
Repair Manual

911 Carrera 4
(993)

Volume IV:
Chassis

IV Chassis

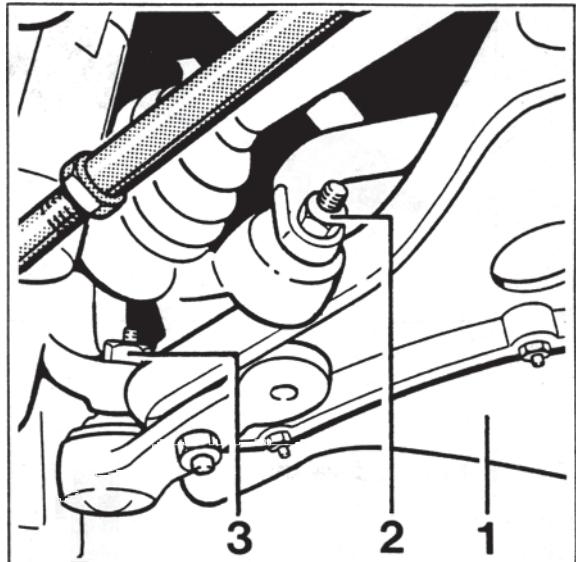
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40 41 19 Removing and installing front drive shaft

Includes: checking drive shaft runout (constant velocity joint runout) in the case of drive shafts without centering. In the case of drive shafts with centering (see pages 40-105 and 40-106), it is not necessary to check the runout

Removal

1. Before lifting the vehicle, loosen connection of drive shaft to wheel.
When doing so, also apply the brakes.
2. Remove front wheel and underside panel.
3. Disconnect brake cooling duct from control arm (1).
Disconnect stabilizer mount from stabilizer (2).
Loosen joint carrier (ball joint) from wheel carrier (3). When loosening the fastening nut, hold Torx screwdriver (special tool 9546) **against bolt**.
Press off ball joint with puller (ball joint extractor) - special tool 9560.



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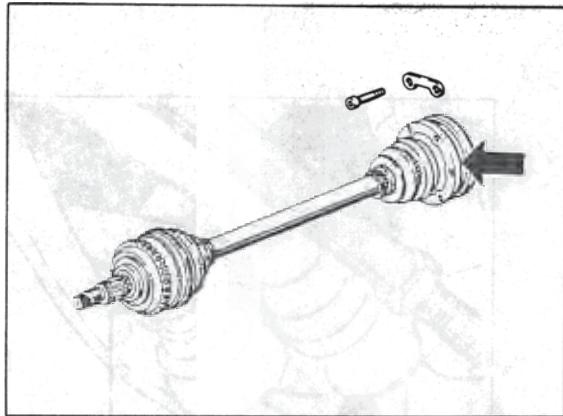
4. Unscrew pan head screws of drive shaft from transmission flange.
Take note of drawing on following page.

Note

The CV joint may fall apart if the dust cover holder (arrow) is removed or damaged. The joint must therefore be protected against falling apart by 2 8 mm bolts and nuts during removal, installation and shipment.

Note

To prevent damage to rubber sleeve of ball joint, apply tire mounting paste to sleeve and extractor in area concerned. Then insert the extractor from the front.



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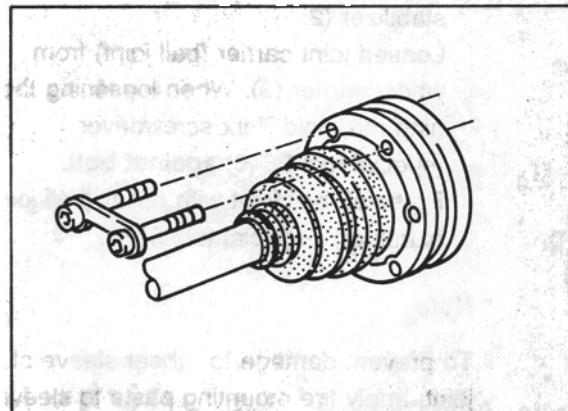
5. Pull out drive shaft.

Note

As considerable force is needed to move the drive shaft in the teeth of the wheel hub, loosen the drive shaft using a copper drift. With unfavorable tolerances, it may be necessary to push the drive shaft out of the hub using a wheel hub puller (e.g. a Klann or Schrem tool)

Installation

1. Grease the drive shaft teeth with Optimoly HT.
2. Insert pan head screws with washers in joint flange.
Insert drive shaft and install pan head screws.
Caution: before the pan head screws on the halfshaft flange are finally tightened, the **runout of drive shafts without centering must be checked (page 40-103).**
In the case of drive shafts with centering (see pages 40-105 and 40-106), checking of the runout (item 3 on page 40-103) is not necessary.



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3. Proceed as follows to check runout of drive shaft.

Attach dial gauge with holder (e.g. VW 387) to side member.

Apply dial gauge to CV joint between the two steel covers, next to the die-stamped part no.

Before making the measurement, remove any dirt or tectyl residue.

- Measure runout (turn wheel hub and read value off gauge).

If the runout measured is **more than 0.2 mm**, loosen the screws slightly and center the joint.

When the runout is acceptable (**0.2 mm maximum**), tighten the pan head screws to 42 Nm, (31 ftlb)..

4. Mount joint carrier (ball joint) on wheel carrier. The ball joint cone and the wheel carrier must be free from grease.

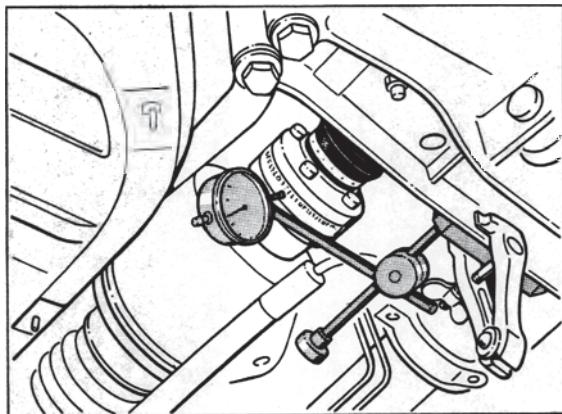
Replace fastening nut (new part).

When tightening fastening nut, hold special tool 9546 (Torx screwdriver) against bolt.

5. Assemble brake ventilation duct and stabilizer mount, using new fastening nuts.

6. **Tighten all screws and bolts to specified torque.**

Install wheel and underside panel.

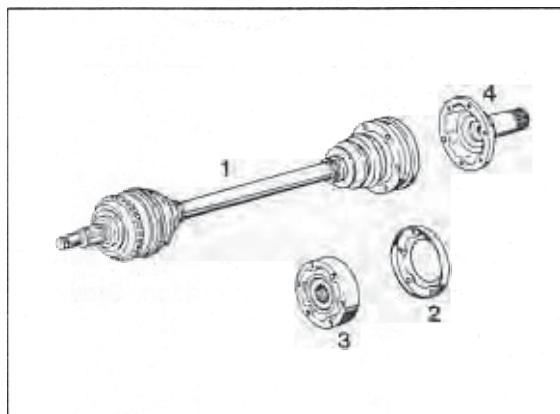


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Front drive shafts with centering

Since June 9, 1995, four-wheel-drive vehicles (911 Carrera 4 and 911 Turbo) have been fitted with drive shafts (no. 1) which are centered in the halfshaft flange (no. 4) of the front axle final drive unit by their caps (no. 2).

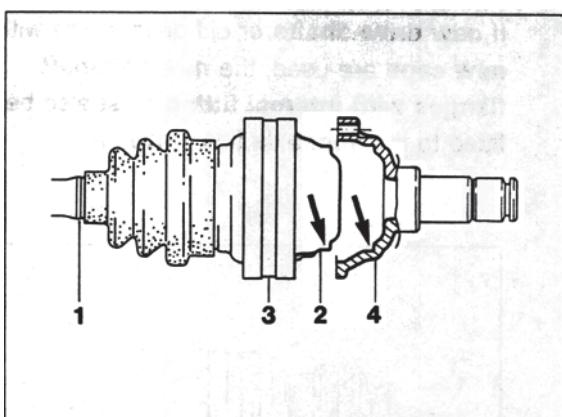
It is therefore no longer necessary to check runout when installing drive shafts. Precise introduction dates (and vehicle ident. nos.) are given in Technical Information, Group 4, No. 3/95.



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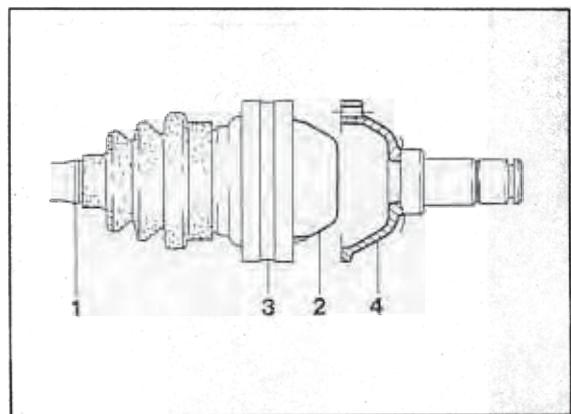
Centering is by means of the cap (2) on the drive shaft (1) and the halfshaft flange (4), which is designed to fit the cap, on the final drive unit.

New (with centering - arrows)



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Old (without centering)



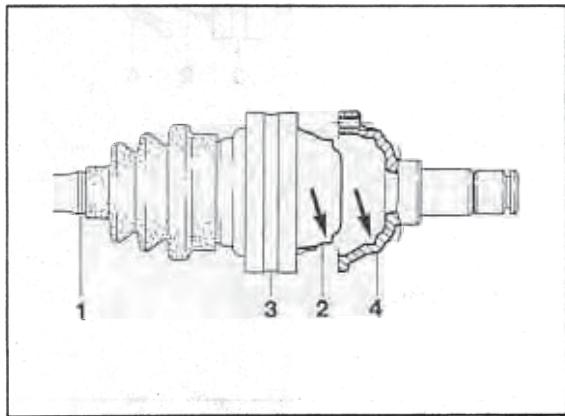
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For repairs where spare parts are needed and where the customer has complained of vibrations at 180 to 200 kph, only parts (drive shafts or caps and halfshaft flanges) with centering (arrows) must be used.

With these parts, the runout checks on the drive shafts described on page 40-103 are no longer required.

The **old** drive shafts without centering may be converted to centering by fitting the **new cap**.

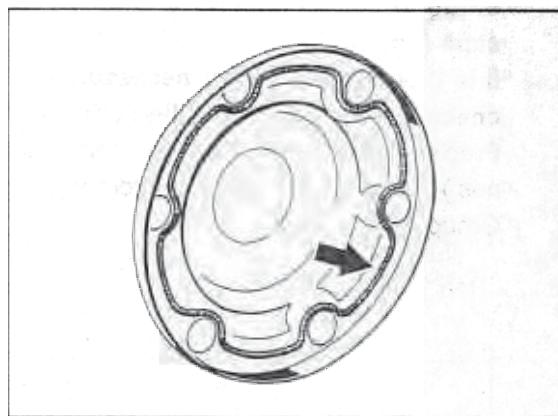
If **new drive shafts** or old drive shafts with **new caps** are used, the **new halfshaft flanges with internal fitting** must also be fitted to the front axle final drive unit.



2275-42

Caution: When installing the cap, the sealing surface against the joint must be **sealed** using sealing gel (000.043.203.47) (arrow).

Important note: The sealing gel must also be used on the caps of the rear axle drive shafts.



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Further information (allocation / part nos.) is given in Technical Information, Group 4, No. 3 / 95.

Technical data

Designation	Observations, dimensions		Wear limit 911 Carrera 4
	911 Carrera 4		
Operating brakes (foot brake)		Hydraulic dual-circuit brake system with front axle/rear axle circuit division. Hydraulic brake booster, internally vented and drilled brake discs with four-piston fixed calipers on front and rear axles. ABS / ABD fitted as standard.	
Brake booster		Hydraulic	
Boost factor		4.8	
Brake master cylinder	front dia. rear dia. stroke	25.4 mm 25.4 mm 17/15 mm	
Proportioning valve			
Switchover pressure reducing factor		45 bar - 0.46	
Brake disc diameter	front rear	304 mm 299 mm	
Effective brake disc diameter	front rear	251 mm 246 mm	
Piston diameter in caliper	front rear	2 x 44 + 2 x 36 mm 2 x 30 + 2 x 28 mm	
Brake pad area	front rear	250 cm ² 172 cm ²	
Total brake pad area		422 cm ²	
Pad thickness	front rear	approx. 11.0 mm approx. 12.0 mm	2 mm 2 mm

Designation	Observations, dimensions		Wear limit 911 Carrera 4
	911 Carrera 4		
Thickness of new brake disc			
front	32 mm		
rear	24 mm		
Minimum brake disc thickness * after machining			
front	30.6 mm		30.0 mm
rear	22.6 mm		22.0 mm
Thickness tolerance of brake disc, max.	0.02 mm (new condition 0.01 mm)		
Lateral runout of brake disc, max.	0.05 mm		
Lateral runout of wheel hub, max.	0.04 mm		
Lateral runout of brake disc when fitted, max.	0.09 mm		
Surface roughness of brake disc after machining, max.	0.006 mm		
Pushrod play (measured at brake pedal plate)	approx. 8 mm		
 Parking brakes (handbrake)	 Drum brake, acting mechanically on both rear wheels		
Parking brake drum diameter	180 mm		181 mm
Brake shoe width	25 mm		
Brake lining thickness	4.5 mm		2 mm

* The brake disc must only be machined symmetrically, i.e. by an identical amount on both sides.

46 Technical data Carrera 4S (Turbo-Look)

Designation	Observations, dimensions		Wear limit
Operating brakes (foot brake)	Hydraulic dual-circuit brake system with front axle/rear axle circuit division. Hydraulic brake booster, internally vented and drilled brake discs with four-piston fixed calipers on front and rear axles. ABS / ABD* fitted as standard.		
Brake booster	Hydraulic		
Boost factor	4.8		
Brake master cylinder	front dia. rear dia. stroke	25.4 mm 25.4 mm 17/15 mm	
Proportioning valve (2 units)			
Switchover pressure reducing factor		40 bar - 0.46	
Brake disc diameter	front rear	322 mm 322 mm	
Effective brake disc diameter	front rear	259.6 mm 268.4 mm	
Piston diameter in caliper	front rear	2 x 44 + 2 x 36 mm 2 x 30 + 2 x 28 mm	
Brake pad area	front rear	302 cm ² 250 cm ²	
Total brake pad area		552 cm ²	
Pad thickness	front rear	approx. 11.0 mm approx. 11.0 mm	2 mm 2 mm

* ABD = automatic brake differential

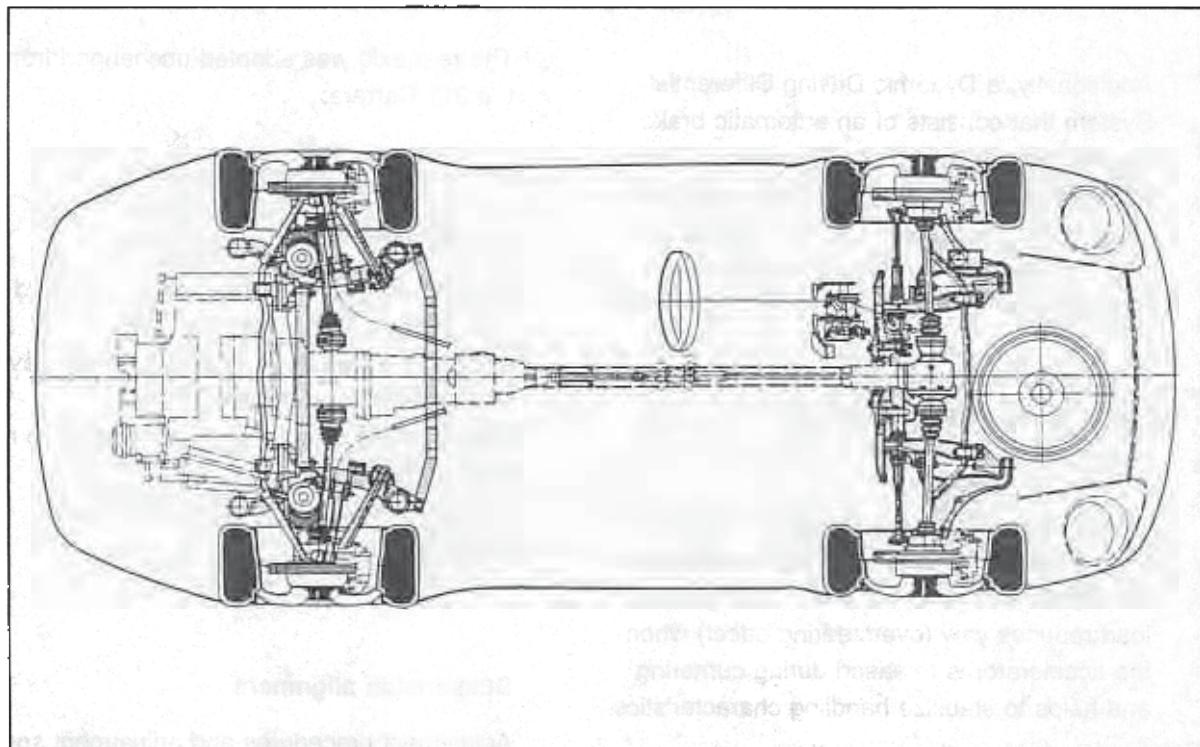
Designation	Observations, dimensions	Wear limit
Thickness of new brake disc front	32 mm	
rear	28 mm	
Minimum brake disc thickness * after machining front	30.6 mm	30.0 mm
rear	26.6 mm	26.0 mm
Thickness tolerance of brake disc, max.	0.02 mm (new condition 0.01 mm)	
Lateral runout of brake disc, max.	0.05 mm	
Lateral runout of wheel hub, max.	0.04 mm	
Lateral runout of brake disc when fitted, max.	0.09 mm	
Surface roughness of brake disc after machining, max.	0.006 mm	
Pushrod play (measured at brake pedal plate)	approx. 8 mm	
Parking brakes (handbrake)		
	Drum brake, acting mechanically on both rear wheels	
Parking brake drum diameter	180 mm	181 mm
Brake shoe width	25 mm	
Brake lining thickness	4.5 mm	2 mm

The brake disc must only be machined symmetrically, i.e. by an identical amount on both sides.

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Running gear overview of 911 Carrera 4

Just like the 911 Carrera (rear-wheel drive 993), the 911 Carrera 4 (four wheel drive 993) is offered with a variety of running gear versions (standard running gear / sports-type running gear M 030 for Coupé only / lowered running gear M 033). Components and running gear tuning of the 911 Carrera (993) and 911 Carrera 4 (993) differ only slightly from each other.



Four-wheel drive (General)

The 911 Carrera 4 is fitted with a permanent four-wheel drive system with **variable** power distribution to the front and rear wheels.

Power is distributed to the wheels across a viscous multi-disc clutch to reflect the wheel speed difference of the front and rear wheels. This ensures that the front wheels are given only enough drive torque to ensure optimum propulsion even under adverse road conditions.

The front wheels are driven by the viscous multi-disc clutch and a central shaft to the front-axle final drive.

The viscous multi-disc clutch is housed in the front transmission housing of the six-speed manual transmission. The design of the six-speed manual transmission is based on the 911 Carrera (993) version.

Additionally, a Dynamic Driving Differential System that consists of an automatic brake operation feature (ABD) and a load-dependent (mechanical) transverse lock differential provides improved traction and driving stability. The limited-slip differential provides different locking values for acceleration and under load:

Locking value during acceleration 25%

Locking value under load 40%

The lower locking value during acceleration considerably improves cornering characteristics. An increased locking value for driving under load reduces yaw (oversteering effect) when the accelerator is released during cornering and helps to stabilize handling characteristics.

Note

For a detailed description, please refer to Service Information Technik '95. Order No. WKD 499 520 (2 = English).

The design of the front axle is identical to that of the 911 Carrera.

To provide sufficient space for the drive shafts, the stabilizer mount is now shaped as an angled drop forging.

Rear axle

The rear axle was adopted unchanged from the 911 Carrera.

Wheels, tires

The 911 Carrera 4 is supplied as standard with 16-inch or (optionally, M No.) with 17-inch wheels in "Cup 93" design (availability as per September, 1994). The "Carrera 4" script is embossed in the hubcaps. Tire pressures: same as on 911 Carrera (page 44 - 1).

Suspension alignment

Adjustment procedures and adjustment specifications of front and rear axles are the same as on the 911 Carrera (as of page 44 - 3).

Brakes - General information

The 911 Carrera 4 is fitted with a dual-circuit brake system (front/rear axle division) **with hydraulic brake booster**. ABS and the dynamic lock system (**consisting of ABD and limited-slip differential**) are supplied as standard.

Front brakes

Front axle

The front brakes were adopted from the 911 Carrera (drilled brake disc, four-piston light-alloy brake calipers).

The brake pad grade is the same as for the 911 Carrera (modified as of MY '95 / please refer to spare parts catalog). Both sides of the brake pads are monitored for wear by brake pad wear indicators.

The brake caliper is painted in a titanium color.

Rear wheel brakes

The rear brakes are fitted with the drilled brake disc adopted from the 911 Carrera. The four-piston light-alloy caliper is fitted with pistons with a diameter of 28 mm and 30 mm (911 Carrera diams. are 30 mm and 34 mm, respectively).

The brake pad grade is the same as on the 911 Carrera (modified as of MY '95 / please refer to spare parts catalog). Both sides of the brake pads are monitored for wear by brake pad wear indicators.

The brake caliper is painted in a titanium color.

Proportioning valve

Two proportioning valves (for left and right-hand side brakes) are fitted to reduce the braking pressure at the rear axle and to adapt the braking pressure to the wheel load distribution.

Switchover pressure: 45 bar

Reducing factor 0.46

(Identification: 5 ↓ 45).

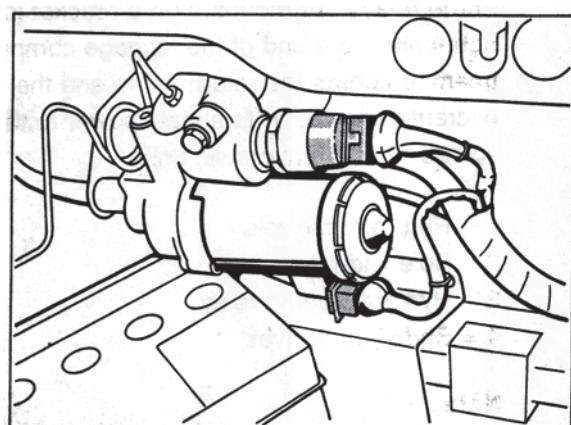
Brake boost / hydraulic pump

The electro-hydraulic brake booster system known from the 911 Carrera 4 (Model Year '89) is used to provide a brake boost effect. To optimize the system, a modified **hydraulic pump** is fitted.

This pump may also be retrofitted to the 911 Carrera 4 as of Model Year '89.

Note

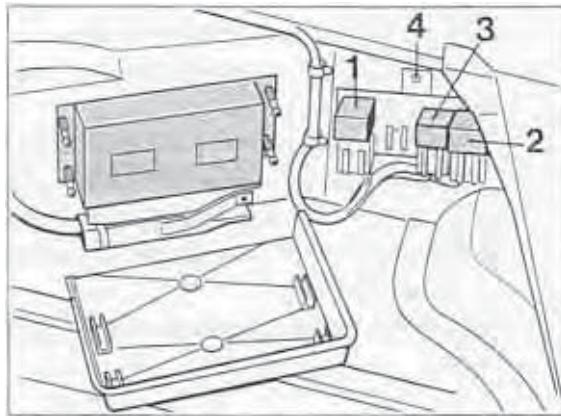
The hydraulic pump relay is no longer located in the Central Electrical System (as in the case of the 911 Carrera 4 as of Model Year '89) but rather in the right-hand front end of the luggage compartment (refer to the below paragraph on relays).



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ABS / ABD hydraulic unit

The 911 Carrera 4 is fitted with the optimized ABS/ABD hydraulic unit that had already been fitted to 911 Carrera vehicles with ABS/ABD system in March 1994 (refer to Technical Information 3/94 of May 27, 1994). The ABS/ABD control unit (993.618.127.00) was adapted to the modified hydraulic unit and the four-wheel drive system. This control unit is also used on the 911 Carrera (rear-wheel drive) with ABD - as of MY '95. To help identification, a sticker with a **red outline** is attached to the control unit.



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Relays

Three relays are mounted on a bracket in the right-hand front end of the luggage compartment to control the return pump and the hydraulic pump and to supply power to the solenoids in the hydraulic unit.

- 1 = Return pump relay
- 2 = Solenoid relay
- 3 = Hydraulic pump relay
- 4 = Body-bound rivet

Note

To remove the cover from the relay bracket, push out the pin in the body-bound rivet and remove the complete bracket assembly. The pin may be retrieved from behind the bracket plate by applying compressed air.

Steering system

The steering system was retained from the 911 Carrera without any changes.

4 Notes on repair descriptions

General information

The 911 Carrera (rear-wheel drive 993) forms the basis of the description of repair, assembly and adjustment operations.

This means that the "911 Carrera 4" Repair Manual (filed after the separation sheet) covers **only operations that affect the 911 Carrera 4.**

Notes on tightening torques

Most tightening torques of the 911 Carrera and 911 Carrera 4 are identical.

Differing or additional tightening torques are included in the tables in the corresponding repair groups of the 911 Carrera (rear-wheel drive 993).

Notes on suspension alignment (Repair Group 44)

The adjustment operations and specifications for front and rear axles are the same as for the 911 Carrera (rear-wheel drive 993).

Notes on brake boosting (Repair Group 47)

The hydraulic brake booster system is also described in the manuals on the 911 Carrera (rear-wheel drive 993).

4 Checks / Notes on four-wheel drive

Balancing the wheels on the vehicle

All four wheels must be off the ground and able to spin freely when the wheels are precision balanced on the vehicle.

Performance tests

Performance tests must only be run on 4-roller dynamometers with rpm coupling. When running tests on 2-roller dynamometers, interrupt the connection between front and rear axle at the central shaft.

Brake tests

Brake tests must only be run on roller dynamometers or plate dynamometers.

If no four-wheel drive brake dynamometer (roller dynamometer) is available, make sure the below limits are not exceeded on conventional roller dynamometers:

Test speed	5 mph
Test duration	20 seconds

Towing

If the vehicle has to be towed with the front or rear axle off the ground, the wheels of the raised axle must be able to rotate freely.

Repair Manual

911 Carrera
(993)

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Preface

Structure

The "Technical Literature" for the "911 Carrera (993)" model is basically structured as before, i.e. the structure follows the familiar repair groups.

A new feature is that the structure includes the main groups **0 to 9** and the main group **D**.

Main groups:	0	Complete vehicle – General
	1	Engine
	2	Fuel, exhaust, engine electrical system
	3	Transmission
	4	Chassis
	5	Body
	6	Body equipment, outside
	7	Body equipment, interior
	8	Air conditioning
	9	Electrical system
	D	Diagnosis

Layout

The layout in the below items remains unchanged throughout the repair manual

1. Table of tightening torques
2. Special tools required
3. Exploded views
4. Legends for the exploded views
5. Assembly notes / use of special tools

As a new feature, however, the former item 6 (Repair group diagnosis) is no longer filed in the volume corresponding to the respective repair group. The **Diagnosis test plans / diagnosis procedures** have been combined in a **separate Diagnosis volume** broken down according to the main groups 0 to 9.

Another new feature is that the contents of the "Service Information Technik" are indicated in the Repair Manual. This brochure concentrates on a description of the design and function of components and of the new features introduced for a particular model year.

Service Number

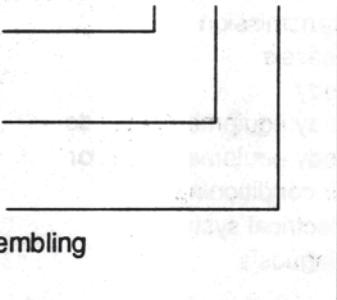
All major repair procedures and repair descriptions are identified by a two- or four-digit **Service Number** completed by two additional digits to identify the work that corresponds to the first six digits of the working position number in the Working Times and Damage Catalog.

Example: 30 37 37 Dismantling and assembling clutch control shaft

Explanation: 30 37 37 50 (full working position number)

Repair group

here: Clutch, control



Component designation

here: Clutch control shaft

Activity

here: Dismantling and assembling

Index

here: Removed

Presentation In the various documents

30 37 37 50	Working position no. from Working Times and Damage Catalog , consisting of repair group, component designation, activity and index
30 37 37	Six-digit number in Repair Manual , consisting of repair group, component designation and activity
30 37	Service number in Service Information , consisting of repair group and component designation

Goal

The introduction of a service number in the "technical literature" is intended to facilitate standardization and positive identification to allow direct cross-referencing among the various documents. This is of particular importance with regard to the use of electronic media.

Survey of contents of Service Information Technik '95

The Service Information gives a detailed description of the technical features of the new 911 Carrera.

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V Body

The Repair Manual for the 911 Carrera (993), Vol. 5, also includes the Repair Manual for the 911 Carrera 4 (993 4WD) and the 911 Targa (993). The 911 Carrera (993) forms the basis for the description of repair work in the Manual an "911 Carrera (993)" appears at the top of each page.

Where different or additional repair procedures apply to the 911 Carrera 4, these are given following the repair instructions for the 911 Carrera. The repair descriptions for the two models are separated by a title page. "911 Carrera 4" appears at the top of each page after the title page (divider). In addition, the page numbering starts with 100.

Where different or additional repair procedures apply to the 911 Carrera (993), these are given following the repair instructions for the 911 Carrera or 911 Carrera 4. The repair instructions for the 911 Targa (993) are separated by a title page. "911 Targa (993)" appears at the top of each page after the title page (divider). In addition, the page numbering starts with 200.

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Safety notes

Observe the following safety notes when performing body repairs:

Removal of components may change the gravity center of the vehicle.

The vehicle may therefore have to be tied down by additional measures on the lifting platform.

Do not store other vehicles without additional protection in rooms used for body repairs (risk of fire damage due to sparks, damage to battery, paint and body glass).

Be extremely careful when grinding or welding in the vicinity of the fuel tank and other parts of the fuel system. If necessary, remove all components affected.

Do not weld, braze or solder any parts of the filled air conditioning system. This also applies to welding, brazing or soldering operations on the vehicle that may cause components of the air conditioning system to heat up.

When drying the vehicle following a respray, do not expose the vehicle to temperatures of max. 80°C for more than 2 hours.

To protect **electronic control units** against **excessive voltage** when using **electric welding equipment**, observe the following safety measures:

Disconnect cable from negative battery terminal and cover negative battery terminal.

Connect ground clamp of electric welding equipment directly and as closely as possible to the component to be welded. Make sure no electrically insulated parts are located between the ground clamp and the welding location.

Do not touch electric control units and electric lines with the ground clamp or with the welding electrode.

Safety precautions for **operations involving naked flames or spark generation** (welding, grinding) in the vicinity of the **battery** or near the location of the **battery vent hose**:

Remove battery and store it in a safe place.

Blow through vent hose using compressed air. Plug hose ends.

(The vent hose is routed into the left-hand wheel housing via an elbow fitting at the front above the battery)

Handling of electronic control units after accident repairs

Replacement of electronic components after an accident is required if at least one of the following conditions is present :

The housing is visibly deformed or damaged.

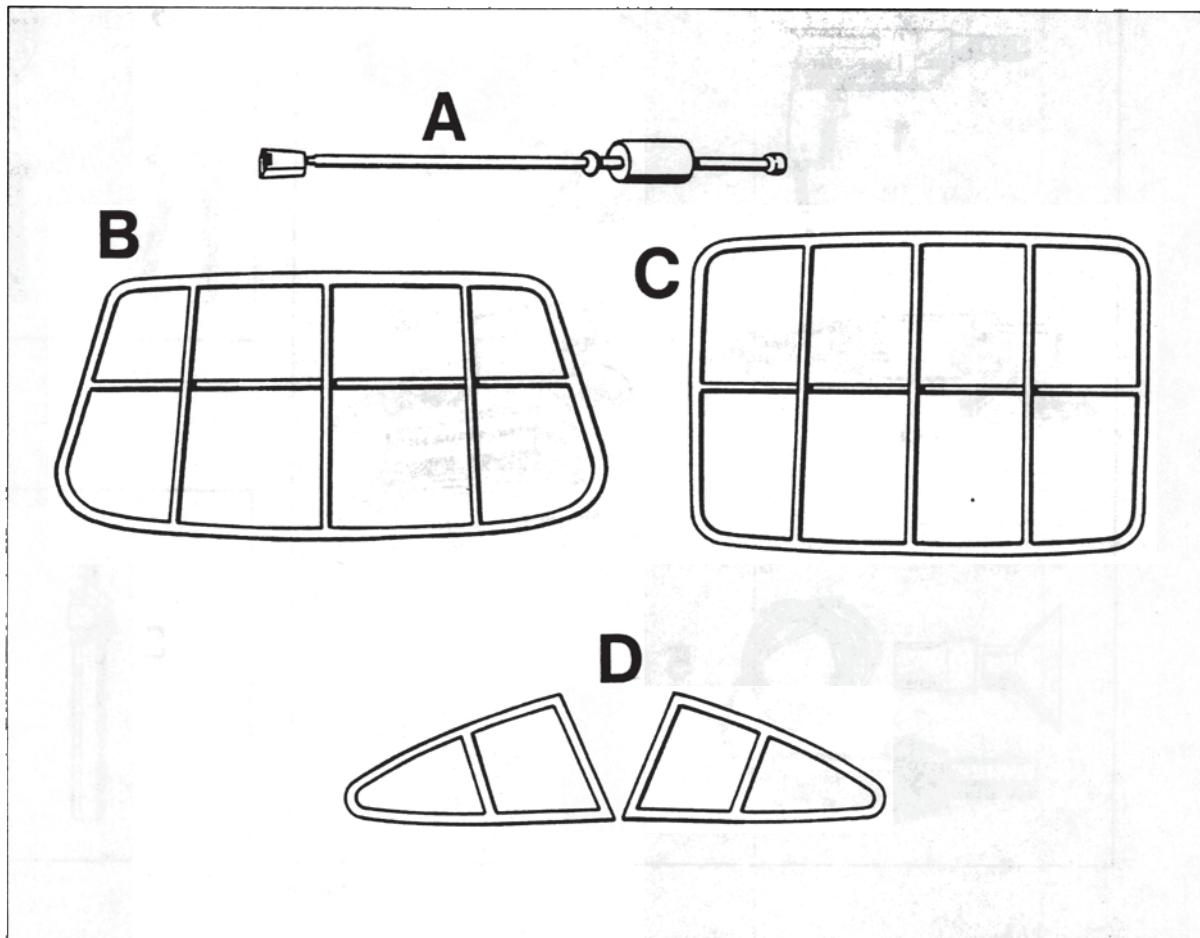
The support surface or console is deformed (no outward signs of damage to the unit).

The plug connection is damaged or corroded due to moisture.

The functional check or self-diagnosis of the unit displays the following fault:

"Control unit faulty".

If electronic components, e.g. the ABS control unit, have been removed when repairs are carried out and if they are to be reused afterwards, the operation of the components must be checked after reinstallation according to the respective specifications.

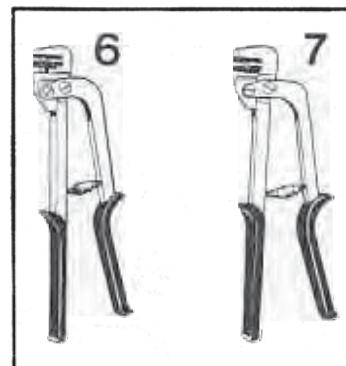
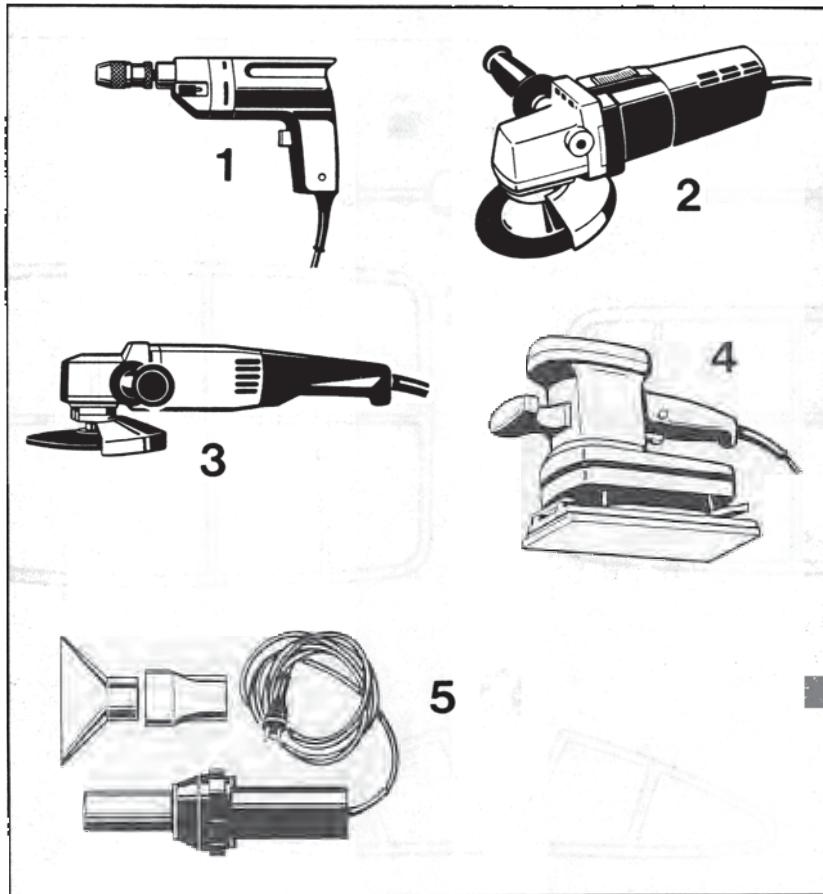
Special tools and sheetmetal tools for body repairs**Special tools:**

A = P 290 (Special Tool for removal and installation of door hinge pins)

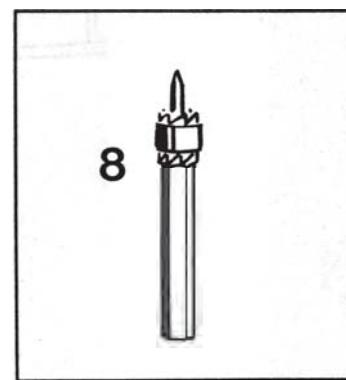
B = P 852 (Windshield gauge)

C = P 853 (Rear window gauge)

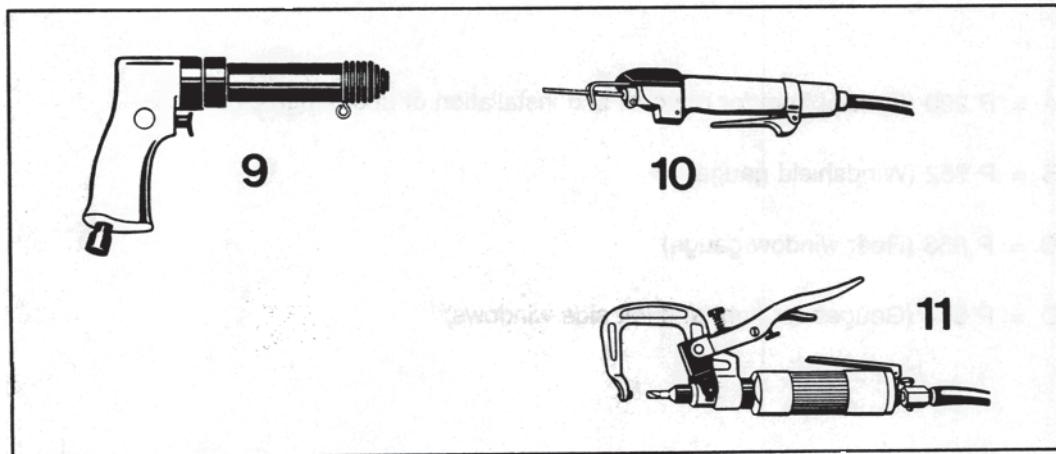
D = P 854 (Gauges for right and left side windows)

Sheetmetal tools (standard):

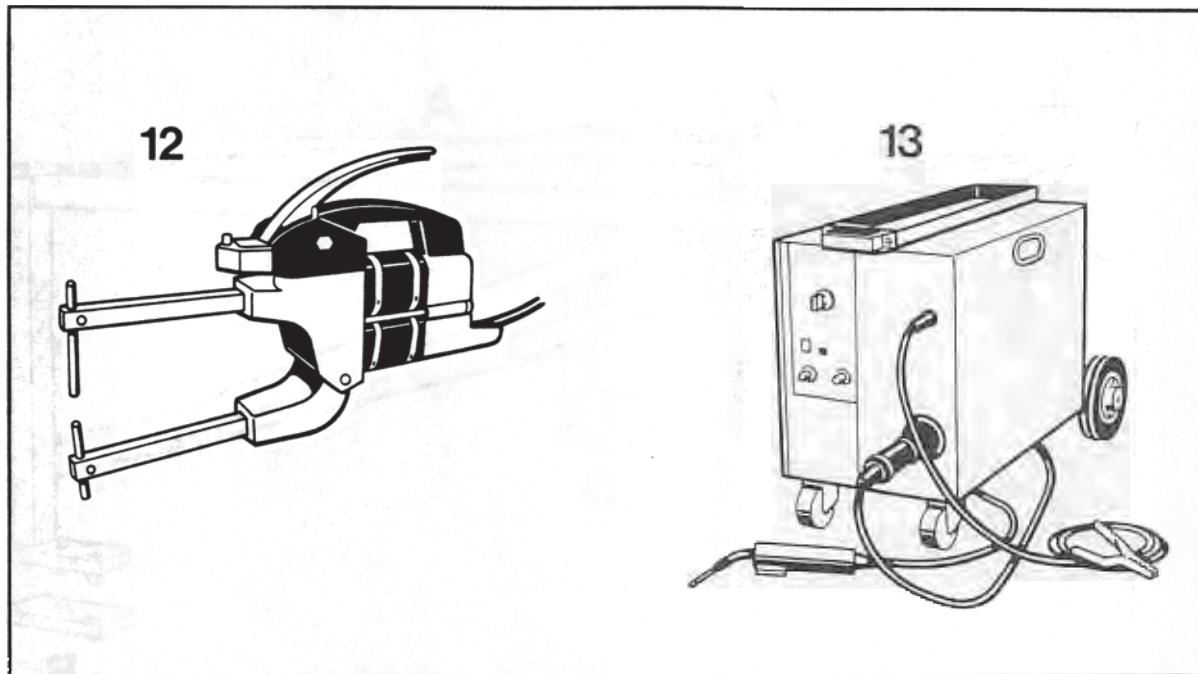
236 - 50



308 - 50



235 - 50

Sheetmetal tools (standard):**Electrical power tools:**

- 1 = Power drill
- 2 = Angle grinder, large
- 3 = Angle grinder, small
- 4 = Grinding tool
- 5 = Hot-air gun

Mechanical power tools:

- 6 = Hole cutter
- 7 = Edge setter

Accessories:

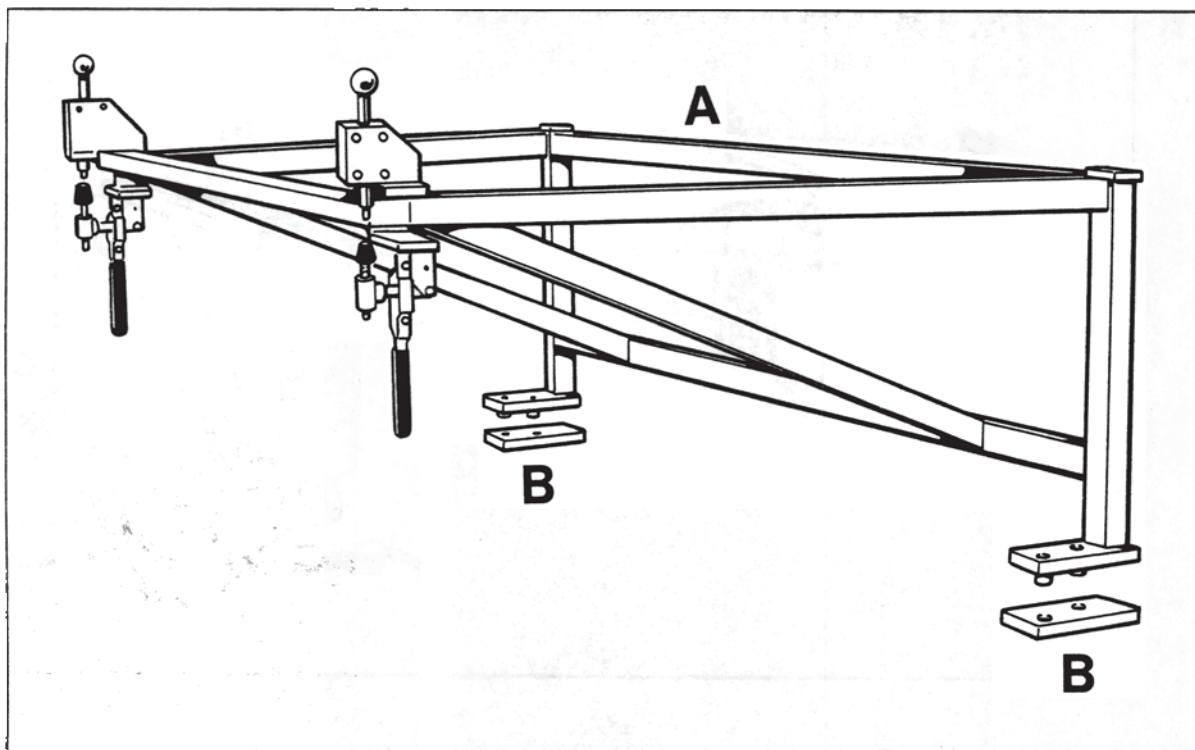
- 8 = Spotweld cutter (for power drill)

Air tools:

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

Welders:

- 12 = Spotwelder
- 13 = MIG welder

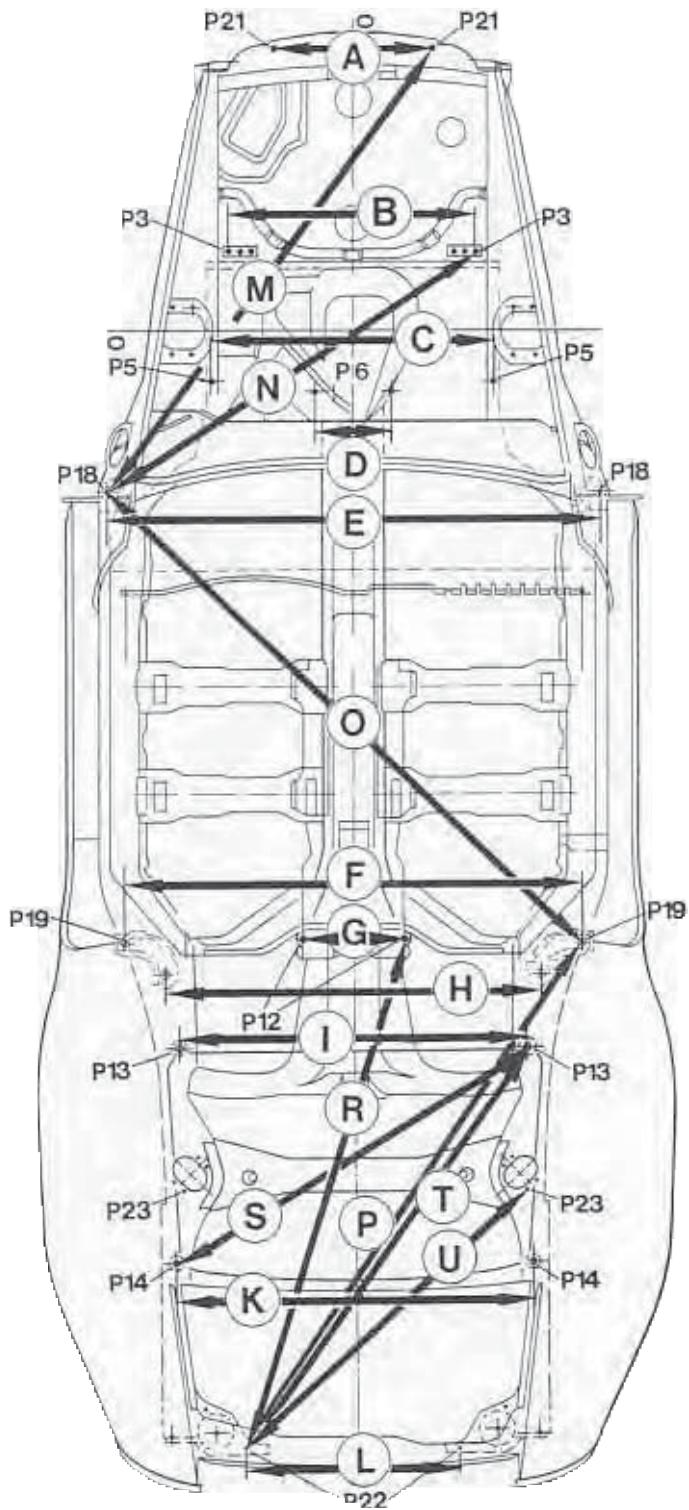
Special tools for repair work on Cabriolet

A = P 9212 (test gauge for convertible top mounting points)

B = P 9212/1 (adapter plates)*

* Adapter plates must be inserted between P 9212 and the convertible top mounts on the B-pillars.

