

## BODY - SHEET METAL PANELS

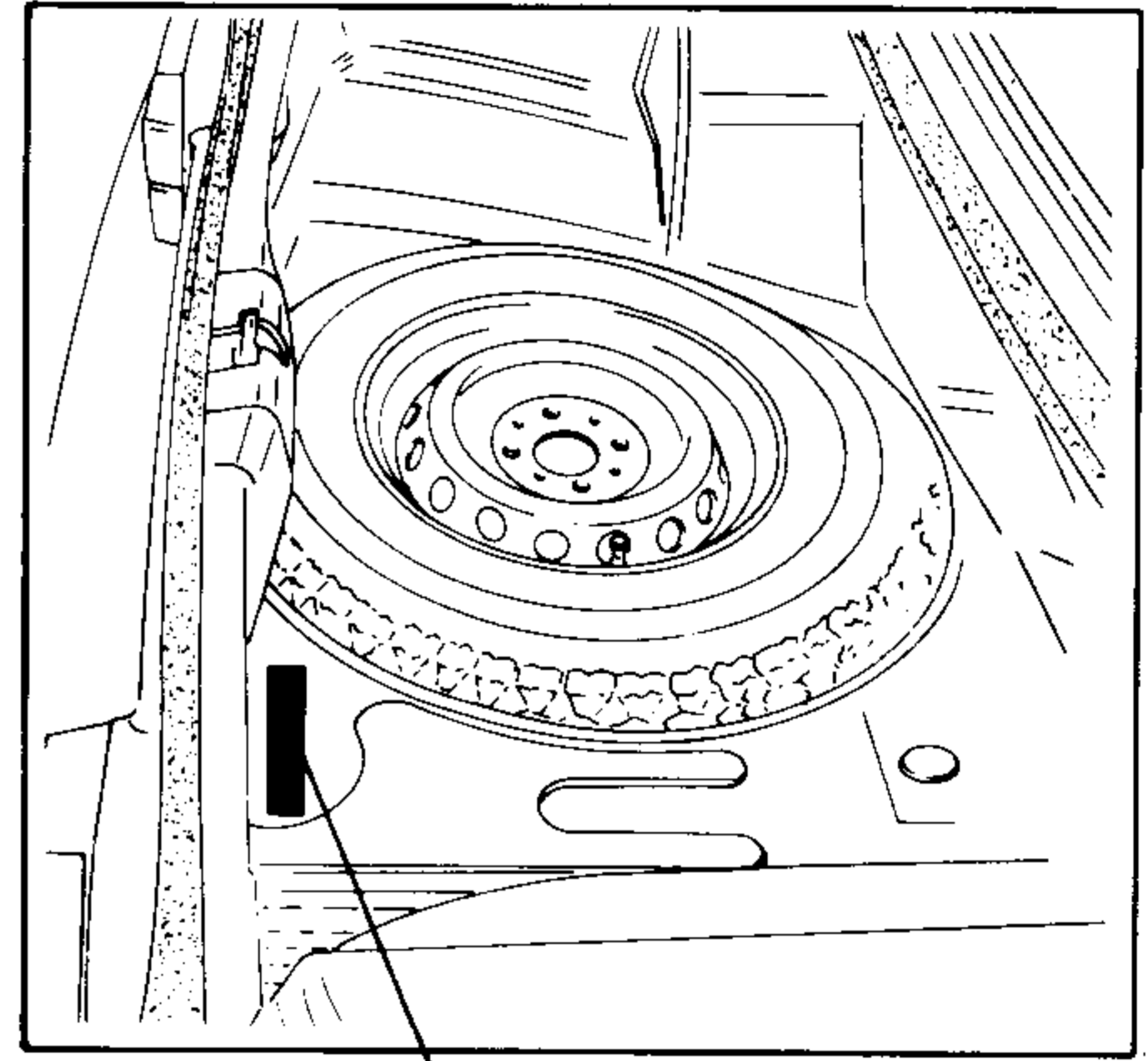
# GROUP 49

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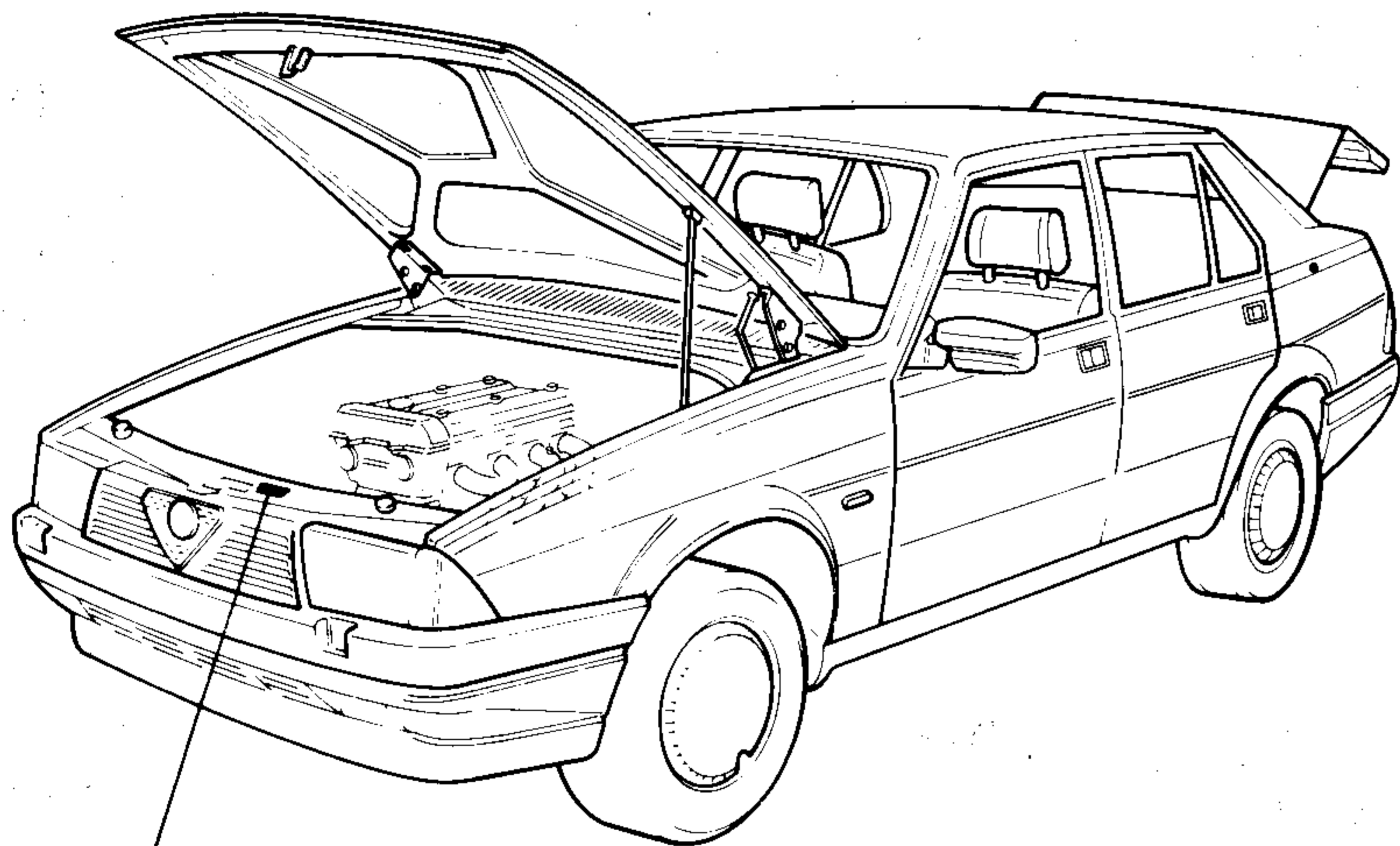
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# GENERAL INFORMATION

## IDENTIFICATION DATA



Luggage compartment  
floor label (Chassis  
type approval number  
and serial number)



Identification label  
(Identification number  
and Type approval  
number)

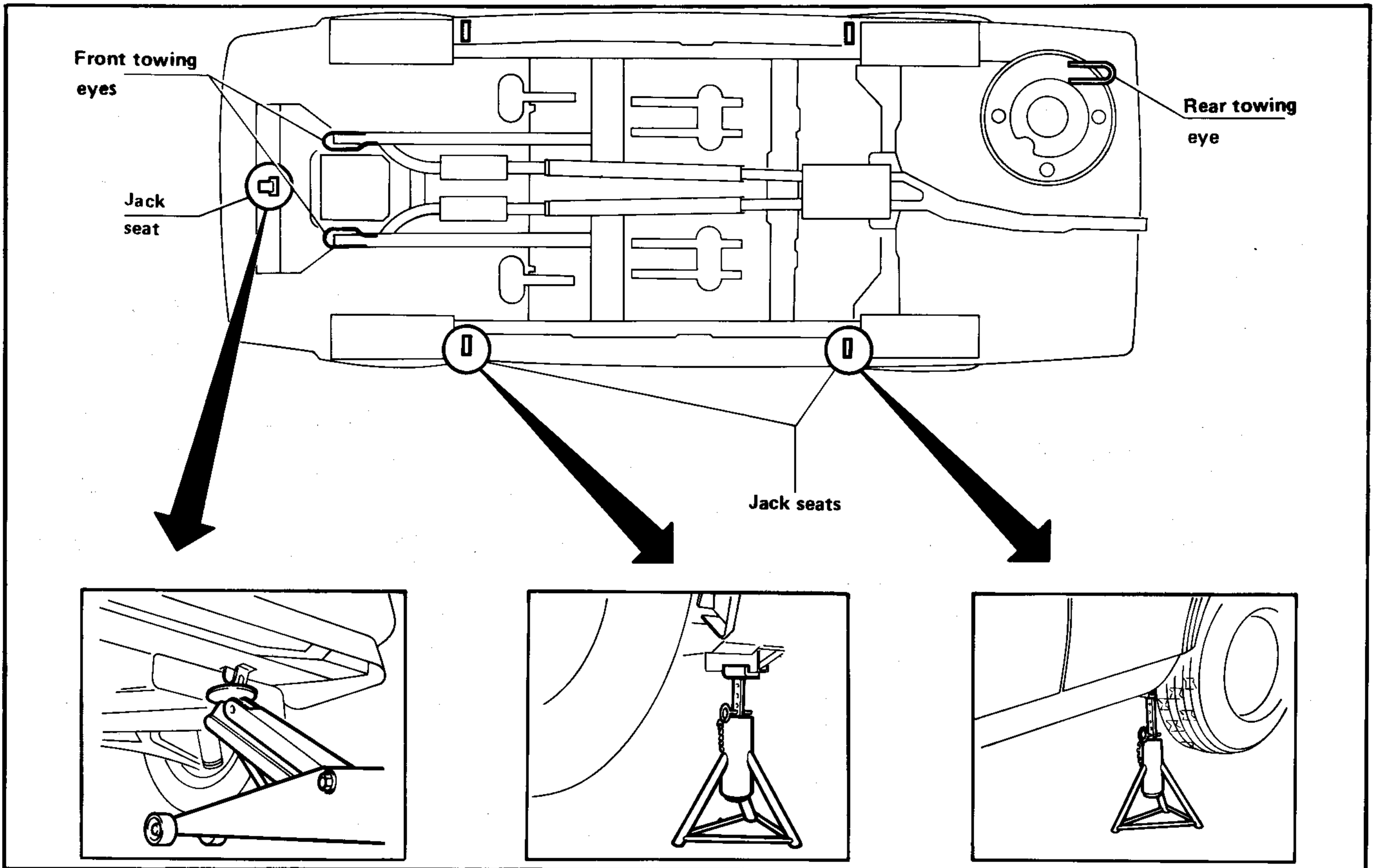
### Identification and certification label

Refer to Group 00 - Service and Identification Data.

### Chassis No. (according to CEE/ISO standard specifications)

Refer to Group 00 - Service and Identification Data.

**LIFTING POINTS**



**Jack and safety stands**

**WARNING:**

- a. After lifting the car by means of hydraulic jack, provide to support car weight by means of safety stands.
- b. Before lifting car rear (front) side place wheel chocks by positioning them at front (rear) wheels.

Securely position hydraulic jack and safety stands in the points identified in figure.

**Axes and suspensions**

**WHEEL ALIGNMENT**

**CAUTION:**

The technicians assigned to the repair and replacement operations of sheet panels, shall always take into account, content of the remaining part of the "Workshop Manual" in order always to maintain original quality and functioning conditions of car as a whole. As restoration of car correct alignment is of particular importance, in the following part are provided the data relevant to geometry of both front and rear suspensions.

For any further information, refer to the specific Groups.

Inspection data	Variations	Alfa 75		75		
		1.6 1.8 2.0 (turbodiesel)	2.0 6V iniezione	1.6 1.8 TURBO D	2.0 6V 2.5 6V 3.0	
Toe-out (E-D) mm(in)		1 ± 1 (0.039 ± 0.039)		2 ± 1 (0.078 ± 0.039)		
Toe-out angle	$\alpha$	9'				
Toe-in angle	$\alpha$ (*)	0° ± 10'				
Wheel rim diameter	$\emptyset$ mm(in)	340 (13.3)	365 (14.4) 390 (**)(15.4)	340 (13.3)	365 (14.4)	
Camber angle	$\beta$	- 30' ± 30'				
Camber angle	$\beta$ (*)	0° ± 30'				
Caster angle	$\gamma$	3° 30' ± 30'		3° 30' ± 30'		4° 30' ± 30'
Max. steering lock	$\delta$	30°				

(\*) For rear wheels only

(\*\*) Not present on 2.0 version

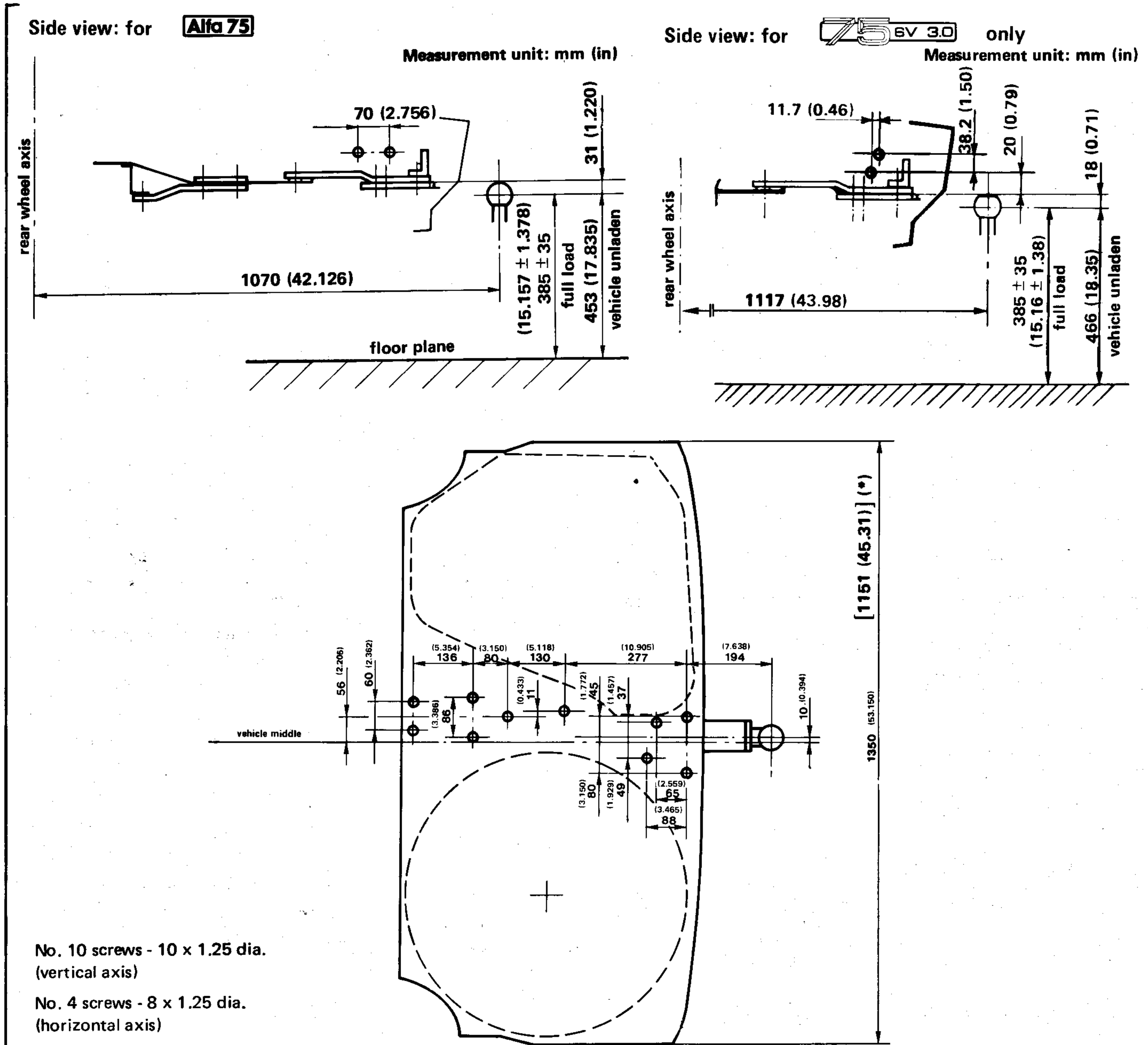
N.B. Wheel alignment refers to vehicle in nominal height (refer to Group 00)

# TOW HOOK INSTALLATION

## CONNECTION TO BODY

The diagram shows the tow hook connection points.

Positions of connection points must not be changed regardless of shape and dimension of tow hook.



No. 10 screws - 10 x 1.25 dia.  
 (vertical axis)  
 No. 4 screws - 8 x 1.25 dia.  
 (horizontal axis)

(\*) For ZS 6V 3.0 only

## MECHANICAL CONNECTION

As regards the mechanical connection, make use of a ball hitch "ISO 50" (table CUNA CN 138-30).

## MAXIMUM TOWING WEIGHT

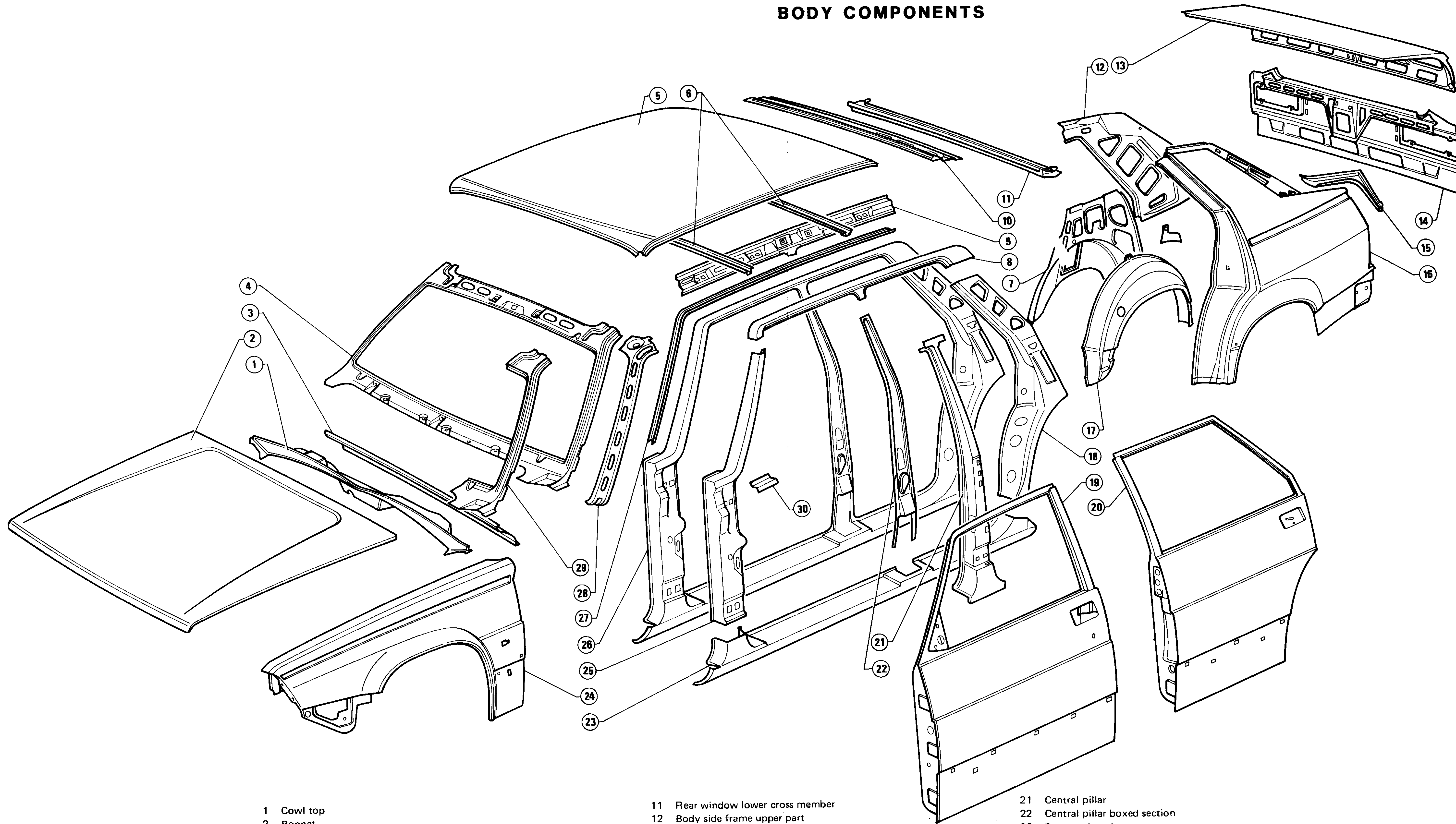
For the maximum towing weight, refer to Group 00 - General Views - Weights and Loads.

## ELECTRIC CONNECTION

Refer to Group 40 - Tow Hook.

# BODY COMPONENT PARTS

## BODY COMPONENTS

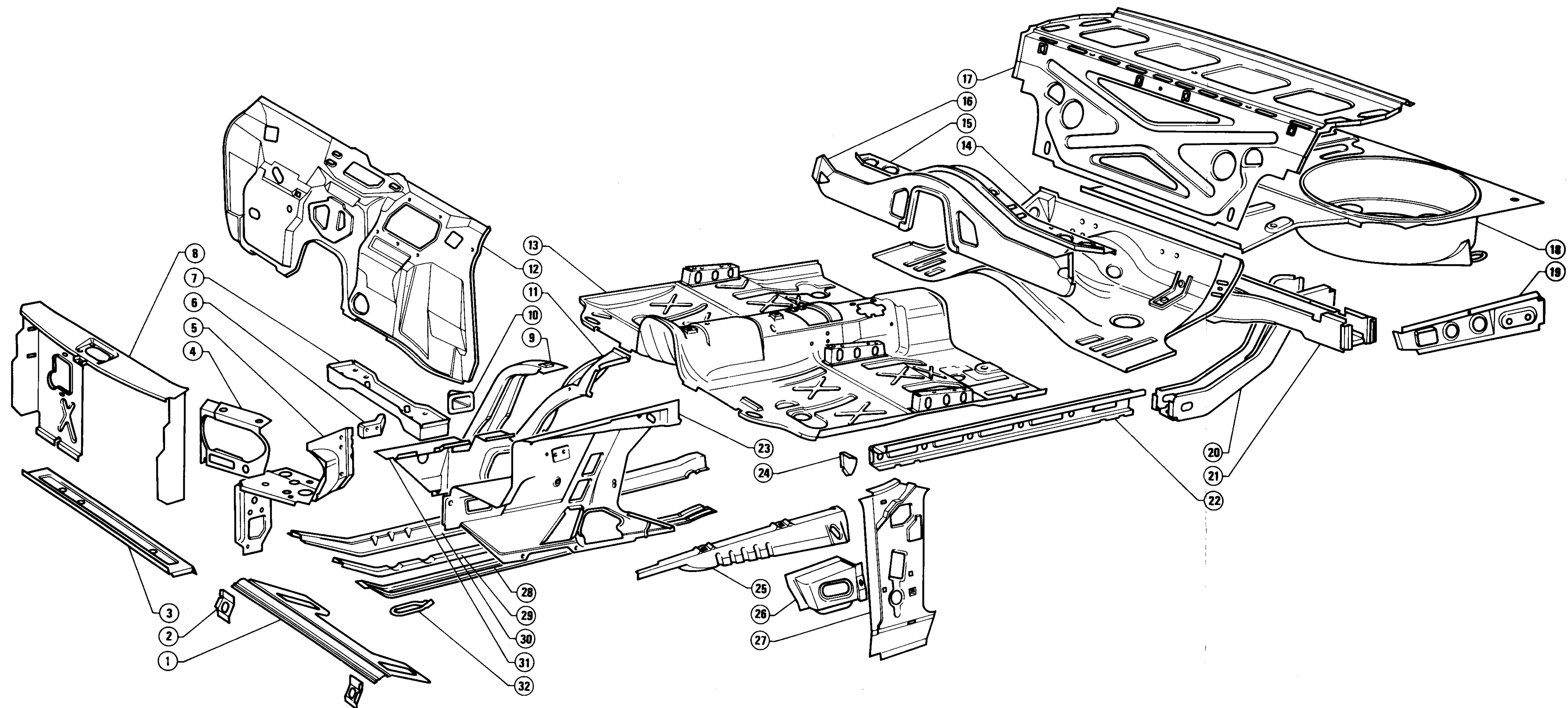


- 1 Cowl top
- 2 Bonnet
- 3 Windscreen lower cross member
- 4 Windscreen rim
- 5 Roof
- 6 Roof bows
- 7 Inner rear wheelarch
- 8 Body side upper cover
- 9 Upper beam frame
- 10 Rear window upper cross member

- 11 Rear window lower cross member
- 12 Body side frame upper part
- 13 Boot lid assembly
- 14 Back panel
- 15 Boot lid drip end
- 16 Rear fender
- 17 Outer rear wheelarch
- 18 Body side rear frame
- 19 Front door assembly
- 20 Rear door assembly

- 21 Central pillar
- 22 Central pillar boxed section
- 23 Door under-trim
- 24 Front fender
- 25 Front pillar
- 26 Body side
- 27 Drip
- 28 Front pillar frame
- 29 Windscreen rim frame
- 30 Connection sheet panel

UNDERBODY COMPONENTS



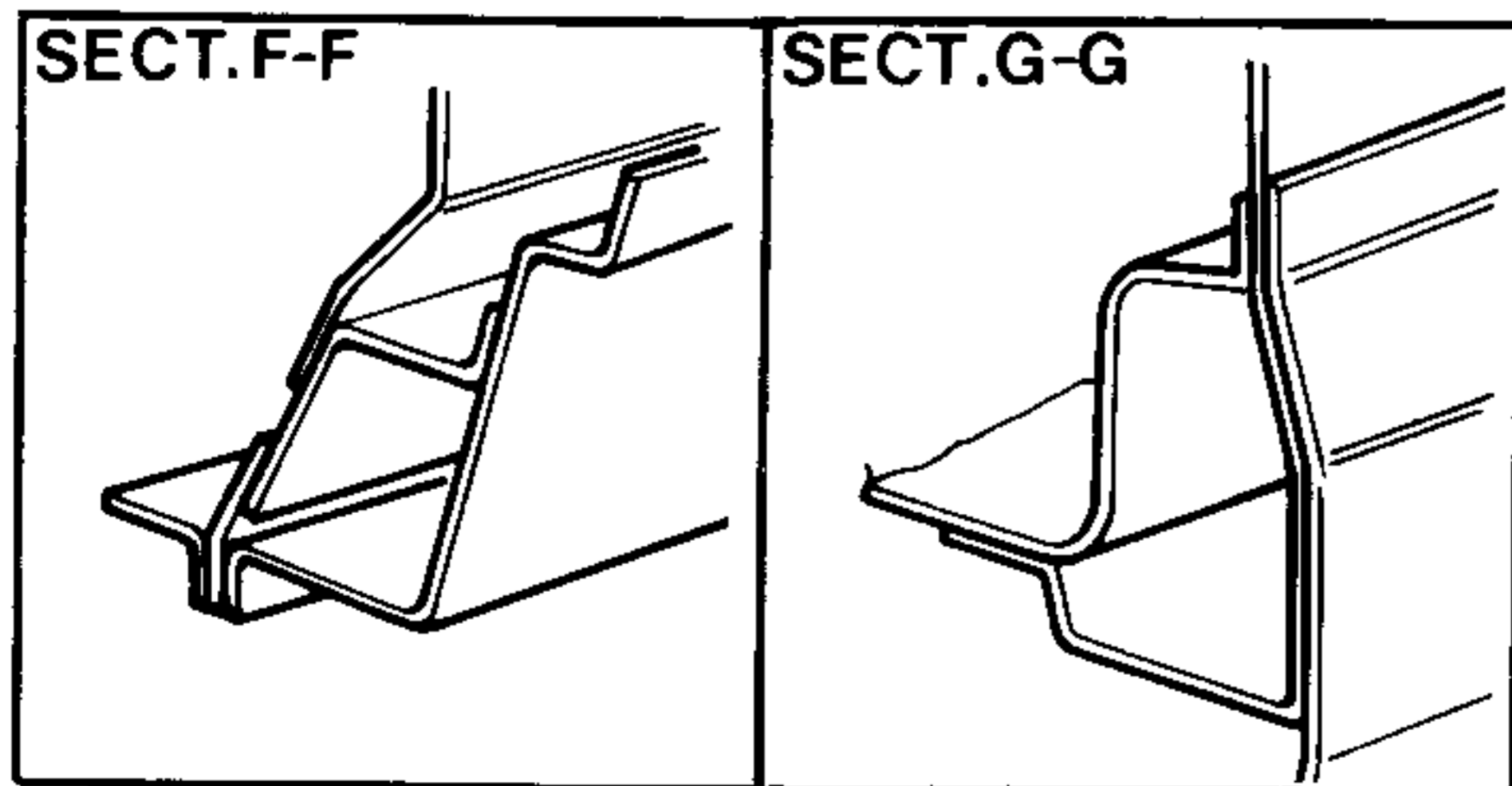
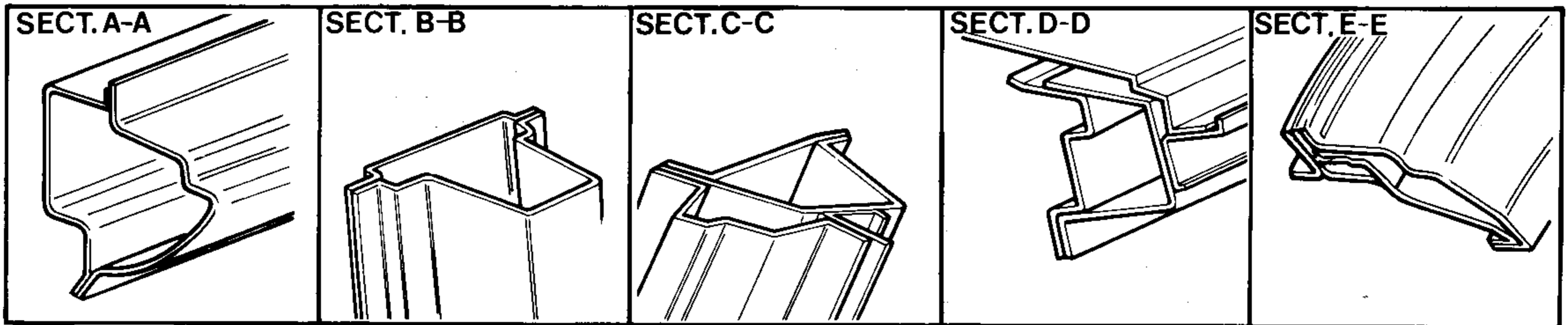
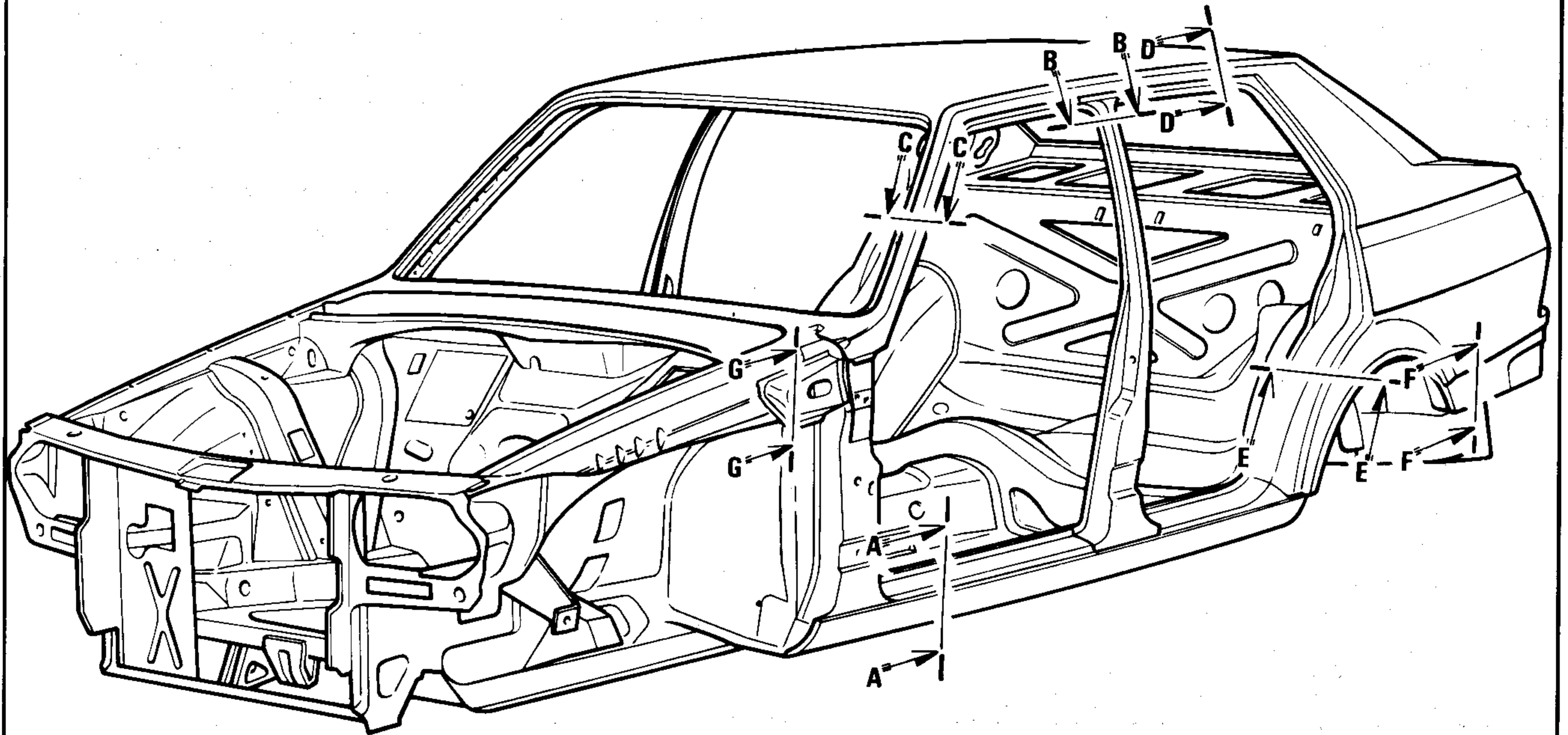
- 1 Connection sheet panel
- 2 Connection angular panel
- 3 Radiator support cross member
- 4 Headlight support plate
- 5 Valance extension
- 6 Reinforcement
- 7 Rack support cross member assembly
- 8 Front cross member assembly
- 9 Central pillar
- 10 Strut anchor bracket
- 11 Lower reinforcement between dashboard and valance

- 12 Dashboard sidewall
- 13 Central floor
- 14 Rear floor
- 15 Rear cross member
- 16 Under-seat front cross member
- 17 Bulkhead behind the seat back
- 18 Luggage compartment floor
- 19 Bumper connection reinforcement beam
- 20 Rear side member extension assembly
- 21 Cross member connecting bars
- 22 Inner side member

- 23 Outer front valance
- 24 Body side lower side member frame
- 25 Outer valance reinforcement
- 26 Bracket connecting body side to beam
- 27 Dashboard sidewall
- 28 Central beam cover
- 29 Lower lever reinforcement
- 30 Central beam
- 31 Inner front valance
- 32 Tow hook

# BODY CONSTRUCTION

## BOXED PART SECTIONS



# BODY SEALING

## DESCRIPTION

The following figures, show the body areas which are sealed by Manufacturer.

The sealings applied to these areas, must be smooth and free from scratches or gaps.

Take care not to apply too much sealing and not to allow other unaffected parts to come in contact with the sealing.

### Body components sealing

Paint seal, after priming or painting, and then sleek by means of a brush along all sheet joints in order to remove

possible sealing faults.

ICIR: Paraflex Alpha 3 M

8531/E

8536/E

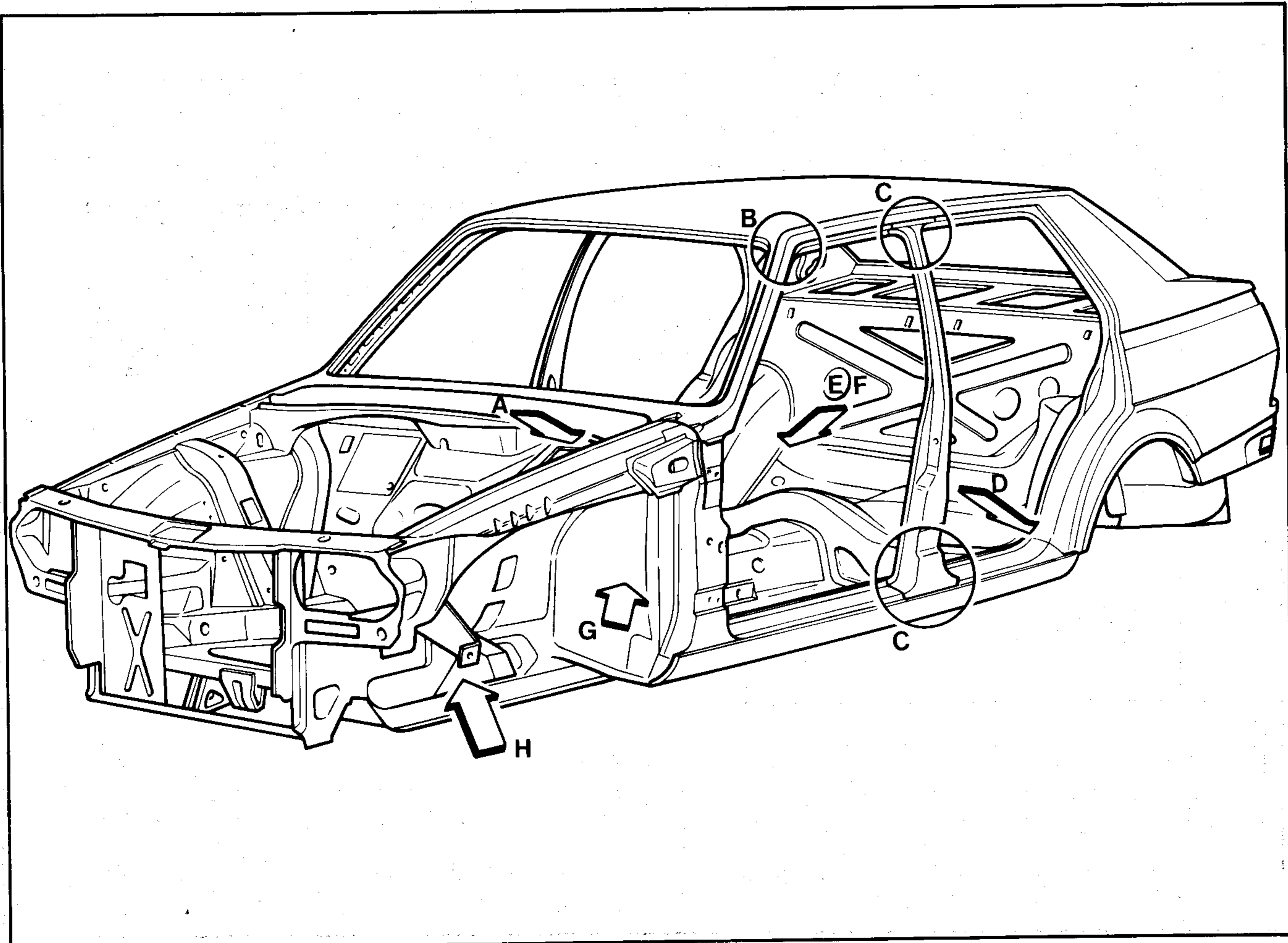
Alternative:

Std. no. 3522-00014

### Sealant for bolted joints

Sealant for joints between panels assembled by bolting.

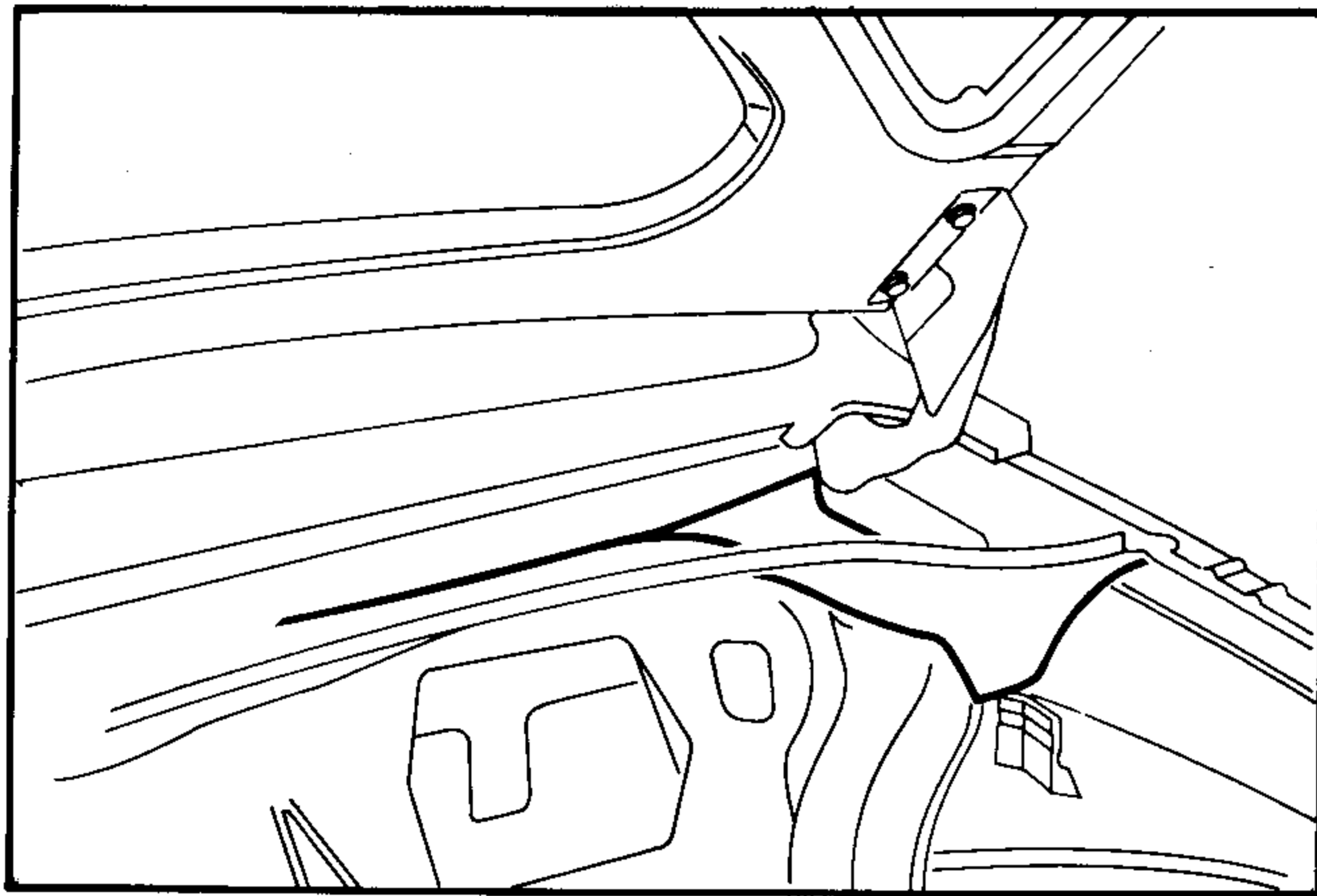
3M - Autosealer 8573E - Std. no. 3522-00045.



