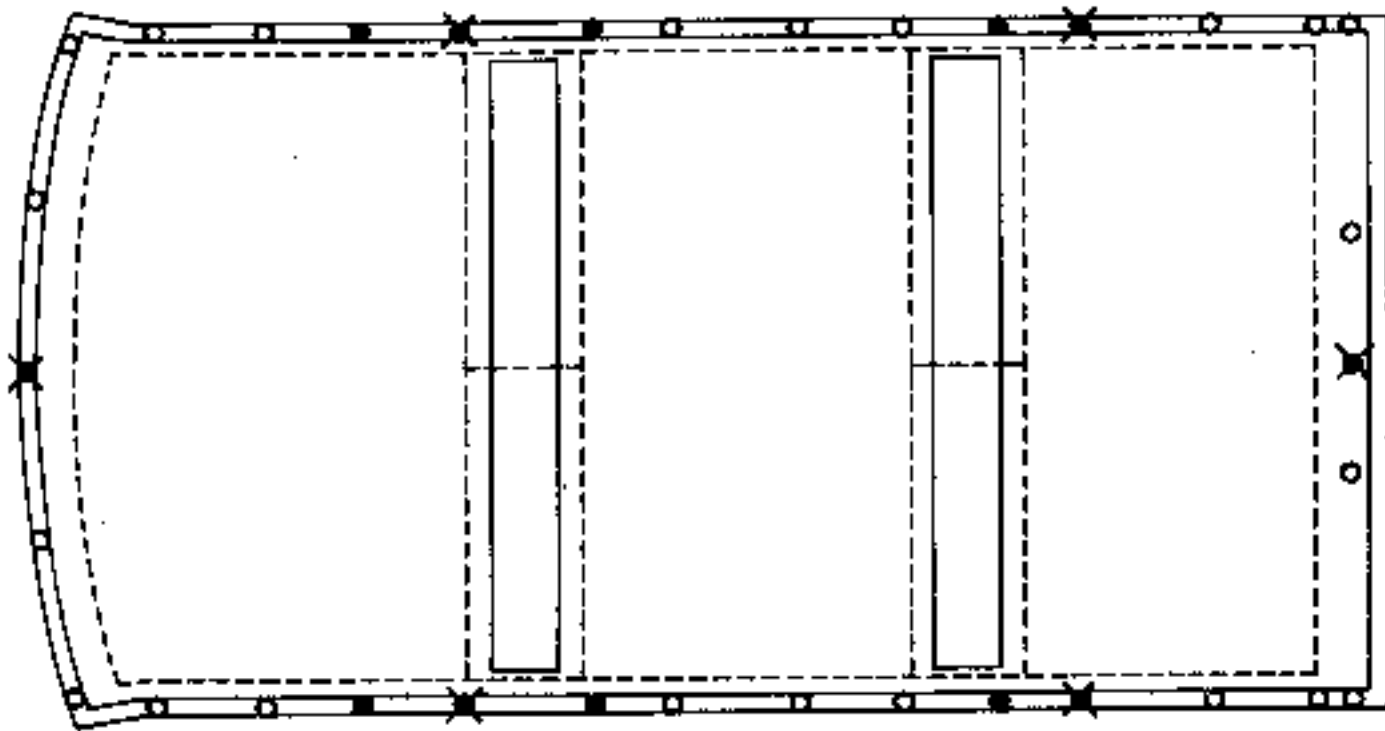
- . Early and later types
  - Remove the 28 rivets that secure the roof to the structure.
  - Cut the roof round its entire periphery then between the crossmembers using a small grinding wheel of the MIR or AIR OUTIL type (see drawing M10087/1).
  - Cut in half the parts remaining on the crossmembers (see drawing M10087/1).
  - Remove these pieces using a hot air gun to soften the bonding fillet so that it can be cut with a knife.
  - Remove that part of the adhesives that remains on the structure then degrease the surface with Derochim.

## . Fitting

- Lower the roof onto the vehicle, centralise it and drill 6 locating holes (see drawing M10087/1). These will be used to locate the roof when it is finally fitted. Remove the roof. Mark off the positions of the sound deadening pads (early type).
- Stick the sound deadening pads inside the roof (early type).
- Extrude fillets of Bostik 2638 adhesive onto the roof and onto the structure in 10 to 12 mm lengths (see drawing M10087/2 and 3).
- Fit the roof, centralising it on the holes already drilled.

- Fit the 28 securing rivets then seal their heads with gurit sealing compound.
- Seal the roof by applying a fillet of gurit at A along the RH and LH cant rails between the roof section and the side panels (see drawing).
- Refit the head lining and re-assemble by carrying out the removing operations in reverse.

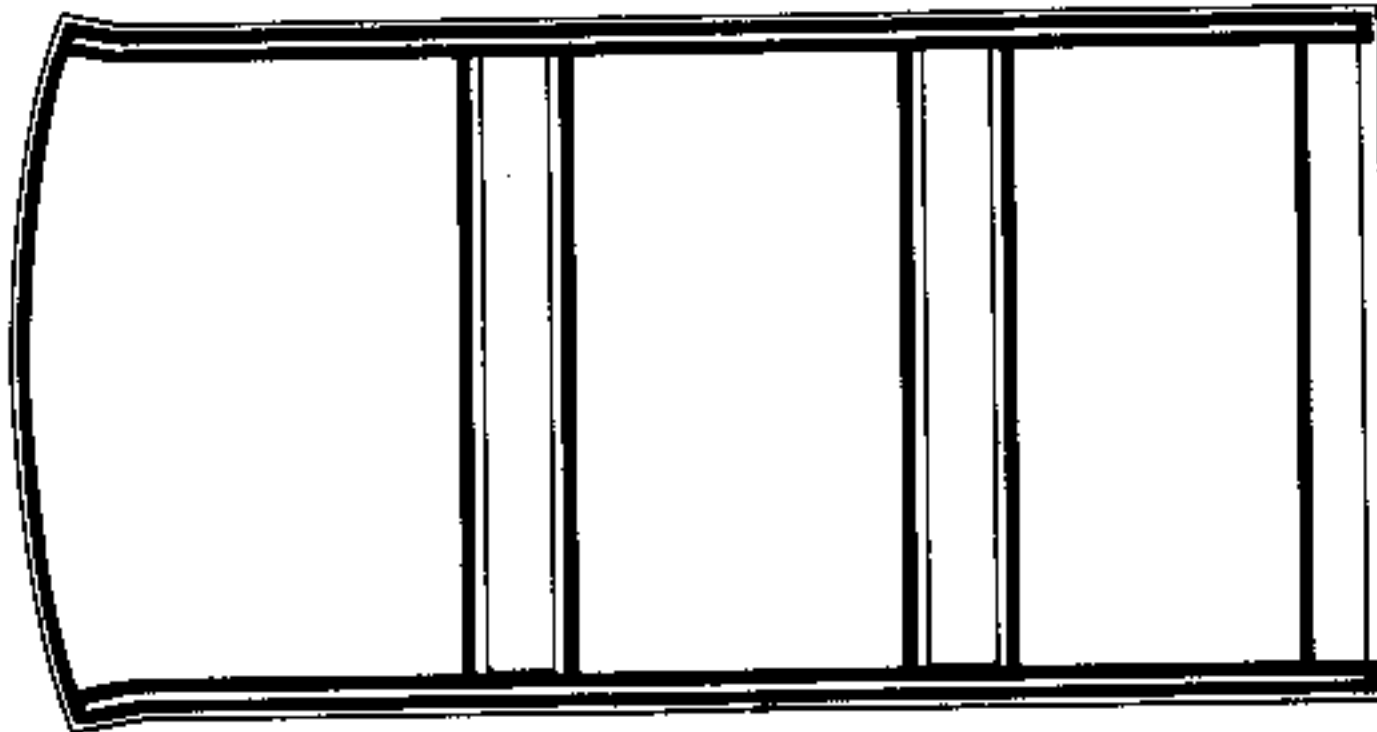




= cut line  
= rivets  
= no rivet

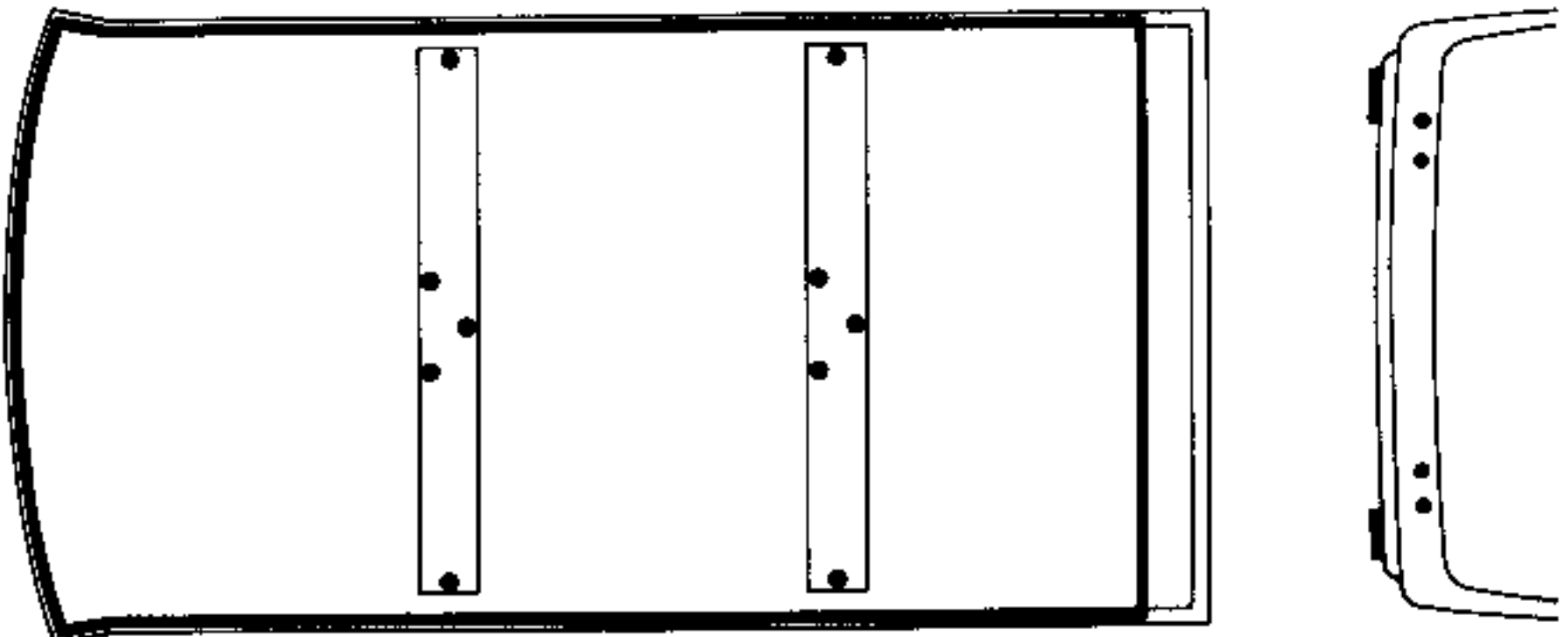
locating hole

EARLY TYPE



= fillet of type 2638 sealing mastic

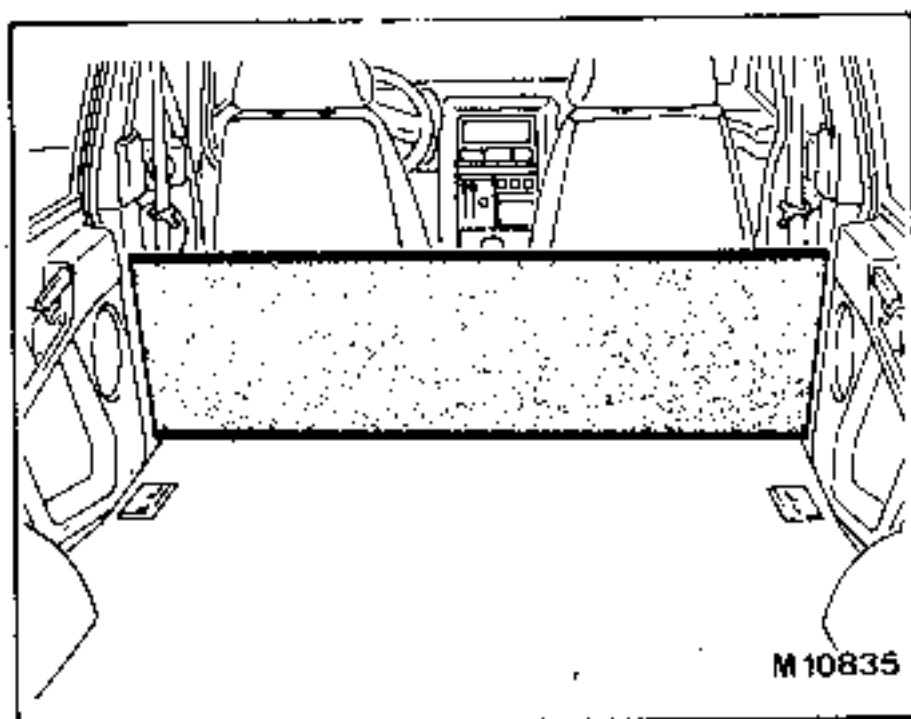
LATER TYPE



= fillet of type 2638 sealing mastic

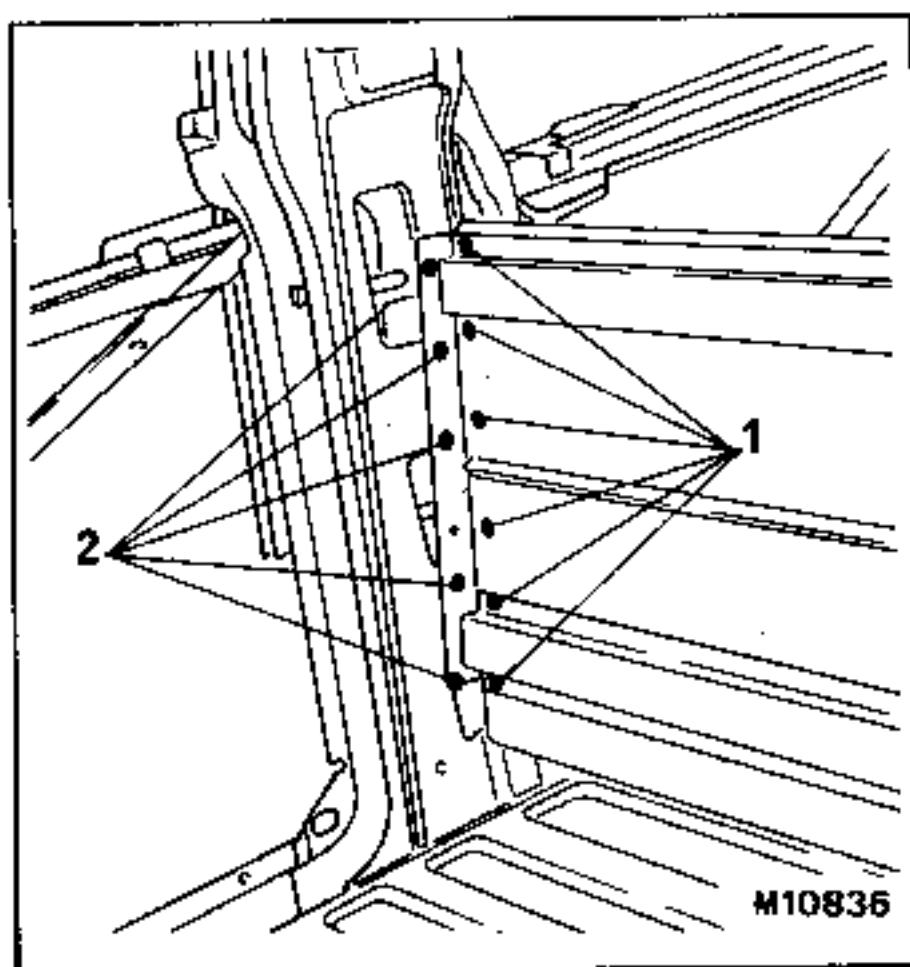


REPLACEMENT



IMPORTANT :

The replacement of the centre door pillar trim or the floor carpeting does not involve removing this panel.

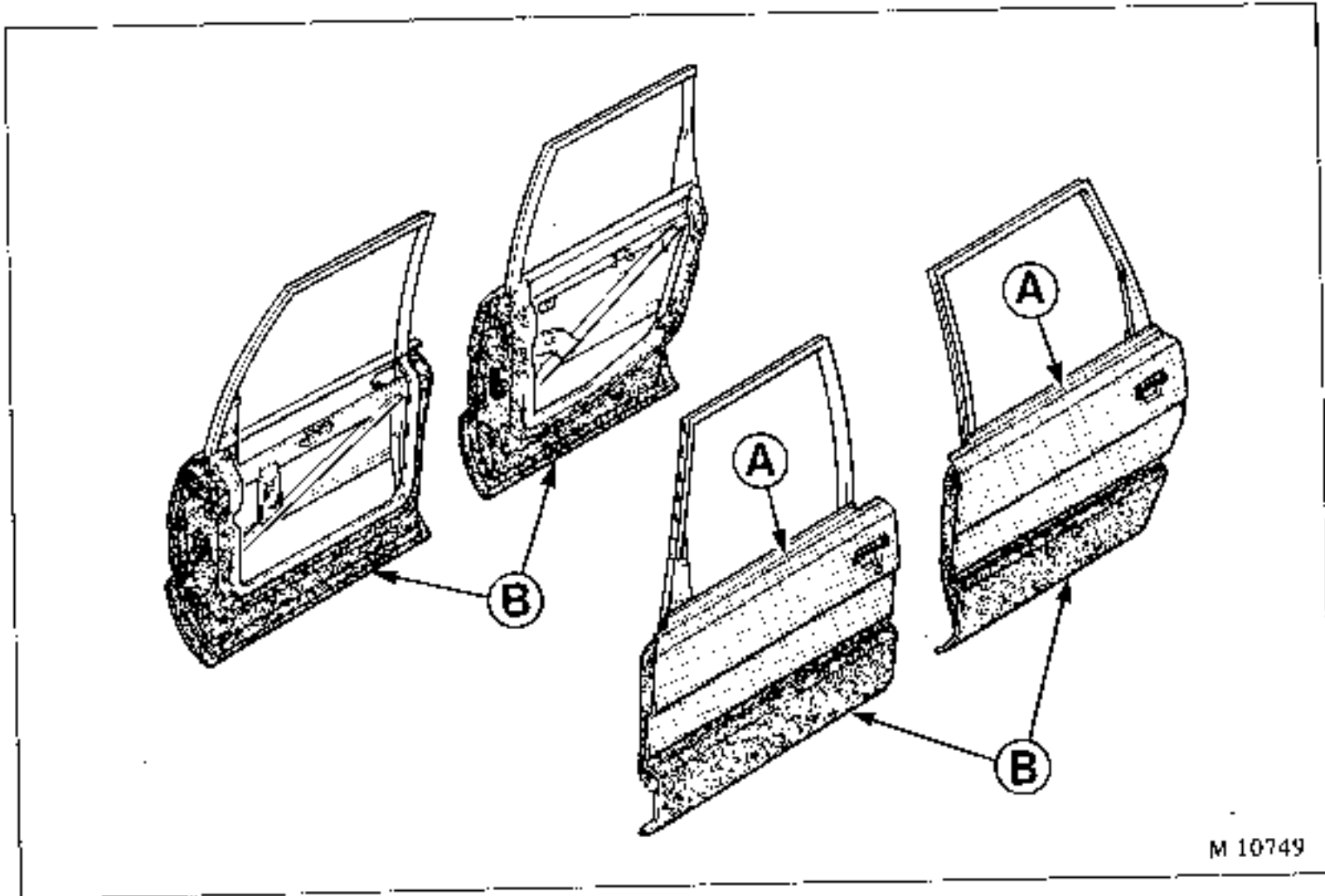


Grind back the spot welds (1) (5 + 6) that secure the panel to the retaining angles.

Should one or both of these angles be damaged, remove them from the door pillars by grinding back the spot weld (2) (5 + 5).

After refitting these parts, re-apply the protection to the welded areas.

Repairing



The door panels are made from resin pre-impregnated fibreglass. Consequently, only cracks, holes and small broken areas can be repaired with epoxy resin and polyester body filler.

Such cracks, holes or small broken areas are to be repaired by carrying out plastic component repair sequence 1, 2 or 3.

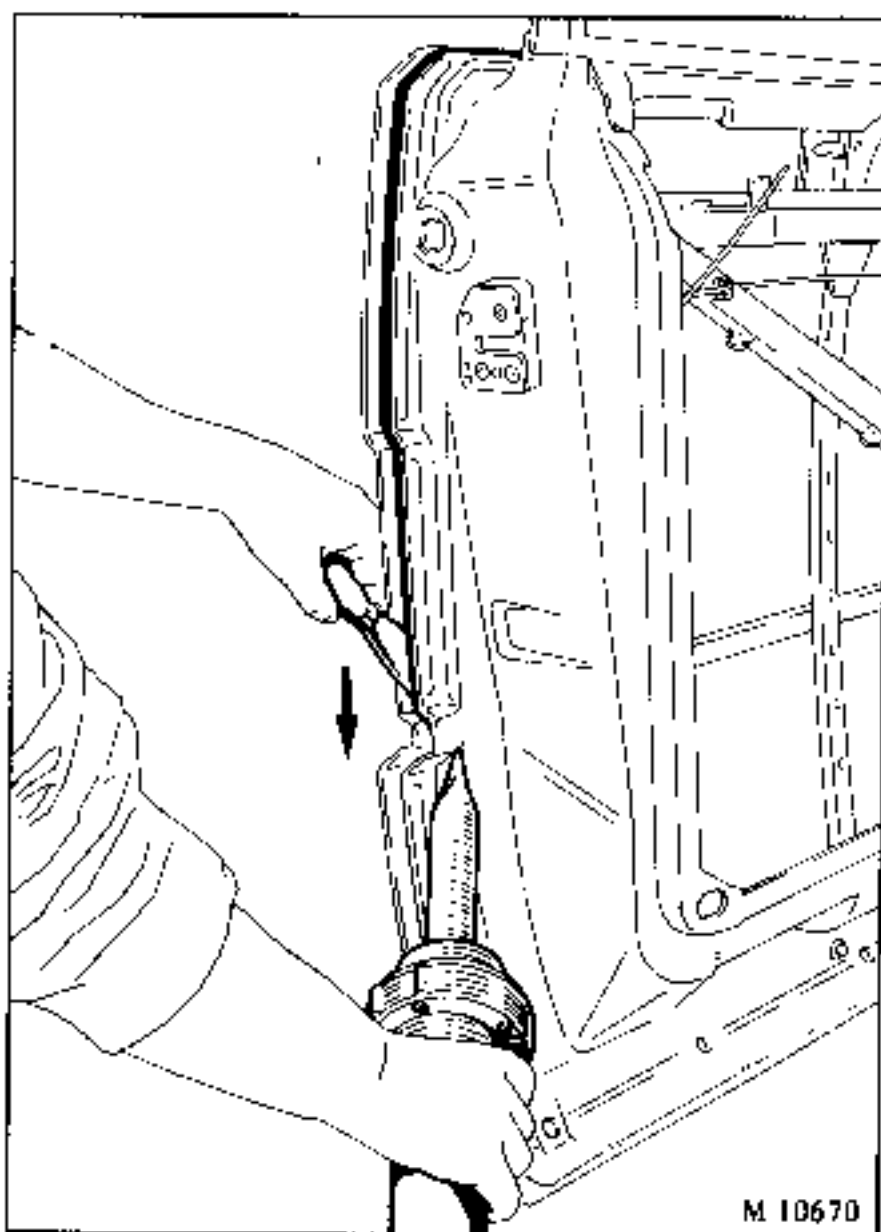
PAINTING : Zone A : body paint finish  
          Zone B : struc-coat

Carry out paint application sequence no. 3.

- Remove the external rear view mirror.
- Remove the foam from under the rear view mirror.
- Remove the window outer wiper strip.
- Remove the window inner wiper strip.
- Remove the door trim.
- Remove the outer door handle and the lock barrel.
- Disconnect the wiring harness and free it from the door together with its protective sleeve.

#### REMOVING THE PANEL

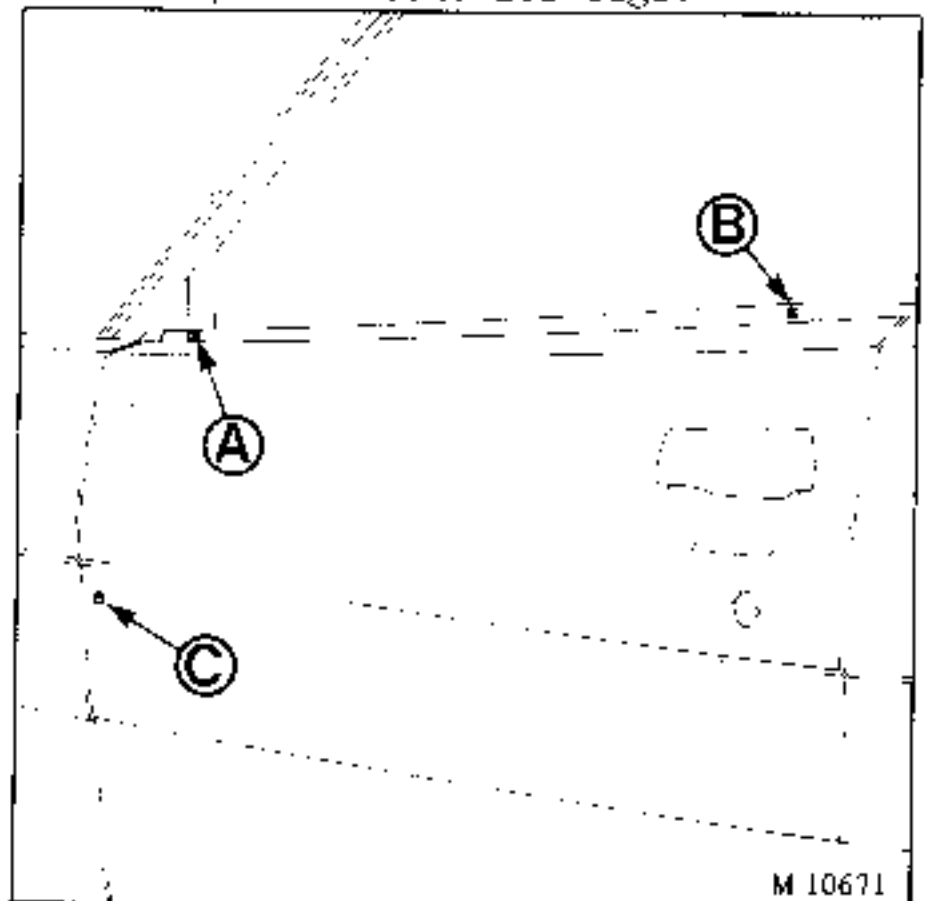
- Protect the front wing, the body sill and the trim with masking tape.



- With a hot air gun and a sharpened spatula, free the panel by heating the door body (starting at the rear end).
- Carefully remove all excessive adhesive remaining on the door body.

#### CENTRALISING the door panel

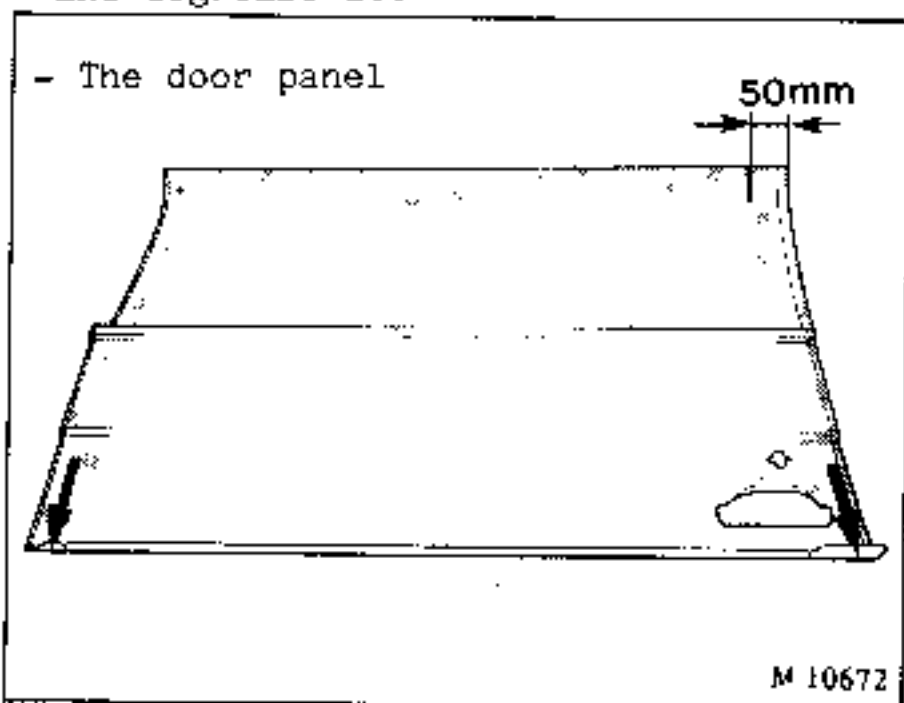
- Refit the wiring harness
- Close the door.
- Offer-up the door panel against the vehicle and centralise it. From the inside, mark round its edge.



- Drill the panel and the door pillars at (A) and (B) so that sheet metal screws can be fitted to correctly locate it during bonding.
- Drill the panel and the door body at (C) to fit another sheet metal screw to ensure that the front part of the panel pulls down correctly (it is impossible to fit clamps).
- Remove the panel.

## PREPARING THE PARTS

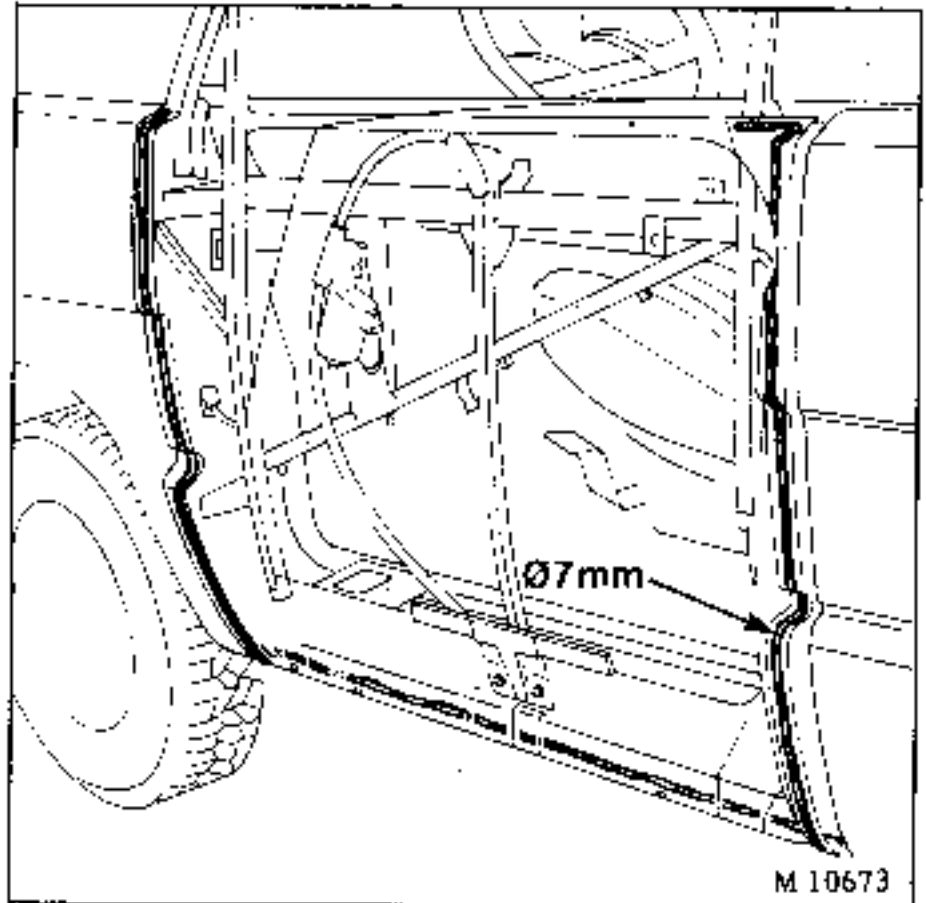
- The door body
- On those areas stripped back to the bare metal
  - . roughen the surface of the metal, blow it off and degrease it.
  - . using a brush, apply a coat of chrome-phosphate primer. Allow it to dry and then apply a coat of corrosion inhibiting primer. Allow it to dry. Lightly key the surface of the primer on the area to be bonded. Blow it off and degrease it.



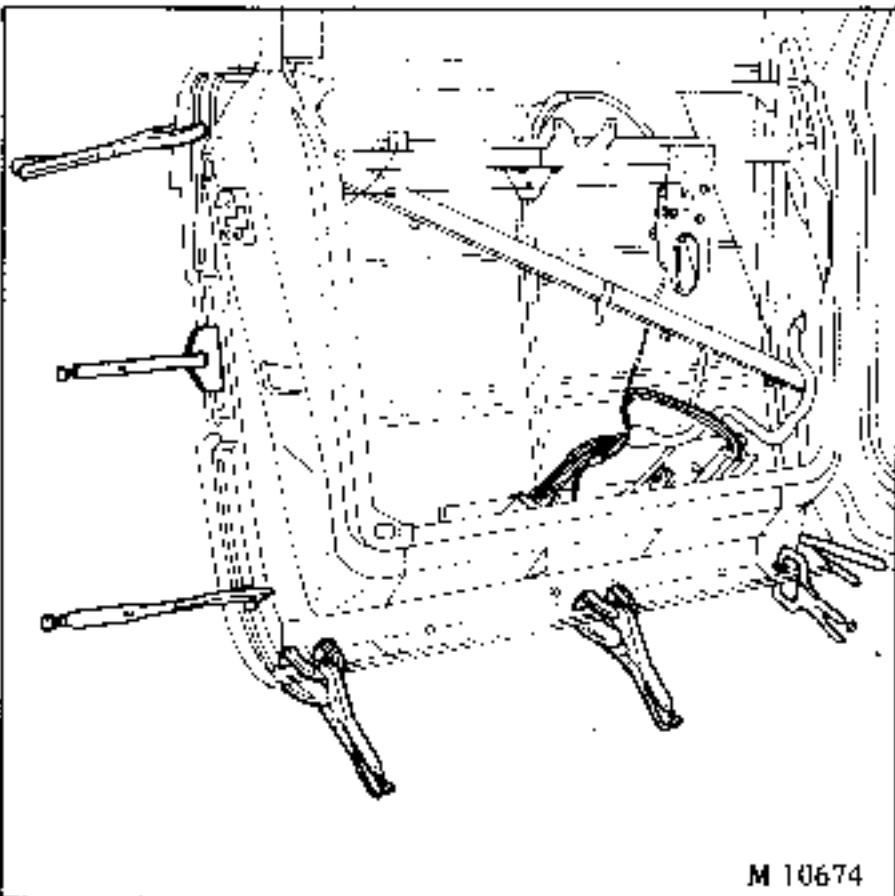
- Using P100 rubbing-down paper, dry, lightly key the area to be bonded, by hand, out to the edge of the panel.
- Blow off and degrease this area.
- Coat the area with windscreen primer (Gurit) and leave it to dry for 10 minutes.
- Key the surface of the primer (using P180).
- Blow off the dust.

## BONDING THE DOOR PANEL

The panel is bonded to the door body using 2 pot adhesive TEROSON 6322. The adhesive is mixed in the cartridge that is supplied with the adhesive (50% of each component).



- Extrude a fillet (diameter 7 mm) of adhesive to the door body, with an extruding gun.
- Protect the internal part of the panel that projects past the door body with adhesive tape.
- Fit the panel and secure it in place with the sheet metal screws.

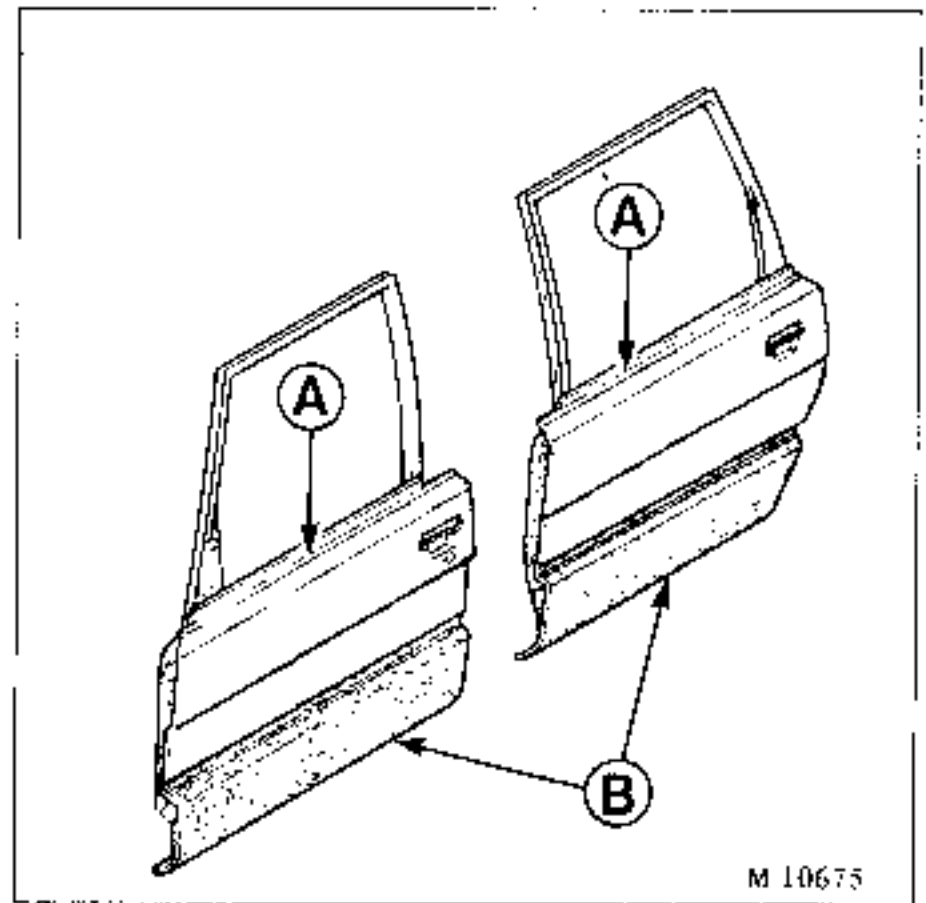


M 10674

- Apply clamps to pull down the panel (protecting the panel with blocks of wood).
- Remove all surplus adhesive after taking off the masking tape.
- Leave the adhesive to dry.
- Remove the screw (C) and fill its hole with polyester body filler.
- Screws (A) and (B) are to be coated with thread locking compound and left in place

## PAINTING

Carry out paint application sequences 1 and 4 after carefully masking-off the interior.



M 10675

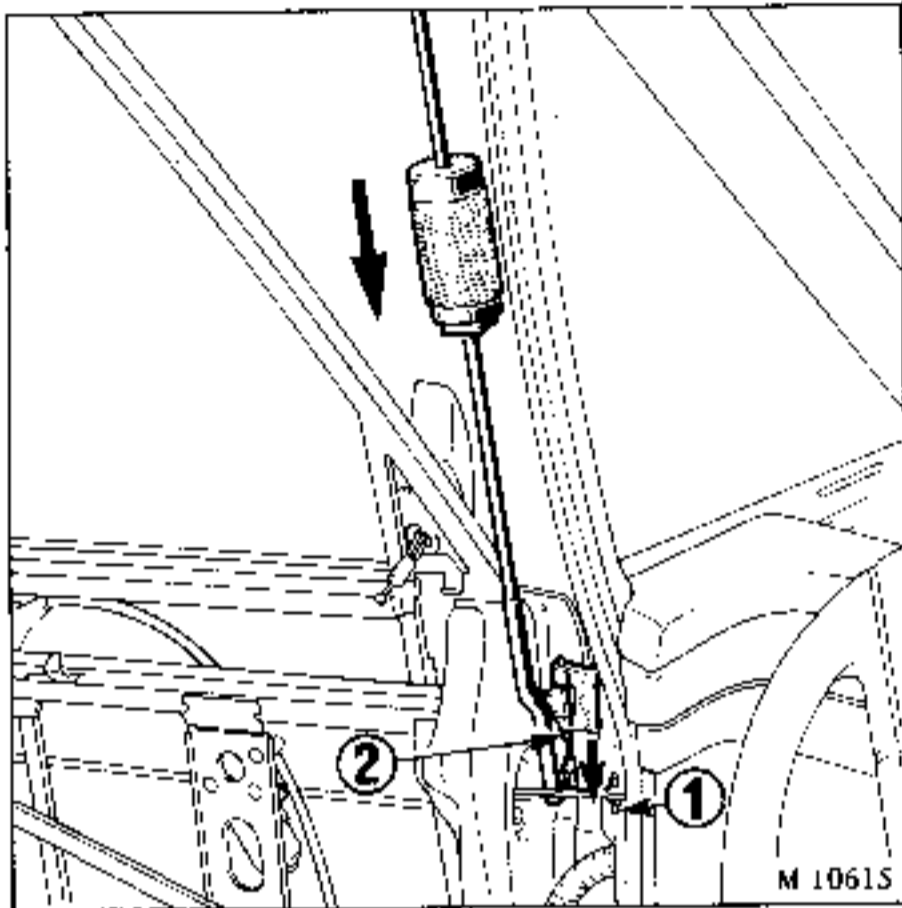
Zone A : body finish coat

Zone B : struc-coat

Door frame : black

REMOVING THE DOOR

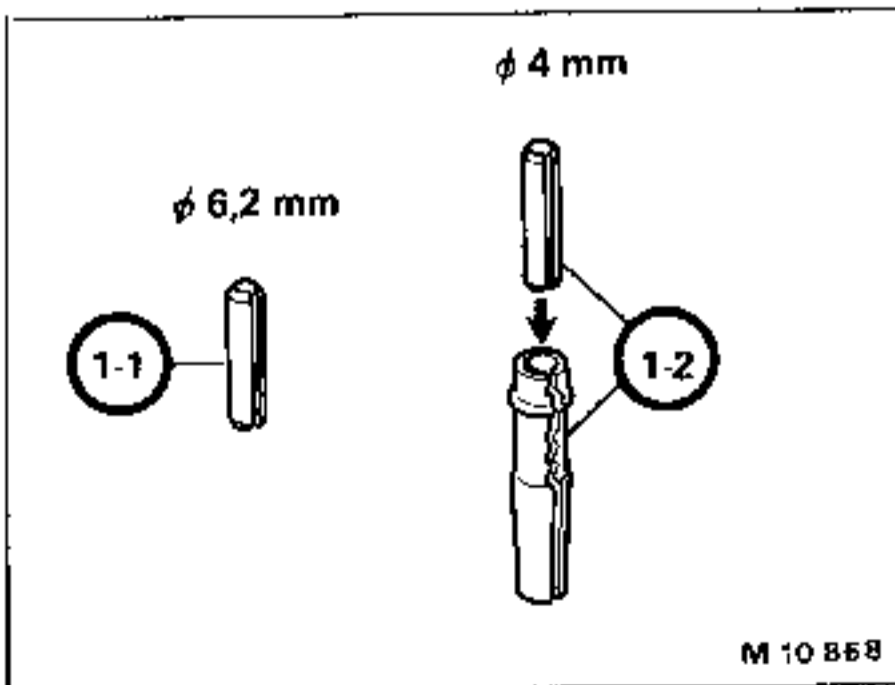
- Remove the trim (see 72)
- Unstick the vinyl sealing sheet
- Disconnect the connectors and pull them out from the door after first removing the rubber protector.



The hinges are welded to the door body. They are secured to the door pillar by nuts that are accessible from inside the pillar.

As the lower hinge pin cannot be removed, one must proceed as follows:

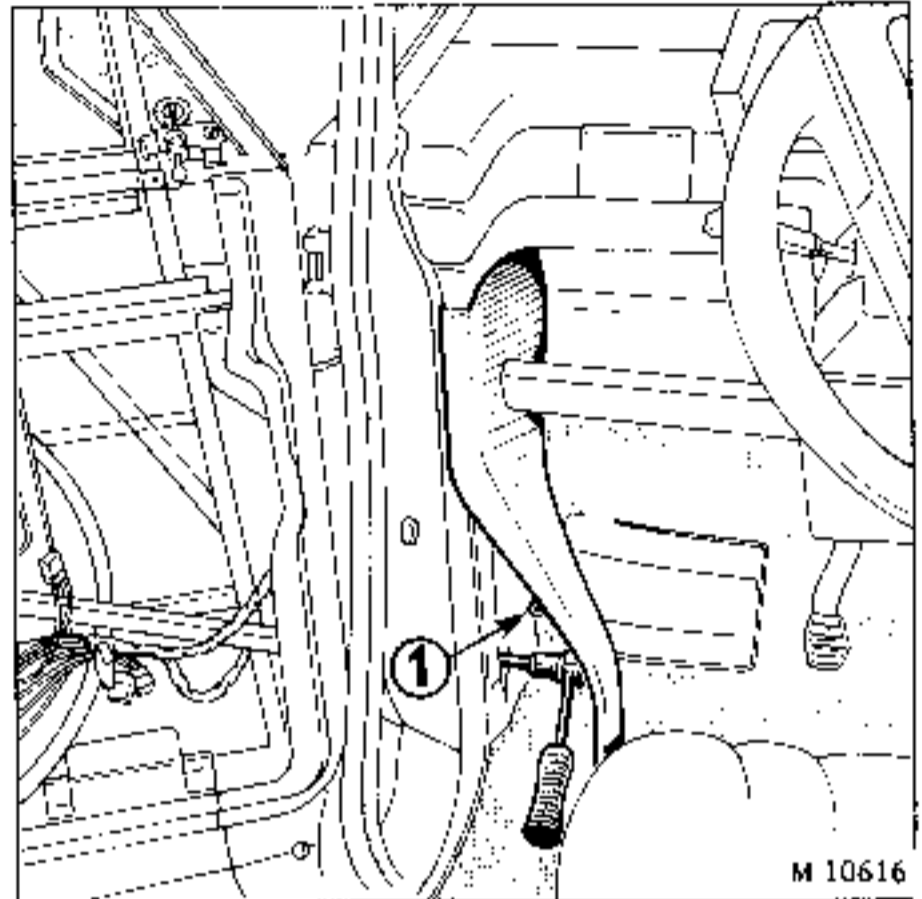
- Disconnect the door check by knocking out the pin (or pins) (1).



1-1 : Early arrangement      1-2 : Later arrangement

Important : On re-assembly, pin arrangement 1-1 must be replaced by arrangement 1-2.

- Disconnect the upper hinge by knocking out the hinge pin (2) with an inertia extractor.
- Partially remove the door sealing strip around the front door pillar trim.



- Free and partially unclip (1 clip (1)) the trim.
- Free the sound deadening from its securing points.
- Remove the 2 nuts securing the lower hinge which are inside the pillar.

Adjusting the door

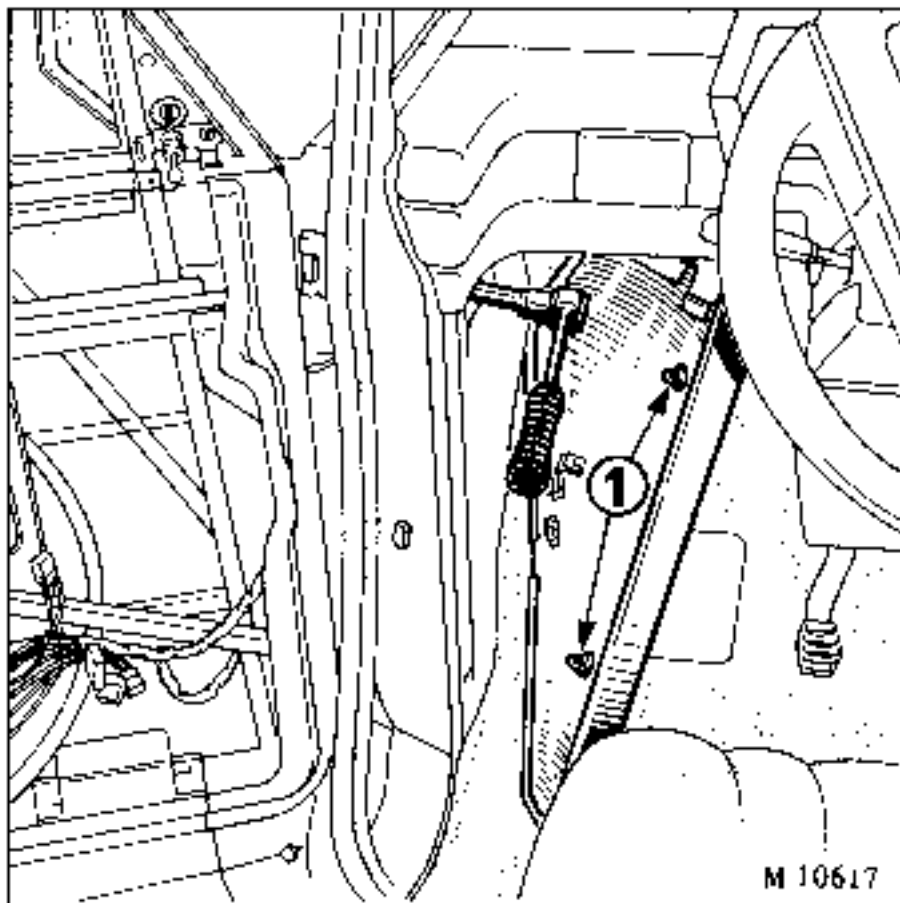
The door is centralised by adjusting the positions of the hinge securing bolts in their slots in the door pillar.

The door is adjusted flush with the rest of the bodywork by fitting shims between the hinges and the door pillar.

If adjustment becomes necessary, one must gain access to the upper hinge securing bolts to be able to loosen them.

To do this

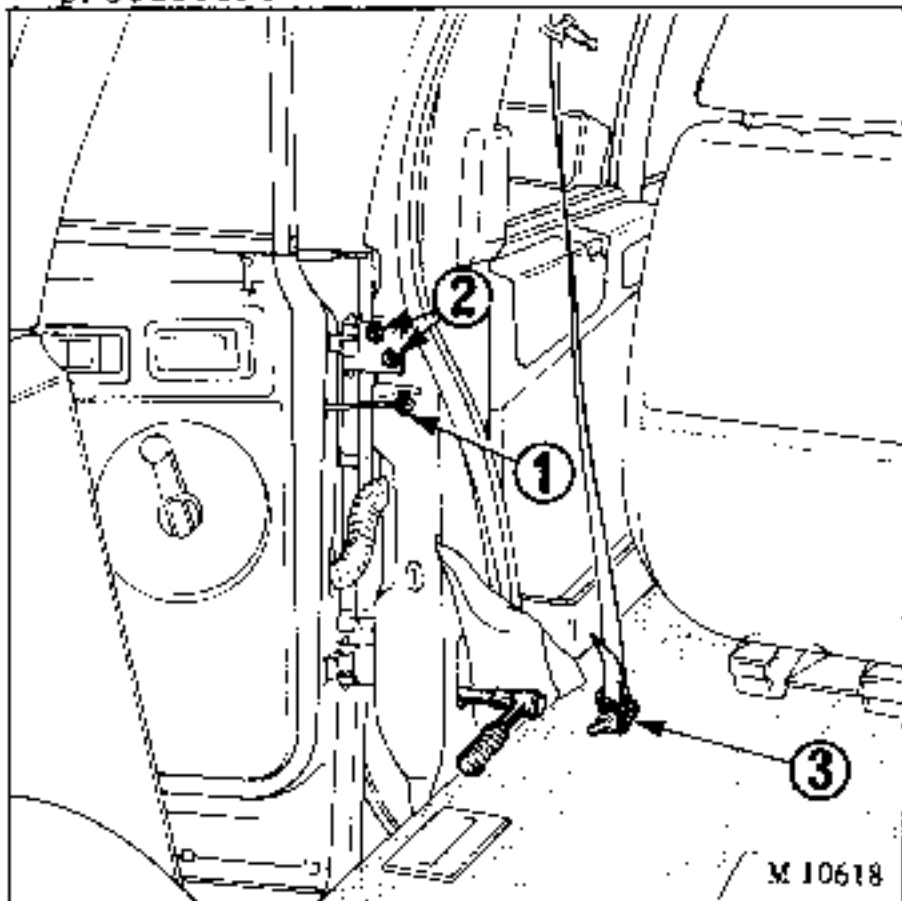
- Remove the parcel shelf from under the fascia panel
  - . on the left-hand side (4 screws)
  - . on the right-hand side (4 screws)
- after first having moved the accessory connection plate out of the way.



- Unclip the trim (2 clips) (1) and remove it.
- Free the sound deadening from around the upper hinge (at the end of the fascia panel).
- Loosen the hinge securing nuts (a universal joint will have to be used on the socket to loosen the upper one).

Removing

- Remove the trim
- Unstick the vinyl sealing sheet
- Disconnect the connector (or connectors) and remove it or them from the door after first removing the rubber protector.



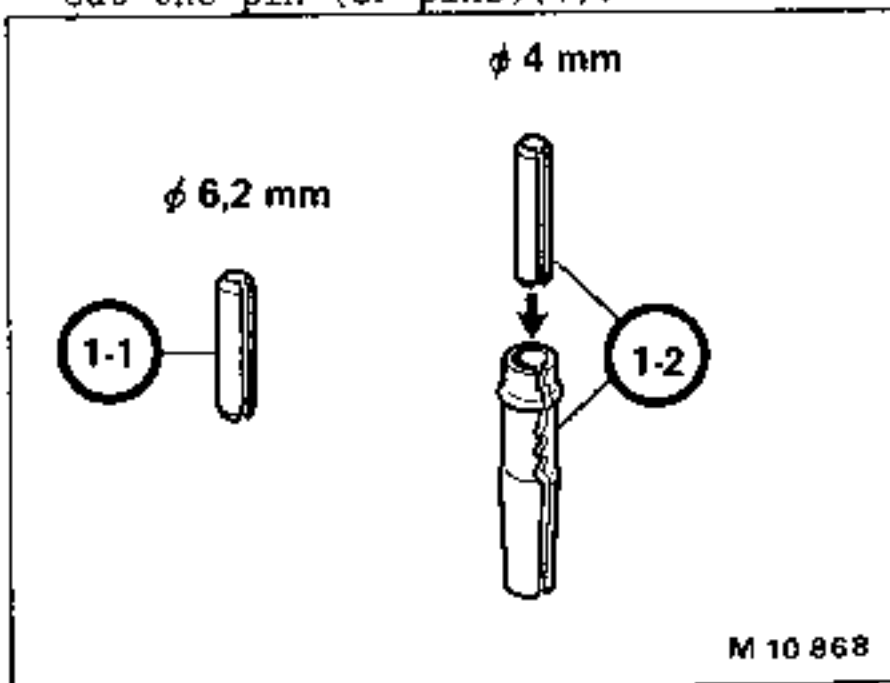
- Remove the 2 bolts (2) that secure the upper hinge to the door pillar.
- Partially remove the rear door sealing strip round the centre door pillar lower trim.
- Remove the seatbelt extension (3).
- Partially free the centre door pillar lower trim.
- Pull the foam and the electrical wiring harness out of the way and remove the 2 nuts inside the door pillar that secure the lower hinge.

Adjusting the door

The door is centralised by moving the hinge securing bolts in their slots in the door pillar.  
It is adjusted flush with the rest of the bodywork by shims placed between the hinges and the door pillar.

The hinges are welded to the door body. The upper hinge is secured to the door pillar by 2 Torx type screws, on the outside, and cage nuts on the inside. The lower hinge is secured by nuts to which access can be gained from inside the door pillar.  
As the lower hinge pin is not removeable one must proceed as follows:

- Disconnect the door check by knocking out the pin (or pins)(1).



1-1 : early arrangement 1 - 2 : later arrangement

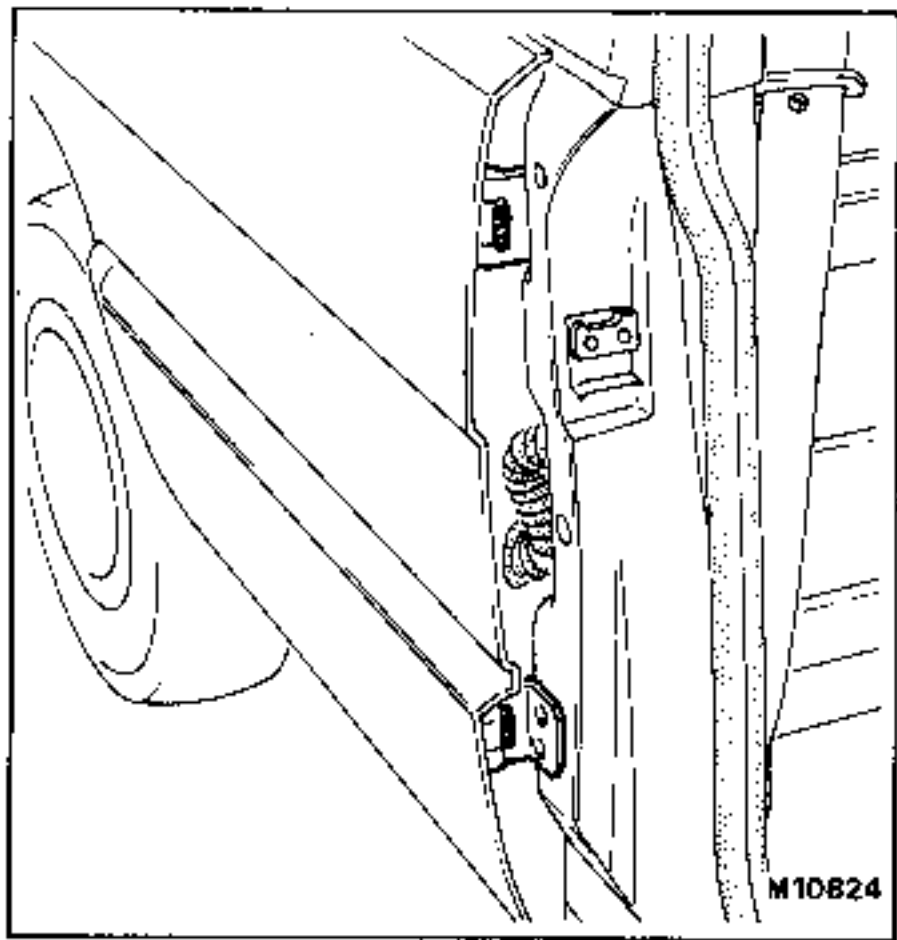
Important : On refitting, pin arrangement 1-1 must be replaced by arrangement 1-2.



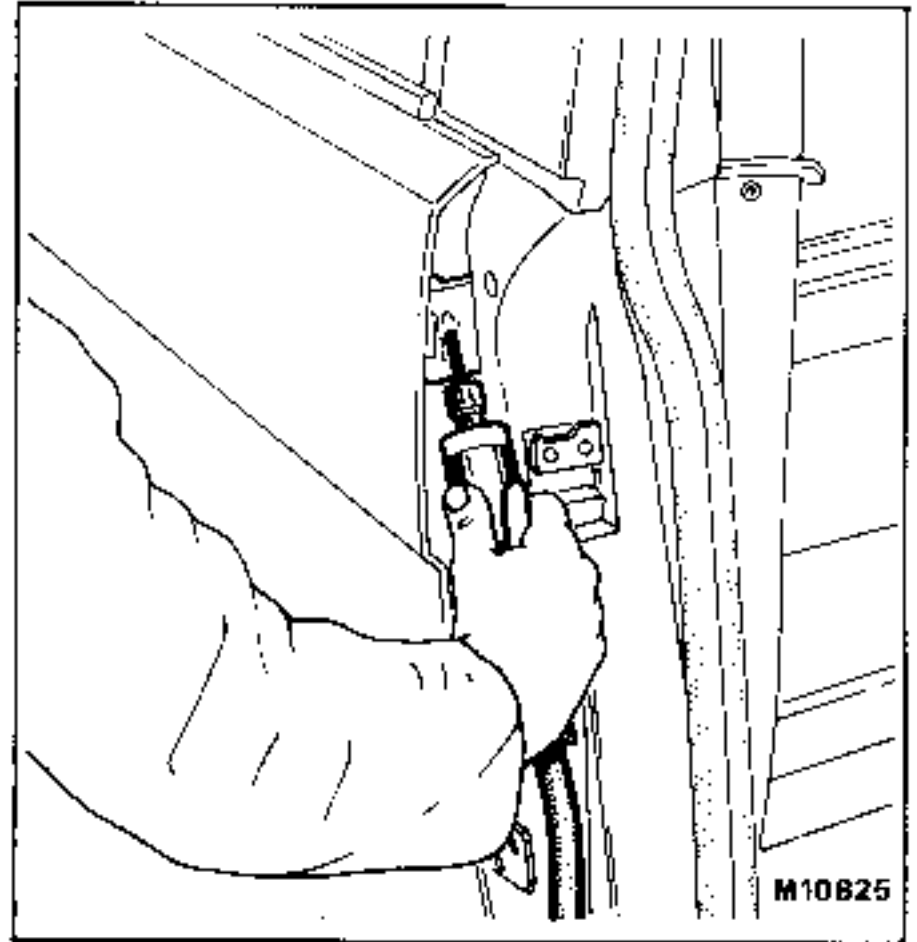
OPENING

To carry out this modification, one must replace the following parts :

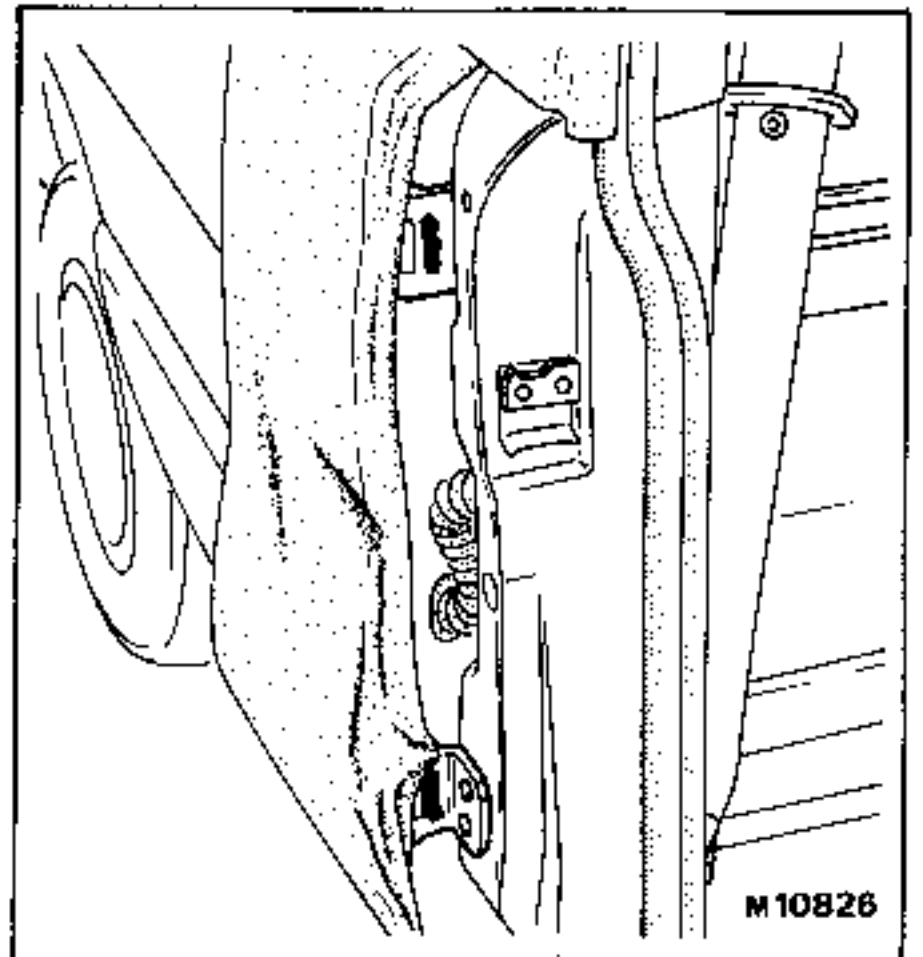
- 1 LH lock            part no.: 77 00 756 702
- 1 RH lock            part no.: 77 00 756 701
- 1 LH striker  
    plate            part no.: 77 01 348 165
- 1 RH striker  
    plate            part no.: 77 01 348 166
- 3 screws            part no.: 77 03 004 082



- Remove the door trim.
- Remove the vinyl sealing sheet.
- Remove the window
- Remove the door sealing strip.
- Open the front door.
- Carefully protect the inside of the passenger compartment and the outside of the rear door with vinyl or paper.

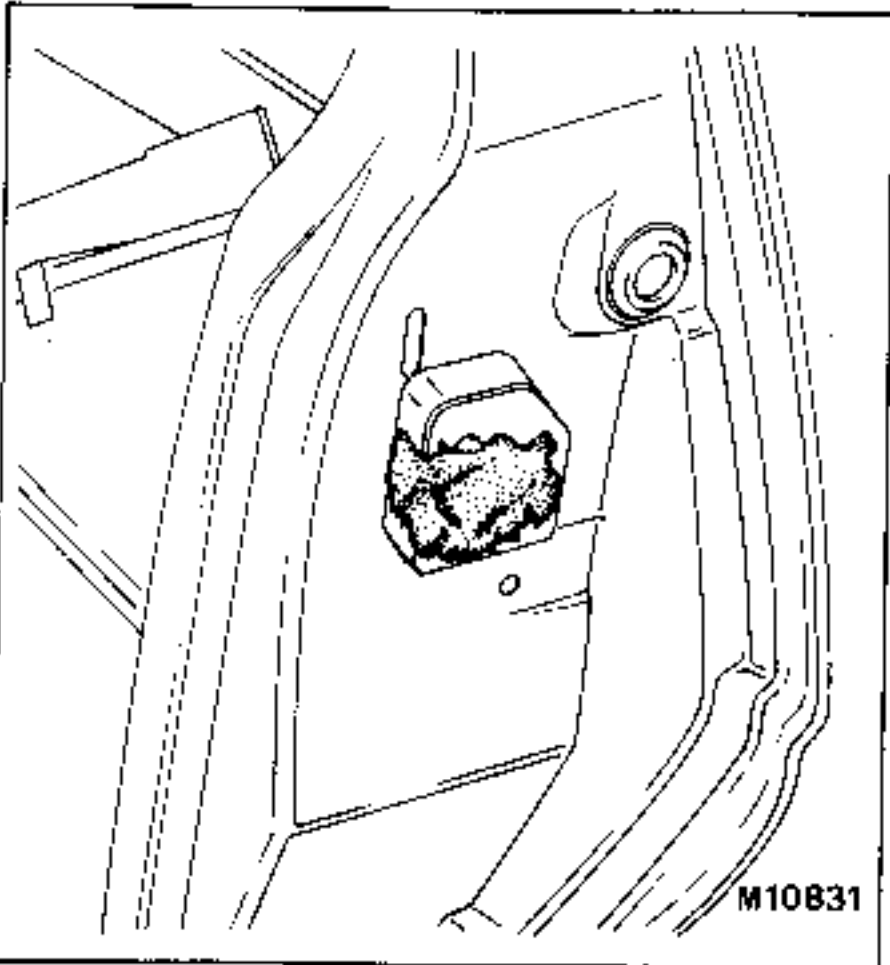


- Grind back the welding fillets on the upper and lower hinges using a straight grinder equipped with a burr or a 40 mm diameter cutting disc.

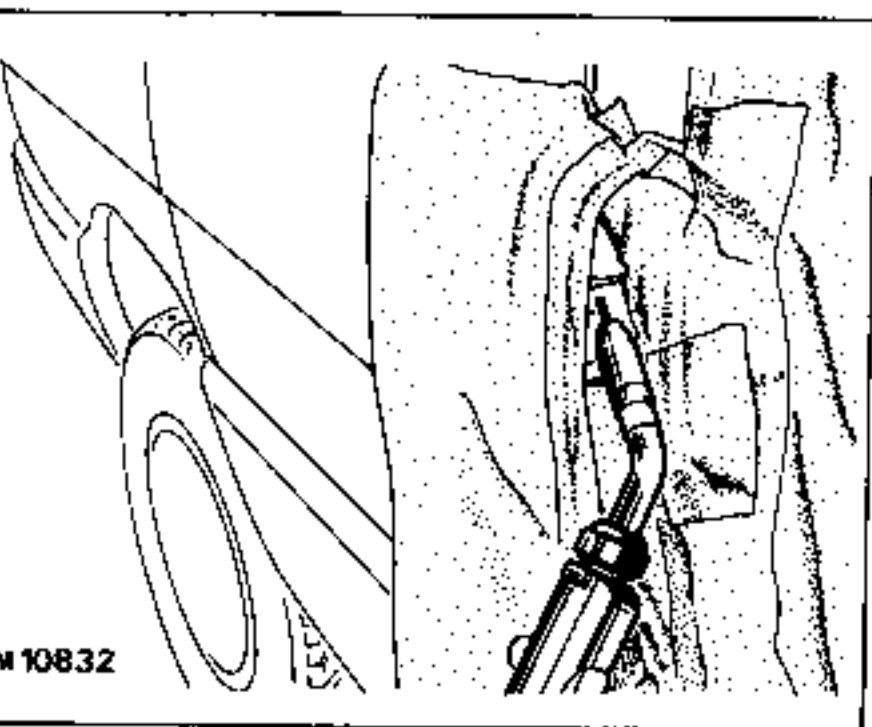


## LATCHING and LOCKING SYSTEM

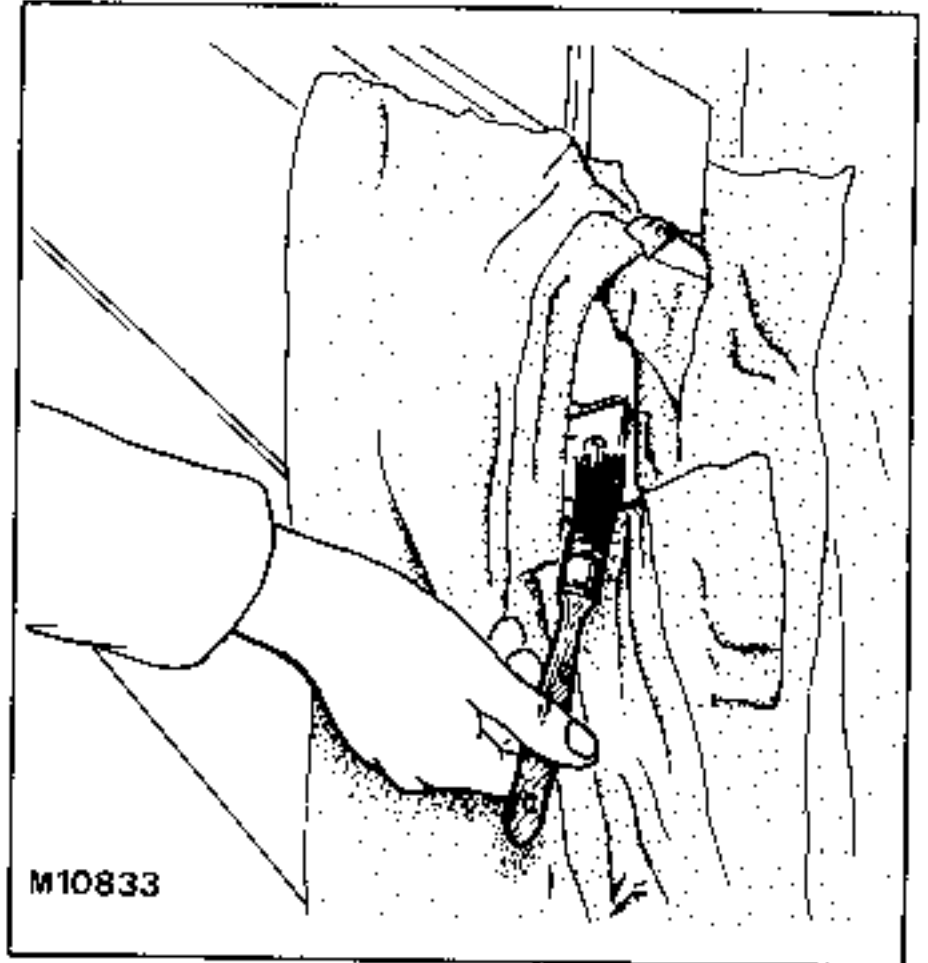
- Fit the new striker plate to the rear door pillar.
- Fit the new lock to the door.
- Adjust the door to bring it flush with the body.
- Tighten the screws that secure the striker plate and the lock.



- Pour the polyester resin into the lock and close the door.



- Re-weld the 2 door hinges in place using fillet welds under a neutral gas envelope (carefully protect the door pillar and the door lining to avoid them being damaged).

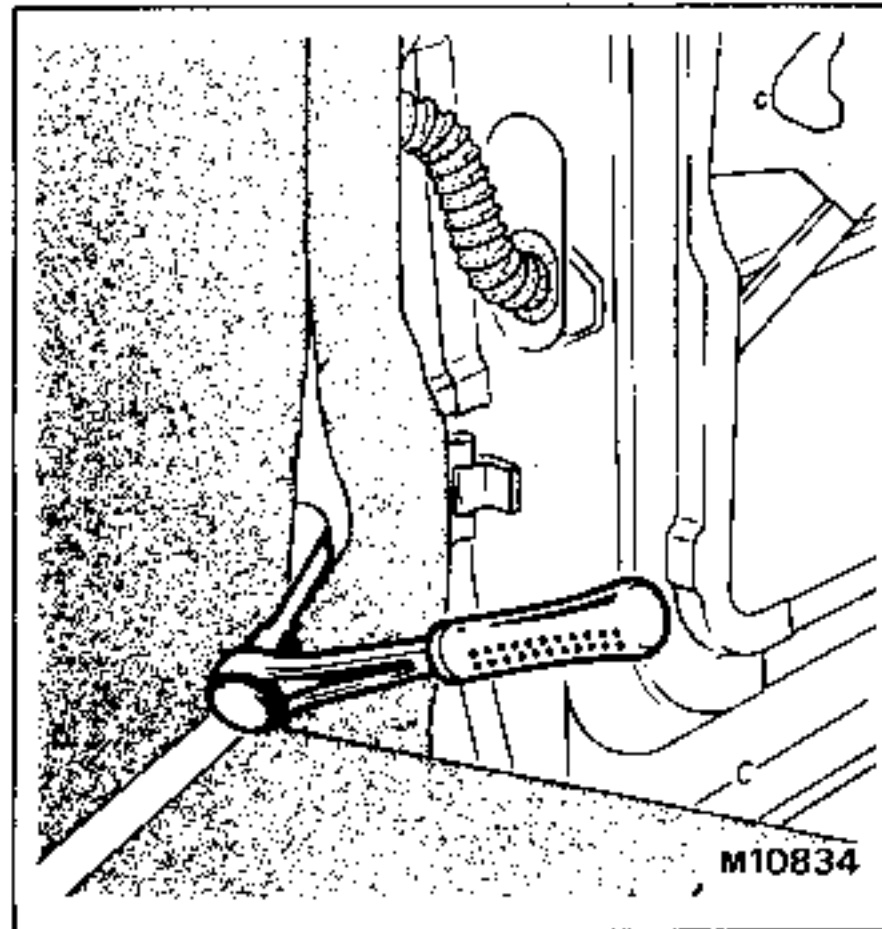


- Protect the welded areas (see section entitled "Protecting areas after welding" on page N24 of MR.272).
- Touch up the paint on the welded areas.
- To re-assemble the rest of the components, carry out the removing operations in reverse.

REMOVING THE DOOR

After opening the door:

- Partially remove the front and rear door seals on the centre door pillar.



- Free the centre door pillar lower trim.
- Refit the 2 nuts that secure the lower hinge, inside the door pillar. Place a plug of mastic inside the socket to avoid the nuts falling down inside the pillar.
- Remove the thrust plate with a hook.
- Remove the door check pin from the door pillar.
- Remove the 2 upper hinge securing bolts.

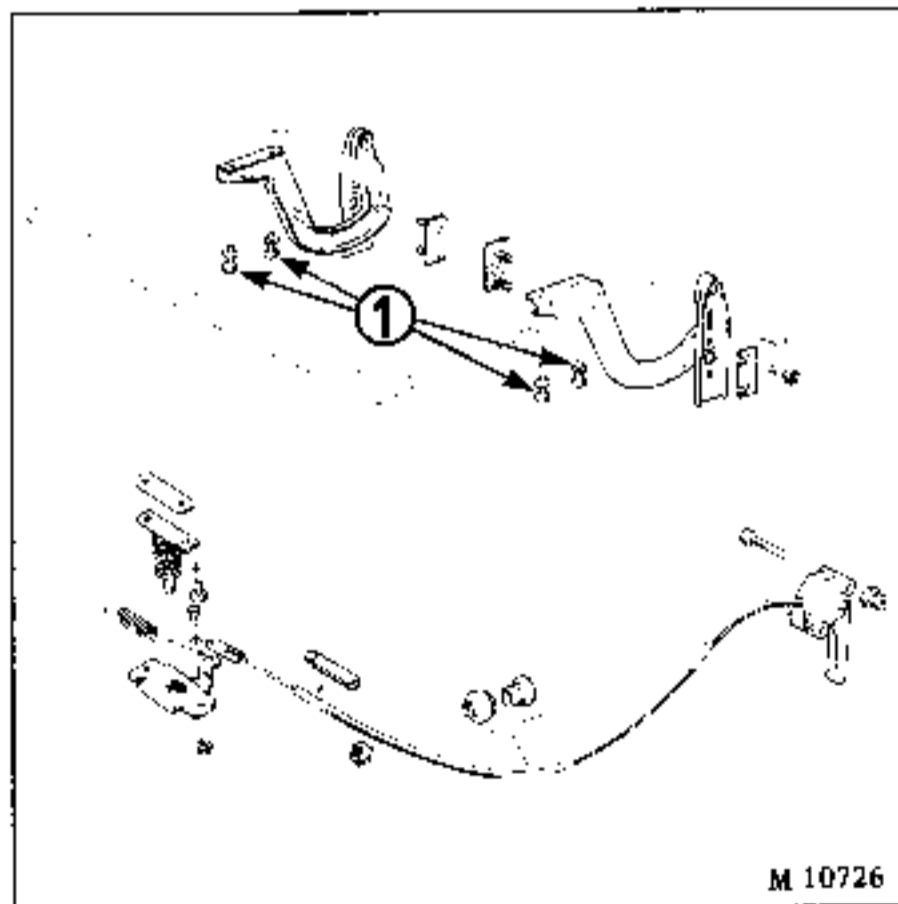
REPAIRING

Only cracks and small broken areas can be repaired according to plastic component repair sequences 1, 2 or 3.

ANY REPAIR BY PARTIAL REPLACEMENT IS FORBIDDEN. The design of the bonnet makes such a partial replacement impossible.

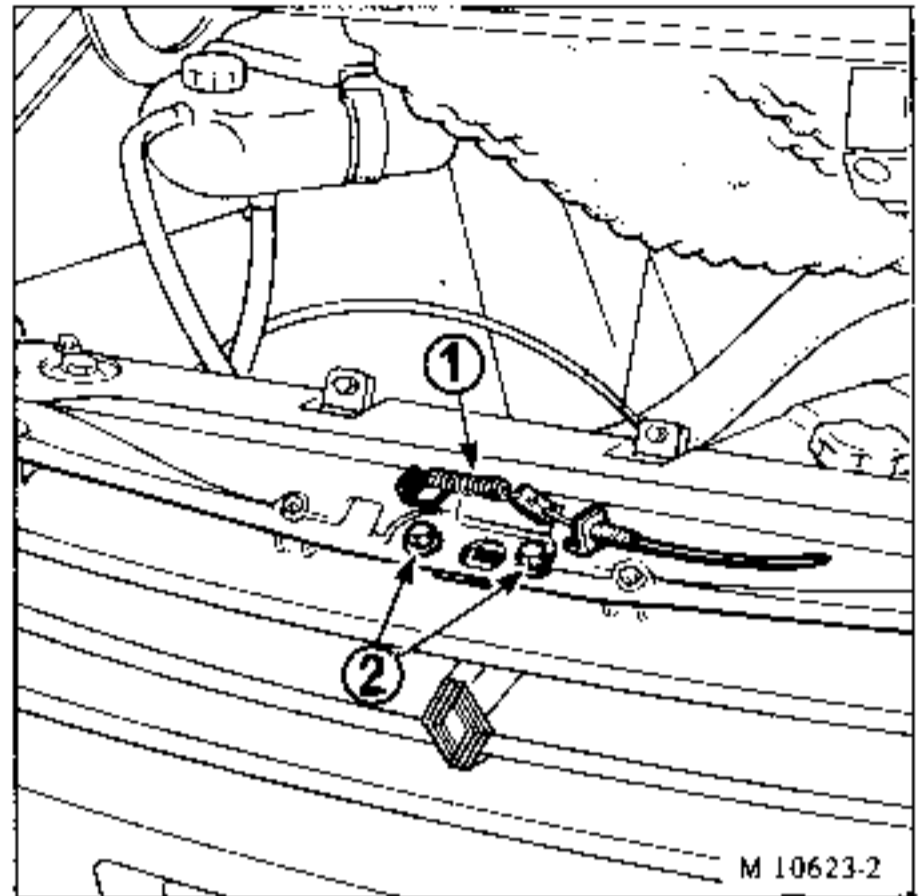
REPLACEMENT

- Open the bonnet
- Disconnect and uncouple the windscreen washer pipes and their jets from their supports.
- Remove the locking finger and the safety spring.



- Remove the 4 screws (1) that secure the bonnet to the quadrants.
- The bonnet is centralised at the slots in the quadrants.

REMOVING THE LOCK



- Disconnect the cable by unhooking the return spring (1).
- Remove the 2 screws (2) that secure the lock to the crossmember.

IF THE BONNET CANNOT BE OPENED following an impact or the breakage of the control cable, it can be opened by pushing a metal hook between the crossmember and the radiator grille and pulling on the lock release lever.

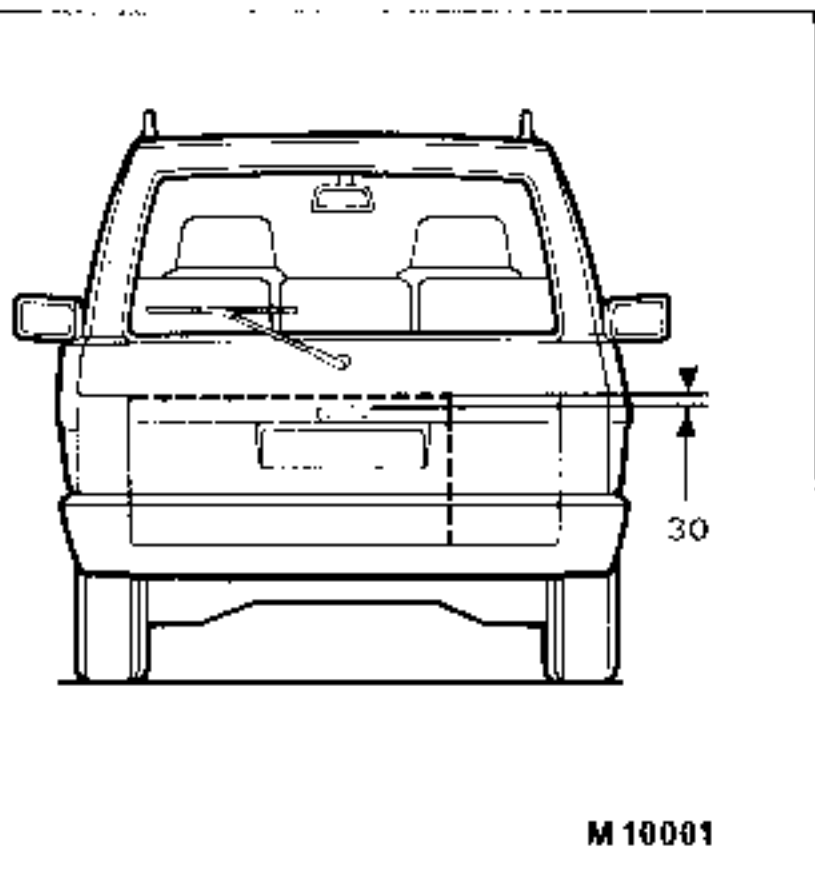
PAINTING : Body finish paint.

Apply paint application sequence no. 1 to both faces.