Dimensions for floor assembly



Dimensions for floor assembly

Dim.	Point	Designation	mm
A	P 21	Bottom front closing section, take-up hole	440 ± 2
B	P 3	FA side member, bolt hole	670 ± 0,5
C	P 5	FA outer crossmember, bolt hole	770 ± 2
D	P 6	FA inner crossmember, bolt hole	204 ± 2
E	P 18	Platform/jacking point front, take-up hole	1330 ± 1
F	P 19	Jacking point rear, take-up hole	1236 ± 1
G	P 12	Transmission support, bolt hole	278 ± 1
H	P 20	Platform rear, take-up hole	1018 ± 1
I	P 13	Subframe, bolt hole	935 ± 1,5
K	P 14	Subframe rear, bolt hole	973 ± 1,5
L	P 22	Inner engine mount, take-up hole	640 ± 1
M	P 21 – P 18		1500 ± 3
N	P 3 – P 18		1199 ± 3 (1195 ± 3)
O	P 18 – P 19		1788 ± 3)
P	P 19 – P 22		1689 ± 3 (1654 ± 3)
R	P 12 – P 22		1447 ± 3 (1414 ± 3)
S	P 13 – P 14		1143 ± 3 (1122 ± 3)
T	P 13 – P 22		1372 ± 3 (1344 ± 3)
U	P 23 – P 22		1043 ± 3 (1039 ± 3)

Note

All dimensions are measured from and to the center of hole or bolt hole.

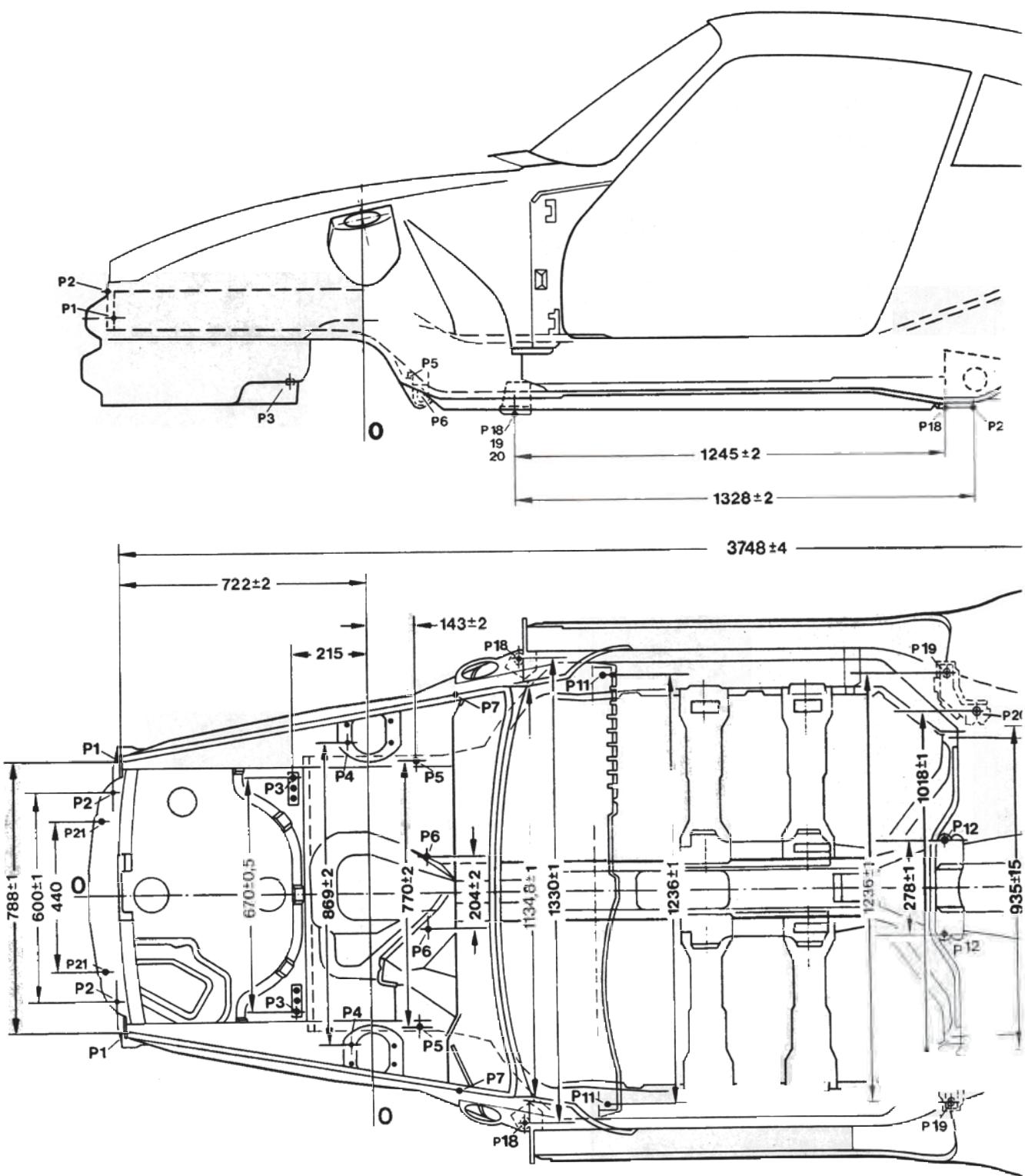
The dimensions are measured directly and are therefore oblique dimensions.

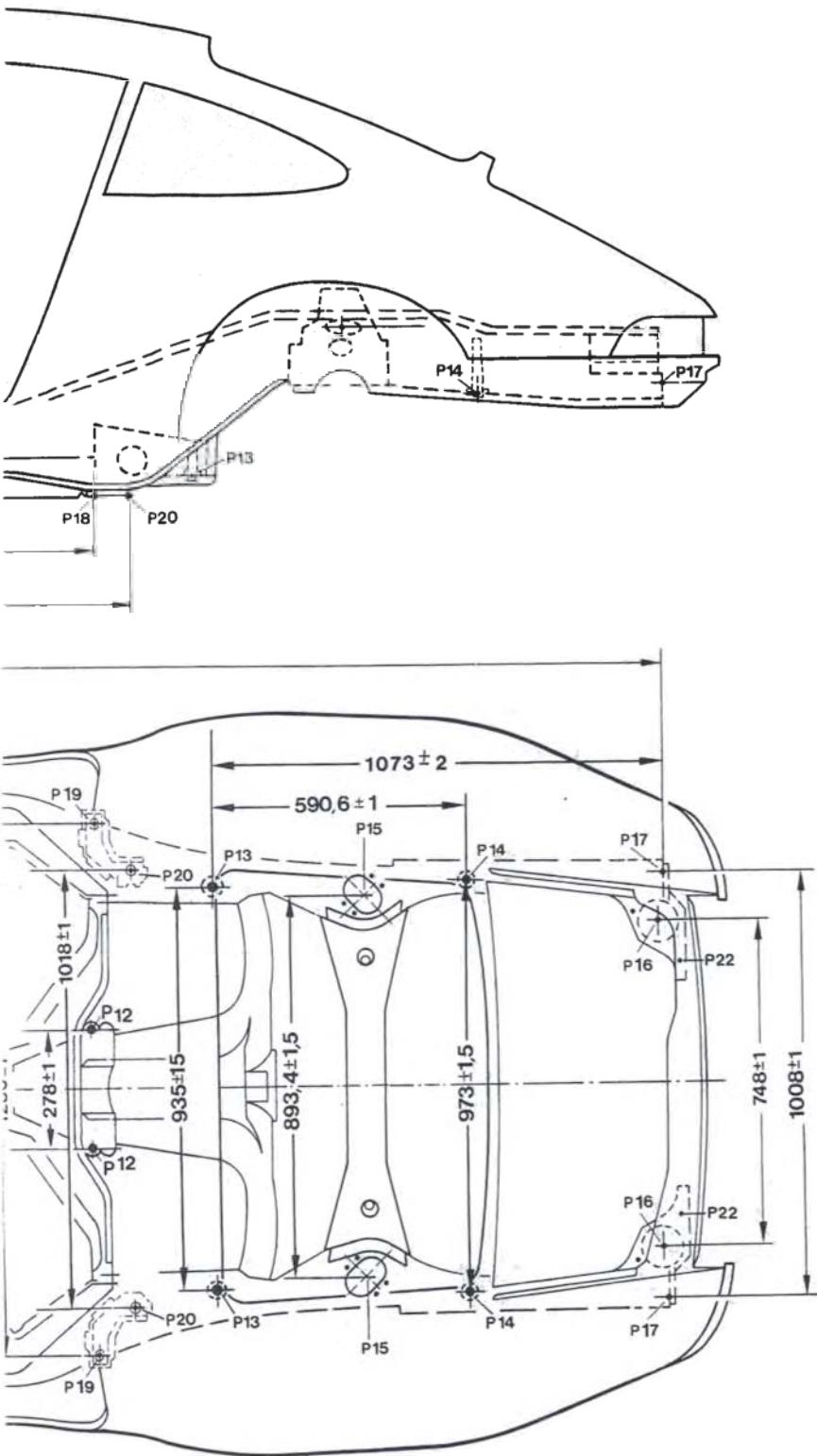
The dimensions in brackets are measured horizontally.

FA = Front axle

RA = Rear axle

Dimensions for body

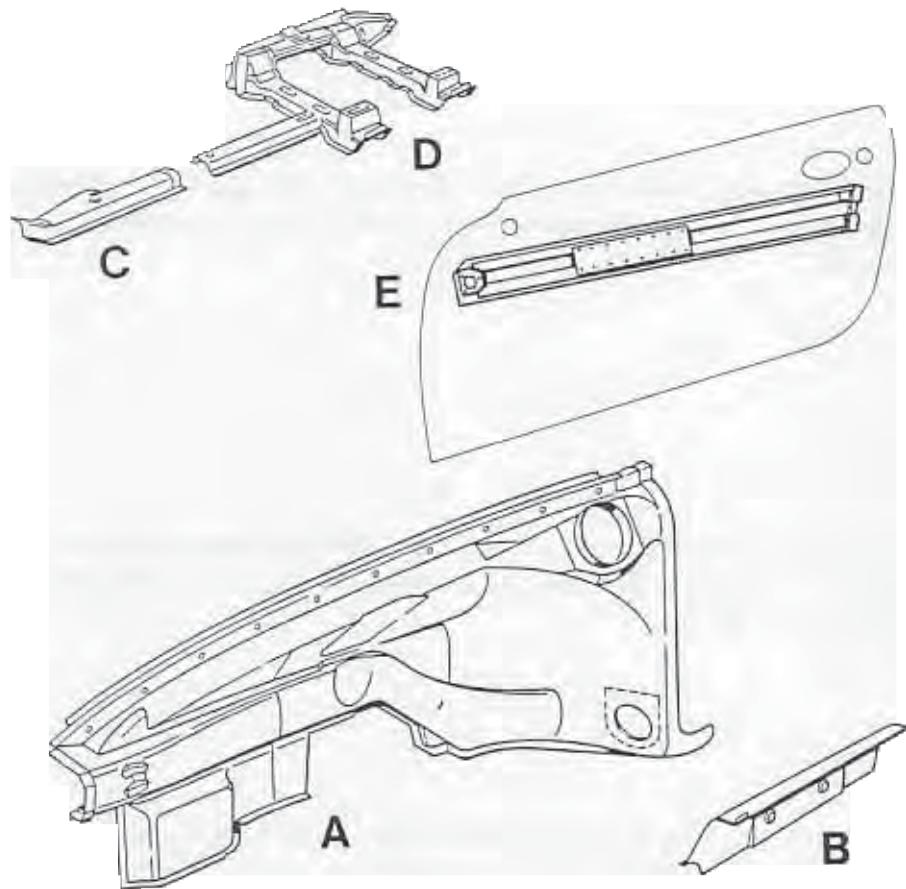




Point LH/RH	Designation
1	Impact absorber / pipe front, bolt hole (M 8 thread)
2	Front upper closing section, take-up hole
3	FA side member, bolt hole (12 x 1.5 thread)
4	FA strut mount, take-up hole
5	Outer FA crossmember, bolt hole (M 12 x 1.5 threads)
6	Inner FA crossmember, bolt hole (M 10 thread)
7	Wheel arch, take-up hole
11	Instrument panel, take-up hole
12	Transmission mount, bolt hole (M10 thread)
13	Subframe front, bolt hole (M 12 x 1.5 thread)
14	Subframe rear, bolt hole (M 12 x 1.5 thread)
15	RA strut mount, take-up hole
16	Engine mount, take-up hole
17	Impact absorber / pipe rear, bolt hole (M 8 thread)
18	Platform / jacking point front, take-up hole
19	Rear jacking point, take-up hole
20	Rear platform, take-up hole
21	Front bottom closing section, take-up hole
VA =	front axle
HA =	rear axle

5 Body parts of stronger sheet steel

The following body parts are made from stronger sheet steel!



A = Front wheel housing
B = Inner side member
C = Front floor section member

D = Seat base
E = Door side strip

General remarks on body parts of stronger sheet steel

Applicable to the 911 Carrera (993) types

Body parts of stronger sheet steel contribute to the strength of the passenger compartment and thus serve to protect the passengers. Furthermore, the fatigue strength is improved in addition to the crash safety.

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

Welding work

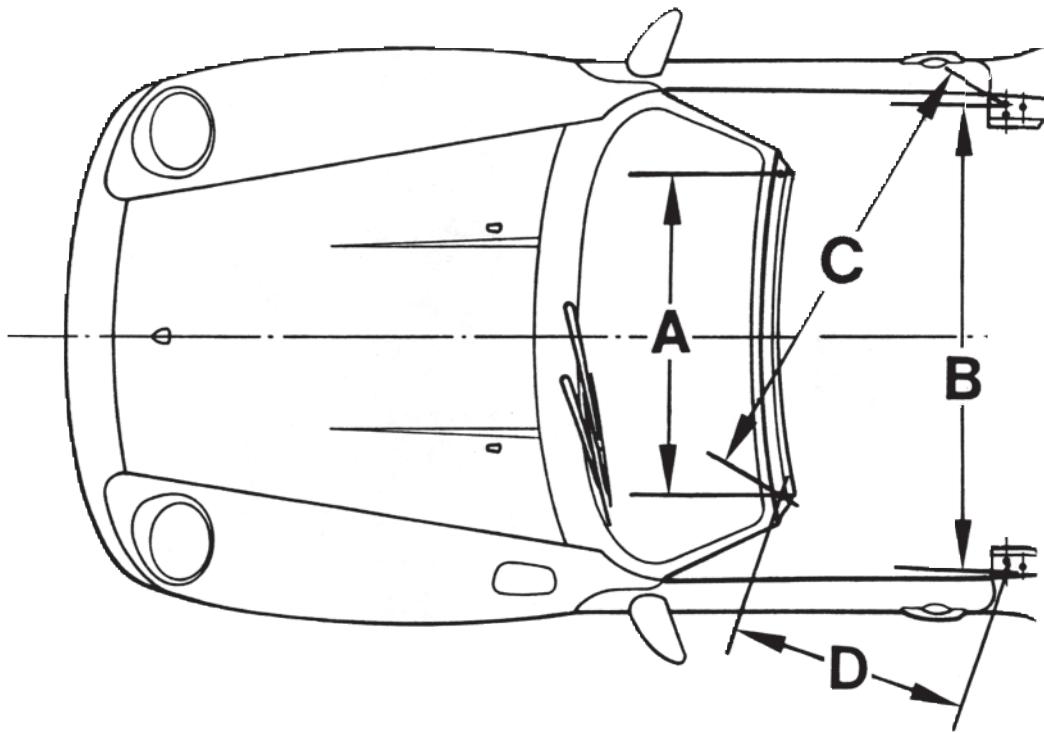
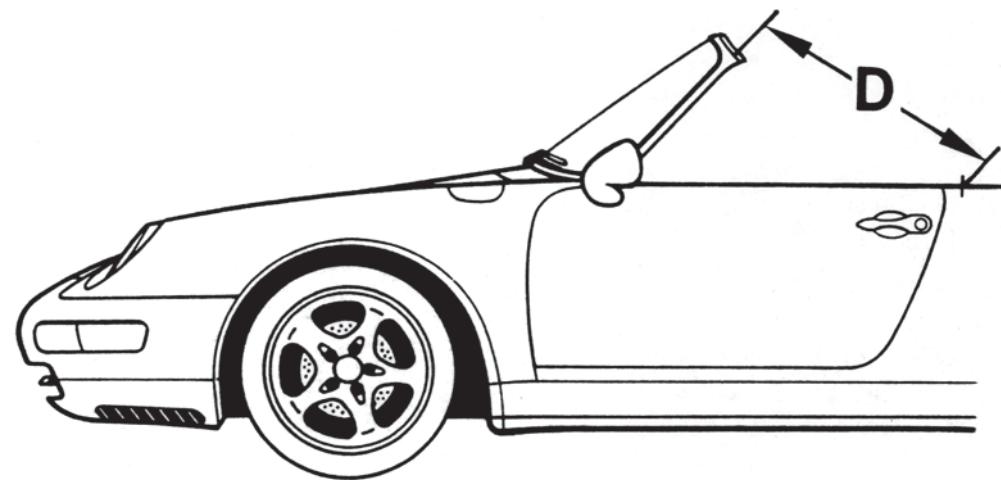
Body parts of stronger sheet steel can be welded using the MIG welding processes that are customary in workshops. The use of the oxyacetylene welding process is not permissible for body parts made from stronger sheet steel.

Repair note:

If significant deformation in this type of body panels has occurred, they cannot be brought back into shape by straightening. Body repairs therefore require fitting of new panels and/or sectional repairs.

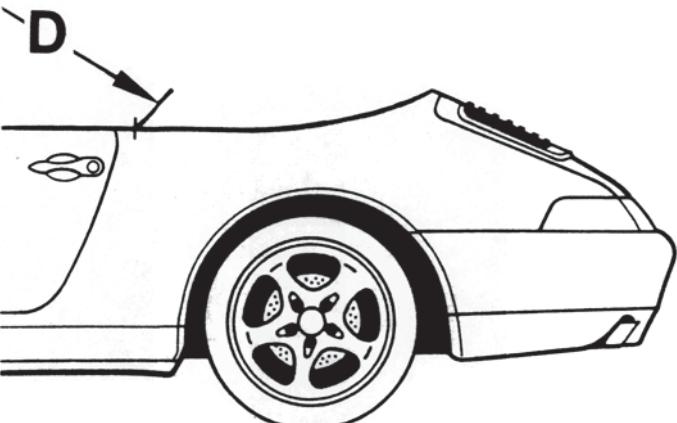
For these purposes, only "Original Porsche Parts" and/or sections of "Original Porsche Parts" must be used!

Dimensions for Cabriolet



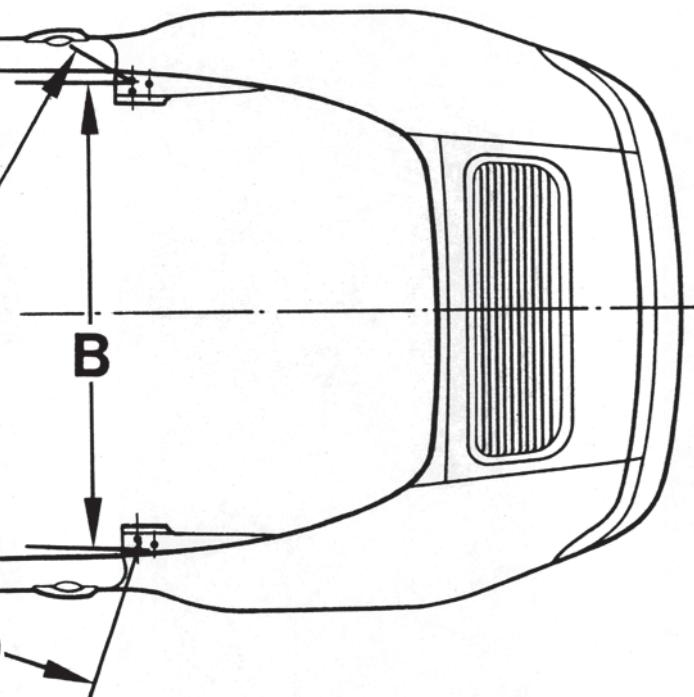
Dim. mm Designation

A 930 ± 2 Horizontal distance between the mountings for the right locating peg and the left locating peg of the convertible top.



B 1306 ± 2 Horizontal distance between the outer bolt hole for the right convertible top mount and the outer bolt hole for the left convertible top mount on the B-pillars.

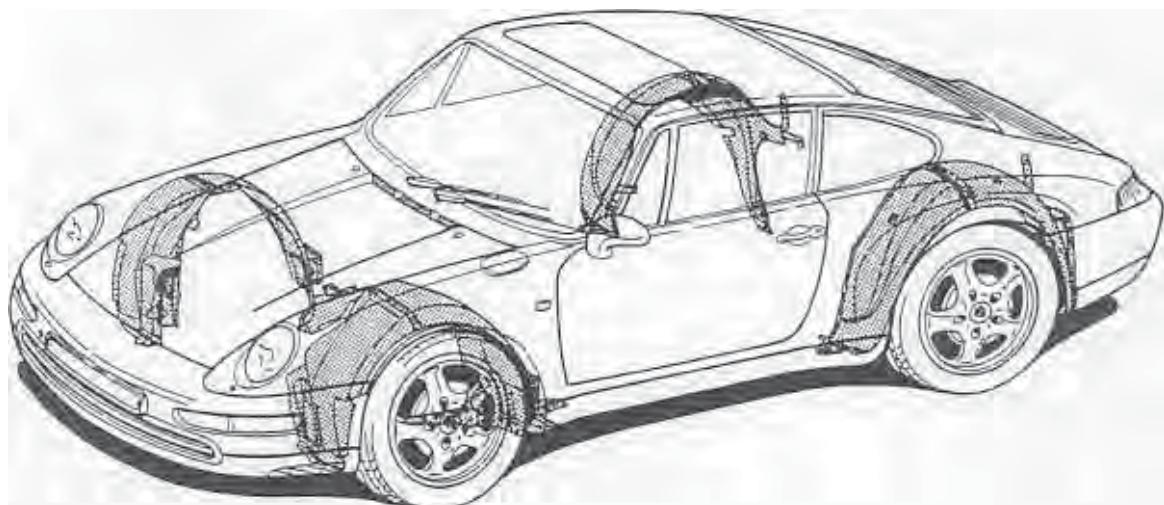
C 1340 ± 3 Diagonal distance between the mounting for the convertible top locating peg and the outer bolt hole for the convertible top mount on the B-pillar.

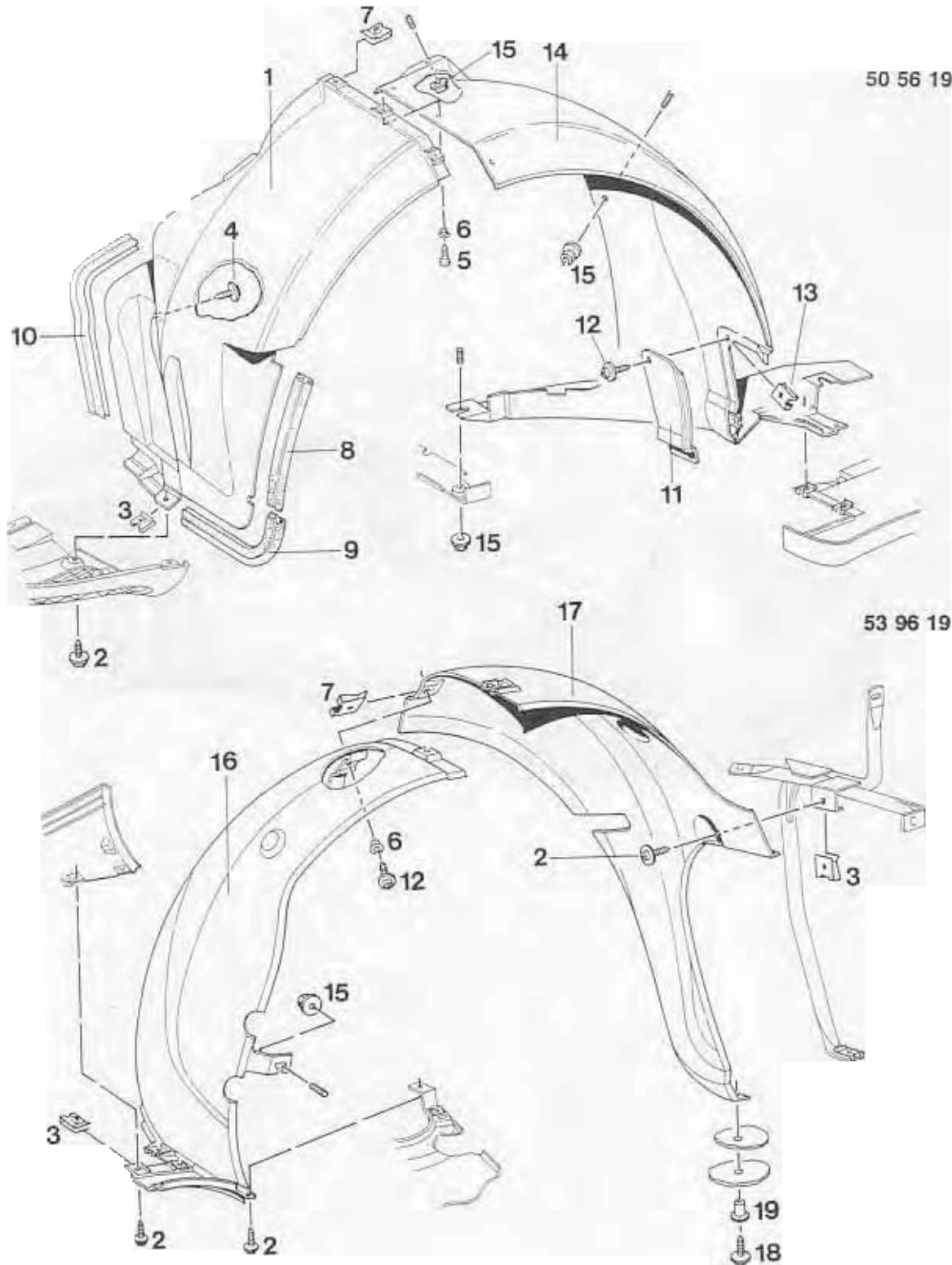


D 763 ± 3 Inclined distance between the mounting for the convertible top locating peg and the outer bolt hole for the convertible top mount on the B-pillar.

Note

All dimensions are measured between bolt hole centres.

50 56 19 Removing and installing wheel housing liner

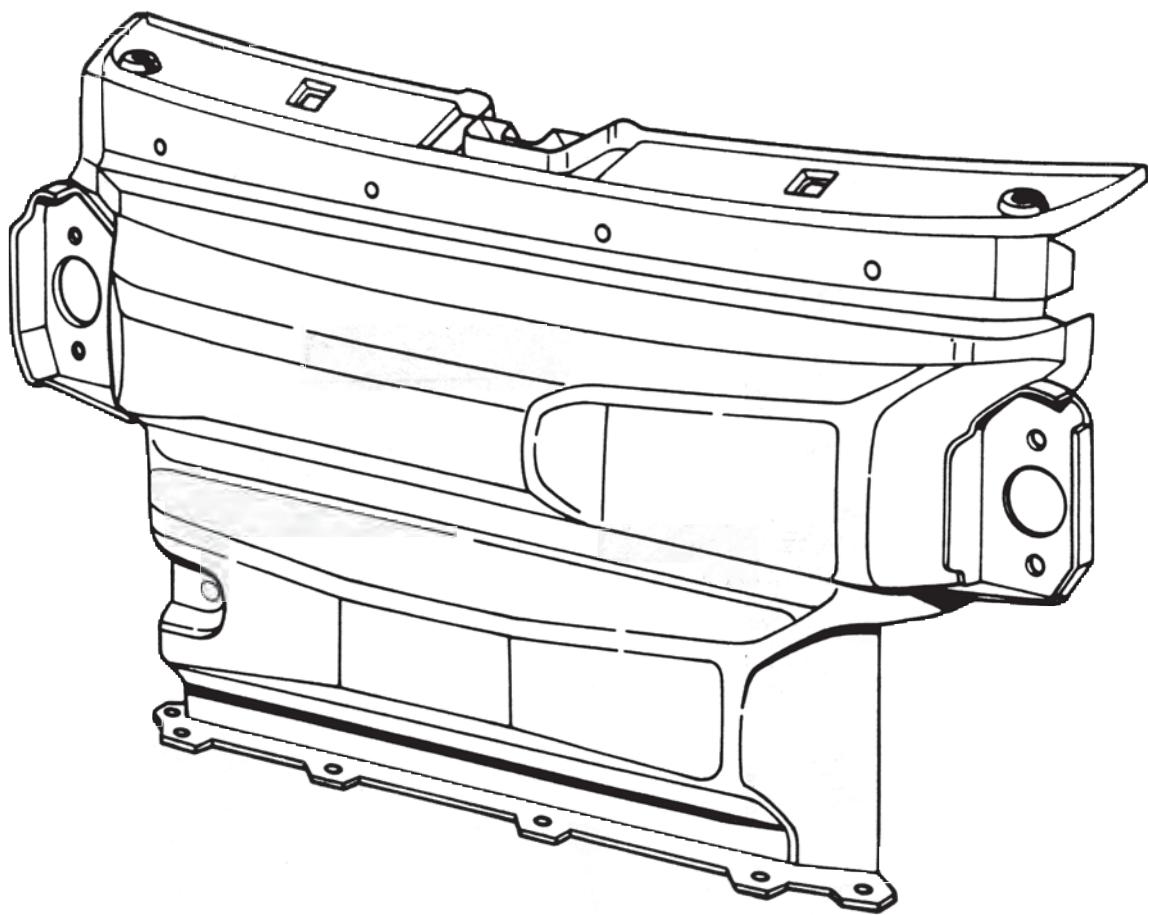
50 56 19 Removing and installing wheel housing liner

50 56 19 Removing and installing wheel housing liner

No.	Designation	Qty.	Note:	
			Removal	Installation
1	Wheel arch wall	2		
2	Screw with washer B 4.8 x 19	2		
3	Sheetmetal nut B 4.8	2		Adjust to center of hole
4	Screw with washer B 4.8 x 16	6		
5	Self-tapping screw B 4.2 x 13	6		
6	Spacer	6		
7	Sheetmetal nut B 4.2	6		Adjust to center of hole
8	Rubber weatherstrip	2		Check, replace if required
9	Rubber weatherstrip	2		Check, replace if required
10	Rubber section	2		Check, replace if required
11	Cover	1		
12	Screw with washer B 4.8 x 19	4		
13	Sheetmetal nut B 4.8	4		Adjust to center of hole
14	Wheel housing trim	2		
15	Plastic nut T 5	4		Check, replace if required

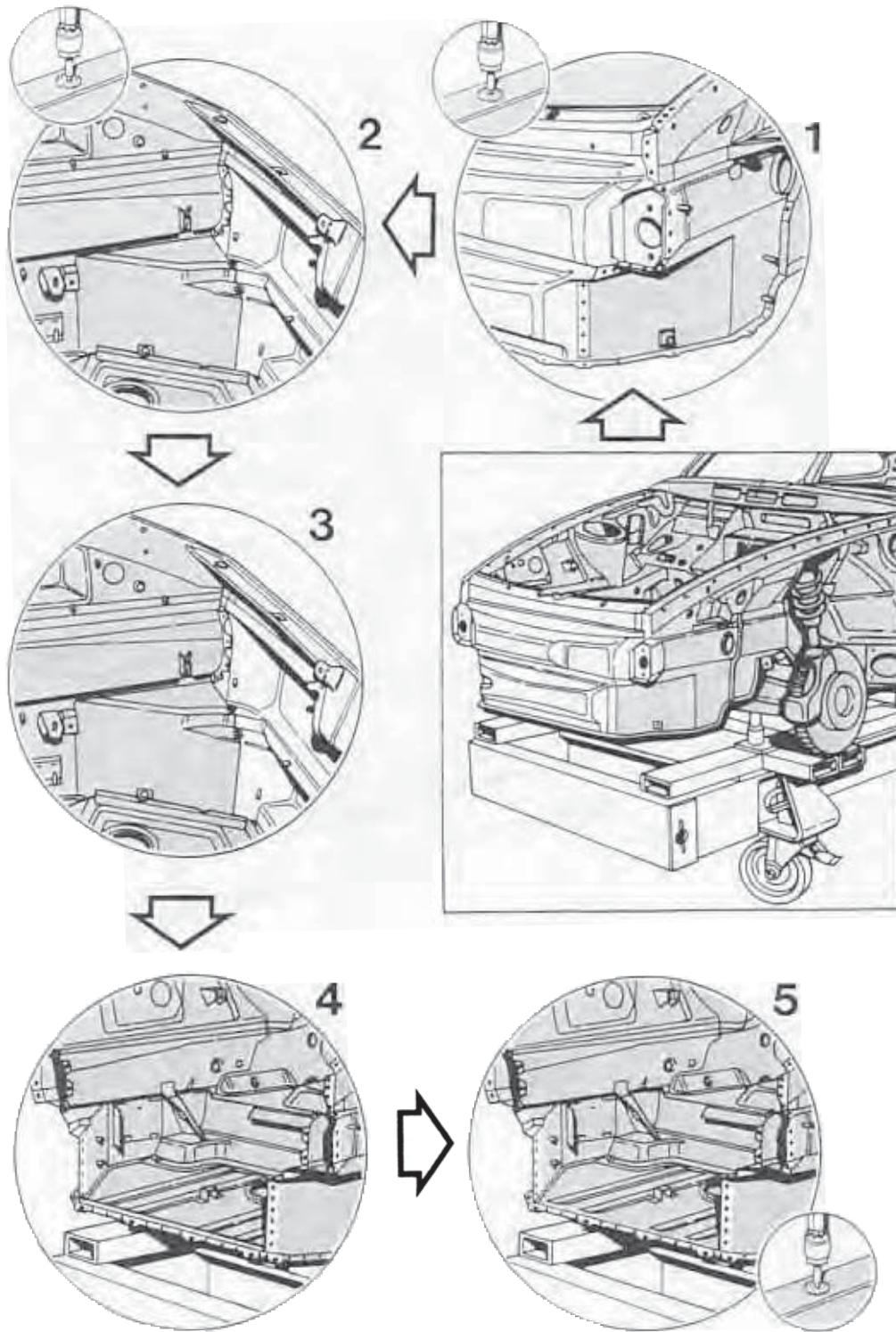
50 10 55 Replacing closing panel

The following body spare part is required for the "Replacing closing panel" body repair operation:



1747 - 50

Closing panel

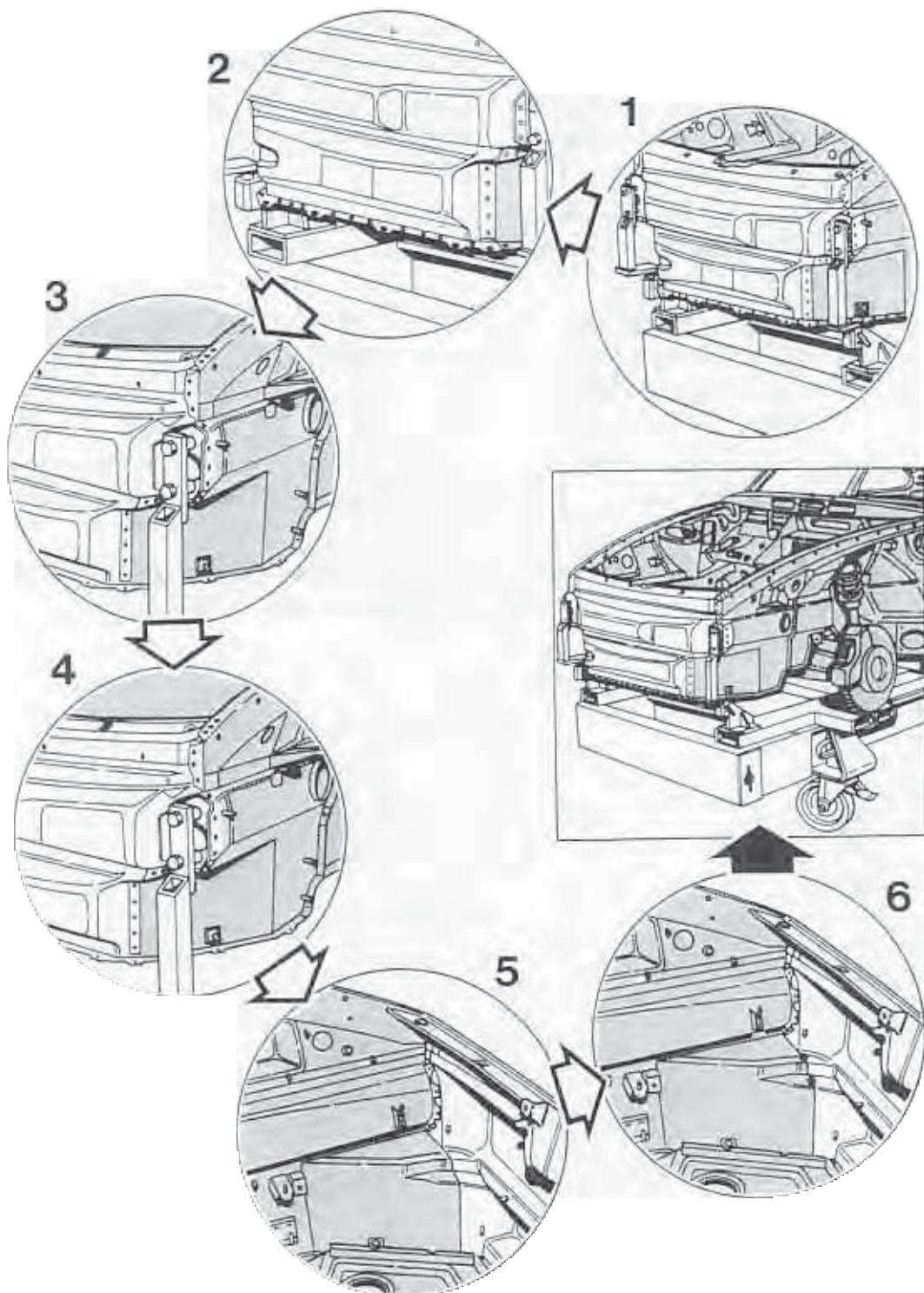
50 10 55 Replacing closing panel**Cutting closing panel out of body**

50 10 55 Replacing closing panel**Cutting closing panel out of body**

No.	Operation	Instructions
	Place vehicle on straightening equipment	Place vehicle with fitted ancillaries onto straightening attachment set and tie down vehicle.
1	Separate spotwelds of closing panel to wheel housings and gusset plates	Separate spotwelds of closing panel to wheel housings and gusset plates from outside using a spotweld cutter.
2	Separate spotwelds between closing panel and side members	Separate spotwelds of closing panel to side members working from inside (trunk side) using a spotweld cutter.
3	Separate welding joints between joints between closing panel and gusset plates	Grind off MIG weld joints between closing panel and gusset plates.
4	Cut out closing panel above spare wheel well	Cut off closing panel above spotweld joint of closing panel to spare wheel well using a body saw and take out panel.
5	Separate spotwelds between closing panel and spare wheel well	Separate spotwelds of closing panel to spare wheel well from above using a spotweld cutter.

50 10 55 Replacing closing panel

Fitting closing panel to body

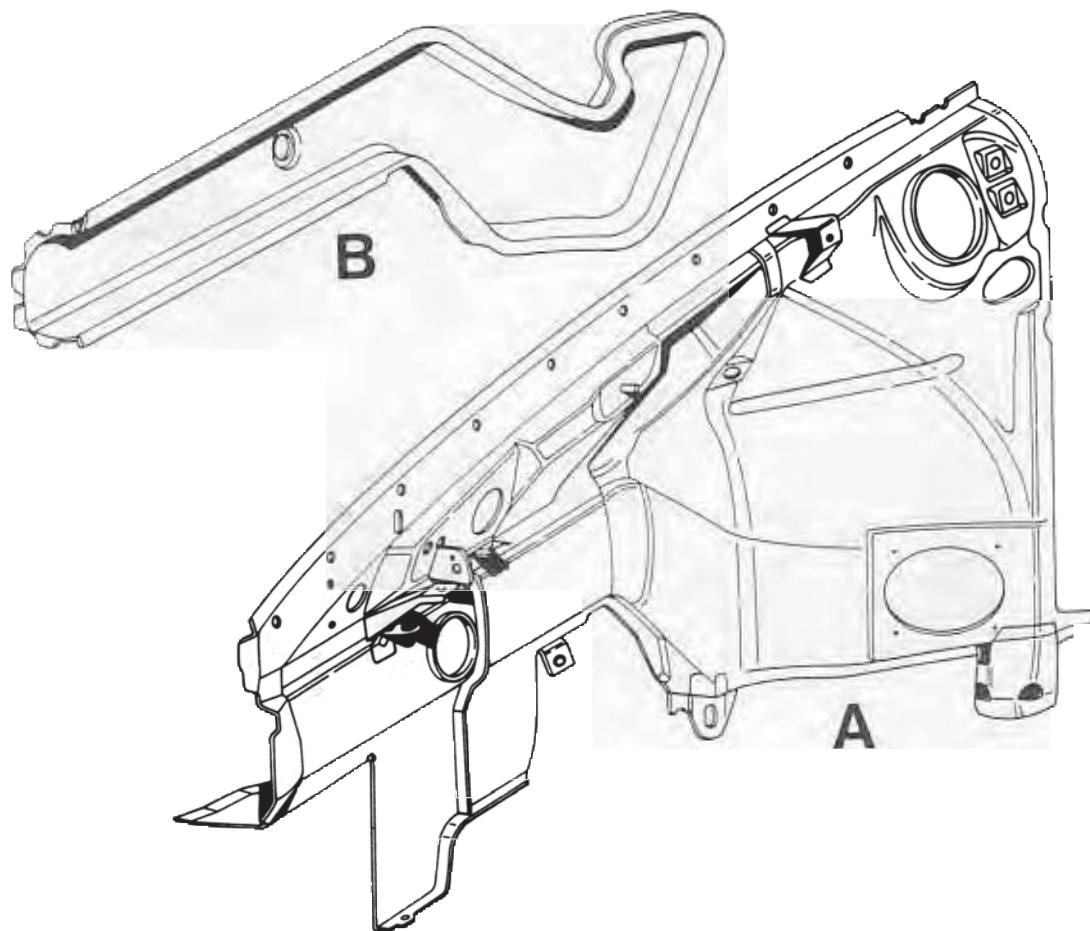


50 10 55 Replacing closing panel**Fitting closing panel to body**

No.	Operation	Instructions
	Clean welding areas	Using a hot air gun or rotary wire brush, remove under-sealant, paint etc. from welding areas of body. Remove factory primer from welding areas of spare part (closing panel), using a rotary wire brush.
1	Attach closing panel to straightening brackets	Trial-fit closing panel to body and attach to straightening brackets.
2	Spotweld closing panel to spare wheel well	Align spare wheel well to closing panel, attach with clamping tools and spotweld into place.
3	Plug weld gusset plates to closing panel	Align gusset plates to closing panel and plug weld with MIG equipment.
4	Plug weld wheel housings to closing panel	Align wheel housing to closing panel, attach with clamping tools and plug weld with MIG equipment.
5	Plug weld side members to closing panel	Align side members to closing panel and plug weld with MIG equipment.
6	MIG-weld gusset plates to closing panel	MIG-weld gusset plates to closing panel (only along horizontal joints) running a full seam.