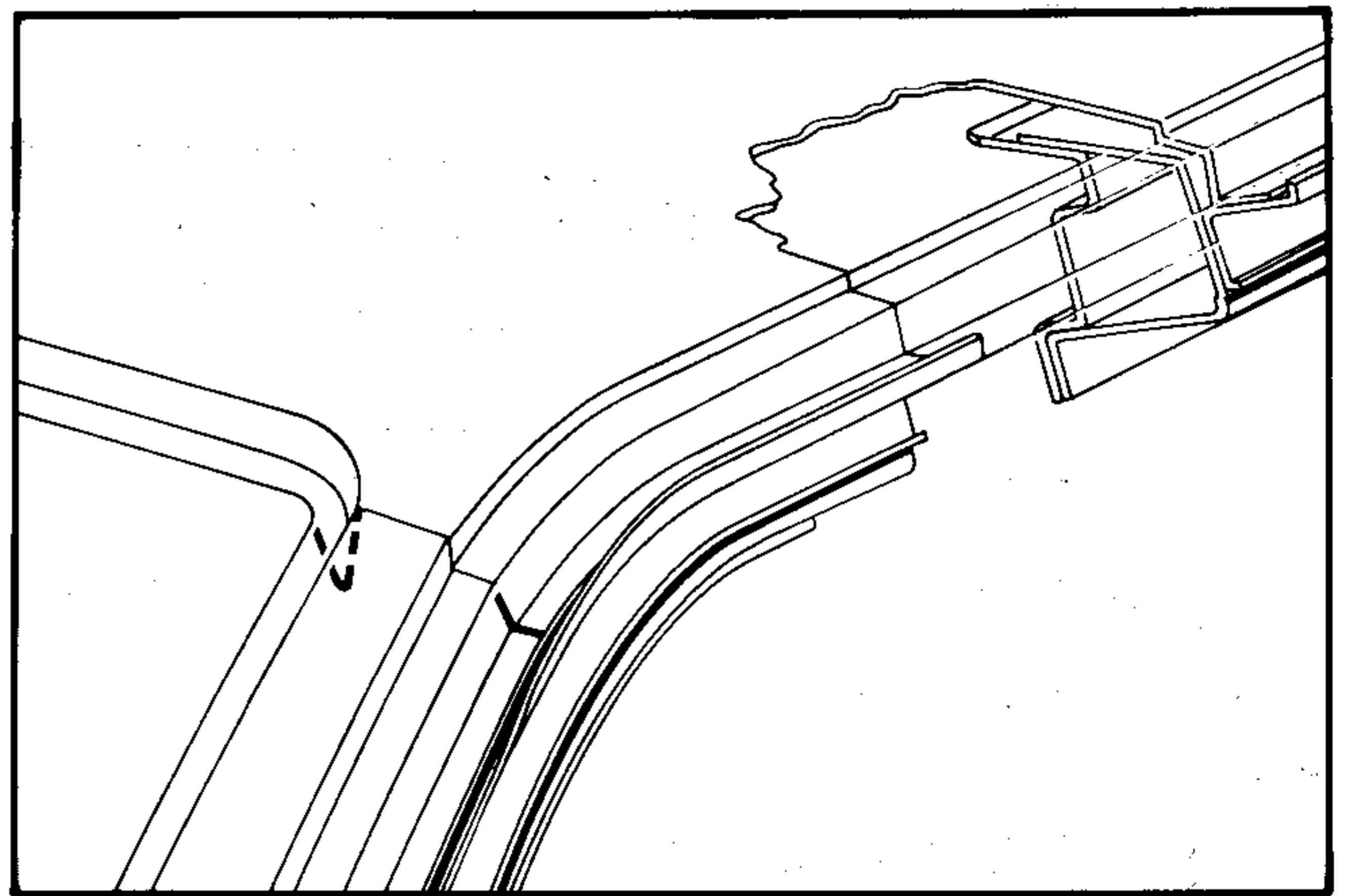


BODY - SHEET METAL PANELS

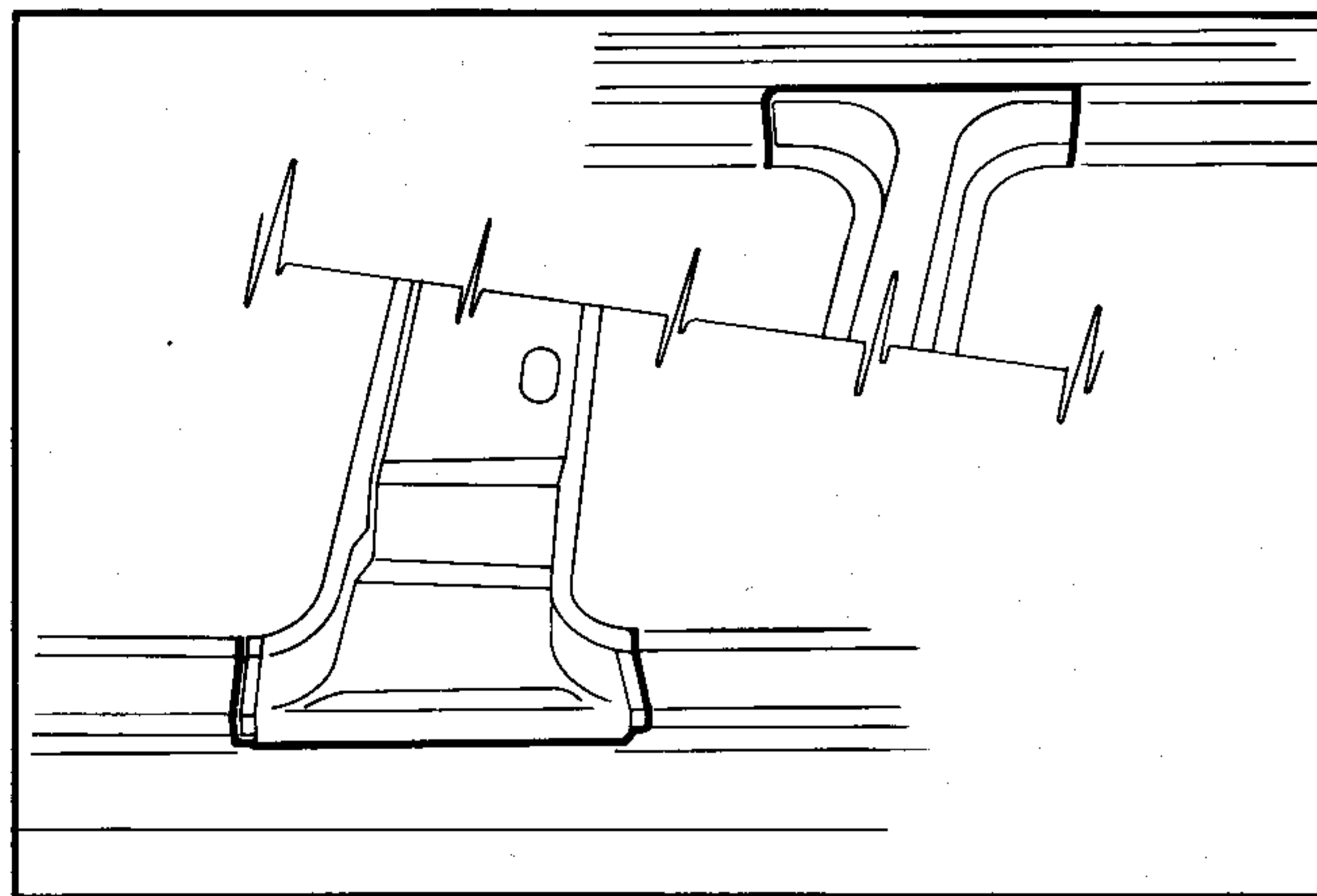
View from A



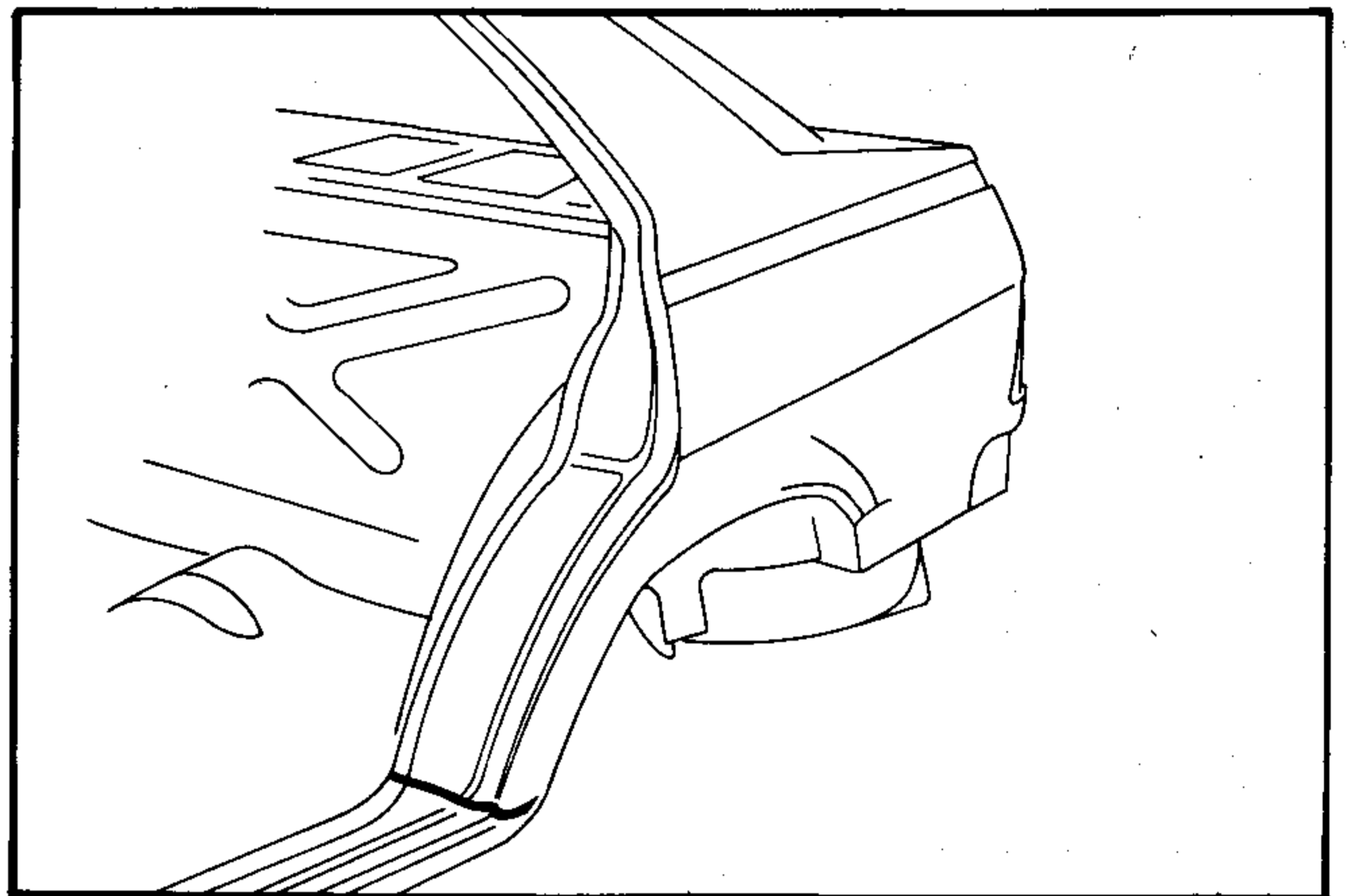
Detail B



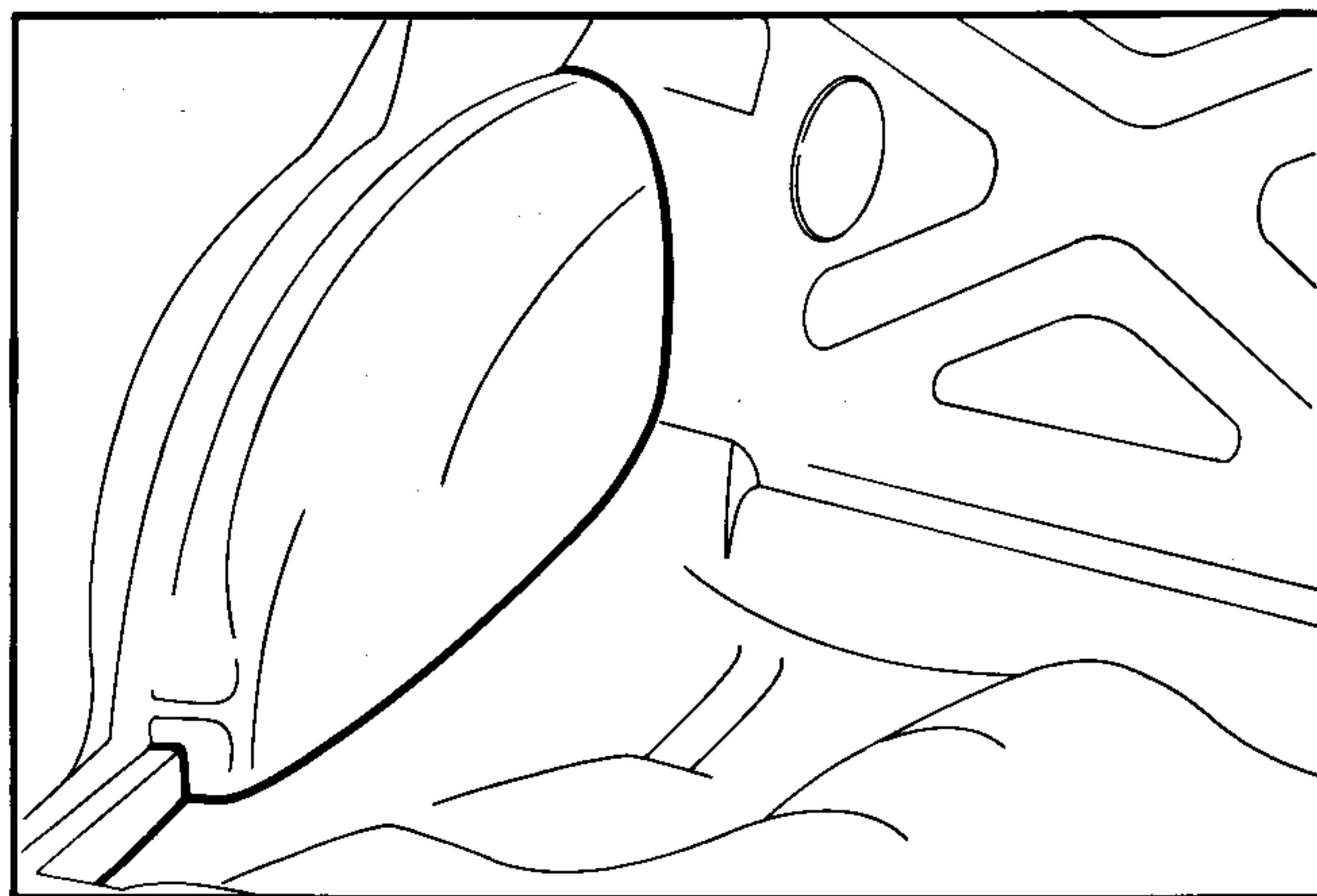
Details C



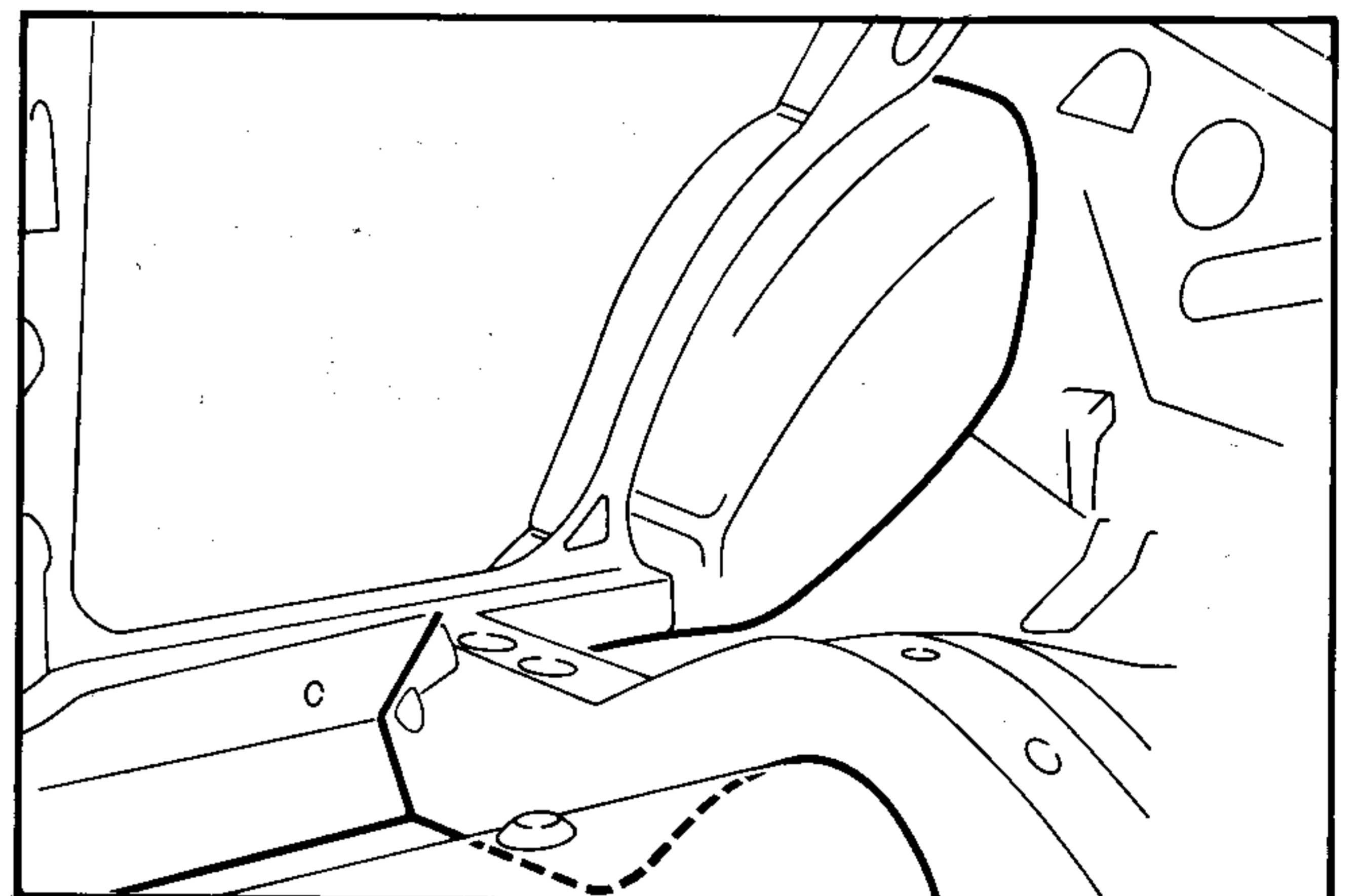
View from D



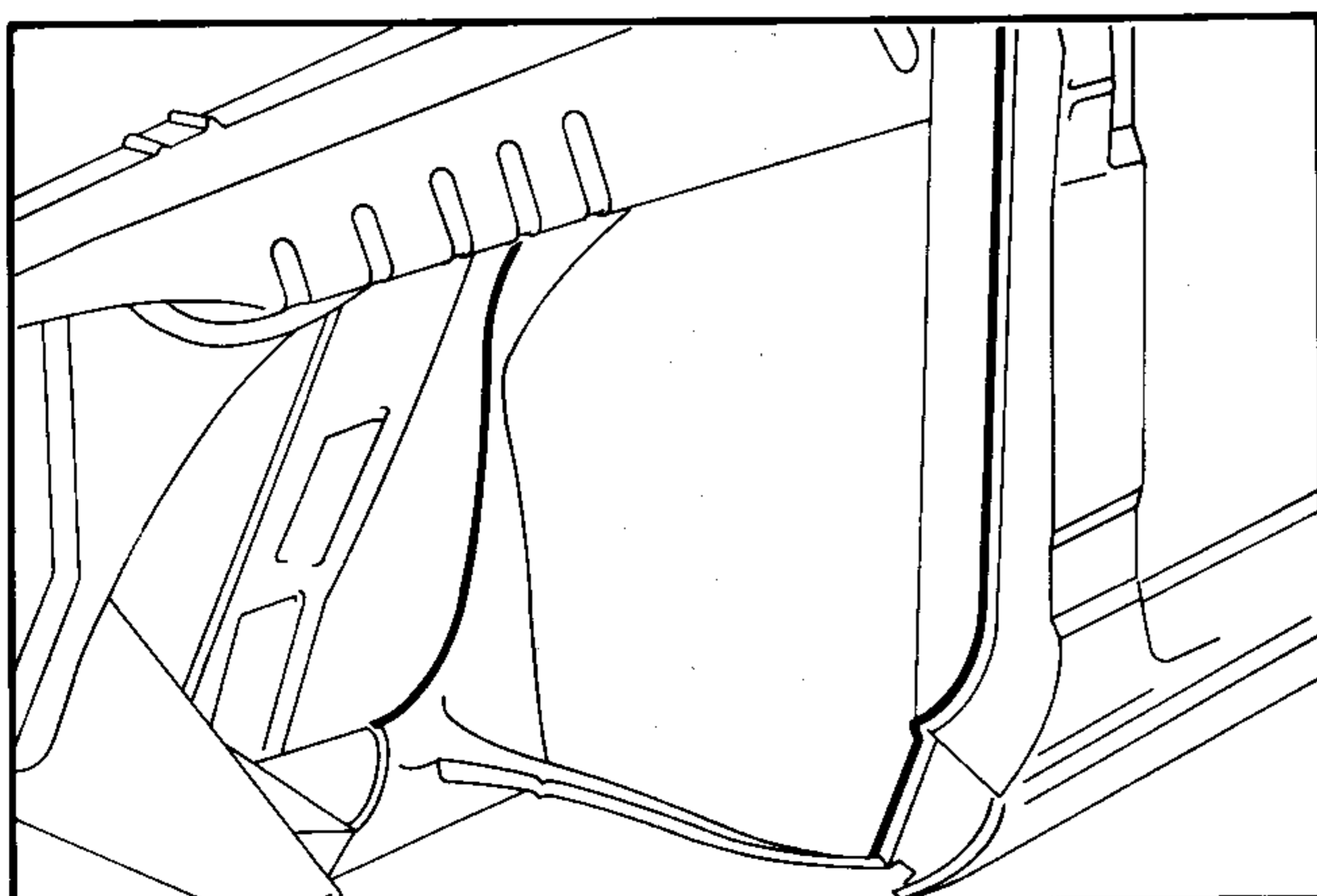
View from E



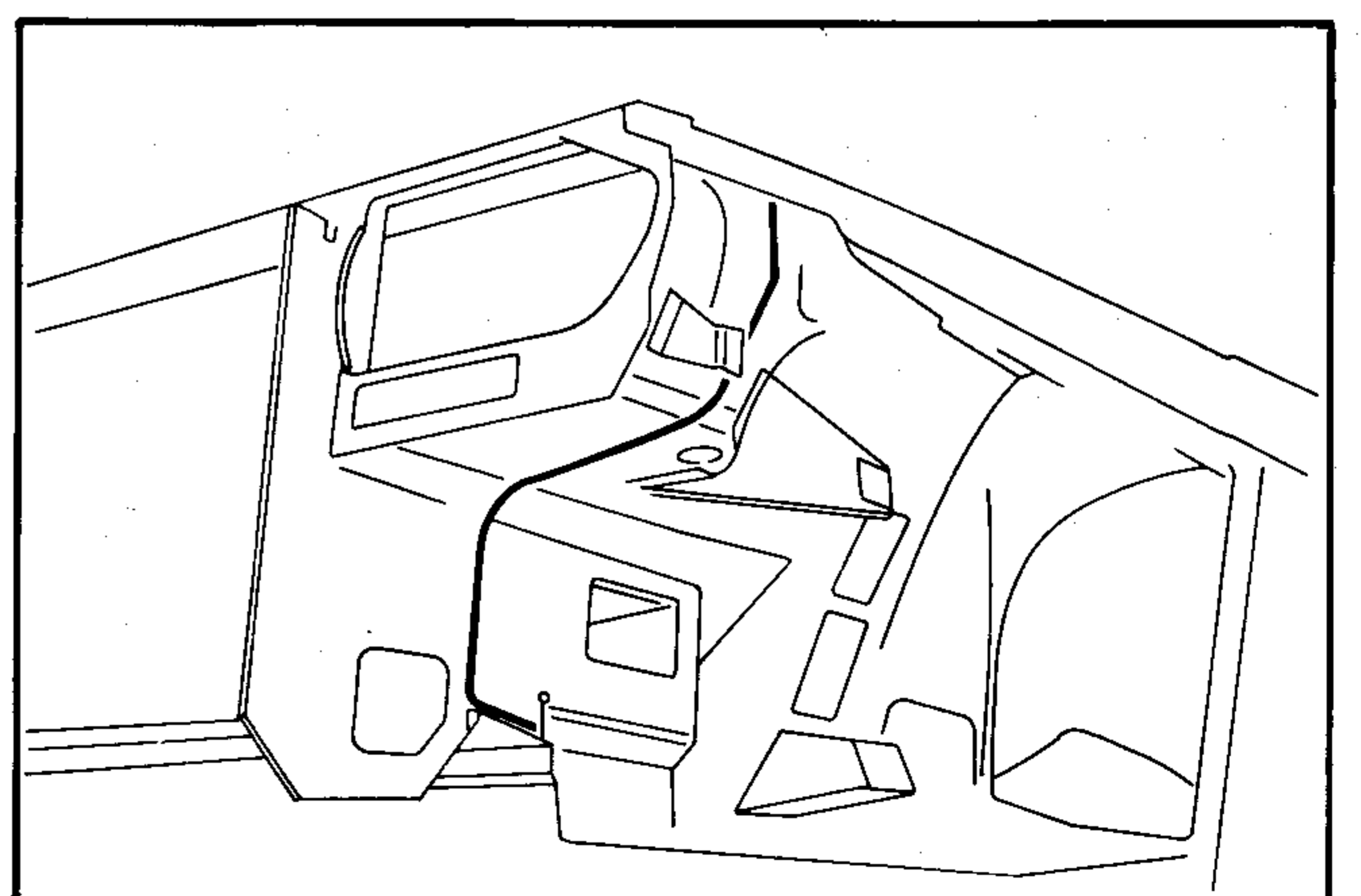
View from F



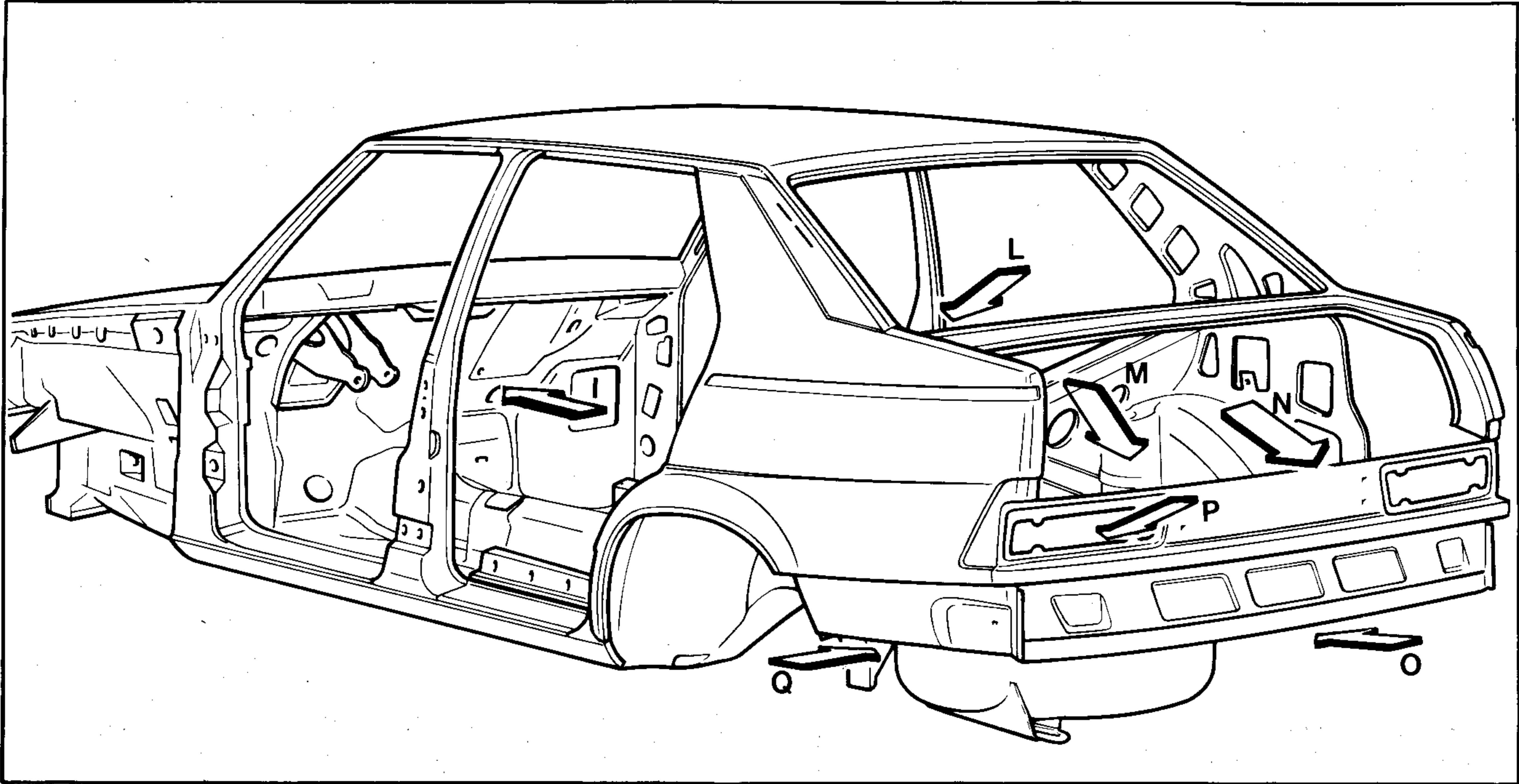
View from G



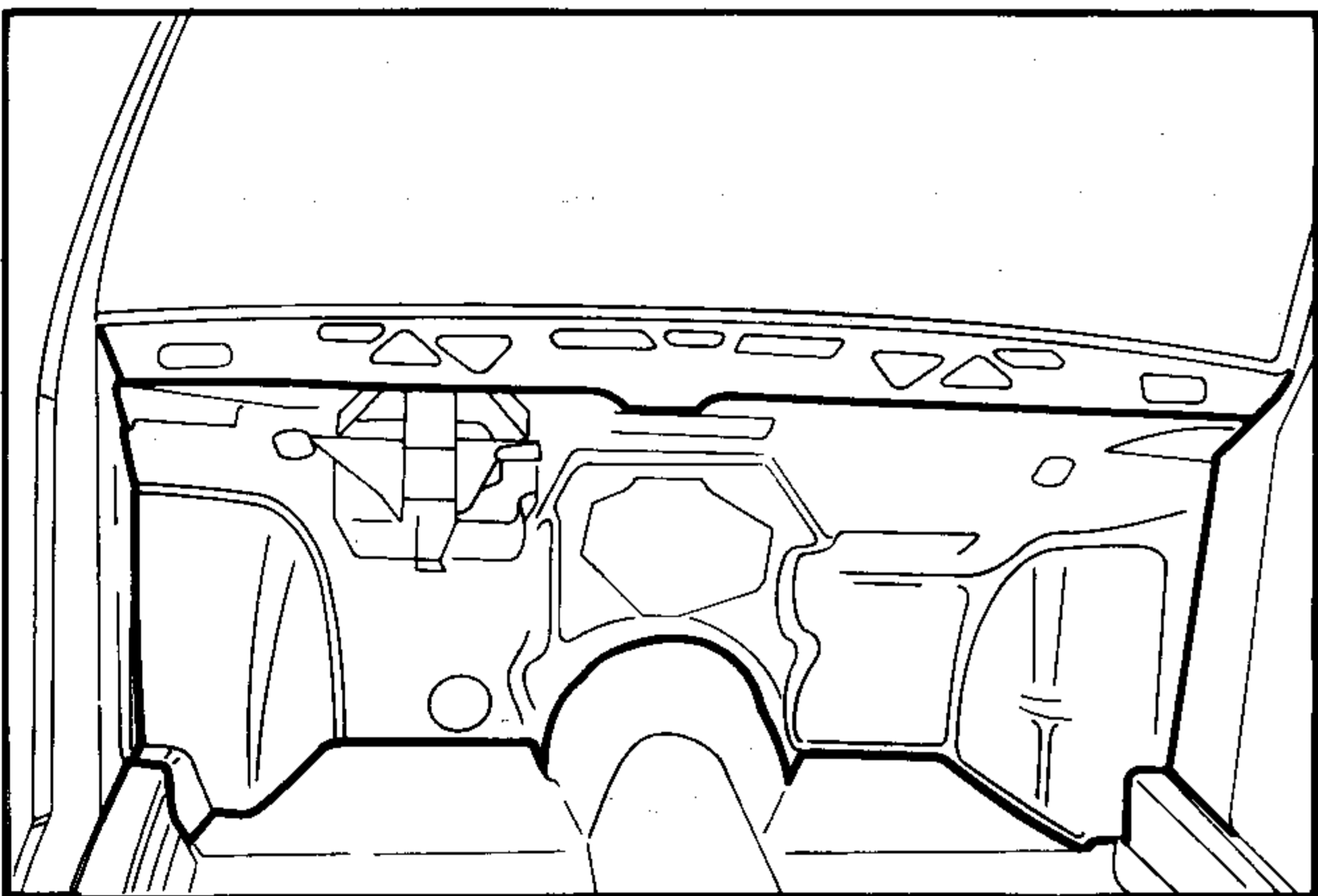
View from H



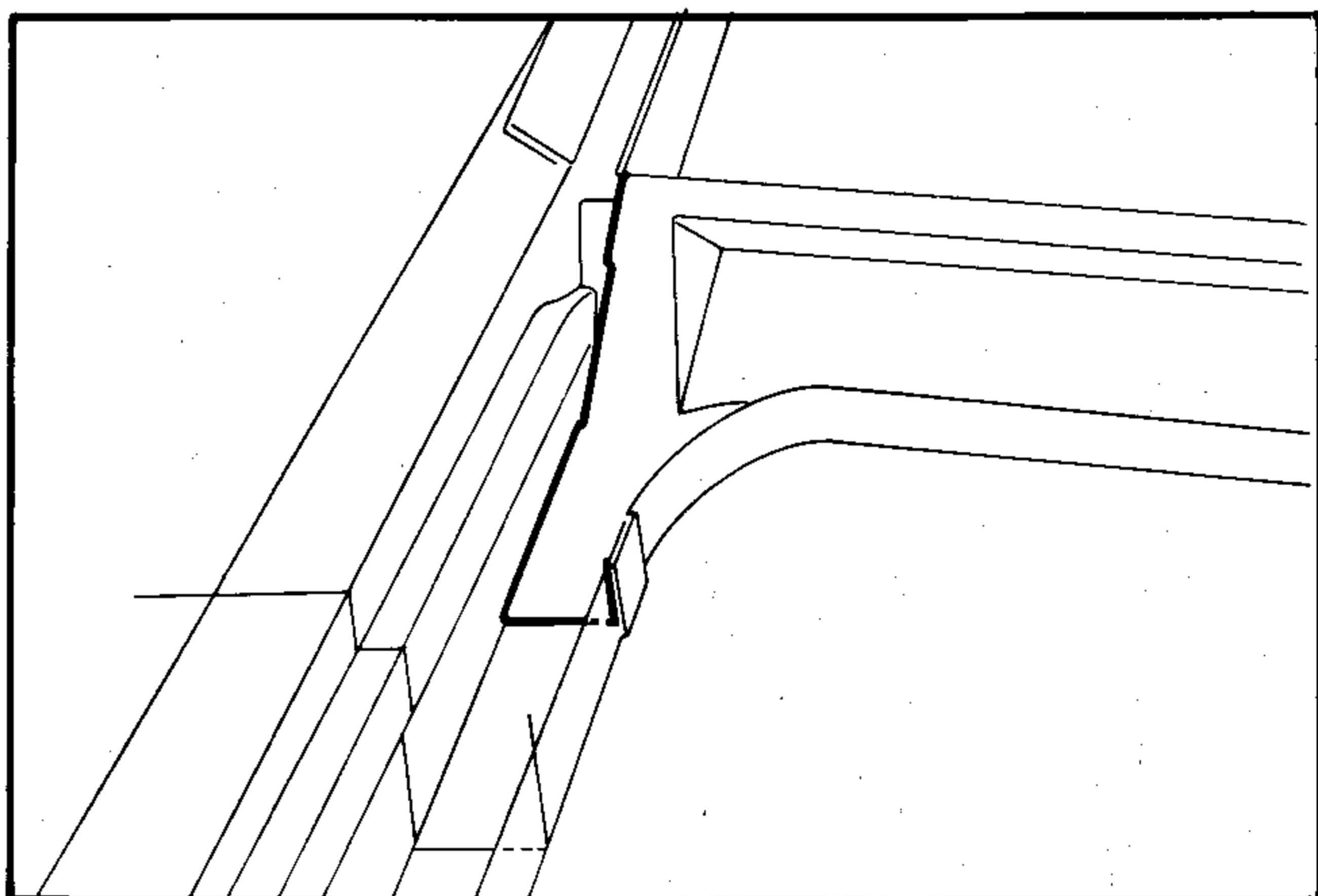
BODY - SHEET METAL PANELS



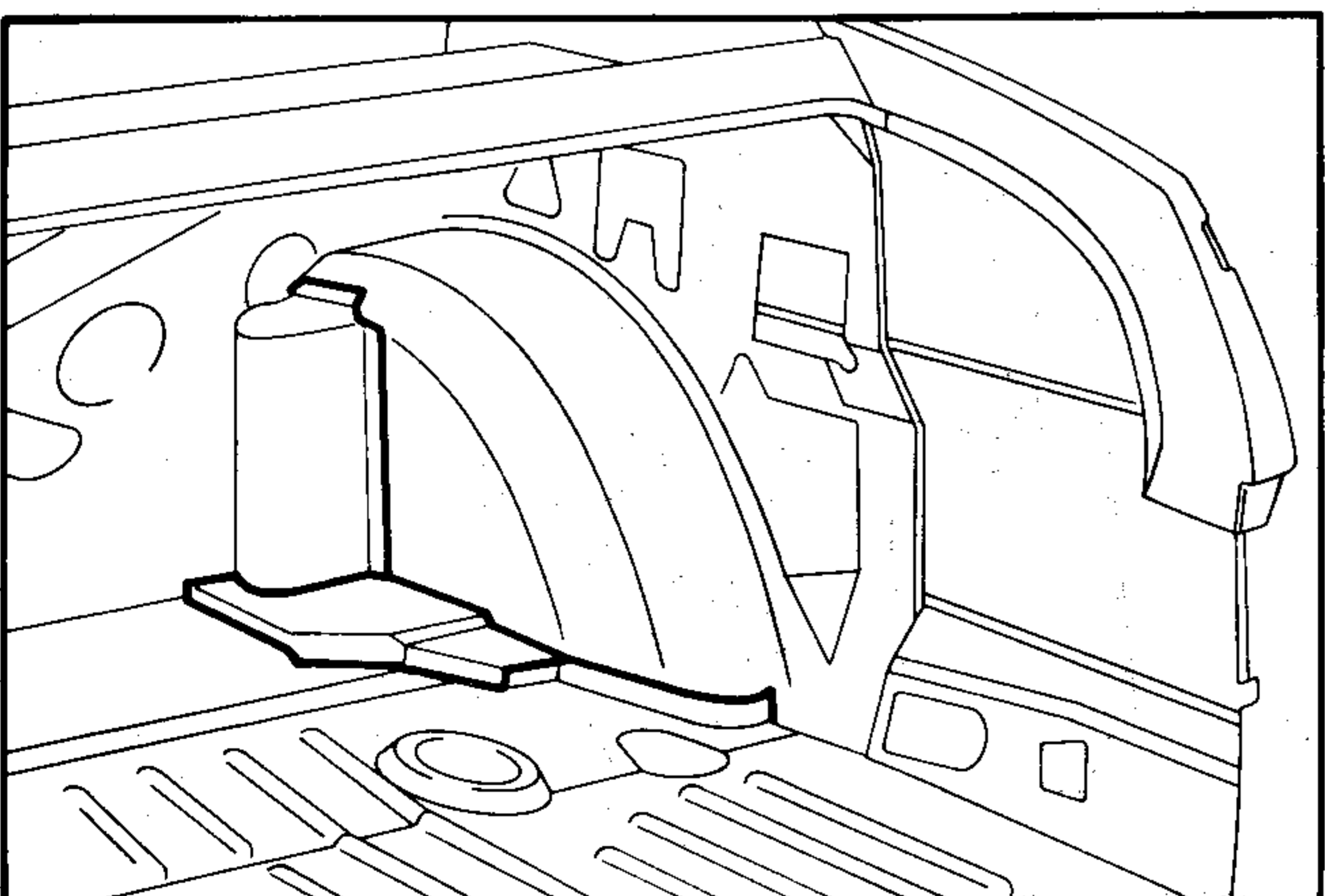
View from I



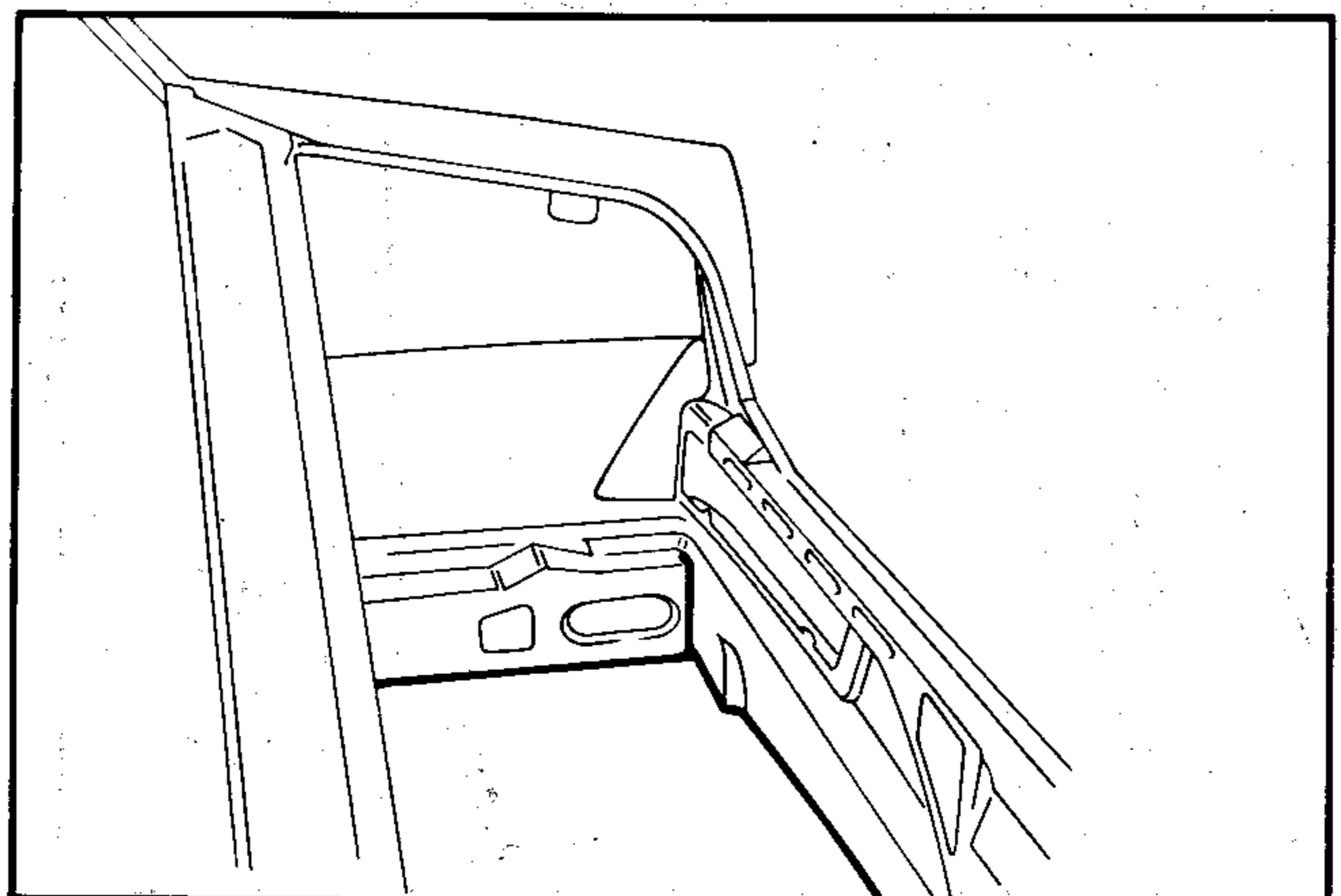
View from L



View from M

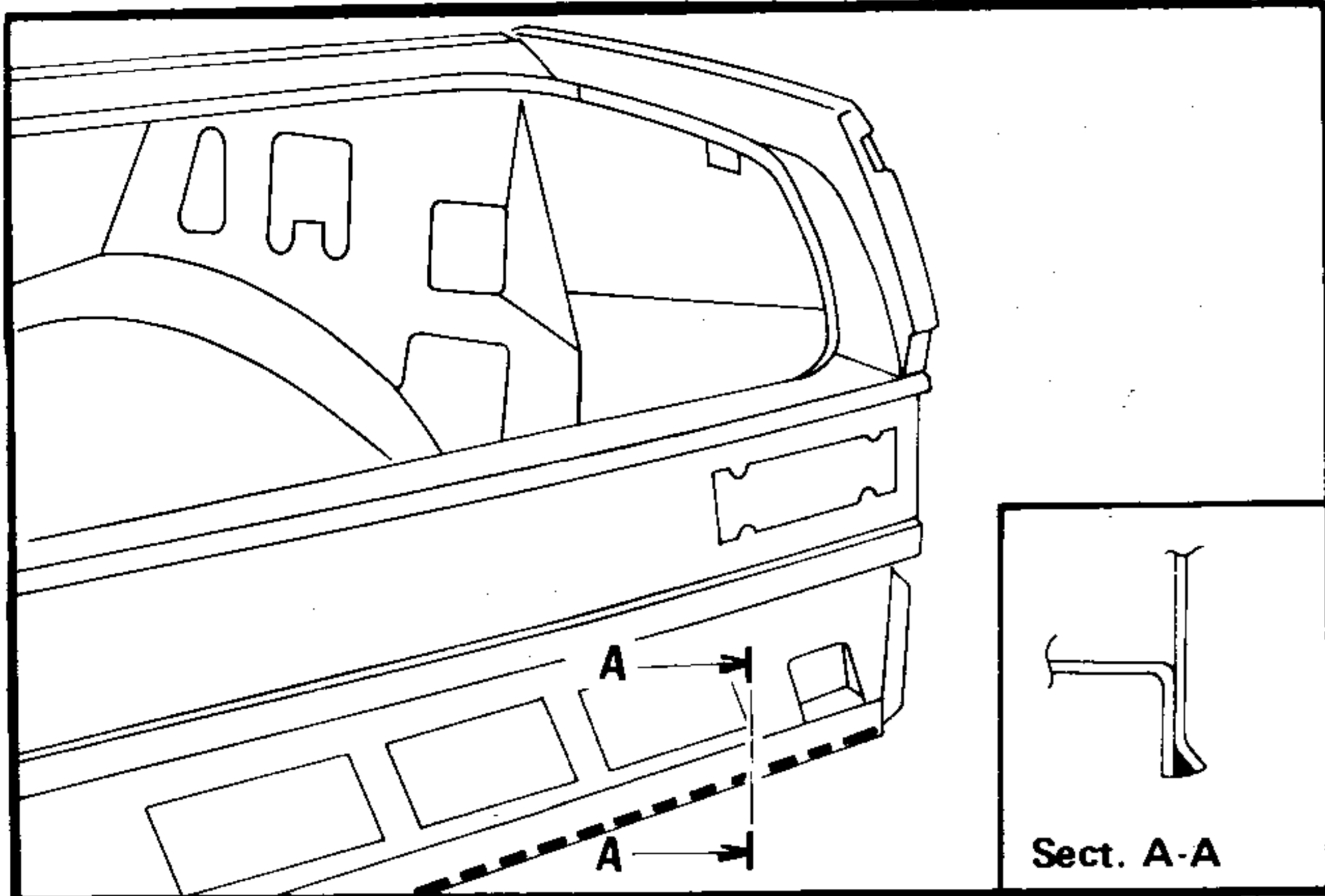


View from N

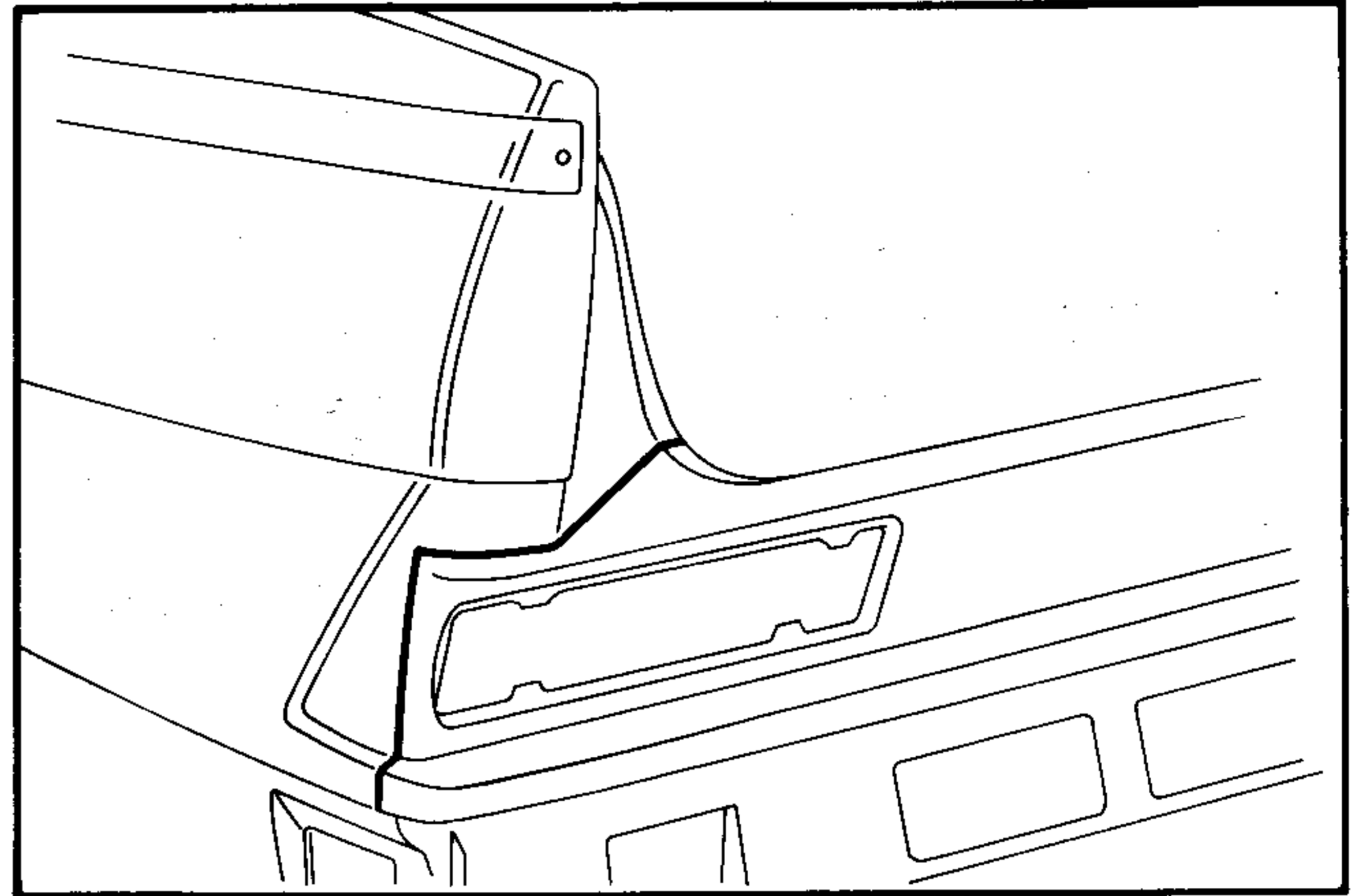


BODY - SHEET METAL PANELS

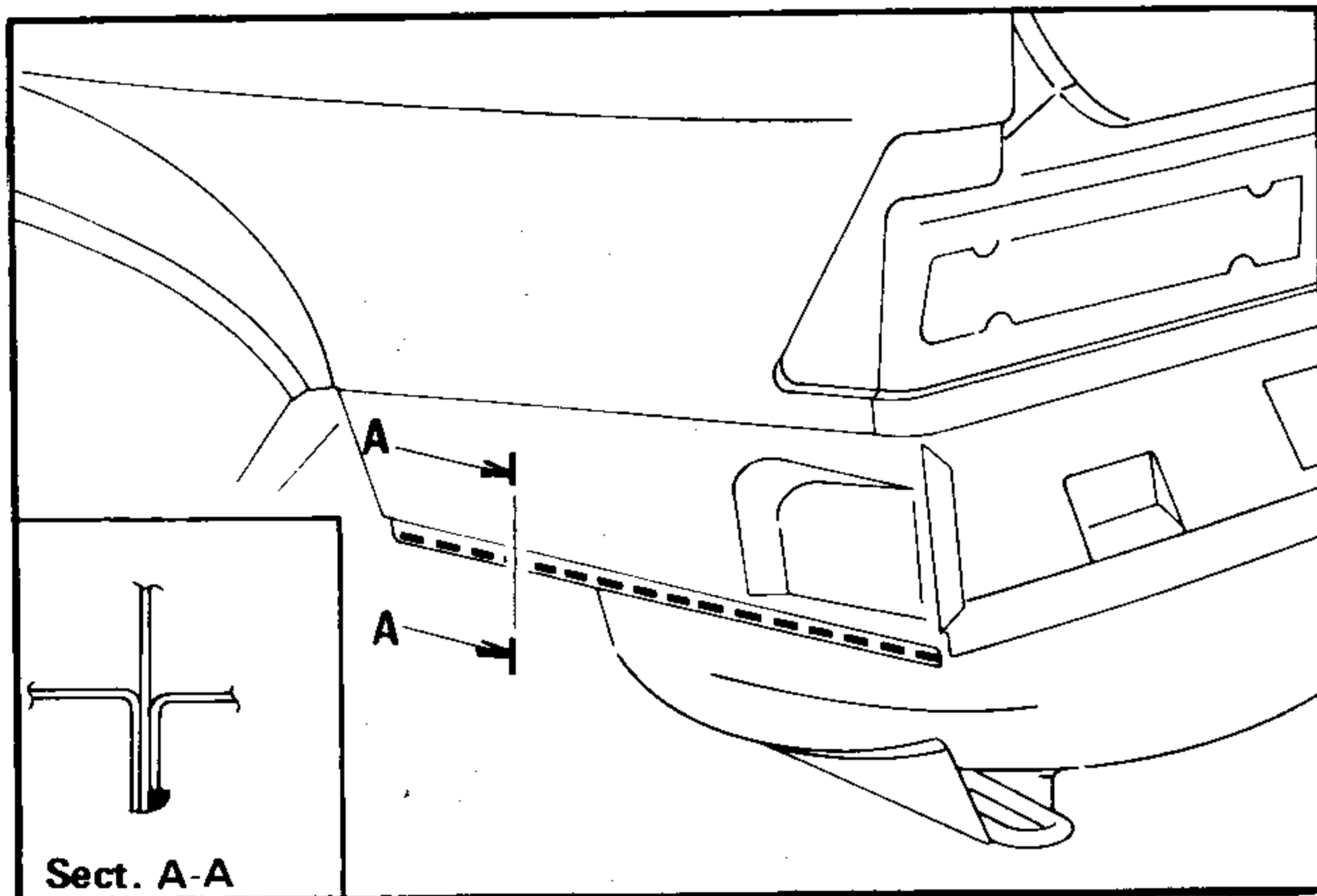
View from O



View from P



View from Q



## BODY ALIGNMENT

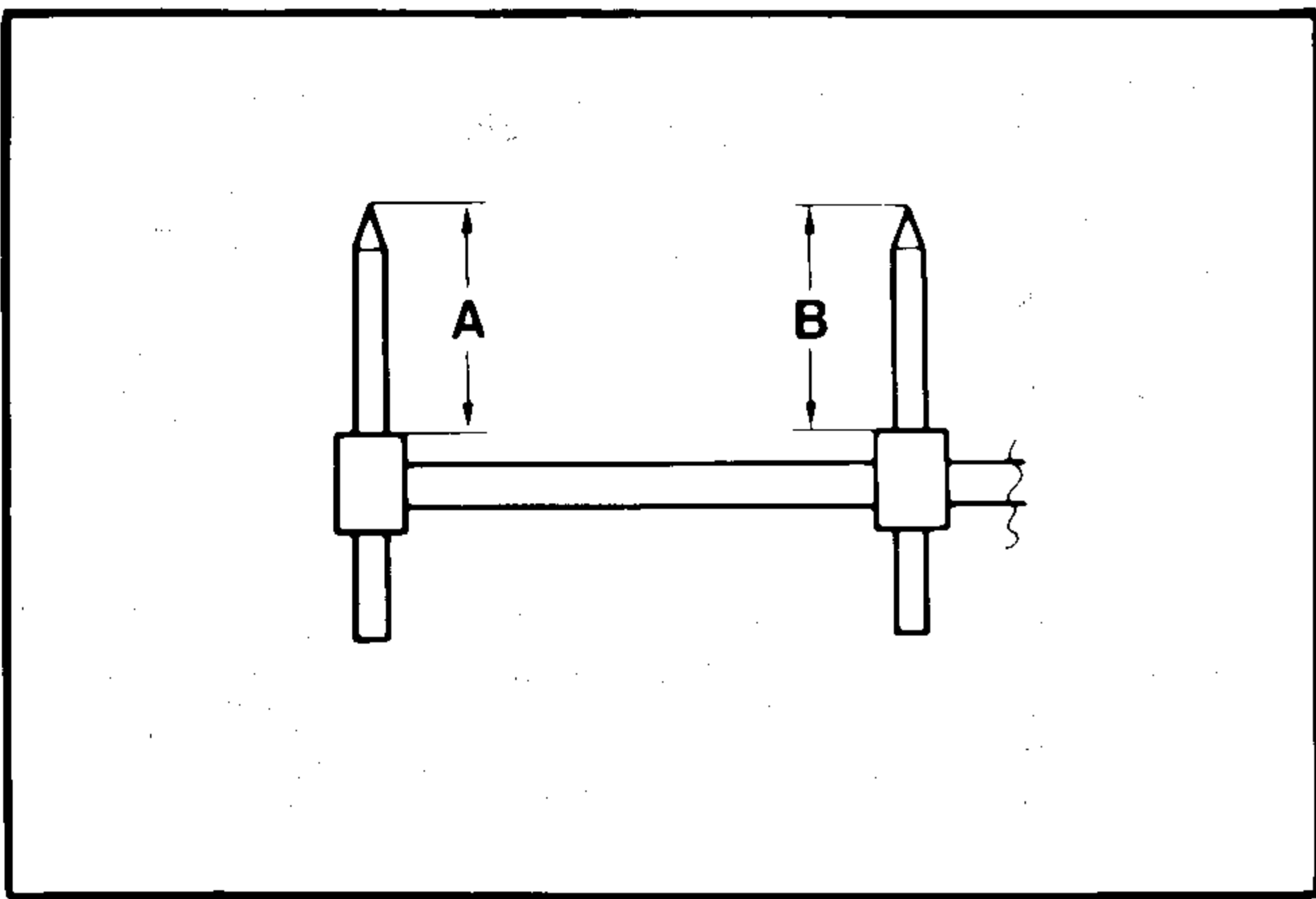
### MEASUREMENT OPERATIONS

Method of measurement operation

- When a tram tracking gauge is used, adjust pointers (A) and (B) to equal lengths as shown in the following figure.  
Check pointers and gauge itself in order to make sure that no clearance is present.

- When a measuring tape is used, verify there is no elongation, twisting or bending.

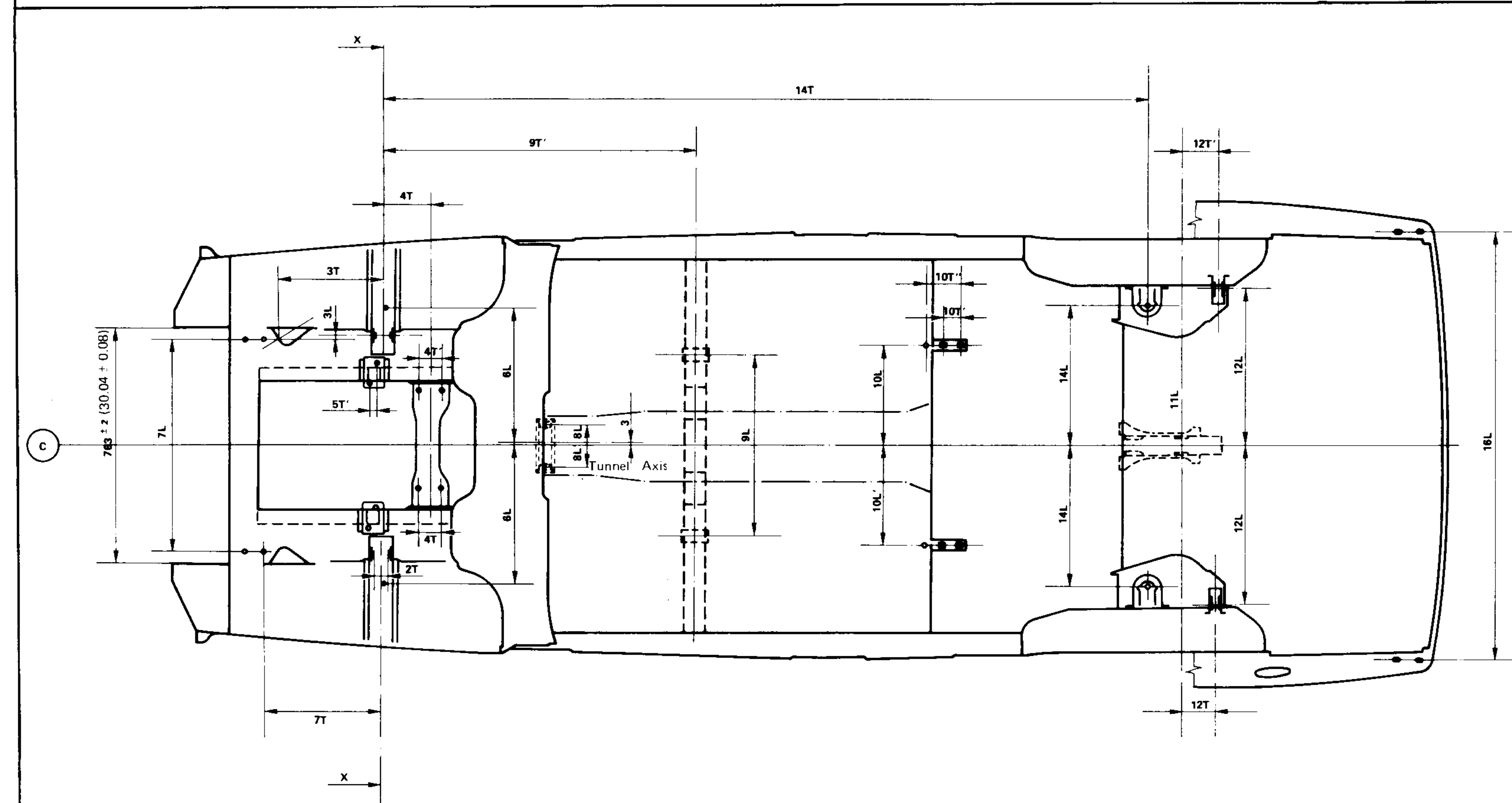
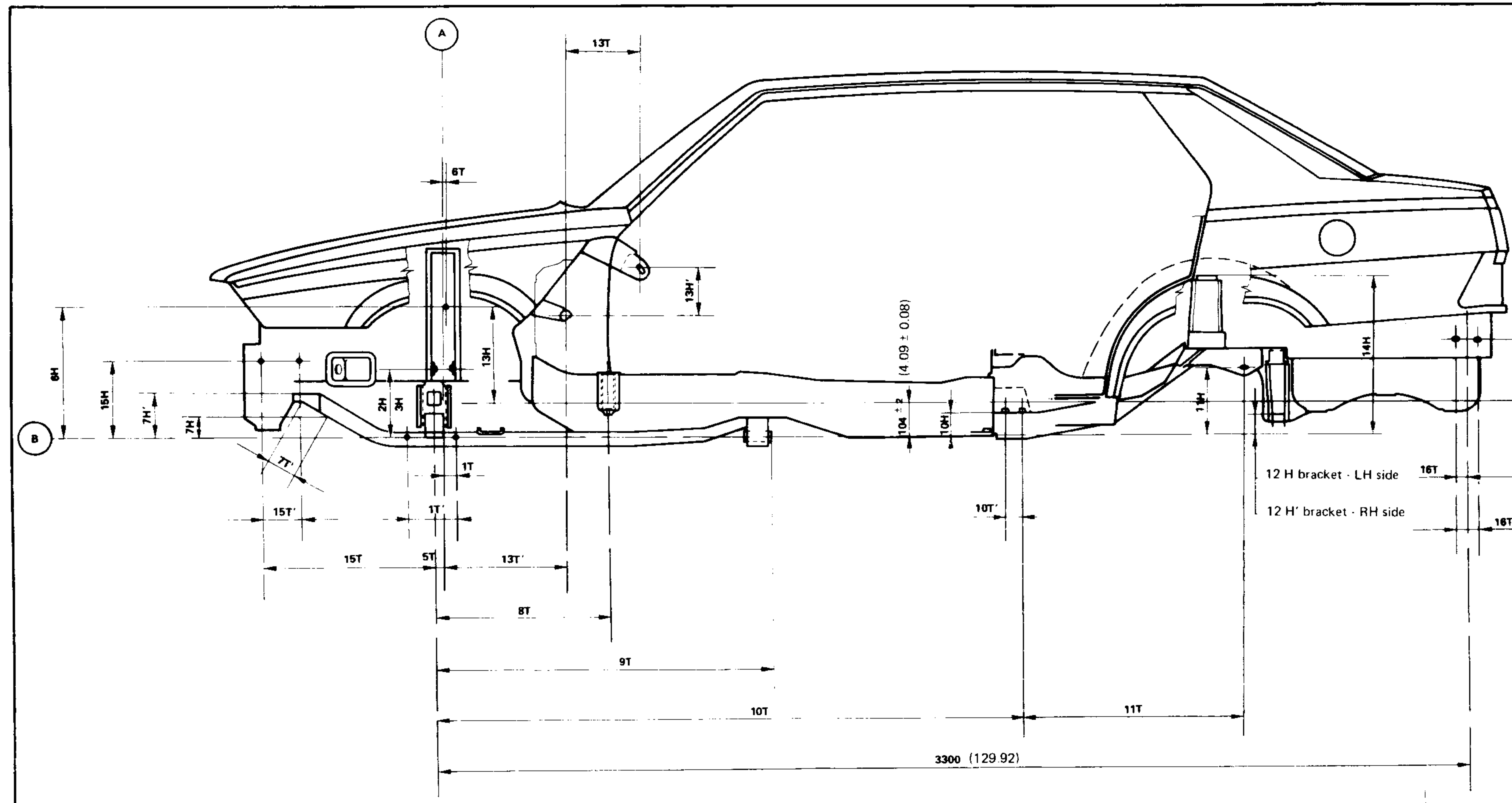
**If, during measurement operations, tape interfere with one or more parts of car body, accurate measurement of distance and length will not be possible.**



MEASUREMENT POINTS

Alfa 75 16  
 Alfa 75 1.6  
 Alfa 75 2.0

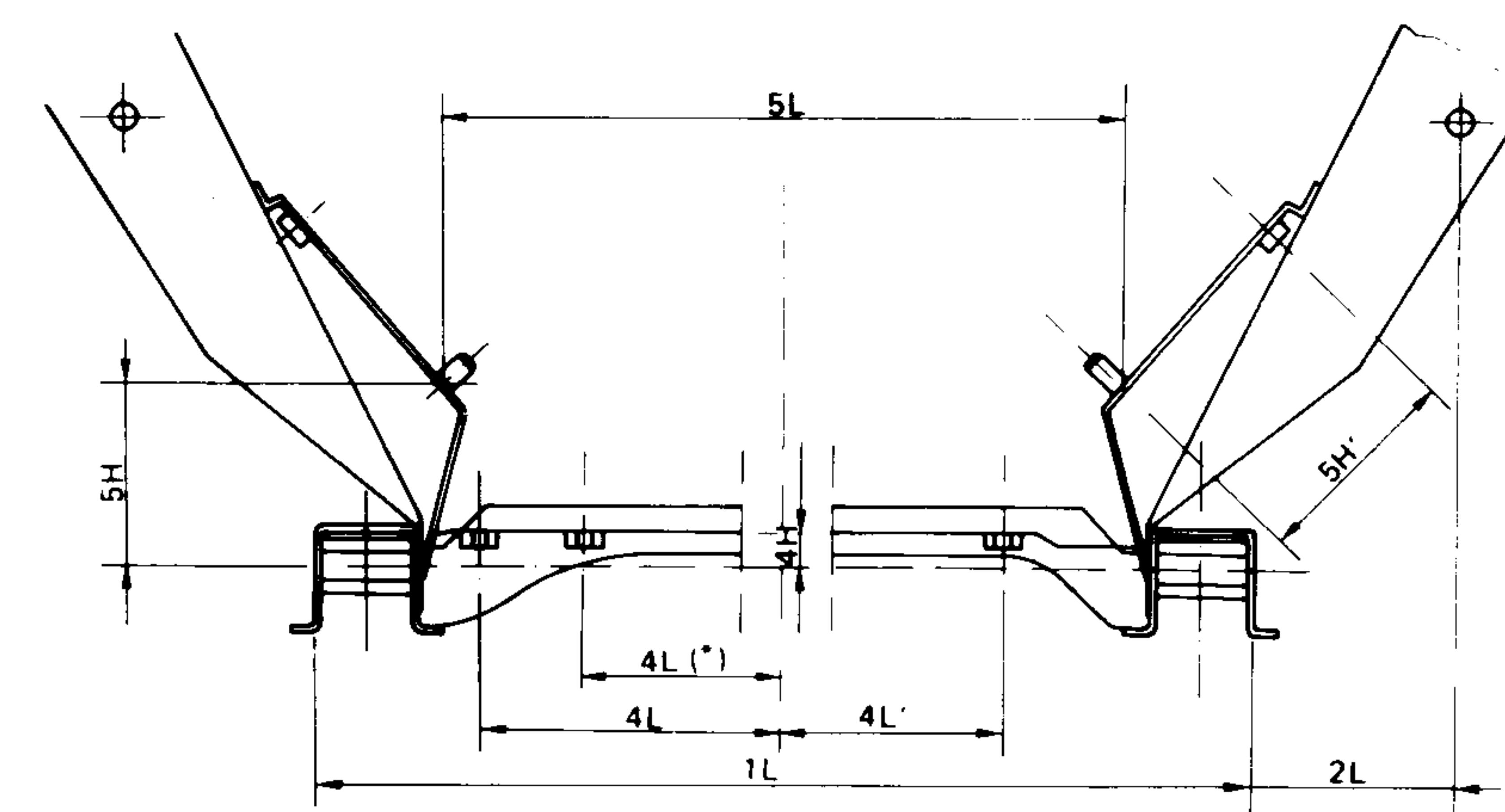
- A - Transverse reference axis (centraline of brackets securing front suspension upper arm)
- B - Vertical reference plane (centraline of holes for attaching the front suspension lower arm)
- C - Longitudinal reference axis (vehicle centreline)



		L	L'	T	T'	T''	H	H'
Front suspension lower arm attachments	1	520 ± 2 (20.47 ± 0.08)		35.5 (1.40)	167 (6.57)		0 (0)	
Front suspension upper arm attachments	2	97 ± 1 (3.82 ± 0.04)		51 ± 0.5 (2.01 ± 0.02)			222 ± 2 (8.74 ± 0.08)	
Caster control link attachments	3	7 ± 2 (0.28 ± 0.08)		334.5 ± 2 (13.17 ± 0.08)			222 ± 2 (8.74 ± 0.08)	
Steering box attachments	4	180 (1) 7.81 (1) 135 (2)(3) (5.31) (2)(3)	135 (1) (5.31) (1)	160 (6.30)	80 (3.15)	74 (2.91)	15 ± 2 (0.59 ± 0.08)	
Front engine support	5	396.5 ± 0.2 (15.61 ± 0.08)		27.5 ± 1 (1.08 ± 0.04)	22 ± 0.5 (0.87 ± 0.02)		87 ± 1 (3.42 ± 0.04)	102 (4.02)
Shock absorbers upper connection	6	443.5 (17.46)		8 (0.31)			398 (15.67)	
Anti-roll bar attachments	7	680 (26.77)			70 ± 0.15 (2.76 ± 0.006)			104 ± 2 (4.09 ± 0.08)
Engine rear support	8	72 (2.83)	66 (2.60)	558.5 ± 2 (22.93 ± 0.08)			82 (3.23)	
Torsion bar brace attachment	9	592 ± 2 (23.31 ± 0.08)		1,084 ± 2 (42.7 ± 0.08)			0 (0)	
Axle support cross member attachment	10	331 ± 1 (13.03 ± 0.04)	318 ± 1 (12.54 ± 0.04)	1,917.5 ± 1 (75.49 ± 0.04)	55 (2.17)		72 (2.83)	
Rear gearbox support	11	59 (2.32)		715 ± 2 (28.15 ± 0.08)			213 (8.38)	
Watt links attachments	12	514 ± 1.5 (20.24 ± 0.06)		115 (4.53)	110 (4.33)		134 ± 2 (5.28 ± 0.08)	39 ± 2 (1.53 ± 0.08)
Steering column support	13			222.5 ± 1 (8.76 ± 0.04)	408.5 ± 2 (16.08 ± 0.08)		393.5 ± 2 (15.49 ± 0.08)	138.5 ± 1 (5.42 ± 0.04)
Rear shock absorbers support	14	452 ± 2 (17.79 ± 0.08)		2,461 (96.89)			518 (20.39)	
Front bumper attachment	15			557.5 ± 2 (21.95 ± 0.08)	123 (4.84)		248 (9.76)	
Rear bumper attachment	16	1,377 (54.21)		40 (1.57)	70 (2.76)		200 (7.87)	

1 Value for LH drive vehicles  
 2 Value for RH drive vehicles  
 3 Value for vehicles equipped with power steering

SECT. X - X



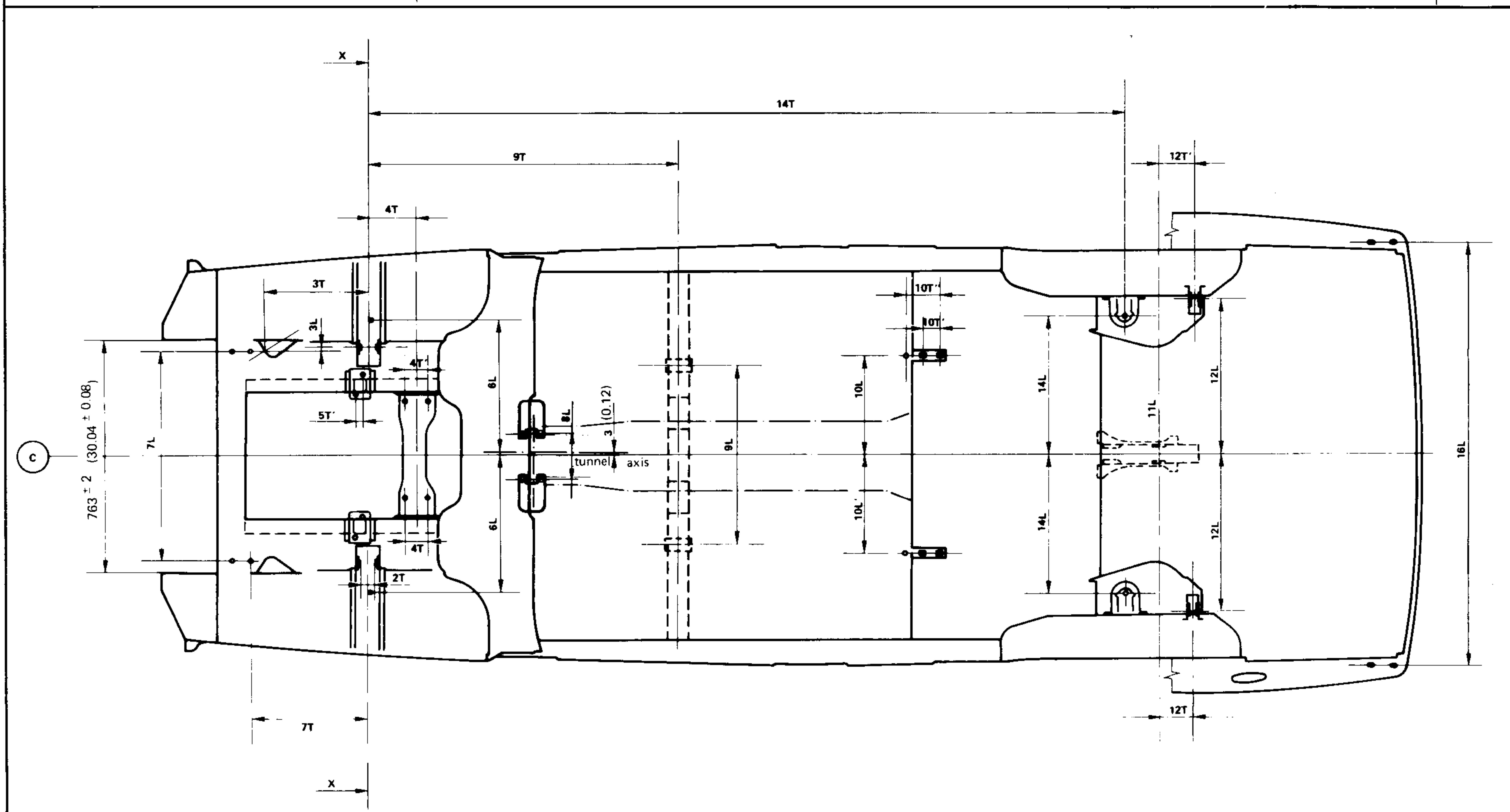
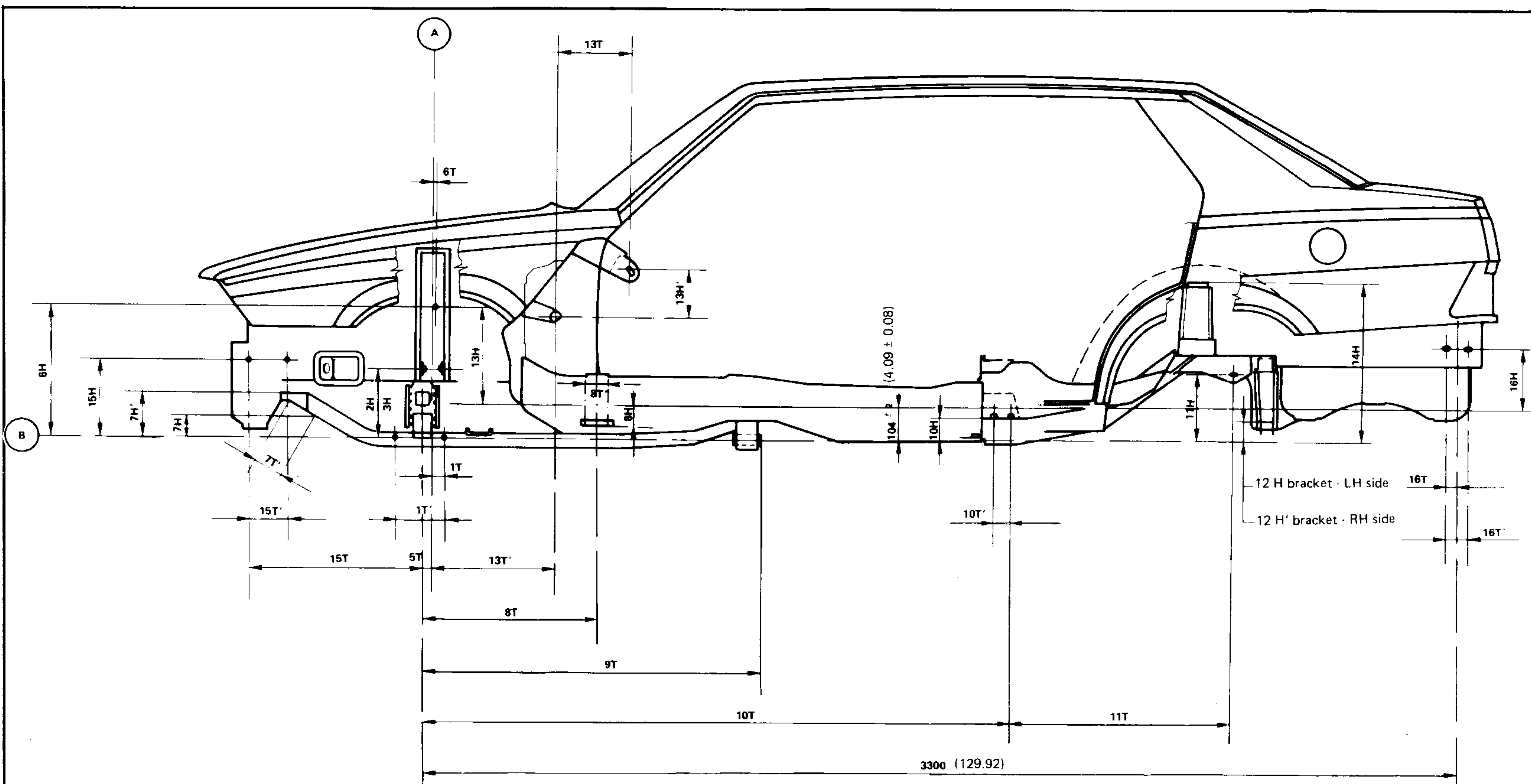
(\* Value for vehicles equipped with power steering)

BODY - SHEET METAL PANELS

Alfa 75 20 turbodiesel

Alfa 75 6V iniezione

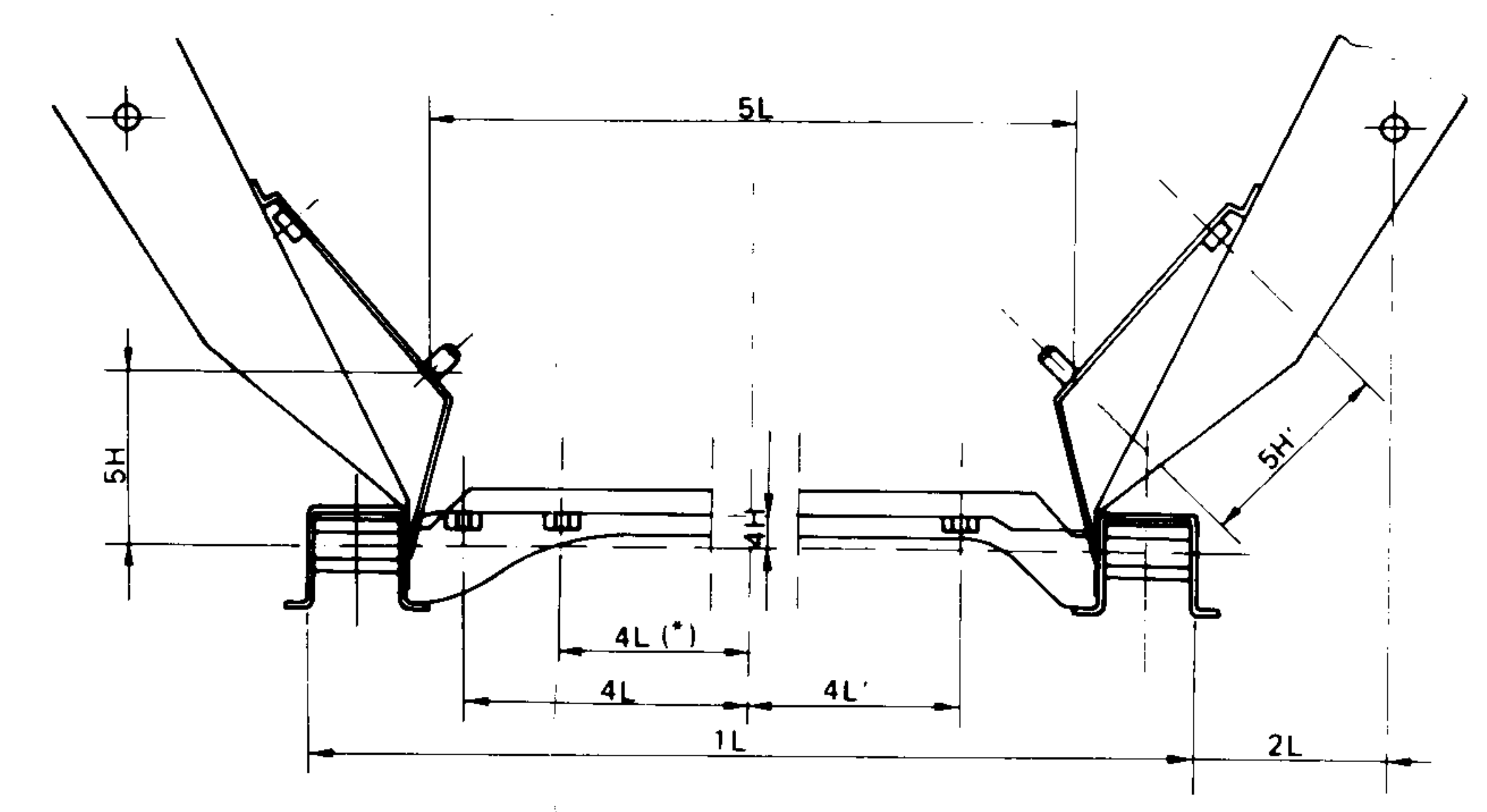
- A - Transverse reference axis (centraline of brackets securing front suspension upper arm)
- B - Vertical reference plane (centraline of holes for attaching the front suspension lower arm)
- C - Longitudinal reference axis (vehicle centreline)



Measurement unit: mm (in)

		L	L'	T	T'	T''	H	H'
Front suspension lower arm attachments	1	520 ± 2 (20.47 ± 0.08)	-	35.5 (1.40)	167 (6.57)	-	0 (0)	-
Front suspension upper arm attachments	2	97 ± 1 (3.82 ± 0.04)	-	51 ± 0.5 (2.01 ± 0.02)	-	-	222 ± 2 (8.74 ± 0.08)	-
Caster control link attachments	3	7 ± 2 (0.28 ± 0.08)	-	334.5 ± 2 (13.17 ± 0.08)	-	-	222 ± 2 (8.74 ± 0.08)	-
Steering box attachments	4	180 (1) 7.81 (1) 135 (2)(3) (5.31) (2)(3)	135 (1) (5.31) (1) 180 (2) (7.81) (2)	160 (6.30)	80 (3.15)	74 (2.91)	15 ± 2 (0.59 ± 0.08)	-
Front engine support	5	396.5 ± 0.2 (15.61 ± 0.008)	-	55.5 ± 2 (2.18 ± 0.08)	18.5 ± 0.5 (0.73 ± 0.02)	-	87 ± 1 (3.42 ± 0.04)	102 (4.02)
Shock absorbers upper connection	6	443.5 (17.46)	-	8 (0.31)	-	-	398 (15.67)	-
Anti-roll bar attachments	7	680 (26.77)	-	-	70 ± 0.15 (2.76 ± 0.006)	-	-	104 ± 2 (4.09 ± 0.08)
Engine rear support	8	134 (5.27)	-	582.5 ± 2 (22.93 ± 0.08)	53 (2.09)	-	51 (2.01)	53 (2.09)
Torsion bar brace attachment	9	592 ± 2 (23.31 ± 0.08)	-	1,084 ± 2 (42.7 ± 0.08)	-	-	0 (0)	-
Axle support cross member attachment	10	331 ± 1 (13.03 ± 0.04)	318 ± 1 (12.54 ± 0.04)	1,975 ± 1.3 (75.49 ± 0.04)	55 (2.17)	-	72 (2.83)	-
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SECT. X-X



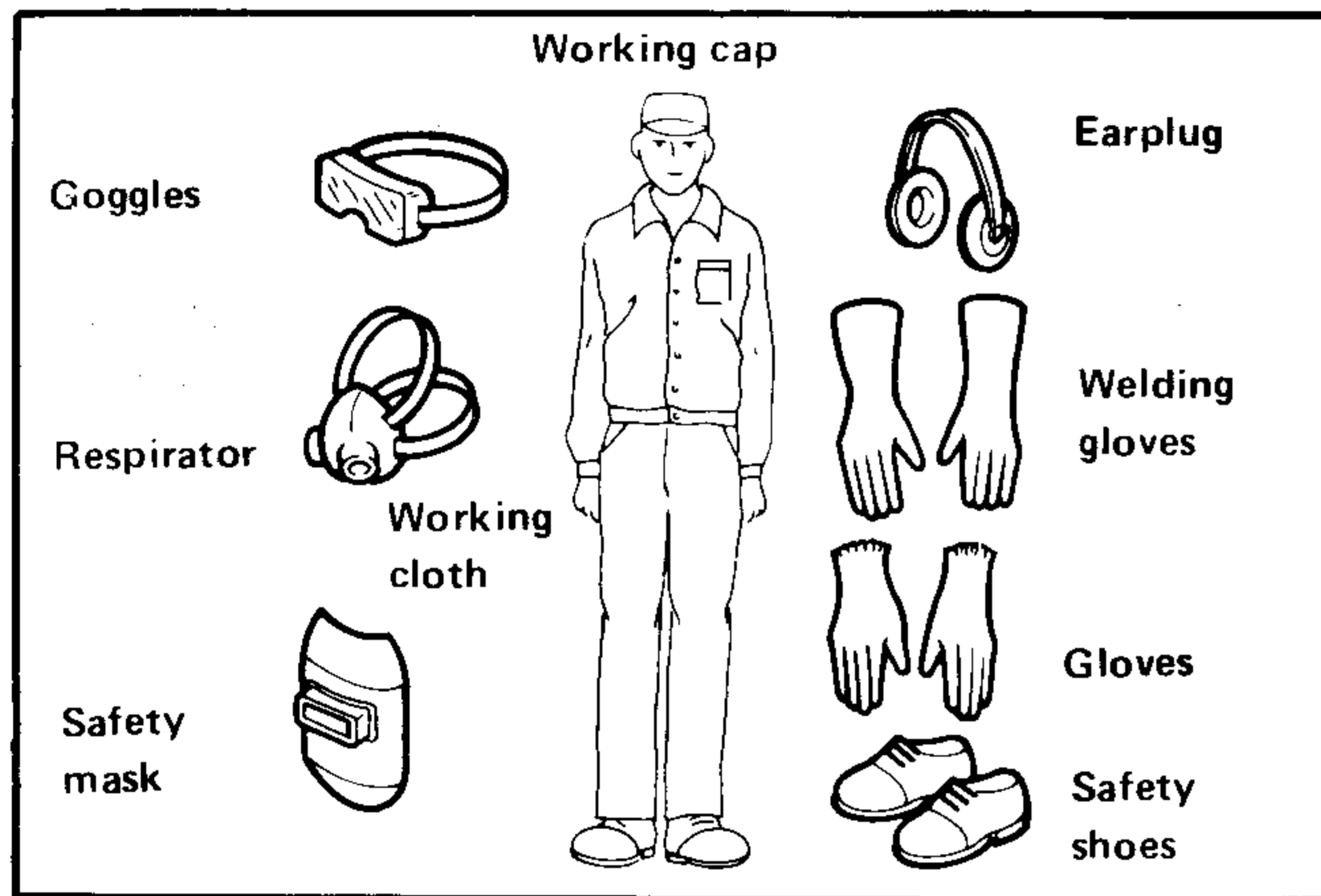
(\* Value for vehicles equipped with power steering)

## CAUTIONS FOR THE OPERATORS

### SAFETY RULES

#### 1. Wear protectors

- Depending on the work to be carried out, make sure to wear goggles, earplug, respirator, etc. Always wear working clothes, safety shoes and working cap.

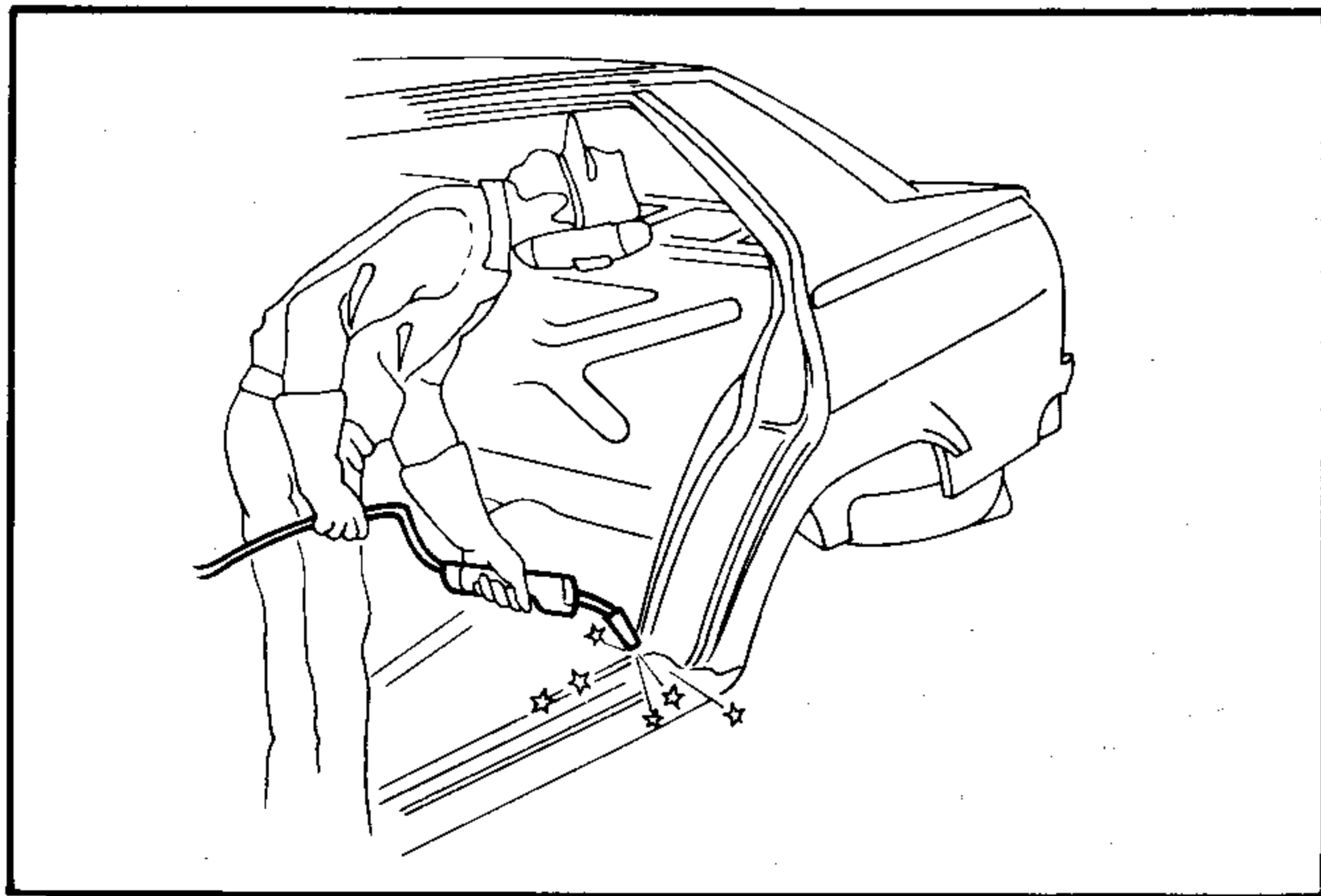


#### 2. Safety stands

- After jacking up the vehicle, support it by means of suitable safety stands. For the supporting positions refer to "Lifting Points".

#### 3. Inflammable substances

- Before starting any operations make sure that battery ground cable has been disconnected.
- In case welding operations in proximity to tank are to be carried out, remove it from its compartment and plug the union.
- When removing unions, plug the previously released connections of fuel pipings and of brake fluid.

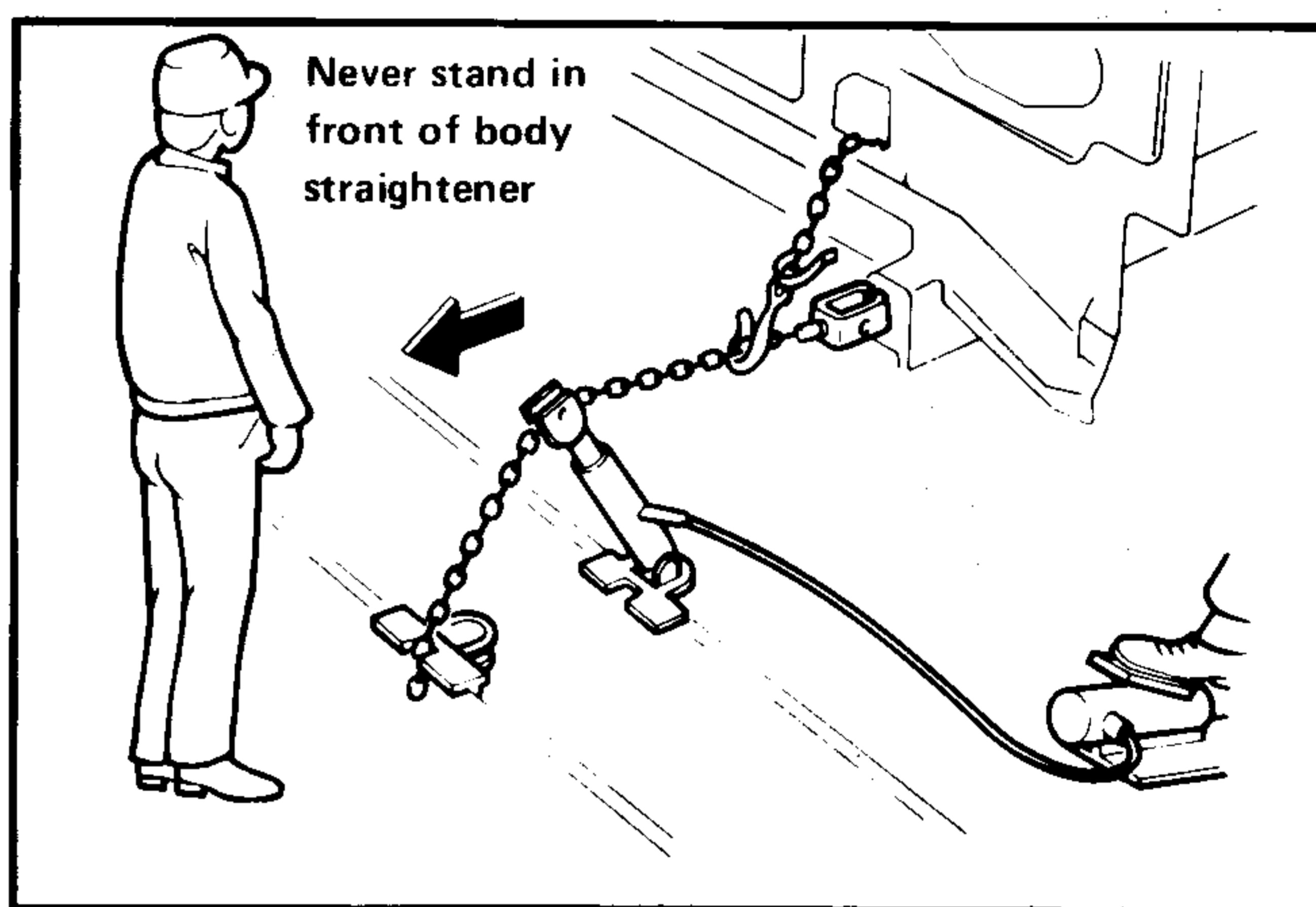


#### 4. Working environment

- The working environment must be well ventilated and illuminated, in order to ensure operator safety.

- Paints and sealants, when heated, may generate poisonous gases. In order to prevent it, when cutting and removing damaged sheets make use of an air saw or an air chisel instead of gas welder.
  - For removal of paint from sheet make use of a belt sander or rotary wire brush.
- #### 5. Vehicle body straightener
- Make sure that body straightener is properly used in accordance with procedures of Instruction Manual of equipment Manufacturer.

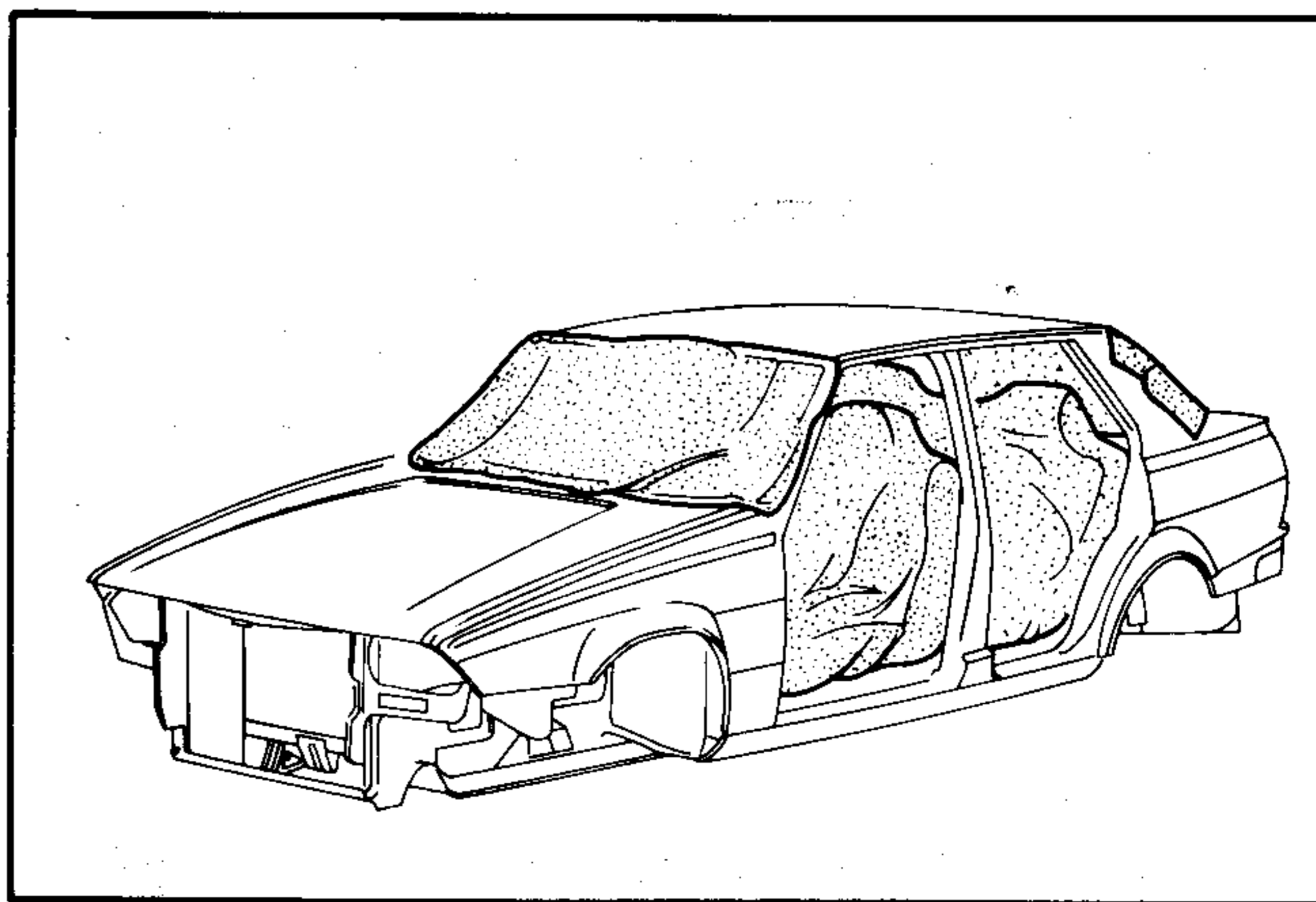
During straightening operations of the damaged body, never stand in front of the machine in the direction towards which it is straightening.



### BODY AND OUTER COMPONENTS PROTECTIONS

#### 1. Body protection

- Remove or cover vehicle trim (upholstery, instruments, carpets).
- Before welding, cover glasses, upholstery and carpets, with heat-resistant materials (this protection is highly recommended especially for CO<sub>2</sub> arc welding).



**2. Outer parts protection**

- When removing external parts (bonnet, back door, moldings, finishings) it is necessary to protect body surfaces with clothes, protection tape or other materials, in order not to damage or scratch vehicle body.
- The scratched painted surfaces must be repaired: even a slight scratch may cause corrosion.

**CAUTIONS DURING REPLACEMENT OPERATIONS**

It is recommended always to use genuine spare parts. This allows perfect repair and restoration of vehicle original functioning.

**CAUTIONS DURING WELDING OPERATIONS**



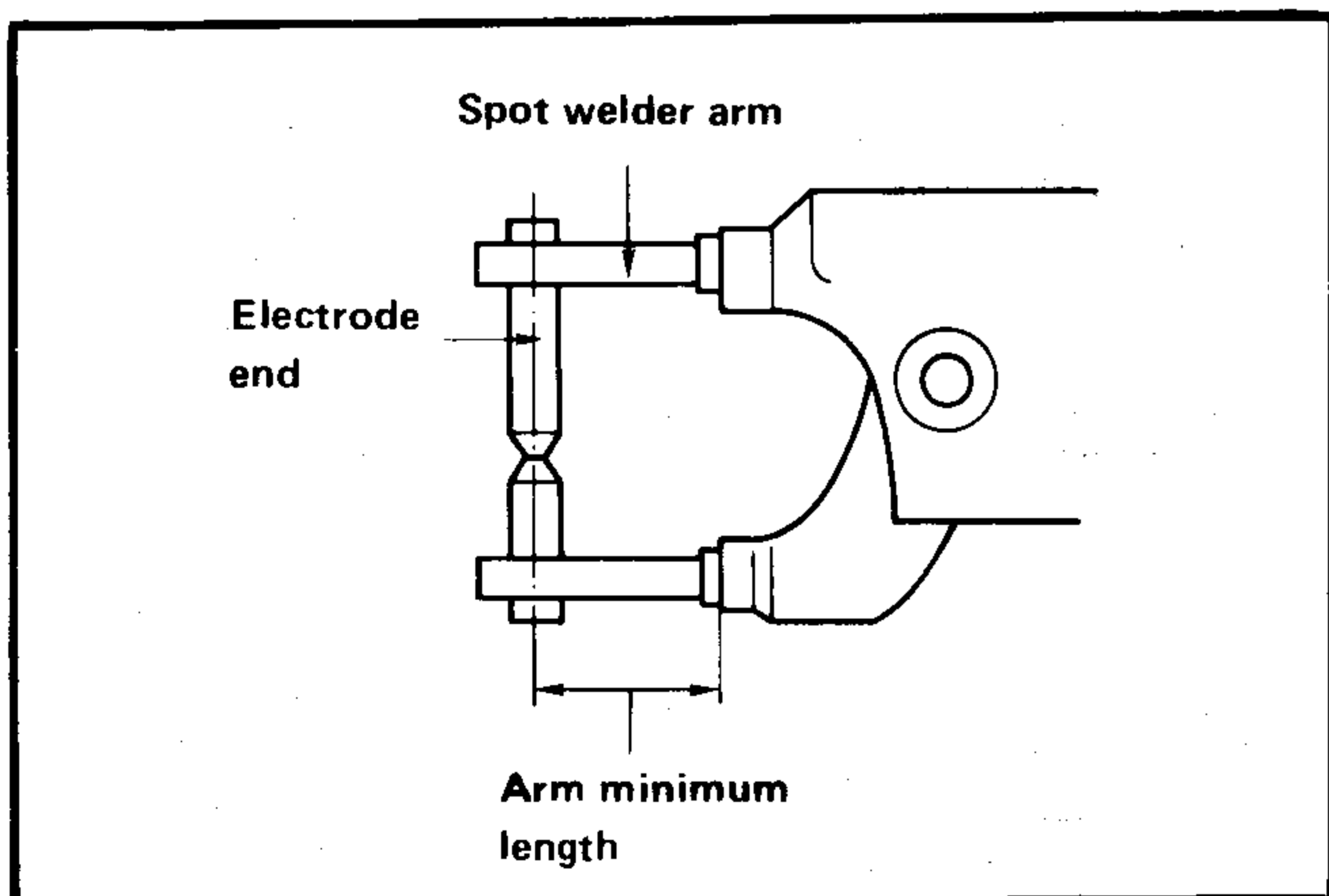
Before carrying out electric welding on vehicle, disassemble the injection electronic control unit to prevent damaging it. (Refer to Group 40 - Injection Control Unit - Removal and Installation).

**Spot welding**

**1. Spot welder**

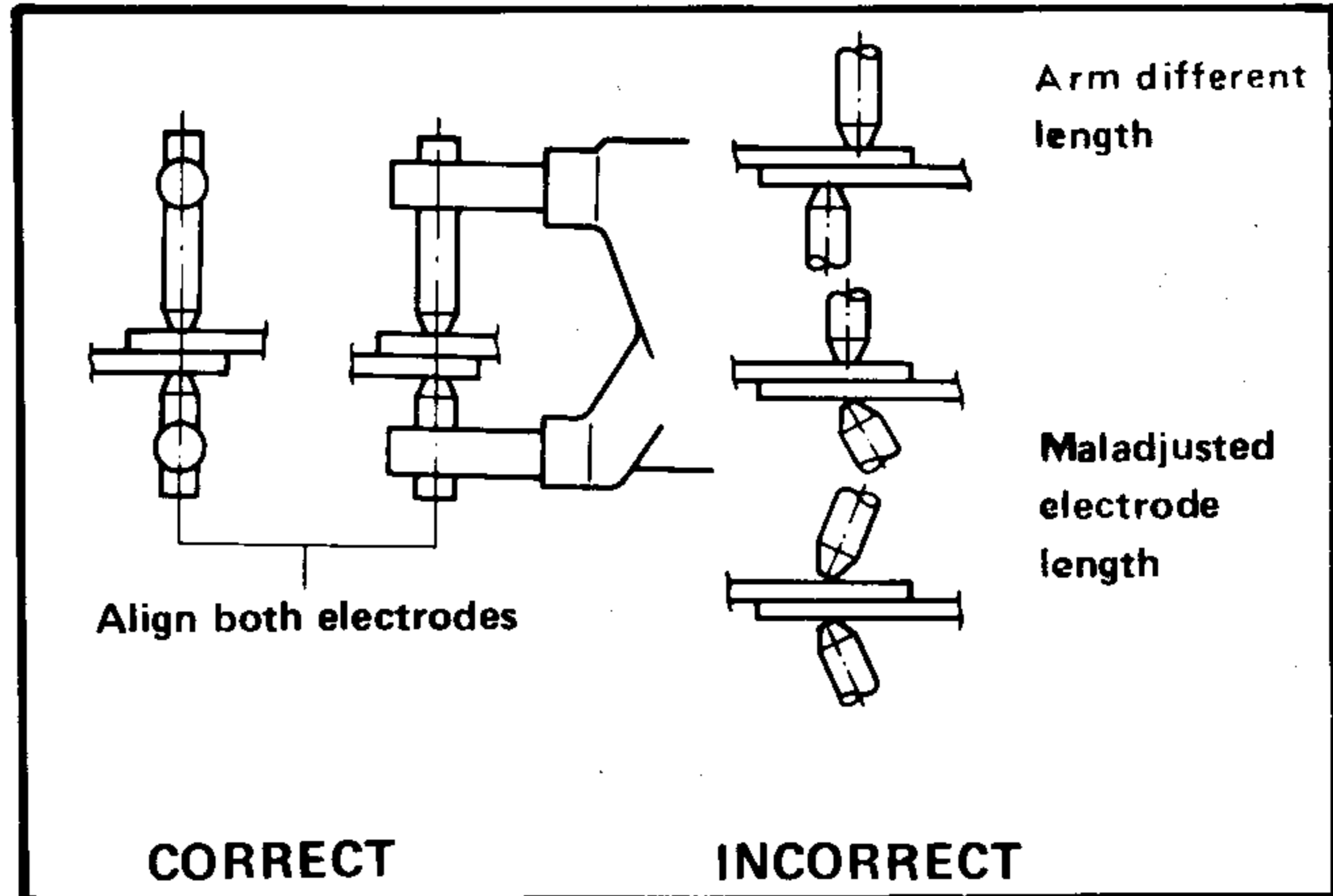
Before starting welding operations, carry out the following checks in order to obtain welding sufficient strength:

- (1) Welder arm adjustment
  - a) Keep the arm as short as possible in order to obtain welding maximum pressure.
  - b) Tighten arm and tips securely so as they do not get loose during soldering operations.



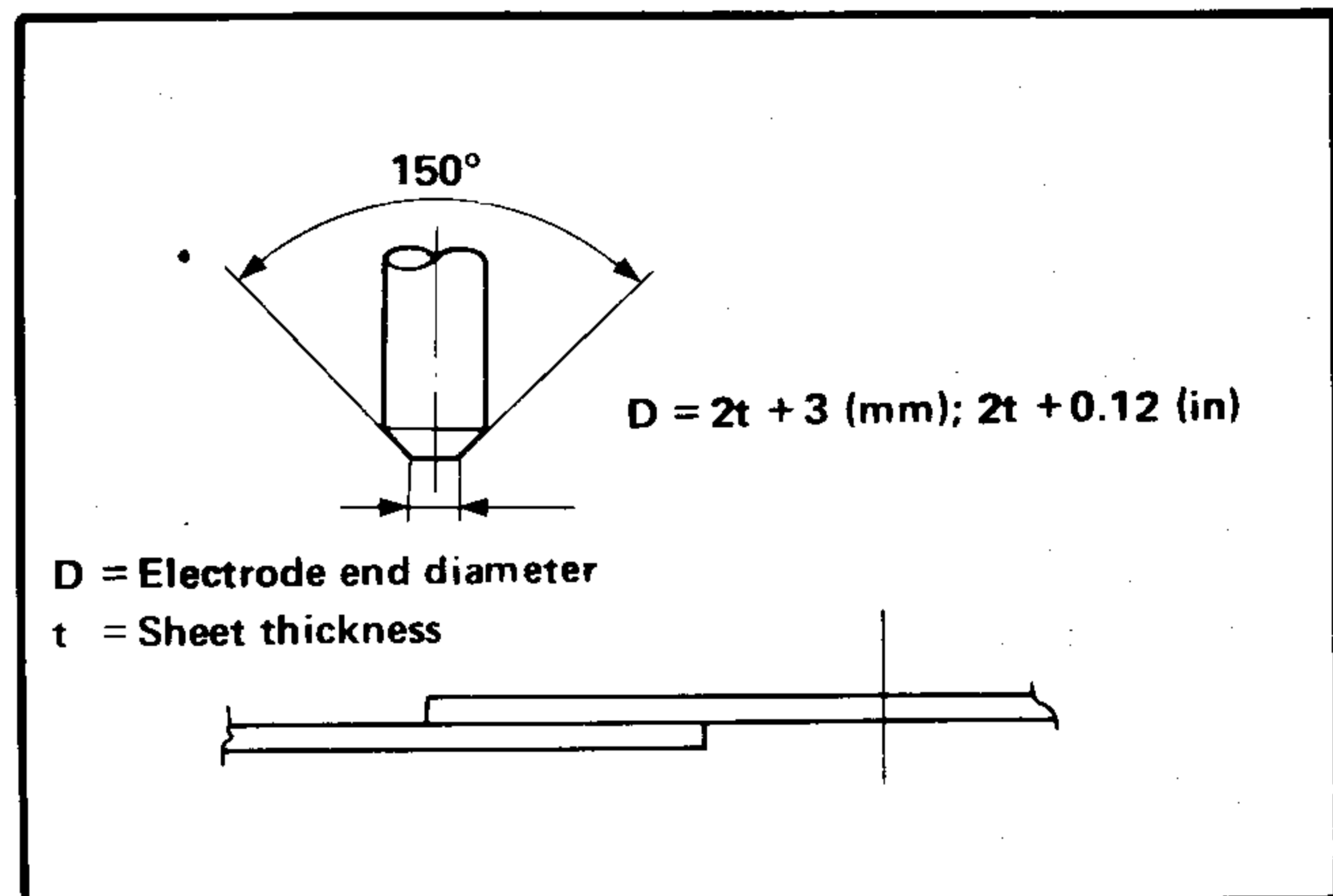
**(2) Electrode alignment**

Align ends of upper and lower electrodes. A misalignment of electrodes generates insufficient pressure of soldering points and, as a consequence, an insufficient strength of points themselves.



**(3) Electrode end diameter**

It is necessary to carefully verify diameter of electrode ends in order to obtain the required welding strength. Before starting working, make sure that end diameter (D) has a value proportional to sheet thickness. Remove burnt and foreign matters from electrode ends.



**2. Condition and preparation of panels to be soldered**

If the surface of the parts to be welded present gap, paint film, rust or dust, this prevents welding current to flow, thus reducing welding area and, as a consequence, strength of welding spot.

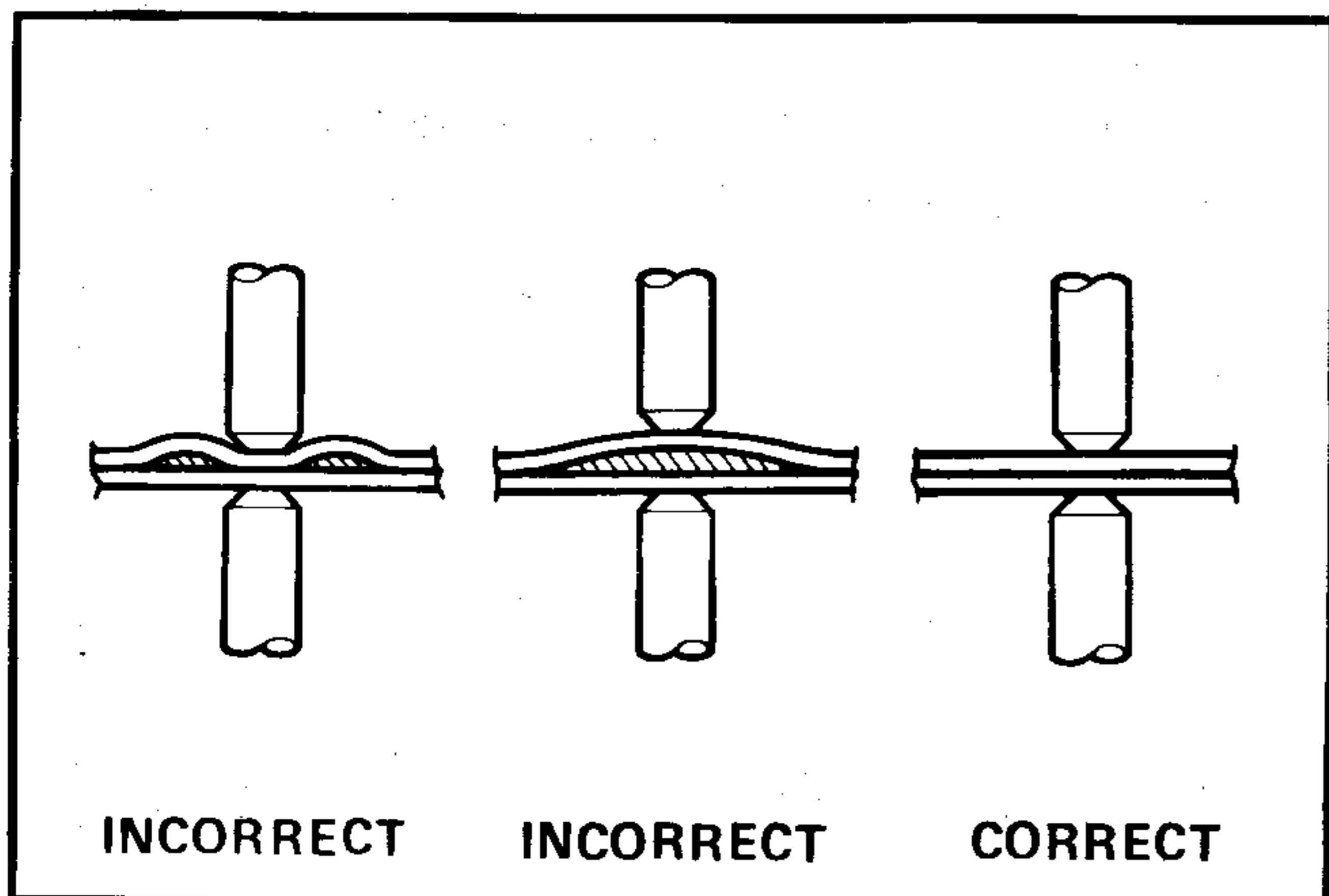
Before starting welding, verify conditions of the parts to be welded, carrying out proper corrections.

**(1) Clearance between the parts to be welded**

Presence of any clearance between surfaces to be welded causes current flow to be reduced. The welding thus obtained, results to be insufficient and poor in strength. Before carrying out soldering, match the surfaces and, when necessary, tighten them by means of a clamp.



## BODY – SHEET METAL PANELS

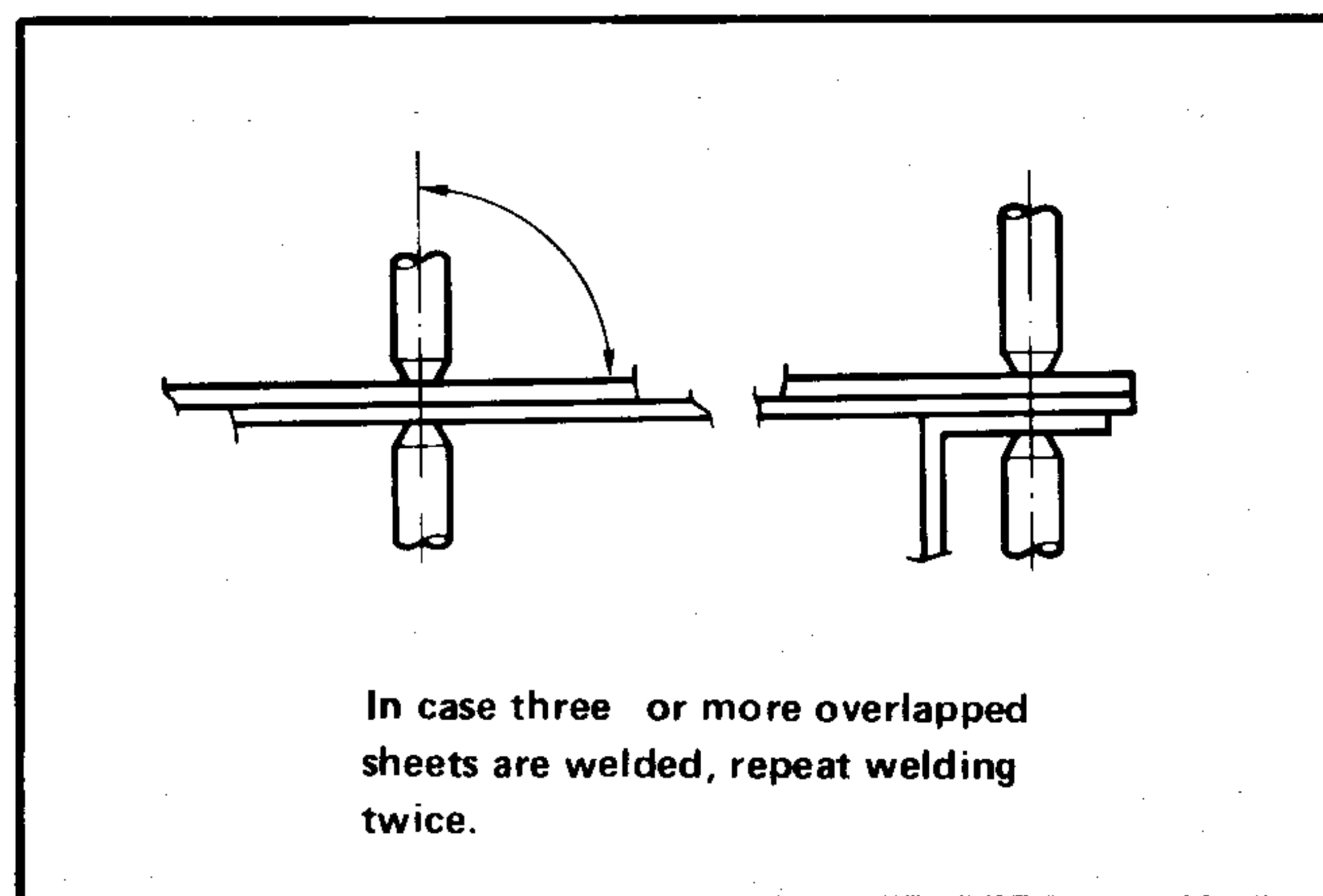


### (2) Electrode installment

Operate such as sheet forms a right angle with electrodes. If not so, current flow will be low and the obtained welding strength insufficient.

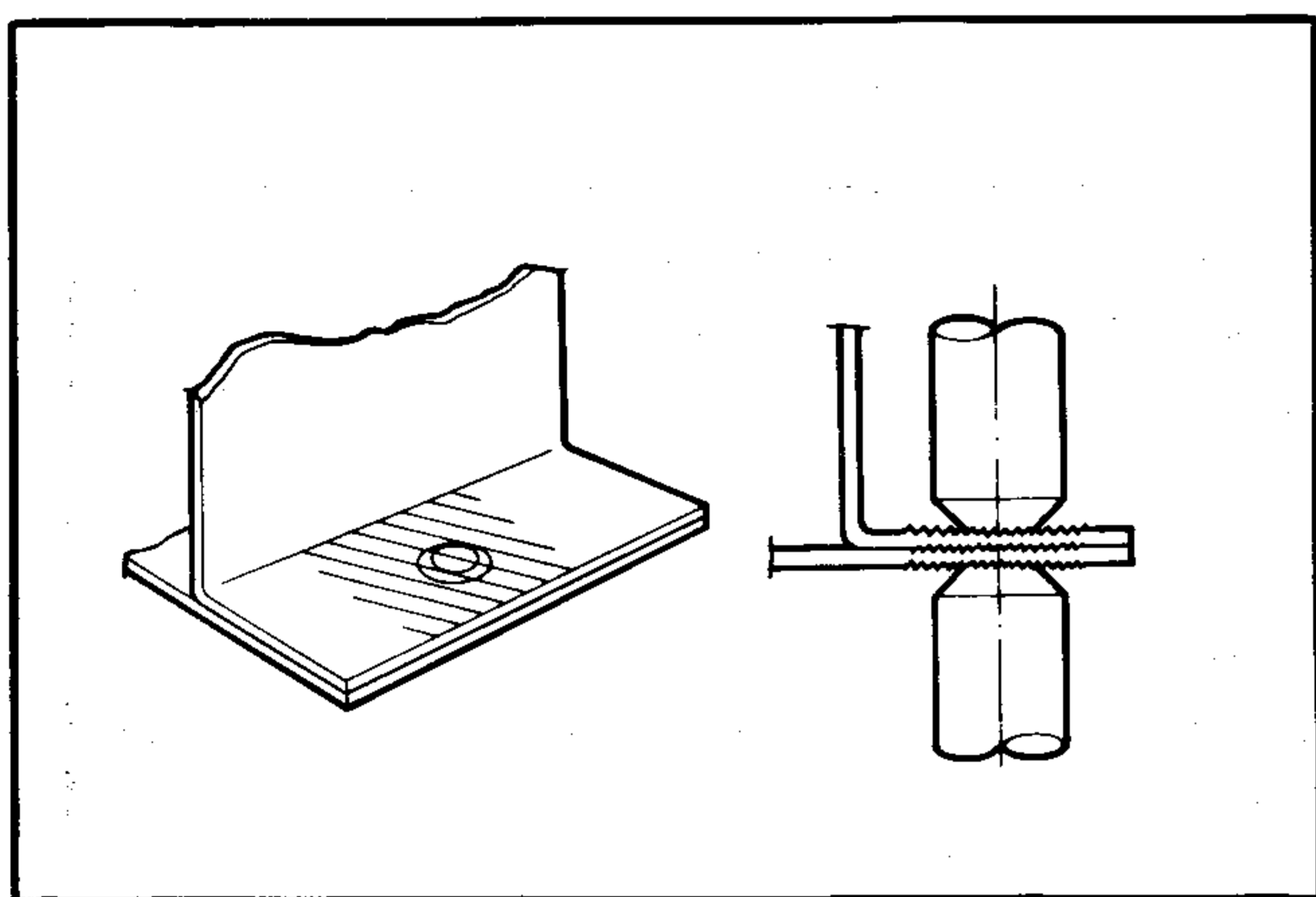
### (3) Welding of three or more overlapped sheets.

In the areas where three or more sheets are overlapped, spot welding must be repeated.

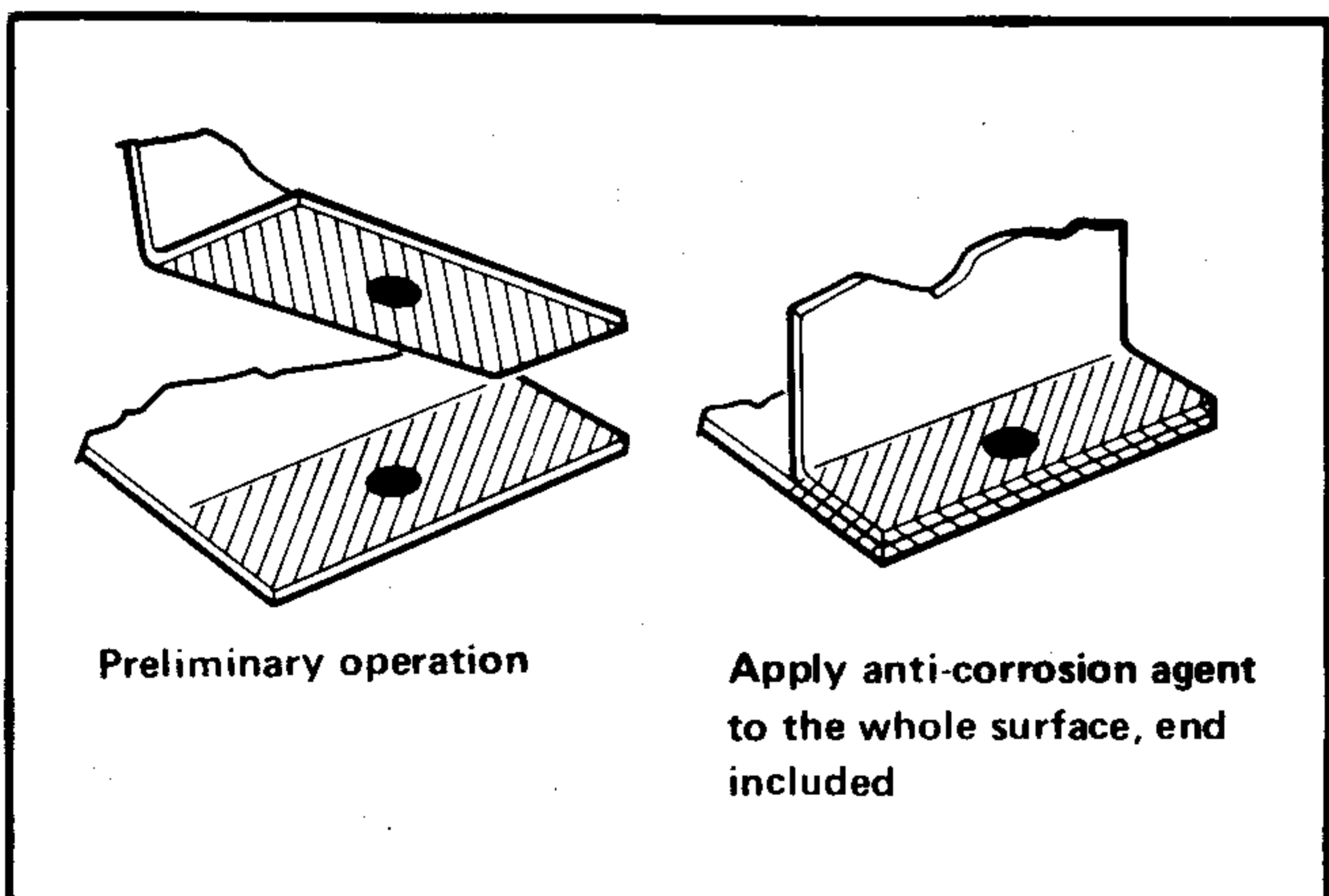


### (2) Welding of metal surfaces

Prepare the surfaces to be welded, removing all impurities and foreign matters (paint, dust, rust) in order to obtain perfect welding.



(3) Anti-corrosion procedure applicable to all metal surfaces. Coat the surface to be welded with high conductivity anti-corrosion agent. It must be applied also to end of surface to be welded.



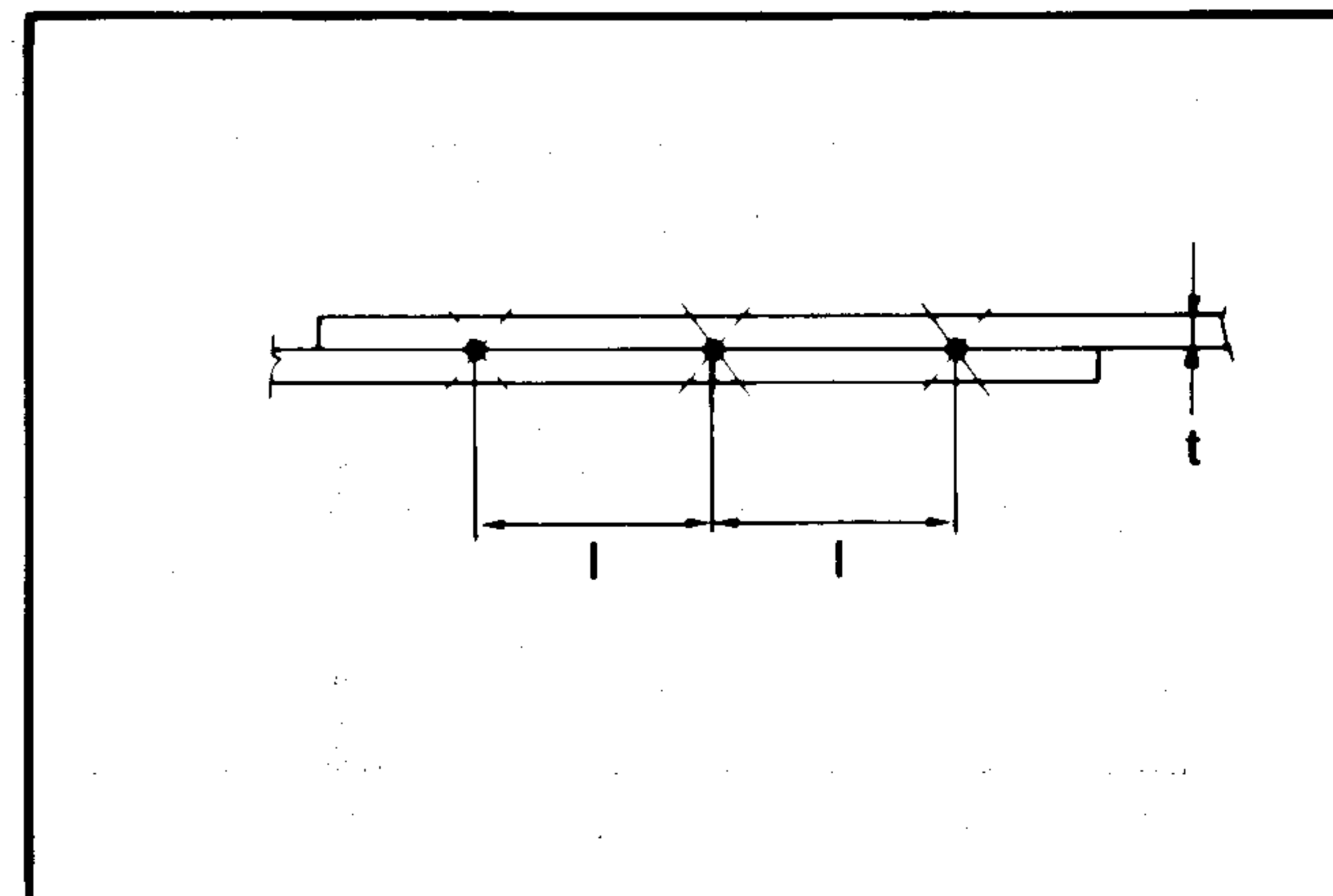
### (4) Number of spot welding points.

