PORSCHE

Technical Manual

911 Carrera (996)

Technical Information

Repair

Contents

Group 5
Body

WKD 483 521 09

Supplement Overview

Supplement	Edition	Topic	Article number
	05/1997	Basic edition	WKD483721
2	08/1997	General supplement	WKD483721.02
5	12/1997	General supplement	WKD483721.05
7	02/1998	Cabriolet scope	WKD483721.07
9	05/1998	Folder separation 5/6	WKD483721.09
11	05/1998	General supplement	WKD483721.11
13	06/1998	General supplement	WKD483721.13
17	10/1998	General supplement	WKD483721.17
18	11/1998	General supplement	WKD483721.18
21	01/1999	General supplement	WKD483721.21
22	02/1999	Folder separation 6/7	WKD483721.22
23	02/1999	General supplement	WKD483721.23
25	03/1999	GT3 scope	WKD483721.25
26	10/1999	Folder separation 0	WKD483721.26
28	05/1999	General supplement	WKD483721.28
31	07/1999	General supplement	WKD483721.31
33	08/1999	General supplement	WKD483721.33
34	10/1999	General supplement	WKD483721.34
35	10/1999	Folder separation 9	WKD483721.35
42	08/2000	General supplement and changes in model year 2001	WKD483721.42
44	11/2000	Body repairs	WKD483721.44

Table of Contents

5 Foreword

Foreword

This manual contains Technical Information as well as instructions on repairs for Porsche vehicles. It is intended for the sole use of workshops belonging to Porsche AG.

The descriptions form the basis for professional and correct maintenance and repair work. The content of the work procedures described is based on the level of training of a fitter who has completed vocational training and has a sound knowledge of the product. This level of knowledge is necessary in order to carry out the work described.

Warning notes

The warning notes and safety instructions are classified by the respective signalising word (Danger, Warning, Caution) beside the warning symbol.

Danger!

Warns against death or very serious injury which will certainly occur if the instructions are not observed.

Warning!

Warns against death or very serious injury which may occur if the instructions are not observed.

Caution!

Warns against minor injury or damage to property if the instructions are not observed.

To prevent injury and restricted operating and traffic safety of the vehicle, or damage to the vehicle as the result of incorrect work, read these instructions carefully and observe them without fail.

It is not possible for Porsche AG to give a detailed evaluation of all danger situations for the persons carrying out the work. It is therefore imperative that all persons carrying out repair and maintenance work on Porsche vehicles use their specialist knowledge to ensure that their own safety is not at risk and the procedure chosen will not have any negative effects on the vehicle - especially with regard to safety.

It is therefore expressly specified that all work involved in the work procedures described should be carried out only in accordance with the valid guidelines and regulations of the local authorities responsible with respect to health and accident prevention and environmen-

tal protection, and in compliance with the legal requirements of individual countries.

Notes

Notes contain advisory information related to the work procedure which makes the fitter's work easier. The following pictogram indicates this information:

Note!

Contains advisory information which makes the work procedure easier.

Due to the continuous development and improvement of our vehicles, there may be discrepancies between the actual technical status of the vehicles and the work descriptions. Any existing deviations are corrected by means of supplements, and the scope of the descriptions is extended with supplements.

Porsche AG retains the right to implement changes at any time and without prior notice.

Use

The workshop documentation for the "911 Carrera (996)" model has the designation "911 Carrera (996) Technical Manual" and contains Technical Information as well as instructions on Repairs.

The integration of the technical information published in the "911 Carrera (996)" Technical Manual with the instructions on repairs provides the user with a complex reference work that combines into one book associated or cross-referenced material of relevance to workshops and originating from various information media.

The "911 Carrera (996)" Technical Manual consists of 15 folders, subdivided into the following Groups.

- 0 Entire vehicle - General
- 0 Diagnosis, part 1 (up to Repair Group 45)
- 0 Diagnosis, part 2 (as of Repair Group 69)
- 1 Engine, part 1 (up to Repair Group 13)
- 1 Engine, part 2 (as of Repair Group 15)
- 2 Fuel, exhaust, engine electronics
- 3 Transmission, manual transmission
- 3 Transmission, automatic transmission
- 4 Running gear
- 5 Body
- 6 Body equipment, exterior
- 7 Body equipment, interior
- 8 / 9 Air conditioning / Electrics
- 9 Circuit diagrams, part 1 (up to and including '99 model)
- 9 Circuit diagrams, part 2 (as of and including '00 model)

The two folders with Group 0 are to be regarded as one folder; i.e. file the "Technical Information" notices only in the folder "Group 0 Diagnosis, part 1" **-up to Repair Group 45-**.

The second folder Group 0 Diagnosis, part 2 **-as of Repair Group 69-** includes the further Repair Groups belonging to Group 0.

The two folders with Group 1 are to be regarded as one folder; i.e. file the "Technical Information" only in front of the repair descriptions in the folder Group 1 – Engine, part 1 **-up to Repair Group 13-**.

The second folder Group 1 Engine, part 2 **-as of Repair Group 15-** includes the further Repair Groups belonging to Group 1.

The two folders with Group 9 are to be regarded as one folder; i.e. file the "Technical Information" notices only in the folder Group 9 Circuit diagrams, part 1 **-up to '99 model-**.

The second folder Group 9 Circuit diagrams, part 2 **-as of '00 model-** includes the further Repair Groups belonging to Group 9.

The "911 Carrera (996)" Technical Manual has the same structure in each folder, with the following breakdown for all Groups:

Title page: "911 Carrera (996)" Technical Manual

- Foreword

Title page: "Technical information"

- Table of contents, Technical Information
- Technical Information

Title page: "Repair"

- Overview of repair groups
- Table of contents, repair
- General / technical data
- Description of repairs

As can be seen from the breakdown, the published Technical Information is in the front part of each folder – numbered according to the Groups. The Table of Contents assigned to each Group will be periodically updated.

Following the Technical Information, separated by a title page, the instructions on repairs – assigned according to the Groups or broken down into Repair Groups – are included in the folders.

The instructions on repairs will be extended and updated by means of supplements.

Note!

Sheets that already exist in the "911 Carrera (996)" Technical Manual and are updated or revised and thereby exchanged by a supplement are designated in the footer with the supplement number corresponding to the current version: e.g. "Printed in Germany ***- 2,- 2000"***

Note!

Due to a system modification in the Technical Literature production, the following procedures have changed in model year 2000:

1 - **The previous record sheet in the folder "0-General" and the supplement contents sheet -red sheet- have been omitted. A supplement overview now appears separately in each folder. The new supplement contents sheet can be destroyed after the supplement is filed in the folder.**

Note!

The supplement overview sheet is replaced with the relevant supplement in the corresponding folder and must no longer be maintained by hand.

2 - **The page numbering in the new and the replaced chapters are no longer continuous. Each new chapter is now given an additional chapter number followed by the page number e.g. -2 Page 11 ⇒ Rep. Gr. 0; General.**

3 - **The old page numbering still applies to existing chapters and those that are not replaced.**

Table of Contents

5 Body

5 Body - general

Safety instructions for body repair

Safety instructions for disassembling components

Warning!

Change in centre of gravity of vehicle when parts are removed!

Danger of injury and damage to vehicle if the vehicle falls from the lifting platform!

If the centre of gravity of the vehicle is changed as a result of removed components, the vehicle must be secured on the lifting platform!

Safety instructions for air conditioning

Caution!

Danger of fire due to the filled air-conditioning system heating up during welding and soldering work!

- *No welding, soldering or hot-air heating may take place on parts of the filled air-conditioning system!*
- *While drying after painting work, the temperature burden on the vehicle must not exceed two hours at a maximum temperature of 80 °C!*
- *Make sure that parts of the air-conditioning system do not heat up during welding or soldering work on the vehicle!*

Safety instructions for fuel tank

Caution!

Danger of fire due to fuel tank or fuel-carrying parts heating up during grinding and welding work!

When carrying out grinding and welding work near the fuel tank or fuel-carrying parts, make sure that these parts do not heat up!

It is recommended to remove endangered parts!

- *Adjacent parts must be covered!*

Safety instructions for paintwork, glass, upholstery, linings

⚠ Caution!

Danger of fire and danger of damage to battery, paintwork and glass due to flying sparks during body repair!

- *No other vehicles may be left unprotected in areas used for body repair!*

Safety instructions for airbag system

⚠ Warning!

Danger of injury if airbag units are triggered while ignition key is not removed!

- *Always remove ignition key during body work, and do not commence adjustment work until a waiting period of at least 1 minute has elapsed!*
- *The ground strap of the battery must be disconnected during work on the airbag system and alignment bench work within the framework of body repair!*

⚠ Warning!

Danger of injury if side airbag units in the door are triggered while ignition key is not removed!

- *Always remove ignition key during body work, and do not commence adjustment work until a waiting period of at least 1 minute has elapsed!*
- *The ground strap of the battery must be disconnected during work on the airbag system and alignment bench work within the framework of body repair!*

Safety instructions for door

⚠ Caution!

Danger of material damage if the door lock is installed incorrectly!

Malfunctions in the alarm system!

The door lock should be installed only when the actuating lever is in basic position!

Warning!

Danger of injury if side airbag units in the door are triggered while ignition key is not removed!

- *Always remove ignition key during body work, and do not commence adjustment work until a waiting period of at least 1 minute has elapsed!*
- *The ground strap of the battery must be disconnected during work on the airbag system and alignment bench work within the framework of body repair!*

Caution!

There is a danger of injury if fingers or hands are trapped by the door window when the comfort function is triggered: lower and raise door window!

When carrying out assembly work in the area of the connection piece (Item 3), the bottom part of the door handle (Item 4) and the door lock (Item 5), the fuse No. 1 in row D must be removed!

Caution!

Damage to plug connection lugs during door removal!

Damage to lugs when pulling the plug connection out of the A-pillar!

- *The locking element at the bottom part of the plug connection must be pulled out before the plug connection is disconnected!*

Caution!

Damage to the bowden cable when removing door trim panel!

Damage by bending the bowden cable at the hook!

Pull the hook out of the end piece only after installation in the inner door release!

Safety instructions for sliding roof

⚠ Caution!

Damage to water drainage channel and sliding roof mechanism when sliding roof panel is removed!

The rear water drainage channel or the sliding roof mechanism is damaged if the sliding/tilting roof trim is moved incorrectly!

- *The sliding roof panel must not be moved to the "Open" position when the sliding roof panel has been removed!*
- *In order to avoid damage to the guides of the sliding roof, the sliding/tilting roof panel (Item 4) must be moved without the use of force!*

Safety instructions for rear spoiler

⚠ Warning!

Danger of injury and danger of damage to hydraulic system if pressure is discharged suddenly!

The hydraulic system is under 30 bar pressure when the rear spoiler is extended!

No work must be carried out on the hydraulic system when the rear spoiler is extended!

⚠ Warning!

Danger of injury and danger of damage to the vehicle if handling is modified when adjusting the additional wing!

- *The additional wing must be moved to the lowest position for use in public traffic!*

Safety instructions for rear window

⚠ Caution!

Damage to surrounding section if rear window is removed incorrectly!

When cutting out the rear window, take care not to damage the surrounding section!

Caution!

Damage to rear window if curing time of adhesive is not observed!

- *The vehicle must not be used until the curing time has elapsed.*

In order to ensure that the bonded joint is sufficiently strong, the following boundary conditions must be adhered to:

- *Curing time: 3 hours*
- *Temperature: at least 10 °C*
- *Fixing time: approx. 1 hour*

Caution!

Wire strand can crack and melt off during heating if pressure frame is fitted incorrectly!

Rear window can be destroyed if pressure frame is fitted incorrectly!

- *The pressure frame must be in contact on all sides!*

Safety instructions for windscreen

Warning!

Danger of injury and danger of damage to windscreen if curing time of adhesive is not observed!

- *The vehicle must not be used until the curing time has elapsed.*

In order to ensure that the bonded joint is sufficiently strong, the following boundary conditions must be adhered to:

- *Curing time: 3 hours*
- *Temperature: at least 10 °C*
- *Fixing time: approx. 1 hour*

Caution!

Danger of damage to surrounding section and to the label with the vehicle identification number if rear window is removed incorrectly!

- *When cutting out the rear window, ensure that the surrounding section and the label with the vehicle identification number are not damaged!*

Safety instructions for heat shields

⚠ Caution!

Danger of heat accumulation if deformed heat shields are assembled near the rear spoiler and rear bumper!

- *Damaged or distorted heat shields must be straightened or replaced!*

Safety instructions for cabriolet convertible top

⚠ Caution!

Damage to tension bow seal if convertible top is actuated electrically in service position!

- *The convertible top must no longer be electrically moved in service position!*

⚠ Caution!

Damage to convertible-top frame if not running synchronously during bleeding!

- *The hydraulic system can be bled only if the hydraulic cylinders are removed from the convertible-top supports and drive levers on both sides!*

⚠ Caution!

Short circuit and burns on convertible top if wire strands are crossed!

Wire strands must not be crossed!

⚠ Caution!

Damage to or destruction of convertible top in the case of electrical actuation when convertible top is removed!

- *The convertible top must no longer be electrically operated when the convertible-top support is detached!*

Safety instructions for roll-over protection system

Warning!

Danger of injury if roll-over bar is actuated when roll-over bar module is being removed!

- *Remove the roll-over bar modules only after the roll-over bar has been extended (triggered)!*

Safety instructions for plug location plan (body)

Caution!

Danger of corrosion and of unwanted water penetration when removing plugs!

The body apertures are sealed with plugs in the factory, and must be resealed with the plugs provided following disassembly or repair work!

Safety instructions for water drains (body)

Caution!

Water drainage hoses can be pushed out or pressed in by blowing them out of the body during cleaning!

- *The water drainage hoses must be blown out carefully during cleaning using compressed air!*

Safety instructions for welding

Caution!

Irritation to respiratory tracts from toxic zinc oxide emitted when welding galvanized steel!

- *The work area must be well ventilated!*
- *Smoke gases must be removed with a suitable extraction system! (Refer to Workshop Equipment Manual, Group 5).*

Safety instructions for Teromix-6700 two-component adhesive

⚠ Caution!

Danger of damage to side section if binding time of adhesive is not observed!

- *The new part must be welded in within 30 minutes!*

Safety instructions for hydraulic system

⚠ Caution!

Danger of damage to hydraulic system if hydraulic lines are bent, trapped or crushed during installation!

- *Do not bend, trap or crush hydraulic lines during installation!*

Safety instructions for hardtop

⚠ Caution!

Danger of crushing and trapping of components in the case of intervention in the hardtop mechanism!

The hardtop must be raised evenly on both sides!

⚠ Caution!

Damage to the hardtop lining and windstop if the procedure is carried out incorrectly!

- *The windstop must be removed before fitting the hardtop!*

⚠ Caution!

Damage to the rivet connections of the hardtop body if the rear window is cut out incorrectly!

- *When cutting out the rear window, make sure to cut close to the rear window!*

Safety instructions for belt strap holder

Caution!

Danger of impact with the belt strap holders fitted on wheel!

- ***Pay attention to the two projecting belt strap holders when working on the vehicle!***

Caution!

Damage to the adhesive when entering or leaving the vehicle during the hot-melt process and the cooling time!

Belt strap tension changes due to entering and leaving the vehicle!

- ***Do not enter or leave the vehicle during the hot-melt process and the cooling time!***

General information and quality notes

Electronic control modules

Note!

If electronic components, e.g. ABS control module, have been removed for repair work and are then reused, they must be given a functional check after installation in accordance with the existing specifications!

Protection against overvoltage

To protect electronic control units from overvoltage during electric arc welding, the following work regulations must be observed:

- When welding work is extensive, the electronic control units must be removed. Ensure that there are no electrically insulated parts between the earth connection and the welding point.
- Remove clamp from negative terminal of battery and cover negative terminal of battery.
- Connect the earth connection of the electric arc welding equipment as near as possible to the welding point on the part to be welded.
- Do not touch electronic control units or electric cables with the earth connection or the welding electrode.

Replacing control modules

The replacement of electronic control modules after an accident is necessary if at least one of the following conditions is met:

- The housing is noticeably deformed or damaged.

  The supporting surface or bracket is deformed (the unit shows no external damage).
- The plug connection is damaged or corroded by moisture.
- Functional checks on or self-diagnosis of the unit reveals the fault "Control module faulty".

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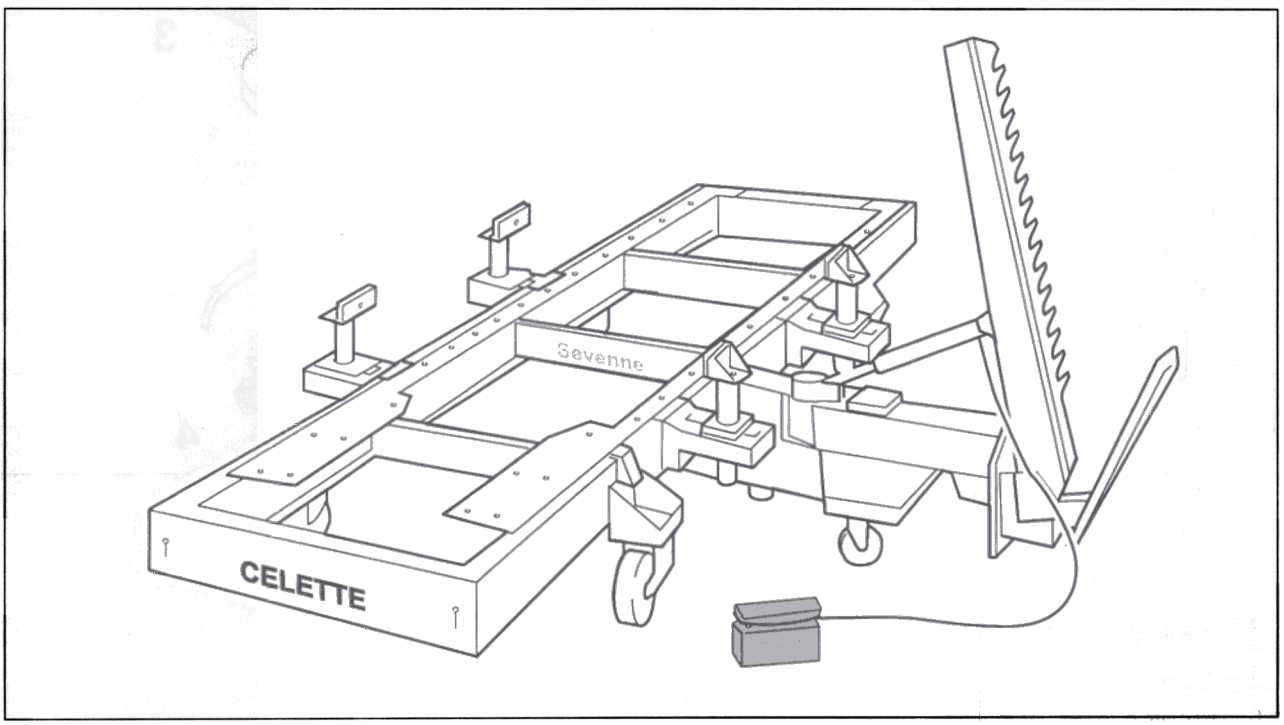
Tools and metalworking tools for body repairs

Note!

Detailed and additional information about tools and equipment can be found in the "Workshop Equipment" manual.

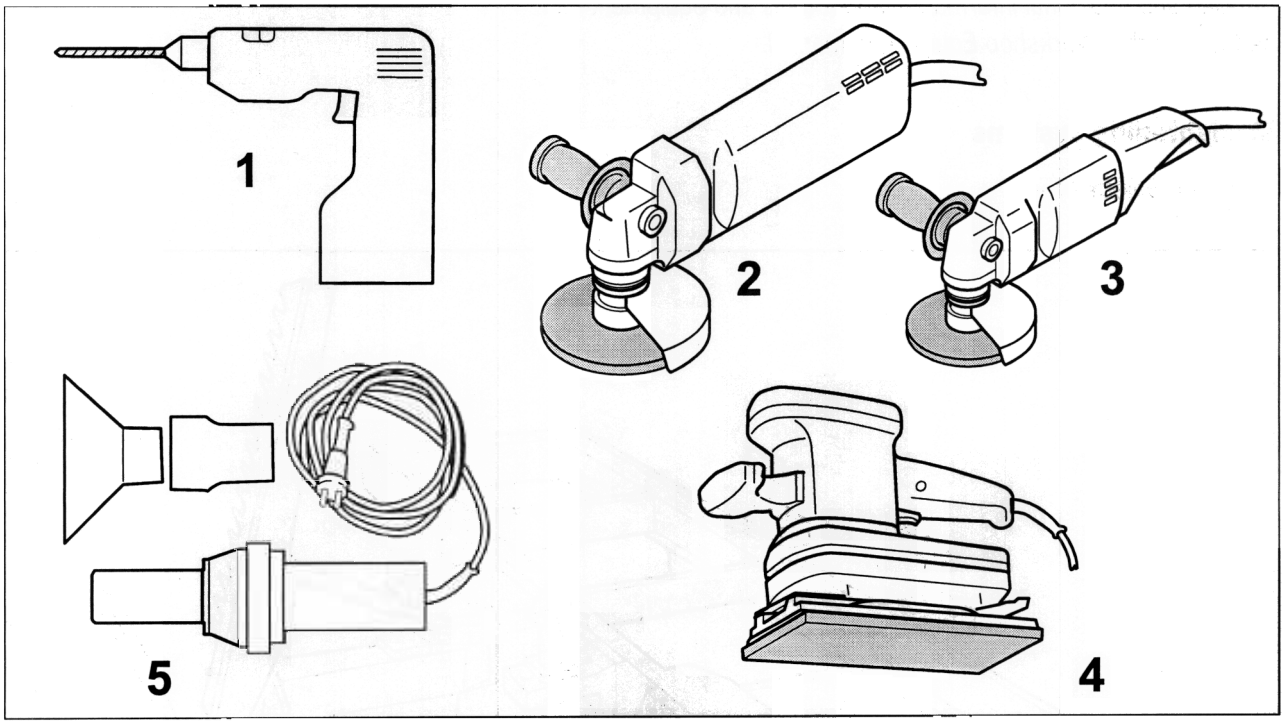
Straightening systems

Shown on Celette type



Metalworking tools

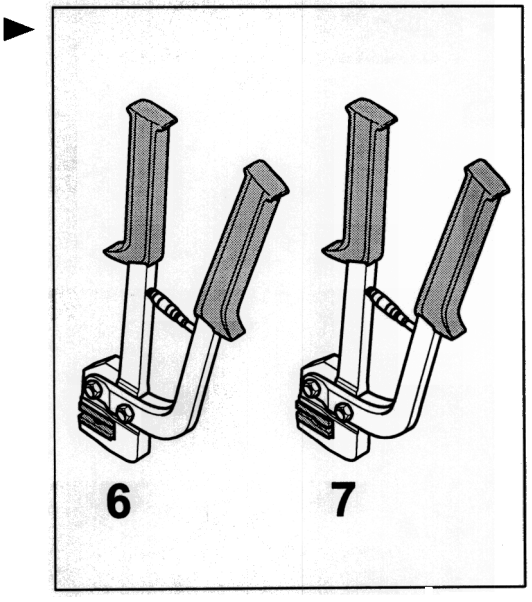
Electrical equipment



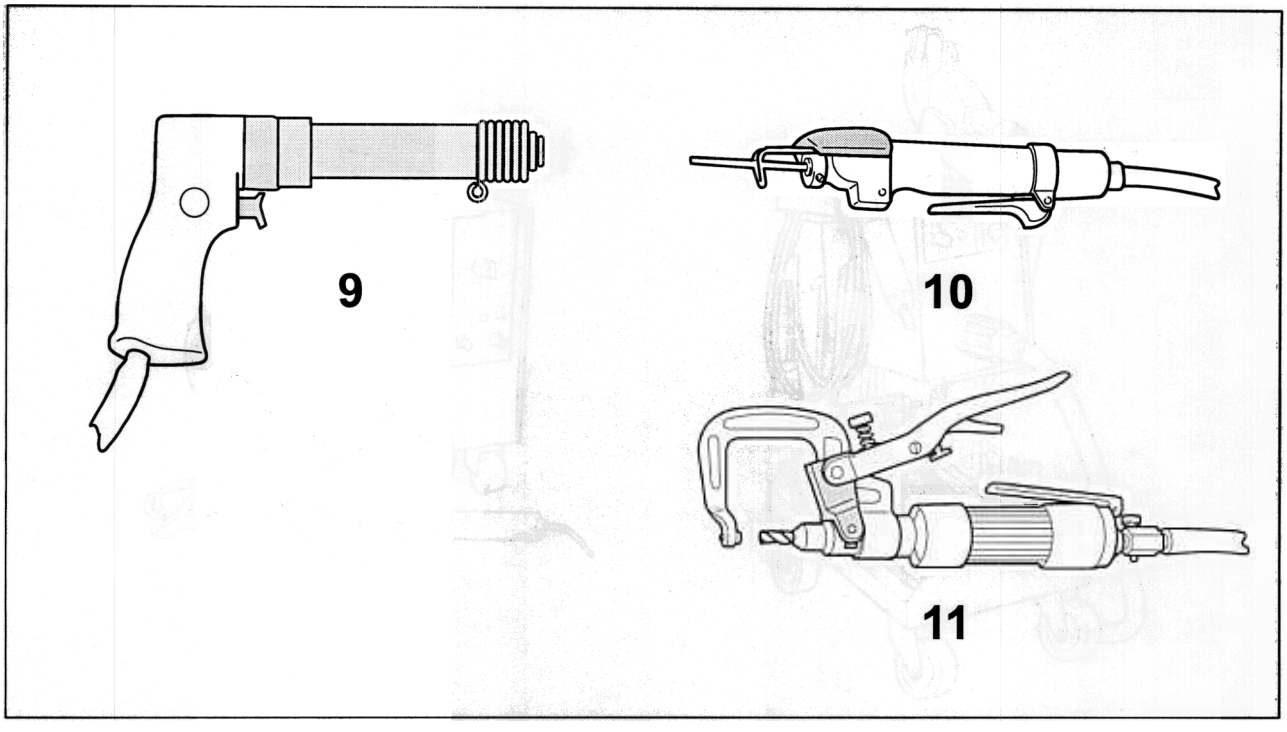
1 - Drill
2 - Angle grinder, large
3 - Angle grinder, small
4 - Sander
5 - Hot-air gun

Mechanical equipment

6 - Hole punch
7 - Edge setter

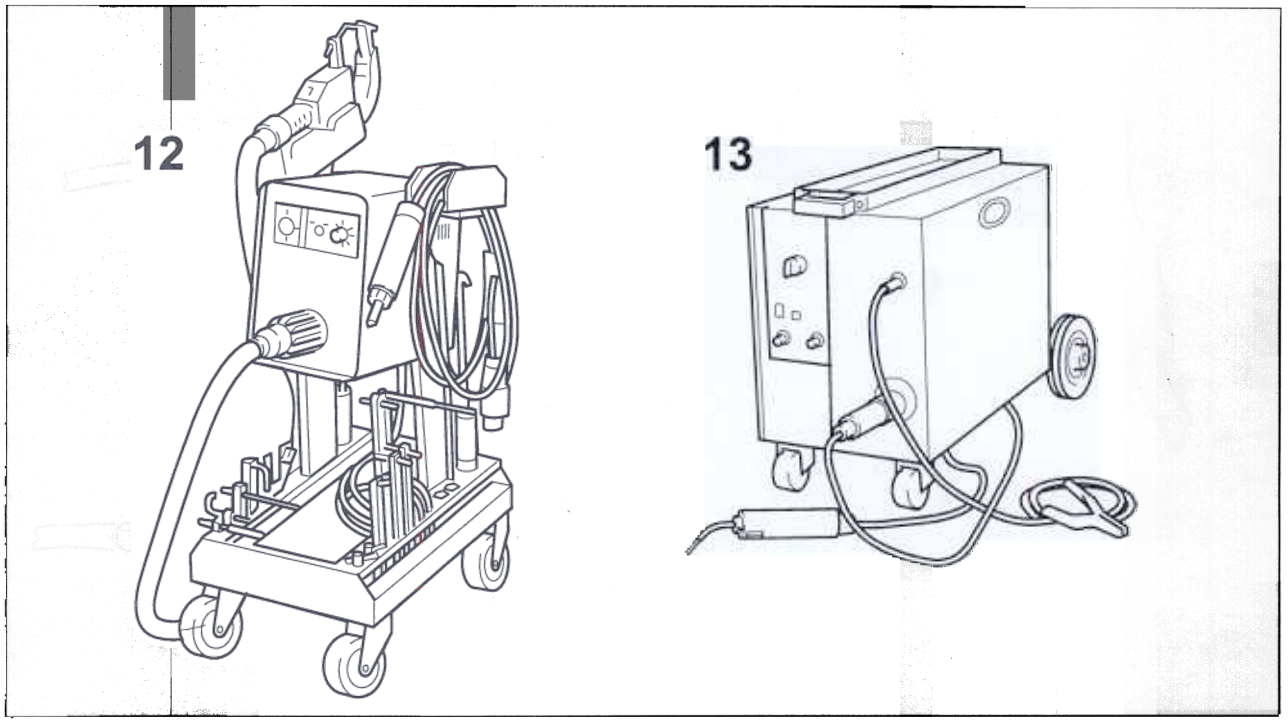


Compressed-air equipment



9 - Air chisel
10 - Body saw
11 - Spotweld cutter

Welding equipment

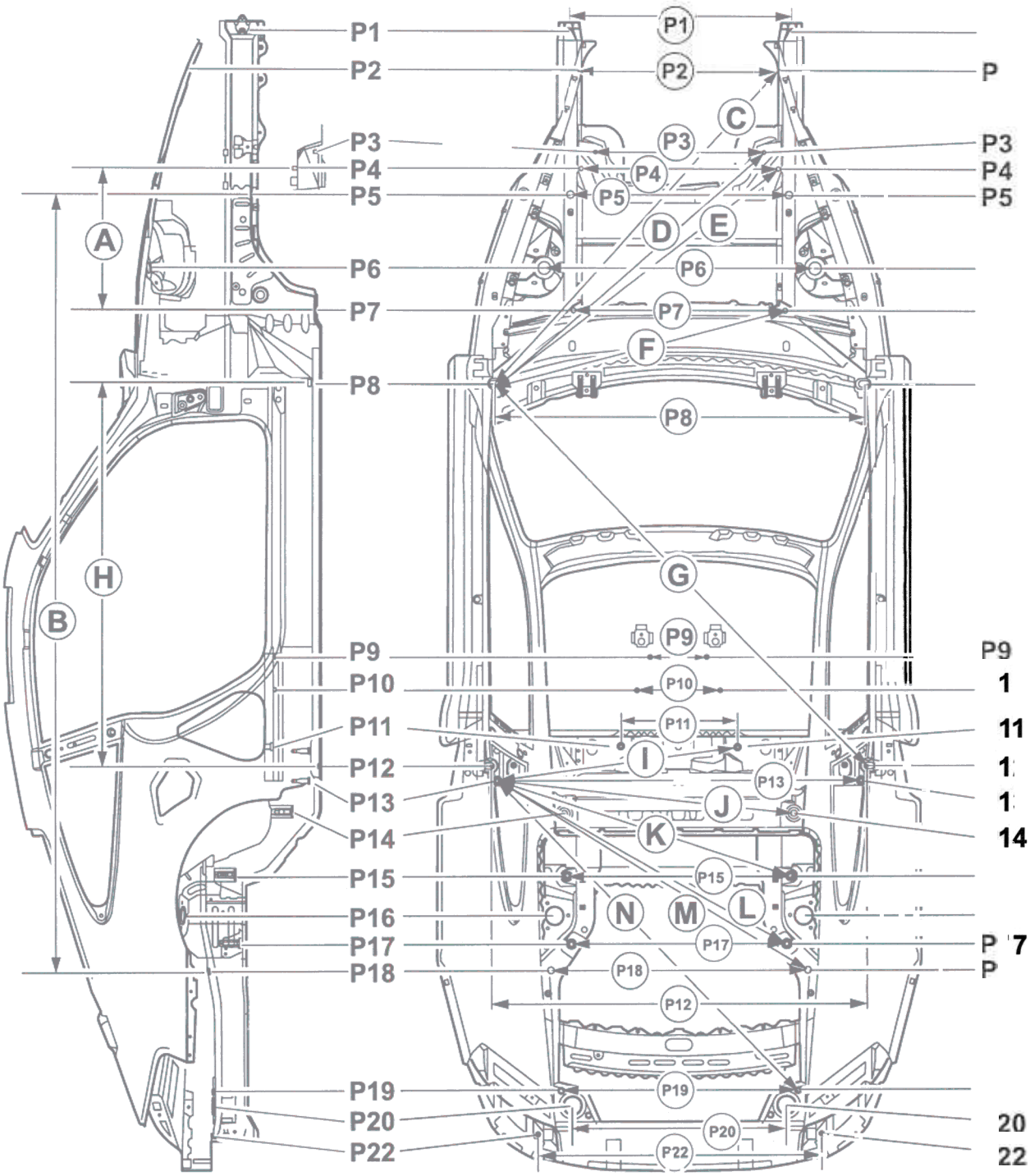


12 - Multispot spot-welder

13 - MIG welder

C eck d mension for body repair

Floor ssembly ntrol dime si th 996 Carrera mode to odel yea 2000



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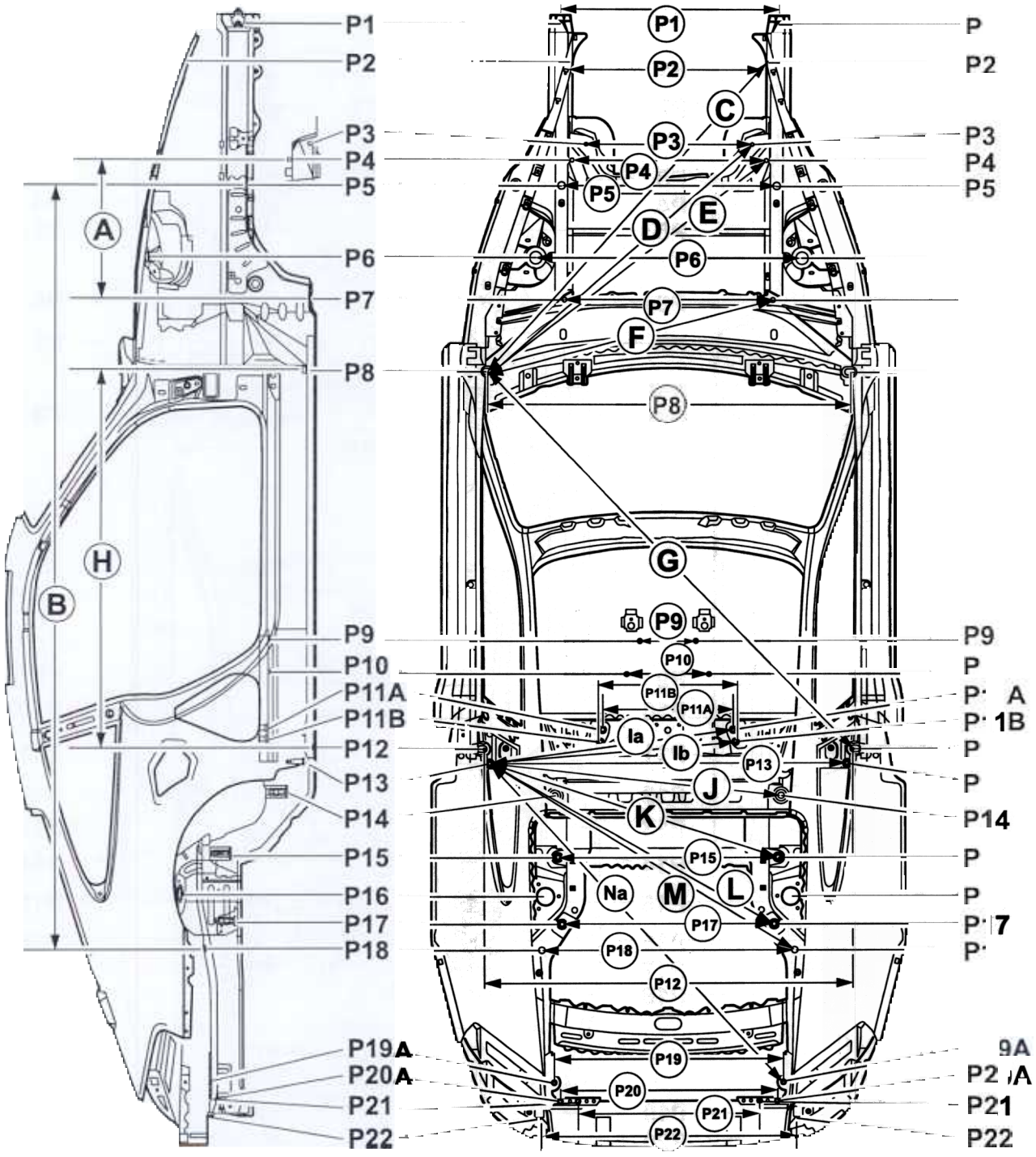
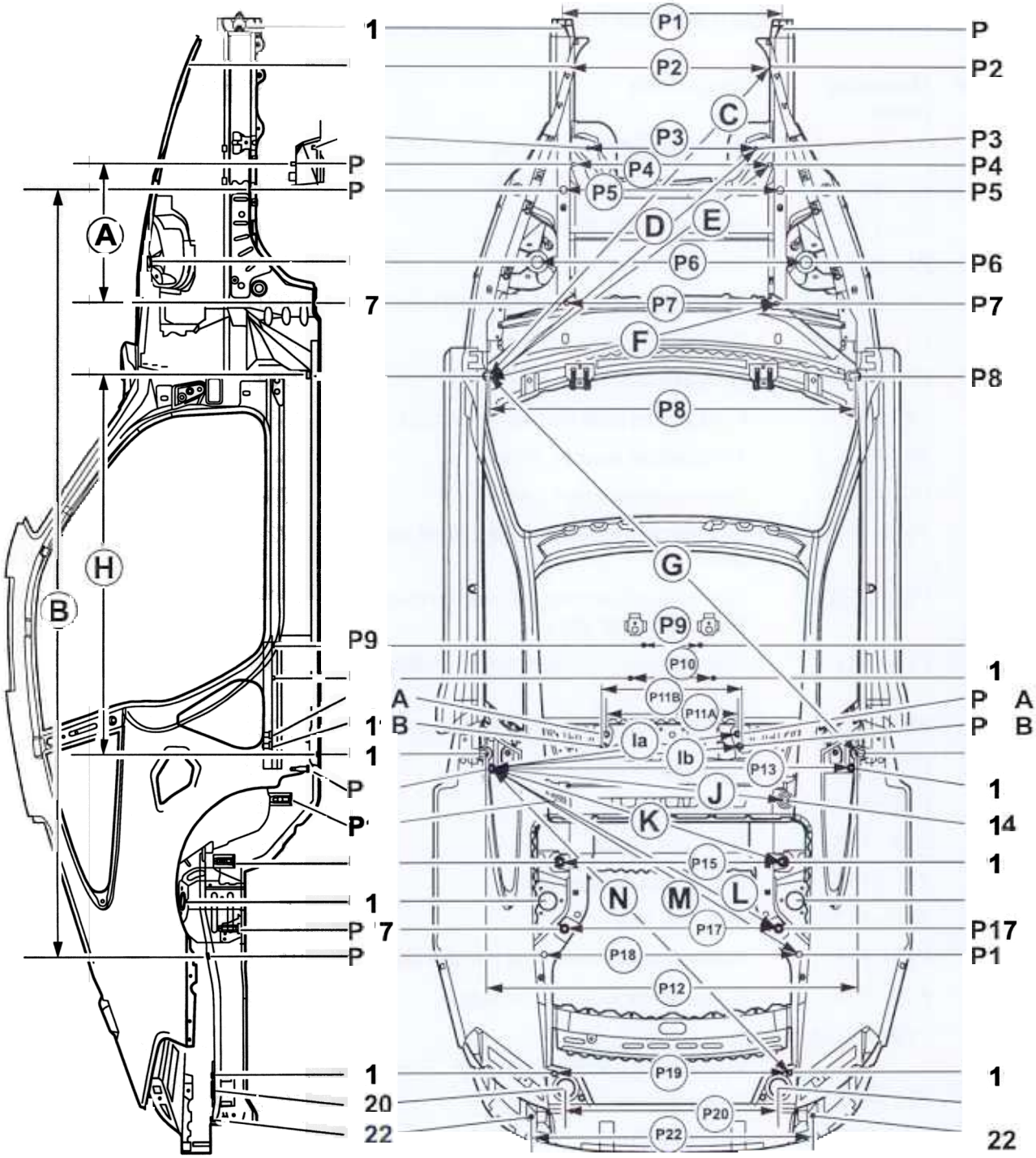
Floor asembly control dimension: f th GT3 model



Floor assembly control dimensions for the 996 Carrera model from model year 2001



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Note!

All dimensions are measured to the middle of the hole or screwed point. The dimensions are measured directly and, therefore, are oblique dimensions. Dimensions in brackets are measured horizontally.

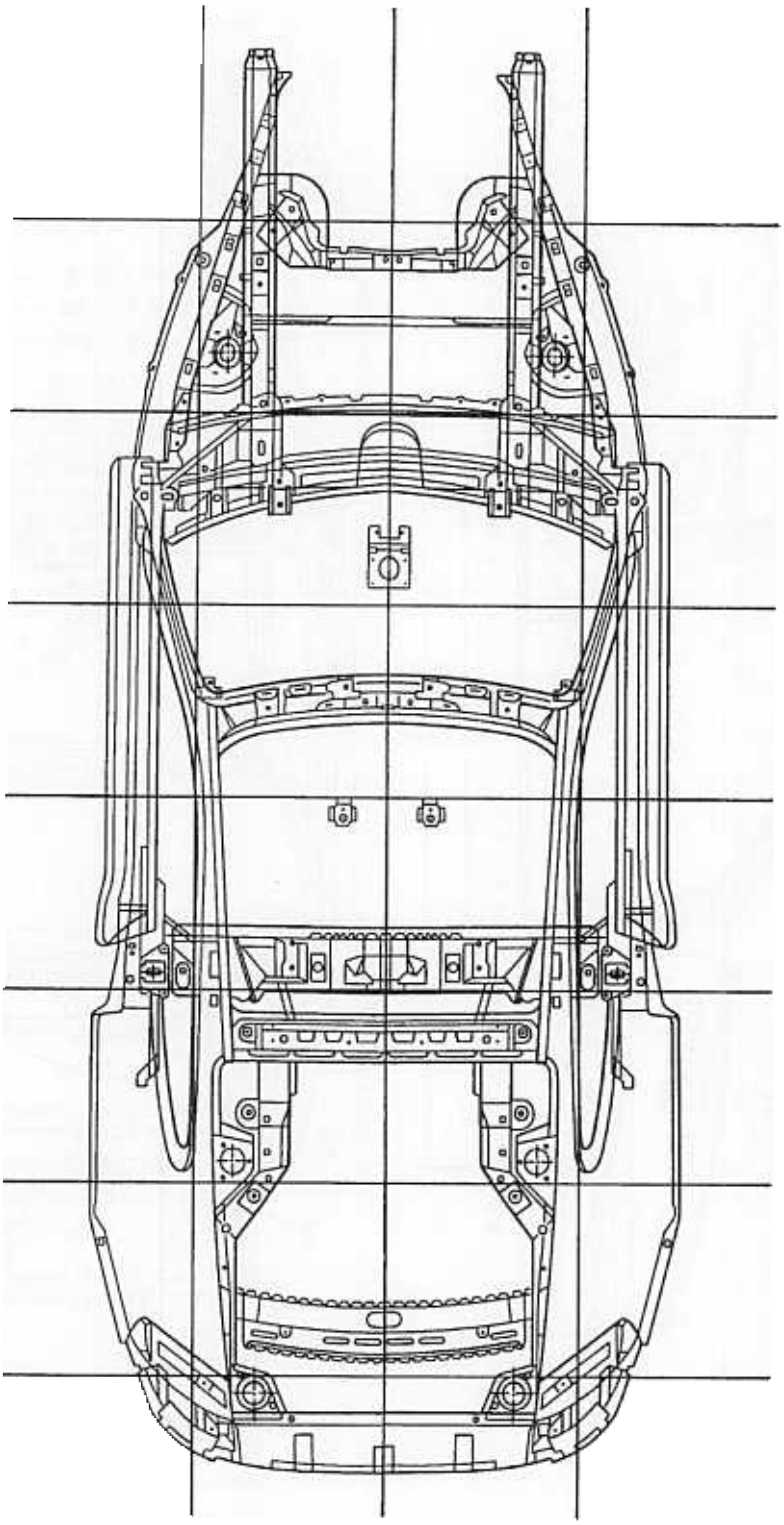
Dimension	Measuring points	Designation	Dimension in mm
P1	P1 – P1	Impact absorber / pipe front	800±2
P2	P2 – P2	Bearer side spare-wheel well	712±2
P3	P3 – P3	Front axle front, front, low	610±1
P4	P4 – P4	Front axle front, rear, high	731,2±1
P5	P5 – P5	Rational location hole, side member front	800±1
P6	P6 – P6	Spring strut bracket, front	985±2
P7	P7 – P7	Front axle front, rear	773±1
P8	P8 – P8	Front jacking point for hoist or car jack	1330±2
P9	P9 – P9	Transmission support, front	256±2
P10	P10 – P10	Transmission support, centre	270±2
P11A	P11A – P11A	GT3 rear transmission support (front screwed point)	472±2
P11B	P11B - P11B	Rear transmission support (rear screwed point) from model year 2001	490±2
P11	P11 – P11	Rear transmission support up to model year 2000	400±2
P12	P12 – P12	Rear jacking point for hoist or car jack	1370±2
P13	P13 – P13	Rear diagonal brace	824±3
P14	P14 – P14	Rear axle, front	836±2
P15	P15 – P15	Rear axle, centre	821±2
P16	P16 – P16	Spring strut bracket, rear	915±2
P17	P17 – P17	Rear axle, rear	792±2
P18	P18 – P18	Rational location hole, side member rear	945±1
P19	P19 – P19	Engine mount location hole outside	889±2
P19A	P19A – P19A	Valid for GT3 Outer engine mount take-up hole	889±2
P20	P20 – P20	Centre engine mount	780±2
P20A	P20A – P20A	Valid for GT3 Centre engine mount	847±2
P21	P21 – P21	Valid for GT3 Inner engine mount	717±2
P22	P22 -P22	Impact absorber / pipe rear	960±1.5
A	P4 – P7	In vehicle's longitudinal direction	507±2

Dimension	Measuring points	Designation	Dimension in mm
B	P5 – P18	In vehicle's longitudinal direction	2795±1
C	P8 – P2	Vehicle diagonal dimension	1525±2
D	P8 – P3	Vehicle diagonal dimension	1279±2
E	P8 – P4	Vehicle diagonal dimension	1279±2 (1283±2)
F	P8 – P7	Vehicle diagonal dimension	1084±2
G	P8 – P12	Vehicle diagonal dimension	1929±2
H	P8 – P12	In vehicle's longitudinal direction	1350±2
	P13 – P11	Vehicle diagonal dimension	875±3 (863±3)
a	P13 – P11A	Vehicle diagonal dimension	
b	P13 – P11B	Vehicle diagonal dimension	
J	P13 – P14	Vehicle diagonal dimension	1087±3 (1085±3)
K	P13 – P15	Vehicle diagonal dimension	1159±3 (1125±3)
L	P13 – P17	Vehicle diagonal dimension	1237±3 (1209±3)
M	P13 – P18	Vehicle diagonal dimension	1349±3 (1323±3)
N	P13 – P19	Vehicle diagonal dimension	1629±3
Na	P13 – P19A	Vehicle diagonal dimension	

Measuring point	Designation
P1	Screwed point (M8 thread)
P2	Bearer side spare-wheel well screwed point (M8 thread)
P3	FA, front screwed point low (thread M12 x 1.5)
P4	FA, front screwed point high (thread M14 x 1.5)
P5	Rational location hole, side member front
P6	Spring strut bracket, front
P7	FA, rear screwed point (thread M14 x 1.5)
P8	Hoist/car jack front location hole
P9	Transmission support, front screwed point (thread M10)
P10	Transmission support, centre screwed point (thread M10)
P11	Transmission support, rear screwed point (thread M 12 x 1.5)

Measuring point	Designation
P12	Hoist/car jack rear location hole
P13	Diagonal brace front screwed point (thread M10)
P14	RA front screwed point (thread M12 x 1.5)
P15	RA centre screwed point (thread M12 x 1.5)
P16	Spring strut bracket, rear
P17	RA rear screwed point (thread M12 x 1.5)
P18	Rational location hole, side member rear
P19	Screwed point (thread M8) for outer engine mount take-up hole
P19A	Screwed point (thread M8) for outer GT3 engine mount take-up hole
P20	Centre engine mount
P20A	Screwed point (thread M8) for outer GT3 engine mount
P21	Inner GT3 engine mount, screwed point (thread M8)
P22	Impact absorber / pipe rear screwed point (thread M8)

Structure dimensions



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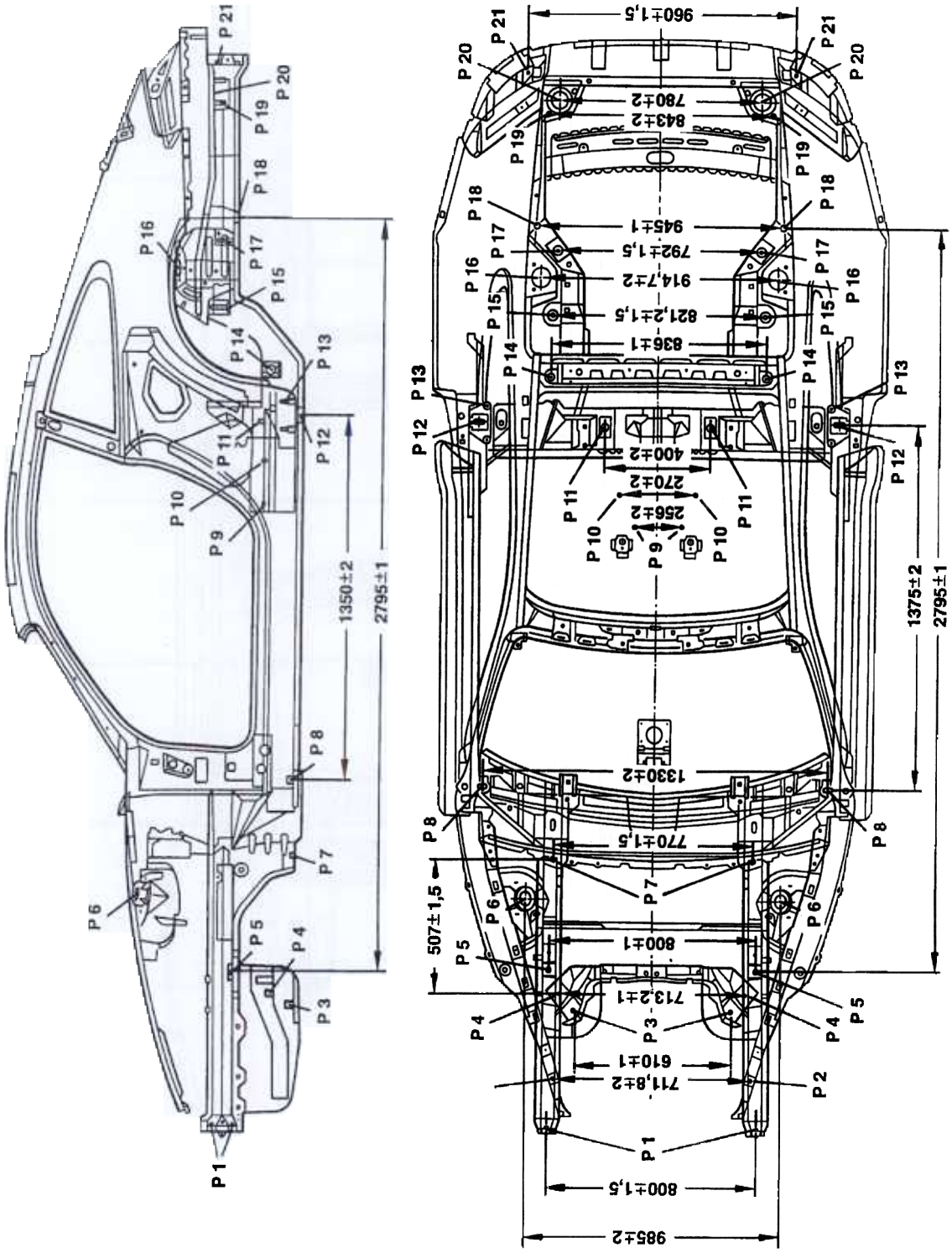
Structure dimensions



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Structure dimensions

Point L/R	Designation	Point L/R	Designation
1	Impact absorber / pipe front screwed point (thread M8)	13	Diagonal brace front screwed point (thread M10)
2	Bearer side spare-wheel well screwed point (thread M8)	14	RA front screwed point (thread M12 x 1.5)
3	FA, front screwed point low (thread M12 x 1.5)	15	RA centre screwed point (thread M12 x 1.5)
4	FA, front screwed point high (thread M14 x 1.5)	16	Spring strut bracket rear
5	Rational location hole, side member front	17	RA rear screwed point (thread M12 x 1.5)
6	Spring strut bracket, front	18	Rational location hole, side member rear
7	FA, rear screwed point (thread M14 x 1.5)	19	Engine mount location hole outside
8	Hoist/car jack front location hole	20	Engine mount screwed point
9	Transmission support, front screwed point (thread M 10)	21	Impact absorber / pipe rear screwed point (thread M8)
10	Transmission support, centre screwed point (thread M 10)		
11	Transmission support, rear screwed point (thread M 12 x 1.5)		
12	Hoist/car jack rear location hole		

FA = Front axle **RA = Rear axle**

5 Body parts of high-strength steel

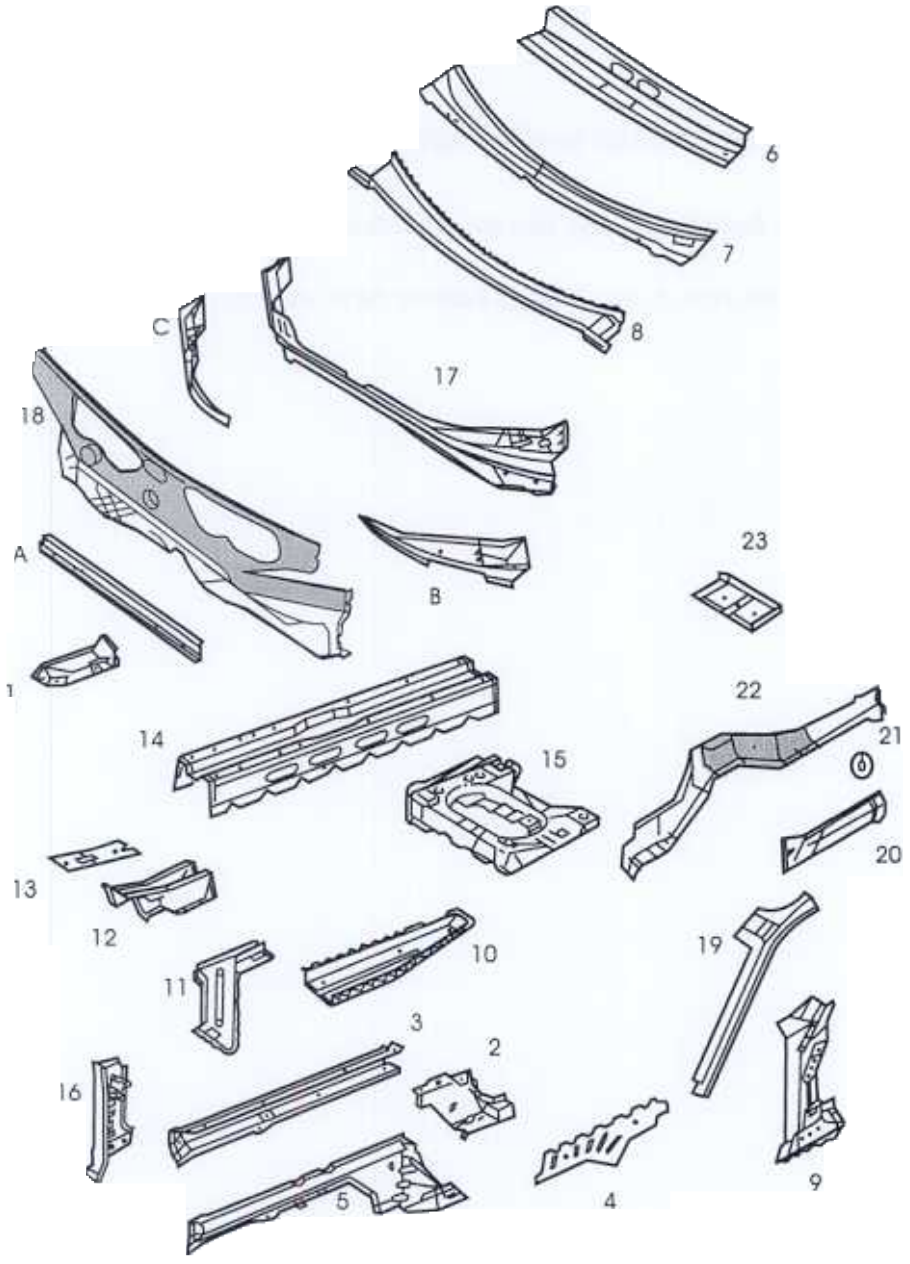
The following body parts are made of high-strength steel (HS).

Body parts 18 and 22 are welded together from plates of different material thicknesses and characteristics and are then deep drawn.

Body parts A, B and C possess extremely high tensile strength and are therefore not hot-dip galvanized.

Body parts 1 to 23 attain their final strength only after the production stage of cathodic immersion painting and drying.
This affects body repairs. For this reason, only "Original Porsche parts" must be used for repair work.

Body parts of high-strength steel



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Body parts of high-strength steel

No.	Designation
1	Bearer side at spare-wheel well left and right
2	Connection bracket inner to side member front inner left and right
3	Side member front inner left and right
4	Web plate outer side member front outer left and right
5	Side member front outer left and right
6	Cowl panel frame top outer
7	Cowl panel bottom outer
8	Cowl panel bottom inner
9	A-pillar reinforcement left and right
10	Side member floor front bottom left and right
11	Bearer floor front top left and right
12	Front crash support
13	Closing part front crash support
14	Tunnel reinforcement
15	Seat support left and right
16	Hinge pillar left and right
17	Cross member firewall inner
18	Firewall
19	A-pillar reinforcement
20	Side member rear outer left and right
21	Impact absorber mount
22	Side member rear inner left and right
23	Web plate

High-strength steel plates without galvanized surface

A = Reinforcement cross member firewall front

B = Reinforcement cross member firewall inner left

C = Reinforcement cross member firewall inner right

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General remarks on the body parts of high-strength sheet steel

Applicable to 911 Carrera (996) model

Body parts of high-strength steel contribute to better protection of the passenger compartment and thus increase protection of the passengers. In addition to improved crash safety, these parts also have a positive influence on fatigue strength.

In terms of crash behaviour, body parts made from high-strength sheet steel are distinguished for their higher energy absorption. But this also means that higher reshaping force must be applied in reshaping work.

Welding work

Body parts of high-strength steel can be welded using the MIG welding processes that are customary in workshops. The use of the oxyacetylene welding process is not permissible for body parts made of high-strength steel.

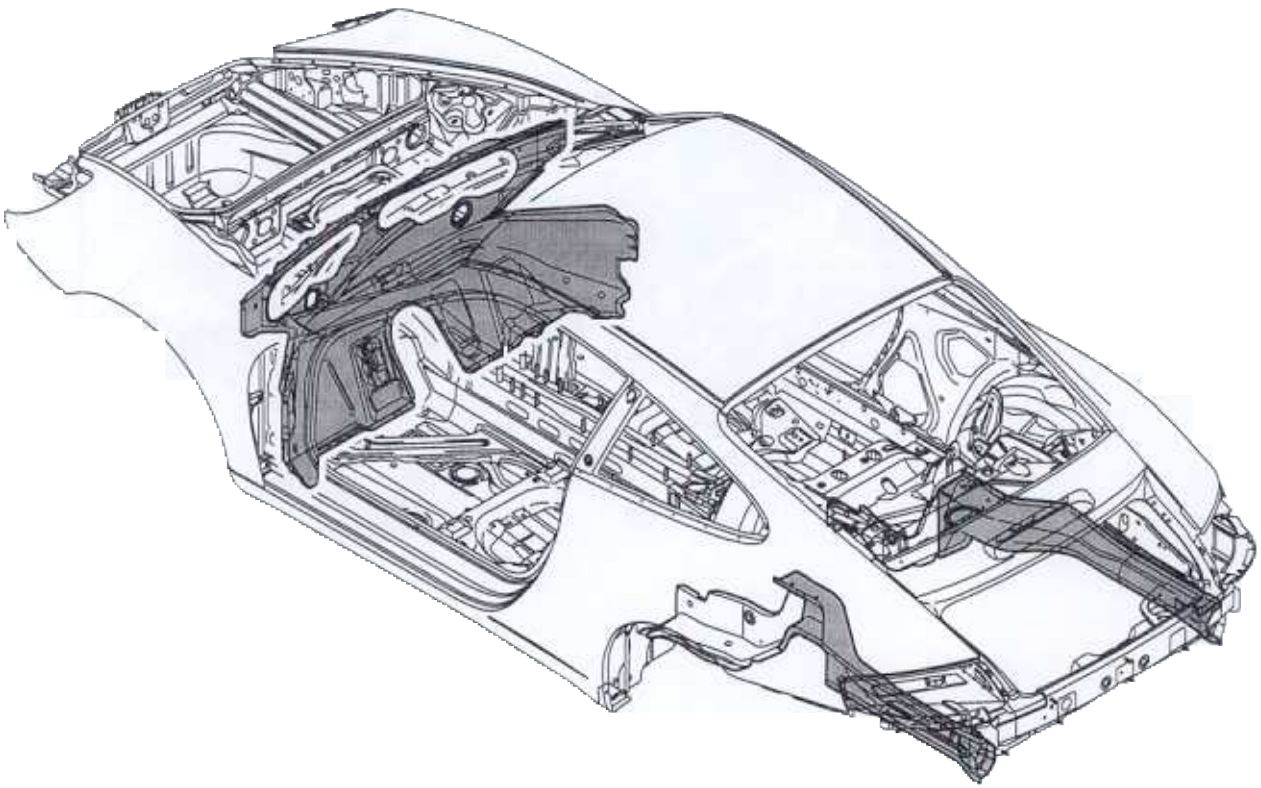
Repair note

Body repairs by reshaping are not possible if these body parts are correspondingly deformed. Here, the repair must be made by the use of new parts or sectional repairs.

For this purpose, only "Original Porsche parts" or sections of "Original Porsche parts" may be used.

Body parts of high-strength steel

The indicated body parts are made by welding together plates of differing thickness and characteristics and then deep-drawing these parts. In their crash behaviour, these body parts are distinguished by their high energy absorption.



149 - 97

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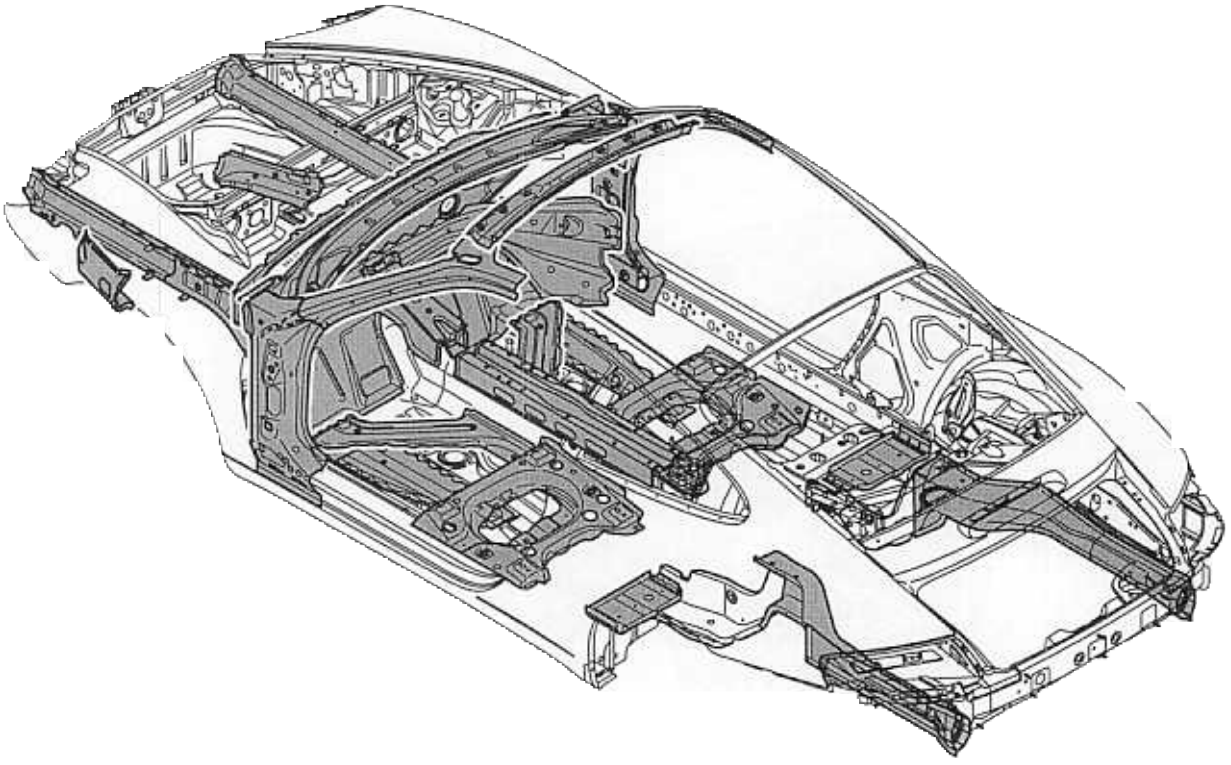
Body parts of high-strength steel

The indicated body parts attain their final strength **only** under the temperature effects of the production stage of cathodic immersion painting and drying.



148 - 97

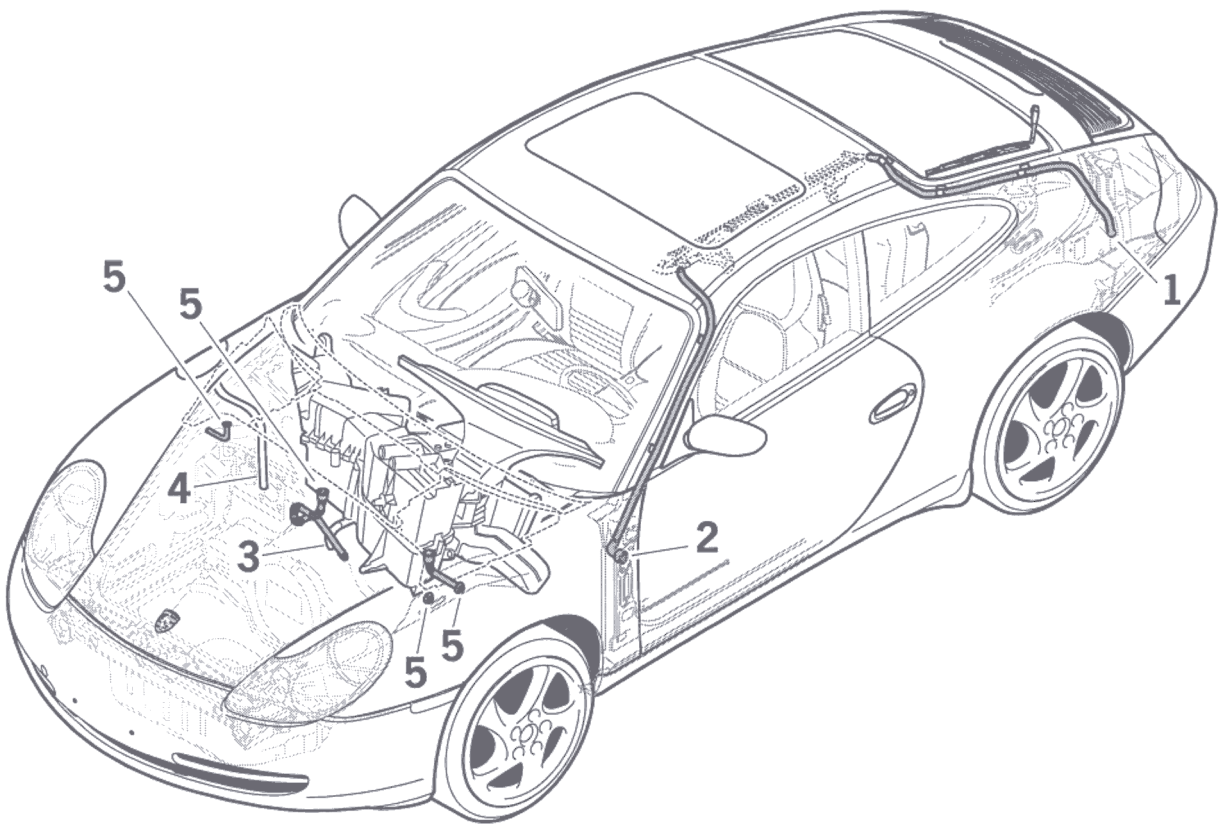
Body repairs by reshaping are not possible if these body parts are correspondingly deformed. Here, the repair must be made by the use of new parts or sectional repairs.

The use of high-strength steels for the body has an effect on body repairs. For this reason, only

"Original Porsche parts"

must be used for repair work.

5 Water drainage plan



287_99

1 Water drainage: sliding roof, rear

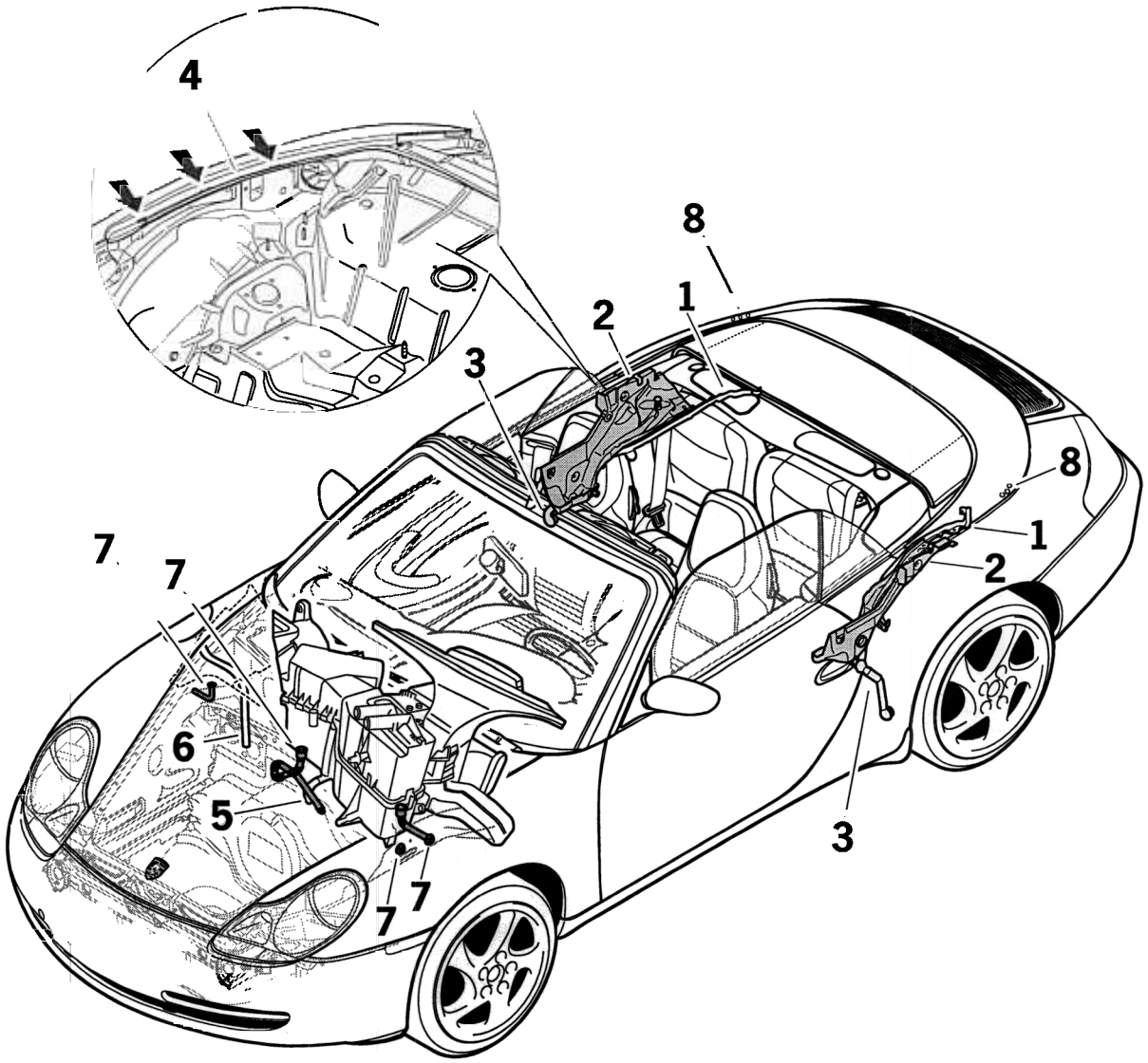
2 Water drainage: sliding roof, front

3 Water drainage: tank tray

4 Water drainage: evaporator of heating and air-conditioning system

5 Water drainage: radiator tank

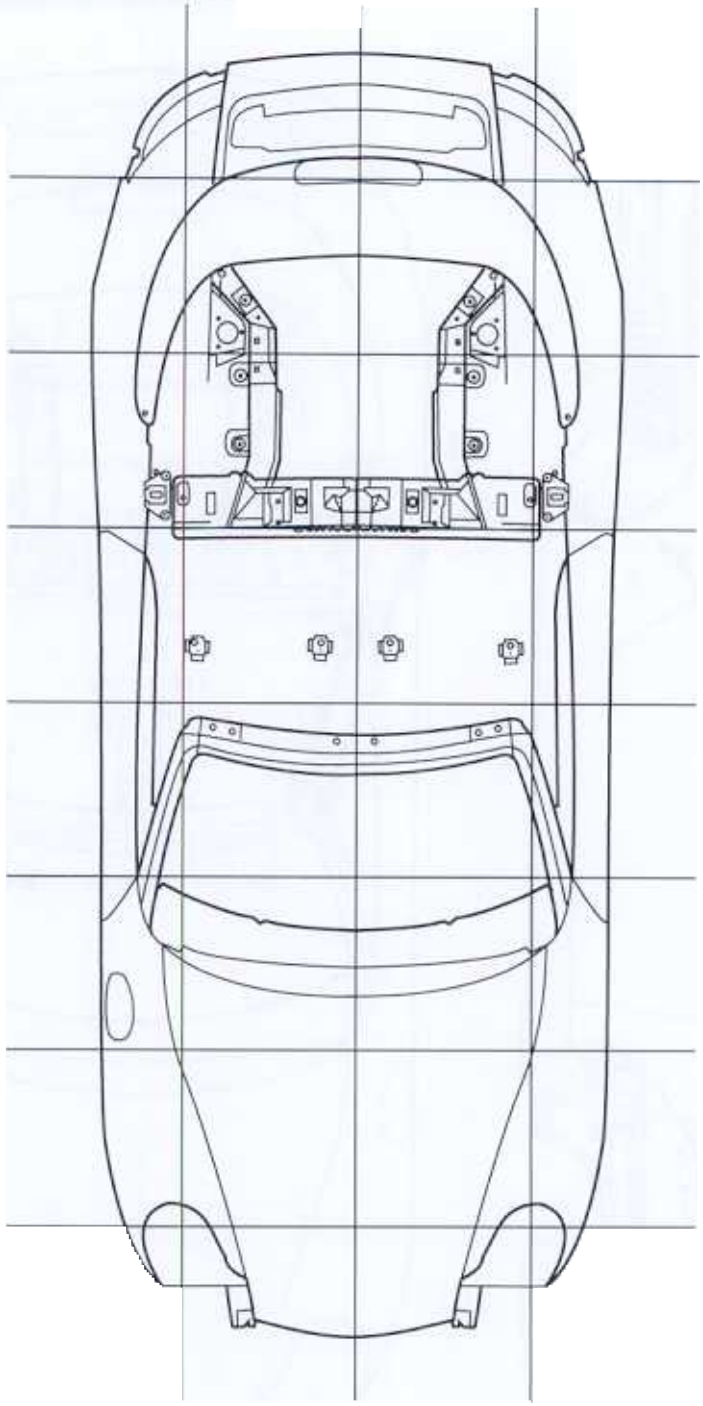
5 Water drainage plan – Cabriolet



288_99

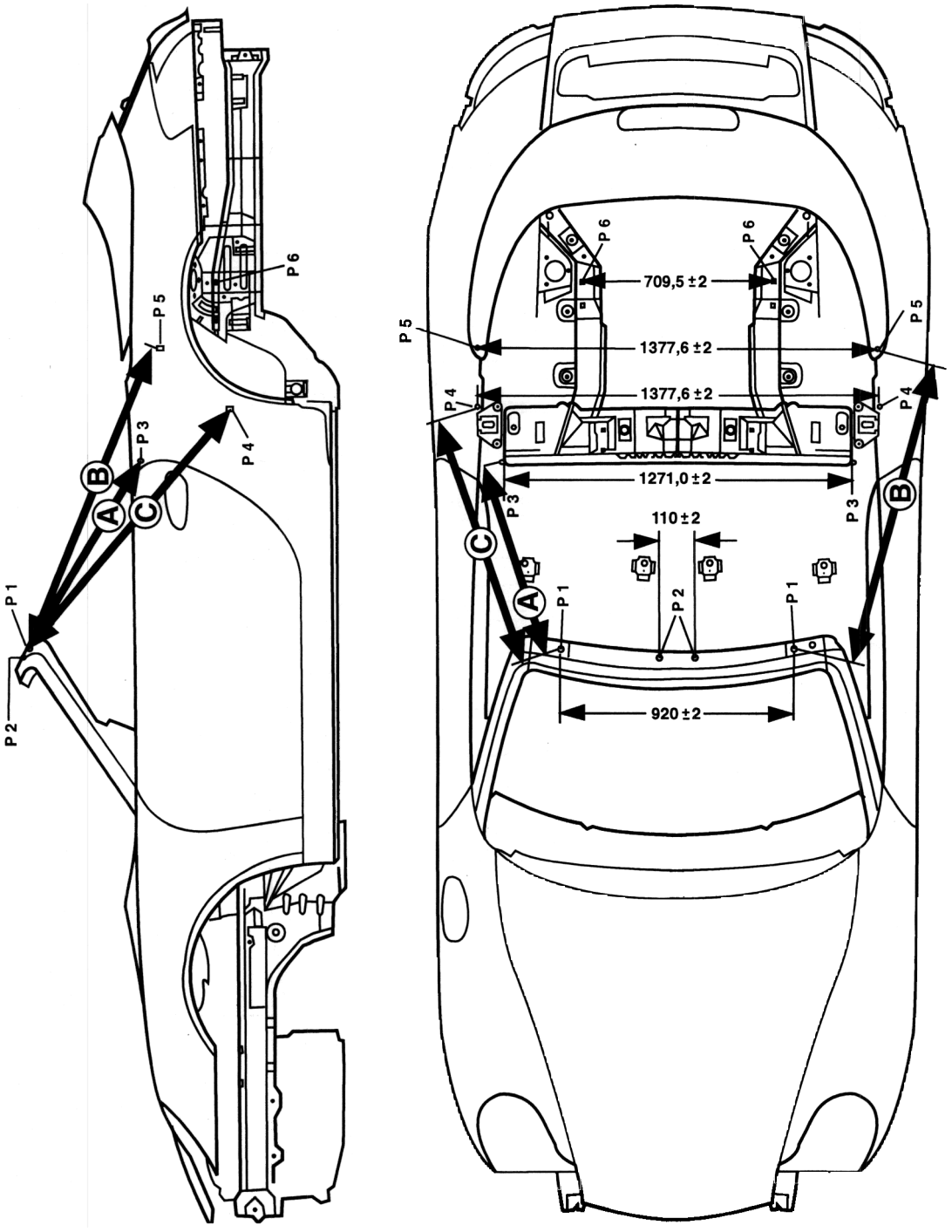
1	Water drainage: water channel	5	Water drainage: evaporator of heating and air-conditioning system
2	Water drainage: water collection tray	6	Water drainage: tank tray
3	Water drainage: water drain tube	7	Water drainage: radiator tank
4	Water drainage: water channel, side section	8	Water drainage: inner panel of convertible top compartment lid

Structure dimensions for cabriolet



660_97

Structure dimensions for cabriolet



661_97

Structure dimensions for cabriolet

Point L/R	Designation
	Convertible-top positioning screwed point (thread M6)
2	Locking screwed point (thread M6)
3	Convertible-top support/B-pillar screwed point (thread M8)
4	Convertible-top support/inner front side section screwed point (thread M8)
5	Convertible-top support/inner rear side section screwed point (thread M8)
6	Auxiliary frame (roll-over bar) screwed point (thread M10)

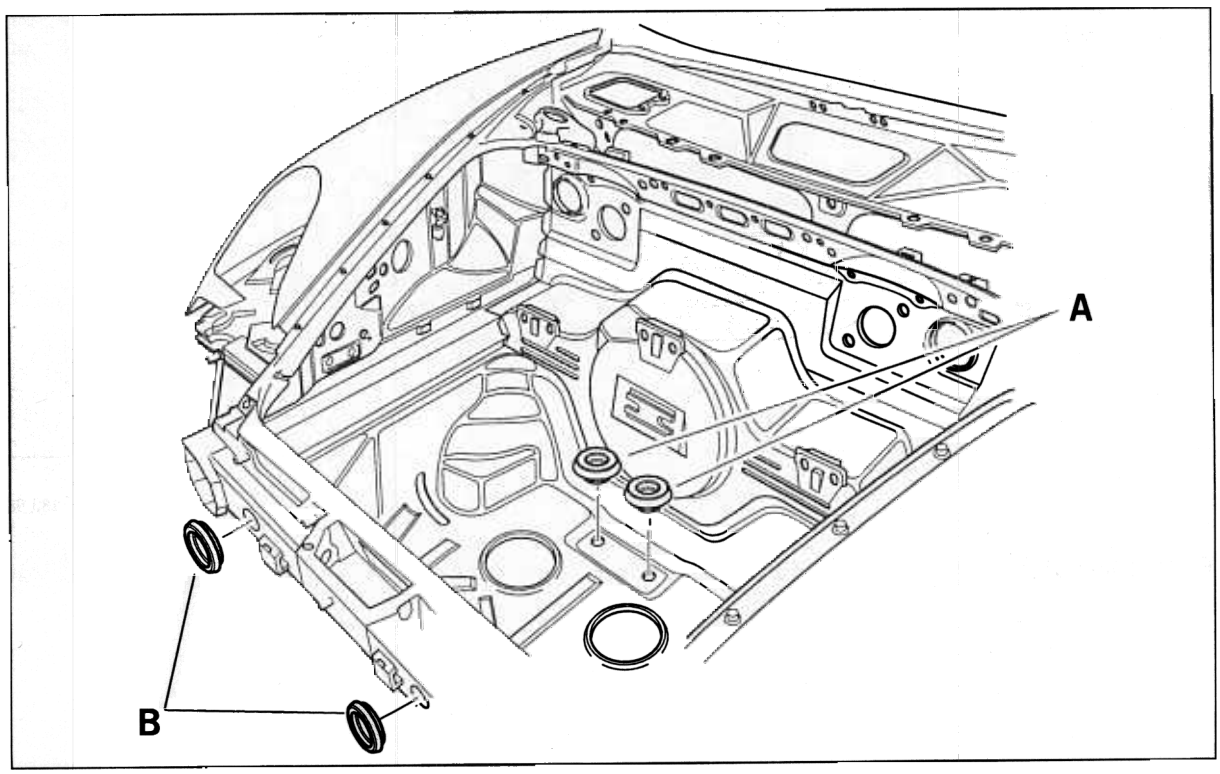
Dimension	Point	Designation	mm
A	P 1 - P 3	Oblique dimension, convertible-top support, B-pillar	743.4
B	P 1 - P 5	Oblique dimension, convertible-top support, front side section	1033.1
C	P 1 - P 4	Oblique dimension, convertible-top support, rear side section	1092.8

5 Plug location plan

"WARNING"
Water leakage and risk of corrosion when plugs are removed.