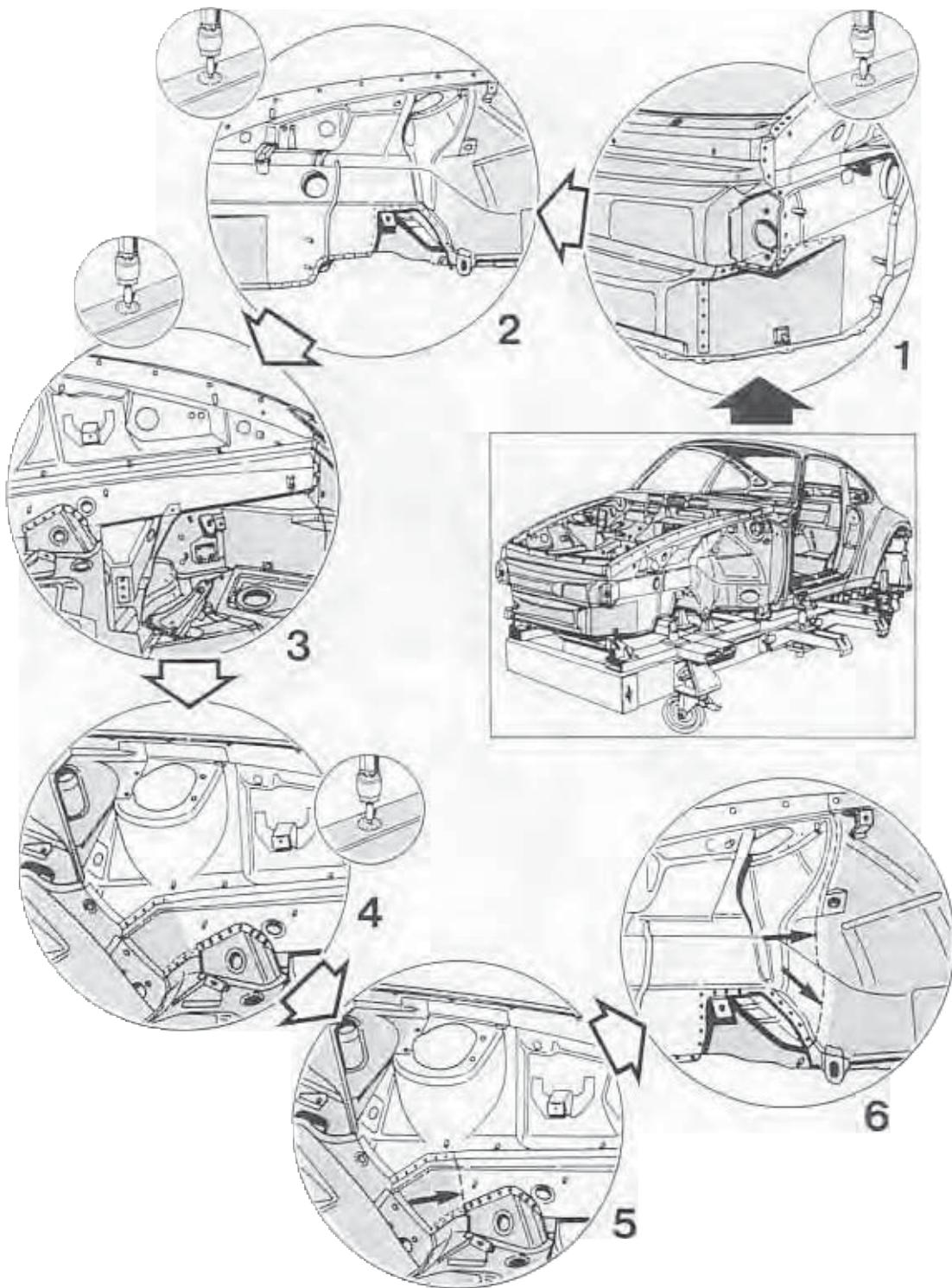
50 74 55 Replacing wheel housing**Replacing part of wheel housing and side member**

The following body spare parts are required for the "Replacing part of wheel housing and side member" sectional repair operation:



A = Front wheel housing

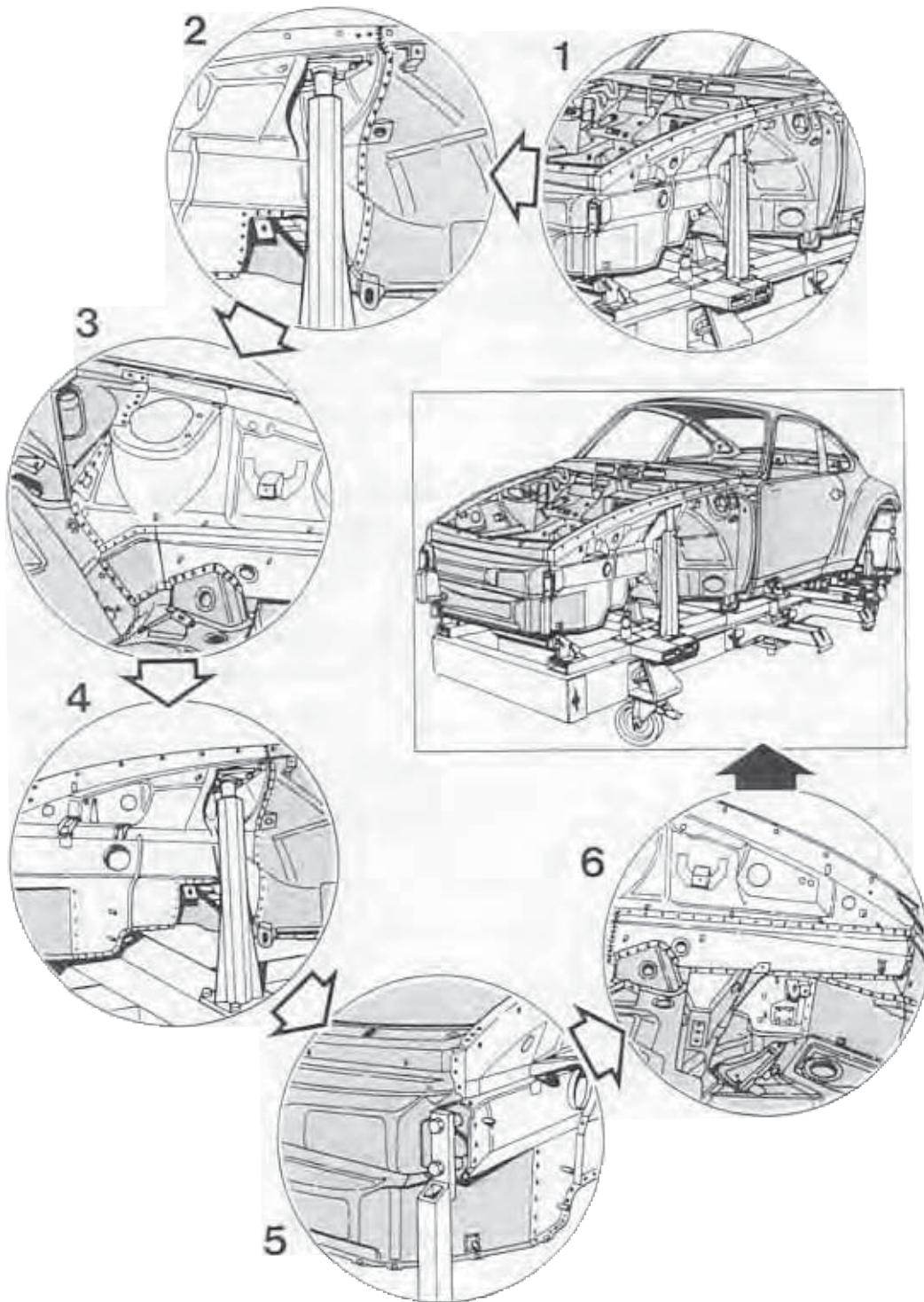
B = Front side member

Replacing part of wheel housing and side member**Cutting wheel housing and side member out of body**

Replacing part of wheel housing and side member

Cutting wheel housing and side member out of body

No.	Operation	Instructions
	Place vehicle on straightening equipment	Place vehicle with rear-mounted ancillaries onto straightening attachment set and tie down vehicle.
1	Separate spotwelds of wheel housing to gusset plate and closing panel	Separate spotwelds of wheel housing to gusset plate and closing panel from outside using a spotweld cutter.
2	Separate spotwelds of wheel housing to spare wheel well, front floor section and member	Separate spotwelds of wheel housing to spare wheel well, front floor section and member from outside using a spotweld cutter.
3	Separate spotwelds of side member to closing panel, front cross member and gusset plate	Separate spotwelds of side member to closing panel, front crossmember and gusset plate from inside (luggage compartment side) using a spotweld cutter.
4	Separate side member to strut dome spotwelds and member to strut dome spotwelds	Separate spotwelds of side member to strut dome and spotwelds of member to strut dome from inside (trunk side) using a spotweld cutter.
5	Cut through side member	Using a body saw, cut through side member approx. 10 mm behind gusset plate in vertical direction.
6	Cut through wheel housing	Using a body saw, cut through wheel housing along strut dome panel and take out housing. Caution: Make sure the member is not cut through completely.

Replacing part of wheel housing and side member**Fitting wheel housing and side member into body**

Replacing part of wheel housing and side member

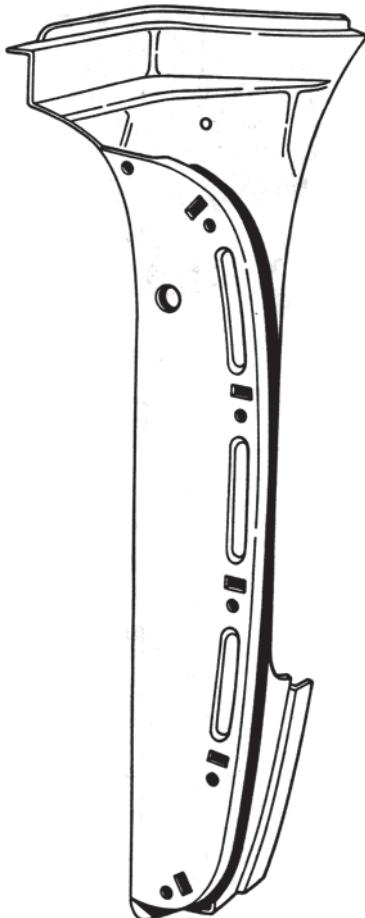
Fitting wheel housing and side member into body

No.	Operation	Instructions
	Clean welding areas	Using a hot air gun or rotary wire brush, remove under-sealant, paint etc. from welding areas of body. Remove factory primer from welding areas of spare parts (wheel housing, side member), using a rotary wire brush.
	Offer up wheel housing into body	Joggle wheel housing (spare part) towards outside and trial-fit to body wheel housing, making an overlap joint. Trial-fit wheel housing in fender mating area, making a butt joint.
1	Attach wheel housing to straightening bracket	Attach wheel housing to straightening bracket. Tack-weld wheel housing to mating sections of wheel housing to body, gusset plate and closing panel, using MIG equipment.
2	Weld wheel housing to body wheel housing	MIG-weld along fender mating flanges, running a butt full seam. Spotweld wheel housing to member. Spotweld wheel housing between member and side member. Plug-weld wheel housing from side member area, using MIG equipment.
3	Plug-weld member with strut dome	Attach member with clamping tools to strut dome and plug-weld with MIG equipment.
4	Spot-weld wheel housing to front floor section, spare wheel well and gusset plate	Align front floor section and spare wheel well to wheel housing, attach with clamping tools and spotweld into place. Align gusset plate to wheel housing and spotweld into place.
5	Spotweld wheel housing to closing panel	Align closing panel to wheel housing, attach with clamping tools and spotweld.

No.	Operation	Instructions
6	Weld in side member	<p>Align side member with wheel housing so that the butt joint between the spare side member and body side member is offset to the joint between the body wheel housing and spare wheel housing.</p> <p>Butt-weld spare side member and body side member with MIG equipment, running a full seam.</p> <p>Spot weld side member to wheel housing.</p> <p>Plug weld cross member to side member and gusset plate to side member with MIG equipment.</p> <p>Align side member with closing panel and plug weld with MIG equipment.</p>
	Cut down weld joints	<p>Grind down butt weld joint of side member and butt weld joint in the fender mating area.</p>

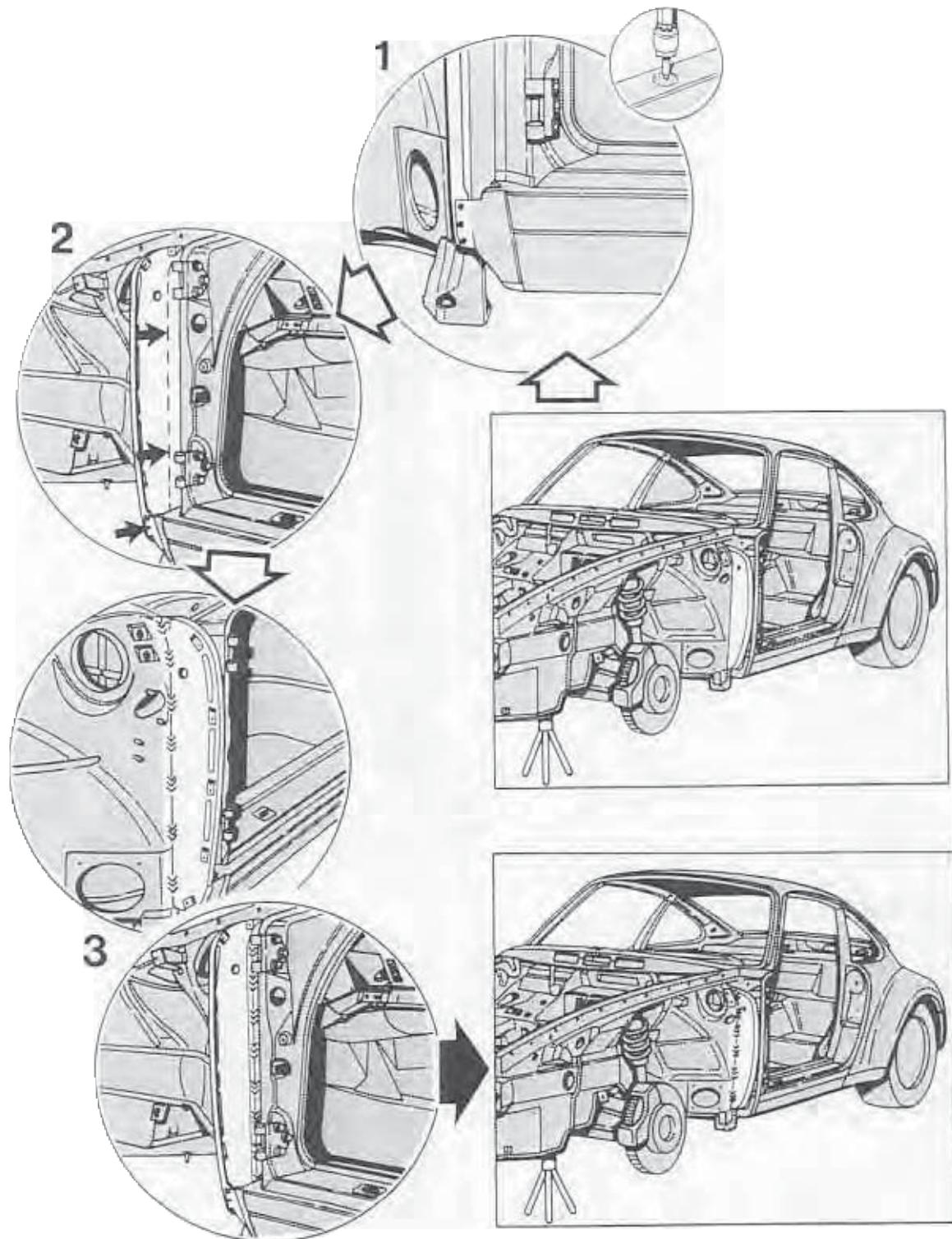
50 53 55 Replacing fender connection panel**Partially replacing fender connection panel**

The following body spare part is required for the "Partially replacing fender connection panel" body repair operation:



1753 - 50

Fender connection panel

Partially replacing fender connection panel

Partially replacing fender connection panel

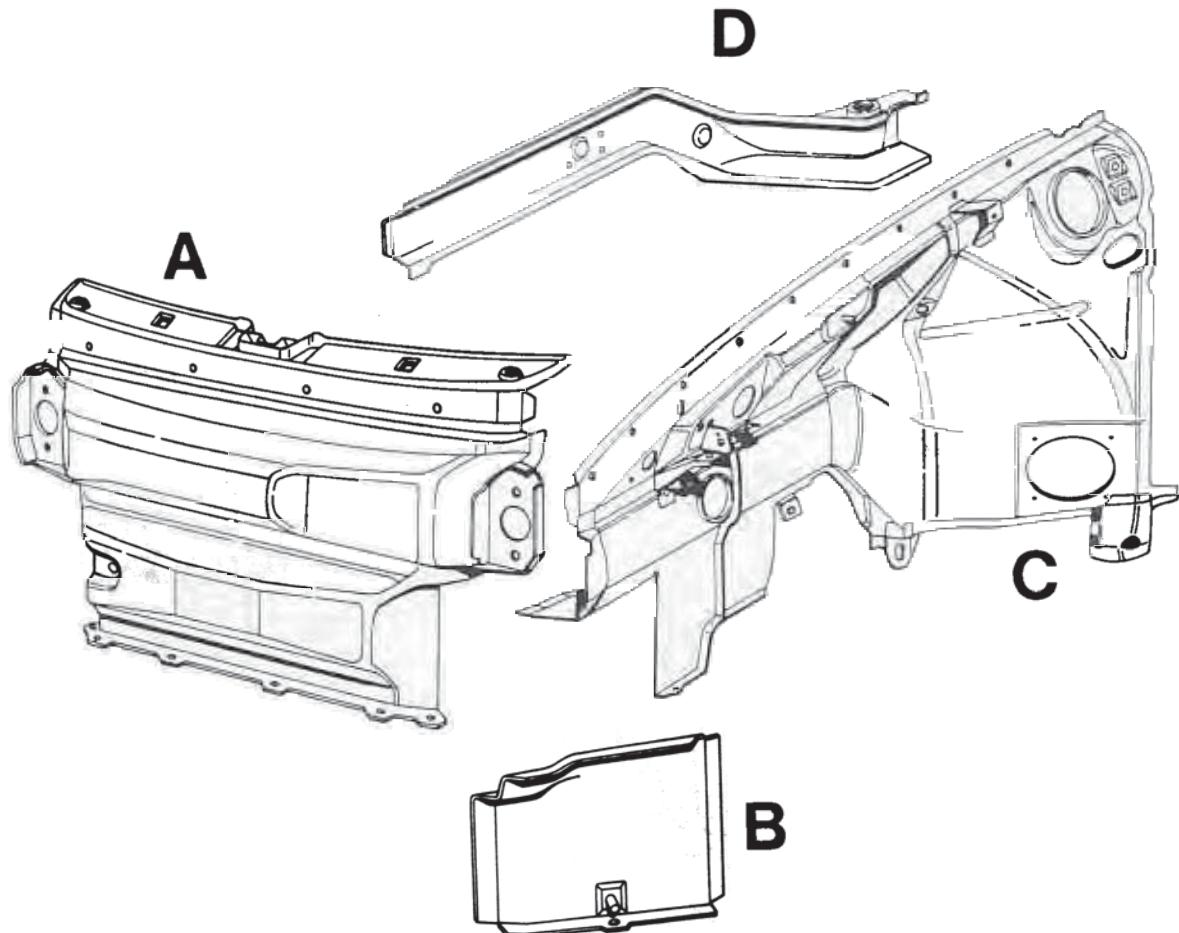
Complete all body straightening operations in this area before the fender connection panel is replaced!

No.	Operation	Instructions
2	Separate spotwelds of fender connection panel to door sill	Separate spotwelds of fender connection panel to door sill using a spotweld cutter.
	Cut off fender connection plate	Cut off the narrow leg of the fender connection panel along the wheel housing.
	Align separating area of fender connection panel remaining attached to body and grind down	
	Prepare and offer up fender connection panel	Cut down fender connection panel along wide leg to approx. 20 mm and align with wheel housing. Drill fender connection panel for plug welding in the door sill area. Using a rotary wire brush, remove factory primer from welding areas of fender connection panel.
3	Weld fender connection panel into place	MIG-weld fender connection panel along both sides, running an intermittent full seam. Plug weld fender connection panel to door sill using MIG equipment.

50 74 56 Replacing wheel housings

Replacing part of front end

The following body spare parts are required for the "Replacing part of front end" sectional repair operation:



A = Closing panel

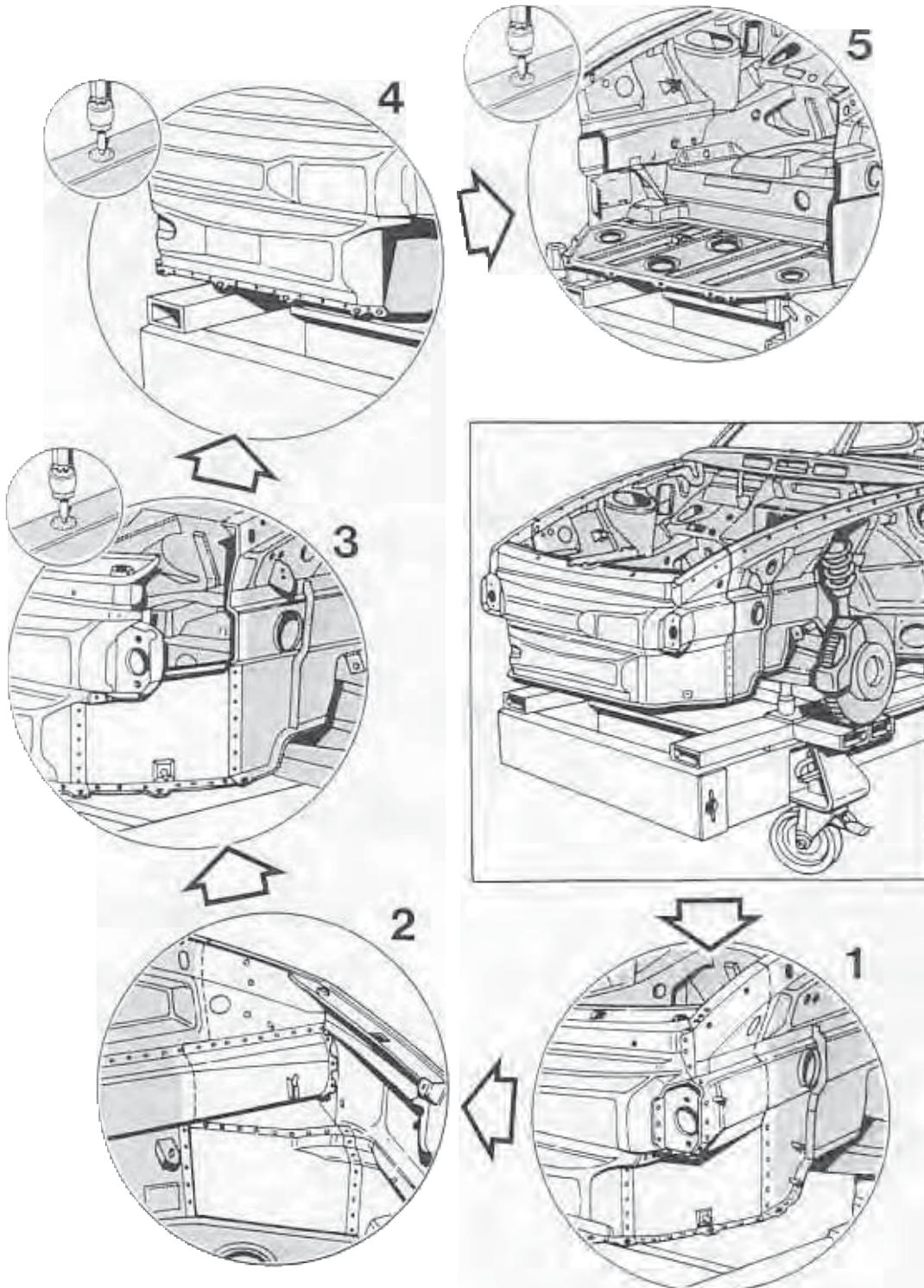
C = Front wheel housing

B = Gusset plate

D = Front side member

Replacing part of front end

Cutting closing panel and gusset plate completely and wheel housings and side members partially out of body



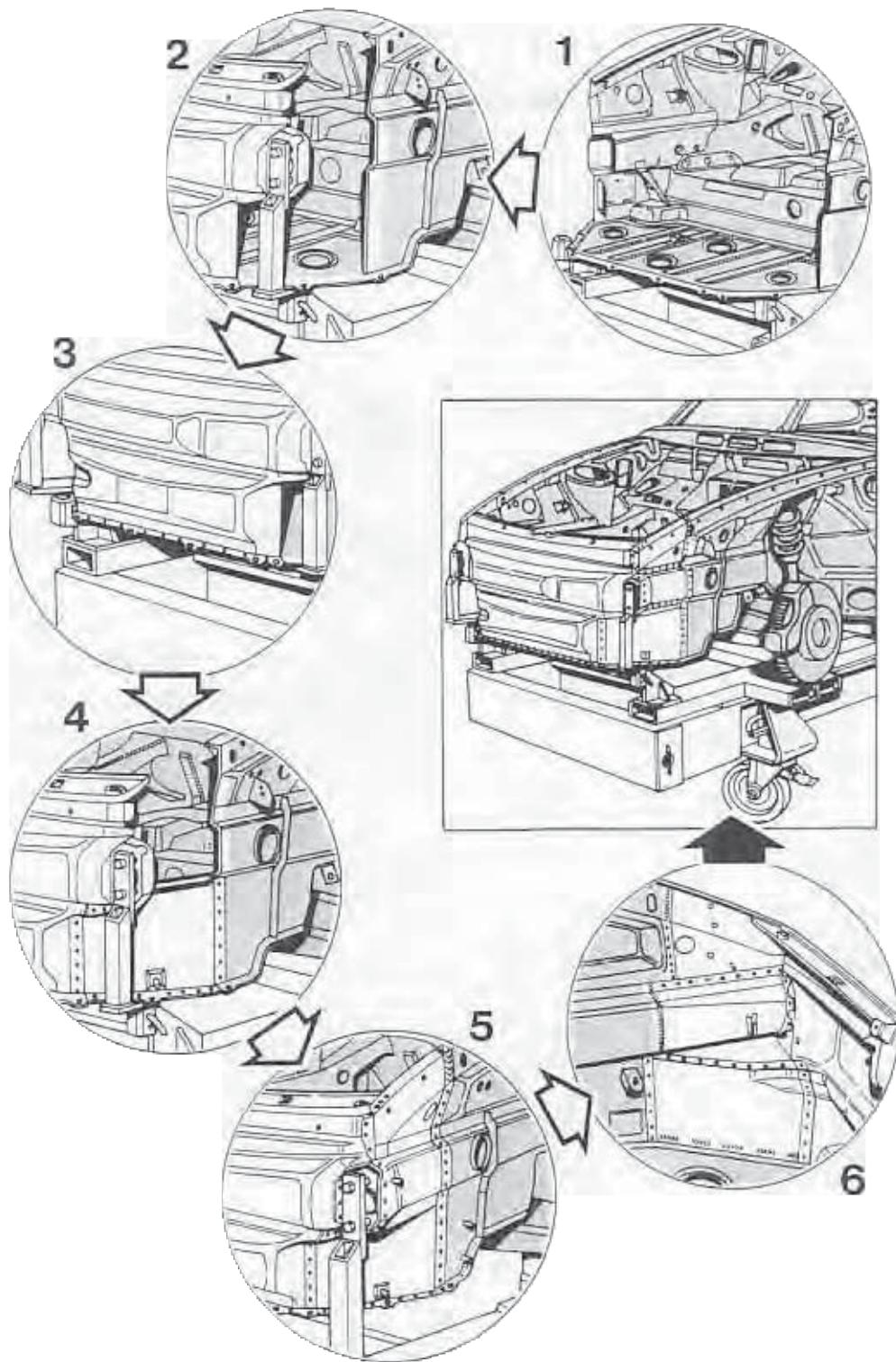
Replacing part of front end

Cutting closing panel and gusset plate completely and wheel housings and side members partially out of body

No.	Operation	Instructions
	Place vehicle on straightening equipment	Place vehicle with fitted ancillaries onto straightening attachment set and tie down vehicle.
1	Cut off wheel housings	Cut off damaged wheel housing areas using a body saw.
2	Cut off side members	Cut off damaged areas of side members with body saw.
3	Separate spotwelds of gusset plates	Separate spotwelds between gusset plate, spare wheel well and wheel housings with a spotweld cutter.
4	Separate spotwelds of closing panel	Separate spotwelds between closing panel and spare wheel well with a spotweld cutter
5	Shorten side member to give an offset with regard to the wheel housings	Shorten side members with body saw and spotweld cutter until an offset of approx. 50 mm is produced between side member and wheel housing.

Replacing part of front end

Fitting closing panel and gusset plates completely and wheel housings and side members partially into body



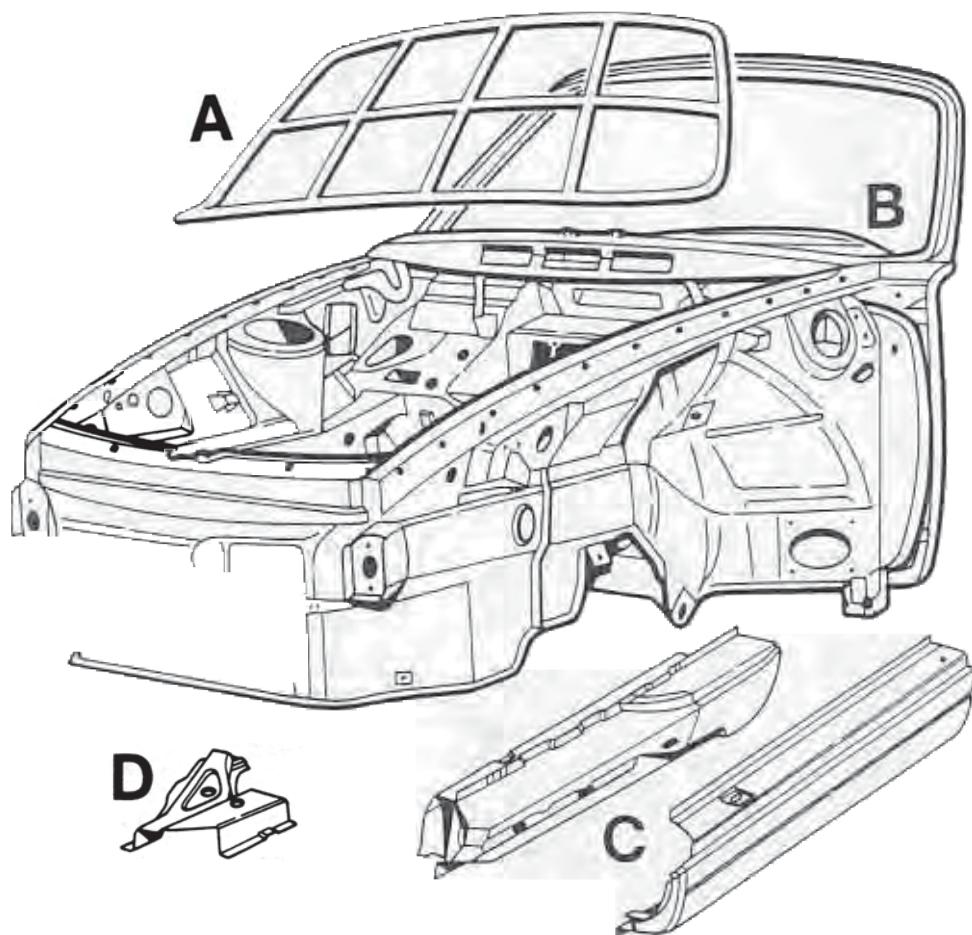
Replacing part of front end

Fitting closing panel and gusset plates completely and wheel housings and side members partially into body

No.	Operation	Instructions
1	Clean welding areas	Using a hot air gun or rotary wire brush, remove under-sealant, paint etc. from welding areas of body.
2	Attach closing panel to straightening brackets	
3	Weld closing panel to spare wheel well	Offer up spare wheel well to closing panel, attach with clamps and spotweld into place.
4	Weld in gusset plates	Offer up gusset plates, attach with clamps to spare wheel well, closing panel and wheel housings and spot-weld into place.
5	Weld in wheel housings and side members	Cut off and align wheel housings and side members. Joggle wheel housings towards outside and attach to body with clamping tools. Spotweld wheel housings to mating parts. Saw in at fender mating surfaces and butt weld into place.
6	Weld in side members and cut down butt weld joints	Offer up side members to wheel housings so that the butt joints of the mating parts are offset with regard to the gusset plates and wheel housings. Butt weld side members and mating panels. Spotweld side members, wheel housings and closing panel. Grind down butt weld joints of side members.

50 95 55 Replacing front end**Replacing complete front end**

The following body spare parts and special tools are required for the "Replacing front end" sectional repair operation:

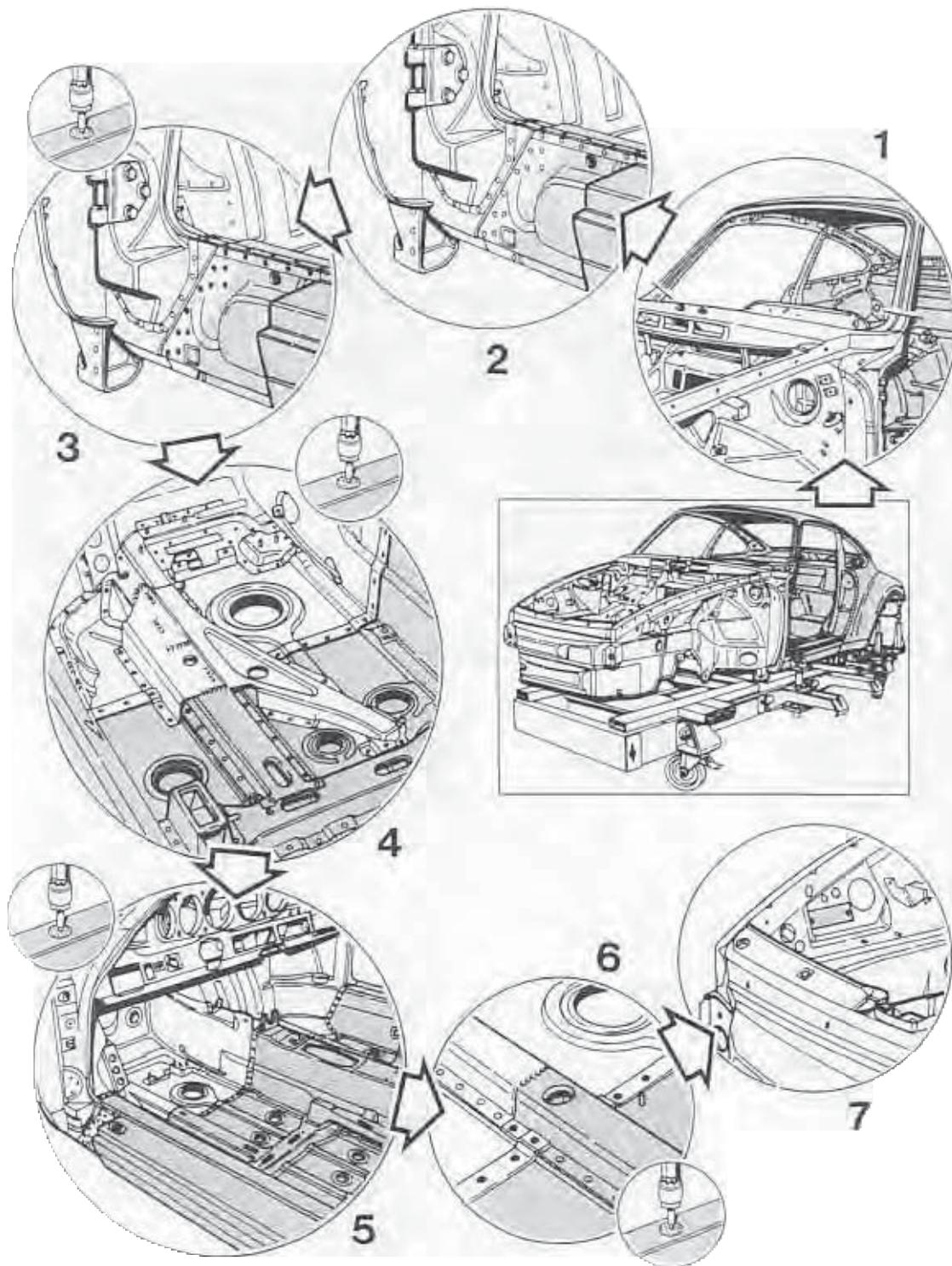


Special Tool P 852

Front end

C = Door sill

D = Left-hand floor reinforcement
(for LHD vehicles only)

Replacing complete front end**Cutting front end off the body**

Replacing complete front end

Cutting front end off the body

Remove all ancillaries and accessories at and near the front end!

No.	Operation	Instructions
	Place vehicle on straightening equipment	Place vehicle with rear-mounted ancillaries onto straightening attachment set and tie down vehicle.
1	Cut through A-pillars	Cut through A-pillars as closely as possible to the front end using a body saw.
2	Cut through door sills	Using a body saw, cut through door sills up to the outer side member and remove in the spotweld area between body side member and front end side member.
3	Separate spotwelds of side member	Separate spotwelds between body side member (inner and outer) and front end side member using a body saw.
4	LHD vehicles only: Separate of reinforcing panel in front floor area	LHD vehicles and left side of vehicle only: Separate spotwelds between reinforcing panel and front body floor using a spotweld cutter. Separate weld joint between reinforcing panel, seat base and seat base extension with an angle grinder.
5	Separate spotwelds of floor panel	Separate spotwelds between body floor panel and front end panel with a spotweld cutter.
6	Separate spotwelds of seat base	Separate spotwelds between body seat base and extension (on front end floor panel) using a spotweld cutter. Grind off MIG weld seam between seat base and extension.
7	Remove identification plate	Drill off rivets and remove identification plate.

Replacing complete front end**Attaching front end to body**

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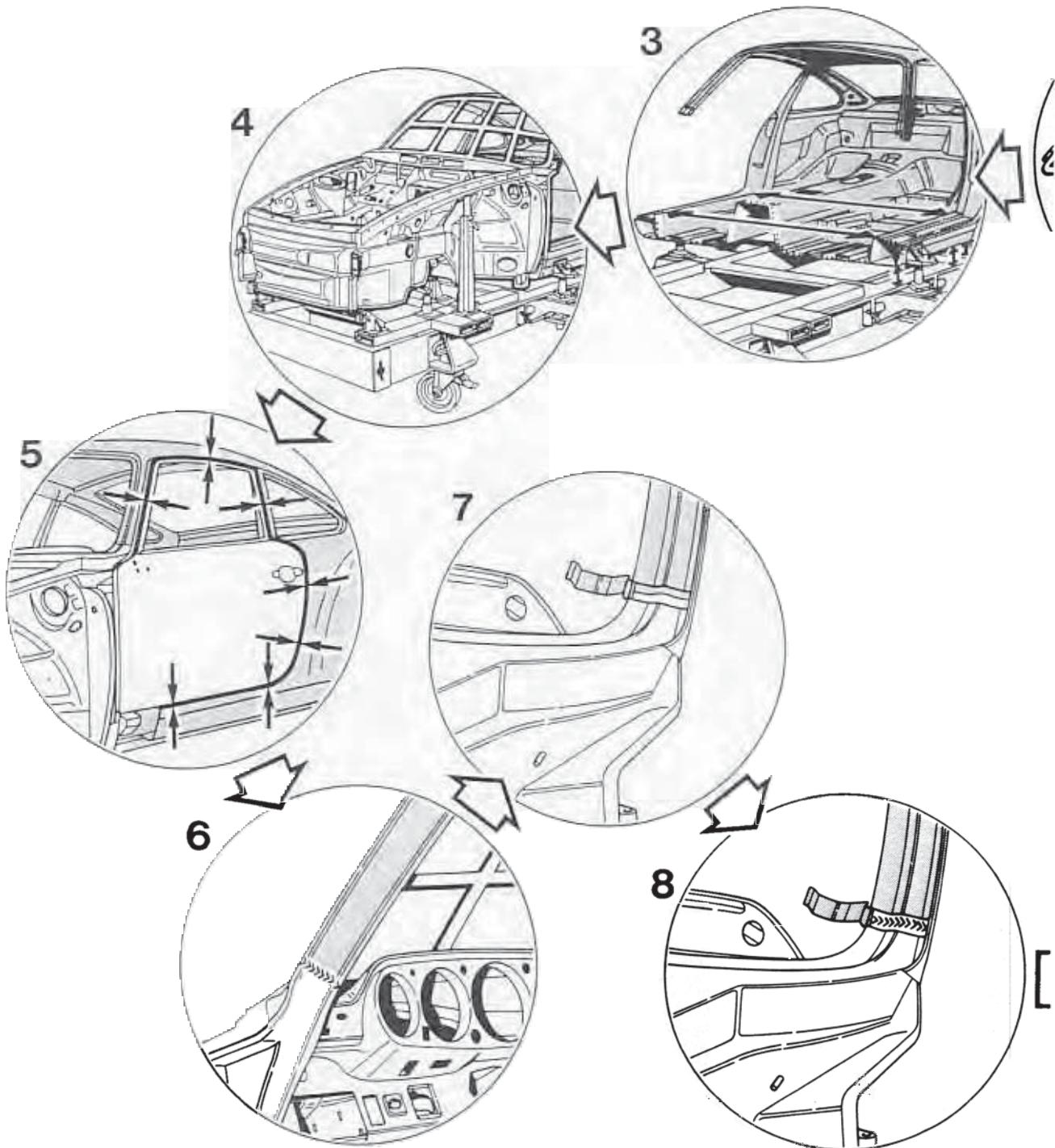
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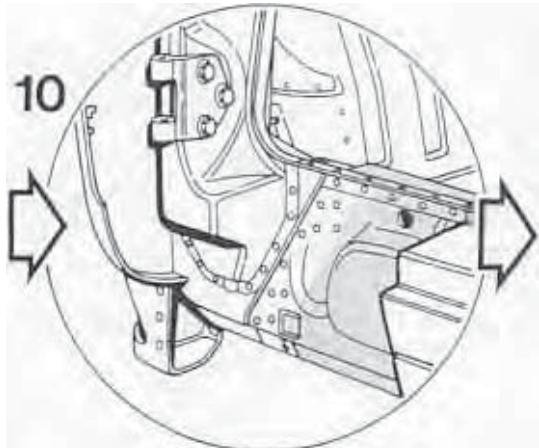
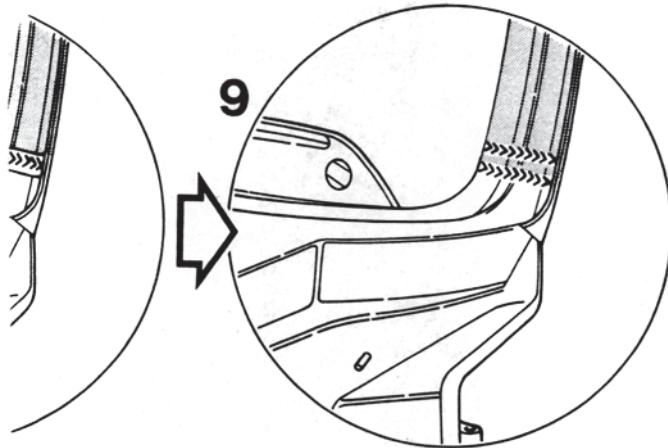
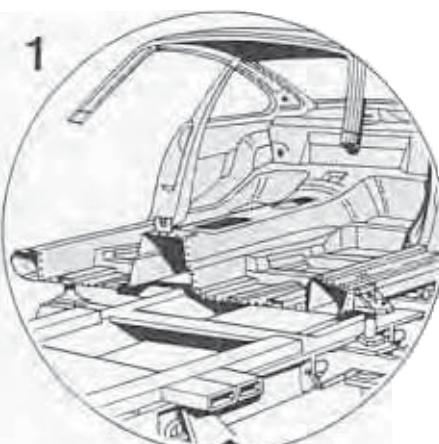
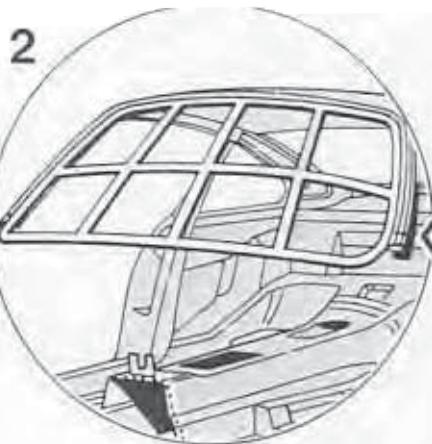
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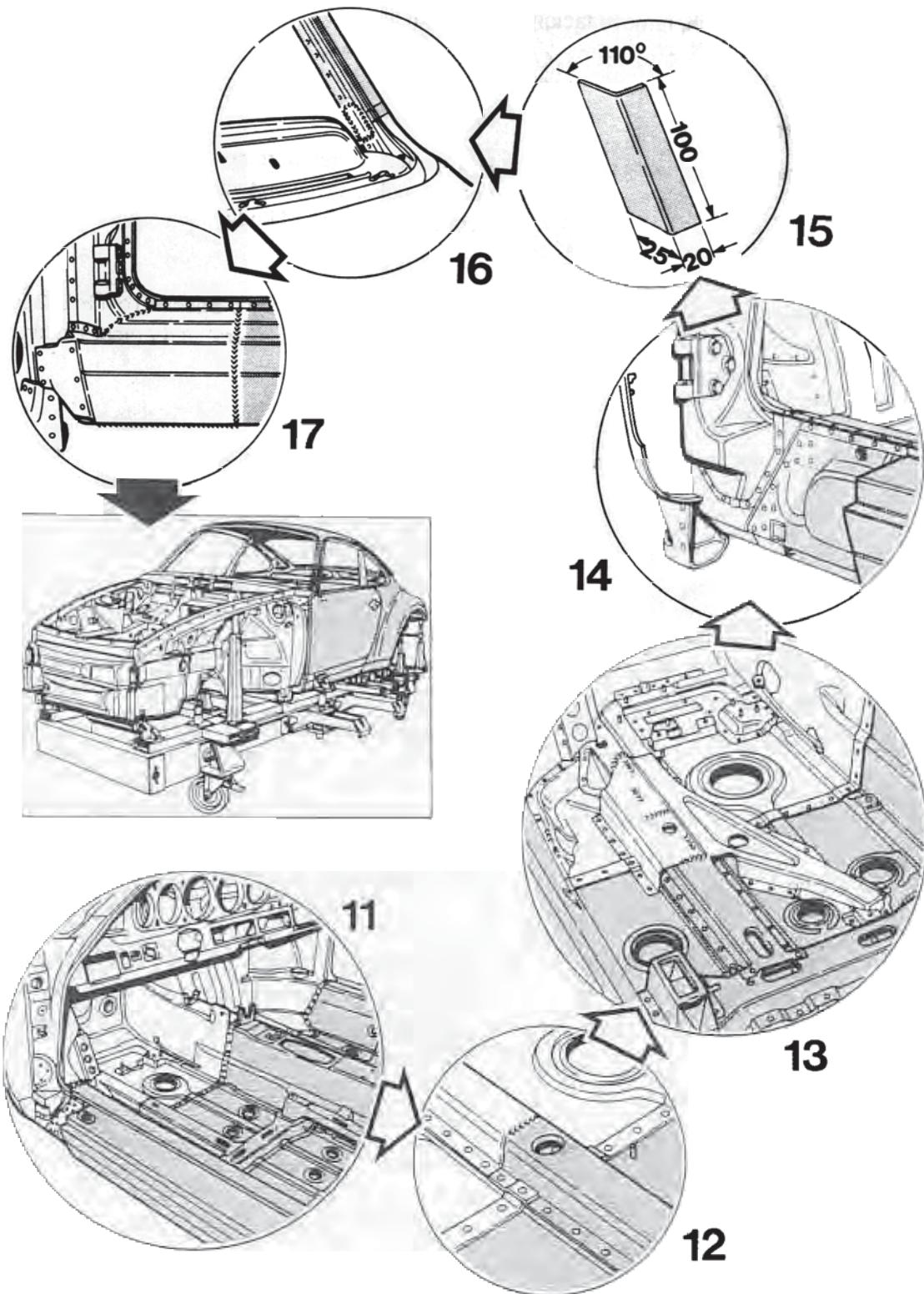
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Replacing complete front end

Attaching front end to body





Replacing complete front end**Attaching front end to body**

Replacing complete front end

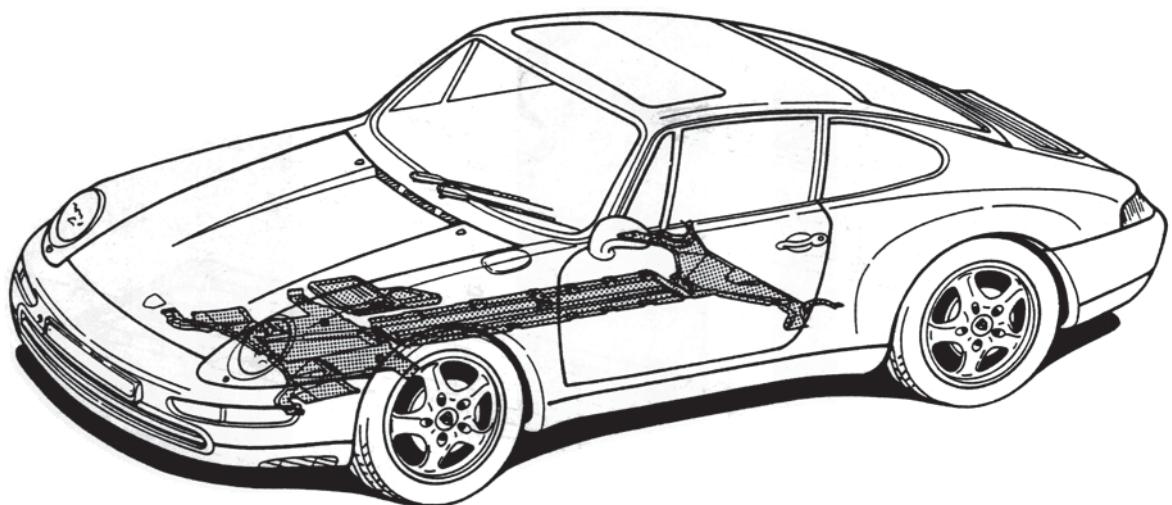
Attaching front end to body

Using a rotary wire brush, remove factory primer from all welding areas of front end!