Generally, efficiency of spot welders available in the Repair Shop is lower than efficiency of spot welders used at the Factory. As consequence, the number of spot welding points performed at the Service Shop should be increased by 20 - 30 % with respect to weldings performed at the Factory.

### (5) Minimum welding pitch.

The minimum welding pitch is function of thickness of sheet to be welded. Generally, the values provided in the following table, should be observed.

Thickness (t) mm (in)	Minimum pitch (l) mm (in)
0.6 (0.024)	10 (0.39) or more
0.8 (0.031)	12 (0.47) or more
1.0 (0.039)	18 (0.71) or more
1.2 (0.047)	20 (0.79) or more
1.6 (0.063)	27 (1.06) or more
1.8 (0.071)	31 (1.22) or more



## 3. Cautions during spot welding

### (1) Spot welding selection.

Use the direct welding method (for the parts this method can not be applied to, use the MIG welding method).

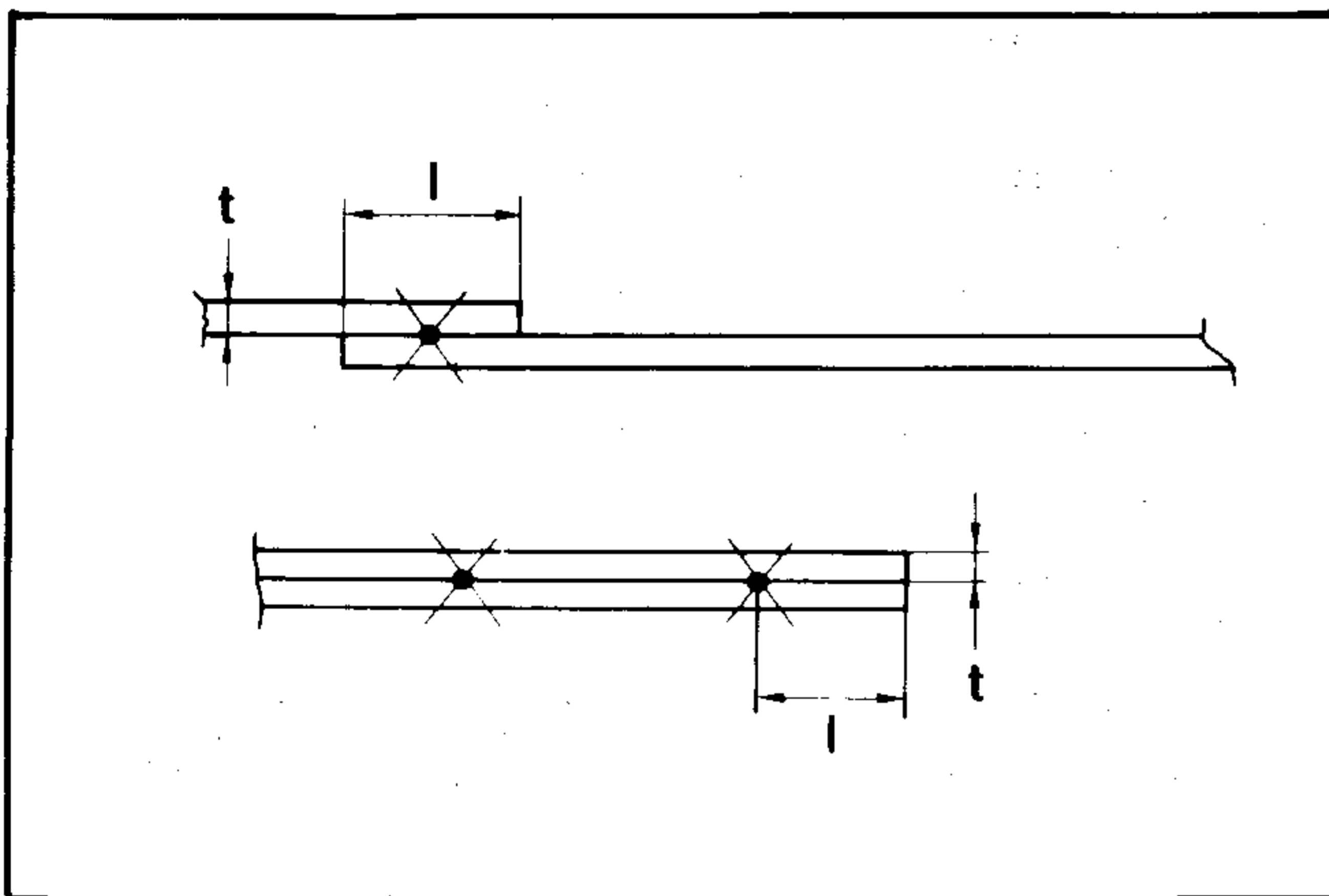
## BODY – SHEET METAL PANELS

It is important not to excessively reduce pitch, as it may cause current to flow through the surrounding points and then, a reduction of welding strength.

### (6) Welding spot position from panel edge.

In case of welding in proximity to panel edge, comply with dimensions provided in the following table.

Thickness (t) mm (in)	Minimum pitch (l) mm (in)
0.6 (0.024)	11 (0.43) or more
0.8 (0.031)	11 (0.43) or more
1.0 (0.039)	12 (0.47) or more
1.2 (0.047)	14 (0.55) or more
1.6 (0.063)	16 (0.63) or more
1.8 (0.071)	17 (0.67) or more

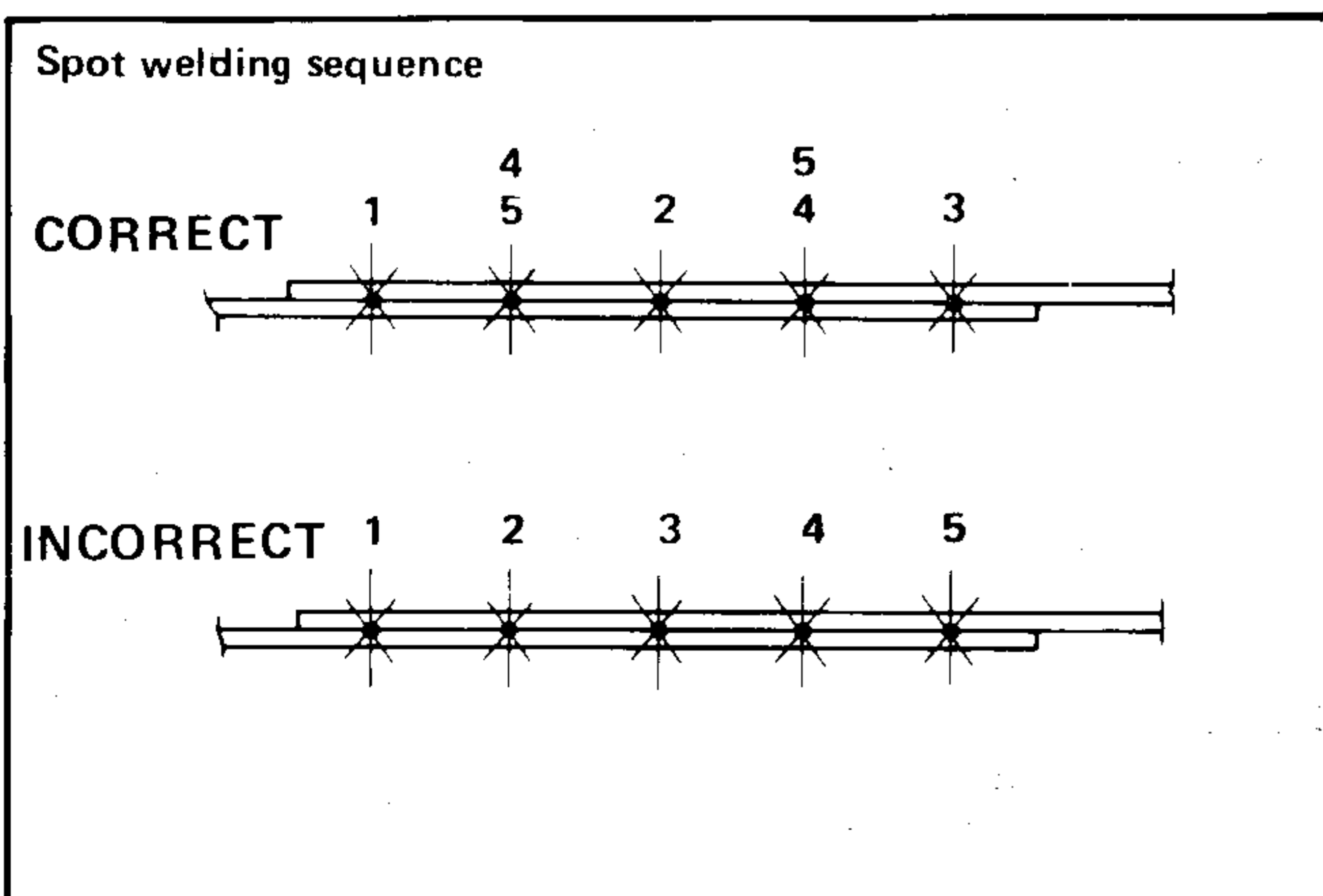


A welding too near to panel edge has no strength enough; besides, sheet can get strained.

### (7) Spot welding sequence

Do not perform continuous spot welding along one direction only. This method generates a weak welding due to the current shunt effect.

Each time electrode ends get overheated or change their color, stop welding and allow ends to cool.

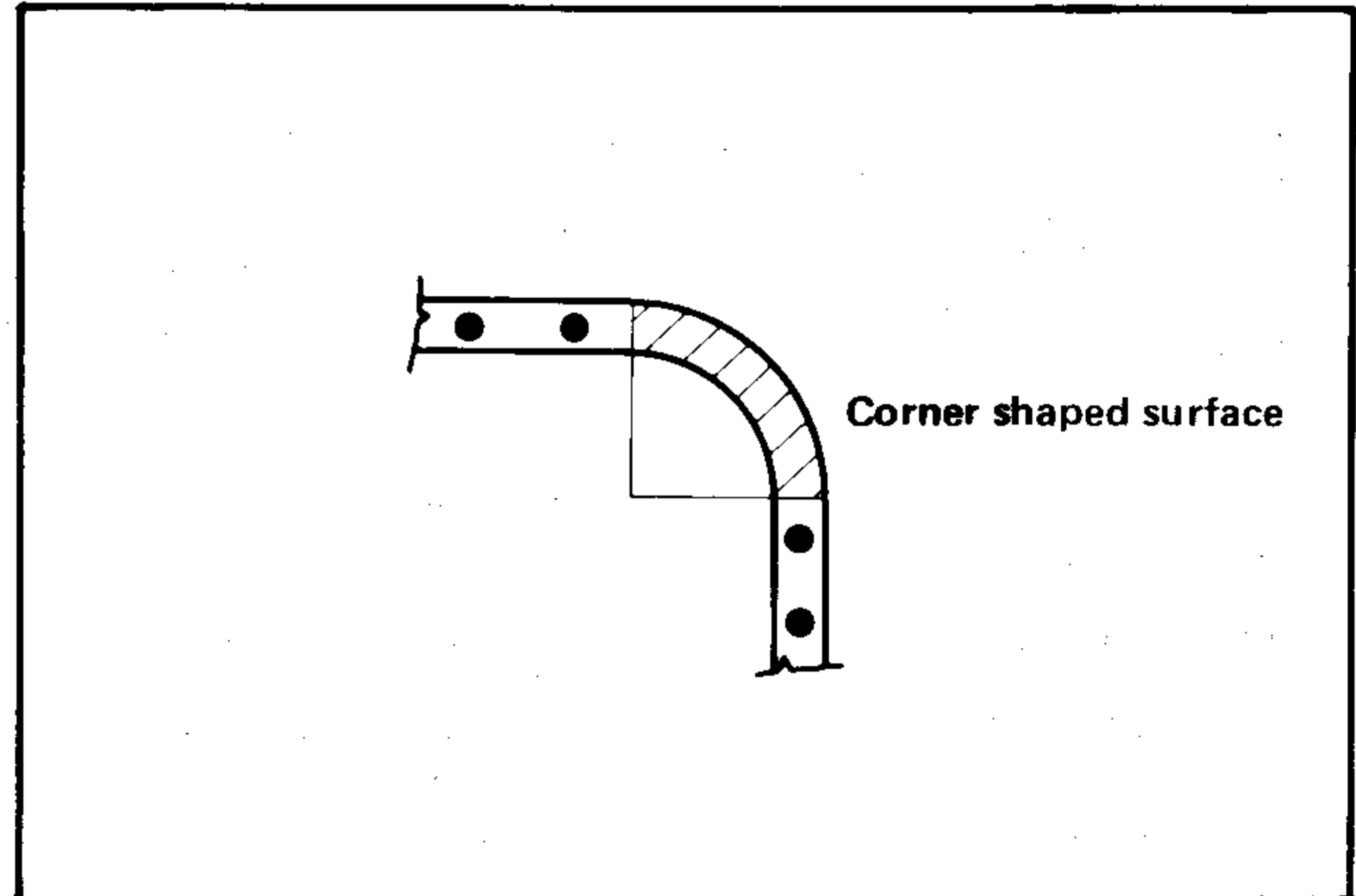


### (8) Welding on corner surfaces

Do not weld on corner surfaces. If not so, the welded surface results under stress concentration which can generate breakages.

e.g.:

- Upper corner of front pillar
- Front part of rear fender
- Front side of body side rear frame



### 4. Inspection of spot welded areas

Inspection of a spot welded part, can be of two types: visual and destructive. It is recommended to carry out the latter type of inspection both before welding operation and at the end of it.

The welding spots must be equally spaced and positioned on center of flange to be welded.

(1) Test to be carried out before welding, by means of test piece.

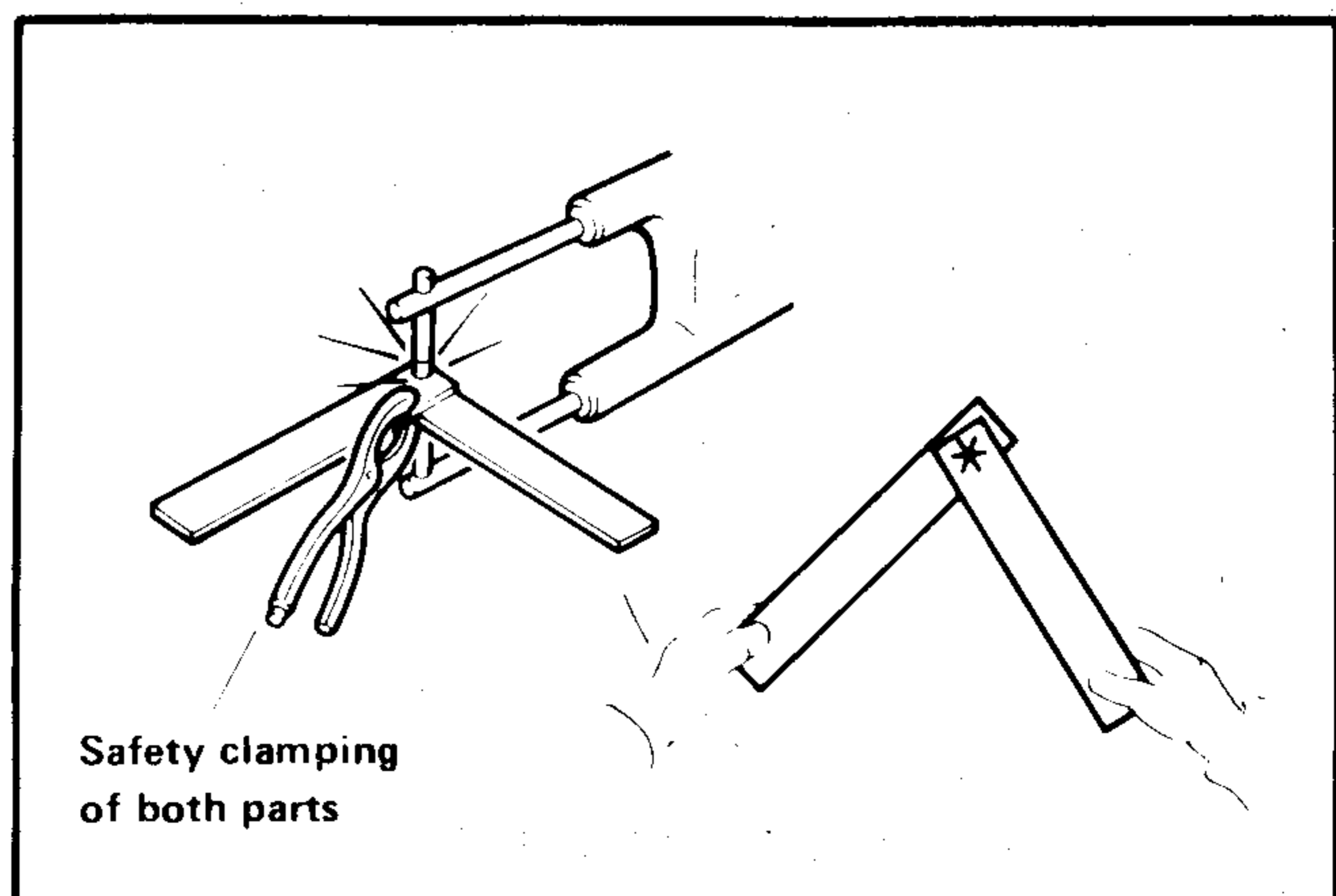
- Prepare test pieces having thickness equal to that of sheets to be welded and clamp them so as they do not slip or move during welding operation.

Carry out welding.

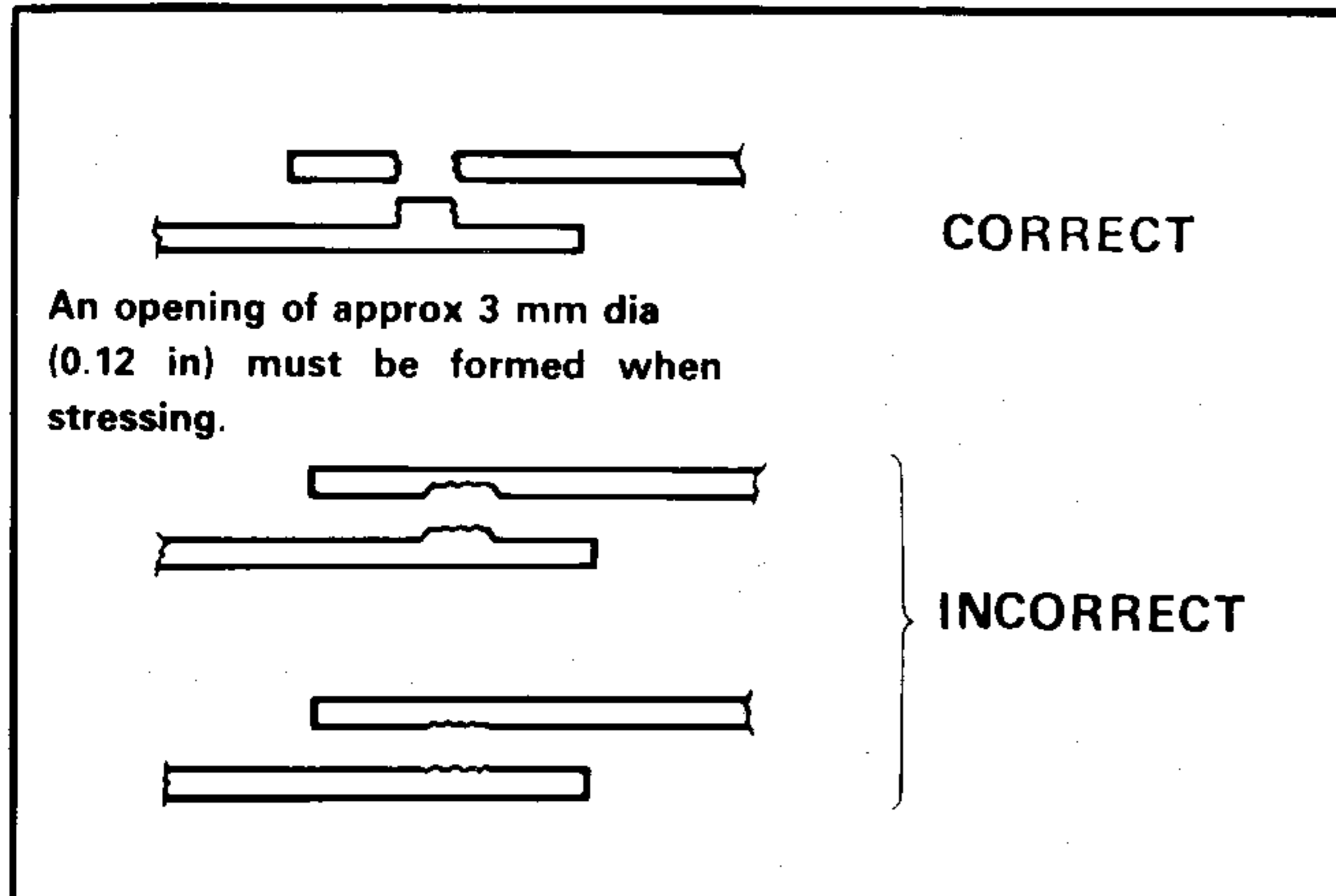
- Detach the welded test pieces by letting them rotate around welding point and verify the breakage areas. The whole welding spot must remain on one of the two sheets while, in the other corresponding one, there must be a circular opening.

If not so, welding conditions are incorrect.

Adjust pressure, welding current, current flow time, and then, the other welding conditions; then, repeat test as long as the optimal result is obtained.

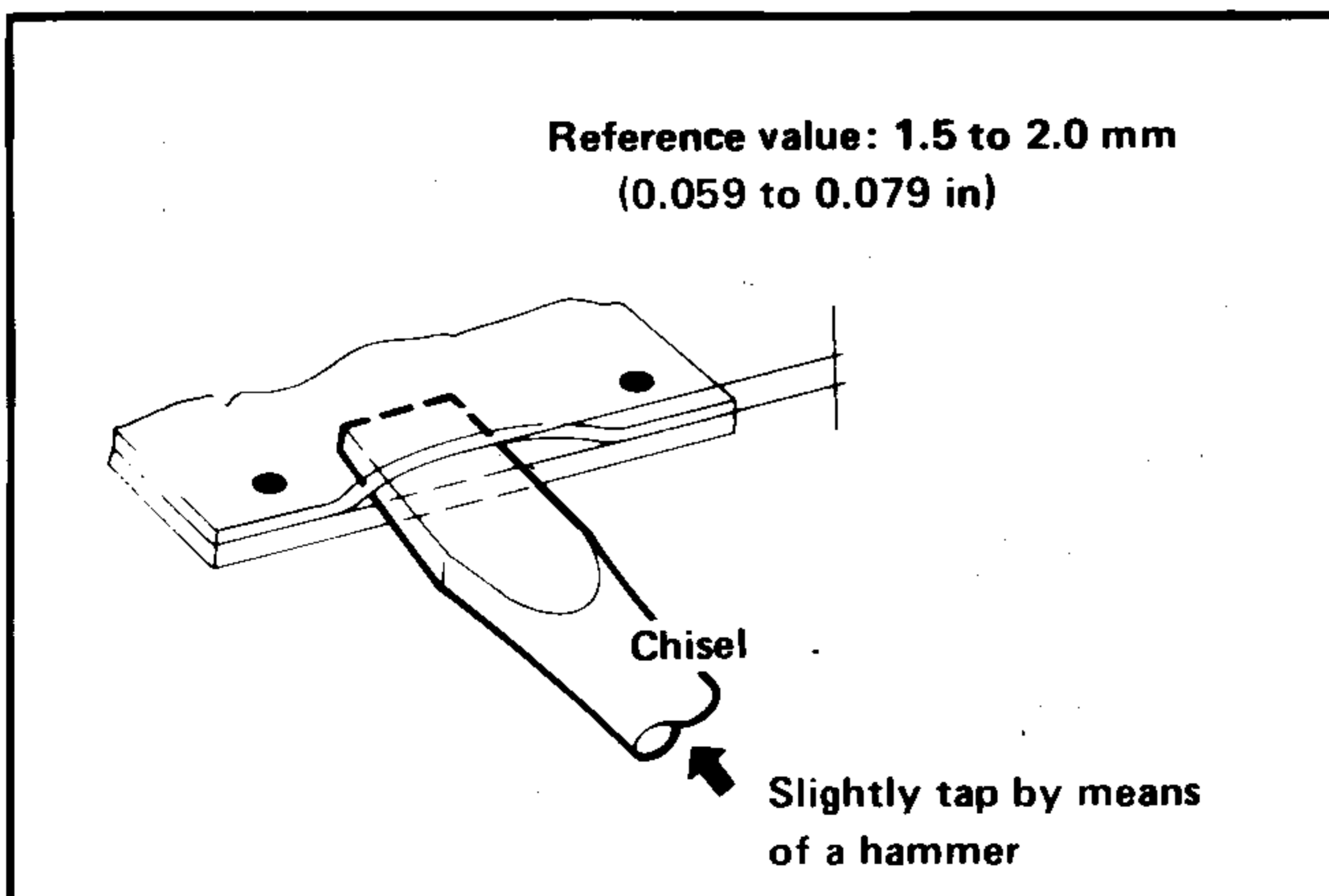
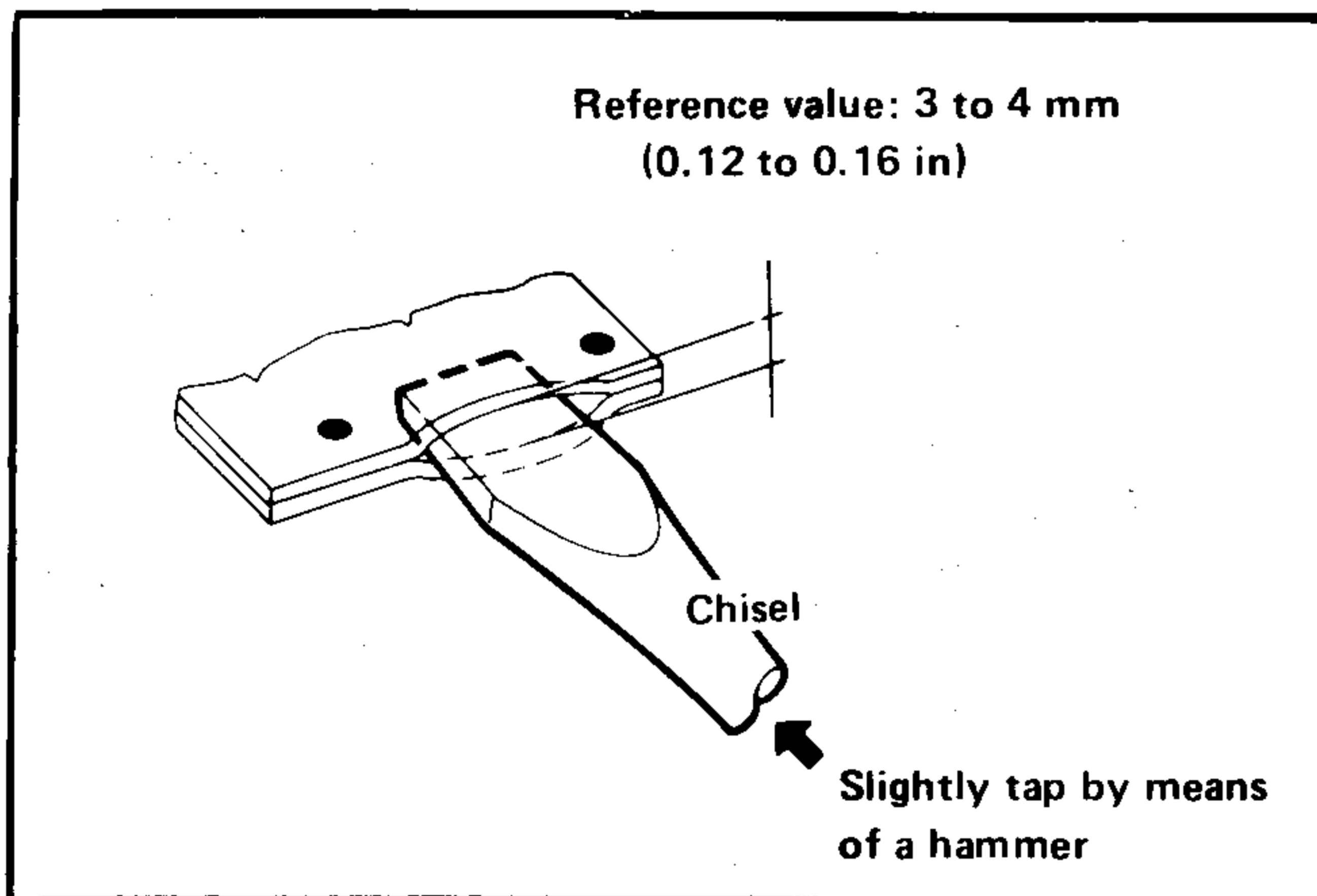


## BODY – SHEET METAL PANELS



(2) Test to be carried out after welding, by means of chisel and hammer.

- Insert tip of a chisel between the welded sheets and slightly tap on chisel until, between sheets, 3 to 4 mm clearance is obtained (0.12 to 0.16 in); if, on the welded part, no strain is present, test result is then positive.
- If sheets thickness is not equal, clearance between sheets must be limited to 1.5 to 2 mm (0.059 to 0.079 in).  
Take into account that the above value is only a reference one.
- The mentioned clearance changes according to position of welding spots, flange length, welding inclination and other factors.  
Never exceed this limits in order not to cause detachment of welding points.
- After test, make sure that the strained part is re-



### MIG welding

#### 1. Conditions of panel to be welded

By means of belt sander or wire brush, remove any foreign matter from surface.

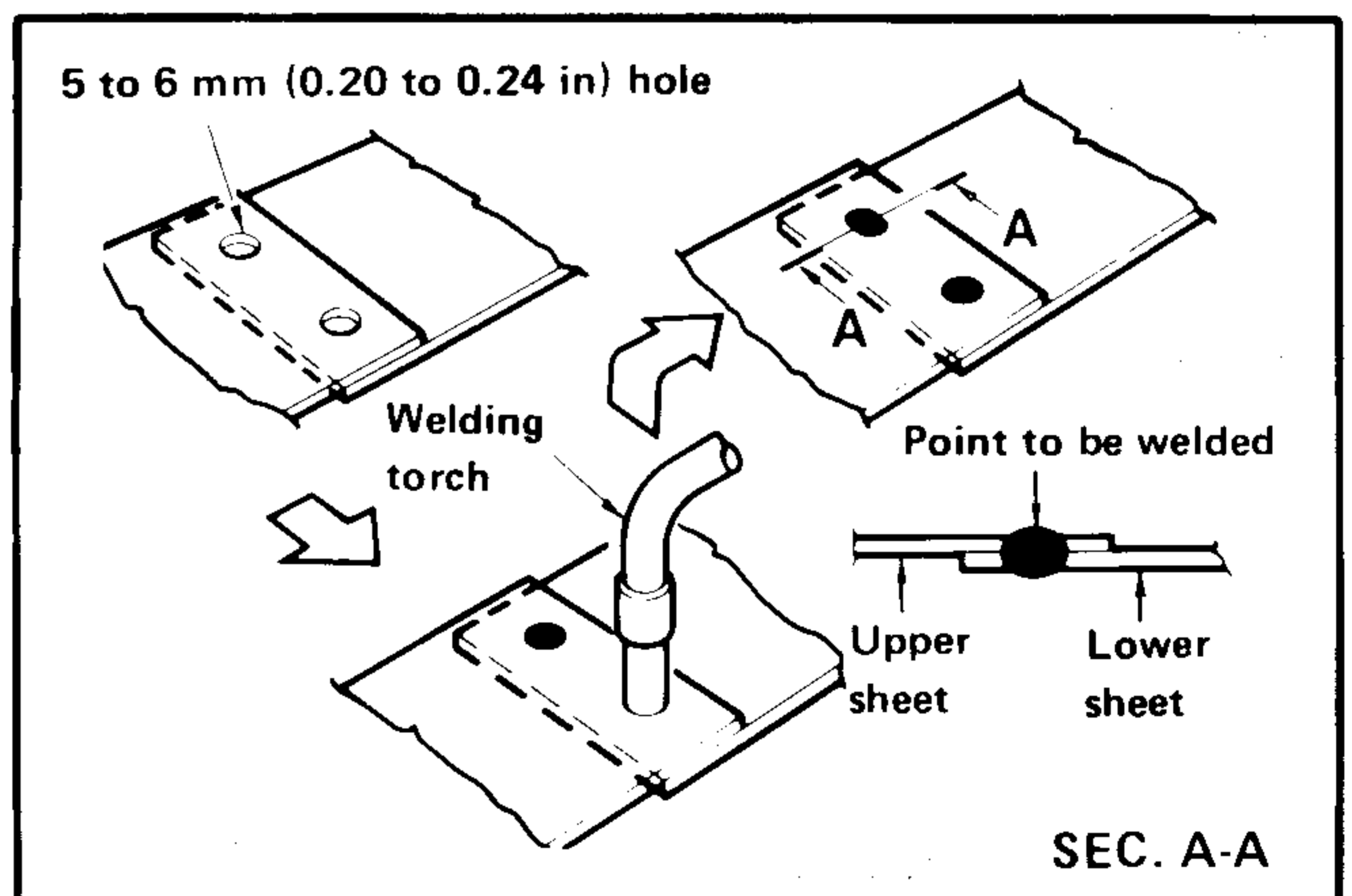
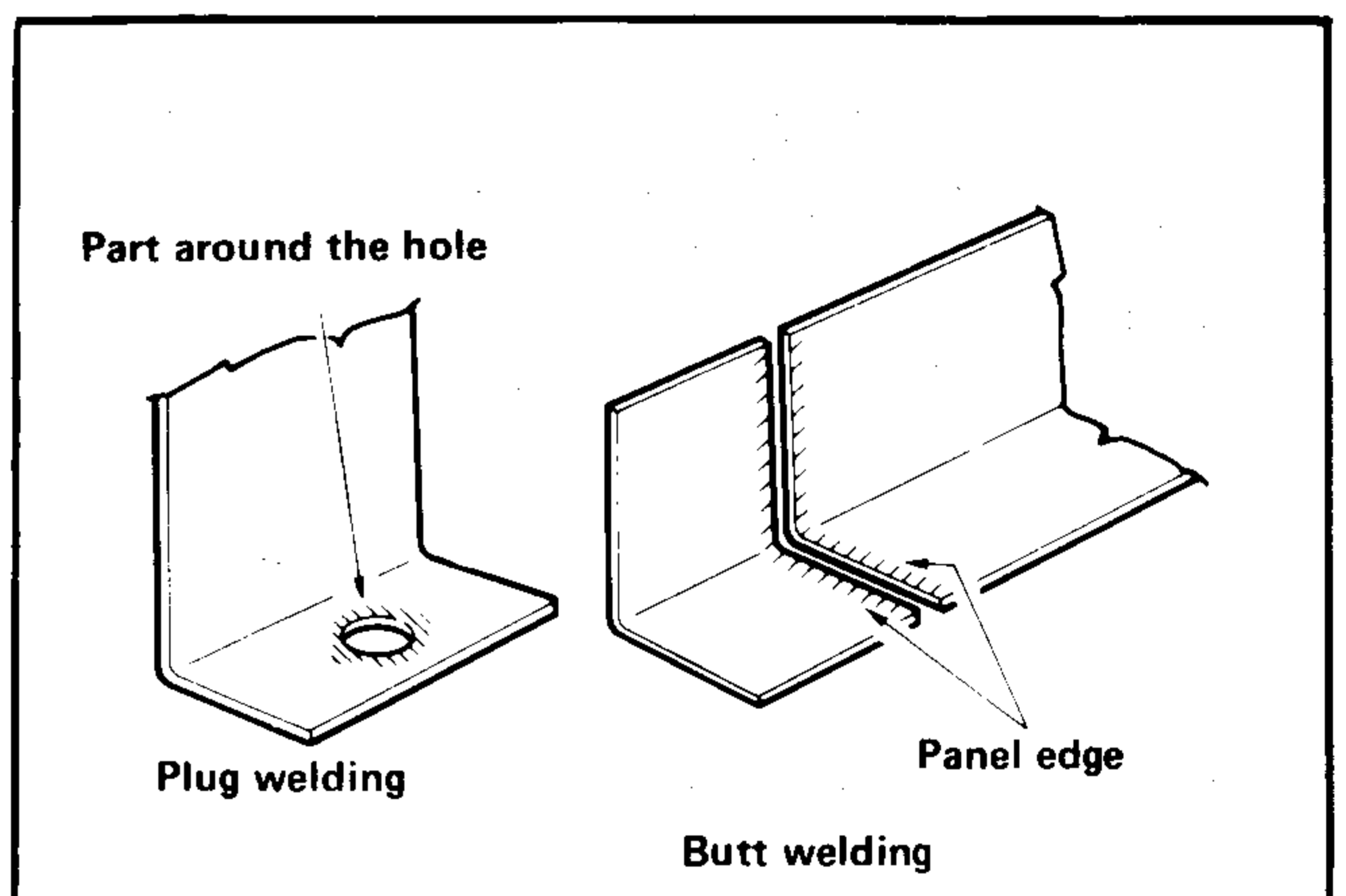
Paint films, rust or oils present on sheet surface, causes welding strength to decrease thus generating blow holes.

#### 2. Cautions during welding operations

##### (1) Plug welding (of pre-established holes)

Plug welding is to be executed in the place of spot welding when the edges to be joined can not be accessed by welder.

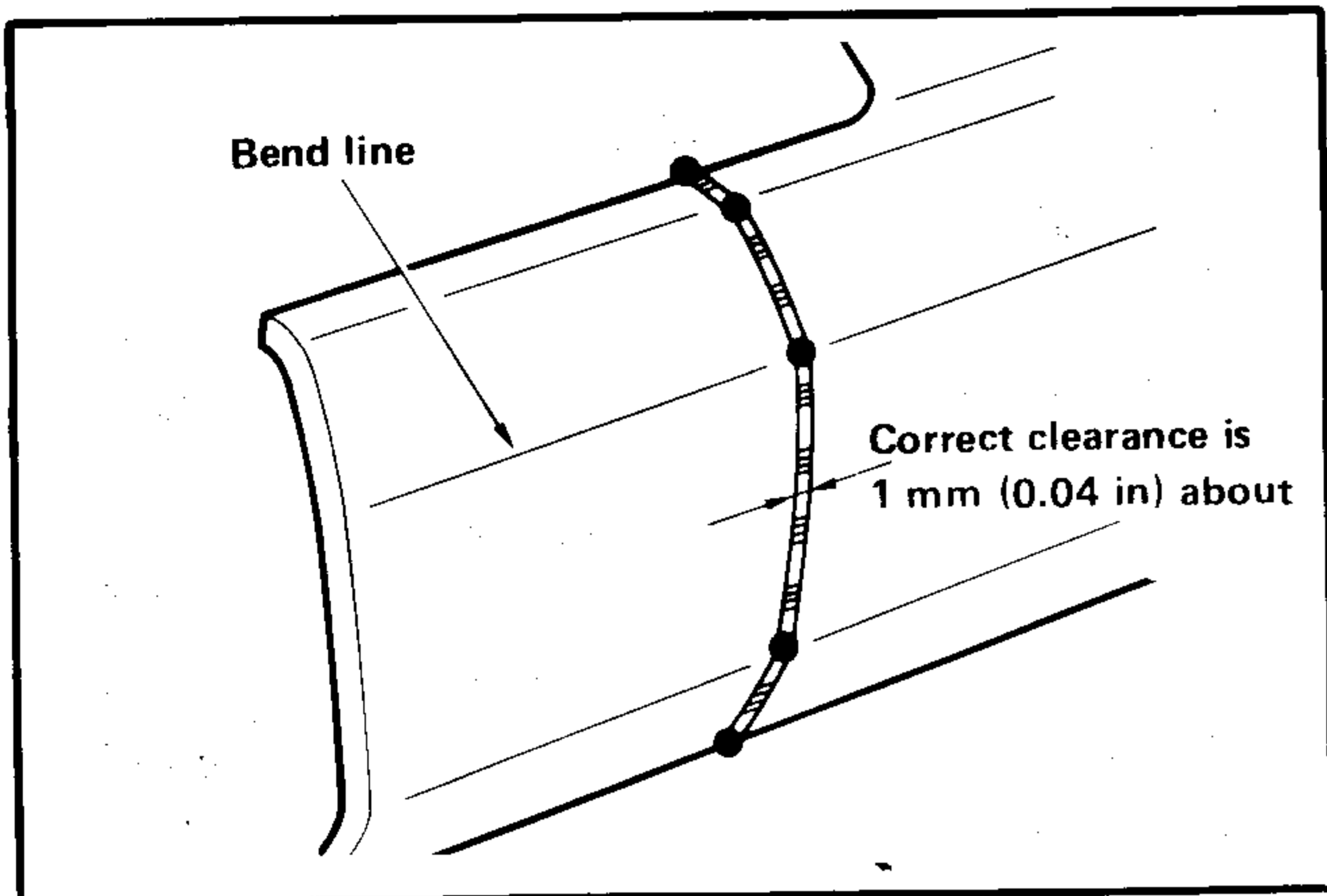
- Make a hole, having 5 to 6 mm diameter (0.20 to 0.24 in) on one of the two sheets to be welded, then match the two sheets and clamp them.
- Position the torch at right angle with respect to sheet, then fill metal into the hole.  
Each time welding is stopped, an oxide film generates on the surface which causes blow holes. If this occurs, remove oxide by means of a wire brush.
- Make sure that welding between upper and lower sheet is perfect.



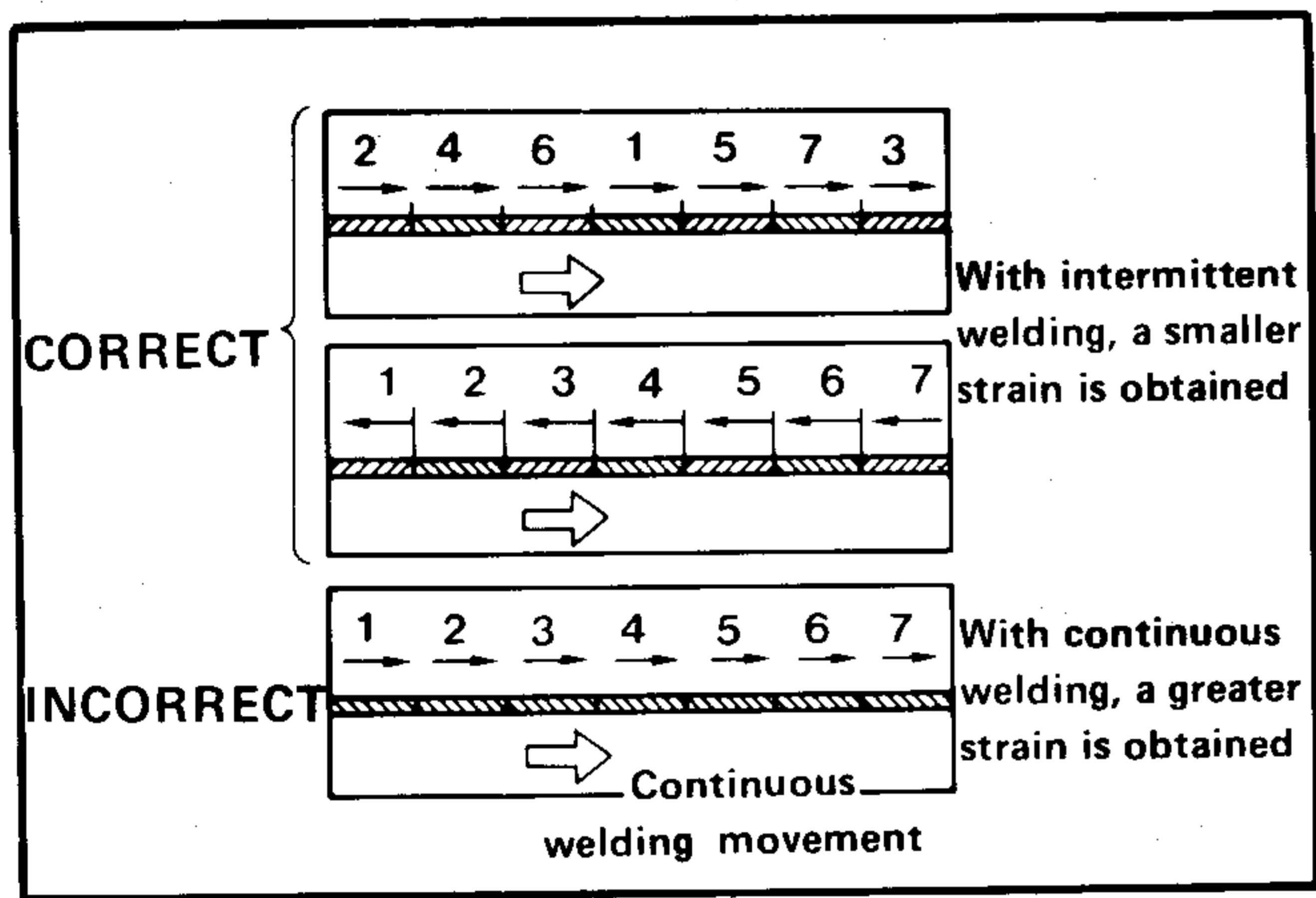
#### (2) Butt welding

- By means of intermittent weld, tack the two surfaces to be welded in order to prevent strains and align the two surfaces, then, fill in the spaces by placing small welding beads.

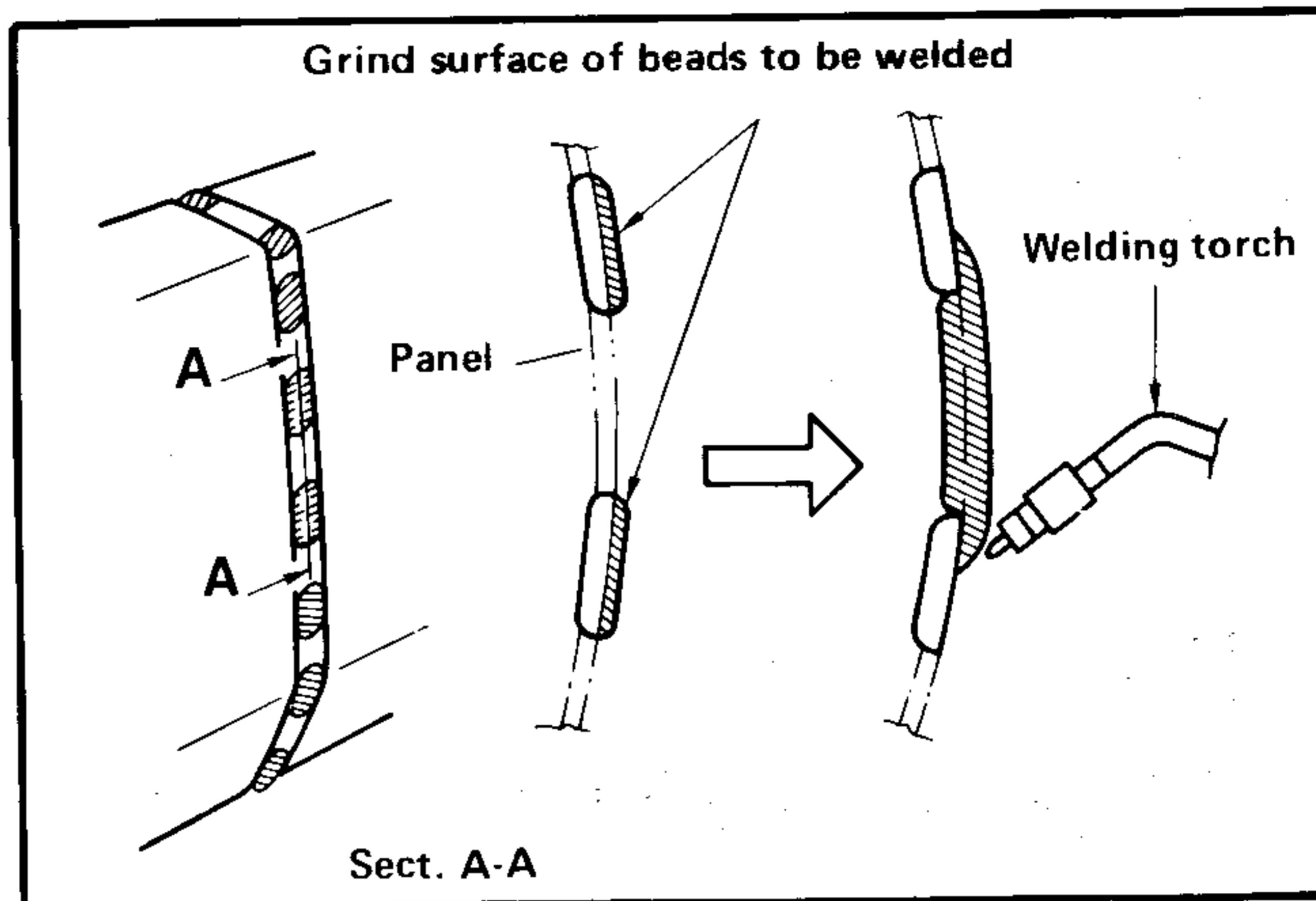
# BODY – SHEET METAL PANELS



b) Do not perform long weld line: it may cause strains. Proceed as shown in figure in order to reduce strain.



c) Before filling space between intermittently placed beads, grind beads by means of a sander following panel shape. If bead surface is not grinded, blow holes may occur.



### 3. Welding inspection

The inspection procedure is similar to the spot welding one.

# REPLACEMENT OPERATIONS

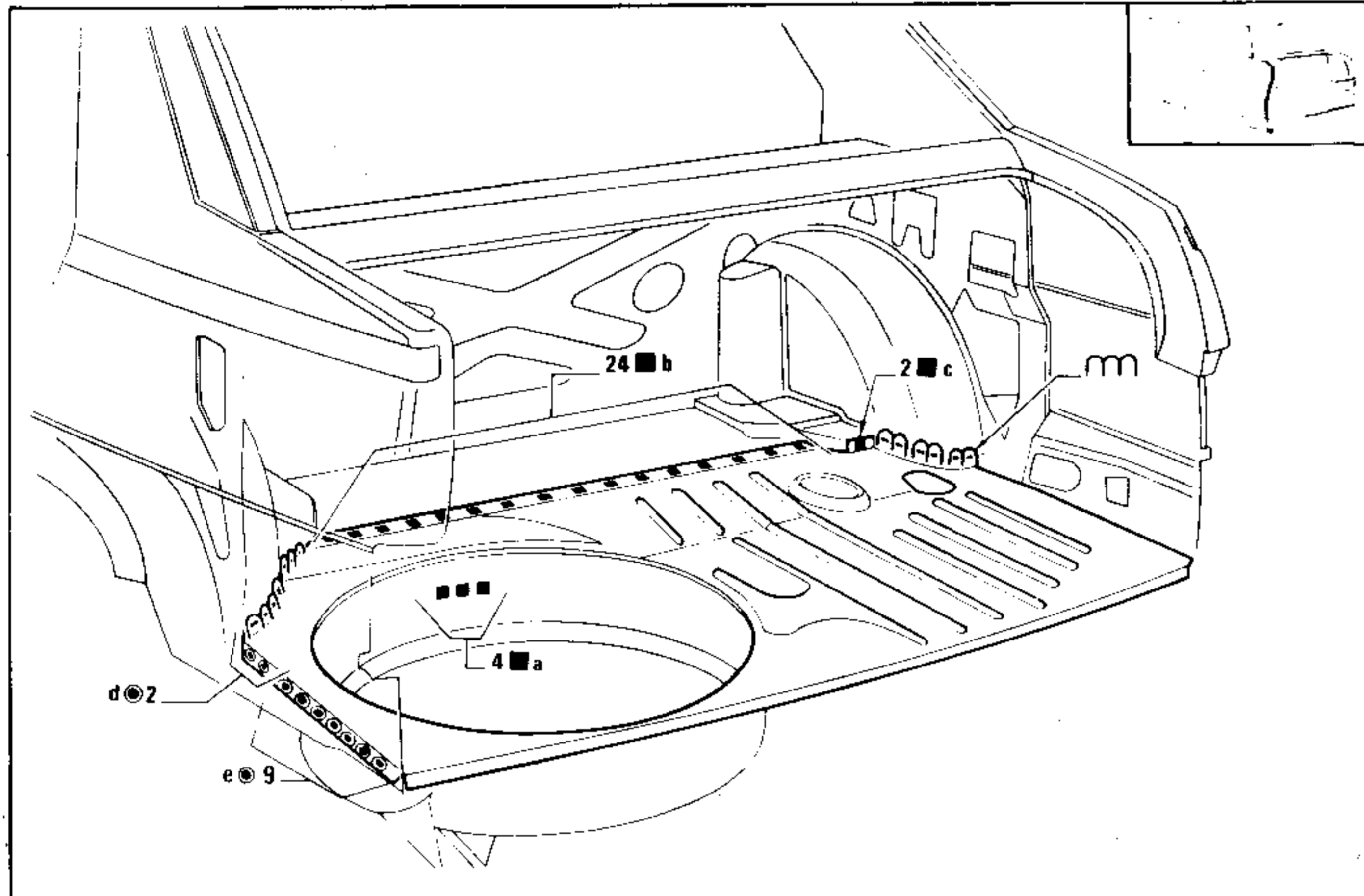
## HOW TO READ THIS CHAPTER

Spare parts of the sheet metal panels of body, will not necessarily be supplied as shown in the figures below.

The formulation of the present part of the manual is uniform for all the replacement operations. For its structure, refer to the following example:

**(I) LUGGAGE COMPARTMENT FLOOR WITH REAR PANEL REMOVED**  
Replacement is to be carried out after having removed the Rear Panel.

**(II) Service joints**



**(III) Parts to be welded**

a. Luggage compartment floor and cross member connecting bars	d. Luggage compartment floor, rear fender, and inner rear wheelarch
b. Luggage compartment floor and cross member connecting bars	e. Luggage compartment floor, bumper connection reinforcement beam, and rear fender
c. Luggage compartment floor and cross member connecting bars	

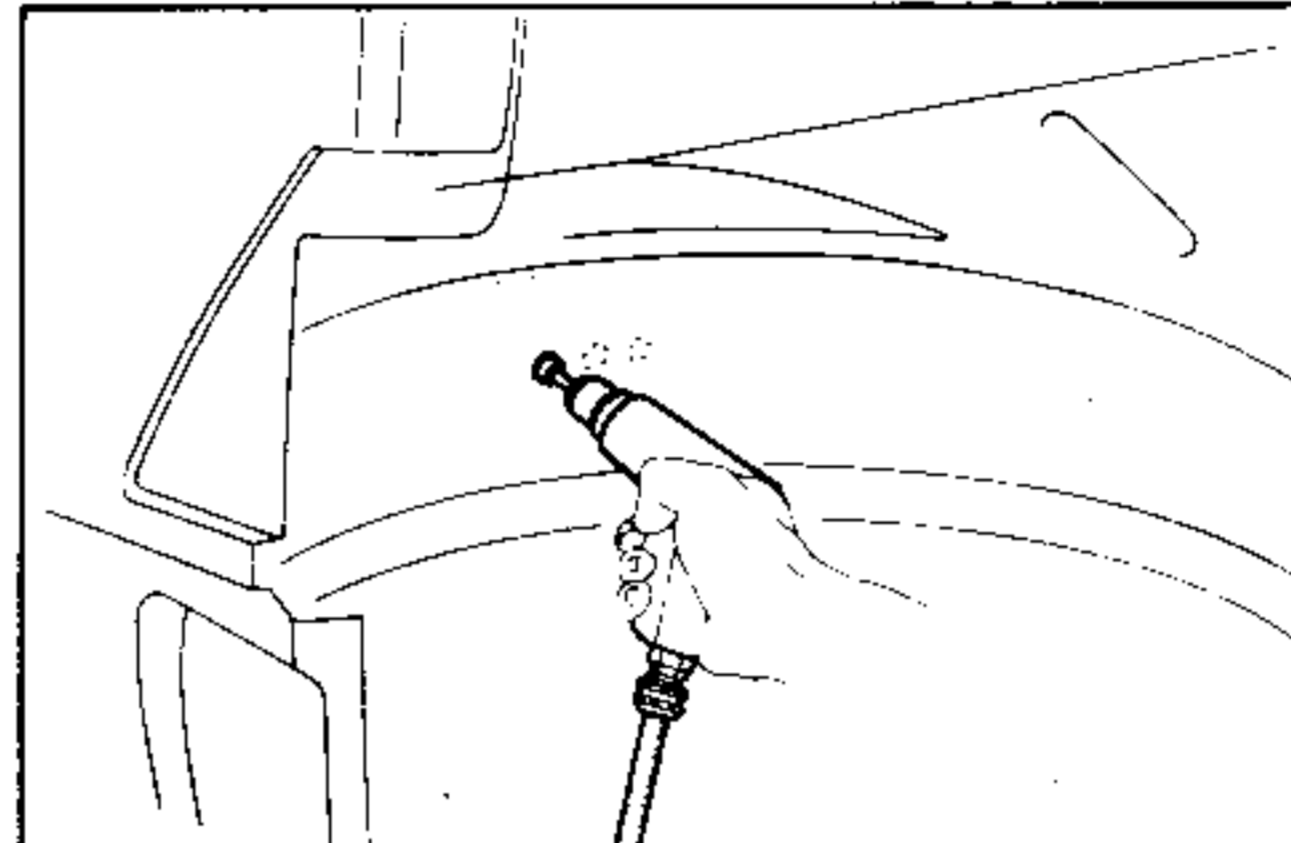
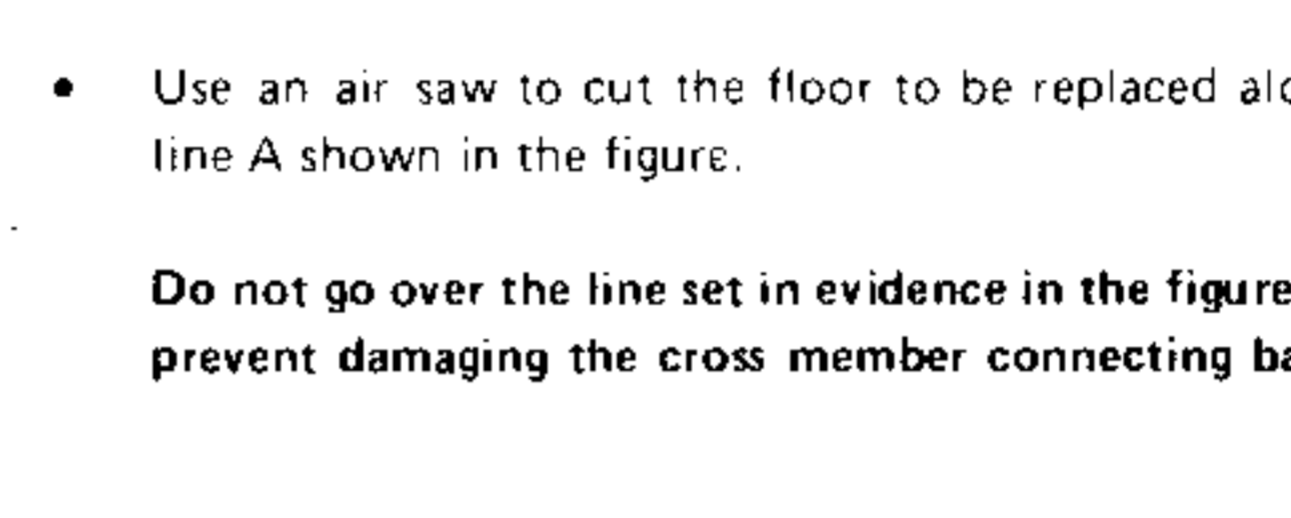
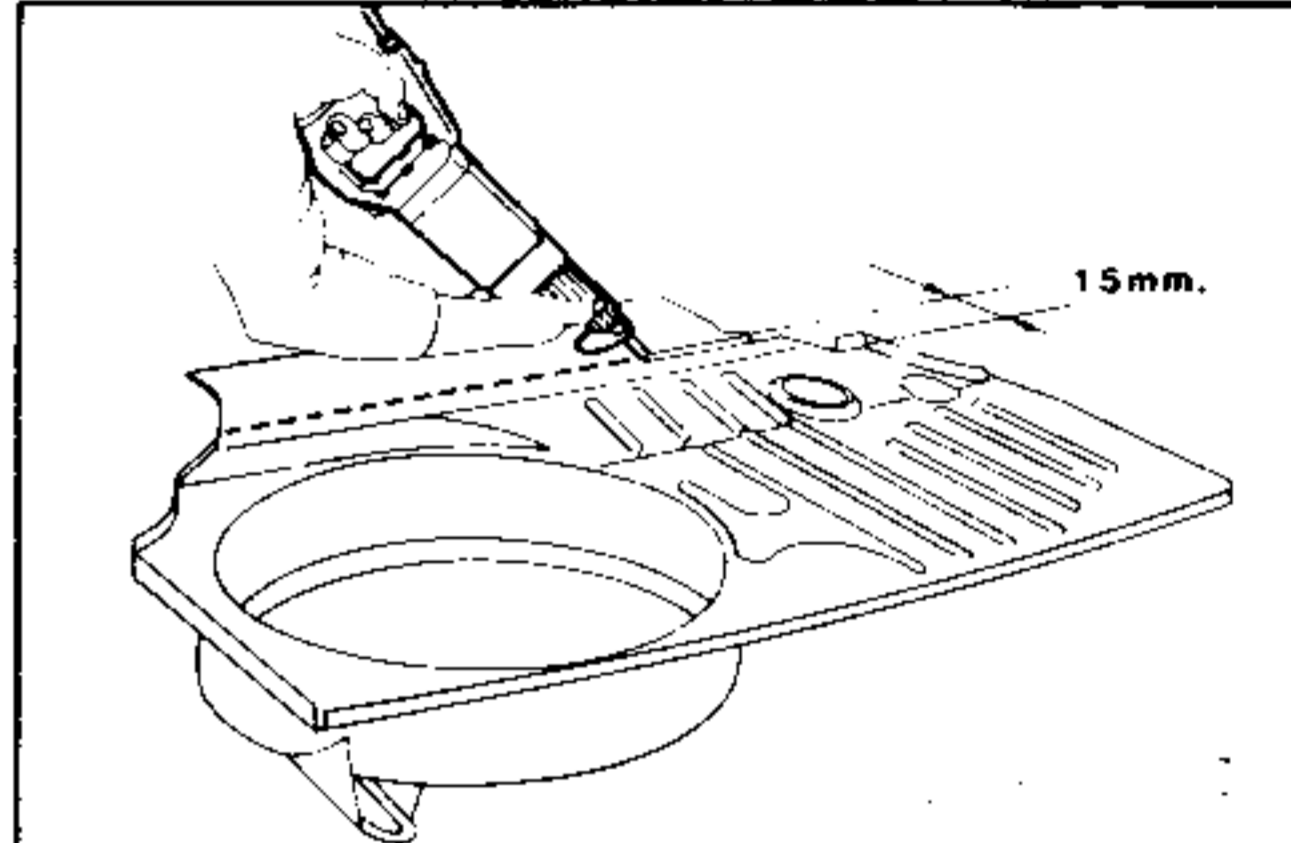
**(IV) REMINDER WHEN REMOVING**

- Use a pneumatic drilling machine and remove the welding spots between luggage compartment floor and cross member connecting bars in correspondence with the spare wheel compartment.
- Use an air saw to remove the welding spots of floor to bumper connection reinforcement beam.

**REMINDER WHEN INSTALLING**

- Adapt the new floor for installation on vehicle:
  - By means of an air saw, cut the floor at the dimension shown in the figure.
  - Drill the front edge of luggage compartment floor and spare wheel compartment for the following MIG plug welding.

Do not go over the line set in evidence in the figure to prevent damaging the cross member connecting bars.

Install the floor on vehicle by overlapping the front edge to the remaining part of the old one, then proceed with welding.

In detail:

### (I) LUGGAGE COMPARTMENT FLOOR WITH REAR PANEL REMOVED

In the title it is indicated the element to be removed (luggage compartment floor) specifying, if required, the operative condition (in this case, rear panel removed). If the element is not in the required conditions, it is necessary, to execute preliminary removal of the other components; in this case, it is necessary to remove the "rear panel", referring to the specific replacement procedures.

### (II) SERVICE JOINTS

Any information concerning the welding operations to be carried out is shown in the figure indicating the welding method and the spot numbers, together with accurate location of spots on the elements to be joined.

Example: a ● 3 — Welding spot number  
 — Welding type (spot welding: see see symbols on page 49-22)  
 — Parts to be welded

The welding spots applied by Manufacturer will be provided along the text. The number of welding spots per-

formed in the Service Workshops should be increased by 20 to 30 % , since the efficiency of welders used in the Service Workshops is lower than that used by Manufacturer.

Where necessary, the parts represented by chain line, set in evidence the components which must result to be removed or for which the preliminary removal is required according to step (I).

### (III) PARTS TO BE WELDED

A list is provided relevant to the component which are to be welded using the methods indicated in step (II).

### (IV) REMINDER WHEN REMOVING/ INSTALLING

Indication is provided, relevant to the main operations to be carried out, with special care in the identification of the areas concerned in the cut operations, selection of the equipment to be used and definition of welding methods to be adopted.


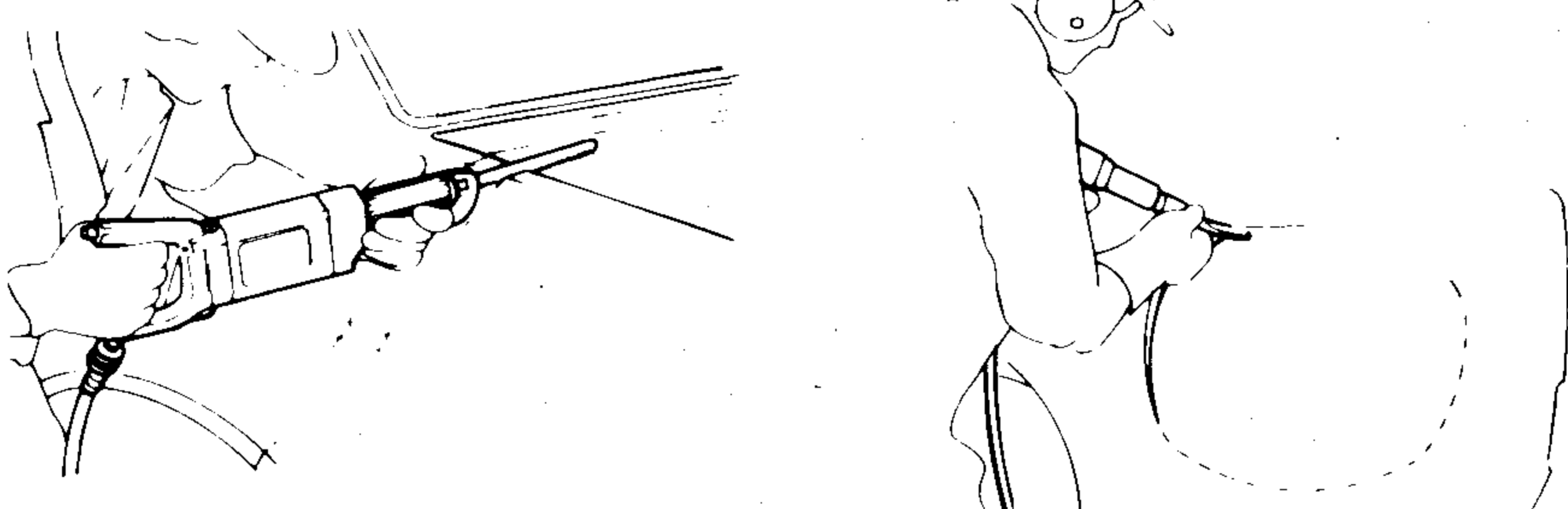
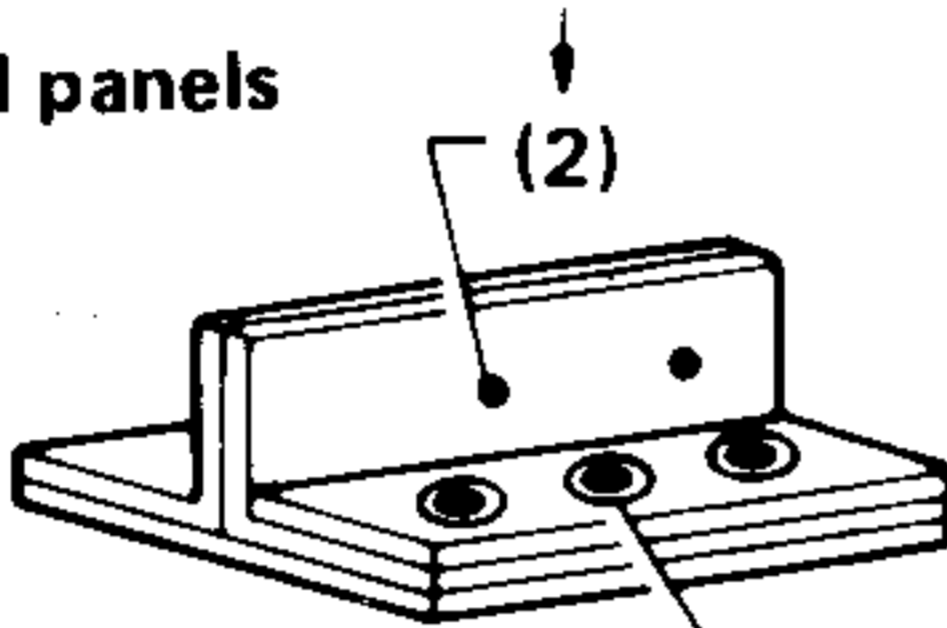

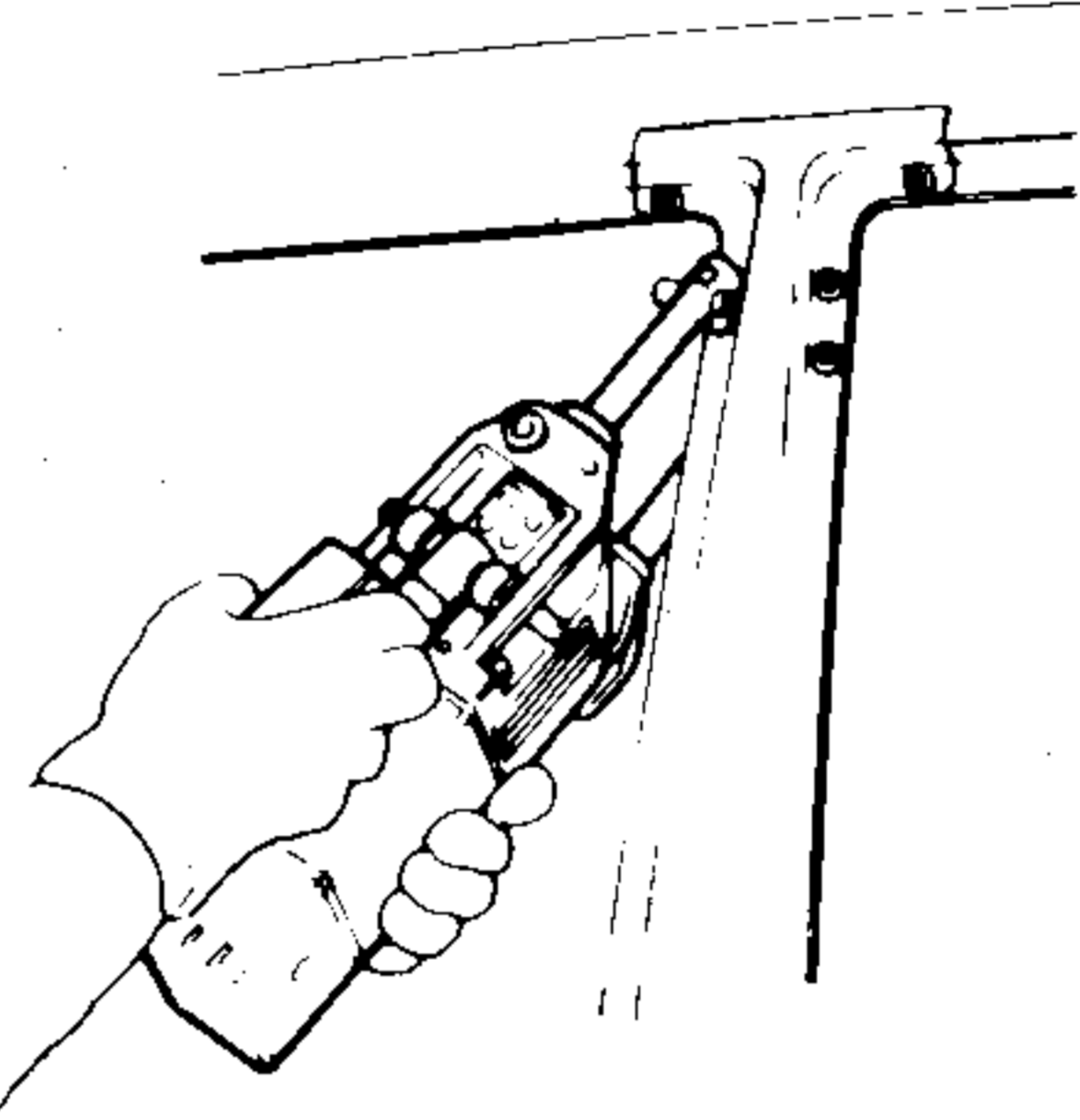

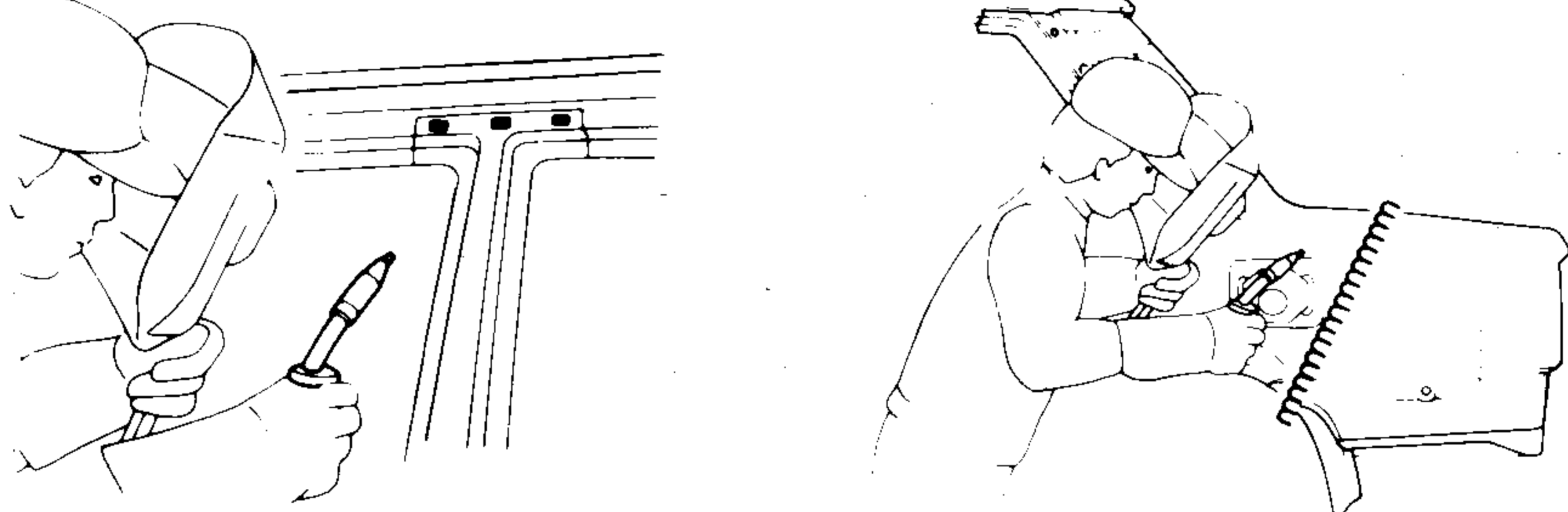

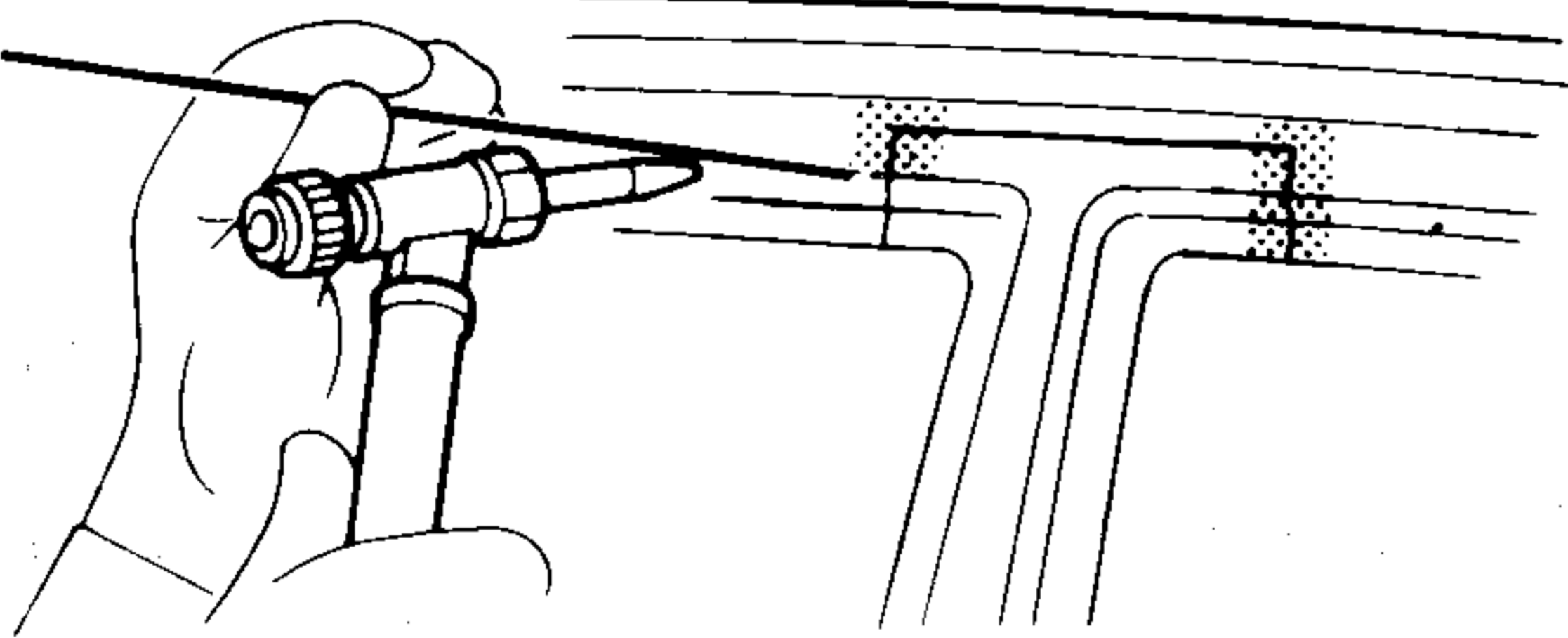

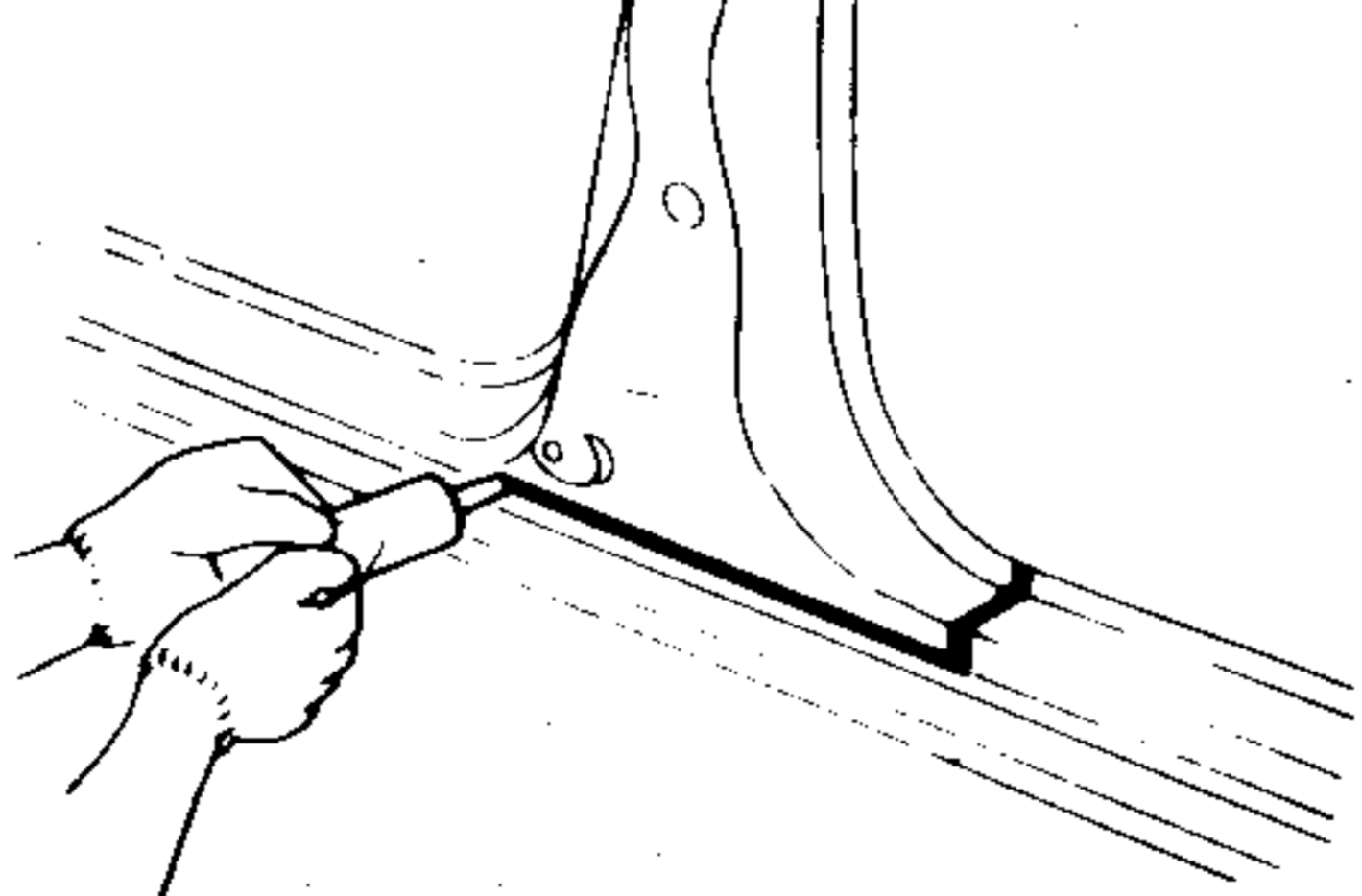
A decisive factor to perform a perfect replacement of a sheet panel, is however strictly linked to the experience of the personnel in charge of the operation. The indications given refer to particular operations for the **Alfa 75** , and must be considered as simple integrative information.

# BODY – SHEET METAL PANELS

## SYMBOLS

### CUTTING AND WELDING/BRAZING OPERATIONS

The symbols used for the cutting and welding/brazing operations are shown in the following figures.

 <p>Cutting performed by means of air saw or air chisel</p>	
<p>Spot welding</p> <p>● ● ● ● Spot welding of two overlapped sheets</p> <hr/> <p>⊙ ⊙ ⊙ ⊙ Spot welding of three overlapped sheets</p>	<p>Two overlapped panels</p>  <p>Three overlapped panels</p>  <p>Note: The value in parenthesis ( ) indicates the number of weld spots</p> 
<p>CO<sub>2</sub> arc welding</p> <p>■ ■ ■ MIG plug weld</p> <hr/>  <p>MIG seam weld/point weld</p>	
 <p>Brazing</p>	
 <p>Sealing</p>	

## REMOVAL AND INSTALLATION PROCEDURES

### COMPONENT REMOVAL

(1) Make sure that all the damaged parts have been detected by measuring the installation main dimensions. Refer to "Body Alignment" drawing.

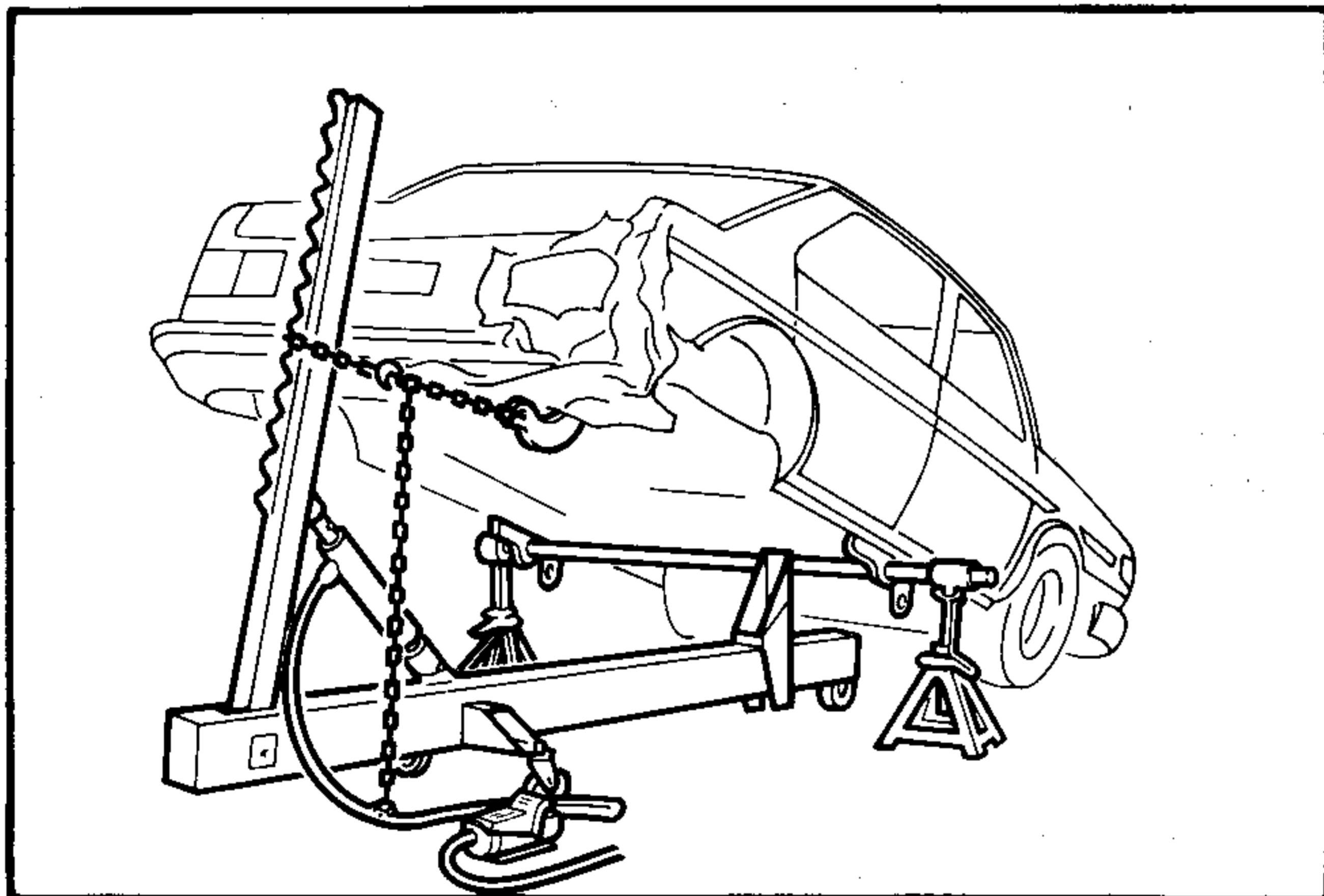
**Tools required:**

- Centering gauge
- Tracking gauge
- Convex rule
- Rack-and-lever jack or car lift

(2) With a body-frame repair system, carry out draw operations, depending on deformation condition. Reuse of the reclaimable parts must be performed in accordance with the figures contained in "Body Alignment".