>The body apertures are sealed with plugs in the factory, and must be sealed with plugs once more following disassembly or repair work.

Top of front end

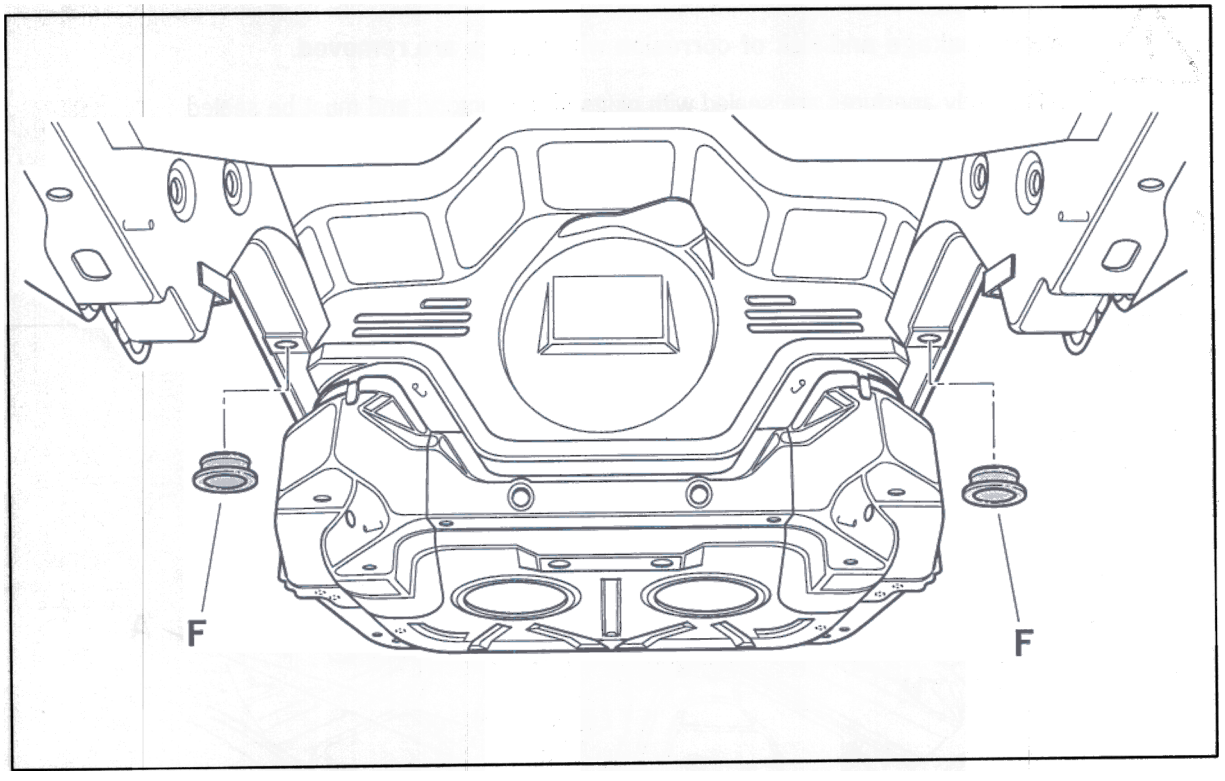


181_98

A : Rubber grommet hole Ø 20 mm

B : Rubber grommet hole Ø 30 mm

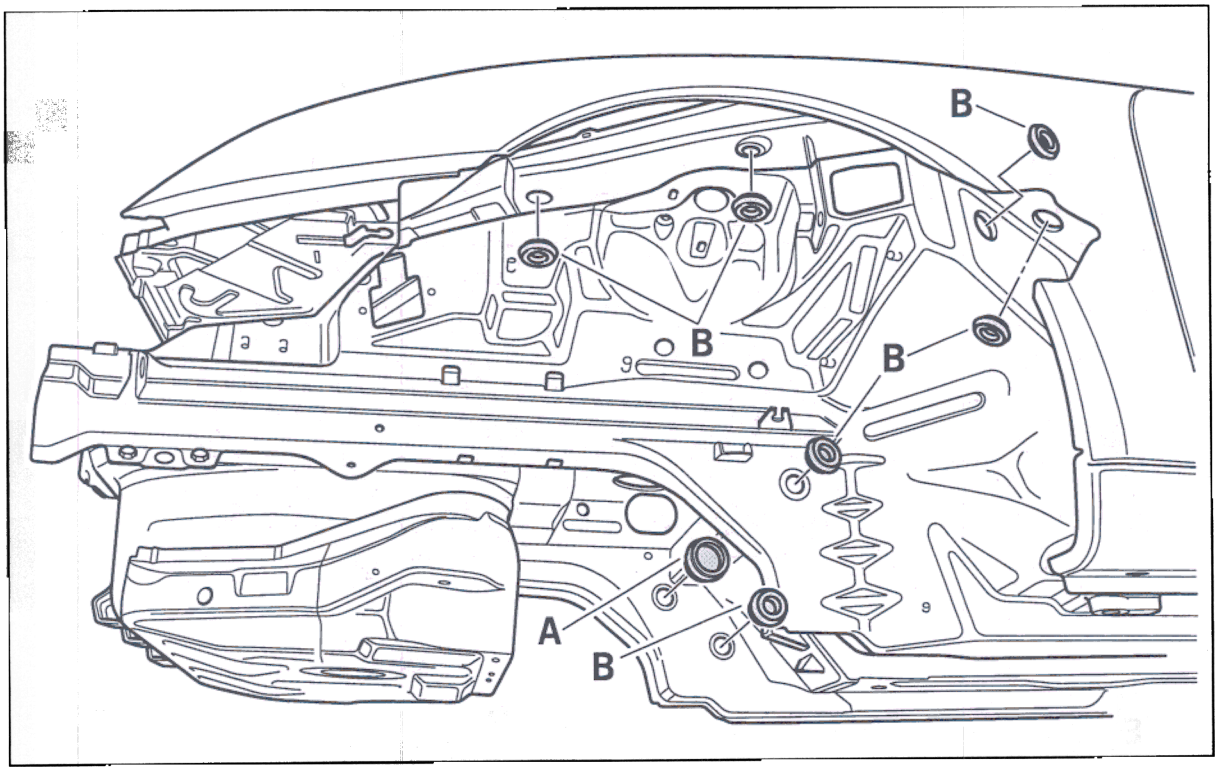
Bottom of front end



180_98

F : Plug hole Ø 20 mm

Side of front end

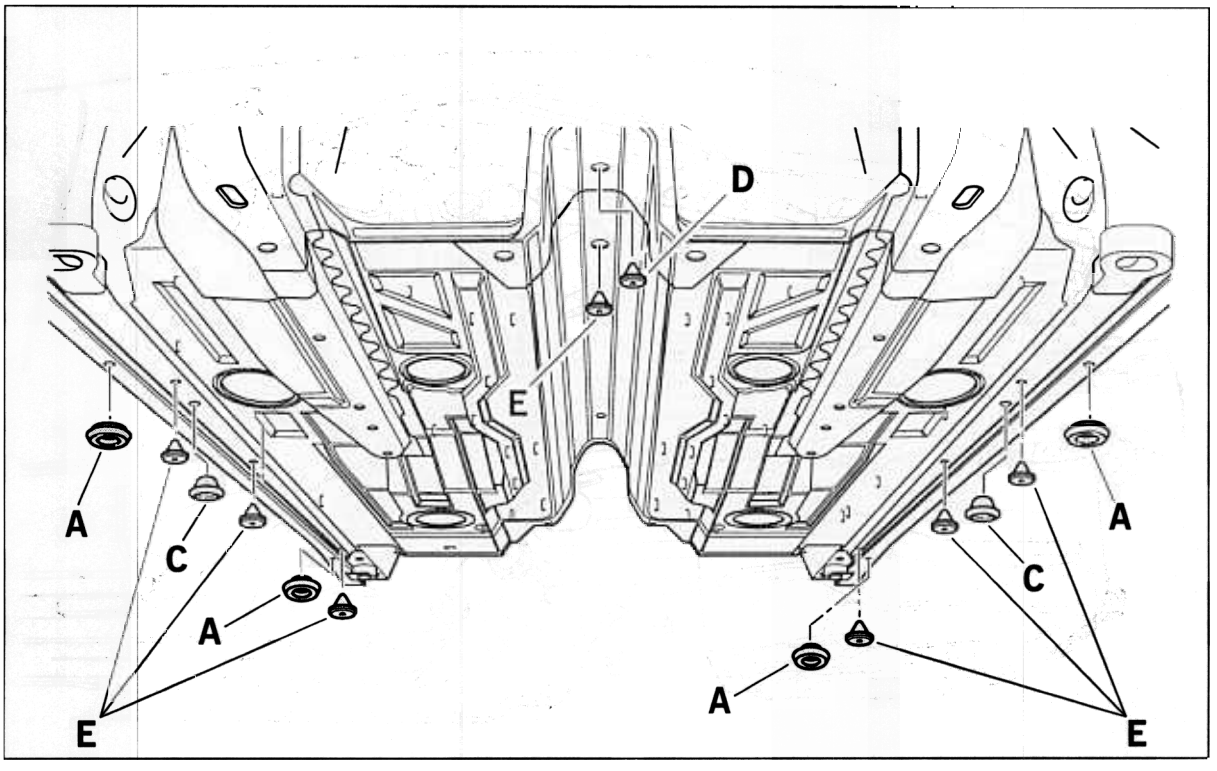


179_98

A : Rubber grommet hole Ø 20 mm

B : Rubber grommet hole Ø 30 mm

Bottom of lower side member and floor



170_98

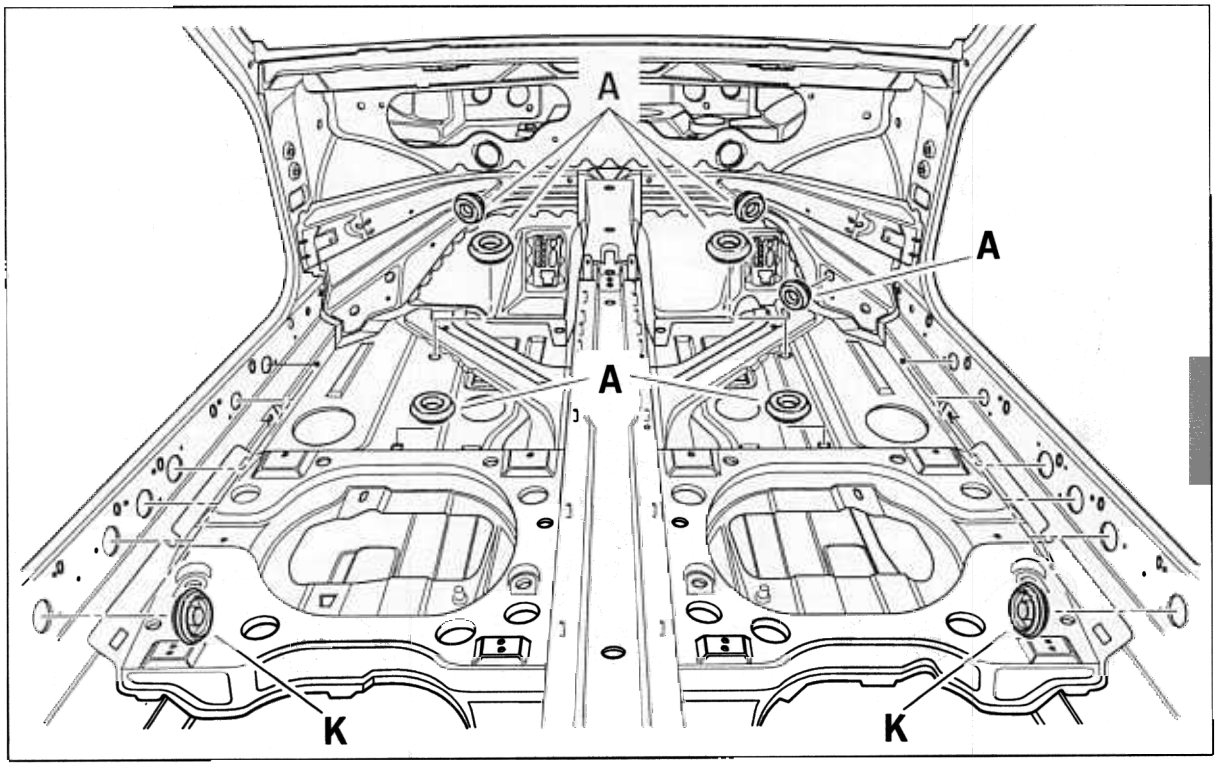
A : Rubber grommet hole Ø 20 mm

C : Plug hole Ø 10 mm

D : Plug hole Ø 10 mm

E : Plug hole Ø 15 mm

Top of lower side member and floor

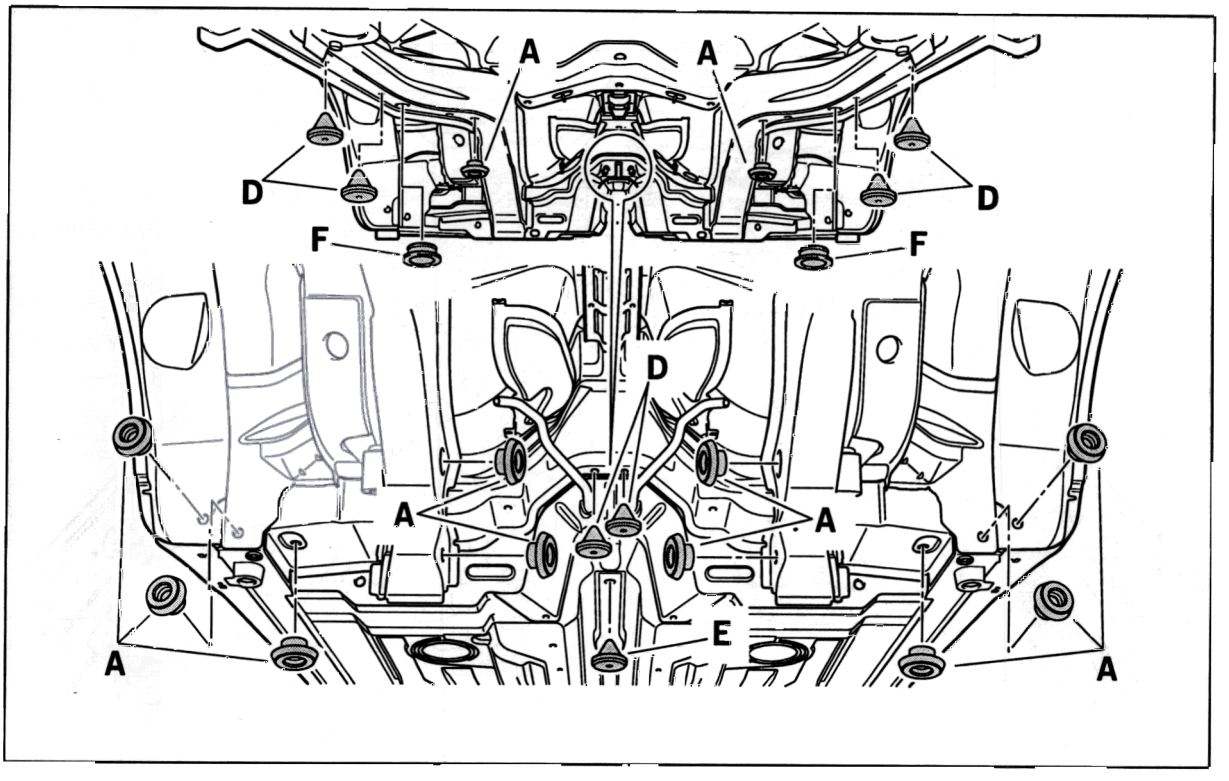


169_98

A : Rubber grommet hole Ø 20 mm

K : Plug hole Ø 30 mm

Bottom of rear end



184_98

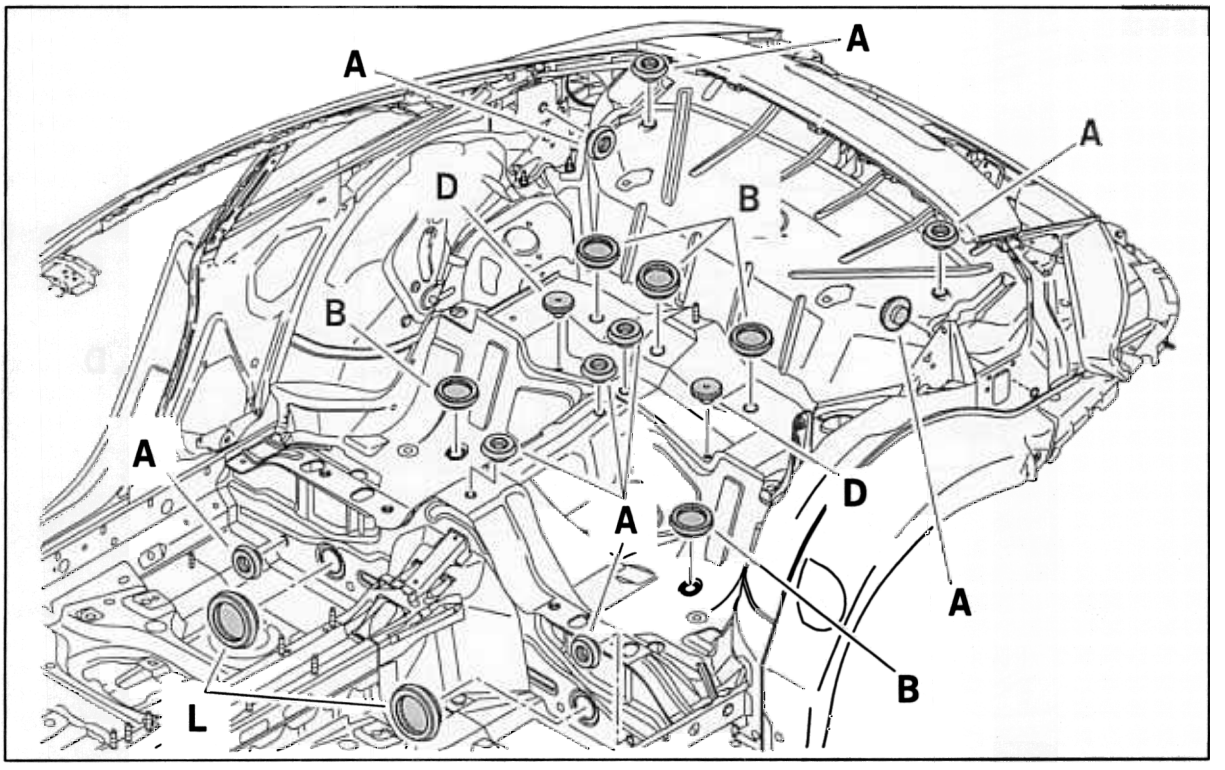
A : Rubber grommet hole Ø 20 mm

D : Plug hole Ø 10 mm

E : Plug hole Ø 15 mm

F : Plug hole Ø 20 mm

Top of rear end



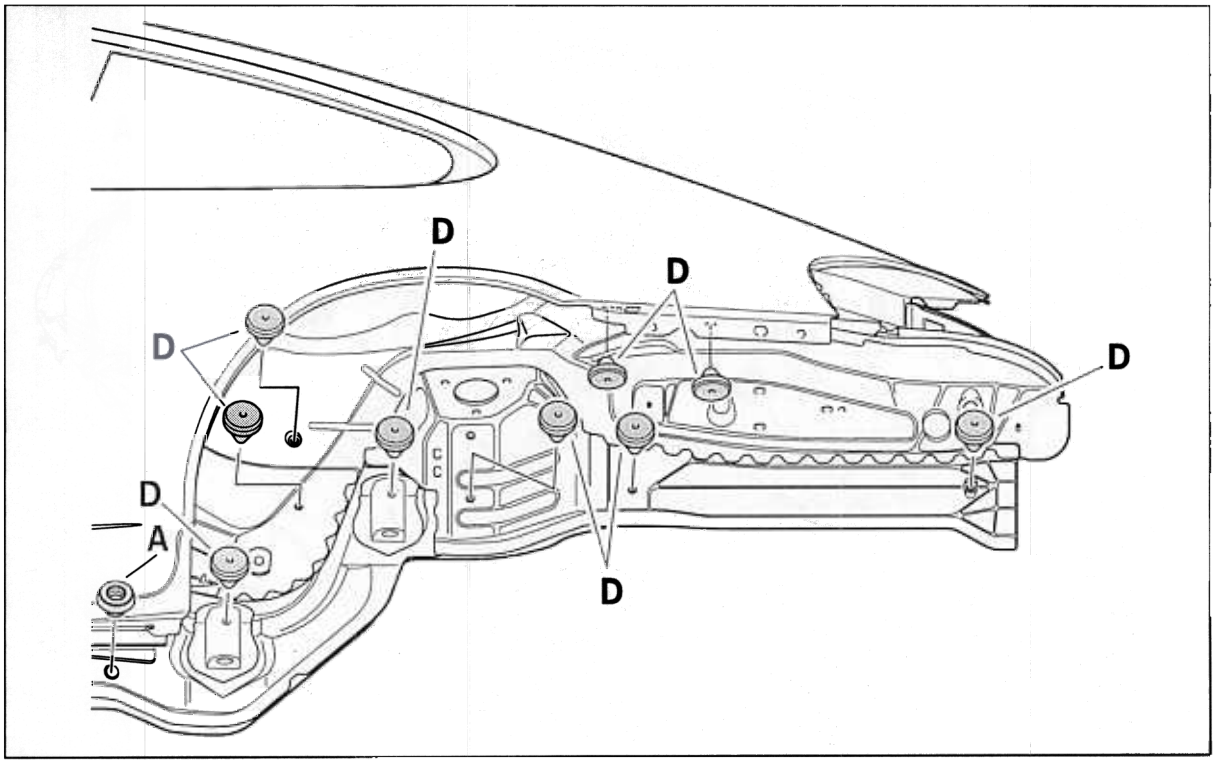
182_98

A : Rubber grommet hole Ø 20 mm

B : Rubber grommet hole Ø 30 mm

L : Closure cap hole Ø 55 mm

Side of rear end



183_98

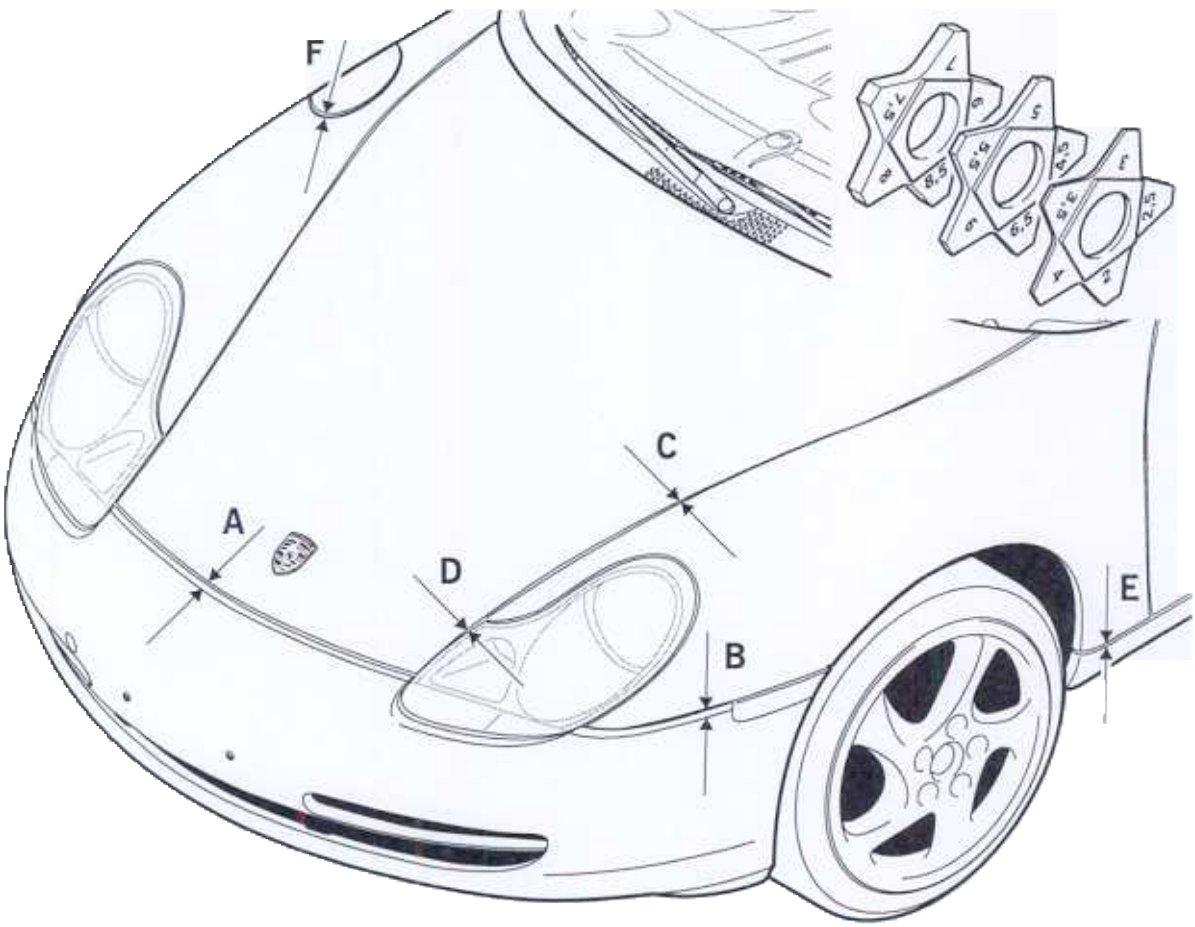
A : Rubber grommet hole Ø 20 mm

D : Plug hole Ø 10 mm

9965_29 Printed in Germany - 11, 1998

5 Body gap dimensions

Body front



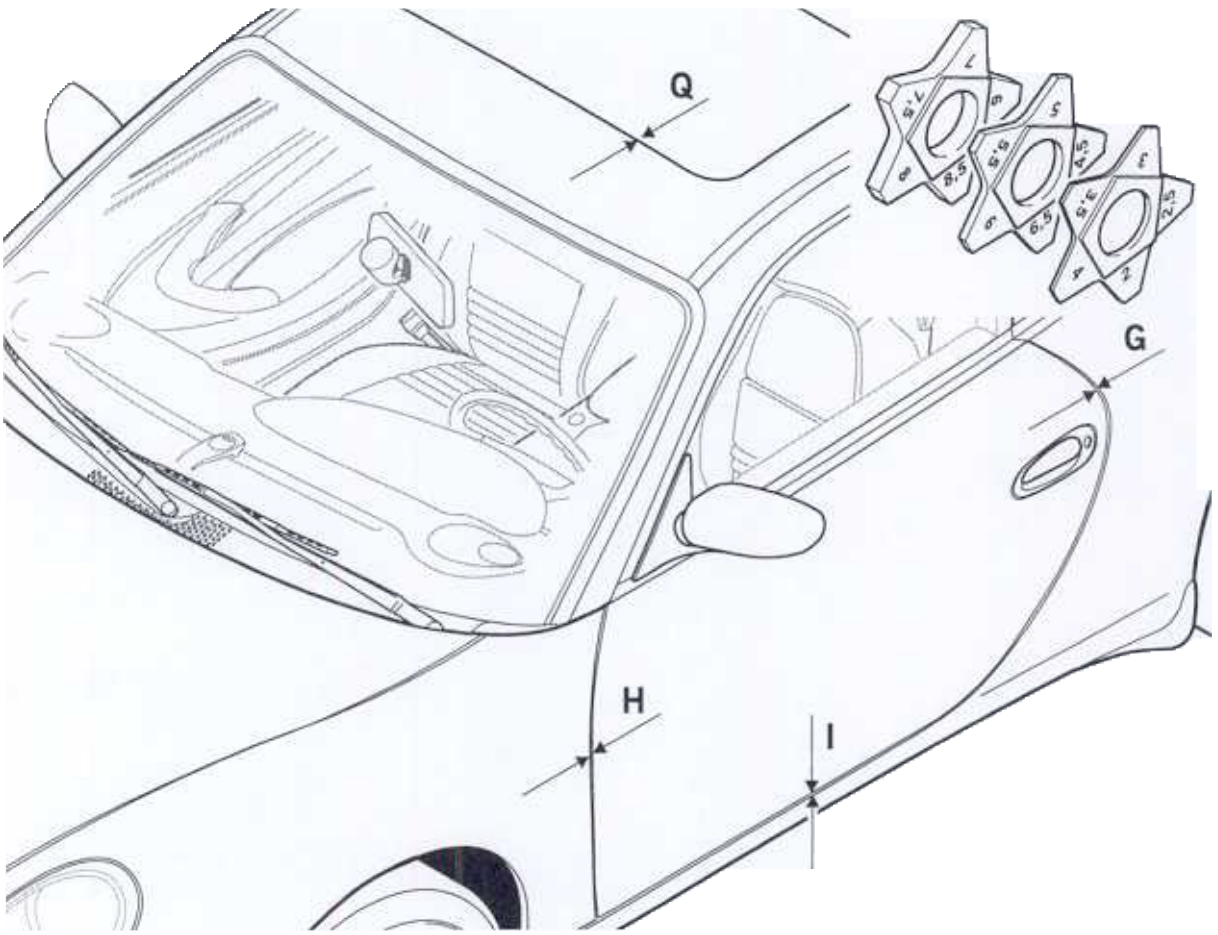
390_98

A = 6 mm	B = 3 mm	C = 4.5 mm
D = 4.5 mm	E = 4 mm	F = 3.5 mm

Use star gauges to adjust or check the gap dimensions, see Workshop Equipment Technical Manual, Chapter 2.4 No. 127 - 1

Body gap dimensions

Body centre

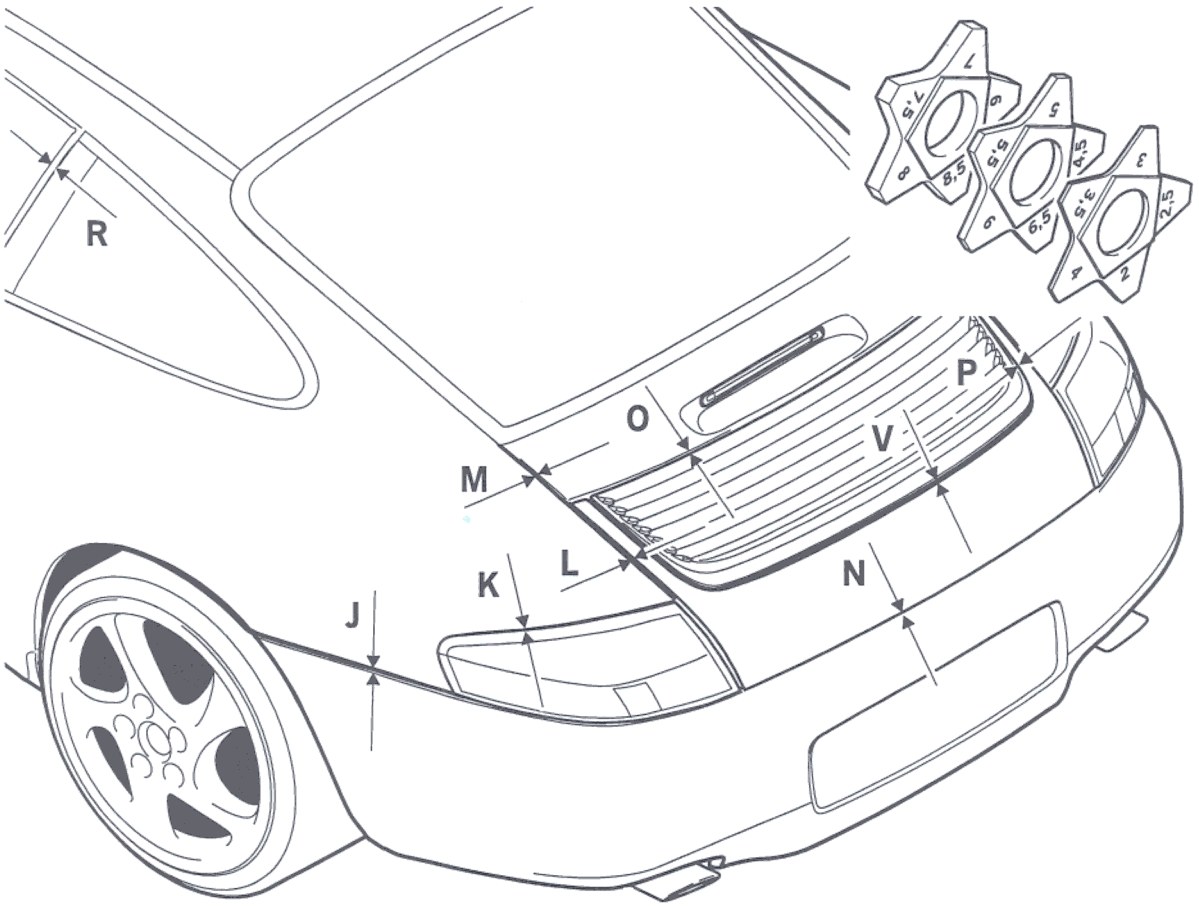


391_98

G = 4 mm H = 5 mm

= 4 mm Q = 5 mm

Body gap dimensions



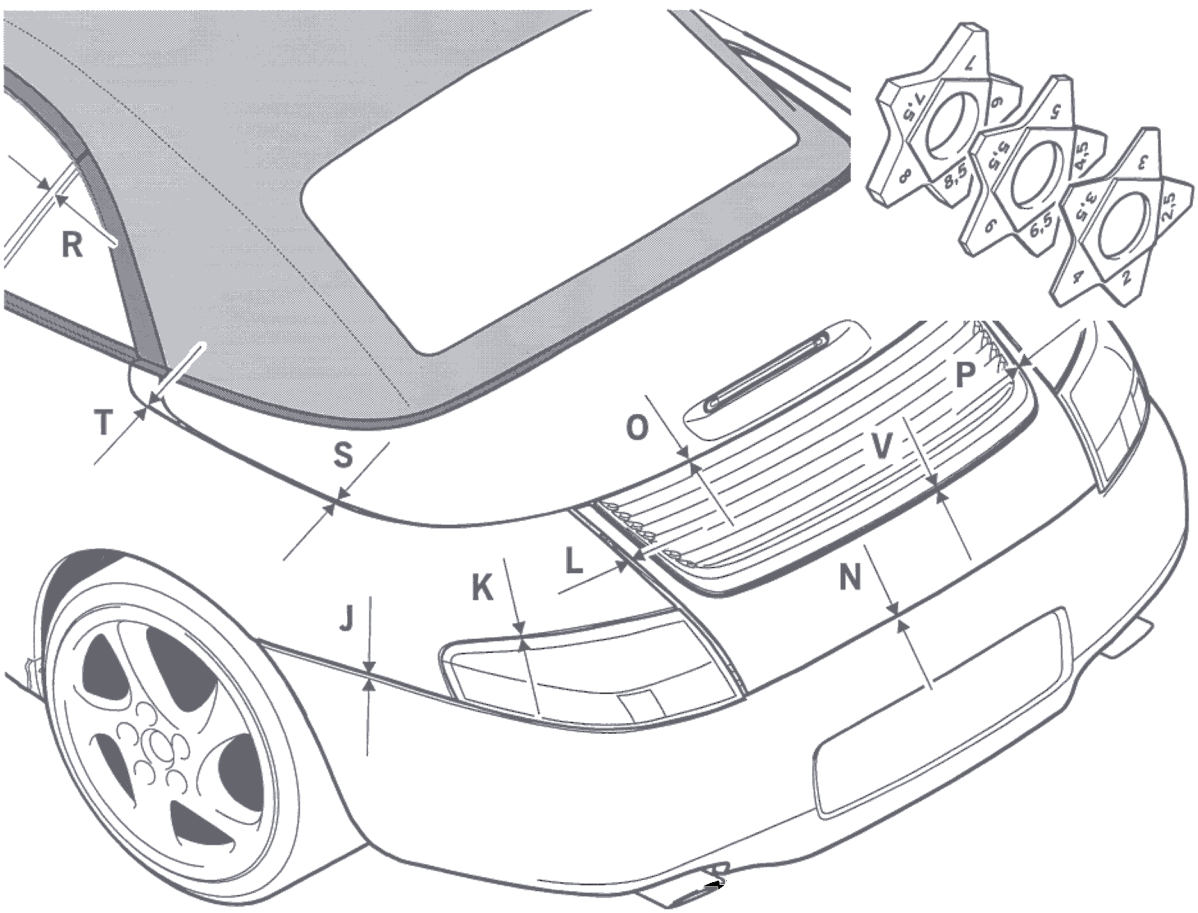
Body rear

392_98

J = 3 mm	K = 3 mm	L = 4.5 mm
M = 4.5 mm	N = 5 mm	O = 6 mm
P = 4.5 mm	R = 9 mm	V = 4.5 mm

Body gap dimensions

Cabriolet body



393_98

J = 3 mm	K = 3 mm	L = 4.5 mm	M = 4.5 mm
N = 5 mm	O = 6 mm	P = 4.5 mm	R = 9 mm
S = 4.5 mm	T = 6 mm	V = 4.5 mm	

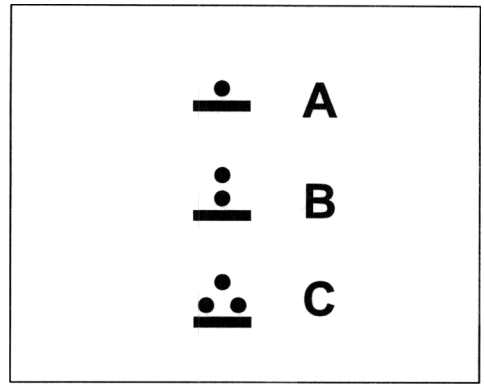
Diagram - keys to symbols for welding work

Resistance spot welding

A - Spot seam, single row

B - Spot seam, double row

C - Spot seam, double row offset



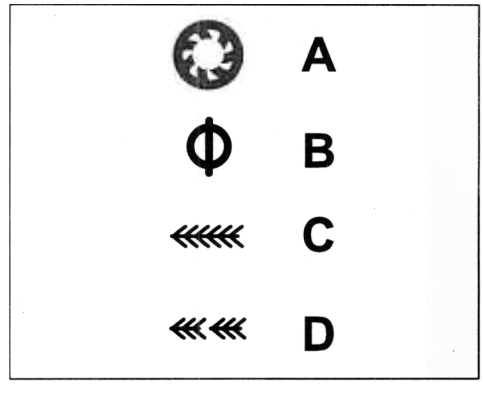
Inert-gas arc welding (MAG procedure)

A - Plug weld

B - Stitch weld

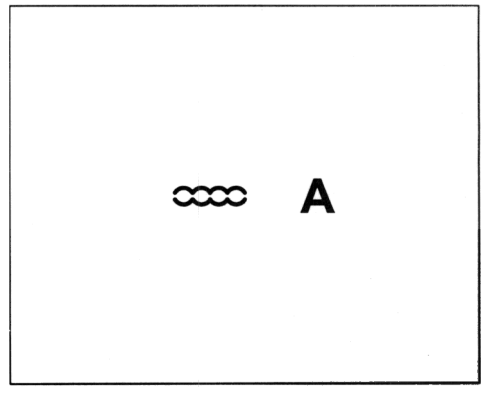
C - Full weld

D - Intermittent full weld

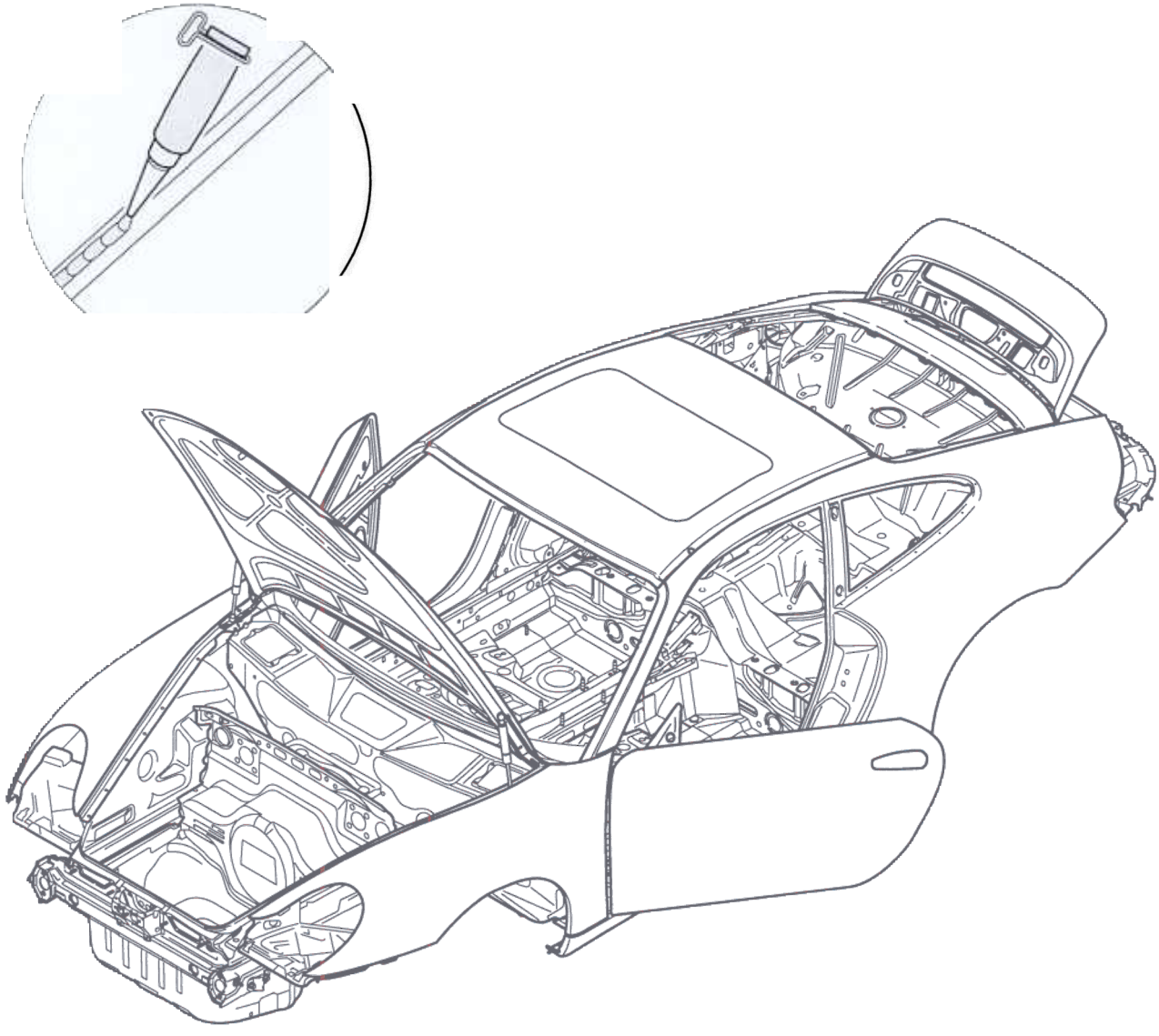


Gas welding

A - Hard soldering



Seam seals

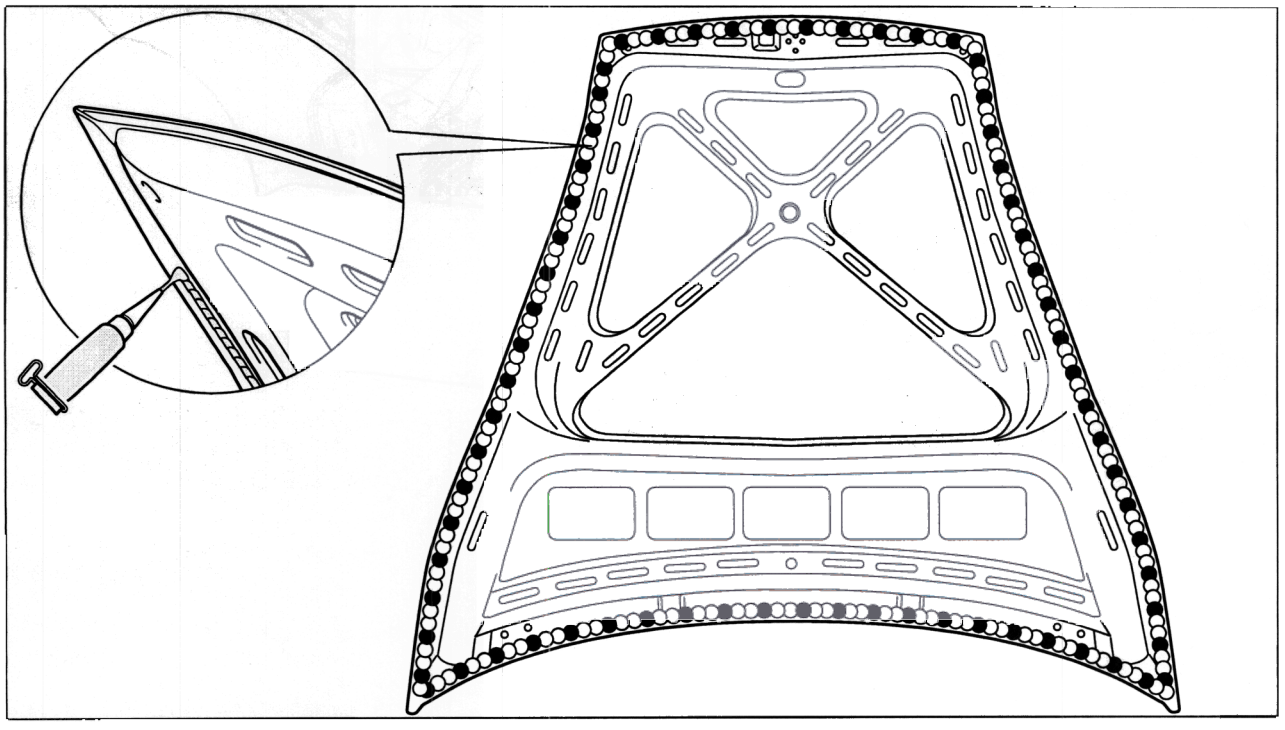


Accessories

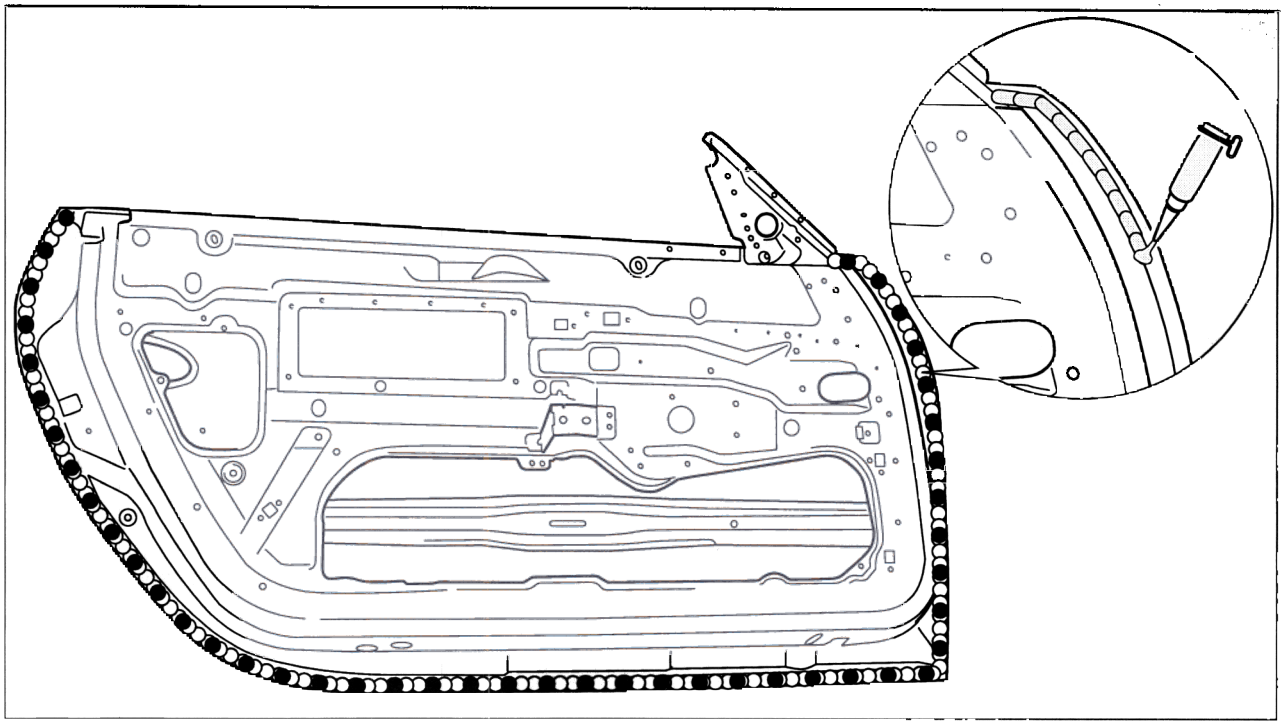
Note!

- *Due to modifications to the spare part range, in the case of repair work, accessories must be sealed before assembly (painting) according to the following illustrations.*
- *The sealing material 000 043 204 38 can be applied directly to the acessories coated with KTL paint (cathodic dipbath coating).*
- *The seam seal can be painted over when it has reached approx. 70 % hardness (approx. 4 - 5 h at 20 °C, 50 % relative air humidity. Higher air humidity or dampening with water accelerates the hardening process).*
- *The hardening can be checked with a nail test. Press a finger nail gently into the hardened sealing mass; if this causes no damage to the sealing mass surface, the seam seal can be painted.*

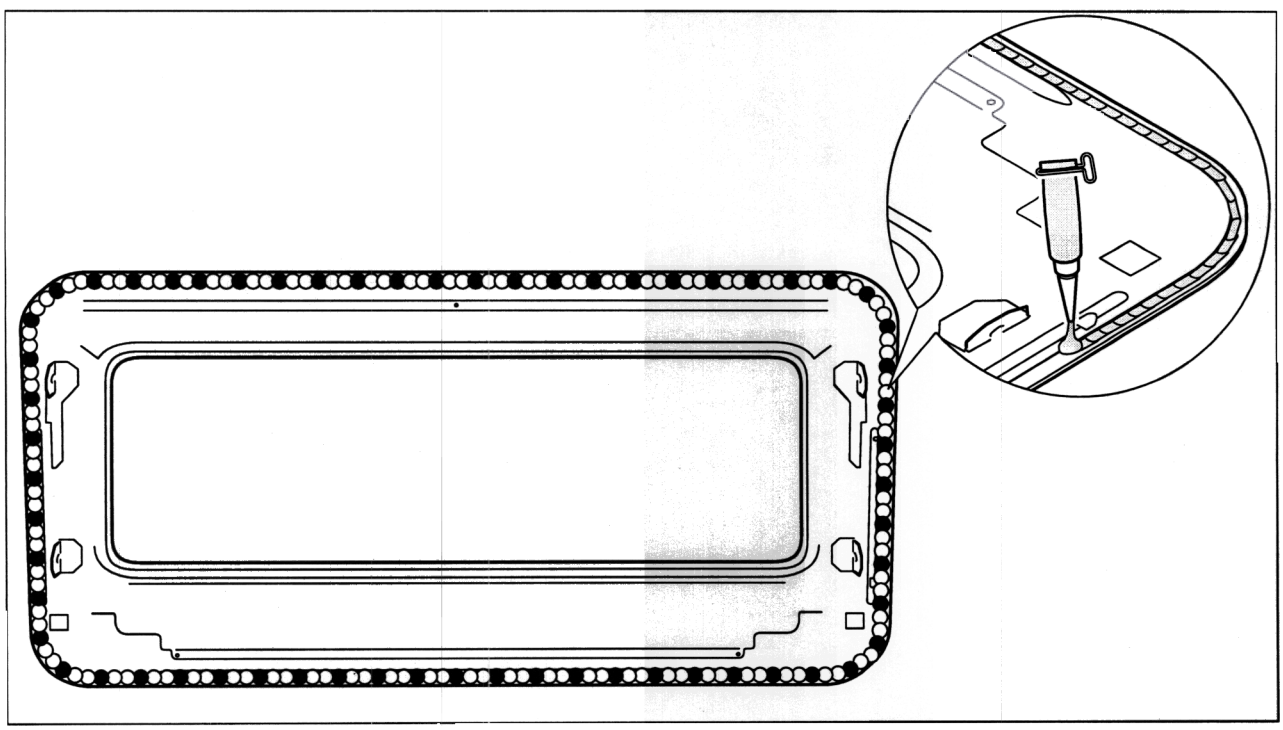
Front lid



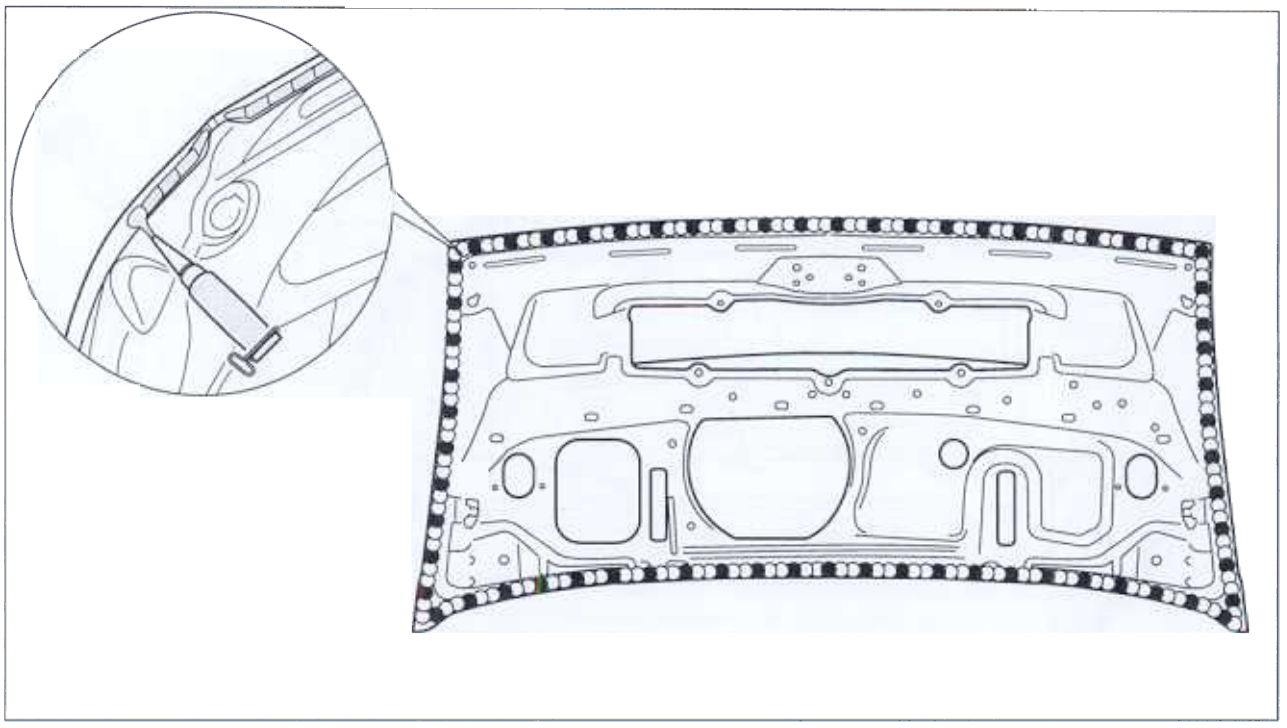
Doors



Sliding roof panel



Rear lid

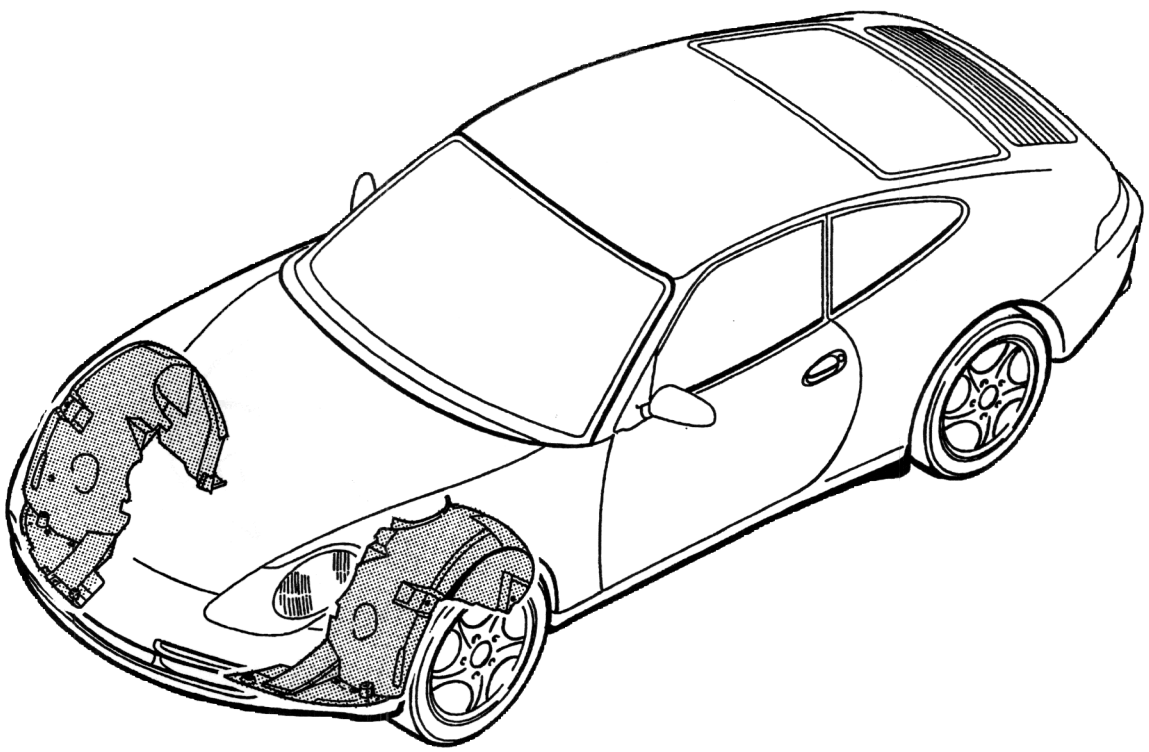


Work sequence for accident repair

Work sequence for accident repair		
Determine scope of damage ↓		
Expose the area to be repaired ↓		
Make an economic or technical decision. Should parts be repaired or replaced? ↓		
Determine the scope of replacement parts and have the parts obtained ← →		
-Repair-		**-Replacement-**
Determine the scope of replacement parts and have the parts obtained ↓		Determine the scope of replacement parts and have the parts obtained ↓
Cover undamaged areas of the vehicle ↓		Cover undamaged areas of the vehicle so that they are protected against fire ↓
		Pre-paint new parts from the inside ↓
Reshape damaged areas ↓		Reshape damaged area by straightening so that adjacent contours or gap dimensions correspond to the series condition ↓
		Roughly cut out damaged areas ↓
If necessary, apply filler or body solder on reshaped areas ↓		Cut out remaining pieces ↓
		Fit new parts in, then check the gap dimensions with the accessories fitted ↓
		Protect spot-welded flanges against corrosion ↓
Apply fine filler on repair areas ↓		Disconnect battery and observe safety and quality instructions for welding. ↓
		Weld in new parts ↓
		Grind visible weld seams flat; if necessary apply body solder or filler ↓
If necessary, primer and seal the seam areas ↓		

Work sequence for accident repair
If necessary, renew the stone impact protection ↓
Paint the repaired area ↓
If necessary, touch up the undersealing ↓
Seal cavities ↓
Fit accessories

50 56 19 Removing and installing wheel housing liner



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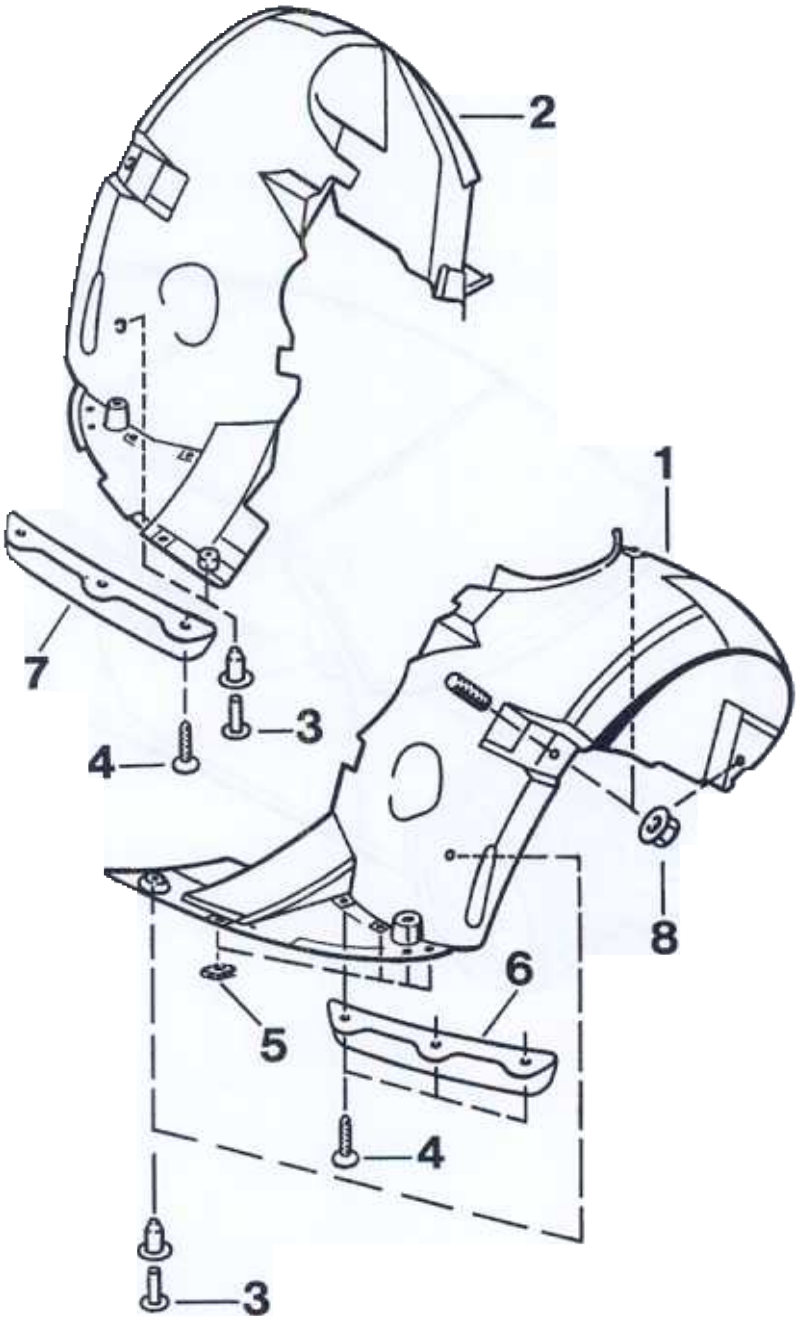
Removing and installing wheel housing liner



128 - 96

Removing and installing wheel housing liner

No.	Designation	Qty.	Removal	Note: Installation
1	Front left wheel housing liner	1		
2	Front right wheel housing liner	1		
3	Expanding rivet St6.3	8		Check, replace if necessary
4	Combination screw B4.8 x 19	4		
5	Plastic nut T5 22 x 10	12		Check, replace if necessary
6	Sheetmetal nut B4.8	6		Adjust to center of hole.
7	Cover, left	1		
8	Cover, right	1		

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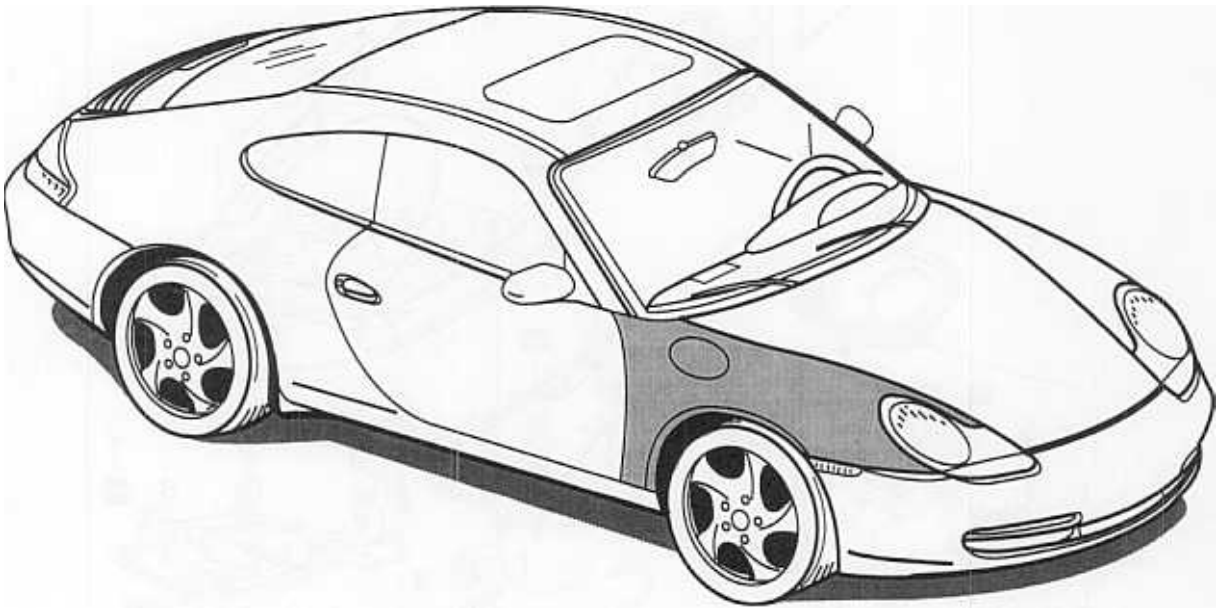
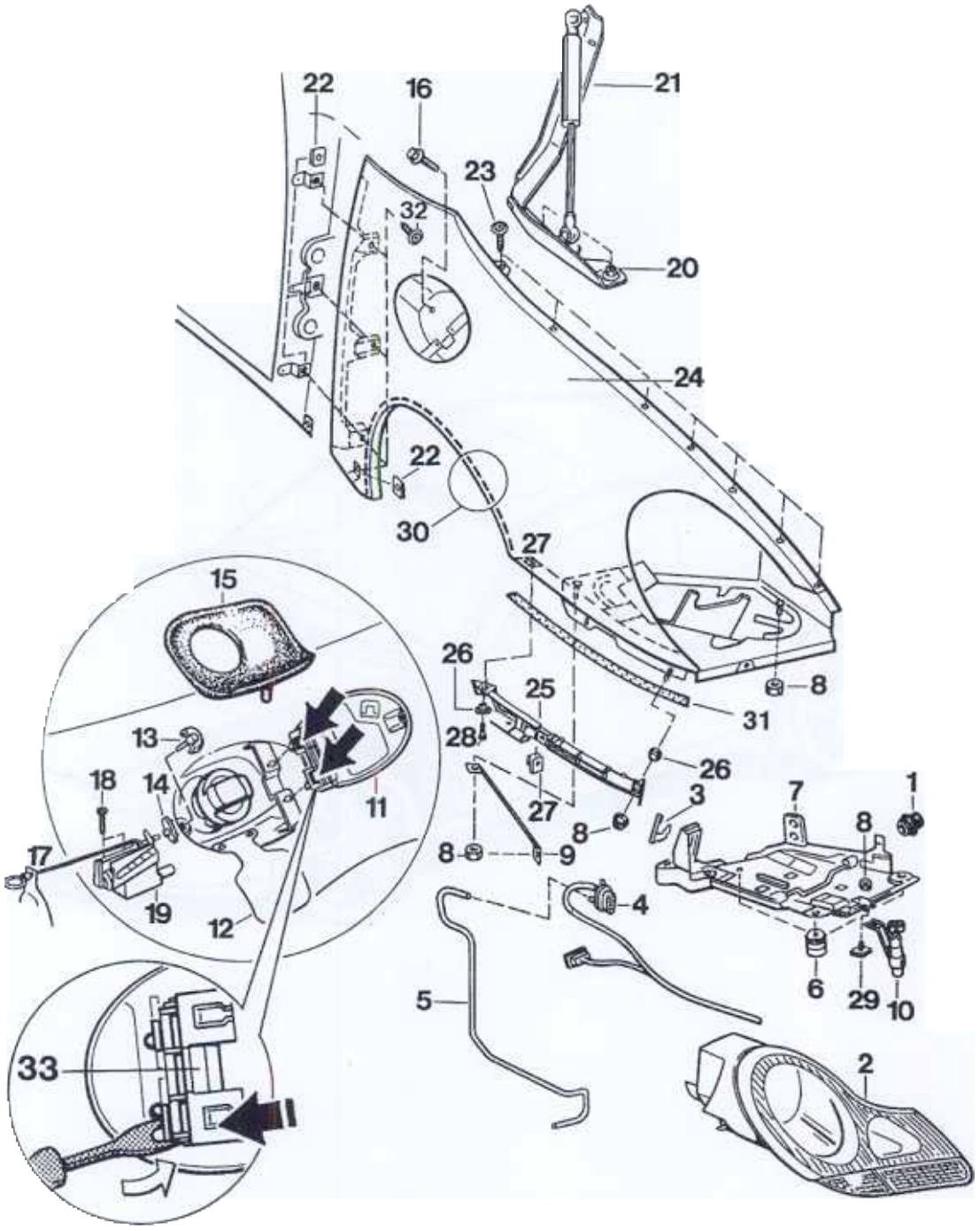
50 55 19 Removing and installing the wing



35 - 97

Printed in Germany, 1997 966505

Removing and installing the wing



201a - 96

Removing and installing the wing

Before removing the wing, it is necessary to remove the wheel, the wheel housing liner and the carbon canister.

No.	Designation	Qty.	Removal	Note: Installation
1	Rubber sleeve	1	Pull off	Press in
2	Main headlight (combination unit)	1	with a socket wrench (width across flats 5), disengage the main headlight and remove it to the front.	Insert the main headlight into the guides of the mounting plate and lock it with the socket wrench (width across flats 5)
3	Sliding piece	1	Pull off downwards	Press in upwards
4	Plug connection		Remove from the mounting plate by turning	
5	Vent hose	1	Pull off	Push on
6	Fastening element	3	Undo	
7	Mounting plate	1	Pull forwards and remove from the headlight recess	Insert the mounting plate into the holes provided for that purpose and press it back. Insert the main headlight into the mounting plate guides and lock in place with the socket wrench (width across flats 5). Adjust the mounting plate with the headlight in accordance with the wing contours and tighten the fastening elements.
8	Collar nut M6	5		
9	Strut	1		
10	Headlight cleaning element	1		

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No.	Designation	Qty.	Removal	Note: Installation
11	Filler flap	1	Insert a narrow screwdriver from above in front of the clip, press the fastening lug backwards and hold, and carefully pull off the filler flap upwards.	Press in
12	Protective tabs	1	Pull off	
13	Rubber sleeve	1	Pull off	
14	Guide ring	1	Unclip	Clip in
15	Sleeve	1	Unclip	Clip in
16	Hexagon-head bolt M6 x 20	1	Undo	Screw in
17	Emergency cable	1	Detach	Attach
18	Sheetmetal screw B4.2 x 18	2	Undo	Screw in
19	Servo motor	1	Disconnect the electrical plug connection	Bolt the servo motor onto the sheetmetal bracket with the sheetmetal screws and connect the electrical plug connection
20	Combination screw M6 x 14	2	Undo	
21	Hinge	1	At the hinge, undo the combination screw by 2 - 3 turns	At the hinge, adjust the contour of the wing to the lid
22	Sheetmetal nut St6.3	11		
23	Sheetmetal screw St6.3 x 14	11		
24	Wing	1	Pull out downwards at the A-pillar and remove to the front	Insert the wing under the lid hinge and fit the sheetmetal screws. Adjust the contours and gaps to the doors and lid. Tighten the sheetmetal screws.

No.	Designation	Qty.	Removal	Note: Installation
25	Rail	1	Undo	Fix and screw down
26	Spacer sleeve 4.8 x 19	4		
27	Sheetmetal nut St4.8	2		
28	Sheetmetal screw 4.8 x 19	1		
29	Sliding piece	1		
30	PVC seam seal			When replacing the wing, put a PVC seam seal on the inside of the crimped seam of the wheel arch.
31	Adhesive tape	1		
32	Sheetmetal screw St6.3 x 12	3		
33	Plastic hinge	1	Insert the **standard commercially available disassembly tool, e.g. Snap-on Order No. A177A** at the locking lugs on the left and right and lift over the locking lugs, push the plastic hinge against the disassembly tool and detach from the filler flap (Item 11).	Position the plastic hinge at the filler flap (Item 11) and push on until it perceptibly engages.