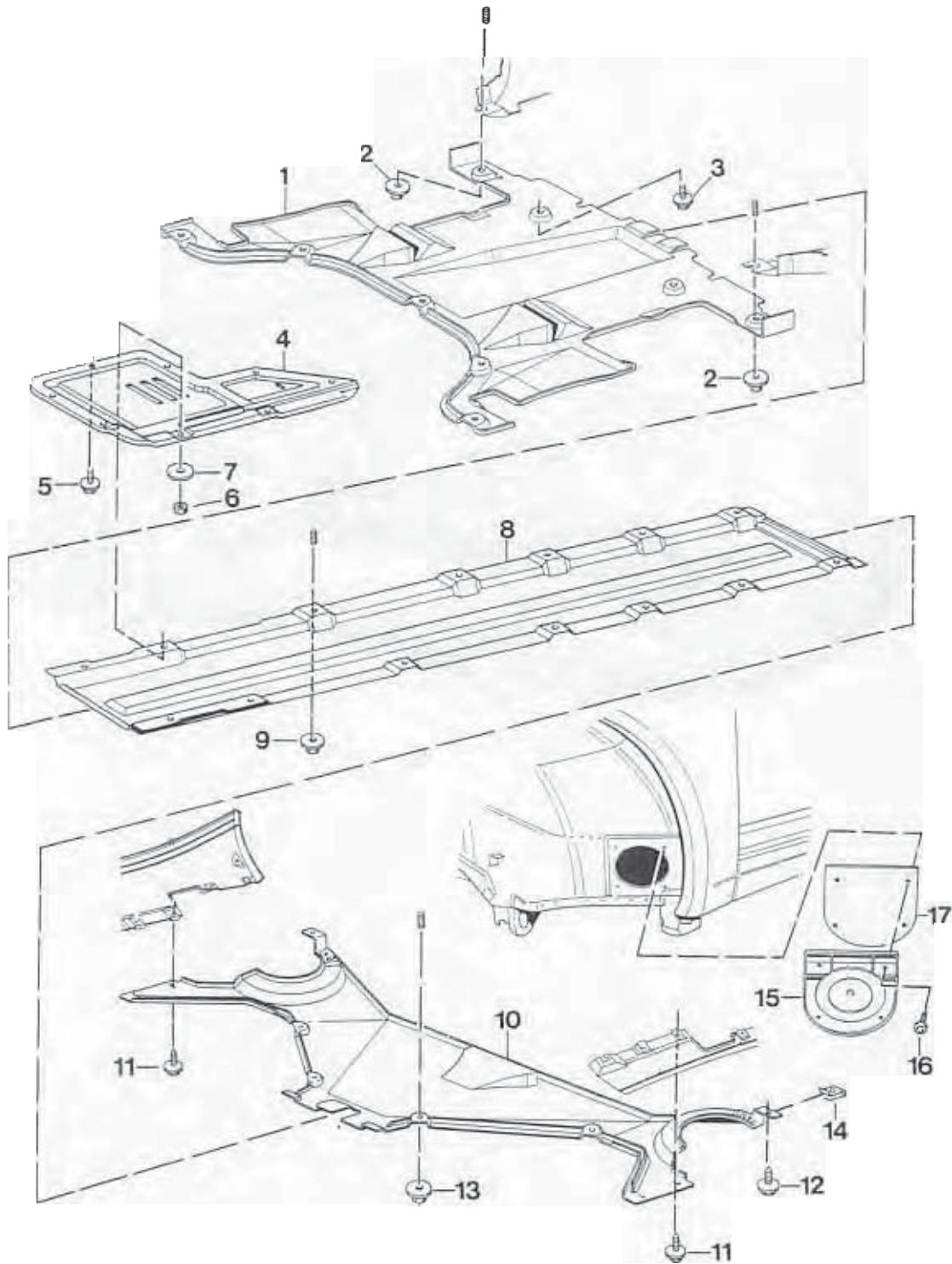
No.	Operation	Instructions
	Clean welding areas of body	Using a hot air gun or rotary wire brush, remove under-sealant, paint, cavity protection and adhesive residues from welding areas of body.
2	Align A-pillars of body	Align A-pillars according to Special Tool P 852 (gauge for body windshield aperture) and prepare cutting joints for proper welding.
3	Align side members and body floorpan	Align side members parallel to each other and parallel to the straightening equipment height. Prepare complete floorpan for proper welding along the joints with the front end.
4	Place front end onto straightening equipment and offer up to body	Place front end loosely onto straightening equipment. Place Special Tool P 852 into body windshield aperture. Align front end with body. Attach front end correctly to straightening brackets.
5	Fit doors to check overall contours of body with front end	The gap between the door and the body shell must be parallel along the entire circumference. Remove doors after checking the door gaps.
6	Butt weld A-pillars in door aperture area	With Special Tool P 852 in place, MIG-weld seam of body A-pillar to front end A-pillar in the door aperture area, making a full butt seam. Remove Special Tool P 852 after welding is completed.

No.	Operation	Instructions
7	Open outer panels of A-pillars	To weld the inner panels, open up outer panels of A-pillars (body) along a length of approx. 20 mm and fold them up.
8	Weld inner panels of A-pillars	MIG-weld inner panels of A-pillars (body and front end), running a butt full seam.
9	Close and weld outer panels of A-pillars	Close outer A-pillar panels, straighten panels and MIG-weld with a full seam. MIG-weld body A-pillars and front end A-pillars running a butt full seam. Grind down weld seams and place Special Tool P 852 into position to check windshield aperture in body.
10	Plug weld front end side member to body side member	Align front end side member that has been inserted into the body side member. Plug weld front end side member and body side member using MIG equipment.
11	Plug weld front end side member to body side member	Align overlap area of body floorpan to front end floorpan. Plug-weld front end floorpan to body floorpan using MIG equipment.
12	Weld body seat base to front end extension with plug welds and a full seam	Plug weld right and left-hand flange of top-hat section of body seat base to front end extension using MIG equipment. MIG-weld front face of body seat base to front end extension running a full seam.
13	LHD vehicles only: Weld floor reinforcing panel to floorpan, seat base and seat base extension with plug welds and a full seam	LHD vehicles and left side of vehicle only: Plug weld front floor reinforcing panel to body floorpan using MIG equipment. MIG-weld front floor reinforcing panel to seat base and seat base extension running a full seam.

No.	Operation	Instructions
14	MIG-weld floor in side member area from below	MIG-weld body floor to front end body in side member area from below running a full seam.
15	Fabricate reinforcing brackets for A-pillars	Fabricate one reinforcing bracket each for right and left-hand A-pillars from 1.25 mm galvanized sheet steel.
16	Weld reinforcing brackets to A-pillars running a circumferential full seam	To reinforce the welds, weld the reinforcing brackets across the weld seams on the inside of the A-pillars, running a continuous full MIG seam. Grind down weld seams.
17	Weld in door sills	Offer up door sills and tack weld them. Spotweld door sills to upper side of side member. Plug weld door sill to fender connection panel with MIG equipment. MIG weld door sill to A-pillar connection panel, running an intermittent full MIG seam. MIG-weld door sill to underside of side member running a butt full seam. MIG-weld body door sill running a continuous full seam. Grind down butt welds.

51 90 19 Removing and installing underbody paneling

51 90 19 Removing and installing underbody paneling



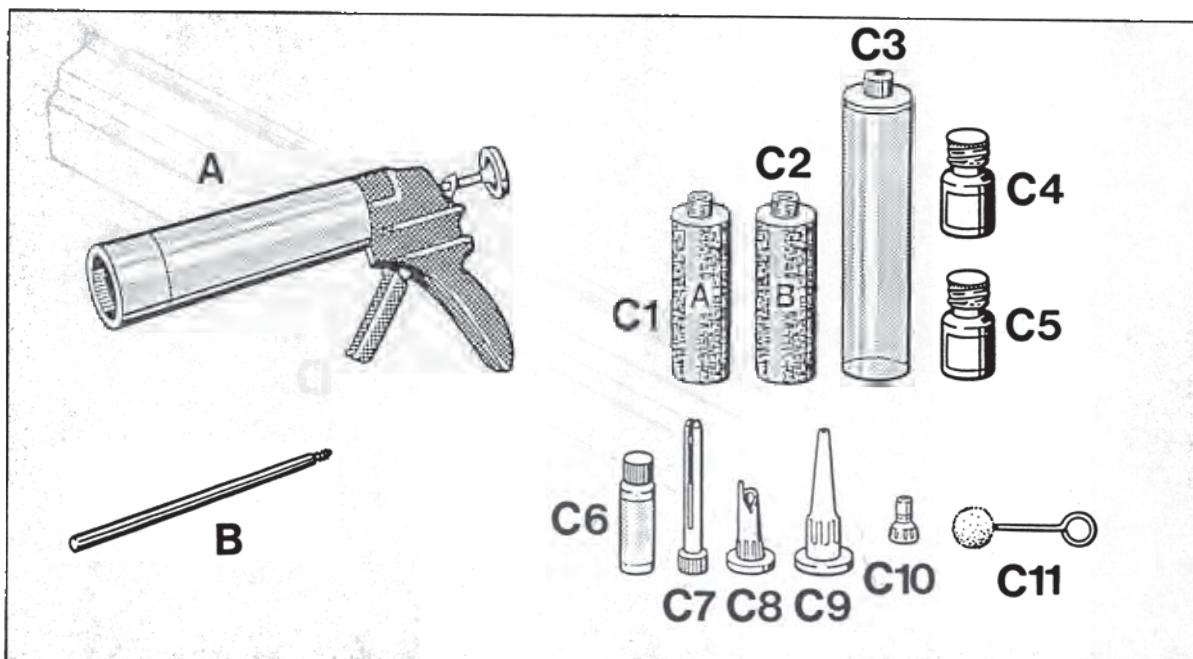
51 90 19 Removing and installing underbody paneling

No.	Designation	Qty.	Note:	
			Removal	Installation
1	Front underbody paneling	1	Detach from center underbody paneling in forward direction	Engage into center underbody paneling in backward direction
2	Plastic nut T 5	7		
3	Screw with washer M 6 x 16 Z2	2		
4	Fuel pump cover	1		
5	Screw with washer M 6 x 12 Z1SB	6		
6	Hexagon head nut M 6	2		
7	Washer A 6.4 x 12.5	2		
8	Center underbody paneling	1	Detach from rear underbody paneling in forward direction	Engage into rear underbody paneling in backward direction
9	Hexagon head nut M 6	12		
10	Rear underbody paneling	1		
11	Screw with washer B 4.8 x 19 Z2	4		
12	Screw with washer M 6 x 16 Z2	4		
13	Hexagon head nut M 6	4		
14	Sheetmetal nut B 4.8	2		Adjust to center of hole

No.	Designation	Qty.	Removal	Note:	Installation
15	Cover for muffler opening	2			
16	Self-tapping screw with washer BZ 4.2 x 13 Z2	8			
17	Cover seal	2			Check, replace if required
18	Clip	2			

51 45 55 Replacing outer side member

The following materials and tools are required for the "Replacing outer side member" repair operation:



1767-66

A Bonding gun	VAG 1628	e.g. VW Werk AG KD-Gerätevertrieb
B Mixing rod 9528	000.721.952.80	Porsche Parts Dept.
C Bonding set	999.915.509.40	

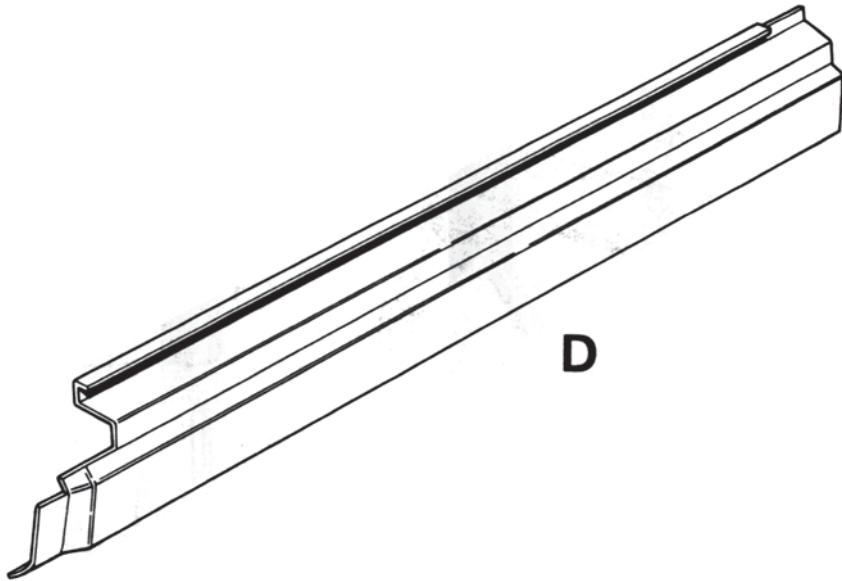
Bonding set contents:

C 1 = Cartridge component A
 C 2 = Cartridge component B
 C 3 = Mixing cartridge
 C 4 = Primer
 C 5 = Activator
 C 6 = Cleaning solution

C 7 = Injector nozzle
 C 8 = Application nozzle
 C 9 = Application nozzle
 C 10 = Filling nozzle
 C 11 = Touch-in tool

Replacing outer side member

The following body spare part is required for the "Replacing outer side member" repair operation:



D = Outer side member

Replacing outer side member

Remove all accessories and interior components from the outer side member section as well as the front fender!

No.	Operation	Instructions
1	Cut through outer side member and separate spotwelds	Using a body saw, cut through outer side member ahead of rear side panel. Separate spotwelds between outer side member and center side member, fender mating panel and closing panel with a spotweld cutter.
	Clean welding areas	Use a hot air gun or rotary wire brush to remove paint, underbody sealant etc. from welding areas of body. Remove factory primer from welding areas of spare part with a rotary wire brush.
2	Trial-fit outer side member to body and prepare for fitting	Trial-fit spare outer side member to body side panel. Drill out outer side member along joints with fender mating panel and closing panel for plug welding. Fit outer side member into body and adjust with door contours.
3	Remove outer side member and prepare bonding area	Lift spare outer side member off the body. Clean bonding areas on gusset plate and outer side member for bonding and apply primer.

Preparing the bonding cartridge for application of adhesive

No.	Operation	Instructions
4	Open nozzle fitting of cartridge containing component A	Use a screwdriver to pierce the diaphragm of the nozzle fitting of the cartridge containing component A (C1).
5	Open flanged cover of cartridge containing component A	Use the screwdriver handle to pierce the flanged cover at the end of the cartridge containing component A (C1).
6	Screw filling nozzle onto cartridge containing component A	Screw filling nozzle (C10) onto cartridge containing component A (C1).
7	Place cartridge containing component A into bonding gun	Place cartridge containing component A (C1) into bonding gun (A). Remove screw-on cap of mixing cartridge (C3).
8	Press component A into mixing cartridge	Insert filling nozzle (C10) of cartridge containing component A (C1) into mixing cartridge (C3). Use bonding gun (A) to press component A into mixing cartridge (C3).
9	Open nozzle fitting of cartridge containing component B	Use a knife to cut off the tip of the nozzle fitting of the cartridge containing component B (C2).
10	Screw injector nozzle onto cartridge containing component B	Screw injector nozzle (C7) onto cartridge containing component B (C2).
11	Place cartridge containing component B into bonding gun	Place cartridge containing component B (C2) into bonding gun (A).

No.	Operation	Instructions
12	Press component B into mixing cartridge with component A	Insert injector nozzle (C7) of cartridge containing component B (C2) into mixing cartridge (C3). Use the bonding gun (A) to press component B (C2) into mixing cartridge (C3) containing component A.
13	Close mixing cartridge	Pull injector nozzle (C7) out of mixing cartridge (C3) and close mixing cartridge with screw-on cap.
14	Screw mixing rod into mixing cartridge	Screw mixing rod (B) manually into internal threads of mixing disc of mixing cartridge (C3). Clamp other end of mixing rod in a power drill chuck. Fit the power drill in a suitable clamping device.
15	Mix component A und component B	Switch on drill (speed 900 - 1200 rpm) and move mixing cartridge 25 times from stop zu stop. Perform all 25 double strokes fairly rapidly!
16	Engage mixing disc into piston	Pull back mixing cartridge until a rattling sensation is felt. Switch off drill und unscrew mixing rod from mixing cartridge. This will cause the mixing disc to engage into the piston of the mixing cartridge.
17	Place mixing cartridge into bonding gun	Place mixing cartridge with mixed 2-pack adhesive into bonding gun. Screw application nozzle (C8) onto mixing cartridge.

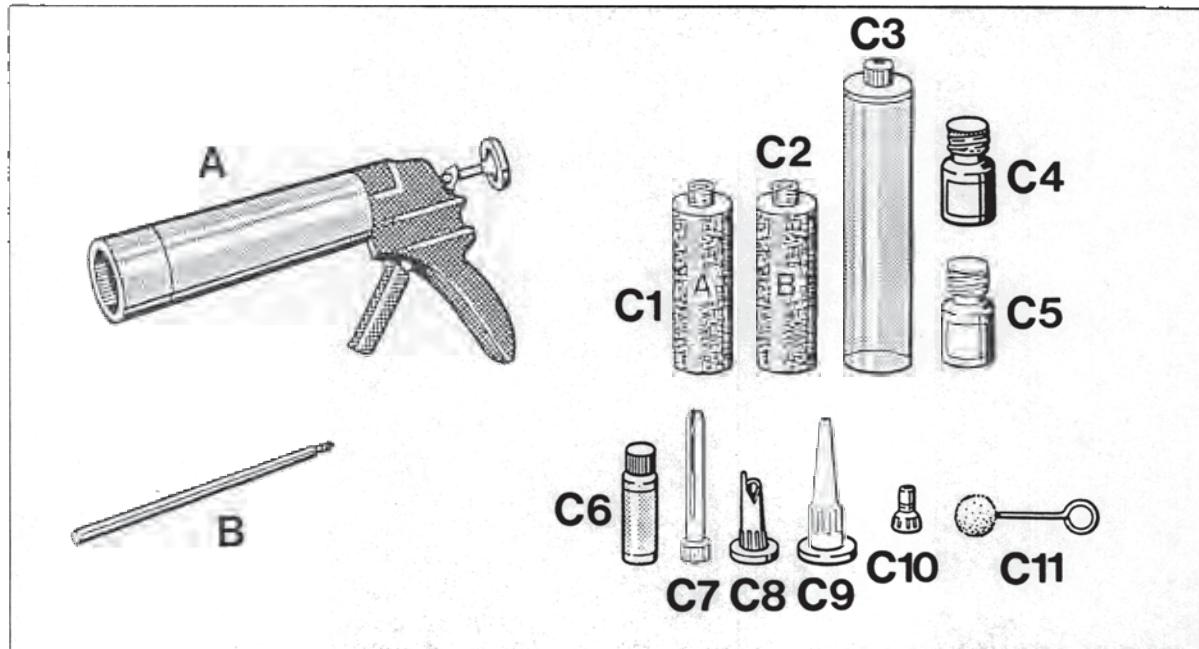
Caution: Observe open time of 15 minutes!

Open time is the time available for application of the adhesive and for fitting the outer side member to the body.

No.	Operation	Instructions
18	Apply adhesive to the gusset plate	Apply 2-pack adhesive with the bonding gun to the entire gusset plate surface to a thickness of 4 mm. Do not apply any adhesive in the outer side member to side panel welding area.
19	Fit outer side member and weld into place	Fit outer side member into body and adjust according to door contours. MIG-weld spare outer side member to body side panel, running a butt full seam. Plug-weld outer side member, fender mating panel and closing panel using MIG equipment. Spotweld outer side member to center side member and inner side member.

51 48 55 Replacing center side member

The following tools and materials are required for the "Replacing center side member" repair operation:



A	Bonding gun	VAG 1628	e.g. VW Werk AG KD-Gerätevertrieb
B	Mixing rod 9528	000.721.952.80	Porsche Parts Dept.
C	Bonding set	999.915.509.40	

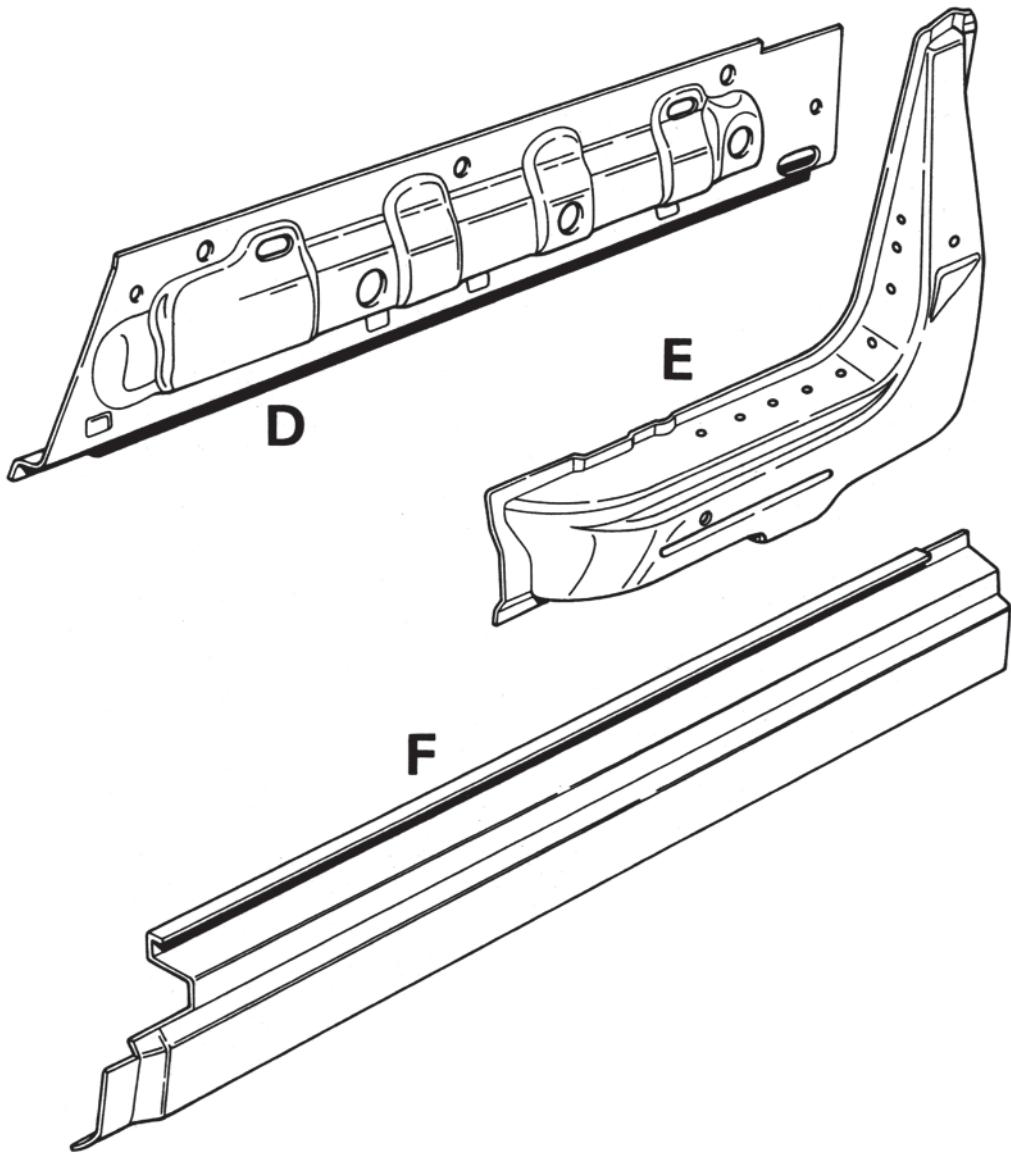
Bonding set contents:

- C 1 = Cartridge component A
- C 2 = Cartridge component B
- C 3 = Mixing cartridge
- C 4 = Primer
- C 5 = Activator
- C 6 = Cleaning solution

- C 7 = Injector nozzle
- C 8 = Application nozzle
- C 9 = Application nozzle
- C 10 = Filling nozzle
- C 11 = Touch-in tool

Replacing center side member

The following body spare parts are required for this sectional repair.

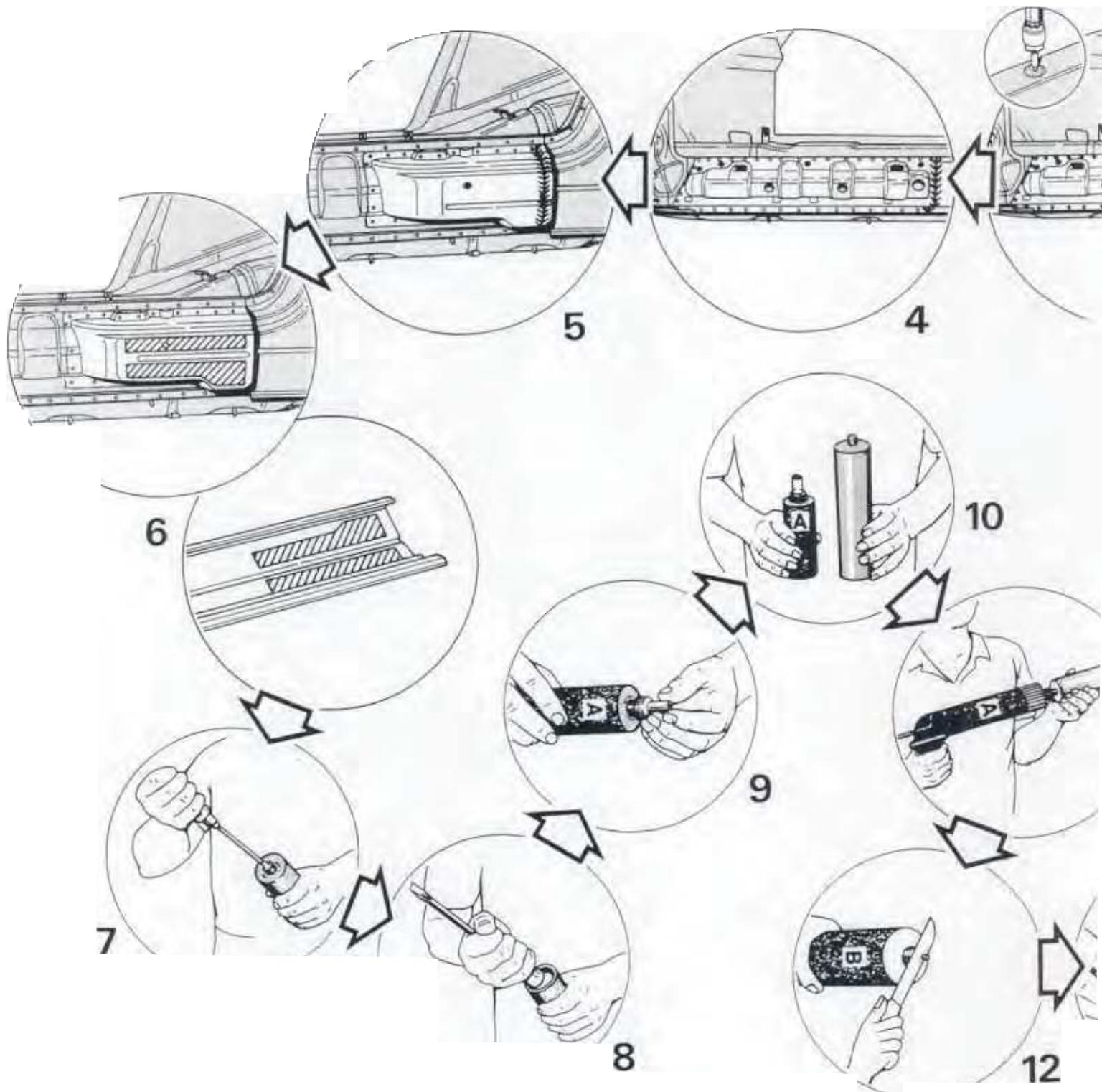


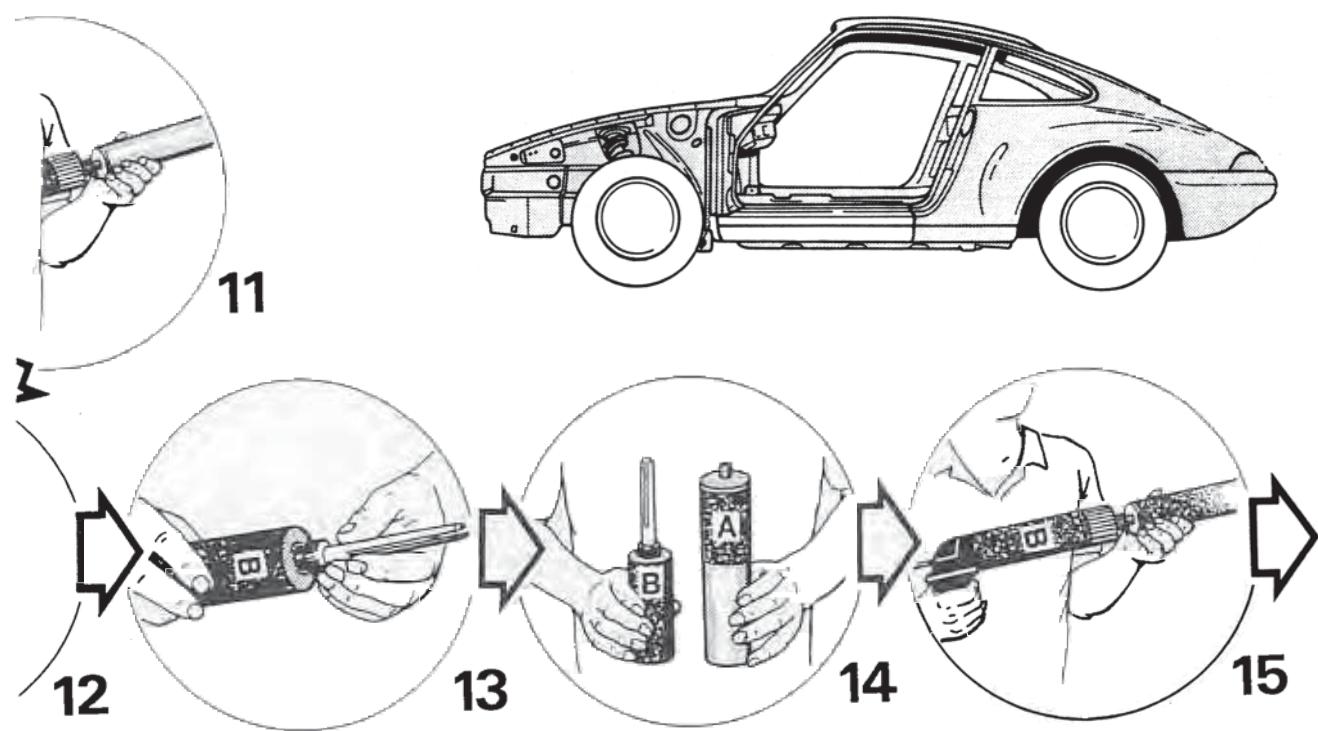
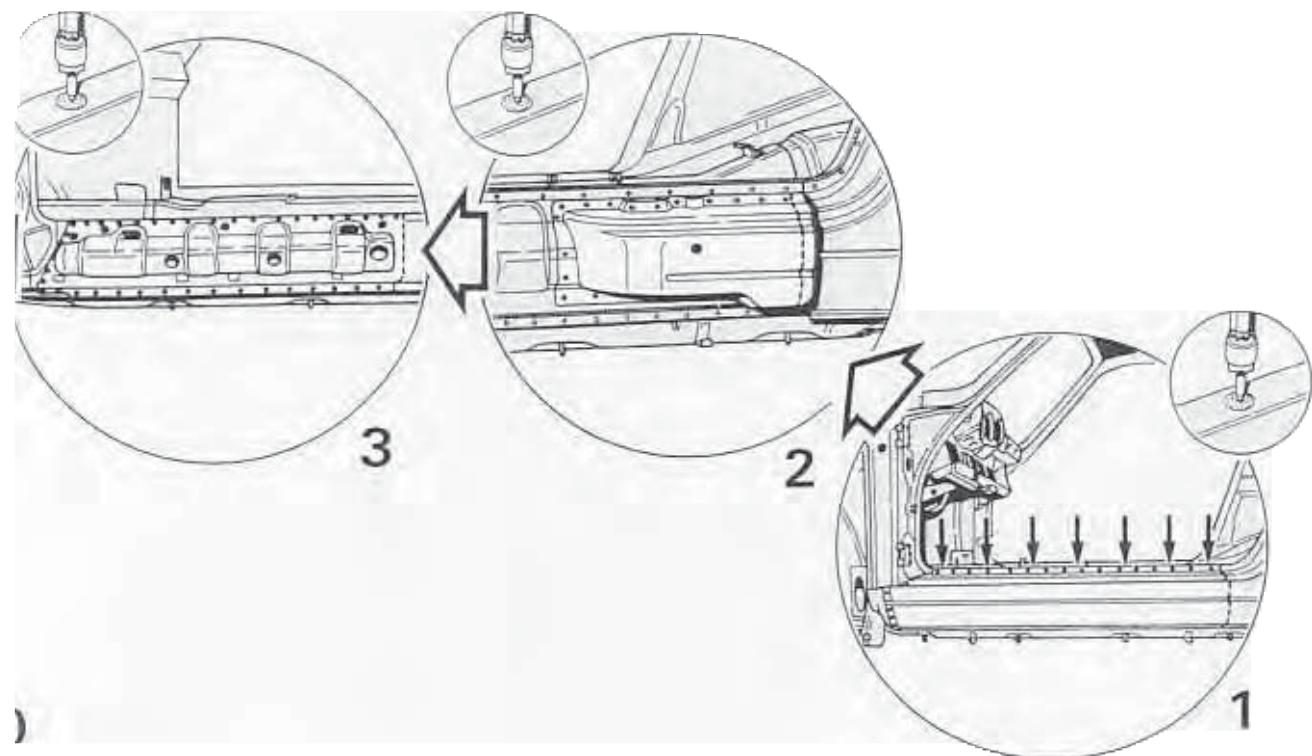
D = Center side member

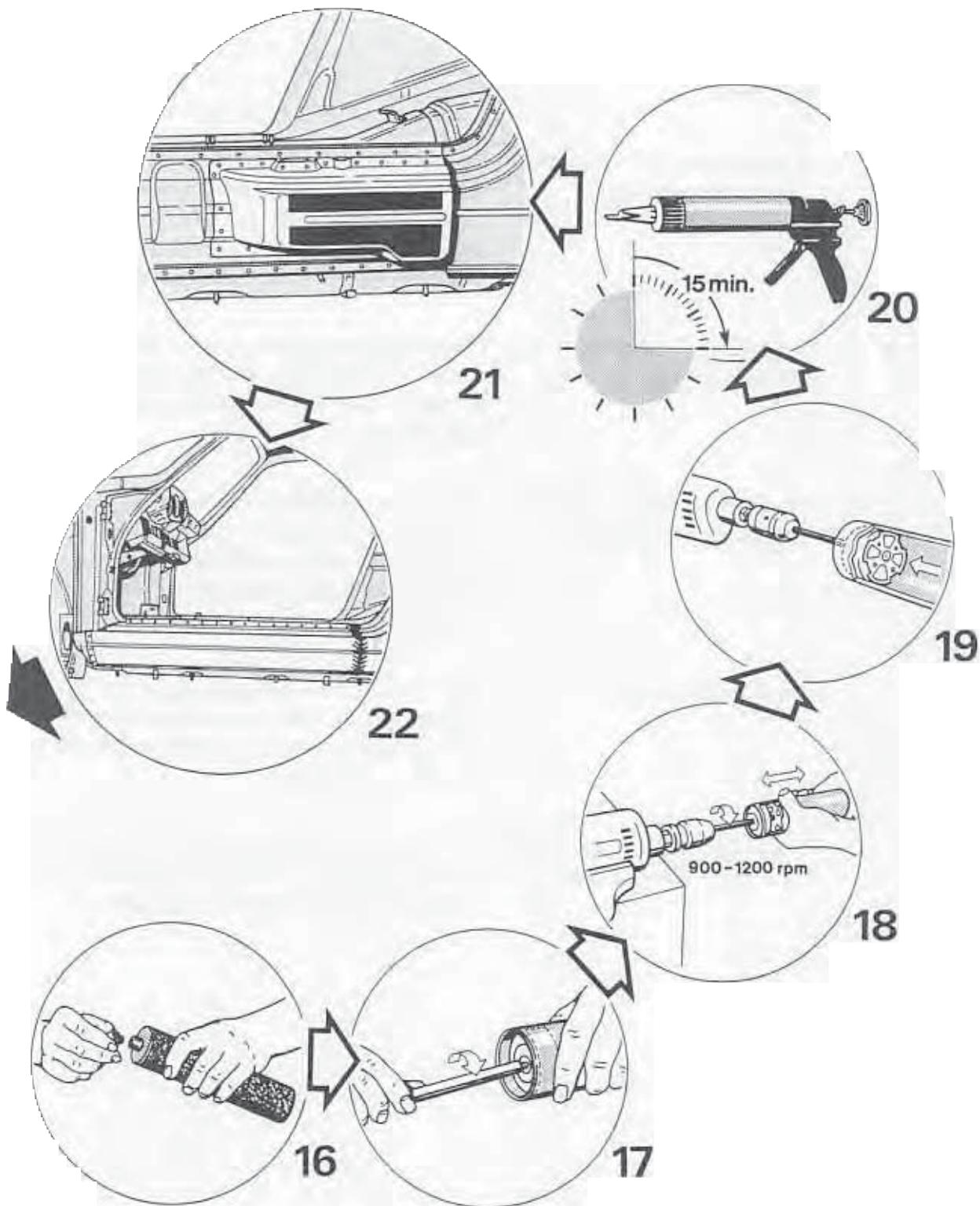
E = Gusset plate

F = Outer side member

Replacing center side member





Replacing center side member

Replacing center side member

Remove all accessories and interior components from the center body section as well as the front fender!

No.	Operation	Instructions
	Cut through outer side member and separate spotwelds	Cut through outer side member ahead of rear side panel using a body saw; use a spotweld cutter to separate spotwelds between outer side member and center side member, inner side member, floorpan, fender mating panel and closing panel.
2	Cut through gusset plate and separate spotwelds	Cut through gusset plate ahead of rear side panel using a body saw. Separate spotwelds between gusset plate and center side member as well as side panel using a spotweld cutter.
3	Cut through center side member and separate spotwelds	Cut through center side member ahead of rear side panel using a body saw. Separate spotwelds between center side member and floorpan, inner side member as well as front side panel using a spotweld cutter
	Clean welding areas	Use a hot air gun or rotary wire brush to remove underbody sealant, paint etc. from welding areas of body. Remove factory primer from spare part welding areas with a rotary wire brush.
	Trial-fit center side member into body and prepare for fitting	Trial-fit spare center side member to body center side member, making a butt joint. Drill center side member at joints to front side panel for plug welding.

No.	Operation	Instructions
4	Weld in center side member	Use clamping tools to attach spare center side member and MIG-weld to body center side member running a butt full seam. Plug weld center side member to front side panel using MIG equipment. Spotweld center side member to floorpan and inner side member.
5	Trial-fit gusset plate, prepare for fitting and weld into place	Trial-fit spare gusset plate to body gusset plate, making a butt joint. Drill gusset plate at joints to center side member for plug welding. MIG-weld spare gusset plate to body gusset plate, running a butt full seam. Plug weld gusset plate to center side member, using MIG equipment.
	Trial-fit outer side member to body and prepare for fitting	Trial-fit spare outer side member to outer side member, making a butt joint. Drill outer side member at joints to fender mating panel and closing panel for plug welding.

Preparing the bonding cartridge for application of adhesive

- 6 Prepare bonding areas Clean bonding areas of gusset plate and outer side member for bonding and apply primer.
- 7 Open nozzle fitting of cartridge containing component A Use a screwdriver to pierce the diaphragm in the nozzle fitting of the cartridge containing component A (C1).
- 8 Open flanged cover of cartridge containing component A Use the screwdriver handle to pierce the flanged cover at the end of the cartridge containing component A (C1).
- 9 Screw filling nozzle onto cartridge containing component A Screw filling nozzle (C10) onto cartridge containing component A (C1).
- 10 Place cartridge containing component A into bonding gun Place cartridge containing component A (C1) into bonding gun (A). Remove screw-on cap from mixing cartridge (C3).

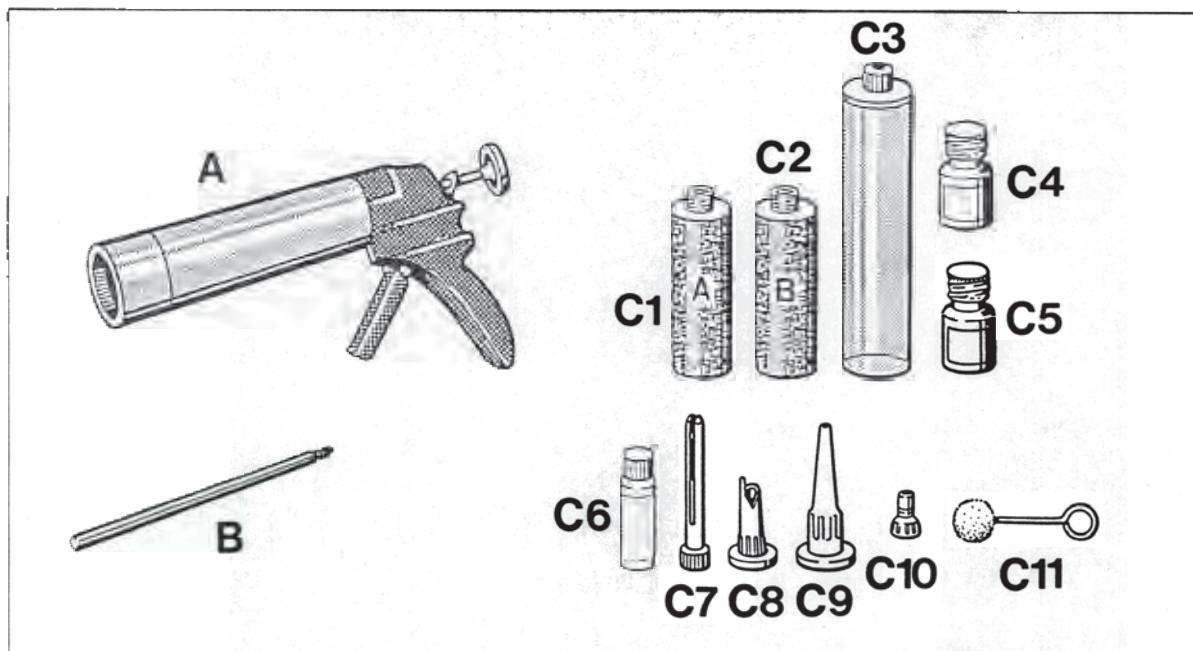
No.	Operation	Instructions
	Press component A into mixing cartridge	Engage filling nozzle (C10) of cartridge containing component A (C1) into mixing cartridge (C3). Use bonding gun (A) to press component A into mixing cartridge (C3).
12	Open nozzle fitting of cartridge containing component B	Use a knife to cut off the tip of the nozzle fitting of the cartridge containing component B (C2).
13	Screw injector nozzle onto cartridge containing component B	Screw injector nozzle (C7) onto cartridge containing component B (C2).
14	Place cartridge containing component B into bonding gun	Place cartridge containing component B (C2) into bonding gun (A).
15	Press component B into mixing cartridge with component A	Insert injector nozzle (C7) of cartridge containing component B (C2) into mixing cartridge (C3). Use the bonding gun (A) to press component B (C2) into mixing cartridge (C3) with component A.
16	Close mixing cartridge	Pull injector nozzle (C7) out of mixing cartridge (C3) and close mixing cartridge with screw-on cap.
17	Screw mixing rod into mixing cartridge	Screw mixing rod (B) manually into internal threads of mixing disc of mixing cartridge (C3). Clamp the other end of the mixing rod in a power drill chuck. Fit the power drill in a suitable clamping device.
18	Mix component A and component B	Switch on drill (speed 900 - 1200 rpm) and move mixing cartridge 25 times from stop to stop. Perform all 25 double strokes fairly rapidly!

No.	Operation	Instructions
19	Engage mixing disc into piston	Pull back mixing cartridge until a rattling sensation is felt. Switch off drill and screw mixing rod out of mixing cartridge. This causes the mixing disc to engage into the piston of the mixing cartridge.
20	Place mixing cartridge into bonding gun	Place mixing cartridge with mixed 2-pack window adhesive into bonding gun. Screw application nozzle (C8) onto mixing cartridge.
Caution: Observe open time of 15 minutes!		
Open time is the time available for application of the adhesive and for fitting the outer side member into the body		
21	Apply adhesive to gusset plate	Apply 2-pack adhesive with bonding gun to entire gusset plate surface to a thickness of 4 mm. Do not apply any adhesive to the outer side member to side panel welding area.
22	Weld in outer side member	Fit outer side member to body and adjust to contours of door. MIG-weld spare outer side member to body outer side member running a butt full seam. Plug-weld outer side member to fender mating panel and closing panel using MIG equipment. Spotweld outer side member to inner side member and center side member (floorpan).