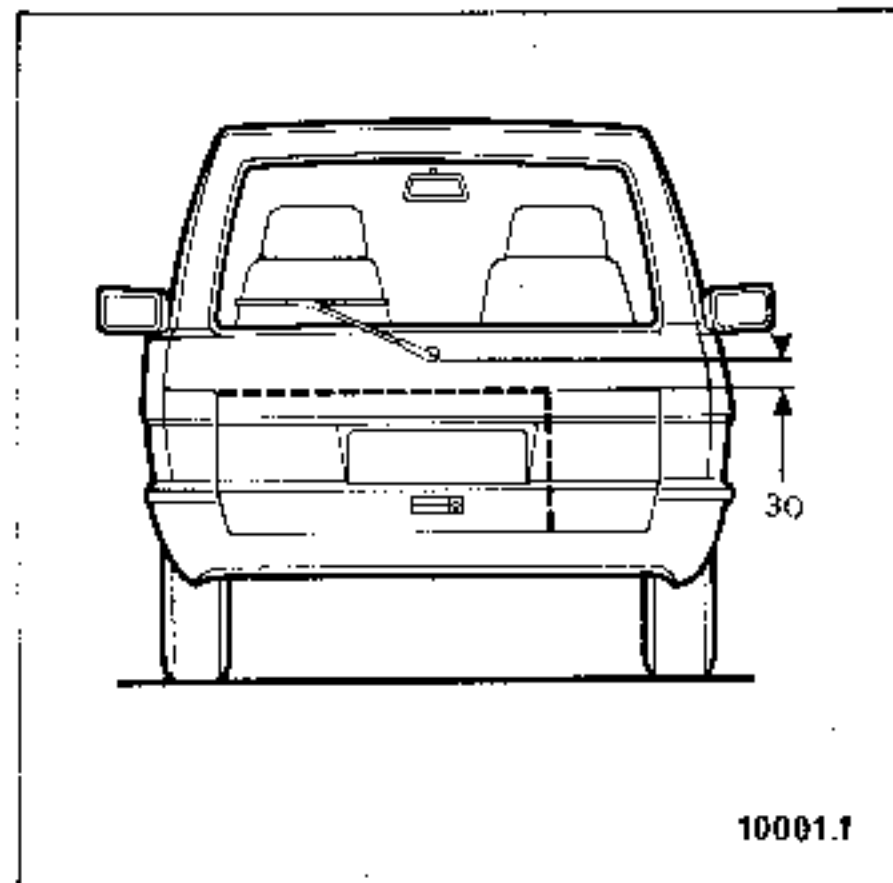
## REPAIRING

Only the lower part of the tailgate can be repaired but the operation can be carried out without removing the tailgate.

Early type



Later type



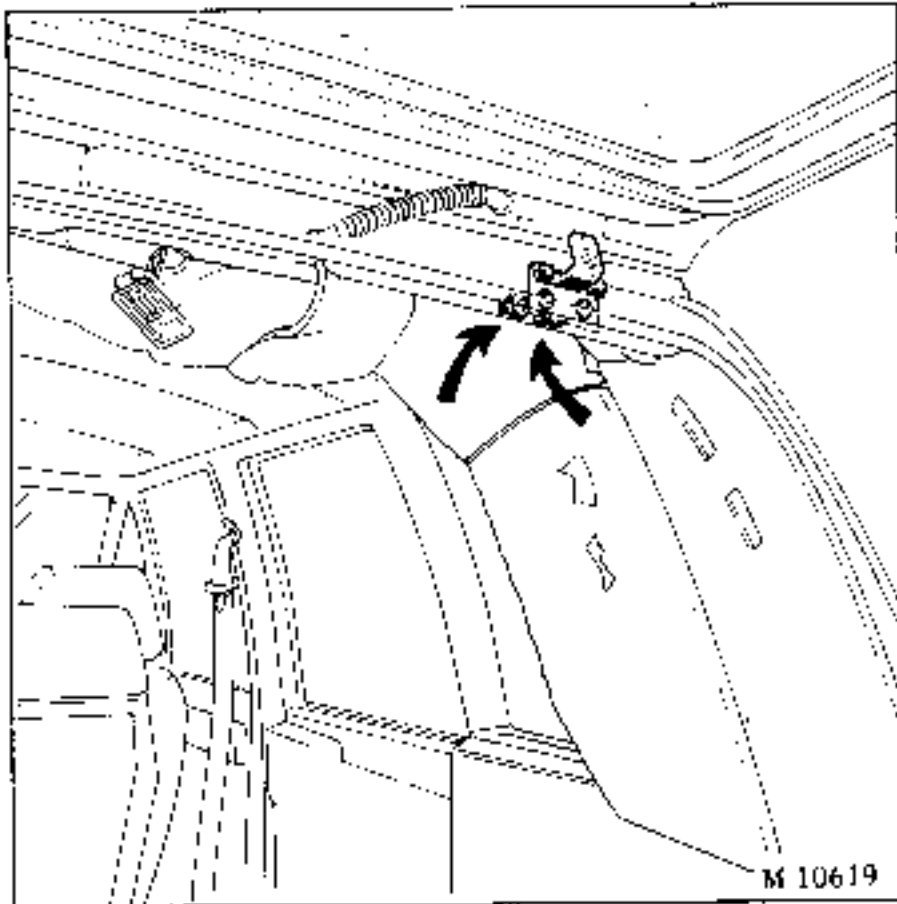
- Remove the tailgate trim.
- Remove the vinyl sealing sheet.
- Remove the right and left-hand locks.
- Remove the lock handle and its linkages.
- Remove the numberplate lights.
- Unstick the lock handle stiffeners and the numberplate light supports using a hot air gun.
- Unstick the part to be replaced from the tailgate lining by the same method and cut the adhesive fillet with a spatula.
- To repair the tailgate, carry out plastic component repair sequence no. 4.

Note: The upper cut line is not to be more than 30 mm from the upper edge of the tailgate lock handle on all early type models equipped with a rear screen wiper.

Carry out paint application sequence no. 1.

REMOVING

- Open the tailgate and prop it in the open position.
- Partially remove the sealing strip along the upper edge.



- Unlock, disconnect and remove the 2 gas struts.
- Remove the 2 gas strut securing ball joints.
- Remove the side ventilators (from certain models).
- Remove the centre rear interior light
- Unstick the head lining from the rear crossmember and the upper part of the tailgate pillars (up to 1987 models).
- Free the head lining from the rear crossmember (it is clipped in place without adhesive)(from 1987 models onwards).
- Free the foam round the hinge securing points.
- Unhook and remove the tailgate trim panel.
- Unstick the vinyl sealing sheet.
- Disconnect all the electrical wiring and the rear screen washer pipe (on certain models).
- Secure a piece of wire (2 metres long) to the end of the electrical wiring harness and screen washer pipe.
- Unclip the rubber protective sleeves from the tailgate.
- Extract the wiring harness and screen washer pipe by pulling them.

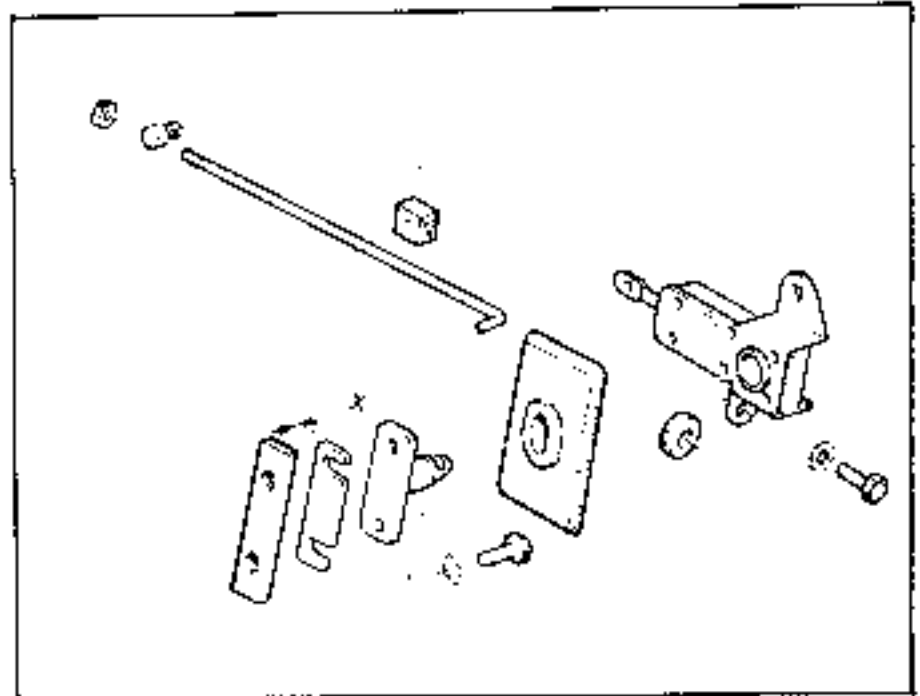
Note: the wire secured to their end is to be used for refitting them.

- Remove the nuts, washers and plates that secure the hinges.

ADJUSTING

The tailgate is centralised by positioning the hinge securing bolts in the slots in the upper rear crossmember.

The tailgate is adjusted flush with the rest of the body by placing shims under the lock strikers.



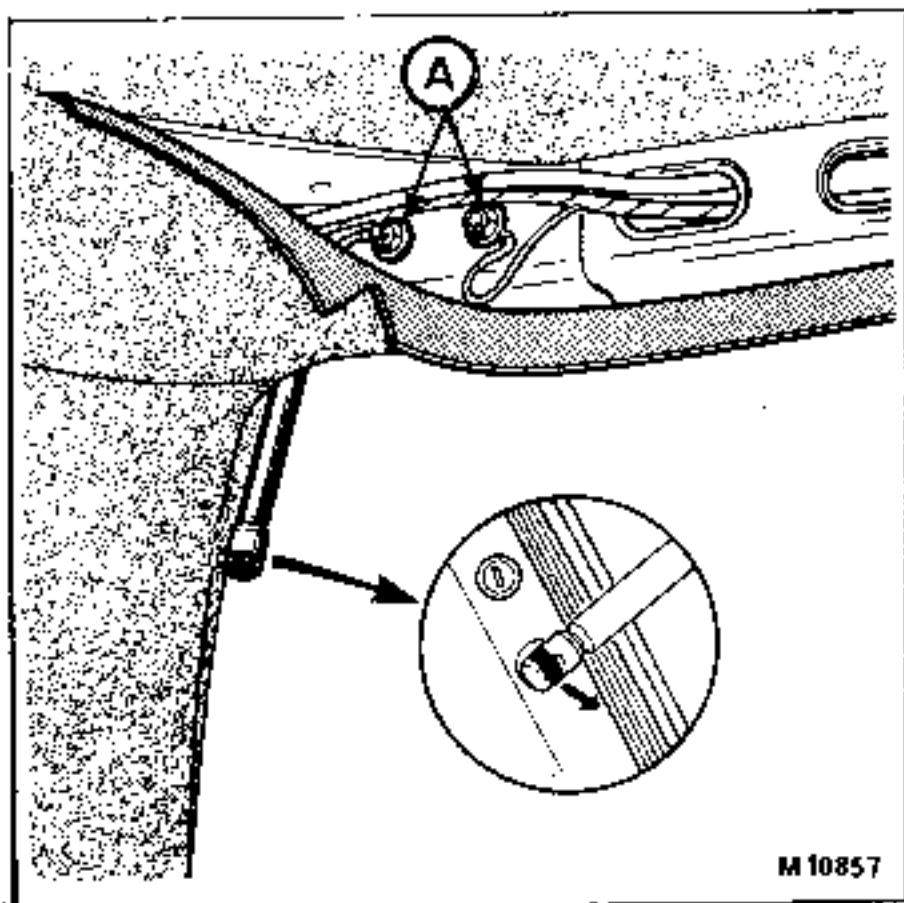
The synchronisation of the locks is adjusted at the adjustable links.

REAR SCREEN

The rear screen assembly fits into the tailgate itself.

REMOVING

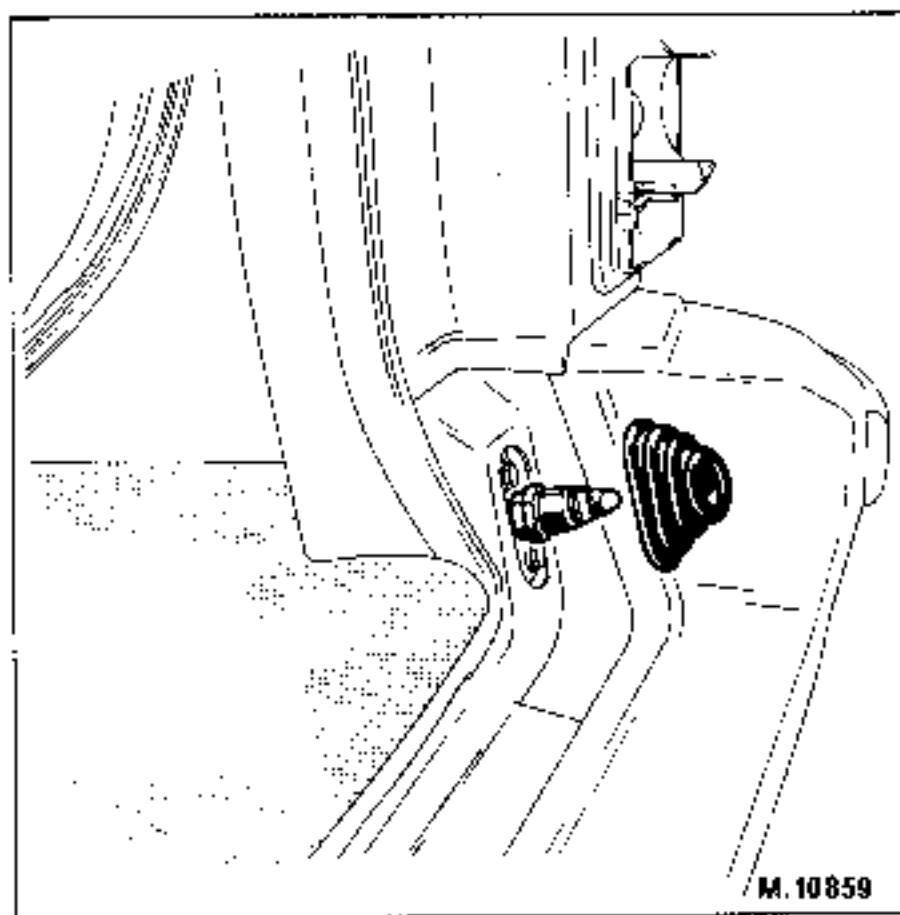
- Open the tailgate and prop it in the open position.



- Pull back the head lining along the rear crossmember (it is clipped in place and not bonded).
- Unlock and remove the 2 gas struts.
- Unclip (8 clips) and remove the tailgate trim panel.
- Disconnect all the electrical wires and the screen washer pipe (on certain models).
- Note which wire is connected to which on the connections and remove the connectors.
- Secure 2 meters of wire to the end of the electrical wiring harness and the screen washer pipe.
- Unclip the protective rubber sleeves from the tailgate.
- Pull out the wiring harness and the screen washer pipe.  
Note : the wire attached to them is to be used for refitting them.
- Remove the nuts, washers and plates that secure the hinges (A).

ADJUSTING

The tailgate is centralised by positioning the hinge securing bolts in the slots in the upper rear crossmember.



It is adjusted so that it is flush with the rest of the bodywork by screwing the strikers (1) in or out. There is a lock nut (2) to lock each of the strikers in position when the correct adjustment has been obtained.

The synchronisation of the locks and the lock handle travel is adjusted at the adjustable links.

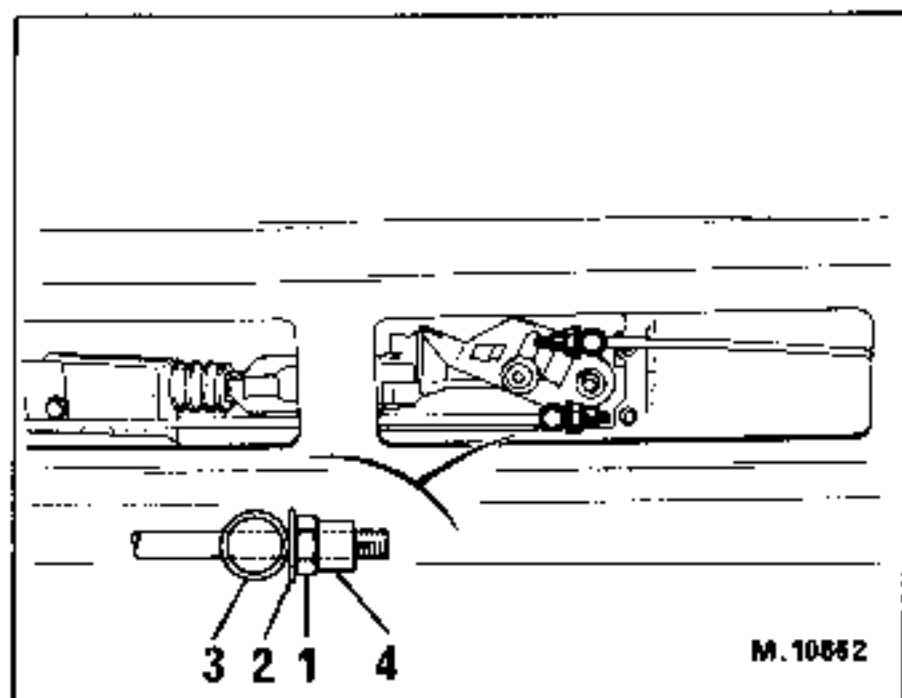
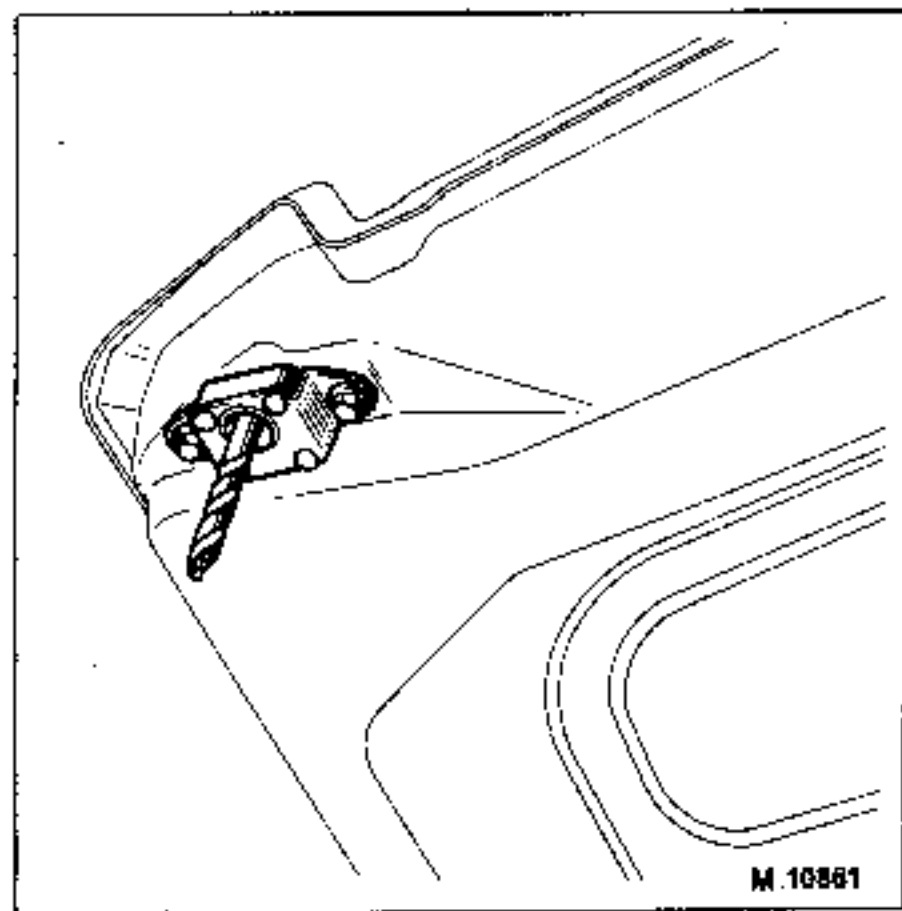
Method

- Place an 8mm diameter drill in each lock.
- To gain access to the handle mechanism, remove the tailgate trim panel and the vinyl sealing sheet.

In this position, bring nuts (1) against the anti-rattle plates (2) which are backed against the trunnions (3). Lock the nuts in this position by means of clips (4).

The rear screen

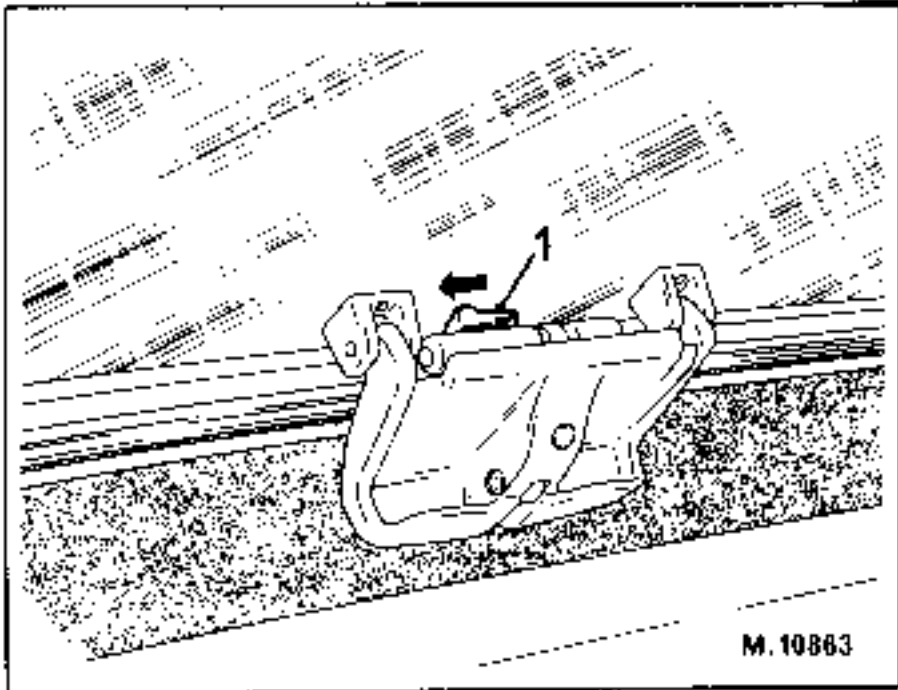
The rear screen fits down over the tailgate itself.





Removing

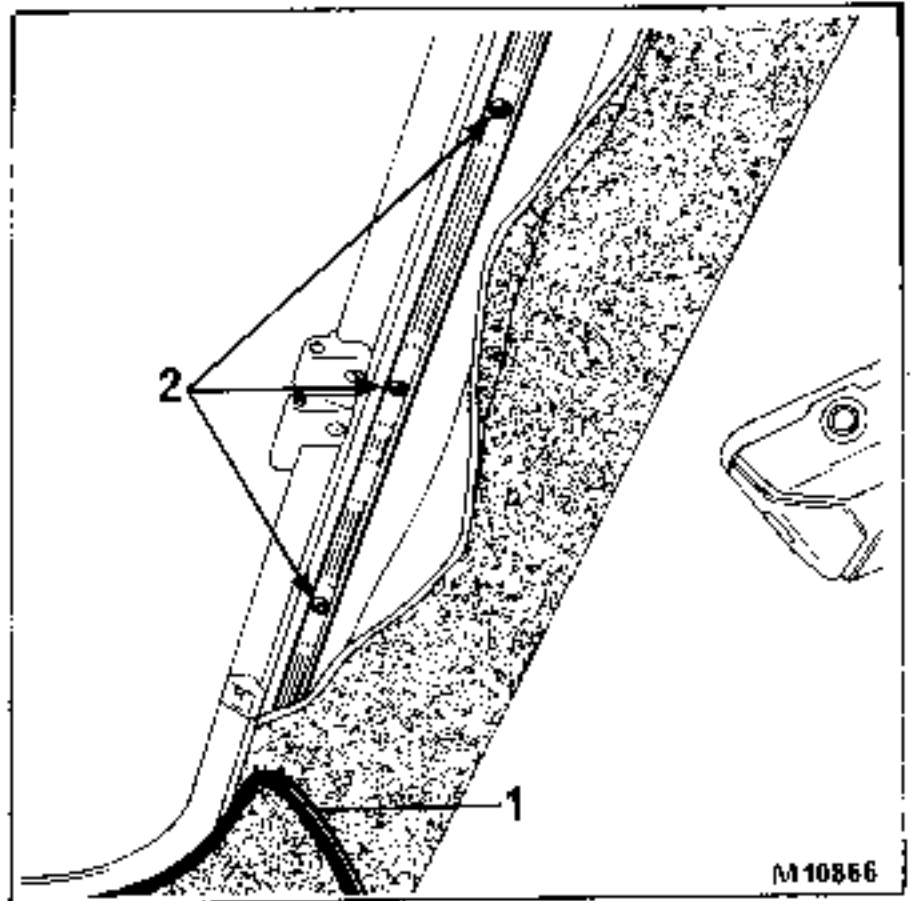
- With the sun roof open, move the knob (1) to the right. Lift the sun roof and free the 2 lugs from the hinges.



Removing the frame

If the assembly is to be re-used it is both pointless and risky to attempt to remove the seal from the glass.

- Removing the glass.



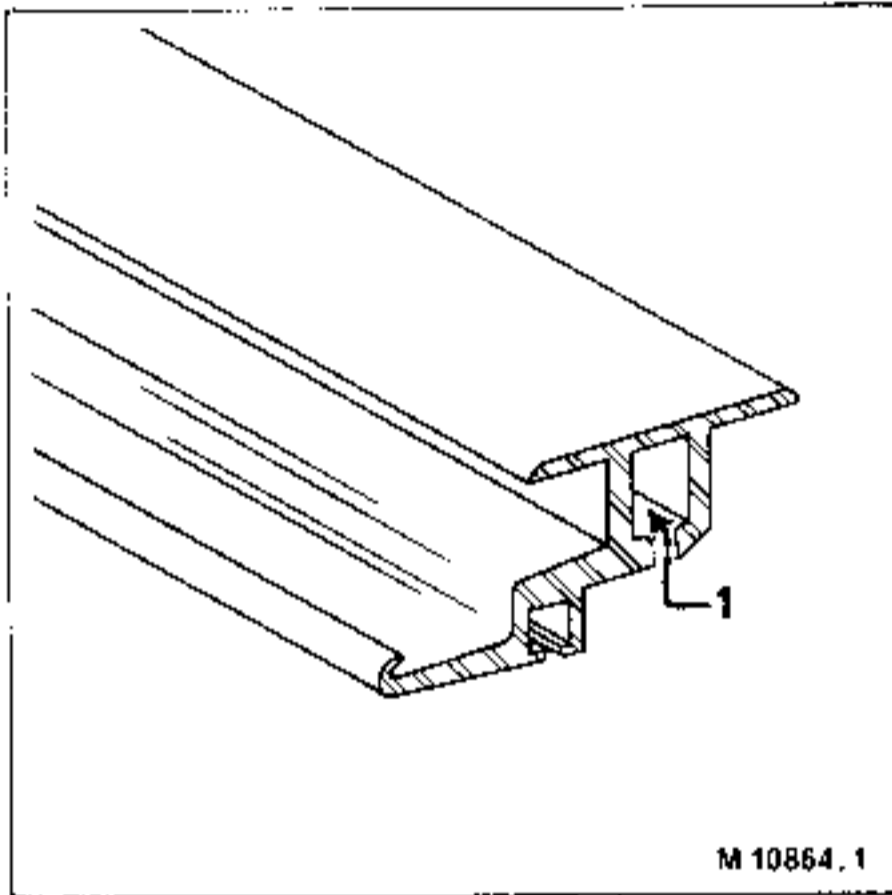
- Remove the inner finishing bead (1)
- Remove the trim from the groove in the bead.
- Using an electric drill and a 5 mm drill bit, remove the heads from the 16 rivets (2) that secure the backing frame to the frame proper.
- Remove the backing frame and frame.

Refitting the original frame

Removing the bodies of the rivets from the frame.

- Using a rivet shank, knock the heads of the shanks that remain in the centre of the rivets into the frame.

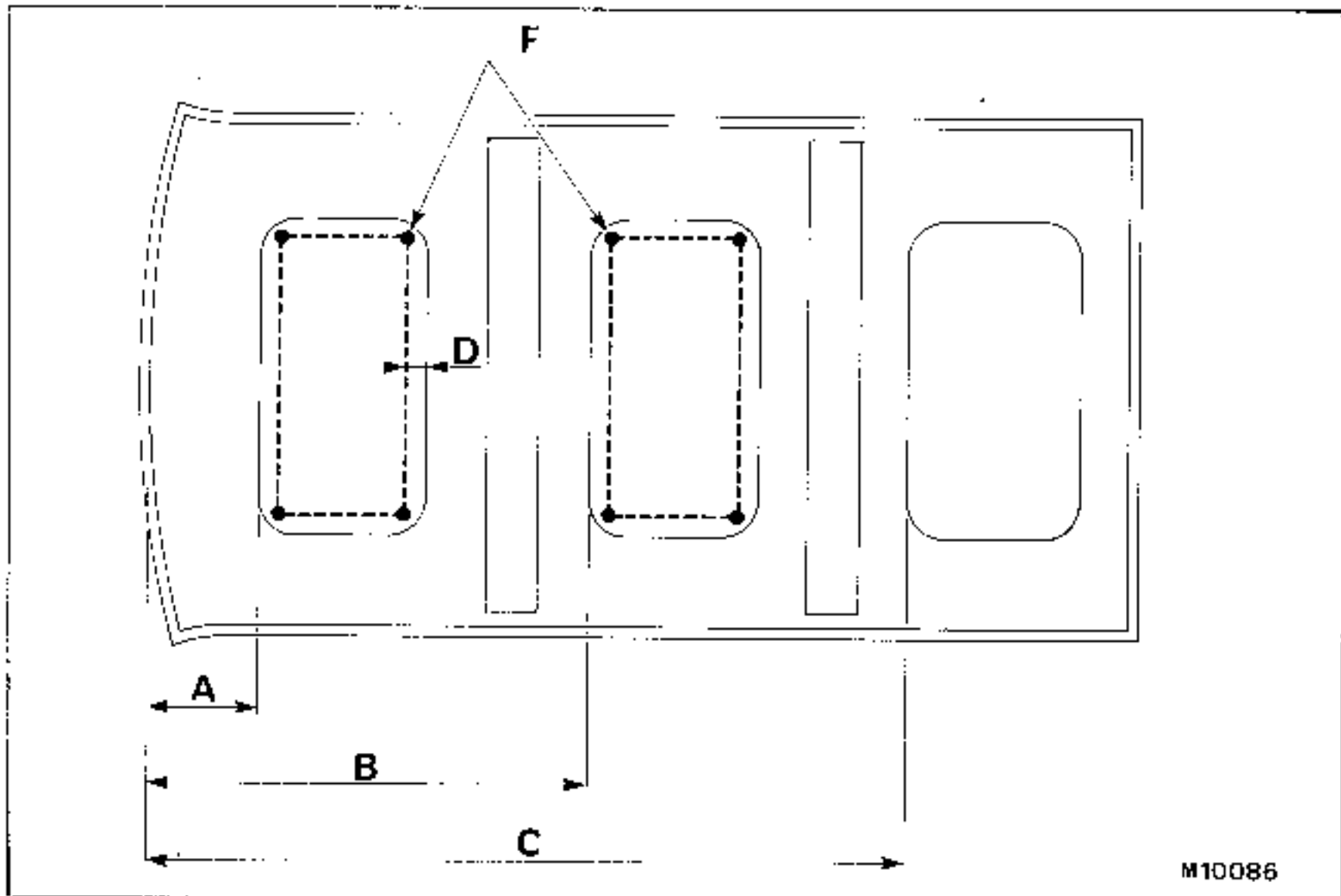
- drill the rivet heads to a diameter of 5 mm.
- Remove the rivet swarf and the heads of the shanks remaining in the frame. If certain pieces cannot be removed (which would be noisy) immobilise them by injecting trim adhesive into the rivet holes (1).



M 10864.1

- Check that the sun roof seal on the roof is in good condition.
- Place the sun roof frame on the vehicle and rivet the backing frame in place.
- Refit the sun roof glass and check it for leaks.
- Fit the moulding in the groove and refit the finishing strip.

## CUT-OUT IN THE ROOF



A = 300 mm	F = Ø 6
B = 1130 mm	
C = 1915 mm	
D = 40 mm	

M10086

These dimensions are taken from the front edge of the roof, in line with the roof aerial base up to the front edge of the cut-out into which the sun roof will fit.

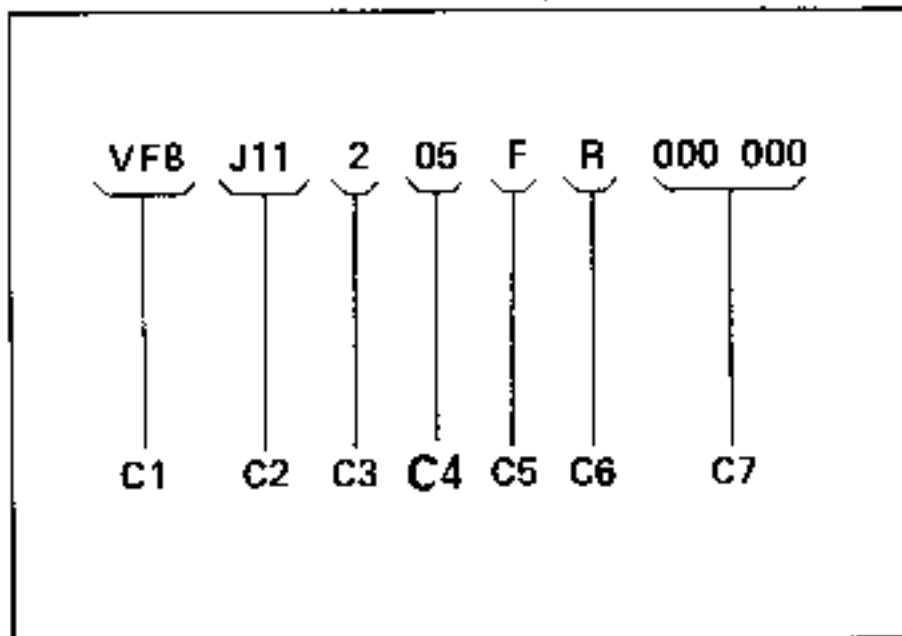
## Cutting :

From series 7 vehicles onwards, cutting apertures in the plastic roof panel involves taking certain precautions to avoid damaging the head lining.

- Place the cut-out template on the roof in the positions shown by the dimensions given above.
- Drill 6 mm diameter holes in the 4 corners of the cut-out, 40 mm from the actual cut line.
- Inside the vehicle, draw 4 lines on the head lining, with a felt tip, to interconnect the 4 holes drilled through the roof.
- Cut out the marked rectangle with a cutter.
- Round this cut in the head lining, unstick the material to a depth of approximately 60 mm and hold the head lining back with pieces of self-adhesive tape so as not to damage the head lining when making the cut-out in the roof panel.
- Fit the sun roof or rooves supplied in the kit.
- Restick the head lining.
- Fit the finishing mouldings.

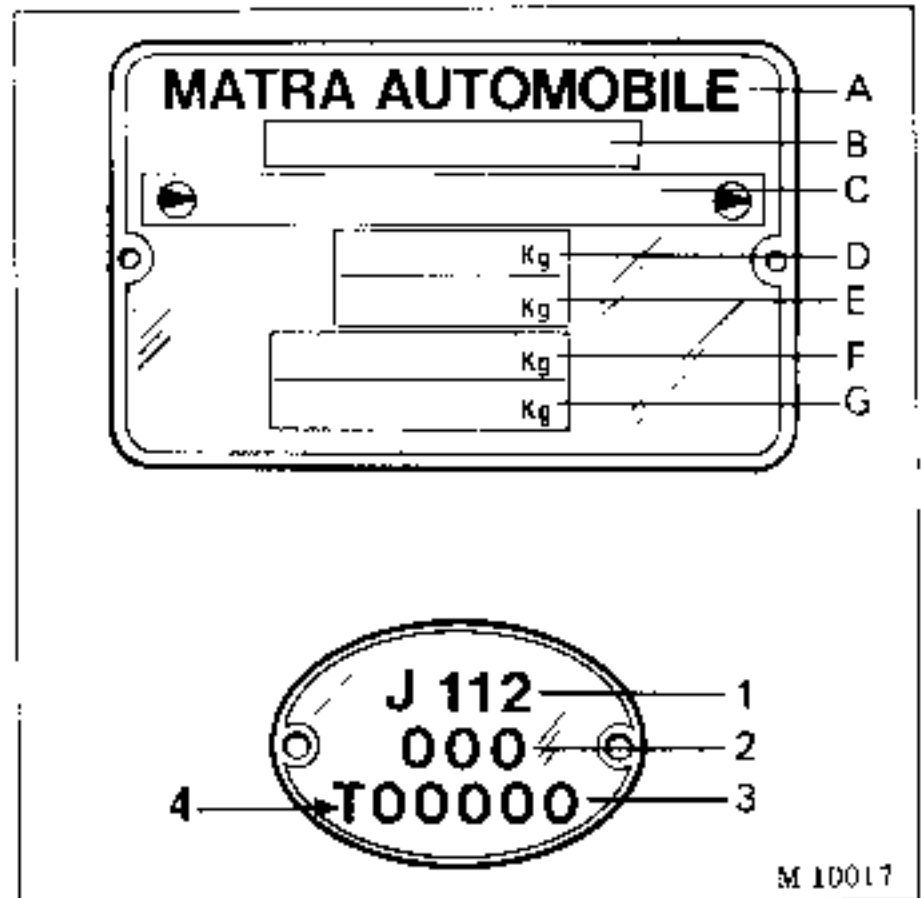
The vehicle is identified by two plates :  
 - a rectangular plate secured to the right wheel arch, in the engine compartment.  
 - an oval plate also secured to the right hand wheel arch in the engine compartment.

The rectangular plate carries\* :  
 at A : the manufacturer's name.  
 at B : the E.E.C. type approval number.  
 at C : the French official type reference and the chassis number.



at C1 : the international manufacturer identification code (for example VF8 identifies MATRA AUTOMOBILE),  
 at C2 : the body configuration code,  
 at C3 : the engine type (2 : petrol, 5 : diesel, 6 : fuel injection, 7 : unleaded fuel injection),  
 at C4 : the gearbox type 05 : type BV5 manual,  
 at C5 : the model year (F : 1985),  
 at C6 : the factory of origin (R : ROMORANTIN),  
 at C7 : the chassis number.

at D : the gross vehicle weight.  
 at E : the total train weight.  
 at F : the maximum permissible front axle loading.  
 at G : the maximum permissible rear axle loading.



The oval plate shows :  
 at (1) : the body and engine type  
 at (2) : the basic equipment number for the market for which the vehicle is intended.

	STEERING (DRIVE)	
	LH	RH
GOOD ROAD	Series 100	Series 600
POOR ROAD	Series 200	Series 700
SPECIAL EQUIPMENT	Series 500	Series 800

- at (3) : the fabrication number  
 at (4) : the factory at which the vehicle was manufactured  
 T = Romorantin  
 K = Dieppe

\*Note : for some export markets, certain of these items of information will not be shown. This describes the most comprehensive form the plate can take.

ESSENTIAL SPECIAL TOOLS

Cha.280-02 Support for fitting to trolley jack

Cha.408-02 Socket for fitting to trolley jack

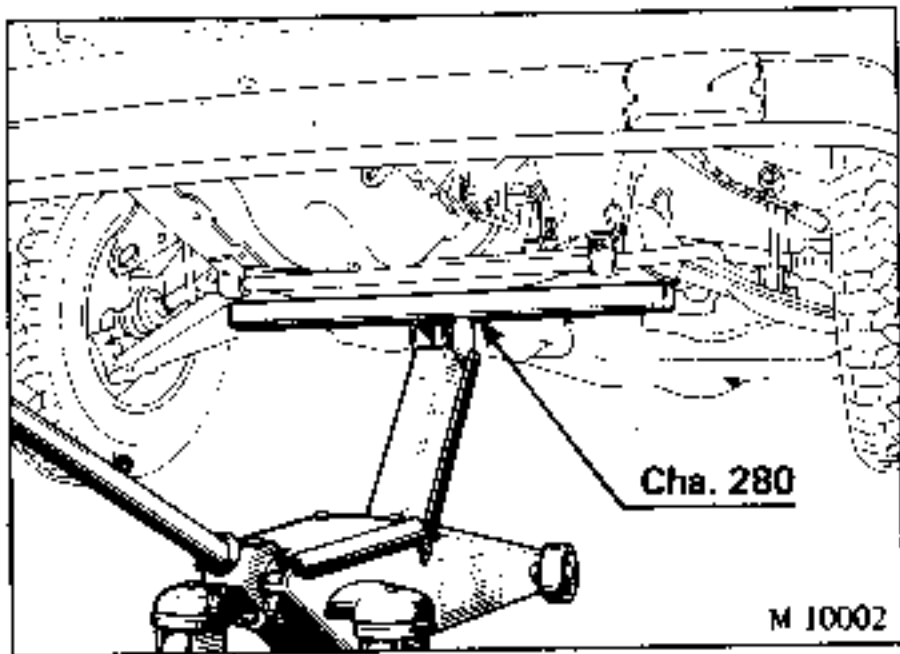
It is forbidden to lift the vehicle by taking the load under the front suspension arms. If the trolley jack used requires it, fit socket CHA.408-02 to locat support CHA.280-02.

LIFTING, WITH A TROLLEY JACK FROM THE FRONT

Apply the hand brake and place chocks behind the rear wheels.

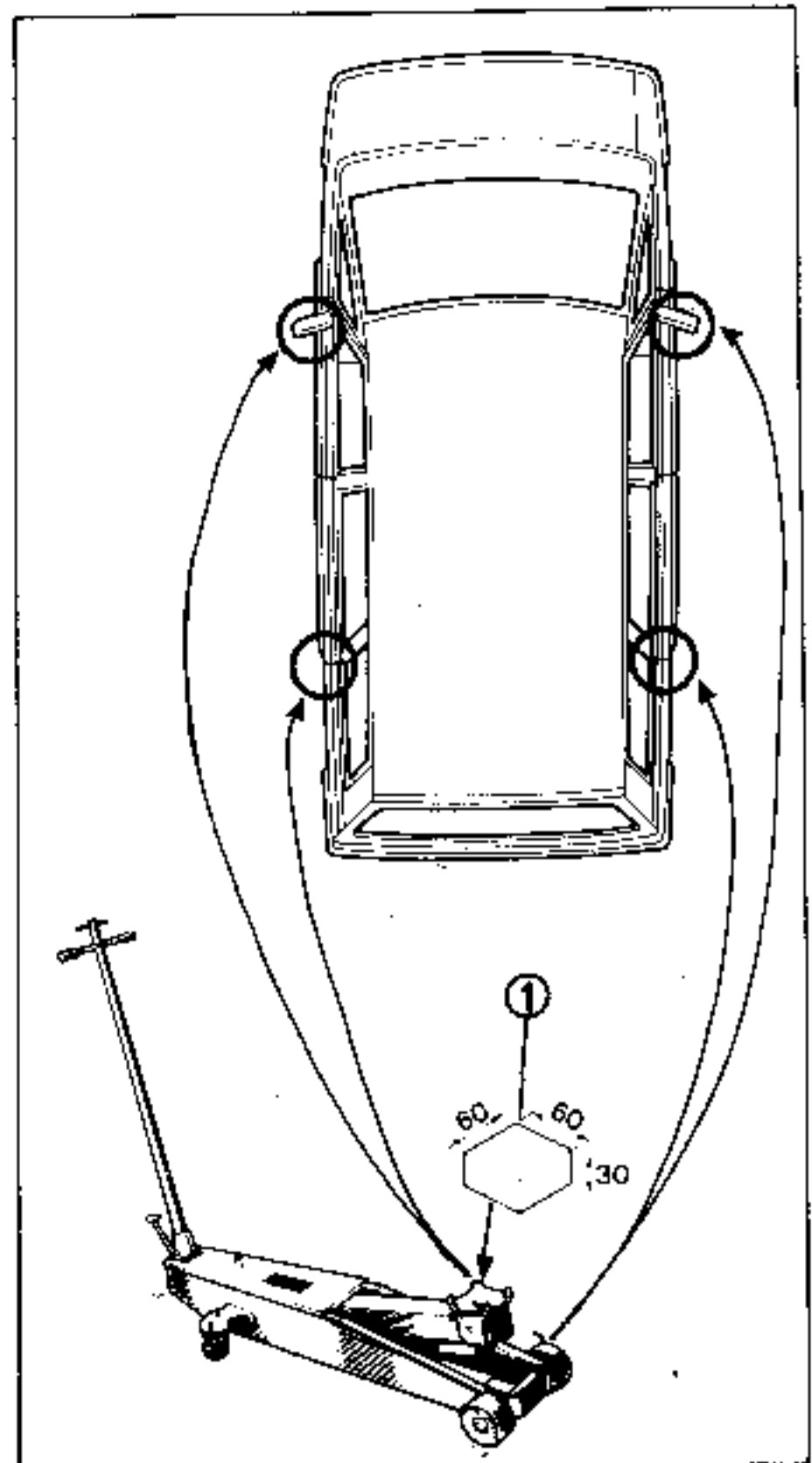
Use support Cha.280-02.

Take the load under the front crossmember. Ensure that the support does not make contact with the gearbox or the exhaust downpipe.



ESSENTIAL PRECAUTIONS

In order not to damage the jacking points (by twisting the metal and thus making it impossible to use the vehicle jack) it is essential to place a pad (1) of the type shown in this diagram, between the head of the trolley jack and the locating face on the side member.



LIFTING, WITH A TROLLEY JACK, FROM THE REAR

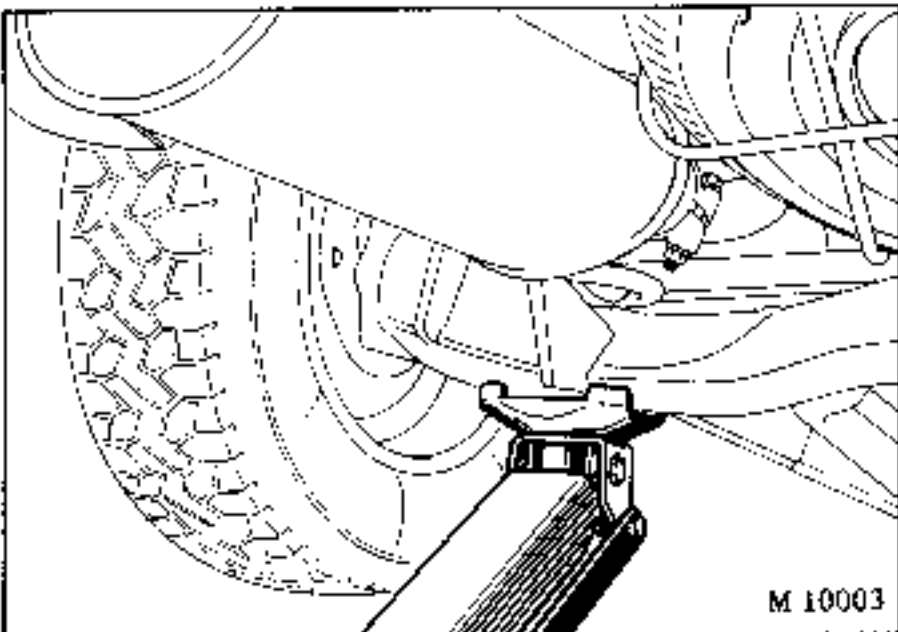
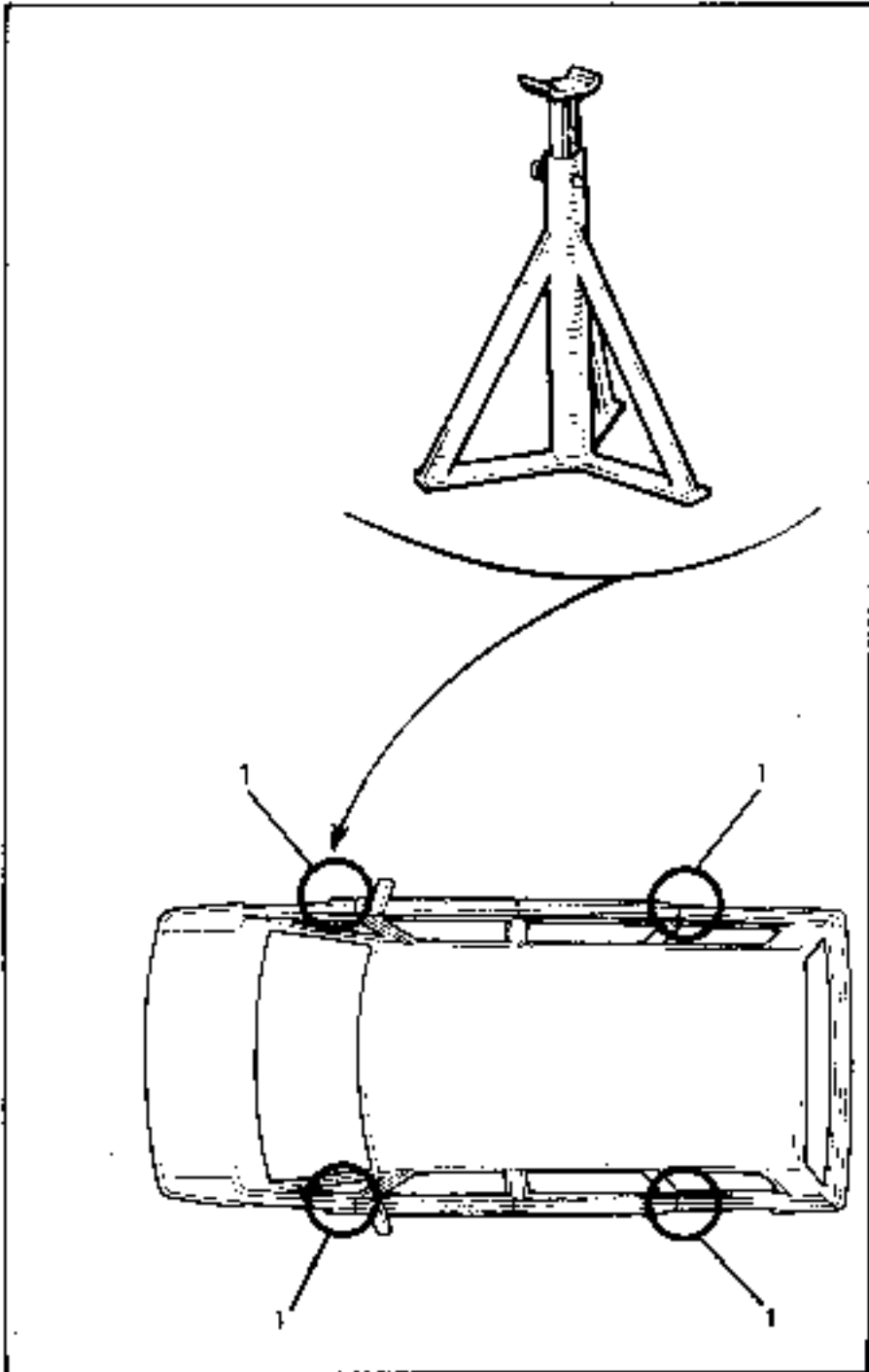
It is FORBIDDEN to lift the rear of this vehicle by taking the load under the centre part of the rear axle. Lift each wheel separately, taking the load under the jacking points provided for the vehicle's own jack.

STANDS

It is essential that any stands used to support the vehicle should be placed under the stiffened jacking points (1) provided for lifting the vehicle with its own jack.

To place the stands under the rear jacking points, lift the vehicle under its rear axle at the shock absorber securing points.

WARNING : DO NOT TAKE THE LOAD UNDER THE BODY SILLS. THEY ARE MADE FROM GLASS REINFORCED POLYESTER AND MAY SPLIT.

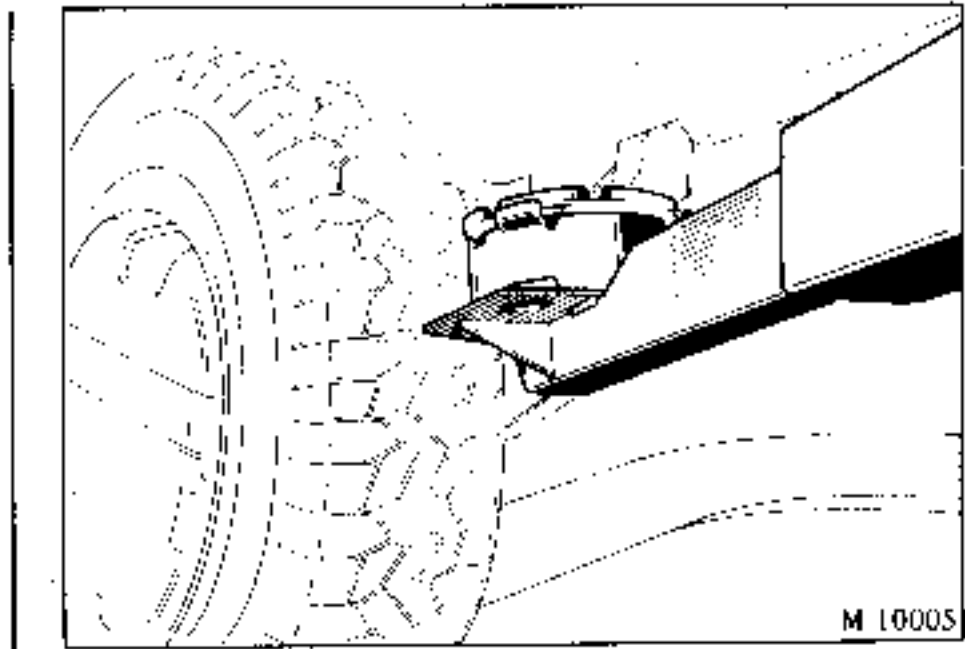
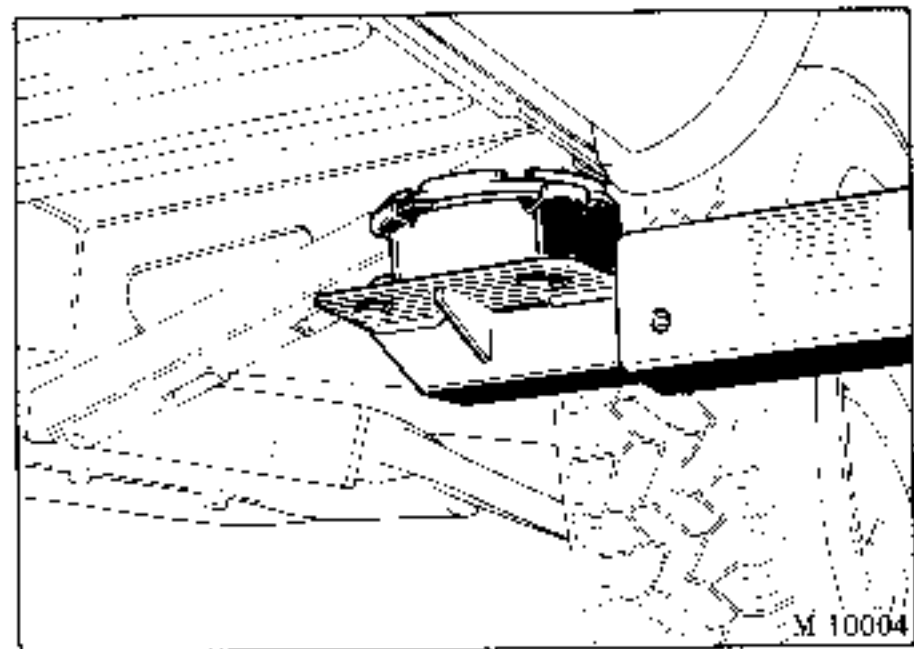


Place the pads of a lift under the jacking points, taking care not to twist the side parts of these jacking points. If these are damaged it will be found impossible to use the vehicle jack.

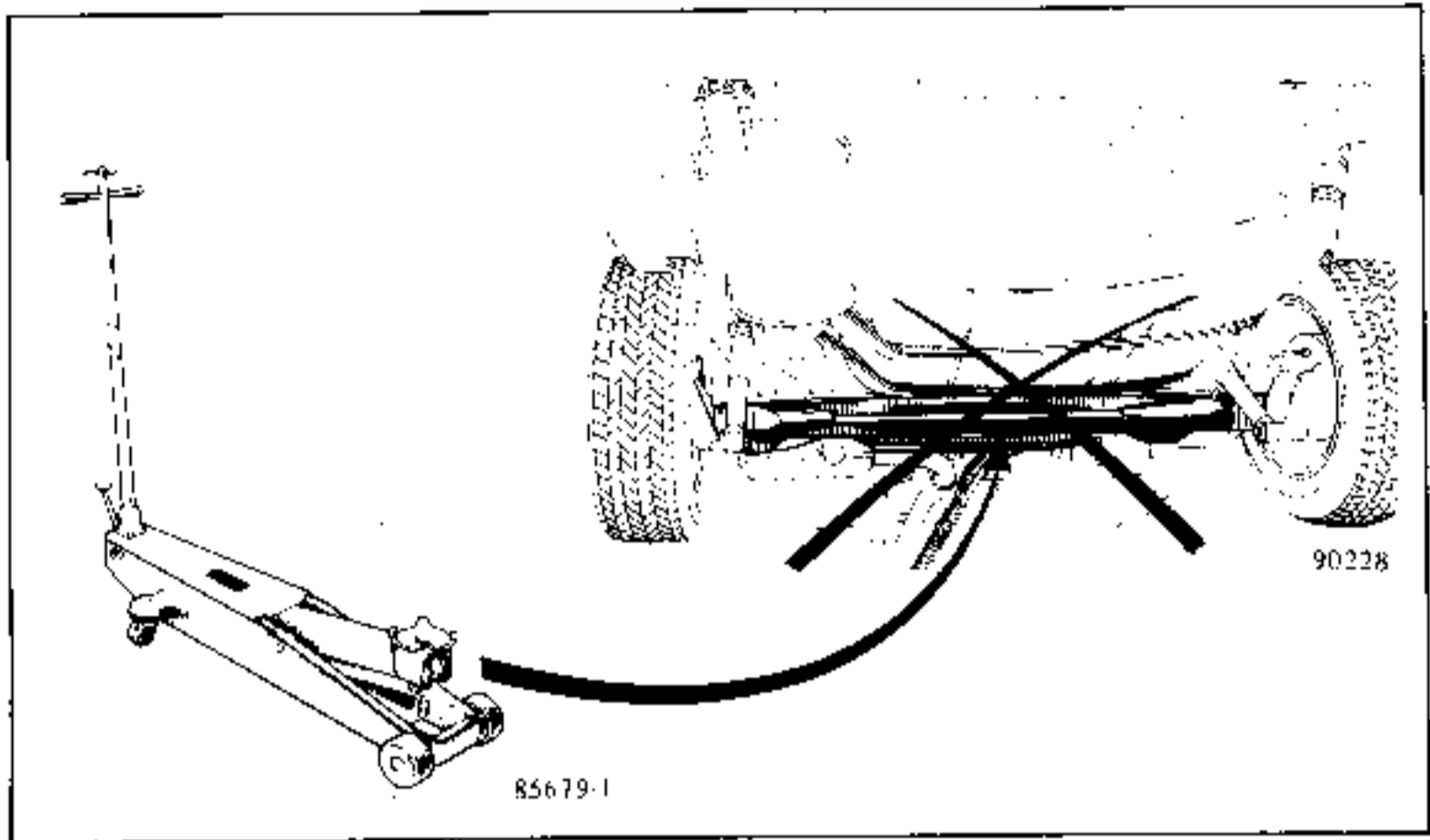
TO AVOID SUCH DISTORTION, USE THE PADS ALREADY DESCRIBED

FOR YOUR OWN SAFETY

To ensure that the lift pads remain under the jacking points, it is FORBIDDEN to remove any component units which would cause a change in the centre of gravity of the vehicle when the vehicle has been raised by a 2 column lift.



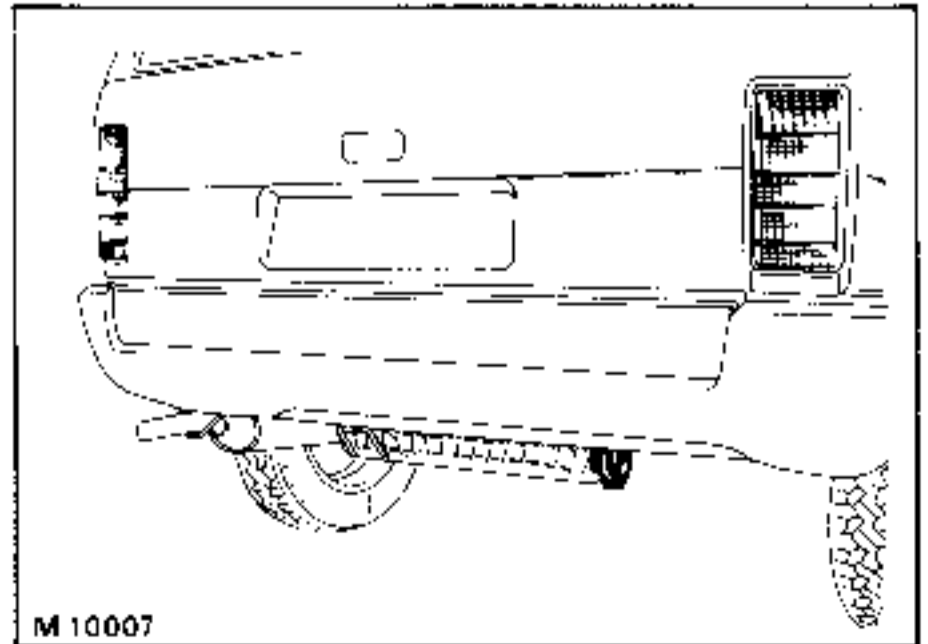
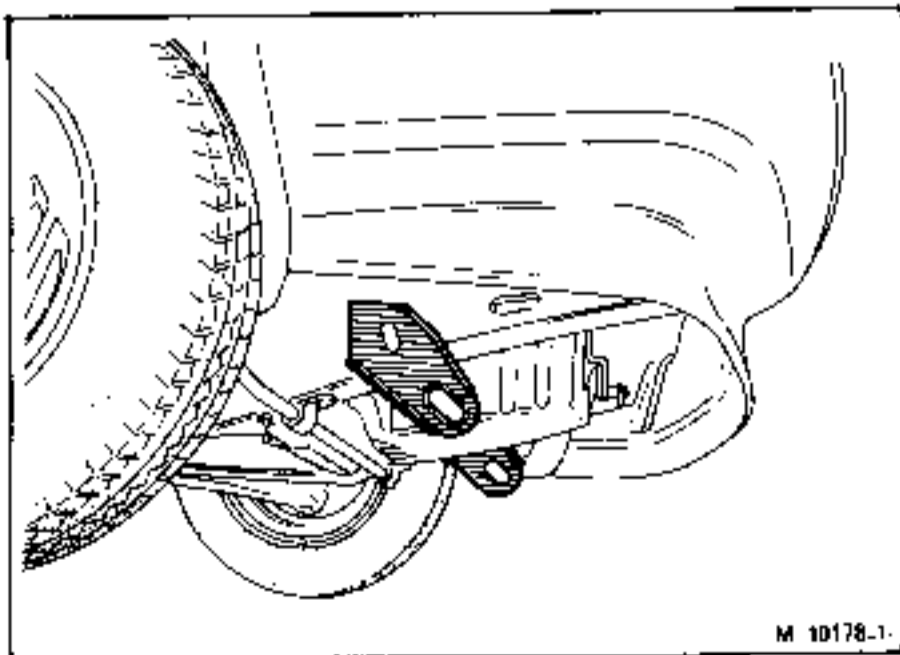
It is FORBIDDEN to take the load under the central part of the rear axle to lift the vehicle.



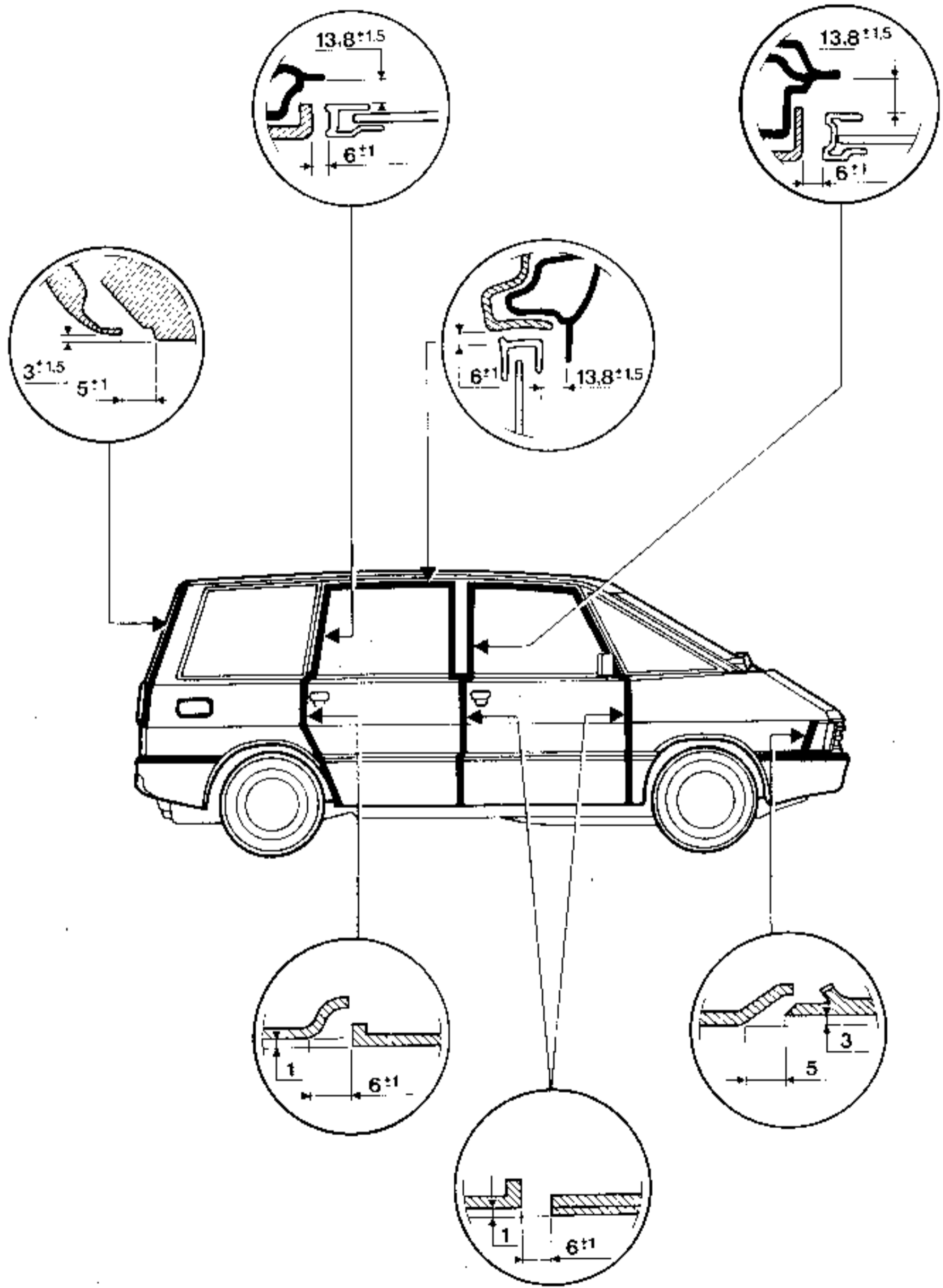
The towing points are only to be used for towing the vehicle on the road. Under no circumstances are they to be used for pulling the vehicle out of a ditch, or any other emergency operation, or for lifting the vehicle either directly or indirectly.

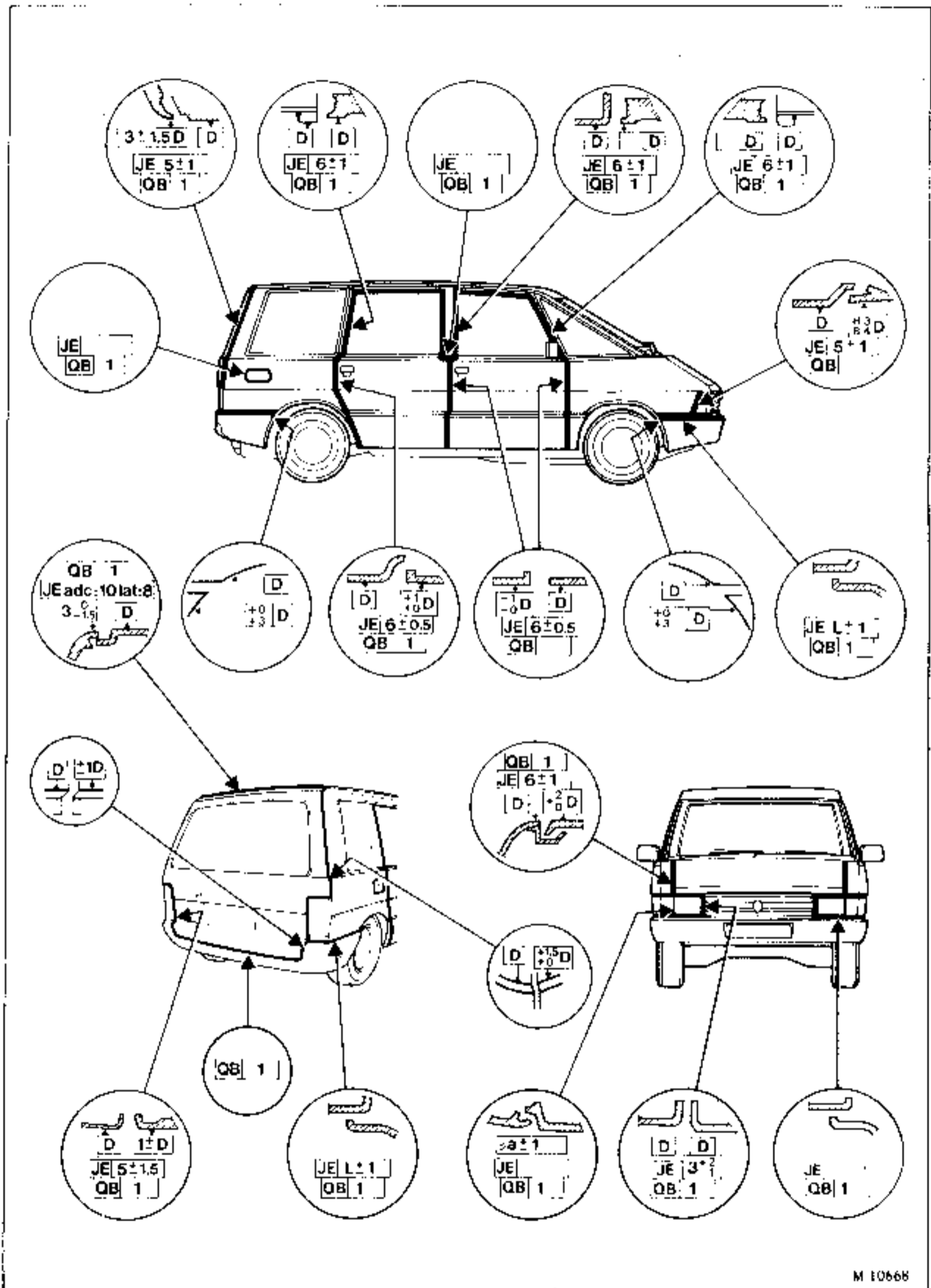
FRONT

REAR









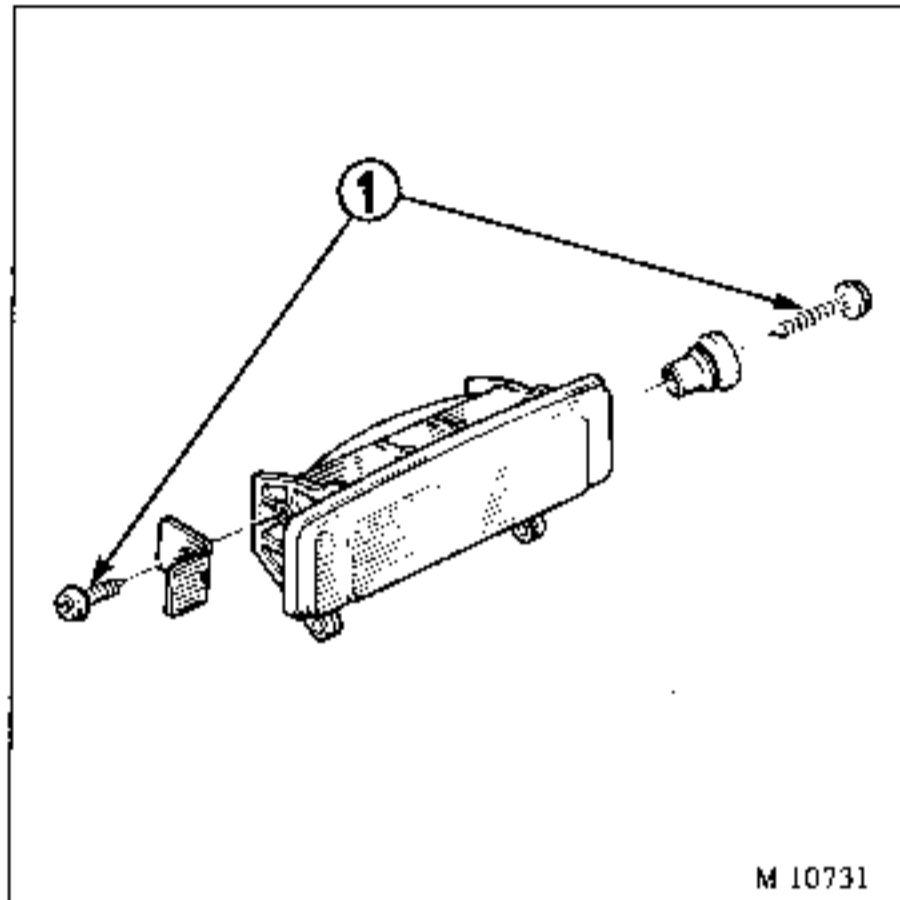
M 10668

D : Height  
 JE : Clearance (adc : body centre line; lat.: side),  
 QB : Taper.

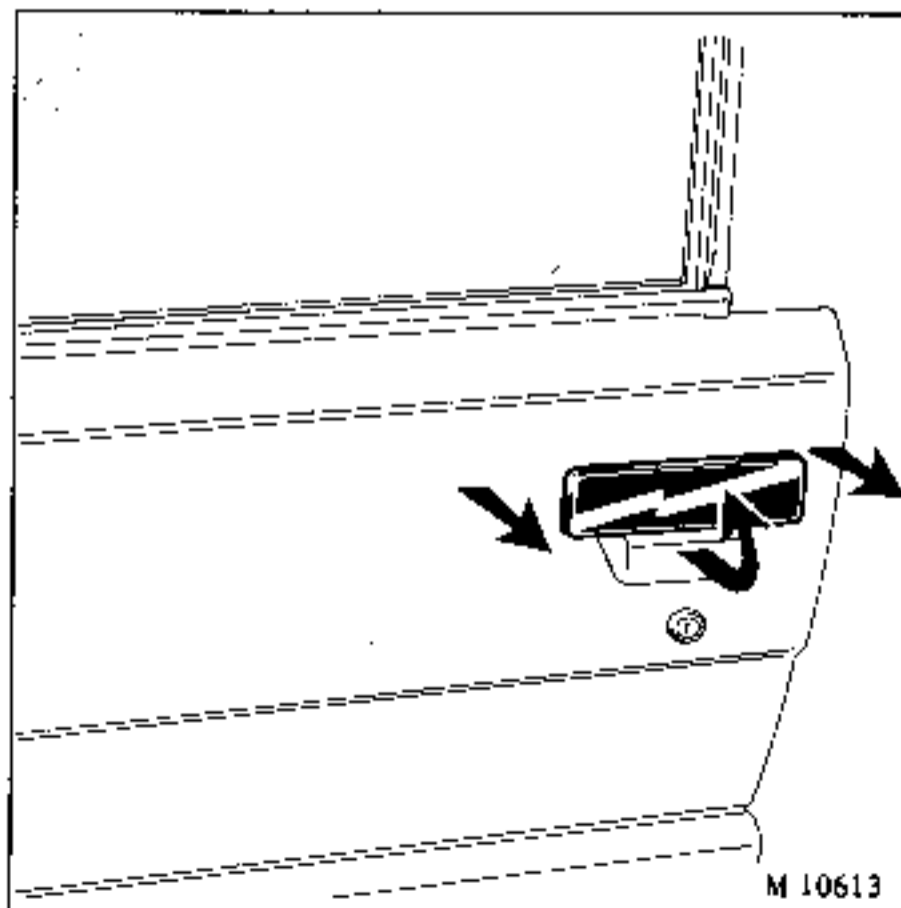
Removing the handle

With the window closed

- Remove the trim (see page 72).
- Lift the vinyl sealing sheet.



- Remove the 2 securing screws (1).
- Free the control lever.

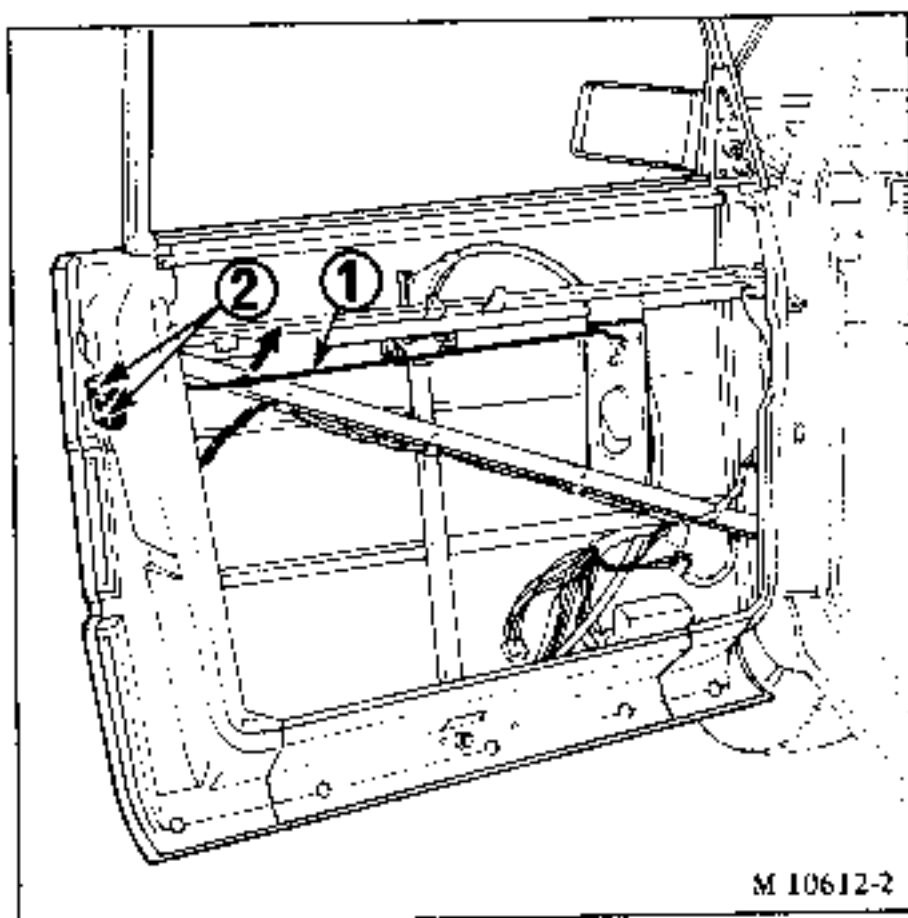


- Pivot the outer door handle.
- Remove it.

Removing the control assembly

With the window closed

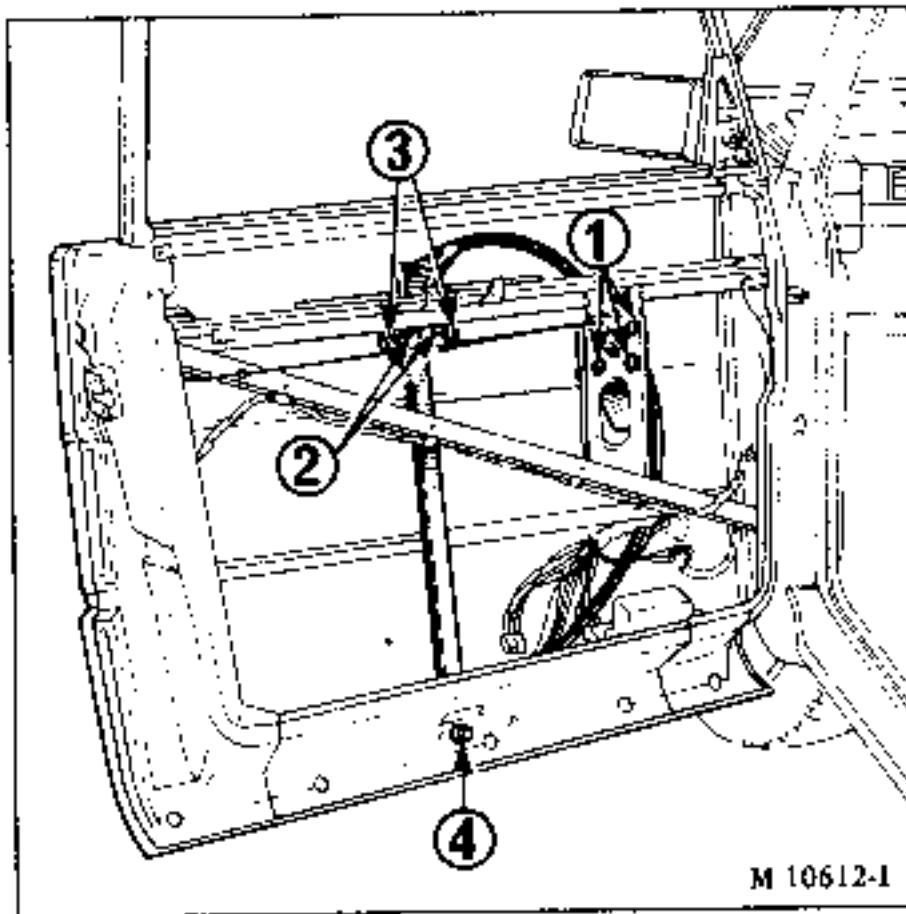
- Remove the trim (see page 72)
- Remove the vinyl sealing sheet.



- Disconnect the electromagnetic control.
- Unclip the control link (1).
- Remove the 3 screws (2) that secure the lock.
- Remove the assembly.

Removing :

- Remove the trim (see page 72).
- Unstick the vinyl sealing sheet.

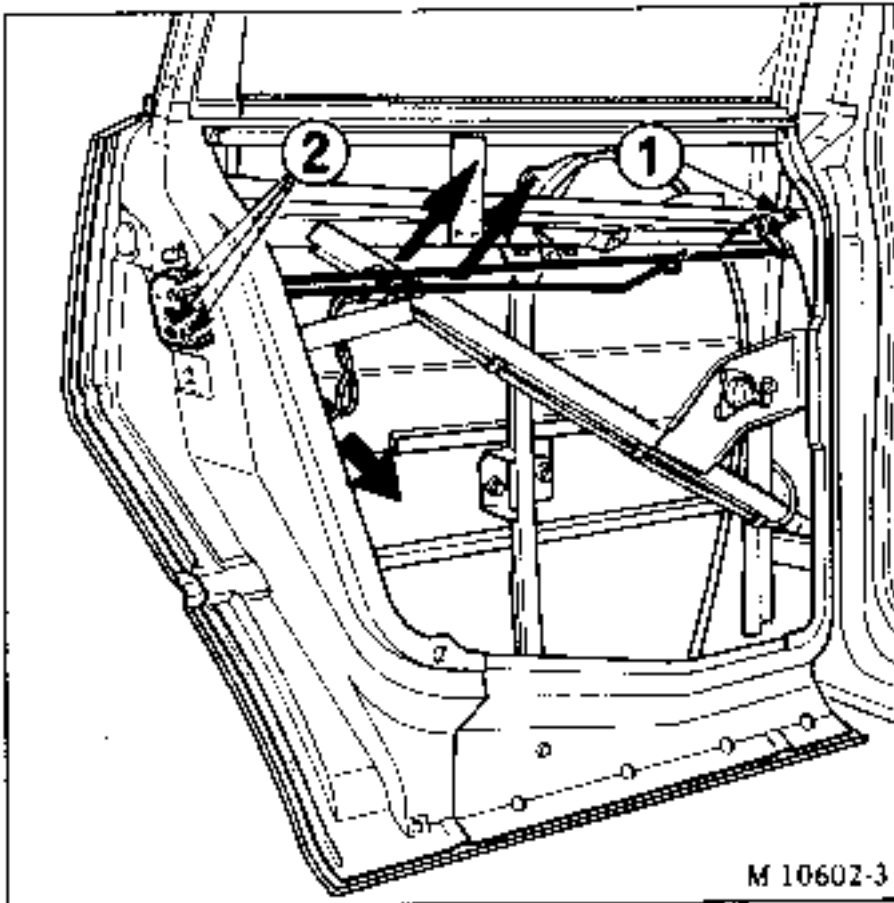


- Disconnect the window winder motor.
- Remove :
  - the 3 motor securing nuts (1).
  - the 2 securing bolts on the crossmember (2).
  - the 2 securing bolts on the window bottom (3).
  - the securing bolt (4) on the door body.
- Tilt the mechanism assembly and remove it.

