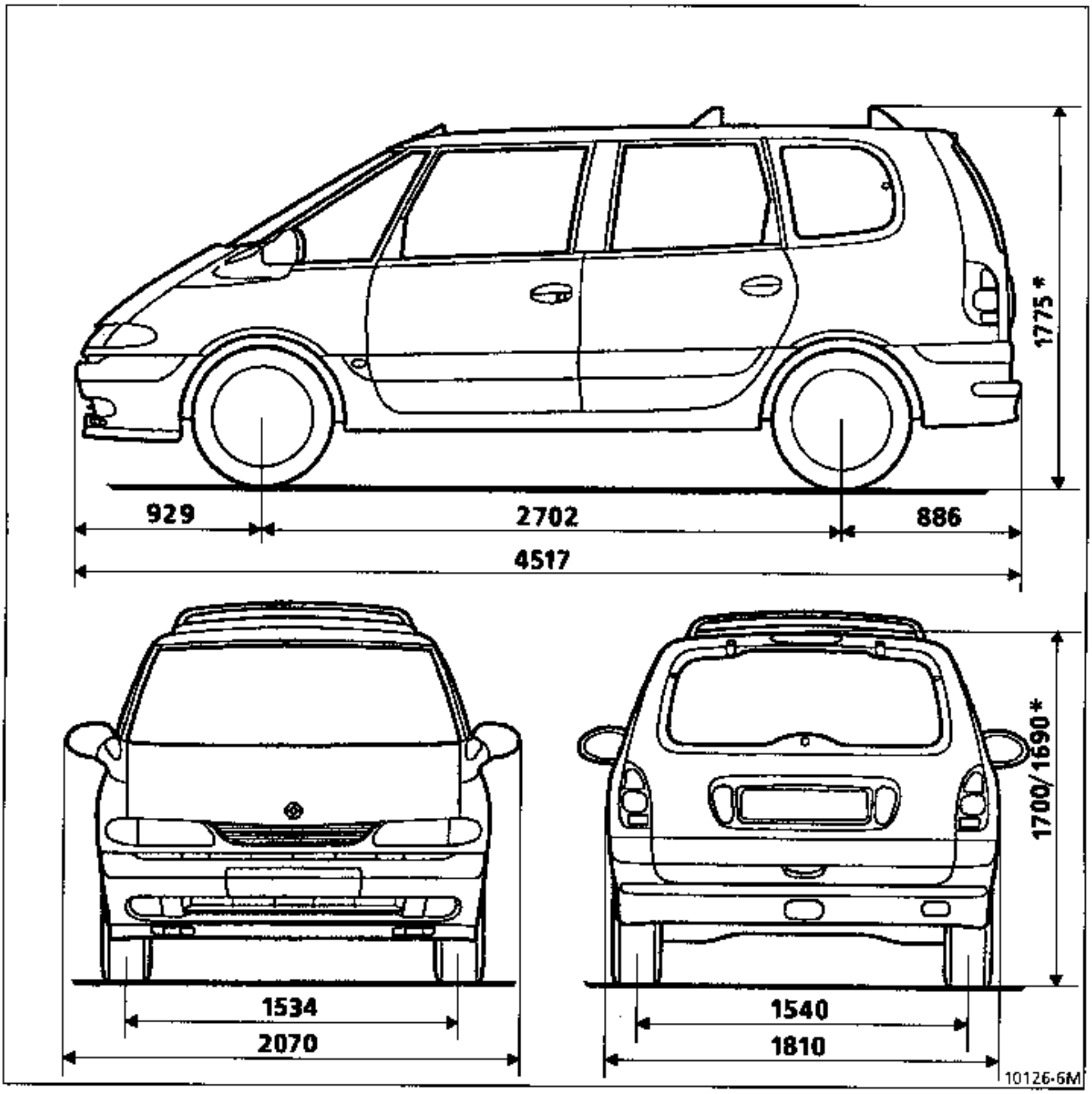
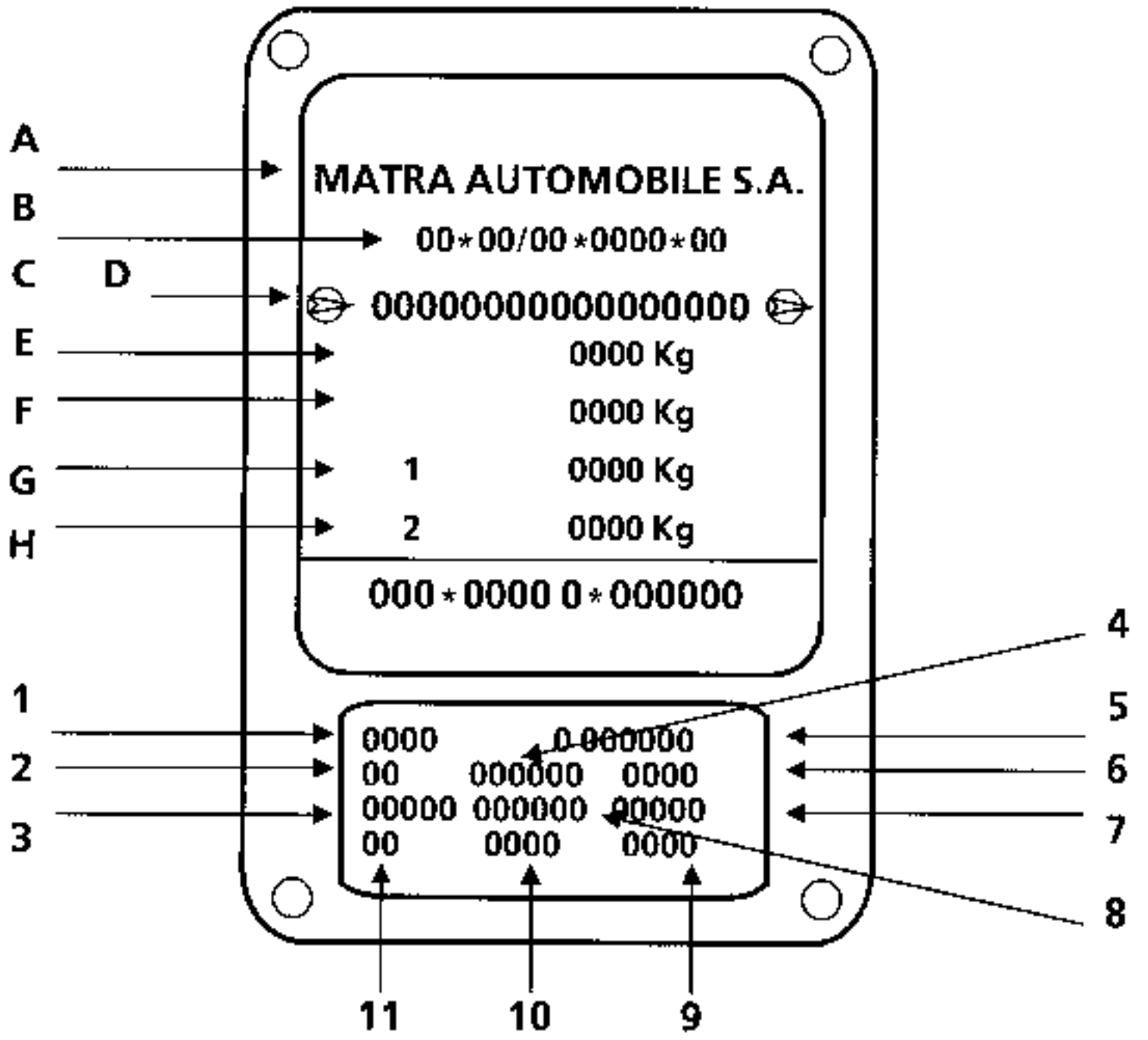


* Unladen ** Depending on version
Dimensions in millimetres

Vehicle type	Engine		Clutch type	Gearbox type
	Type	Capacity		
JE0A05 JE0A02	F3R 728 F3R 729	1998	215 DBRN 4400 converter 227	JC5 026 AT AD4 032
JE0E05 SE0E05 JE0J05	G8T 716 G8T 716 G8T 718	2188	B02300305 B02300308	PK1 050 PK1 050 JC5 026
JE0D02	Z7X 775	2963	converter 250	AT AD8 013



This shows:

At A : the name of the manufacturer,
At B : the E.E.C. acceptance number,
At C : the mines type of the vehicle preceded by the world manufacturers identification code (VF8 corresponds to MATRA AUTOMOBILE),
At D : the chassis number,
At E : the total all up weight(P.T.M.A.)
At F : the maximum permitted total train weight (P.T.R. - vehicle loaded with trailer)
At G : the maximum permitted weight on the front axle (P.T.M.A. front axle)
At H : the maximum permitted weight on the rear axle (P.T.M.A. rear axle)

At 1 : the vehicle type,
At 2 : the equipment level,
At 3 : the paint type and body colour reference,
At 4 : special edition or limited edition,
At 5 : a letter describing the factory of manufacture followed by the manufacturing number,
At 6 : additional factory optional equipment,
At 7 : the interior matching trim code,
At 8 : the seat trim,
At 9 - 10 : the parts catalogue symbol identification,
At 11 the technical features.

NOTE : Depending on the country of export, certain details might not be given. The plate described above shows all possible information.

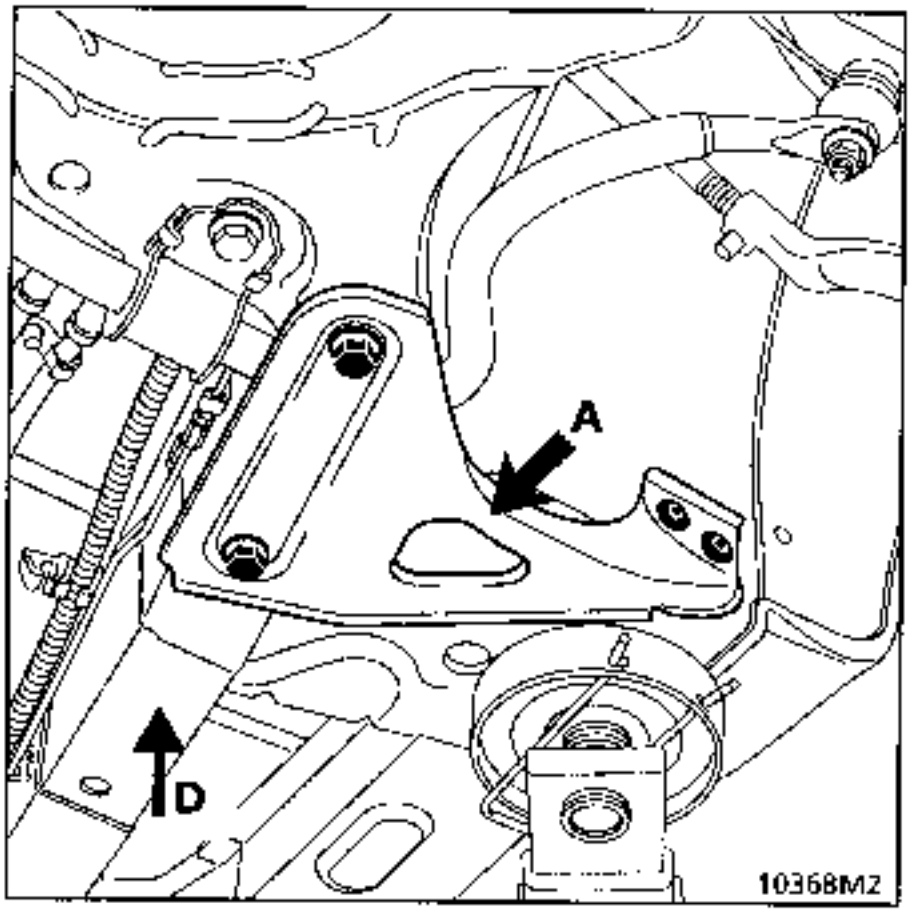
Safety symbol (special precautions to be taken when carrying out operations).

SPECIAL TOOLING REQUIRED		
Cha.	280-02	Adaptable cross piece for trolley jack
Cha.	408-01	Adaptable socket for trolley jack
Cha.	408-02	

If a trolley jack is used, appropriate axle stands must always be used.

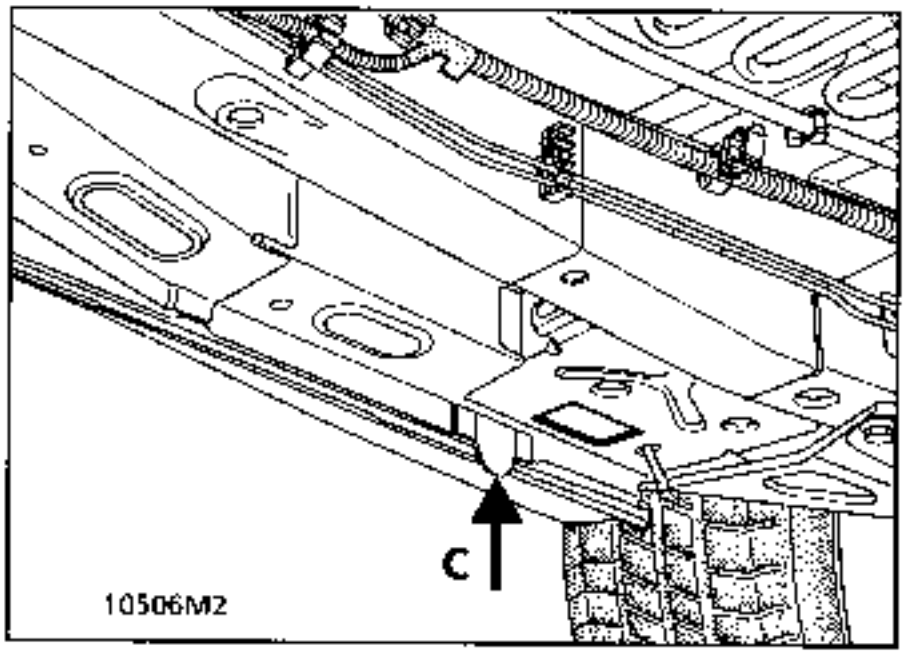
TROLLEY JACK

It is **forbidden to lift** the vehicle **by** supporting its weight under the **front** suspension arms, under the triangular reinforcements **A** for the front wheel arch or under the rear axle assembly cross member.



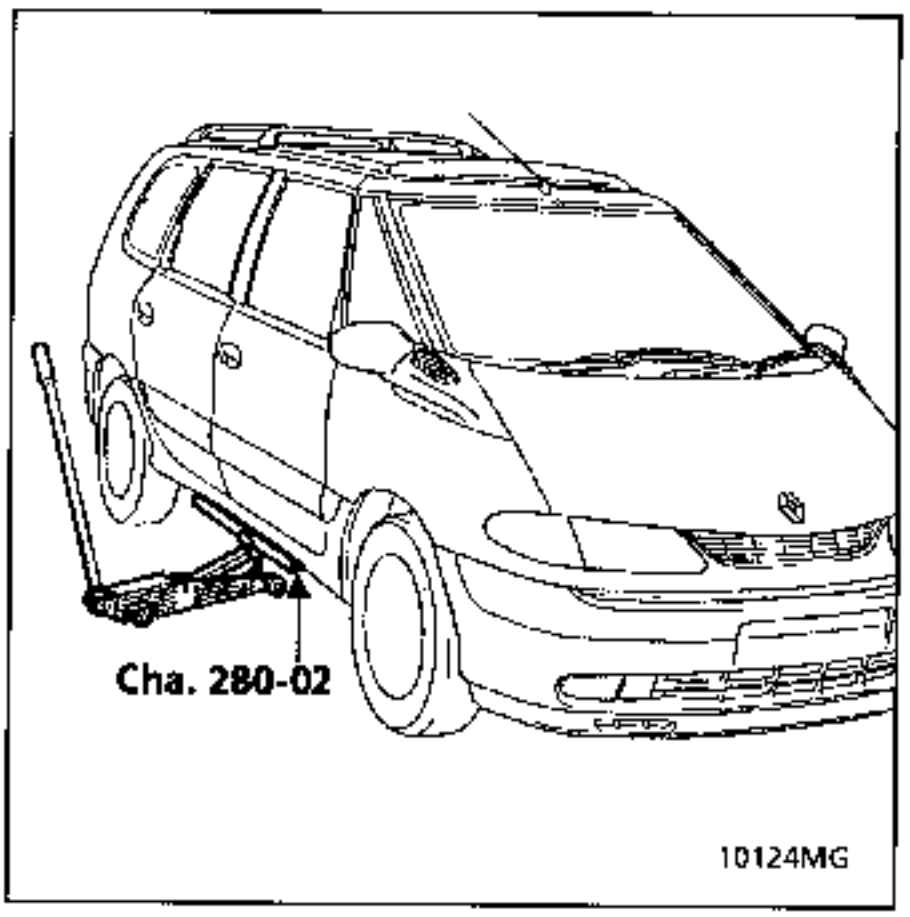
To lift at the front

Take the weight under the vehicle jacking point **C** or the front side member extension **D**.



To lift at the rear

Take the weight under the vehicle jacking points.



To lift at the side

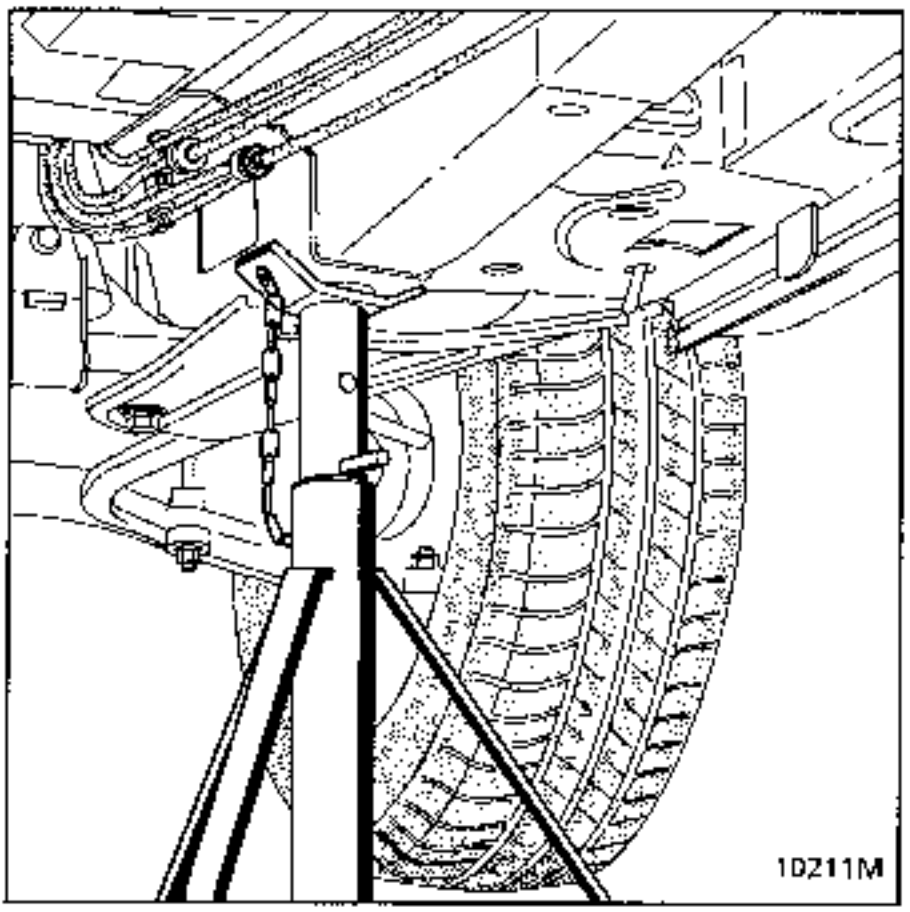
Take the weight under the plastic valance flange using cross piece **Cha.280.02 only** between the vehicle jacking points.

If a trolley jack is used, appropriate axle stands must always be used.

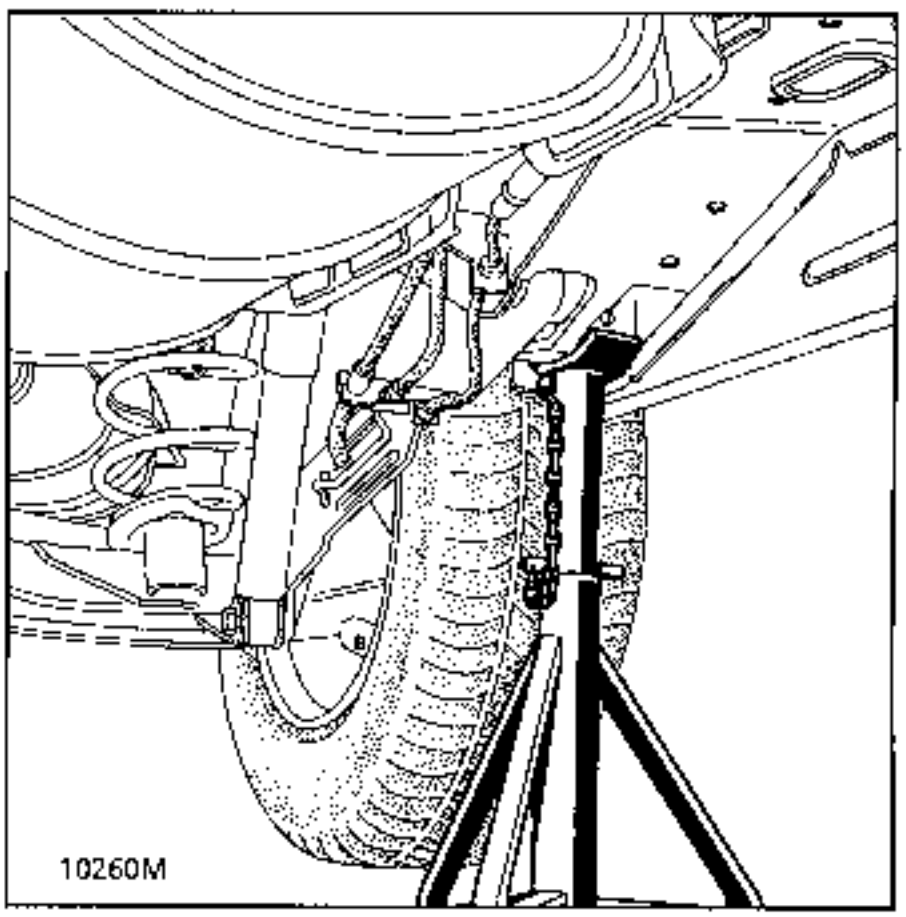
AXLE STANDS

When putting the vehicle on axle stands, they must be positioned:

- at the front under the side members behind the triangular reinforcements.

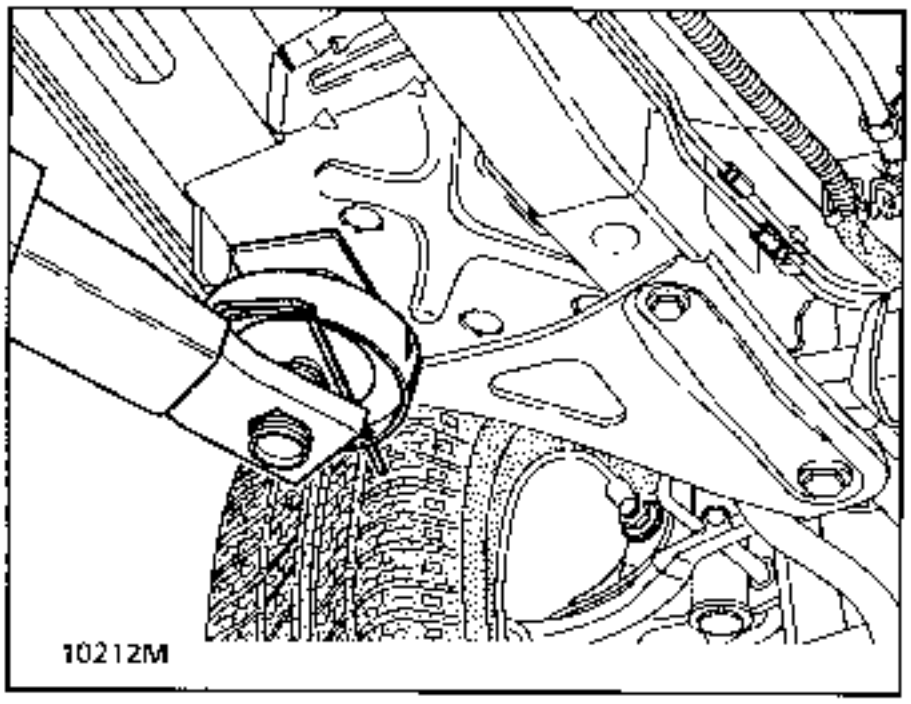


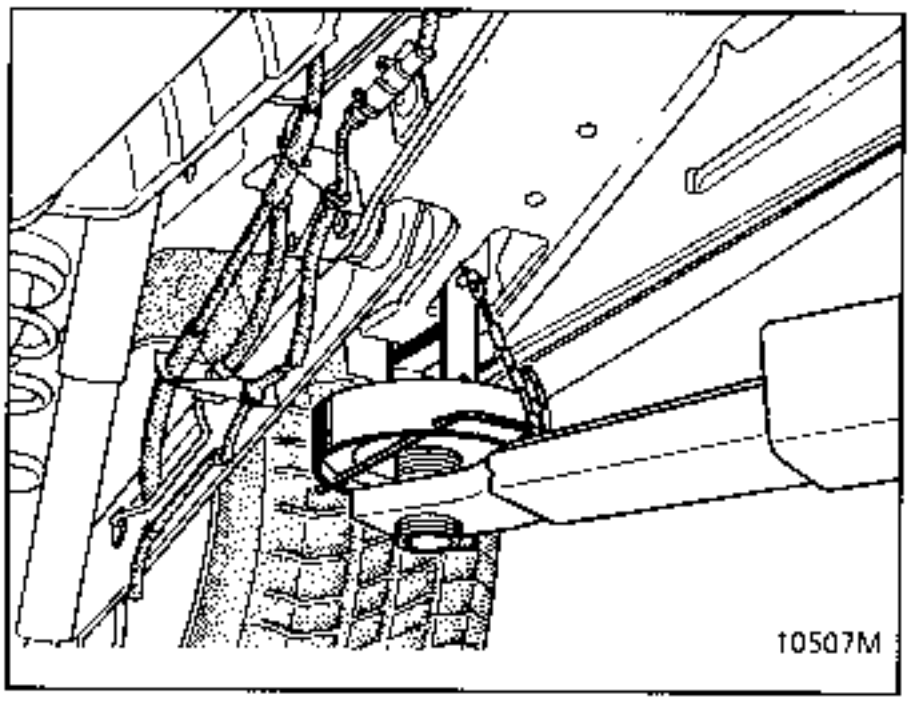
- at the rear under the suspension arm mounting points.



SAFETY INSTRUCTIONS

Never use a 2 post lift without the safety locking pads specially designed for the Espace.



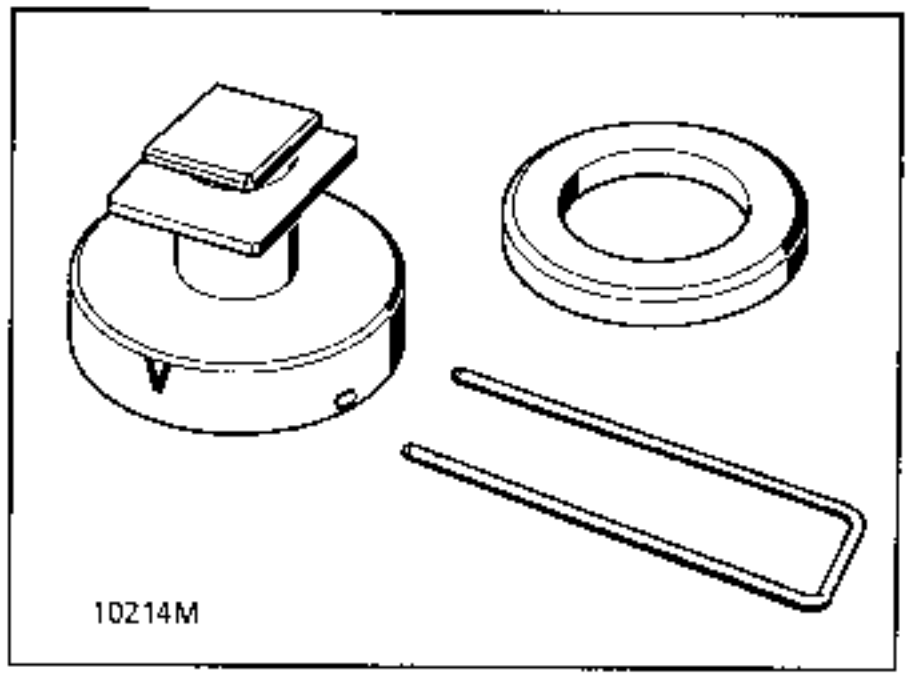


REMOVING - REFITTING THE ENGINE AND TRANSMISSION ASSEMBLY or REAR AXLE or FUEL TANK

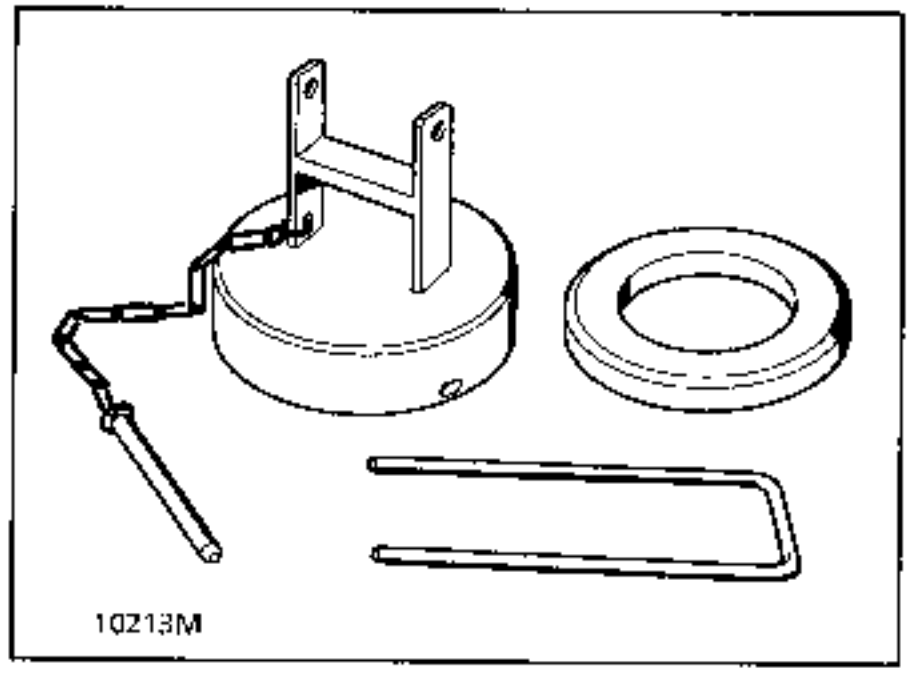
In these cases, the vehicle body must be secured to the arms of the 2 post lift using special pads.

Company FOG :
Part Number FOG xxx

FRONT

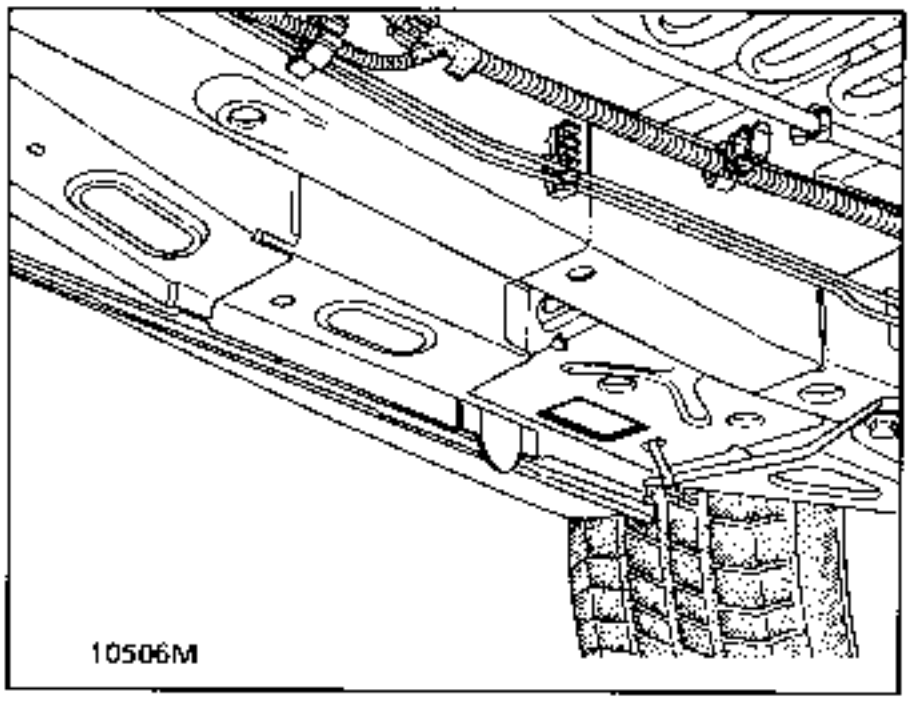


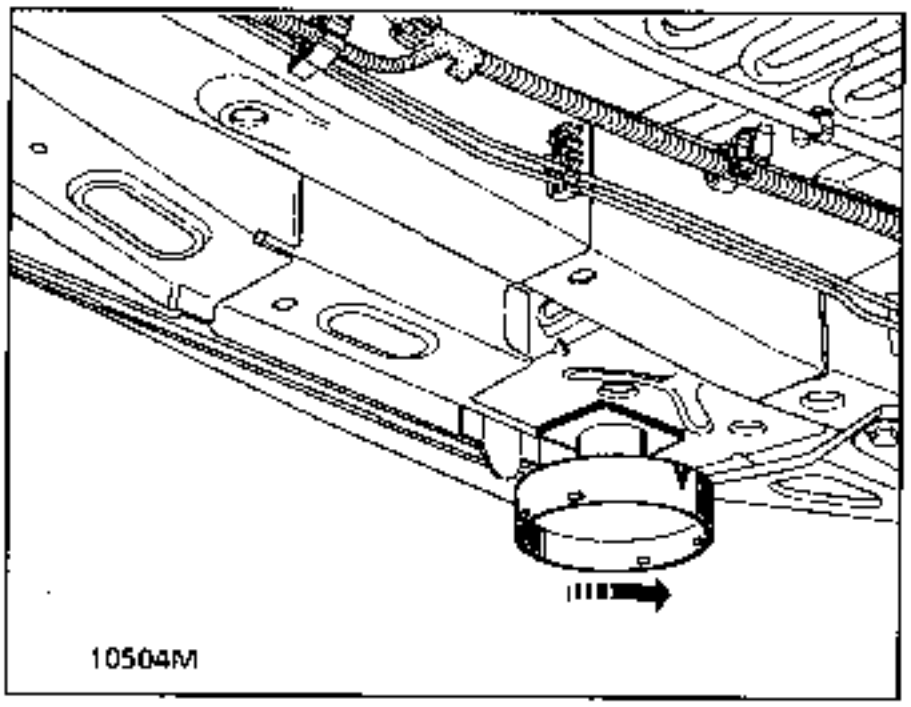
REAR

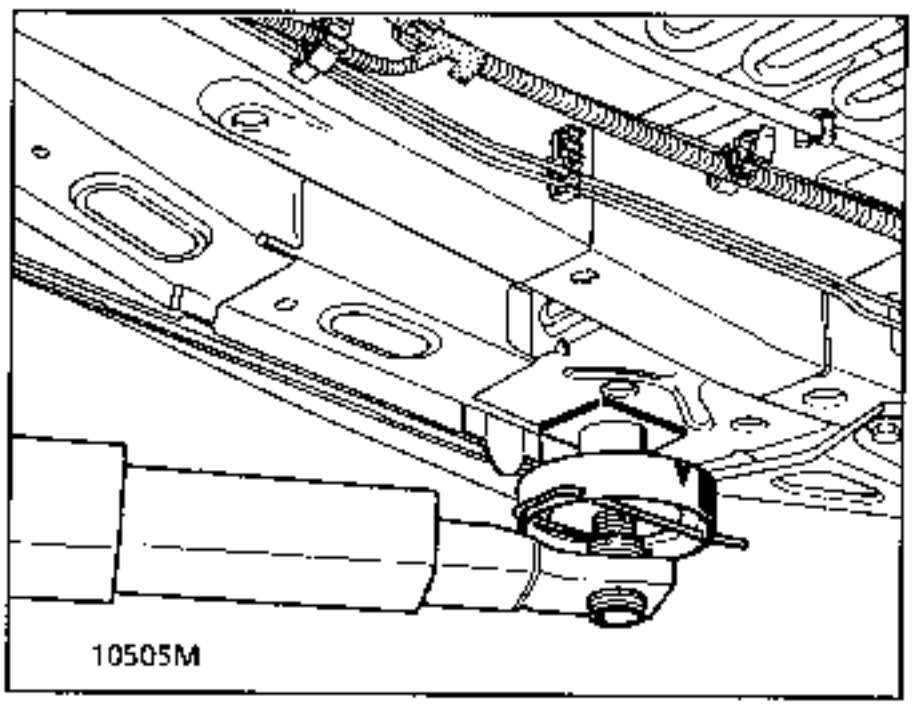


FITTING THE SAFETY PADS

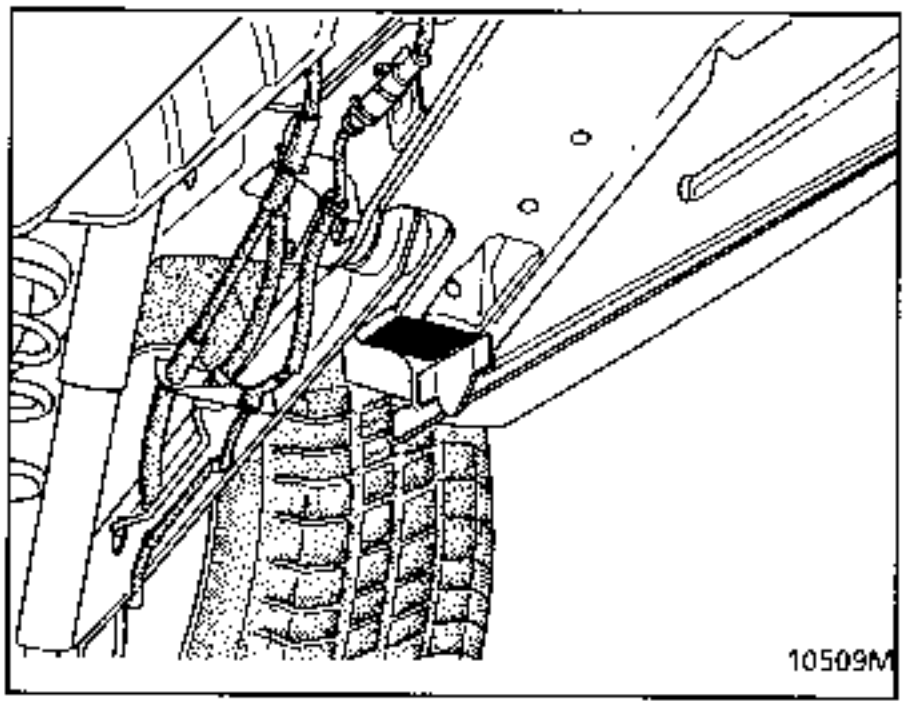
At the front:
Hang the pads from the body using the rectangular holes in the cross members. Turn them a quarter turn so that the "VE" on the pads is visible from the outside or from the inside, under the vehicle.

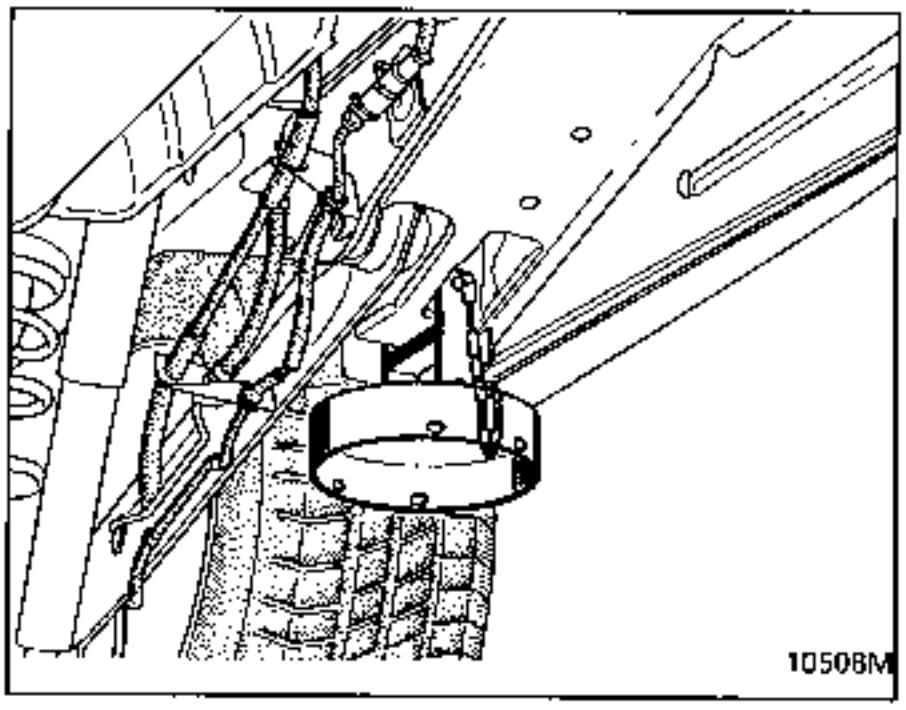


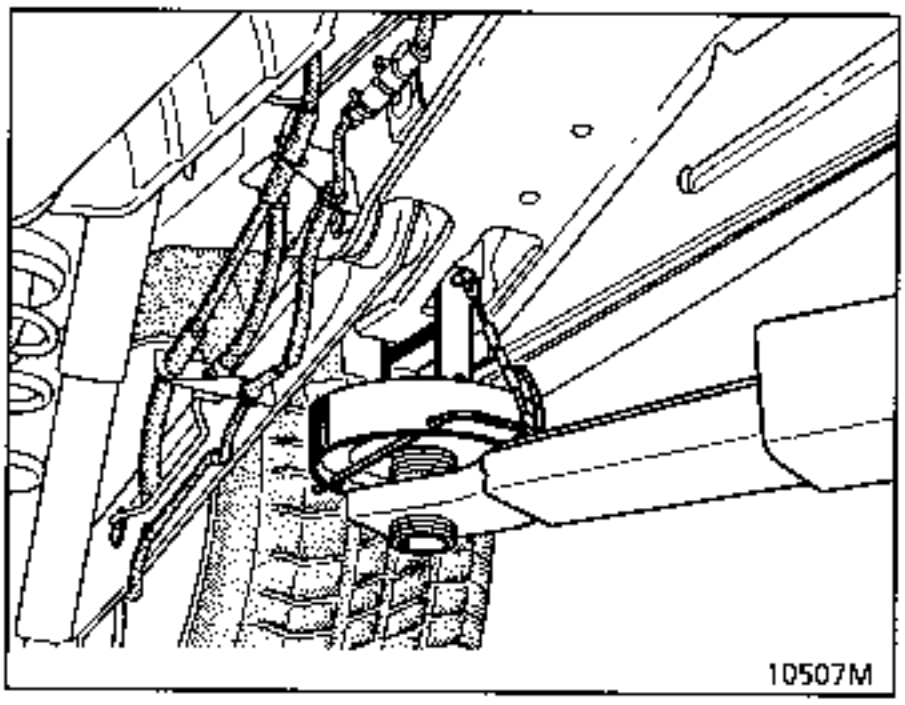




At the rear:
Hang the pads under the arm bearings and secure them using roll pins.







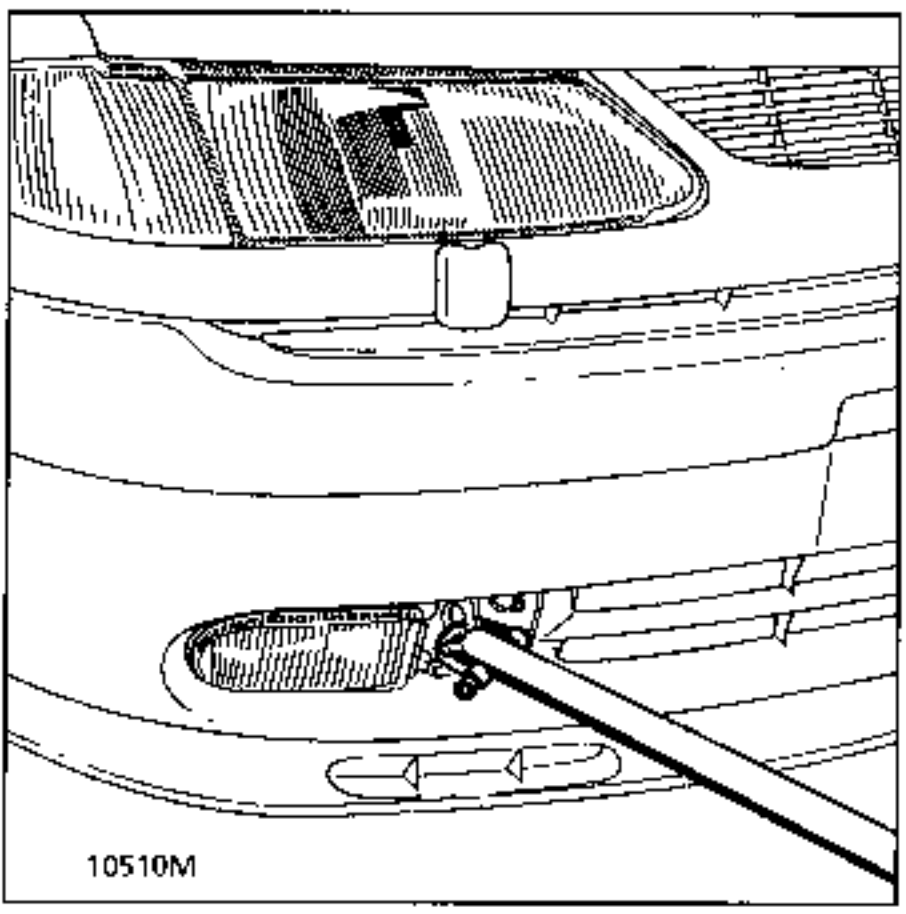
Raise the lift into position aligning the lift pads with the four vehicle pads and fit the four safety forks.

OBSERVE THE LEGAL TOWING REQUIREMENTS OF THE COUNTRY YOU ARE IN.

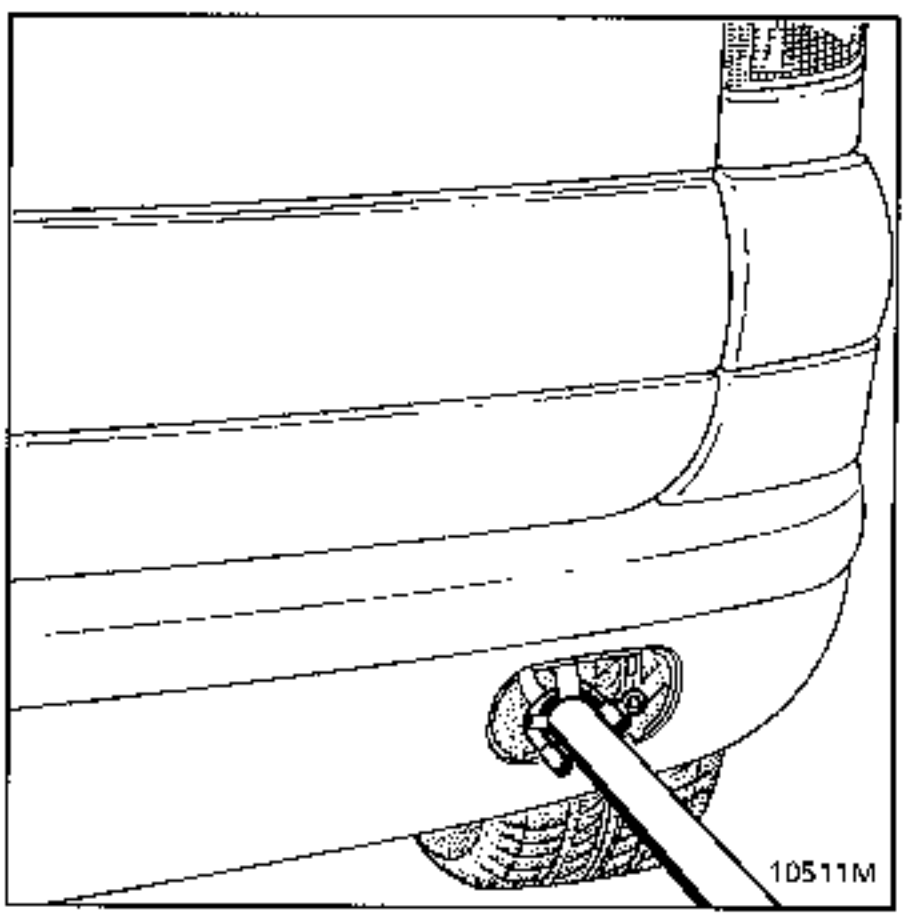
NEVER USE THE DRIVESHAFTS AS ATTACHMENT POINTS.

The towing points may only be used for towing the vehicle on the road. They should never be used for removing the vehicle from a ditch or for any other similar breakdown operation or to lift the vehicle, either directly or indirectly.
They may be used for winching purposes by placing a shackle between the towing eye and the winch hook.

FRONT



REAR



Remove the ring cover from the left of the front right hand additional light or the rear cover on the right hand side of the bumper and fit the shackle into the ring.

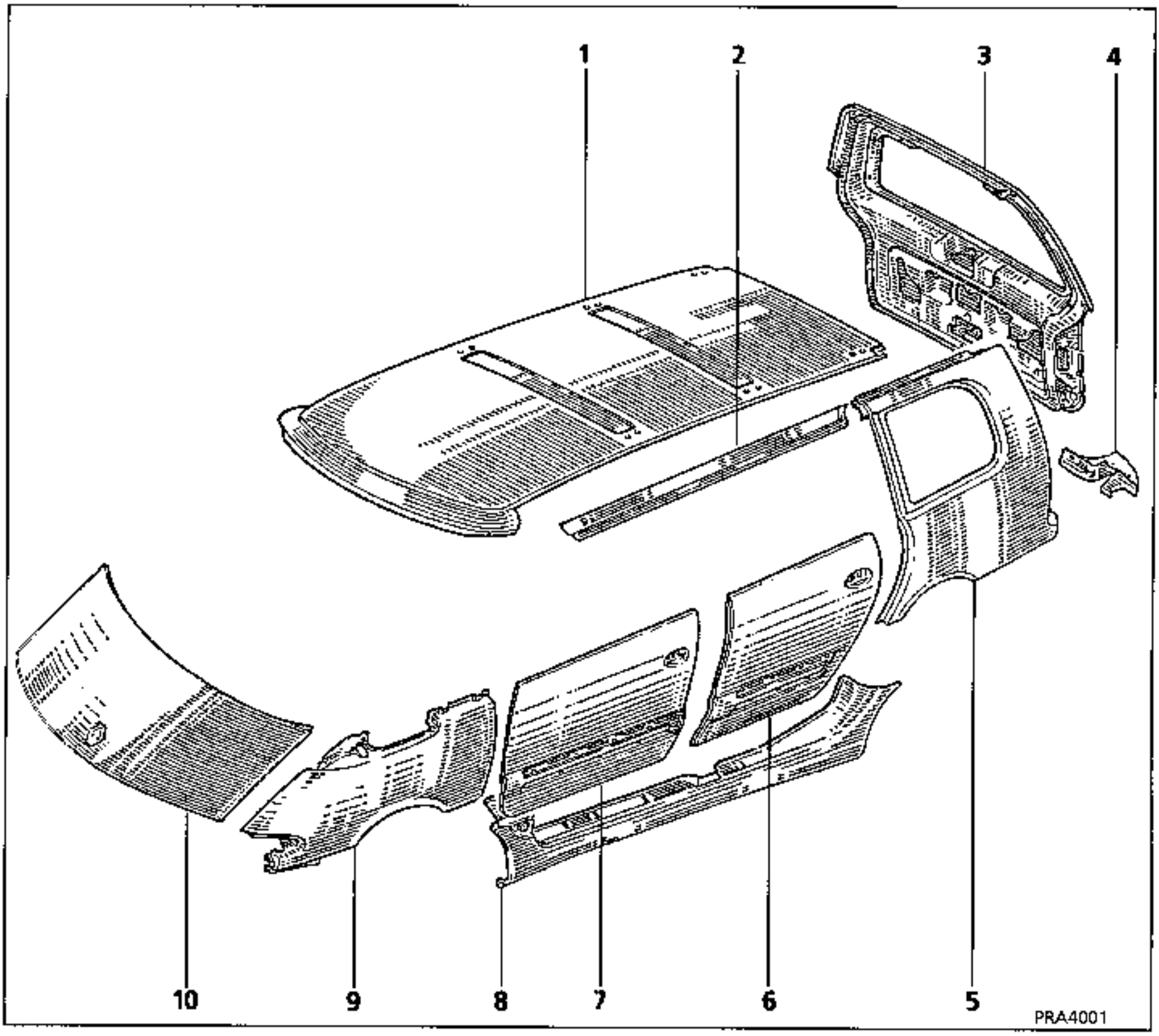
TOWING A VEHICLE WITH AUTOMATIC TRANSMISSION

The front of the vehicle should be raised, but if this is not possible, the vehicle may be towed with the wheels on the ground under exceptional circumstances, under the following conditions:

Only tow the vehicle at a speed less than 25 mph (40 km/h) and for not more than 31 miles (50 km).

SECURING ON TRANSPORTER VEHICLES

Use the front left hand side member ring and the two eyes located behind the rear bumper.



PLASTIC STRUCTURE

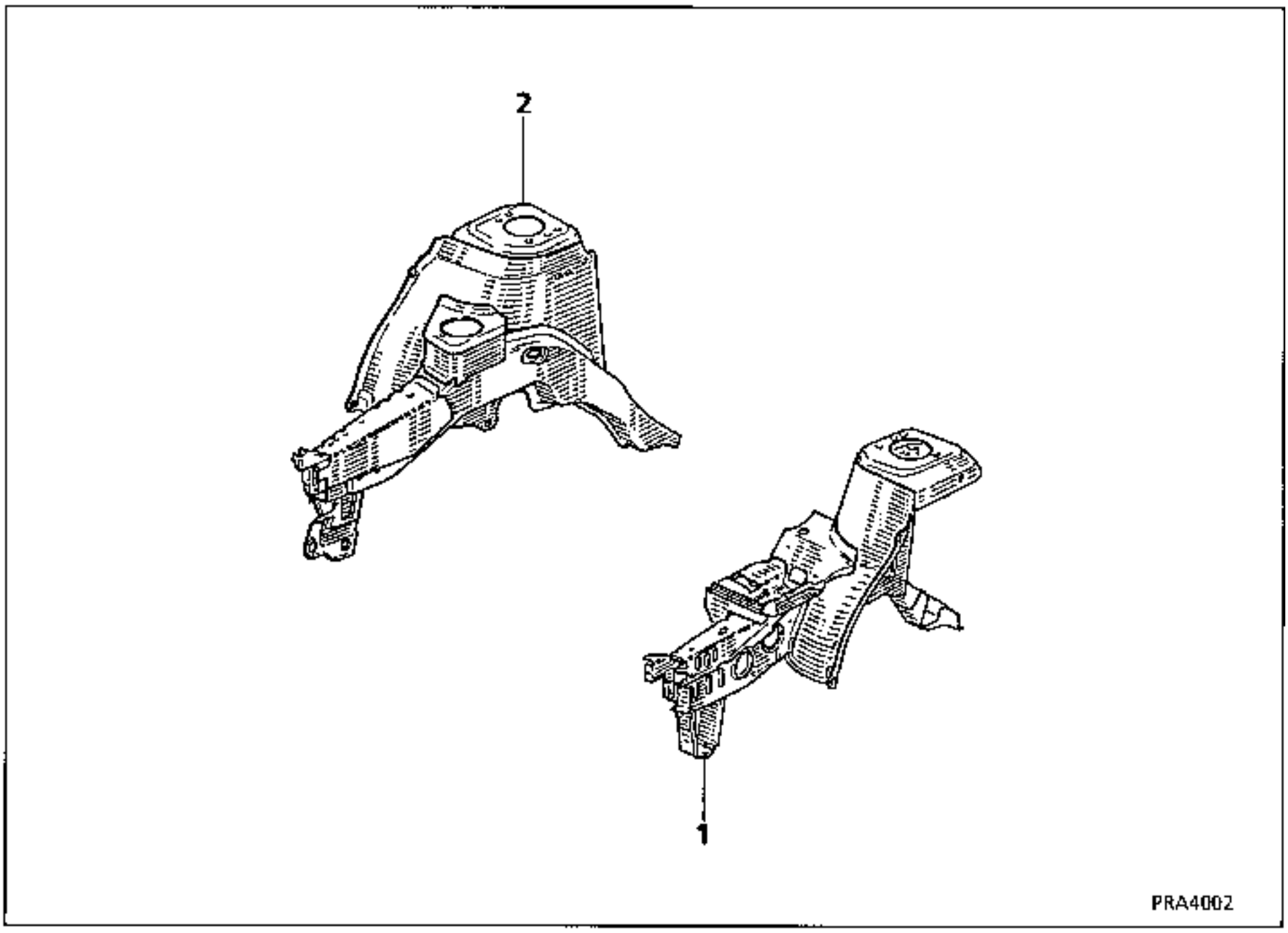
PARTS BONDED TO THE CHASSIS

1 Roof
2 Top of body
4 Wing corner
5 Rear wing
8 Sill panel
9 Front wing

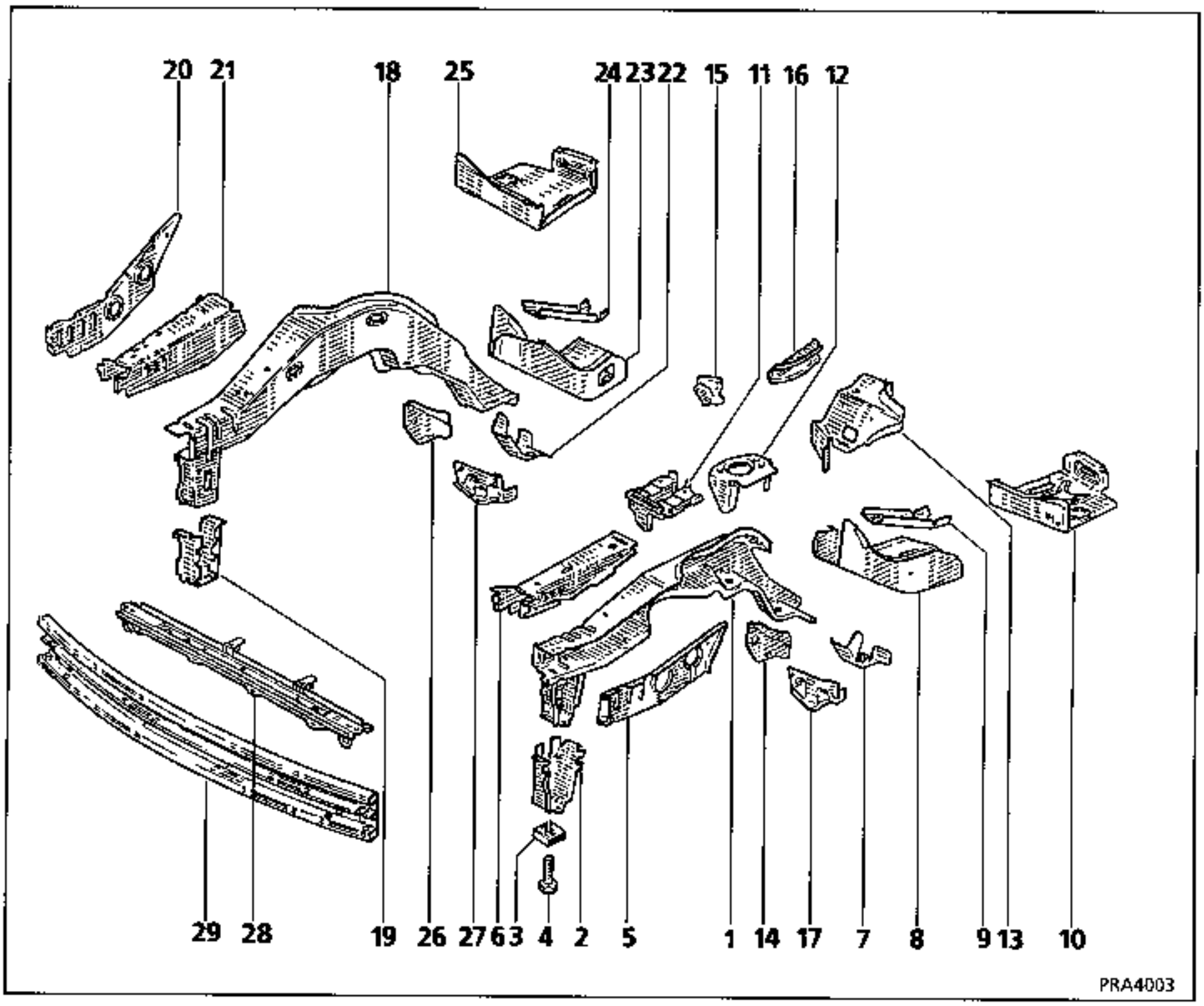
REMOVABLE

6 Rear door panel
7 Front door panel
3 Tailgate
10 Bonnet (metal)

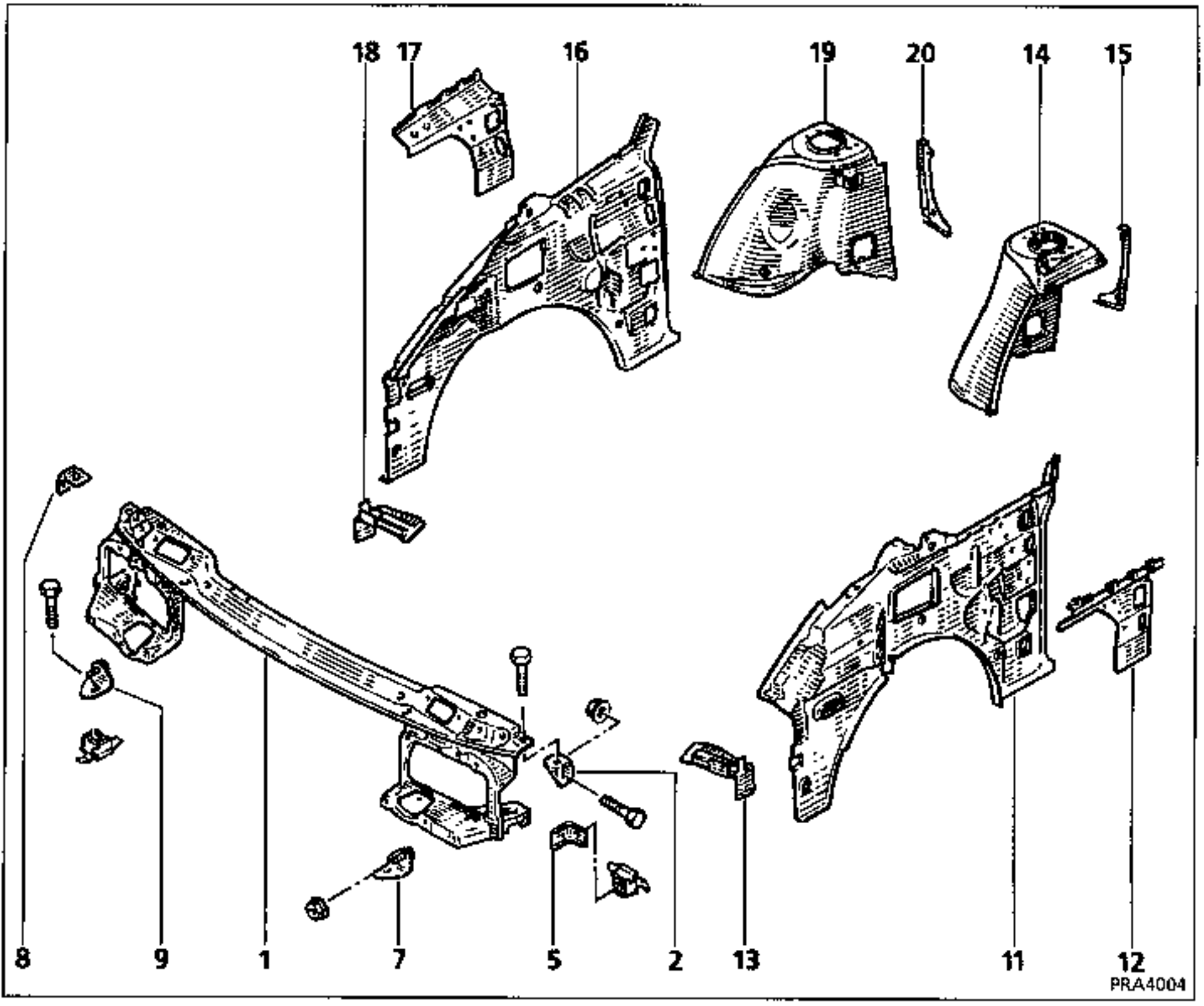
These parts are made from a POLYESTER resin based composite material:
- Pre-impregrnation technique (SMC) : parts 1,2,3,4,5,6,7,8,9.



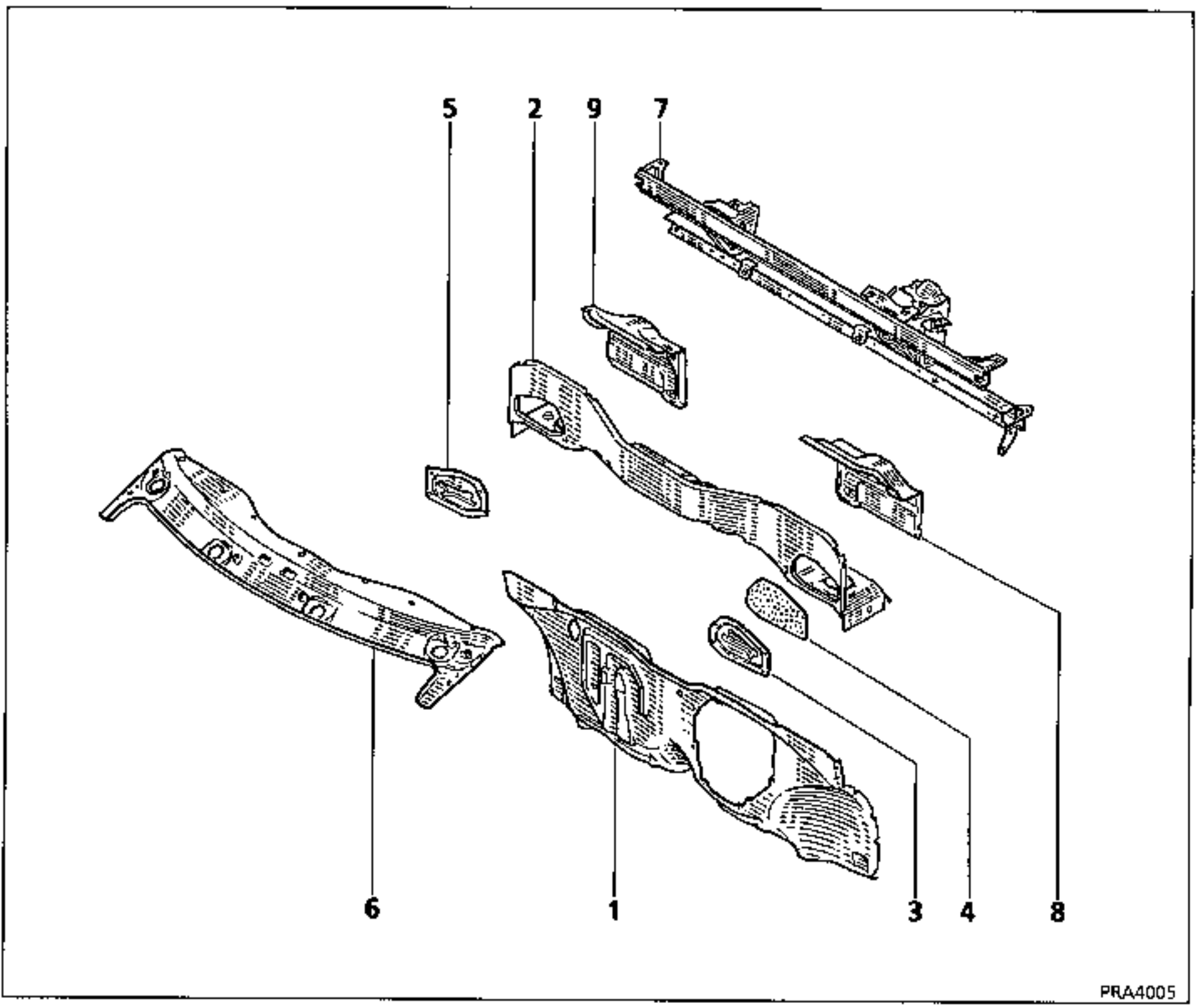
1 Front left hand half unit
2 Front right hand half unit



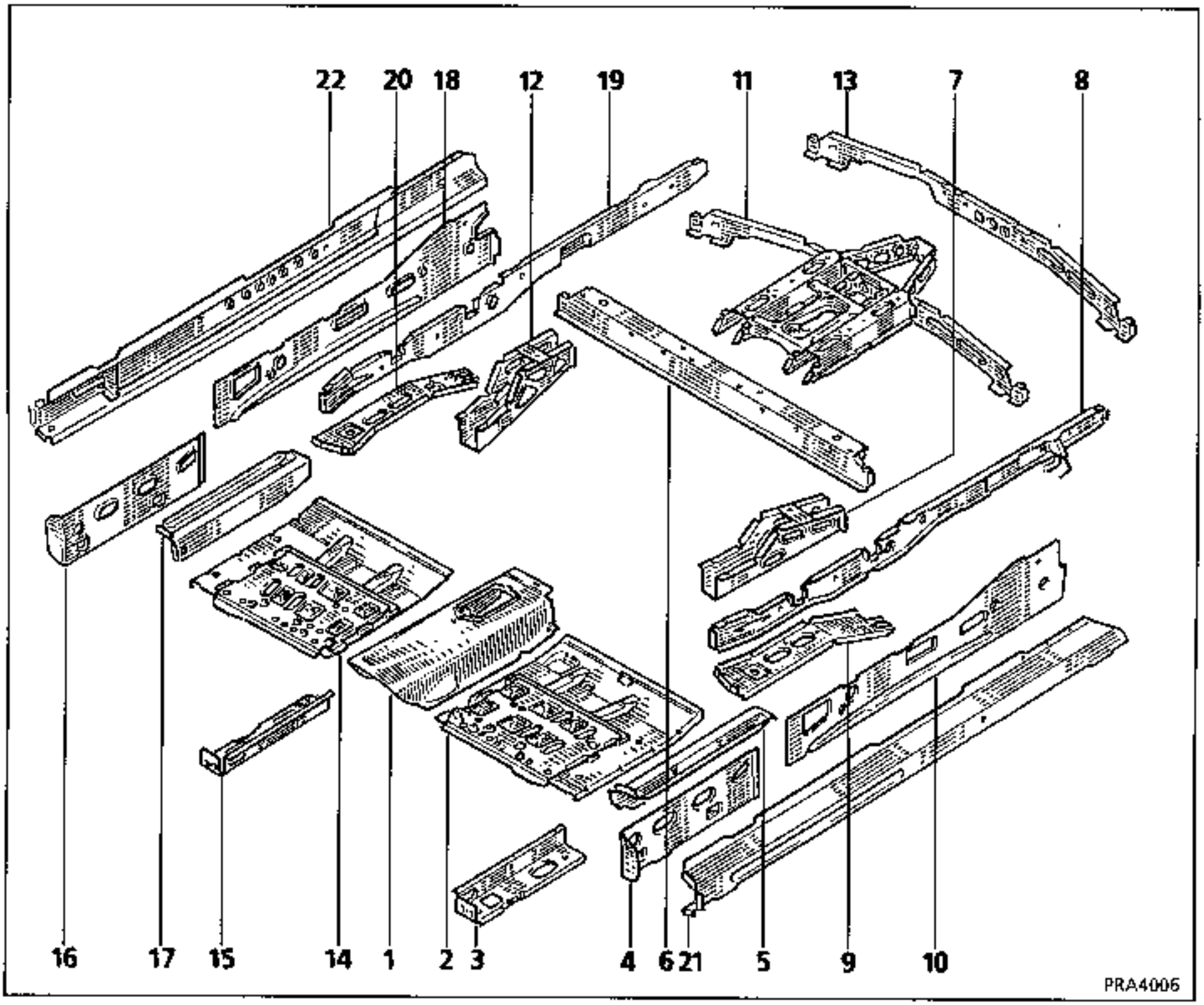
1 Simplified front left side member
2 Radiator cross member left hand mounting
5 Front left side member closure panel
6 Front left side member extension
7 Rear left sub-frame reinforcement
8 Front left side member, rear section
9 Front left side member reinforcement, rear section
10 Left hand jacking point mounting cross member
11 Battery mounting
12 Upper gearbox mounting assembly
13 Lower gearbox mounting assembly
14 Outer sub-frame rear left crash mounting reinforcement
15 Front right side member reinforcement for sub-frame
16 Gearbox upper rear right side member reinforcement
17 Inner sub-frame rear left crash mounting reinforcement
18 Simplified front right side member
19 Radiator cross member right hand mounting
20 Front right side member closure panel
21 Front right side member extension
22 Rear right sub-frame reinforcement
23 Front right side member, rear section
24 Front right side member reinforcement, rear section
25 Right hand jacking point mounting cross member
26 Outer sub-frame rear right crash mounting reinforcement
27 Inner sub-frame rear right crash mounting reinforcement
28 Radiator cross member
29 Front end cross member



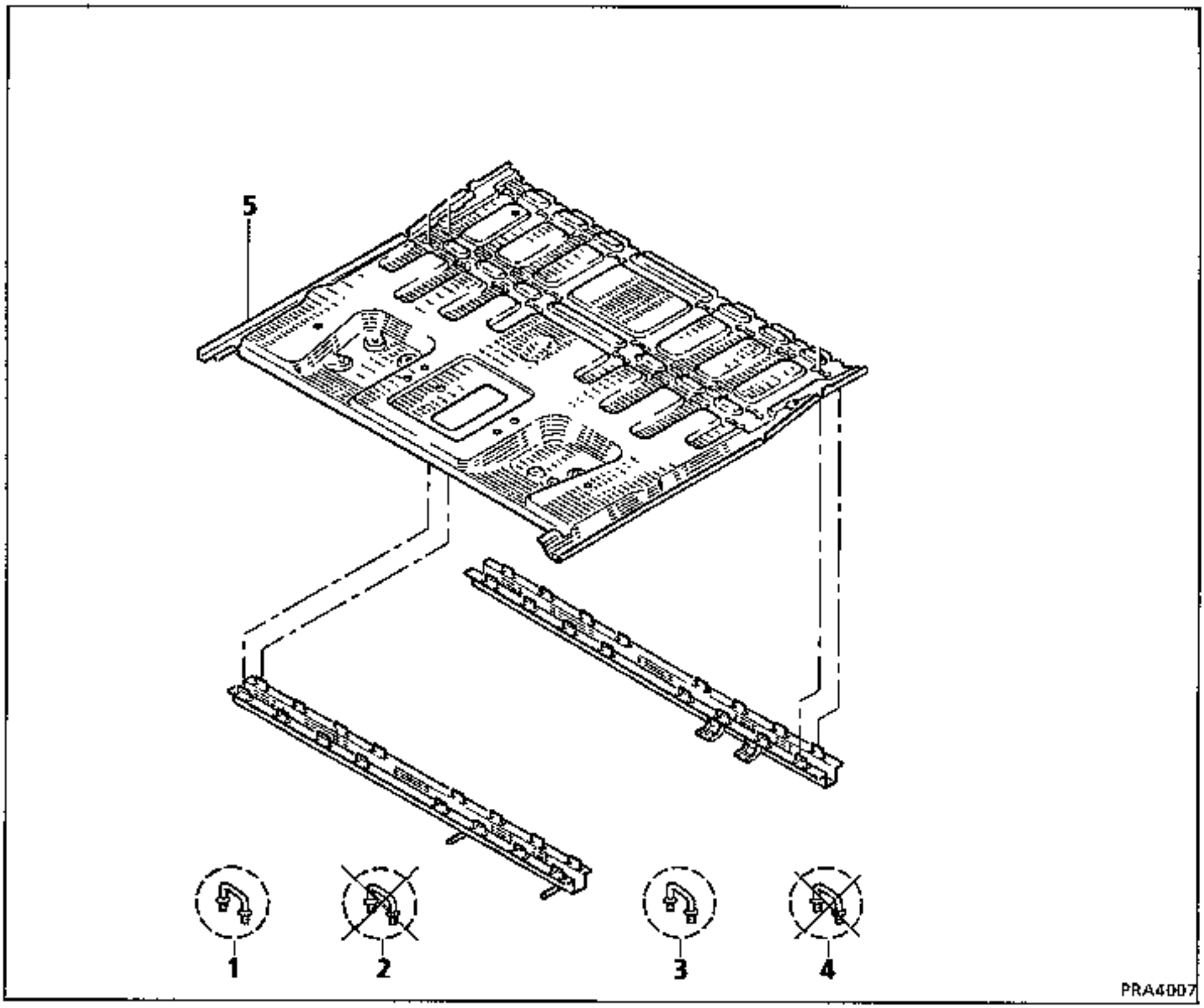
1 Front panel assembly
2 Left hand upper brackets
5 Left hand side brackets
7 Left hand lower brackets
8 Right hand upper brackets
9 Right hand lower brackets
11 Left front valance panel
12 Left hand deflector lower stretcher reinforcement
13 Left hand mudguard skirt tie rod
14 Front left wheel arch
15 Front left wheel arch brackets
16 Right front valance panel
17 Lower right hand stretcher reinforcement
18 Right hand mudguard skirt tie rod
19 Front right wheel arch
20 Front right wheel arch bracket



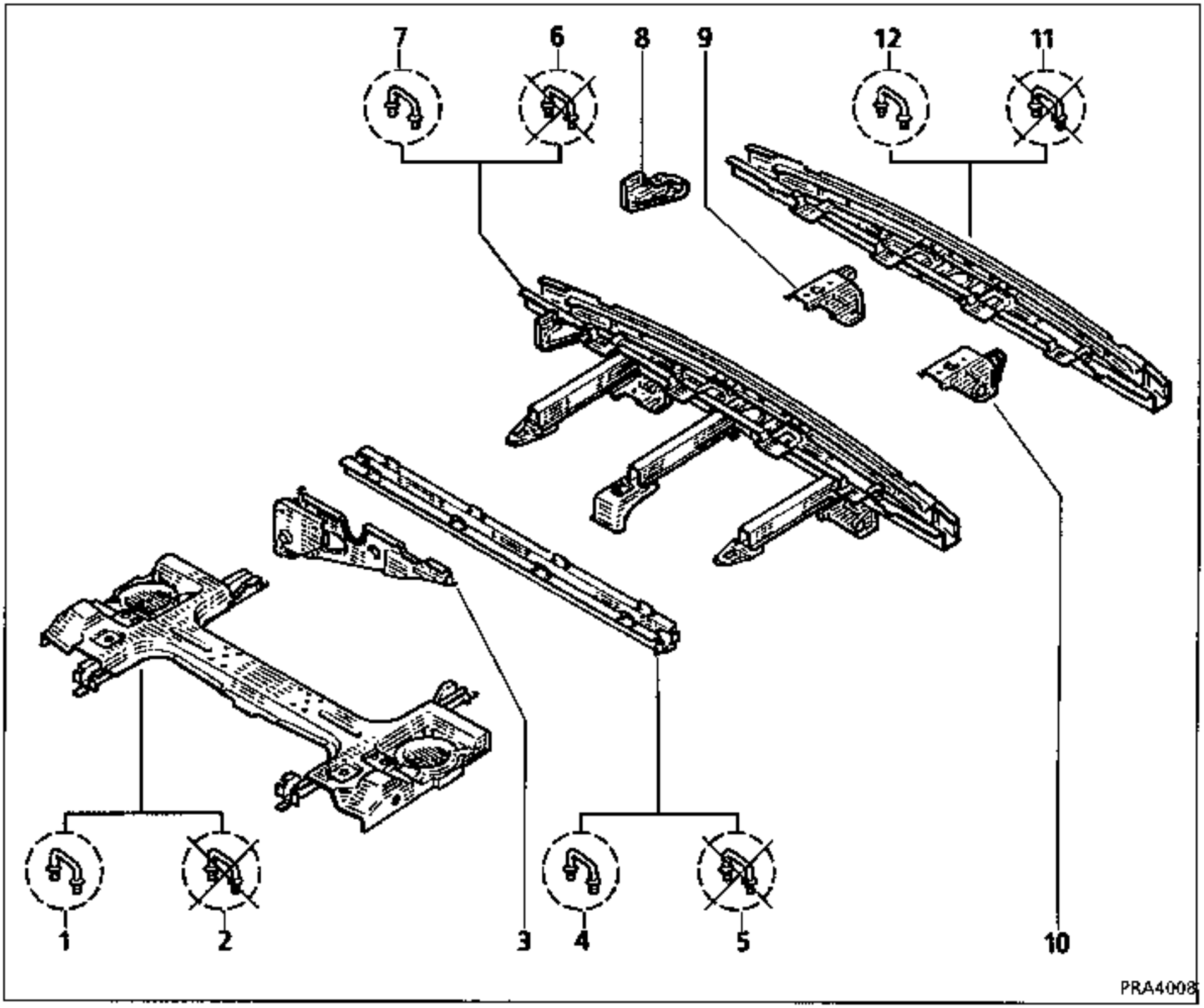
1 Bulkhead
2 Engine compartment panel
3 Left hand pollen filter cover
4 Soundproofing
5 Right hand pollen filter cover
6 Windscreen aperture lower cross member
7 Cross assembly
8 Left hand side closure panel
9 Right hand side closure panel



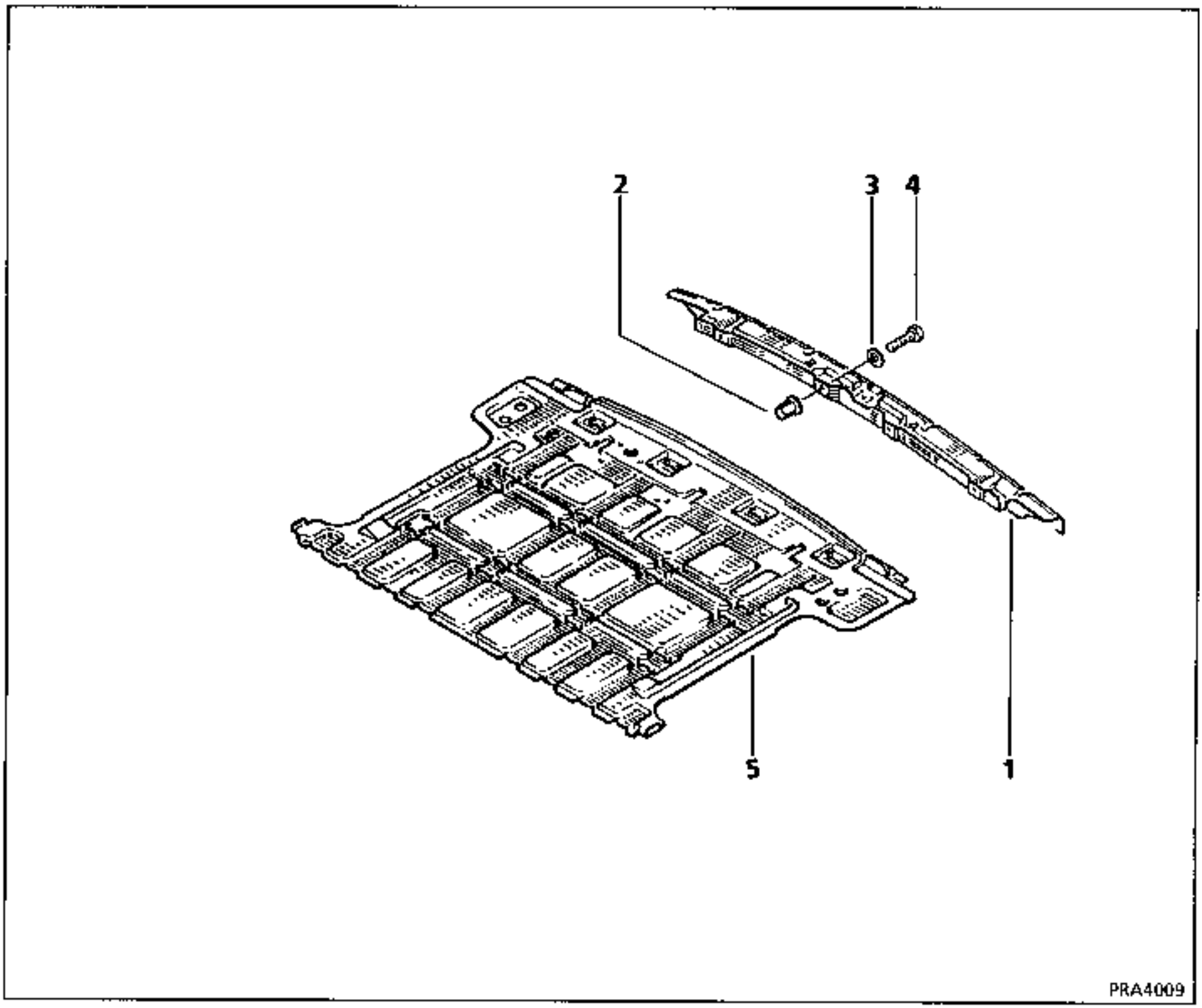
1 Tunnel
2 Front left floor
3 Side member under footwell
4 Front left side panel
5 Side member under left hand footwell
6 Floor front cross member
7 Side member extension
8 Left hand outer side member
9 Lower rear left hand valance closure panel
10 Left hand side valance closure panel
11 Handbrake reinforcement
12 Right hand side member extension
13 Joint between cross members
14 Front right floor
15 Side member under right hand footwell
16 Front right side panel
17 Side member under footwell
18 Right hand side panel
19 Right hand outer side member
20 Lower rear right hand valance closure panel
21 Valance panel left hand reinforcement
22 Valance panel right hand reinforcement



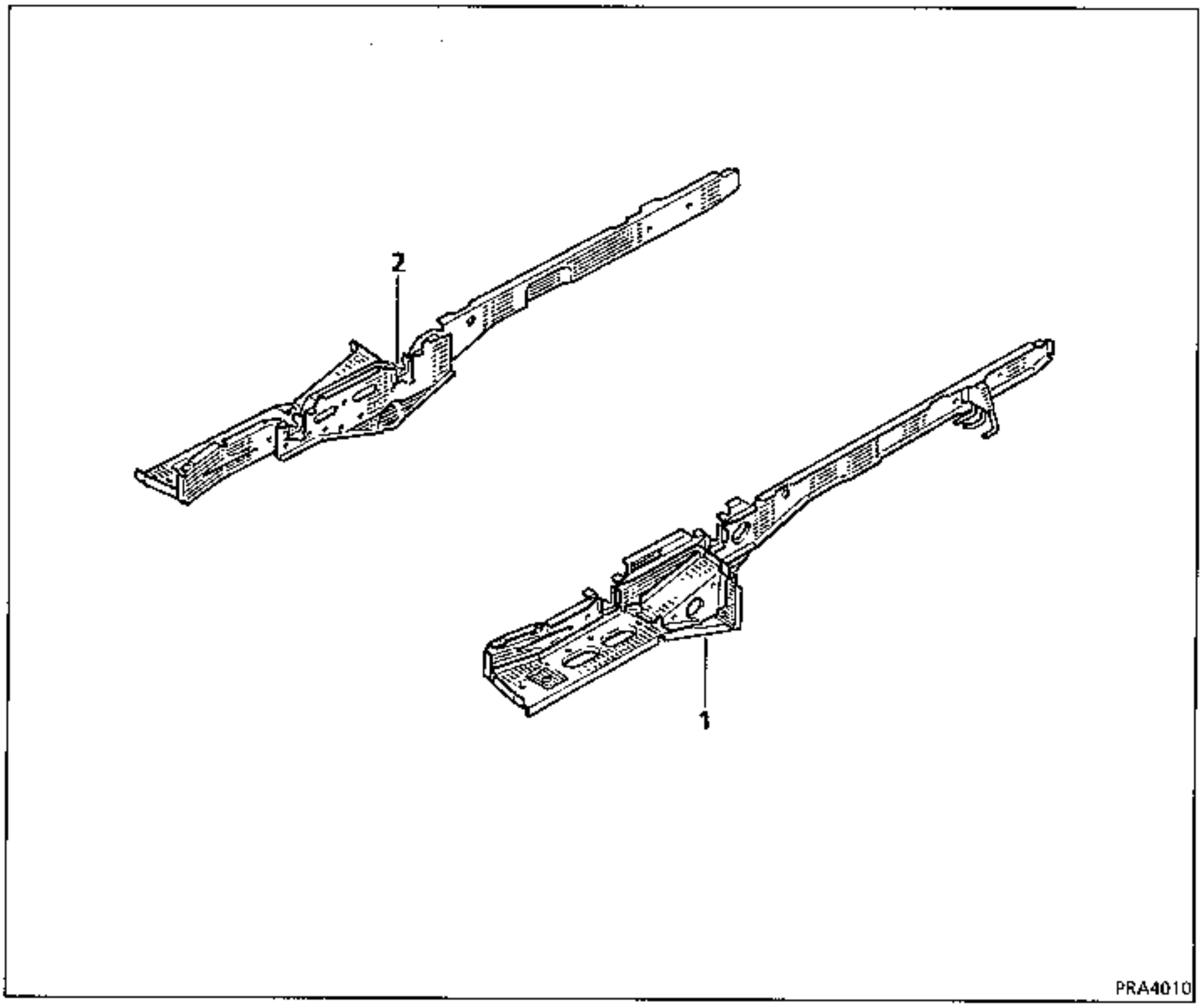
1 Front cross member - 2nd row seats, with rings
2 Front cross member - 2nd row seats, without rings
3 Rear cross member - 2nd row seats, with rings
4 Rear cross member - 2nd row seats, without rings
5 Floor



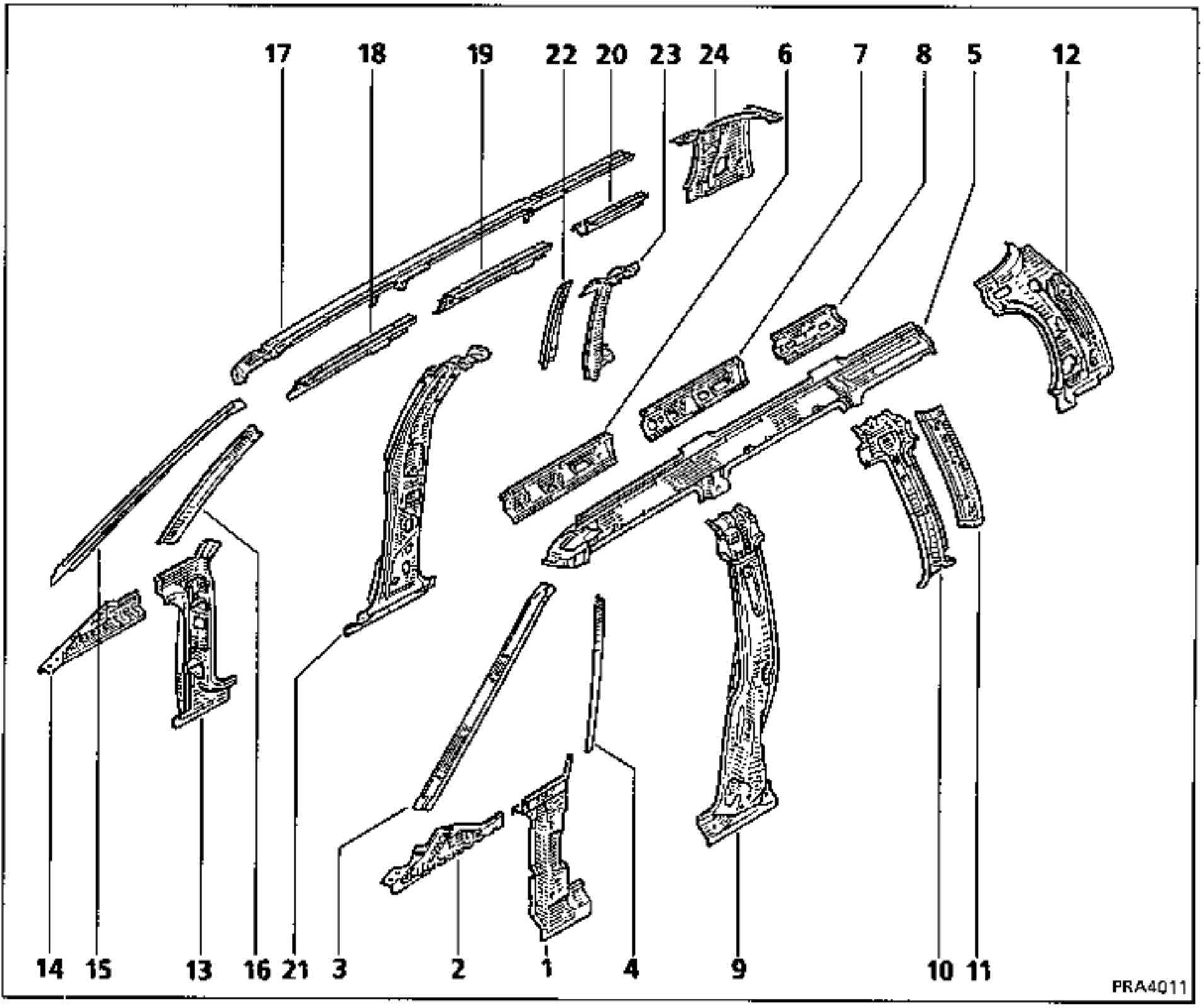
1 Rear axle assembly cross member with rings
2 Rear axle assembly cross member without rings
3 Panhard bar flange
4 Rear cross member - 3rd row seats with rings
5 Rear cross member - 3rd row seats without rings
6 Lower rear cross member without rings
7 Lower rear cross member with rings
8 Rear towing flange
9 Right hand connecting panel
10 Left hand connecting panel
11 Lower cross member assembly without rings
12 Lower cross member assembly with rings



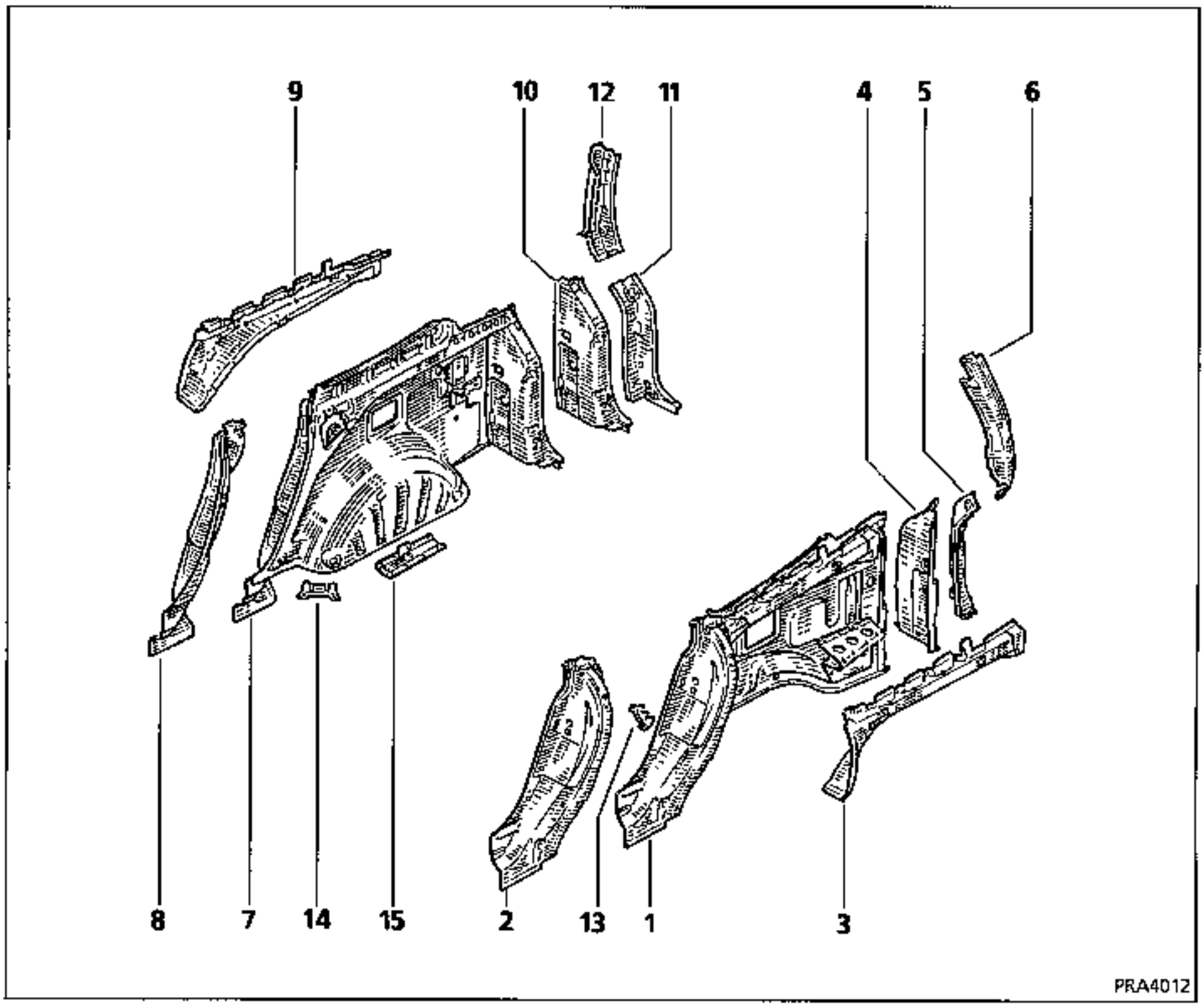
1 Bumper cross member
2 Nut - to be crimped
3 Washer
4 Bolt
5 Floor



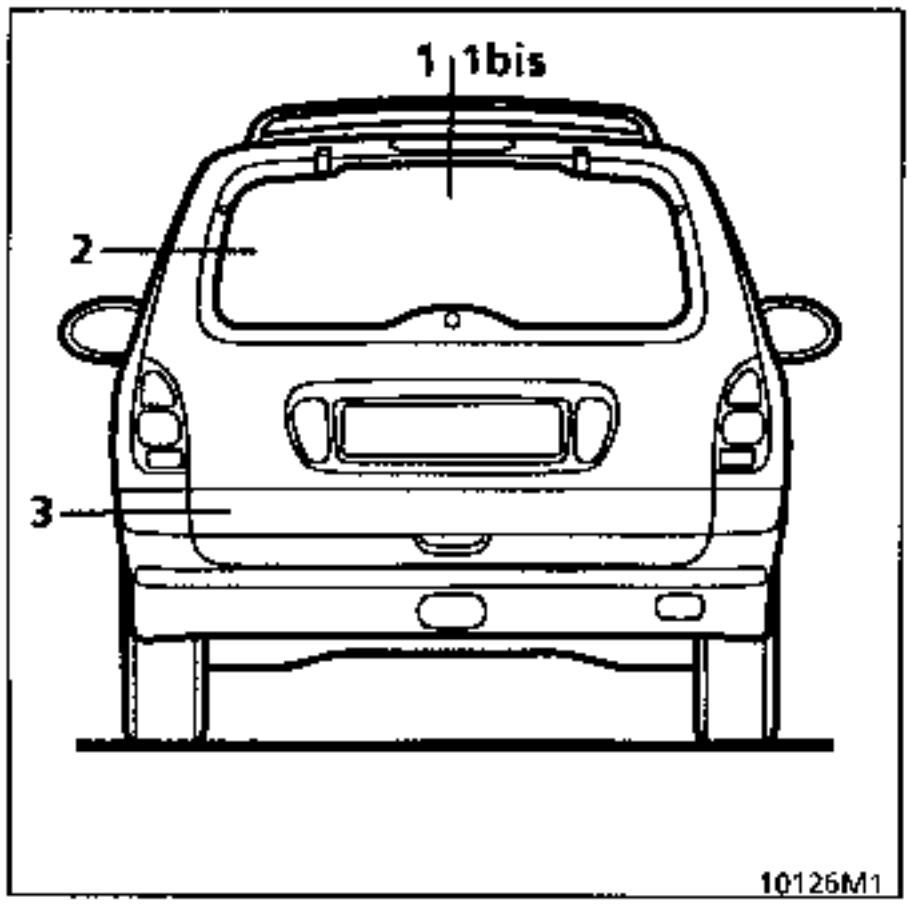
1 Left hand side member assembly
2 Right hand side member assembly



1 Front left pillar
2 Left lower stretcher
3 Left hand windscreen pillar
4 Left hand pillar deflector
5 Left upper stretcher
6 Front left upper stretcher lining
7 Centre left upper stretcher lining
8 Rear left stretcher lining
9 Left centre pillar
10 Pillar lining in front of left hand rear quarter panel window
11 Pillar in front of left hand rear quarter panel window
12 Left hand rear quarter panel lining
13 Front right pillar
14 Right lower stretcher
15 Right hand windscreen pillar
16 Right hand pillar deflector
17 Right upper stretcher
18 Front right upper stretcher lining
19 Centre right upper stretcher lining
20 Rear right stretcher lining
21 Right centre pillar
22 Pillar in front of right hand rear quarter panel window
23 Pillar lining in front of rear quarter panel window
24 Right hand rear quarter panel lining



1 Wheel arch assembly
2 Rear left pillar
3 Left lower stretcher for rear quarter panel window
4 Left lower drip moulding lining
5 Rear drip moulding, left hand lower section
6 Rear drip moulding, left hand upper section
7 Right hand wheel arch assembly
8 Right rear pillar
9 Right lower stretcher for rear quarter panel window
10 Right lower rain drip moulding lining
11 Rear drip moulding, right hand lower section
12 Rear drip moulding, right hand upper section
13 Welding bridge
14 Right hand welding bridge
15 Floor welding bracket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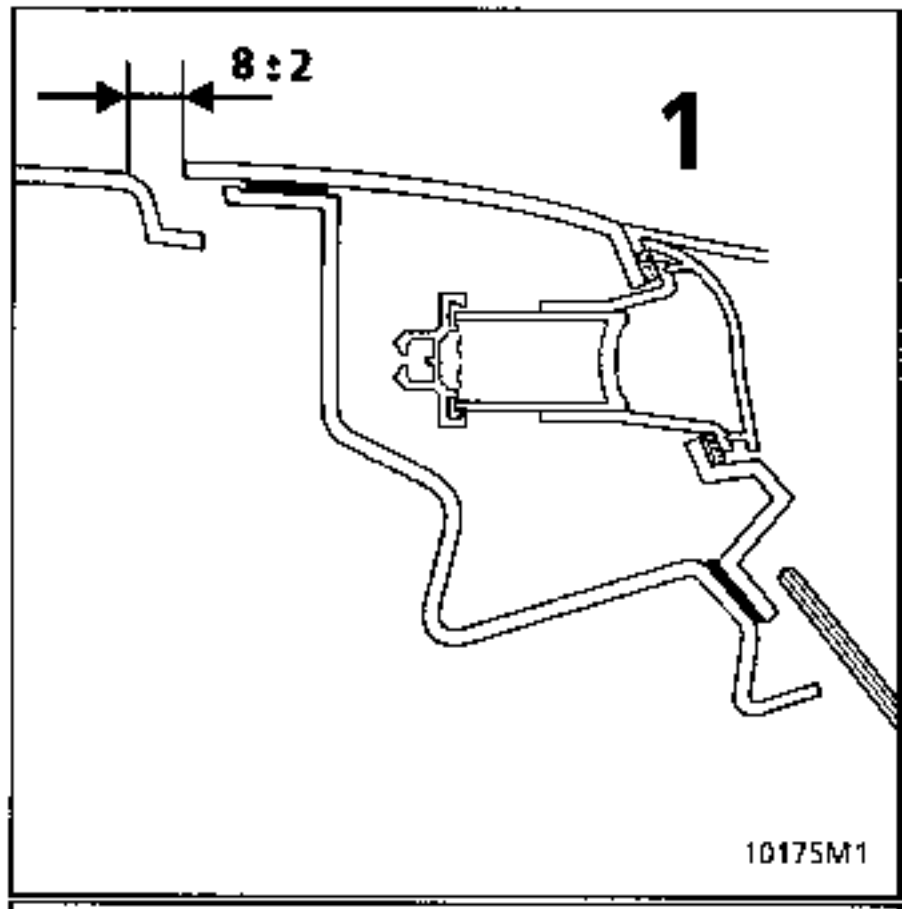
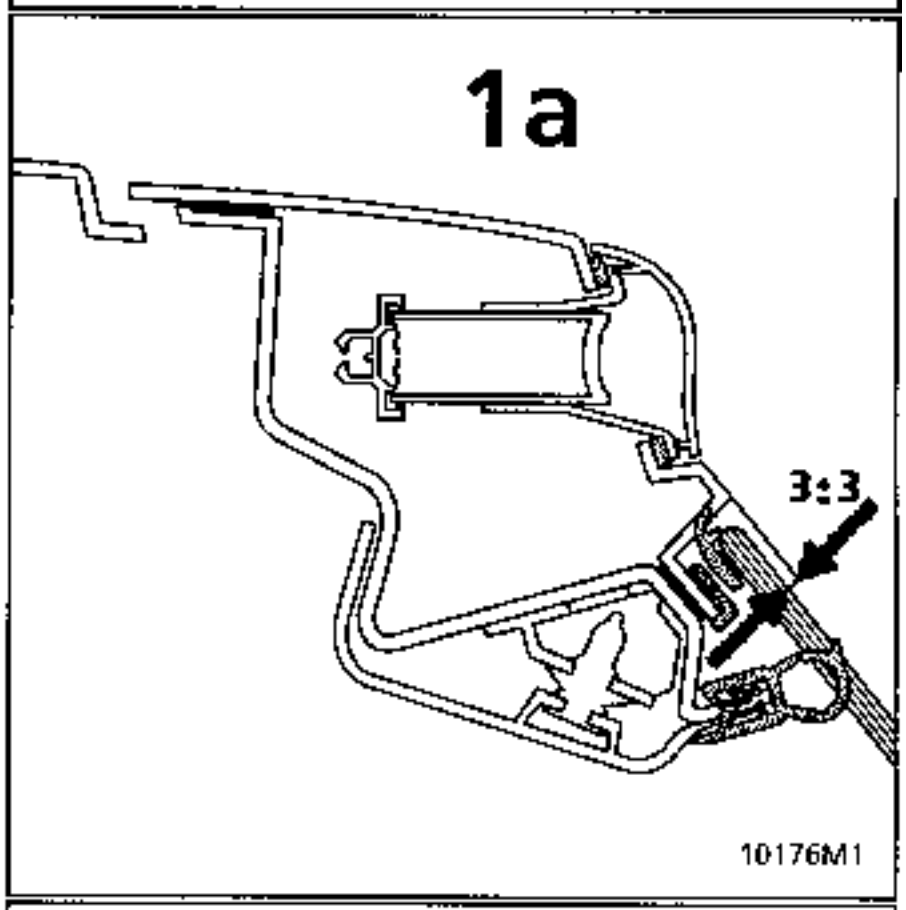
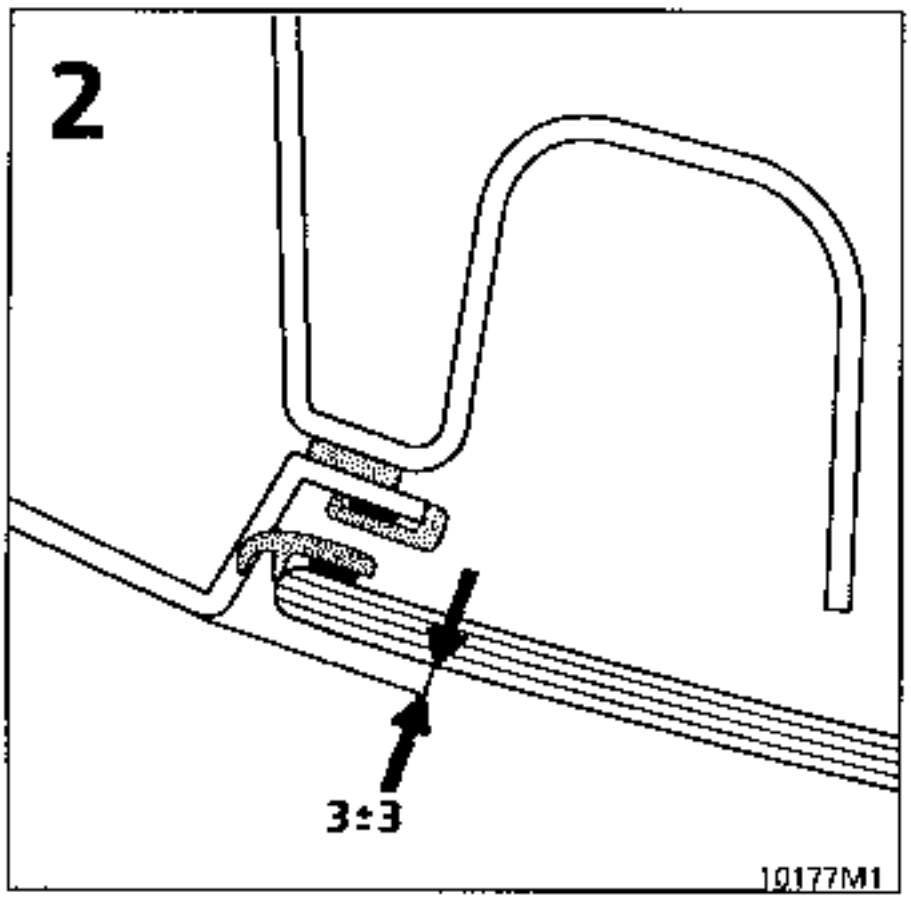
2
3
10126M1


8±2
1
10175M1


1a
3±3
10176M1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3±3
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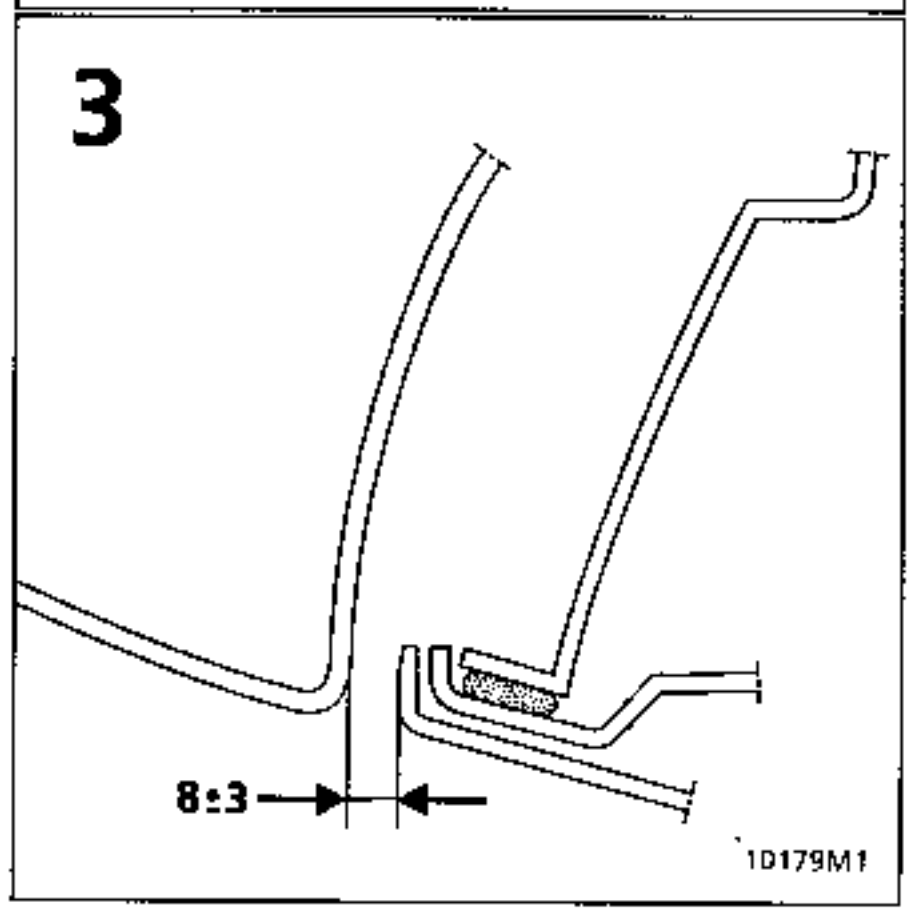
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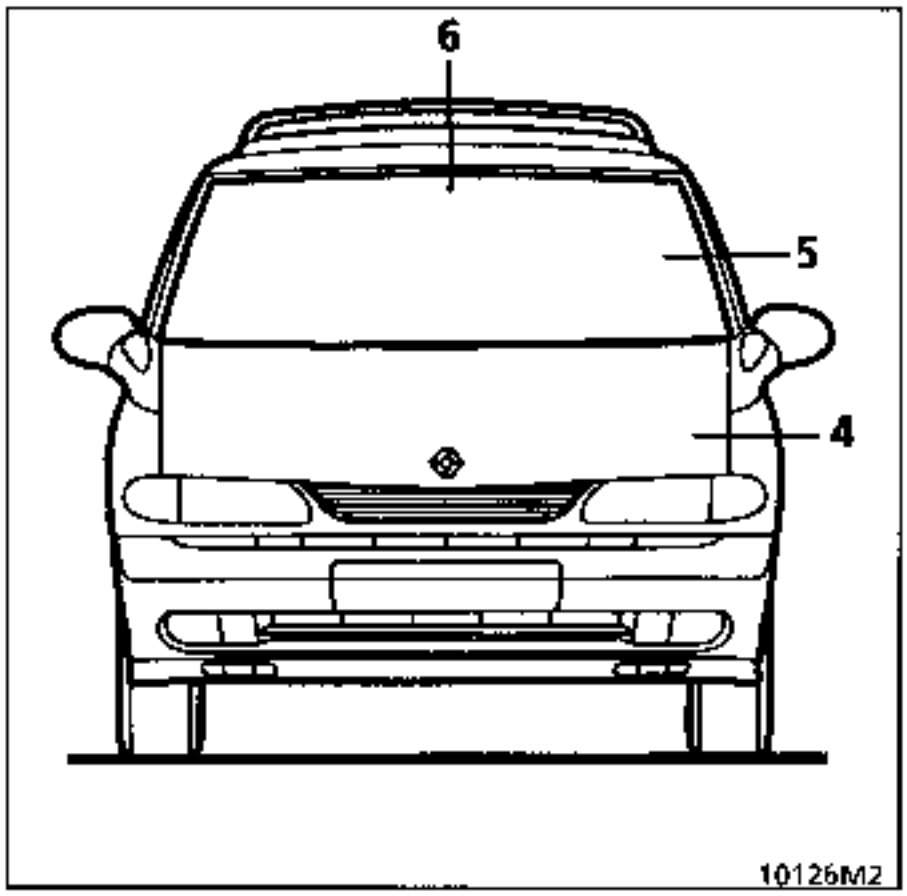
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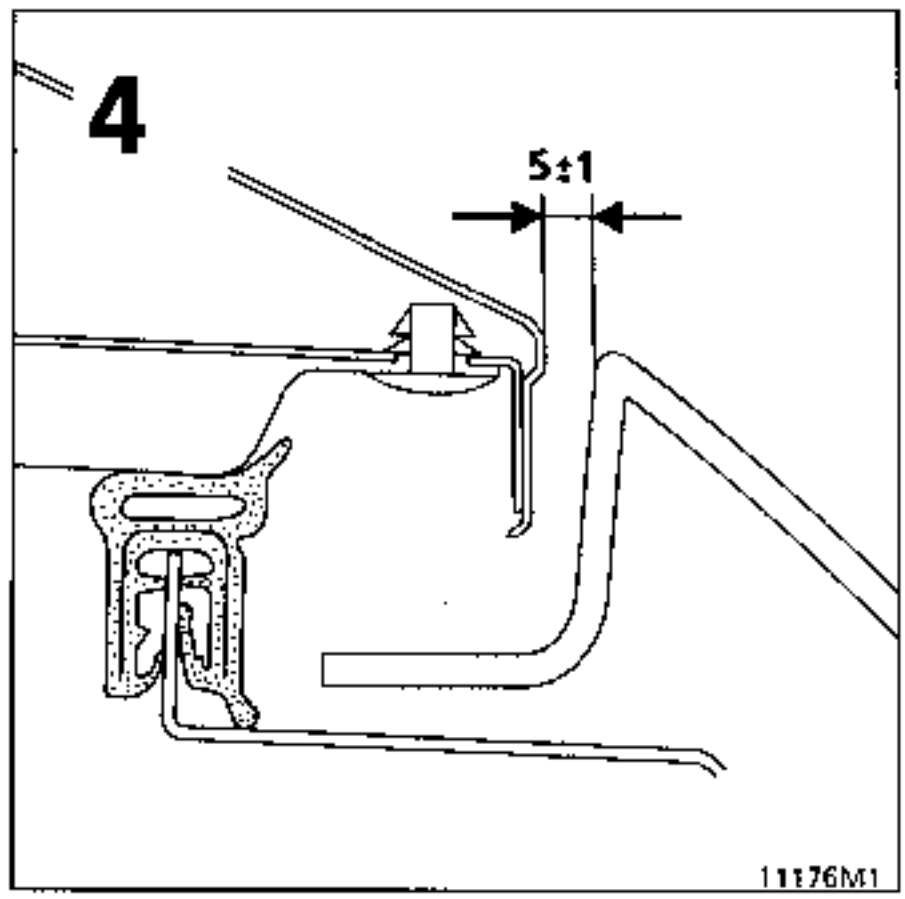
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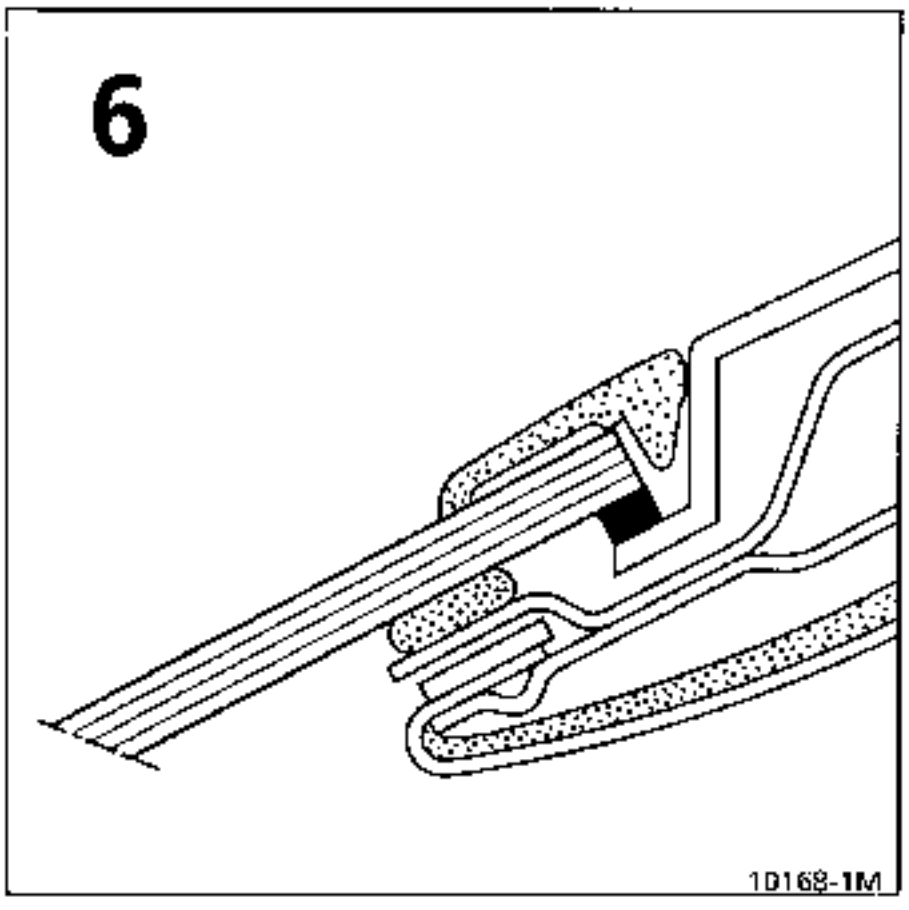
5±1
11176M1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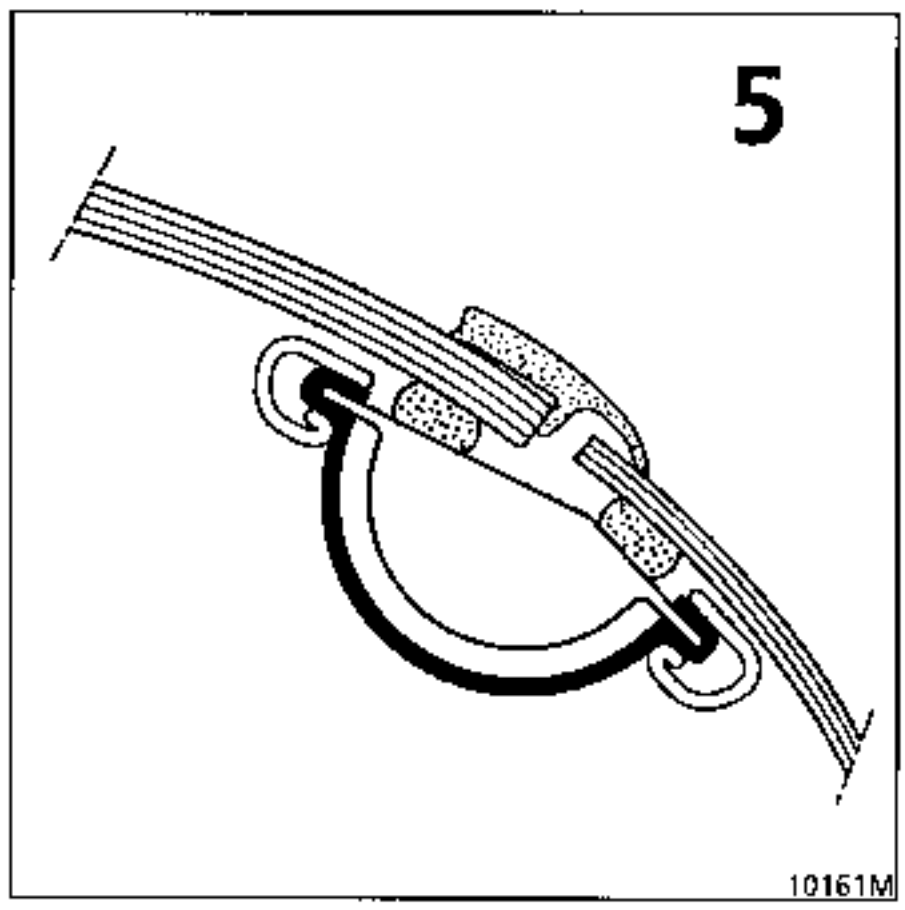
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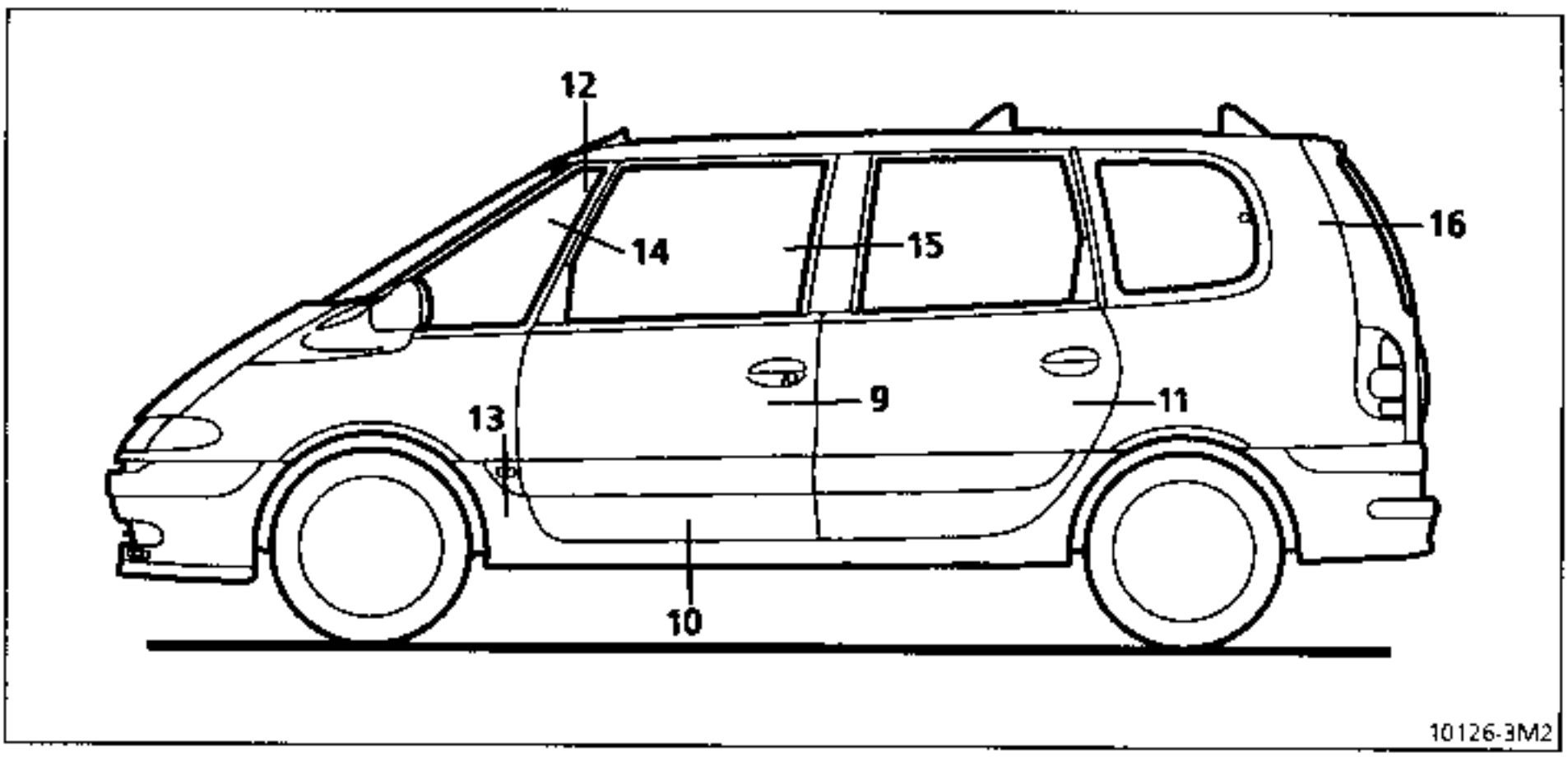
12
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16
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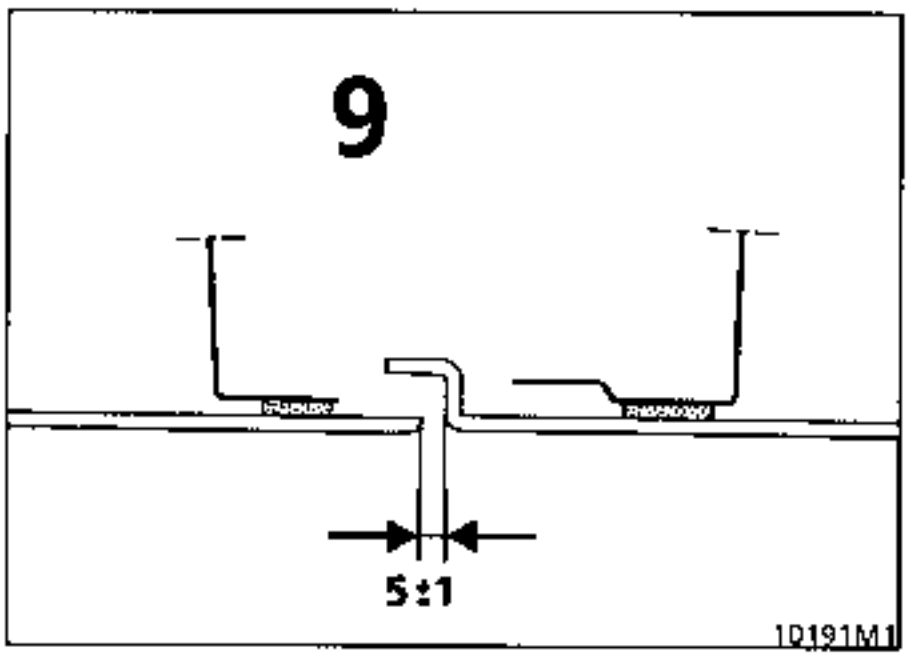
10126-3M2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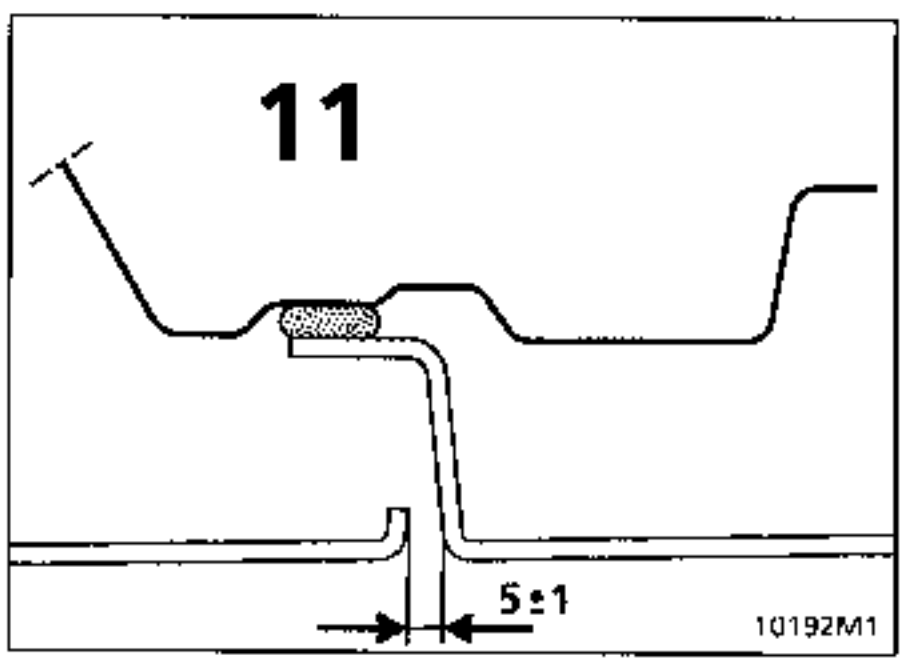
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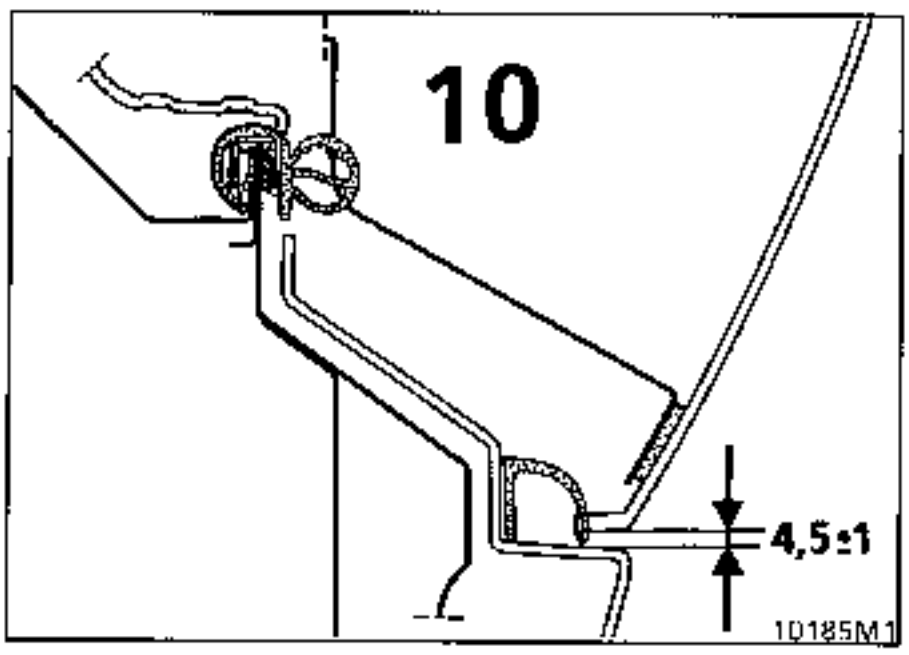
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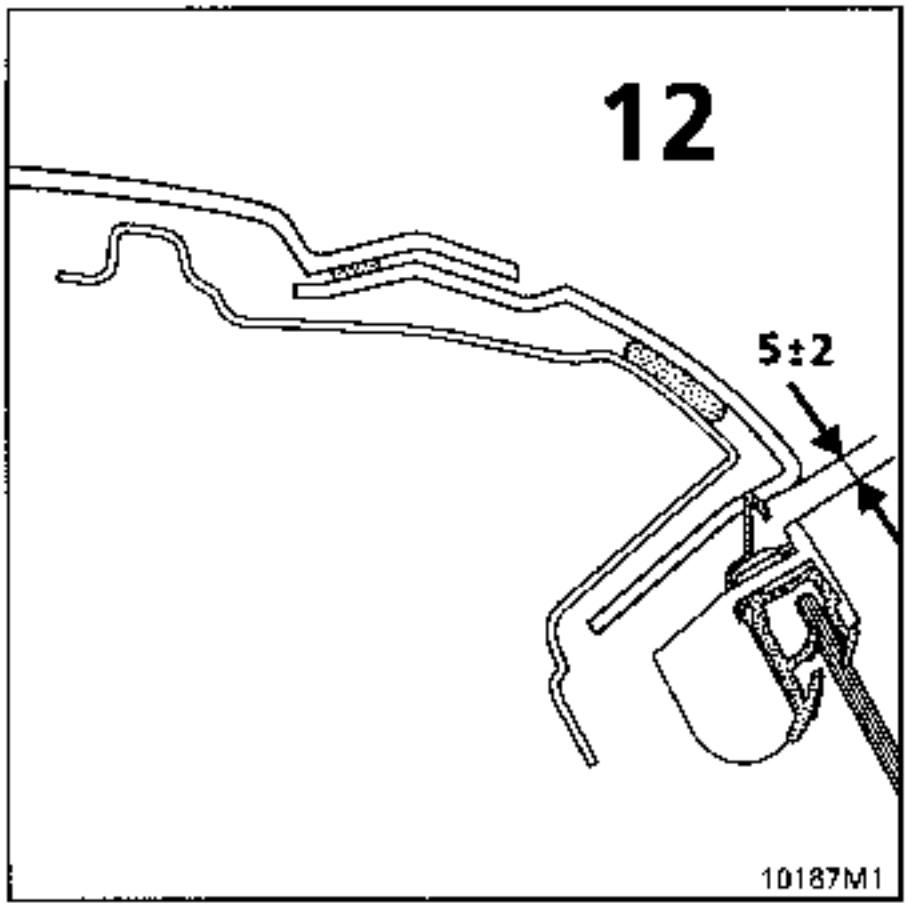

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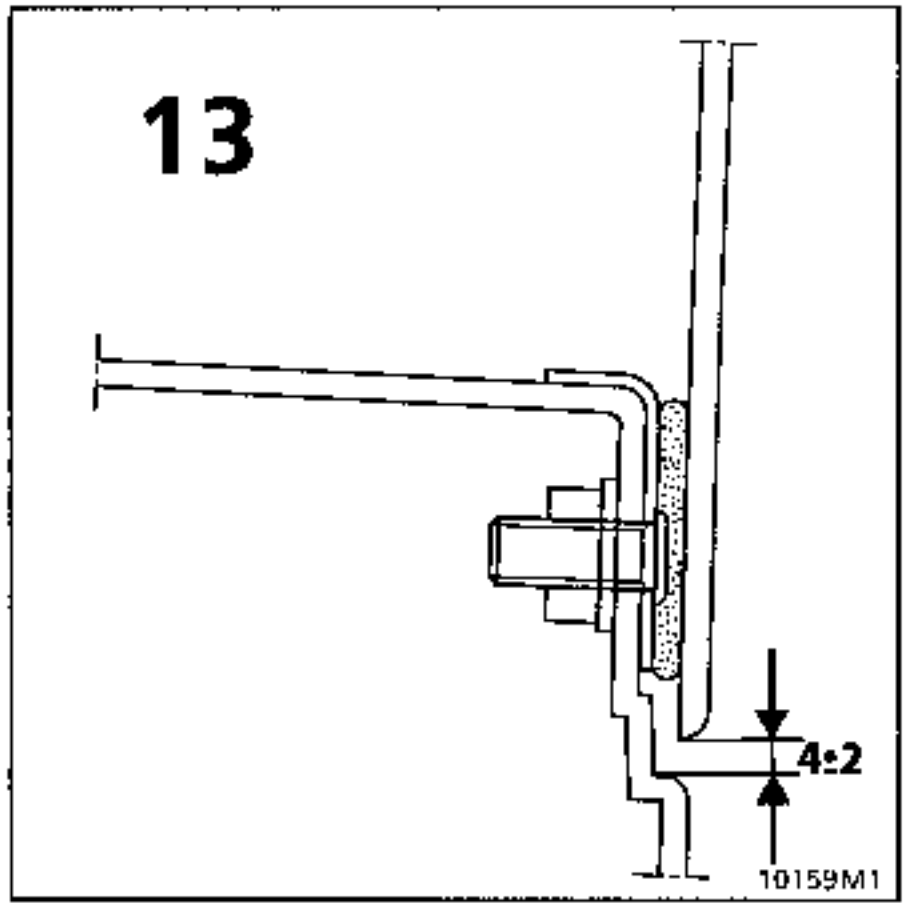

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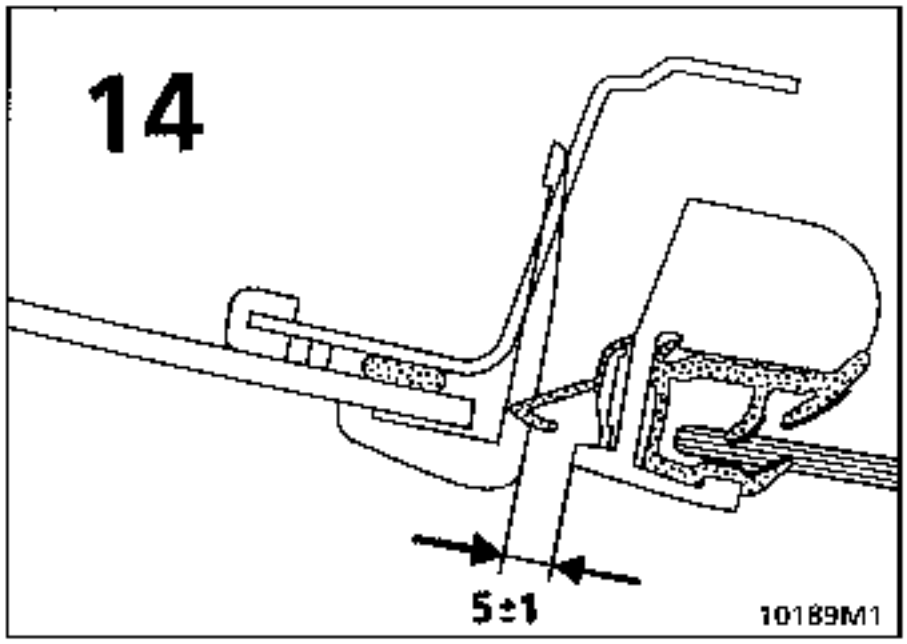

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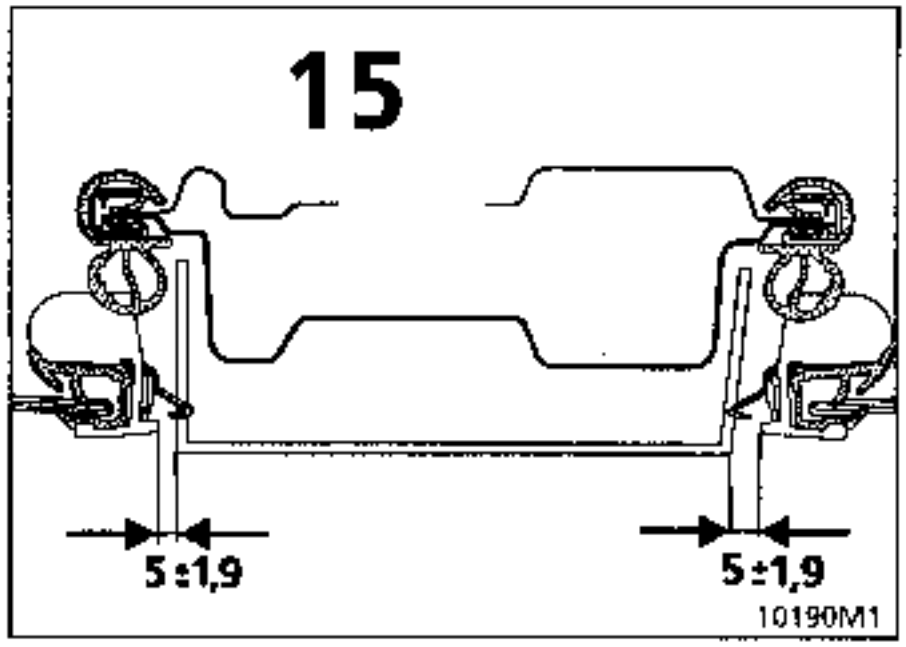

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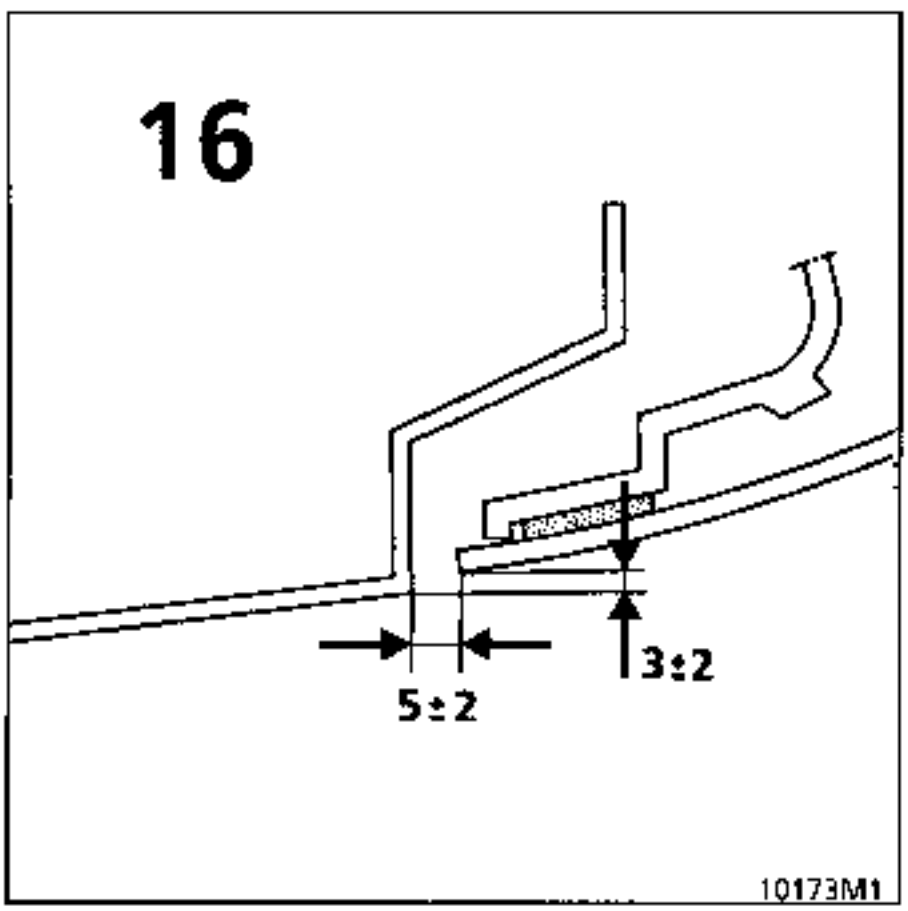

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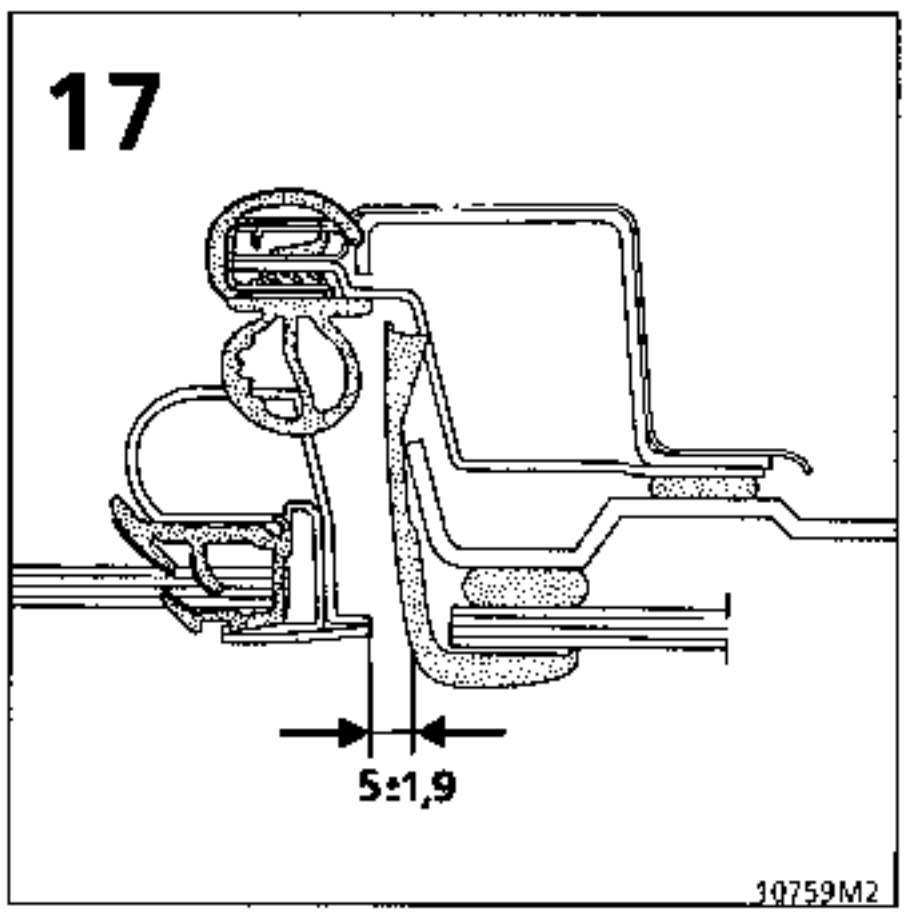


Chiselfing.