Grind down butt weld seam

51 73 55 Replacing floorpan

The following materials and tools are required for the "Replacing floorpan" repair operation:



A	Bonding gun	VAG 1628	e.g. VW Werk AG KD-Gerätevertrieb
B	Mixing rod 9528	000.721.952.80	Porsche Parts Dept.
C	Bonding set	999.915.509.40	

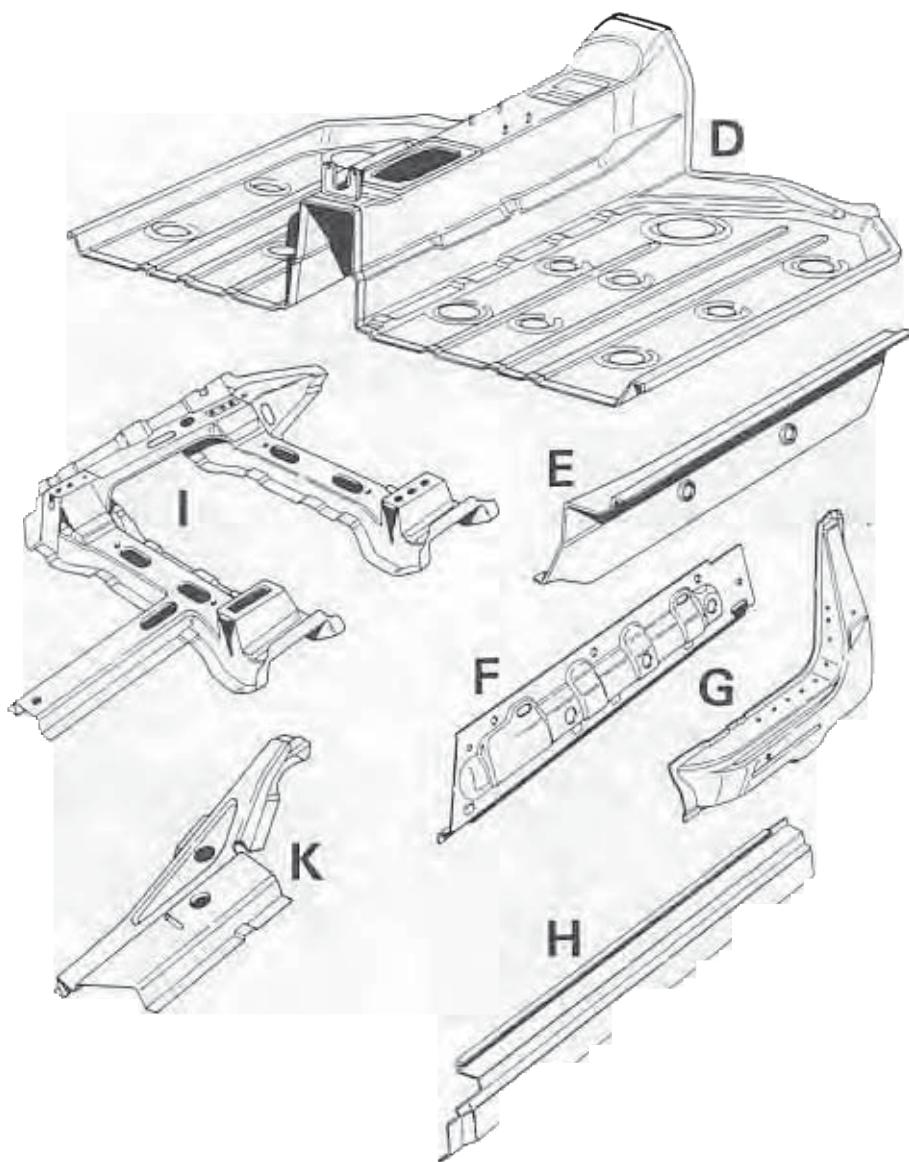
Bonding set contents:

- C 1 = Cartridge component A
- C 2 = Cartridge component B
- C 3 = Mixing cartridge
- C 4 = Primer
- C 5 = Activator
- C 6 = Cleaning solution

- C 7 = Injector nozzle
- C 8 = Application nozzle
- C 9 = Application nozzle
- C 10 = Filling nozzle
- C 11 = Touch-in tool

Replacing floorpan

The following body spare parts are required for this sectional repair:



D = Floorpan

E = Inner side member

F = Center side member

G = Gusset plate

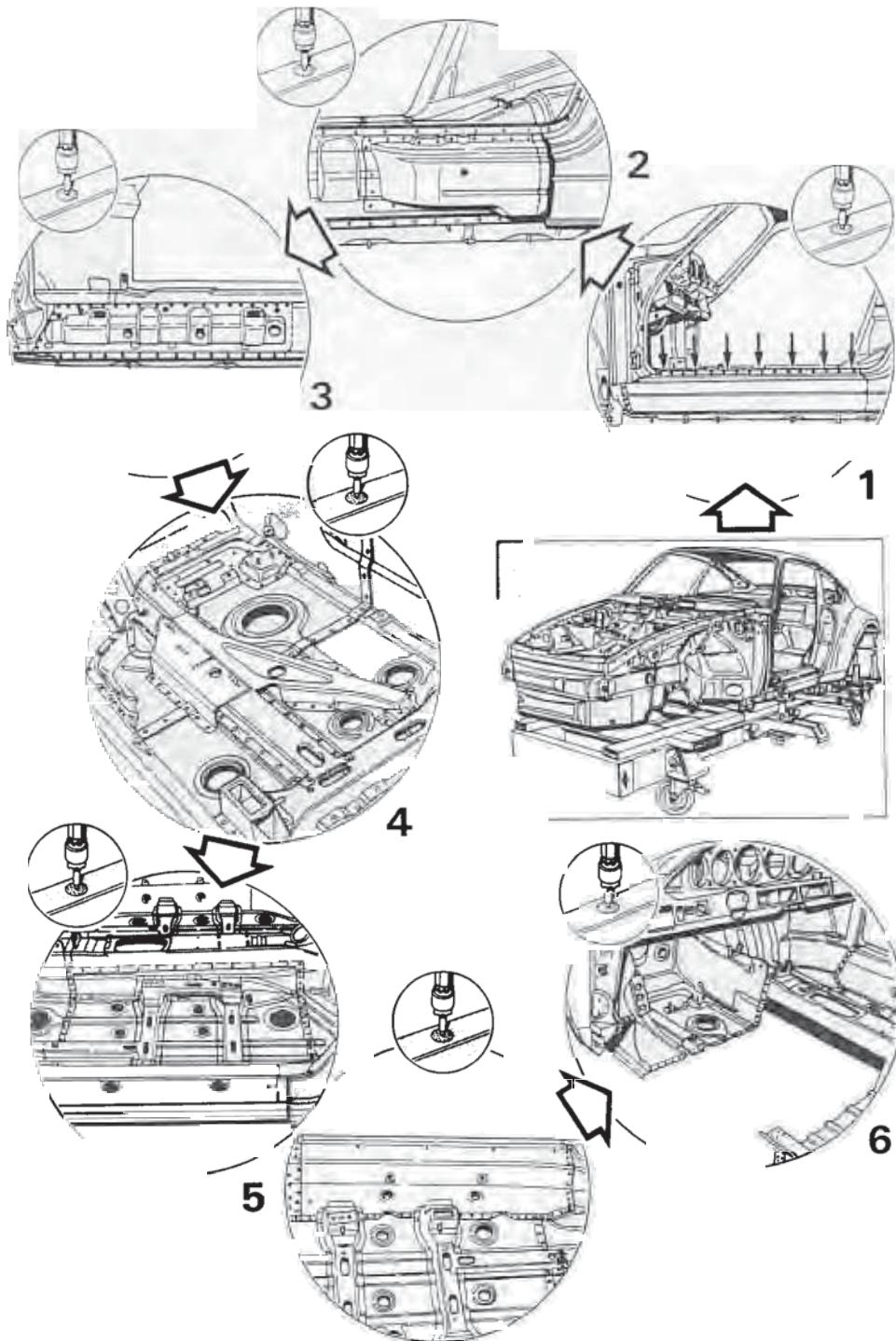
H = Outer side member

I = Seat base

K = Front floor bracing plate

Replacing floorpan

Cutting outer side member, center side member, inner side member and floorpan partially out of body



Replacing floorpan

Fitting parts of outer side member, center side member, inner side member and floorpan into body

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Replacing floorpan

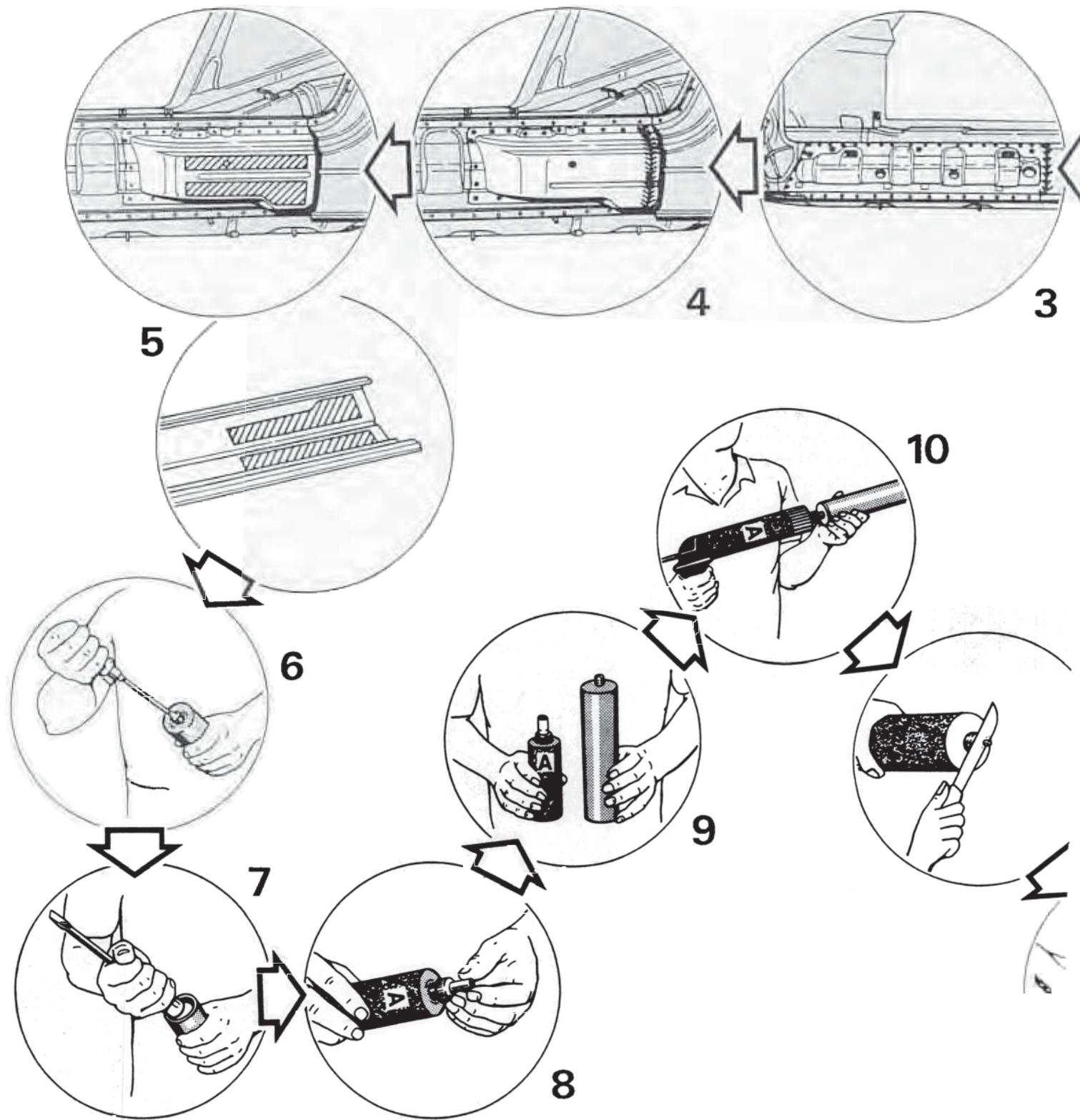
Cutting outer side member, center side member, inner side member and floorpan partially out of body

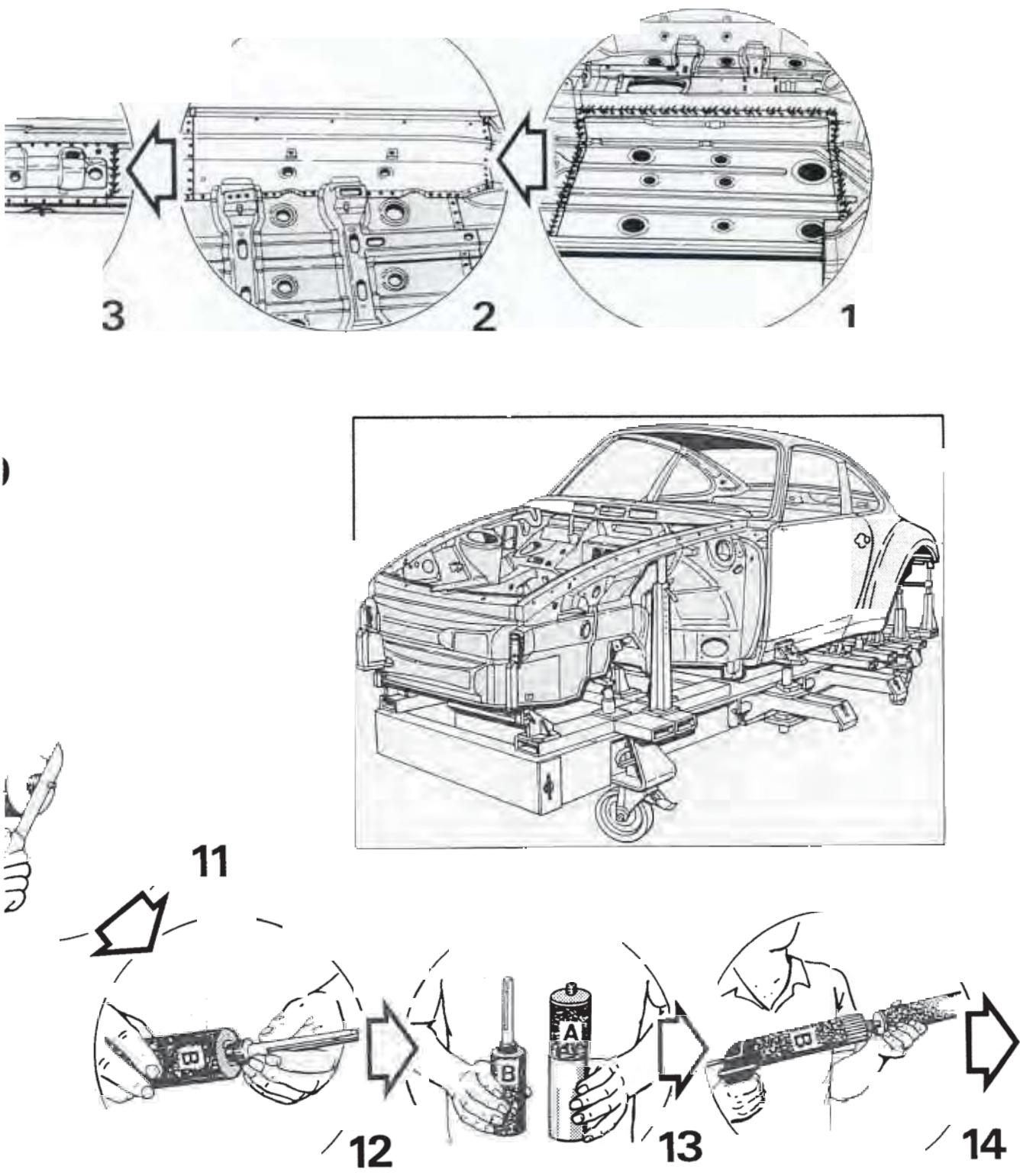
Remove all ancillaries and accessories, including interior trim, from the center body section as well as the front fender !

No.	Operation	Instructions
	Place vehicle onto bench-type straightening equipment	Place vehicle onto straightening attachment set – not the economy set –.
1	Cut through outer side member and separate spotwelds	Cut through outer side member ahead of rear side panel using a body saw. Separate spotwelds between outer side member and inner side member, center side member, fender mating panel as well as closing panel using a spotweld cutter.
2	Cut through gusset plate and separate spotwelds	Cut through gusset plate ahead of rear side panel with a body saw. Separate spotwelds between gusset plate and center side member as well as side panel using a spotweld cutter.
3	Cut through center side member and separate spotwelds	Cut through center side member ahead of rear side panel using a body saw. Separate spotwelds between center side member and floorpan, inner side member as well as front side panel with a spotweld cutter.
4	Left-hand drive only : Separate weld seams of floor bracing panel	Separate spotwelds between bracing panel and front body floor with a spotweld cutter. Grind down MIG weld seams between bracing panel, seat base and extension.
5	Cut through inner side member, floorpan and tunnel. Separate weld joints	Cut through inner side member ahead of rear side rail, rear floorpan behind seat base and floorpan next to tunnel with a body saw. Grind off MIG weld seam between seat base and extension. Separate spotwelds between inner side member and front side rail, between center of floorpan and front floorpan as well as between center of tunnel and front of tunnel with a spotweld cutter.
6	Separate spotwelds of inner side member /rear side rail	Separate spotwelds between inner side member and rear side rail with a spotweld cutter. Lift out remaining inner side member.

Replacing floorpan

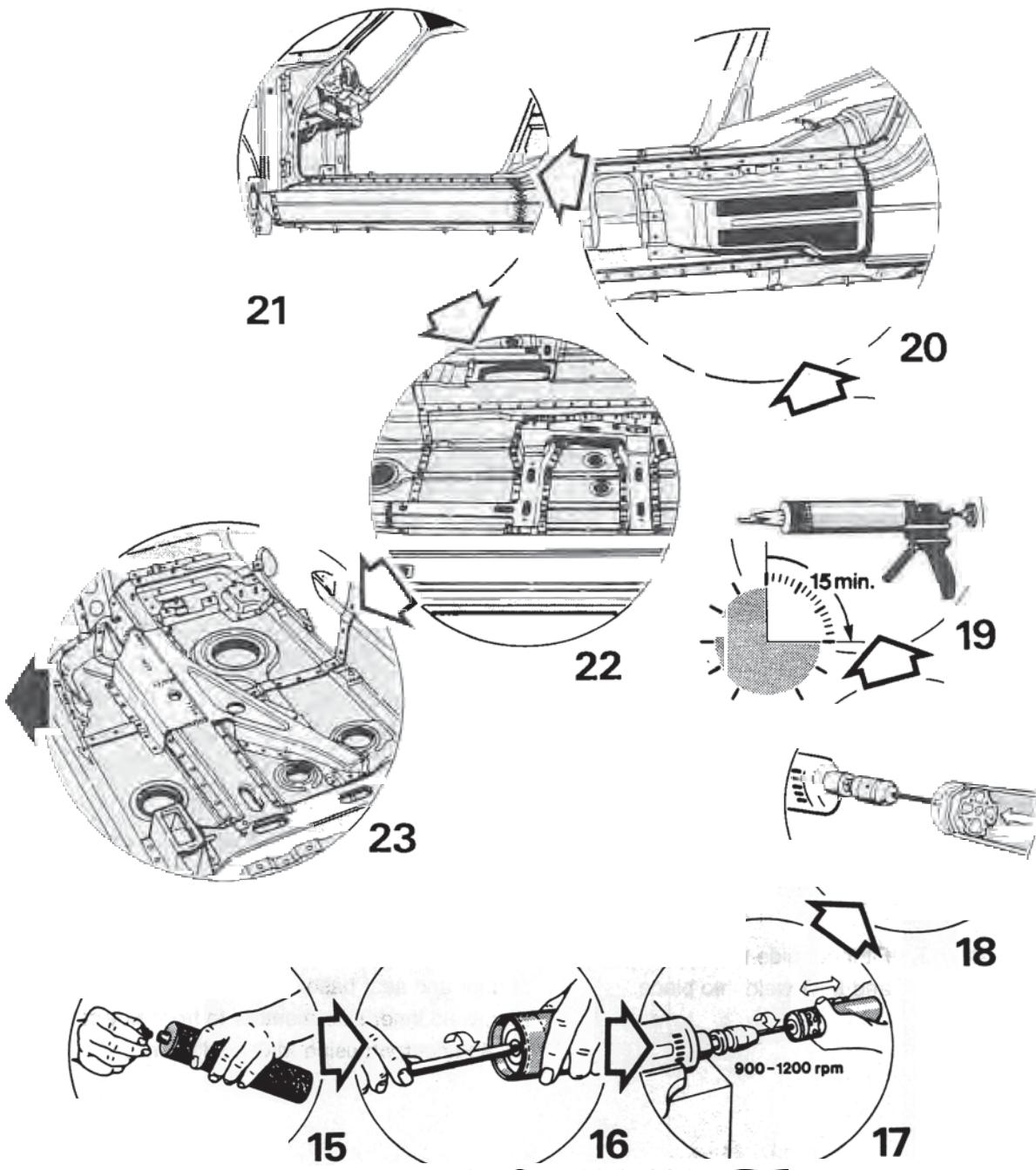
Fitting parts of outer side member, center side member, inner side member and floorpan into body





Replacing floorpan

Fitting parts of outer side member, center side member, inner side member and floorpan into body



Replacing floorpan

Fitting parts of outer side member, center side member, inner side member and floorpan into body

No.	Operation	Instructions
	Carry out straightening operations and adjust body with straightening brackets	Carry out all straightening operations on the body. Adjust body with straightening brackets. Refit door to check body contours. The gap between door and body must be parallel along its entire circumference.
	Clean welding areas	Use a hot air gun or rotary wire brush to remove underbody sealant, paint etc. from welding areas of body. Use a rotary wire brush to remove factory primer from welding areas of spare parts.
	Trial-fit floorpan into body and prepare for welding in	Trial-fit spare floorpan in mating areas with rear floorpan and tunnel into body, making an overlap joint. Joggle spare floorpan towards inside in these areas. Drill spare floorpan for plug welding.
	Weld floorpan into body	Locate floorpan with clamping tools. Plug weld spare floorpan to rear floorpan, tunnel and front floorpan with MIG equipment. MIG-weld overlapping areas between spare floorpan and rear floorpan, tunnel and front floorpan with an intermittent full seam.
	Prepare inner side member for trial-fitting into body	Drill inner side member at joints with front side rail and floorpan for plug welding.
2	Fit inner side member to body and MIG-weld into place	Fit inner side member into body and adjust to contours of door and seat base. Plug-weld inner side member to front side rail, rear side rail and floorpan using MIG equipment.

No.	Operation	Instructions
	Trial-fit center side member to body and prepare for fitting	Trial-fit spare center side member to body center side member, making a butt joint. Drill center side member at joints with front side panel for plug welding.
3	Weld in center side member	Attach spare center side member with clamping tools and MIG-weld to body center side member, running a butt full seam. Plug weld center side member to front side panel using MIG equipment. Spotweld center side member to floorpan and inner side member.
4	Trial-fit gusset plate, prepare for fitting and weld into place	Trial-fit spare gusset plate to body gusset plate, making a butt joint. Drill gusset plate at joints with center side member for plug welding. MIG-weld spare gusset plate to body gusset plate, running an intermittent full seam. Plug-weld gusset plate to center side member, using MIG equipment.
	Trial-fit outer side member to body and prepare for fitting	Trial-fit spare outer side member to body outer side member, making a butt joint. Drill outer side member at joints with fender mating line, closing panel and center side member for plug welding.
5	Prepare bonding areas	Prepare bonding areas at gusset plate and outer side member for bonding and apply primer.

Preparing the bonding cartridge for application of adhesive

No.	Operation	Instructions
6	Open nozzle fitting of cartridge containing component A	Use a screwdriver to pierce the diaphragm in the nozzle fitting of the cartridge containing component A (C1).
7	Open flanged cover of cartridge containing component A	Use the screwdriver handle to pierce the flanged cover at the end of the cartridge with component A (C1).
8	Screw filling nozzle onto cartridge containing component A	Screw filling nozzle (C10) onto cartridge containing component A (C1).
9	Place cartridge containing component A into bonding gun	Place cartridge containing component A (C1) into bonding gun (A). Remove screw-on cap from mixing cartridge (C3).
10	Press component A into mixing cartridge	Insert filling nozzle (C10) of cartridge containing component A (C1) into mixing cartridge (C3). Use Bonding gun (A) to press component A into mixing cartridge (C3).
11	Open nozzle fitting of cartridge containing component B	Use a knife to cut off the tip of the nozzle fitting of the cartridge containing component B (C2).
12	Screw injector nozzle onto cartridge containing component B	Screw injector nozzle (C7) onto cartridge containing component B (C2).
13	Place cartridge containing component B into bonding gun	Place cartridge containing component B (C2) into bonding gun (A).
14	Press component B into mixing cartridge with component A	Engage injector nozzle (C7) of cartridge containing component B (C2) into mixing cartridge (C3). Use the bonding gun (A) to press component B (C2) into mixing cartridge (C3) with component A.

No.	Operation	Instructions
15	Close mixing cartridge	Pull injector nozzle (C7) out of mixing cartridge (C3) and close mixing cartridge with screw-on cap.
16	Screw mixing rod into mixing cartridge	Screw mixing rod (B) manually into internal threads of mixing disc in mixing cartridge (C3). Clamp the other end of the mixing rod in a power drill chuck. Fit the power drill in a suitable clamping device.
17	Mix component A and component B	Switch on drill (speed 900 - 1200 rpm) and move mixing cartridge 25 times from stop zu stop. Perform all 25 double strokes fairly rapidly!
18	Engage mixing disc into piston	Pull back mixing cartridge until a rattling sensation is felt. Switch off drill and unscrew mixing rod from mixing cartridge. This causes the mixing disc to engage into the piston of the mixing cartridge.
19	Place mixing cartridge into bonding gun	Insert mixing cartridge with mixed 2-pack window adhesive into bonding gun. Screw application nozzle (C8) onto mixing cartridge.

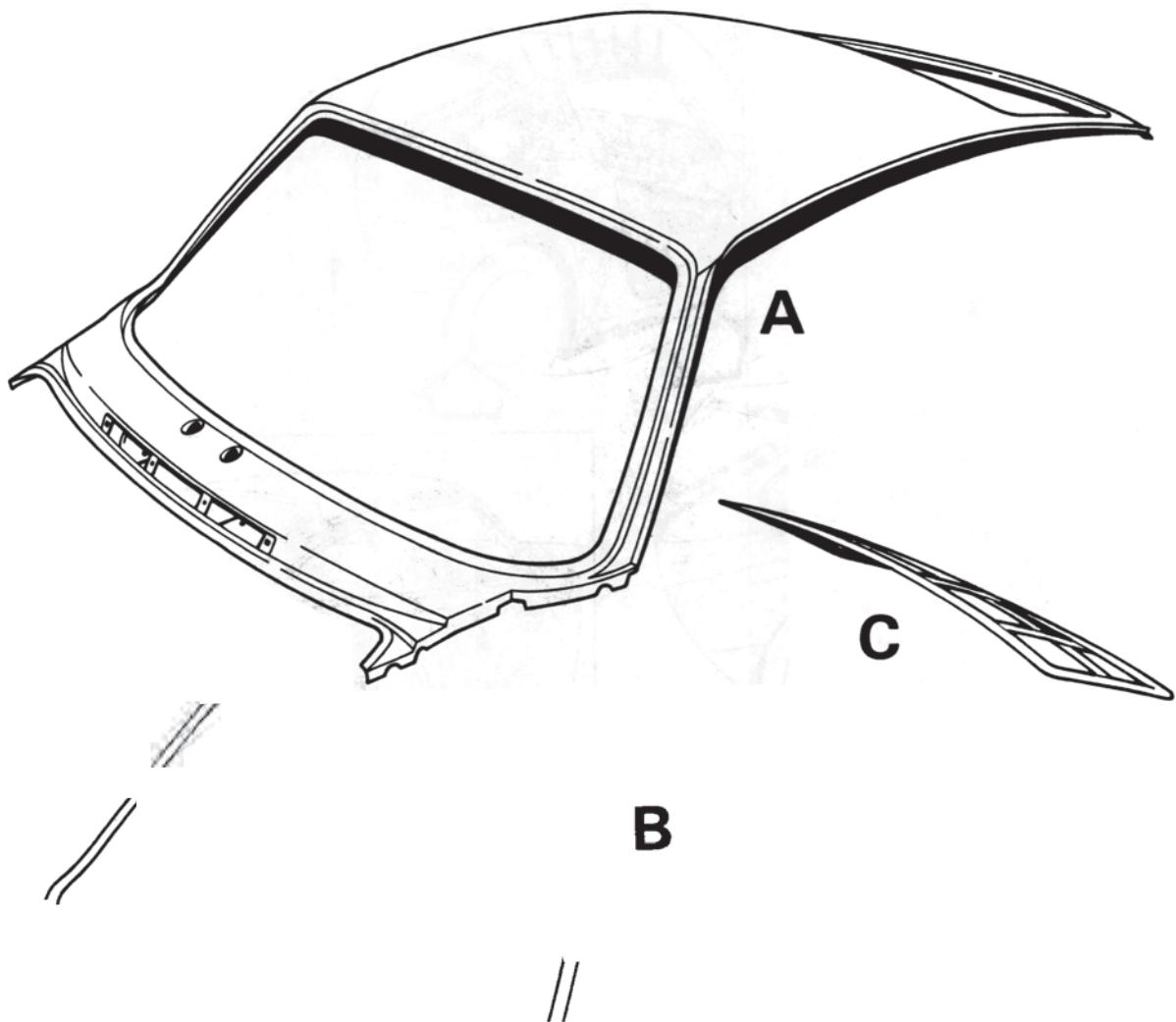
Caution: Observe open time of 15 minutes!

Open time is the time available for application of the adhesive and for fitting the outer side member into the body.

No.	Operation	Instructions
20	Apply adhesive to gusset plate	Use bonding gun to apply 2-pack adhesive to entire gusset plate surface to a thickness of 4 mm. Do not apply any adhesive to outer side member to rear side panel welding area.
21	Weld in outer side member	Fit outer side member into body and align with door contours. MIG-weld spare outer side member to body outer side member, running a butt full seam. Plug weld outer side member to center side member, fender mating panel and closing panel, using MIG equipment. Spot-weld outer side member to inner side member and center side member.
	Grind down butt weld seam	
22	Prepare seat base for trial fitting and weld in place	Drill seat base at spotweld flanges for plug welding. Plug weld seat base to floorpan, tunnel and inner side member using MIG equipment. MIG-weld seat base complete with extension, running an intermittent full seam.
23	Only LHD vehicles, left side Trial-fit front floorpan bracing plate and weld into place	Trial-fit front floorpan bracing plate, MIG plug weld to front floor pan, MIG-weld to seat base front end extension, running a full seam.

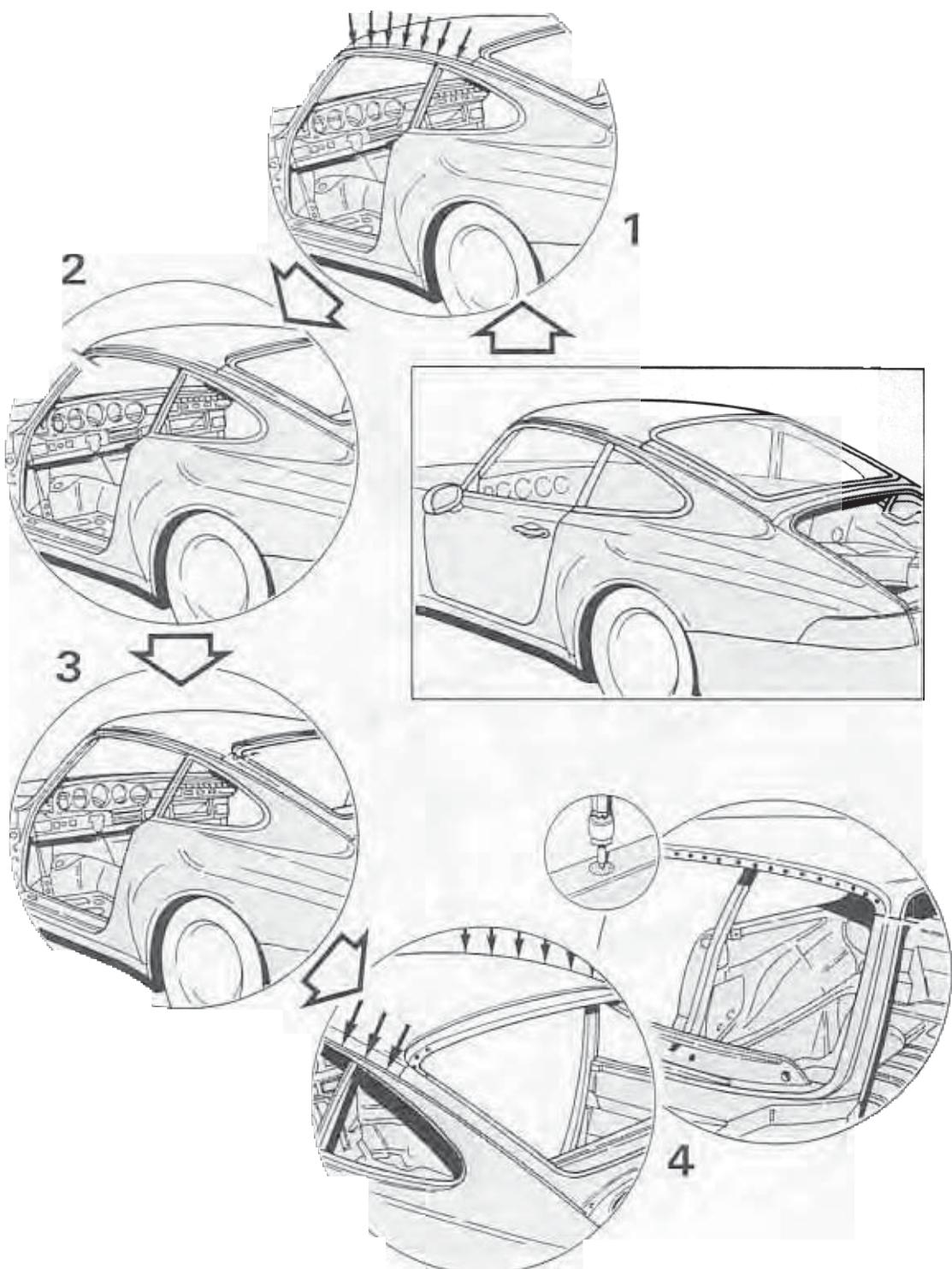
51 03 55 Replacing part of roof panel

The following special tools and body spare parts are required for the "Replacing part of roof panel" repair operation



Replacing part of roof panel

Cutting roof partially out of body

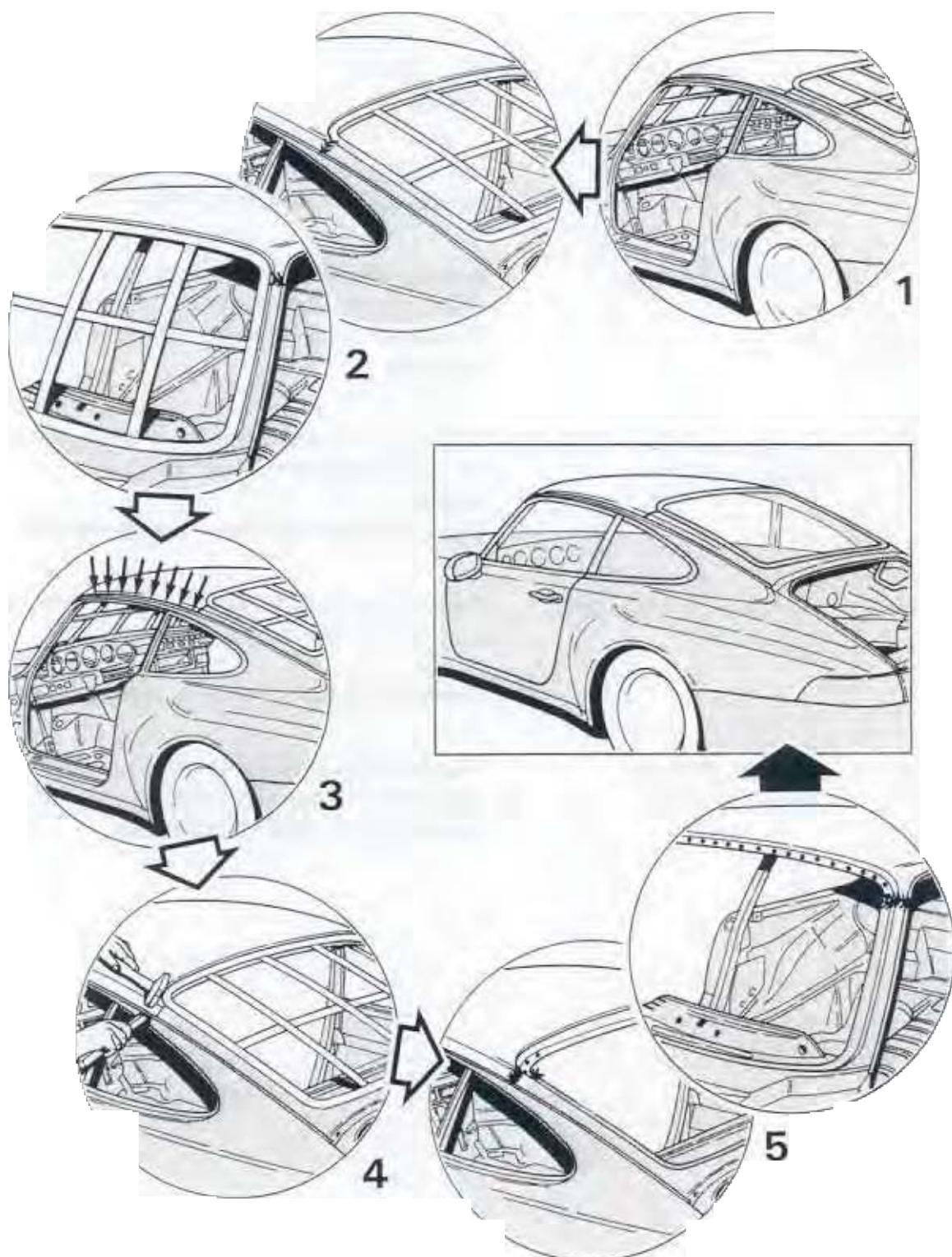


Replacing part of roof panel

Cutting roof partially out of body

Remove interior complete with window glass!

No.	Operation	Instructions
	Remove paint coat from roof flanges	Use a rotary wire brush to remove paint coating from roof flanges between A and C posts.
1	Separate flange joints	Separate flange joints between flange panels and roof rails as well as between side panels and roof rails. To separate the flange joints, heat the flanges and bend them open.
2	Cut through roof outer panel in A post area	Cut through roof outer panel as closely as possible to the windshield crossbeam at the A posts. Caution: Take care not to cut into or damage the roof rails.
3	Cut through roof outer panel in C post area	Cut through roof outer panel at C posts in rear window body aperture area. Caution: Take care not to cut into or damage the roof rails.
4	Separate spotwelds of roof outer panel	Separate spotwelds between roof outer panel and windshield crossbeam, roof rails, flange panels and side panels with a spotweld cutter.

Replacing part of roof panel**Fitting part of roof panel to body**

Replacing part of roof panel

Fitting part of roof panel to body

No.	Operation	Instructions
	Clean welding areas	Use a hot air gun or rotary wire brush to remove sealant residue, paint etc. from welding areas of body. Remove factory primer from welding areas of spare roof outer panel.
	Trial-fit roof outer panel into body	Trial-fit spare roof outer panel to body roof outer panel, making a butt joint.
1	Place Special Tools P 852 and P 853 into position	Place Special Tools P 852 (windshield template) and P 853 (rear window template) into body apertures and clamp into place along spotweld flanges using clamping tools.
	Attach roof outer panel	Using clamping tools, attach roof outer panel to roof rails, flange panels and side panels.
2	MIG-weld roof outer panel	MIG-weld spare roof outer panel to body roof outer panel, running a full seam.
	Tack-weld roof outer panel with MIG equipment	Tack-weld roof outer panel to spotweld flanges in windshield and rear window areas from inside (passenger compartment) using MIG equipment.
3	Spotweld roof outer panel	Spotweld roof outer panel to roof rails, side panels and flange panels. Note: When spotwelding in the visible areas, use a copper plate to avoid spotweld indentations.

No.	Operation	Instructions
4	Flange roof outer panel	Flange roof outer panel and roof rails with flange panels and side panels.
	Remove all Special Tools	
5	Spotweld the spotweld flanges	Spotweld the spotweld flanges of the windshield and rear window body apertures.
	Finish welding in the roof outer panel	MIG-weld roof outer panel in all areas of A and C posts that have been inaccessible up to now, running a full seam.
	Grind down MIG weld seams	Grind down MIG weld seams along A and C posts.

51 03 35 Replacing the complete roof

The following body spare parts and special tools are required for the "Replacing the complete roof" repair operation:



1912 - 51

- A = Outer roof sheet
- B = Transverse windshield section
- C = Roof rail
- D = Flange panel
- E = Inner panel B-post
- F = Enclosed angle

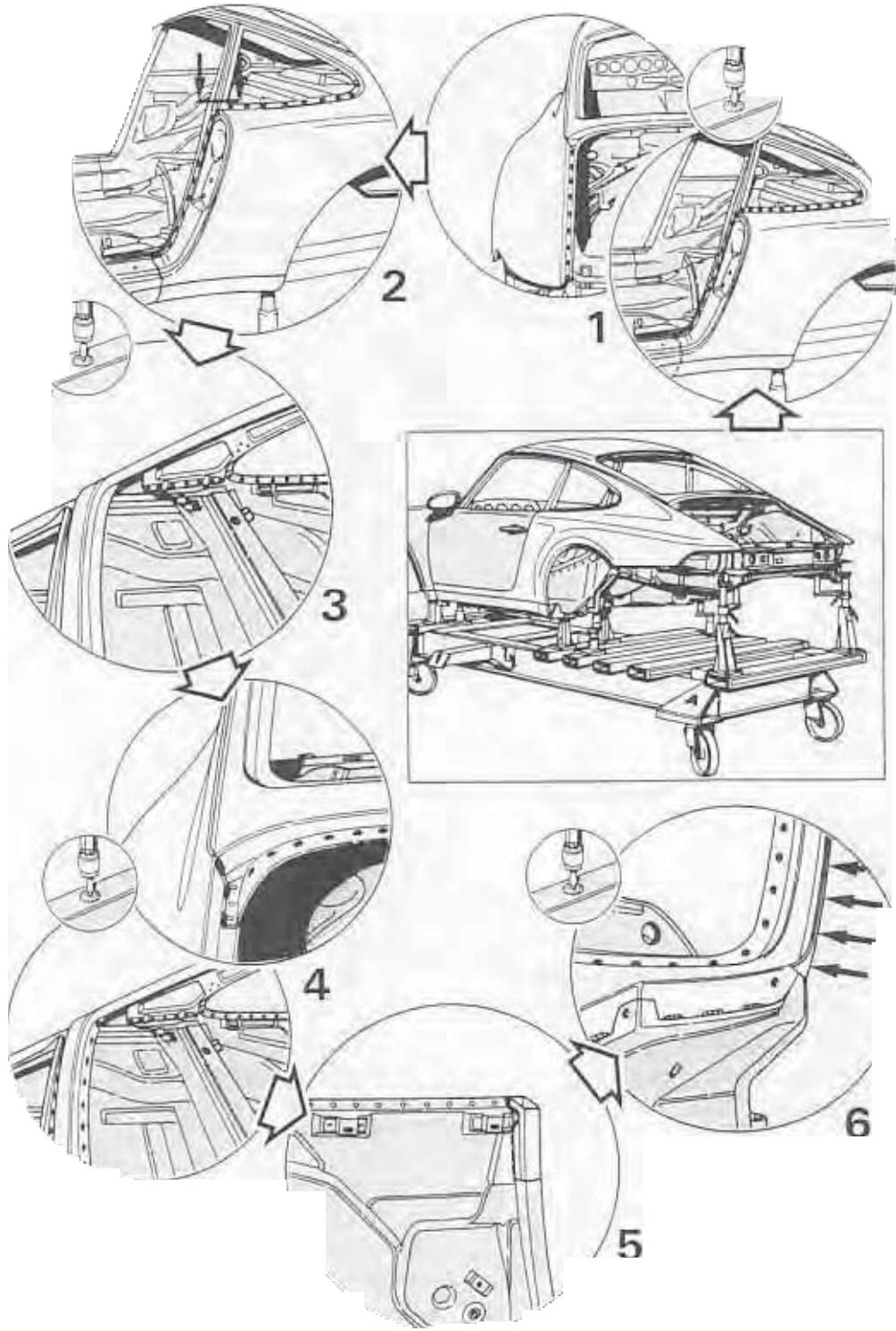
- G = Side panel
- H = Sealing
- I = Special Tool P 852
- K = Special Tool P 853
- L = Special Tool P 854

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panel:

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Replacing the complete roof

Cutting roof panel and side panels from body

Remove assemblies and accessories as well as complete interior equipment including all body glass!

Body straightening operations must be completed before the roof is replaced!

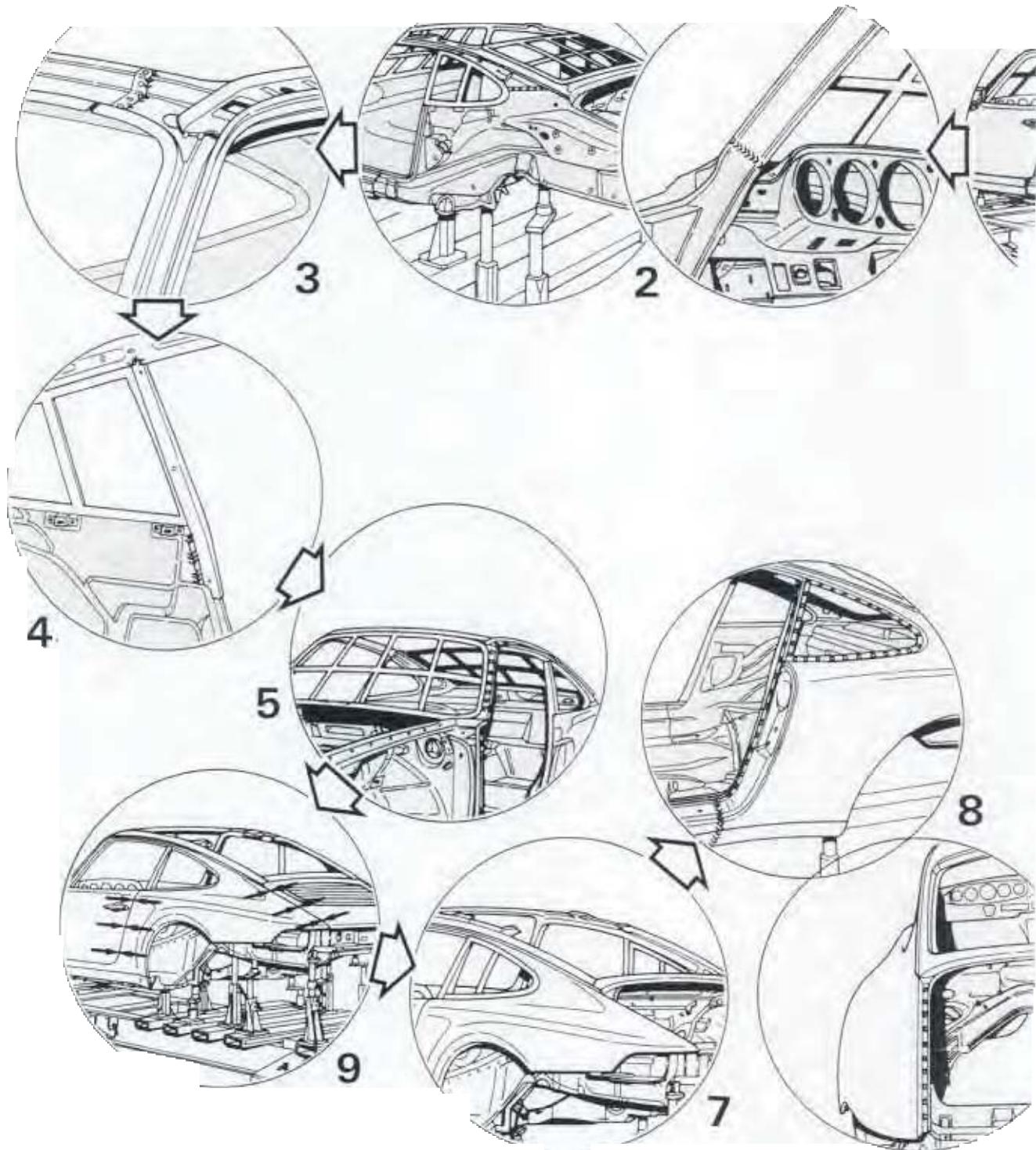
No.	Operation	Instructions
	Set up vehicle on straightening equipment	Set up vehicle with fitted front-end assemblies on basic straightening attachments set and tighten vehicle.
1	Separate spotwelds at side panel	Separate spotwelds between side panel and rear wheel housing using a spotweld cutter. Separate MIG weld seams between side panel and door sill, roof sheet/rear wheel housing and crossmember.
2	Separate brazed joint of guide tube	Separate brazed joint of lid release guide tube at side panel and lock pillar.
2	Cut through B-post	Cut through B-post along extension of bottom edge of rear side window using a body panel saw.
3	Cut through A-post	Cut through A-post using a body panel saw.
3	Separate spotwelds between roof rail/rear wheel housing	Separate spotwelds between roof rails and rear wheel housing with a spotweld cutter.
4	Separate spotwelds between roof and rear shelf panel	Separate spotwelds between roof and rear shelf panel using a spotweld cutter.
5	Lift roof complete with side walls the body	
5	Separate weld joints of inner panel	Grind off MIG weld seams between rear wheel housing and inner panel (B-post).
6.	Separate weld joints of cowl panel	Separate spotwelds between cowl panel and upper dashboard section using a spotweld cutter.
	Separate flange joint of A-post/flange panel	Separate MIG weld joints between cowl panel and wheel arch.
		Separate flange joint between A-post and flange panel.