Removing :

With the window closed

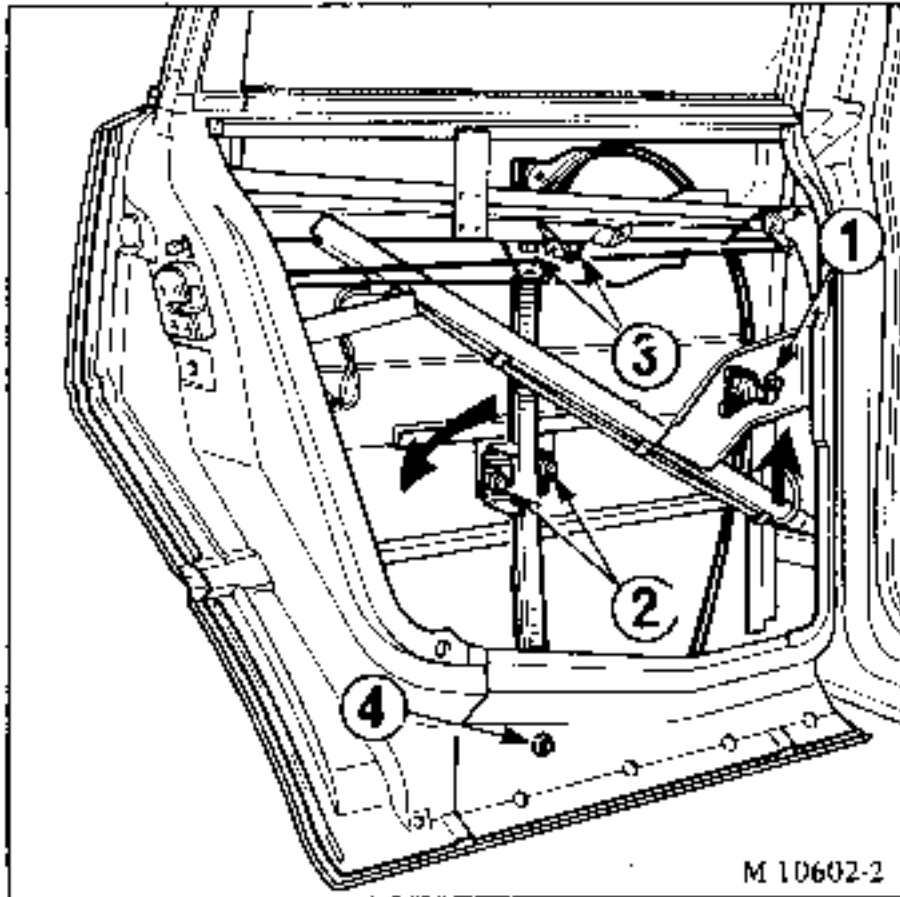
- Remove the trim.
- Unstick the vinyl sealing sheet.



- Disconnect the electromagnetic door lock.
- Remove the lock swivel (1).
- Unclip the links.
- Remove the 3 lock securing screws (2).

Removing :

- Remove the trim
- Unstick the vinyl sealing sheet.

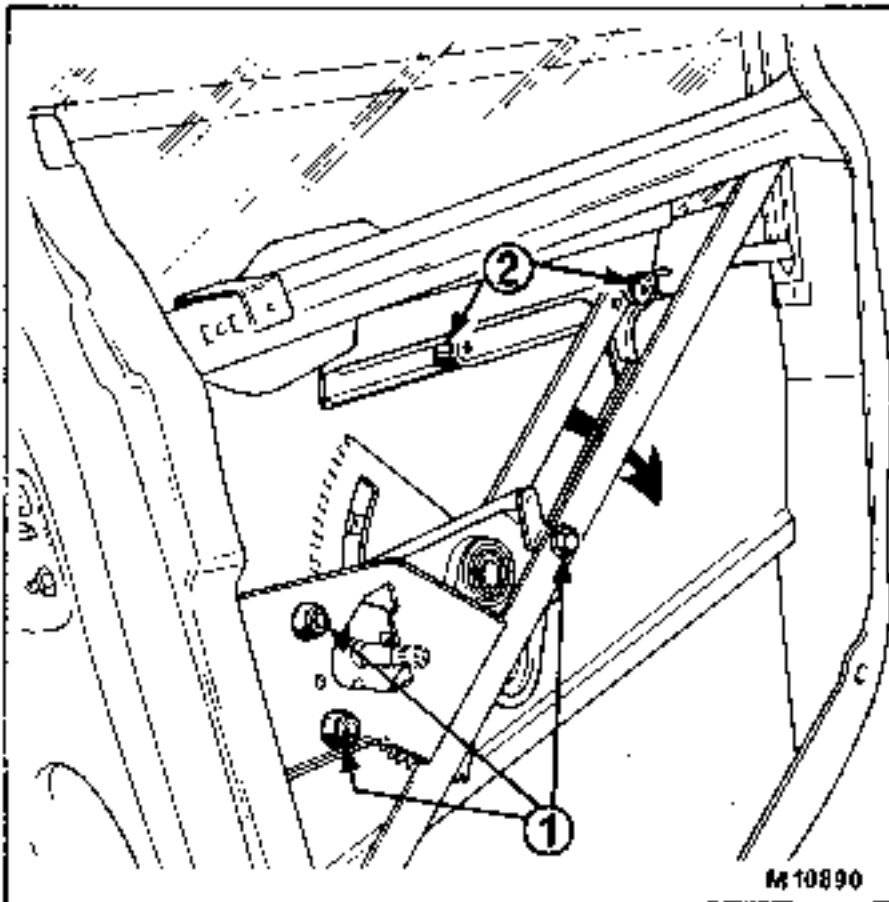


With the window closed

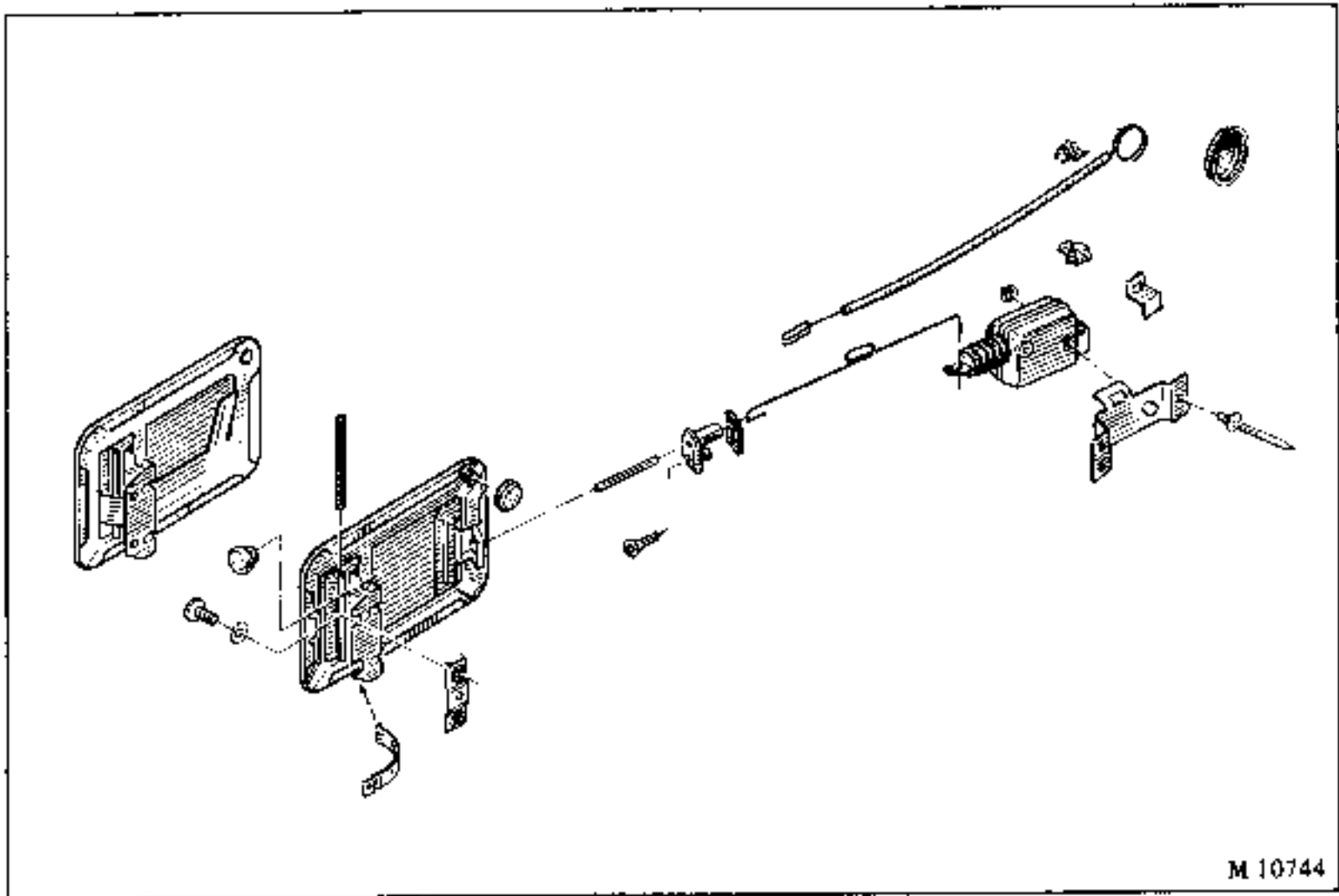
- Remove :
  - the screw (1) that secures the window winder shaft
  - the 2 screws (1) that secure the bottom of the window to the mechanism
  - the 2 crossmember securing bolts (3)
  - the securing bolt (4) on the bottom of the door body.
- Take out the rack guide tube from the stiffener.
- Tilt the assembly towards the lock and take out the mechanism.

Removing (window closed)

- Remove the trim.
- Unstick the vinyl sealing sheet.
- Remove the 3 securing screws (1).
- Free the 2 guides (2) by sliding them rearwards.
- Tilt the mechanism downwards and take it out.

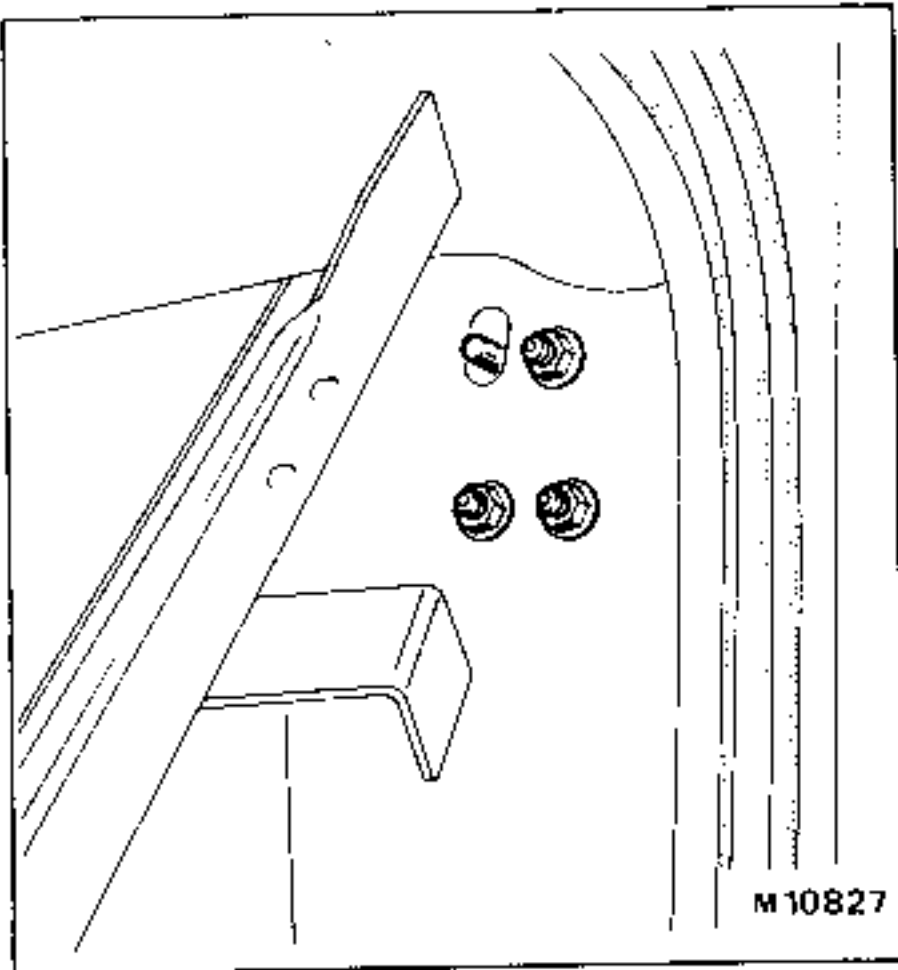




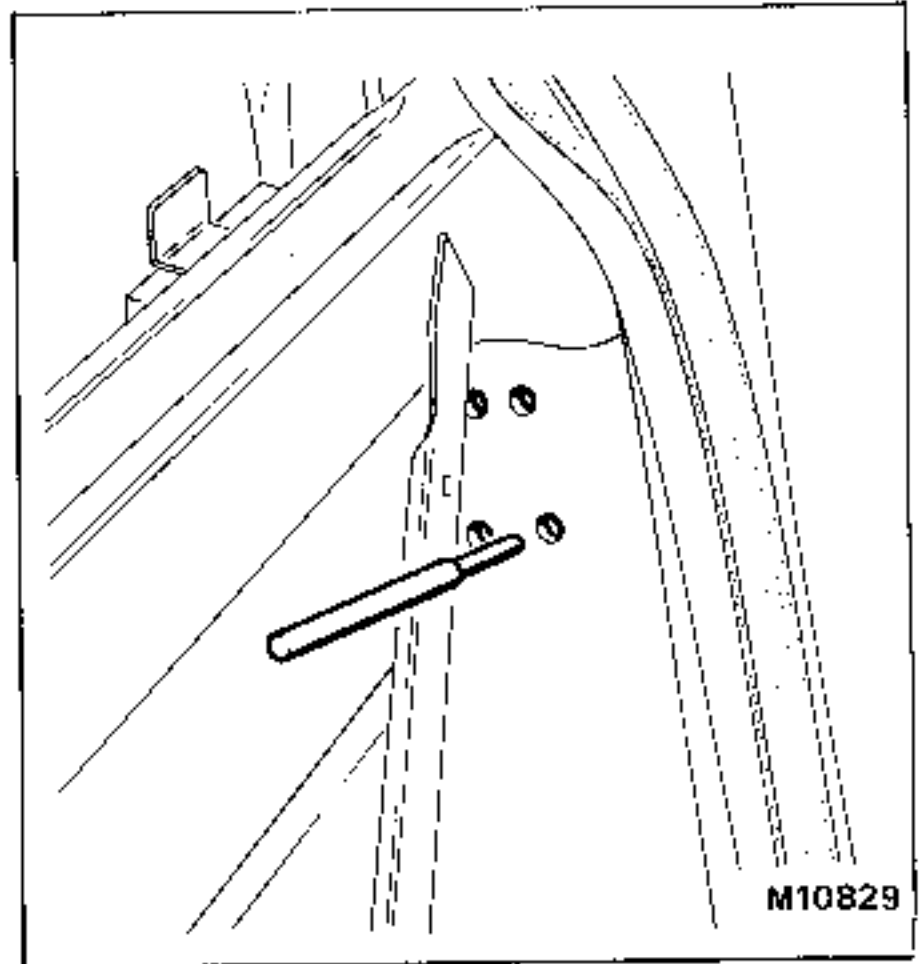


To gain access to the mechanism, one must first remove the mud baffle from the rear right hand wheel arch which is secured to the chassis by 5 rivets.

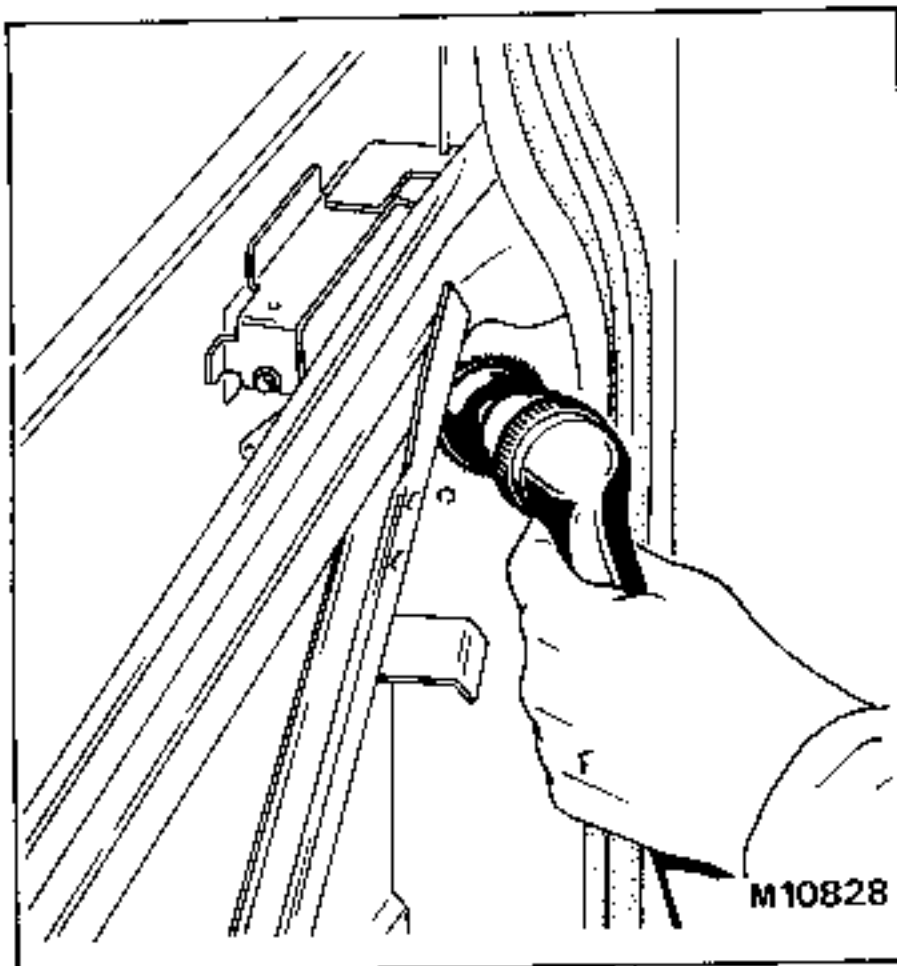
Opening



- Remove the 3 lock securing nuts which are inside the door.

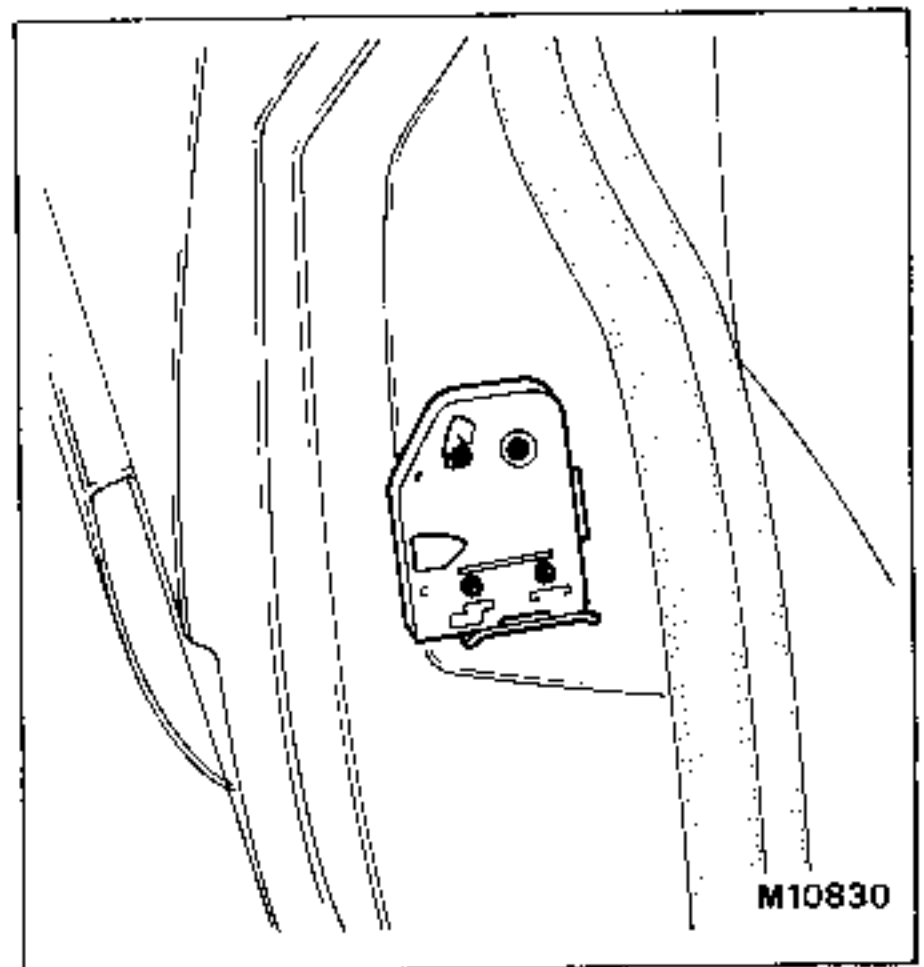


- Using a 5 mm pin punch, push the bolts and the finger lightly through to free them from the stiffener and open the door.



- Cut off the 3 bolts and the lock finger as near as possible to the door stiffener then grind them back with a grinder.

Removing the striker plate

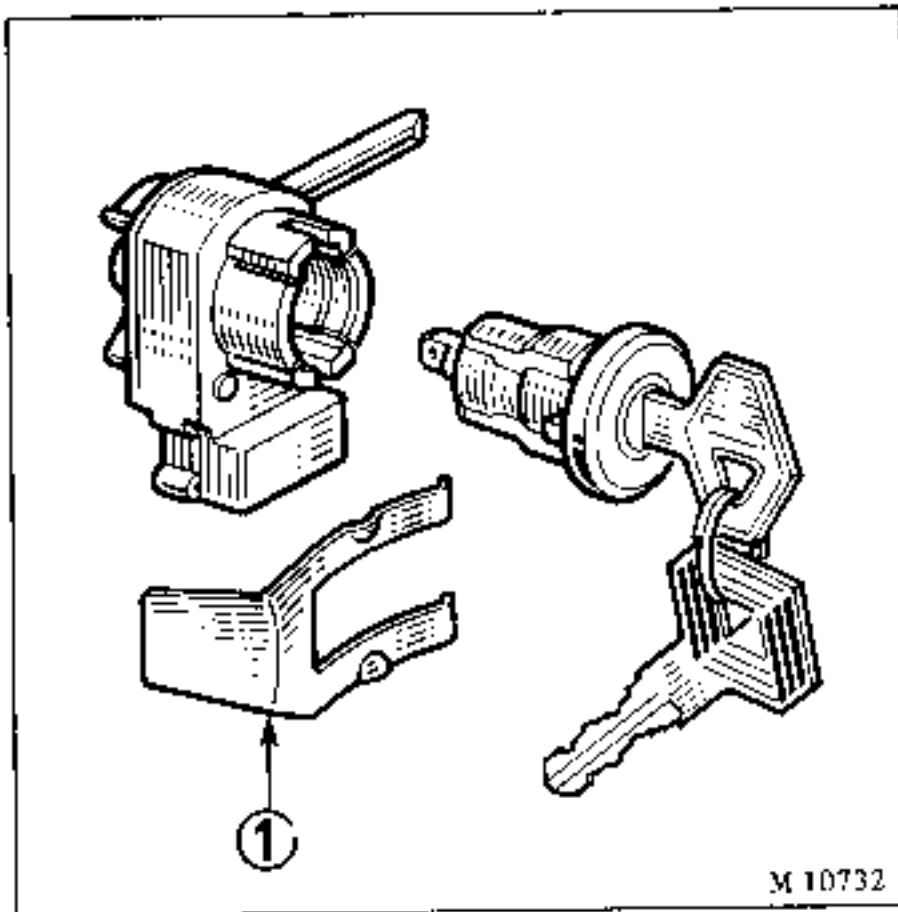


- Remove the lock from the striker plate, with a cold chisel, then remove the striker plate from the door pillar.

Removing :

Window closed

- Remove the trim (see page 72)
- Unstick the vinyl sealing sheet.



- Disconnect the lock control.
- Unclip the lock barrel by removing the clip (1).
- Unclip the electric lock mechanism from the barrel.

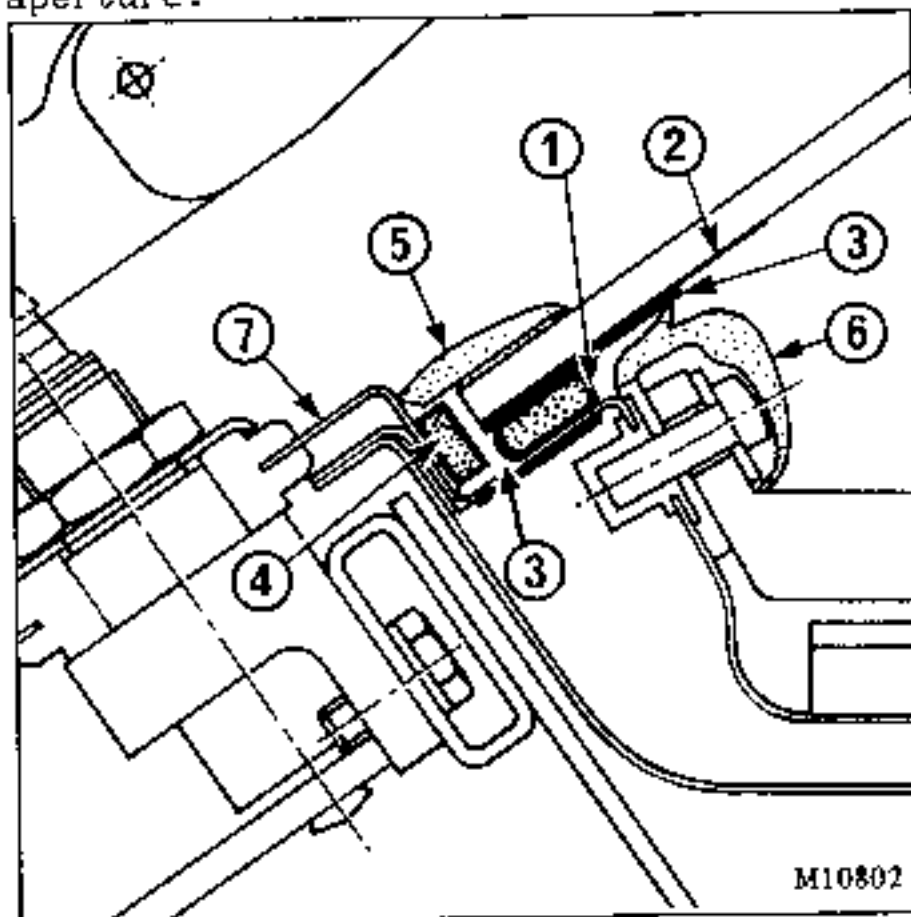
Replacing

The windscreen is bonded to the bodywork by an adhesive seal (1).

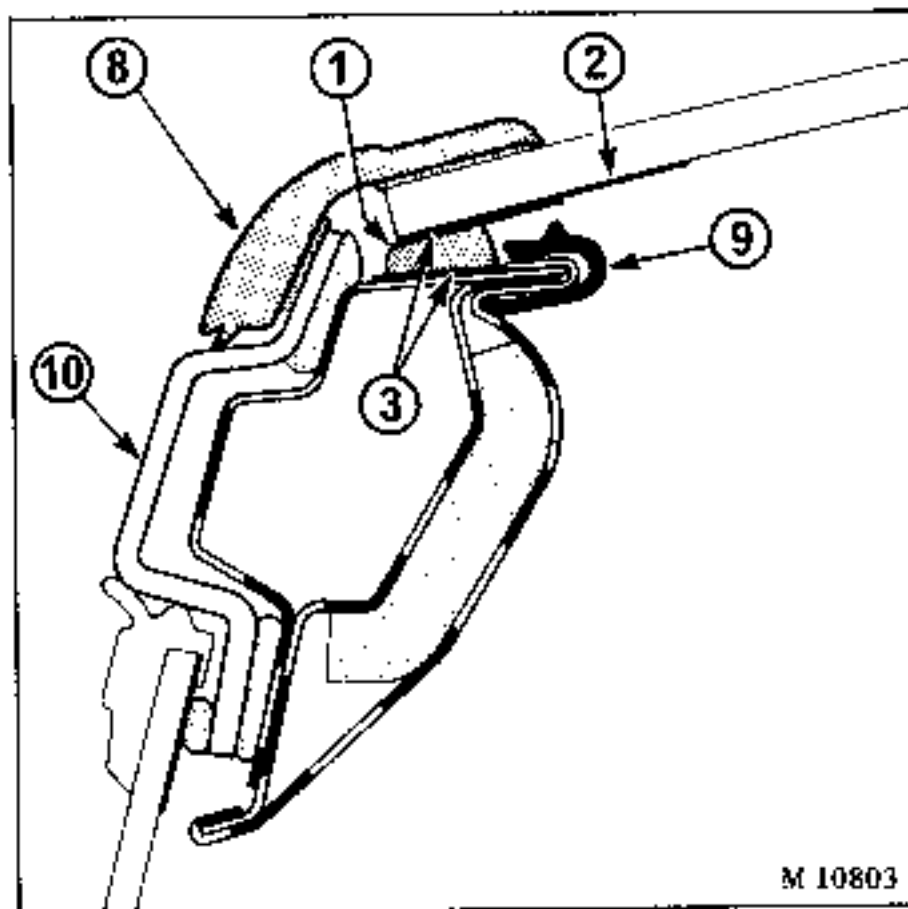
The enamelled area (2) on the inside provides a good finish for the bonded seal.

An adherence primer (3) applied to the enamelled section (2) round the periphery of the windscreen ensures an effective bond between the glass, the adhesive seal and the windscreen aperture.

- 1 - Adhesive seal
- 2 - Black enamel
- 3 - Adherence primer
- 4 - Locating stop
- 5 - Windscreen trim
- 6 - Fascia panel finishing bead
- 7 - Scuttle panel
- 8 - Crosspiece trim
- 9 - Windscreen pillar finishing strip
- 10 - Windscreen pillar



Section through windscreen at scuttle panel



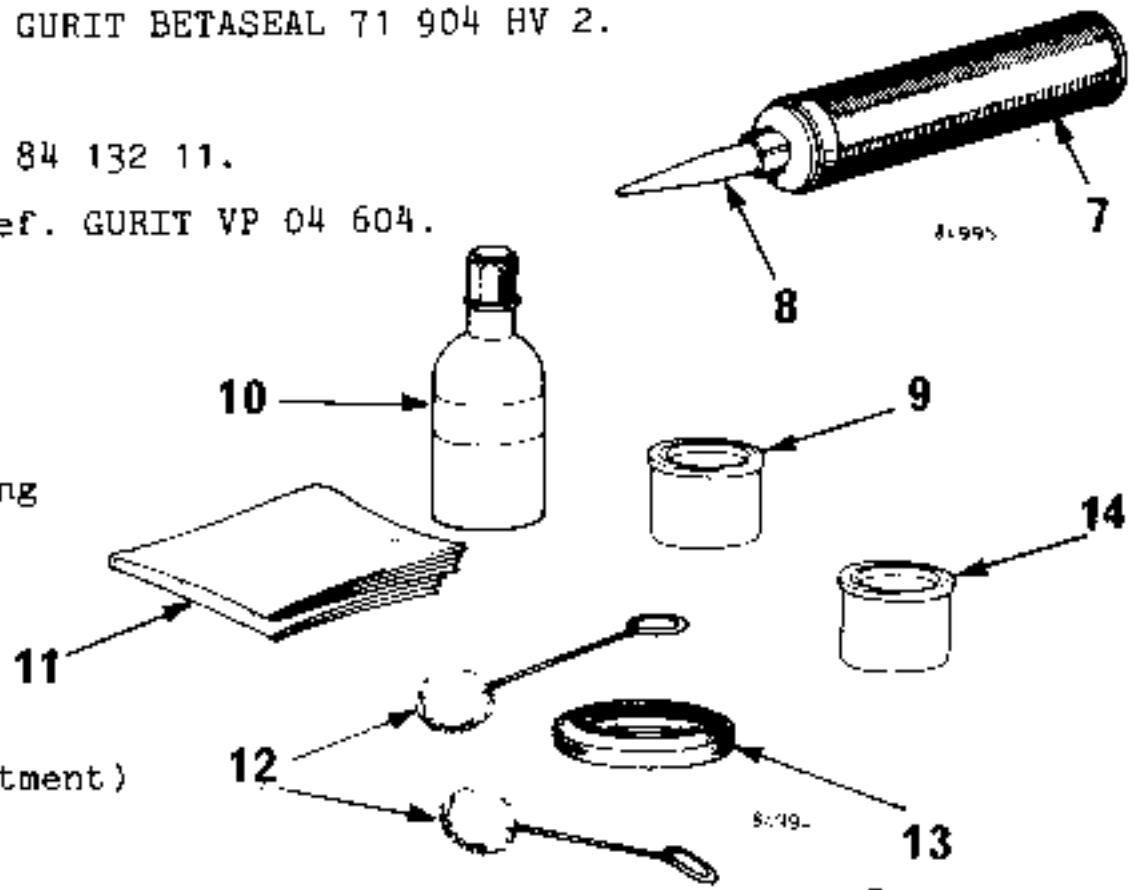
Section through windscreen at windscreen pillars.

Note : The windscreens of certain vehicles have been bonded with an adhesive seal that required an application of transparent degreasing primer. As this product is not available in the network, it is essential to use adherence primer (black) with the adhesive seal (gurit) when replacing a windscreen of this type.

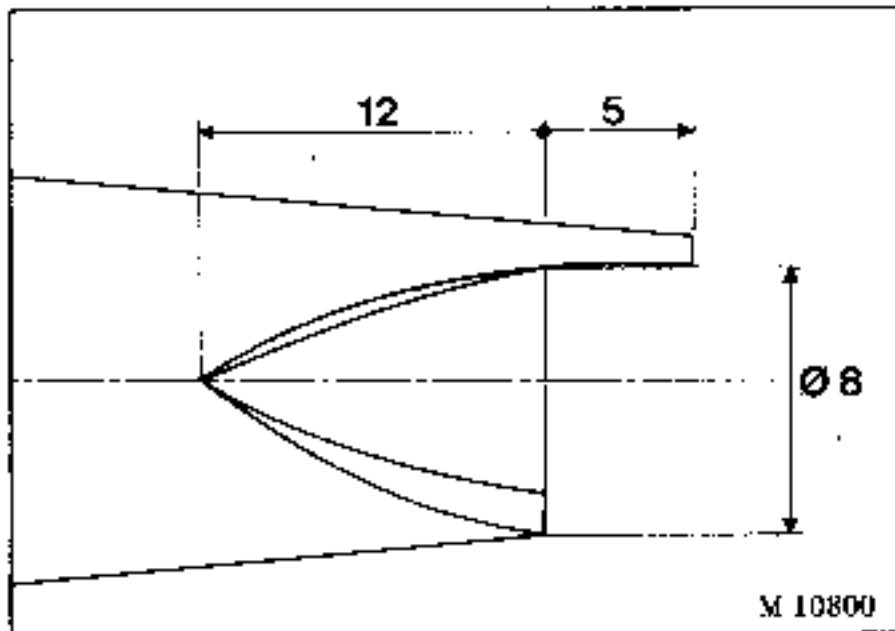
PRODUCTS

COMPOSITION of kit available from Parts Department. Ref. 77 01 202 273

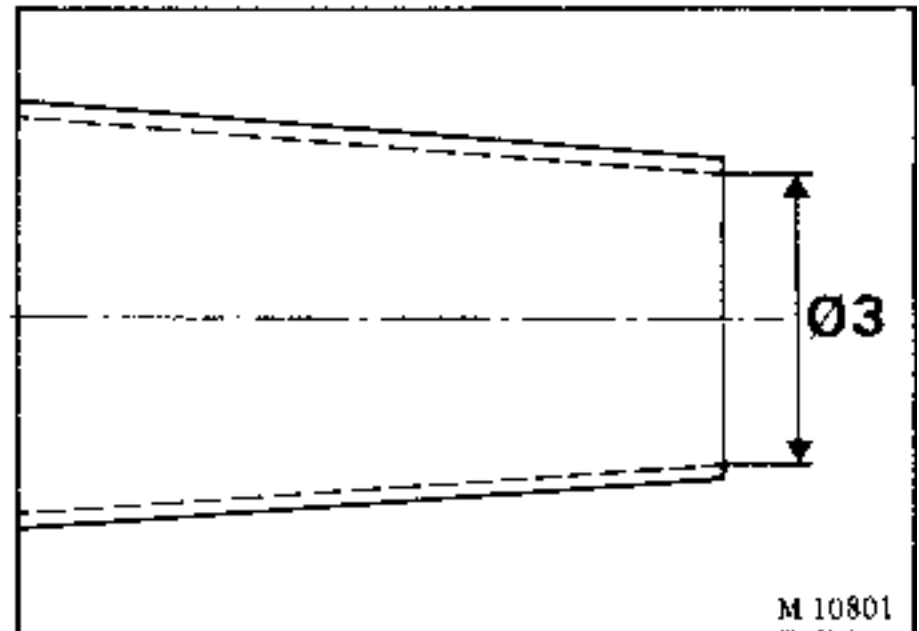
- 7 - Cartridge of mastic GURIT Ref. GURIT BETASEAL 71 904 HV 2.
- 8 - Nozzle for cartridge.
- 9 - Tin of glass primer Ref. GURIT 84 132 11.
- 10 - Bottle of degreasing solvent Ref. GURIT VP 04 604.
- 11 - Cloth for degreasing solvent.
- 12 - Pads for primer.
- 13 - Piano wire (steel).
- 14 - Can of primer for steelpanelling Ref. GURIT 435-46.



SEPARATE CARTRIDGE OF MASTIC +  
NOZZLE (available from Parts Department)  
Ref. 77 202 234



Method of cutting the nozzle for apply-  
ing the fillet to the windscreen.



Method of cutting the nozzle for re-  
touching the seal.

EQUIPMENT

Full handle



Retaining tool.



Roll of cutting wire  
(piano wire)



Pair of suckers for  
fitting the windscreen.



### REMOVING THE ACCESSORIES

Remove :

- The windscreen wipers.
- Part of the trim from the body side crosspieces, by unsticking them (see page 56).
- The windscreen upper and lower finishing strips.

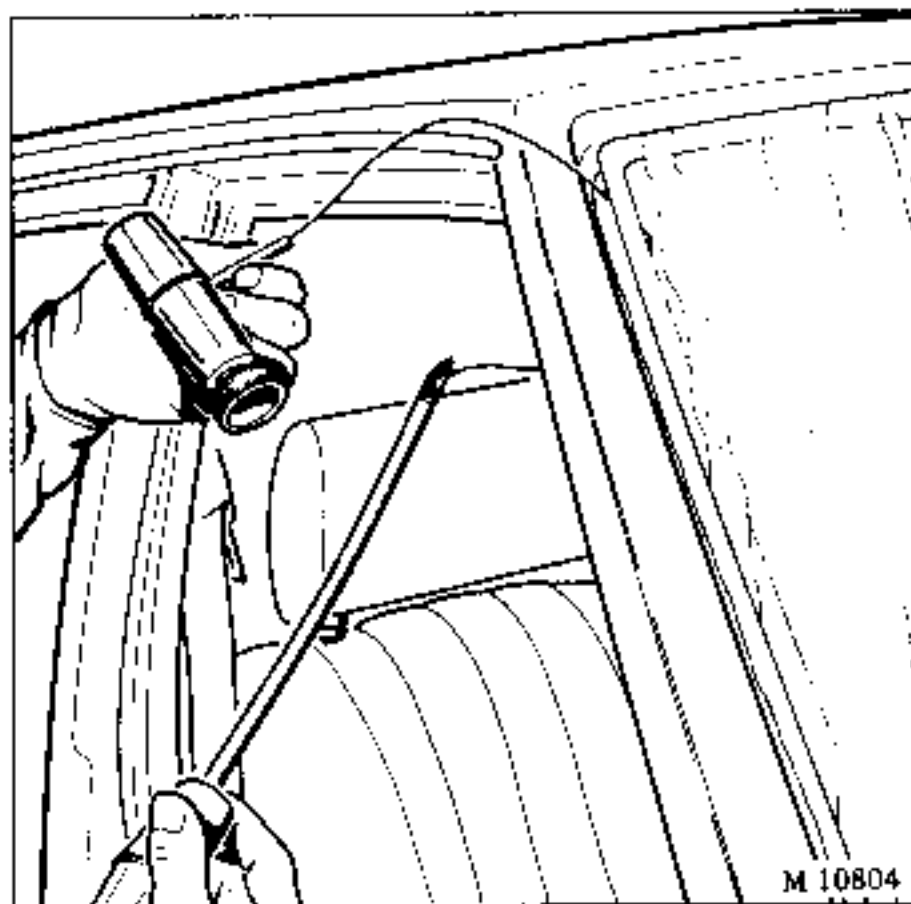
### REMOVING THE WINDSCREEN

OPERATORS MUST WEAR GLOVES AND GOGGLES WHEN REMOVING THE WINDSCREEN.

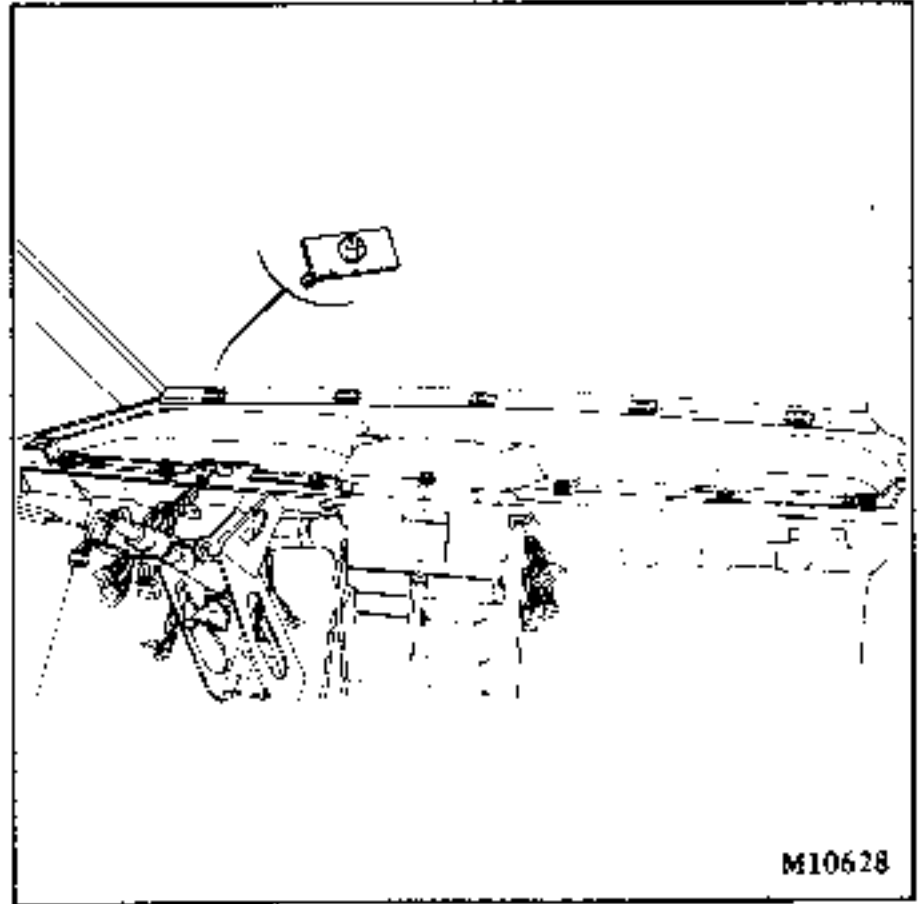
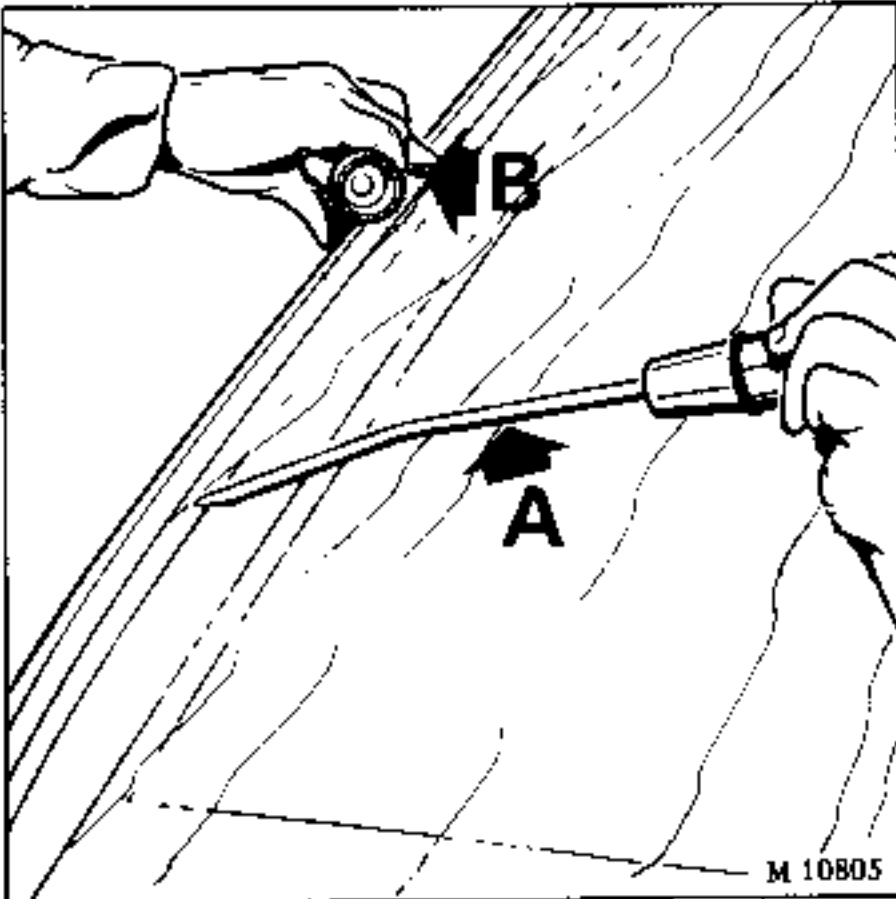
USING A WIDE DOUBLE THICKNESS STRIP OF ADHESIVE TAPE, PROTECT THE AREA ROUND THE WINDSCREEN APERTURE AND PLACE A DUST COVER OVER THE FASCIA PANEL.

#### Cutting the adhesive seal

- Remove the excess adhesive seal from the windscreen surround, with a sharp tool, paying particular attention to the 4 corners, to facilitate the passage of the piano wire when the windscreen is cut out.
- Cut approximately 700 mm of the 0.6 mm diameter piano wire.



- Secure the piano wire to the "pricker".
- Pierce the adhesive seal alongside the windscreen upright with a scriber point.
- Pass through the piano wire from the inside outwards.
- Grip its end with a pair of pliers.
- Secure it to the puller handle on the outside of the vehicle.



- One operator inside the vehicle is to place the pricker (A) in the seal approximately 300 mm from the point at which the wire has been passed through.
- The other operator, on the outside, pulls the handle and cuts the seal.
- This operation is repeated until the adhesive seal has been cut round the entire windscreen.

DURING THIS OPERATION, CHECK, CONTINUALLY, THAT THE CUTTING WIRE IS CORRECTLY ENGAGED UNDER THE GLASS ESPECIALLY IN THE CORNERS OF THE WINDSCREEN.

- Remove the windscreen (using the suction pads).

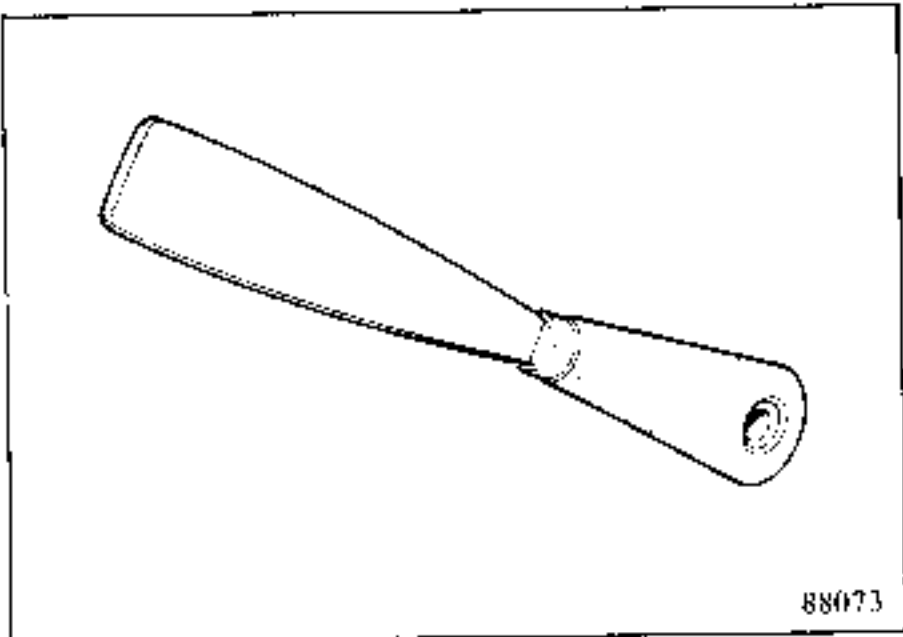
IMPORTANT : The fascia panel lower beading is damaged each time the windscreen is removed.

It therefore must be replaced :

- Lift the beading to remove the screws from inside the vehicle.
- Fit the new bead before refitting the windscreen.

CLEANING THE WINDSCREEN APERTURE

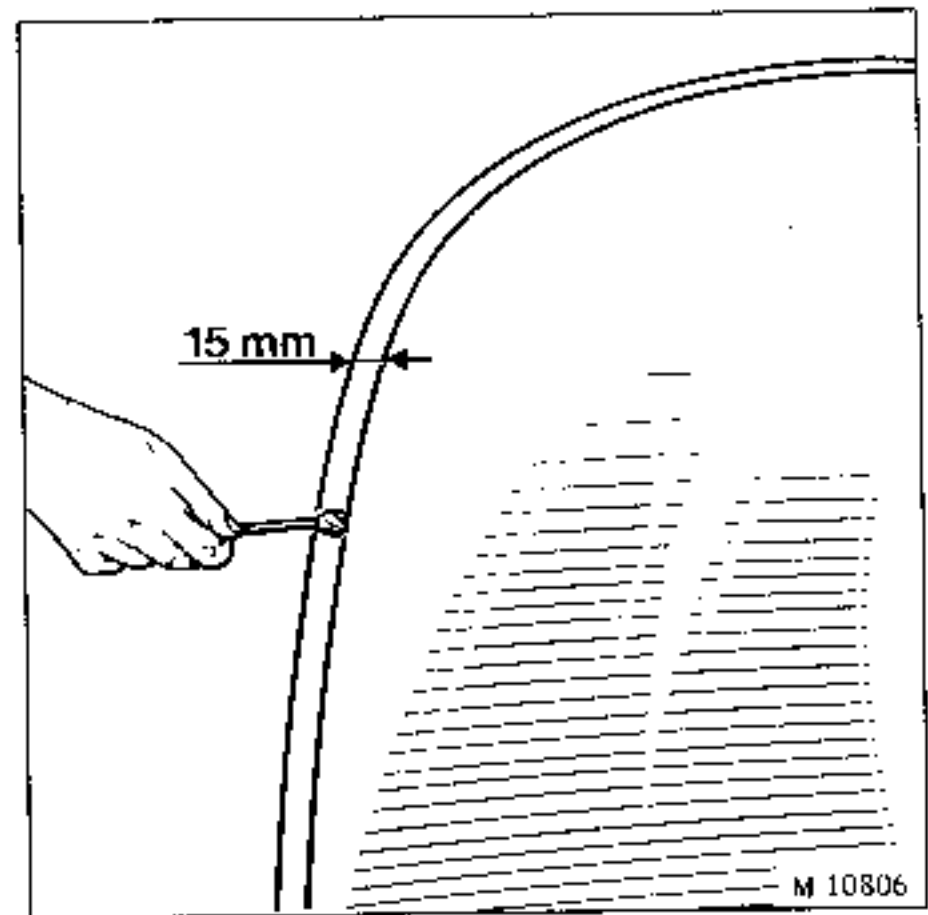
- Using a sharpened spatula, smooth down that part of the seal still remaining on the windscreen aperture (avoid, whenever possible, stripping back the panelling to the bare metal).



- Blow out the windscreen aperture.
- Shake the bottle of primer.
- Apply the primer to the flange round the windscreen aperture, paying particular attention to those areas where the adhesive seal has been entirely removed.
- Leave the primer to dry for 10 minutes.

PREPARING THE WINDSCREEN

- In the case of a new windscreen
- Degrease the edge and the periphery on the inside of the windscreen over a width of 30 mm. Wipe the degreased areas with a clean dry cloth.
- Wait for the solvent to evaporate.
- Shake the bottle of primer.



- Apply a strip of primer round the periphery of the windscreen over a width of 15 mm.
- Also coat the edge of the windscreen with primer.
- Leave the primer to dry for 5 minutes.
- If necessary, apply a second coat to any areas that are not fully covered (wait for it to dry).

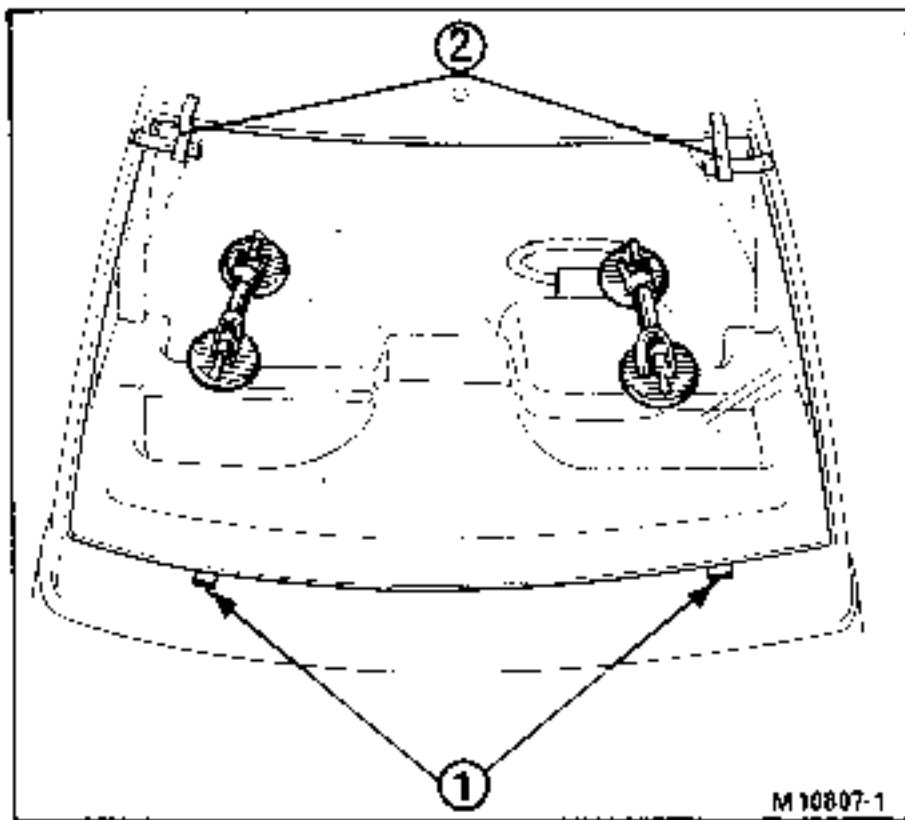


If the original windscreen is refitted

- Remove the adhesive seal from the primer using the sharpened spatula (take care not to scratch the glass).
- If necessary, apply primer to the areas from which it has been removed.

REFITTING THE WINDSCREEN

- Offer-up the windscreen to check that it locates correctly.

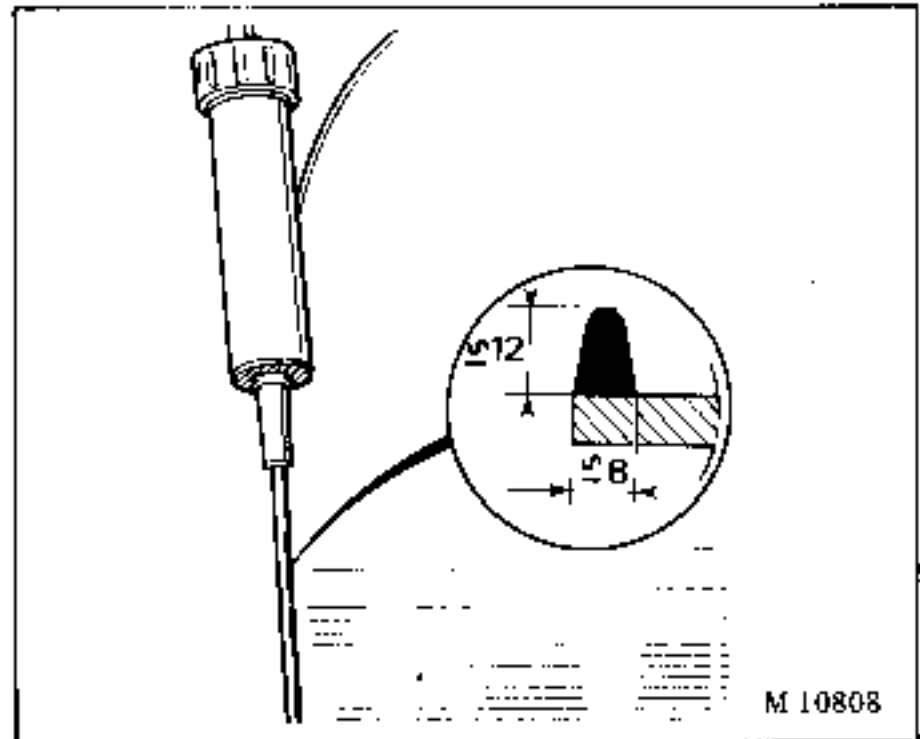


- Place 2 rubber pads 4 mm thick at (1) on the windscreen bay so that the windscreen does not make contact with the scuttle panel.
- Fit the suction pads to the outside of the windscreen.
- Place the windscreen in position, centralise it and locate its final position with adhesive tape (2) in the upper corners.  
**Note :** the fascia panel finishing moulding acts as a locating stop at the bottom.
- Remove the windscreen.

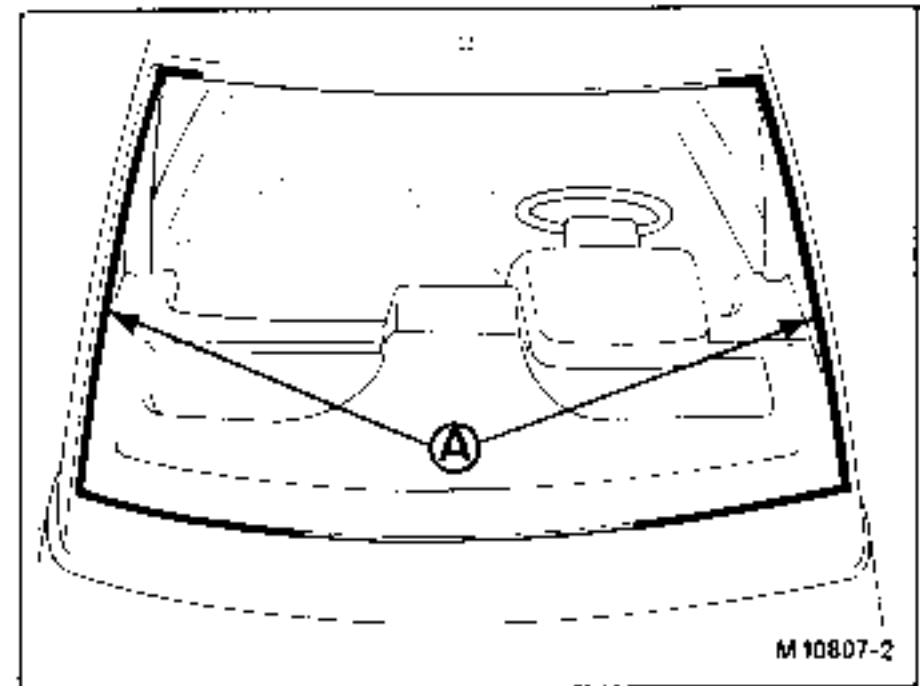
- Applying the adhesive seal to the windscreen

Before placing the adhesive seal cartridge in the gun, proceed as follows :

- pierce the diaphragm with a screwdriver.
- screw on the nozzle which has already been cut to shape.
- Take off the bottom and remove the dehumidifier



- Fit the cartridge to the gun and extrude a continuous fillet of adhesive seal to the periphery of the windscreen, using the pre-cut shape of the nozzle to guide it along the edge of the windscreen.



VERY IMPORTANT

- Hold the gun so that the fillet remains at a constant profile as shown in the diagram (a triangle 12 x 8 mm).
- After removing the gun, finish the joint at the end of the seal with the fingers after first dipping them in soapy water and also apply a little adhesive to the joints between the roof and the cross-pieces.
- Extrude a fillet of adhesive seal 5mm in diameter around the windscreen aperture at A.

- Fitting
- Offer up the windscreen, centralising it by the pieces of adhesive tape already applied to the top.
- Swing the windscreen carefully down at the bottom and check that it locates correctly on the height stops.
- Press lightly down round the periphery of the windscreen to make sure that it contacts the stops.
- Extrude round the entire periphery of the windscreen, a fillet of adhesive seal (1) which is to be smoothed down with a spatula dipped in soapy water.
- Without waiting, check the windscreen, immediately, for leaks with a hose. If a leak is noted mark the position on the outside of the vehicle and dry the adhesive seal with a jet of air. Apply a further fillet of adhesive seal 3 mm in diameter, also from outside, on either side of the leak, over a length of approximately 5 cm.
- Smooth it down with a wooden spatula dipped in soapy water.
- Recheck for leaks.

FINISHING

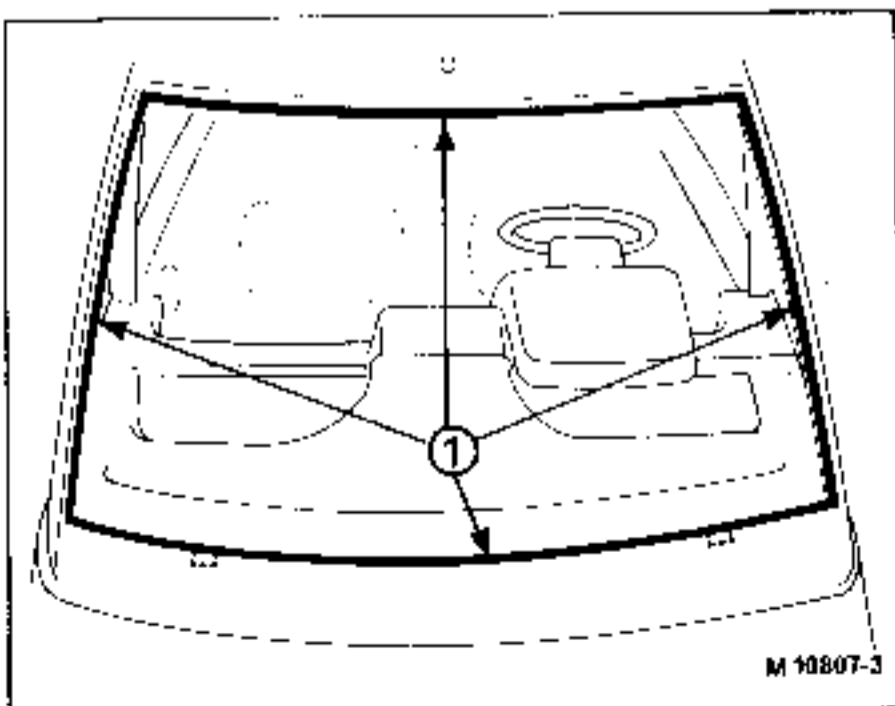
- Degrease then wipe round the outside of the windscreen crosspieces to which the self-adhesive part of the trim strips are applied.
- Refit the trim strips, sticking them in place with adhesive seal (see the schedule of operations at the end of this section).
- Refit the rear view mirror and the windscreen wiper arms.
- Remove the adhesive tape protection from round the outside of the windscreen.
- Clean the bodywork, the windscreen and the external finishing strips with white spirit.

IMPORTANT : We do not recommend the use of alcohol for this operation as it prevents the adhesive seal from hardening.

- Leave the adhesive seal to dry for 2 hours before driving the vehicle.

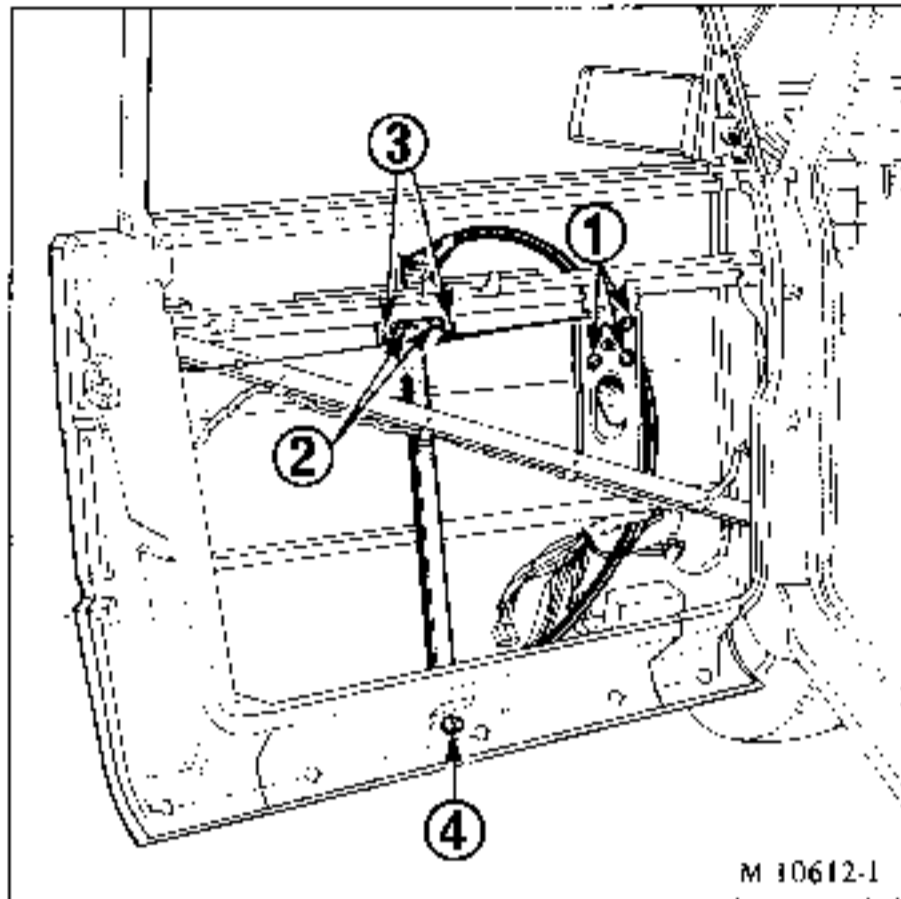
Schedule of operations for bonding the windscreen pillar trim strips

- On those areas to which the self-adhesive strips are to be applied (including the windscreen):
  - thoroughly clean and degrease the surface
- Between these areas :
  - roughen the crosspiece panelling with rubbing down paper (P600), blow them off and degrease them
  - coat the roughened areas with glass primer and leave them to dry
  - extrude a fillet of adhesive seal onto the trim strips (between the self-adhesive pads)
  - apply the trim strip and, if necessary, clean off any surplus adhesive seal.

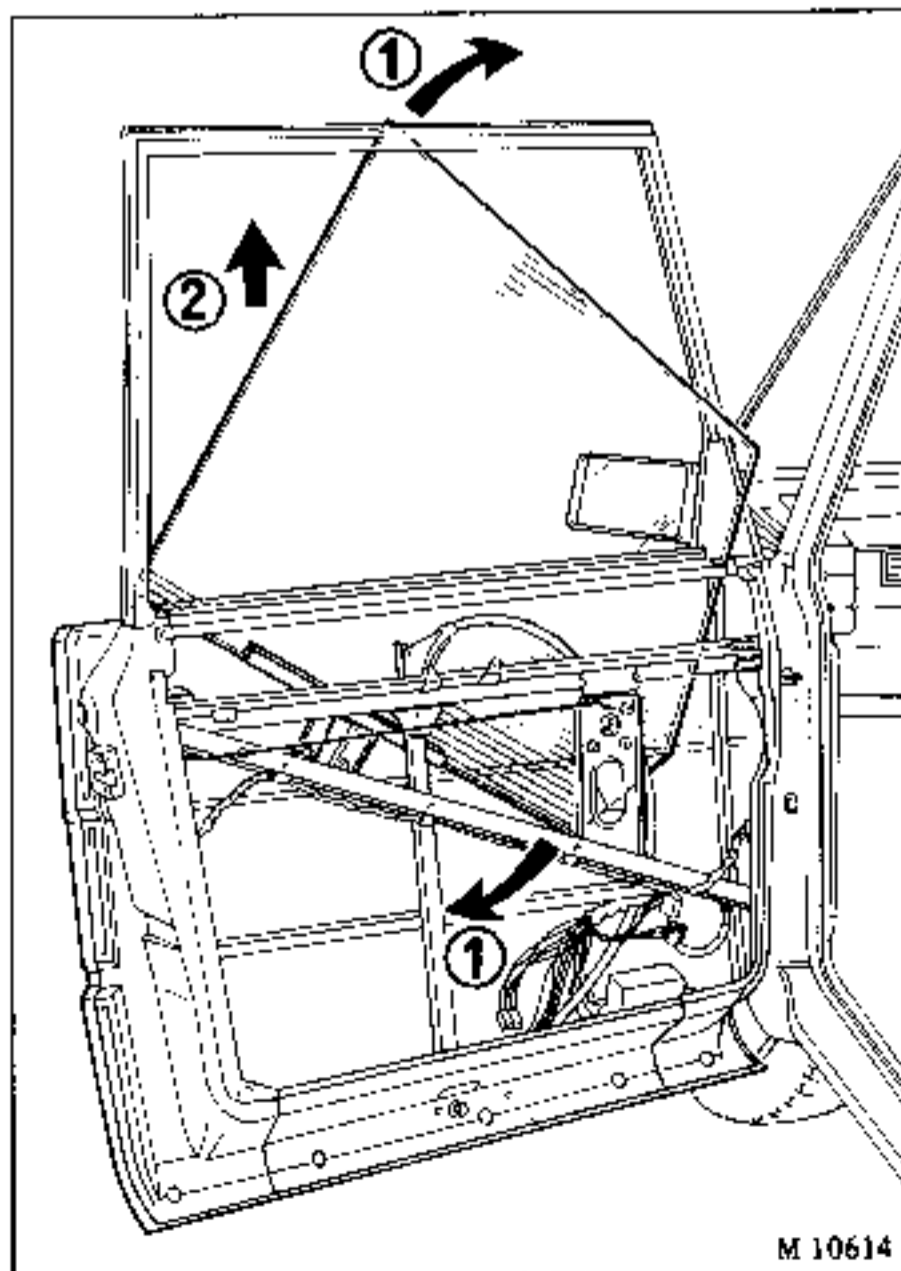


Removing

- Remove the trim
- Unstick the vinyl sealing sheet.



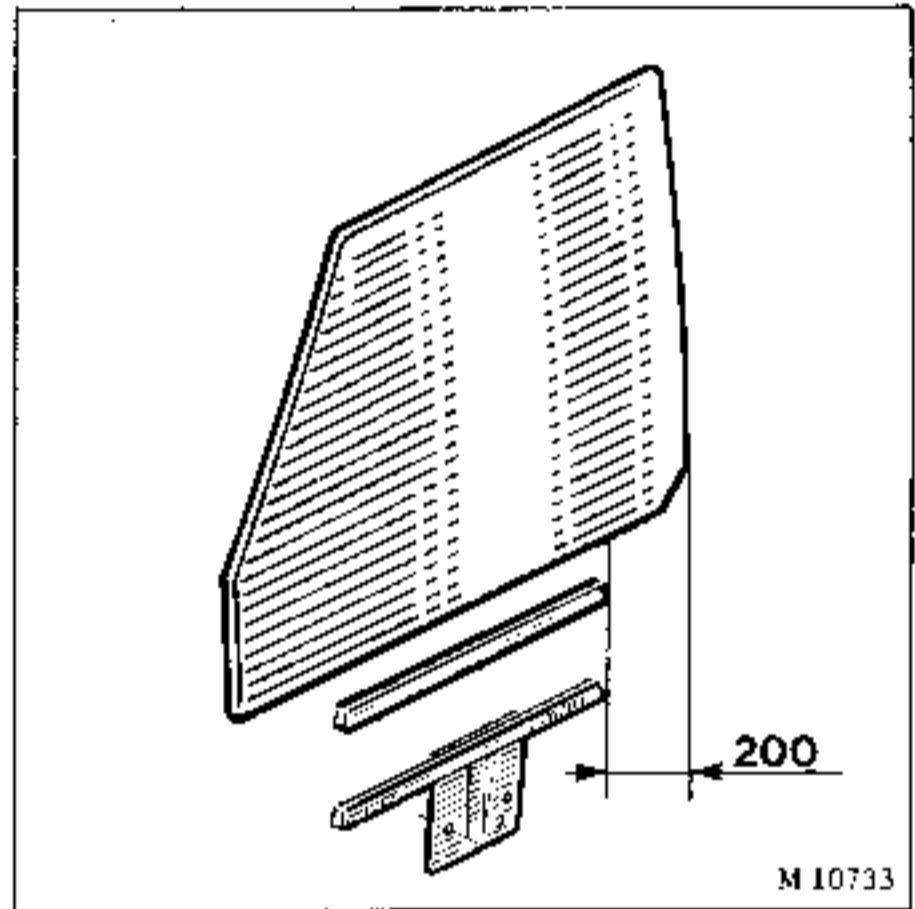
- Fully lower the window.
- Remove the trim (see page 72).
- Remove the vinyl sealing sheet.
- Remove the 2 screws (3) that secure the window bottom to the mechanism.



- Tilt the window as shown in the illustration.
- Remove the window in an upward direction.

NOTE

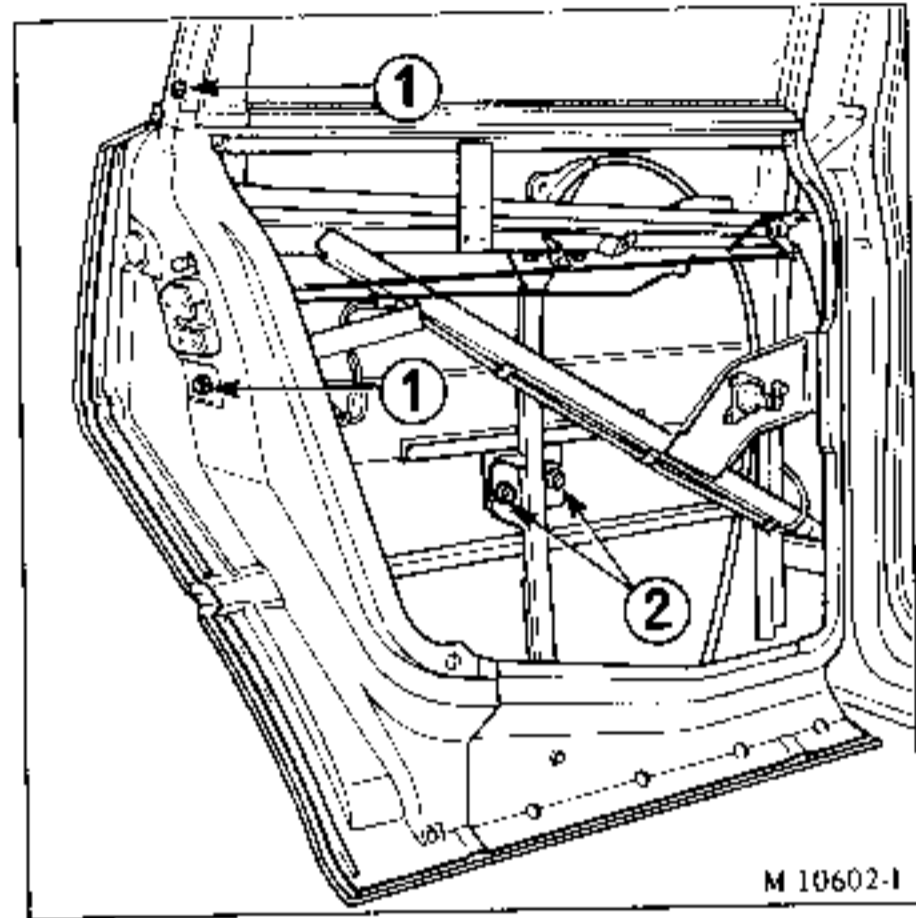
When replacing the window glass, the window bottom piece is positioned as shown below.



Removing the window

With the window closed

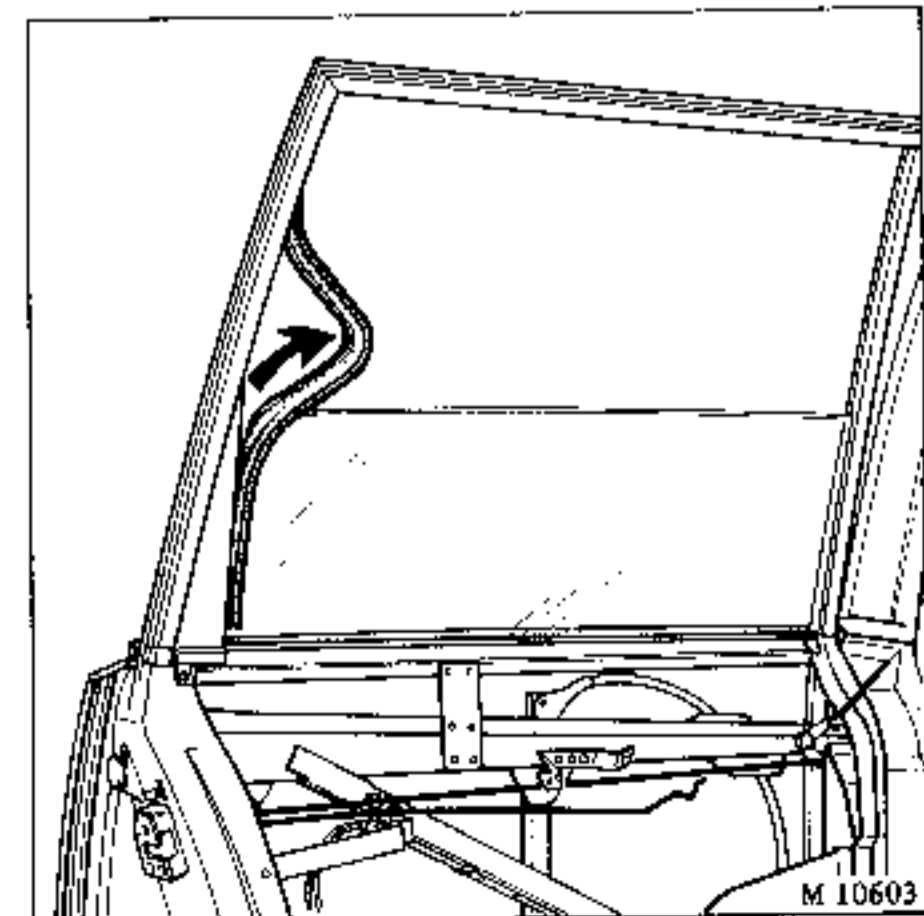
- Remove the trim
- Remove the vinyl sealing sheet.



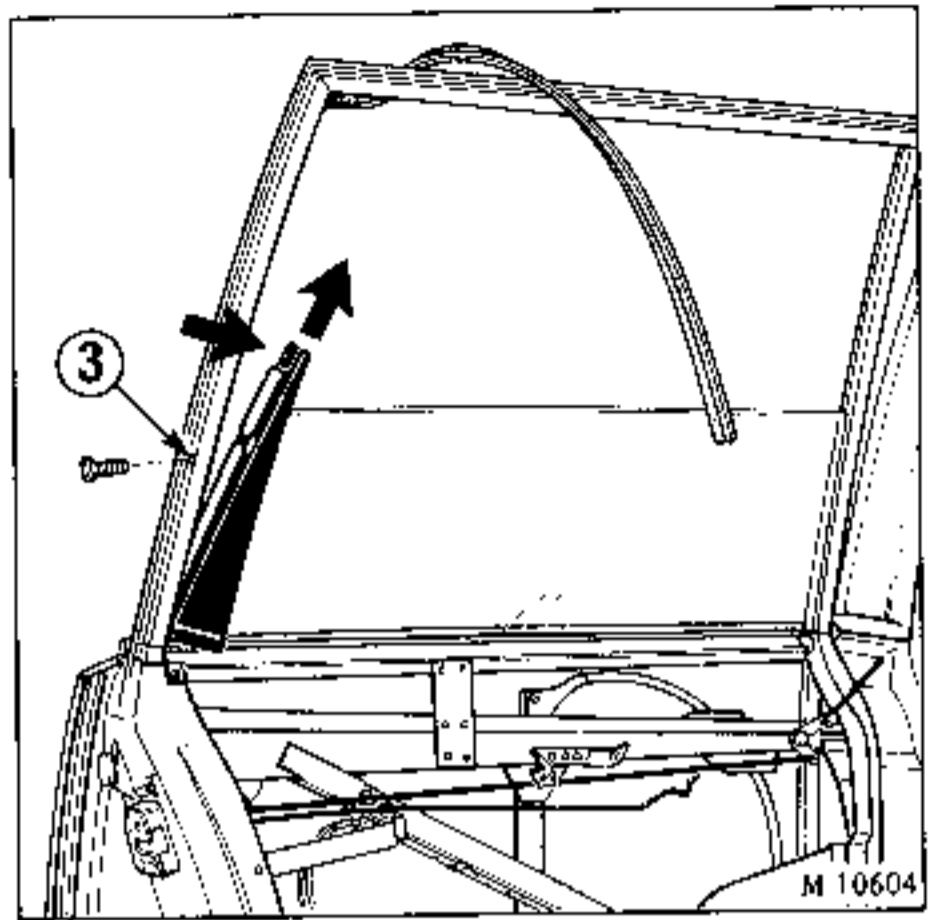
- Remove the lower part of the rear slide together with its guide, by taking out the 2 screws (1).

Fully lower the window.

- Remove the 2 screws (2) that secure the window bottom to the mechanism.



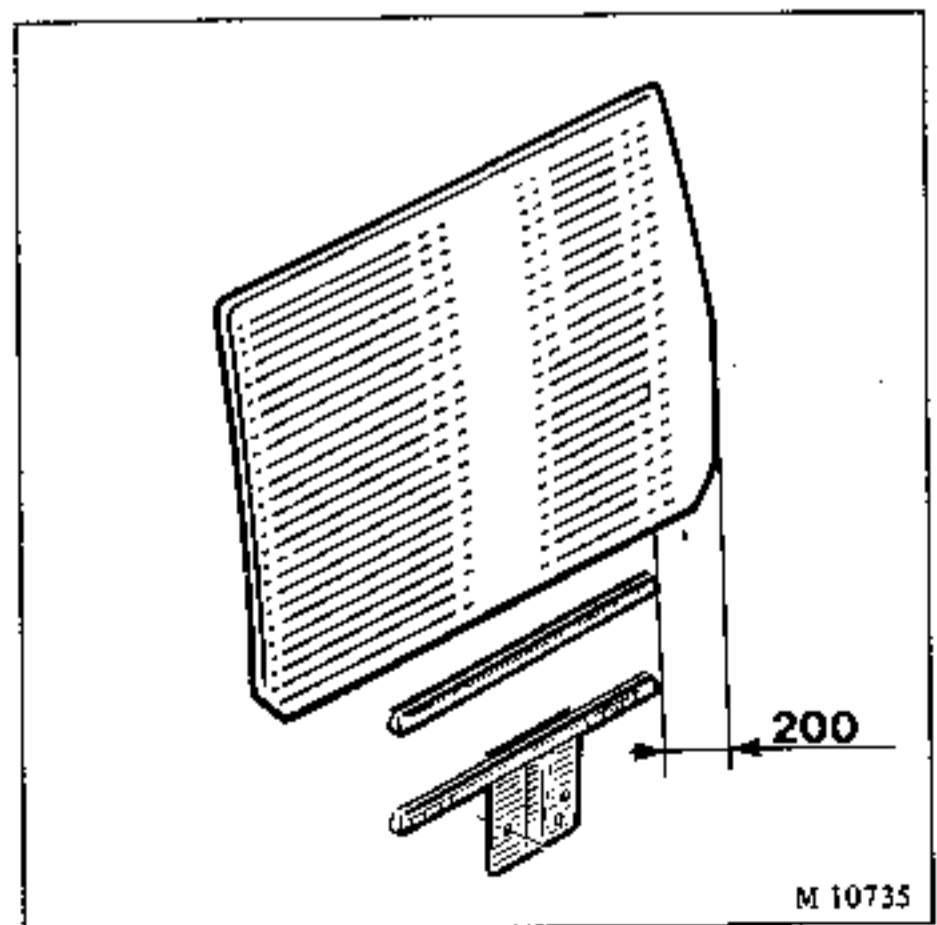
- Pull out the glass channel from the rear upright.