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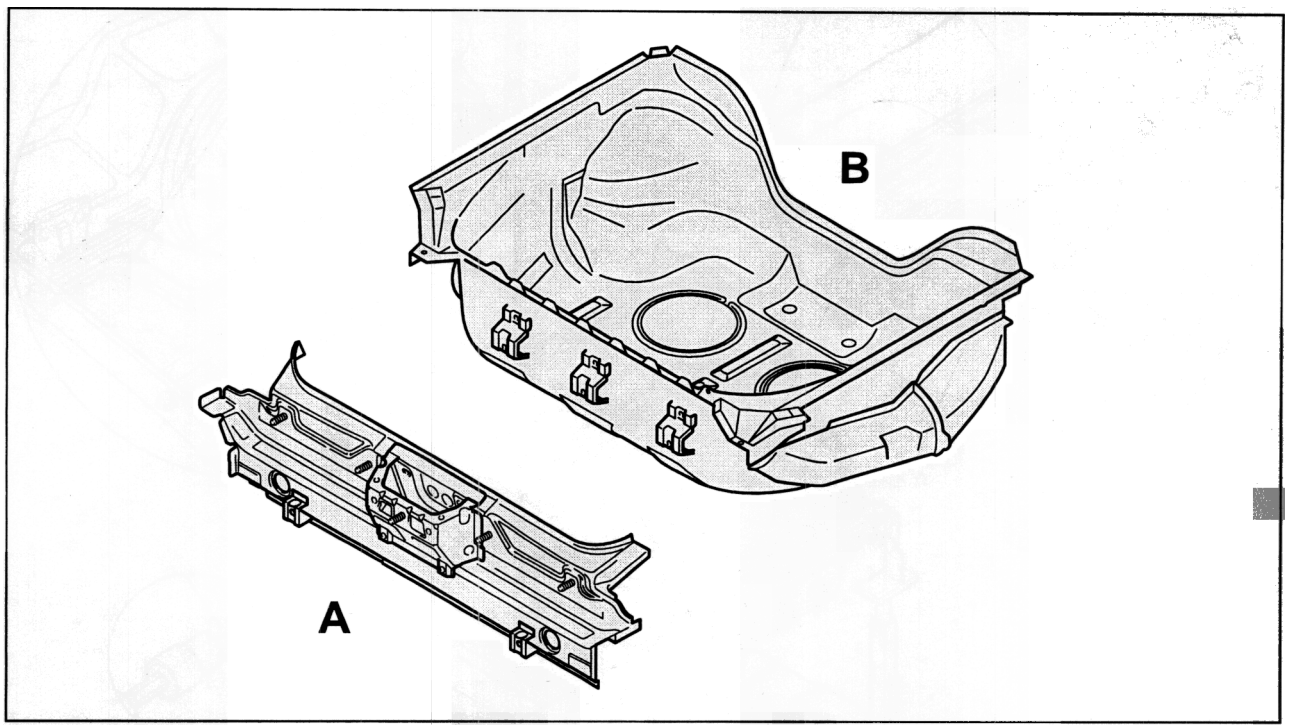
Replacing closing panel

Replacing closing panel and front floor panel

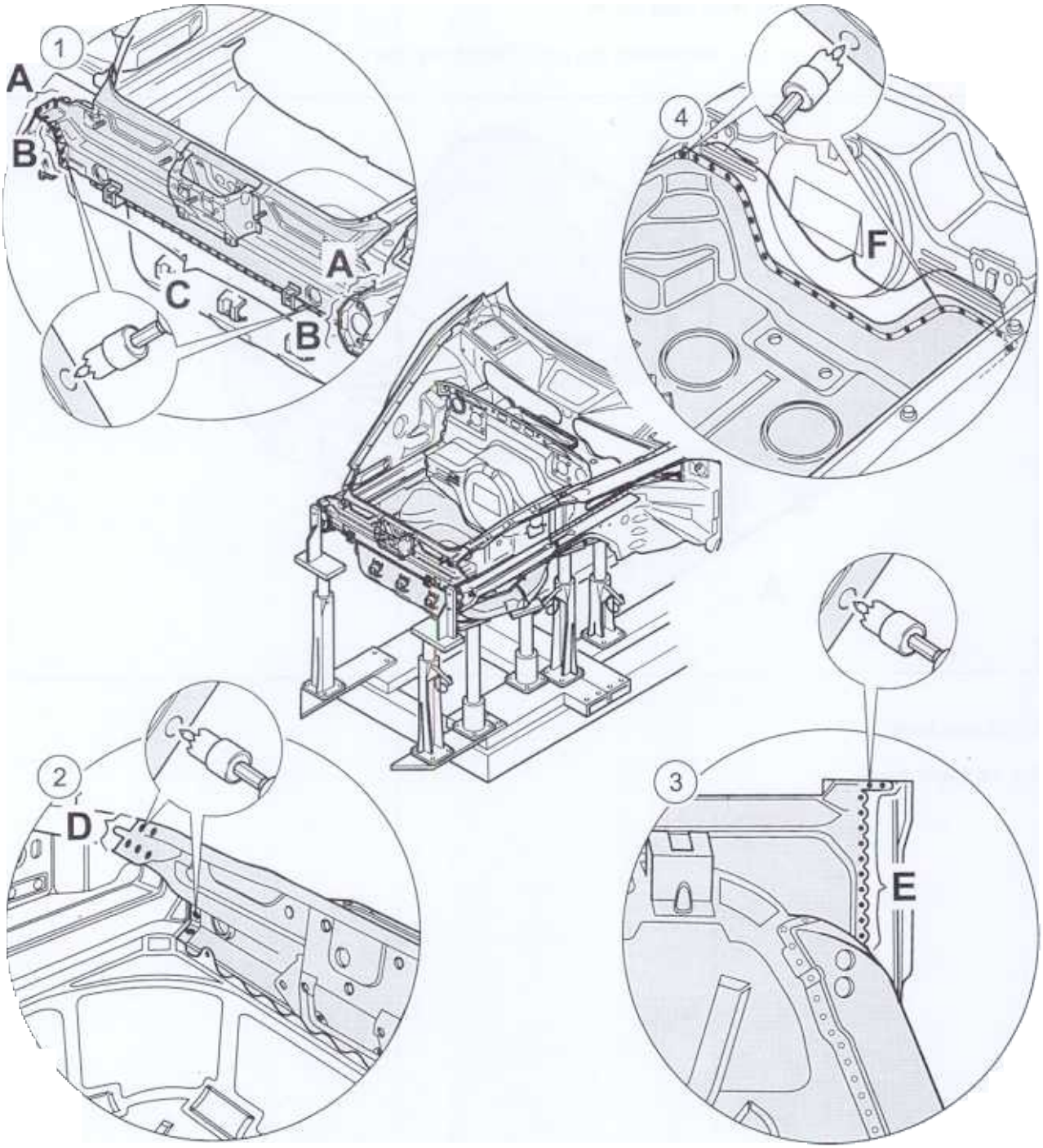
The following spare body parts are required for the repair "Replacing roof":



A = closing panel

B = front floor panel

Cutting out closing panel and front floor panel



Warning!

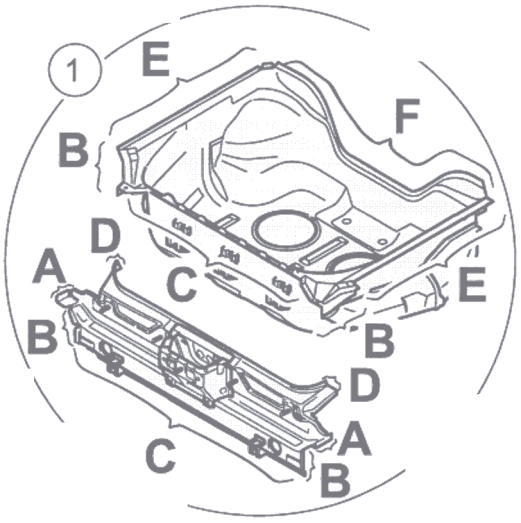
During body repairs, the following safety instructions and the general information and quality instructions must be followed. ⇒ Rep. Gr. 5; Safety instructions

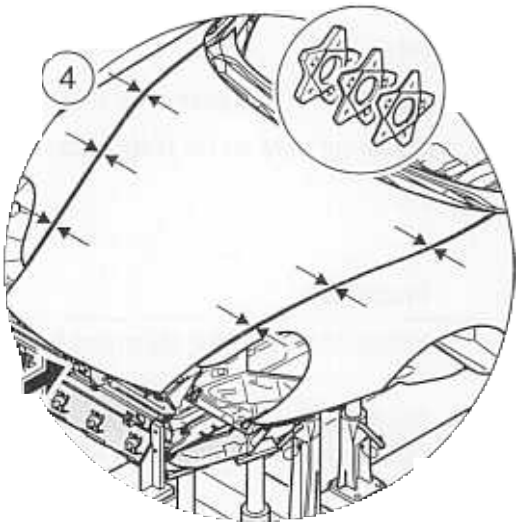
Note!

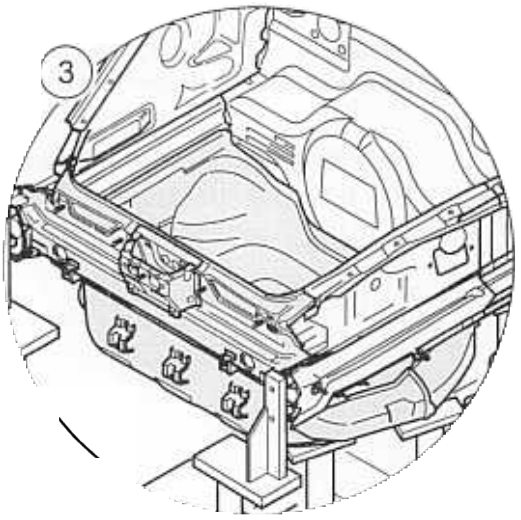
- *The accessories in the repair area should be removed, depending on the extent of the damage.*
- *All straightening work on the body in this area must have been completed before the damaged parts are removed.*

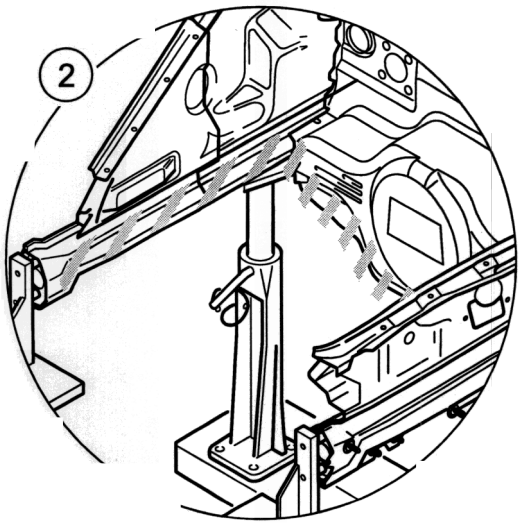
No.	Procedure	Instructions
	Placing vehicle on the alignment bench	Place the vehicle with the units installed at the rear onto the set of straightening attachments and fasten in place.
1	Separating spot-welded joints between the closing panel/side members and the front floor panel	Use the spotweld cutter to separate the spot-welded joints of the closing panel to the side members **-A, B-** and the front floor panel **-C-** from the outside.
2	Separating spot-welded joints between the closing panel/wheel housings	Separate the spot-welded joints of the closing panel to the wheel housings from the inside (luggage-compartment side) **-D-** with the spotweld cutter.
3	Separating spot-welded joints between the front floor panel/side members	Separate spot-welded joints of the front floor panel to the side members on the left and right **-E-** from the outside with the spotweld cutter.
4	Separating spot welds between the front floor panel and bulkhead.	Separate spot-welded joints of the front floor panel to the bulkhead at the middle **-F-** with the spotweld cutter.

Preparing closing panel and front floor panel for installation and fitting



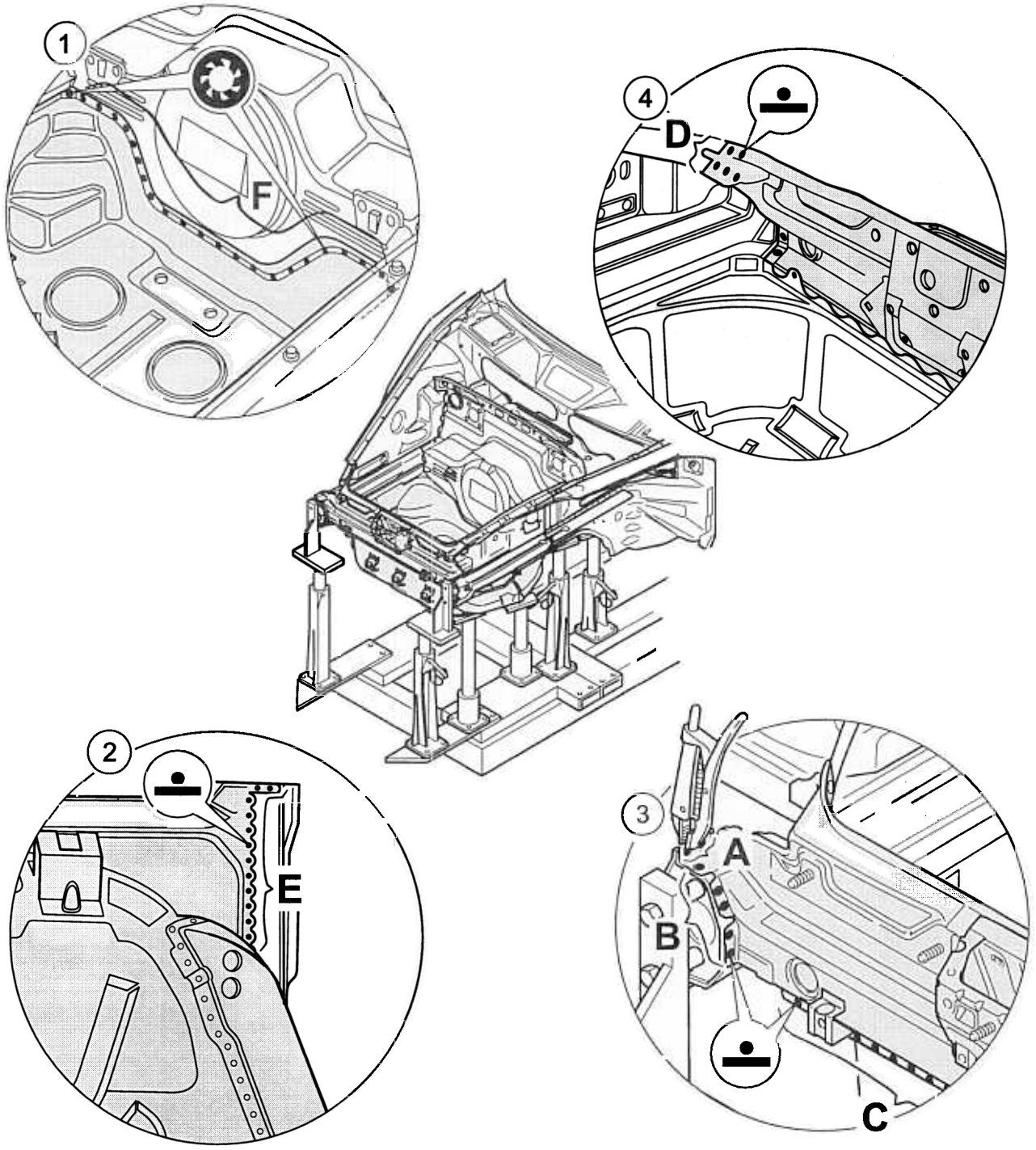






No.	Procedure	Instructions
		Remove the factory-applied primer on the welding areas of the spare parts **-A, B, C, D, E, F-** using the rotary brush. Drill or punch (with a hole punch) ∅7 mm holes spaced 20 mm apart for plug-welding with shielding gas. ⇒ "Welding in closing panel and front floor panel" in **50-11** page 6
2	Cleaning the welding areas	Remove underbody coating and paint layers, etc. from the welding areas of the body with a hot-air gun or rotary brush.
3	Fitting the front floor panel in the body and fastening it on the straightening attachments.	Adjust the spare front floor panel to the side members and to the bulkhead. Fasten the spare front floor panel to the straightening attachment for the front-axle mount and diagonal brace. Fasten the side members to the straightening attachment for the impact pipes (impact dampers).
4	Fitting in wings and front lid	Fit the left and right wings and fit in the front lid. ⇒ Rep. Gr. 552237; Disassembling and assembling front lid ⇒ Rep. Gr. 505519; Removing and installing the wing

Welding in closing panel and front floor panel



No.	Procedure	Instructions
	Plug-welding front floor panel to the bulkhead under shielding gas	Plug-weld the front floor panel to the bulkhead **-F-** under shielding gas.
2	Plug-welding the front floor panel to the side members under shielding gas	Align the front floor panel with the side members on the left and right **-E-** and plug-weld under shielding gas.
3	Spot-welding the closing panel	Spot-weld the closing panel to the front floor panel **-C-** and the side members on the left and right **-A, B-**.
4	Spot-welding the closing panel to the front floor panel	Spot-weld the closing panels with to wheel housings on the left and right **-D-**.

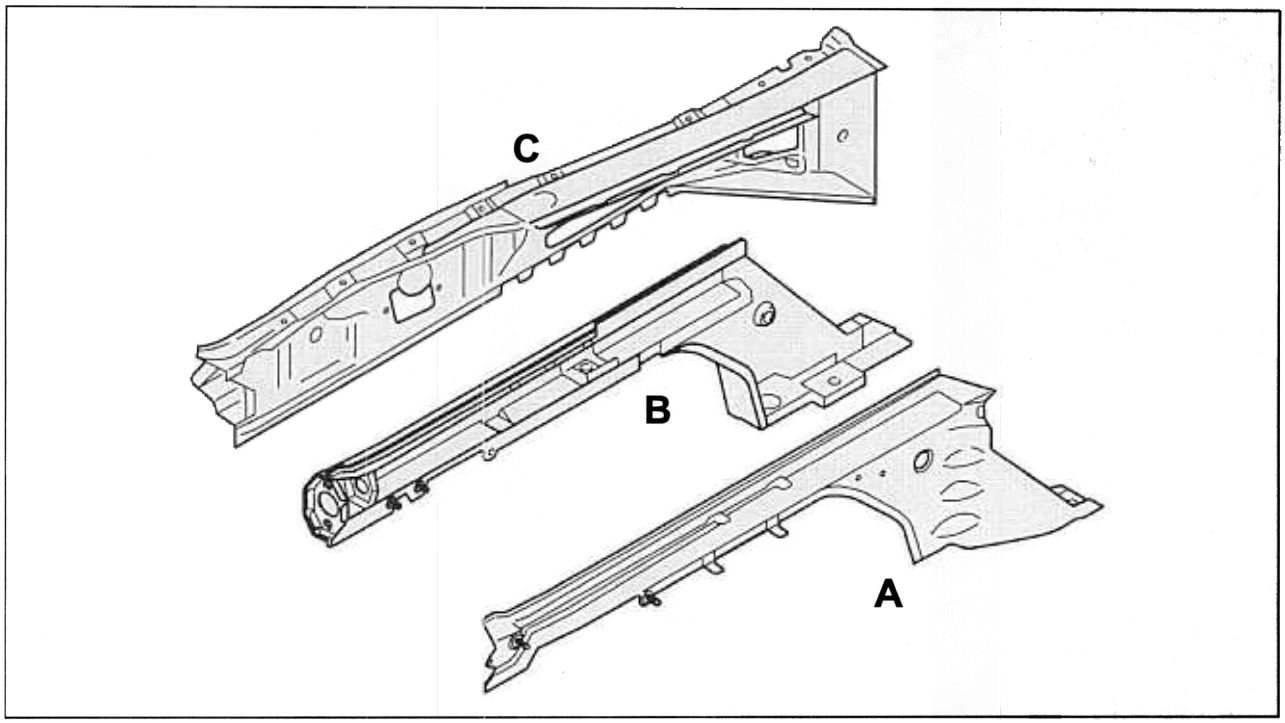
Tools and materials

Item	Designation of the special tool	Explanation
	Basic straightening attachments for 911 Carrera (996) Nr. 7250700	⇒ Rep. Gr. 3; Workshop Equipment Manual
2	Star gauges Nr. 127-1	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
3	Shielding-gas welding device	⇒ Rep. Gr. 3; Workshop Equipment Manual
4	Multispot spotwelder	⇒ Rep. Gr. 3; Workshop Equipment Manual
5	Pneumatic body saw	⇒ Rep. Gr. 3; Workshop Equipment Manual
6	Angle grinder	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
7	Oscillating body saw (special electrical cutter)	⇒ Rep. Gr. 3; Workshop Equipment Manual
8	Multispot spotweld cutter	⇒ Rep. Gr. 3; Workshop Equipment Manual
9	Hole punch	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
10	Hot-air gun	⇒ Rep. Gr. 3; Workshop Equipment Manual
11	Rotary brush	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
12	Spotweld cutter Ø7 mm, No. 129	⇒ Rep. Gr. 2.4; Workshop Equipment Manual

Replacing wheel housings and side members (sectional repair)

Partially replacing wheel housings and side members

The following spare body parts are required for the sectional repair "Partially replacing wheel housings and side members":

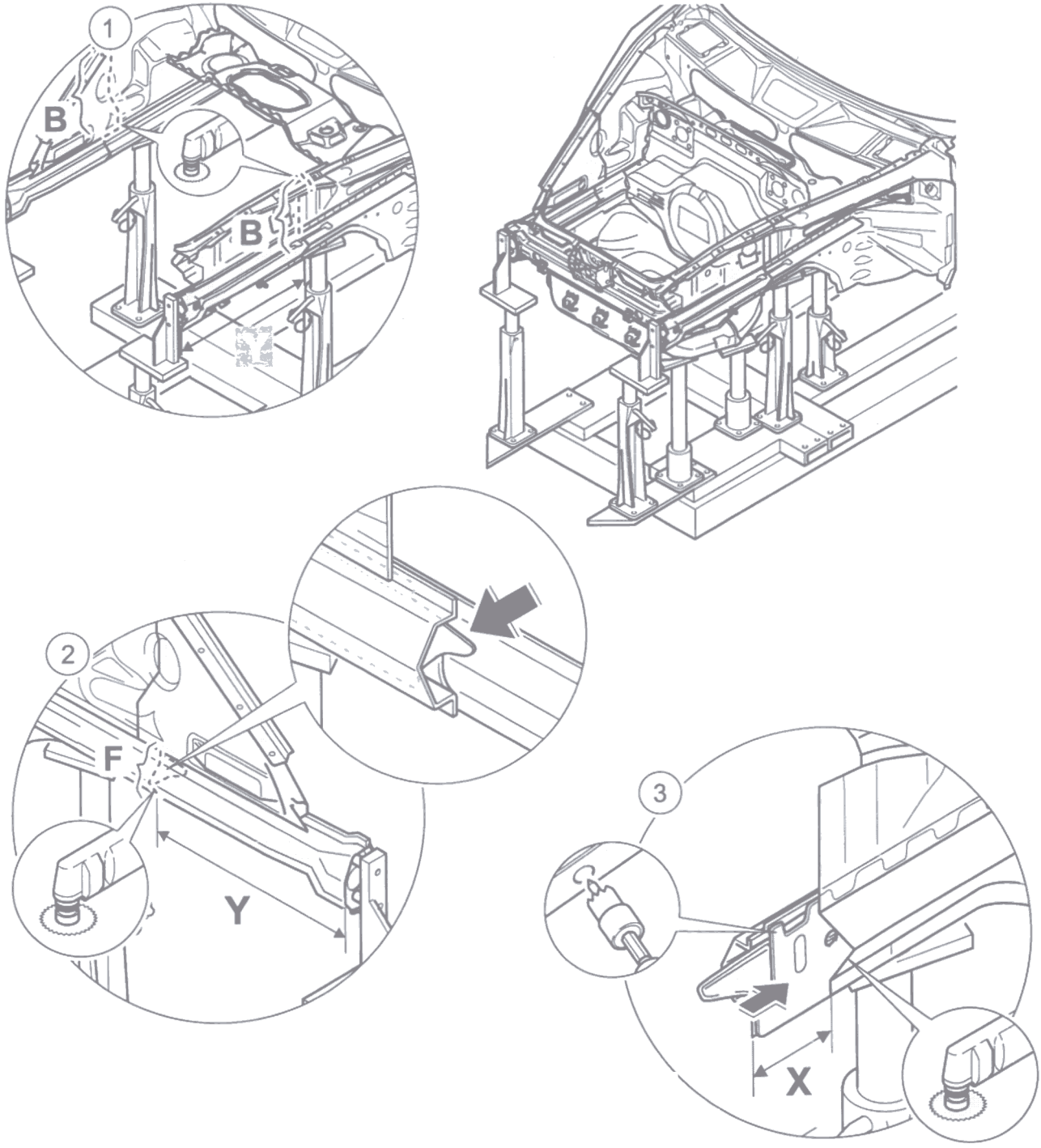


A = front outer side member

B = front inner side member

C = front wheel housing

Cutting out wheel housings and side members



Warning!

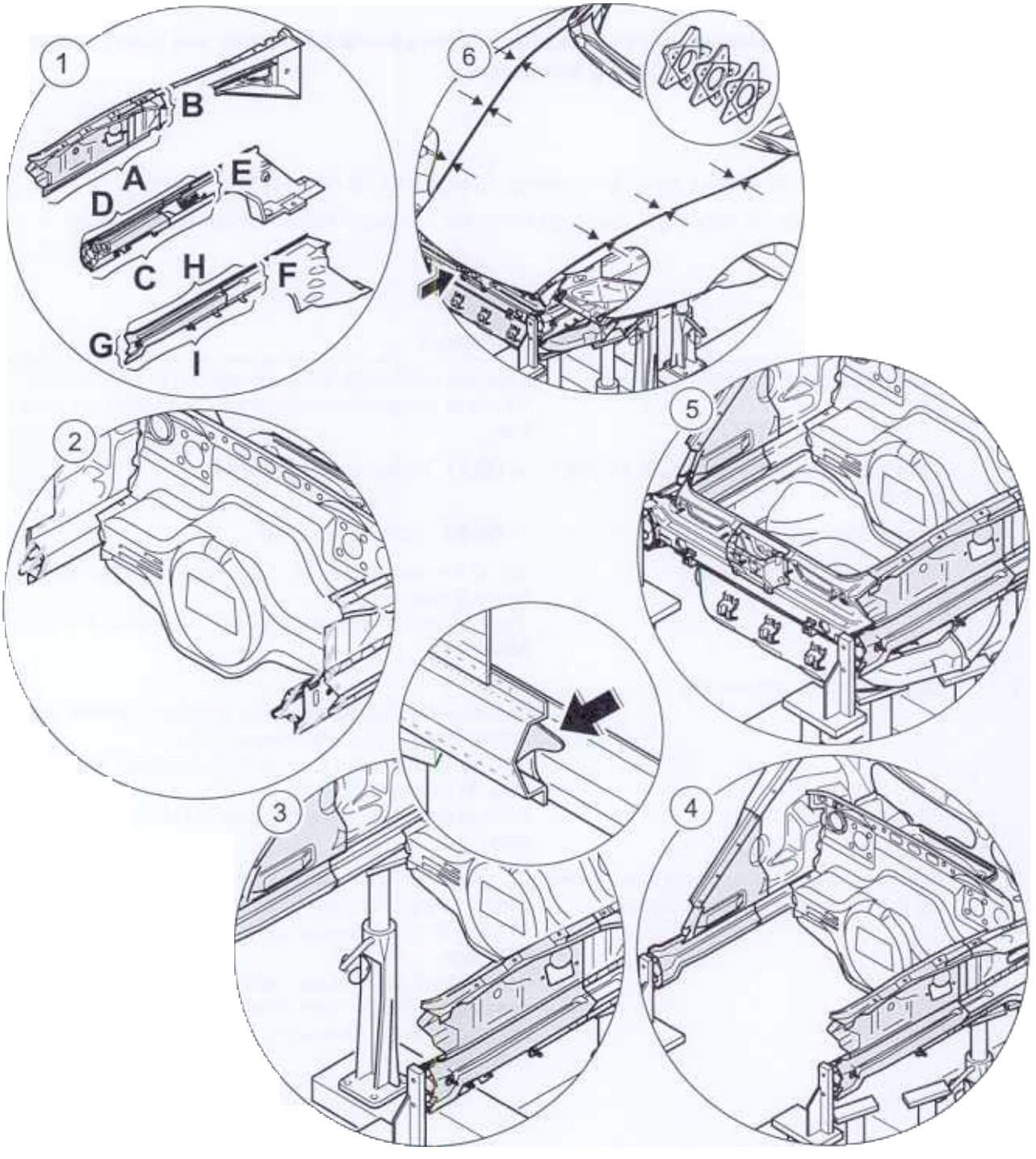
During body repairs, the following safety instructions and the general information and quality instructions must be followed. ⇒ Rep. Gr. 5; Safety instructions

Note!

- *The accessories in the repair area should be removed, depending on the extent of the damage.*
- *All straightening work on the body in this area must have been completed before the damaged parts are removed.*

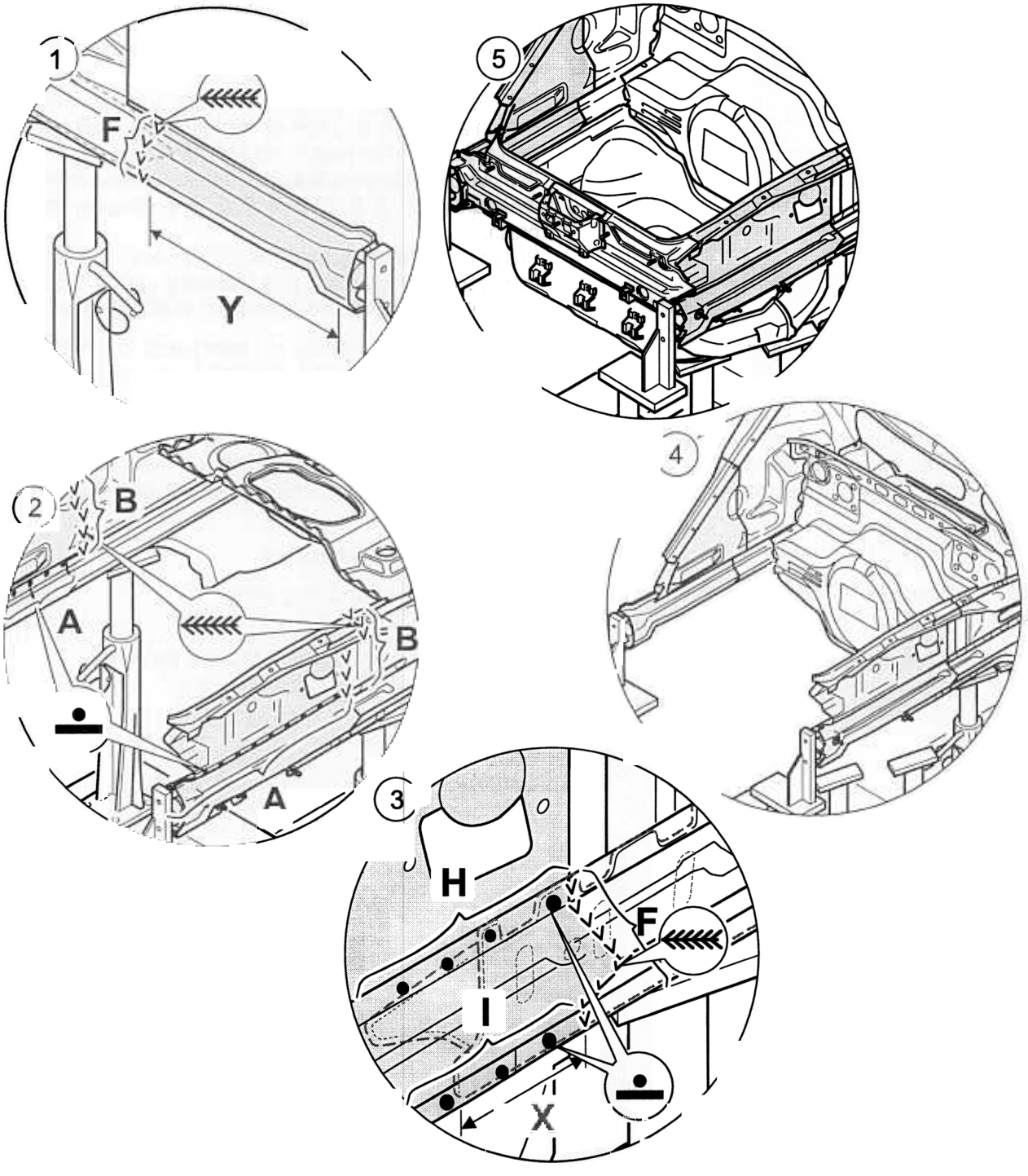
No.	Procedure	Instructions
	Placing vehicle on the alignment bench	Place the vehicle with the units mounted at the rear onto the set of straightening attachments and fasten it in position.
	Closing panel and front floor panel already cut out	⇒ **50-11** "Replacing closing panel"
	Front wall already cut out	⇒ **50-33** "Replacing front wall"
1	Removing the wheel housings	Cut off the damaged areas of the wheel housings **-B-** with the body saw. Position the cut within the specified dimension of **-Y = 580 mm-**.
2	Cutting off inner side member	Note: Do not cut through the inner reinforcements **-arrow-** when cutting through the inner side members. Remove the damaged areas of the outer/inner side members **-F-** with the body saw. Position the cut **-Y-** within the specified dimension of **-580 mm-**.
3	Cutting off outer side members and shortening to the offset to the wheel housings	Do not cut through the inner reinforcements **-arrow-** when cutting through the outer side members. Position the cut within the specified dimension of **-Y = 580 mm-**. Use the body saw and spotweld cutter to shorten the side members until there is an offset of **-dimension X = 50 mm-** between the inner/outer side members and the wheel housing.

Preparing wheel housings and side members for installation and fitting



No.	Procedure	Instructions
		Transfer cut to the spare front wheel housings and then cut to size. Cut spare side members to size with the body saw and fit in such a way that an offset of **-dimension X = 50 mm-** results between the inner/outer side members. Remove the factory-applied primer on the welding areas of the spare parts **-A, B, C, D, E, F, G, H, I-** using the rotary brush. Drill or punch (with a hole punch) ∅7 mm holes spaced 20 mm apart for plug-welding under shielding gas.⇒ "Welding in wheel housings and side members" in **50-17** page 6
2	Cleaning the welding areas	Remove underbody coating and paint layers, etc. from the welding areas of the body with a hot-air gun or rotary brush.
3	Fitting the side members and wheel housing in the body and fastening them on the straightening attachments.	Fasten the spare innner side member on the straightening attachment for the front-axle mount or on the straightening attachments for the impact pipes (impact absorbers) and fit it in.
4	Fitting in front wall	⇒ **50-33** "Replacing front wall"
5	Fitting the front floor panel in the body and fastening it on the straightening attachment.	⇒ **50-11** "Replacing closing panel"
6	Fitting in wings and front lid	Fit the left and right wings and fit in the front lid. ⇒ **5-37** "Diagram - body gap dimensions"

Welding wheel housings de be



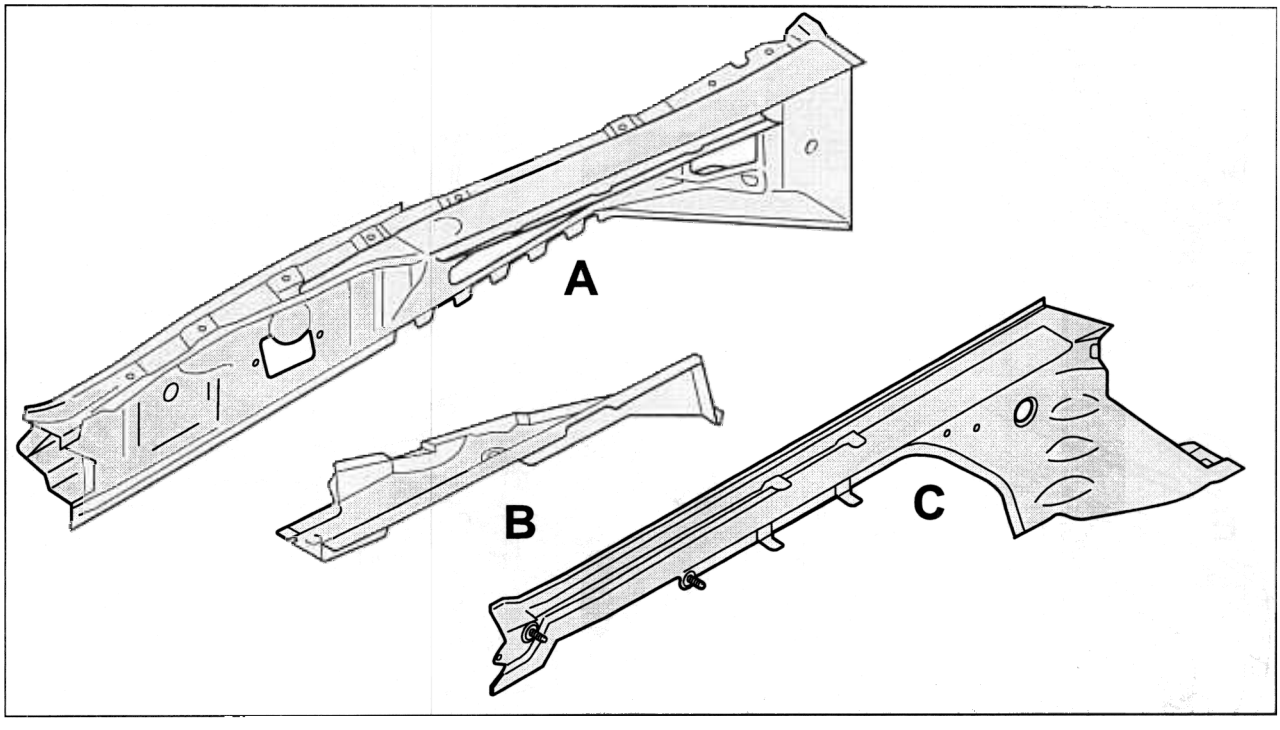
No.	Procedure	Instructions
	Welding in the inner side member.	Weld the inner side member with a full butt weld **-F-** under shielding gas.
2	Welding in wheel housings.	Spot-weld wheel housings and inner side members **-A-**. Weld the wheel housing from the outside with a full butt weld **-B-** under shielding gas.
3	Welding in the outer side member.	Spot-weld the outer side member to the inner side member **-H, I-**. Weld the outer side member with a full butt weld **-F-** under shielding gas.
4	Welding in front wall	⇒ chapter "Welding in front wall" in **50-33**
5	Welding in closing panel and front floor panel	⇒ chapter "Welding in closing panel and front floor panel" in **50-11**

Item	Designation of the special tool	Explanation
	Basic straightening attachments for 911 Carrera (996) Nr. 7250700	⇒ Rep. Gr. 3; Workshop Equipment Manual
2	Star gauges Nr. 127-1	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
3	Shielding-gas welding device	⇒ Rep. Gr. 3; Workshop Equipment Manual
4	Multispot spotwelder	⇒ Rep. Gr. 3; Workshop Equipment Manual
5	Pneumatic body saw	⇒ Rep. Gr. 3; Workshop Equipment Manual
6	Angle grinder	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
7	Oscillating body saw (special electrical cutter)	⇒ Rep. Gr. 3; Workshop Equipment Manual
8	Multispot spotweld cutter	⇒ Rep. Gr. 3; Workshop Equipment Manual
9	Hole punch	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
10	Hot-air gun	⇒ Rep. Gr. 3; Workshop Equipment Manual
	Rotary brush	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
12	Spotweld cutter Ø7 mm Nr. 129	⇒ Rep. Gr. 2.4; Workshop Equipment Manual

Replacing wheel housing

Replacing wheel housing, bottom part and outer side member

The following spare body parts are required for the repair "Replacing wheel housings'

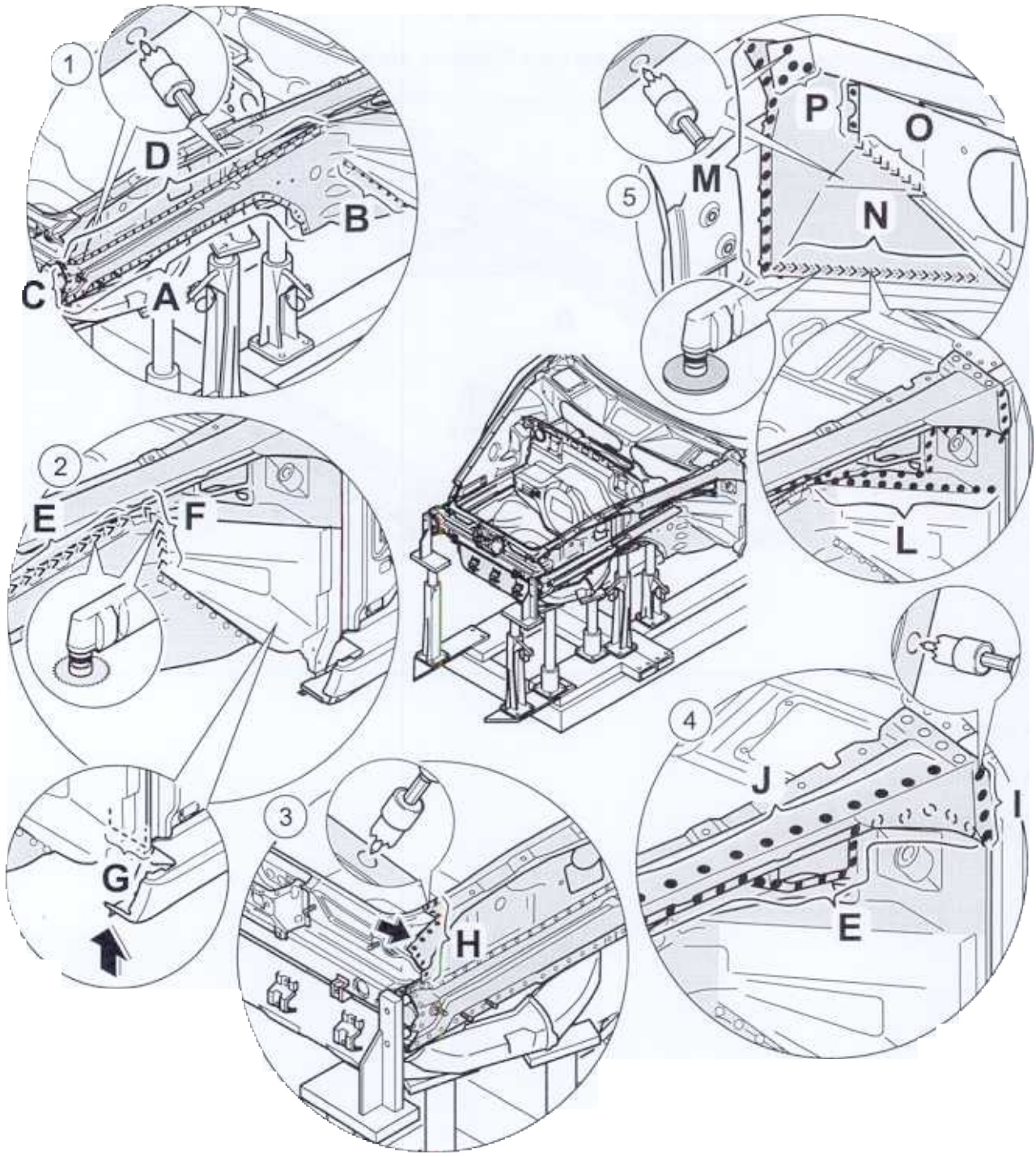


A = wheel housing

B = lower shell

C = outer side member

Removing wheel housing, lower shell and outer side member from the body



Warning!

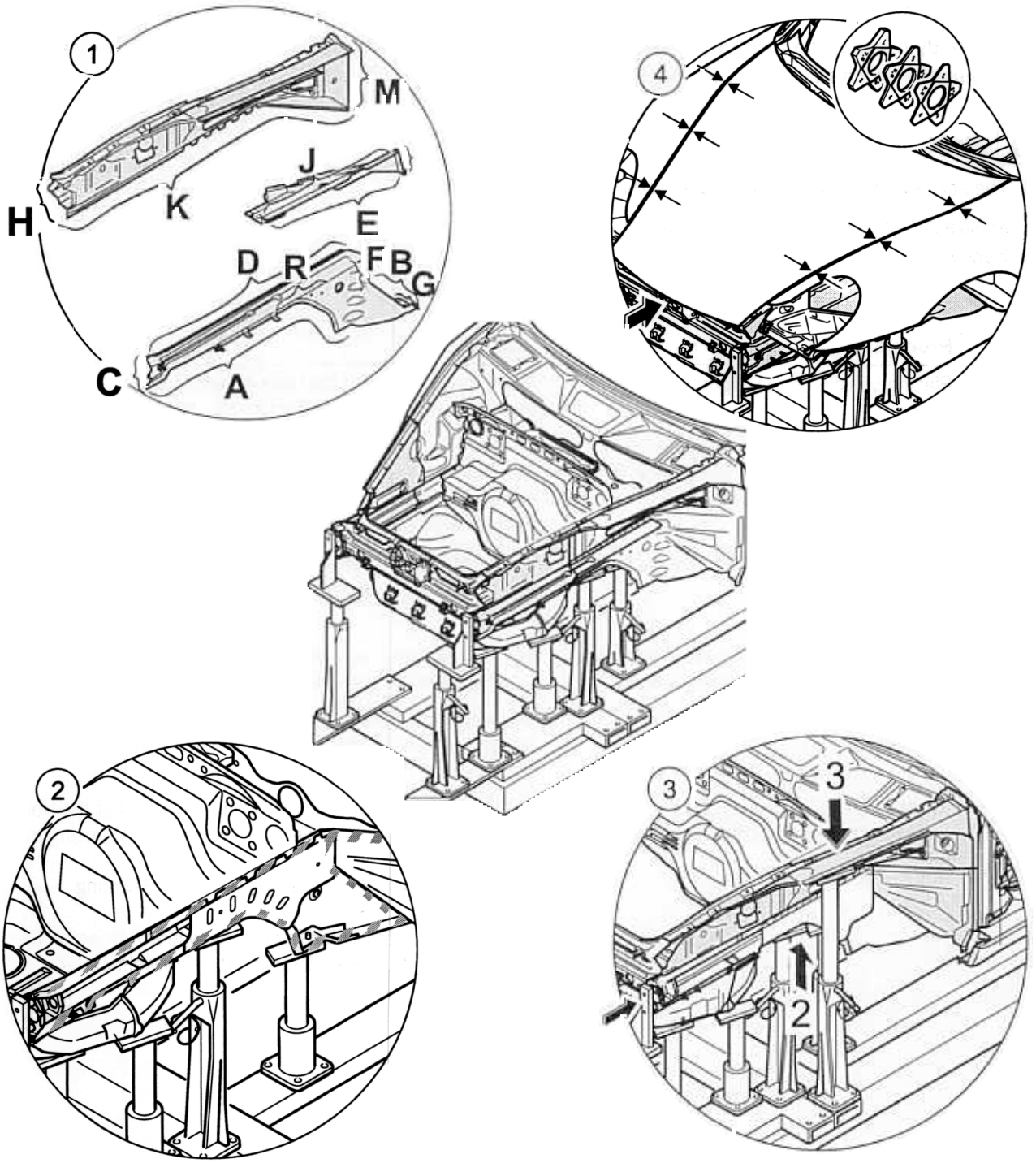
During body repairs, the following safety instructions and the general information and quality instructions must be followed. ⇒ Rep. Gr. 5; Safety instructions

Note!

- *The accessories in the repair area should be removed, depending on the extent of the damage.*
- *All straightening work on the body in this area must have been completed before the damaged parts are removed.*

No.	Procedure	Instructions
	Placing vehicle on the alignment bench	Place the vehicle with the units mounted at the rear onto the set of straightening attachments and fasten it in position.
	Separating the spot-welded joint between the outer/inner side members	Separate the spot-welded joints between the outer side member and inner side member **-A, C, D-** and the front wall **-B-** with the spotweld cutter.
2	Separating welds between outer side member and front wall	Grind open the MIG seams between outer side member **-E-** and the front wall **-F-** and the support shell on the floorpan **-G-**.
3	Separating the spot-welded joint between the wheel housing and closing panel	Separate the spot-welded joint of the wheel housing to the closing panel **-H-** using the spotweld cutter.
4	Separating spot-welded joint between lower shell/wheel housing and hinge pillar	Separate spot-welded joint of the lower shell to the wheel housing **-J, E-** and the hinge pillar **-I-** using the spotweld cutter.
5	Separating the spot-welded joint between the wheel housing/ A-pillar and transverse wall	Separate the spot-welded joint (vehicle interior) of the front wall **-P-** and hinge pillar **-M-** to the wheel housing using the spotweld cutter. Grind open the MIG seams **-N, O-** with the parting grinder. Separate the spot-welded joint of the wheel housing on the outside to the front wall **-L-** using the spotweld cutter.

Preparing wheel housing, lower shell and outer side member for installation and fitting



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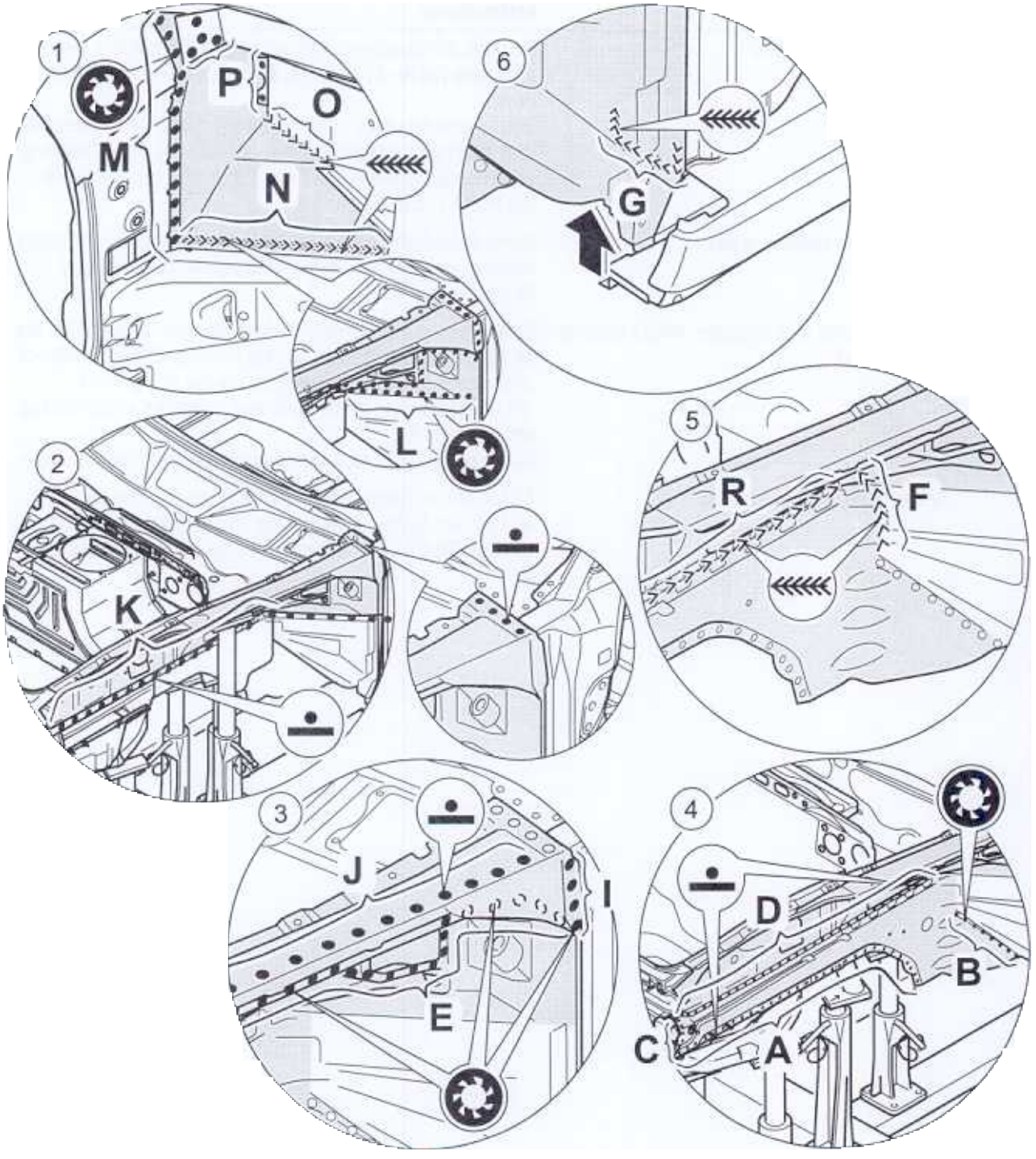
No.	Procedure	Instructions
	Preparing spare parts	Remove the factory-applied primer on the welding areas of the spare parts **-A, B, C, D, E, F, G, H, I-** using the rotary brush. Drill or punch (with a hole punch) ∅7 mm holes spaced 20 mm apart for plug-welding with shielding gas. ⇒ "Welding wheel housing, lower shell and outer side members into the body" in **50-23** page 6
2	Cleaning the welding areas	Remove underbody coating and paint layers, etc. from the welding areas of the body with a hot-air gun or rotary brush.
3	Inserting outer side member, wheel housing into the body	Straightening attachment **-2-** for front-axle mount or on the straightening attachment **-1-** for the impact pipes (impact absorbers) must be screwed on for the fitting work. Fit wheel housing in the body and fasten on straightening attachment **-3-**. Insert spare outer side member on the inner side member.
4	Fitting in wings and front lid	Fit the left and right wings and fit in the front lid. ⇒ Rep. Gr. 505519; Removing and installing wings ⇒ Rep. Gr. 552237; Disassembling and assembling front lid

Welding wheel housing, lower shell and outer side members into the body



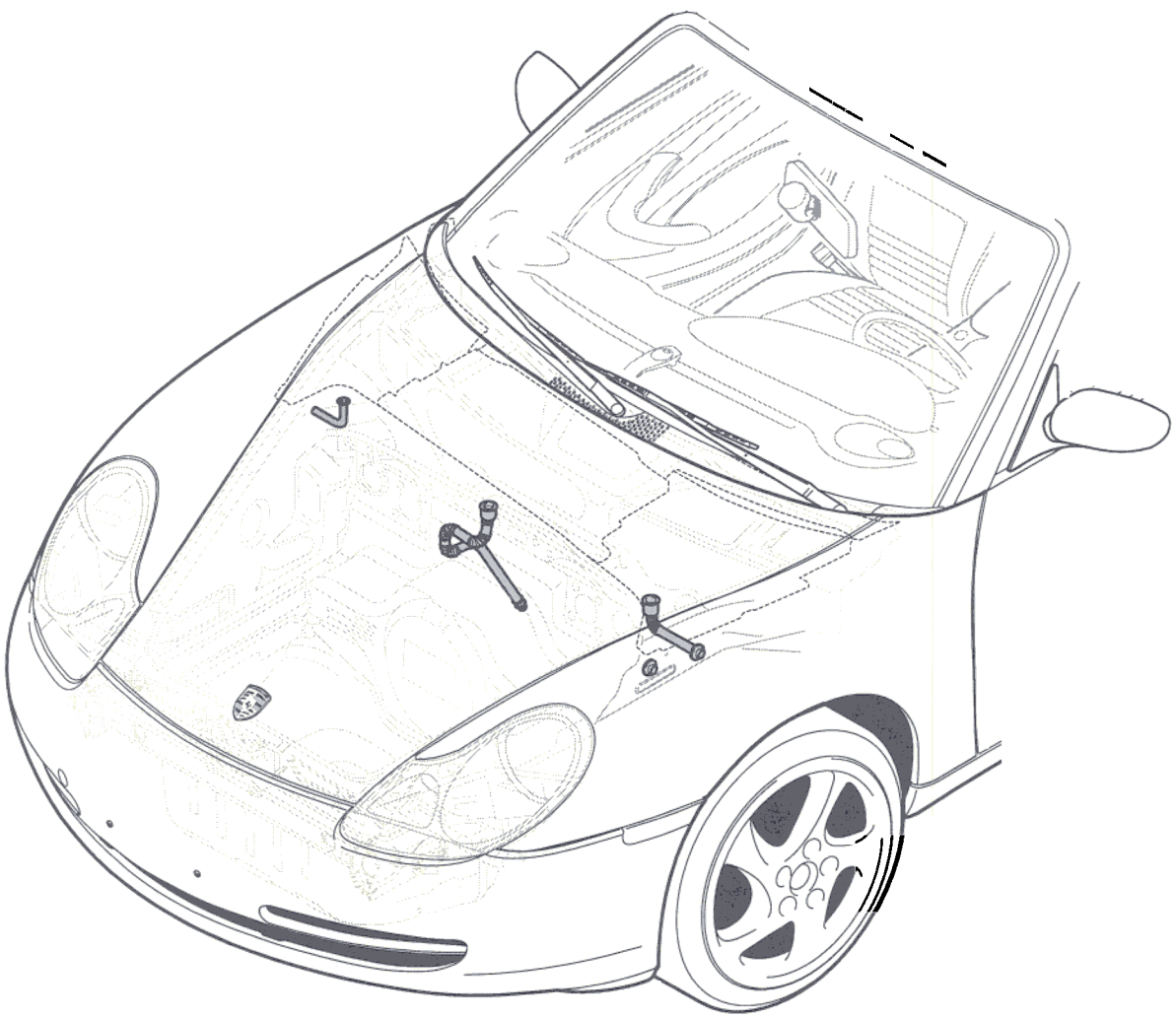
No.	Procedure	Instructions
1	Plug-welding wheel housing/hinge pillar, front wall and cross member under shielding gas	Weld the spare wheel housing to the front wall **-N, O -** with an interrupted full weld under shielding gas. Plug-weld the connection to the hinge pillar **-M-** and the front wall **-P, L-** under shielding gas.
2	Spot-welding the wheel housing	Spot-weld the wheel housing to the outer side member **-K-**.
3	Welding the lower shell under shielding gas	Plug-weld the lower shell to the wheel housing **-J, E, I-** under shielding gas.
4	Welding outer side member under shielding gas and with spot welds	Spot-weld the outer side member to the inner side member **-A, D, C-**. Plug-weld the connection to the front wall **-B-** under shielding gas.
5	Welding inner/outer side members and front wall under shielding gas	Weld inner side member to outer side member **-R-** and the front wall **-F-** with an interrupted full weld under shielding gas.
6	Welding side member/support shell under shielding gas	Weld side members to the support shell **-G-** with a full weld under shielding gas.

Tools and materials

Item	Designation of the special tool	Explanation
	Basic straightening attachments for 911 Carrera (996) Nr. 7250700	⇒ Rep. Gr. 3; Workshop Equipment Manual
2	Star gauges Nr. 127-1	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
4	Shielding-gas welding device	⇒ Rep. Gr. 3; Workshop Equipment Manual
5	Multispot spotwelder	⇒ Rep. Gr. 3; Workshop Equipment Manual
6	Pneumatic body saw	⇒ Rep. Gr. 3; Workshop Equipment Manual
7	Angle grinder	⇒ Rep. Gr. 3; Workshop Equipment Manual
8	Oscillating body saw (special electrical cutter)	⇒ Rep. Gr. 3; Workshop Equipment Manual
9	Multispot spotweld cutter	⇒ Rep. Gr. 3; Workshop Equipment Manual
10	Hole punch	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
11	Hot-air gun	⇒ Rep. Gr. 3; Workshop Equipment Manual

Item	Designation of the special tool	Explanation
	Rotary brush	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
13	Spotweld cutter ∅7 mm, No. 129	⇒ Rep. Gr. 2.4; Workshop Equipment Manual

50 93 30 Cleaning front water drains on Coupe and Cabriolet



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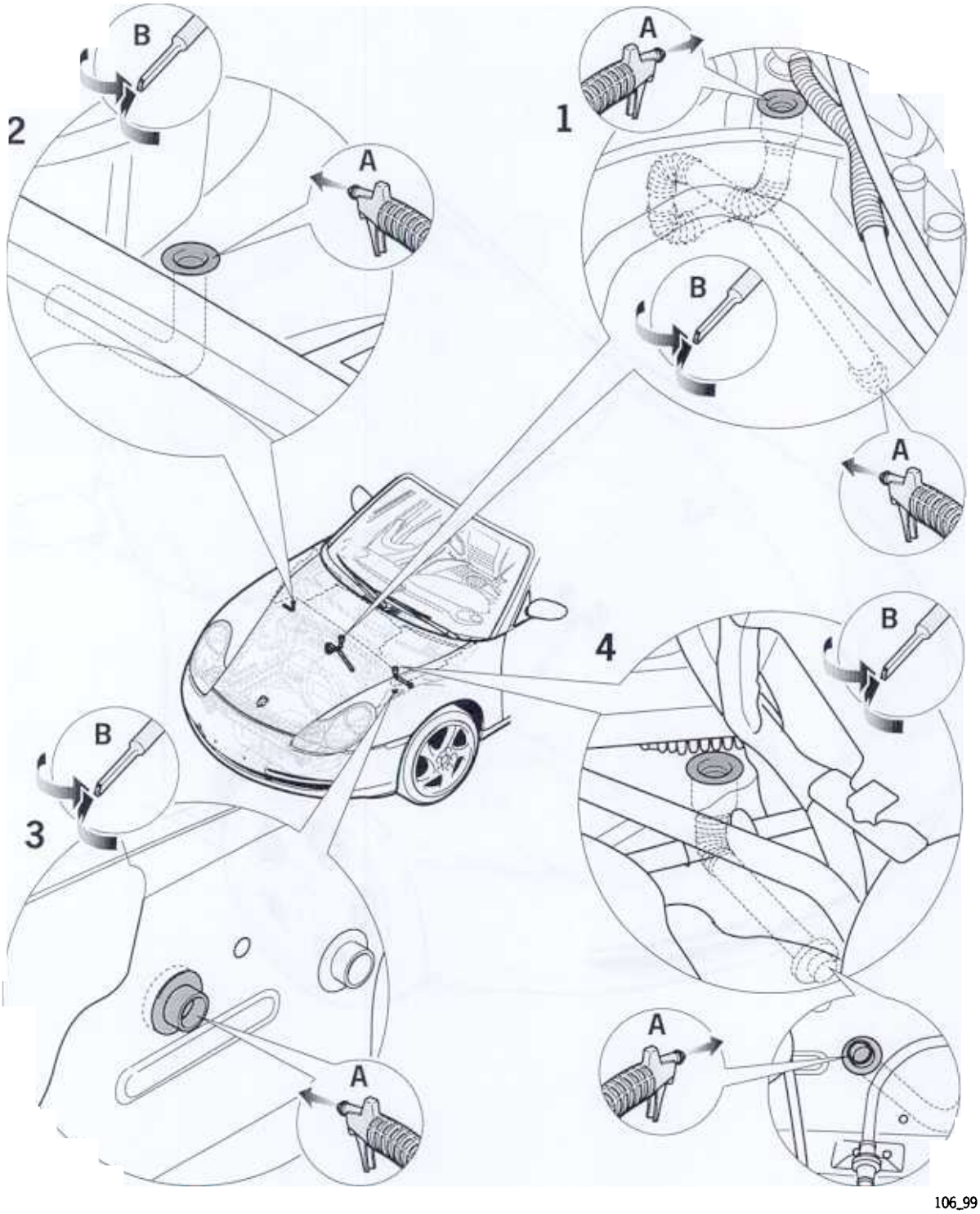
Cleaning water drains on Coupe and Cabriolet



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Cleaning water drains on Coupe and Cabriolet

Removing cowl panel cover, see Serv. No. 70 22.

Warning!

Water drainage hoses can be pushed out or pressed in when blown out of the body!

> The water drains of the Coupe and Cabriolet should be blown out carefully with compressed air.

No.	Procedure	Instructions
1	Blow out Coupe, Cabriolet water drains on right side of front end.	Carefully blow out water drain from top **(inset A)** on right side of front end. Remove dirt particles from the radiator tank **(inset B)** with the vacuum cleaner.
2	Blow out Coupe, Cabriolet water drains on right side of front end.	Carefully blow out water drain from top **(inset A)** on right side of front end. Remove dirt particles from the radiator tank **(inset B)** with the vacuum cleaner.
3	Blow out Coupe, Cabriolet water drains on left side of front end.	Put vehicle onto lifting platform and carefully blow out the left water drain **(inset A)** from the outside of the wheel arch. Remove dirt particles from the radiator tank **(inset B)** with the vacuum cleaner.
4	Blow out Coupe, Cabriolet water drains on left side of front end.	Put vehicle onto lifting platform and carefully blow out the left water drain **(inset A)** from the outside of the wheel arch. Remove dirt particles from the radiator tank **(inset B)** with the vacuum cleaner. Installing cowl panel cover, see Serv. No. 70 22

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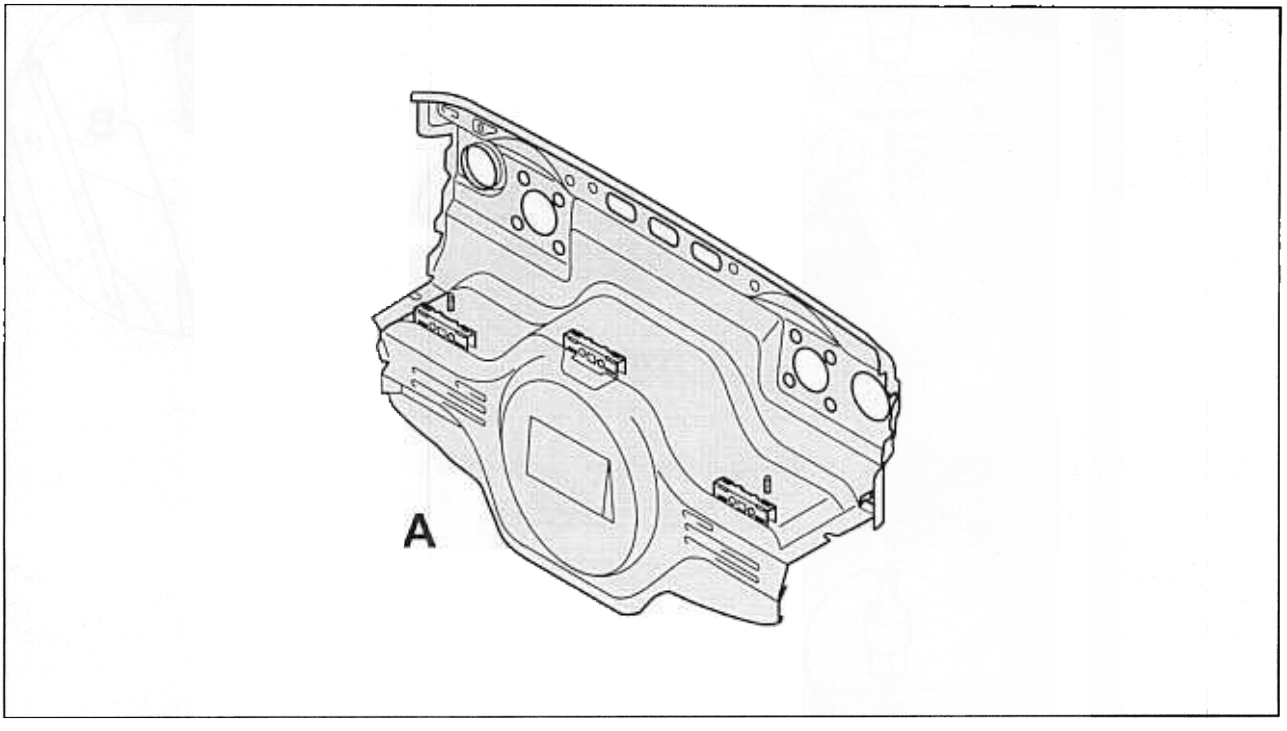
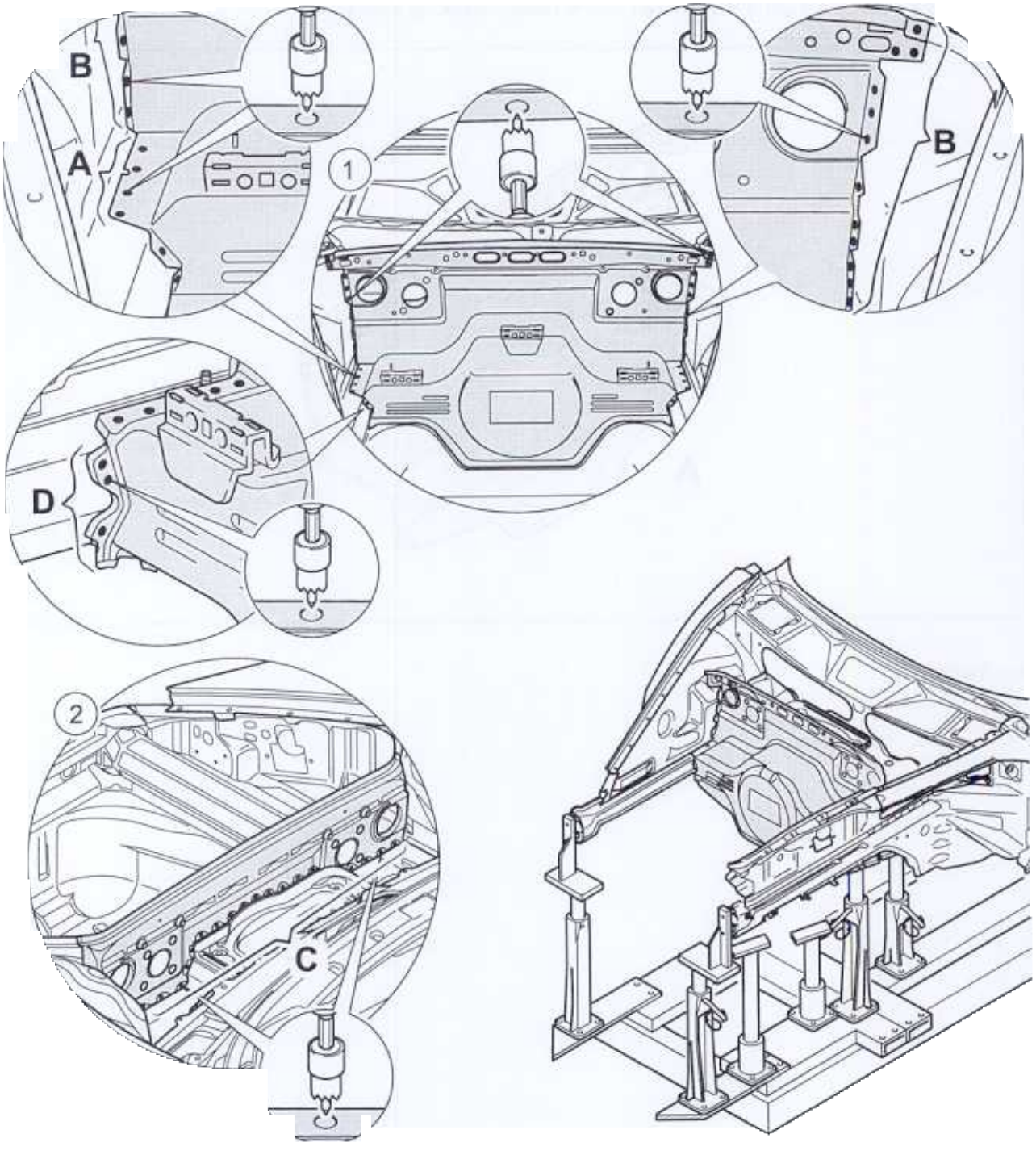
Replacing front wall

The following spare body parts are required for the repair "Replacing front wall":



A = front wall

Cutting out front wall



Warning!

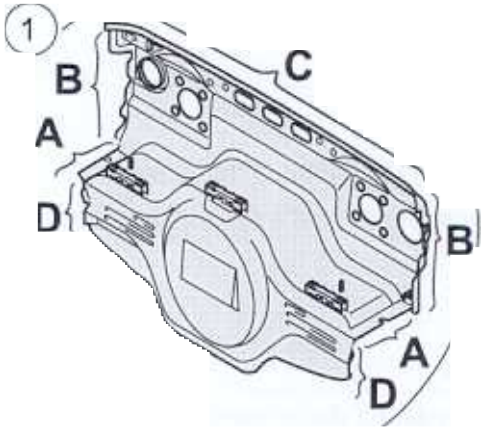
During body repairs, the following safety instructions and the general information and quality instructions must be followed. ⇒ Rep. Gr. 5; Safety instructions

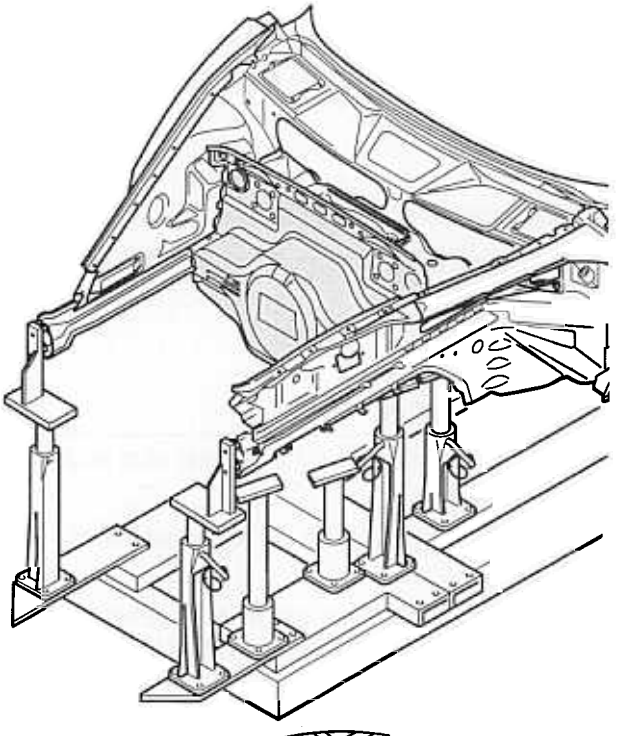
Note!

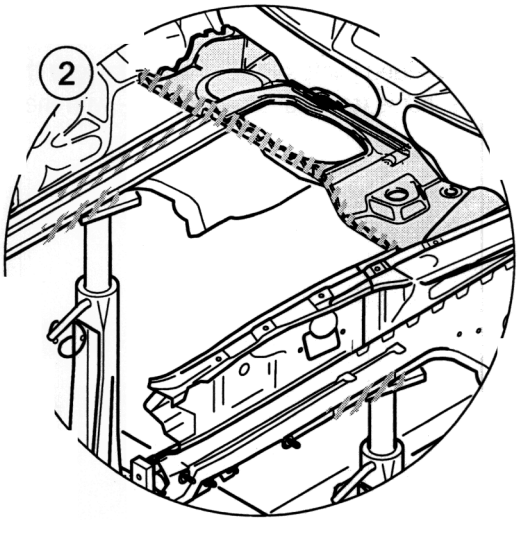
- *The accessories in the repair area should be removed, depending on the extent of the damage.*
- *All straightening work on the body in this area must have been completed before the damaged parts are removed.*

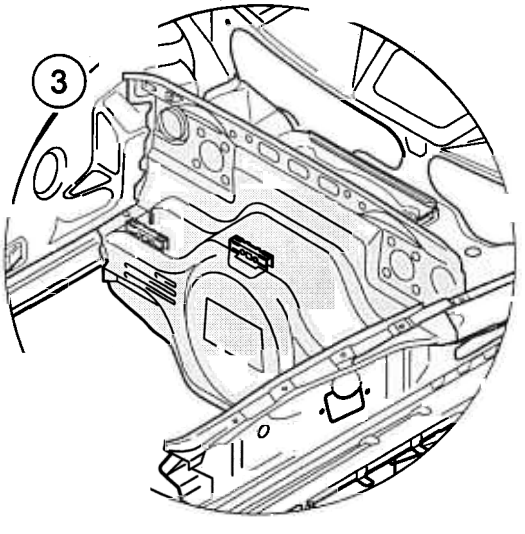
No.	Procedure	Instructions
	Cutting out closing panel and front floor panel	⇒ **50-11** "Replacing closing panel"
	Placing vehicle on the alignment bench	Place the vehicle with the units installed at the rear onto the set of straightening attachments and fasten in place.
1	Separating spot-welded joints between front wall/side members and wheel housings	Separate spot-welded joints of the front wall to the side members **-A, D-** and the wheel housings **-B-** with the spot-weld cutter.
2	Separating spot-welded joints between the radiator tank and front wall	Separate the spot-welded joints of the radiator tank to the front wall from the inside (radiator-tank side) **-C-** with the spotweld cutter.

Preparing front wall for installation and fitting



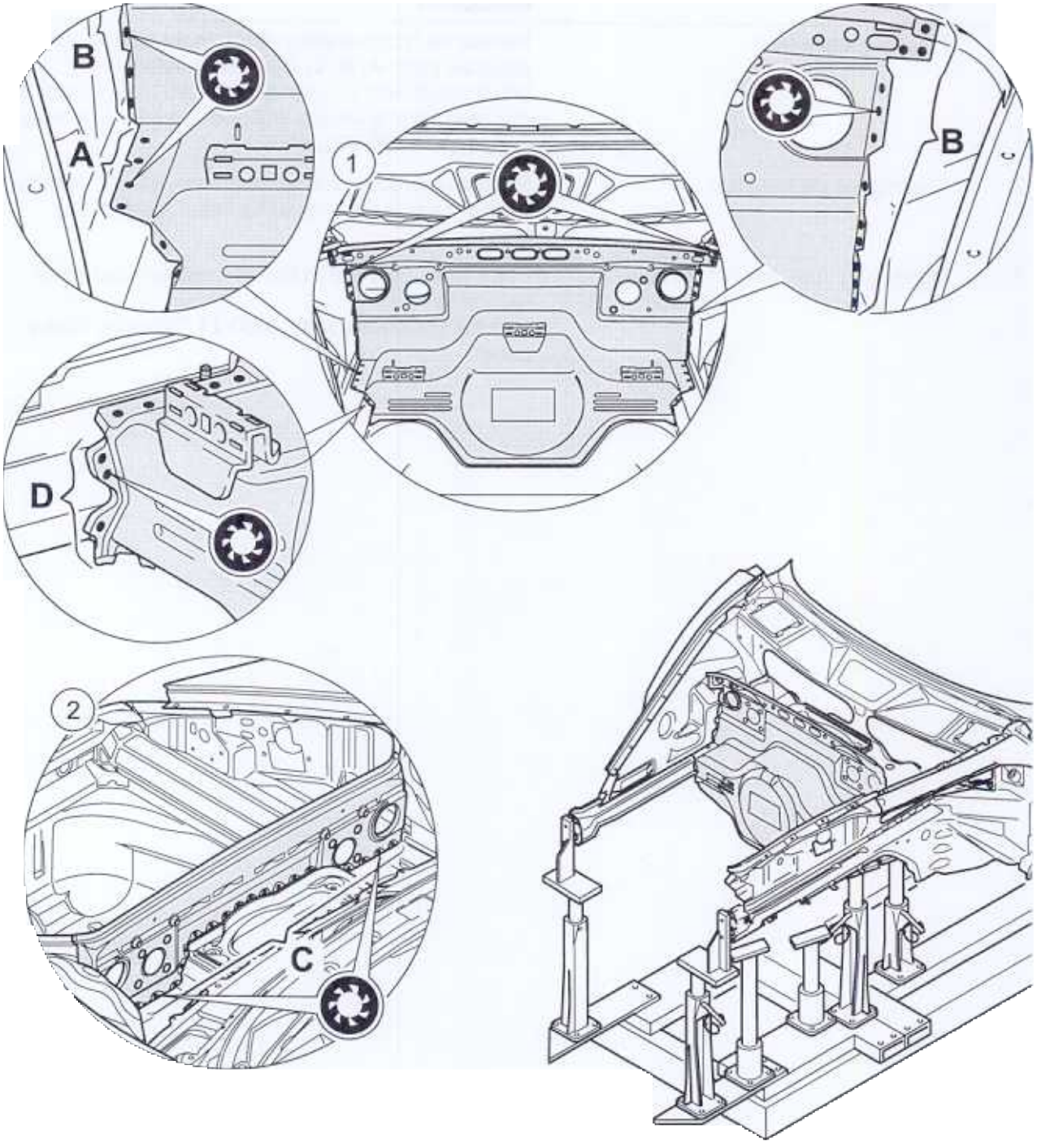






No.	Procedure	Instructions
		Remove the factory-applied primer on the welding areas of the spare parts **-A, B, C, D-** using the rotary brush. Drill or punch (with a hole punch) Ø7 mm holes spaced 20 mm apart for plug-welding with shielding gas.⇒ "Welding in front wall" in **50-33** page 6
2	Cleaning the welding areas	Remove underbody coating and paint layers, etc. from the welding areas of the body with a hot-air gun or rotary brush.
3	Inserting the front wall into the body	Fit the spare front wall on the side members and on the radiator tank. Fit in the subsequent parts ⇒ **50-11** "Replacing closing panel"

Welding in front wall



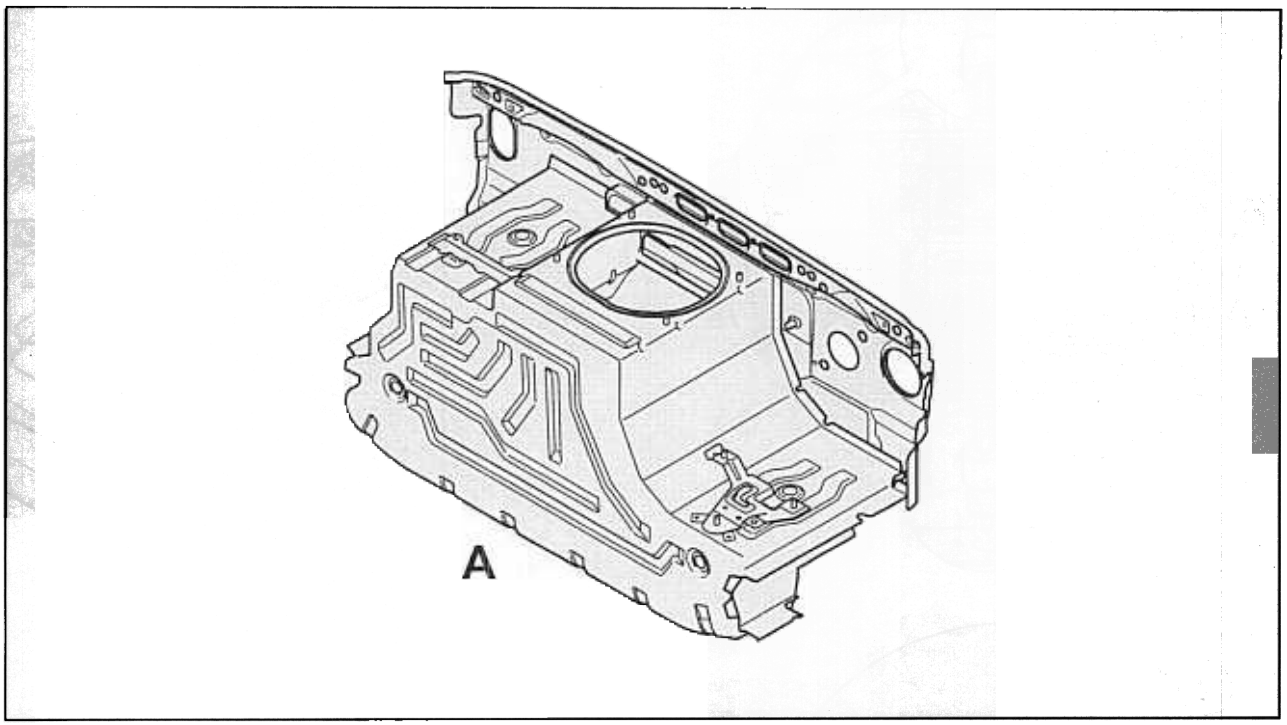
No.	Procedure	Instructions
	Plug-welding front wall/side members and wheel housings	Plug-weld the front wall to the side members **-A, D-** and to the wheel housing **-B-** under shielding gas.
2	Plug-welding radiator tank/front wall.	Plug-weld radiator tank to the front wall **-C-** on the left and right.