Replacing the complete roof

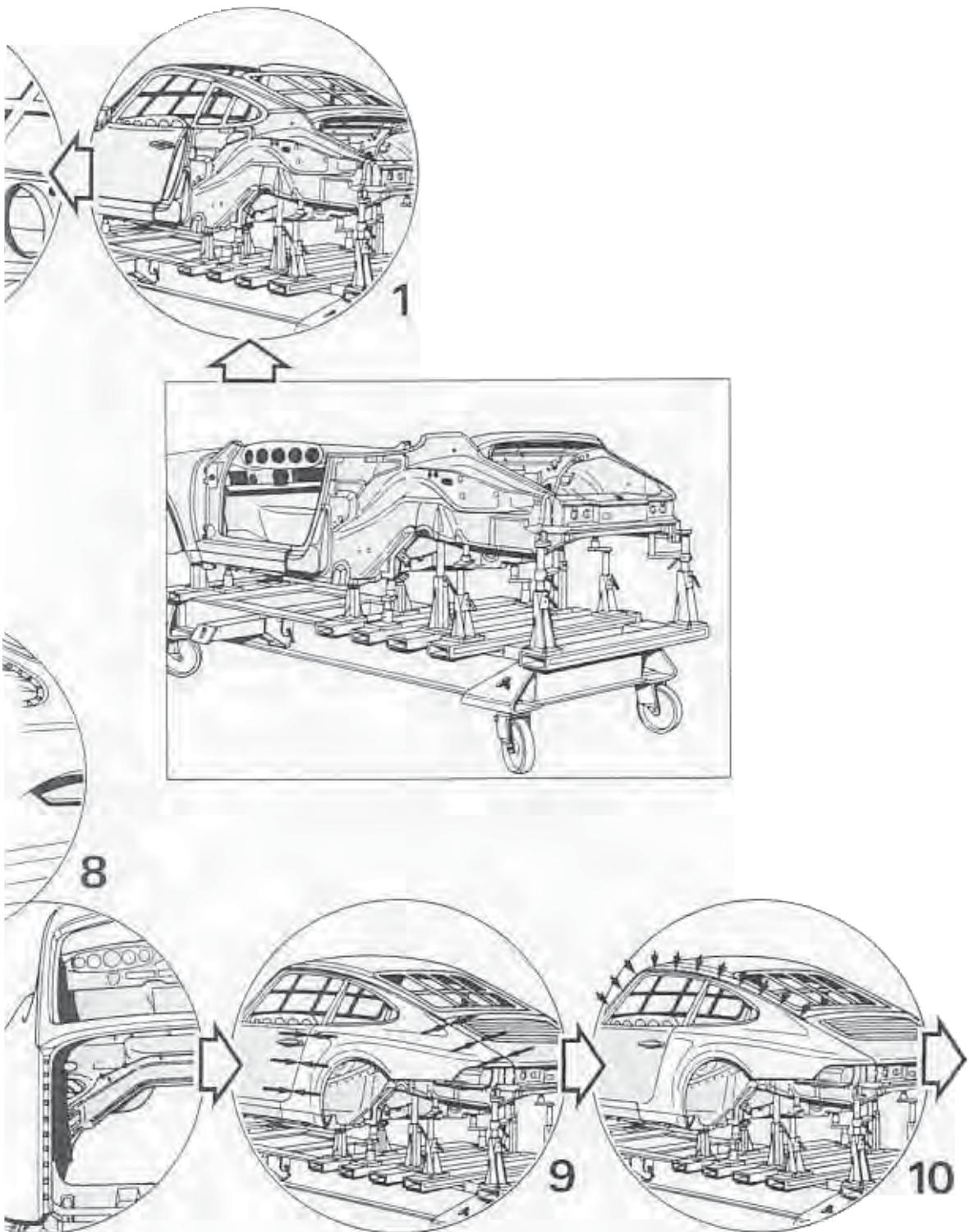
Fitting roof and side panels to the body

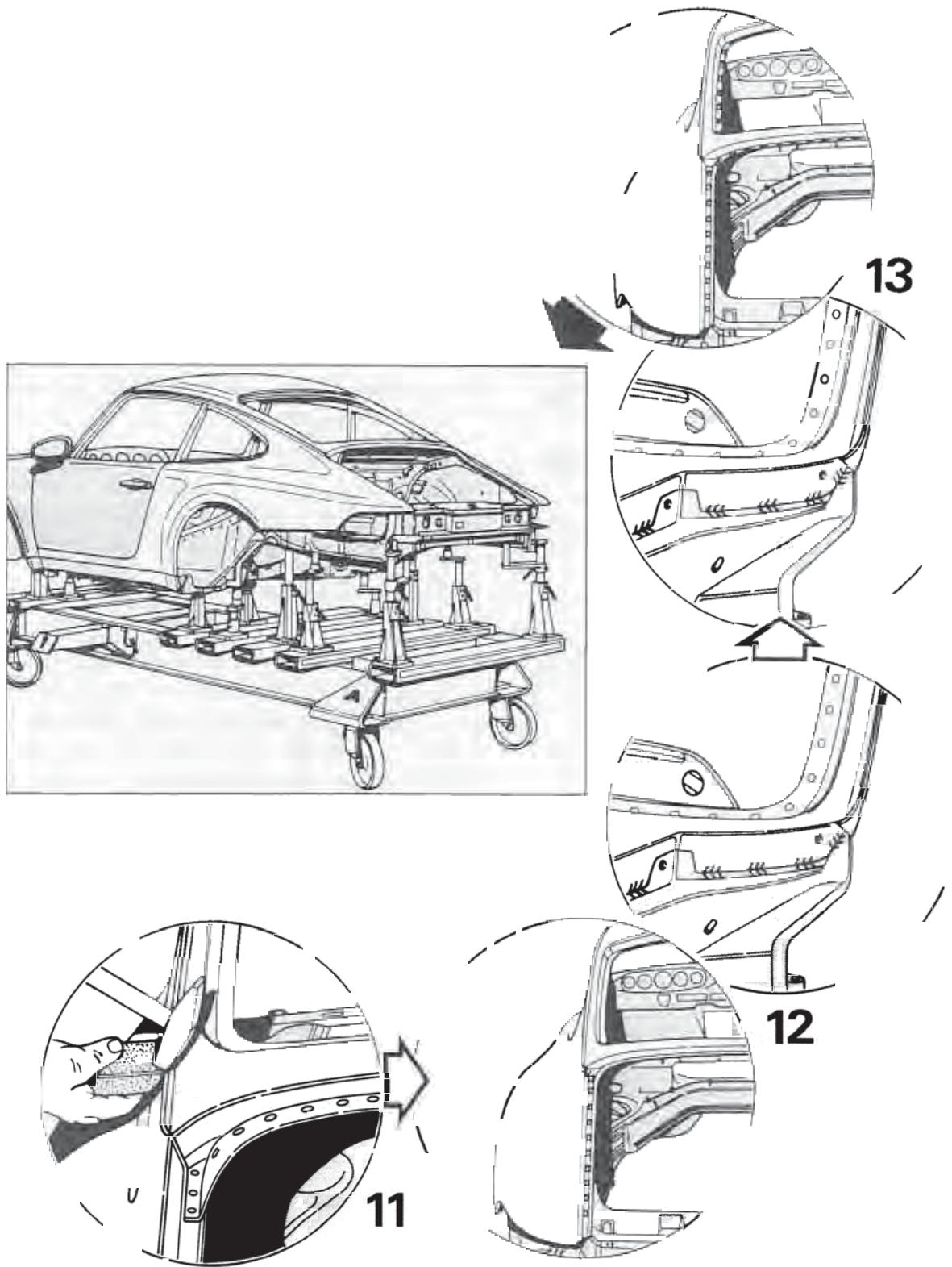
Replacing the complete roof

Fitting roof and side panels body



inner





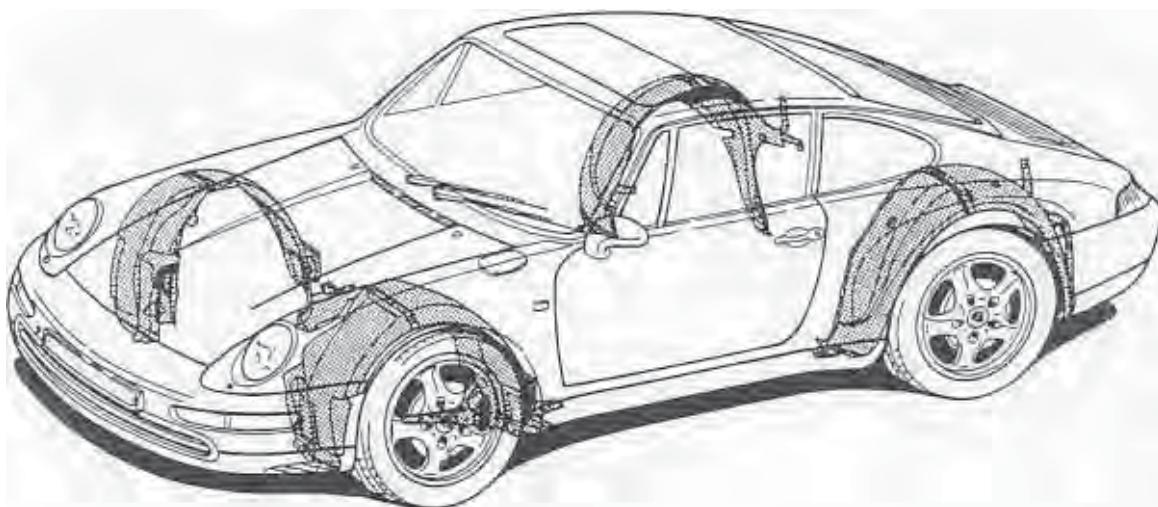
Replacing the complete roof

Fitting roof and side panels to the body

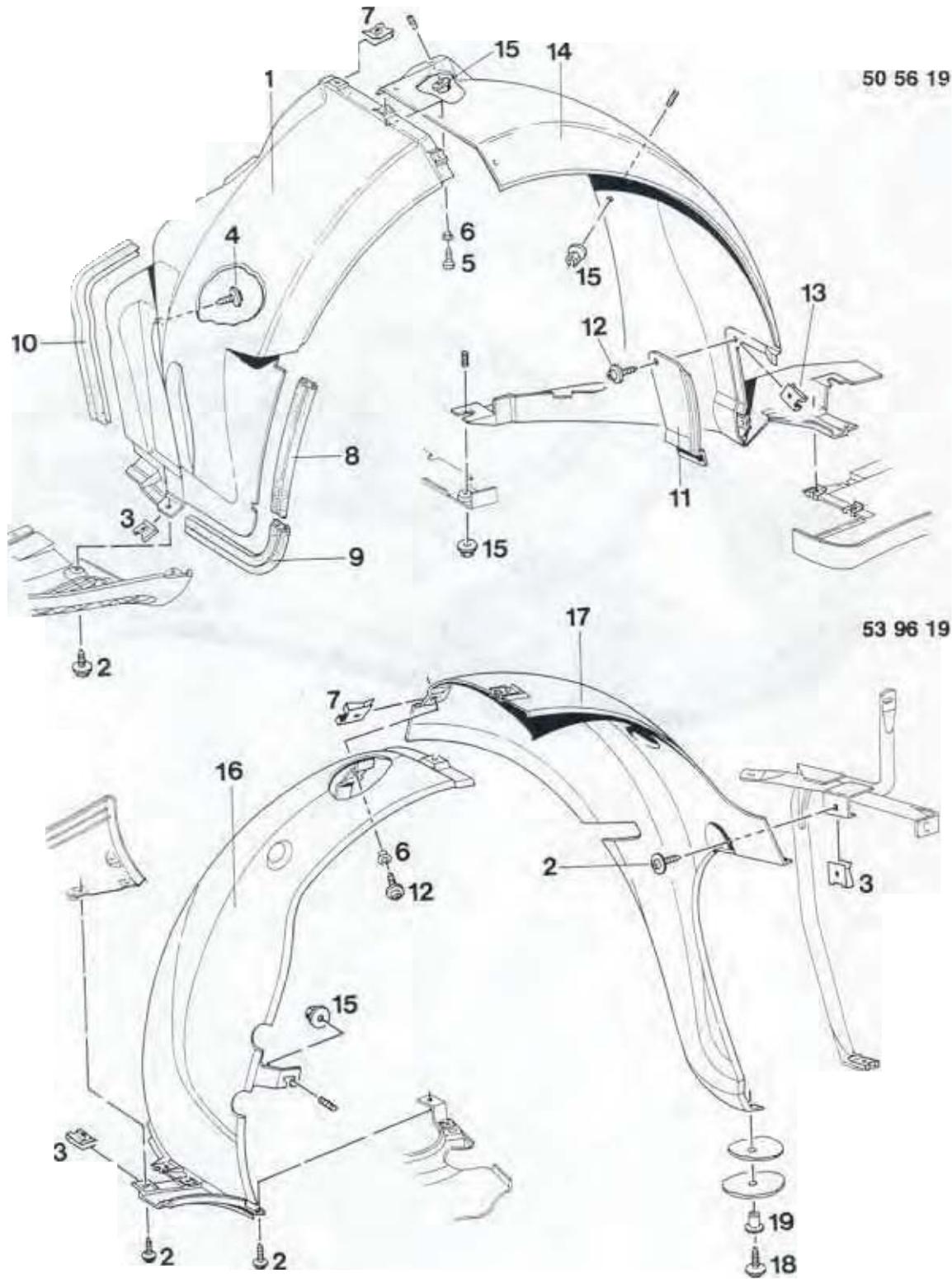
No.	Operation	Instructions
	Clean the welding areas	Use a hot air gun or rotary brush to clean remaining sealant, paint etc. from the welding areas of the body panels.
1	Fit doors to body	
	Trial-fit roof rails and flange panels to body	Trial-fit roof rails and flange panels to body observing correct door contours.
1	Insert Special Tools P 852, P 853 and P 854	Insert Special Tools P 852 (windshield gauge), P 853 (rear window gauge) and P 854 (rear side window gauges) into body apertures and clamp to spotweld flanges along with roof rails (using suitable clamping tools).
2	Weld roof rails to body	Weld roof rails to A-posts running a full seam. Spotweld roof rails to rear wheel housings.
3	Trial-fit windshield transverse section into body and spotweld into place	Trial-fit windshield transverse section according to contours of Special Tool P 852 into the body, clamp in place with special clamps and apply spotwelds. MIG-weld windshield transverse section and roof rails running a discontinuous full seam.
4	Weld B-post inner panel to body	Trial-fit inner panels of B-posts to body and clamp in place with special clamps. MIG-weld B-post inner panels and roof rails running a full seam. MIG-weld B-post inner panels and rear wheel housings in the rear side window area running a full seam and MIG-weld other areas running a discontinuous full seam.

No.	Operation	Instructions
5	Weld flange panels to body	Spotweld flange panels with roof rails using the door frame contours for reference. MIG-weld flange panels and A-posts running a full seam. MIG-weld flange panels to B-post inner panels and roof rails running a full seam.
	Remove all special tools and finish welding	Remove Special Tools P 852 and P 854 and weld all areas that have not been accessible until now using MIG equipment.
6	Trail-fit side panels to body	Trial-fit side panels to body. Introduce guide tube for lid release cable into side panel. Install doors and rear lids to check fit and body contours. Make sure the door-to-body gaps as well as the rear lid-to-body gaps are parallel throughout.
7	Insert Special Tools P 854	Insert Special Tools P 854 into body aperture for rear side window and attach to spotweld flange.
	Tack weld side panels using MIG equipment	Tack weld side panel to door sill, B-post, spotweld flange for rear side window, rear wheel housing and cross member using MIG equipment.
8	Spotweld and MIG weld side panels	Spotweld side panel to rear wheel housing, B-post and roof rail. MIG-weld side panel to door sill, roof rail (in B-post area) and cross member running a discontinuous full seam.
	Trial-fit outer roof sheet to body	Adjust outer roof sheet according to spotweld flanges in the body apertures for the windshield and rear window. Make sure the body gaps between outer roof sheet and front and rear lid are parallel throughout.

No.	Operation	Instructions
9	Insert Special Tools P 852 and P 853	Insert Special Tools P 852 and P 853 into body apertures and clamp to spotweld flanges using suitable clamping tools.
	Tack weld outer roof sheet using MIG equipment	Tack weld outer roof sheet to spotweld flanges in the windshield and rear window areas from inside (passenger compartment) using MIG welding equipment.
10	Spotweld outer roof sheet	Spotweld outer roof sheet to roof rails, side panels, flange panels and rear parcel shelf. Note: When spotwelding in the visible areas, insert a copper plate to avoid indentations at the spotwelds.
11	Flange outer roof sheet	Trim a flange at outer roof sheet and rails along flange panels and side panels.
12	MIG-weld outer roof sheet	MIG-weld flange ends of outer roof sheet to C-posts and side panels running a full seam. MIG-weld outer roof sheet and B-posts running a full seam. MIG-weld outer roof sheet to A-posts and wheel arch running a discontinuous full seam.
13	Take out all special tools Spotweld flanges of spotweld joints of windshield and rear-window apertures in a continuous line. Braze guide tube for cover operating cable Spotweld angle plate to rear wheel housings Grind down MIG weld seams Insert seals	Braze guide tube for lid release cable to lock post (B-post). Grind down MIG weld seams of flange ends and B-post. Insert seals between side walls and side panels.

53 69 19 Removing and installing wheel housing liner

53 69 19 Removing and installing wheel housing liner



53 69 19 Removing and installing wheel housing liner

No.	Designation	Qty.	Note:	
			Removal	Installation
2	Screw with washer B 4.8 x 19	2		
3	Sheetmetal nut B 4.8	2		Adjust to center of hole
6	Spacer	6		
7	Sheetmetal nut B 4.2	6		Adjust to center of hole
12	Screw with washer B 4.8 x 19	4		
15	Plastic nut T 5	4		Check, replace if required
16	Wheel housing liner	2		
17	Wheel housing trim	2		
18	Self-tapping screw B 4.8 x 19	2		
19	Spacer 6.1 x 1.0	2		

53 55 55 Replacing side section - Cabriolet

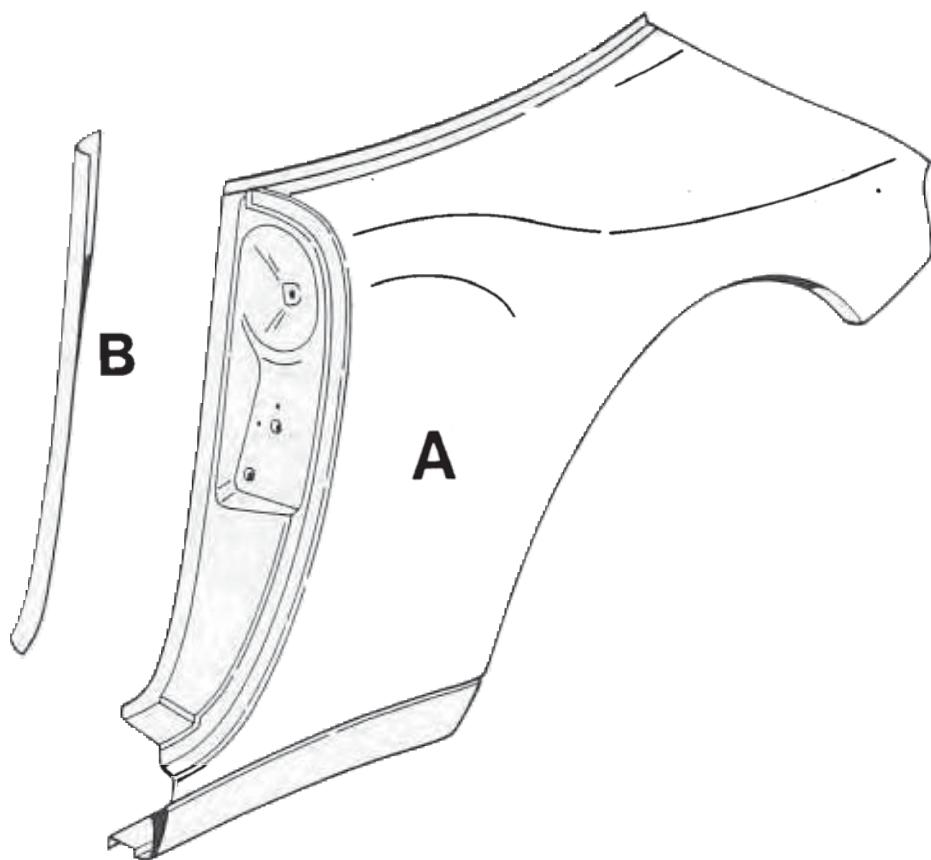
In May 1995, we introduced technical modifications on the side section and rear centre panel in production. The modification involves a change from a narrow joint to a wide joint between the side section and rear centre panel.

For the repair "Replacing side section" on vehicles with narrow joint up to

Vehicle Identification Number 99 SS 33 23 68 RoW

 99 SS 34 34 68 USA,

the side section spare part with wide joint is fitted in the body as a part panel to preserve the narrow joint.



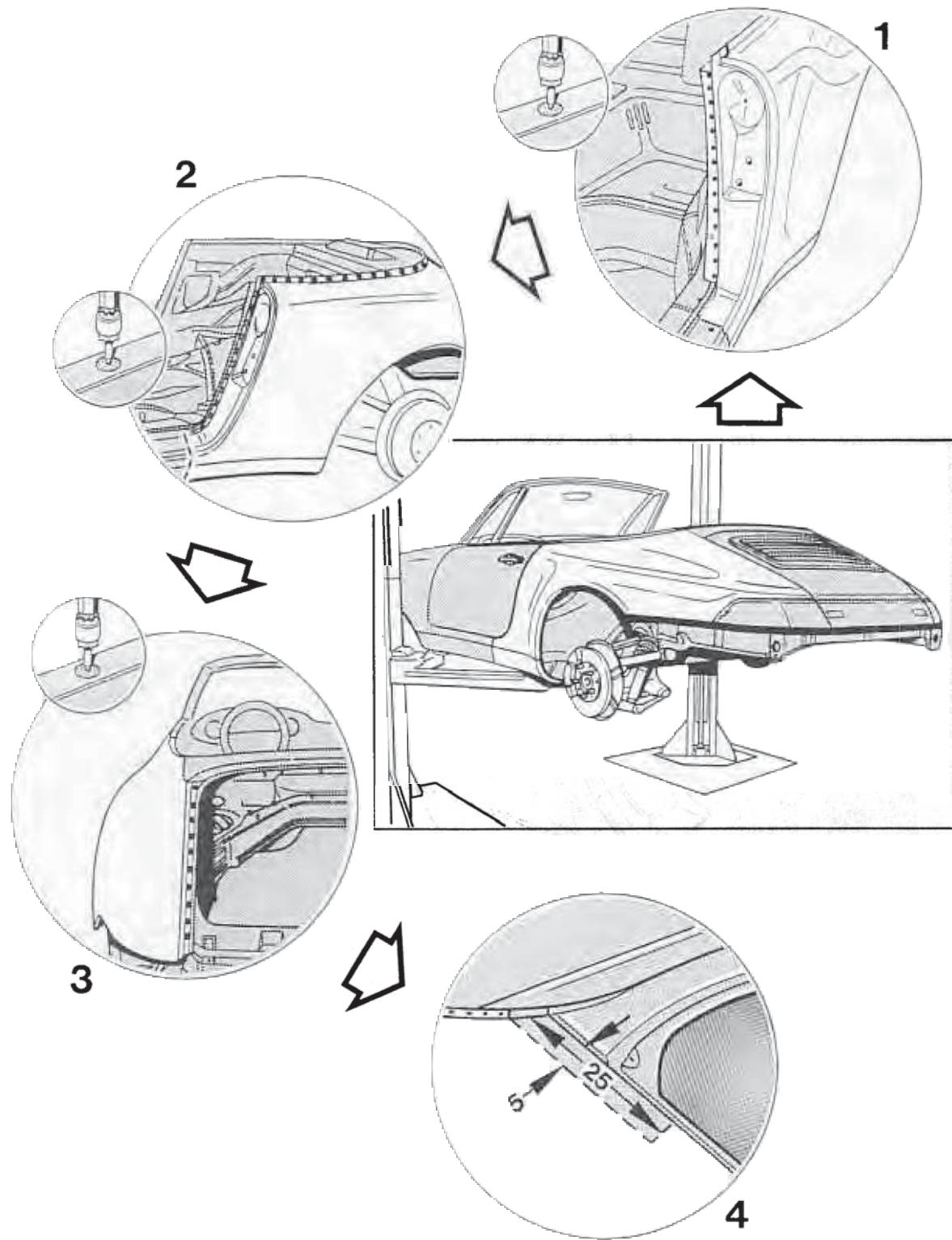
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Spare body parts:

A = Side section

B = Edge fitting

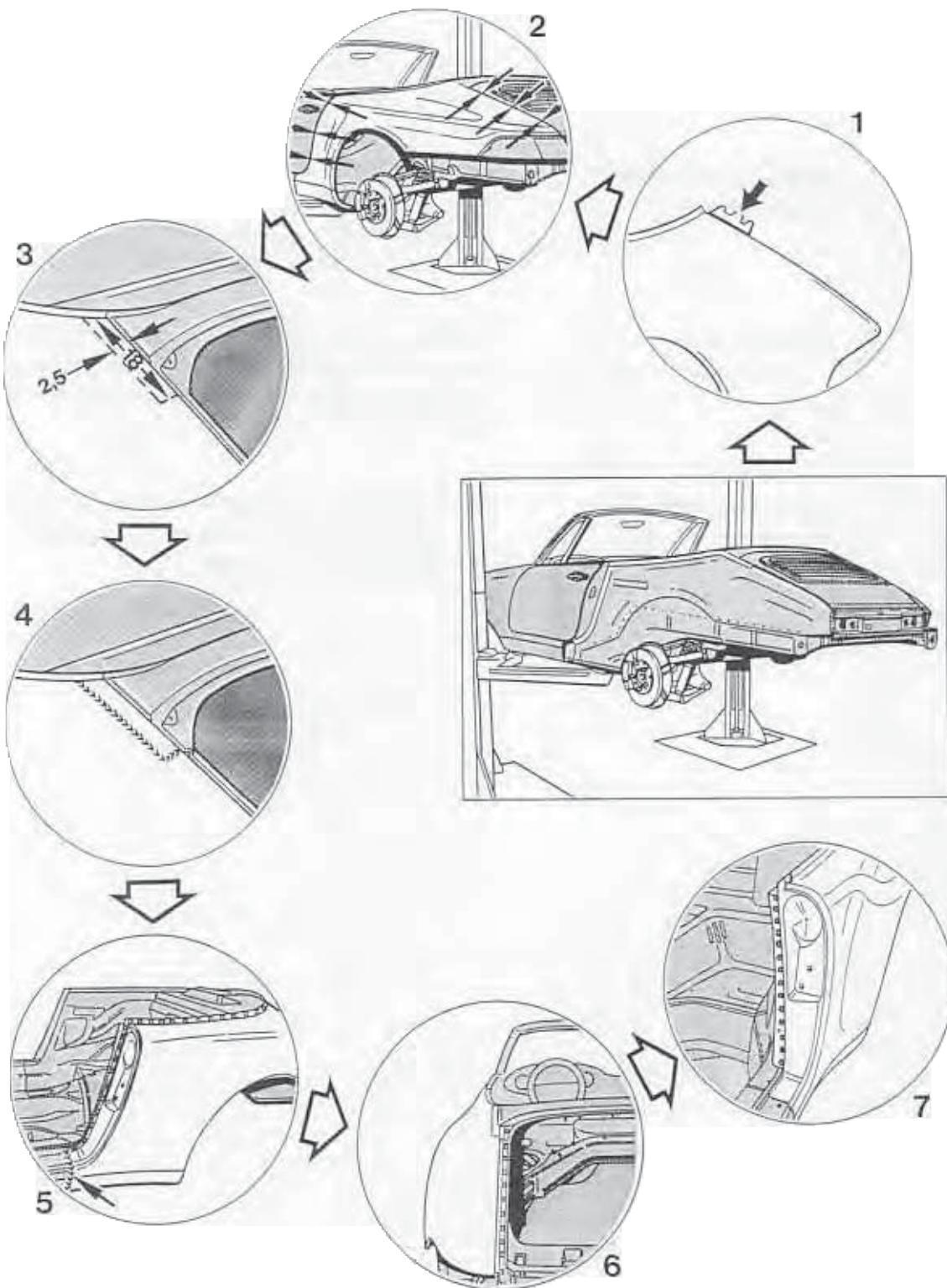
Cutting side section out of the body



Cutting side section out of the body

Remove all accessories and the interior, including convertible top!

No.	Operation	Instructions
	Separating spot welds of the edge fitting	Use the spotweld cutter to separate spot welds between the edge fitting and wheel housing at rear.
2	Separating spot welds of the side section	Use the spotweld cutter to separate the spot welds between the side section edge and wheel housing edge at top and the B-pillar. Cut the side section in front of the side member at the outside with the body saw.
3	Separating spot welds of the side section at rear	Use the spotweld cutter to separate the spot welds between the side section and the wheel housing. Grind off MIG seams between the side section and cross member.
4	Cutting side section from the rear centre panel	Use the body saw to cut off the side section so that that 5 cm of the side section from the joint to the outside and 25 cm to the rear remain.

Fitting side section in the body

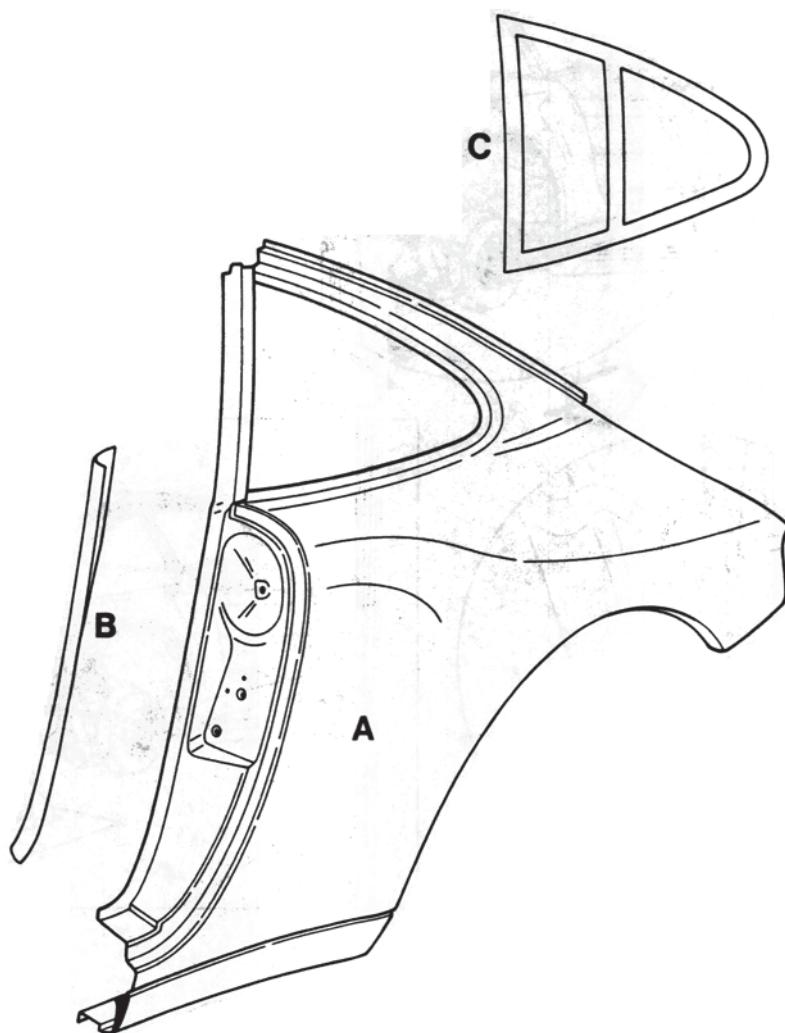
Fitting side section in the body

No.	Operation	Instructions
	Cleaning welding areas	Use a hot air gun or rotary brush to remove underbody coating and paint layers etc. Remove the factory-applied primer coat from the welding areas of the spare parts with a rotary brush.
1	Cutting off side section	Cut side section at the folded edge in the area where the side section meets the rear centre panel.
2	Adapting side section to the body	Adapt side section to the body. Fit door and rear cover to check the body contours. The gaps between the door and body and between the rear cover and body must be parallel along the entire perimeter.
3	Adapting side section to the rear centre panel	Cut the side section – 2.5 cm to the outside and 18 cm to the rear from the gap – and the underlying overlapped panel using the body saw.
	Tack-welding the side section with the MIG welder	Use the MIG welder to tack-weld the wheel housing with the side section B-pillar, side section edge and the wheel housing edge at top and the side section at rear with the cross member.
4	Welding spare side section to body side section with the MIG welder	Use the MIG welder to weld the spare side section to the body side section with a continuous butt weld.
5	Spotwelding and MIG welding the side section	Spotweld side section, B-pillar, to the wheel housing at front. Use the MIG welder to weld the side section to the side member at the outside and wheel housing at front with a continuous weld.
6	Spotwelding and MIG welding the side section at rear to the wheel housing	Spotweld the side section to the wheel housing at rear; weld the side section end to the cross member with the MIG welder.

No.	Operation	Instructions
	Grinding MIG weld seams	Grind MIG weld seams between the spare side section and body side section and side member at the outside.
7	Spotwelding edge fitting to the side section at the inside	Position edge fitting at the wheel housing liner at the front on the inside and spotweld in place

53 55 55 Partly renewing side panel

For the part-section repair "Partly renewing side panel" the following replacement body parts and special tools are required:

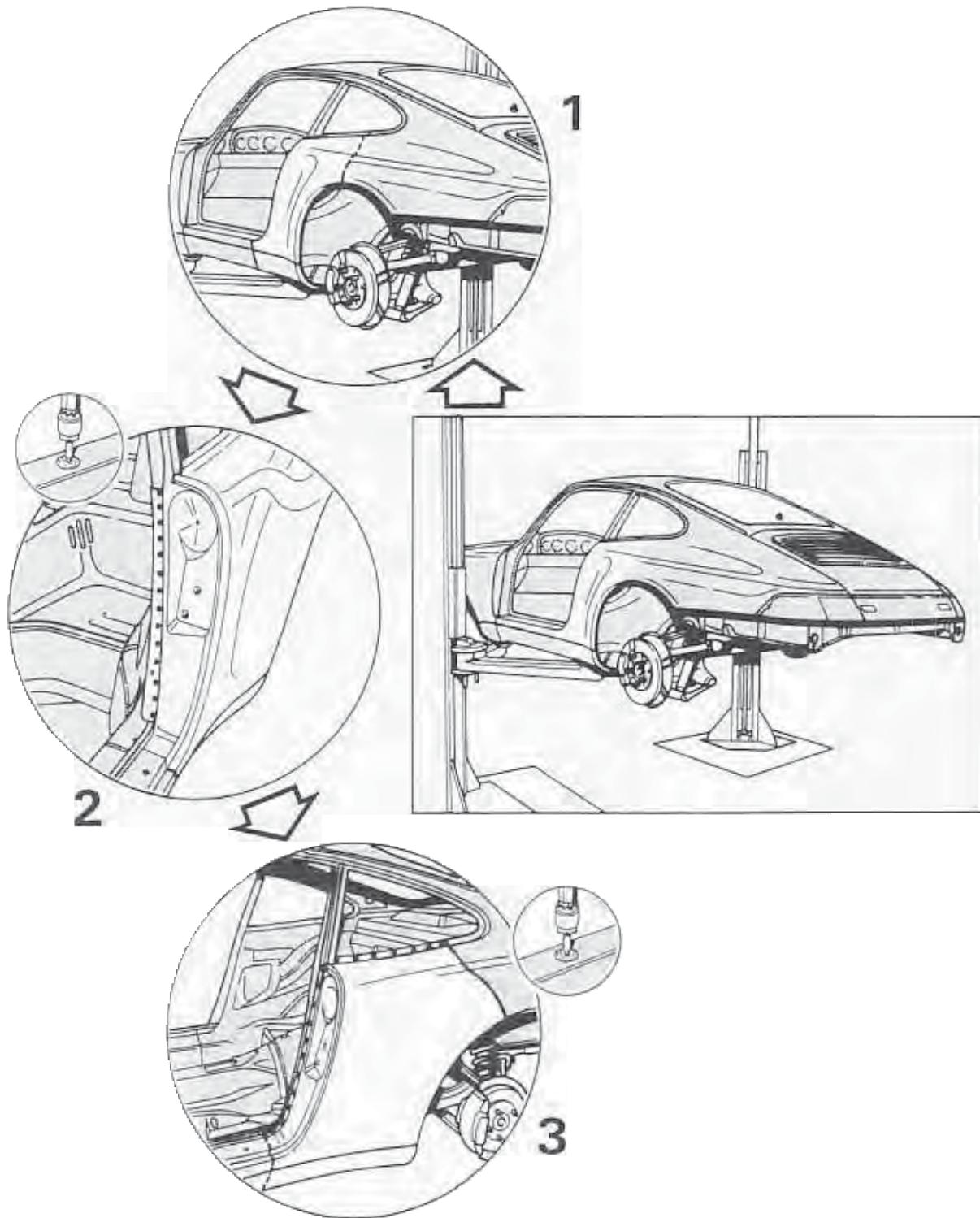


A = Side panel

B = Angled surround

C = Special tool P 854

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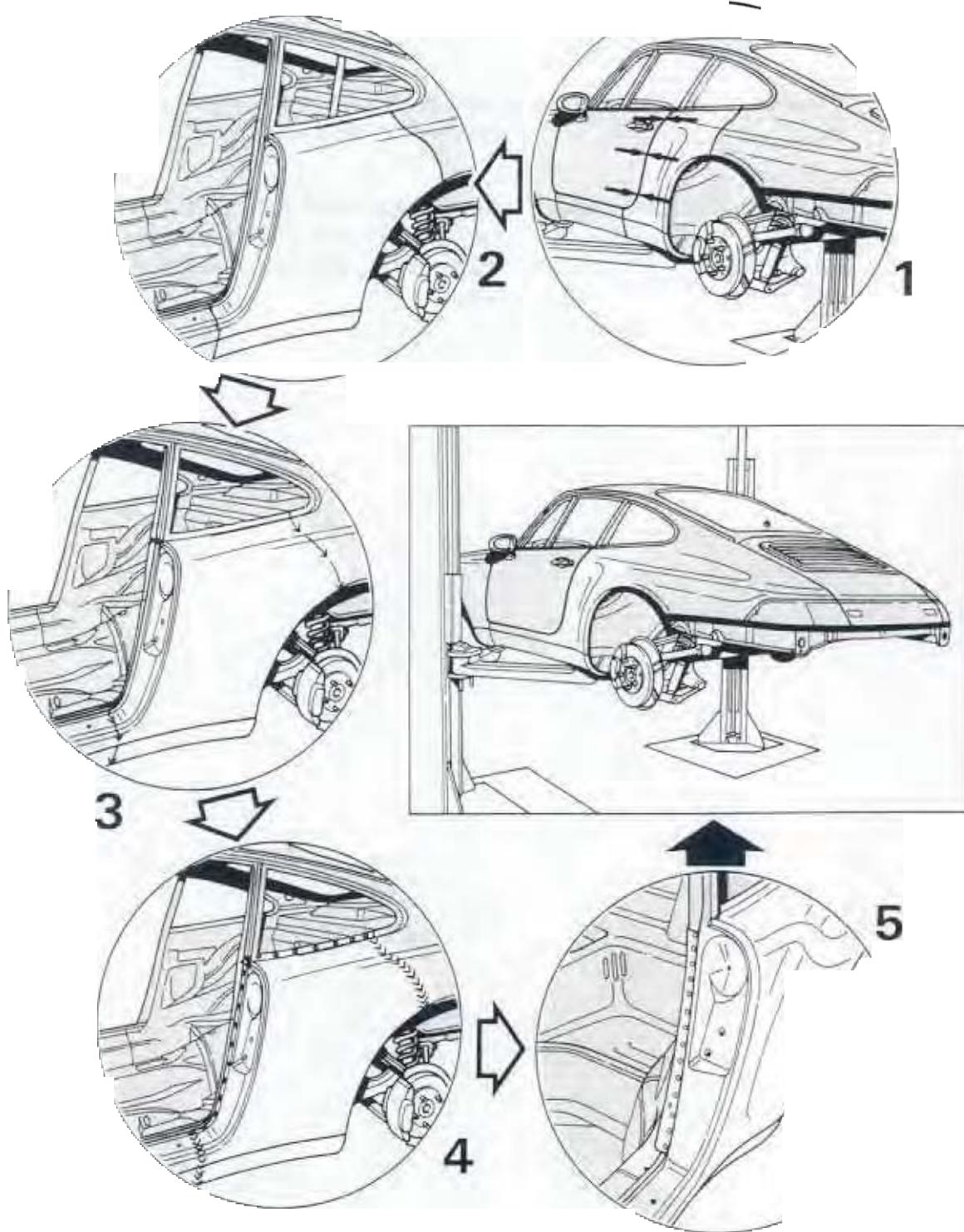
Partly renewing side panel**Cutting side panel partly from the body**

Cutting side panel partly from the body

Remove all attached equipment and the interior trim, including glass, from the side panel area.

No.	Operation	Instructions
	Cut through the side panel	Cut through the side panel with the body panel saw.
2	Separate the spot welds for the angled surround	Separate the spot welds between the angled surround and the rear wheel housing with a spot weld cutter.
3	Separate welds at side panel	Separate spot welds between side panel and rear wheel housing and B-post with a spot weld cutter. Cut through the side panel before the door sill using the body panel saw.

Fitting side panel body

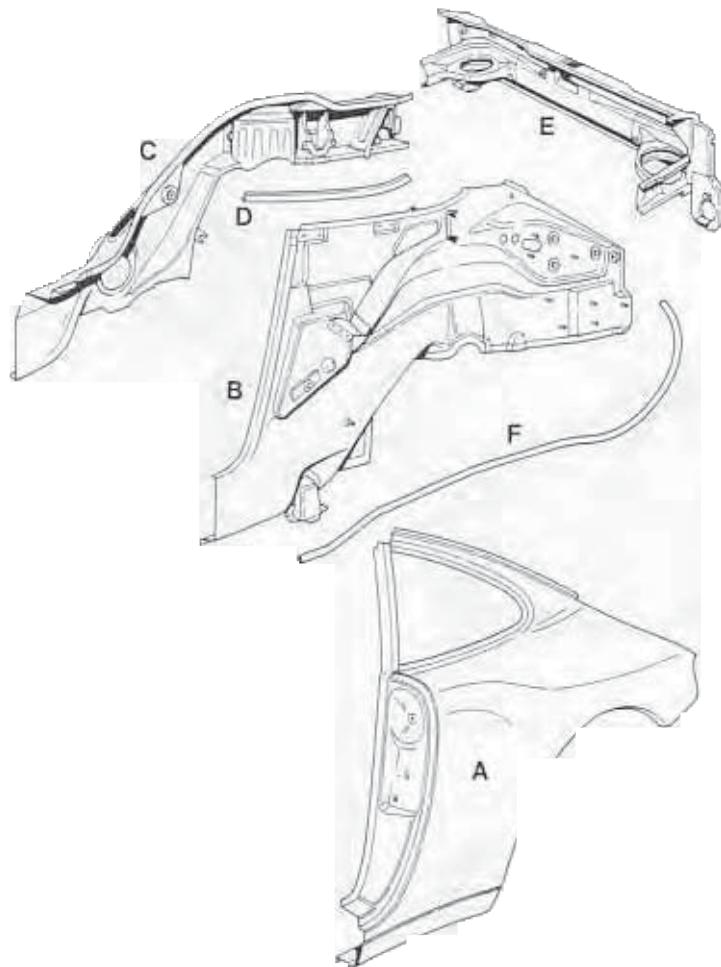


Fitting side panel to body

No.	Operation	Instructions
	Clean the weld areas	Use a hot air blower or rotary brush to remove underseal, paint etc. from weld areas on the body. Remove factory-applied primer coating from weld areas on the replacement parts with a rotary brush.
1	Fit the side panel into the body	Make a butt joint between the side panel and the body. Insert the door to check the body contour. The gap between door and body must be parallel all round.
2	Insert special tool P 854	Place special tool P 854 (rear side window template) into the body cutout for the rear side window, and secure to the spot weld flange with clamps.
3	Tack weld the side panel using inert gas	Using the inert gas method, tack weld the side panel to the door sill, rear wheel housing (B-post area) and rear side window spot weld flange. Take out special tool P 854 (rear side window template).
4	Spot and MIG weld the side panel	Spot weld the side panel to the rear wheel housing. MIG weld the side panel to the door sill and rear wheel housing with a full seam. Butt weld the replacement side panel to the body side panel under inert gas running a full seam.
	Sand the MIG weld seams	Grind the MIG weld seams between the side panel and the door sill and the butt weld seam between the replacement side panel and the body side panel.
5	Spot weld the angled surround to the rear wheel housing	Trial-fit and spot weld the angled surround to the rear wheel housing.