Grind back beads or spot welds.
Straight grinding wheel with 75 mm diameter bakelite impregnated disc, thickness 1.8 to 3.2 mm.

Grind back spot welds.
20 000 rpm straight grinder with 10 or 16 mm diameter spherical burr.

Grind back spot welds.
Hardened steel bit. Speed of rotation 800 to 1 000 rpm.

Unpicking.

Cleaning surfaces to be welded.
100 mm diameter fibre disc.


Cutting with a saw.
Alternating pneumatic saw.

Cutting out part by grinding off flange or grinding back remaining traces of spot weld.
Angle grinder equipped with a rubber pad and a 120 to 180 mm diameter fibre disc grain size P36.

Unsoldering.

MAG stitch weld
Note : to obtain a good quality weld we recommend the use of a gas consisting of argon + 15 % CO_2. This is considered to be an active gas (MAG).

Plug welding.
under MAG gas protection.

Injecting a product for hollow sections.
Pressurised spray gun equipped with a flexible end piece with different ends.

Safety symbol.
This means that the welding operation in question concerns one or more of the vehicle's vital safety components.

Body solder - lead fill.
Hot air torch.
Nozzle output temperature 600° min.
Bat+ 33 % tin solder + tallow.
Note : to a large extent, body solder filling compensates for the heat distortion caused by welding.

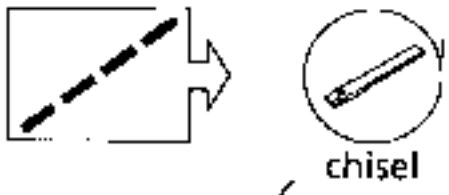
Application of aluminium paint.
This is to be applied to the joint faces of each of the parts to be plug welded. The paint conducts electricity and is is resistant to high temperatures. It provides anti-corrosion protection around the plug welds.

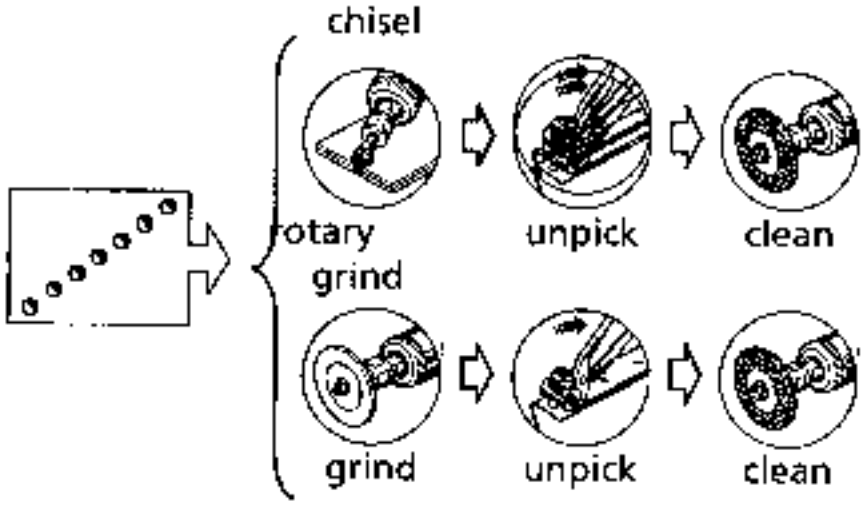
Apply a fillet of extruded mastic
- from a manual or pneumatic application gun.
- one or two pot mastic for crimped and butt joints.

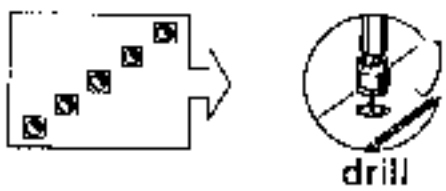
Spray on sealer
- spray gun.
- two pot anti-gravel and anti-corrosion mastic.

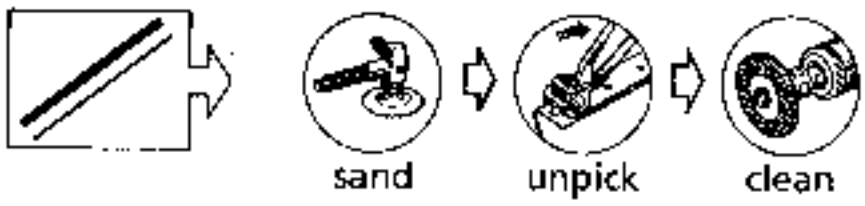
SITE OF OPERATION	TYPES OF TOOLS AND ORDER OF OPERATIONS

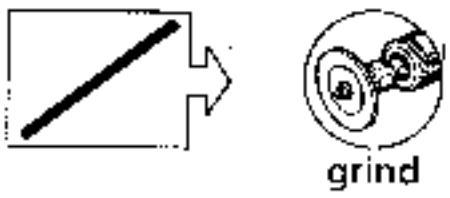
CUTTING OUT - UNPICKING



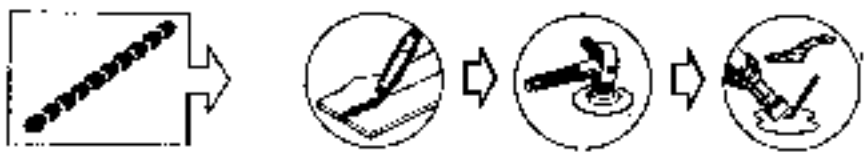






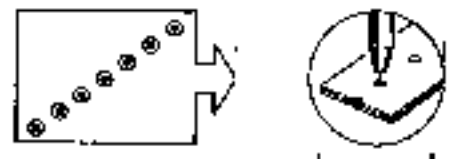


WELDING

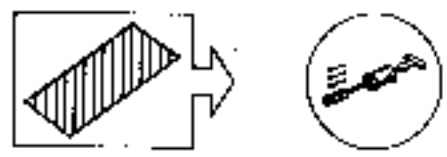


SITE OF OPERATION	TYPES OF TOOLS AND ORDER OF OPERATIONS

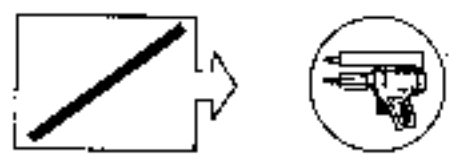
WELDING (cont)



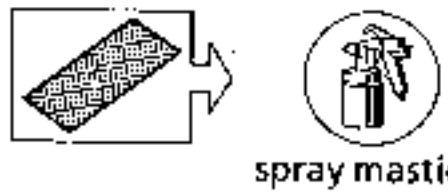
STRAIGHTENING



CRIMP ZONE PROTECTION

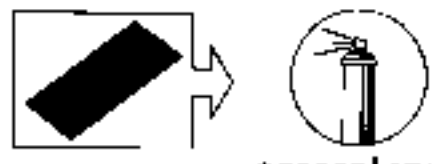


ANTI-GRAVEL PROTECTION

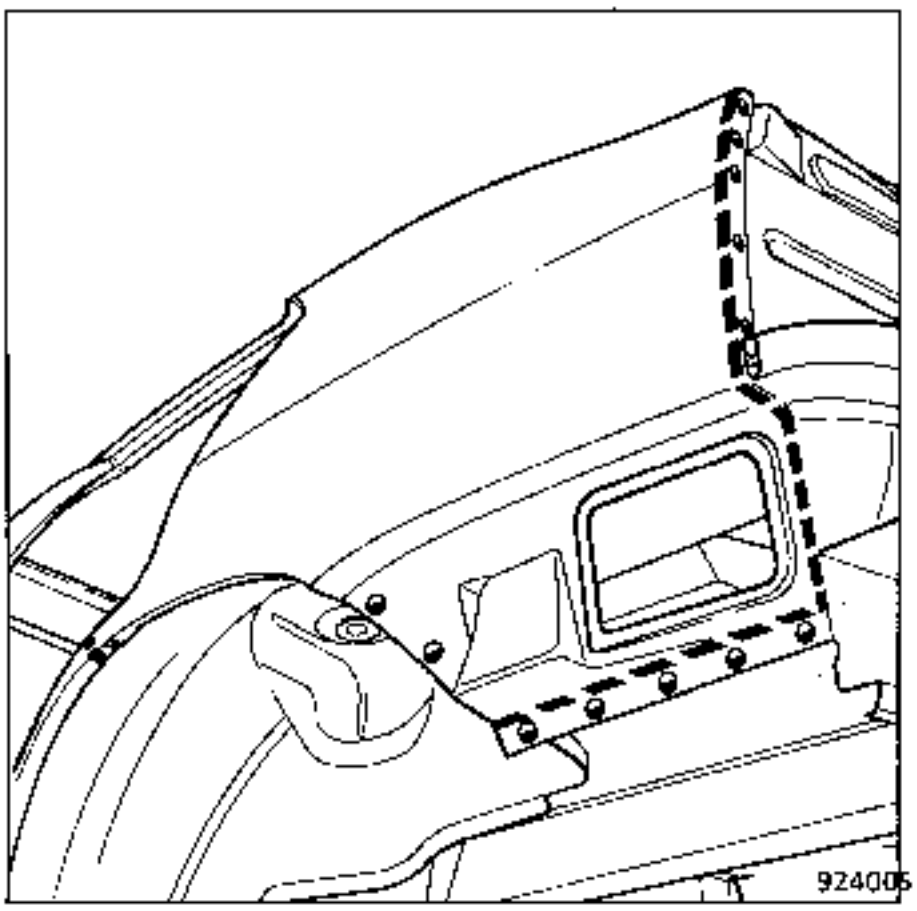


HOLLOW SECTION PROTECTION

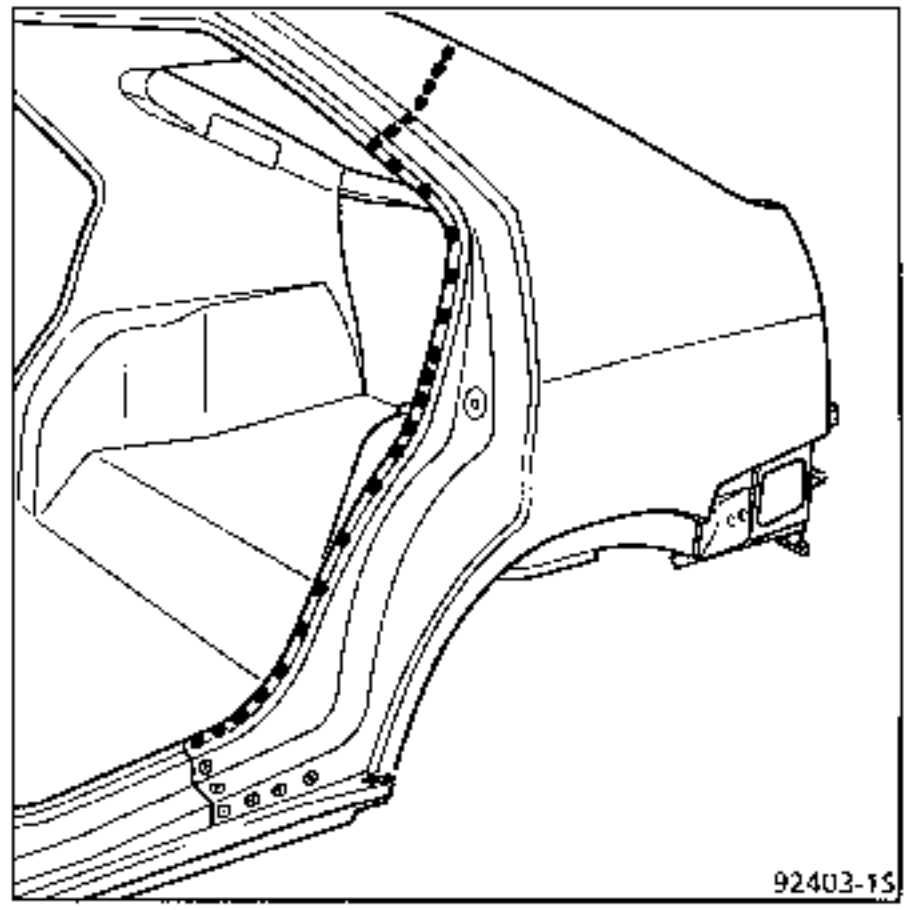
PAINTING STYLISED ZONES



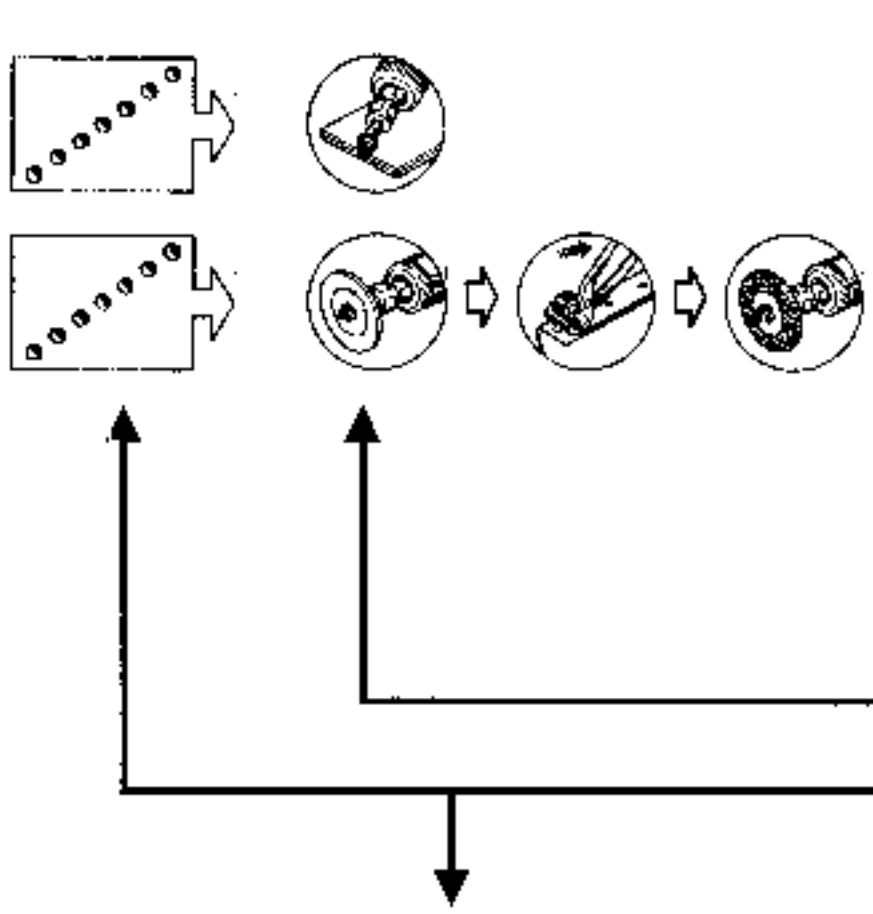
CUTTING OUT - UNPICKING

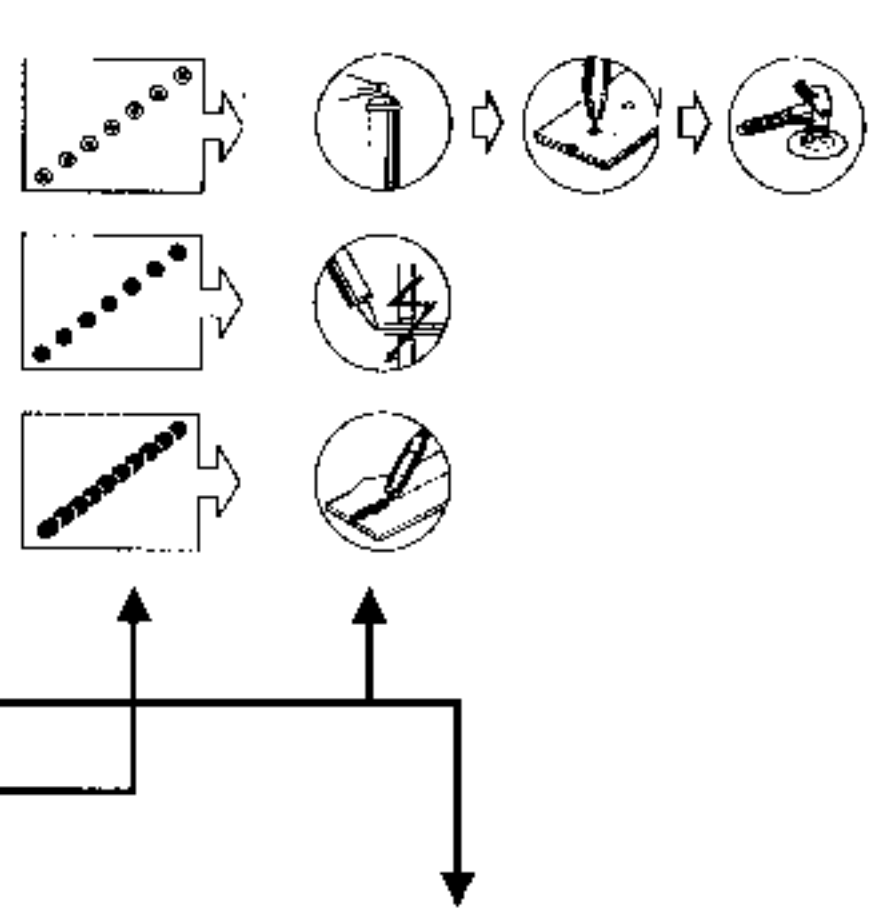


WELDING



e = 1.7 mm H = 30 mm D = 6 mm





Operation symbols

This determines the type of operation and the exact point at which it is to be applied.

Note : The operations involved in unpicking the strip of steel remaining in place and grinding back the traces of spot weld remaining on the support panels can only be carried out after the part to be replaced has been removed entirely.

Tool symbols

These show the type of tools and the logical sequence in which they are to be used at the various points concerned.

Note : the operations involved in protecting spot welds (passive galvanisation and aluminium paint) are to be performed before the new part is fitted.

SPECIAL NOTES FOR WELDING ON GALVANISED METAL COMPONENTS

All metal parts forming the structure of the ESPACE vehicle are sold galvanised.

When repairs are carried out, welding operations must be carried out in a normally ventilated area, preferably using a protective gas welding technique (MIG-MAG).

Generally speaking, we recommend that only the areas to be welded are cleaned using local sand blasting of the site of the plug weld to ensure the vehicle retains its original anti-corrosion properties. After welding, brush the weld bead while it is still hot using a metal brush, to re-galvanise the bead with zinc from around the edge of the weld.

1 - WELDING UNDER A PROTECTIVE GAS

- Use 0.6 or 0.8 mm steel wire (eg. : METALLIT, Fil Mag Zinc Rouille Extrem ("Extreme Rust Zinc Mag Wire") or METAFLUX Galvafil),
- Atal, or Arcal 21 gas which reduces porosity.
- ensure a distance of 10 mm is maintained between the end of the nozzle and the contact tip.

The welding equipment should be set up by testing on ordinary sheet of the same thickness as the panels to be welded.

In all cases, before welding, an anti-spatter product should be applied to both sides of the area to be welded and the inside of the welding equipment nozzle, to keep the metal clean.

- **BUTT WELDING**

  Leave a gap between the panels equal to half their thickness.
  Weld using the "stitch weld" method.

- **LAP WELDING**

  Clean the overlapping edge of the area to be welded.
  Weld using the "stitch weld" method.

- **PLUG WELDING**

  Drill the top layer of metal : 5 mm
  Ensure the sheets are correctly positioned (a slight gap may cause them to be perforated and lead to a poor quality weld)
  If necessary, make two welds, one on top of the other.

We recommend that OXYACETYLENE welding IS NOT used (torch).

Outer panels (centre pillar for example) may easily have LEAD FILLER applied, using a hot air gun.

In certain cases of sealing specified below, braze welding using cupro-aluminium wire under Argon INARC or soldering may be carried out using low melting point filler rods (eg METALLIT CA 20 F).

These brazing operations should be limited to the windscreen aperture, where they are carried out in the factory:

- left and right hand joint between the lower stretcher for the dummy deflector at the front and the upper panel of the engine compartment,
- right and left hand joint between the windscreen cross member and the upper stretchers, front section.

IMPORTANT : in all cases, after welding, the welded areas must be protected according to the operations described in the paint manual, ESPACE section.

- passivation - galvanisation and zinc painting,
- anti-gravel mastic, sealed by smooth beads or sprayed mastic,
- painting,
- injection of a product for hollow sections.

STRIPPING

All the parts must be placed on a workshop trolley provided for this purpose.

The details for the removal of trim components are given in the paragraph corresponding to each component.

CUTTING OUT - UNPICKING

Remove the damaged part following the instructions given with the diagram for each operation (if necessary, refer to the paragraph explaining the use of symbols).

Grind back the pieces of spot weld remaining on the vehicle panels.

Special notes for part section replacements - cutting out with overlap:

Cut the new part approximately 20 mm larger than the part to be removed from the vehicle.

Position the new part on the vehicle, over the part to be replaced, then secure it using a vice grip wrench.

Simultaneously saw through the two panel thicknesses to make it easier to adjust the cuts, then remove the new part.

PREPARATION BEFORE WELDING

Sand or grind down any excess thickness or grains of zinc to ensure the areas to be welded are flat and even (on the vehicle and new part). Try to avoid damaging the zinc coating as far as possible.

Prepare the parts to be plug welded: drill the first panel to diameter D shown below each welding diagram using a milling tool with stop.

Partial cleaning of the drilled or punched area must be carried out using a PTC 9095 DELTA PROTECTION sand blasting gun.

Adjust the new part on the vehicle then secure it using vice clamps.

WELDING

Depending on the case apply:
- tack welds on the weld lines for butt weld joints,
- stitch welds under a protective gas,
- plug welds under a protective gas.

On butt welded parts lead fill after grinding down the weld bead.

STRAIGHTENING - RESTRUCTURING - CHECKING ON THE REPAIR BENCH

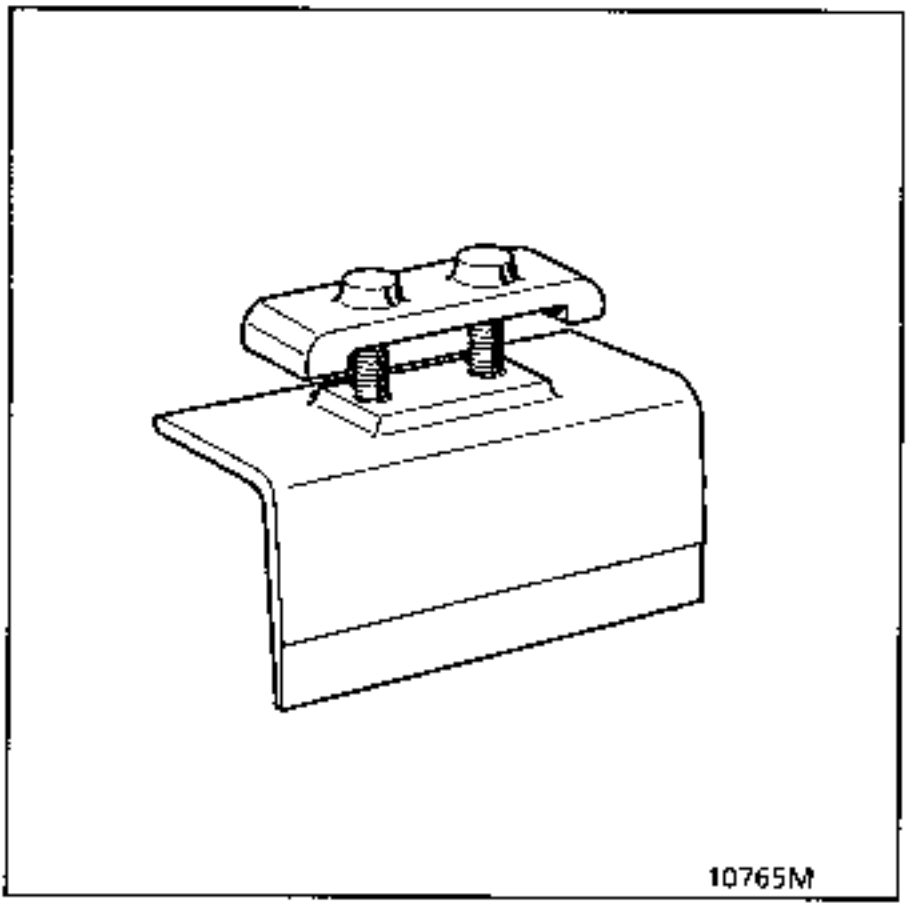
For reasons of SAFETY and to give a better QUALITY of repair, it is FORBIDDEN to:

- **Replace** a side member, half unit or unit, **without using a repair bench.**
  Using a repair bench guarantees that the vehicle will be restructured to the original manufacturing dimensions, ensuring that the front and rear axle assemblies are correctly positioned.

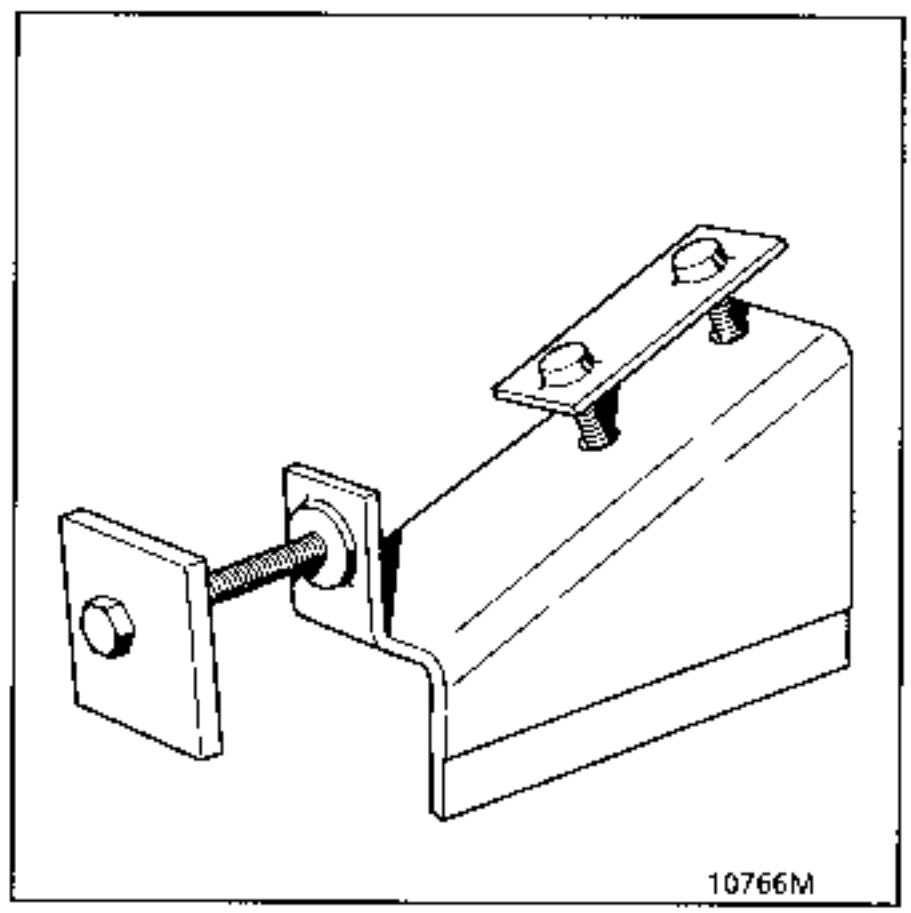
- **Carry out traction operations on a vehicle** positioned on the brackets, **without having first anchored it to the bench clamping jaw,** using at least two traction interfaces to prevent jacking out forces being transmitted to the brackets which could deform them.

It is also very important, if a body has been subjected to damage which requires a welded component to be replaced, that, before removal, the component to be replaced is jacked out. This returns the bodywork to a condition as close as possible to its original form, to release neighbouring components from stresses due to deformation (see MR 501, F001)

IMPORTANT: If the complete body is to be replaced when refitting the old doors, do not unscrew the hinges on the body structure side so that the first fitting adjustments are retained, if possible.
Simply remove the door pins using tool Car.1055-02 (this operation must be carried out by two people) see adjustment in section 47.



Front mounting



Rear mounting

REPLACING WELDED COMPONENTS

The operations for replacing welded components and the positioning of their cutting lines are described according to the possibilities of manufacturing the parts and the following criteria:

FOR SUB-FRAME COMPONENTS AND EXTERNAL PANEL LININGS:

If there is an impact, the choice of cutting line allows the risks of passenger compartment and side member deformation to be reduced beyond the mechanical mounting points (risks enhanced by weld heating zones which create deformation melt points).

For reasons of SAFETY, it is forbidden:

- **To cut and butt weld, to heat to straighten:**
  - **side members** in the parts located **between the mechanical mounting points and the passenger compartment** (only the end sections of the side members, located before these points, may be replaced using butt welding),
  - **body pillars** where **the seat belt anchorage points are located**.
- **To cut and butt weld, on the same line, any component of the bodywork and its lining.**

  An offset of several centimetres between the two cutting lines should be allowed to distribute the fusion points created by the welds.
  Lead filling may be applied to improve the final appearance of the repair.
- **To braze side members** and all other parts in the vehicle structure
  we recommend that protective gas equipment is used (**MIG or MAG**) applying plug welds or tack welds (see section on bodywork welding).

PROTECTION OF PARTS REPAIRED IN GALVANISED METAL

To avoid any future concern, it is very important after repairing or replacing a body component, that the inner and outer protection is made good in order to ensure the same characteristics as the vehicle originally possessed. This ensures quality and gives a guarantee that the repair is protected against corrosion.

Depending on the case, different types of protection may be applied:

Butt welding

- **before welding:** spray the edges of the repair with an anti-adherence product to avoid weld spatter on the zinc,
- **after welding:** passivation using zinc-rich paint 6025070445 in accessible partitioned areas and exterior areas after brushing the repair using a nylon brush. Protect the welded area using DRA passivating agent applied using a brush. After drying, use a brush or a spray gun to apply 2 successive coats of zinc-rich paint. On outer finish components (engine compartment) apply the same protection as above plus a coat of aluminium paint. Under the body apply the same protection and spray on a coat of anti-gravel mastic.
- **after painting:** in non-accessible partitioned areas, **inject a product for hollow sections.**

Door panels

For bonding to door structures, use a SIKA single pot adhesive after removing the trim from the base metal and protecting the box section against corrosion (see section on door side impacts).

Sprayed - on anti-gravel mastic (E)

This two pot product must be used on all parts which were originally protected as well as on all areas which have been repaired under the body in order to guarantee the quality of the repair. Areas where panels meet after welding should be sealed by a fillet of mastic then mastic should be sprayed on (with great care for passenger compartment joints).

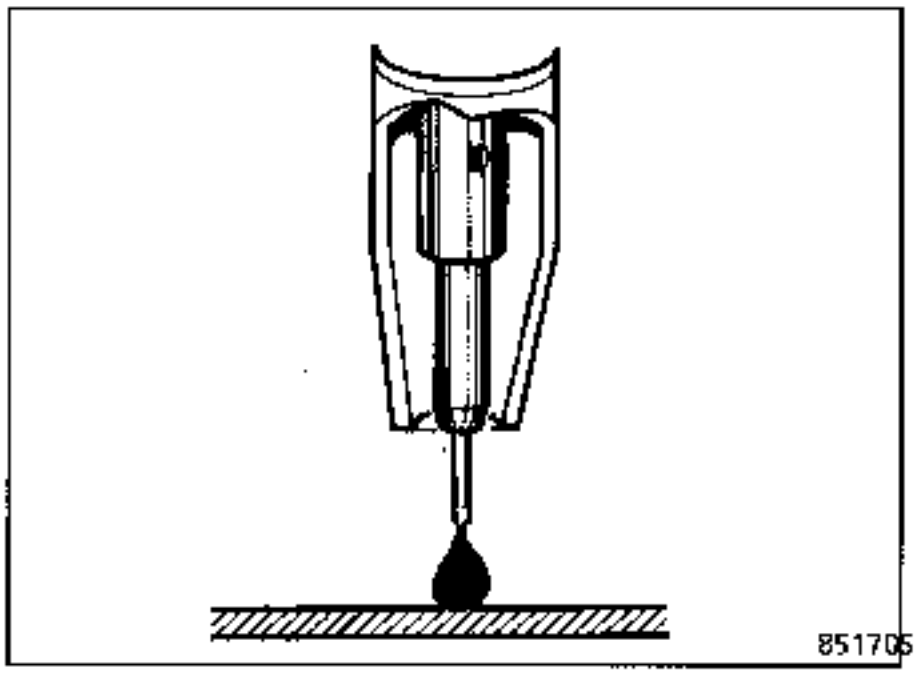
WELDING UNDER MAG PROTECTIVE GAS

Continuous welding

Set the current control to an estimated value depending on the thickness of the panel.

Carry out tests to determine the wire flow required to obtain a uniform bead.

When the test piece is turned over, check that the penetration is correct, otherwise correct the current adjustment and determine the corresponding wire flow.



Spot welding

Use the same adjustment method as continuous welding, increasing the current for a spot to make it easier to begin welding.

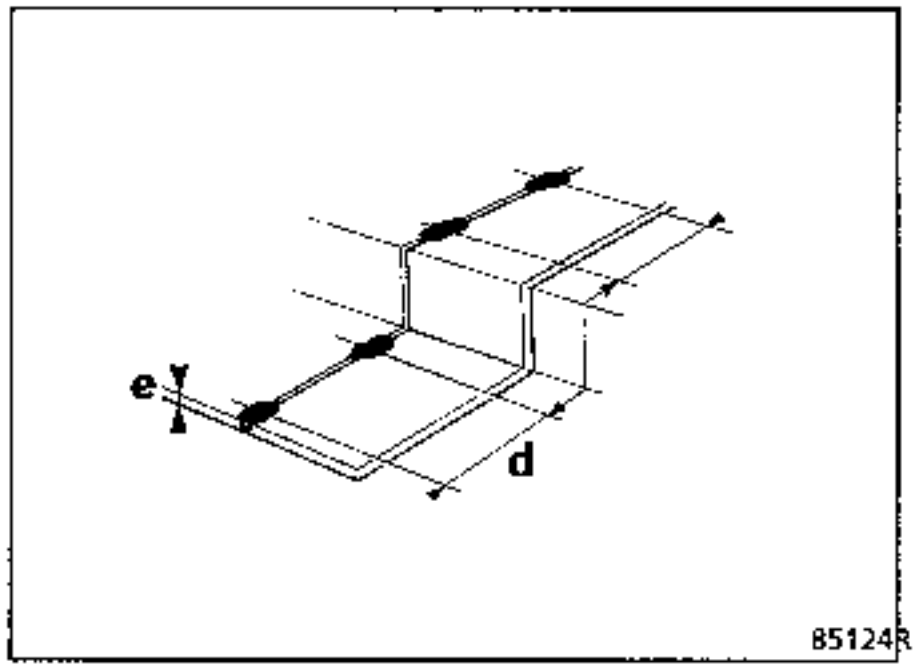
Special notes for butt stitch welding

Adjusting the panel:

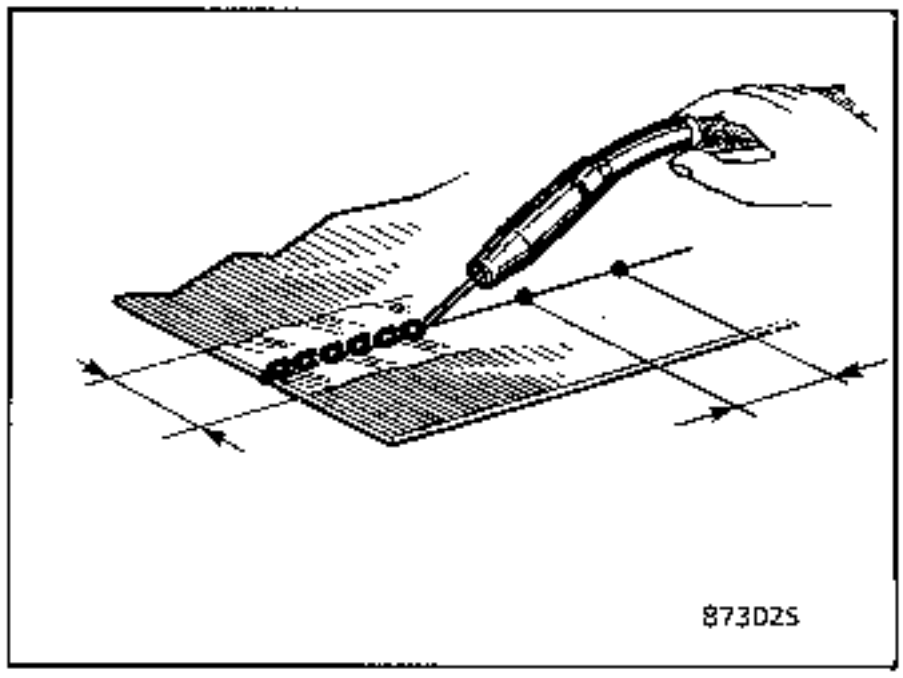
Distance between welds - d ~ 30 e

Distance between panels, 1 times thickness e.

Avoid making anchor welds on edges or hollow sections so that panel adjustment can be checked more easily.

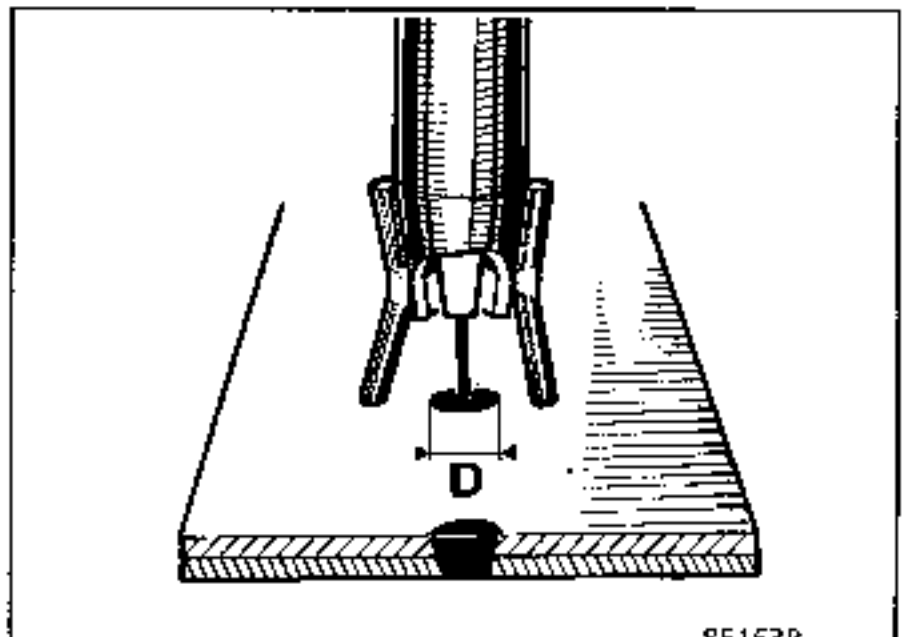


Welding:
Make a series of successive welds, overlapping one on top of the other . 4 to 5 seconds should be allowed between welds to ensure that the blue zone does not exceed 10 mm.



Special notes for plug welding

The weld should be made by punching or drilling the top panel beforehand and filling the hole with weld. Tests should be carried out to ensure a flat weld spot is obtained.



WELDING UNDER MAG PROTECTIVE GAS

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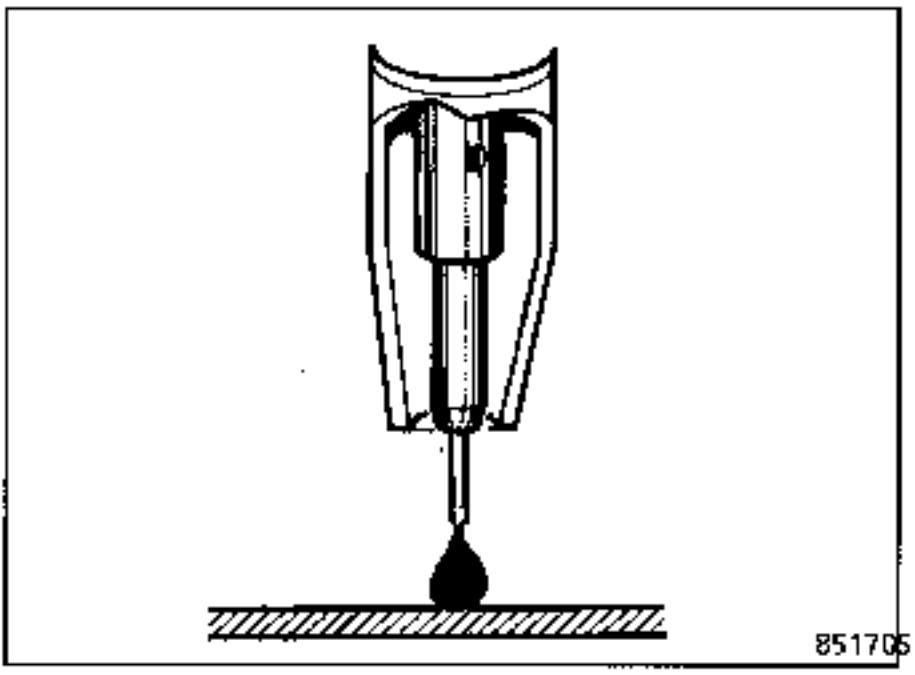

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Adjusting the panel:

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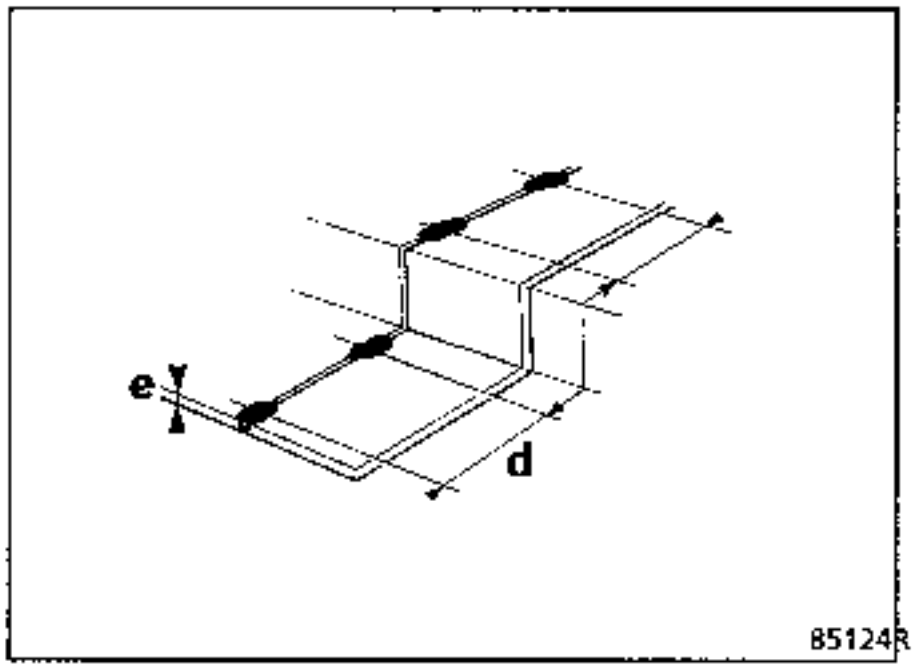
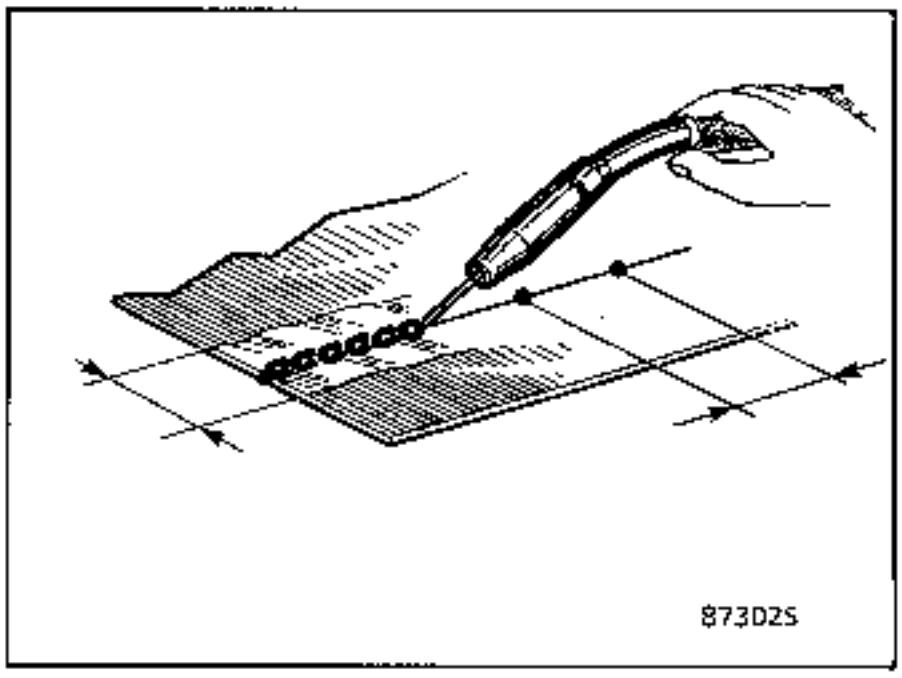


Welding:
Make a series of successive welds, overlapping one on top of the other . 4 to 5 seconds should be allowed between welds to ensure that the blue zone does not exceed **10 mm**.



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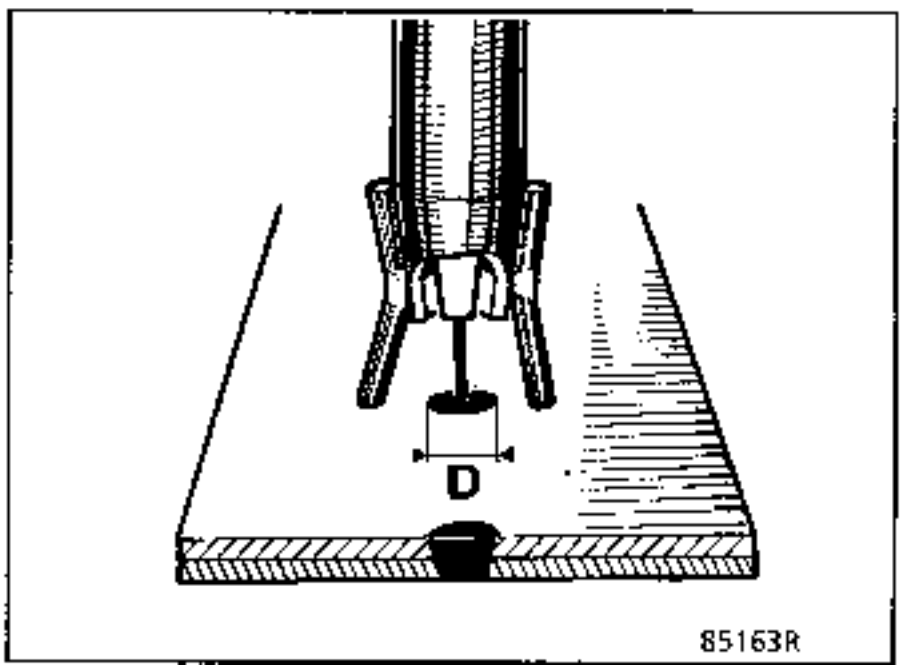
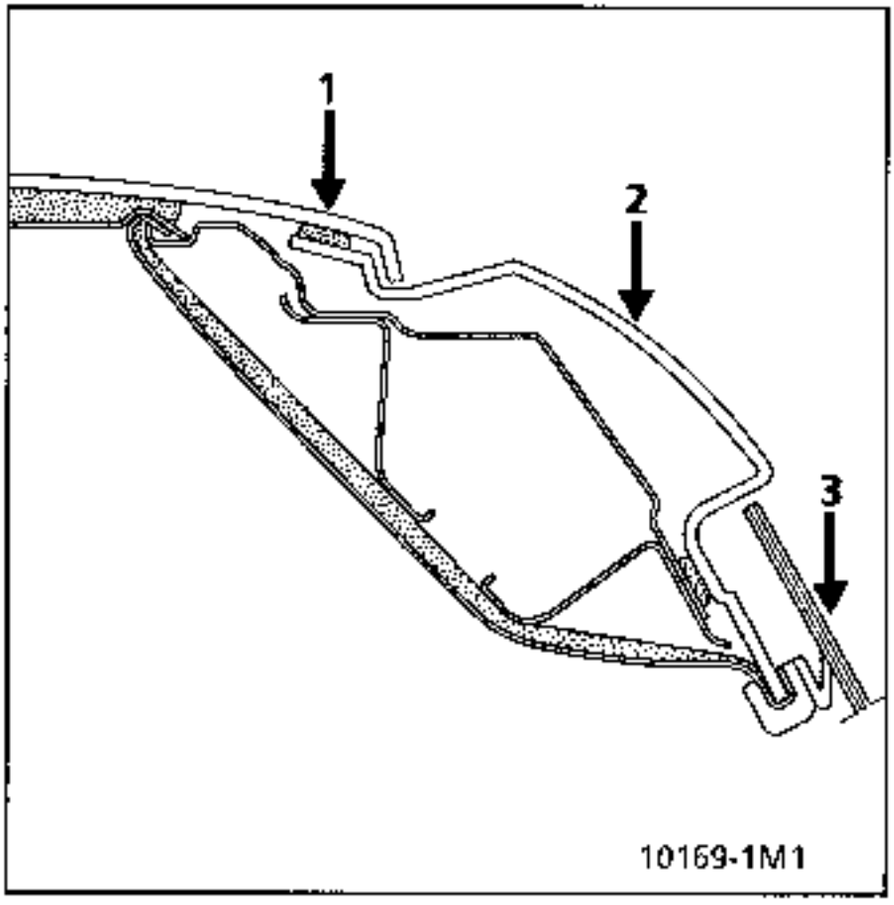




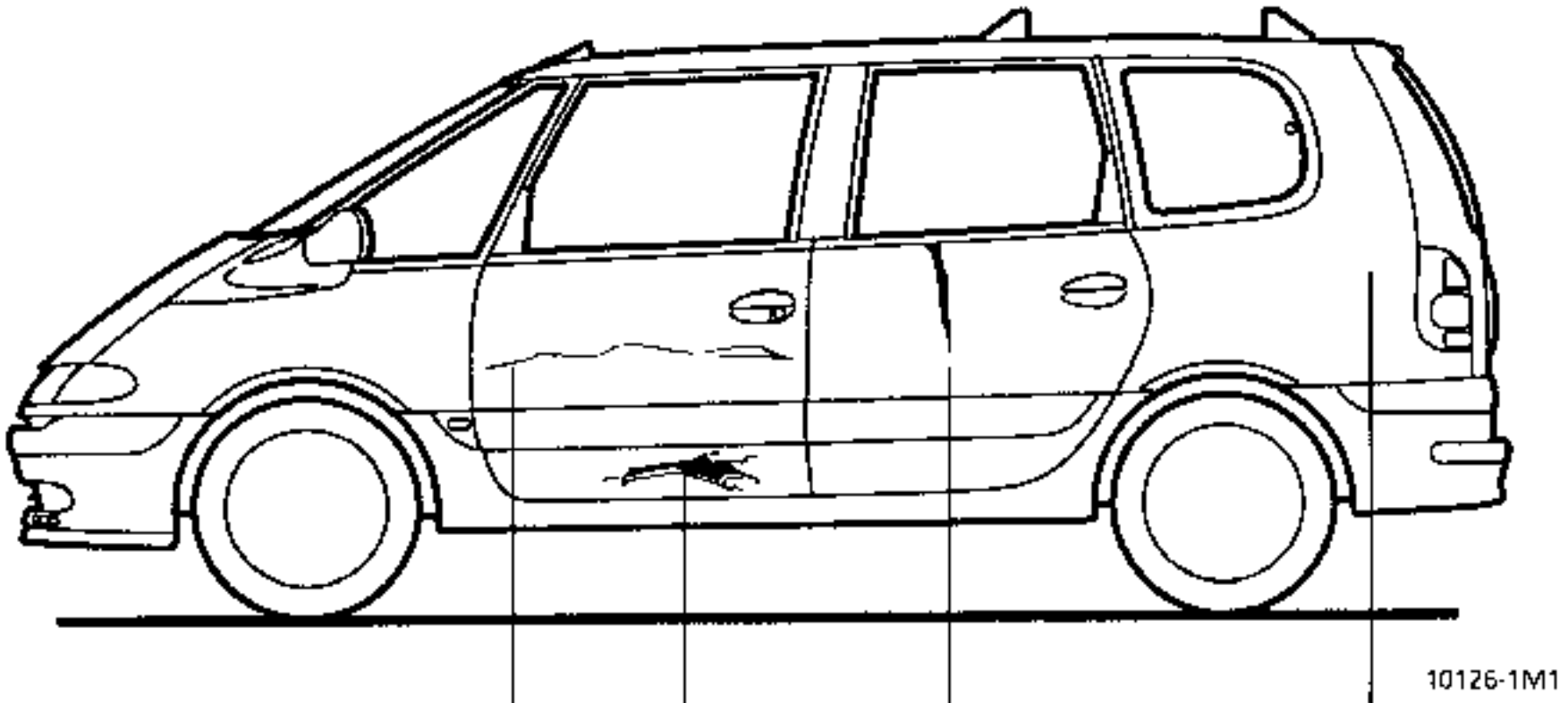
SMC panels are bonded to the galvanised structure using polyurethane adhesive.

The various components (except the sill panels) overlap each other, eg:
- the roof panel (1) overlaps the top of body panel (2).

The windows are bonded:
- the windscreen and the front side windows to the galvanised structure,
- the rear side windows (3) to the rear wings.

NOTE : the rear screen is fitted into the tailgate edge (fixed screen equipment).

TYPE OF REPAIR



10126-1M1

CRACKS AND SCRATCHES IN PLASTIC	BREAKS	REPLACING A COMPONENT
REPAIR OPERATION N° 1	REPAIR OPERATION N° 3	REPAIR OPERATION N° 4

HOLES
REPAIR OPERATION N° 2

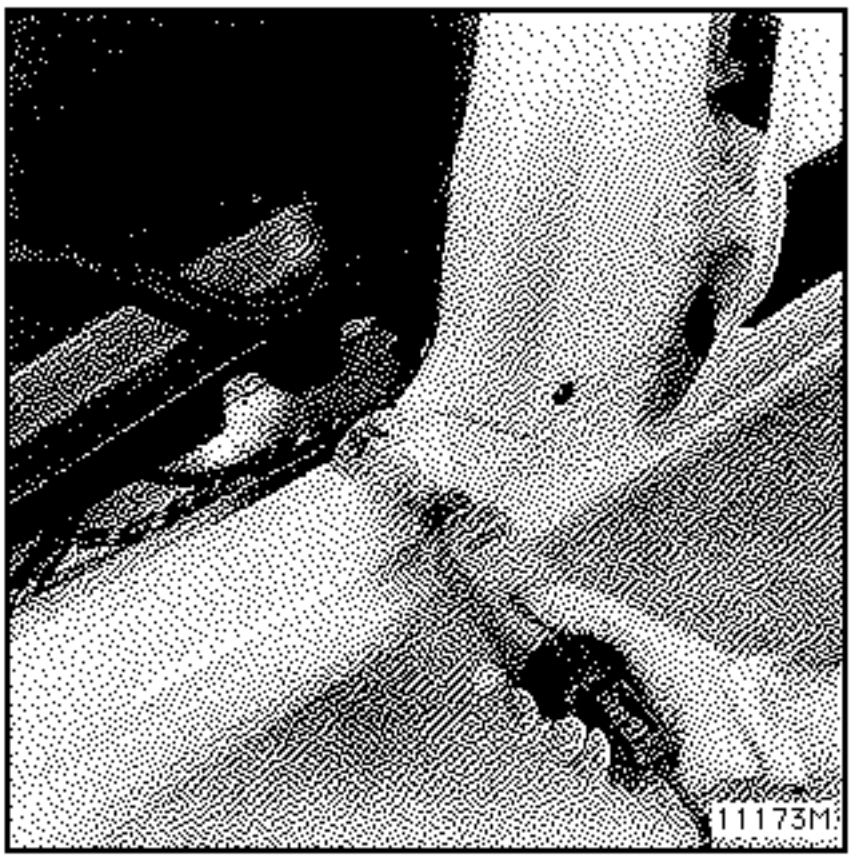
IMPORTANT:
For reasons of cost and to ensure that the final appearance of a repaired panel is of a good quality which lasts, it is not permitted to repair cracks, breaks or holes larger than 50 mm.

TOOLING - PERSONAL PROTECTION - HYGIENE

PREPARATION OF THE COMPONENT

- adhesive tape, masking paper
- sander with P80 fitting
- rubber rubbing down block
- rubbing down paper (P120)
- clean cloth

CUTTING OUT THE COMPONENT

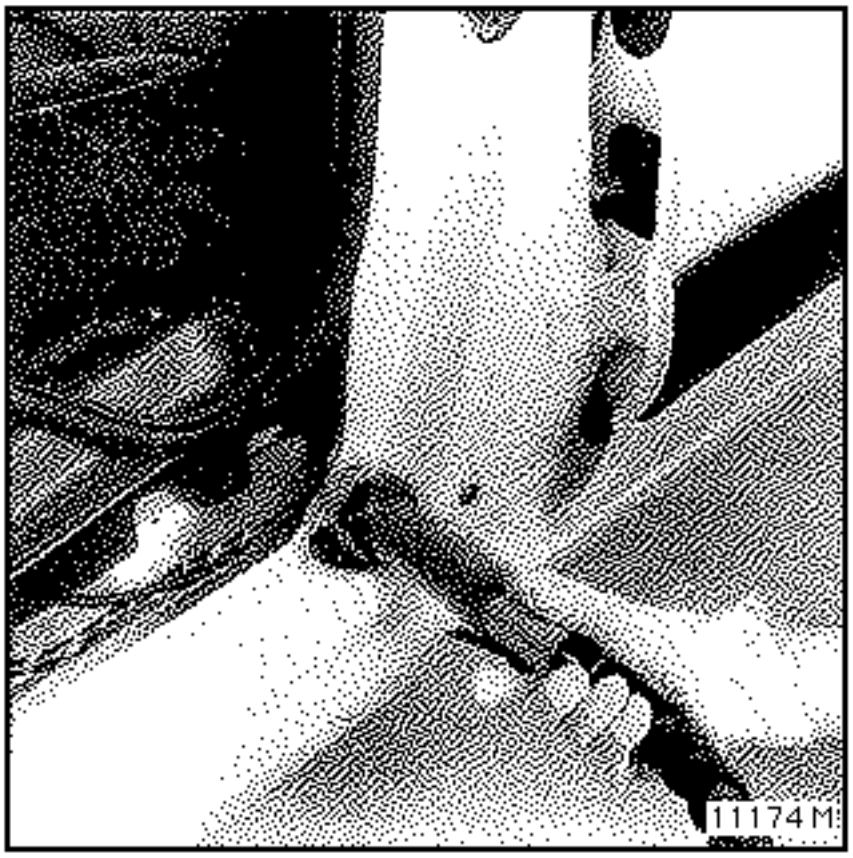


- Saw: . pneumatic, type AIR OUTIL SA 86*
  or . electric, oscillating, type DESSOUTER CC1
  or . metal saw

* (fitted with diamond powder blade)

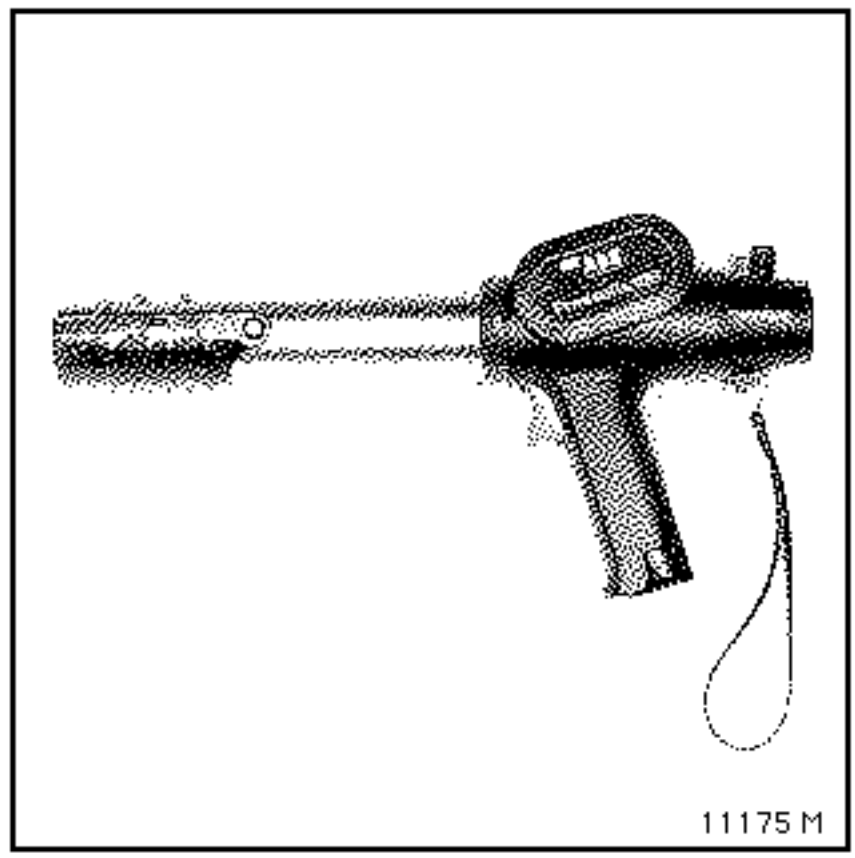
- sander (P80)

UNPICKING THE COMPONENT



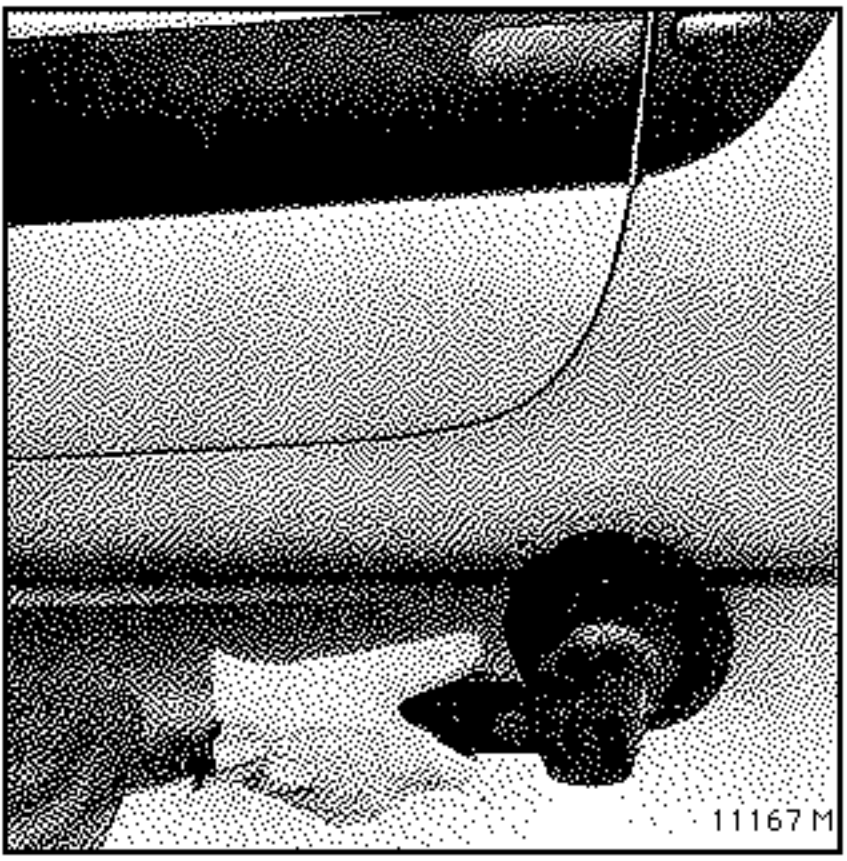
- electric knife FEIN ASTIXE 636-5
- knife, sharp spatula
- tool for removing windscreen using piano wire

FITTING A COMPONENT



- ABB persofix 100 extrusion gun
- centring tool
- drill
- riveting tool

FINISHING



- orbital sander with suction MULLER 3232 902
- rubbing down block with finishing paper P180 to P600

HYGIENE - PERSONAL PROTECTION

- BORDE PROTECTION 42040 anti-static overalls
- paper masks
- rubber gloves
- goggles
- individual breathing apparatus located on-site

APPROVED PRODUCTS

Pre-impregnated resin components (SMC) **must be repaired or re-bonded using the products described below**:

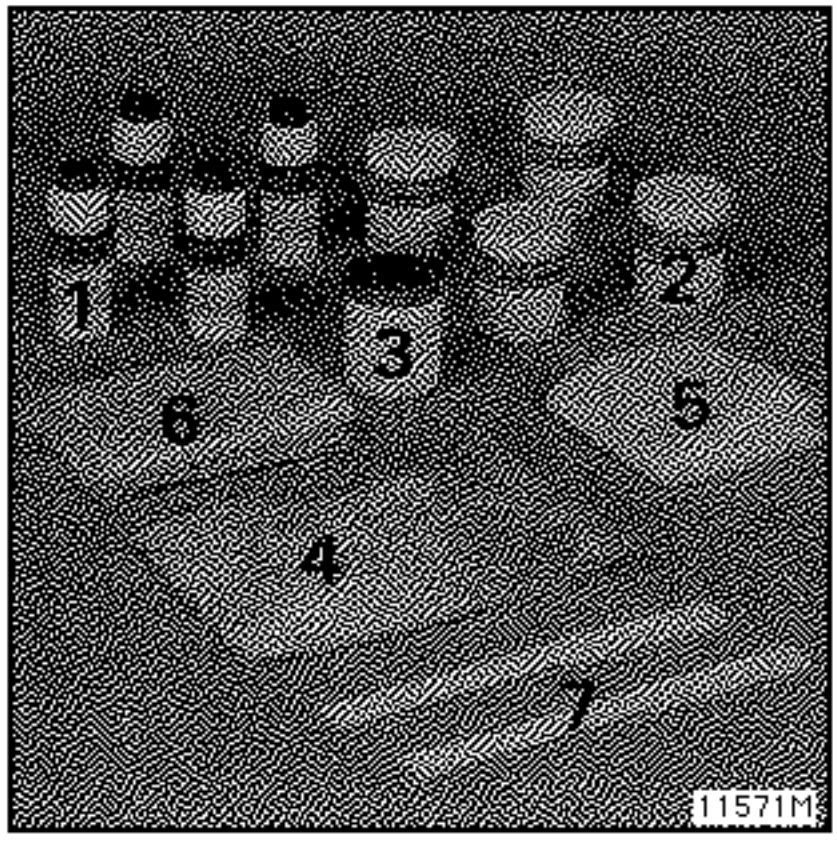
These products have been specially developed and tested to ensure correct adherence to the base component and to guarantee an original appearance which lasts.

Any repairs carried out using non-approved products will be under the sole liability of the repairing agent. The manufacturer refuses all liability for the reliability and quality of the repair.

EPOXY RESIN

DESCRIPTION OF THE KIT

One single package (0.75 litre) - Part Number 60 25 070 997



1 4 pots of hardener GT 200 of 34 g (34 cm^3) red stopper
2 4 pots of resin GT 200 of 166 g (154 cm^3) white cover
3 1 empty mixing pot
4 1 sachet of short fibres (length : 4 to 5 mm) of 200 g
5 Woven mat 0.11 m x 2 m = 0.22 m^2
6 Glass matting 0.4 m x 1.2 m = 0.48 m^2
7 2 polyamide spatulas for mixing and applying the resin

This must be used for pre-impregnated SMC base components, only for cracks, holes and small breaks.

If a larger repair is needed on any of these components, they MUST be renewed.

Specifications:
resin appearance: cloudy gel
hardener appearance: amber fluid

Life of mixture: (200 g) at 20°C :
— 15 to 20 minutes.

Hardening time on repair:
from 1 hour to 3 hours (depending on acceleration by heating).

Operating temperature: + 15°C to 30°C.

Storage (sealed original packing) 1 year at 15/30°C.

Thermal resistance / stability: 100 °C (130°C with 40 % glass fibre)

BASIC PRINCIPLES FOR USING RESIN

TEMPERATURE :

Do not use below 15°C : the hardening reaction will not begin and high viscosity will not allow uniform mixing of the components and rapid elimination of the air bubbles trapped in the mixture during this operation.

If the ambient temperature is lower, the products must be pre-heated, as must the area to be repaired (20°C to 25°C).

Above 30°C, the reaction occurs very quickly, so the products must be used with great care.

The reaction becomes more rapid, the longer and more vigorous the mixing process is (internal heating).

ACCELERATION OF HARDENING TIME

The use of a thermal aid (stove, IR lamps) is advised for epoxy resins (hardening at the centre to avoid risks of shrinkage after painting) and the following instructions should be observed:

- wait 15 minutes before subjecting the repair to an increase in temperature (avoid major shrinkage : breaks),
- do not bring the IR lamps closer than 0.7 m from the repair,
- do not exceed a temperature of 60°C at the repair (polyester deformation),
- avoid using a hot air torch (the temperature is not able to be controlled and is not uniform: hot spots→ stress in the resin).

VOLUME :

Observe the correct proportions for each component:

- too much resin→ will not harden
- too much hardener→ reaction too quick, resin liable to break.

The greater the volume of mixture, the quicker the reaction (bulk effect).

REPAIRS:

Thixotropy (tendency of a product not to run) is improved by adding short fibres when carrying out vertical repairs, to a maximum of 50 % short fibres.

PRECAUTIONS FOR USE

Inconsiderate use of synthetic resins and their hardeners may cause skin irritation or general intoxication. The following precautions should be observed to eliminate these risks :

- ventilation and high degree of cleanliness of working areas,

- frequent changes of work clothes, protection of exposed body parts using barrier creams - frequent washing of hands, forearms and face.

If accidental contact does occur, wash with soapy water and rinse with copious quantities of water. If the eyes are splashed, rinse with water and seek medical advice.

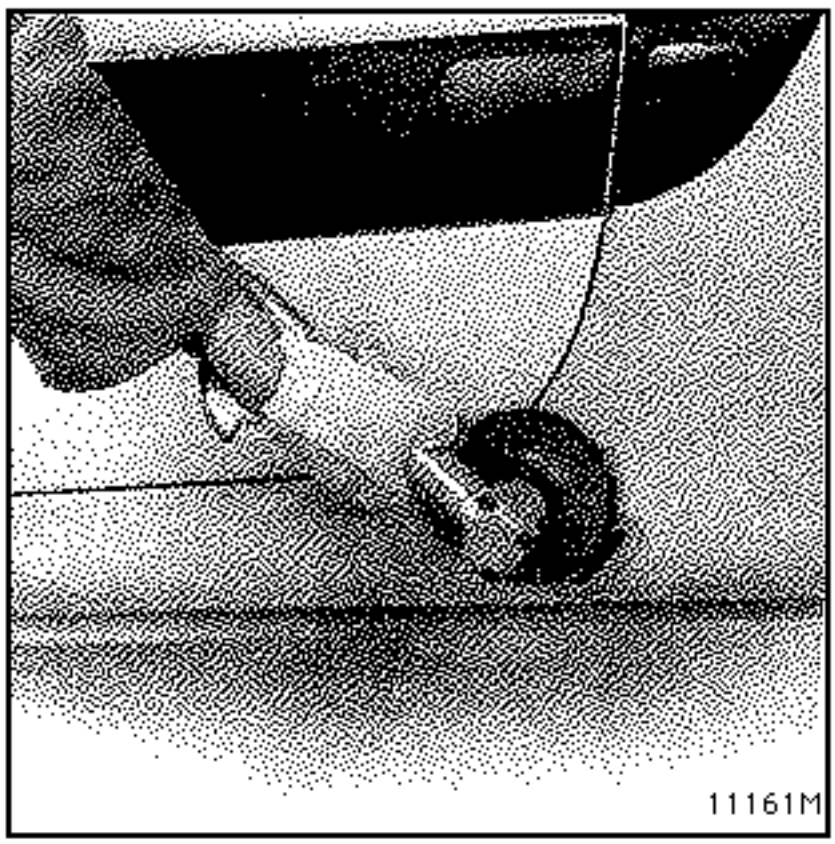
USING THE RESIN

The kit is pre-measured: 1 pot of resin for 1 pot of hardener (red stopper)

Products which are not used may be stored and used at a later date.

GENERAL METHOD

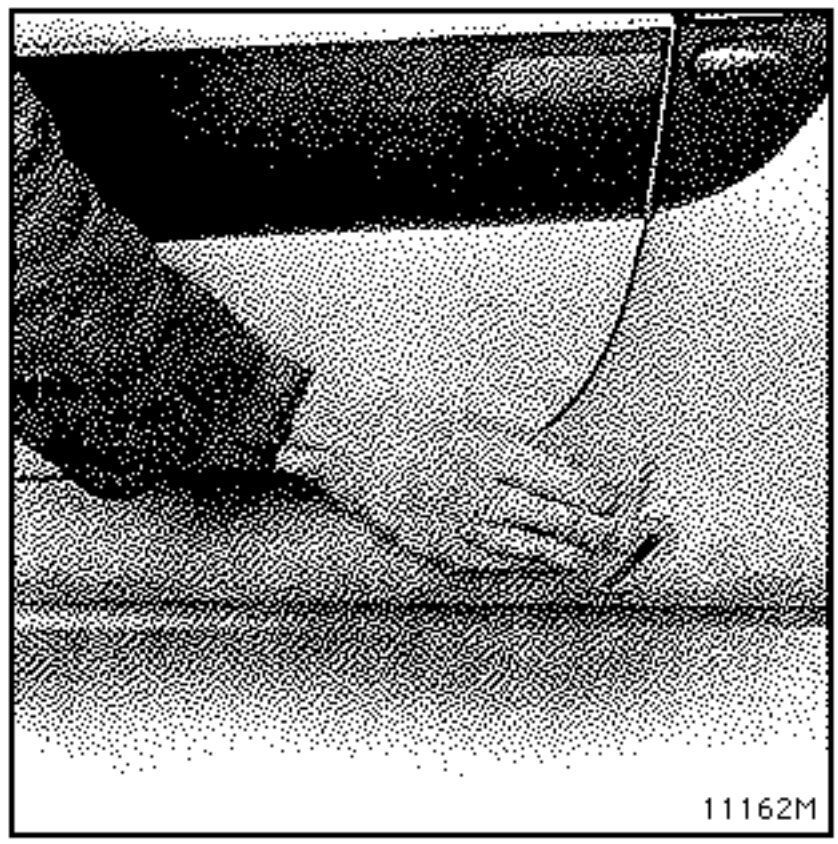
SANDING - CHAMFERING



Sander P80

Open up breaks and holes.
Chamfer the edge.

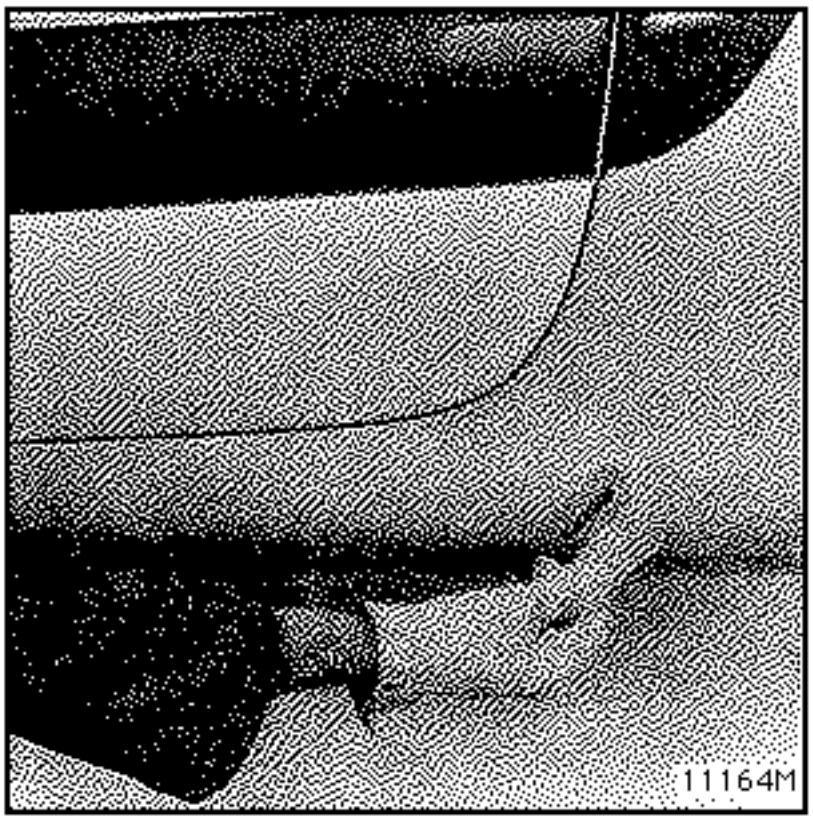
FLATTING - WIPING DOWN



Hand flat (P120) the areas which have been sanded to remove internal stripping components which rise to the surface when a mechanical sander is used (heat).

Wipe down using a clean dry cloth.

PREPARATION OF THE MATTING

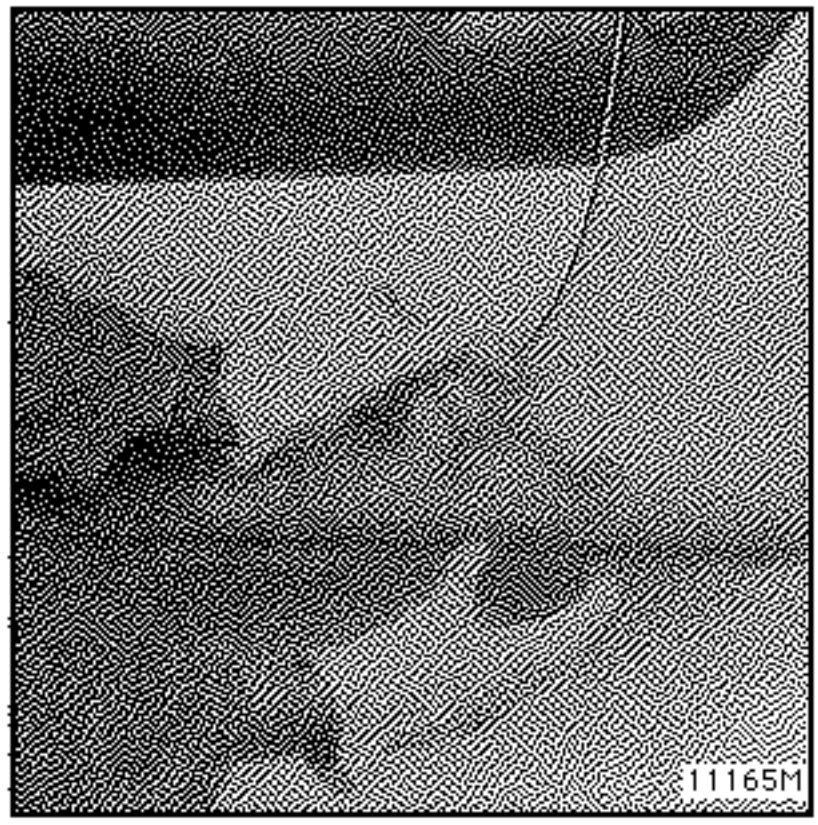


Cut out a piece of matting corresponding to the dimensions of the repair.

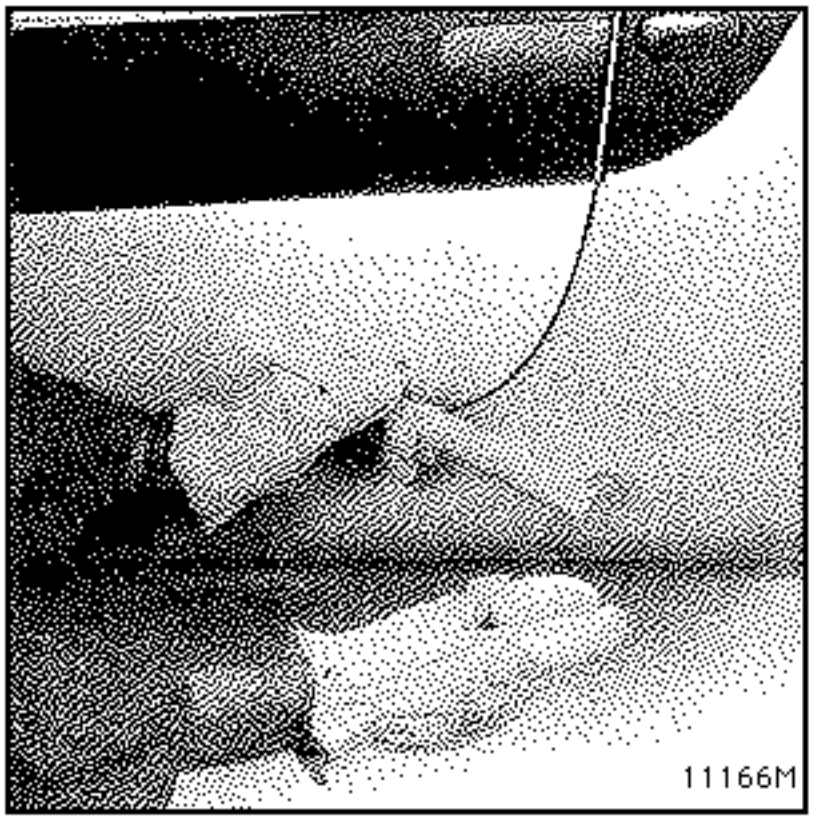
RESIN

Prepare the resin (see previous section).

Using a clean brush, coat the area to be repaired with resin without fibres.



Fit the piece of matting previously cut out over the repair and impregnate it with resin using a brush to eliminate any air bubbles (holes and breaks).



Using resin mixed with short fibres, fill the chamfer, removing any air bubbles.

HARDENING

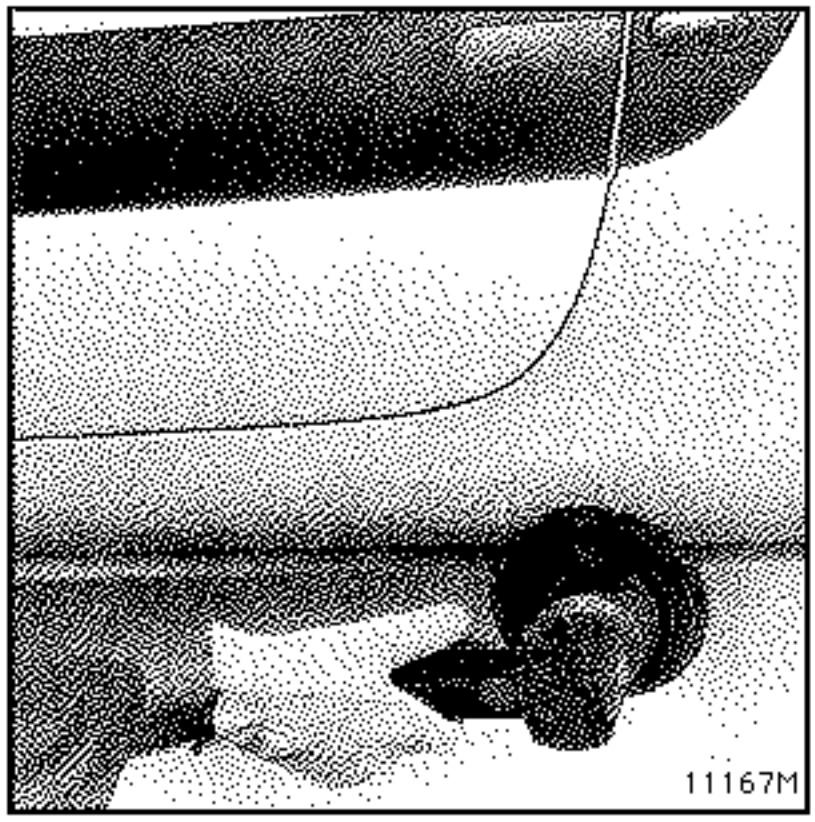
Leave to harden for 15 minutes at ambient temperature before subjecting the repair to INFRARED radiation :

MAXIMUM TEMPERATURE AT THE REPAIR
60° C

MINIMUM DISTANCE OF LAMPS FROM THE REPAIR
0.70 m

FINISHING

Rub down any excess resin (P120).

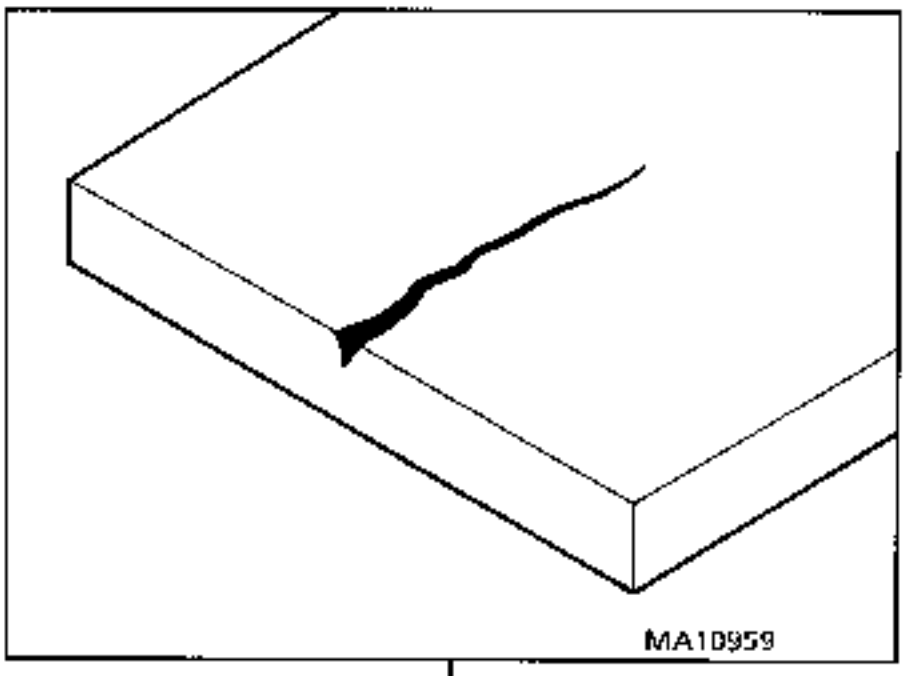


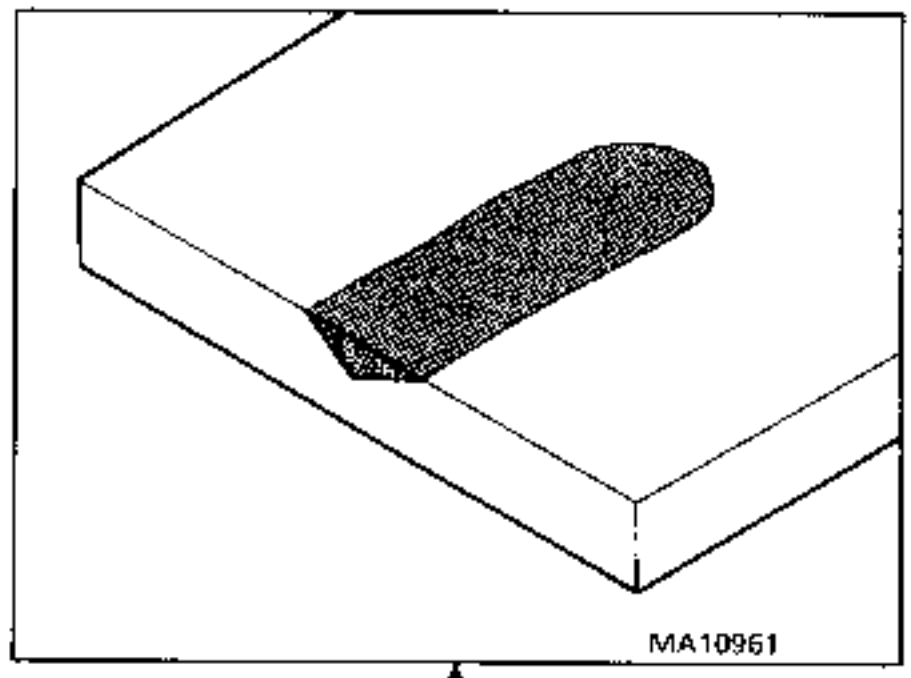
Using polyester mastic, coat the repaired area, in particular any small holes in the resin.

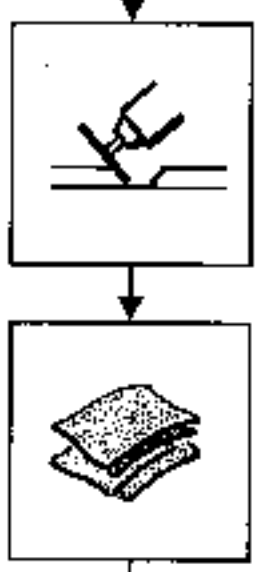
Half finish by rubbing down dry (P280).

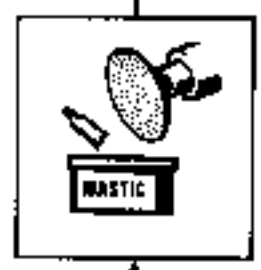
OPERATION N° 1 - CRACK AND SCRATCH IN THE PLASTIC

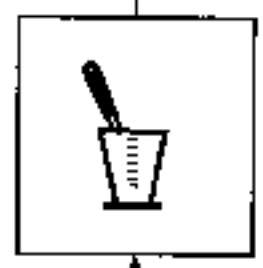
Definition: micro-break which does not penetrate the laminate all the way through

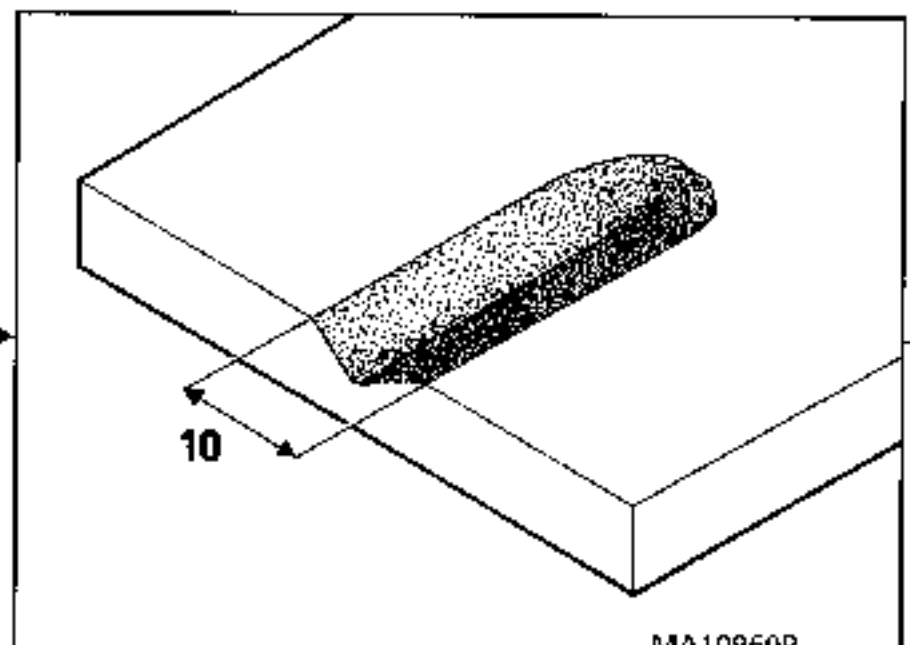






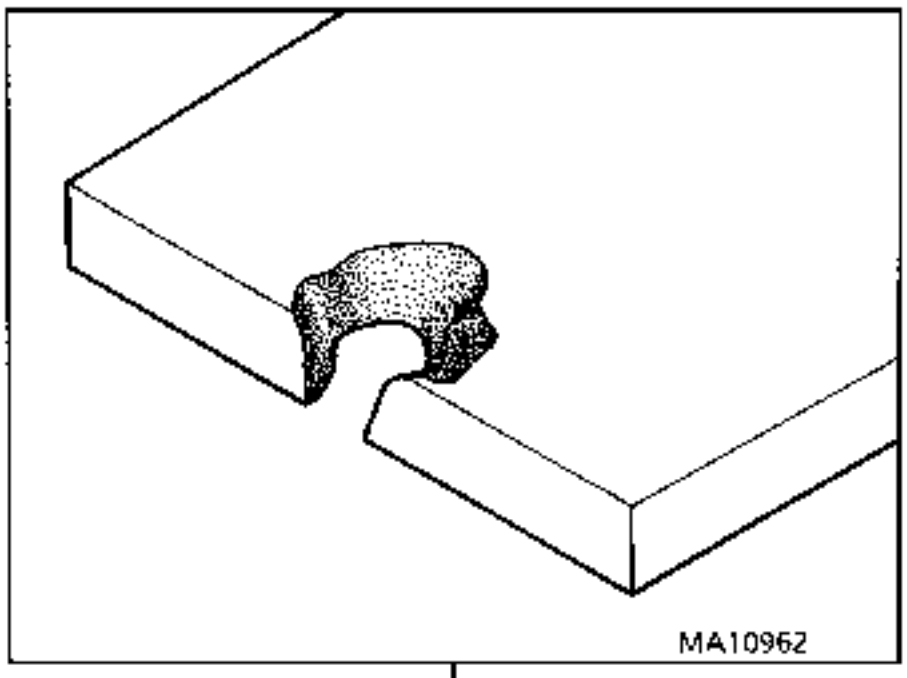


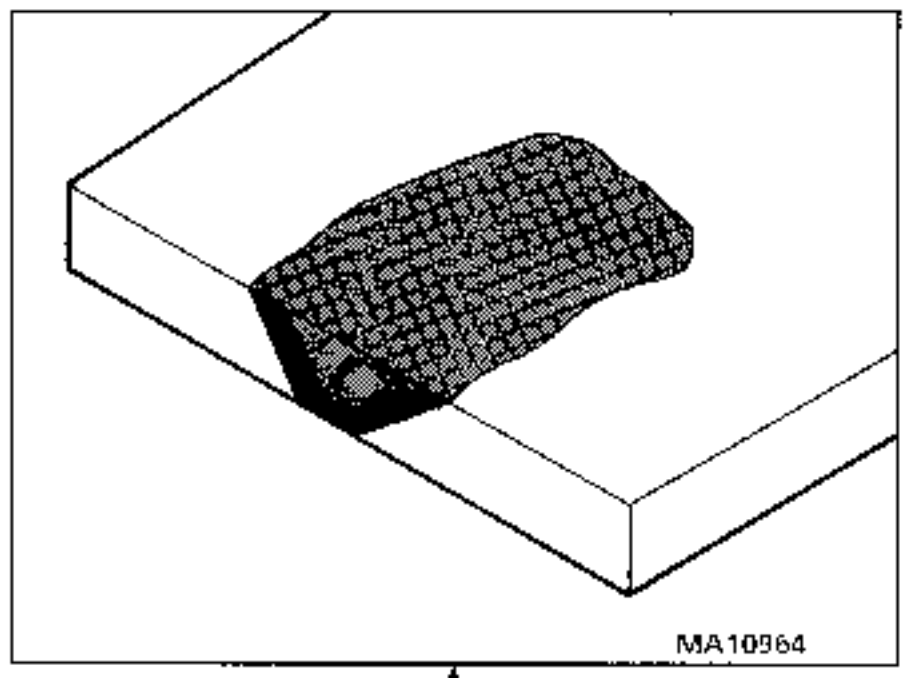


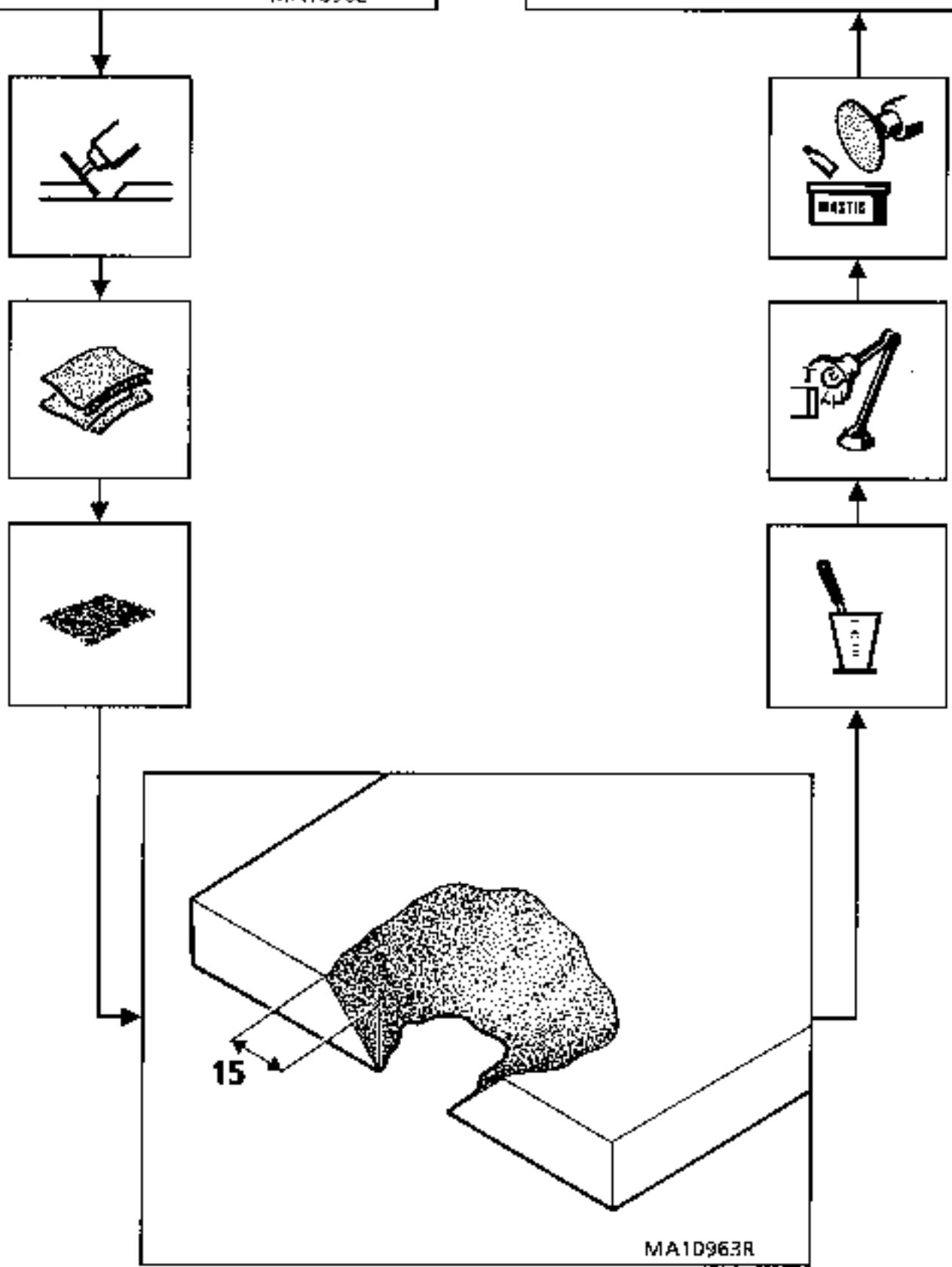


OPERATION N° 2 - HOLE

Definition : open hole not exceeding **50 mm** in diameter.

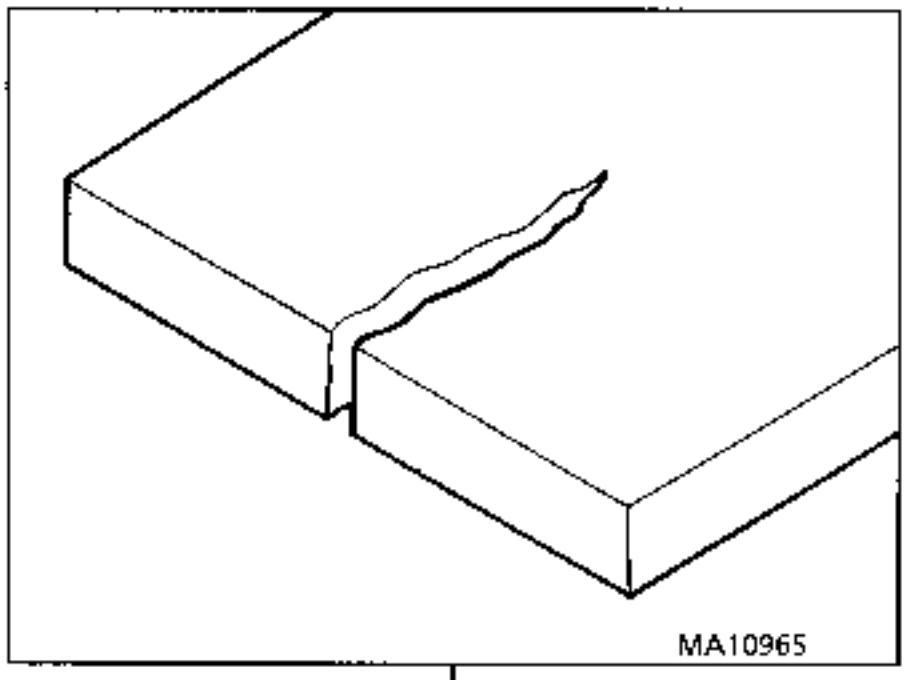


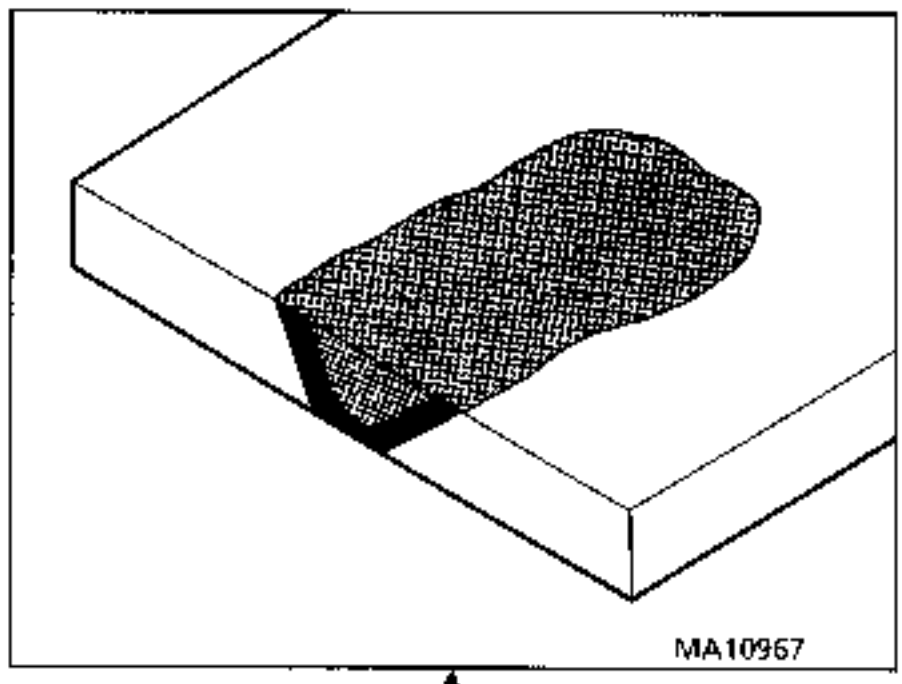


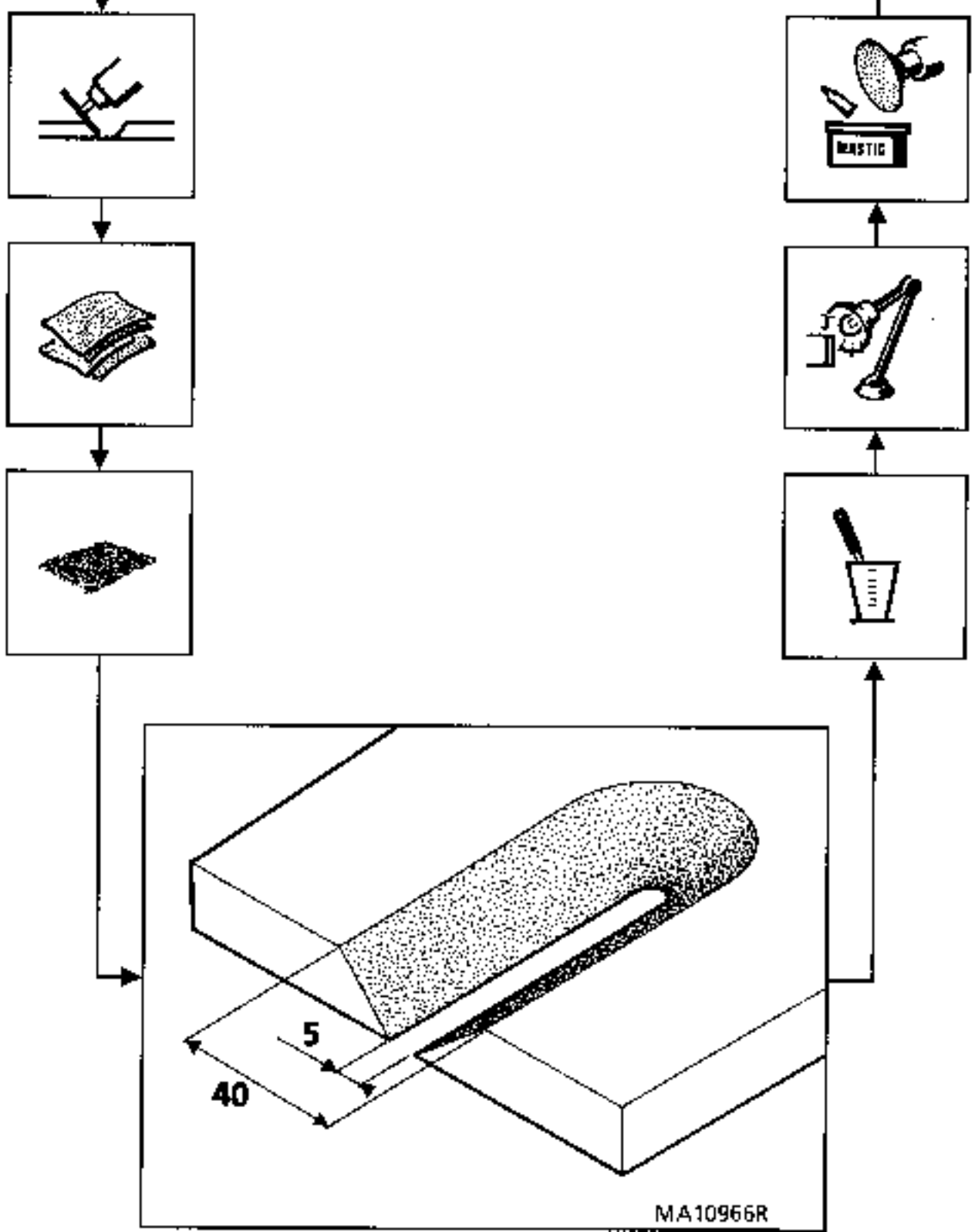


OPERATION N° 3 - BREAK

Definition : isolated break not exceeding **50 mm** in length (the laminate is broken all the way through).





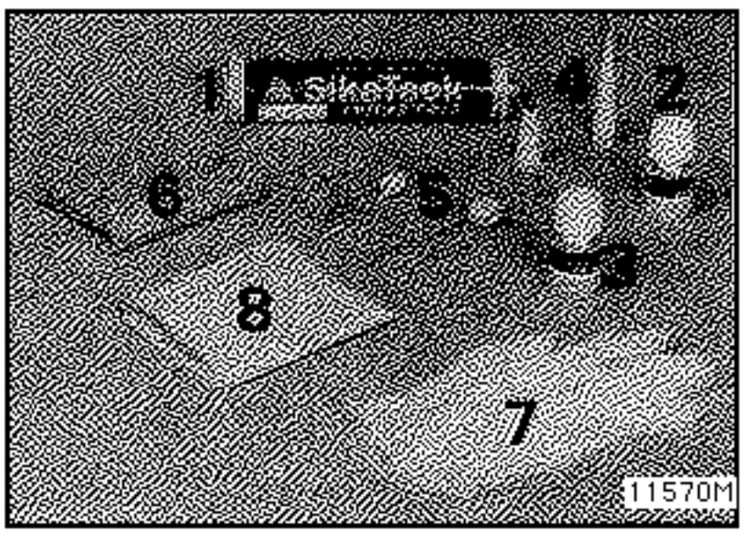


OPERATION N° 4 - REPLACING A COMPONENT

Replacement	Section
FRONT WING	42
EXTERNAL DOOR PANELS	47
SILL PANEL	43
TOP OF BODY	45
REAR WING	44
ROOF	45

BONDING THE COMPONENTS

Approved products



Kit Part Number 60 25 170 306 comprises:

1 cartridge of adhesive 310 ml
2 adhesion primer
3 degreaser (colourless)
4 two nozzles, one cut to the dimensions of the bead to be extruded
5 primer applicators
6 cloth for degreasing
7 pair of gloves (MUST be worn)
8 rubbing down paper (SMC roughening)

Storage: in the original packing 9 months at 10-25°C. Keep away from frost.

RECOMMENDATIONS

Operations using :
- **degreaser,**
- **adhesion primer,**
- **adhesive,**

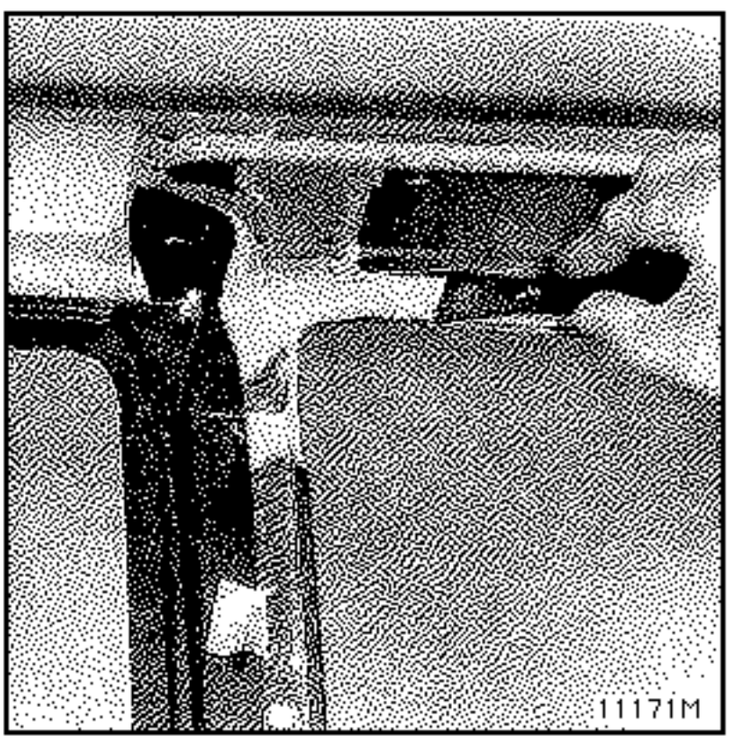
must be carried out in a ventilated location.
Gloves (provided in the kit) MUST be worn for these operations.

PREPARATION OF THE BASE COMPONENTS

STRUCTURE

On new parts: – galvanised chassis
– cataphoresised doors

On original parts:

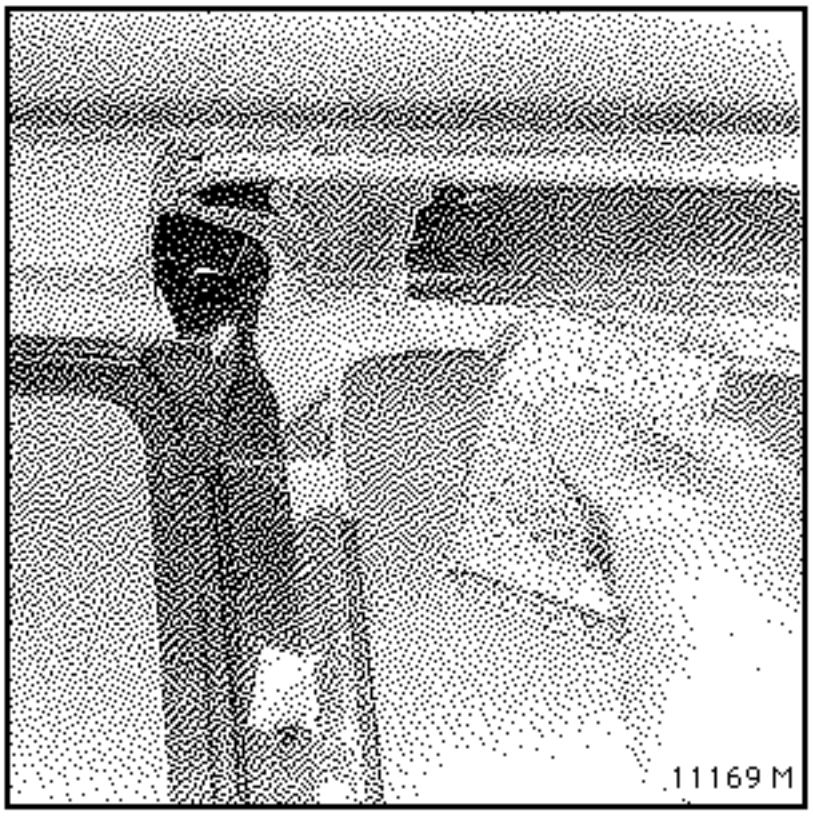


Using a sharp spatula, cut back the original bead of adhesive, leaving a thickness of **1** to **2** mm on the parts.

APPLY THE FOLLOWING TREATMENTS TO THESE PARTS ACCORDING TO THE RECOMMENDATIONS BELOW:

DEGREASING

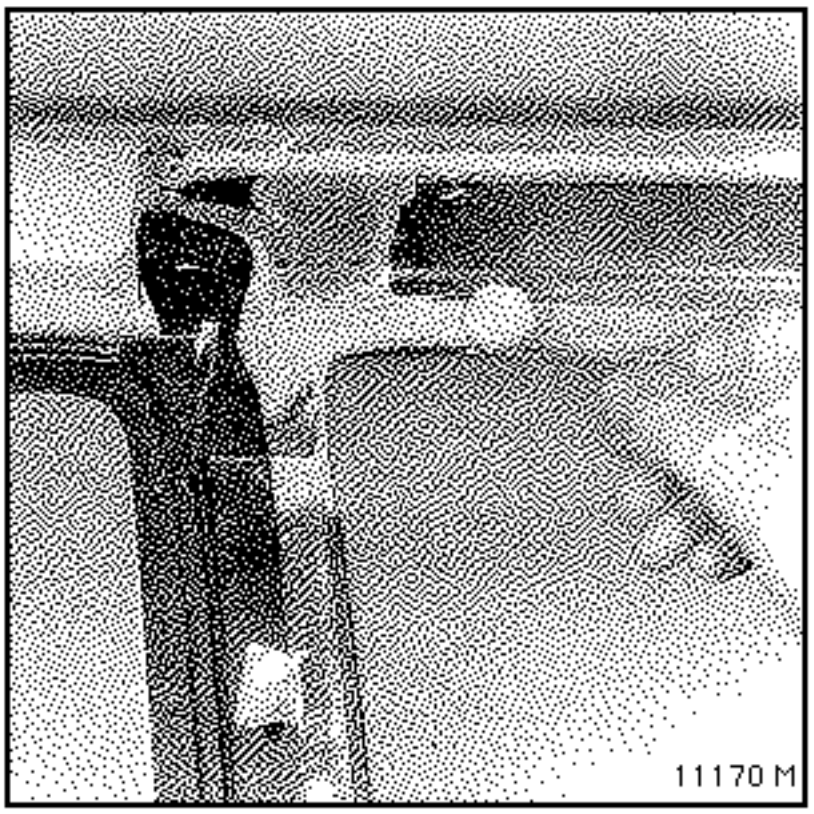
Remove dust using a clean dry cloth.



Apply the colourless degreaser (3) using the special cloth (6).

Leave the degreaser to evaporate (5minutes at 20°C) before applying the adhesion primer.

APPLICATION OF THE ADHESION PRIMER (colour : yellow)



Apply an even thin layer of primer (2) using the applicator (5) of width **30 mm**.

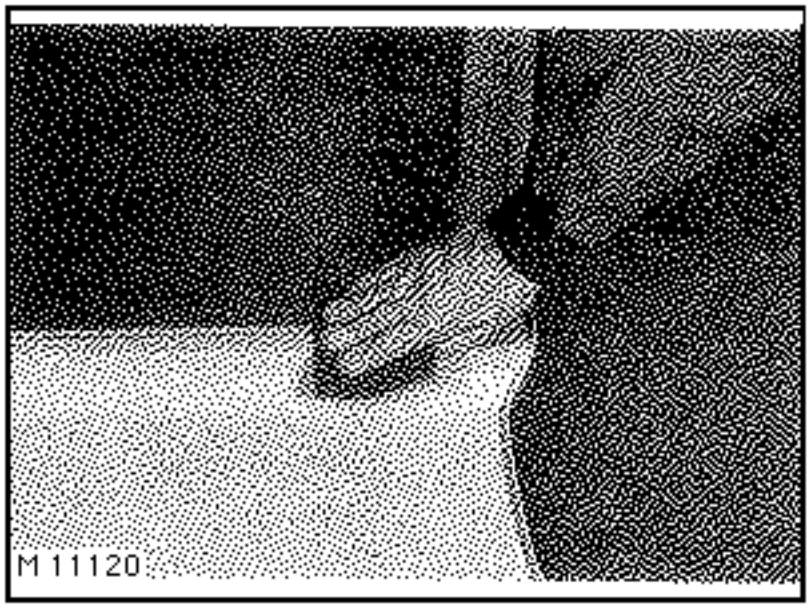
Leave to dry for 20 minutes at 20°C.

DO NOT TOUCH THESE AREAS AGAIN - BONDING MUST TAKE PLACE WITHIN **30 MINUTES** AFTER DRYING.

IMPORTANT: the areas where the galvanisation or catephoresis has been scratched must be completely covered with primer to avoid any possible corrosion.

NEW PANELS

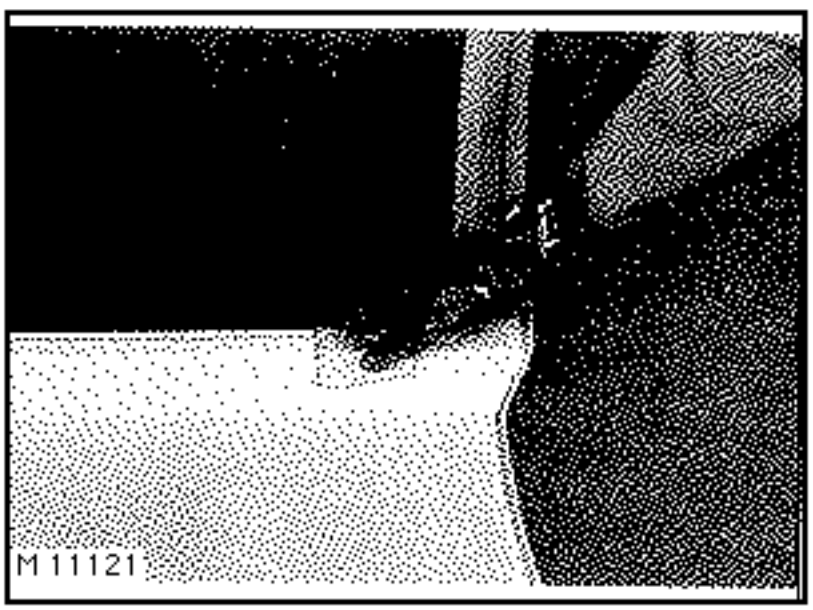
FLATTING



Using rubbing down paper (8), flat the bonding area over a width of 50 mm (see detail in sections concerned).

DEGREASING

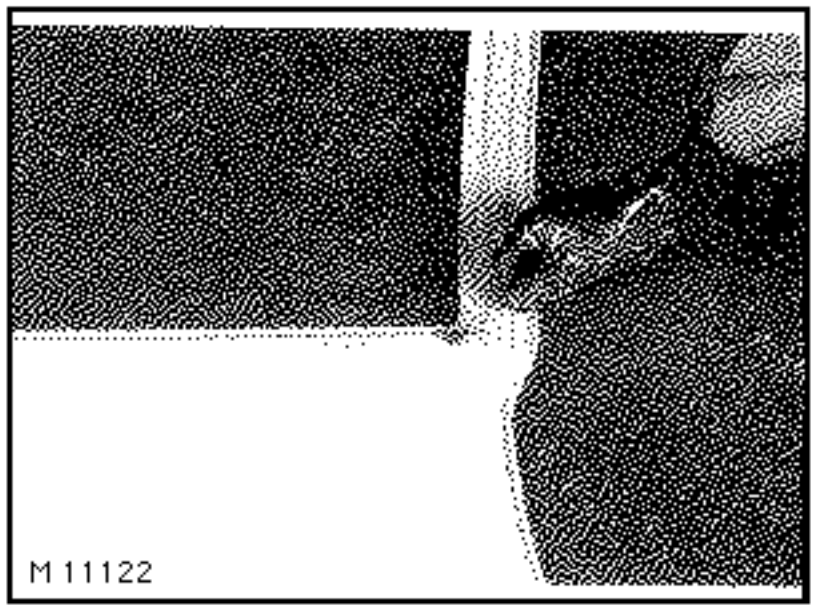
Remove any dust using a clean dry cloth.



Apply the colourless degreaser (3) using the special cloth (6) over a width of **50 mm**.

Leave the degreaser to evaporate (5minutes at 20°C) before applying the adhesion primer.

APPLICATION OF ADHESION PRIMER (colour : bluish)



Apply an even thin coat of primer (2) using the applicator (5) of width **50 mm**.

Leave to dry for 20 minutes at 20°C.

DO NOT TOUCH THESE AREAS AGAIN.

REMOVING THE ADHESIVE

SPECIFICATIONS

MONOPOT ADHESIVE HARDENING IN AIR HUMIDITY

Colour: black

Skin formation period: 30 minutes at 23°C

Hardening: 4 to 5 mm per 24 h at 23°C

Application temperature : between 5°C and 30°C

Re-use: may be re-used for local retouching work in the following minutes.

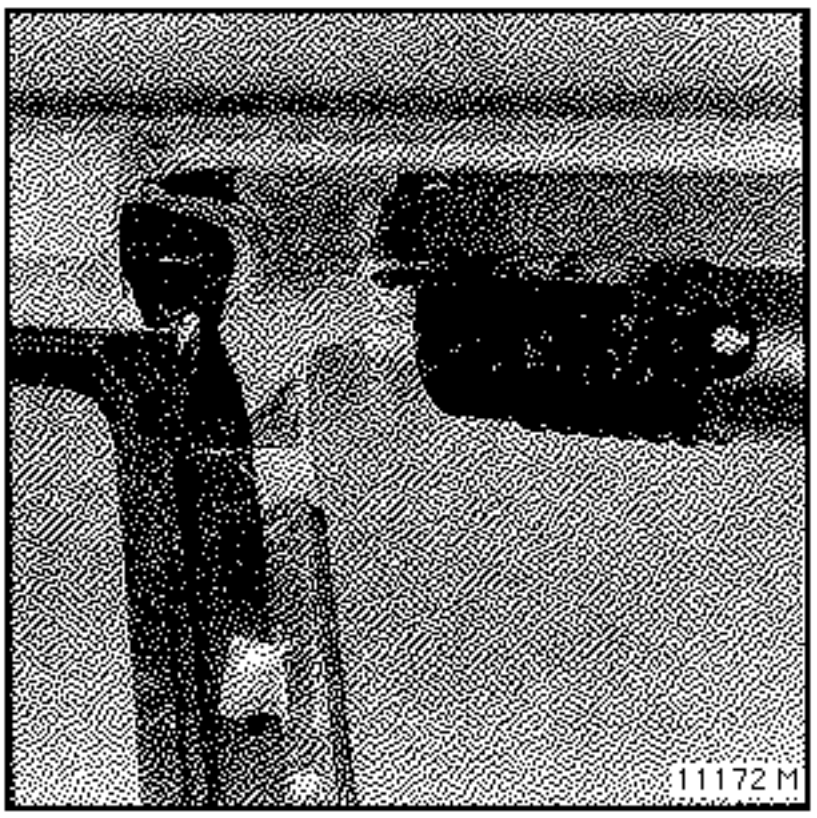
PREPARATION OF THE CARTRIDGE

Remove the bottom of the cartridge.

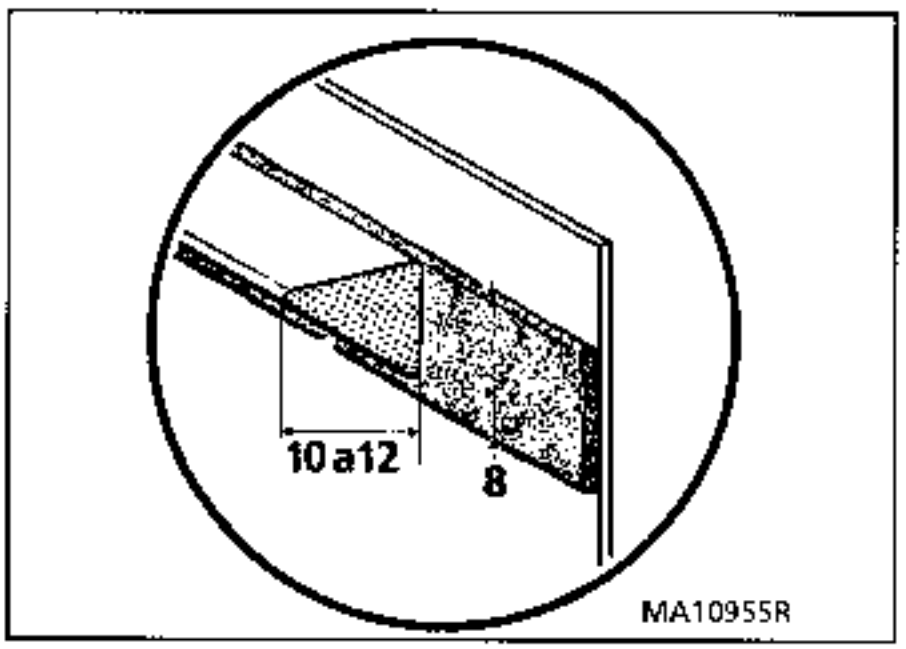
Pierce the cap.

Screw on the pre-cut nozzle (4).

Fit the cartridge (1) into the gun.



Extrude an even bead in the centre of the area to be bonded on the structure.



THE NEW COMPONENT MUST BE FITTED IN THE NEXT 10 MINUTES.

After fitting, any retouching work to seal or finish the repair must be carried out using the remaining adhesive in the cartridge and the second nozzle (4).

At 20°C, the retaining clamps for the new component may be removed after 30 minutes.

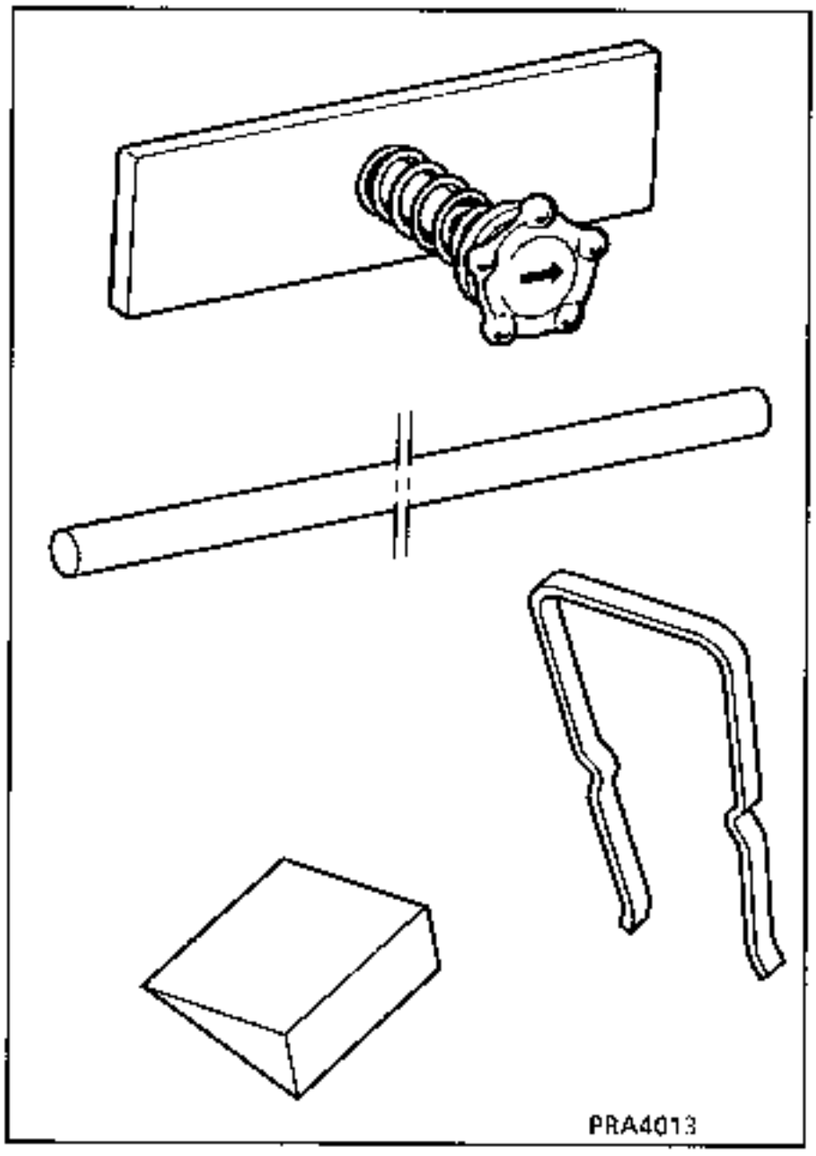
CLEANING

Before drying: using a degreaser.

After drying: the adhesive will not stick to the retainers without adhesion primer.

CENTRING AND ALIGNING COMPONENTS

Centring and aligning of side components: front wing - front and rear door external panels - rear wing is carried out using the tools available in kit Part Number **Car. 1219-01**



comprising:

- 6 flat plates diameter 4, rod length 10 mm
- 6 flat plates diameter 4, rod length 30 mm
- 3 rules, diameter 6
- 6 corners
- 4 clips 60 25 103 948

OPERATIONS	PRODUCTS	PART NUMBER	WHERE TO ORDER**
WELDING ON GALVANISED METAL USING MAG PROCESS (ATAL GAS)	MAG ZINC ROUILLE EXTREME welding wire Diameter 0.6 mm Diameter 0.8 mm	 189 049 189 050	Métallit France
SEALING AND SOUNDPROOFING OF HOLLOW SECTIONS	See Paint Manual section on Espace		
BONDING OF LAMINATED RESIN COMPONENTS (SMC) ON CHASSIS OR DOOR STRUCTURE	Polyurethane bonding kit	60 25 170 306	M.P.R. MATRA AUTOMOBILE
REPAIR OF LAMINATED RESIN COMPONENTS (SMC) cracks, holes, breaks	Epoxy resin repair kit	60 25 070 997	M.P.R. MATRA AUTOMOBILE
FINISHING OF REPAIRS ON PRE-IMPREGNATED RESIN COMPONENTS (SMC)	POLYESTER MASTIC – normal – extra fine	 77 01 395 513 77 01 421 285	
WINDOW BONDING	ADHESIVE MASTIC – conventional kit* – single cartridge* – kit 450 ml ● – kit 220 ml ●		with pneumatic gun Requires special electric gun (approval No. 617 000)
ZINC PASSIVATION of welds	Kit	6025070445	MPR MATRA

* Single pot kit
● Two pot kit

** For details of where to obtain products, please contact your After Sales Head Office.

Before repairing the bodywork of a vehicle, even that which appears to have been only slightly damaged, a series of checks must be carried out:

- **VISUAL INSPECTION**

  This inspection entails the examination of the vehicle sub-frame where mechanical components are mounted and in crumple zones or vulnerable areas to detect folds where materials have been deformed.

- **INSPECTION USING TRAMMEL GAUGE**

  The visual inspection is completed by a check using a trammel gauge which allows measurement of certain deformations by symmetrical comparisons (for more details on each point to check, refer to the repair bench section below).

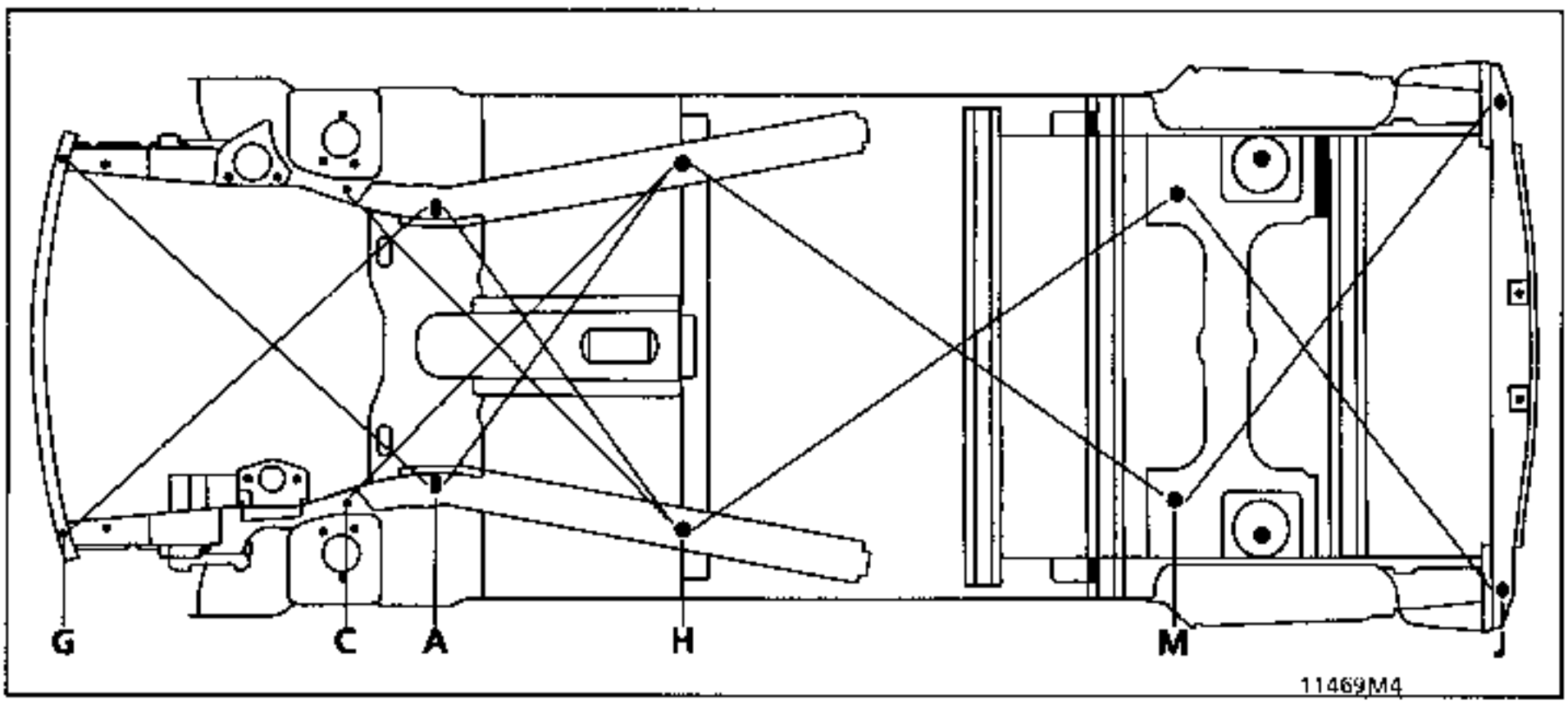
- **INSPECTION USING AXLE ASSEMBLY GEOMETRY**

  This is the only check which determines whether the impact suffered by the vehicle has or has not affected its road holding.

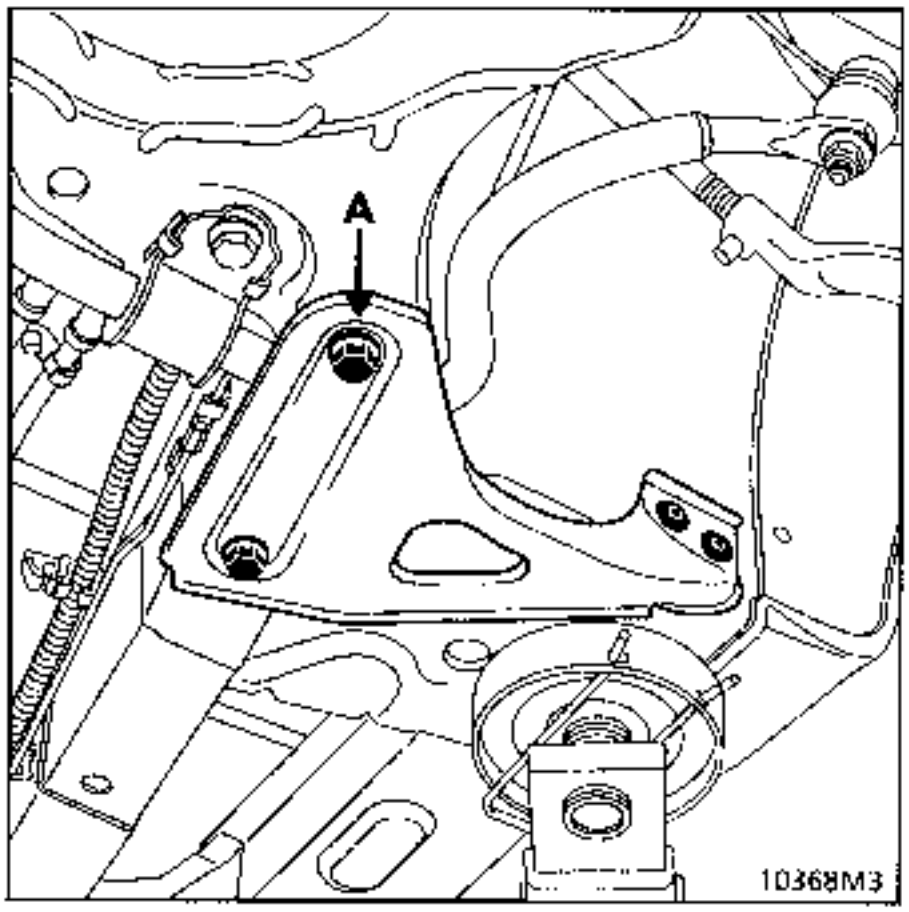
  Important : in borderline cases remember to check the axle assembly components which could also have been subject to deformation.

In principle, no welded component in the bodyshell should be replaced without having ensured that the sub-frame was not affected by the impact.