Tools and materials

Item	Designation of the special tool	Explanation
	Basic straightening attachments for 911 Carrera (996) 7250700	⇒ Rep. Gr. 3; Workshop Equipment Manual
2	Star gauges 127-1	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
3	Shielding-gas welding device	⇒ Rep. Gr. 3; Workshop Equipment Manual
4	Pneumatic body saw	⇒ Rep. Gr. 3; Workshop Equipment Manual
5	Angle grinder	⇒ Rep. Gr. 3; Workshop Equipment Manual
6	Oscillating body saw (special electrical cutter)	⇒ Rep. Gr. 3; Workshop Equipment Manual
	Multispot spotweld cutter	⇒ Rep. Gr. 3; Workshop Equipment Manual
8	Hole punch	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
9	Hot-air gun	⇒ Rep. Gr. 3; Workshop Equipment Manual
10	Rotary brush	⇒ Rep. Gr. 3; Workshop Equipment Manual
11	Spotweld cutter ∅ 7 mm Nr. 129	⇒ Rep. Gr. 2.4; Workshop Equipment Manual

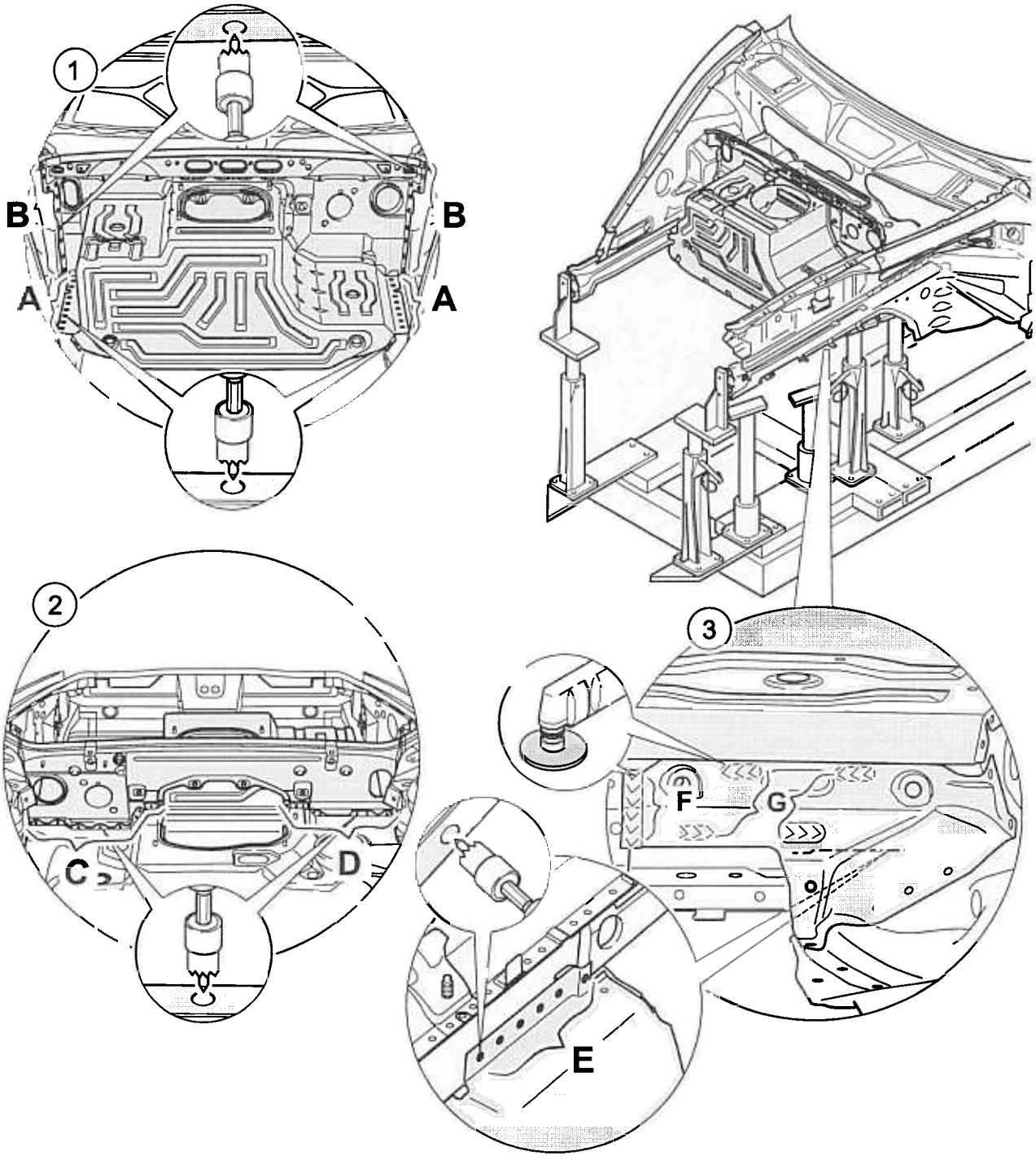
Replacing front wall - Carrera 4 / GT 3

The following spare body parts are required for the repair "Replacing front wall":



A = front wall

Cutting out front wall



Warning!

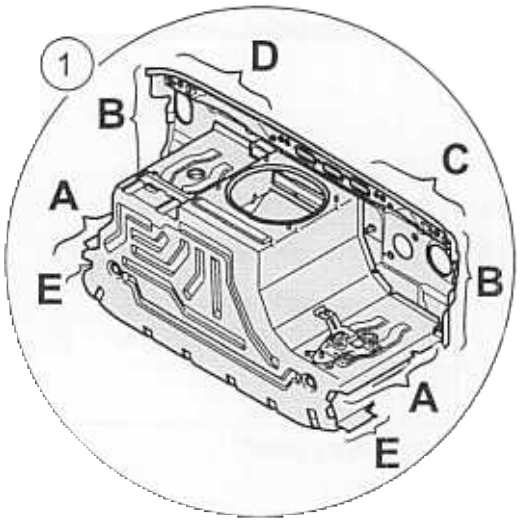
During body repairs, the following safety instructions and the general information and quality instructions must be followed. ⇒ Rep. Gr. 5; Safety instructions

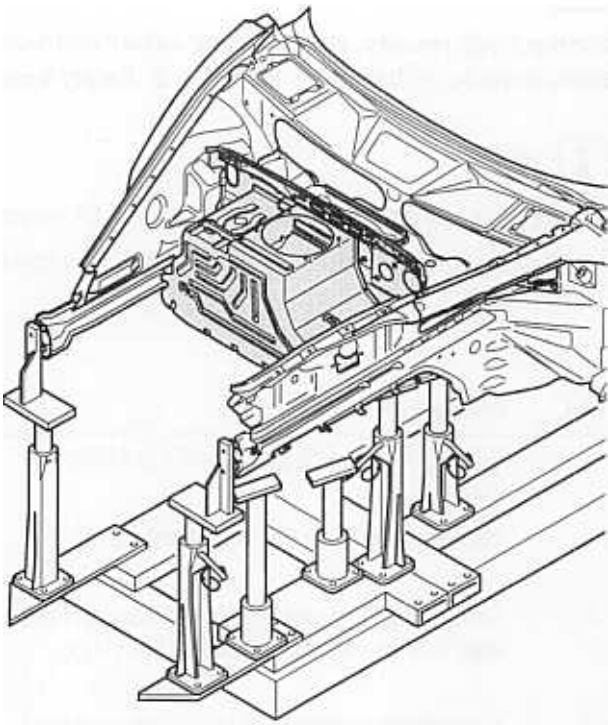
Note!

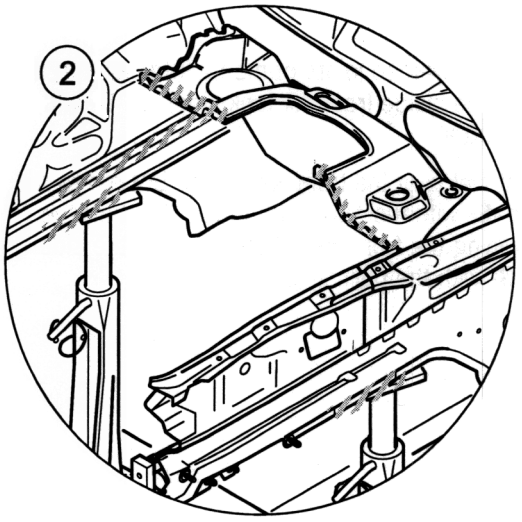
- *The accessories in the repair area should be removed, depending on the extent of the damage.*
- *All straightening work on the body in this area must have been completed before the damaged parts are removed.*

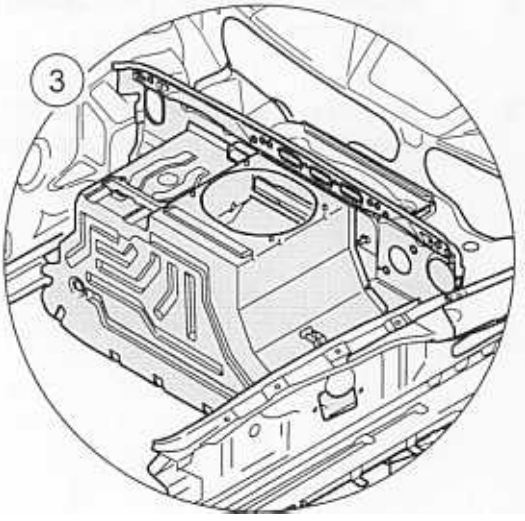
No.	Procedure	Instructions
	Cutting out closing panel and front floor panel	⇒ **50-11** "Replacing closing panel"
	Placing vehicle on the alignment bench	Place the vehicle with the units installed at the rear onto the set of straightening attachments and fasten in place.
	Separating spot-welded joints between front wall/side members and wheel housings	Separate spot-welded joints of the front wall to the side members **-A-** and the wheel housings **-B-** with the spot-weld cutter.
2	Separating spot-welded joints between the radiator tank and front wall	Separate the spot-welded joints of the radiator tank to the front wall from the inside (radiator-tank side) **-C, D-** with the spotweld cutter.
3	Separating spot-welded joints and MIG seams between the front wall and side members.	Separate spot welds of the front wall at the bottom to the side member **-E-** with the spotweld cutter. Grind off the MIG seams joining the front wall at the sides to the side member **-F, G-** with the parting grinder.

Preparing front wall for installation and fitting



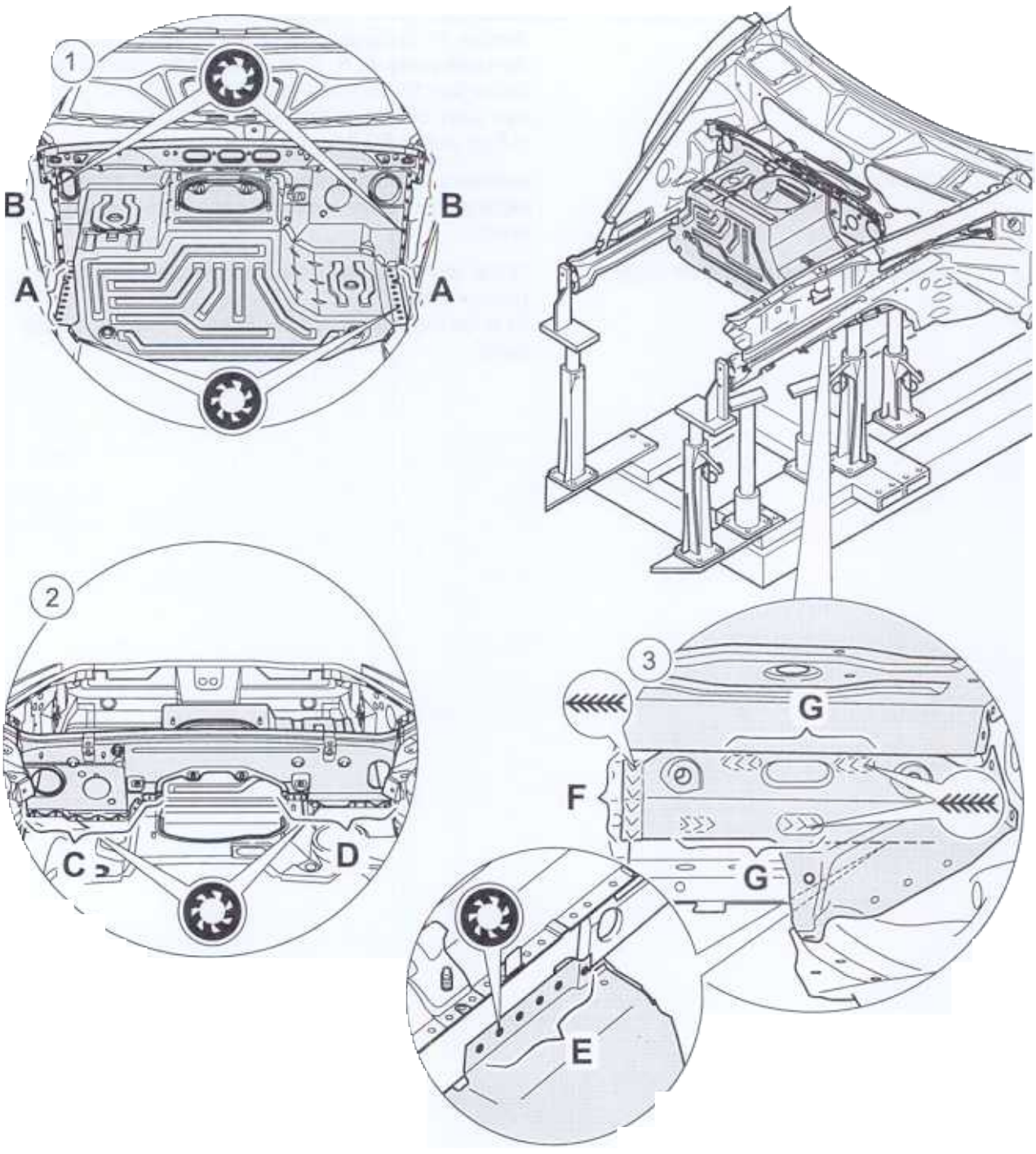






No.	Procedure	Instructions
		Remove the factory-applied primer on the welding areas of the spare parts **-A, B, C, D, E-** using the rotary brush. Drill or punch (with a hole punch) ∅7 mm holes spaced 20 mm apart for plug-welding with shielding gas.⇒ "Welding in front wall" in **50-34** page 6
2	Cleaning the welding areas	Remove underbody coating and paint layers, etc. from the welding areas of the body with a hot-air gun or rotary brush.
3	Inserting the front wall into the body	Fit the spare front wall on the side members and on the radiator tank. Fit in the subsequent parts ⇒ **50-11** "Replacing closing panel"

Welding in front wall

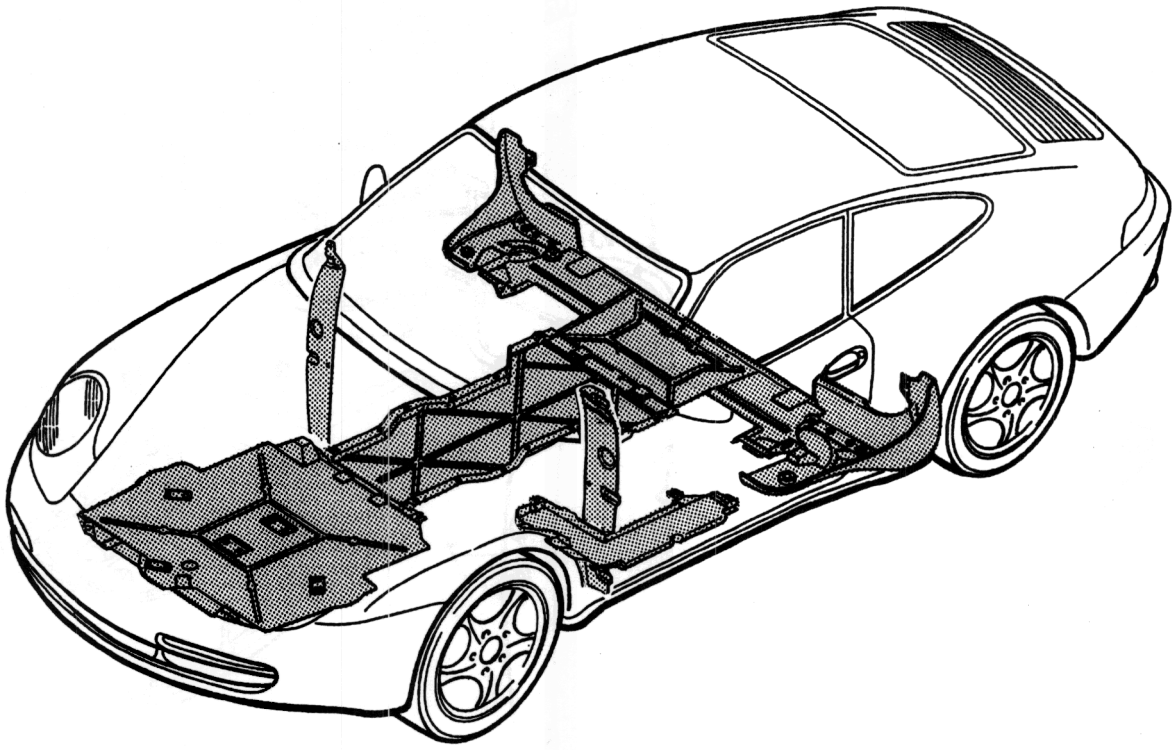


No.	Procedure	Instructions
	Plug-welding front wall/side members and wheel housings	Plug-weld front wall to the side members and wheel housing **-A, B-** under shielding gas.
2	Plug-welding radiator tank/front wall.	Plug-weld radiator tank to the front wall **-C, D-** on the left and right.
3	Welding the front wall/side members under shielding gas	Weld front wall at the bottom to the side member **-E-** and front wall at the sides to the side member **-F, G-** with a full weld under shielding gas.

Tools and materials

Item	Designation of the special tool	Explanation
	Basic straightening attachments for 911 Carrera (996) 7250700	⇒ Rep. Gr. 3; Workshop Equipment Manual
	Star gauges 127-1	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
3	Shielding-gas welding device	⇒ Rep. Gr. 3; Workshop Equipment Manual
4	Multispot spotwelder	⇒ Rep. Gr. 3; Workshop Equipment Manual
5	Pneumatic body saw	⇒ Rep. Gr. 3; Workshop Equipment Manual
6	Angle grinder	⇒ Rep. Gr. 3; Workshop Equipment Manual
7	Oscillating body saw (special electrical cutter)	⇒ Rep. Gr. 3; Workshop Equipment Manual
8	Multispot spotweld cutter	⇒ Rep. Gr. 3; Workshop Equipment Manual
9	Hole punch	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
10	Hot-air gun	⇒ Rep. Gr. 3; Workshop Equipment Manual
11	Rotary brush	⇒ Rep. Gr. 3; Workshop Equipment Manual
12	Spotweld cutter Ø 7 mm Nr. 129	⇒ Rep. Gr. 2.4; Workshop Equipment Manual

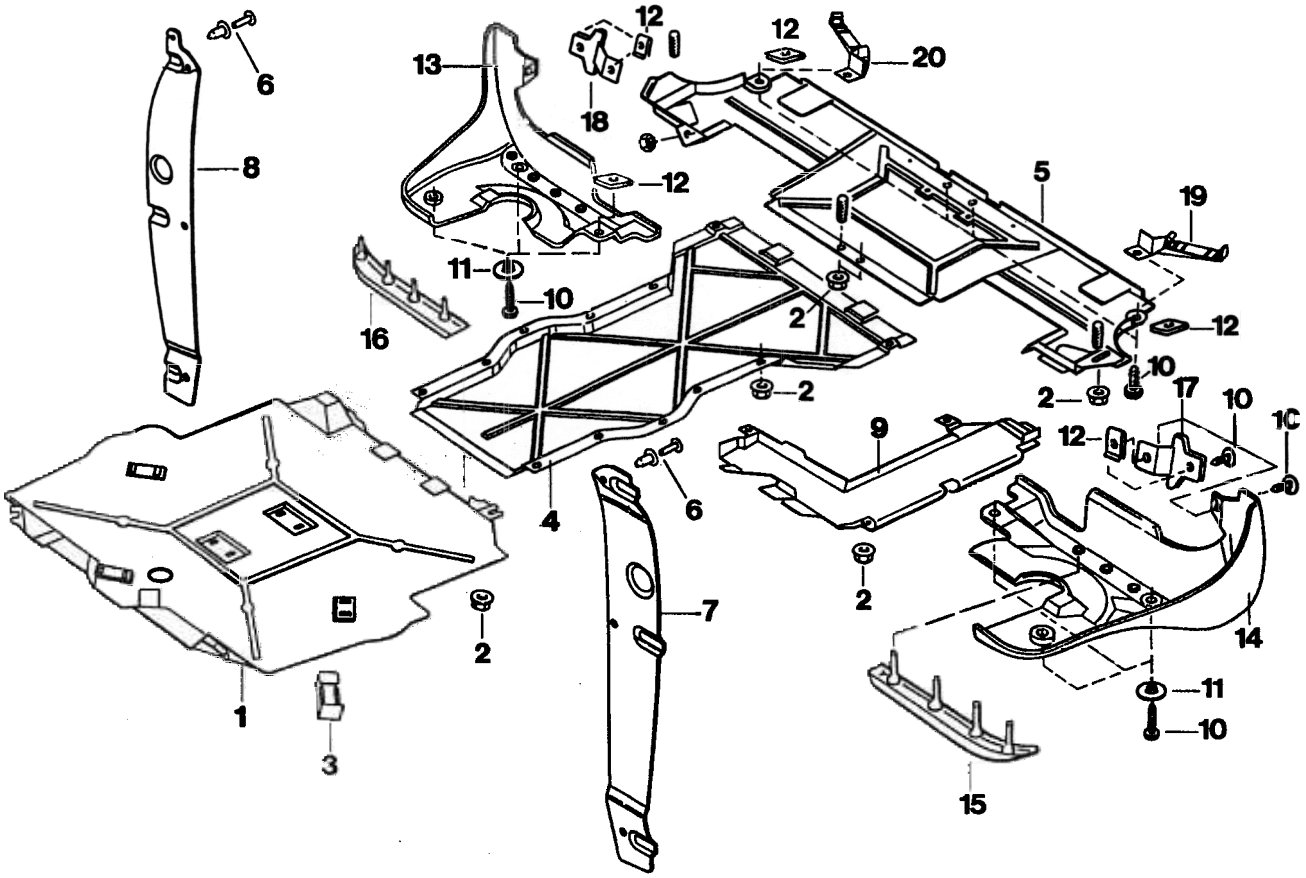
51 90 19 Removing and installing underbody cover



188 - 97

Printed in Germany, 1997 996511

Removing and installing underbody cover



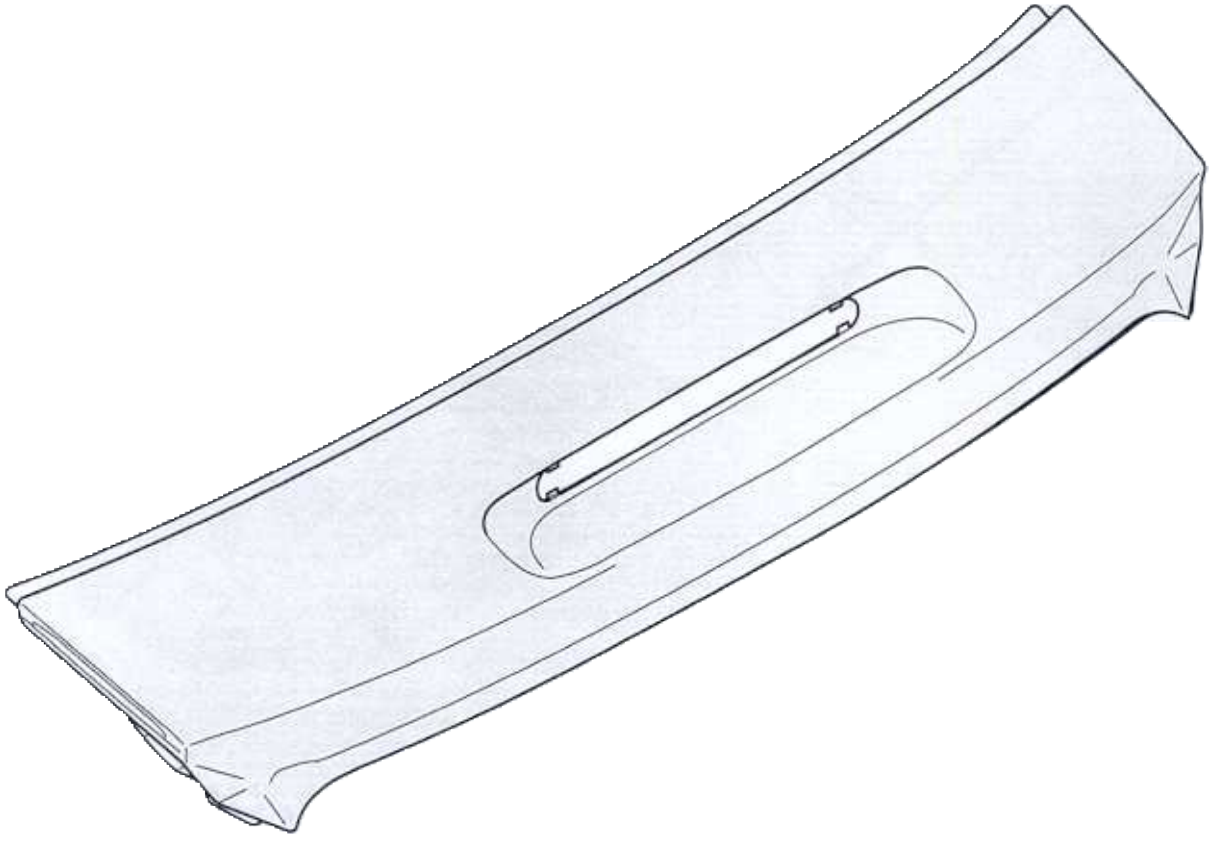
146 - 96

Removing and installing underbody cover

No.	Designation	Qty.	Note: Removal	Installation
	Underside panel front	1	Remove from underside panel middle to the front	Insert to the rear into the underside panel middle
2	Plastic nut T5/22 x 10	26		
3	Clip	6		Check, replace if necessary
4	Underside panel middle	1	Remove from underside panel rear to the front.	Insert to the rear into the underside panel rear.
5	Underside panel rear			
6	Expanding rivet D6	6		Check, replace if necessary.
7	Masking panel left			
8	Masking panel right	1		
9	Cover			
10	Sheetmetal screw B 4.8 x 20	16		
11	Spacer sleeve	10		
12	Sheetmetal nut St 4.8	16		
13	Side cover right	1		
14	Side cover left	1		
15	Rubber lip left	1	Pull off	Push on
16	Rubber lip right	1	Pull off	Push on
17	Clip left	1		Check, replace if necessary.
18	Clip right	1		Check, replace if necessary.
19	Sheetmetal bracket	1		
20	Sheetmetal bracket	1		

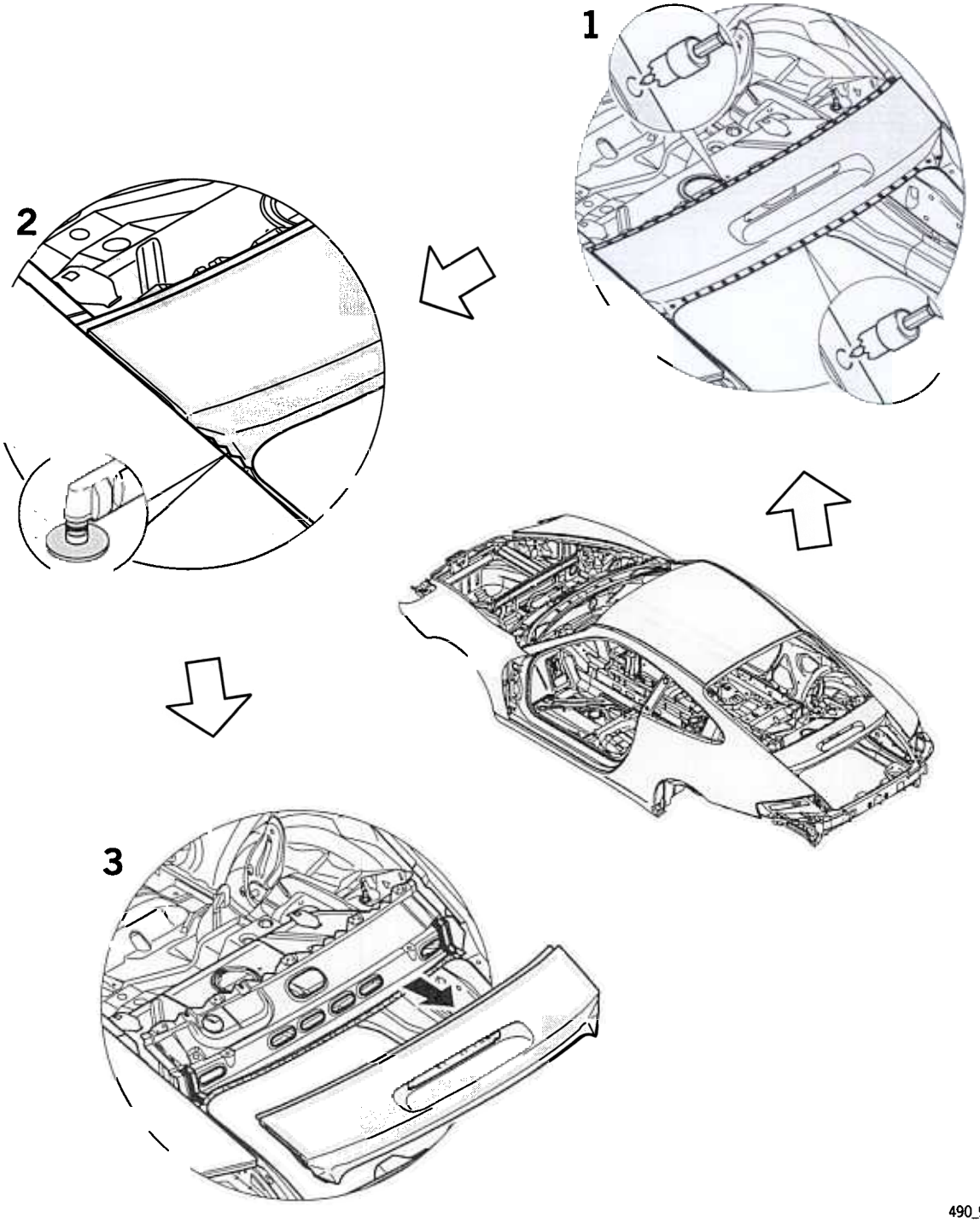
Printed in Germany. 1997 996511

51 21 55 Replacing rear centre panel



489_98

Taking out rear centre panel



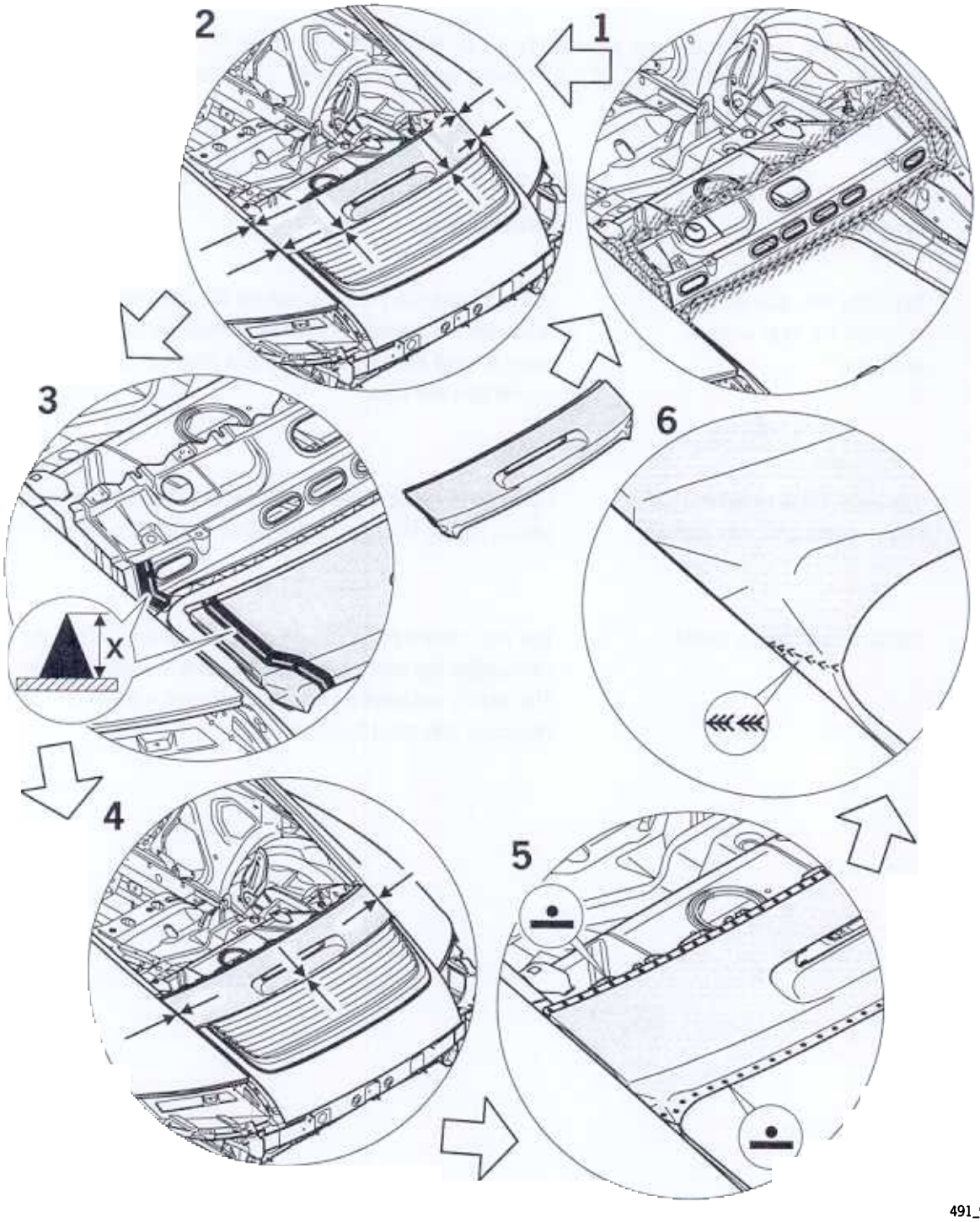
490_98

Taking out rear centre panel

Remove the following accessories: rear window (Serv. No. 64 75), rear lid (Serv. No. 55 90), rear-window wiper system (Serv. No. 92 30), third brake light (Serv. No. 94 70), coolant expansion tank (Serv. No. 19 40).

No.	Procedure	Instructions
	Separate the spot-welded joints on the rear window aperture.	Using a spotweld cutter, separate the spot-welded joint between the outside of the rear centre panel, closing panel of rear centre panel to cross member of convertible top rest.
2	Separate joints between rear centre panel and side panel.	Using an abrasive cutter, separate the shielding-gas weld seams joining the rear centre panel to the side panel.
3	Remove rear centre panel.	The rear centre panel is factory-sealed at the joint to the convertible top rest cross member with swollen sealant. The seal is destroyed when the rear centre panel is replaced, and must be renewed.

Inserting rear centre panel



491_98

Inserting rear centre panel

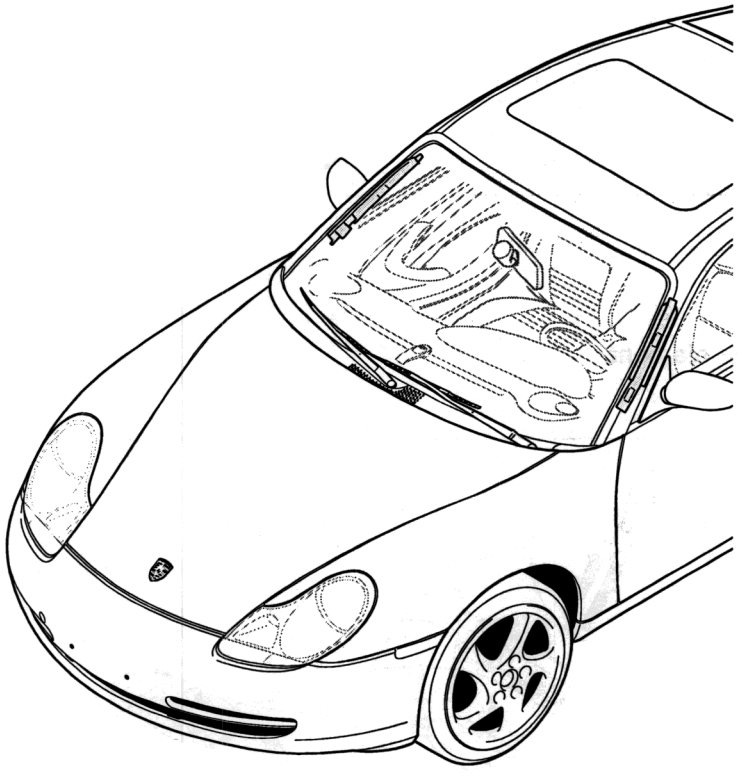
Warning:
Welding galvanized steel sheets produces toxic zinc oxide

> The workplace must be well ventilated and the fumes must be extracted by a suitable extraction system. (e.g. refer to Workshop Equipment Manual, Group 5 Page 3.5 - 35)

No.	Procedure	Instructions
1	Clean weld and sealing areas	Remove undersealing, paint, etc. from the welding areas on the body or sealing areas (convertible top rest cross member) using a hot-air gun or rotary brush. Remove the factory-applied primer from the welding areas of the spare parts using a rotary brush.
2	Insert rear centre panel in the body	Insert rear centre panel in the body. Use the rear lid to check the body contour. Adjust the gap between the rear lid and the side panel to the body. See: Serv. No. 5 Body gap dimensions
3	Insert seal	Apply a triangular bead **dimension "X" = approx. 15 mm** of body sealant to the inside of the rear centre panel seal. Apply a triangular bead **dimension "X" = approx. 15 mm** of body sealant in the recess on the underside of the convertible top rest cross member.
4	Insert rear centre panel in the body	Insert rear centre panel in the body. Fix the rear centre panel in place using crimping pliers. Check contours and gaps.
5	Spot-weld rear centre panel	Spot-weld the rear centre panel to the rim of the window aperture and the joint at the bottom to the convertible top rest cross member.

No.	Procedure	Instructions
6	Weld joint to side panel using shielding gas	Weld the overlap to the side panel with an interrupted full weld using shielding gas.

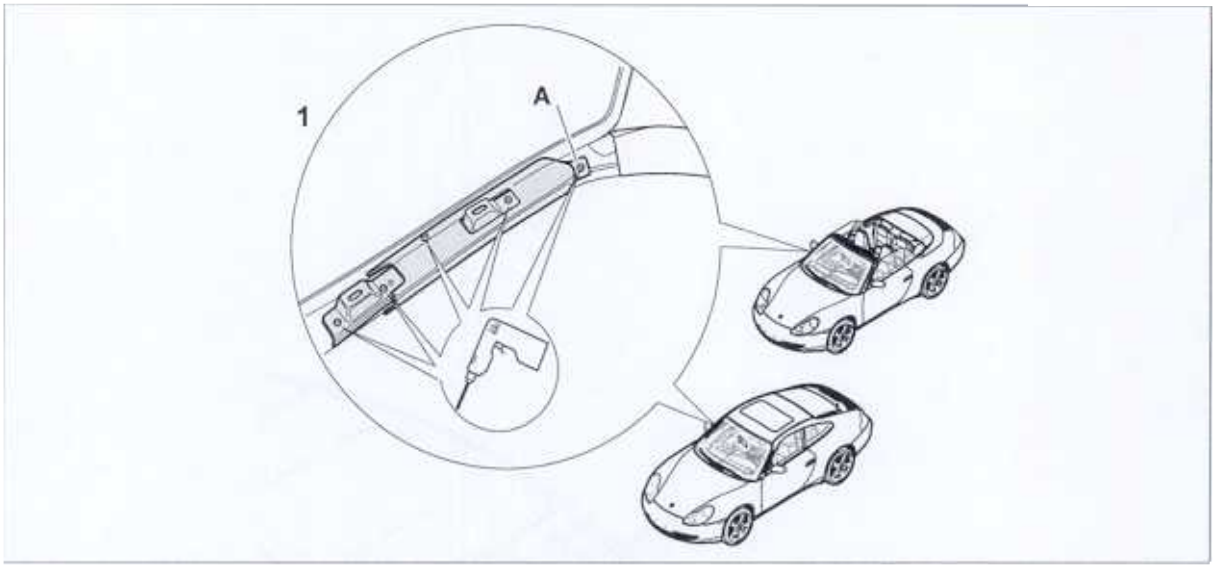
51 63 19 Removing and installing deformation element



51630001

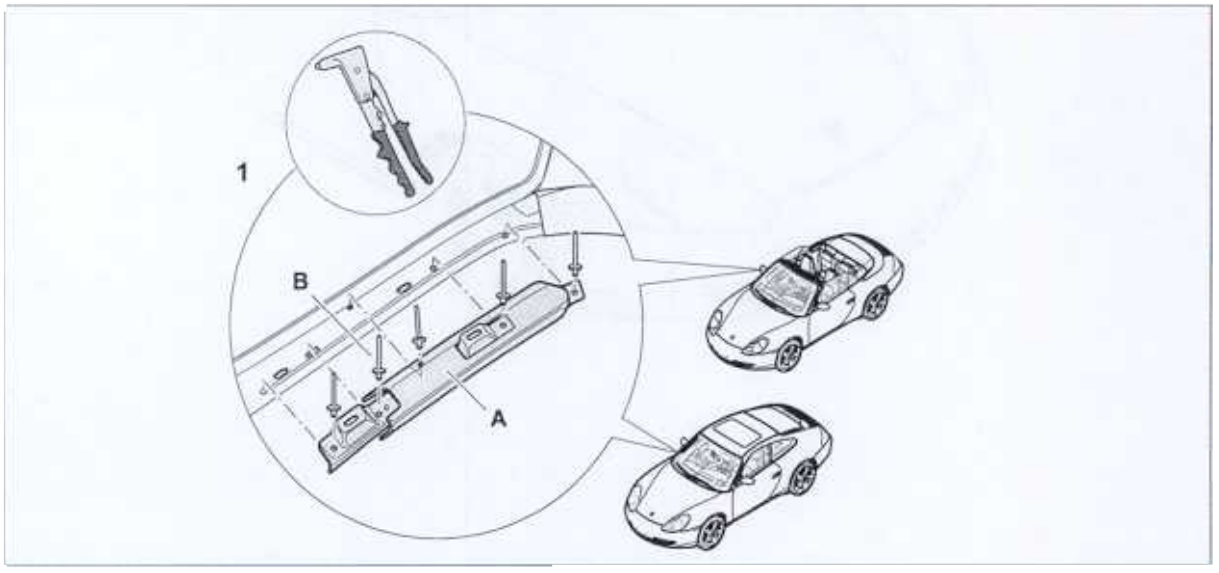
Printed in Germany - 34, 1999 9965111

Removing deformation element



51630002

Installing deformation element



51630003

Removing deformation element

The A-pillar trim must be removed for removal of the deformation element.
Refer to Serv. No. 70 57

Note:
> From model year 2000 onwards, a deformation element will be fitted on the inner left and right sides of the windscreen frame.

Caution!
Danger of injury by damaged deformation elements after an accident.
> It is impermissible to perform repairs on the deformation element.
The deformation element must be replaced in the event of visible damage or pressure marks.

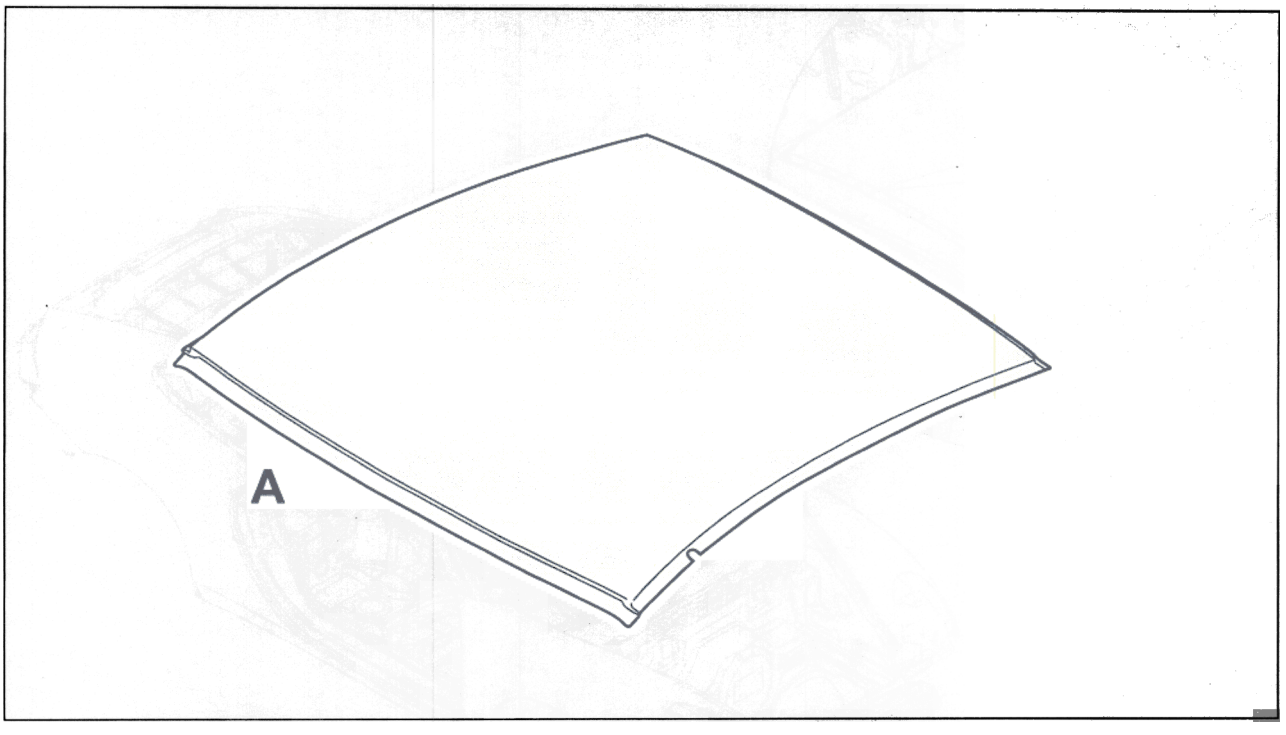
No.	Procedure	Instructions
	Drilling the pop rivet out	Drill out the A 4.0 x 6.3 pop rivets **(A)** using a 4 mm Ø drill bit.

Installing deformation element

No.	Procedure	Instructions
	Riveting the deformation element.	Position the deformation element **(A)** with the A 4.0 x 6.3 pop rivets **(B)** at the existing holes in the windscreen frame and rivet it into place.

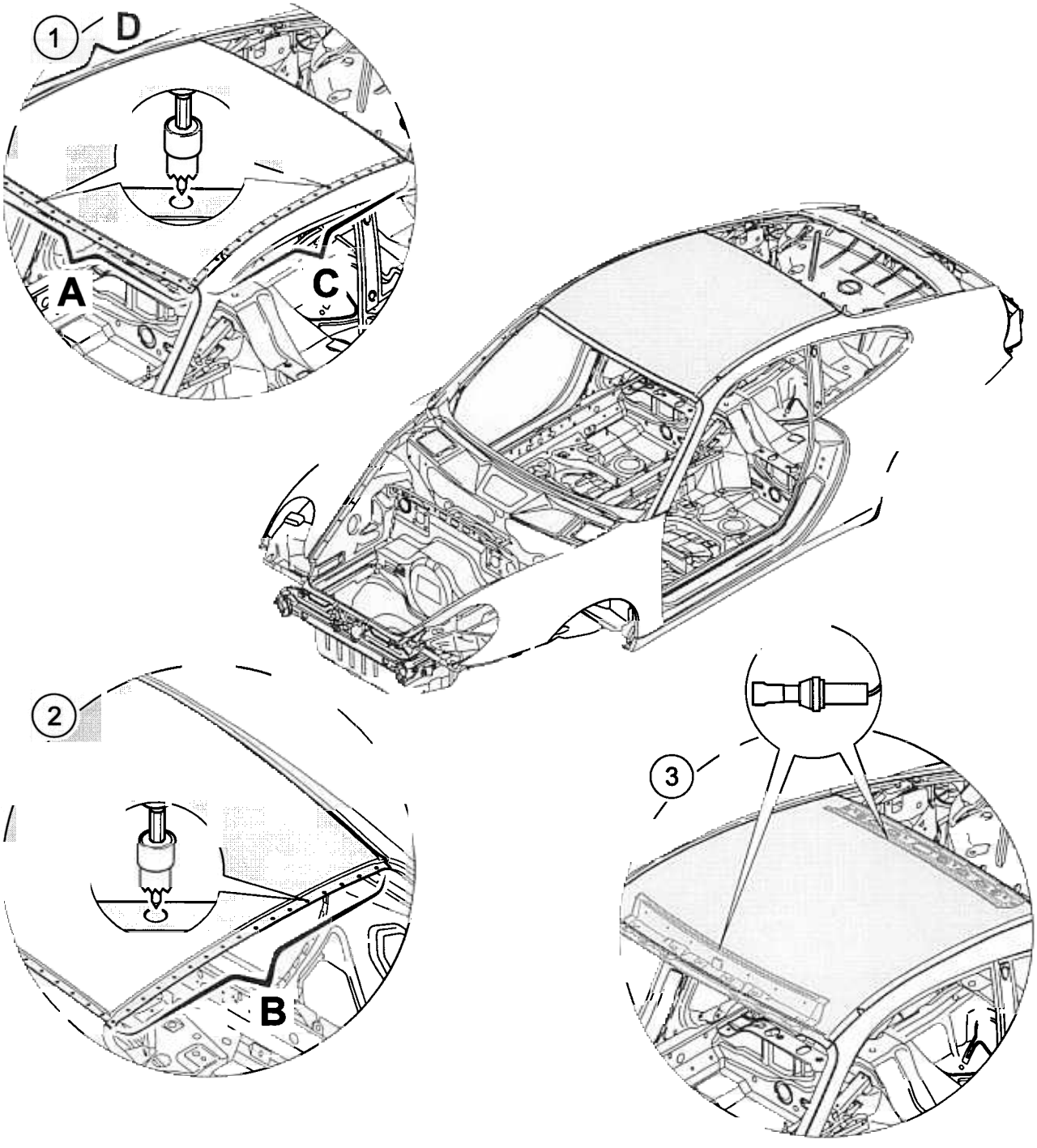
Replacing roof

The following spare body parts are required for the repair "Replacing roof":



A = Roof

Disconnecting roof



Warning!

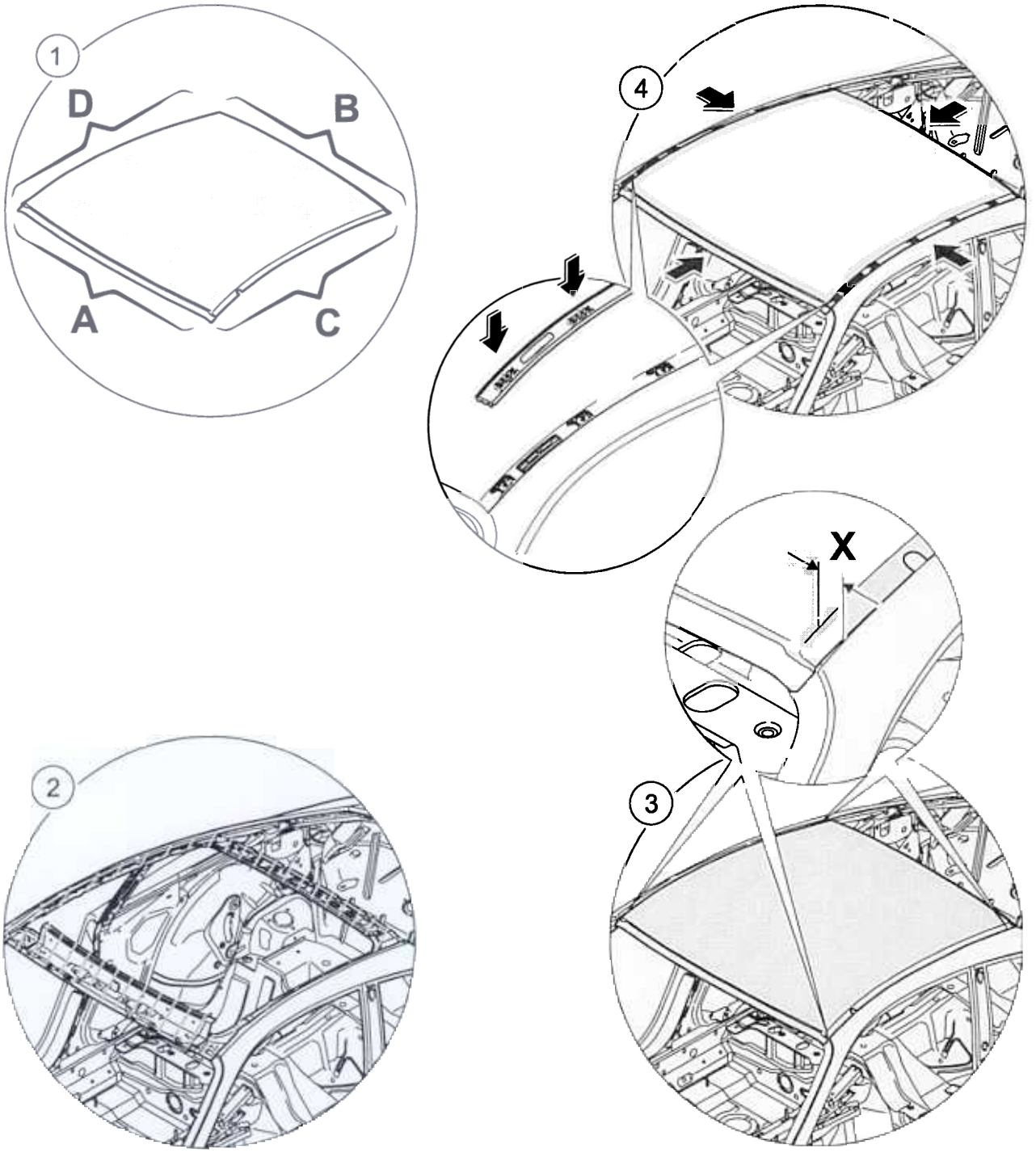
During body repairs, the following safety instructions and the general information and quality instructions must be followed. ⇒ Rep. Gr. 5; Safety instructions

Note!

- *The accessories in the repair area should be removed, depending on the extent of the damage.*
- *All straightening work on the body in this area must have been completed before the damaged parts are removed.*

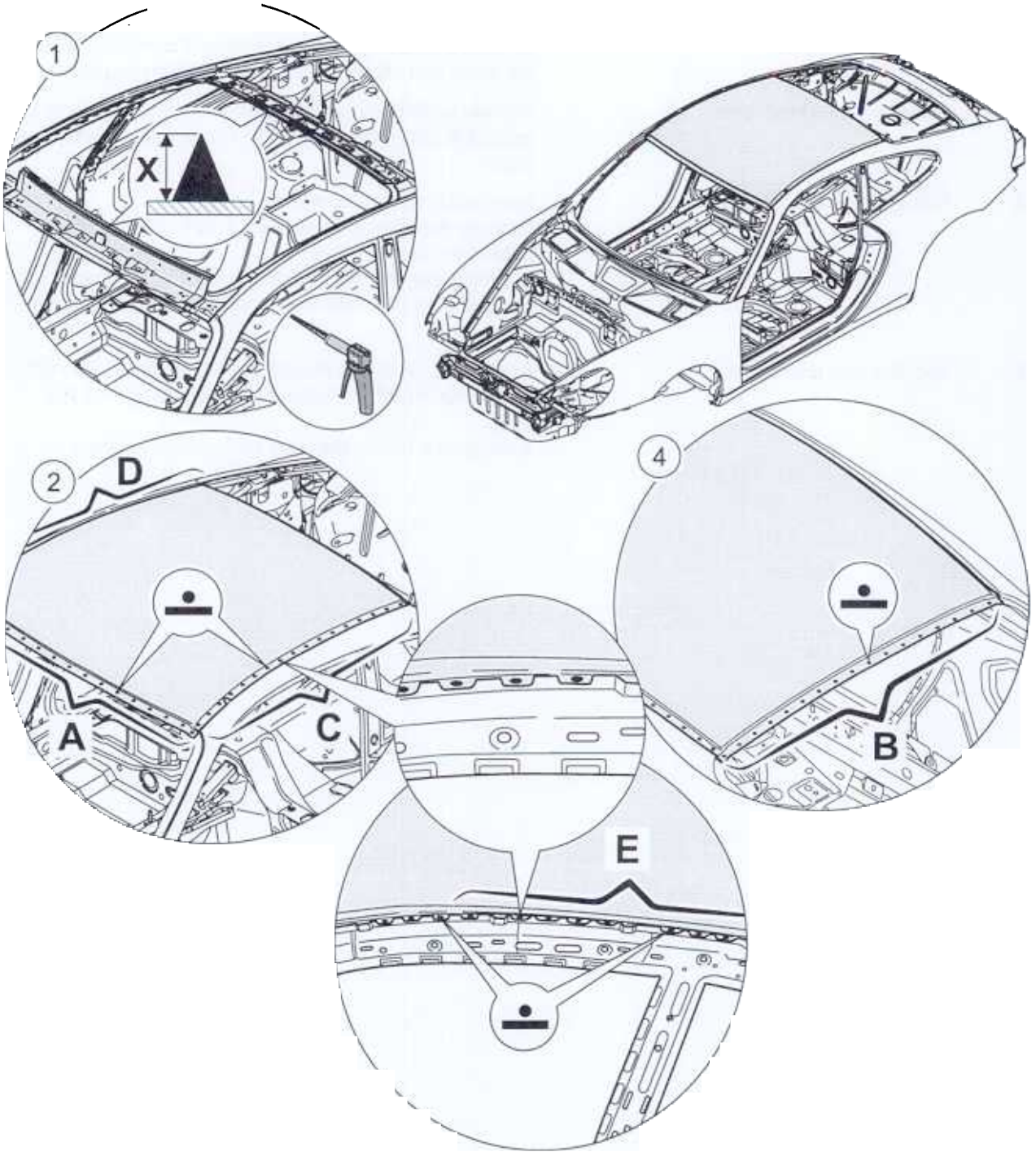
No.	Procedure	Instructions
	Separating the spot-welded joints between the outer roof panel/outer side section	Separate the spot-welded joints between the outer roof panel and the outer side section **-C, D-** and on the cowl panel frame **-A-** with the spotweld cutter.
2	Separating the spot-welded joints between the outer roof panel/rear roof frame	Separate the spot-welded joint between the outer roof panel and the rear roof frame **-B-** with the spotweld cutter.
3	Separating the bonded joint between the cowl panel frame on the outer roof panel/ rear roof frame	Heat up the bonded joint between the outer roof panel and the cowl panel frame or the rear roof frame with the hot-air gun. Insert a metal spatula between the bonded joints and separate them. Lift the outer roof panel upwards out of the body.

Preparation of roof for installation and fitting



No.	Procedure	Instructions
		Remove the factory-applied primer on the welding areas of the spare part **-A, B, C, D-** using the rotary brush.
2	Cleaning the welding areas	Remove underbody coating and paint layers, etc. from the welding areas of the body with a hot-air gun or rotary brush.
3	Fitting the outer roof panel	Insert outer roof panel into the body. Measure the dimension **-X = 25.2 mm-** on the left and right of the roof channel. It is necessary to measure dimension X between four corner points on the outer roof panel and the outer side section.
4	Inserting roof joint strips	As a check, install the roof joint strips on the left and right. ⇒ Rep. Gr. 663619; Removing and installing roof joint strip. If necessary, centre the outer roof panel once more.

Welding in roof



No.	Procedure	Instructions
		Observe the working time of the adhesive: ⇒ **5-1** "Safety instructions for body repair" For ordering address, see: ⇒ "Tools and materials" in **51-15** page 7 Apply the adhesive evenly to the inside of the cowl panel frame and the rear roof frame as a triangular bead **-dimension X = approx. 8 mm-**.
2	Welding the outer roof panel/outer side section under shielding gas	Spot-weld the outer roof panel to the outer side section **-C, D-**. Ensure that the spot-welding is carried out within the corrugated cut-out of the inner roof frame **-E-**.
3	Welding the outer roof panel/rear roof frame under shielding gas	Spot-weld the outer roof panel to the rear roof frame **-B-**.

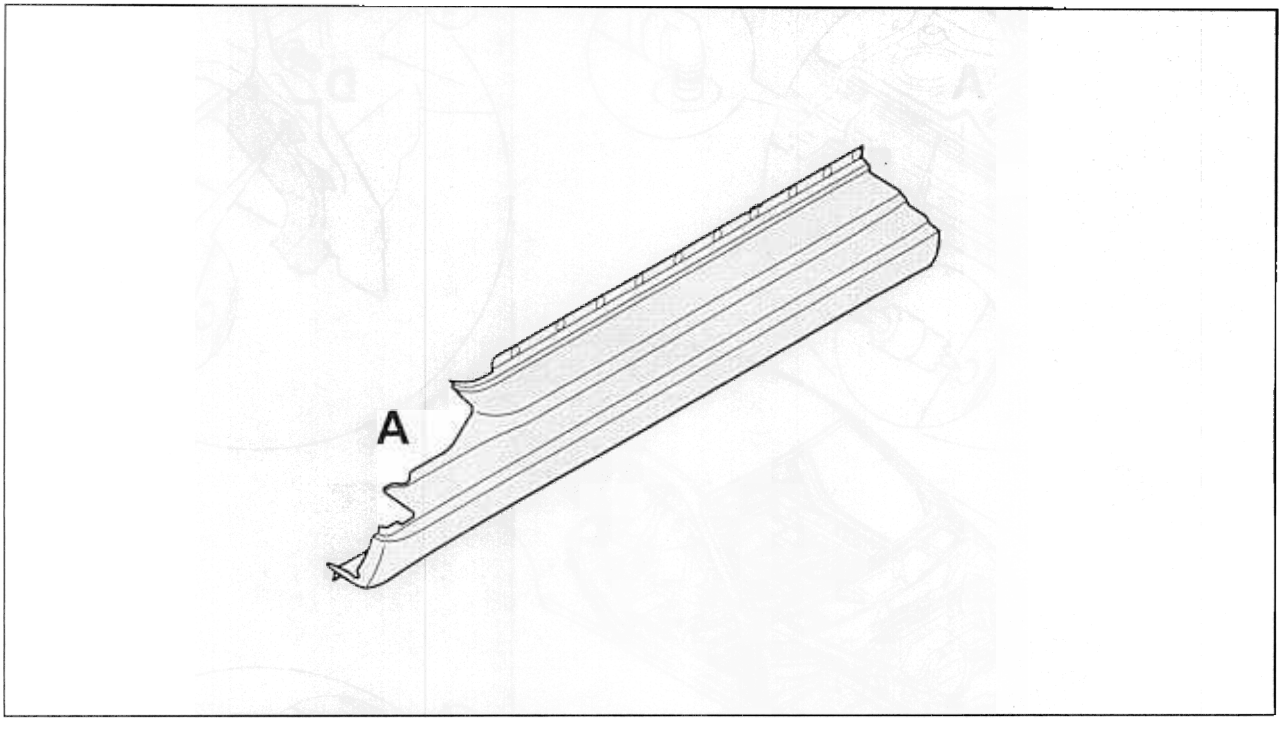
Tools and materials

Item	Designation of the special tool	Explanation
	Teromix-6700 2-component adhesive	Manufacturer: Henkel Teroson GmbH Postfach 10 56 20 69046 Heidelberg Hans-Bunte-Straße 4 Tel.: (066221) 7040 Fax: (066221) 704585
2	Teromix processing nozzle	Manufacturer: Henkel Teroson GmbH Postfach 10 56 20 69046 Heidelberg Hans-Bunte-Straße 4 Tel.: (066221) 7040 Fax: (066221) 704585
3	Basic straightening attachments for 911 Carrera (996)	⇒ Rep. Gr. 3; Workshop Equipment Manual
4	Star gauges Nr. 127-1	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
5	MIG welder	⇒ Rep. Gr. 3; Workshop Equipment Manual
6	Multispot spotwelder	⇒ Rep. Gr. 3; Workshop Equipment Manual
7	Multispot spotweld cutter	⇒ Rep. Gr. 3; Workshop Equipment Manual
8	Pneumatic body saw	⇒ Rep. Gr. 3; Workshop Equipment Manual
9	Angle grinder	⇒ Rep. Gr. 3; Workshop Equipment Manual

Item	Designation of the special tool	Explanation
	Oscillating body saw (special electrical cutter)	⇒ Rep. Gr. 3; Workshop Equipment Manual
11	Hole punch	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
12	Hot-air gun	⇒ Rep. Gr. 3; Workshop Equipment Manual
13	Rotary brush	⇒ Rep. Gr. 3; Workshop Equipment Manual
14	Spotweld cutter Ø 7 mm Nr. 129	⇒ Rep. Gr. 2.4; Workshop Equipment Manual

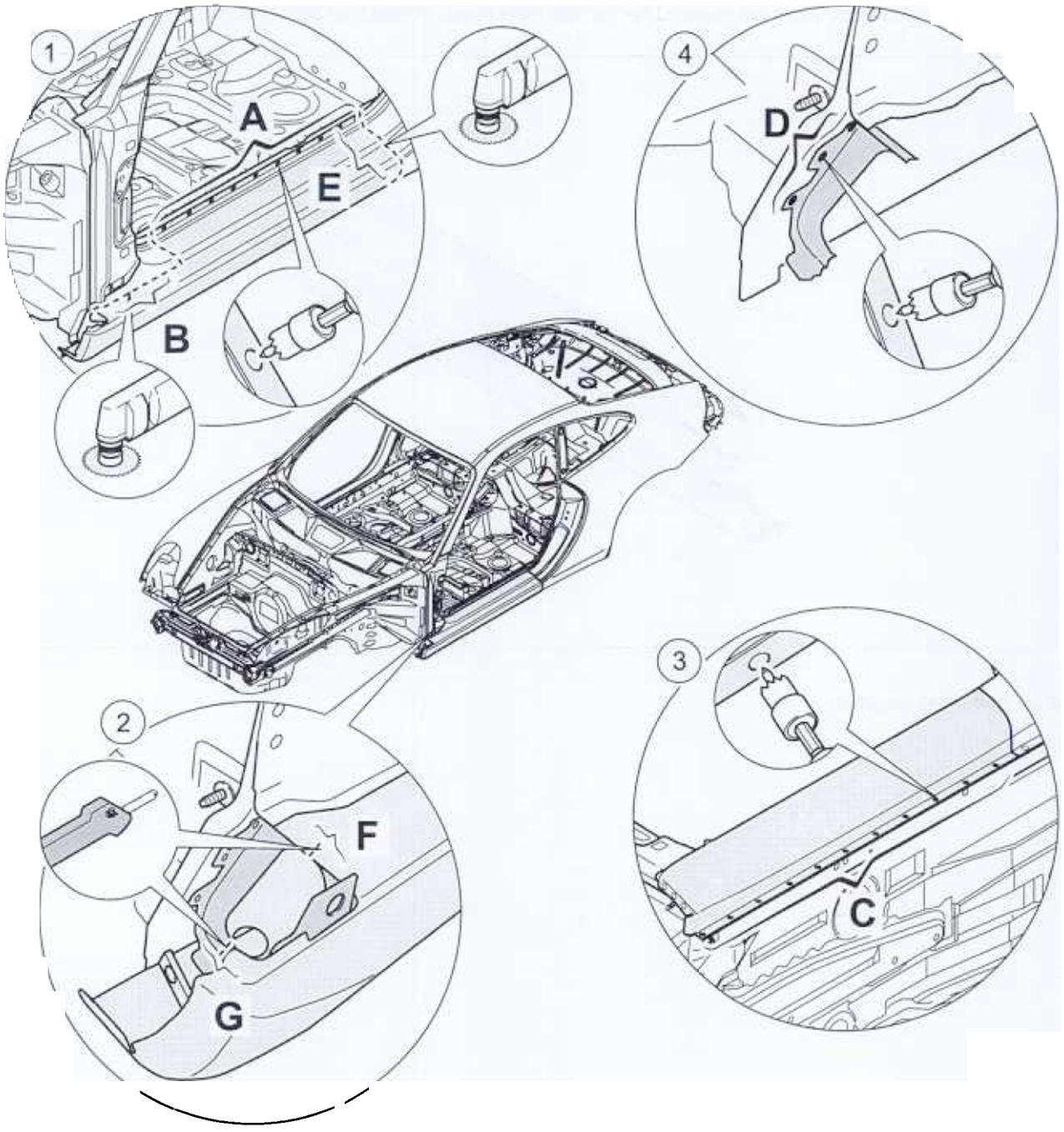
Replacing lower side member

The following spare body parts are required for the sectional repair "Replacing lower side member":



A = Lower side member

Cutting out lower side member



Warning!

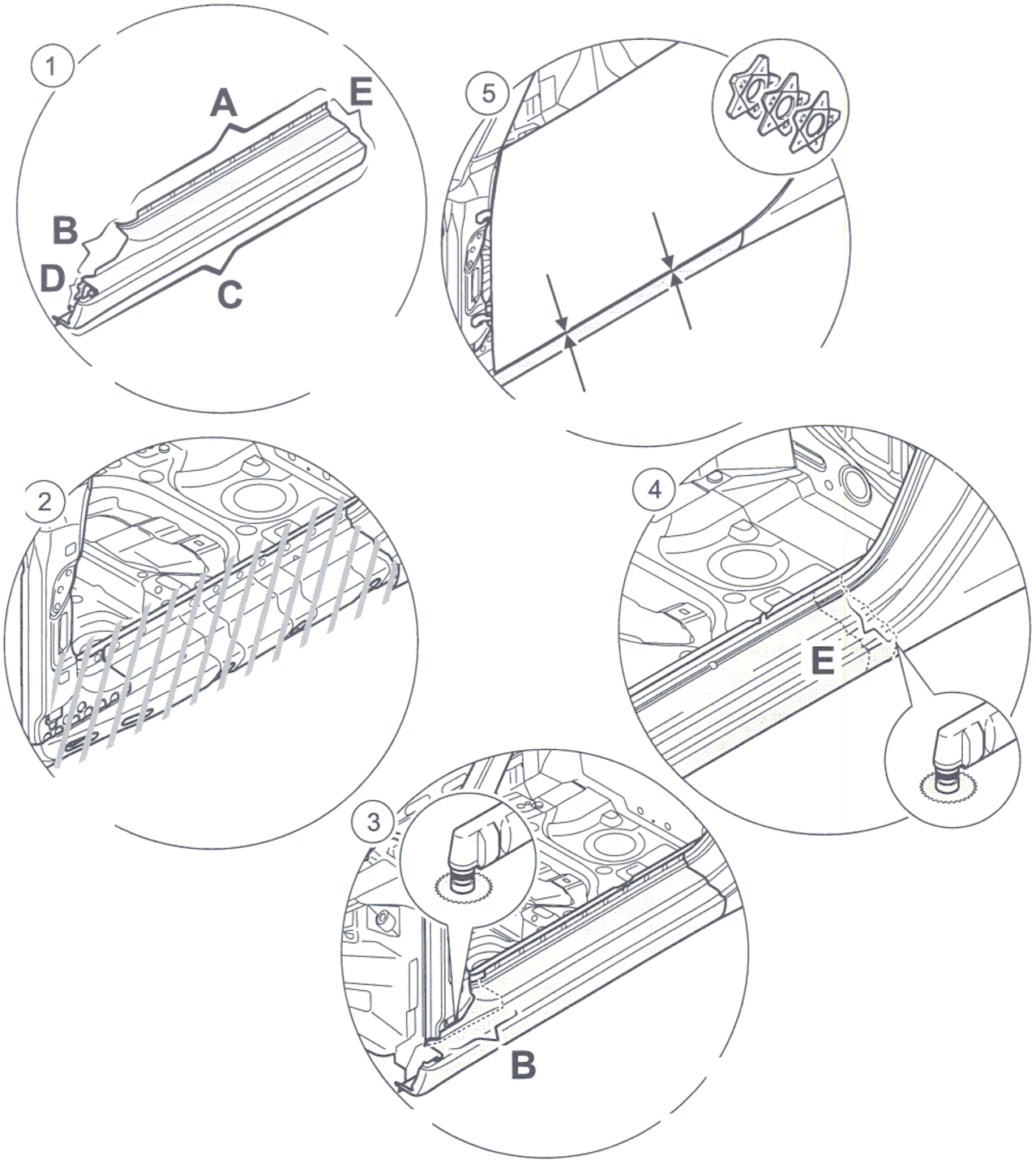
During body repairs, the following safety instructions and the general information and quality instructions must be followed. ⇒ Rep. Gr. 5; Safety instructions

Note!

- *The accessories in the repair area should be removed, depending on the extent of the damage.*
- *All straightening work on the body in this area must have been completed before the damaged parts are removed.*

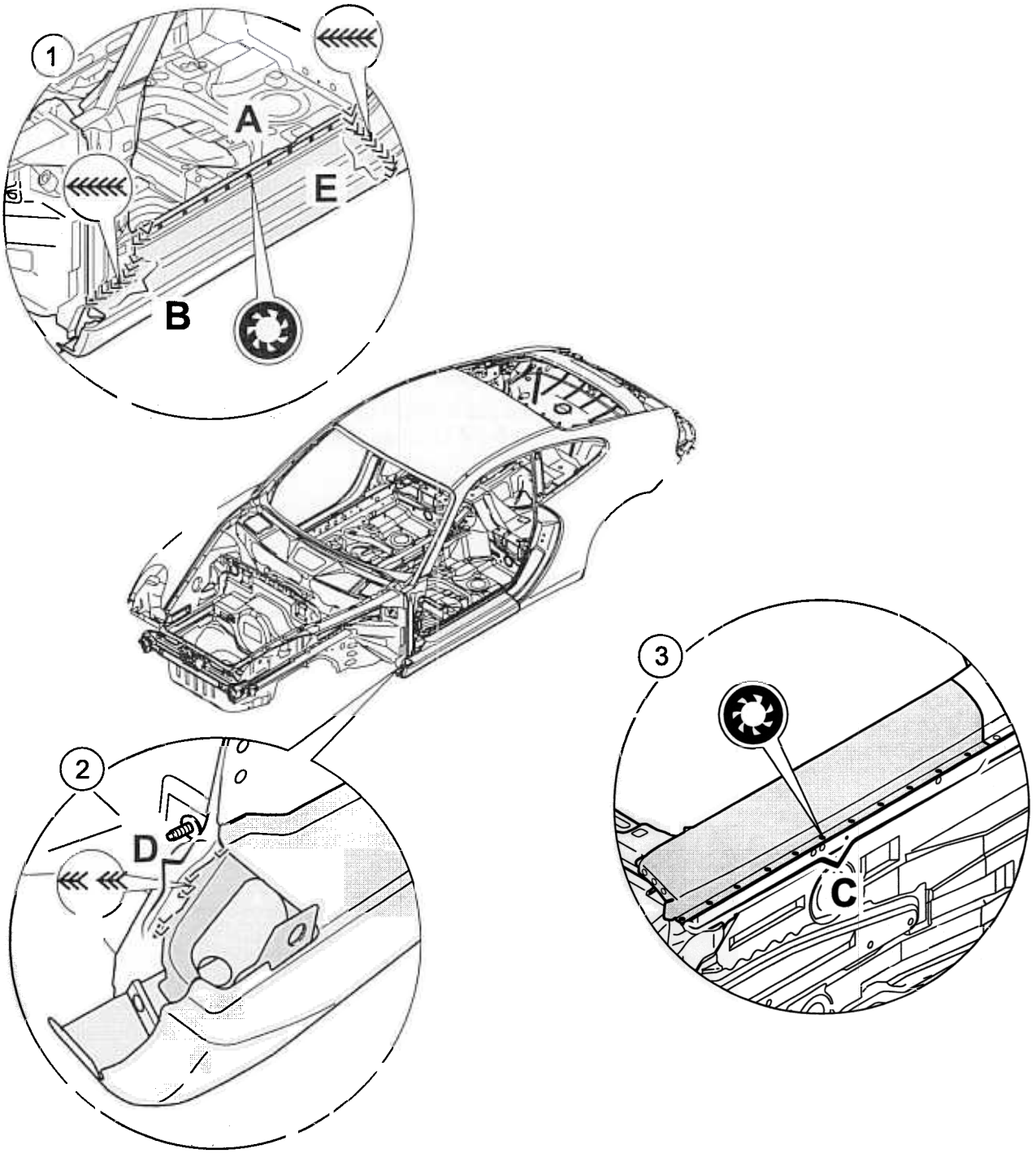
No.	Procedure	Instructions
	Separating the spot-welded joint between the outer/inner lower side members	Separate the spot-welded joint between the outer lower side member and the inner lower side member **-A-** with the spotweld cutter. Cut through the connection to the A-pillar **-B-** with the body saw. Position the cut so that the spare body part (outer lower side member) overlaps A-pillar by approx. 60 mm. Cut the connection to the side section **-E-** with the body saw. Position the cut so that the spare body part (outer lower side member) overlaps the side section by approx. 60 mm.
2	Sawing through the web plate	Cut through the web plate at the top and bottom **-F, G-** with the body saw.
3	Separating the spot-welded joint between the outer/inner lower side members	Separate the spot-welded joint between the outer lower side member and the inner lower side member **-C-** with the spotweld cutter.
4	Separating the spot-welded joint between the web plate/inner lower side member	Separate the spot-welded joint between the web plate and the inner lower side member **-D-** with the spotweld cutter.