53 68 56 Partly renewing rear section of body

For the part-section repair "Partly renewing rear section of body" the following replacement body parts are needed:



A = Side panel

B = Rear wheel housing

C = Side member

D = Sectioned rail

E = Cross-member

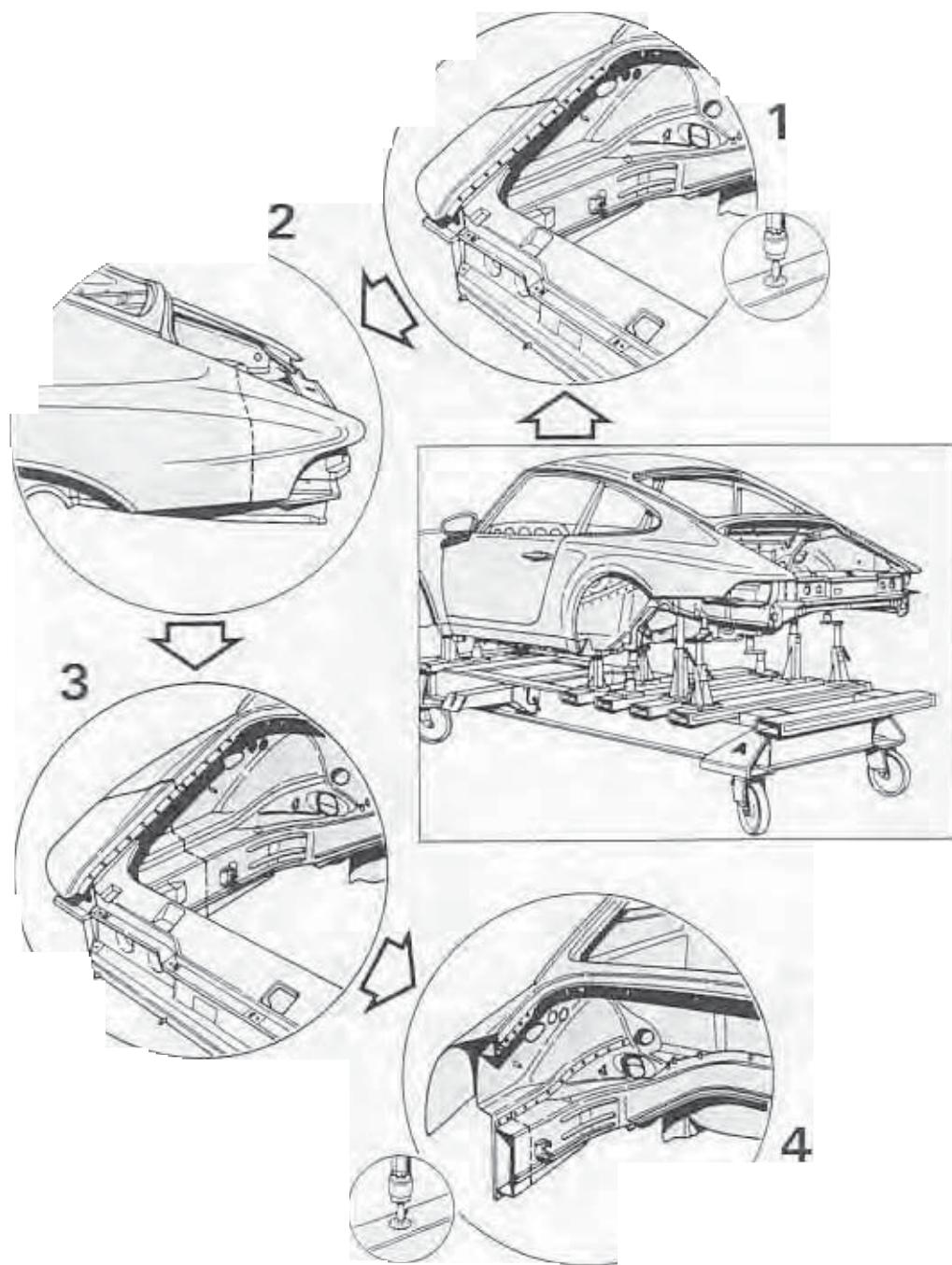
F = Guide tube for lid release cable

1922-53

Partly renewing rear section of body

Renewing cross-member with engine mount, partly renewing side panels, rear wheel housings and side members

Cutting rear section partly from the body



Partly renewing rear section of body

Renewing cross-member with engine mount, partly renewing side panels, rear wheel housings and side members

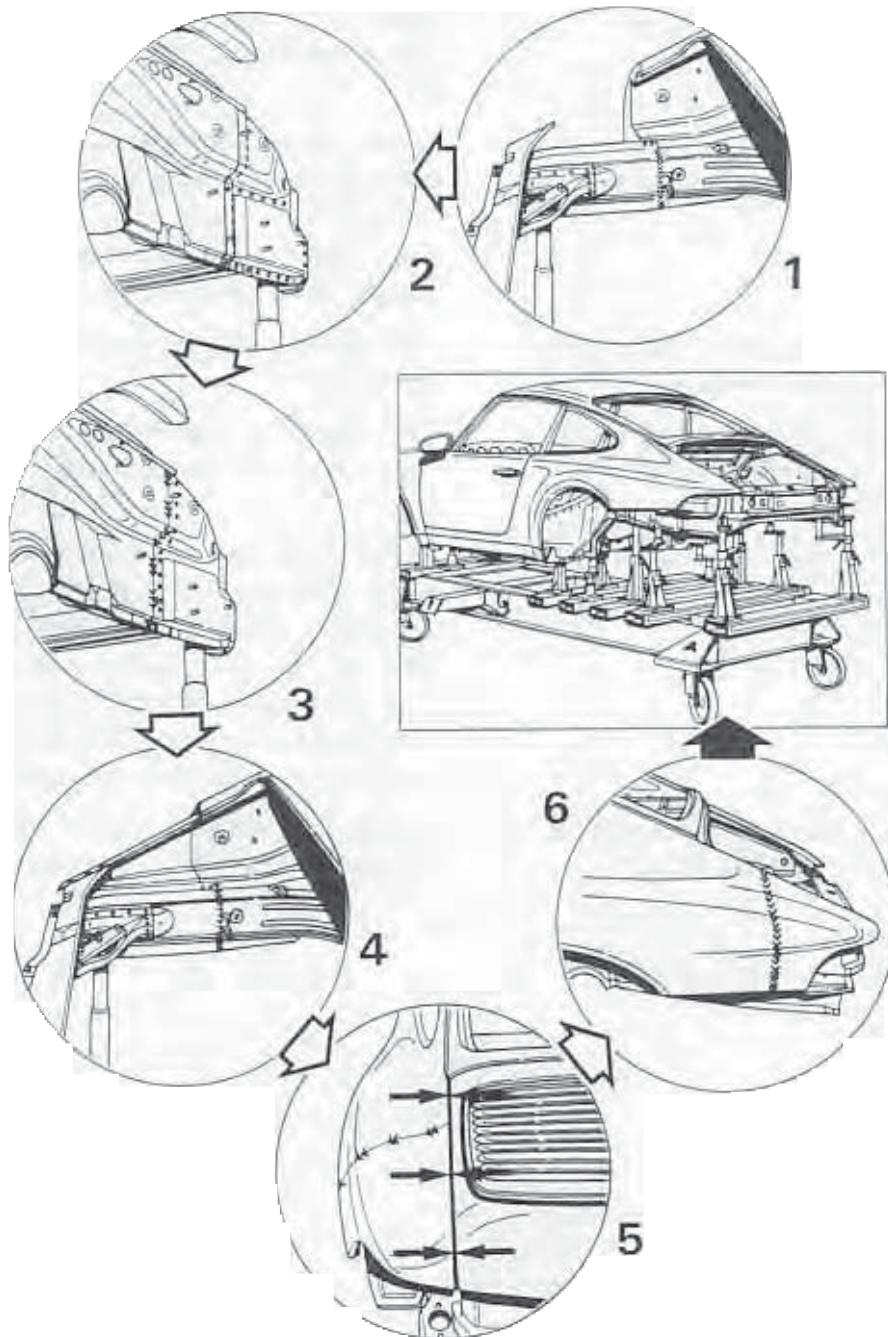
Partly renewing rear section of body

No.	Operation	Instructions
	Place car on body alignment rig	Mount the car with mechanical assemblies in position at the front on the basic set of aligning angles and secure it.
	Separate the side panel welds in the damaged area	In the damaged body area, separate the spot welds between the side panels and the rear wheel housings with spot weld cutters. Grind away the MIG weld seams between the side panels and the cross-member.
2	Separate the side panels from the body	Cut away the damaged side panel areas with the body panel saw.
3	Cut away the rear wheel housings and the side members	Cut away the damaged areas of the rear wheel housings and the side members with the body panel saw.
4	Cut away the side members in a stepped pattern	Cut away both side members so that the cut edges of the side members form a step in relation with the cut edges of the rear wheel housings. Separate the spot weld joints between the side members and the rear wheel housings using spot weld cutters. Cut away the side members with the body panel saw after they have been separated.
	Separate the brazed joint for the guide tube	Separate the brazed joint for the lid release cable guide tube on the rear wheel housing and at the lock post.

Partly renewing rear section of body

Renewing cross-member with engine mount, partly renewing side panels, rear wheel housings and side members

Partly inserting rear body section into body



Partly renewing rear section of body

Renewing cross-member with engine mount, partly renewing side panels, rear wheel housings and side members

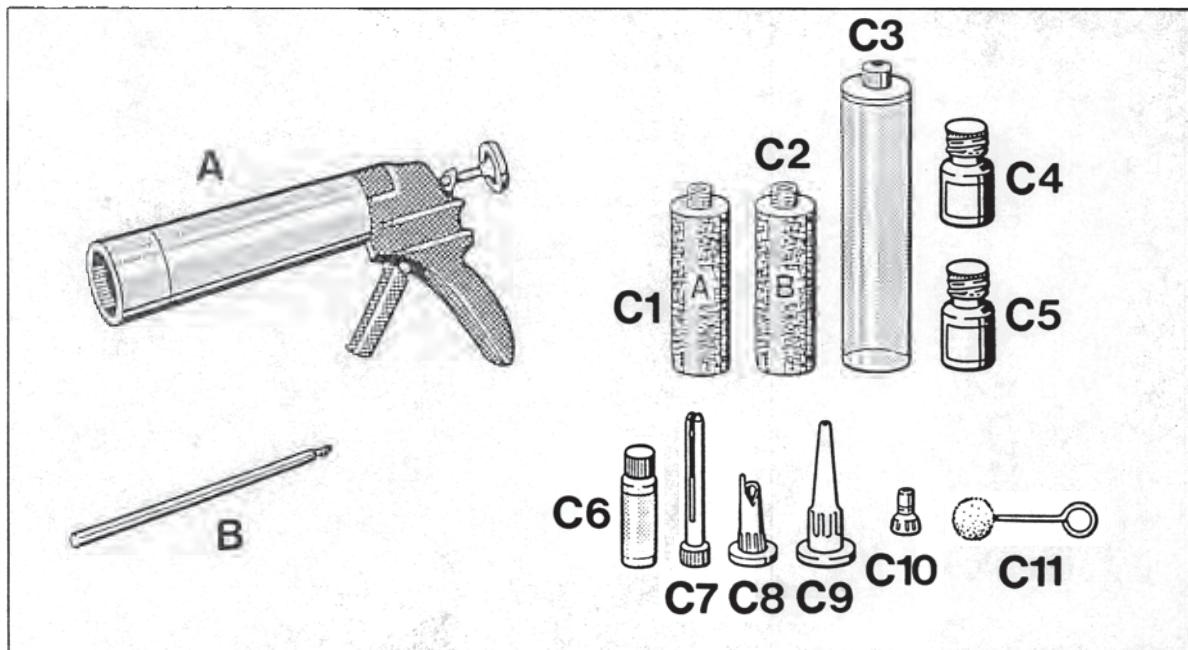
Partly inserting rear body section into body

No.	Operation	Instructions
	Clean the weld areas	Use a hot air blower or rotary brush to remove under-seal, paint etc. from the weld areas on the body. Remove factory-applied primer coating from the weld areas on the replacement parts with a rotary brush.
1	Align cross-member with rig aligning angles Fit the side member to the body and weld in	Make a butt joint at the side member, secure it with clamping tools and tack weld into position under inert gas. Butt weld the replacement side member to the body side member under inert gas running a full seam. Spot weld the side member to the cross-member and engine mount. Grind the butt weld seams on the side members.
2	Prepare rear wheel housings for installing in body	Fit the rear wheel housings into the body. Flange the replacement rear wheel housings outwards and overlap them with the body rear wheel housings. In the side panel contact areas, make a butt joint with the rear wheel housings. Drill out the rear wheel housings in the upper side member area, ready for plug welding.
3	Weld the rear wheel housings into the body	Secure the rear wheel housings with clamping tools and tack weld them into position under inert gas. Butt weld the rear wheel housings in the side panel contact areas with a full seam, under inert gas. Plug weld the replacement rear wheel housings to the body rear wheel housings in the upper side member area, using inert gas. Spot weld the replacement rear wheel housings to the body rear wheel housings and the side member. In addition, MIG weld all spot and plug weld points between the replacement rear wheel housings and the body rear wheel housings running a discontinuous full seam.

No.	Operation	Instructions
4	Spot weld cross-member with rear wheel housings Weld impact tube or impact damper half-mounts Grind the butt weld seams Braze on the lid release cable guide tube	Spot weld the impact tube or impact damper half-mounts or weld by the inert gas method with a discontinuous full seam. Grind the butt weld seams on the rear wheel housings in side panel contact areas. Insert the guide tube for the lid release cable and braze it to the lock post, rear wheel housings and cross-member.
5	Fit the side panels into the body and tack weld	Fit the side panels to the body. Insert the rear lid to check the body contour. The gap between the rear lid and the body must be parallel all round. Tack weld the side panels into position under inert gas.
6	Spot and inert-gas welding of side panels Fit the sectioned rails and weld them to the side members Grind the butt weld seams on the side panels	Butt weld the replacement side panels to the body side panels under inert gas running a full seam. Spot weld the replacement side panels with the rear wheel housings. MIG weld the side panels to the cross-member with a discontinuous full seam. Fit the sectioned rails, spot weld them to the spot weld flanges on the side members/rear wheel housings and tack weld them in the engine mount areas.

53 47 55 Replacing side member w. cross member, rear wheel housing & side panel

The following materials and tools are required for the "Replacing side member with cross member, rear wheel housing and side panel" repair operation:



A	Bonding gun	VAG 1628	e.g. VW Werk AG KD-Gerätevertrieb
B	Mixing rod 9528	000.721.952.80	Porsche Parts Dept.
C	Bonding set	999.915.509.40	

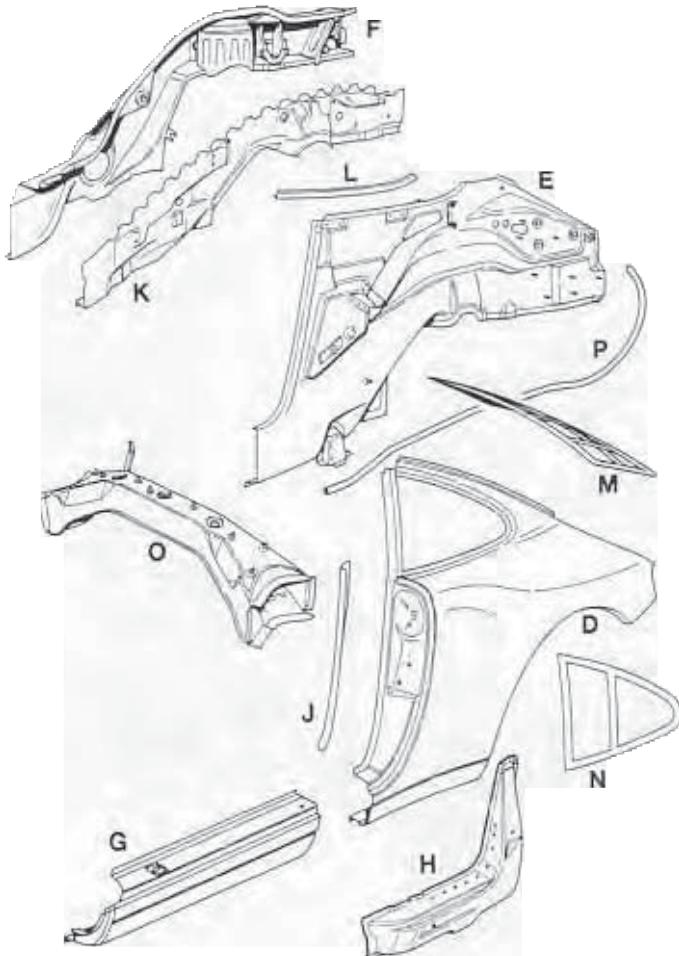
Bonding set contents:

- C 1 = Cartridge component A
- C 2 = Cartridge component B
- C 3 = Mixing cartridge
- C 4 = Primer
- C 5 = Activator
- C 6 = Cleaning solution

- C 7 = Injector nozzle
- C 8 = Application nozzle
- C 9 = Application nozzle
- C 10 = Filling nozzle
- C 11 = Touch-in tool

Replacement parts and special tools

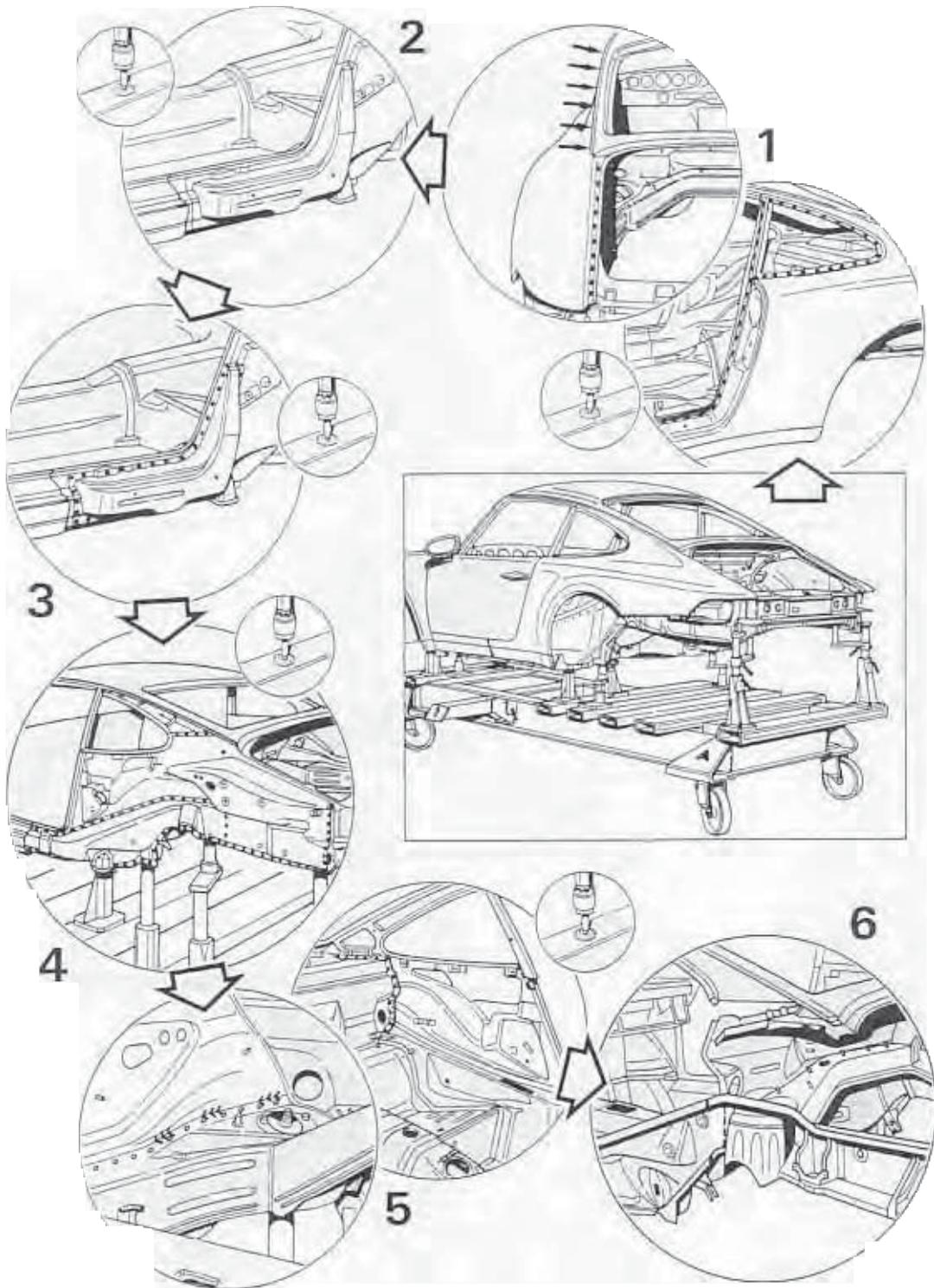
The following replacement body parts and special tools are required for the "Replacing side member with cross member, rear wheel housing and side panel" repair operation:



1932-53

D = Side panel
E = Rear wheel housing
F = Side member
G = Door sill
H = Gusset plate
I = Angled surround

K = Reinforcement rear wheel housing
L = Sectioned rail
M = Special tool P 853
N = Special tool P 854
O = Cross member
P = Lid release guide tube

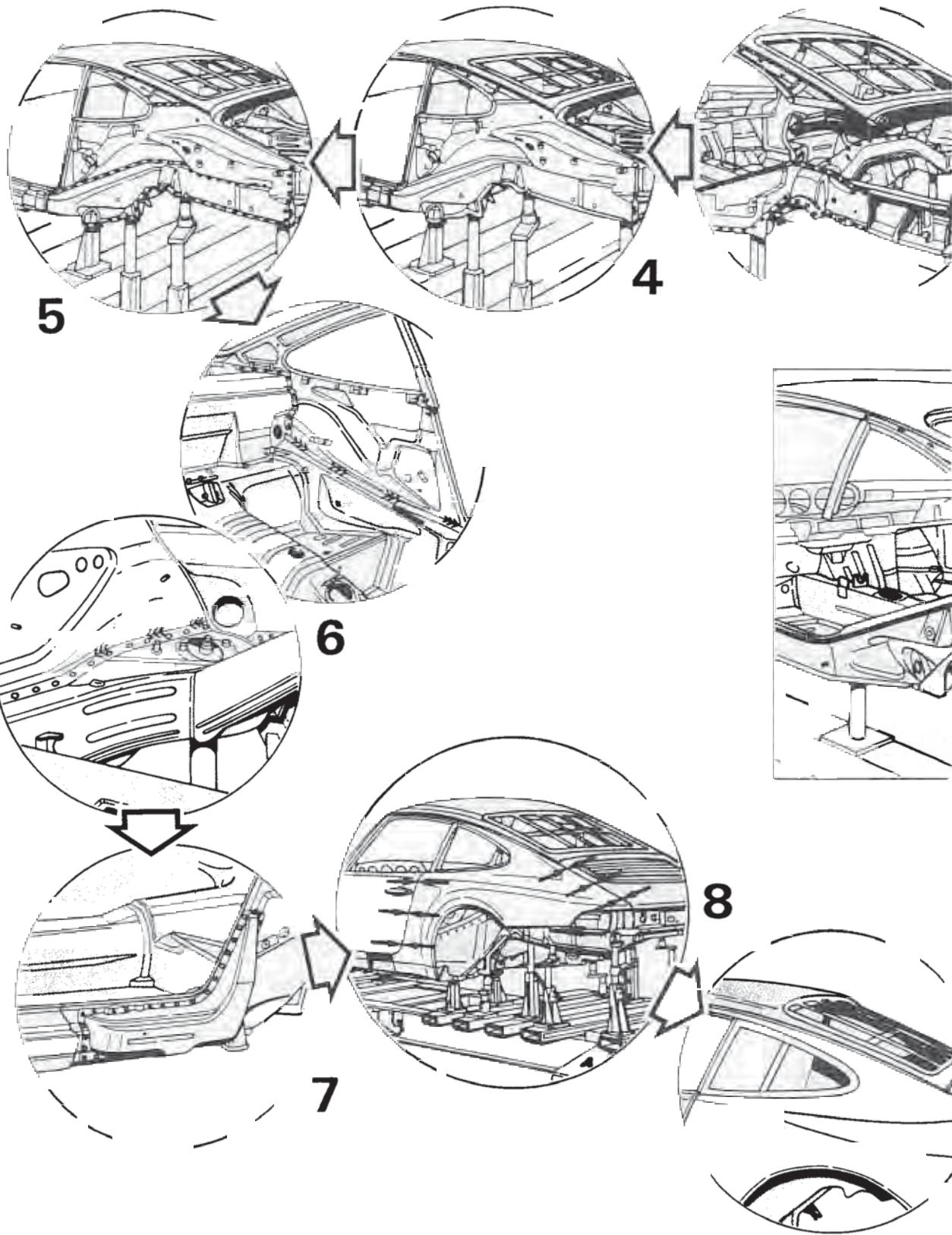
Cutting rear body section from body on one side

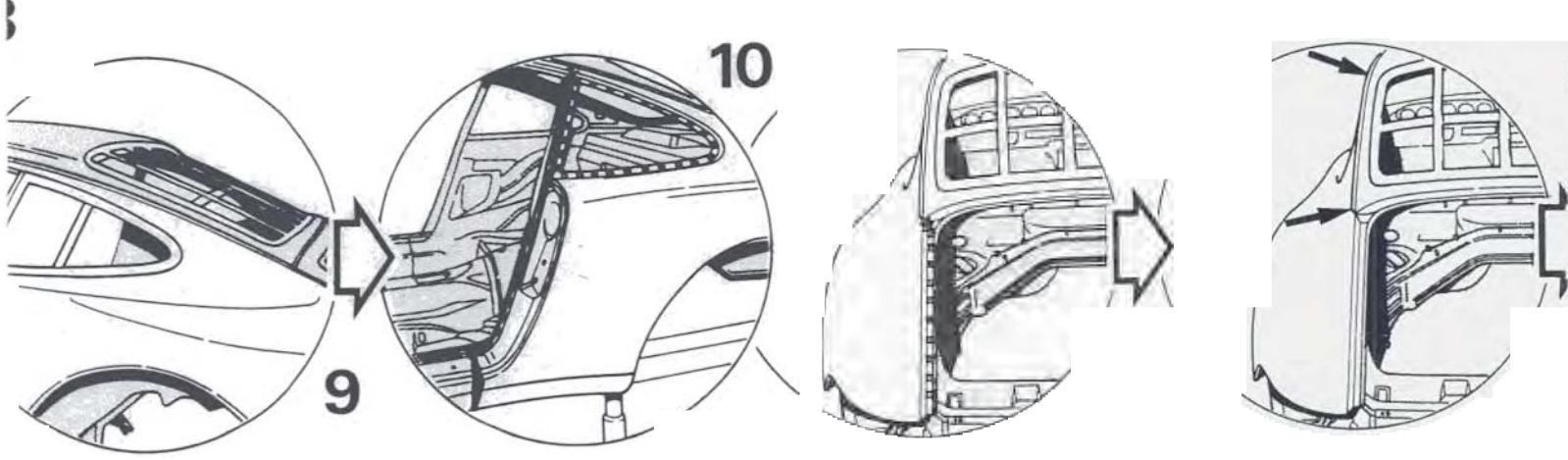
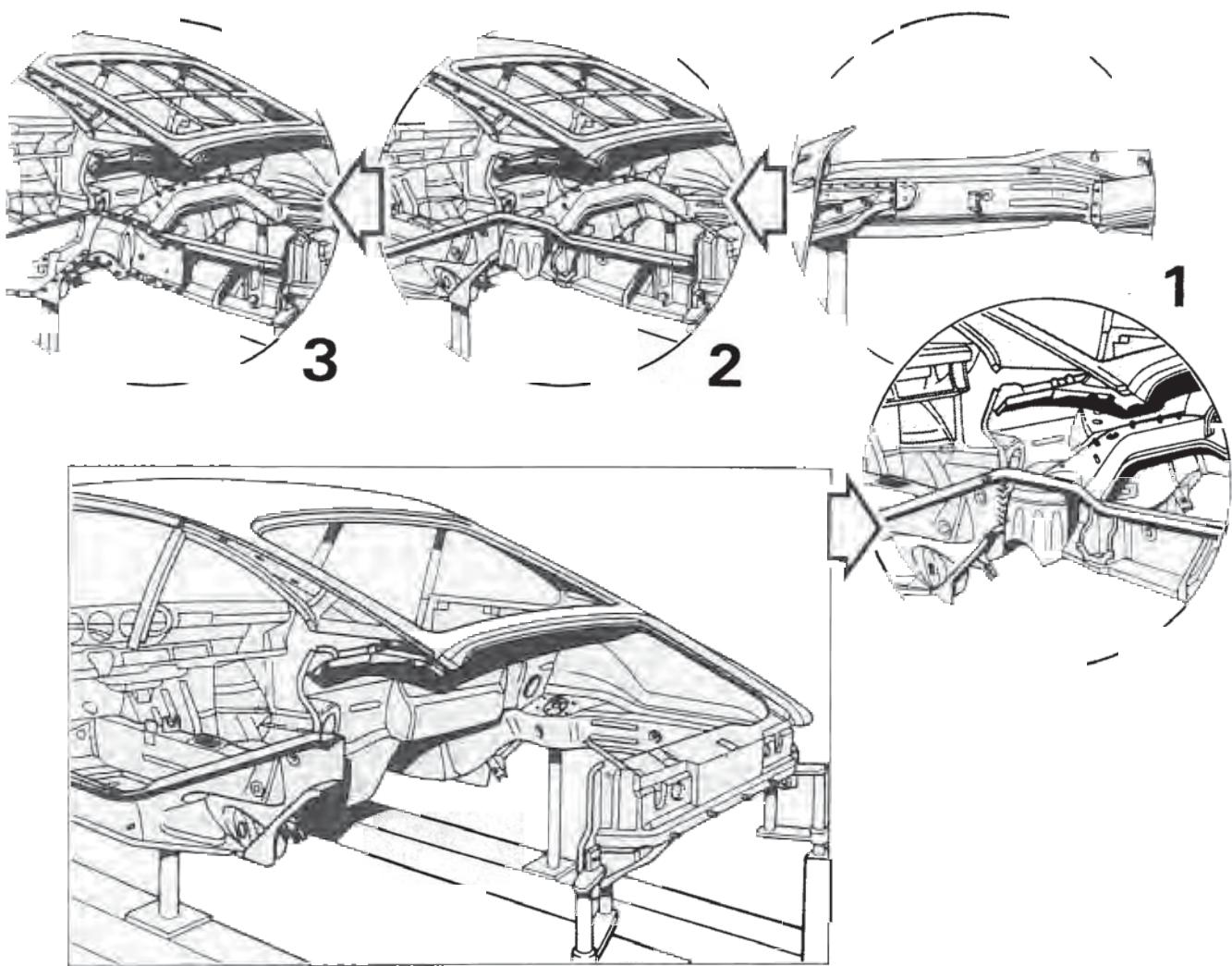
Cutting rear body section from body on one side

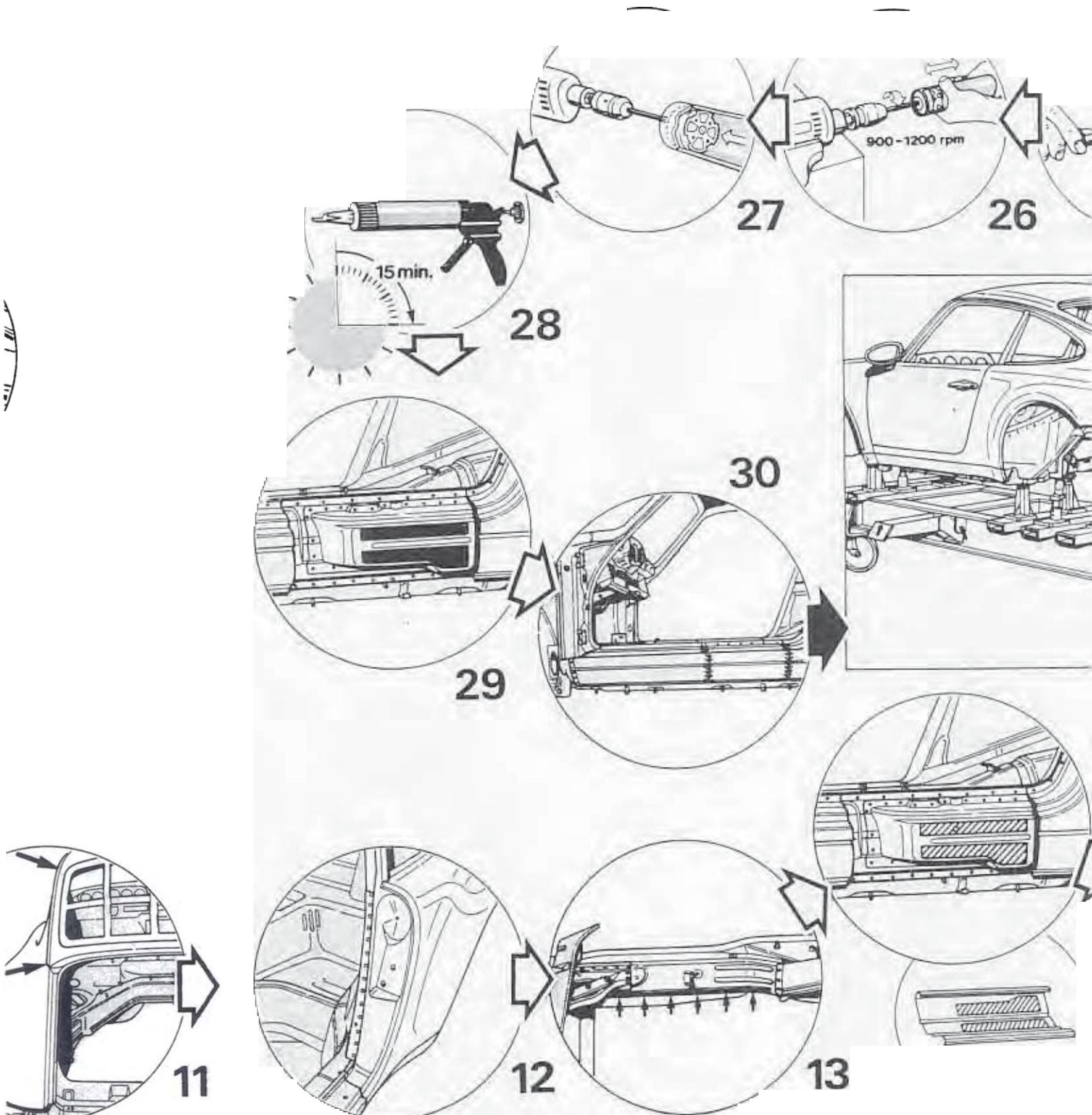
Remove all mechanical assemblies and attached equipment and also the complete interior trim including glass from the interior and exterior of the rear body section.

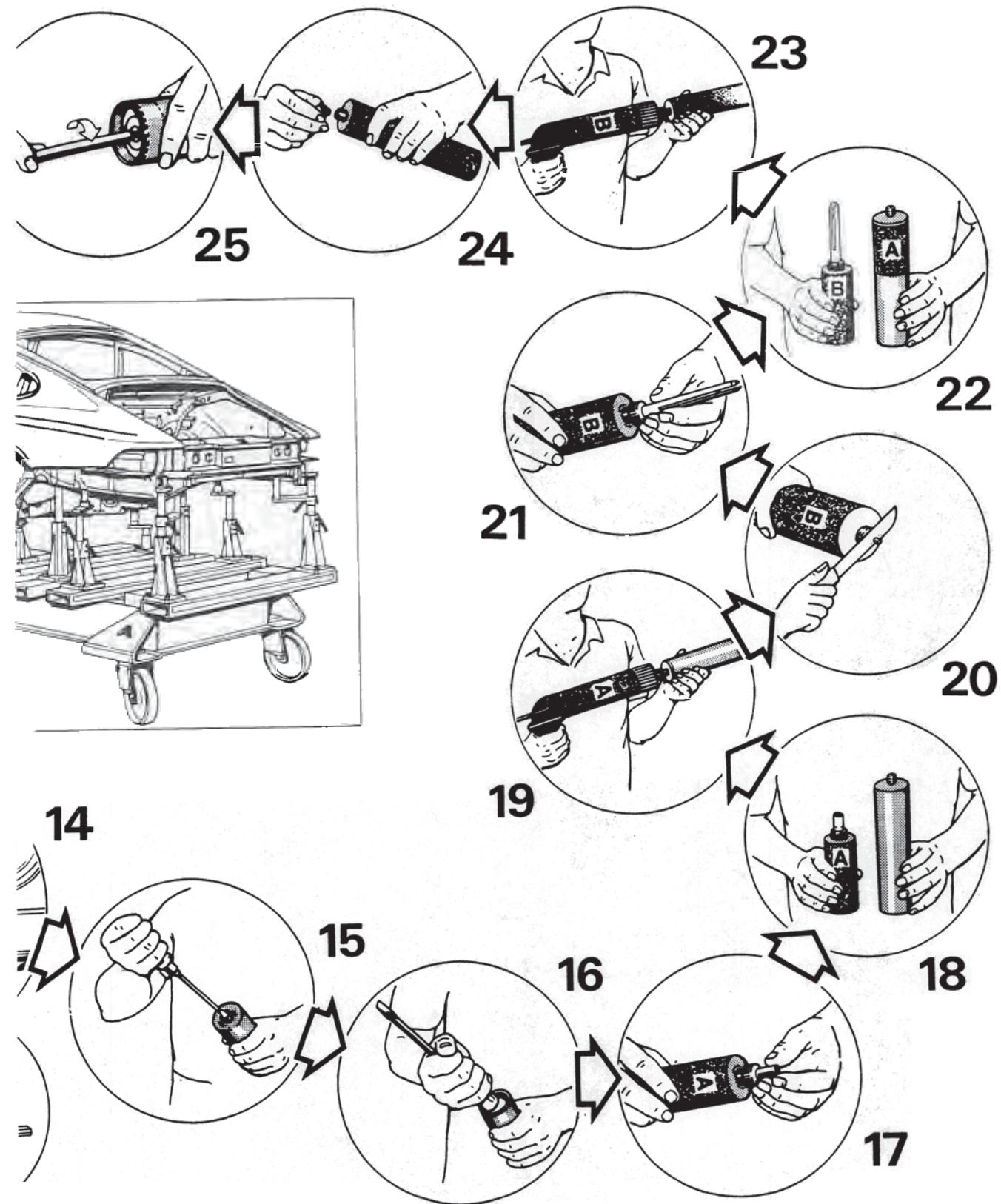
No.	Operation	Instructions
	Mount car on body alignment rig	Mount the car with mechanical assemblies in place at the front on the basic set of alignment angles, and secure it.
1	Separate the welded joints at the side panel Separate the flange joint between side panel and roof	Using a spot weld cutter, separate the spot welds between the side panel and the rear wheel housing, the B-post and the roof frame member. Separate the MIG weld seams between the side panel and the door sill, roof frame (in the B-post area), outer roof panel/rear wheel housing and cross-member. Cut through the flange joint between the side panel and the roof.
2	Cut through the door sills and separate the welded joints	Cut through the door sills with the body panel saw. Separate the spot welds between the door sill and the side member and the central side member with the spot weld cutter. Grind away the MIG weld seams between the door sill and the gusset plate.
3	Separate the welded joints at the gusset plate	Separate the welded joints between the gusset plate and the rear wheel housing and central side member.
4	Separate the welded joints at the rear wheel housing (from the outside)	Bend up the angled surround at the B-post. Separate the spot welds between the rear wheel housing and the side member, roof frame and central side member, using spot weld cutters.
5	Separate the welded joints at the rear wheel housing (from the inside)	Separate the spot welds between the rear wheel housing and the seat pan and the rear-window shelf with a spot weld cutter. Grind the away the MIG weld seams between the rear wheel housing and the B-post and side member.
6	Separate the spot welds on the side member Cut through the side member	Separate the spot welds between the side member and cross-member, engine mount and rear-axle cross member with a spot weld cutter. Cut through the side member near the rear-axle cross-member (before center of shock absorber mount) with the body panel saw.

Fitting rear body section into body on one side

Fitting rear body section into body on one side







Inserting rear body section into body at on side

No.	Operation	Instructions
	Clean the weld areas	Clean the body areas to be welded with a hot air blower or rotary brush to remove underseal, paint etc. Remove factory-applied primer with a rotary brush from the weld areas on the replacement parts.
1	Fit side member and rear axle cross member into body and weld in	Fit side member and rear axle cross member into body, secure with clamping tools and tack weld into position. Using the inert gas method, butt weld the replacement side member to the body side member with a full seam. Plug weld the side member to the cross member, engine mount and rear axle cross member. Note: The rear axle cross member may only be fitted together with a side member.
2	Insert special tool P 853	Place special tool P 853 (rear window template) into body cutout for rear window and secure with clamps to the spot weld flange.
3	Fit rear wheel housing into body and prepare for welding in	Trial-fit reinforcements to the side member, secure with clamping tools and tack weld.
4	Trial-fit rear wheel housing to body and prepare for welding in	Trial-fit rear wheel housing to body. Drill out the rear wheel housing ready for plug welding at points not accessible for spot welding.
5	Weld the rear wheel housing into the body (from the outside)	Secure the rear wheel housing with clamping tools and spot weld to the cross member, rear wheel housing reinforcement, side member (where accessible) and roof frame. Using the inert gas method, plug weld the rear wheel housing to the central side member in the areas of the side member and the rear wheel housing reinforcement not accessible for spot welding.

No.	Operation	Instructions
6	Weld the rear wheel housing to the body (from the inside)	MIG weld the rear wheel housing to the B-post, the rear wheel housing reinforcement and the side member with a discontinuous full seam. Plug weld the inner side panel to the rear window shelf and seat pan.
7	Fit the gusset plate, prepare for inserting and MIG weld	Fit the gusset plate to the rear wheel housing and the central side member. Drill out the gusset plate for plug welding. Plug weld the gusset plate to the rear wheel housing and the central side member, using inert gas.
	Solder lid release guide tube	Fit lid release guide tube and braze to lock pillar, rear wheel housing and cross member.
8	Fit side panel to body	Fit side panel to body. Install door and engine compartment lid to check body contours. Gaps between door and body and between rear lid and body must be parallel all round.
9	Insert special tool P 854	Place special tool P 854 (template for rear side window) in the rear side window body cutout and secure to spot weld flange with clamps.
	Tack weld side panel under inert gas	Using inert gas, tack weld the side panel to the door sill, B-post, rear side window spot-weld flange, rear wheel housing and cross-member. Take out special tool P 854 (rear side window template).
10	Spot weld and MIG weld side panel	Spot weld the side panel to the rear wheel housing, B-post and roof rail. MIG weld the side panel to the door sill (B-post area), outer roof sheet / rear wheel housing and cross member with a discontinuous full seam.
	Fold roof over into side panel	Fold side panel edge over web on roof.

No.	Operation	Instructions
	MIG weld the ends of the fold using inert gas.	MIG weld the side panel to the roof at the end of the fold in the B-post area running a full seam. MIG weld the side panel to the roof at the end of the fold in the rear lid area running a full seam. Take out special tool P 853 (rear window template). Grind the inert gas weld seams.
12	Spot weld the angled surround to the inner side panel	
13	Spot and tack weld the sectioned rail to the side member	Spot weld the sectioned rail to the side member/rear wheel housing spot weld flange on the inside, and tack weld under inert gas in the engine mount area.
	Fit door sill to body and prepare for inserting	Making a butt joint, fit replacement door sill to body door sill and side panel. Insert door sill into body and adjust according to door contours.
14	Remove door sill and prepare bonding area	Remove replacement door sill from body. Clean bonding areas at gusset plate and door sill and apply primer.

Preparing the bonding cartridge for application of adhesive

No.	Operation	Instructions
15	Open nozzle fitting of cartridge containing component A	Use a screwdriver to pierce the diaphragm in the nozzle fitting of the cartridge containing component A (C1).
16	Open flanged cover of cartridge containing component A	Use the screwdriver handle to pierce the flanged cover at the end of the cartridge containing component A (C1).
17	Screw filling nozzle onto cartridge containing component A	Screw filling nozzle (C10) onto cartridge containing component A (C1).
18	Place cartridge containing component A into bonding gun	Place cartridge containing component A (C1) into bonding gun (A). Remove screw-on cap from mixing cartridge (C3).
19	Press component A into mixing cartridge	Engage filling nozzle (C10) of cartridge containing component A (C1) into mixing cartridge (C3). Use bonding gun (A) to press component A into mixing cartridge (C3).
20	Open nozzle fitting of cartridge containing component B	Use a knife to cut off the tip of the nozzle fitting of the cartridge containing component B (C2).
21	Screw injector nozzle onto cartridge containing component B	Screw injector nozzle (C7) onto cartridge containing component B (C2).
22	Place cartridge containing component B into bonding gun	Place cartridge containing component B (C2) into bonding gun (A).
23	Press component B into mixing cartridge with component A	Insert injector nozzle (C7) of cartridge containing component B (C2) into mixing cartridge (C3). Use the bonding gun (A) to press component B (C2) into mixing cartridge (C3) with component A.
24	Close mixing cartridge	Pull injector nozzle (C7) out of mixing cartridge (C3) and close mixing cartridge with screw-on cap.

No.	Operation	Instructions
25	Screw mixing rod into mixing cartridge	Screw mixing rod (B) manually into internal threads of mixing disc of mixing cartridge (C3). Clamp the other end of the mixing rod in a power drill chuck. Fit the power drill in a suitable clamping device.
26	Mix component A and component B	Switch on drill (speed 900 - 1200 rpm) and move mixing cartridge 25 times from stop to stop. Perform all 25 double strokes fairly rapidly!
27	Engage mixing disc into piston	Pull back mixing cartridge until a rattling sensation is felt. Switch off drill and screw mixing rod out of mixing cartridge. This causes the mixing disc to engage into the piston of the mixing cartridge.
28	Place mixing cartridge into bonding gun	Place mixing cartridge with mixed 2-pack window adhesive into bonding gun. Screw application nozzle (C8) onto mixing cartridge.

Caution: Observe open time of 15 minutes!

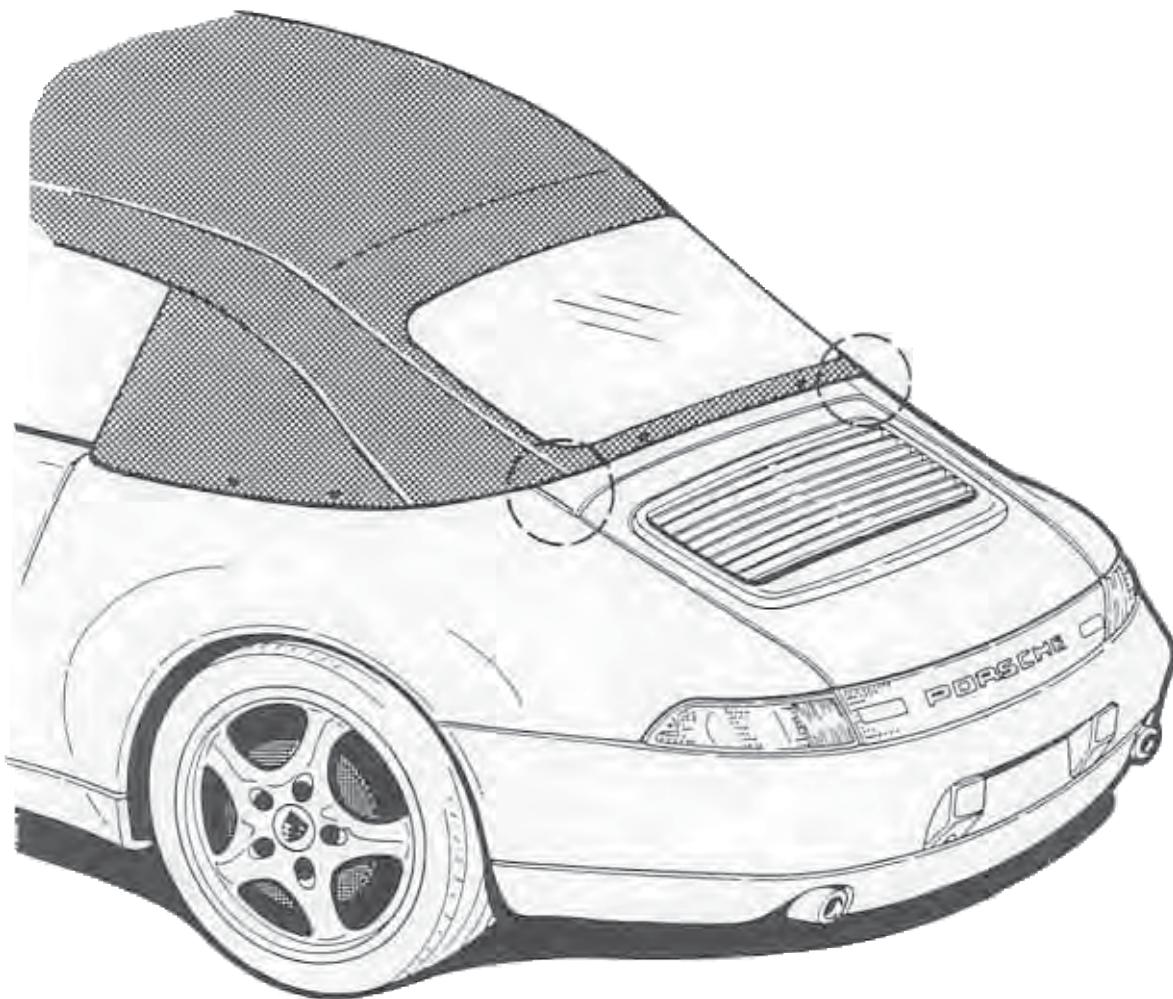
Open time is the time available for application of the adhesive and for fitting the outer side member into the body.