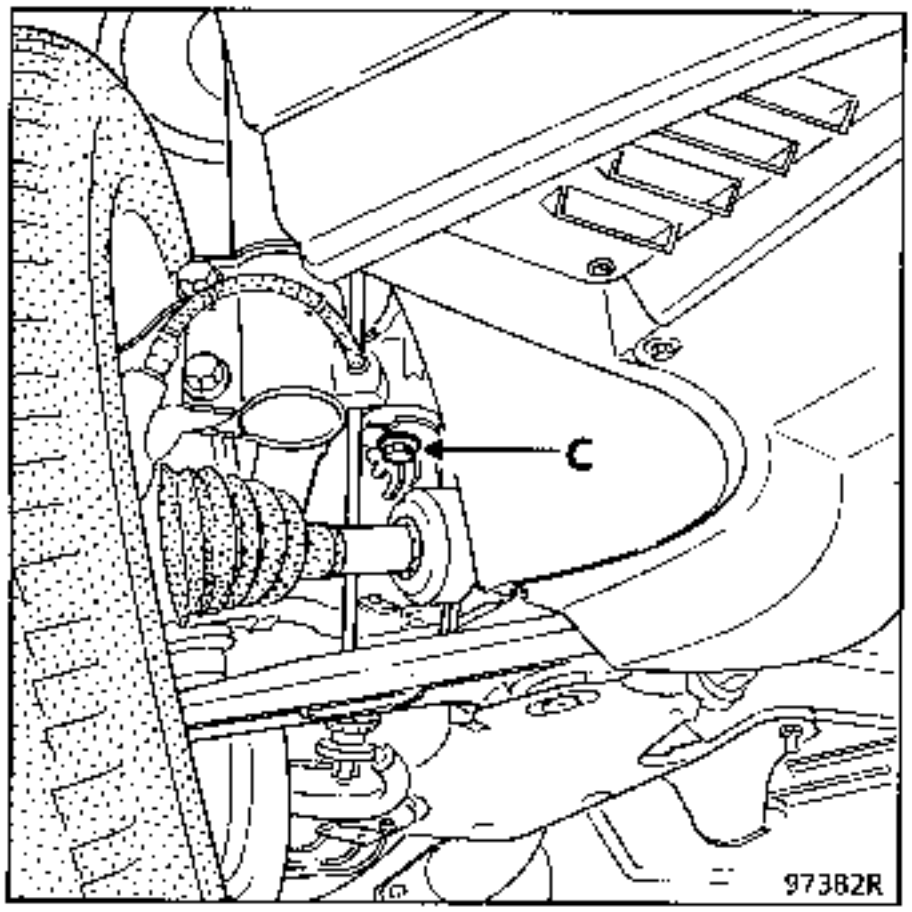
GAUGE POINTS



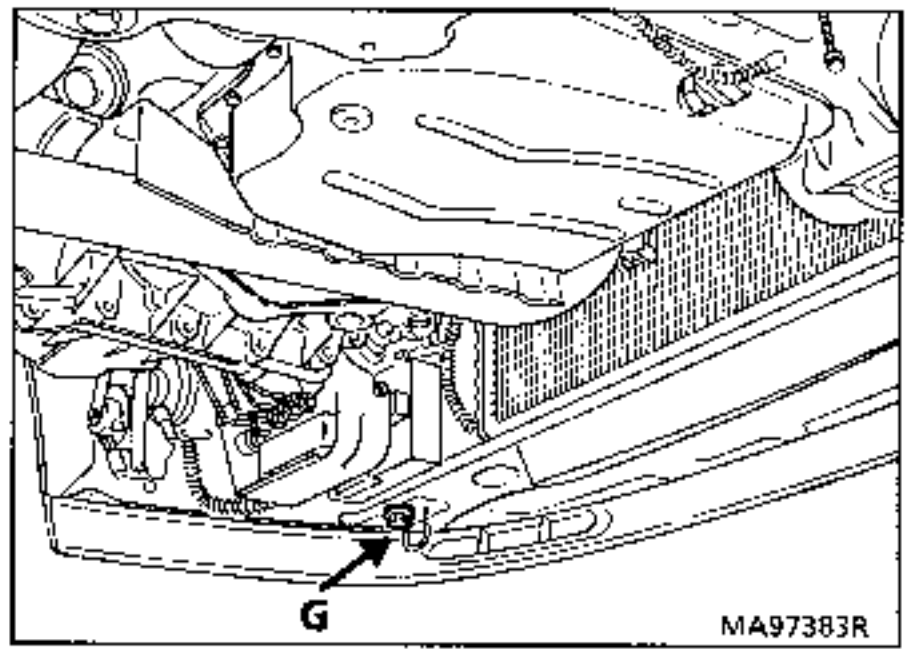
GAUGE POINTS



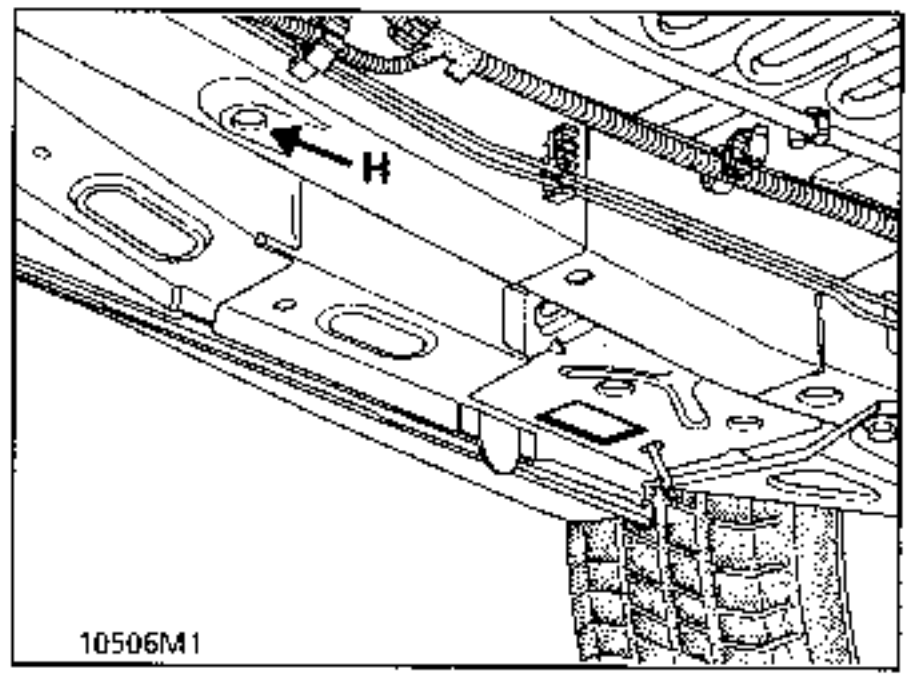
POINT A : rear sub-frame mounting.



POINT C : front sub-frame mounting.

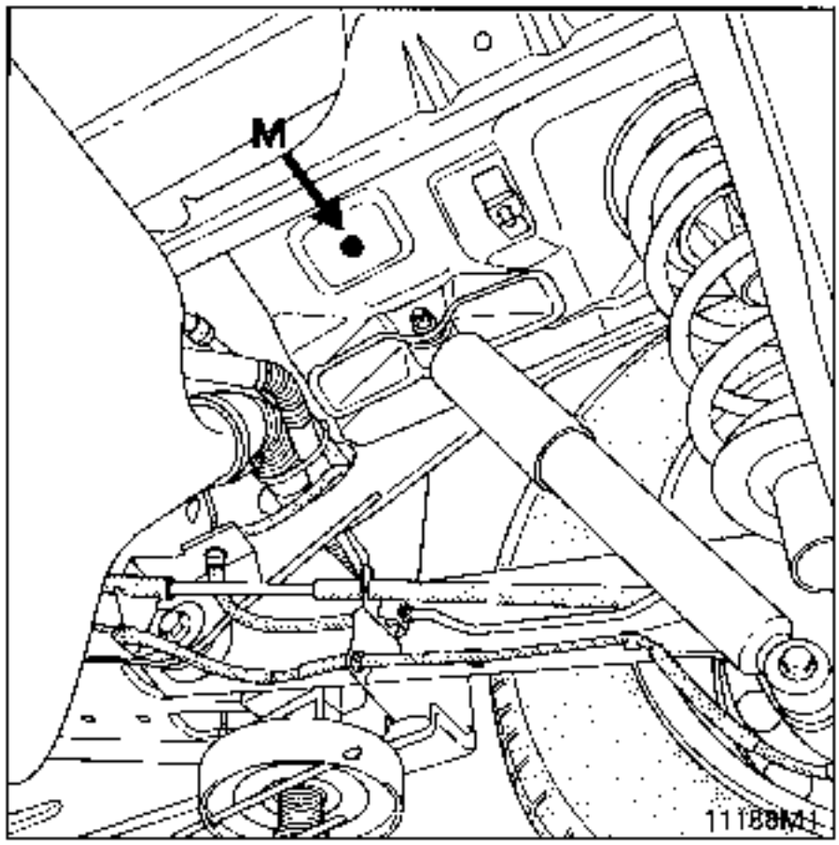


POINT G : front end of front side member, radiator cross member mounting.

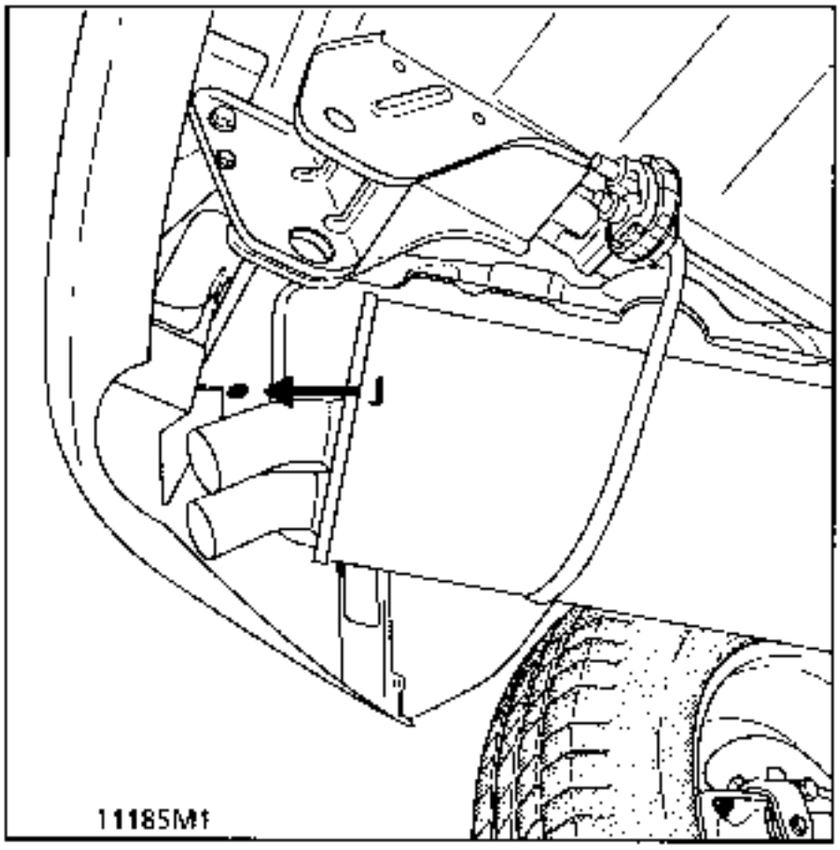


POINT H : side member extension reference point

GAUGE POINTS

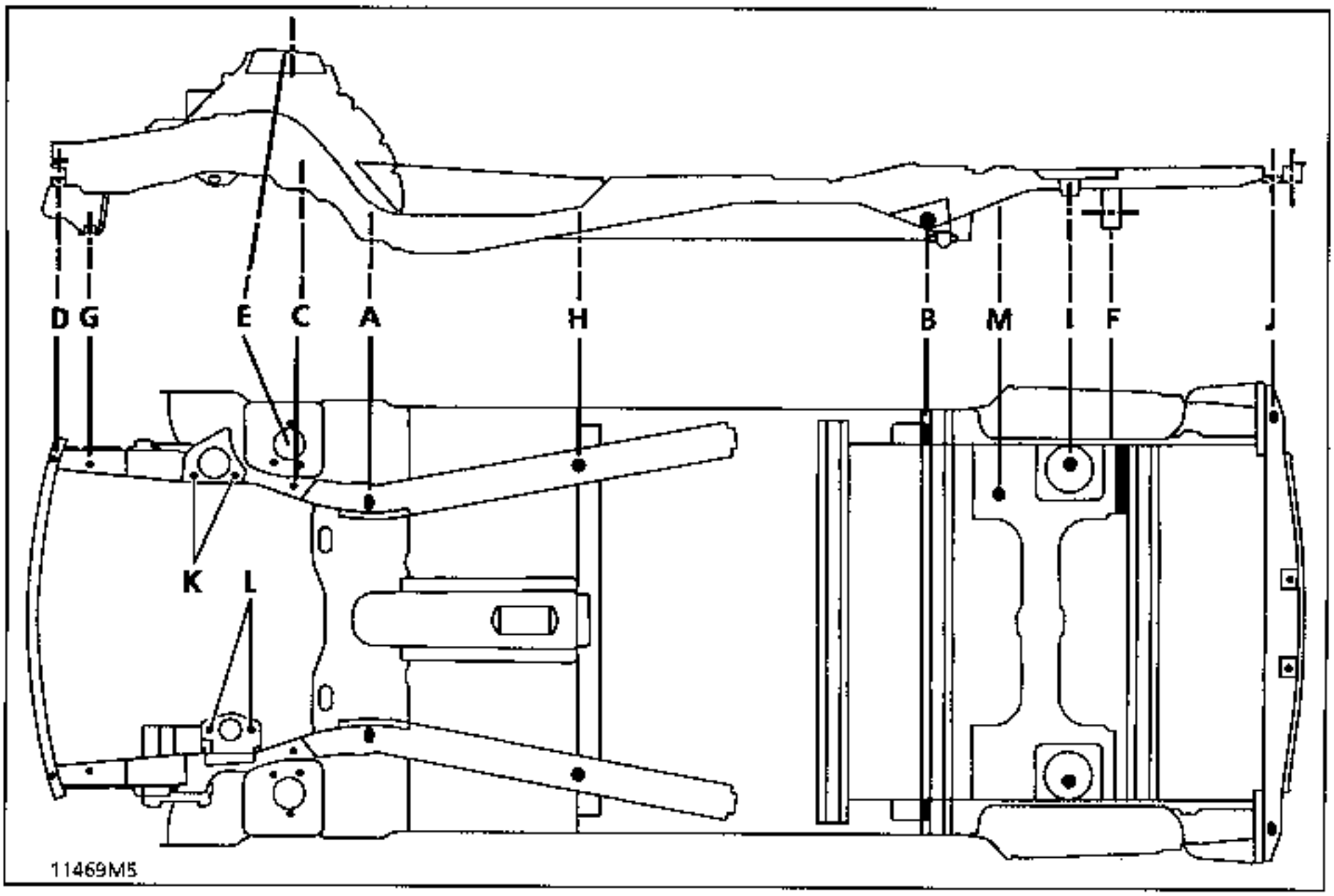


POINT M : LH and RH reference point on rear axle assembly cross member.

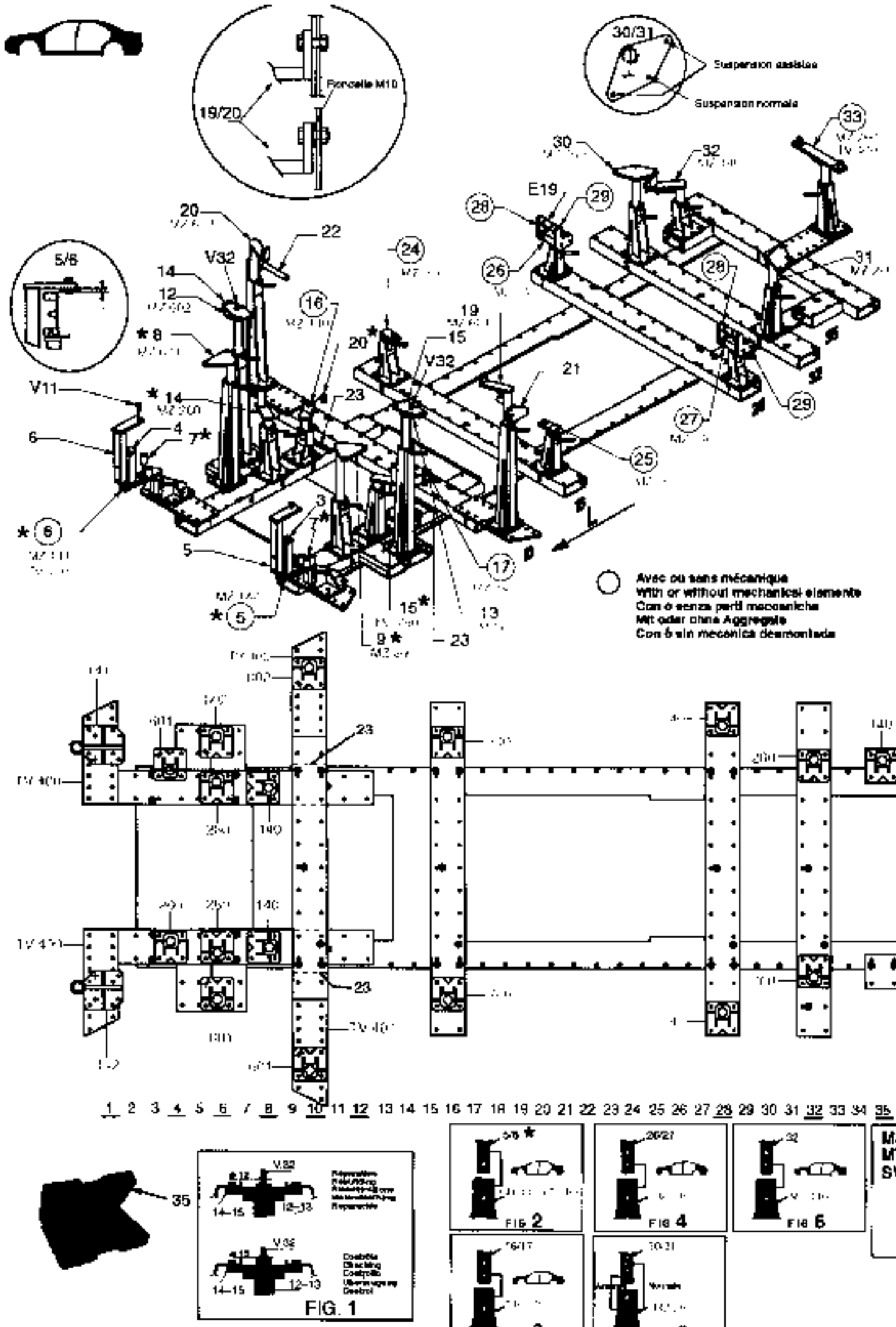


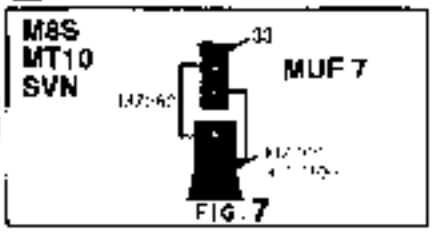
POINT J : Rear end cross member.

P52	DESCRIPTION	X	Y	Z	DIAMETER	ANGLE %
A	Front sub-frame rear mounting	299	--397	19	Left: 20.5 Right: 20.5	0
B	Rear axle tie rod mounting	2155	−659.5	77		0
C	Front sub-frame front mounting	39.5	−459.5	−210	15.5	0
D	Front end cross member mounting	-777.8	-543.7	196		
E	Front shock absorber support mounting	23.2	·· 598.7	629.6	10.2	0
F	Guide bar mounting	2807	560	67	10.2	0
G	Radiator cross member mounting	−653.5	··559	37	14.5	0
H	Side member extension	995	525	36	24.4	0
I	Impact stop mounting	2645	−527	162.8	hexagonal	0
J	Rear end cross member	3386.5	· 145	218.5	14	0
K	Front engine mounting	−299	492	500	M10	0
K	Rear engine mounting	-- 159	492	500	M10	
L	Front gearbox mounting	−258.3	−411.5	359	M12	
L	Rear gearbox mounting	· 124.8	−411.5	359	M12	0
M	Rear axle cross member reference point	2397	−450	227	15	0


D
G
E
C
A
H
B
M
I
F
J
K
L
11469M5

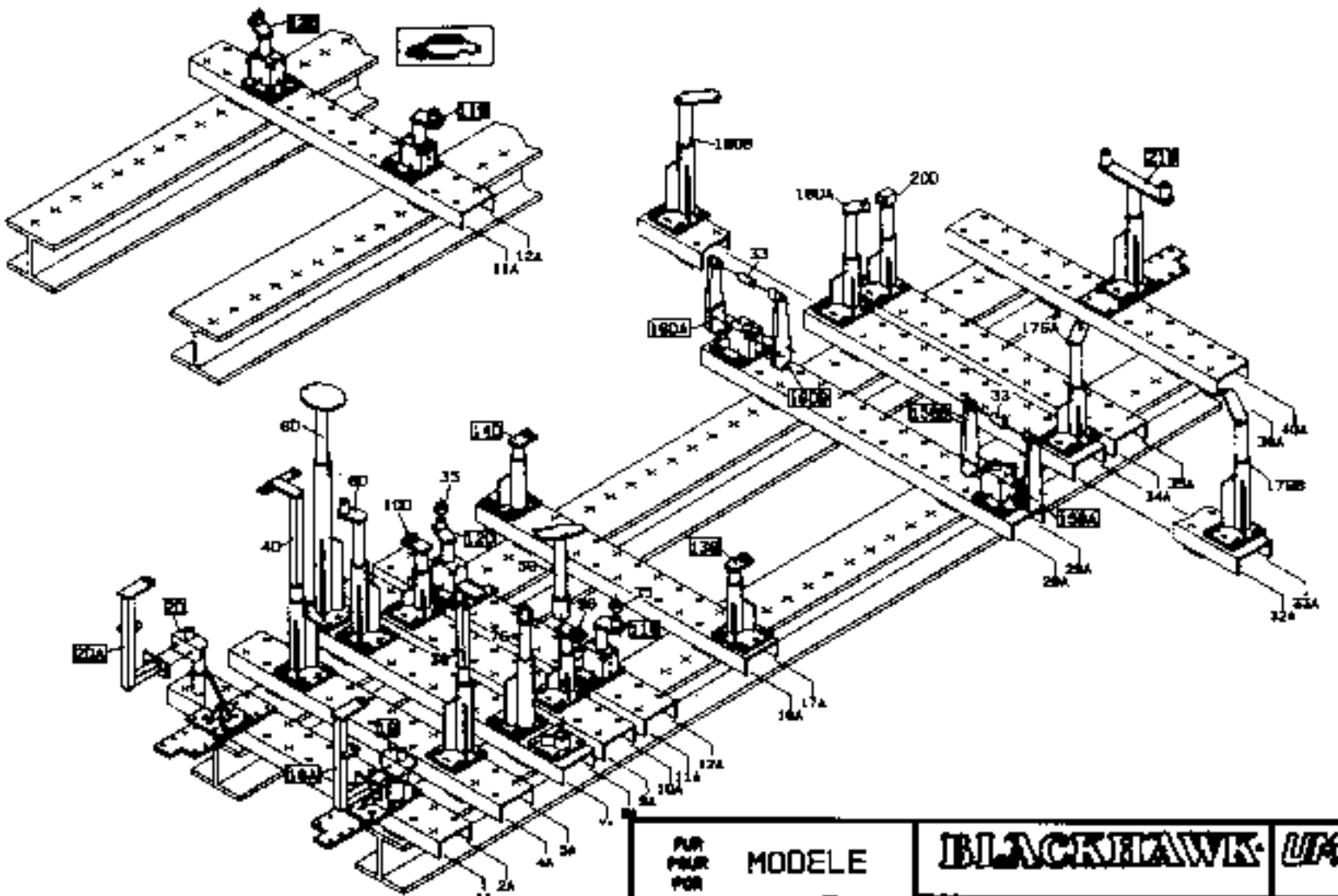
FITTING CELETTE BRACKETS





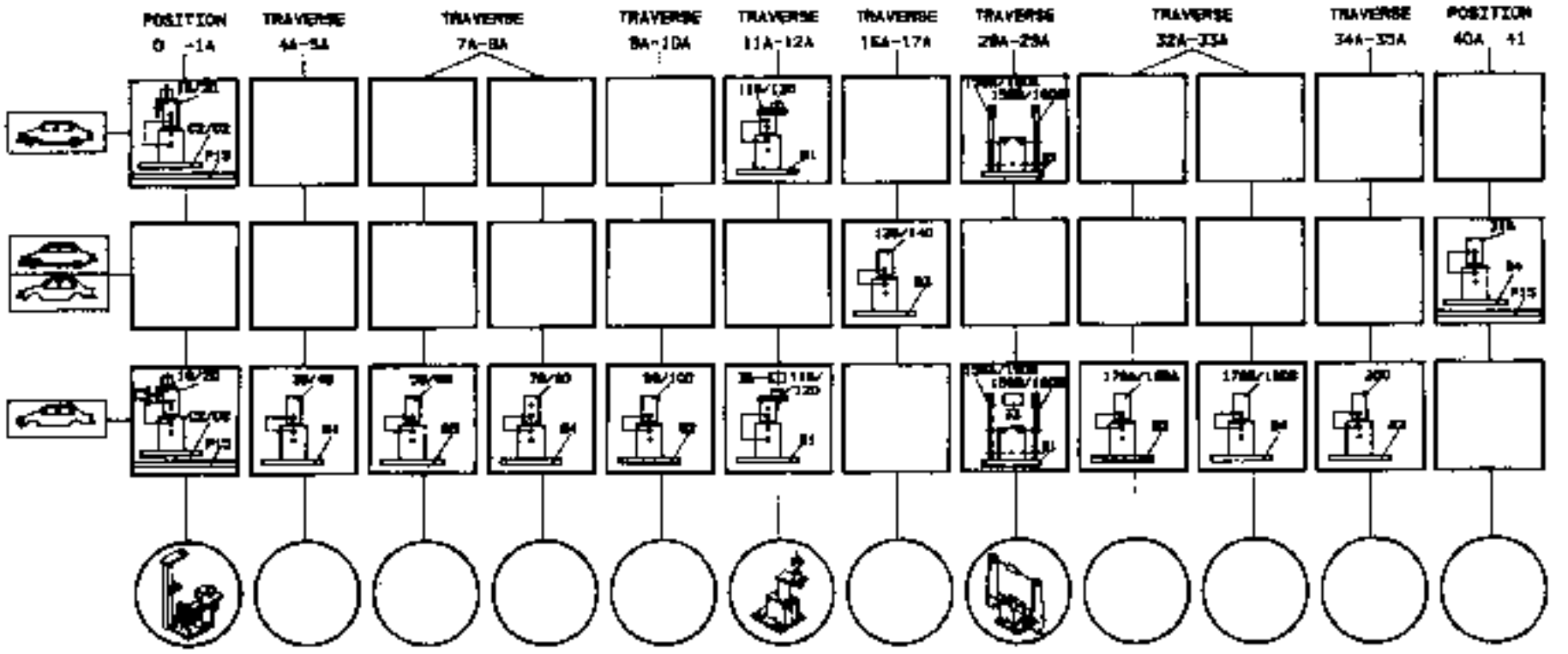
PR54001

FITTING BLACKHAWK BRACKETS



AVEC MECANIQUE/WITH MECHANICS/MIT MECHANIK/CON MECCANICA

POUR MODELE RENAULT ESPACE MOD.97-›	BLACKHAWK
	REF.Nat REN-88100

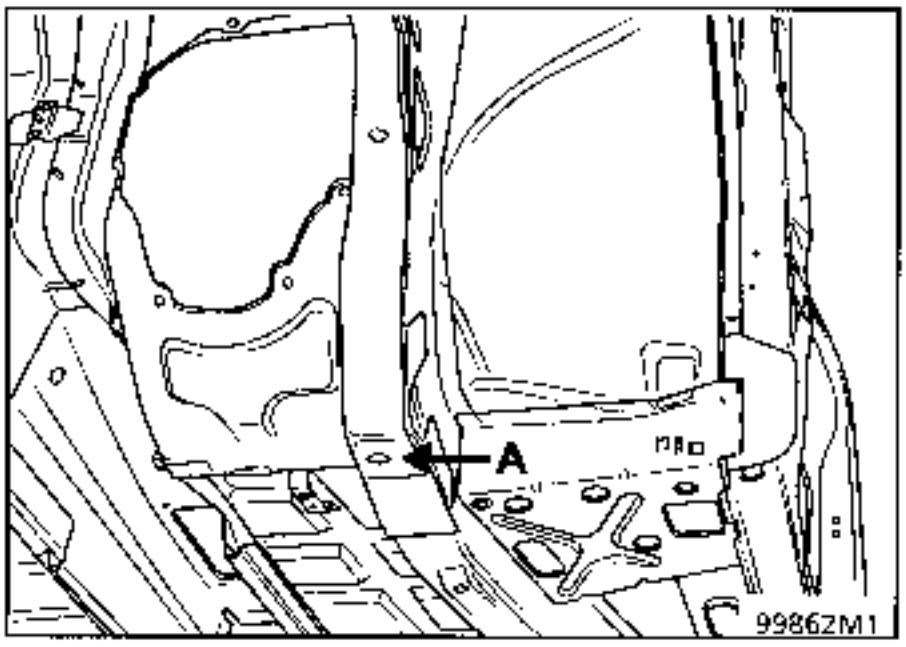


PRS4002

RENAULT ESPACE
MOD.97-›
REN-88100

I - MAIN REFERENCE POINTS FOR ALIGNMENT

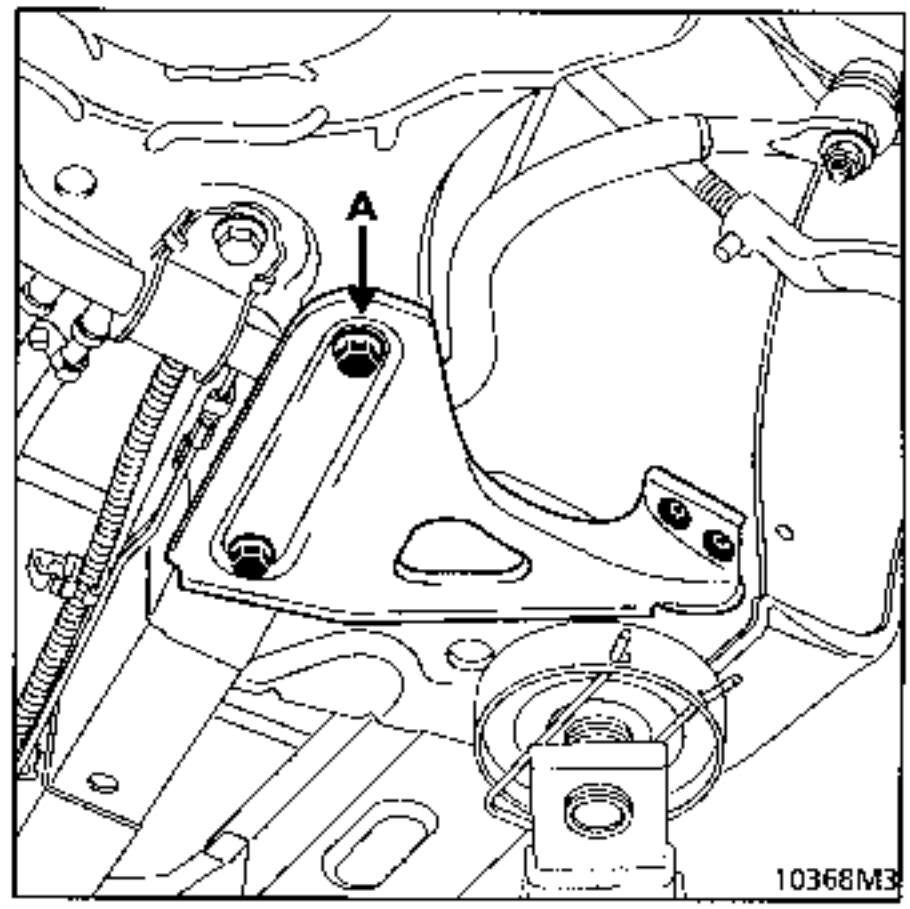
A - FRONT SUB-FRAME REAR MOUNTING



This is the main front reference point.

1 - Front mechanical units removed:

The bracket rests against the rear part of the front side member and is centred in the sub-frame mounting hole.



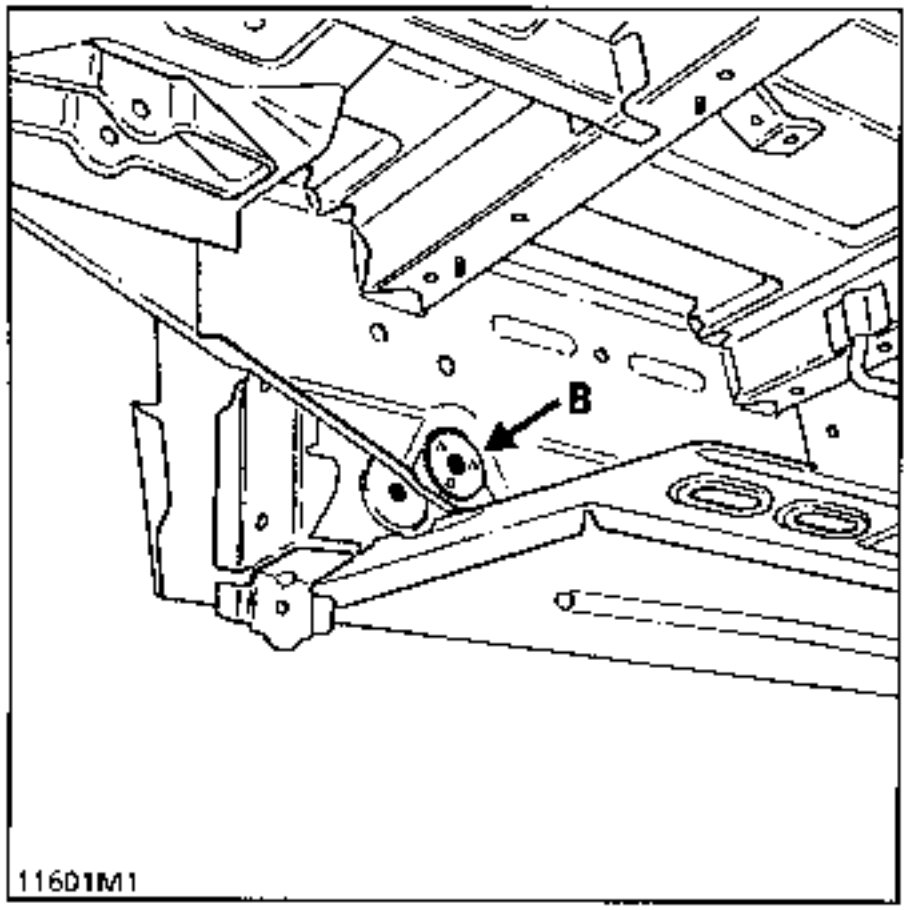
2 - Front mechanical units in place:

The bracket covers one of the sub-frame mounting bolts.

If the rear of the vehicle is being rebuilt, this bracket alone may be used to align the front of the vehicle on the bench.

I - MAIN REFERENCE POINTS FOR ALIGNMENT (cont)

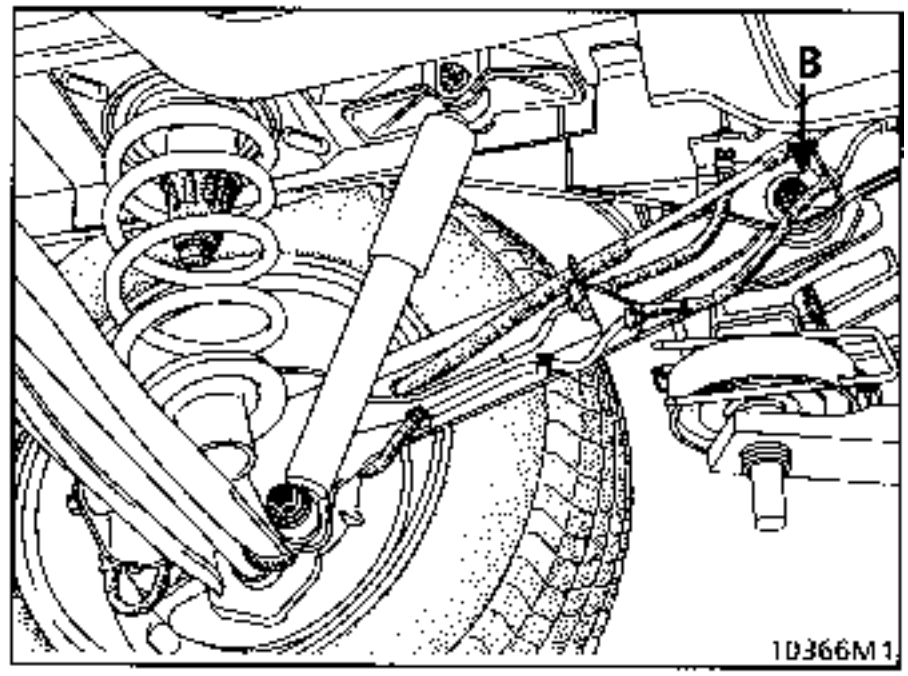
B - REAR AXLE TIE ROD MOUNTING



This is the main rear reference point.

1 - Rear mechanical units removed:

The bracket rests against the rear axle assembly mounting unit and is centred in the mounting hole for the rear axle tie rod.



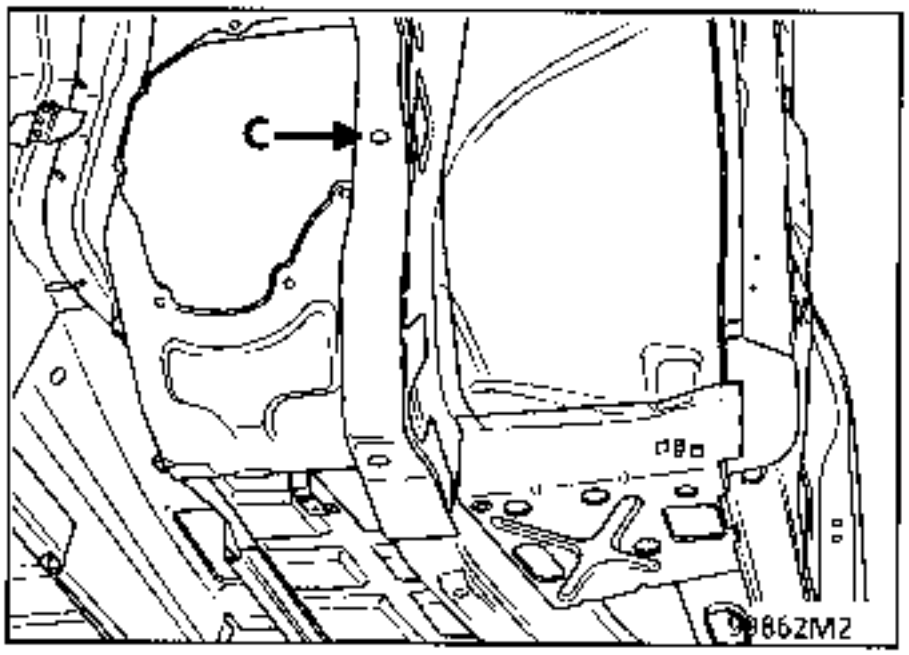
2 - Rear mechanical units in place:

The bracket covers one of the mounting bolts for the rear axle tie rod and is used to support the vehicle.

If the front of the vehicle is being rebuilt, this bracket (B) alone may be used to align the vehicle.

III - REFERENCE POINTS FOR POSITIONING REPLACED PARTS

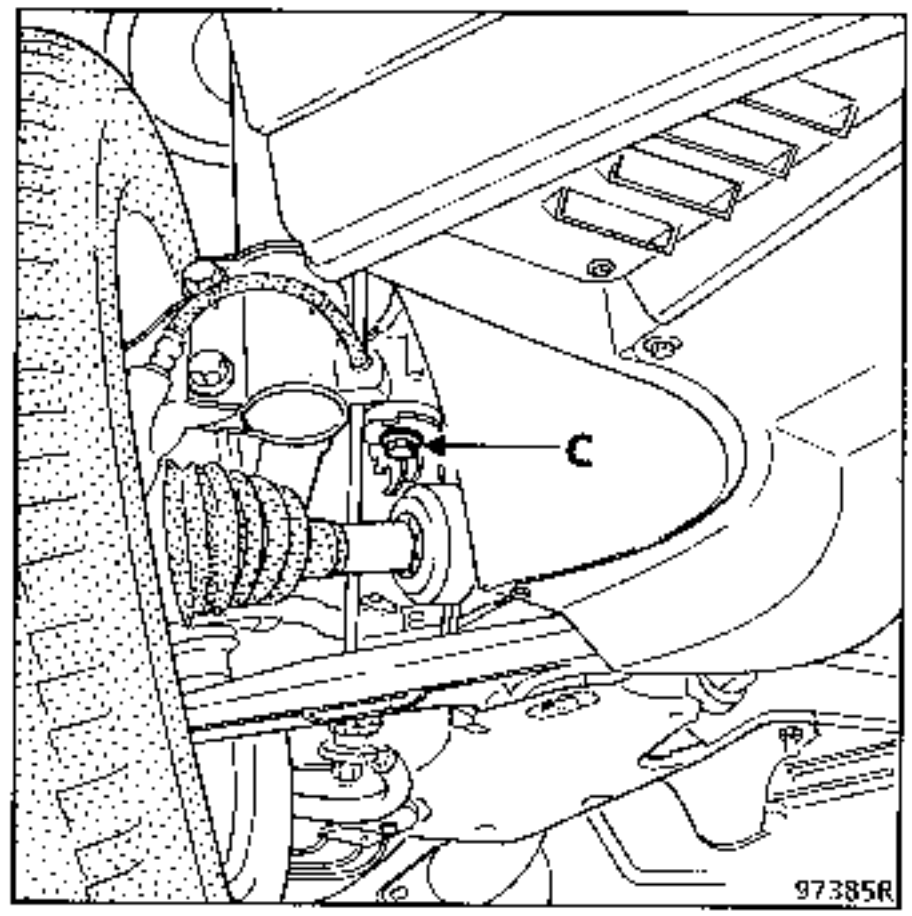
C - FRONT SUB-FRAME FRONT MOUNTING



1 - Front mechanical units removed:

The bracket rests under the sub-frame mounting and is used to check the mounting hole.

It is used when replacing:
- the front side member,
- a front half unit.



2 - Front mechanical units in place:

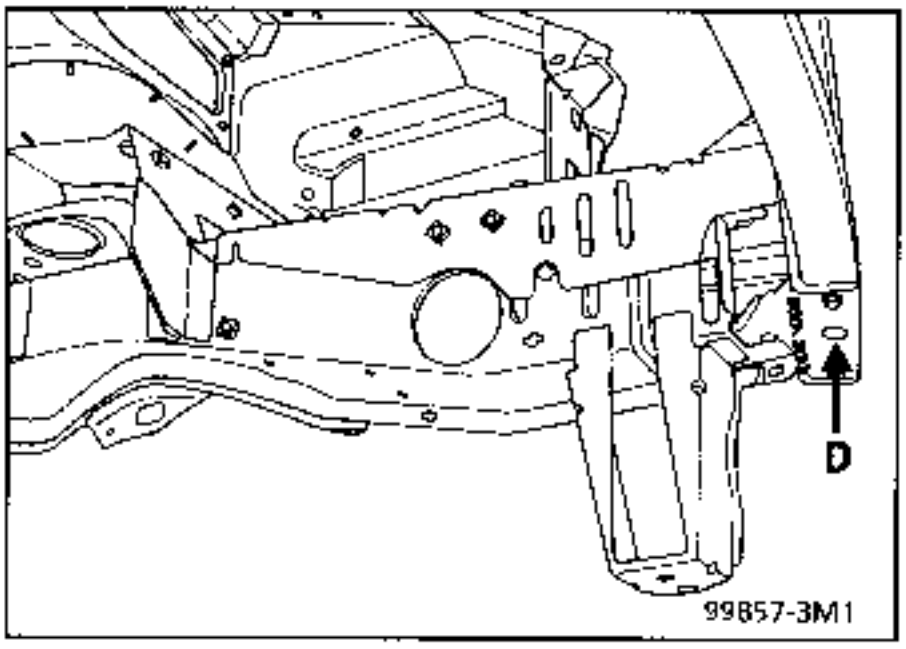
The bracket rests against and covers the bottom of the mounting bolt for the sub-frame.

It is used following a frontal collision for a small impact.

It is used for fault finding for the mechanical mountings if there is any doubt after checking the front axle assembly angles.

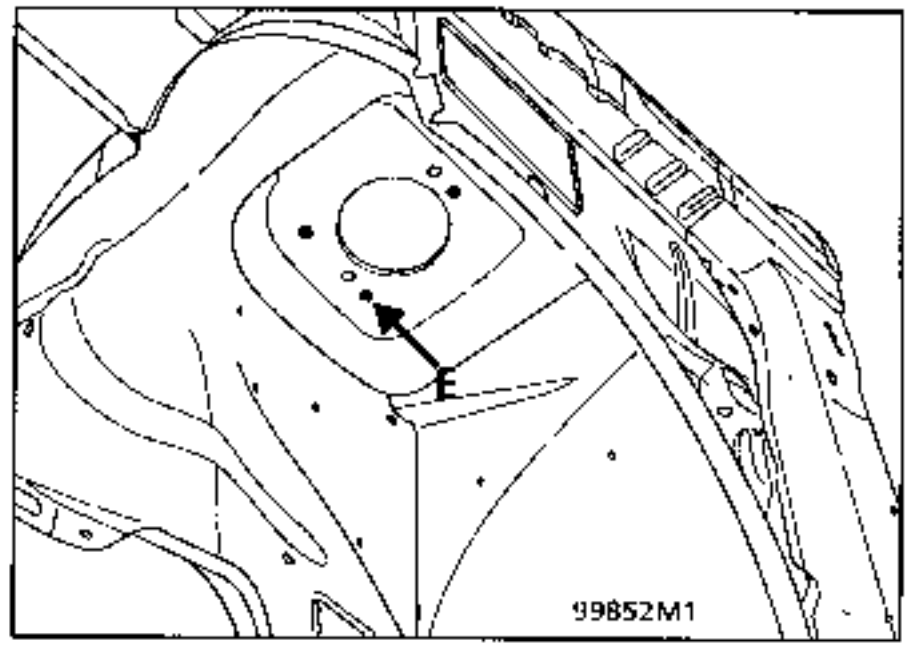
III - REFERENCE POINTS FOR POSITIONING REPLACED PARTS (cont)

D - FRONT END CROSS MEMBER MOUNTING



The bracket rests on the pilot hole and is used to check it.

E - FRONT SHOCK ABSORBER MOUNTING



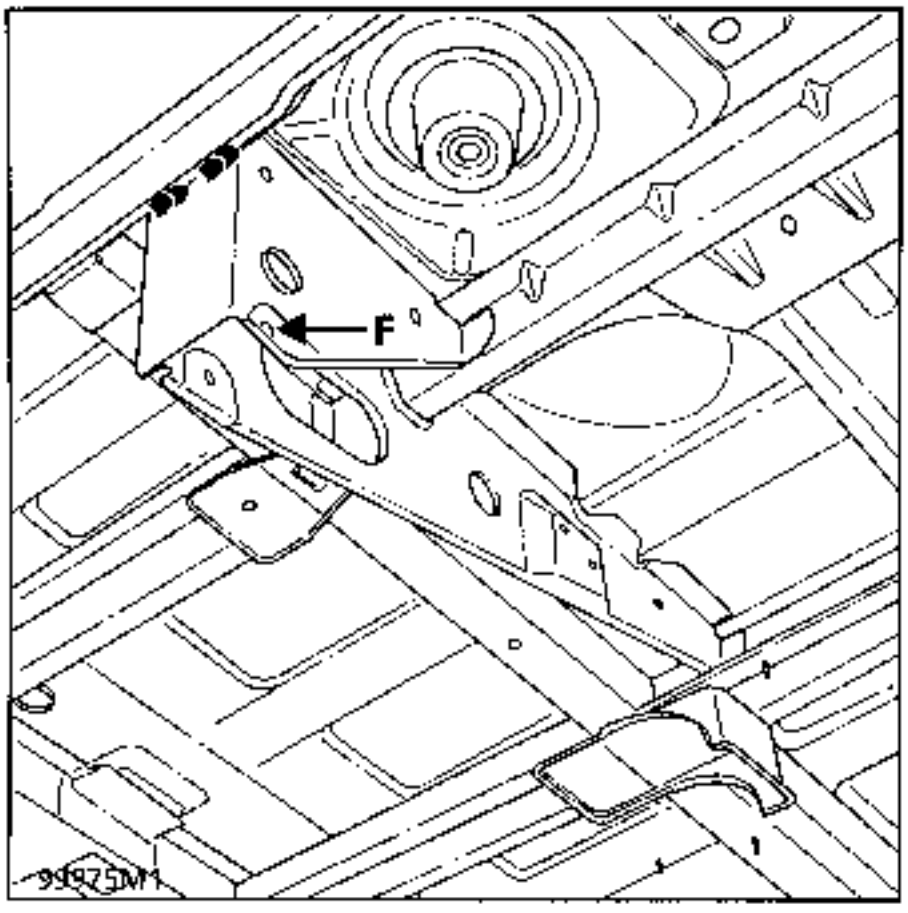
The bracket rests under the shock absorber cup and checks the mounting holes for the shock absorber cup.

It is used when replacing:
- a wheel arch,
- a half unit.

It is also used when checking the re-alignment of the shock absorber cup after removal of the front mechanical units.

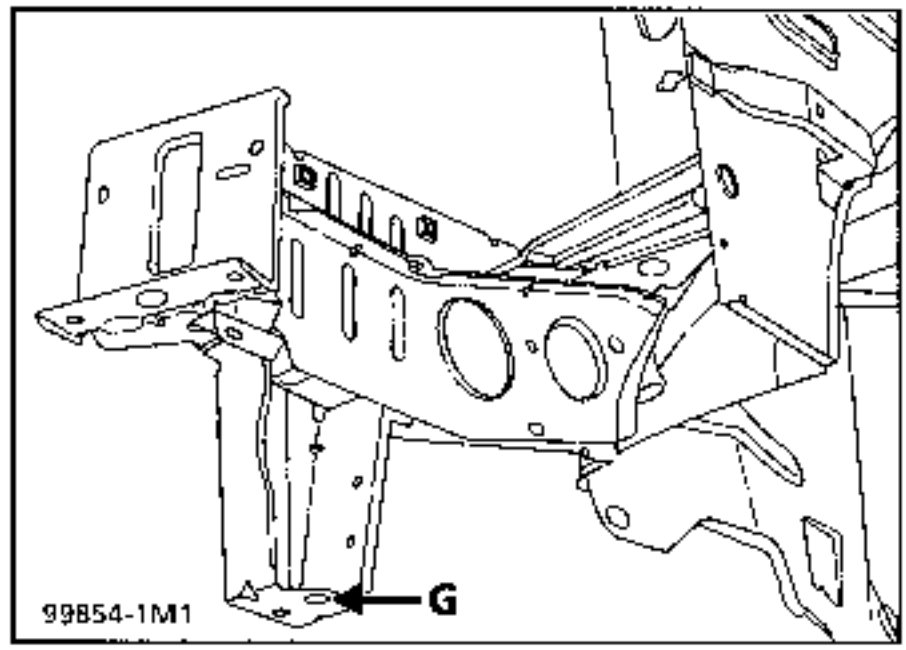
III - REFERENCE POINTS FOR POSITIONING REPLACED PARTS (cont)

F - END OF GUIDE BAR



Used when rebuilding the rear when replacing a side member or a rear floor unit, this bracket is used to align the replaced parts.

G - RADIATOR CROSS MEMBER MOUNTING

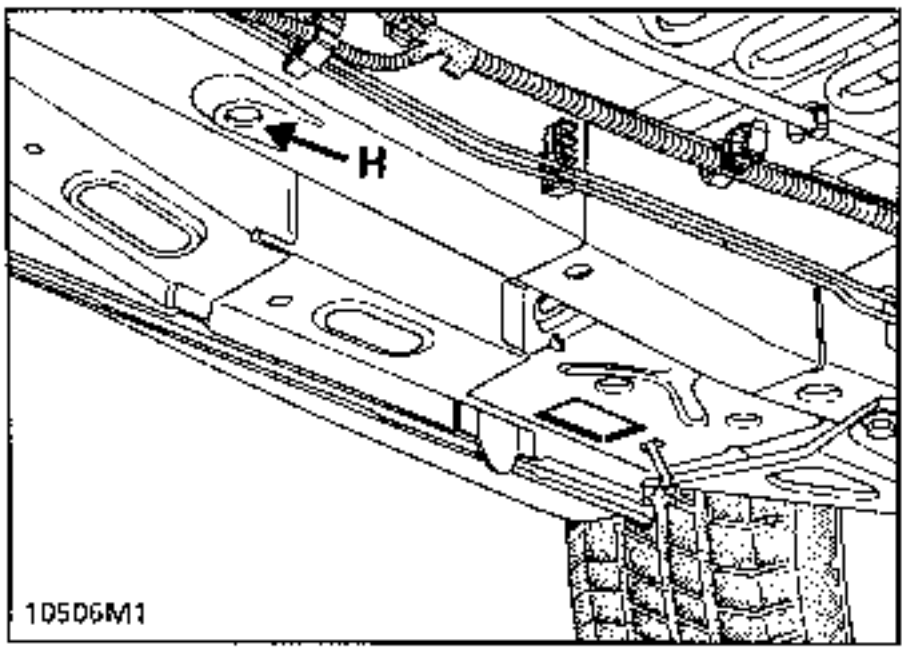


The bracket rests under the radiator cross member mounting and is centred in the cross member mounting hole.

It is used to position the end of the side member when replacing the front section in part section or completely.

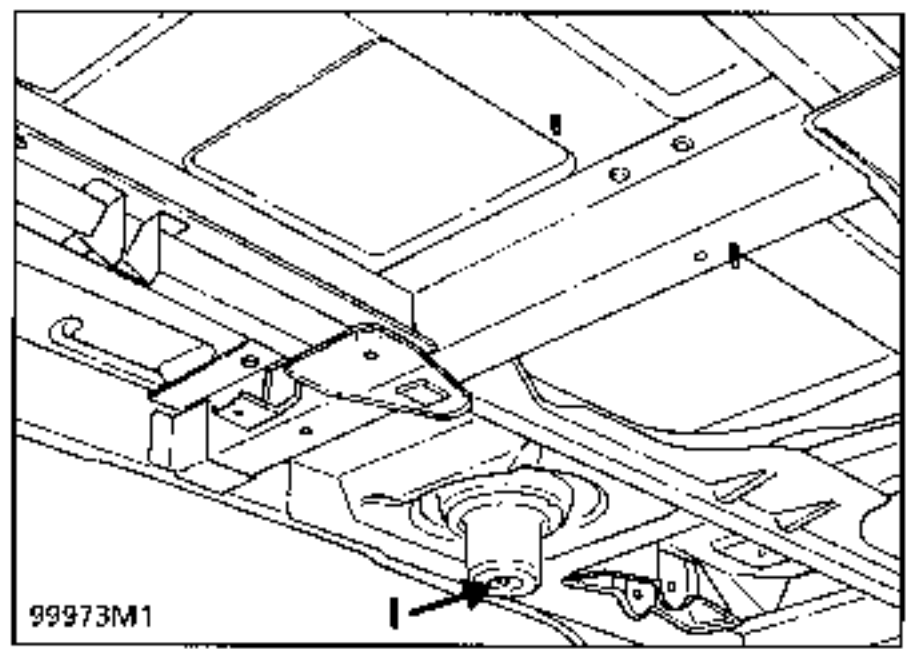
III - REFERENCE POINTS FOR POSITIONING REPLACED PARTS (cont)

H - FRONT SIDE MEMBER MOUNTING, REAR SECTION



Point (H) is also used as a positioning reference for replaced components when replacing a part of the front side member.

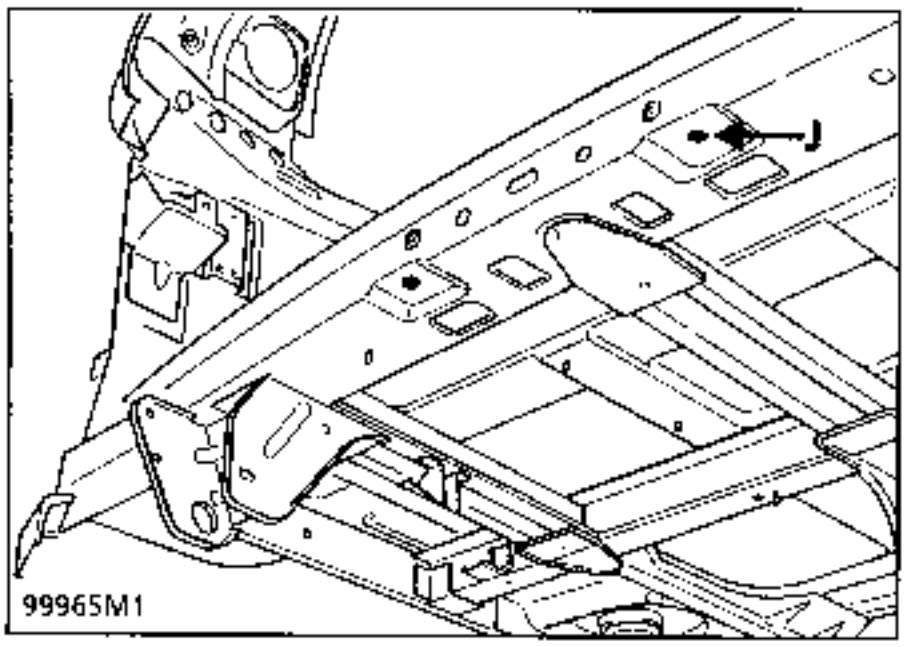
I - IMPACT STOPS MOUNTING



Used when rebuilding the rear when replacing a side member or a rear axle cross member, part section.

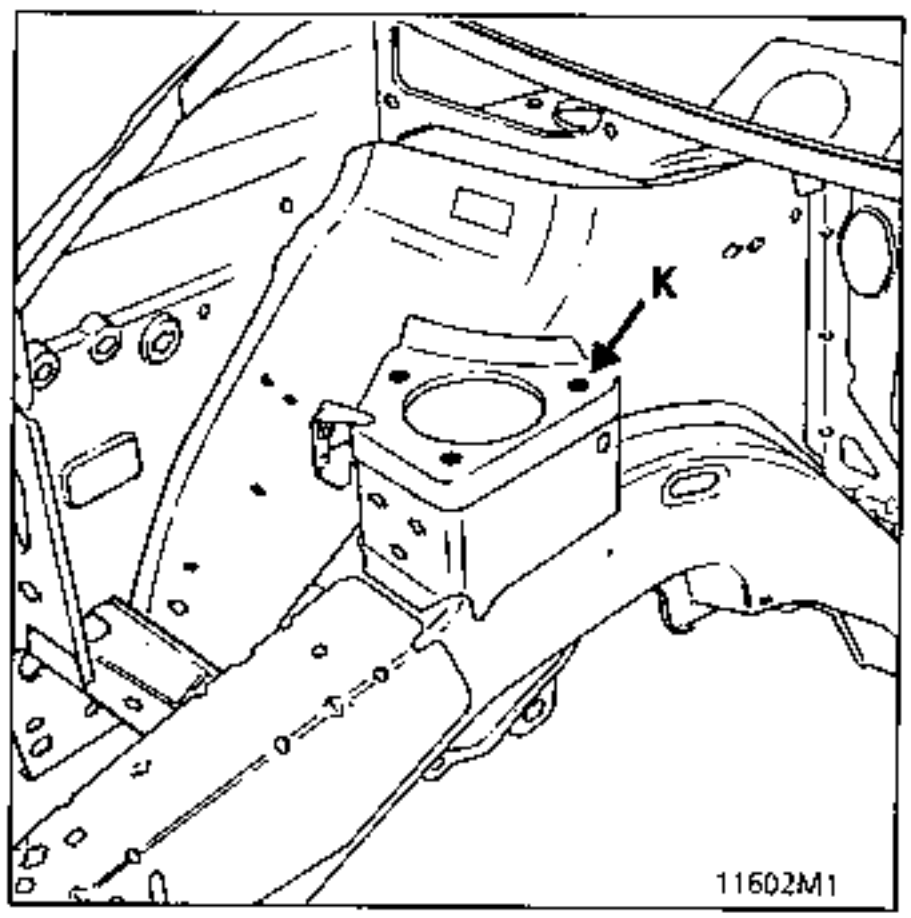
III - REFERENCE POINTS FOR POSITIONING REPLACED PARTS (cont)

J - REAR END CROSS MEMBER



Used mainly when rebuilding the rear for positioning the end cross member or floor limiting cross member, it may also be used to assist in aligning the vehicle for front rebuilding when replacing a front half unit.

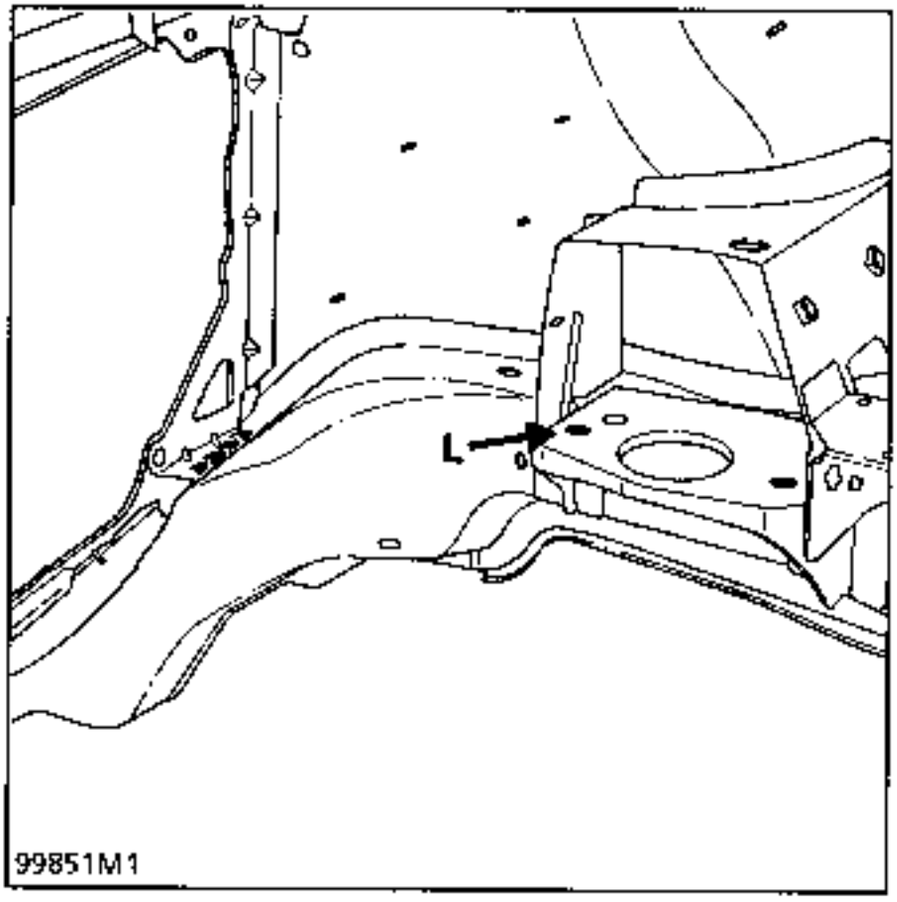
K - FRONT ENGINE MOUNTING



This point is used when rebuilding the front mechanical units when replacing the front right hand half unit, for positioning the engine mounting cup.

III - REFERENCE POINTS FOR POSITIONING REPLACED PARTS (cont)

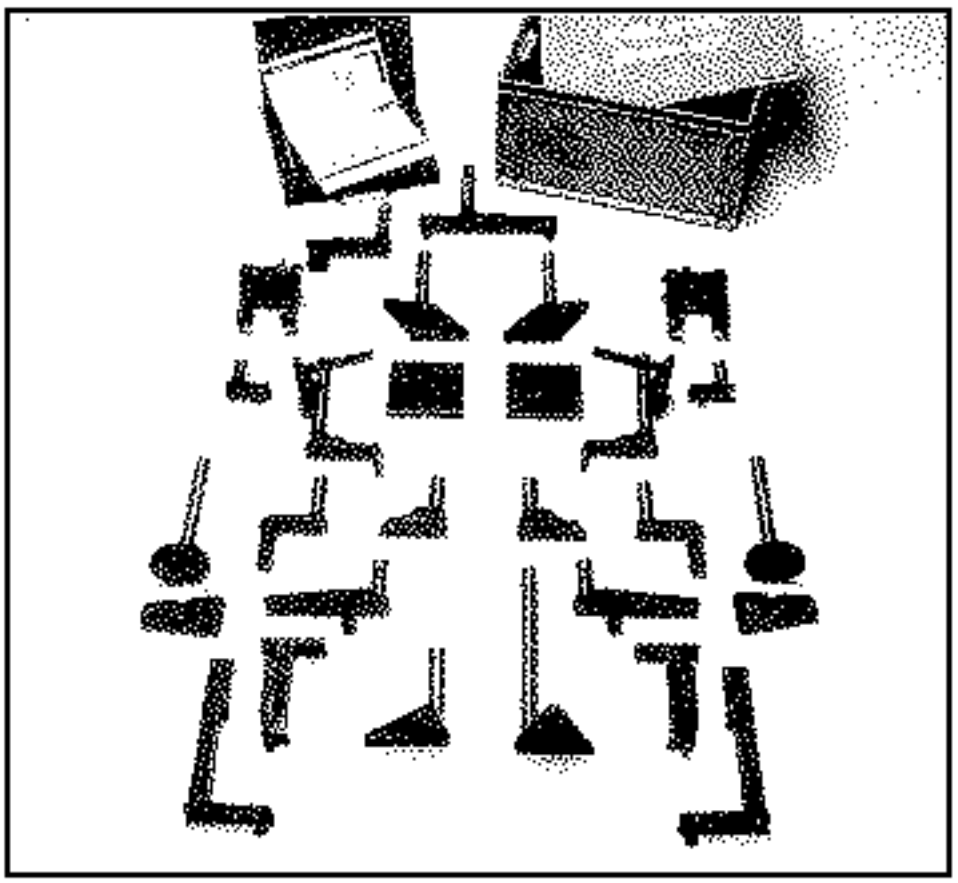
L - FRONT GEARBOX MOUNTING



This point is used for rebuilding the front mechanical units when replacing a front half unit:

- front left hand side for aligning the part,
- front right hand side for aligning the vehicle.

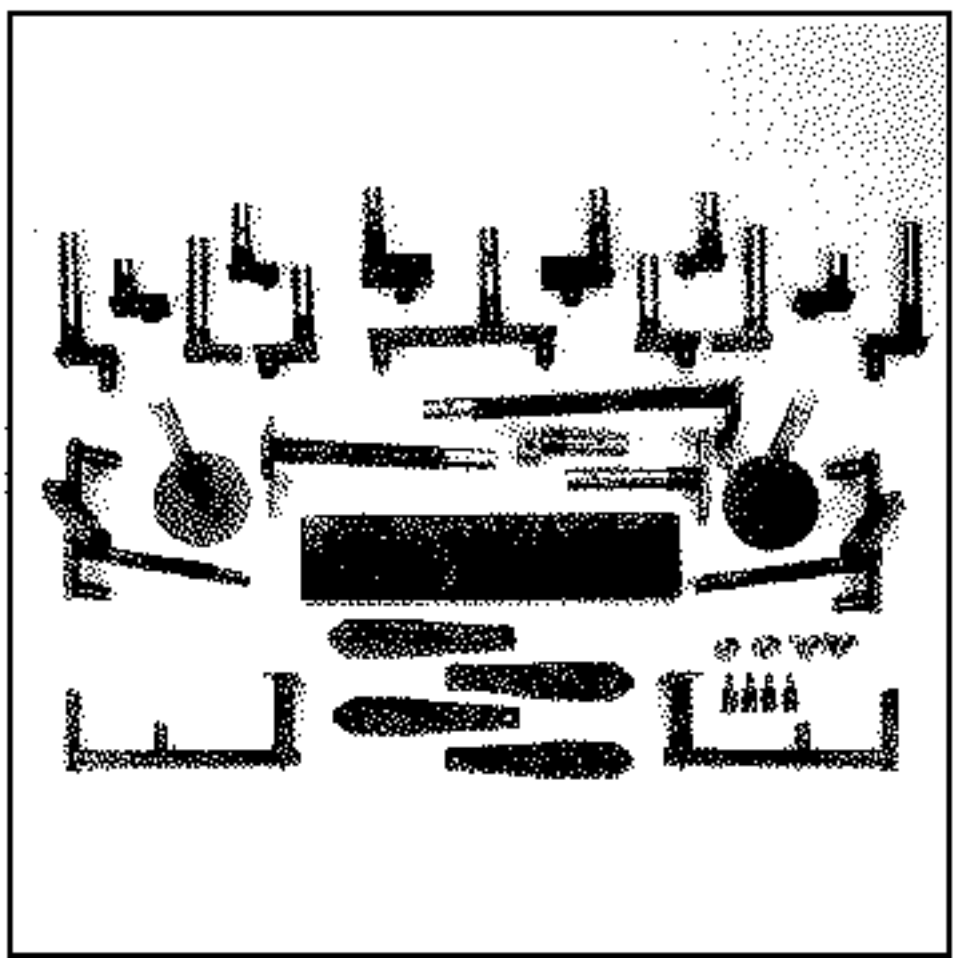
If both half units are being replaced, with the vehicle positioned using reference points (A) and (D), the left hand half unit must be assembled before the right hand half unit, so that the universal base may be retained which is used to position point (E) on the left hand side and to fit the bracket on point (K) which is fitted to the same base.



Special heads for the **CELETTE System MZ** Repair bench

Order from: Consult your After Sales Head Office.

Supplier's Part Number:
- complete assembly 741.300
- additional assembly 675.300 to 675.308



Special heads for the **BLACKHAWK System MS** Repair bench

Order from: Consult your After Sales Head Office.

Supplier's Part Number: REM.88100

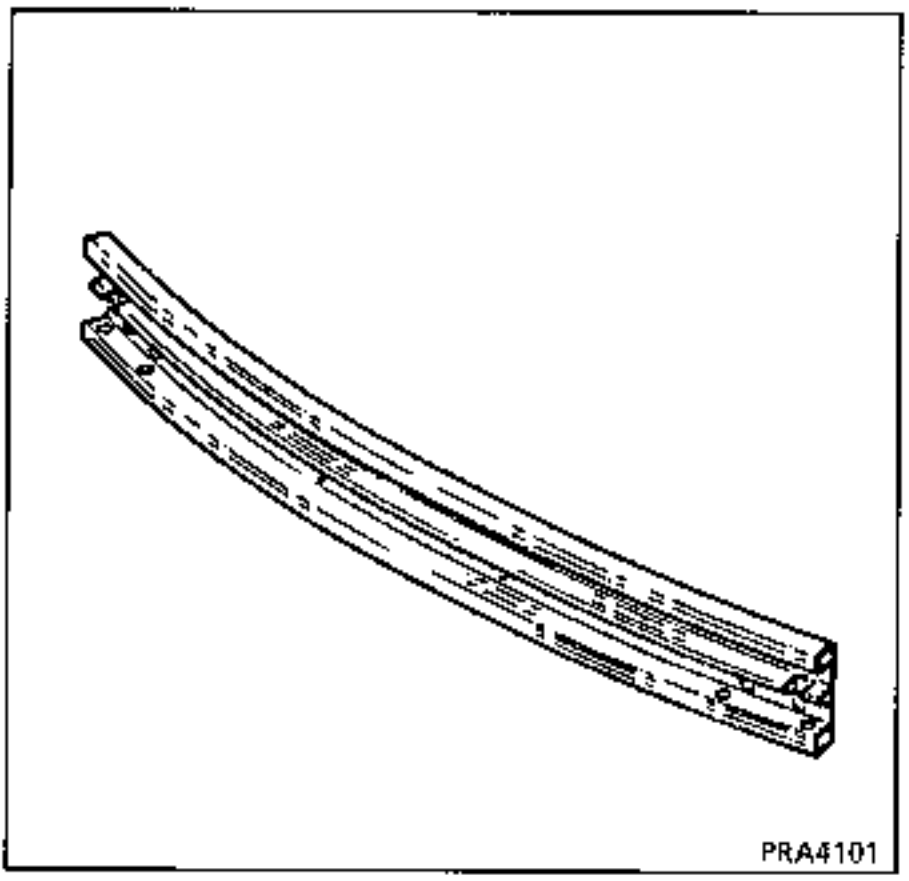
INTRODUCTION

This part is supplied by the Parts Department with its mounting reinforcements. These should be welded to the end of each side member as necessary.

If one of the two reinforcements is to be replaced, the new cross member and the vehicle reinforcement on the side opposite the impact are used to ensure the positioning of the replaced part.

If both reinforcements are damaged, the operation must be carried out on the repair bench.

COMPOSITION OF PART FROM PARTS DEPARTMENT


PRA4101

Preliminary operations.

Remove:
- the mudguard,
- the bumper,
- the engine undertray.

REMOVAL - REFITTING

This part may be disassembled but is bonded by the galvanising. It is mounted by four bolts to its mounting reinforcements which are in turn welded at the end of each side member.

Tighten the bolts until they shear at about **10daN.m.**

Release the galvanised edges using a flat chisel.

When refitting the cross member, if the side members are slightly separated, do not make the holes in the cross member larger as this component is used to determine the axis between the side members.

The gap must be compensated for at the side members:
- either by supporting the weight of the engine and transmission assembly,
- or by tightening the side members using a mechanical tensioner.

1 JOINT WITH FRONT END CROSS MEMBER CONNECTING PANEL

Thickness of panels concerned (mm)

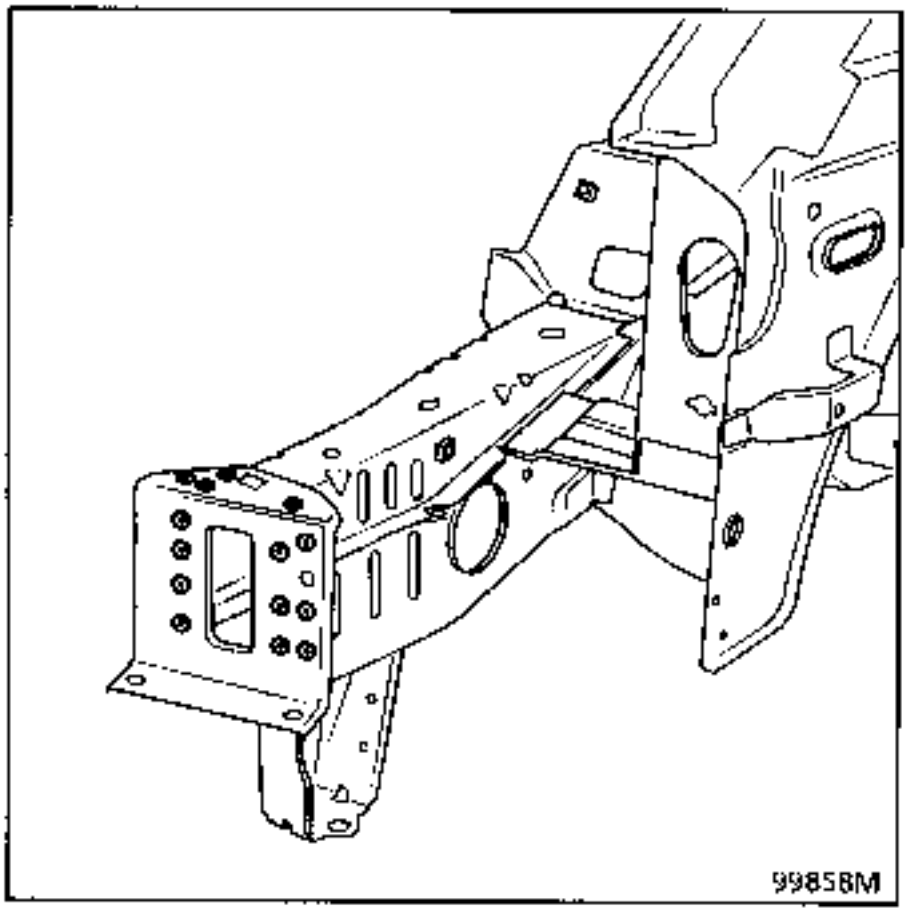
Side extension infront of reinforcement	1.2
Front side member extension	1.2
Front side member, front section	1.5
Front side member closure panel	1.2

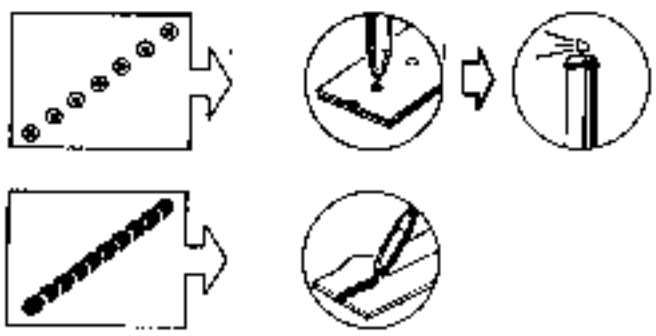
Unpicking

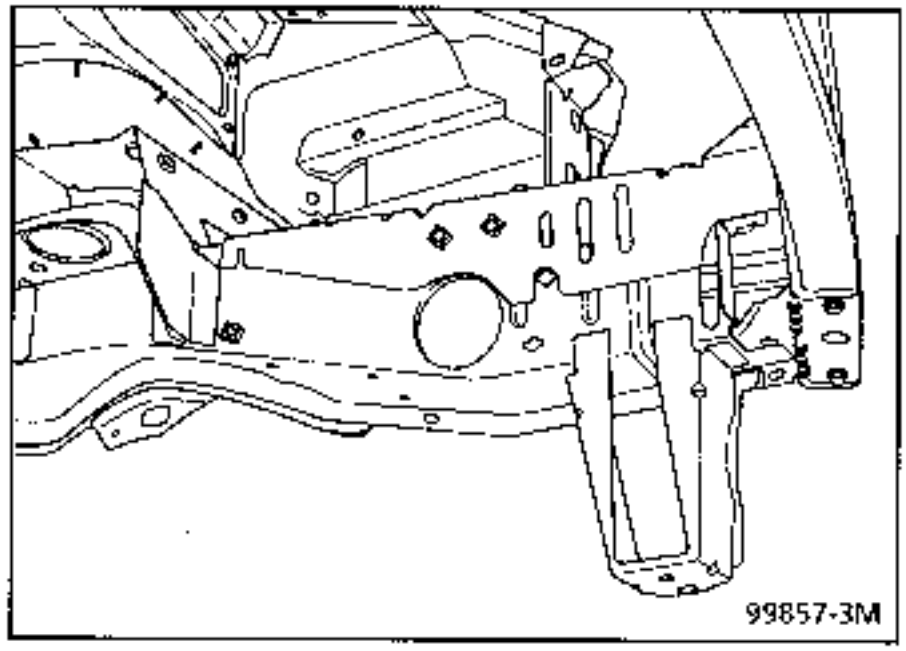
14 spot welds on thickness 1.50

+4 MAG fillets of 25 mm

Welding







NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of the mounting reinforcement for the front end cross member and the side member closure panel, front section.

COMPOSITION OF PART FROM PARTS DEPARTMENT

PRA4102

Preliminary operations.

Remove:
- the mudguard,
- the engine undertray,
- the bumper,
- the radiator cross member,
- the LH side horn,
- the washer bottle on the RH side.

NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

1 JOINT WITH FRONT SIDE MEMBER, FRONT SECTION

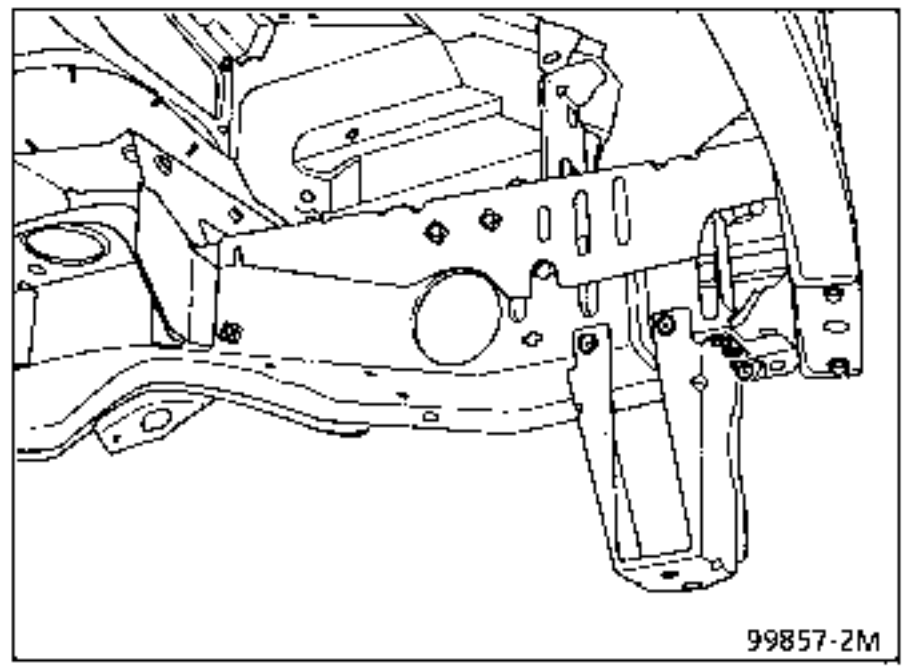
Thickness of panels concerned (mm)

Radiator cross member mounting	1.5
Front side member, front section	1.5

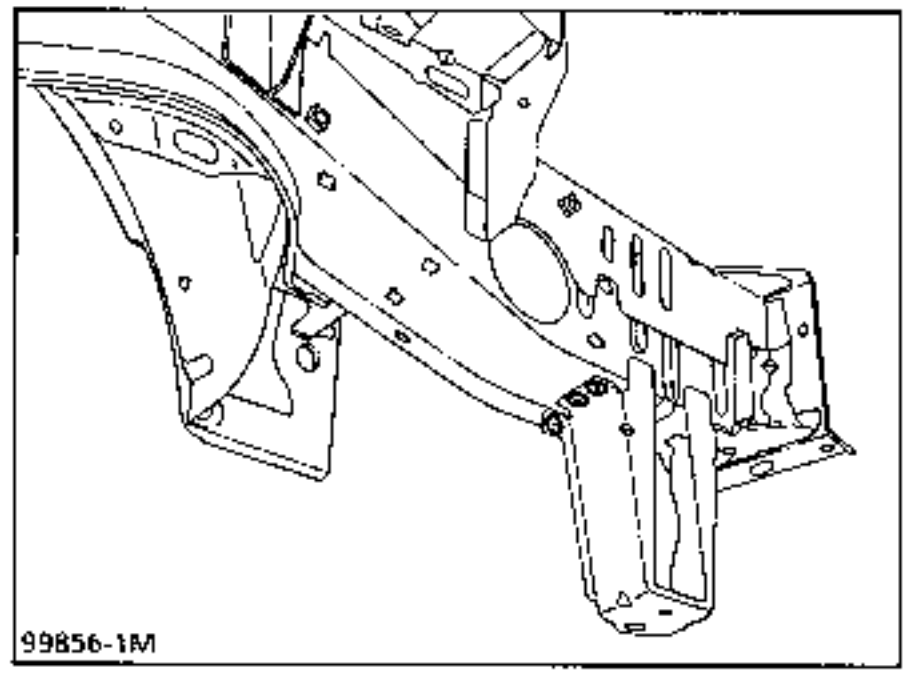
Unpicking

8 spot welds on thickness 1.50

Welding



99857-2M

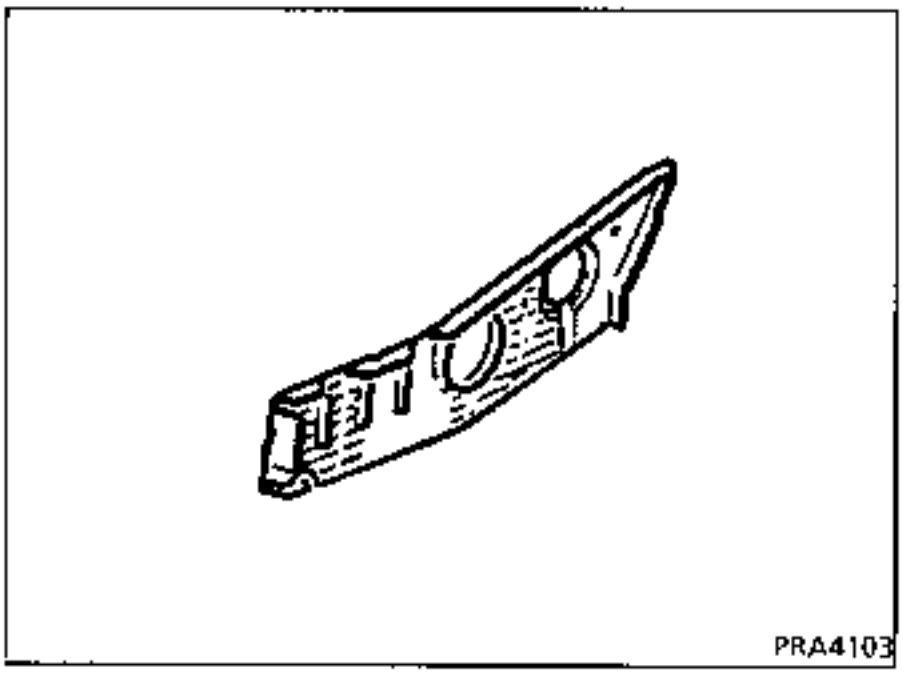


99856-1M

INTRODUCTION

The replacement of this part is a basic operation for a front impact.

COMPOSITION OF PART FROM PARTS DEPARTMENT


PRA4103

Preliminary operations.

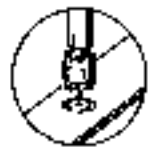
Remove:
- the mudguard,
- the engine undertray,
- the bumper,
- the RH side of the cruise control,
- the washer bottle,
- the LH side horn.

1 JOINT WITH FRONT END CROSS MEMBER CONNECTING PANEL

Thickness of panels concerned (mm)

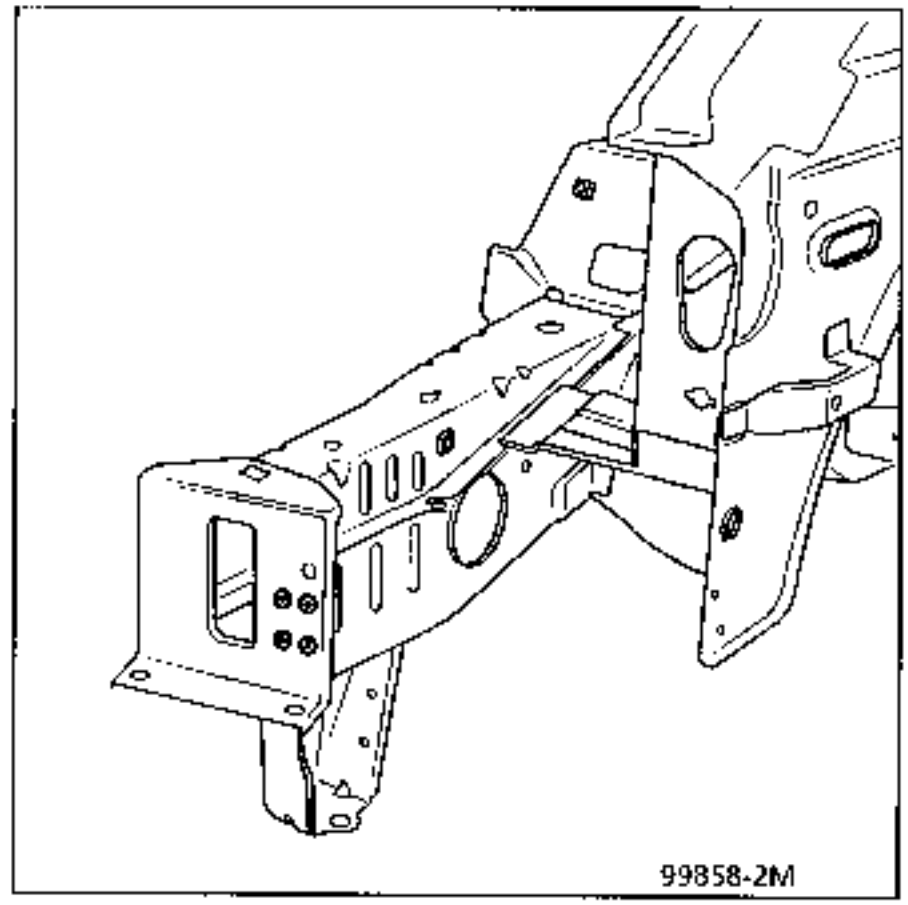
Front side member closure panel	1.2
Front end cross member connecting panel	1.2

Unpicking



4 spot welds on thickness 1.20

Welding


99858-2M

2 JOINT WITH SIDE MEMBER FRONT EXTENSION

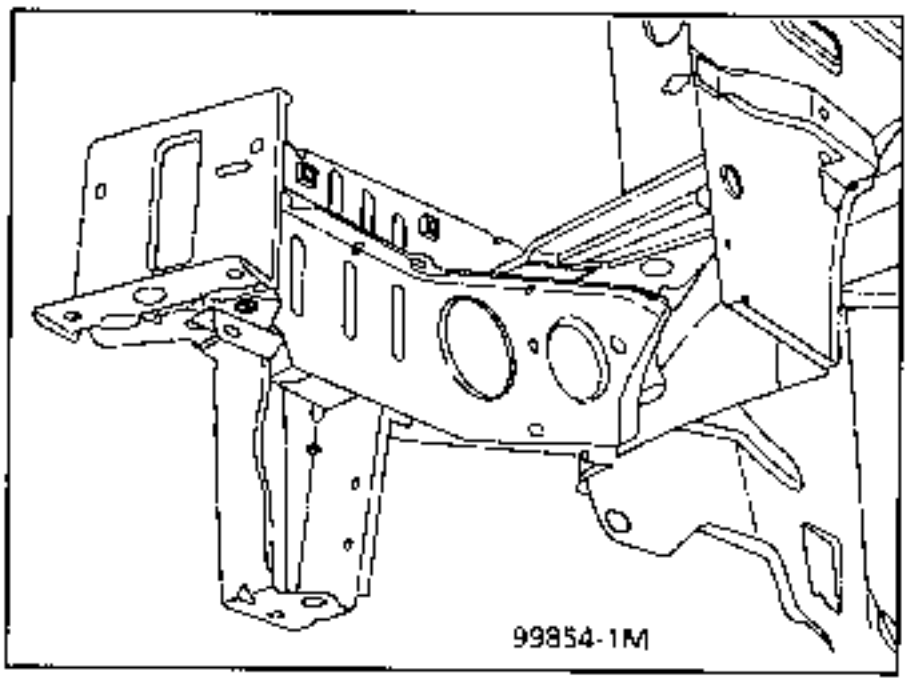
Thickness of panels concerned (mm)

Front side member closure panel	1.20
Side member extension	1.20

Unpicking

1 spot weld on thickness 1.20

Welding

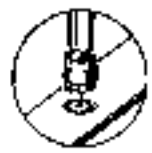


3 JOINT WITH FRONT SIDE MEMBER, FRONT SECTION

Thickness of panels concerned (mm)

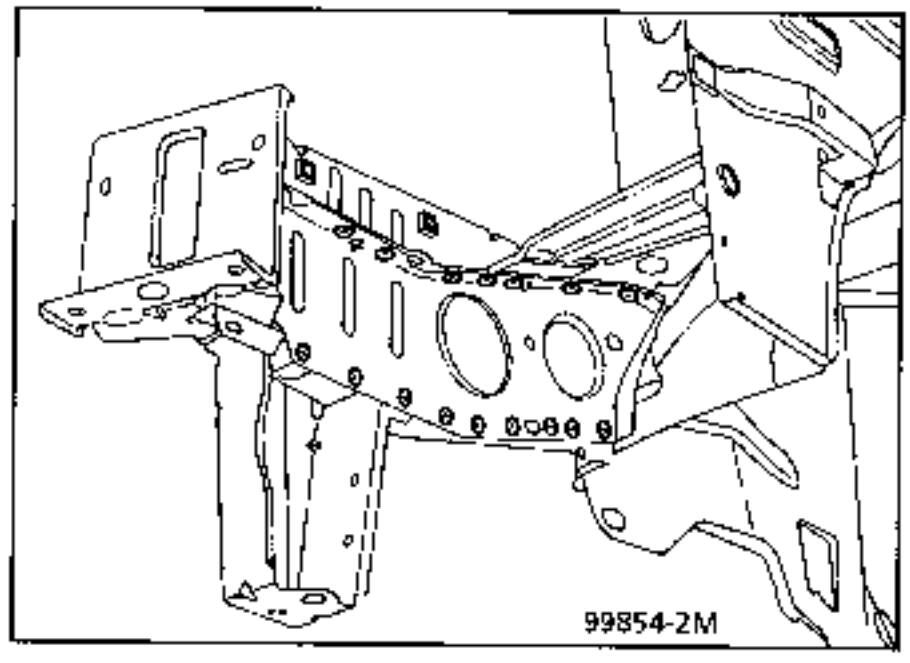
Front side member closure panel	1.20
Front side member, front section	1.50

Unpicking



16 spot welds on thickness 1.20

Welding

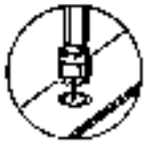


4 JOINT WITH WHEEL ARCH

Thickness of panels concerned (mm)

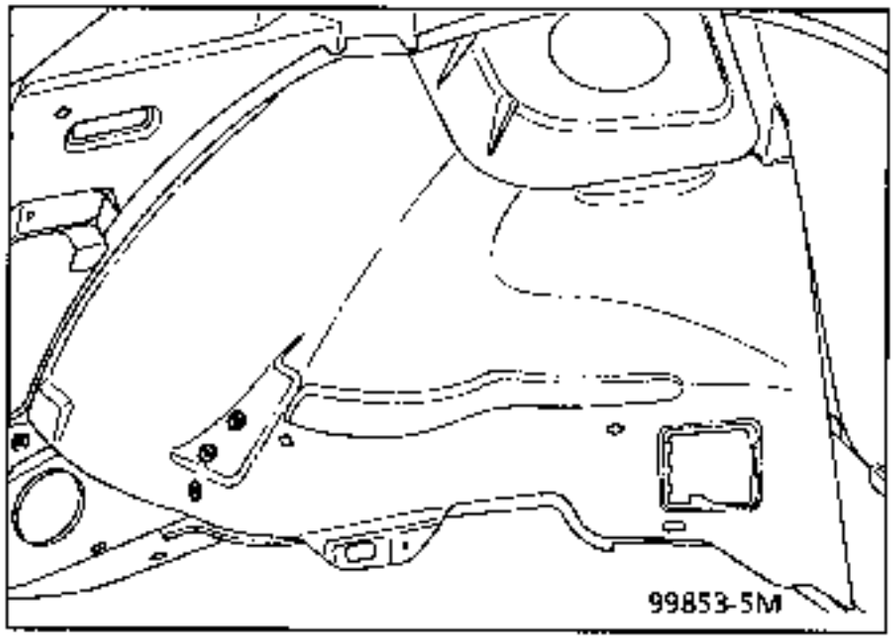
Front side member closure panel	1.20
Wheel arch	*1.50*

Unpicking



3 spot welds on thickness 1.20

Welding



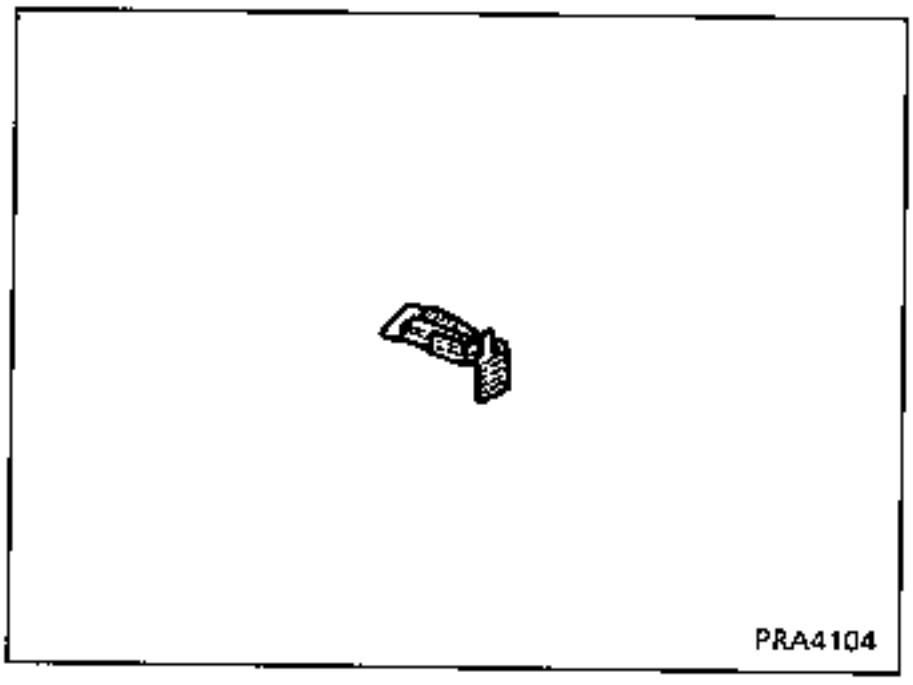
NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation of the replacement of the cowl side panel.

The right and left hand parts are not symmetrical.

COMPOSITION OF PART FROM PARTS DEPARTMENT



PRA4104

Preliminary operations.

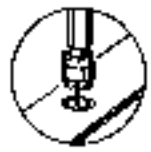
Remove:
- the mudguard,
- the engine undertray,
- the bumper,
- part of the wiring loom.

1 JOINT WITH SIDE MEMBER EXTENSION

Thickness of panels concerned (mm)

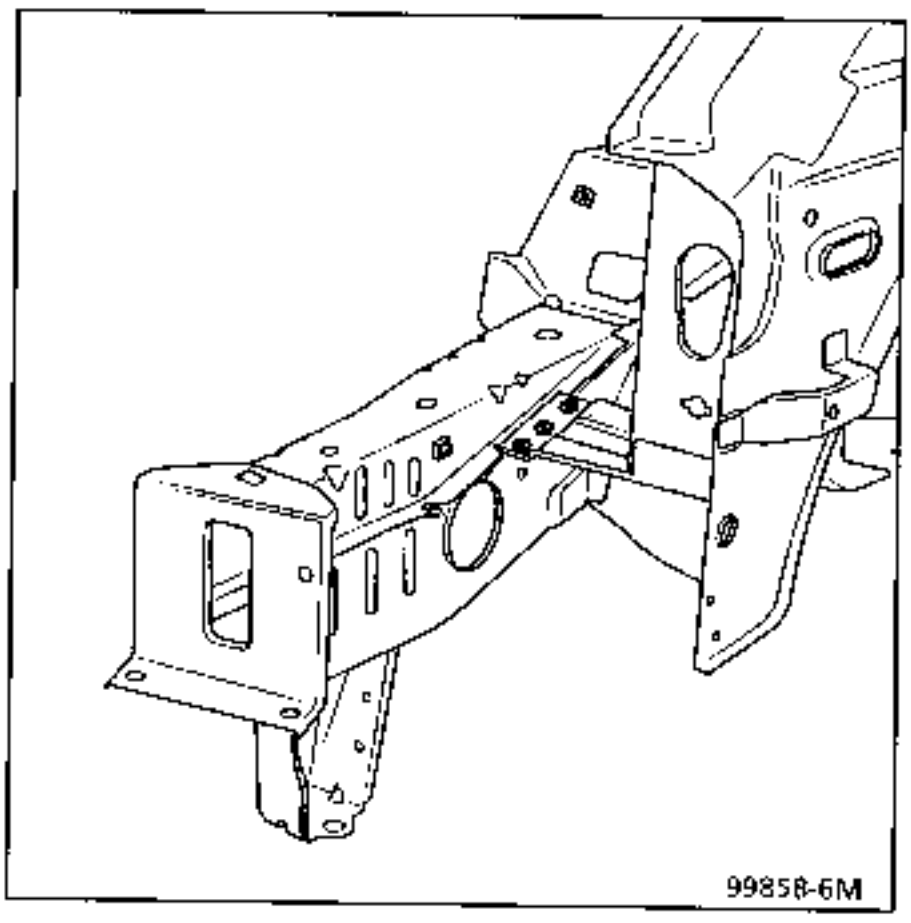
Side cross member	1.20
Side member extension	1.20

Unpicking



3 spot welds on thickness 1.20

Welding



99858-6M

2 JOINT WITH MUDGUARD SKIRT LEG

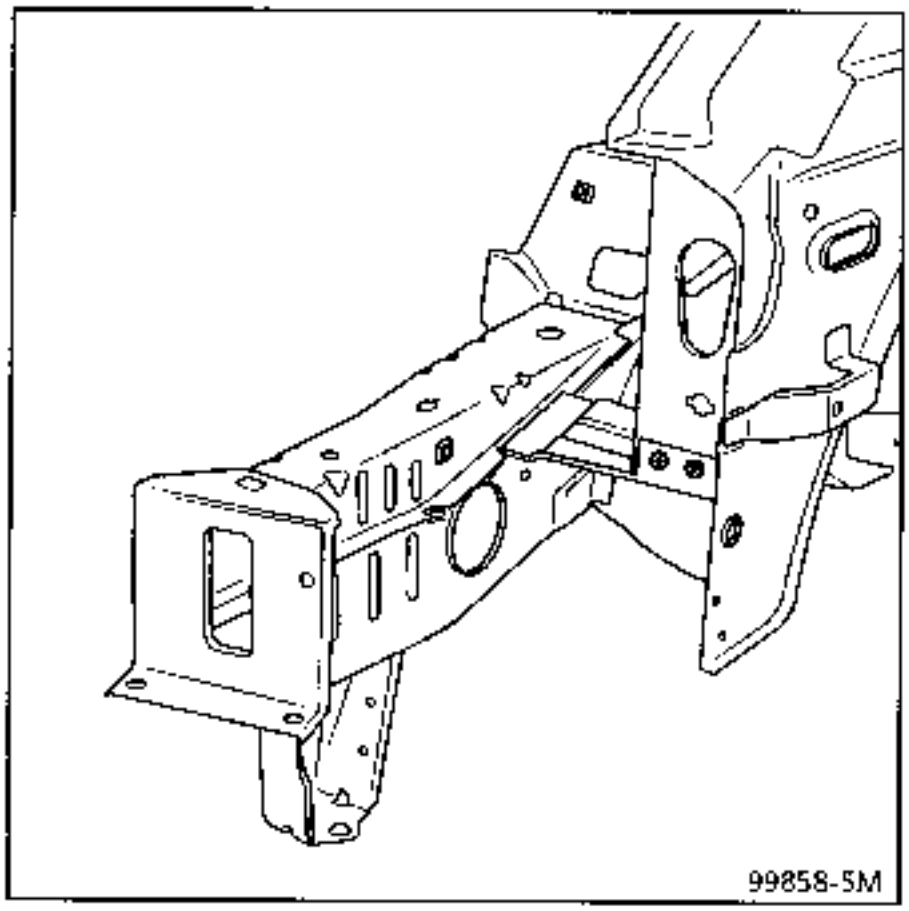
Thickness of panels concerned (mm)

Side cross member	1.20
Mudguard skirt leg	1.20

Unpicking

2 spot welds on thickness 1.20

Welding

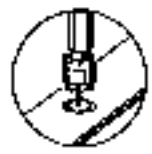


3 JOINT WITH FRONT VALANCE PANEL

Thickness of panels concerned (mm)

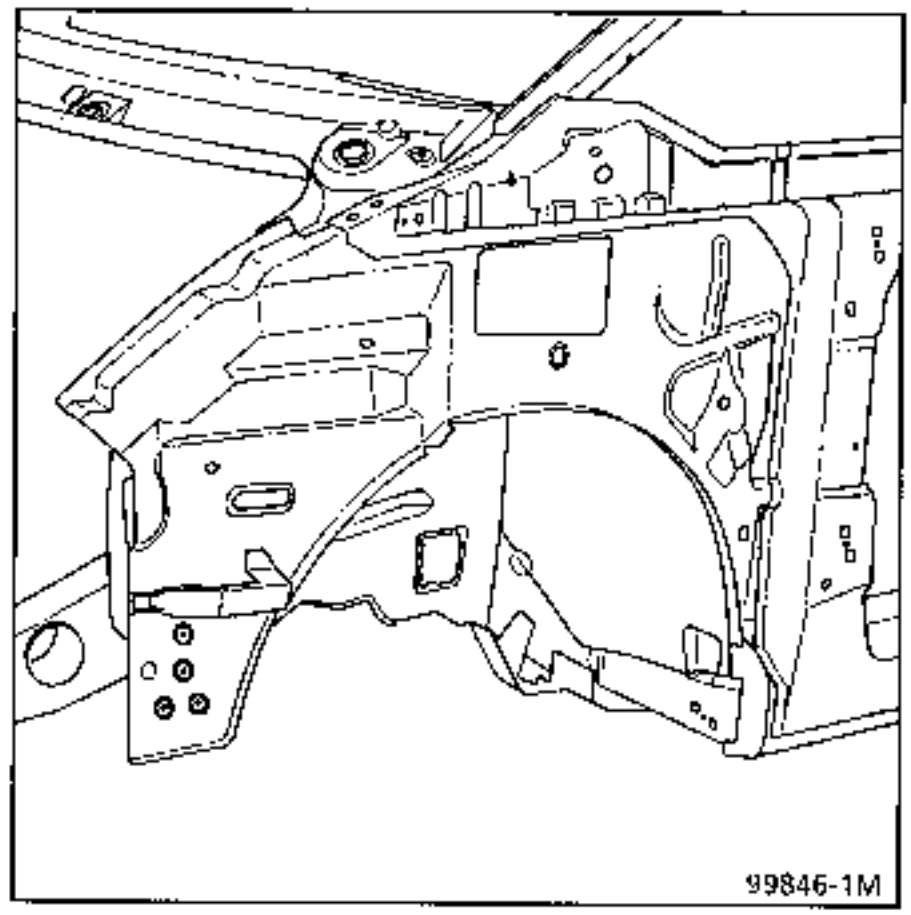
Side cross member	1.20
Front valance panel	1.20

Unpicking



4 spot welds on thickness 1.20

Welding



NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

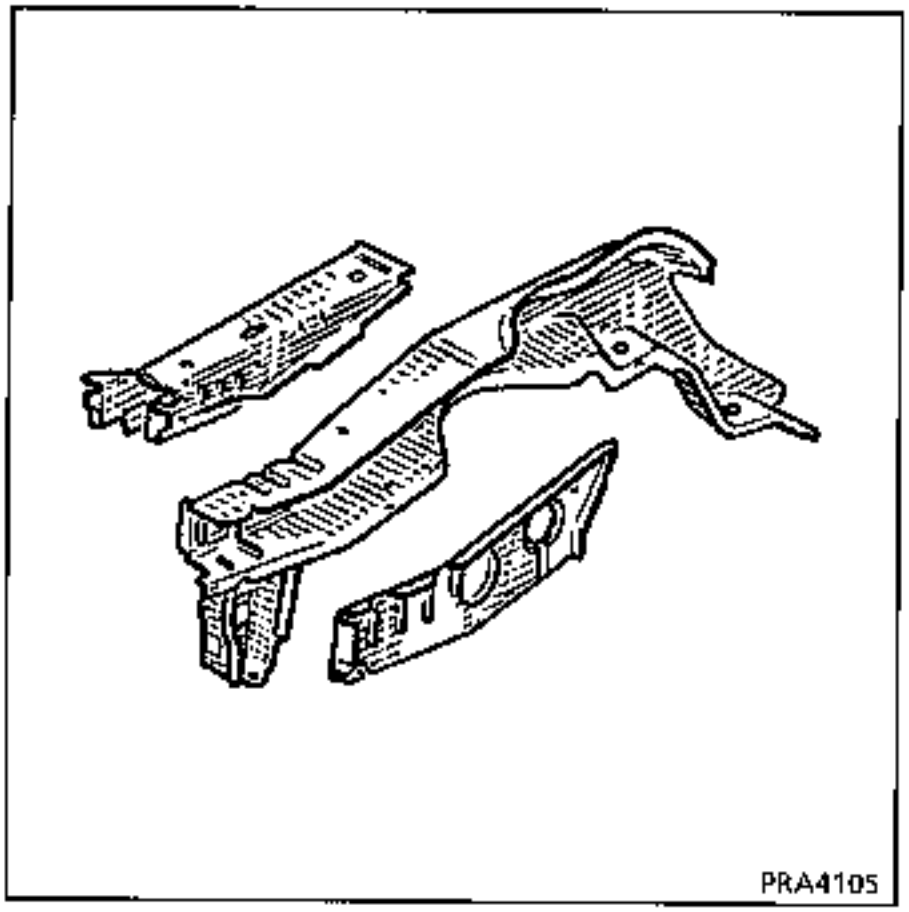
Complementary operations to the front end cross member reinforcement.

The replacement of this part also requires the side member closure panel and the side member extension to be replaced, which should be ordered separately.

For additional information, refer to the sections concerned.

This operation must be carried out on the repair bench.

COMPOSITION OF PART FROM PARTS DEPARTMENT



PRA4105

Preliminary operations.

Remove :
- the mudguard,
- the engine undertray,
- the bumper,
- the indicators,
- the radiator grille bar,
- the headlight carrier panel,
- the front end cross member,
- the radiator cross member and fan assembly,
- the battery,
- the battery tray,
- the side member extension.

1 JOINT WITH FRONT END CROSS MEMBER CONNECTING PANEL

REMINDER : refer to operations 41-A-1

2 JOINT WITH FRONT SIDE MEMBER CLOSURE PANEL

REMINDER : refer to operations 41-C-1 41-C-2 41-C-3 41-C-4 41-D-1

3 JOINT WITH BATTERY TRAY

REMINDER : refer to operations 41-G-1 41-G-2 41-G-3 41-G-4

4 JOINT WITH SIDE MEMBER EXTENSION

REMINDER : refer to operations 41-F-4

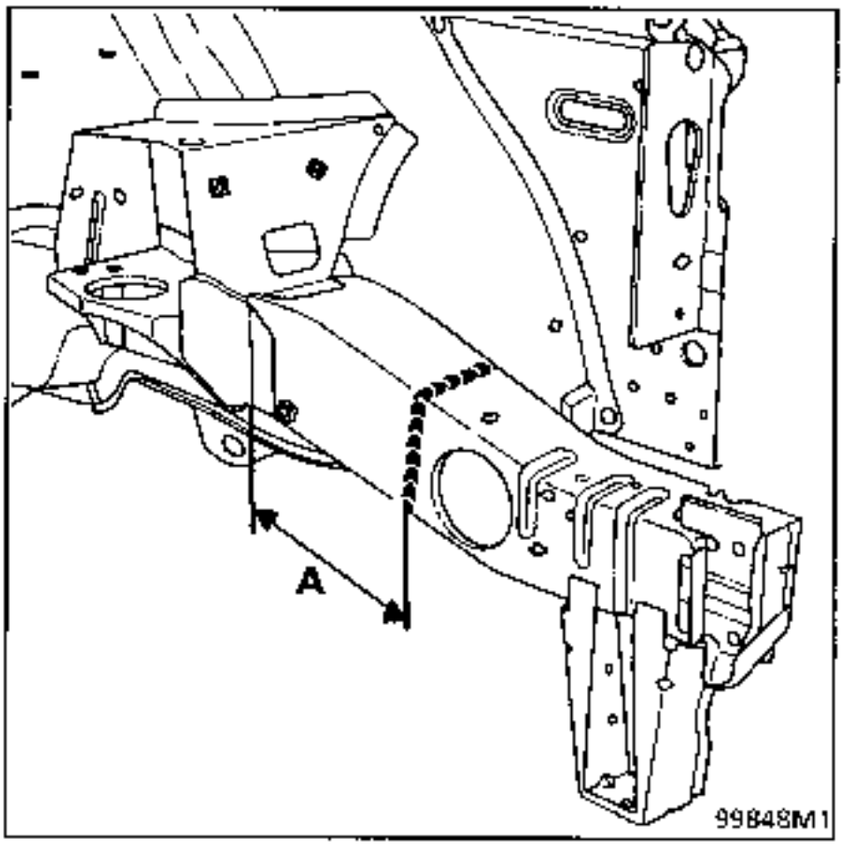
5 PART SECTION

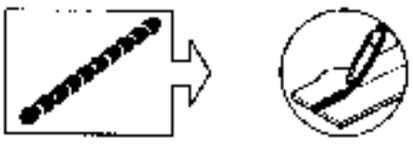
Thickness of panels concerned (mm)

Front side member, front part section 1.5

340 mm on thickness 1.5

Welding





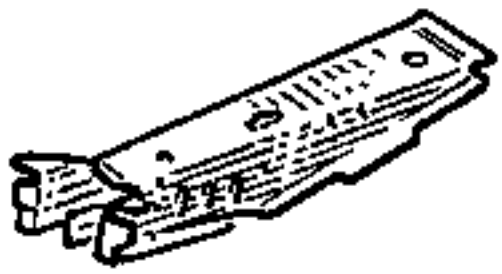
NOTE:
Cut (A) should be made 145 mm from the lower gearbox mounting.

NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of the front side member, front part section.

COMPOSITION OF PART FROM PARTS DEPARTMENT



PRA4106

Preliminary operations.

Remove:
- the mudguard,
- the engine undertray,
- the bumper,
- the indicators,
- the radiator grille bar,
- the headlight carrier panel,
- the battery,
- the battery tray,
- part of the wiring loom.

1 JOINT WITH FRONT END CROSS MEMBER CONNECTING PANEL

REMINDER : refer to operations 41-A-1

2 JOINT WITH BATTERY TRAY

REMINDER : refer to operations 41-G-1 41-G-2 41-G-3 41-G-4

3 JOINT WITH FRONT END SIDE CROSS MEMBER

REMINDER : refer to operations 41-D-1

4 JOINT WITH FRONT SIDE MEMBER, FRONT PART SECTION

Thickness of panels concerned (mm)

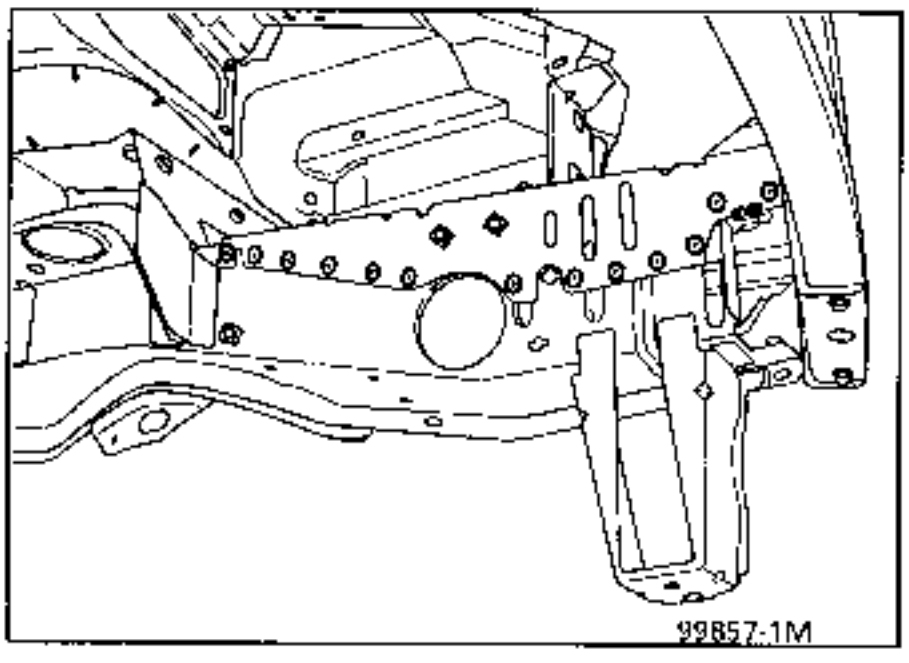
Side member extension	1.2
Front side member, front part section	*1.5*

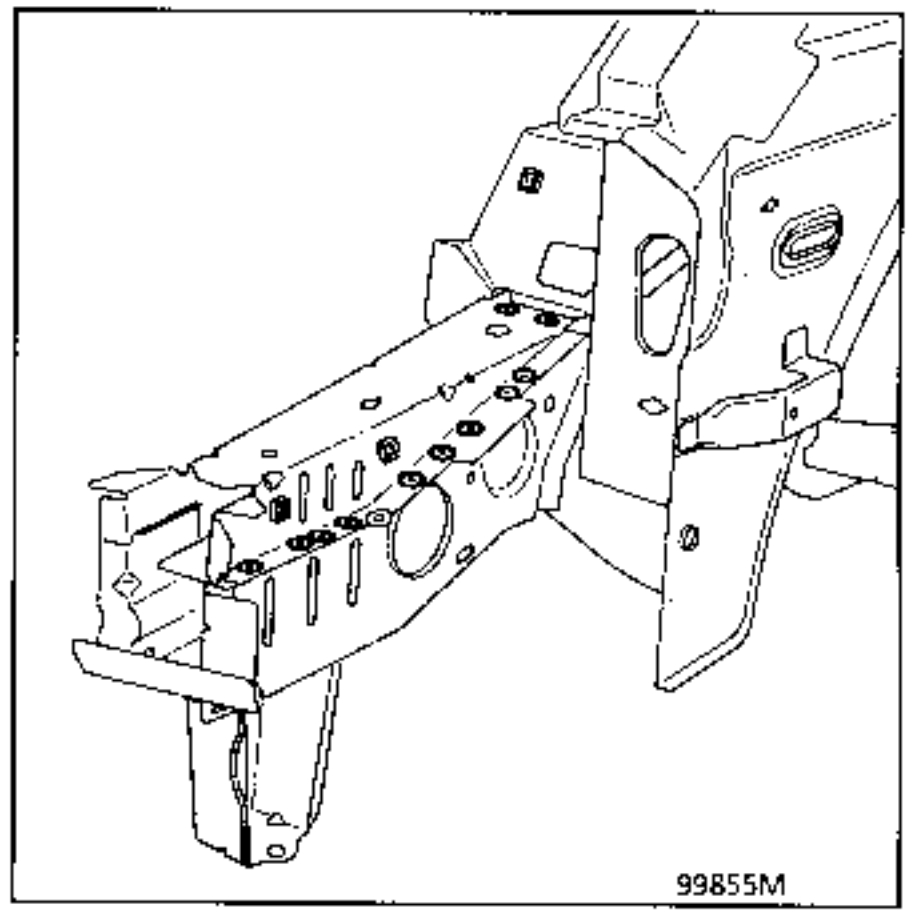
Unpicking

24 spot welds on thickness 1.20

+ 1 MAG fillet of 30 mm

Welding



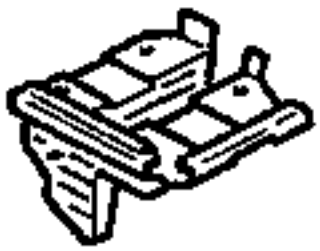


NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of the front side member, front part section or the front half unit.

COMPOSITION OF PART FROM PARTS DEPARTMENT



PRA4107

1 JOINT WITH FRONT SIDE MEMBER, FRONT PART SECTION

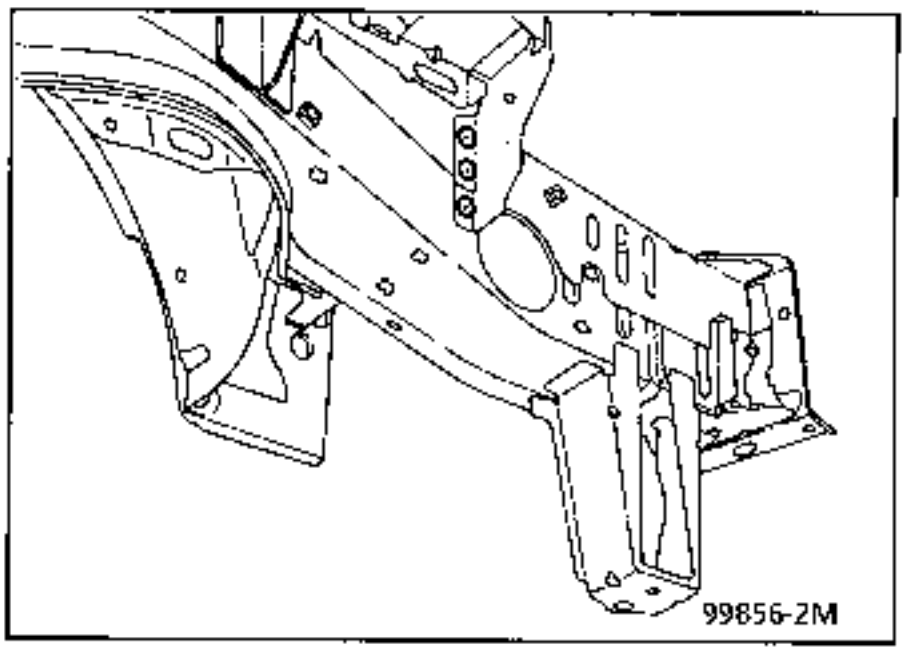
Thickness of panels concerned (mm)

Battery tray	1.2
Front side member, front part section	1.5

Unpicking

3 spot welds on thickness 1.50

Welding



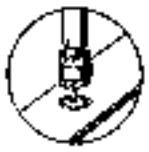
99856-2M

2 JOINT WITH SIDE MEMBER EXTENSION

Thickness of panels concerned (mm)

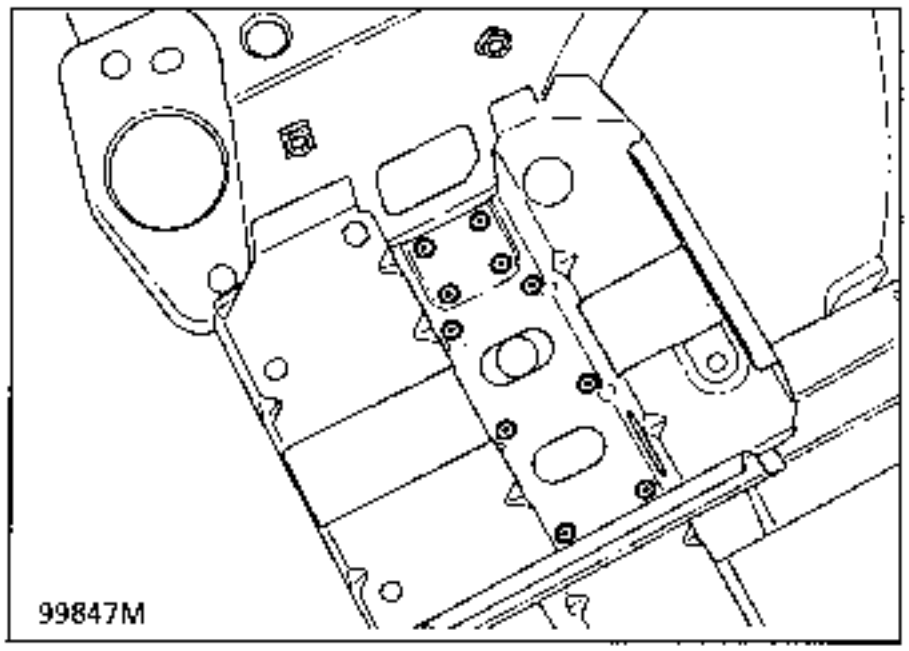
Battery tray	1.2
Side member extension	1.2

Unpicking



10 spot welds on thickness 1.20

Welding



3 JOINT WITH UPPER GEARBOX MOUNTING

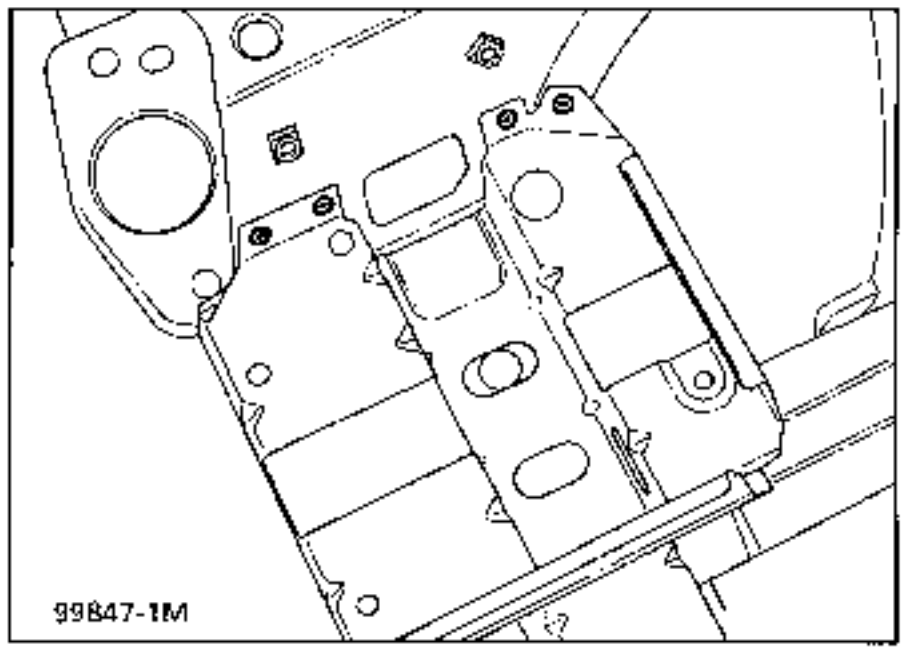
Thickness of panels concerned (mm)

Battery tray	1.2
Upper gearbox mounting	1.2

Unpicking

4 spot welds on thickness 1.20

Welding



4 JOINT WITH LOWER GEARBOX MOUNTING

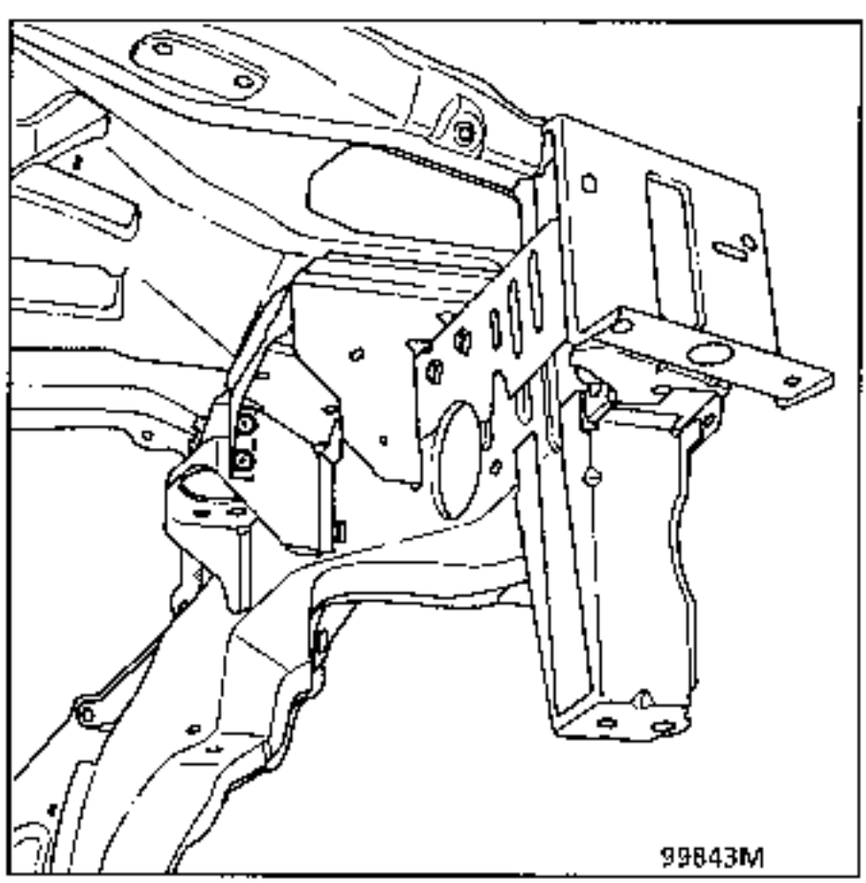
Thickness of panels concerned (mm)

Battery tray	1.2
lower gearbox mounting	1.2

Unpicking

2 spot welds on thickness 1.20

Welding



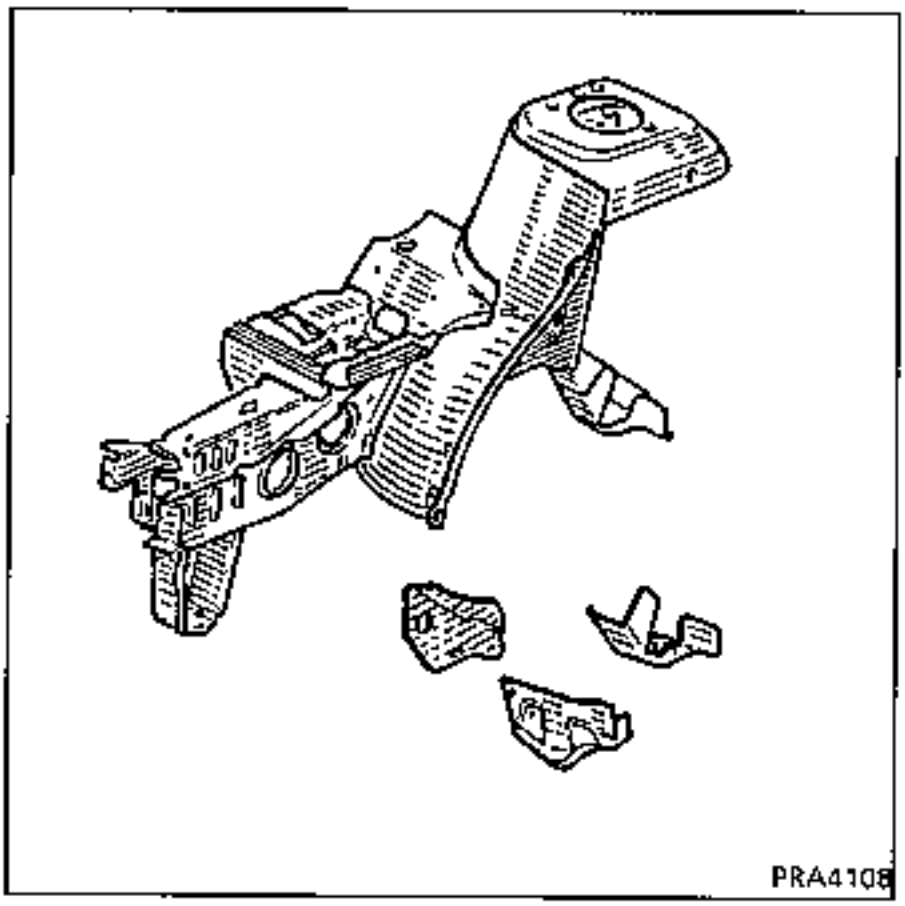
NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a basic operation for a frontal impact which requires the replacement of the cowl side panel part section and its upper reinforcement, the front end side cross member of the partial bulkhead.

The repair operation should be carried out on the repair bench.
These parts must be ordered separately.

COMPOSITION OF PART FROM PARTS DEPARTMENT



Preliminary operations.

Remove:
- the bumper,
- the front end panel,
- the radiator cross member,
- the front end cross member,
- the bonnet,
- the front wing,
- the scuttle panel,
- the front axle assembly,
- the engine and gearbox,
- the battery,
- the fuse box,
- the wiring,
- the computer depending on side,
- the cooling unit,
- the upper section of the dashboard (only),
- the carpet.

1 JOINT WITH IMPACT REINFORCEMENT REAR LEFT HAND MOUNTING FOR SUB-FRAME - INNER AND OUTER

Thickness of panels concerned (mm)

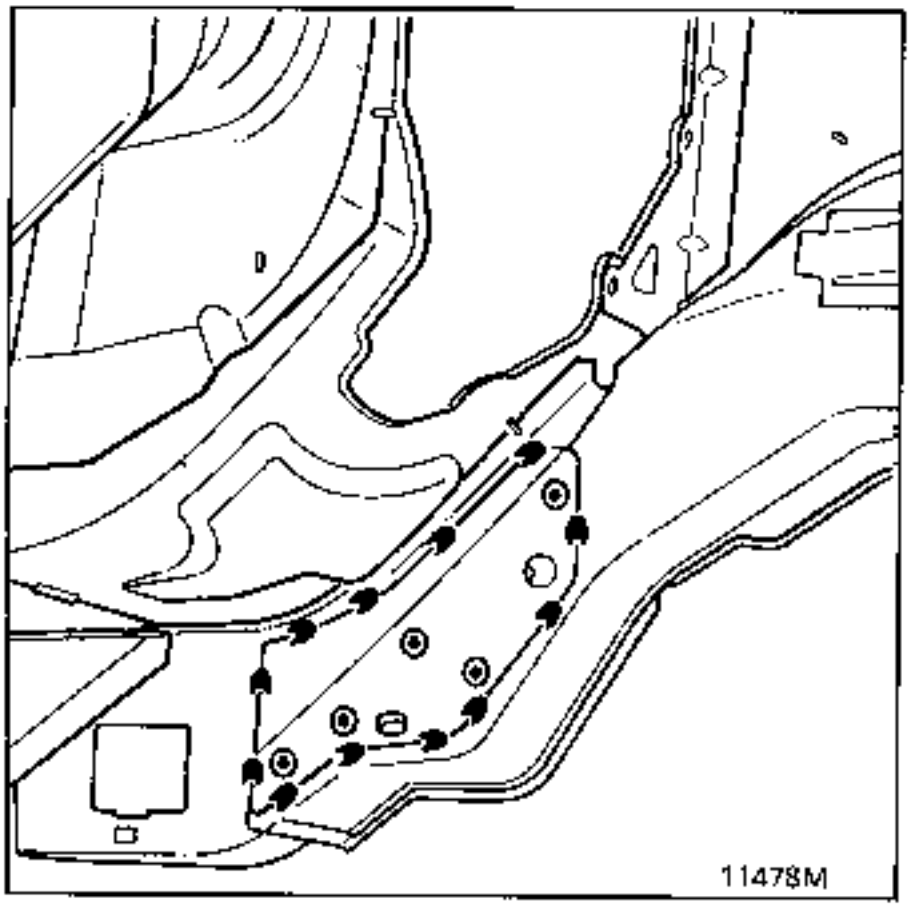
Inner impact reinforcement	1.5
Outer impact reinforcement	1.5
Sub-frame rear mounting reinforcement	2.5
Wheel arch	1.5

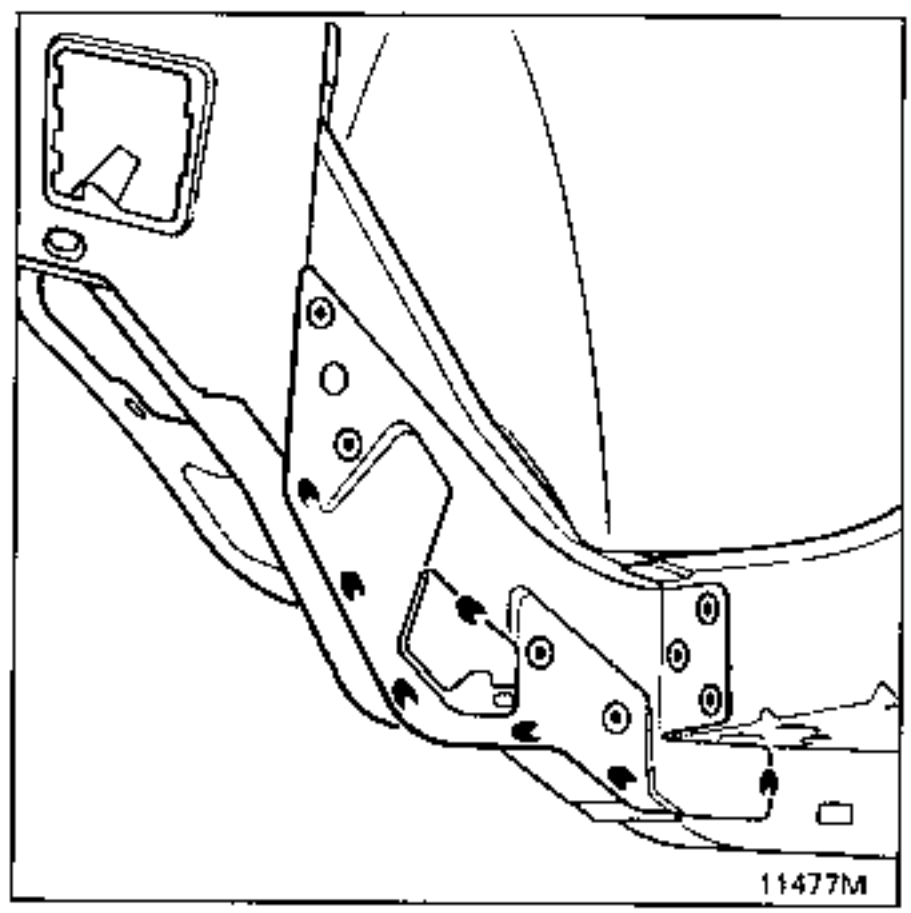
Unpicking

11 spot welds on thickness 1.50

18 MAG fillets of 30 mm

Welding





2 JOINT WITH FRONT SIDE MEMBER REAR SECTION

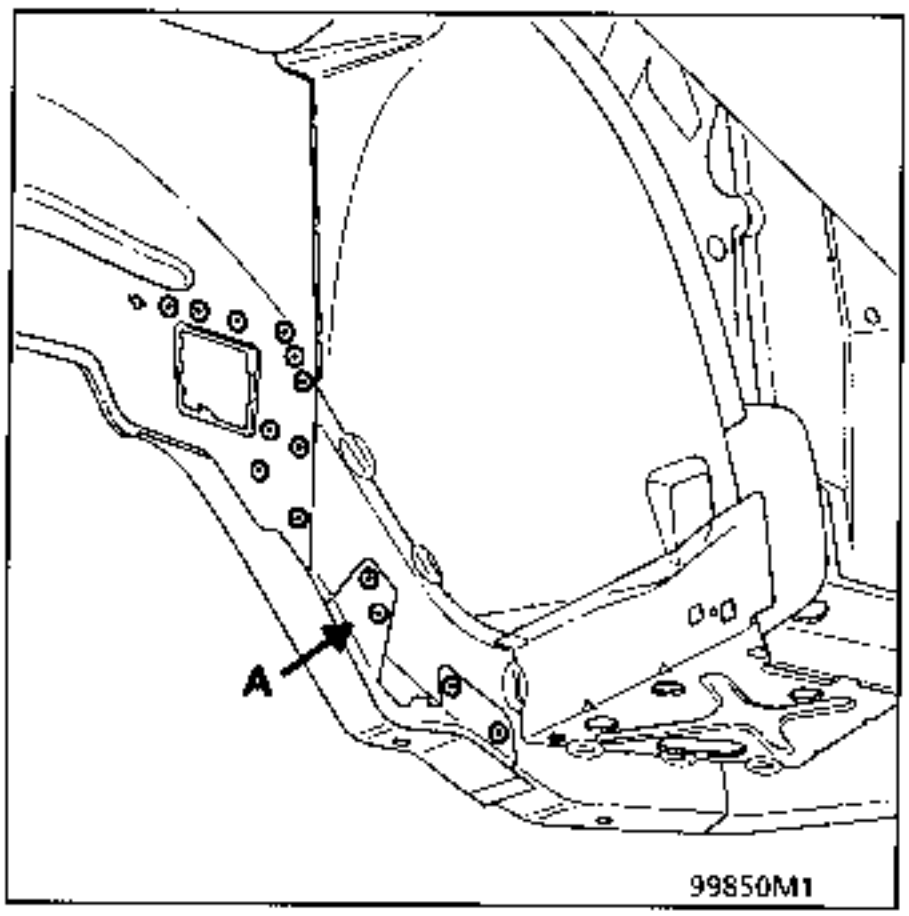
Thickness of panels concerned (mm)

Front side member, front section	1.5
Front side member, rear section	1.5
Rear sub-frame mounting reinforcement	2.5
Wheel arch	1.5

Unpicking

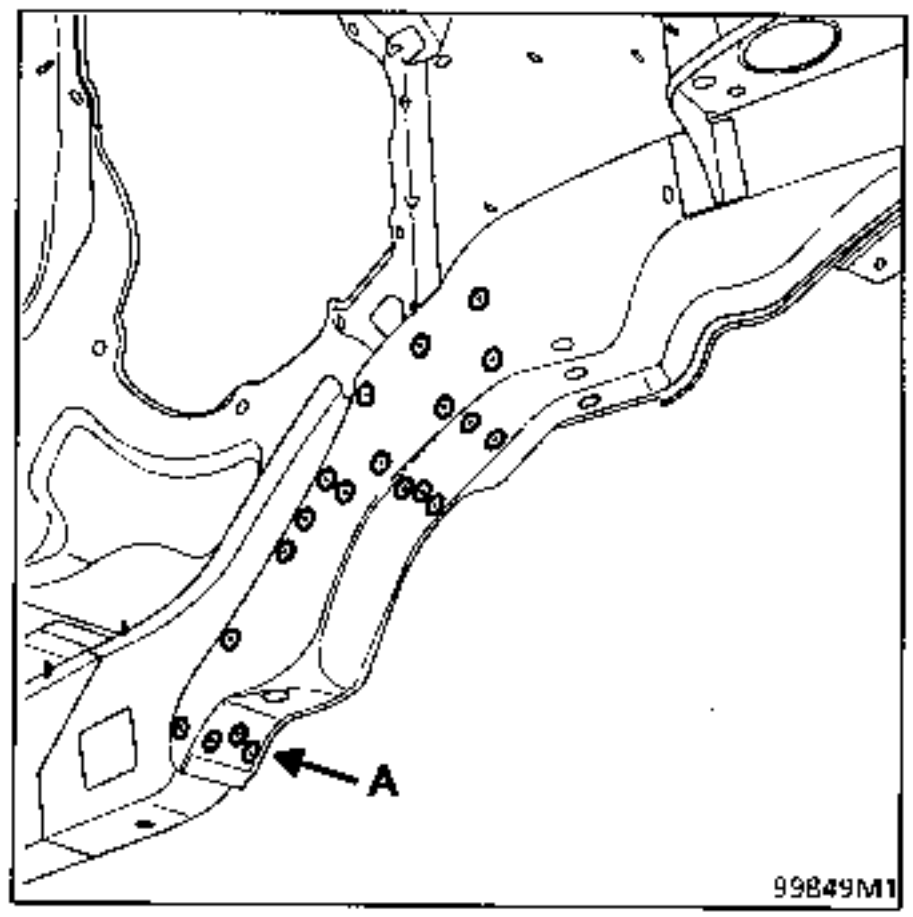
27 spot welds on thickness 1.50
3 spot welds on 2 thicknesses : 1.5 + 2.5
4 spot welds on thickness 2.5

Welding



IMPORTANT:
Fit the half unit.

NOTE :
Part (A) must be offset and welded, after refitting and positioning the front half unit.