Preparation for installation of lower side member and fitting



No.	Procedure	Instructions
	Cleaning the welding areas	Remove the factory-applied primer on the welding areas of the spare part **-A, B, C, D, E-** using the rotary brush.
2	Preparing spare part	Remove underbody coating and paint layers, etc. from the welding areas of the body with a hot-air gun or rotary brush.
3	Inserting outer lower side member Fitting lower side member separation point	Insert the outer lower side member into the body. Cut through the outer lower side member, overlapping at the separation point, flush with the A-pillar **-B-** using the body saw.
4	Fitting lower side member separation point	Cut through the outer lower side member, overlapping at the separation point, flush with the side section **-E-** with the body saw.
5	Setting gap	Set gap between door and outer lower side member. ⇒ **5-37** "Diagram - body gap dimensions"

Welding in lower side member



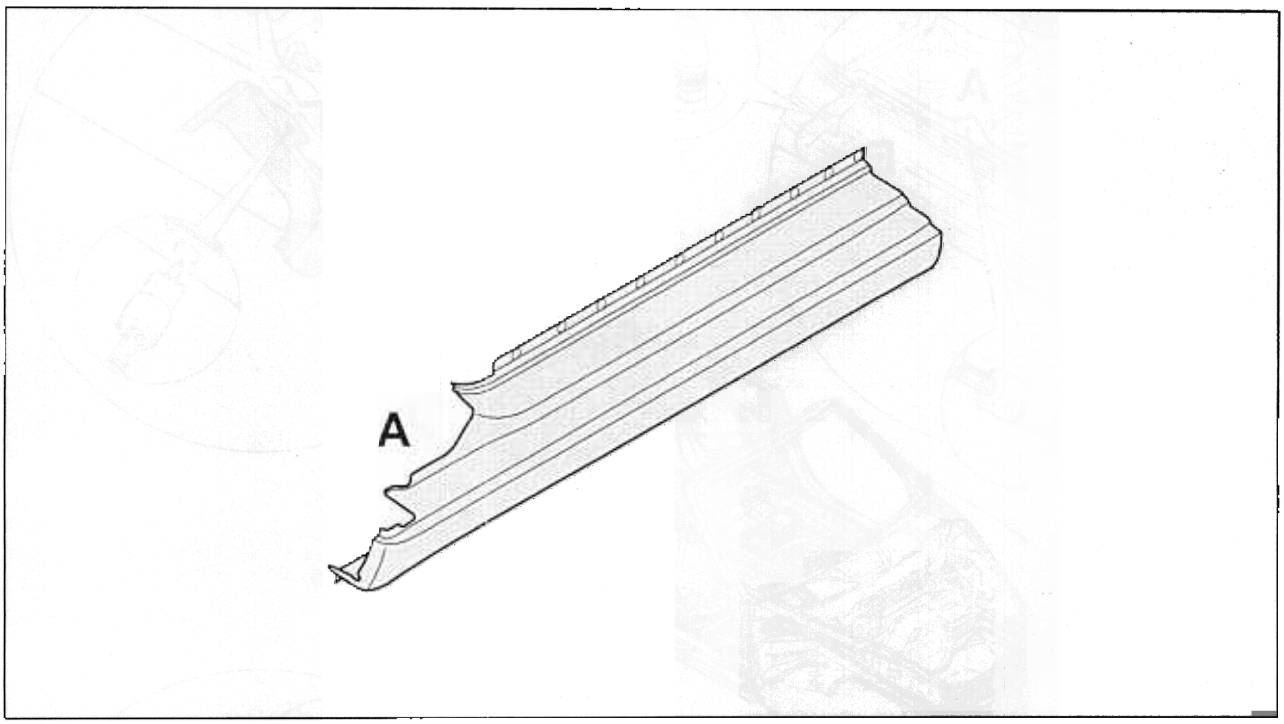
No.	Procedure	Instructions
	Welding outer/inner lower side members under shielding gas	Plug-weld the outer lower side member and the inner lower side member **-A-** with shielding gas. Weld the connection to the A-pillar **-B-** and the connection to the side section **-E-** with a continuous full weld under shielding gas.
2	Welding the web plate under shielding gas	Weld the web plate and the inner lower side member **-D-** together with an intermittent full weld under shielding gas.
3	Welding outer/inner lower side members under shielding gas	Plug-weld the outer lower side member and the inner lower side member **-C-** together under shielding gas.

Tools and materials

Item	Designation of the special tool	Explanation
	Star gauges Nr. 127-1	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
2	MIG welder	⇒ Rep. Gr. 3; Workshop Equipment Manual
3	Body saw	⇒ Rep. Gr. 3; Workshop Equipment Manual
4	Angle grinder	⇒ Rep. Gr. 3; Workshop Equipment Manual
5	Oscillating body saw (special electrical cutter)	⇒ Rep. Gr. 3; Workshop Equipment Manual
6	Multispot spotweld cutter	⇒ Rep. Gr. 3; Workshop Equipment Manual
7	Hole punch	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
8	Hot-air gun	⇒ Rep. Gr. 3; Workshop Equipment Manual
9	Rotary brush	⇒ Rep. Gr. 3; Workshop Equipment Manual
10	Spotweld cutter Ø 7 mm Nr. 129	⇒ Rep. Gr. 2.4; Workshop Equipment Manual

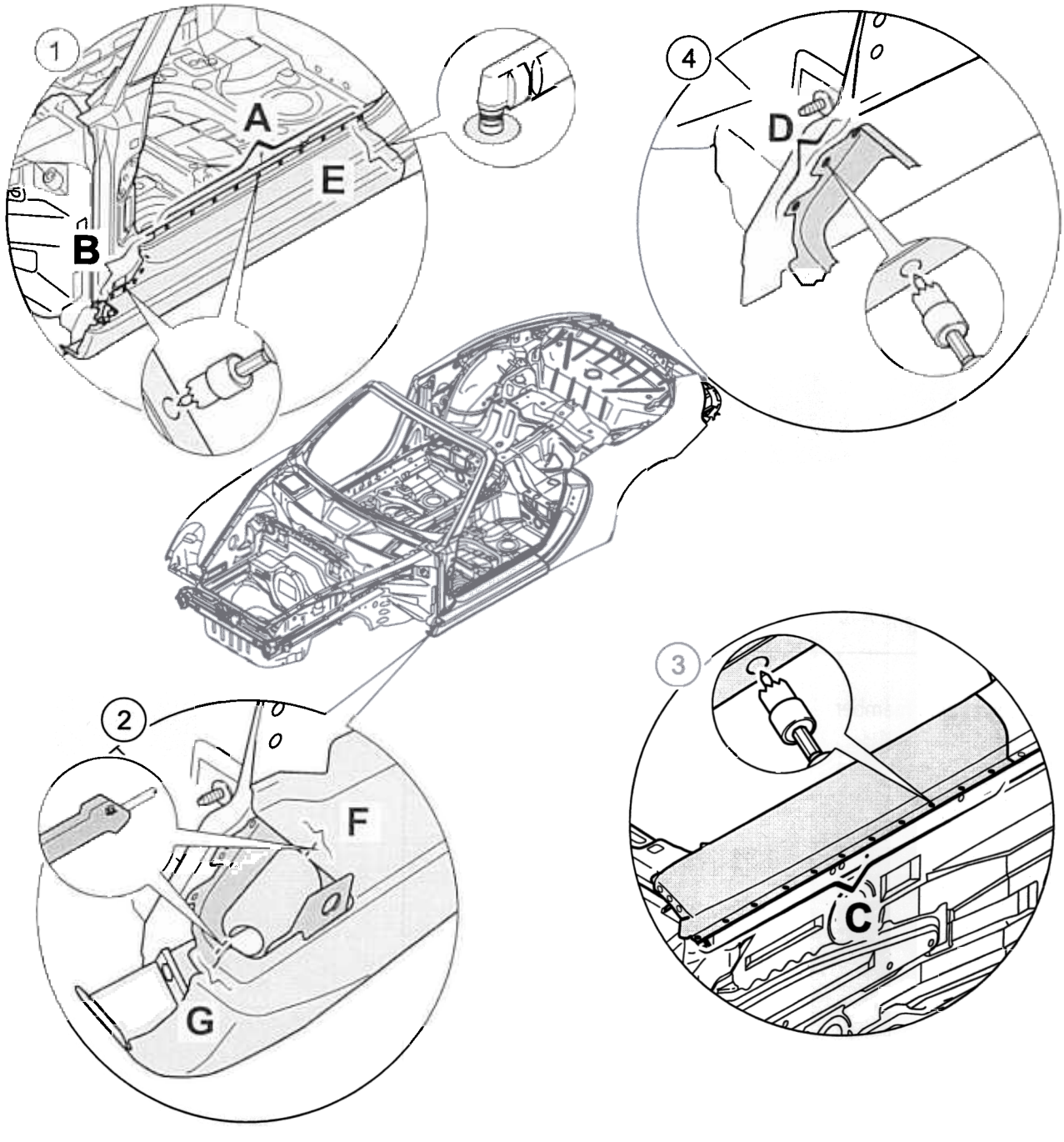
Replacing lower side member - Cabriolet

The following spare body parts are required for the sectional repair "Replacing lower side member"



A = Lower side member

Cutting out lower side member



Warning!

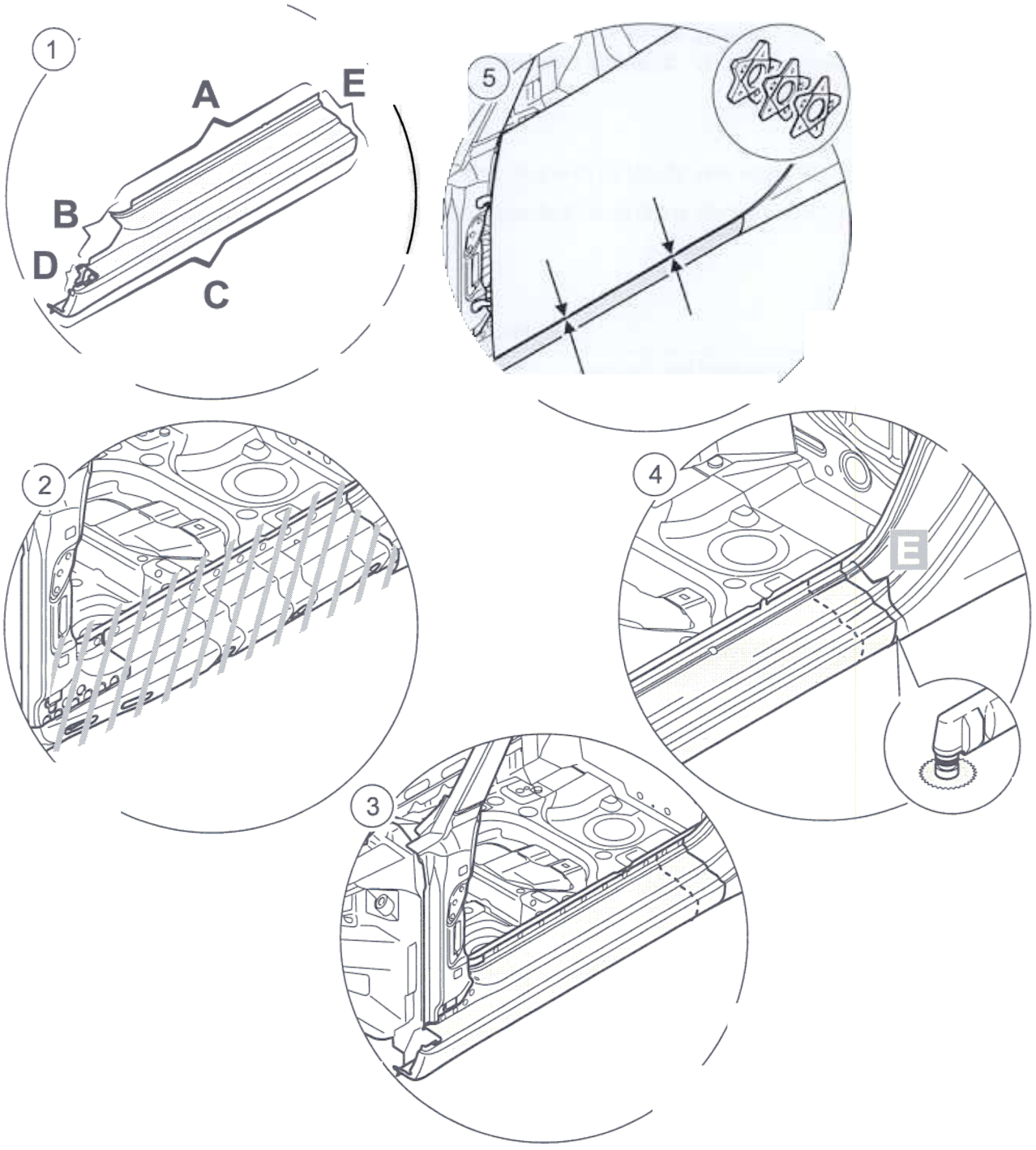
During body repairs, the following safety instructions and the general information and quality instructions must be followed. ⇒ Rep. Gr. 5; Safety instructions

Note!

- *The accessories in the repair area should be removed, depending on the extent of the damage.*
- *All straightening work on the body in this area must have been completed before the damaged parts are removed.*

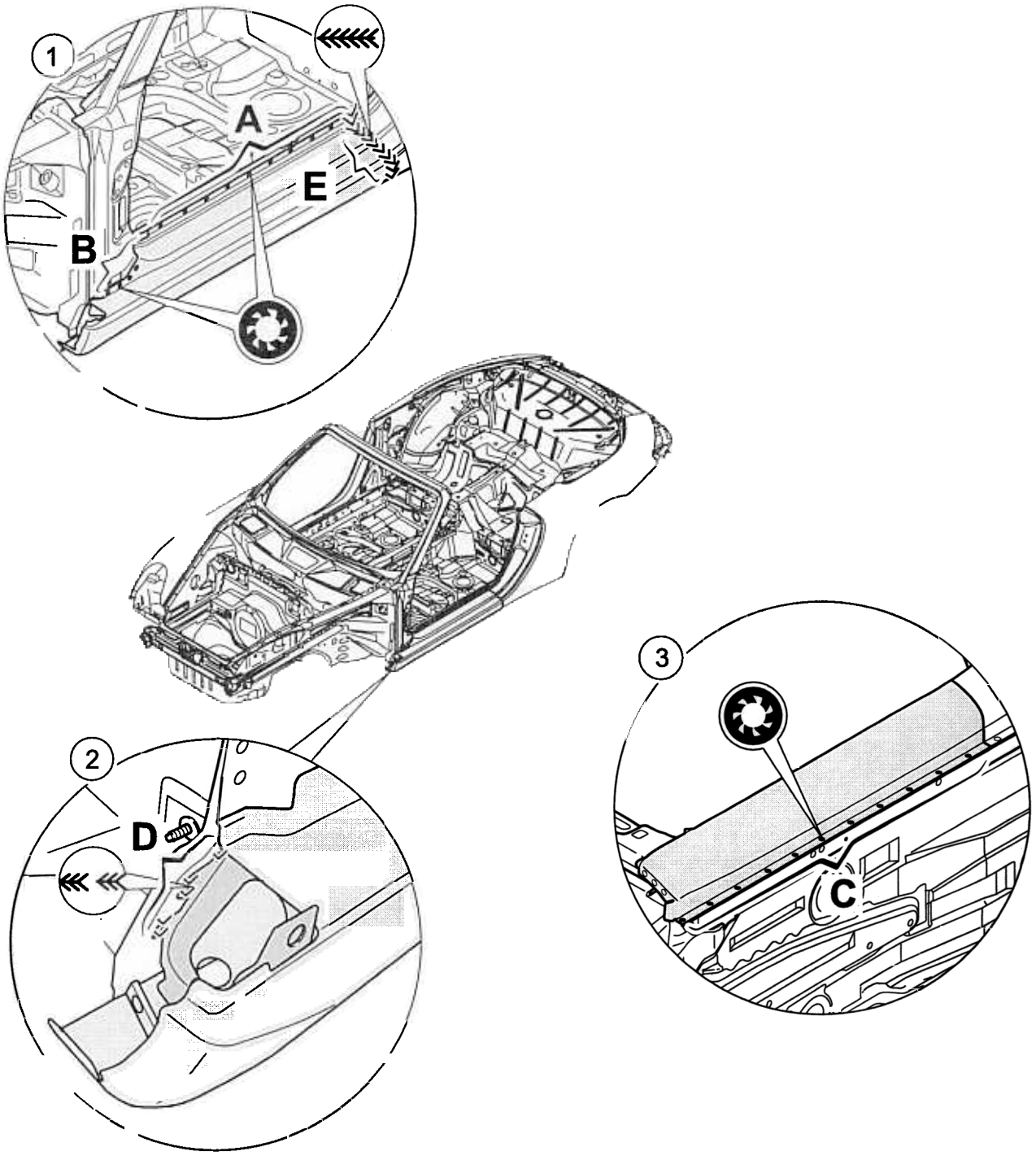
No.	Procedure	Instructions
	Separating the spot-welded joint between the outer/inner lower side members	Cut through the spot-welded joint between the outer lower side member and the inner lower side member **-A-** or between the outer lower side member and the A-pillar **-B-** with the spotweld cutter. Cut through the connection to the side section **-E-** with the body saw. Position the cut so that the spare body part (outer lower side member) overlaps the side section by approx. 60 mm.
2	Sawing through the web plate	Cut through the web plate at the top and bottom **-F, G-** with the body saw.
3	Separating the spot-welded joint between the outer/inner lower side members	Separate the spot-welded joint between the outer lower side member and the inner lower side member **-C-** with the spotweld cutter.
4	Separating the spot-welded joint between the web plate/inner lower side member	Separate the spot-welded joint between the web plate and the inner lower side member **-D-** with the spotweld cutter.

Preparatio fo installatio of owe side membe nd fitti



No.	Procedure	Instructions
	Cleaning the welding areas	Remove the factory-applied primer on the welding areas of the spare part **-A, B, C, D, E-** using the rotary brush.
2	Preparing spare part	Remove underbody coating and paint layers, etc. from the welding areas of the body with a hot-air gun or rotary brush.
3	Inserting outer lower side member	Insert outer lower side member into the body.
4	Fitting lower side member separation point	Cut through the outer lower side member, overlapping at the separation point, flush with the side section **-E-** with the body saw.
5	Setting gap	Set gap between door and outer lower side member. ⇒ **5-37** "Diagram - body gap dimensions"

Welding in lower side member



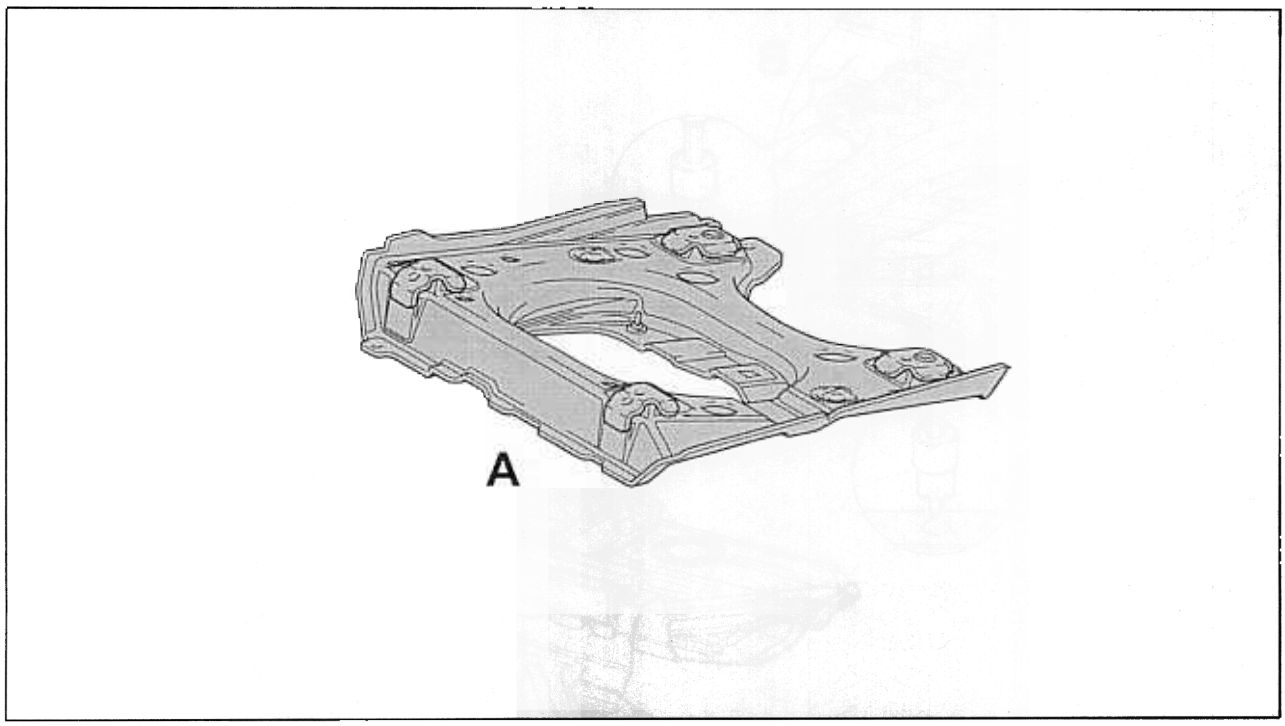
No.	Procedure	Instructions
	Welding outer/inner lower side members under shielding gas	Plug-weld the outer lower side member and the inner lower side member **-A-** as well as the connection to the A-pillar **-B-** with shielding gas. Weld the connection to the side section **-E-** with a continuous full weld under shielding gas.
2	Welding the web plate under shielding gas	Weld the web plate and the inner lower side member **-D-** together with an intermittent full weld under shielding gas.
3	Welding outer/inner lower side members under shielding gas	Plug-weld the outer lower side member and the inner lower side member **-C-** together under shielding gas.

Tools and materials

Item	Designation of the special tool	Explanation
	Star gauges Nr. 127-1	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
2	MIG welder	⇒ Rep. Gr. 3; Workshop Equipment Manual
3	Body saw	⇒ Rep. Gr. 3; Workshop Equipment Manual
4	Angle grinder	⇒ Rep. Gr. 3; Workshop Equipment Manual
5	Oscillating body saw (special electrical cutter)	⇒ Rep. Gr. 3; Workshop Equipment Manual
6	Multispot spotweld cutter	⇒ Rep. Gr. 3; Workshop Equipment Manual
7	Hole punch	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
8	Hot-air gun	⇒ Rep. Gr. 3; Workshop Equipment Manual
9	Rotary brush	⇒ Rep. Gr. 3; Workshop Equipment Manual
10	Spotweld cutter Ø 7 mm Nr. 129	⇒ Rep. Gr. 2.4; Workshop Equipment Manual

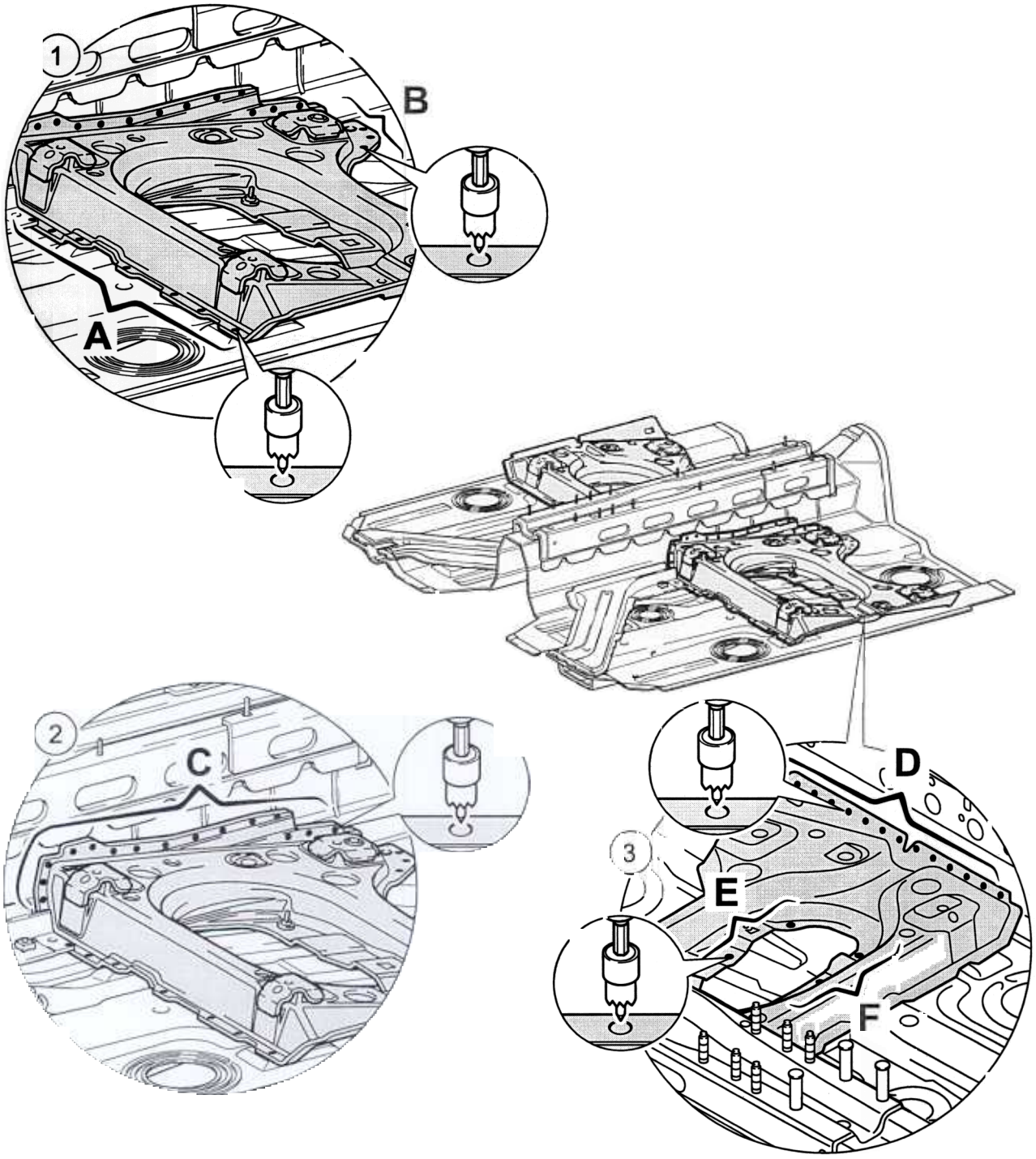
Replacing seat cross member

The following spare body parts are required for the repair "Replacing seat cross member"



A = seat cross member

Cutting out seat cross membe



Warning!

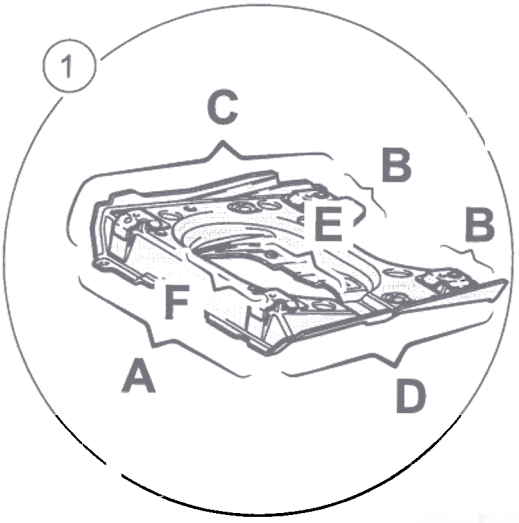
During body repairs, the following safety instructions and the general information and quality instructions must be followed. ⇒ Rep. Gr. 5; Safety instructions

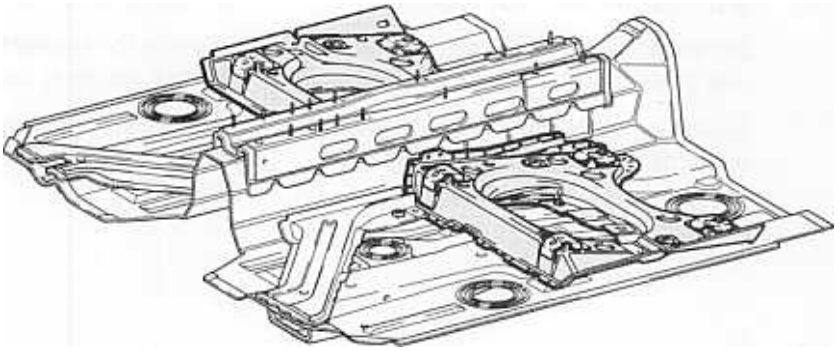
Note!

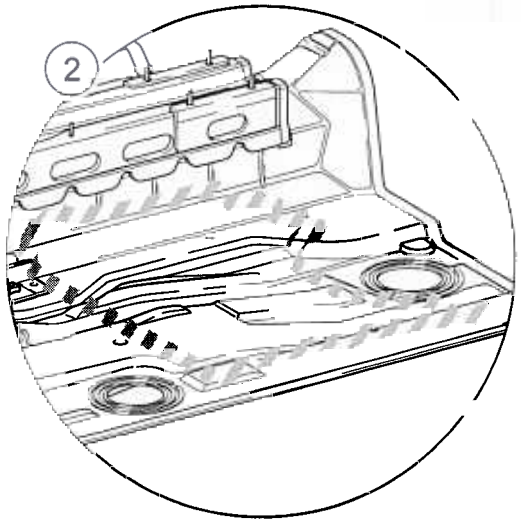
- *The accessories in the repair area should be removed, depending on the extent of the damage.*
- *All straightening work on the body in this area must have been completed before the damaged parts are removed.*

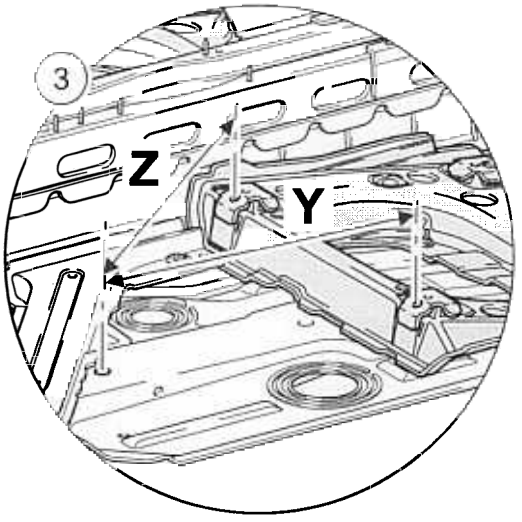
No.	Procedure	Instructions
	Separating spot-welded joints between the seat cross member and floorpan	Separate the spot-weld joints between the seat cross member and the floorpan **-A, B-** with the spot-weld cutter.
2	Separating spot-welded joints between the seat cross member and inner member	Separate the spot-weld joints **-C-** between the seat cross member and inner member with the spot-weld cutter.
3	Separating spot-welded joints between the seat cross member and inner member	Separate the spot-welded joints **-D, E, F-** between the seat cross member and inner lower side member with the spot-weld cutter.

Preparation of seat cross member for installation and fitting



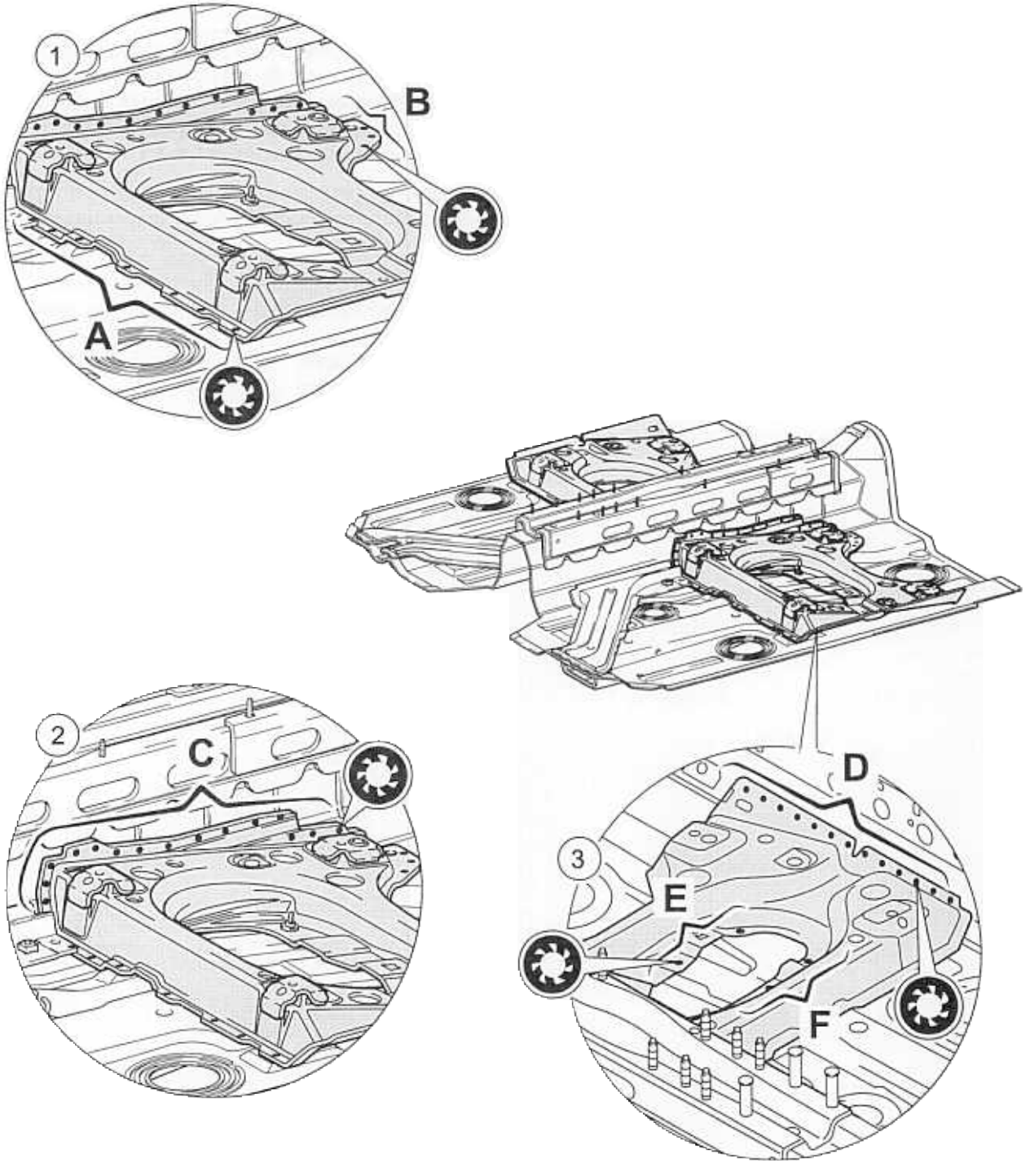






No.	Procedure	Instructions
		Remove the factory-applied primer on the welding areas of the spare parts **-A, B-** using the rotary brush. Drill or punch (with a hole punch) ∅7 mm holes spaced 20 mm apart for plug-welding with shielding gas. ⇒ "Welding in seat cross member" in **51-18** page 6
2	Cleaning the welding areas	Remove underbody coating and paint layers, etc. from the welding areas of the body with the hot-air gun or rotary brush.
3	Measuring seat cross member	Measure the seat cross member at the front screwed points (hole center) forward to the hole edge of the reinforcement in the floorpan **-dimension X = 405 mm-** **-dimension Y = 453 mm-**

Welding in seat cross member

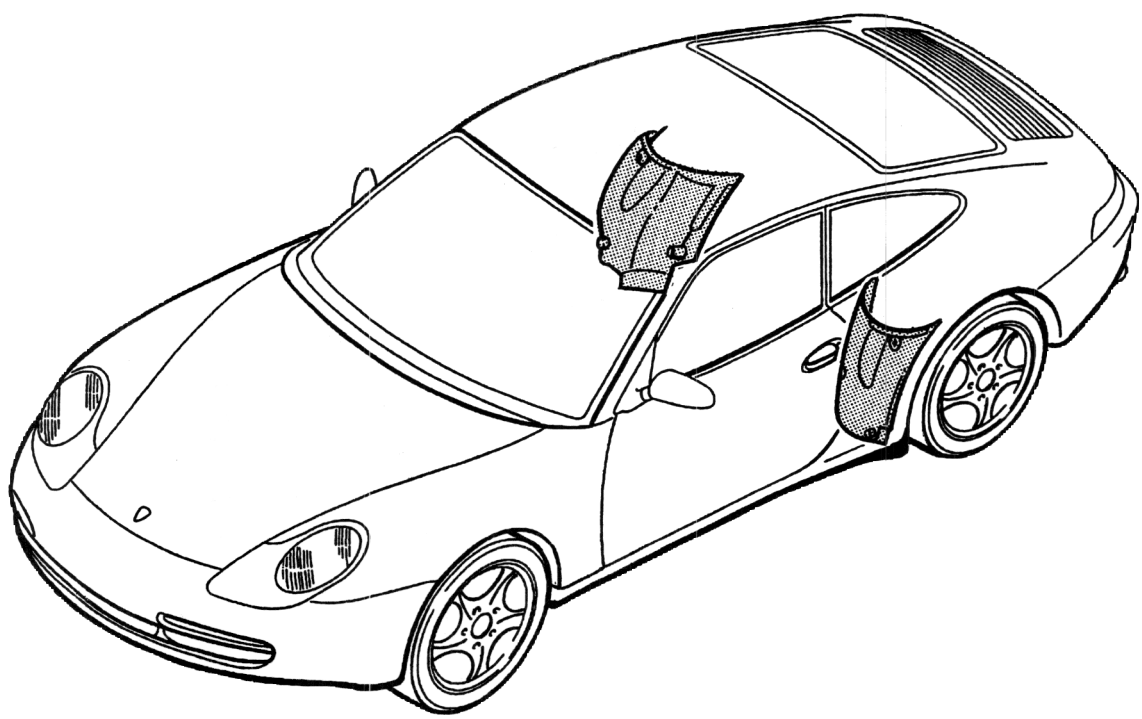


No.	Procedure	Instructions
	Plug-welding seat cross member under shielding gas	Plug-weld the seat cross member at the front and rear **-A, B-** under shielding gas.
2	Plug-welding seat cross member under shielding gas	Plug-weld the seat cross member at the sides **-C-** under shielding gas.
3	Plug-welding seat cross member under shielding gas	Plug-weld the seat cross member at the sides and middle **-D, E, F-** under shielding gas.

Tools and materials

Item	Designation of the special tool	Explanation
	MIG welder	⇒ Rep. Gr. 3; Workshop Equipment Manual
2	Angle grinder	⇒ Rep. Gr. 3; Workshop Equipment Manual
3	Multispot spotweld cutter	⇒ Rep. Gr. 3; Workshop Equipment Manual
4	Hole punch	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
5	Hot-air gun	⇒ Rep. Gr. 3; Workshop Equipment Manual
6	Rotary brush	⇒ Rep. Gr. 3; Workshop Equipment Manual
	Spotweld cutter Ø7 mm Nr. 129	⇒ Rep. Gr. 2.4; Workshop Equipment Manual

53 69 19 Removing and installing wheel housing liner



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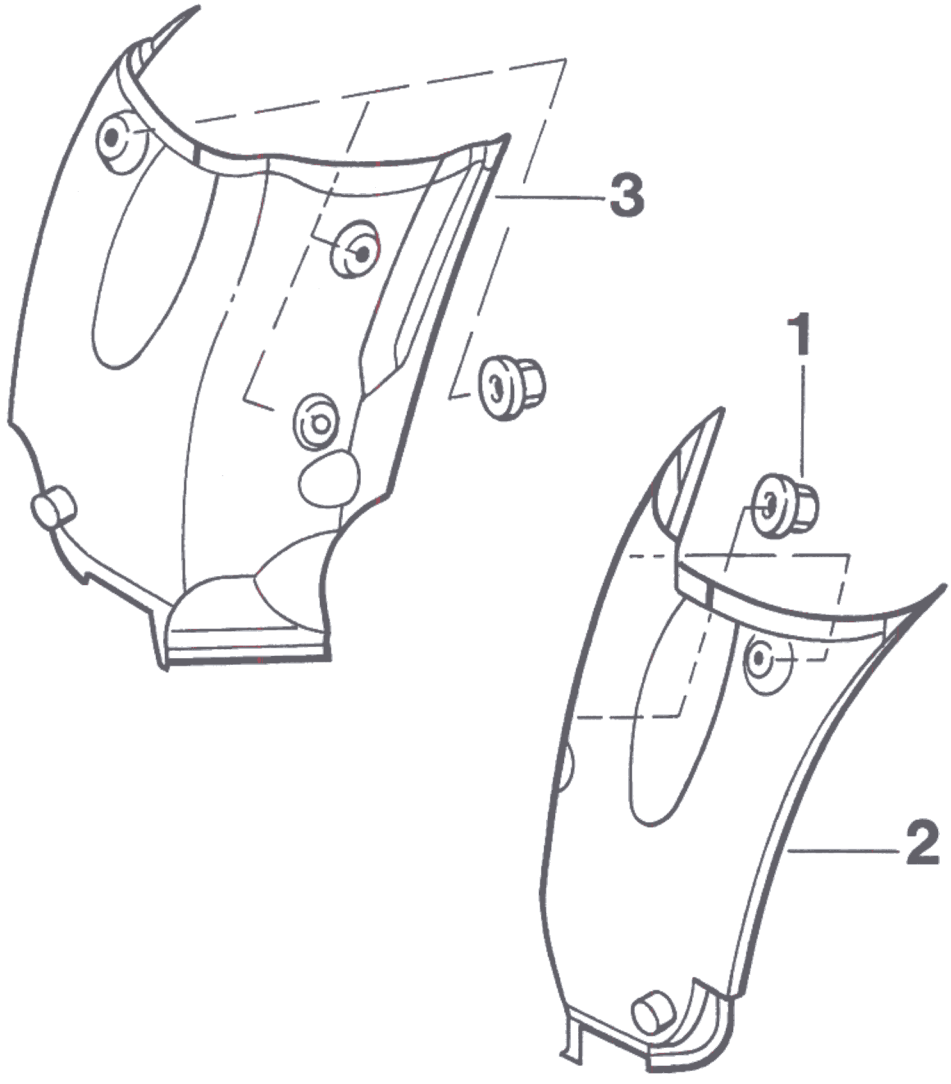
Removing and installing wheel housing liners



323 - 97

Removing and installing wheel housing liners

No.	Designation	Qty.	Removal	Note: Installation
1	Left wheel housing liner	1	Pull out downwards.	
2	Right wheel housing liner	1	Pull out downwards.	
3	Plastic nut T5.	6	Unscrew.	Inspect and replace if necessary.

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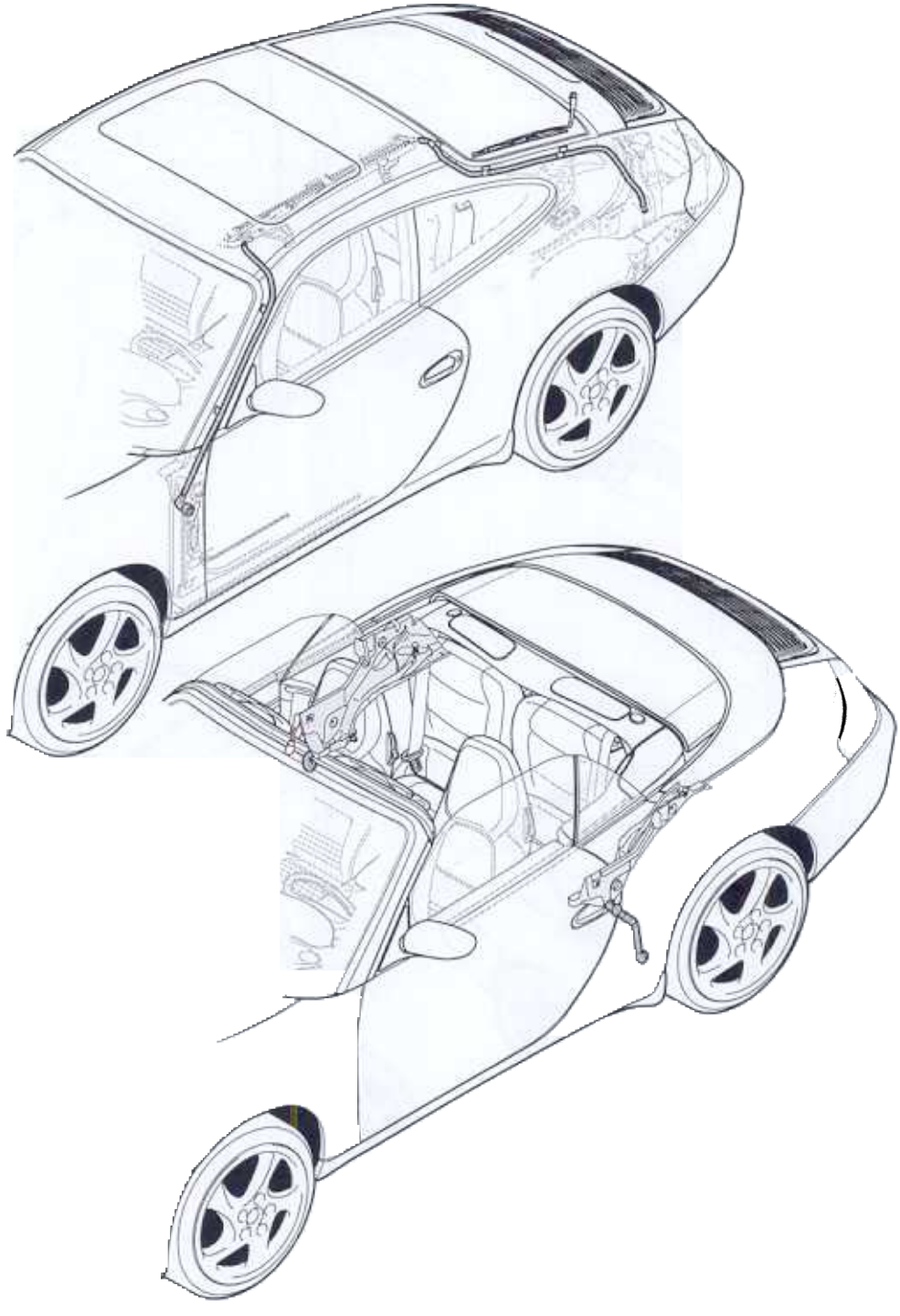
53 93 30 Cleaning rear water drains on Coupe and Cabriolet



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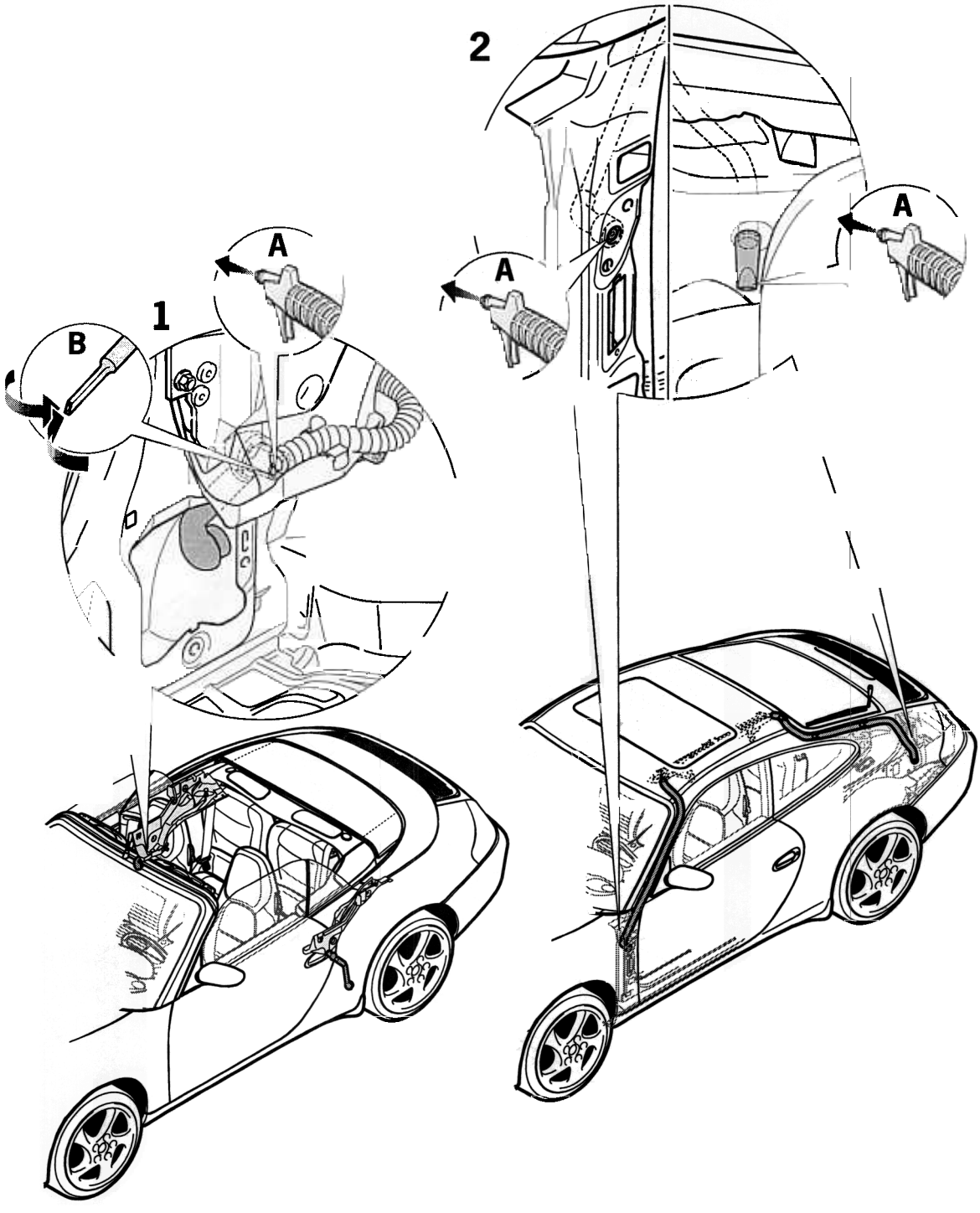
Cleaning rear water drains on Coupe and Cabriolet



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Cleaning rear water drains on Coupe and Cabriolet

Removing side-panel lining, see Serv. No. 70 75; removing rear wheel housing liner, see Serv. No. 53 69

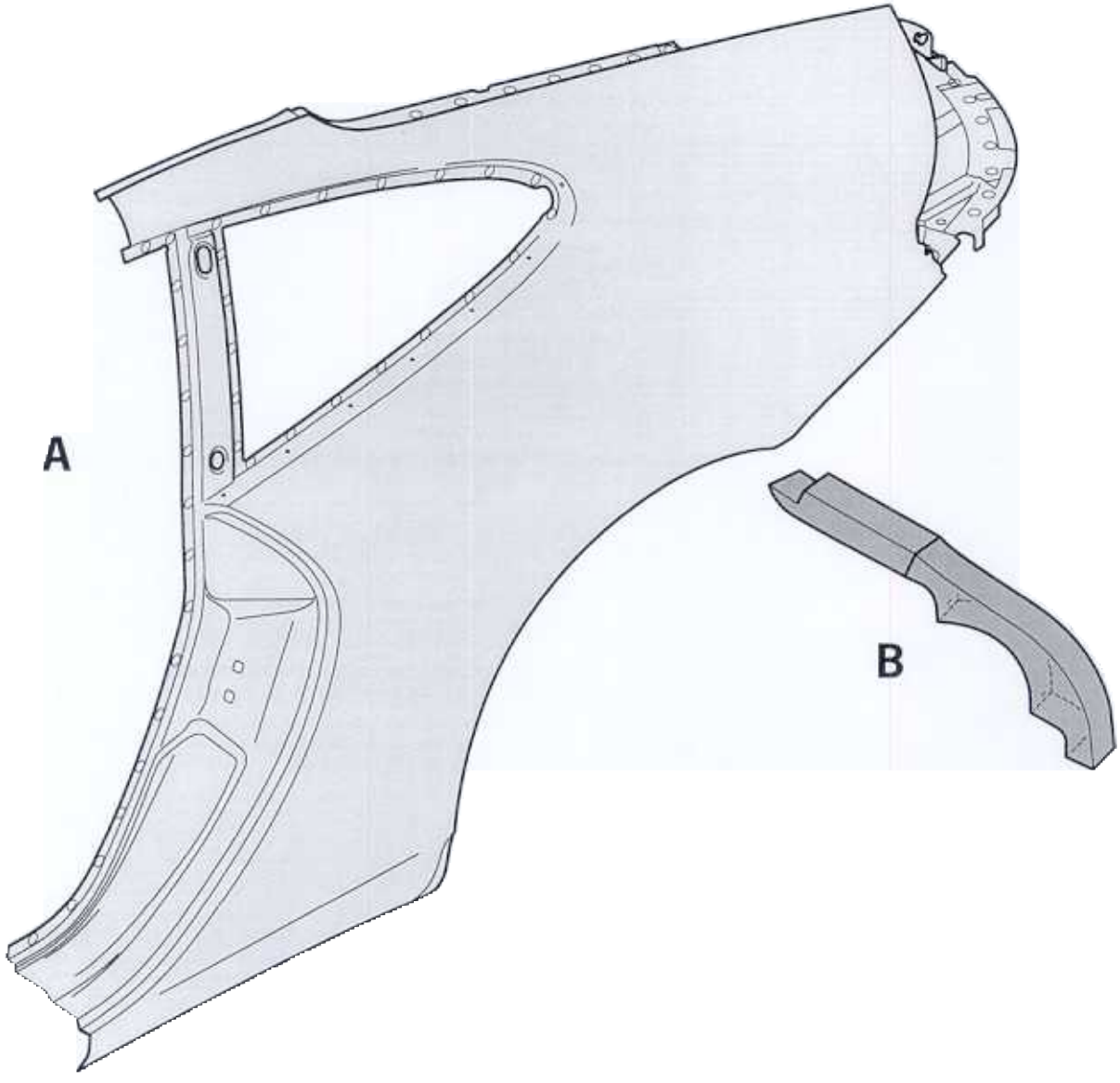
Warning!
Water drainage hoses can be pushed out or pressed in when blown out of the body!

> The water drains of the Coupe and Cabriolet should be blown out carefully with compressed air.

No.	Procedure	Instructions
1	Blow out the Cabriolet water drain tube in the rear wheel housings on the left and right.	Carefully blow out the water drain tube **(arrow A)** in the water collection tray on the left and right. Remove any dirt particles from the water collection tray **(arrow B)** using the vacuum cleaner. Installing side-panel lining, see Serv. No. 70 75
2	Blow out the water drainage hoses from the sliding/tilting roof at the front, rear, left and right.	**Note:** The water drainage hoses should only be blown out when the sliding/tilting roof is closed. Front water drainage hose: Carefully blow out the front water drainage hose in the B-pillar **(arrow A)** on the left and right. Rear water drainage hose: Put vehicle onto lifting platform and carefully blow out the water drain **(arrow A)** on the left and right in the rear wheel housing from the outside of the wheel arch Open sliding/tilting roof and remove dirt particles from the sliding roof frame using the vacuum cleaner. Installing rear wheel housing liner, see Serv. No. 53 69

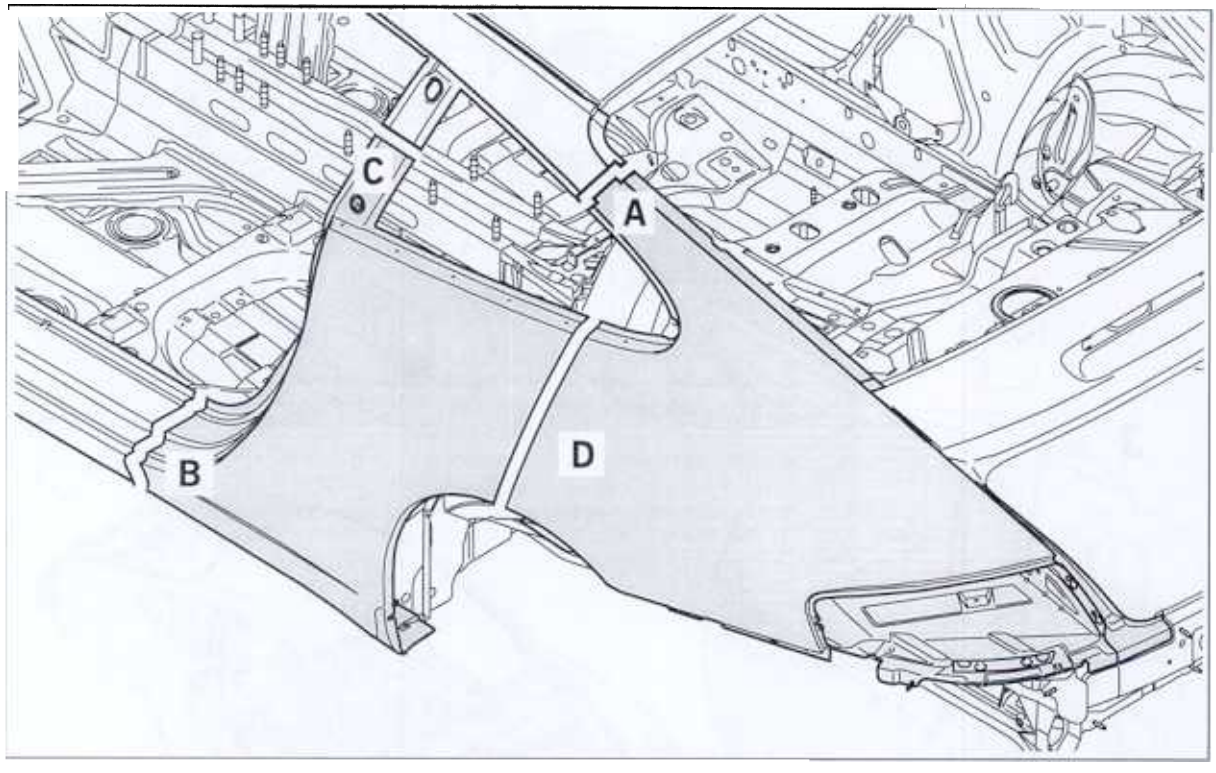
53 55 55 Replacing side section

The following spare body parts required for the epair "Replacing side section



A ide section seal

Separation points on side section



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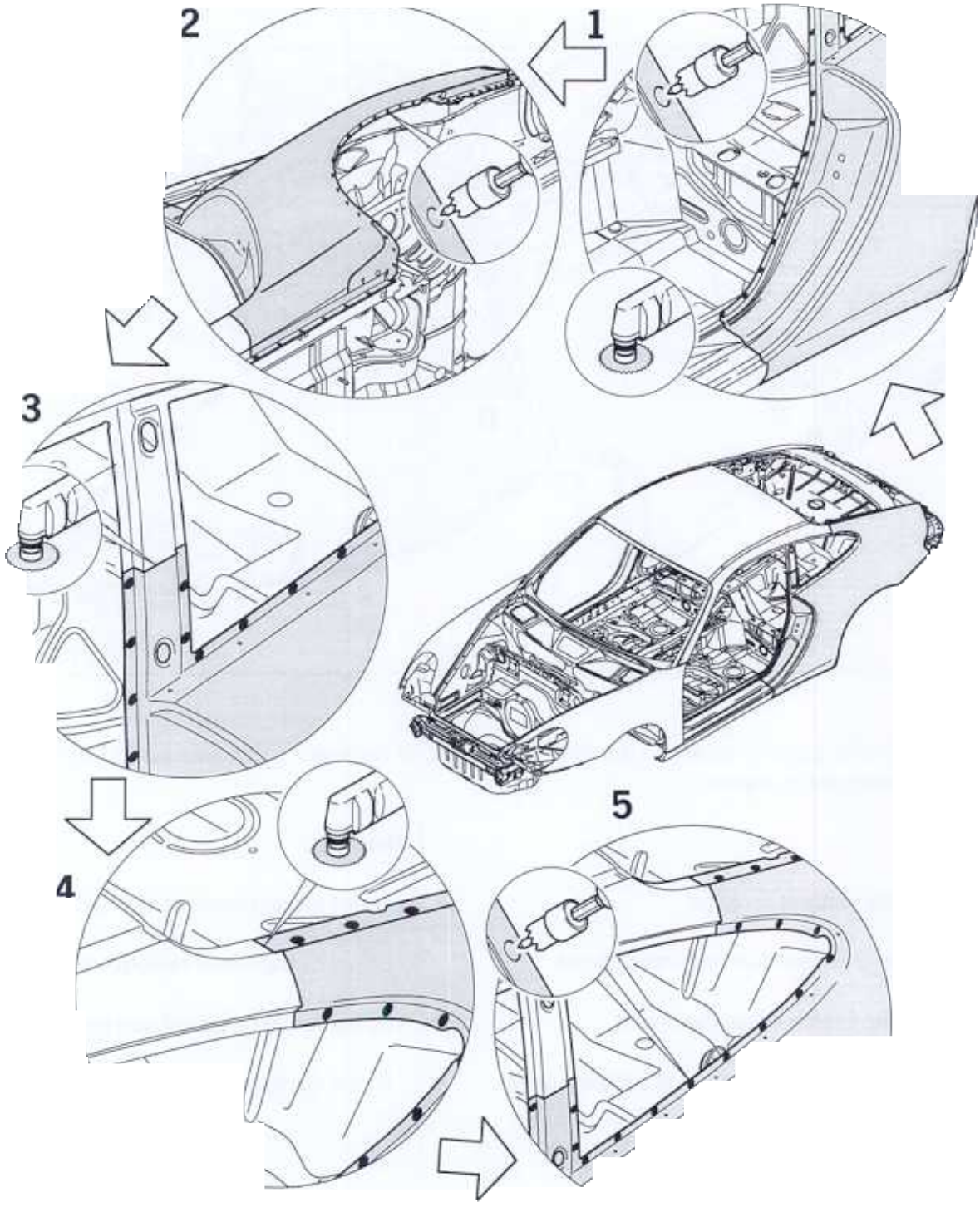
Lay separation points according to damage. Figure shows all separation points provided and also where part replacement is possible.

	Note:
A: C-pillar separation point	Do not damage inside of side section
B: Lower side member separation point	Do not damage inner reinforcement
C: B-pillar centre separation point	Do not damage inside of side section
D: Centre part replacement separation point	Do not damage outer wheel arch

Removing side section from body



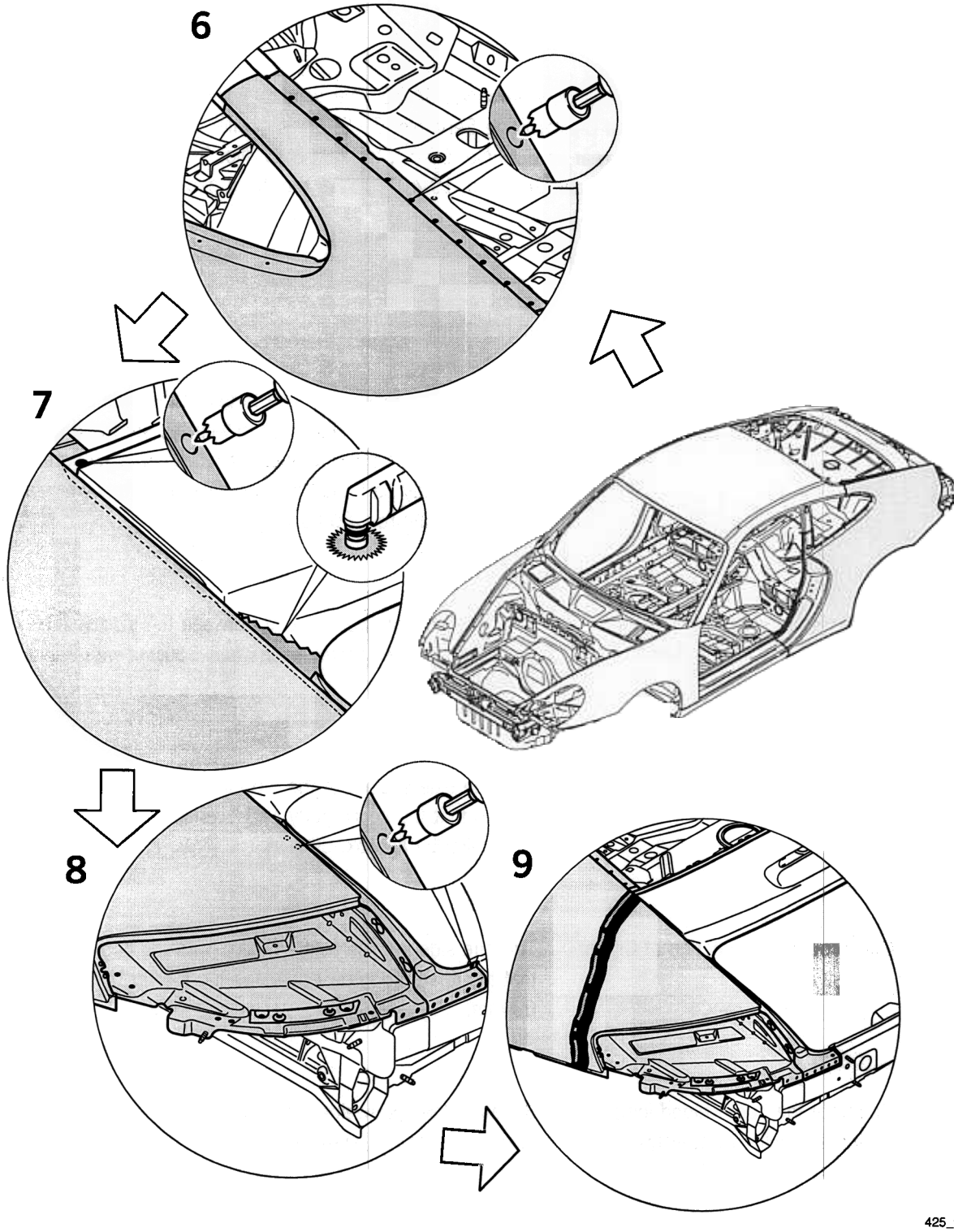
Removing side section from the body

Remove the following accessories: side window Serv. No. 64 75, rear window Serv. No. 64 86, side-panel lining Serv. No. 70 57, B and C-pillar lining Serv. No. 70 57, rear spoiler Serv. No. 63 55, roof joint strip Serv. No. 66 36, release for rear lid Serv No. 55 57, tail light Serv. No. 94 33, wheel housing liner Serv. No. 53 69, coolant expansion tank Serv. No. 19 40*, striker pin, front seat belt, door seal.

= only when replacing the left side section

No.	Procedure	Instructions
1	Separate the spot-welded joint on the B-pillar	Separate the spot-welded joint between the side section and the inside of the side section with the spotweld cutter. Cut off the lower side member with the body saw so that the spare body part (side section) overlaps the lower side member by approx. 60 mm.
2	Separate the spot-welded joint on the lower side member and the wheel housing	Separate the spot-welded joint between the side section and the lower side member or wheel housing with the spotweld cutter.
3	Cut through centre of B-pillar	Trim the side section at the B-pillar centre with the body saw so that the spare body part overlaps the centre of the B-pillar by approx. 60 mm.
4	Cut through side section at C-pillar	Trim the side section at the C-pillar with the body saw so that the spare body part overlaps the C-pillar by approx. 60 mm.
	Separate the spot-welded joint on the side window aperture	Separate the spot-welded joint on the side window aperture using the spotweld cutter.

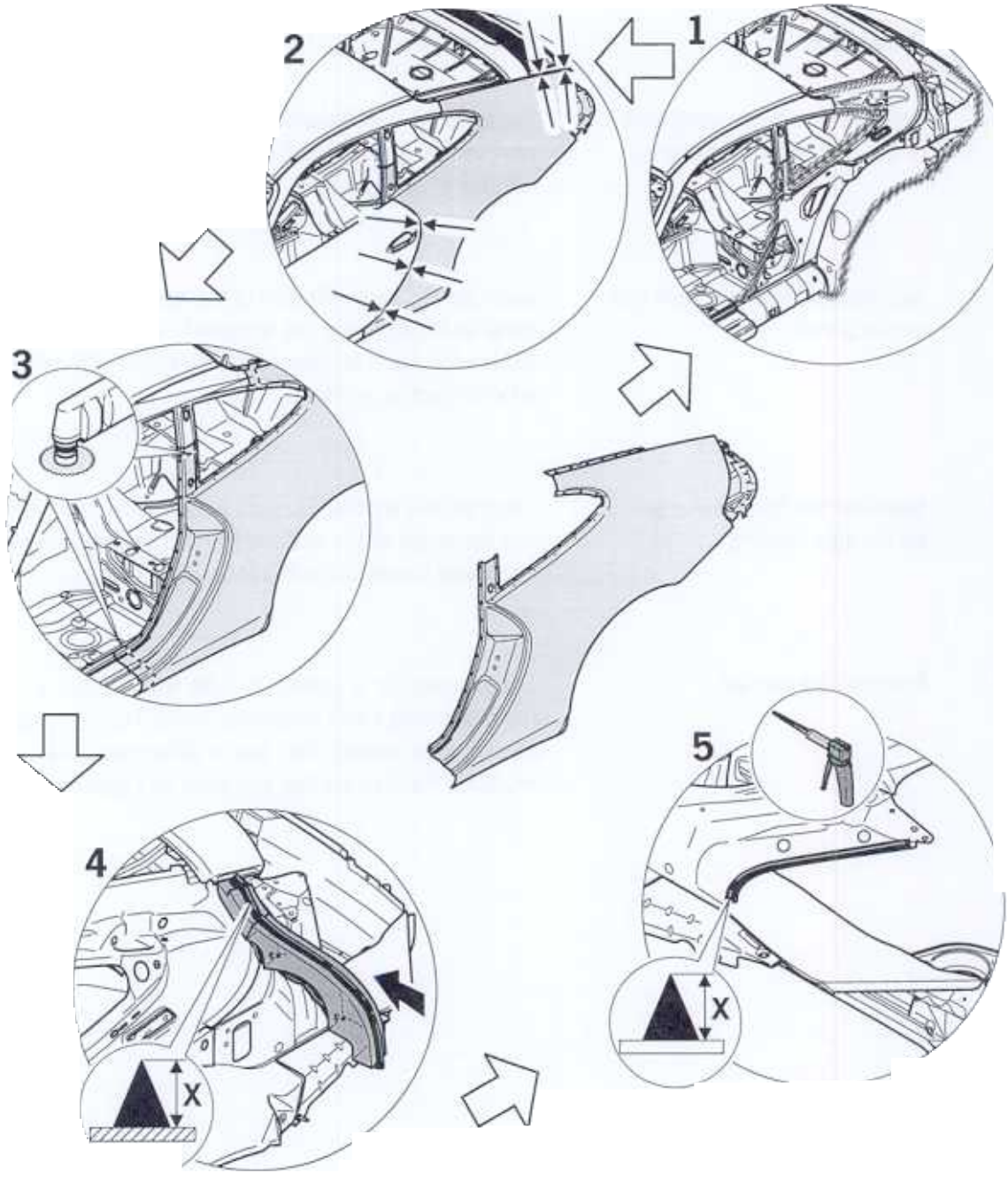
Removing side section from the body



Removing side section from the body

No.	Procedure	Instructions
6	Separate the spot-welded joint of the rear window aperture.	Separate the spot-welded joint between the side section rear window aperture and the inside of the side section with the spotweld cutter.
7	Separate side section from rear centre panel	Separate the spot-weld joint of the overlapping rear centre panel at the top using the spotweld cutter. Cut through the brazed seam on the connection to the side section with the parting grinder.
8	Separate the spot-welded joint on the light housing	Separate the spot-welded joint between the light housing and the inside of the side section and the rear transverse lock panel connection with the spotweld cutter.
9	Remove side section	The side section is sealed from the light housing to the rear centre panel connection in the factory using an expanded sealant. This seal is destroyed when replacing the side section and must be replaced.

Inserting the side section into the body



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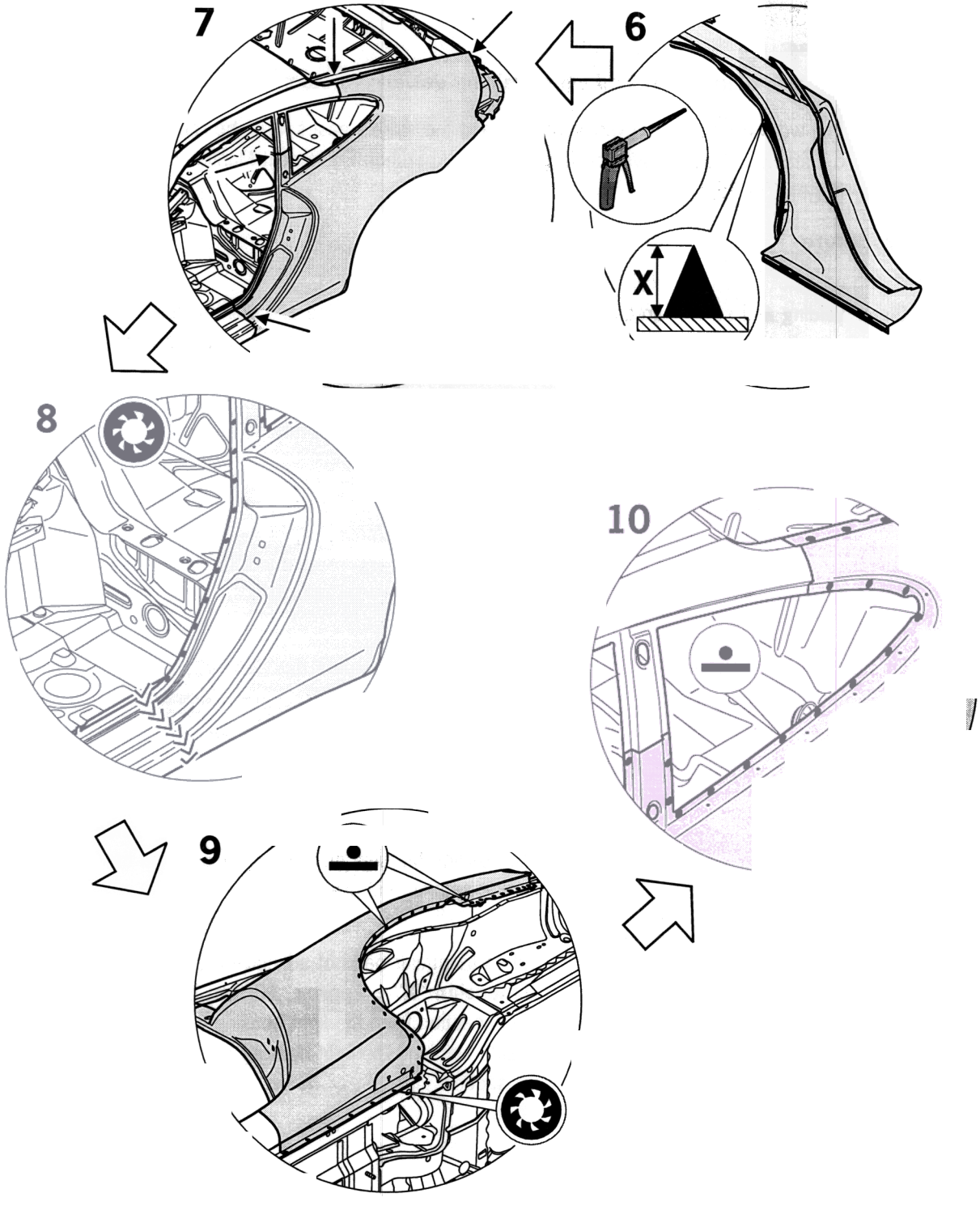
Inserting the side section into the body

Warning:
Toxic zinc oxide is emitted when welding galvanized steel

> The work area must be well ventilated and the smoke gases must be removed with a suitable extraction system. (E.g. refer to Workshop Equipment Manual, Group 5 Page 3.5 - 35)

No.	Procedure	Instructions
	Clean welding and sealing areas	Remove underbody coating and paint layers from the welding areas on the body or sealing areas (inside of side section) using a hot-air gun or rotary brush. Remove the factory-applied primer from the welding areas of the spare part using the rotary brush.
2	Adapt the side section to the body	Fit the side section to the body. Insert door and rear lid to check the body contour. Adjust the gap dimensions between the door and rear lid and the body. See: Serv. No. 5 Body gap dimensions
3	Fit side section separation points	Cut through both panels at the separation points where the side section overlaps the lower side member, C-pillar and B-pillar centre using the body saw.
4	Insert seal	Apply a triangular bead of body sealant **- dimension "X" = approx. 12 mm high -** on all sides of the side section seal. Position the seal on the Tucker bolts on the inside of the side section and press on.
5	Bond light housing with the inside of the side section	Apply a triangular bead of adhesive (Teromix-6700) **- dimension "X" = approx. 10 mm high -** on the connection from the light housing to the inside of the side section. The light housing must lie flush with the side section.