- Remove the screw (3).
- Swing down and extract the rear triangle.
- Take out the window by pulling it upwards.

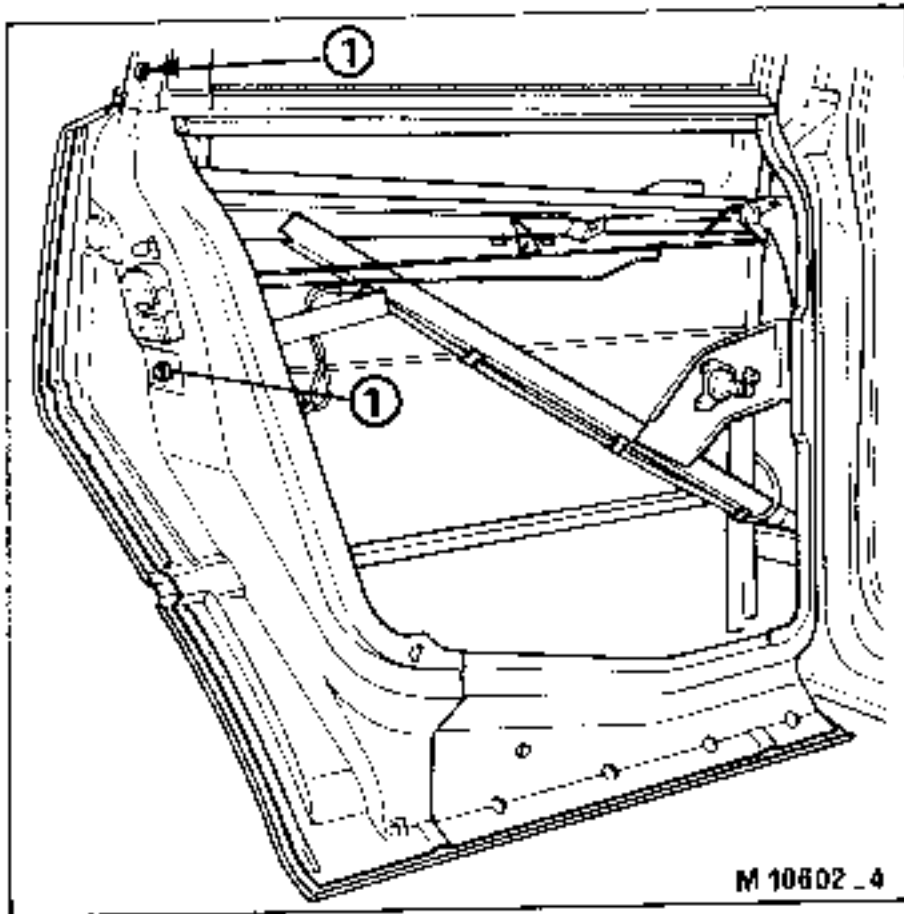
NOTE

When replacing the glass, the window bottom is positioned as shown in the illustration below

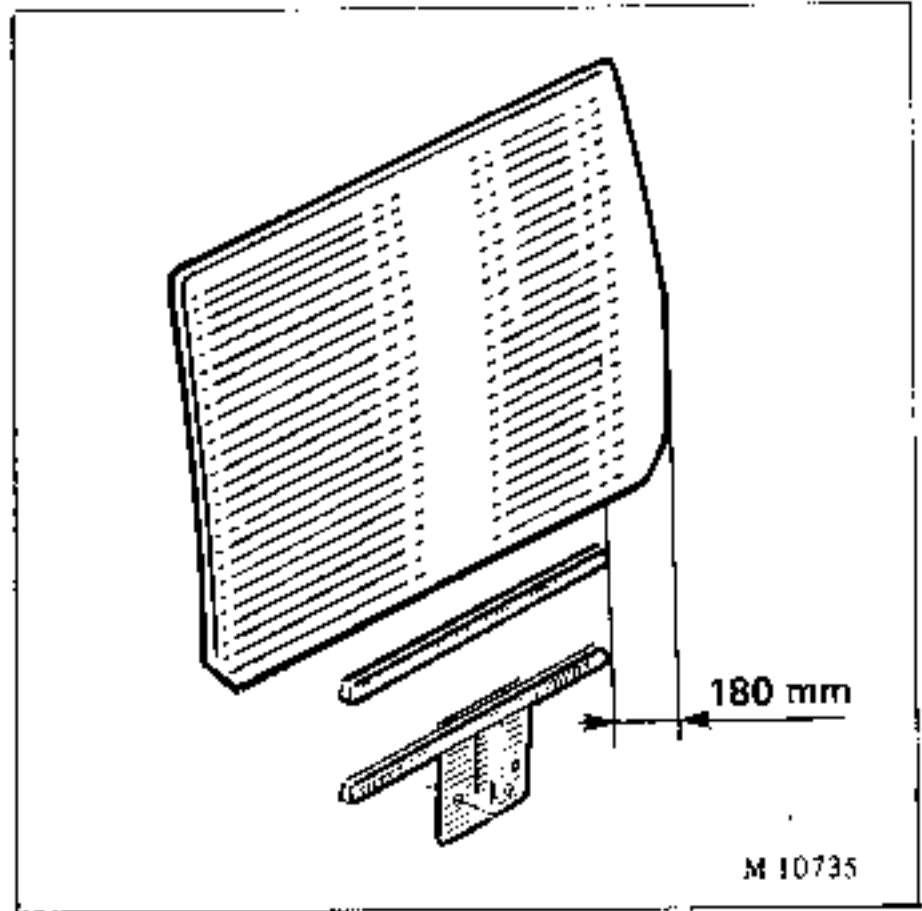


## Removing

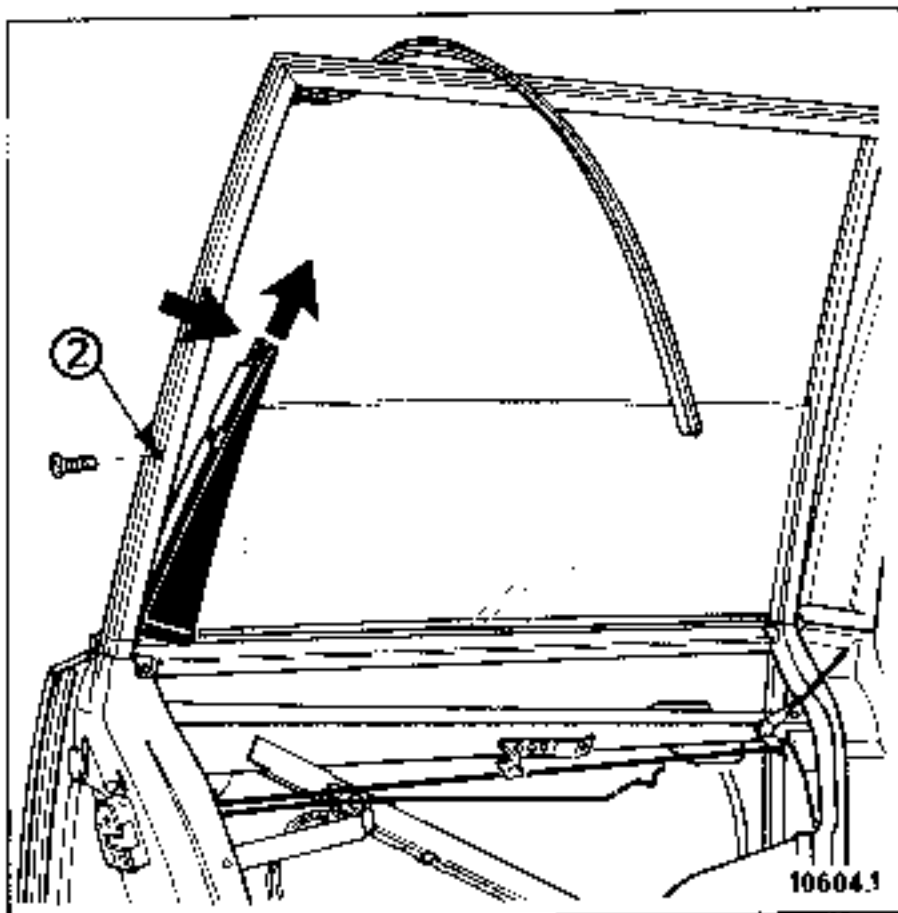
- Remove the window winder.
- Remove the lower part of the rear slide, together with its guide, by taking out the 2 screws (1).



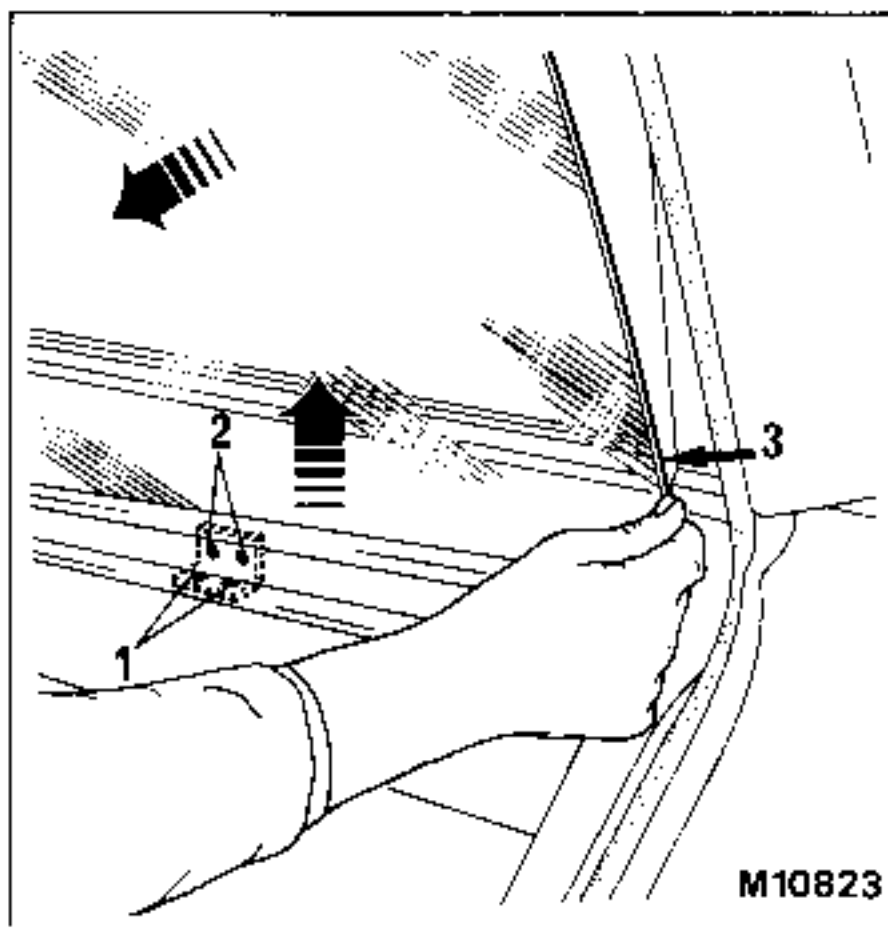
NOTE : When replacing the glass, the window bottom is positioned as shown in the illustration below.



- Fully lower the window.
- Pull the glass channel from the rear upright.
- Remove the screw (2).
- Swing down then take out the rear triangle.
- Take out the glass by pulling it outwards.



Removing :



- Remove the door trim.
- Remove the vinyl sealing sheet.
- Take out the 2 screws (1) that secure the bracket that keeps the window in the closed position.
- Take out the 2 screws (2) that secure the bracket to the window bottom.
- Remove the glass channel.
- Remove the window, freeing it from the rear triangle (3) and pulling it inwards and upwards.

PRODUCTS

KIT Ref. : 77 01 202 273.

EQUIPMENT

- Pull handle.
- Retaining tool.
- Cutting wire (0.6 mm piano wire).
- Pair of suction pads to facilitate fitting the window.
- Protective sheet (0.4 mm steel) to be placed between the retaining tool and the trim.

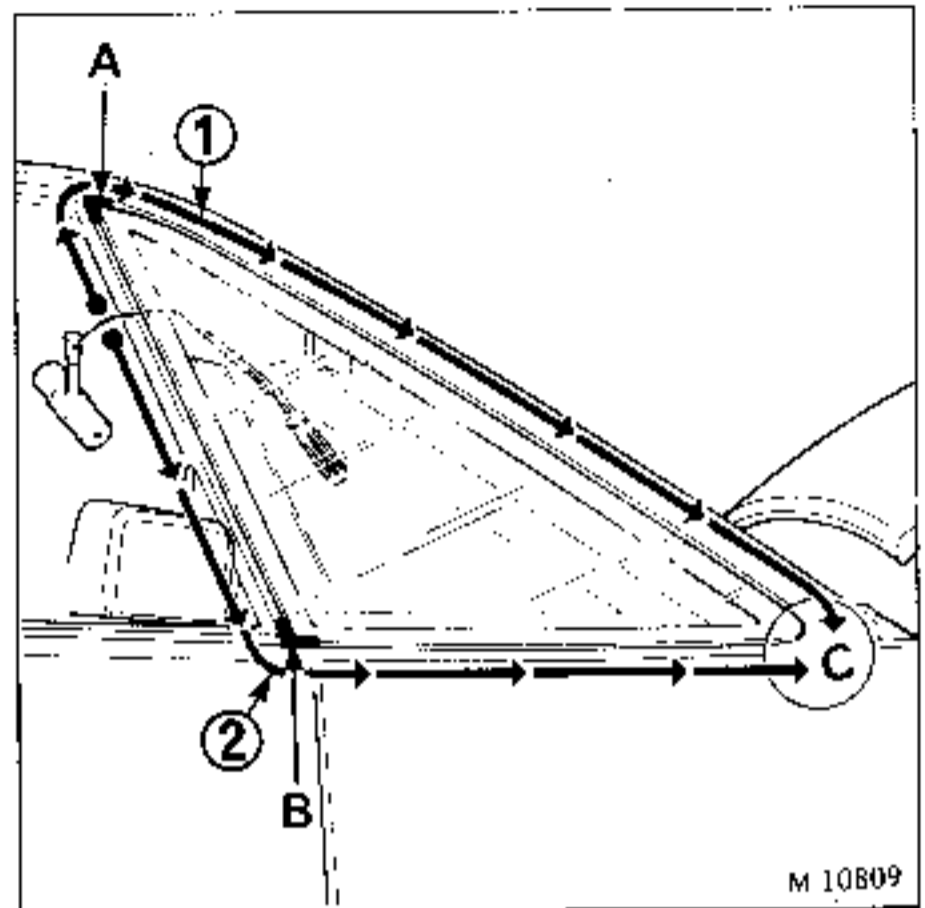
REMOVING

- Remove the deflector trim (3 rivets).
- Unstick the seal from around the glass, starting at the top.
- Protect the window aperture periphery with two thicknesses of wide self-adhesive tape.

OPERATORS MUST WEAR GLOVES AND GOGGLES WHEN REMOVING THE DEFLECTOR WINDOW.

CUTTING THE ADHESIVE SEAL

- Remove the excess adhesive seal from around the window aperture with a sharp edged tool.
- Start cutting the adhesive seal at A and B to make it easier for the piano wire to pass round the corners when cutting out the glass.



Using the tools  
(Carry out the same operations as were described for removing the windscreen)

IMPORTANT : To avoid damaging the interior trim, place a piece of protective sheet steel between the retaining tool and the trim.

Special features :

- Start cutting the adhesive seal in line with the front upright.
- Cut in direction 1.
- Come back and continue to cut in direction 2.

Detail C

As the corner of the window is a very sharp one, it is difficult to cut the adhesive seal at this point with piano wire.

Finish cutting the adhesive seal at C, with a sharp edged tool, pulling the glass lightly outwards to do so.

IMPORTANT : DURING THIS OPERATION, ENSURE THAT THE PIANO WIRE REMAINS FULLY ENGAGED UNDER THE GLASS, ESPECIALLY IN THE CORNERS OF THE WINDOW.

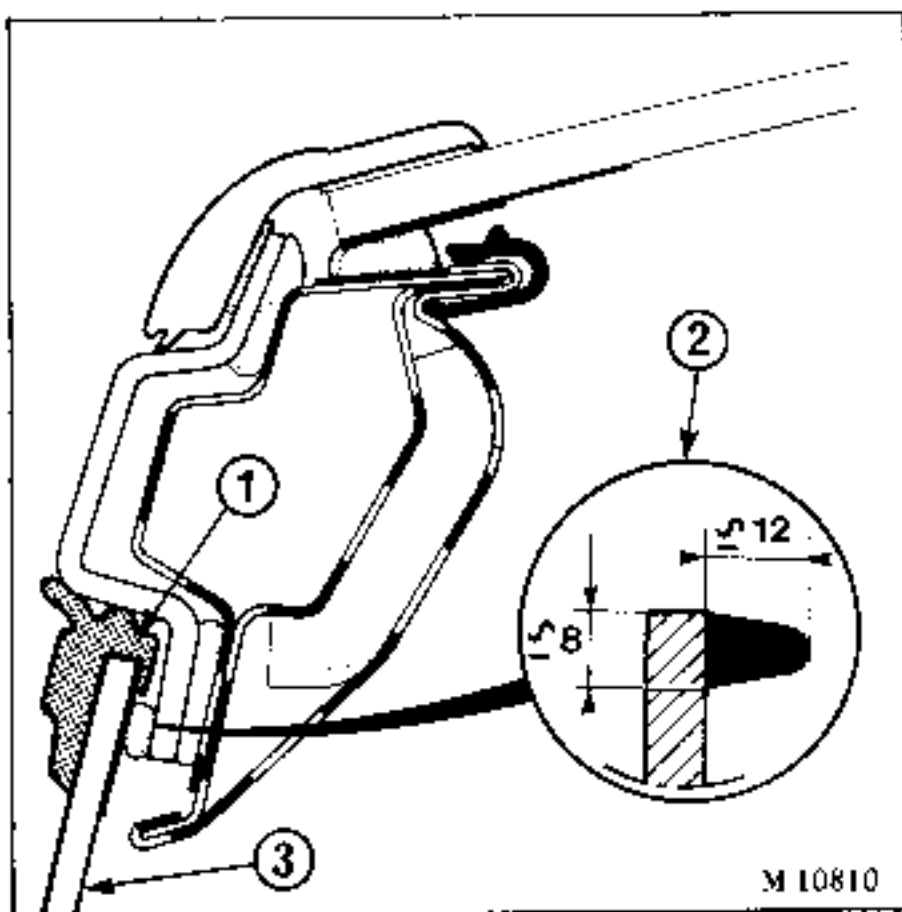
CLEANING THE WINDOW APERTURE AND  
PREPARING THE GLASS

- Carry out the same operations as were involved for the windscreen.

REFITTING

- Fit the seal to the glass.
- Offer up the glass to its aperture to check on its location (if necessary, mark the final position with adhesive tape).

APPLYING THE ADHESIVE SEAL



- 1 - Rubber seal
- 2 - Adhesive seal
- 3 - Deflector window

- Extrude a continuous fillet of adhesive seal to the periphery of the window (carry out the same sequence as for fitting the windscreen), guiding the fillet along the seal.

- Refit the deflector window and push it in as far as it will go.
- Refit the trim to the deflector (3 rivets) having, beforehand, applied adhesive seal round the 3 existing holes in the deflector rear upright to avoid any possible leakage.



PRODUCTS

KIT ref. : 77 01 202 273.

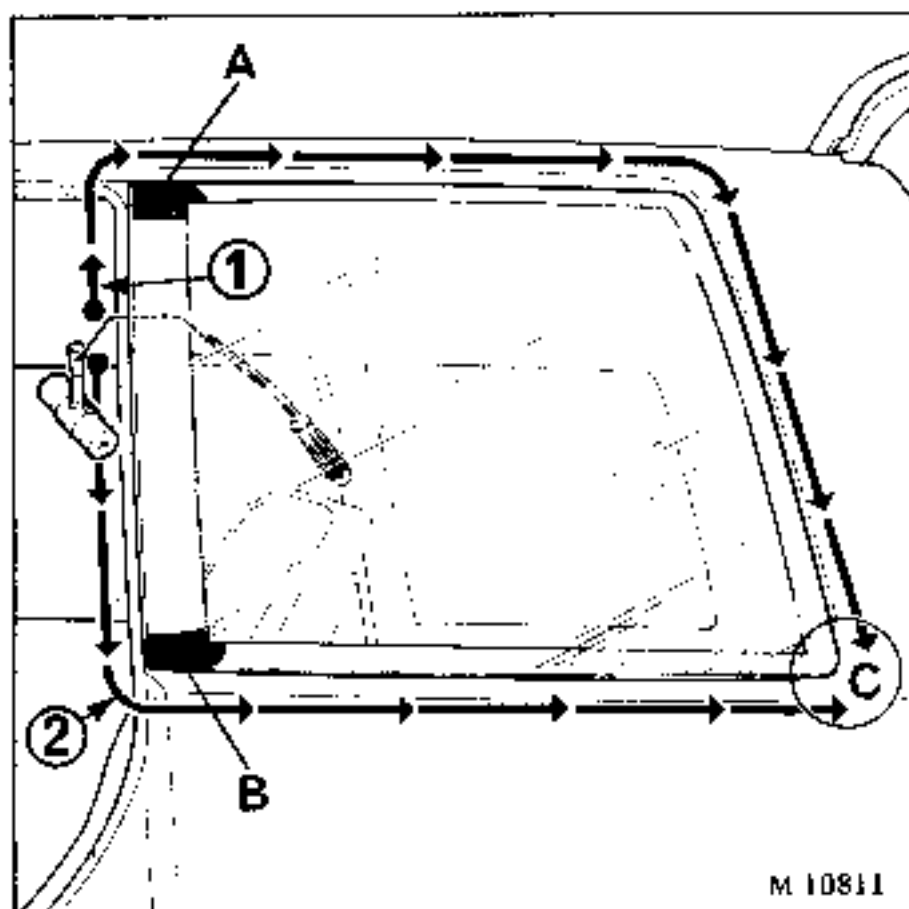
EQUIPMENT

Use the same equipment as for removing the front deflector window.

REMOVING

Carry out the same removing operations as for the front deflector window.

CUTTING THE ADHESIVE SEAL



Carry out the same operations as for removing the deflector window.

CLEANING THE APERTURE

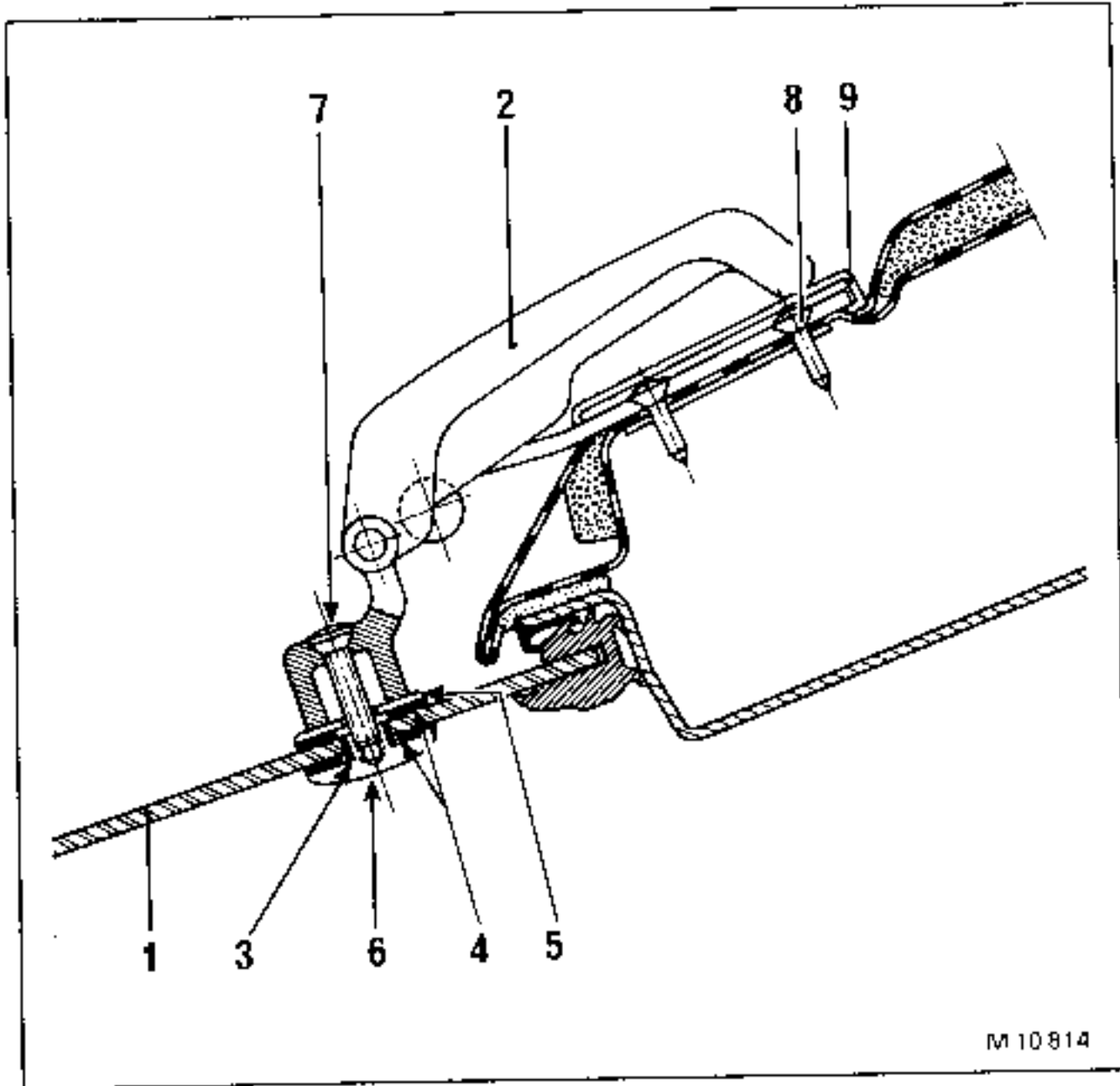
PREPARING THE GLASS

REFITTING

Carry out the same operations as for refitting the deflector window.

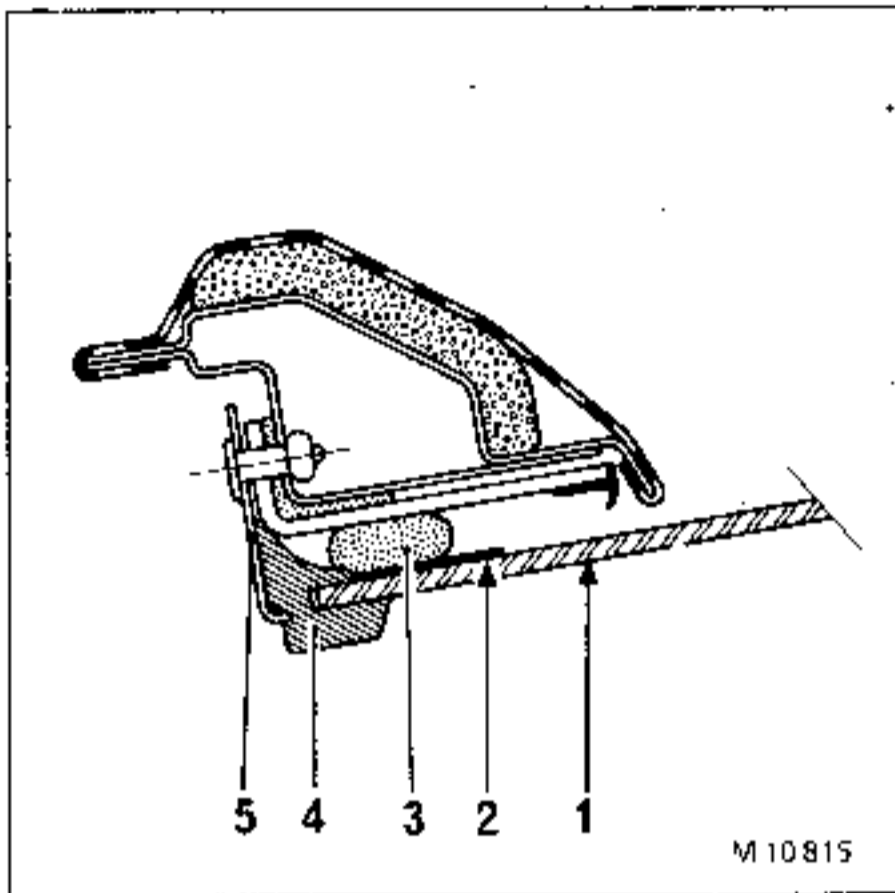
1 - DESCRIPTION OF THE ASSEMBLY

Locking system



- 1 - Glass
- 2 - Latch
- 3 - Spacer
- 4 - Sealing washers
- 5 - Washer
- 6 - Latch nut
- 7 - Screw securing latch to glass
- 8 - Screw securing latch to body
- 9 - Cover

Hinge



- 5
- 4
- 3
- 2
- 1

M10815

- 1 - Glass
- 2 - Adherence primer on glass
- 3 - Adhesive seal fillet (GURIT)
- 4 - Seal fitted and bonded to the periphery of the glass
- 5 - Trim secured by 3 sealed rivets.

NOTE : a seal bonded to the body finishes off the assembly and seals it.

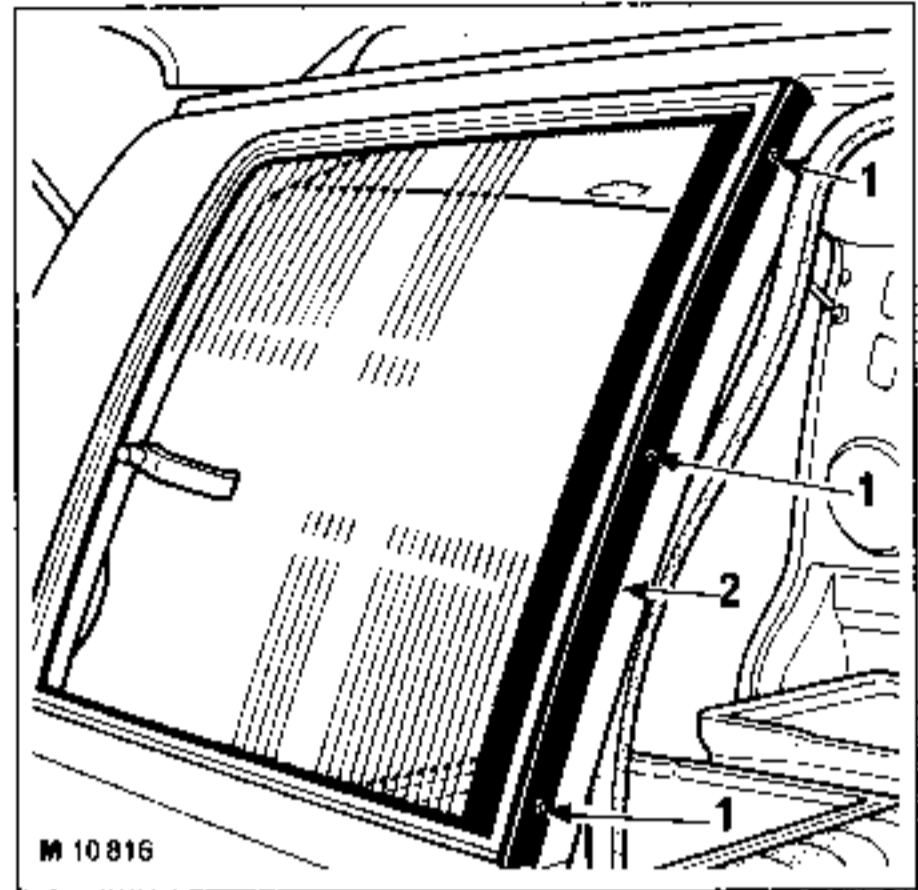
2 - REMOVING - REFITTING THE WINDOW

Consumables required :

- Glass primer ref. 60 25 070 330
- Cartridge of adhesive seal ref. 77 01 202 234

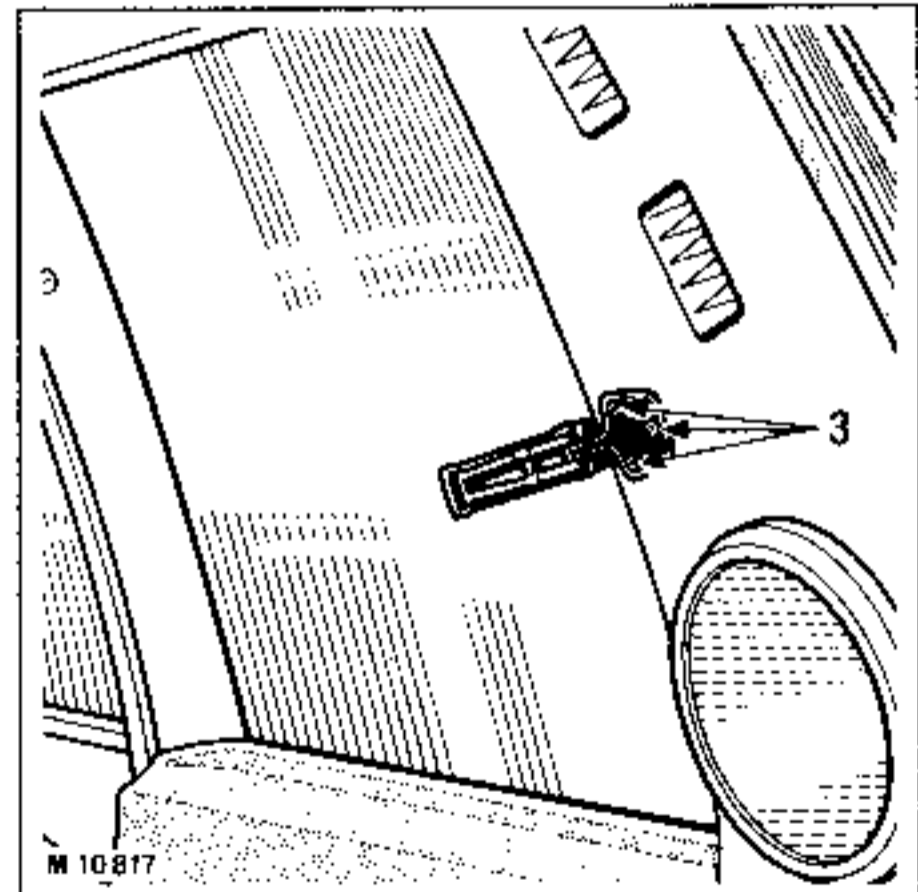
REMOVING THE WINDOW

- Open the rear door
- Partially remove the door sealing strip.



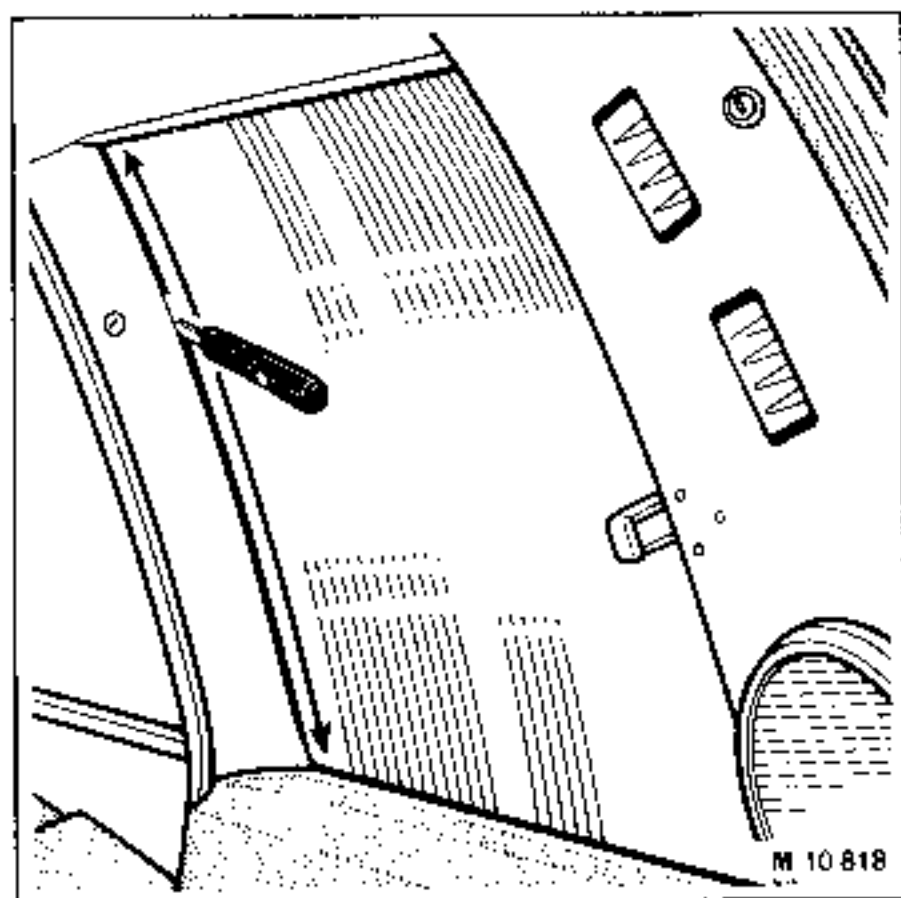
M 10816

- Remove the 3 rivets (1) that secure the front trim piece (2) using a 5 mm diameter drill.
- Remove the trim.



M 10817

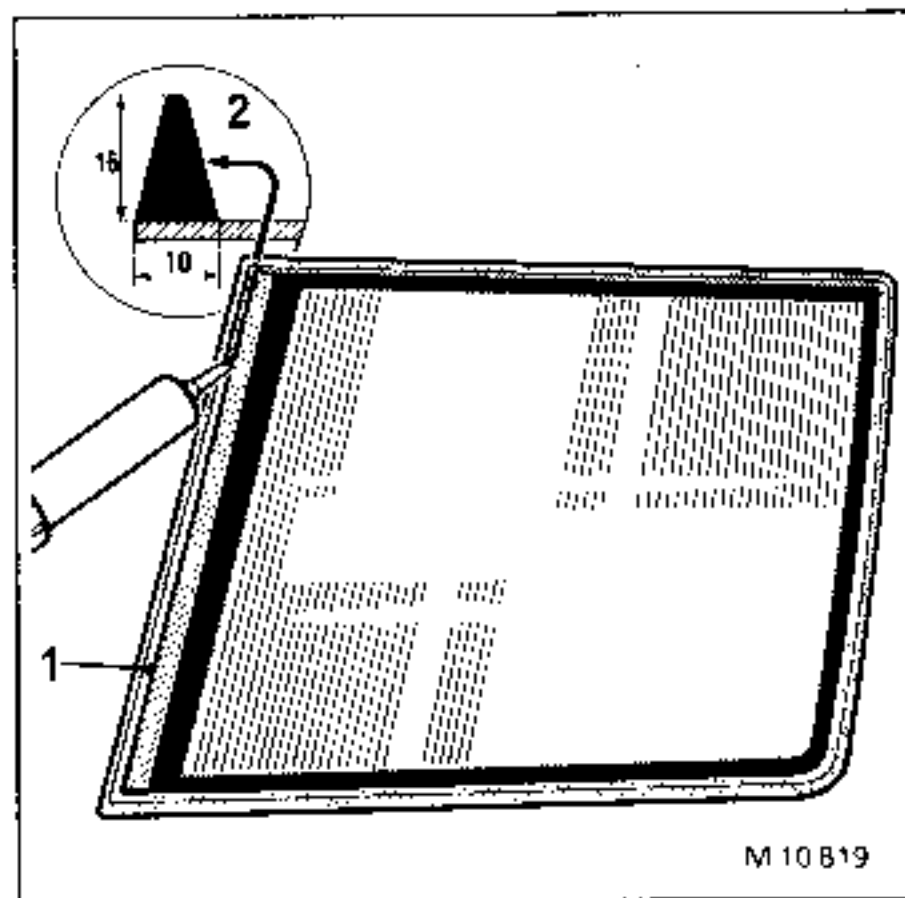
- From inside the vehicle, remove the cover and take out the 3 screws (3) that secure the latch to the vehicle body.



- Pull the glass outwards.
- Using a relatively long blade (stanley knife or sharpened hacksaw blade), cut the adhesive seal fillet on the quarter light front upright.
- Remove the glass.

#### REFITTING THE WINDOW

- Clean off the adhesive seal remaining on the upright and on the glass.
- Apply glass adherence primer to any areas that have been stripped back or, after degreasing, to a strip (1) 25mm wide all round the seal if a new glass is to be fitted.
- Offer up the glass and centralise it so that the seal beds down correctly in the window aperture (determine the position from the front trim piece and its securing holes).
- Remove the glass.
- If new glass is to be fitted, fit the latch without tightening it.



- Extrude a fillet of adhesive seal (2) (10 x 15 mm) along the rubber seal over the entire height of the glass.
- Fit the glass with its lower part well against the upright.
- Fit the front trim piece (with 3 sealed rivets) and close the glass.
- Secure the latch to the vehicle body (3 screws) and tighten the fastenings on the glass.
- Clean the assembly if necessary.

WARNING : do not open the window before 24 hours has elapsed (there is a risk of the adhesive seal coming unstuck).

### 3 - REPLACING THE SEAL

(after removing the glass)

The seal is fitted over and bonded to the glass with a thermo-setting adhesive of a type that cannot be used under service conditions.

Under service conditions, the bond is made with a silicone adhesive mastic (of the Rubson type).

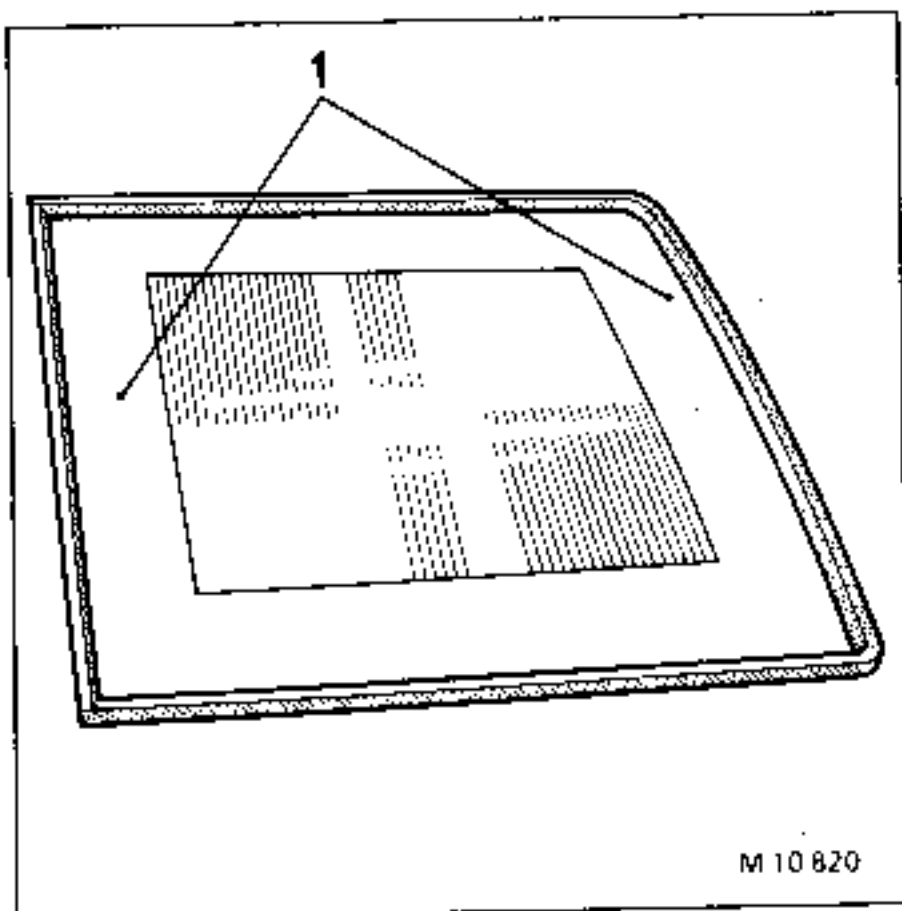
**WARNING :** The use of silicone compounds involves taking particular precautions and carefully cleaning all the parts to avoid the material rejecting paint or primer.

#### REMOVING

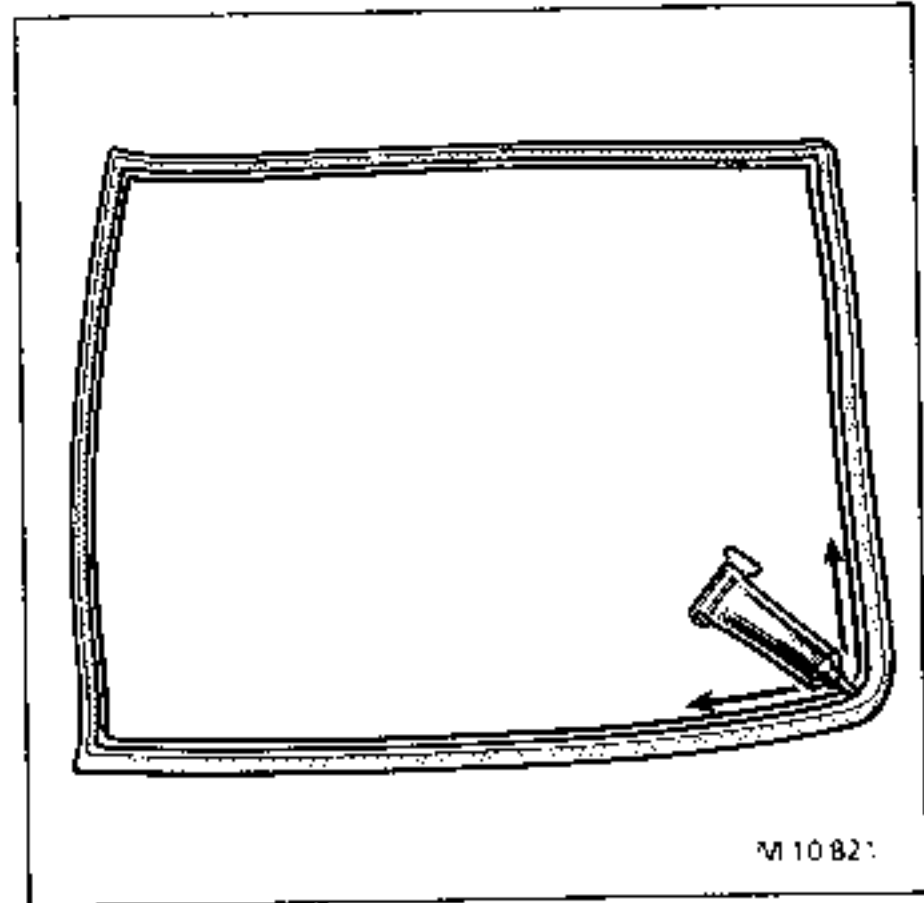
- Remove the seal.
- Clean the glass to remove the original adhesive.

#### REFITTING

- Fit the seal over the glass without bonding it (start by fitting the 4 corners, finishing at the upper rear corner on which the radius is the largest).



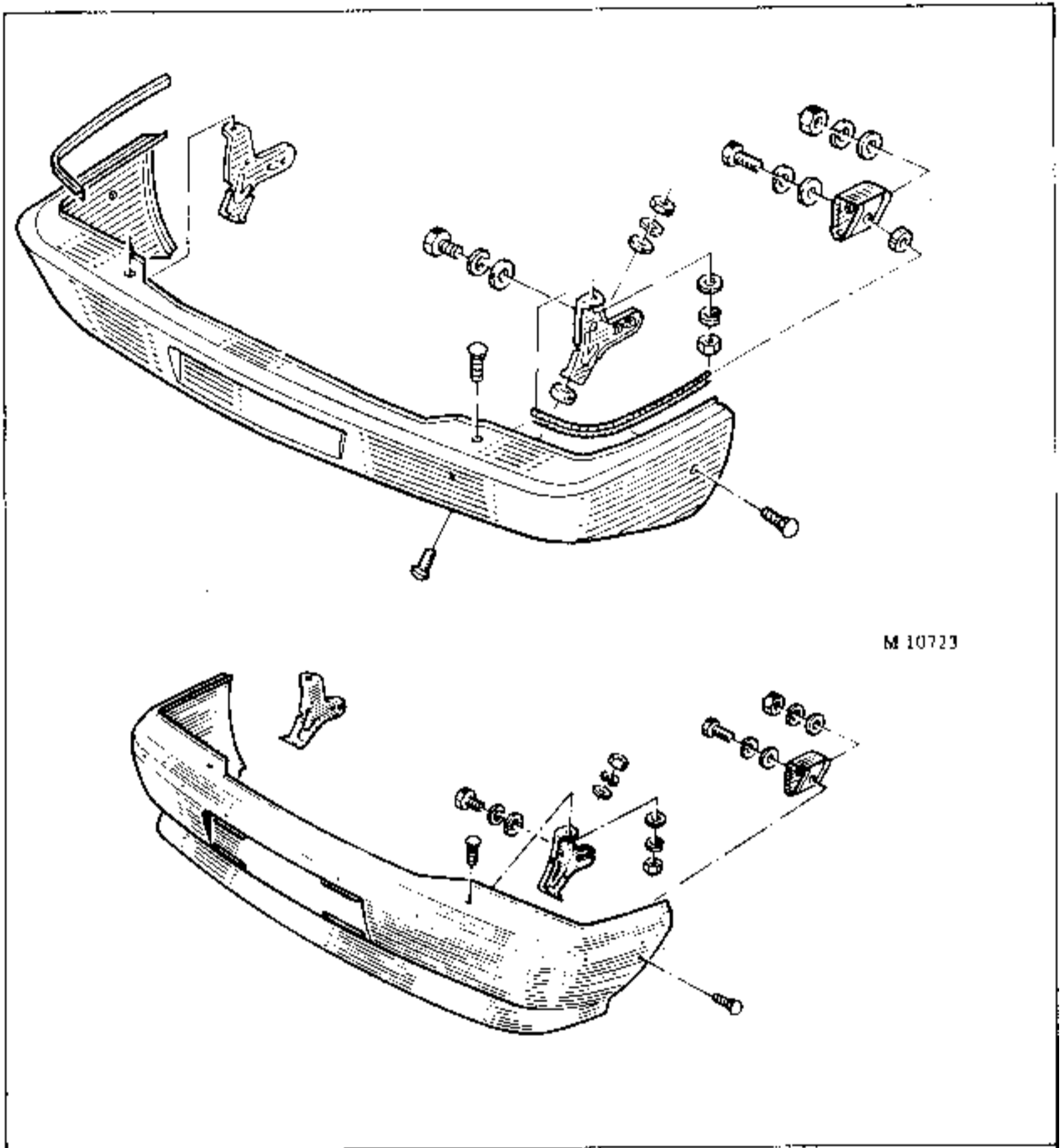
- Mask off the glass on both sides, along the seal, using adhesive tape.
- Remove the seal.
- Carefully degrease :
  - the edge and both faces of the glass under the seal,
  - the inside of the seal.



- Extrude a fillet of silicone based adhesive mastic into the seal :
  - 3 mm in diameter at the front and at the bottom
  - 6 mm in diameter at the rear and at the top, paying particular attention to the corners.
- Fit the seal ( start at the corners) and press on it heavily to bring it into contact with the masking.
- Allow it to dry for one hour then remove the masking and carefully clean off any excess of mastic especially along the inner front area to which the primer for bonding the adhesive seal will be applied.
- Fit the glass to the body and avoid opening the window before 24 hours has elapsed.

**NOTE :** the adhesive mastic has initially cured after 1 to 4 hours.

REPAIRING



M 10723

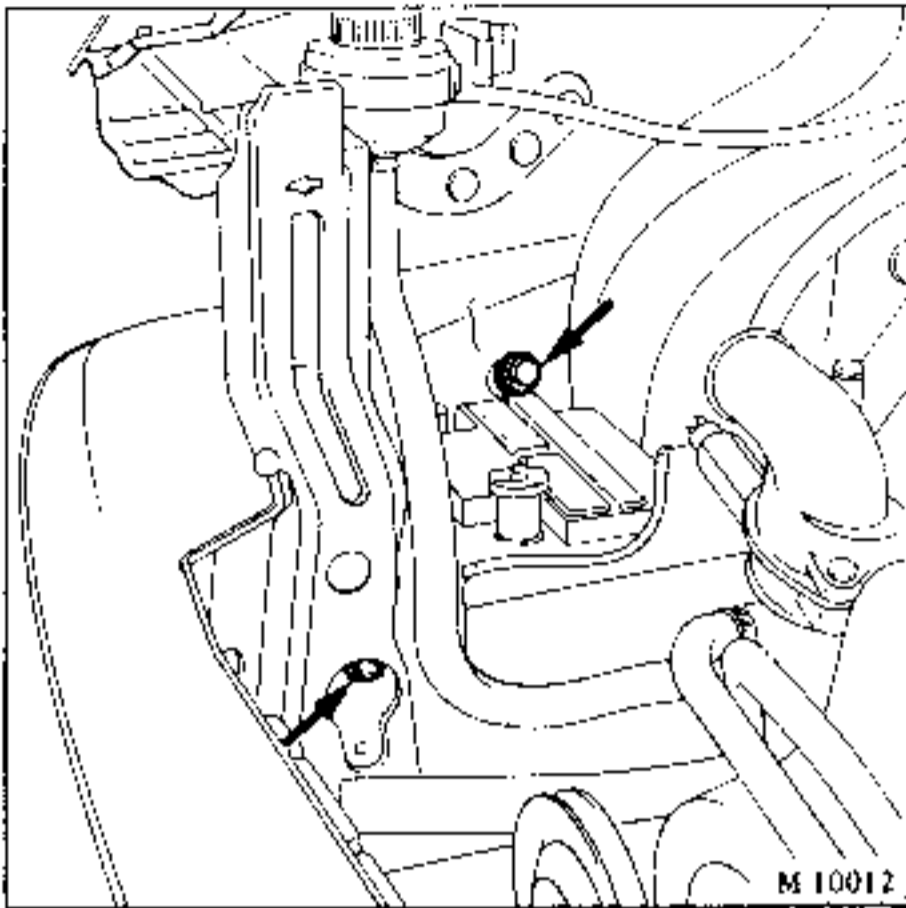
The bumper shield is made from resin pre-impregnated fibreglass. Consequently, only cracks, holes and small broken areas can be repaired using epoxy resin and polyester body mastic.

The cracks, holes and small broken areas are to be repaired according to plastic component repair sequences 1, 2 or 3.

PAINTING : Struc-coat

Carry out paint application sequence no. 1.

Replacing

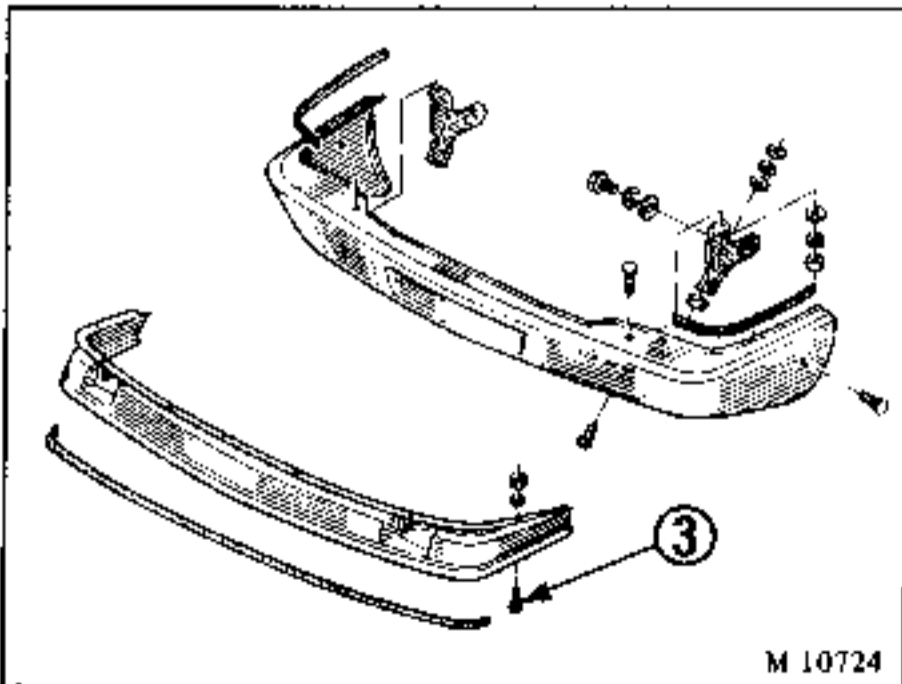


PAINTING :

Carry out paint application sequence no. 1.

- Remove the side mud baffles which are secured to the wheel arches (3 + 3 rivets).
- Remove the 2 bolts that secure the brackets to the cowl sides.
- Remove the 2 bolts that secure the front brackets to the headlight supports.
- Disconnect and remove the fog lights (if necessary).

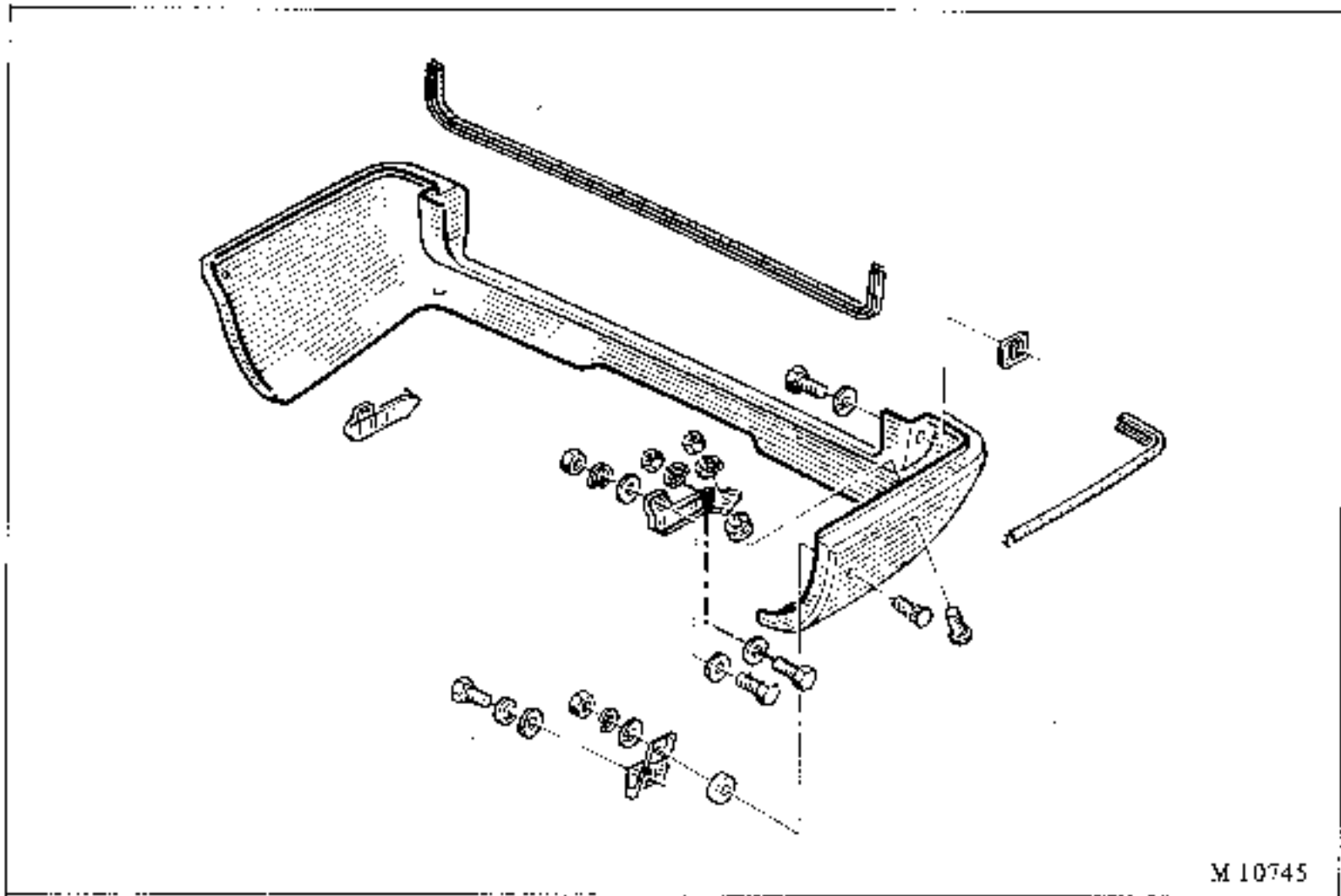
Versions with a separate spoiler



Remove the spoiler

The spoiler is secured to the bumper shield by 7 screws (3).

Repairing :



The bumper shield is made from resin pre-impregnated fibreglass. Consequently, only cracks, holes and small broken areas can be replaced using epoxy resin and polyester body mastic.

The cracks, holes and small broken areas are to be repaired by carrying out plastic components repair sequence 1, 2 or 3.

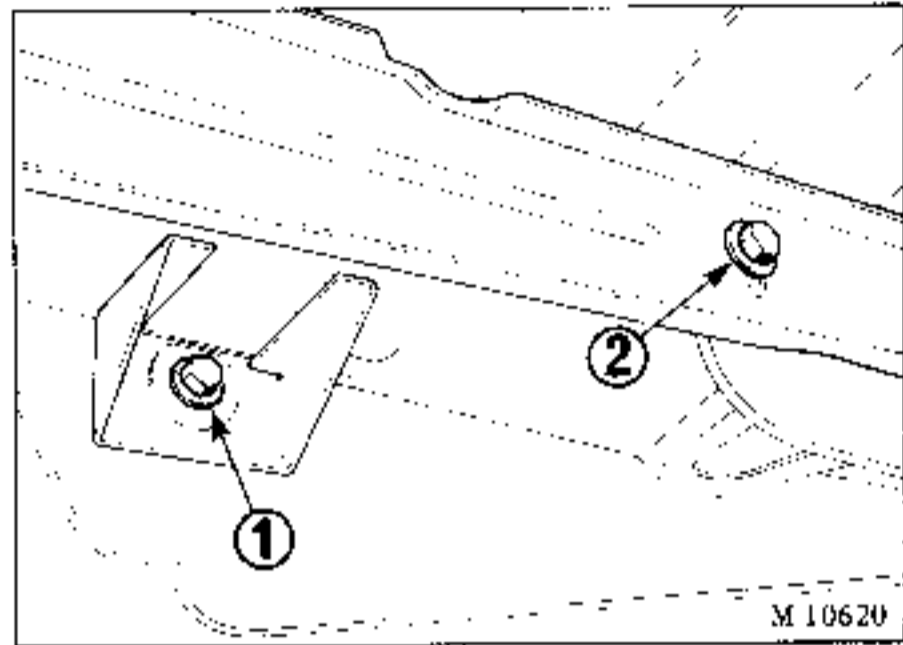
PAINTING : Struc-coat

Carry out paint application sequence no. 1.

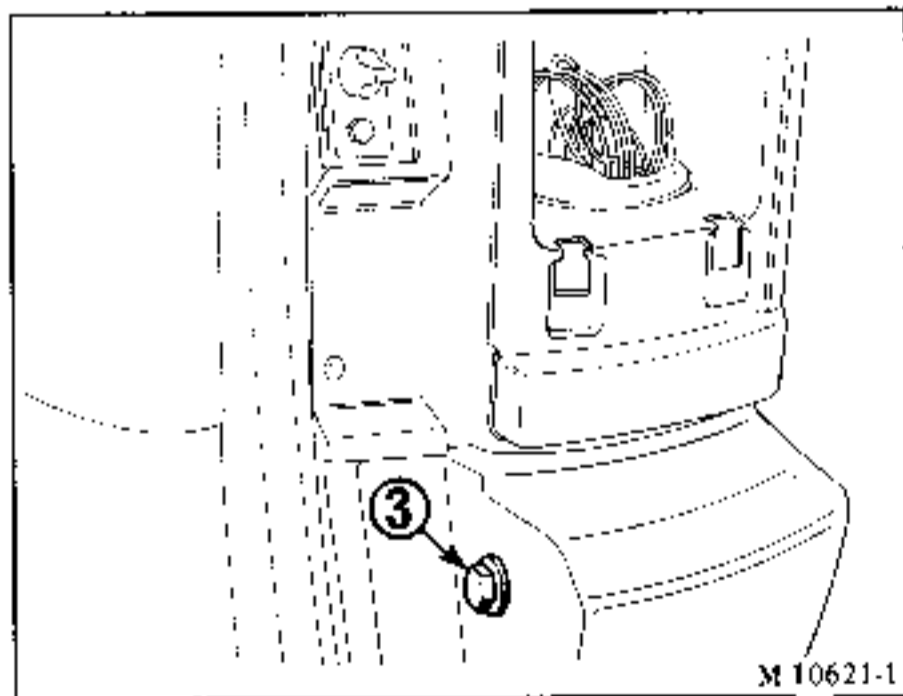


Old type :

REMOVING

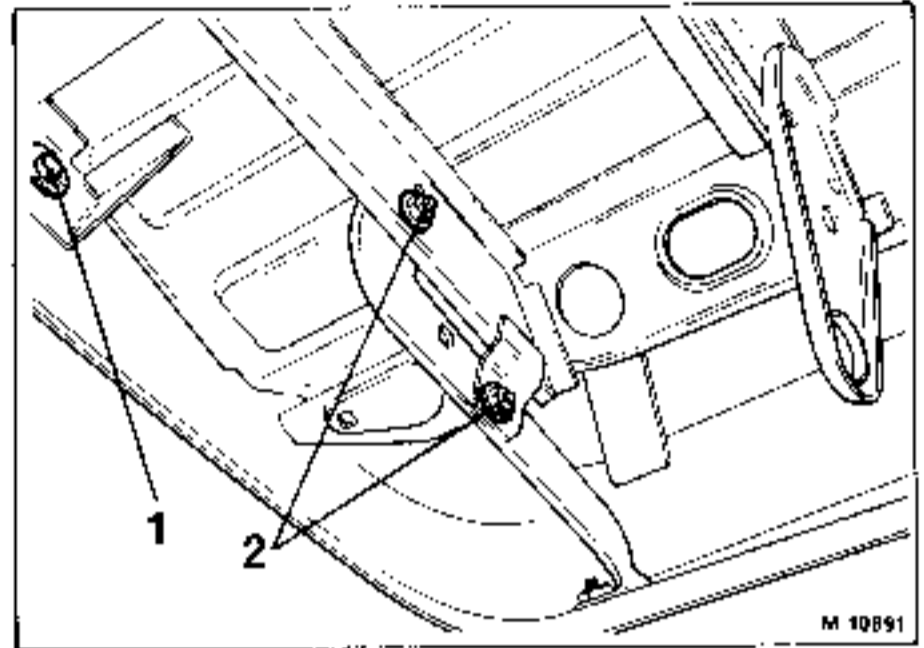


- Remove the 2 screws (1) that secure the bumper shield to the outer side-member.
- Remove the 2 screws (2) that secure the bumper shield to the inner side member.



- Remove the 2 screws (3) that secure the bumper shield to the rear door pillar.

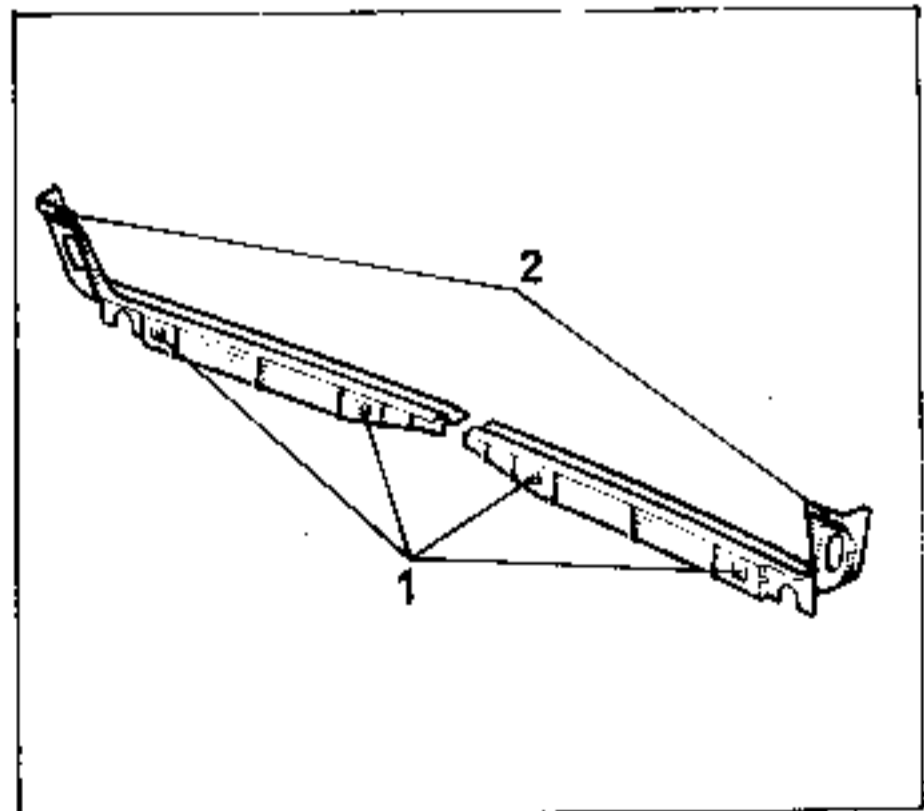
New type :



- Remove the 2 screws (1) that secure the bumper shield to the outer side member
- Remove the 4 bolts that secure the bumper shield to the inner side member.

FINISHING PIECES

- Remove the rear bumper shield.
- Take out the 4 lower rivets (1) diameter 5.
- Take out the 2 upper rivets (2) from the rear light casings.

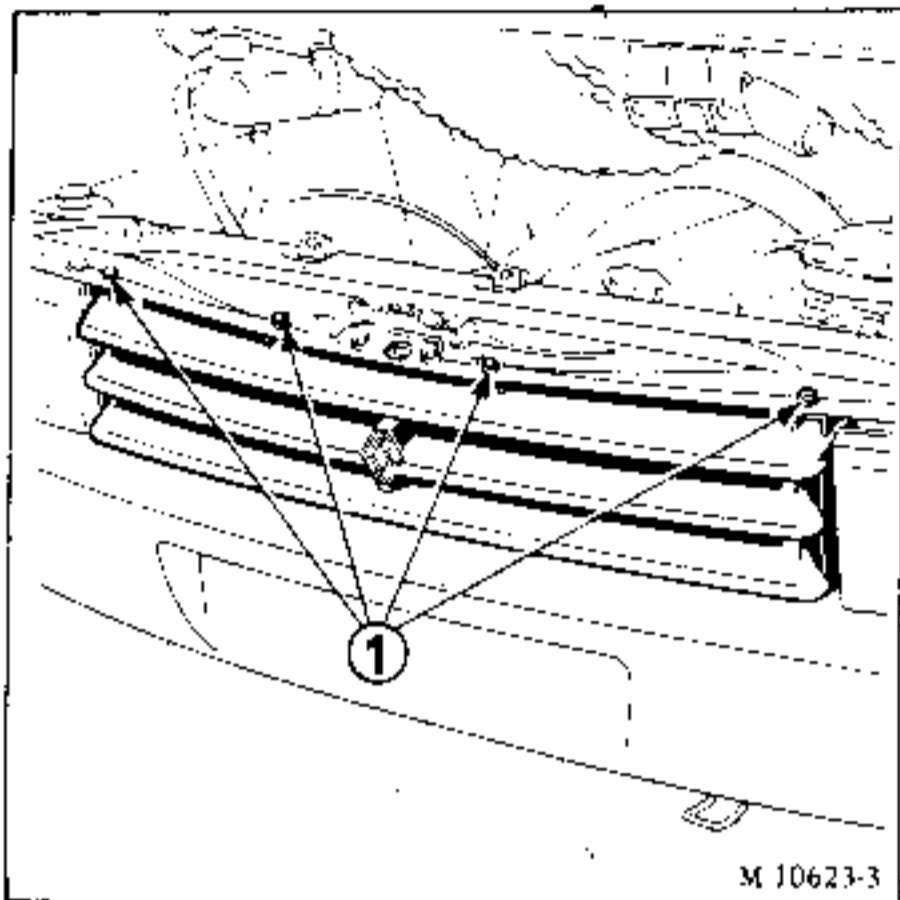


PAINTING : Struc-coat.

Carry out paint application sequence no.1.

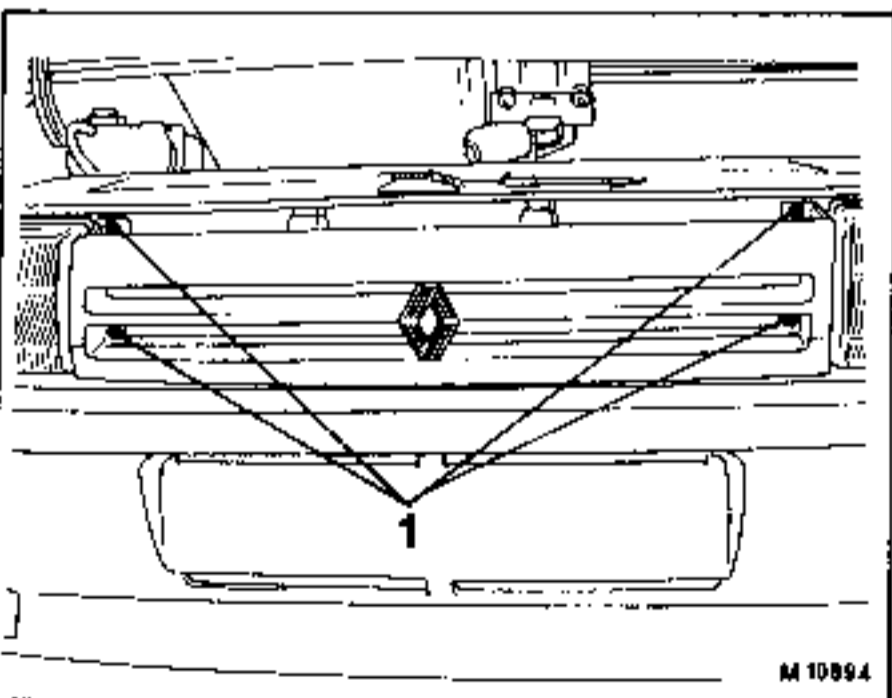
Replacing :

1) Early type vehicles

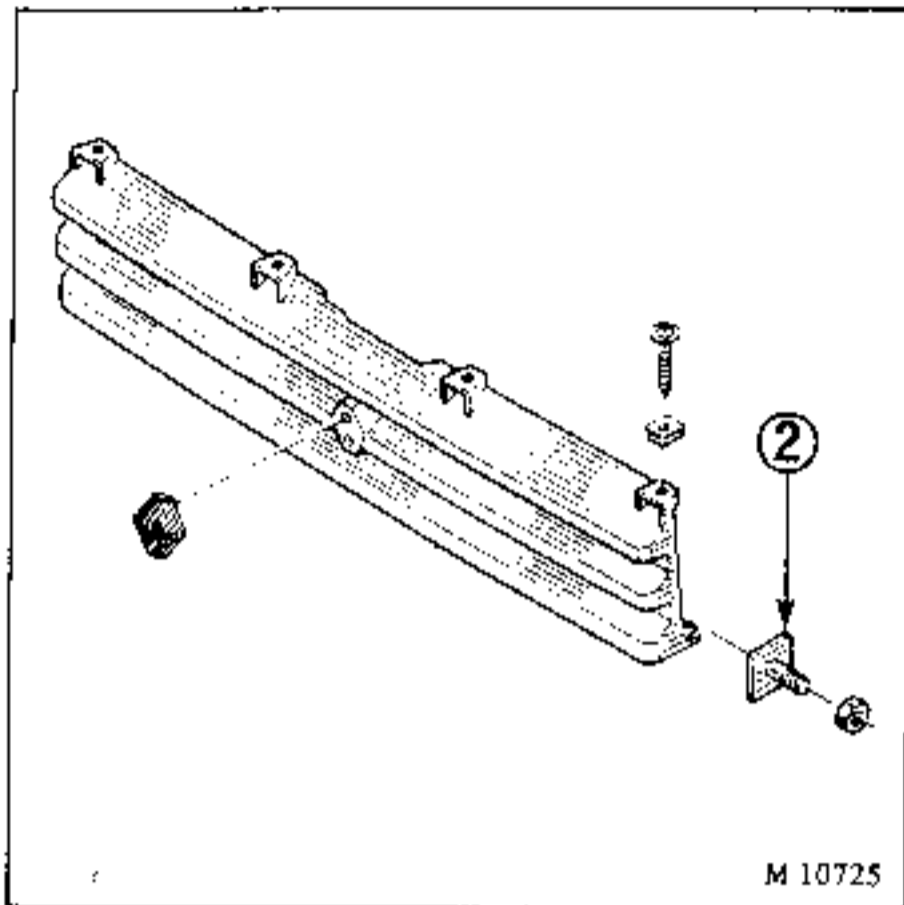


- Remove the 4 screws (1) that secure the radiator grille to the upper crossmember.

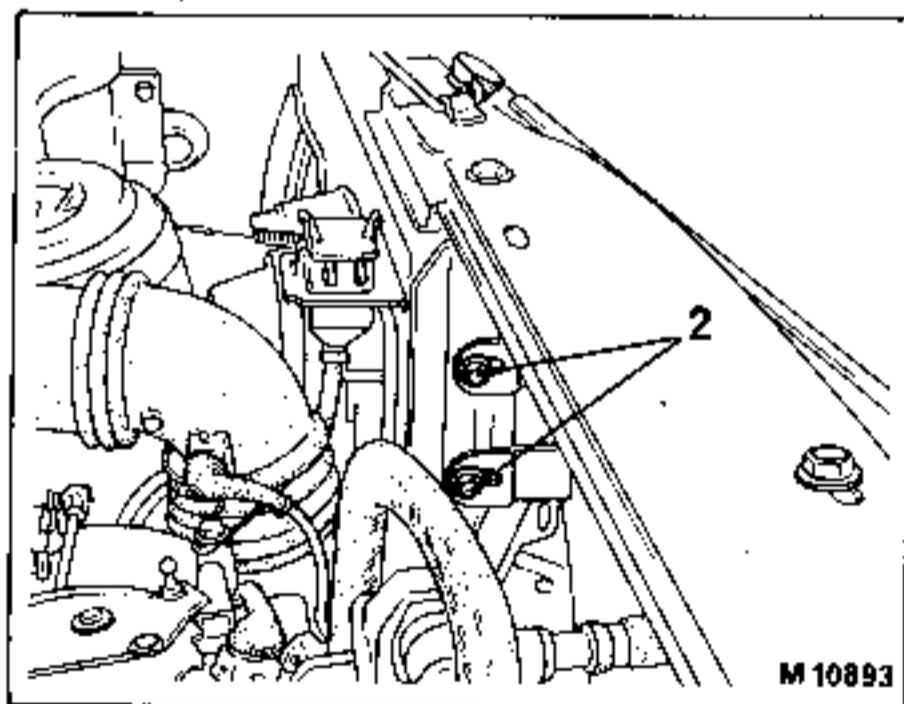
2) Later type vehicles



- Remove the 4 screws (1) that secure the radiator grille to the supports.



- Remove the 2 screws (2) that secure the lower lugs to the headlight support panel upright.
- Remove the radiator grille.

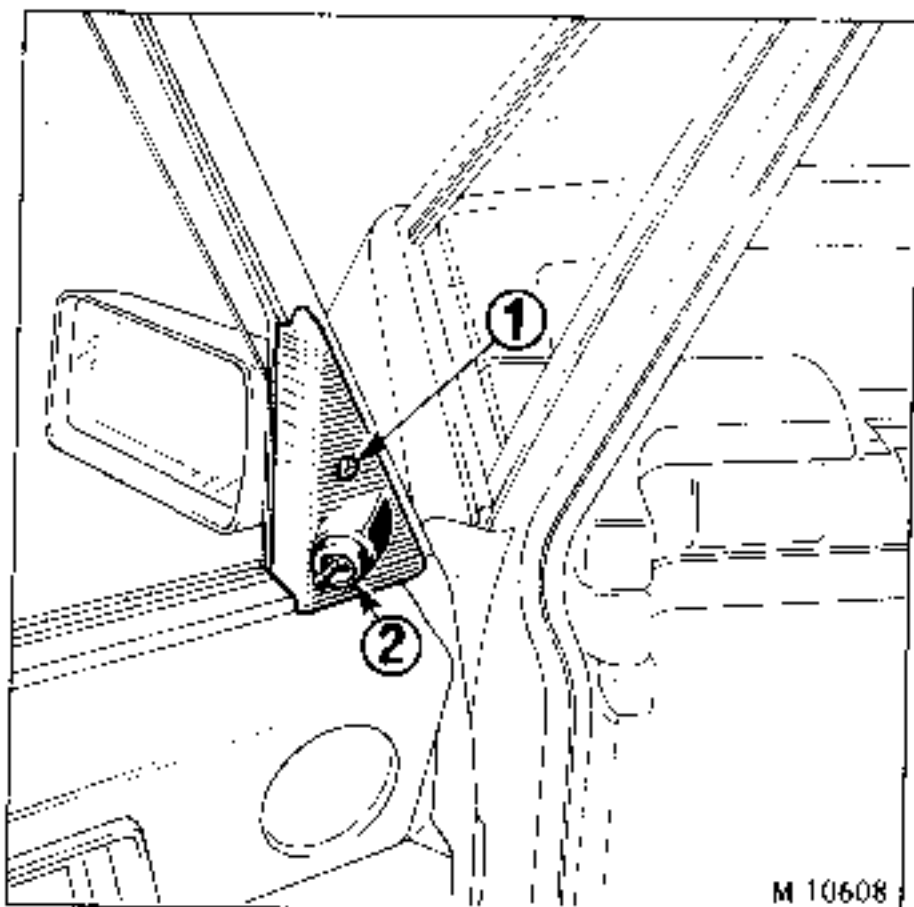


- Remove the 2 screws (2) that secure the radiator grille supports.

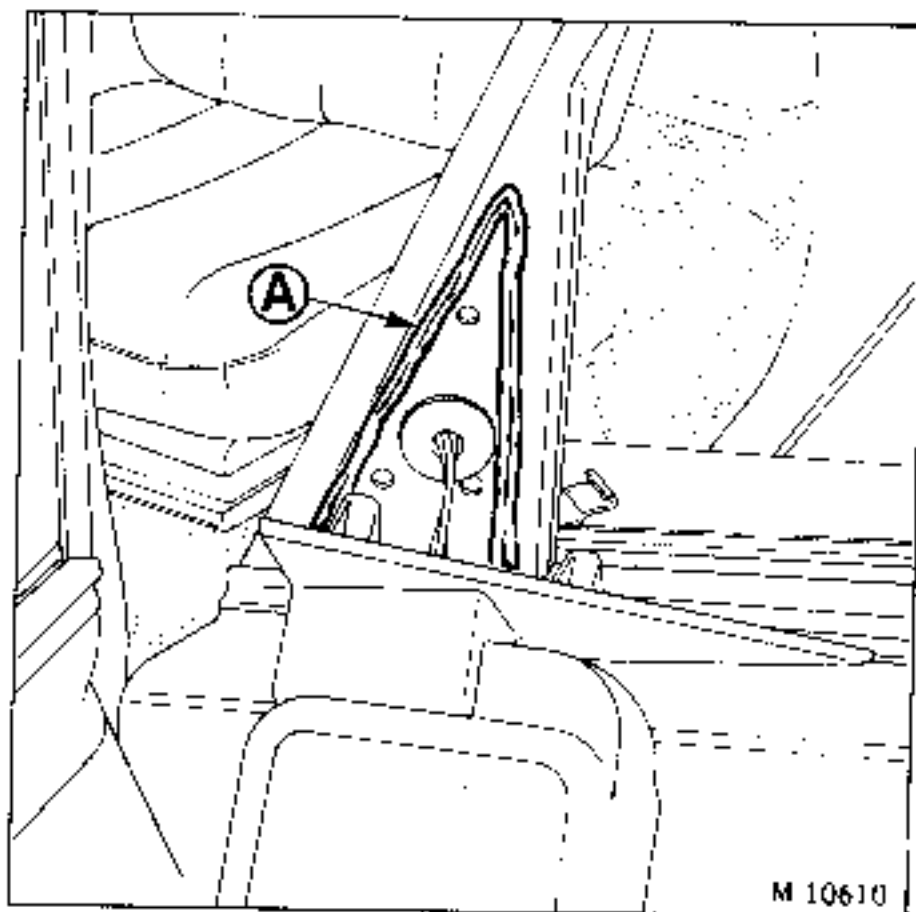
PAINTING : Body finish paint

Replacement radiator grilles are supplied in primer. Rub them down before painting.

Removing



- Remove the screw (1) from the inner trim piece.
- Remove the nut (2) that secures the control lever in place.
- Remove the inner trim piece.