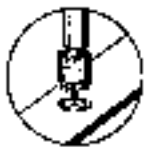
NOTE :
At (A), 3 spot welds on 2 thicknesses: 1.5 + 2.5

3 JOINT WITH BULKHEAD CONNECTING BRACKET

Thickness of panels concerned (mm)

Wheel arch	1.5
Bulkhead connecting bracket	1.0

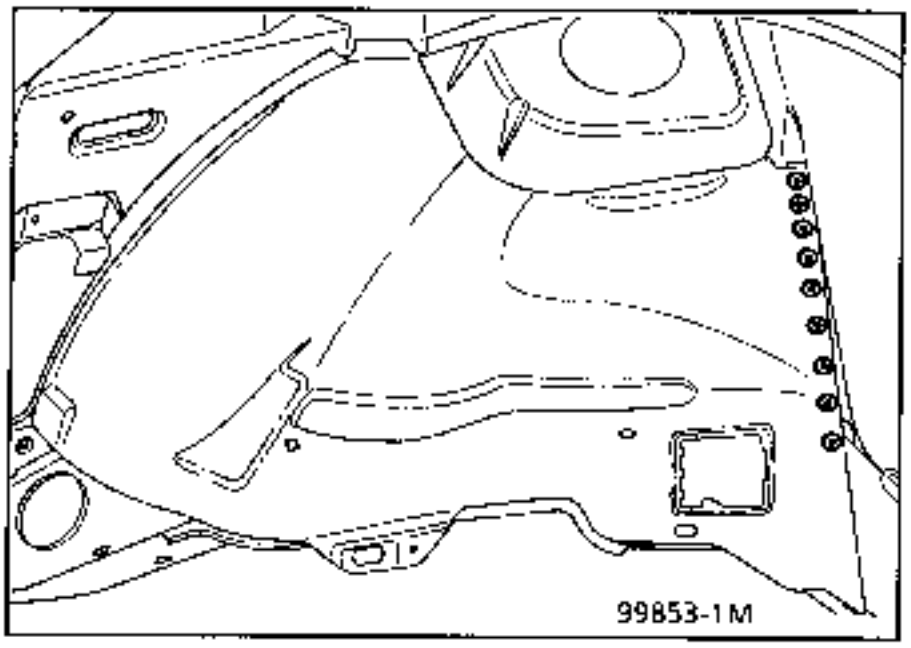
Unpicking

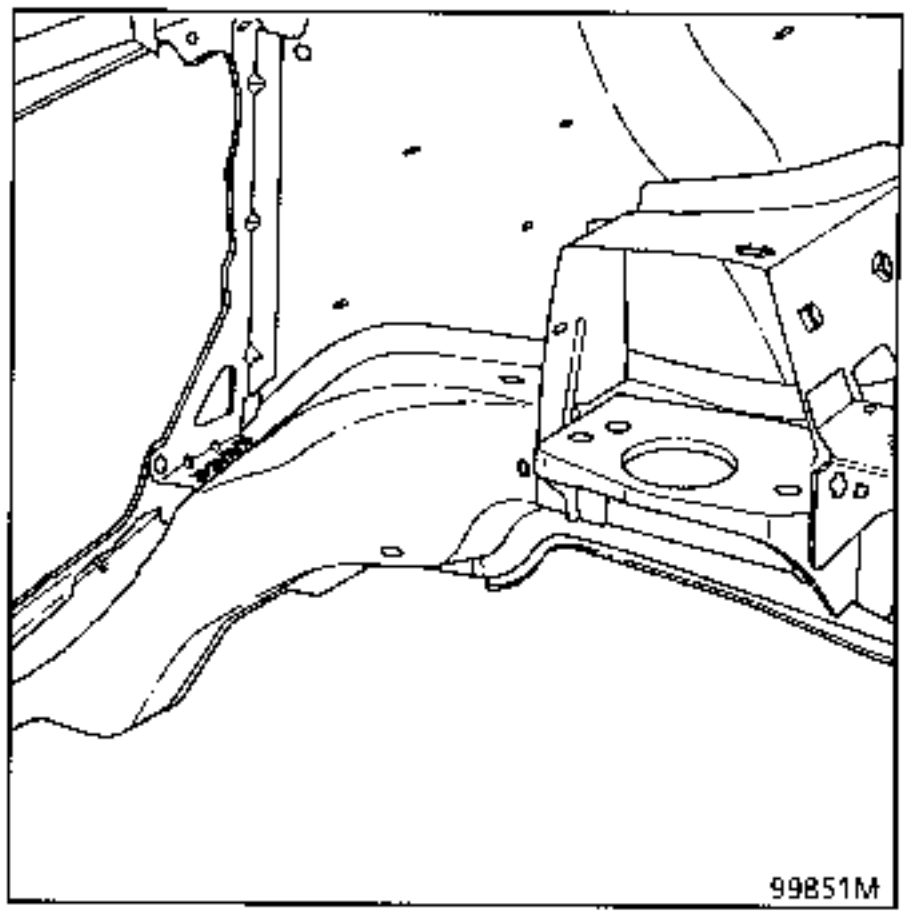


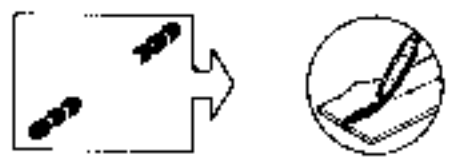
9 spot welds on thickness 1.5

+1 MAG fillet of 30 mm

Welding







4 JOINT WITH PLENUM CHAMBER

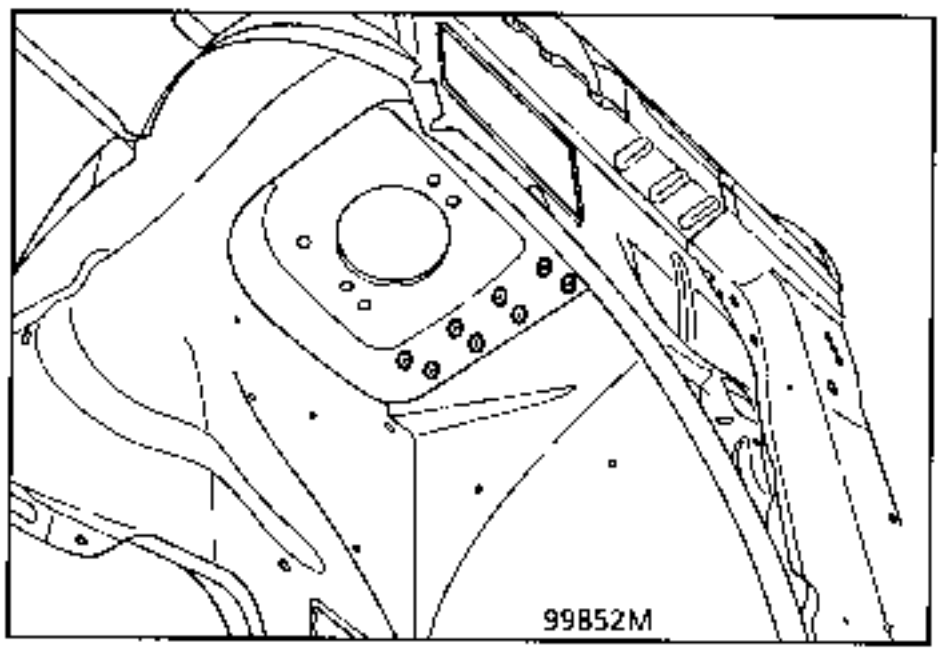
Thickness of panels concerned (mm)

Shock absorber upper cup	2.0
Plenum chamber	1.0
Air duct	1.0

Unpicking

14 spot welds on thickness 2

Welding



IMPORTANT : Welding of the cups

Remove:
- the front scuttle panel grille,
- the soundproofing from the upper air duct.

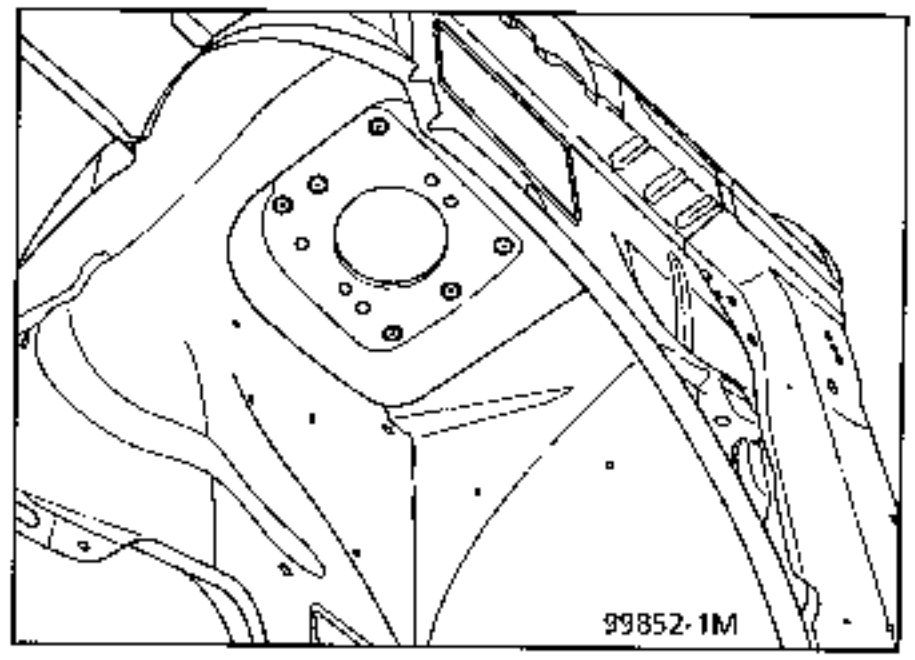
Slacken the two plastic nuts on the vertical soundproofing.

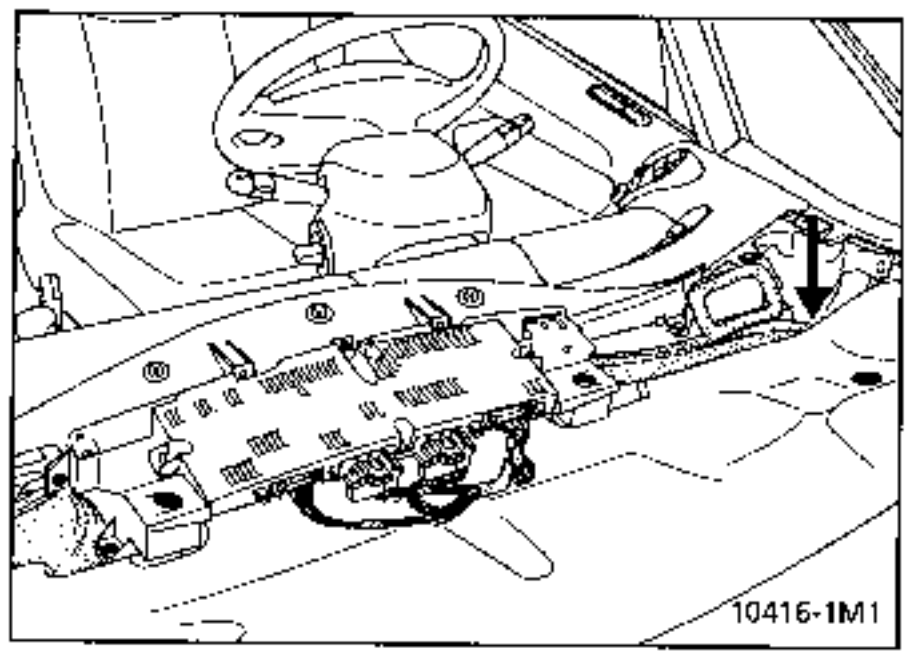
Flatten the air duct for the fan unit and the air conditioning unit.

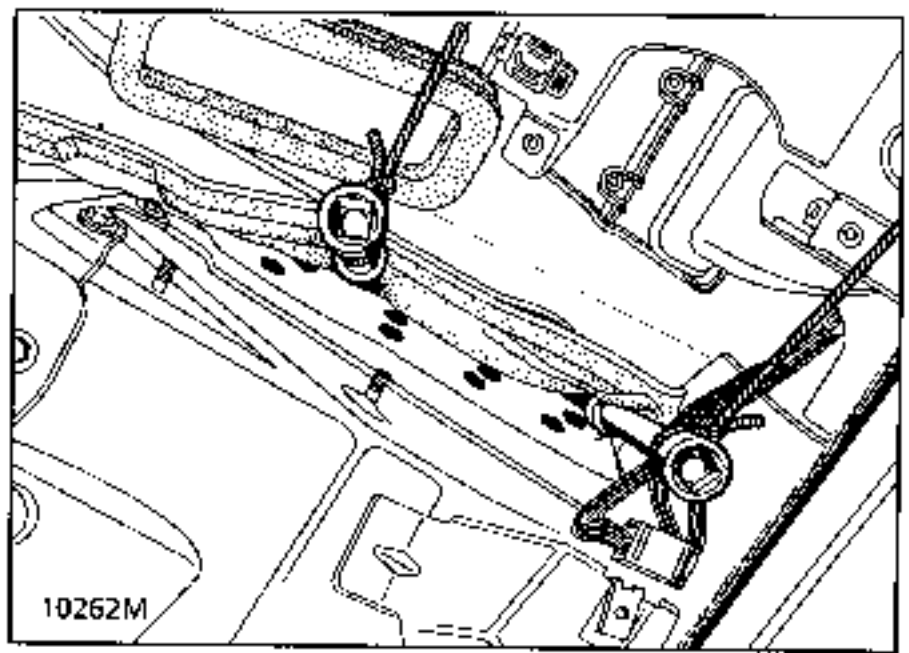
Separate the soundproofing and hold it to one side using extensions and sockets to avoid the 8 welds burning it.

IMPORTANT: move the wiring in the corner of the cowl side panel - bulkhead.

Welding





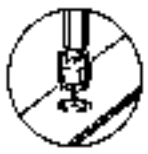


5 JOINT WITH MUDGUARD SKIRT

Thickness of panels concerned (mm)

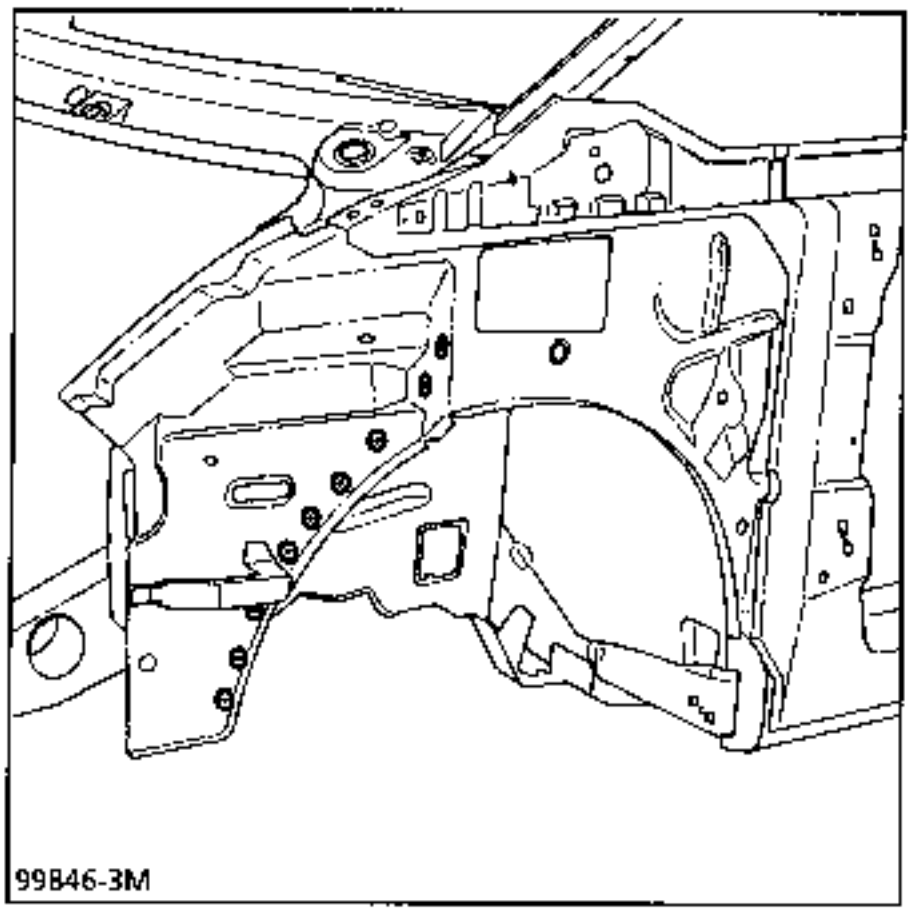
Wheel arch	1.5
Front valance panel	1.0

Unpicking



9 spot welds on thickness 1.5

Welding

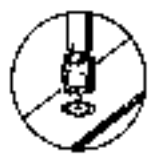


6 JOINT WITH MUDGUARD SKIRT TIE ROD

Thickness of panels concerned (mm)

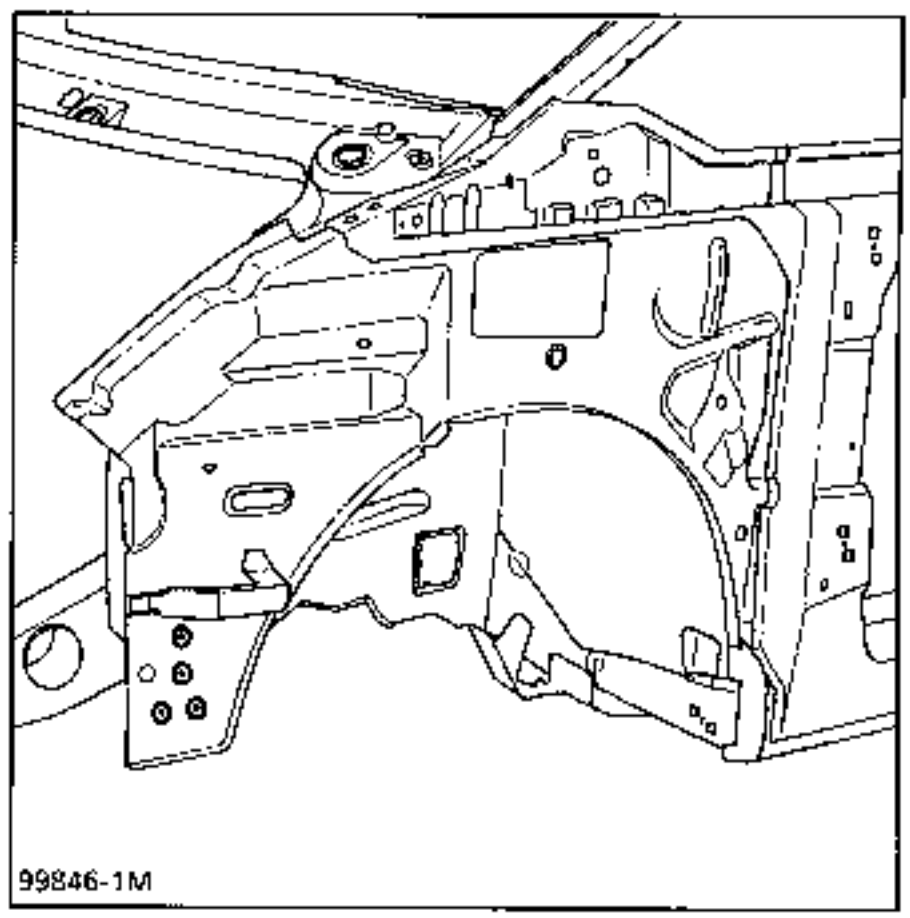
Front valance panel	1.0
Mudguard skirt tie rod	1.2

Unpicking



4 spot welds on thickness 1.0

Welding



7 JOINT WITH CUP

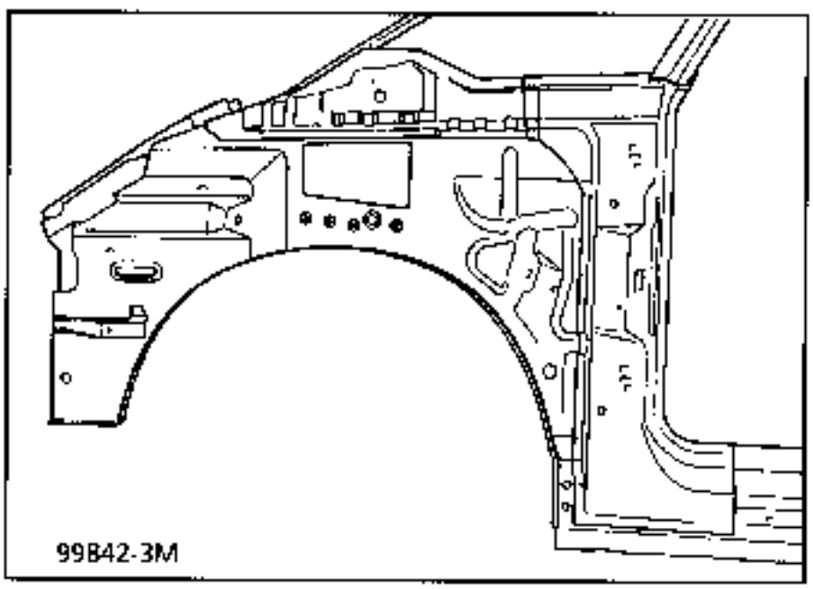
Thickness of panels concerned (mm)

Cup	2.0
Mudguard skirt	1.0

Unpicking

4 spot welds on thickness 2.0

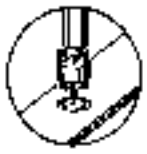
Welding



8 JOINT WITH FRONT END CROSS MEMBER CONNECTING PANEL

REMINDER : **refer to operations** 41-A-1.

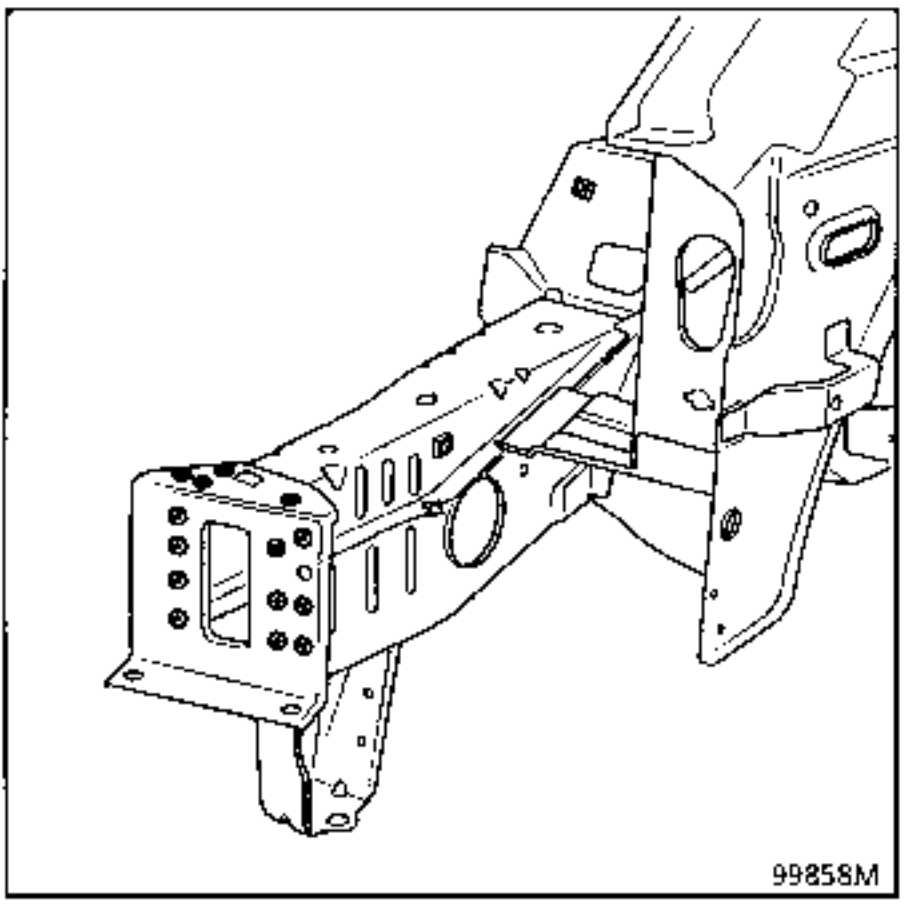
Unpicking



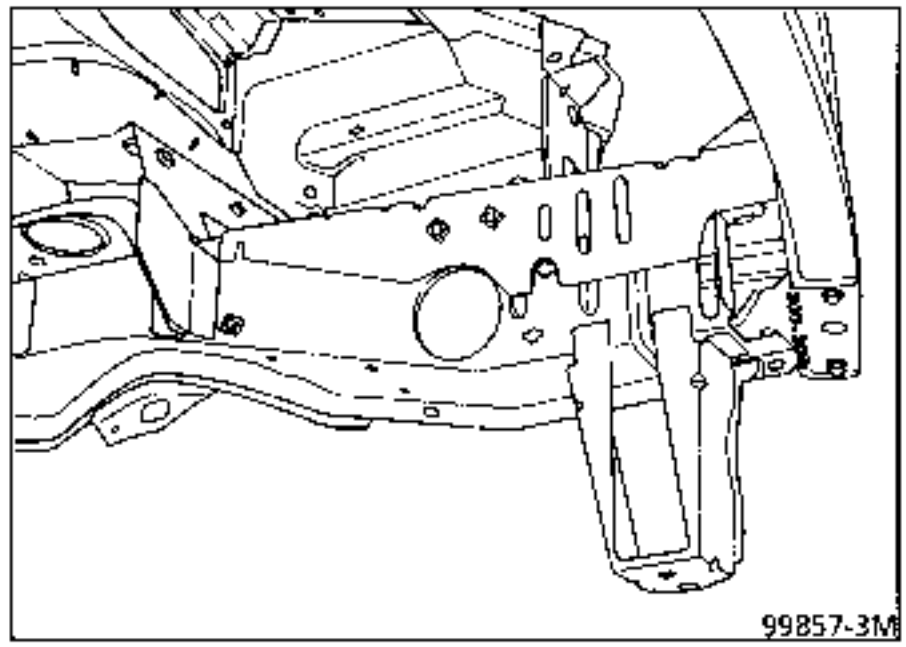
14 spot welds on thickness 1.2

+2 MAG fillets of 25mm

Welding



Welding

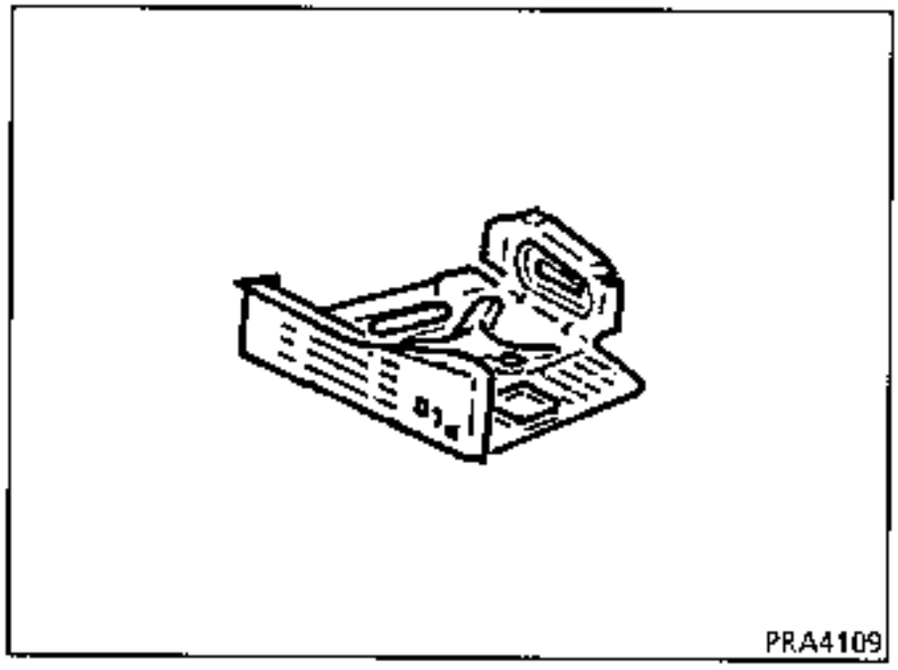


NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of the front pillar for a side impact.

COMPOSITION OF PART FROM PARTS DEPARTMENT



Preliminary operations.

Remove:
- the tripod,
- the soundproofing,
- the wiring from the areas to be welded.

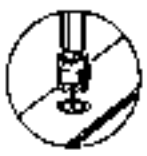
1 JOINT WITH FRONT SIDE MEMBER, REAR SECTION

Thickness of panels concerned (mm)

Jacking point mounting cross member	1.0
Front side member, front section	1.5

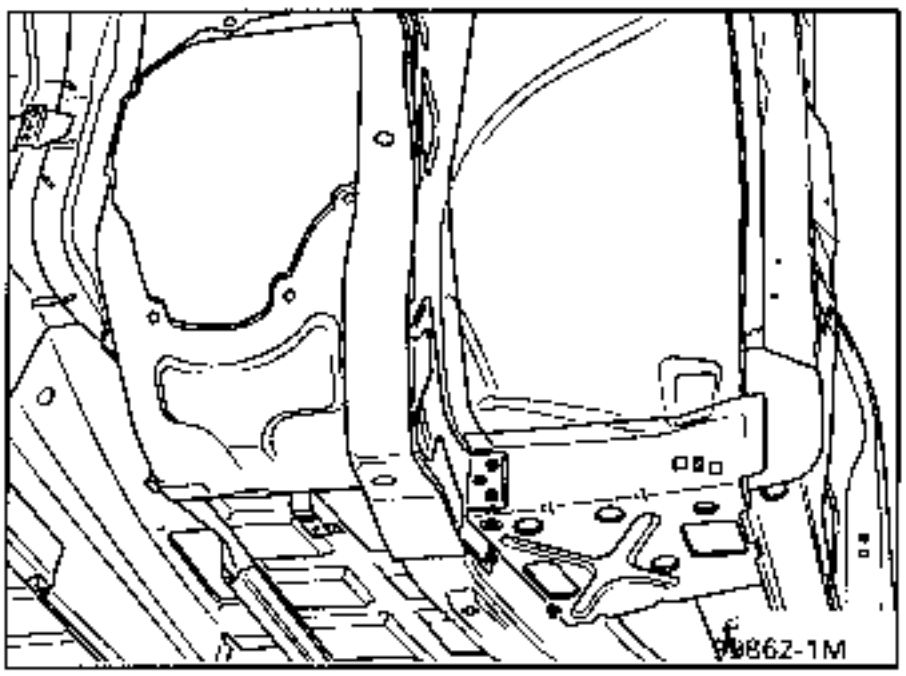
Unpicking

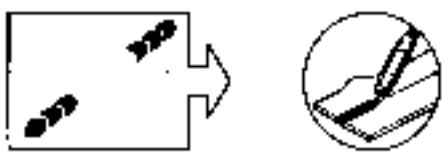
2 MAG fillets of 30mm

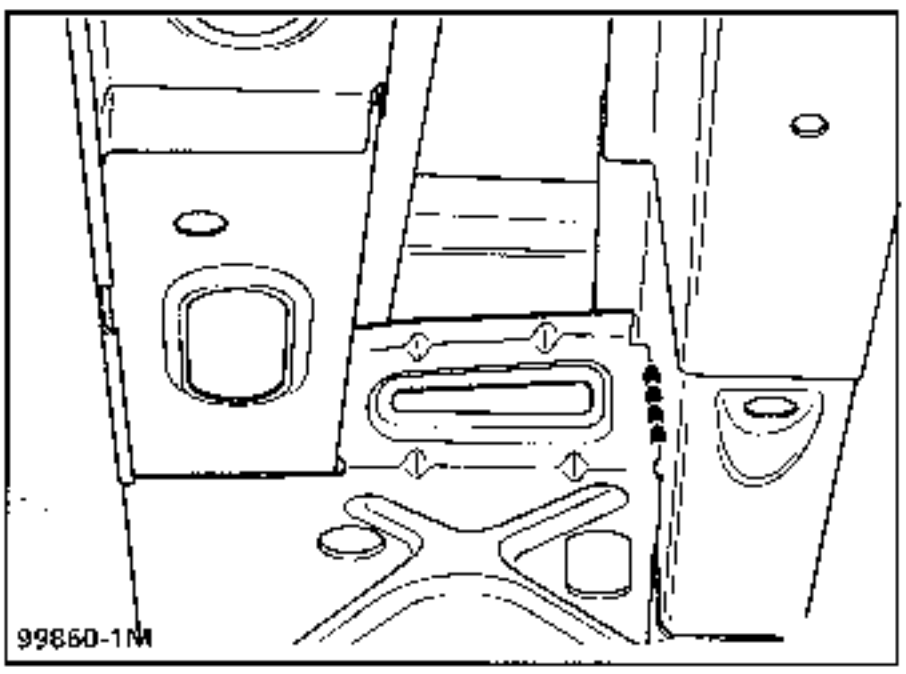


3 spot welds on thickness 0.7 mm

Welding







2 JOINT WITH VALANCE PANEL, FRONT SECTION

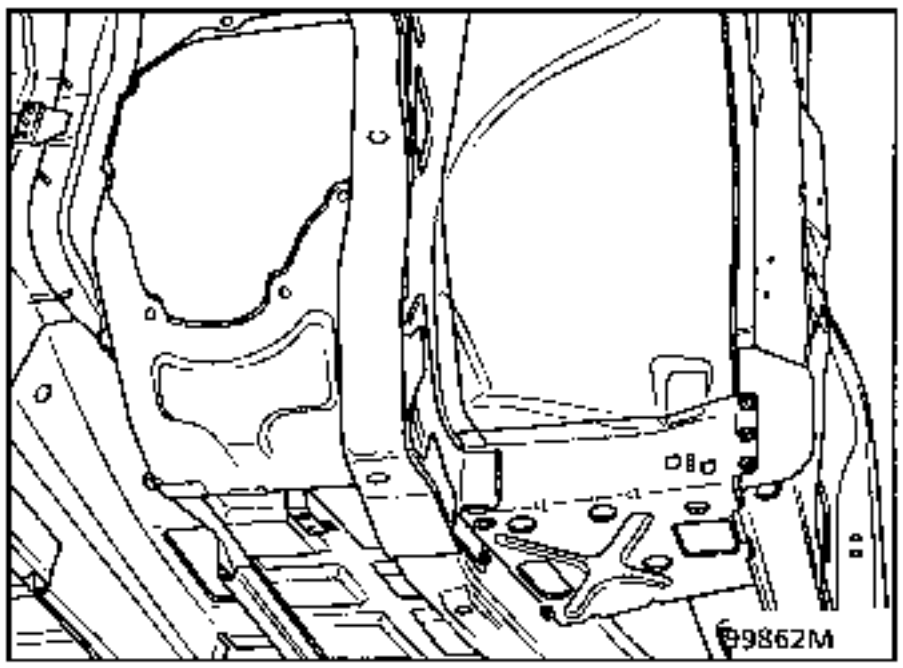
Thickness of panels concerned (mm)

Jacking point mounting cross member	1.0
Valance panel	0.7

Unpicking

3 spot welds on thickness 0.7 mm

Welding



3 JOINT WITH BULKHEAD

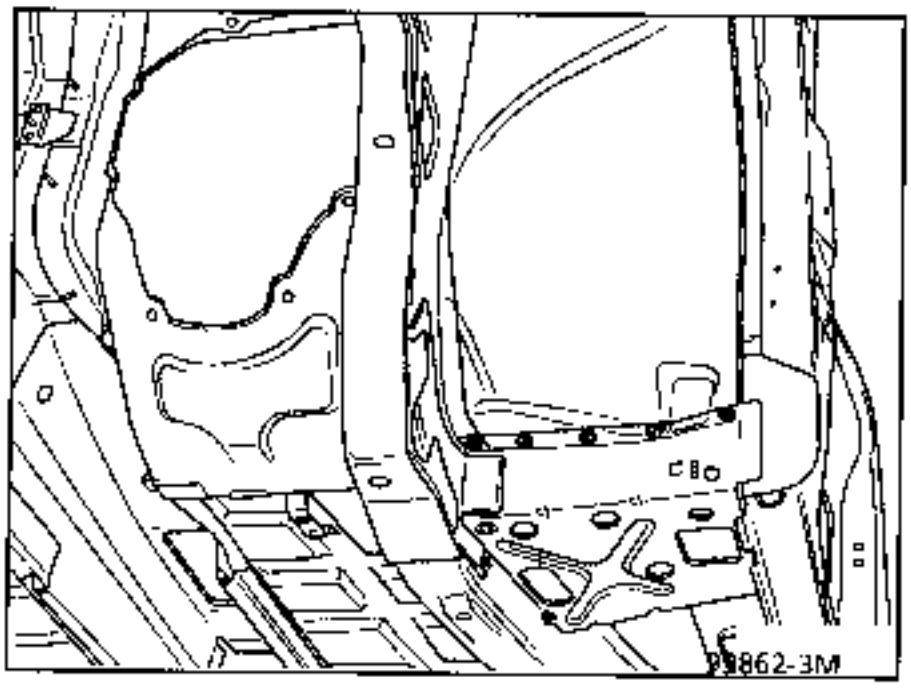
Thickness of panels concerned (mm)

Jacking point mounting cross member	1.0
Bulkhead	1.0

Unpicking

5 spot welds on thickness 1.0

Welding



4 JOINT WITH SIDE MEMBER UNDER FOOTWELL

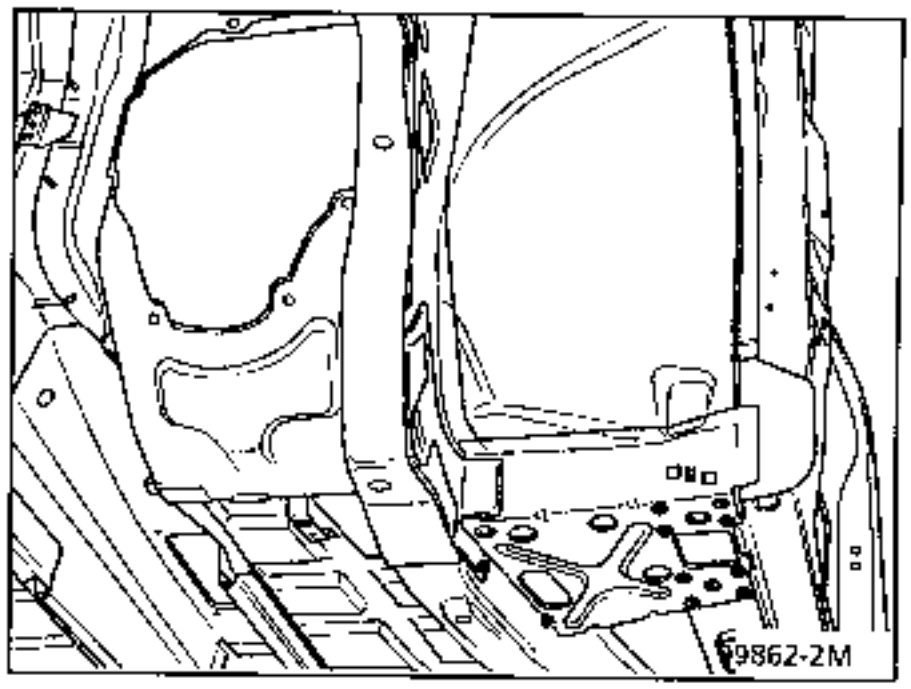
Thickness of panels concerned (mm)

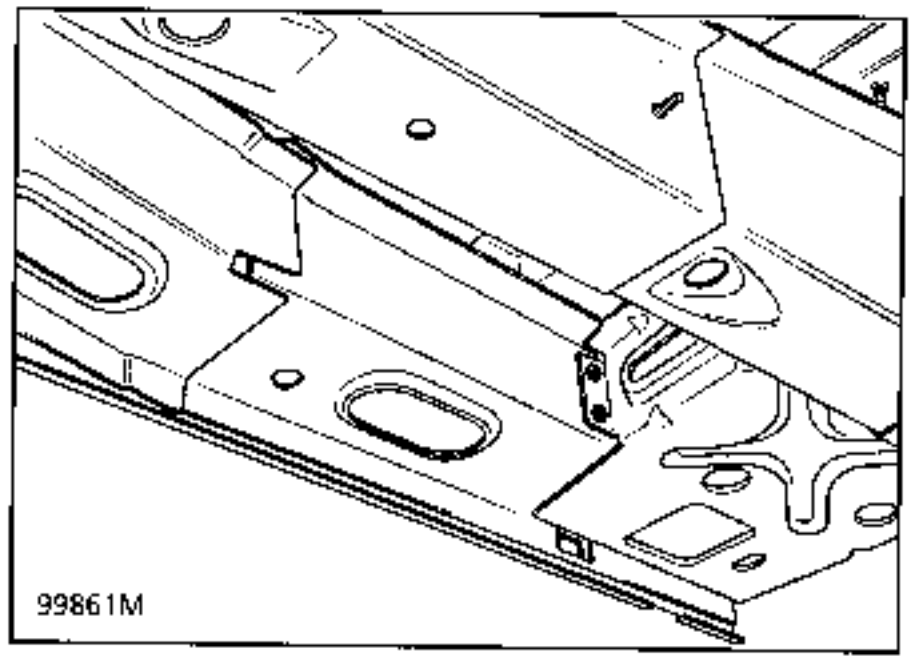
Jacking point mounting cross member	1.0
Side member under footwell	1.5

Unpicking

11 spot welds on thickness 1.0

Welding





5 JOINT WITH FLOOR

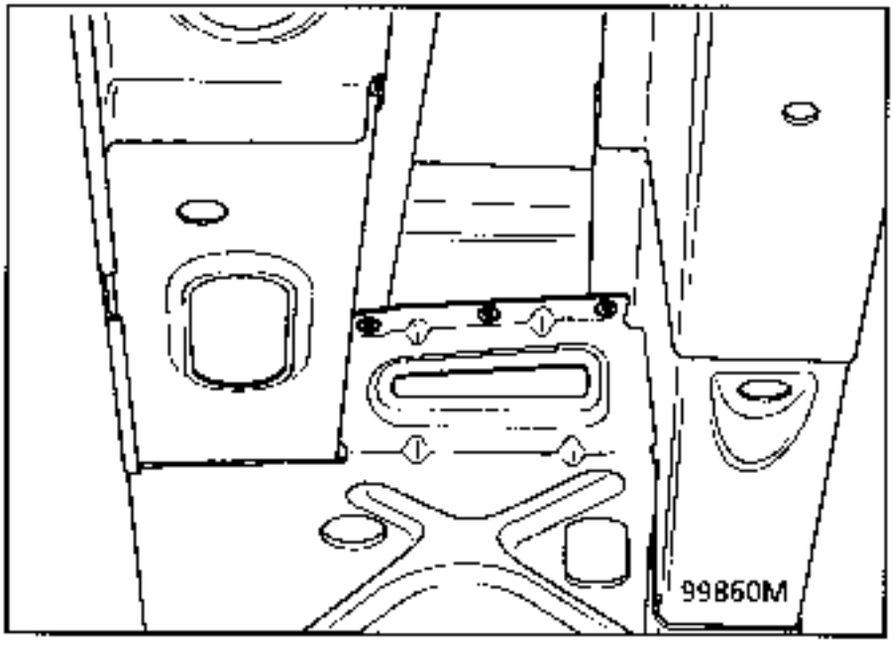
Thickness of panels concerned (mm)

Jacking point mounting cross member	1.0
Floor	0.8

Unpicking

3 spot welds on thickness 1.0

Welding



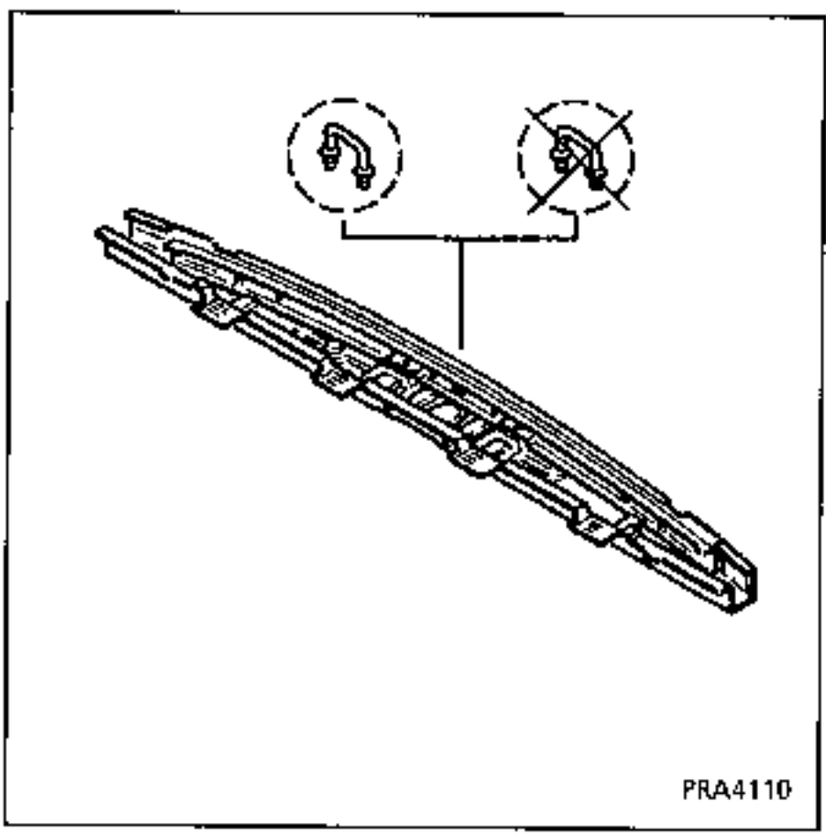
NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to :
- the replacement of the rear floor, part section
- the rear end pillar.

The repair must be carried out on the repair bench.

COMPOSITION OF PART FROM PARTS DEPARTMENT



Preliminary operations.

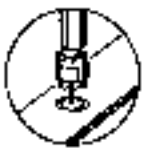
Remove:
- the mudguard,
- the bumper,
- the bumper cross member,
- the tailgate seal,
- the wheel arch lining,
- the anchorage covers,
- the floor lining,
- the emergency spare wheel,
- the exhaust,
- part of the wiring loom,
- part of the soundproofing.

1 JOINT WITH OUTER SIDE MEMBER

Thickness of panels concerned (mm)

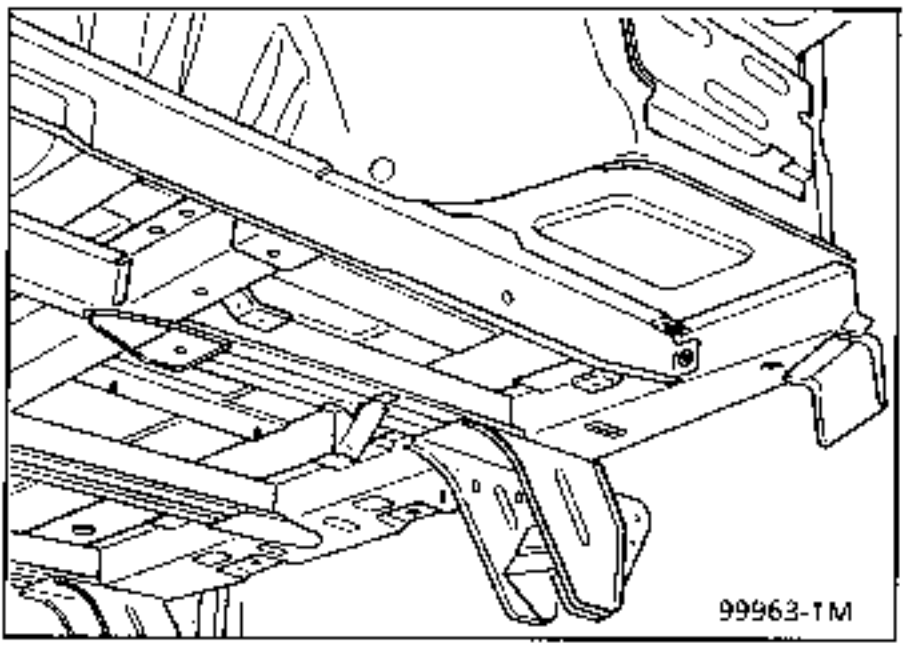
Rear lower cross member	2.0
Outer side member	2.5

Unpicking



2 spot welds on thickness 2.0

Welding

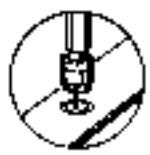


2 JOINT WITH CONNECTING PANEL

Thickness of panels concerned (mm)

Rear lower cross member	2.0
Connecting panel	2.0

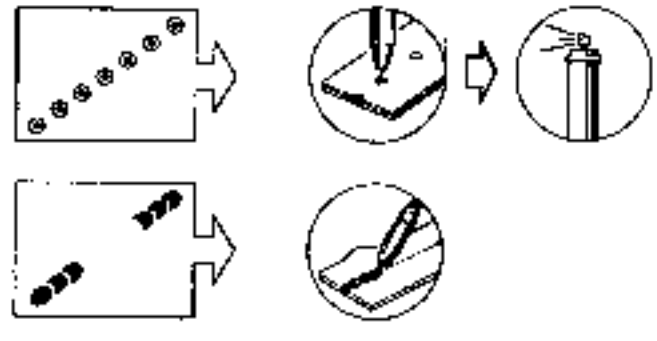
Unpicking



3 spot welds on thickness 2.0

+ 2 fillet of 15 mm

Welding



3 JOINT WITH REAR CENTRE CONNECTING PLATE

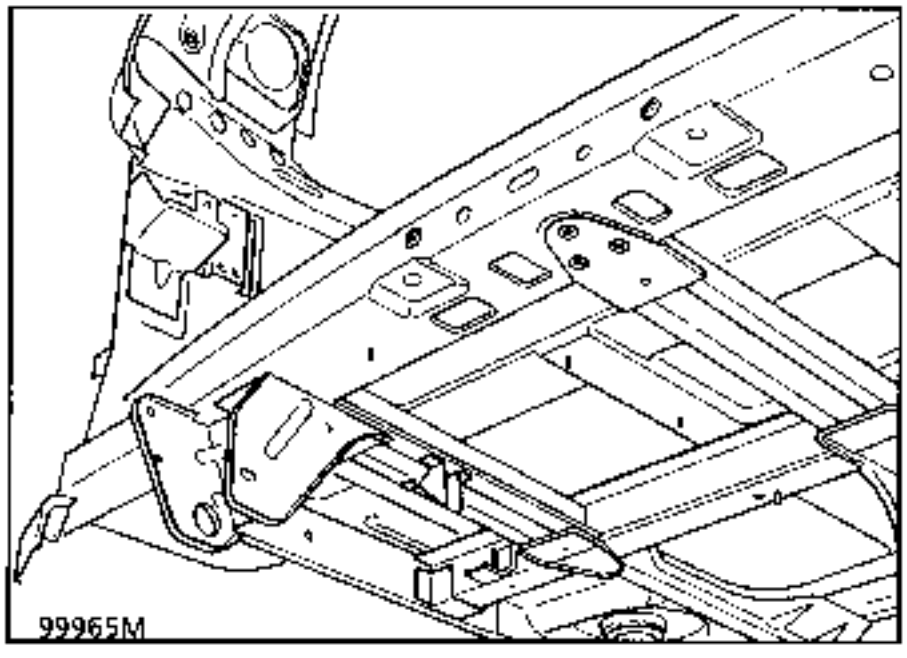
Thickness of panels concerned (mm)

Rear lower cross member	2.0
Rear centre connecting plate	1.5

Unpicking

3 spot welds on thickness 2.0

Welding



4 JOINT WITH STRIKER PLATE MOUNTING REAR GUSSET

Thickness of panels concerned (mm)

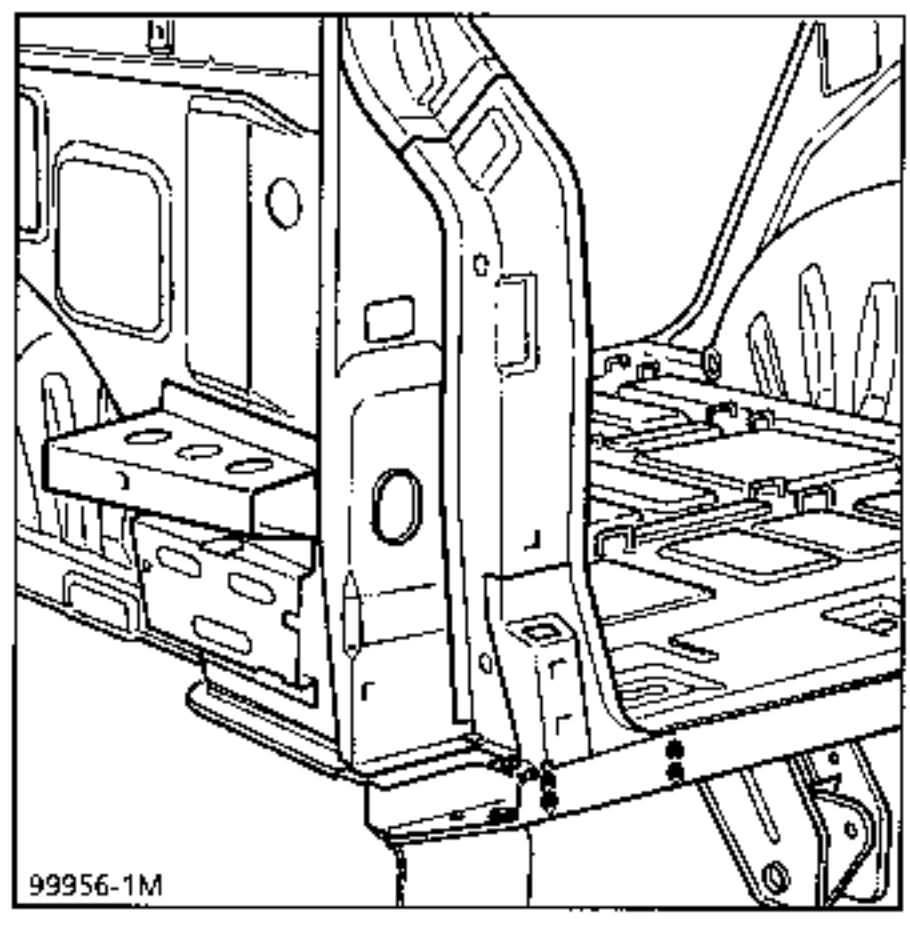
Rear lower cross member	2.0
Striker plate mounting rear gusset	2.0

Unpicking

1 spot welds on thickness 2.0

+ 2 MAG fillets of 30mm
+ 1 MAG fillet of 10mm

Welding



5 JOINT WITH REAR END PILLAR

REMINDER : refer to operations 44-D-1 44-D-2 44-D-3

6 JOINT WITH REAR FLOOR

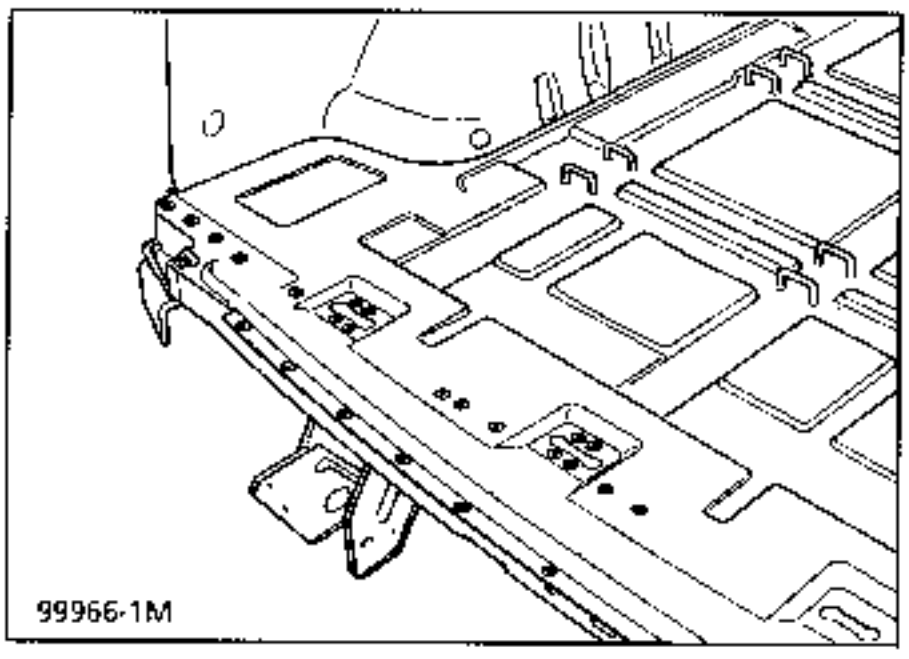
Thickness of panels concerned (mm)

Rear lower cross member	2.0
Rear floor	0.8

Unpicking

25 spot welds on thickness 2.0

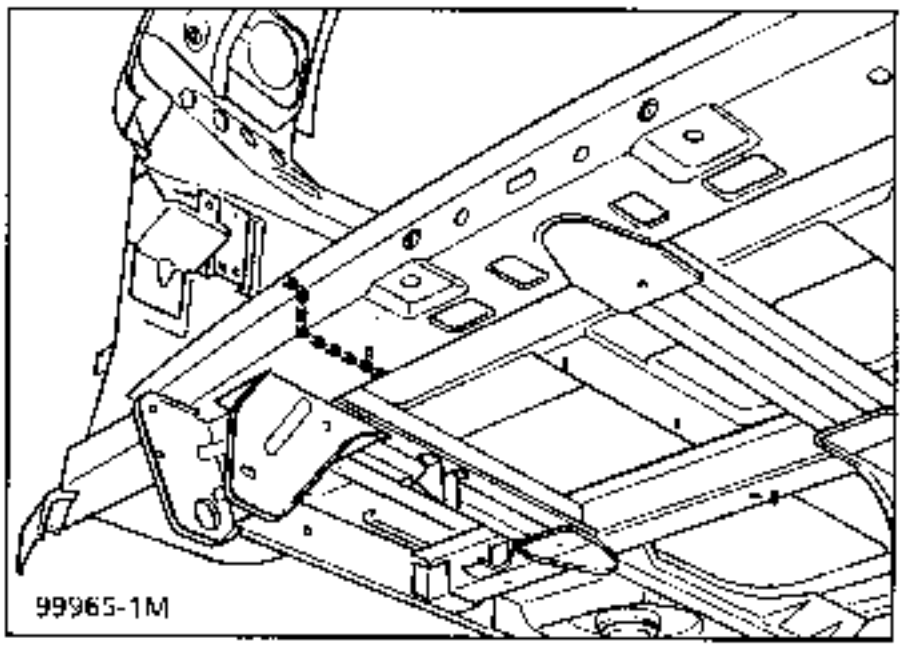
Welding

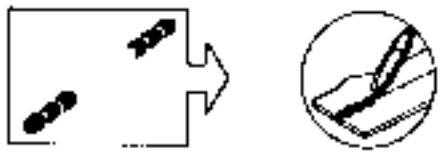


6 PART SECTION

Unpicking

250 mm on thickness 2.0





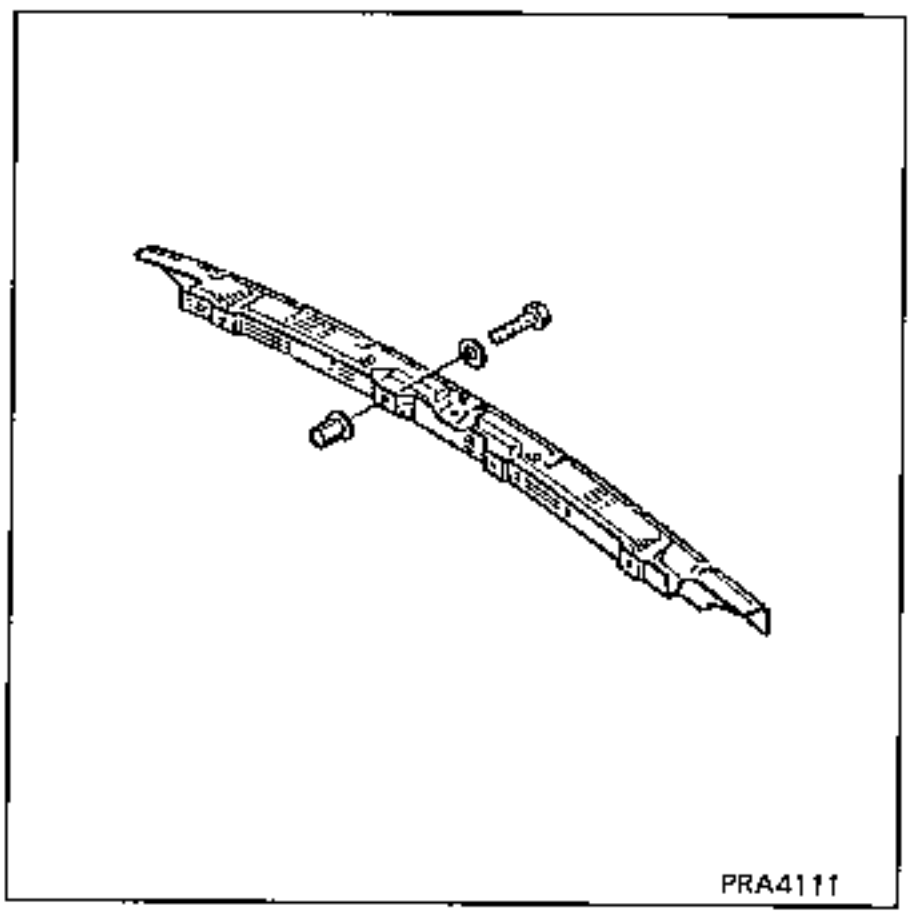
NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

This part is supplied by the Parts Department complete with its mounting reinforcements.

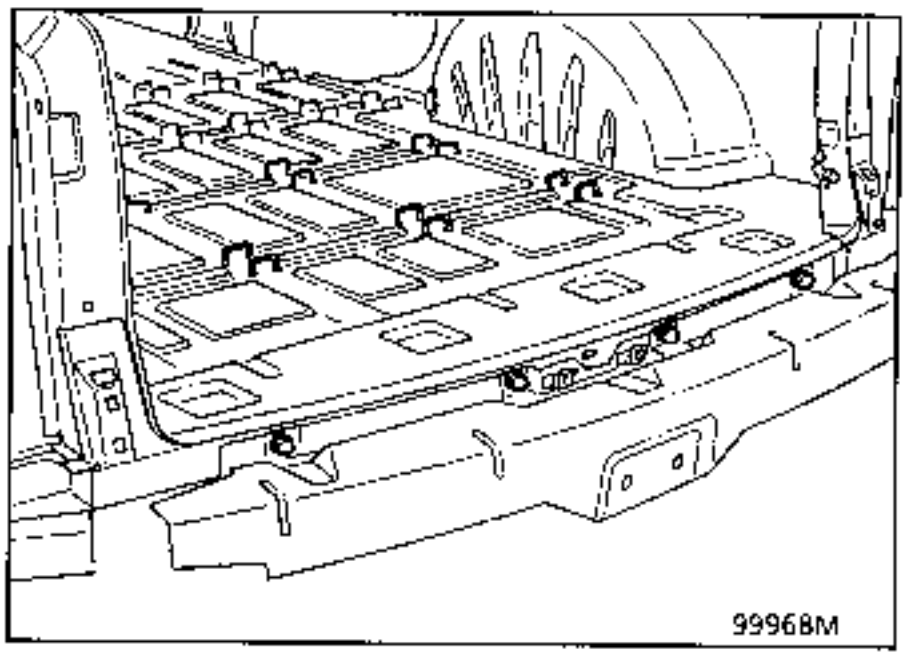
REMOVAL - REFITTING

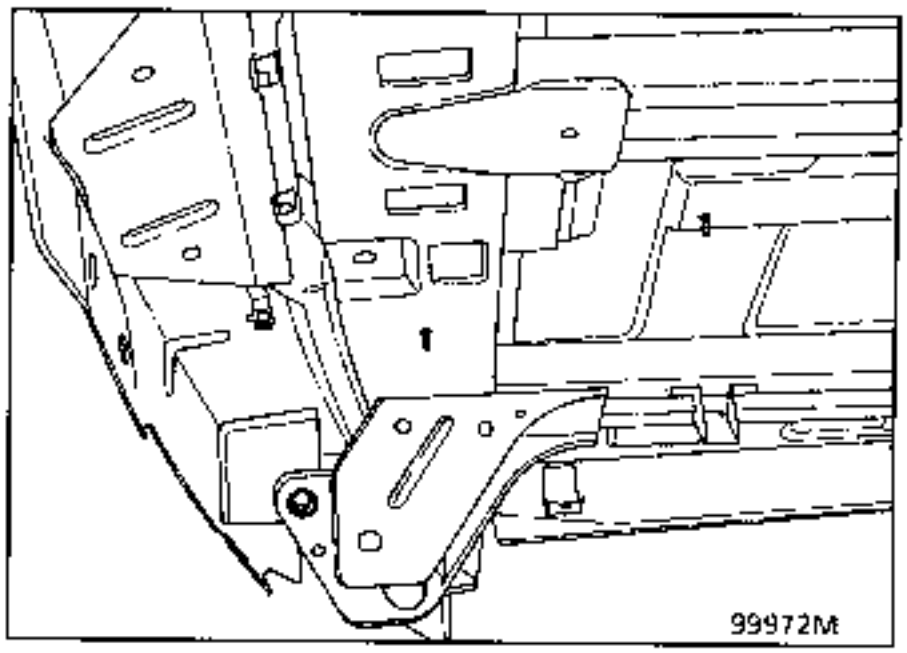
This part may be disassembled, it is mounted by six bolts and nuts to the rear lower cross member and the securing clevices.

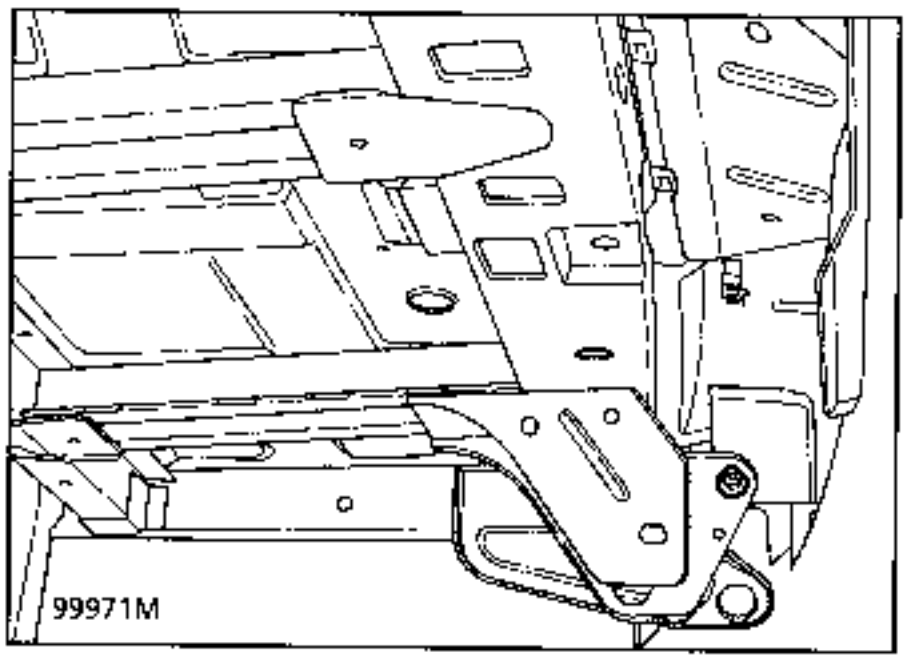

PRA4111

Preliminary operations.

Remove:
- the mudguard,
- the bumper.


99968M

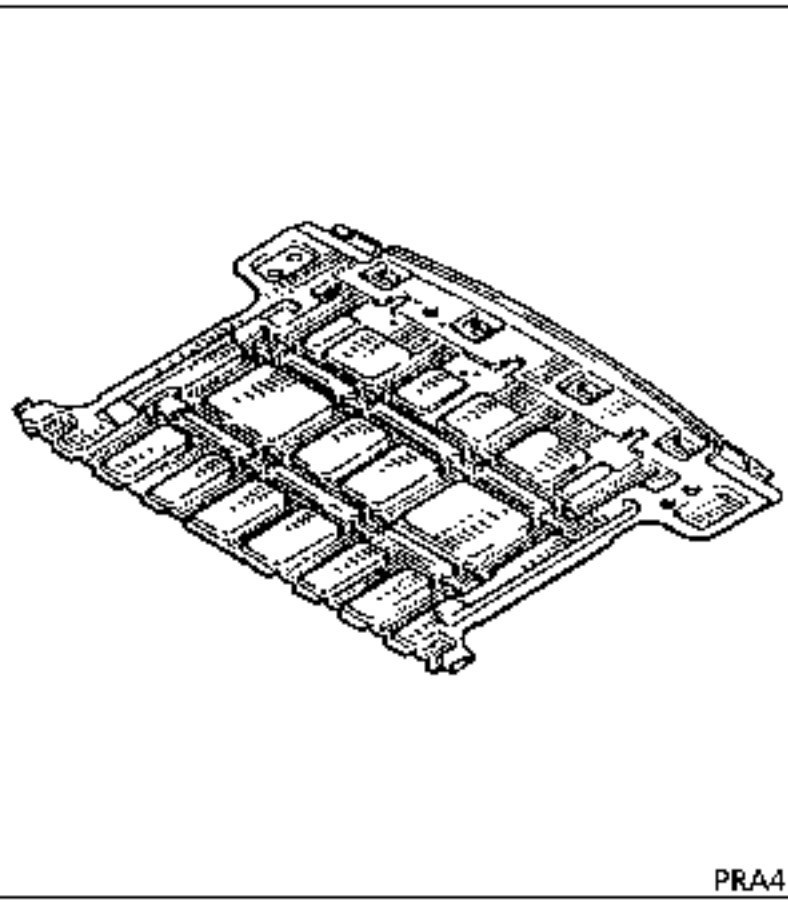

99972M


99971M

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of the wheel arch for the rear end pillar for a side impact.

COMPOSITION OF PART FROM PARTS DEPARTMENT


PRA4124

Preliminary operations.

Remove:
- the exhaust,
- the emergency spare wheel winch on the RH side,
- the emergency spare wheel,
- the fuel tank on the RH side,
- part of the wiring loom,
- the wheel arch lining,
- the tailgate seal,
- the rear carpet.

1 JOINT WITH FLOOR

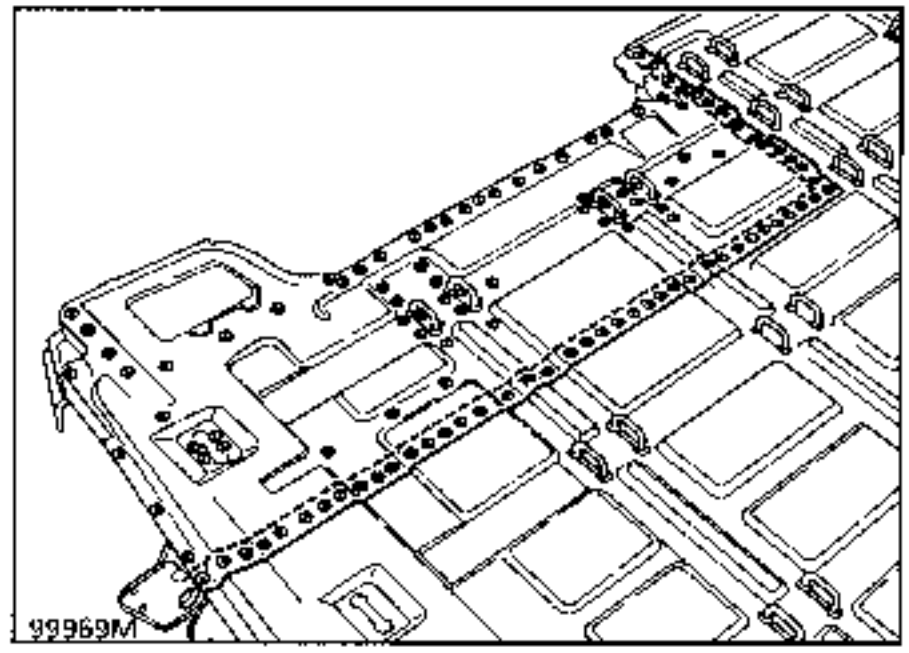
Thickness of panels concerned (mm)

Floor	0.8
Rear axle assembly cross member	2.0
Rear cross member - 3rd row seats	2.0
Rear side member	1.5
Rear lower cross member	2.0

Unpicking

69 spot welds on thickness 0.8
+1500 mm on thickness 0.8

Welding


99969M

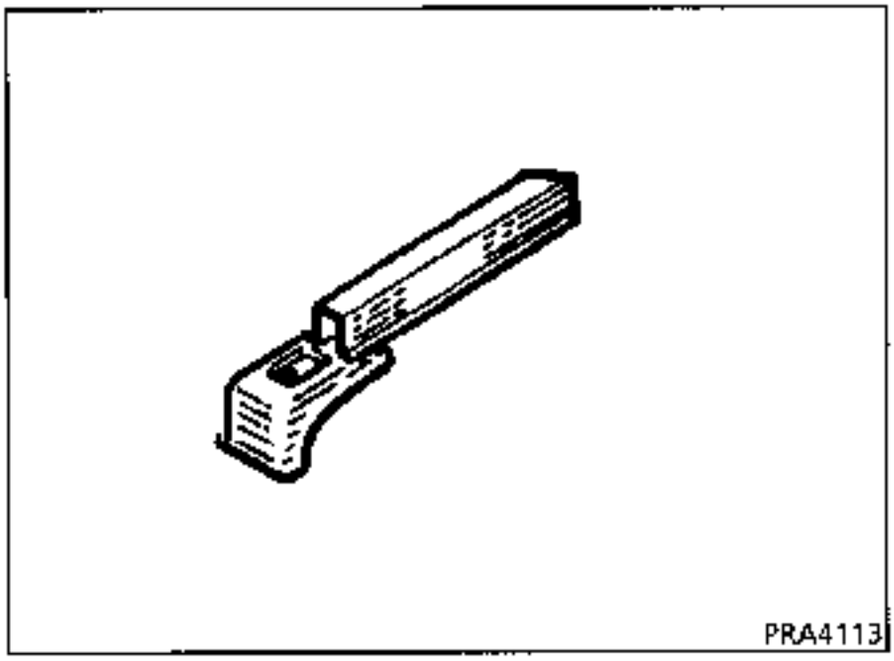
NOTE : Refer to section 40 General, for information on cutting out and preparation before welding.

NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of the side floor, part section or rear floor, part section.

COMPOSITION OF PART FROM PARTS DEPARTMENT



Preliminary operations.

Remove:
- the wheel arch lining,
- the anchorage covers,
- the rear floor lining,
- the exhaust, RH side,
- the emergency spare wheel.

1 JOINT WITH CONNECTING PANEL

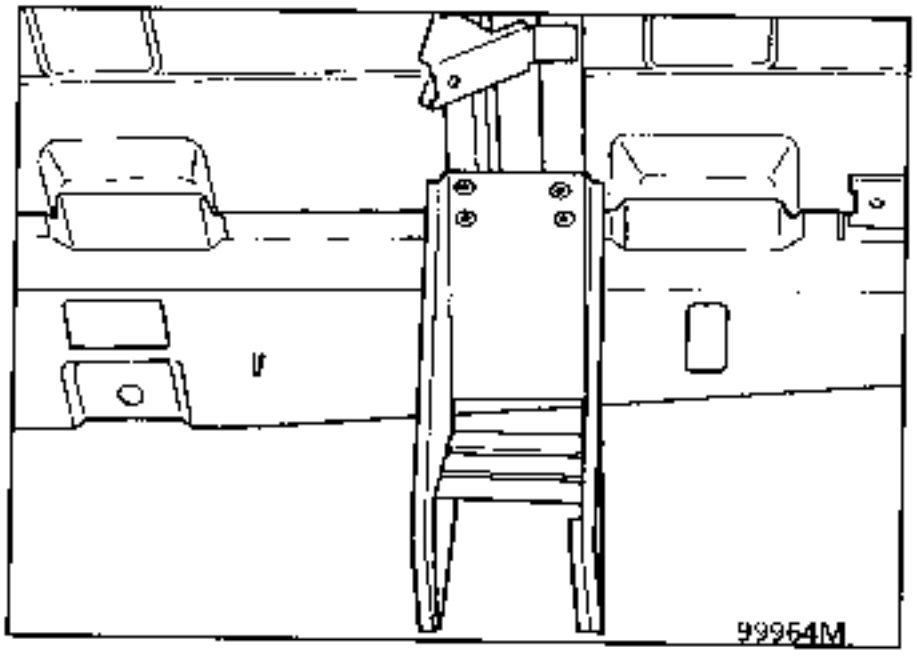
Thickness of panels concerned (mm)

Rear side member	1.5
Connecting panel	2.0

Unpicking

4 spot welds on thickness 1.5

Welding



2 JOINT WITH CENTRE SIDE CONNECTING PLATE

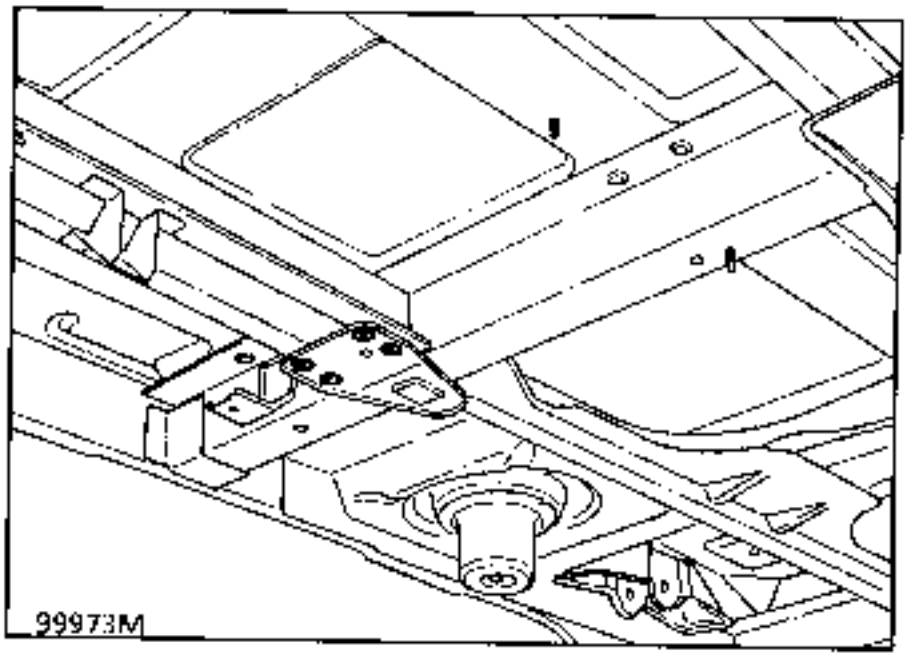
Thickness of panels concerned (mm)

Rear side member	1.5
Centre side connecting plate	1.5

Unpicking

4 spot welds on thickness 1.5

Welding



3 JOINT WITH REAR FLOOR

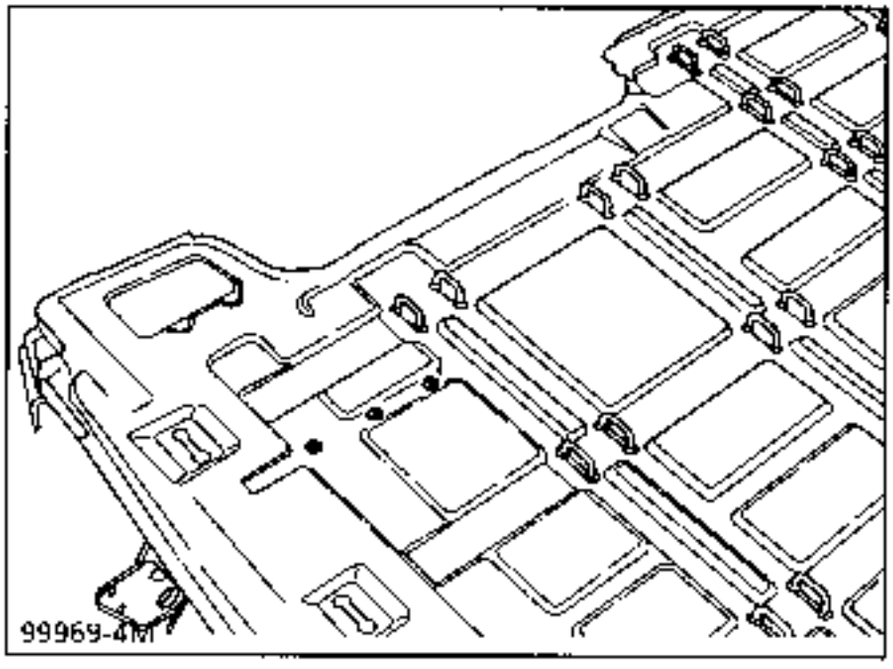
Thickness of panels concerned (mm)

Rear side member	1.5
Floor	0.8

Unpicking

3 spot welds on thickness 1.5

Welding

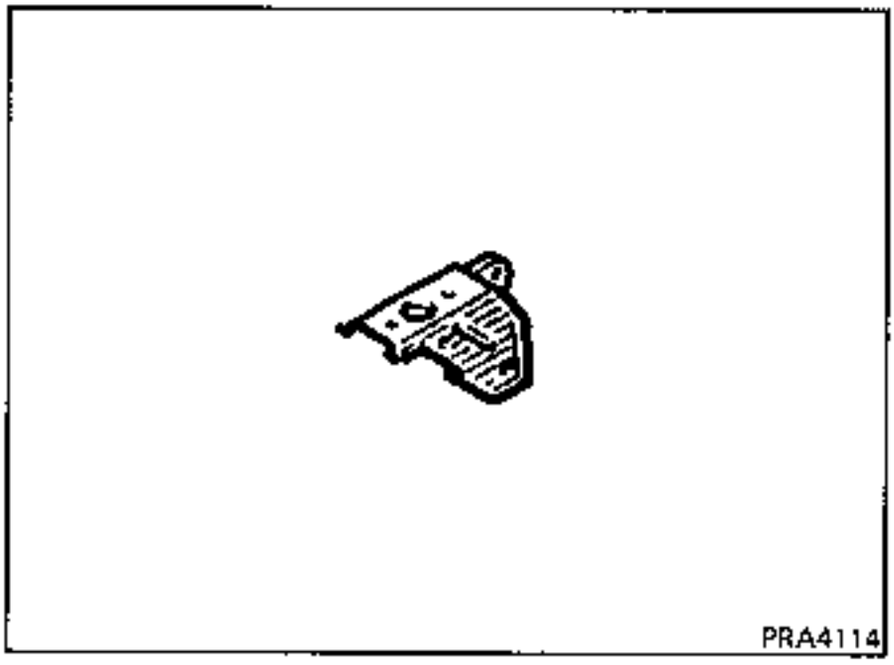


NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a basic operation for a rear impact.

COMPOSITION OF PART FROM PARTS DEPARTMENT



Preliminary operations.

Remove:
- the mudguard,
- the bumper,
- the bumper cross member,
- the exhaust, LH side,
- the emergency spare wheel, RH side.

1 JOINT WITH REAR SIDE MEMBER

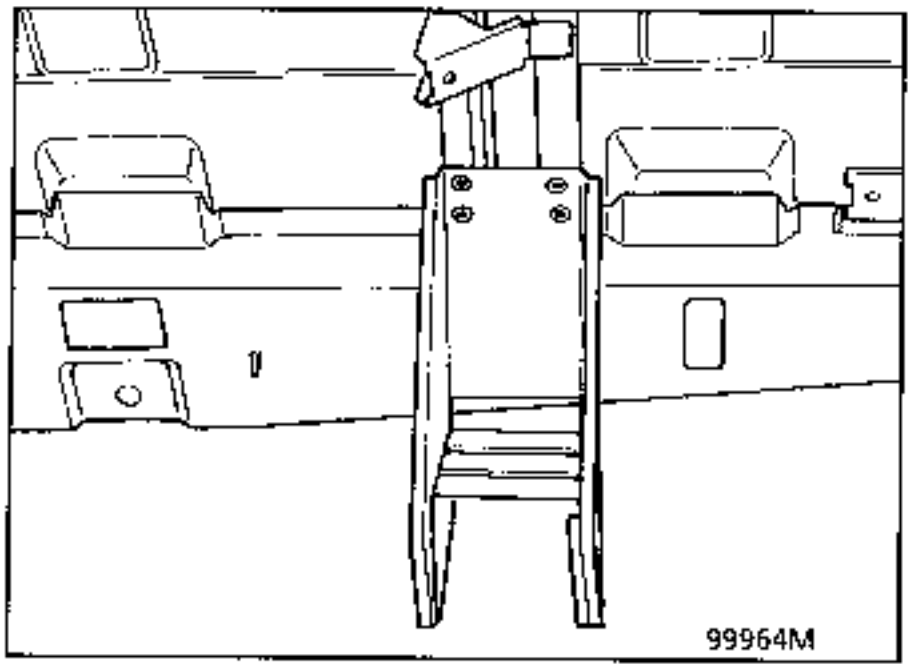
Thickness of panels concerned (mm)

Securing clevice	2.0
Rear side member	1.5

Unpicking

4 spot welds on thickness 1.5

Welding



2 JOINT WITH REAR LOWER CROSS MEMBER

Thickness of panels concerned (mm)

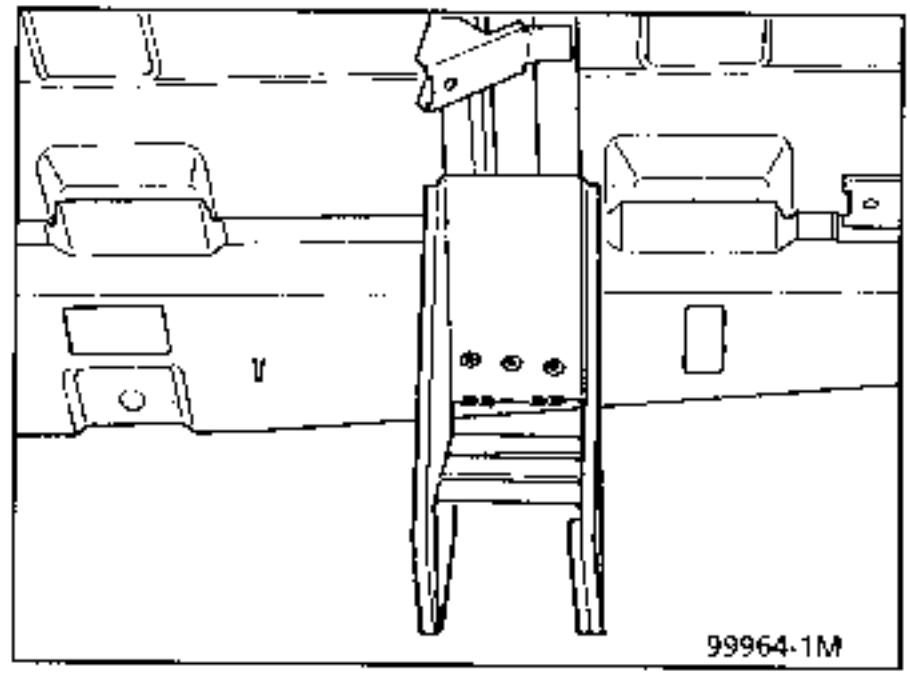
Securing clevice	2.0
Rear lower cross member	2.0

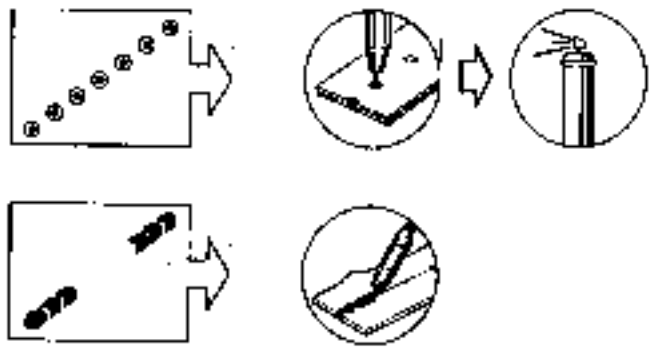
Unpicking

3 spot welds on thickness 1.5

+2 MAG fillet of 15 mm

Welding



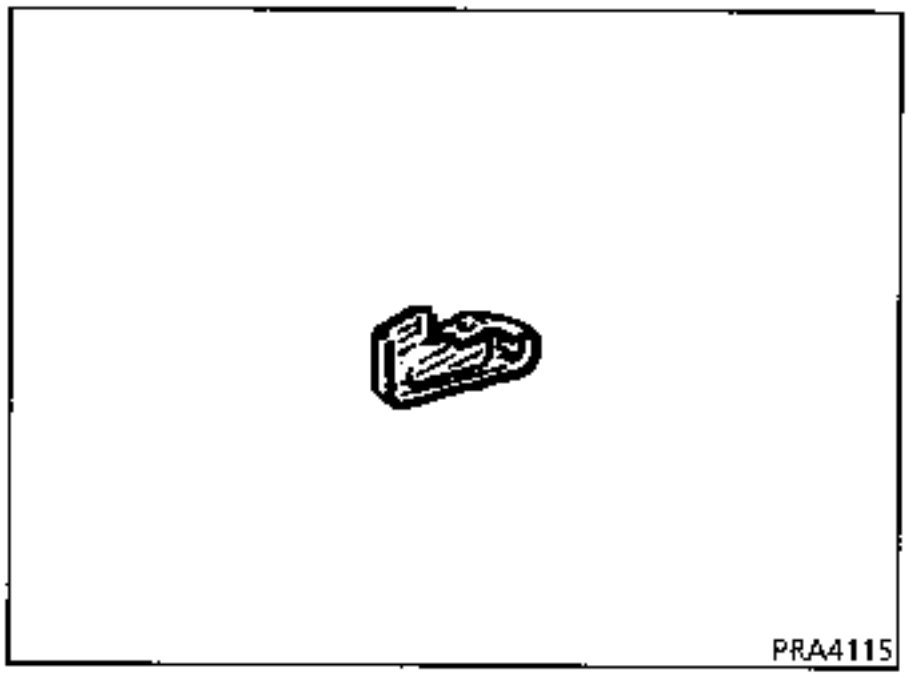


NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a basic operation for a rear impact.

COMPOSITION OF PART FROM PARTS DEPARTMENT


PRA4115

Preliminary operations.

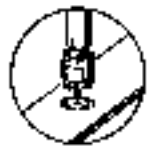
Remove:
- the mudguard,
- the bumper.

1 JOINT WITH OUTER SIDE MEMBER

Thickness of panels concerned (mm)

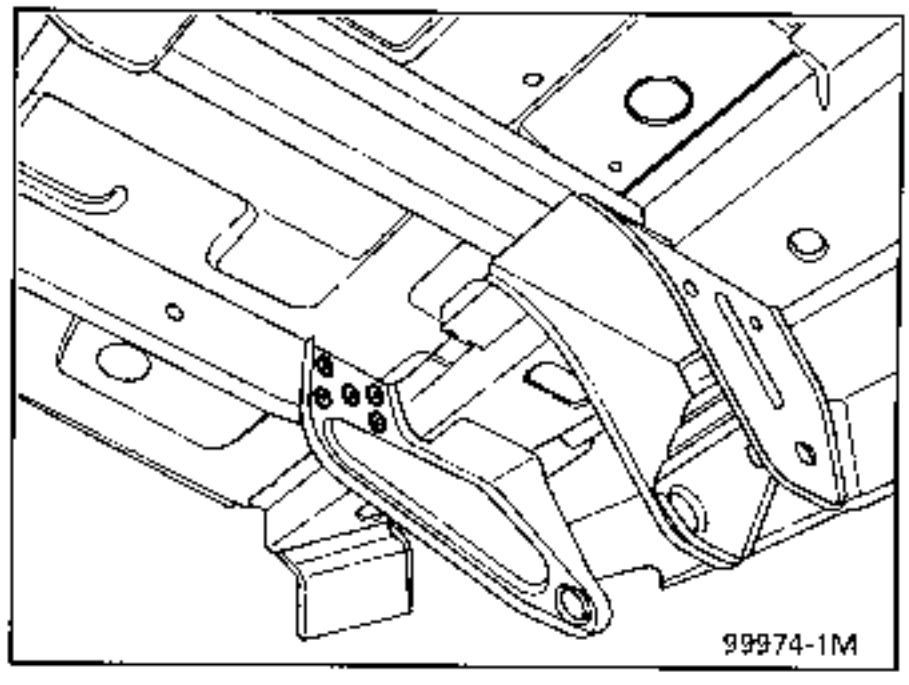
Outer side member	2.5
Towing ring	2.5

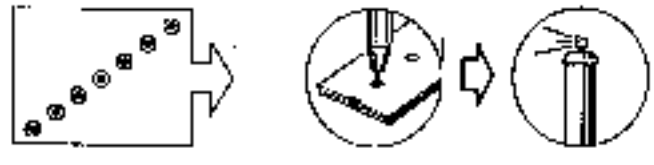
Unpicking



5 spot welds on thickness 2.5

Welding


99974-1M



2 JOINT WITH REAR LOWER CROSS MEMBER

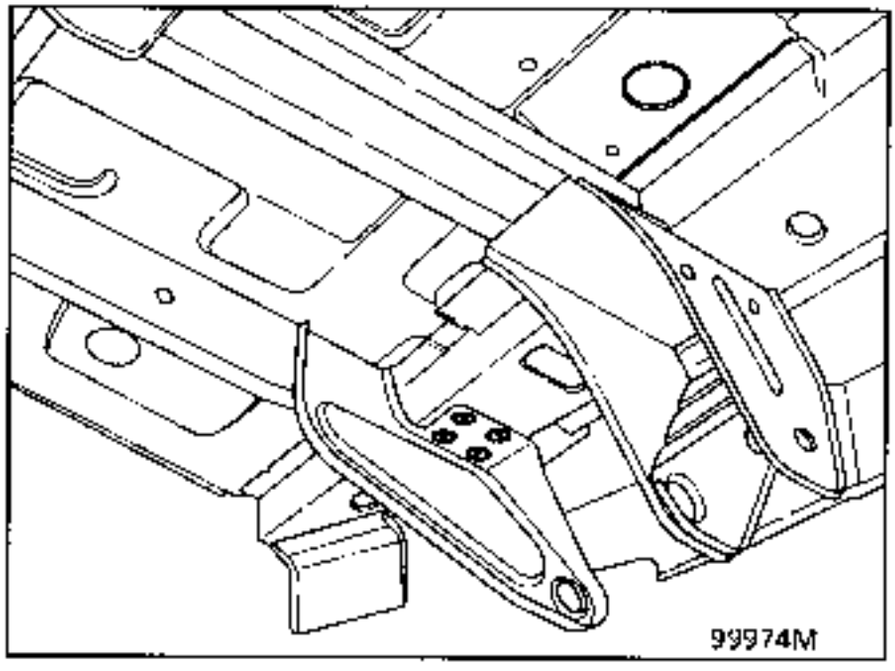
Thickness of panels concerned (mm)

Rear lower cross member	2.0
Towing ring	2.5

Unpicking

4 spot welds on thickness 2.0

Welding

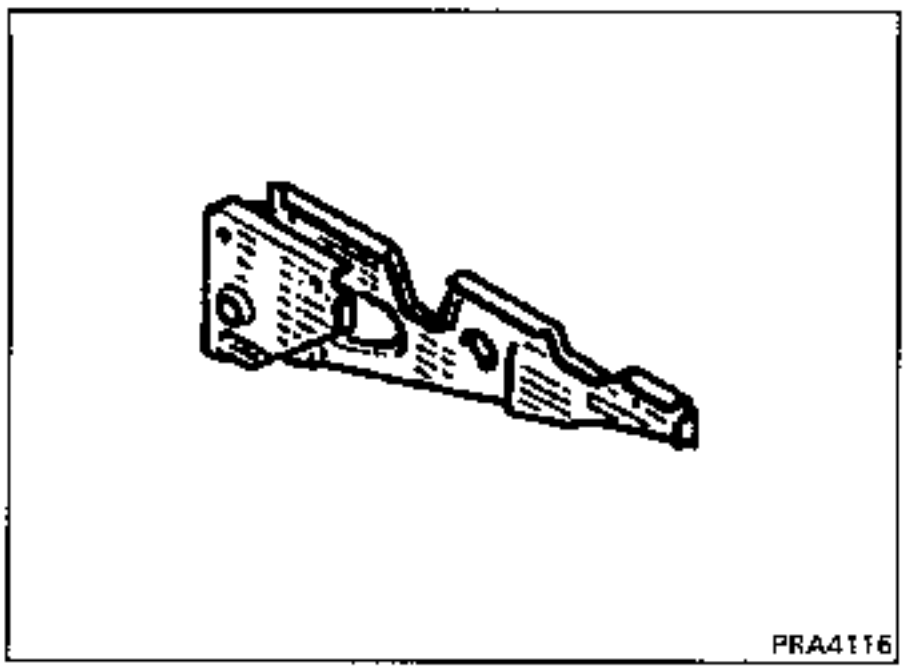


NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of the rear axle cross member part section for a side impact.

COMPOSITION OF PART FROM PARTS DEPARTMENT


PRA4116

Preliminary operations.

Remove:
- the guide bar,
- the wheel arch lining,
- the anchorage covers,
- the floor lining.

1 JOINT WITH OUTER SIDE MEMBER

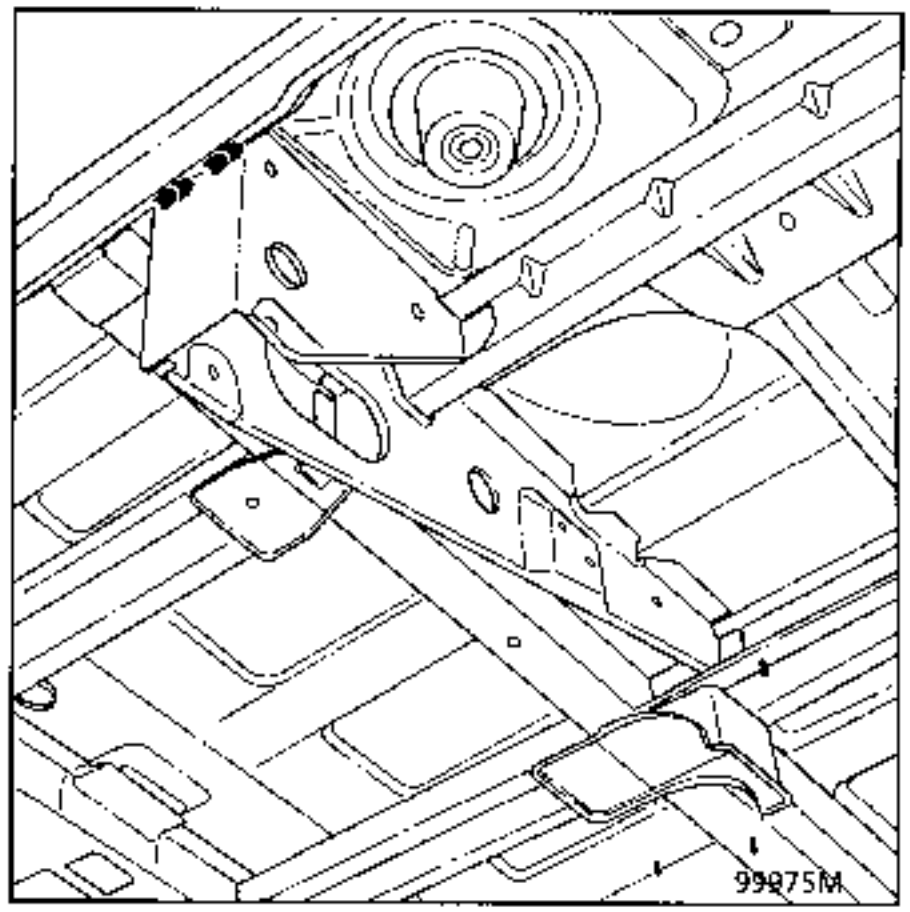
Thickness of panels concerned (mm)

Outer side member	2.5
Guide bar clevice	2.0

Unpicking

2 MAG fillets on thickness 20 mm

Welding

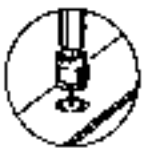

99975M

2 JOINT WITH REAR AXLE CROSS MEMBER SIDE REINFORCEMENT

Thickness of panels concerned (mm)

Rear axle cross member side reinforcement	2.0
Guide bar clevice	2.0

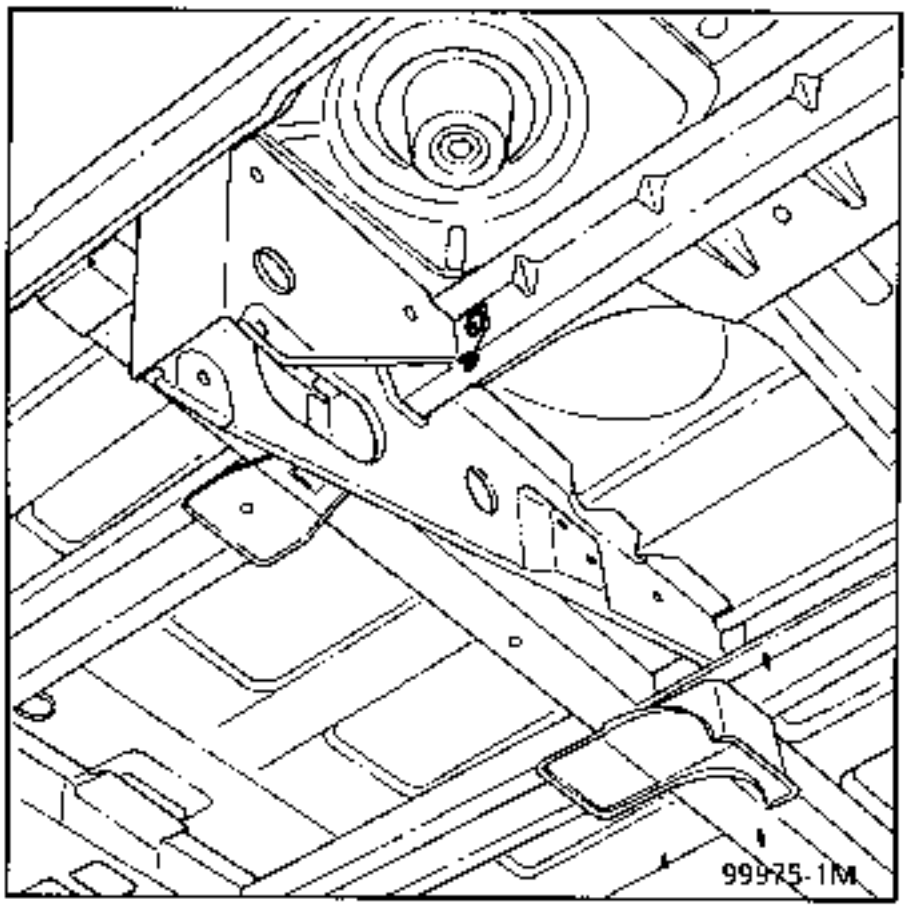
Unpicking

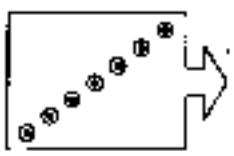


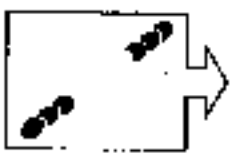
1 spot welds on thickness 2.0

+ 1 MAG fillet of 10mm

Welding







3 JOINT WITH FLOOR

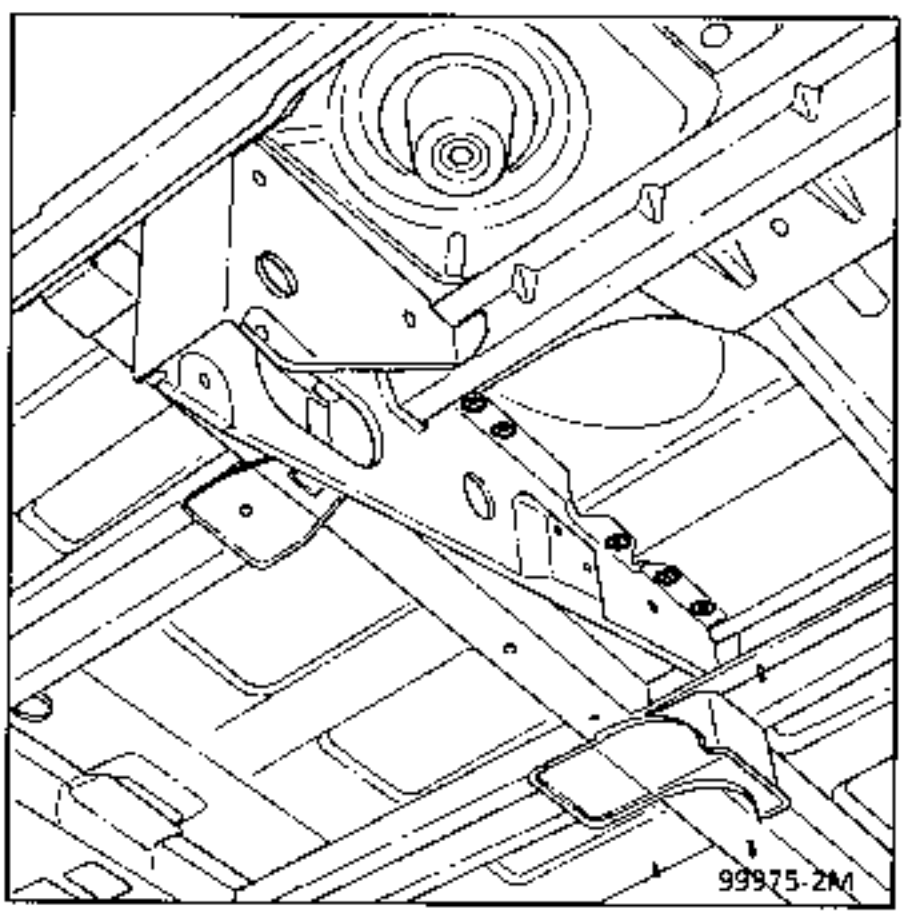
Thickness of panels concerned (mm)

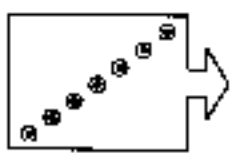
Floor	0.8
Guide bar clevice	2.0

Unpicking

5 spot welds on thickness 0.8

Welding





4 JOINT WITH CENTRAL CENTRE SIDE MEMBER

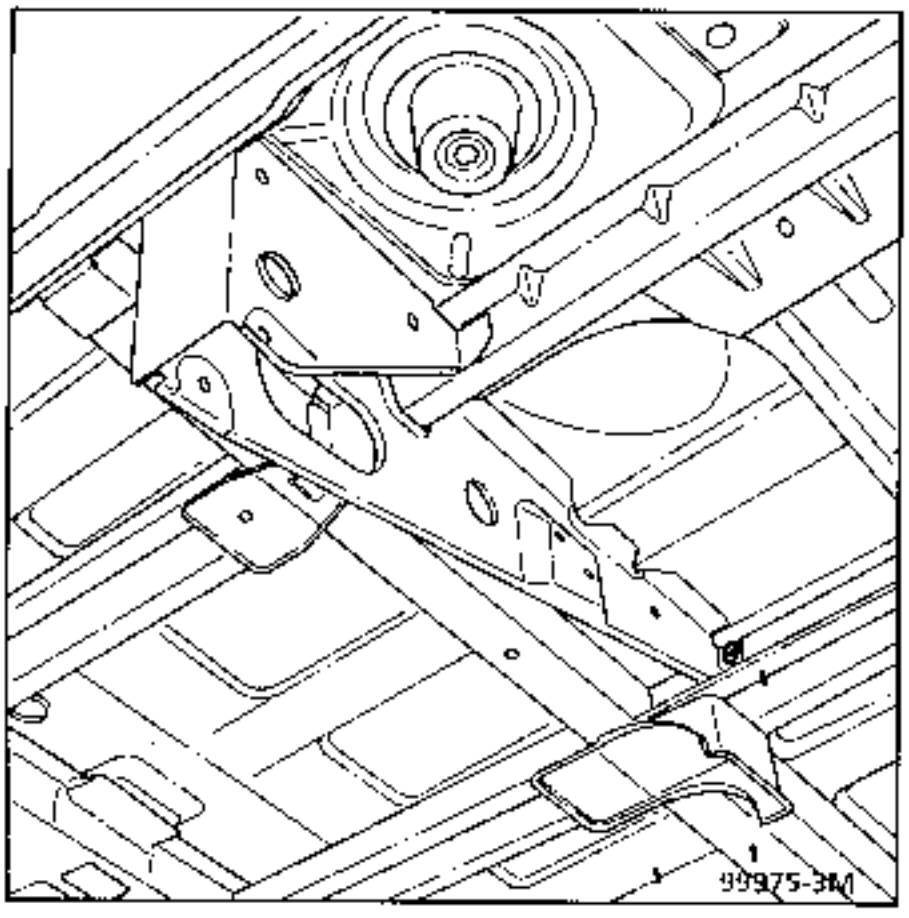
Thickness of panels concerned (mm)

Central centre side member	1.5
Guide bar clevice	2.0

Unpicking

1 spot welds on thickness 1.5

Welding

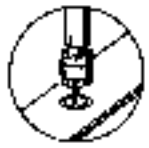


5 JOINT WITH REAR AXLE CROSS MEMBER

Thickness of panels concerned (mm)

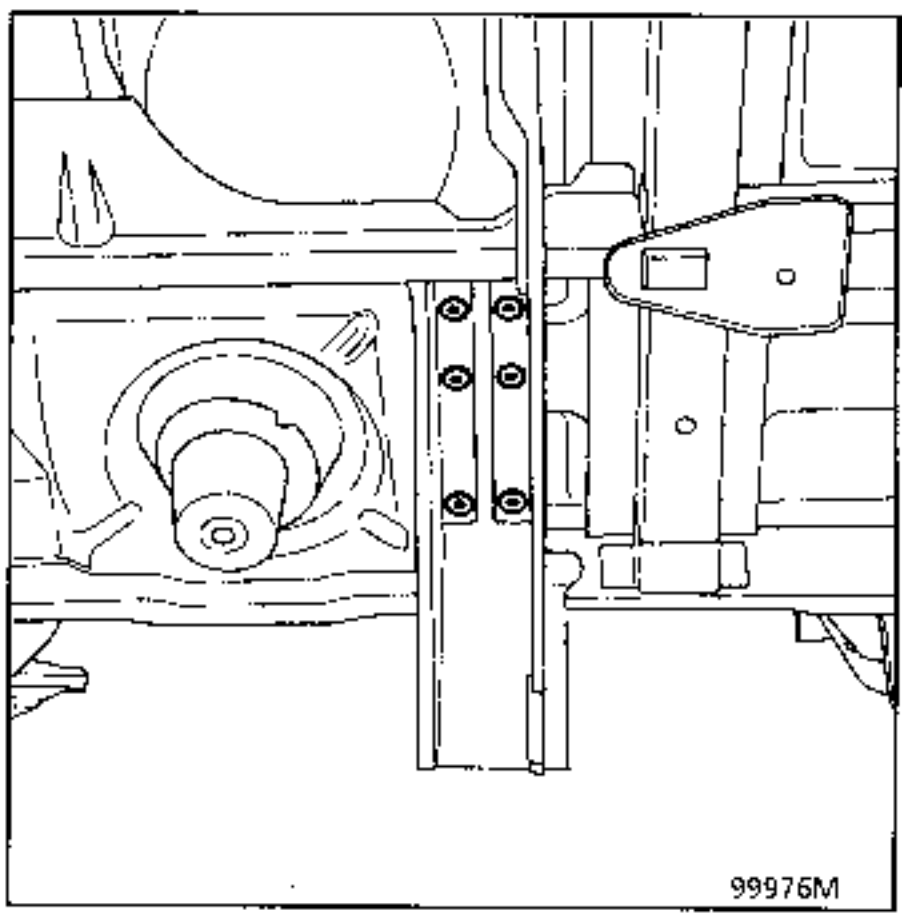
Rear axle cross member	2.0
Guide bar clevice	2.0

Unpicking



6 spot welds on thickness 2.0

Welding

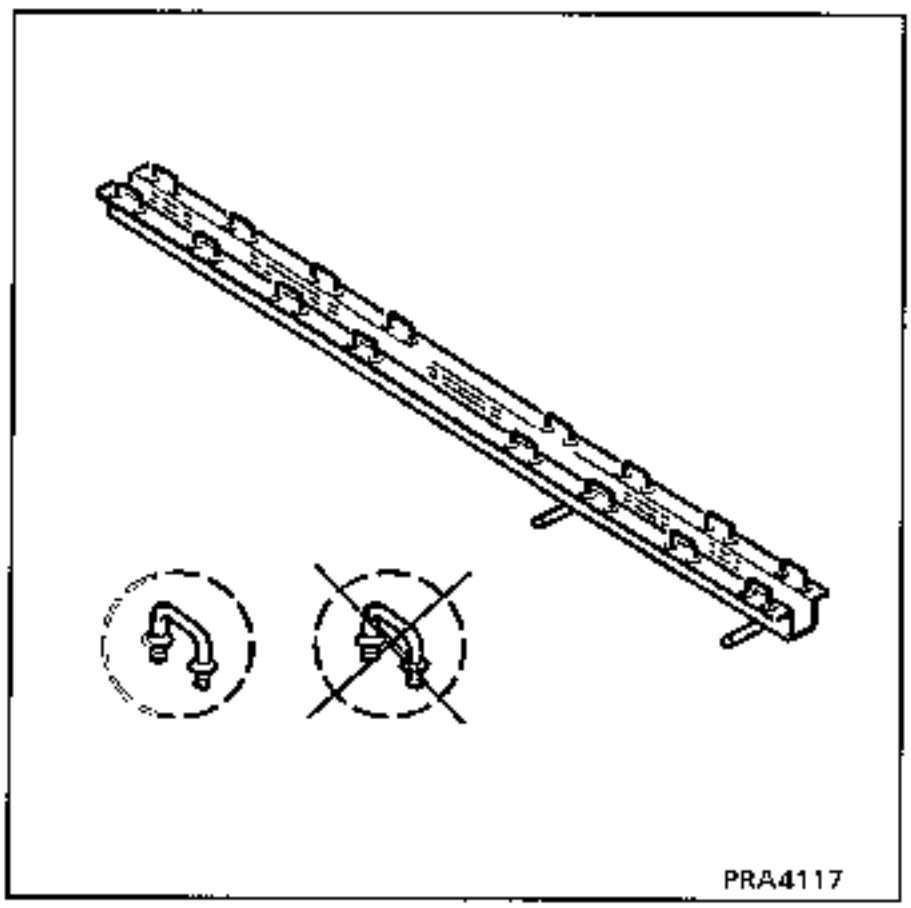


NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of the complete rear side member, the side floor, part section, the complete wheel arch, the valance panel, the valance panel reinforcement, for a side impact.

COMPOSITION OF PART FROM PARTS DEPARTMENT



Preliminary operations.

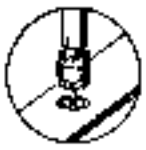
Remove:
- the exhaust, LH side,
- the fuel tank, RH side,
- the wheel arch lining,
- the anchorage covers,
- the floor lining.

1 JOINT WITH REAR SUSPENSION ARM INNER FLANGE

Thickness of panels concerned (mm)

Rear suspension arm inner flange	1.5
Front cross member - 2nd row seats	2.0

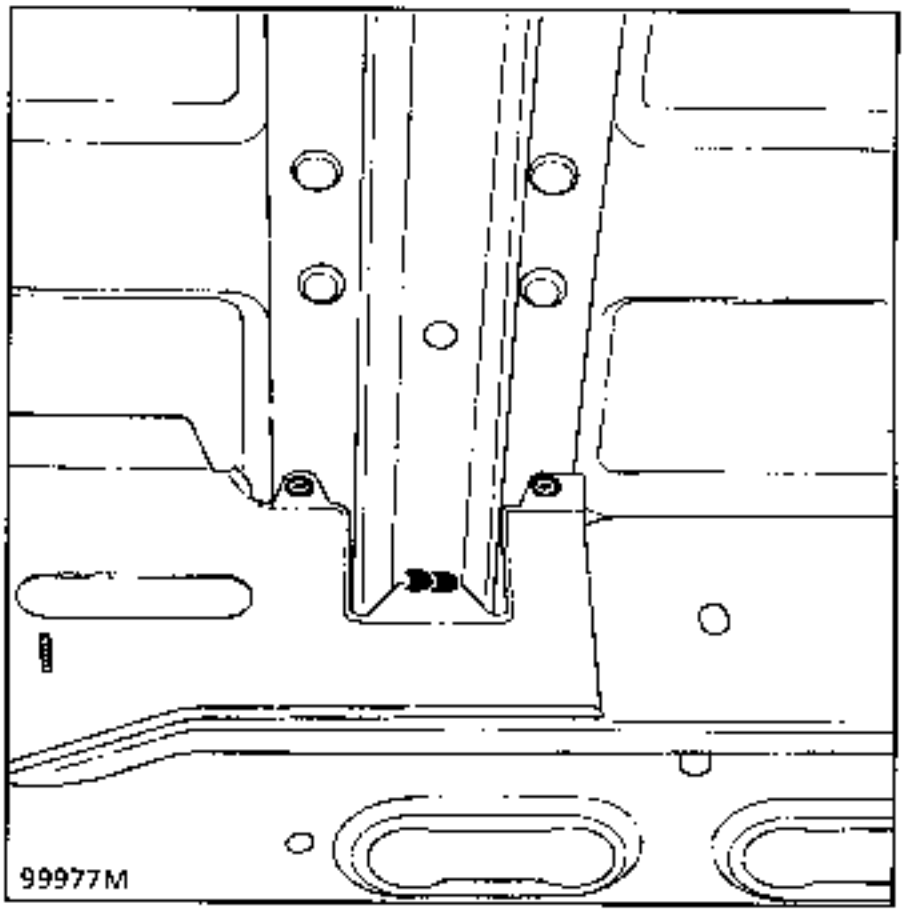
Unpicking

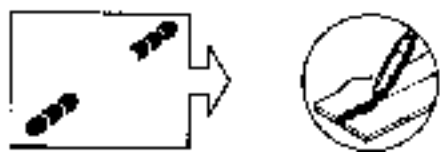


2 spot welds on thickness 2.0

1 MAG fillet of 10 mm on thickness 2.0

Welding





2 JOINT WITH FLOOR

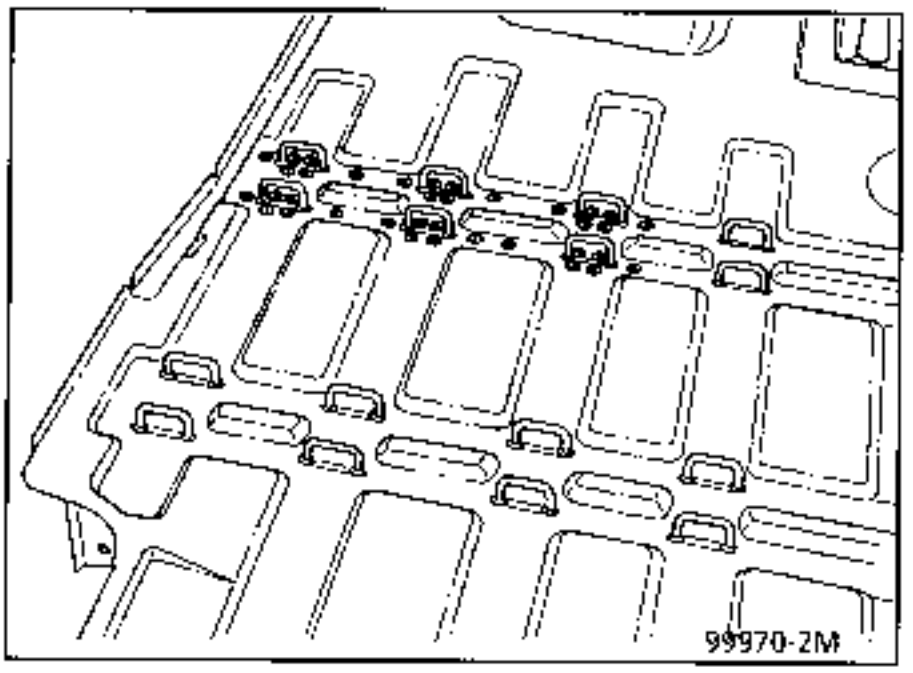
Thickness of panels concerned (mm)

Floor	0.8
Front cross member - 2nd row seats	2.0

Unpicking

36 spot welds on thickness 2.0

Welding

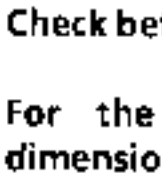


3 PART SECTION

Thickness of panels concerned (mm)

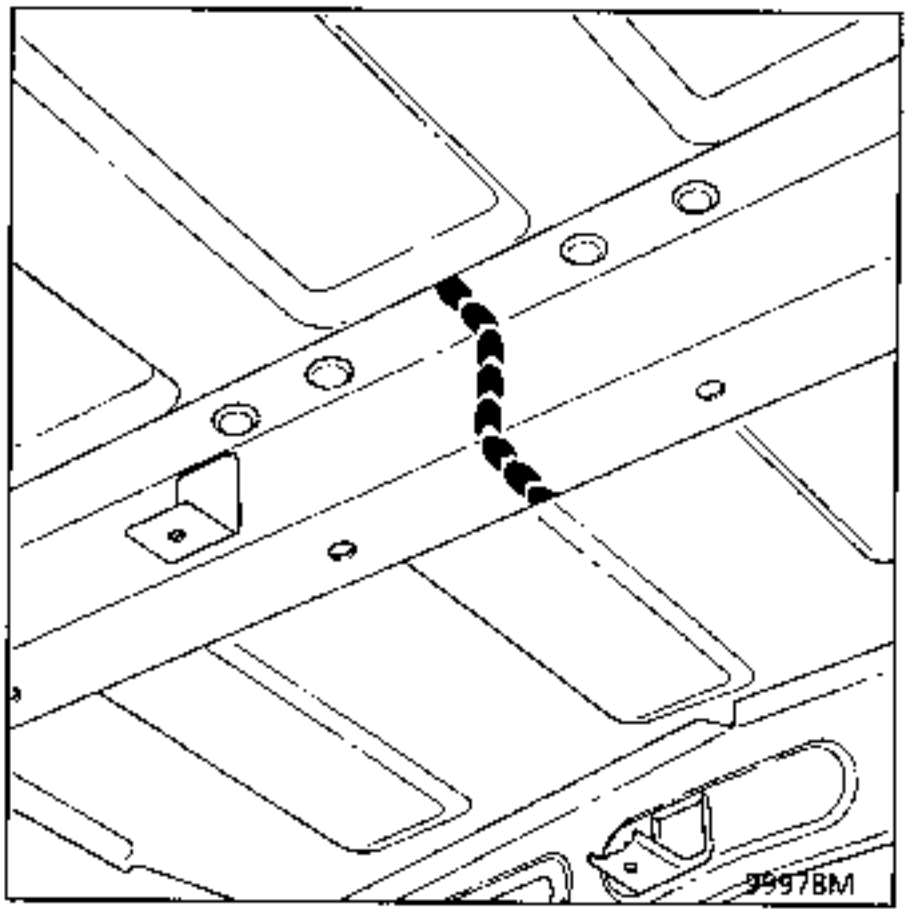
Front cross member - 2nd row seats	2.0

Unpicking



125 mm on thickness 2.0

Welding



Check before Welding :

For the version with rings, measure the dimension between the axes of the rings.

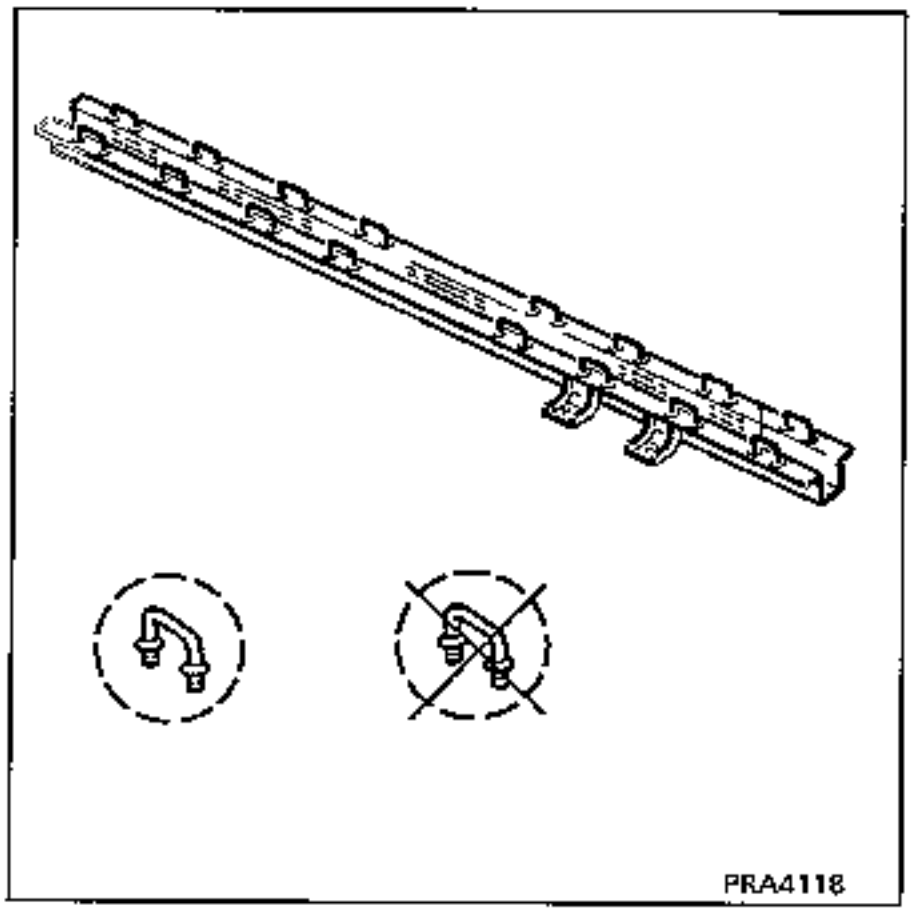
For the version with rail :
Fit the rails without fully tightening them
Position a seat to check the dimensions.
Lock the rail bolts to a torque of 1.2 daN.m

NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of the complete rear side member, the side floor, part section, the complete wheel arch, the valance panel, the valance panel reinforcement, for a side impact.

COMPOSITION OF PART FROM PARTS DEPARTMENT



Preliminary operations.

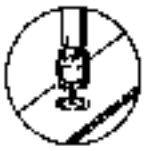
Remove:
- the exhaust, LH side,
- the fuel tank, RH side,
- the wheel arch lining,
- the anchorage covers,
- the floor lining.

1 JOINT WITH JACKING POINT MOUNTING

Thickness of panels concerned (mm)

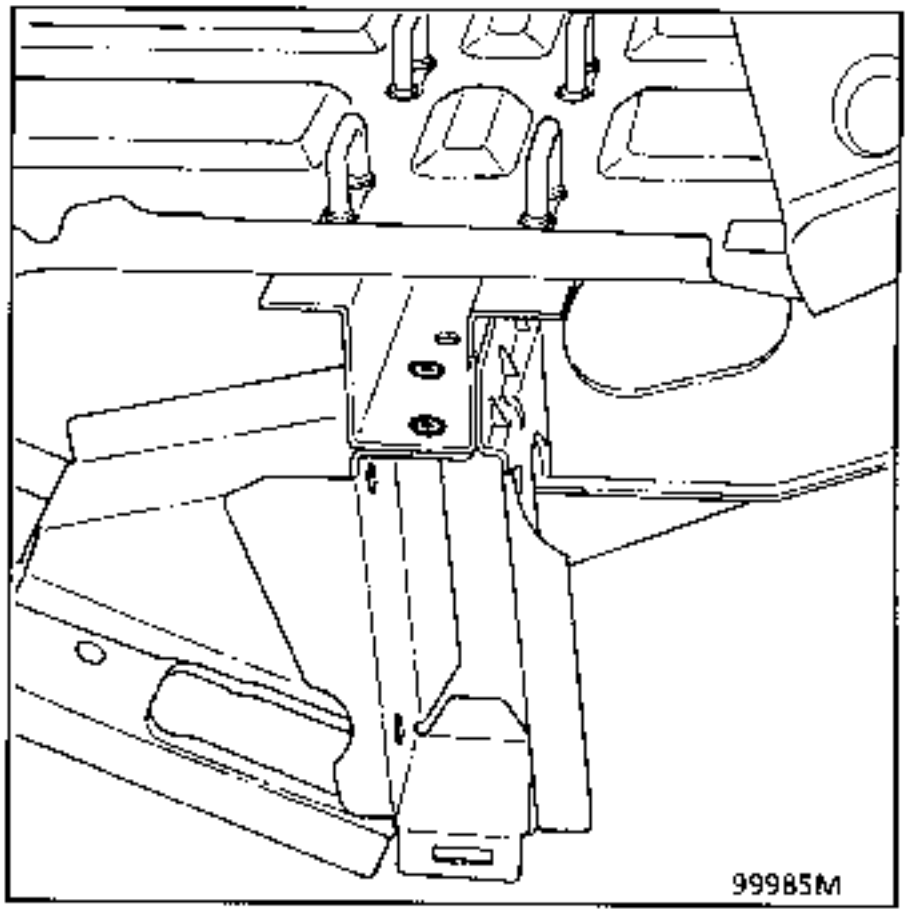
Jacking point mounting	2.0
Rear cross member - 2nd row seats	2.0

Unpicking



2 spot welds on thickness 2.0

Welding



2 JOINT WITH JACKING POINT MOUNTING CLOSURE PANEL

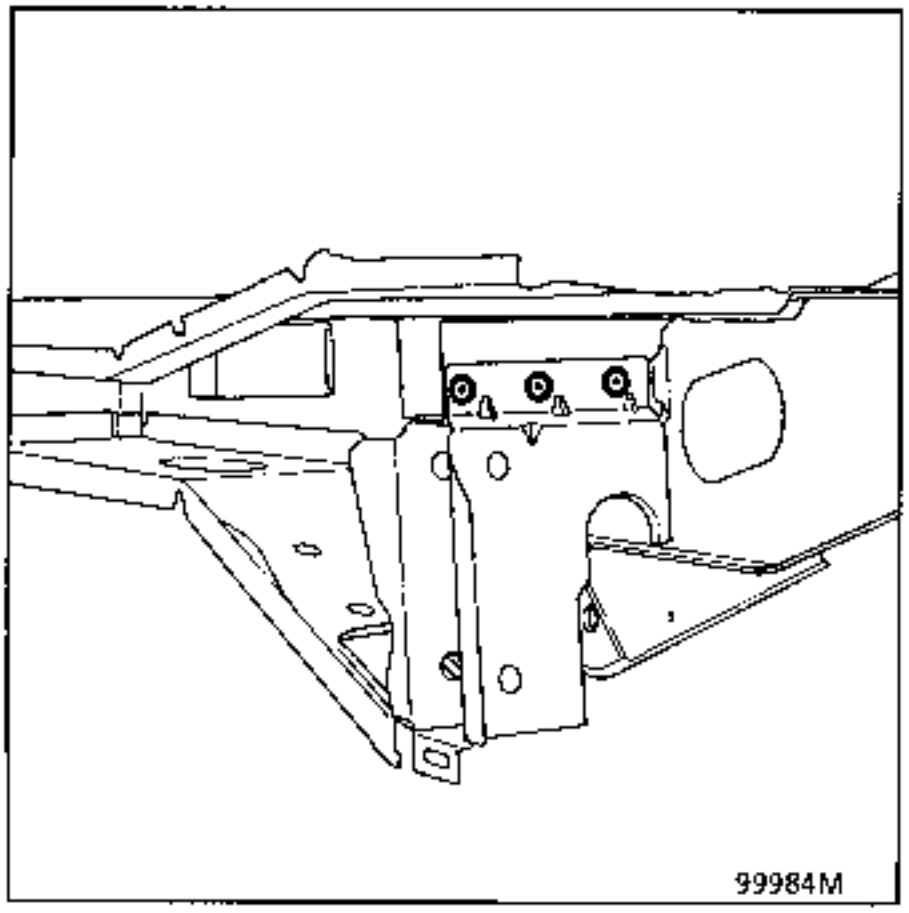
Thickness of panels concerned (mm)

Jacking point mounting closure panel	2.0
Rear cross member - 2nd row seats	2.0

Unpicking

3 spot welds on thickness 2.0

Welding



3 JOINT WITH SUSPENSION ARM INNER FLANGE

Thickness of panels concerned (mm)

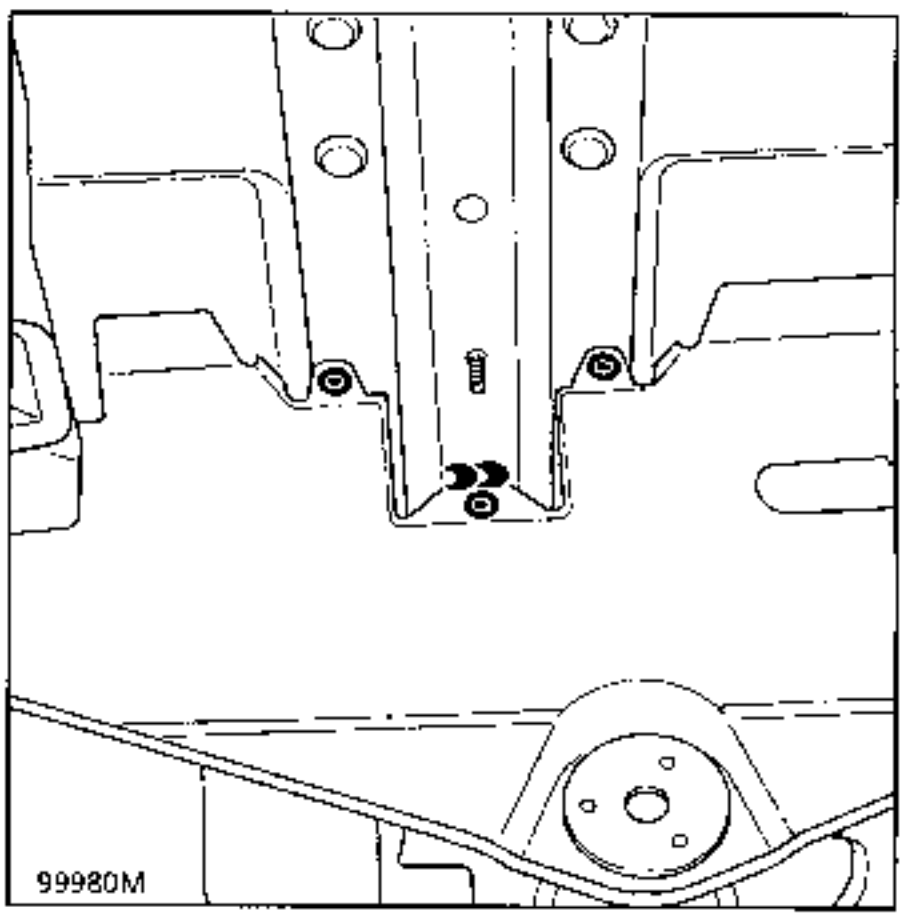
Inner flange	1.5
Rear cross member	2.0

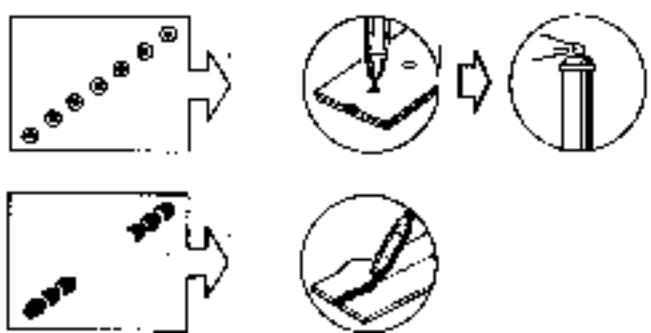
Unpicking

3 spot welds on thickness 2.0

1 MAG fillet of 10 mm on thickness 2.0

Welding





4 JOINT WITH REAR AXLE CROSS MEMBER SIDE REINFORCEMENT

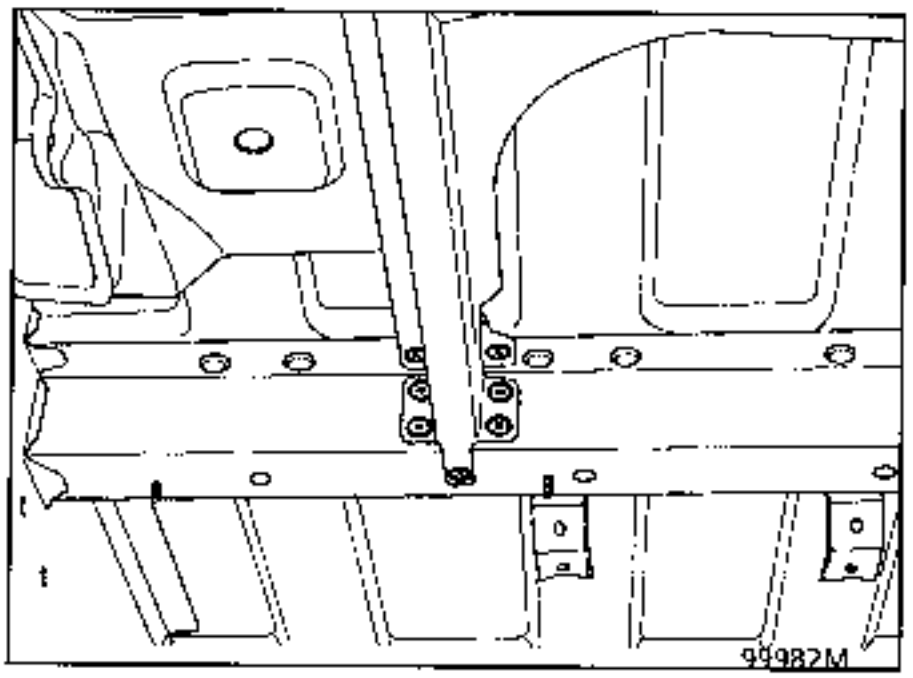
Thickness of panels concerned (mm)

Side reinforcement	2.0
Rear cross member	2.0

Unpicking

7 spot welds on thickness 2.0

Welding



5 JOINT WITH FLOOR

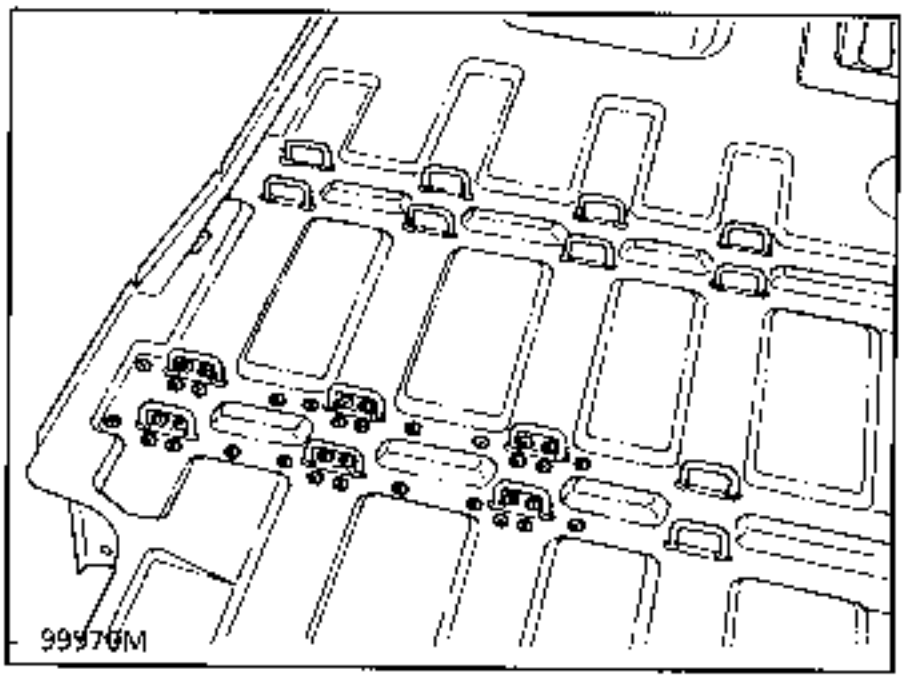
Thickness of panels concerned (mm)

Floor	0.8
Rear cross member	2.0

Unpicking

36 spot welds on thickness 2.0

Welding



6 PART SECTION

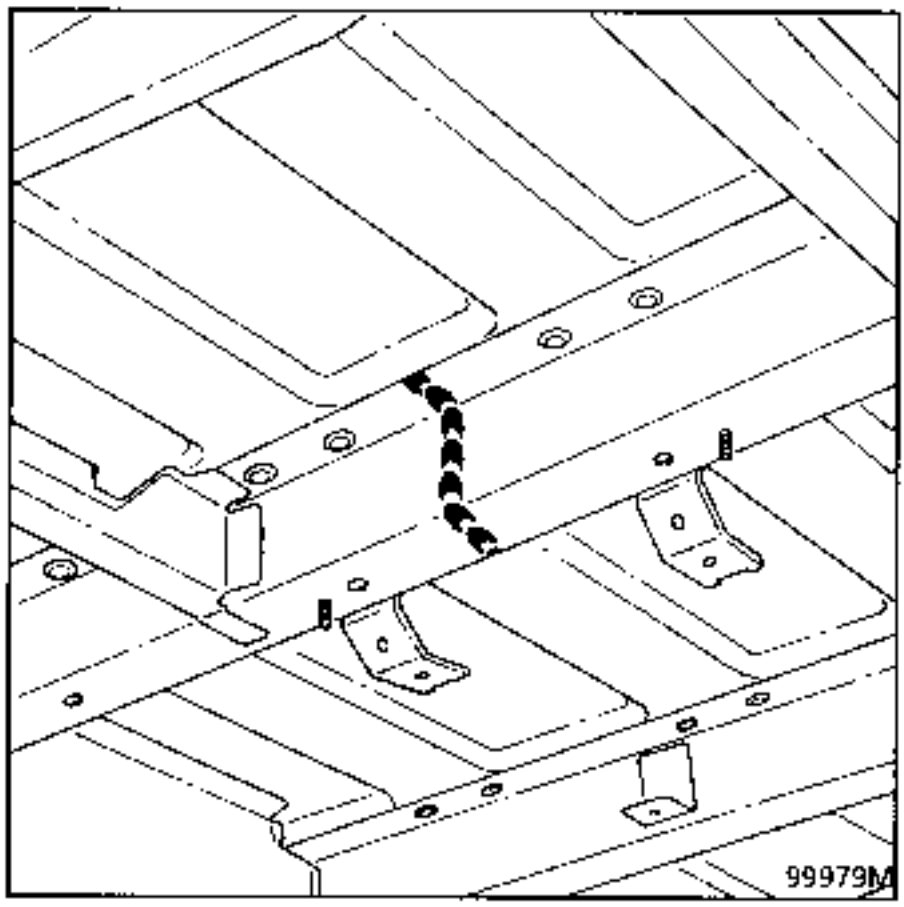
Thickness of panels concerned (mm)

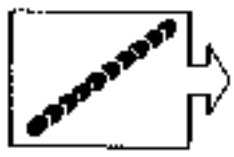
Rear cross member - 2nd row seats	2.0

Unpicking

124 mm on thickness 2.0

Welding





Check before Welding :

For the version with rings, measure the dimension between the axes of the rings.