Inserting side section into the body



Inserting the side section into the body

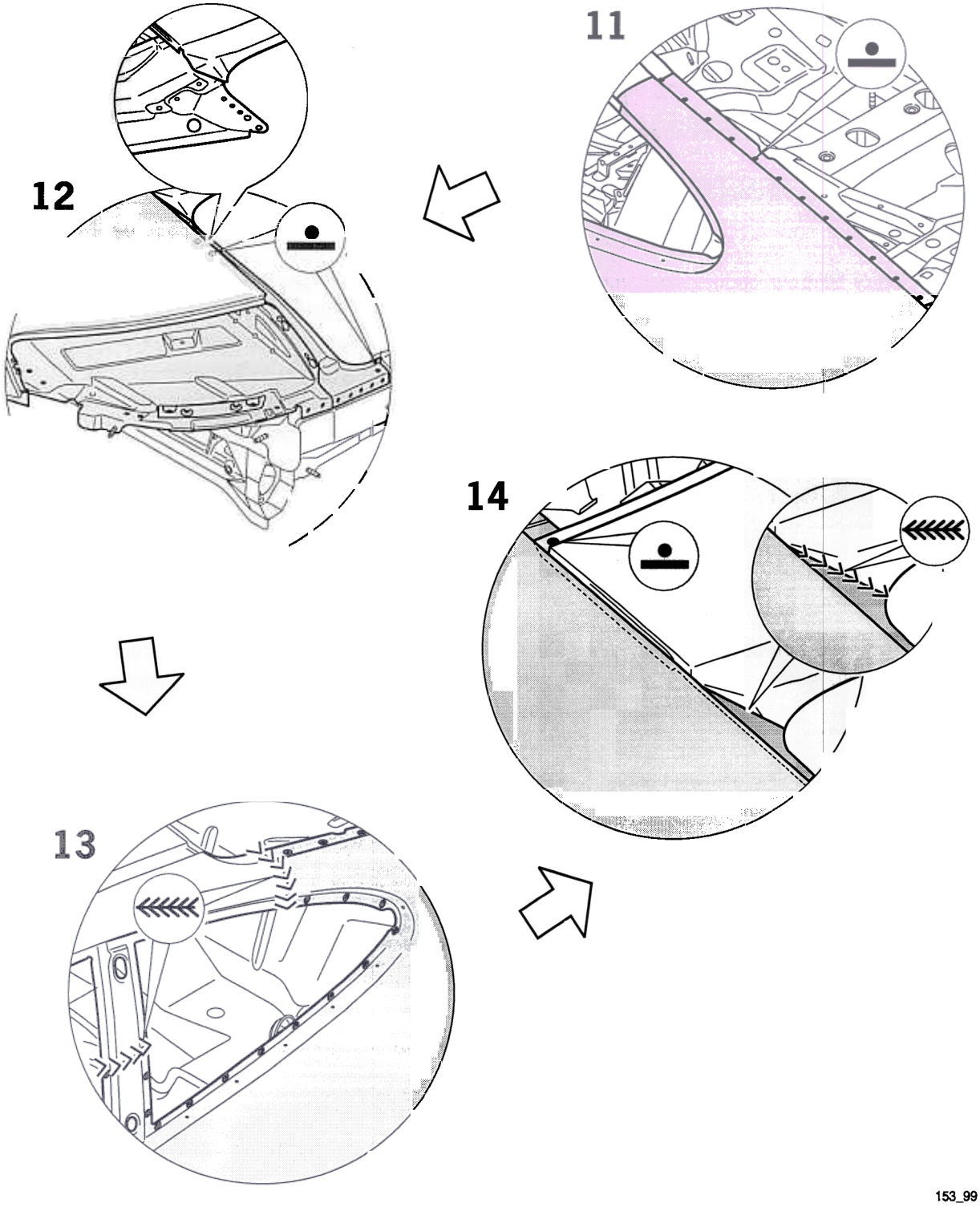
Warning:

Observe the working time of the adhesive (Item 6)

> The new part must be welded in within 30 minutes. Otherwise the adhesion of the adhesive is impaired.

No.	Procedure	Instructions
6	Apply adhesive on the wheel arch up as far as the start of the side member and the water channel of the side section	Apply the adhesive as a triangular bead - **dimension "X" = approx. 8 mm** - on the inside of the side section, along the inner edge up as far as the start of the side member and on the underside of the water channel. Reference address: Teromix-6700 2-component adhesive and the Teromix processing nozzle **Henkel Teroson GmbH Postfach 10 56 20 69 0 46 Heidelberg Hans-Bunte-Straße 4 Telephone (06221) 7040 Fax (06221) 704585**
7	Tack-weld side section under shielding gas	Insert side section into the body. Check the contours and gap dimensions. Tack-weld the side section under shielding gas at the separation points.
8	Spot-weld B-pillar and weld under shielding gas	Spot-weld the B-pillar side section to the inside of the side section. Weld the lower side member connection on the side section to the lower side member with a continuous butt weld under shielding gas.
9	Spot-weld wheel arch and weld under shielding gas	Plug-weld underside of lower side member. Spot-weld wheel arch
10	Spot-weld side window aperture	Spot-weld the side window aperture to the inside of the side section.

Inserting the side section into the body



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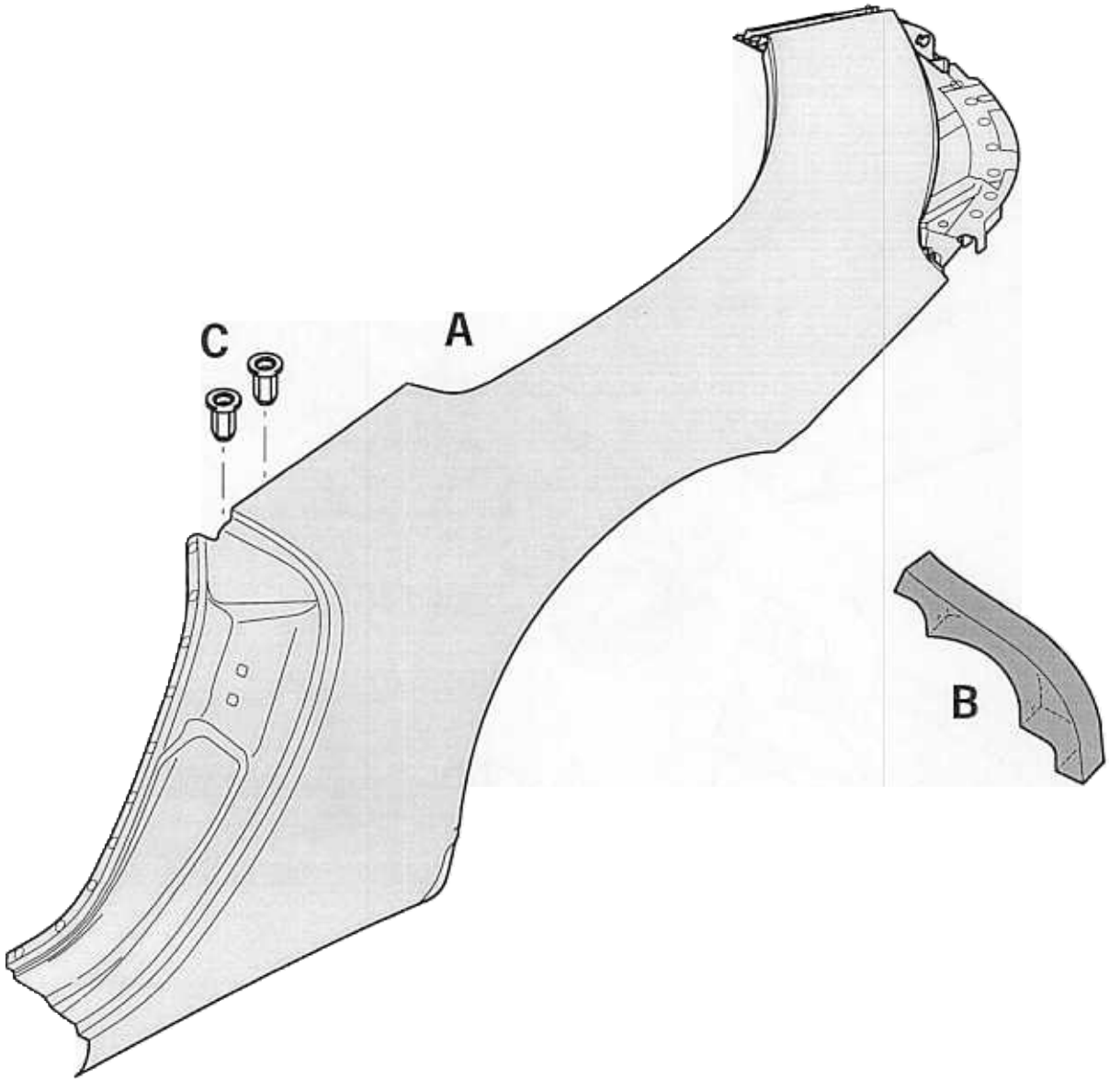
Inserting the side section into the body

No.	Procedure	Instructions
11	Spot-weld rear window aperture	Spot-weld the rear window aperture and the inside of the side section.
12	Spot-weld light housing	Spot-weld light housing with the connecting angle and the connection to the transverse lock panel. On the inside of the side section (small figure), make sure that the welding nuts are lined up with the hole pattern in the side section. Screw in M6 hexagon-head bolts to position. Spot-weld the connection with the side section.
13	Weld B-pillar centre and C-pillar under shielding gas	Weld B-pillar centre and C-pillar with a continuous butt weld under shielding gas. Grind the welds.
14	Spot-weld rear centre panel and weld under shielding gas.	Spot-weld the overlap of the rear centre panel at the top. Weld the overlap on the lower connection of the side section with an interrupted full weld under shielding gas.

53 55 55 Replacing side section – Cabriolet

The following spare body parts are required for the repair "Replacing side section – Cabriolet":



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A = side section B = seal C = insertion bushing

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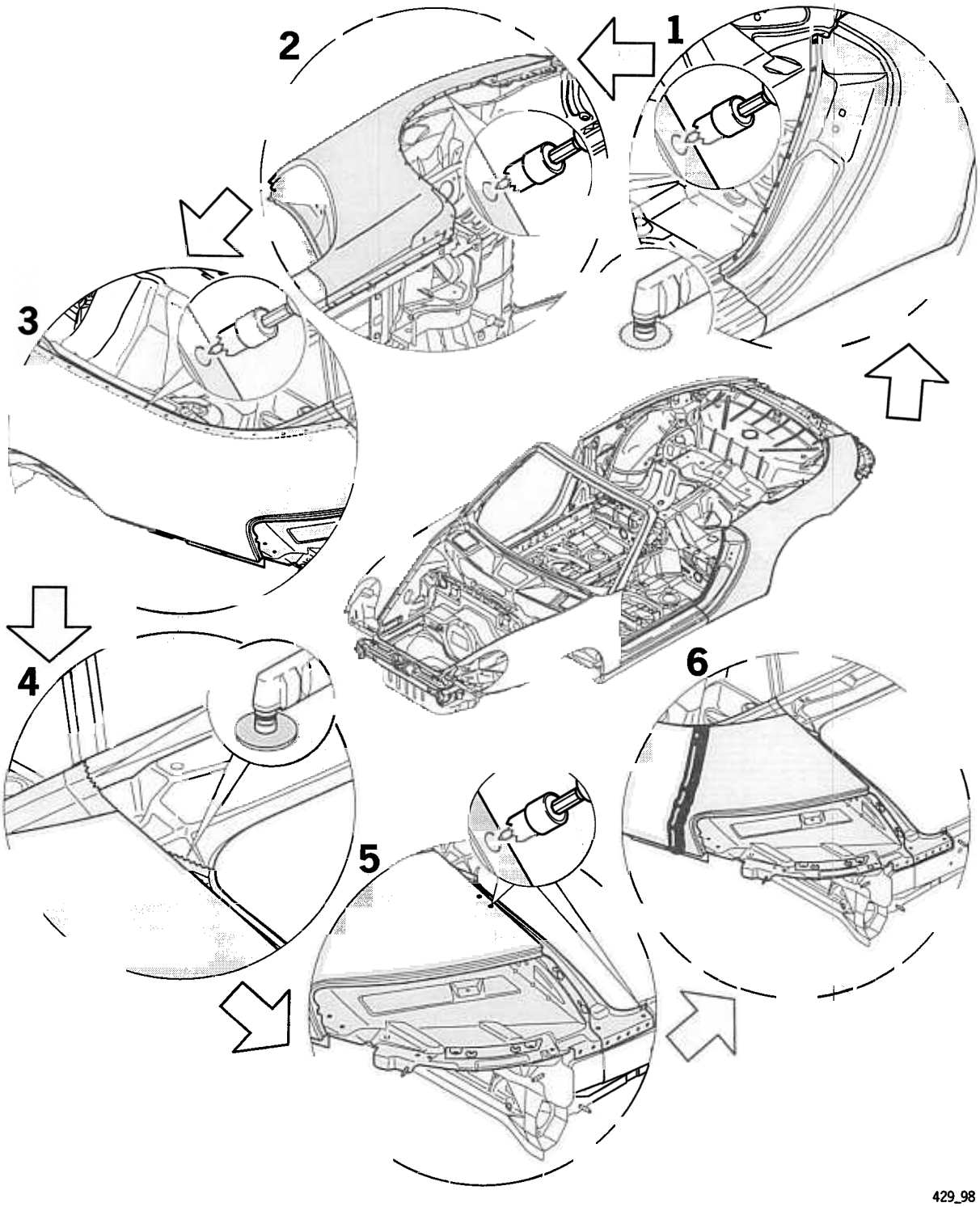
Removing side section – Cabriolet from the body



Removing side section – Cabriolet from the body

Remove the following accessories: convertible top Serv. No. 61 01, convertible top compartment lid Serv. No. 61 90, side-panel lining Serv. No. 70 75, release for front lid Serv. No. 55 10, rear spoiler Serv. No. 63 55, tail light Serv. No. 94 31, coolant expansion tank Serv. No. 19 40.

No.	Procedure	Instructions
1	Separate the spot-welded joint on the B-pillar	Separate the spot-welded joint between the side section and the inside of the side section with the spotweld cutter. Cut off the lower side member with the body saw so that the spare body part (side section) overlaps the lower side member by approx. 60 mm.
2	Separate the spot-welded joint on the lower side member and the wheel housing	Separate the spot-welded joint between the side section and the lower side member or wheel housing with the spotweld cutter.
3	Separate the spot-welded joint in the water channel	Separate the spot-welded joint between the water channel and the inside of the side section with the spotweld cutter.
4	Separate the shielding gas welds and the spot-welding joint to the cross member	Cut through the shielding gas weld of the overlapping cross member at the top using a parting grinder. Cut through the overlap on the lower connection to the side section with the parting grinder. Separate the spot-welded joint from the rear sealing channel to the gusset plate with the spotweld cutter.
5	Separate the spot-welded joint on the light housing	Separate the spot-welded joint between the light housing and the inside of the side section and the rear transverse lock panel connection with the spotweld cutter.
6	Remove side section	The side section is sealed from the light housing to the rear centre panel connection in the factory using an expanded sealant. This seal is destroyed when replacing the side section and must be replaced.

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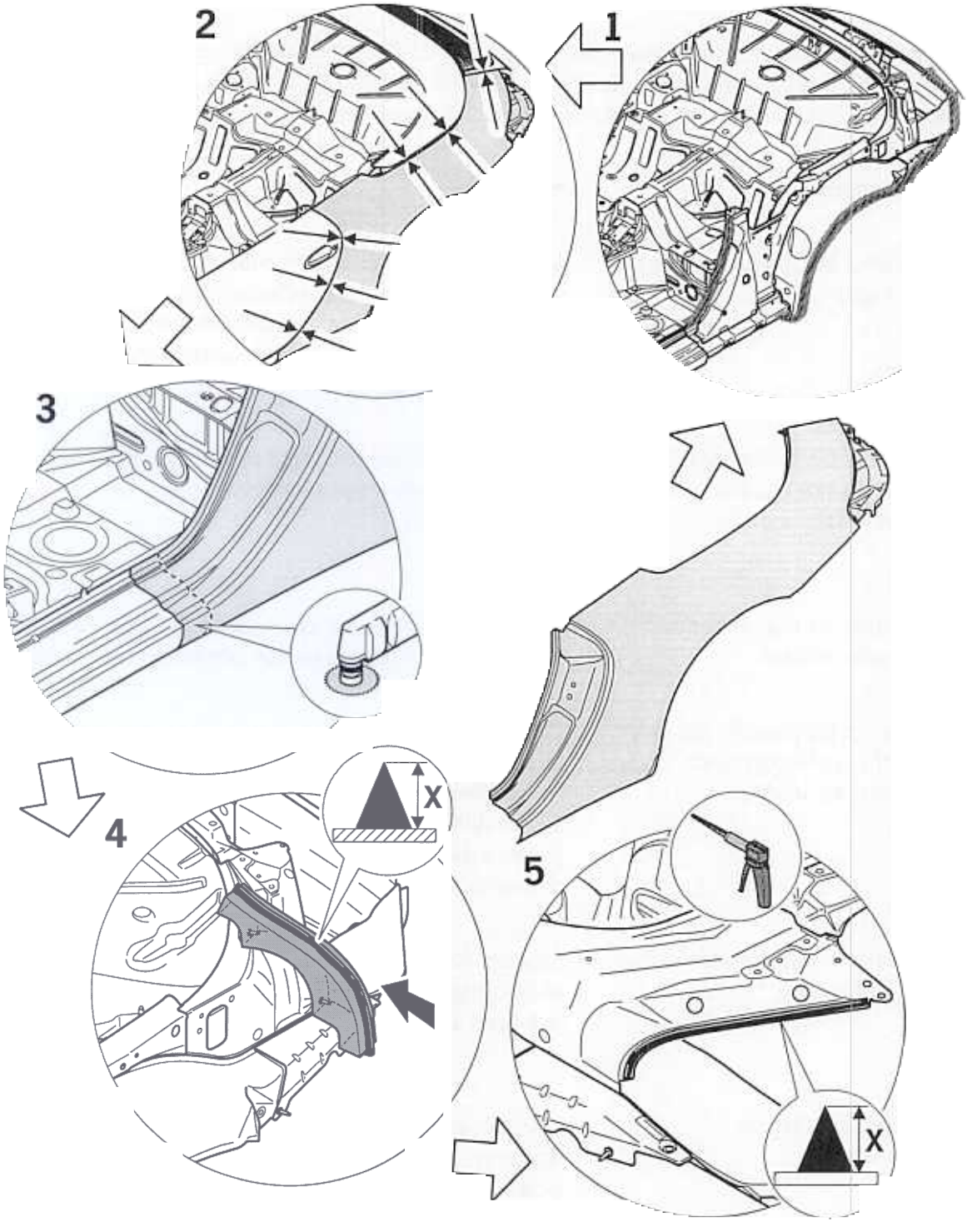


Inserting the side section – Cabriolet into the body

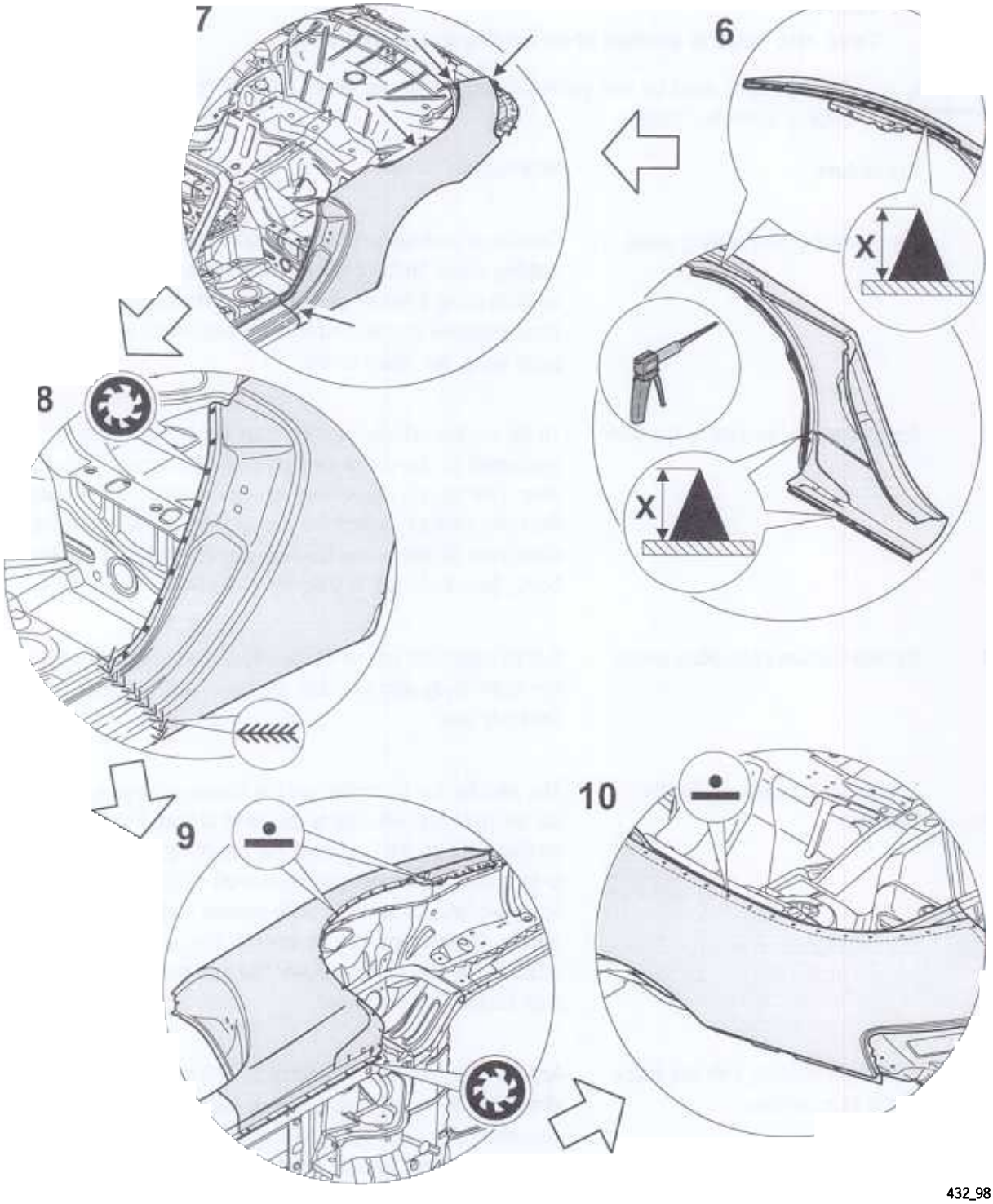
Caution!

Toxic zinc oxide is emitted when welding galvanized steel

> The work area must be well ventilated and the smoke gases must be removed with a suitable extraction system.

No.	Procedure	Instructions
1	Clean welding and sealing areas	Remove underbody coating and paint layers from the welding areas on the body or sealing areas (inside of side section) using a hot-air gun or rotary brush. Remove the factory-applied primer from the welding areas of the spare parts using the rotary brush.
2	Adapt the side section to the body	To do so, the vehicle must be standing on its wheels or positioned on the set of straightening attachments. Insert door, rear lid and convertible top compartment lid to check the body contour. Adjust the gap dimensions between the door, rear lid and convertible top compartment lid and the body. See: Serv. No. 5 Diagram of body gap dimensions
3	Fit side section separation points	Cut through both panels of the separation points at which the spare body part overlaps the lower side member using the body saw.
4	Shorten and insert seal for the Cabriolet	The seal for the Cabriolet and the Coupe side section and for the right and left side is an identical part. For the sealing area on the Cabriolet, the upper section of the seal is torn away at the designated tear-off edge. Apply a triangular bead of body sealant – **dimension "X" = approx. 15 mm high** – on all sides of the side section seal. Position the seal on the Tucker bolts on the inside of the side section and press on.
5	Bond light housing with the inside of the side section	Apply a triangular bead of adhesive (Teromix-6700) – **dimension "X" = approx. 10 mm high** – on the connection from the light housing to the inside of the side section. The light housing must lie flush with the side section.

Inserting the side section – Cabriolet into the body



Inserting the side section – Cabriolet into the body

Caution!

Observe the working time of the adhesive (Item 6)

> The new part must be welded in within 30 minutes. Otherwise the adhesion of the adhesive is impaired.

No.	Procedure	Instructions
6	Apply adhesive on the inside of the water channel and on the wheel arch up as far as the start of the side member	Apply the adhesive as a triangular bead (**dimension "X" = approx. 8 mm**) on the inside of the side section, along the water channel and the wheel arch as far as the start of the side member. Reference address: Teromix-6700 2-component adhesive and the Teromix processing nozzle **Henkel Teroson GmbH** **Postfach 10 56 20** **69 0 46 Heidelberg Hans-Bunte-Straße 4** **Telephone (06221) 7040** **Fax (06221) 704585**
7	Tack-weld side section under shielding gas	To do so, the vehicle must be standing on its wheels or positioned on the set of straightening attachments. Insert side section into the body. Check the contours and gap dimensions. Tack-weld the side section under shielding gas at the separation point.
8	Weld the B-pillar under shielding gas	Plug-weld the B-pillar side section to the inside of the side section under shielding gas. Weld the side section to the lower side member connection with a continuous butt weld under shielding gas.
9	Spot-weld wheel arch and weld under shielding gas	Plug-weld underside of lower side member. Spot-weld wheel arch
10	Spot-weld water channel	Spot-weld inside of side section with the water channel

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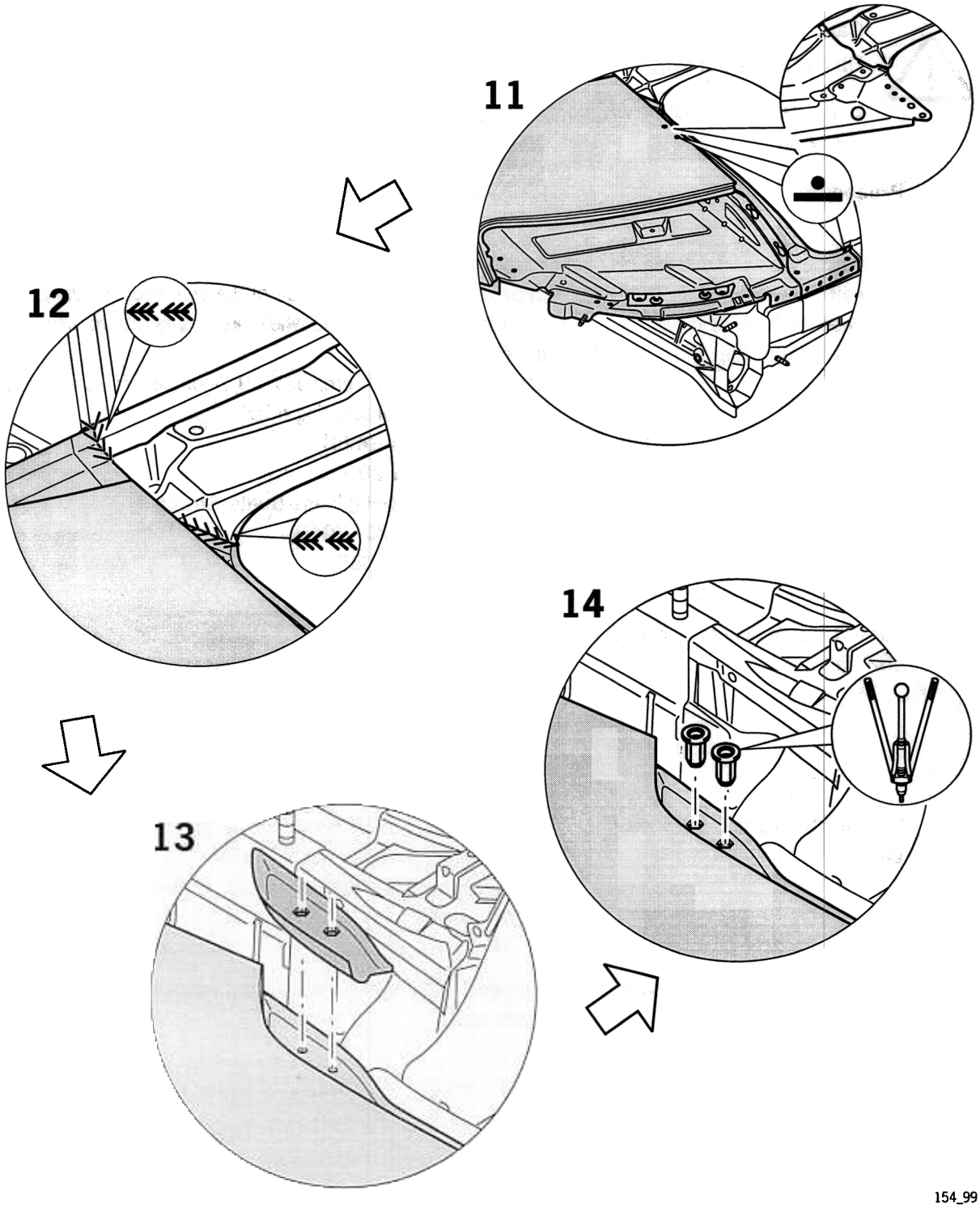
Inserting the side section – Cabriolet into the body



No.	Procedure	Instructions
11	Spot-weld light housing	Spot-weld light housing with the connecting angle and the connection to the transverse lock panel. On the inside of the side section (small figure), make sure that the welding nuts are lined up with the hole pattern in the side section. Screw in M6 hexagon-head bolts to position. Spot-weld the connection with the side section.
12	Weld cross member under shielding gas	Weld the overlap of the cross member at the top with a stitch weld seam under shielding gas. Weld the overlap on the lower side section connection under shielding gas.
13	Mark bores for the insertion bushings	Cut the water channel as a template out of the removed side section as shown in Figure 13, put it on the spare body part (side section) and mark the bores for the insertion bushings. Bore a 9.0 mm mark in the water channel using a twist drill.
14	File off insertion bushings and insert	File off both bores to the hexagon of the insertion bushing using a needle-point file. Insert the insertion bushing using the blind rivet nut manual device. Blind rivet nut manual device: refer to Workshop Equipment Manual, Chapter 2.4, No. 125.

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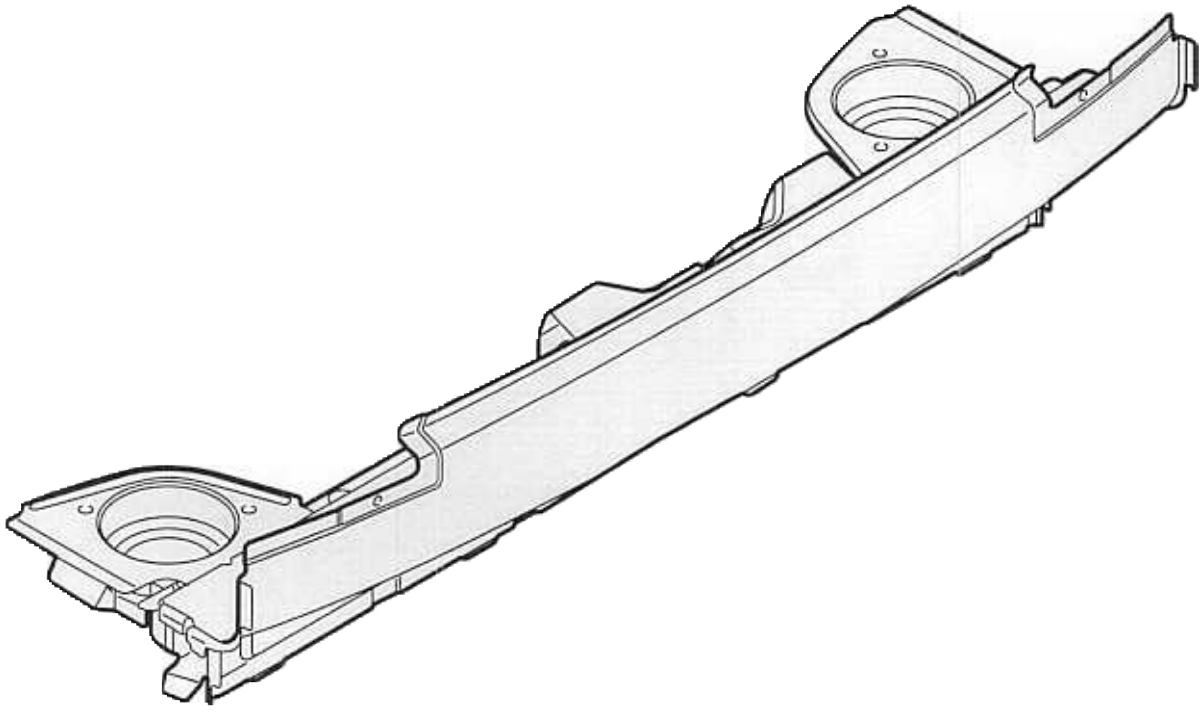
53 05 55 Replacing rear closing panel



53050004

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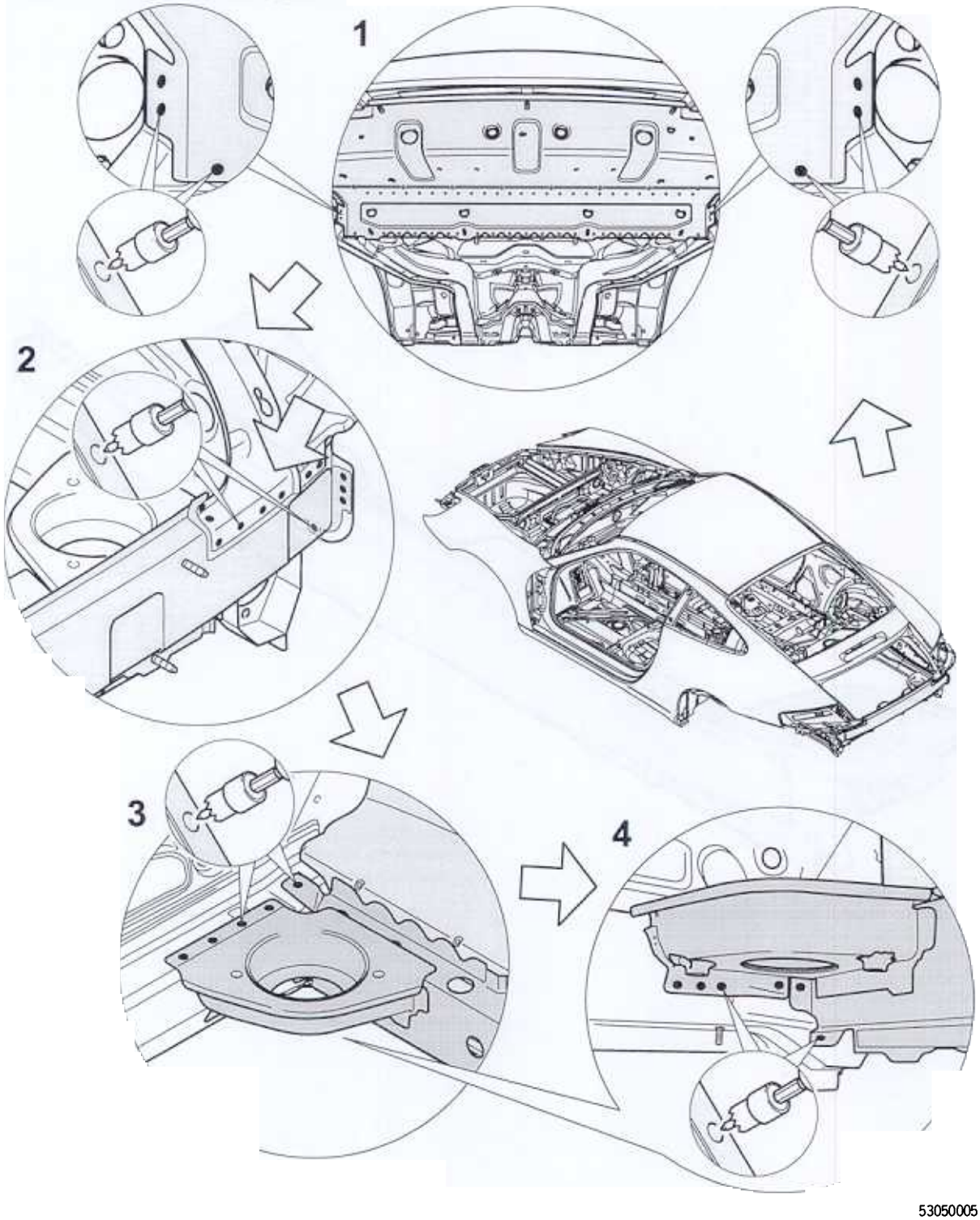
Cutting out rear closing panel



53050005

Cutting out rear closing panel

Remove the accessories: rear spoiler (serv. No. 63 55), tail light (serv. No. 94 31), lower part of lid lock (serv. No. 55 86) and engine (serv. No. 10 01).

Note:
> All straightening work on the body in this area must have been completed before the damaged parts are removed.

No.	Procedure	Instructions
	Placing vehicle on the alignment bench.	Place the vehicle with the units mounted at the front onto the set of straightening attachments and fasten it in position.
1	Separating the spot-welded joint at the rear closing panel.	Use a spotweld cutter to separate the connection between the inner side members and the rear closing panel on the left and right.
2	Separating the spot-welded joint at the rear closing panel.	Use the spotweld cutter to separate the connection between the side section on the inside and the rear closing panel.
3	Separating the spot-welded joint on the engine mount at top.	Use the spotweld cutter to separate the spot-welded joint between the engine mount at top and the inner side member.
4	Separating the spot-welded joint on the engine mount at bottom.	Use the spotweld cutter to separate the spot-welded joint between the engine mount at bottom and the inner side member.

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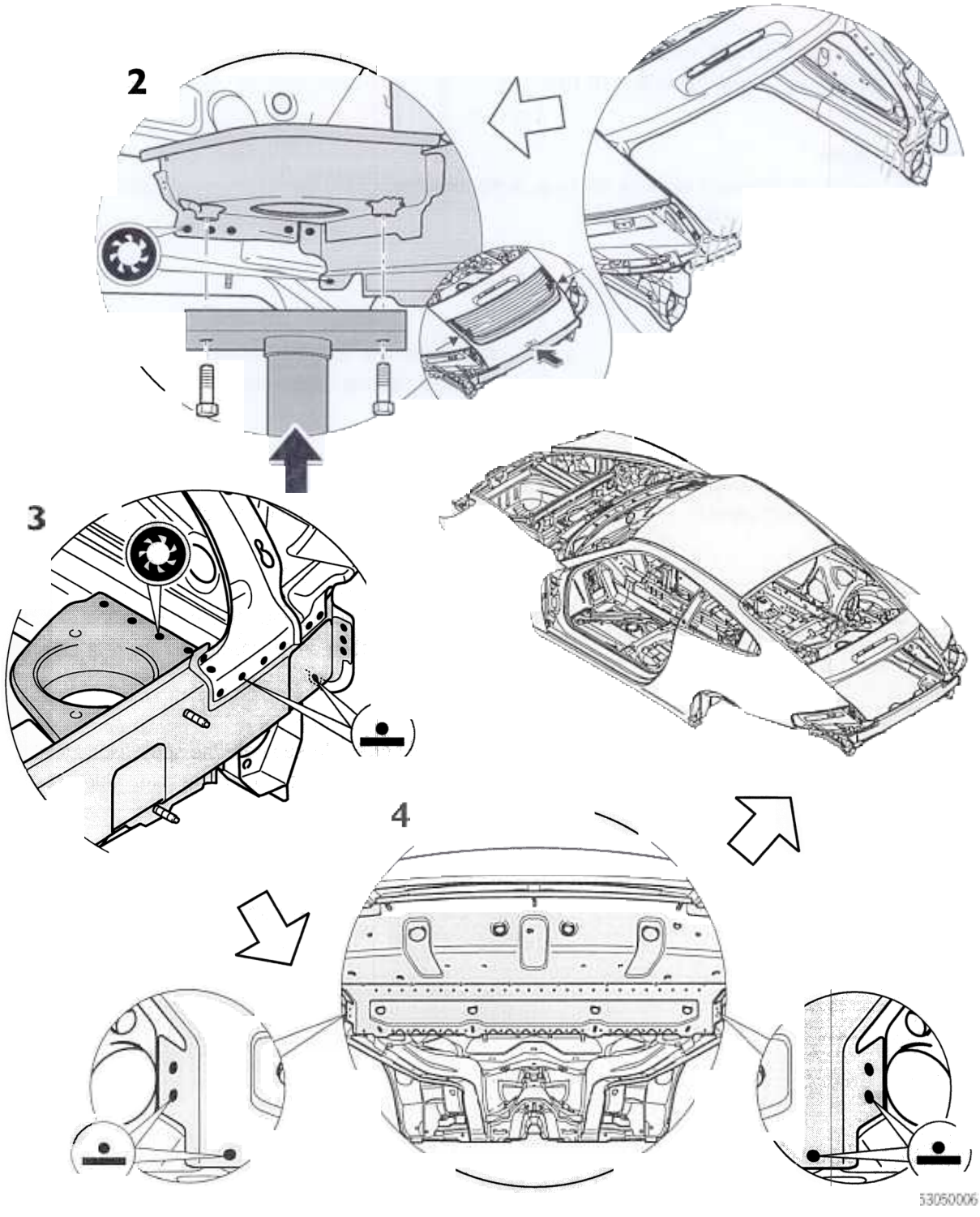
Inserting closing panel

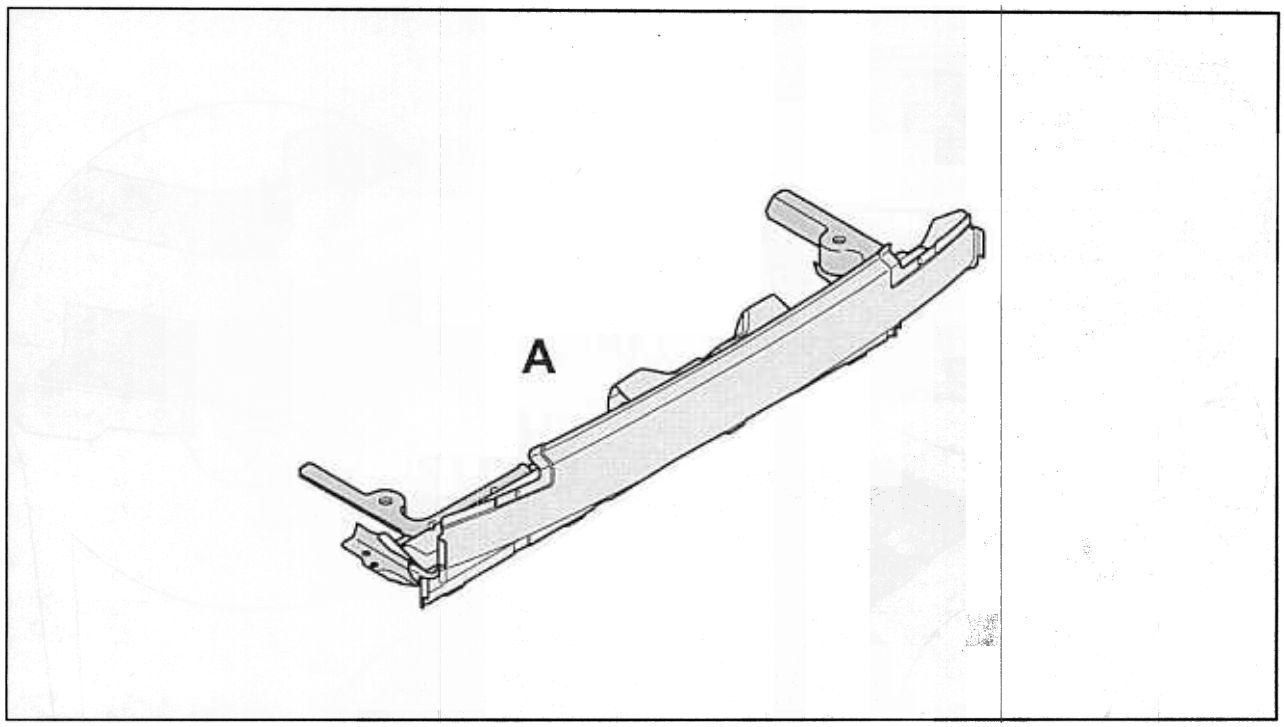


Inserting rear closing panel

1	Cleaning the welding areas	Remove underbody coating and paint layers from the welding areas using a hot-air gun or rotary brush. Remove the factory-applied primer from the welding areas of the spare parts using a rotary brush.
2	Inserting the rear closing panel into the body and plug-weld the engine mount/side member at bottom under shielding gas	Insert the rear closing panel into the body and fit it on the inner side sections and the left and right side members. Fasten the replacement rear closing panel on the attachment set. Fit the lid and adjust the gap widths. See: Serv. No. 5 "Diagram of body gap dimensions" Fit lower part of rear lid lock, see KD No. 55 86, and check whether the upper part of the lock engages in the lower part of the lock.
3	Plug-welding the engine mount/side member at top under shielding gas	Plug-weld the engine mounts at the right and left to the side member under shielding gas. Spot-weld the connection to the corner panel and to the side section on the left and right.
4	Spot-welding the rear closing panel/side member on the inside	Spot-weld the connection between the inner side members and the rear closing panel on the left and right.

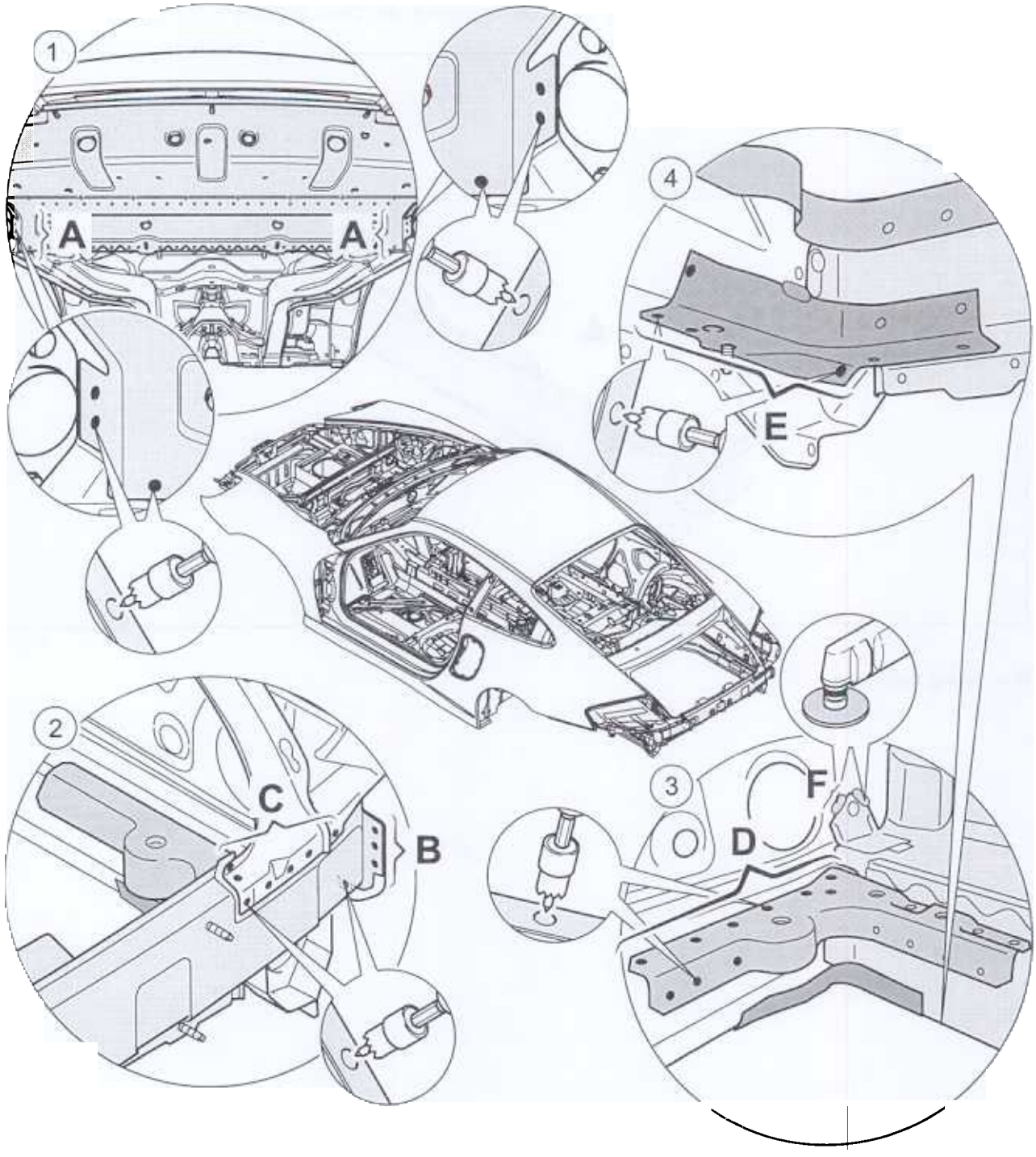
Replacing rear closing panel GT 3

The following spare body parts are required for the repair "Replacing seat cross member":



A = closing panel

Cutting out rear closing panel



Warning!

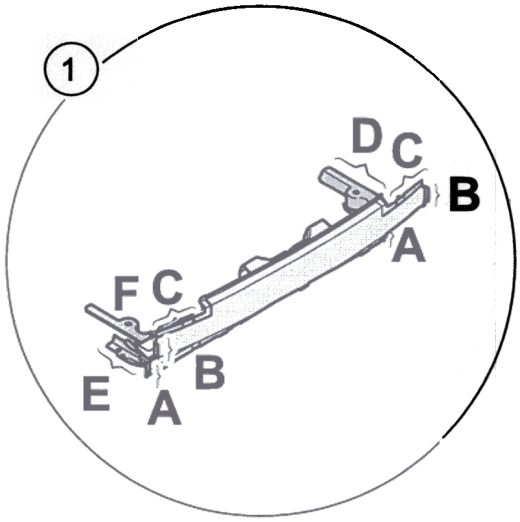
During body repairs, the following safety instructions and the general information and quality instructions must be followed. ⇒ Rep. Gr. 5; Safety instructions

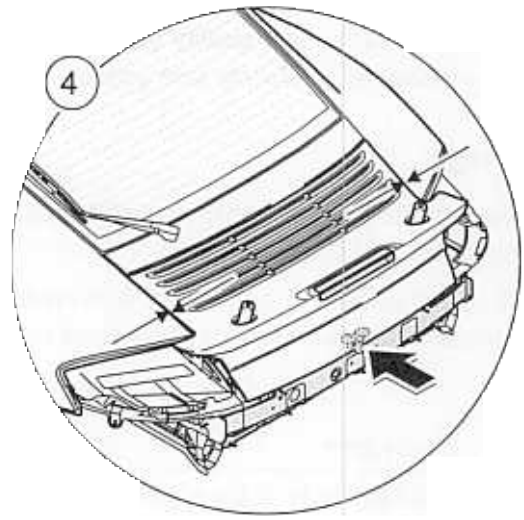
Note!

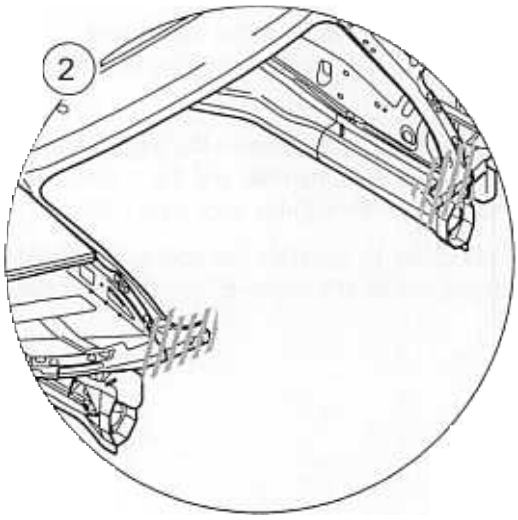
- *The accessories in the repair area should be removed, depending on the extent of the damage.*
- *All straightening work on the body in this area must have been completed before the damaged parts are removed.*

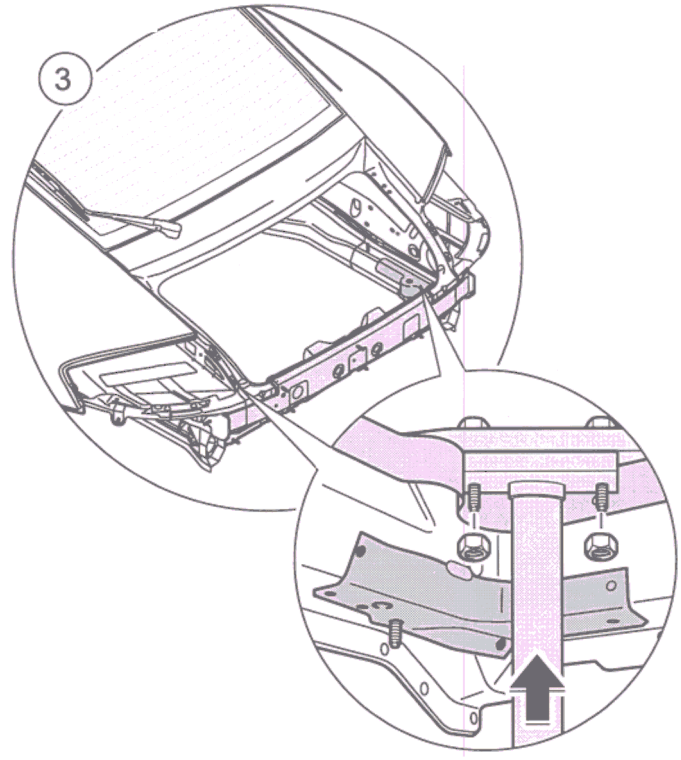
No.	Procedure	Instructions
	Placing vehicle on the alignment bench.	Place the vehicle with the units mounted at the front onto the set of straightening attachments and fasten it in position.
	Separating the spot-welded joint at the rear closing panel.	Use a spotweld cutter to separate the connection between the inner side members and the rear closing panel **-A-** on the left and right.
2	Separating the spot-welded joint at the rear closing panel.	Use the spotweld cutter to separate the connection between the side section on the inside and the rear closing panel **-B, C-**.
3	Separating the spot-welded joint on the engine mount at top.	Separate the spot-welded joint between the engine mount at top **-D-** and the inner side member and the connection to the inner side section **-F-** with the spot-weld cutter.
4	Separating the spot-welded joint on the engine mount at bottom.	Use the spotweld cutter to separate the spot-welded joint between the engine mount at bottom **-E-** and the inner side member.

Preparing the rear closing panel for installation and fitting



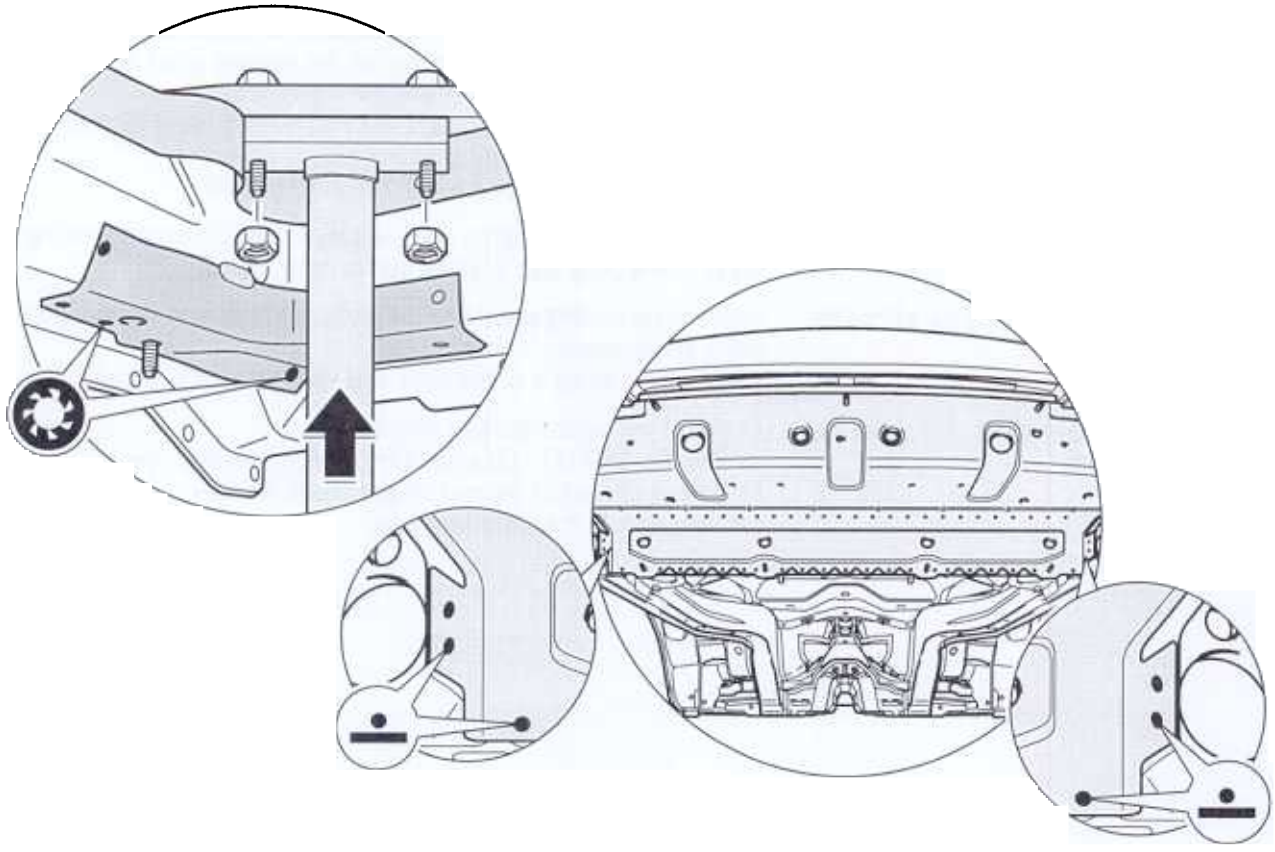


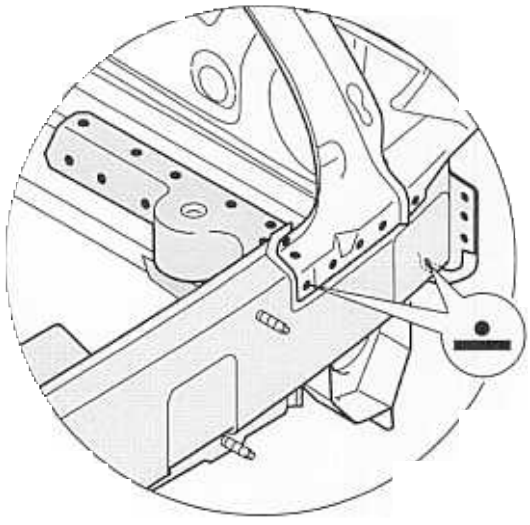


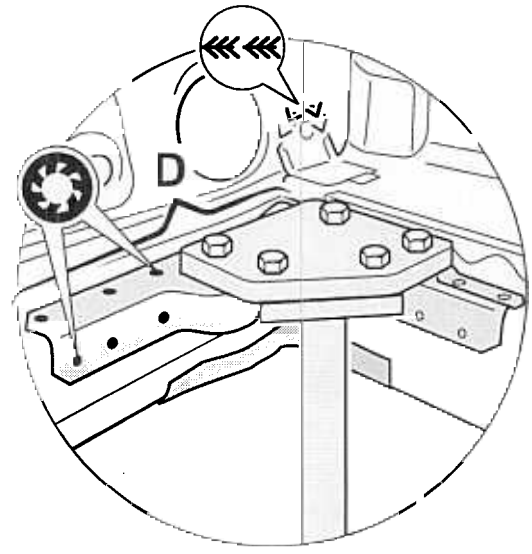


No.	Procedure	Instructions
		Remove the factory-applied primer on the welding areas of the spare parts **-A, B, C, D, E-** using the rotary brush. Drill or punch (with a hole punch) ∅7 mm holes spaced 20 mm apart for plug-welding with shielding gas. ⇒ "Welding in rear closing panel" in **53-39** page 6
2	Cleaning the welding areas	Remove underbody coating and paint layers, etc. from the welding areas of the body with a hot-air gun or rotary brush.
3	Inserting the closing panel into the body	Insert spare closing panel into the body and fasten on the straightening attachments. If necessary, adapt it to the inner side sections and side members.
4	Fitting add-on parts and check gap dimensions	Fit the lid and adjust the gap widths. ⇒ Rep. Gr. 559037 ; Disassembling and assembling rear lid Fit lower lock part of the rear lid and check whether the upper lock part engages in the lower lock part.

Welding in rear closing panel







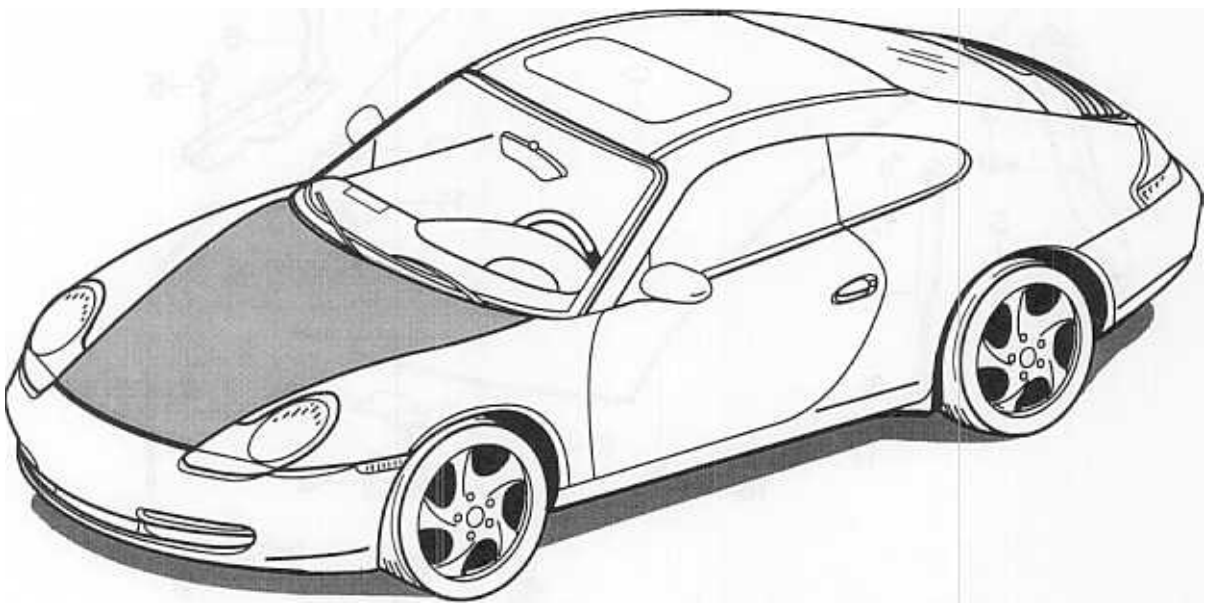
No.	Procedure	Instructions
	Plug-welding reinforcement/side member at bottom under shielding gas	Plug-weld the reinforcement between the side members at bottom **-E-** and the closing panel under shielding gas.
2	Spot-welding the rear closing panel/side member on the inside	Spot-weld the connection between the inner side members **-B, C-** and the rear closing panel on the left and right.
3	Plug-welding the engine mount/side member at top under shielding gas	Plug-weld the engine mounts at the left and right to the side member at top **-D-** under shielding gas. Plug-weld the connection **-F-** to the inner side section with an approx.10 mm full weld.
4	Spot-welding the closing panel/side members on the inside	Plug-weld the connection between the inner side members **-A-** and the closing panel under shielding gas.

Tools and materials

Item	Designation of the special tool	Explanation
Item	Designation of the special tool	
	Basic straightening attachments for 911 Carrera (996)	⇒ Rep. Gr. 3; Workshop Equipment Manual
2	Additional straightening attachments for 996 Turbo	⇒ Rep. Gr. 3; Workshop Equipment Manual
3	Star gauges Nr. 127-1	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
4	MIG welder	⇒ Rep. Gr. 3; Workshop Equipment Manual
5	Multispot spotwelder	⇒ Rep. Gr. 3; Workshop Equipment Manual
6	Pneumatic body saw	⇒ Rep. Gr. 3; Workshop Equipment Manual
7	Angle grinder	⇒ Rep. Gr. 3; Workshop Equipment Manual
8	Oscillating body saw (special electrical cutter)	⇒ Rep. Gr. 3; Workshop Equipment Manual
9	Multispot spotweld cutter	⇒ Rep. Gr. 3; Workshop Equipment Manual
10	Hole punch	⇒ Rep. Gr. 2.4; Workshop Equipment Manual
11	Hot-air gun	⇒ Rep. Gr. 3; Workshop Equipment Manual
12	Rotary brush	⇒ Rep. Gr. 3; Workshop Equipment Manual

Item	Designation of the special tool	Explanation
	Spot-weld cutter Ø7 mm Nr. 129	⇒ Rep. Gr. 2.4; Workshop Equipment Manual

55 22 37 Disassembling and assembling front lid



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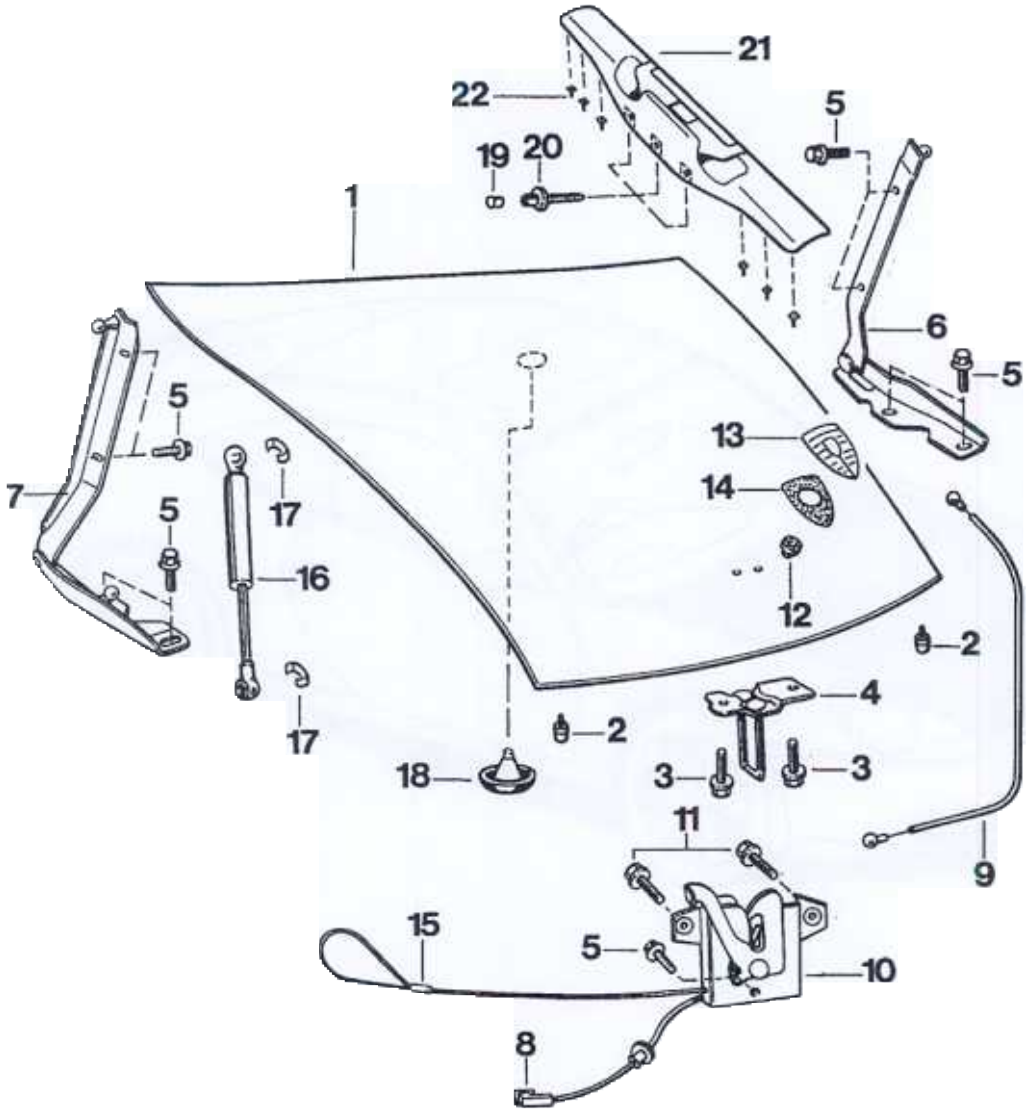
Disassembling and assembling front lid



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Disassembling and assembling front lid

No.	Designation	Qty.	Removal	Note: Installation
1	Lid	1		Adjust lid to the hinges in accordance with the contours of the wings and the front spoiler.
2	Rubber buffer	2	Remove rubber buffers by turning them.	Screw in rubber buffers.
3	Combination screw M6 x 12	2		**Tightening torque: 10 Nm (7.5 ftlb.)**
4	Upper part of lock	1	Remove upper part of lock from lid.	Fasten upper part of lock to the lid with the combination screws and adjust to the lower part of lock.
5	Combination screw M6 x 14	10	Loosen fastening screws and remove lid from vehicle.	Lay lid on hinges and screw tight.
6	Hinge left	1	Loosen combination screws M6 x 14	Adjust to the left side section in accordance with lid contour.
7	Hinge right	1	Loosen combination screws M6 x 14	Adjust to the right side section in accordance with lid contour.
8	Plug connection	1	Disconnect cable-harness plug connection.	Connect cable-harness plug connection.
9	Bowden cable	1	Press Bowden cable out of holder.	Press Bowden cable into holder.
10	Lower part of lock	1		Fasten lower part of lock with combination screws and adjust to upper part of lock.
11	Combination screw M6 x 30	1	Undo	

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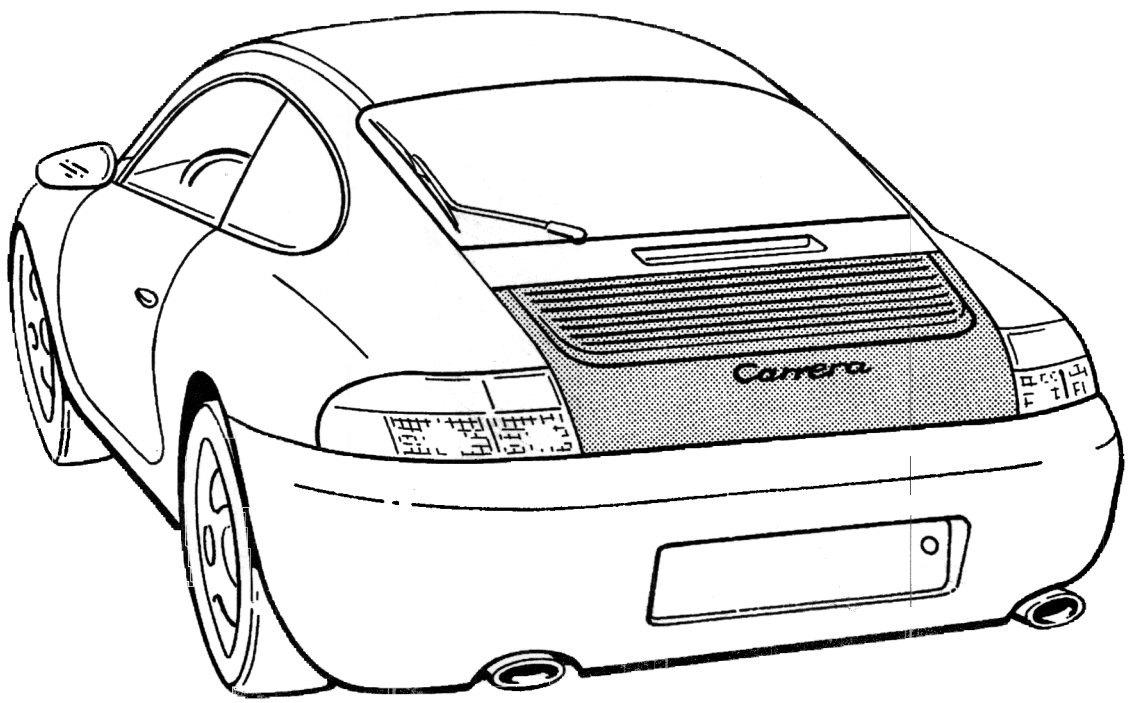
No.	Designation	Qty.	Removal	Note: Installation
12	Tapping nut	2	Unscrew fastening nut of lid badge.	Replace
13	Badge on lid	1	Remove base of lid badge.	Insert base and lid badge into the lid and fasten with tapping nut.
14	Base	1		
15	Emergency operation mechanism	1		
16	Pneumatic spring	2		
17	Catch	4	Press catch out.	Press catch in.
18	Rubber sleeve	1		
19	Plug 8.0 x 11 x 7.2	3		
20	Hexagon socket head bolt M6 x 25	3	Back off hexagon socket head bolt by 4 – 5 turns.	Screw hexagon socket head bolt into the bottom support by 2 - 3 turns.
21	Kick plate with gripper	1	Remove plug 8.0 x 11 x 7.2 (Item 19), back off hexagon socket head bolt M6 x 25 by approx. 4 - 5 turns. Lift kick plate upwards out of the bottom support with a plastic spatula and press out.	Position kick plate on the support and push on. Screw down hexagon socket head bolts M6 x 25 **See additional assembly instructions on Page 55-11**
22	Plastic clip	6		Check and replace if necessary.

55 90 37 Disassembling and assembling rear lid



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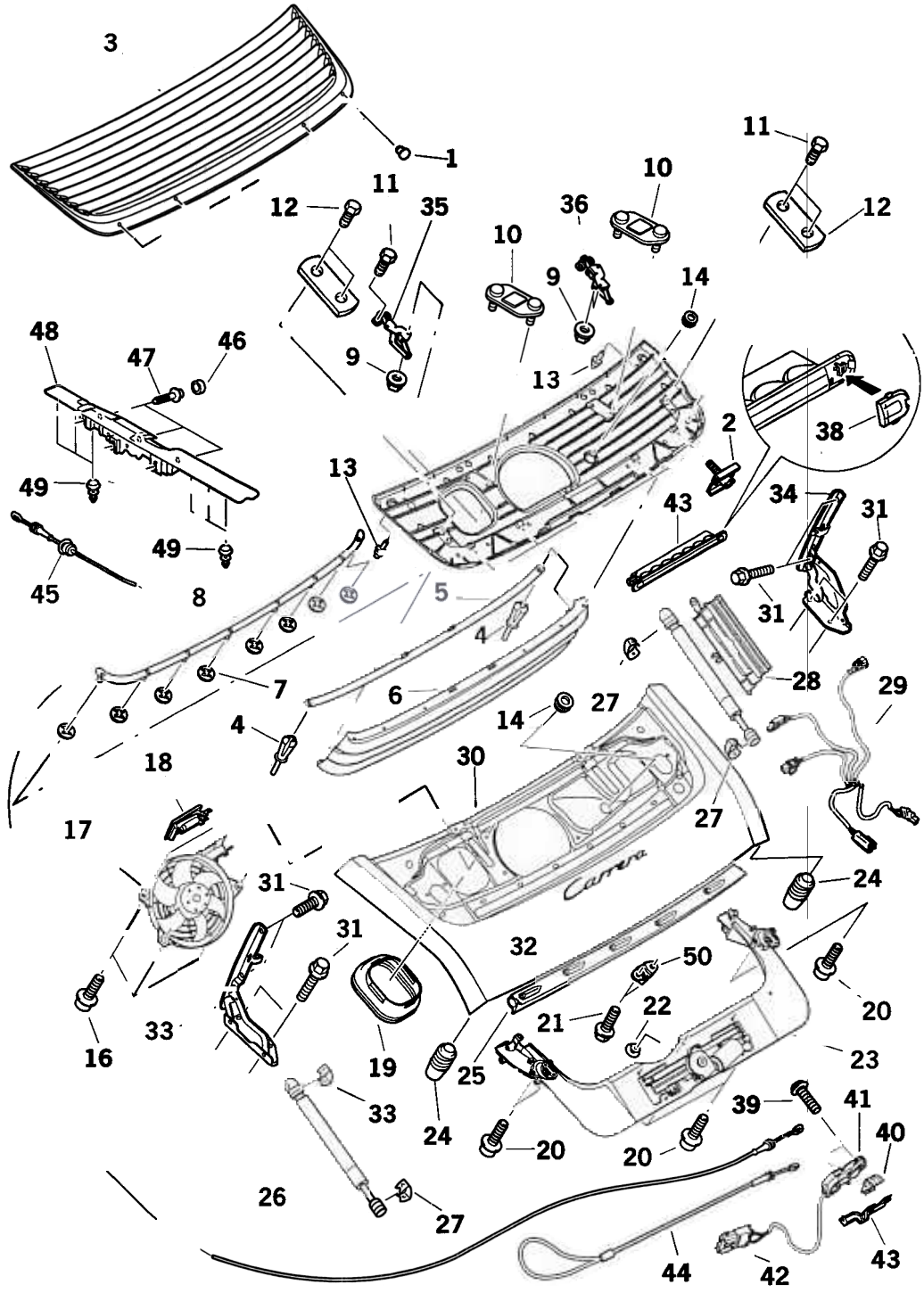
Disassembling and assembling rear lid



131_97

Disassembling and assembling rear lid

No.	Designation	Qty.	Removal	Note: Installation
1	Plastic plug	4		
2	Clamping screw	4	Back off by 2 - 3 turns.	Position upper part of spoiler (Item 3) and tighten clamping screw
3	Upper part of spoiler	1		
4	Body-bound rivet	2		
5	Rail	1		
6	Rear panel	1		
7	Clamping washer 5.0	8		Replace
8	Rail	1		
9	Collar nut M6	4	Undo	
10	Holder	2		
11	Plate	4		
12	Combination screw M6 x 12	4		
13	Stop plug	2		
14	Grommet	2		
15	Bottom part of spoiler	1		
16	Combination screw M6 x 20	4		
17	Fan with fan housing	1		
18	Interior light	1		Unclip and disconnect electrical plug connection.
19	Air guide	1	Pull off	Plug in
20	Combination screw M6 x 16	4		

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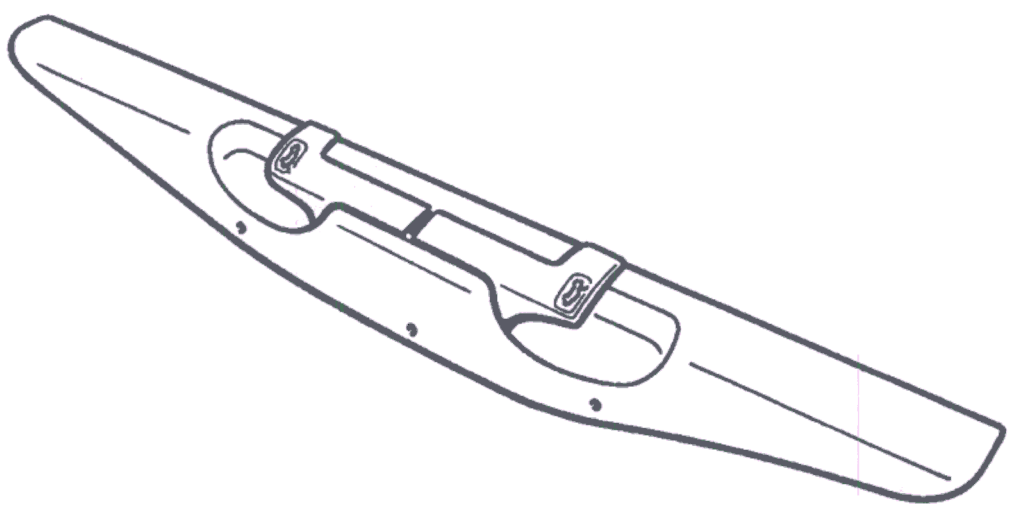
No.	Designation	Qty.	Removal	Note: Installation
21	Combination screw M6 x 12	2		**Tightening torque 10 Nm (7.5 ftlb.)**
22	Plastic plug	1		
23	Actuator	1		Plug in the electrical plug connection and clip the interior light into the fan housing (Item 17)
24	Rubber buffer	2	Unscrew	Screw in
25	Rubber cover			
26	Pneumatic spring	2		
27	Catch	4		Press in
28	Wire retainer			
29	Wiring harness	1	Disconnect the electrical plug connections.	Connect the electrical plug connections
30	Lid body structure	3		Adjust lid to the hinges in accordance with the contours of the wings and the front spoiler.
31	Hexagon socket screw M6 x 16	8		
32	Logo *Carrera*	1		
33	Mount left	1	Loosen combination screws M6 x 16.	Adjust to the left side section in accordance with lid contour.
34	Mount right	1	Loosen combination screws M6 x 16.	Adjust to the left side section in accordance with lid contour.
35	Hinge left	1		
36	Hinge right	1		

No.	Designation	Qty.	Removal	Note: Installation
37	Additional brake light	1	Unclip right cover, turn rotary lock with a screw driver and remove additional brake light.	Position additional brake light in the bottom spoiler section (Item 15), turn rotary lock and clip closing piece into the additional brake light.
38	Cover	1		
39	Combination screw M6 x 30	2		
40	Catch	1	Press catch out.	Press catch in.
41	Lower part of lock	1		Fasten lower part of lock with combination screws and adjust to upper part of lock.
42	Plug connection	1	Disconnect cable-harness plug connection.	Connect cable-harness plug connection.
43	Holder	1		
44	Emergency operation mechanism	1		
45	Bowden cable	1	Press Bowden cable out of holder.	Press Bowden cable into holder.
46	Plug 8.0 x 11 x 7.2	3		
47	Hexagon socket head bolt M6 x 25		Back off hexagon socket head bolt by 4 – 5 turns.	Screw hexagon socket head bolt into the bottom support by 2 - 3 turns.
48	Kick plate with gripper	1	Remove plug 8.0 x 11 x 7.2 (Item 46), back off hexagon socket head bolt M6 x 25 by approx. 4 - 5 turns. Lift kick plate upwards out of the bottom support with a plastic spatula and press out.	Position kick plate on the support and push on. Screw down hexagon socket head bolts M6 x 25 See additional assembly instructions on Page 55-17

No.	Designation	Qty.	Removal	Note: Installation
49	Plastic clip	1		Inspect and replace if necessary.
50	Upper part of lock	1	Remove upper part of lock from lid.	Fasten upper part of lock to the lid with the combination screws and adjust to the lower part of lock.