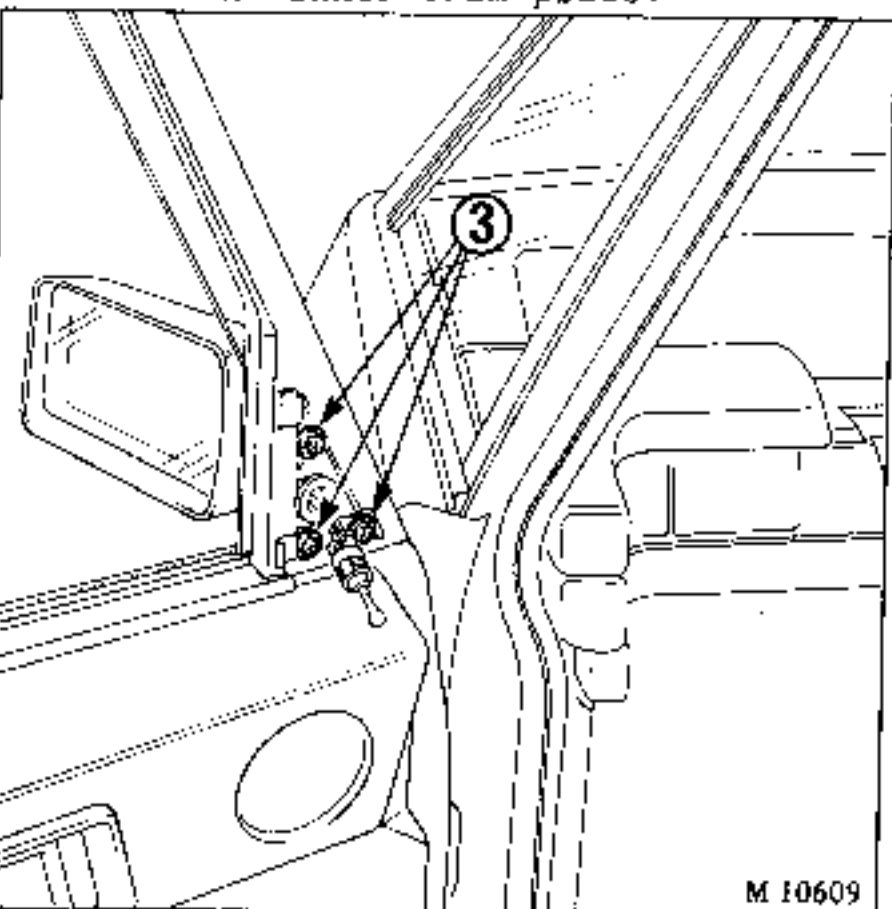


- Free the rear view mirror by pulling it outwards.
- Remove the control grommet and remove the assembly.

REFITTING :

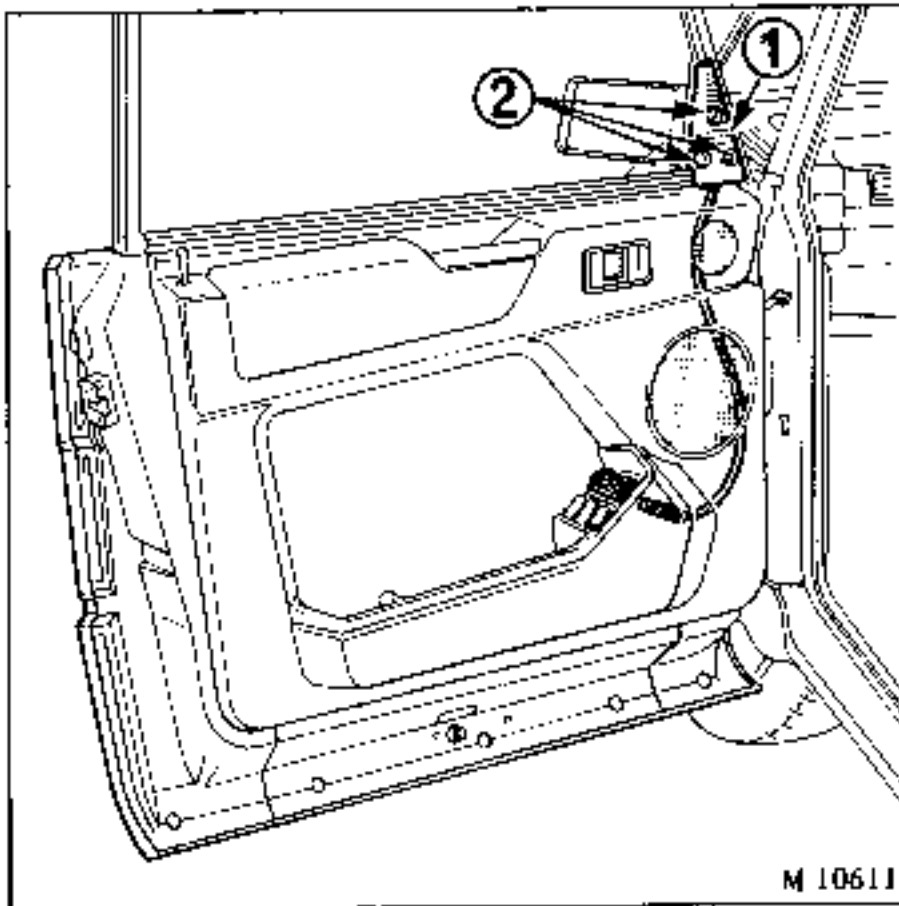
Special feature :

Before refitting, apply a fillet of sealing mastic 5 mm in diameter to the door in area (A) to seal the assembly.

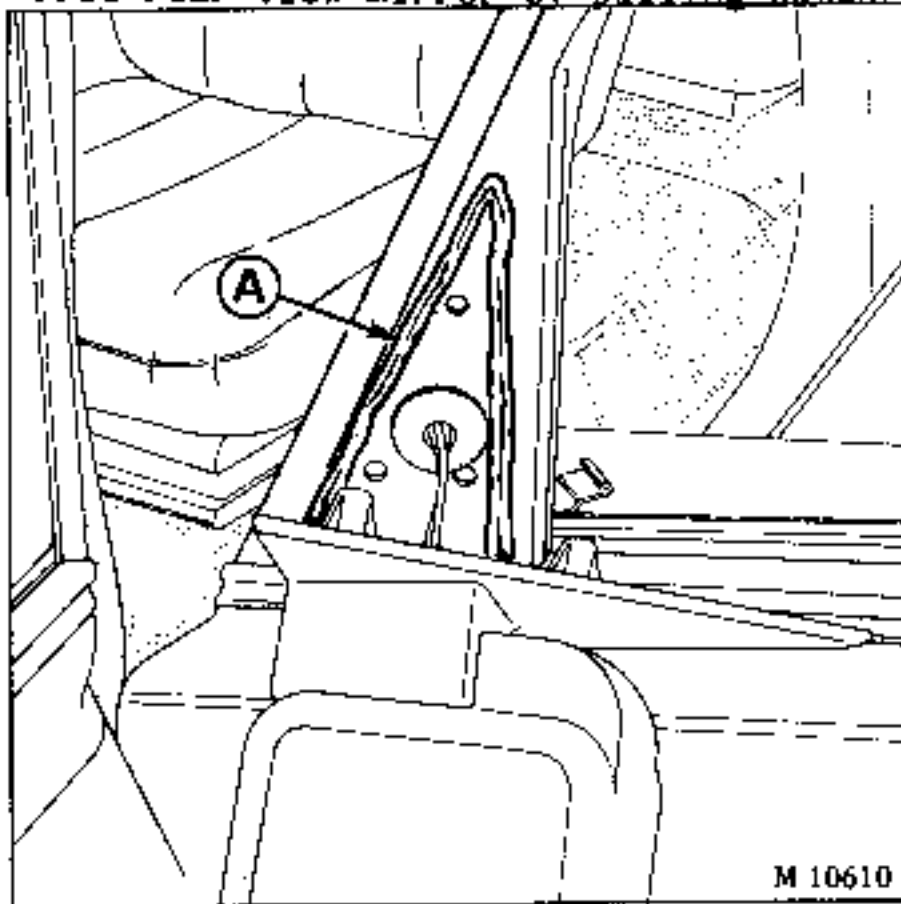


- Remove the 3 screws (3) from the inner support.

Removing the electric external rear view mirror



- Remove the inside trim to gain access to the rear view mirror wiring.
- Remove the screw (1) from the inner trim piece.
- Remove the trim piece.
- Remove the 3 screws (2) from the inner support.
- Free rear view mirror by pulling outwards.



Refitting

Special feature :

Before refitting, apply a 5 mm diameter fillet of sealing mastic to the door in area (A) to seal the assembly.

PARTIALLY REMOVING

Partial removal of the cant rail trim (to remove the scuttle panel, the windscreen, to carry out a plastic component repair etc.) does not mean that the trim piece has to be entirely replaced.

The double face adhesive can be partially replaced by the following method :

- Parts required : roll of 3M double face adhesive - 4205 (length 10m, width 12.7mm) ref. 60 25 070 397.
- Consumable Heptane degreasing solvent.
- Tooling : hot air torch.
- Method : with the trim still on the vehicle.
  
- Remove the adhesive from the trim piece in the area on which it has been unstuck. To do this, heat it (to 40°C) with the hot air torch then roll it off with the finger.
  
- Clean off any remaining adhesive from the trim piece and the body using a cloth dipped in Heptane solvent.
  
- Heat the trim piece (40°C) to which the adhesive is to be applied, apply adhesive, pressing it down hard and cut it off to length.
  
- Carefully degrease the areas to which the trim piece is to be stuck on the cant rail and on the windscreen (if necessary) and heat these areas (to approximately 40°C). Press down the trim piece hard, ensuring that it is correctly aligned.

Note : Additional bonding using adhesive seal (gurit) as described in M.R. 272 is no longer necessary if this adhesive is used or on trim pieces supplied by the Parts Department which have orange coloured protection on them.

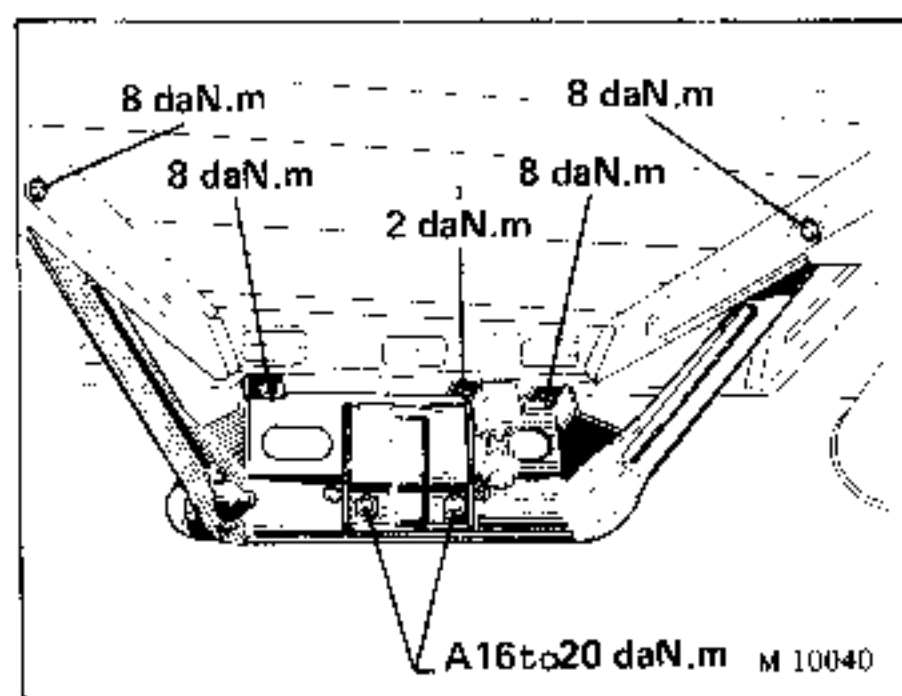
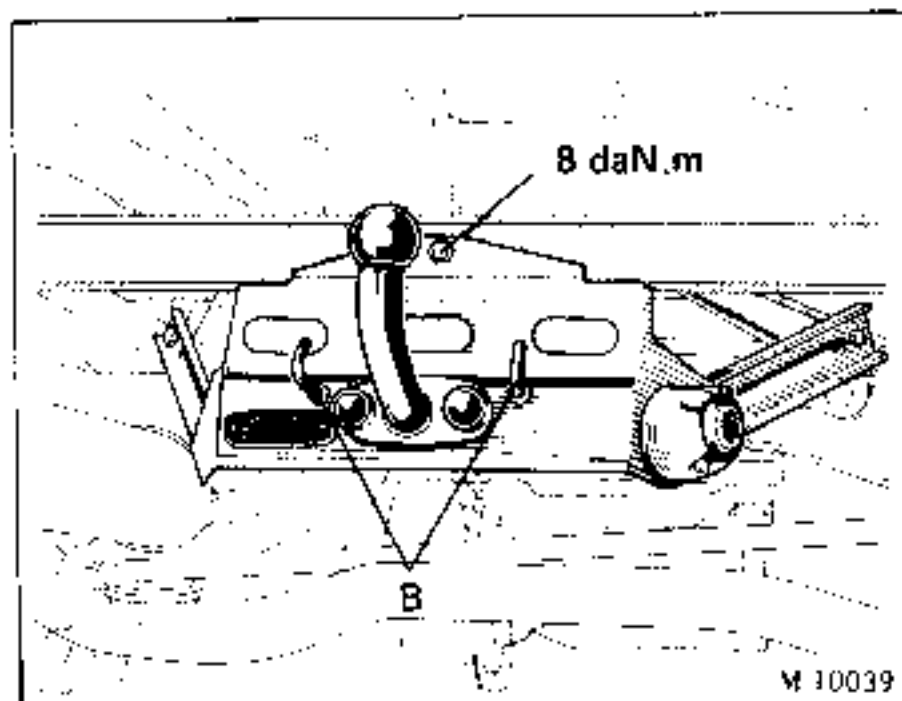
## FITTING A 1,100 Kg TOW BAR TO A PHASE I VEHICLE

## Fitting the tow bar

Remove the spare wheel and the rear bumper shield.

Offer up the tow bar and secure it in place with the nuts and bolts provided.

Tighten all the nuts and bolts to the specified torque, including the ball fastenings (A) to 16 to 20 daN.m and the safety hooks (B) to 2 daN.m.



## Fitting the wiring

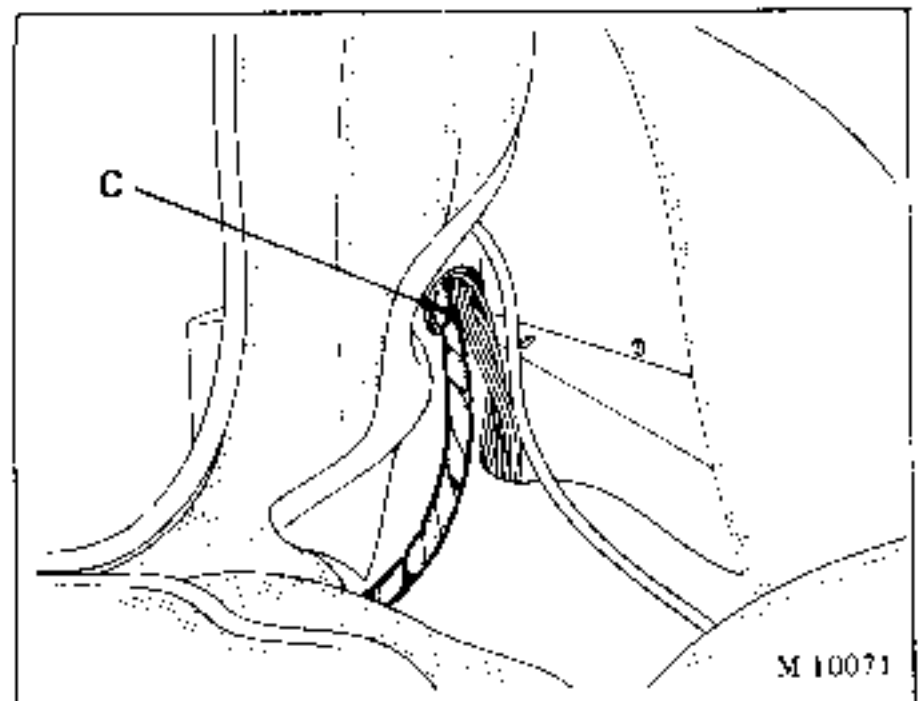
Disconnect the battery.

Remove the left-hand rear light.

Partially remove the trim from the floor.

As seen when looking at the vehicle from the rear, mark a line parallel with the body centre line, 247 mm to the right of the spare wheel carrier bolt. The point to be drilled is 80 mm from the rear edge of the floor.

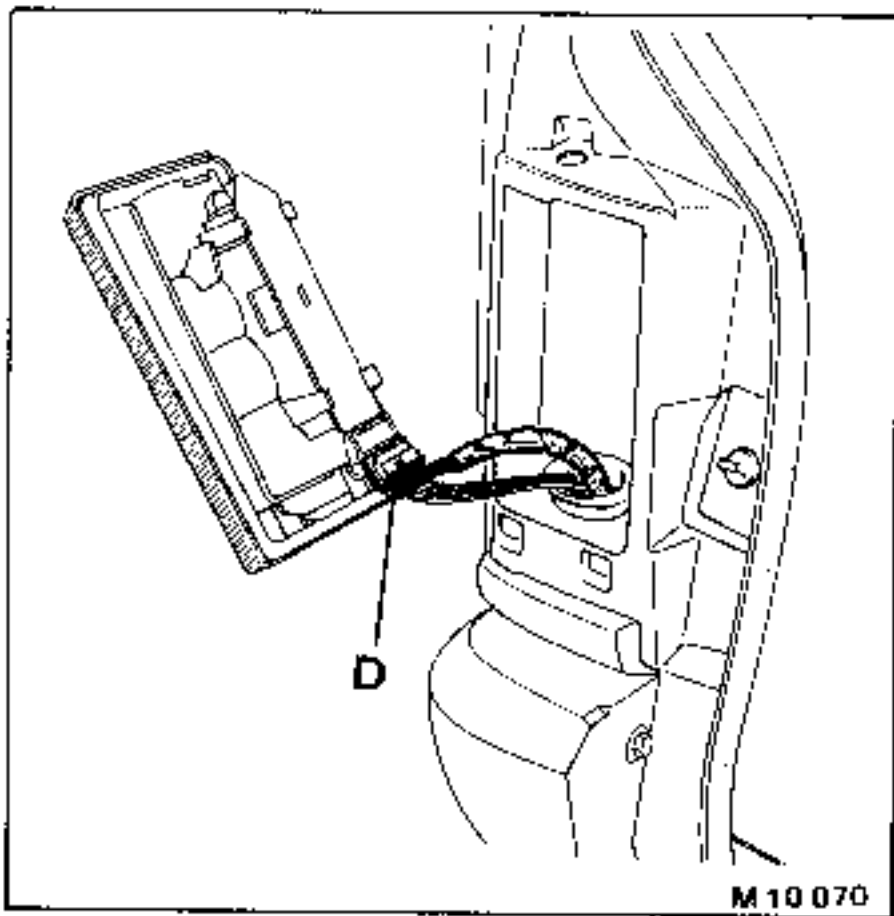
Drill a hole 21 mm in diameter at this point to take the cable grommet through which the wiring will pass.



Pass the wiring harness under the floor mat to the left-hand rear light.

Pass it through the rear left-hand door pillar in the same place as the rear light wiring at (C).

Connect the clip holder to the rear light connection plate (D).

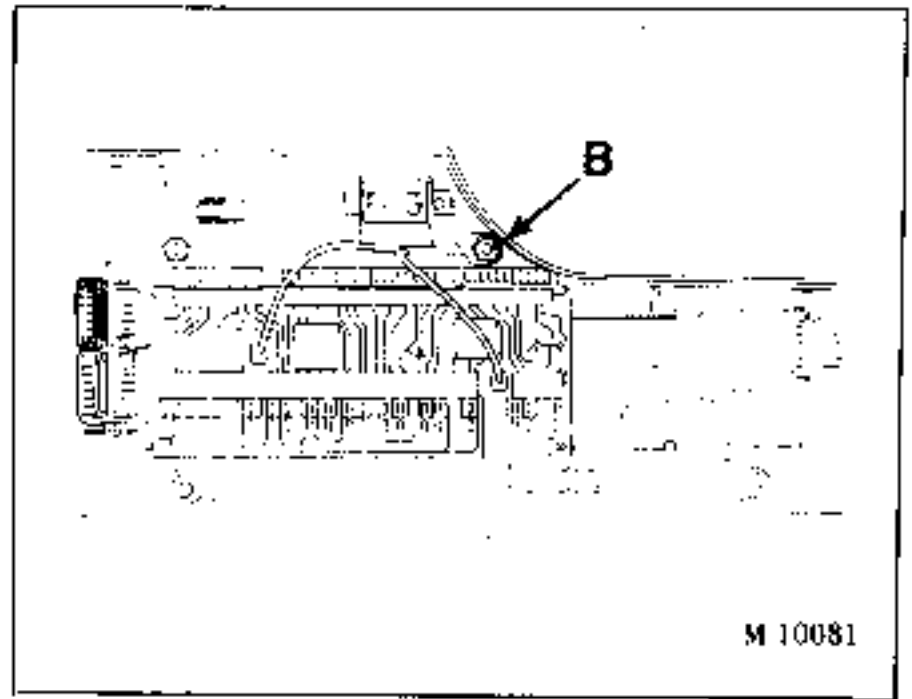


Under the vehicle, connect the main supply harness to the plug on the right-hand side of the tow bar and connect the additional wiring to the left-hand plug.

#### CARAVAN LIGHTING

The power supply for the caravan lights and various pieces of electrical equipment is through a wire in a 5 mm diameter PVC sleeve.

Pass the wiring under the floor mat to the accessory connection plate and connect it to the + terminal (B).



A 15 Amp fuse protects this circuit, near the accessory plate.

**IMPORTANT :** Any unused wires are to be insulated and secured.

After connecting up the wiring, reconnect the battery and test the plugs with a test light.

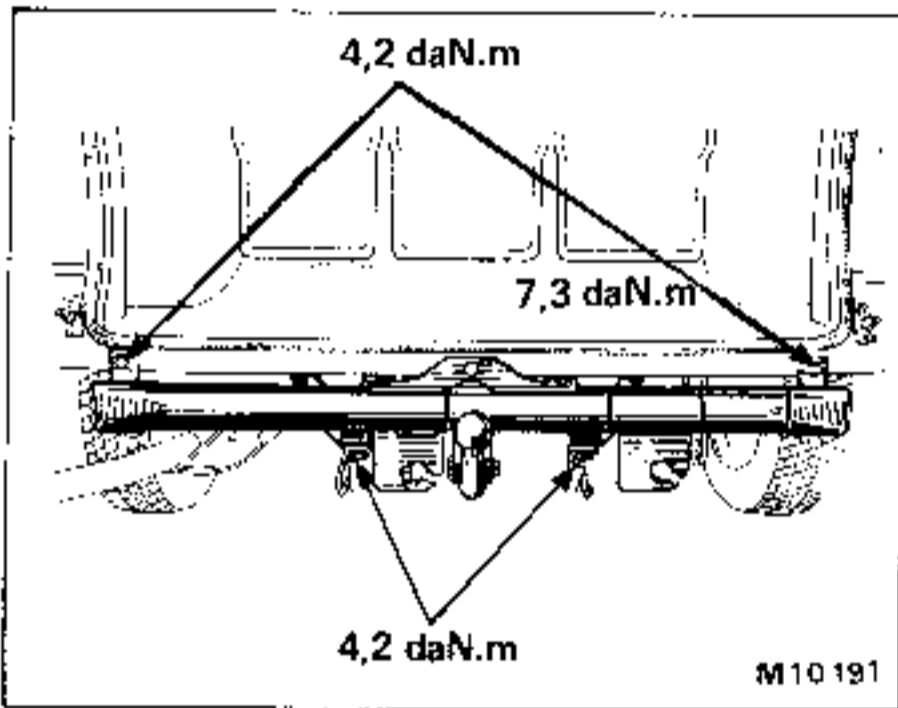
Refit the left-hand rear light, the rear bumper and the spare wheel.

## FITTING THE TOW BAR

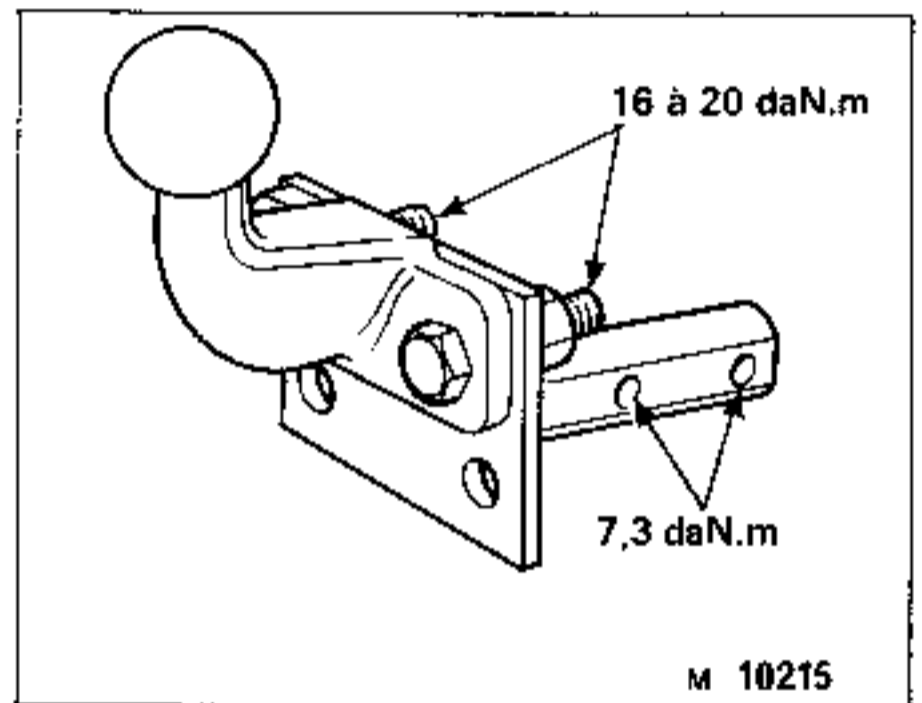
Remove the rear bumper shield and the spare wheel.

Offer up the tow bar and secure it with the nuts and bolts provided.

Tighten all the nuts and bolts to torque.



On this type tow bar one can use either the original ball, tightening it to the specified torque, or an assembly that includes a support for fitting a "TUNES" anti-yaw system and the ball that is special to this arrangement.

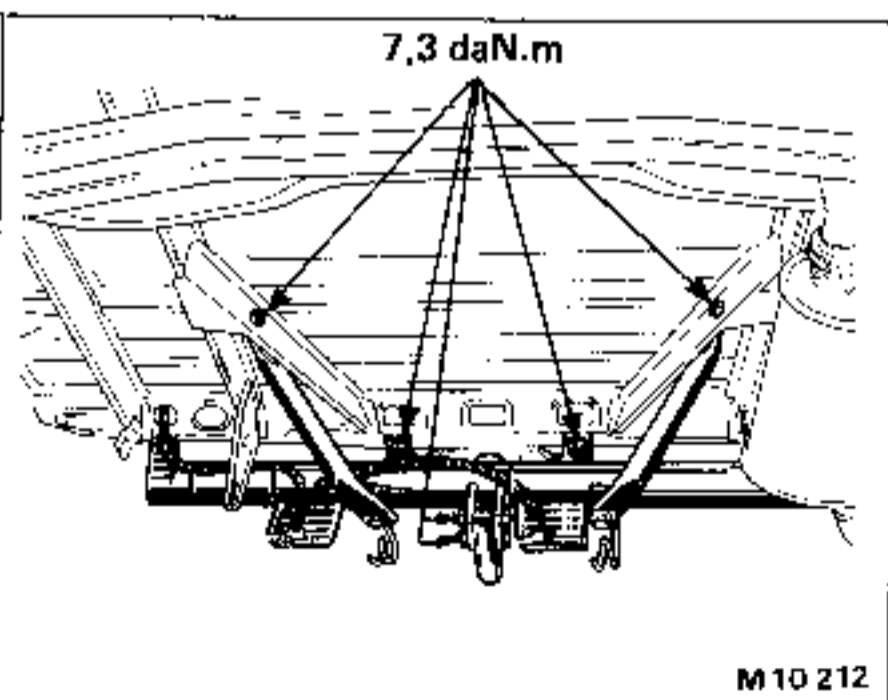
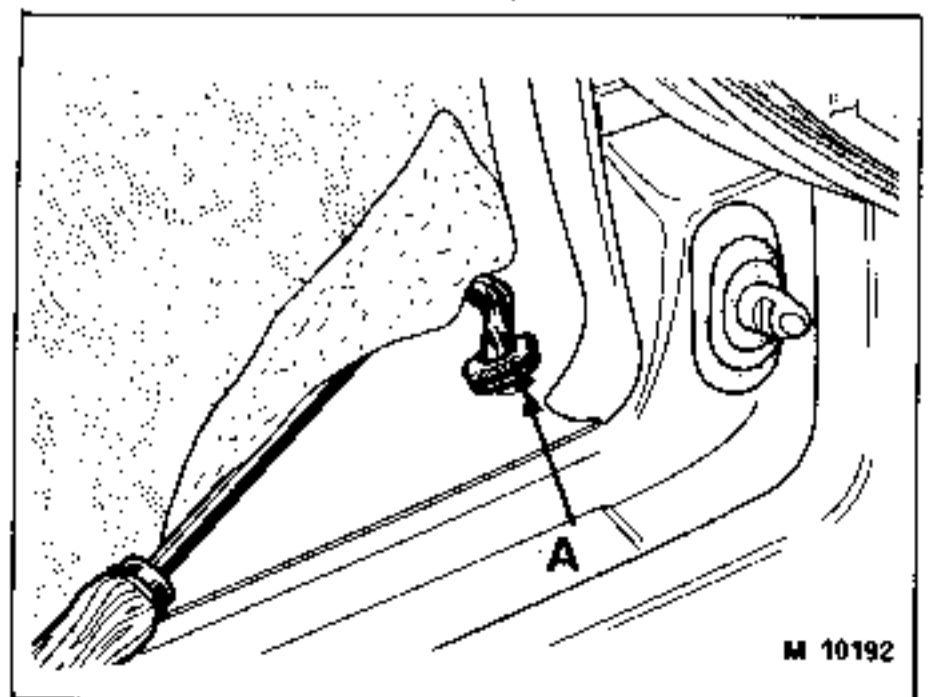


## FITTING THE WIRING

Disconnect the battery.

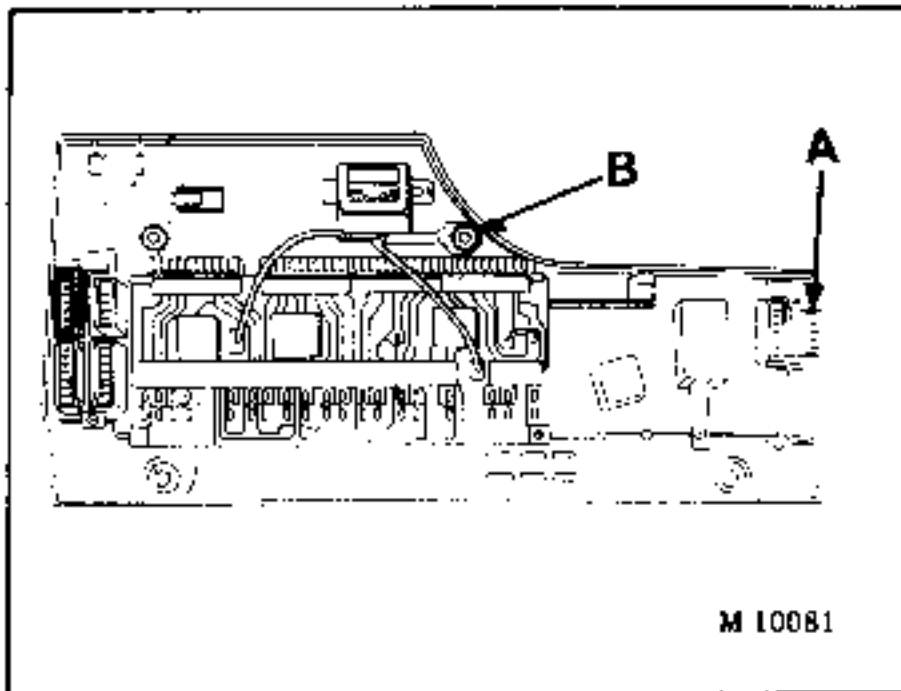
On the right-hand side :

Remove the trim from the rear right-hand corner of the floor and drill a hole 21 mm in diameter (A) for the grommet through which the wiring will pass.





The wiring is passed under the rear floor mat on the right-hand side as far as the accessory connection plate where it is connected to the blue connector (7 pin) on plug (A) and the red wire fitted with a 15 Amp fuse at (B).



#### ON THE TOW BAR

Secure the wiring to the tow bar. Pass it into the support and the plug protector.

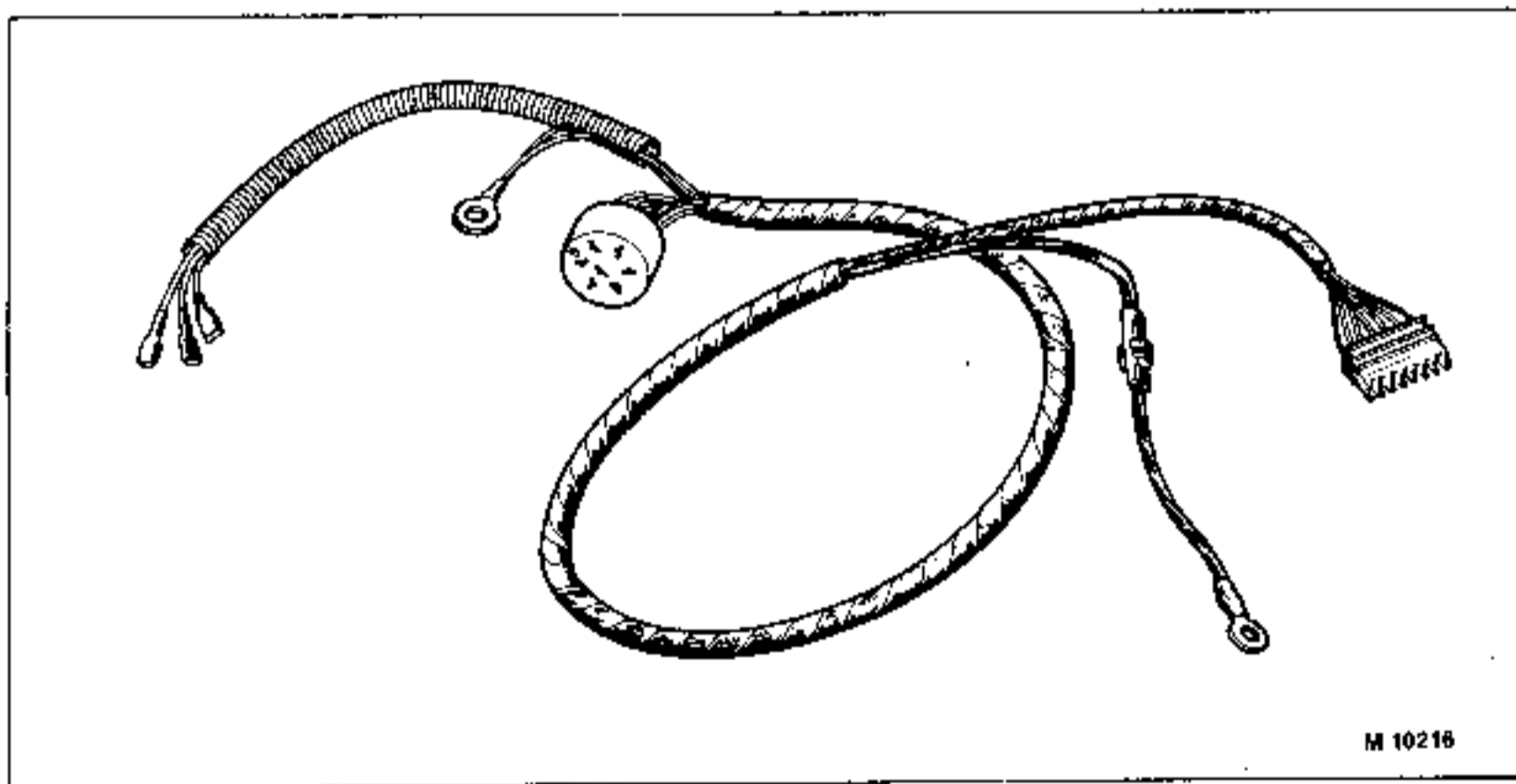
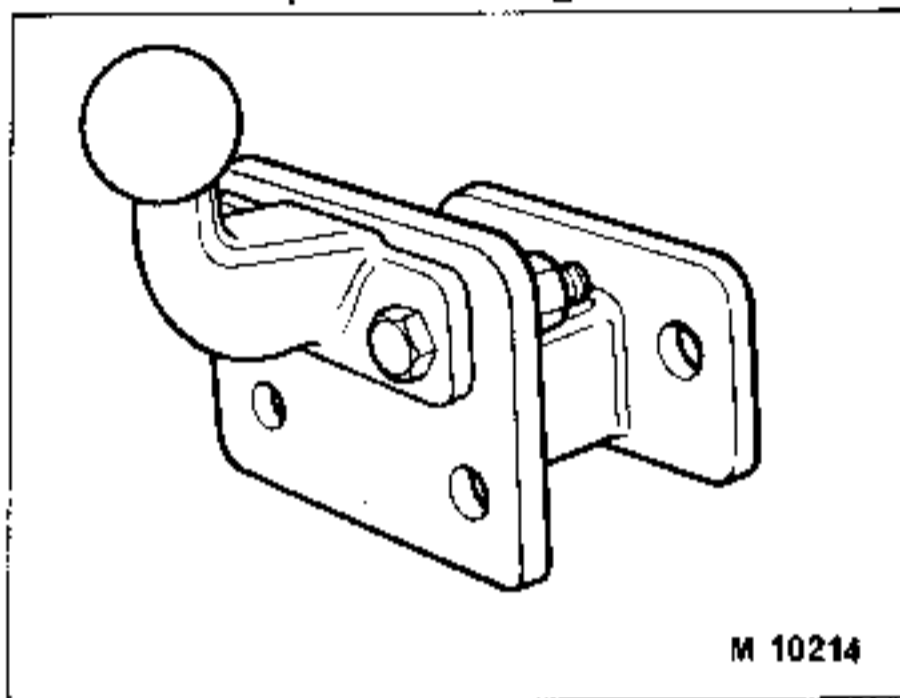
Connect the wires to the connector to suit the trailer wiring or according to one of the charts on the next page but one.

FITTING A 1,100 Kg TOW BAR TO A PHASE II MODEL

FITTING THE TOW BAR

Remove the spare wheel and the rear bumper shield.

The tow bar is fitted in the same way as on previous vehicles except that, in addition, a kit must be fitted that includes a clearance spacer, a ball and a special wiring harness.



FITTING THE WIRING

Disconnect the battery on the right-hand side.

Carry out the same operations as for fitting the 1,800 Kg wiring as regards the position of the wiring and its connection to the plugs.

Description	Wire	Code	Description	Wire	Code
Earths	Black		LH Rear light	Green	Red
Battery +	Red		Stop lights	White	Violet
Rear fog light	Brown		Rear RH dir. ind.	White	Green
Reversing light	Red	Grey	Rear LH dir. ind.	White	Red
RH Rear light	Green				

The wiring harness, as designed, provides connections for the following functions:

On the standard plug :

Stop lights - LH direction indicator - RH direction indicator - LH rear light - RH rear light - rear fog lights - earth.

On the additional plug :

Reversing light - Interior power supply (battery +) - Earth.

On the tow bar bracket :

The earth wire terminal.

#### PLUG 12N (Standard)

Identification on the plug	D.I.N. Standard	Old A.F.N.O.R. Standard	New A.F.N.O.R. Standard (French)
1	LH dir. ind.	LH dir. ind.	LH dir. ind.
2	Interior lighting	No function	Rear foglights
3	Earth	Earth	Earth
4	RH dir. ind.	RH dir. ind.	RH dir. ind.
5	RH rear and number-plate light	RH rear and overall dimension light + number-plate light	Rear light, RH overall dimension light, number-plate light
6	Stop lights	Stop lights	Stop lights
7	LH rear light	LH rear and overall dimension light, number-plate light	Rear lights, LH overall dimension light, number-plate light
			Interior lighting*

Fog lights

A.F.N.O.R. Standard : The numberplate light is to be connected so that no bulb on this lighting system is connected simultaneously to contacts 5 and 7.

\*IF MORE THAN 7 WIRES ARE REQUIRED, THE SECOND PLUG (12S) WILL HAVE TO BE FITTED TO THE LEFT HAND SIDE OF THE TOW BAR BRACKET, AT THE POINT PROVIDED.

The connections are then carried out to suit the trailer installation or according to the trailer manufacturer's instructions.

## STABILISERS

When towing a trailer or a caravan, the inertia and the additional weight may cause, especially when the brakes are applied or when driving over rough roads, momentary down-loads on the rear of the towing vehicle.

To avoid this, we recommend, when the down weight on the tow hook is considerable, or the caravan is a very heavy one, the use of a stabiliser.

## ADJUSTING THE STABILISER

Follow the instructions published by the stabiliser manufacturer and supplied with it.

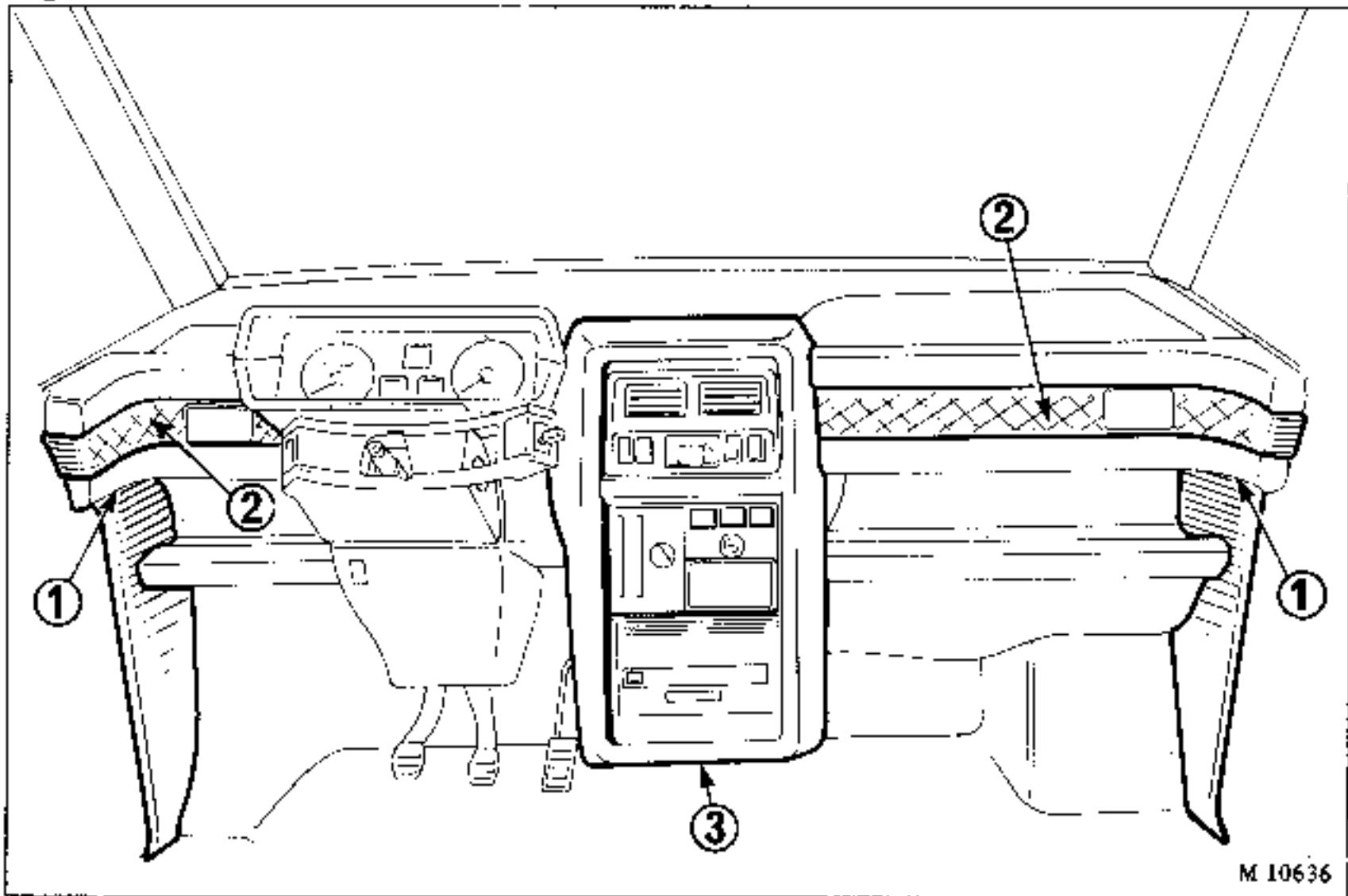
Generally, one must measure the height (between the rear bumpers and the ground) of the vehicle when loaded (with the handbrake released).

The caravan is then to be hooked in place and the stabiliser tensioned to raise the rear of the vehicle to a point a little below the height before the caravan was hooked in place.

Do not forget that there must always be down weight on the caravan tow bar because the tow bar tends to lift a little, when the caravan is moving, because of the pressure of the air under its front end.

NOTE : To fit the stabiliser one must move the safety hooks on the plate. They are originally on the rear face and are to be moved to the side arms on the bracket. Securing holes are provided alongside the securing points for the plug.

Removing :

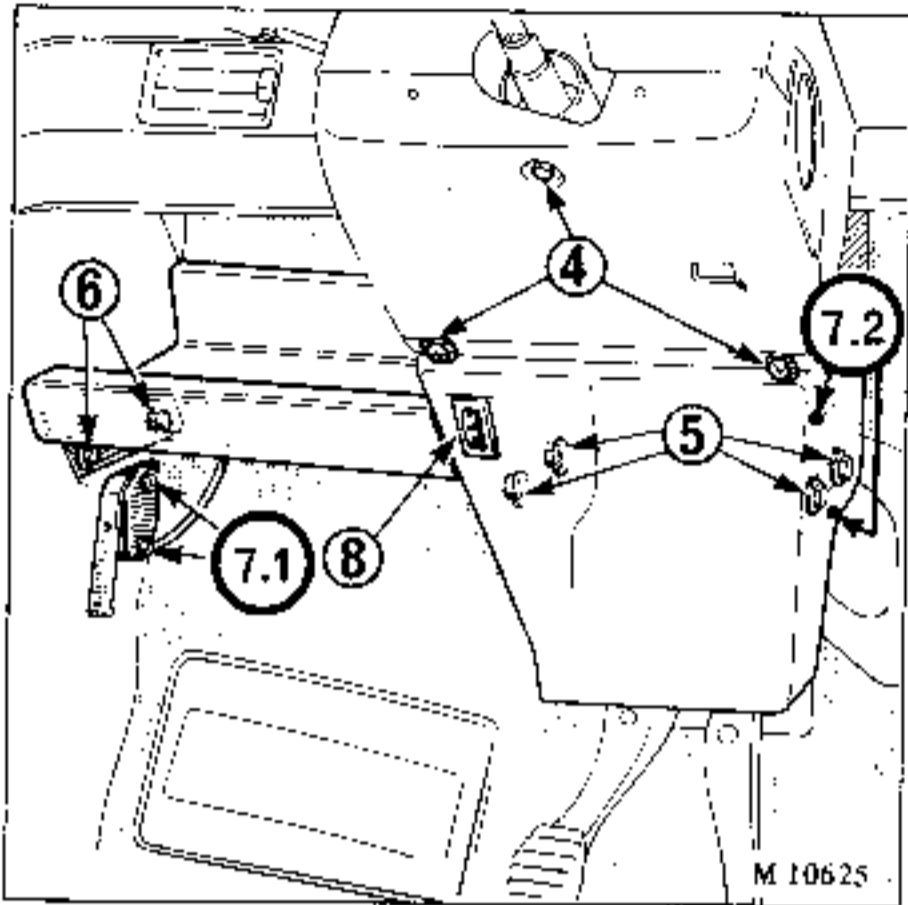


RESUME OF OPERATIONS INVOLVED

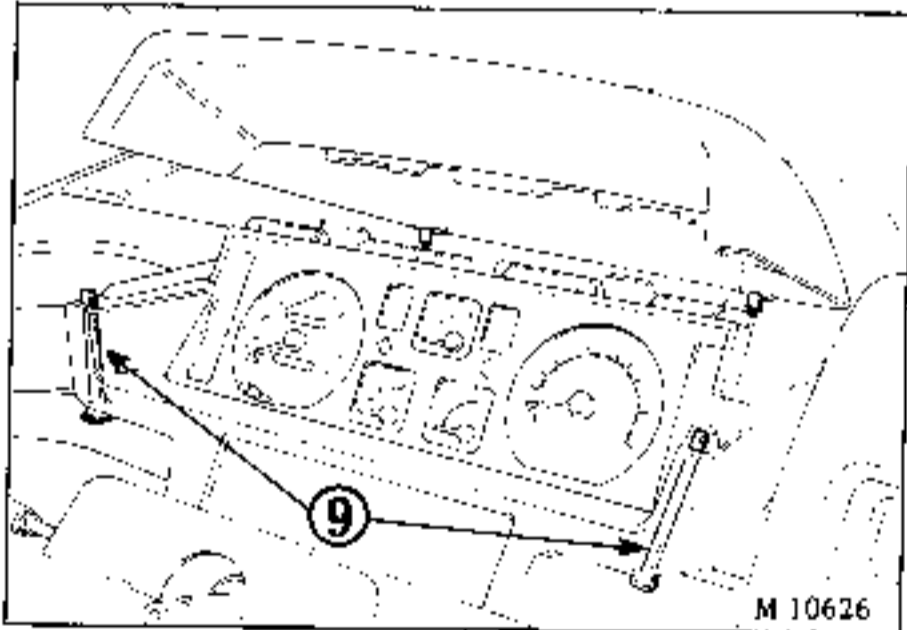
To remove the fascia panel, one must remove several other sub-assemblies to gain access to the screws that secure the fascia panel to the structure.

- Disconnect the battery.
- Remove :
  - the steering wheel,
  - the lower half shell,
  - the upper half shell,
  - the instrument panel upper casing
  - the instrument panel,
  - the instrument panel lower casing,
  - the left hand glove compartment,
  - the pedal cover,
  - the bonnet latch control
  - the right hand glove compartment,
  - the right hand panel from the centre console,
  - the left hand panel for the centre console
  - the front RH and LH door pillar trims,
  - the screws that secure the fascia panel to the structure.

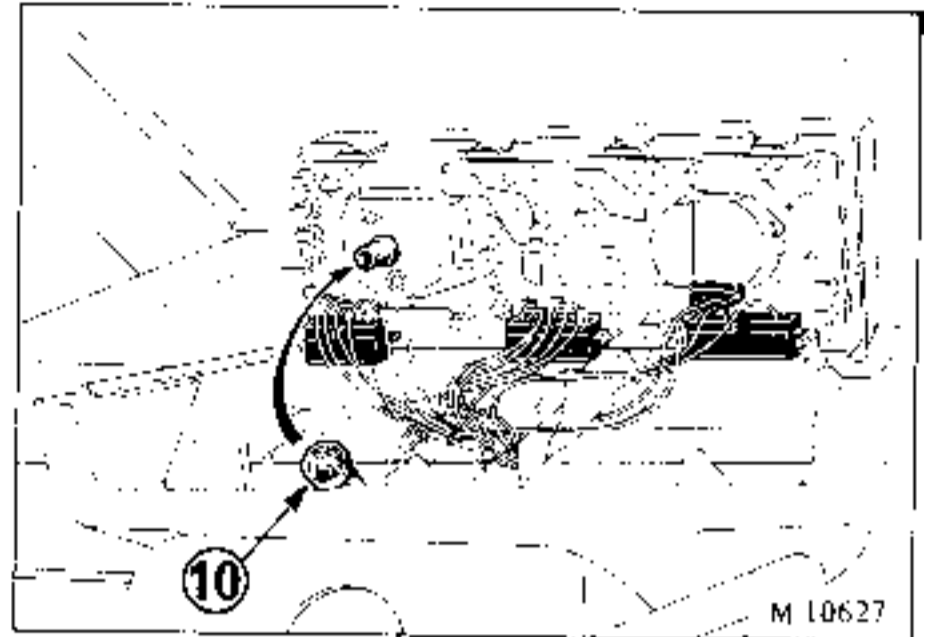
- 1 - Screws on the front RH and LH door pillars.
- 2 - Screws under the trim strip.
- 3 - Screws on the lower part of the centre console.



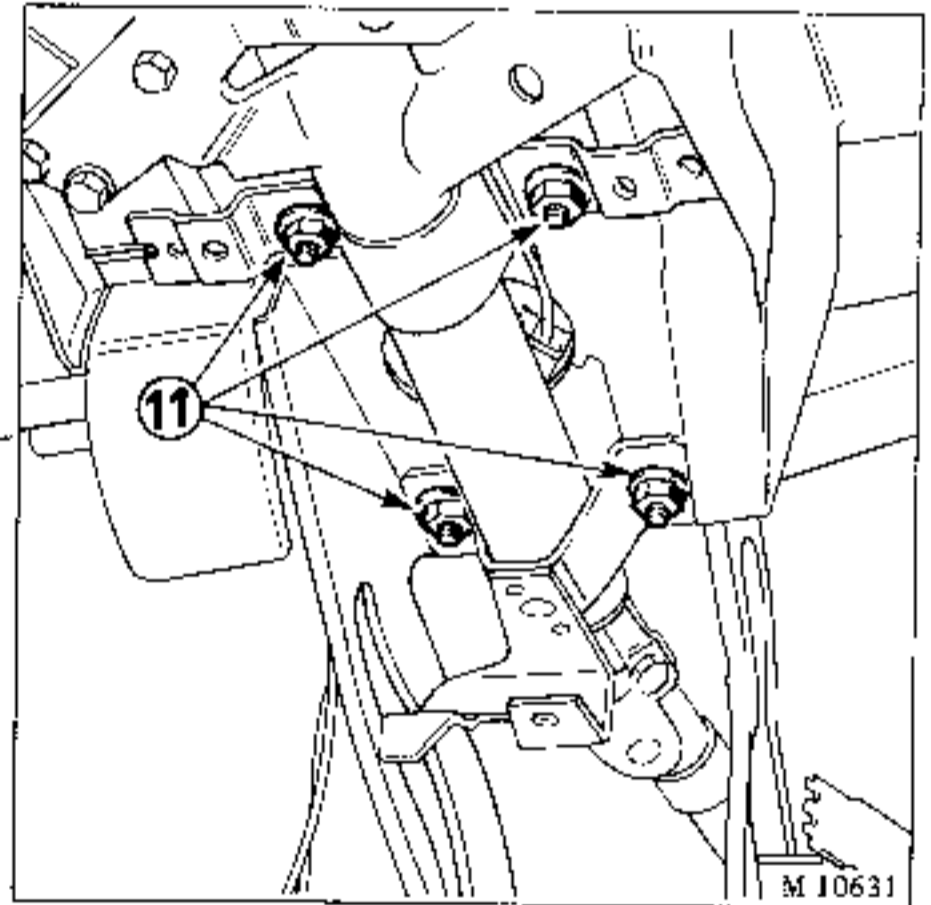
- Remove :
  - the screws (4) from the lower half shell,
  - the screws (5) from the pedal cover,
  - the screws (6) from the left hand glove compartment,
  - the screws (7) from the bonnet latch control :
- 7-1: 1985 models - 7-2: Later models



- Disconnect the lighting rheostat (8).
- Remove the bolts (9) that secure the instrument panel casing.
- Lift the casing and remove it.

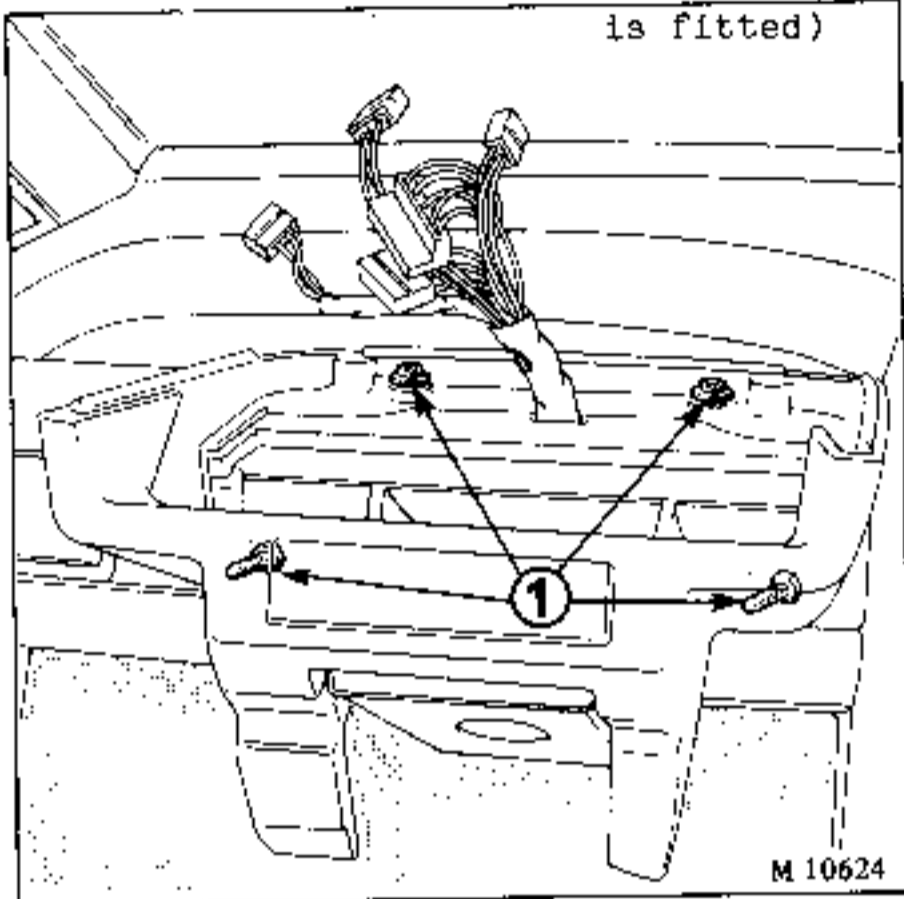


- Disconnect :
  - the speedometer drive cable (10),
  - the connectors from the instrument panel.
- Remove the instrument panel.

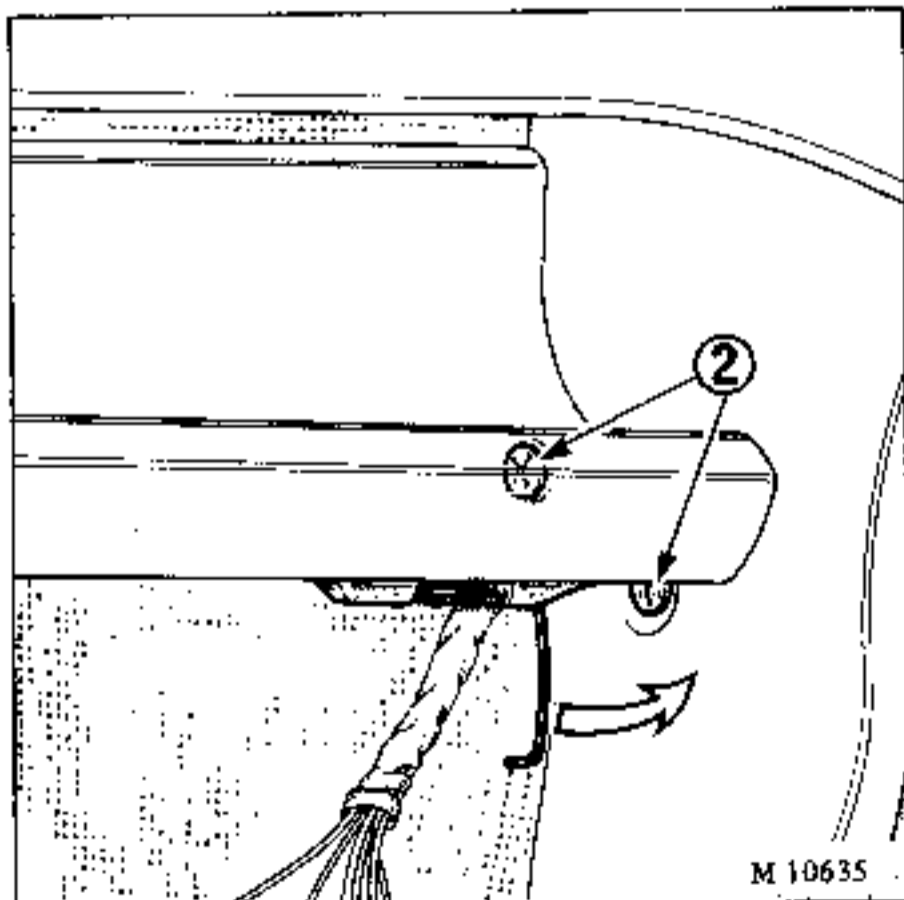


- Remove the nuts (11) that secure the steering column in place (if necessary)

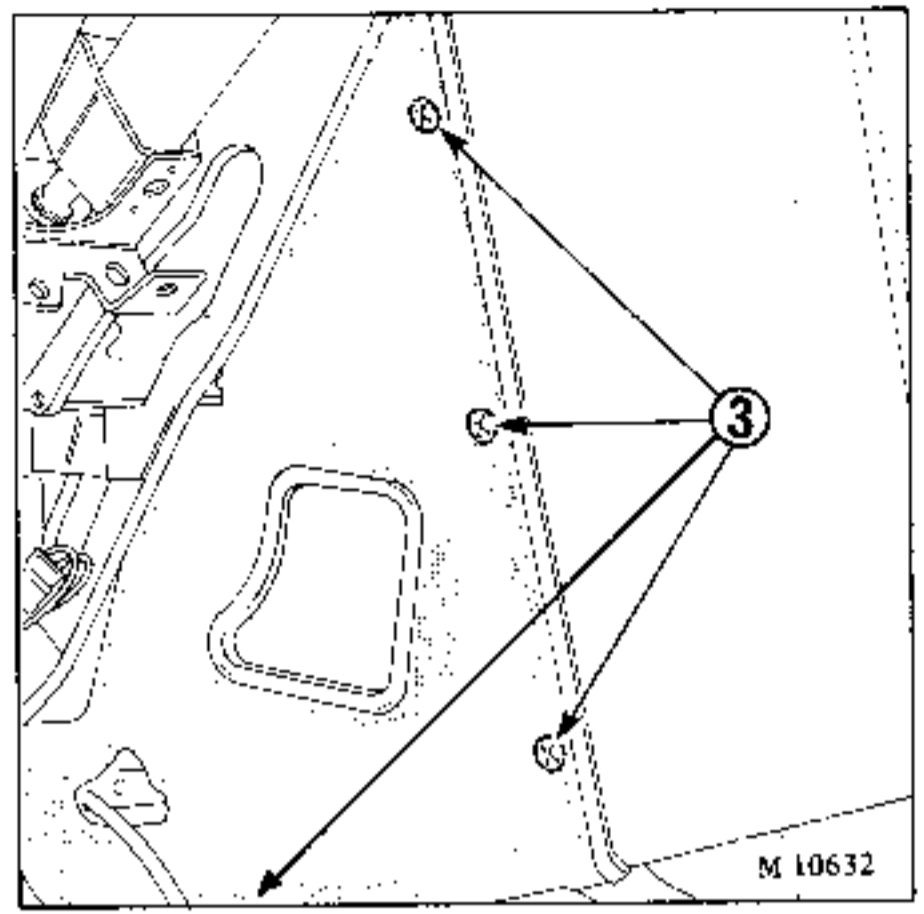
- Disconnect the windscreen wiper connector.
- Remove the upper steering column half shell.
- Disconnect the connectors : from the lighting switch - from the steering lock - earth - from the radio (if this option is fitted)



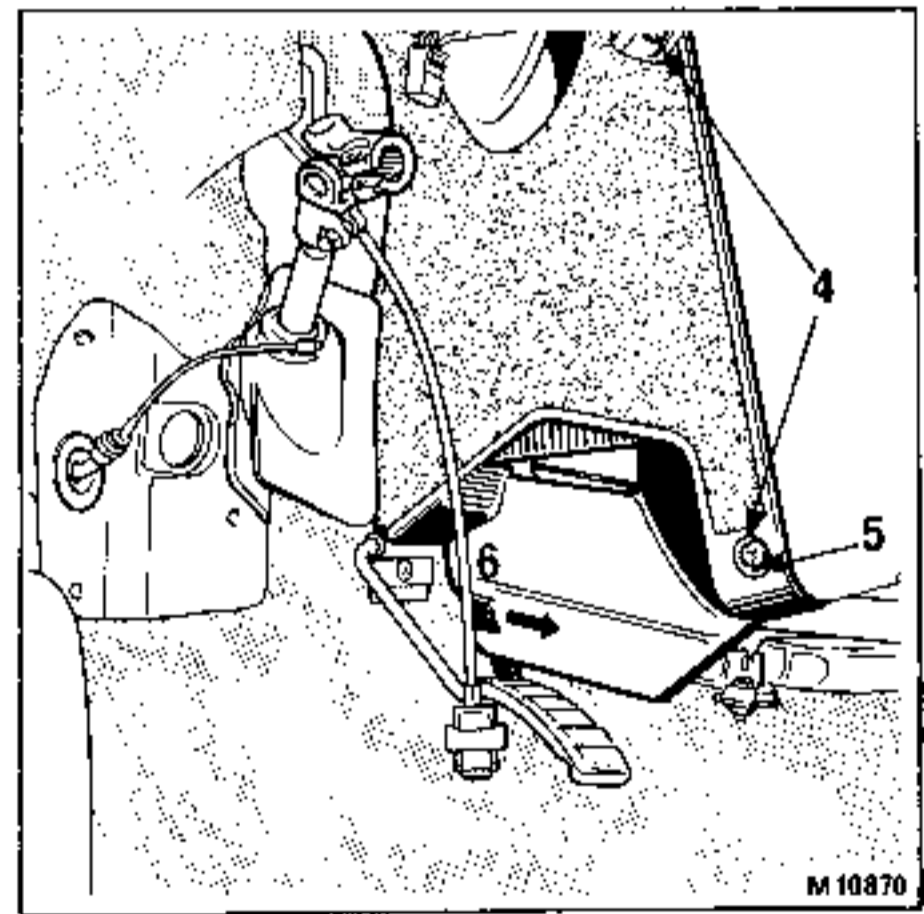
- Remove the upper and lower screws (1) from the instrument panel lower casing.
- Remove the lower casing.



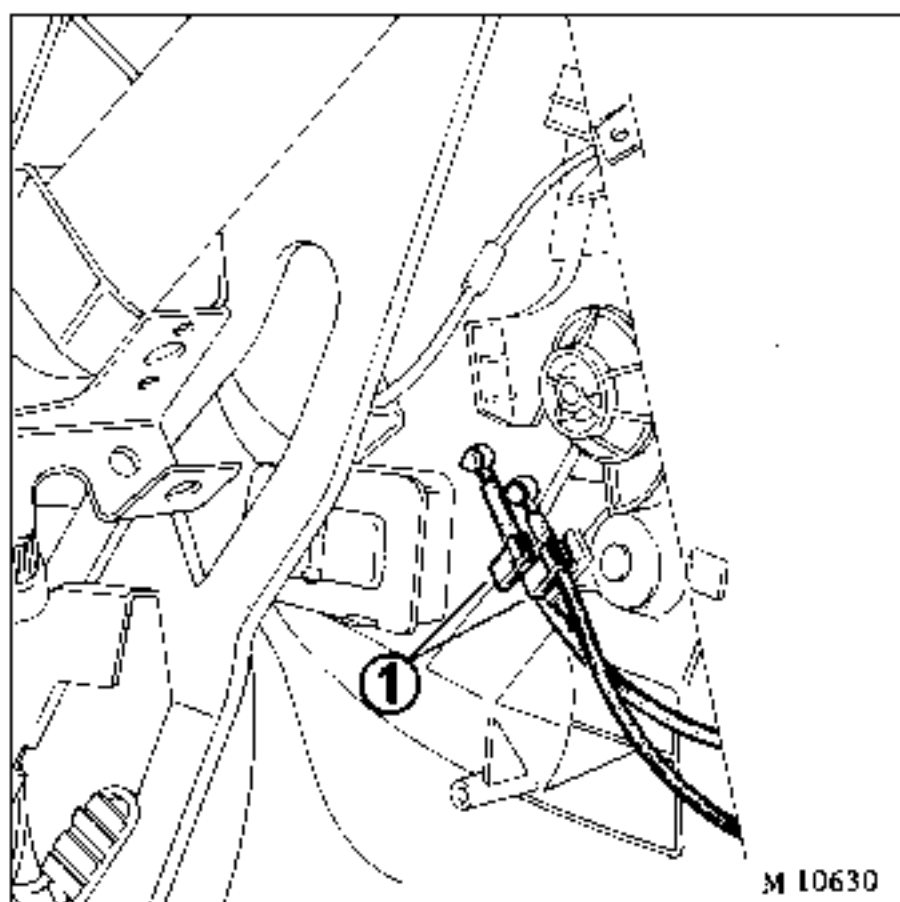
- Open the accessory connection plate.
- Free the pins from the accessory connection plate.
- Remove the 2 RH glove compartment securing screws (2)
- Remove the screws (3) from the console RH and LH panels (up to 1988 model, phase 2).



- Screws (4) after removing the cover (from 1988 models phase 2).
- Unclip the panel from the lug (6) at the rear.



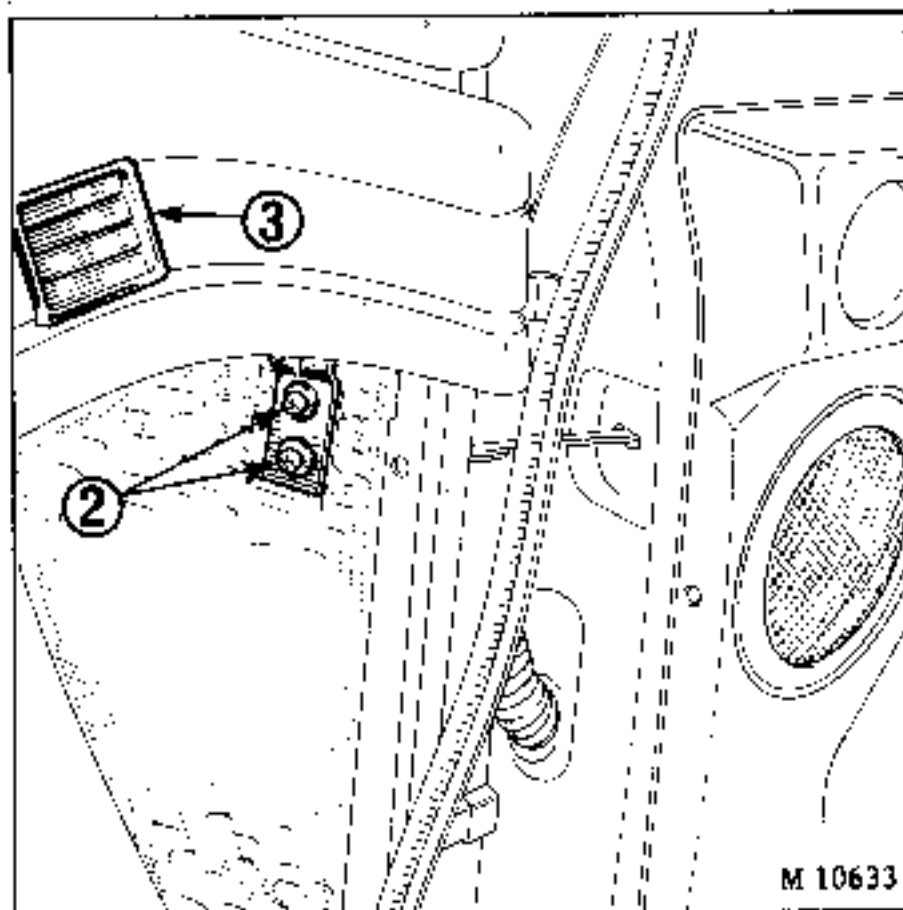
- Disconnect the connections from the additional heating resistance secured to the LH console panel (on certain models).
- Disconnect the connectors on the wiring between the console and the fascia panel.



- Remove the clips (1) from the heater controls, marking their positions, and the position of the cable cover with reference to the clips.

- Free the heater controls.

NOTE : Identify the control connections.

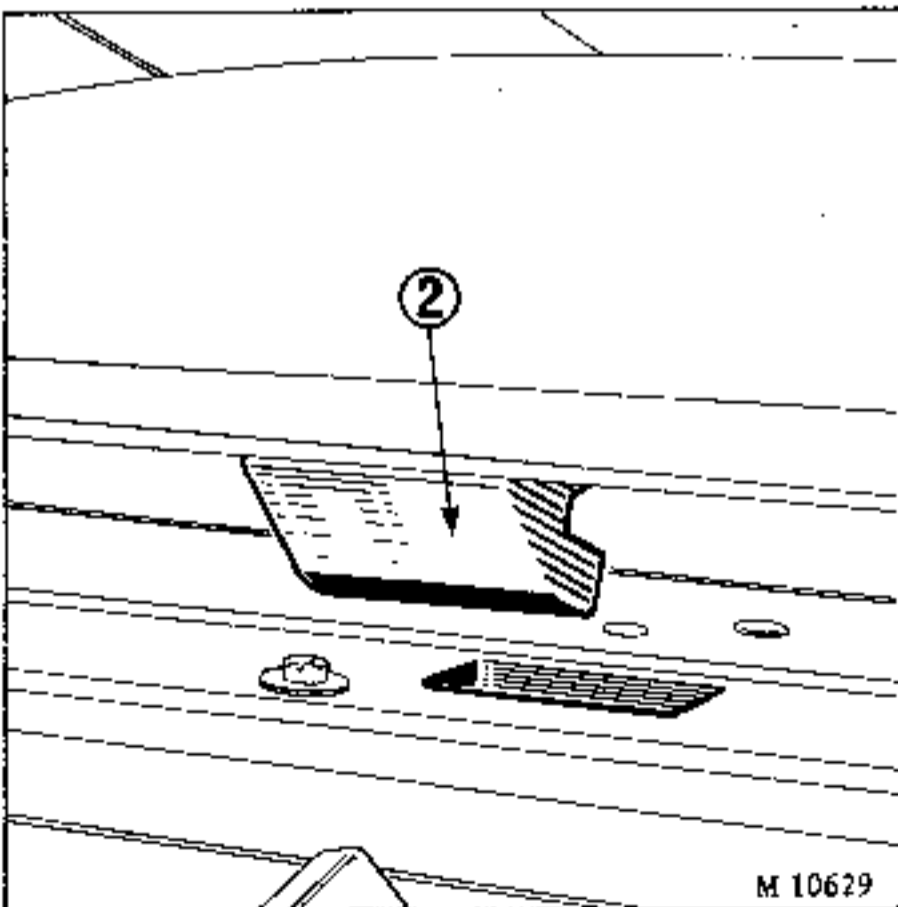
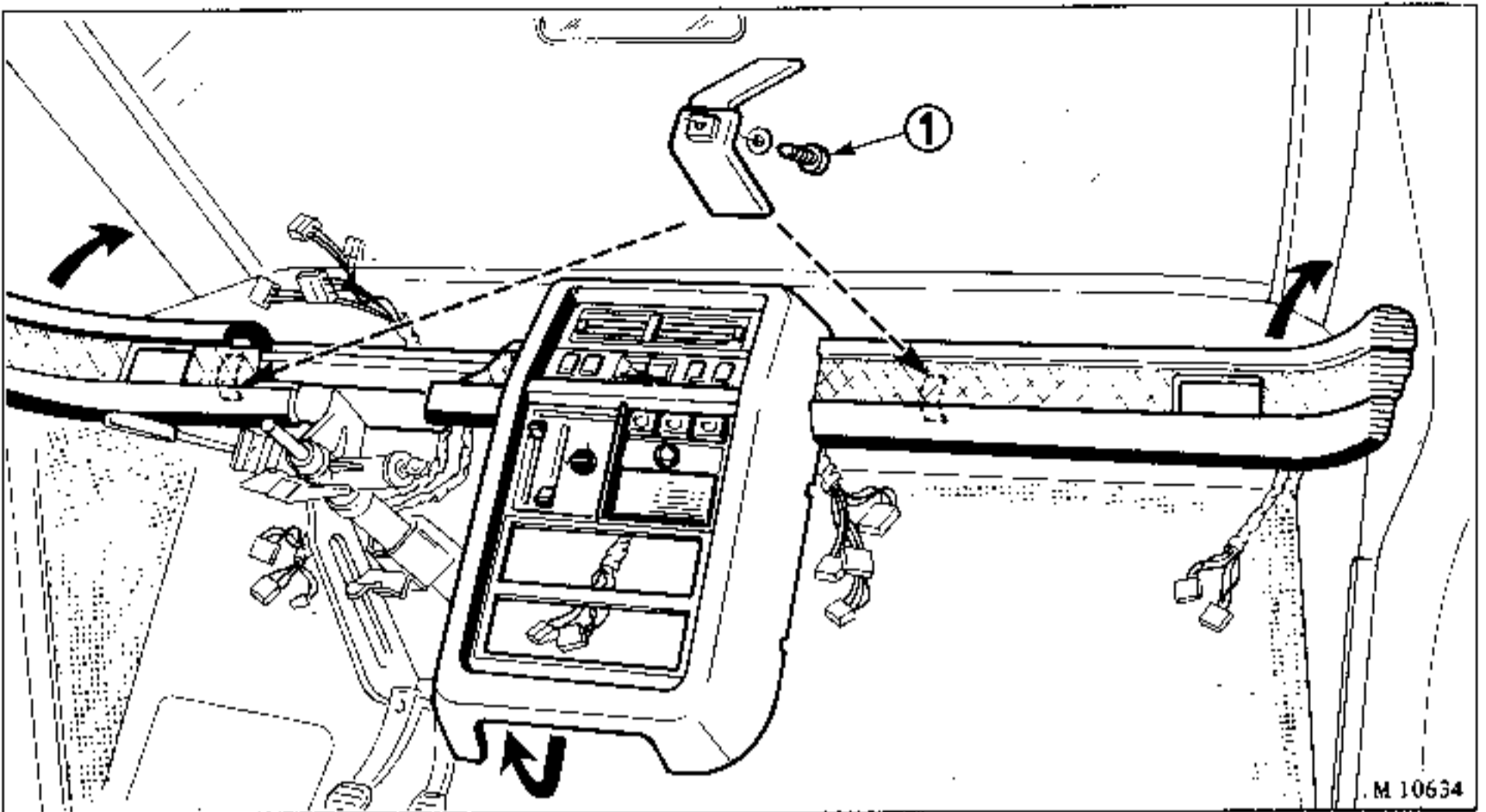


- Remove the screws (2) from the side lugs on the front RH and LH door pillars.

- Remove the side ventilators (3).

- Remove the screw under the centre console.





- Remove the screws (1) from the inner lugs under the trim strip.
- Lift the fascia panel assembly to free the lugs (2) that engage in the cross-member between the door pillars.
- Pull the fascia panel towards you and remove it.

**WARNING**

TAKE CARE NOT TO TEAR THE DOOR PILLAR TRIM WITH THE SIDE SECURING LUGS.

Cleaning :

- Cleaning the fascia panel covering

Greasy stains can be removed with solvent "S27" (Heptane).

Reference : 77 01 407 086 (0.5 litres)

Reference : 77 01 407 087 (0.250 litres).

The only way to ensure that the stains are correctly removed is by following the method described.

VERY IMPORTANT

As the "S27" solvent is inflammable, it is absolutely forbidden to smoke whilst using it

- Dip a white cotton cloth in the "S27".
- Rub the stain with the damped cloth, starting at the centre and moving outwards.
- Renew the section of cloth as it gets dirty.

IMPORTANT :

- Before the stain has dried, rub it again with a clean cloth dipped in solvent to carry the wetted area to the limits of the flat section concerned.
- Finish the cleaning operation by rubbing the area with a clean dry cloth.

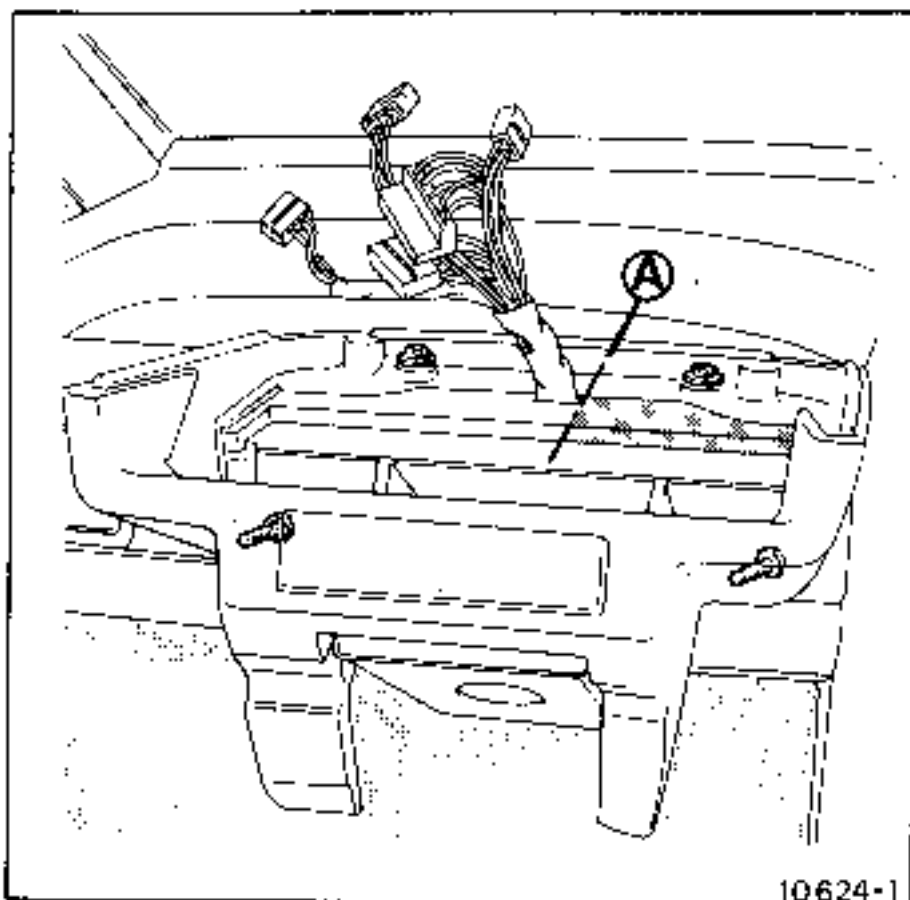
Do not use chlorinated solvents (Trichlore Baltane) on any of the trim.

General cleaning operations on the fascia panel can be carried out with the interior renovation products described in MR501 section Y002.

Removing

It is not necessary to remove the left hand trim strip and therefore the front left hand door pillar trim to take out the centre console.

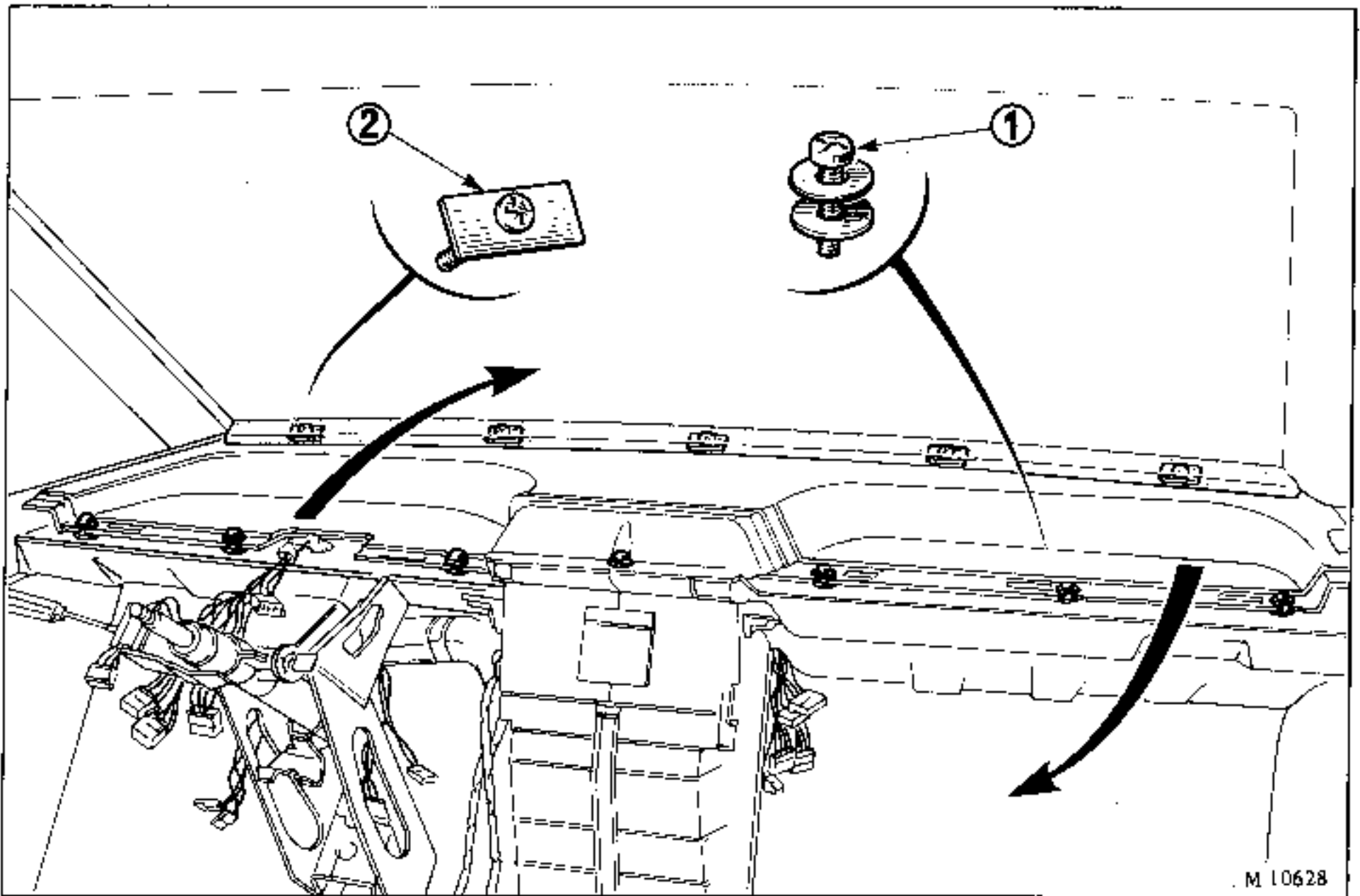
After first removing the instrument panel lower casing, one must saw through the fascia panel strip at (A).