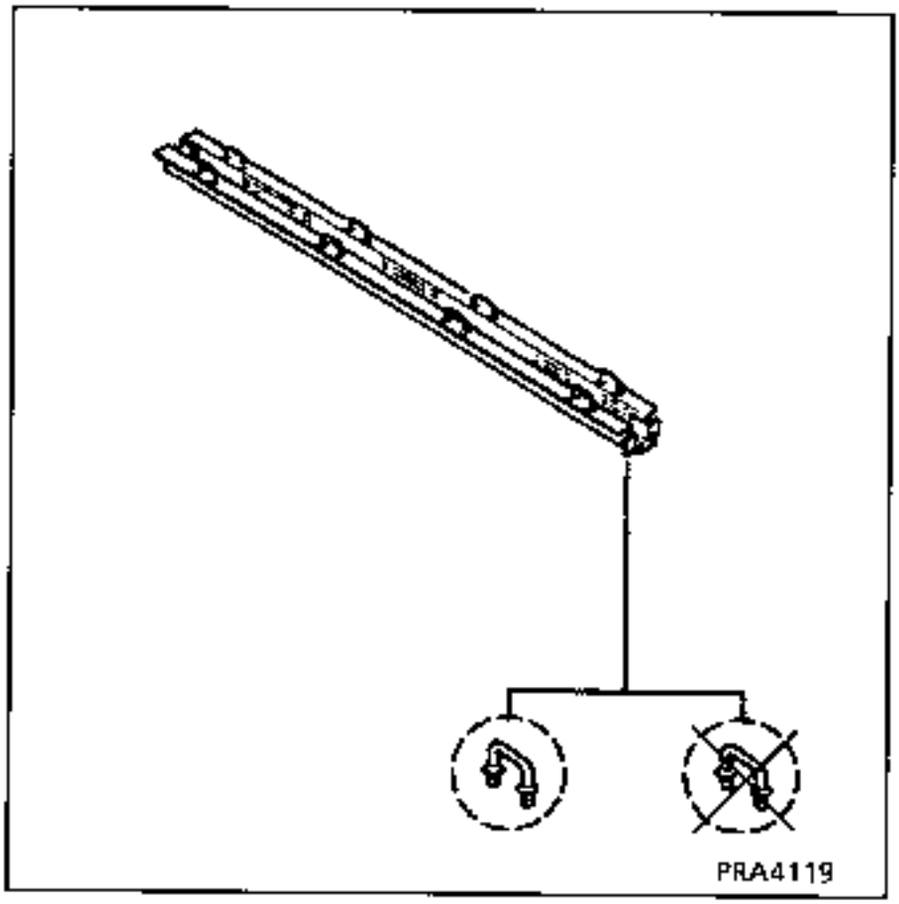
For the version with rail :
Fit the rails without fully tightening them
Position a seat to check the dimensions.
Lock the rail bolts to a torque of 1.2 daN.m

NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of the side floor, part section, the rear side member, part section.

COMPOSITION OF PART FROM PARTS DEPARTMENT



Preliminary operations.

Remove:
- the exhaust, LH side,
- the wheel arch lining,
- the anchorage covers,
- the floor lining,
- the emergency spare wheel,
- the compressor.

1 JOINT WITH OUTER SIDE MEMBER

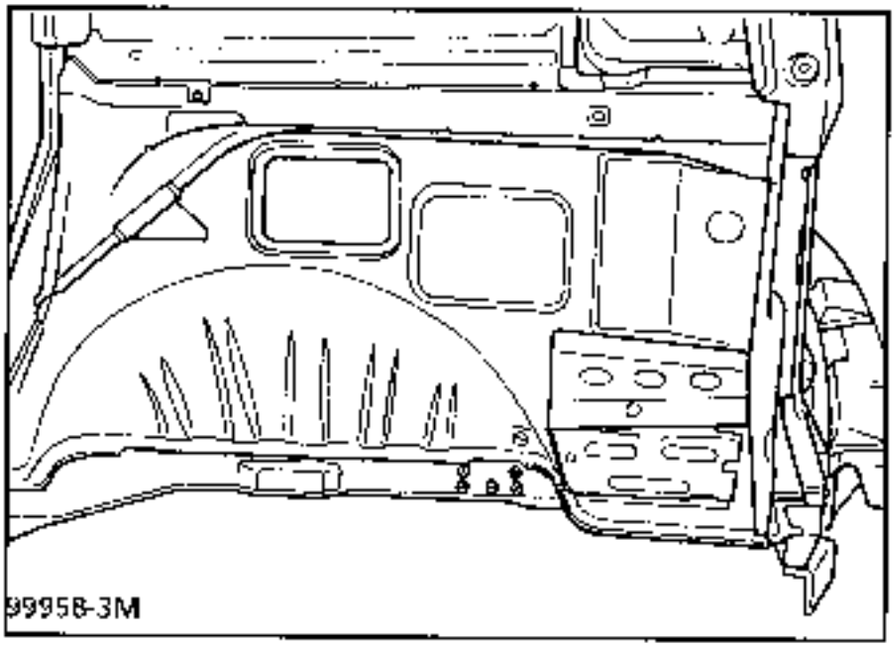
Thickness of panels concerned (mm)

Cross member - 3rd row seats	2.0
Outer side member	2.5

Unpicking

5 spot welds on thickness 2.0

Welding



2 JOINT WITH CENTRE SIDE CONNECTION PLATE

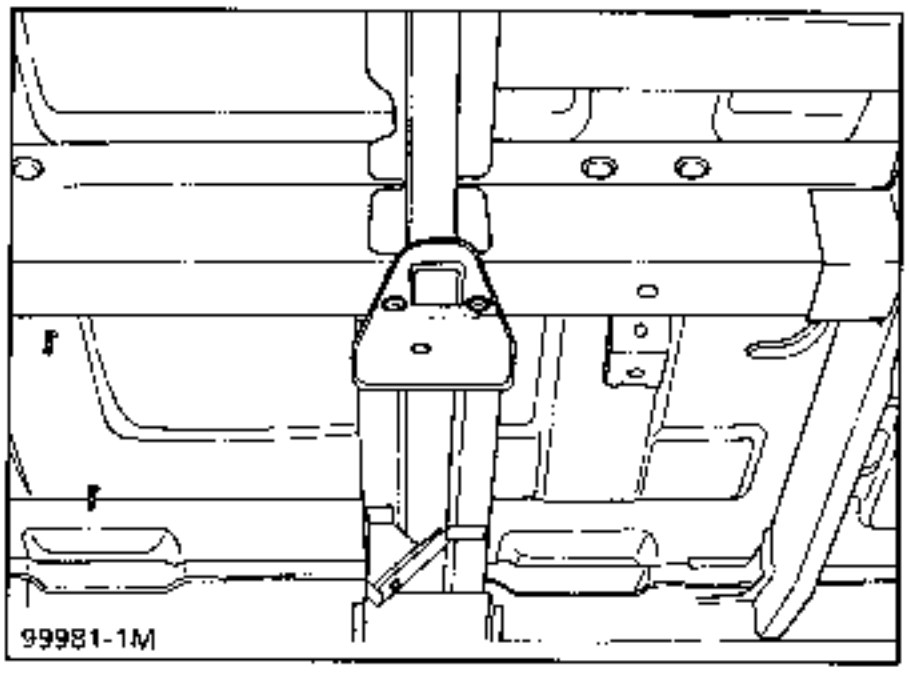
Thickness of panels concerned (mm)

Cross member - 3rd row seats	2.0
Connecting plate	1.5

Unpicking

2 spot welds on thickness 2.0

Welding



3 JOINT WITH REAR AXLE CROSS MEMBER SIDE REINFORCEMENT

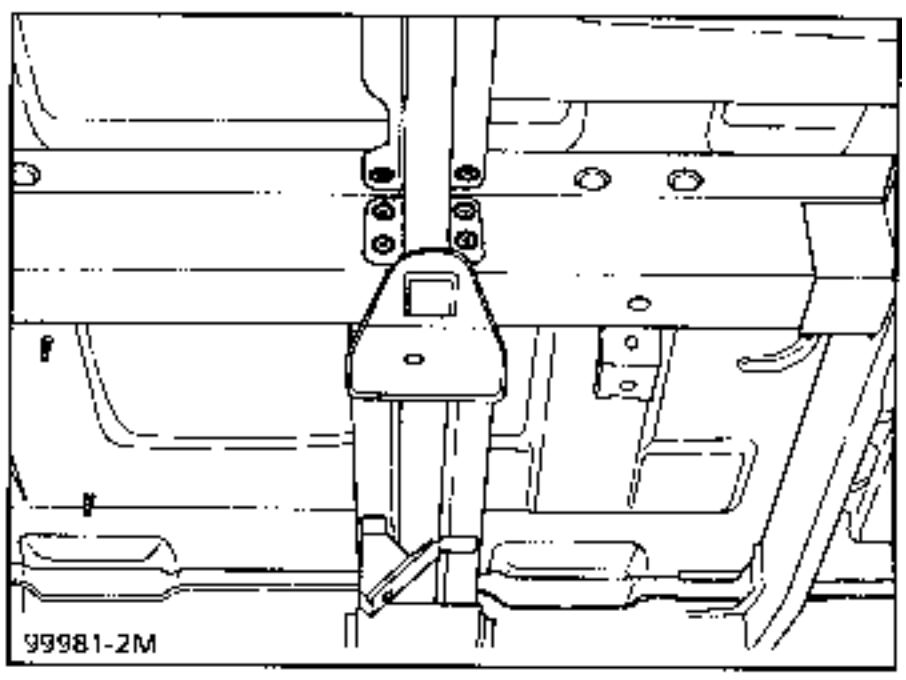
Thickness of panels concerned (mm)

Side reinforcement	2.0
Seat cross member	2.0

Unpicking

6 spot welds on thickness 2.0

Welding



4 JOINT WITH FLOOR

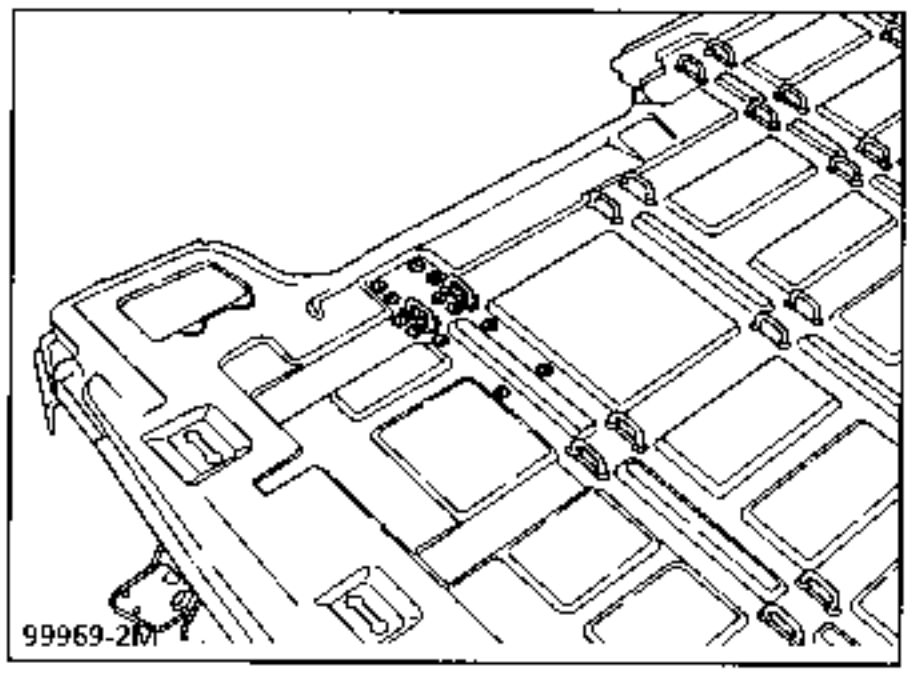
Thickness of panels concerned (mm)

Floor	0.8
Cross member - 3rd row seats	2.0

Unpicking

16 spot welds on thickness 2.0

Welding

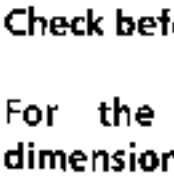


5 PART SECTION

Thickness of panels concerned (mm)

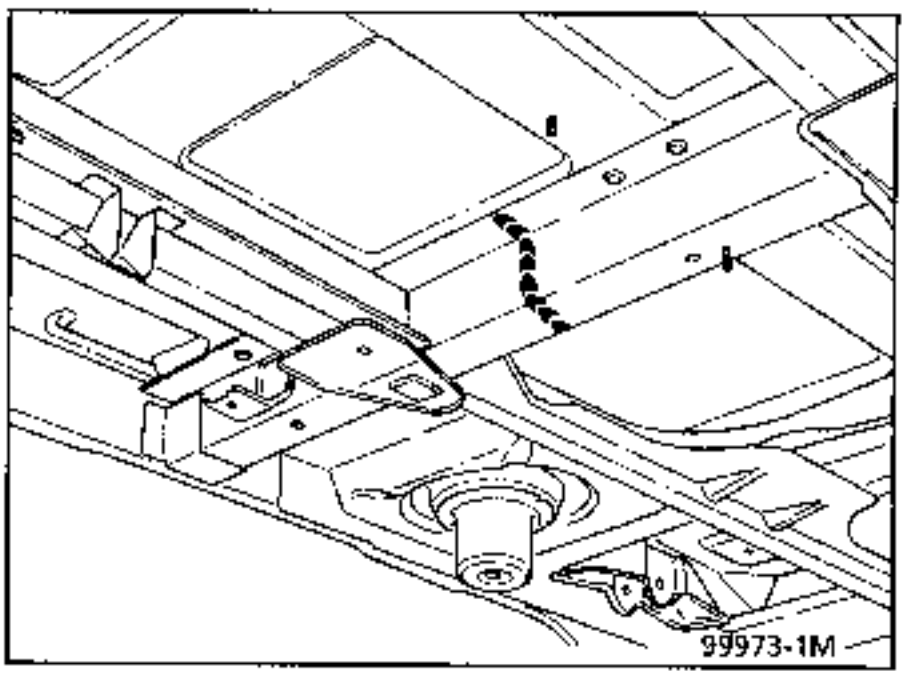
Cross member - 3rd row seats	2.0

Unpicking



124 mm on thickness 2.0

Welding



Check before Welding :

For the version with rings, measure the dimension between the axes of the rings.

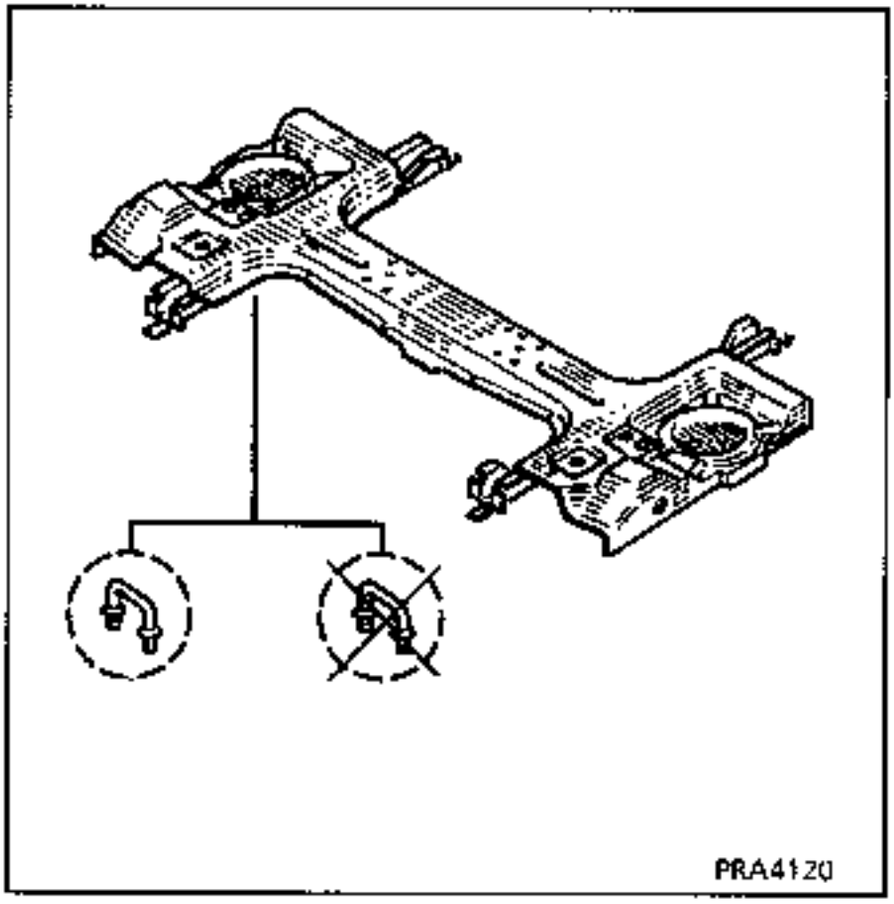
For the version with rail ;
Fit the rails without fully tightening them
Position a seat to check the dimensions.
Lock the rail bolts to a torque of 1.2 daN.m

NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of the side floor, part section, the wheel arch assembly, the complete side member assembly, for a side impact.

COMPOSITION OF PART FROM PARTS DEPARTMENT



Preliminary operations.

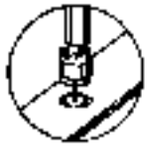
Remove:
- the rear axle assembly,
- the exhaust,
- the fuel tank, RH side,
- the wheel arch lining,
- the anchorage covers,
- the floor lining.

1 JOINT WITH OUTER SIDE MEMBER

Thickness of panels concerned (mm)

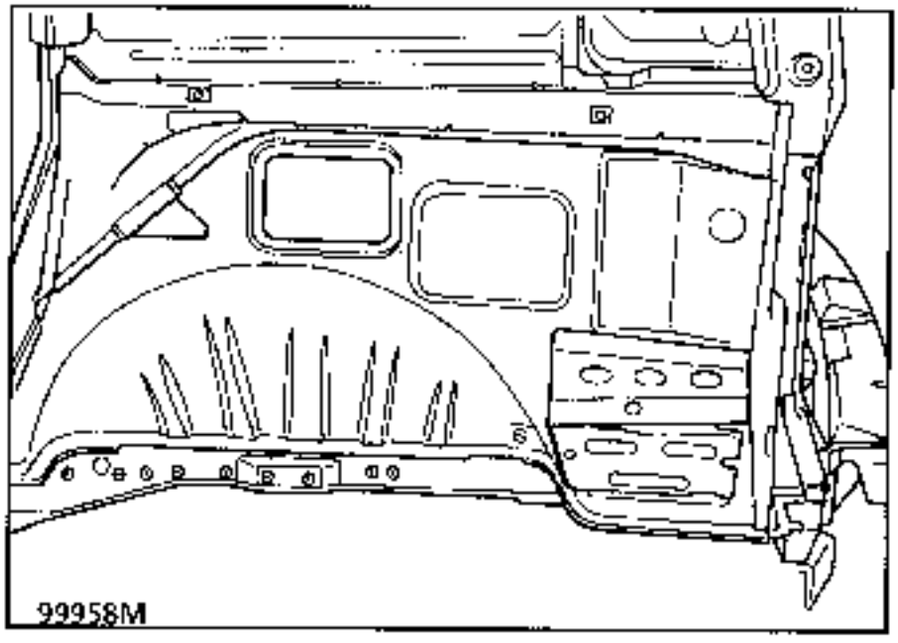
Outer side member	2.5
Rear axle cross member side reinforcement	2.0

Unpicking



9 spot welds on thickness 2.0

Welding



2 JOINT WITH REAR CROSS MEMBER - 2ND ROW SEATS

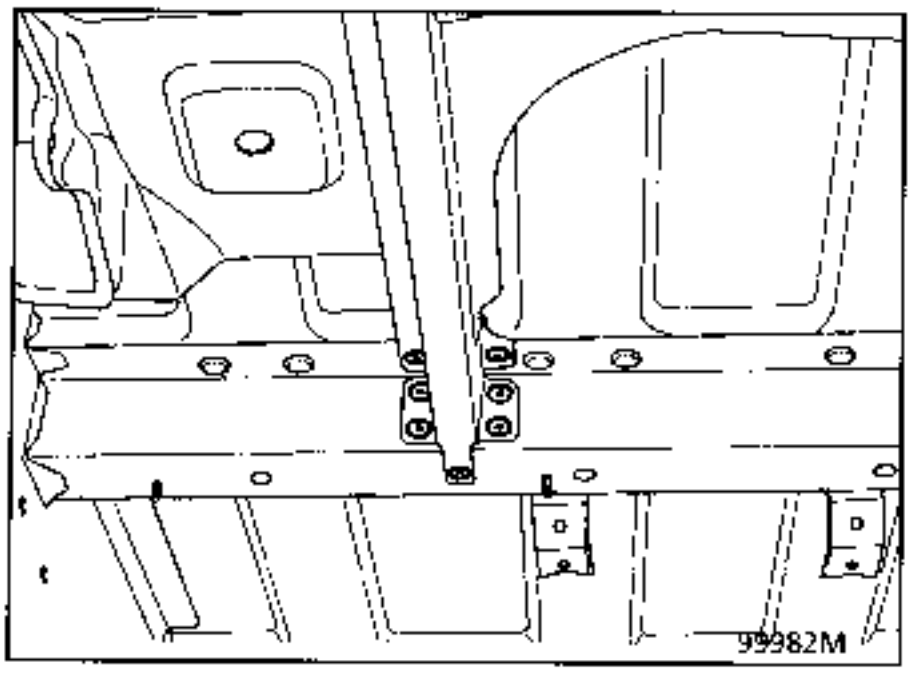
Thickness of panels concerned (mm)

Rear cross member - 2nd row seats	2.0
Rear axle cross member side reinforcement	2.0

Unpicking

7 spot welds on thickness 2.0

Welding

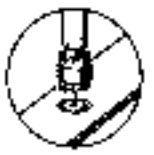


3 JOINT WITH REAR CROSS MEMBER - 3RD ROW SEATS

Thickness of panels concerned (mm)

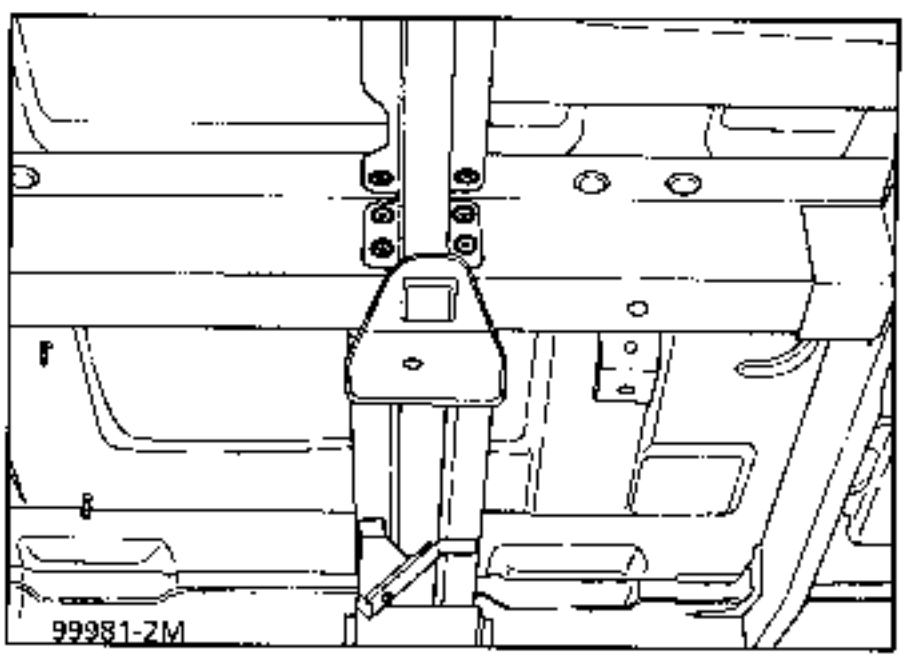
Rear cross member - 3rd row seats	2.0
Rear axle cross member side reinforcement	2.0

Unpicking



6 spot welds on thickness 2.0

Welding



4 JOINT WITH CENTRE SIDE CONNECTING PLATE

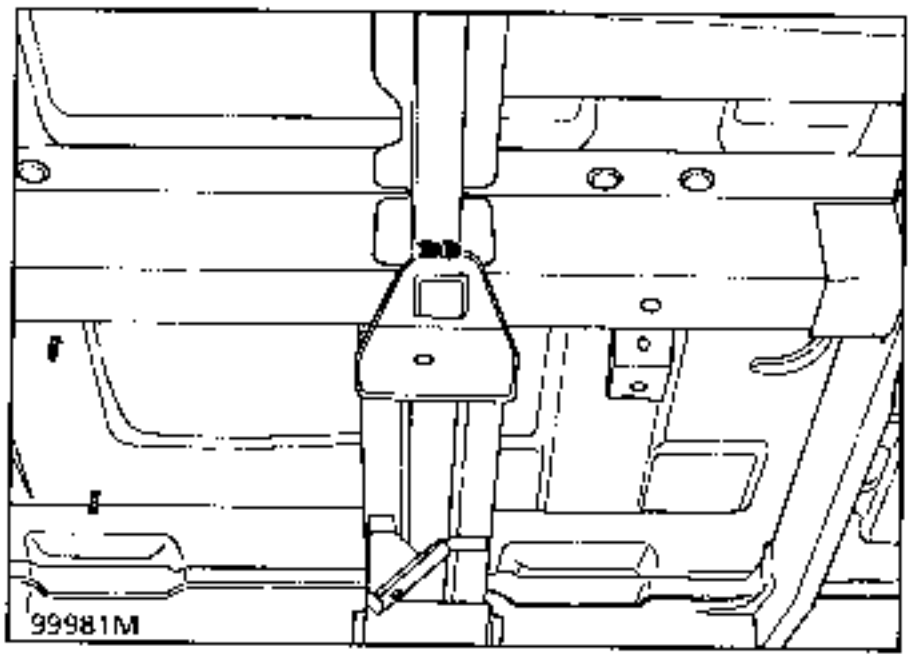
Thickness of panels concerned (mm)

Centre side connecting plate	1.2
Rear axle cross member side reinforcement	2.0

Unpicking

1 MAG fillet of 15 mm

Welding



5 JOINT WITH FLOOR

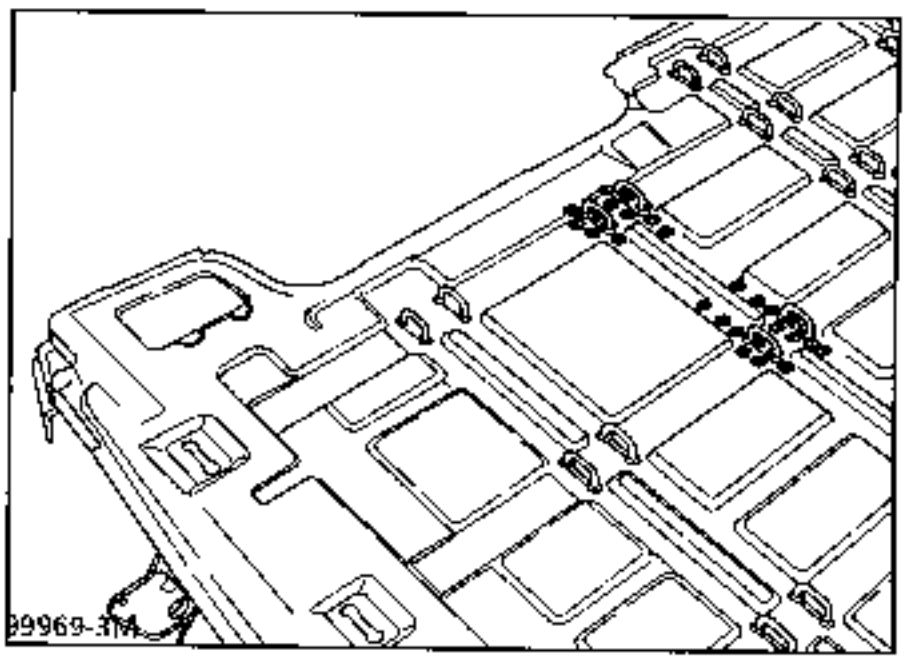
Thickness of panels concerned (mm)

Floor	0.8
Rear axle cross member side reinforcement	2.0

Unpicking

29 spot welds on thickness 2.0

Welding



6 PART SECTION

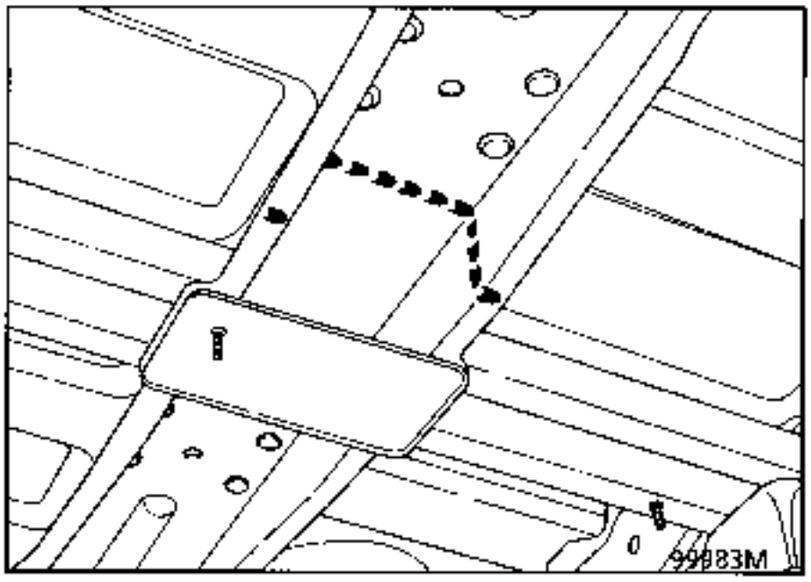
Thickness of panels concerned (mm)

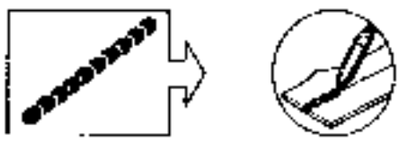
Rear axle cross member	2.0

Unpicking

340 mm on thickness 2.0

Welding





Check before Welding :

For the version with rings, measure the dimension between the axes of the rings.

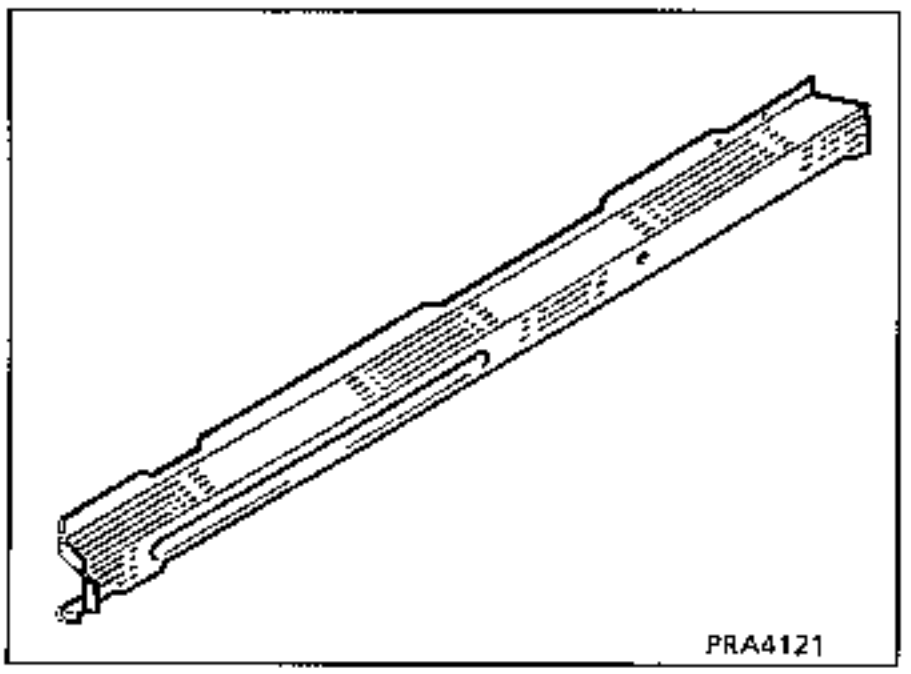
For the version with rail :
Fit the rails without fully tightening them
Position a seat to check the dimensions.
Lock the rail bolts to a torque of 1.2 daN.m

NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of the complete rear side member valance panel.

COMPOSITION OF PART FROM PARTS DEPARTMENT



Preliminary operations.

Remove:
- the valance panel seal,
- the SMC sill panel,
- part of the wiring loom,
- the floor lining, part section.

Recommendations for replacement:

Depending on the areas of deformation, several types of repair may be made.

1 JOINT WITH VALANCE PANEL

Thickness of panels concerned (mm)

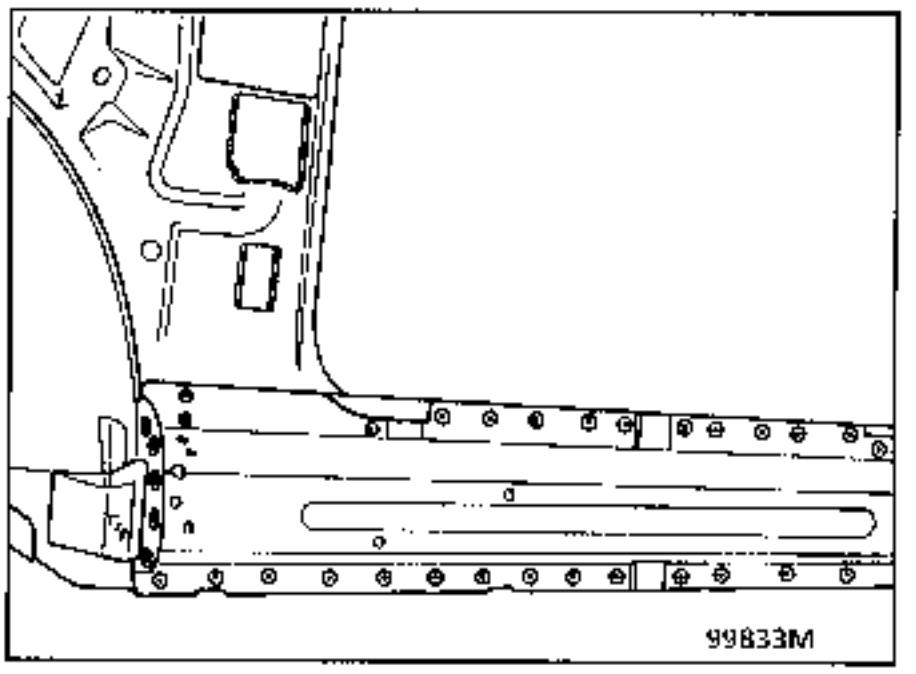
Valance panel	0.8
Valance panel reinforcement	0.7

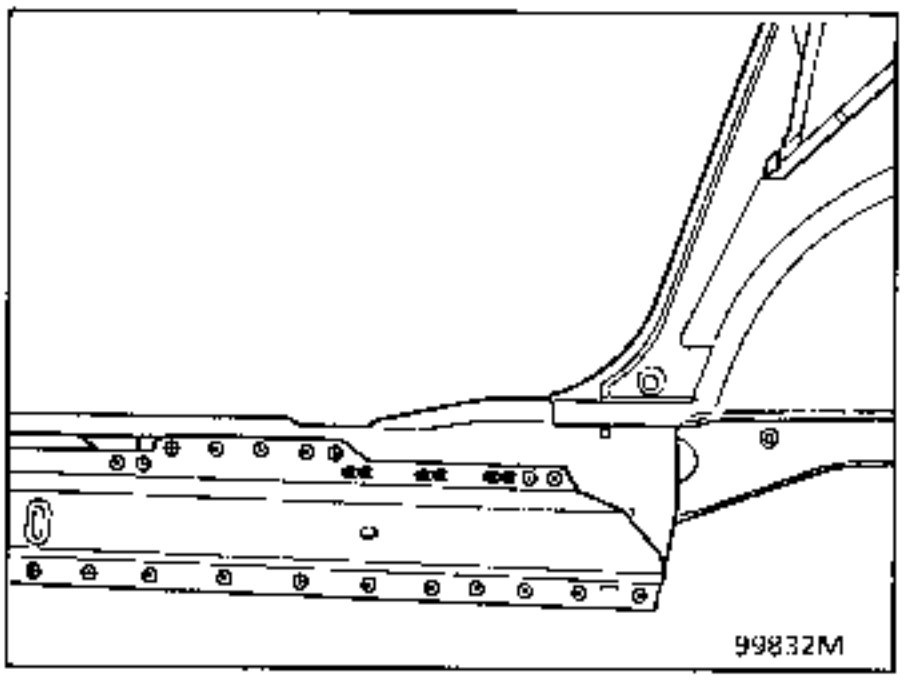
Unpicking

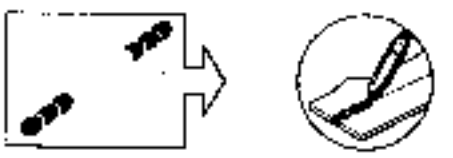
56 spot welds on thickness 0.8

+3 MAG fillet of 20 mm

Welding







2 PART SECTION

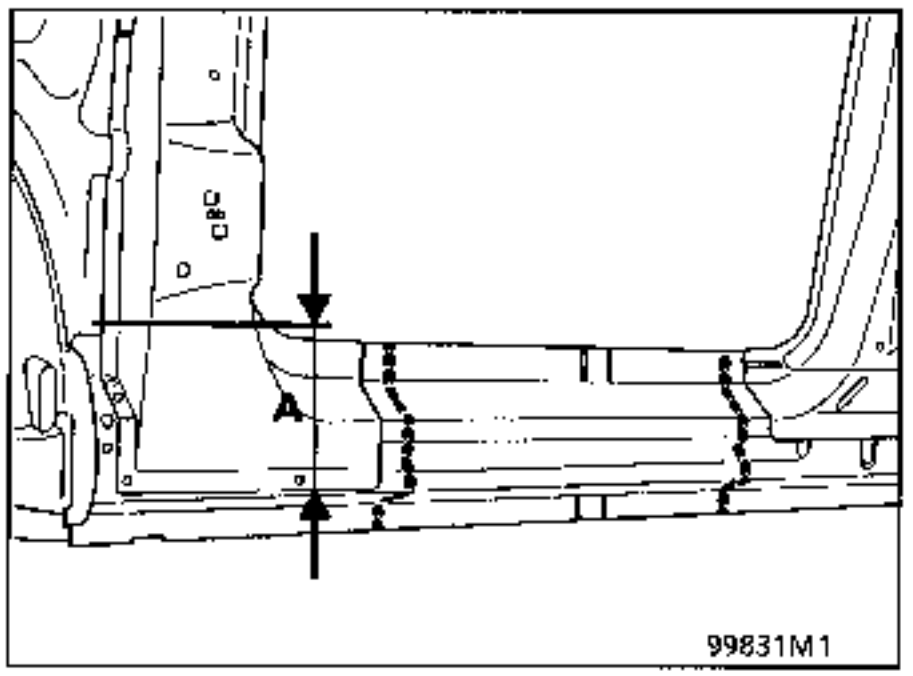
Thickness of panels concerned (mm)

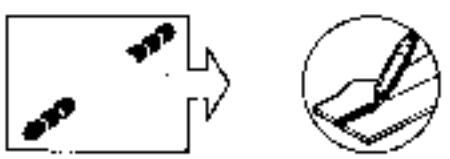
Valance panel reinforcement	0.8

Unpicking

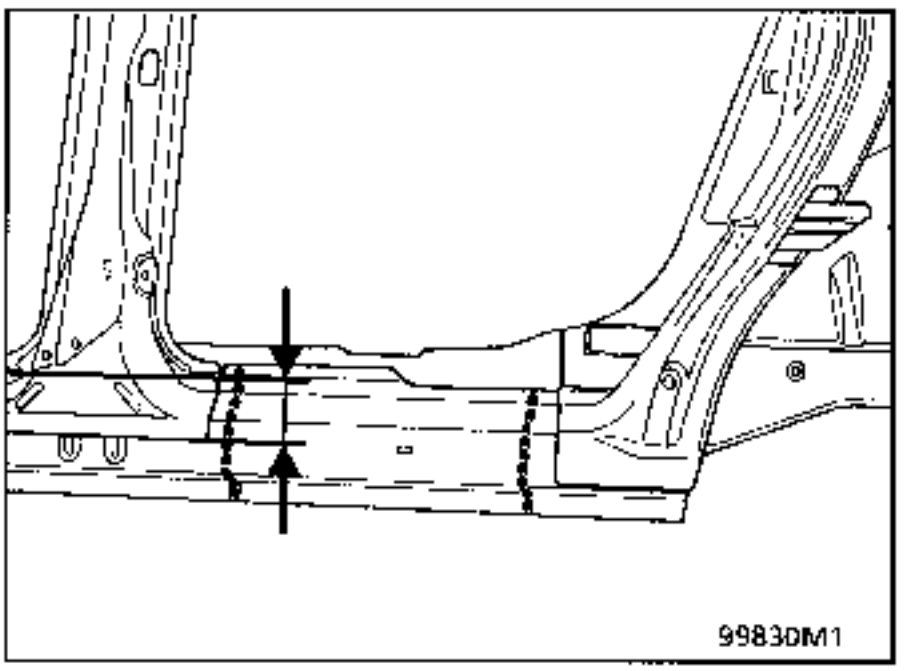
260 mm on thickness 0.8

Welding





Front pillar cutting line (A)
Butt welding



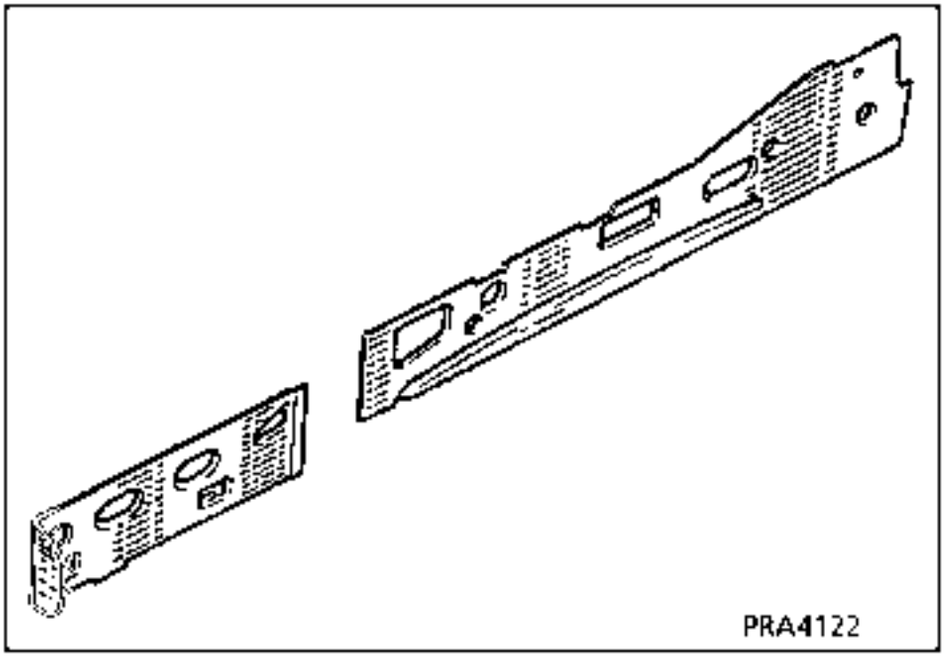
Centre pillar cutting line
Butt welding

NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of a complete rear side member.

COMPOSITION OF PART FROM PARTS DEPARTMENT



Preliminary operations.

Remove:
- the inner sill panel protectors,
- the door seals,
- the floor lining,
- part of the wiring loom,
- the valance panel seals,
- the valance panel,
- the valance panel reinforcement.

1 JOINT WITH VALANCE PANEL

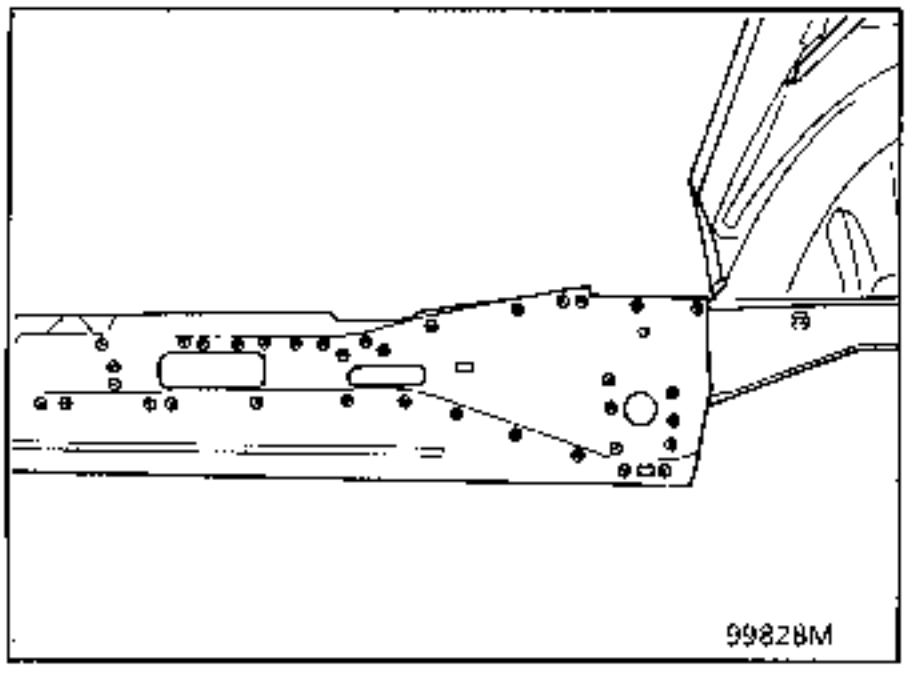
Thickness of panels concerned (mm)

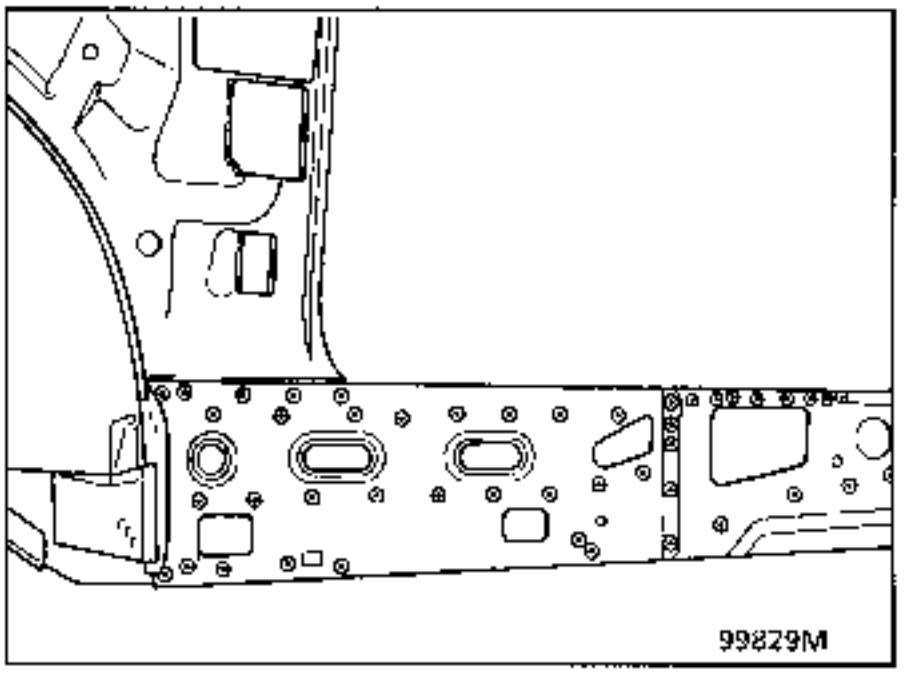
Valance panel	0.7
Jacking point mounting	2.0
Rear lower valance closure panel	0.8
Front lower valance closure panel	0.8
Floor	0.8

Unpicking

82 spot welds on thickness 0.8 and 2.0

Welding





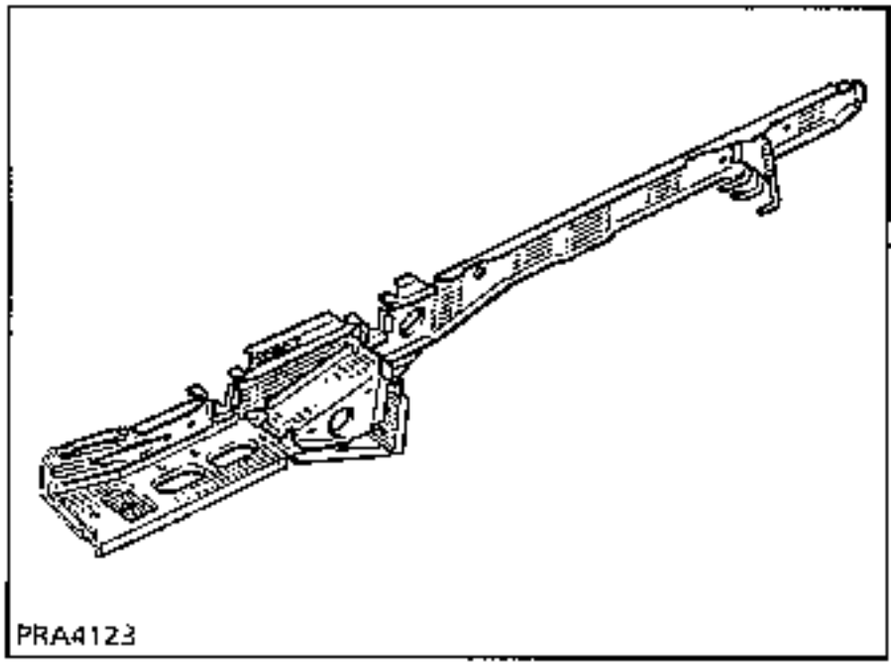
NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of :
– a side floor part section,
– the wheel arch assembly,
– the valance panel reinforcement,
for a side impact.

The operation must be carried out on the repair bench.

COMPOSITION OF PART FROM PARTS DEPARTMENT


PRA4123

Preliminary operations.

Remove:
– the mudguard,
– the exhaust,
– the fuel tank, RH side,
– the rear axle assembly,
– the anchorage covers,
– the wheel arch lining,
– the floor lining.

1 JOINT WITH REAR PILLAR

REMINDER : refer to operations 44-B1-B2-B3-B4.

2 JOINT WITH VALANCE PANEL REINFORCEMENT

REMINDER : refer to operations 41-U1-U2.

3 JOINT WITH VALANCE PANEL, REAR SECTION

REMINDER : refer to operations 41-V1.

4 JOINT WITH CROSS MEMBER BETWEEN CENTRE PILLARS

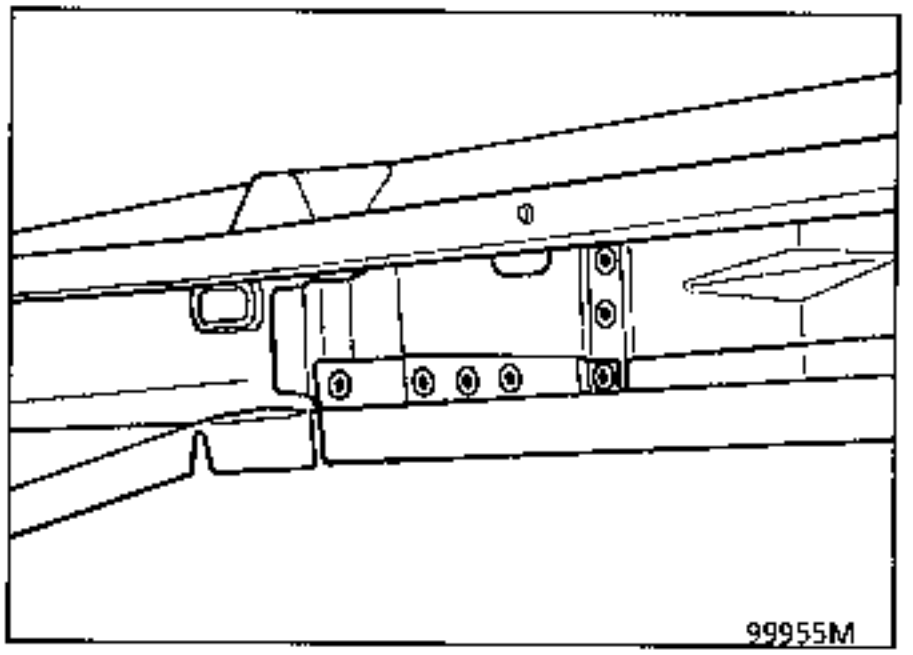
Thickness of panels concerned (mm)

Cross member between centre pillars	1.5
Outer side member	2.5
Lower valance closure panel	0.8

Unpicking

7 spot welds on thickness 1.5

Welding

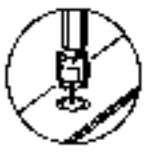


5 JOINT WITH VALANCE PANEL LOWER CLOSURE PANEL

Thickness of panels concerned (mm)

Valance panel lower closure panel	0.8
Front lower valance closure panel	0.8
Side member extension	1.2

Unpicking



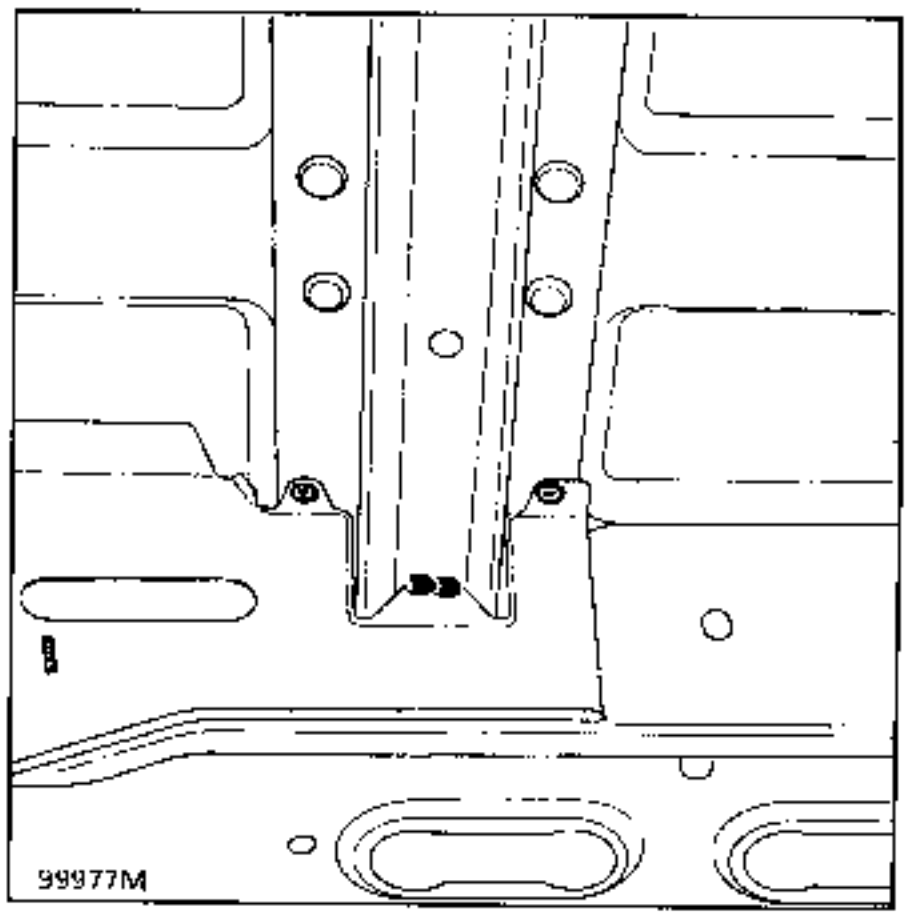
5 spot welds on thickness 0.8 and 1.2

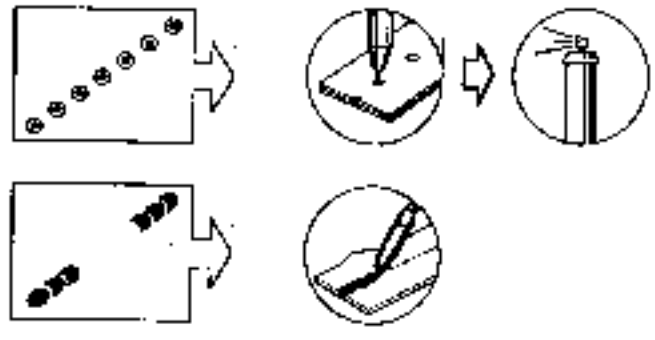
Welding

6 JOINT WITH FRONT CROSS MEMBER - 2ND ROW SEATS

REMINDER : refer to operations 41-Q-1.

Welding

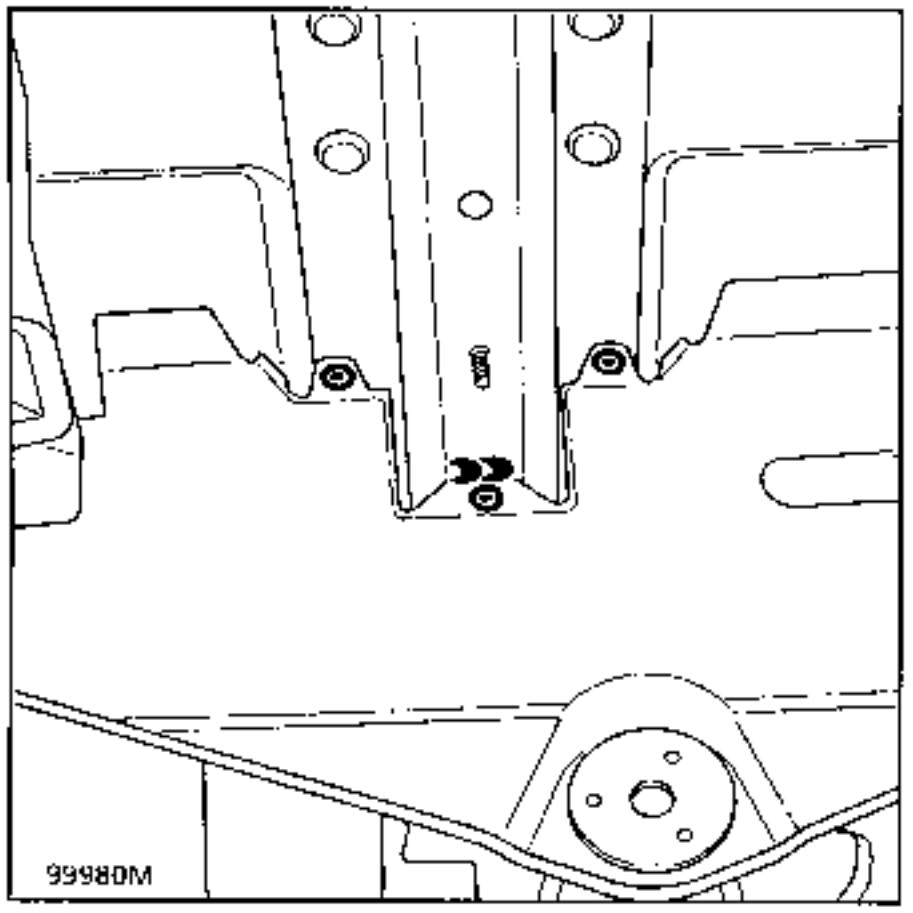


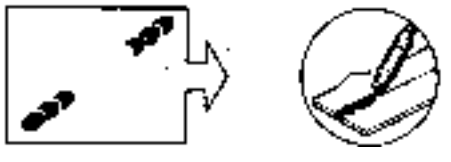


7 JOINT WITH REAR CROSS MEMBER - 2ND ROW SEATS

REMINDER : refer to operations 41-R-3.

Welding

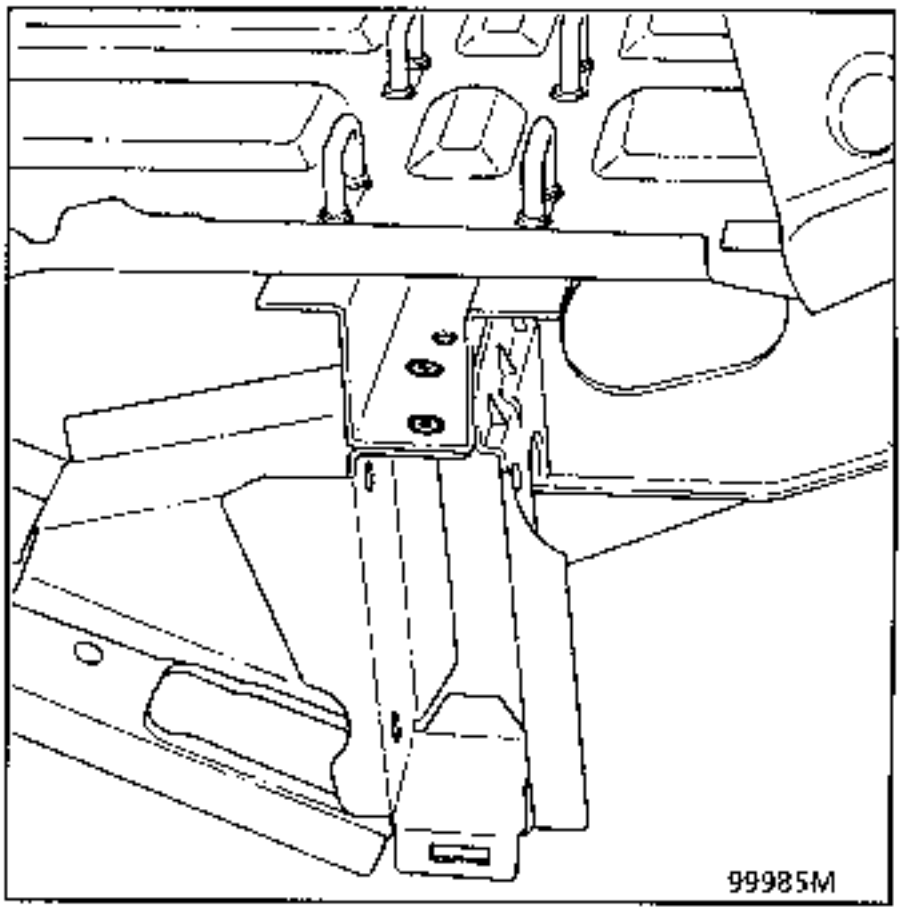




8 JOINT WITH JACKING POINT MOUNTING

REMINDER : refer to operations 41-R-1.

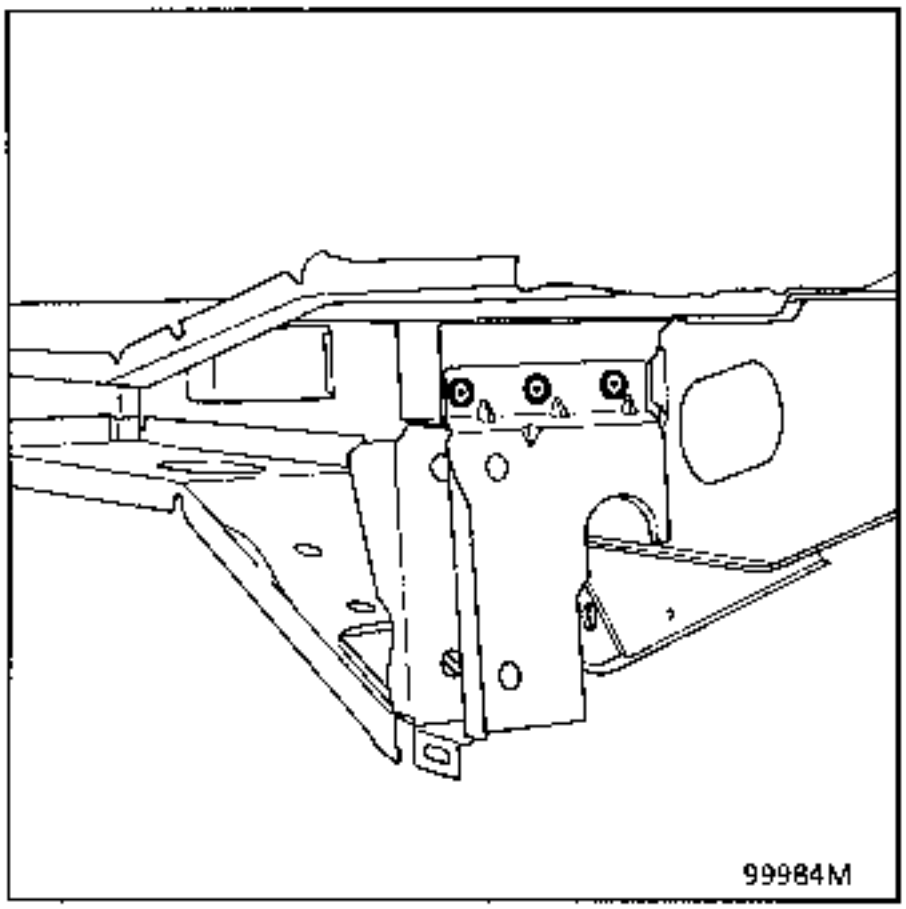
Welding



9 JOINT WITH JACKING POINT MOUNTING CLOSURE PANEL

REMINDER : refer to operations 41-R-2.

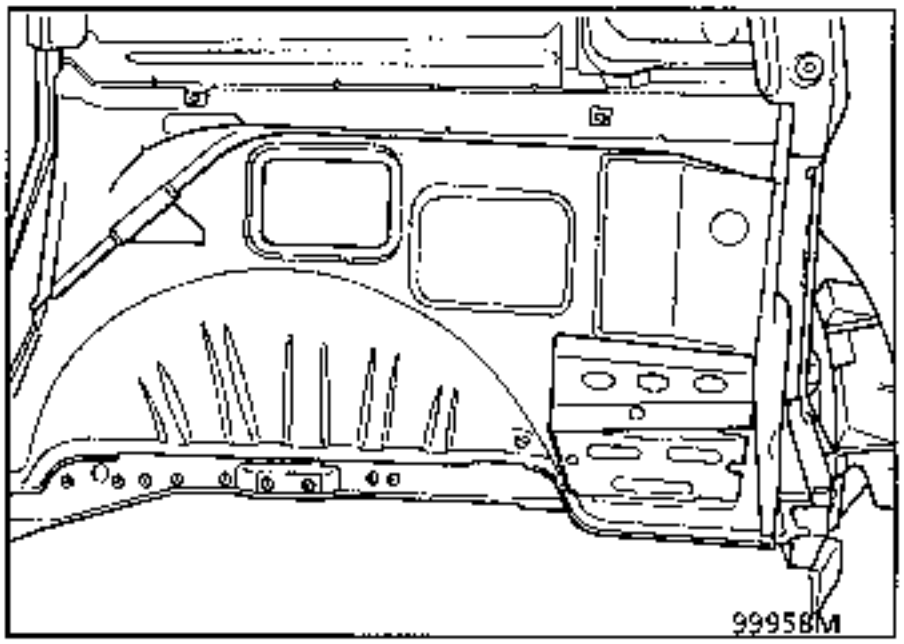
Welding



10 JOINT WITH REAR AXLE CROSS MEMBER

REMINDER : refer to operations 41-T-1.

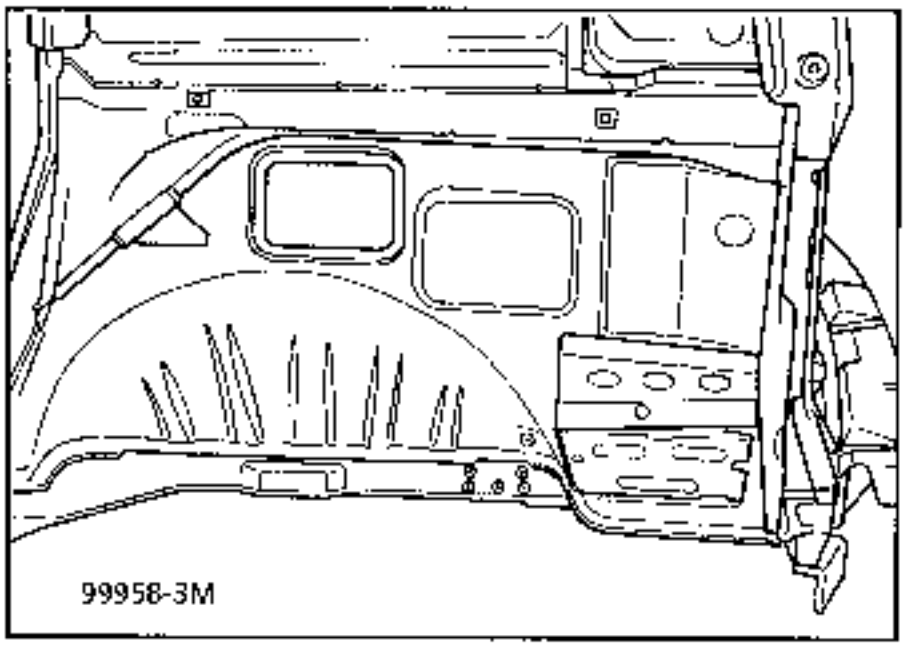
Welding



11 JOINT WITH CROSS MEMBER - 3RD ROW SEATS

REMINDER : refer to operations 41-S-1

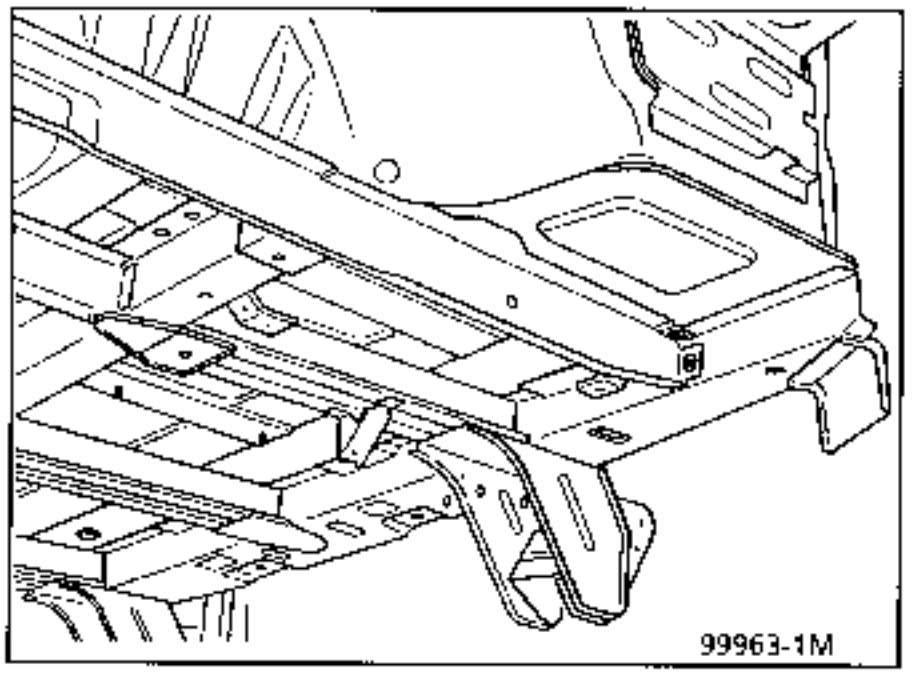
Welding



12 JOINT WITH LOWER CROSS MEMBER

REMINDER : refer to operations 41-J-1

Welding

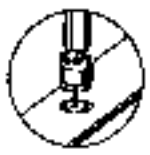


13 JOINT WITH FLOOR

Thickness of panels concerned (mm)

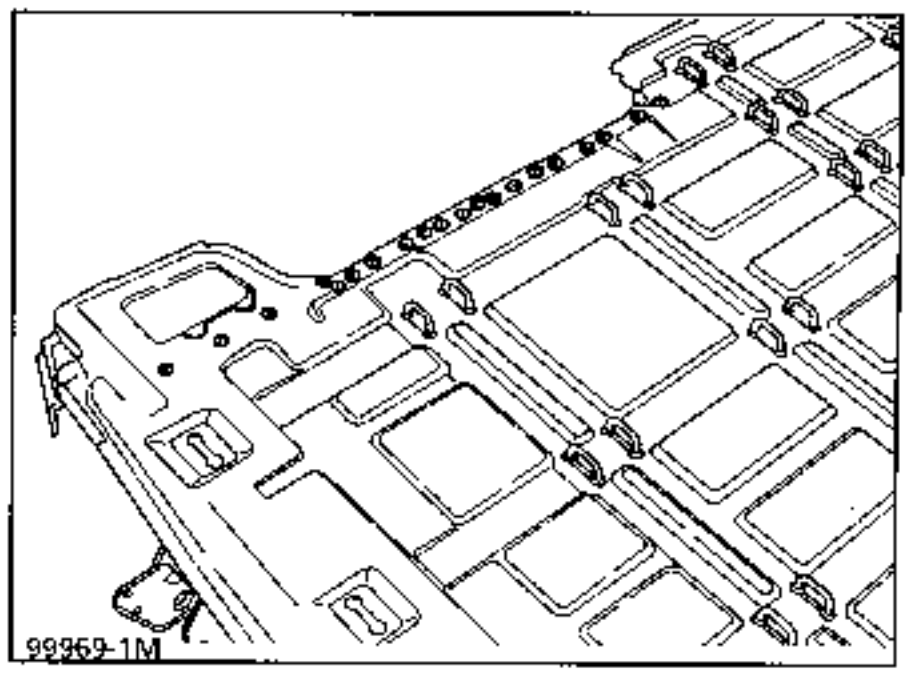
Floor	0.8
Outer side member	2.5

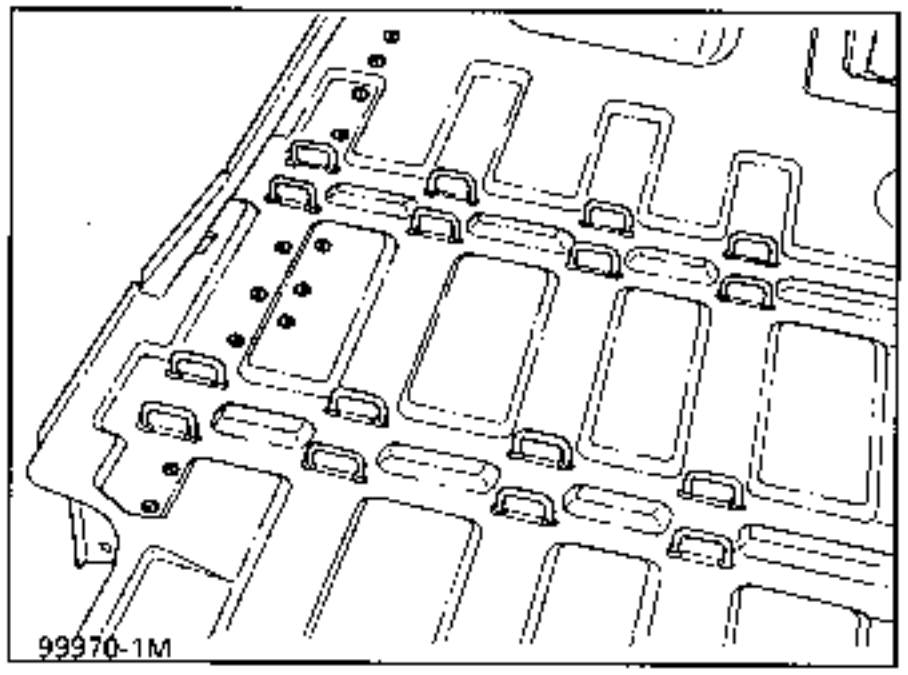
Unpicking



32 spot welds on thickness 2.5

Welding





14 PART SECTION

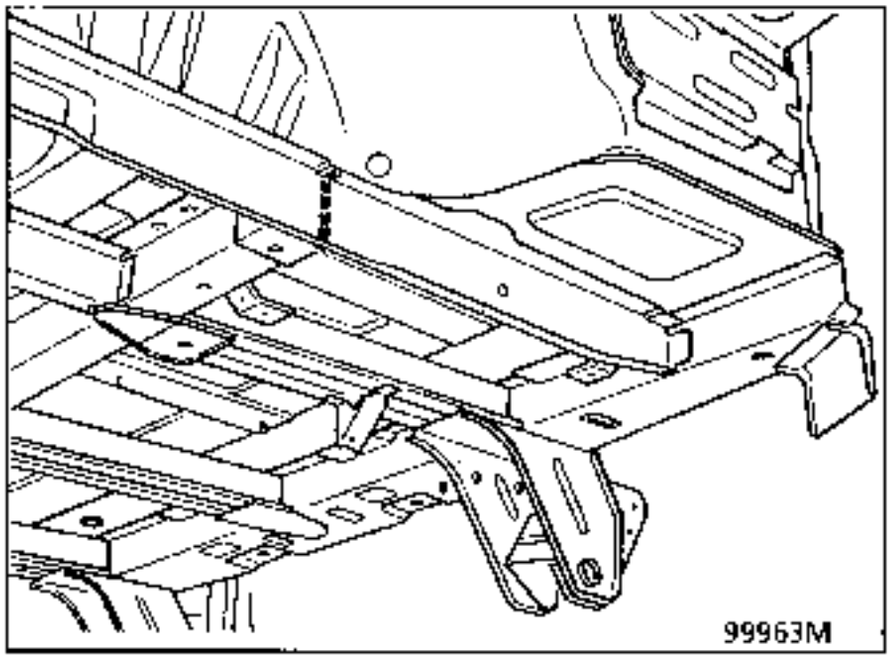
Thickness of panels concerned (mm)

Rear side member, part section	2.5

Unpicking

150 mm on thickness 2.5

Welding

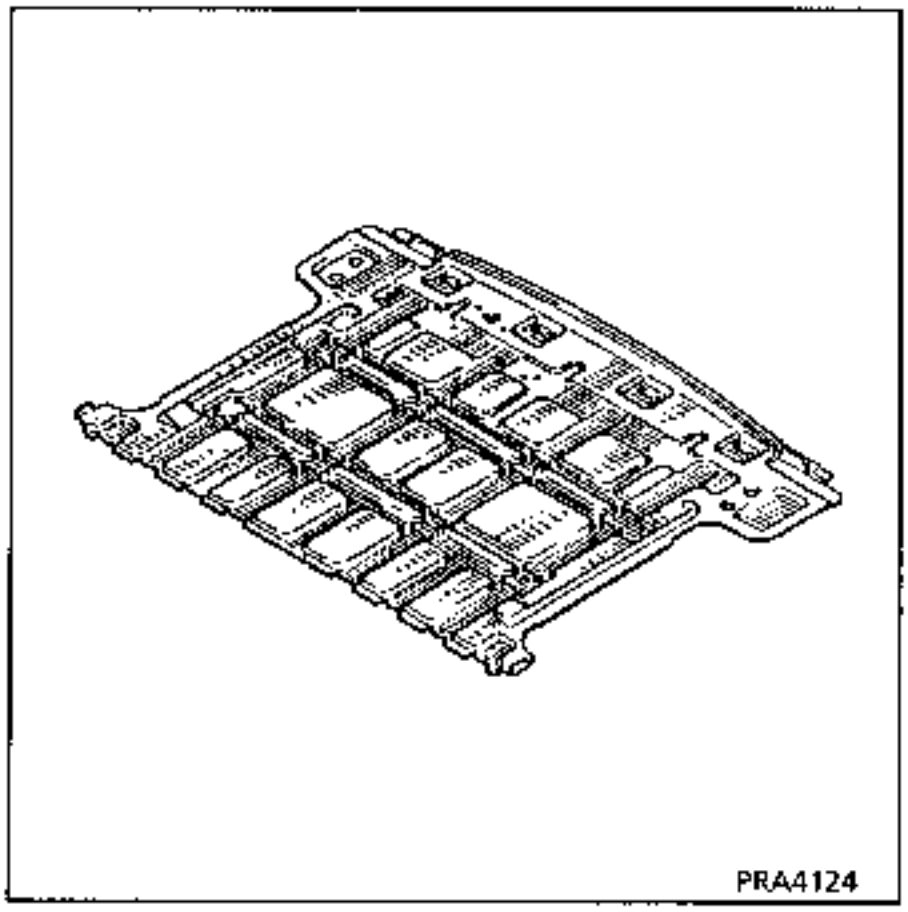


NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of the rear lower cross member, the rear side member, the rear end pillar for a rear impact.

COMPOSITION OF PART FROM PARTS DEPARTMENT



Preliminary operations.

Remove:
- the bumper,
- the bumper cross member,
- the rear light,
- the rear wing,
- the tailgate seal,
- the wheel arch linings,
- the anchorage covers,
- the floor lining,
- the emergency spare wheel,
- the fuel tank,
- the exhaust.

NOTE : Refer to section 40 General, for information on cutting out and preparation before welding.

NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

1 JOINT WITH FLOOR

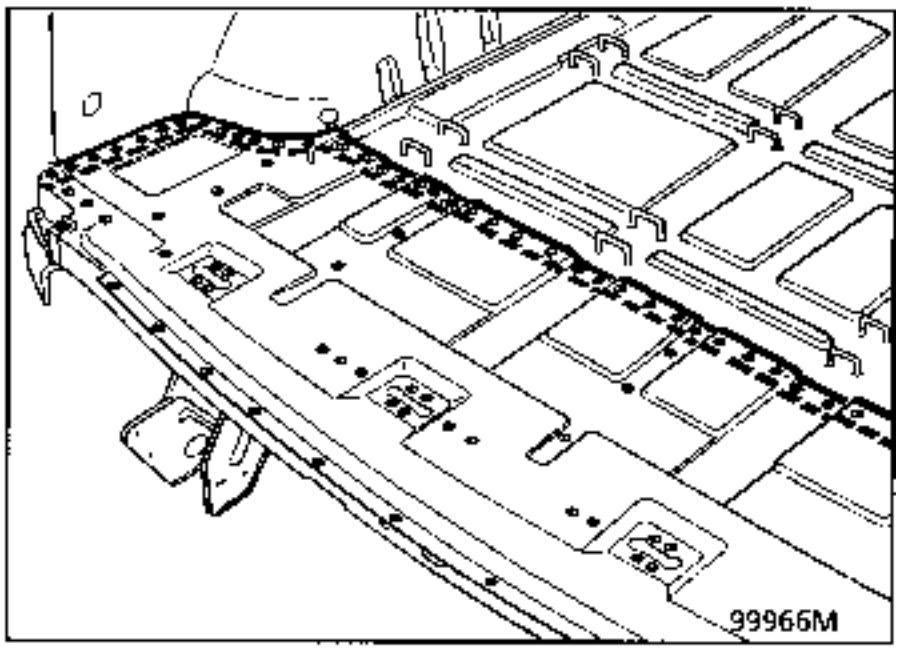
Thickness of panels concerned (mm)

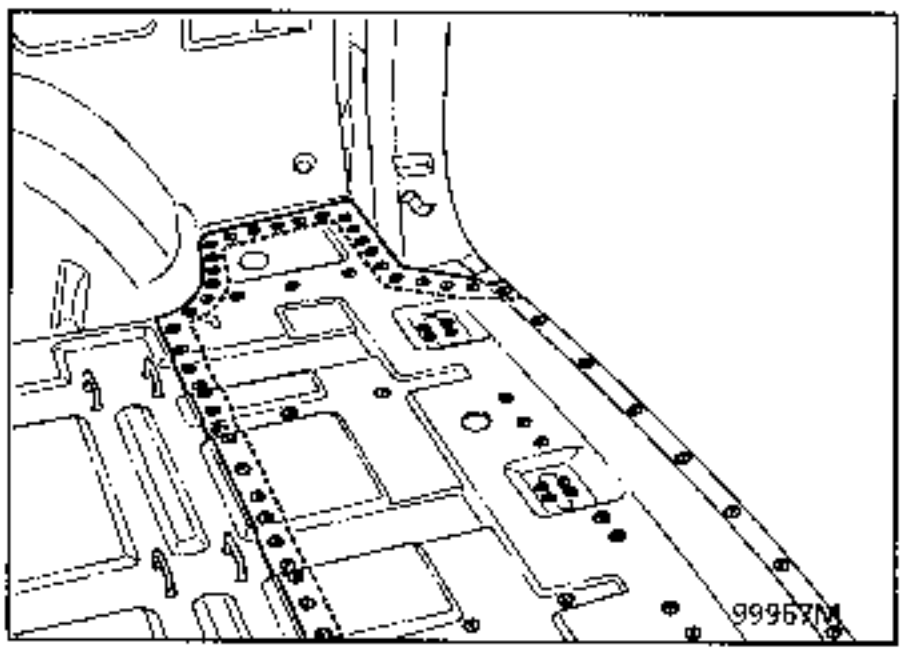
Rear floor	0.8
Outer side member	2.5
Rear side member	1.5
Rear lower cross member	2.0

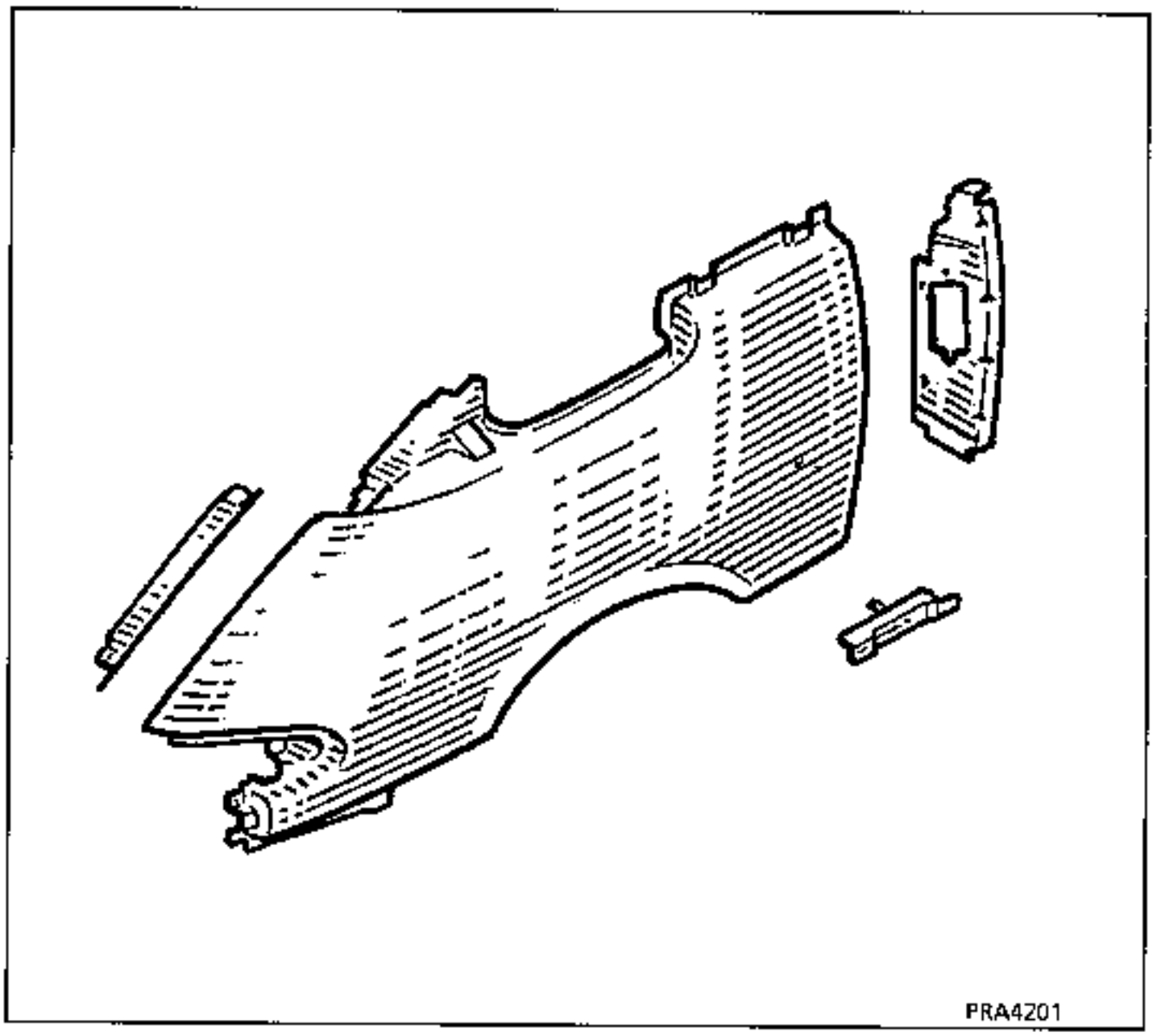
Unpicking

60 spot welds on thickness 0.8

Welding






PRA4201

REPAIRS

- Cracks See repair operation n° 1
- Holes See repair operation n° 2
- Breaks See repair operation n° 3

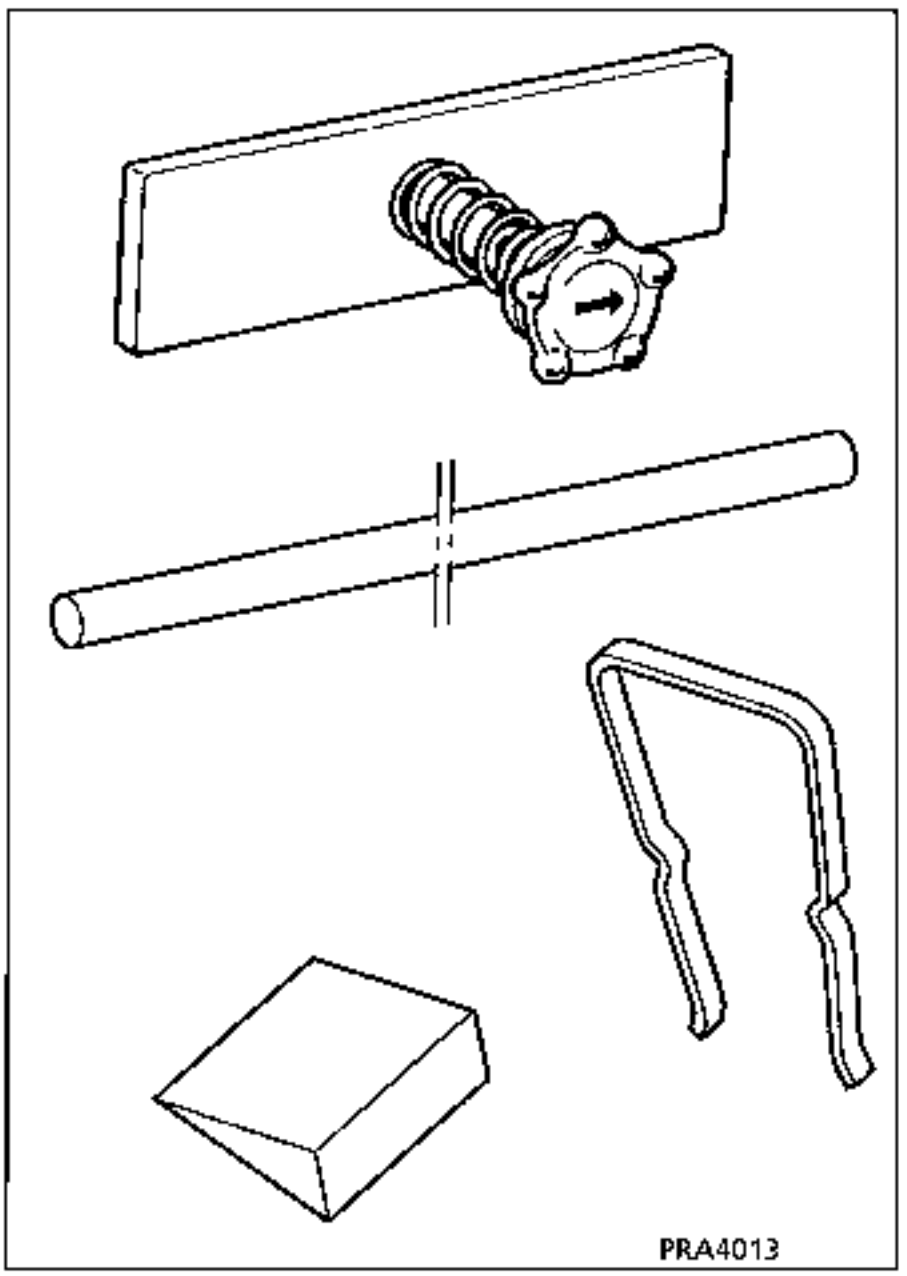
REPLACEMENT

THE QUARTER GLASS DOES NOT NEED TO BE REMOVED TO CARRY OUT THIS OPERATION

Parts to be systematically replaced:
- quarter glass trim.

Tooling required:

- saw (with diamond disc or blade),
- sharp spatula
- adhesive extrusion gun
- centring tooling kit, Part Number Car.1219-01

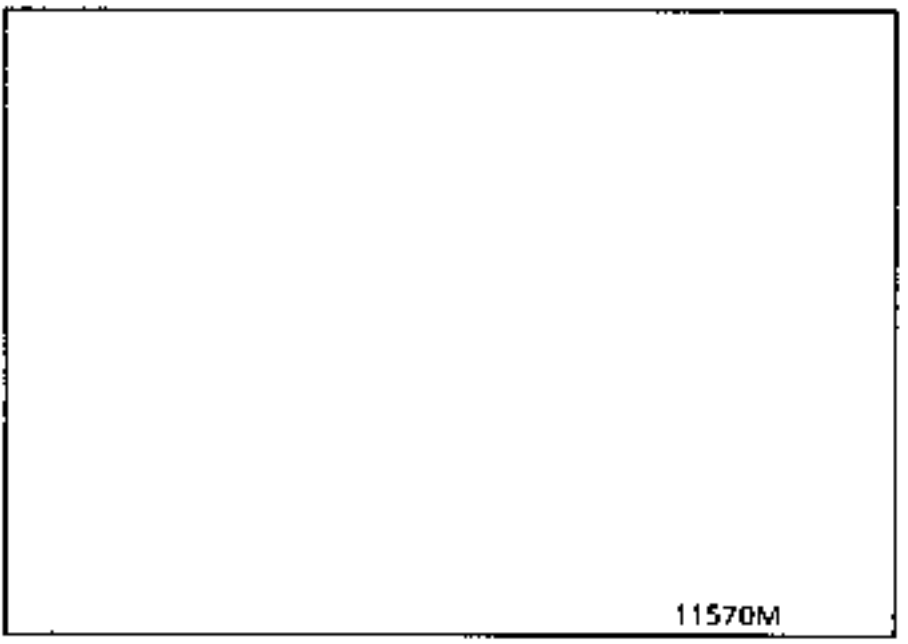


REMOVAL

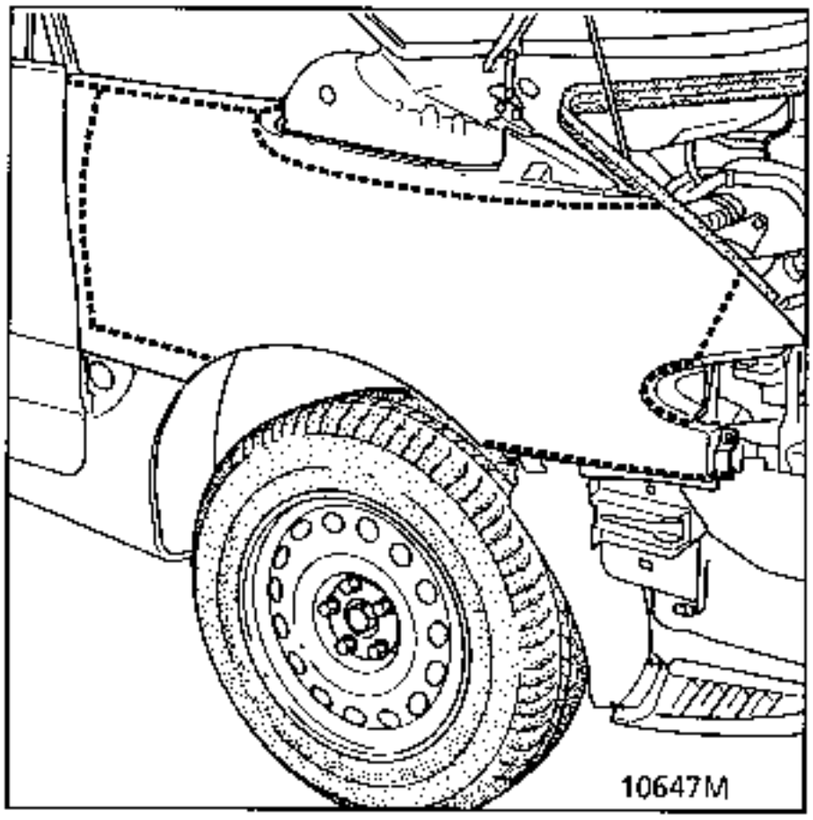
Remove:
- the bumper,
- the side light on the side of the impact
- the wing repeater (depending on version),
- the repeater protector,
- the rear view mirror,
- the quarter glass trim,
- the mudguard,
- the radiator grille bar.
- the door protector.

Protect the air pipe inlet (dust from cutting).

Product required:
Bonding kit, Part Number : 60 25 170 306



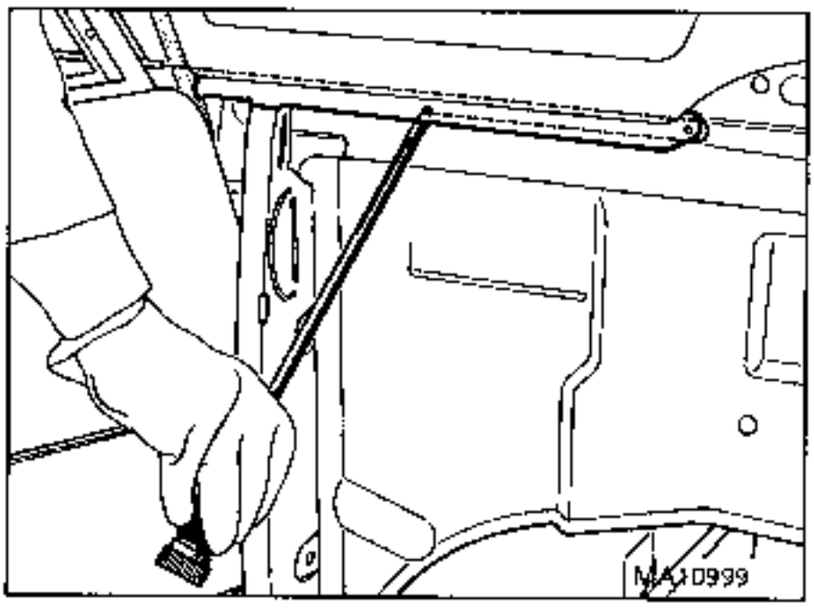
Personal protection:
Goggles, gloves, masks and breathing equipment.



Using a oscillating cutter, cut the wing as shown in the diagram above.

Remove the nut from the wing.

Slide a protective sheet (1 mm) between the wing and the air unit, to prevent the unit from being damaged when the panel is cut.



Using piano wire, remove the section of the wing remaining under the quarter glass.

Using a sharp spatula, remove the other remaining parts.

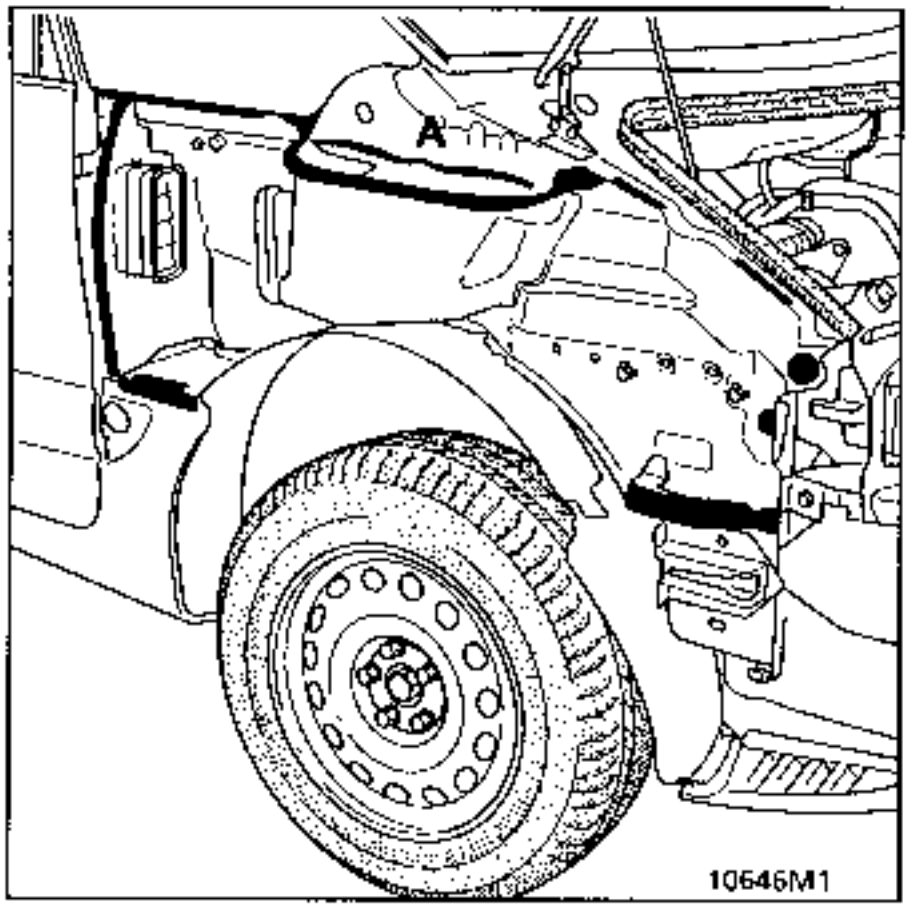
Use a dry cloth to wipe down the bonding areas on the structure.

Introductory note: the bonnet must be correctly adjusted with respect to the other wing (play, clearance) before the new wing is fitted.

FOR PRECISE DETAILS ON USE OF THE PRODUCTS, REFER TO SECTION 40

FITTING THE NEW COMPONENT

Preparation of the chassis



Shown in black : bonding zone.
In zone (A), protect the air unit with adhesive tape.

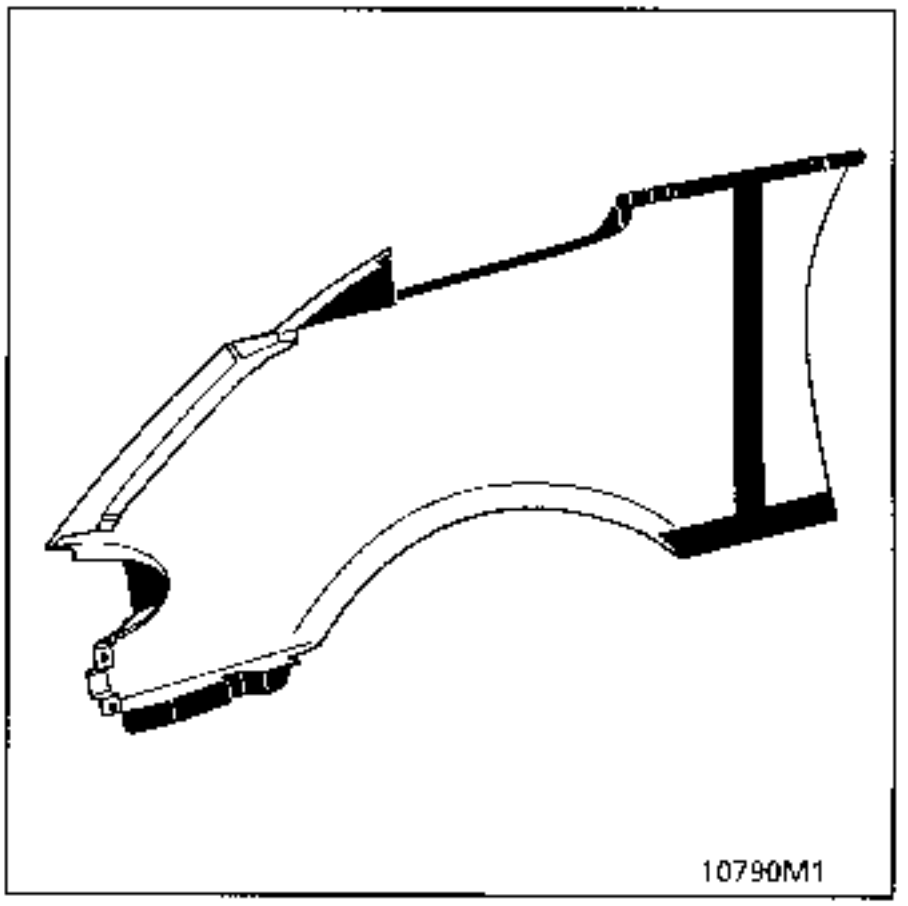
After degreasing:
- the bead remaining on the chassis,
- galvanised areas which have been laid bare or damaged,

coat the bonding area with the primer supplied in the kit.

NOTE: a new component may be bonded to the chassis after degreasing the bonding zones and coating them with primer.

IMPORTANT : any scratched area on the chassis must be coated in primer.

Preparation of the new wing



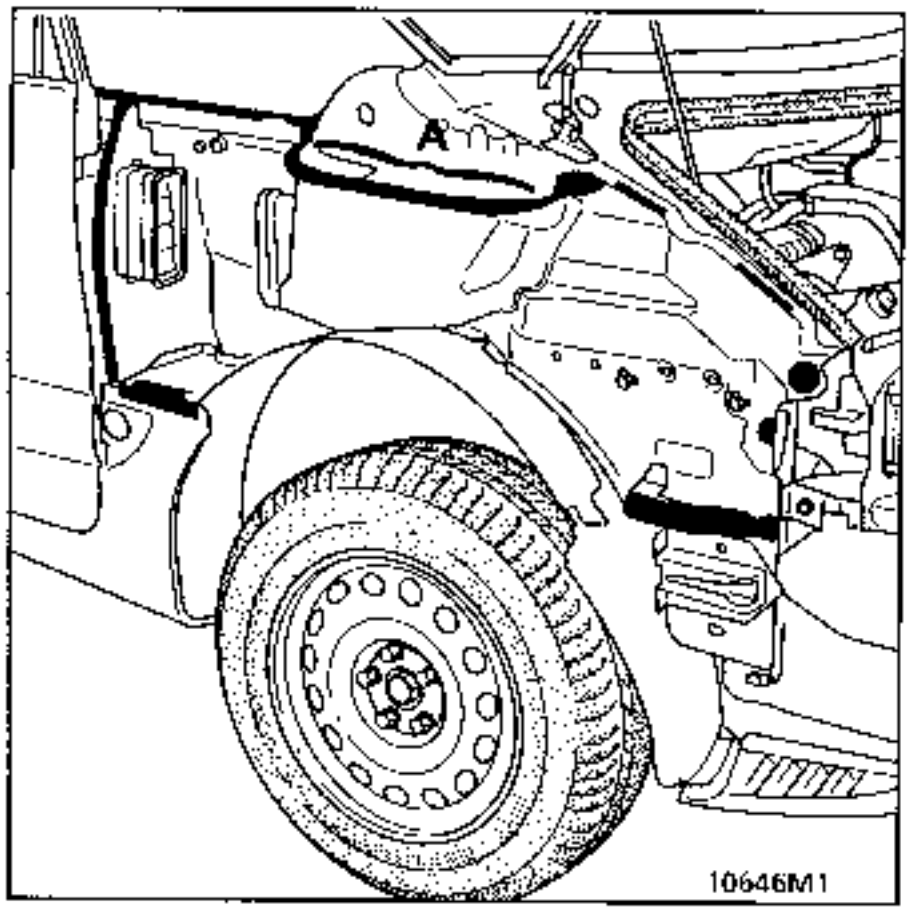
Retain the rear view mirror mountings as well as the radiator grille bar locating sleeves and the sealing foam and refit to the new wing.

Roughen (P180 paper) the bonding zone.

Degrease the bonding zone using the degreaser supplied in the kit.

Coat the bonding zone with the primer supplied in the kit over a minimum width of 50 m.

IMPORTANT:
The adhesive will not adhere to SMC without primer.



Applying the bead

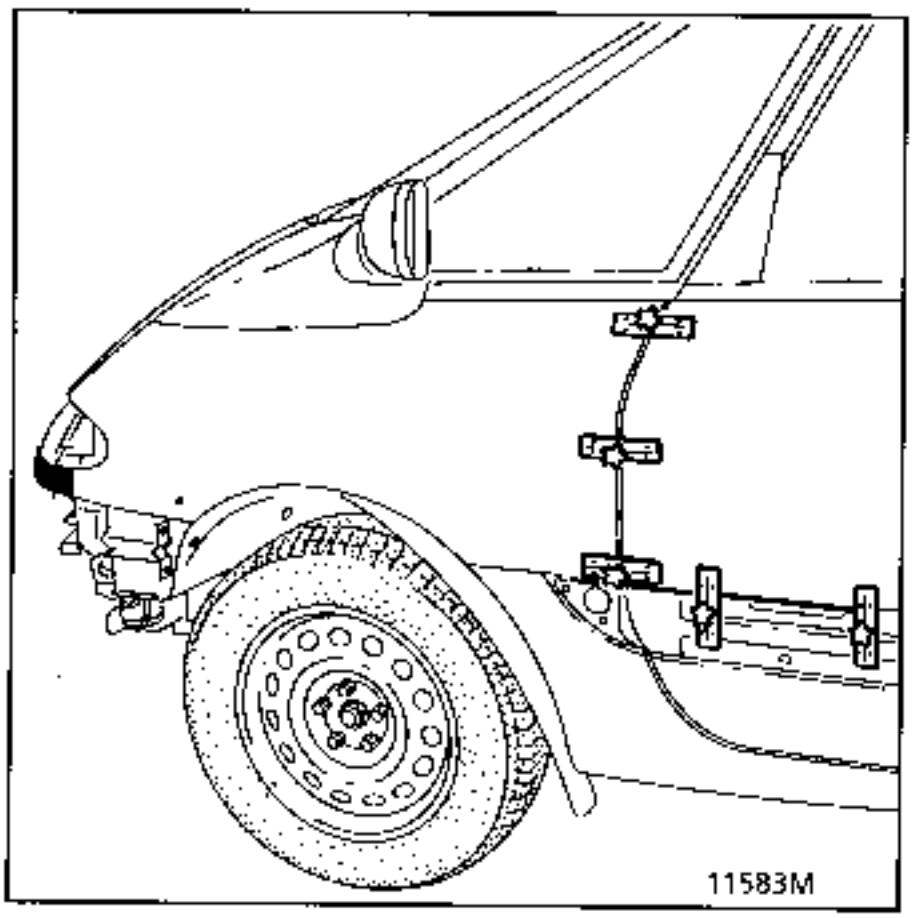
Extrude a uniform bead onto the chassis (as shown in the diagram).

In section (A) apply the bead over the adhesive tape.

THE WING PANEL MUST BE BONDED WITHIN THE NEXT 10 MINUTES.

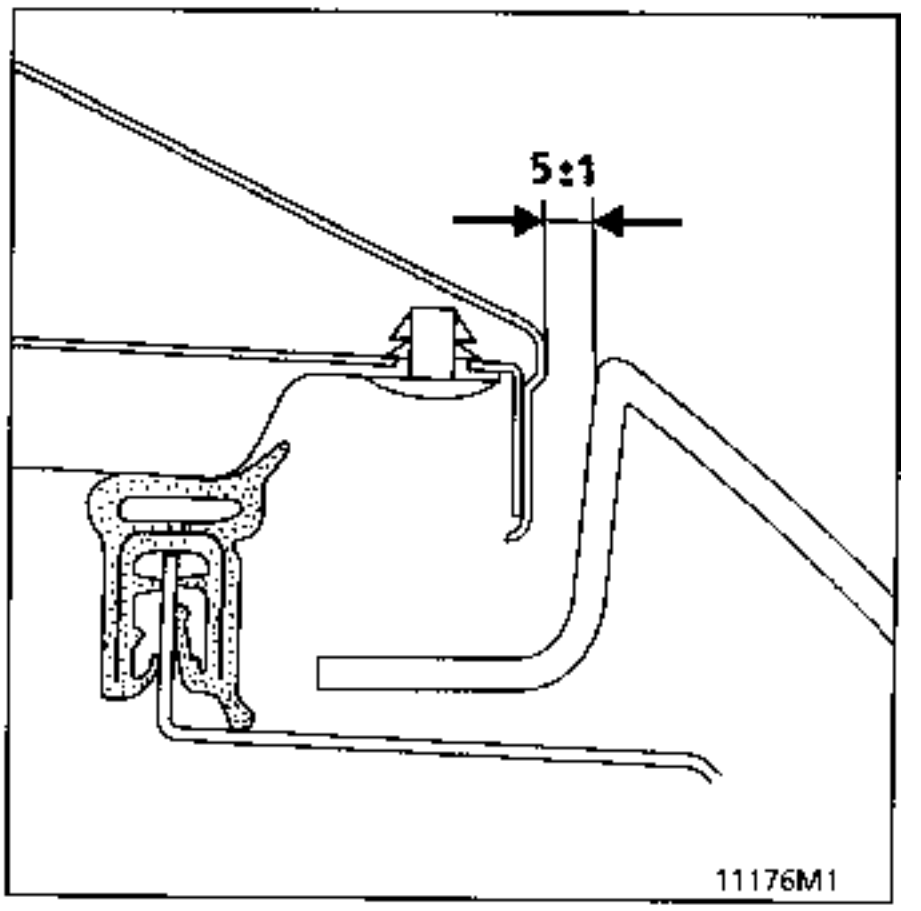
Fitting the wing

Slowly slide the wing under the deflector.



Fit the tools for positioning the wing on the front door to ensure play, clearance and alignment.

DO NOT OPEN THE DOOR UNTIL THE TOOLS HAVE BEEN REMOVED.



Fit the rear view mirror and the radiator grille bar to check the position of the wing and check there is 5 mm clearance between the bonnet and the wing, by fitting a shim.

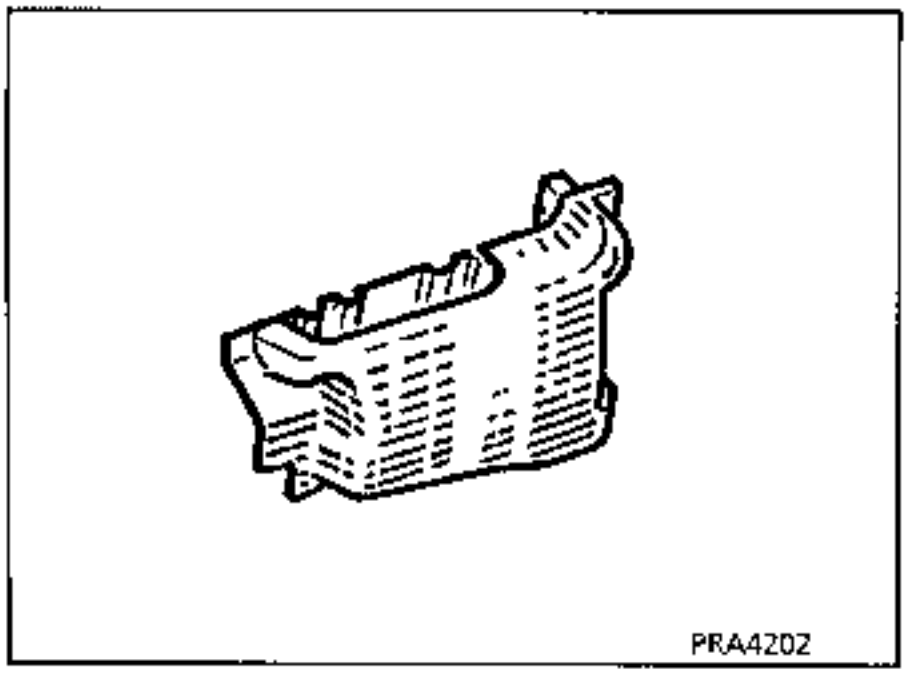
Immobilise the wing using adhesive tape stuck to the bonnet (2 hours).

Leave to harden for 30 minutes, then remove the centring tools.

Adjust the bonnet height if necessary.

NOTE : the bumper, the side light, the repeater protector, the wing repeater, the rear view mirror and the quarter glass trim are fitted **AFTER THE PAINTING OPERATION.**

COMPOSITION OF PART FROM PARTS DEPARTMENT

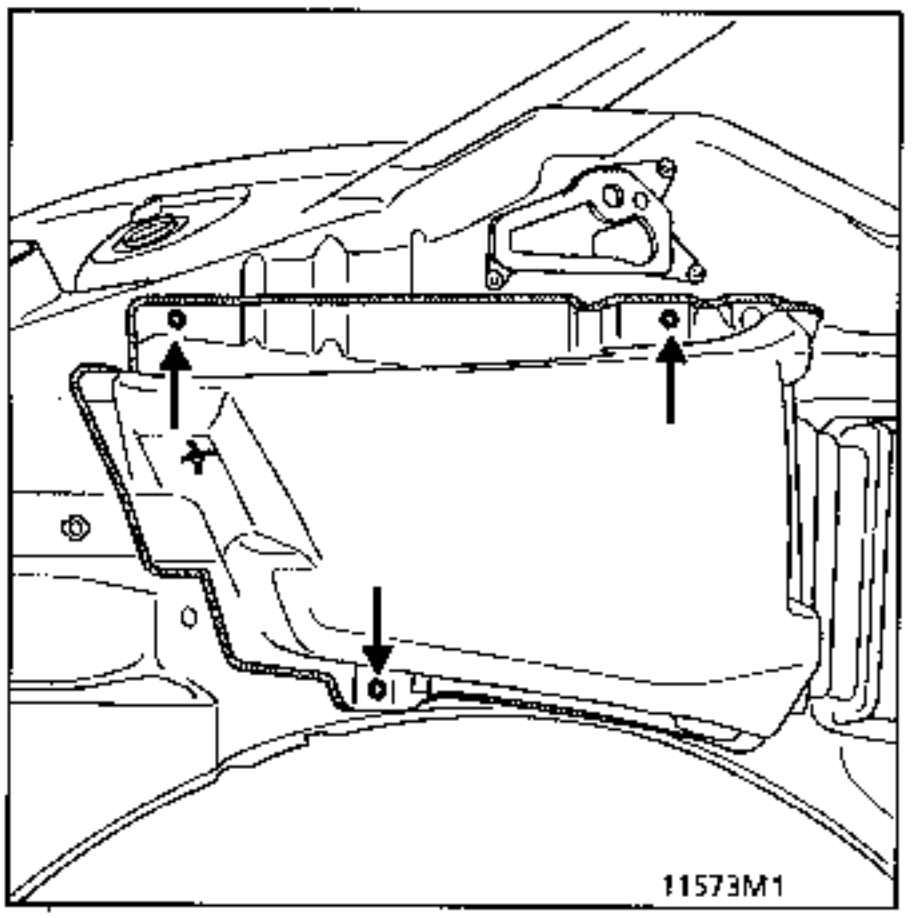


Preliminary operations.

Remove the rear view mirror.
Move the bumper to one side.

This operation requires the wing to be replaced.

REMOVAL



Remove the 3 upper mountings.

Cut the bead on the 3 bonded sides.

REFITTING

Use kit 60 25 170 306

Trace the bonding zone on the new cowl side panel.

Degrease the two faces to be bonded.

Apply primer to the new surface or the old bead.

Roughen the bonding zone on the separator.

Apply the adhesive.

Bond and rivet.

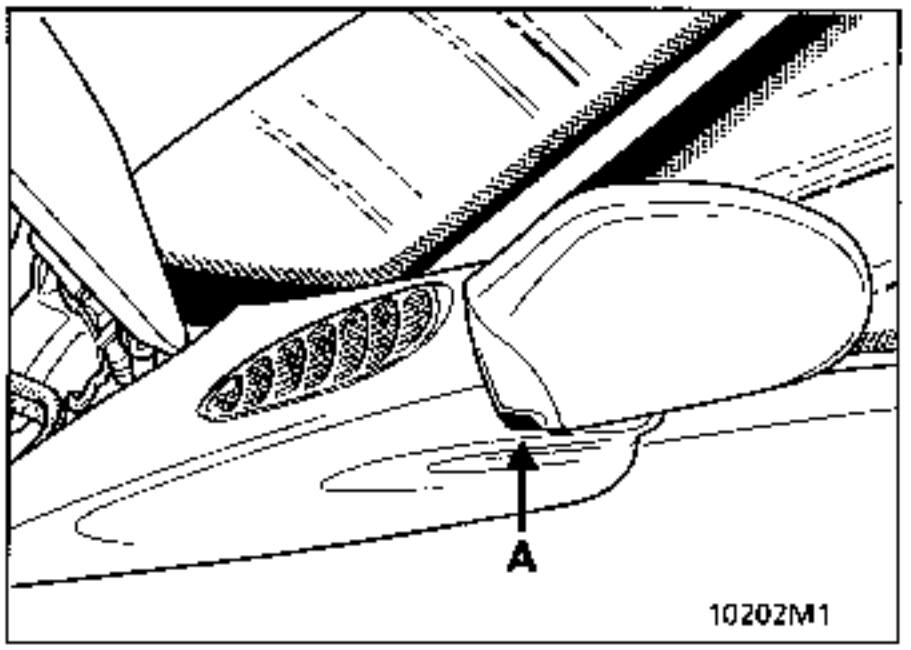
1 SCUTTLE PANEL GRILLE

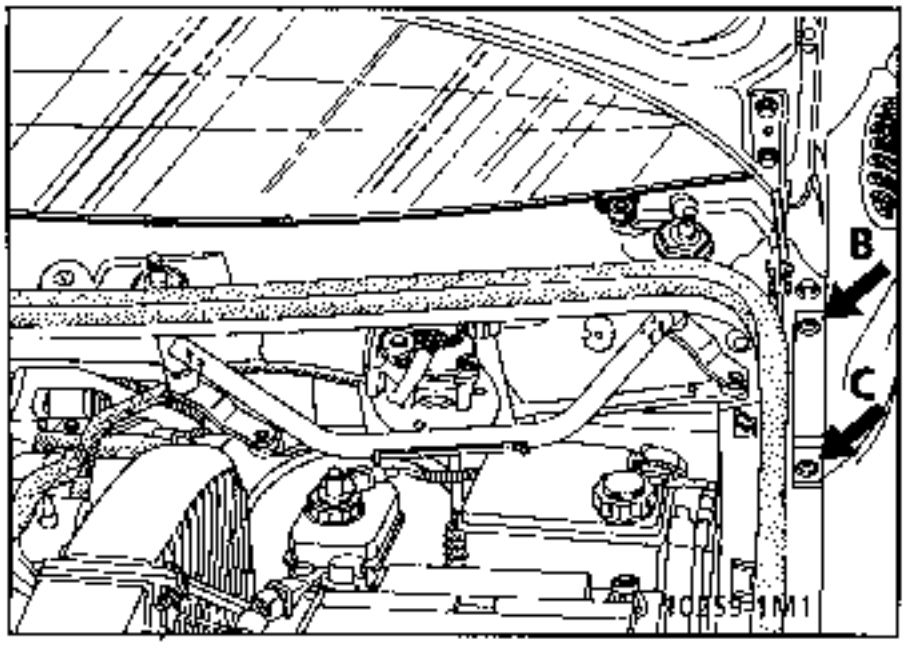
REMOVAL

Slacken the left and right hand rear view mirrors.

Remove:
- the main hexagonal bolt (A).
- the upper Torx bolt (20) (B).

Pivot the rear view mirror around the front bolt (C).





Disconnect the two washer pipes.

Remove the two wiper arms.

Slacken the 4 Torx mountings for the scuttle panel grille.

Fit a protector to the windscreen at the edge of the scuttle panel grille.

Use a sharp spatula to cut the adhesive seal which bonds the grille to the windscreen.

Remove the scuttle panel grille, disconnecting the washer pipes at the 3 way supply union.

REFITTING

Preparation

Before refitting the scuttle panel grille, replace the adhesive seal. To do this, clean and degrease the area where the seal will be applied, then apply primer **SIKA n° 60 25 071 207**. Leave to dry for 10 minutes.

Fit the double sided adhesive tape.

On the windscreen, carry out the same preparation operations using degreaser and glass primer.

Fit the grille to the windscreen.

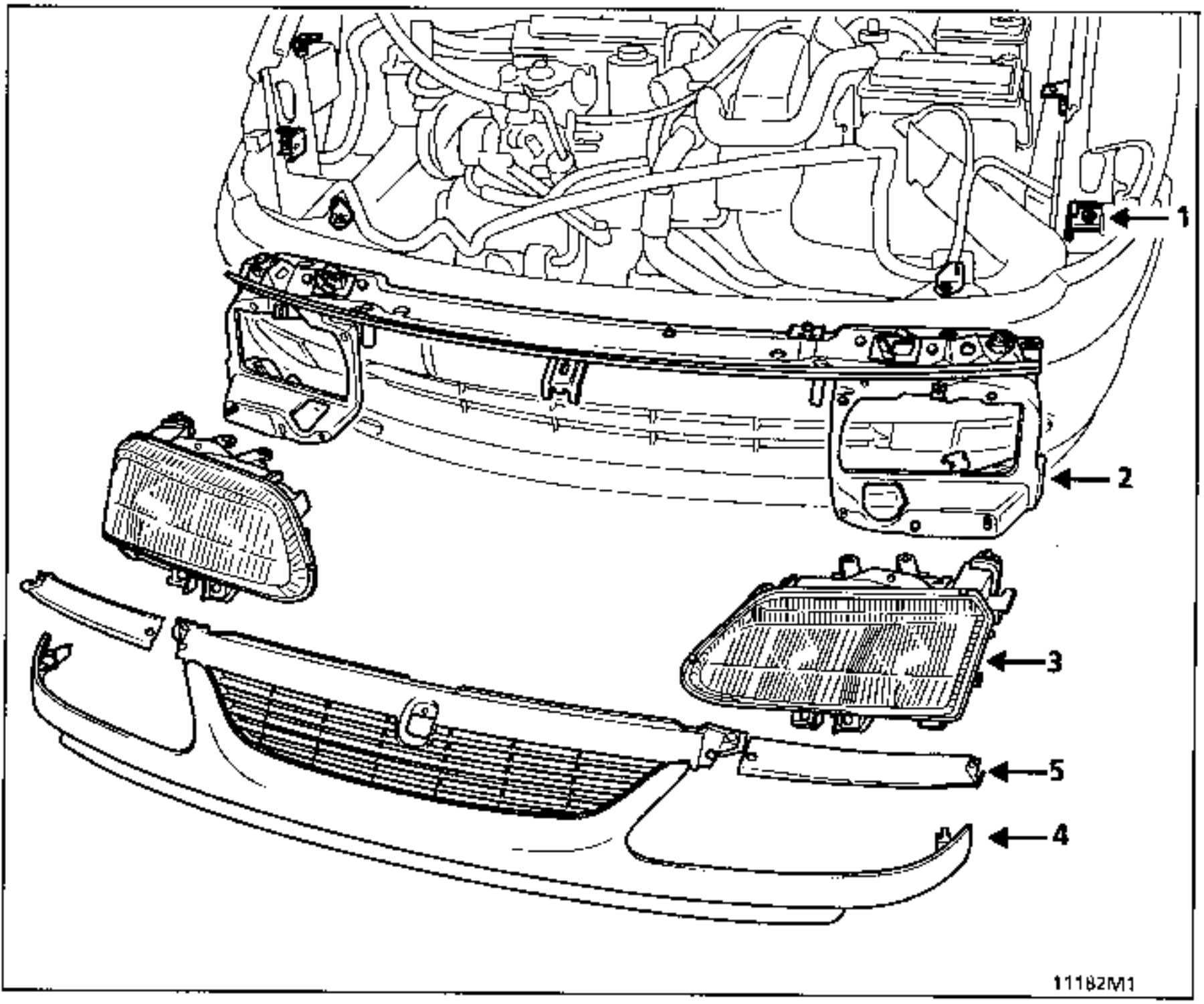
Hand tighten the 4 bolts.

Pull off the red protection on the adhesive, press the adhesive down and tighten the bolts.

Refit the wiper arms, ensuring that the arms line up with the reference marks on the windscreen.

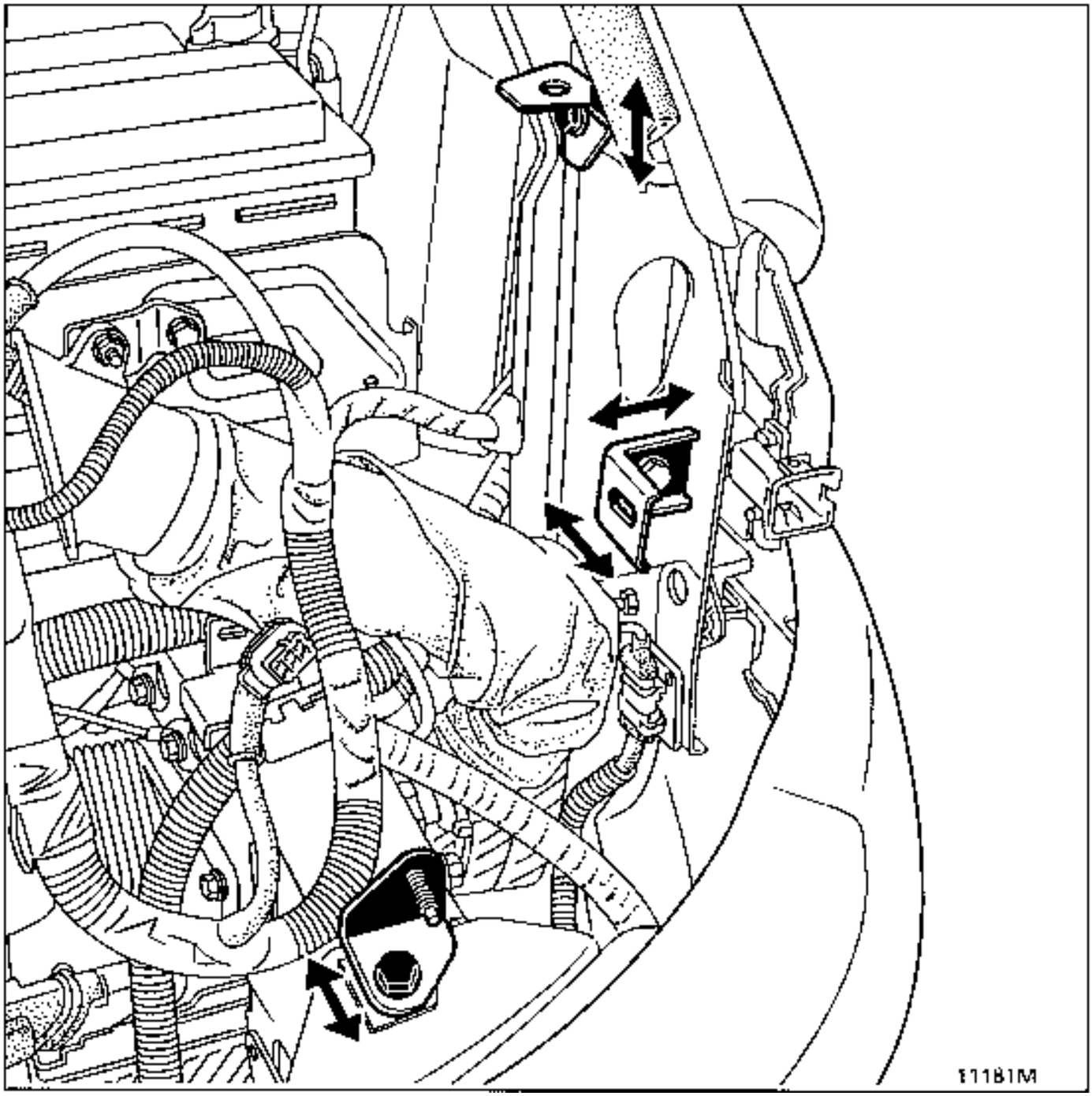
Refit the rear view mirrors.

REMOVING - REFITTING THE RADIATOR GRILLE BAR - NO IMPACT



1 Mounting brackets
2 Headlight carrier panel
3 Headlights
4 Radiator grille bar
5 Radiator grille extension

Adjusting the brackets.

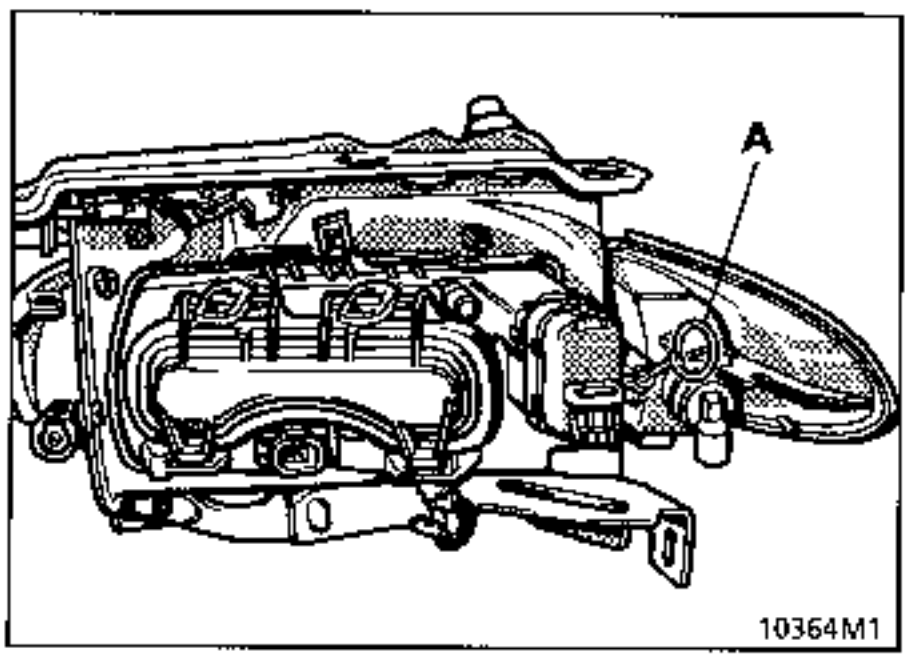


Removing - Refitting- no impact

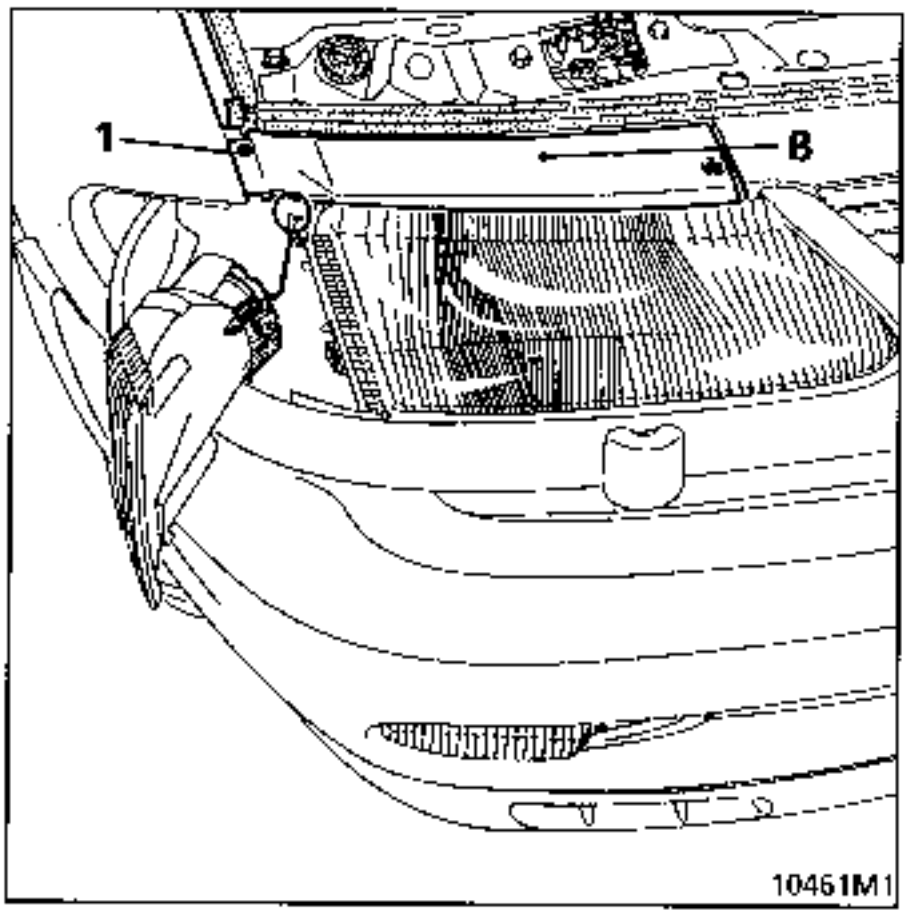
Disconnect :
- the battery
- the connector(s) on the headlight unit.

Release the two indicators towards the outside of the vehicle.

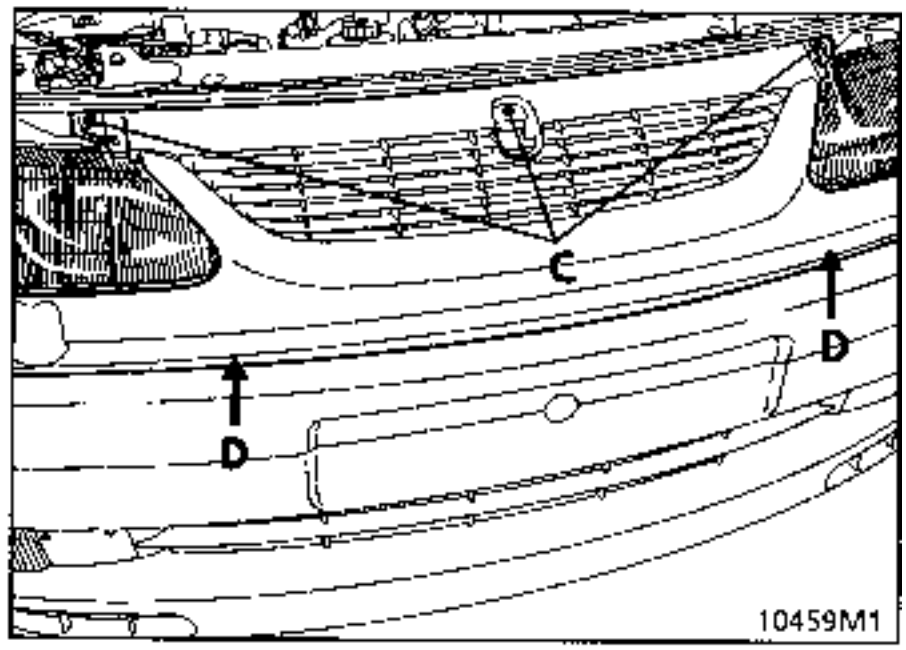
To do this, for each indicator, release the retaining spring (A) from its location.



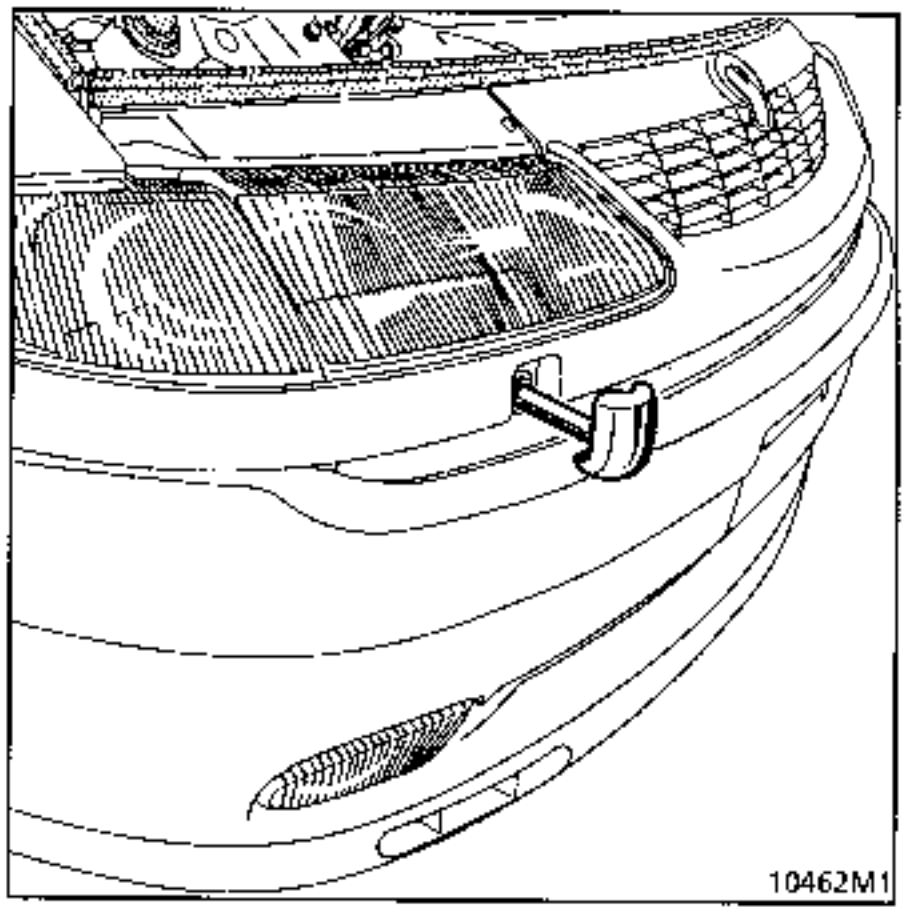
Remove the right and left hand extensions (B) for the radiator grille. To reach bolt (1) lift the adhesive tape.



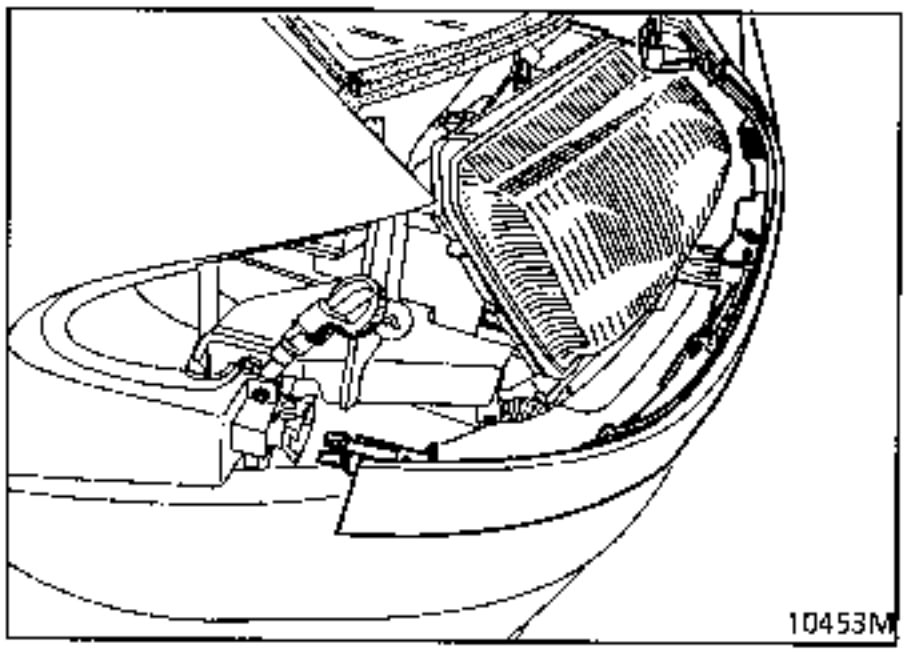
Remove the three upper bolts (C) and the two lower bolts reached via openings (D) using a Torx screwdriver: these two bolts remain on the radiator grille when it is removed.