**Caution during operation:**

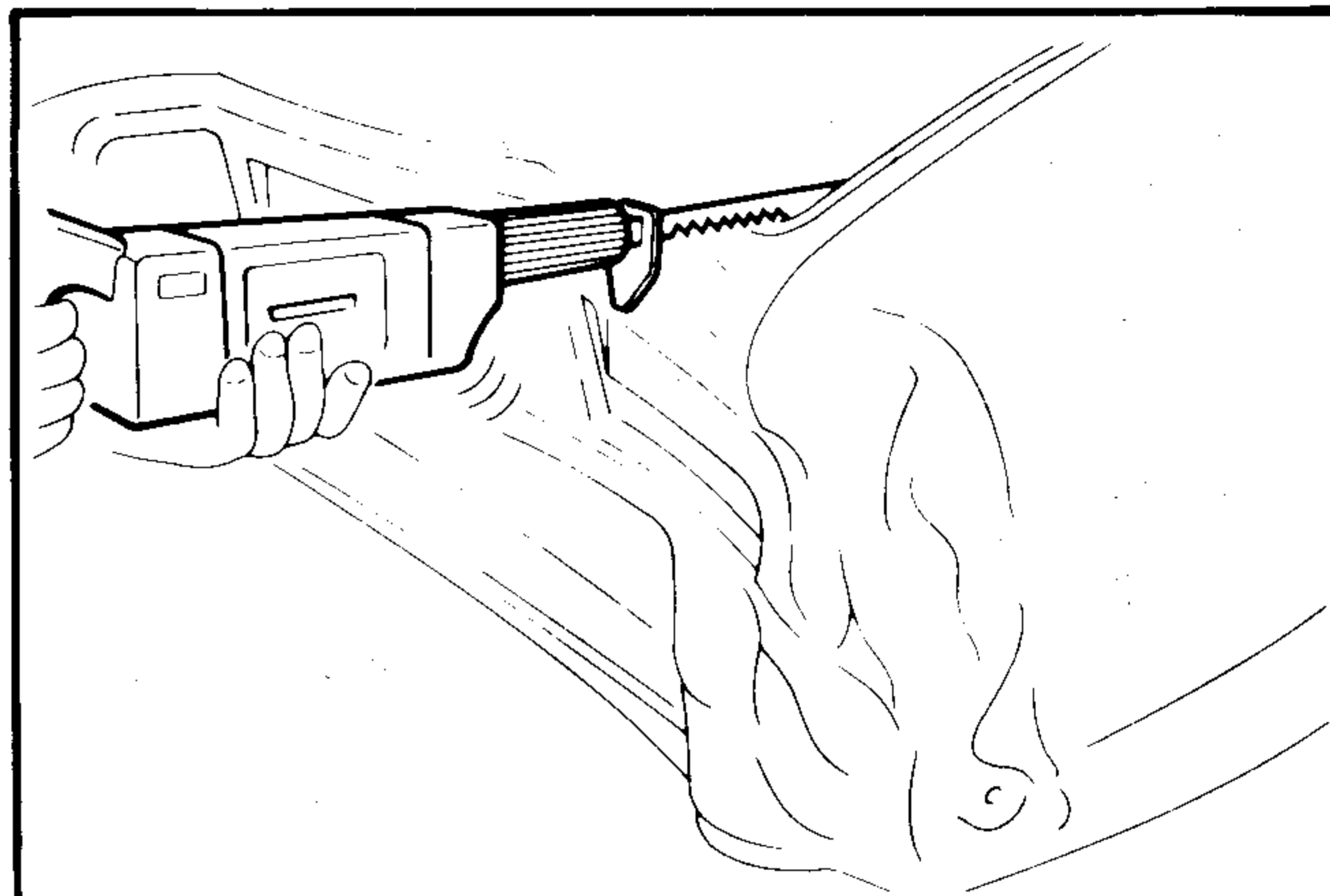
- Carefully secure drawing chains to body and equipment, so as to prevent accidental release during operation execution.
- Apply draw stress in the direction opposite to collision.



(3) Cut-off damaged parts.

**Tools required:**

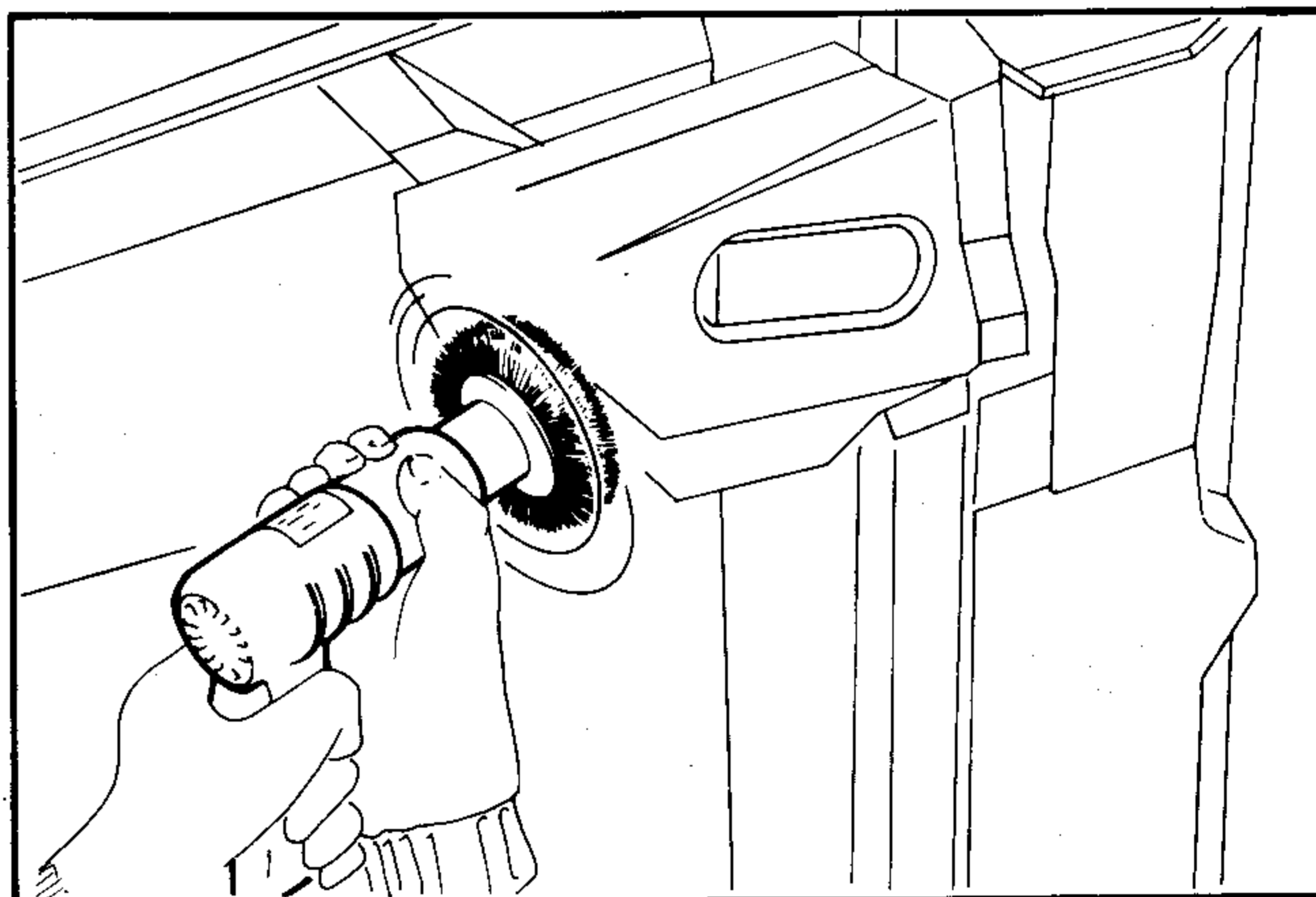
- Air saw
- Air chisel



(4) If welding spots are not visible, remove paint by means of rotary wire brush.

**Tools required:**

- Rotary wire brush



(5) Punch all the welding spots in order to make centering of a drill.

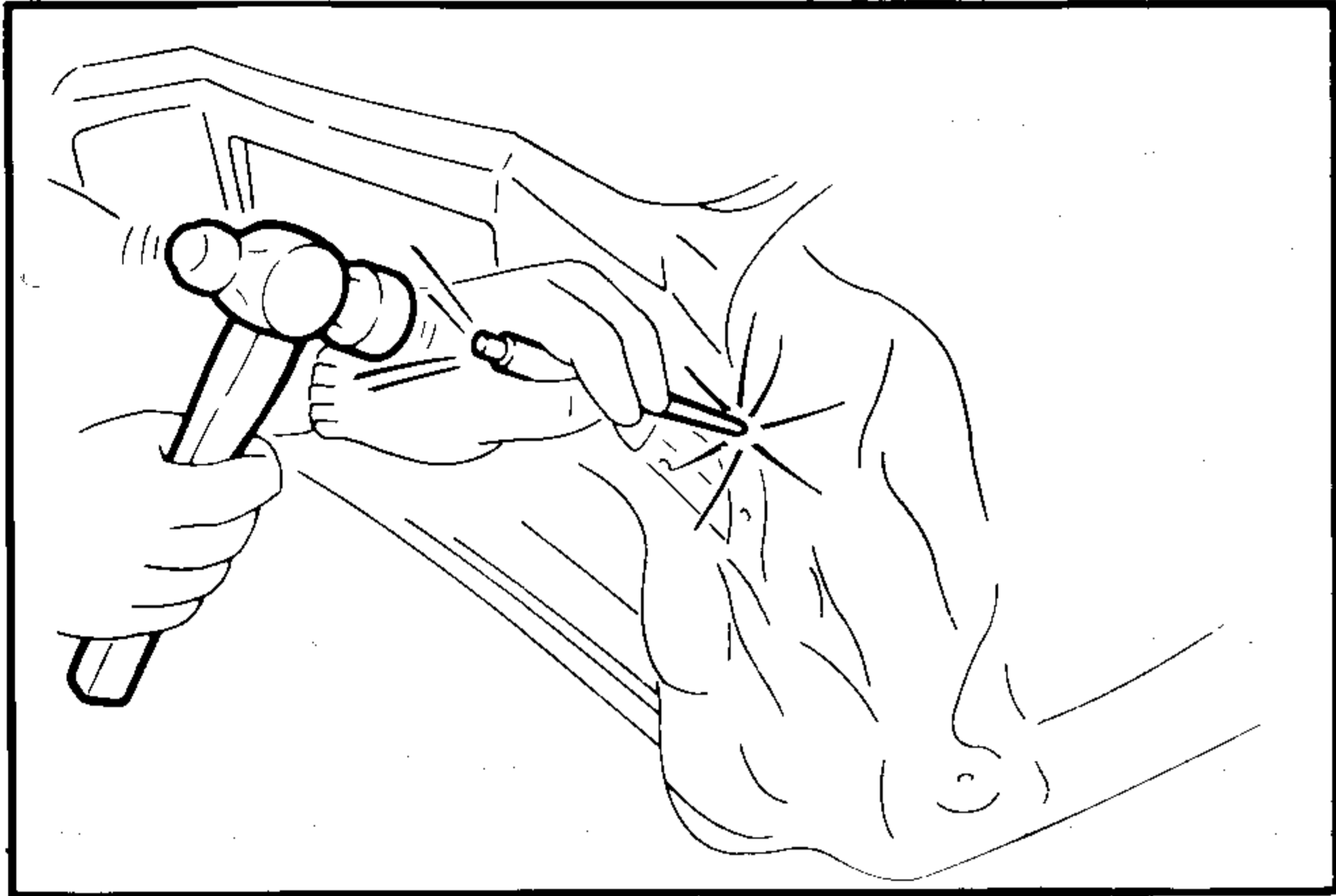
**Tools required:**

- Hammer
- Center punch

## BODY – SHEET METAL PANELS

### Caution during operation

- Punch deeply in the center of each, welding spot. A non-centered punch does not allow complete cut of nugget.  
Besides, a shallow marked hole location does not allow a reliable drive of drill.
- As a rule, punching must be executed from sides of the components that are to be removed.



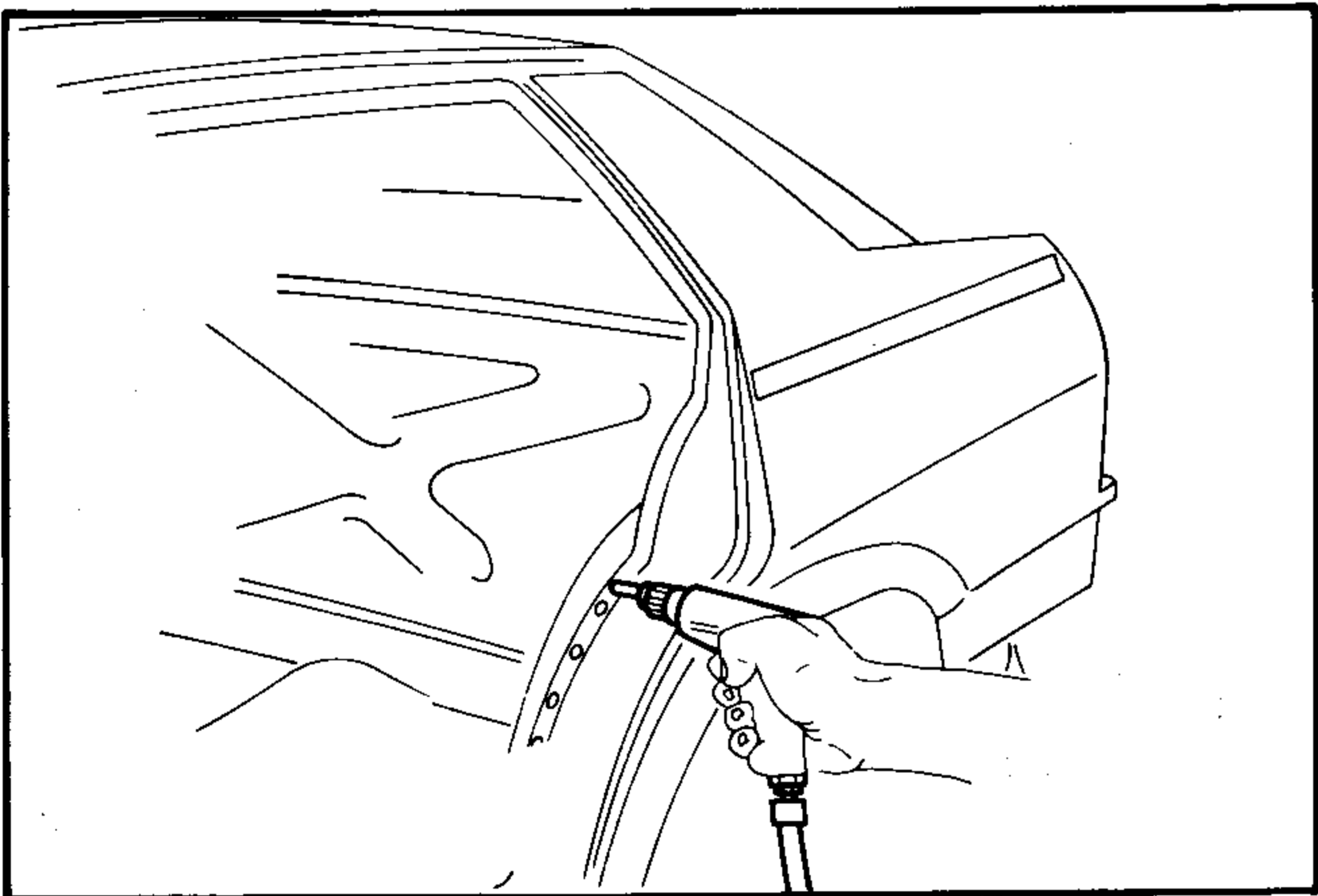
(6) Remove welding spots by means of a spot cutter or an air drill.

### Tools required:

- Spot cutter
- Air drill

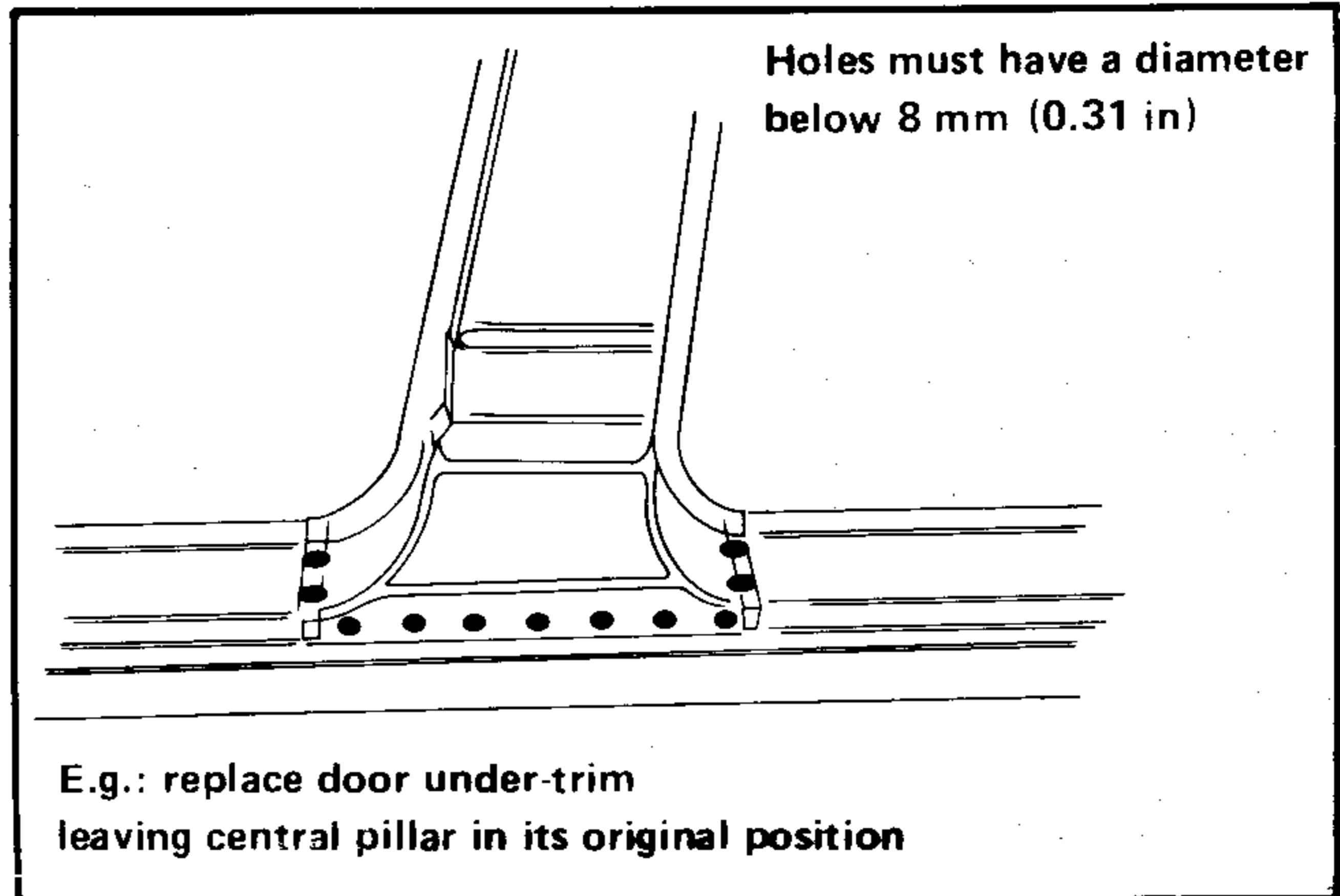
### Caution during operation:

- Use a drill speed of about 1000 r.p.m. in order to obtain the best results.



### Cautions during operation:

- Take care not to drill mating parts. In case holes have been made, plug them making use of autogenous or projection welding.  
Presence of holes, decreases strength of the concerned component, besides, it may generate water leakage.
- When, for new components, are used holes already drilled in welded parts (just as per those of the spot welding) make use of a drilling machine having small diameter drill (below 8 mm – 0,31 in) and complete welding as soon as possible.



(7) By means of a chisel remove the remaining spot welding parts.

### Tools required:

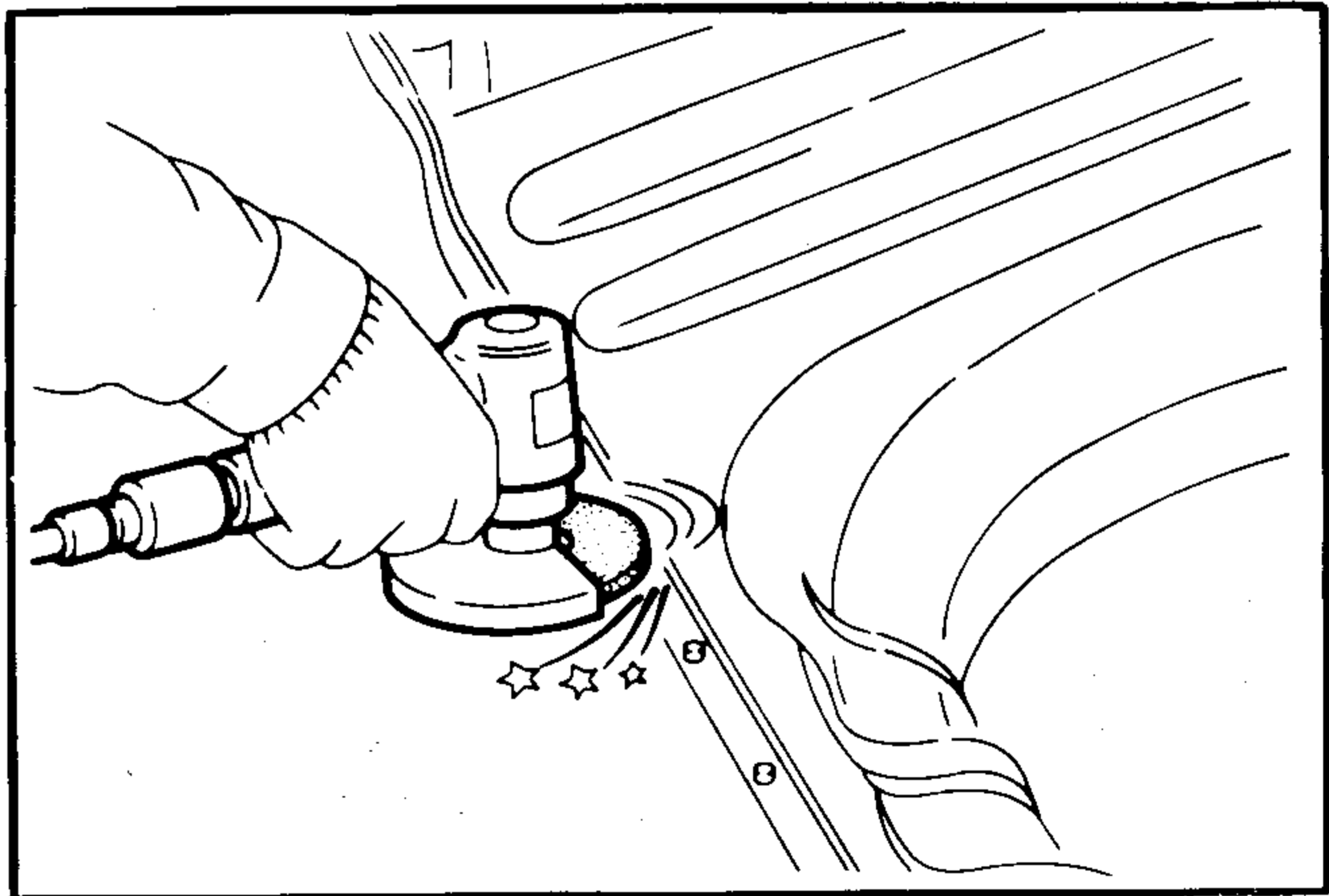
- Chisel
- Hammer

## PREPARATION FOR MATING PARTS INSTALLATION

(1) By means of a sander, grind sheet in correspondence with welding spots.

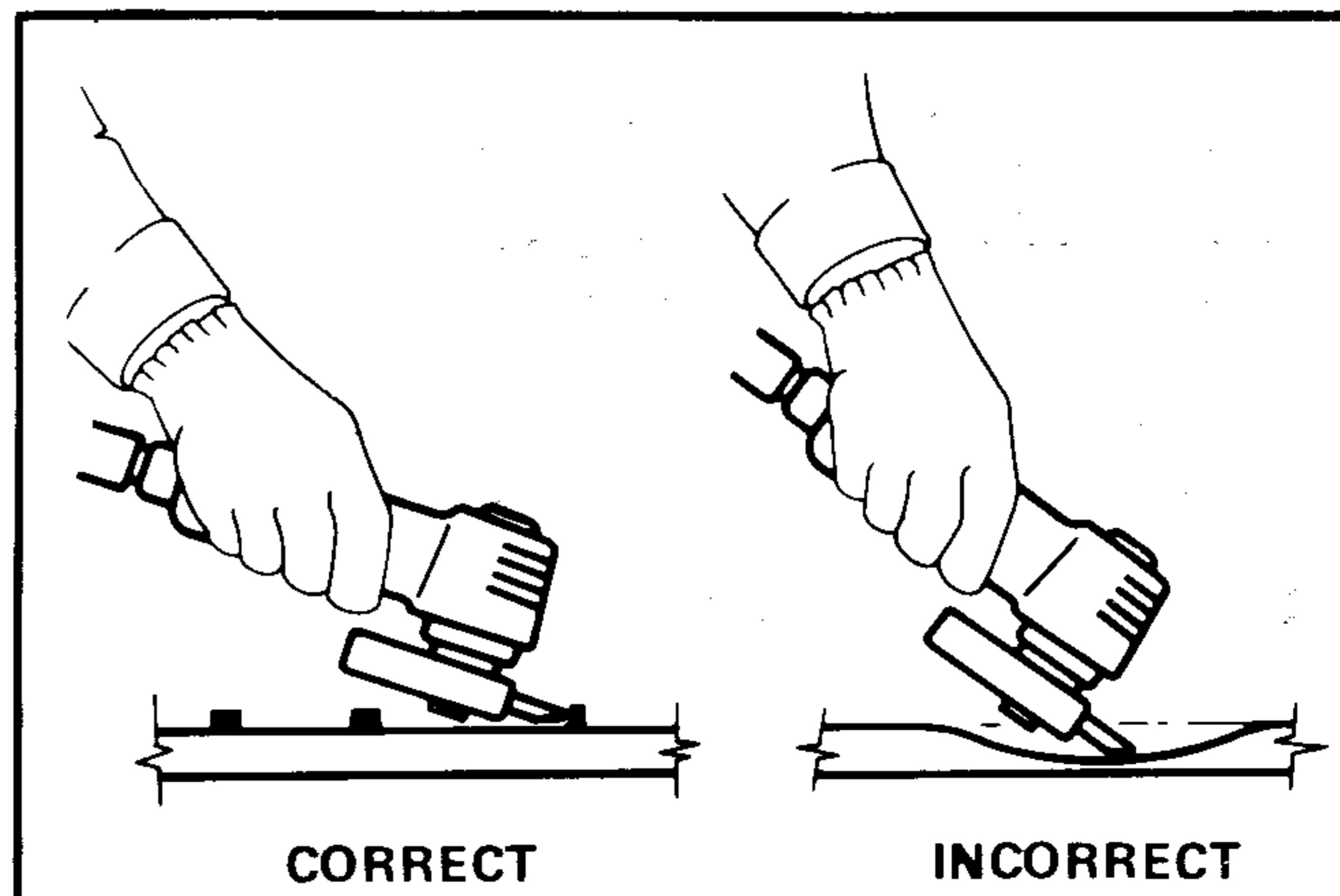
### Tools required:

- Air sander
- Disc sander



### Cautions when grinding

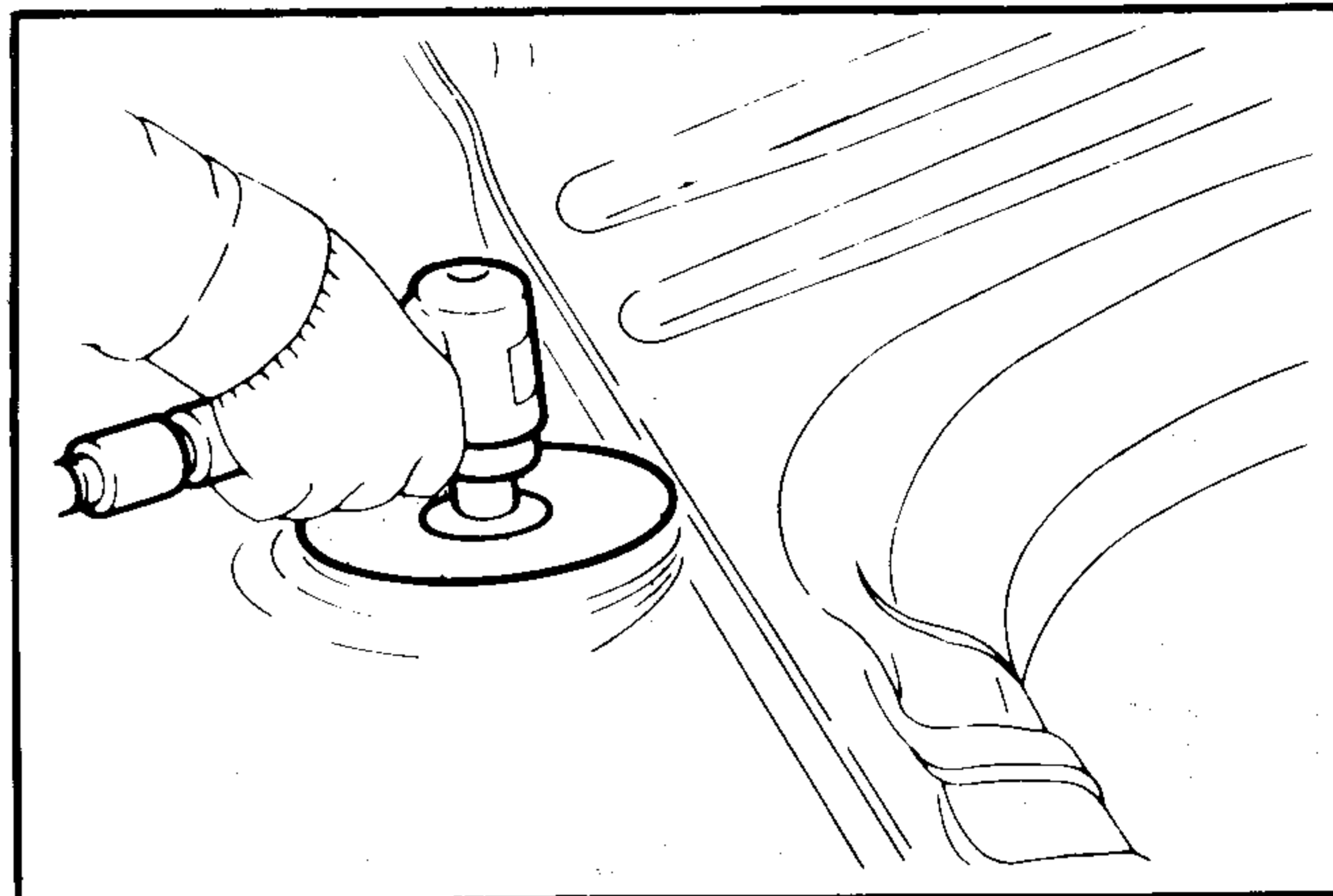
- Take care not to cut much on base metal: this may generate decrease of sheet thickness and, then, welding strength.





## BODY – SHEET METAL PANELS

- Carefully remove iron powder from the surfaces which have been grinded and from surrounding areas. Presence of iron powder, causes decrease of welding efficacy and can also generate corrosion.



- (4) Apply primer to edges of new components and of body panels which are to be welded.

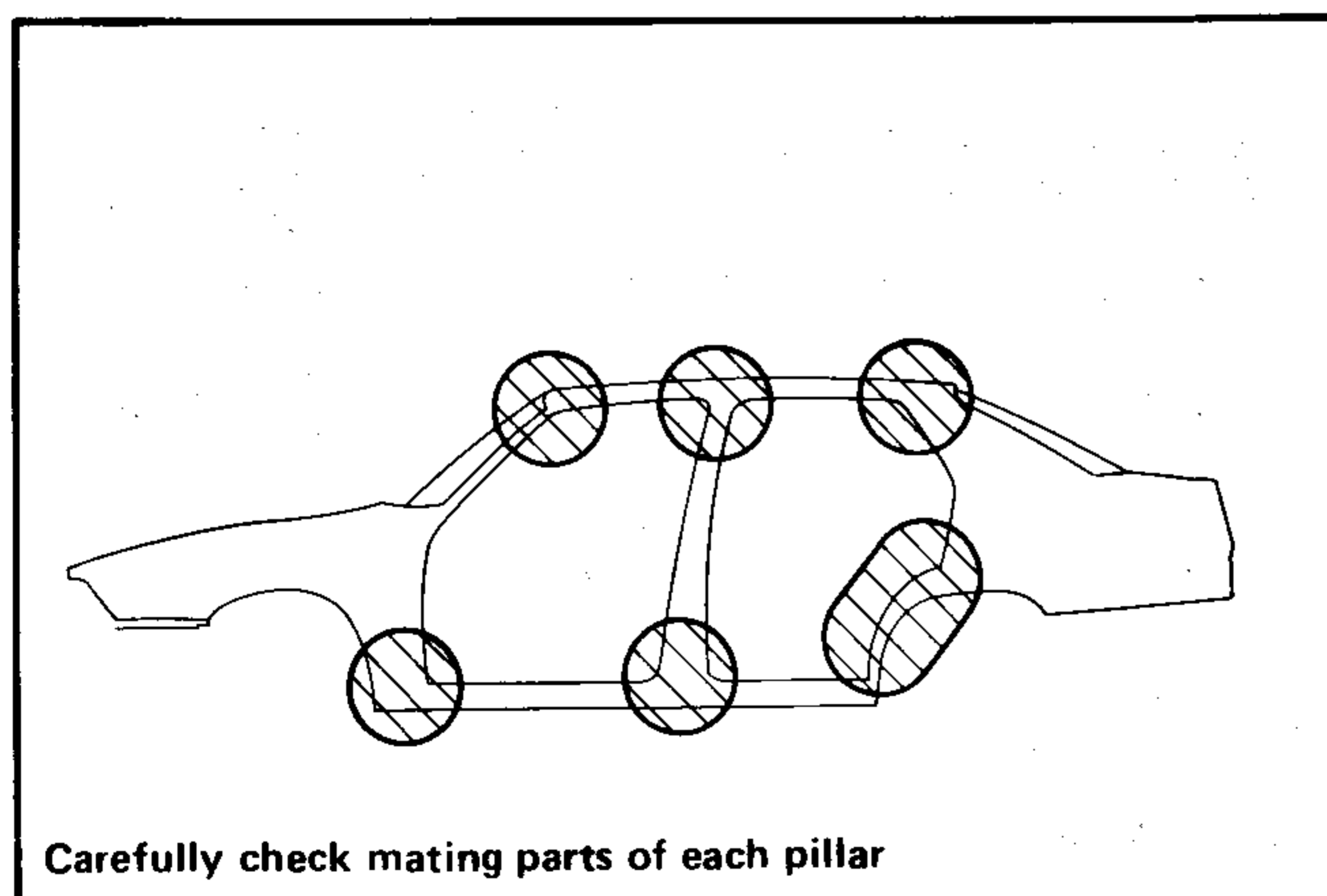
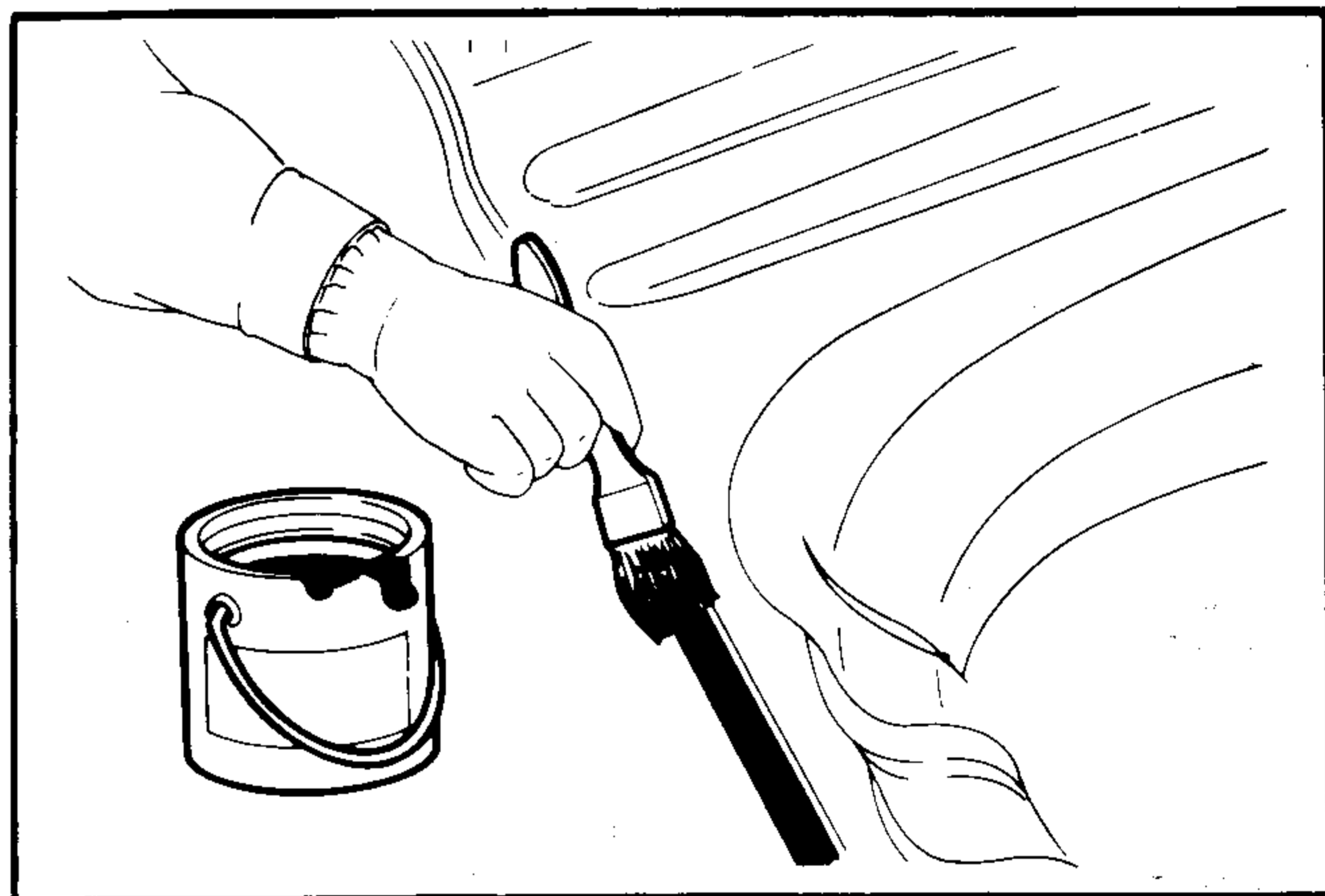
- (2) By means of a hammer and dolly correct deformed areas.

### Tools required:

- Hammer
- Dolly

### Cautions during operation:

- Check against presence of even the smallest deformations, in particular, in the inner panels where they are hard to be found. Infact, if they are not removed, they can cause a strength decrease due to stress concentration.



- (3) Remove paint from welding edges.

### Tools required:

- Belt sander
- Disc sander

Before welding apply conductive antirust paint on edges of all sheet parts which are to be assembled.

### Recommended paint:

Std. No. 3540-44401

SAVID: Zincovid No. 7949

SCHRAM LACK: Extrinum Punktschweissfarbe

GLASURIT: Glassomax 7 F 4625 (red color) \*

\* To be used with catalyst

Glassomax Harter 965-7/1 in the proportion 1:10  
(Std. No. 3514-20003)

Panels must be welded within 15 minutes of the paint application (air drying time of paint film).

The film thickness after drying must be 0.005 to 0.025 mm (2 to 9.8)  $10^{-4}$  in.

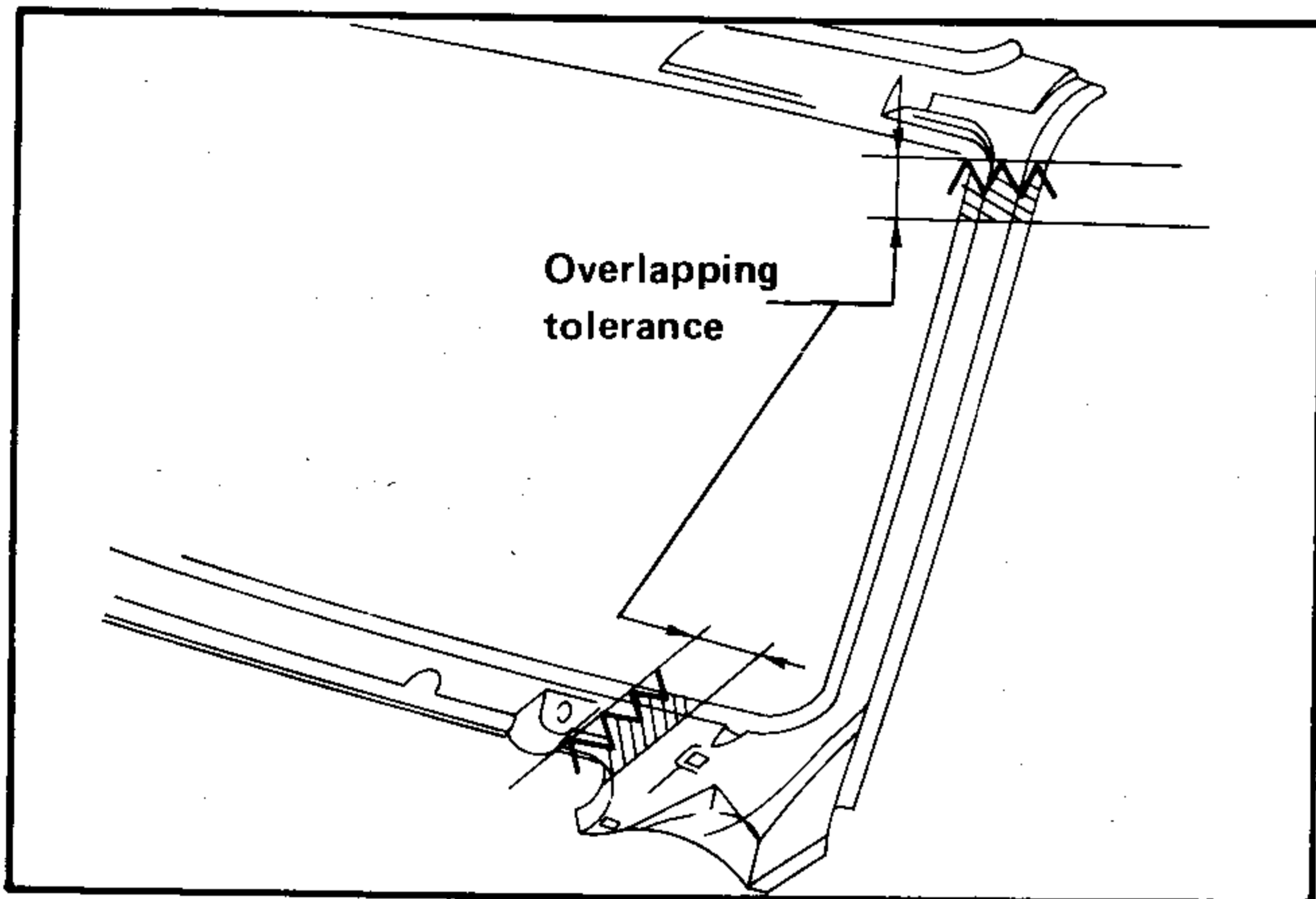
## PREPARATION FOR NEW COMPONENT INSTALLATION

(1) If a partial replacement is to be carried out, it is necessary to maintain an overlapping tolerance of about 50 mm (1.97 in) during cut of non-usable sheets; in order to have a sufficient mating surface.

### Tools required:

- Air saw
- Hack saw
- Tracking gauge
- Convex rule (or equivalent)

It is recommended always to use genuine spare parts. This ensures a perfect repair and restoration of vehicle functioning.

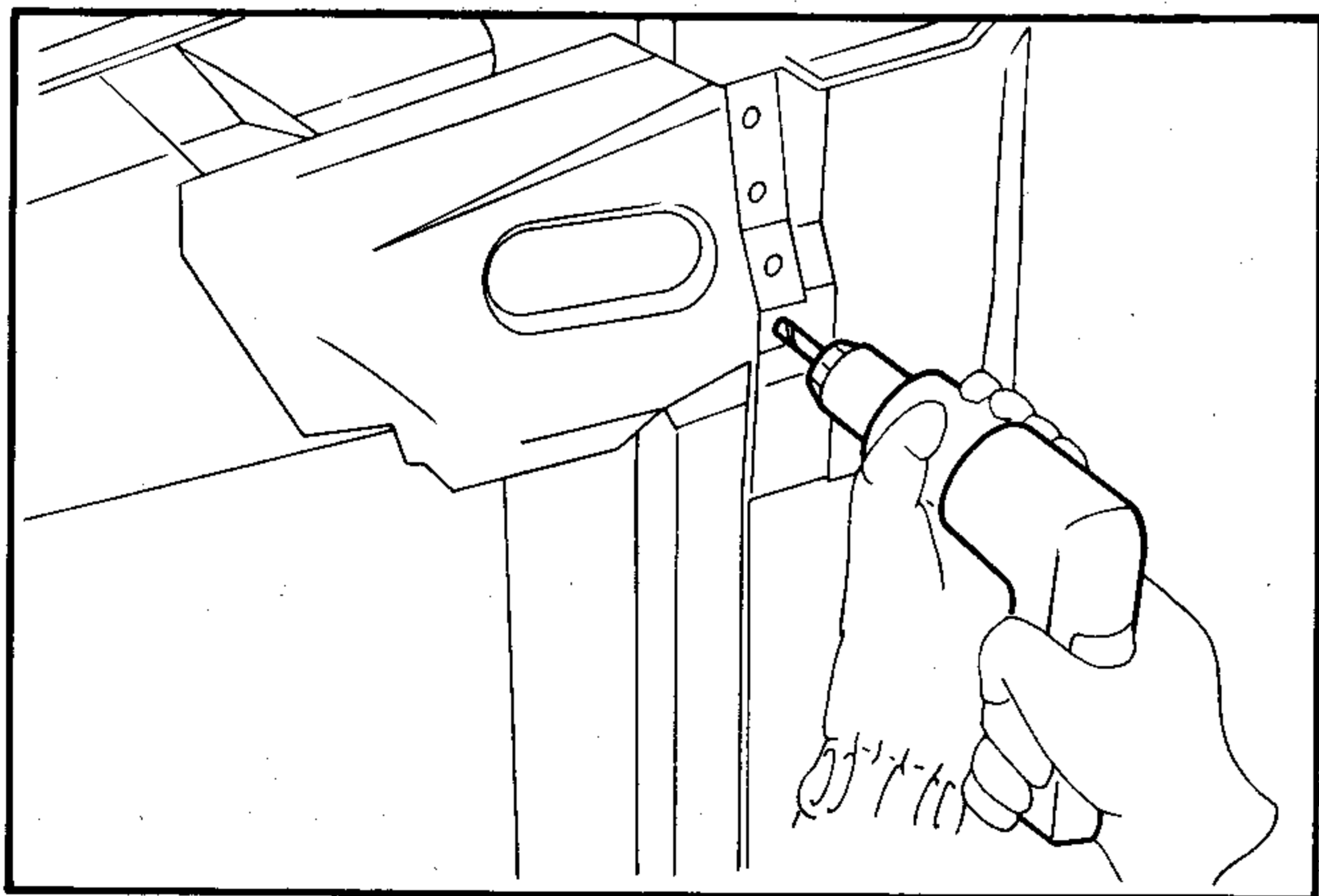


(2) MIG plug weld

This method must be used for those areas which can not be reached by spot welder. To carry out this operation, drill, in the welding spots, making holes having 5 to 6 mm (0.20 to 0.24 in) dia.

### Tools required:

- Puncher
- Air drill



(3) Remove paint from components to be welded.

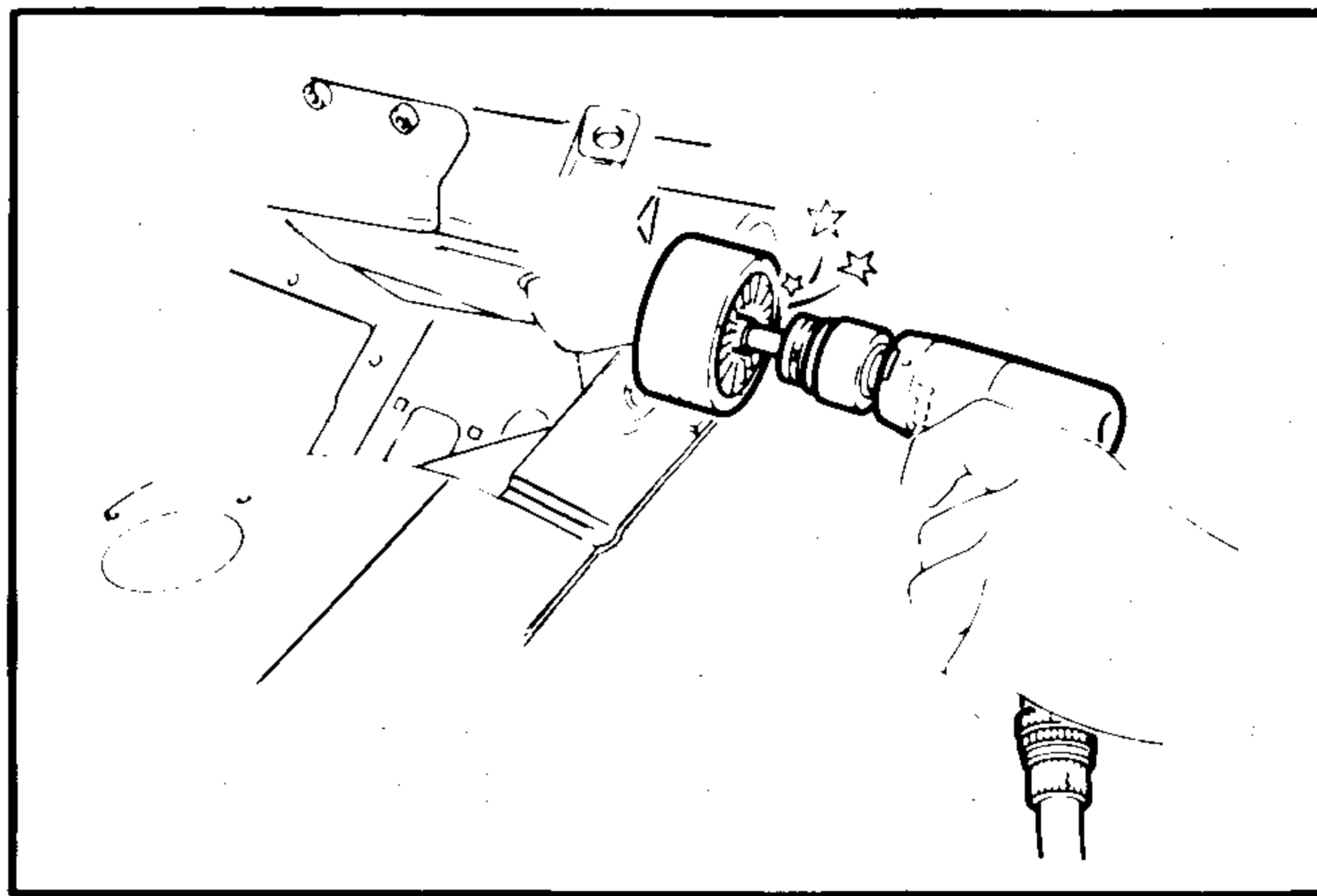
### Tools required:

- Belt sander
- Disc sander

### Cautions during operation:

- Remove paint from both sides of components that are to be welded, such as the surfaces to be spot welded, spot welding rims and edges of surfaces to be butt welded.

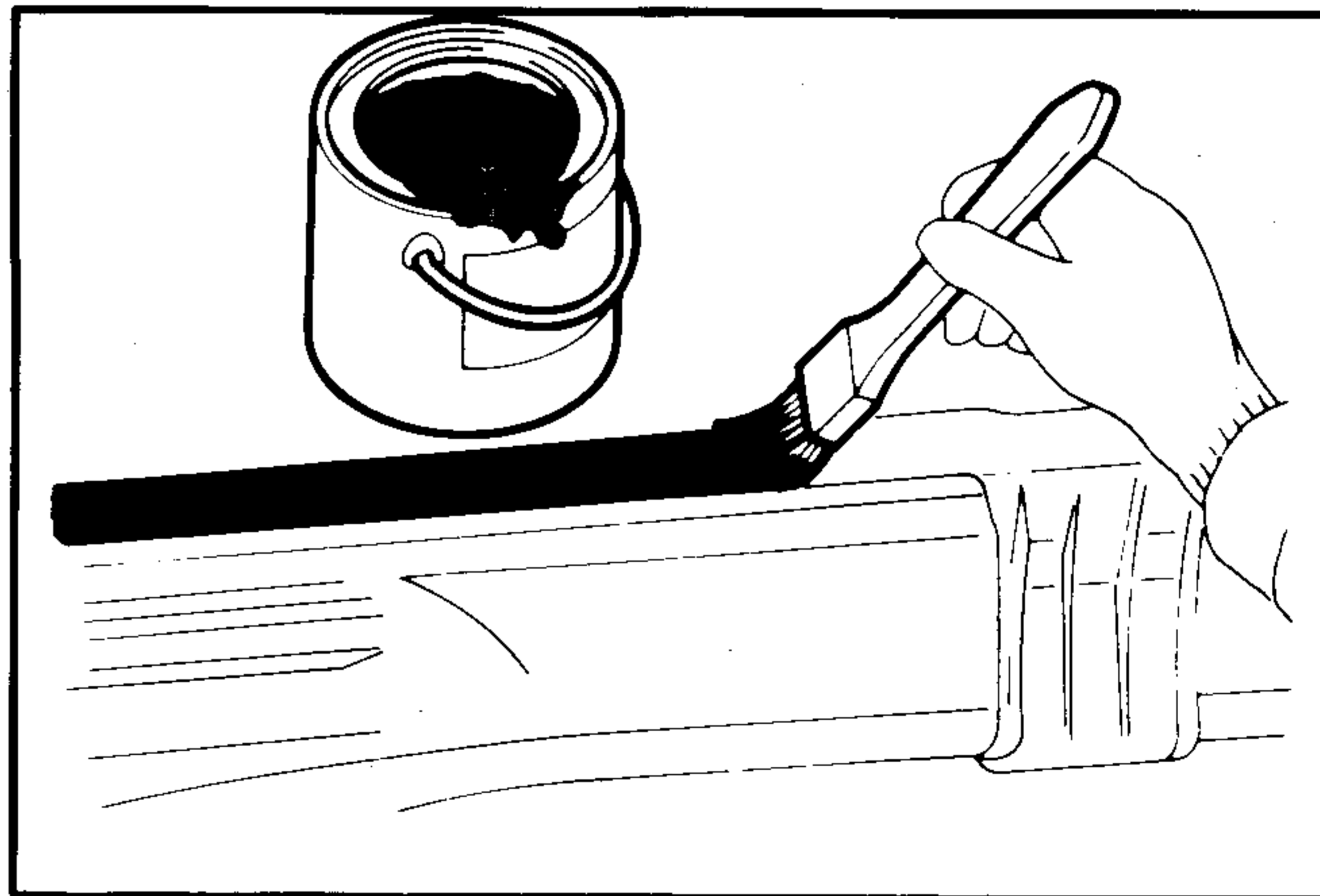
The remaining paint, prevents current flowing into spot weldings, with consequent poor strength of spot. It can also generate depressions in the plug MIG welding.



(4) Apply primer to component and body surfaces which are to be spot welded.

### Tools required:

- Wire brush
- Conductive anti-rust paint



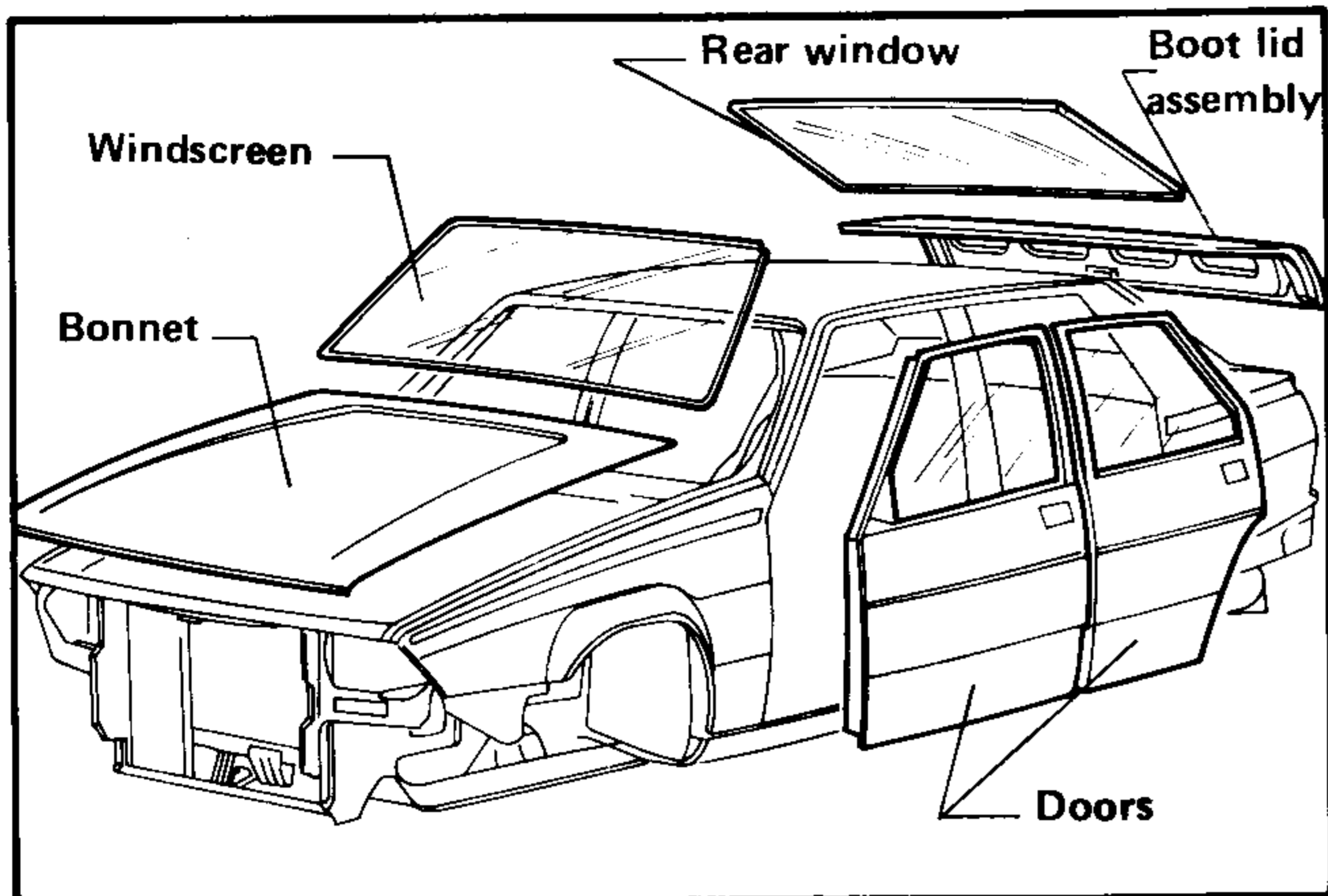
## INSTALLATION

(1) New service parts temporary installation.

### Tools required:

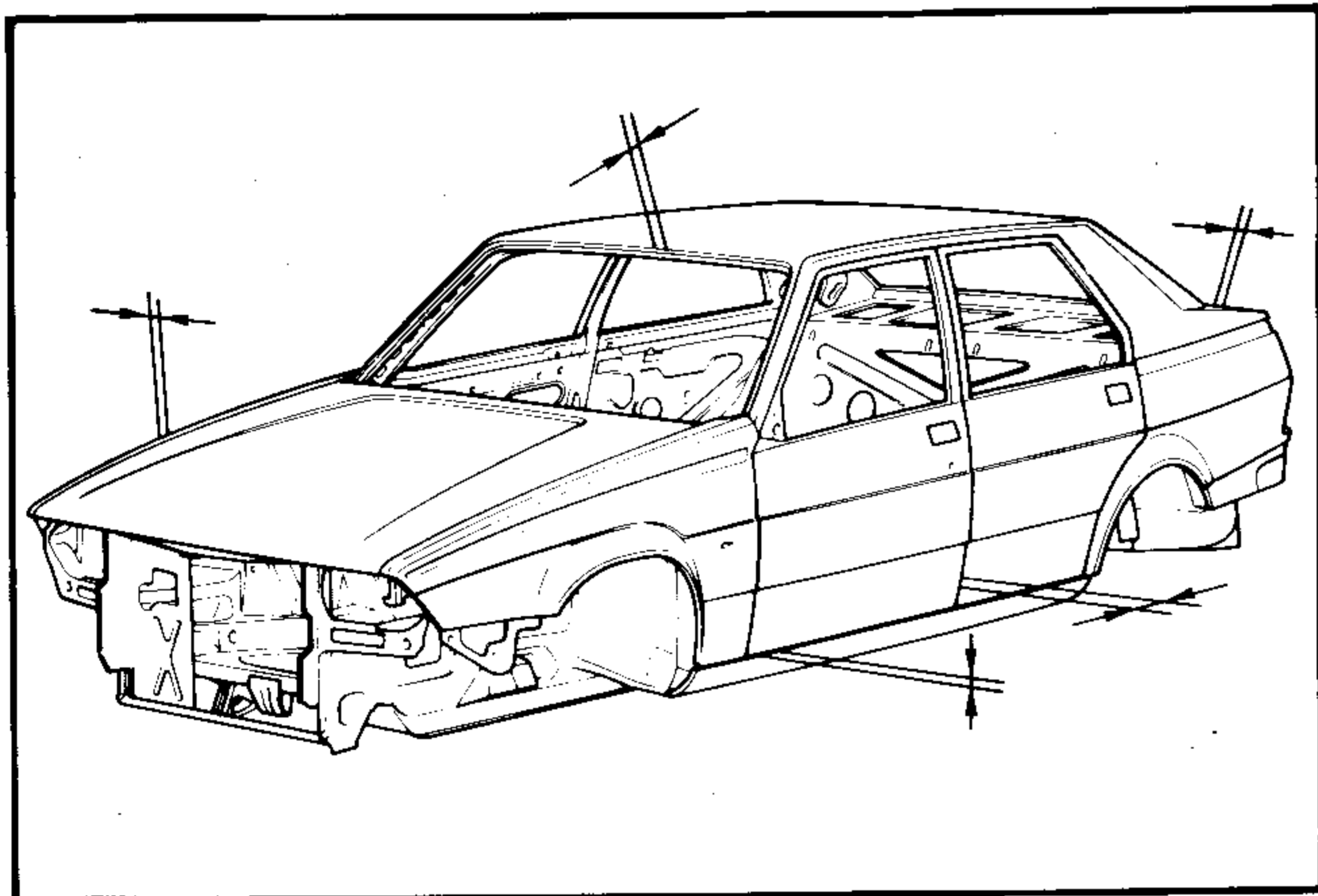
- Vise pliers
- Convex rule
- Tracking gauge (sight)
- Centering gauge
- Power supply unit
- Jack
- Spot welder
- Mig welder

## BODY – SHEET METAL PANELS



### Cautions during operation:

- Position components as per figures provided in "Body Alignment". Install the movable parts into body compartments, (windscreen, doors, bonnet, boot lid) in order to carry out check of clearances, grades and parallelism. If necessary, adjust sheets until correct alignment is obtained.
- Clamp parts to be welded by means of pliers and some welding spot.

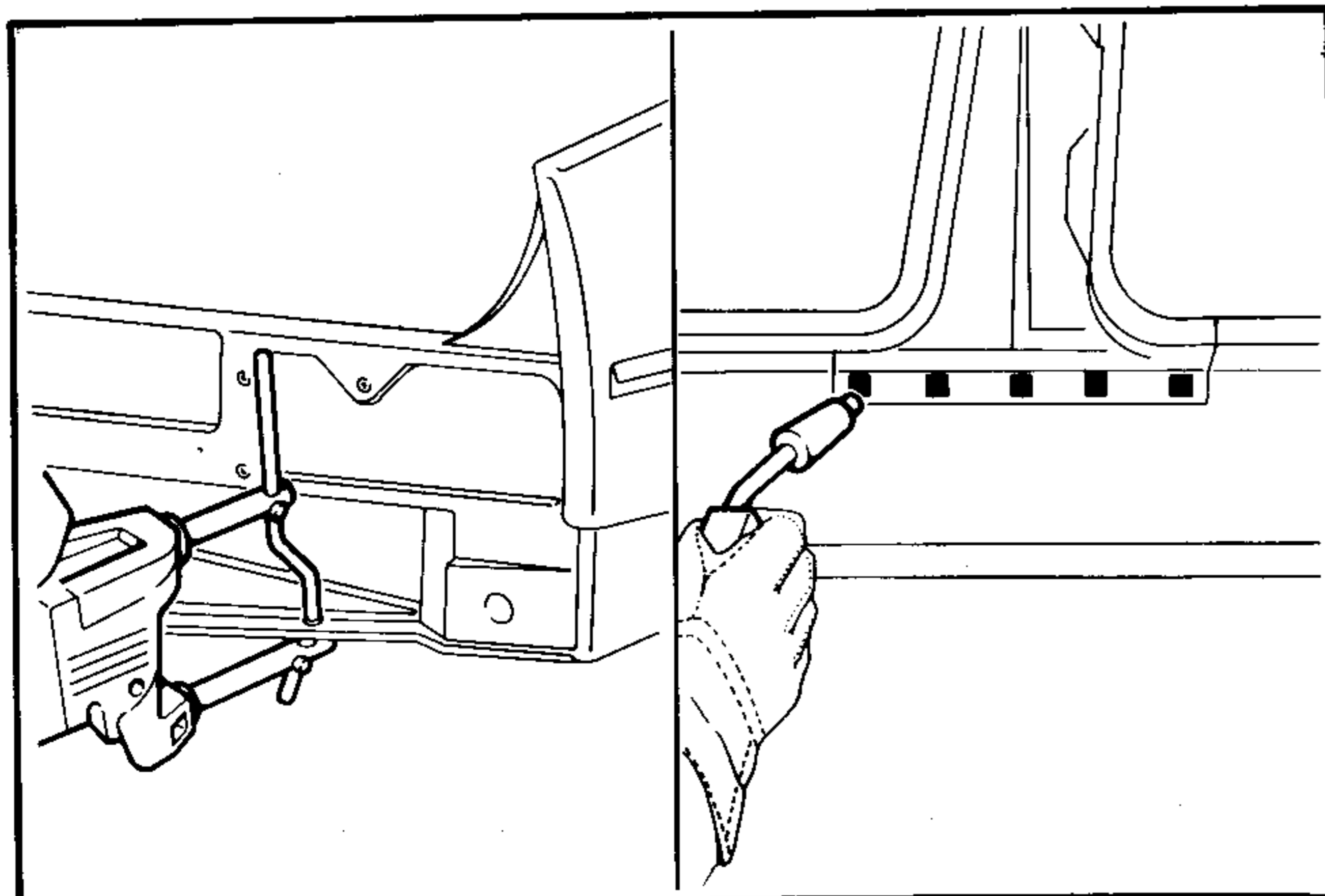


### (2) Execution of the required weldings.

Carry out welding complying with specifications provided in "Cautions during Welding Operations".

#### Tools required:

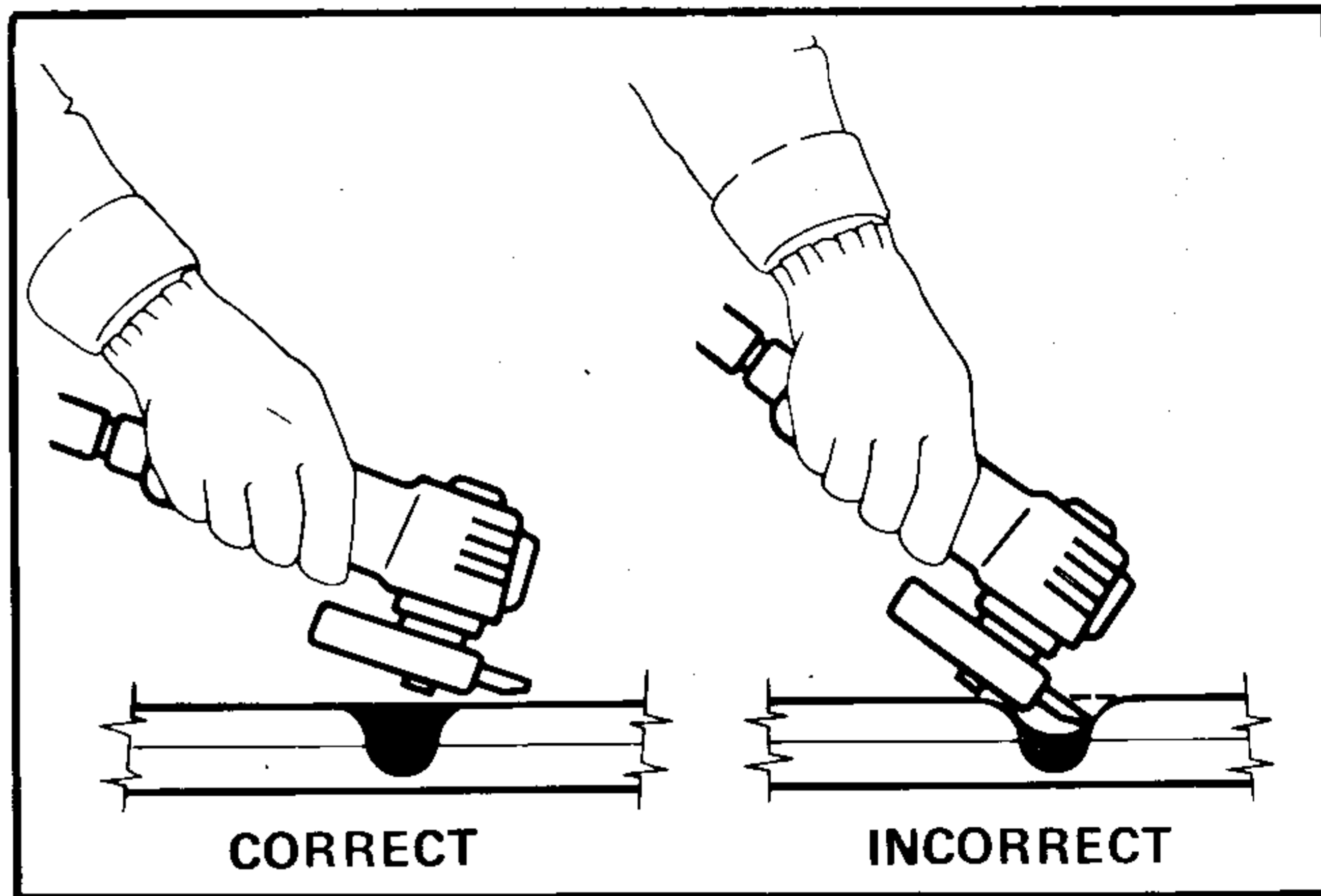
- Spot welder
- MIG welder
- Autogenous welder



### (3) Grind MIG welding by means of a sander machine.

#### Tools required:

- Air sander
- Disc sander

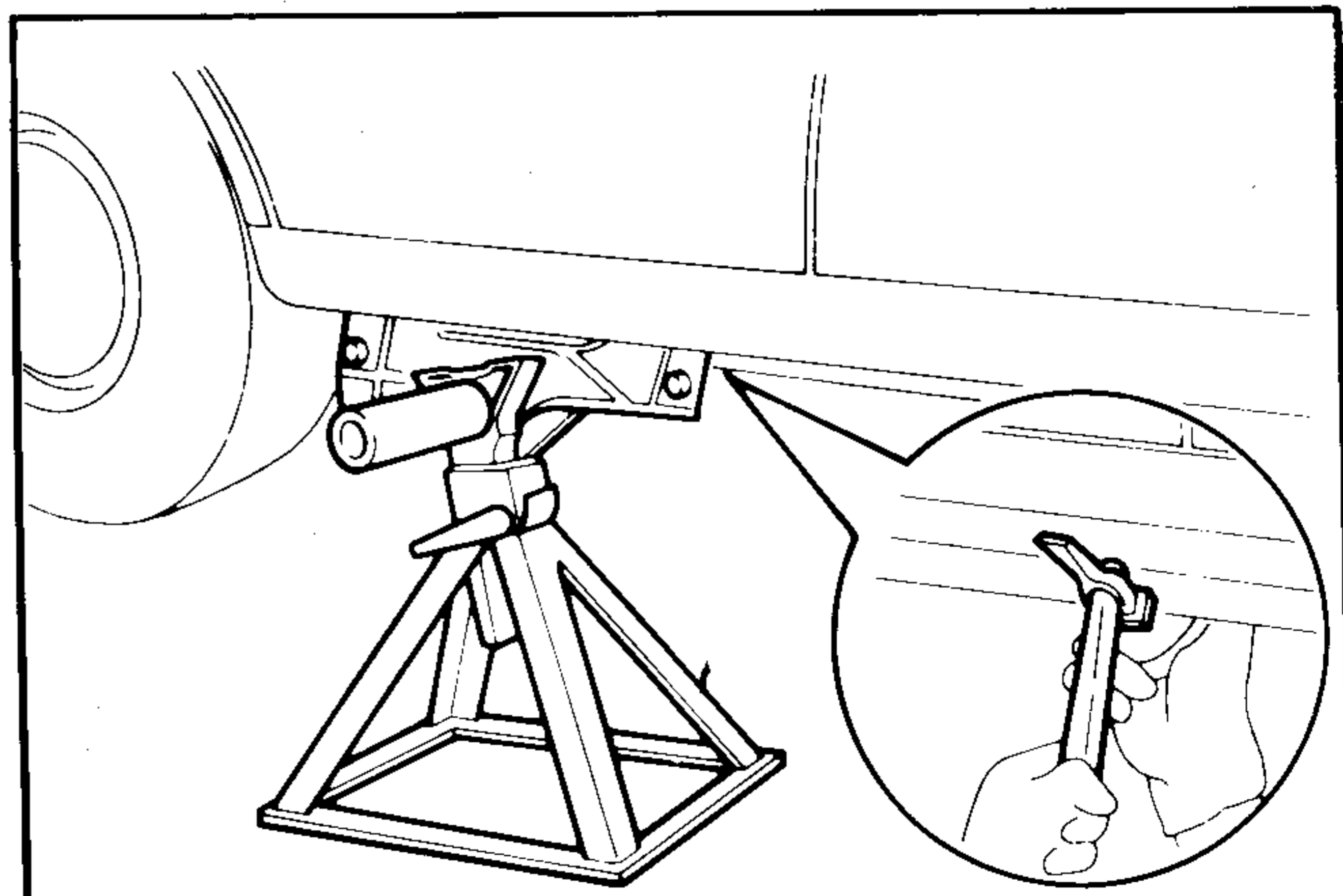


### Cautions during operation:

- Take care not to grind excessively on spot weldings: it may generate decrease of sheet thickness and, consequently, welding strength.
- Remove iron powder from grinded surfaces and surrounding areas. Presence of iron powder, causes decrease of welding efficacy and can also generate corrosion.



### (4) After welding, remove clamps used for securing edges and remove possible dinging.



## BODY – SHEET METAL PANELS

(5) Apply anti-corrosion agent to the welded components.

(6) Apply sealant to joints.

This operation must be carried out carefully in order to prevent corrosion in the welded joints.

Refer to figures provided in "Body Sealing"

(7) For under body protection, apply a coat having **4 mm (0.16 in)** thickness.

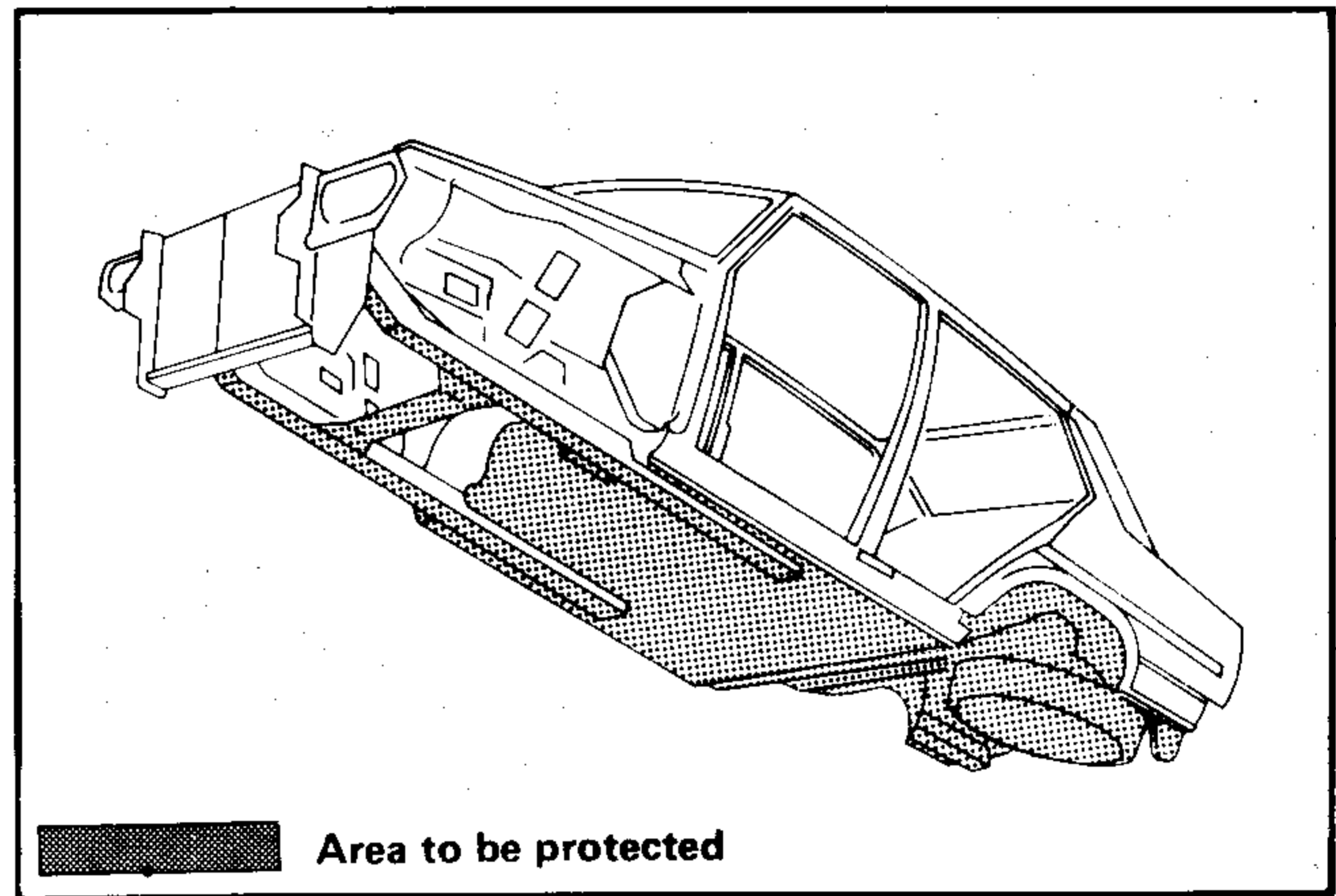
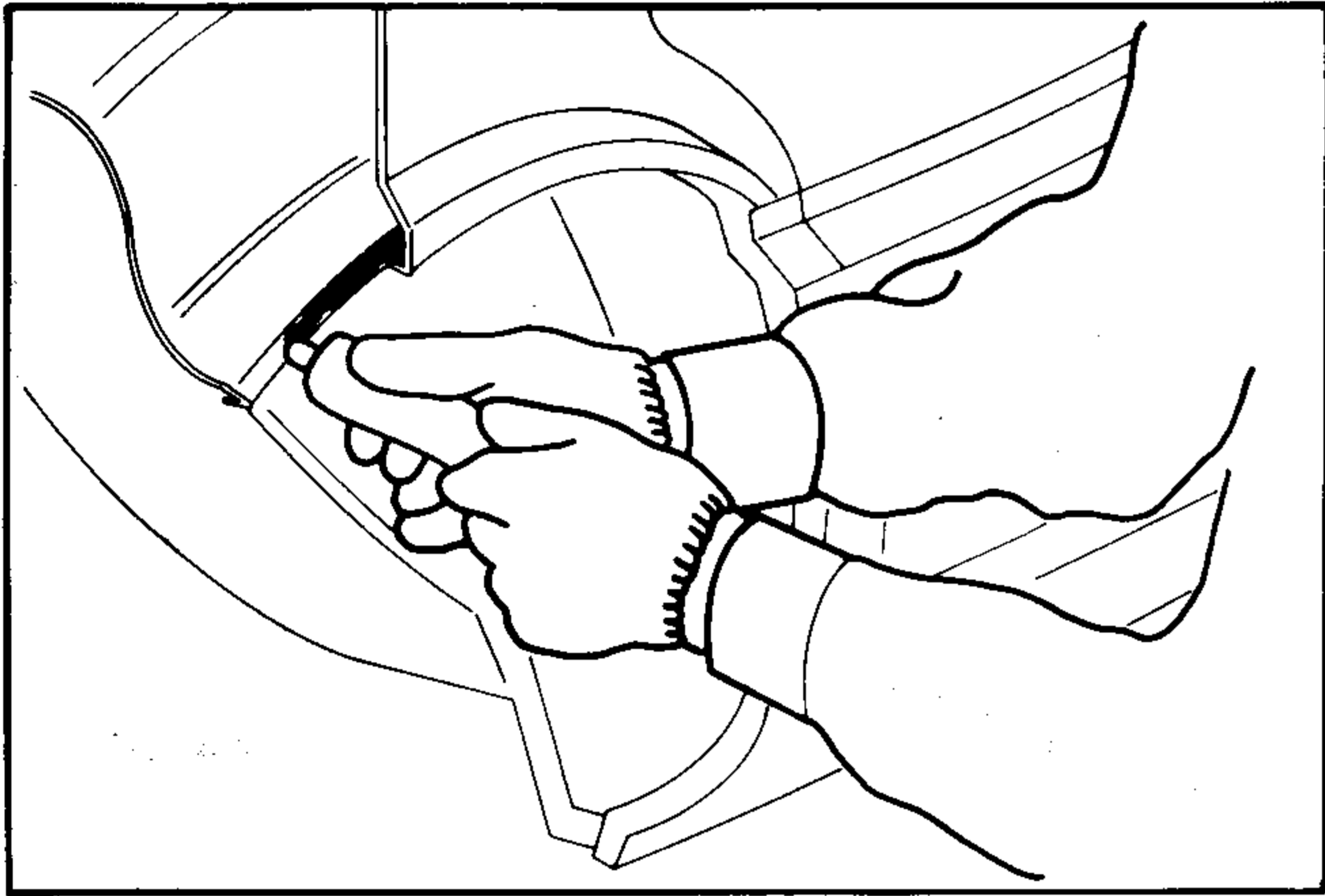
**Antidrum: part. No. 3523-00001**

**Alternatives: 3M**

**Body Plast 8874 E**

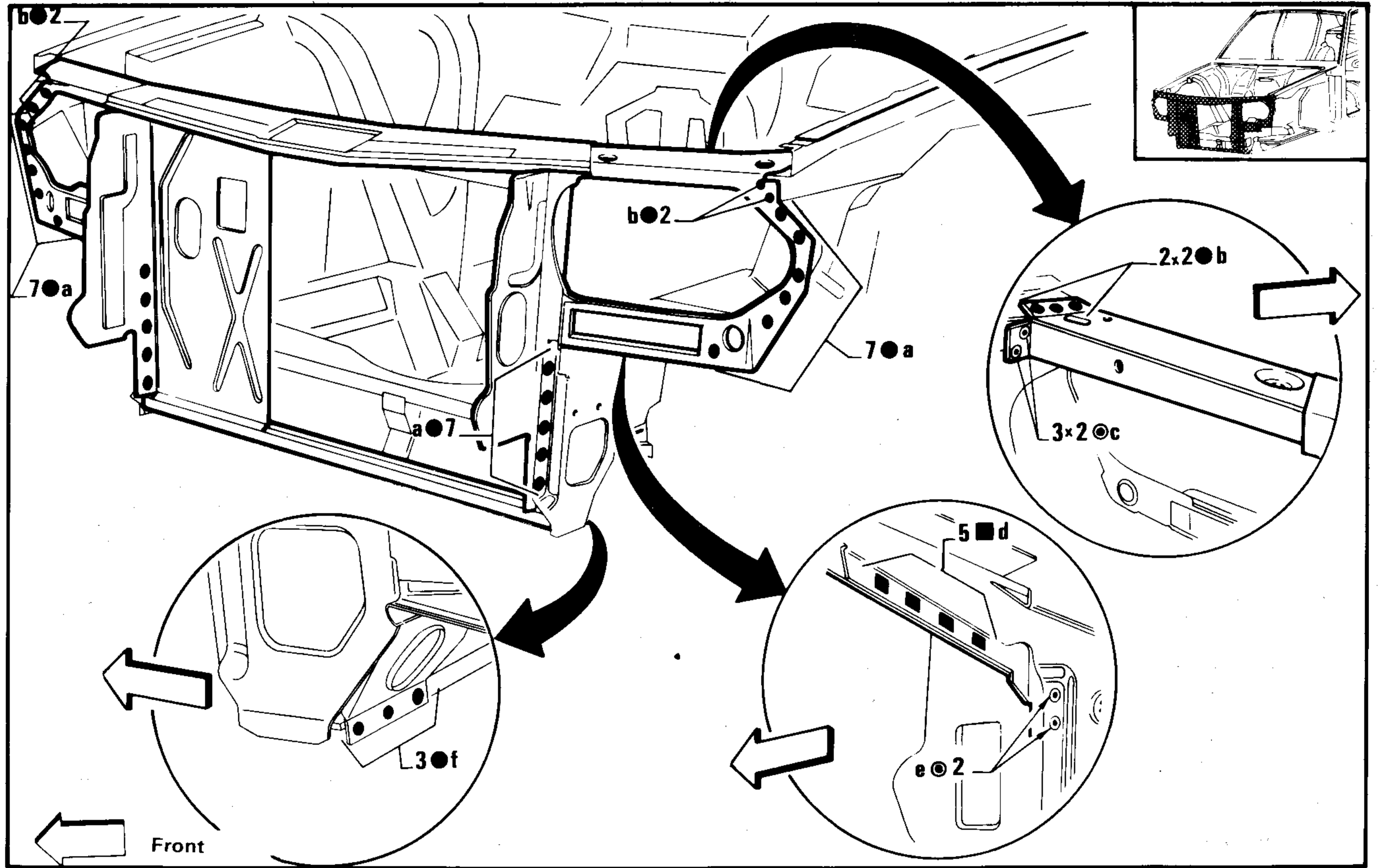
**Body Schutz 8864 E**

**IVI Grey protective acrylic 854751**



**FRONT CROSS MEMBER ASSEMBLY WITH HEADLIGHT SUPPORT PLATE**

Service joints

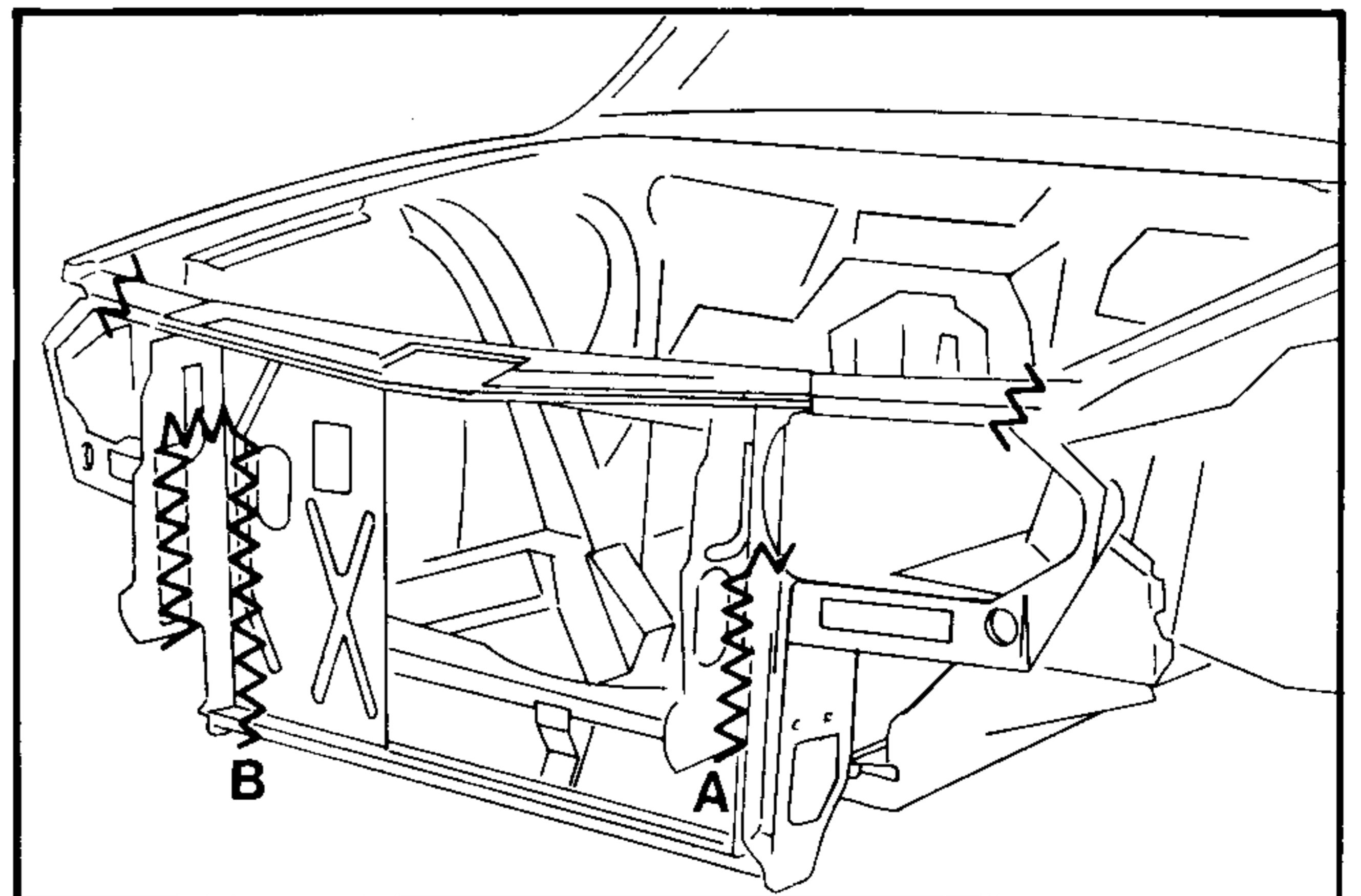


Parts to be welded

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>a. Front cross member assembly and valance extension</li> <li>b. Front headlight support plate and outer valance reinforcement</li> <li>c. Front headlight support plate and outer valance reinforcement and valance reinforcement</li> </ul> | <ul style="list-style-type: none"> <li>d. Headlight support plate and valance extension</li> <li>e. Front cross member assembly, headlight support plate and valance extension</li> <li>f. Front cross member assembly and connection sheet</li> </ul> |
|--|--|

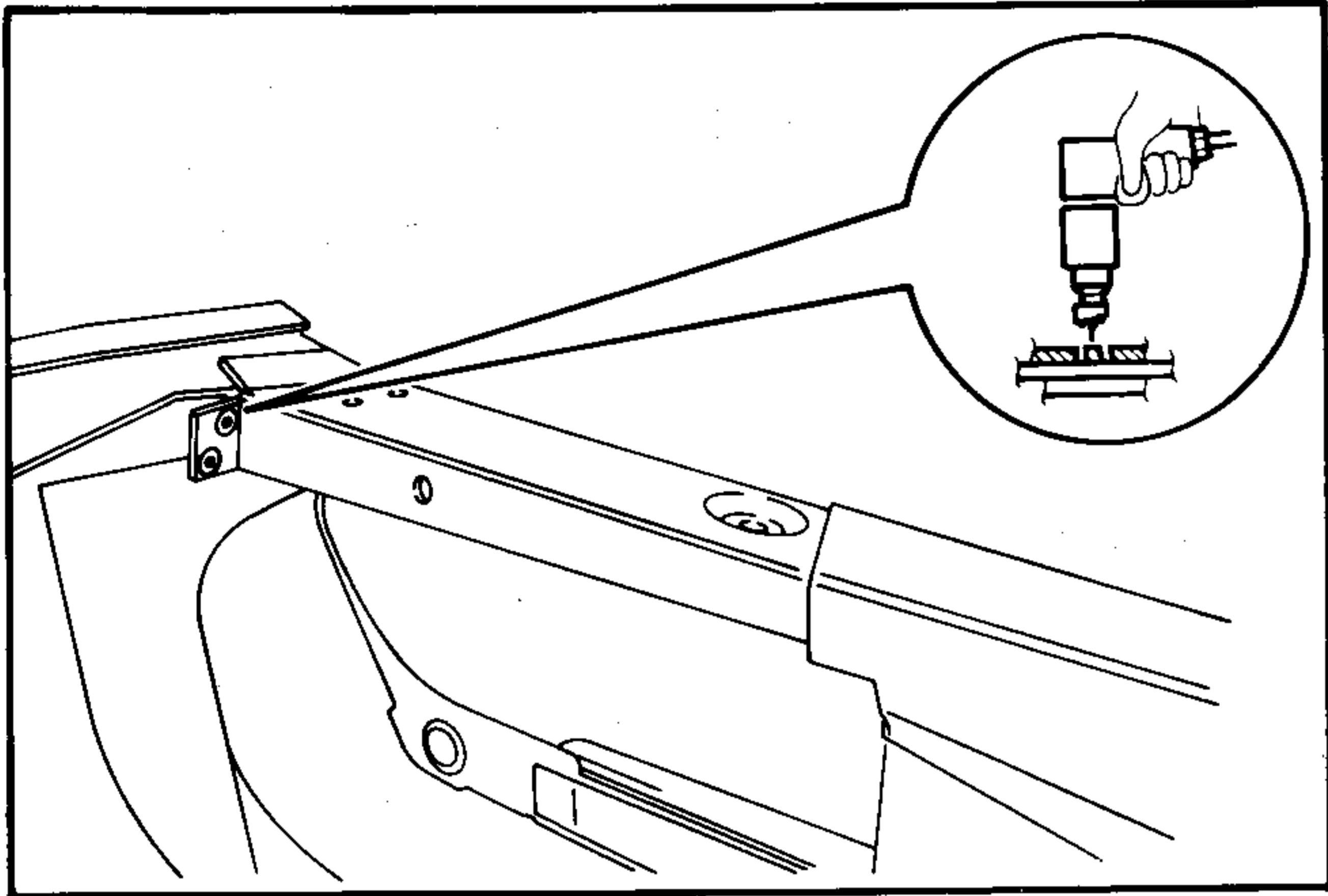
**REMINDER WHEN REMOVING**

- By means of air chisel, cut according to lines A and B.