55 10 37 Disassembling and assembling release for front lid



1 - 97

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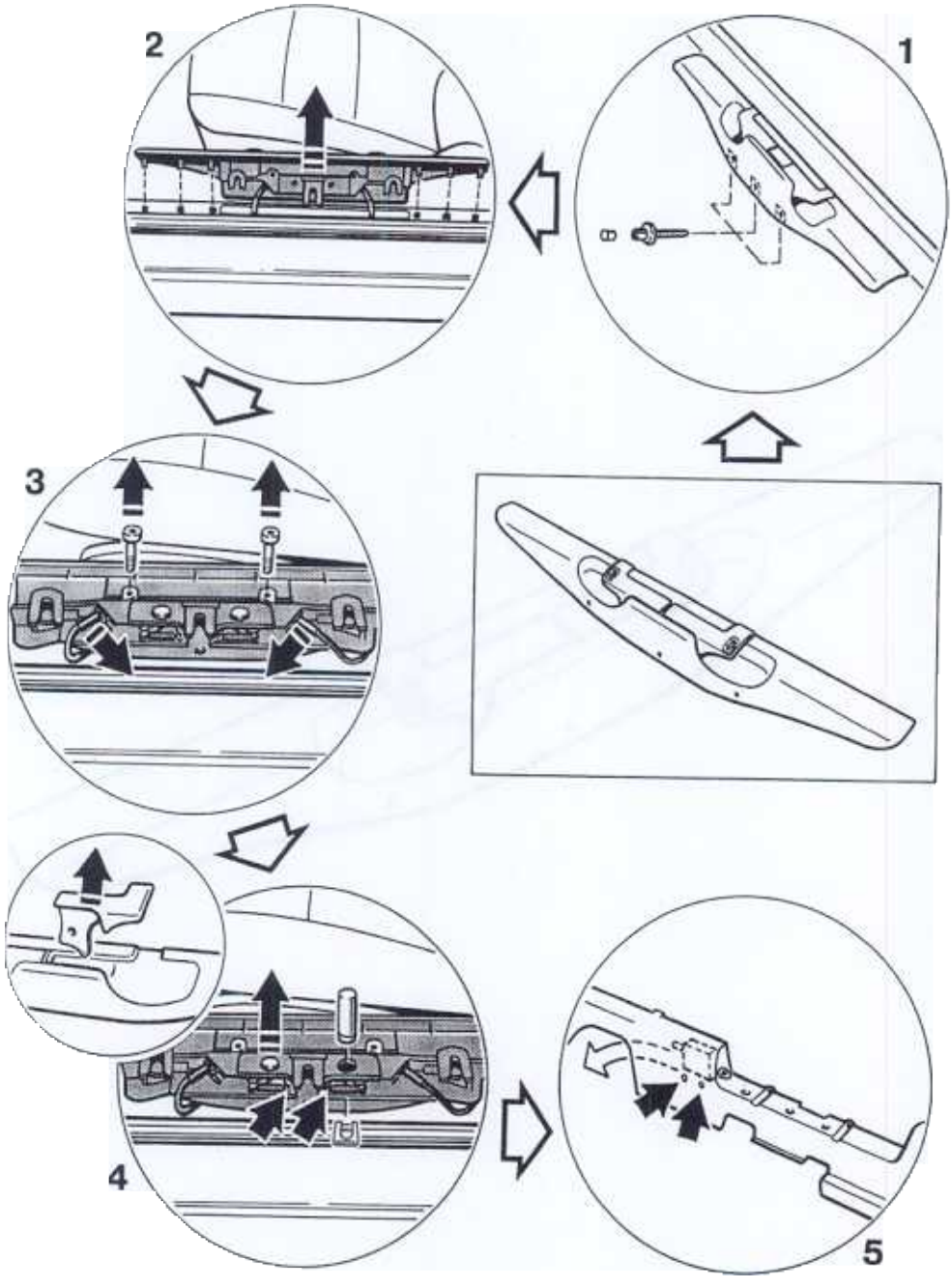
Disassembling release for front lid



2 - 97

Disassembling release for front lid

No.	Procedure	Instructions
1	Undo hexagon socket head bolts.	Remove plastic plugs and undo the M6 x 25 hexagon socket head bolts from the sill by approx. 4 to 5 turns.
2	Remove sill cover.	Lift sill cover upwards out of the bottom support with a plastic spatula and press out.
3	Undo bowden cables.	Undo the M4 x 14 hexagon socket head bolt of the bowden cable in the actuating lever. Press the bowden cable sleeve out of the guide of the sill cover.
4	Undo actuating levers.	Press retainer SLB 6 out of the 6 x 22 x 19 pin. Remove pin from the actuating lever and from the sill cover. Disengage spring from the sill cover and pull the actuating lever up and out of the sill cover.
5	Undo actuating element.	Undo Torx screws from the actuating element and pull out of the support to the rear; disconnect electrical connection.

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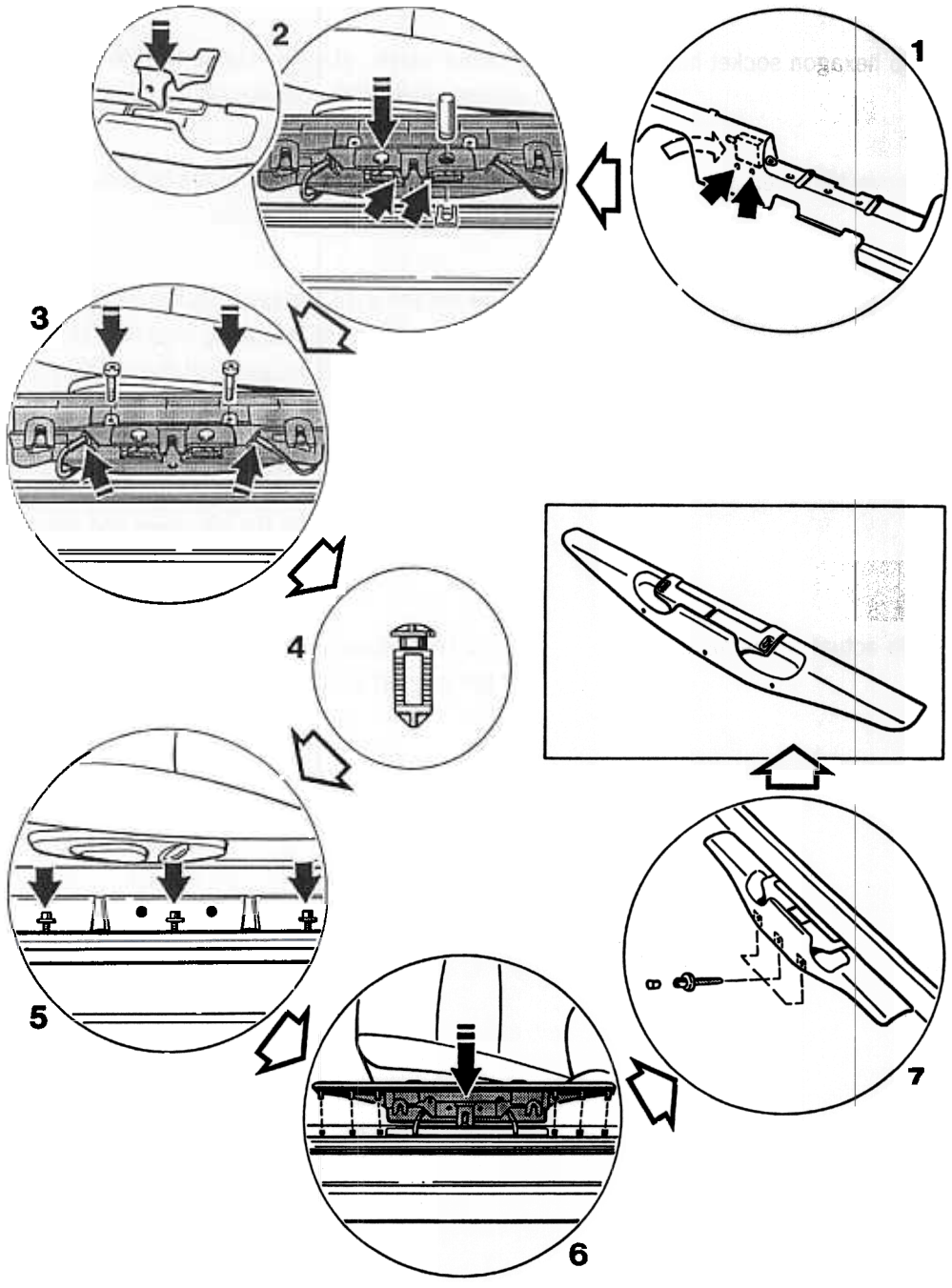
Assembling release for front lid

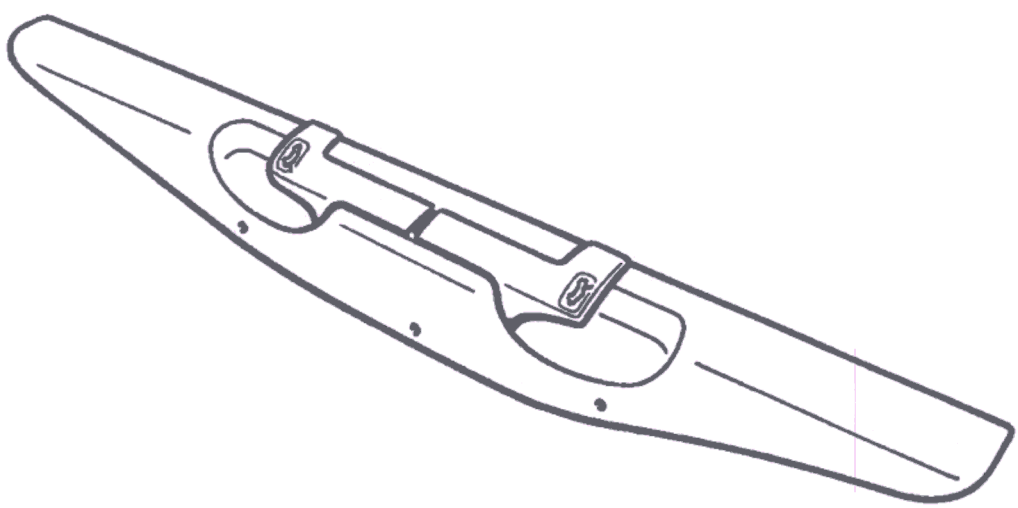


3 - 97

Assembling release for front lid

No.	Procedure	Instructions
1	Fit actuating element.	Insert the actuating element for lid release into the support from behind and position. Then fasten with the T20 x 15 Torx screws. Connect electrical plug connection. Plug in the electrical plug connection.
2	Fit actuating levers.	Position actuating lever in the sill cover, press in 6 x 22 x 19 pin and secure with the retainer SLB 6. Engage the tension spring 0.8 x 5.2 x 30 in the sill cover and engage the actuating lever.
3	Fit bowden cables.	Position bowden cable in the actuating lever and fasten with the M4 x 14 hexagon socket head bolt. Press the bowden cable sleeve into the guide of the sill cover.
4	Check plastic clips.	Check plastic clips in the sill cover and replace them if necessary.
5	Screw in hexagon socket head bolts.	The M6 x 25 hexagon socket head bolts in the support must not be screwed in by more than 3 to 4 turns.
6	Fit sill cover.	Position the sill cover on the support and push it onto the support.
7	Tighten hexagon socket head bolts.	Tighten the M6 x 25 hexagon socket head bolts in the support through the holes in the sill cover. Press in the 8.0 x 11 x 7.2 plugs.

55 57 37 Disassembling and assembling release for rear lid



1 - 97

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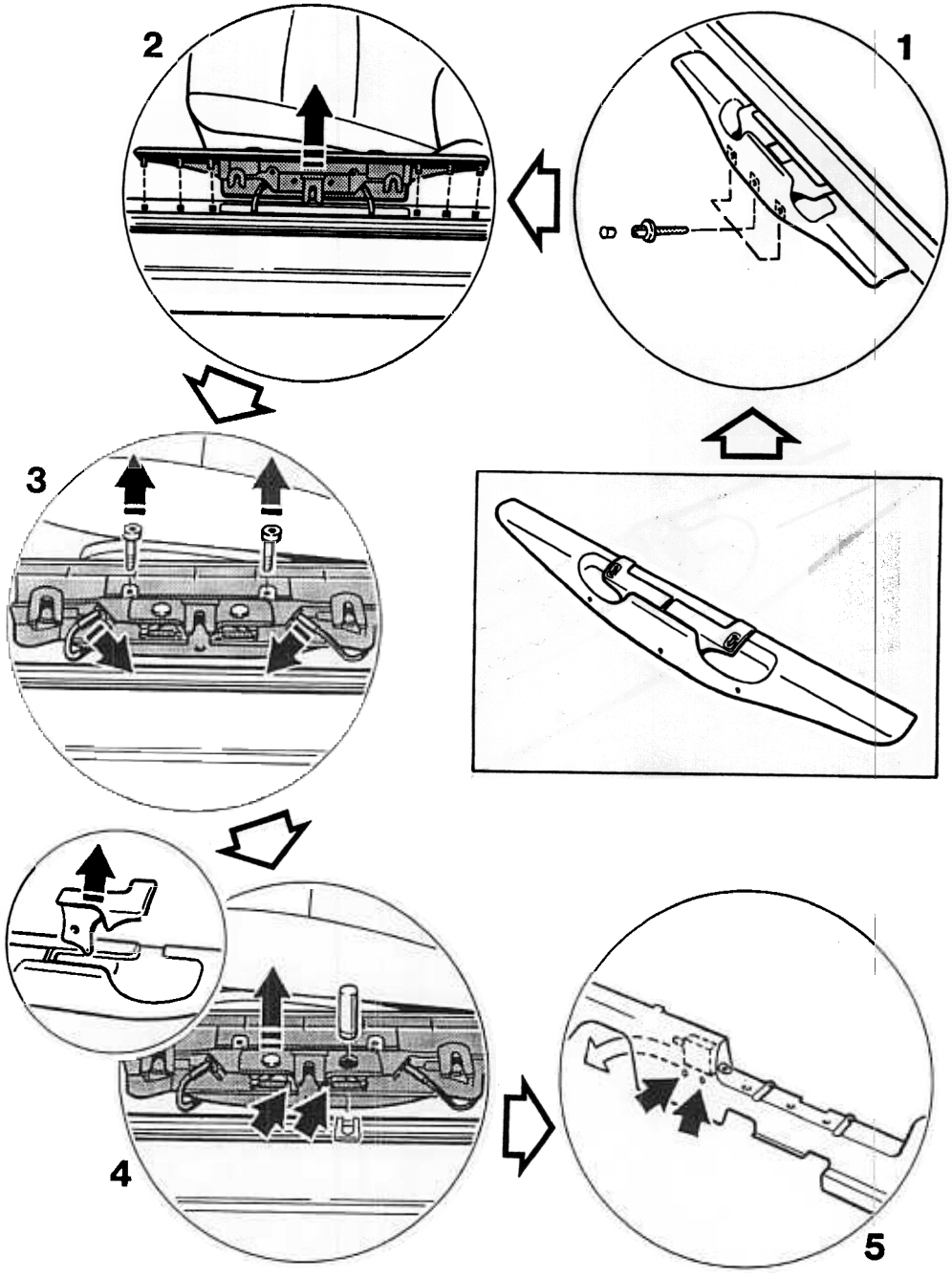
Disassembling and assembling release for rear lid



2 - 97

Disassembling release for rear lid

No.	Procedure	Instructions
1	Undo hexagon socket head bolts.	Remove plastic plugs and undo the M6 x 25 hexagon socket head bolts from the sill by approx. 4 to 5 turns.
2	Remove sill cover.	Lift sill cover upwards out of the bottom support with a plastic spatula and press out.
3	Undo bowden cables.	Undo the M4 x 14 hexagon socket head bolt of the bowden cable in the actuating lever. Press the bowden cable sleeve out of the guide of the sill cover.
4	Undo actuating levers.	Press retainer SLB 6 out of the 6 x 22 x 19 pin. Remove pin from the actuating lever and from the sill cover. Disengage spring from the sill cover and pull the actuating lever up and out of the sill cover.
5	Undo actuating element.	Undo Torx screws from the actuating element and pull out of the support to the rear; disconnect electrical connection.

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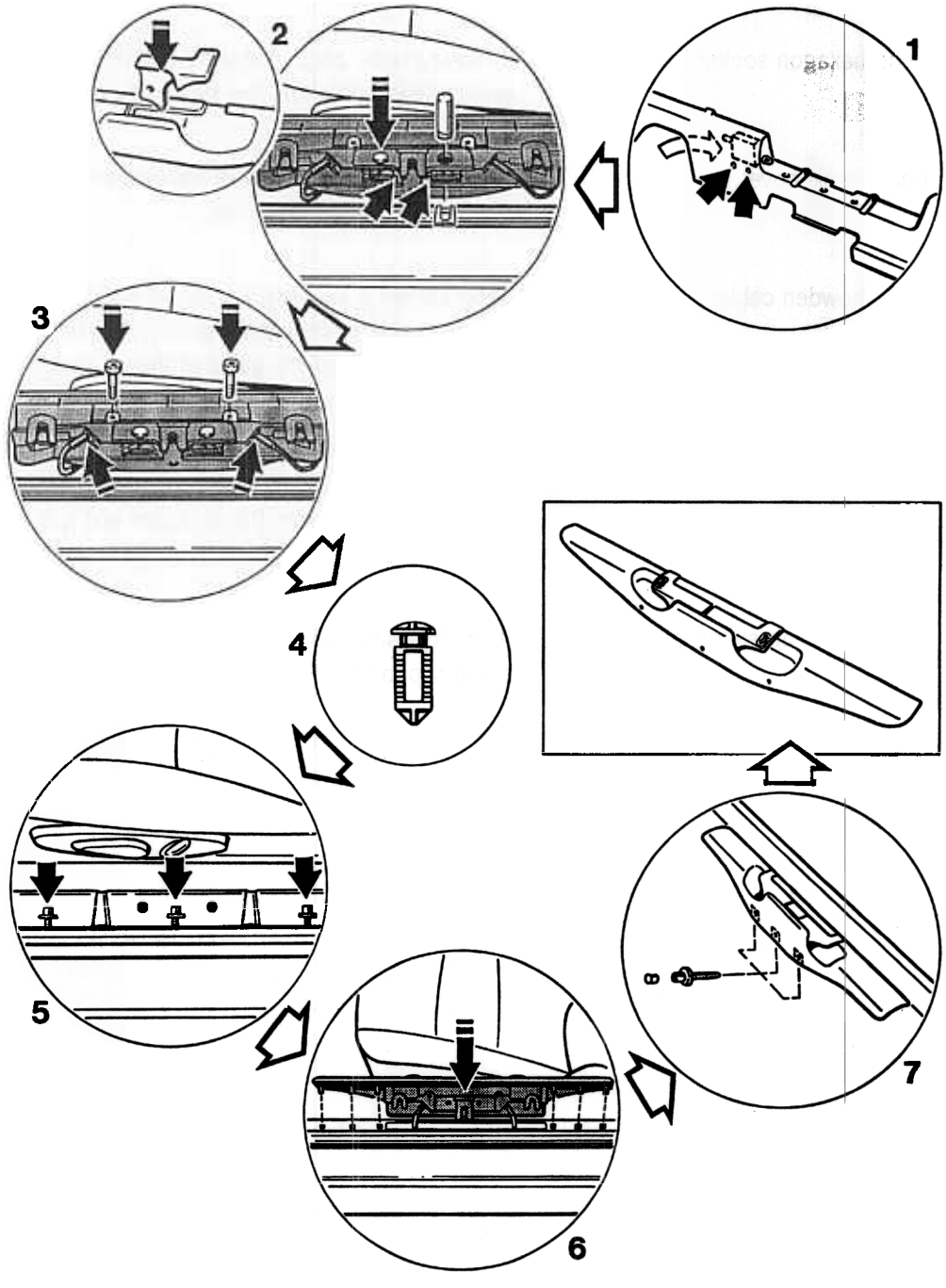
Assembling release for rear lid



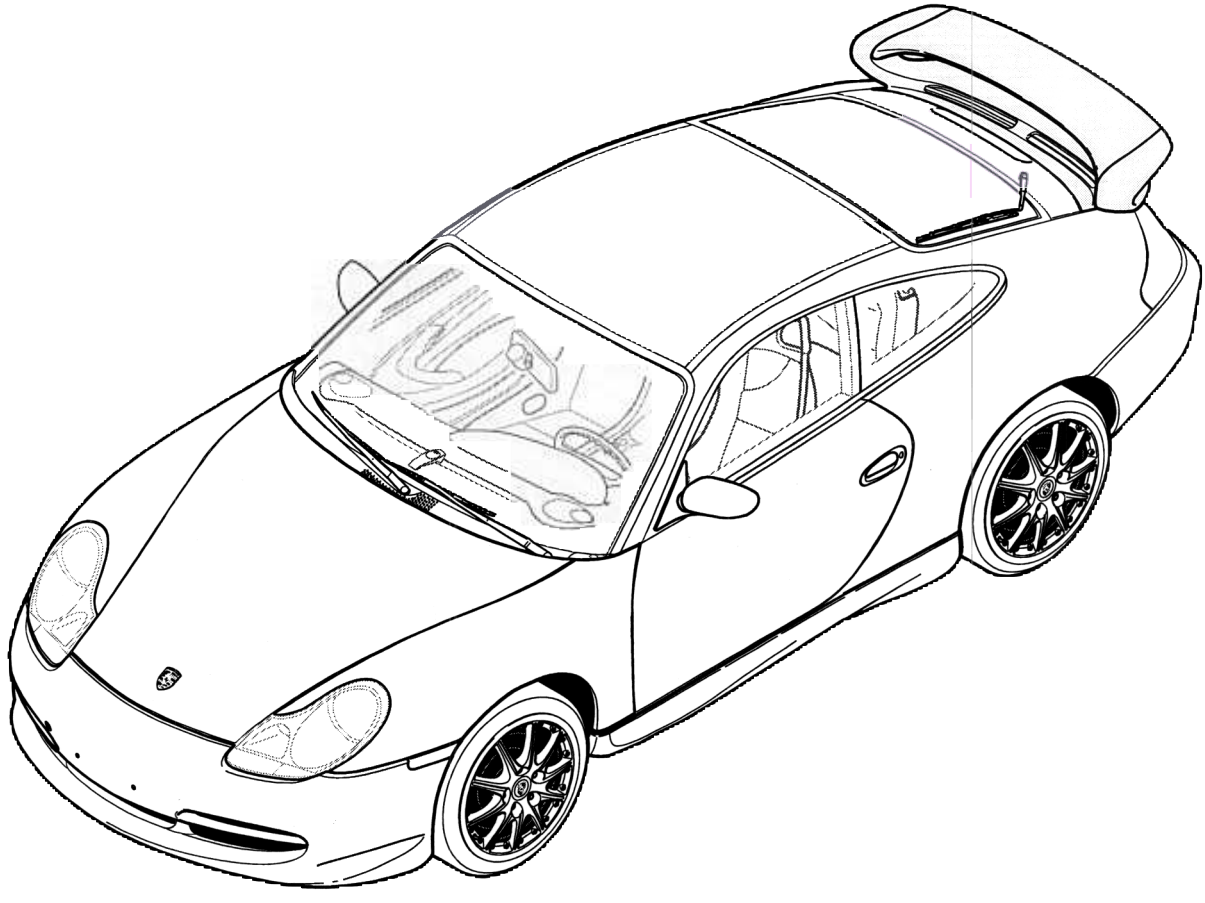
3 - 97

Assembling release for rear lid

No.	Procedure	Instructions
1	Fit actuating element.	Insert the actuating element for lid release into the support from behind and position. Then fasten with the T20 x 15 Torx screws. Connect electrical plug connection. Plug in the electrical plug connection.
2	Fit actuating levers.	Position actuating lever in the sill cover, press in 6 x 22 x 19 pin and secure with the retainer SLB 6. Engage the tension spring 0.8 x 5.2 x 30 in the sill cover and engage the actuating lever.
3	Fit bowden cables.	Position bowden cable in the actuating lever and fasten with the M4 x 14 hexagon socket head bolt. Press the bowden cable sleeve into the guide of the sill cover.
4	Check plastic clips.	Check plastic clips in the sill cover and replace them if necessary.
5	Screw in hexagon socket head bolts.	The M6 x 25 hexagon socket head bolts in the support must not be screwed in by more than 3 to 4 turns.
6	Fit sill cover.	Position the sill cover on the support and push it onto the support.
7	Tighten hexagon socket head bolts.	Tighten the M6 x 25 hexagon socket head bolts in the support through the holes in the sill cover. Press in the 8.0 x 11 x 7.2 plugs.

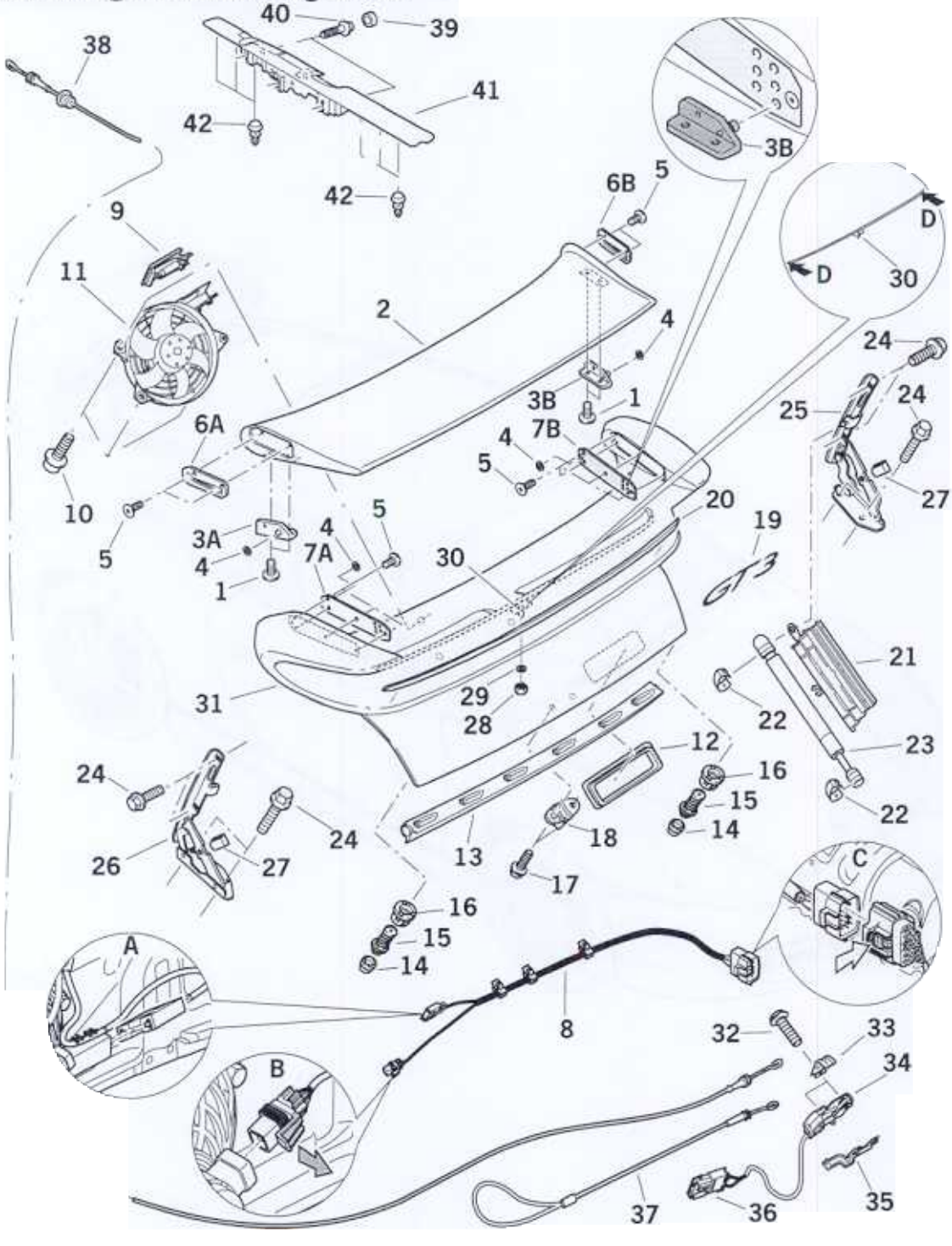
Printed in Germany. 1997 996559

55 90 37 Disassembling and assembling rear lid – GT3



44_99

Disassembling and assembling rear lid



45_99

Disassembling and assembling rear lid

Warning:

Change in handling, the balance from the front to the rear axle is affected!

> The additional wing is set to the lowest (horizontal) position for street use. Changes to the setting (to individually match the personal driving style) are only intended for the racing track.
> The additional wing **must** be moved to the lowest position for use in public traffic.

Nr.	Designation	Qty.	Removal	Note: Installation
1	Countersunk screw M6 x 16	2		**Tightening torque: 10 Nm (7.5 ftlb.)**
2	Spoiler	1	Turn rear spoiler approx. 45° upward and push forward.	Insert the guide fitting of the spoiler into the peg of the rear lid.
3A	Left bearing angle	1	Remove	Insert in the adjustment fitting. Lowest position see: inset **Observe safety instruction!**
3B	Right bearing angle	1	Remove	Insert in the adjustment fitting. Lowest position see: inset **Observe safety instruction!**
4	Spacer washer	4		
5	Countersunk screw M4 x 8.0	10		**Tightening torque: 2.8 Nm (2 ftlb.)**
6A	Left guide fitting	1		
6B	Right guide fitting	1		
7A	Left adjustment fitting	1		
7B	Right adjustment fitting	1		

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No.	Designation	Qty.	Removal	Note: Installation
8	Wiring harness	1	Disconnect interior light electrical plug connection **(inset A)**, **(inset B)** push air cleaner locking lug (arrow) outward, **(inset C)** push locking lug (arrow) on wiring harness disconnection point and disconnect.	Connect electrical plug connection.
9	Interior light	1		Unclip and disconnect electrical plug connection.
10	Hexagon socket head bolt M6 x 20	3		
11	Fan with fan housing	1		
12	Air guide	1	Remove from the inner side of the lid.	
13	Rubber cover	1		
14	Rubber buffer	2		
15	Adjusting element	2		
16	Collar	2		Push in until the collar engages.
17	Combination screw M6 x 12	2		
18	Upper part of lock	1	Remove upper part of lock from lid.	Fasten upper part of lock to the lid with the combination screws and adjust to the lower part of lock.
19	Logo *GT3*	1	Pull off	Replace, pull off protective paper and affix.
20	Spoiler lip	1	Pull off	Glue on with a K-2 adhesive (Porsche part no. 000.044.000.37).

No.	Designation	Qty.	Removal	Note: Installation
21	Cable retainer	1		
22	Circlip	4	Press out	Press in
23	Pneumatic spring			
24	Hexagon socket head bolt M6 x 16	8		
25	Mount right	1	Loosen combination screws M6 x 16.	Adjust to the left side section in accordance with lid contour.
26	Mount left	1	Loosen combination screws M6 x 16.	Adjust to the left side section in accordance with lid contour.
27	Plastic stop	2		
28	M5 nut	1	Undo	
29	Washer	1		
30	Inlet fin	1		Glue the corner points **arrow D** into the lid with a K-2 adhesive (Porsche part no. 000.044.000.37). Tighten the inlet fin in the centre with the washer and the M5 nut.
31	Lid - plastic	1		Adjust lid to the hinges in accordance with the contours of the wings and the front spoiler.
32	Combination screw M6 x 30	2		
33	Locking plate	1	Press locking plate out.	Press locking plate in.

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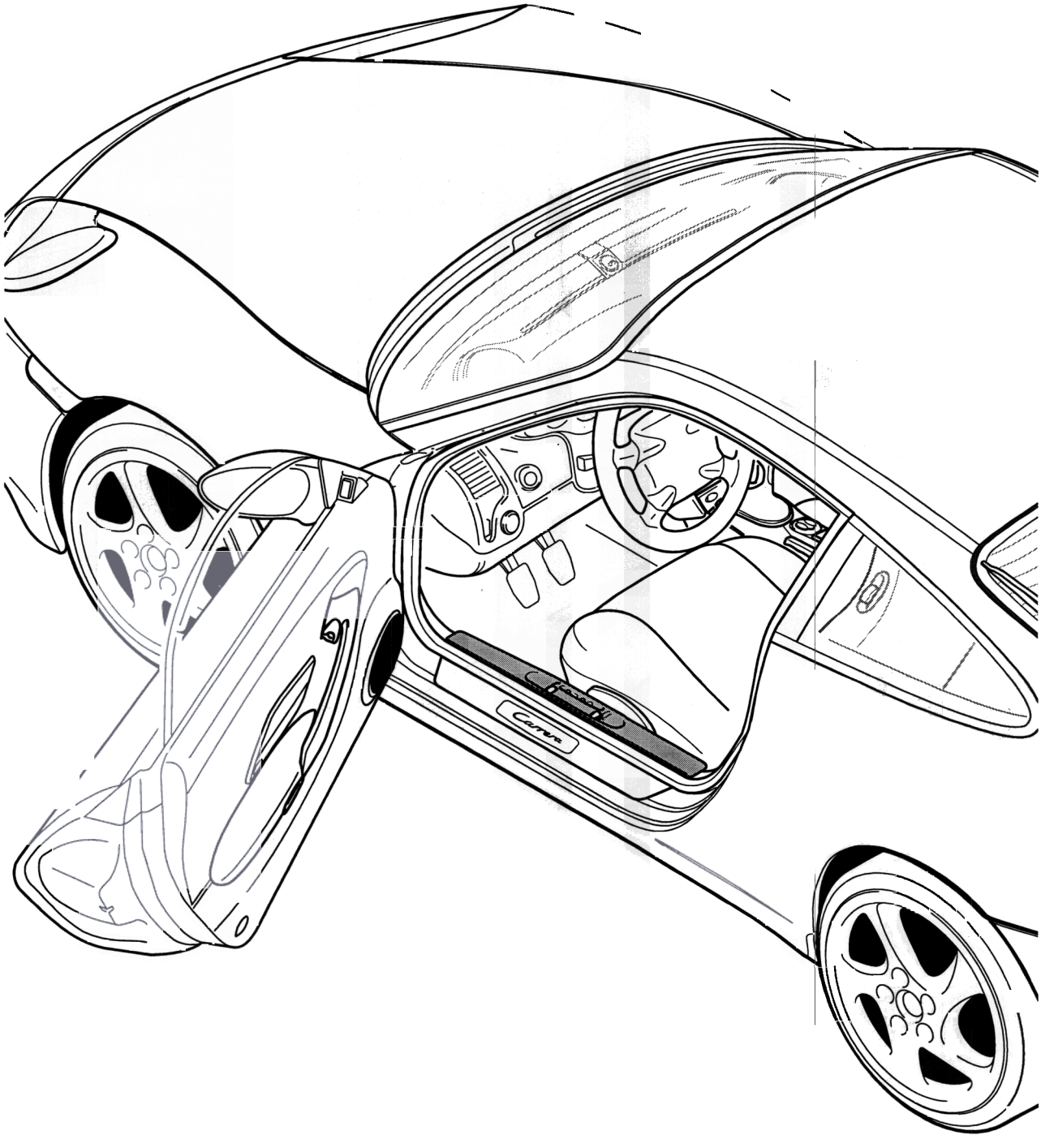
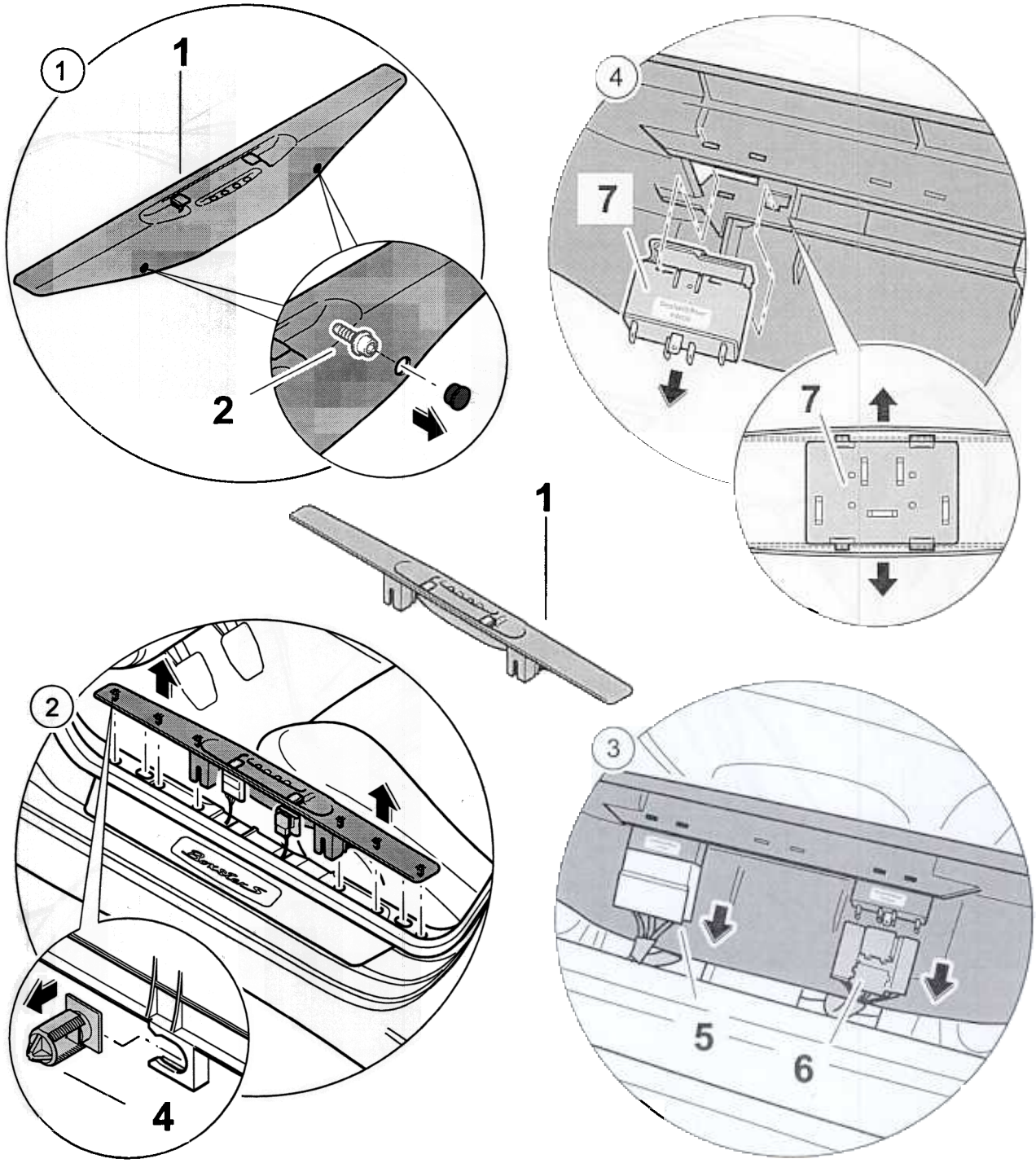
No.	Designation	Qty.	Removal	Note: Installation
34	Lock	1		Fasten lower part of lock with combination screws and adjust to upper part of lock.
35	Holder	1		
36	Plug connection	1	Disconnect cable-harness plug connection.	Connect cable-harness plug connection.
37	Emergency operation mechanism	1		
38	Bowden cable	1	Press bowden cable out of holder.	Press bowden cable into holder.
39	Plug 8.0 x 11 x 7.2	3		
40	Hexagon socket head bolt M6 x 25		Back off hexagon socket head bolt by 4 – 5 turns.	Screw hexagon socket head bolt into the bottom support by 2 - 3 turns.
41	Kick plate with gripper	1	Remove plug 8.0 x 11 x 7.2 (Item 39), back off hexagon socket head bolt M6 x 25 by approx. 4 - 5 turns. Lift kick plate upwards out of the bottom support with a plastic spatula and press out.	Position kick plate on the support and push on. Screw down hexagon socket head bolts M6 x 25 **Additional assembly instructions, see: Serv. No. 55 10**
42	Plastic clip	1		Inspect and replace if necessary.

Disassembling and assembling release for front lid - as of model year 2001

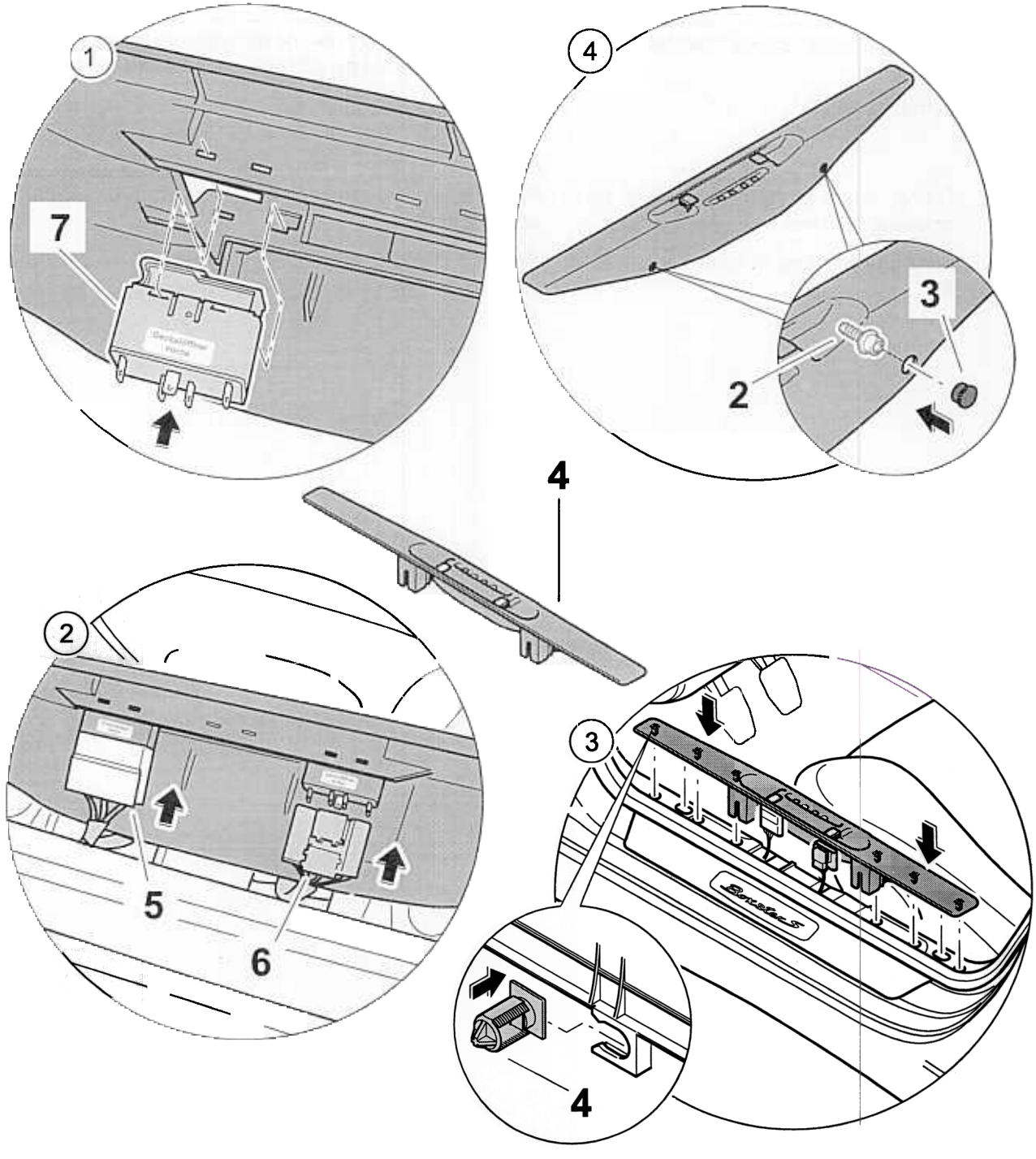


Disassembling release for front lid



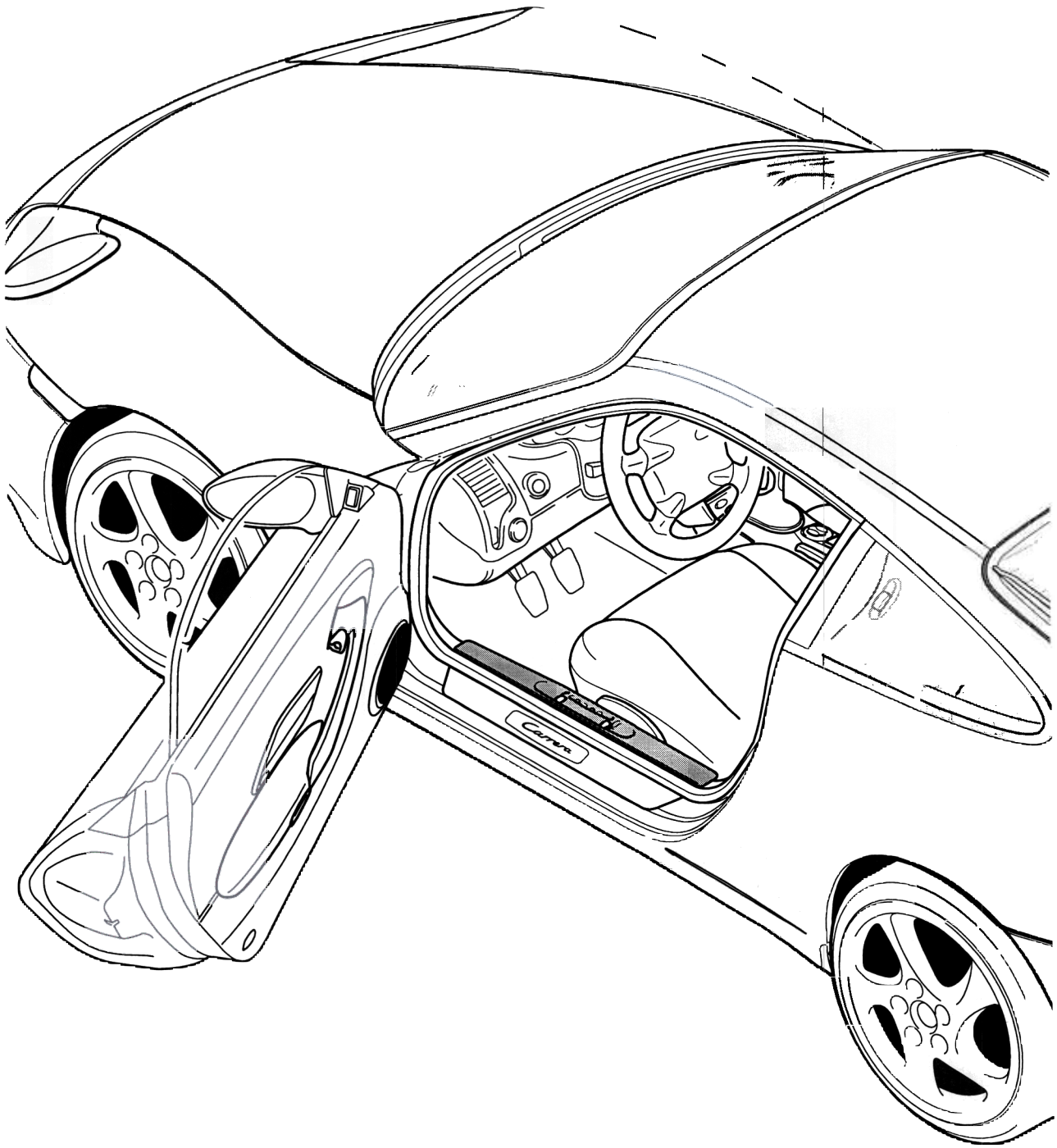
No.	Procedure	Instructions
	Undoing hexagon socket head bolts **-2-**	Remove plastic plugs **-3-** and undo the hexagon socket head bolts **-2-** from the sill by approx. 4 - 5 threads.
2	Removing sill **-1-**	Lift sill **-1-** upwards out of the bottom support with a plastic spatula and press out. Check fastening clips **-4-**, replace if necessary.
3	Pulling off plug connections **-5, 6-** of the actuating switches	Pull off plug connections **-5, 6-** on the actuating switches of the lids.
4	Removing actuating switches for front lid **-7, 8-**	Press the fastening ribs of the sill **-arrows-** outward with a screwdriver and unclip the actuating switch of the front lid **-7-**.

Assembling release for front lid

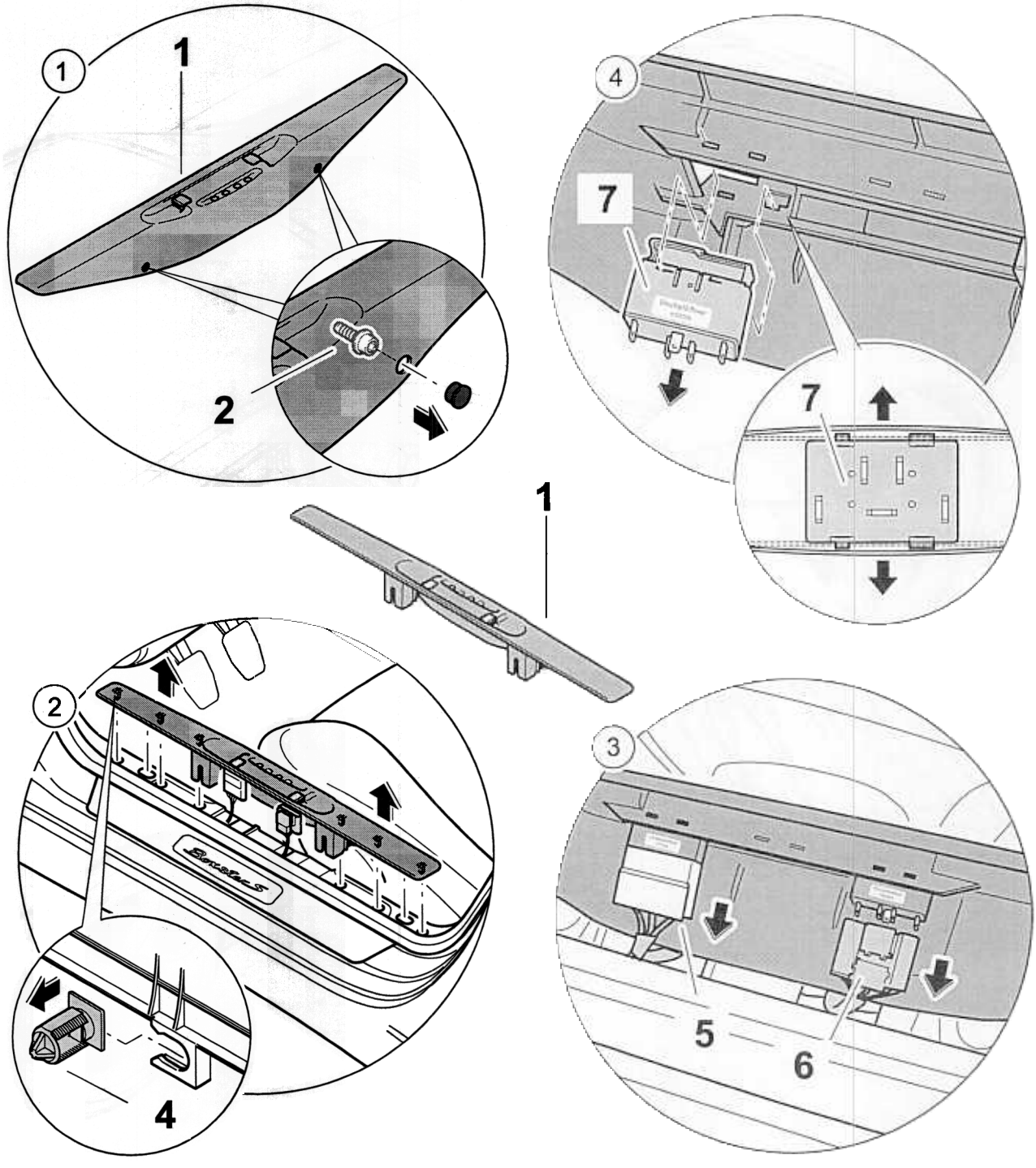


No.	Procedure	Instructions
	Installing actuating switch of front lid **-7-**	Clip locking tabs of the actuating switch for the front lid **-7-** into the fastening ribs of the sill.
2	Joining plug connections **-5, 6-** of the actuating switches	Push plug connections **-5, 6-** onto the actuating switches of the lids.
3	Attaching sill **-1-**	Clip in new fastening clips **-4-** if necessary. Insert sill **-1-** downward into the lower support and engage.
4	Tightening hexagon socket head bolts **-2-**	Screw in hexagon socket head bolts **-2-** of the sill by approx. 4 - 5 threads. Seal holes of the sill with plastic plugs **-3-**.

Disassembling and assembling release for rear lid - as of model year 2001

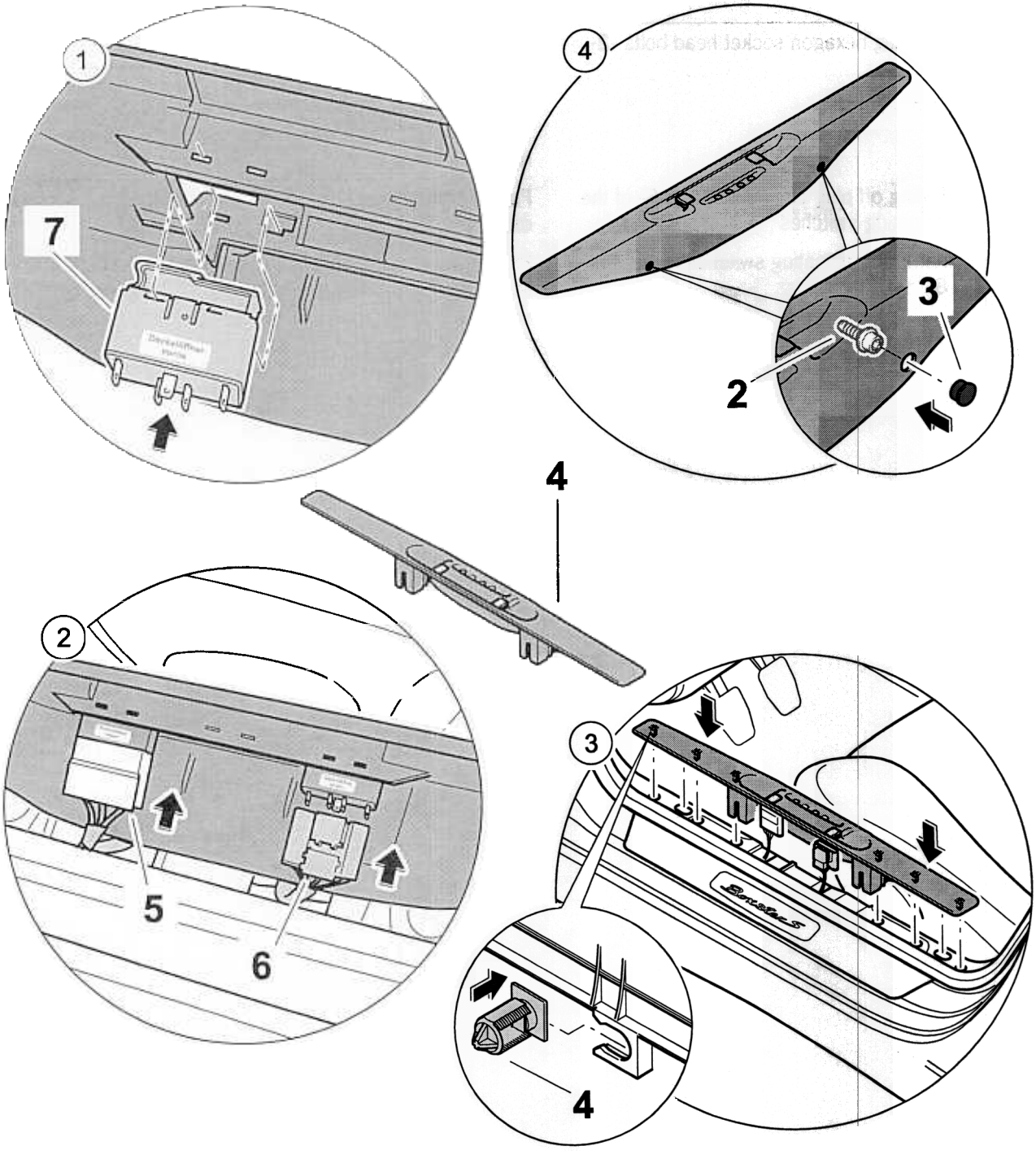


Disassembling release for rear lid



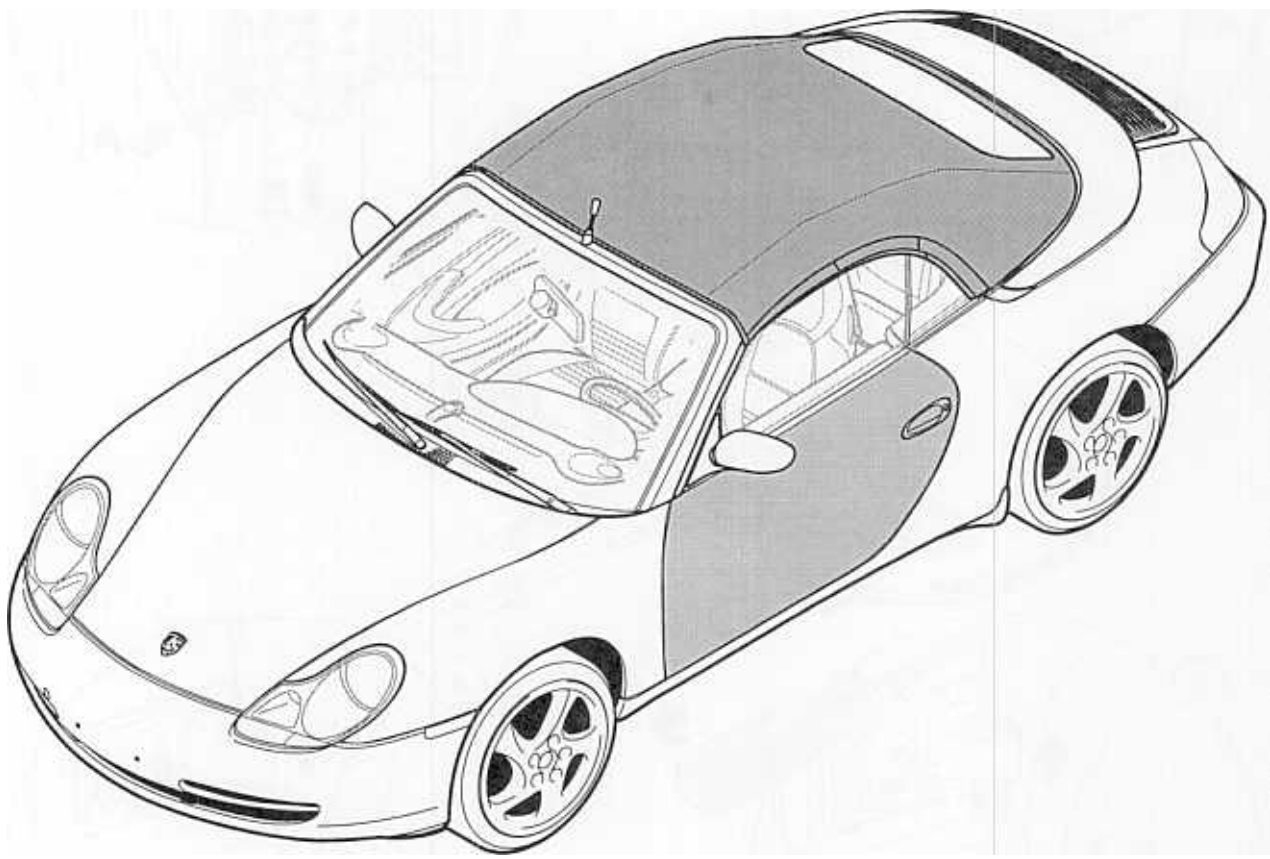
No.	Procedure	Instructions
	Undoing hexagon socket head bolts **-2-**	Remove plastic plugs **-3-** and undo the hexagon socket head bolts **-2-** from the sill by approx. 4 - 5 threads.
2	Removing sill **-1-**	Lift sill **-1-** upwards out of the bottom support with a plastic spatula and press out. Check fastening clips **-4-**, replace if necessary.
3	Pulling off plug connections **-5, 6-** of the actuating switches	Pull off plug connections **-5, 6-** on the actuating switches of the lids.
4	Removing actuating switches for rear lid **-7, 8-**	Press the fastening ribs of the sill **-arrows-** outward with a screwdriver and unclip the actuating switch of the rear lid **-7-**.

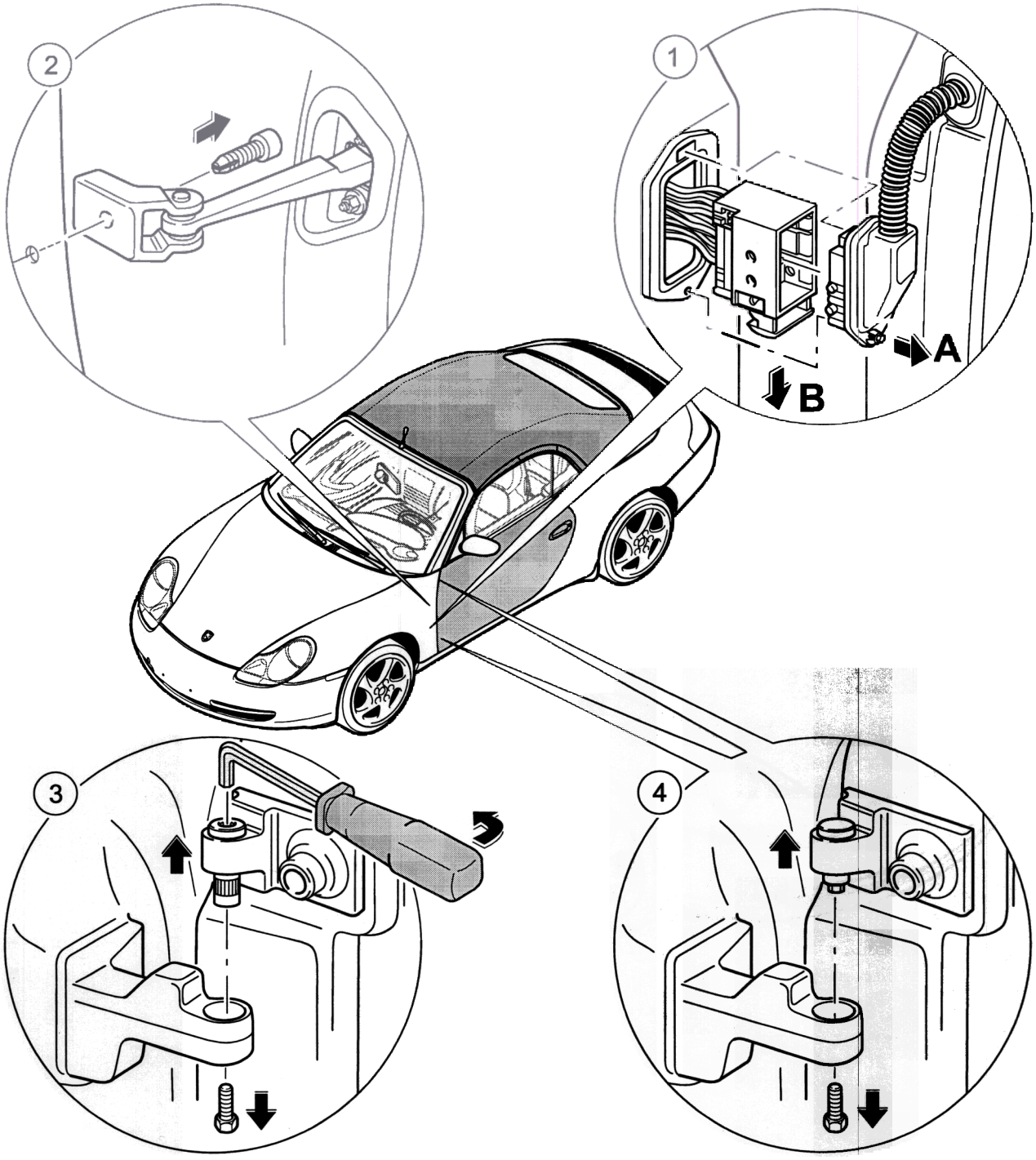
Assembling release for rear lid



No.	Procedure	Instructions
	Installing actuating switch of rear lid **-7-**	Clip locking tabs of the actuating switch for the rear lid **-7-** into the fastening ribs of the sill.
2	Joining plug connections **-5, 6-** of the actuating switches	Push plug connections **-5, 6-** onto the actuating switches of the lids.
3	Attaching sill **-1-**	Clip in new fastening clips **-4-** if necessary. Insert sill **-1-** downward into the lower support and engage.
4	Tightening hexagon socket head bolts **-2-**	Screw in hexagon socket head bolts **-2-** of the sill by approx. 4 - 5 threads. Seal holes of the sill with plastic plugs **-3-**.

Removing and installing door



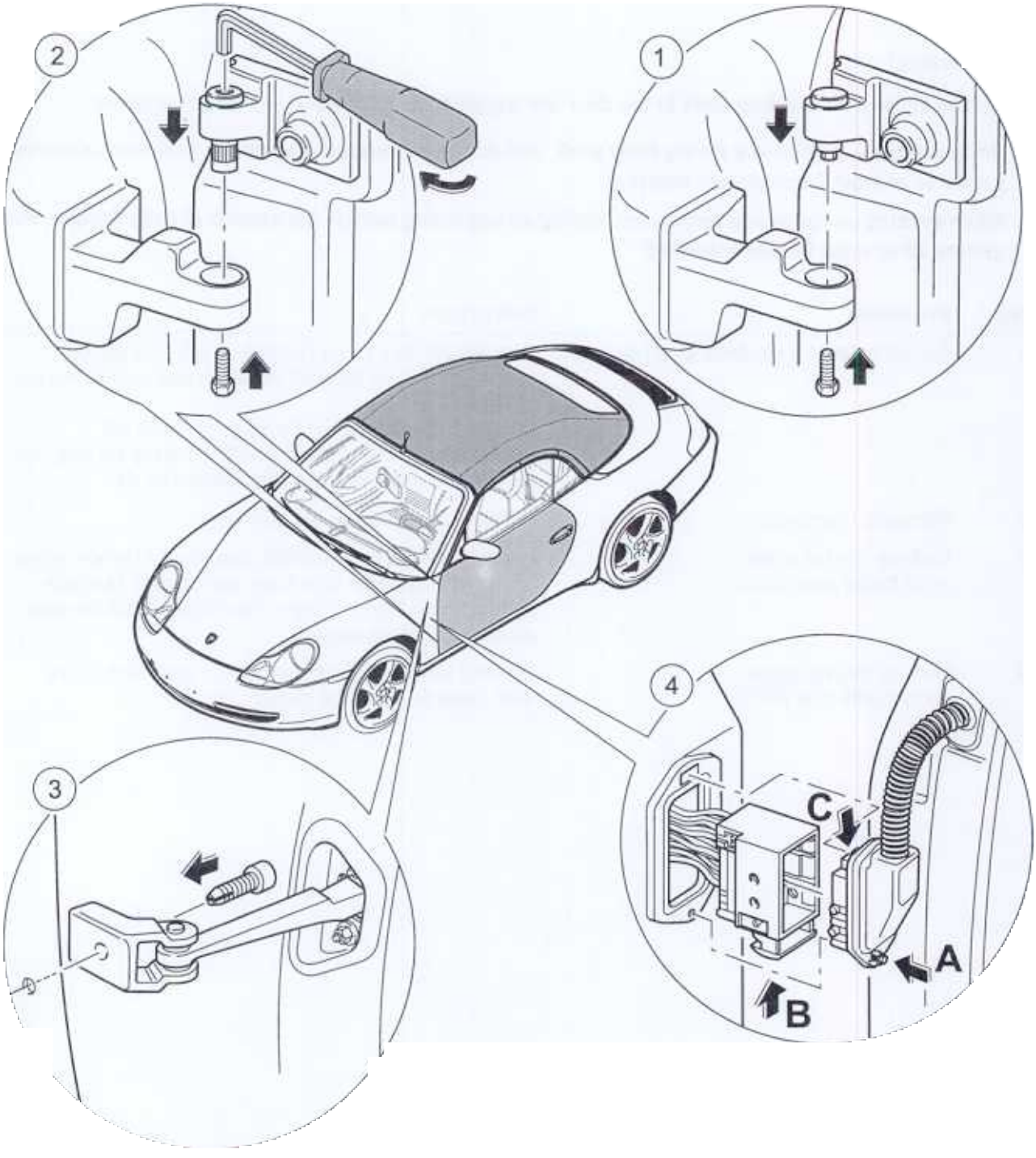


⚠ Warning!

Danger of injury if side airbag units in the door are triggered while ignition key is not removed

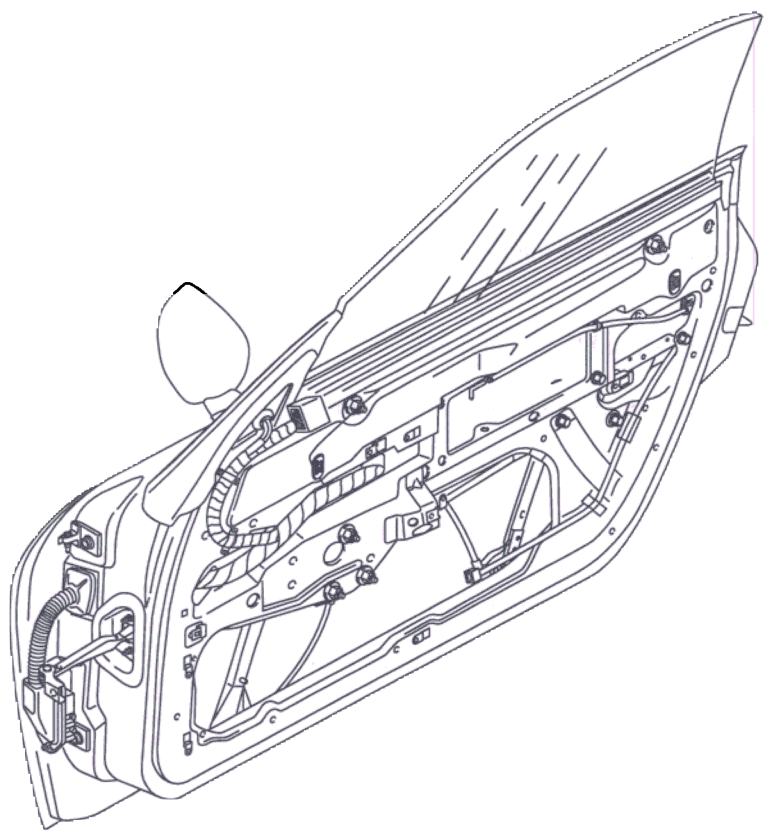
- ***Always remove ignition key during body work, and do not commence adjustment work until a waiting period of at least 1 minute has elapsed!***
- ***When working on the airbag system and during straightening work in the context of body repairs, the ground strap must be disconnected!***

No.	Procedure	Instructions
	Disconnecting the electrical plug connection	Unscrew the Torx screw (T20) **-A-**, push plug up by approx. 3 mm and then pull the whole plug connection out of the A-pillar. Attention: Locking tabs in the plug can break off! Pull out locking element at the bottom part of the plug connection and disconnect the plug connection **-B-**.
2	Releasing door brake	Unscrew Torx screw on the door brake.
3	Undoing locking screw as of model year 2001	Insert special tool ⇒ No.9666; Rep. Gr. 2.4; (angle screwdriver) into the upper door hinge and counter. Unscrew locking screw from the lower door hinge and lift the door upwards out of the hinges.
4	Undoing locking screw up to model year 2000	Unscrew locking screw from the door hinge and lift the door upwards out of the hinges.



No.	Procedure	Instructions
	Engaging the door up to model year 2000	Engage the door in the door hinge from above and screw in the locking screw. Note: the locking screw is microencapsulated and must be replaced every time it is unscrewed. Tightening torque **-10 Nm (7.5 ftlb.)-**
2	Engaging the door as of model year 2001	Engage door in door hinge from above, screw in locking screw and tighten with **-13 Nm (9.5 ftlb.)-**. Note: the locking screw is microencapsulated and must be replaced every time it is unscrewed. Use special tool ⇒ No. 9666; Rep. Gr. 2.4; (angle screwdriver) to counter.
3	Fitting door brake	Screw the door brake to the body with the fastening screw. Tightening torque: **-23 Nm (17 ftlb.)-**
4	Connecting electrical plug connection	Connect electrical plug connection. Attention: locking tabs in the plug can break off! Press in the securing latch of the plug connection **-B-**. Push the whole plug connection into the A-pillar. Press the plug down approx. 3 mm, so that the locking tab **-C-** engages in the retaining bracket. Then screw the Torx fastening screw T20 **-A-** tight. Tightening torque: **-2.5 Nm (2.0 ftlb.)-**

Disassembling and assembling door



Disassembling door

Warning!

Danger of injury if side airbag units in the door are triggered while ignition key is not removed!

- *Always remove ignition key during body work, and do not commence adjustment work until a waiting period of at least 1 minute has elapsed!*
- *The ground strap of the battery must be disconnected during work on the airbag system and alignment bench work within the framework of body repair!*

Caution!

Damage to the bowden cable when removing door trim panel!

Damage by bending the bowden cable at the hook!

- *Pull the hook out of the end piece only after installation in the inner door release!*

Caution!

Damage to plug connection lugs during door removal!

Damage to lugs when pulling the plug connection out of the A-pillar!

- *The locking element at the bottom part of the plug connection must be pulled out before the plug connection is disconnected!*

Caution!

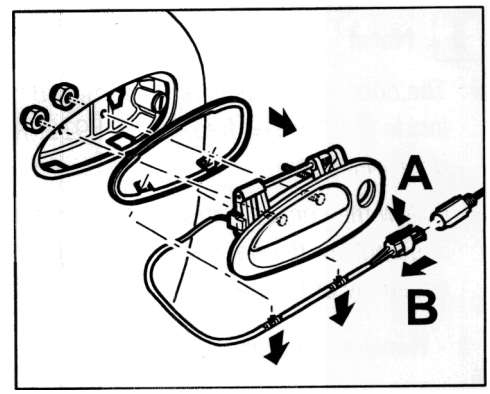
Danger of material damage if the door lock is installed incorrectly!

Malfunctions in the alarm system!

- *The door lock should be installed only when the actuating lever is in basic position!*

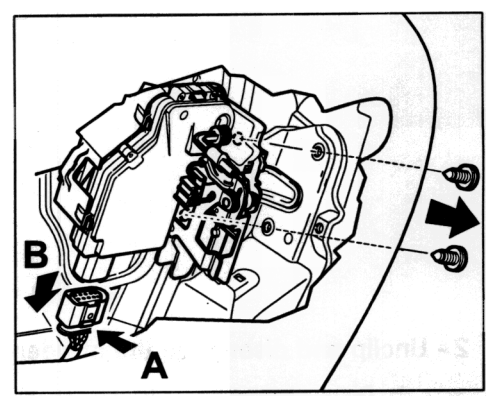
4 - Remove door handle and bottom part of door

1. Remove collar nuts M6.
2. Separate bottom part of door handle from door handle and remove.
3. Press electrical plug connection off microswitch **-A-** and disconnect.
4. Unclip on the base of the electrical lead **-B-**.



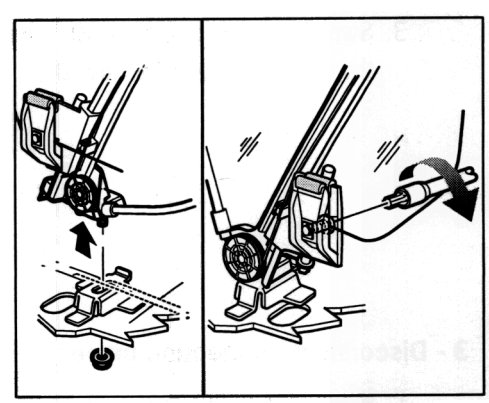
5 - Remove door lock

1. Undo micro-encapsulated Torx screws T40 M8 x 14.
2. Disconnect the electrical plug connection. To do this, press the locking lug **-A-** on the plug connection and separate in the direction of the arrow **-B-**.
3. Pull door lock with actuating motor unit out of the door.



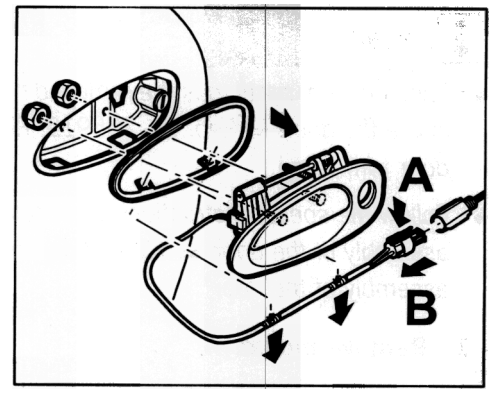
6 - Remove door window

1. Undo Torx screws T 30 on the clamping pieces of the power window unit.
2. Pull door window out of the door channel.



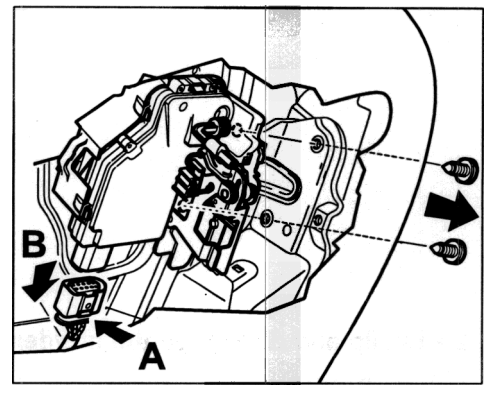
4 - Remove door handle and bottom part of door

1. Remove collar nuts M6.
2. Separate bottom part of door handle from door handle and remove.
3. Press electrical plug connection off microswitch **-A-** and disconnect.
4. Unclip on the base of the electrical lead **-B-**.