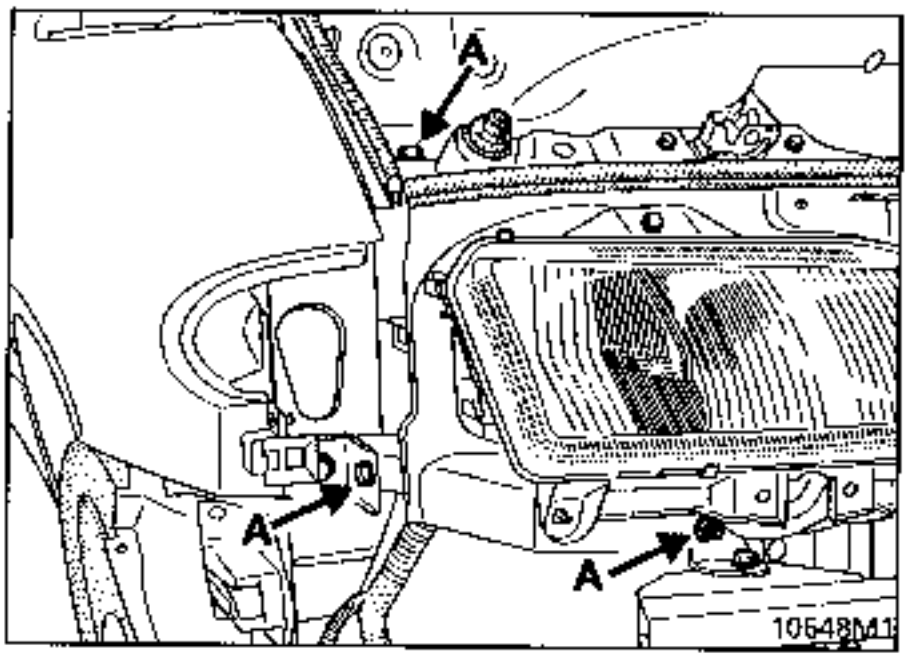
If the vehicle is fitted with a headlight washer system, pull on the jet, lock the cylinder by hand and turn a quarter turn to the left to release it.



Unclip the radiator grille at both ends and remove it.



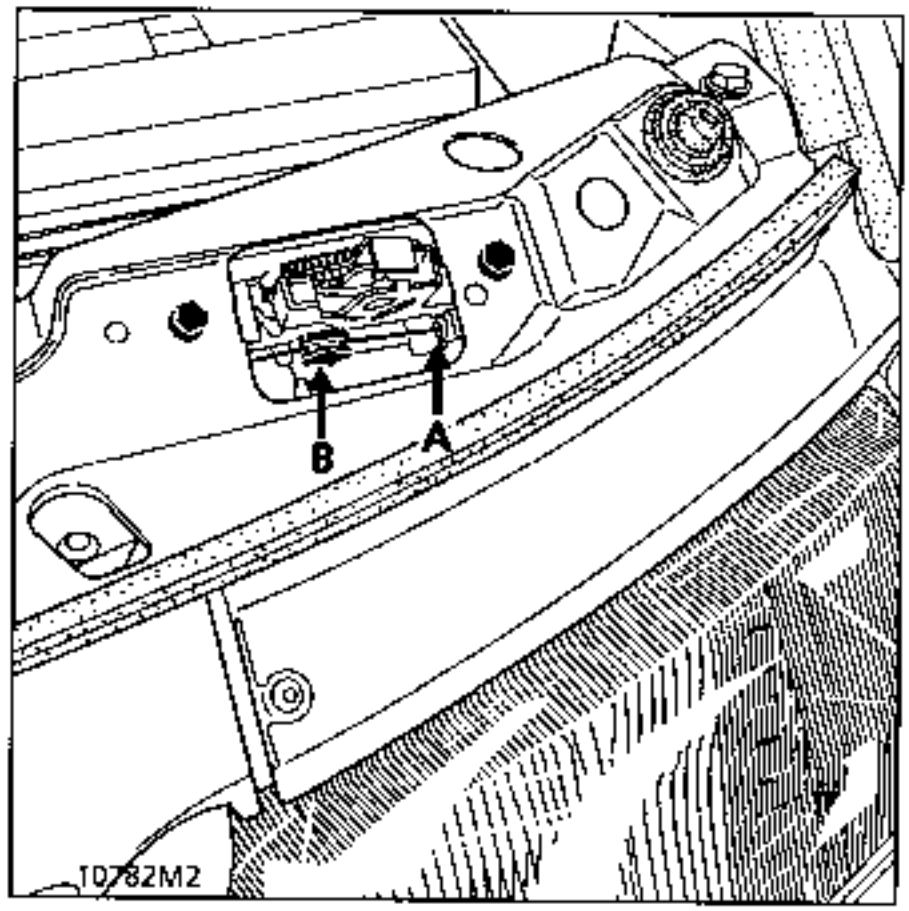
REMOVING - REFITTING THE HEADLIGHT CARRIER PANEL



Remove the six mounting bolts (A) for the headlight carrier panel as shown above.

IMPORTANT: when removing the headlight carrier panel, do not slacken the brackets on the body structure side so that the original adjustment is retained on refitting.

Release :
- the cable sleeve stop (A),
- the lock cable on the left hand side (B).



Disconnect the headlight electrical wiring.

Remove the 7 mounting bolts for the channel (wiring routing)

The mounting bolt (8 hexagonal) for the air inlet trumpet.

Power assisted steering reservoir - F3R engine.

Remove the headlight carrier panel.

REPLACEMENT FOLLOWING A SIDE IMPACT

Fit the headlight carrier panel with :

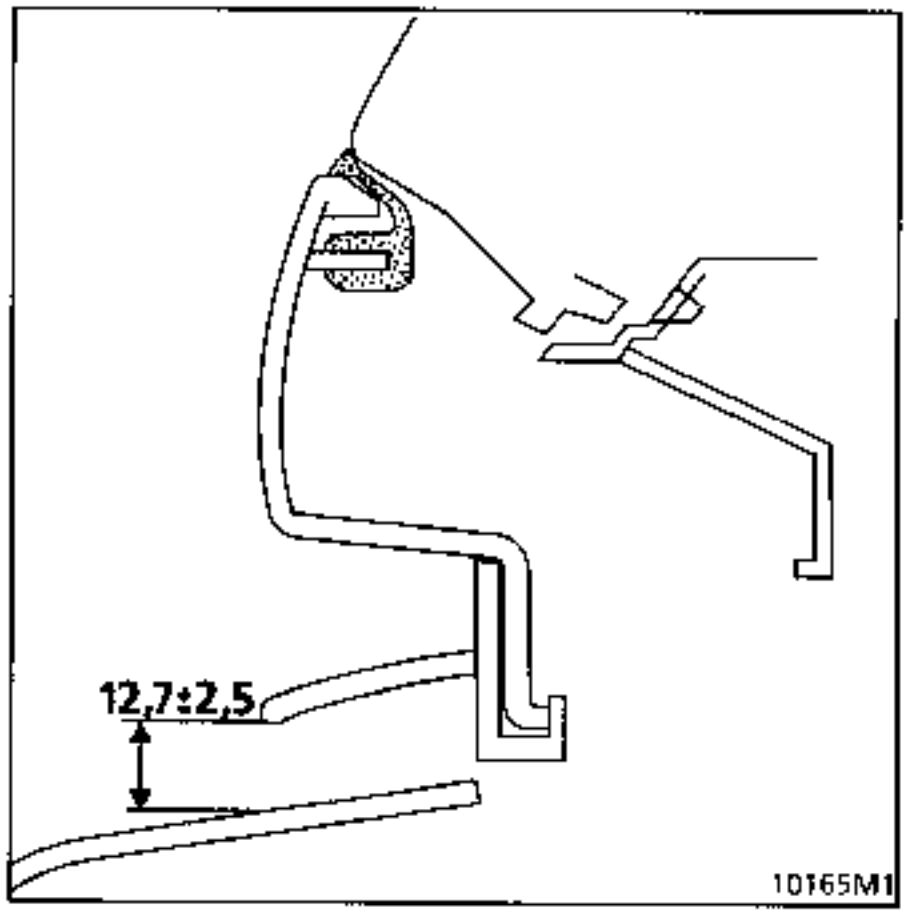
- the locks,
- the headlights,
- the radiator grille bar,
- the locating brackets.

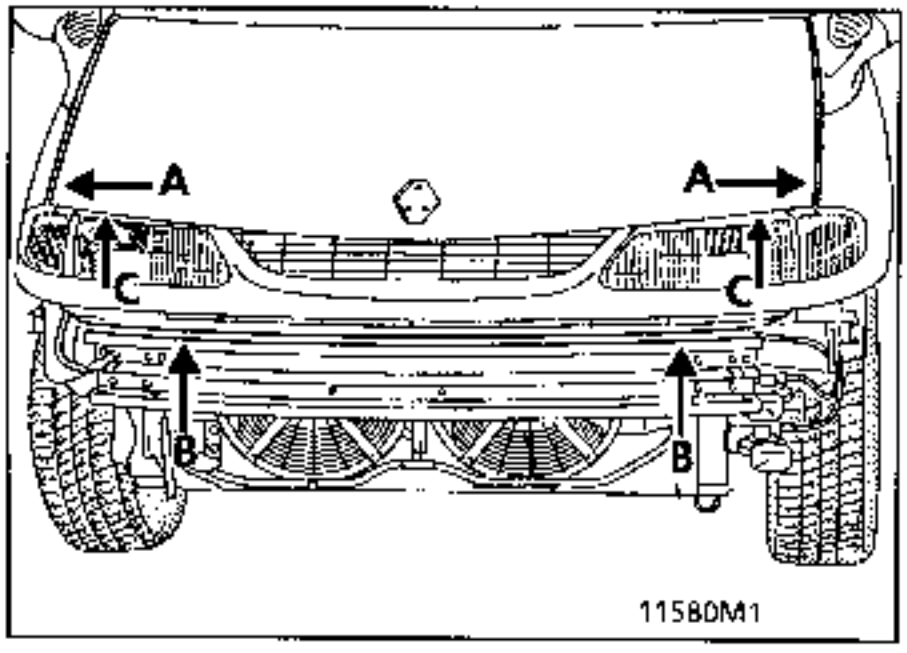
Fit the assembly to the vehicle

Refit the indicators.

Close the bonnet.

Adjust the clearance of the bonnet in relation to the wing and rear view mirror (A) by lifting the front panel at (B) and adjusting the stops (C).





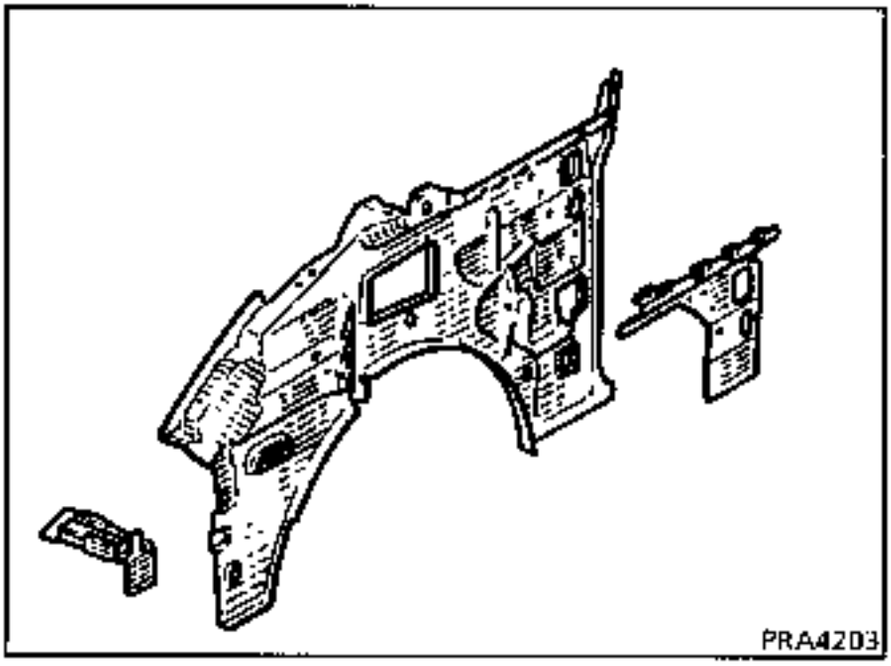
Once the adjustment has been made, tighten the bolts and check.

Fit the bumper and check the clearance.

INTRODUCTION

The replacement of this part is a basic operation for a front impact.

COMPOSITION OF PART FROM PARTS DEPARTMENT



Preliminary operations.

Remove:
- the front panel,
- the front wing,
- the wheel arch protectors,
- the air / water separator,
- the bumper,
- the counter plate reinforcement,
- the bonnet.

1 JOINT WITH MUDGUARD SKIRT TIE ROD

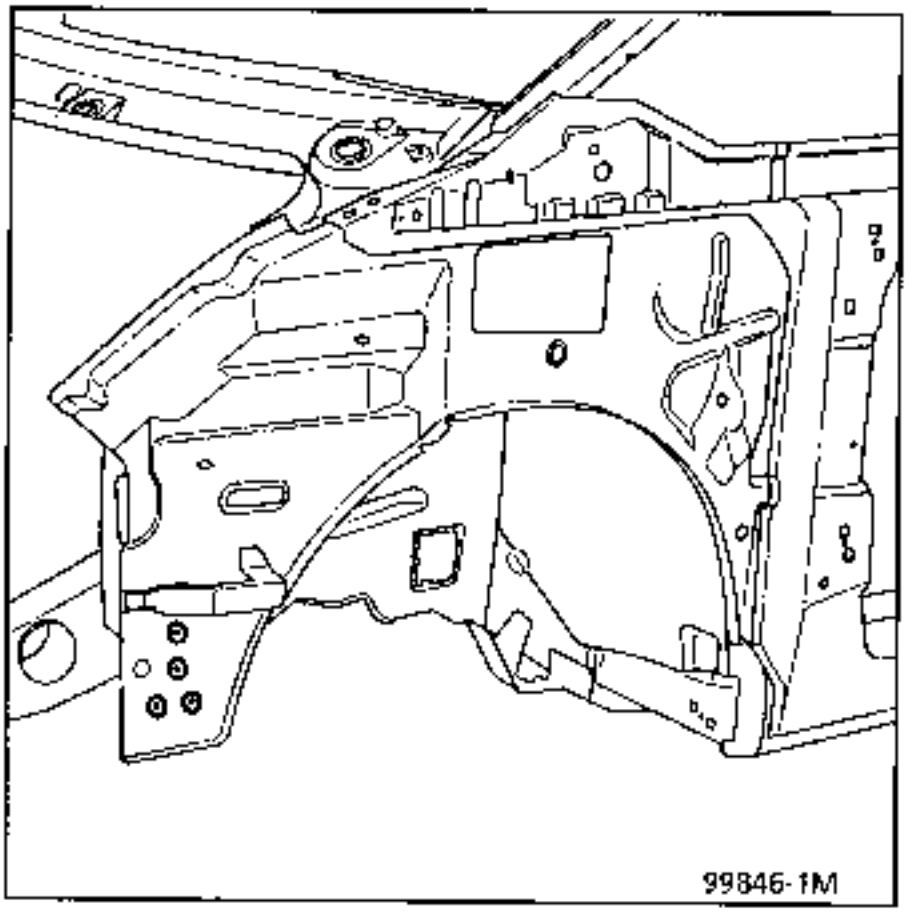
Thickness of panels concerned (mm)

Mudguard skirt	1.0
Mudguard skirt tie rod	1.2

Unpicking

4 spot welds on thickness 1.0

Welding



2 JOINT WITH WHEEL ARCH

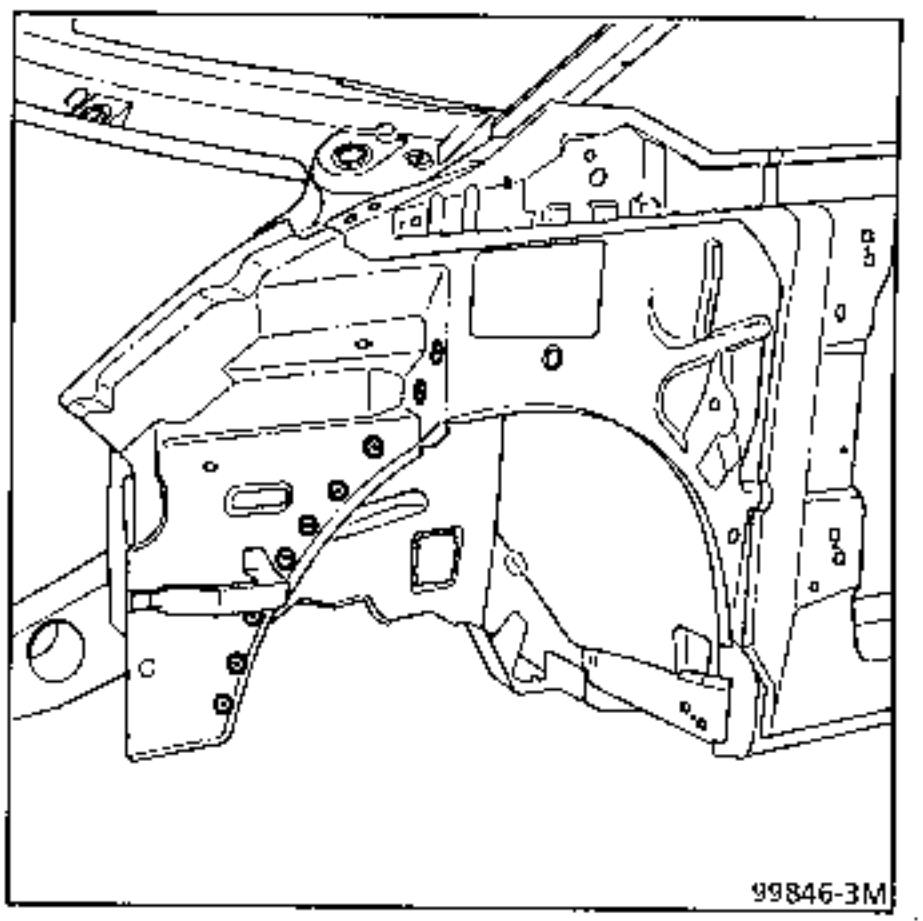
Thickness of panels concerned (mm)

Mudguard skirt	1.0
Wheel arch	1.5

Unpicking

9 spot welds on thickness 1.0

Welding

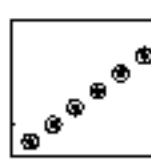


3 JOINT WITH ENGINE COMPARTMENT PANEL

Thickness of panels concerned (mm)

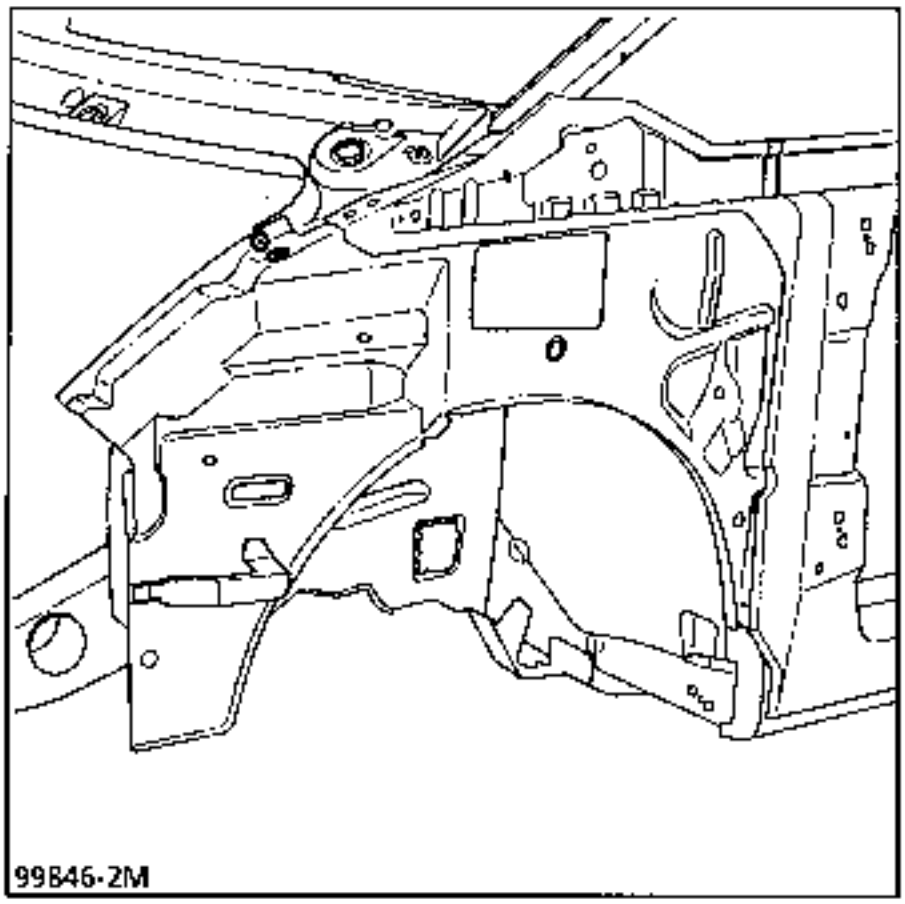
Mudguard skirt	1.0
Engine compartment panel	0.8

Unpicking



2 spot welds on thickness 1.0

Welding

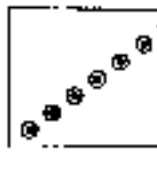


4 PART SECTION

Thickness of panels concerned (mm)

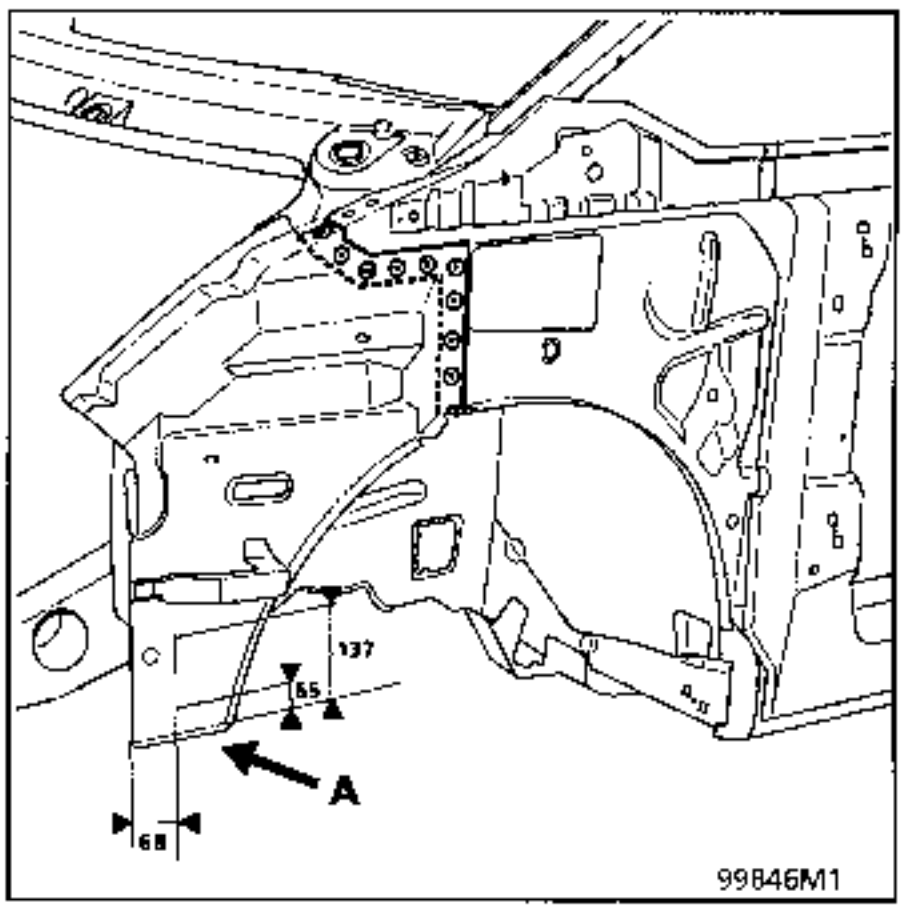
Mudguard skirt	1.0

Unpicking



150 mm on thickness 1.0

Welding



At (A) counter plate reinforcement mounting dimension .
Countersink holes diameter 10.

NOTE : Refer to section 40 General, for information on cutting out and preparation before welding.

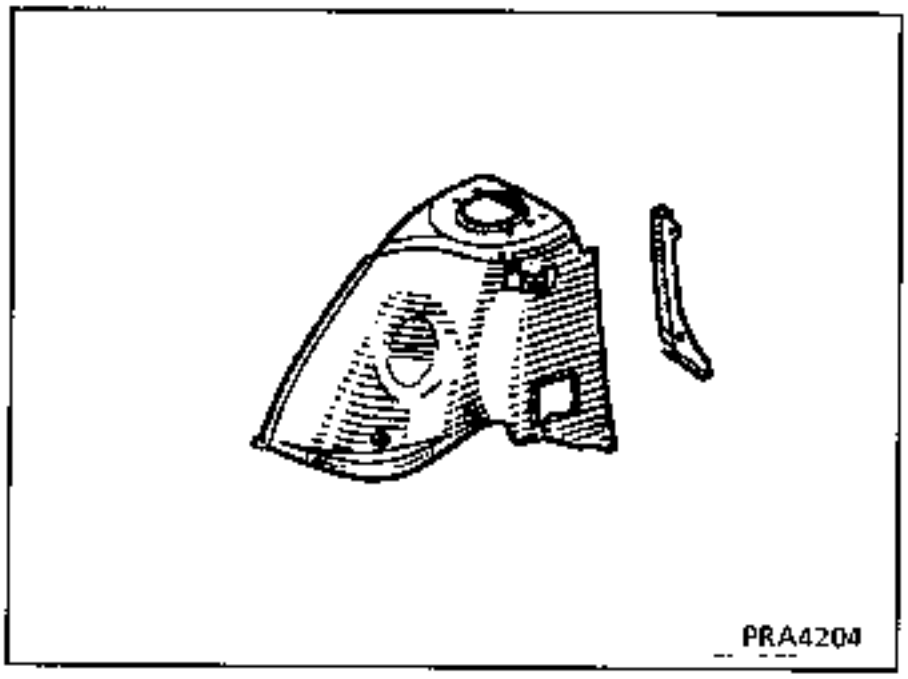
NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of the cowl side panel.

This operation must be carried out on the repair bench.

COMPOSITION OF PART FROM PARTS DEPARTMENT



Preliminary operations.

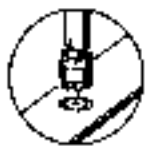
Remove:
- the front wing,
- the scuttle panel,
- the sub-frame and front axle,
- the upper part of the dashboard only,
- the soundproofing.

1 JOINT WITH FRONT SIDE MEMBER CLOSURE PANEL

Thickness of panels concerned (mm)

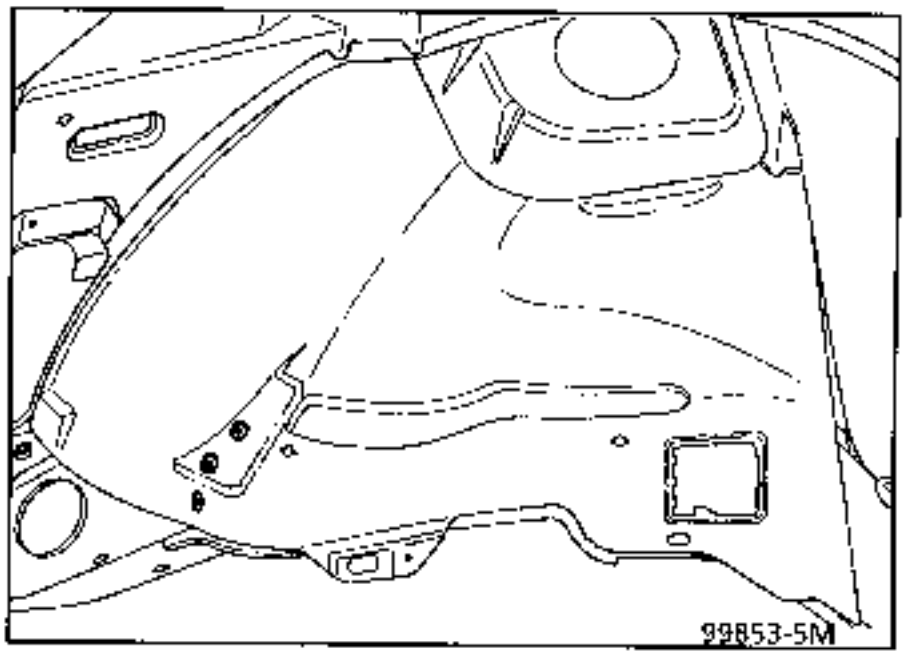
Wheel arch	1.5
Front side member closure panel	0.7

Unpicking



3 spot welds on thickness 1.5

Welding



2 JOINT WITH UPPER GEARBOX REINFORCEMENT

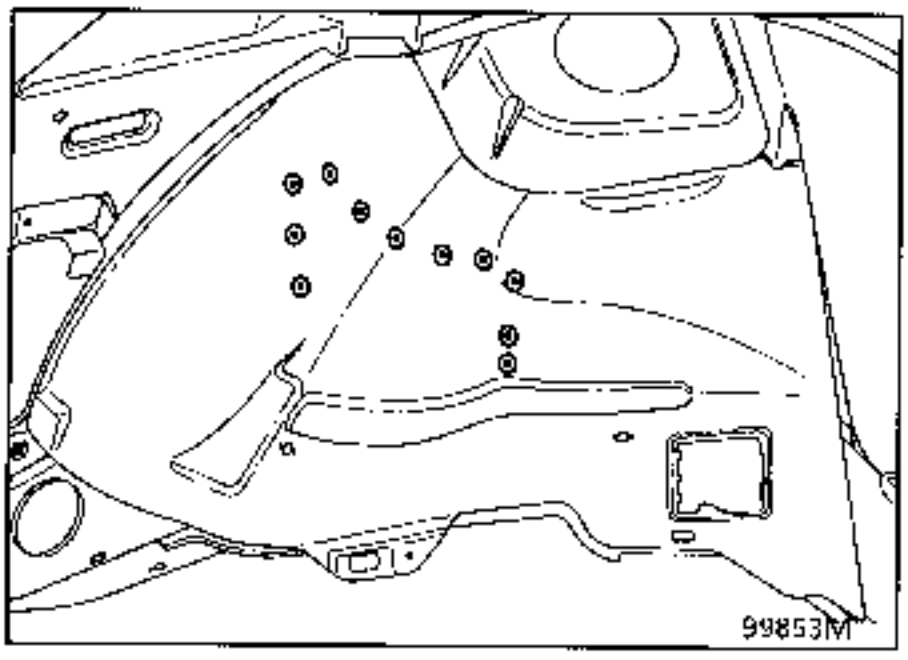
Thickness of panels concerned (mm)

Wheel arch	1.5
Gearbox upper mounting	1.2

Unpicking

11 spot welds on thickness 1.5

Welding

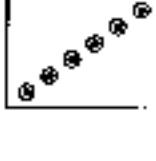


3 JOINT WITH MUDGUARD SKIRT

Thickness of panels concerned (mm)

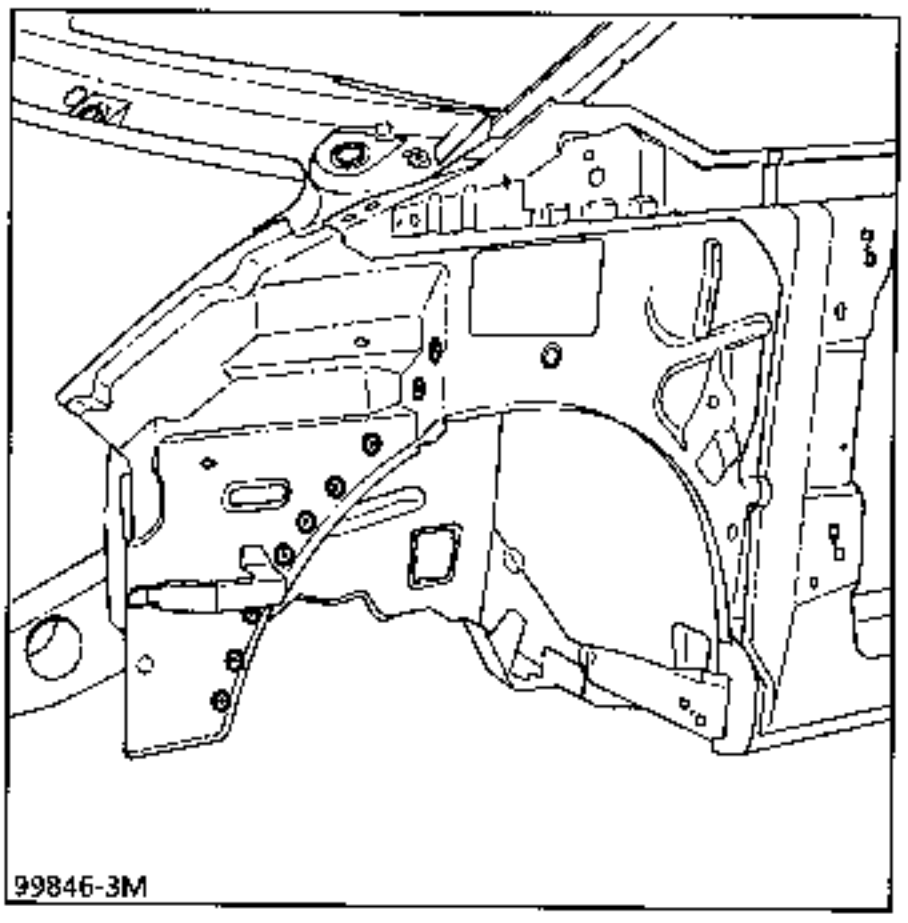
Wheel arch	1.5
Mudguard skirt	0.7

Unpicking

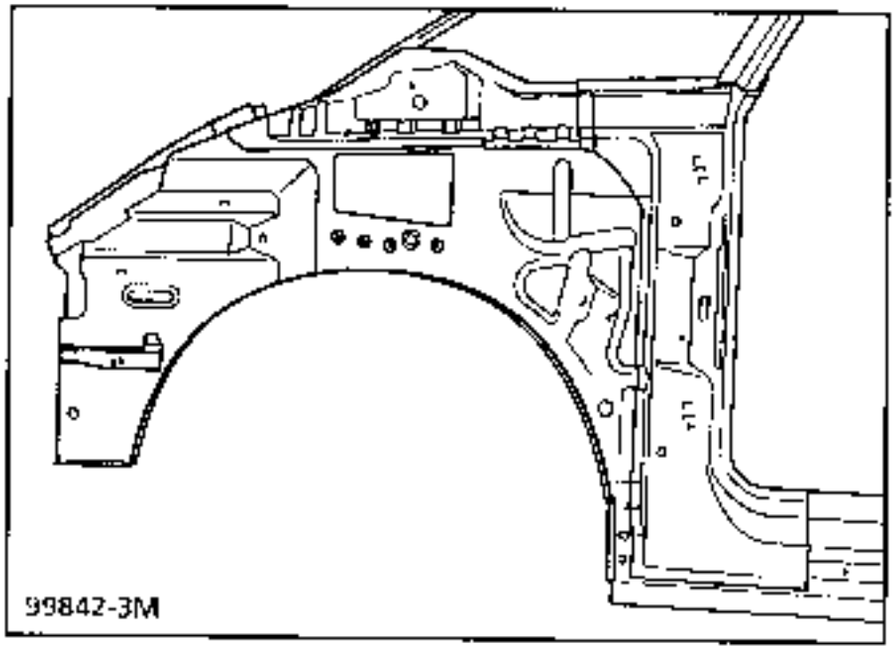


13 spot welds on thickness 1.5

Welding



Welding

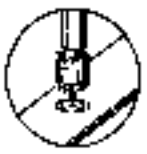


4 JOINT WITH FRONT SIDE MEMBER, FRONT SECTION

Thickness of panels concerned (mm)

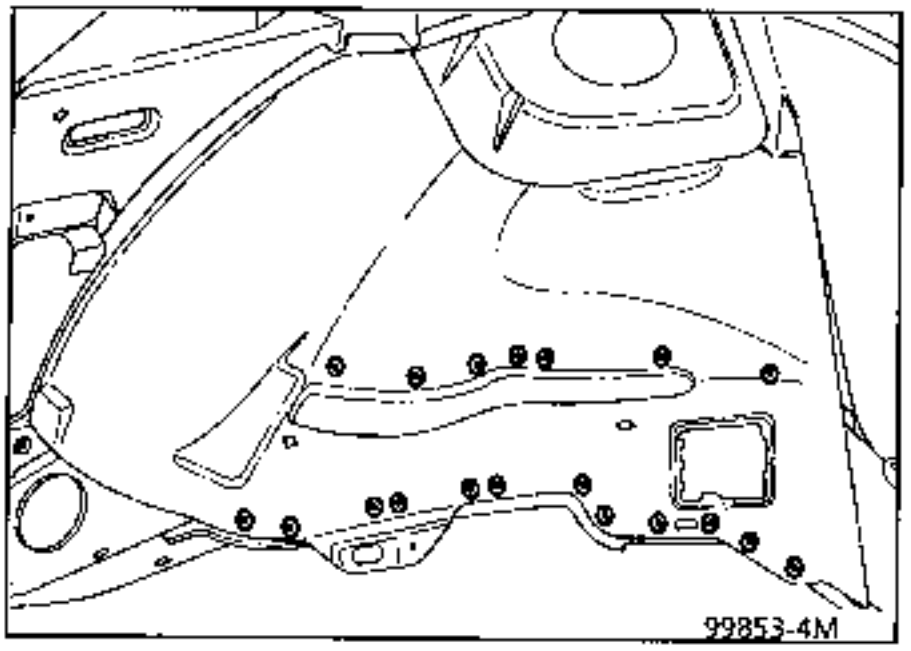
Wheel arch	1.5
Front side member, front section	1.5
Side member reinforcement	2.5

Unpicking



19 spot welds on thickness 1.5

Welding



5 JOINT WITH IMPACT REINFORCEMENT

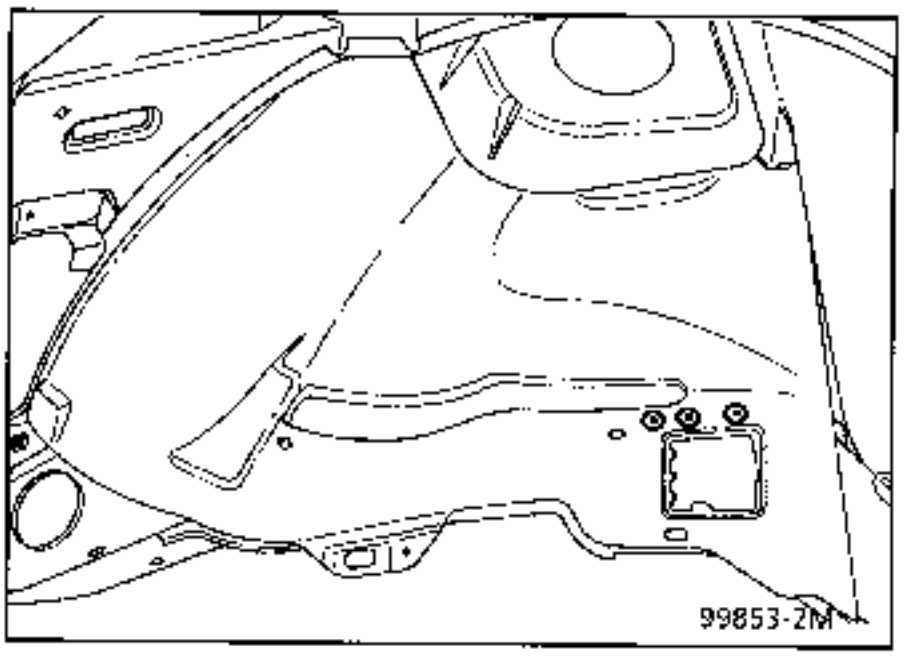
Thickness of panels concerned (mm)

Impact reinforcement	2.5
Wheel arch	1.5

Unpicking

3 spot welds on thickness 2.5

Welding



6 JOINT WITH FRONT SIDE MEMBER, REAR SECTION

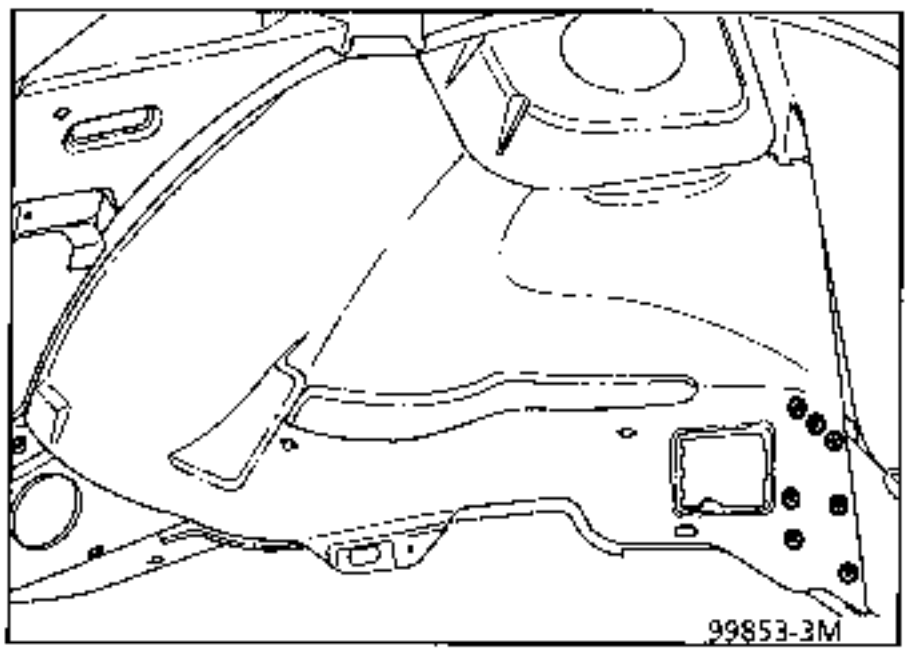
Thickness of panels concerned (mm)

Wheel arch	1.5
Front side member, rear section	1.5

Unpicking

7 spot welds on thickness 1.5

Welding



7 JOINT WITH BULKHEAD CONNECTING BRACKET

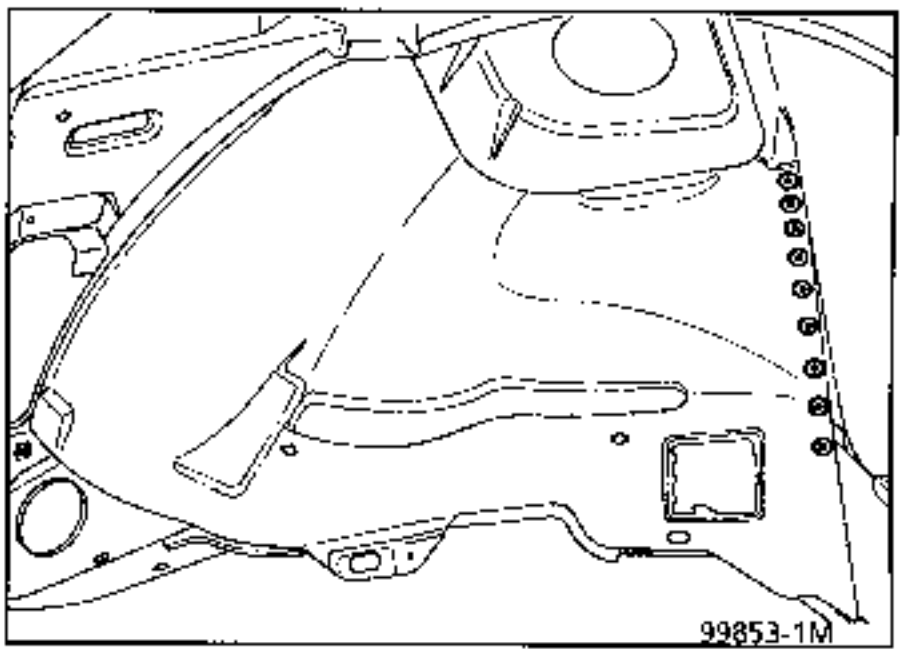
Thickness of panels concerned (mm)

Wheel arch	1.5
Bulkhead connecting bracket	1.0

Unpicking

9 spot welds on thickness 1.5

Welding



8 JOINT WITH PLENUM CHAMBER

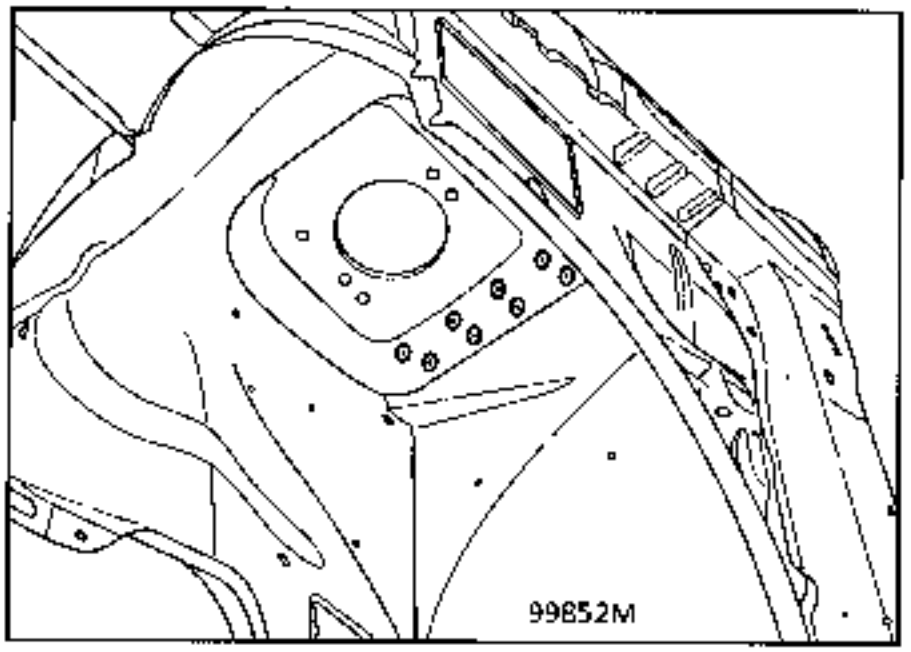
Thickness of panels concerned (mm)

Wheel arch	1.5
Plenum chamber	1.0
Shock absorber cup	2.0

Unpicking

8 spot welds on thickness 1.0

Welding

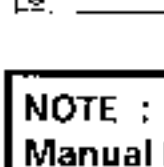


9 JOINT WITH AIR DUCT

Thickness of panels concerned (mm)

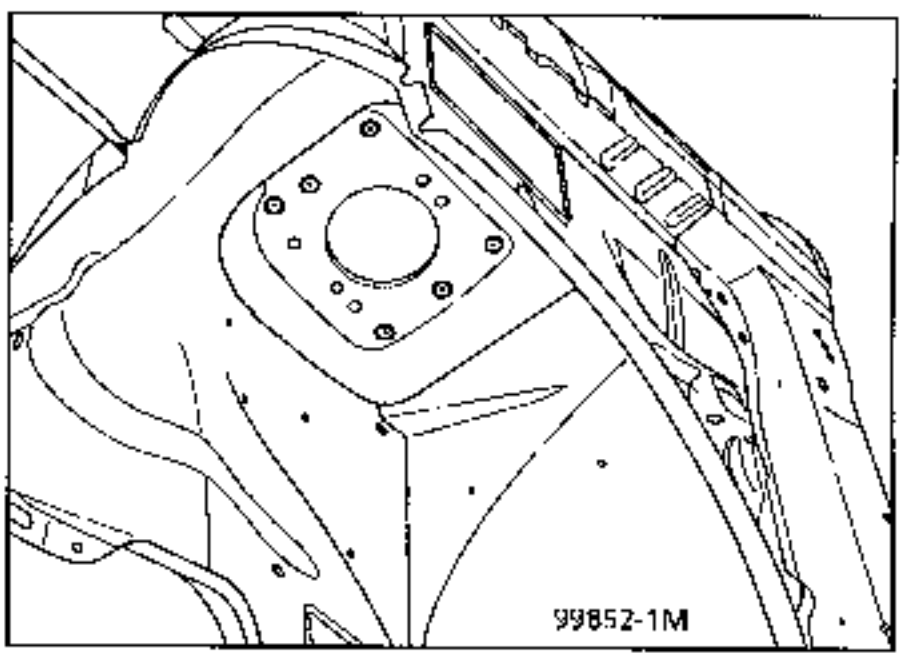
Wheel arch	1.5
Air duct	1.0

Unpicking



6 spot welds on thickness 1.5

Welding

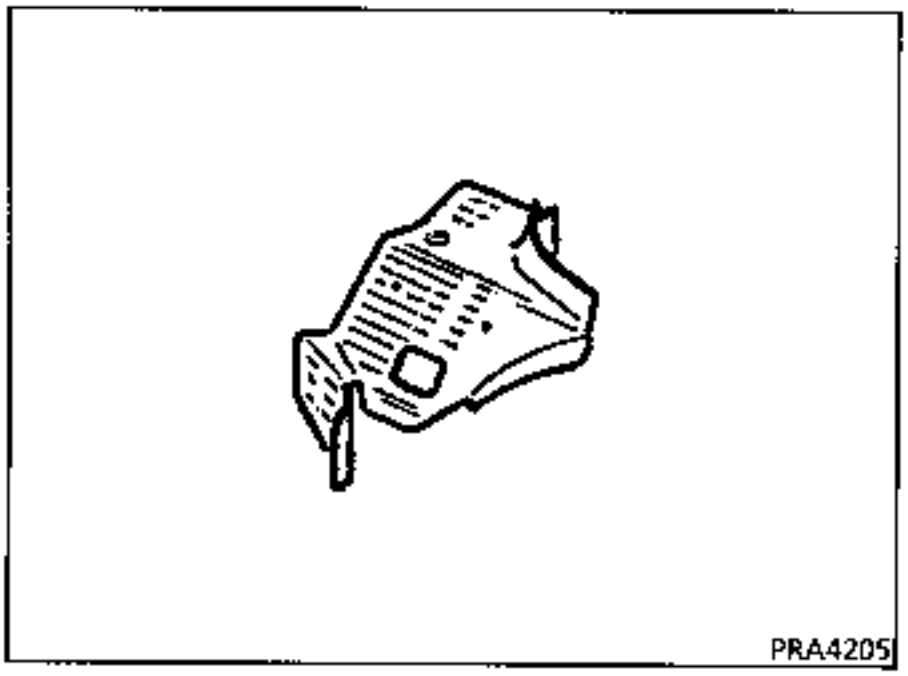


NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of the left hand wheel arch only.

COMPOSITION OF PART FROM PARTS DEPARTMENT

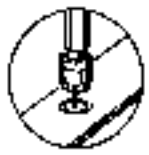


1 JOINT WITH WHEEL ARCH

Thickness of panels concerned (mm)

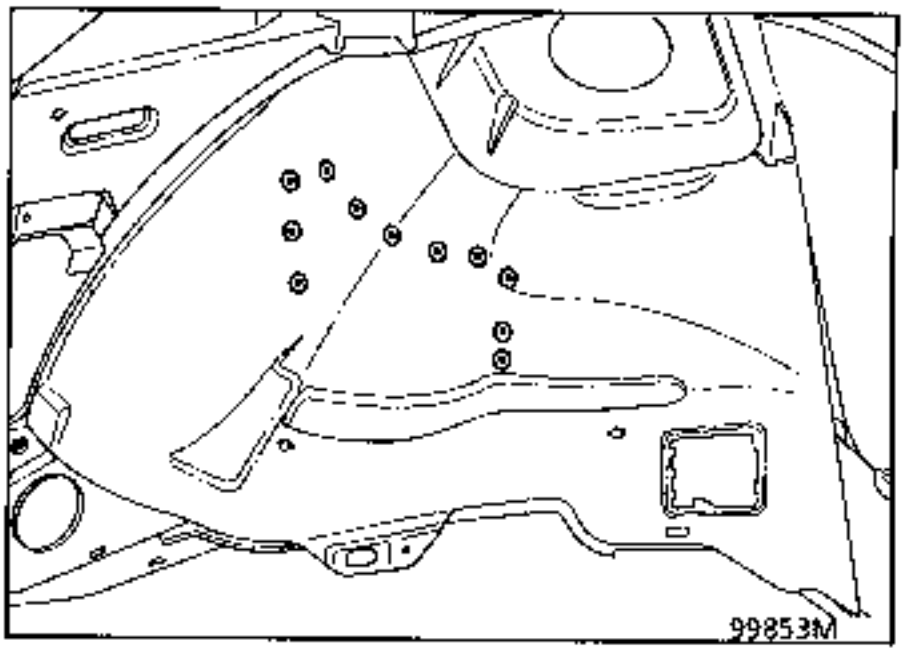
Gearbox upper mounting	1.2
Wheel arch	1.5

Unpicking



11 spot welds on thickness 1.2

Welding



2 JOINT WITH SIDE MEMBER FRONT SECTION

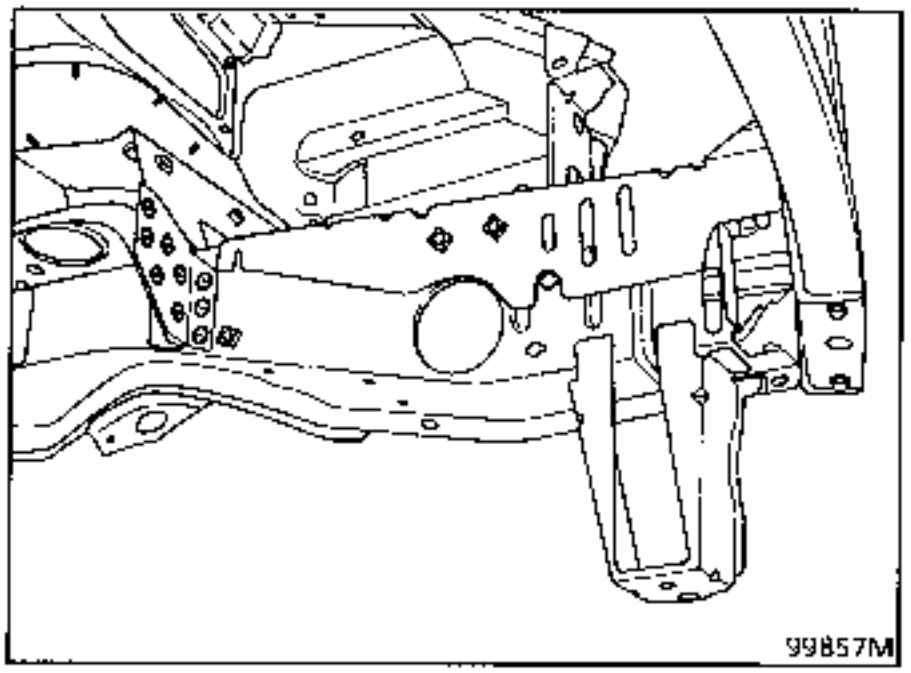
Thickness of panels concerned (mm)

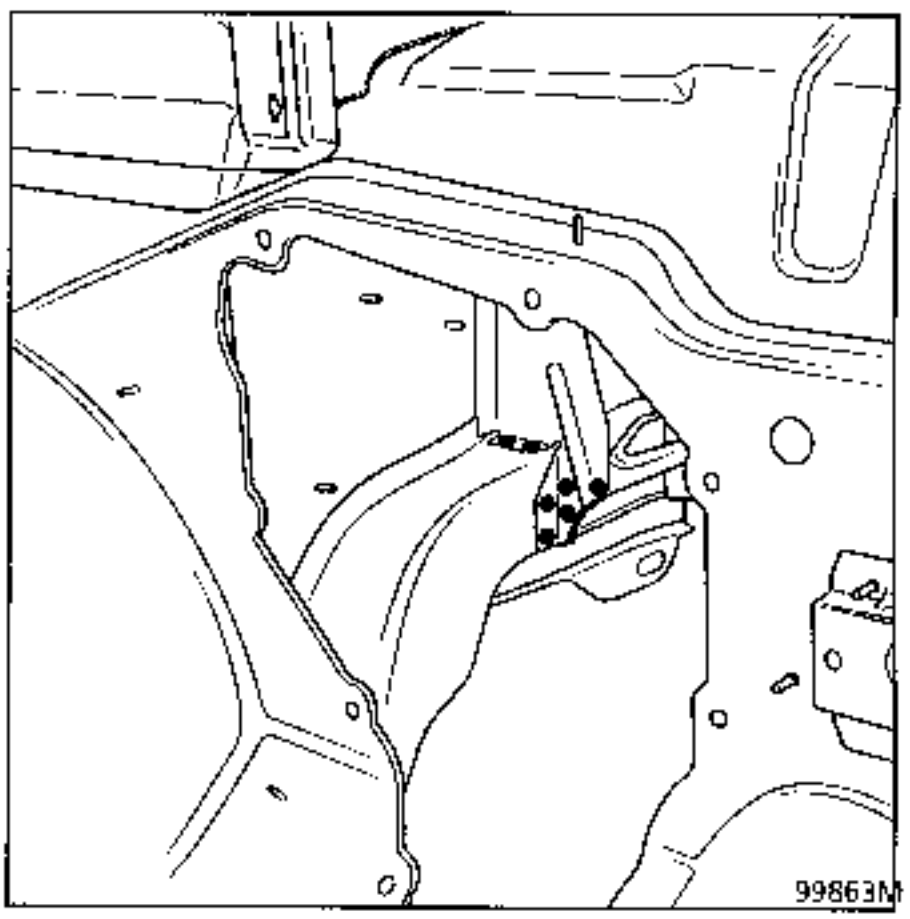
Gearbox upper mounting	1.2
Front side member, front section	1.5
Lower gearbox mounting	2.5

Unpicking

16 spot welds on thickness 1.2

Welding

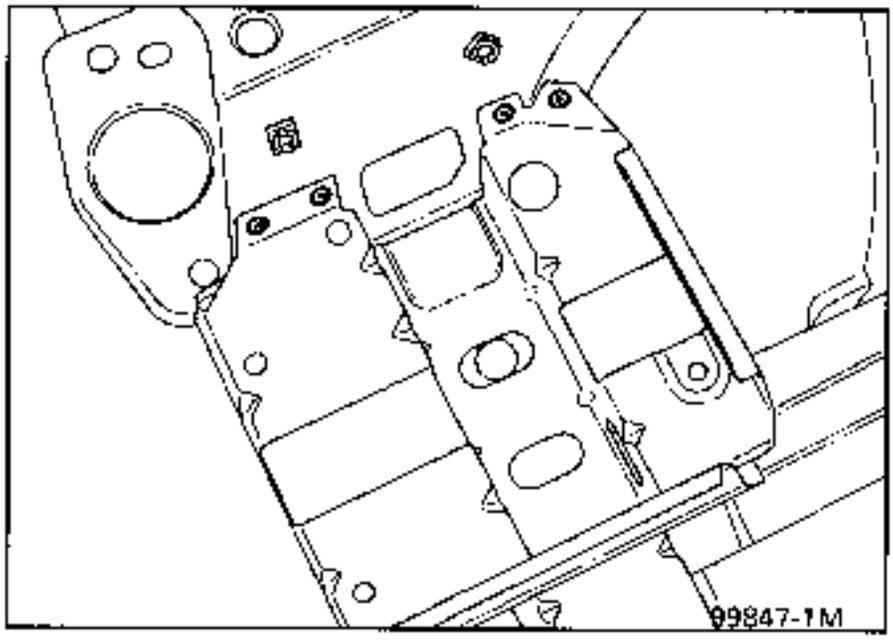




3 JOINT WITH BATTERY TRAY

REMINDER : refer to operations 41-G-3

Welding

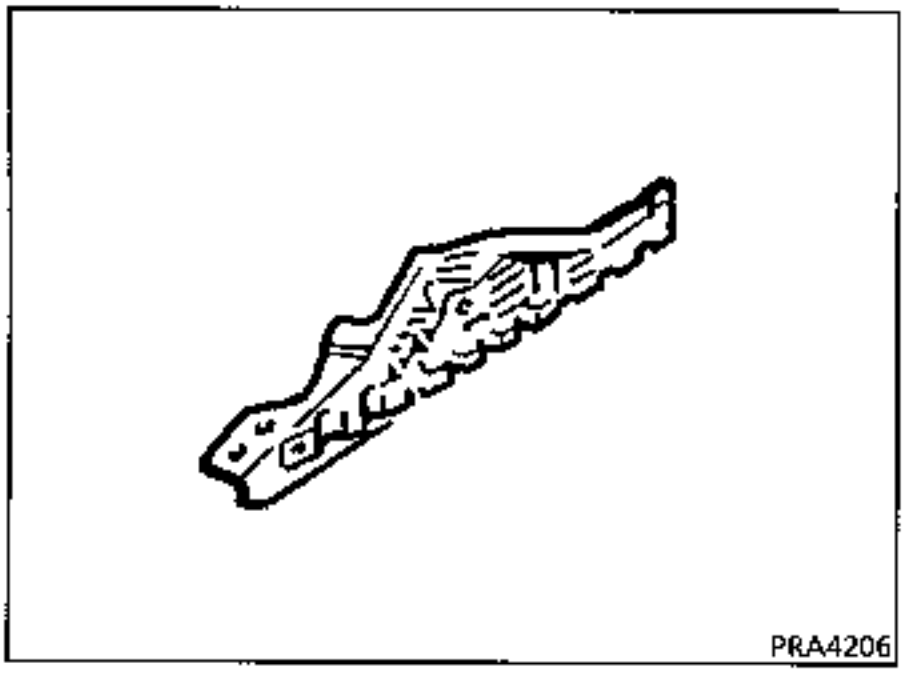


NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of the windscreen aperture cross member and the complete engine compartment panel.

COMPOSITION OF PART FROM PARTS DEPARTMENT



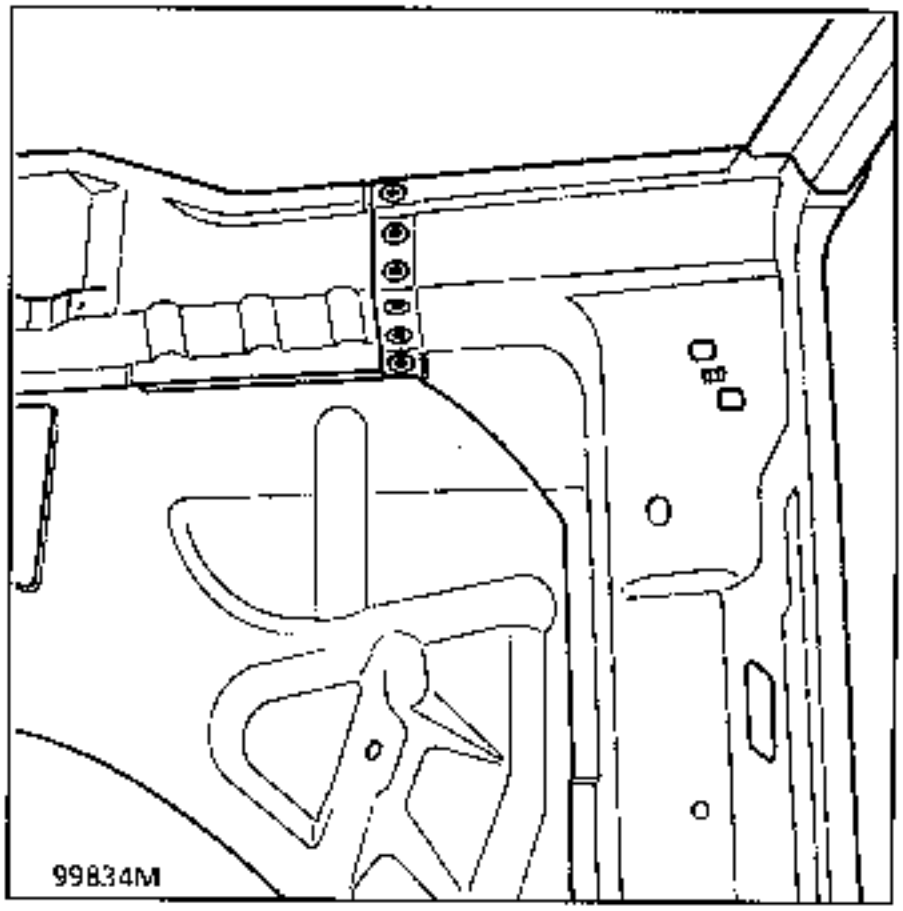
Preliminary operations.

Remove:
- the rear view mirror,
- the deflector,
- the front wing,
- the air / water separator,
- the windscreen,
- the front panel from the dashboard,
- part of the roof lining,
- the pillar lining,
- part of the wiring loom.

1 JOINT WITH FRONT PILLAR

REMINDER : refer to operations 43-A-3

Welding



2 JOINT WITH MUDGUARD SKIRT

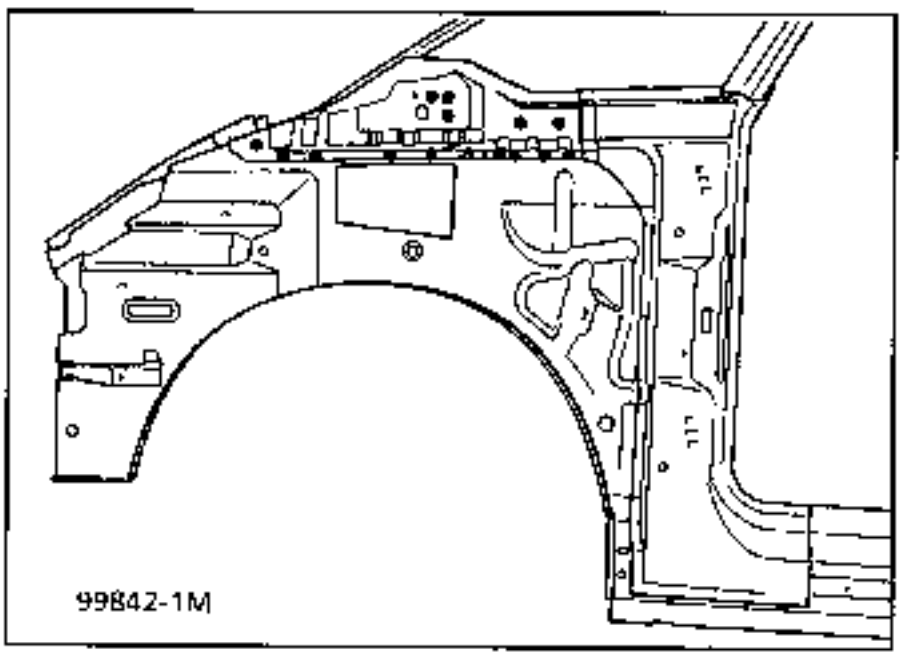
Thickness of panels concerned (mm)

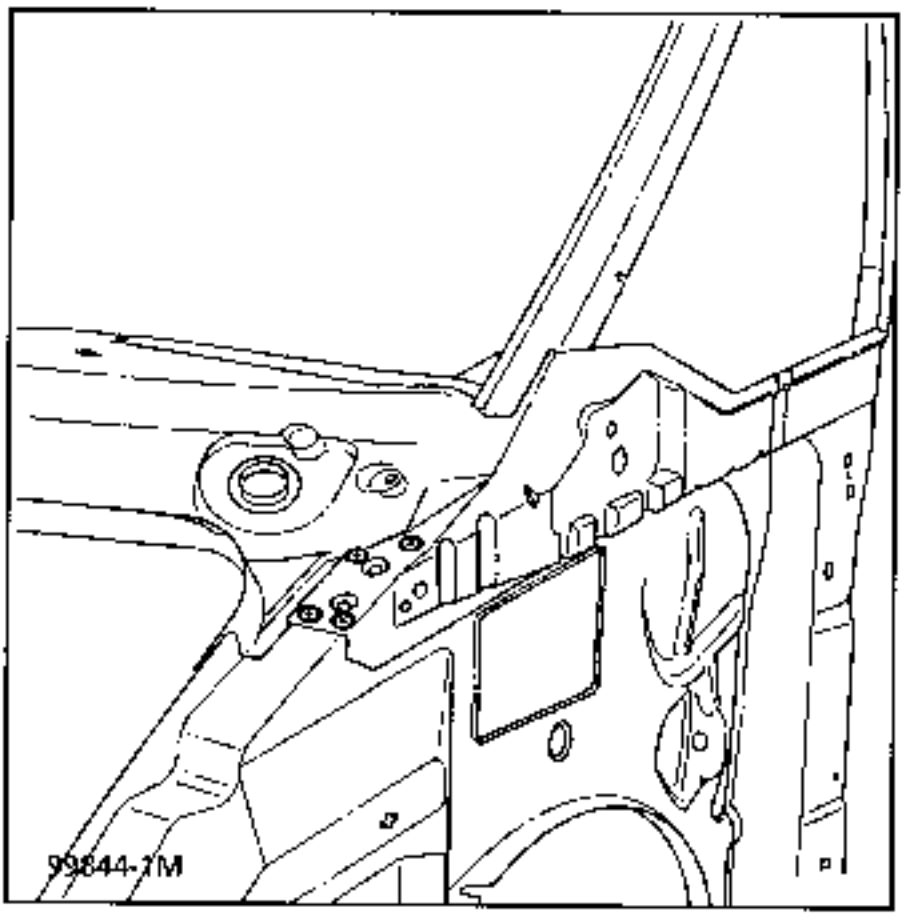
Mudguard skirt	0.7
Lower stretcher	1.0

Unpicking

19 spot welds on thickness 0.7

Welding



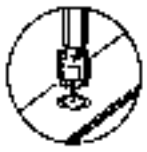


3 JOINT WITH WINDSCREEN PILLAR

Thickness of panels concerned (mm)

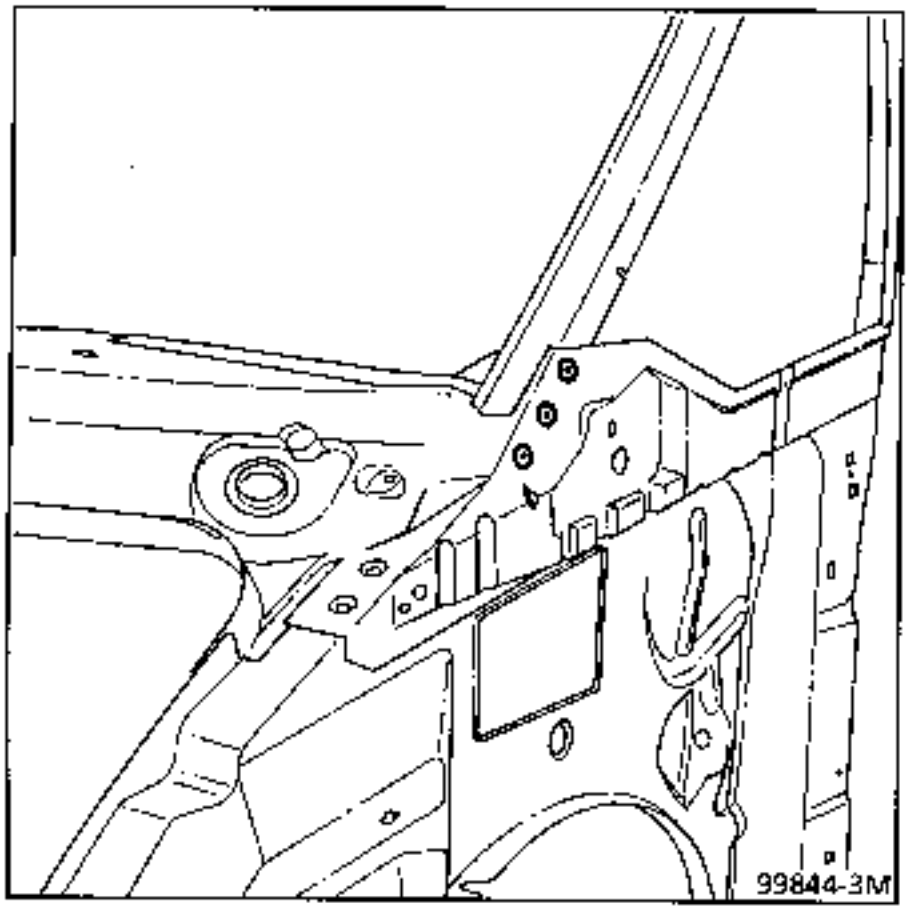
Windscreen pillar	0.8
Lower stretcher	1.0

Unpicking



3 spot welds on thickness 0.8

Welding



4 JOINT WITH ENGINE COMPARTMENT PANEL

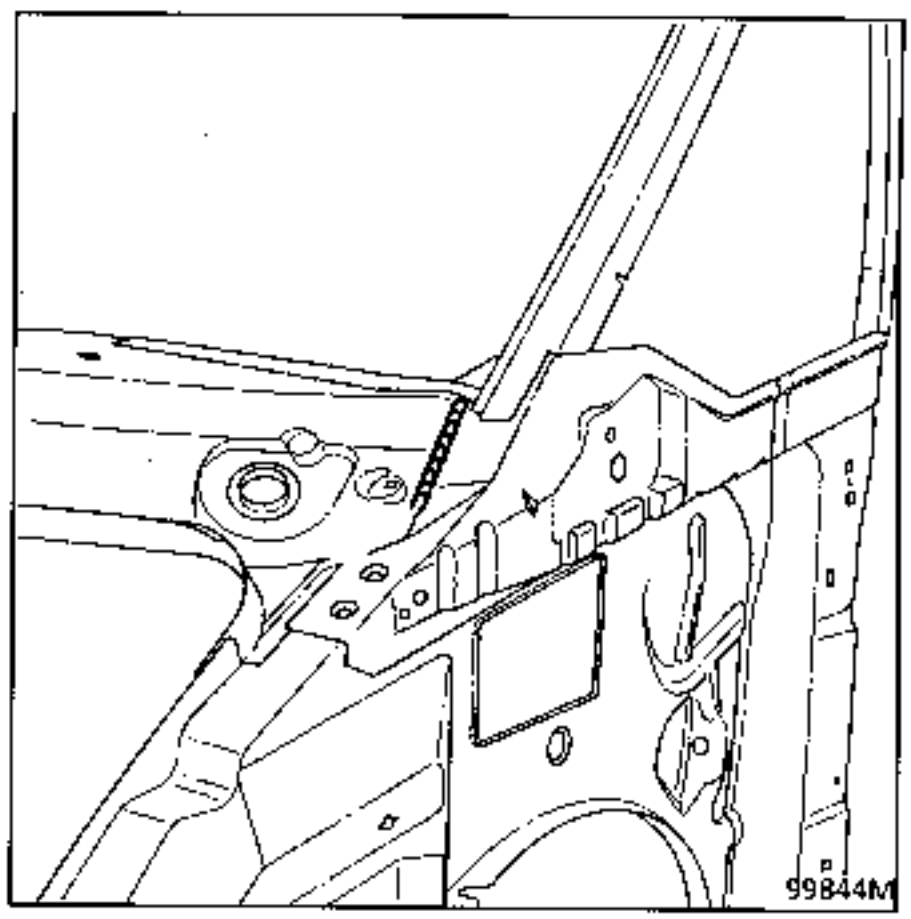
Thickness of panels concerned (mm)

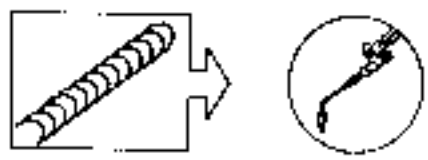
Engine compartment panel	0.8
Lower stretcher	1.0

Unpicking

Braze on thickness 0.8

Welding





NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

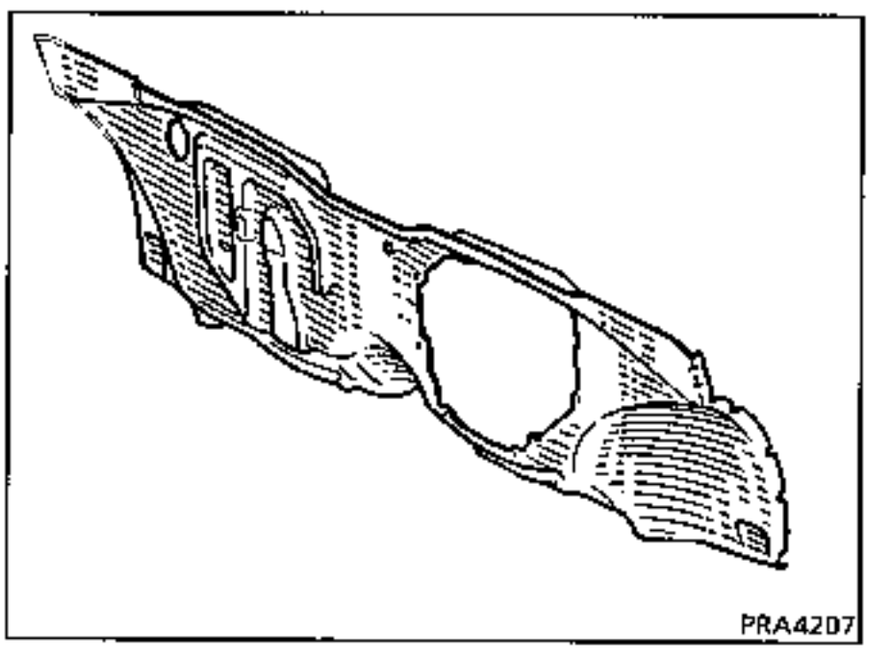
INTRODUCTION

The replacement of this part is a complementary operation to the replacement of :
- a front half unit for a front impact,
- the front pillar with lining for a side impact.

This operation also requires the replacement of the connecting bracket between the bulkhead and the half unit.

This part must be ordered separately.

COMPOSITION OF PART FROM PARTS DEPARTMENT


PRA4207

Preliminary operations.

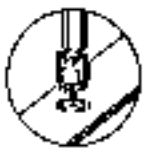
Remove:
- the sill panel,
- the carpet,
- the complete pedal mounting,
- the soundproofing,
- the dashboard,
- part of the wiring,
- the engine and transmission assembly.

1 JOINT WITH HALF FLOOR IMPACT REINFORCEMENT

Thickness of panels concerned (mm)

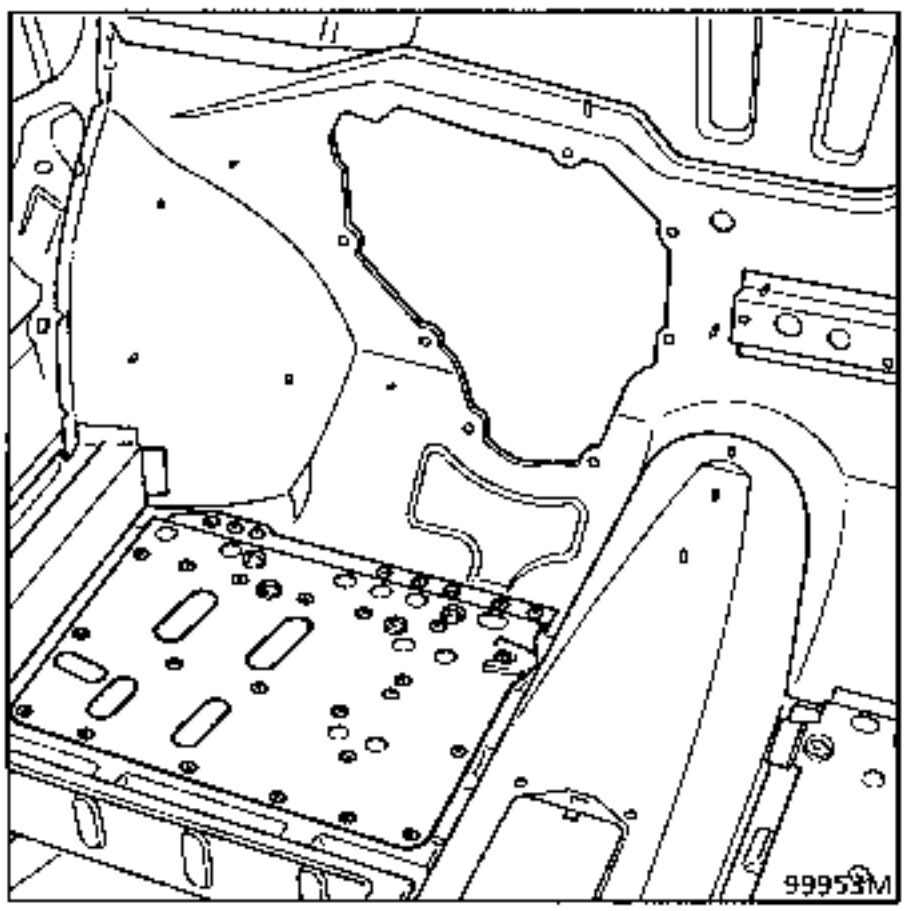
Impact reinforcement	0.8
1/2 floor	0.8

Unpicking



29 spot welds on thickness 0.8

Welding



2 JOINT WITH FOOTWELL SIDE MEMBER

Thickness of panels concerned (mm)

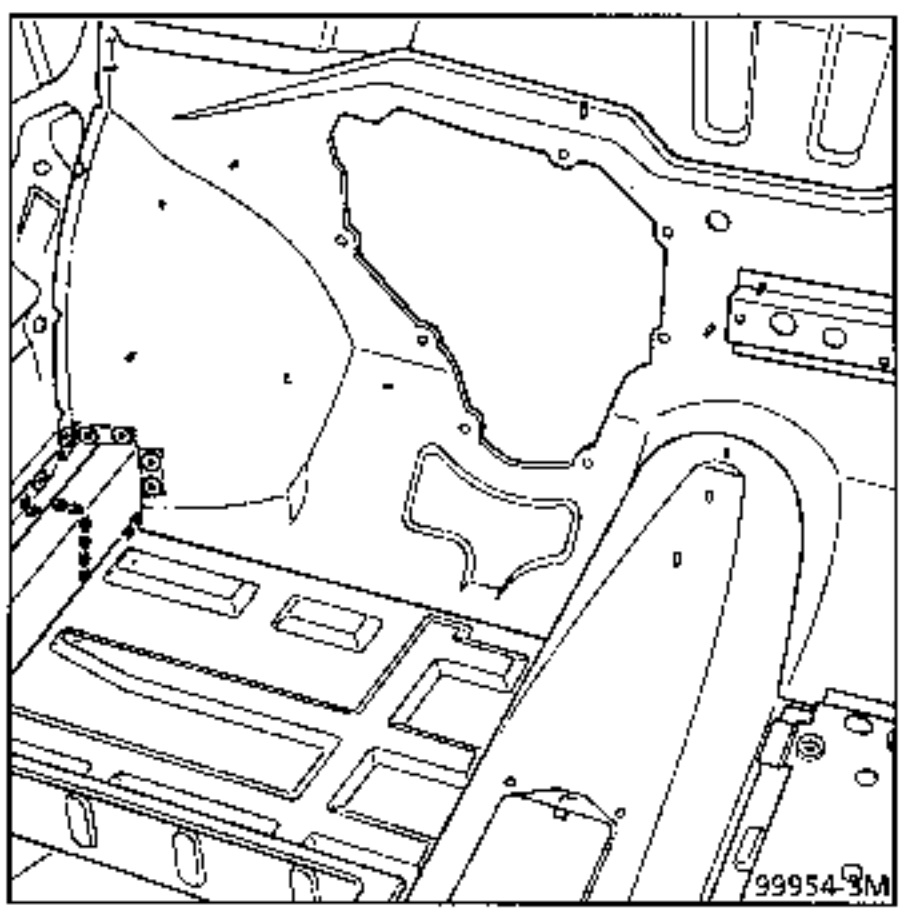
Footwell side member	0.8
Bulkhead	1.0
Mudguard skirt	1.0

Unpicking

6 spot welds on thickness 1.0

150 mm on thickness 1.0

Welding

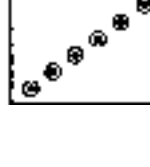


3 JOINT WITH WHEEL ARCH BRACKET

Thickness of panels concerned (mm)

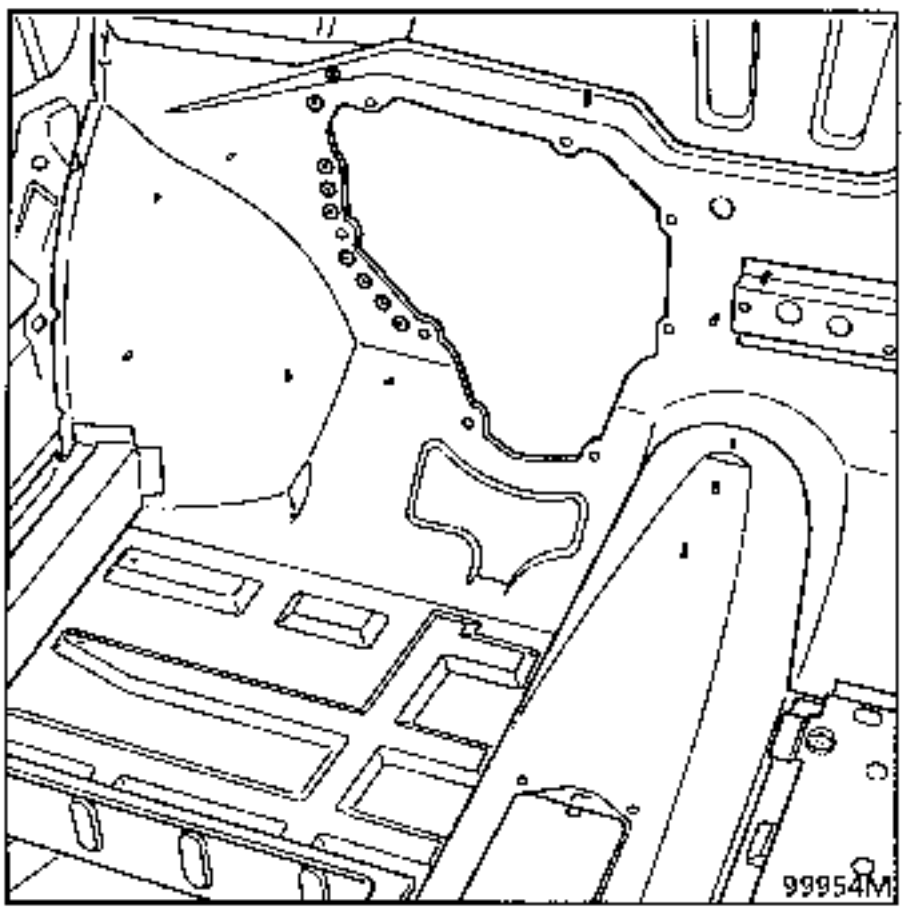
Wheel arch bracket	1.2
Bulkhead	1.0

Unpicking



9 spot welds on thickness 1.2

Welding



4 JOINT WITH MUDGUARD SKIRT

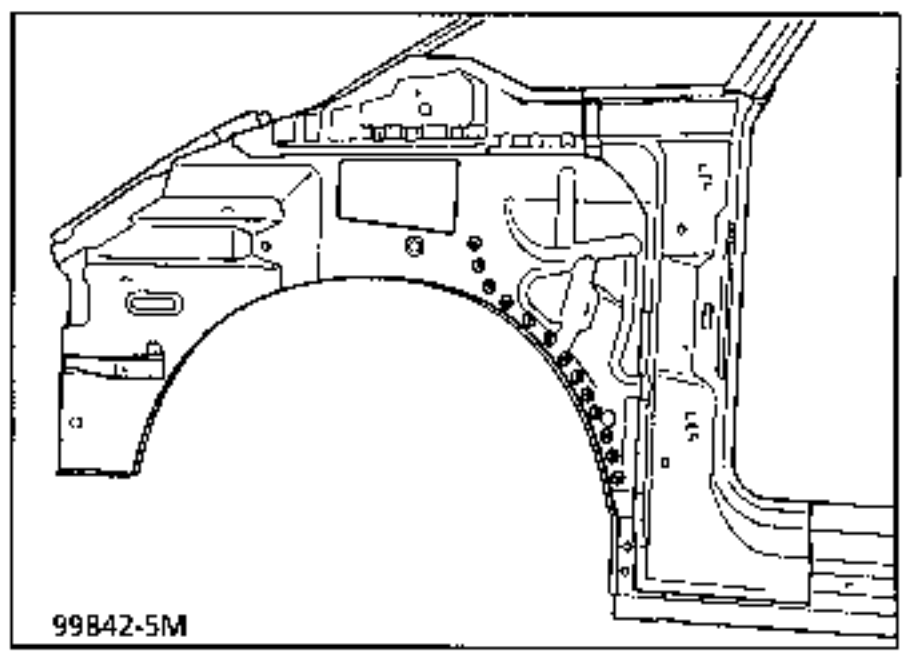
Thickness of panels concerned (mm)

Mudguard skirt	1.0
Bulkhead	1.0

Unpicking

13 spot welds on thickness 1.0

Welding



5 JOINT WITH FRONT SIDE MEMBER, REAR SECTION

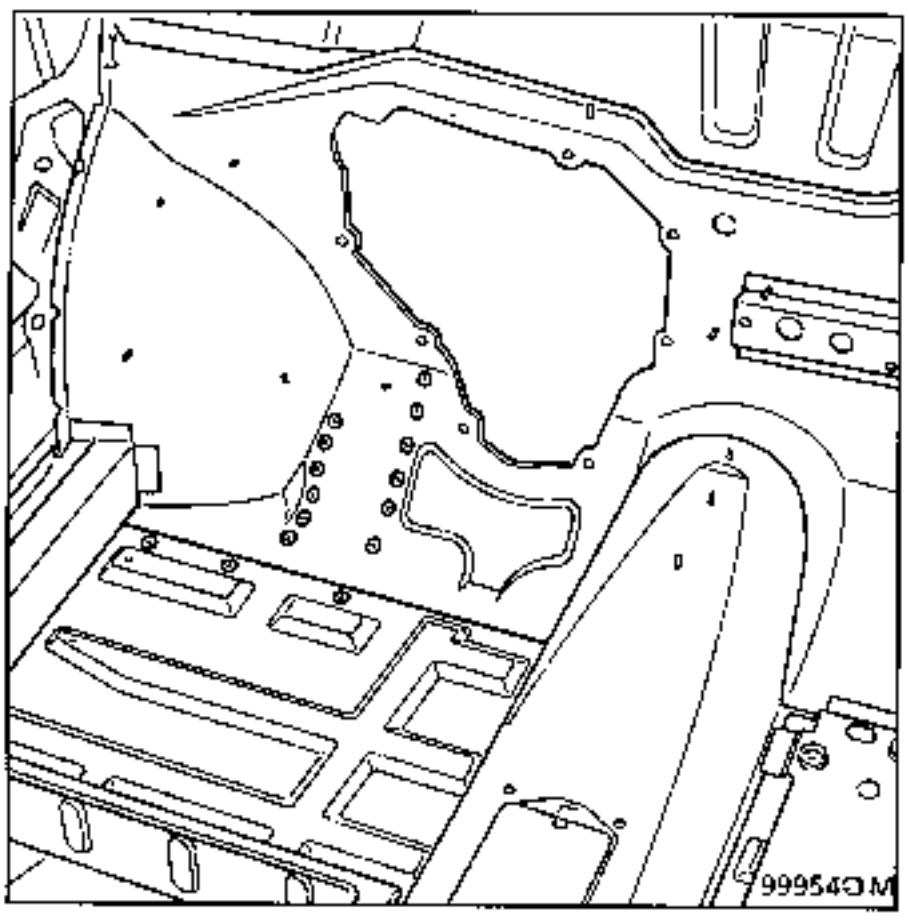
Thickness of panels concerned (mm)

Front side member, rear section	1.5
Half floor	0.8
Bulkhead	1.0

Unpicking

15 spot welds on thickness 1.5

Welding

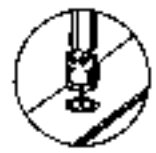


6 JOINT WITH PLENUM CHAMBER

Thickness of panels concerned (mm)

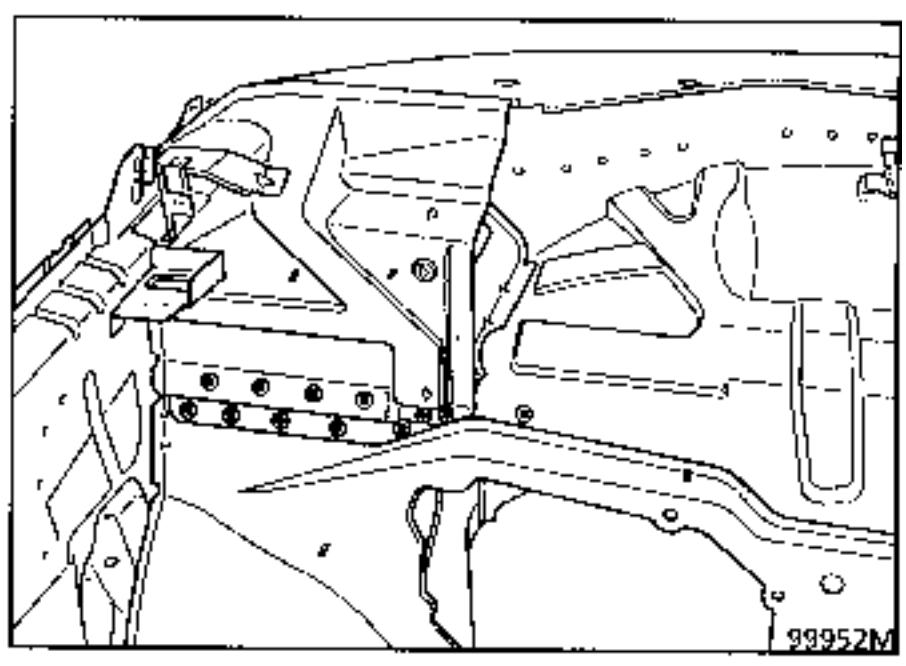
Bulkhead part section	0.9
Plenum chamber	1.0
Side closure panel	1.0

Unpicking



12 spot welds on thickness 1.0

Welding



7 PART SECTION

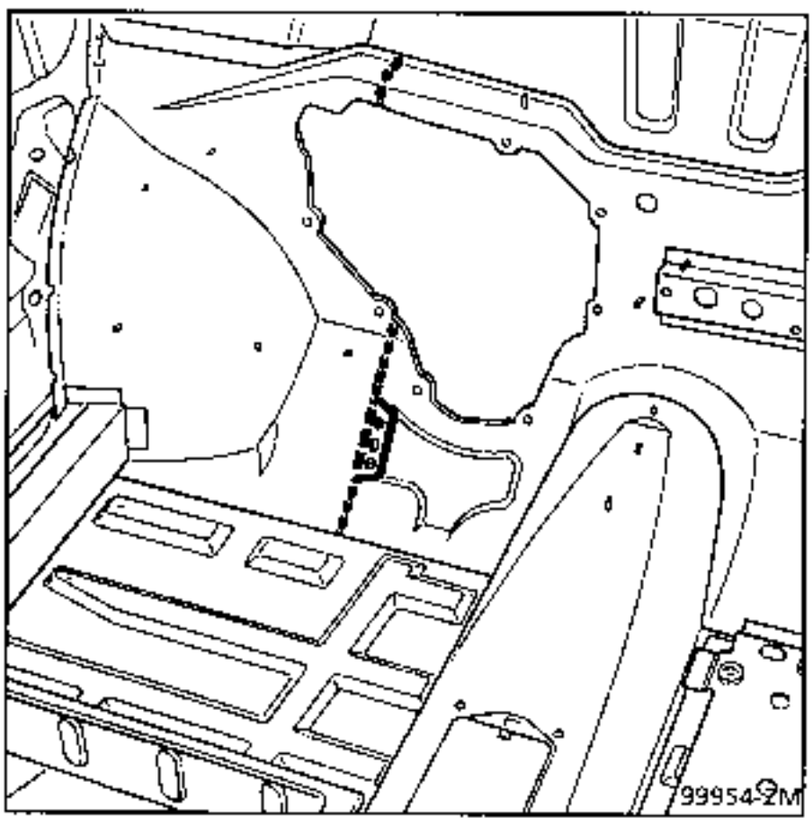
Thickness of panels concerned (mm)

Bulkhead	1.0

Unpicking

70 + 300 mm on thickness 1.0

Welding



Positioning before welding:

Fitting the pedal mounting.
Fit the panels using clamps.

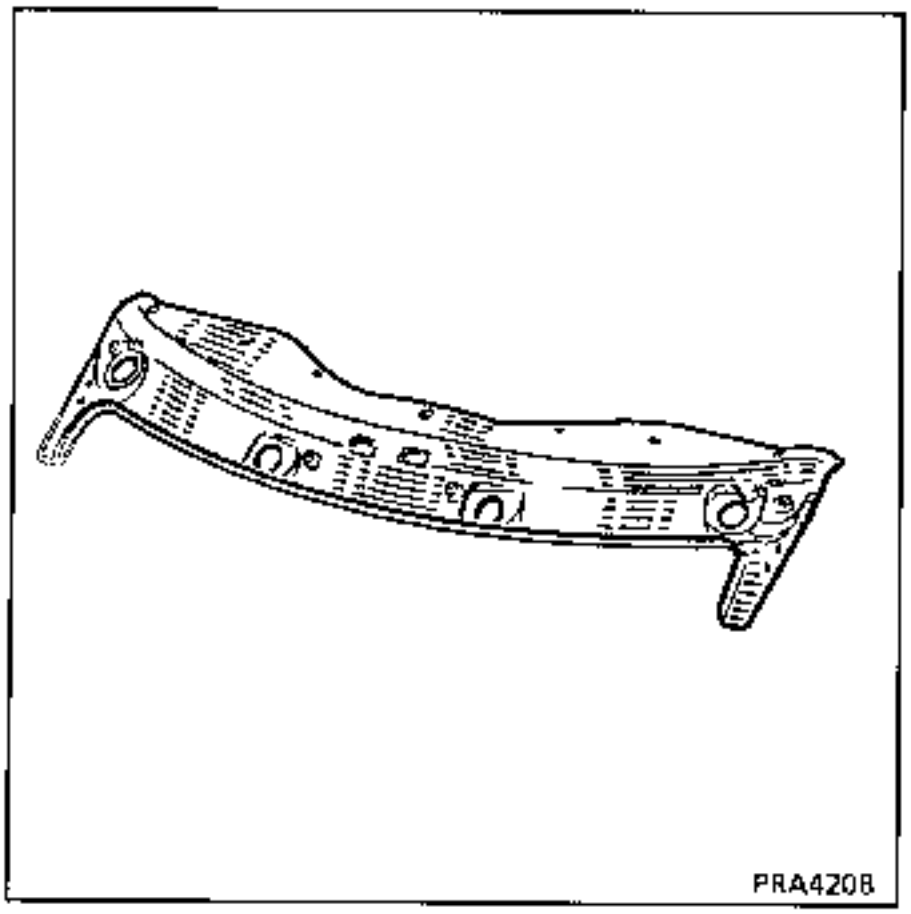
NOTE : Refer to section 40 General, for information on cutting out and preparation before welding.

NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of the lower stretcher and the cowl side panel for a side impact.

COMPOSITION OF PART FROM PARTS DEPARTMENT



Preliminary operations.

Remove:
- the bonnet,
- move the dashboard back by one metre,
- the fan assembly,
- the quarter glass,
- the windscreen,
- the front wing,
- the air / water unit,
- the wiper mechanism,
- part of the roof lining,
- the soundproofing on the engine compartment panel,
- the particle filters,
- the evaporator.

1 JOINT WITH AIR DUCT

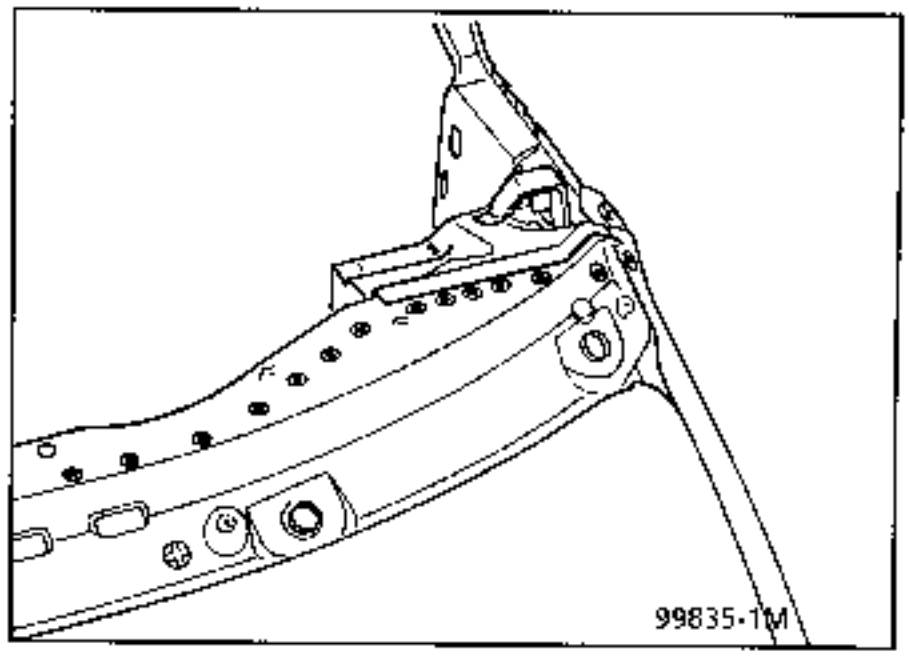
Thickness of panels concerned (mm)

Air duct	1.0
Engine compartment panel	1.0

Unpicking

14 spot welds on thickness 1.0

Welding



2 JOINT WITH SIDE CLOSURE PANEL

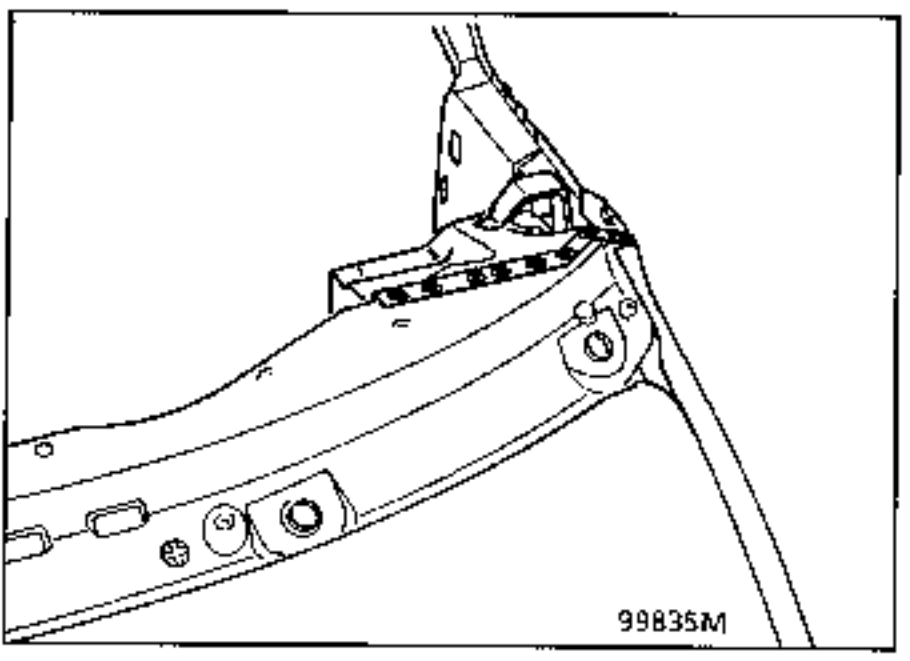
Thickness of panels concerned (mm)

Side closure panel	1.0
Engine compartment panel	1.0

Unpicking

8 spot welds on thickness 1.0

Welding

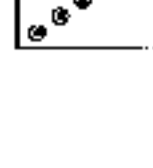


3 JOINT WITH WINDSCREEN APERTURE LOWER CROSS MEMBER

Thickness of panels concerned (mm)

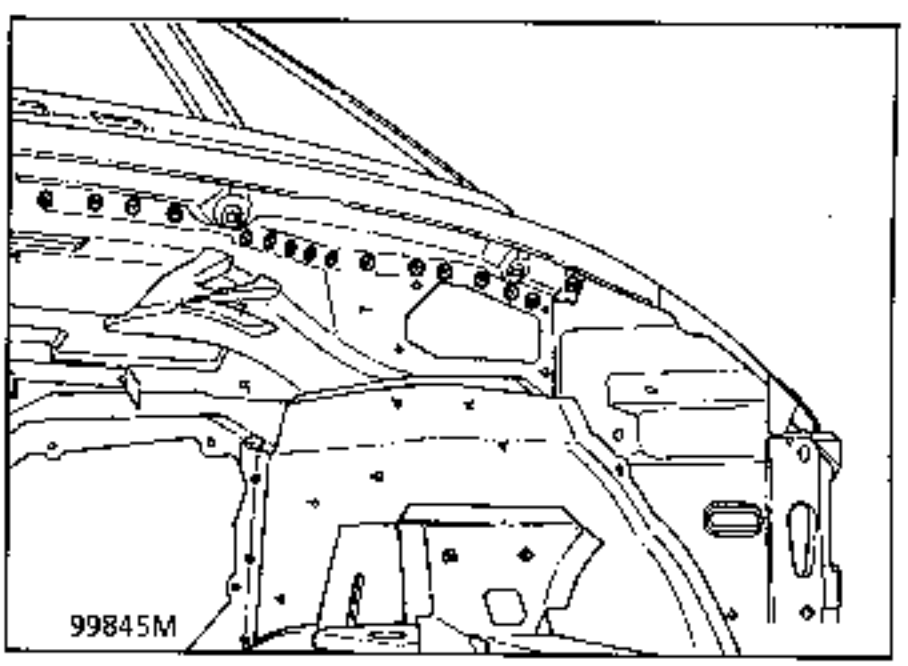
Windscreen aperture lower cross member	1.0
Engine compartment panel	1.0
Air duct	1.0

Unpicking



16 spot welds on thickness 1.0

Welding

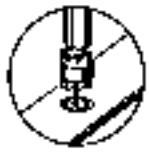


4 JOINT WITH LOWER STRETCHER

Thickness of panels concerned (mm)

Lower stretcher	1.0
Mudguard skirt	1.0
Engine compartment panel	1.0
Windscreen pillar	0.8

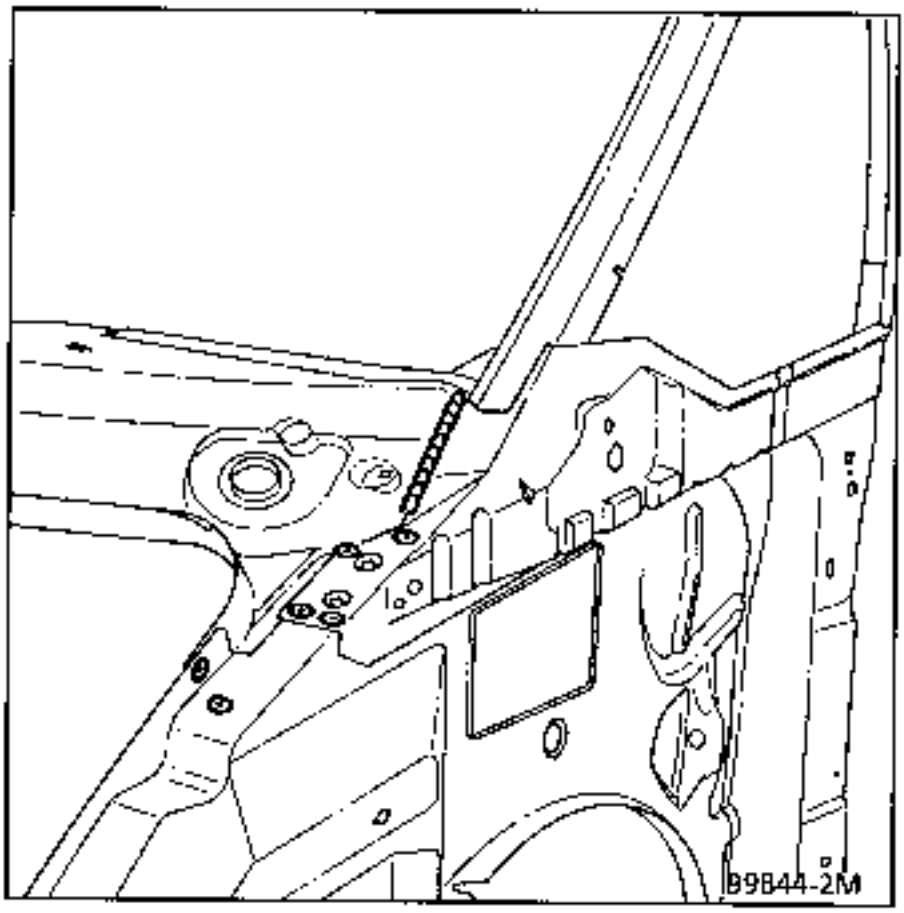
Unpicking

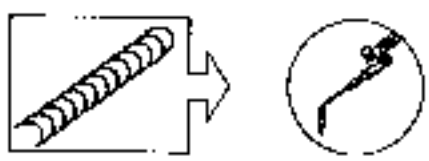


6 spot welds on thickness 1.0

+ 1 brazed joint of 60 mm

Welding



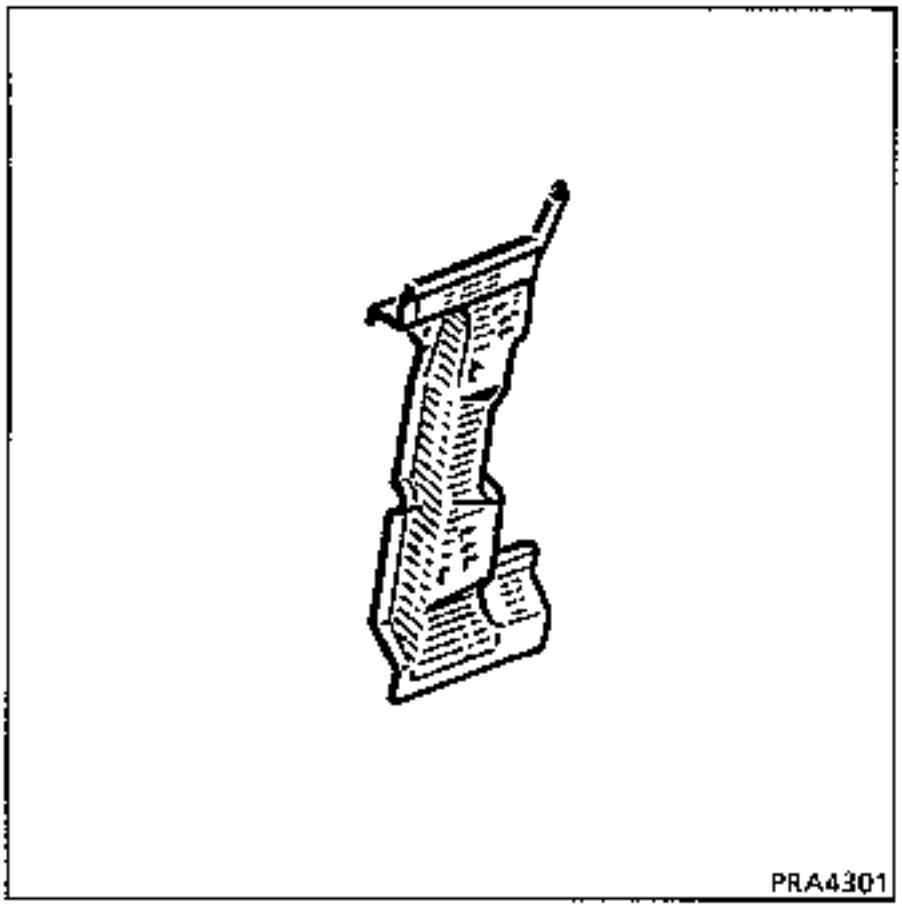


NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a basic operation for a side impact.

COMPOSITION OF PART FROM PARTS DEPARTMENT



Preliminary operations.

Remove:
- the quarter glass trim,
- the quarter glass,
- the rear view mirror,
- the front wing,
- the mudguard,
- the door seal,
- the front door,
- the pillar lining,
- the door switch,
- the sill panel,

Move the dashboard back by 1 m,

Remove:
- part of the wiring loom,
- the wheel,
- the mudguard.

1 JOINT WITH VALANCE REINFORCEMENT PANEL

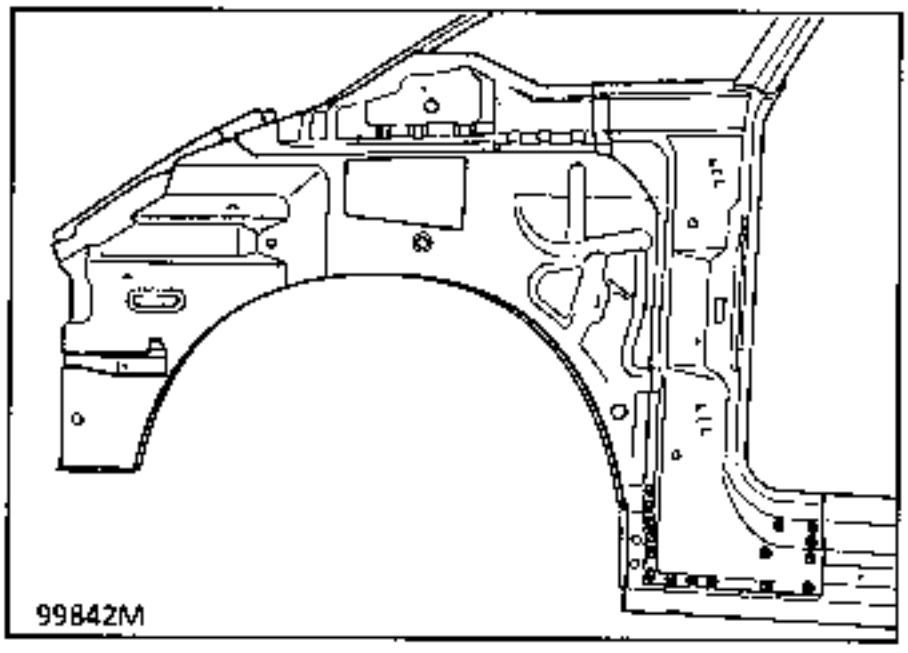
Thickness of panels concerned (mm)

Valance reinforcement panel	0.8
Front pillar	1.0

Unpicking

16 spot welds on thickness 1.0

Welding

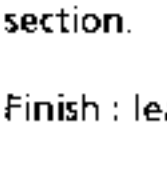


2 JOINT WITH MUDGUARD SKIRT

Thickness of panels concerned (mm)

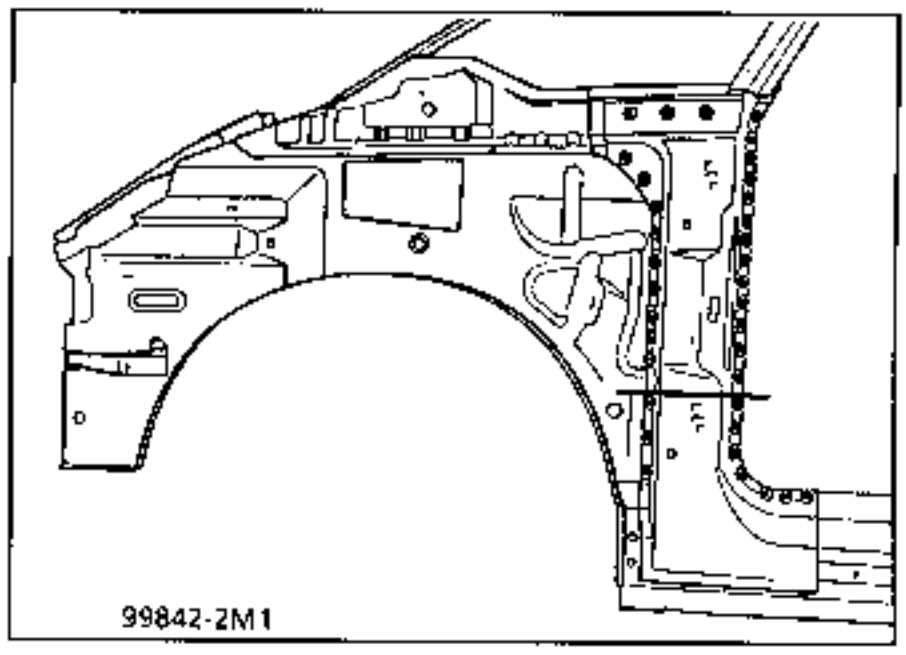
Front valance panel	1.0
Front pillar	1.0
Upper hinge reinforcement	1.5
Lower hinge reinforcement	1.5

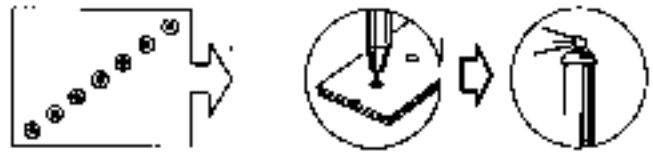
Unpicking



36 spot welds on thickness 1.0

Welding





Front pillar cutting line for repairing the lower section.

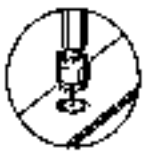
Finish : lead fill

3 JOINT WITH LOWER STRETCHER

Thickness of panels concerned (mm)

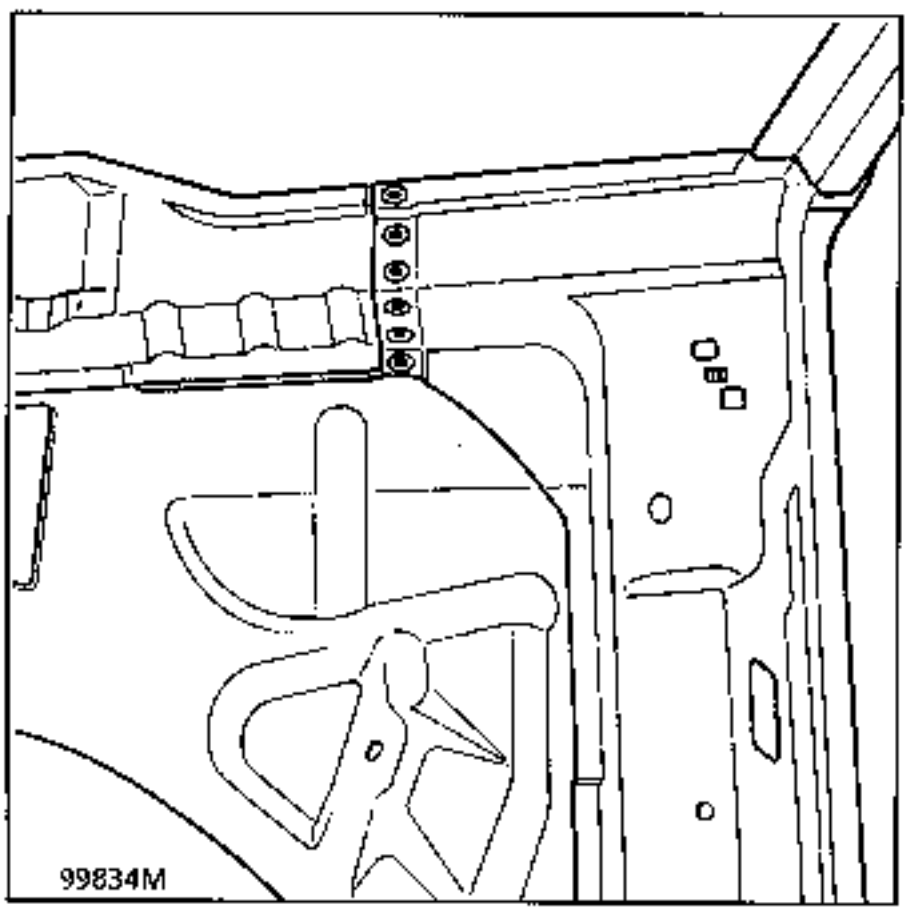
Lower stretcher	1.0
Front pillar	1.0

Unpicking



6 spot welds on thickness 1.0,

Welding

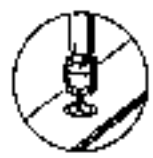


4 JOINT WITH DEFLECTOR PILLAR

Thickness of panels concerned (mm)

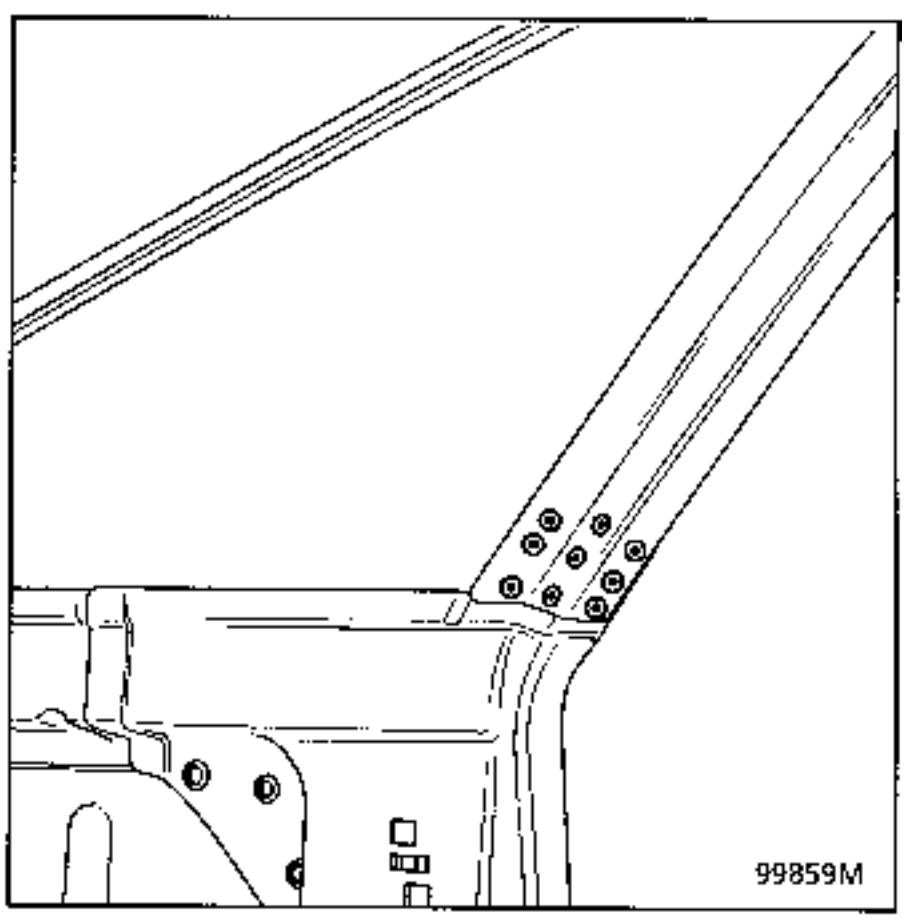
Deflector pillar	1.5
Front pillar	1.0
Mudguard skirt	1.0

Unpicking

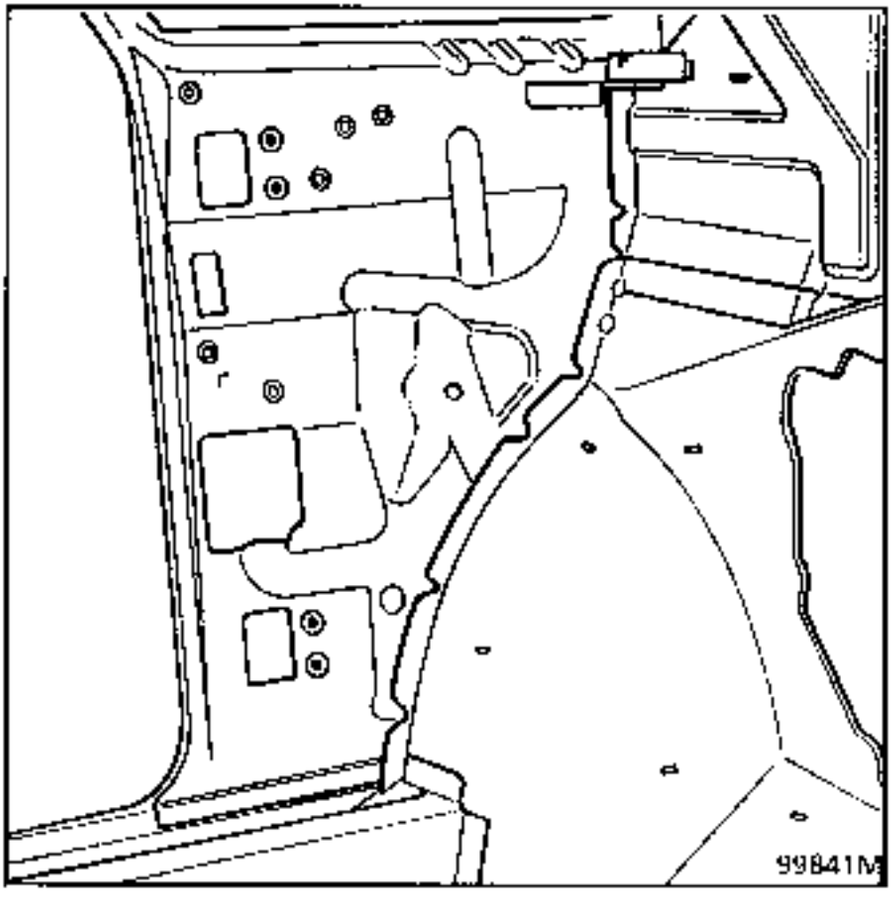


9 spot welds on 3 thicknesses
1.5 + 1.0 + 1.0

Welding



Welding



NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a basic operation for a side impact.

COMPOSITION OF PART FROM PARTS DEPARTMENT


PRA4302

Preliminary operations.

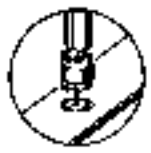
Remove:
- the sill panel,
- the floor lining, part section,
- the centre pillar lining,
- the upper lining, part section,
- the rear door,
- the seat belt,
- the front and rear door seals,
- part of the wiring loom,
- the door switch,
- the centre pillar trim,
- the medallion.

1 JOINT WITH VALANCE PANEL REINFORCEMENT

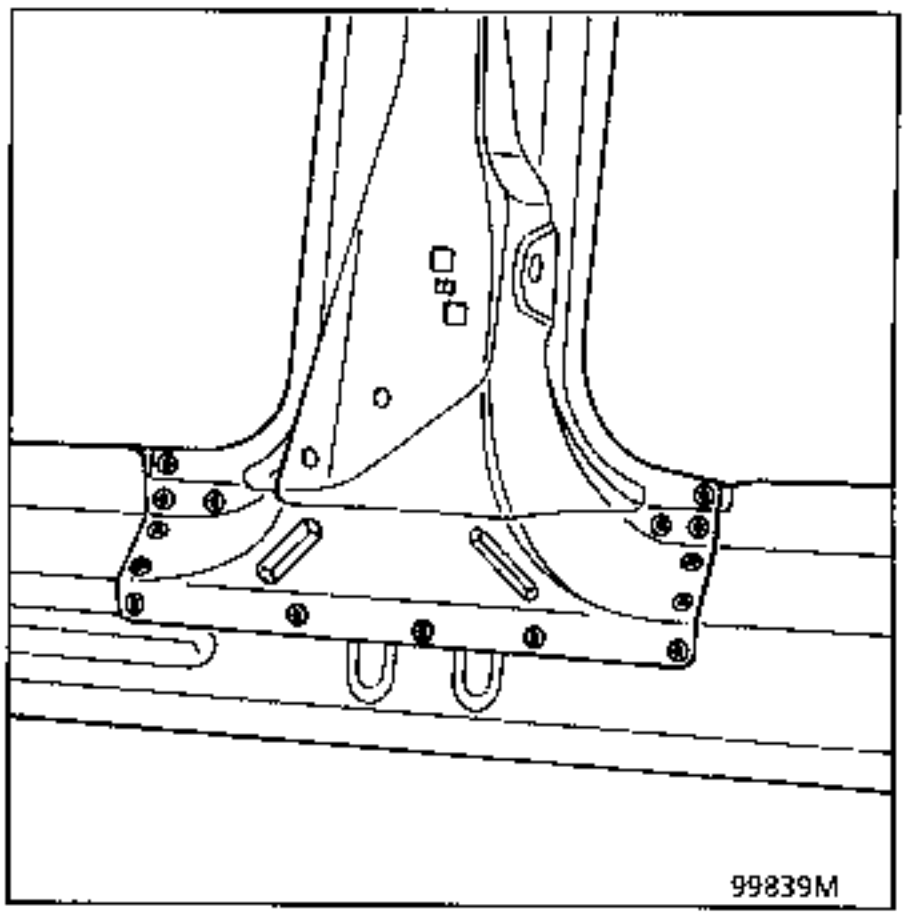
Thickness of panels concerned (mm)

Valance panel reinforcement	0.8
Centre pillar	0.8
Valance panel partition	1.2

Unpicking


15 spot welds on thickness 0.8

Welding


99839M

2 PILLAR LINING JOINT WITH FLOOR

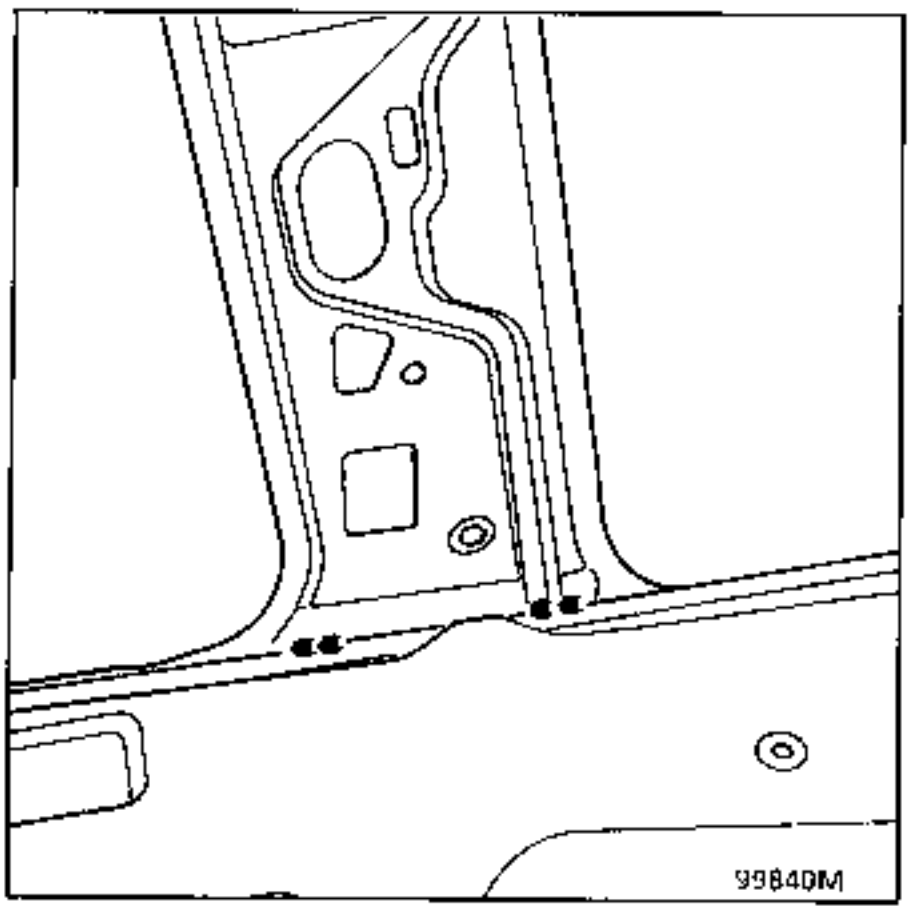
Thickness of panels concerned (mm)

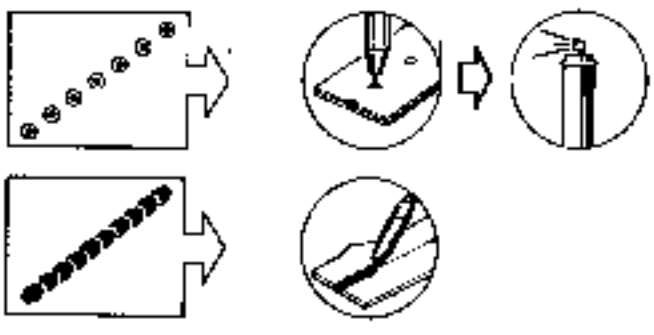
Pillar lining	0.8
Floor	0.7

Unpicking

2 MAG fillets of 25 mm

Welding





3 JOINT WITH CENTRE ROOF CROSS MEMBER

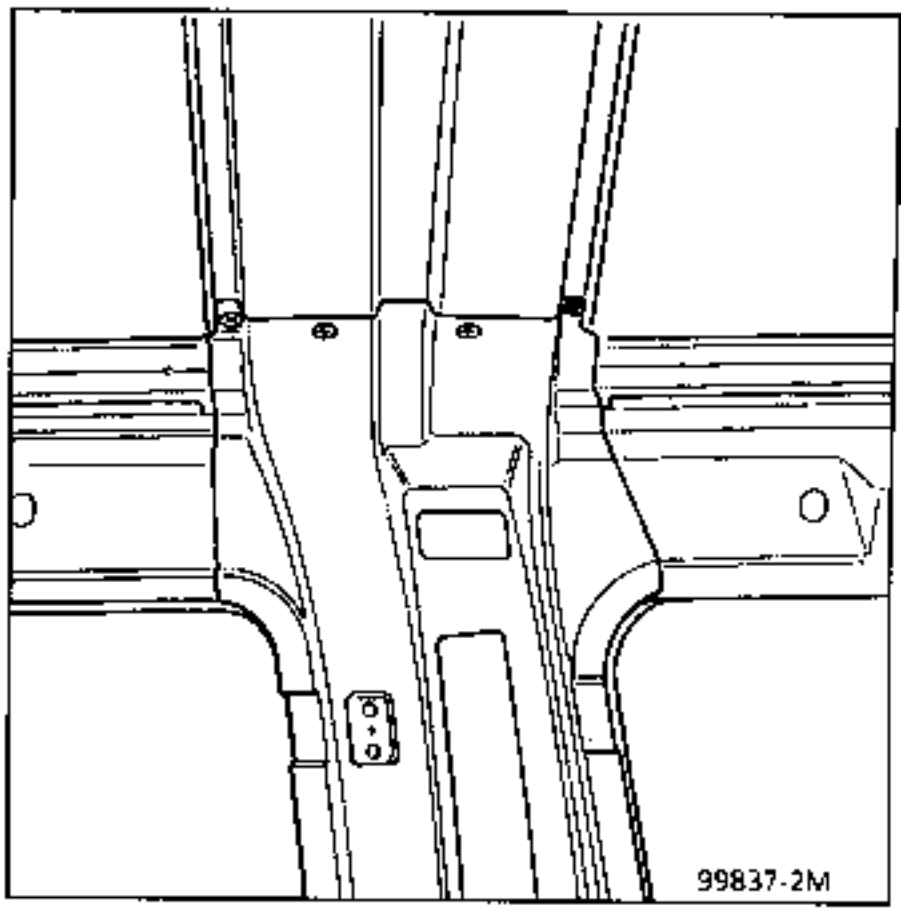
Thickness of panels concerned (mm)

Pillar lining	0.8
Centre roof cross member	0.6

Unpicking

4 spot welds on thickness 0.6

Welding



4 PILLAR LINING JOINT WITH UPPER STRETCHER

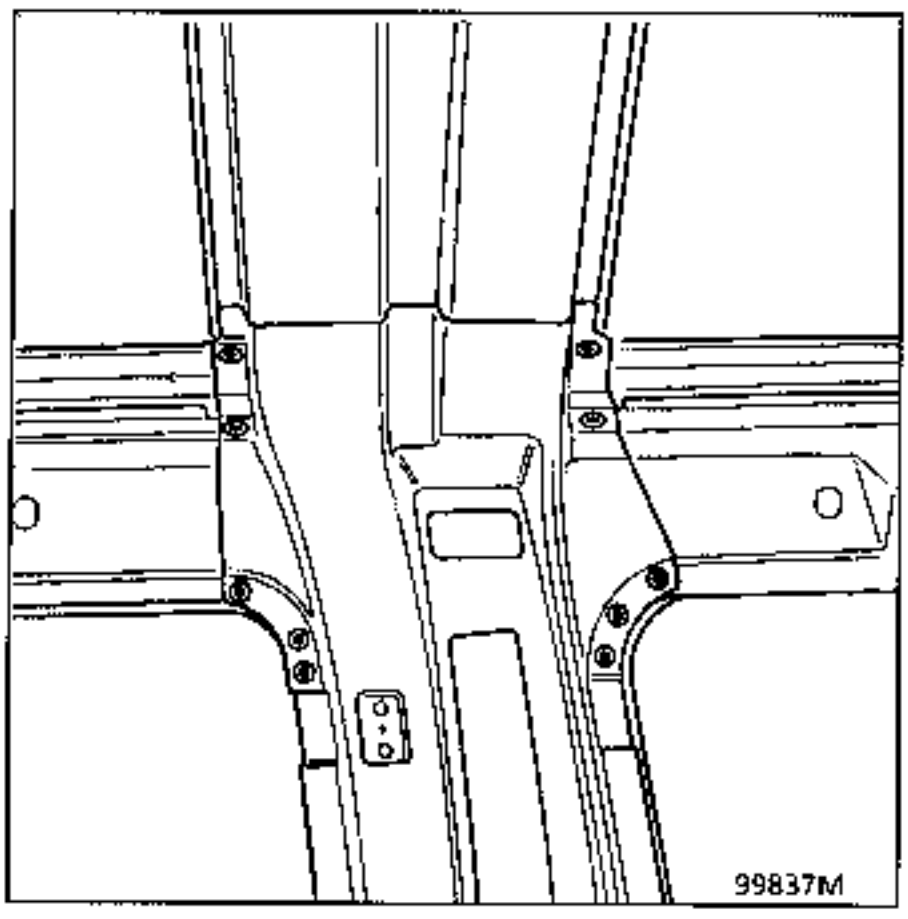
Thickness of panels concerned (mm)

Pillar lining joint	0.8
Upper stretcher	0.7

Unpicking

10 spot welds on thickness 0.7

Welding



PROTECTION : place a wet cloth on the roof during welding.

5 JOINT WITH STRETCHER LINING

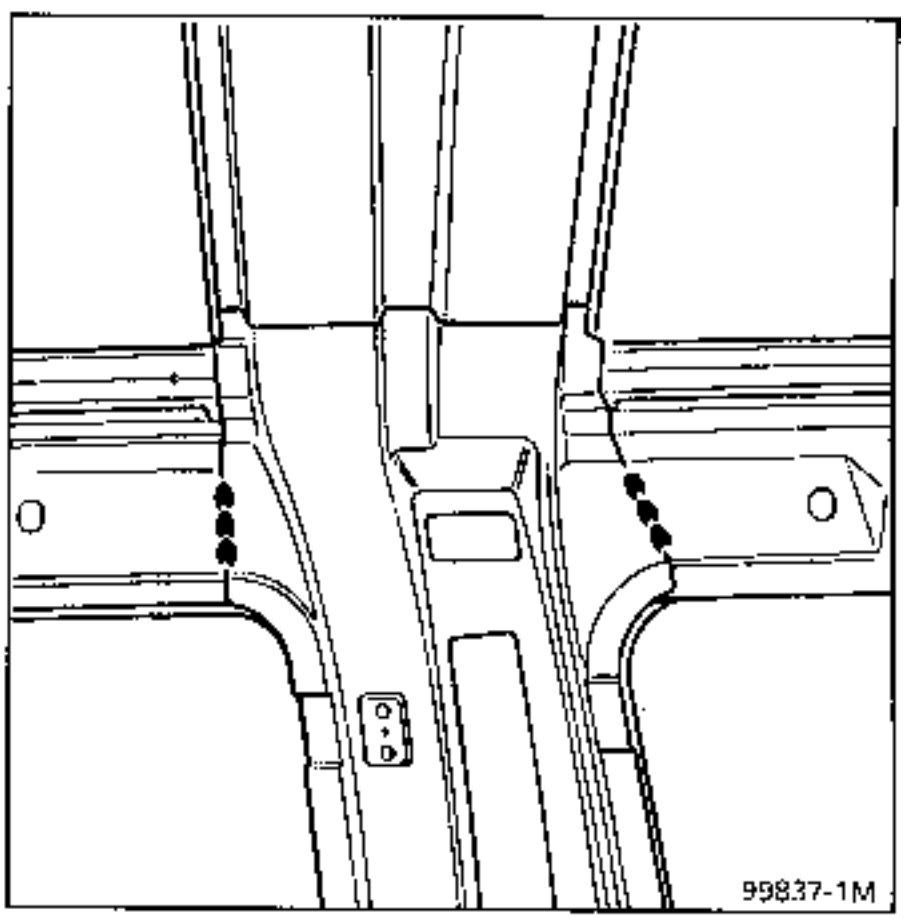
Thickness of panels concerned (mm)

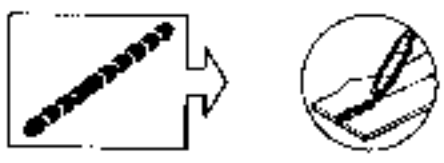
Centre pillar lining	0.8
Front upper stretcher lining	0.7
Centre upper stretcher lining	0.7

Unpicking

2 MAG fillets of 30mm

Welding





6 CENTRE PILLAR JOINT WITH UPPER STRETCHER

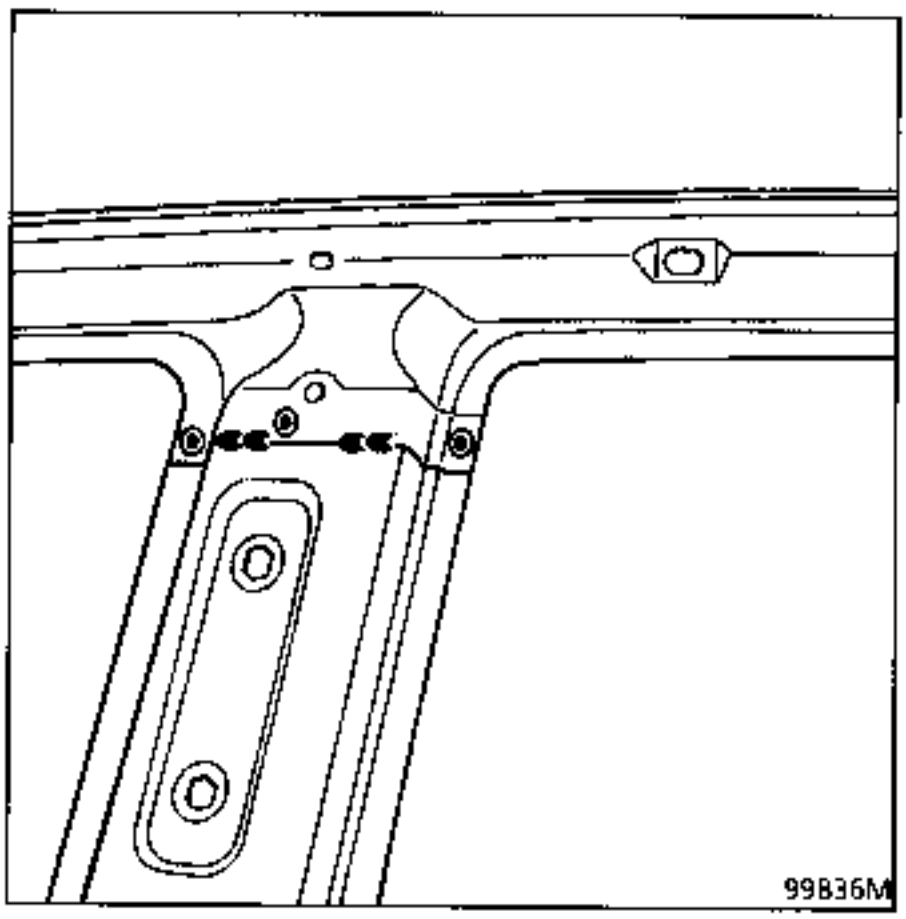
Thickness of panels concerned (mm)

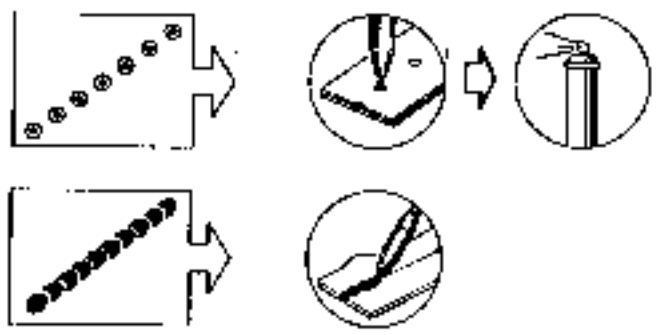
Centre pillar	0.8
Upper stretcher	0.7
Centre pillar lining	0.8

Unpicking

3 spot welds on thickness
0.8 + 0.8 + 0.7

2 MAG fillets of 25 mm





NOTE :
When refitting the centre pillar before welding carry out a check by refitting the front door which will serve as a guide for correctly positioning the pillar on the vehicle.

NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

REPLACEMENT

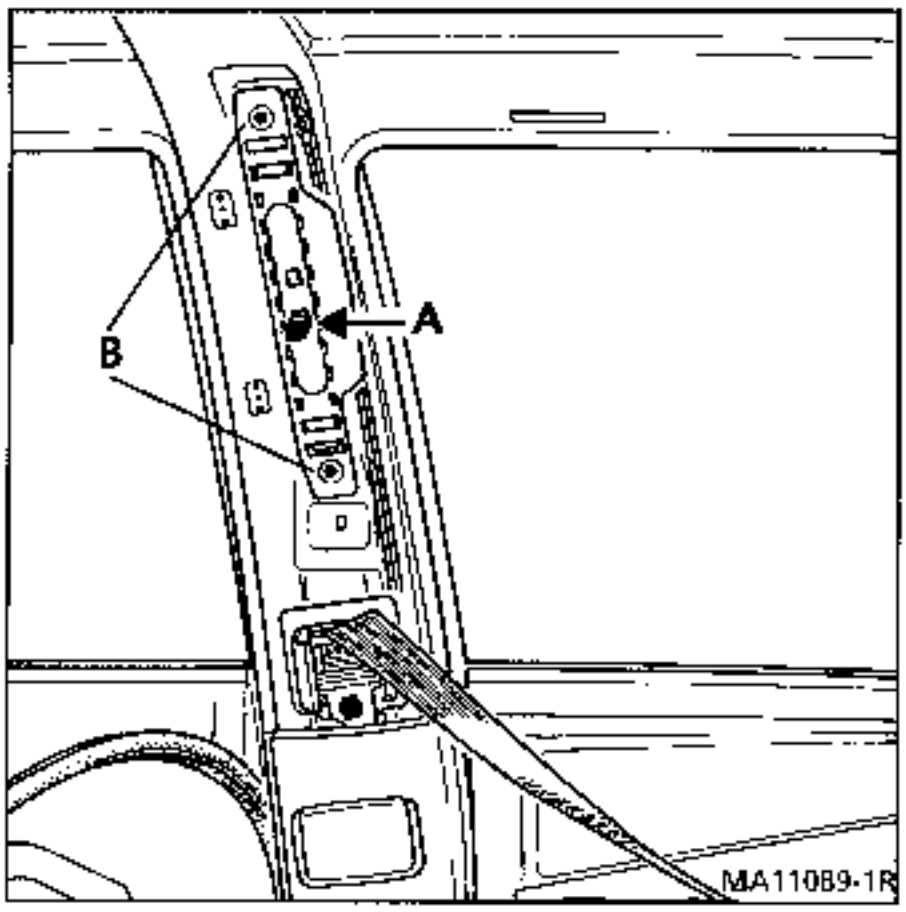
REMOVAL

Slacken the upper seat belt mounting.

Unclip the 2 retaining handle covers, remove the handle and its base.

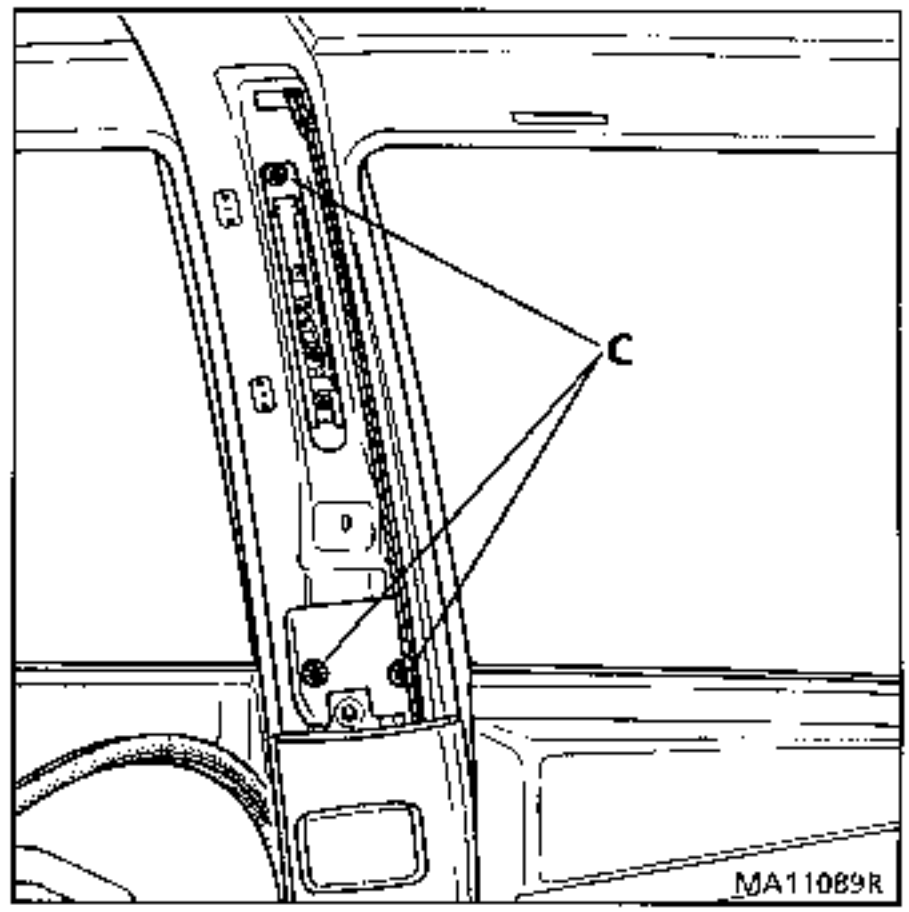
Remove the door seals at the level of the centre pillar.

Release the trim from the centre pillar.



Unclip the height adjustment button (A).

Slacken :
- the 2 bolts (B) for the adjustment system,
- the 3 bolts (C) for the centre pillar trim.

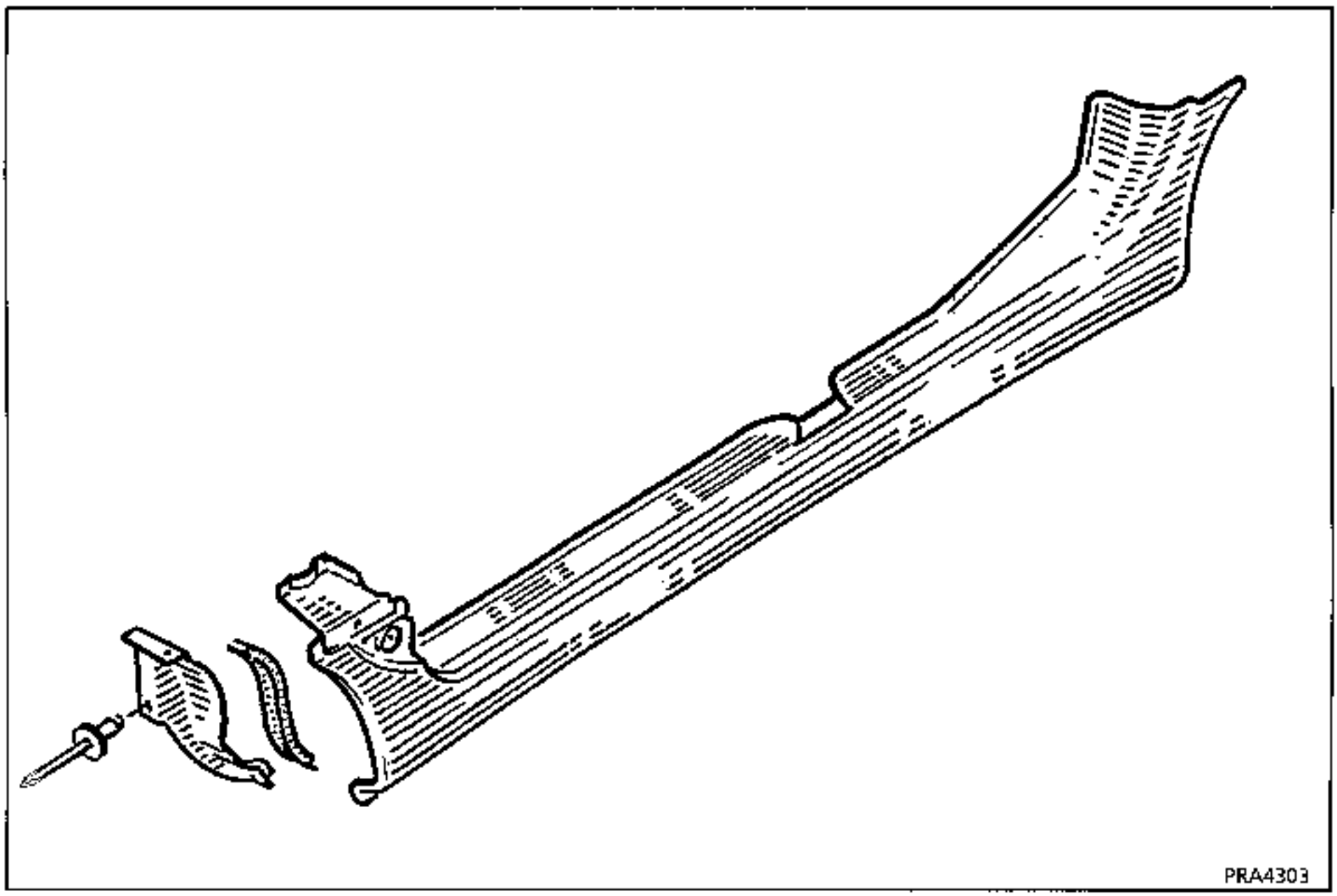


REFITTING

Refit the 3 bolts (C) .

Refitting is the reverse of removal.

Tighten the upper seat belt mounting to a torque of **2.5 daN.m**



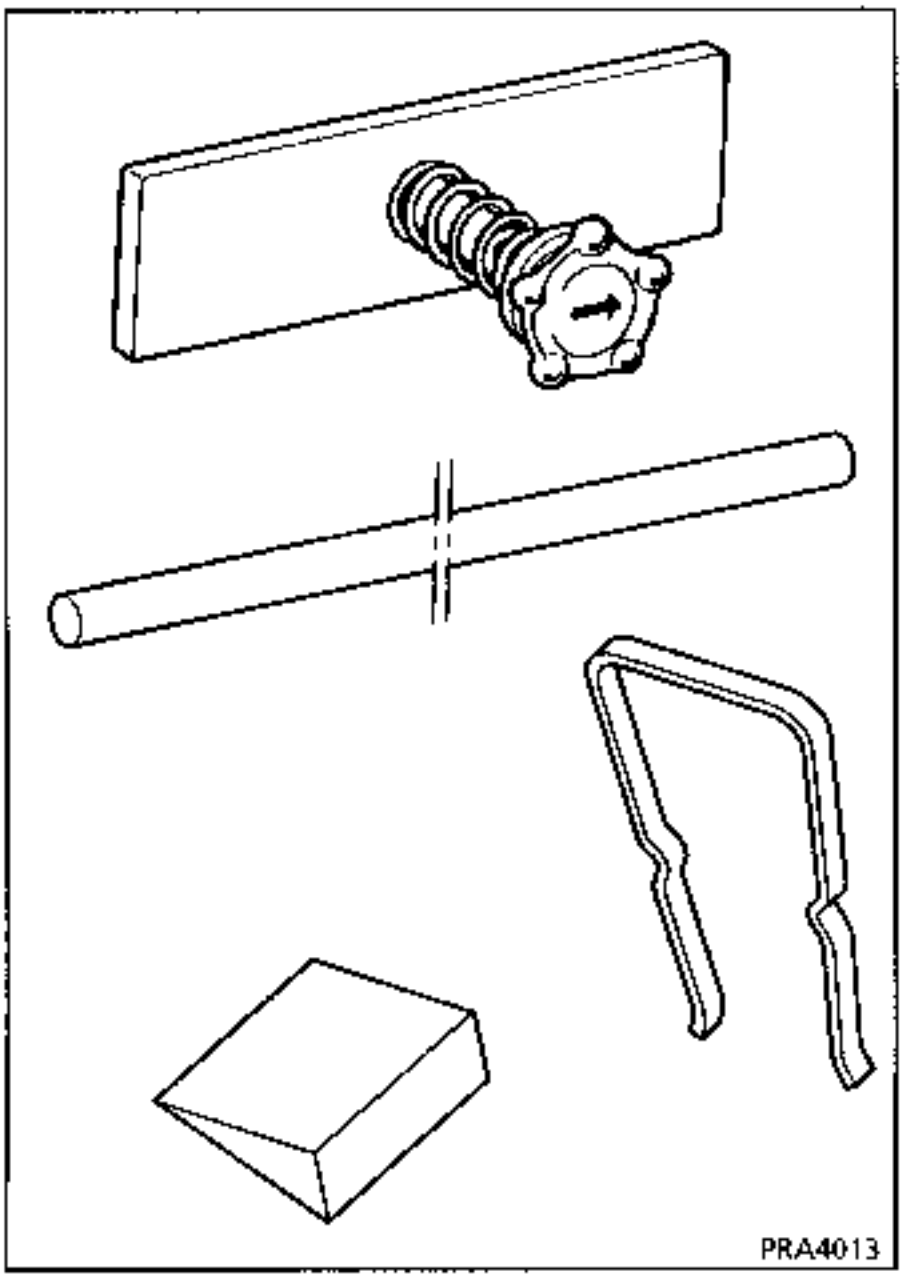
REPAIRS

- **Cracks** See repair operation n° 1
- **Holes** See repair operation n° 2
- **Breaks** See repair operation n° 3

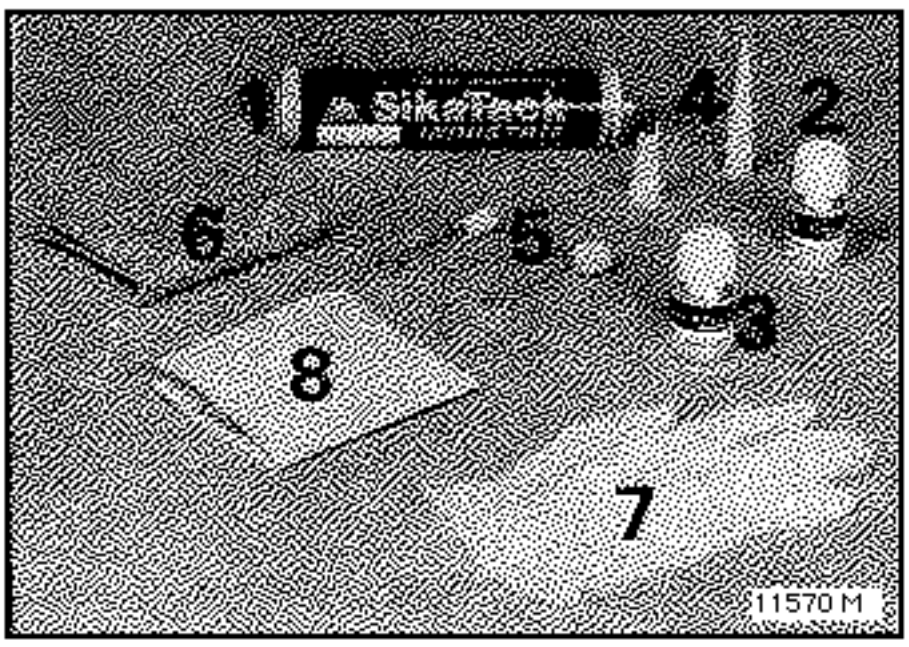
REPLACEMENT

Parts to be systematically replaced:
- Valance panel primary seal

Tooling required:
- saw (with diamond disc or blade),
- sharp spatula
- vibrating tool for removing windows (25 mm blade and cleaning blade) : this tool is recommended to facilitate the removal operations.
- riveting tool,
- adhesive extrusion gun
- centring tooling kit, Part Number **Car.1219-01**



Product required:
Bonding kit, Part Number : 60 25 170 306



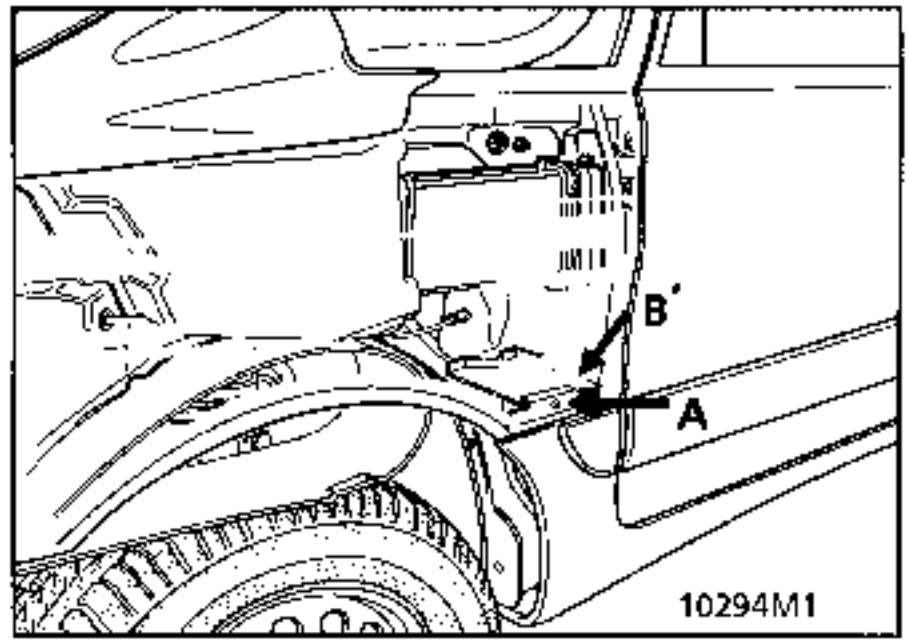
Personal protection:
Goggles, gloves, masks and breathing equipment.

REMOVAL

THIS OPERATION IS MADE EASIER IF THE VEHICLE IS ON A LIFT.

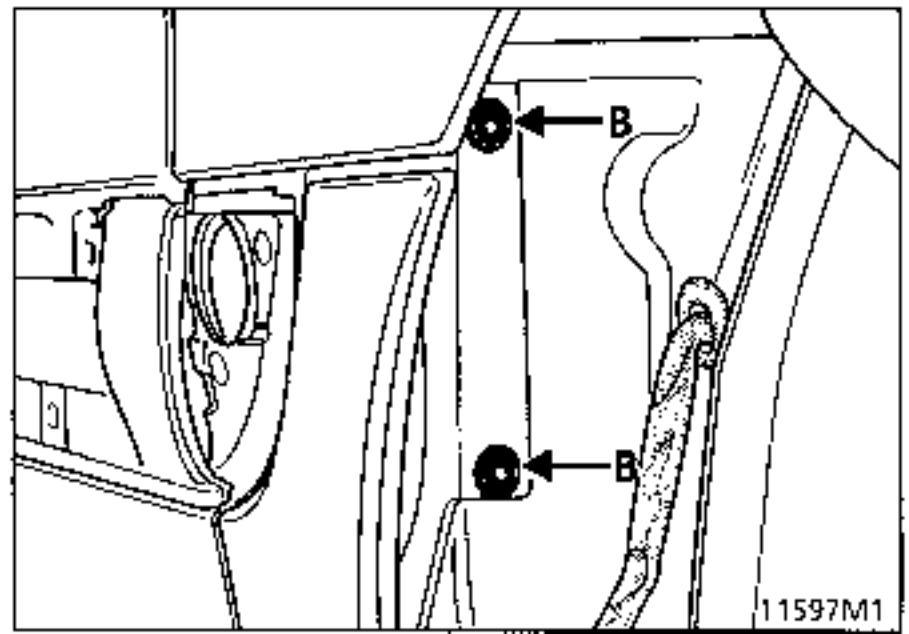
THE DOORS DO NOT NEED TO BE REMOVED

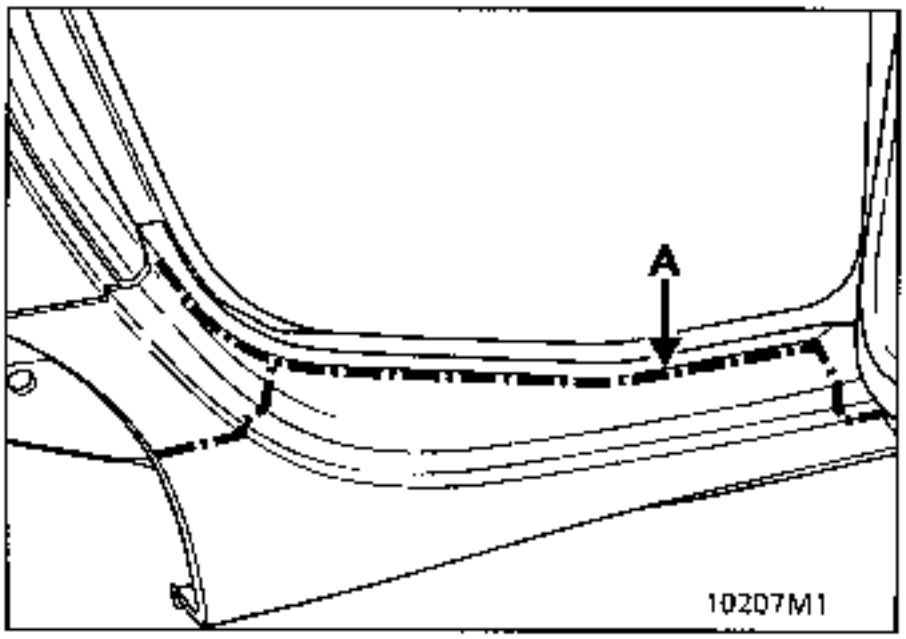
Remove:
- the inner sill protectors,
- the complete door seals,
- the front wing mudguard (partially, 3 rivets),
- the sill panel primary seal,
- the repeater strip.

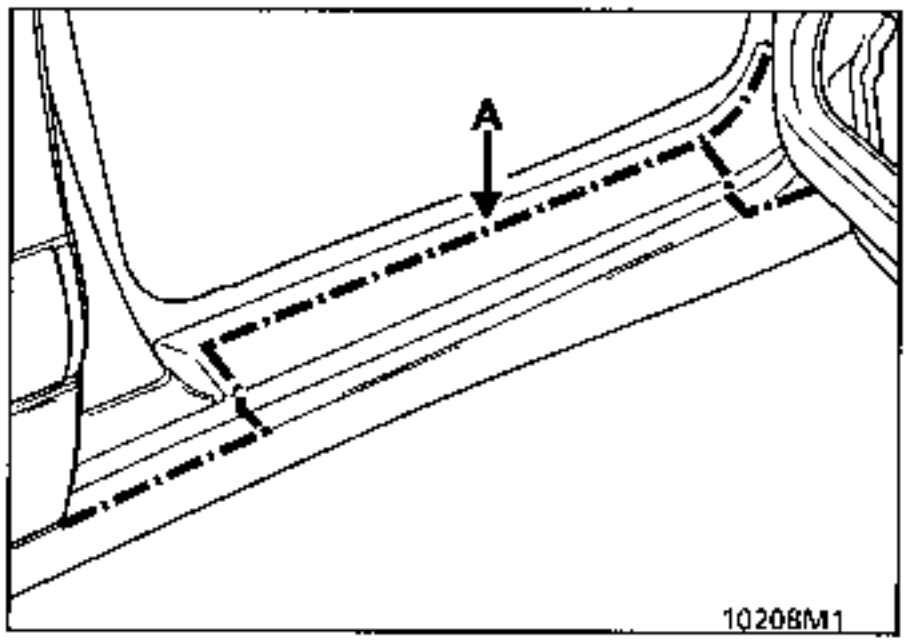


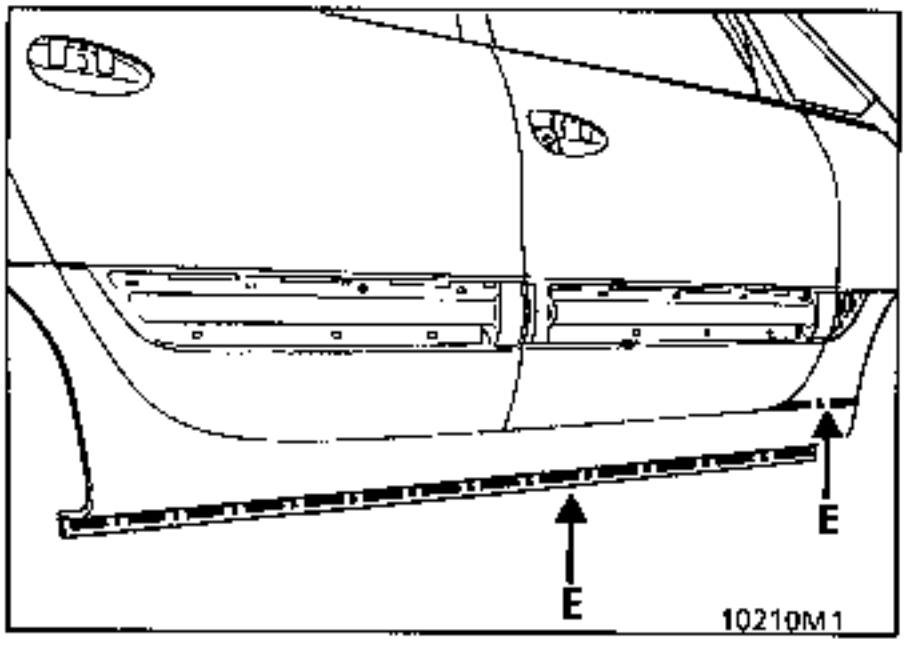
(A) Wing mounting nut on the sill panel.

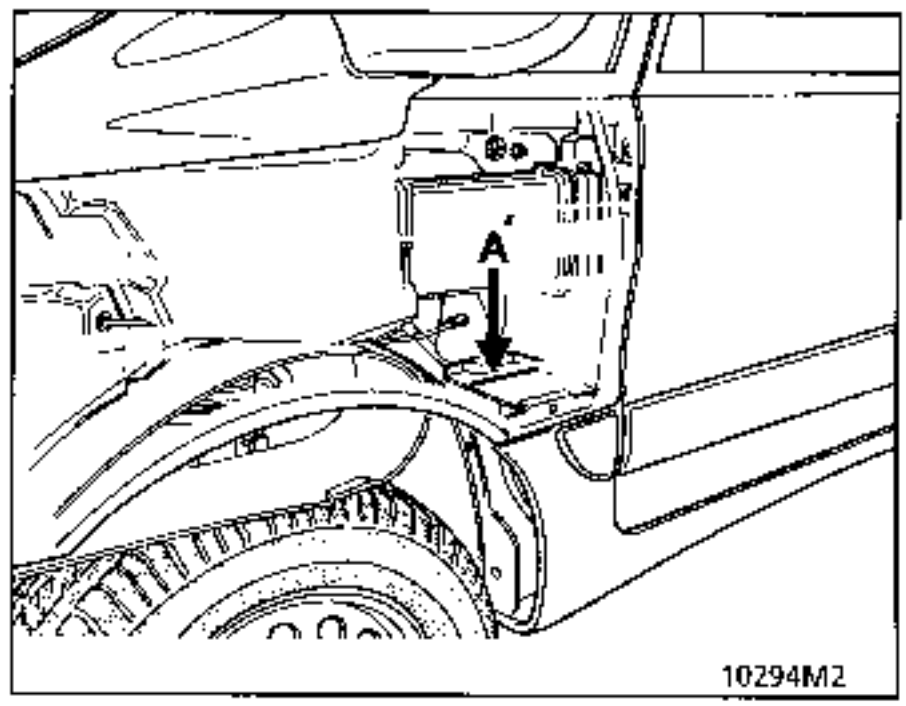
(B) Drill the 2 rivets mounting the wing tensioner on the front pillar.











Using a vibrating tool, cut the adhesive bead between the chassis and the sill panel (A and E) and use the pneumatic saw at (A').

Remove the sill panel.

Take off the excess adhesive from the metal structure, leaving a layer in place so that the new bead will adhere.

Wipe down the bonding zones on the structure using a dry cloth.

Retain the wing tensioner extension rivet (B').

Introductory note: the doors and the rear wing must be correctly adjusted before the sill panel is bonded into position.

FOR PRECISE DETAILS ON USE OF THE PRODUCTS, REFER TO SECTION 40

FITTING THE NEW COMPONENT

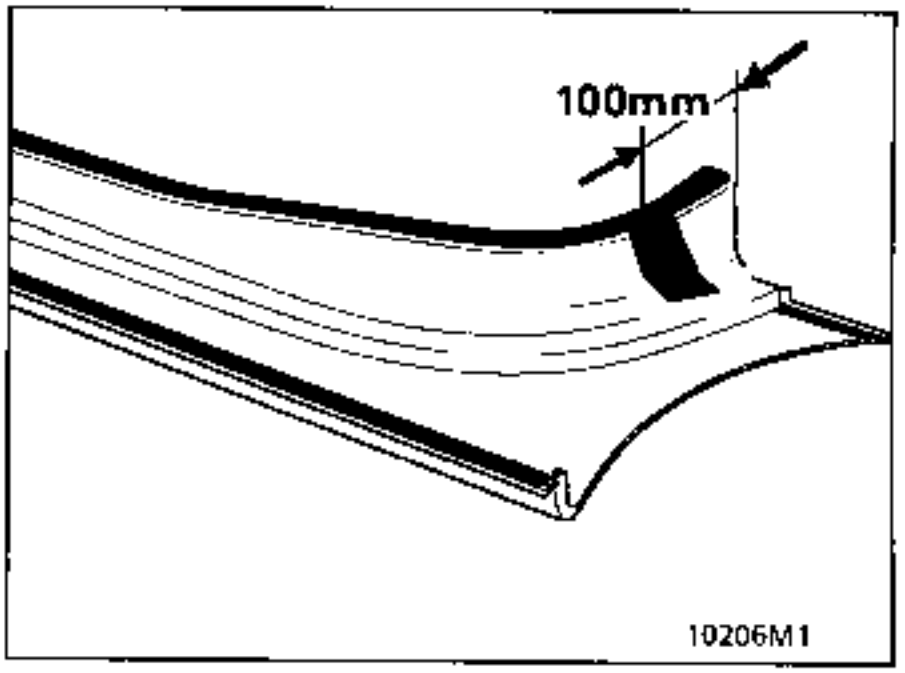
Preparation of the chassis

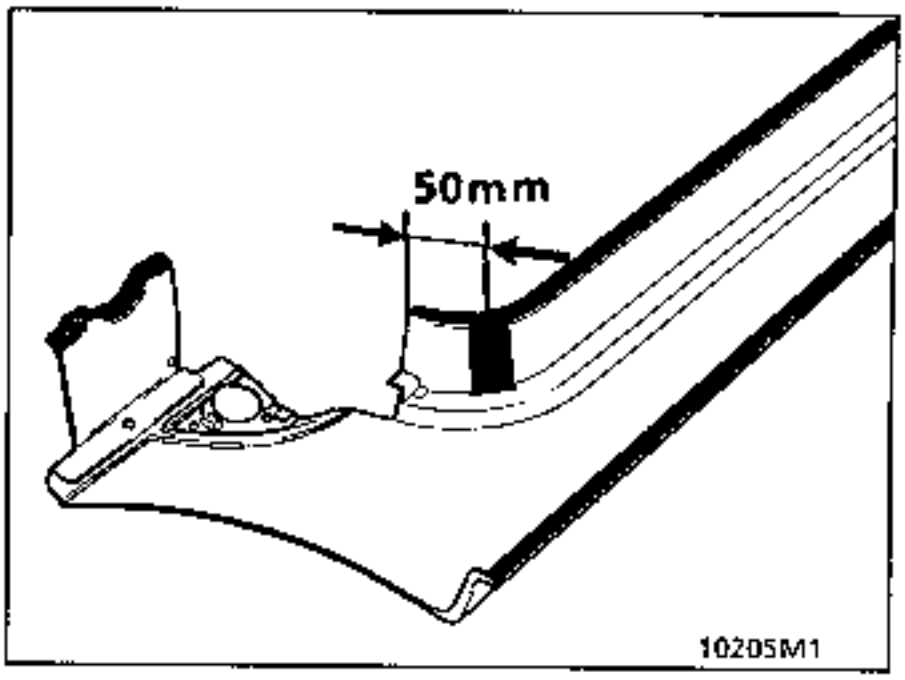
After degreasing:
- the bead remaining on the chassis,
- galvanised areas which have been laid bare or damaged,

coat the bonding area with the primer supplied in the kit.

NOTE: a new component may be bonded to the chassis after degreasing the bonding zones and coating them with primer.

Preparation of the new sill panel





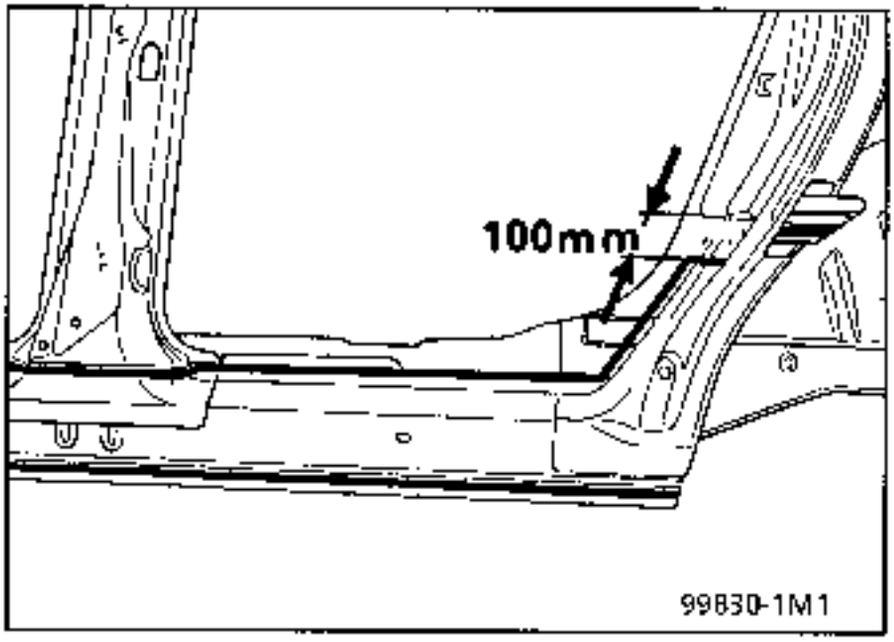
Roughen (P180 paper) the bonding zone.

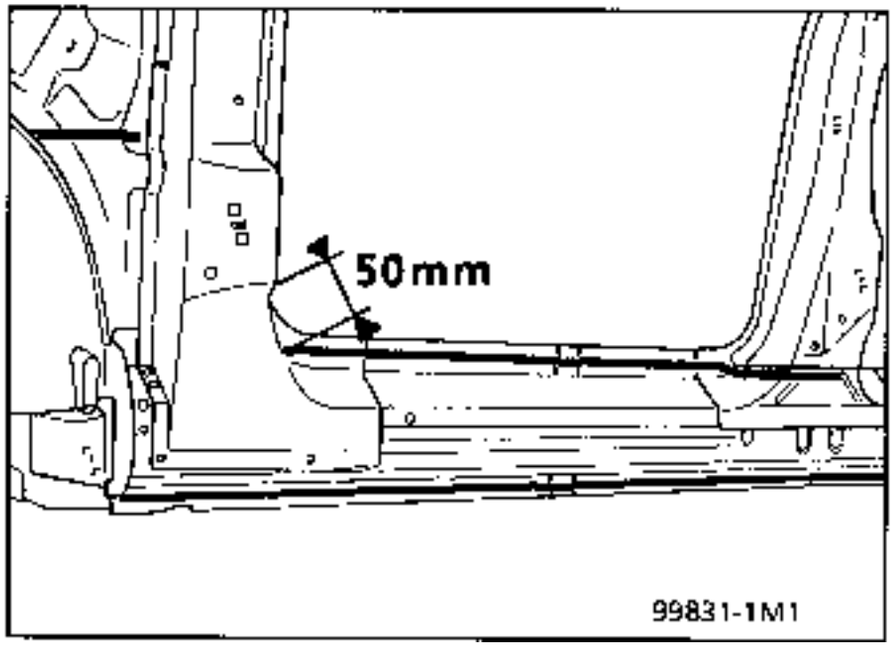
Degrease the bonding zone behind the sill panel and coat it with primer.

APPLYING THE BEAD

Extrude a uniform bead onto the chassis (as shown in the diagram).

THE SILL PANEL MUST BE BONDED WITHIN THE NEXT 10 MINUTES.





Fitting the sill panel (doors open)

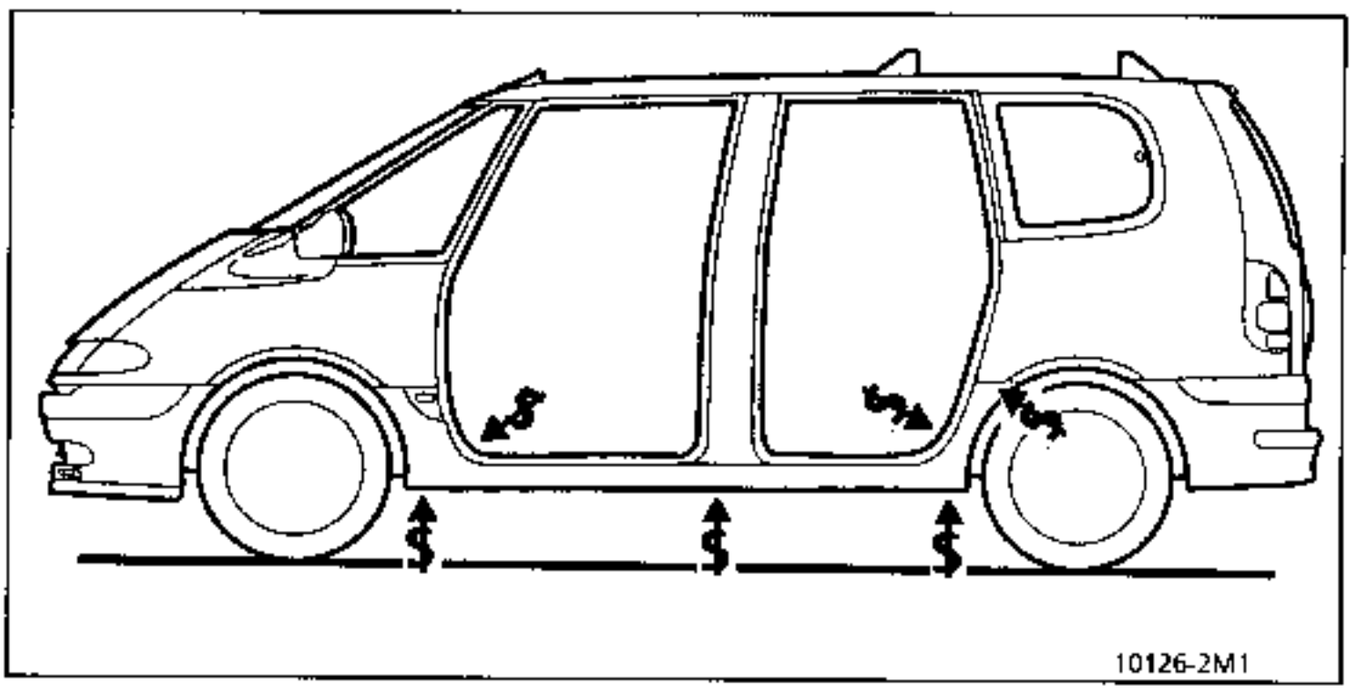
Move the front wing to one side to allow the sill panel to be fitted.

Refit the valance panel tensioner extension and rivet it.

Close the doors and check the clearances and alignments in relation to the rear and front wings and the perimeter protection line.

Immobilise the sill panel using clamping tools.

Open the doors and fit the 2 upper clamping tools.

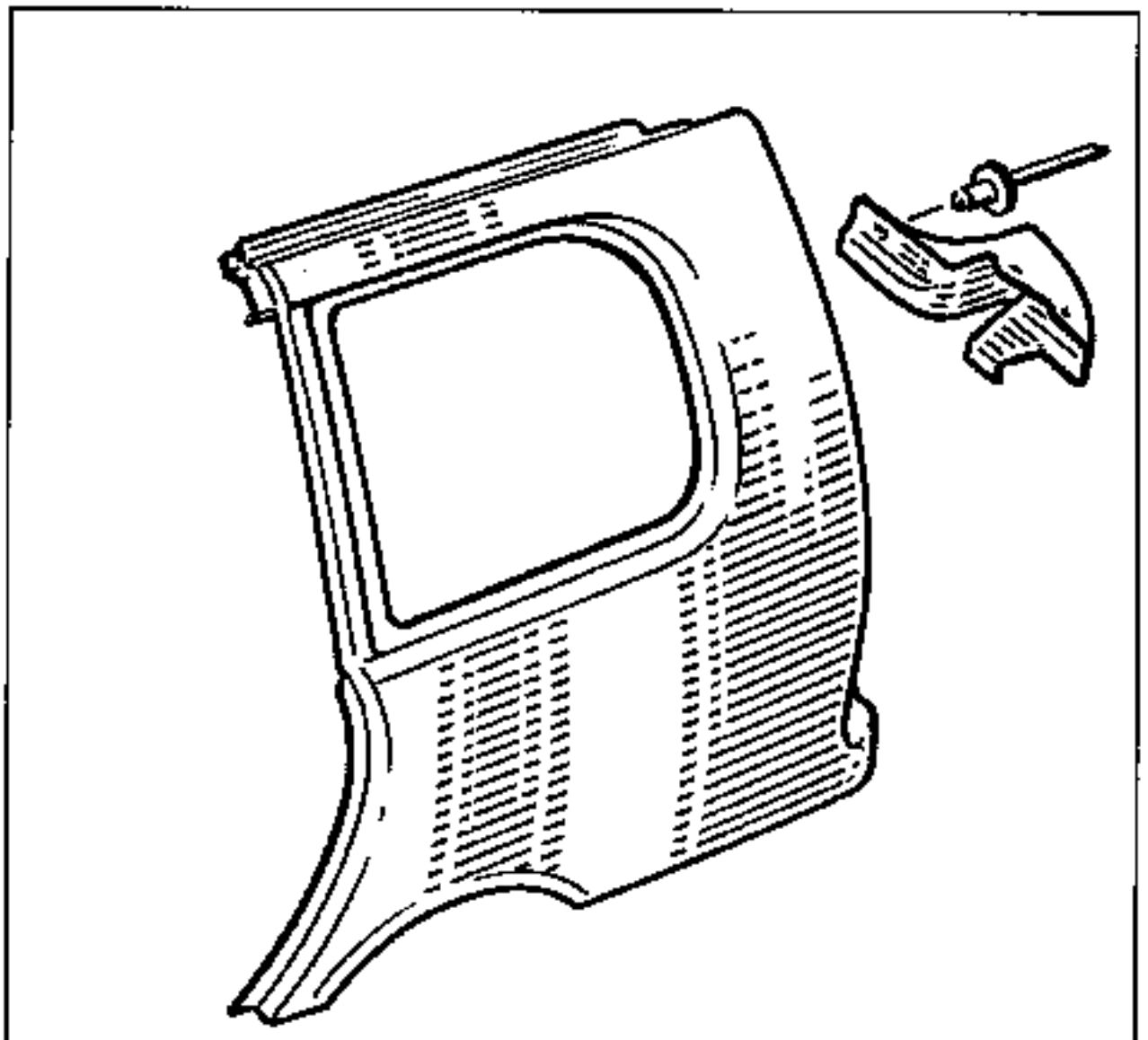


Refit the mounting nut for the wing on the valance panel.

Wait for 30 minutes before handling.

Refit:
- the front mudguard,
- the door seals,
- the inner sill protections,

after painting.



REPAIRS

- Cracks See repair operation n° 1
- Holes See repair operation n° 2
- Breaks See repair operation n° 3

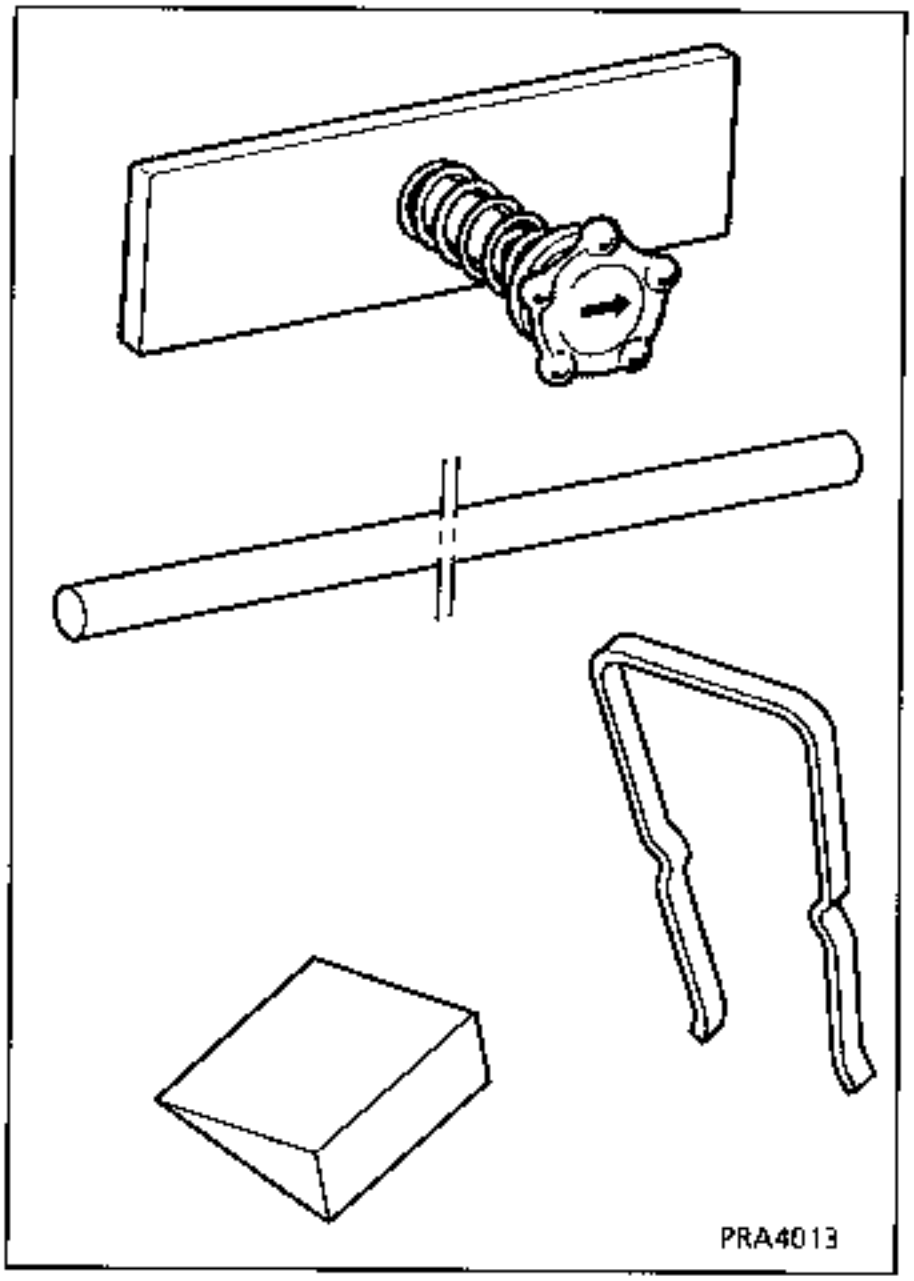
REPLACEMENT

THE REAR QUARTER PANEL WINDOW NEEDS TO BE REMOVED FOR THIS OPERATION

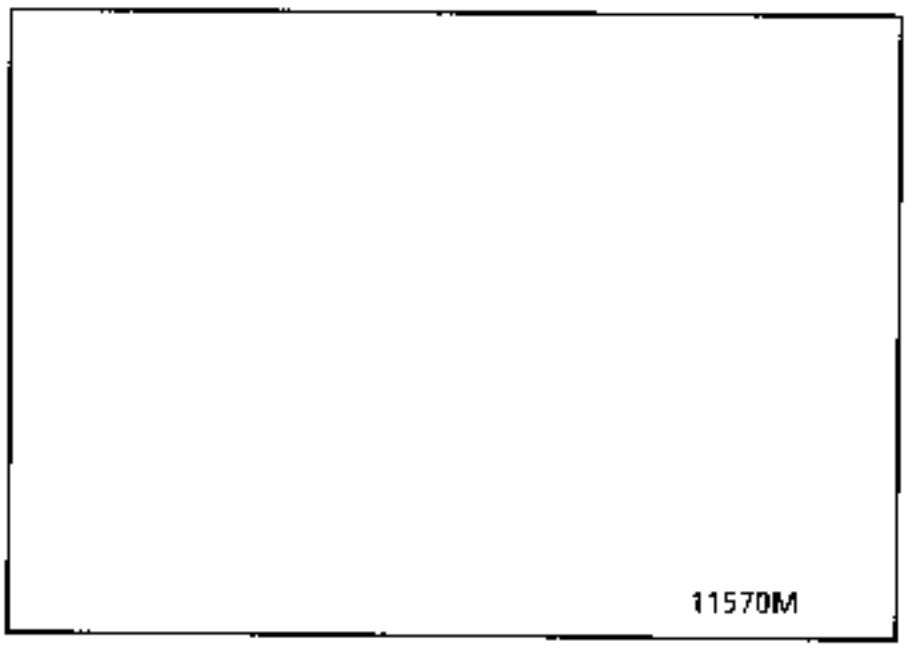
Parts to be systematically replaced:
- rear quarter panel front trim,
- rear quarter panel window seal (pivoting window).

Tooling required:

- saw (with diamond disc or blade),
- sharp spatula
- sander (P80),
- riveting tool,
- adhesive extrusion gun
- centring tooling kit, Part Number **Car.1219-01**


PRA4013

Product required:
Bonding kit, Part Number : 60 25 170 306


11570M

Thick adhesive tape (Registration plate or gaffer type).
Epoxy resin repair kit Part No. 60 25 070 997
Polyester mastic Part No. 77 01 395 513

Personal protection:
Goggles, gloves, masks and breathing equipment.

REMOVAL

Remove:

- the rear lights,
- the bumper,
- the mudguards (rivets),
- the fuel filler flap, lock, filler cap and fuel filler neck (RH side),
- the rear quarter panel trim
- the hinge trim
- the rear quarter panel,
- the wheel arch lining,
- the inner sill panel,
- part of the tailgate and door seals,
- the pivoting rear quarter panel window seal.
- the door protector

Release the lining from the wing around the rear quarter panel.

Protect the following parts against dust:

- the fuel filler neck,
- the interior trim.

Protect the stretcher from grinding scratches using thick adhesive tape from the rear to the centre of the rear door.

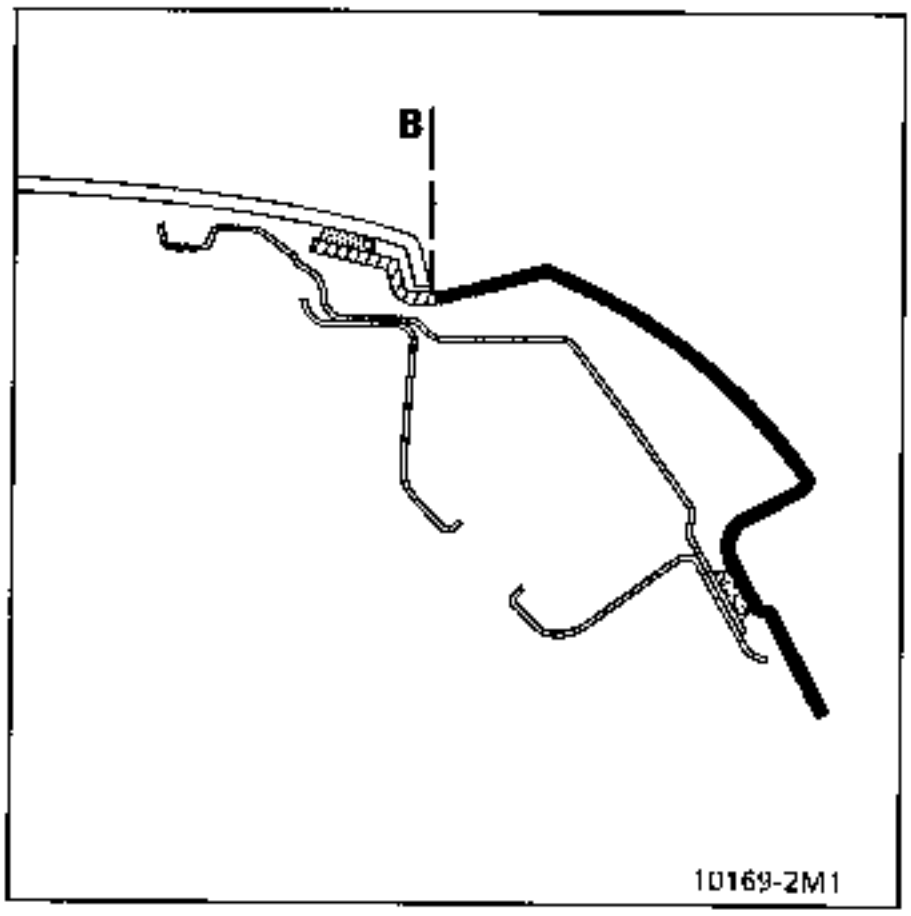
INTRODUCTORY NOTE

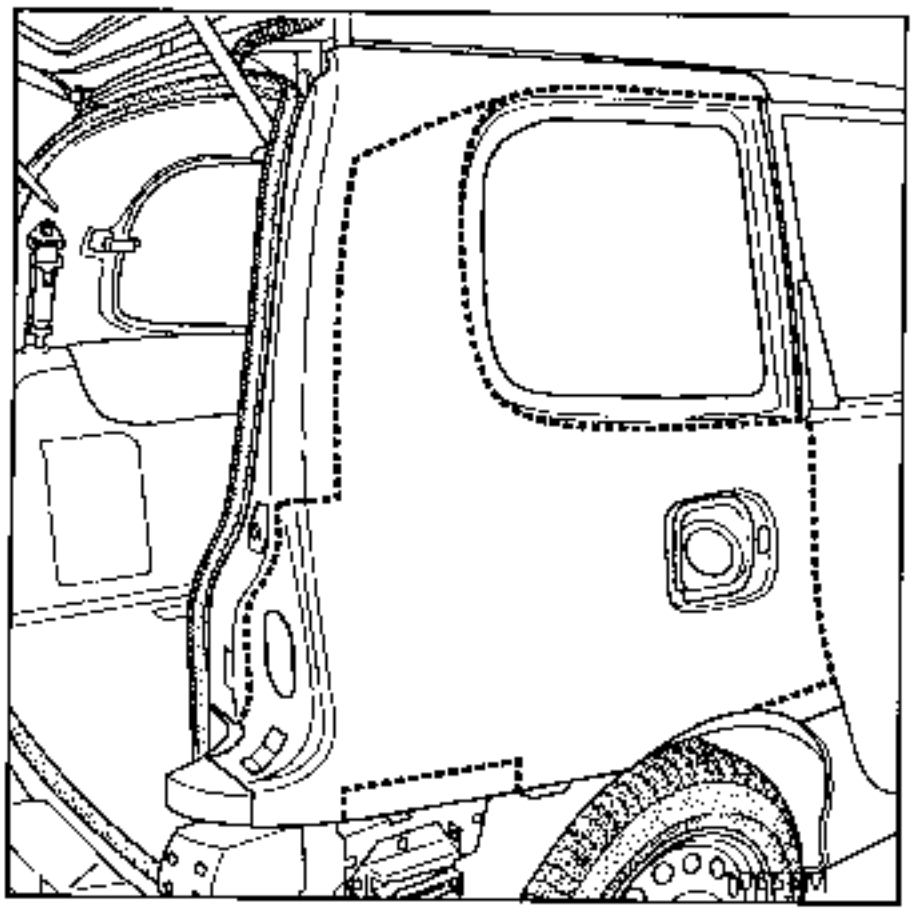
Release the finishing trim from the top of the body.

Protect the edge of the roof along the complete length of the wing using adhesive tape.

REMOVAL

Using a circular saw, cut the wing at a tangent to the roof at (B).

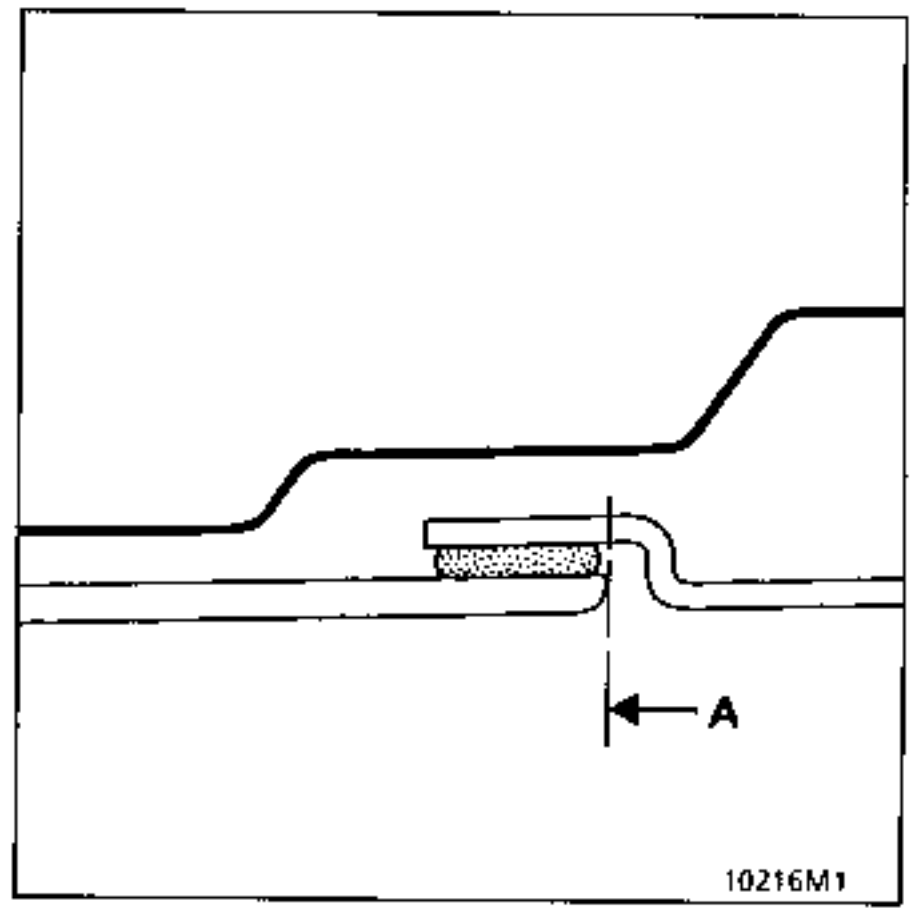




Cut out the wing following the dotted lines on the diagram.

Joint between the top of body, rear section with the wing.

Cut out the wing as shown on the diagram.



Remove the centre section of the wing and retain the rear light mountings.

Using a sharp spatula, remove the pieces of wing remaining on the chassis, except at the top.

Use a dry cloth to wipe down the bonding zones on the structure.

FITTING THE NEW COMPONENT

Introduction

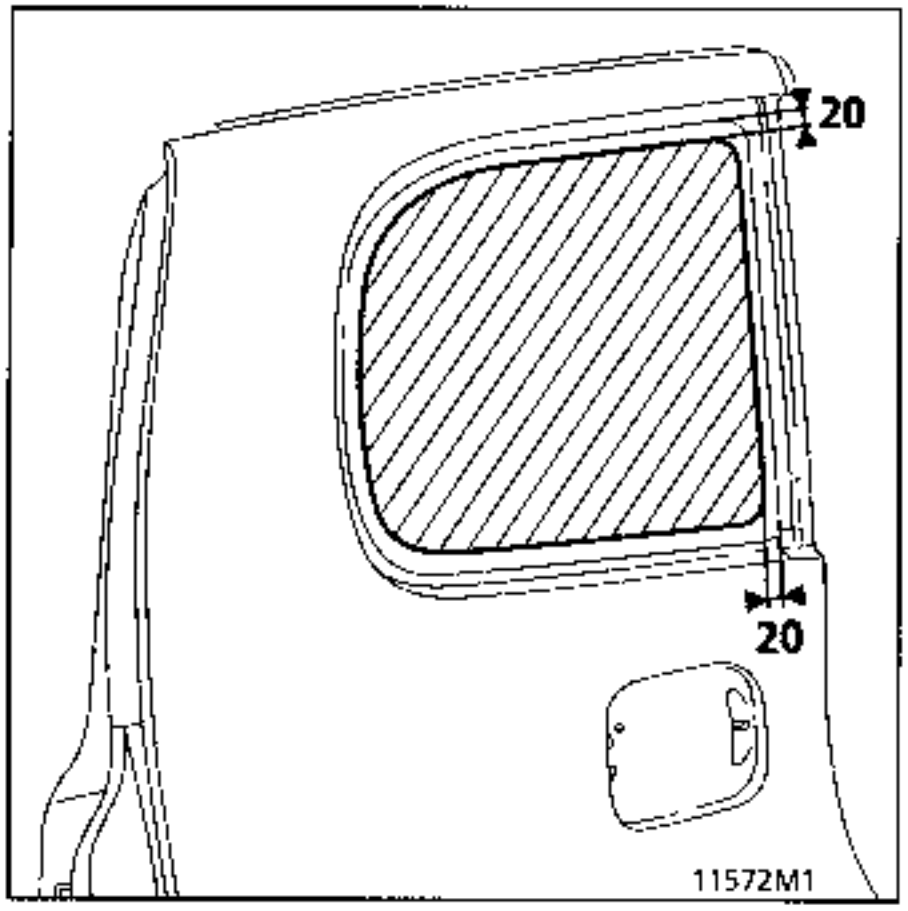
The tailgate must be correctly adjusted in relation to the roof and the opposite wing (play, clearance) before the new wing is fitted.

FOR PRECISE DETAILS ON USE OF THE PRODUCTS, REFER TO SECTION 40

Cutting out the new wing

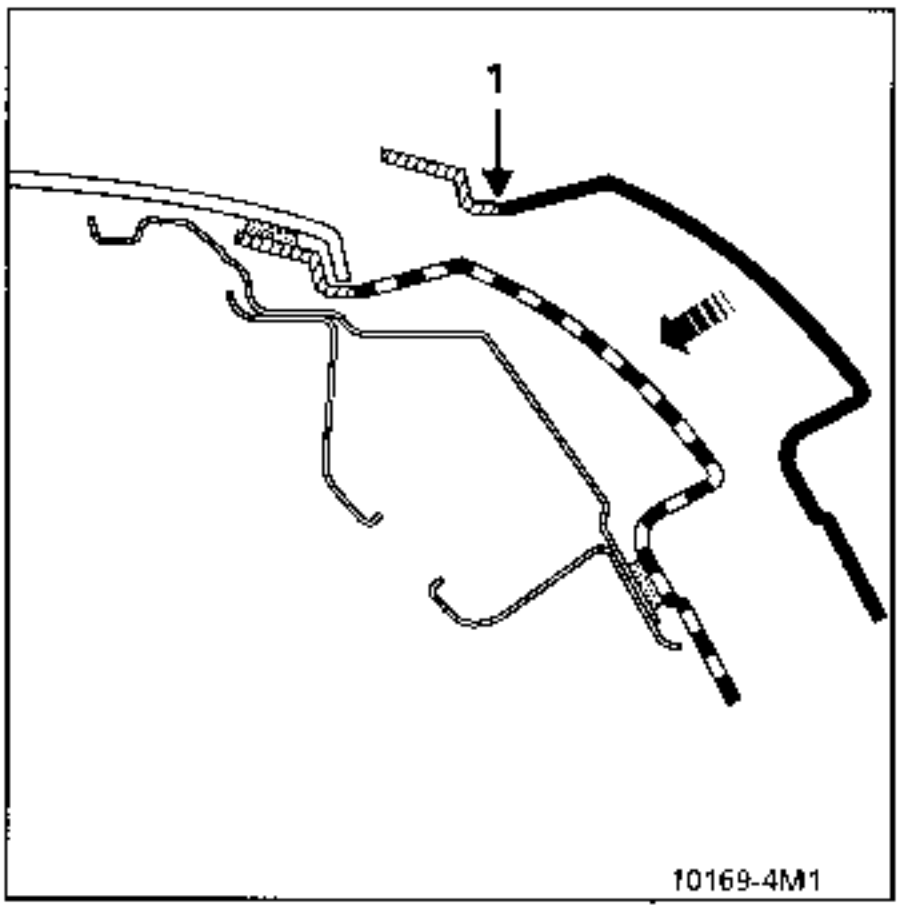
The new wing is supplied without the quarter panel cut out, which should be carried out using the TEMPLATE supplied with the wing.

Cutting out the rear quarter panel section

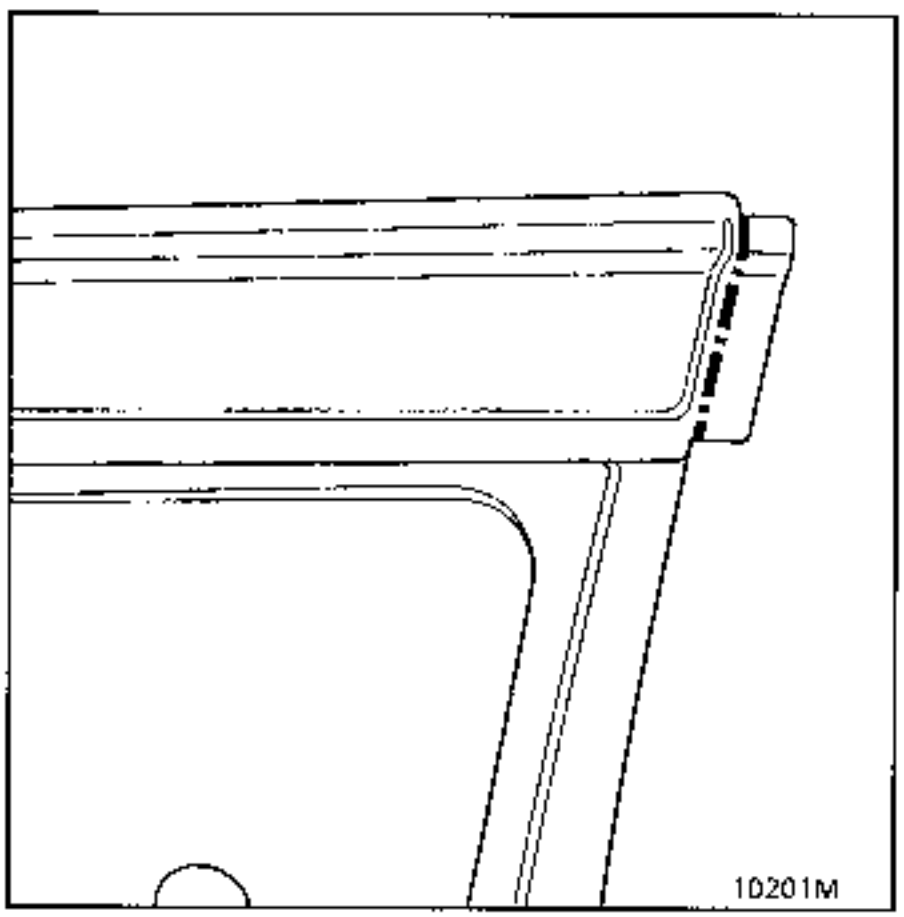


Using adhesive tape, fit the template as shown in the diagram:
- trace through the line,
- remove the template and cut out using a circular saw,
- finish off the lower corners using a file.

Preparation of the new wing

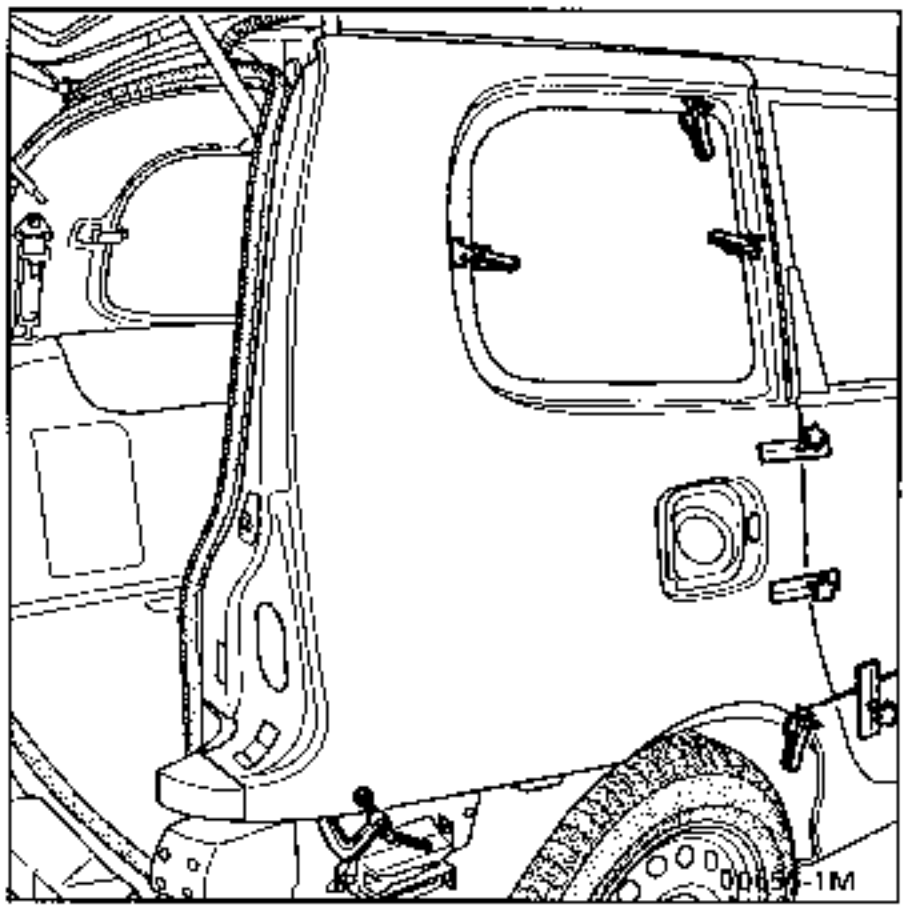


Cut out part (1) of the wing in preparation.



Cut off the excess as shown in the diagram.

Adjusting the wing

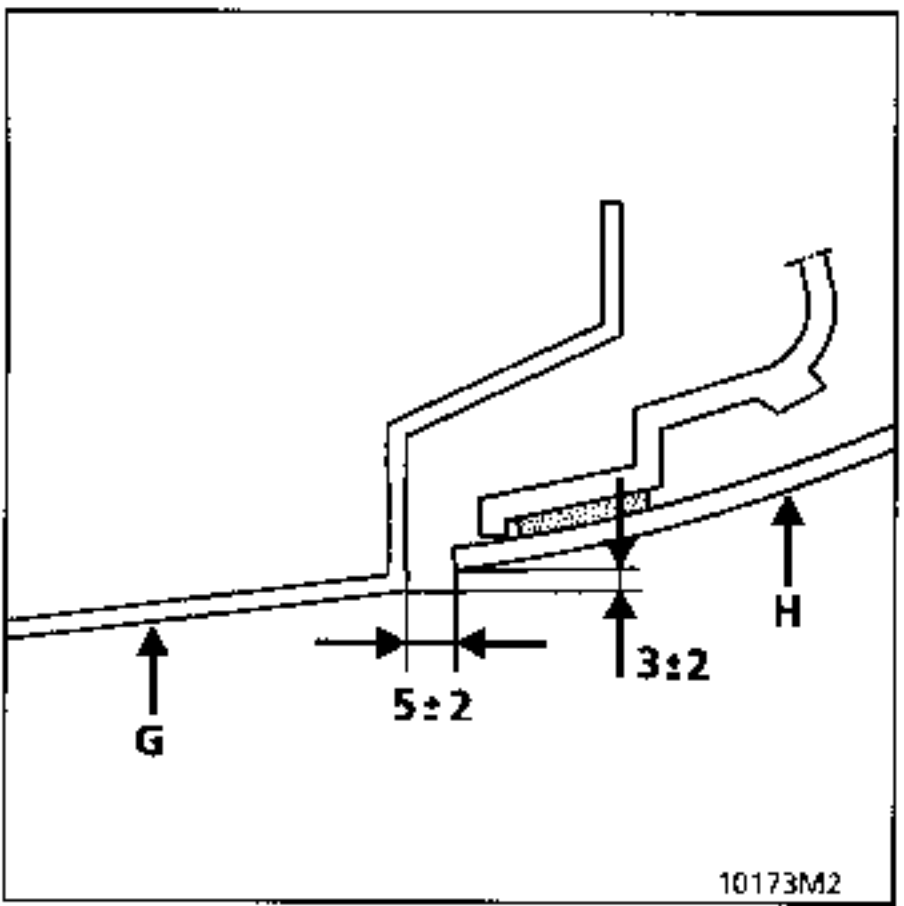


Fit the wing, adjust its height and if necessary adjust the height of the wing with the stretcher and position the cut against the bottom of the drip moulding.

Fit the centring tools to the rear door, ensuring the play, clearance and alignment are correct.

Lock the rear door.

Close the tailgate.

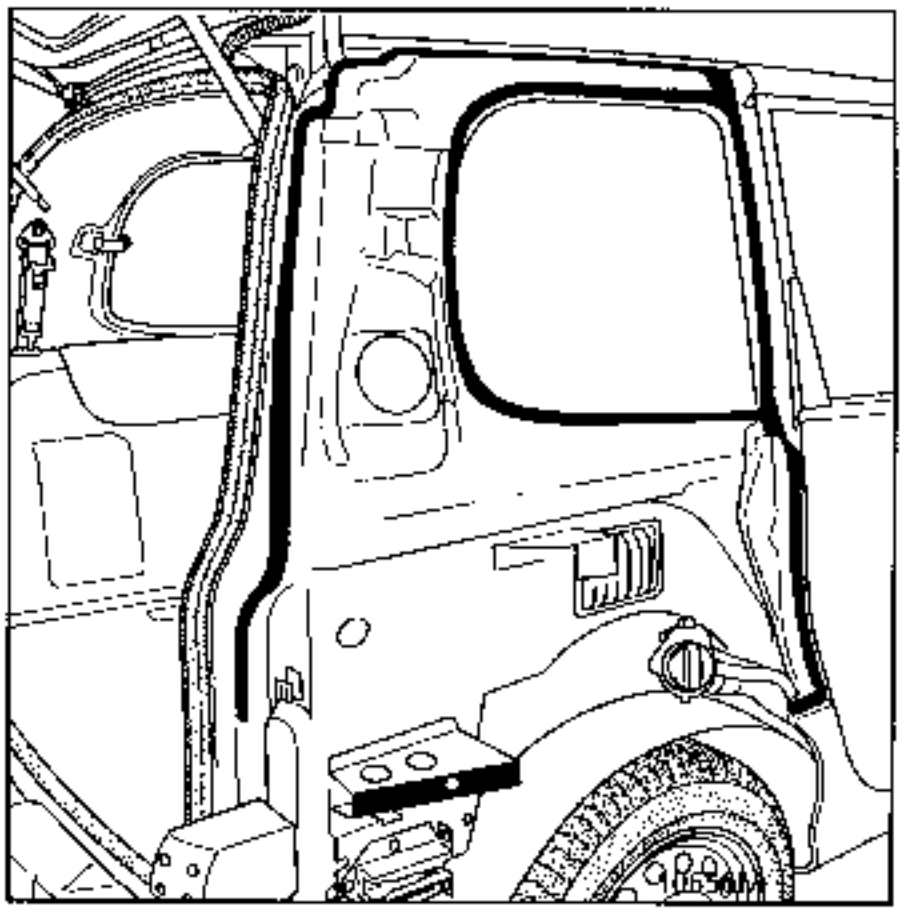


Adjust the angle of the wing (G) in relation to the tailgate (H)

Secure the wing with clamps, having protected the jaws of the clamps with pieces of SMC taken from the rear quarter panel cut-out.

Remove the wing once it has been adjusted.

Preparation of the chassis.



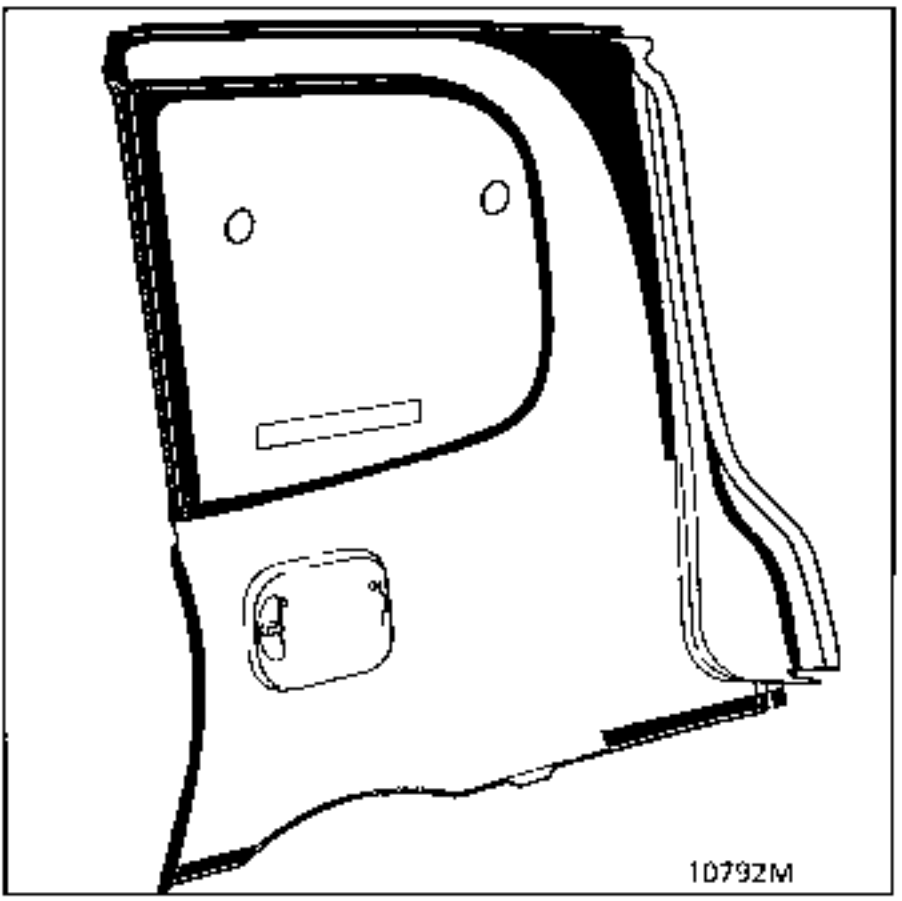
After degreasing:
- the bead remaining on the chassis,
- galvanised areas which have been laid bare or damaged,

coat the bonding area with the primer supplied in the kit.

NOTE: a new component may be bonded to the chassis after degreasing the bonding zones and coating them with epoxy primer 60 25 070 444.

IMPORTANT : any scratched galvanised area must be coated in primer from the bonding kit.

PREPARATION OF THE NEW WING



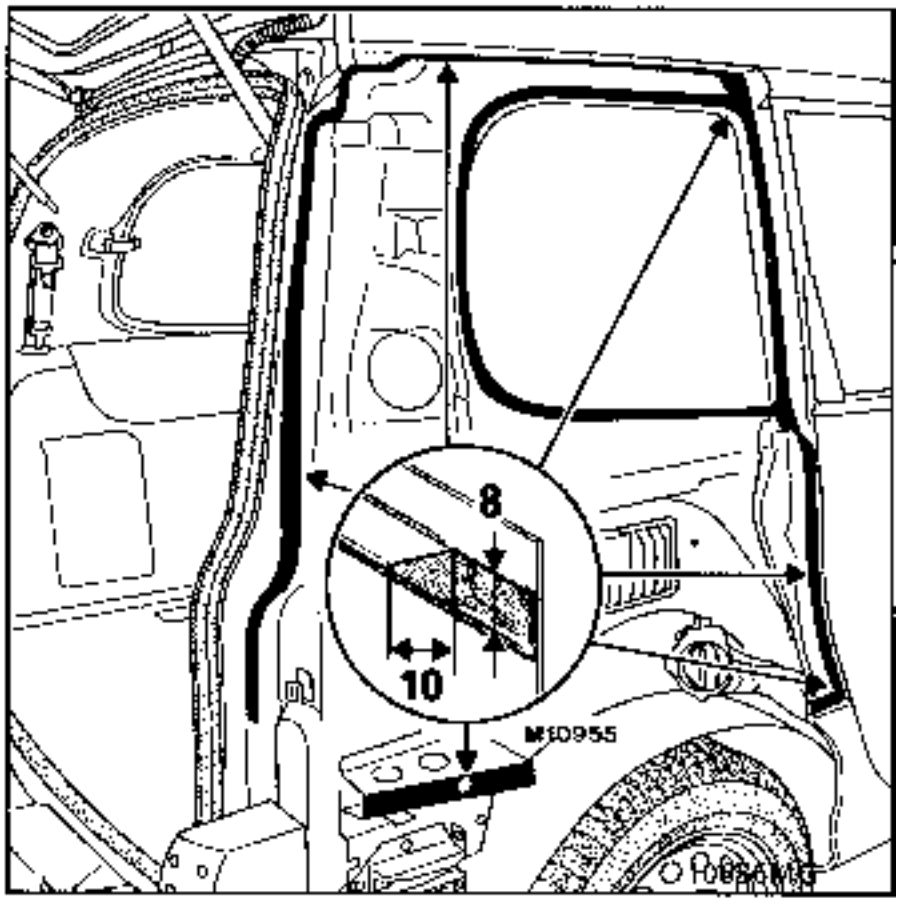
Roughen (P180 paper) the bonding zone.

Degrease the bonding zone behind the wing and coat it in primer.

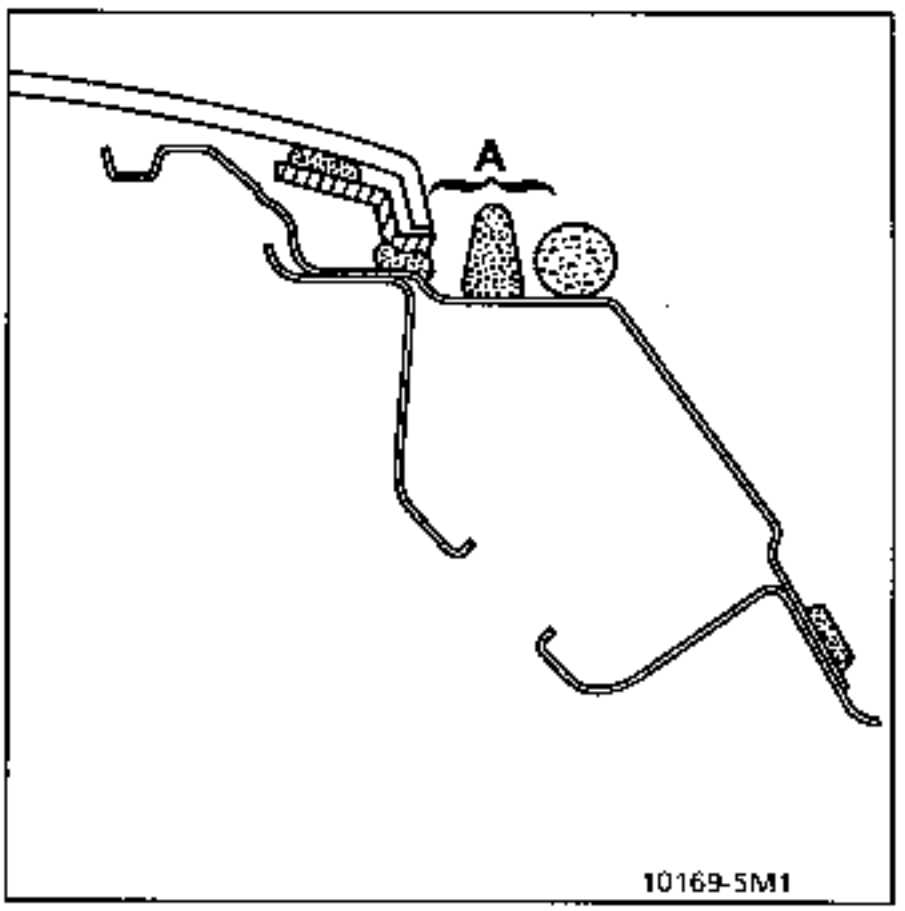
APPLYING THE BEAD

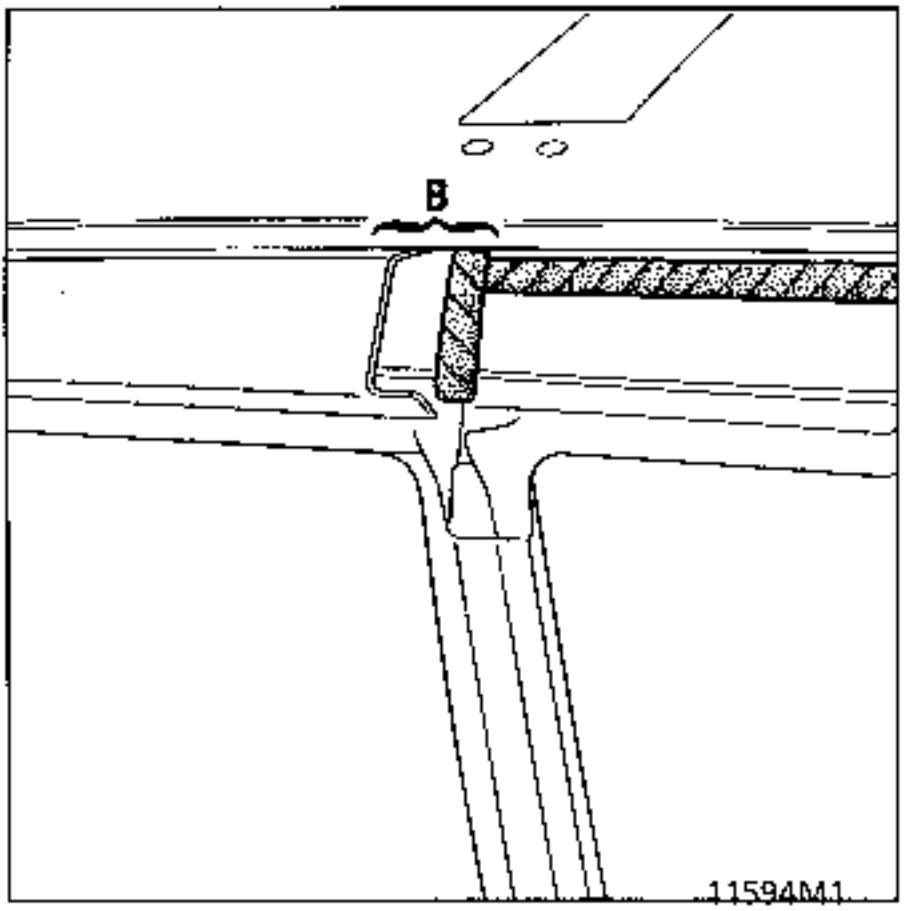
Extrude a uniform bead onto the chassis (as shown in the diagram), following the remainder of the old bead.

THE WING PANEL MUST BE BONDED WITHIN THE NEXT 10 MINUTES.



IMPORTANT: in zones (A) apply the bead between the roof and the foam section, Part Number : 77 11 170 210 (3M 9973)
The excess adhesive will come out of the joints and be smoothed off (glove, soapy water).





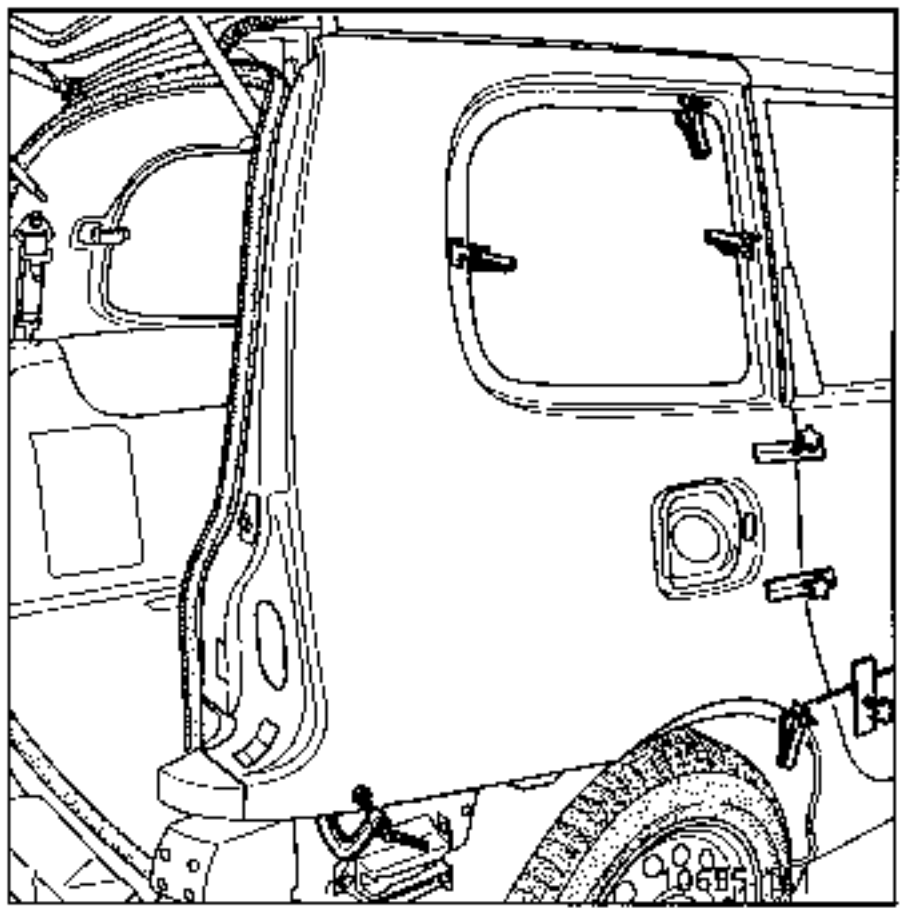
In zone (B) between the stretcher and the foam section : 77 11 170 210 (3M 9973)
The excess adhesive will come out of the joints and be smoothed off (glove, soapy water).

Fitting the wing (tailgate and door open)

Close the door and fit the centring tools, ensuring the play, clearance and alignment are correct between the wing and the stretcher.

DO NOT OPEN THE DOOR UNTIL THE TOOLS HAVE BEEN REMOVED.

Finishing the wing
Using the remaining adhesive in the cartridge, fit the second nozzle, cut to the required diameter, apply the adhesive and smooth off using a glove and soapy water.

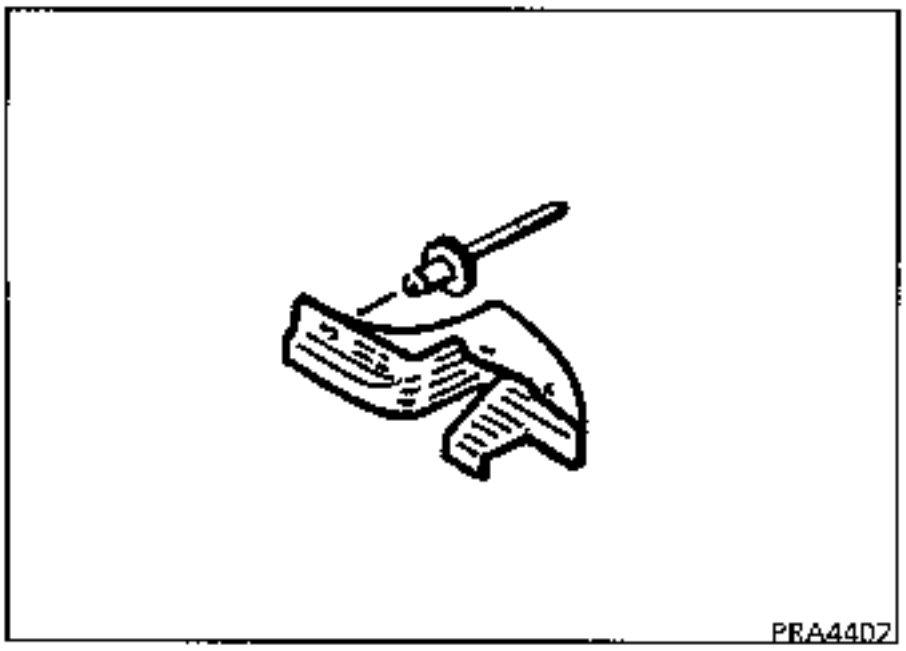


Leave to harden for 30 minutes.

Remove the centring tools.

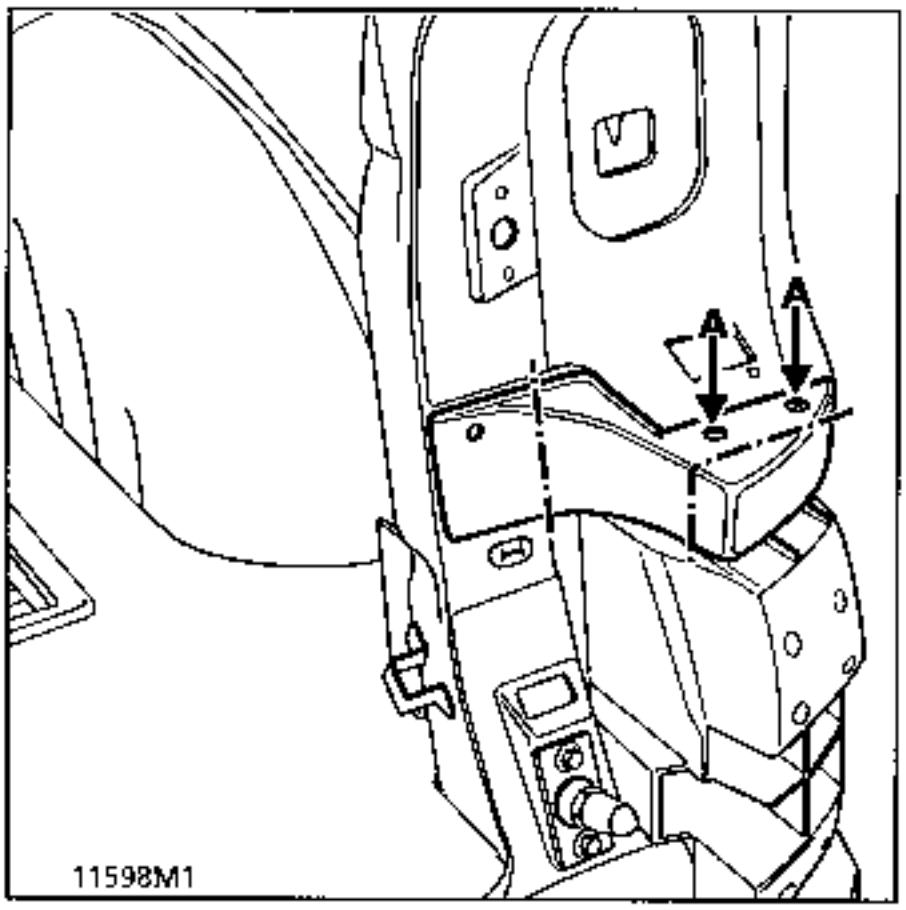
NOTE : the bumper, the light, the door seals, the upper wing trim, the rear quarter panel surrounding wing trim, the rear quarter panel seal, the rear quarter panel window, the fuel filler neck (RH side) and the rear door protector are fitted **AFTER THE PAINTING OPERATION.**

COMPOSITION OF PART FROM PARTS DEPARTMENT



The wing does not need to be replaced for this operation.

REMOVAL



Remove the 2 mounting rivets (A).

Using a vibrating tool, cut out the wing corner as shown in the diagram above.

Remove the remaining pieces using a sharp spatula.

Wipe down the bonding zones on the wing and structure using a cloth.

REFITTING

Use kit 60 25 170 306

Roughen the bonding zone on the wing.

Degrease the two faces to be bonded.

Apply primer to the surfaces.

Apply the adhesive.

Fit the wing corner.

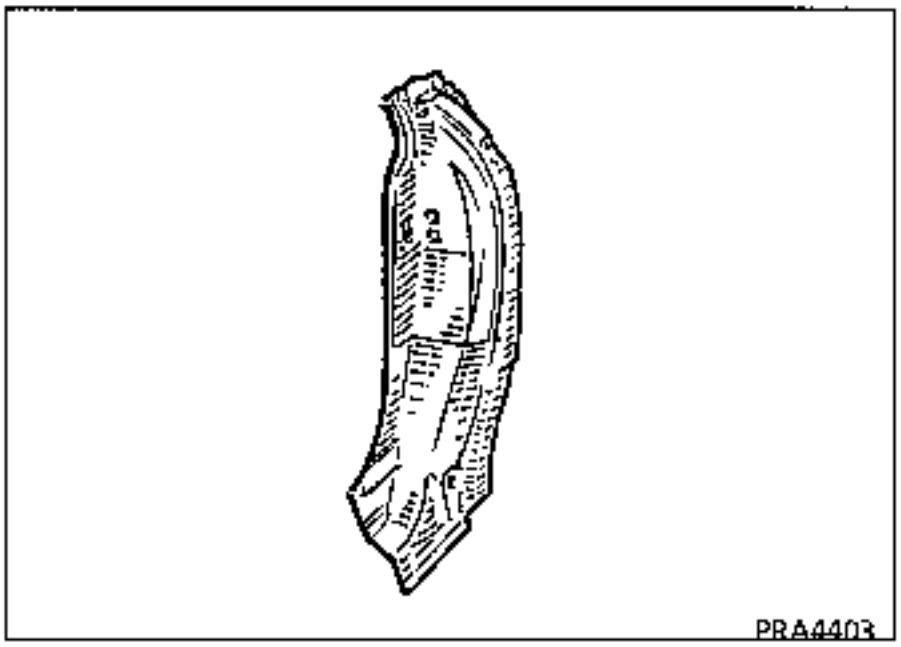
Countersink it.

Bond and rivet.

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of the wheel arch for a side impact.

COMPOSITION OF PART FROM PARTS DEPARTMENT



Preliminary operations.

Remove:
- the inner sill,
- the door seal, part section,
- the sill panel,
- the rear quarter panel window,
- the rear light,
- the rear wing,
- the wheel arch lining,
- part of the roof lining,
- the floor lining.

1 JOINT WITH VALANCE PANEL REINFORCEMENT

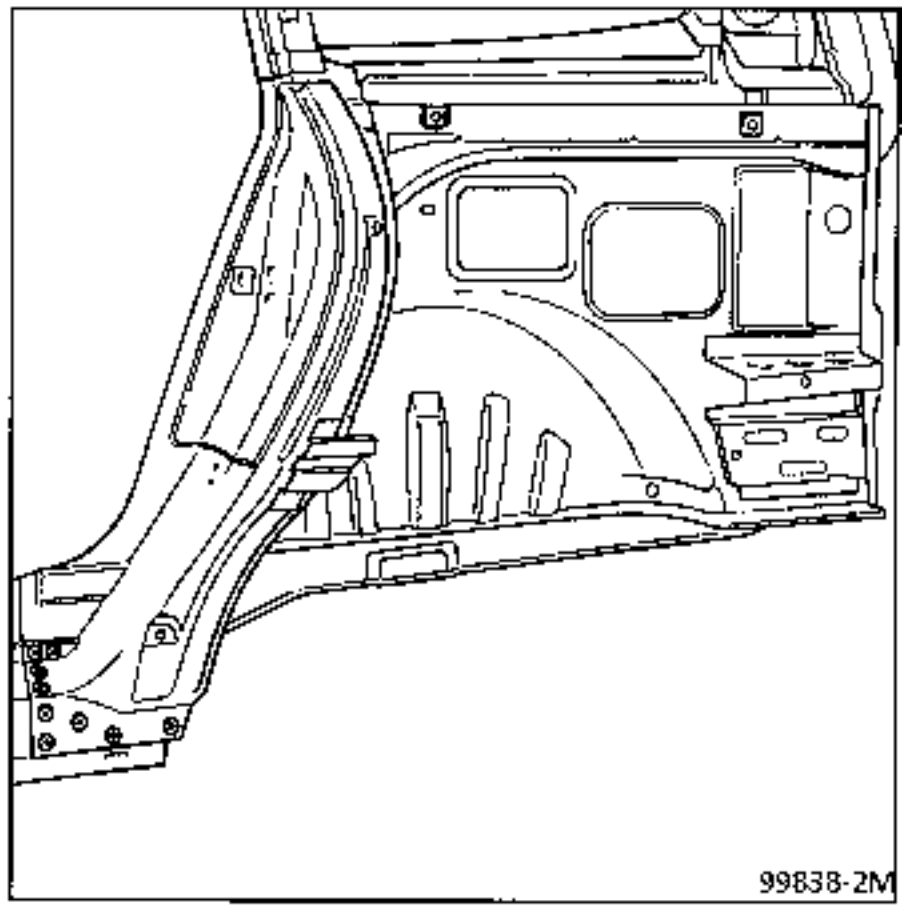
Thickness of panels concerned (mm)

Valance panel reinforcement	0.8
Rear pillar	0.7

Unpicking

9 spot welds on thickness 0.8

Welding



2 JOINT WITH WHEEL ARCH

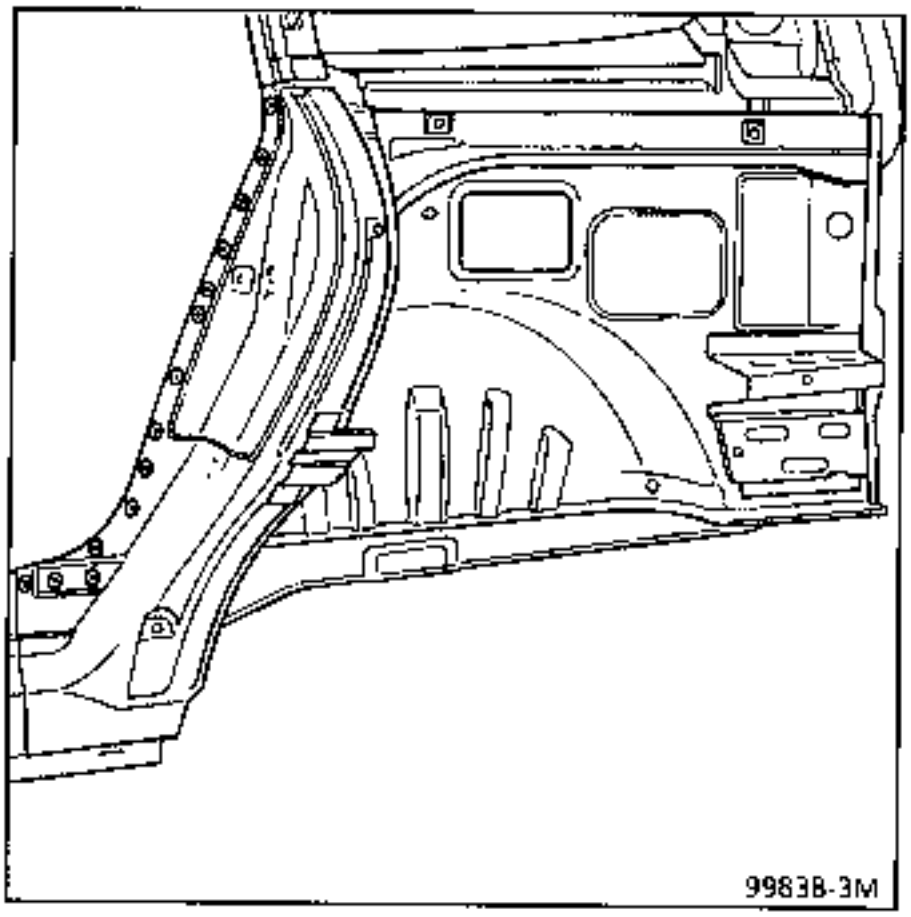
Thickness of panels concerned (mm)

Wheel arch	0.7
Rear pillar	0.7

Unpicking

14 spot welds on thickness 0.7

Welding

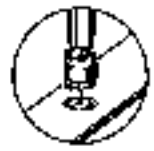


3 JOINT WITH REAR QUARTER PANEL WINDOW FRONT PILLAR

Thickness of panels concerned (mm)

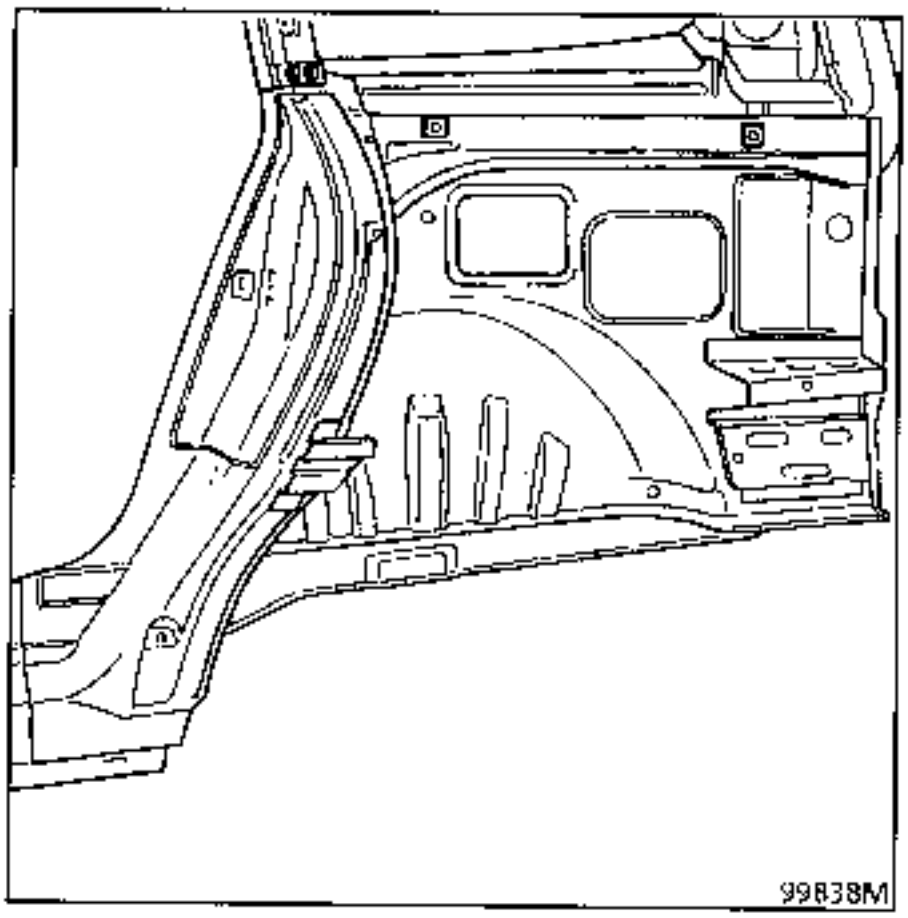
Rear quarter panel window front pillar	1.2
Rear pillar	0.7
Wheel arch	0.7

Unpicking



2 spot welds on thickness 1.2 + 0.7 + 0.7

Welding



4 JOINT WITH REAR QUARTER PANEL WINDOW LOWER STRETCHER

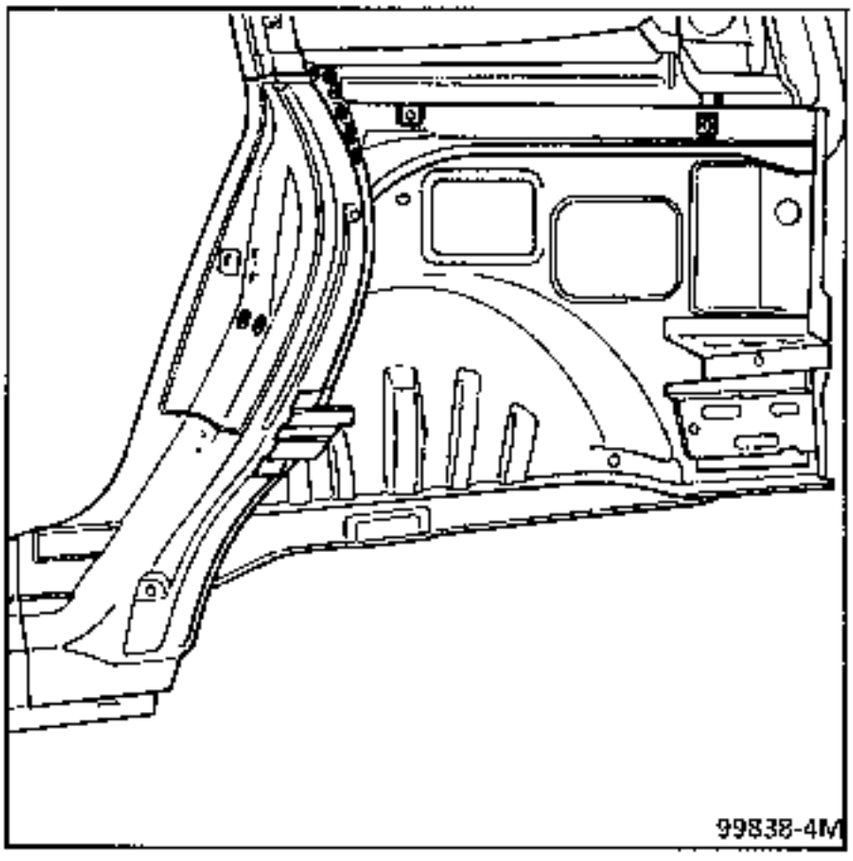
Thickness of panels concerned (mm)

Rear pillar	0.7
Rear quarter panel window lower stretcher	0.7

Unpicking

8 spot welds on thickness 0.7

Welding

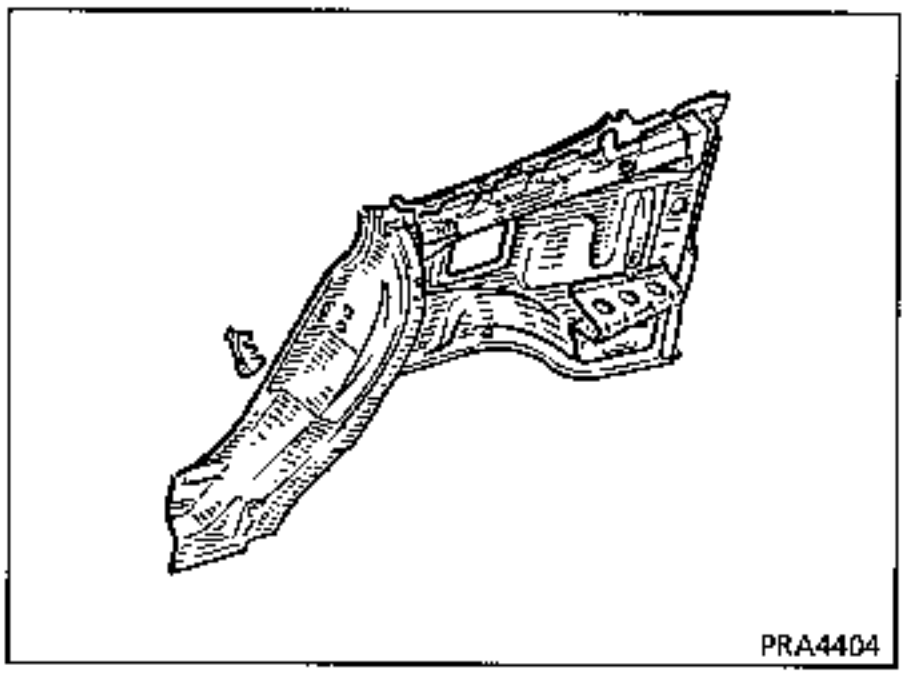


NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to the side floor, part section.

COMPOSITION OF PART FROM PARTS DEPARTMENT



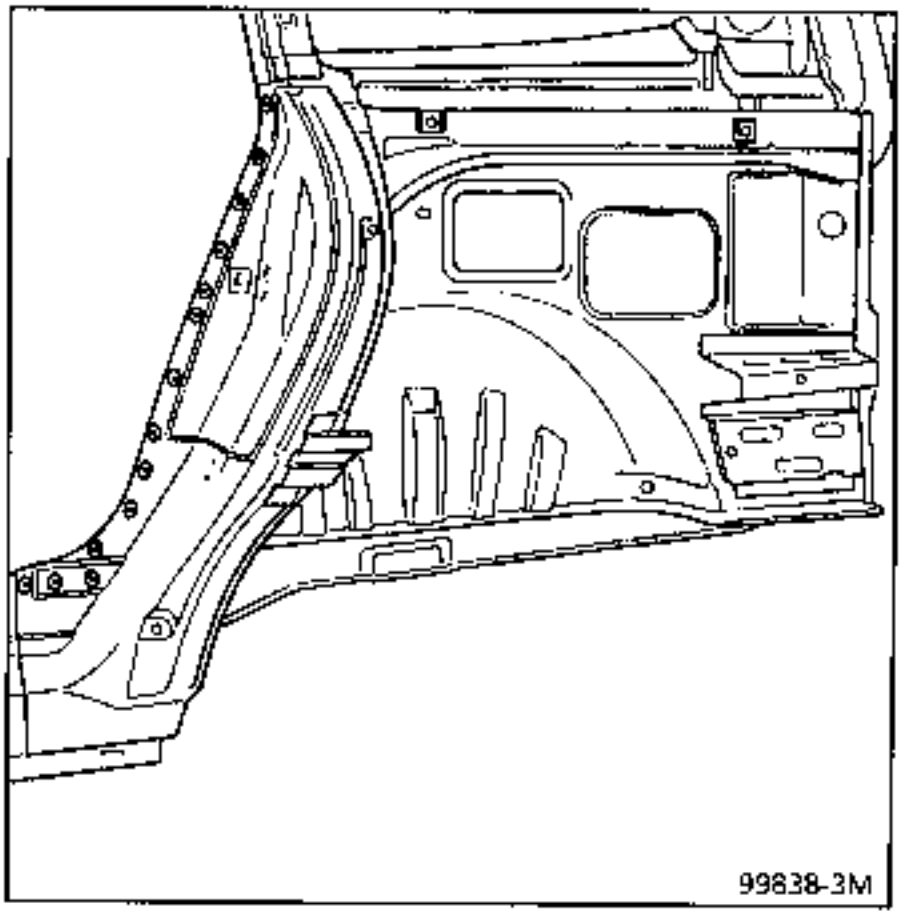
Preliminary operations.

Remove:
- the inner sill,
- the door seal, part section,
- the sill panel,
- the rear quarter panel window,
- the rear light,
- the rear wing,
- the wheel arch lining,
- the upper lining, part section,
- the tailgate,
- the rear wheel,
- the mudguard,
- the bumper,
- part of the wiring loom,
- the seat belt,
- the fuel flap locking assembly,
- the floor lining, part section.

1 JOINT WITH REAR PILLAR

REMINDER : refer to operations 44-B-2

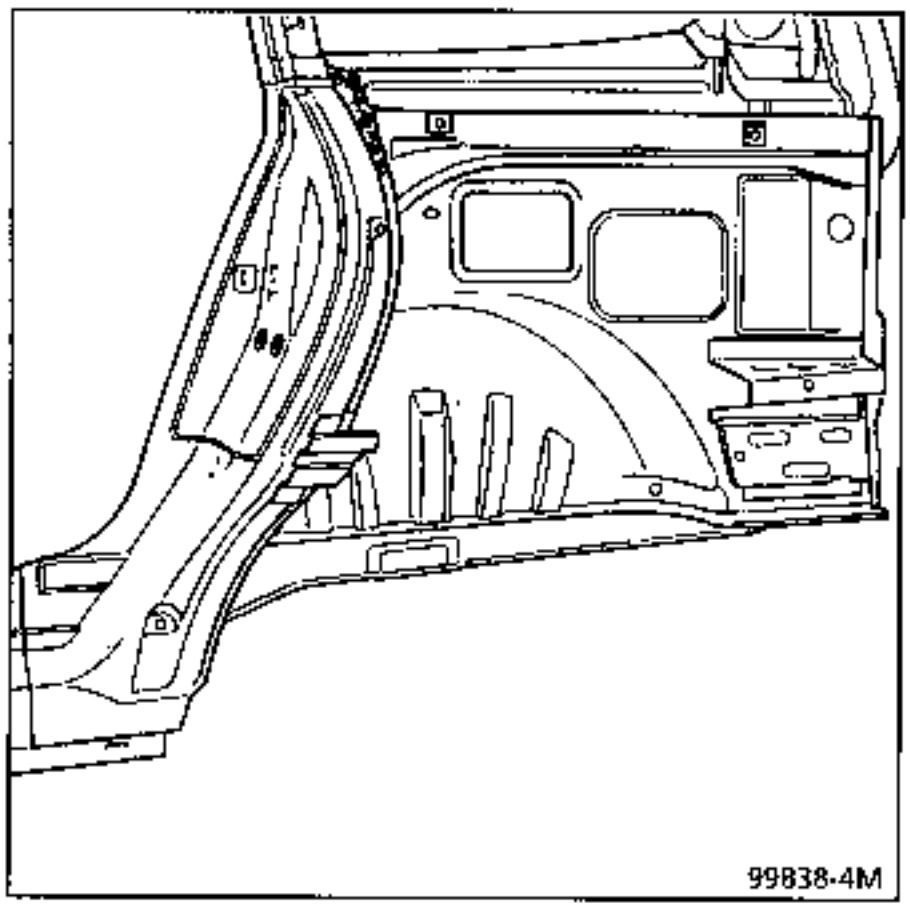
Welding



2 JOINT WITH REAR QUARTER PANEL WINDOW LOWER STRETCHER

REMINDER : refer to operations 44-B-4

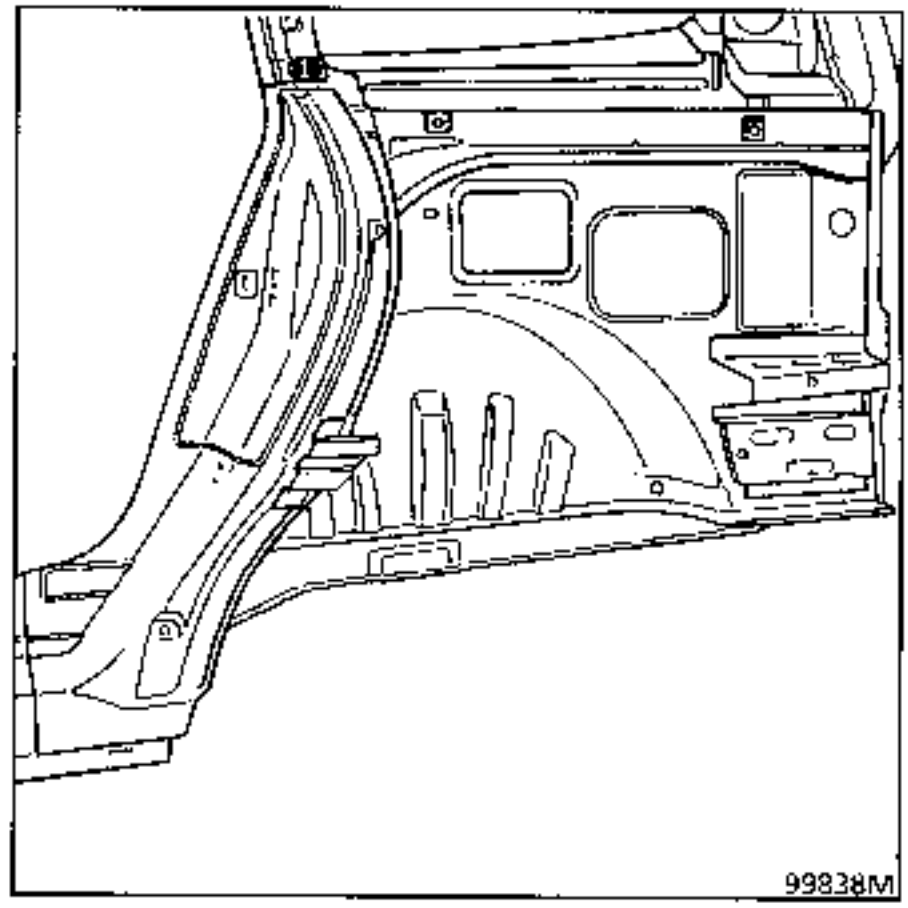
Welding



3 JOINT WITH REAR QUARTER PANEL WINDOW FRONT PILLAR

REMINDER : refer to operations 44-B-3

Welding

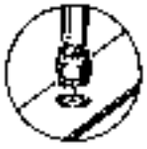


4 JOINT WITH REAR QUARTER PANEL WINDOW PILLAR LINING

Thickness of panels concerned (mm)

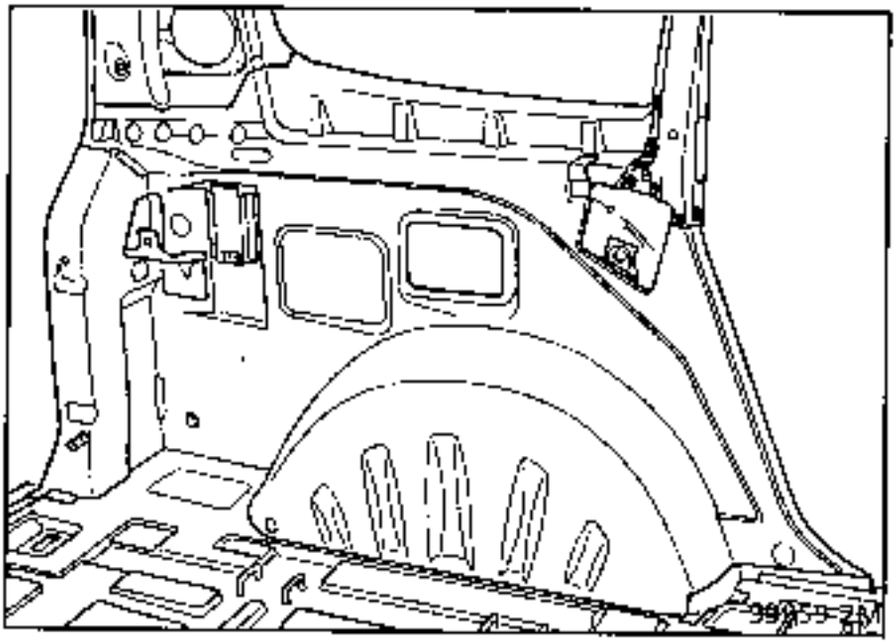
Rear quarter panel window pillar lining	0.8
Wheel arch	0.7

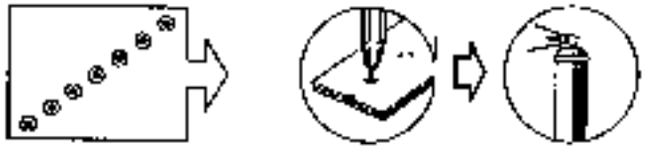
Unpicking



9 spot welds on thickness 0.7

Welding





To make removal easier, cut the wheel arch.

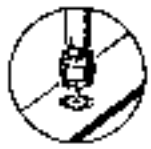
Release the pieces of metal remaining on the base components after cutting out.

5 JOINT WITH DRIP MOULDING LINING

Thickness of panels concerned (mm)

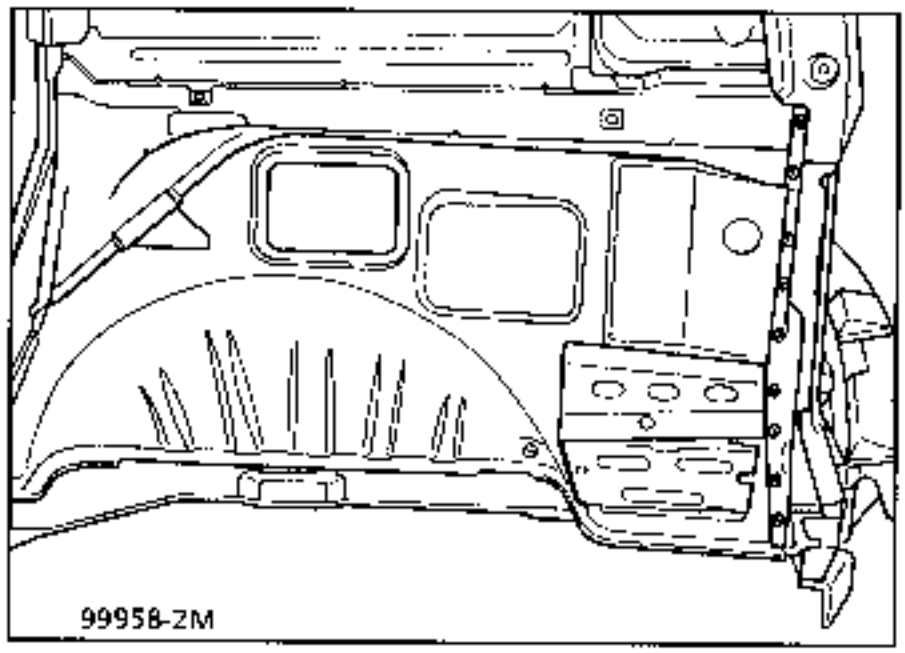
Wheel arch	0.7
Drip moulding lining	0.7
Inertia reel mounting reinforcement - 3rd row	2.0

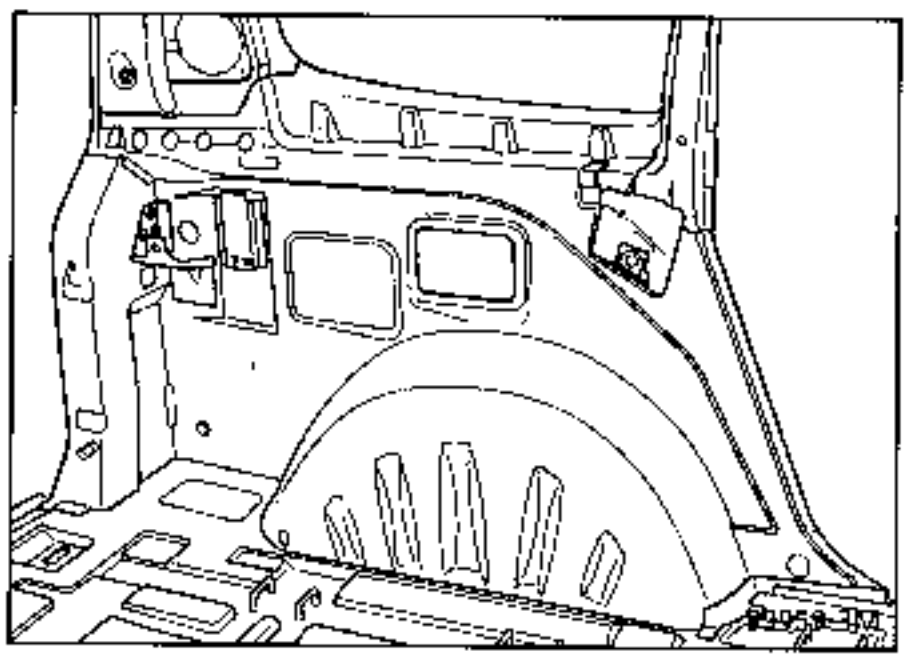
Unpicking



12 spot welds on thickness 0.7

Welding





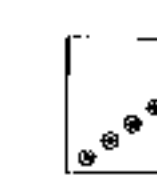
6 JOINT WITH REAR QUARTER PANEL LINING

Thickness of panels concerned (mm)

Rear quarter panel lining	0.8
Wheel arch	0.7
Rear quarter panel window lower stretcher	0.7
Rear drip moulding, upper section	0.7
Drip moulding lining	0.7

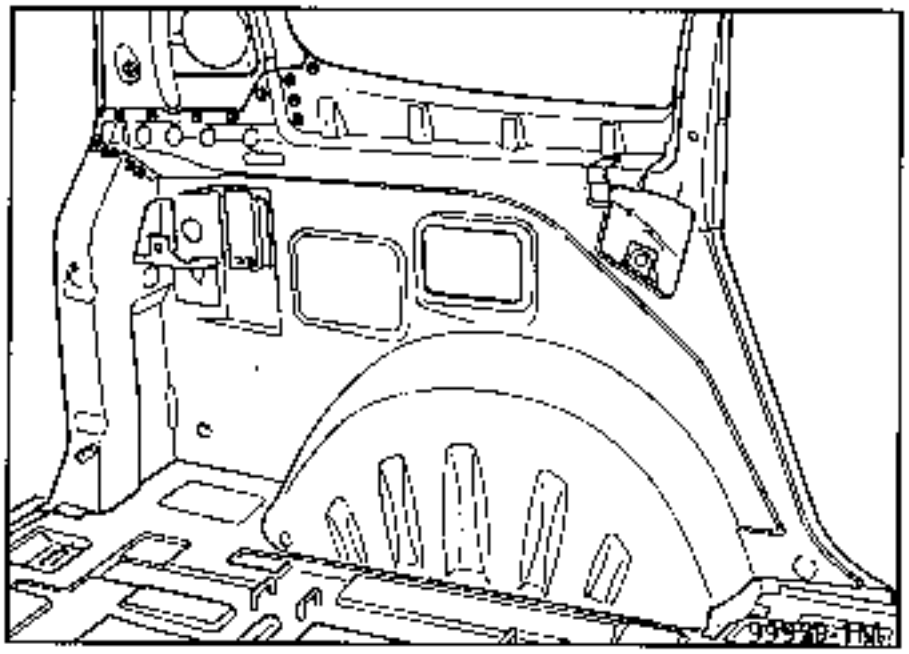
Unpicking

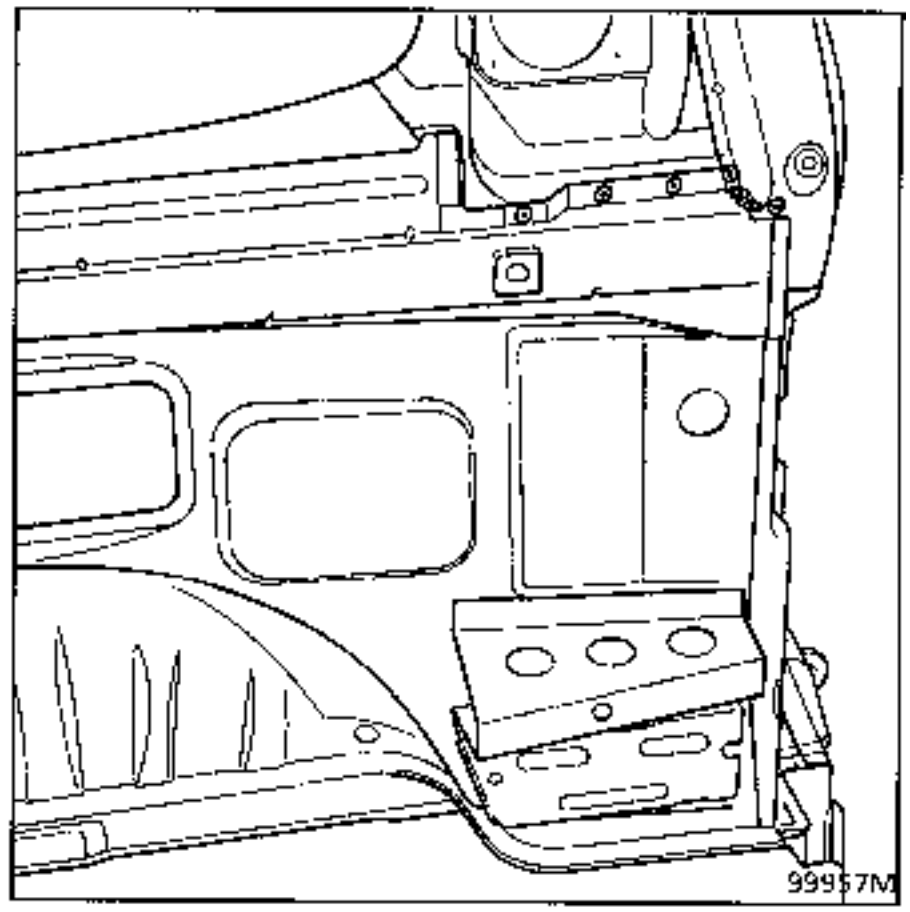
18 spot welds on thickness 0.7



+ 2 MAG fillets of 30 mm

Welding



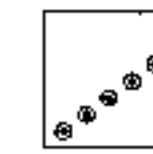


7 JOINT WITH FLOOR

Thickness of panels concerned (mm)

Floor	0.8
Wheel arch	0.7

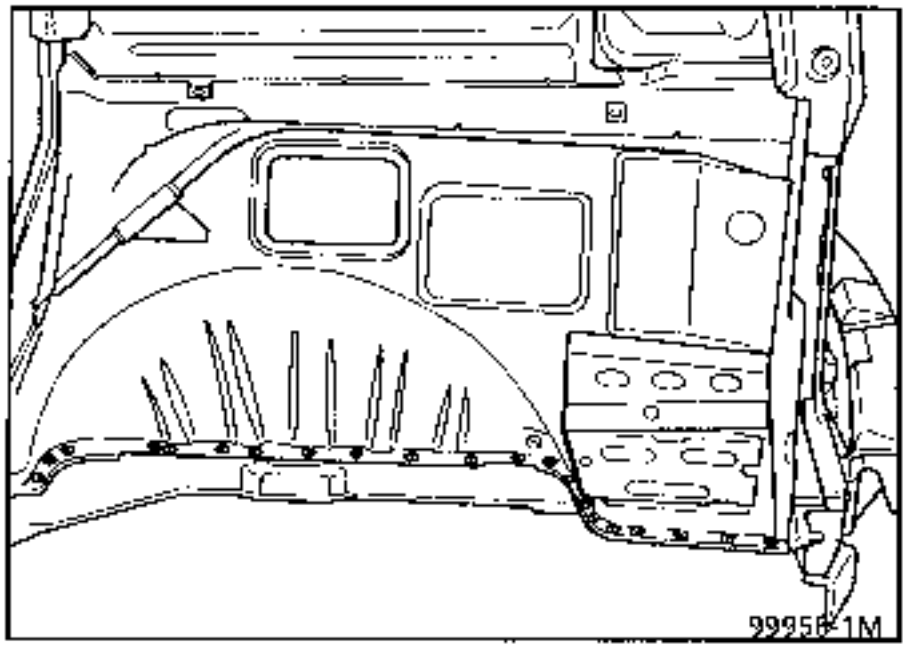
Unpicking

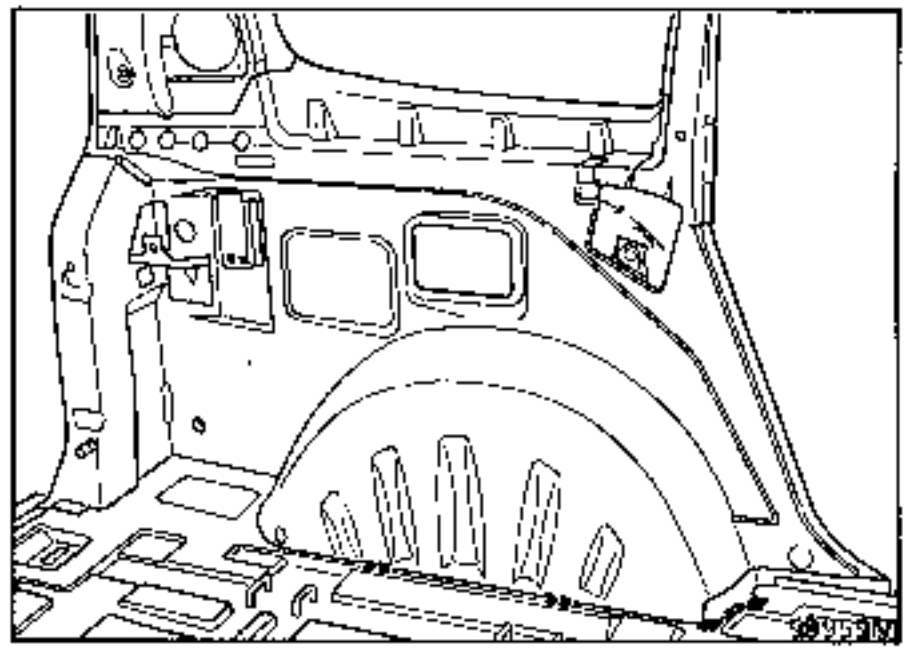


23 spot welds on thickness 0.8

+ 8 plug welds

Welding





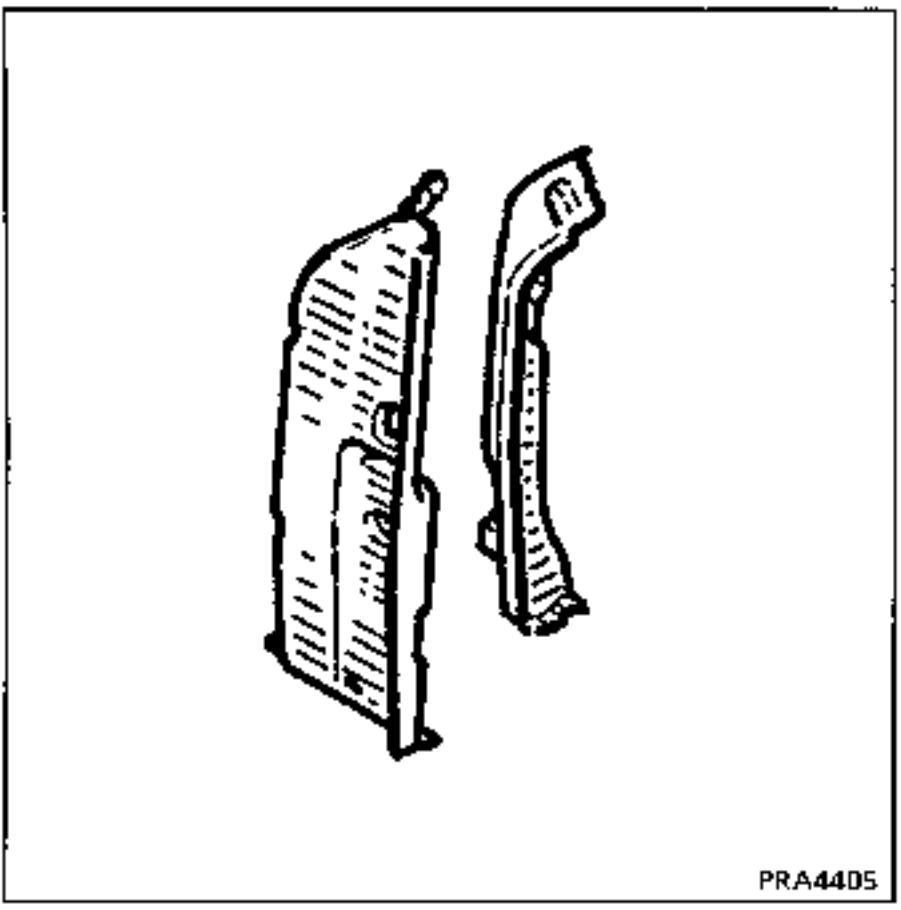
NOTE : refer to section 44 E for positioning and drilling of the counter plate reinforcement.

NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of the rear floor, part section for a rear impact.

COMPOSITION OF PART FROM PARTS DEPARTMENT


PRA4405

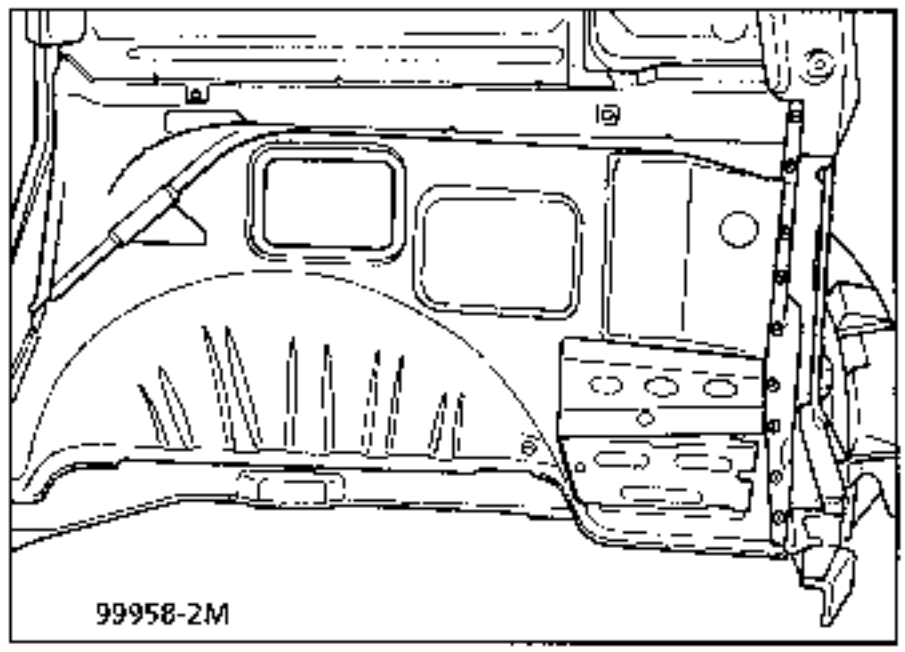
Preliminary operations.

Remove:
- the rear light,
- the bumper,
- the rear quarter panel window,
- the rear wing,
- the mudguard,
- the tailgate seal,
- the seat belt,
- the floor lining, part section,
- the wheel arch lining,
- part of the wiring loom.