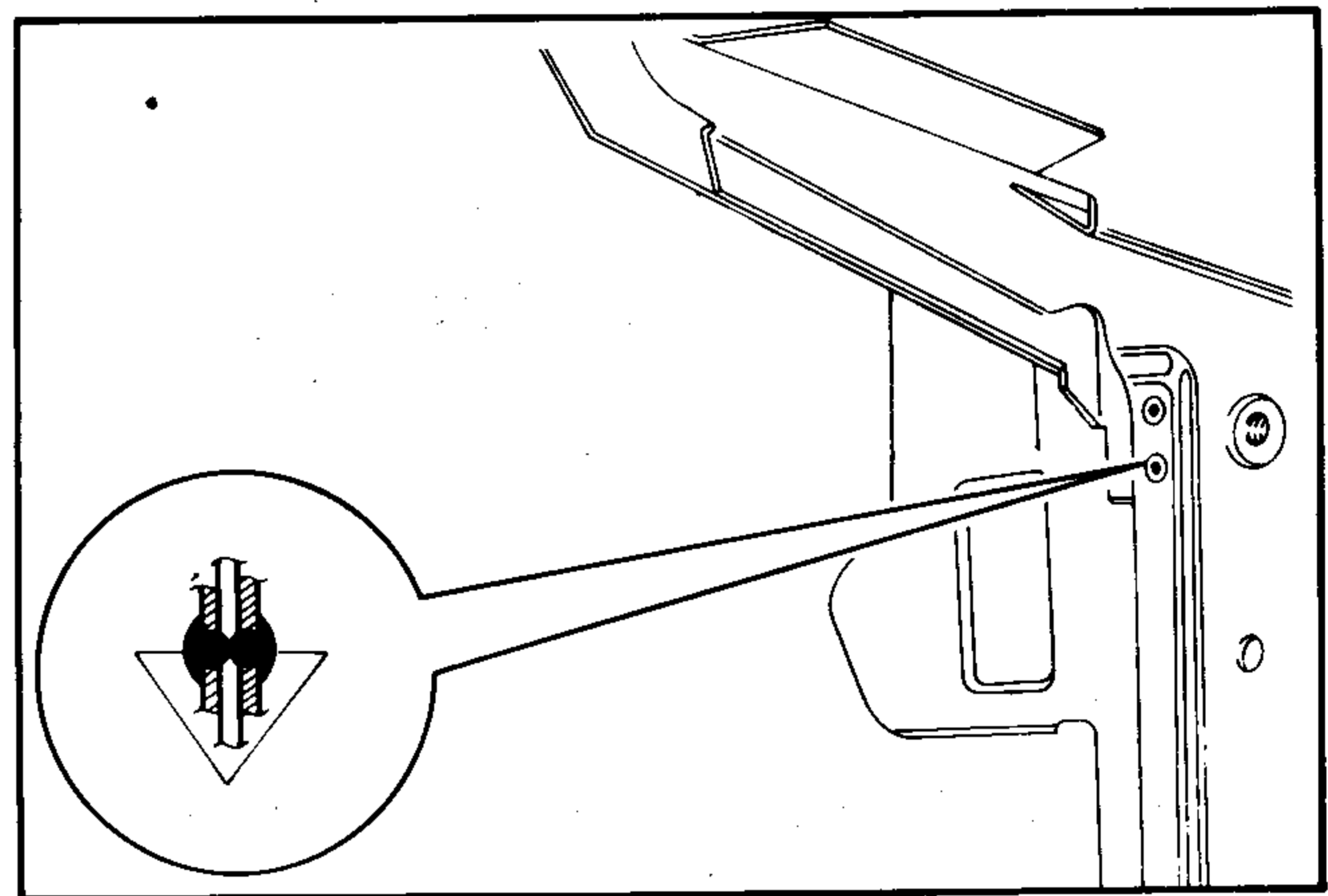
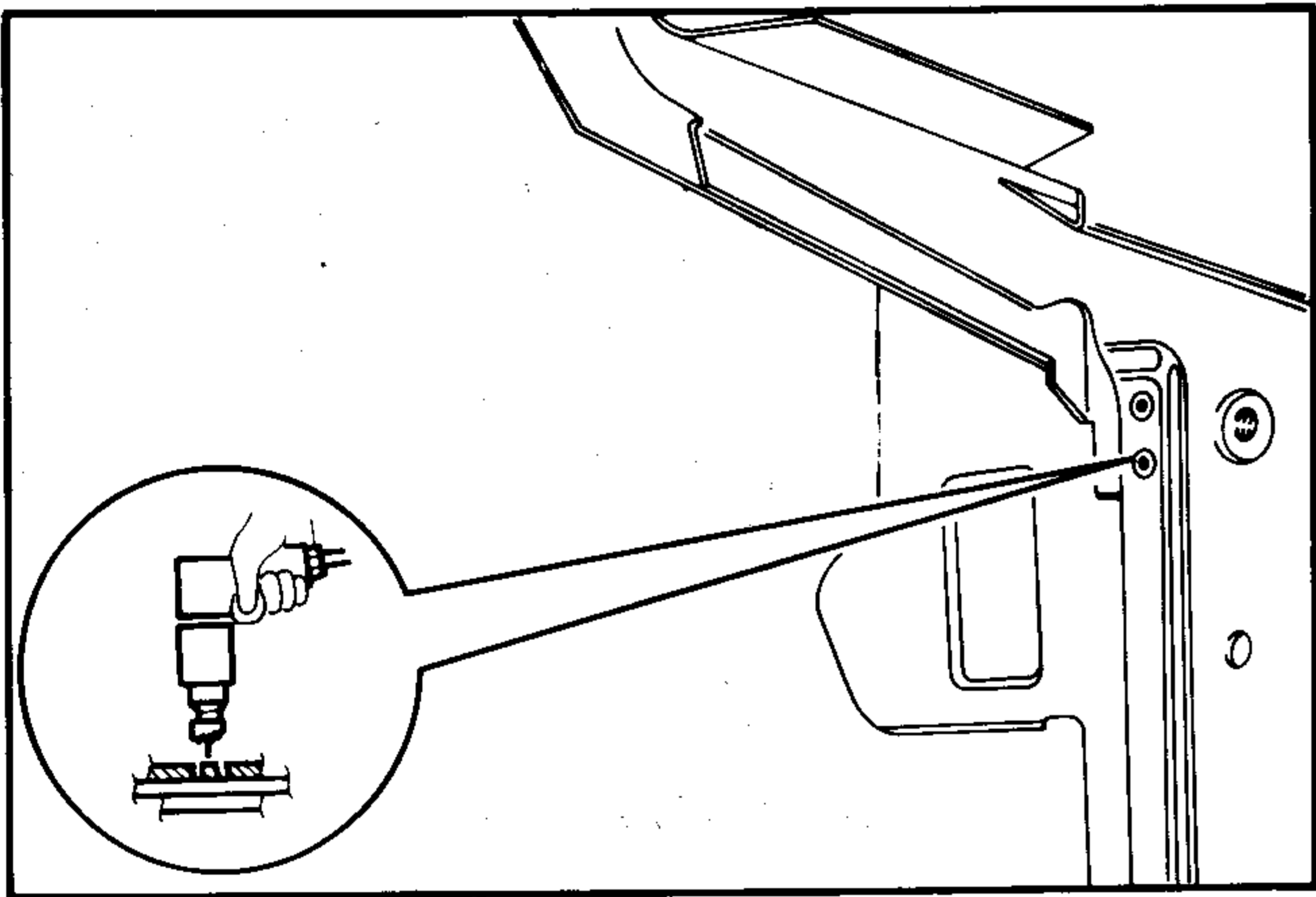
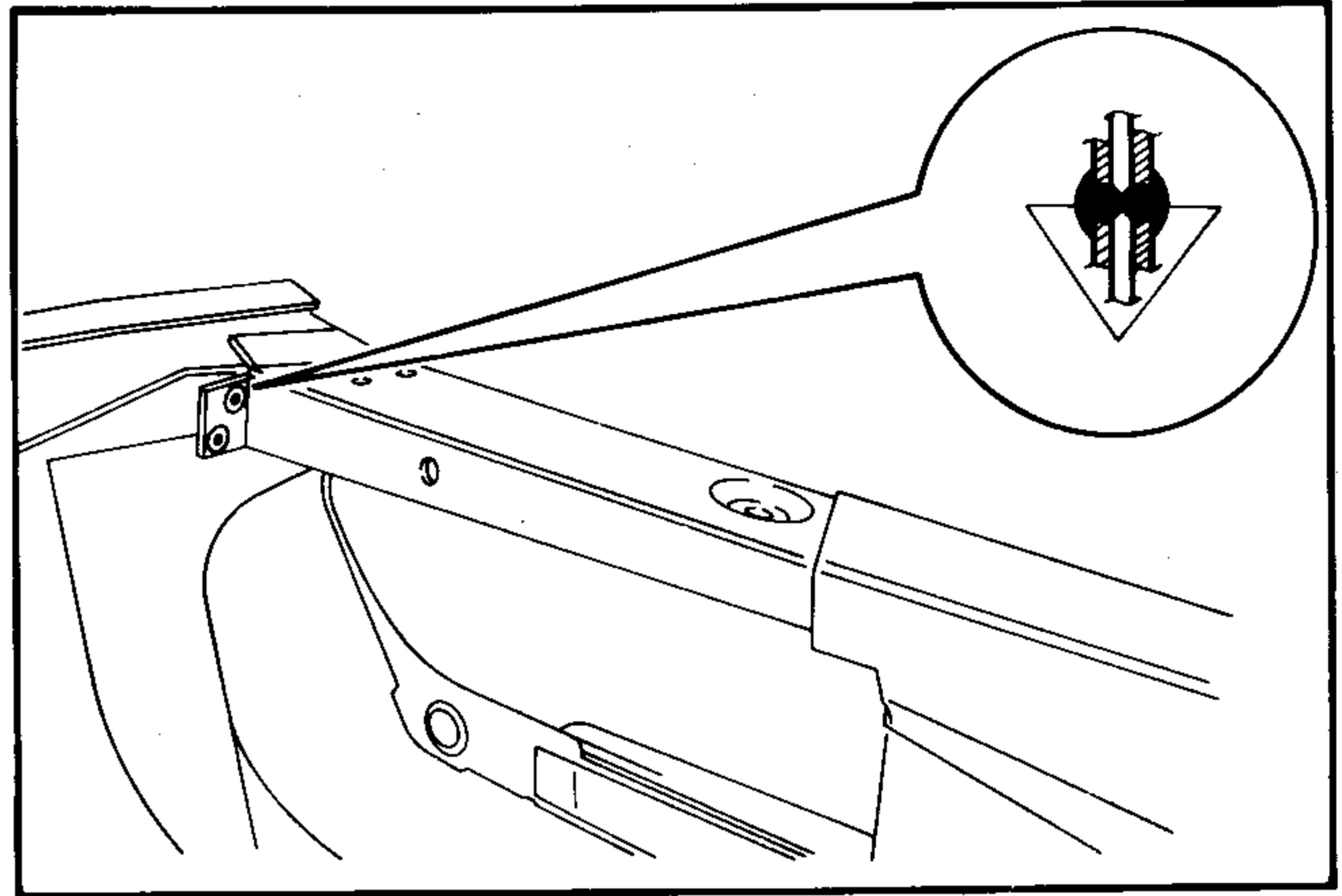
## BODY – SHEET METAL PANELS

- By means of a drill, remove the welding spots of the three-overlapping sheets.



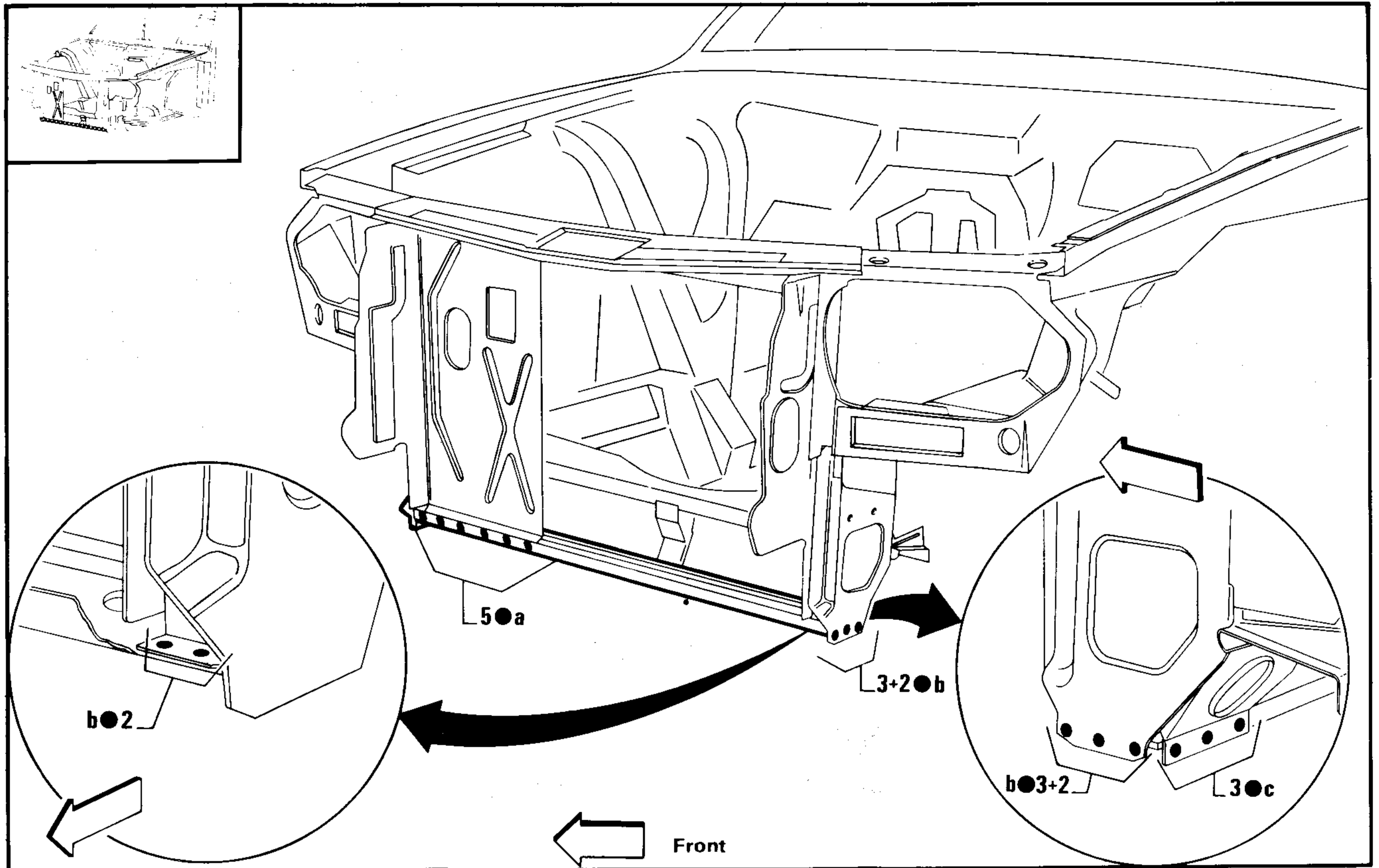
### REMINDER WHEN INSTALLING

- MIG weld the three-overlapping sheets.



# RADIATOR SUPPORT CROSS MEMBER

## Service joints

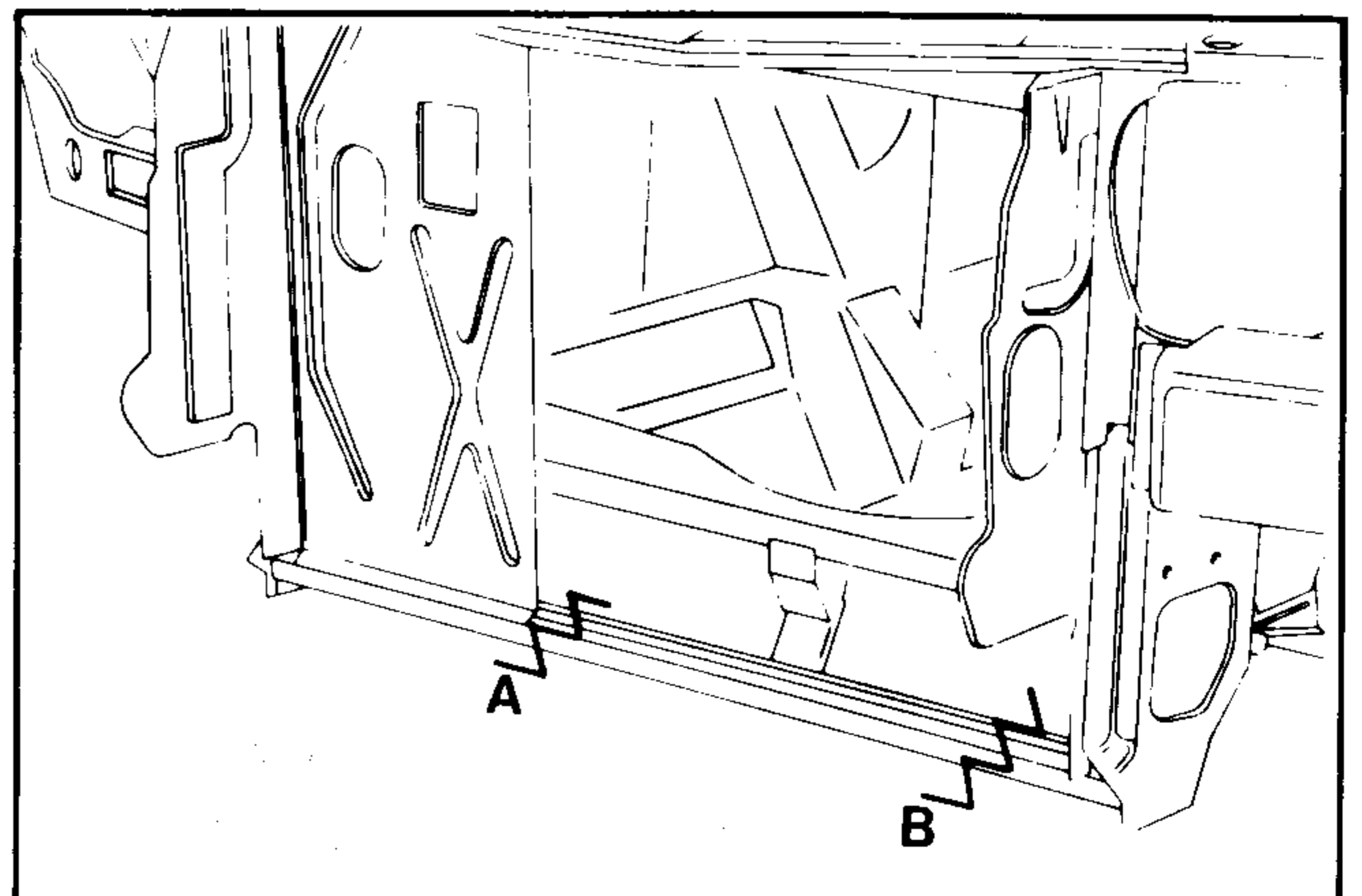


## Parts to be welded

- a. Radiator support cross member and front cross member assembly
- b. Radiator support cross member and valance extension
- c. Radiator support cross member and connection angular panel

## REMINDER WHEN REMOVING

- Cut cross member with air saw according to lines A and B.



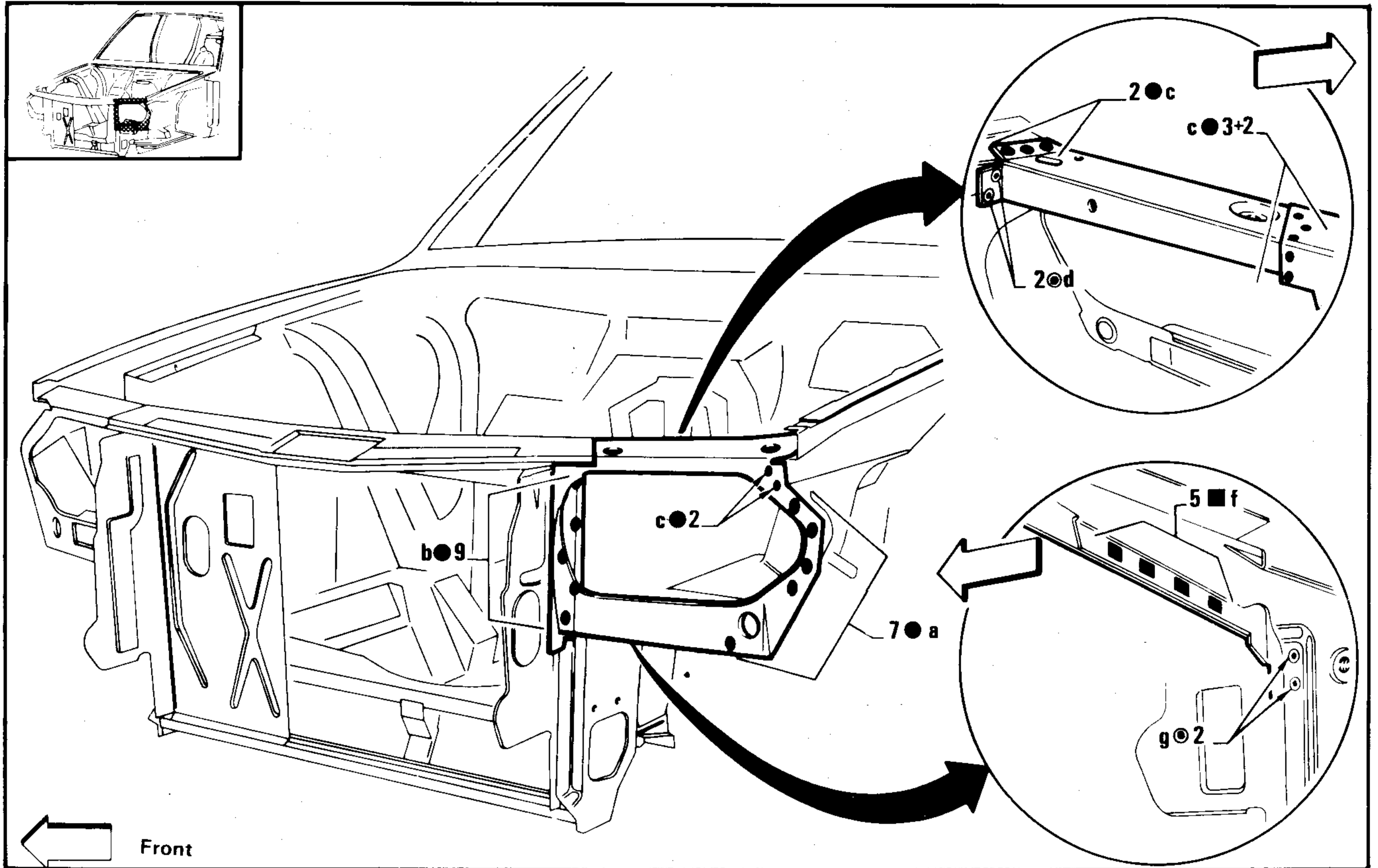
BODY - SHEET METAL PANELS

---



## HEADLIGHT SUPPORT PLATE

### Service joints

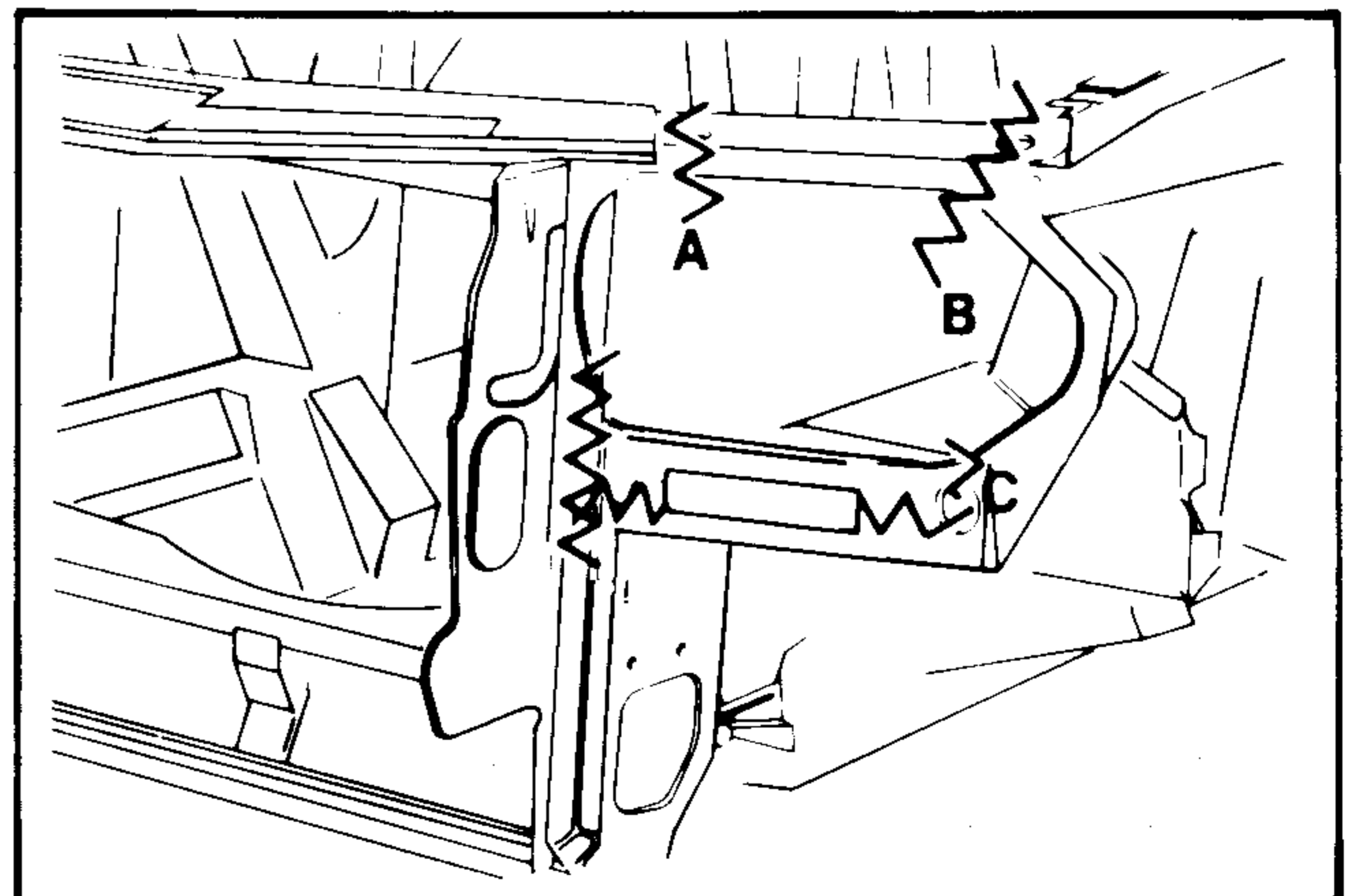


### Parts to be welded

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>a. Headlight support plate and valance extension</li> <li>b. Headlight support plate and front cross member assembly</li> <li>c. Headlight support plate and outer valance reinforcement</li> <li>d. Headlight support plate, outer valance reinforcement and valance extension</li> </ul> | <ul style="list-style-type: none"> <li>e. Headlight support plate and front cross member assembly</li> <li>f. Headlight support plate and valance extension</li> <li>g. Headlight support plate, front cross member assembly and valance extension</li> </ul> |
|---|---|

### REMINDER WHEN REMOVING

- By means of air saw, cut according to lines A, B and C.

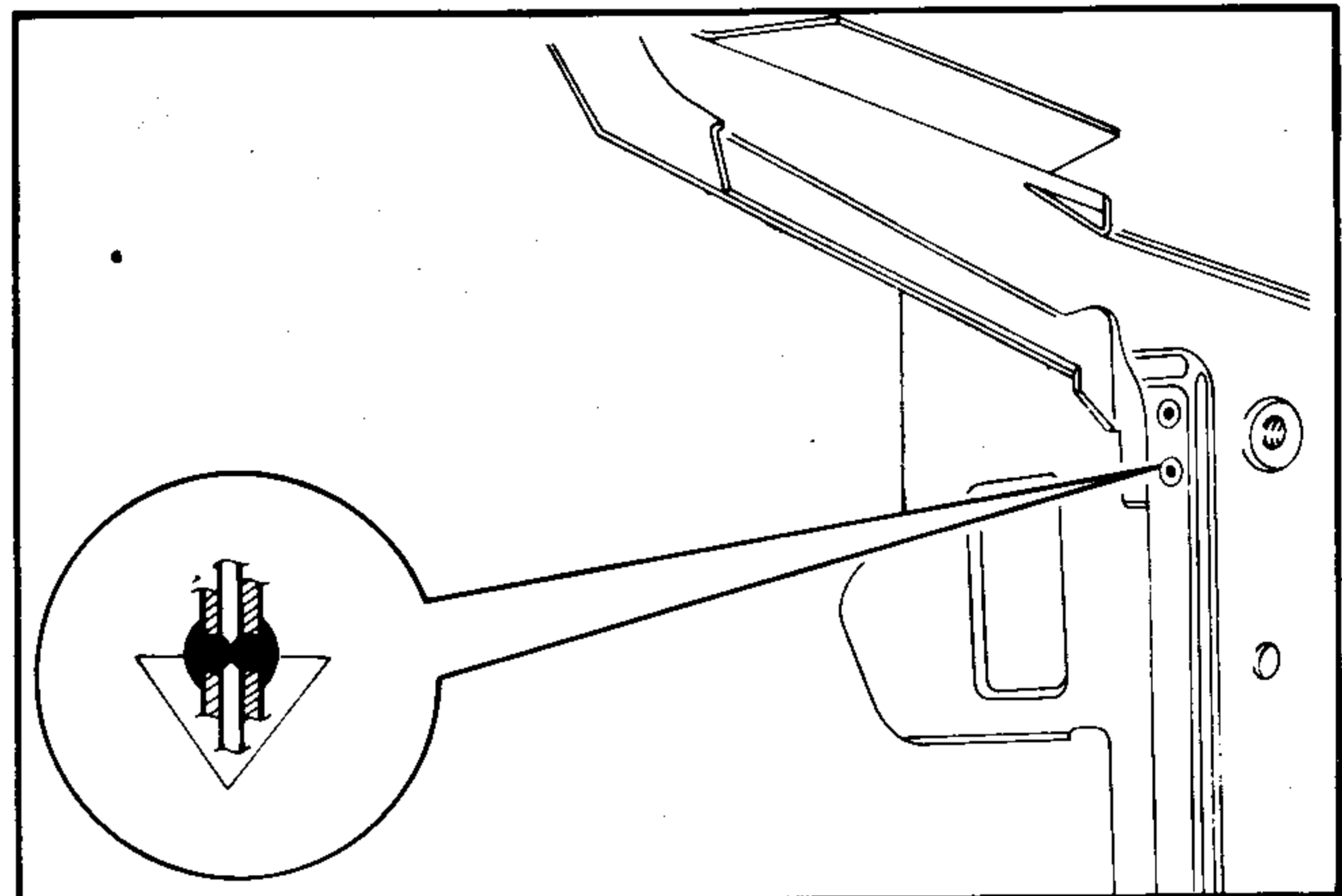
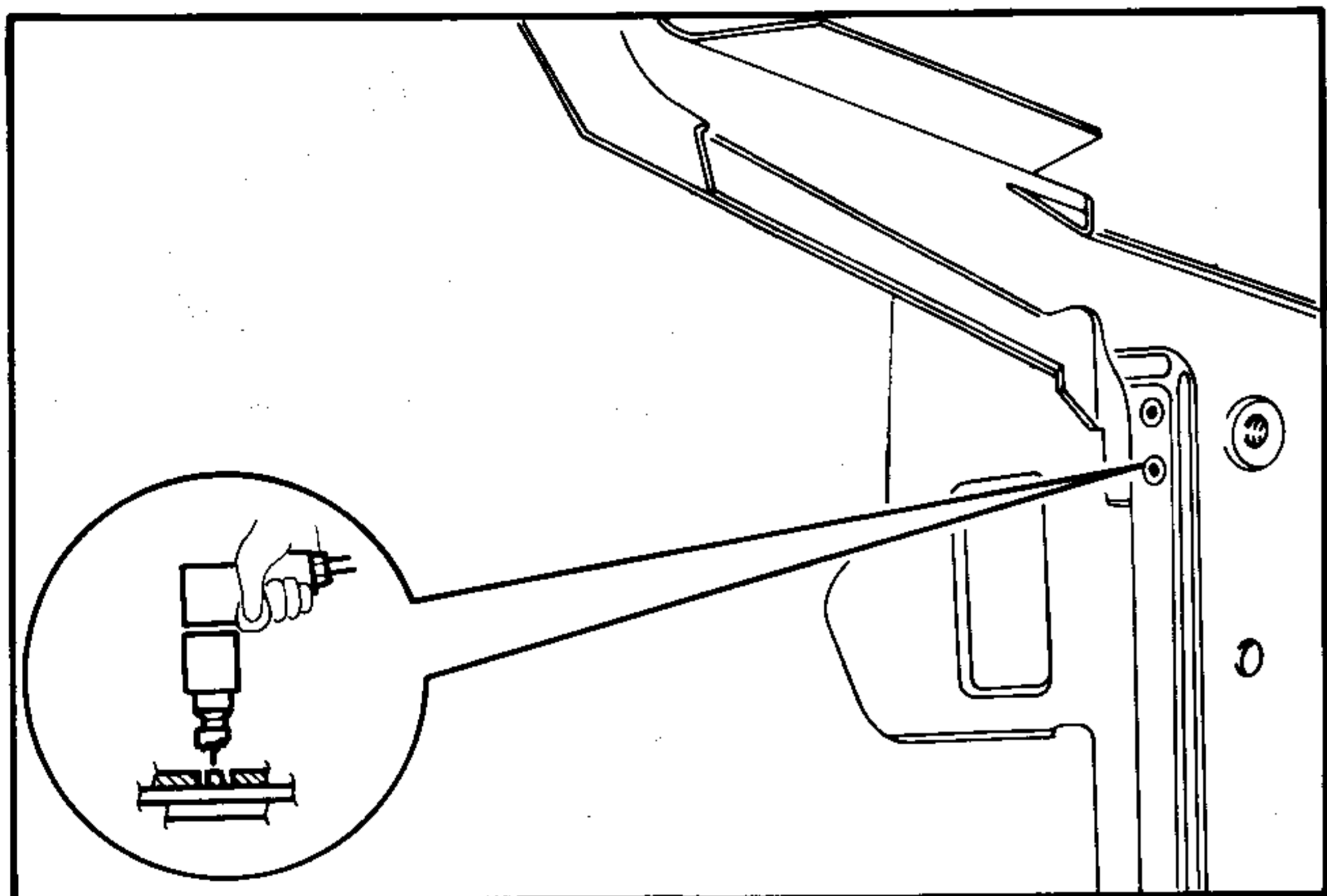
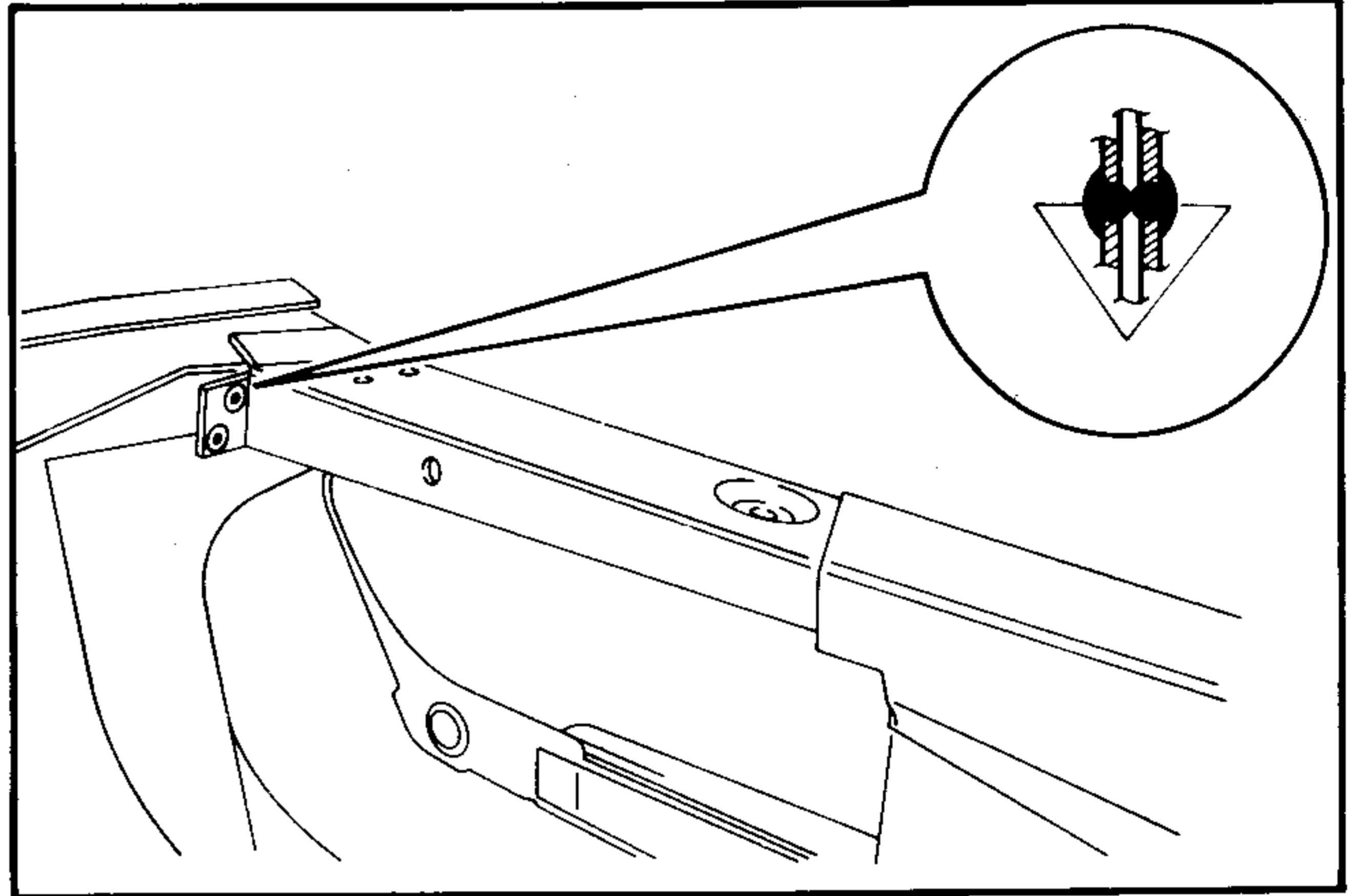
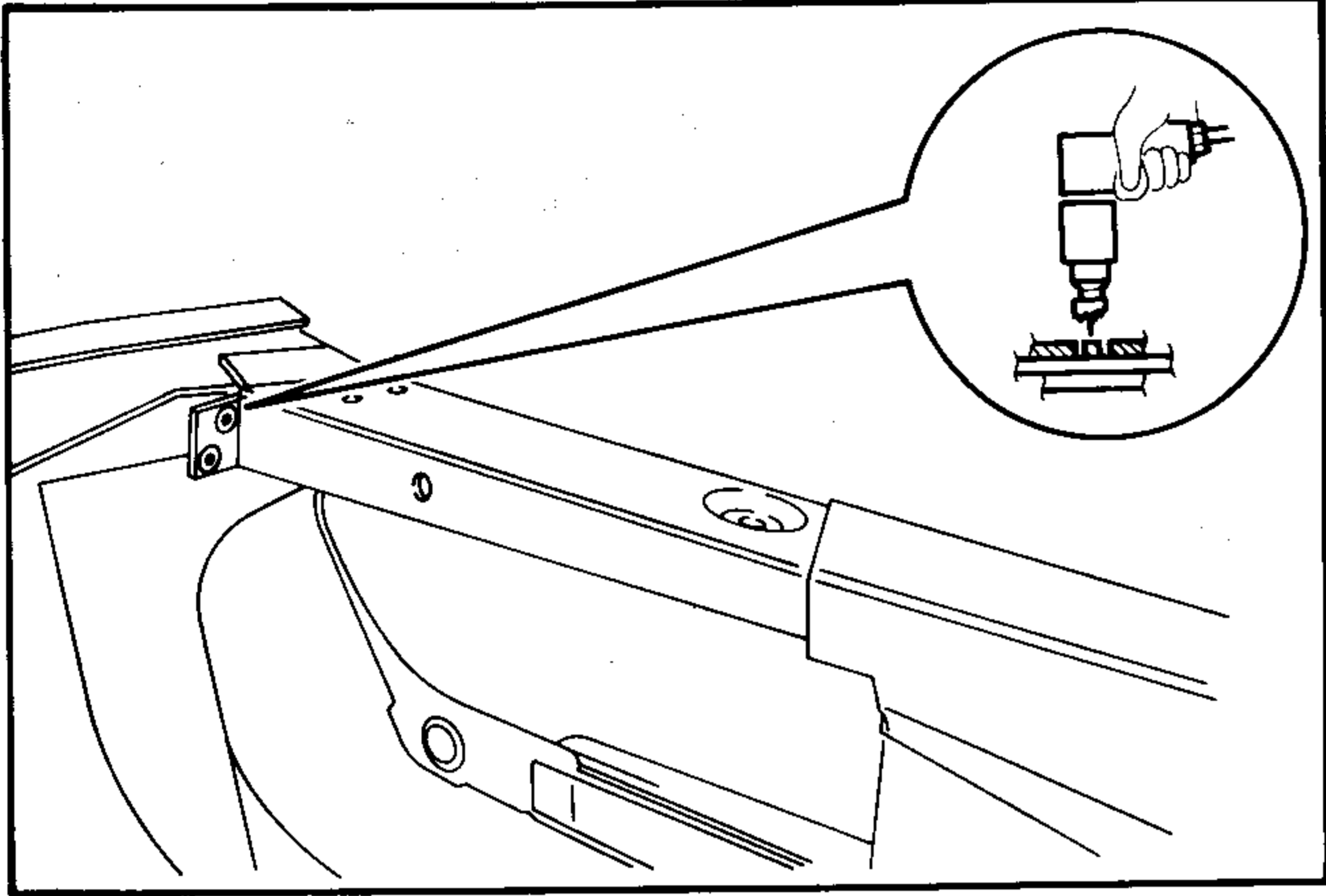


## BODY – SHEET METAL PANELS

- By means of a drill, remove the welding spots of the three overlapping sheets.

### REMINDER WHEN INSTALLING

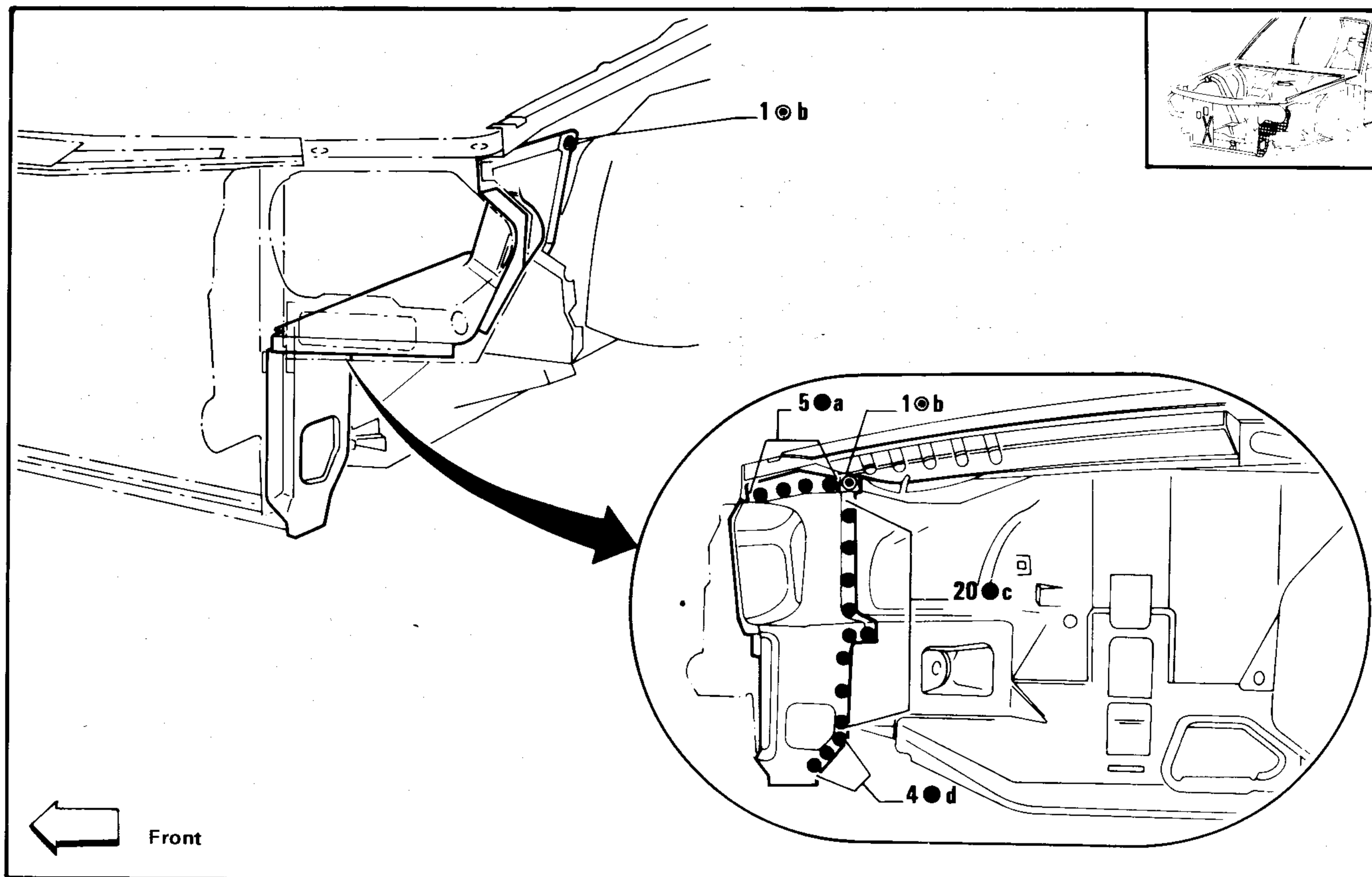
- MIG plug weld the three overlapping sheets from both sides.



## VALANCE EXTENSION

First remove the Headlight Support Plate, then carry out replacement (Refer to page 49-33)

### Service joints

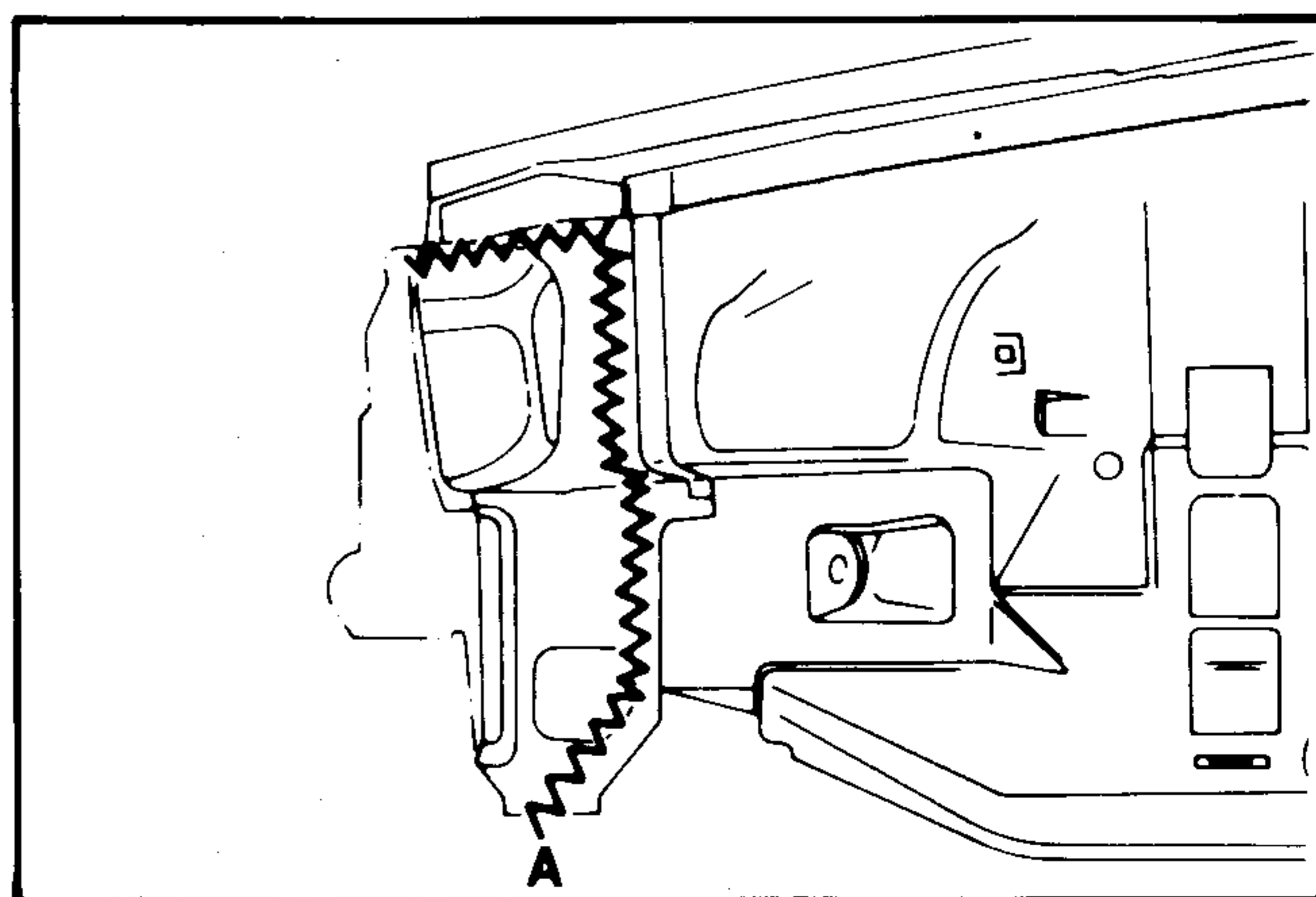


### Parts to be welded

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>a. Valance extension and outer front valance reinforcement</li> <li>b. Valance extension, outer front valance reinforcement and outer front valance</li> </ul> | <ul style="list-style-type: none"> <li>c. Valance extension and outer front valance</li> <li>d. Valance extension and connection angular panel</li> </ul> |
|---|---|

### REMINDER WHEN REMOVING

- By means of air saw, cut according to line A.

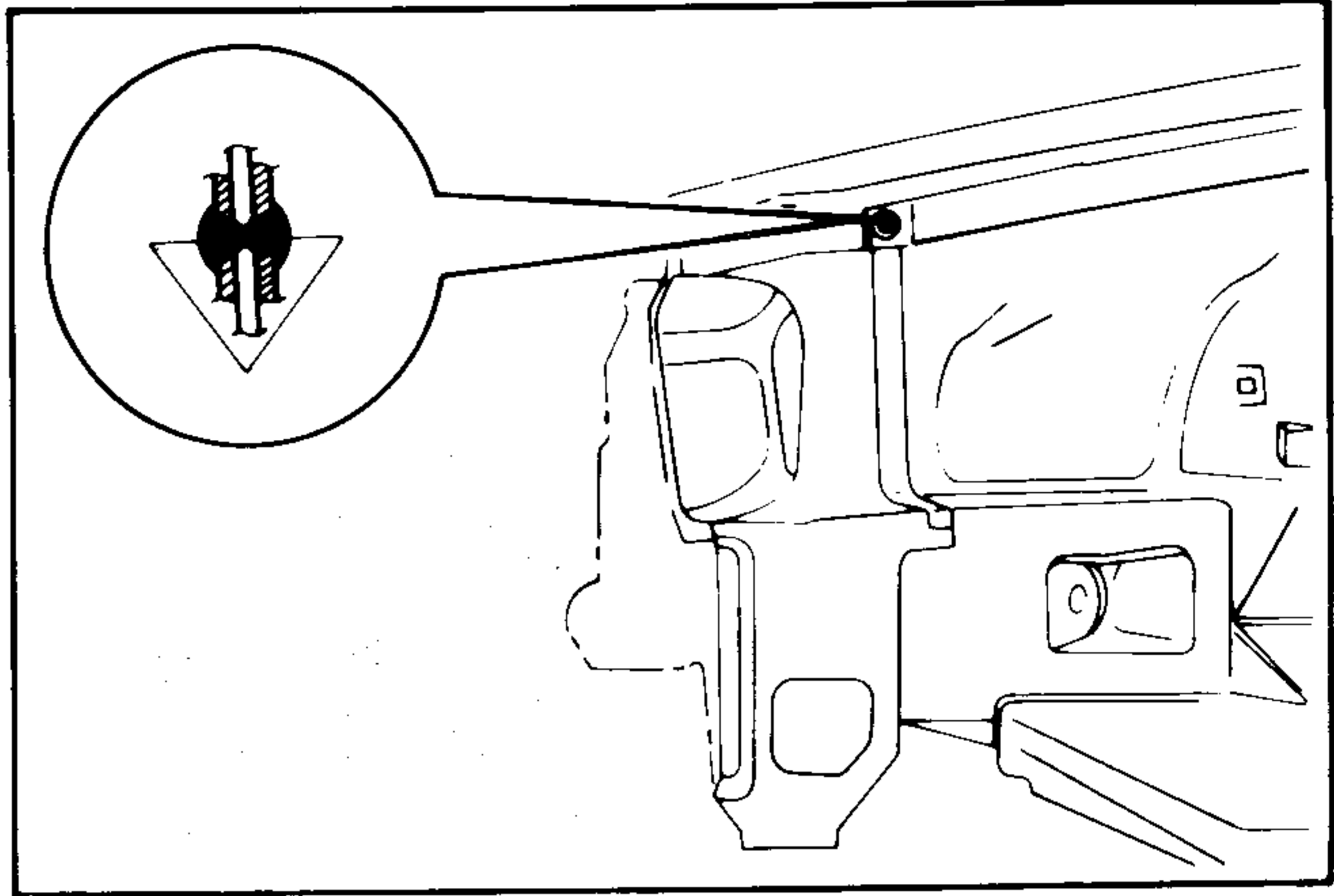
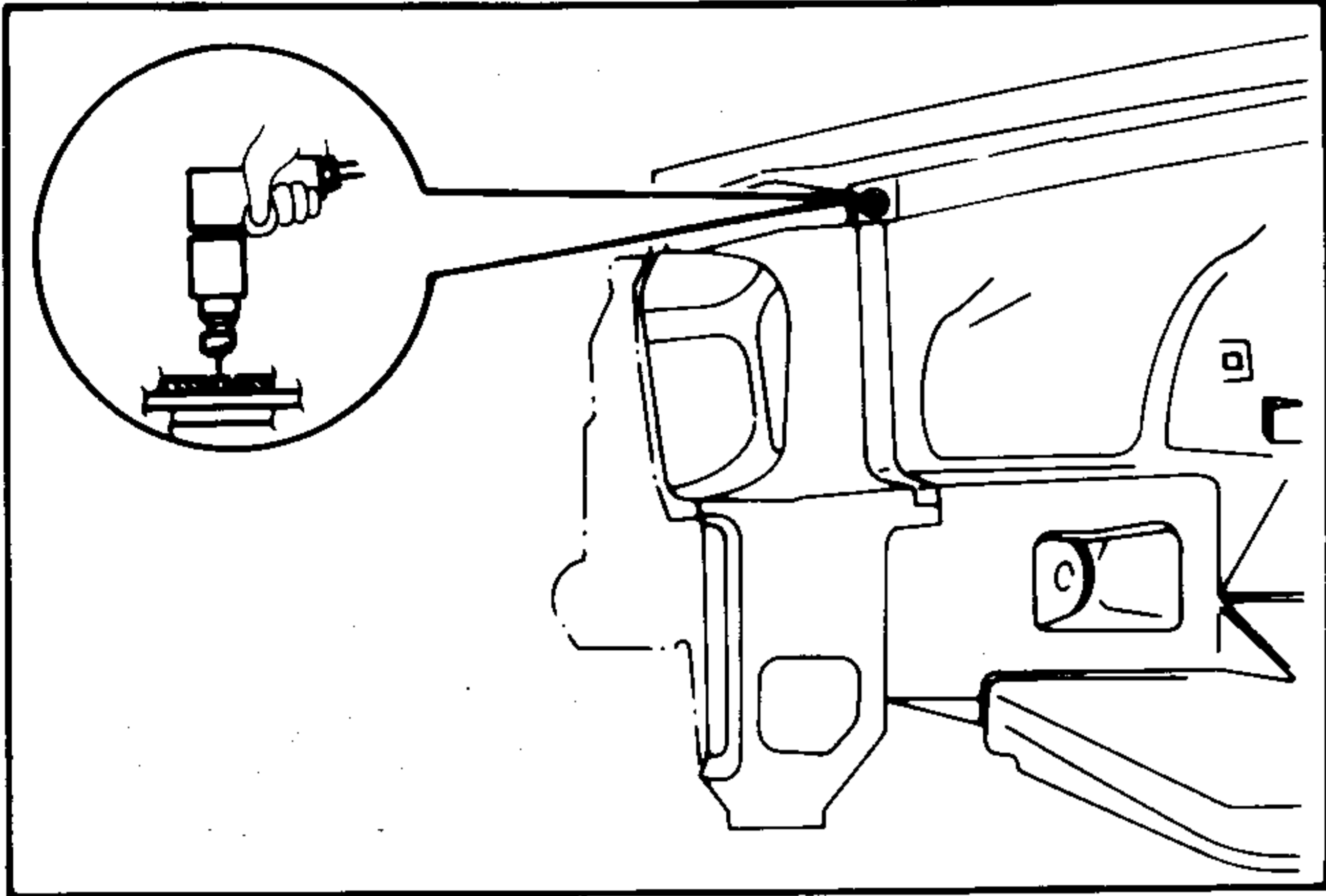


## BODY — SHEET METAL PANELS

- By means of a drill, remove welding spots from the three overlapping sheets.

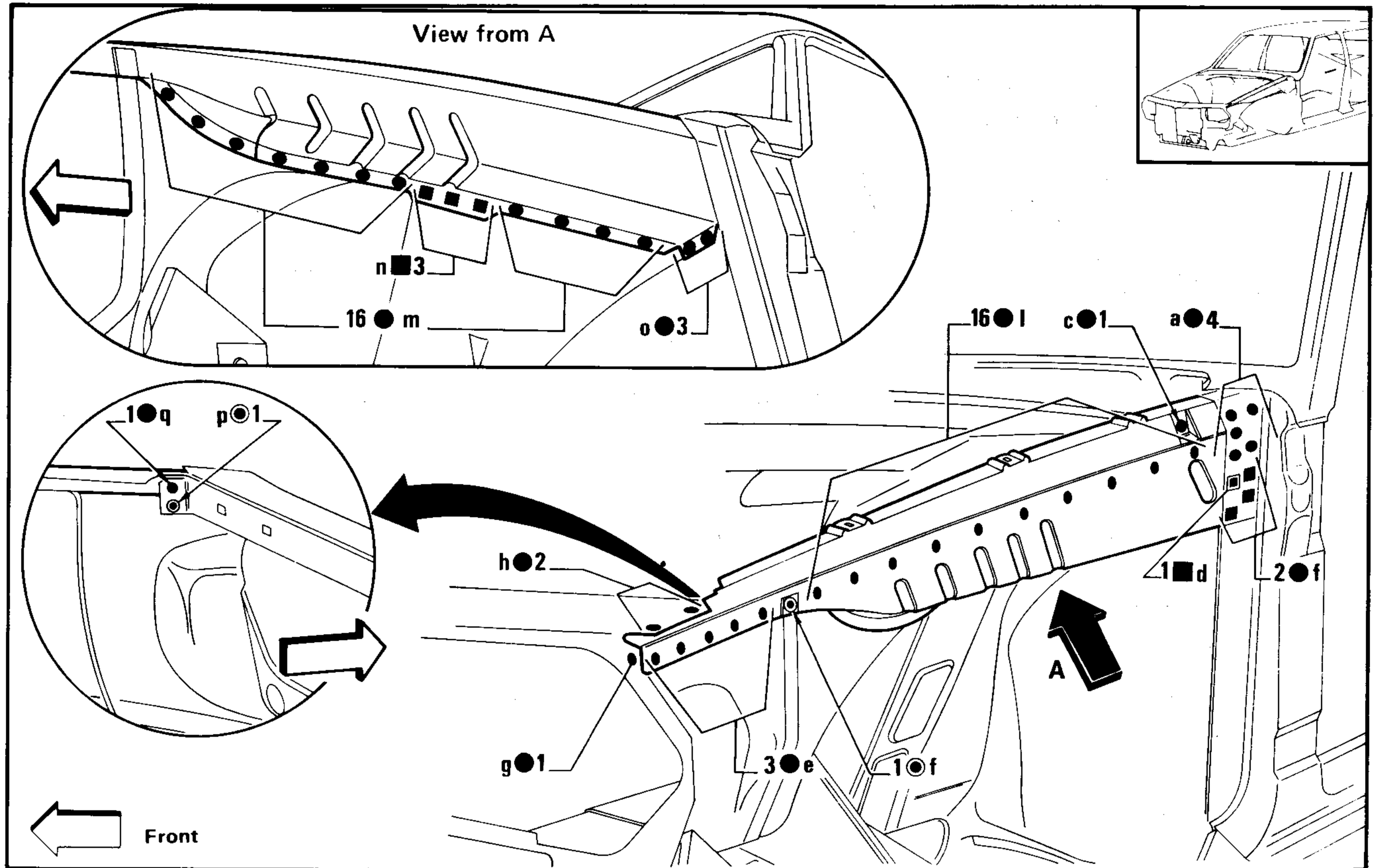
### REMINDER WHEN INSTALLING

- MIG plug weld the three overlapping sheets from both sides.



## OUTER VALANCE REINFORCEMENT

### Service joints



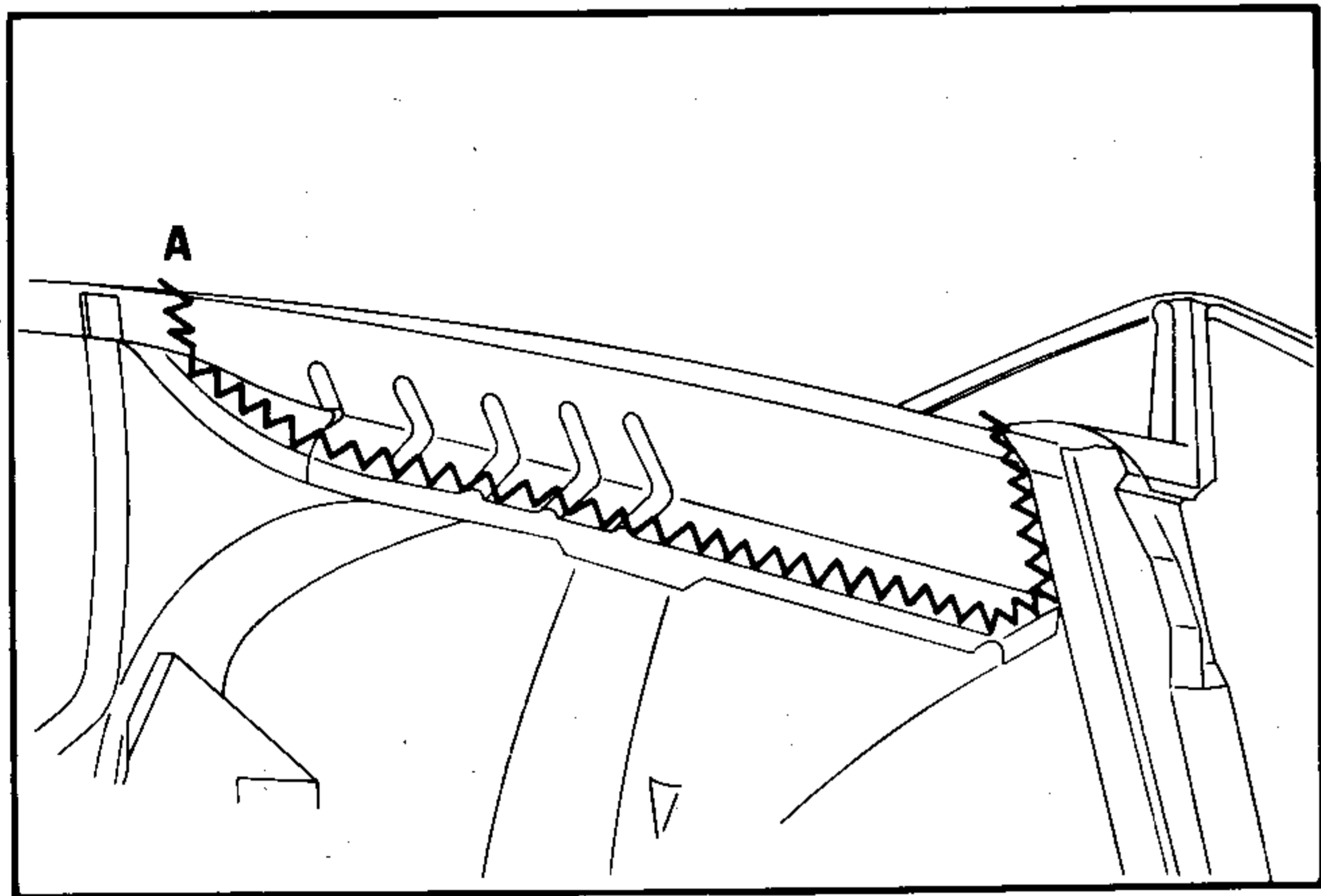
### Parts to be welded

- |    |   |    |  |
|----|---|----|--|
| a. | Outer valance reinforcement and dashboard sidewall          | h. | Outer valance reinforcement and headlight support plate                    |
| b. | Outer valance reinforcement and dashboard sidewall          | i. | Outer valance reinforcement and outer front valance                        |
| c. | Outer valance reinforcement and cowl top                    | m. | Outer valance reinforcement and outer front valance                        |
| d. | Outer valance reinforcement and dashboard sidewall          | n. | Outer valance reinforcement and outer front valance                        |
| e. | Outer valance reinforcement and valance extension           | o. | Outer valance reinforcement and outer front valance                        |
| f. | Outer valance reinforcement, valance, and valance extension | p. | Outer valance reinforcement, headlight support plate and valance extension |
| g. | Outer valance reinforcement and headlight support plate     | q. | Outer valance reinforcement and headlight support plate                    |

## BODY — SHEET METAL PANELS

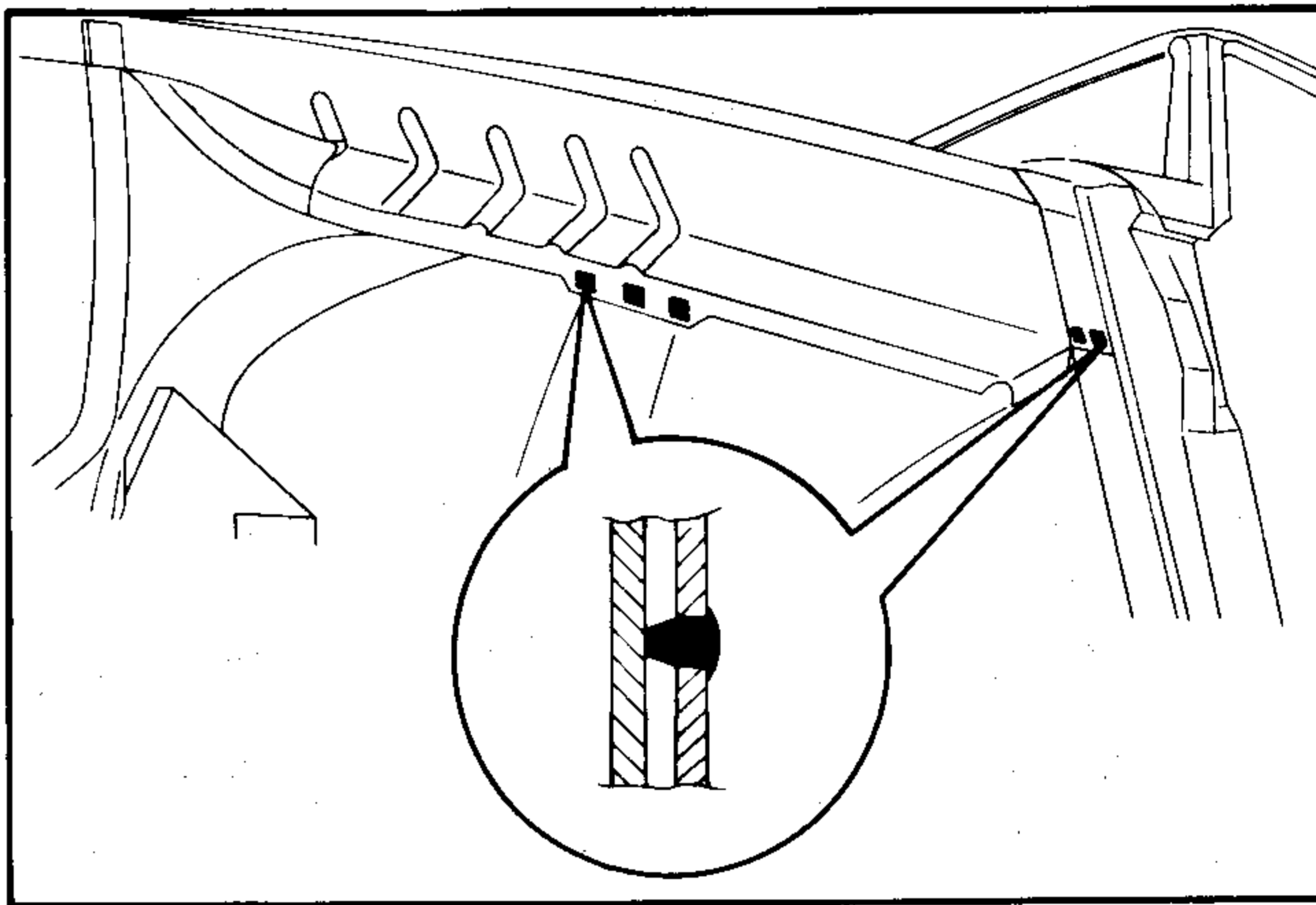
### REMINDER WHEN REMOVING

- Use an air chisel, and cut the outer valance reinforcement according to the line A shown in the figure.



### REMINDER WHEN INSTALLING

- Drill (5 to 6 mm - 0.20 to 0.24 in dia) the component in the points where the plug weldings are to be performed.
- Execute plug welding in the points that can not be accessed by welder.

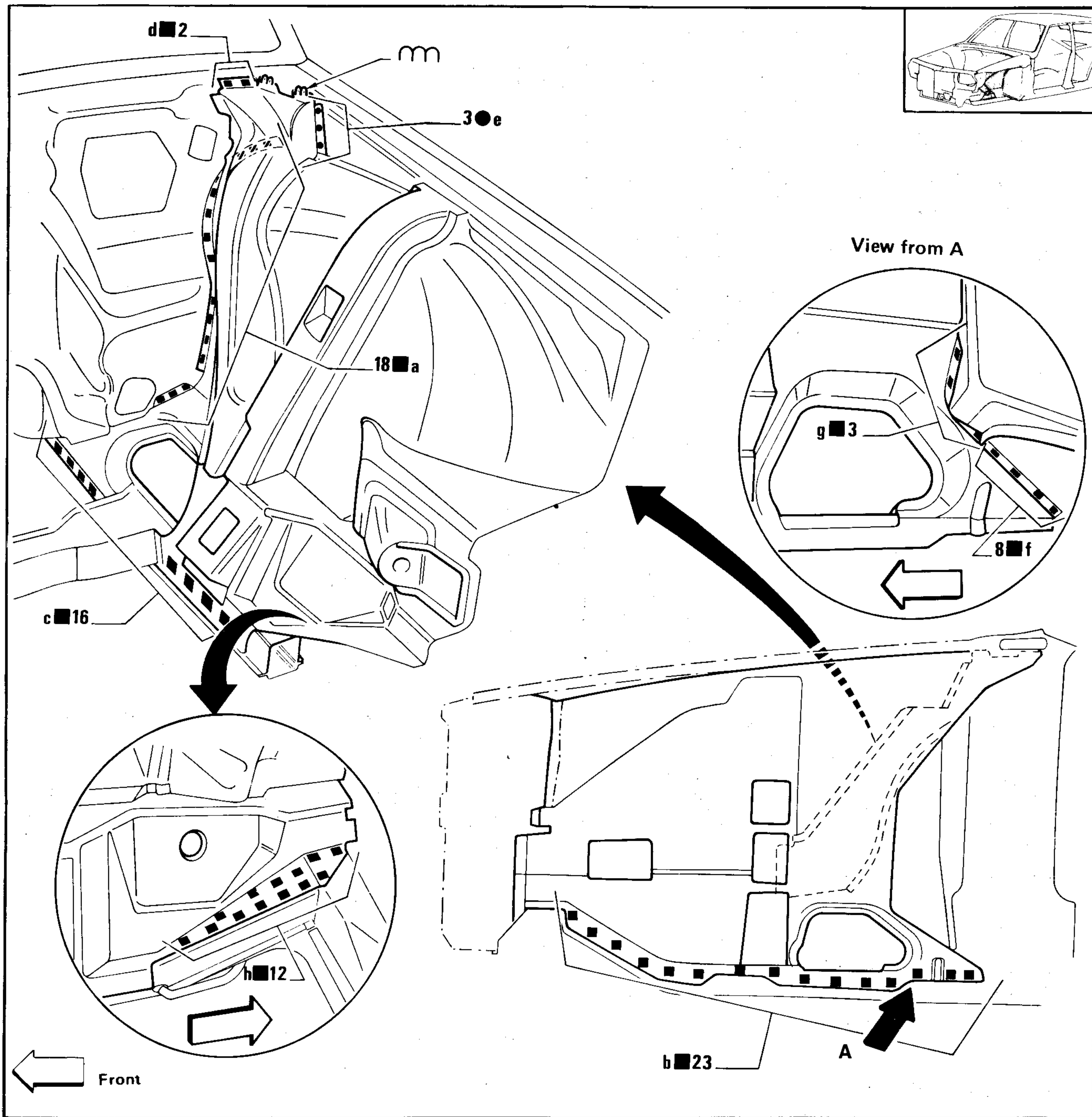


- Remove the component from body by removing the welding spots with an air chisel fitted with the appropriate tool.

# FRONT VALANCE WITH VALANCE EXTENSION AND OUTER VALANCE REINFORCEMENT REMOVED

Replacement is to be performed after having removed the Valance Extension and the Outer Valance Reinforcement.

## Service joints

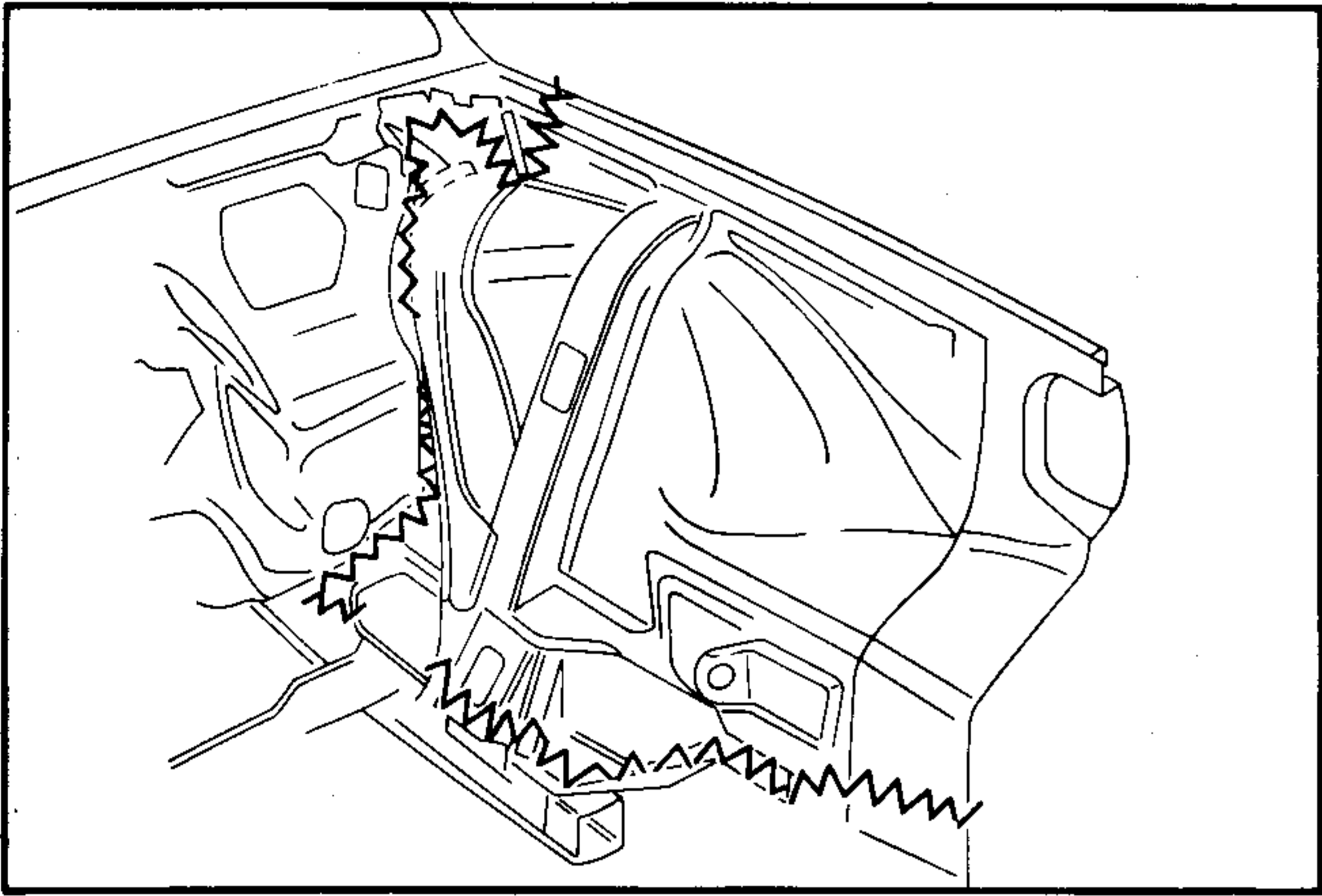


## Parts to be welded

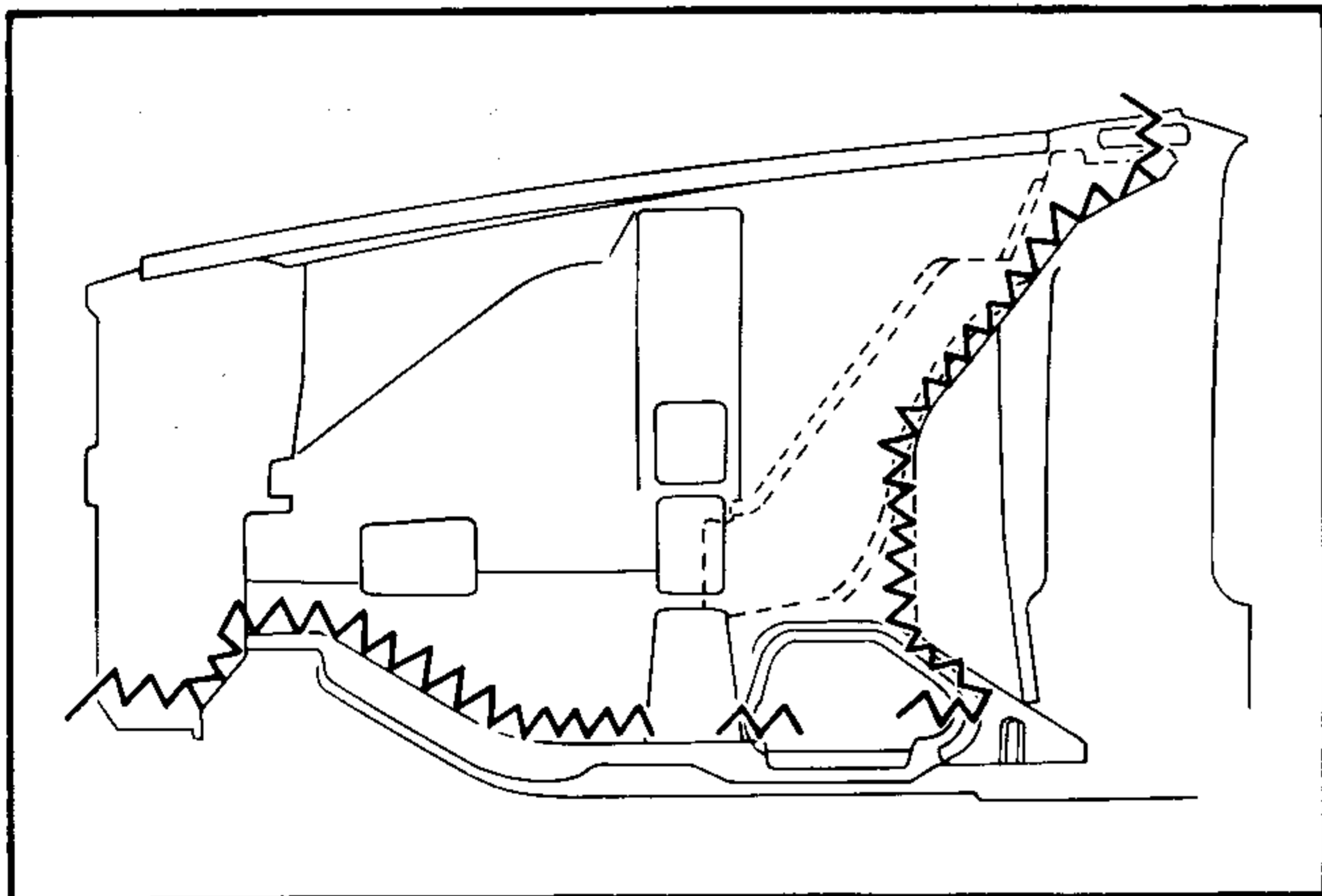
- |  |   |
|--|---|
| a. Outer front valance and dashboard sidewall          | f. Inner front valance and central floor      |
| b. Outer front valance and central beam                | g. Inner front valance and dashboard sidewall |
| c. Inner front valance and central beam                | h. Inner front valance and central beam       |
| d. Inner front valance and central beam                |   |
| e. Inner front valance and outer valance reinforcement |   |

**REMINDER WHEN REMOVING**

- Operating from the engine compartment side, use an air chisel to cut the inner front valance following the trace shown in the figure.



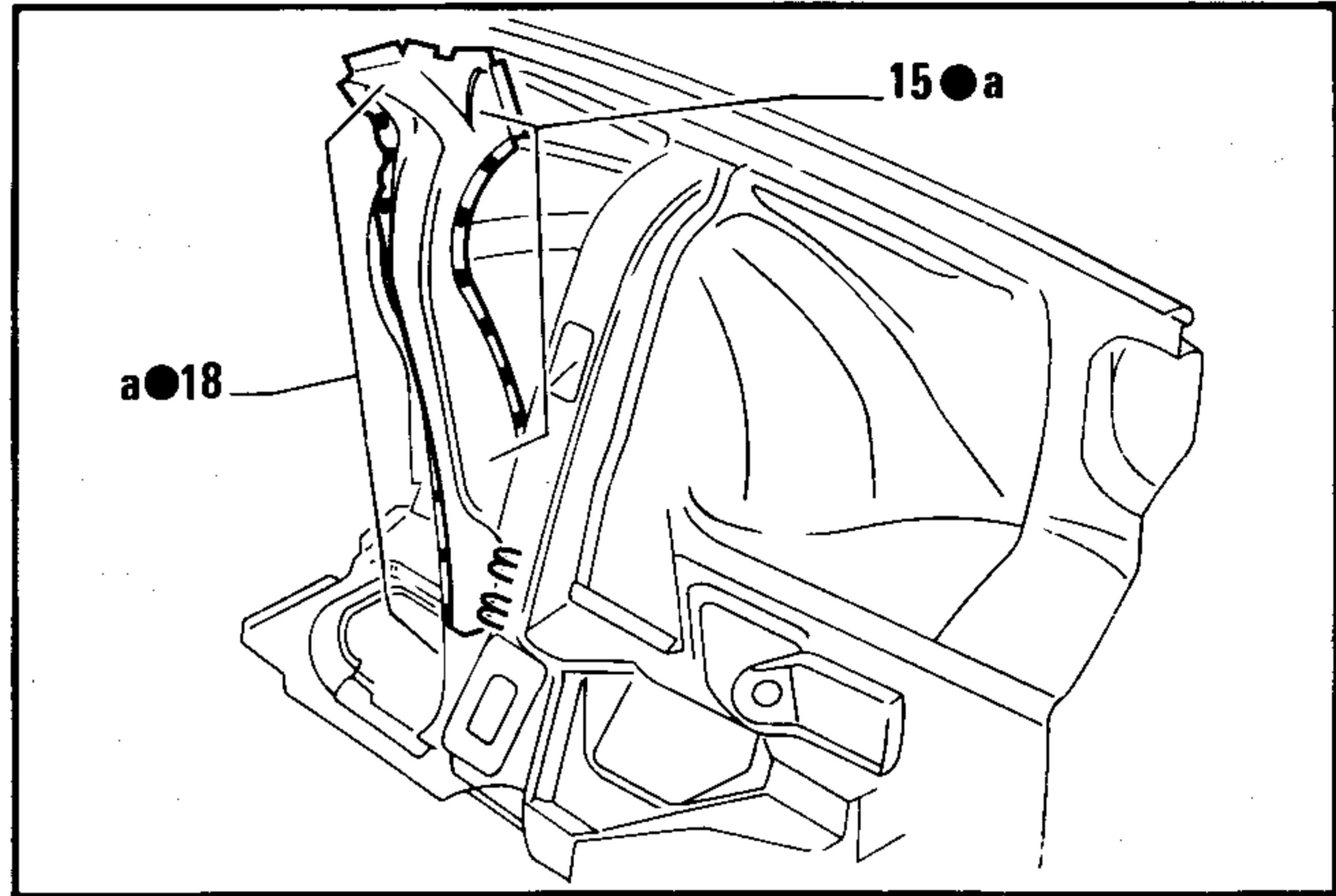
- By means of an air chisel, cut the outer front valance following the trace shown in the figure.



- By means of a pneumatic drilling machine, remove the welding spots and the remaining edges of the component to be replaced.

**REMINDER WHEN INSTALLING**

- Operating at bench, assemble the outer front valance and lower reinforcement between dashboard and valance. Spot weld following the indications given in the figure.