In this way one can remove just the right hand part of the fascia panel.

Removing

This operation involves removing the complete fascia panel assembly.



- Remove the screws (1) on the crossmember between the front door pillars.
- Remove the screws (2) under the fascia panel front trim.
- Pull out the front shelf by swinging it from left to right.

## FITTING THE NEW TYPE, FACTORY OPTION ROOF RACK

From fabrication no. T00 9067, petrol engined version and T00 2631 diesel engined version, ESPACE vehicles are fitted with the necessary fixtures to receive a factory option type roof rack.

The kit (ref. 60 25 070 460) supplied by the Parts Department can be used for both the old type and new type arrangements.

## FITTING

- Remove the bolts that fill the securing points.
- Fit the bases of the roof rack feet.
- Fit the feet and the bars. The bolts to be used for this type arrangement are 6 x 100, 16 mm long equipped with washers.
- Coat the threads with liquid butyl to seal the assembly.
- Fit the bolt covers.

## REMOVING THE SEAL

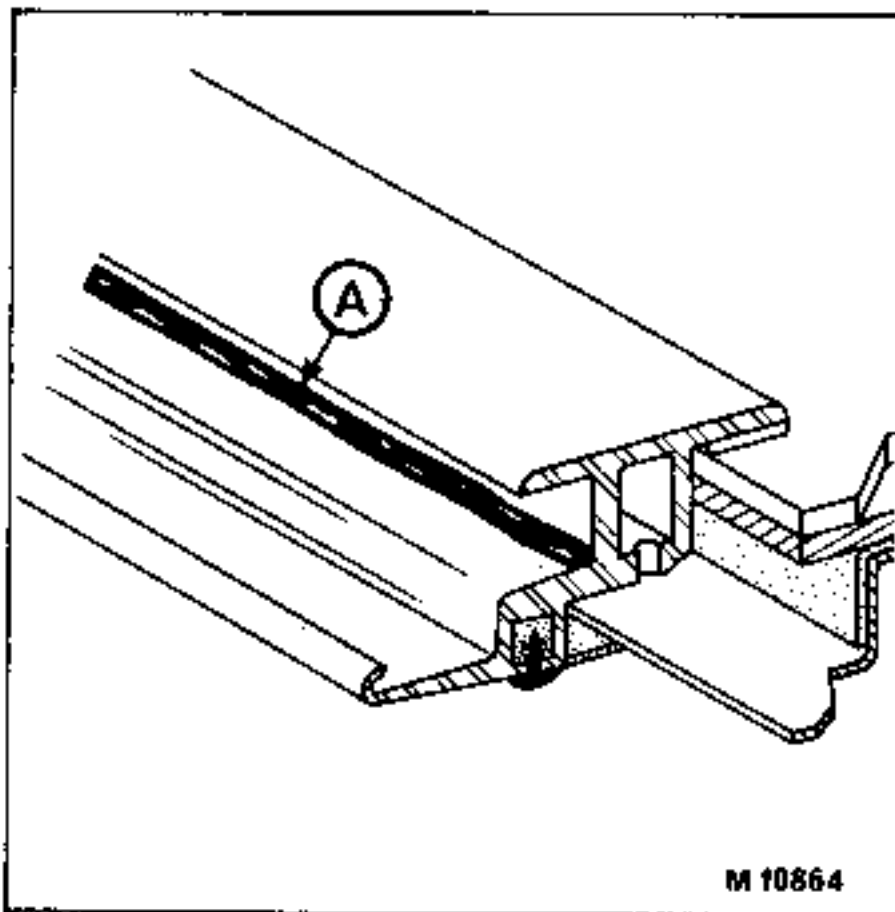
- Remove the door trim.
- Remove the seal from the door, starting at the joint.
- When refitting, apply soap to the body of the seal to facilitate it taking up its place against the door stiffener and start fitting the seal at its lower joint.

## REPLACING THE SEAL

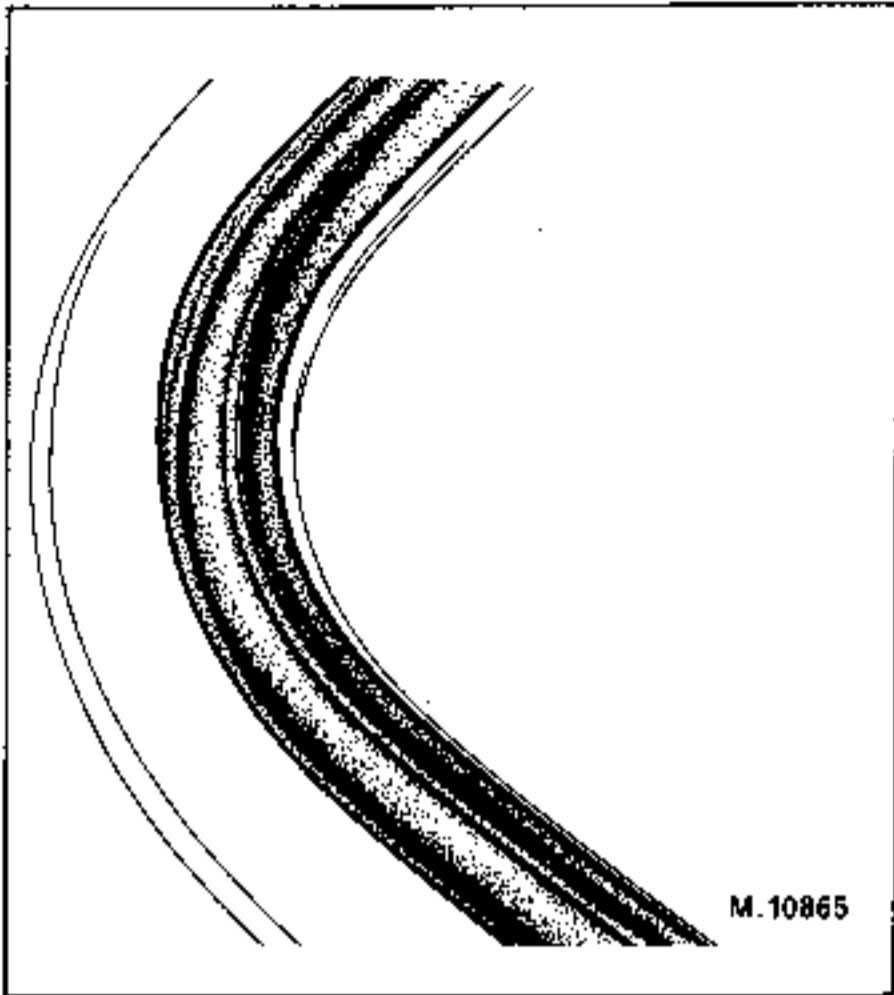
The replacement of this seal is often the consequence of water leaking at this point.

Before condemning the seal (seal slit, distorted or torn) carry out the following operations. They are often all that is necessary to cure the leak :

- 1 : Ensure that there are no foreign bodies (insects, pine needles, leaves etc.) across the seal lips. Clean them if necessary.
  - 2 : Ensure that the seal is correctly fitted (the curves are to be parallel with the frame and there should be no kinks or folds). See later for the method of re-positioning the seal.
  - 3 : Remove any deposits that have formed on the glass above the seal.
- Remove the glass.
  - Remove the original seal.
  - Using a wooden spatula, clean out any sealing mastic remaining in the groove in the frame.
  - Use the tube supplied with the seal to extrude an even fillet of mastic, 3mm in diameter, at A round the periphery of the frame.



- Cover the screws under the seal with a thin coat of mastic.
- Fit the new seal. The joint at the rear is to be on the latch handle centre line.



Note : The seal is not to tilt towards the inside of the corner. If it does, it is subjected to too much pressure and must be partially refitted.

- Check that the seal is applied evenly to each edge (absence of "waves" and lips correctly positioned).
- Coat the seal with glycerine or a rubber seal maintenance product in an aerosol can.
- Refit the glass after first cleaning the area on which the seal locates (if necessary).
- Check the seal for leaks. If water still enters, check whether it is leaking :
  - 1) between the frame and the seal
  - 2) between the seal and the glass.

1) Between the frame and the seal

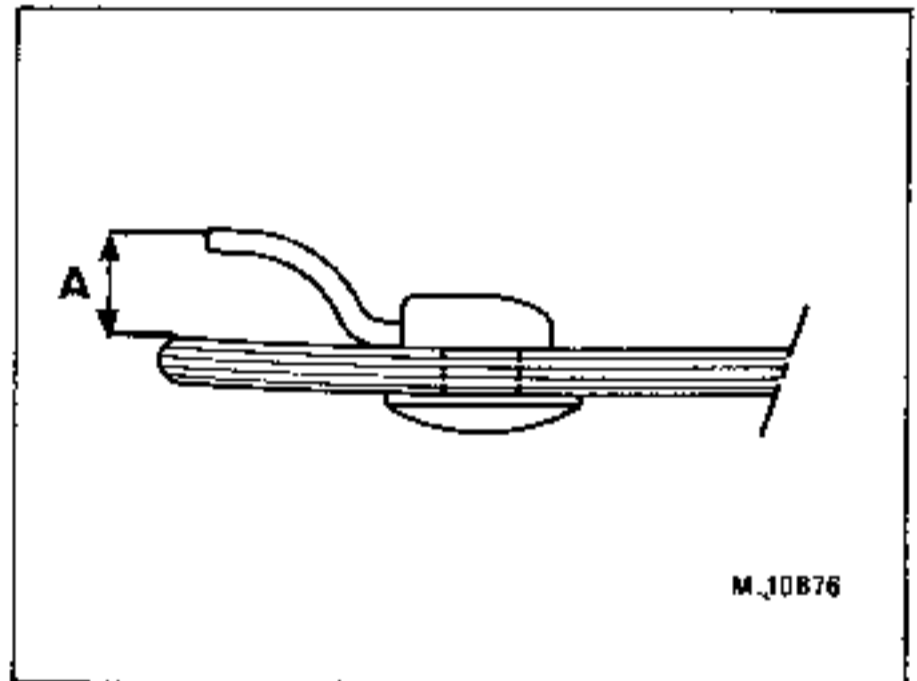
Cause :

- outer lip incorrectly positioned on the frame,
- mastic fillet broken or unevenly applied.

2) Between the seal and the glass

Cause :

- internal lip incorrectly positioned in the frame,
- excess mastic (causing waves in the seal).



- Distortion at the window front securing lugs.  
dimension A = 22 mm  
(straighten or if necessary replace the lugs)

Note :

- The presence of water in the passenger compartment may be caused by :
- opening the window when there is water lying on the outside (the compression of the seal at the front causes water to flow into the interior of the vehicle).
  - condensation on the inside of the window under given climatic conditions and at certain times.



## MAINTENANCE

All rubber seals require a certain amount of maintenance to ensure that they remain effective, over a long period and to avoid them suffering from wear that could cause them to LEAK.

SUN ROOF seals are that much more vulnerable

- in that they are permanently exposed to ultra-violet light,
- because the pressure subjected to them is not even when the window is operated (compression at the front and no compression at the rear),
- because the sun roof can be left for several months without being opened.

This is why it is essential that the seals should be subjected to a certain amount of maintenance.

Every 3 months :

- Remove the glass.
- Clean, if necessary, the seals and the glass.
- Coat the seals with glycerine or a special seal maintenance product in an aerosol can.
- Refit the glass.

NOTE : The head lining on 85 models (with 9 stretchers) is stuck to foam in line with the door pillars (2-3-4-5-6).

The head lining on 86 models (with 6 stretchers) has pillars with integral foam.

The head lining with 6 stretchers can be fitted in place of that with 9 stretchers on condition that the foam stuck to the body structure is first removed.

DESCRIPTION

The head lining is made from a material called DUVETINE and consists of the head lining proper (1) to which is stitched the trim for the :

- windscreen pillars (2)
- the dummy deflector (3)
- the centre door pillars (4)
- the front quarter pillars (5)
- the rear quarter pillars (6).

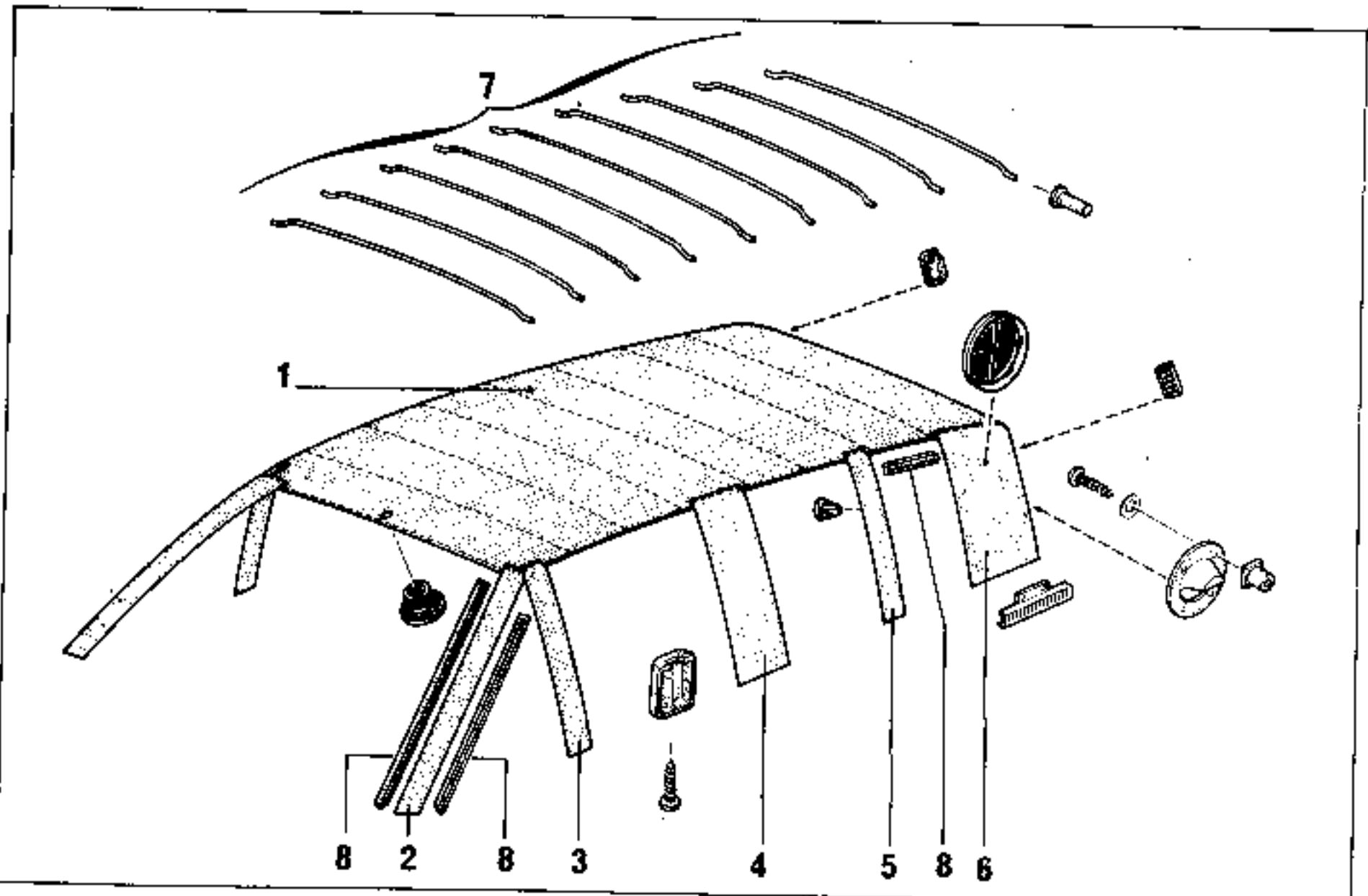
It is secured :

- to the front crossmember stiffener : by pieces of card slid behind the crossmember panelling,
- to the cant rails : by 9 or 6 (model year 1986) stretchers (7) each of which is specific and each of which is identified by a colour code : from front to rear : Black, Blue, Red, Yellow, Green, White, Brown, Orange, Grey. The rear stretcher is held by 3 hooks secured to the rear crossmember.

Spacer washers can be placed between the cant rail and the stretcher support.

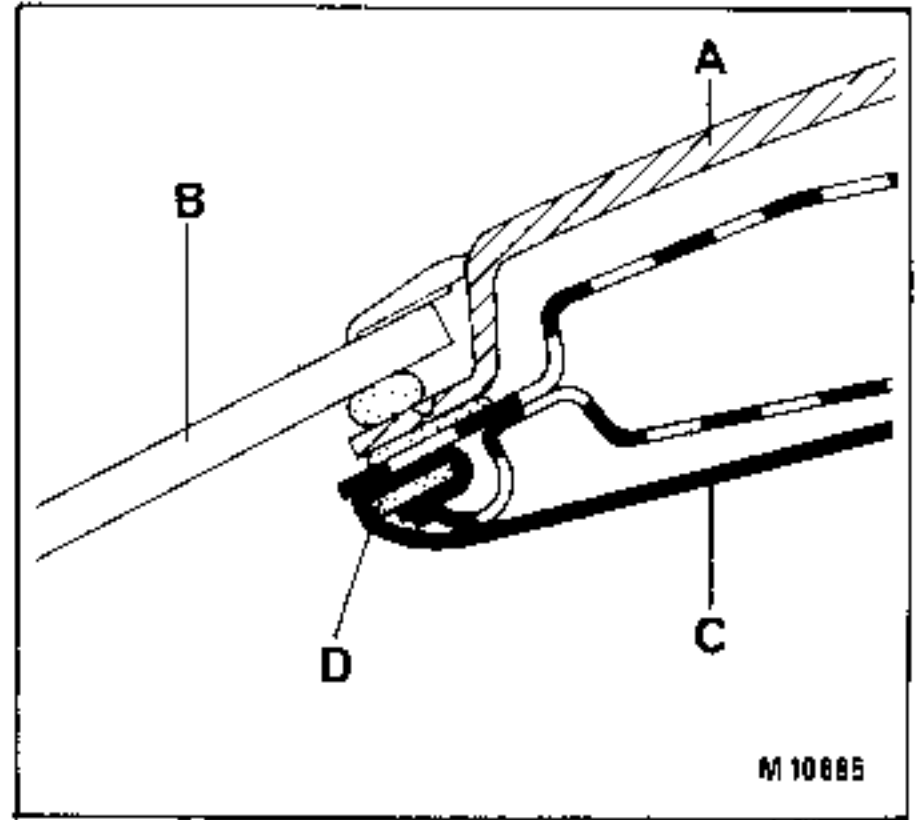
- at the apertures (windows, doors, tailgate, sun roof) : by bonding to strips around the aperture flanges. A black finishing bead (8) is fitted to the windscreen pillars and above the quarter lights.

The seal between the trim and the door seals consists of a fillet of mastic (round the side doors) or adhesive ribbons stuck to the aperture flange (tailgate).



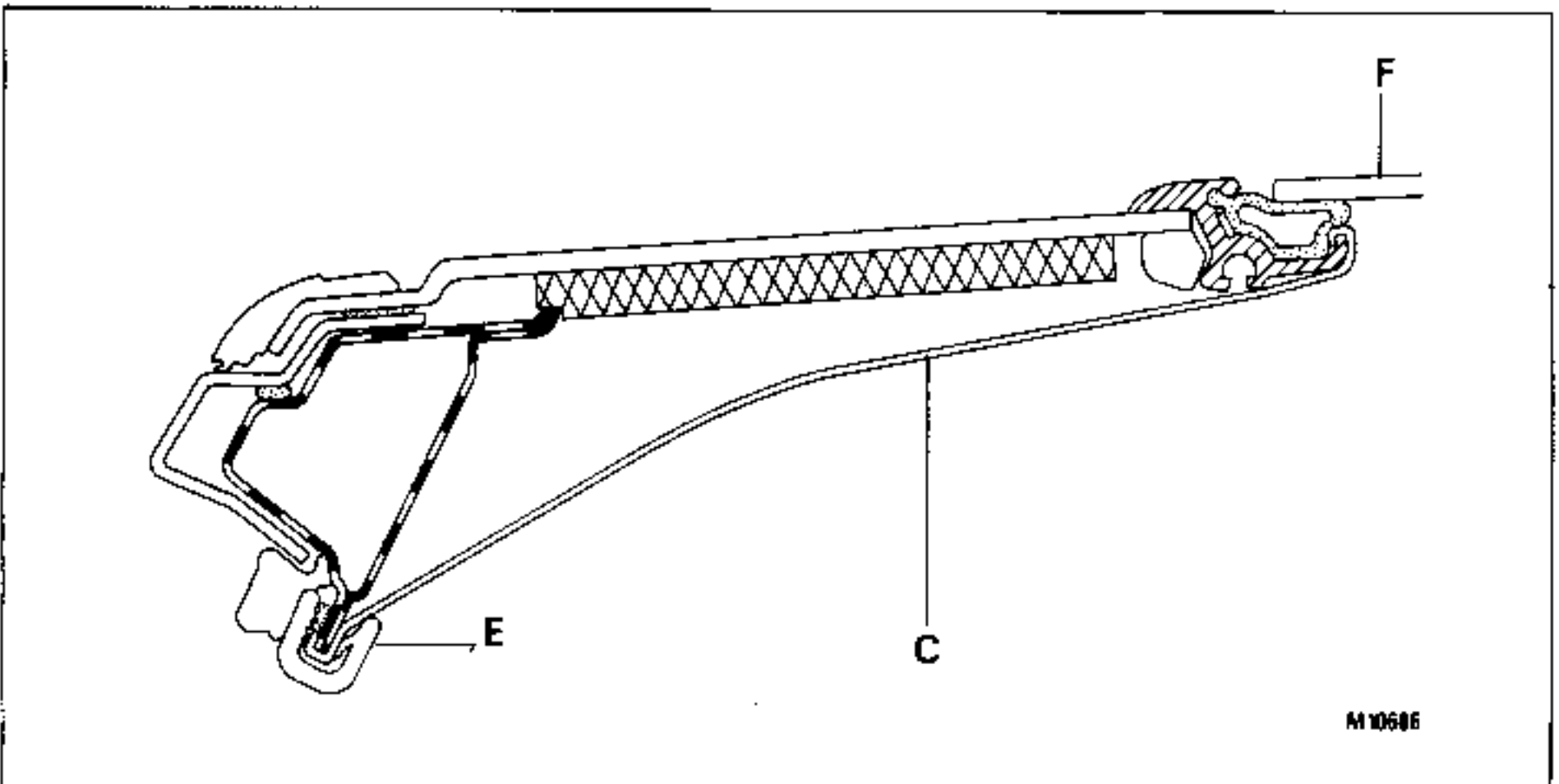
CARDBOARD RETAINERS on the front crossmember stiffener.

- A - Roof
- B - Windscreen
- C - Head lining
- D - Cardboard retainer.



BONDING OF TRIM TO APERTURE FLANGES

- E - Door seal
- F - Sun roof
- C - Head lining



REPLACING THE COMPLETE HEAD LINING

REMOVING

Remove :

- The windscreen, the 4 bonded side windows and the finishing beads, the door and tailgate sealing strips and the sealing mastic.

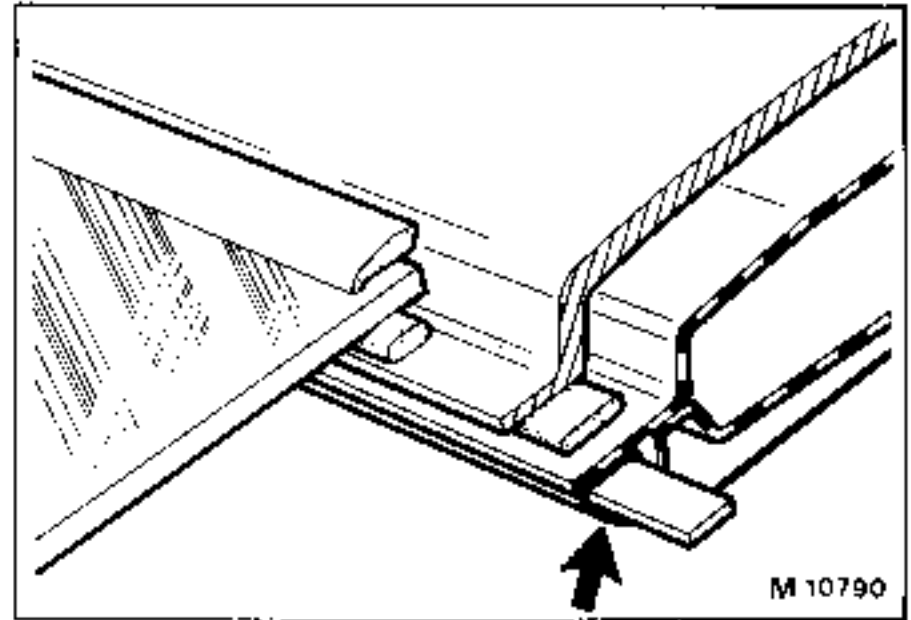
If necessary, remove the sun roof glasses, their seals or the finishing bead.

Remove :

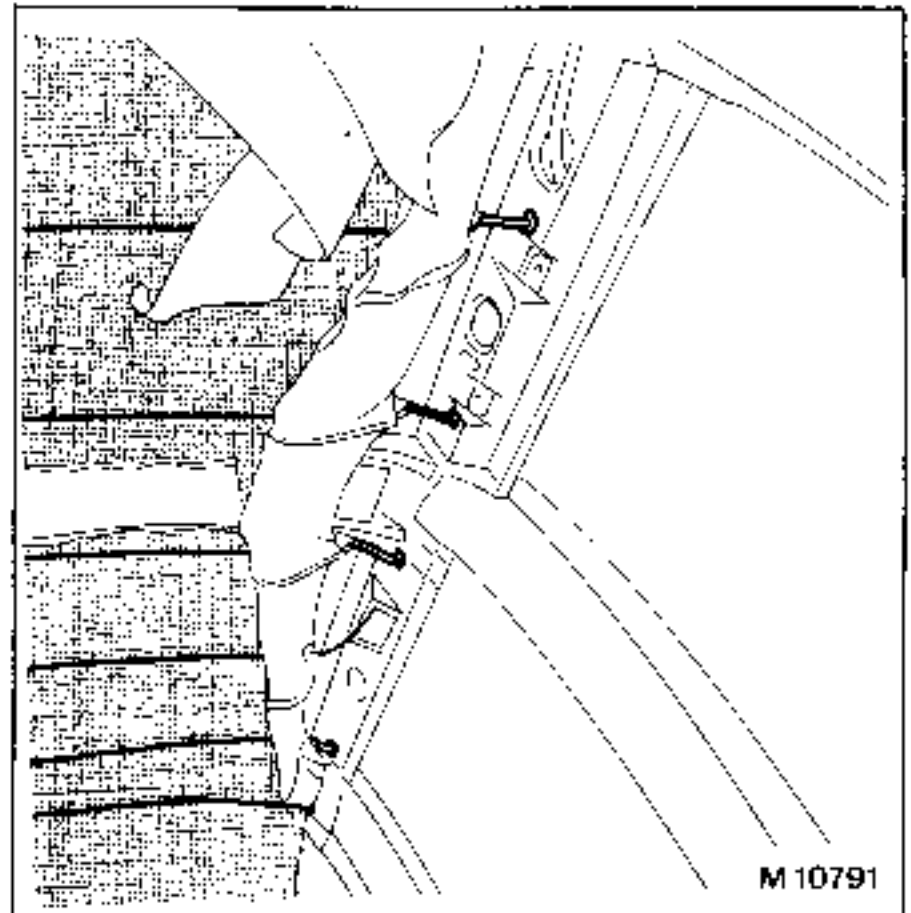
- the finishing beads inside the windscreen pillars, the grab handles, the interior lights, the sun visors and their clips, the console between the sun visors, or the plug, the seat belts and their trim, their reels on the centre door pillars, the speakers, the ventilators, the tailgate gas strut ball joints and the quarter panel plugs.
- Unstick the trim round all the aperture flanges and also the foam.
- Free the following trim :
  - quarter panel (slipped under the lower guide),
  - windscreen pillar (slipped under the fascia panel),
  - free the rear stretcher from its hooks,
  - free the stretchers one by one starting at the rear,
  - free the cardboard retainers on the upper front crossmember,
  - remove the head lining.

REFITTING

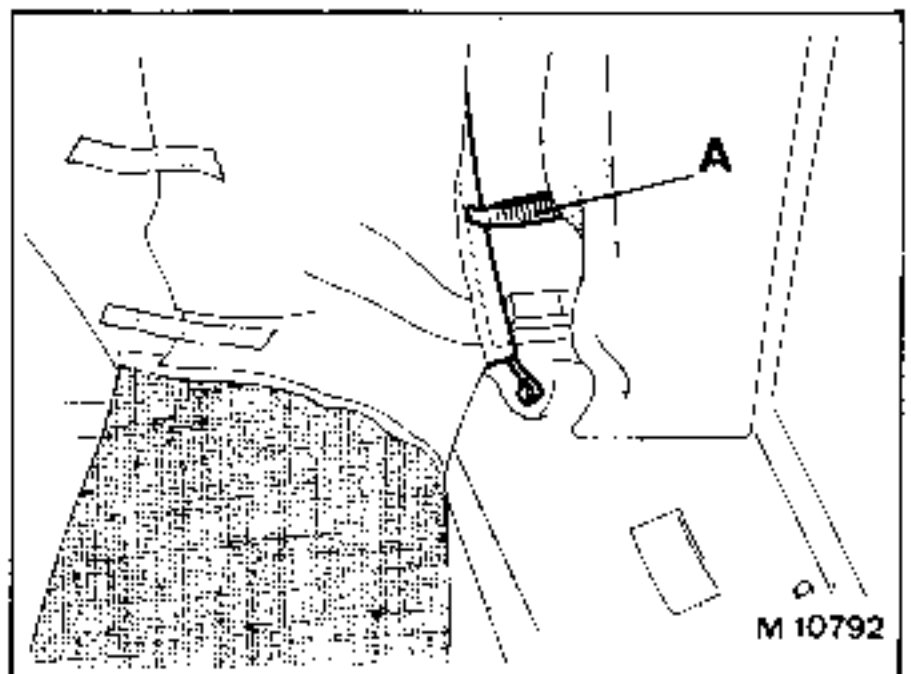
- Engage the cardboard retainers in the upper front crossmember.



- Starting at the front, fit the stretchers one by one, tensioning them as they are fitted.



- Secure the rear stretcher with its hooks (A).



Apply adhesive to the foam pieces and to the pillar trims.

Then stick the head lining in place, section by section, as follows :

- 1) To the tailgate aperture flange.
- 2) To the quarter panel flanges (tension it then slide it under the lower guide).
- 3) To the rear door aperture flanges.
- 4) To the front door aperture flanges.
- 5) To the dummy deflector flanges.
- 6) To the windscreen aperture side flanges.
- 7) To the sun roof frame (IDEX) or place it under the trim strip (FARNIER-PENIN)

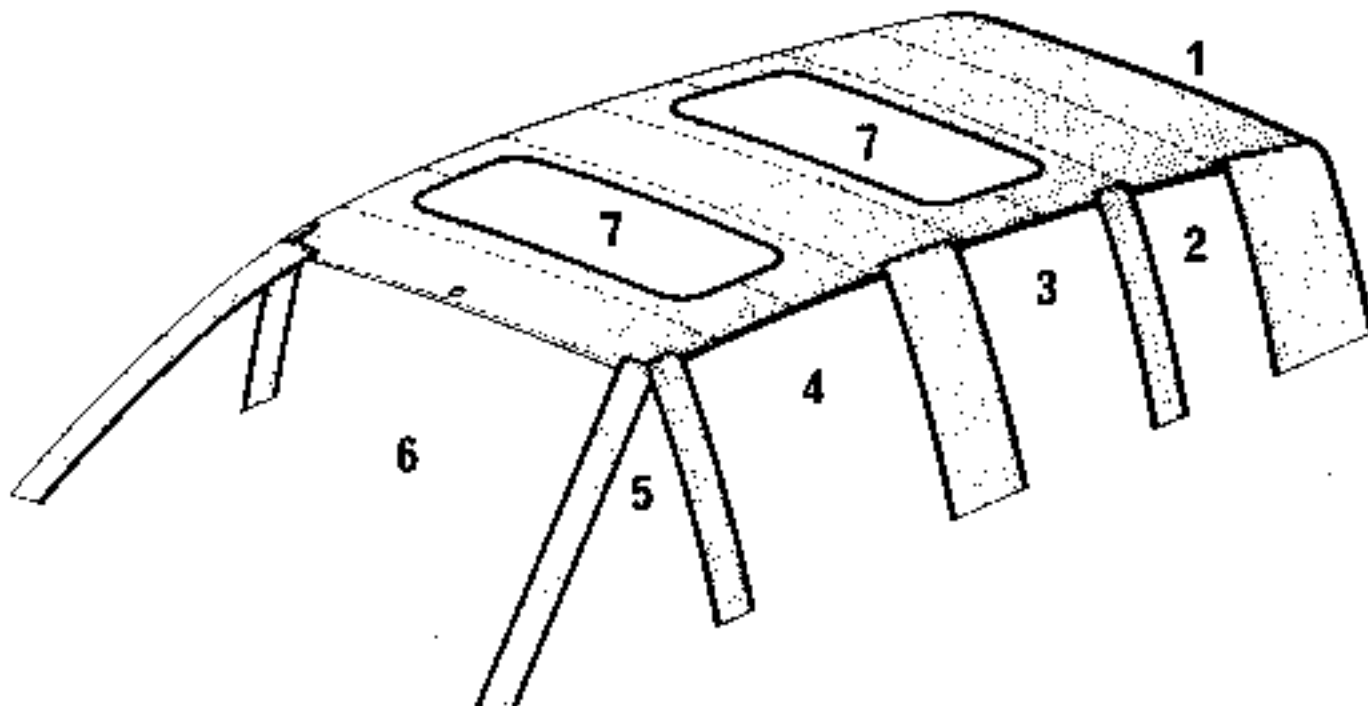
When fitting a new head lining :

Make the necessary cut-outs and remove the excess trim round the aperture flanges.

Clean the areas to which the window bonding adhesive is to be applied.

Fit the plastic trim that retains the head lining.

Refit all the accessory components.

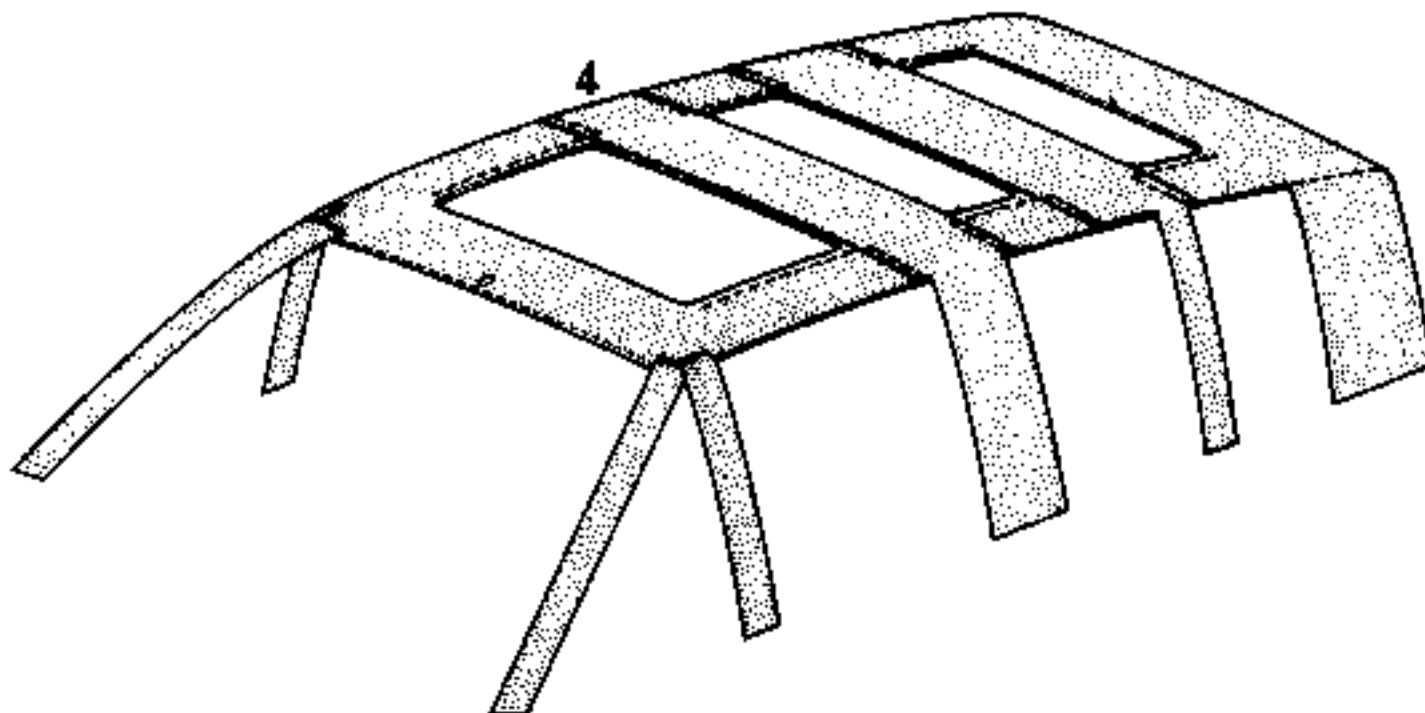
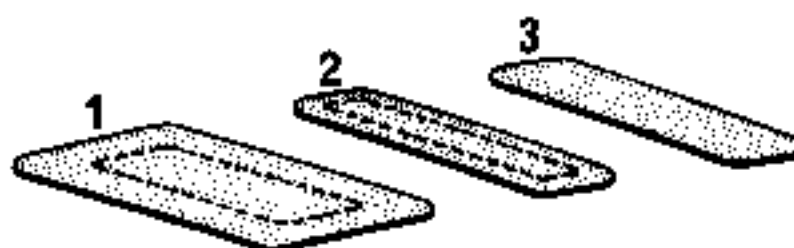
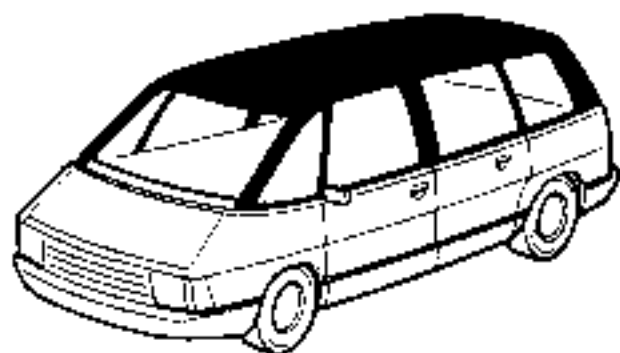


This head lining consists of 4 sections :

- 3 pads that are stuck to the roof (front 1 - centre 2 - rear 3)  
These pads consist of a strip of felt cloth stuck to a foam support.
- a tensioned section that fits round the edge of the roof and acts as trim for the pillars (4).

These parts can be replaced separately. In the case of the surround, one can replace, individually, the pieces that make up the tensioned section.

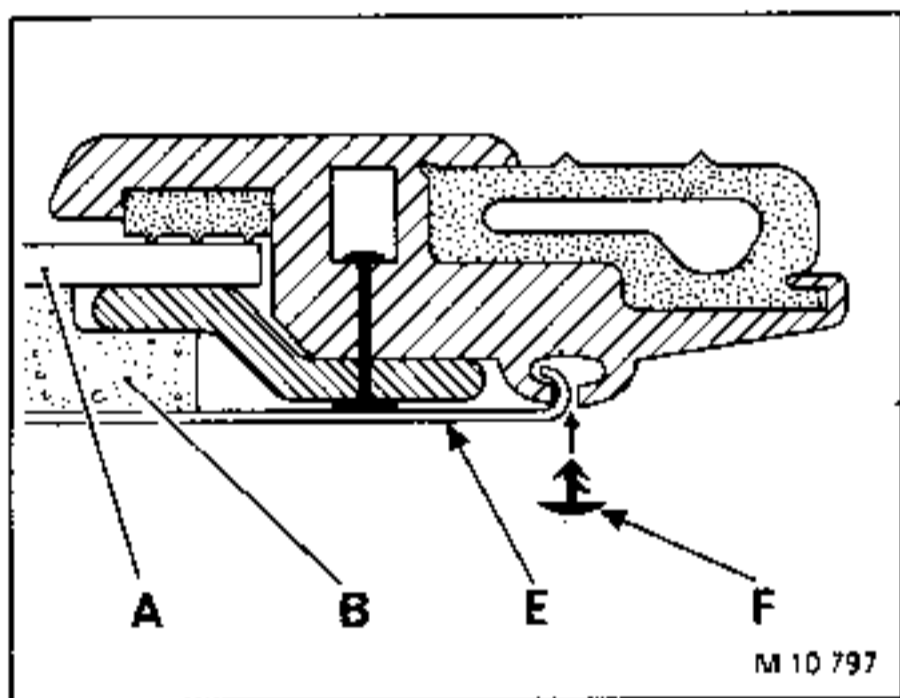
The old and new type head linings are not interchangeable.



FITTING THE ROOF PADS

WARNING : When the vehicle is fitted with sun roof

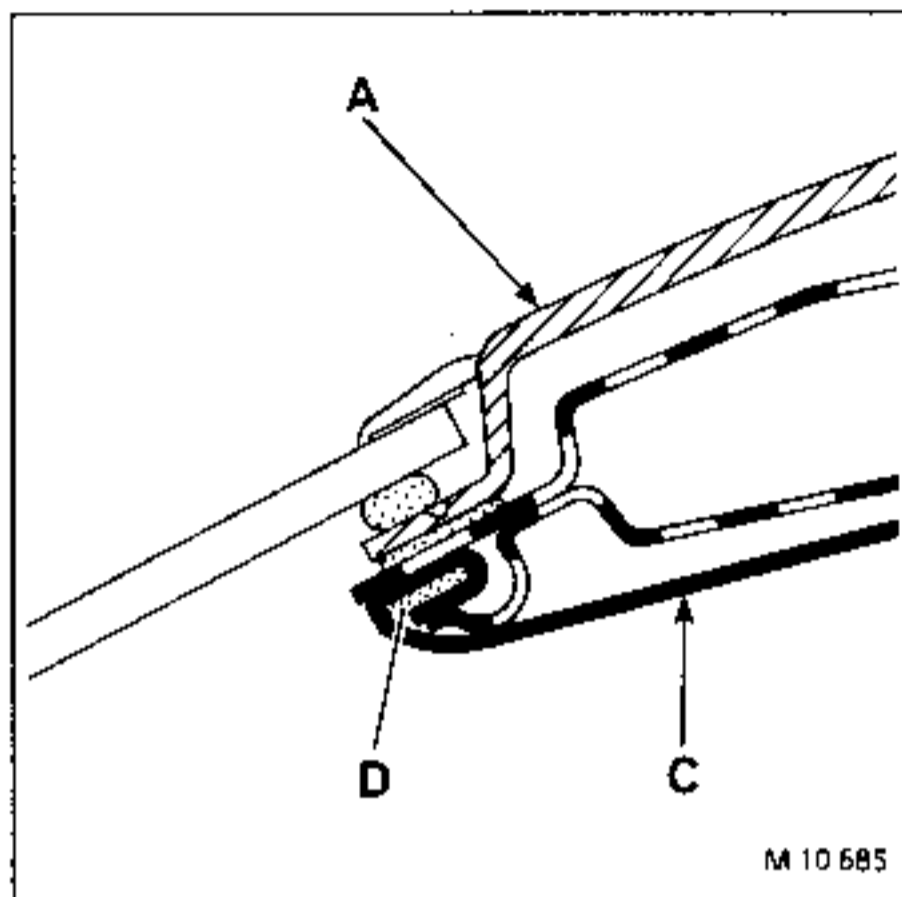
- Mark off and cut the sun roof locations on the foam.
- Stick the foam pads to the roof.
- Stick the felt to the foam.
- Pass the felt into the sun roof groove and cut it at the bottom of the groove with a cutter.
- Fit the finishing strip.



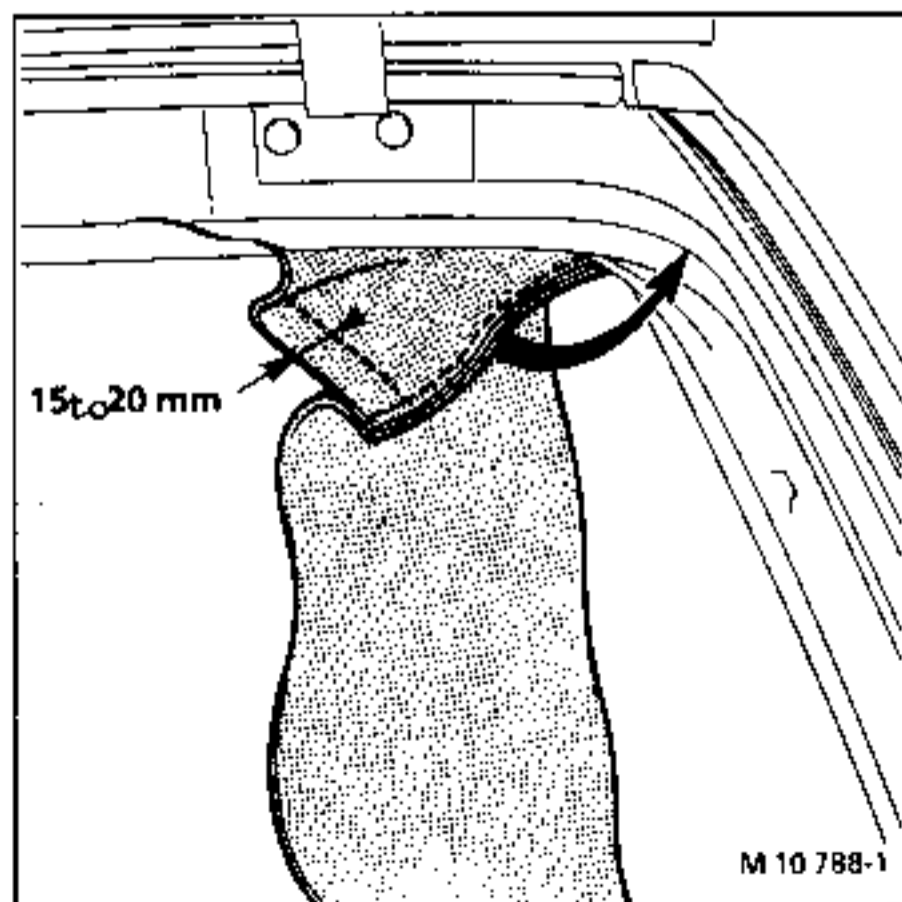
- A Roof
- B Foam
- C Surround
- D Cardboard retainer
- E Head lining
- F Finishing strip

- Make up the 3 pads by sticking the felt to the foam.
- Mark, for example with adhesive tape, the centre of the front and rear edges of the 3 pads.
- Mark the centre of the roof crossmembers
- Apply the adhesive to the roof at the point to which the pads are to be fitted
- Apply adhesive and fit the 3 pads, positioning them by following the position marks already made and taking care to push their periphery under the crossmembers.

FITTING THE ROOF SURROUND

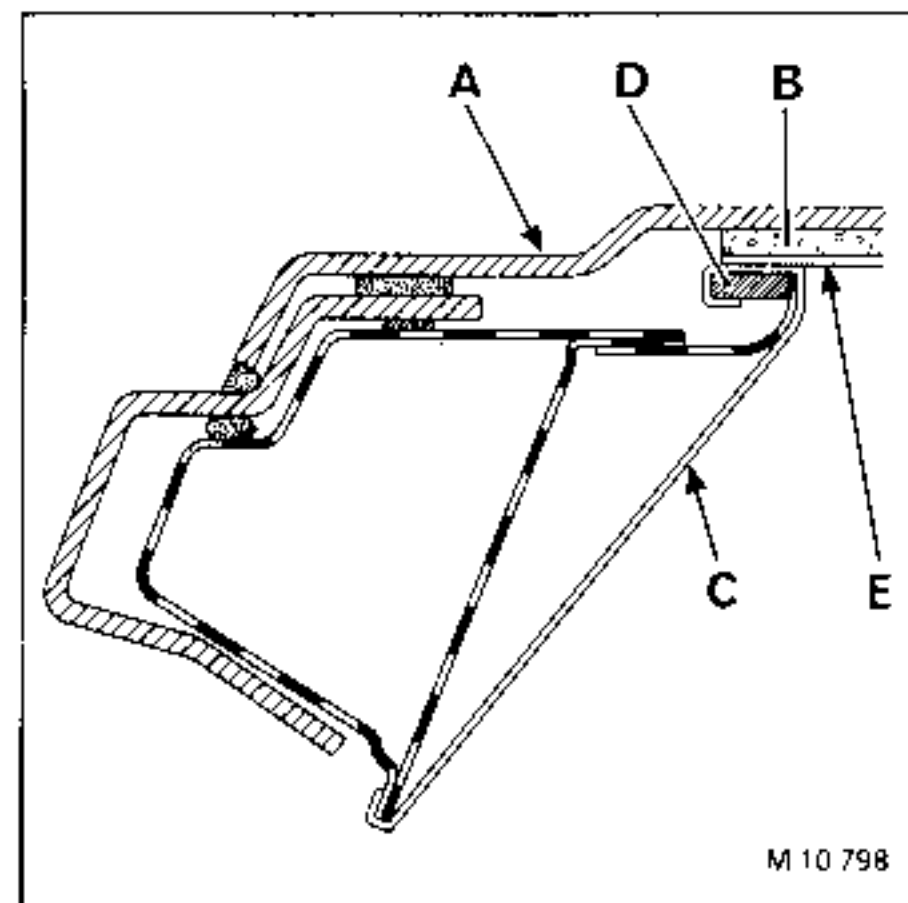


- Insert the cardboard retainers into the upper front crossmember.
- Position the surround on the windscreen frame so that the seams on the quarter panels are in the centre of the 2 upper corners of the aperture.
- Tension the cloth to pull the rear part of the surround 15 to 20 mm past the aperture flange.





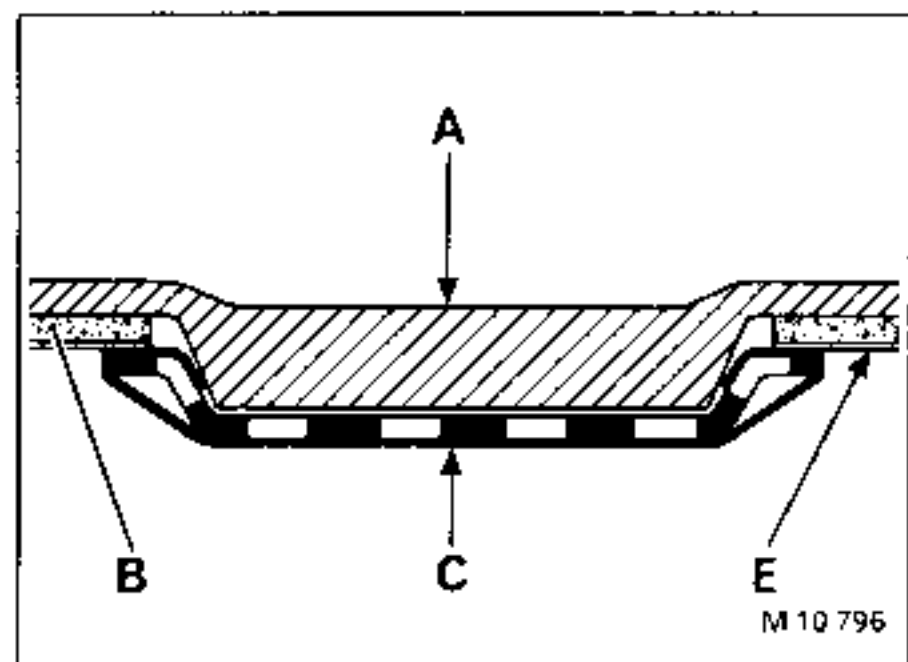
- Engage the cardboard retainers between the cant rails and the roof above the front doors, the rear doors and the quarter lights.



M 10 798

- Moderately tension the cloth to remove any creases.
- Make the cut-outs and remove any surplus trim from round the flanges.
- Fit the plastic trim strips to the flanges round the windscreen, the deflectors and the quarter lights.
- Clean the areas to which the window joints will be bonded.
- Fit all the various accessories by carrying out the removing operations in reverse.

- Slide the cloth between the crossmembers (front, centre and rear) and the head lining, using a wooden spatula.



M 10 796

- Apply adhesive to the door pillar flanges.
- Then apply the adhesive to the following sections, one by one :
  - 1 on the windscreen pillar flanges
  - 2 on the dummy deflector pillar flanges
  - 3 on the front door frame flanges
  - 4 on the rear door frame flanges
  - 5 on the quarter light flanges
  - 6 on the tailgate frame flanges

## REPLACING A PILLAR TRIM

## Tools required :

- tool for removing bonded windows,
- hand operated sewing machine or curved needle,
- brushes, scissors, cutter etc.

## Products required :

- cartridge of gurit mastic reference 60 25 070 327,
- trim adhesive in an aerosol can or a pot,
- fillet mastic (for door seals, length 1 m, ref. 60 25 070 459,
- waterproof adhesive tape (for the tailgate sealing strip),
- polyamide thread of the same colour as the trim.

## REMOVING

## A - Windscreen pillar

## Remove :

- the windscreen, the dummy deflector glass and the finishing strips,

Free the trim from under the fascia panel.

## B - Dummy deflector rear pillar

## Remove :

- the dummy deflector glass, the door sealing strip and the mastic.

## C - Centre door pillar

## Remove :

- the door sealing strips and mastic, the seatbelt trim, the seatbelt and its reel.

## D - Front quarter pillar

## Remove :

- the quarter light, the door sealing strip and mastic, the plug.

## E - The quarter panel

## Remove :

- the quarter light, the upper finishing strip, the gas strut ball joint, the ventilators, the speaker, the plug and the tailgate sealing strip.

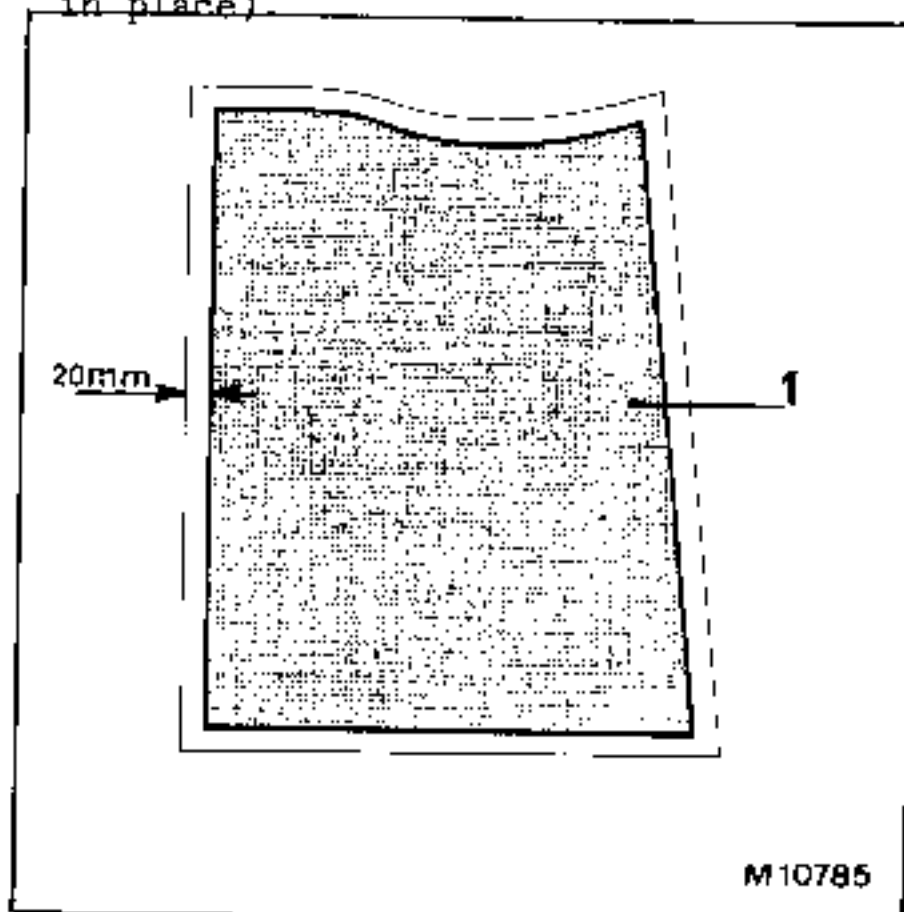
Free the trim from the lower guide.

## For all types of trim :

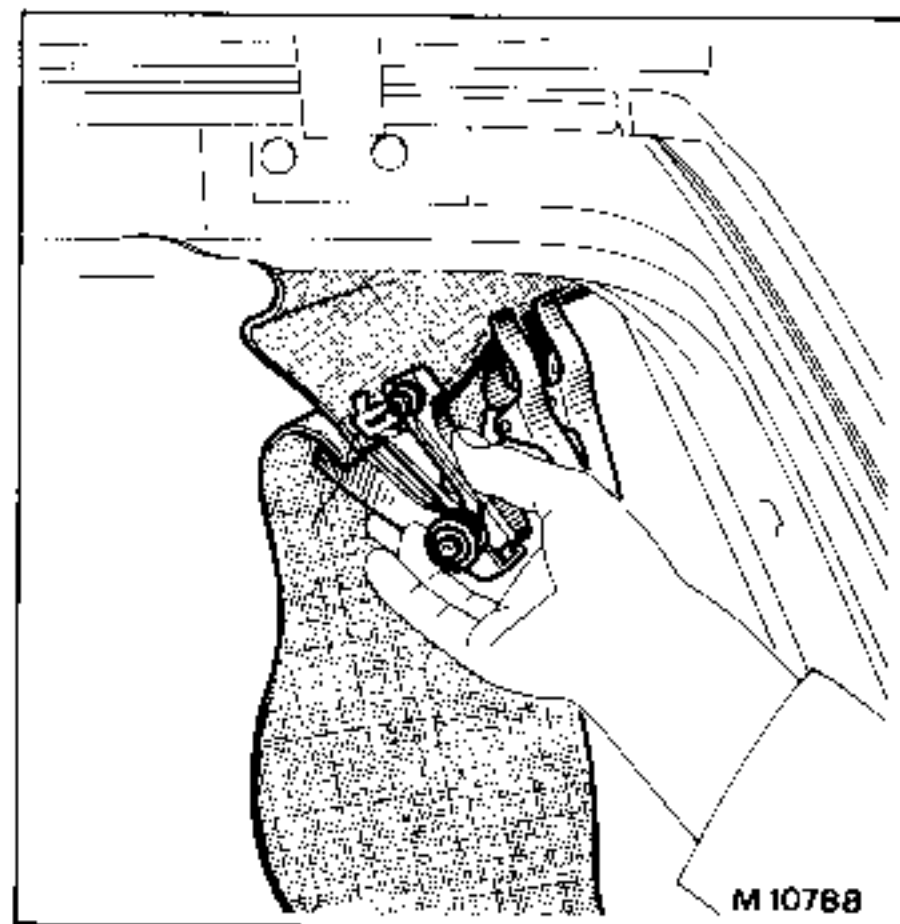
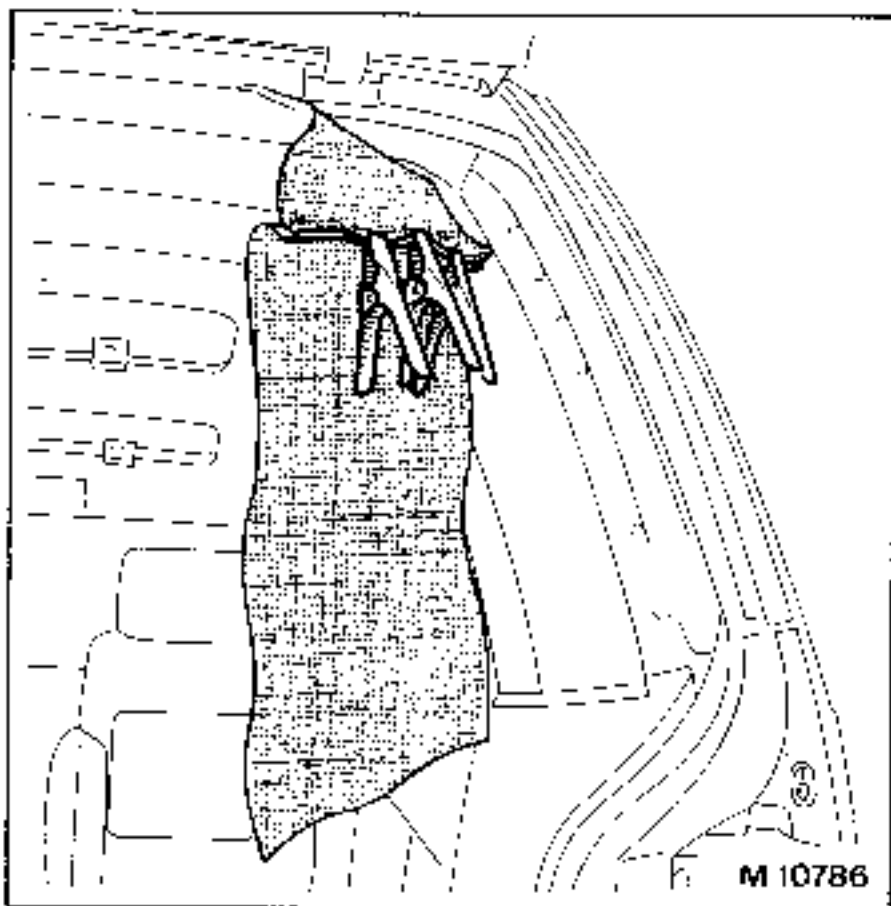
- carefully clear the area round the seam.
- carefully free the stitching without tearing the head lining remaining in place.

## REFITTING

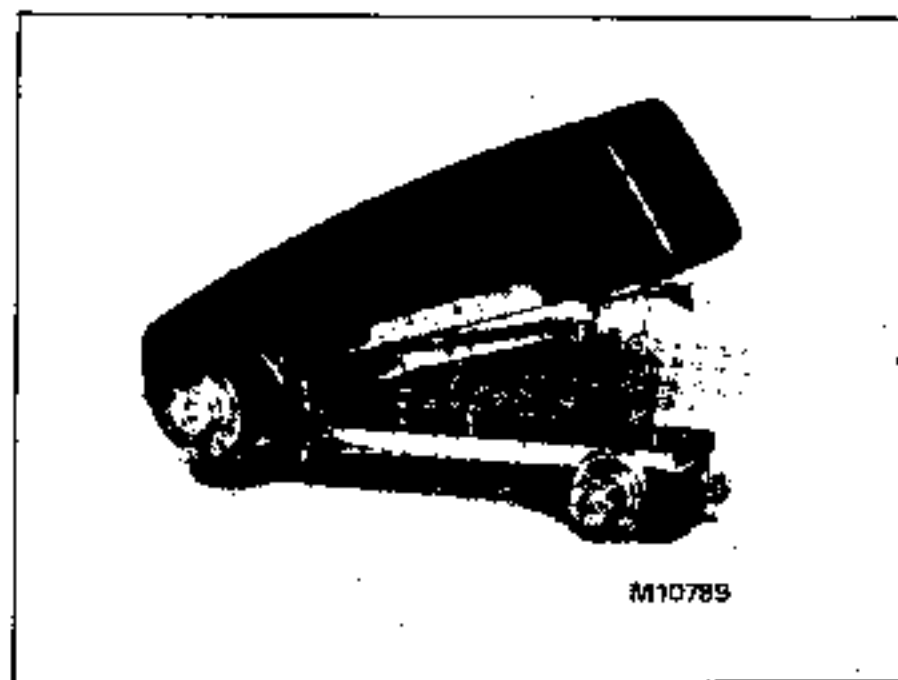
- Place the unstitched trim (1) on the cloth, making sure that the warp and the weft lie in the correct directions. Mark off the contours (leaving 20 mm excess cloth on either side to be able to apply tension when sticking the trim in place).



- If necessary restick the foam to the structure.
- Offer up the trim that has already been cut out.
- Align the edges of the 2 pieces of trim.
- Secure them with a few tacks or with clips (fold 5 to 10 mm wide).



It is preferable to use a manual sewing machine for this operation to obtain tight, even stitches (see the instructions supplied with the machine).



Apply the adhesive to the trim and tension it :

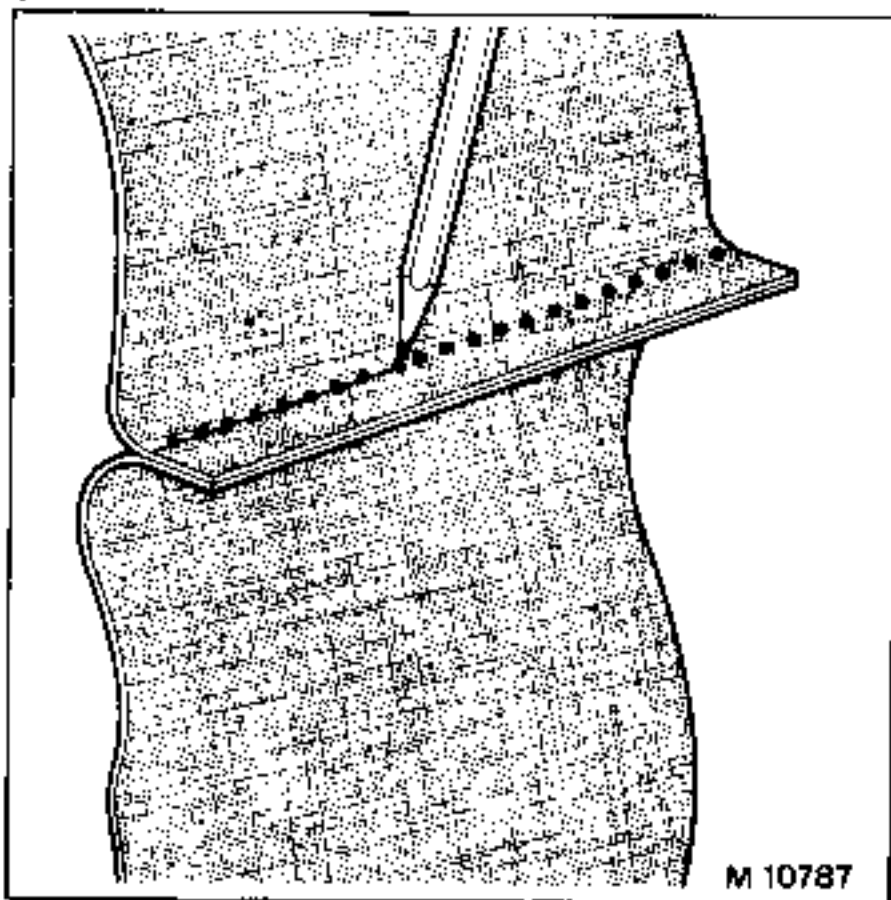
- in the case of the windscreen pillars, slide it under the fascia panel,
- in the case of the quarter trim : slide it under the lower guide.

Cut off all excess cloth round the door flanges.

Make any cut-outs required to fit accessories.

Refit all the accessories which were removed.

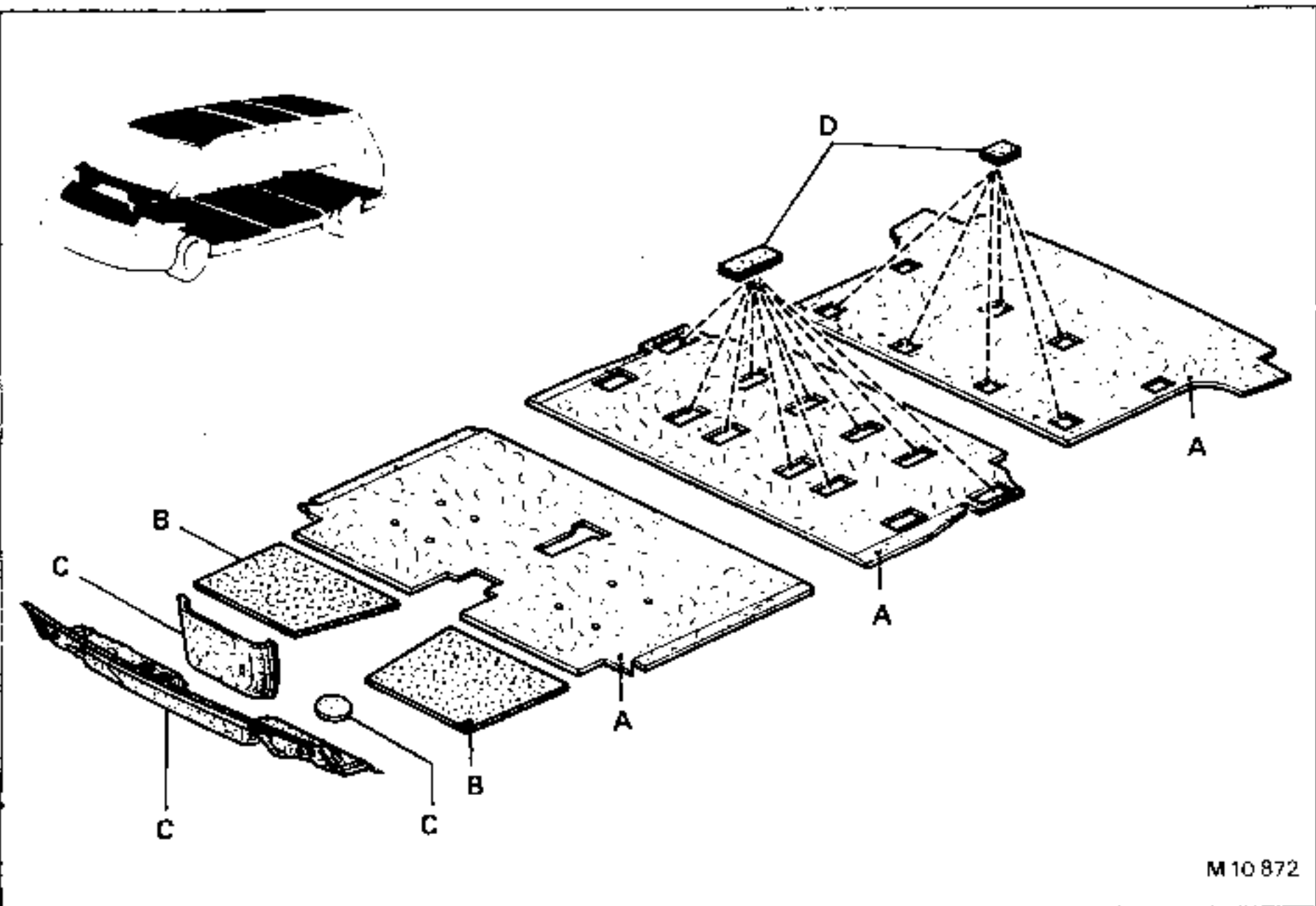
With a pen, mark the line of the seam (through the original holes) to guide the operation.



- Make a stitched seam, aligning it with the stitch holes in the original piece (using thread the same colour as the trim).

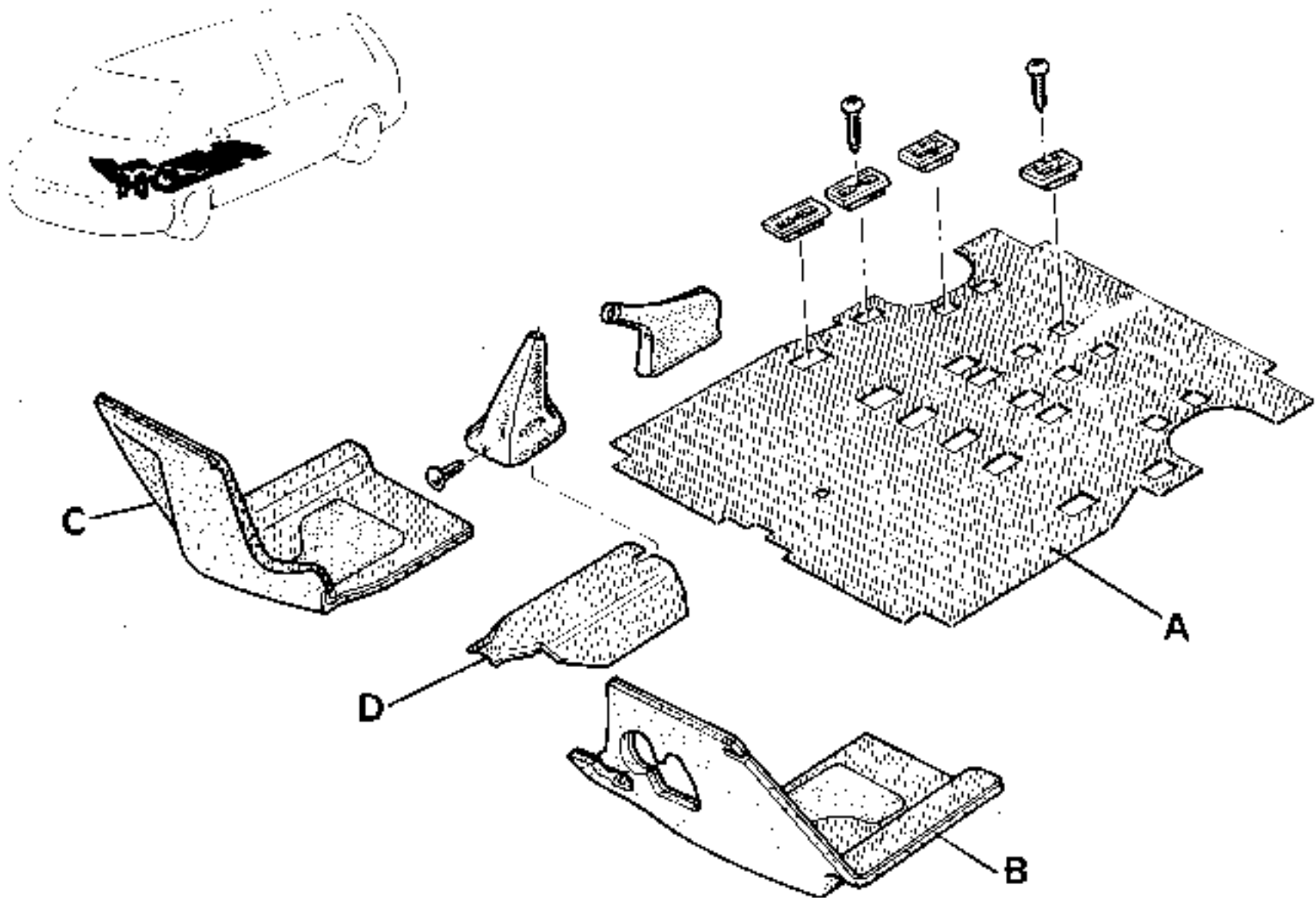
DESCRIPTION

SOUND DEADENING



- A Rear floor sound deadening
- B Front floor sound deadening
- C Scuttle sound deadening
- D Sound deadening for Company vehicle version  
(fitted in place of the rear seat securing points)

CARPETING



M 10 873

- A Rear floor carpet
- B Floor carpet on driver's side \*
- C Floor carpet on passenger side
- D Centre tunnel carpet \*

\* These carpets are secured to one sound deadening piece.

ADHESIVE USED FOR FLOOR SOUND DEADENING AND CARPETS

Since June 1985 (1986 models) a thermoplastic adhesive (that softens under the effect of heat) has been used for sticking down the sound deadening and the carpeting.

IDENTIFICATION :

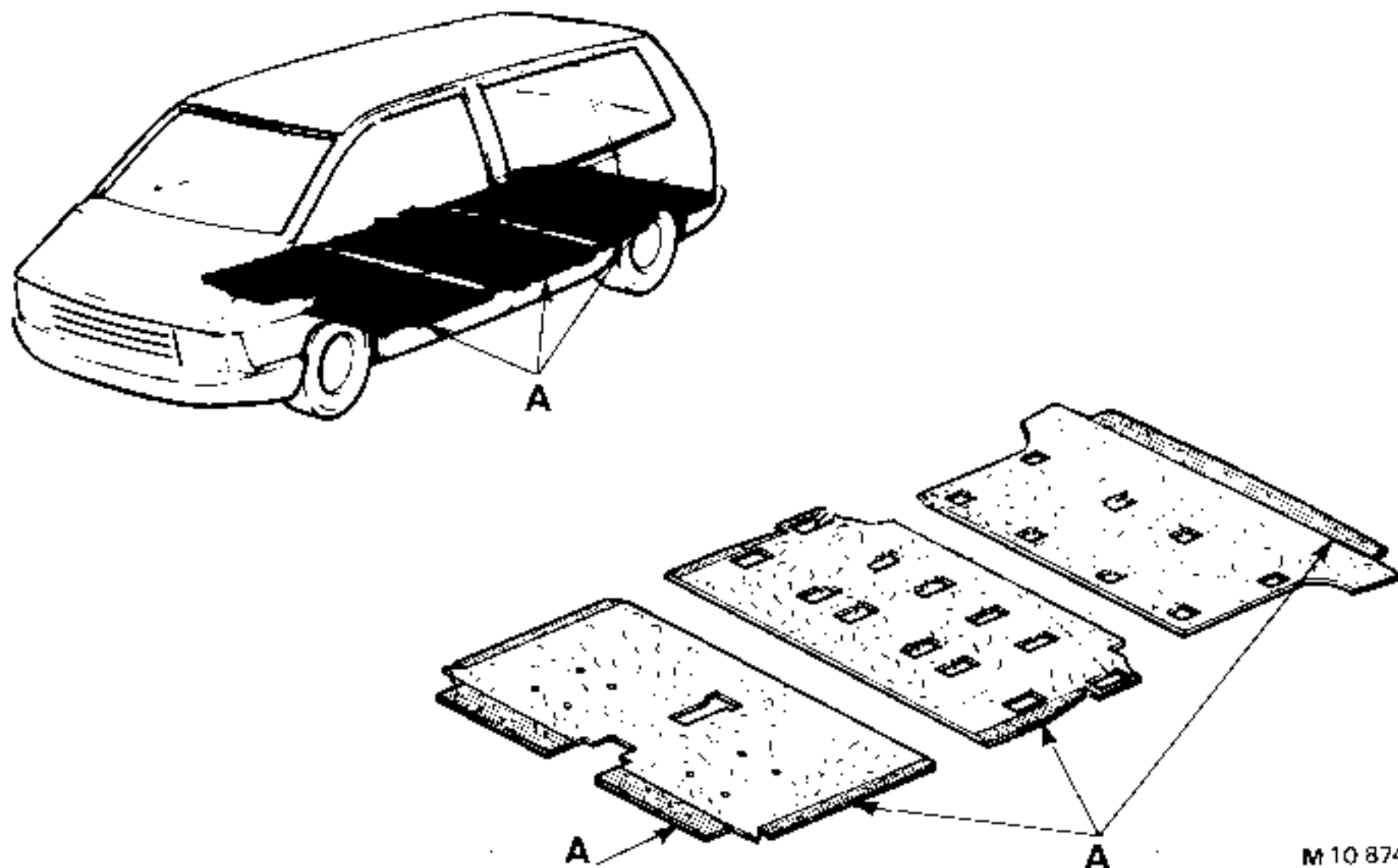
- Vehicles prior to the modification : Bostik 1400 D neoprene adhesive, orange in colour, that does not remain tacky after the solvents have evaporated. This adhesive cannot be re-used (it is still employed for sticking the trim to the window and door surrounds).

- Vehicles subsequent to the modification : Thermoplastic transparent adhesive that remains permanently tacky.

An increase in the temperature reduces its adherence but as the temperature falls to a normal level it returns to its original characteristics : THIS ADHESIVE IS RE-USABLE.

Furthermore, since February 1986, the sound deadening is only stuck to the floor at areas (A).

The carpeting is still stuck to the entire surface of the sound deadening.



On vehicles made since June 1985, whenever carrying out work that involves unsticking the carpeting or the sound deadening (repair work, curing leaks, replacing wiring, etc.) we strongly recommend that the method described below should be used to avoid any damage to these components.

**FREEDING THE ADHESIVE :**

Before pulling on the component to unstick it, the adhesive must be softened by heating the area to be unstuck with infra-red panels (a minimum of 50 cm away for 10 minutes).

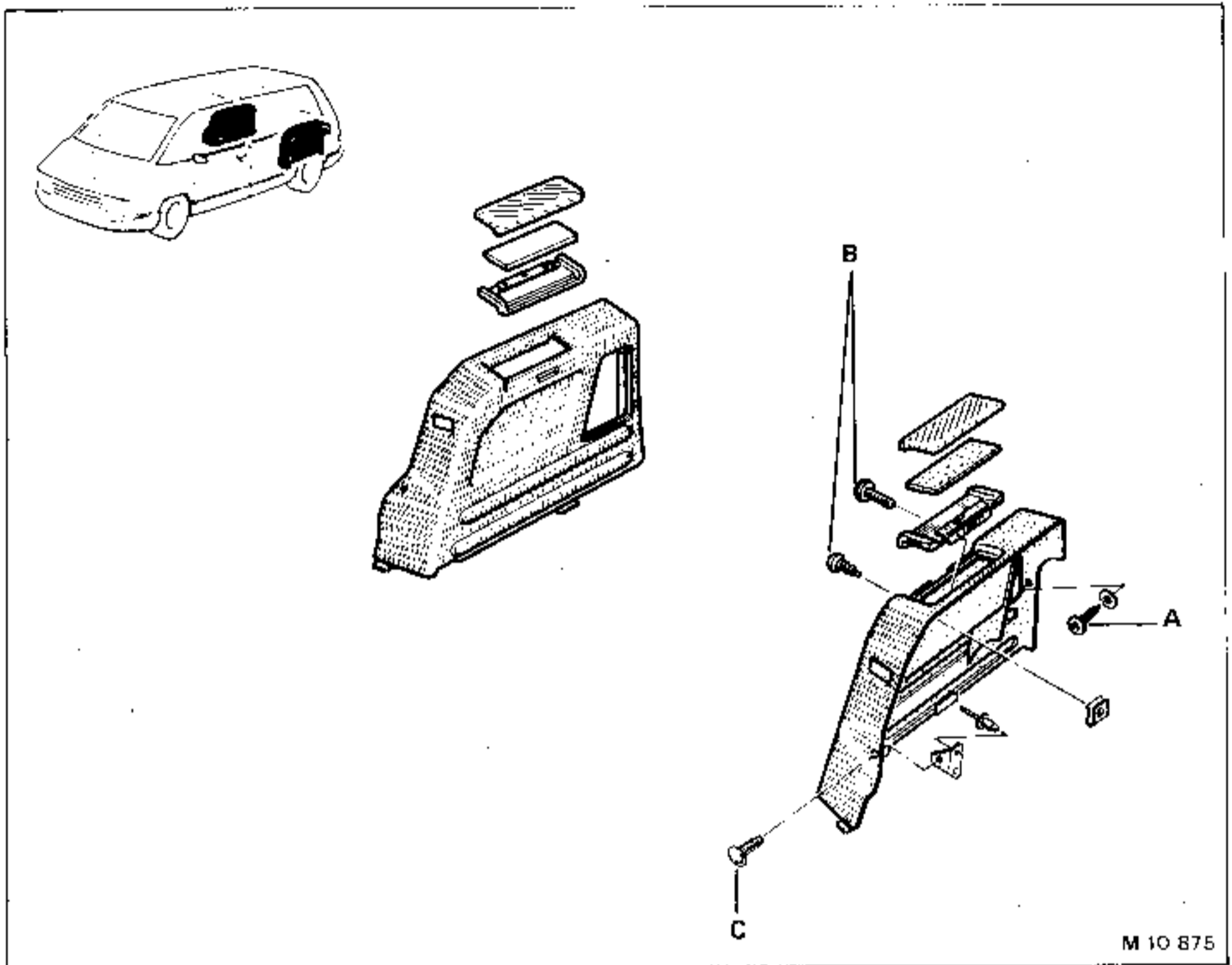
**RESTICKING :**

If the original adhesive has not been destroyed, it can be re-used. Merely heat it locally before pressing down the sound deadening material or carpeting.