1 JOINT WITH DRIP MOULDING LINING

REMINDER : refer to operations 44-C-5

Welding

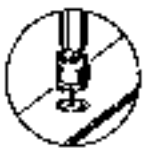

99958-2M

2 JOINT WITH REAR DRIP MOULDING, UPPER SECTION

Thickness of panels concerned (mm)

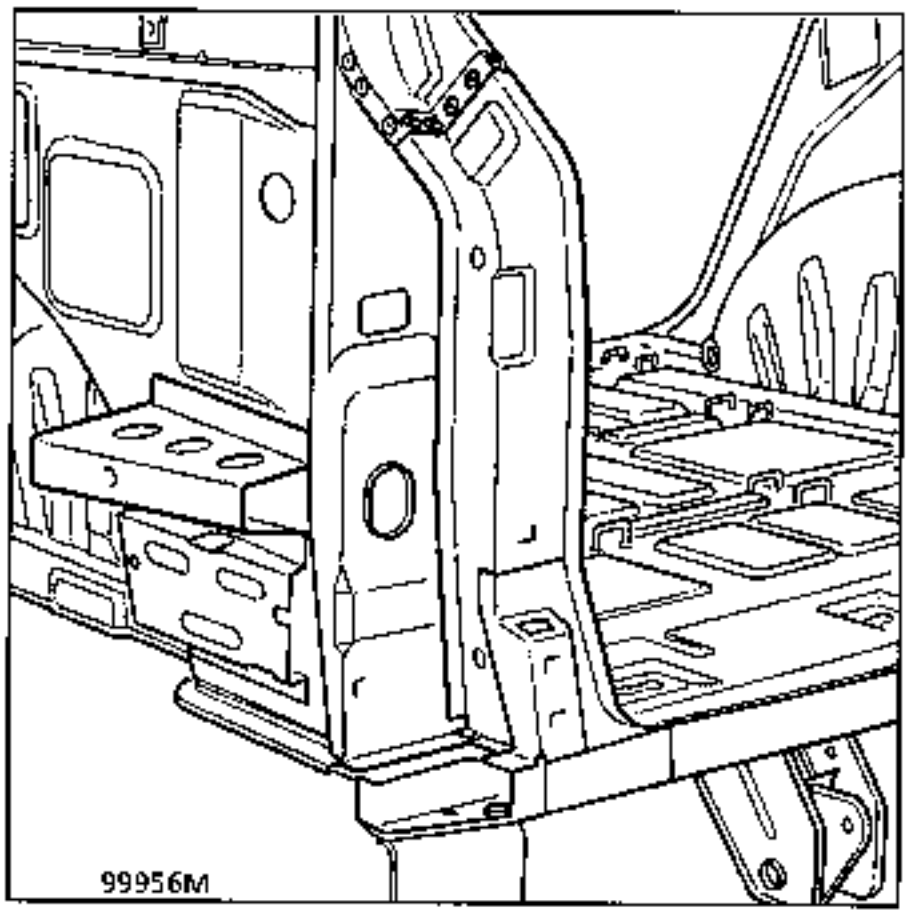
Rear drip moulding, upper section	0.8
Rear end pillar	0.7

Unpicking



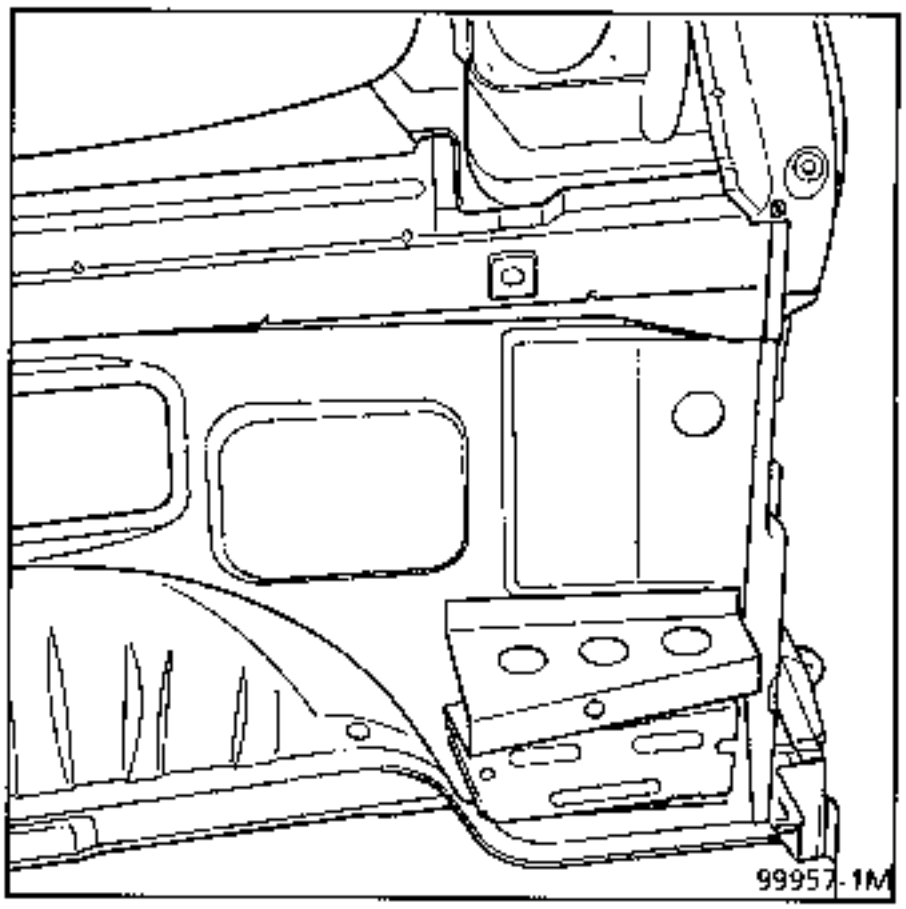
9 spot welds on thickness 0.8

Welding



Grind down the unpicked weld seam and the excess zinc remaining on the base components.

Welding



3 JOINT WITH FLOOR

Thickness of panels concerned (mm)

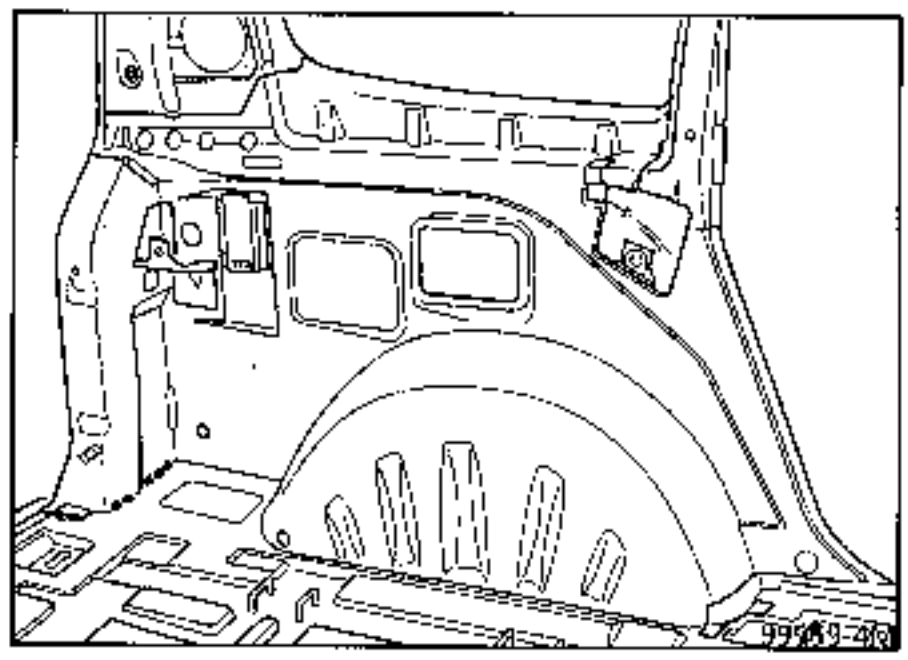
Floor	0.8
Rear end pillar	0.7

Unpicking

4 spot welds on thickness 0.8

4 MAG fillets of 20 mm

Welding



Preparation of the new part

Grind down any excess zinc on the surface to be welded, position the parts, then secure them using clamps.

4 JOINT WITH REAR LOWER CROSS MEMBER

Thickness of panels concerned (mm)

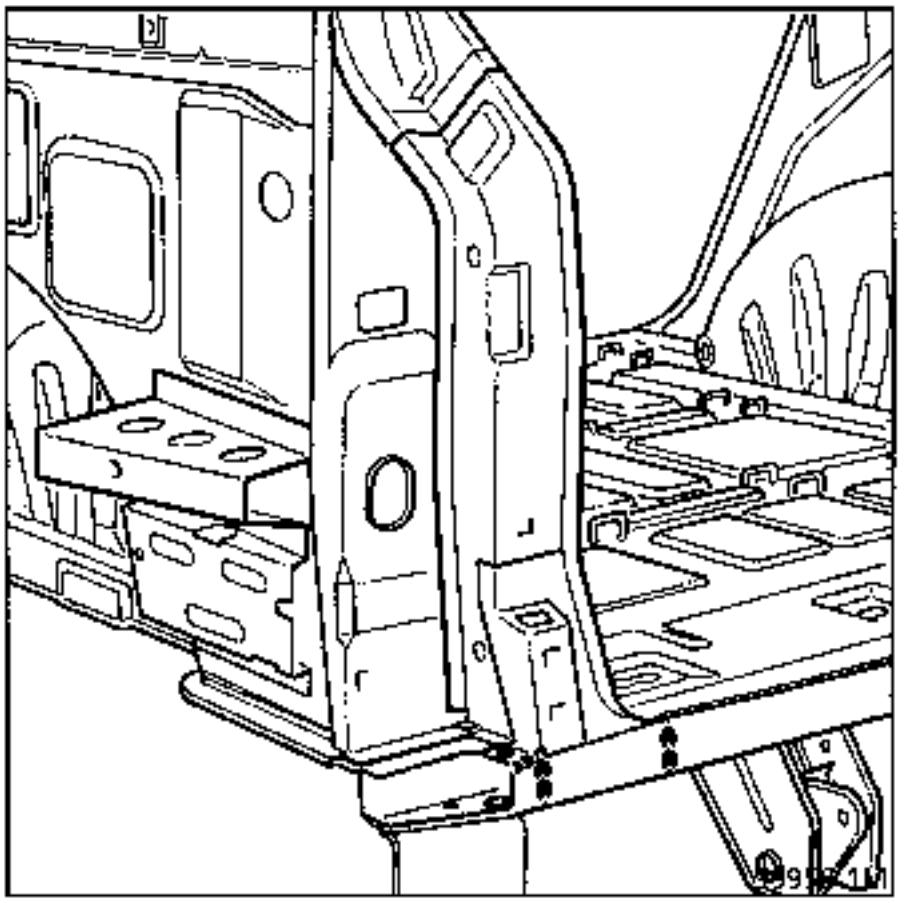
Rear lower cross member	2.0
Striker plate mounting rear gusset	2.0

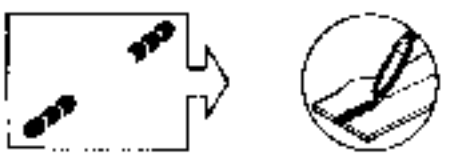
Unpicking

1 spot weld on thickness 2.0

2 MAG fillets of 50 mm
1 MAG fillet of 10 mm

Welding





NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a basic operation for a side impact.

Preliminary operations.

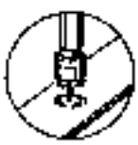
Remove:
- the bumper,
- the counter plate reinforcement,
- the wing,
- the rear quarter panel,
- the light,
- the mudguard,
- the wheel,
- the tailgate seal, part section,
- the wheel arch lining,

1 JOINT WITH WHEEL ARCH

Thickness of panels concerned (mm)

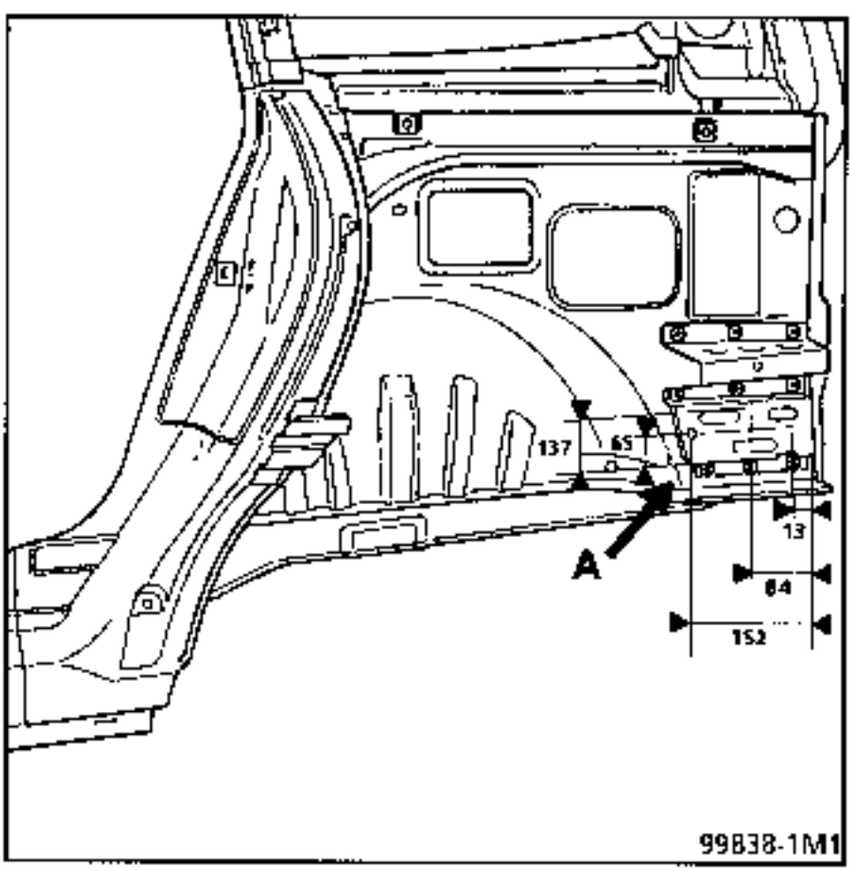
Wheel arch	0.7
Bumper mounting side support	0.7

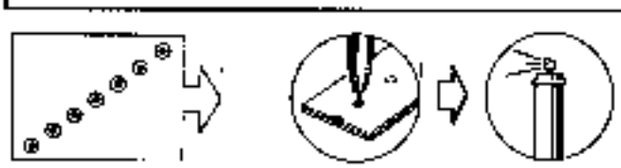
Unpicking



9 spot welds on thickness 0.7

Welding





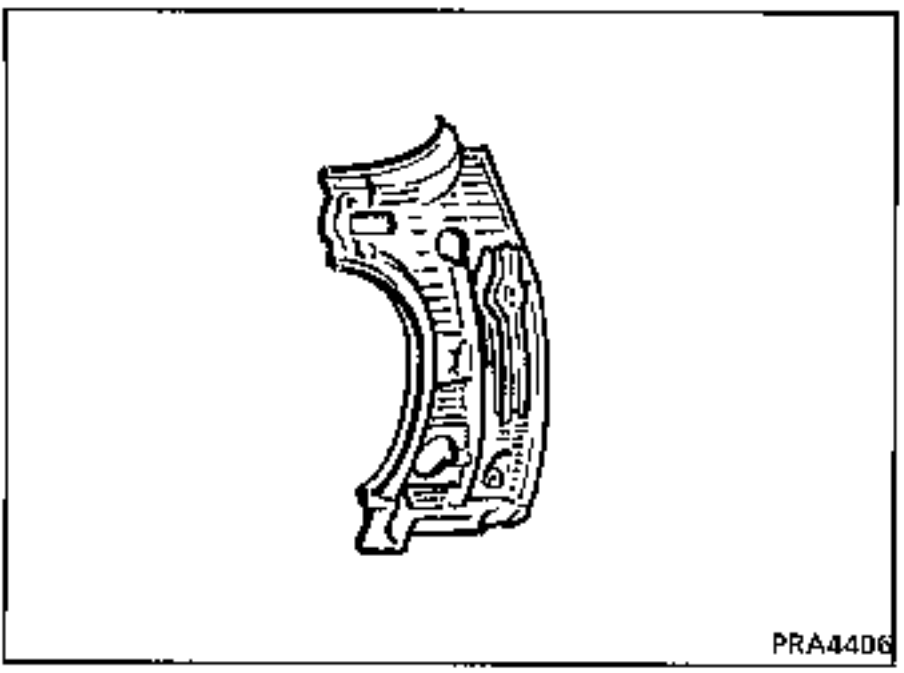
At (A) counter plate reinforcement mounting
NOTE : countersink the holes to diameter 10.

NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

INTRODUCTION

The replacement of this part is a complementary operation to the replacement of the roof.

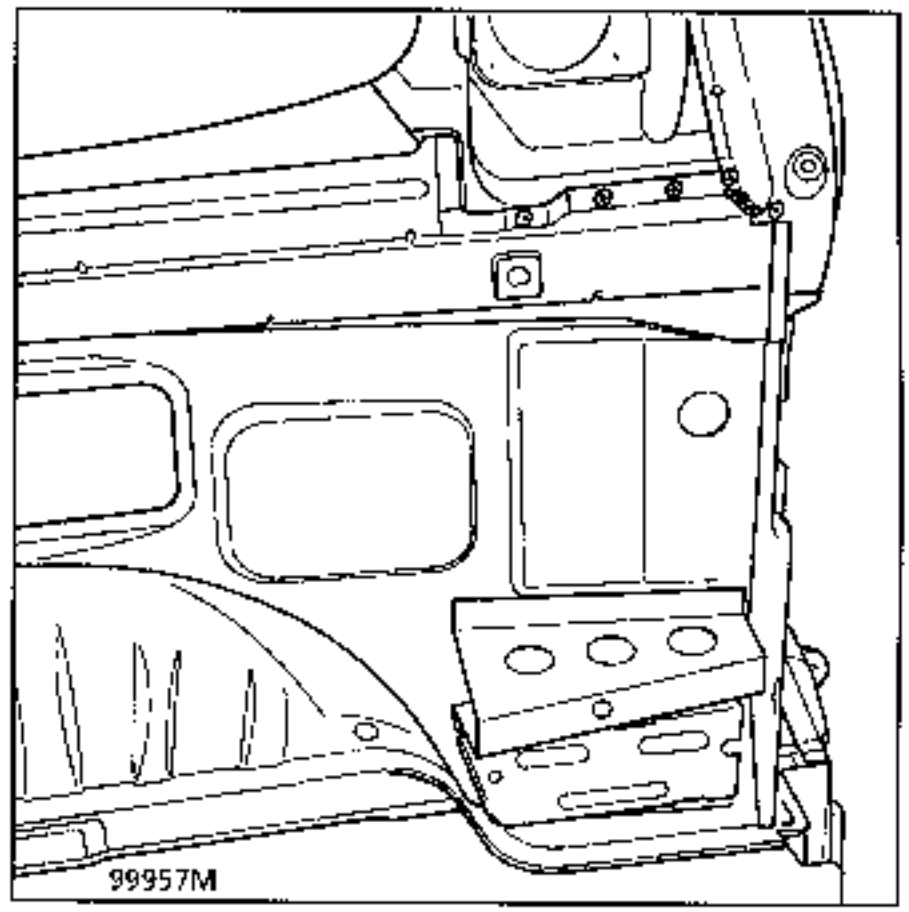
COMPOSITION OF PART FROM PARTS DEPARTMENT

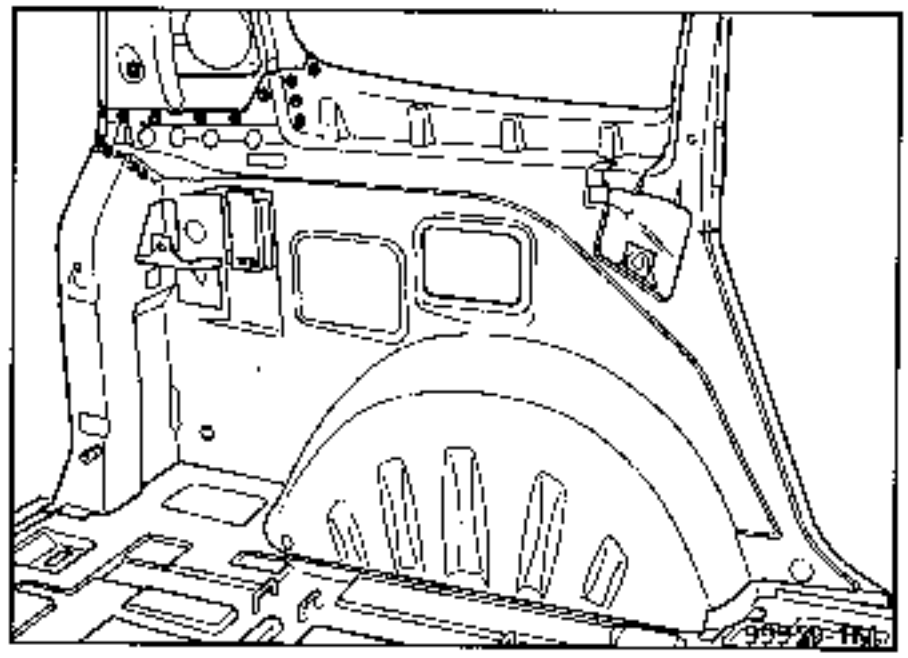


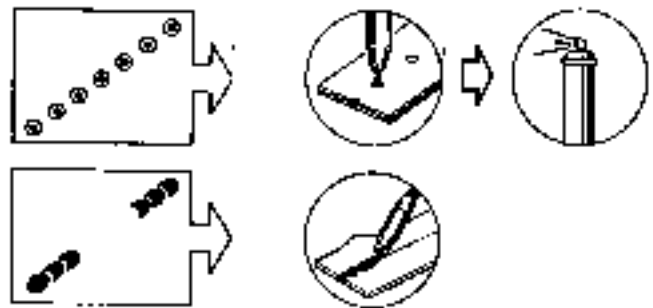
1 JOINT WITH REAR QUARTER PANEL LINING

REMINDER : refer to operations 44-C-6-

Welding





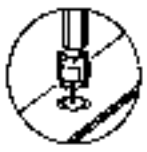


2 JOINT WITH CONNECTING GUSSET

Thickness of panels concerned (mm)

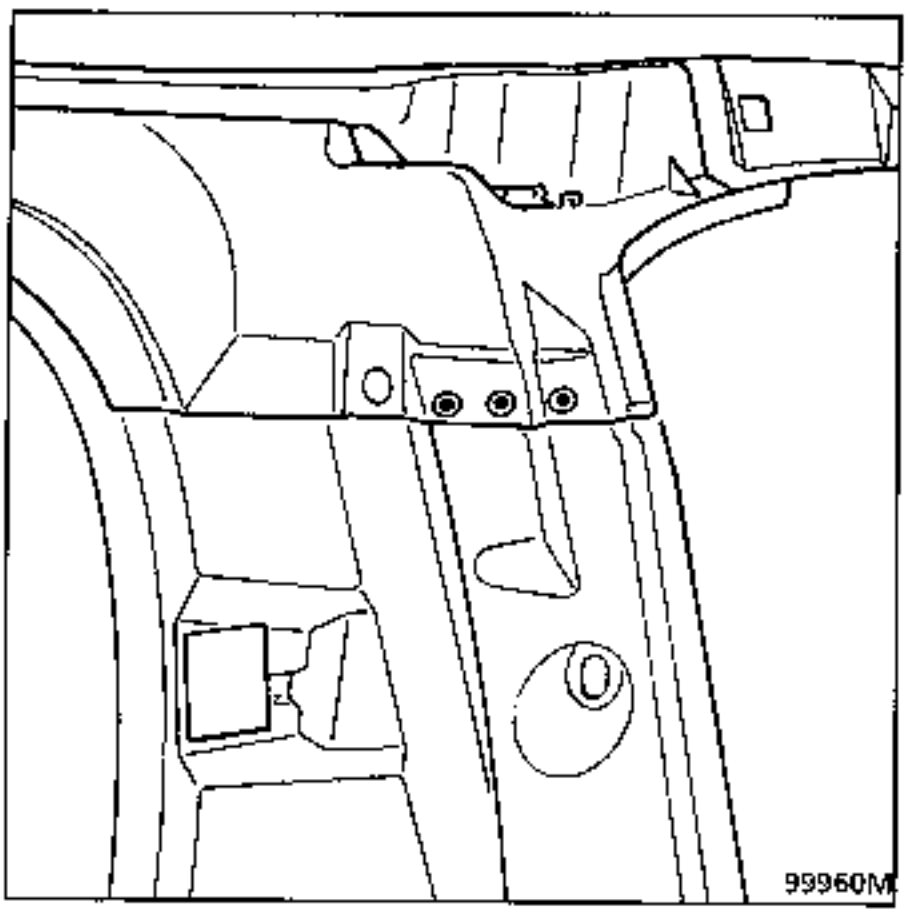
Connecting gusset	1.0
Rear quarter panel lining	0.8
Upper stretcher	0.7

Unpicking

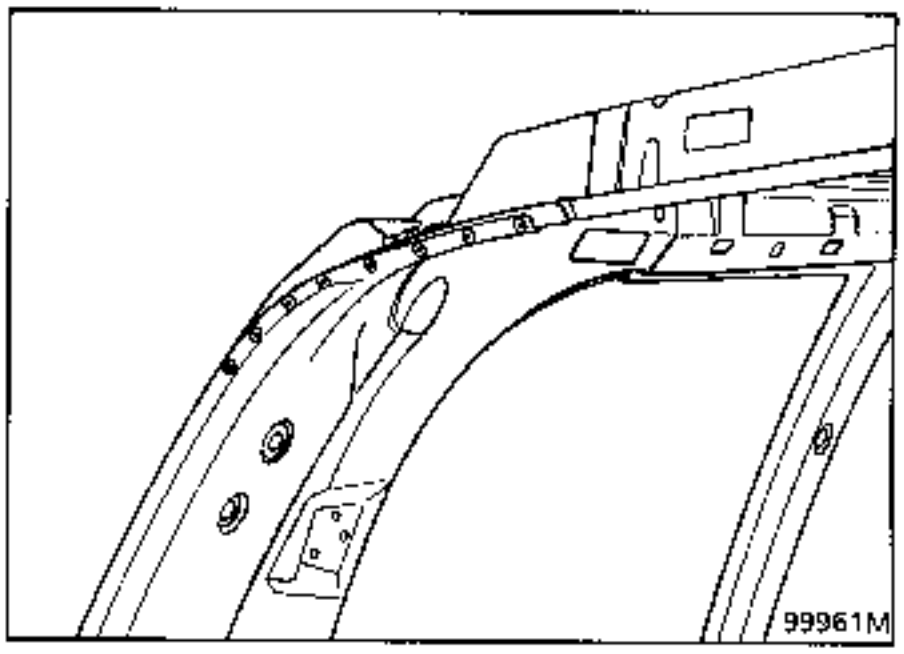


26 spot welds on thickness 1.0

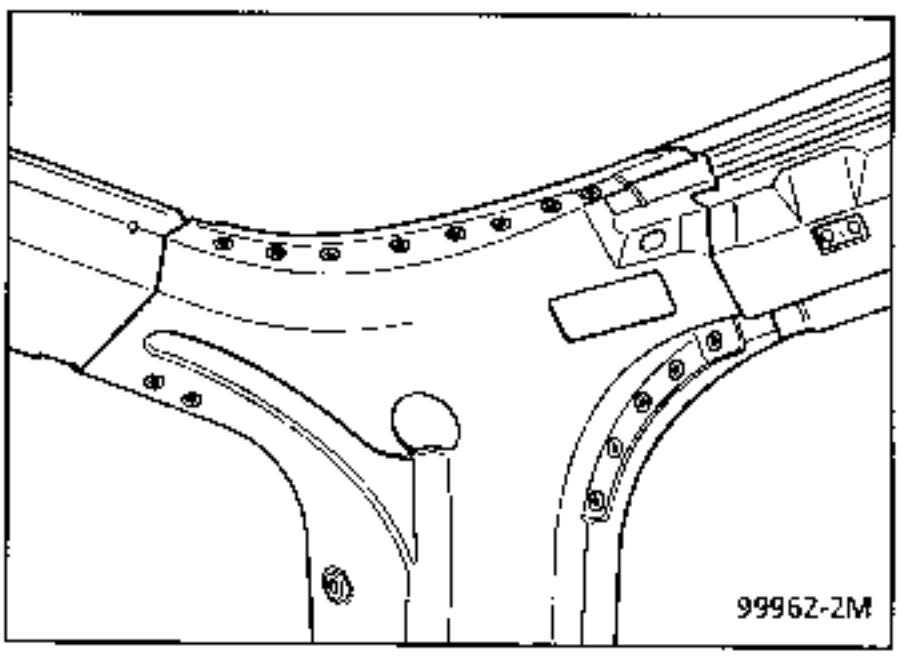
Welding



Welding



Welding

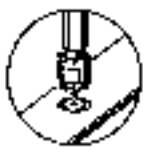


3 JOINT WITH REAR CROSS MEMBER UPPER LINING

Thickness of panels concerned (mm)

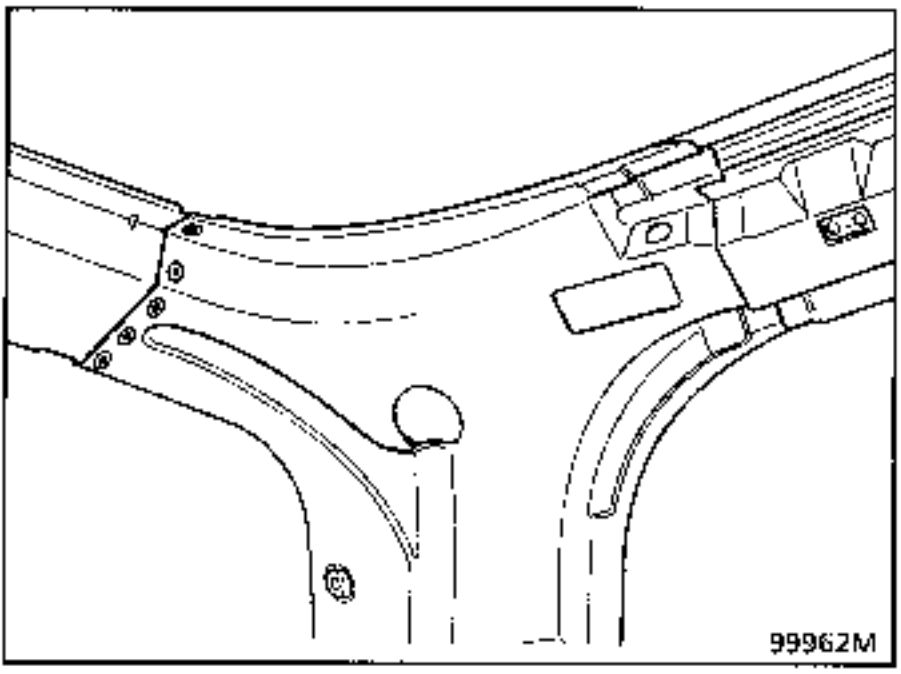
Upper lining	0.7
Rear quarter panel lining	0.8

Unpicking



5 spot welds on thickness 0.7

Welding

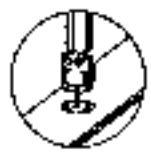


4 JOINT WITH REAR STRETCHER LINING

Thickness of panels concerned (mm)

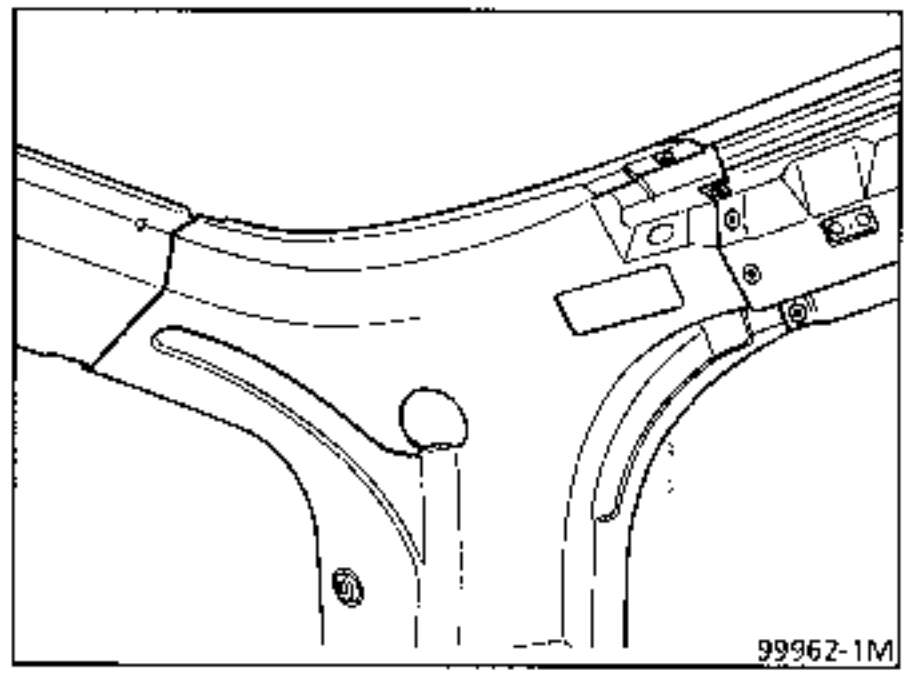
Rear stretcher lining	0.7
Rear quarter panel lining	0.8

Unpicking



5 spot welds on thickness 0.7

Welding



NOTE : protection and sealing - refer to Paint Manual MR 601 section 95.

REPAIR

Only cracks, holes and small breaks less than 50 mm may be repaired using the plastic repair operations described in section 40.

REPLACEMENT

Parts to be systematically replaced

Partial replacement may be made according to the operations described below, and only the following parts need to be replaced:
- upper deflector trim,
- finishing trim between the body top panel and roof.

Tooling required
- Saw (with diamond disc and blade)
- Sharp spatula,
- adhesive extrusion gun,
- 2 bonding kits 60 25 170 306.

This method has three stages.

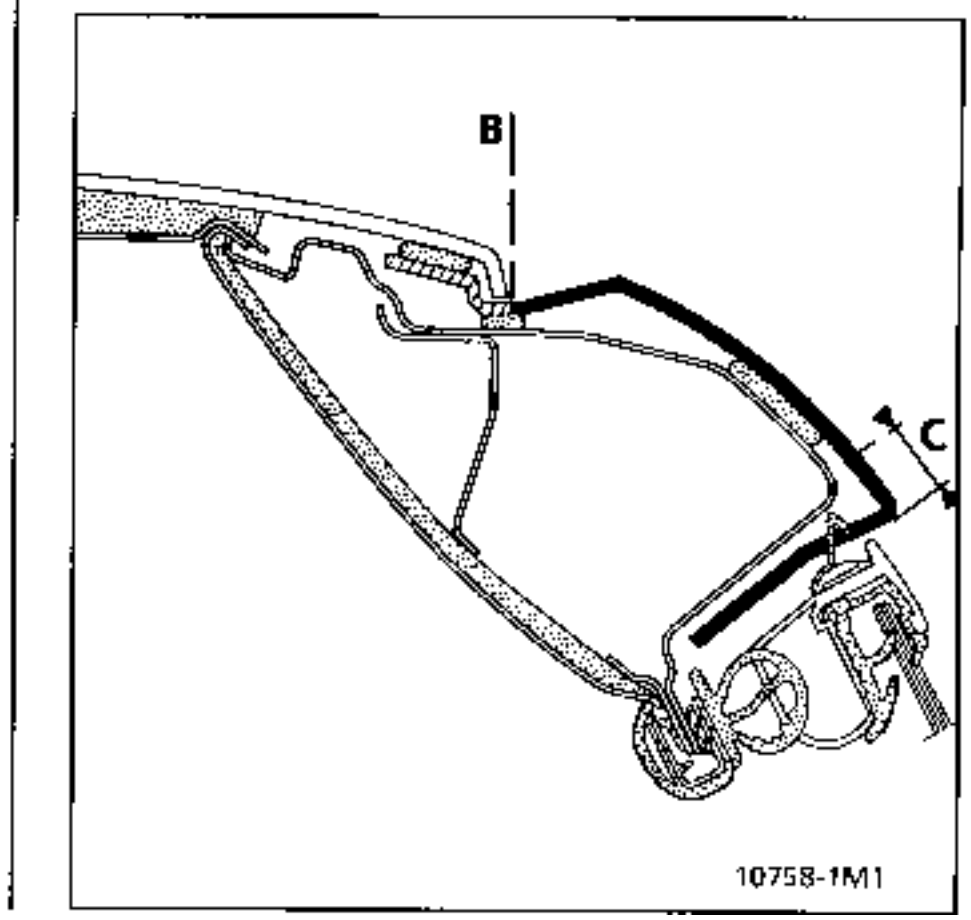
INTRODUCTORY NOTES

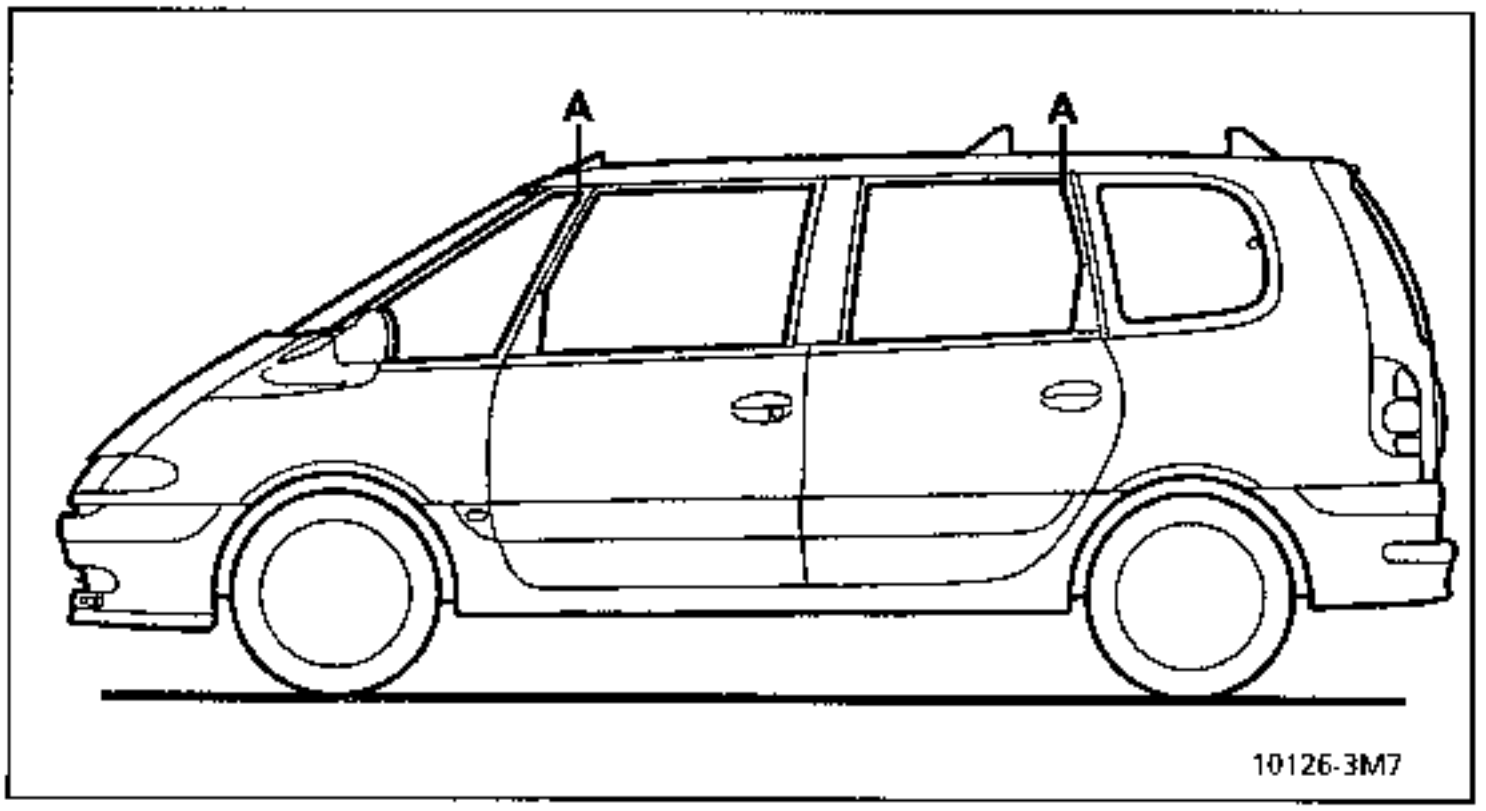
Release the finishing trim on the top of the body.

Use adhesive tape to protect the edge of the roof along the complete length of the vehicle.

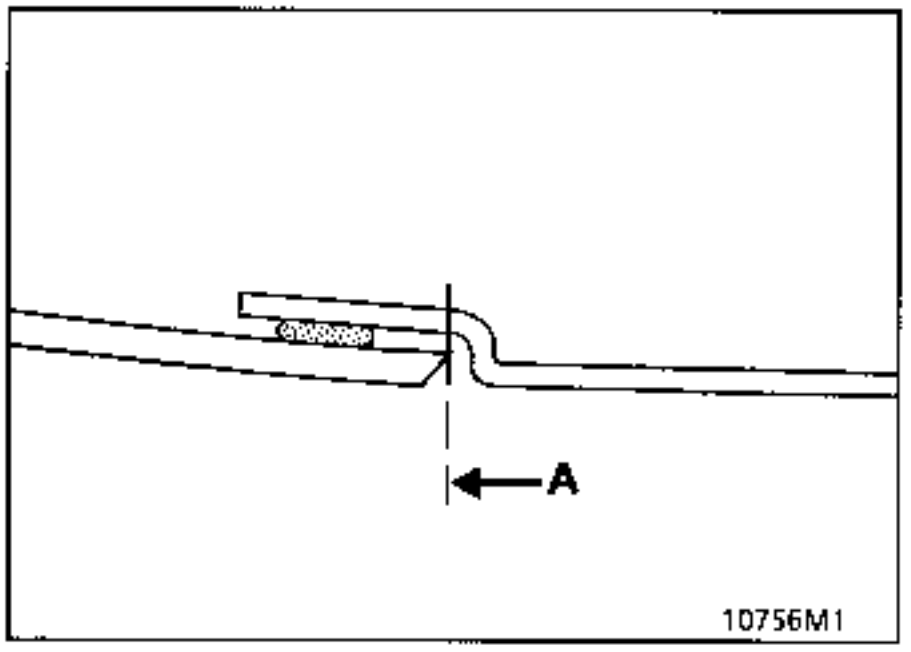
REMOVAL

Using a circular saw, cut out the body top panel along its length, at a tangent to the roof at (B) and 3 mm from the edge at (C).



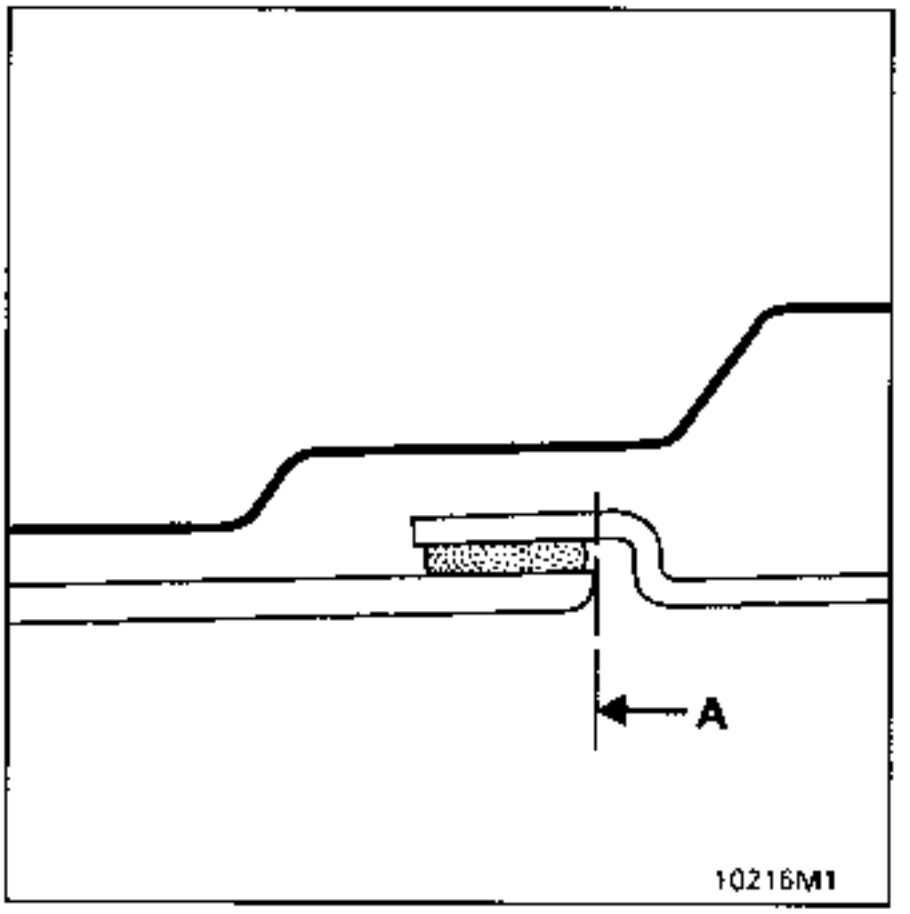


Joint between body top panel and front section of roof



At (A) cut out the body top panel as shown in the diagram.

Joint between body top panel, rear section and wing



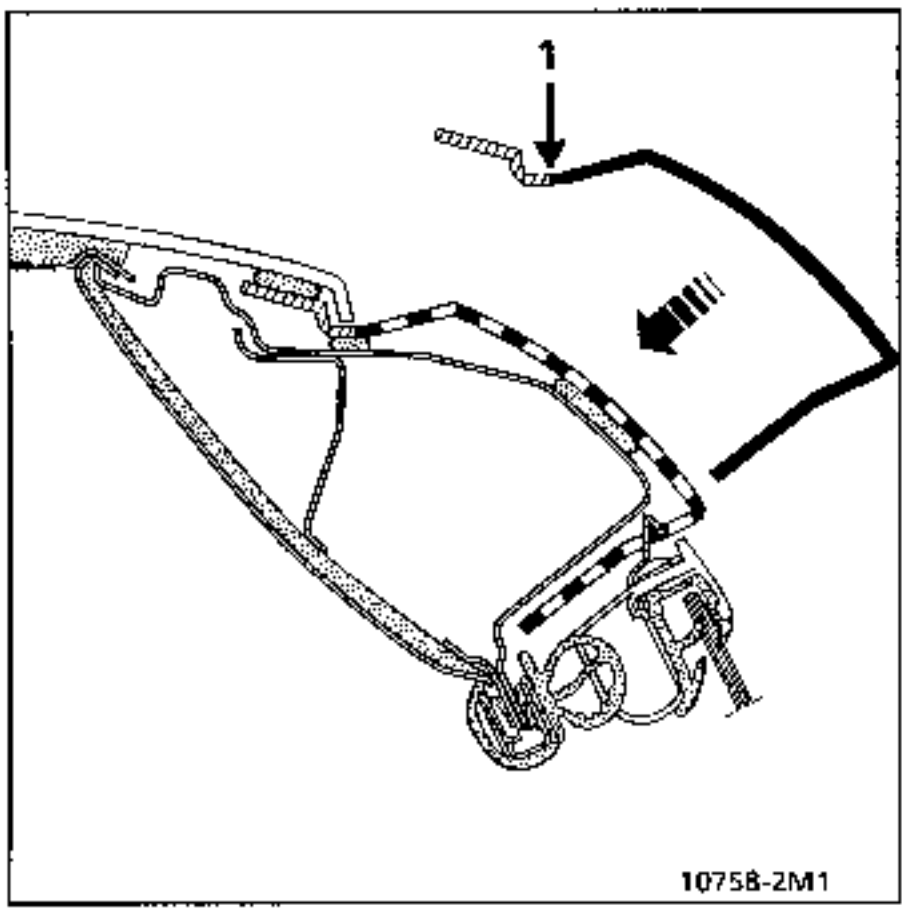
At (A) cut out the body top panel as shown in the diagram.

Finish releasing by cutting the adhesive beads using a sharp spatula.
Grind down the adhesive remaining on the metal structure, leaving a layer to allow the new bead to adhere.

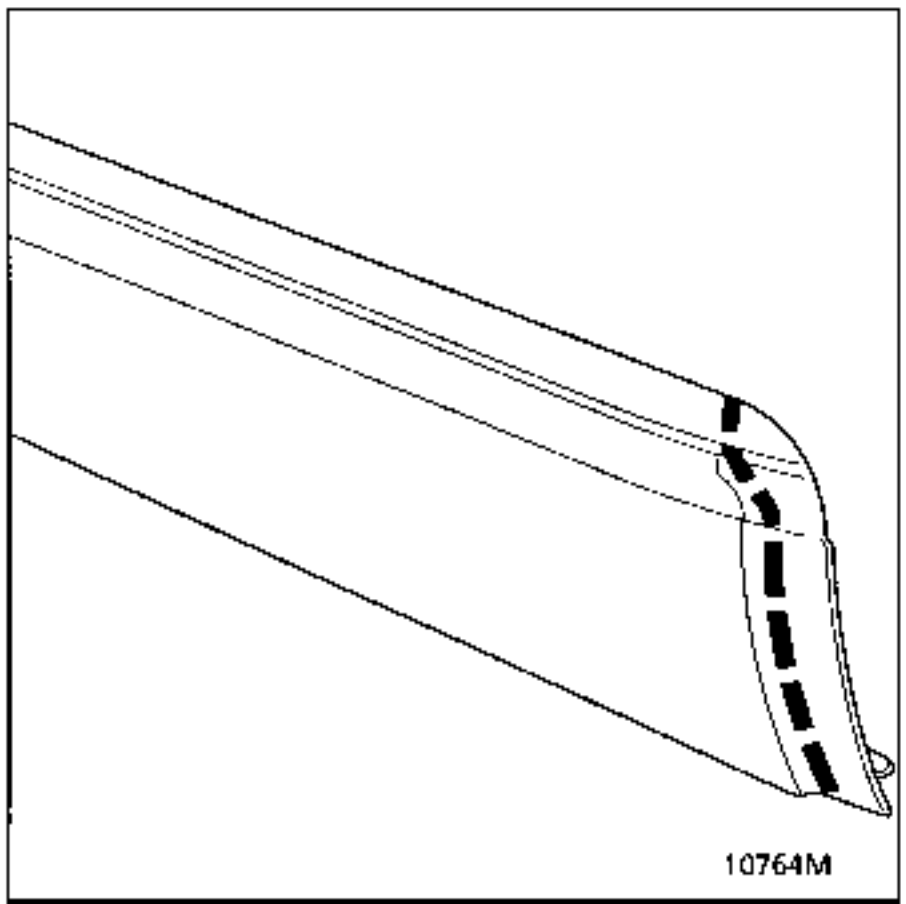
FITTING

Preparation of the new body top panel

Cut out section (1) from the body top panel.



Cut off the excess from the body top panel as shown in the diagram.



Adjust the panel's position on the vehicle.

Roughen the bonding zone:
- remove all dust,
- degrease,
- coat with primer.

Preparation of the metal structure

Degrease the old bonding zone.

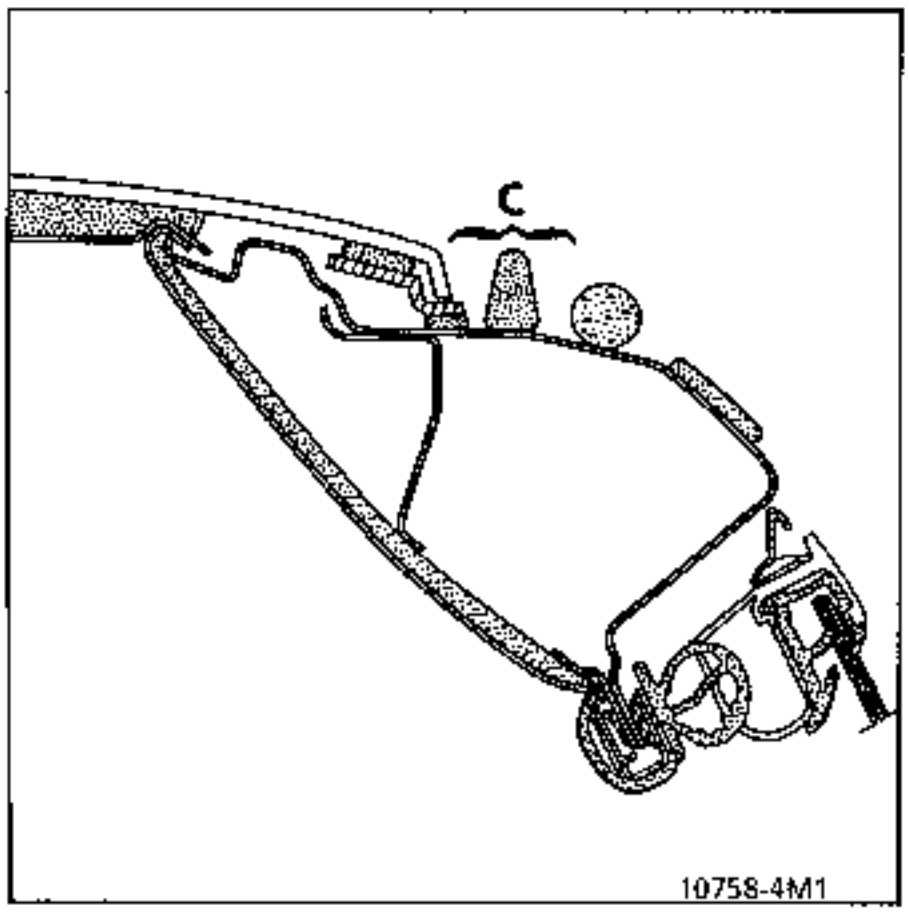
Apply metal primer to the complete area.

Leave to dry for approximately 10 minutes.

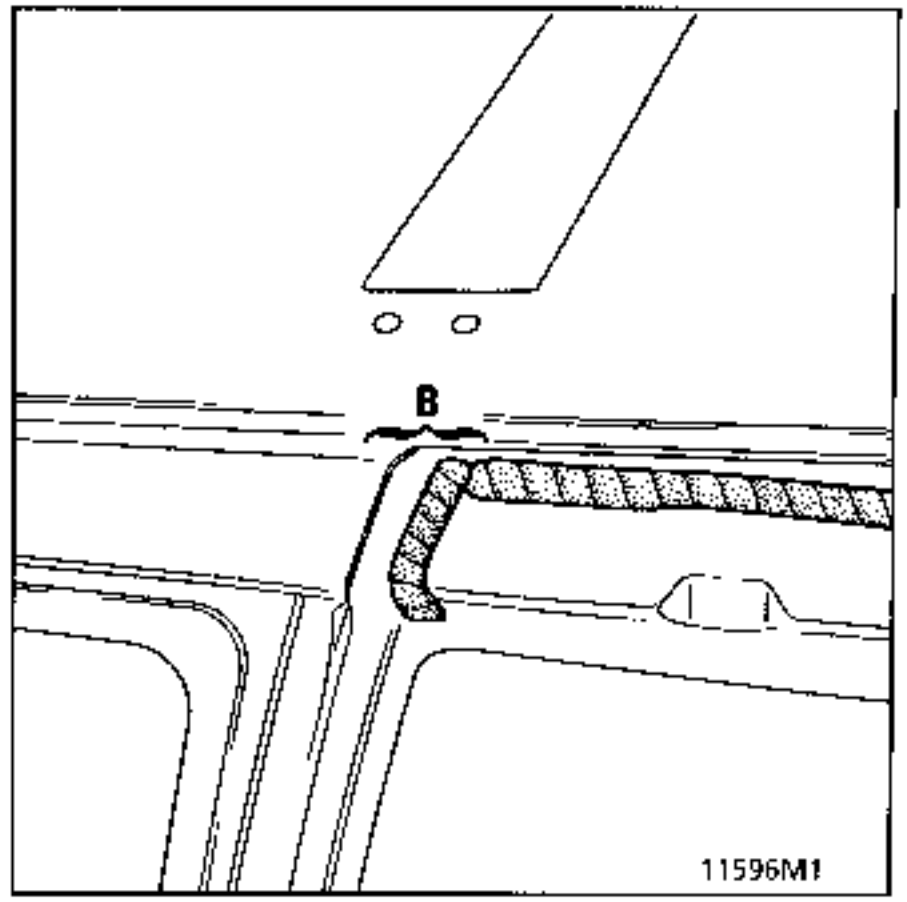
Bonding the body top panel

Using a gun suited to the type of adhesive, extrude an 8 mm diameter bead of adhesive over the old beads on the body.

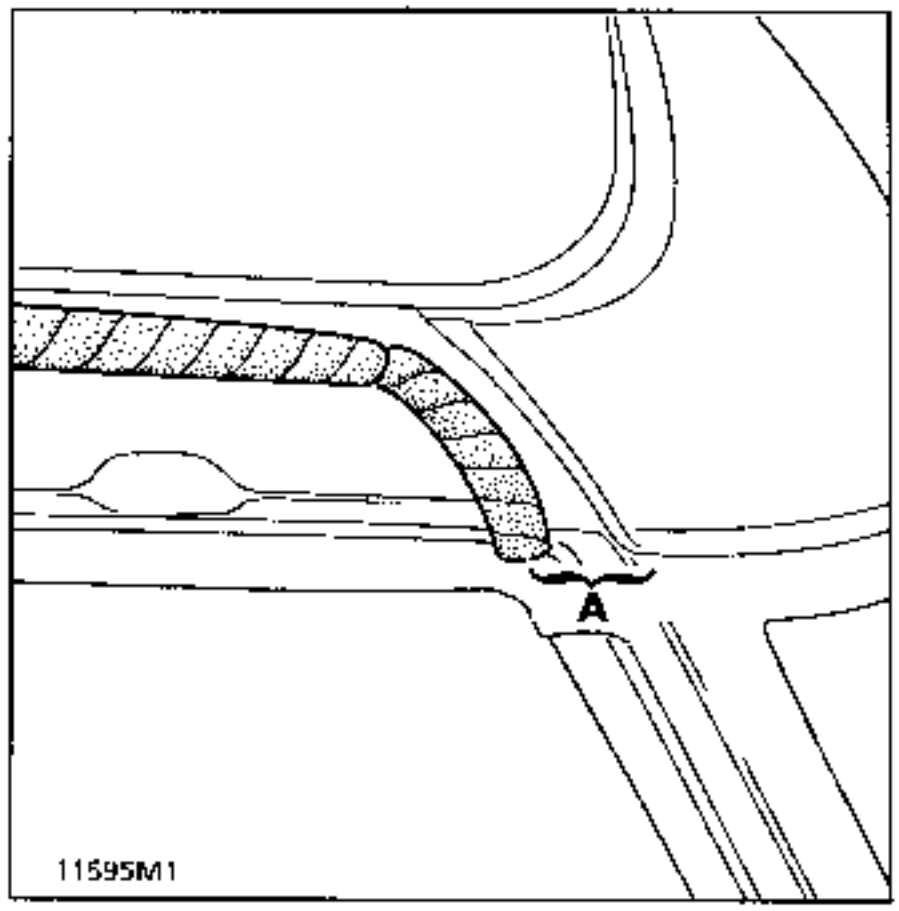
Important: in zone C apply the bead between the roof protected by adhesive tape and the foam section.



In zone B apply the bead between the rear wing and the foam section, Part Number : 77 11 170 210.



In zone A apply the bead between the roof and the foam section, Part Number : 77 11 170 210.



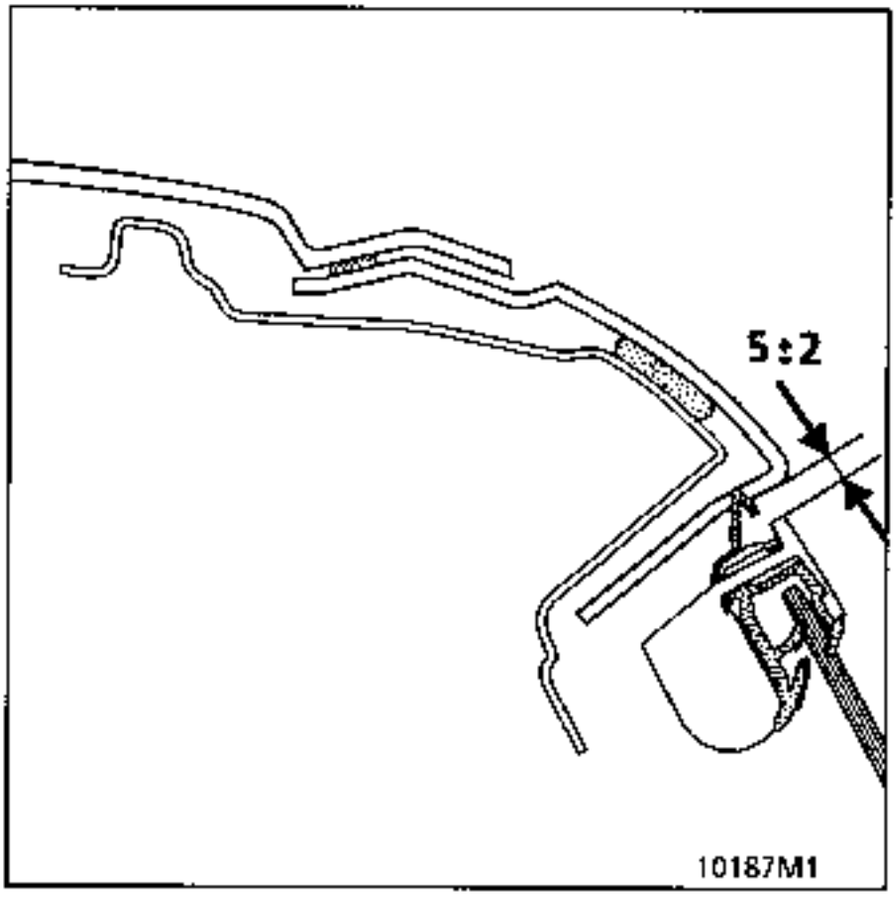
The excess adhesive will come out of the joints and be smoothed off (gloves, soapy water).

Fit and adjust the body top panel in relation to the rear wing and the roof at the front and set the cut edge against the bottom of the drip moulding.

Adjust the play at the top of the door frame.

Strap the body top panel at the front and rear.

Finishing the body top panel
Using the remaining adhesive in the cartridge, fit the second nozzle, cut to the required diameter, apply the adhesive and smooth off using a glove and soapy water.



Remove the tools after polymerisation.

Refer to the Workshop Repair Manual for painting preparation.

Refit the parts removed.

REPLACEMENT

Parts to be systematically replaced

- the three carpet medallions bonded to the roof,
- the tailgate upper primary seal,
- the windscreen seals.

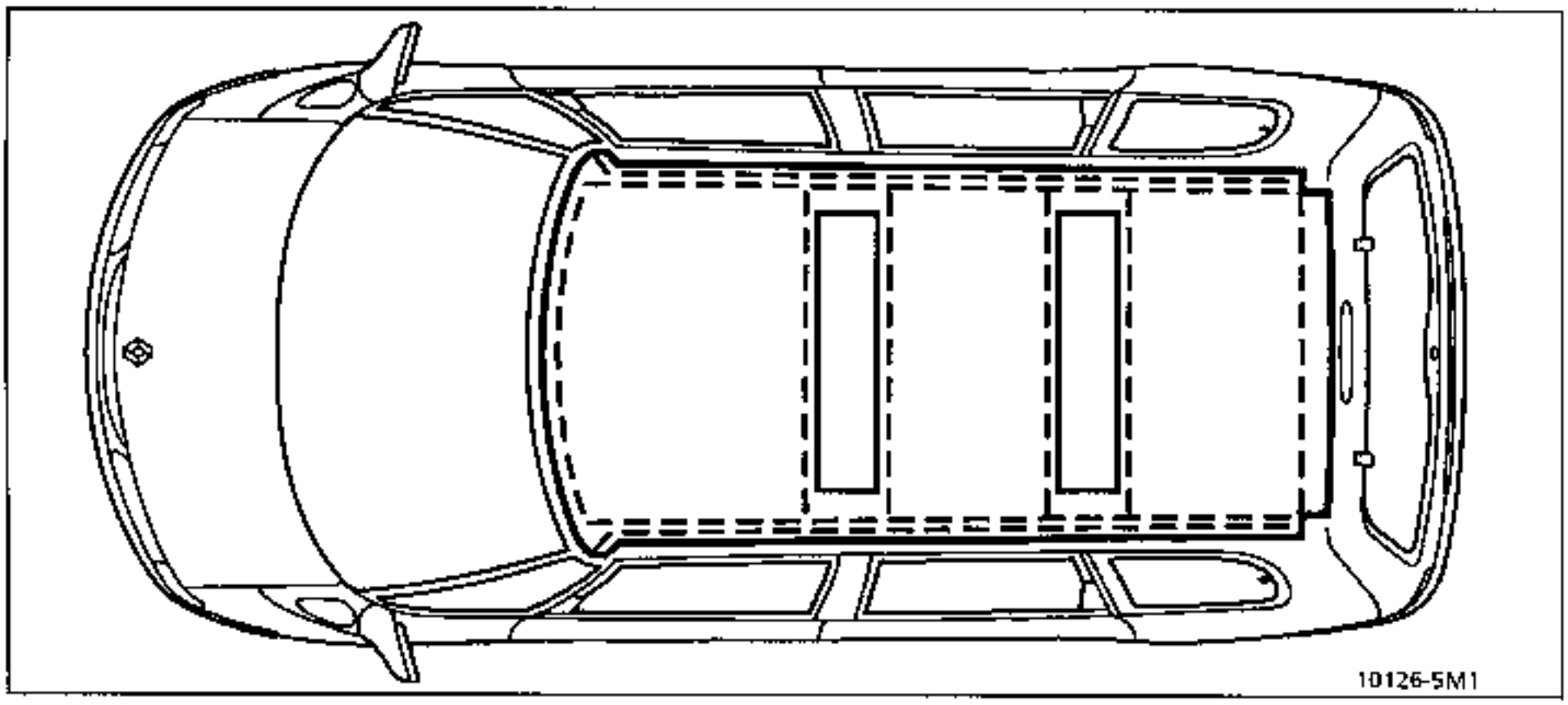
Tooling required

- Saw (with diamond disc or blade),
- Sharp spatula,
- Adhesive extrusion gun,
- 2 bonding kits n° 60 25 170 306.

REMOVAL

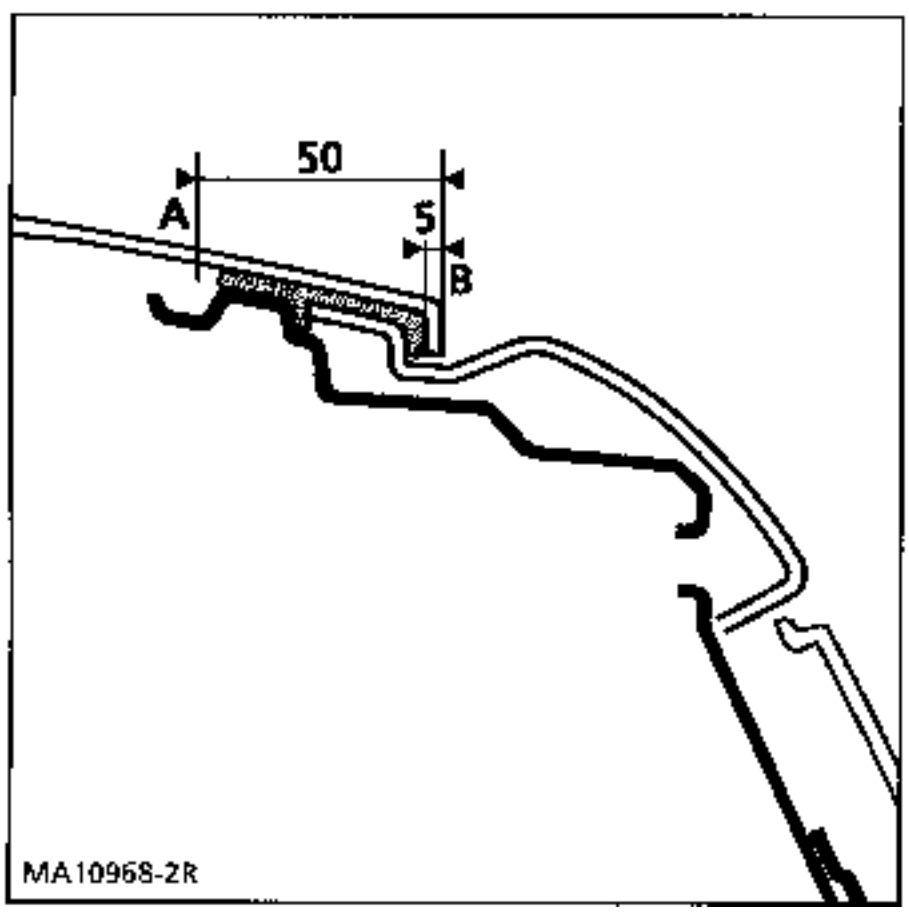
Remove:

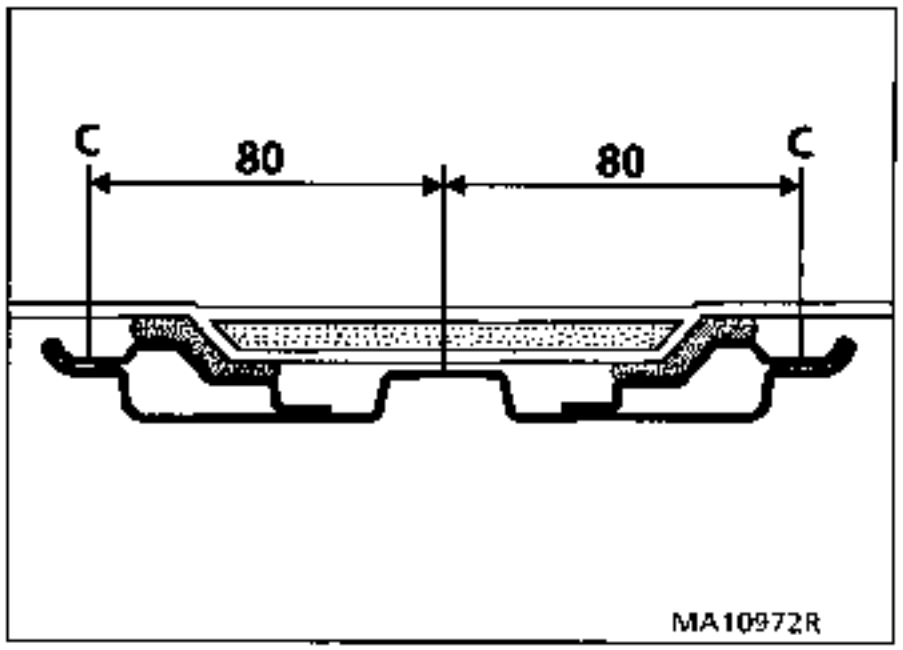
- the windscreen trim,
- the radio aerial,
- the sunroofs,
- the roofrack rails,
- the tailgate hinge trims,
- the tailgate, slackening the 2 hinge pins,
- part of the roof lining, releasing the straps for the cloth lining on all the inner trims for the sections of trim which conceal the fittings for the headlining, without damaging the card fittings.



Cutting out the roof

Using an oscillating cutter, cut out:
- the roof around the edge (A), 50 mm from the edge and 80 mm from the rear at the tailgate end,
- the dropped edge (B) at 5 mm from the edge .



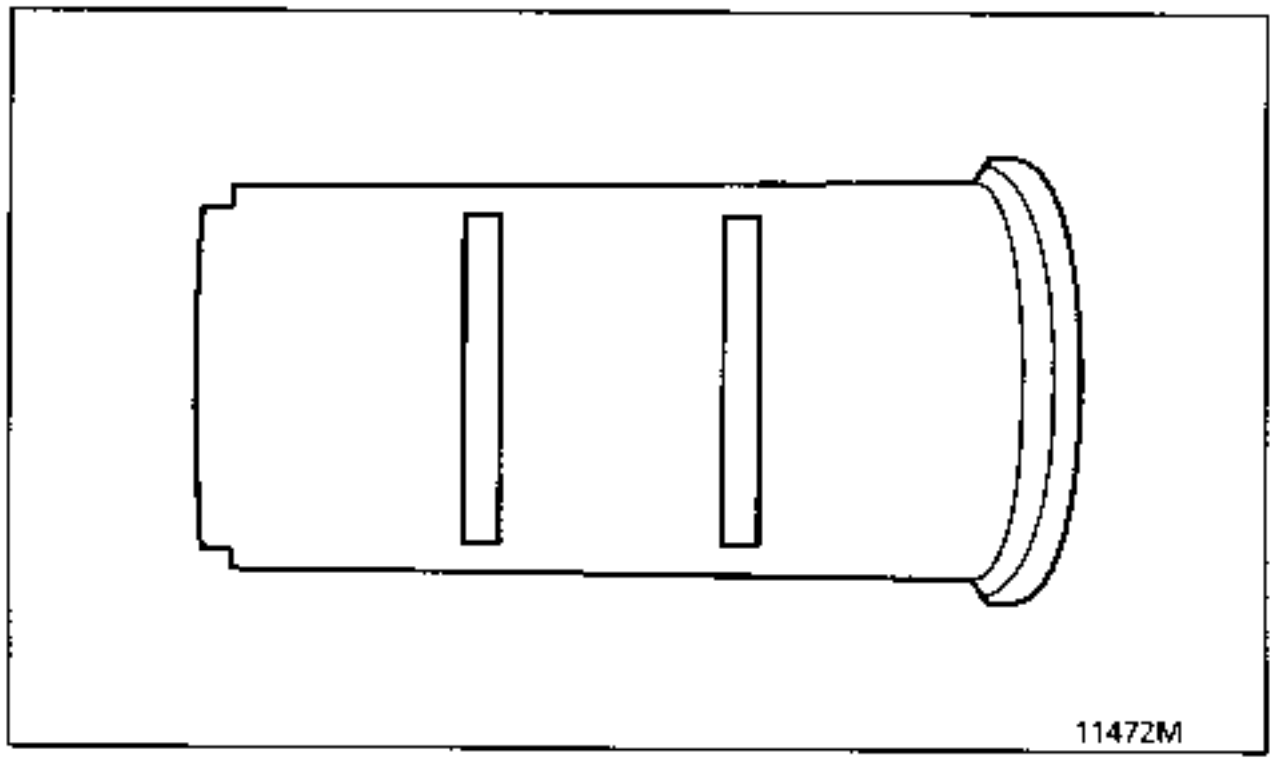


Cut out either side of the cross members, 80 mm from each side of the cross member.

Remove the three centre strips.

Cut the beads using a sharp spatula.

Clean the bonding zones without removing all of the adhesive bead on the galvanised metal.



FITTING

Fit the roof over the vehicle.

Centre the roof in relation to the two stretchers.

Adjust it in relation to the stretchers, the windscreen and the rear wings.

Mark this position using adhesive tape.

Preparation and bonding

Structure

Degrease the old bonding zone.

Coat with primer.

Leave to dry for 10 minutes.

Roof

Degrease the bonding zone.

Coat with primer.

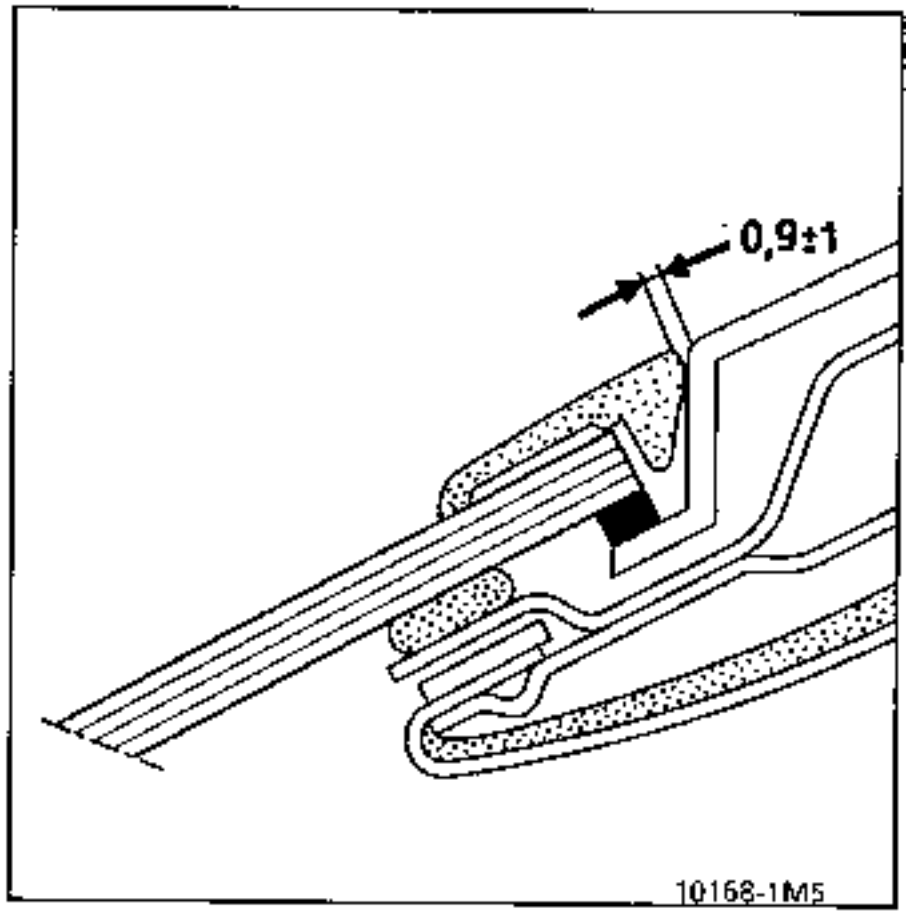
Leave to dry for 10 minutes.

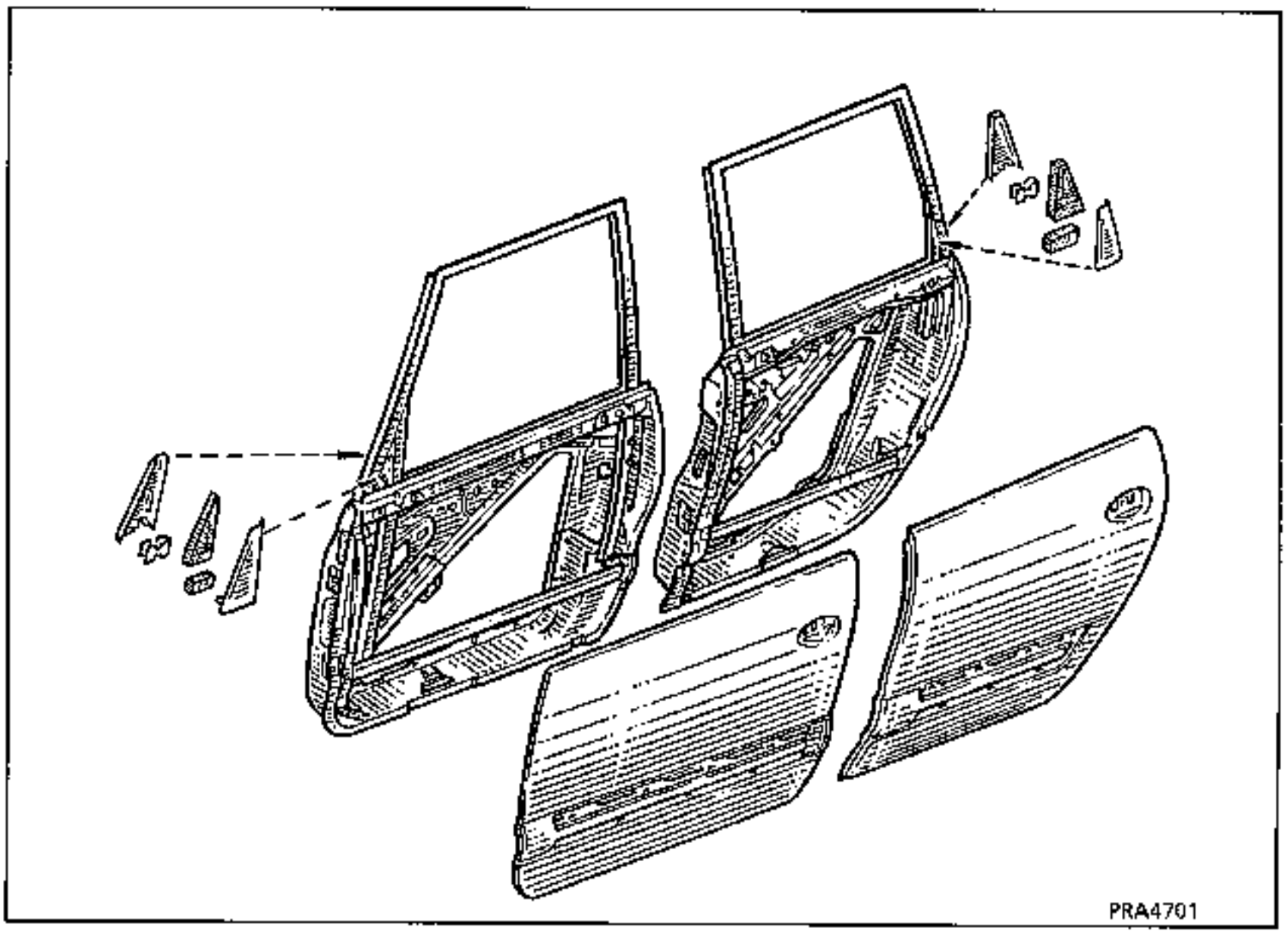
Apply adhesive beads of diameter 10-12 mm to the structure, following the old beads.

Fit the roof to the vehicle, positioning it in relation to the references made using adhesive tape, within 10 minutes of applying the adhesive.

Strap the assembly, adjusting the central position in relation to the tailgate and windscreen.

IMPORTANT : check the roof is sealed before fitting the trim.





REPAIR

Door panels are made of SMC (pre-impregnated resin).

Only cracks, holes and small breaks less than 50 mm may be repaired using the plastic repair operations described in section 40.

Prepare and apply the paint finish following the operations in M.R. Peinture 601, section Espace.

REPLACEMENT

This operation is carried out without removing the door frame.

Tooling required

- Sharp spatula
- Adhesive extrusion gun
- Set of centring locks and plates for bodywork panels **Car. 1219-01**
- Joint clamp

Product required

1 bonding kit, Part Number 60 25 170 306.

REMOVAL

Inner door trim (section 72)

Remove
- the switch mounting (Torx 20),
- the 3 bolts at the bottom of the storage tray,
- the bolt hidden under the speaker grille,
- the air inlet bolt,
- the body protection strip,
- the triangular window trim.

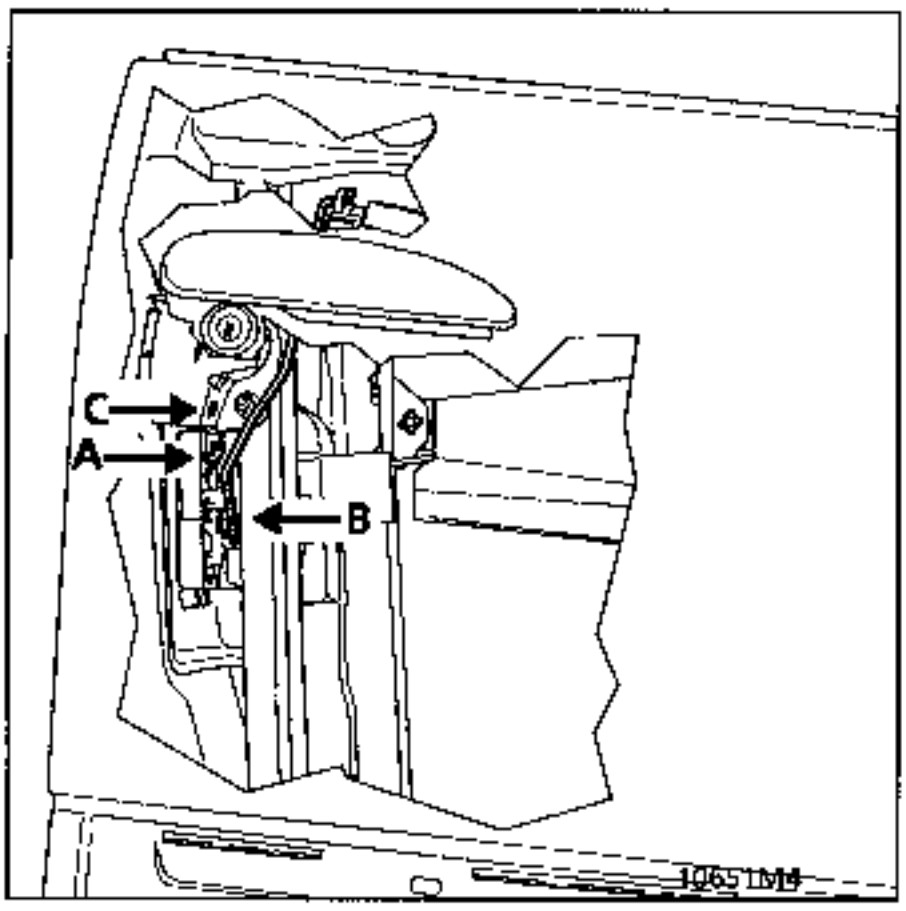
Release the trim upwards.

Release the opening linkage for the interior control handle.

Remove the vinyl.

Panel

Protect the rear part of the front wing with adhesive tape.

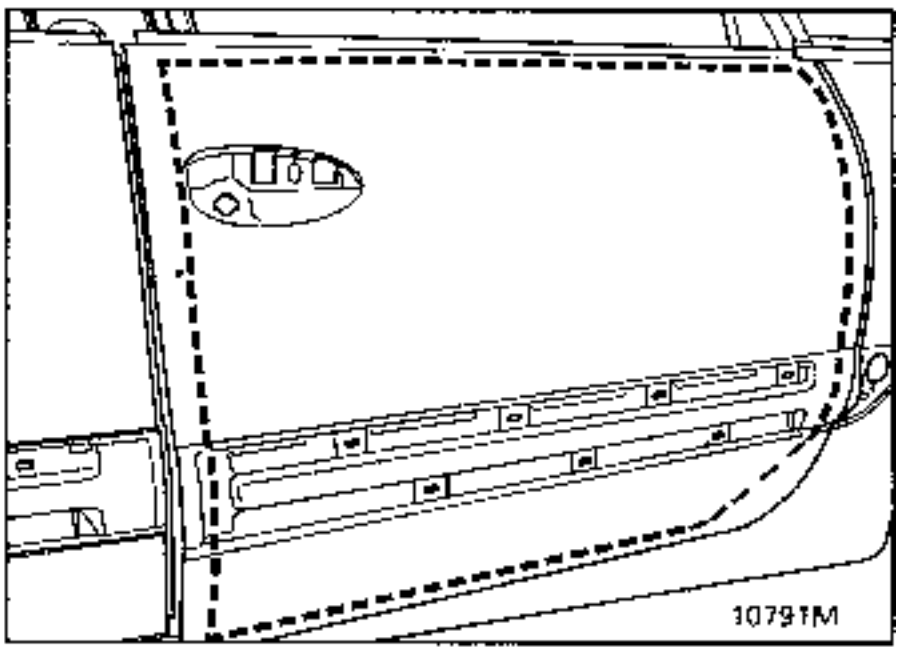


Disconnect:
- the barrel linkage (A)
- the handle control linkage (B).

Remove the mounting bolt (C) for the lock barrel retaining fork.

Release the triangular trim from the corner of the window.

Remove the door opening handle, the lock barrel and the exterior weatherstrip.



Using a vibrating cutting tool, cut out the inside of the panel following the dotted line in the diagram above.

Remove the panel.

Use a spatula to cut out the remaining pieces.

Grind off the adhesive remaining on the metal structure, leaving a layer to allow the new bead to adhere.

Straighten up the bonding zones on the door frame.

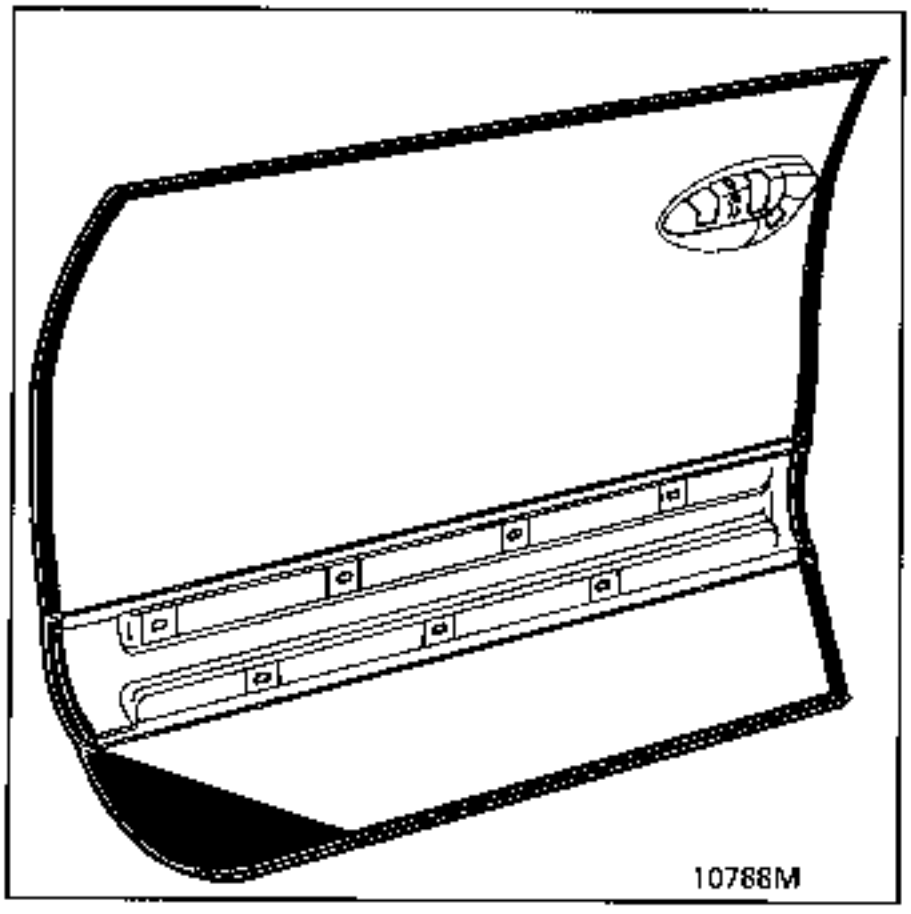
Fit the new panel to check that there is not an excess of adhesive.

FITTING

Preparation of components

Door frame:
- degrease the bonding zone,
- apply metal primer to the complete area,
- leave to dry for approximately 10 minutes.

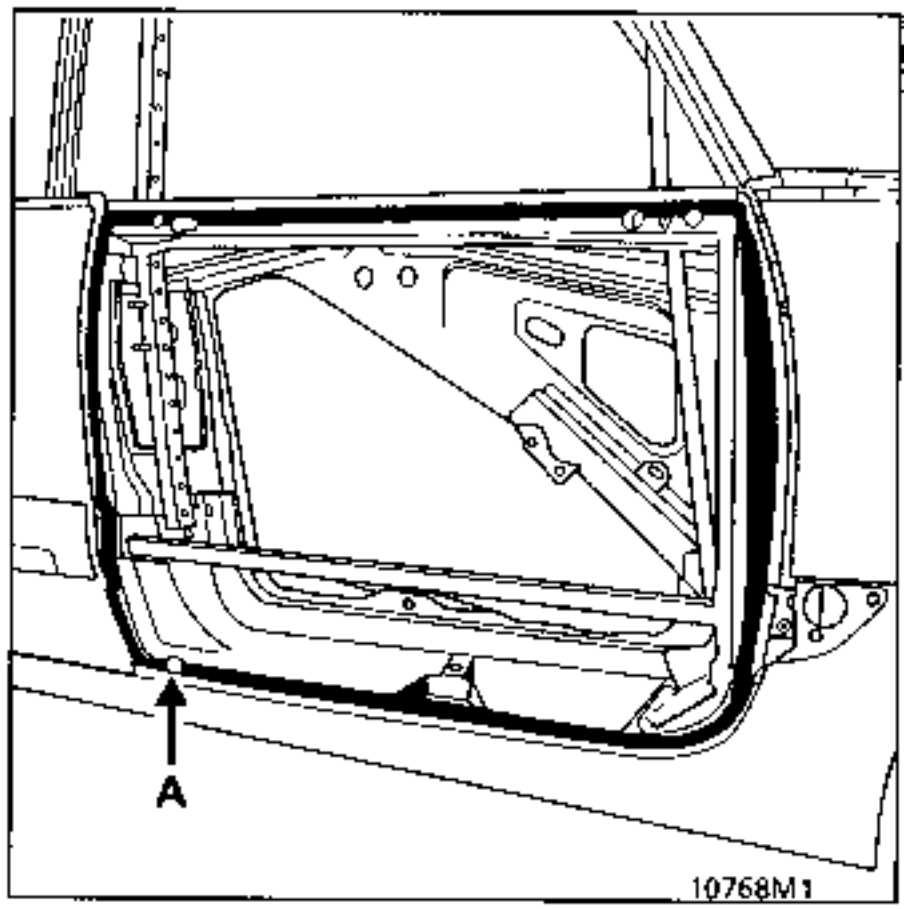
Door panel:
- roughen the bonding zone over a 50 mm wide area,
- remove all dust,
- degrease,
- coat with primer



Bonding the door panel

Bonding should be carried out using an approved adhesive - see section 40.

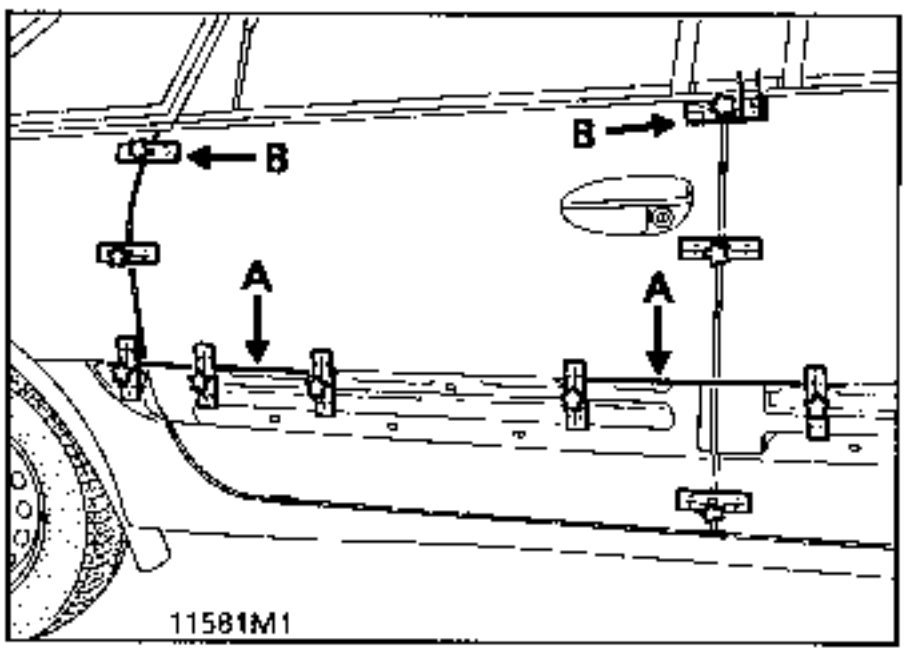
Refer to the technical instructions from the adhesive manufacturer.



Using an adhesive gun suited to the type of adhesive used, apply an 8 mm diameter bead, with a small break opposite the lower water drain channel (A).

Positioning the door panel

Lock the other door to prevent it opening accidentally and damaging the panels which have been secured by the tools.



Fit the panel to the structure, without pressing it.

Lock the two 6 mm diameter rods to the neighbouring components (A) to adjust the panel's height, clearance and play with respect to these components.

Lock the plates at (B) to the neighbouring components to adjust the panel's clearance and play with respect to these components.

Remove the tools after 1 hour 30 minutes polymerisation.

Finish off with adhesive if necessary.

Refer to M.R. 601 for preparation and painting.

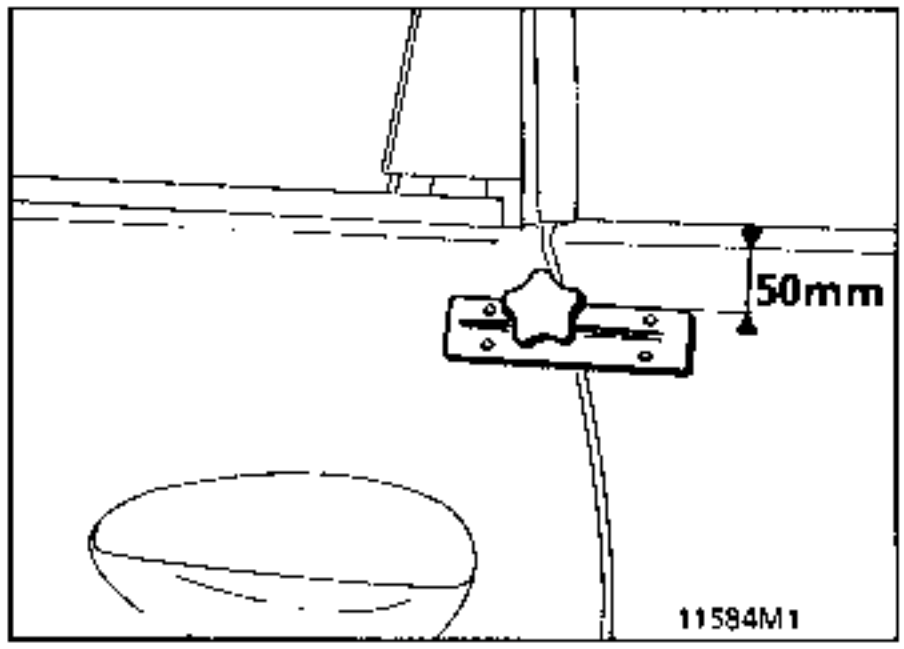
Refit the equipment.

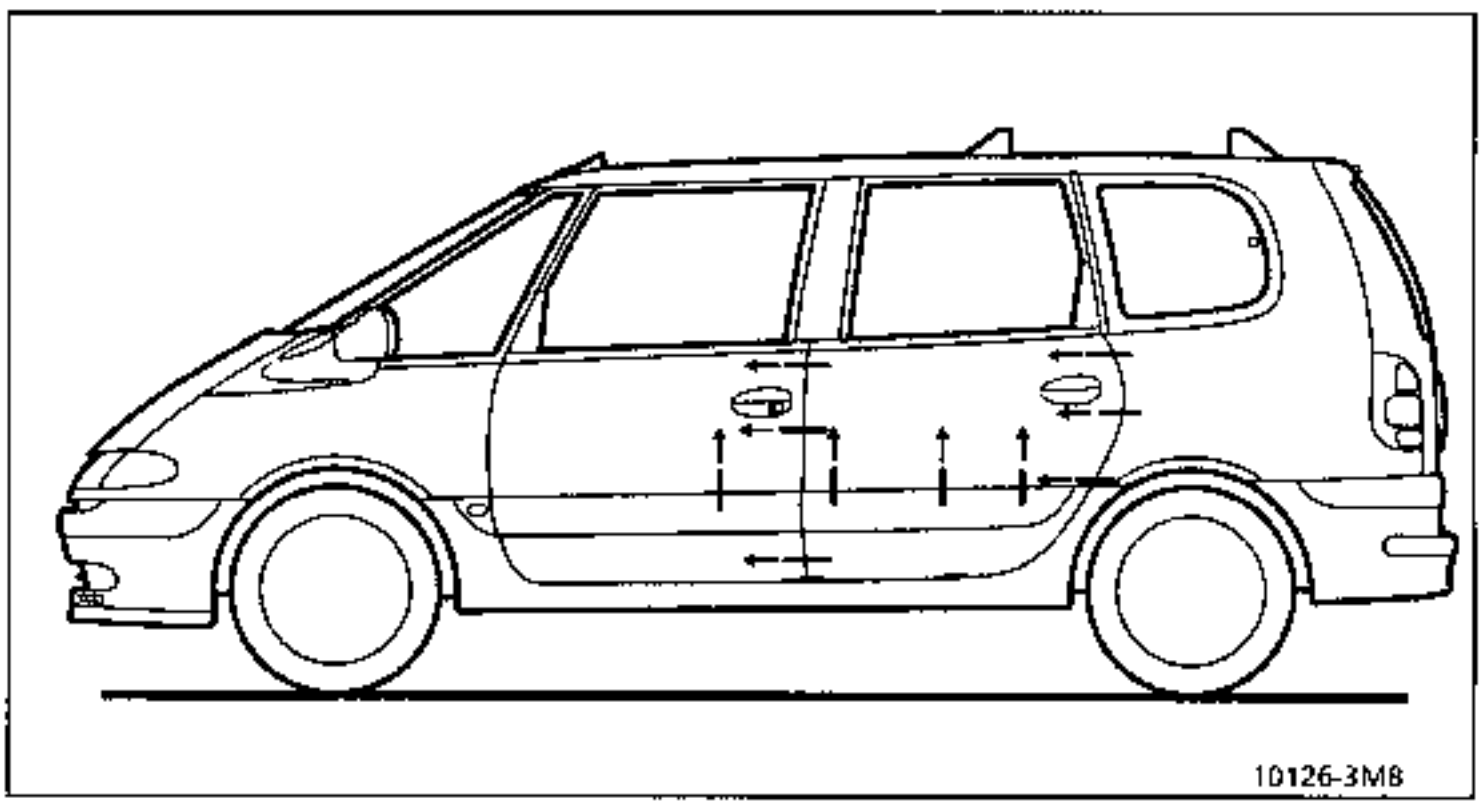
The excess adhesive which comes out of the bonding join should only be cut off before painting.

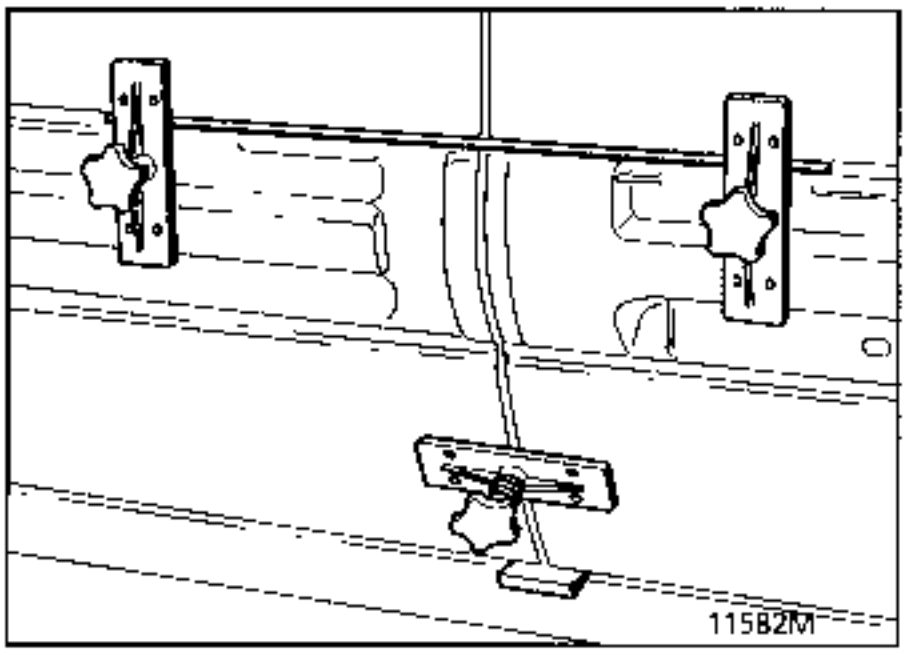
Refer to the technical instructions from the adhesive manufacturer.

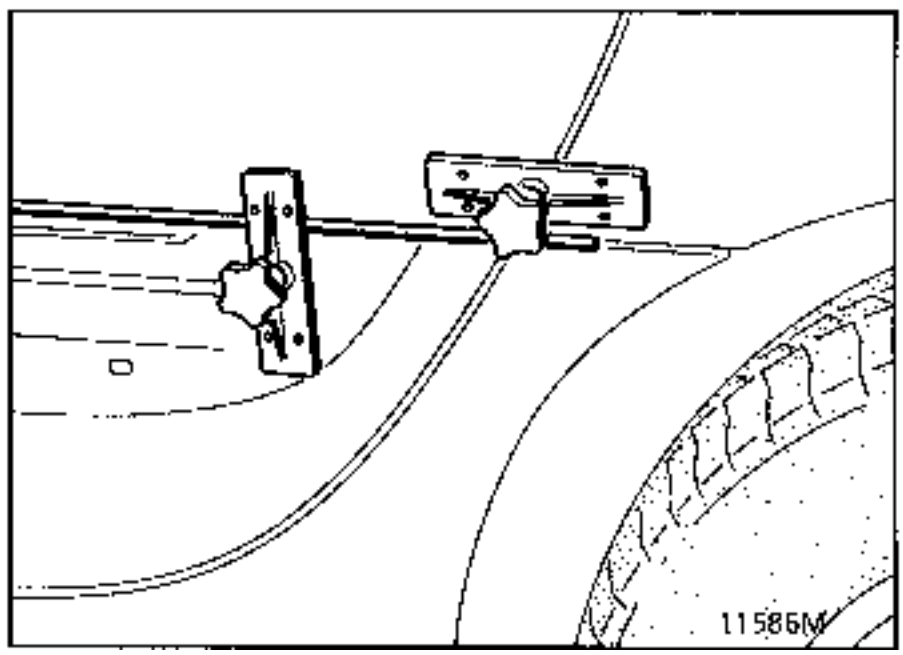
NOTE : when positioning a door panel or rear wing, the plates and locks should be secured to the rear door panel; the rear wing is too thick to attach them.

New rear door panel







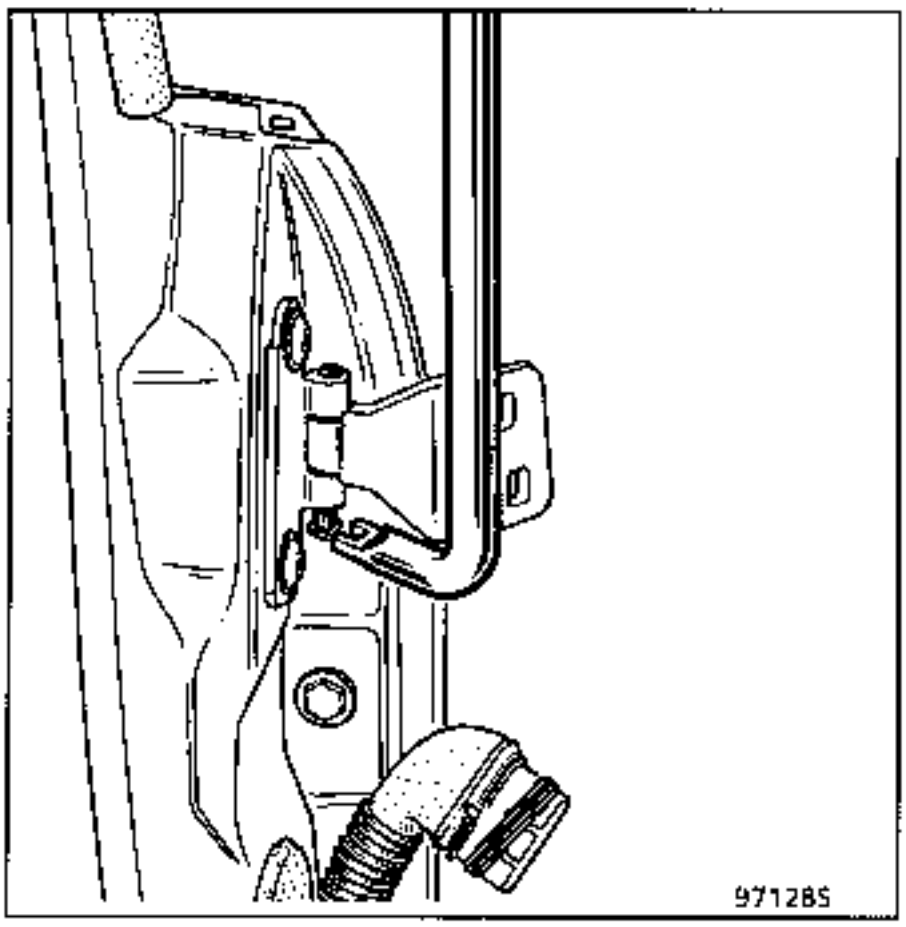


REMOVING THE FRONT DOOR

Tooling required
Tool for extracting door hinge pin
Car. 1055-02 Part Number : 00 00 105 502.

Disconnect the connectors.

Remove the mounting bolt for the door tie rod on the pillar.



Remove the safety clip.

Remove the roll pin from :
- the lower hinge using the hinge pin extraction tool,
- the upper hinge and remove the door.

FITTING THE FRONT DOOR

If the front door is being completely renewed, the metal structure and the SMC panel are supplied separately, so that the hinges may be fitted, adjusted and tightened on the front pillar.

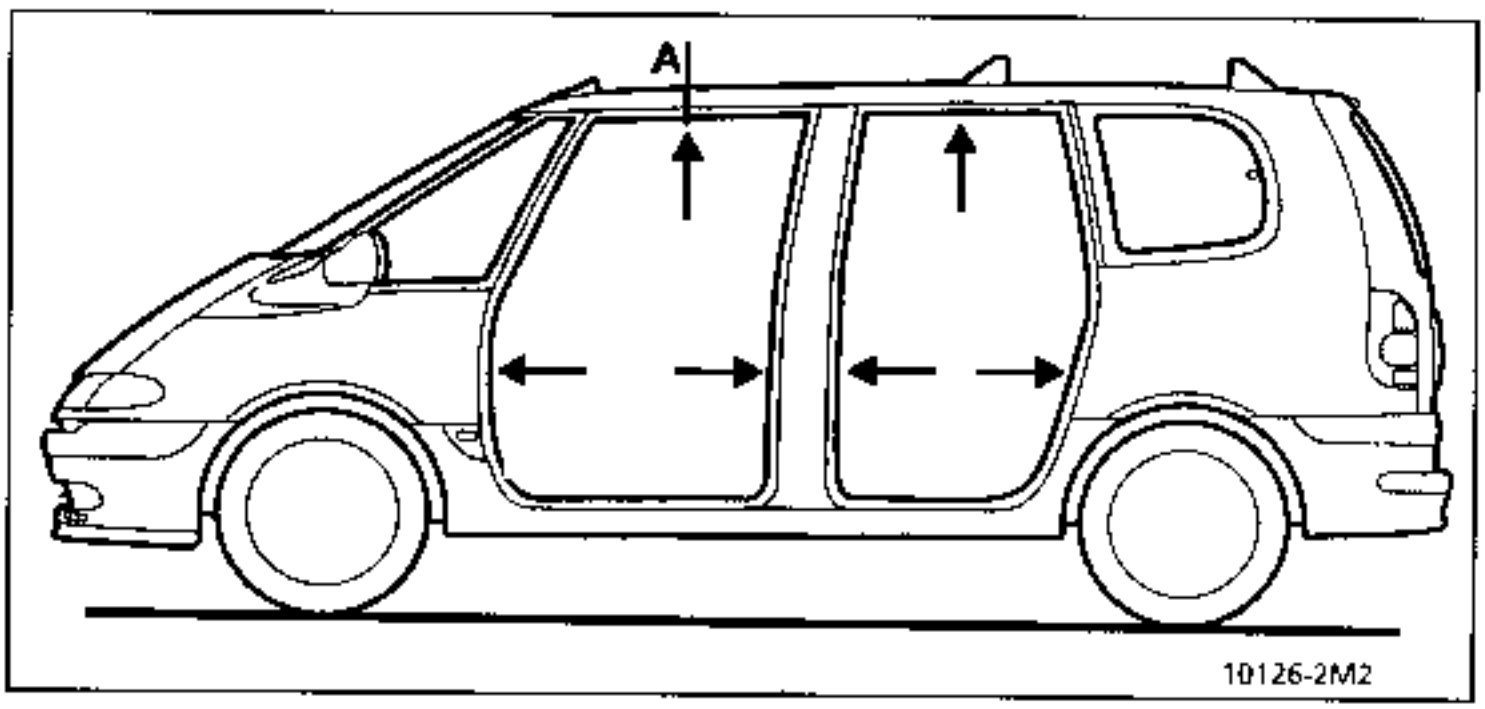
Preparing the door structure

Fit:
- the window runner felt,
- the window,
- the window winder mechanism,
- the lock,
- the door hinges.

ADJUSTING THE FRONT DOOR ASSEMBLY

Fit the assembly to the vehicle without the seal.

Close the door (lock engaged at second notch).



Adjust the gap between the door assembly and the switch as shown in the diagram above, using 15 mm shims and adjusting the door hinge bolts.

Tighten the hinge bolts, but do not lock them.

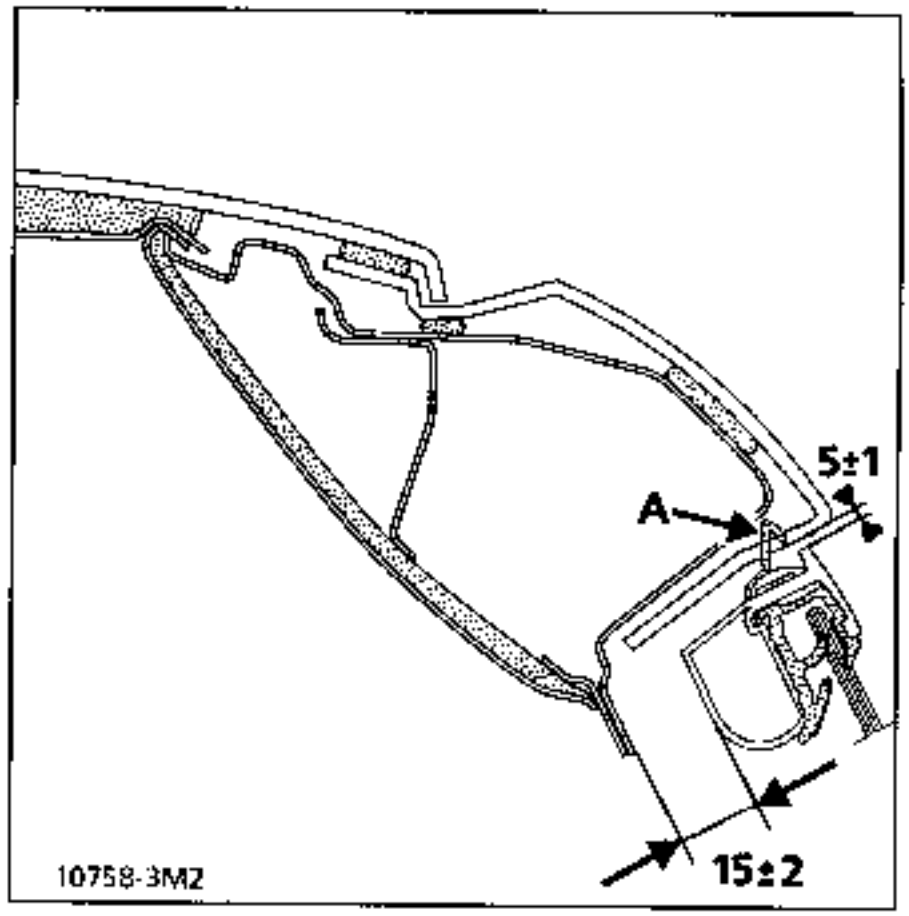
Fit the seal and adjust the assembly with relation to the body top panel and the centre pillar trim. Ensure a uniform flush fitting (5 mm) around the whole window frame surround by moving the hinges and the latch, so that when the primary seal (A) is fitted, the seal is perfect.

Once the adjustment has been made, fully tighten the hinge bolts to 3 daN.m.

Fit the door tie rod into the assembly and tighten it on the front pillar.

Check the locking system operates correctly.

Bond the panel to the assembly following the operations described on page 47-3.



REMOVING THE REAR DOOR

Disconnect the wiring.

Remove:
- the mounting bolt for the door tie rod on the centre pillar,
- the safety clip.

Remove the roll pin from :
- the lower hinge using the hinge pin extraction tool,
- the upper hinge and remove the door.

REPLACING THE REAR DOOR AND ADJUSTMENT

The new door is supplied with panel and metal frame separate.

Follow the operations for refitting the front door to refit the rear door.

NOTE : the door must be removed from its hinges to paint the inside.

REMOVAL WITHOUT REPLACEMENT OF THE HINGES

Open the bonnet and position the stay.

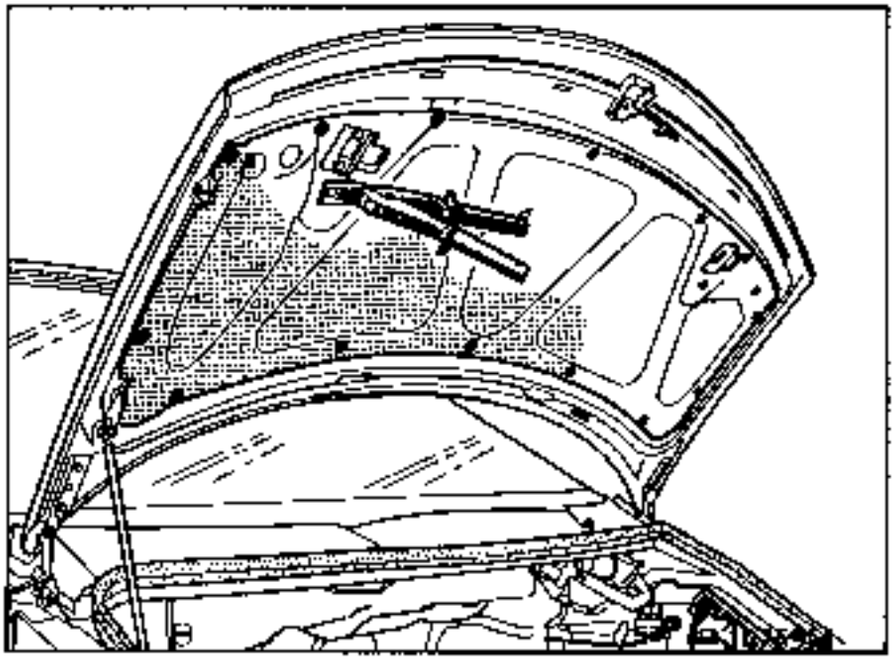
Protect the wings and the rear view mirrors.

Remove the 4 bolts mounting the bonnet to the hinges.

Remove the trim:
- safety clip,
- bonnet latches,
- bonnet soundproofing.

FITTING

Preparation and painting (see M.R. Peinture 601, section Espace).



Fit the new bonnet with the accessories.

Fit the latches.

Check the adjustment.

REMOVAL WITH REPLACEMENT OF THE HINGES

Remove the bonnet.

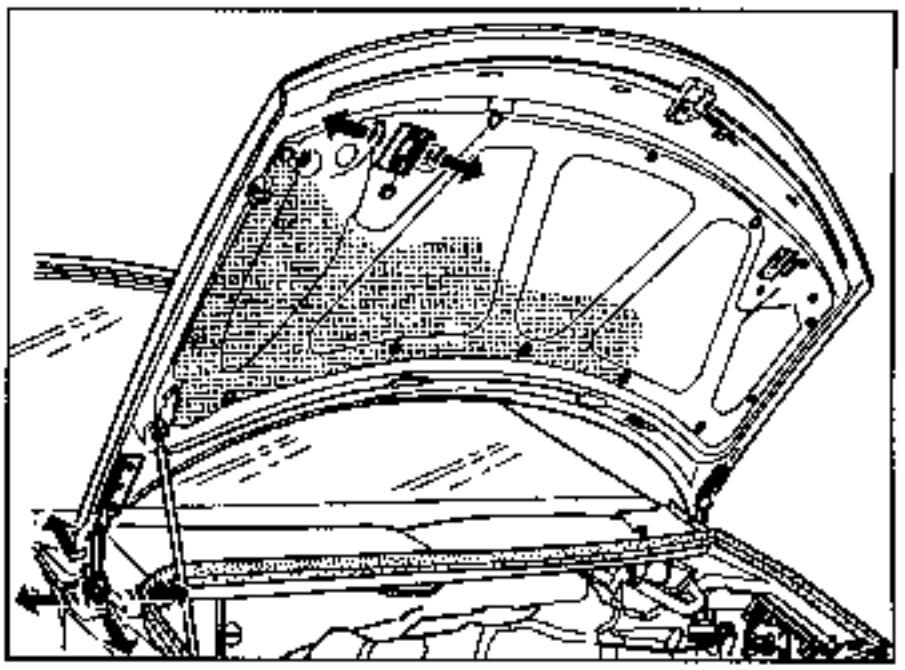
Slacken :
– the two Torx bolts.
– the hexagonal bolt, part way.

Pivot the rear view mirror to gain access to the hinge mounting bolts.

Remove the hinges.

Refitting is the reverse of removal.

ADJUSTMENTS



1) Adjust the depth and the lateral centring by sliding the hinge mountings on the body and the latches on the bonnet, so that the bonnet line continues that of the wings.

2) Adjust the height by moving the 4 side mounting bolts on the hinges to ensure that the wing is higher than the bonnet.

Pretighten the bolts.

Refit the rear view mirror.

Close the bonnet and check it.

One the adjustment is complete, open the bonnet and tighten the bolts to a torque of **7.4 daN.m.**

REMOVAL - REFITTING

Remove:
- the wiper,
- the trim (section 73),
- the vinyl,
- the wiper mechanism.

Disconnect the left and right hand connectors.

Remove the washer pipe.

Disconnect the connectors for the 3rd stop light.

Disconnect the heated rear screen.

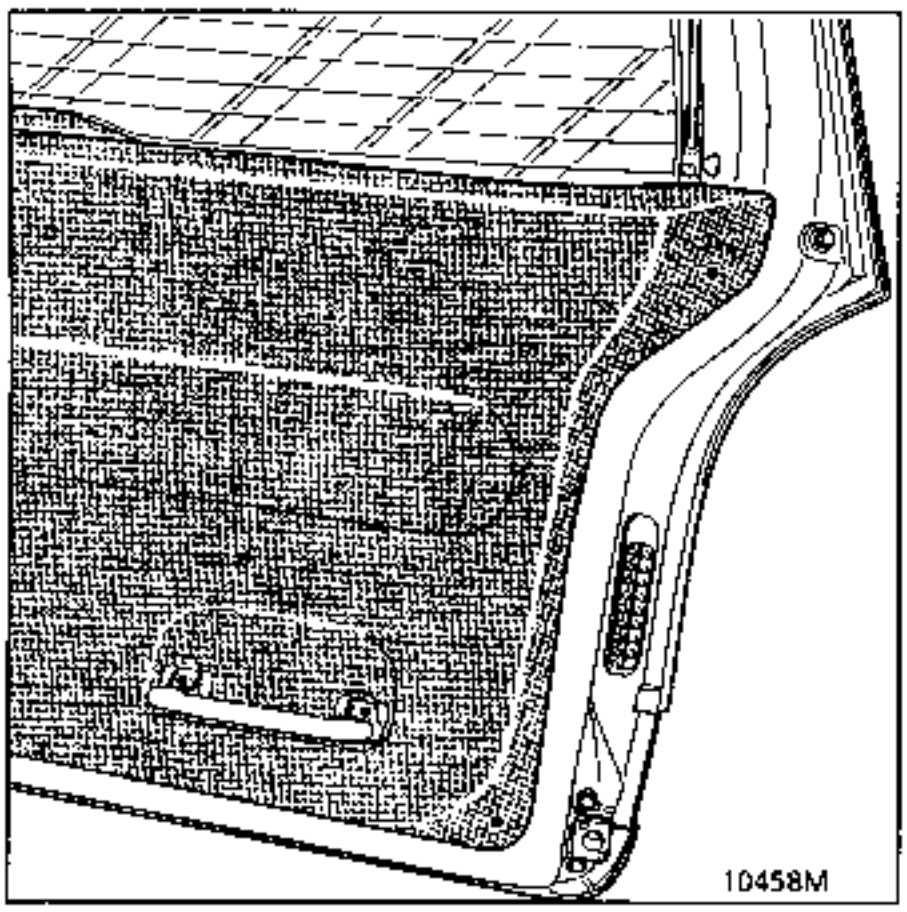
Attach two rethreading wires.
- 60 mm to the end of the heated screen wires
- 200 mm at the end of the main wiring loom (with the washer pipe).

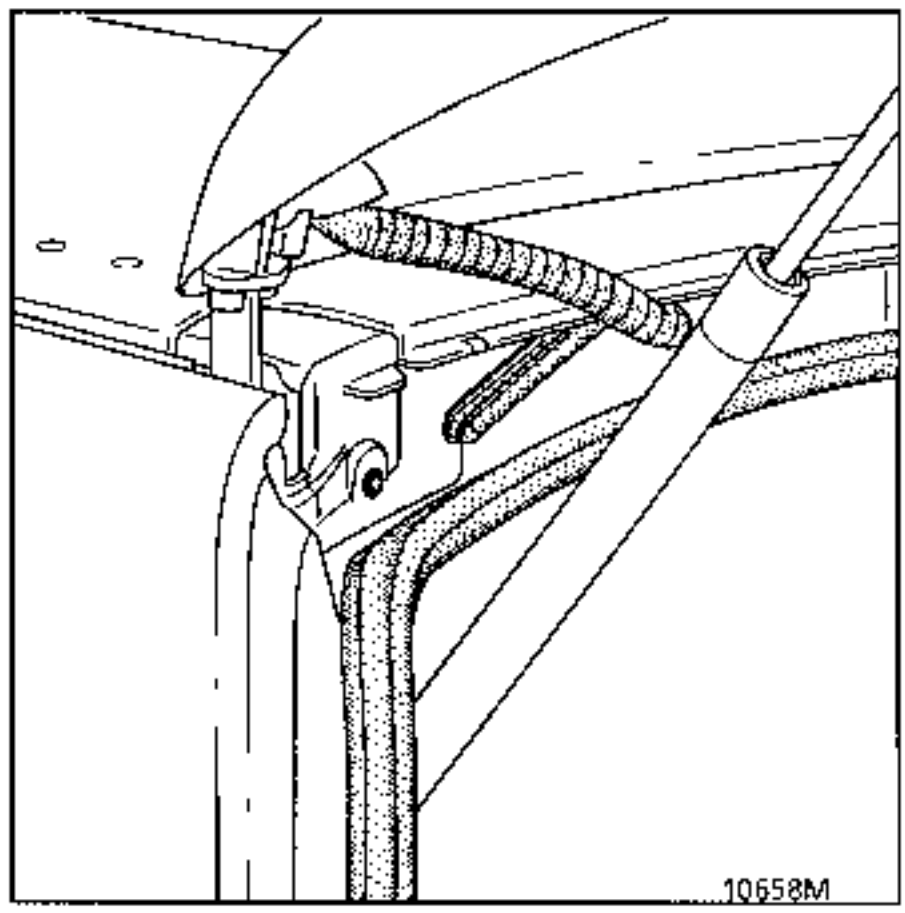
Release the two rubber connecting sleeves between the tailgate and the vehicle.

Pull the wiring through, leaving the rethreading wires in the tailgate.

NOTE : the rethreading wires will be used for refitting.

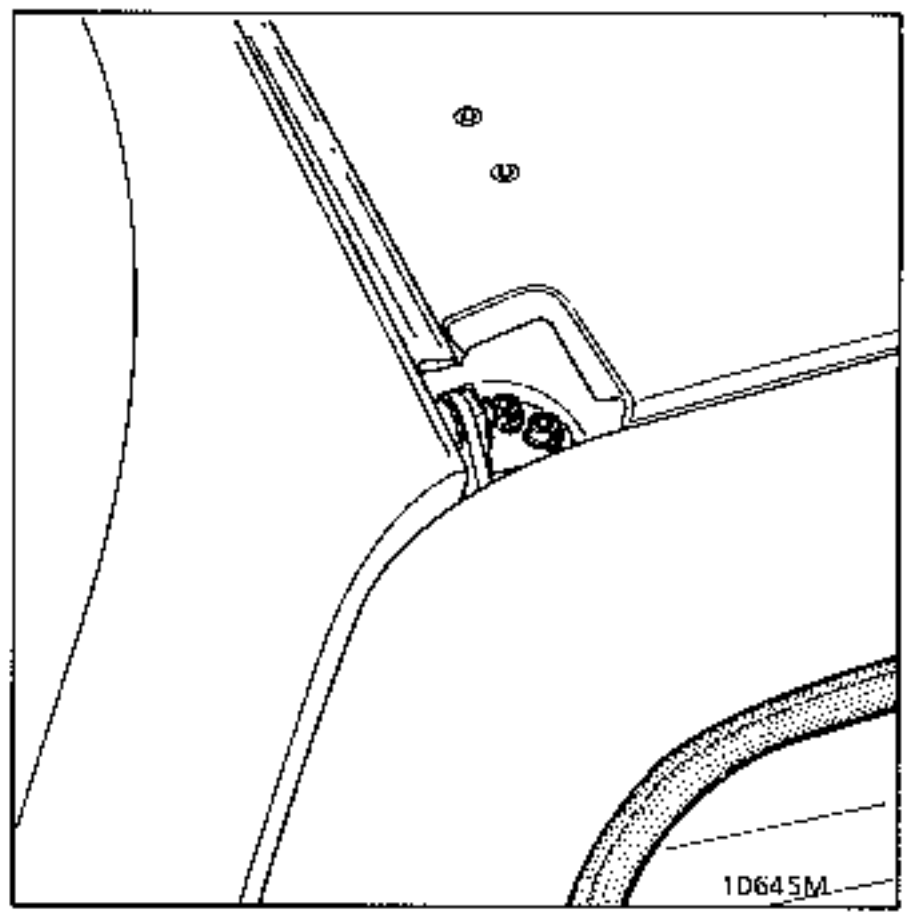
Remove the primary seal fitted to the roof.





Pull off the trim pieces clipped at the rear.

Release and remove the hydraulic struts.

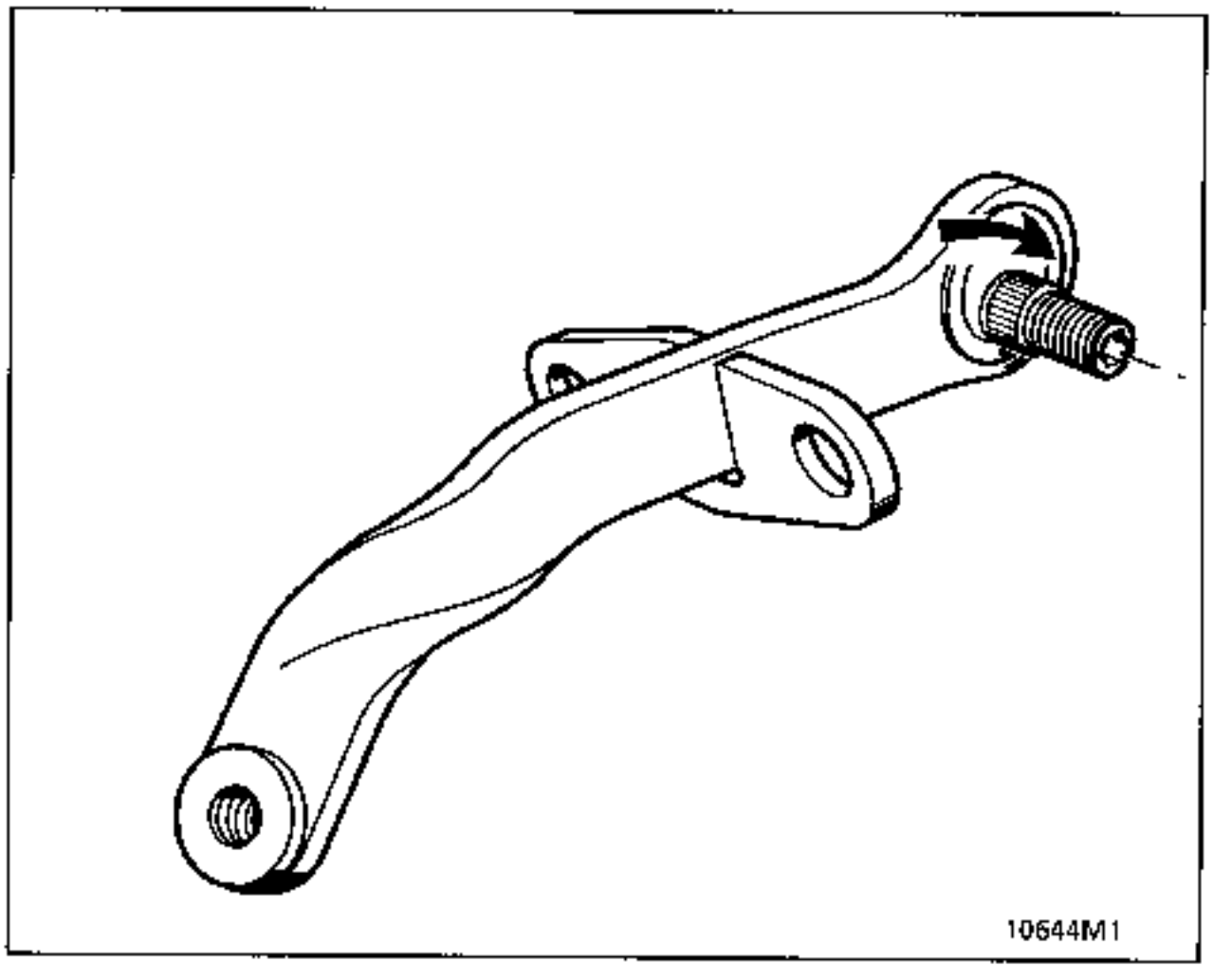


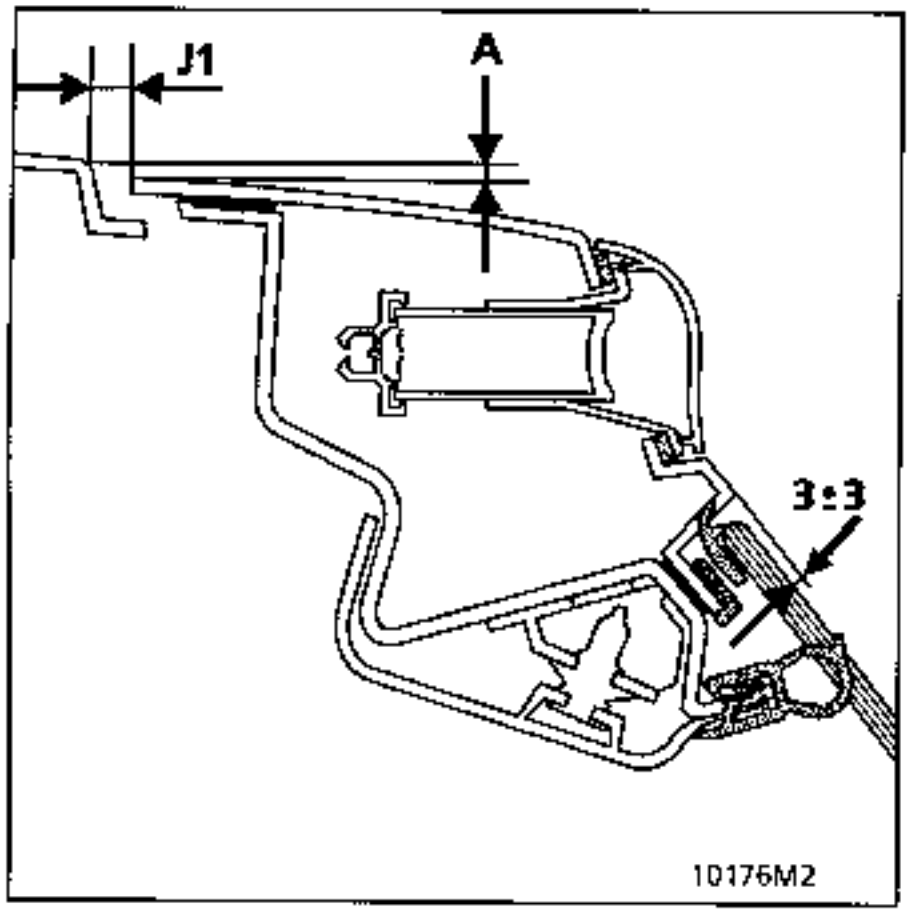
Close the tailgate.

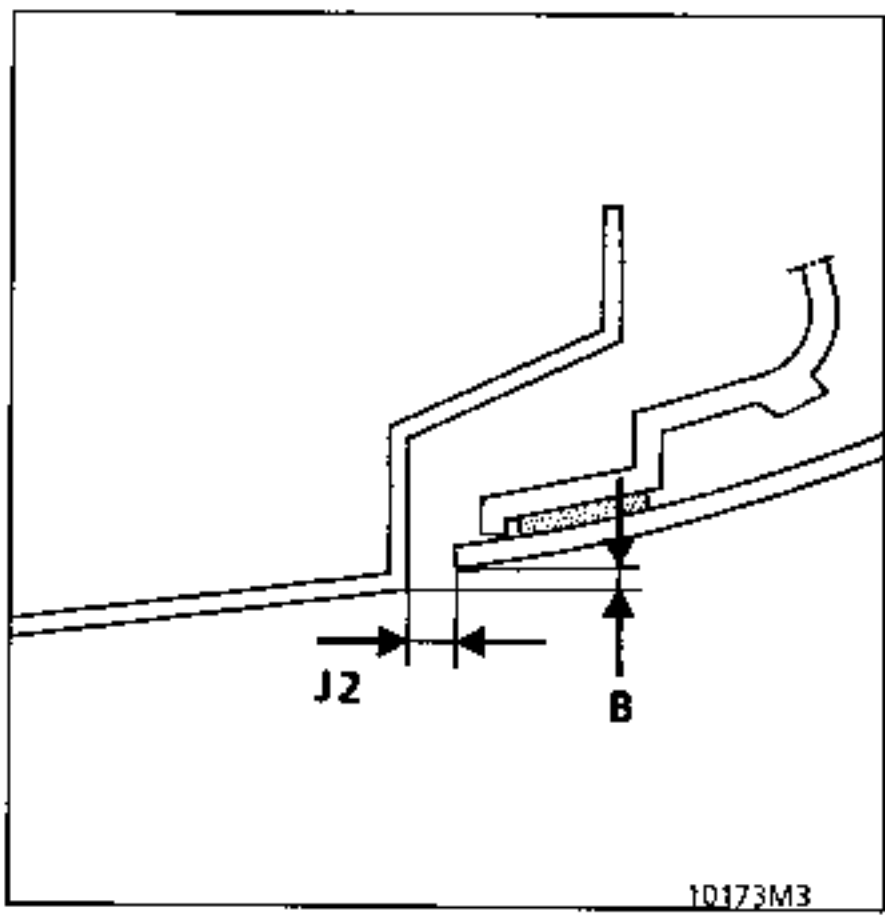
Remove the two mounting bolts for each hinge.

Open the lock and remove the tailgate,using two persons.

FITTING - ADJUSTMENT





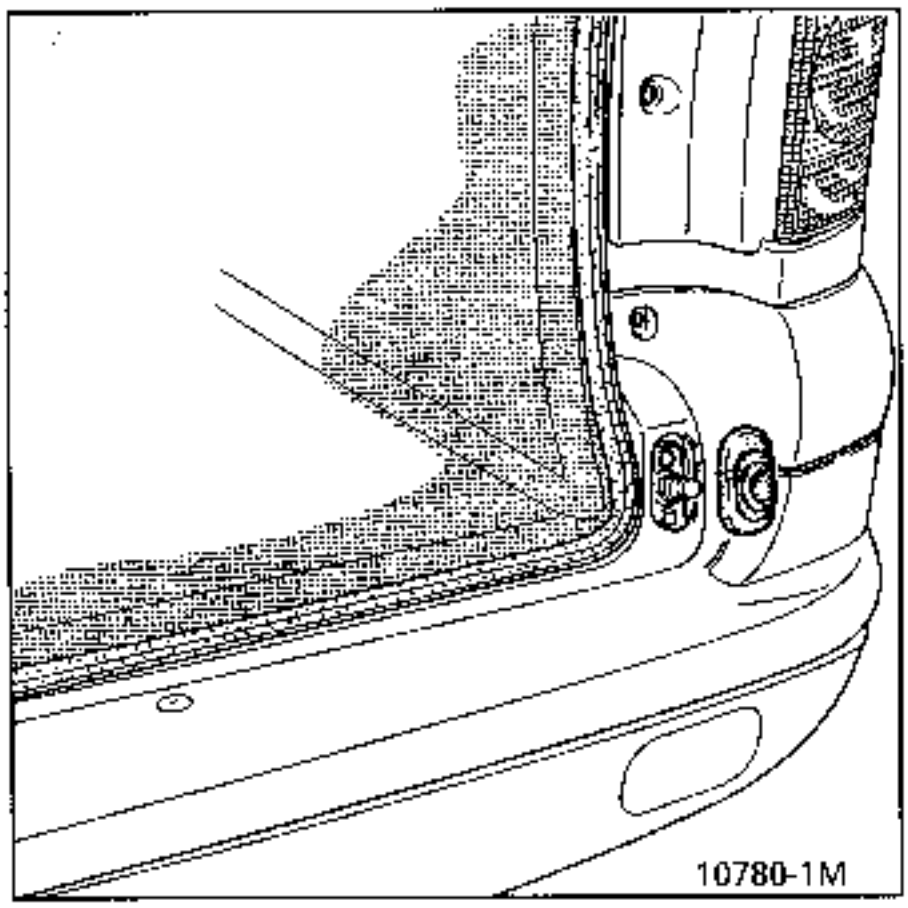


Pre-adjust the offset between the tailgate and the roof (A = 1.2 to 4 mm)

Adjust the flush fitting between the roof and the tailgate (J1 = 7 to 8 mm)

Adjust the lateral protrusion for both wings at the same time (B = 2.4 to 3 mm)

To carry out these adjustments, move the eccentric adjuster and the hinge brackets.

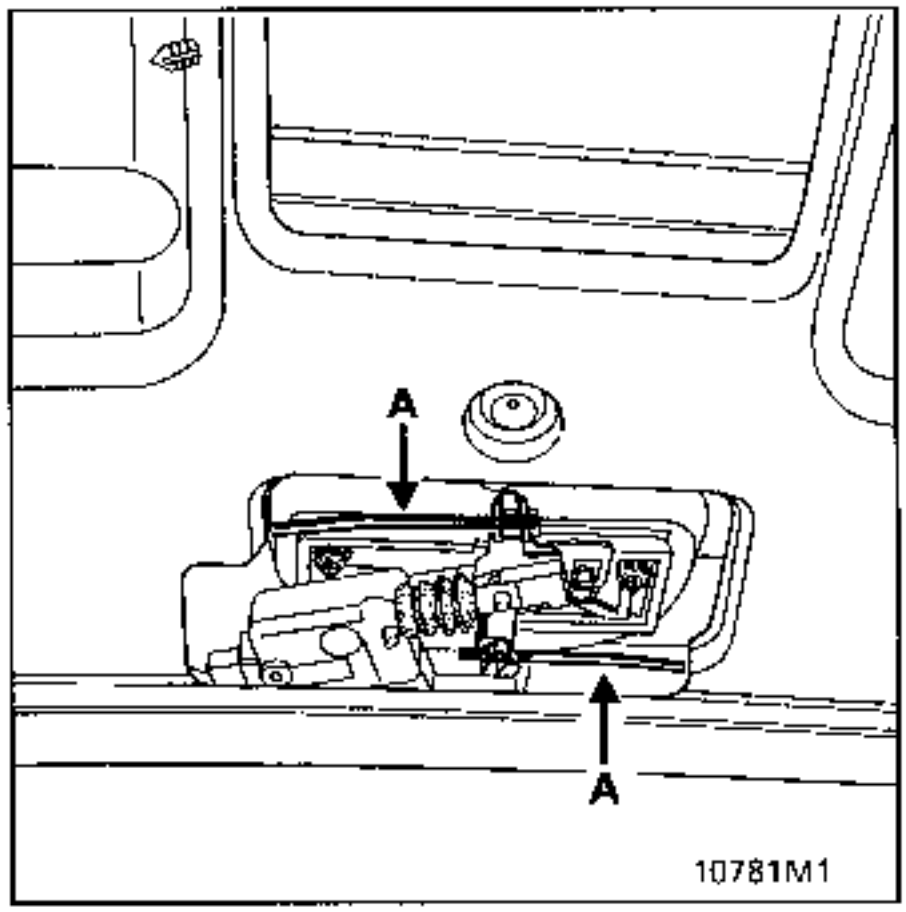


Adjust the flush fitting between the wings and the tailgate (J2 − 5 ± 1 mm) by tightening or slackening the locking pins.

A lock nut secures the pins when the adjustment has been made.

ADJUSTING THE LOCKS

Opening synchronisation and the handle travel are ensured by the linkages, which are simply clipped at (A).



REFITTING : is the reverse of removal.