**Parts to be welded**

- Lower reinforcement between dashboard and valance, and outer front valance
- Drill the component (5 to 6 mm - 0.20 to 0.24 in dia.) in the points to be plug welded.
  - Plug weld in the points that can not be accessed by welder.

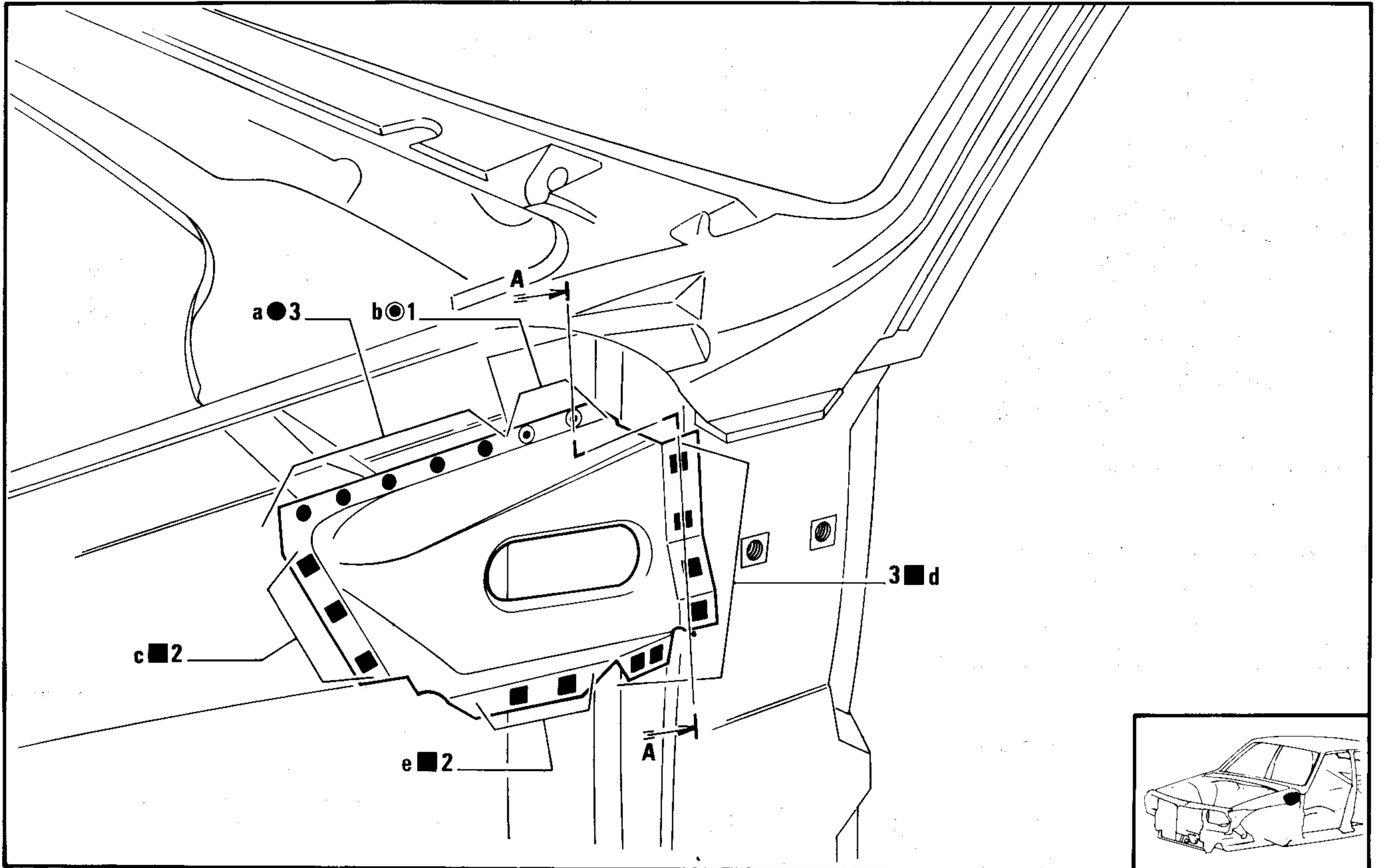
Welding of the outer front valance with the dashboard sidewall must be executed by operating from inside the passenger compartment.



## BRACKET CONNECTING BODY SIDE WITH FRONT FENDER REMOVED

Replacement is to be carried out after having removed the Front Fender.

### Service joints

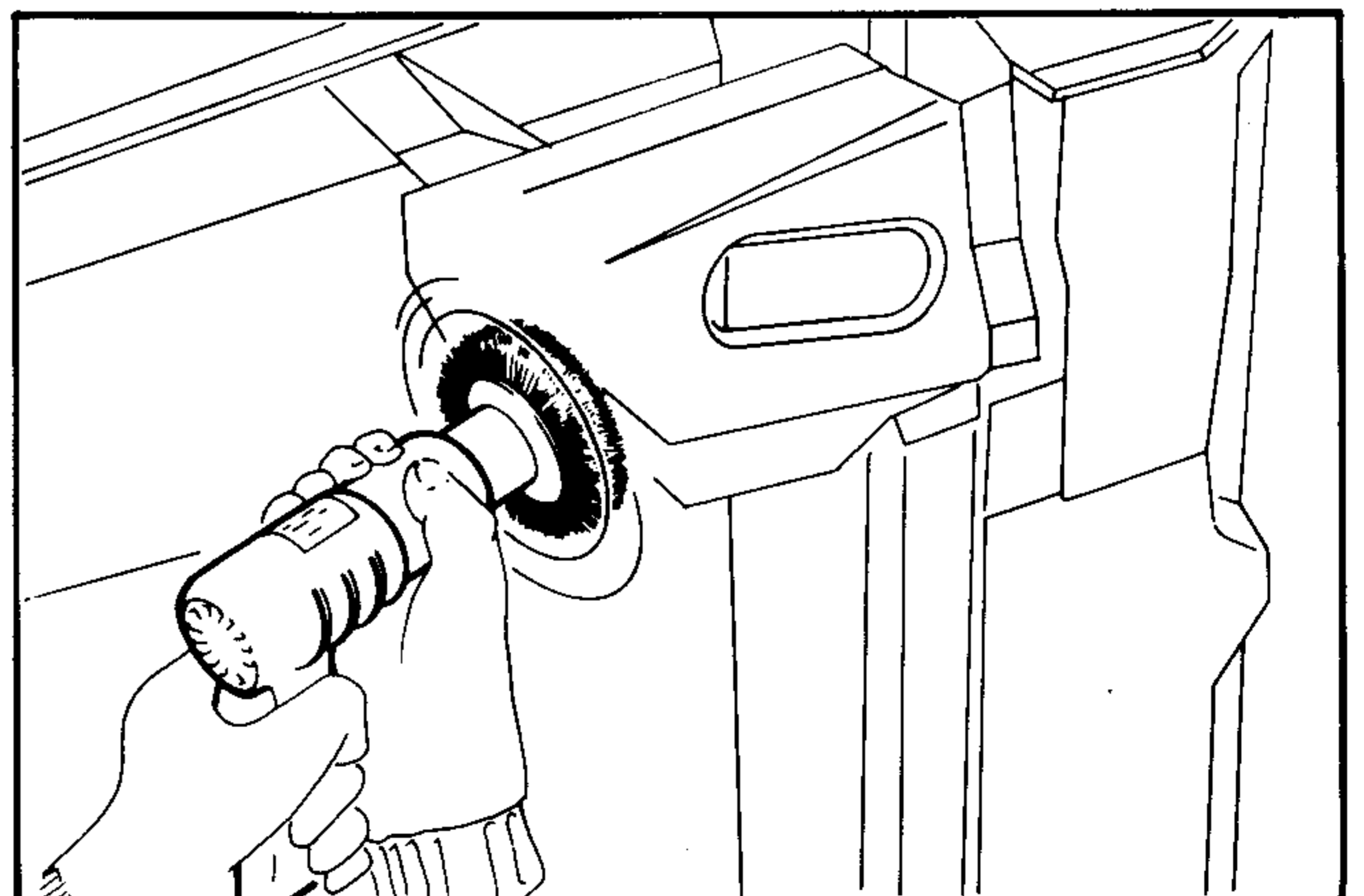


### Parts to be welded

- |  |   |
|--|---|
| <p>a. Bracket connecting body side to beam, inner front valance, and outer valance reinforcement</p> <p>b. Bracket connecting body side to beam, dashboard sidewall, and outer valance reinforcement</p> <p>c. Bracket connecting body side to beam, and central valance reinforcement</p> | <p>d. Bracket connecting body side to beam and front pillar</p> <p>e. Bracket connecting body side to beam and dashboard sidewall</p> |
|--|---|

### REMINDER WHEN REMOVING

- Use a metal brush to carefully remove the sealing compound from bracket to permit the previous welding spots to be identified.

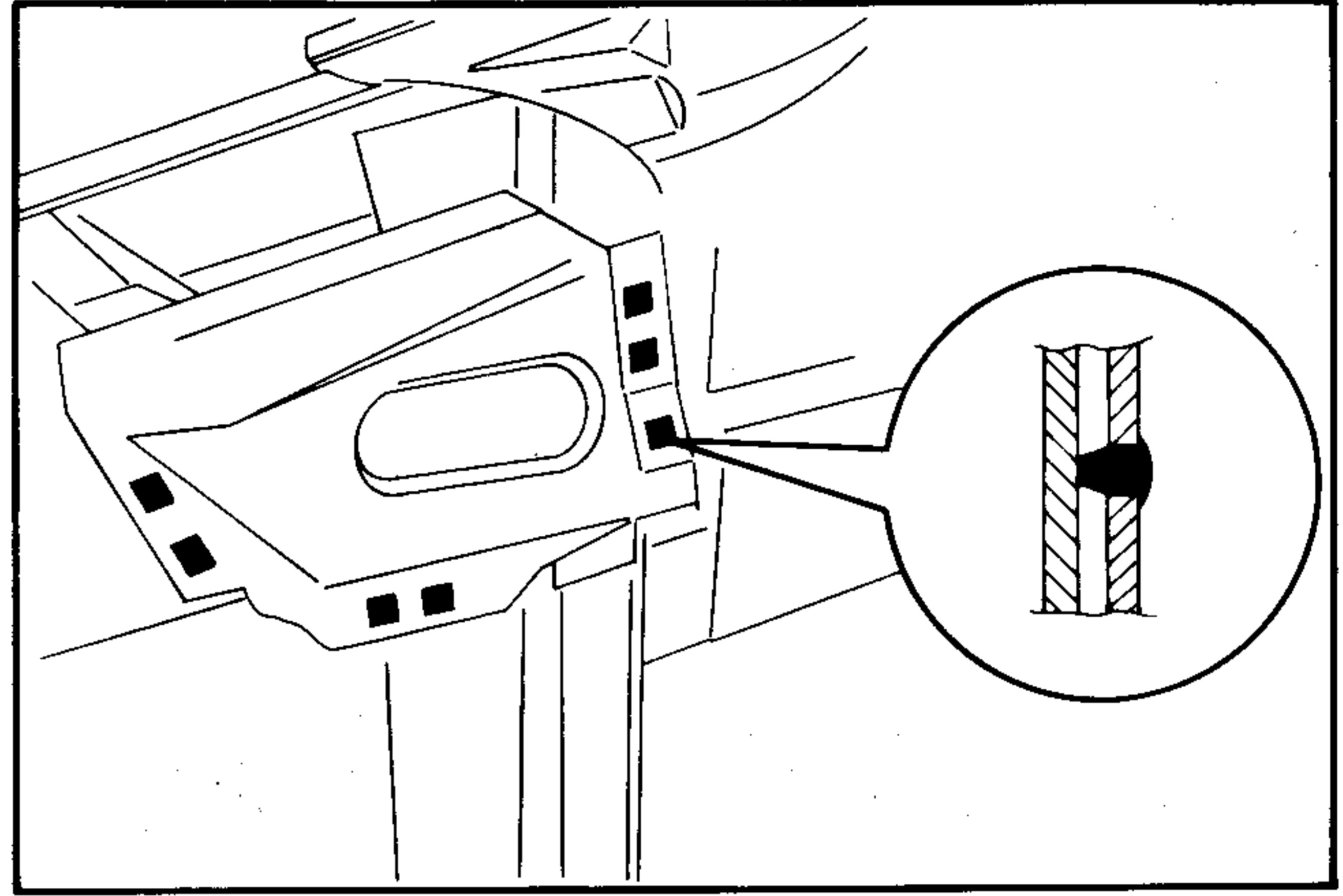
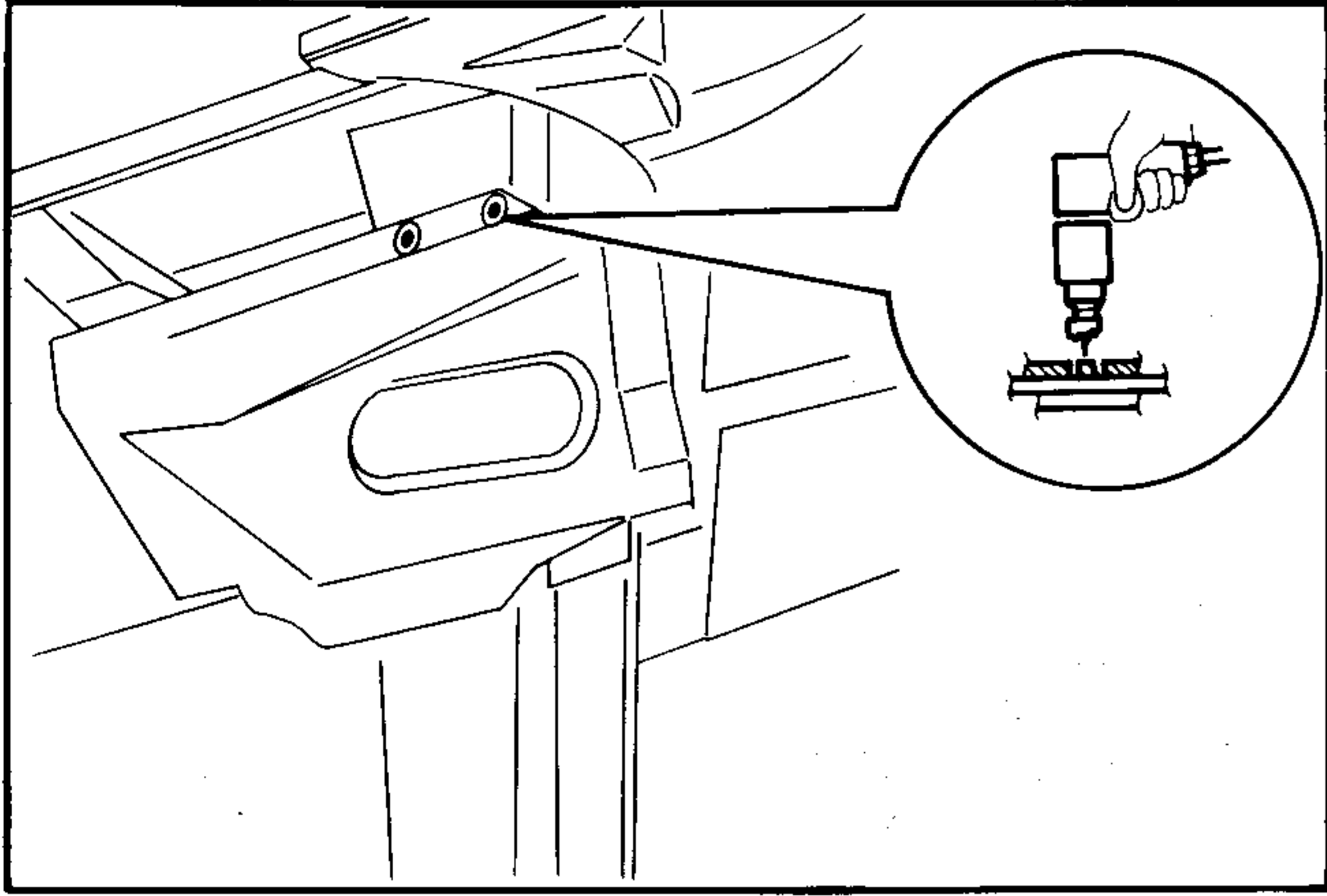


## BODY – SHEET METAL PANELS

- By means of a drilling machine remove the welding spots, and remove the bracket connecting body side to beam from body.

### REMINDER WHEN INSTALLING

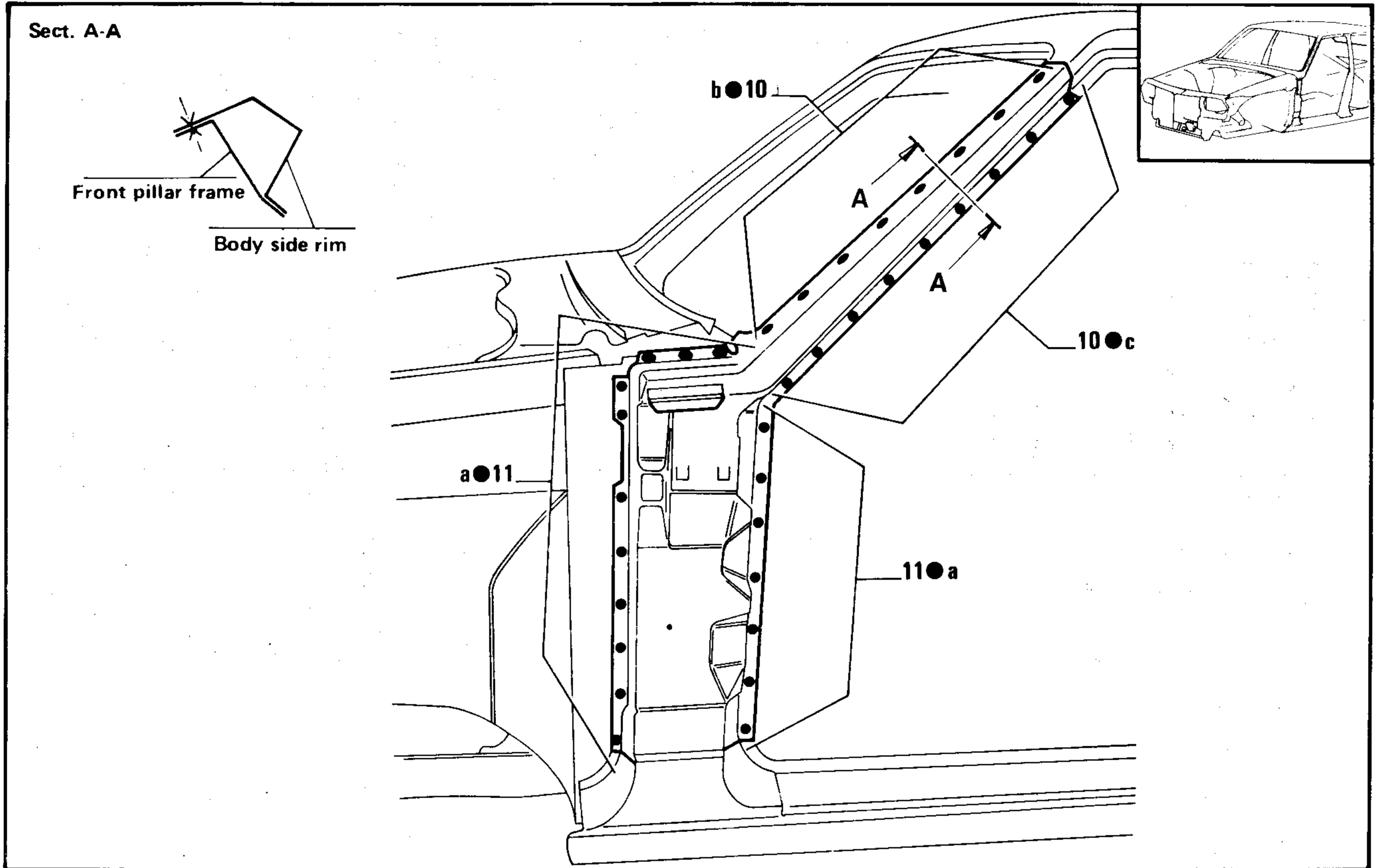
Drill the component in the points which are to be MIG plug welded.



## FRONT PILLAR WITH FRONT FENDER REMOVED

Replacement is to be carried out after having removed Front Fender, Windscreen Rim Pillar, and Bracket Connecting Body Side to Beam

### Service joints

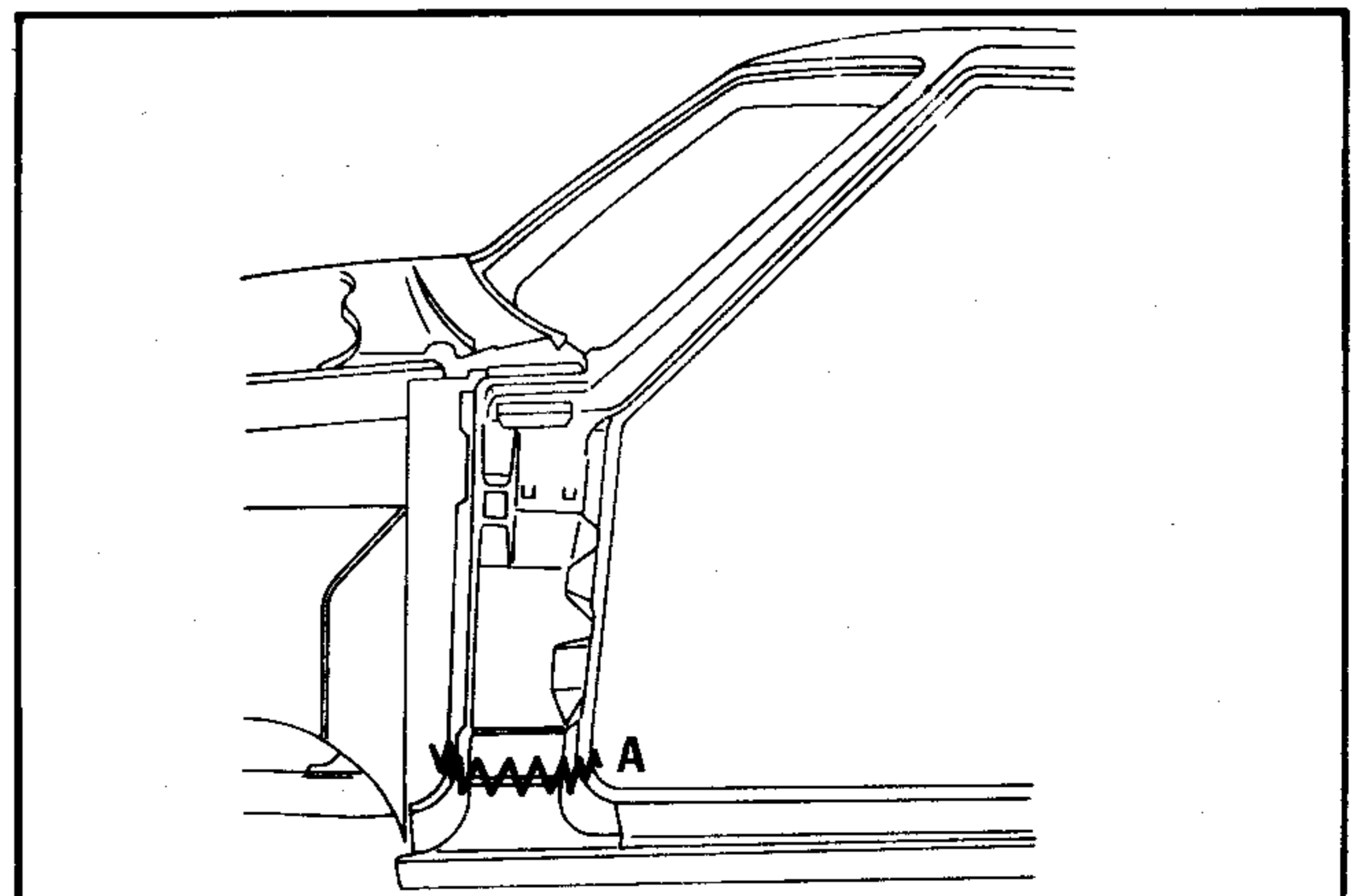


#### Parts to be welded:

- a. Front pillar and dashboard sidewall
- b. Front pillar and front pillar frame
- c. Front pillar and front pillar frame

#### REMINDER WHEN REMOVING

- Use an air chisel to cut according to line A shown in the figure.



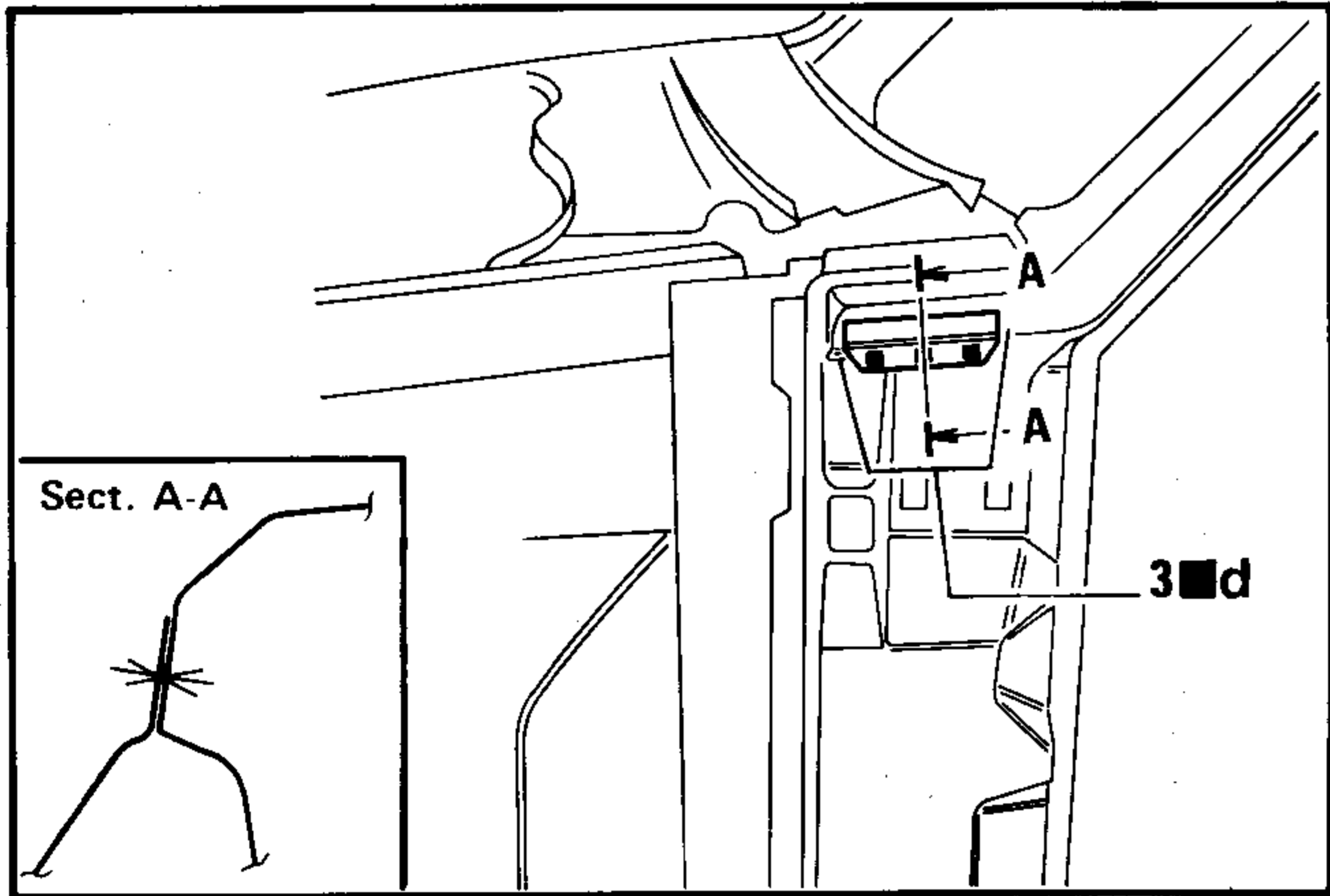
## BODY – SHEET METAL PANELS

- Remove the welding spots, and remove the component to be replaced.

### REMINDER WHEN INSTALLING

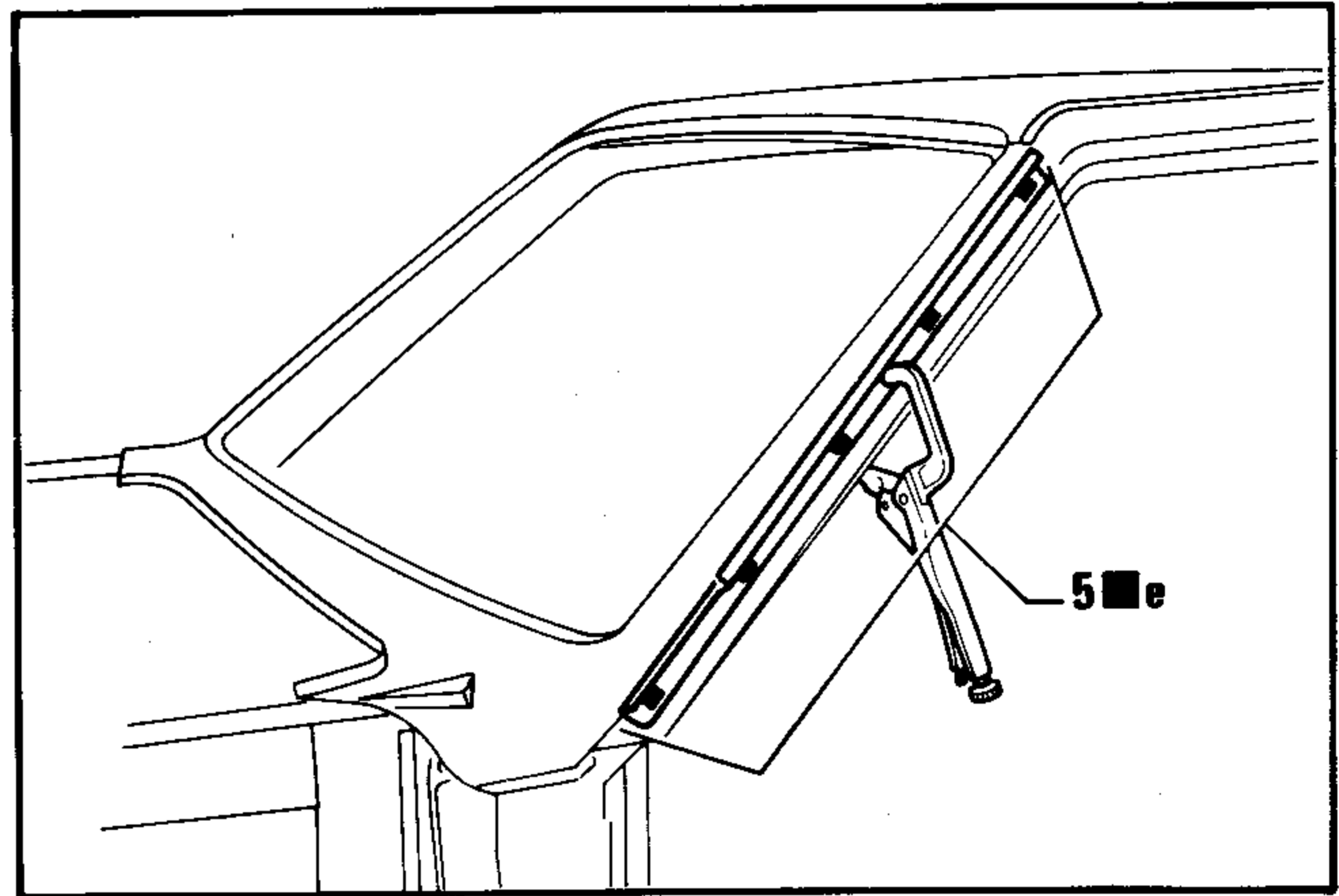
- Install the new pillar on body.
- Weld the connecting sheet panel to pillar

- Temporarily secure the drip to front pillar and verify that the clearance of windscreen corner is correct.
- Weld the drip to front pillar following the indications given in the figure below.



#### Parts to be welded

- d. Connecting sheet panel and front pillar



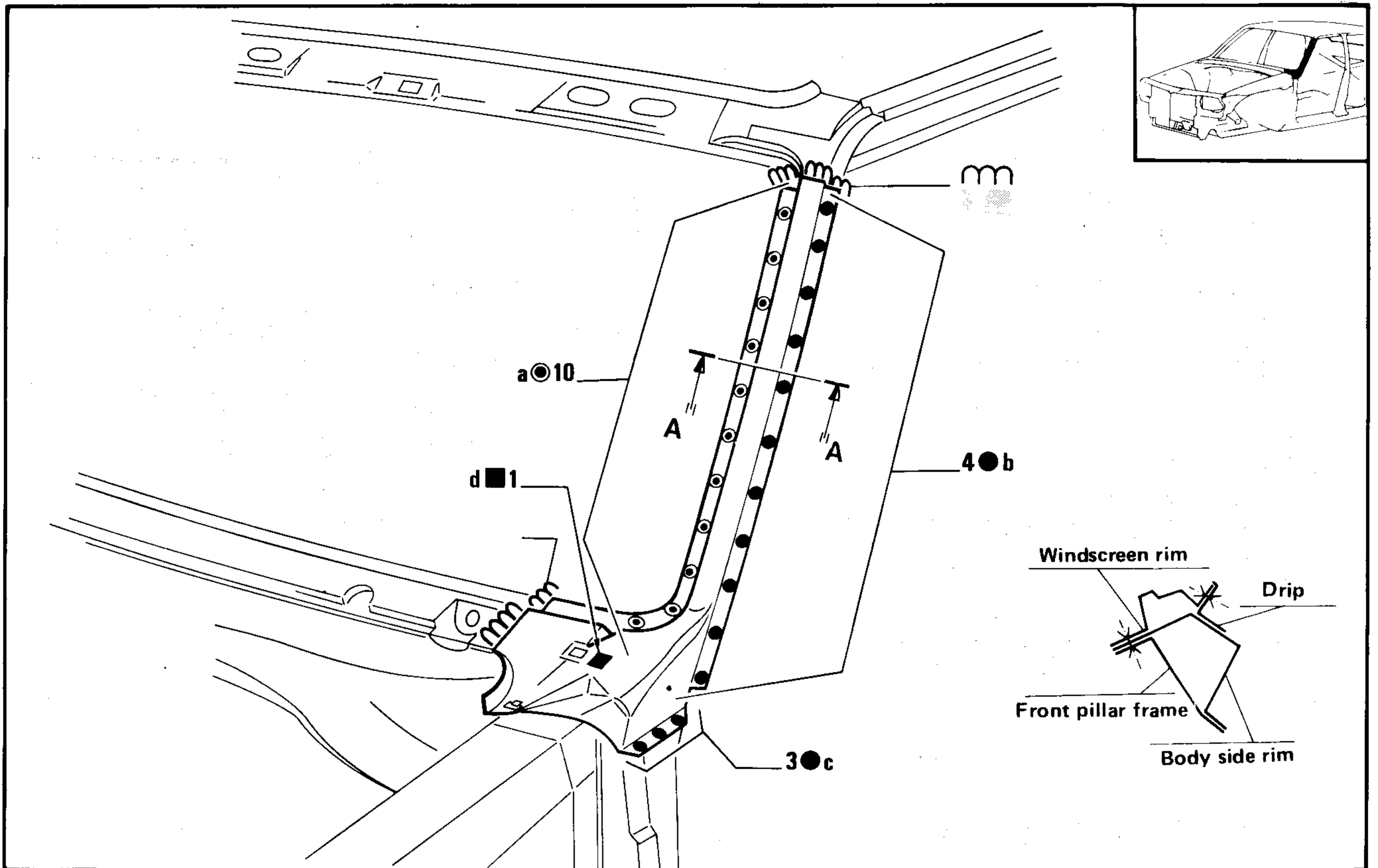
#### Parts to be welded

- e. Front pillar and drip

## WINDSCREEN RIM (pillar partial replacement)

Replacement is to be carried out after having removed Front Fender and Bonnet Hinge.

### Service joints



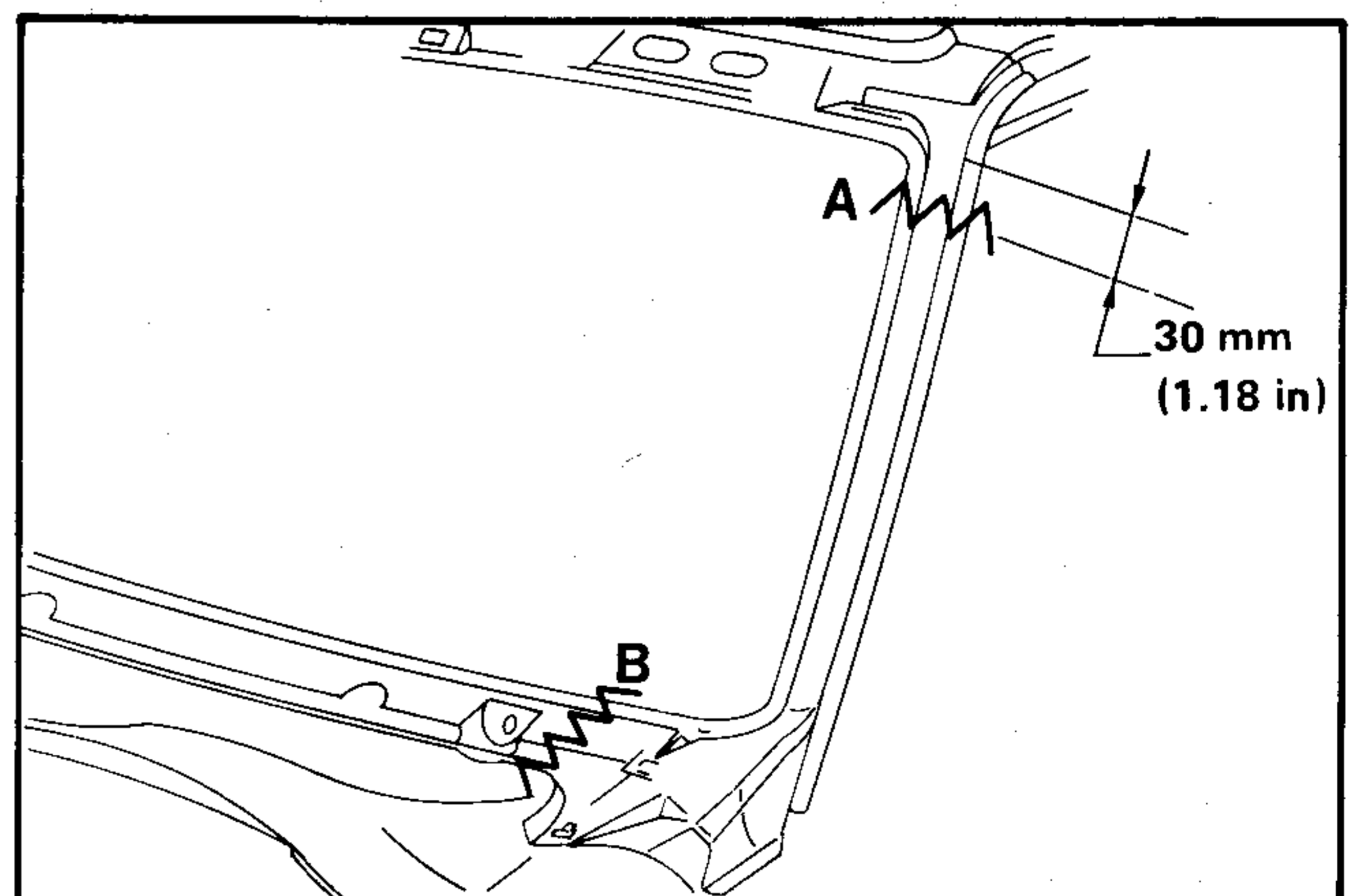
### Parts to be welded

- |  |  |
|--|--|
| a. Windscreen rim, front pillar frame, and body side rim | c. Windscreen rim and front pillar       |
| b. Windscreen rim and drip                               | d. Windscreen rim and dashboard sidewall |

### REMINDER WHEN REMOVING

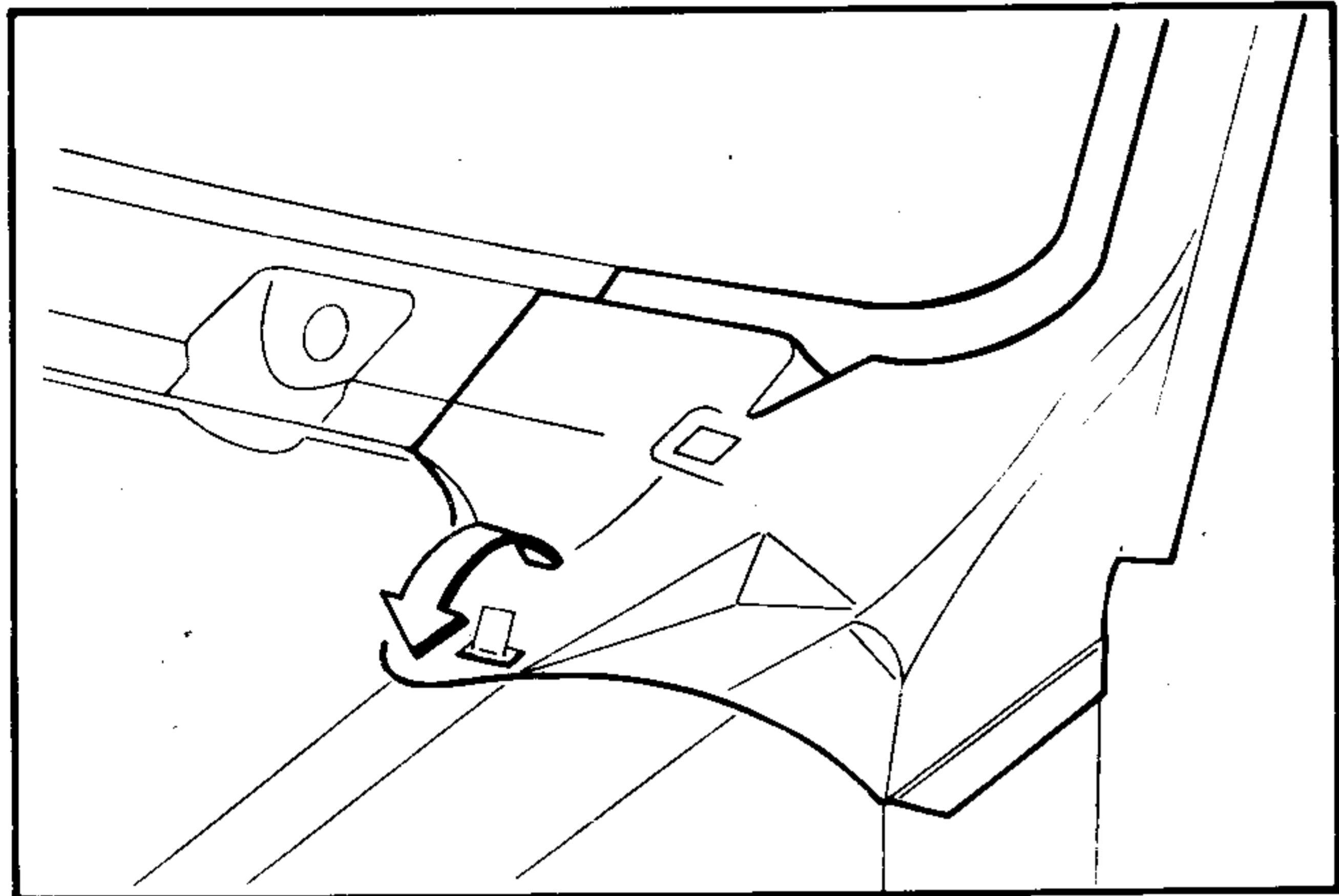
- Cut the windscreen rim according to the lines A and B shown in the figure.

When cutting according to line A, cut 30 mm (1.18 in) underneath the junction between roof and windscreen rim, taking care not to damage the body side.

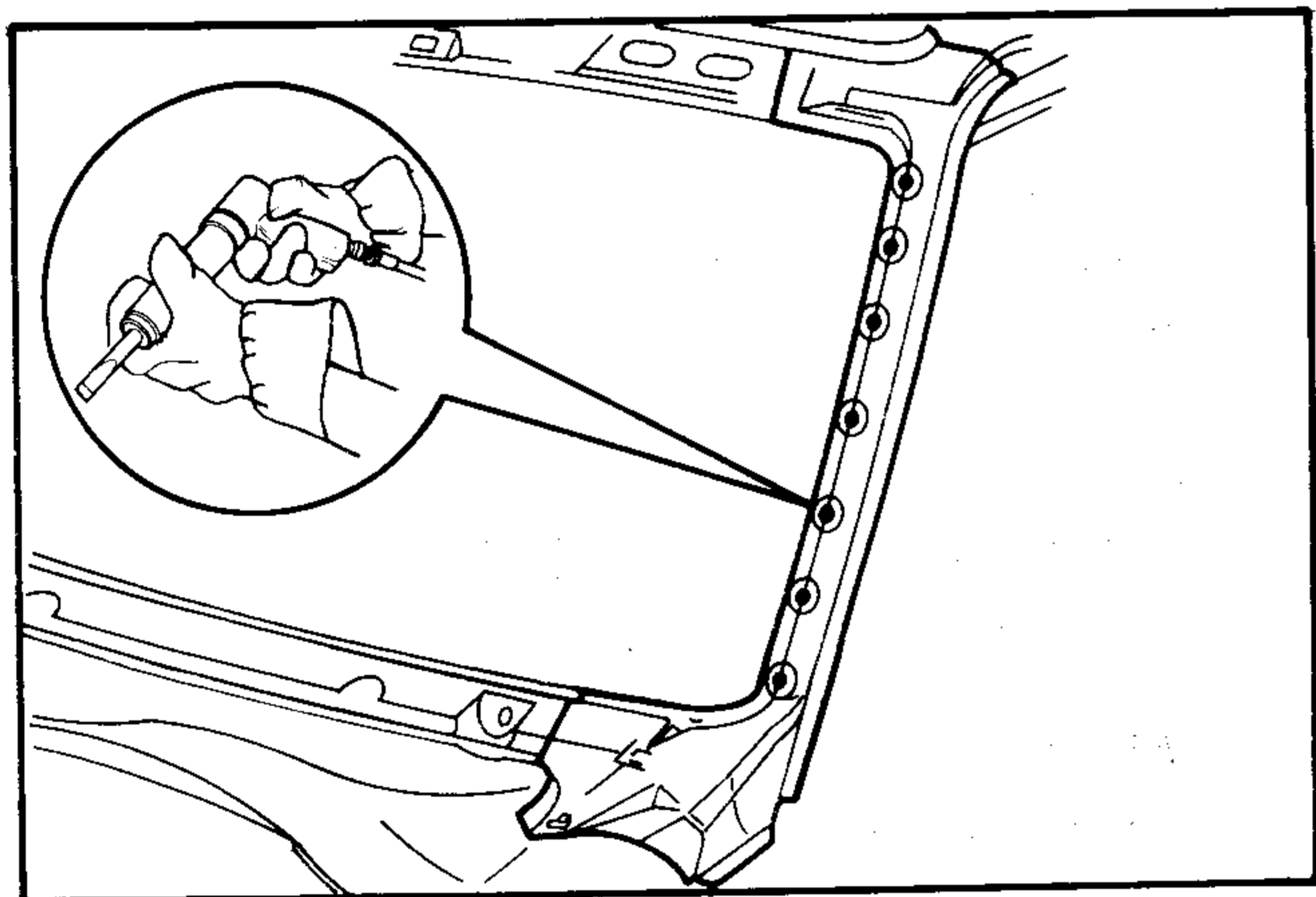


## BODY – SHEET METAL PANELS

- Lift the tab connecting windscreen rim and front valance.

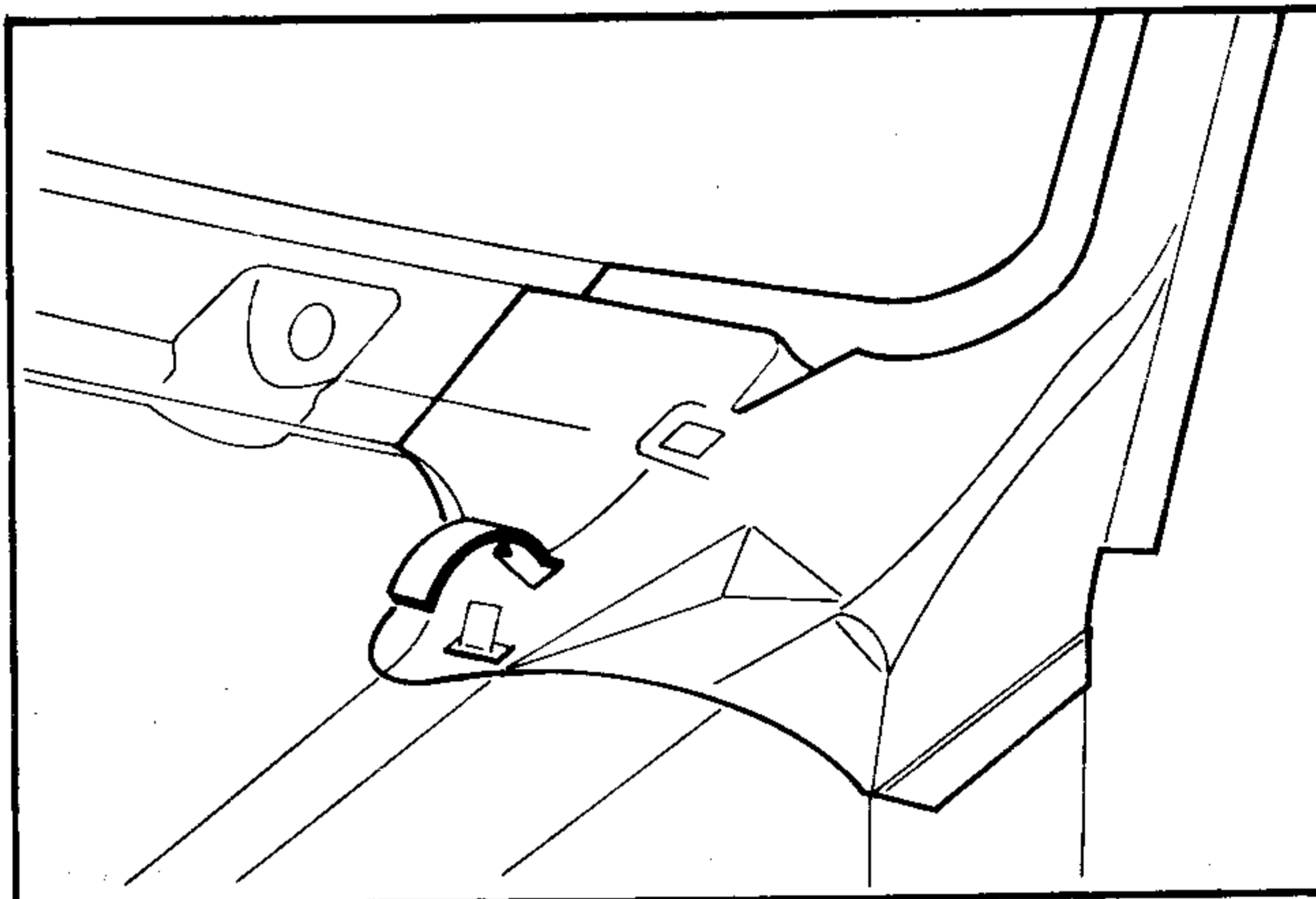


- Use an air saw to remove the remaining edges of windscreen rim from body.



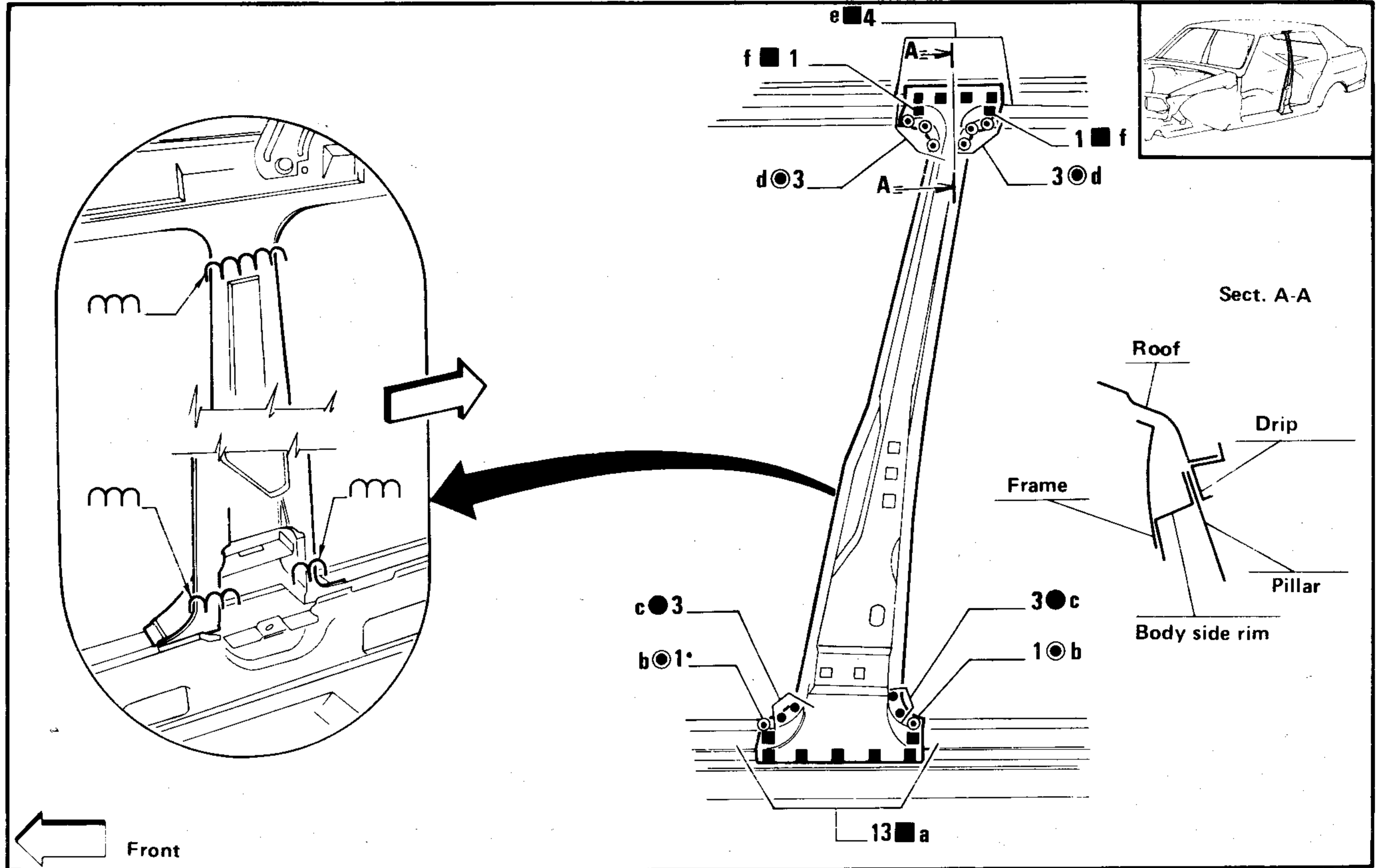
### REMINDER WHEN INSTALLING

- Adapt the new body side rim part to butt weld it to body.
- Drill the new component in the points to be MIG plug welded.
- Correctly place the windscreen rim on body, inserting the tab into the special slot on front valance.
- Bend the tab.



**CENTRAL PILLAR AND CENTRAL PILLAR BOXED SECTION**

Service joints

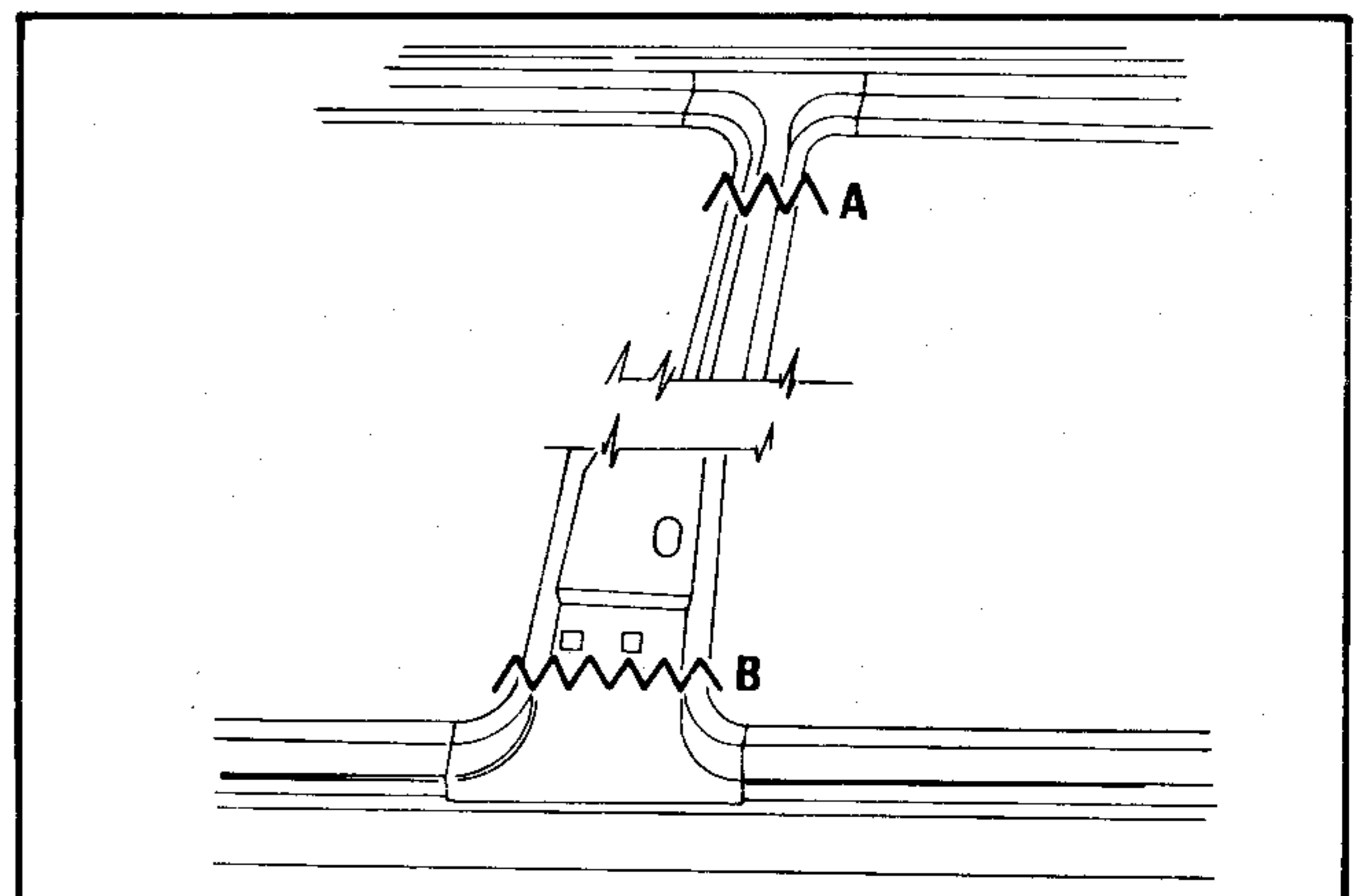


Parts to be welded

- |   |  |
|---|--|
| a. Central pillar and door under-trim                 | d. Central pillar and pillar boxed section |
| b. Central pillar, door under-trim, and central floor | e. Central pillar, body side, and drip     |
| c. Pillar and pillar boxed section                    | f. Central pillar and body side rim        |

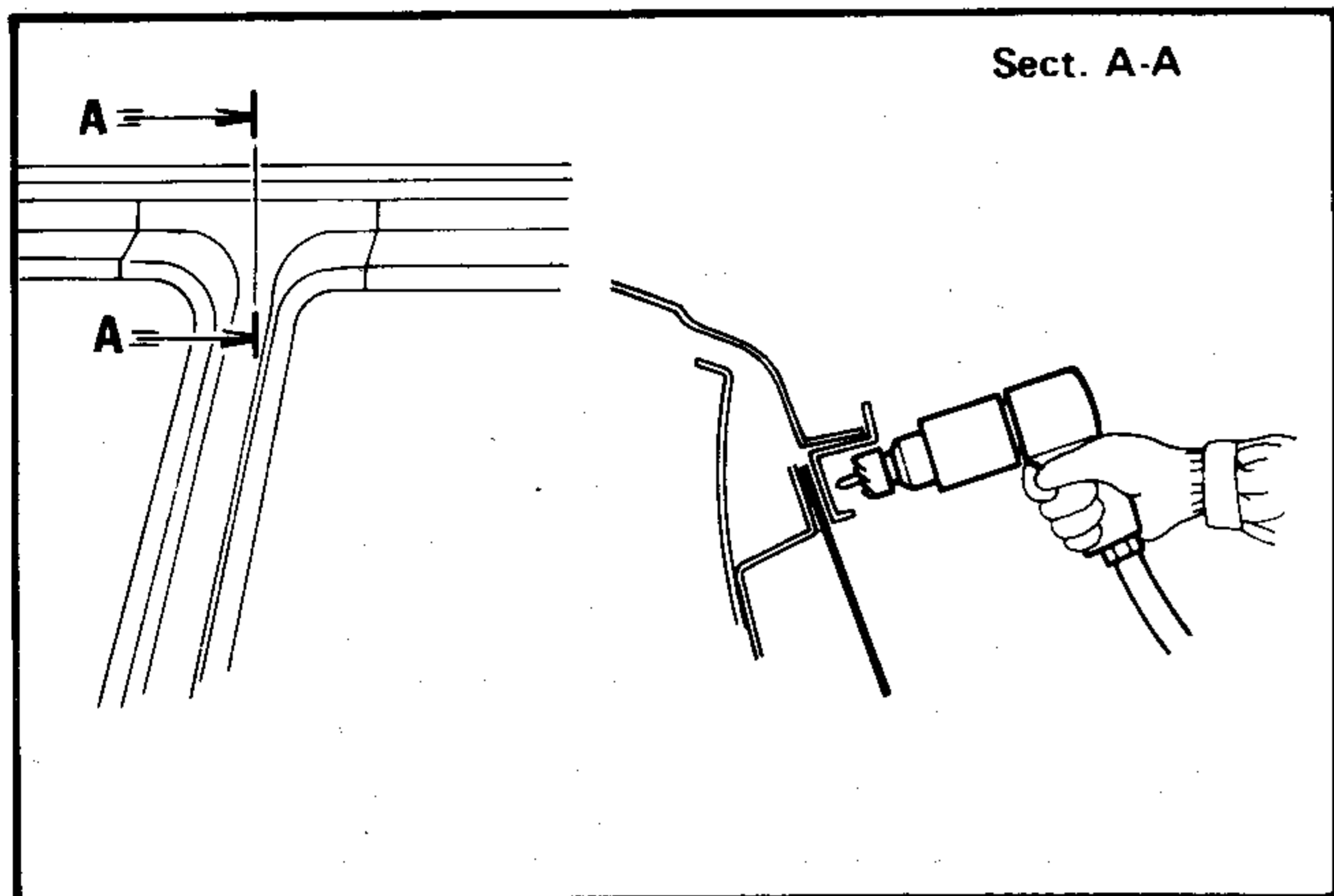
**REMINDER WHEN REMOVING**

- By means of an air chisel, cut the central pillar (complete with related boxed section) according to the lines A and B shown in the figure.

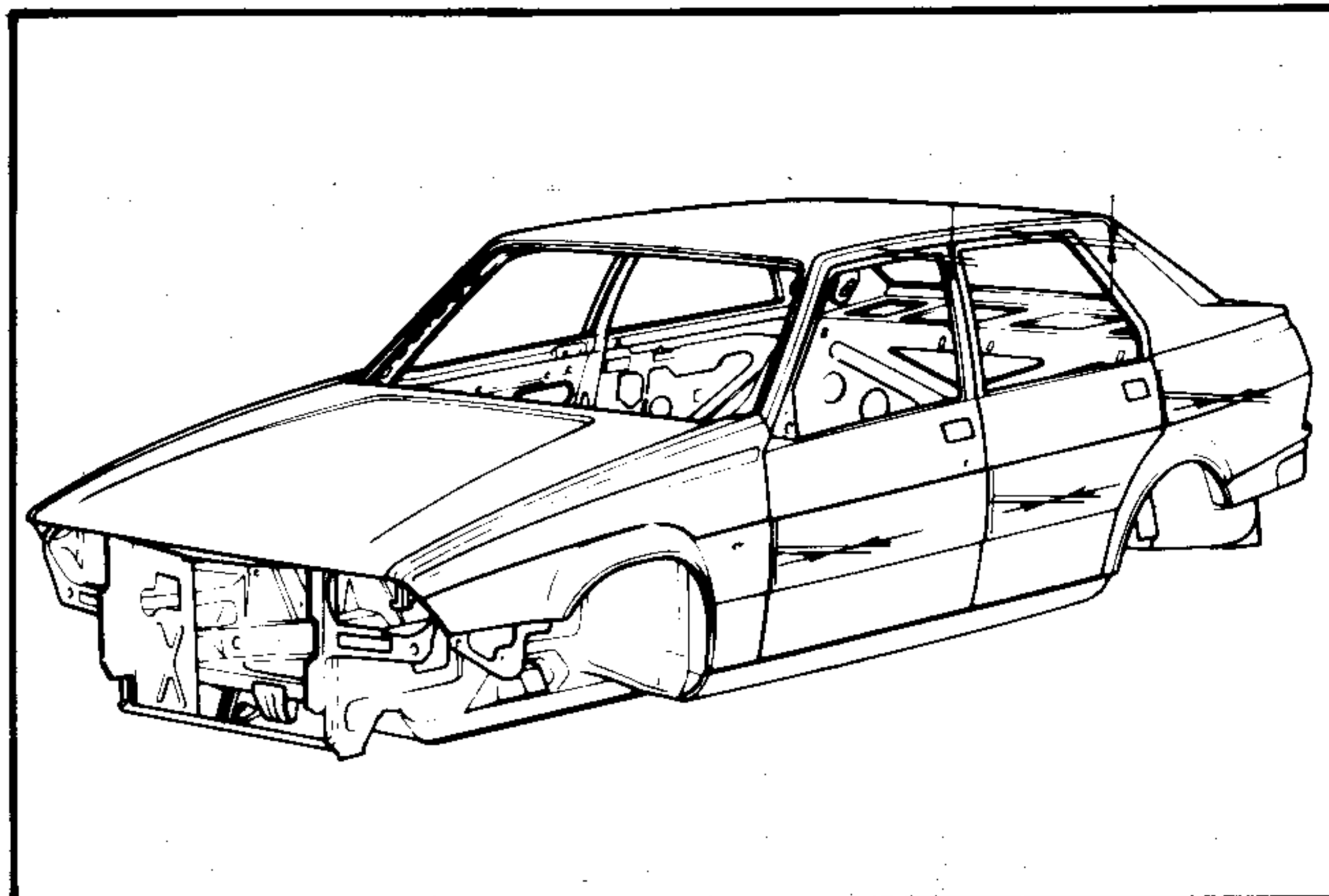


## BODY – SHEET METAL PANELS

- Use a drilling machine to cut the welding spots and remove the remaining pieces (upper and lower) of pillar and boxed section from body.

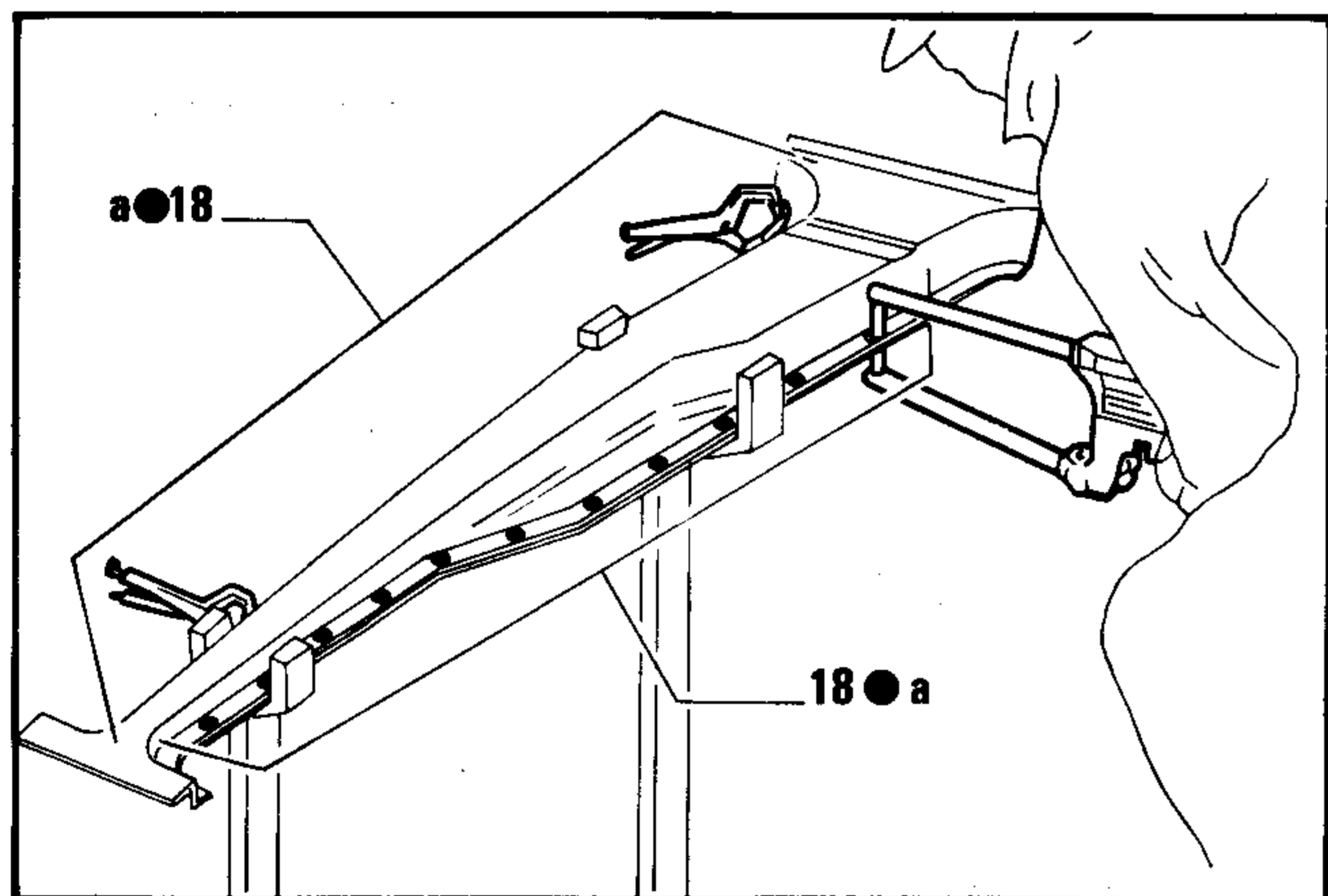


- By means of a hacksaw adapt the pillar boxed section to body to butt weld it to body side.
  - Position the pillar on body by tack welding it.
  - Drill the pillar for the following MIG plug welding.
  - Tack weld the adjacent components such as front and rear doors.
- Check clearances, angles and parallelisms.



### REMINDER WHEN INSTALLING

- Operating at bench, assemble the central pillar and related boxed section (new). Spot weld by following the indications given in the figure.



- Complete the fixing of pillar complete with boxed section, to body.

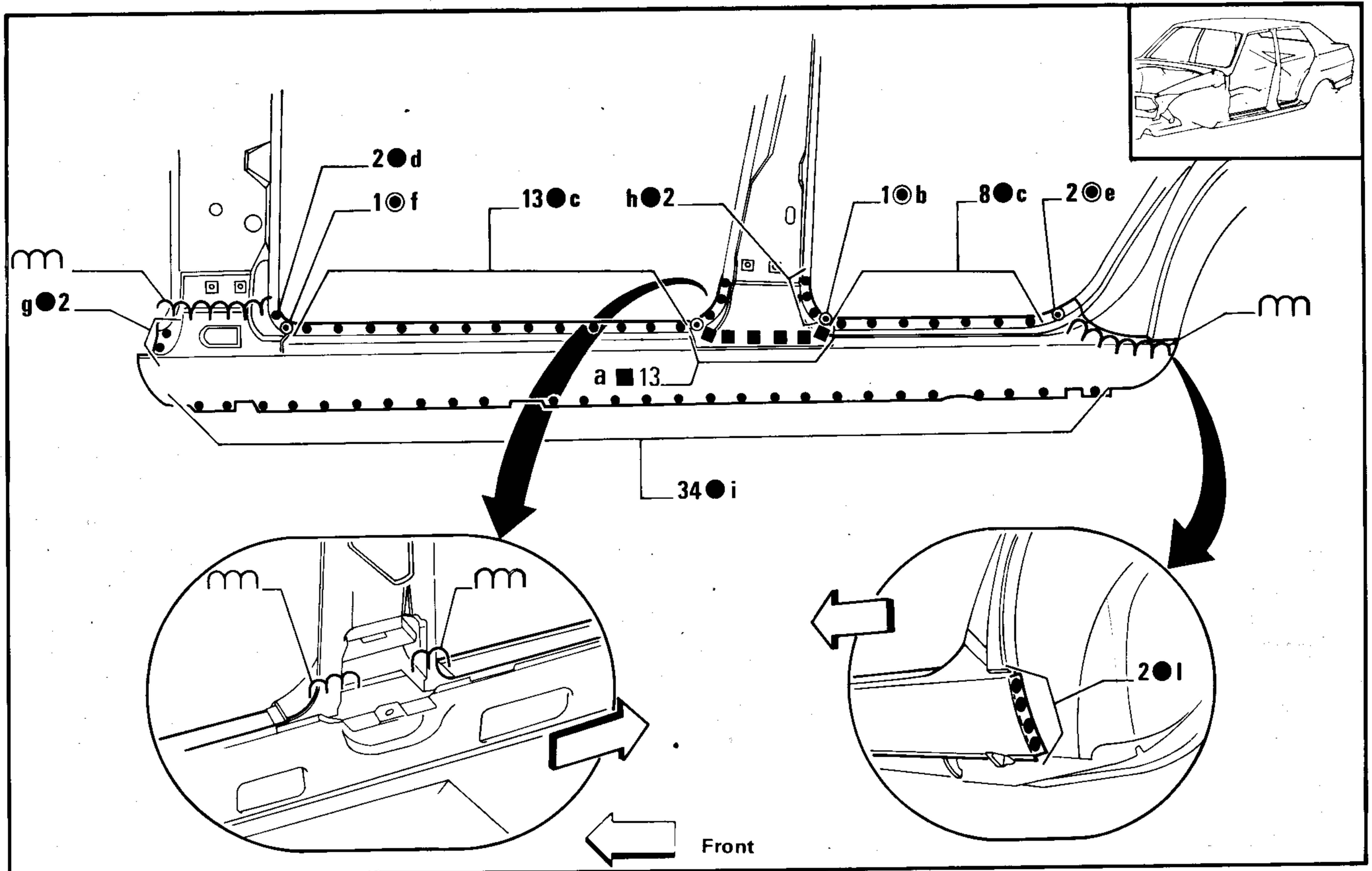
### Parts to be welded

- a. Central pillar and central pillar boxed section



**DOOR UNDER-TRIM**

Service joints

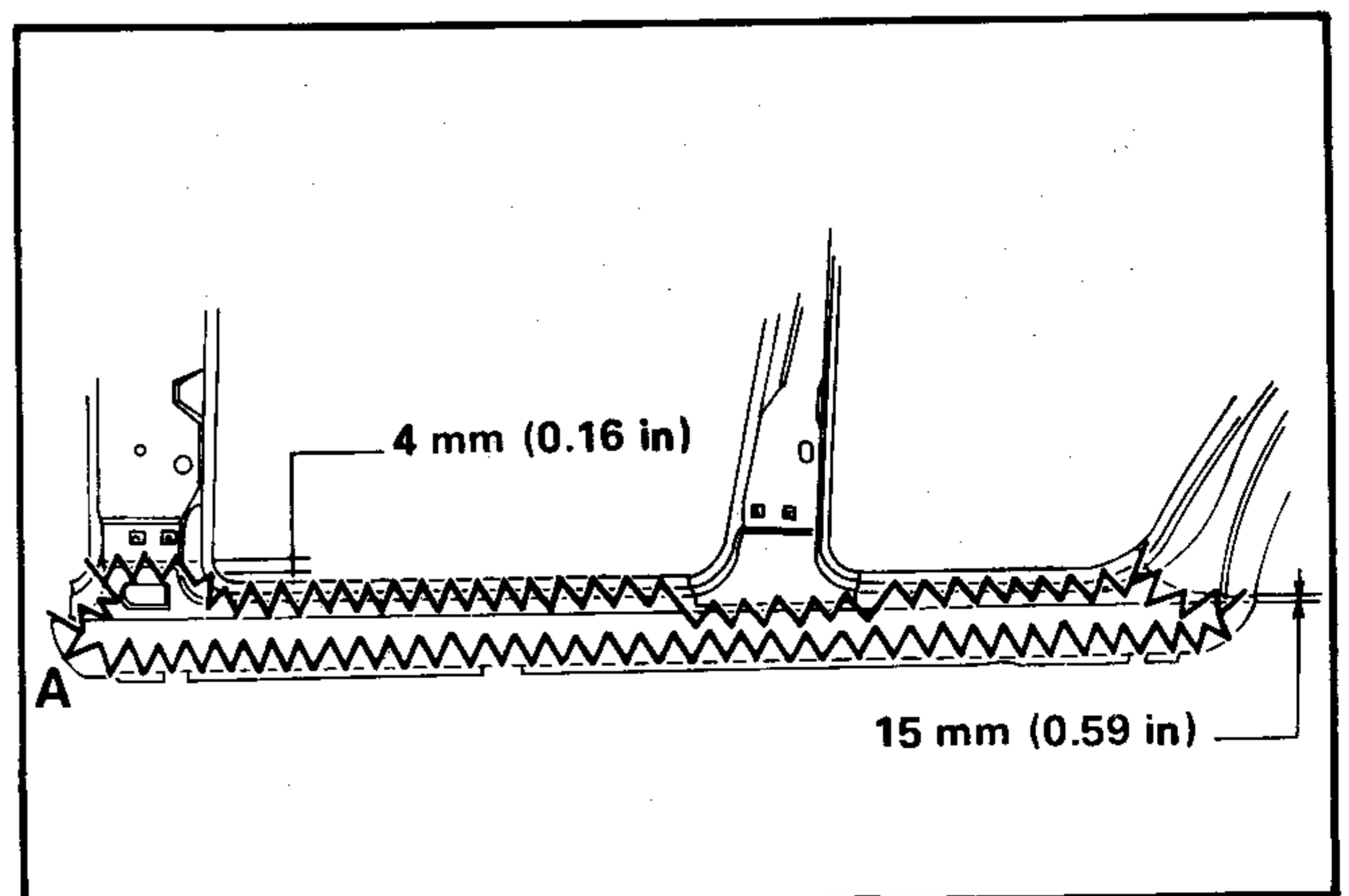


**Parts to be welded**

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>a. Door under-trim and central pillar</li> <li>b. Door under-trim, central pillar, and inner side member</li> <li>c. Door under-trim and inner side member</li> <li>d. Door under-trim and dashboard sidewall</li> <li>e. Door under-trim, inner side member, and inner rear wheelarch</li> </ul> | <ul style="list-style-type: none"> <li>f. Door under-trim, dashboard sidewall, and inner side member</li> <li>g. Door under-trim and body side lower side member frame</li> <li>h. Door under-trim and central pillar</li> <li>i. Door under-trim and inner side member</li> <li>l. Door under-trim and outer rear wheelarch</li> </ul> |
|--|---|

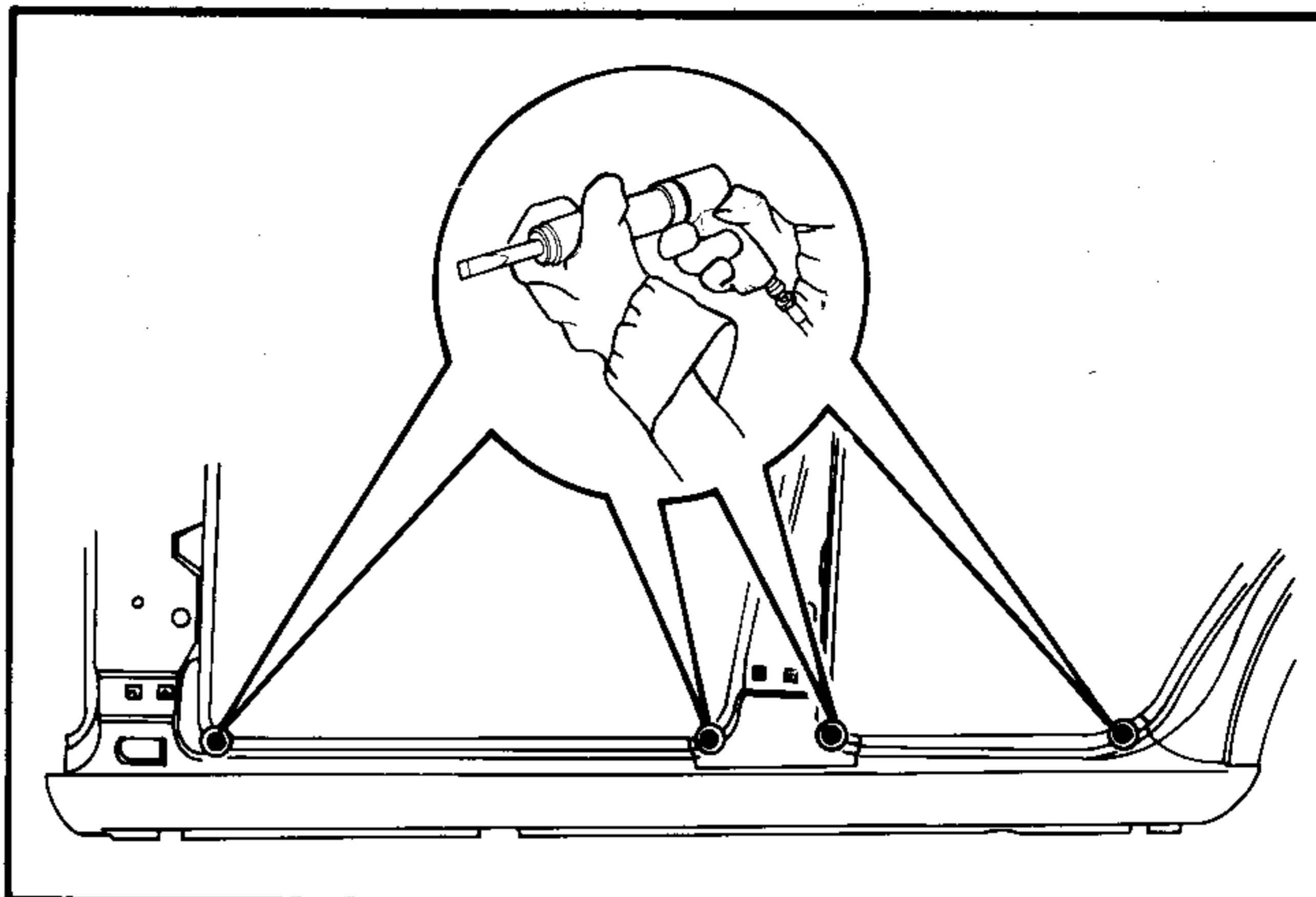
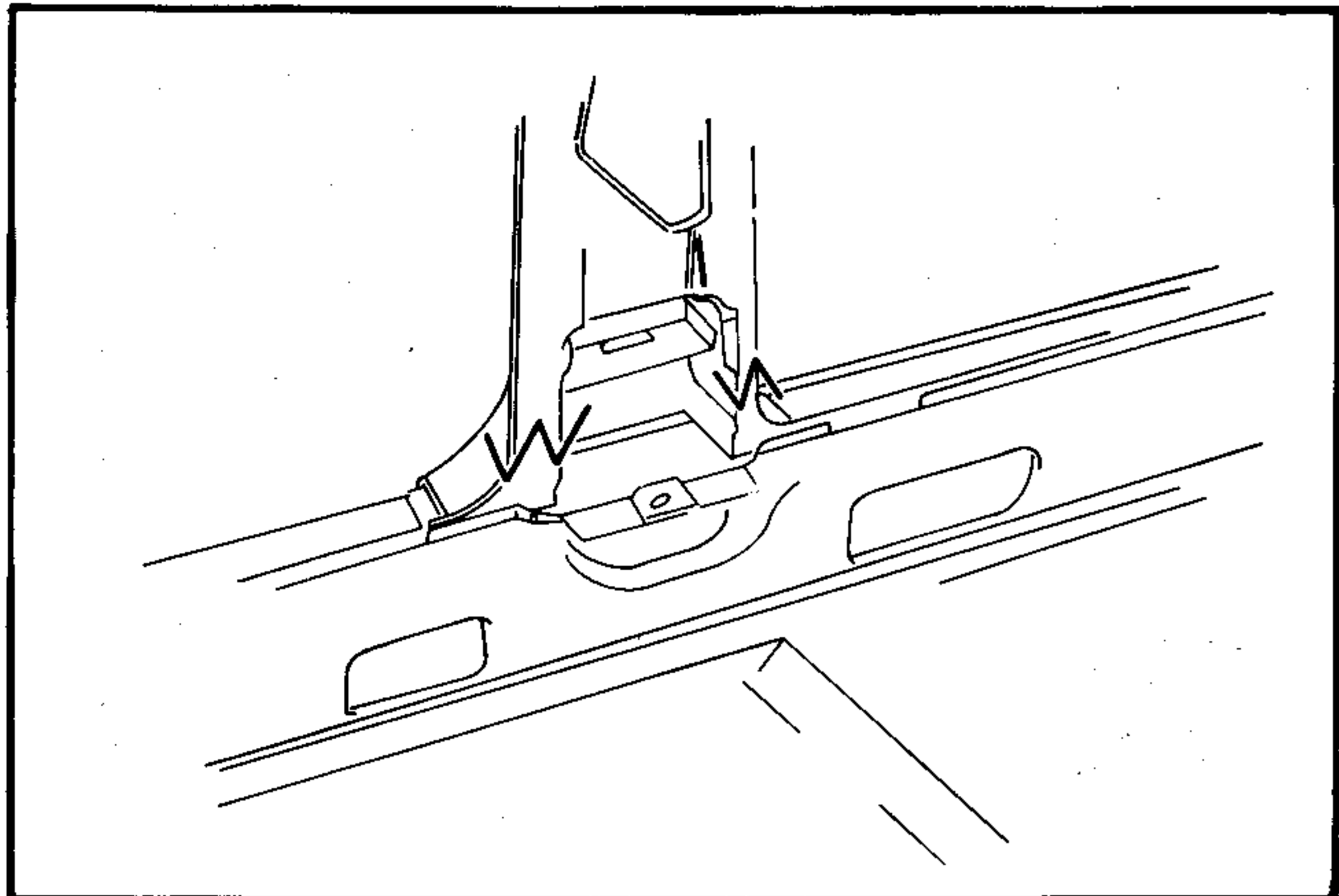
**REMINDER WHEN REMOVING**

- By means of an air chisel, cut the door under-trim according to line A, shown in the figure. **When cutting, take care not to damage the adjacent components.** Cut the rear edge of door under-trim at  $\cong 15$  mm (0.59 in) approx. from junction with rear fender. In this way, the fender will not be damaged as well as the related seal.



## BODY – SHEET METAL PANELS

- Use an air chisel to cut the body side taking care not to damage the central pillar.



### REMINDER WHEN INSTALLING

- Remove the welding spots and the remaining pieces of door under-trim from body.

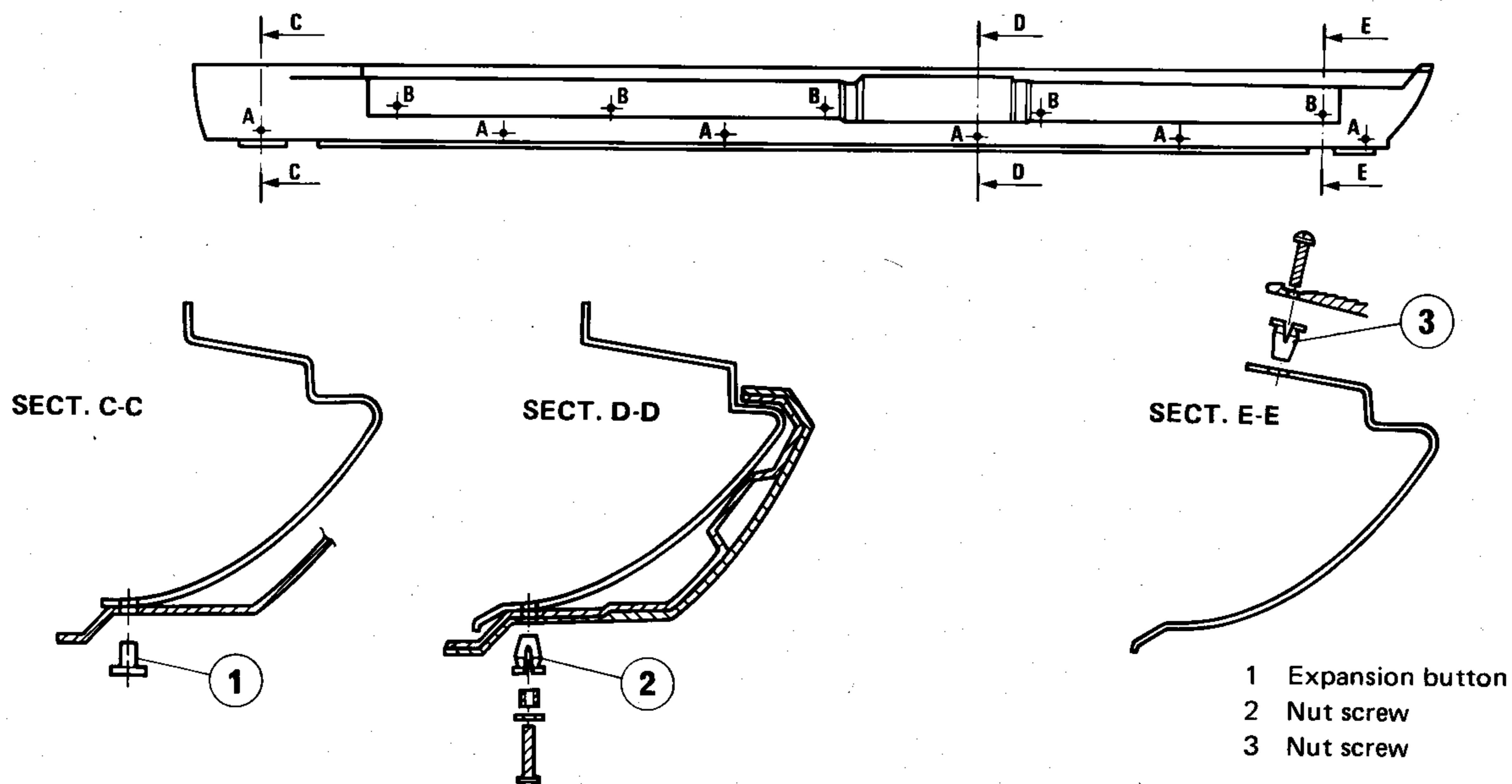
- Cut the door under-trim aligned with connecting sheet panels.