If the adhesive has been destroyed, use a conventional trim adhesive (neoprene) only on the areas described above (the production type adhesive cannot be used under service conditions).

**IMPORTANT :** This method makes it easier to re-use sound deadening and carpeting when replacing a body shell on a vehicle made later than June 1985.

REMOVING - REFITTING THE LOCKERS



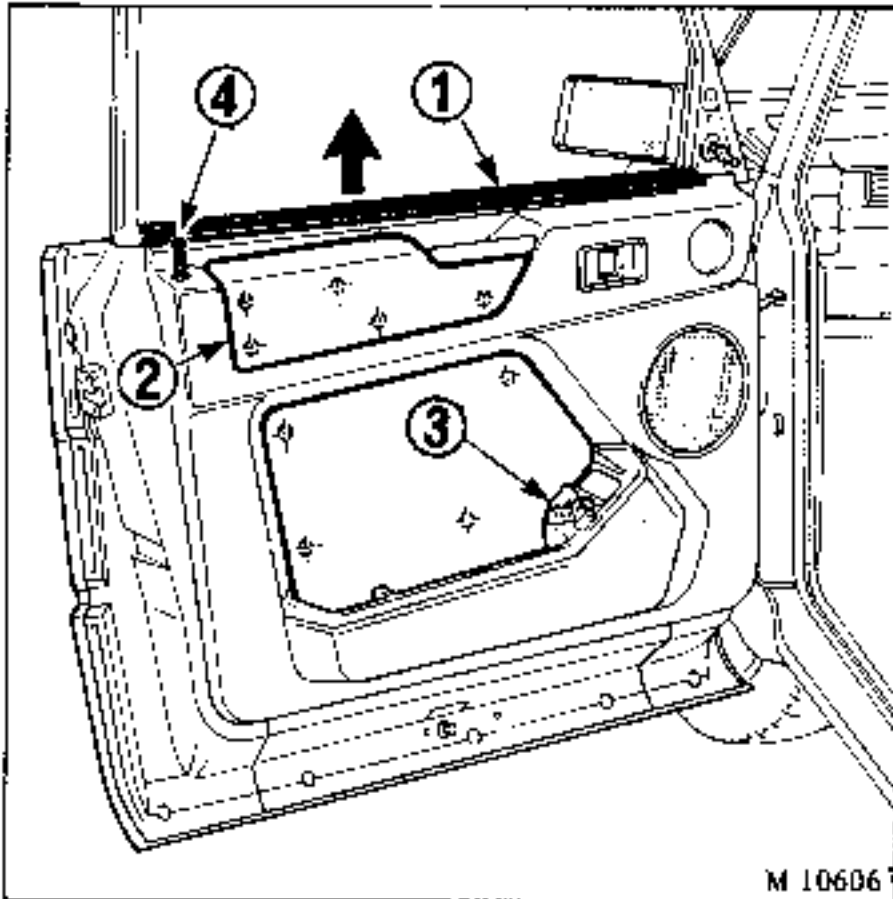
Fastenings :

- A 1 self-tapping screw on the tailgate pillar
- B 2 self-tapping screws on the rear wheel arch
- C 1 clip on a lug riveted to the rear wheel arch

\* On certain versions

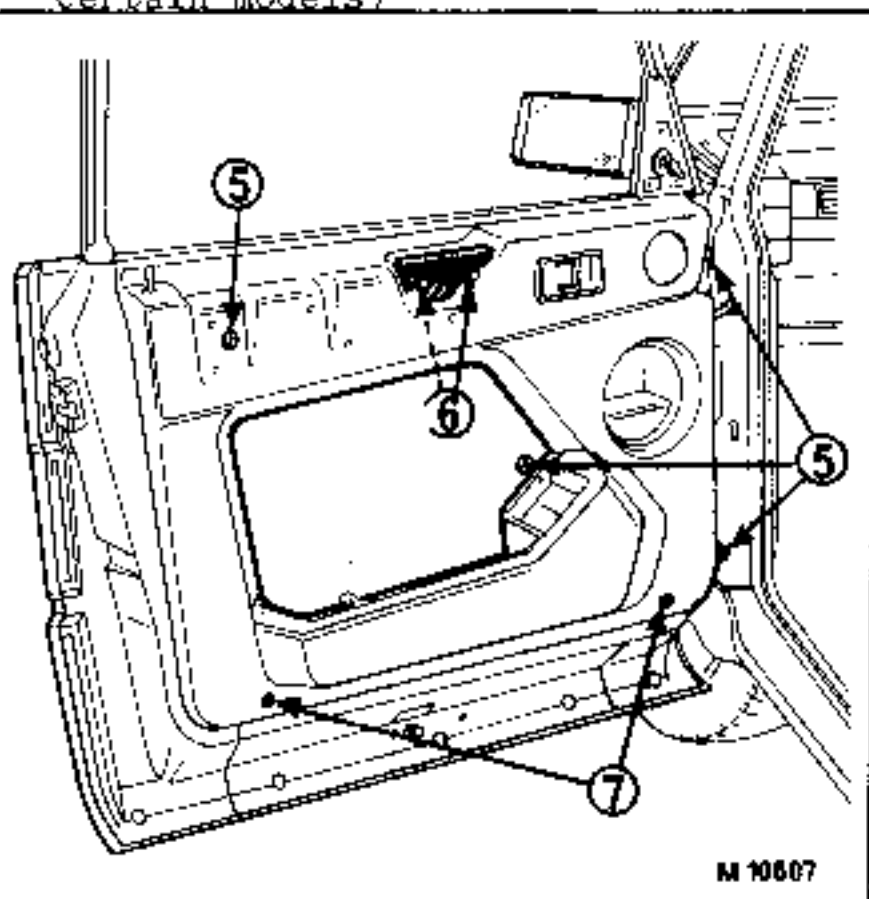


Removing the trim



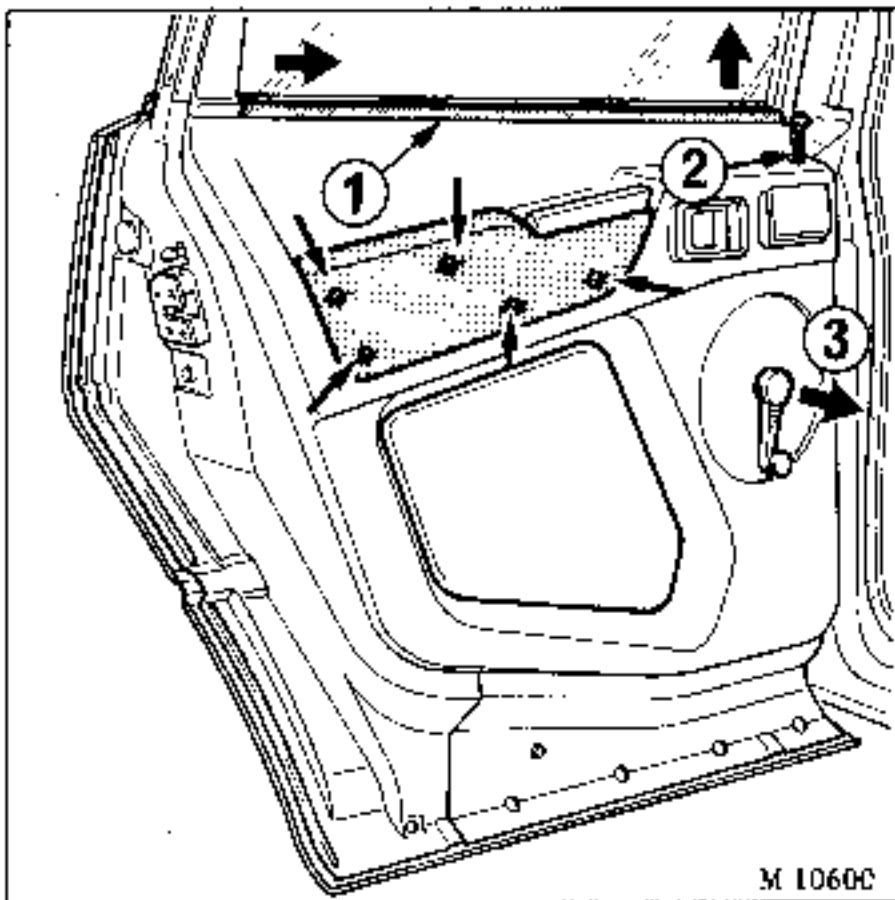
- Remove the rear view mirror inner trim piece.
- Remove the upper wiper strip (1).
- Remove the upper trim panel (2) which is secured by 5 studs (or clips).
- Free the switches (3) and disconnect them.
- Free the rear view mirror electrical control and disconnect it (on certain models).
- Unscrew the door latch knob (4) (on certain models)

- Remove the pull handle which is secured by either one or 2 screws (6).
- Unstick the vinyl sealing sheet from the trim upper stiffener.
- Pull out the trim.
- Unclip the studs (7) (on certain models).
- Free the control link from the latch plate.
- Disconnect the speakers (if fitted).
- Remove the trim panel.



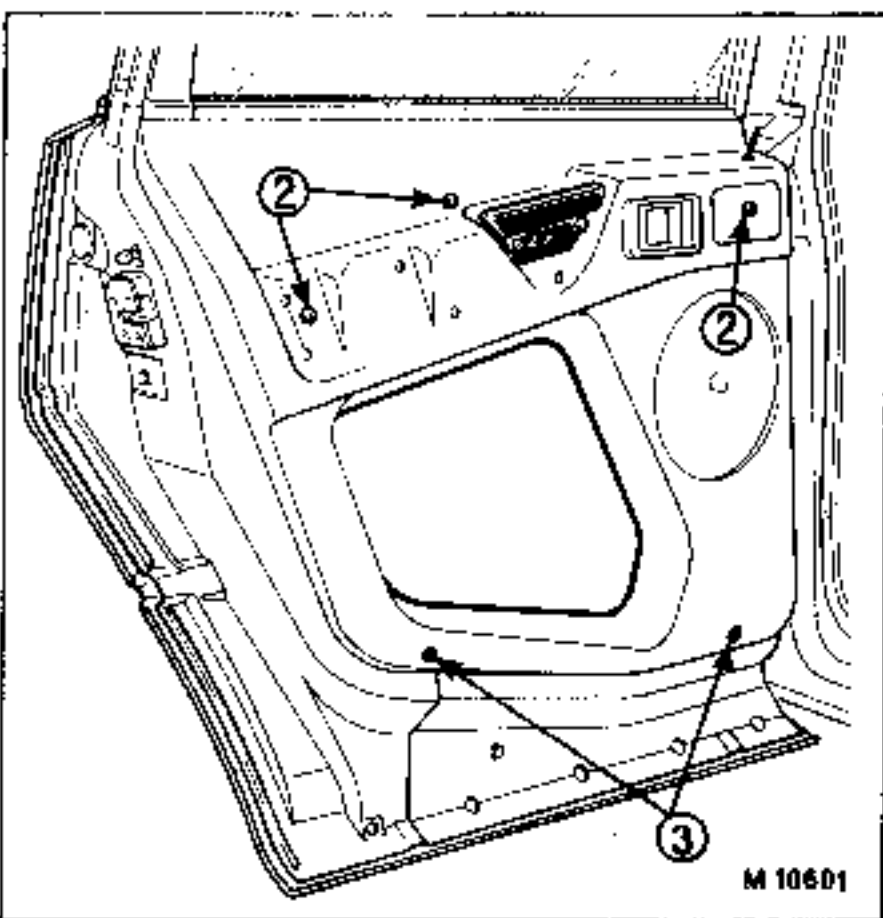
- Remove the 4 securing screws (5).

Removing the trim



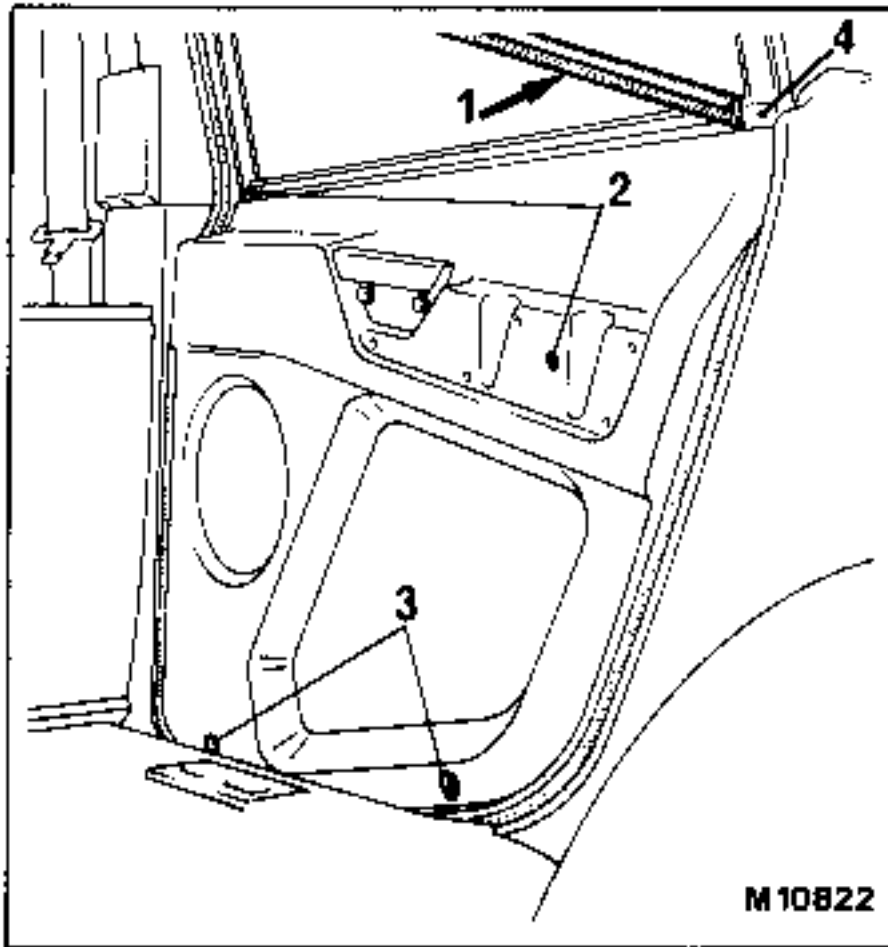
- Remove the upper wiper strip (1).
- Unscrew the lock knob (2).
- Remove the window winder handle (3) using tool FACOM D115 (place a piece of wood between the trim and the tool to act as a fulcrum).
- Remove the armrest cover (5 studs or clips).

- Unstick the vinyl sealing sheet from the upper stiffener on the trim.
- Pull the trim panel towards you and free the link from the handle lever.
- Unclip the 2 studs (3) (on certain models).
- Remove the trim.



- Remove the 2 screws (1) that secure the door pull.
- Remove the ashtray.
- Remove the 3 screws (2) that secure the trim panel.

REMOVING



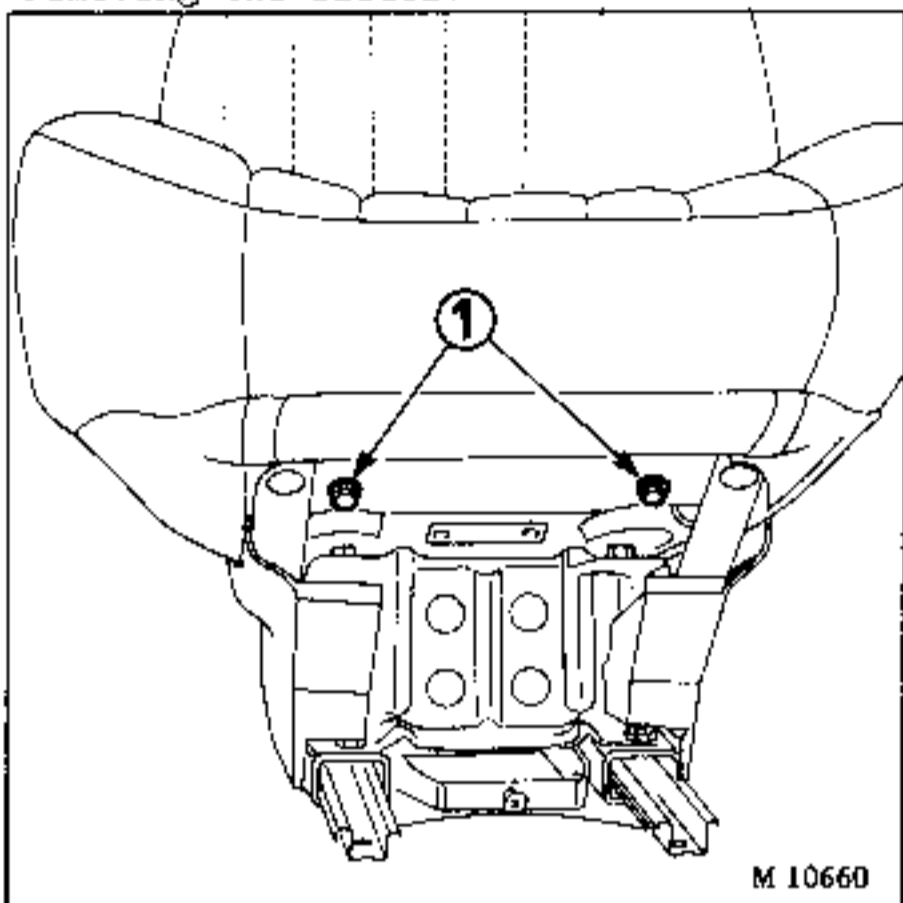
- Remove the upper window wiper strip (1).
- Remove the armrest (5 clips).
- Remove the screws (2) that secure the trim.
- Remove the 2 clips (3).
- Free the trim panel from the trim piece (4), by swinging it.

When refitting the trim panel, replace the 2 clips by new ones.

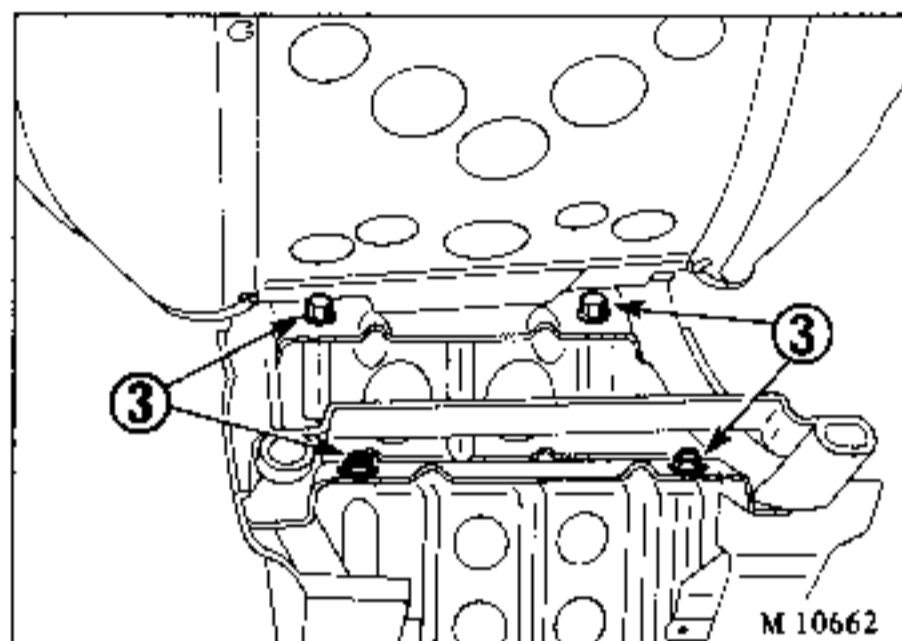
Ref.: 77 03 077 133 sable  
77 03 077 139 ash grey

REMOVING

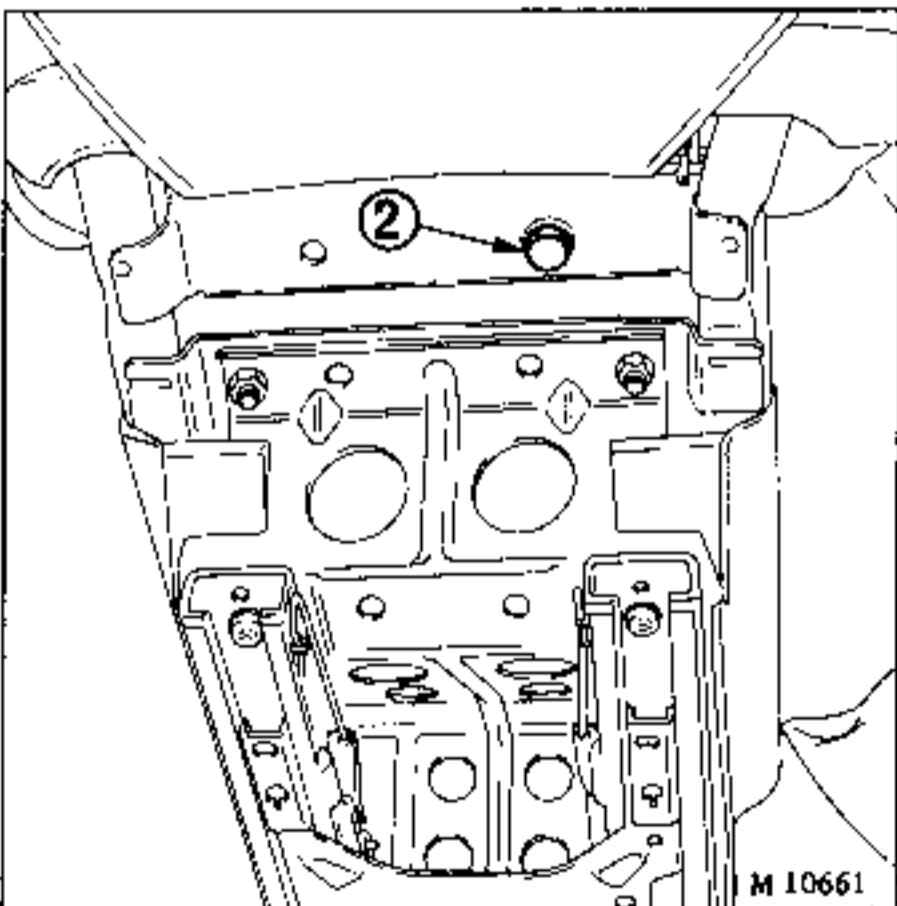
The front seats can be removed without removing the slides.



- Remove the 2 cushion front securing screws (1).



- Lift up the cushion.
- Remove the 4 screws (3) that secure the frame to the slides.
- Remove the seat.

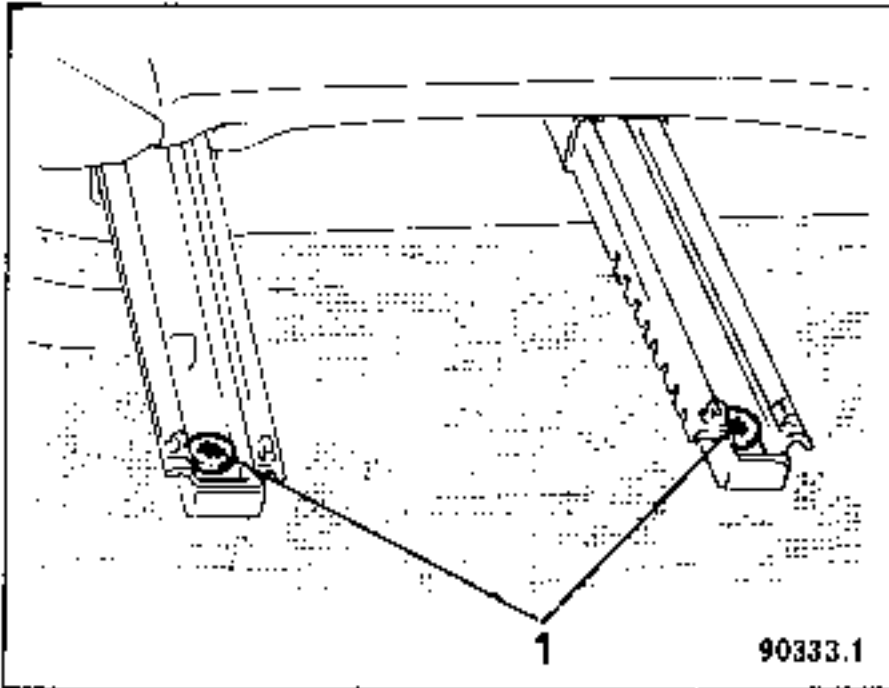


- Remove the cushion rear securing screw (2).

NOTE

These components must be removed to gain access to the bolts that secure the frame to the slide.

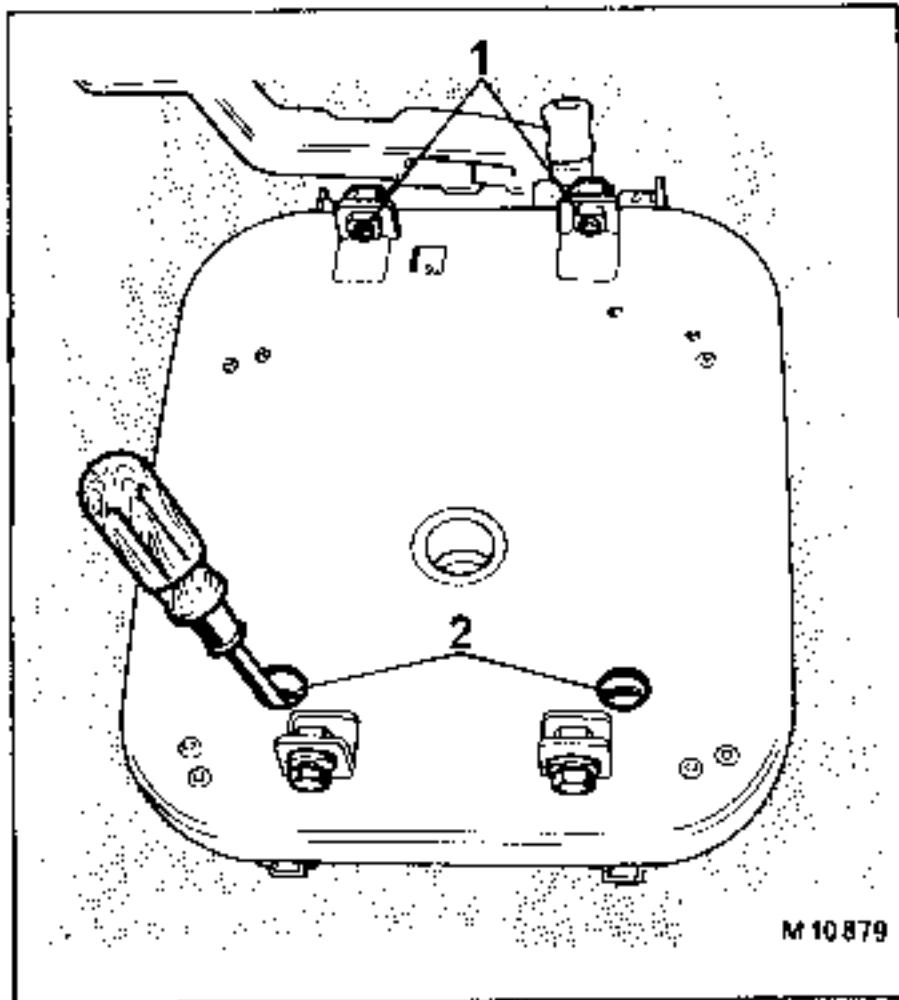
REMOVING



- Remove the 2 rear securing screws (1).
- Push the seat backwards and remove the 2 front securing screws.

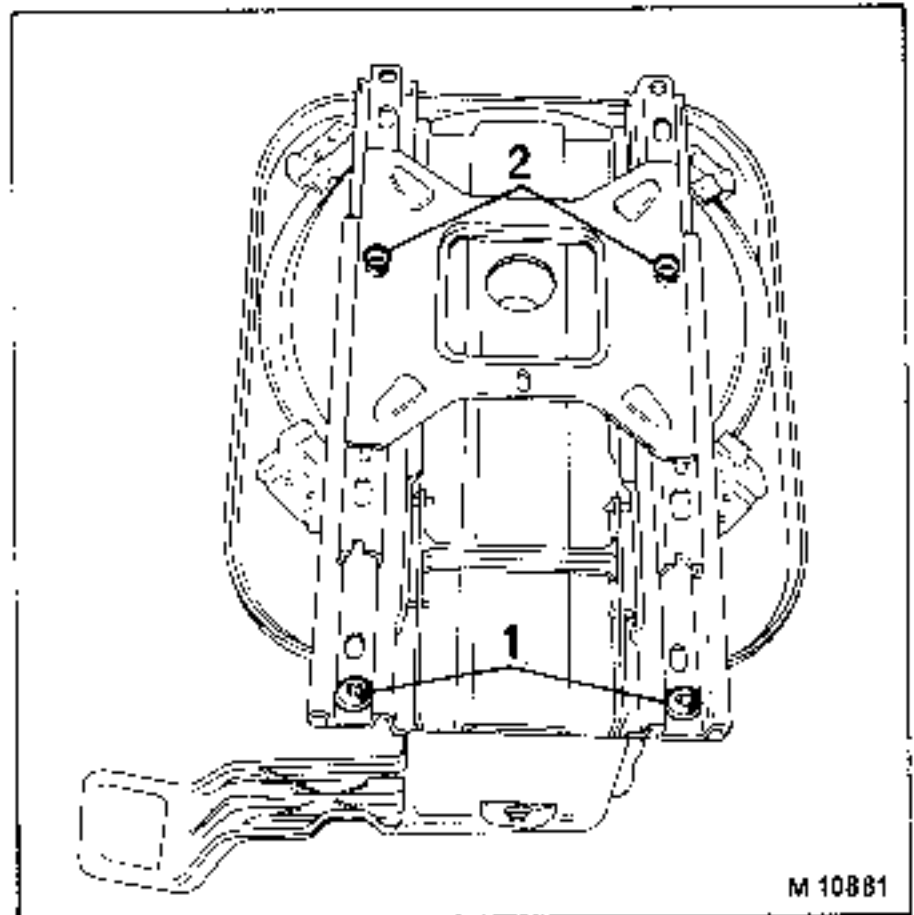
REMOVING THE FRONT SEAT FRAME  
(without the slides)

- Remove the 4 screws (1) that secure the frame to the swing plate.



REMOVING THE SLIDES

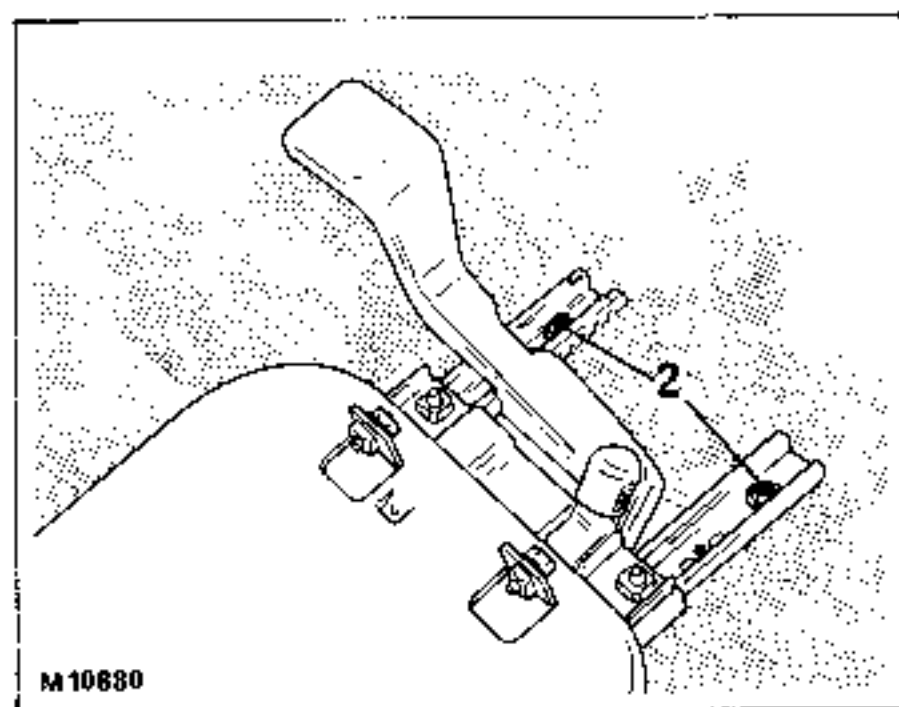
- Remove the 2 front screws (1).
- Push the slides forwards and remove the 2 rear screws (2).



REMOVING THE SWING PLATE AND SLIDE  
ASSEMBLY

After removing the frame :

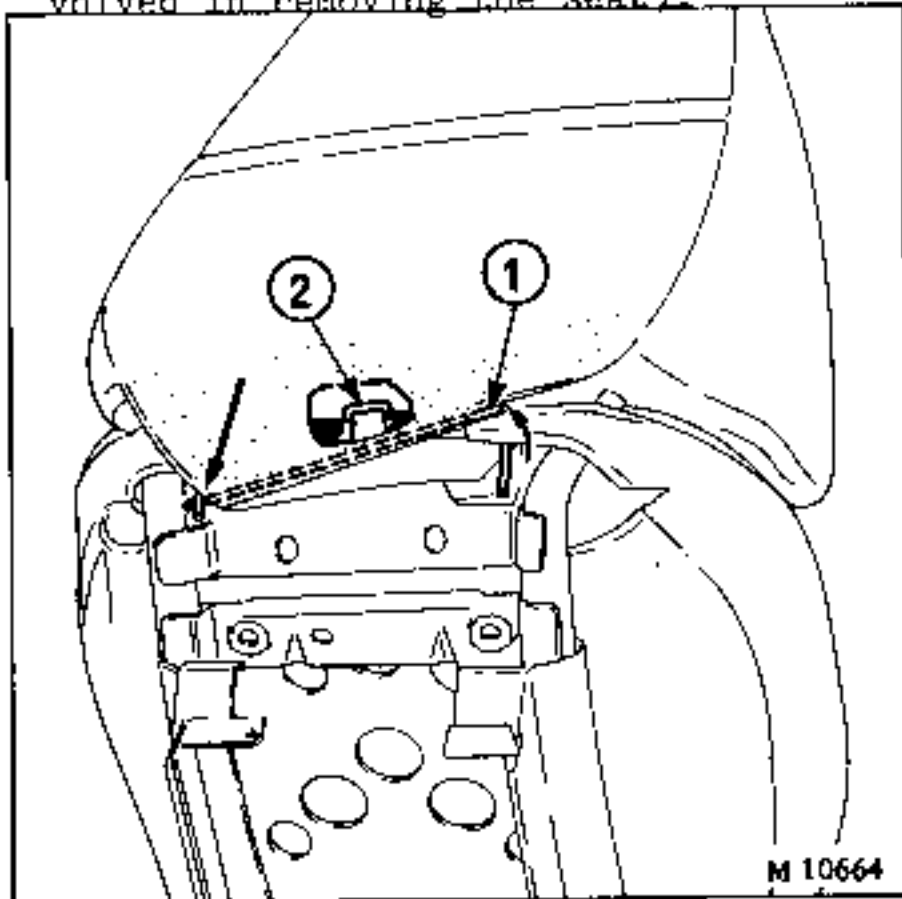
- Take out the 4 screws (2) that secure the slides to the floor.



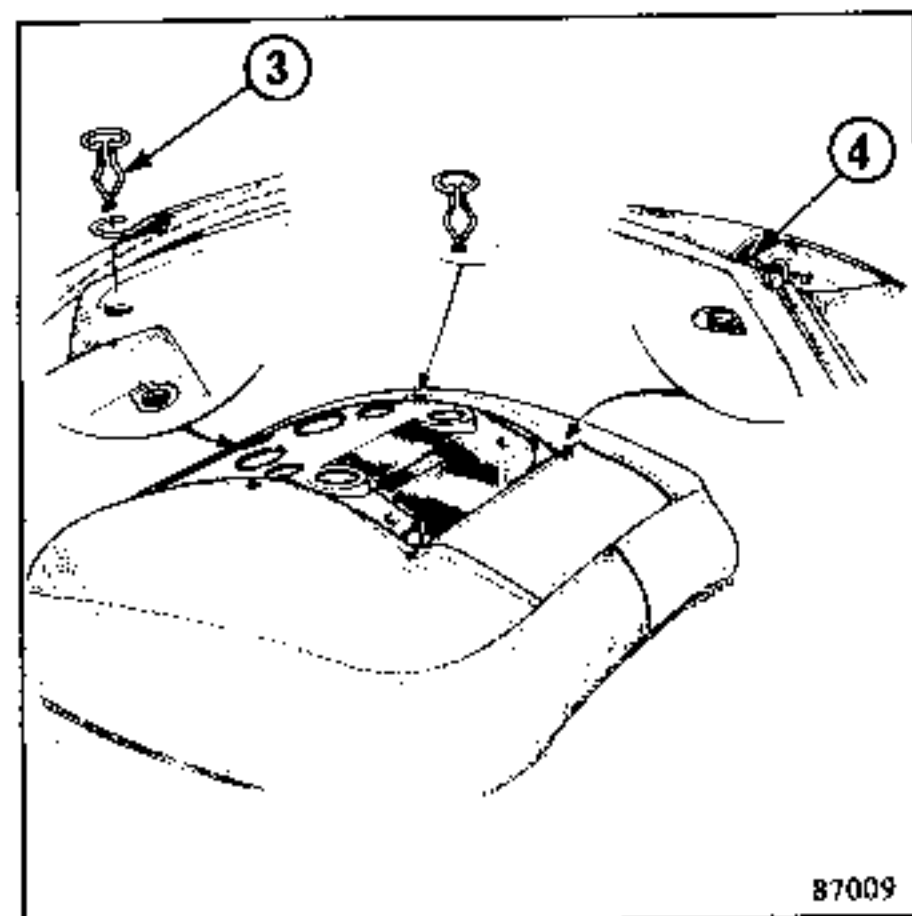
Removing

This operation can be carried out without removing the seat. It is only necessary to remove the cushion.

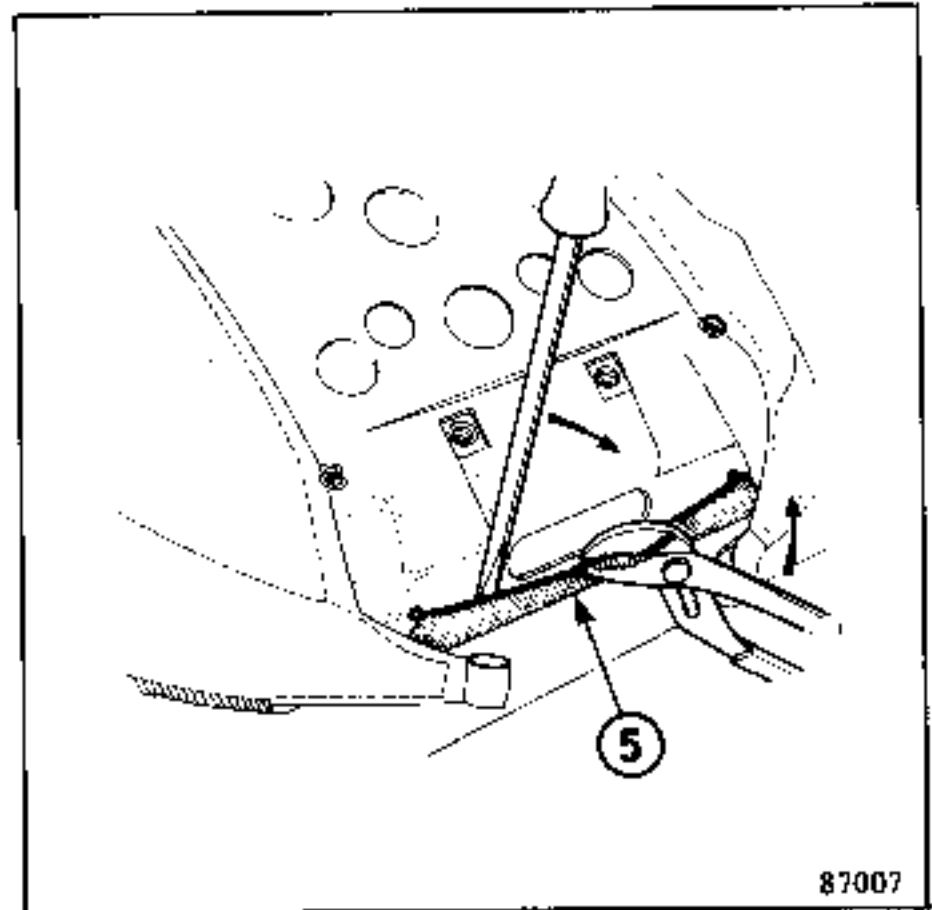
- Remove the 3 screws that secure the cushion to the frame (see operations involved in removing the seat).



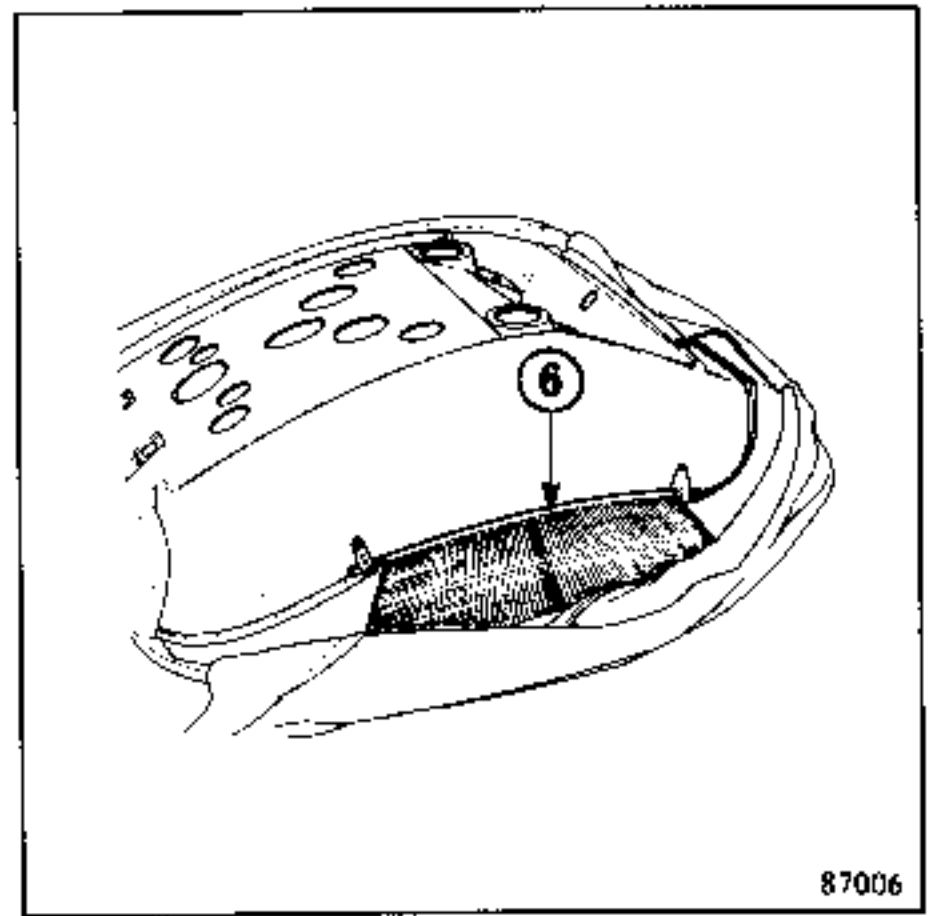
- Free the link (1) that secures the lower part of the seat back cover.
- Remove the clip (2) that secures the cushion cover.
- Remove the cushion.



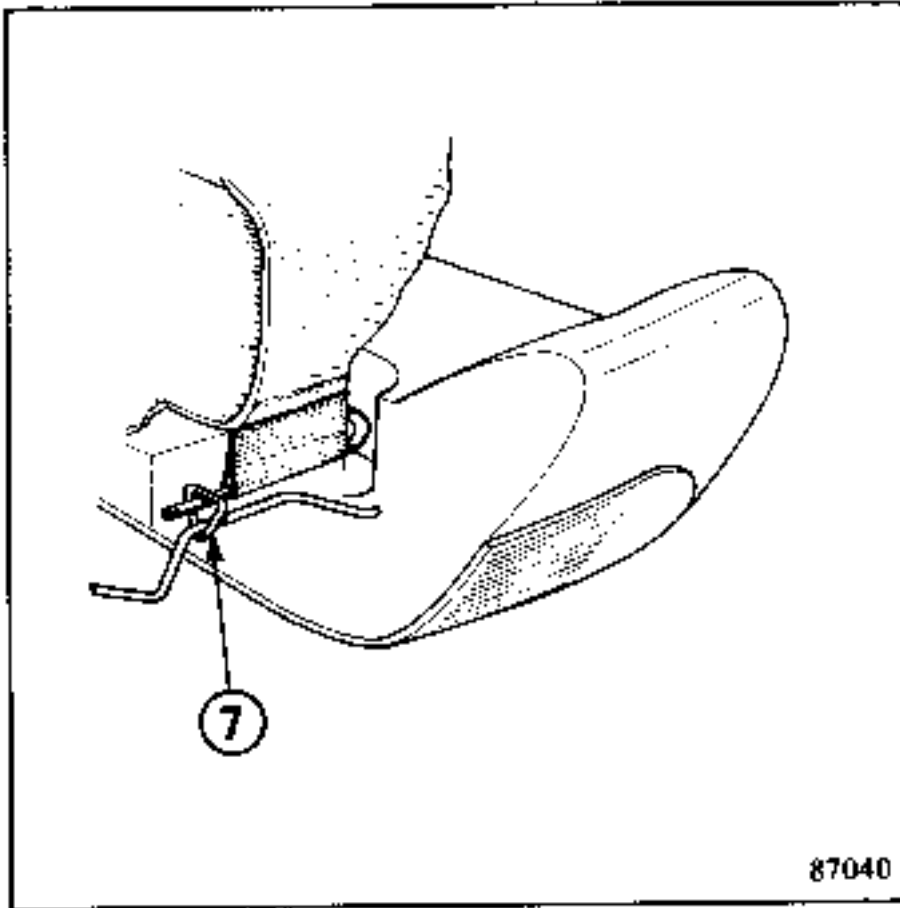
- Remove the 4 clips (3).
- Free the 2 links (4) from the plastic shell.



- Using a pair of pliers, swing link (5) and, with a screwdriver, lever it out from the plastic shell.



- Remove the 2 side links (6).



- Cut the clips (7) that maintain the shape of the centre of the cushion, using wire cutters.
- These clips are hooked over a link which is embedded in the foam.



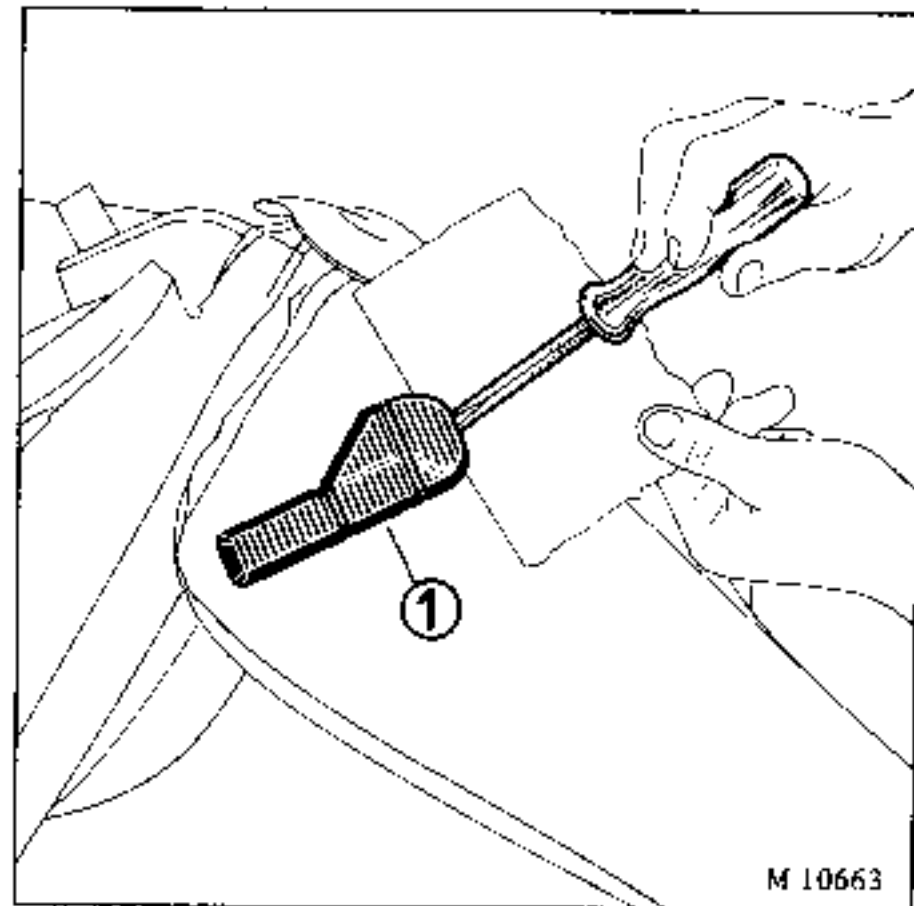
- Remove:
- the seat from the vehicle,
  - the cushion.

Free the rod (1) from the seat back trim at the lower front end.

- Remove :
- the head rest,
- the locking knobs (by pulling them).

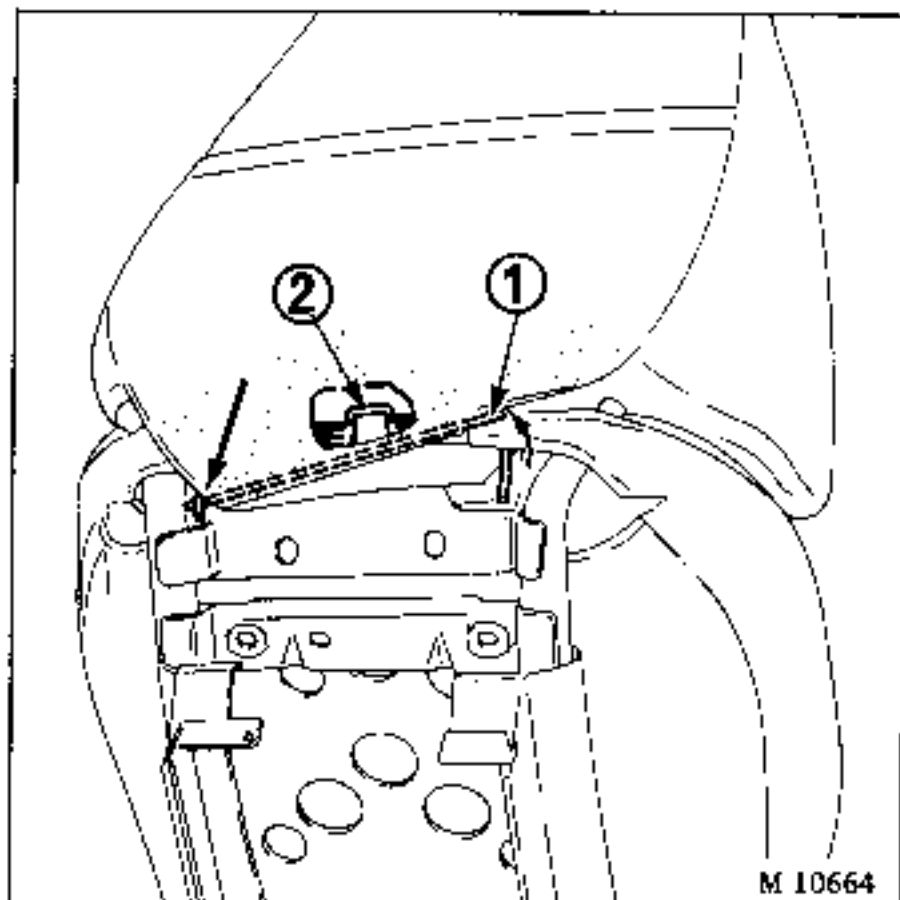
Pass one hand between the covering and the foam (at the front) to free the velcro strips.

Remove the covering from the seat back.



Remove the seatback angle adjusting handle (1) (using a screwdriver and a sheet of some protective material).

Remove the 2 clips (2) that secure the covering side flaps.



The De luxe models are equipped :

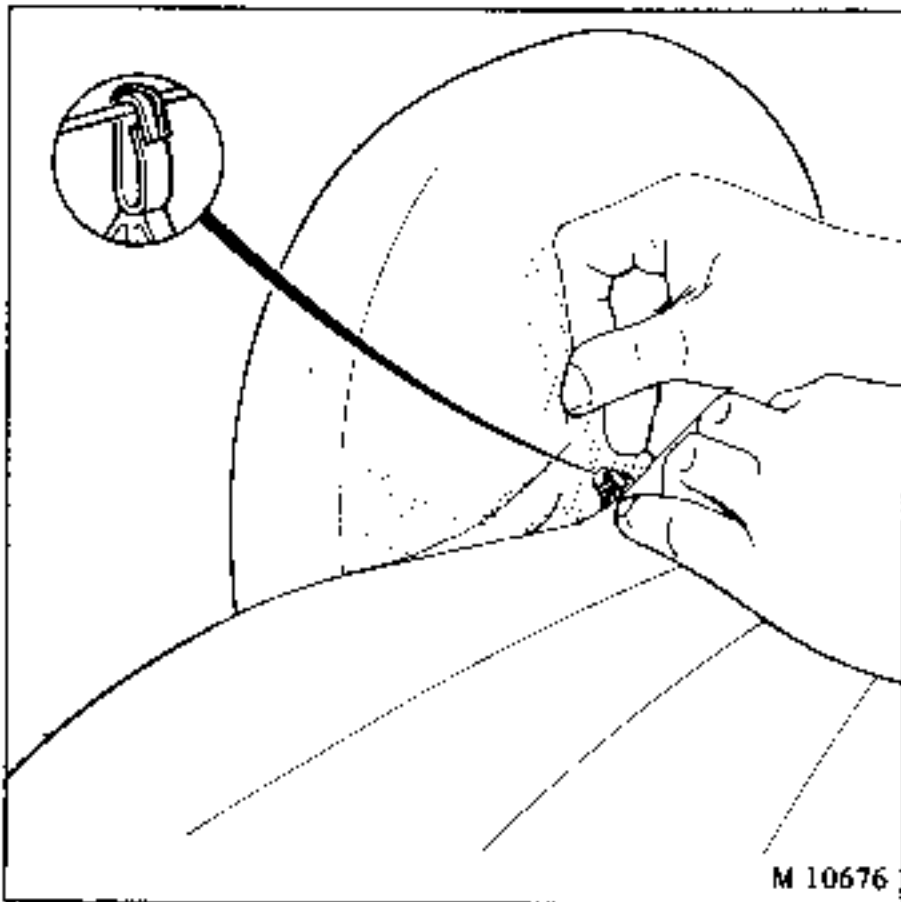
- with a swing plate,
- with a seat back tray of the "Air line" type,
- with a special seat back.

The seat cushion is identical to that of the basic model.

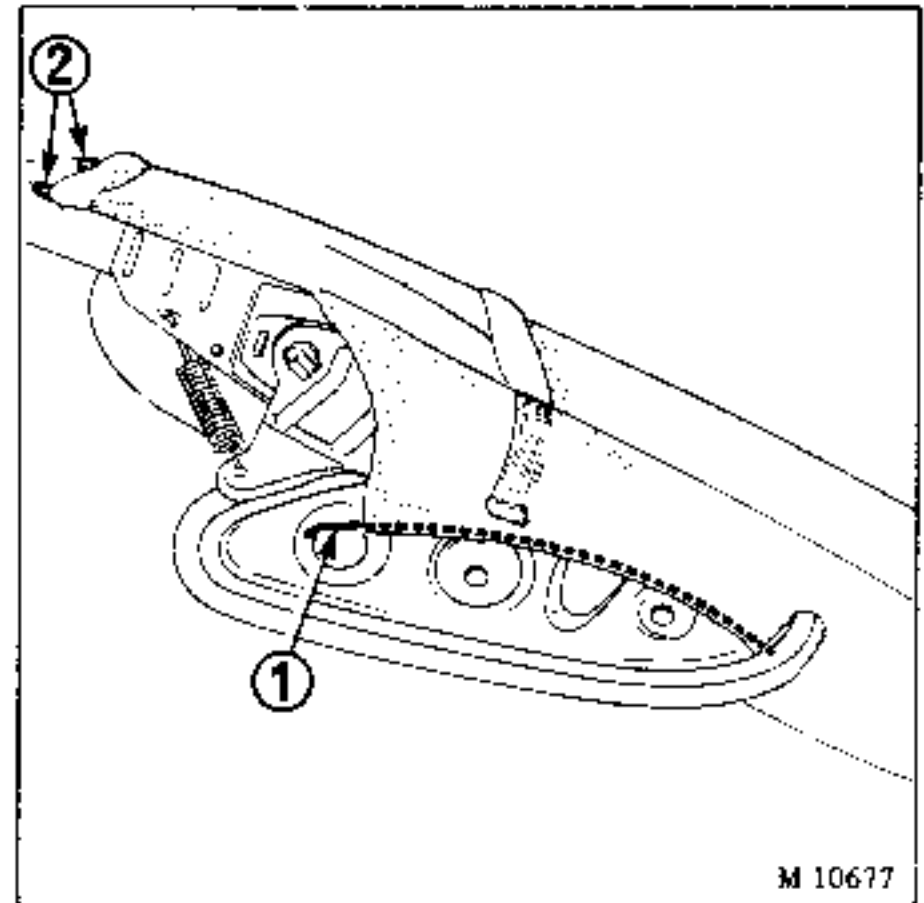
#### REMOVING THE CUSHION

Carry out the same sequence of operations as for the basic model.

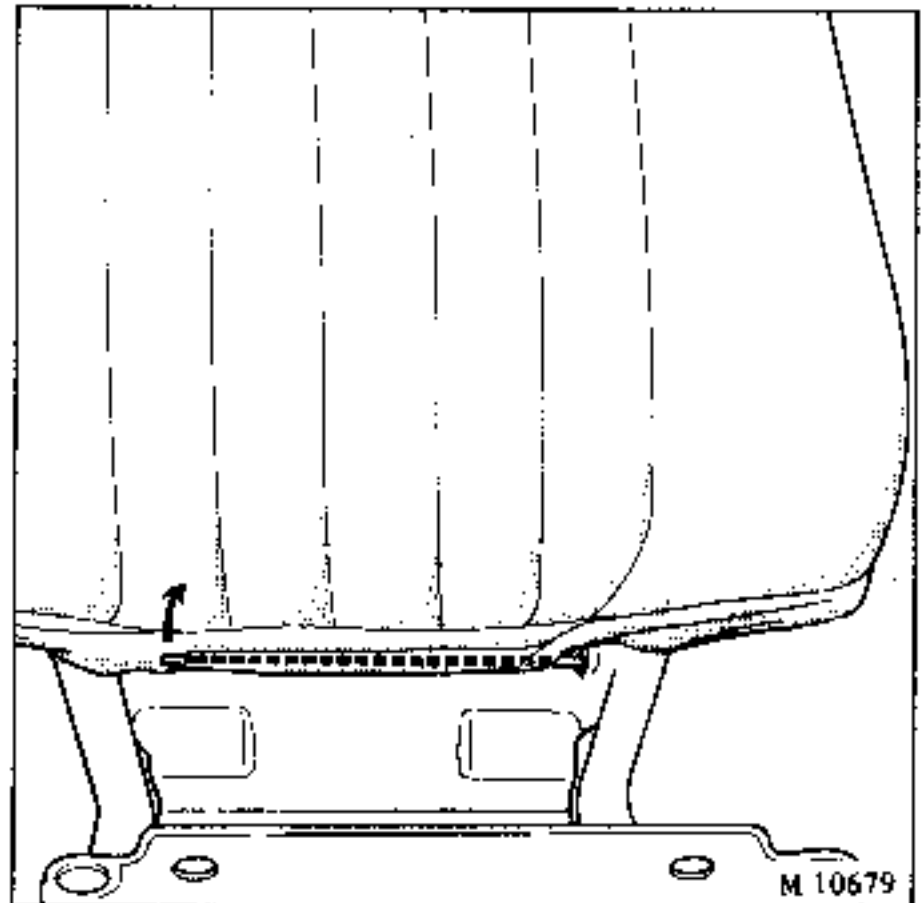
#### REMOVING



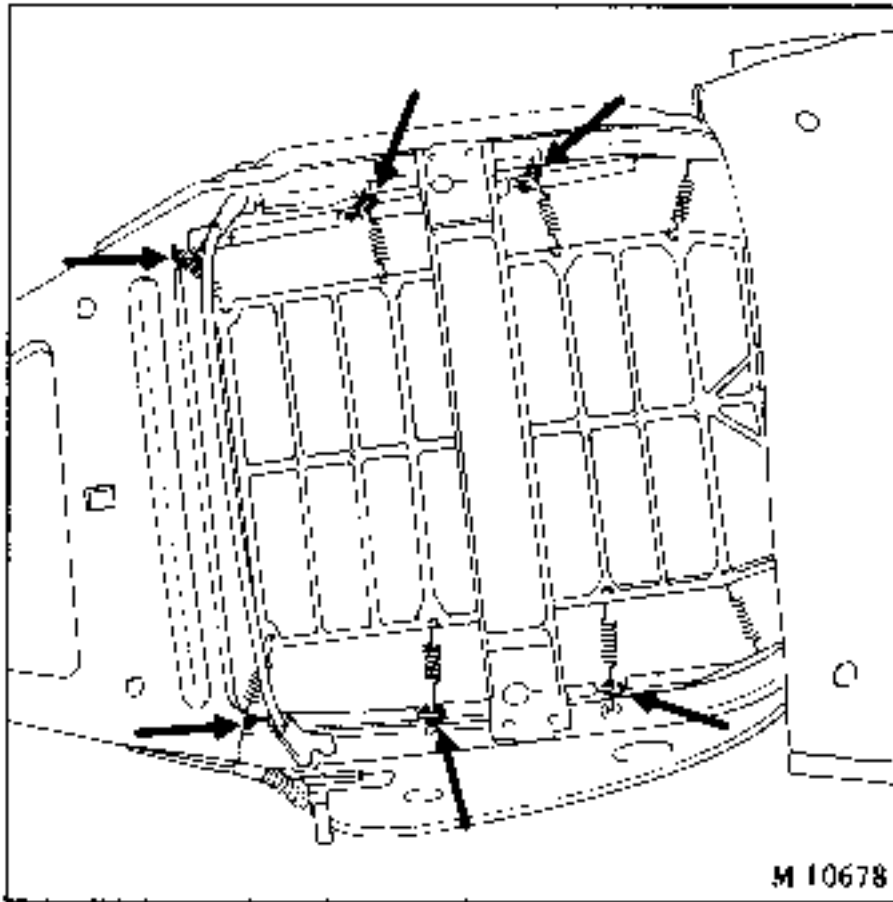
Pull apart the seat back wings and, using a screwdriver, free the clips.



- Remove the side links (1).
- Free the lower elastic bands (2) on the covering.



- Free the rod from the seat back covering at its front end.
- Remove :
  - the head rest,
  - the locking knobs (by pulling them),
  - the seat back angle adjusting handle.



- Cut the clips.
- Remove the tray, the clips and the strut lower securing point.
- Remove the covering from the seat back.

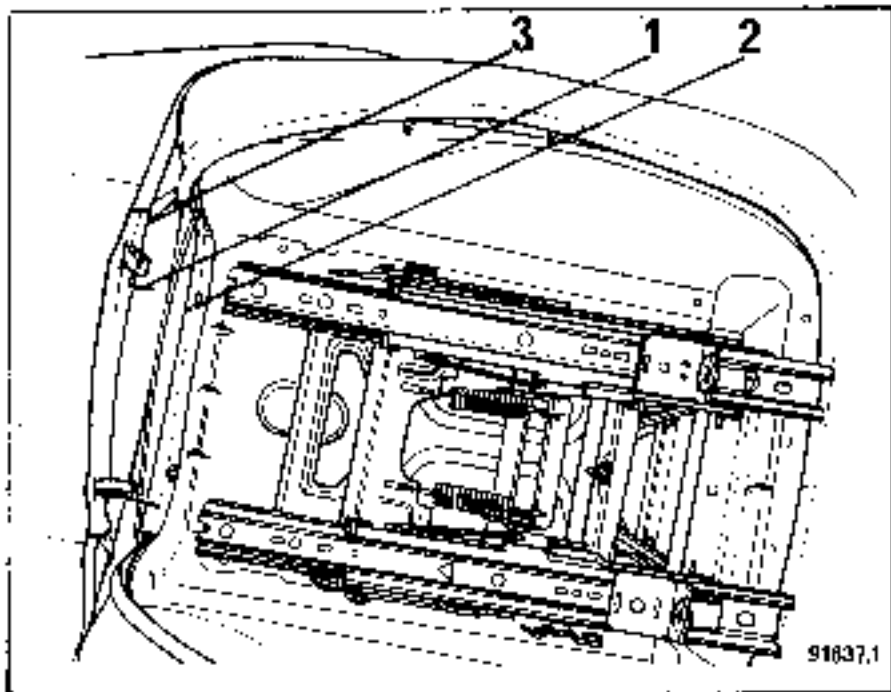
#### REFITTING

Carry out the removing operations in reverse.

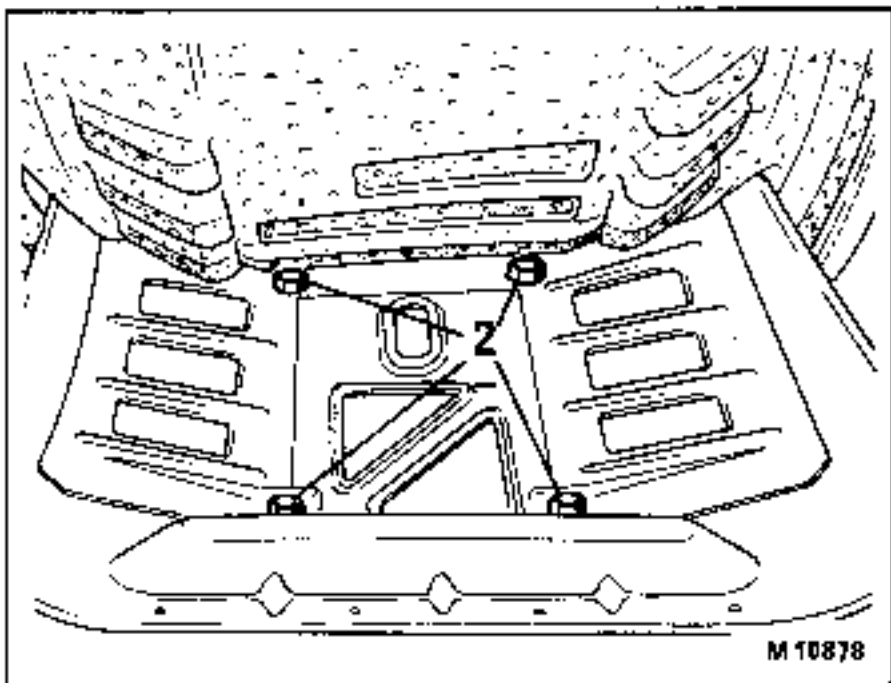
Removing

It is not necessary to remove the slides to carry out this operation.

- Unclip :
  - the 2 hooks (1),
  - the periphery of the covering (2).
- Cut the 2 hook clips (3).
- Fold back the covering over the top of the cushion.

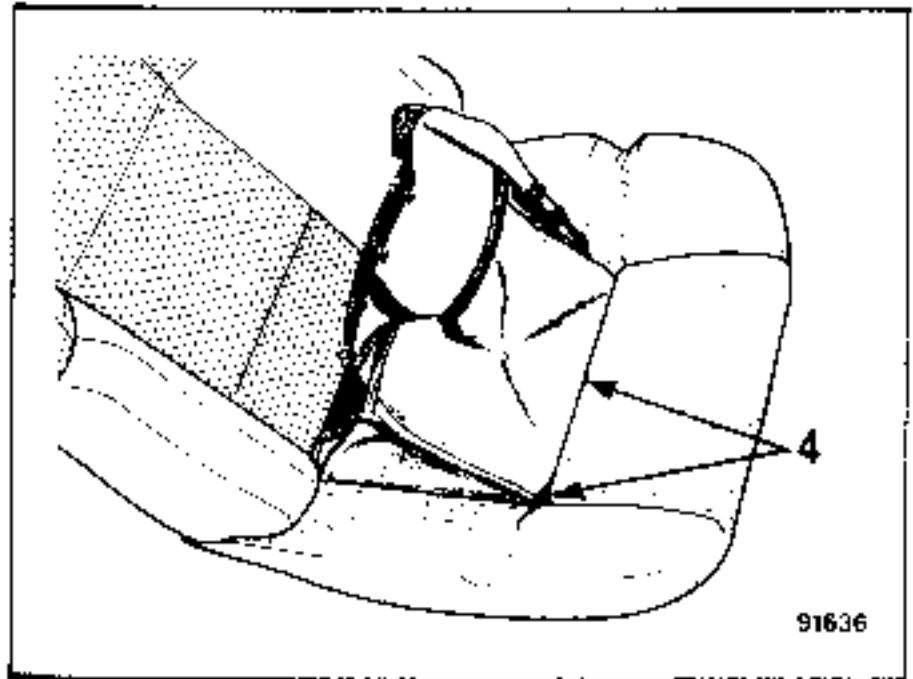


- Lift up the cushion foam to gain access to the screws (2) and take them out.



- Remove the seat frame.

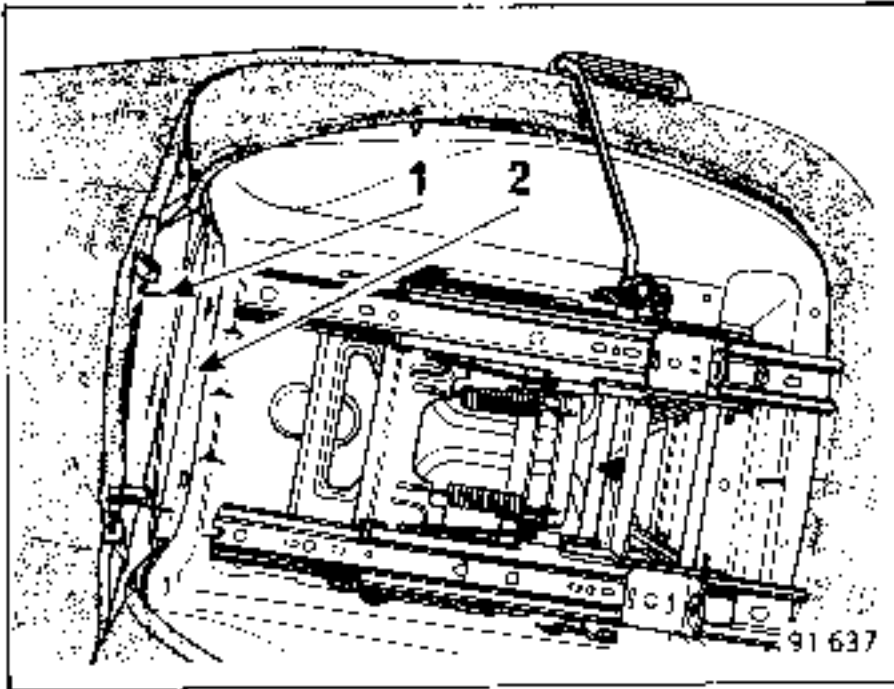
- Cut the clips (4) that secure the 3 links to the foam.



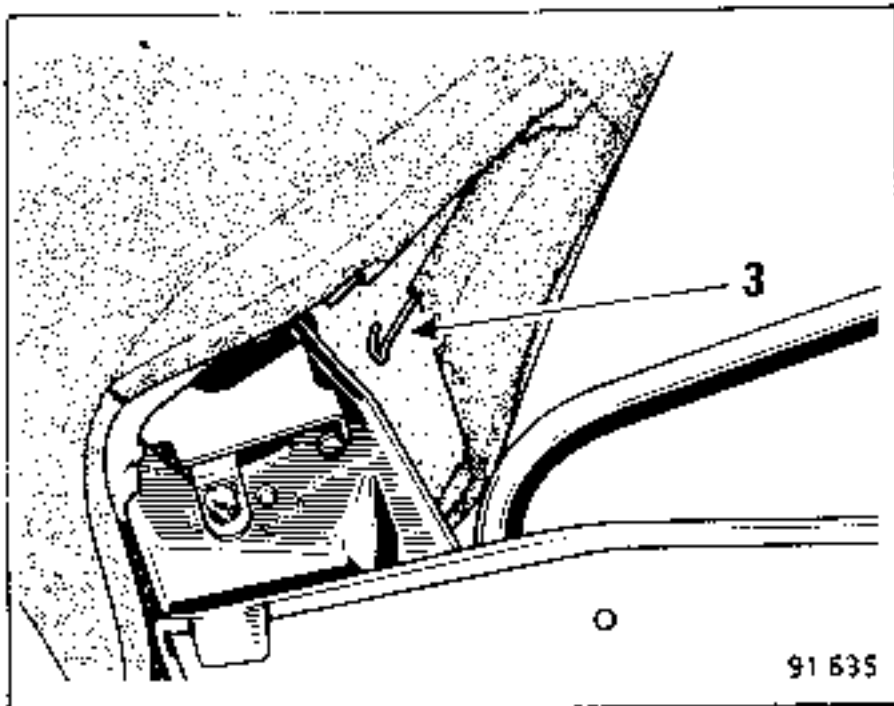
Removing :

Unclip :

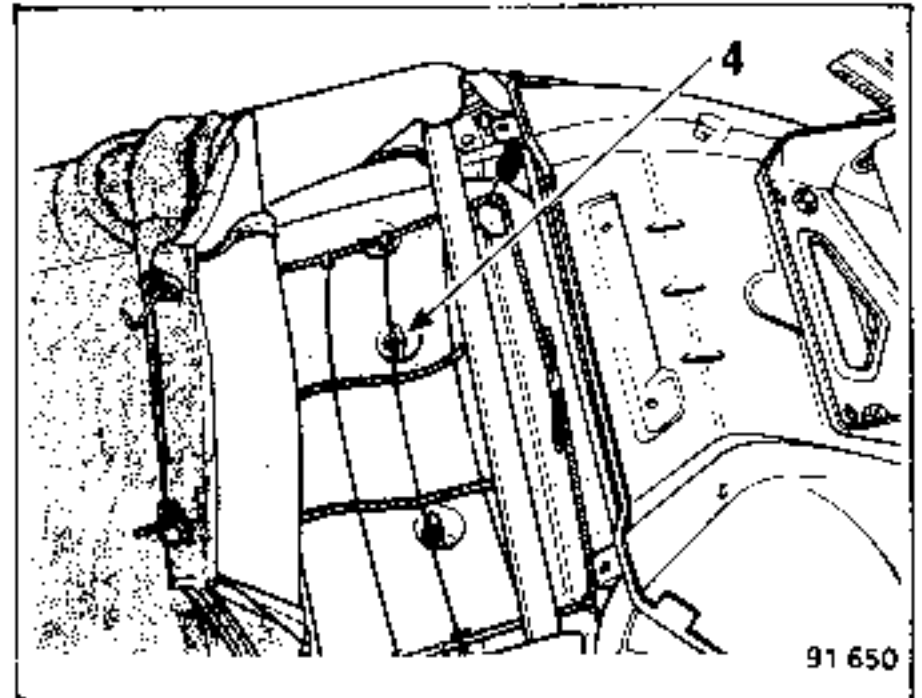
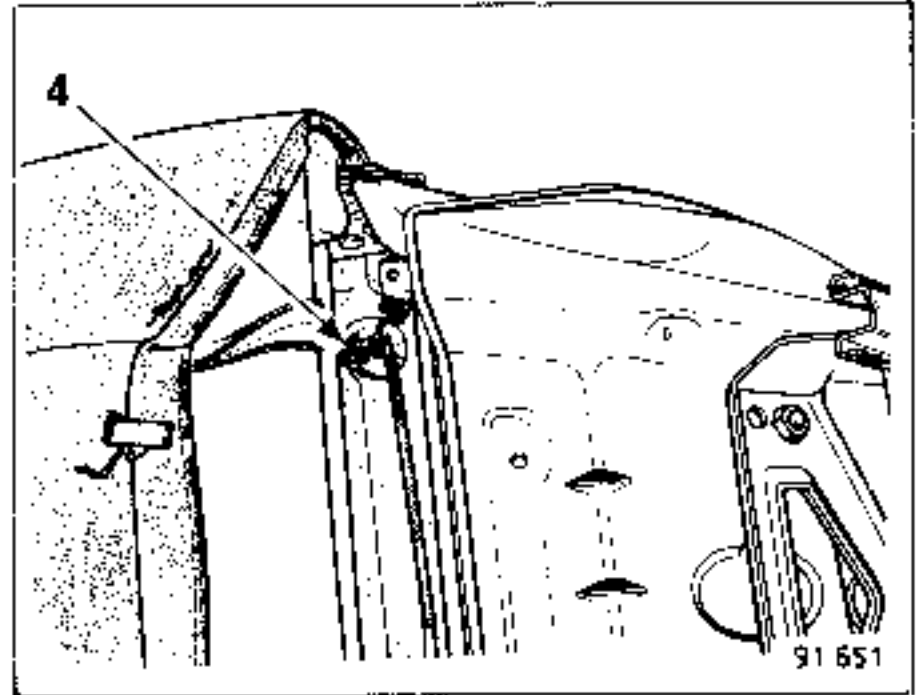
- the 2 hooks (1),
- the covering (2).



- the 2 clips (3) on either side of the seat.



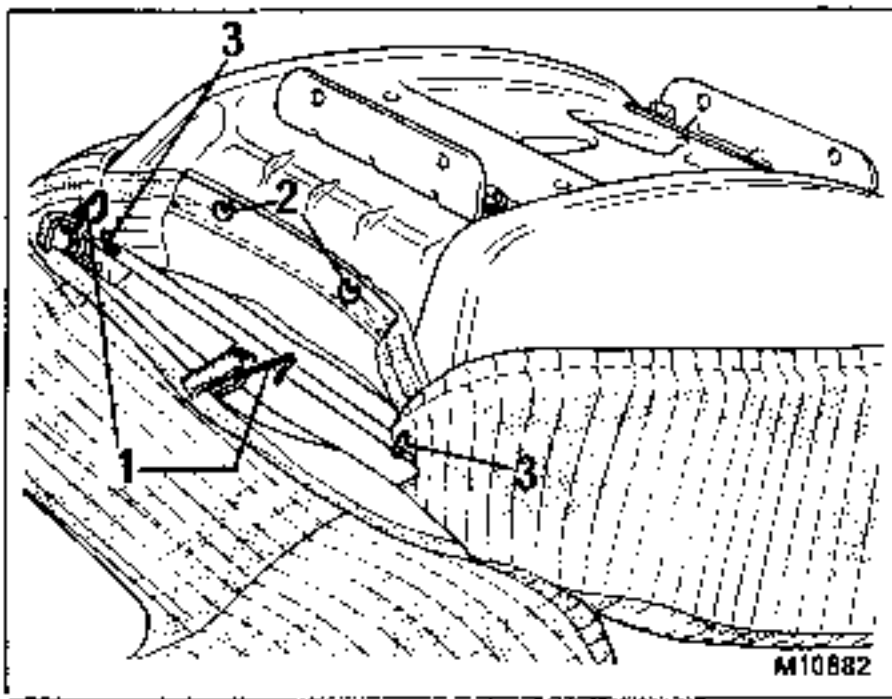
- Cut the hook type clips (4) that secure the covering to the seat frame.



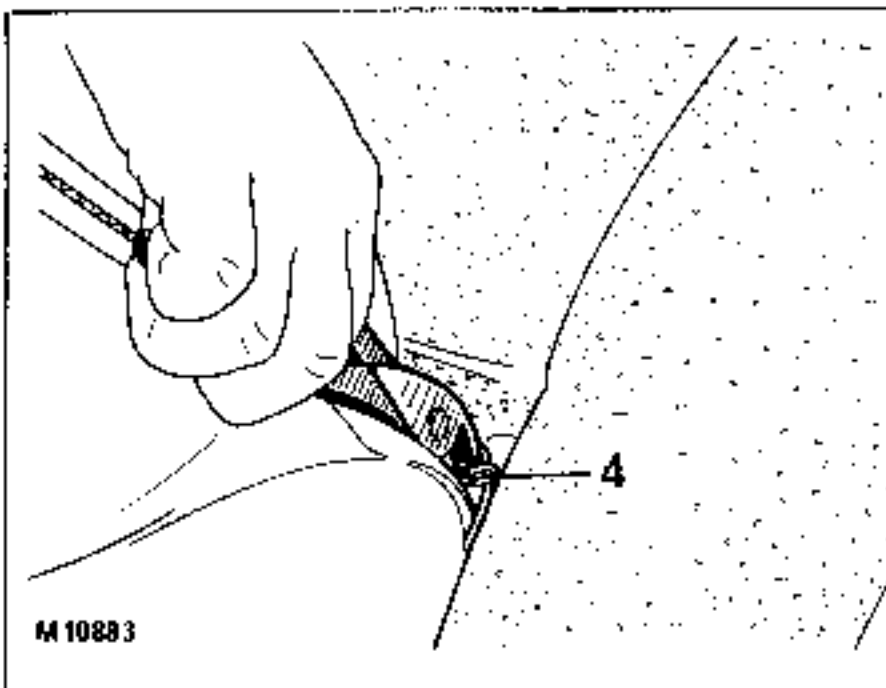
Removing :

First remove the seat frame :

- Unclip the 2 hooks (1) and the clips (2) that secure the outside of the covering to the cushion frame.
- Cut the 2 hook type clips (3).
- Fold the covering back over the cushion foam.

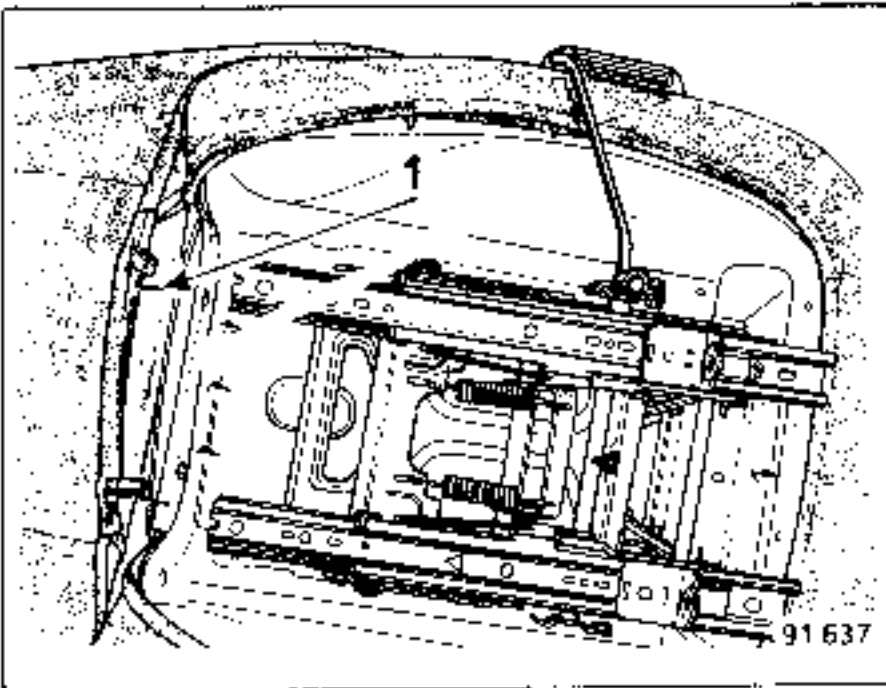


- Cut the clips (4) that secure the covering to the link embedded in the foam, using a pair of wire cutters.