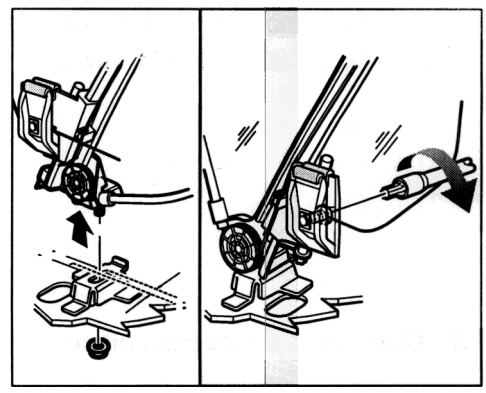
5 - Remove door lock

1. Undo micro-encapsulated Torx screws T40 M8 x 14.
2. Disconnect the electrical plug connection. To do this, press the locking lug **-A-** on the plug connection and separate in the direction of the arrow **-B-**.
3. Pull door lock with actuating motor unit out of the door.



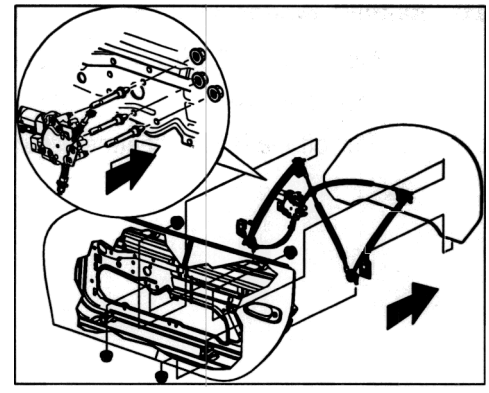
6 - Remove door window

1. Undo Torx screws T 30 on the clamping pieces of the power window unit.
2. Pull door window out of the door channel.



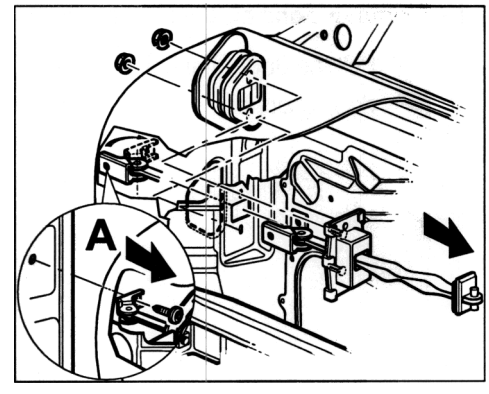
7 - Remove power window unit

1. Disconnect the electrical plug connection.
2. Undo collar nuts M6 from the power window unit.
3. Pull the power window unit downward out of the door opening.



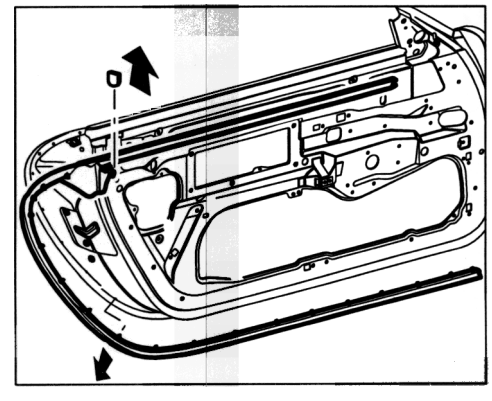
8 - Remove door brake

1. Unscrew Torx screw M8 **-A-** from the A-pillar.
2. Remove collar nuts from the door brake.
3. Pull out the door brake towards the inside.
4. Remove the seal.



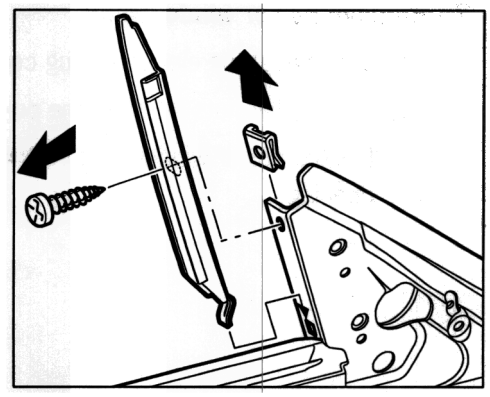
9 - Remove door seal on outside

1. Press out clip **-A-** with a plastic spatula.
2. Pull off door seal on the outside.
3. Carefully pull the seal out of the clips along the door contour.



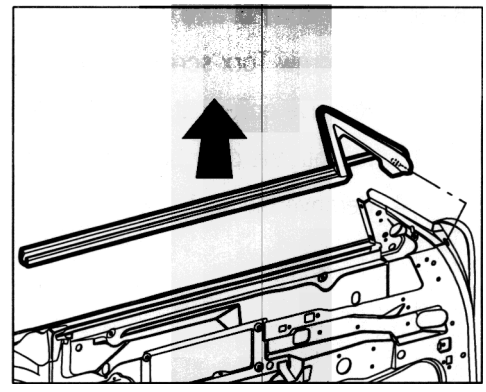
10 - Remove window guide rail

1. Unscrew the B3.5 x 9.5 sheetmetal screw from the window guide rail.
2. Pull off the B 3.5 sheetmetal nut.



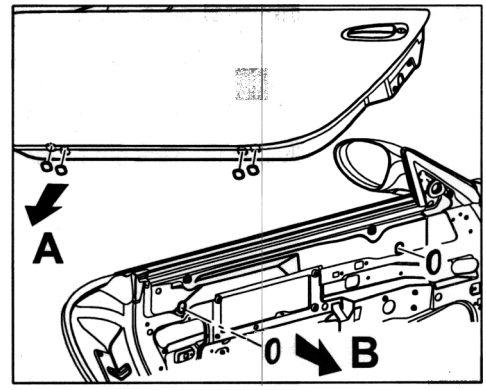
11 - Remove door channel seal on inside

– Pull the door channel seal on the inside off the bead of the door channel.



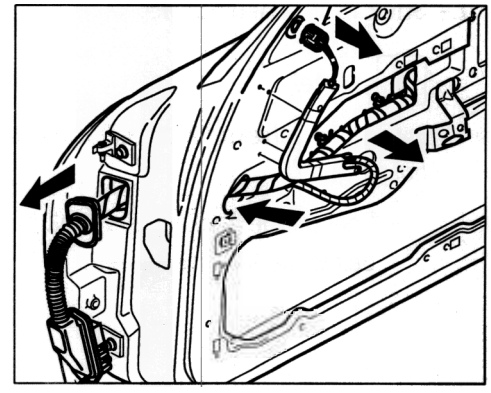
12 - Remove lid

– Press out the 24 x 40 lid **-A-** and the 20 x 28 lid **-B-** with a plastic spatula.



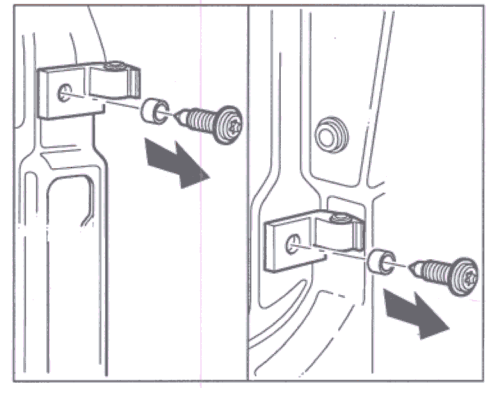
13 - Remove wiring harness

1. Unclip the electrical wiring along the inner door panel.
2. Pull wiring harness out of the door in the **-direction of the arrow-**.



14 - Remove angle piece

– Unscrew T 45 M8 x 33 Torx screw from the angle piece and the 12 x 8 x 7 centring sleeve.



Assembling door

Warning!

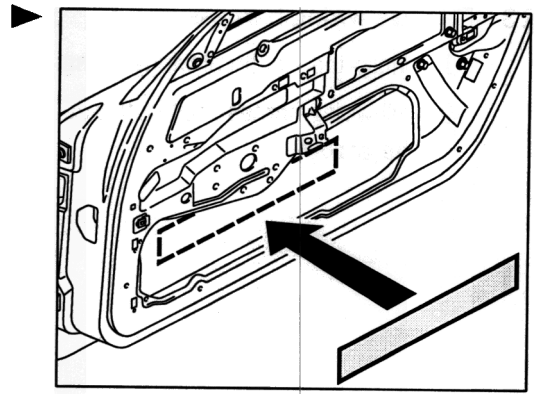
Danger of injury if side airbag units in the door are triggered while ignition key is not removed!

- ***Always remove ignition key during body work, and do not commence adjustment work until a waiting period of at least 1 minute has elapsed!***
- ***The ground strap of the battery must be disconnected during work on the airbag system and alignment bench work within the framework of body repair!***

Note!

Follow the special instructions on installation and adjustment for assembly of the door!

1 - Stick in the insulation

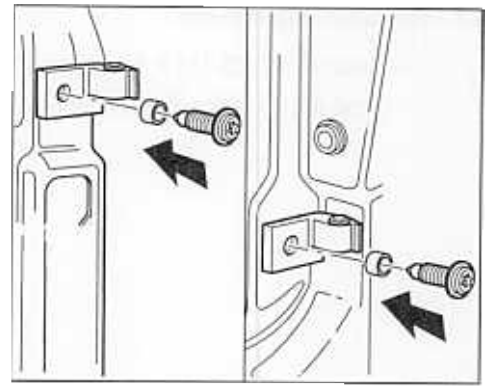


Note!

In order to achieve better adhesion, heat the insulation using a hot-air gun!

– Peel off the backing and stick the insulation into the door below the side-impact bar.

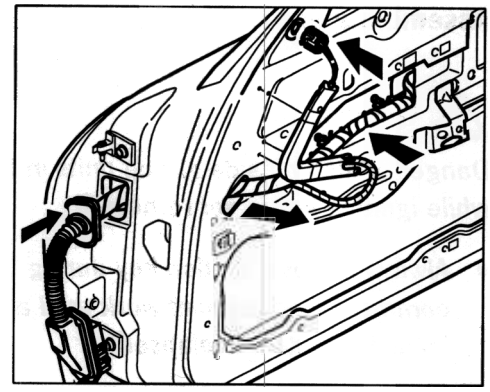
2 - Fit angle piece



– Position the angle piece with the 12 x 8 x 7 centring sleeve on the door and fasten with the T 45 M8 x 33 Torx screw.

Tightening torque: 23 Nm (17 ftlb.)

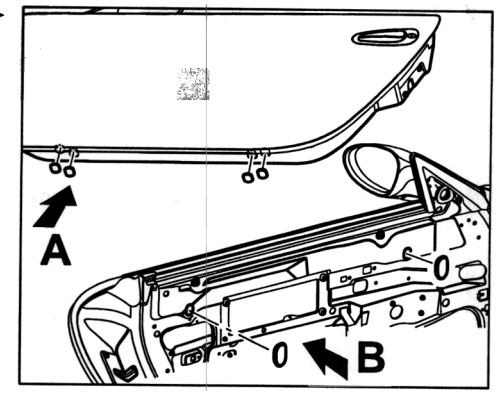
3 - Fit wiring harness



1. Insert wiring harness into the door in the **-direction of the arrow-**.
2. Clip in the electrical wiring along the inner door panel.

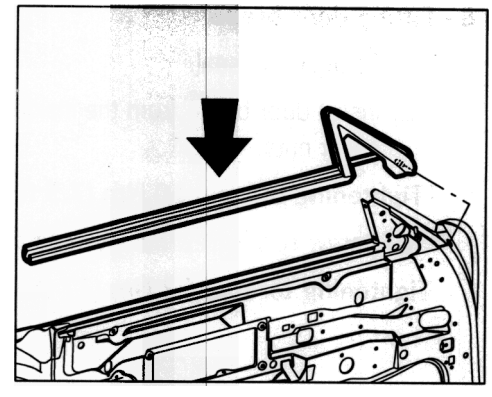
4 - Fit lid

– Press in the 24 x 40 lid **-A-** and the 20 x 28 lid **-B-**.



5 - Fit door channel seal on inside

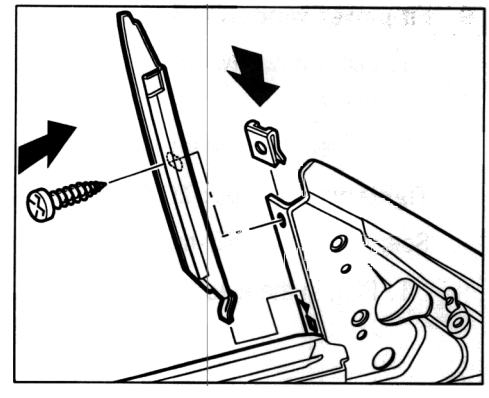
– Position the door channel seal on the inside **-arrow-** in the bead of the door channel and press it on.



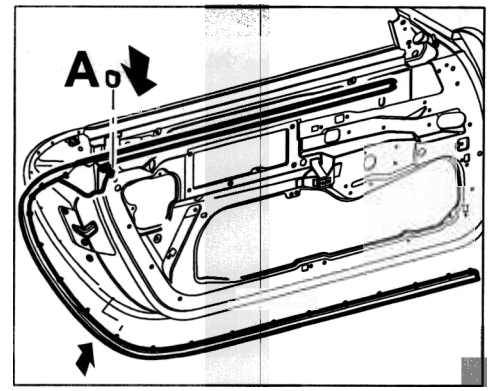
6 - Fit window guide rail

1. Push on the B 3.5 sheetmetal nut.
2. Position the window guide rail and fasten it with the B3.5 x 9.5 sheetmetal screw.

Tightening torque: 1,4 Nm (1.0 ftlb.)



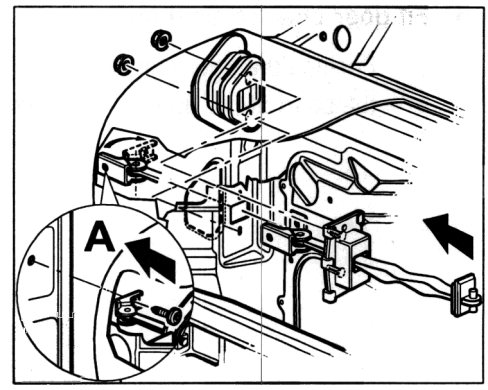
7 - Fit door seal on outside



– Position door seal on the outside at the top edge of the door and push it on.

1. Clip in the seal along the door contour.
2. Fasten the door seal on the inner door panel with the clip **-A-**.

8 - Fitting door brake



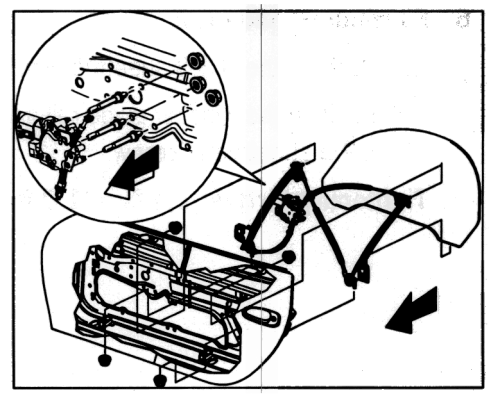
1. Position the seal.
2. Insert door brake from the inside and fasten it with the collar nuts.

Tightening torque: 10 Nm (7.5 ftlb.)

1. Screw Torx screw M8 **-A-** onto the A-pillar.

Tightening torque: 23 Nm (17 ftlb.)

9 - Fit power window unit



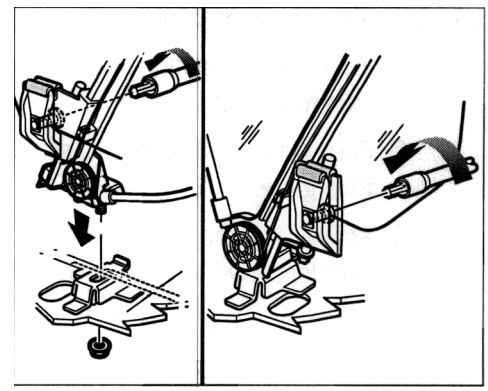
1. Insert power window unit into the door opening from below.
2. Fasten the power window unit with the M6 collar nuts.

Tightening torque: 10 Nm (7.5 ftlb.)

See: Additional adjustment instructions for the power window.

1. Plug in the electrical plug connection.

10 - Fit door window



1. Insert door window into the door channel and position it in the front and rear clamping pieces of the power window unit.

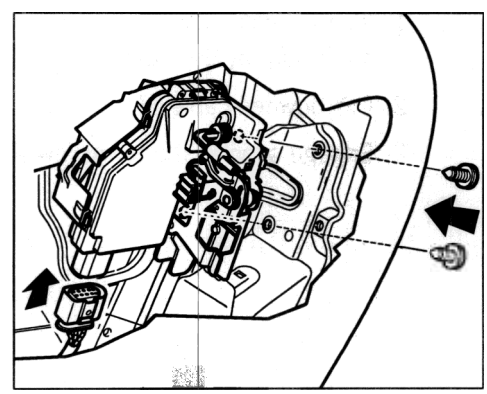
Note!

- *The bottom edge of the window must rest on the screw during adjustment!*
- *Observe additional instructions for adjusting the door window!*

1. Tighten the T 30 Torx screw.

Tightening torque: 8.5 ± 1.5 Nm (6.0 ± 1.0 ftlb.)

11 - Fit door lock



Note!

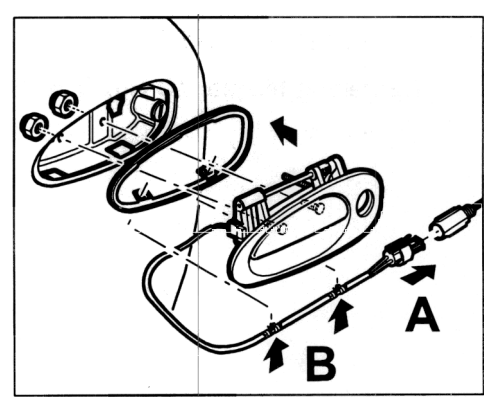
- *The actuating lever must be locked in basic position before installation!*
- *Observe additional instructions for adjusting the door lock!*

1. Insert door lock with actuating motor unit into the door and fasten with the micro-encapsulated T40 M8 x 14 Torx screw.

Tightening torque: 20 +2 Nm (15.0 + 3.5 ftlb.)

1. Plug in the electrical plug connection.

12 - Fit connection piece



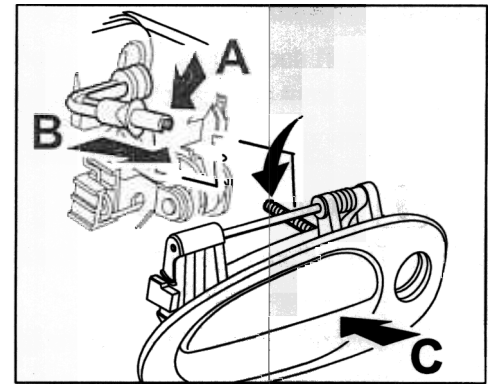
1. Clip in the electrical lead **-B-** on the base.
2. Insert door handle and position the bottom part of the door handle on the door handle from inside. Tighten with the collar nuts M 6.

Tightening torque: 10 Nm (7.5 ftlb.)

1. Connect electrical plug connection **-A-**.

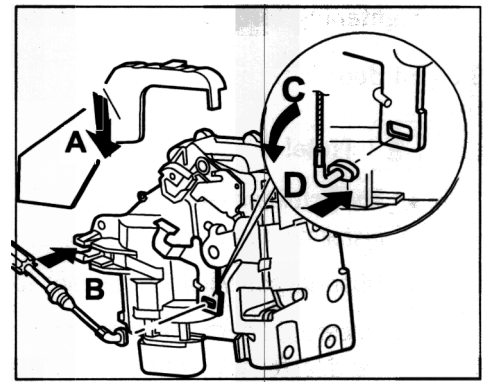
13 - Disconnect connection piece

1. Insert the connection piece into the actuating shaft **-arrow A-** without play.
2. Push out the sliding piece **-arrow B-** until it can be heard to engage.
3. Actuate the handle **-arrow C-** to ensure that the handle and door lock function without play.



14 - Fit bowden cable

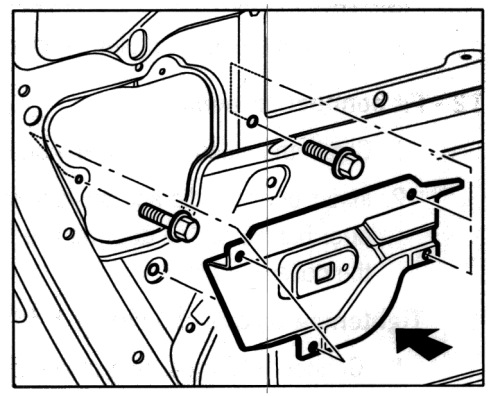
1. Insert bowden cable into the actuating lever **-arrow D-** and rotate by 90° **-arrow C-**.
2. Clip bowden cable into the door lock **-arrow B-**.
3. Engage support frame **-arrow A-** on the door lock.



15 - Fit mount

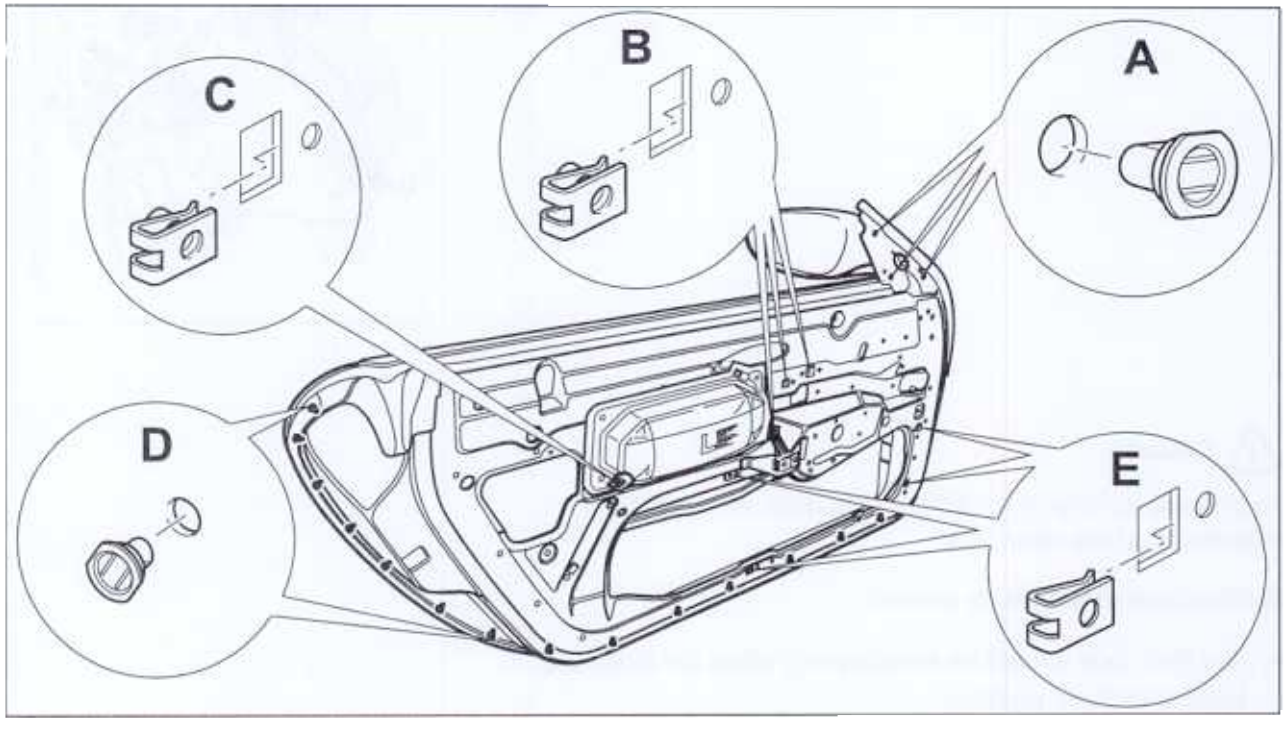
– Position the mount in the door and fasten it with the M6 x 16 hexagon-head bolt.

Tightening torque: 10 Nm (7.5 ftlb.)



Adjustment instructions for assembly of the door

Diagram: sheetmetal clips and grommets



A - Grommet

B - M6 sheetmetal clip

C - M5 sheetmetal clip

D - Grommet

E - Sheetmetal clip St 3.8

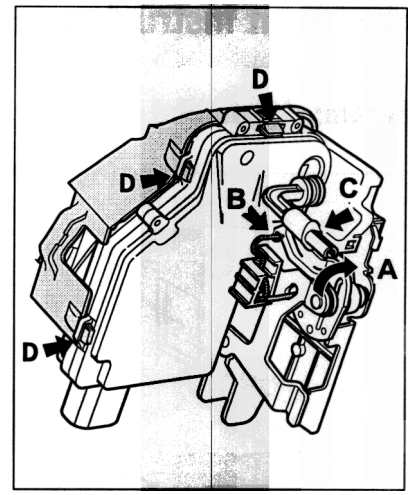
Basic setting of door lock

Warning!

Danger of injury if side airbag units in the door are triggered while ignition key is not removed!

- ***Always remove ignition key during body work, and do not commence adjustment work until a waiting period of at least 1 minute has elapsed!***
- ***The ground strap of the battery must be disconnected during work on the airbag system and alignment bench work within the framework of body repair!***

Basic setting of the door lock before installation ►



Caution!

To prevent locking or unlocking actuation, or incorrect installation of the door lock!

Malfunctions in the alarm system!

- ***The door lock should be installed only when the actuating lever is in basic position!***

1. Swivel out the actuating lever **-A-** in an upward direction.
2. Lift the spring and simultaneously lower the spring hook of the actuating lever until it engages in the locking spring **-B-**.

Note!

Greater force is necessary to actuate the door handle after installation of the door lock as the locking spring audibly disengages.

Note!

Make sure that the lugs of the support frame are correctly locked when assembling the door lock to protect against theft ***-arrows: D-***.

Standardising the system

Standardising the power windows

The system must be re-standardised after an interruption in the power supply to the power window electronics in the door. The position values for the short-stroke lowering function, position-controlled lowering function in the case of convertible top actuation and ena-

bling for "automatic start-up of window closing" (one-touch function) are redefined. The standardisation process is initiated by continuous actuation of the operating button Raise window .

Hold down the button Raise window until the window is closed and is switched off by the blockage detection function of the power windows.

Blockage detection function

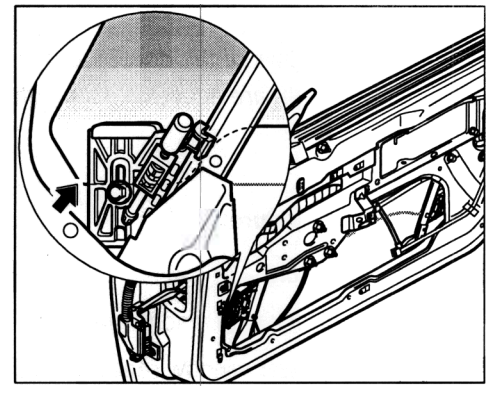
Note!

If the window drive encounters resistance during the door window movement, the motor is switched off after a delay of 500 ms.

Precondition for operation of the power windows

- Ignition switched on.
- Ignition key should not be removed from the steering lock with the ignition switched off.
- The door is opened for the first time after switching off the ignition.
- Door opened.

Fitting the door window in the clamping jaws



1. Insert the door window through the door channel into the clamping jaws of the front and rear drivers.
2. Position the door window corner flush with the driver at front.

Note!

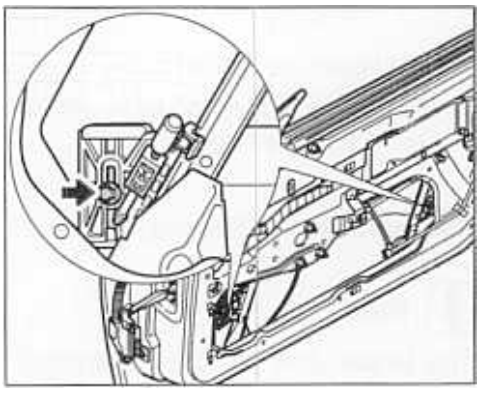
The bottom edge of the window must rest on the screw during adjustment.

3. Tighten the clamping jaws after completing the adjustment.

Tightening torque: 8,5 Nm (6.0 ftlb.)

Adjusting the door window angle in the vehicle's longitudinal direction

Driver

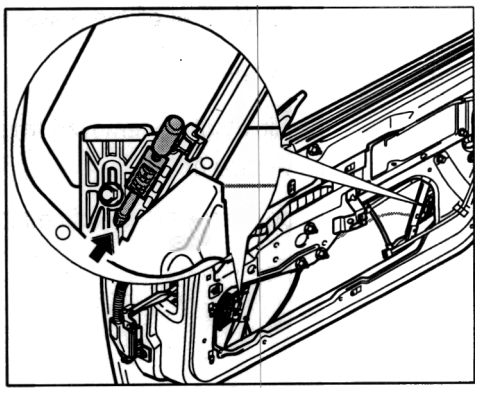


1. Adjust to equalise the angle of the door window on the clamping jaws of the driver (upwards or downwards).

Adjustment range 10 mm

2. Tighten the clamping jaw after completing the adjustment

Adjusting the door window height



Adjust the upper limit stops of the drivers by screwing the Torx screw T30 in or out with socket E6 in or against the direction of travel.

Adjustment range approx. 15 mm

2. Adjust the drivers so that they meet the upper limit stops at the same time.

Note!

The adjusting screws of the drivers for the upper limit stops for the door window height are accessible through 2 holes at the bottom of the door.

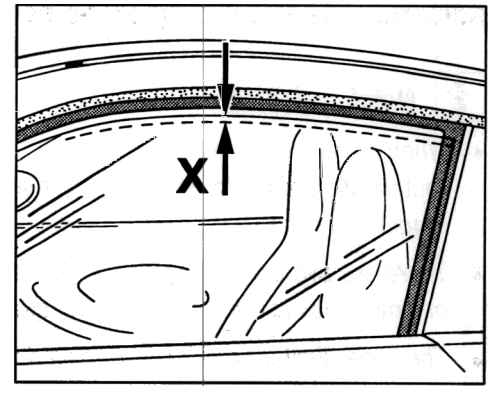
Adjustment procedure:

1. Open the doors
2. Lock door lock with a screwdriver.
3. Move the power window regulator into its upper position.
4. Adjust door window height at the drivers so that the door window evenly projects approx. 2 mm above the roof strip.

Checking the adjustment

1. Close the doors.
2. Use a wax marker to mark the door window along the roof strip.
3. Actuate the door handle until the window lowering function is activated.

Adjustment valve for window lowering function approx. 13 mm

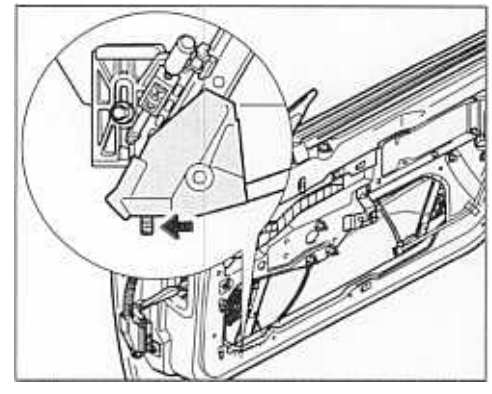


Note!

The wax marking along the door window should be uniformly approx. 4 mm.

Adjustment of the door window pressing force on the door seal at the top and sides

1. Move the power window unit rails by approx. 10 mm outwards or inwards.



Note!

The adjusting nuts of the power window unit rails for the pressing force of the door window upper edge against the convertible top are accessible through two holes at the bottom of the door.

Adjustment procedure:

1. Open the doors.
2. Move the power window regulator into its upper position and undo the combination nuts M 6 of the power window rails.
3. Adjust the power window unit so that the upper edge of the door window is sufficiently pressed against the door seal at the side

Tightening torque: 10 Nm (7.5 ftlb.

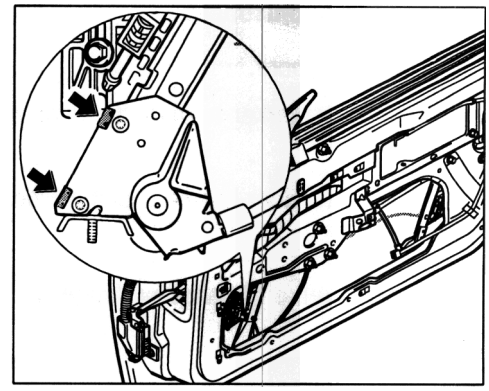
Checking the adjustment:

Clamp a sheet of paper between the door window and door seal.

Note!

It must not be possible to pull out the sheet of paper.

Adjusting the lower stop of the power window unit



Note!

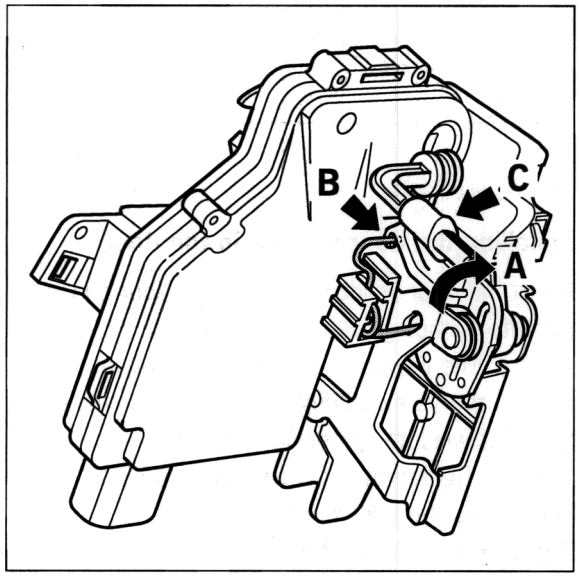
- *When replacing the power window unit, make sure that the correct position of the lower limit stop is selected for the respective model.*
- *There are two bores lying one above the other with the screwed-on limit stops in the front power window unit rail.*
- *The upper limit stop must be removed for the 911 Carrera (996) model.*

Additional assembly instructions for installation of the door lock

Warning:
To prevent locking or unlocking actuation:

> The door lock must be installed only if the actuating lever is in basic position.

Basic setting of the door lock before installation in the door



572_98

Basic setting is necessary after removal of the door lock with actuating motor unit. Swivel out the actuating lever **(arrow A)** in upward direction, lift the spring and simultaneously lower the spring hook of the actuating lever until it engages in the locking spring **(arrow B)**.

The connection piece of the door handle **(arrow C)** must be installed in the actuating shaft of the door handle only in its basic setting. Greater force is necessary to actuate the door handle after installation of the door lock as the locking spring audibly disengages.

Additional instructions for adjusting the door window

The power windows can be operated if:

- the ignition is switched on.

2. after the ignition is switched off, if the ignition key is not removed from the steering lock.

3. after the ignition is switched off until a door is opened for the first time.

4. with a door open.

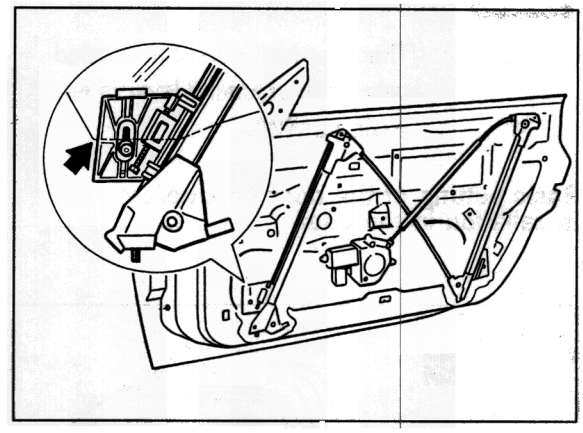
Standardising the system

The system must be re-standardised after an interruption in the power supply to the power window electronics in the door.
The position values for the short-stroke lowering function, position-controlled lowering function in the case of convertible top actuation and enabling for "automatic start-up of window closing" (one-touch function) are redefined.
The standardisation process is initiated by continuous actuation of the operating button toward **"close window"**. The button must be held until the window is closed and is switched off by the blockage detection function of the power windows.

Blockage detection function

If the window drive encounters resistance during the door window movement, the motor is switched off after a delay of 500 ms.

Fitting the door window in the clamping jaws

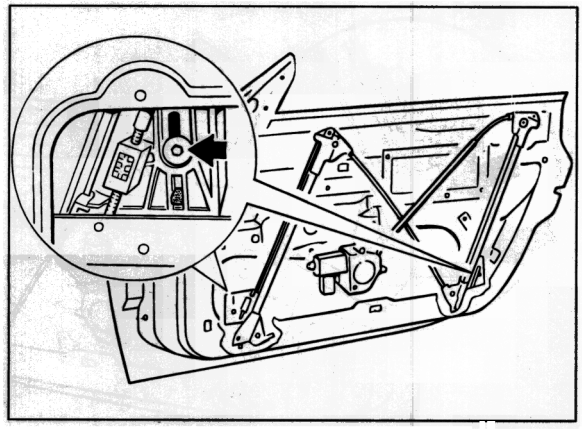


451_97

Installing the door window in the door

Insert the door window through the door channel into the clamping jaws of the front and rear drivers. The bottom edge of the window must rest on the screw during adjustment. Position the door window corner flush with the driver at front. Tighten the clamping jaws after completing the adjustment.
Tightening torque: 8.5 1.5 Nm (6.5 1.0 ftlb.)

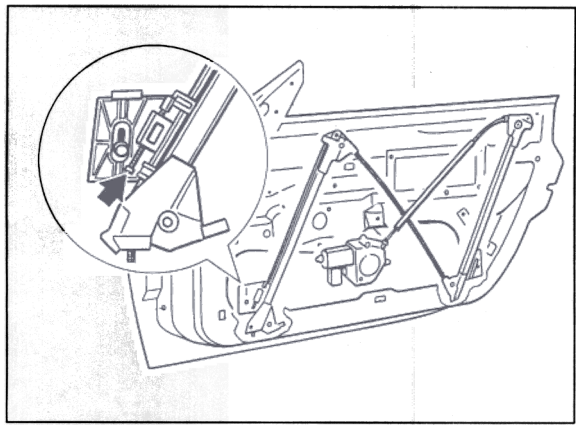
Adjusting the door window angle in the vehicle's longitudinal direction



230_96

Adjusting the clamping jaw at the driver upwards or downwards **(adjusting range 10 mm)** equalises the angle of the door window. Tighten the clamping jaw after completing the adjustment.

Adjusting the door window height

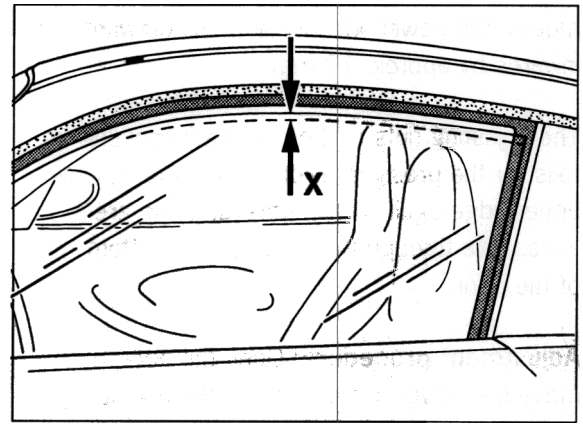


231_96

The upper limit stops of the drivers are adjusted in or against the direction of travel by screwing the Torx screw T30 in or out with socket E6 **(adjusting range approx. 15 mm)**. Adjust the drivers so that they meet the upper limit stops at the same time. The adjusting screws of the drivers for the upper limit stops for the door window height are accessible through 2 holes at the bottom of the door.

Adjustment procedure: Open the door; lock the door lock with a screwdriver. Move power window unit to top position; adjust door window height at the drivers so that the door window evenly projects approx. 2 mm above the roof strip.

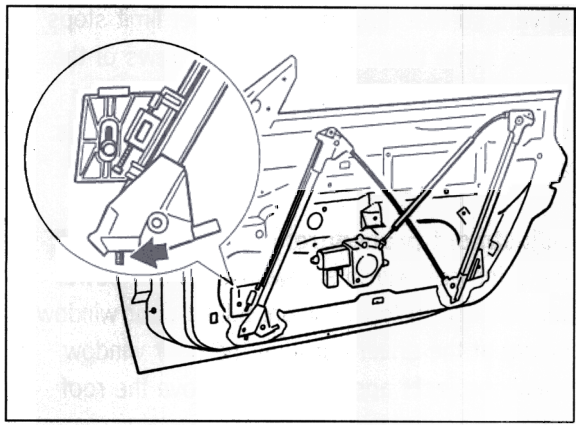
Checking the adjustment



489_97

Close the door and use a wax marker to mark the door window along the roof strip.
Actuate the door handle until the window lowering function (approx. 13 mm) is activated.
The wax marking along the door window should be uniformly **approx. 4 mm**.

Adjustment of the door window contact pressure on the door seal at the top and sides



232_96

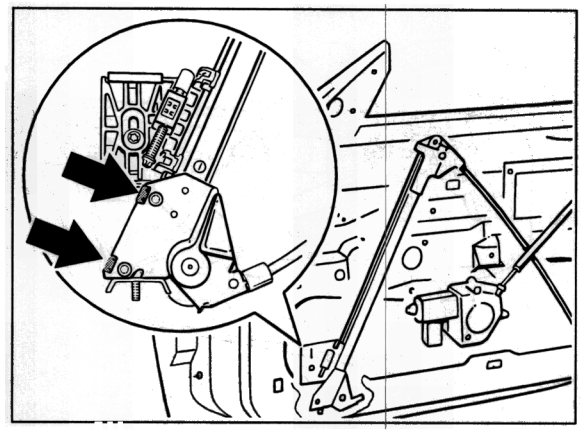
The pressing force of the door window upper edge against the convertible top is adjusted by moving the power window unit rails outwards or inwards by approx. 10 mm.

The adjusting nuts of the power window unit rails for the pressing force of the door window upper edge against the convertible top are accessible through two holes at the bottom of the door.

Adjustment procedure: Open the door, move the power window unit to top position and undo the M 6 combination nuts of the power window unit rails. Adjust the power window unit so that the upper edge of the door window is sufficiently pressed against the door seal at the side.
Tightening torque: 10 Nm (7.5 ftlb.)

Checking the adjustment: Clamp a sheet of paper between the door window and door seal. It must not be possible to pull out the sheet of paper.

Adjusting the lower stop of the power window unit

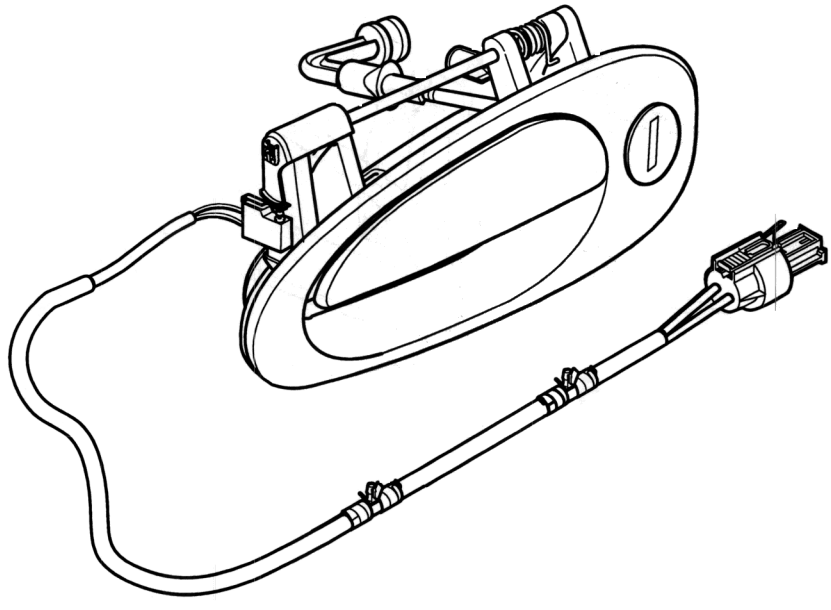


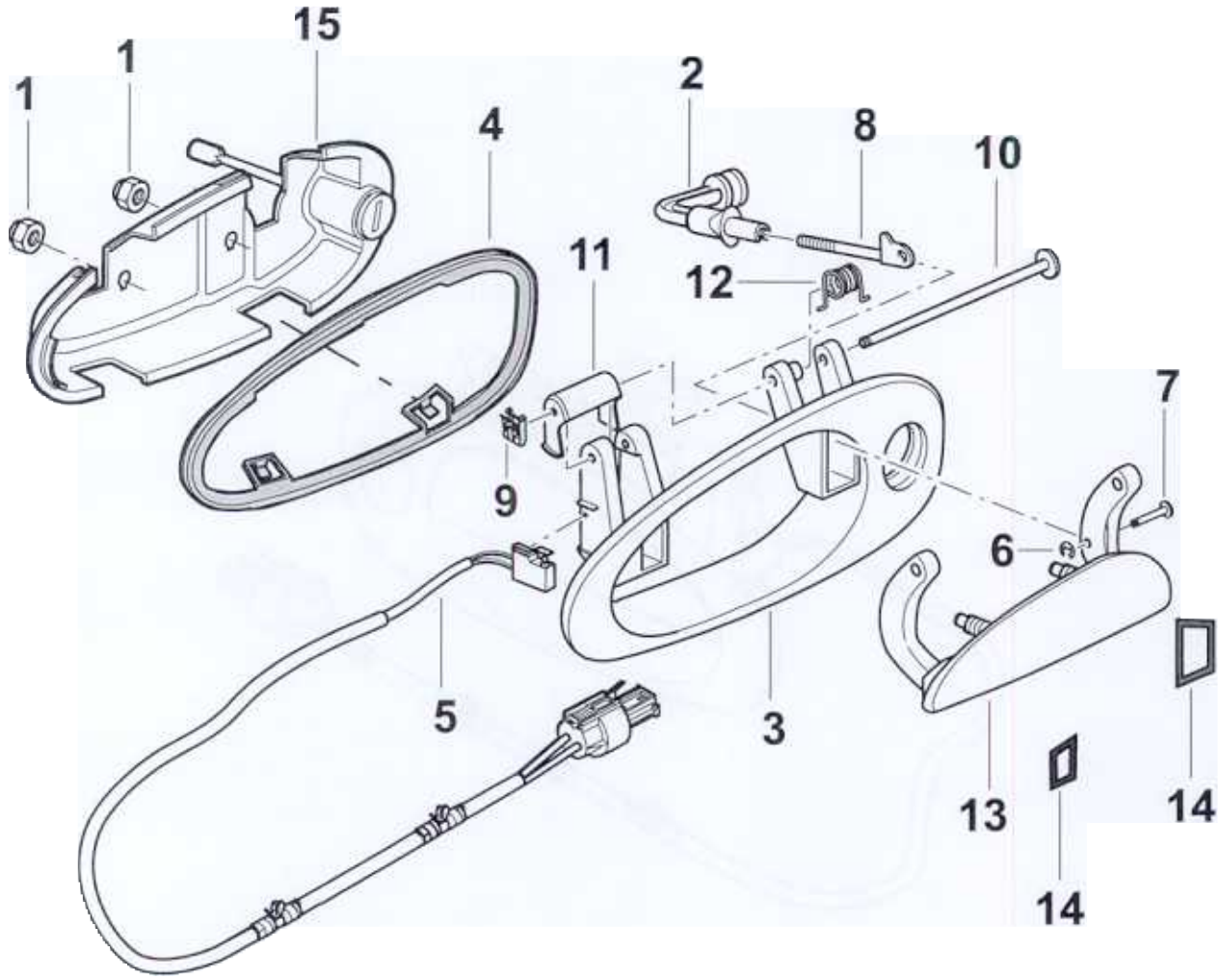
570_1_97

When replacing the power window unit, make sure that the correct position of the lower limit stop is selected for the respective model.

There are two bores lying one above the other with the screwed-on limit stops in the front power window unit rail.
The upper limit stop must be removed for the 911 Carrera (996) model.

Disassembling and assembling door handle





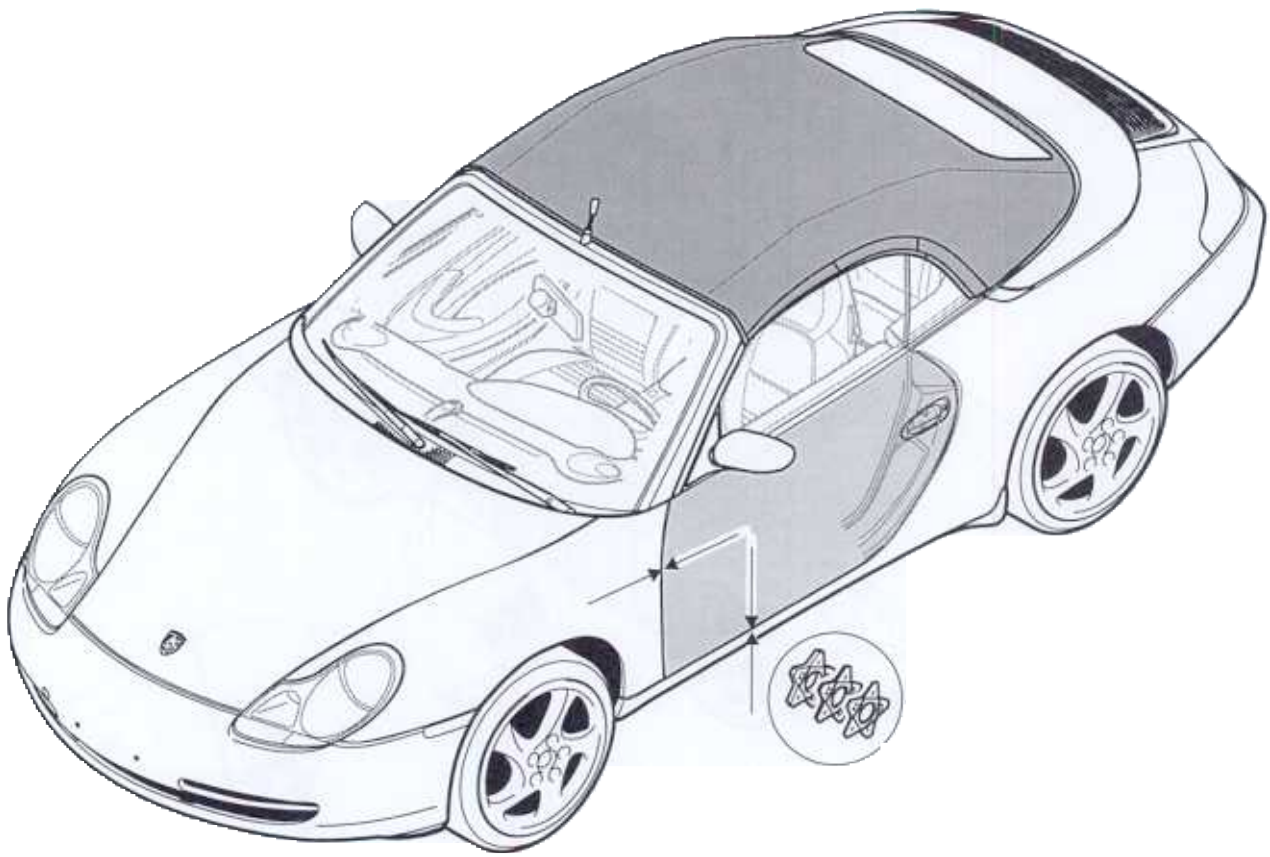
Caution!

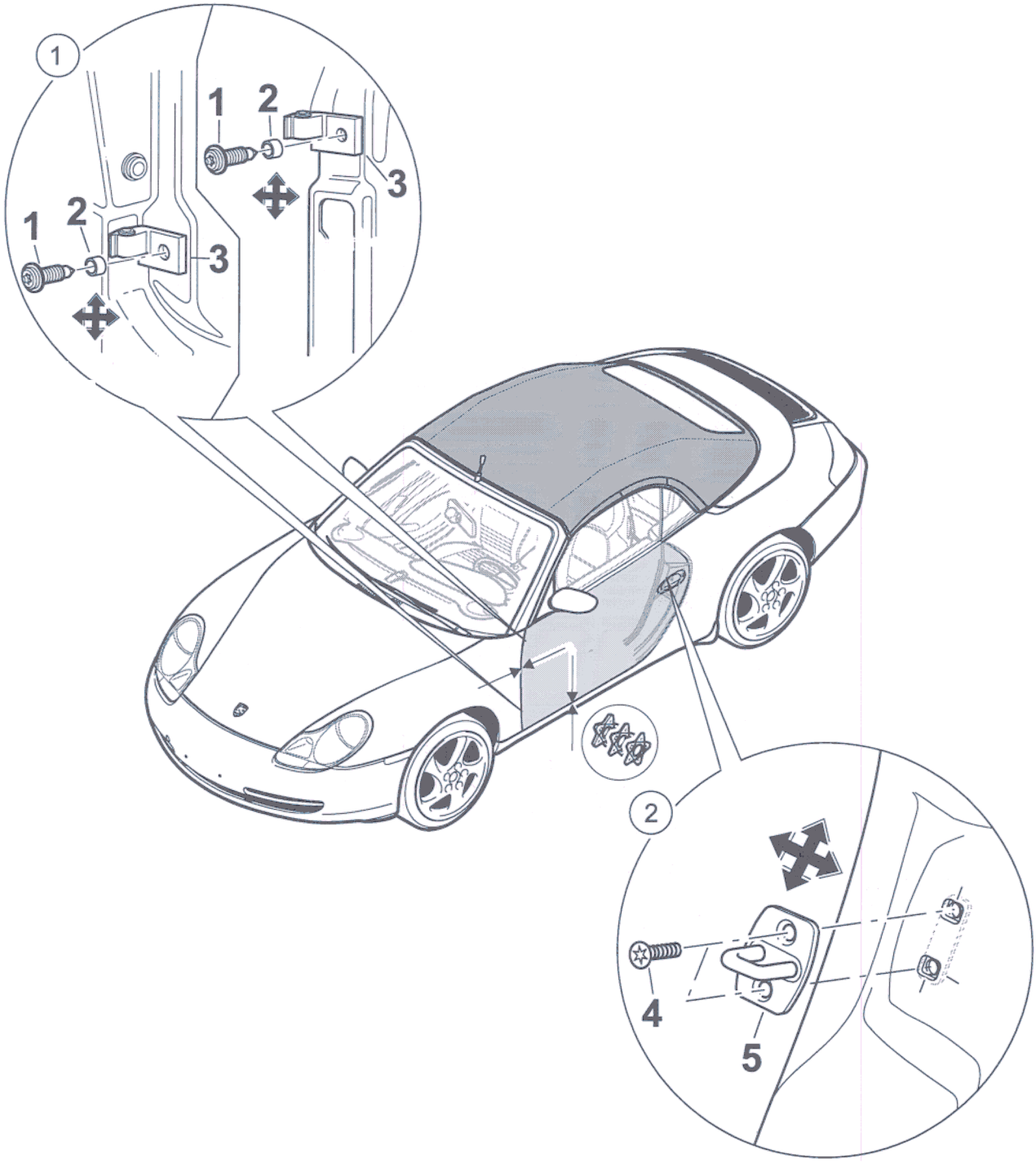
There is a danger of injury if fingers or hands are trapped by the door window when the comfort function is triggered: lower and raise door window!

- ***When carrying out assembly work in the area of the connection piece, the bottom part of the door handle and the door lock, the fuse No. 1 in row D must be removed!***

No.	Designation	Qty.	Removal	Installation
	M6 collar nut		Undo.	
2	Connection piece		Shift sliding piece of the connection piece and unclip actuating shaft **-8-**.	
3	Handle liner	1	Pull out handle liner downward at an angle.	
4	Base	1	Unclip.	Clip in.
5	Microswitch	1	Unclip.	Clip in.
6	Circlip	1	Press out.	Press in.
7	Pin	1		
8	Actuating shaft	1	Pull pin **-7-** out of the handle **-13-** and remove actuating shaft.	Position actuating shaft on the handle **-No. 13-**. Insert pin **-7-** and secure pin with the circlip **-6-**.
9	S retainer	1		
10	Pin rod	1		Replace.
11	Eccentric	1		
12	Return spring	1		
13	Handle	1	Pull pin rod **-10-** out of the handle liner **-3-** and separate handle from the handle liner.	Position return spring **-12-**, eccentric **-11-** and handle on the handle liner **-3-**, insert the pin rod **-10-** and secure retainer **-9-**.
14	Buffer	2	Pull off.	Replace.
15	Door handle bottom part	1		

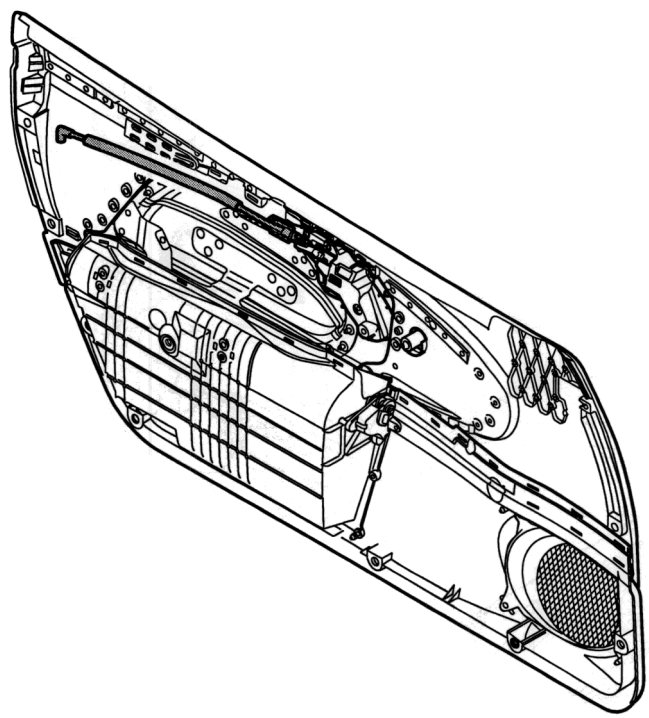
Setting the door

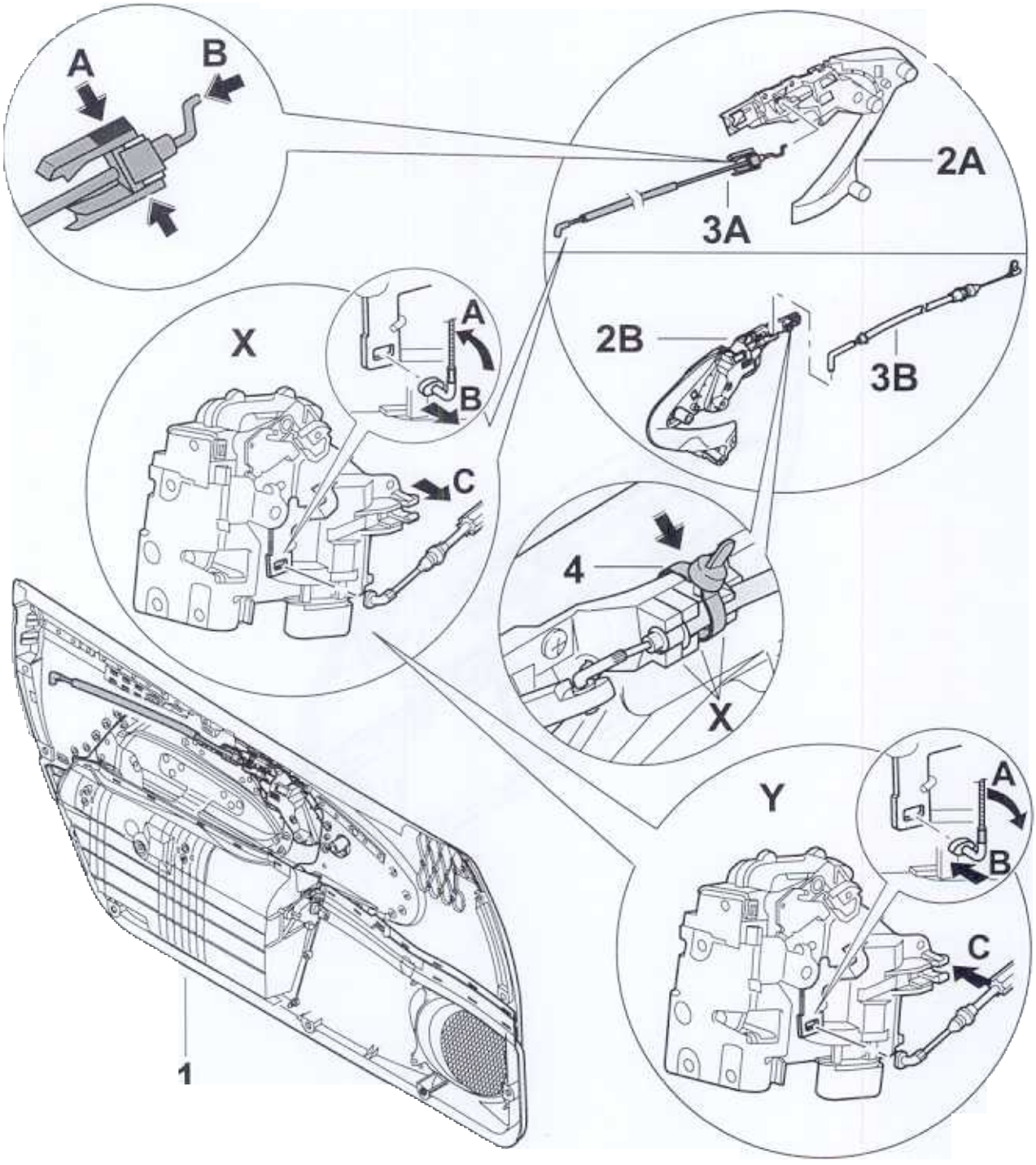




No.	Procedure	Instructions
		Undo fastening screw **-1-**. Set the contour in relation to the wing and the side member by shifting the angle pieces **-3-** in their vertical and horizontal positions. ⇒ Rep. Gr. 5; Body gap dimensions The setting range can be extended by removing the centring sleeve **-2-**. Tightening torque: 23 Nm (17 ftlb.)
2	Setting the door at rear	Undo fastening screw **-4-**. Set the contour in relation to the rear wing and the side member by shifting the latch striker **-5-** in its vertical and horizontal position. ⇒ Rep. Gr. 5; Body gap dimensions Tightening torque: 23 Nm (17 ftlb.)

Removing and installing inner door release (bowden cable) for door lock





Caution!

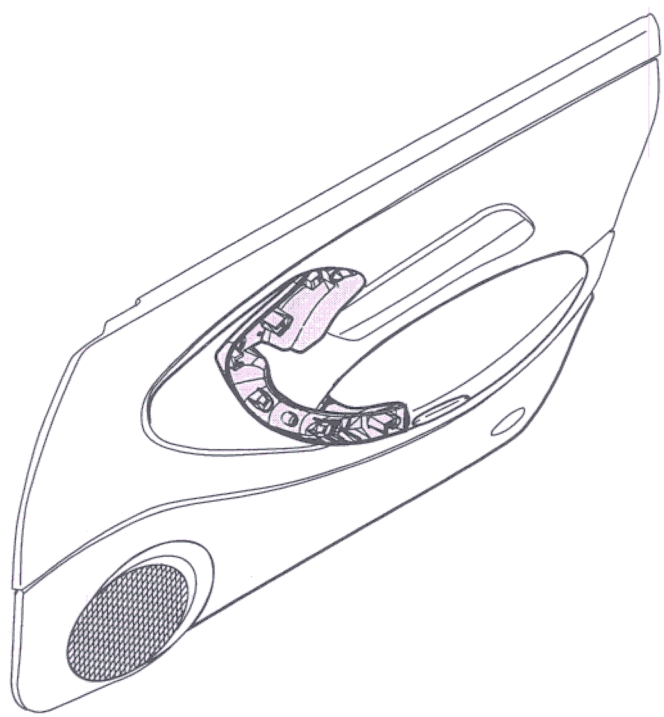
Damage to the bowden cable when removing door trim panel!

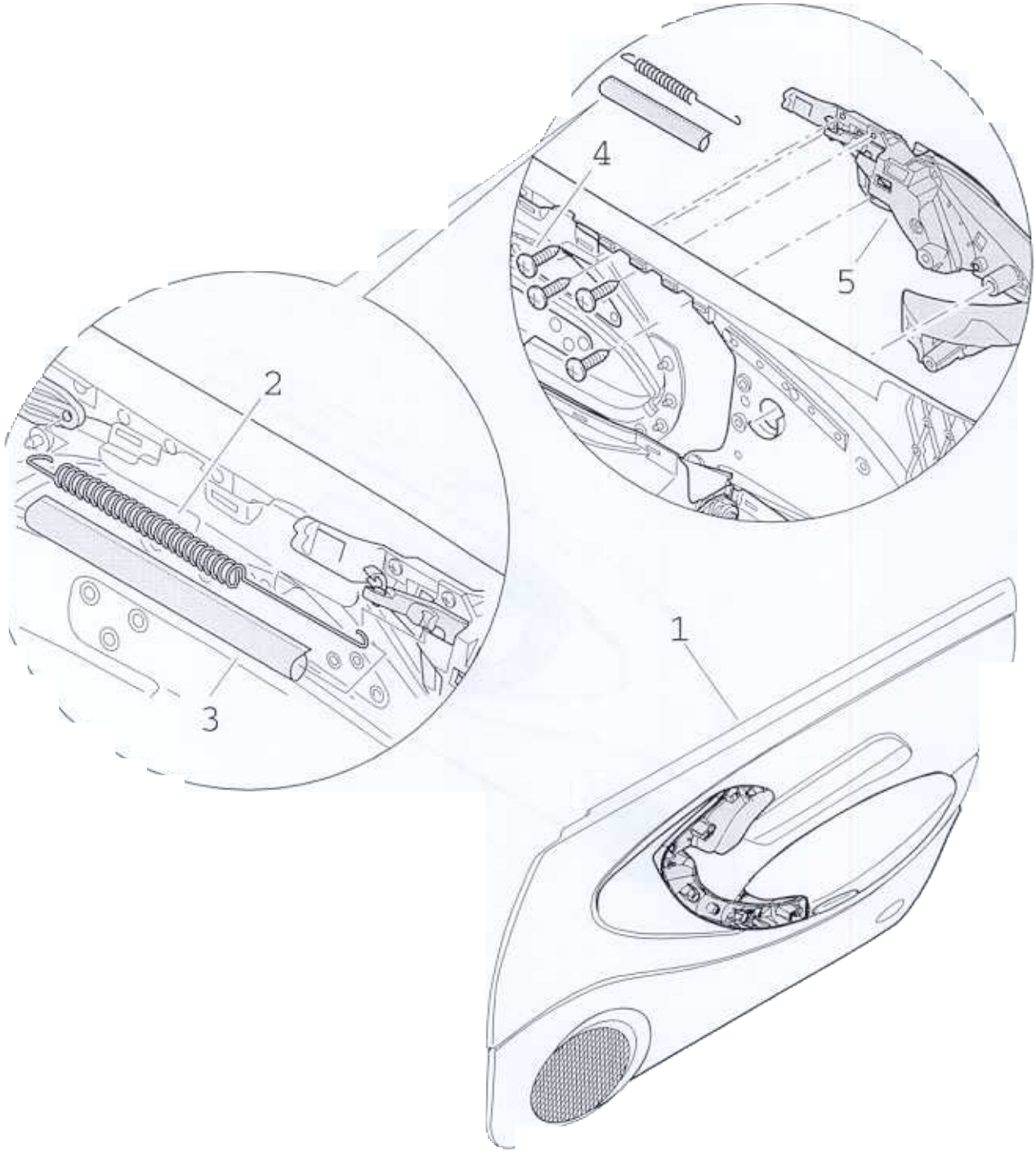
Damage by bending the bowden cable at the hook!

- ***Pull the hook out of the end piece only after installation in the inner door release!***

No.	Designation	Qty.	Removal	Installation
1	Door trim panel	1	⇒ Rep. Gr. 705919; Removing and installing door trim panel	
2A	Door handle	1	⇒ **57-27** "Removing and installing door handle"	Parts of variant A can be only be installed together.
2B	Door handle	1	⇒ **57-27** "Removing and installing door handle"	Parts of variant B can be only be installed together.
3A	Bowden cable Bowden cable variant A from Vehicle Identification Numbers 99 ZXS 60 0958 RoW 99 ZXS 64 0513 RoW 99 9XS 62 3890 USA 99 1XS 65 2308 USA	1	Door handle side: Press the lugs of the plastic clip **-A-** and extend to the rear. Push bowden cable back into the end piece of the sleeve **-B-**. Lock side: **-Inset X-** Unclip bowden cable from the door lock **-C-**. Swivel bowden cable by 90° **-A-** and pull it out of the actuating lever **-B-**.	Door handle side: Insert bowden cable in the door handle **-2-**. Pull the hook out of the end piece of the sleeve only after installation in the door handle. Lock side: **-Inset Y-** Insert the bowden cable in the actuating lever **-B-** and rotate by 90° **-A-**. Clip bowden cable into the door lock **-C-**.
3B	Bowden cable	1	Door handle side: Cut tie-wrap **-4-**. Lock side: **-Inset X-** Unclip the bowden cable from the door lock **-C-**. Swivel bowden cable by 90° **-A-** and pull it out of the actuating lever **-B-**.	Door handle side: Insert bowden cable in the door handle **-2A-**. The bowden cable always must be set free of play. There are 3 possible positions at the door handle **-X-** in order to set the bowden cable free of play. Lock side: **-Inset Y-**Insert bowden cable in the actuating lever **-B-** and rotate by 90° **-A-**. Clip bowden cable into the door lock **-C-**.

Removing and installing door handle

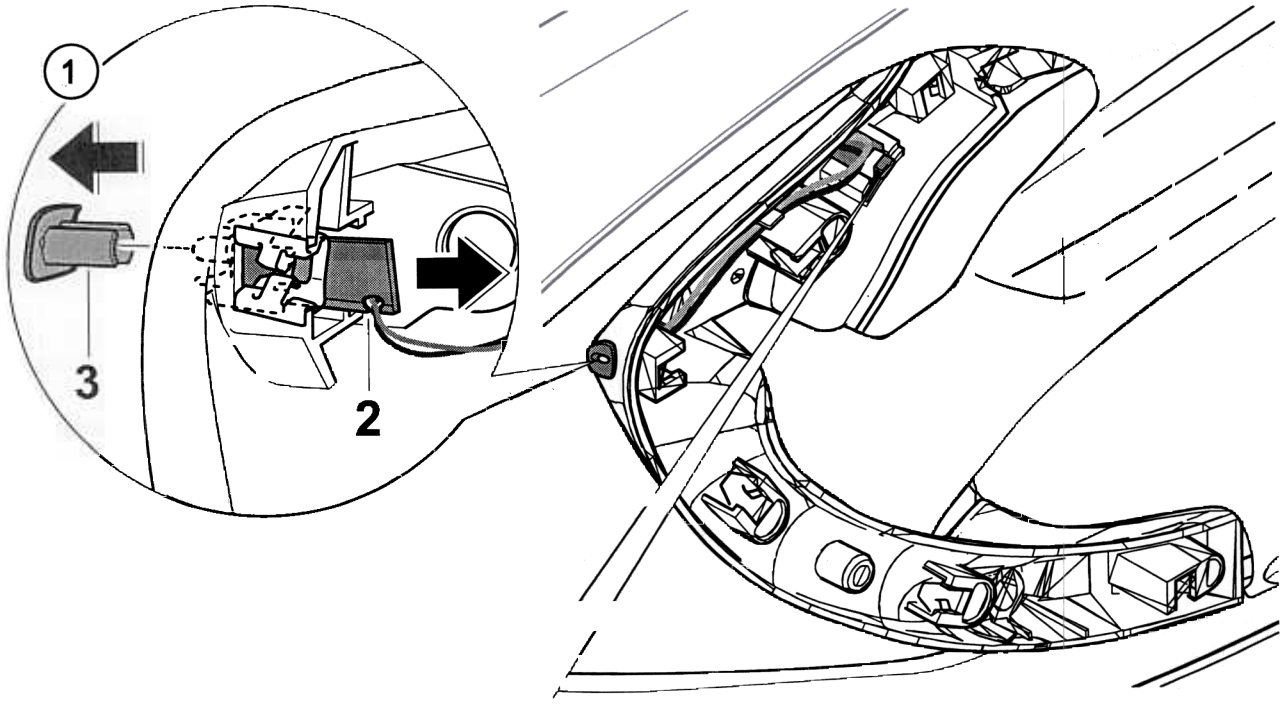


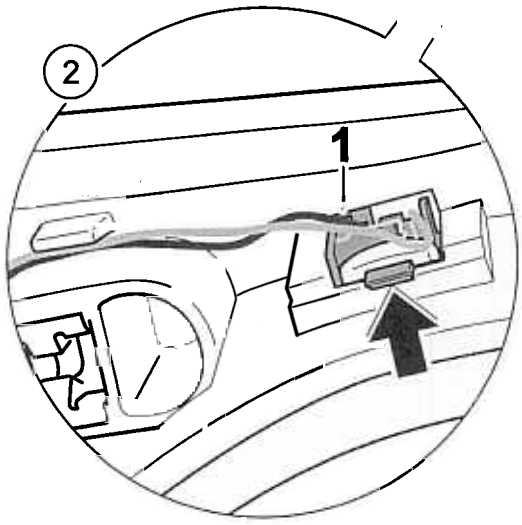


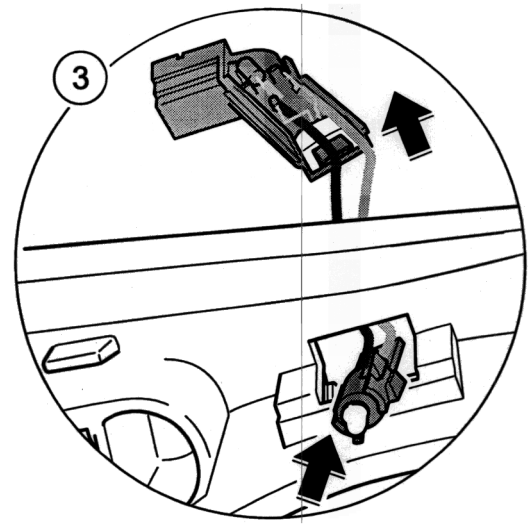
No.	Designation	Qty.	Removal	Installation
	Door trim panel		⇒ Rep. Gr. 705919; Removing and installing door trim panel	
2	Return spring **-2-**	1	Unclip from the door handle **-5-** and the door trim panel **-1-**.	Clip into the door handle **-5-** and the door trim panel **-1-**.
3	Sleeve	1	Pull off from the return spring **-2-**.	Put onto the return spring **-2-**.
4	Oval-head screw 4.2 x 13	4		
5	Door handle **-5-**	1	Undo oval-head screws **-4-** and pull the door handle out of the door trim panel **-1-**.	Insert door handle **-5-** into the door trim panel **-1-** from the rear and position it. Screw tight with the oval-head screws **-4-**.

Removing and installing orientation lighting (LED light-emitting diodes)

Removing orientation lighting (LED light-emitting diodes)

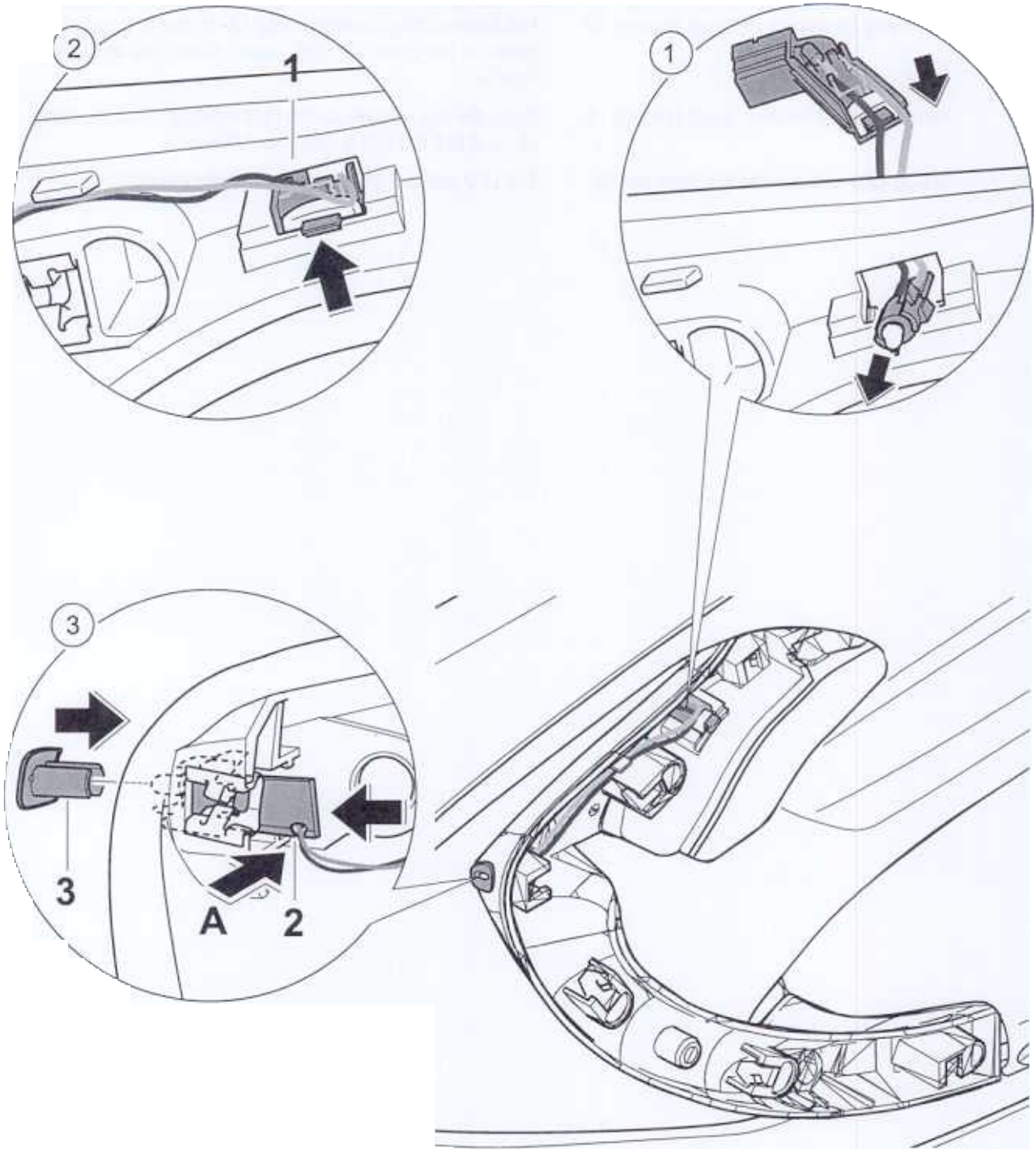






No.	Procedure	Instructions
1	Removing light-emitting diode housing **-2-**	Pull light-emitting diode housing **-2-** to the rear out of the locks on the cover **-3-**. Pull cover at front out of the door handle.
2	Removing light-emitting diode housing **-1-**	Raise the lug **-arrow-** of the light-emitting diode housing **-1-** and pull it out in a downward direction.
3	Pulling LED unit out into the door handle	Pull LED unit out of the door handle to the rear.

Installing orientation lighting (LED light-emitting diodes)



No.	Procedure	Instructions
	Inserting LED unit into the door handle	Insert LED unit into the door handle from the rear.
2	Installing light-emitting diode housing **-1-**	Insert the light-emitting diode housing **-1-** into the guide of the door handle until the lug **-arrow-** engages.
3	Installing light-emitting diode housing **-2-**	Position the light-emitting diode housing **-2-** into the door handle. The cable **-arrow A-** must point downwards. Push cover **-3-** into the door handle from the front until there is no more play on the lock of the light-emitting diode housing.