### CAUTION:

Should one of the trim under door be replaced, proceed as follows in order to correctly install the under-door plastic strips:

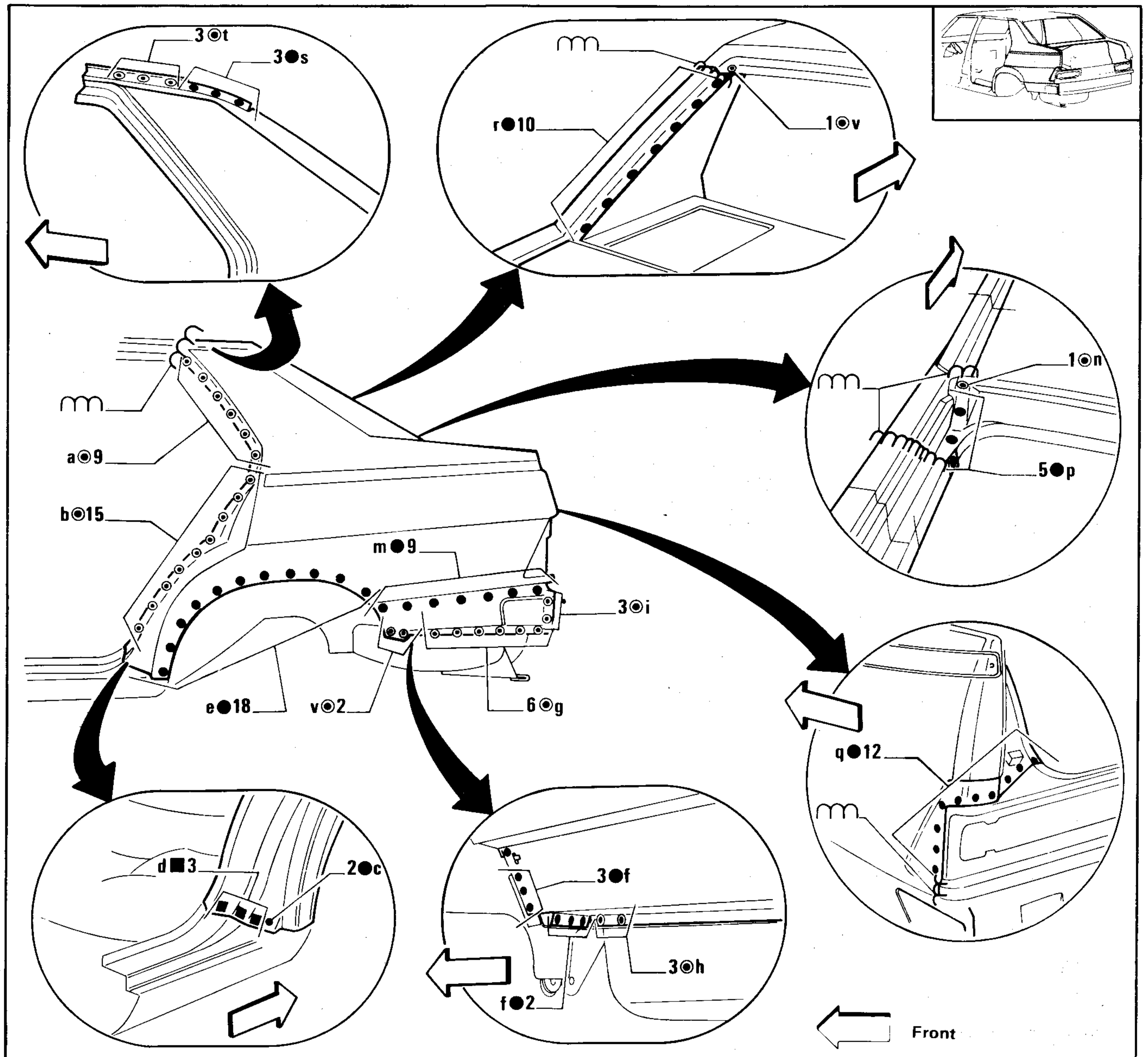
1. Operating at the bench, position the new under-door strips on the new door under-trim and using strips themselves as templates, mark off the centres for holes A and B.
2. Drill taking into account that diameter of A type holes is 8 mm (0.31 in), while diameter of B type holes is 7 mm (0.27 in).
3. Deburr all holes, then apply antirust agent Std. No. 3540-44401 to holes and inside the boxed section.
4. Weld and paint the door under-trim.
5. Operating on the upper section of door under-trim, insert the five nut screws (3) into B holes, and by operating on the lower section, insert the five buttons (1) and a nut screw (2) into A holes, being the nut screw in the junction area of plastic strips (SECT. D-D).

### DRILLING THE DOOR UNDER - TRIM - TOP VIEW



REAR FENDER

Service joints



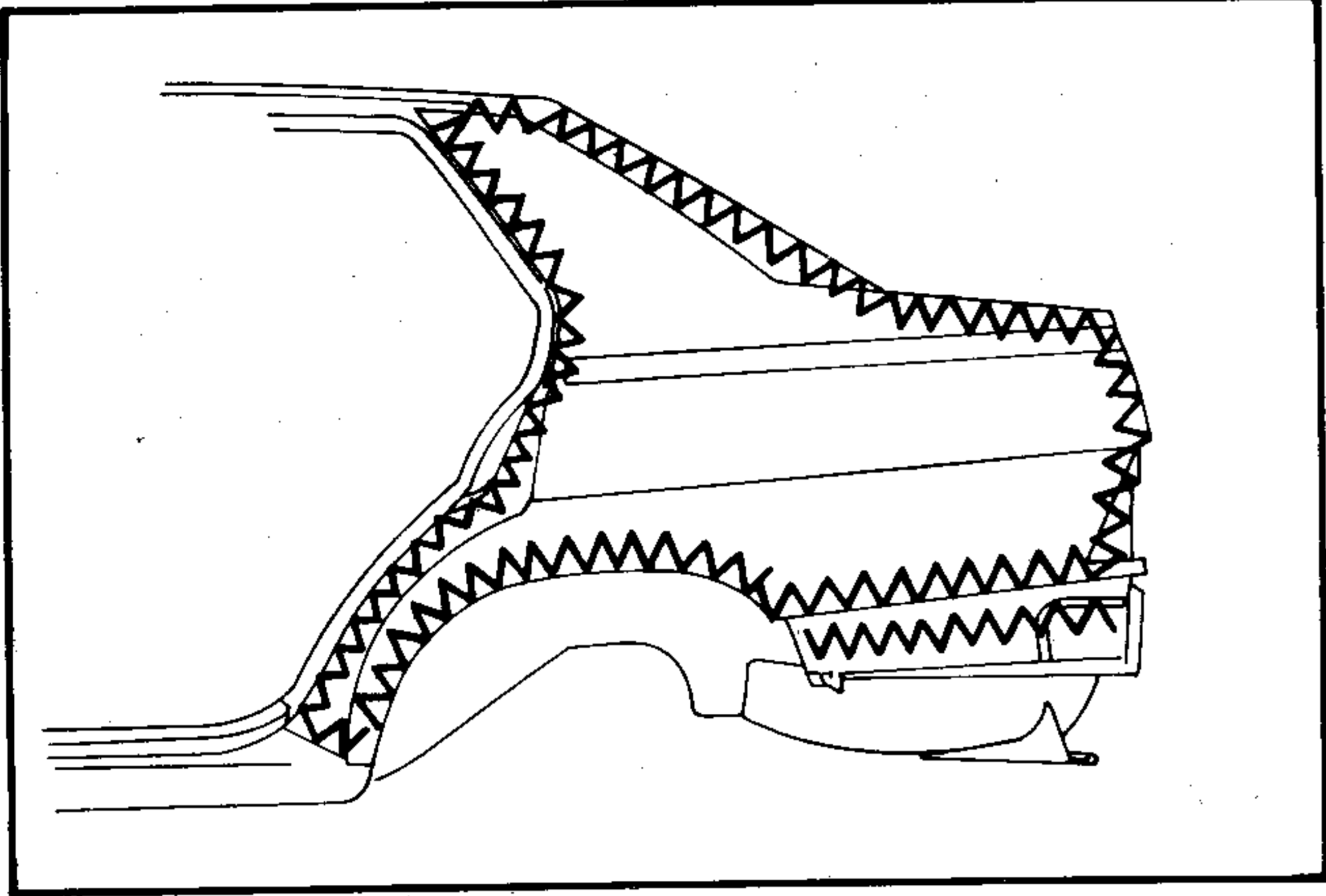
Parts to be welded

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>a. Rear fender, body side frame upper part, and body side rear frame</li> <li>b. Rear fender, inner rear wheelarch, and body side rear frame</li> <li>c. Rear fender, outer rear wheelarch, and body side rear frame</li> <li>d. Rear fender and door under-trim</li> <li>e. Rear fender and outer rear wheelarch</li> <li>f. Rear fender and outer rear wheelarch</li> <li>g. Rear fender, luggage compartment floor, and bumper connection reinforcement beam</li> <li>h. Rear fender, luggage compartment floor, and inner rear wheelarch</li> <li>i. Rear fender, rear panel, and bumper connection</li> </ul> | <ul style="list-style-type: none"> <li>reinforcement beam</li> <li>l. Rear fender and outer rear wheelarch</li> <li>m. Rear fender, luggage compartment floor, and bumper connection reinforcement beam</li> <li>n. Rear fender, boot lid drip end, and bulkhead behind the seat</li> <li>p. Rear fender and rear window lower panel</li> <li>q. Rear fender and rear panel</li> <li>r. Rear fender and body side frame upper part</li> <li>s. Rear fender and roof</li> <li>t. Rear fender, roof, and drip</li> <li>u. Rear fender, inner rear wheelarch, and luggage compartment floor</li> <li>v. Rear fender, roof, and body side frame upper part</li> </ul> |
|---|---|

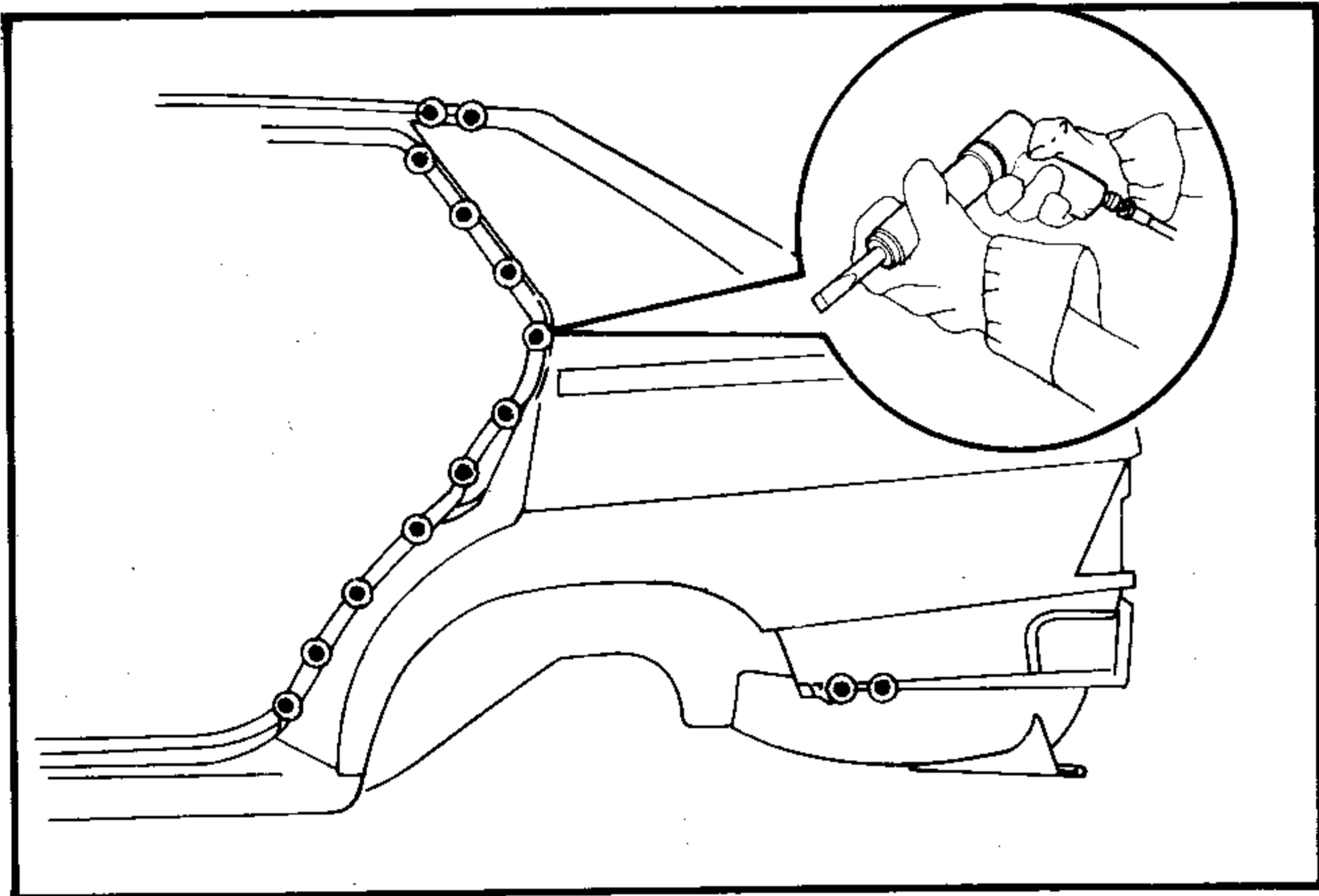
## BODY - SHEET METAL PANELS

### REMINDER WHEN REMOVING

- By means of an air saw, cut the fender according to the lines shown in the figure taking care not to damage the components underneath.



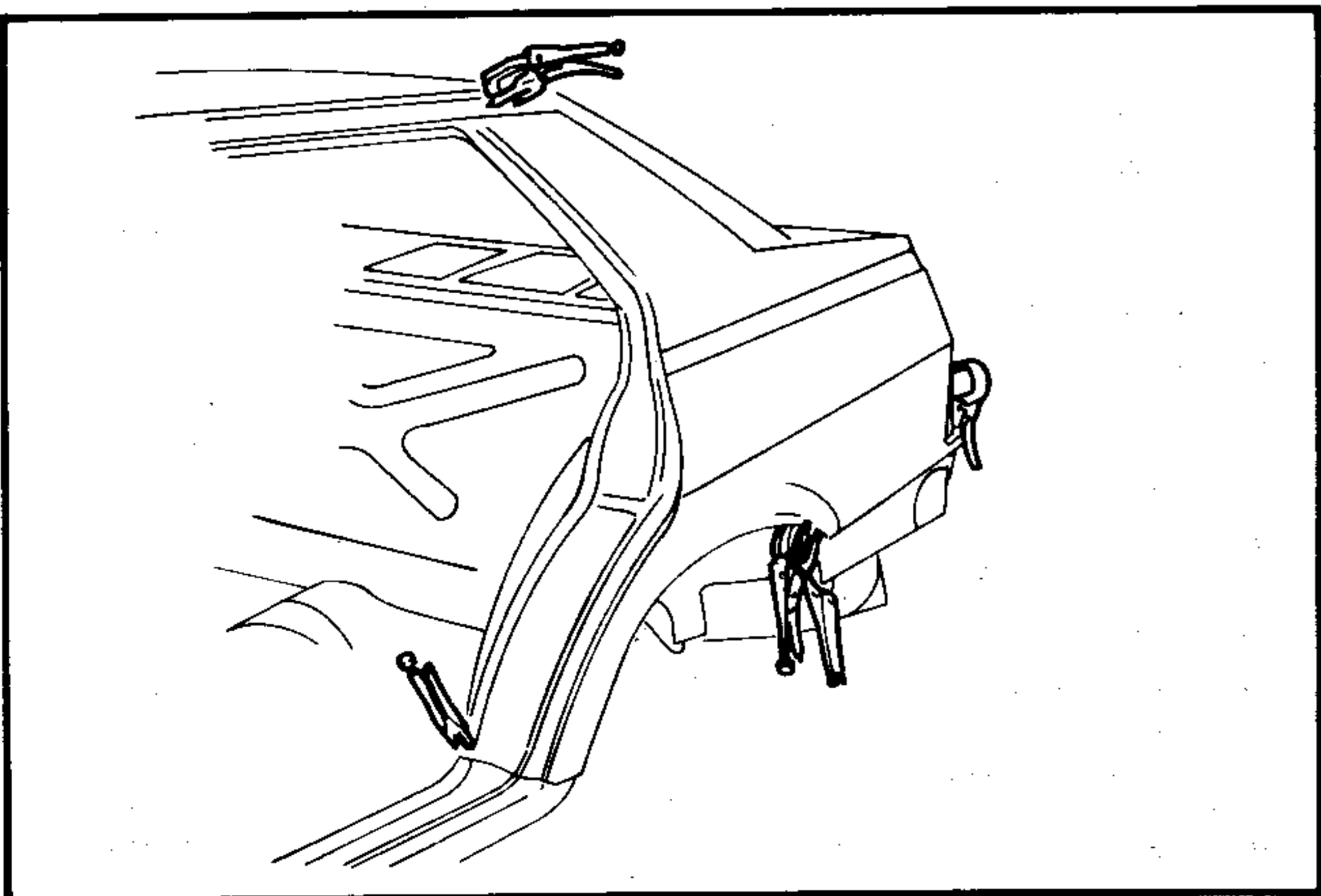
- Remove the welding spots (with pneumatic drilling machine or air chisel with appropriate tool) and detach the remaining edges of fender from body.



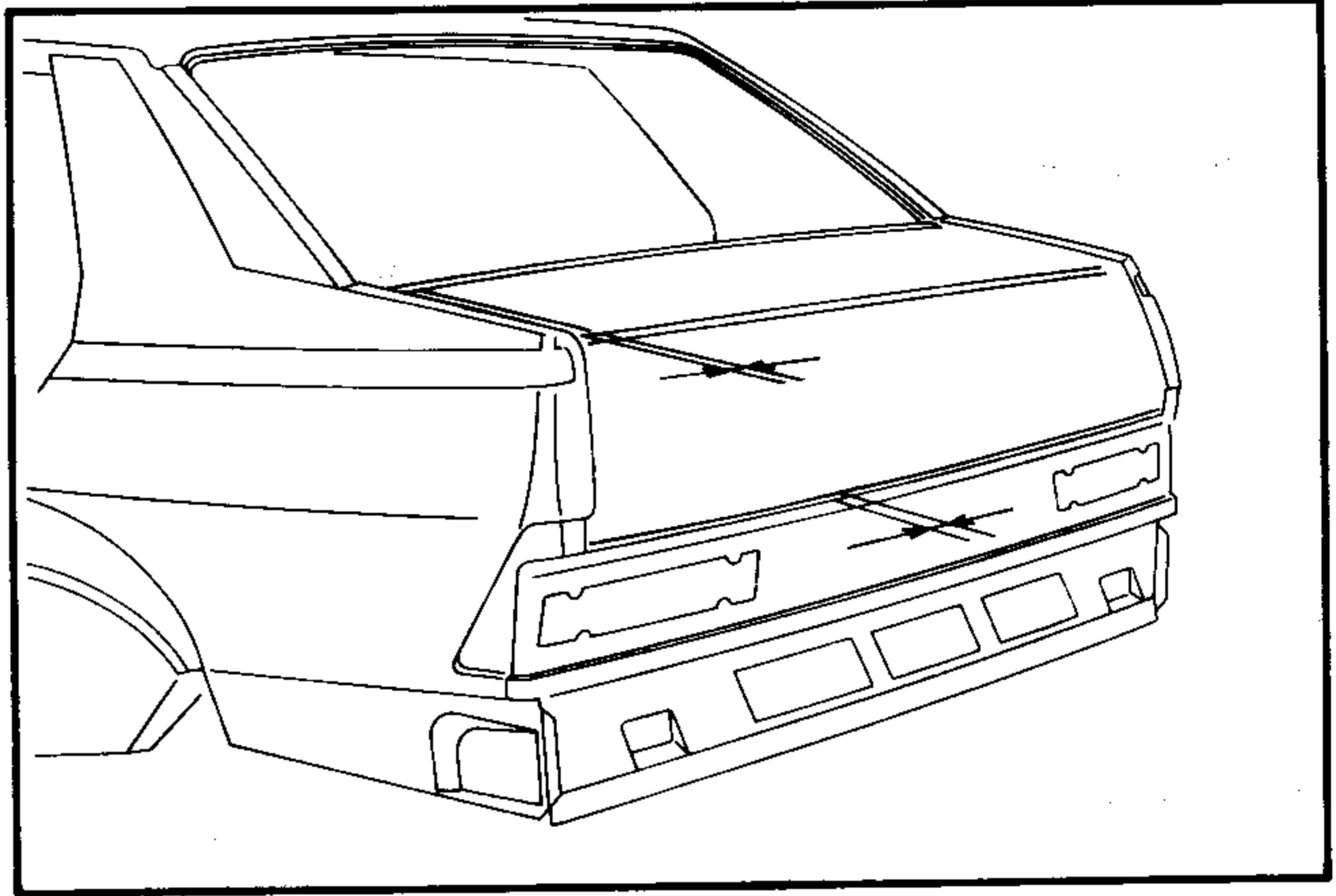
- Use an air chisel fitted with suitable tip to remove the edges of fender remained on body.

### REMINDER WHEN INSTALLING

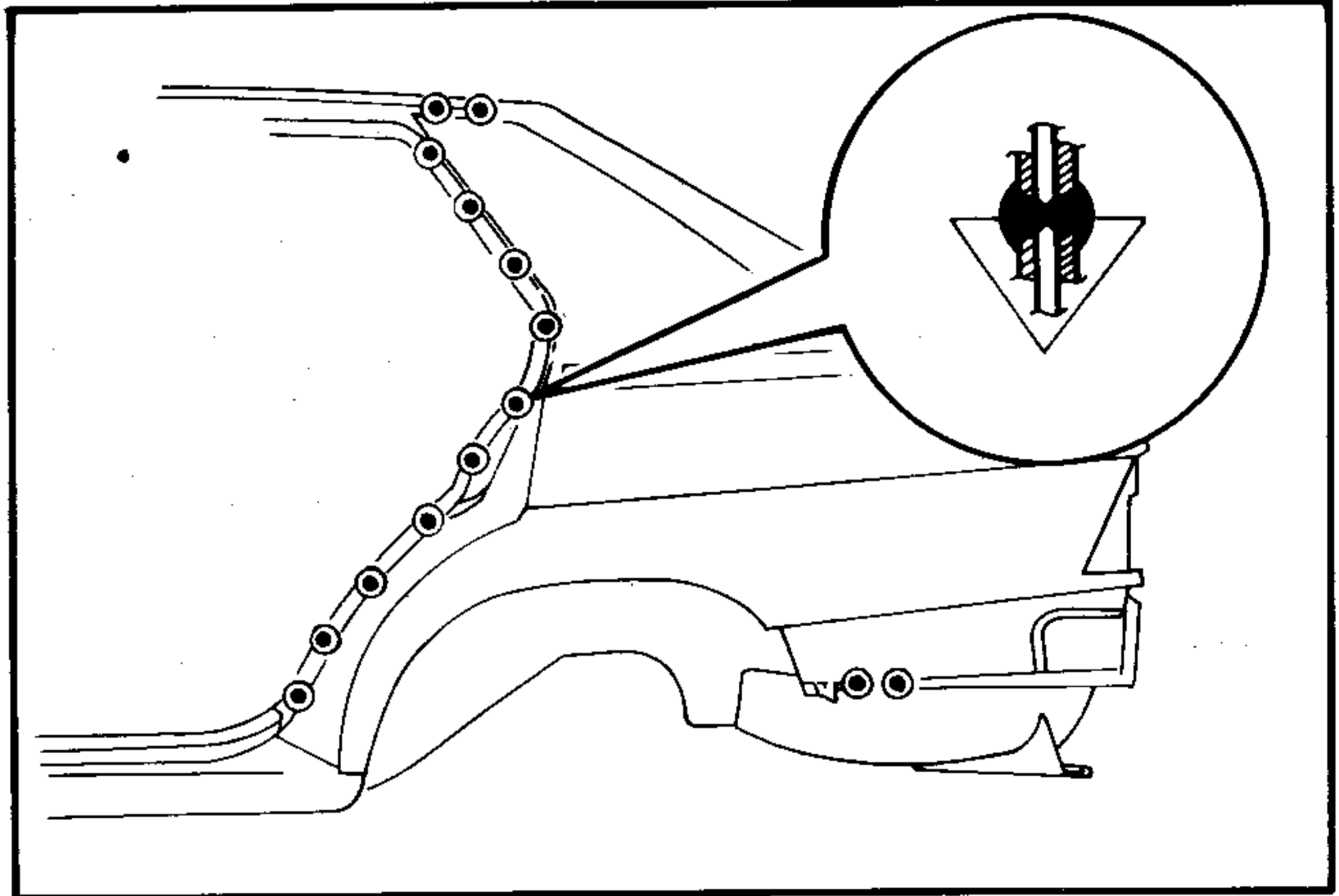
- By means of clips, temporarily secure rear fender to body.



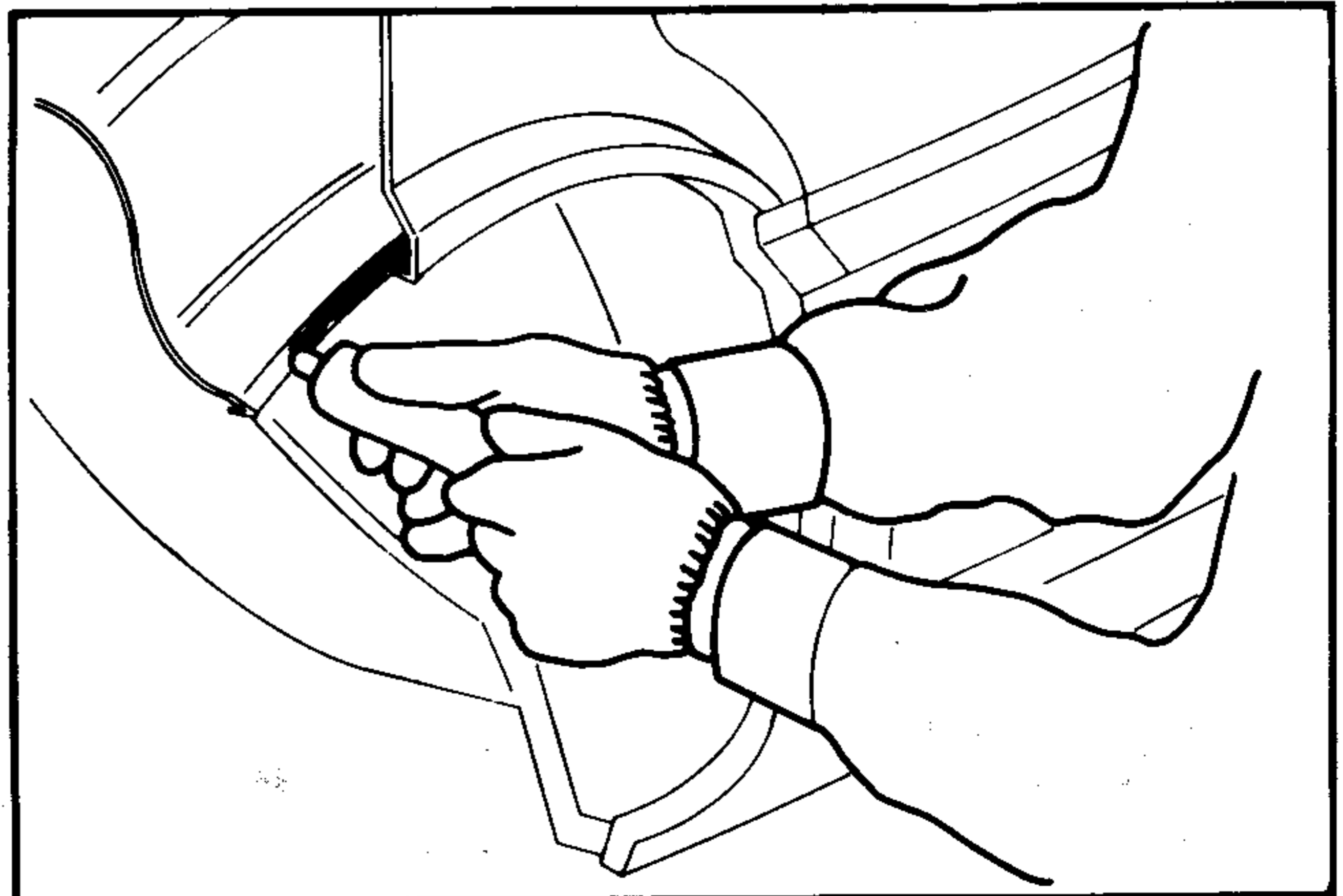
- Temporarily secure the adjacent components such as rear door and boot lid.  
Check clearances angles and parallelisms.



- MIG plug weld the three overlapping sheets from both sides.

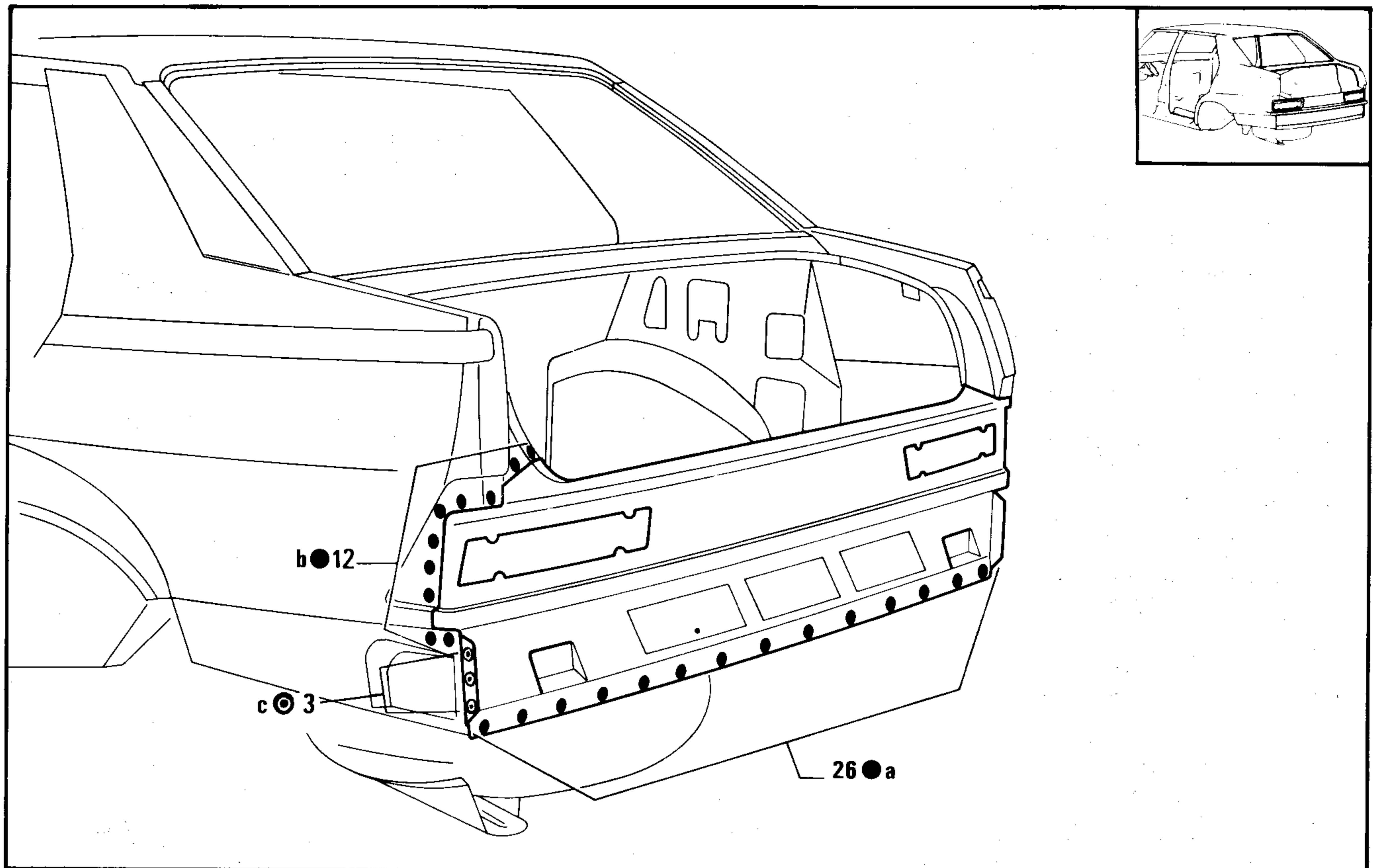


- Apply the sealing compound on wheelarch outer side.



## REAL PANEL

### Service joints

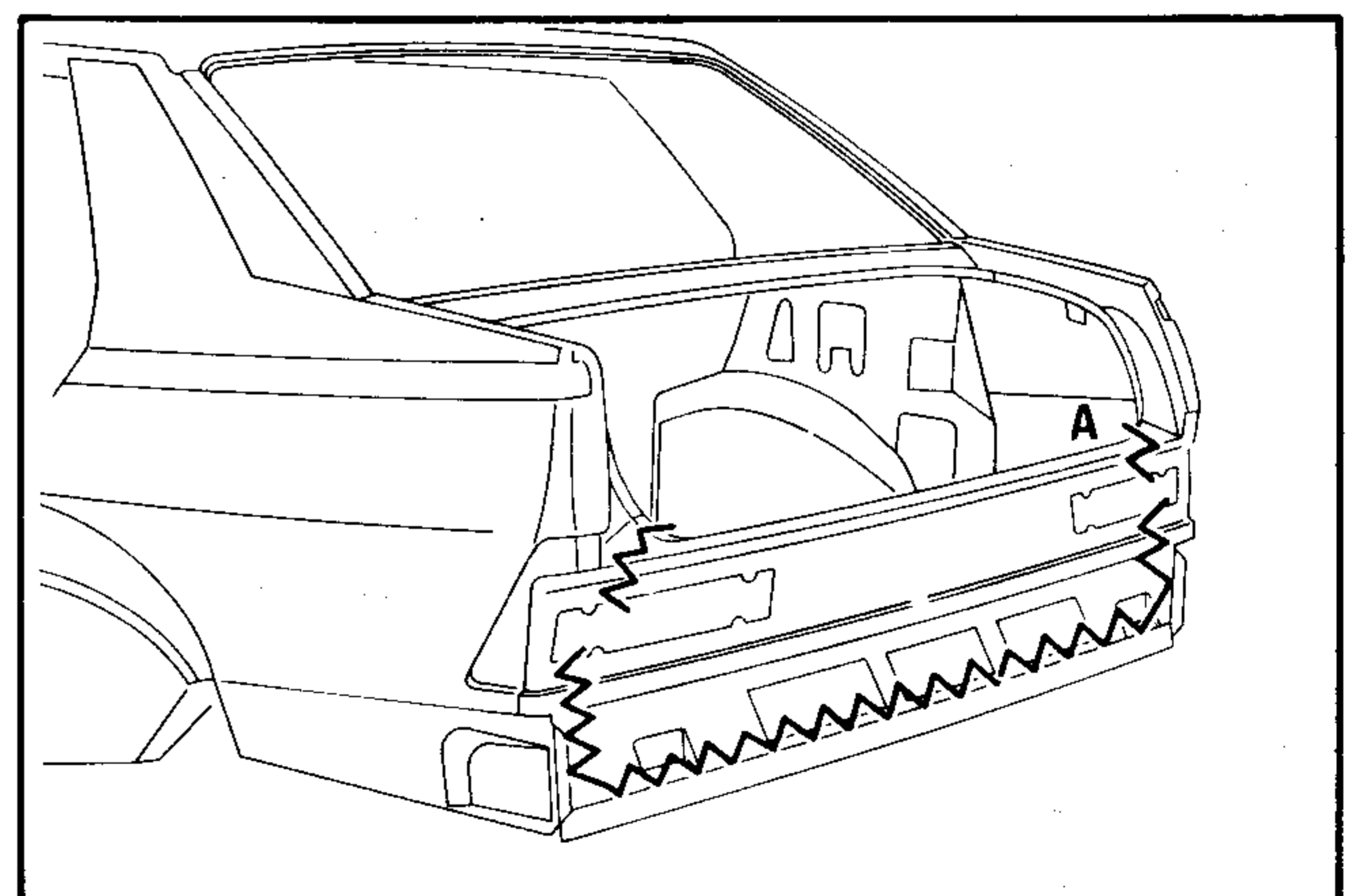


### Parts to be welded

- a. Rear panel and luggage compartment floor
- b. Rear panel and rear fender
- c. Rear panel, rear fender, and bumper connection reinforcement beam

### REMINDER WHEN REMOVING

- By means of an air saw, cut the rear panel according to the line A shown in the figure.

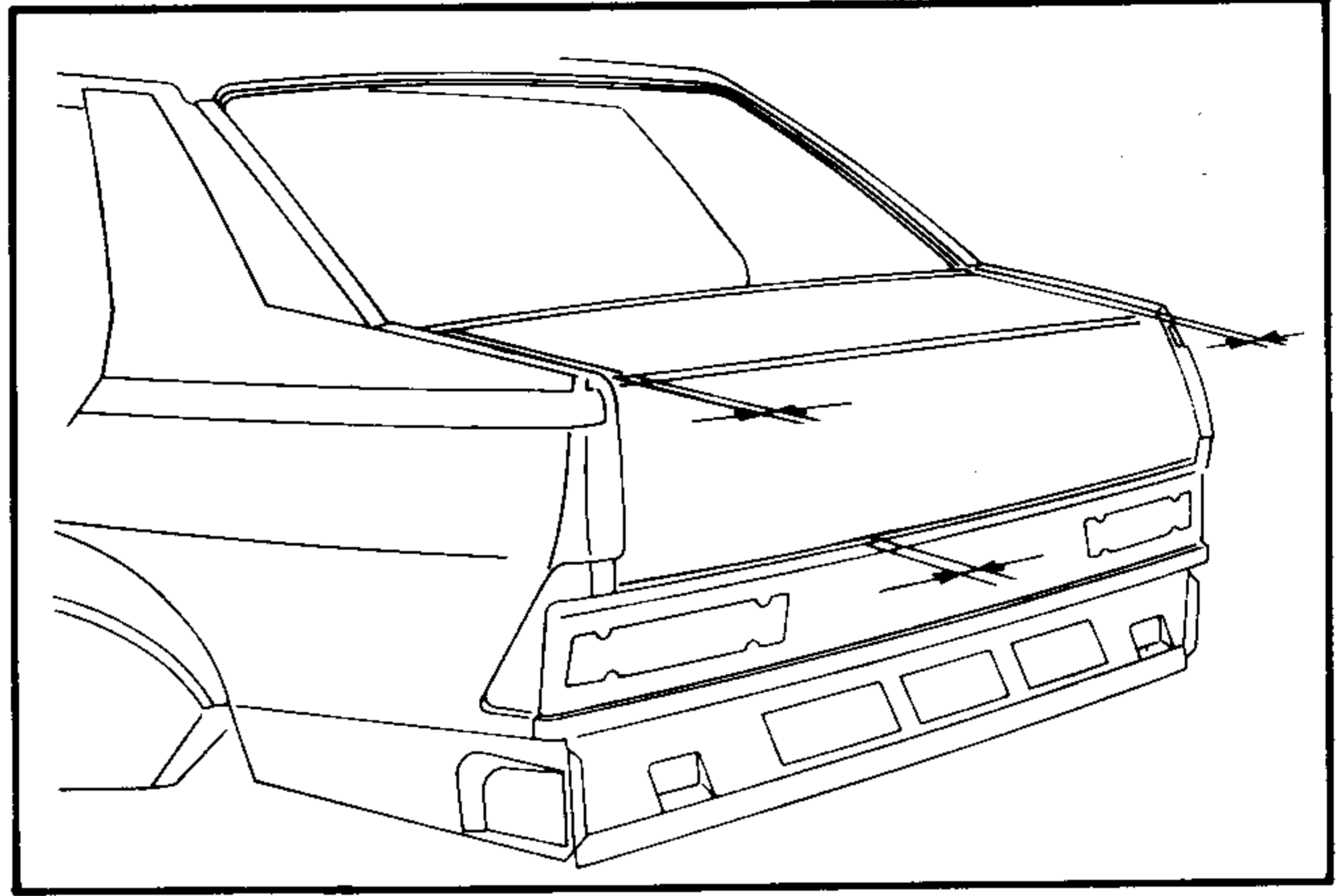
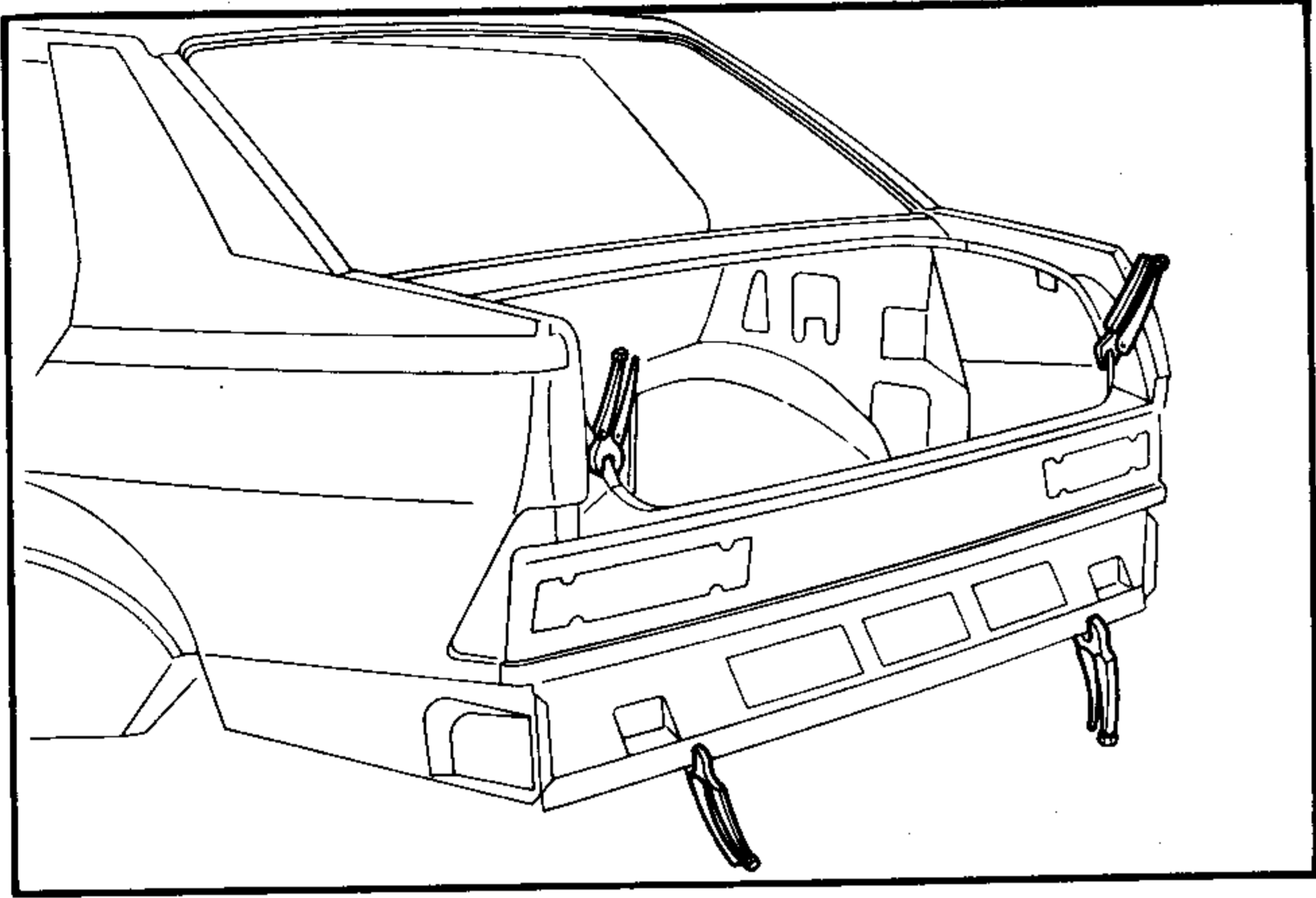


## BODY – SHEET METAL PANELS

- By means of an air saw remove the welding spots and the remaining pieces of rear panel from rear fenders and luggage compartment floor.
- Temporarily secure the boot lid assembly to body. Check clearances, angles and parallelisms. Check that bumper is correctly positioned and aligned.

### REMINDER WHEN INSTALLING

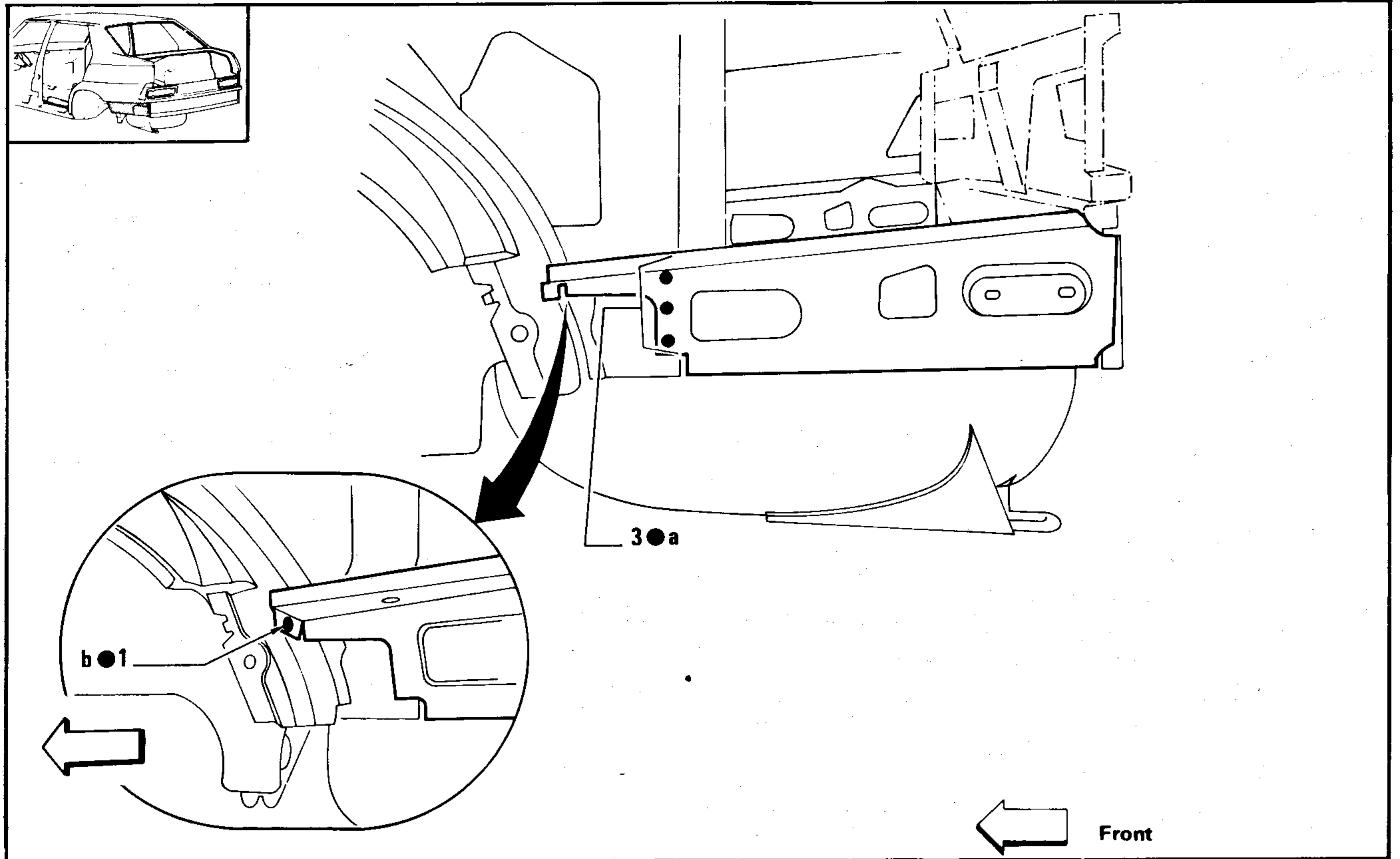
- Temporarily secure the rear panel to body.



## BUMPER CONNECTION REINFORCEMENT BEAM WITH REAR FENDER AND REAR PANEL REMOVED

Removal is to be carried out after having removed Rear Fender and Rear Panel

### Service joints

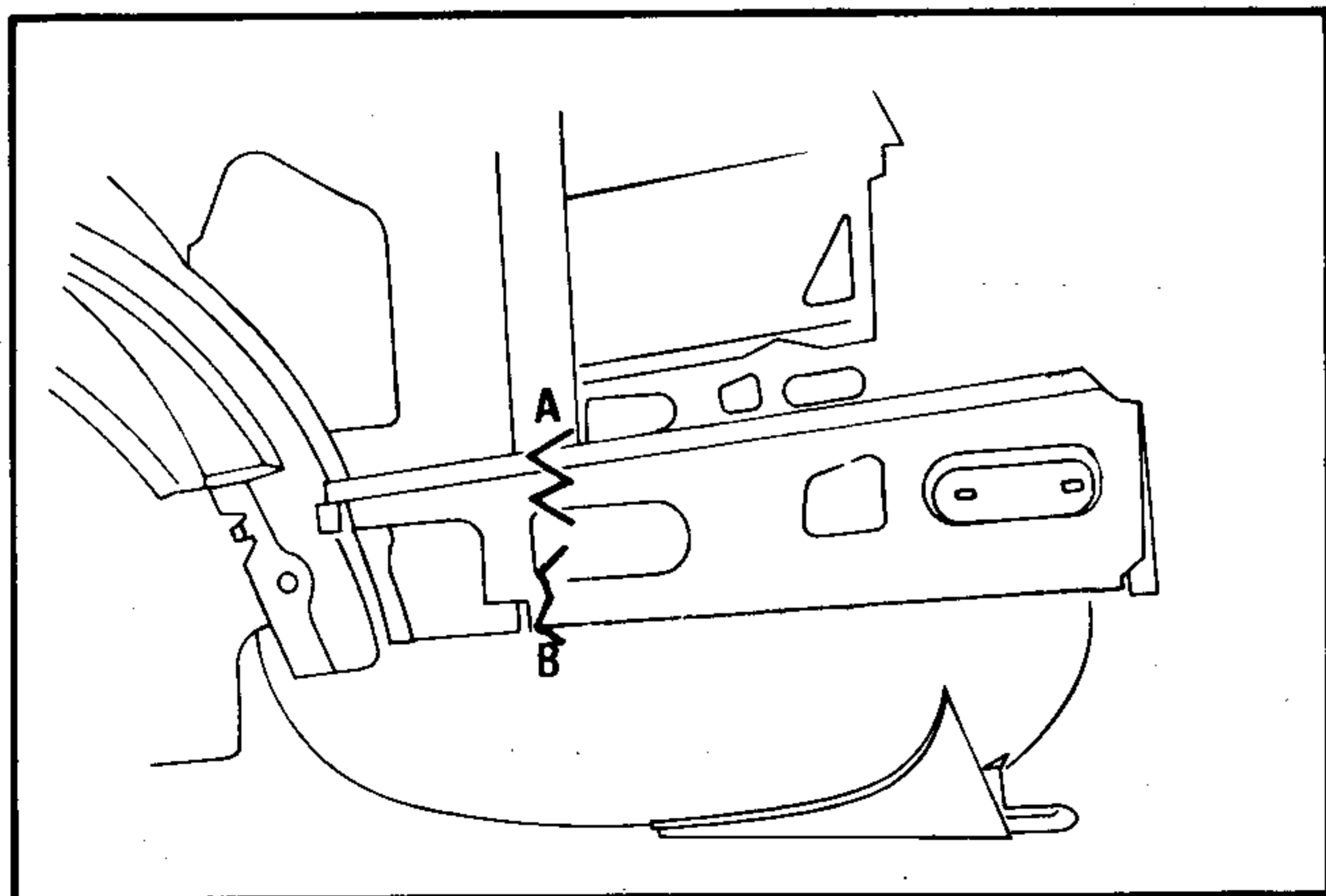


### Parts to be welded

- a. Bumper connection reinforcement beam and inner rear wheelarch
- b. Bumper connection reinforcement beam and outer rear wheelarch

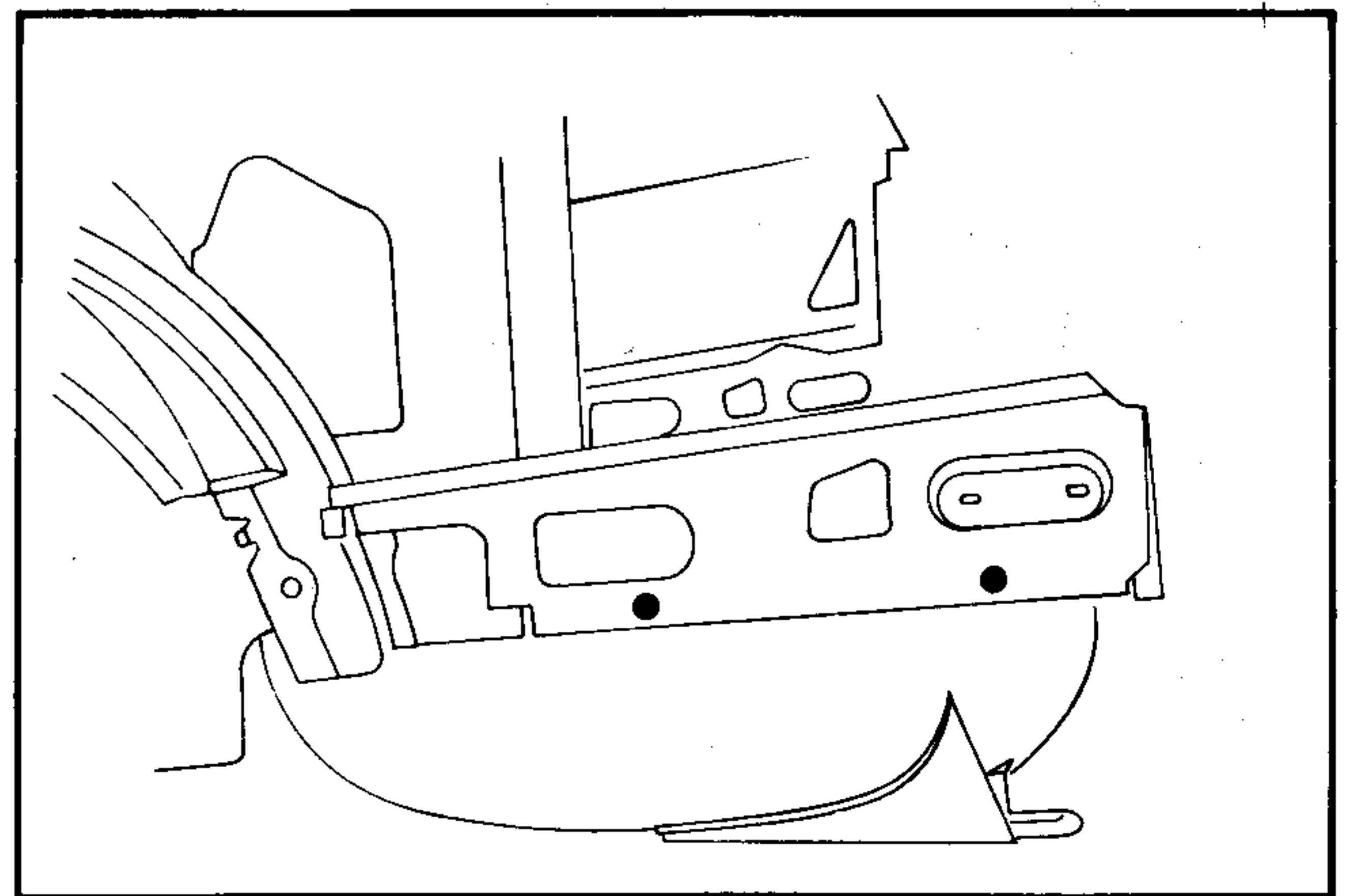
### REMINDER WHEN REMOVING

- Use an air saw to cut according to lines A and B shown in the figure.



### REMINDER WHEN INSTALLING

- When installing, tack weld the beam to luggage compartment floor.

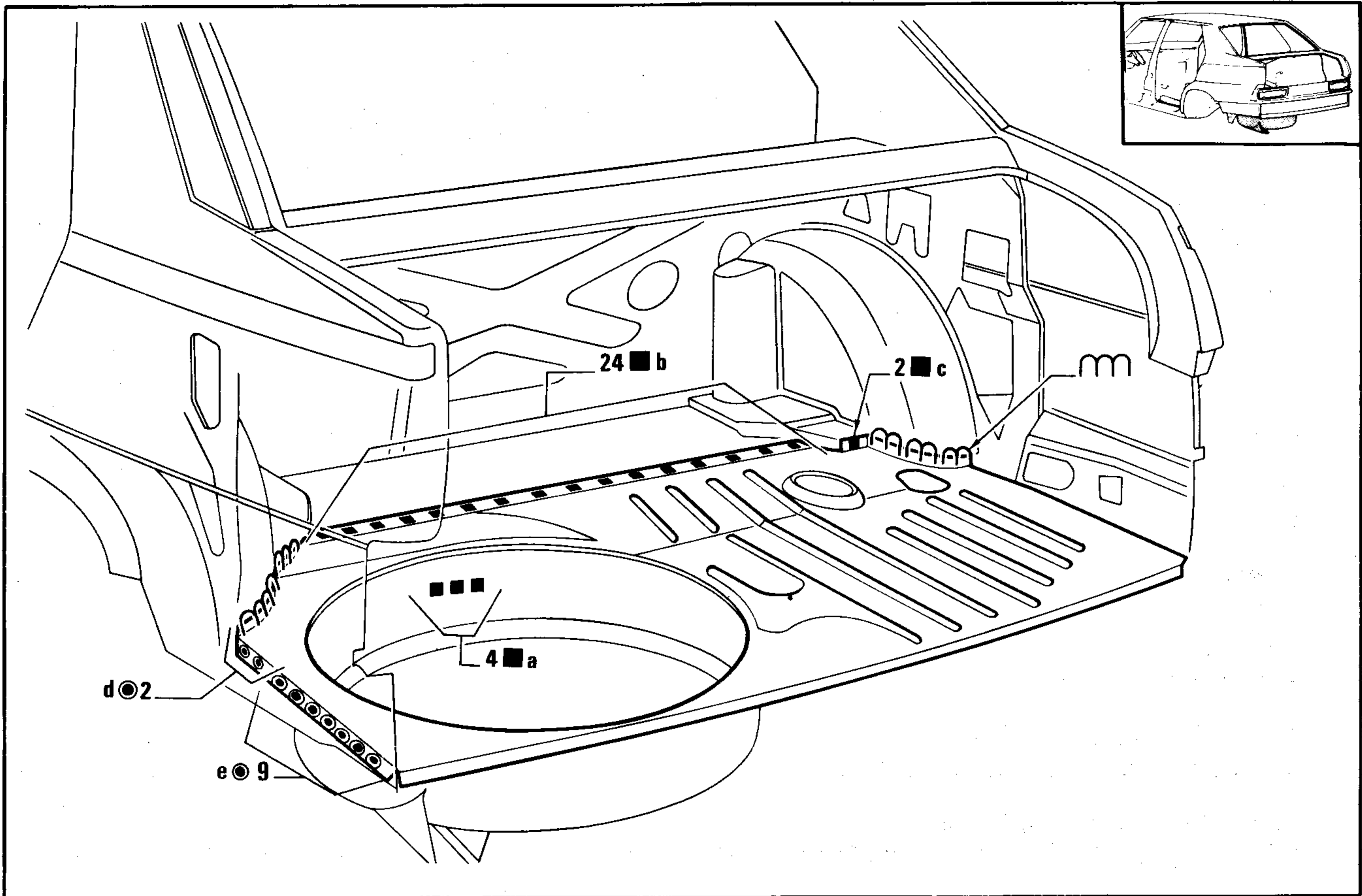


- Remove the welding spots, and the remaining piece of beam.

## LUGGAGE COMPARTMENT FLOOR WITH REAR PANEL REMOVED

Replacement is to be carried out after having removed the Rear Panel.

### Service joints

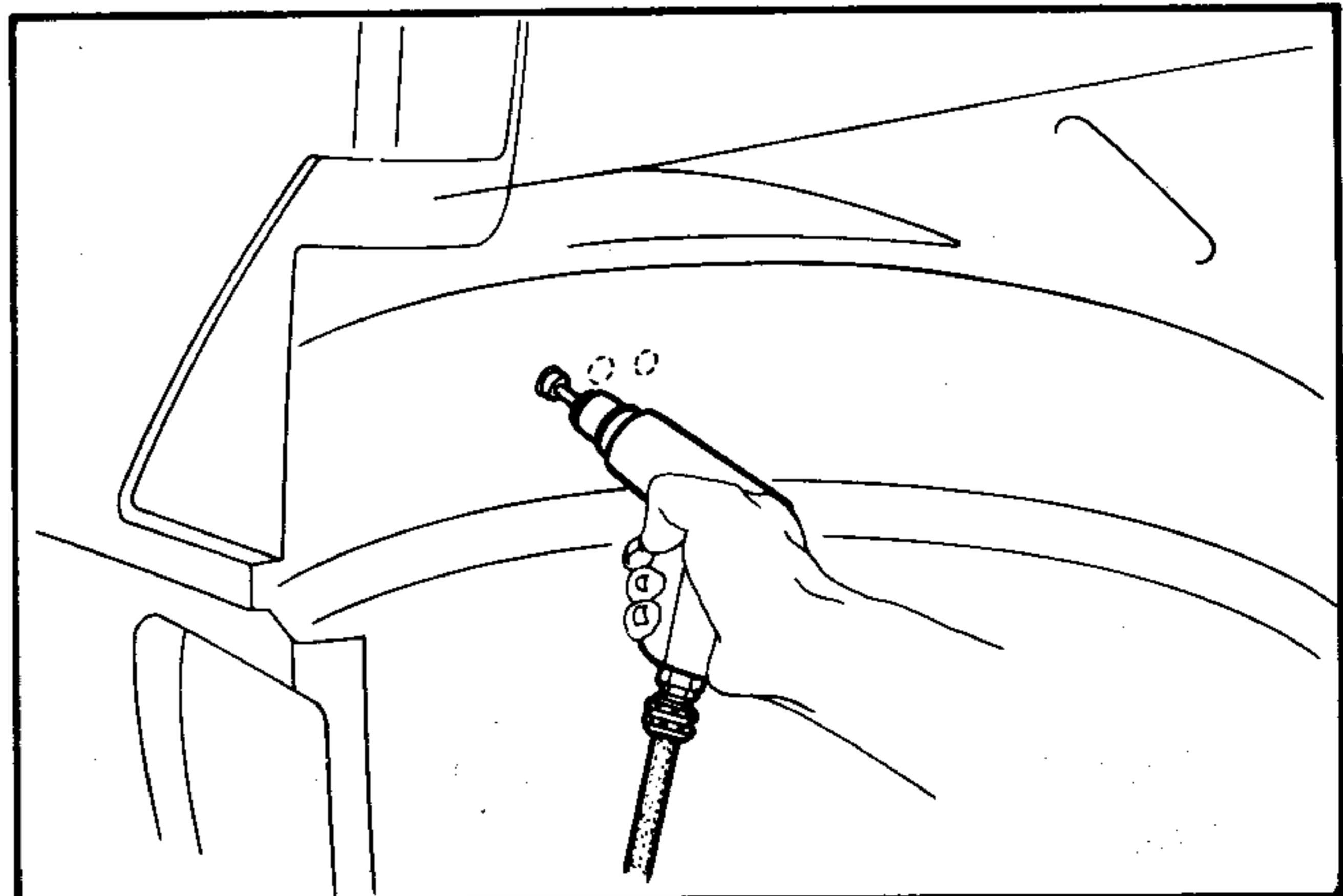


### Parts to be welded

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>a. Luggage compartment floor and cross member connecting bars</li> <li>b. Luggage compartment floor and cross member connecting bars</li> <li>c. Luggage compartment floor and cross member connecting bars</li> </ul> | <ul style="list-style-type: none"> <li>d. Luggage compartment floor, rear fender, and inner rear wheelarch</li> <li>e. Luggage compartment floor, bumper connection reinforcement beam, and rear fender</li> </ul> |
|---|--|

### REMINDER WHEN REMOVING

- Use a pneumatic drilling machine and remove the welding spots between luggage compartment floor and cross member connecting bars in correspondence with the spare wheel compartment.

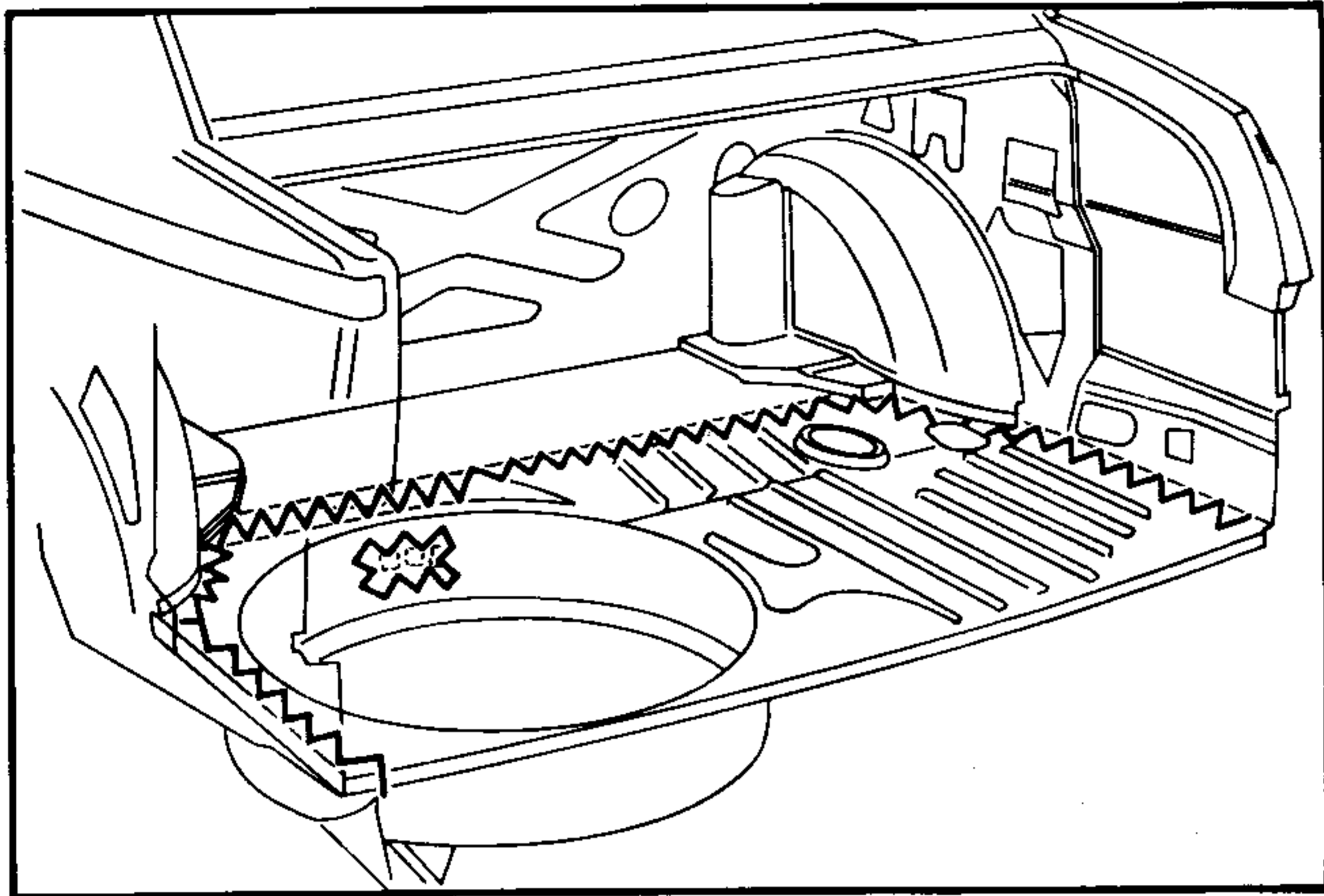




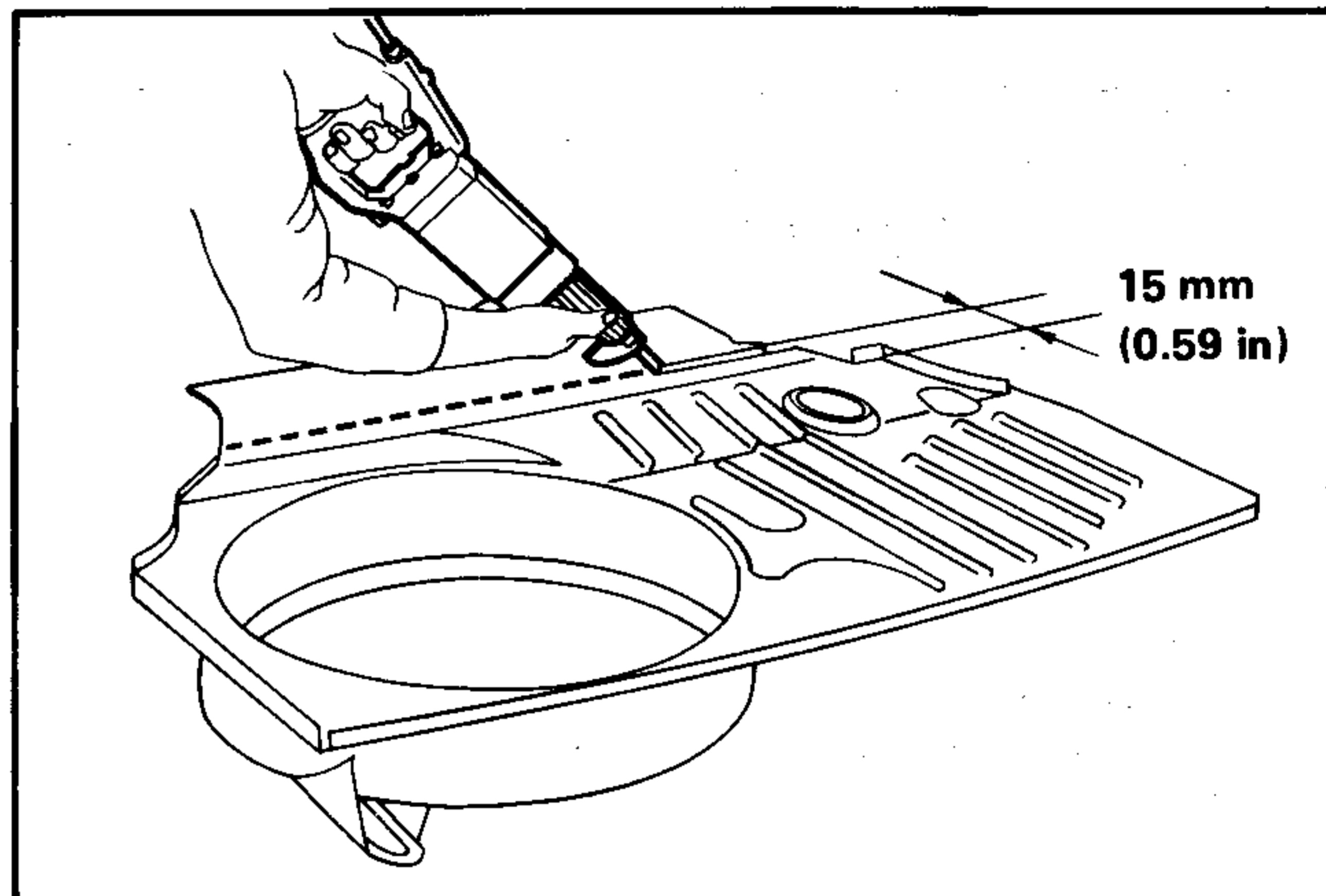
## BODY – SHEET METAL PANELS

- Use an air saw to cut the floor to be replaced along line A shown in the figure.

**Do not go over the line set in evidence in the figure to prevent damaging the cross member connecting bars.**



Drill the front edge of luggage compartment floor and spare wheel compartment for the following MIG plug welding.



- Use an air saw to remove the welding spots of floor to bumper connection reinforcement beam.

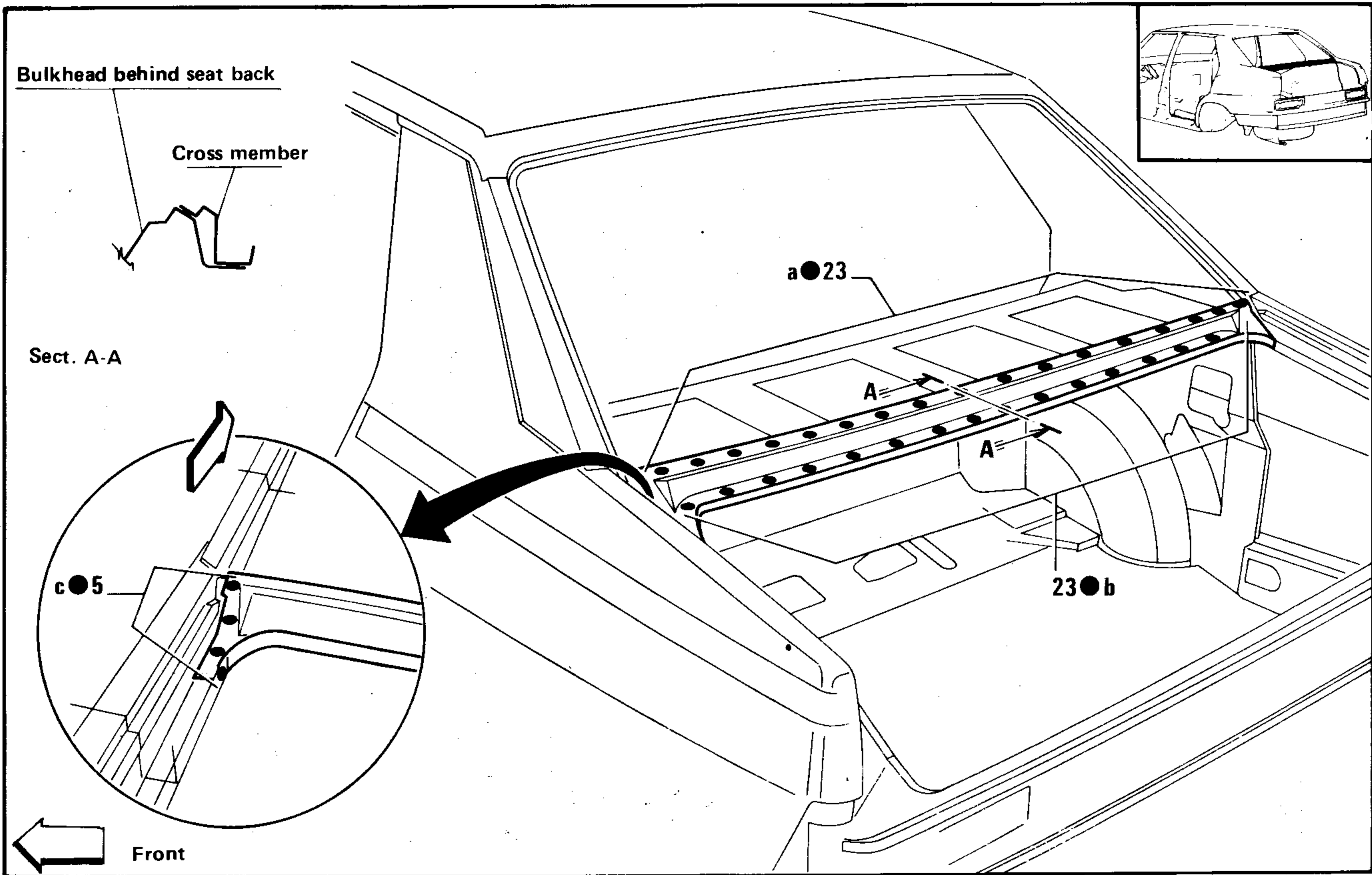
- Install the floor on vehicle by overlapping the front edge to the remaining part of the old one, then proceed with welding.

### REMINDER WHEN INSTALLING

- Adapt the new floor for installation on vehicle:
  - By means of an air saw, cut the floor at the dimension shown in the figure.

REAR WINDOW LOWER PANEL

Service joints

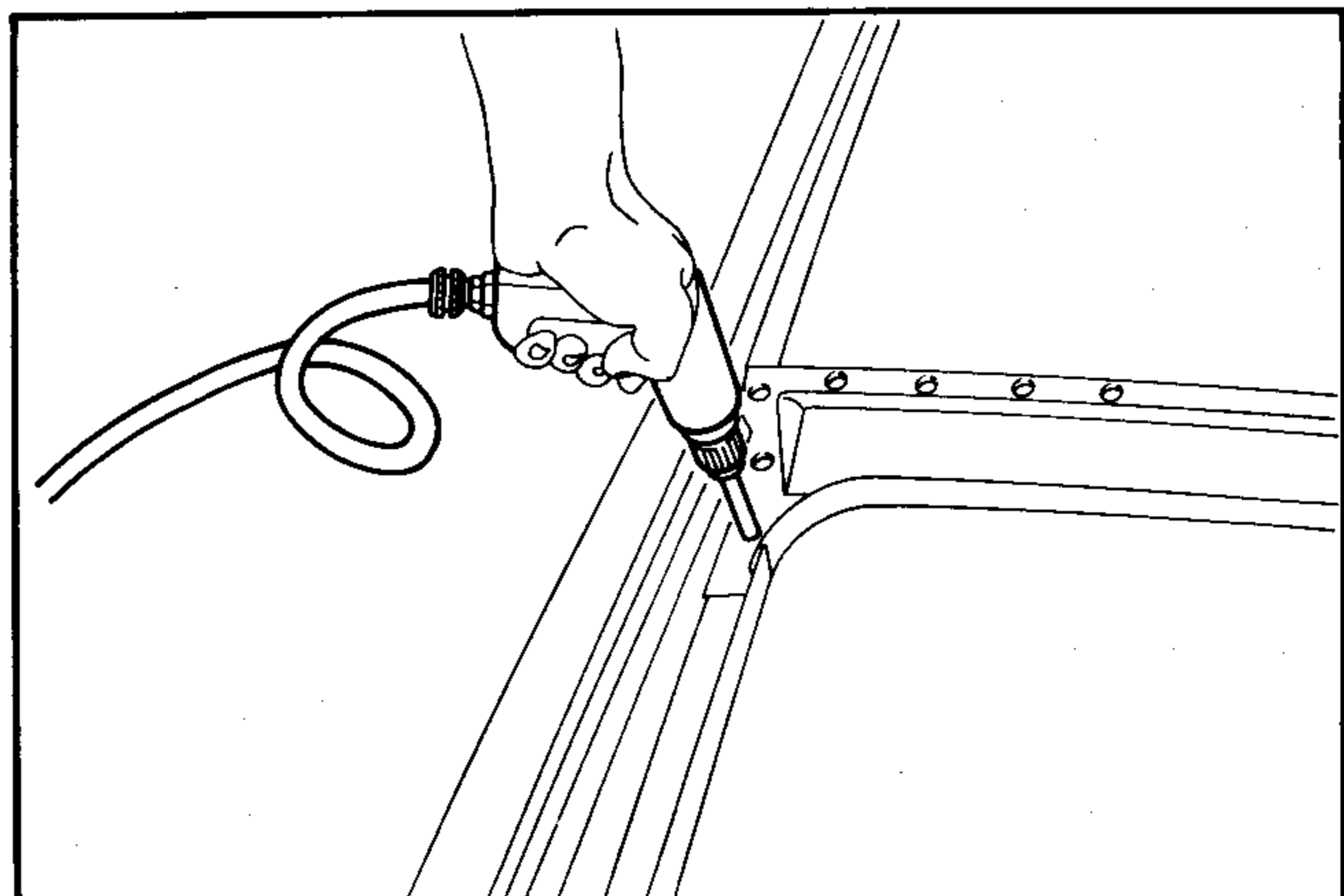


Parts to be welded

- a. Rear window lower panel and bulkhead behind the seat back
- b. Rear window lower panel and bulkhead behind the seat back
- c. Rear window lower panel and rear fender

REMINDER WHEN REMOVING

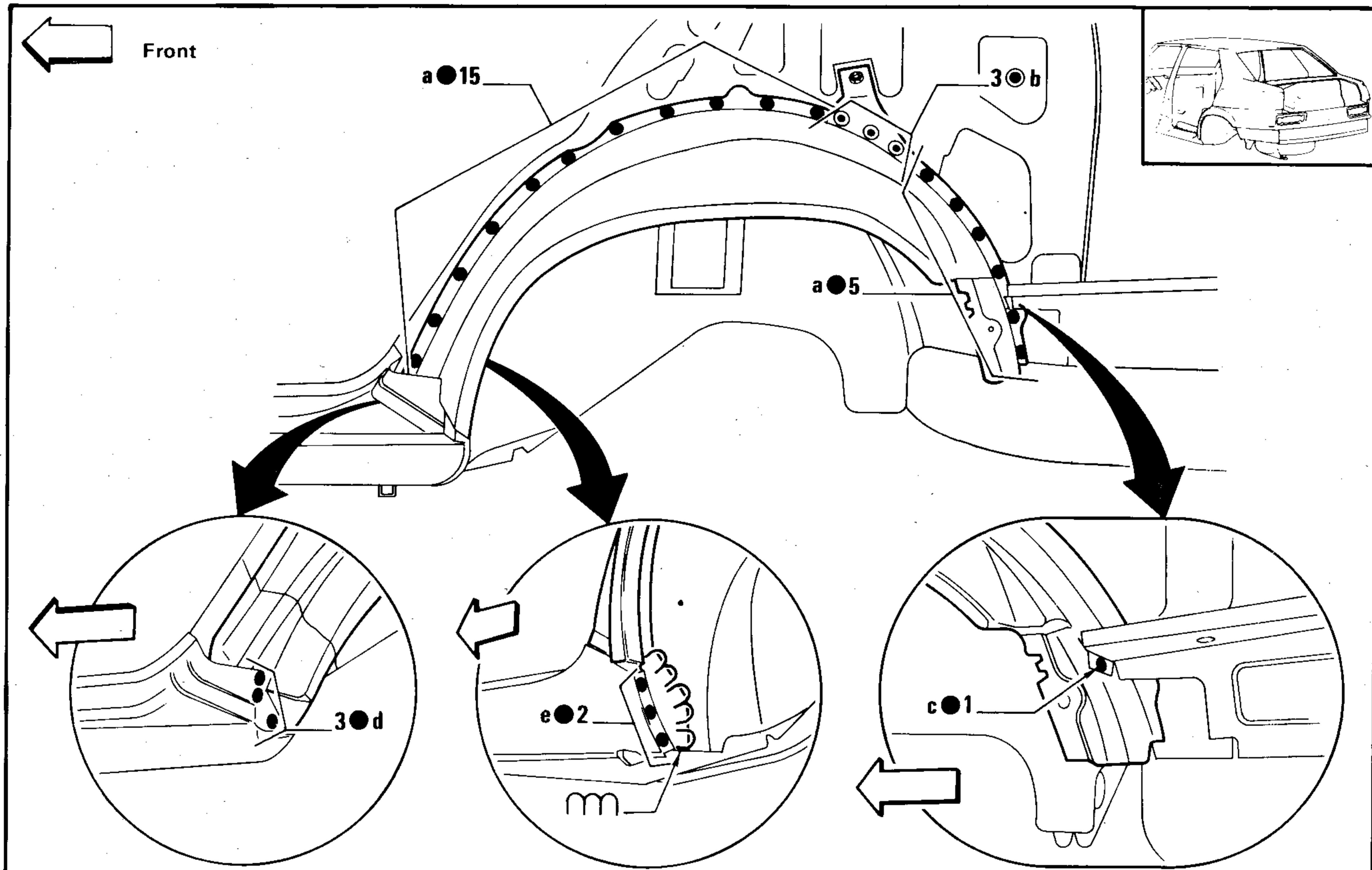
- Remove the welding spots and the rear window lower panel.



## OUTER REAR WHEELARCH WITH REAR FENDER REMOVED

Replacement is to be carried out after having removed Rear Fender and Body Side Rear Frame.

### Service joints

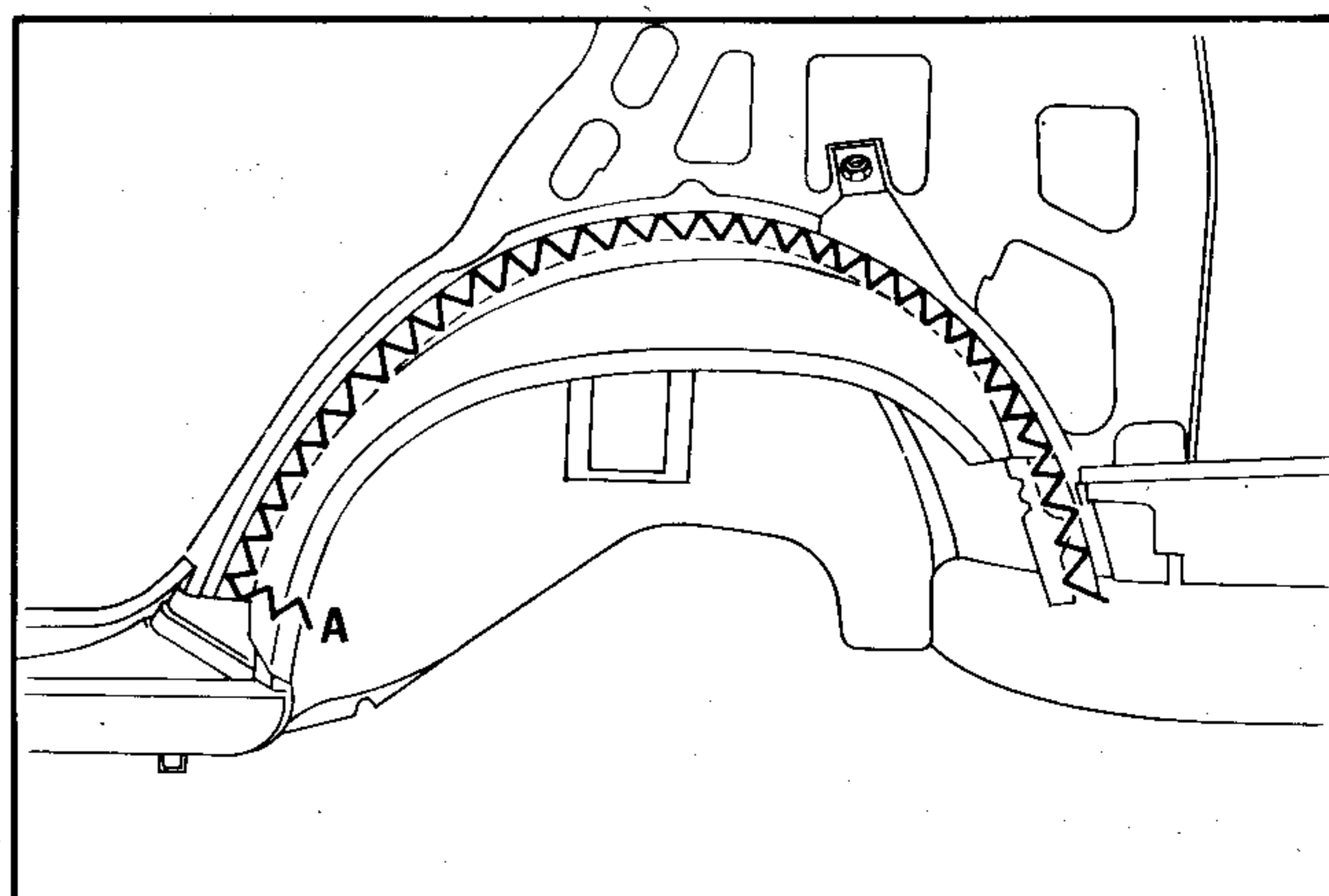


### Parts to be welded

- |   |   |
|---|---|
| a. Outer rear wheelarch and inner rear wheelarch                              | forcement beam                              |
| b. Outer rear wheelarch, bracket securing retractor, and inner rear wheelarch | d. Outer rear wheelarch and door under-trim |
| c. Outer rear wheelarch and bumper connection reinforcement beam              | e. Outer rear wheelarch and door under-trim |

### REMINDER WHEN REMOVING

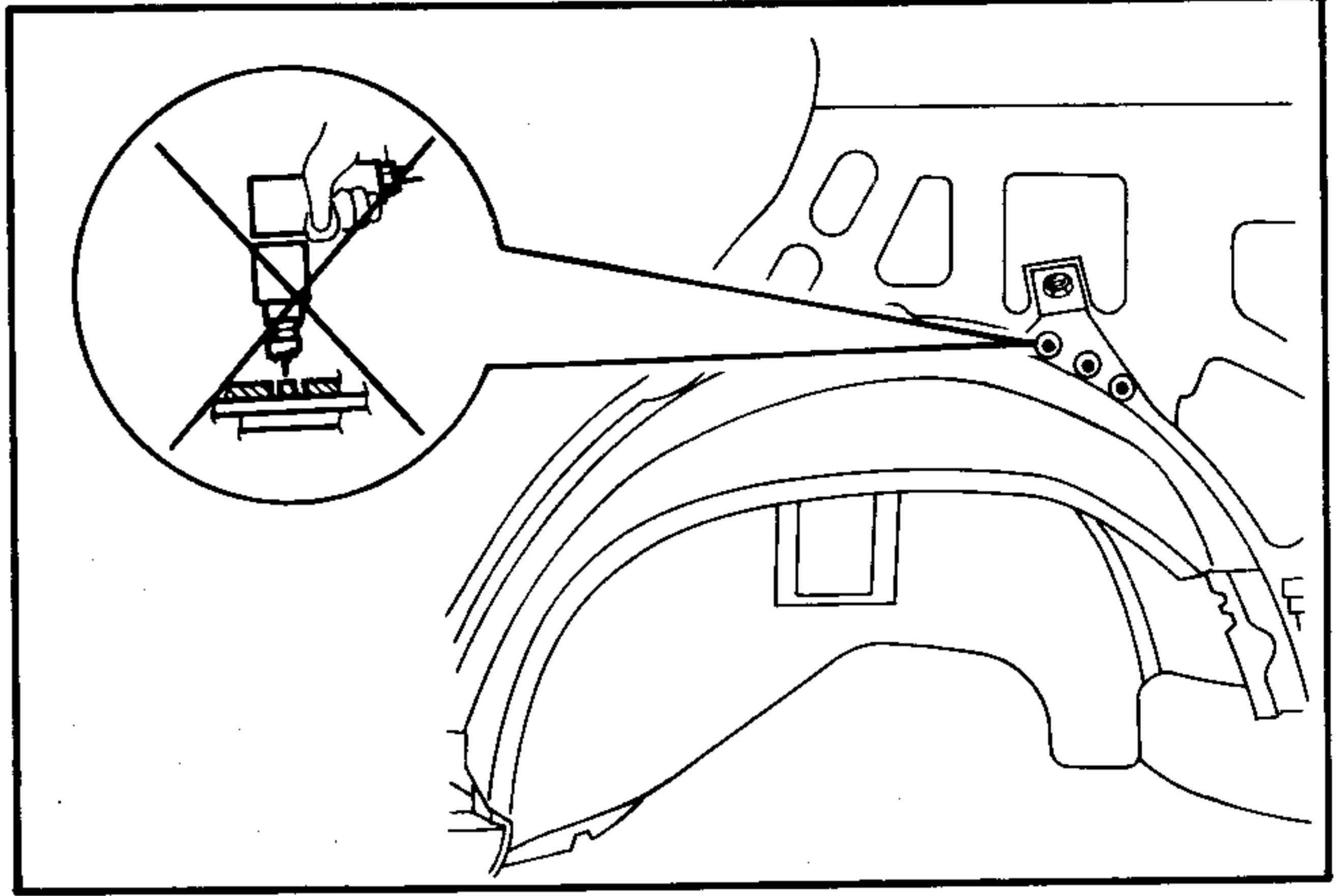
- Use an air chisel to cut according to line A shown in the figure.