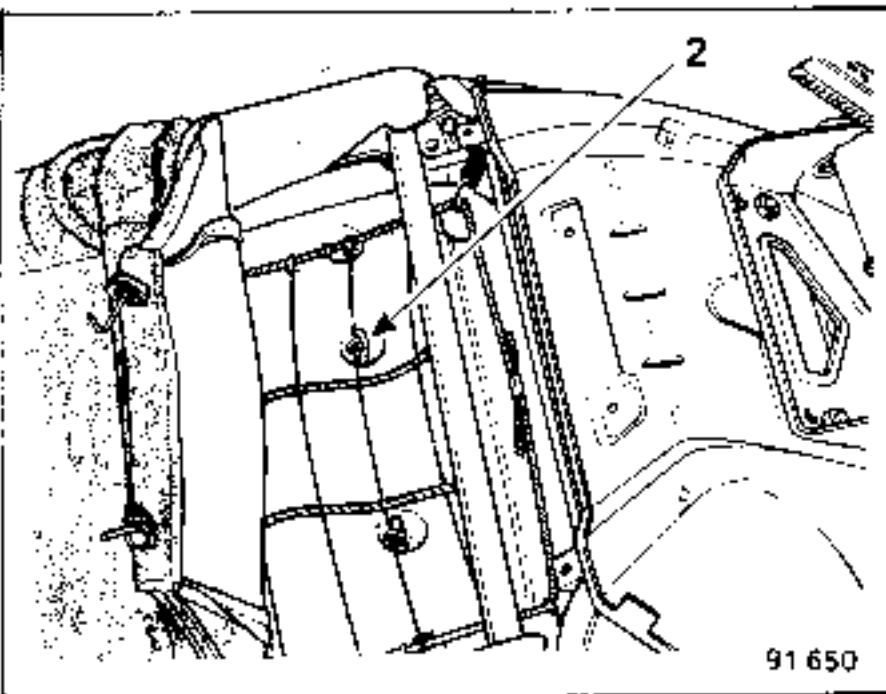


Removing

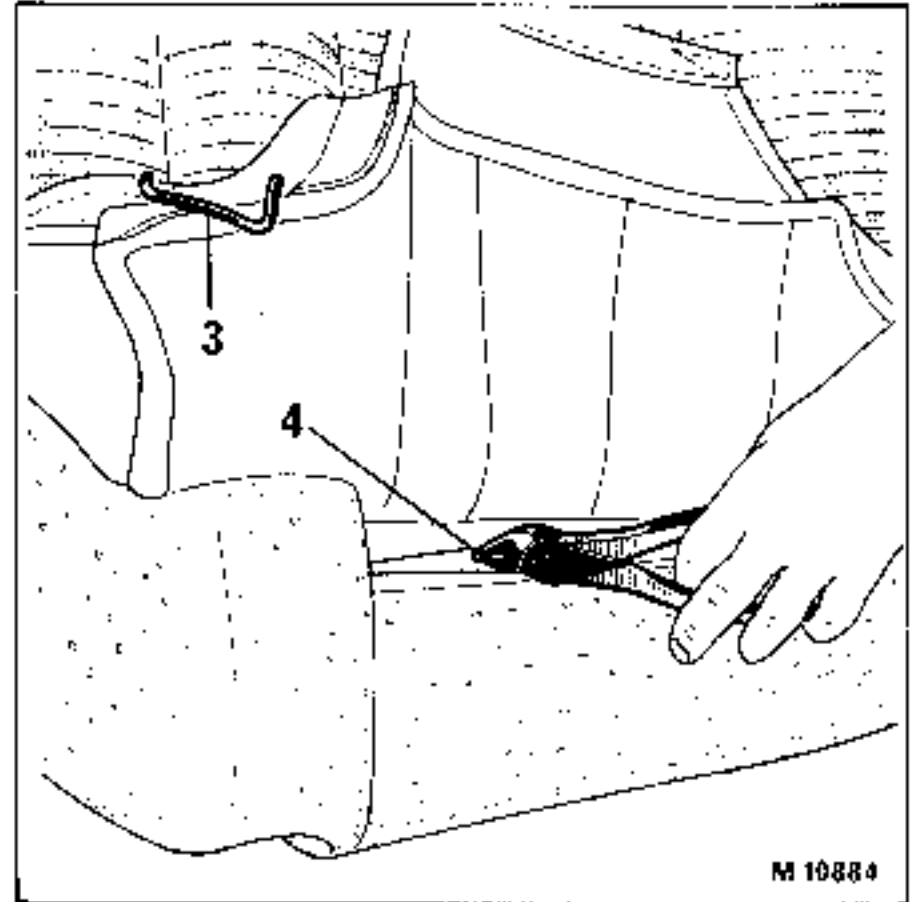
- First remove the seat frame :
- Take off the seat back tray, the clips, the strut lower securing point and the headrest.
- Unclip the 2 hooks (1).



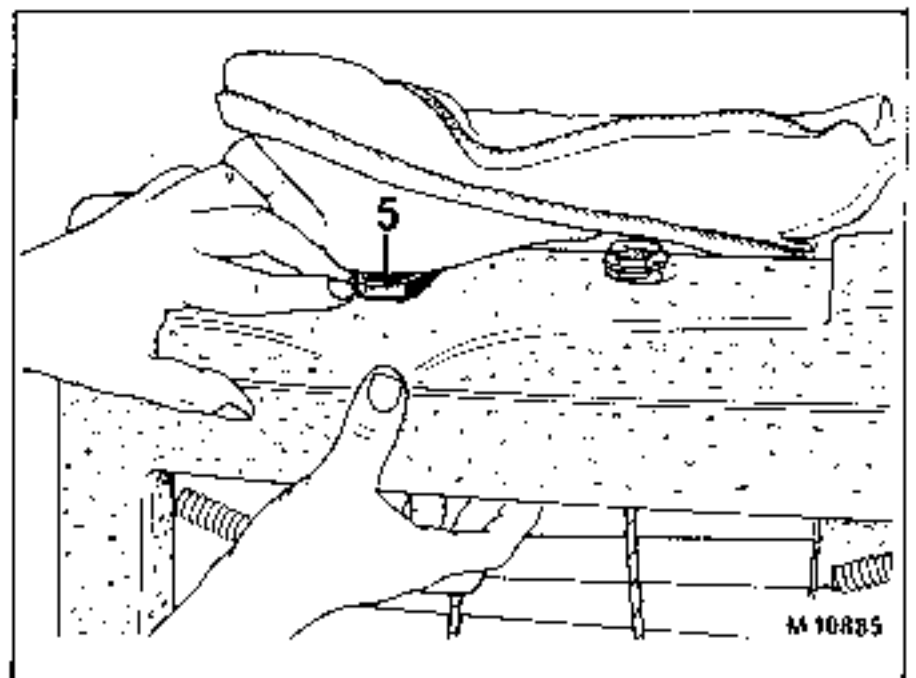
- Cut the hook type clips that secure the covering to the frame, with a pair of wire cutters.



- Remove the 2 clips (3).
- Cut the 2 hook type clips (4).

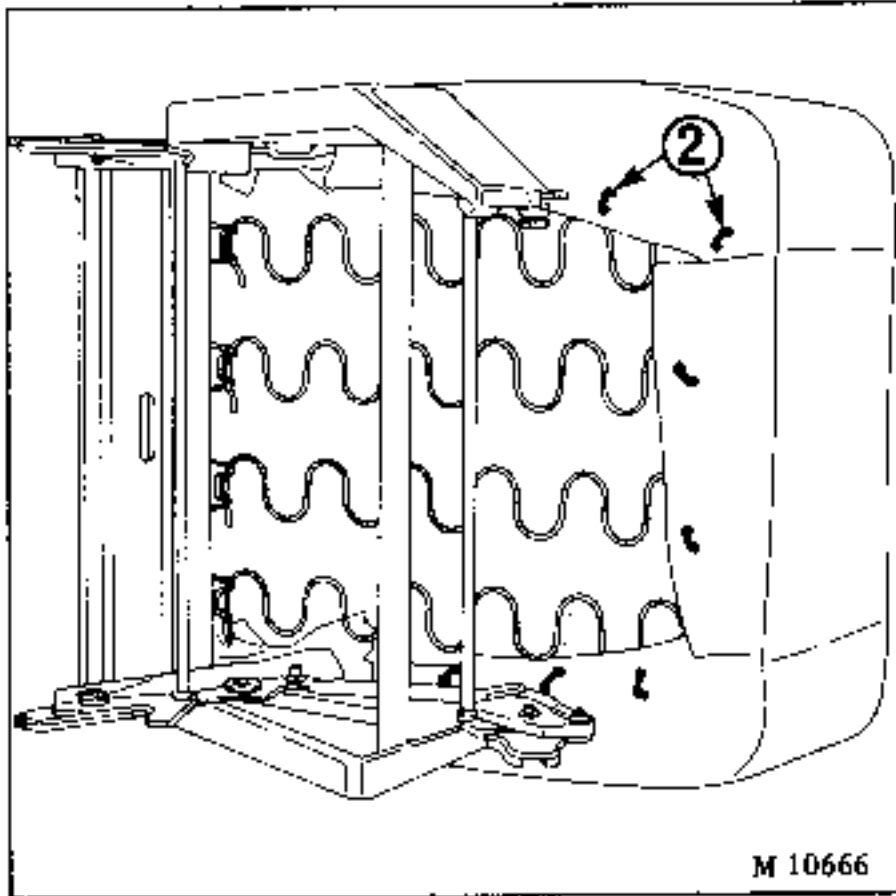


- Remove the adjusting bush on the right hand side of the headrest.
- Unclip the bush on the left hand side (5) that secures the trim, in line with the headrest guide.
- Remove the covering by passing it over the bush (5).



- Remove the seat from the vehicle.

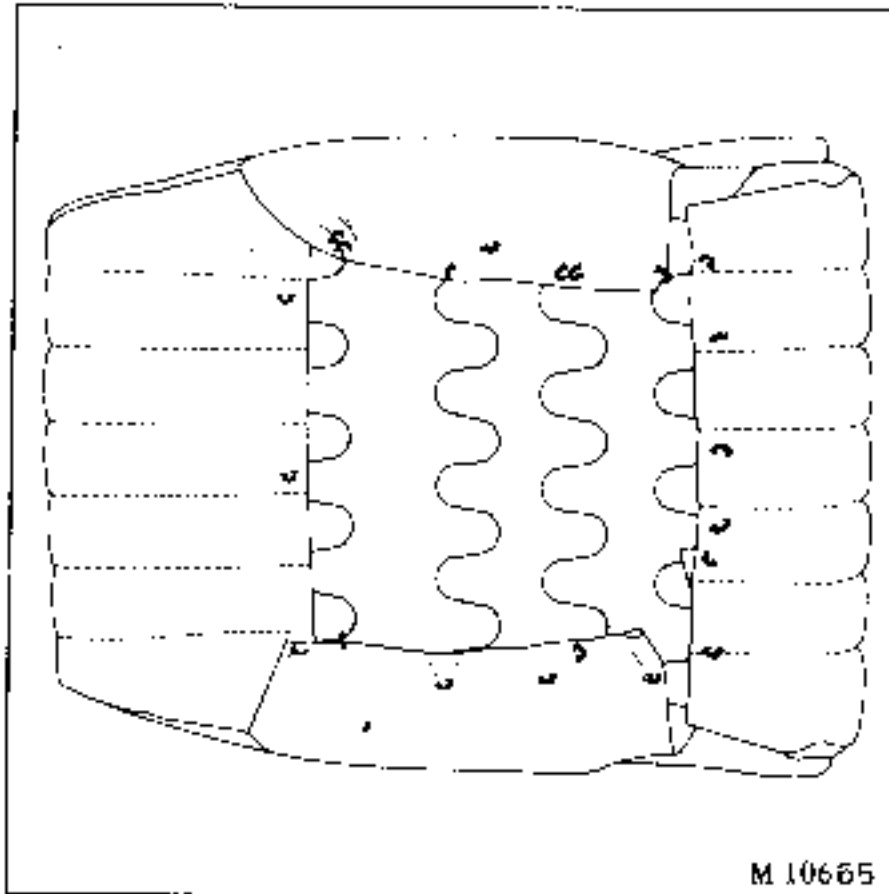
Removing



- Remove the lower protection.
- Cut the clips (2) that hold the covering in place.



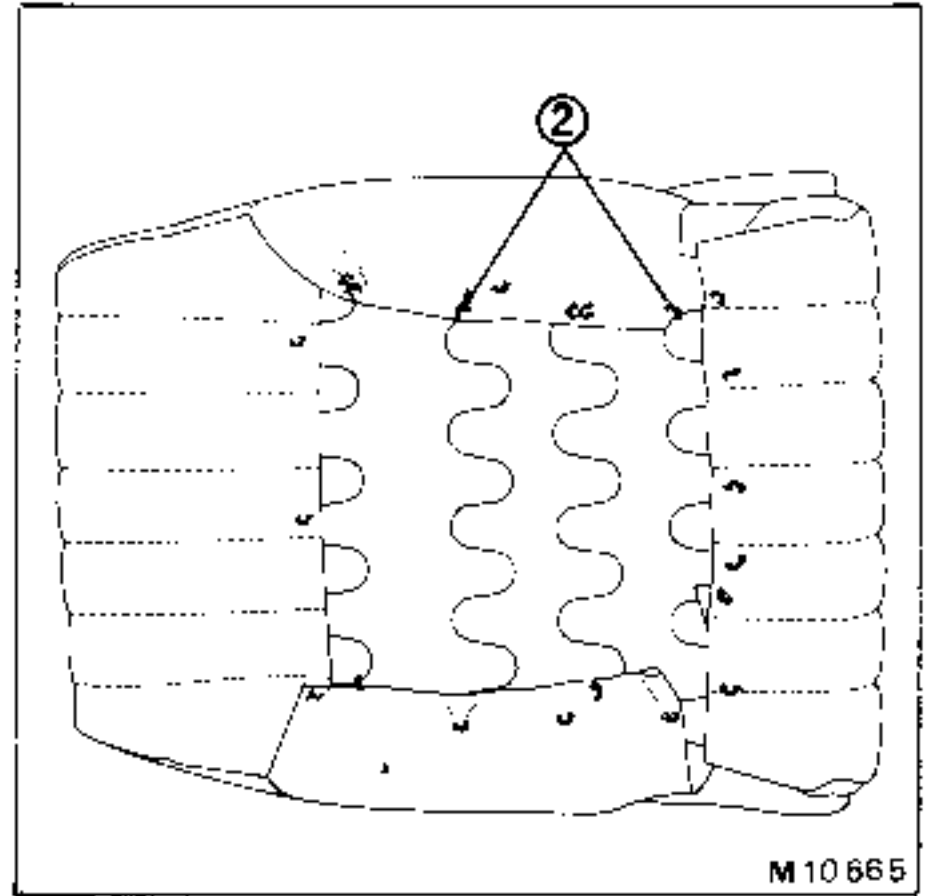
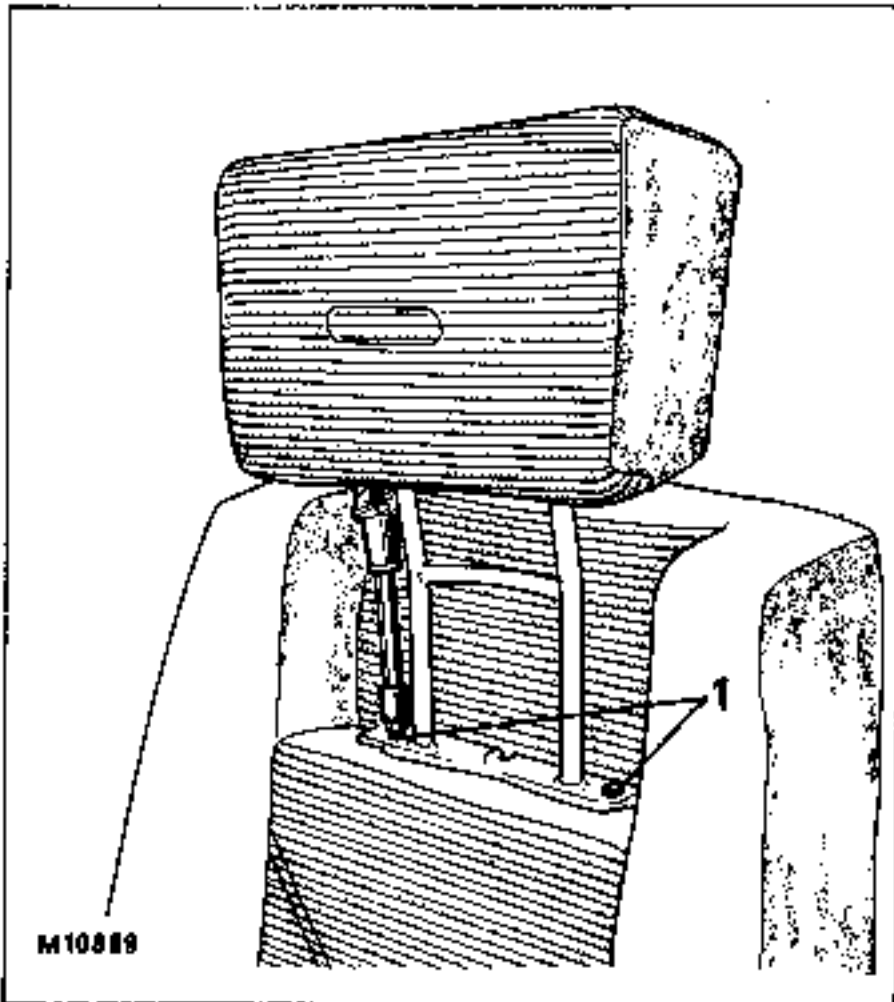
- Remove the seat from the vehicle.
- Removing



- Remove the 4 screws (or clips) that secure the tray to the seat back.
- Cut the clips with wire cutters.
- Pull the foam upwards.

REMOVING

- Pull the headrest upwards to its full extent.
- Remove the 2 screws (1) that secure the headrest support.
- Take out the support and headrest assembly by pulling it upwards.

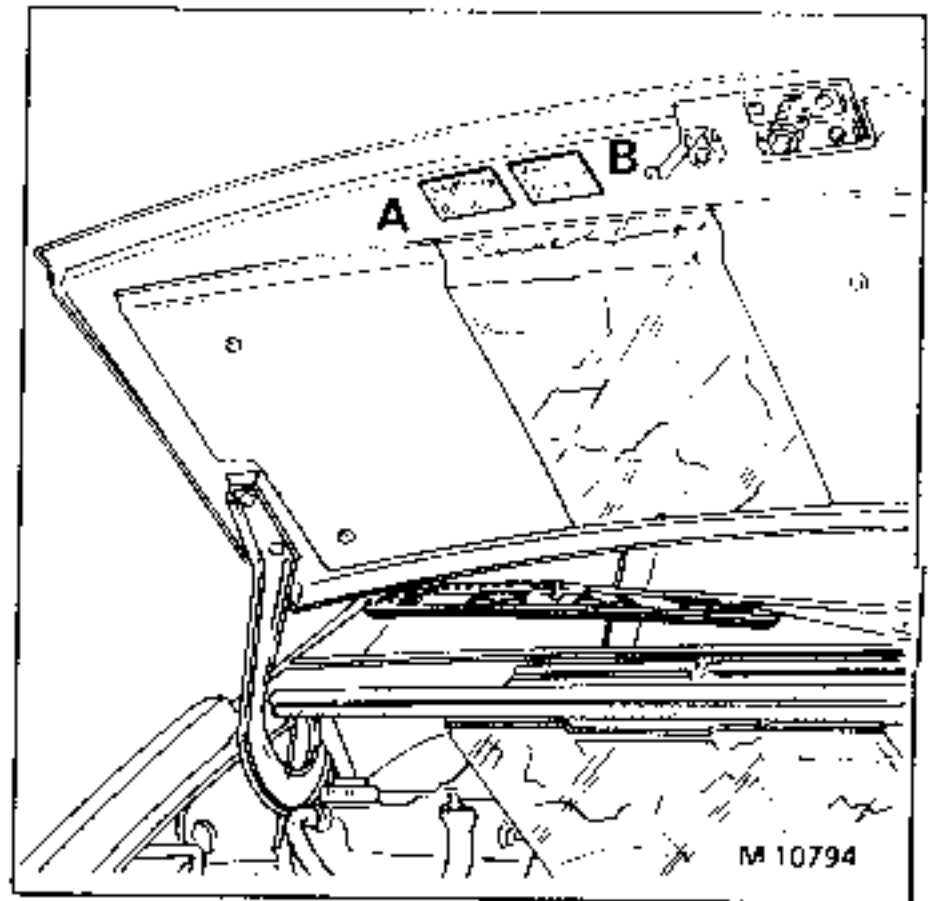


REMOVING THE SEAT CUSHION

Carry out the same operations as on a seat that has no headrest.

- Remove the seat from the vehicle.
- Remove the tray from the seat back. It is secured to the frame by 4 clips.
- Cut the hook type clips (2) with wire cutters.
- Remove the covering.

Self-adhesive labels identifying the body and accessory paint colours are applied under the engine compartment lid.



DETAILS OF MARKINGS

B - STRUC-COAT PAINT (Bumper shields, interior areas, sub-frames, etc.)

A - BODY FINISH

<b>VERILAC</b>	
Service	8, Rue Mazenod 69003 LYON
Commercial	Téléphone : 880-07-35 +
Usine	: PONT D'AIN - Téléph. : 39-01-44
U 51588 <b>967</b> ← 2	
VERT YUCCA 8409 ← 1	

<b>VERILAC</b>	
Service	8, Rue Mazenod 69003 LYON
Commercial	Téléphone : 880-07-35 +
Usine	: PONT D'AIN - Téléph. : 39-01-44
AU 59163	
STRUC-COAT GRIS 8410 ← 1	

Inscription 1 is the "MATRA" reference.  
Inscription 2 is the "RENAULT" reference.

SOURCE OF SUPPLY OF PRODUCTS TO BE USED

**MATRA AUTOMOBILES**  
Magasin Pièces de Rechange (Spare Parts Stores)  
41200 ROMORANTIN

Telex : MAT MPR 751436

Tel. : 54.76.15.22  
54.76.19.68

	Colour	RENAULT Ref.	Kit ref.	MATRA Ref.
OPAQUE FINISHES	YUCCA GREEN	967	60 25 070 302	8409
	ATLAS BEIGE	163	60 25 070 303	3399
	PIMENTO RED	704	60 25 070 499	8414
	BAMAKO IVORY	103	Supplied by CORONA	7404
	VANILLA	305	60 25 070 812	8429
OPAQUE 2 COAT	MOSS GREEN	909	60 25 070 813	8430
METALLIC 2 COAT	CINNAMON BROWN	174	60 25 070 29	8404
	ISLAND BLUE	447	60 25 070 301	8408
	TITANIUM GREY	647	60 25 070 298	8403
	CORNALINE RED	742	60 25 070 300	8407
	SARDINIA RED	144	60 25 070 503	8418
	SIDERAL BLUE	436	60 25 070 501	8417
	CHARCOAL GREY	662	60 25 070 504	8415
	METEOR RED	707	60 25 070 500	8419
	ATALANTA GREEN	905	60 25 070 502	8416
	MANCHURIAN BLUE	437	60 25 070 684	8426
	EMERALD GREEN	988	60 25 070 814	8431
	VESUVIUS RED	712	60 25 070 815	8432
	AMBER GREY	609	60 25 070 817	8435
STRUC-COAT SATIN VARNISH	STRING		60 25 070 305	8411
	GREY		60 25 070 304	8410
	BLACK		60 25 070 306	8412
	ATALANTA GREEN*		60 25 070 629	8424
	CHARCOAL GREY*		60 25 070 627	8423
	SARDINIA BROWN*		60 25 070 628	8422
	MANCHURIAN BLUE *		60 25 070 685	8427
	VESUVIUS RED*		60 25 070 816	8433
	AMBER GREY*		60 25 070 818	8436

\*Metallic struc-coat.

## LIMITED SERIES (Special versions)

## PAINT READY FOR USE

COLOUR	EQUIVALENT	MATRA Ref.	Kit Ref.	APPLICATION
Neve WHITE	PSA (Rancho Murena)	3321	60 25 070 578	Ambulance (Sanicar & Baboulin)
		8425		Special order
Pure BLACK	PSA (Rancho)	3403	60 25 070 577	Special order
EDF BLUE	RNUR 417 RNUR 451	7402		EDF Prototype
BEIGE	RNUR 010	7401		German Taxi
Mephisto RED	PSA (Murena)	3401	00 32 757 600	Fire Service
Pimento RED	RNUR 704	3406	60 25 070 49	Paris taxis

## STRUC-COAT READY FOR USE

BLUE		8402	60 25 070 641	Paris taxis
WHITE		8421	60 25 070 640	Ambulances

(A) GALVANISED SURFACES			
Anti-corrosion protection of repaired areas	Protection kit	60 25 070 445	This kit consists of: -1nylon brush for stripping -0.5 litres pacifying paint -1 litre of zinc rich paint -0.5 litres of thinners 3022
Finishing of areas after anti-corrosion protection	Anti-chipping mastic	77 01 421 122*	For repairing under body areas and wheel arches
	Aluminium paint	77 01 418 199*	For repairing visible areas in the engine compartment
Preparation of repaired areas ready for painting	Epoxy primer	60 25 070 444	To improve adherence make up: - $\frac{2}{3}$ primer - $\frac{1}{3}$ hardener to be diluted with the thinners 3022 supplied (0.5 l)

## (B) PLASTIC COMPONENTS

Filling	Polyester mastic	77 01 395 513	For filling surface defects during panel repairs
Surfacer	Polyester coplast surfacer	77 01 394 771	For surfacing panel repairs
Primer	Polyurethane primer	77 01 404 180*	To cover rubbing-down marks and small defects
		77 01 421 306*	

## (C) MISCELLANEOUS PRODUCTS

Degreasing	DEROCHIM P 42	60 25 070 314	To remove greasy materials
Wiping	Chemical pad	77 01 417 065*	To remove dust
Black styled paintwork	Aerosol can black 698	77 01 405 457*	For window frames
Varnish coating	VERILAC kit consisting of: 1 l varnish - 0.5kg of 486 hardener	60 25 070 320	To be diluted with thinners D4100 Ref.: 60 25 070 329

\*Products to be ordered from the Parts Department at Cergy or CRPR

## CONTENTS OF PAINT KIT

VERILAC	-Opaque	-Struc-coat varnish	NITROLAC
-Metallic and opaque 2 coat. The kit consists of: 0.8 kg paint 0.16 kg hardener 0.5 kg varnish 0.25 kg hardener	Kit contains : 0.8 kg paint 0.4 kg hardener 0.25 kg thinners D4046 0.25 kg thinners D4100	Kit consisting of: - 1 kg paint - 0.2 kg hardener - 0.5 kg varnish - 0.25 kg satin varnish hardener - 0.25 kg thinners D4064 - 0.25 kg thinners D4100	- Opaque Kit consisting of: - 0.8 kg paint - 0.2 kg hardener - 0.25 kg thinners
	Varnish - 0.25 kg thinners D4046 - 0.25 kg thinners D4100		

## I VERILAC PAINT

## OPAQUE PAINT

Paint	100 parts
Hardener	50 parts
Thinners	5 parts

## METALLIC BASE

Paint	100 parts
Hardener	20 parts
Thinners	10 to 15 parts

## STRUC-COAT

Paint	100 parts
Hardener	20 parts
Thinners	10 to 20 parts

## VARNISH

Paint	100 parts
Hardener	5 parts
Thinners	50 parts

## II NITROLAC PAINT

## OPAQUE

Paint	100 parts
Hardener	25 parts
Thinners	20 parts

## III EPOXY ZINC-RICH PAINT

Paint	100 parts
Thinners	10 to 15 parts

## IV EPOXY PRIMER

Paint	100 parts
Hardener	30 parts
Thinners	10 parts

## A - COLOUR

- This is the sensation that the eye receives when daylight falls on coloured objects which surround us.
- Daylight consists of the mixture of colours that we can see in the rainbow (Red - Orange - Yellow - Green - Blue - Violet).

Example :

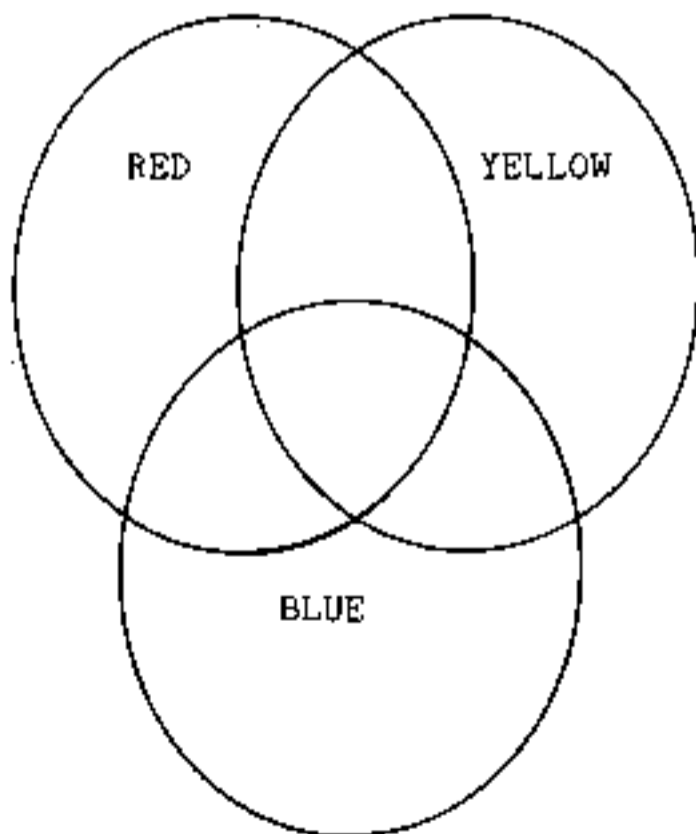
A coloured object (an orange) when illuminated by daylight absorbs all the colours apart from its own which it reflects (orange) and it is this that is seen by the eye.

## B - THE CHROMATIC CIRCLE

The chromatic circle is a simplified representation of all the colours in a given plan. The centre of the circle appears as colourmetric black.

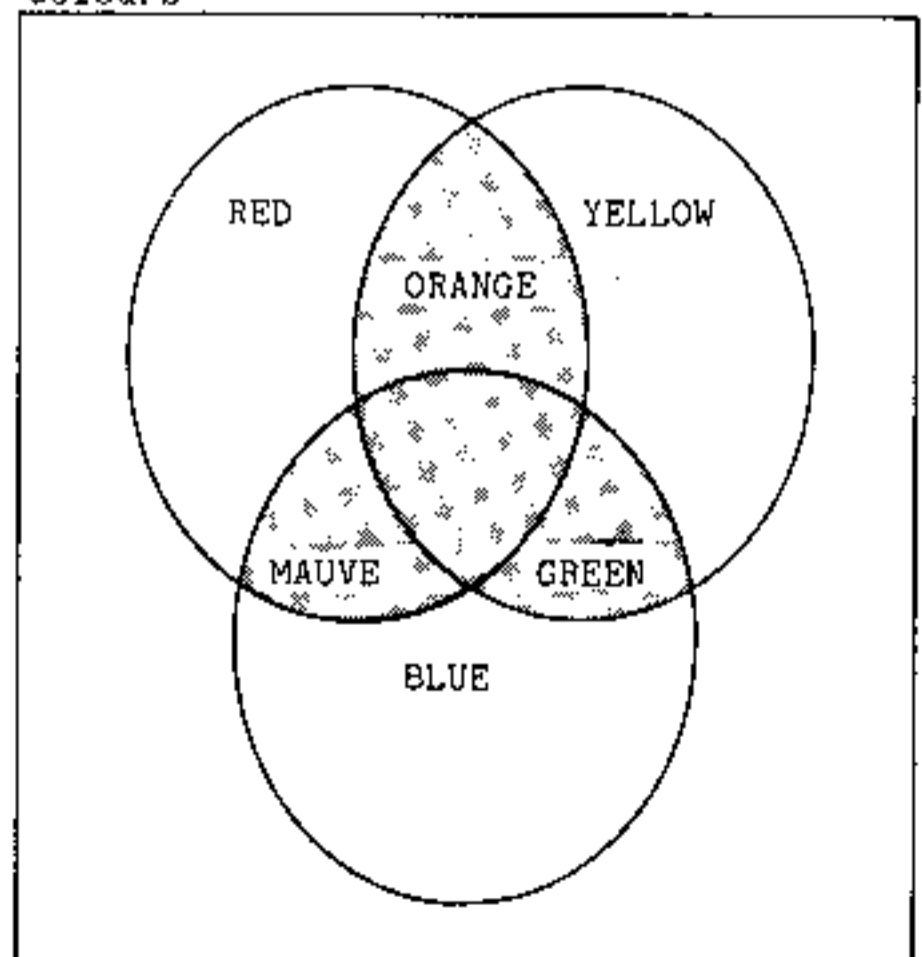
## THE PRIMARY COLOURS

These cannot be produced by mixing



## COMPLEMENTARY COLOURS

These are obtained by mixing two primary colours



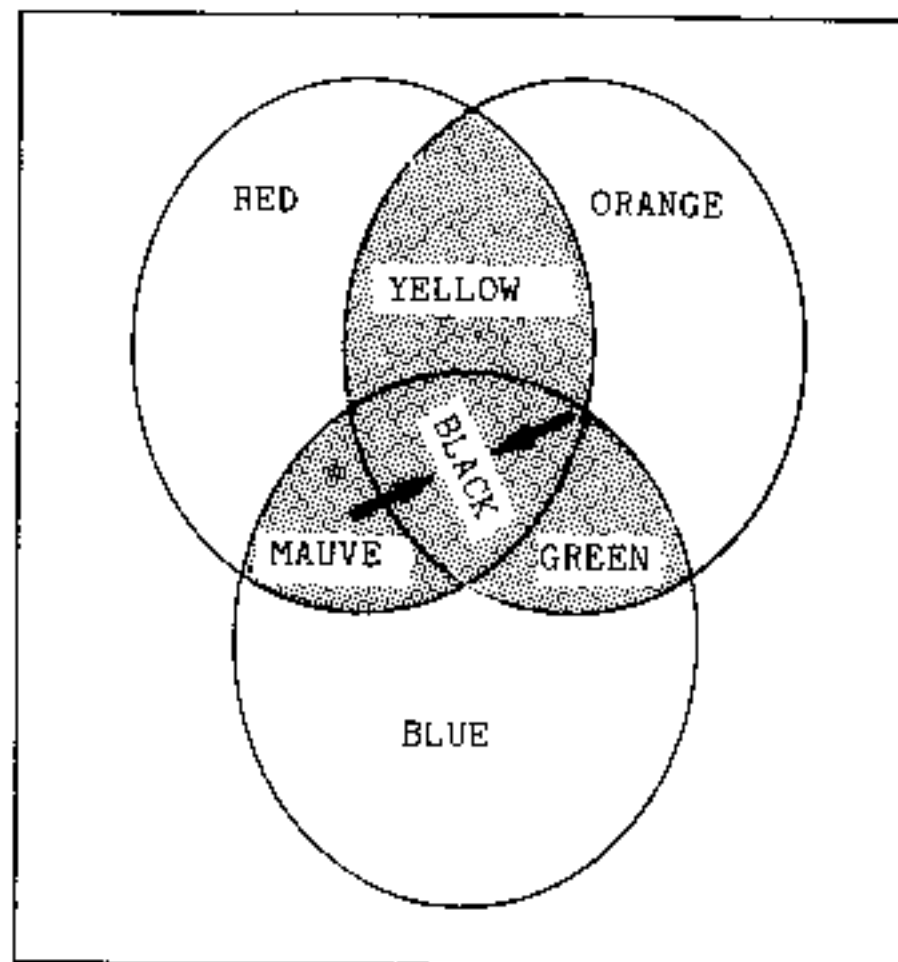
RED + YELLOW = ORANGE  
 RED + BLUE = MAUVE  
 BLUE + YELLOW = GREEN



## THE FUNCTION OF COMPLEMENTARY COLOURS

The colours GREEN - ORANGE - MAUVE are said to be complementary to the primary colours that are diametrically opposite to them in the chromatic circle, in that they are made up of two of the PRIMARY colours.

- A mixture of the three PRIMARY colours produces BLACK (colourmetric black).



$$\text{Example : } \text{YELLOW} + \underbrace{\text{MAUVE}}_{\text{BLUE} + \text{RED}} = \text{BLACK}$$

$$\text{BLUE} + \underbrace{\text{ORANGE}}_{\text{RED} + \text{YELLOW}} = \text{BLACK} \quad \text{RED} + \underbrace{\text{GREEN}}_{\text{BLUE} + \text{YELLOW}} = \text{BLACK}$$

C - PRODUCING A COLOUR MATCH

- Ensure that the paint is correctly applied (see data sheet).
- Spray the colour onto a primed test piece 200 x 200 mm.
- Polish a section of the vehicle bodywork to one side of the repaired area.

D - CORRECTING THE COLOUR MATCH

- A mix consists of 4 or 5 basic colours.
- Any colour difference is corrected with the components of the basic formula, otherwise metamerism may occur.

E - WHAT IS METAMERISM?

Visually, metamerism consists of the amplification or inversion of a colour effect if the composition of the light under which it is viewed is altered.

## I - ADHERENCE

\*Preparation of the plastic part (Door panel).

- Rub down dry with P150 paper.
- Degrease with a roughening pad dipped in cleaning solvent.
- Wipe and blow off.

If necessary, fill any surface defect with polyester body mastic.

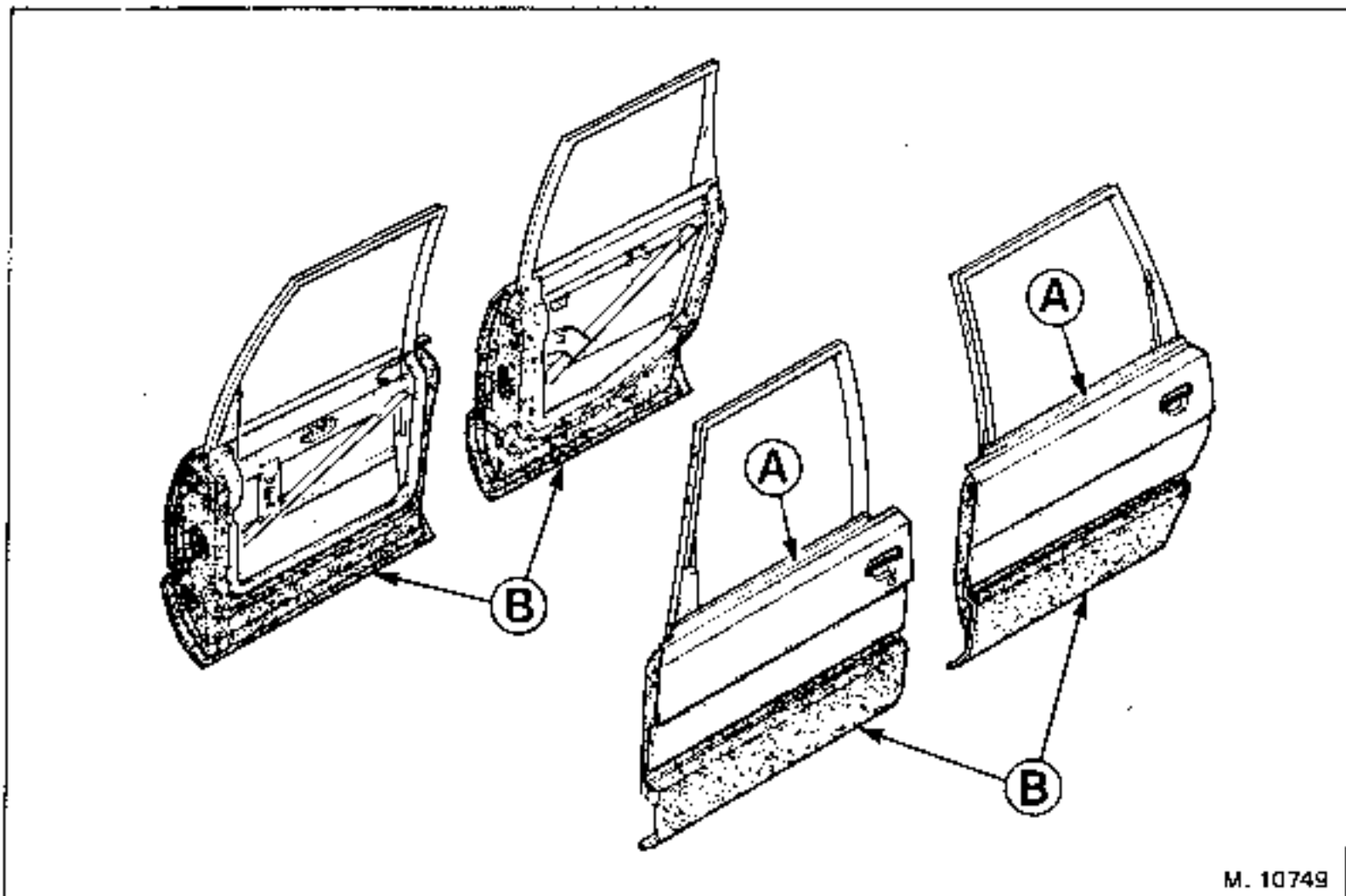
\*Preparing the sheet metal section (Lining).

- Rub down dry with P320 paper or a roughening pad.
- Wipe and blow off.
- Apply phosphate primer to areas stripped back to the bare metal.

## II FINISHING AND PAINT APPLICATION

\*On both parts (plastic and sheet metal).

- Mix up the two pot primer (e.g. Polyurethane) and spray it on.
- Stove for 30 minutes at 60° C.
- Match the colour on a primed test piece 200 x 200 mm.
- Rub down areas A with P180 paper, dry, for struc-coat application.
- Degrease and blow off.
- Mask-off the area to which the struc-coat is not to be applied.
- Spray on the struc-coat (see section on thinning).
- Allow the solvents to evaporate for 10 minutes at 20°C.
- Spray on the satin varnish (see section on thinning).
- Stove for 30 minutes at 60° C (after leaving 10 minutes at 20° C for the evaporation of the solvents).

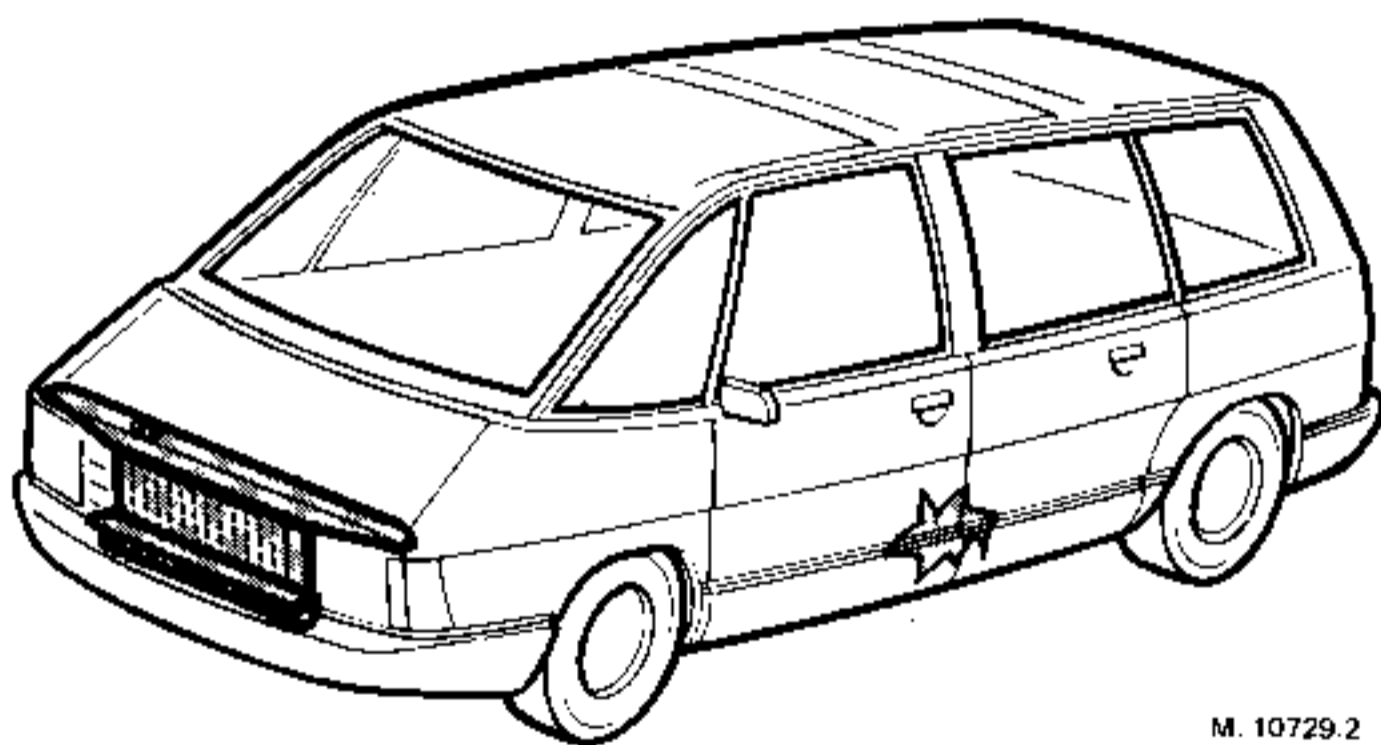


M. 10749

## REFITTING THE COMPONENT TO THE VEHICLE

- Apply a black rubbing-down coat with an aerosol can.
- Rub down with P800 paper for opaque paint and P1000 paper for two coat finishes.
- Wipe and blow off.
- Mask-off the struc-coat area at the bottom of the door (B external) with masking tape.
- Mark off the sections on the vehicle (after checking and matching the colour).
- Place the vehicle in a paint booth (cover it with a dust cover and connect up the earthing lead).
- Wipe down with a chemical tack pad.
- Apply the two pot paint.

- Degrease.
- Rub down, dry, with P100 paper and a sanding pad round the periphery of the repaired area.
- Rub down the remainder of the component, dry, with P150 paper.
- Roughly mask-off.
- Mix the polyester primer and spray on several coats.
- Dry : for 45 min. at 60°C in an oven (after 10 min. for the solvents to evaporate) or 30 min. using infra-red panels placed a minimum of 80 cm from the surface.
- Match the finish colour on a primed test piece 200 x 200 mm.
- Apply a black rubbing down coat with an aerosol can.
- Rub down with P150 paper, dry or P220 paper wet.
- Wipe and blow off.
- Roughly mask-off.
- Mix the two pot primer (e.g. Polyurethane) and spray it on.
- Dry for 30 min. at 60° C (after leaving the solvents to evaporate).
- Apply a black rubbing down coat with an aerosol can.
- Rub down with P800 paper for opaque finishes and P1000 for two coat finishes.
- Wipe and blow off.



M. 10729.2

- Mask-off (after checking and matching the colour).
- Place the vehicle in the oven (apply the dust cover and connect up the earthing lead).
- Degrease and blow off.
- Wipe down with a chemical tack pad.
- Apply the paint or struc-coat.

NOTE : (When using VERILAC AND NITROLAC kits).

For opaque colours, avoid "blown in" repairs (entirely repaint the component or partially repaint it stopping off at one of the ribs on the component).

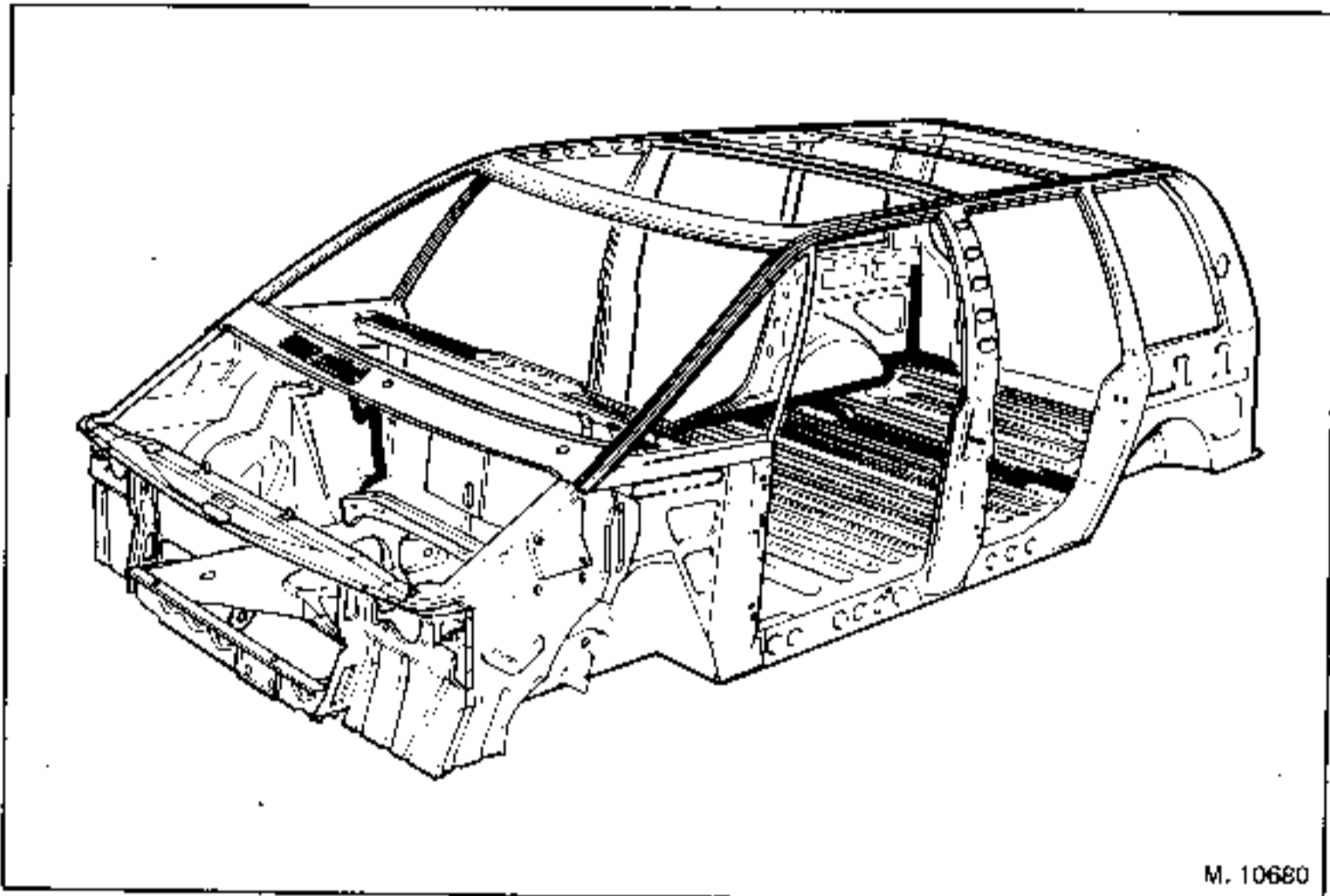
For metallic finishes : the repair may be "blown in" but the varnish coat must be applied to the entire component or up to a rib on the component.

All these components are galvanised and therefore a clearly defined method and specific products must be used if a good quality repair is to be obtained.

- Rub down the welded or repaired areas, dry, with P100 paper.
- Rub down the remainder of the component, dry, with P150 paper.
- Blow off and degrease.

On rubbed down or corroded areas, scrub the surface with the nylon brush provided in the repair kit.

- Apply pacifying agent to these areas.
- Leave it to dry for 15 min. at 20° C.
- Apply 2 coats of zinc rich epoxy paint.
- Leave it to dry.
- Round the crimped joints or panel joints apply a fillet or a sprayed coat of anti-chipping mastic.



M. 10680

DEPENDING ON THE AREA OF THE REPAIR ONE MUST :

- |   |  |
|---|--|
| <p>*On under body areas or in wheel arches</p> <ul style="list-style-type: none"> <li>- Spray on anti-chipping mastic.</li> </ul> | <p>*On areas inside the engine compartment</p> <ul style="list-style-type: none"> <li>- Spray on aluminium paint.</li> </ul> |
|---|--|

\*Areas to which paint or struc-coat finish is to be applied

- Apply epoxy primer over the entire surface of the component in thin even coats (for mixing see section on thinning).
- Dry for 12 hours at 20° C or for 30 min. at 60° C.
- Rub down the surface dry with P240 paper.
- Blow off and degrease.
- Wipe down with a chemical tack pad.
- Apply the paint or struc-coat finish.

If the above sequence is not applied, these products will lift away from the galvanised panelling after a certain period of time.

Determine the area to be prepared :

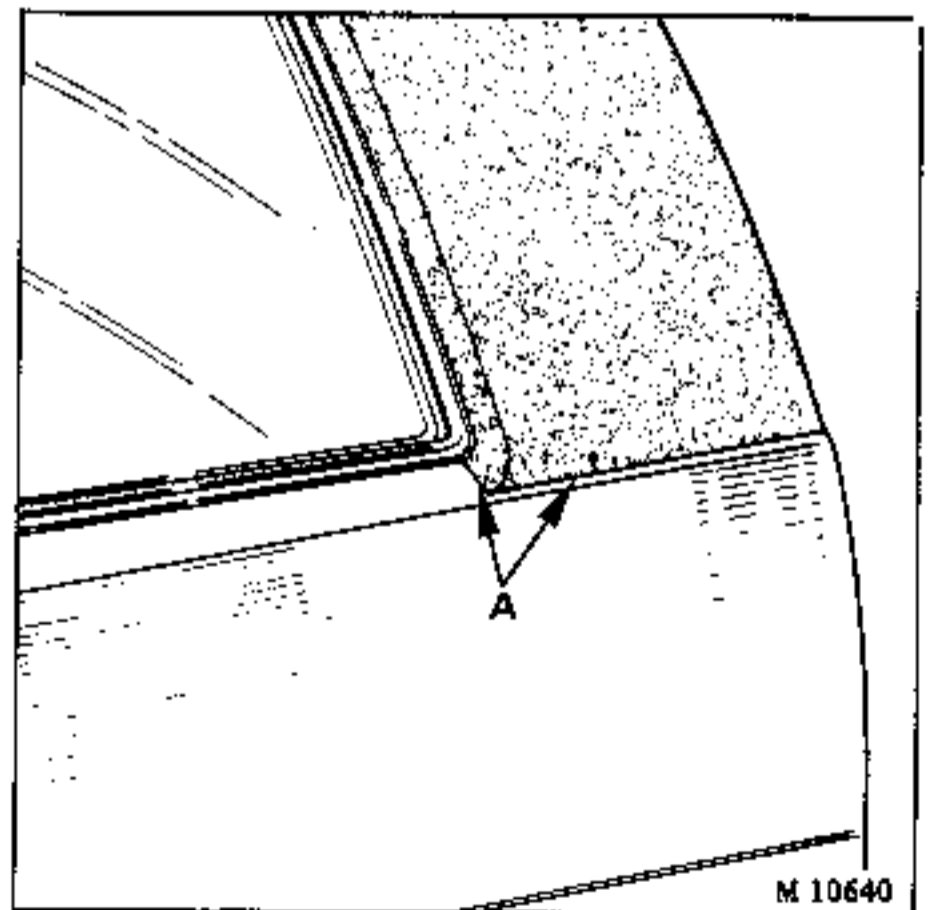
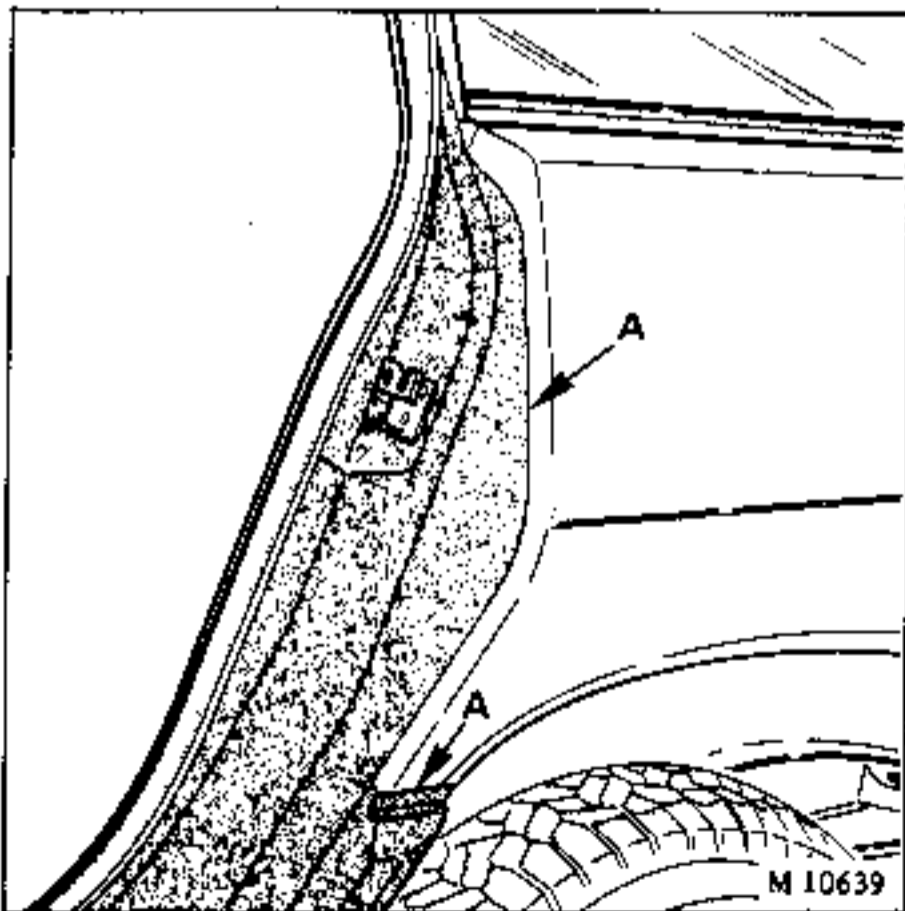
- Front and rear bumper shields: the entire component.
- Quarter panel : apply up to the narrowest part of the cant rail (above the quarter light).
- Roof : Apply up to the dished areas or the sections between the cant rails and the dished areas.
- etc...

#### I APPLYING STRUC-COAT ON STRUC-COAT

- Mask-off, if necessary, along the limit of the area determined above.
- Smooth down the area by rubbing it with P100 or P120 abrasive paper (dry).
- Degrease and blow off.

#### II STRUC-COAT ON BODY FINISH PAINT

- Polish the paint (A) to improve the adherence of the struc-coat and to obtain a neat edge after the masking is removed.
- Mask-off the painted areas.
- Rub down any paint mist with P150 abrasive paper used dry.
- Blow off the area.

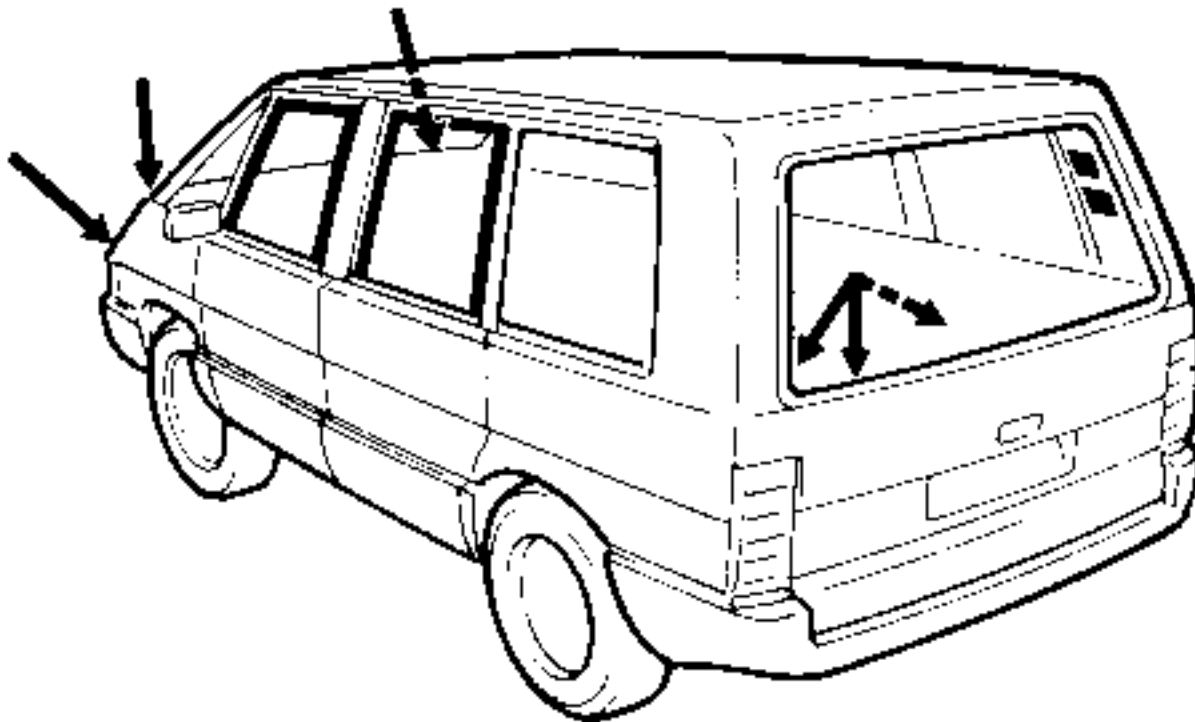


- After preparation (I or II).
- Spray on the struc-coat (see section on thinning).
- Leave the solvents 10 min. at 20° C to evaporate.
- Spray on satin finish varnish (see section on thinning).
- Stove for 30 min. at 60° C (after leaving 10 min. at 20° C for the solvents to evaporate).

After repairing the basic paintwork as on the original finish, simply take an aerosol can of the required colour and spray the paint on the areas concerned in the conventional way.

Black 698 reference 77 01 405 457.

- Door frames.
- Ends of headlight support panels, cowl sides (under finishing pieces).
- Inside the air intake (under the scuttle panel grille).
- Inside the vehicle : seat retaining hooks, quarter panels behind the passenger compartment ventilators.



M. 10750

The ribs on the panels limit the body finish and struc-coat areas around the upper or lower body surrounds.

If small body repairs have been carried out, such as the repair of scratches, it is possible to "blow in" just the damaged areas by masking-off along a rib, instead of repainting the entire component. However, care must be taken to obtain a perfect colour match:

- Prepare the area to be repaired
- Degrease and polish the rest of the component before masking-off, in the case of body finished areas
- Degrease only when masking-off struc-coat finished areas
- Mask-off along the upper or lower edge.



MASKING-OFF

1 - Partially blowing in a "floc-coated" area.

There are 3 possible cases :

- Masking-off along an area painted in body finish : take care to polish, thoroughly, the area to which the masking tape is to be applied to facilitate its removal and avoid tearing off the floc-coat.
- Masking-off along a rib within the floc-coated area : degrease the area and mask it off using the maskin tape and folded paper method.
- Masking-off within the floc-coated area (along a cant rail for example) : degrease the area and mask it off using the masking tape and folded paper method.

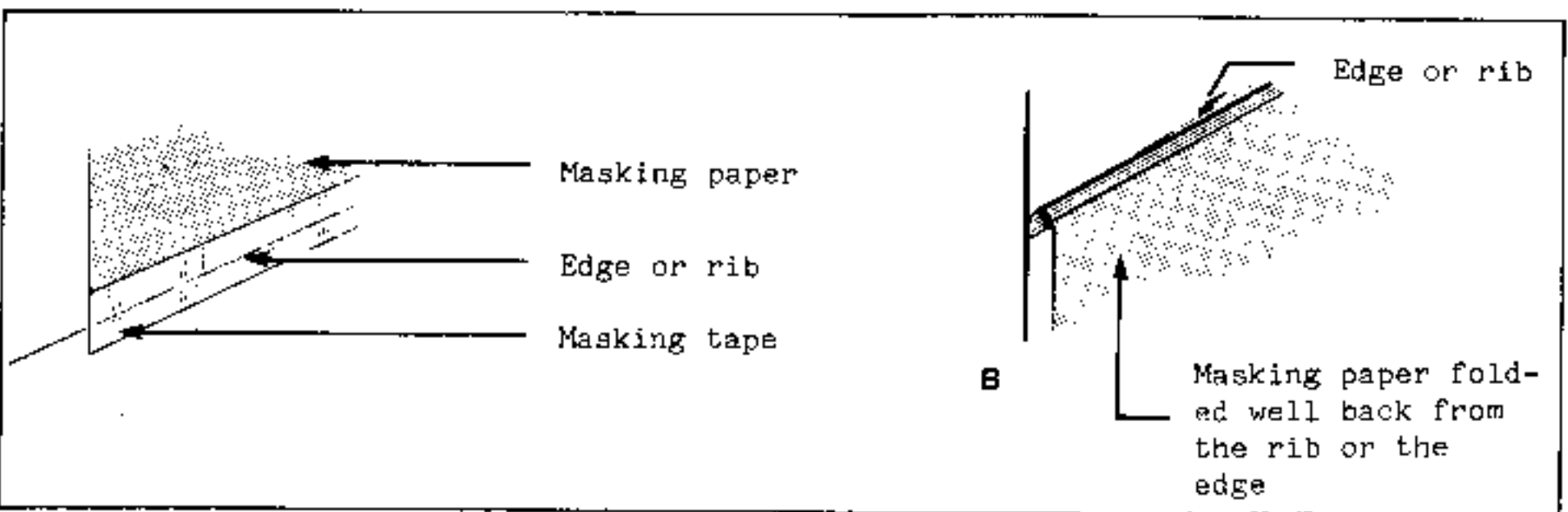
After applying the floc-coat and varnish, rub the area with thinners to blend in the edge of the repair.

2 - Partially blowing in a body finished area

There are 2 possible cases :

- Masking-off along the edge of a floc-coated area : degrease the area and carefully apply the masking tape.
- Masking-off along a rib within the body finish area : degrease the area and mask-off using the masking tape and folded paper method.

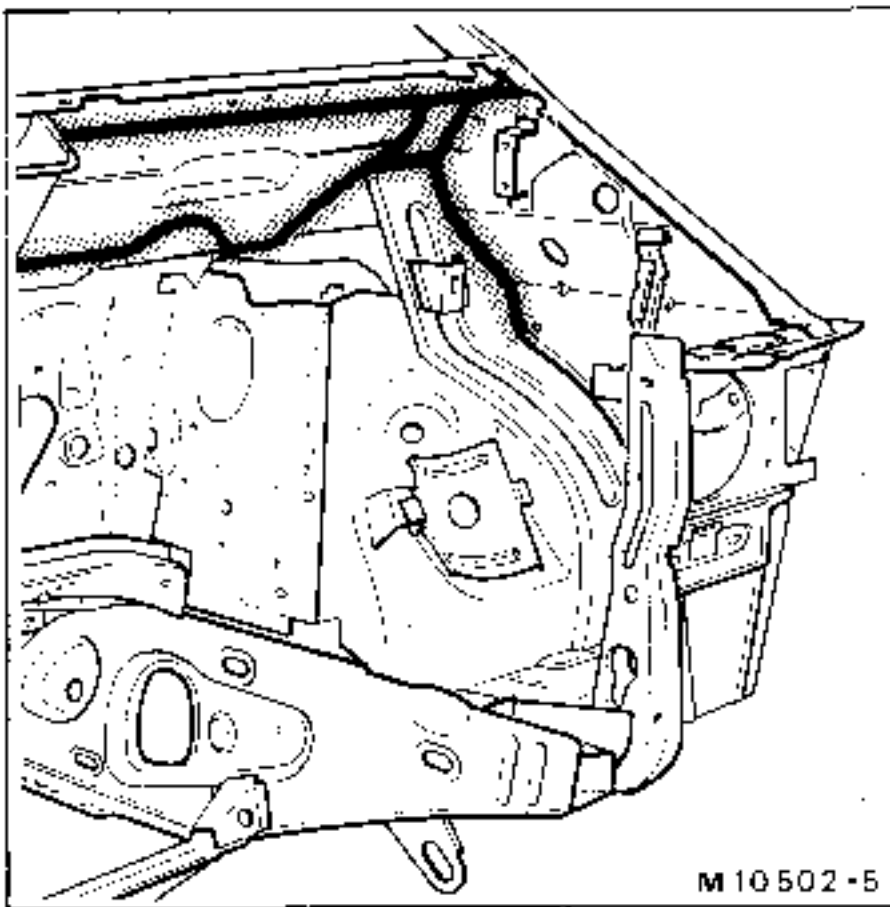
Method of masking-off using masking tape and folded paper, on an upper edge



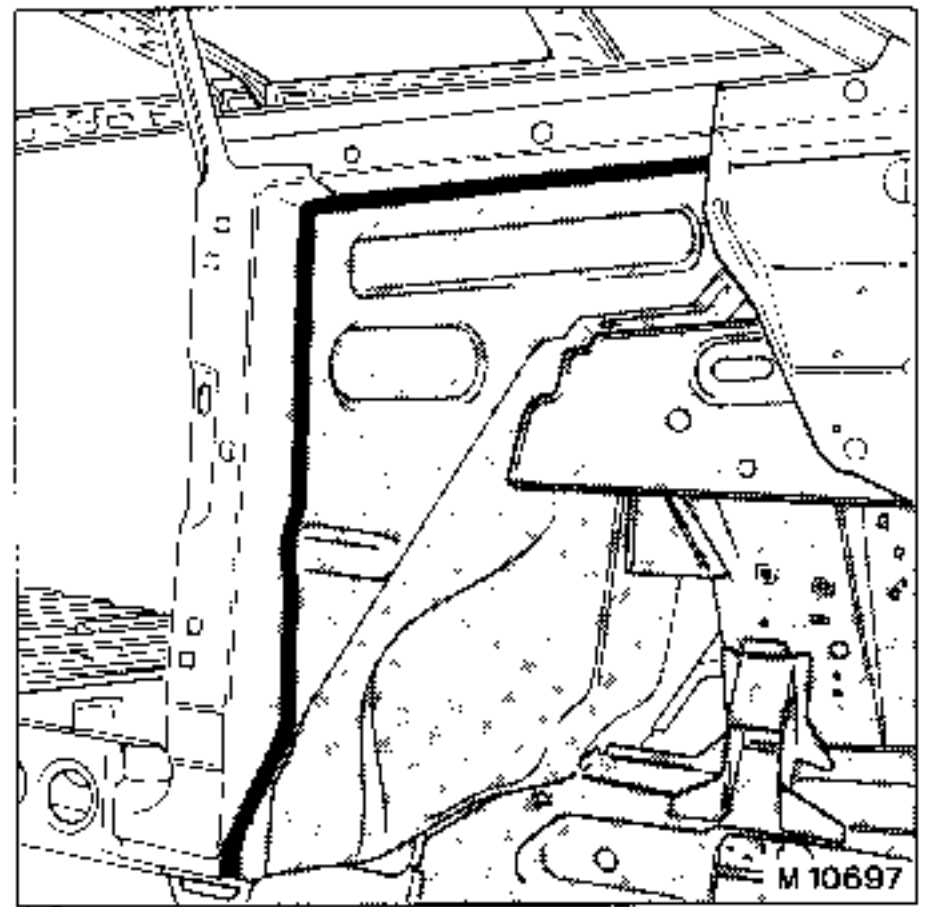
B - FELLETS APPLIED ROUND PANEL JOINTS

All the panel joints inside the passenger compartment are to be sealed with a fillet of anti-chipping mastic :

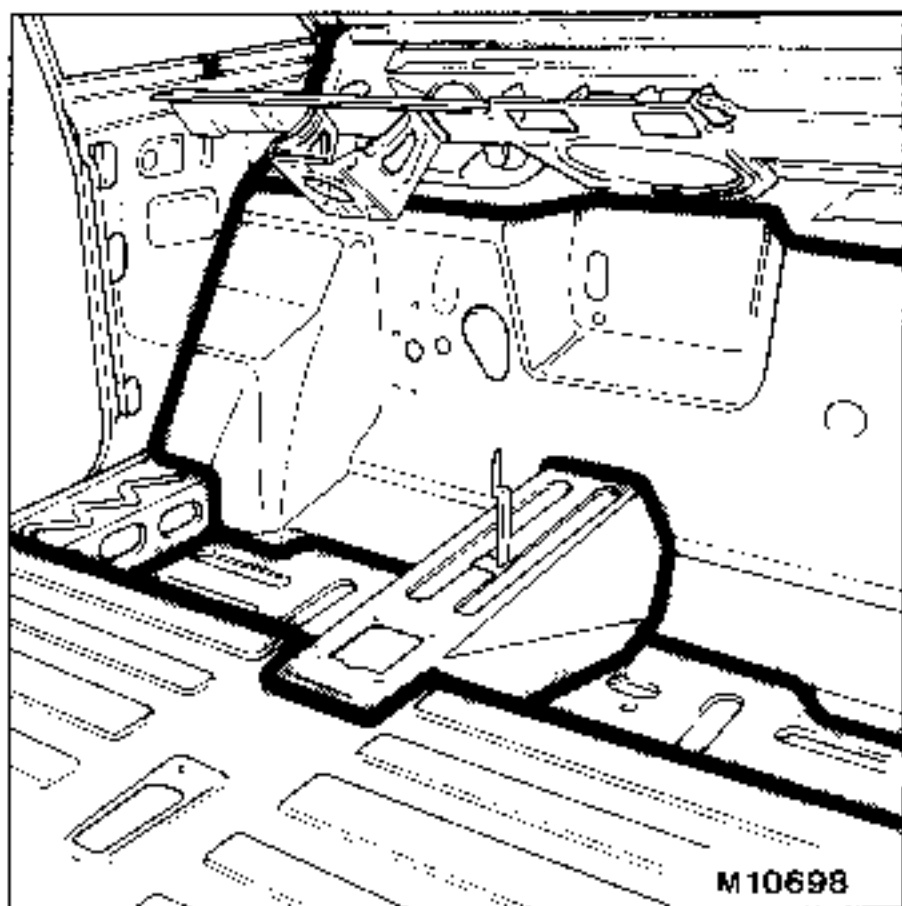
- inside (smooth down the fillet under areas to which trim is to be applied),
- under the body : rear seat securing points (spray on the mastic and leave it unsmoothed).



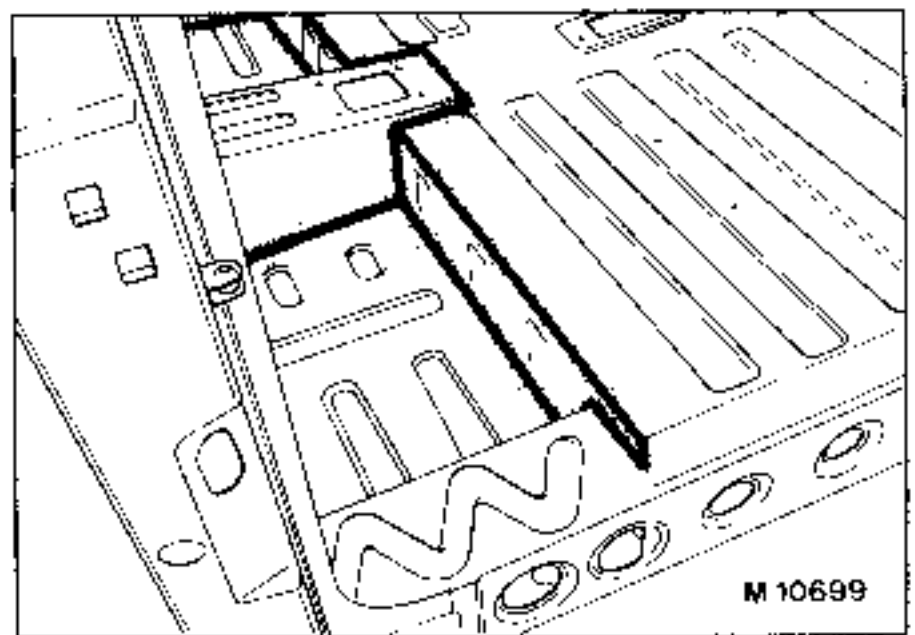
In the Front compartment

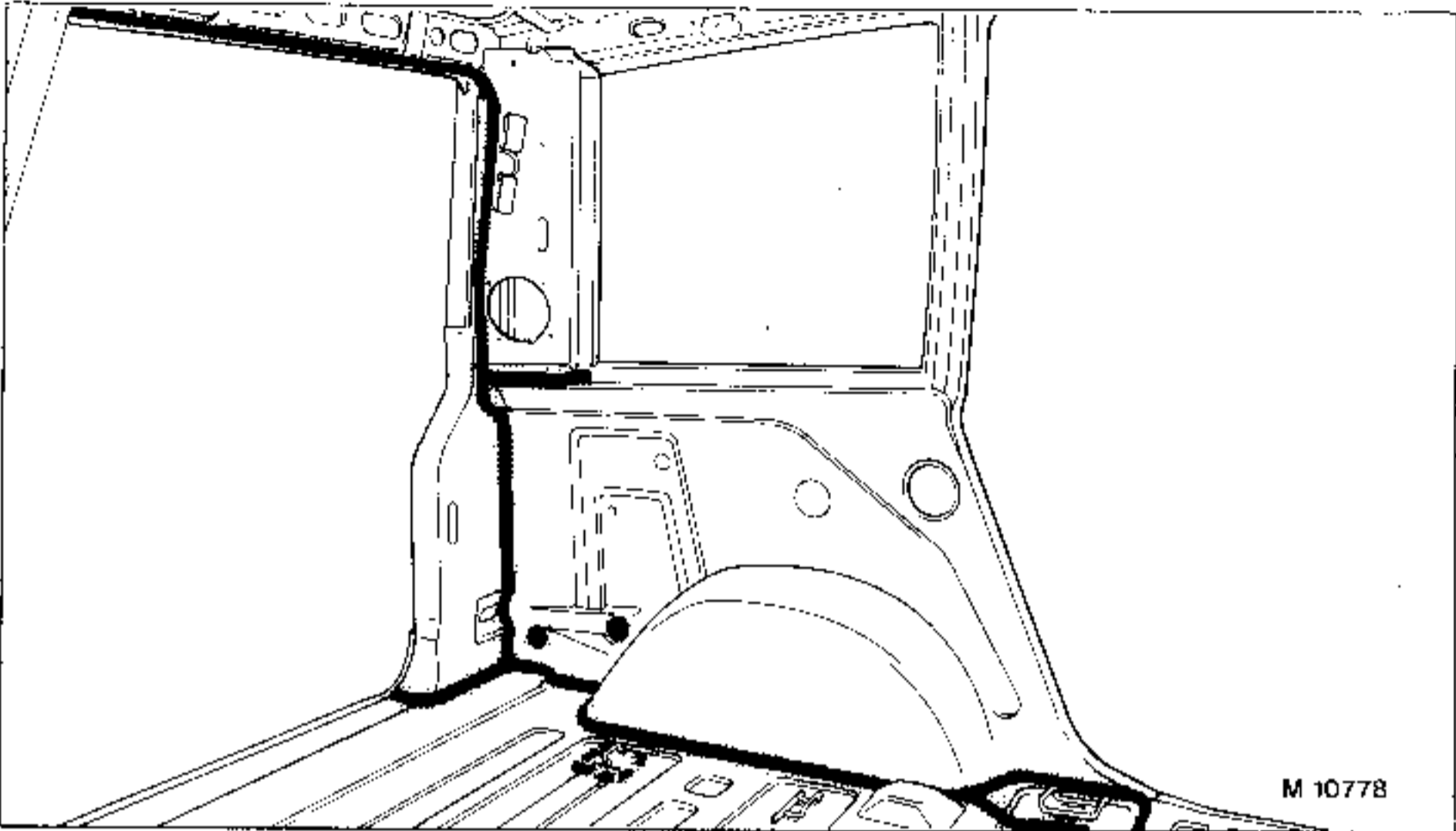


In the Front wheel arch

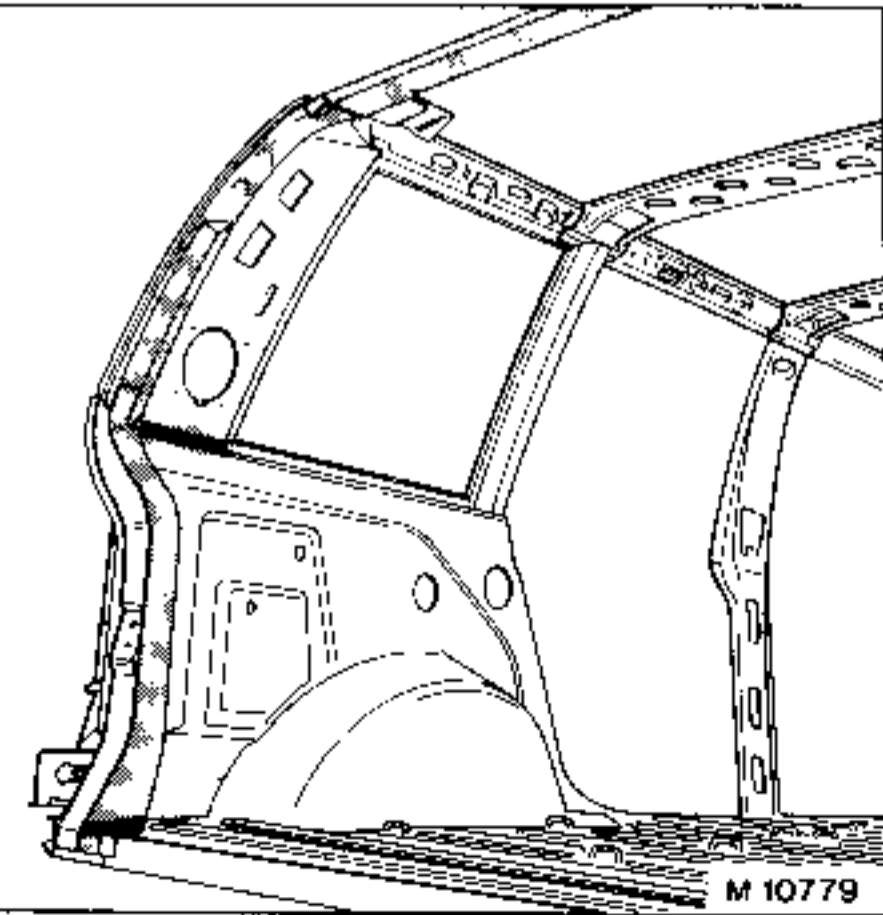


On the Front floor

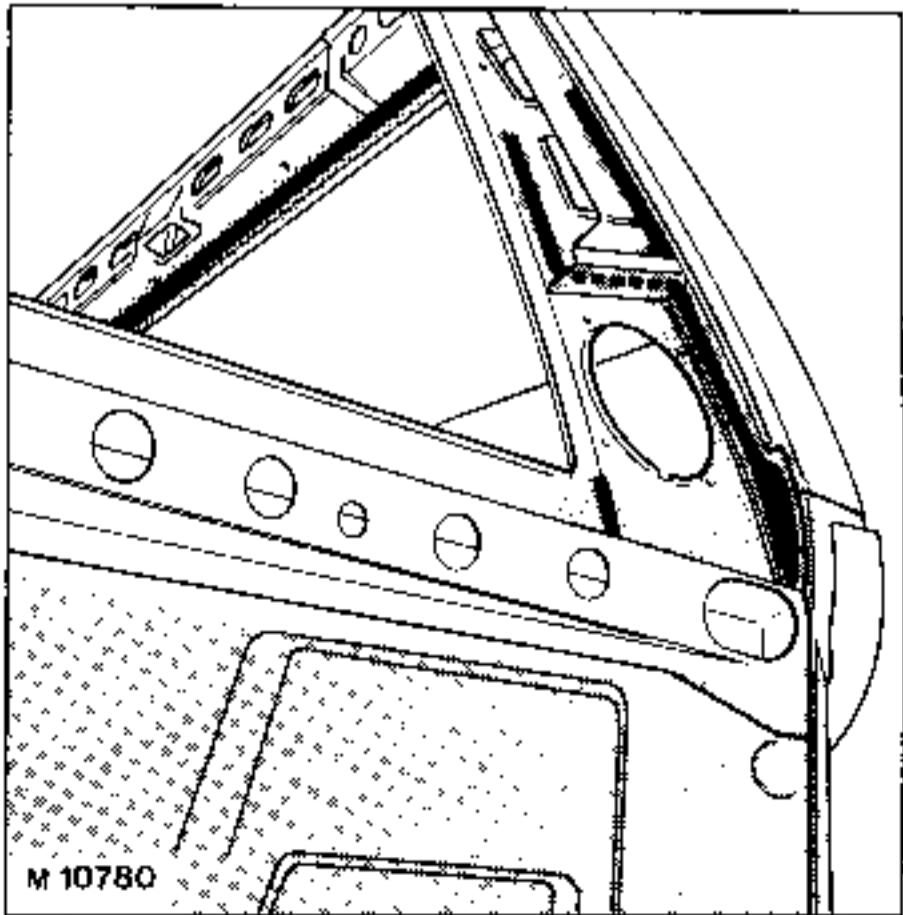




On the Rear floor



Tailgate frame



Quarter panel

### Preparation

Thoroughly mix the two parts (parts A and B).

For the product to retain its optimum qualities, it must be mixed in the correct proportions, that is to say :

- all of part A mixed with all of part B,
- half of part A mixed with half of part B.

### Pot life

The mix can be sprayed for up to 1 hour at ambient temperature.

### Application

The panelling is first to have an application of DRA pacifying agent followed by 2 coats of zinc-rich paint (kit ref. 6025 07 0311).

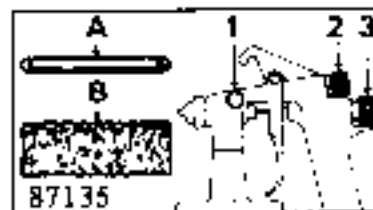
Apply the product in successive coats 1 to 1.5 mm thick using a pressure pot type gun.

Pressure pot type gun (Pipo 2 type) for applying anti-chipping mastic.



Adjusting the pressure pot type gun (Pipo 2 type) for the application of anti-chipping mastic.

Set the air pressure reducing valve at 3 bars.



(A) An extruded fillet of mastic can be obtained by setting the gun as follows :

- unscrew the screw (1),
- close the air output screw (2),
- unscrew the product output screw (3) by three turns.

The mastic can be sprayed into wheel arches by setting the gun as follows :

- unscrew the screw (1),
- unscrew the screw (2) by one and a half turns,
- unscrew the screw (3) by three turns.

(B) The gun is to be set for spraying the product on all panel joints as follows :

- unscrew the screw (1),
- unscrew the screw (2) by one turn,
- unscrew the screw (3) by two and a half turns...

Clean the gun immediately after application.

### Drying time.

Stove the product for 15 minutes at 75° C, using infra-red panels.