## BODY – SHEET METAL PANELS

- Use an air chisel fitted with suitable tip to remove the remaining edges of outer rear wheelarch.

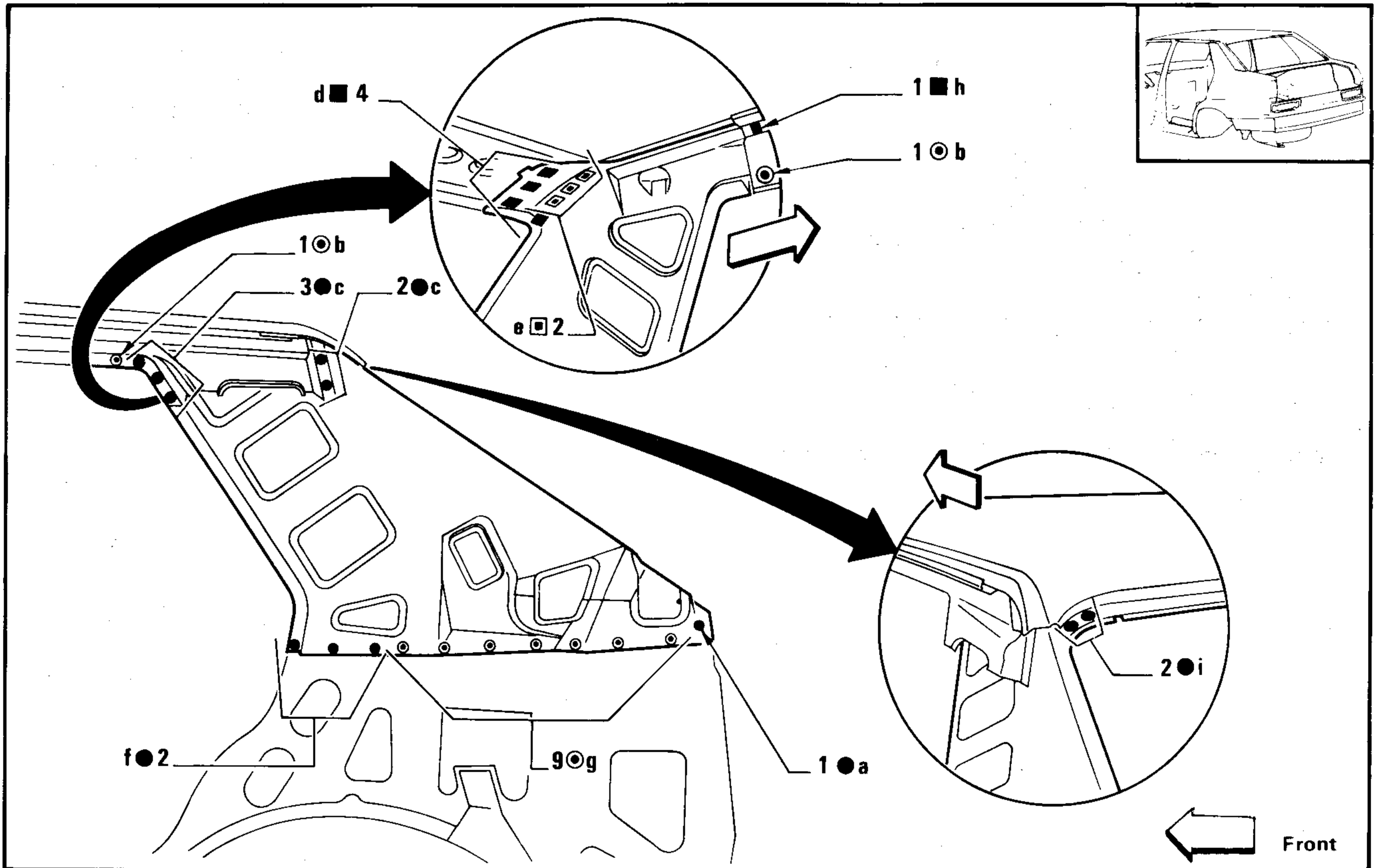
When removing the welding spots of the bracket securing retractor, do not use the drilling machine since this could cause the bracket to come off.



## BODY SIDE FRAME UPPER PART

Replacement is to be performed after having removed Rear Fender and Body Side Rear Frame.

### Service joints

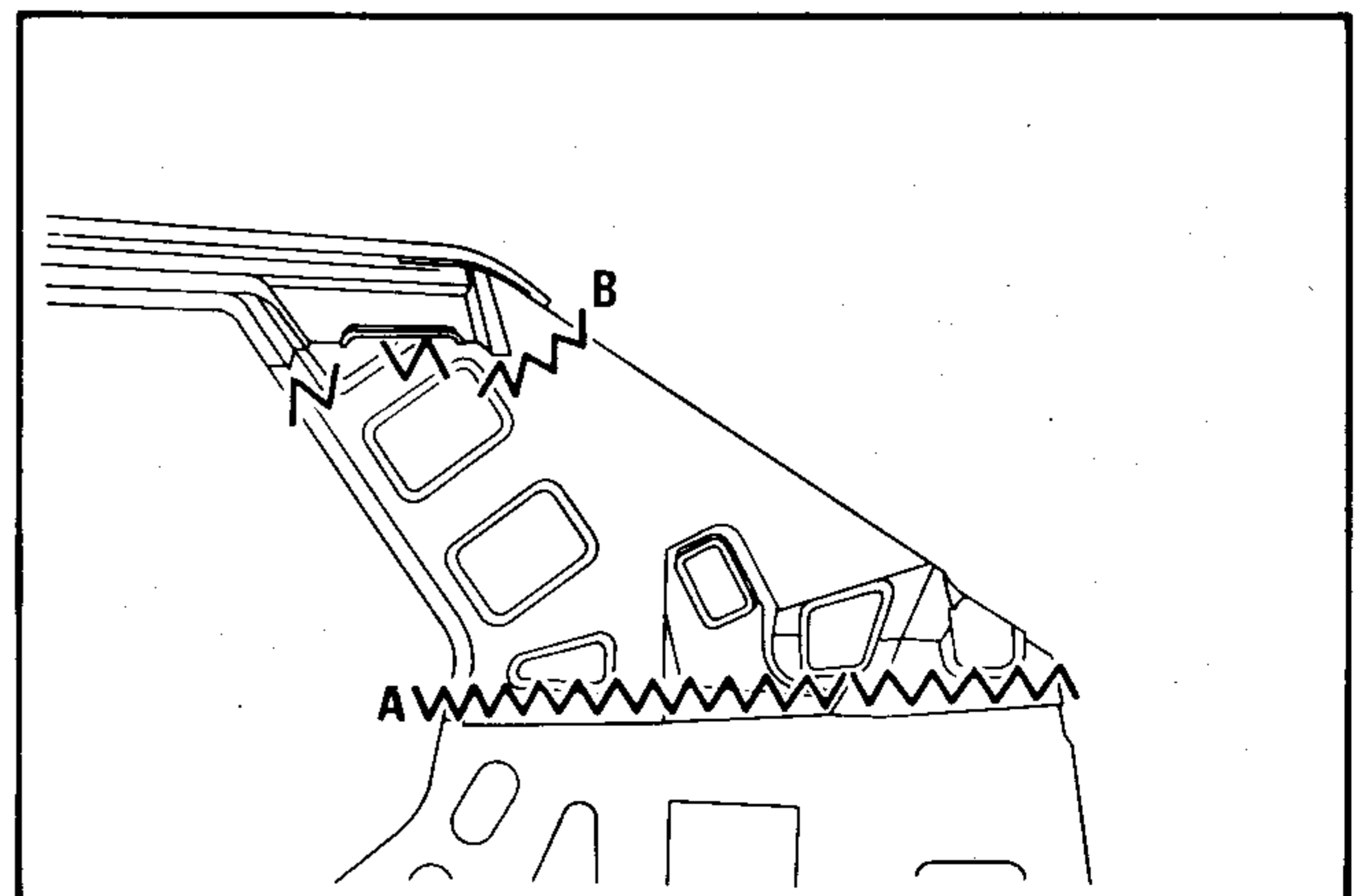


### Parts to be welded

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>a. Body side frame upper part and bulkhead behind seat back</li> <li>b. Body side frame upper part, body side, and upper beam frame</li> <li>c. Body side frame upper part and body side (body side rear frame)</li> <li>d. Body side frame upper part and rear window upper cross member</li> <li>e. Body side frame upper part and upper beam frame</li> <li>f. Body side frame upper part and inner rear wheelarch</li> </ul> | <ul style="list-style-type: none"> <li>g. Body side frame upper part, inner rear wheelarch, and bulkhead behind seat back</li> <li>h. Body side frame upper part and upper beam frame</li> <li>i. Body side frame upper part and roof</li> </ul> |
|---|--|

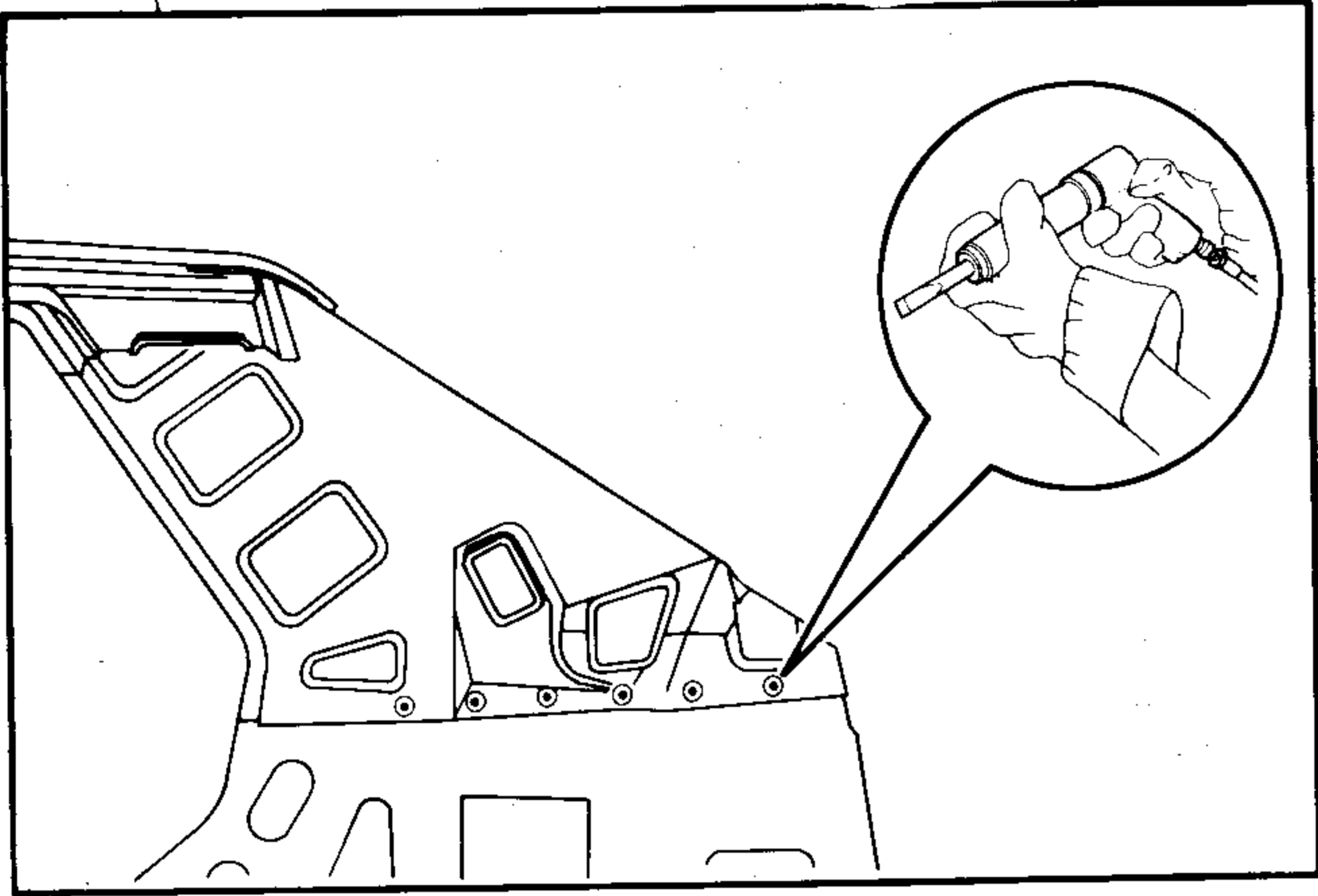
### REMINDER WHEN REMOVING

- By means of an air chisel, cut the component according to lines A and B shown in the figure.

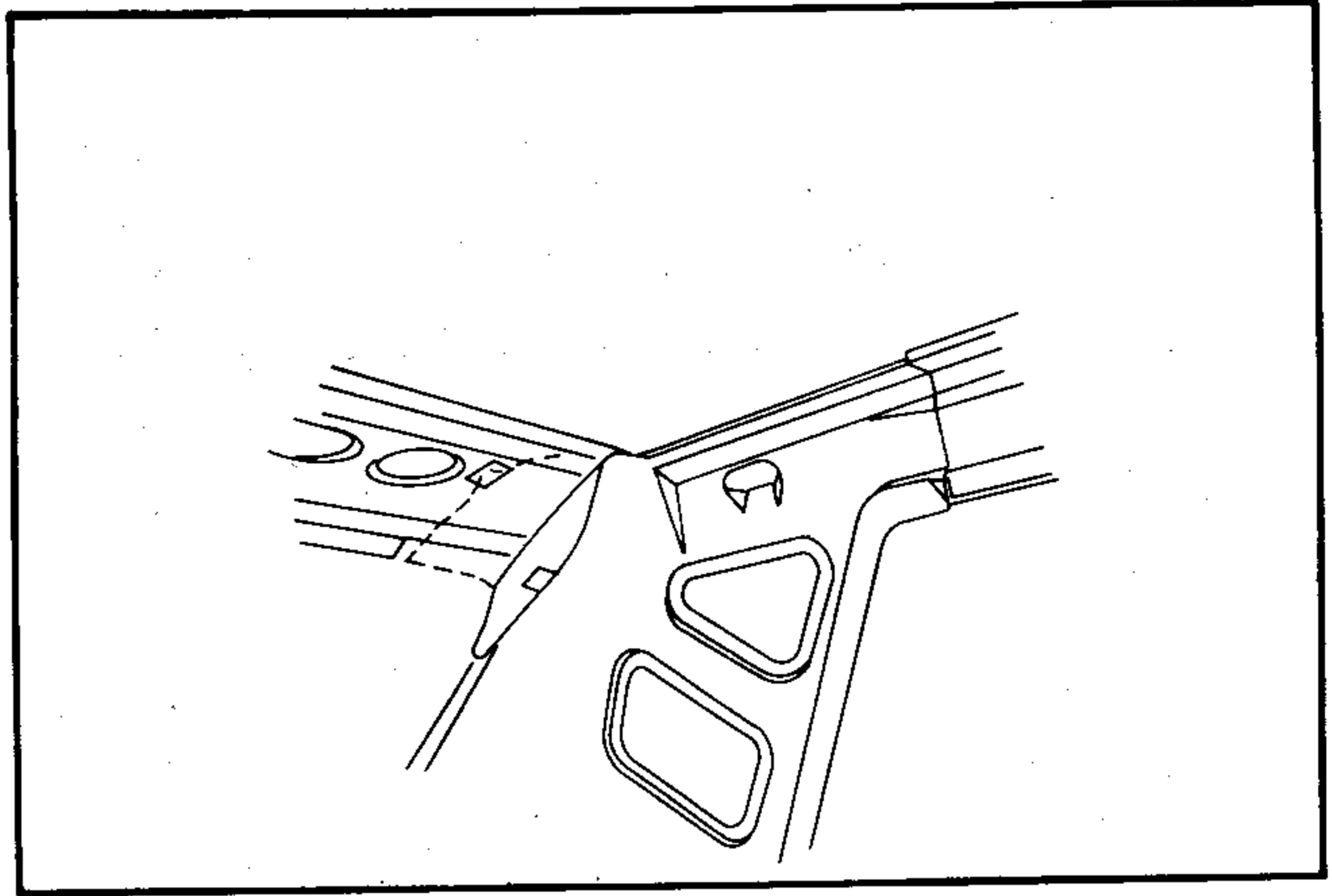


## BODY – SHEET METAL PANELS

- Remove the welding spots of the remaining edges of body side frame upper part.



- When removing the upper edge, release the tab from the slot of rear window upper cross member.



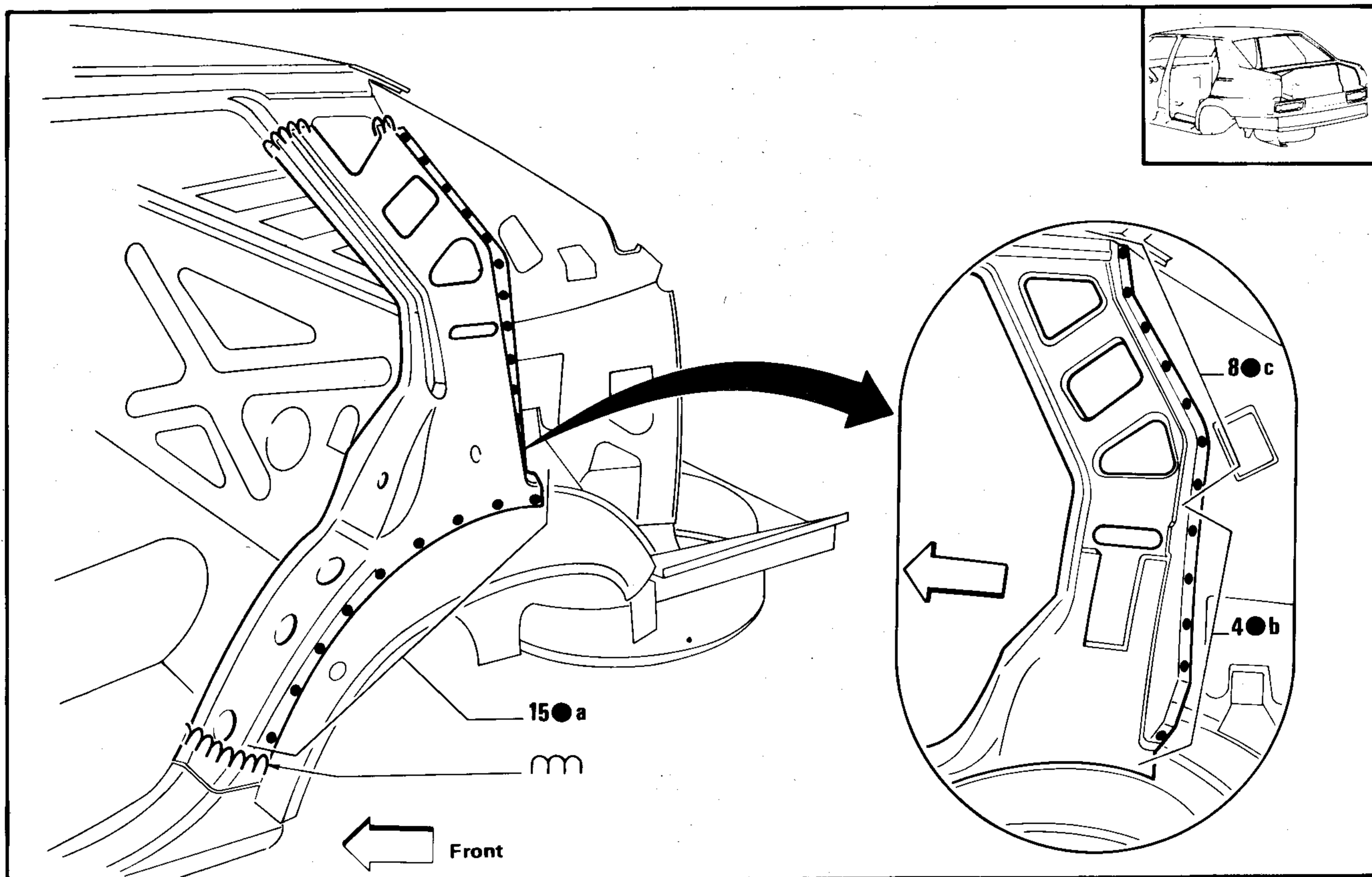
### REMINDER WHEN INSTALLING

- Position the new component correctly on body inserting the tab into the rear window upper cross member.
- Drill the new component in the points to be MIG plug welded.

**BODY SIDE REAR FRAME WITH REAR FENDER REMOVED**

Replacement is to be carried out after having removed Rear Fender.

**Service joints**

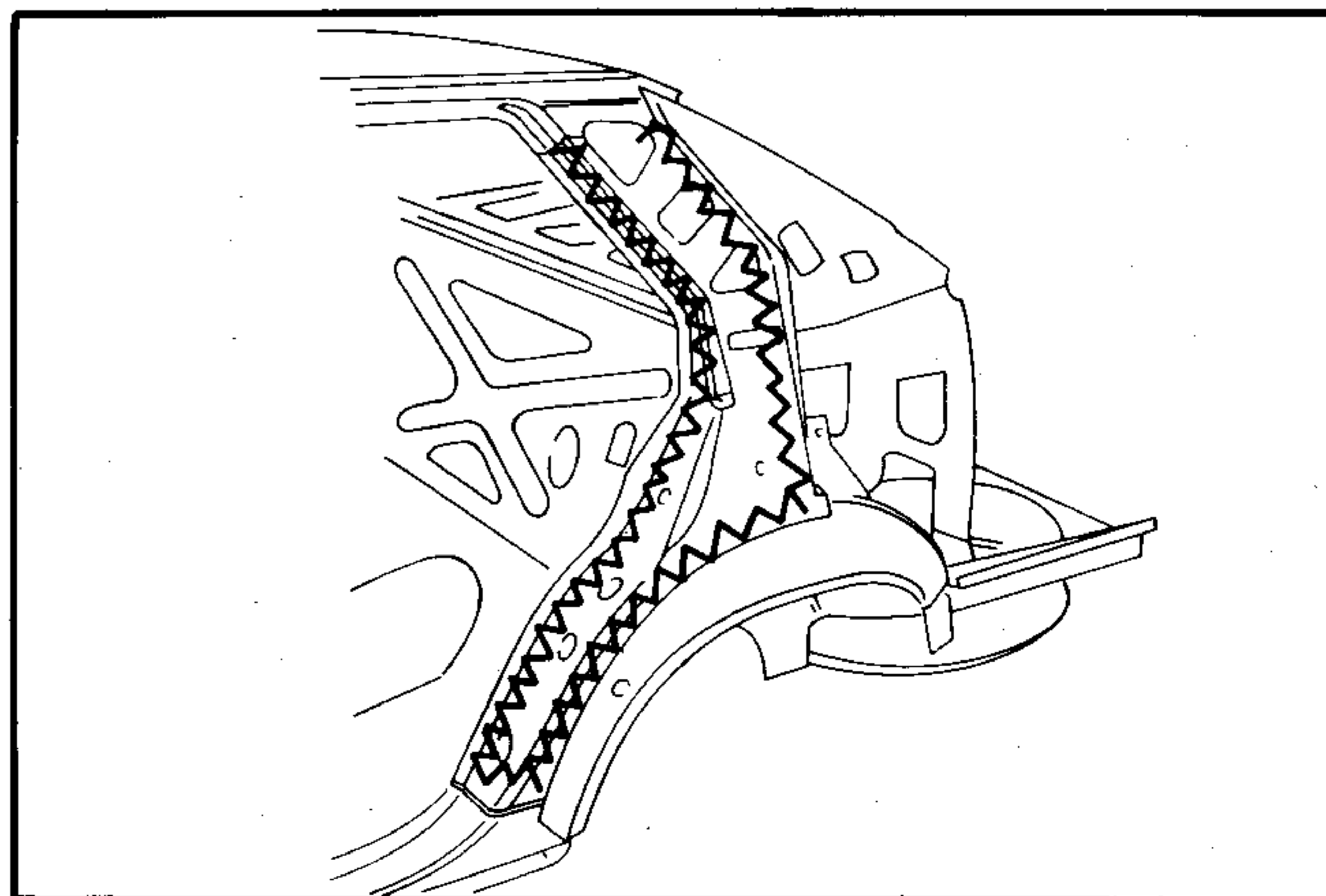


**Parts to be welded**

- a. Body side rear frame and outer rear wheelarch
- b. Body side rear frame and inner rear wheelarch
- c. Body side rear frame and body side frame upper part

**REMINDER WHEN REMOVING**

- By means of an air chisel, cut the component according to the line shown in the figure.



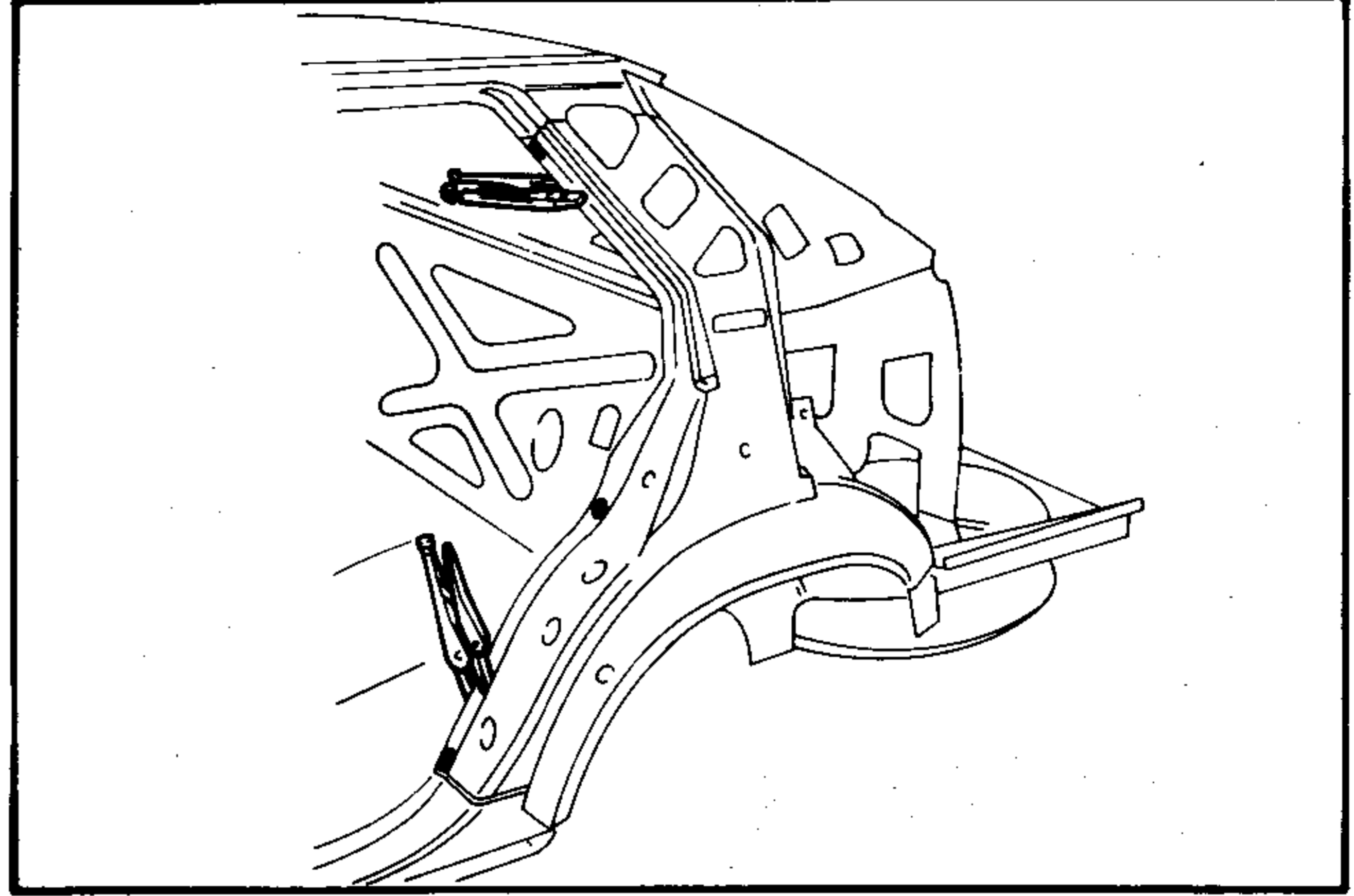
## BODY – SHEET METAL PANELS

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- By means of an air chisel remove the welding spots and the remaining parts of body side rear frame from body.

### REMINDER WHEN INSTALLING

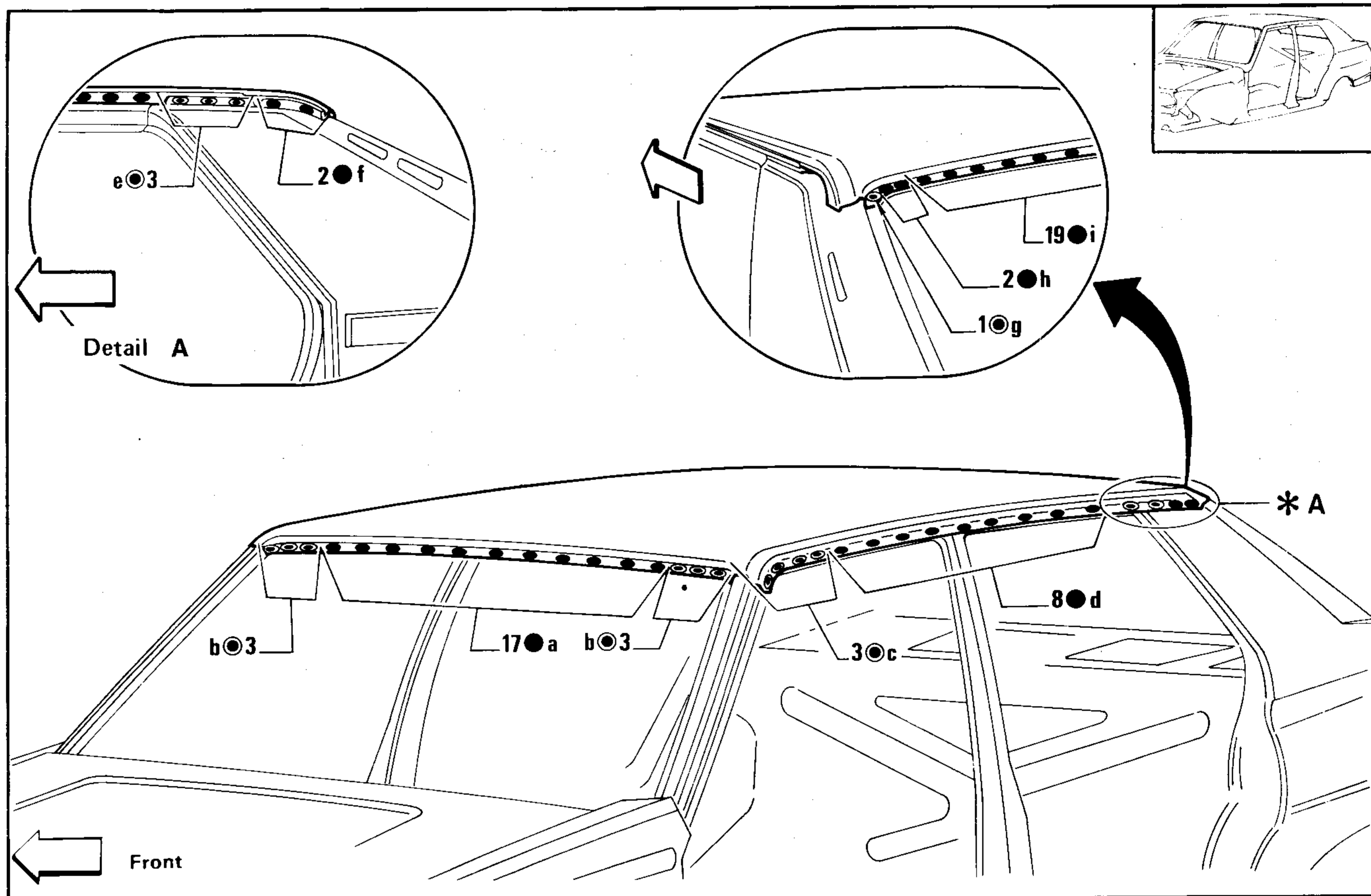
- Adapt the new component for installing it on body.
- Tack weld the body side rear frame to inner rear wheelarch and body side frame upper part in three points as shown in the figure.





**ROOF**

Service joints

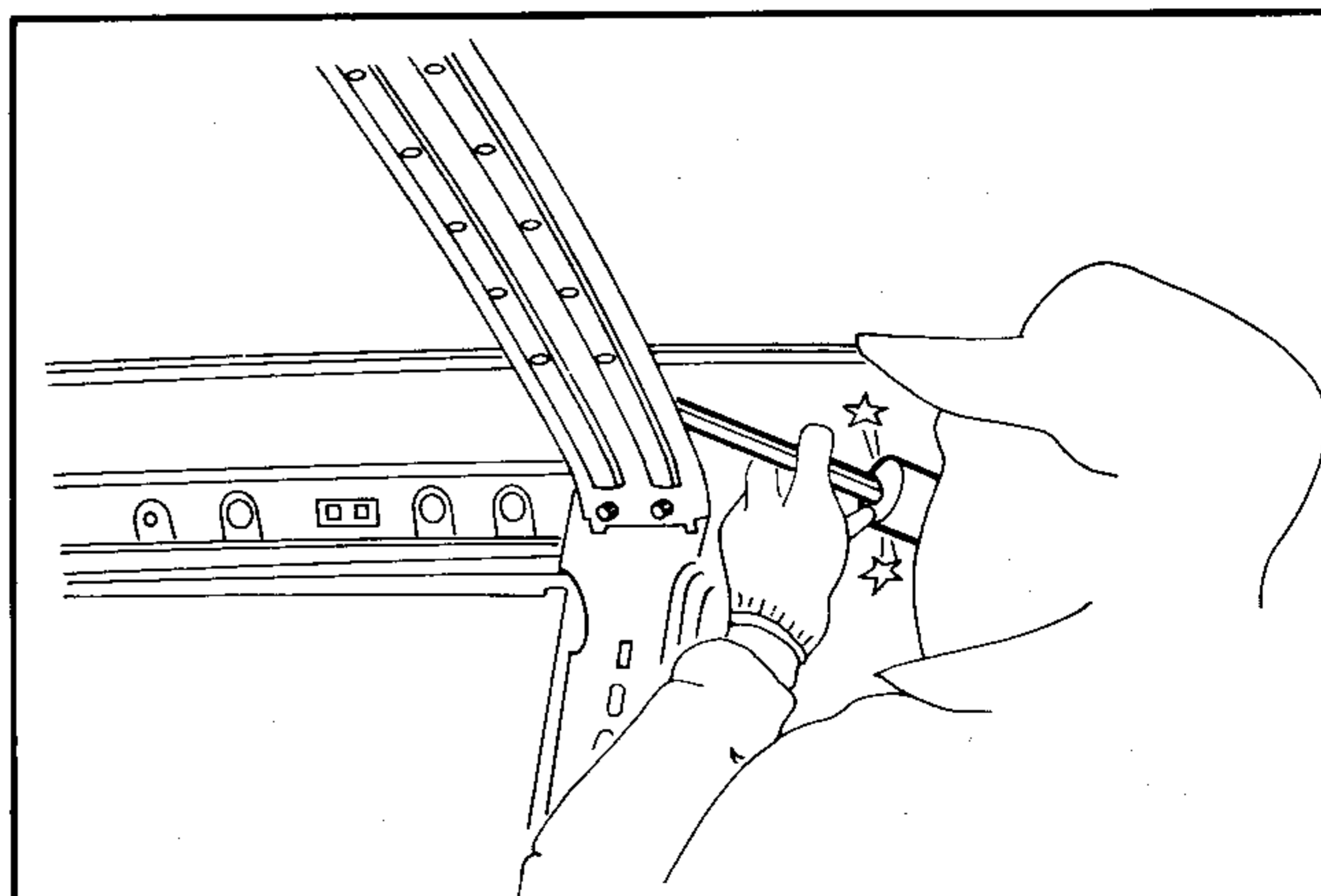


**Parts to be welded**

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>a. Roof and windscreen rim</li> <li>b. Roof, front pillar frame, and windscreen rim</li> <li>c. Roof, body side, and front pillar frame</li> <li>d. Roof and drip</li> <li>e. Roof, drip, and rear fender</li> </ul> | <ul style="list-style-type: none"> <li>f. Roof and rear fender</li> <li>g. Roof, rear fender, and body side frame upper part</li> <li>h. Roof and body side frame upper part</li> <li>i. Roof and rear window upper cross member</li> </ul> |
|---|---|

**REMINDER WHEN REMOVING**

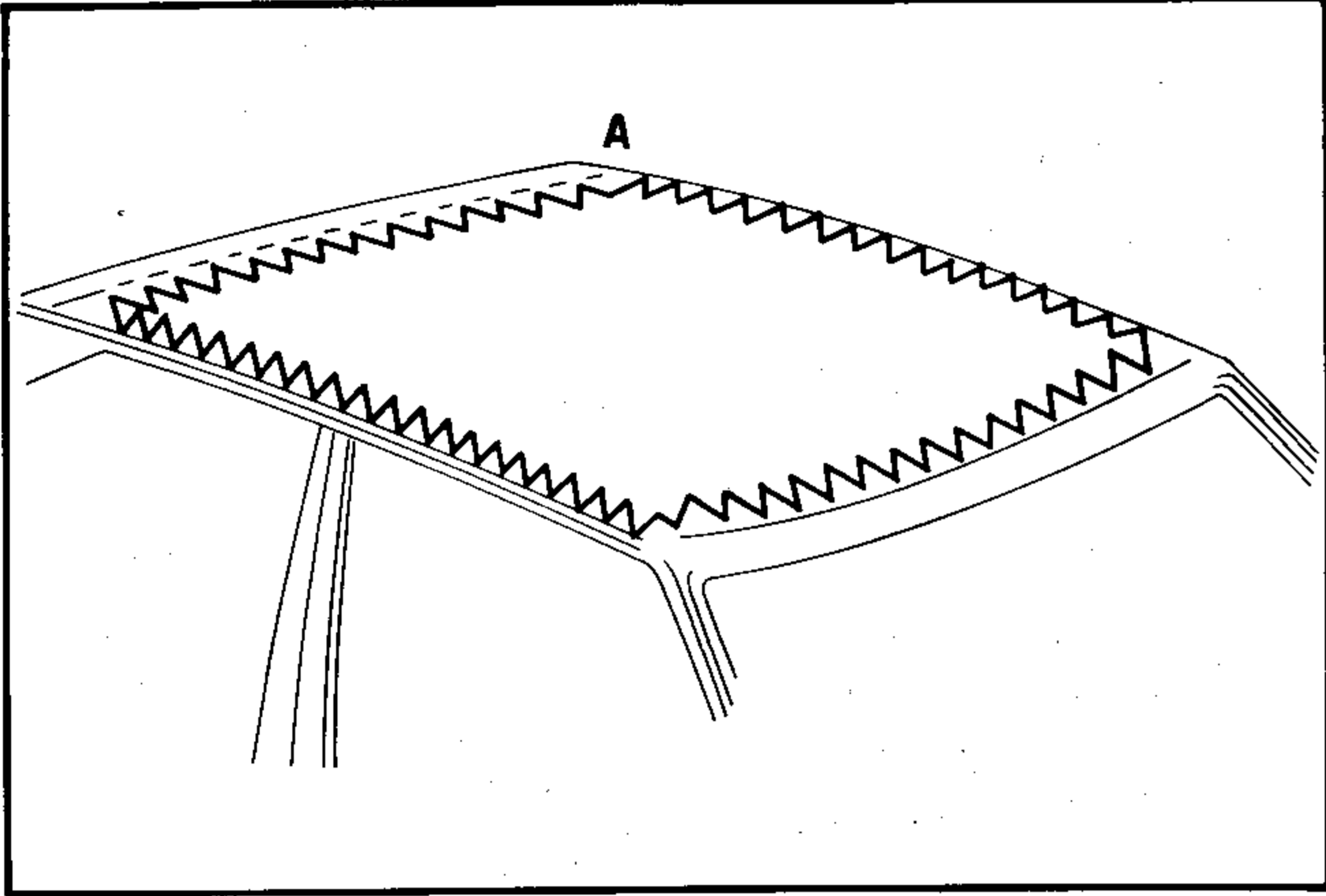
- Using a suitable tool remove the adhesive between roof and roof bows.



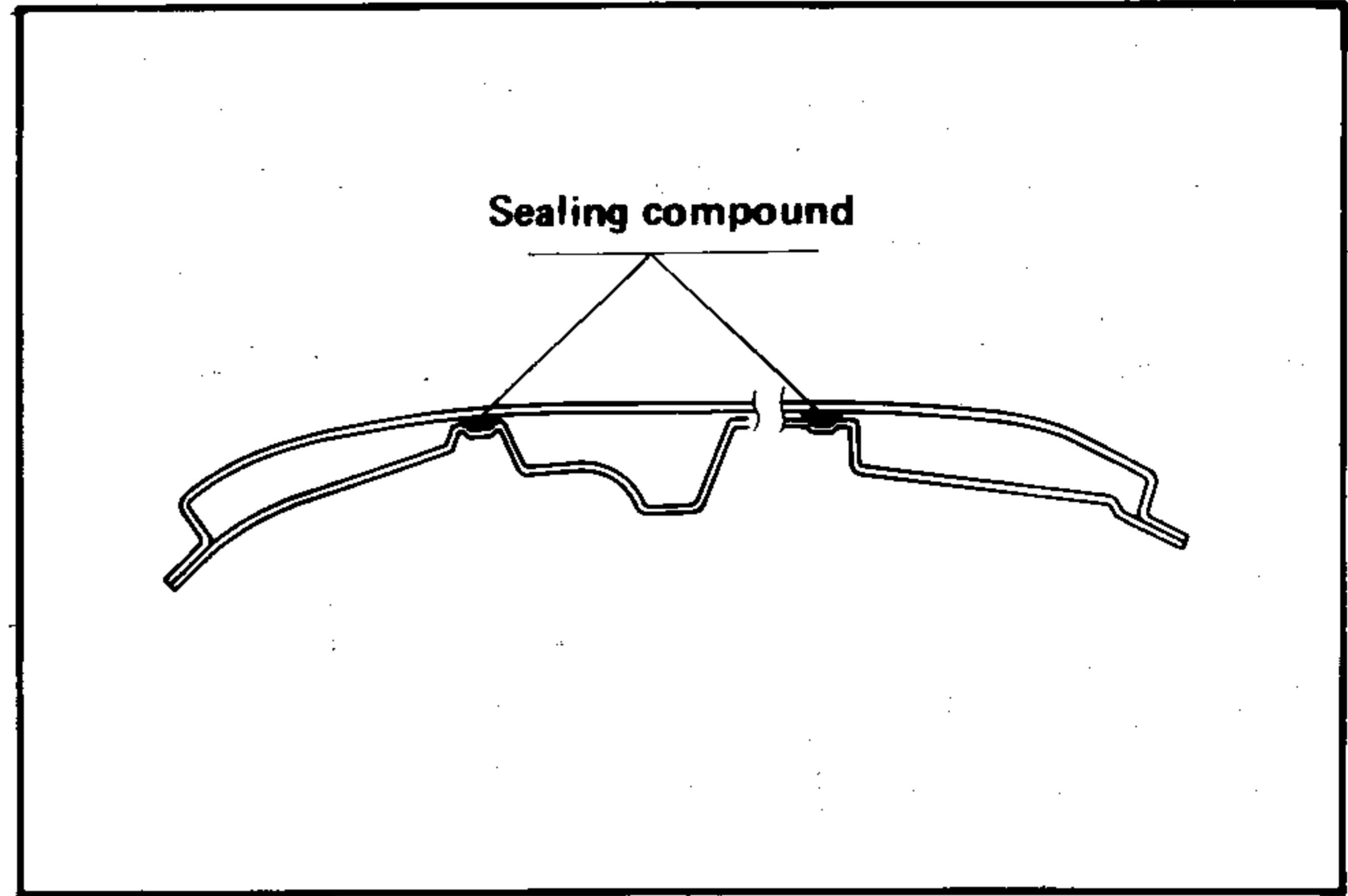
## BODY – SHEET METAL PANELS

- By means of an air chisel, cut the roof according to the line shown in the figure.

Take care not to cut the roof bows.



- Apply the specific sealing compound in the body grooves shown in the figure.

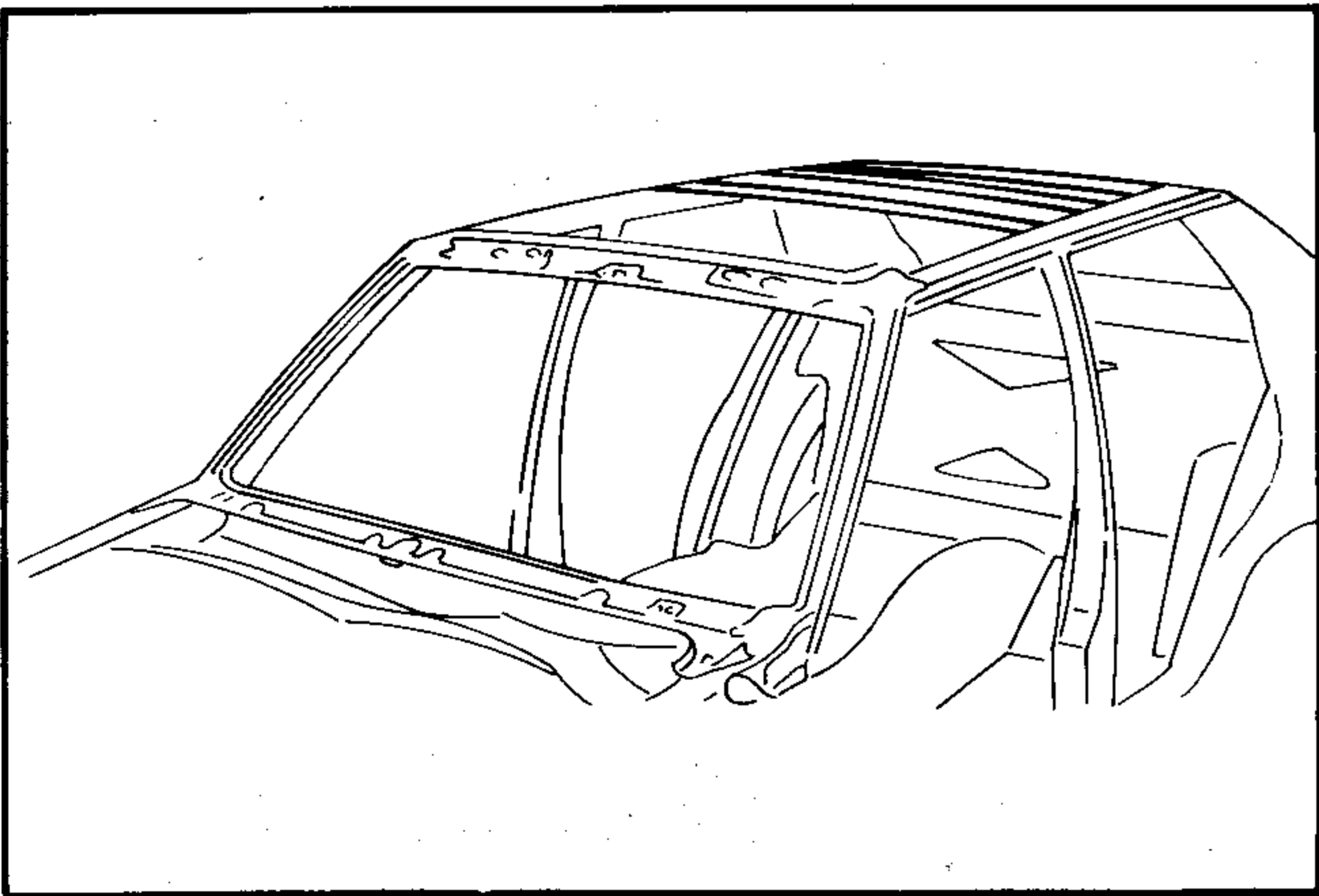


- Braze as necessary.

- By means of an air chisel, remove the welding spots and the remaining parts of roof from body.

### REMINDER WHEN INSTALLING

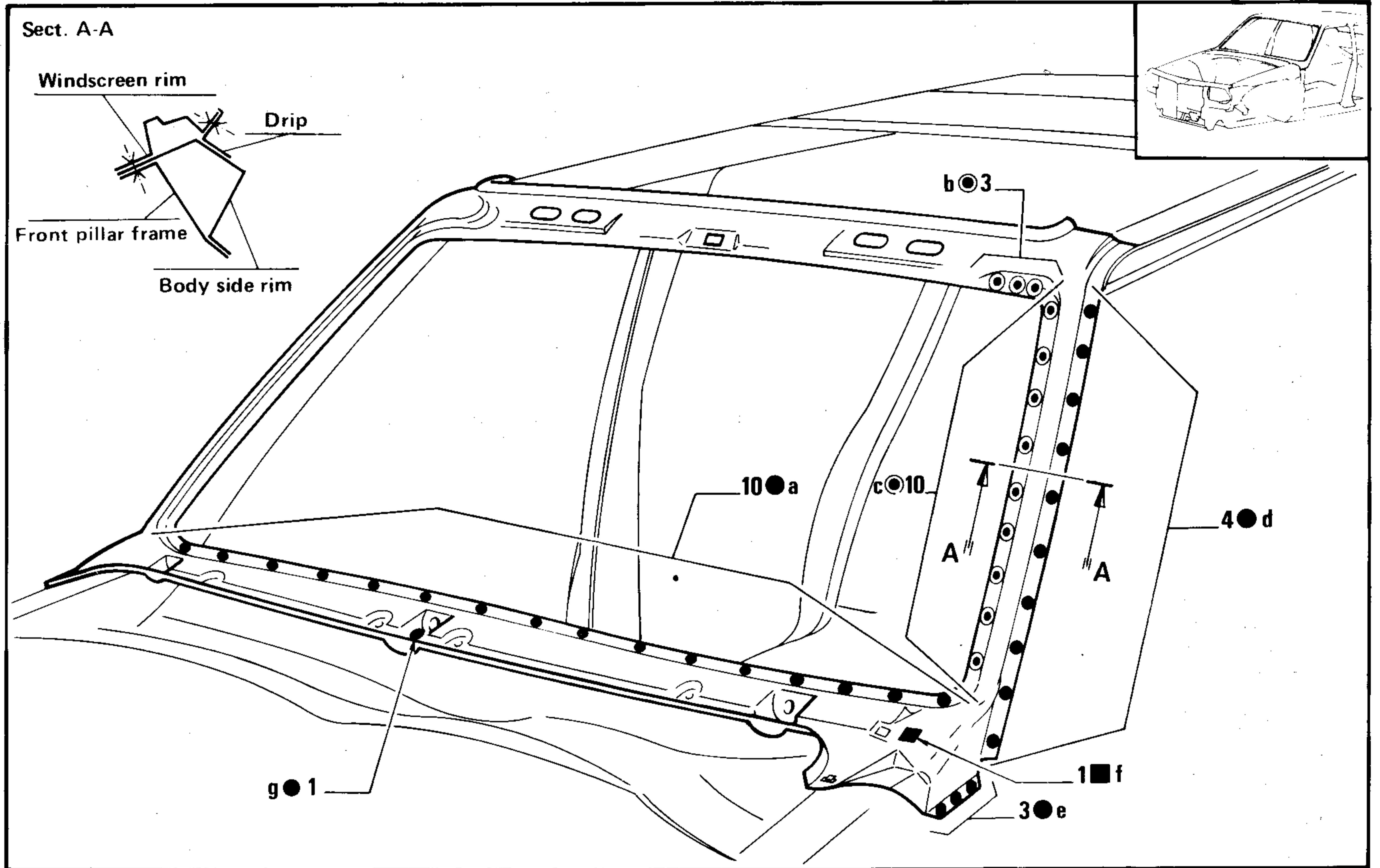
- Apply a suitable adhesive to roof bows.



**WINDSCREEN RIM WITH FENDER, BONNET HINGE, AND ROOF REMOVED**

Replacement is to be carried out after having removed Front Fender, Bonnet Hinge and Roof

**Service joints**

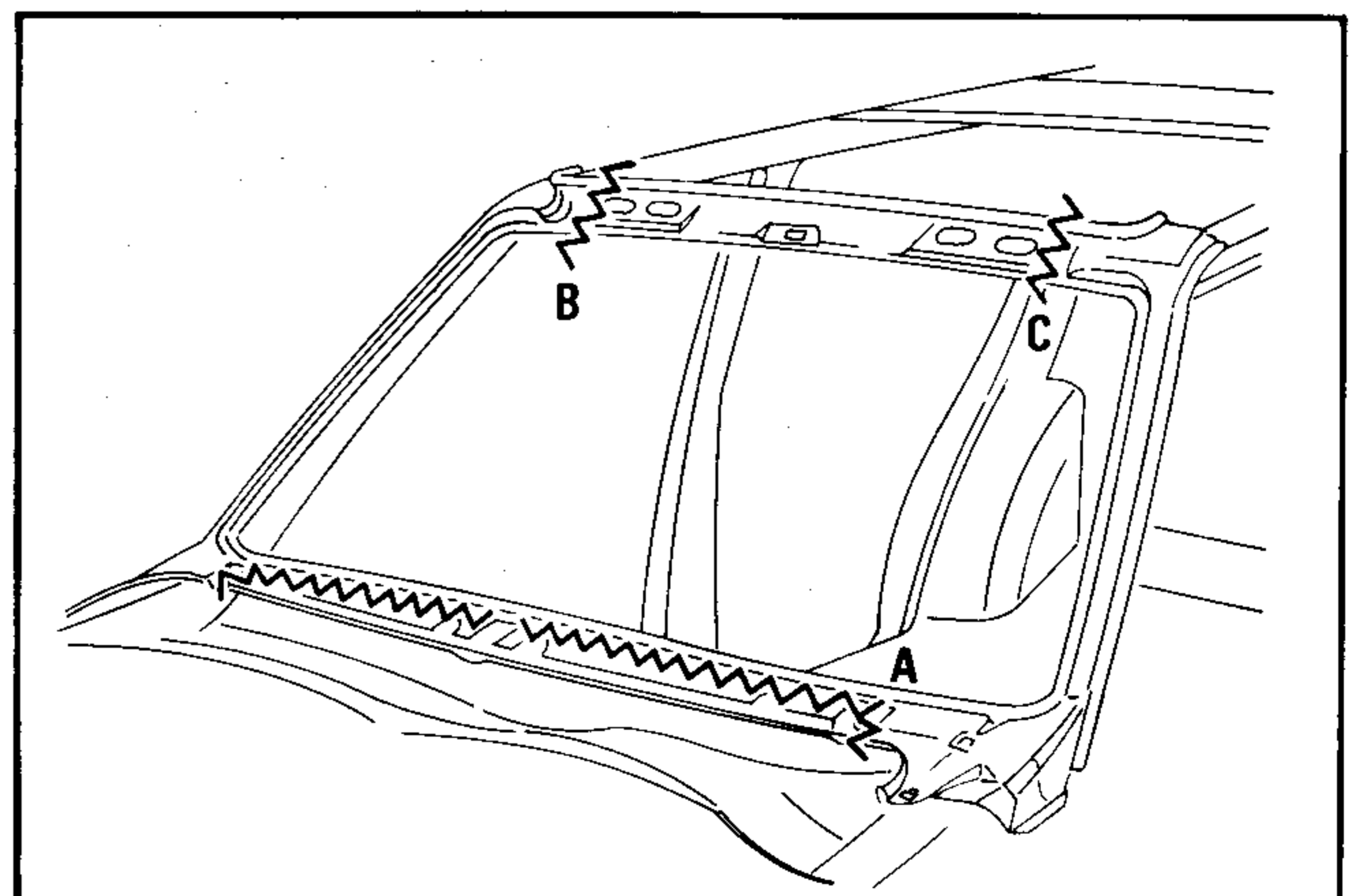


**Parts to be welded**

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>a. Windscreen rim and windscreen lower cross member</li> <li>b. Windscreen rim, front pillar frame, and body side rim</li> <li>c. Windscreen rim, front pillar frame, and body side rim</li> <li>d. Windscreen rim and drip</li> </ul> | <ul style="list-style-type: none"> <li>e. Windscreen rim and front pillar</li> <li>f. Windscreen rim and dashboard sidewall</li> <li>g. Windscreen rim and cowl top</li> </ul> |
|---|--|

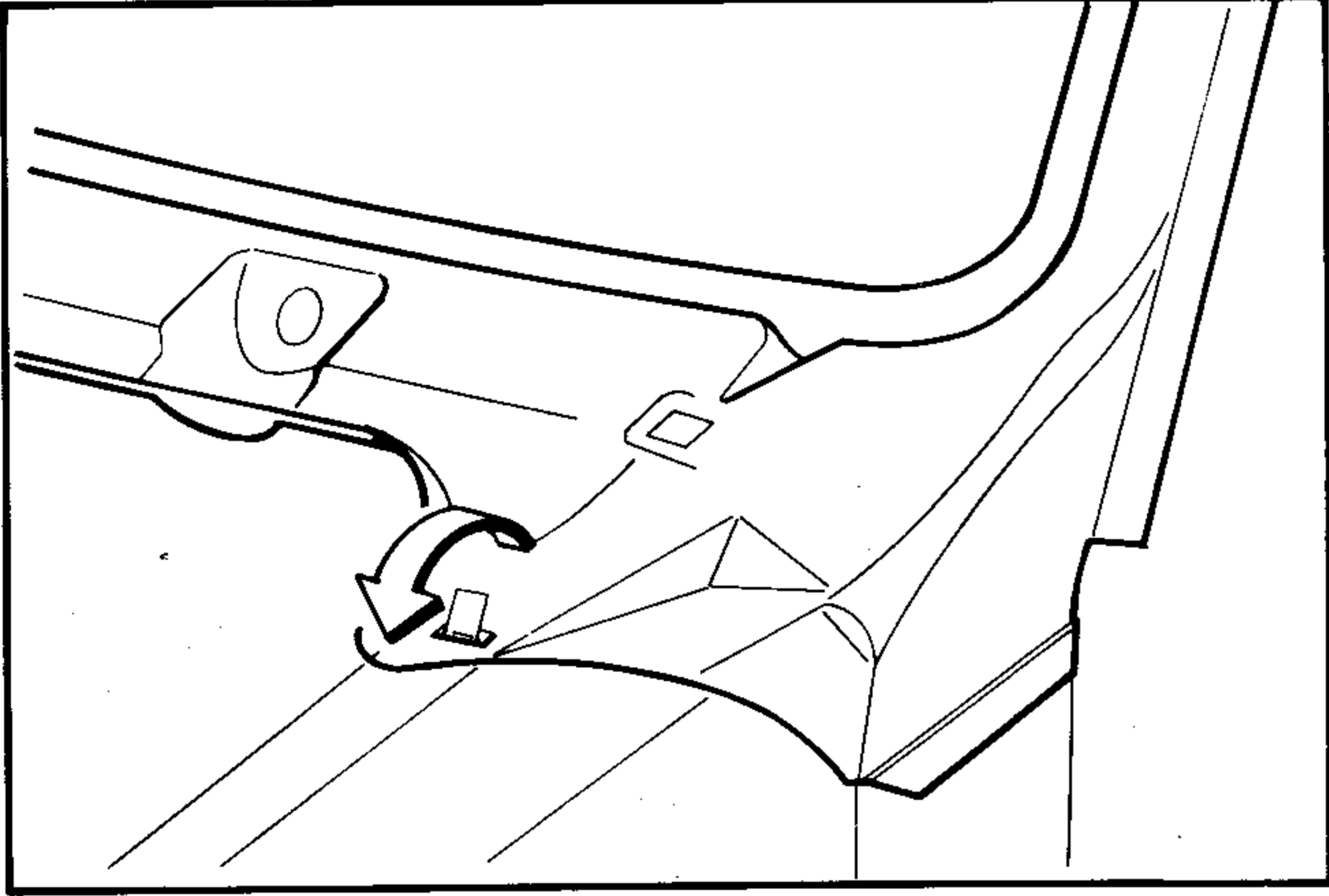
**REMINDER WHEN REMOVING**

- Cut the windscreen rim according to lines A, B and C shown in the figure.



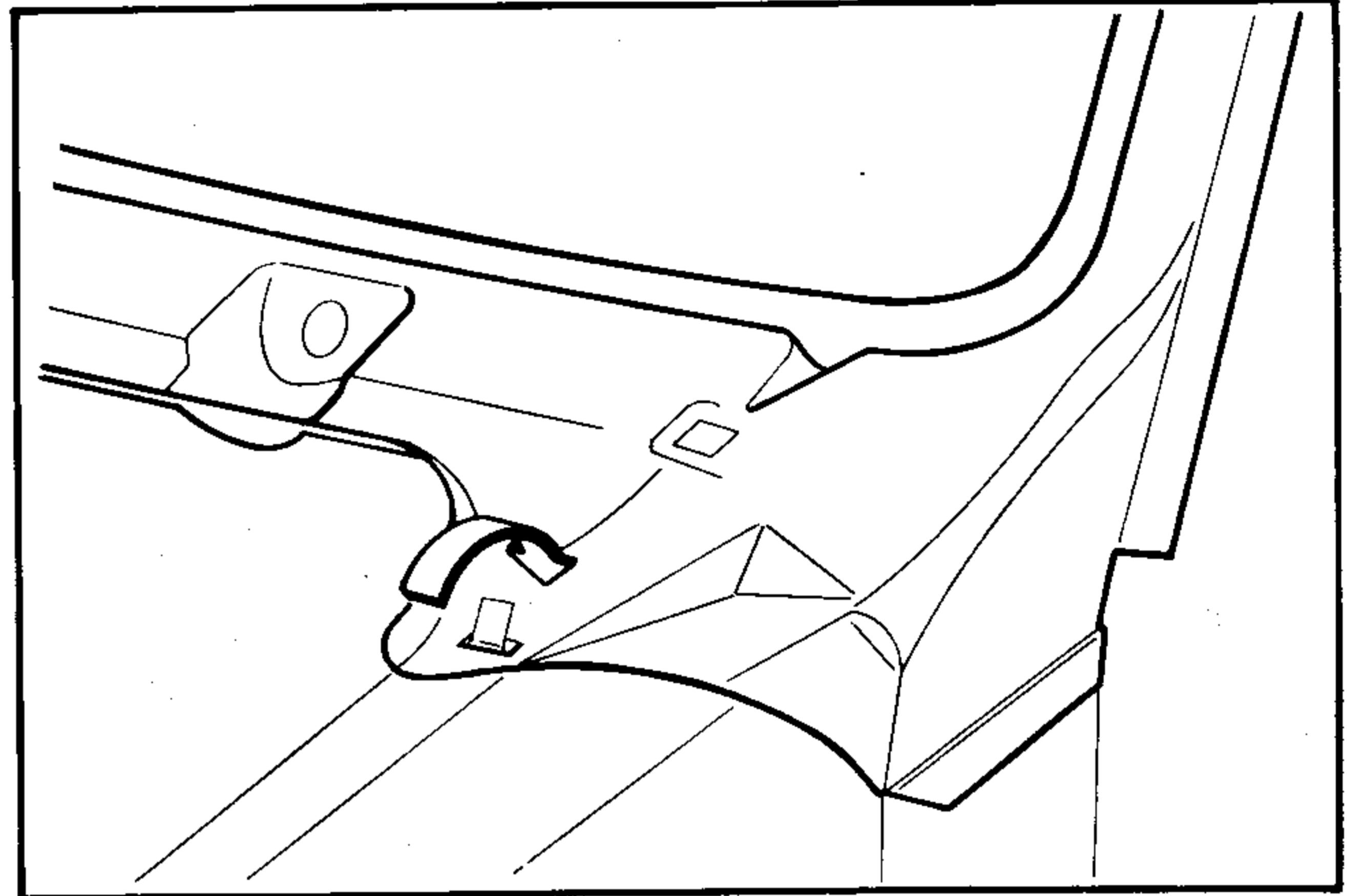
## BODY – SHEET METAL PANELS

- Lift the tab connecting windscreen rim to front valance.

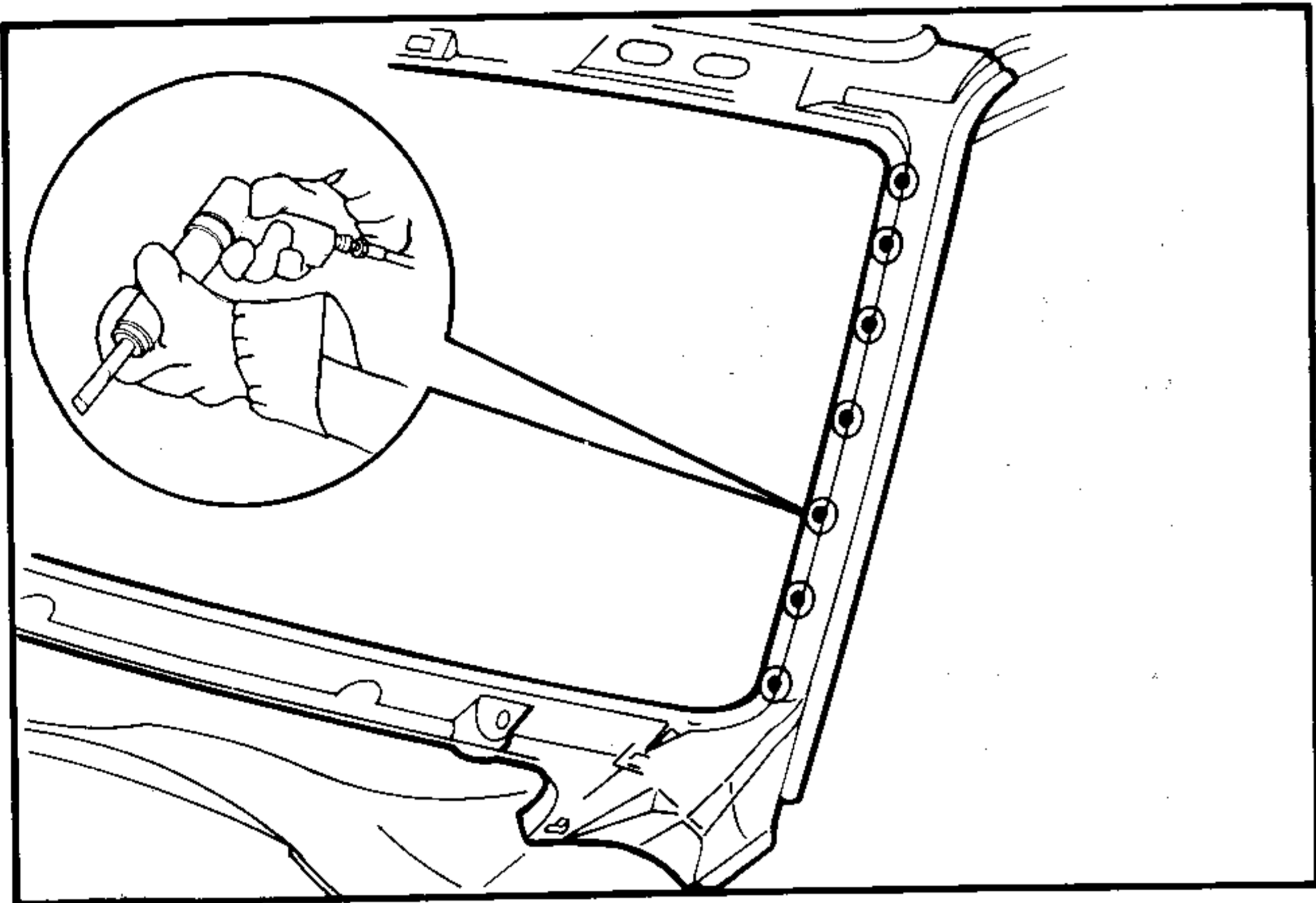


### REMINDER WHEN REMOVING

- Drill the new component in the points to be MIG plug welded.
- Position the windscreen rim correctly on body, inserting the front valance tab into the related slot.
- Bend the tab.



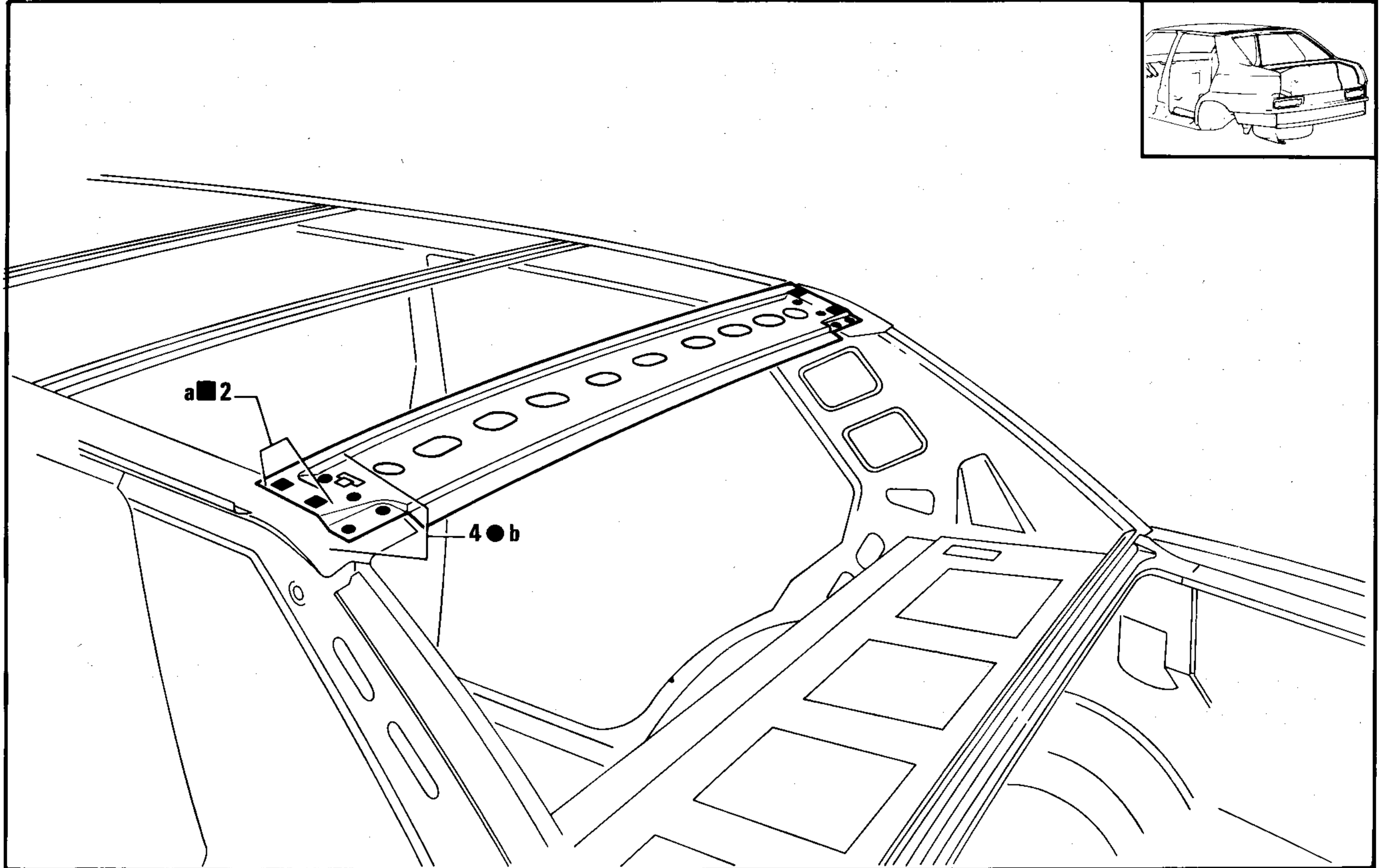
- By means of an air chisel, remove the remaining edges of windscreen rim from body.



## REAR WINDOW UPPER CROSS MEMBER WITH ROOF REMOVED

Removal is to be performed after having removed the Roof.

Service joints

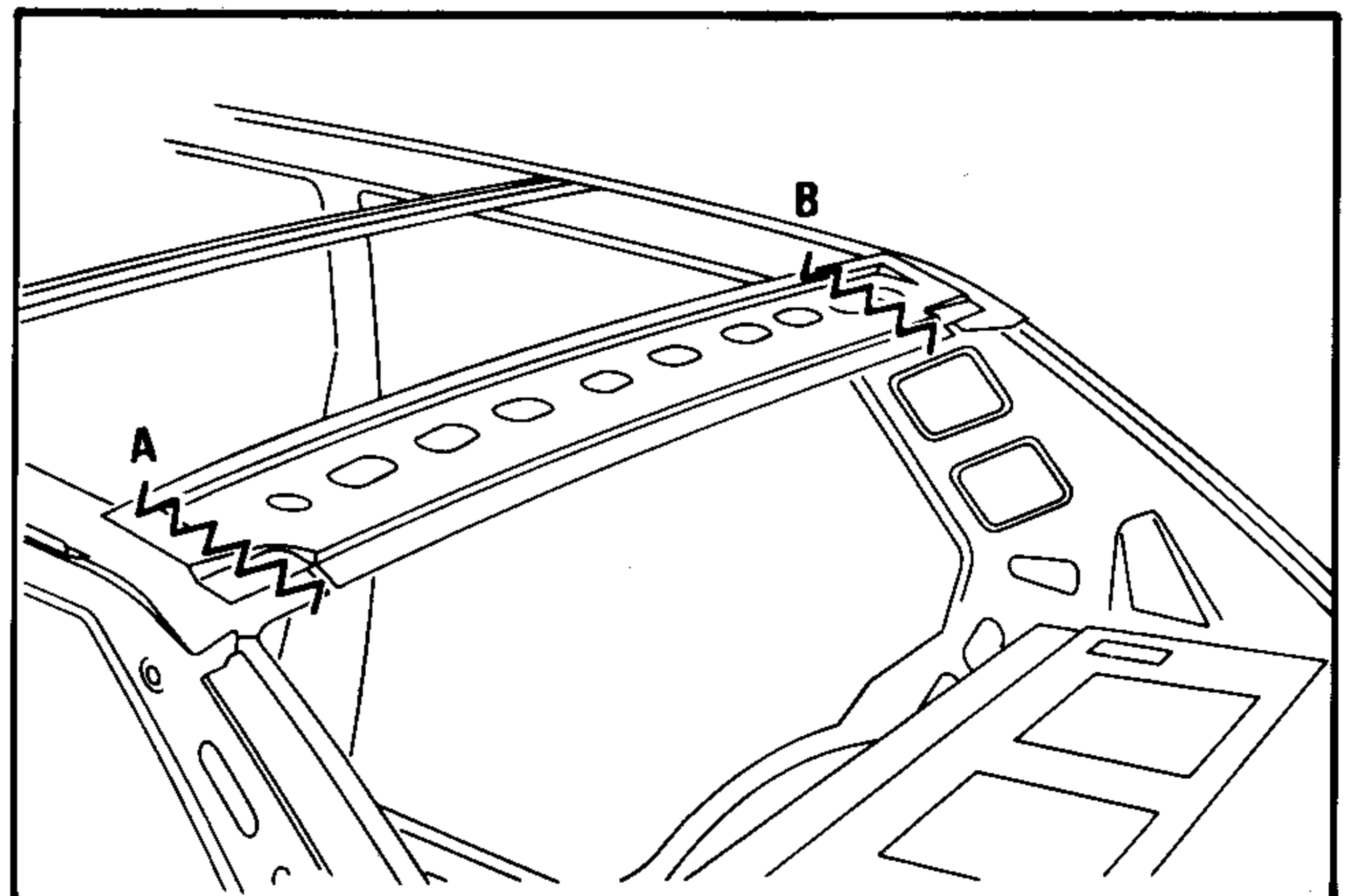


### Parts to be welded

- a. Rear window upper cross member, body side frame upper part, and body side
- b. Rear window upper cross member and body side frame upper part.

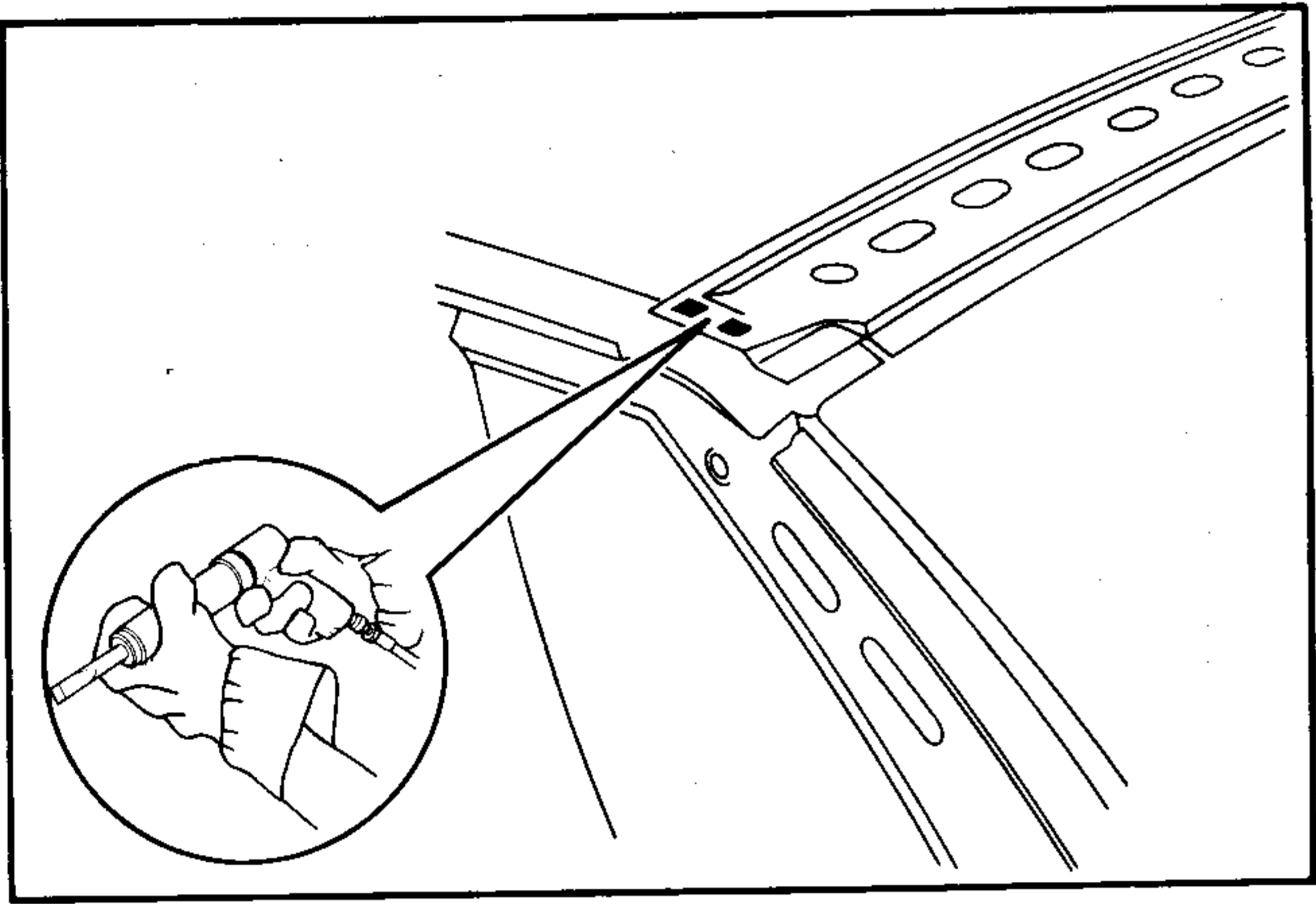
### REMINDER WHEN REMOVING

- By means of an air saw, cut the component according to lines A and B shown in the figure.



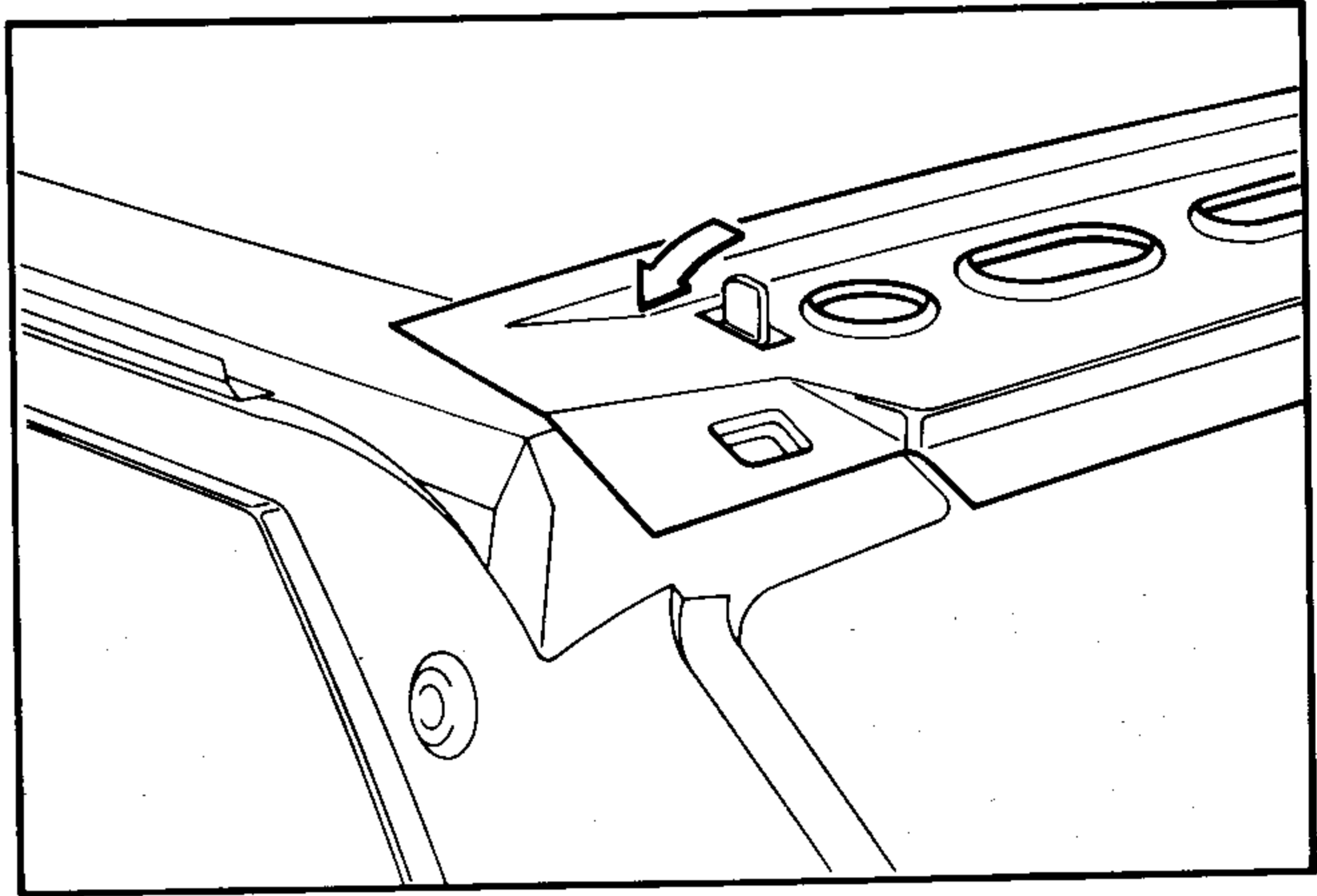
## BODY – SHEET METAL PANELS

- Use an air chisel to remove the welding spots.

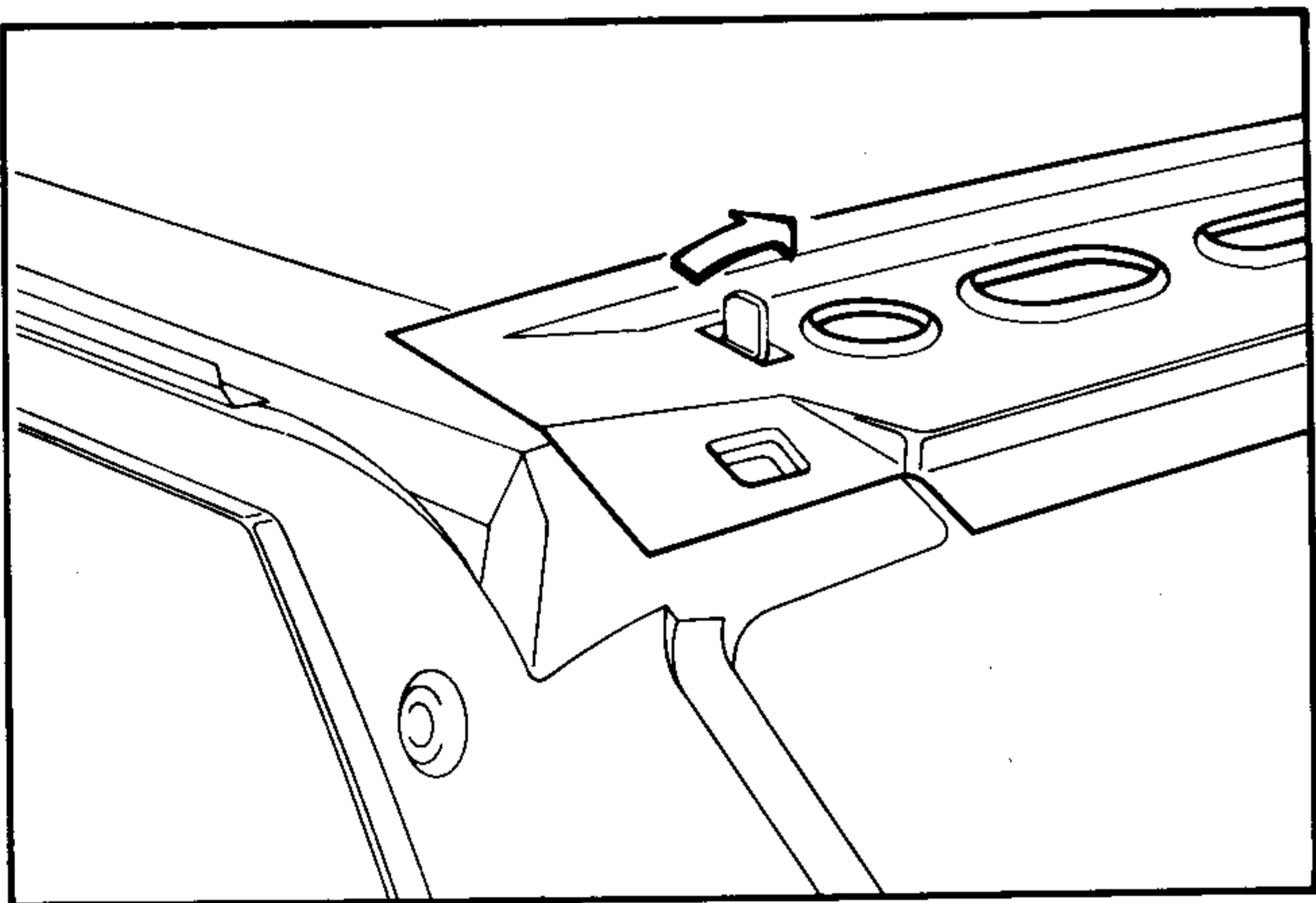


### REMINDER WHEN INSTALLING

- Position the cross member on body and bend the tabs as shown in the figure.



- Lift the tab shown in the figure and remove the remaining pieces of the rear window upper cross member.



- MIG plug weld the three overlapping sheet from both sides.