No.	Operation	Instructions
29	Apply adhesive to gusset plate	Apply 2-pack adhesive with bonding gun to entire gusset plate surface to a thickness of 4 mm. Do not apply any adhesive to the outer side member to side panel welding area.
30	Weld in outer side member	Fit outer side member to body and adjust to contours of door. MIG-weld spare outer side member to body outer side member running a butt full seam. Plug-weld outer side member to fender mating panel and closing panel using MIG equipment. Spotweld outer side member to inner side member and center side member (floorpan).

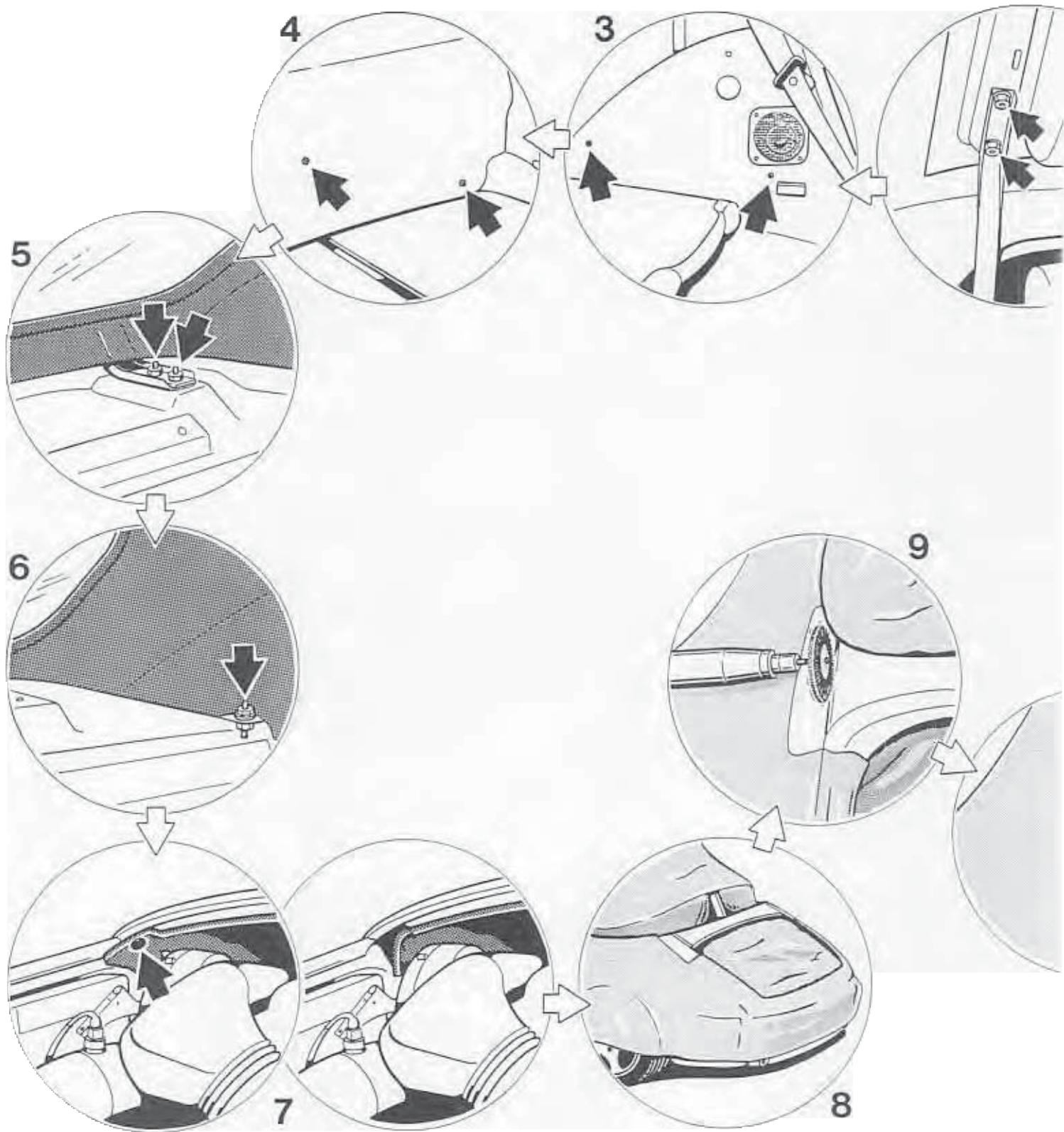
53 02 49 Reworking rear bodywork — Cabriolet**Repairing incipient cracks between rear center panel and rear side panels**

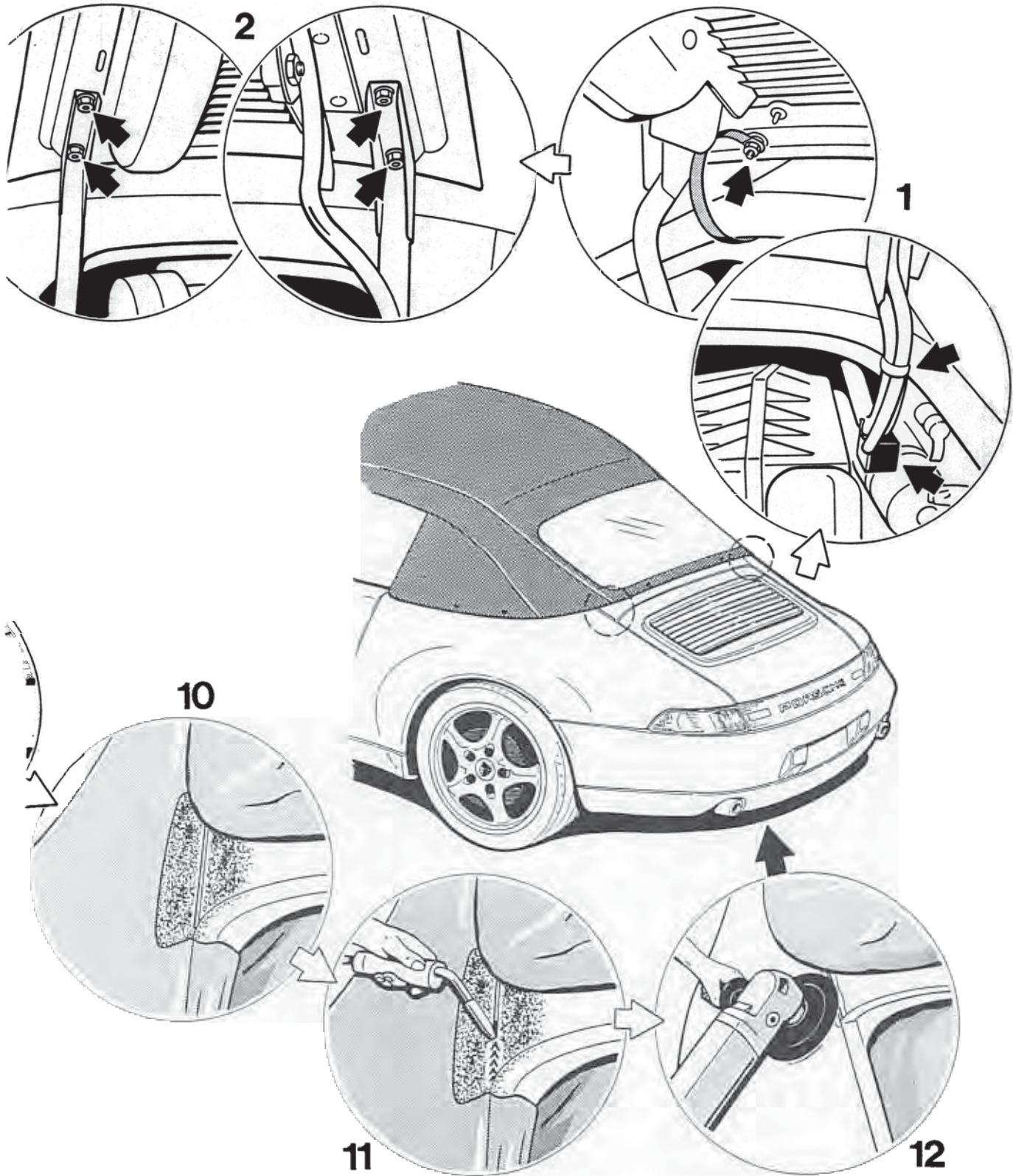
(Technical modifications were introduced in the course of production in August 1994.)

Note: Following the repair of the incipient cracks, the joint between rear side panel and rear center panel is no longer visible. Both sides of the vehicle should therefore be reworked.



Repairing incipient cracks between rear center panel and rear side panels





Repairing incipient cracks between rear center panel and rear side panels

In order to repair the incipient cracks between the rear center panel and rear side panels, the engine compartment lid, the convertible top, the rear wheel houses and the engine compartment insulation must be partially dismantled.

No.	Operation	Instructions
	Unlock rear lid	
	Disconnect electrical cables from rear lid	Unclip connector cap from wire harness, disconnect connector and pull cable holder off hinge. Unscrew fastening nut of ground connection cable.
2	Remove rear lid	Unscrew mounting screws. Lift lid off vehicle and place it on a clean, soft surface.
	Unlock convertible top	
3	Remove side wall trim panels	Remove mounting screws and press studs of side wall trim panels. Disconnect plugs from loudspeakers and take side wall trim panels out of vehicle.
4	Remove rear wall trim panel	Remove mounting screws of rear wall trim panel. Pull rear wall trim panel forward and take it out of vehicle.
5	Disconnect rear tack strip	Unscrew fastening nuts of holders from rear tack strip.

No.	Operation	Instructions
6	Disconnect tack strip at sides Remove rear left and right wheelhousing trims	Press roof liner upwards and outwards at mounting points and unscrew mounting nuts of tack strip.
7	Disconnect right and left engine compartment insulation Lift convertible top off body at rear	Unscrew retaining press stud and disconnect engine compartment insulation from body. Lift convertible top off body at rear and fix it in this position by inserting a wooden wedge for example.
8	Position covers	Cover convertible top, right rear side panel, left rear side panel, lights and rear spoiler.
9	Remove paint from joints	Remove paint to bright metal in the area of the joints between rear center and side panels using a rotary brush.
10	Apply heat transfer paste Remove heat transfer paste	To prevent thermal warping, apply heat transfer paste to rear center and side panels. Do not apply paste to joints!
11	Weld joints Remove heat transfer paste	Weld joints (full weld) by inert arc welding.
12	Grind welds	Grind welds to contour of body using an angle grinder.

No.	Operation	Instructions
	Repair damaged underseal.	Apply underseal in accordance with instructions in painting manual, Section L 4, Underseal – material and application data.
	Paint repaired body section.	Paint in accordance with painting manual, Section L4 – material and application data and Section L5 – working procedures/methods, – blending technique.
	Re-assemble vehicle	Mount left and right engine compartment insulation with retaining press studs. Attach tack strip of convertible top at sides and rear. Install rear and side wall trim panels. Install rear lid and connect electrical cables. Install left and right rear wheel housing trims.

Body paint colors beginning with 994 Model Year

standard colors		special colors	
Grandprix white	908	Polar silver metallic	92E
Grandprix white	92R*	Polar silver metallic	2M*
Black	47	Midnight blue metallic	17W
Black		Midnight blue metallic	39C*
uards red	80K	Black metall	746
uards red	84A	Black metall	744
Rivi blue	39	Slate gray metallic	
Rivi blue	3AG	Slate gray metallic	23F*
Amaranth violet	39D	iris blue metallic	39N
Amaranth violet	3AH*	iris blue metallic	39V*
Speed yellow	2G	Aventurine metall	39R
Speed yellow	2H*	Aventurine metall	39S

Water-base paints

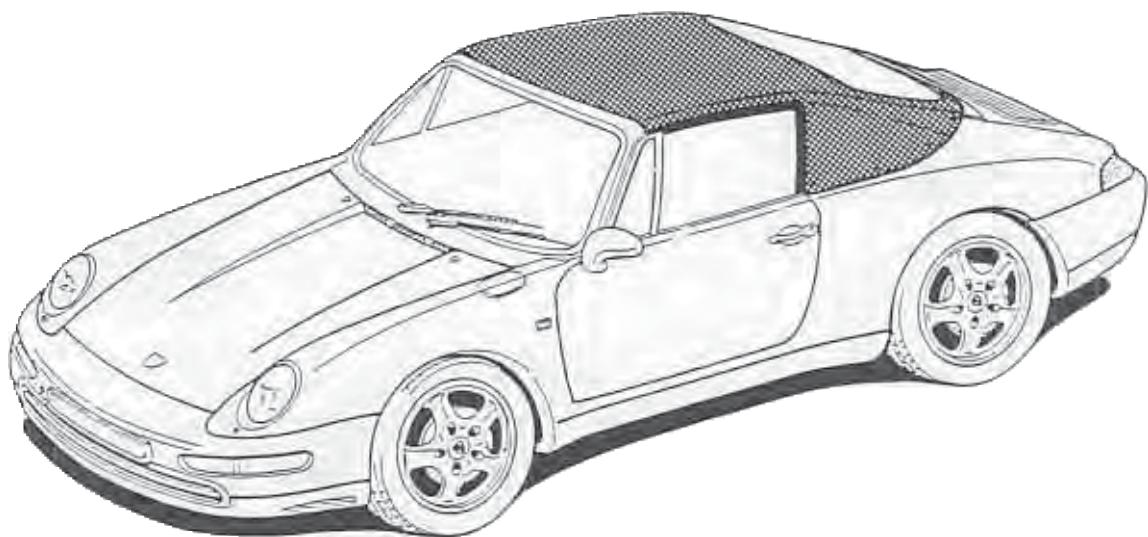
Body paint colors beginning with 1995 Model Year

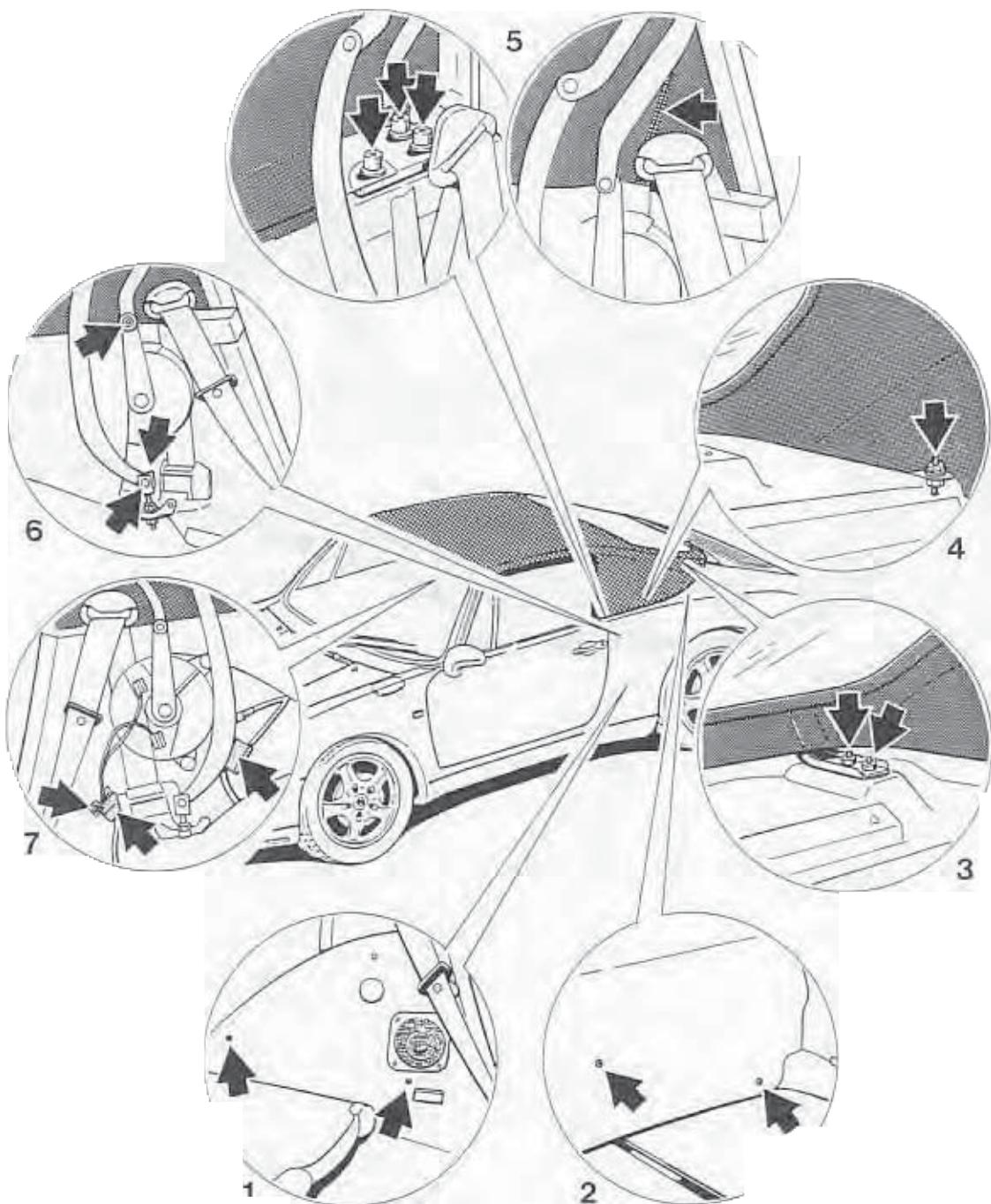
Standard colors:		Special colors:	
Grandprix white	908	Polar silver - metallic	92E
Grandprix white	92R*	Polar silver - metallic	92M*
Black	747	Midnight blue - metallic	37W
Black	741*	Midnight blue - metallic	39C*
Guards red	80K	Black - metallic	746
Guards red	84A*	Black - metallic	744*
Riviera blue	39E	Slate gray - metallic	22D
Riviera blue		Slate gray - metallic	23F*
Amaranth violet	39U	Iris blue - metallic	39N
Amaranth violet	3AH*	Iris blue - metallic	39V*
Speed yellow	12G	Aventurine green - metallic	39R
Speed yellow	12H*	Aventurine green - metallic	39S*
		Arena red metallic	84R
		Arena red metallic	84S*

= Water-base paints

Body paint colors beginning with 1996 Model Year

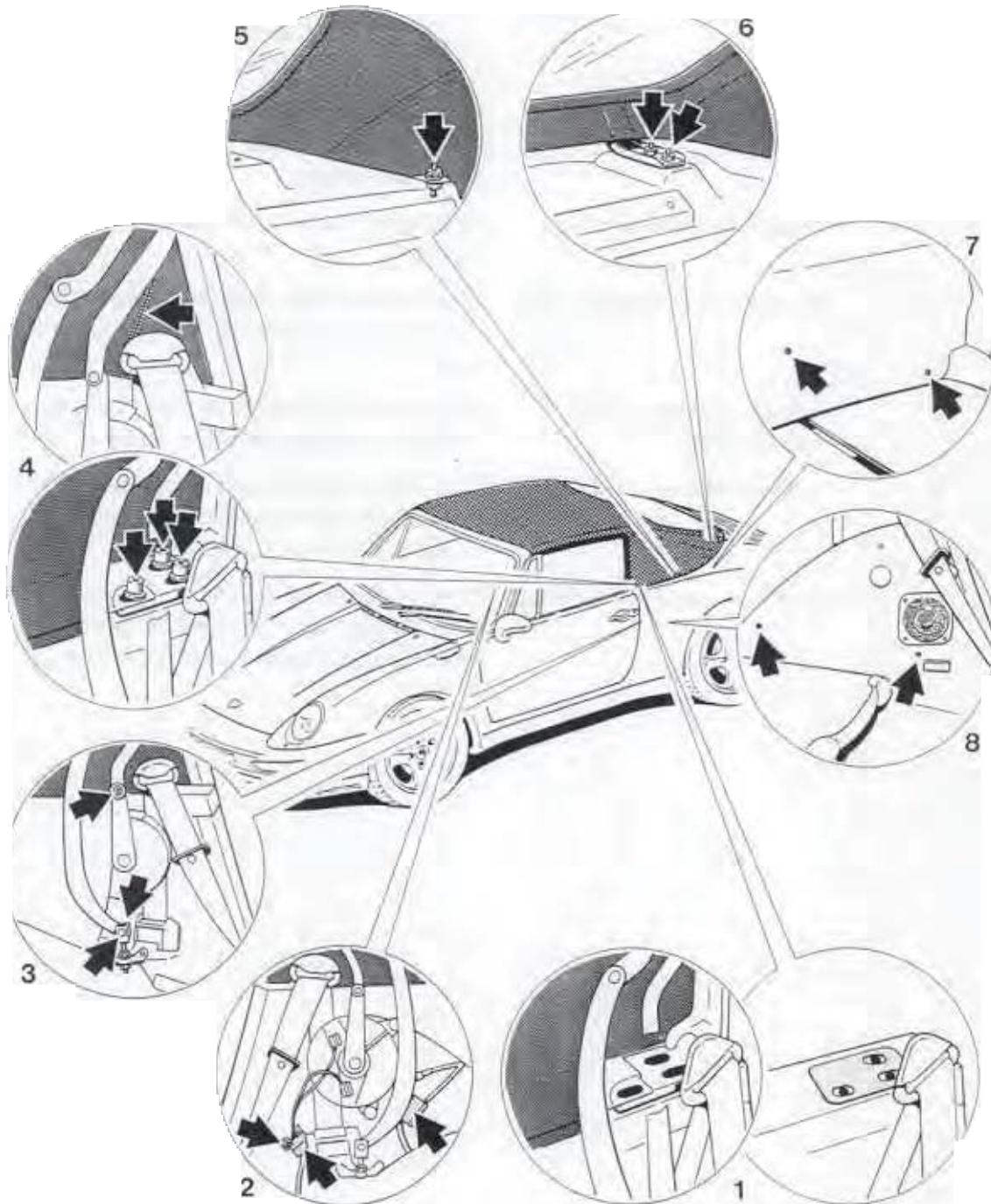
Standard colors:		Special colors	
Grandprix white	908	Polar silver metallic	92E
Grandprix white	92R*	Polar silver metallic	92M*
Black		Midnight blue metallic	17W
Black		Midnight blue metallic	39C*
Guards red	80K	Black metallic	746
Guards red	84A	Black metallic	'44'
Speed yellow	2G	Slate gray metallic	22D
Speed yellow	2H*	Slate gray metallic	23F*
Blue turquoise	3AR	Iris blue metallic	39N
Blue turquoise	3AS*	Iris blue metallic	39V*
		Aventurine green metallic	39R
		aventurine green metallic	39S*
		red metallic	84R
		Arena red metallic	84S*
Water-base paints		Turquoise metallic	25C
		Turquoise metallic	25D*

61 01 19 Removing and installing convertible top

61 01 19 Removing and installing convertible top**Removing convertible top**

61 01 19 Removing and installing convertible top**Removing convertible top**

No.	Operation	Instructions
	Unlock convertible top	
1	Remove side wall trim panels	Remove fastening screws and press studs of the side wall trim panels. Disconnect the loudspeaker connector and remove the side wall trim panels from the vehicle.
2	Remove rear wall trim panel	Remove the fastening screws of the rear wall trim panel, pull the rear wall trim panel forwards and remove it from the vehicle.
3	Release tack strip at rear	Remove the fastening screws of the holder from the tack strip.
4	Release tack strip at the sides	Press the roof liner upwards and outwards at the mounting points and unscrew the fastening nuts of the tack strip.
5	Release mounts and tack strip at the front	Open roof liner zip fastener and remove screws of convertible top mounts and tack strip at the front.
6	Release links and pushrods	Remove tab washers and bolts between links and joint yokes. Remove the headless screws connecting the transmission arm to the pushrods.
7	Disconnect electrical systems	Unscrew the connector for the microswitches from the body. Disconnect the connectors for the microswitches and convertible top locks. Lift convertible top off vehicle.

61 01 19 Removing and installing convertible top**Installing convertible top**

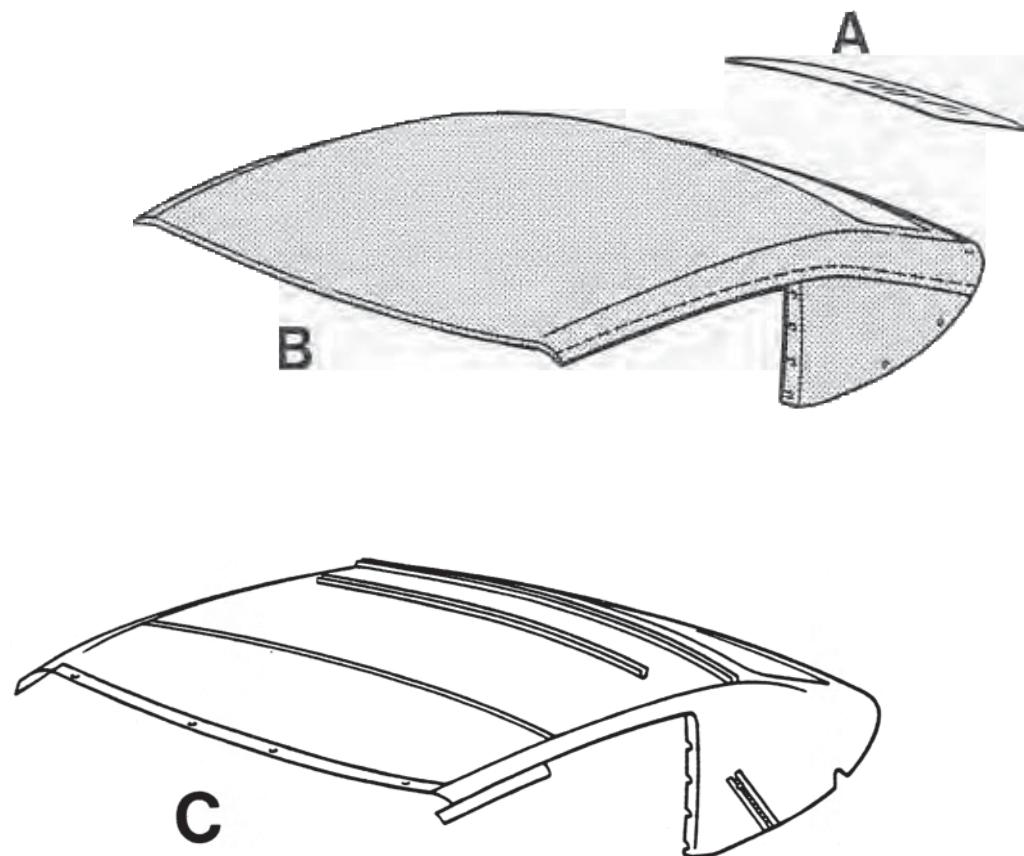
61 01 19 Removing and installing convertible top**Installing convertible top**

Before installing the convertible top, check and if necessary replace the tack strip seal.

No.	Operation	Instructions
1	Place top on vehicle	Position the top on the mounting points on the vehicle. Use shims under the mounts as required to adjust the height of the top.
2	Connect electric systems	Connect the connectors for the microswitches and locks and attach the connector for the microswitches to the body.
3	Fasten links and pushrods	Guide the links between the joint yokes, insert the bolts and fix them in position with the tab washers. Attach the pushrods to the transmission frame using the headless screws.
4	Fasten mounts and tack strip at front	Fasten the mounts and the tack strip at the front to the mounting points on the B-pillars using M 8 x 25 socket head screws with washers. The top can be adjusted in the lengthwise direction at these points. Tightening torque 20 Nm (15 ftlb.).
5	Fasten tack strip at sides	Screw the flanged M 6 nuts to the stud bolts. The height of the top in relation to the body can be adjusted at these points.
6	Fasten tack strip at rear	Fasten the tack strip on the holders to the body with washers and M 6 nuts. Tightening torque 9 Nm (7 ftlb.). Lock top. Any adjustments which may be required can be carried out at the mounting points on the bodywork.
7	Install rear wall trim panel	Push the rear wall trim panel under the tack strip and fasten it to the bodywork at the bottom using the fastening screws.
8	Install side wall trim panels	Connect cables to loudspeakers. Push the side wall trim panels between the brackets and the side parts and fasten them to the bodywork using the fastening screws.

61 28 55 Replacing convertible top fabric and roof liner

The following body spare parts are needed for replacing the convertible top fabric and the roof liner:



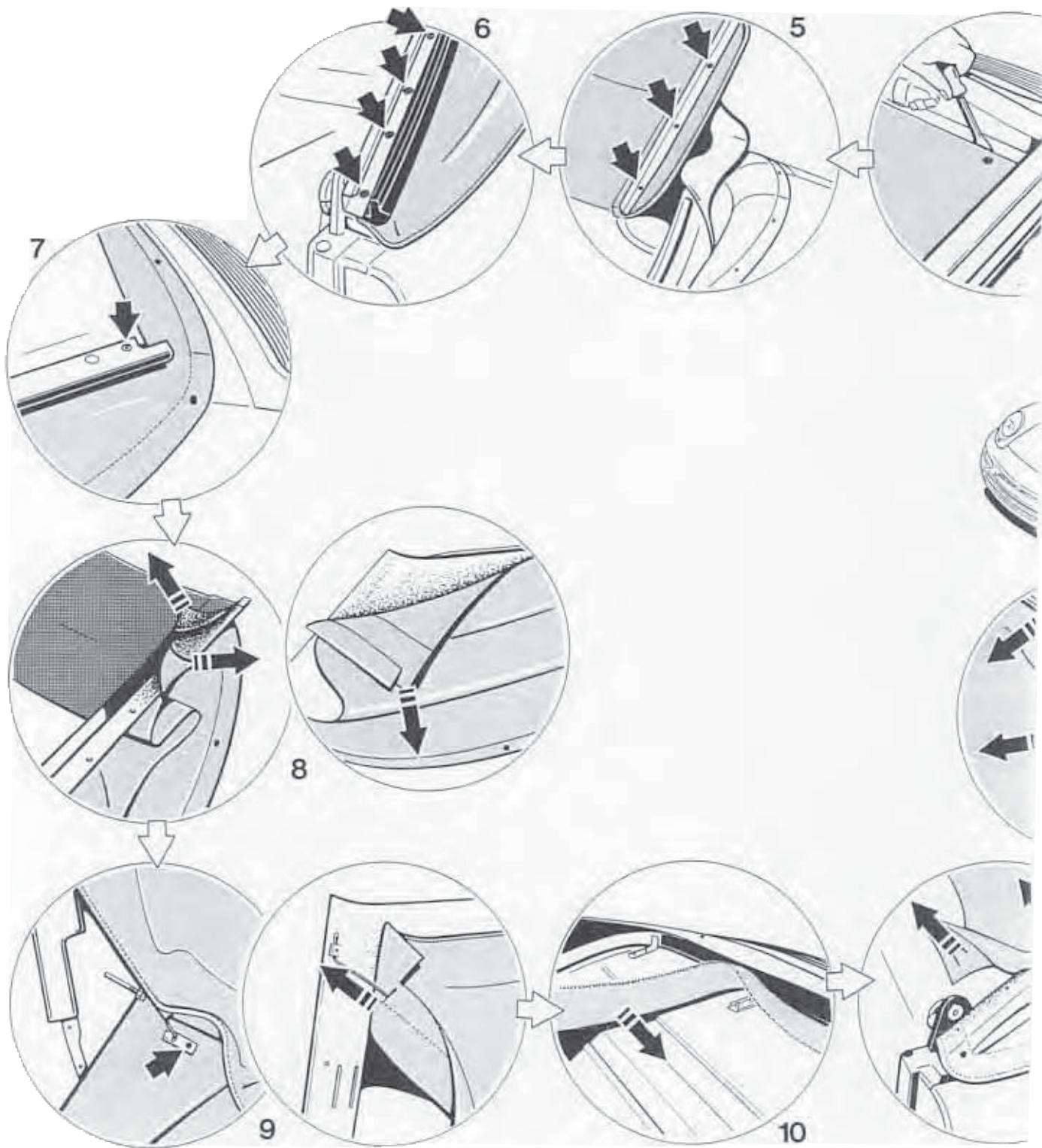
A rear window

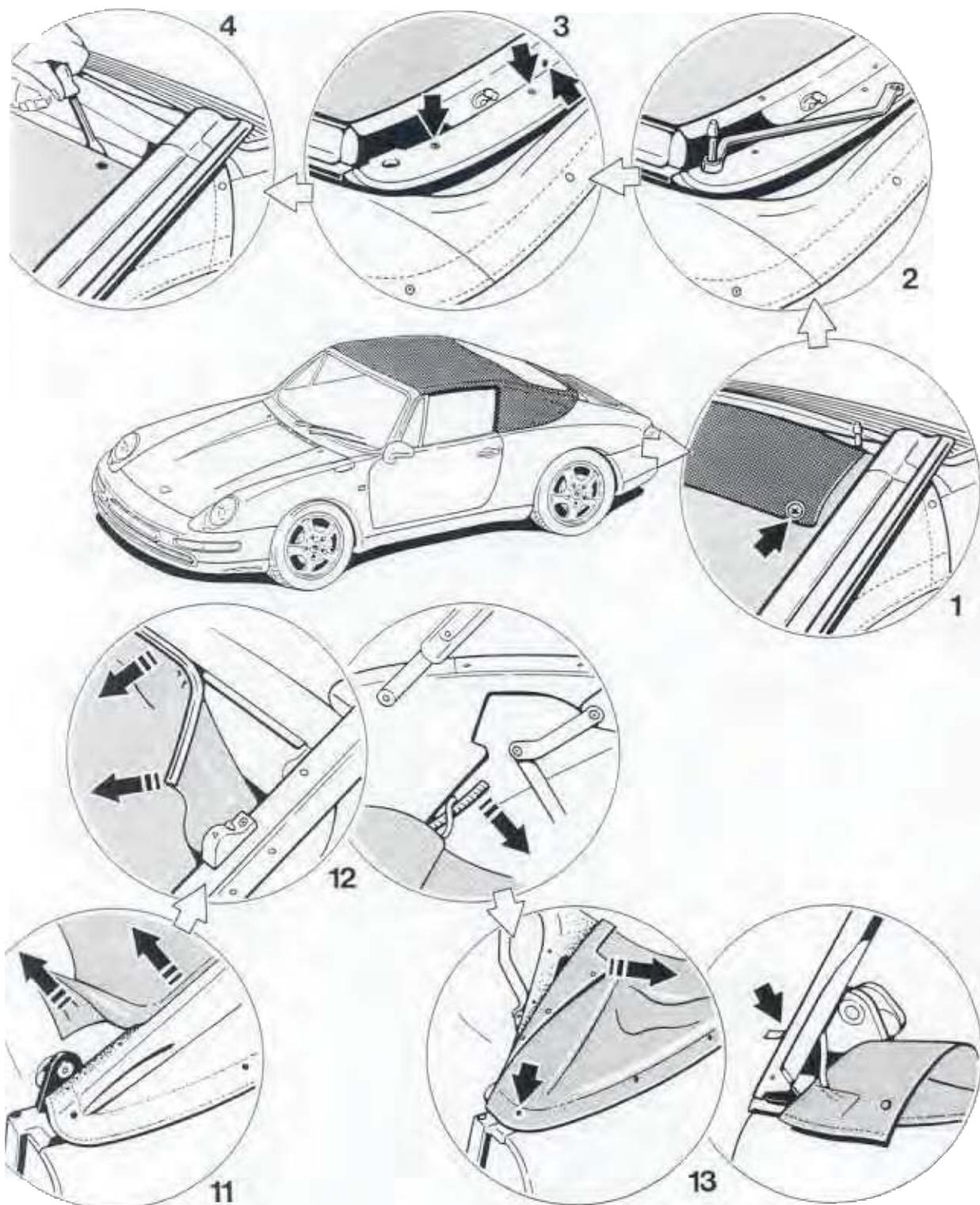
convertible top fabric

C roof liner

Replacing convertible top fabric and roof liner

Removing convertible top fabric and roof liner



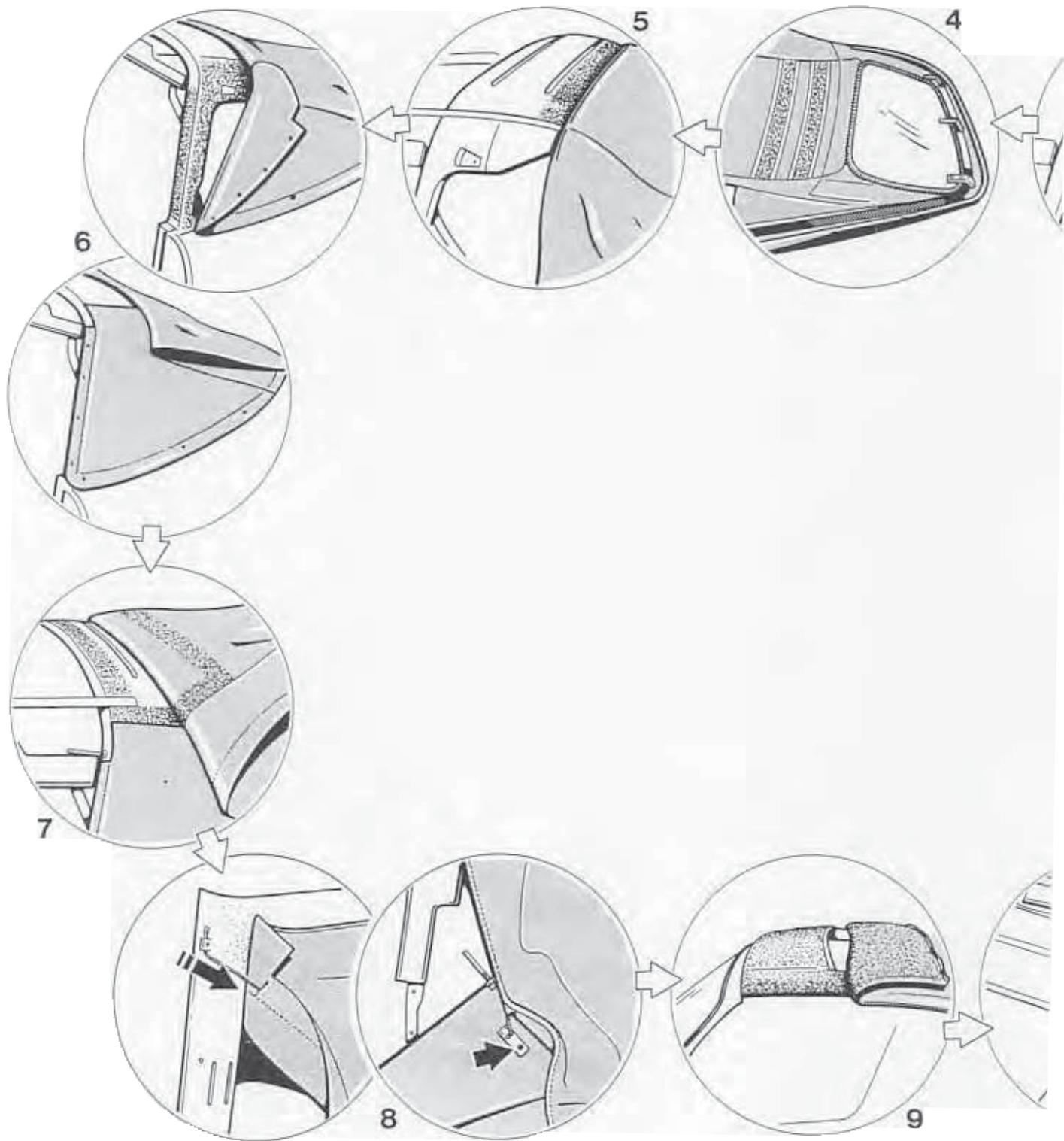


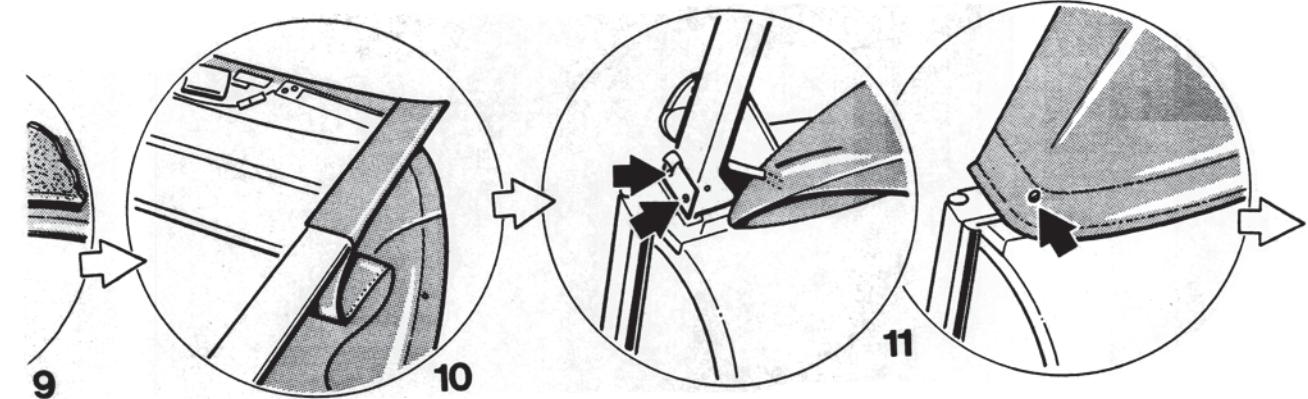
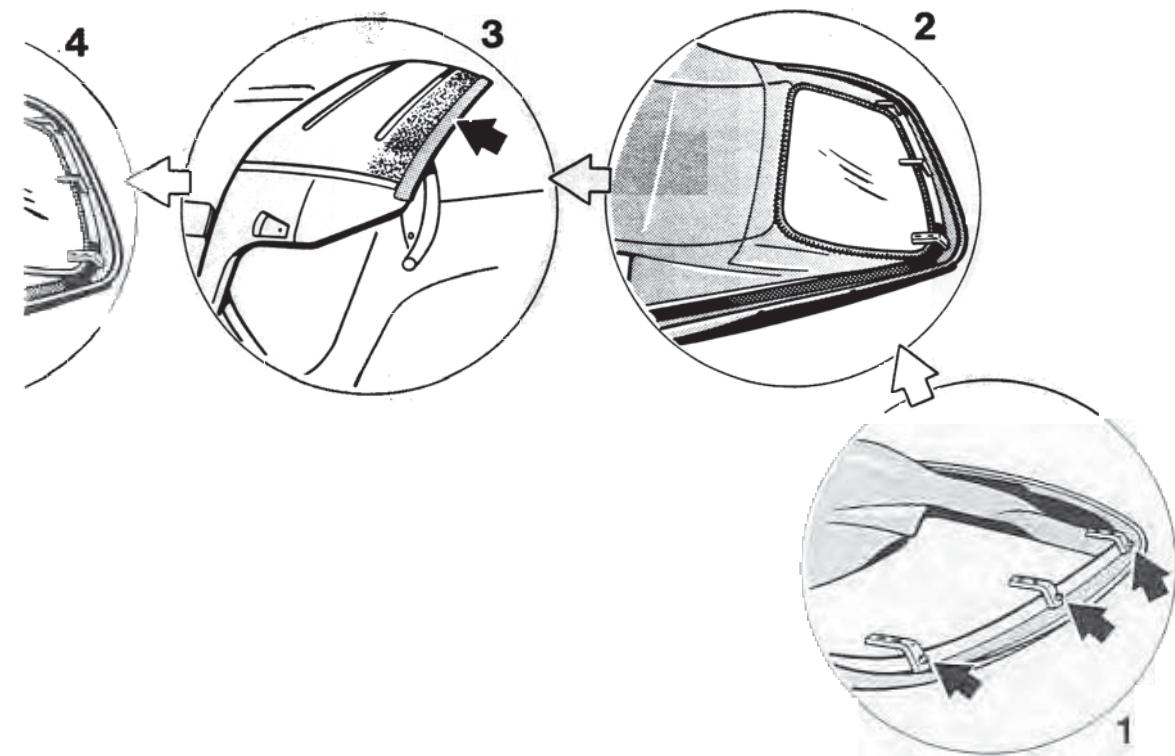
No.	Operation	Instructions
9	Remove cover trims and tensioner rope	Unscrew fastening screws for tensioner ropes, cover trims and roof liner inside, hexagonal nuts and washers and pull tensioner ropes out of convertible top.
	Remove side wall and rear wall trim panels	
	Loosen tack strip at rear, sides and front	
10	Open zipper	Open zipper between rear window and roof liner. Pull roof liner away from Velcro strip under tack strip.
11	Disconnect roof liner from B-pillars	Pull roof liner away from adhesive bonding points in area of B-pillar. Take rubber strip off pushrods.
12	Remove roof liner from main bow	Pull push-in sections on roof liner from edges of main bow and take roof liner out of vehicle.
13	Disconnect top fabric from main bow	Unscrew front Tenax bottom part from main bow. Disconnect fabric from main bow at adhesive bonding points. Drill out rivets of tensioner strip from inside and lift convertible top fabric with tack strip off vehicle.

No.	Operation	Instructions
9	Remove cover trims and tensioner rope	Unscrew fastening screws for tensioner ropes, cover trims and roof liner inside, hexagonal nuts and washers and pull tensioner ropes out of convertible top.
	Remove side wall and rear wall trim panels	
	Loosen tack strip at rear, sides and front	
10	Open zipper	Open zipper between rear window and roof liner. Pull roof liner away from Velcro strip under tack strip.
11	Disconnect roof liner from B-pillars	Pull roof liner away from adhesive bonding points in area of B-pillar. Take rubber strip off pushrods.
12	Remove roof liner from main bow	Pull push-in sections on roof liner from edges of main bow and take roof liner out of vehicle.
13	Disconnect top fabric from main bow	Unscrew front Tenax bottom part from main bow. Disconnect fabric from main bow at adhesive bonding points. Drill out rivets of tensioner strip from inside and lift convertible top fabric with tack strip off vehicle.

Installing convertible top fabric and roof liner

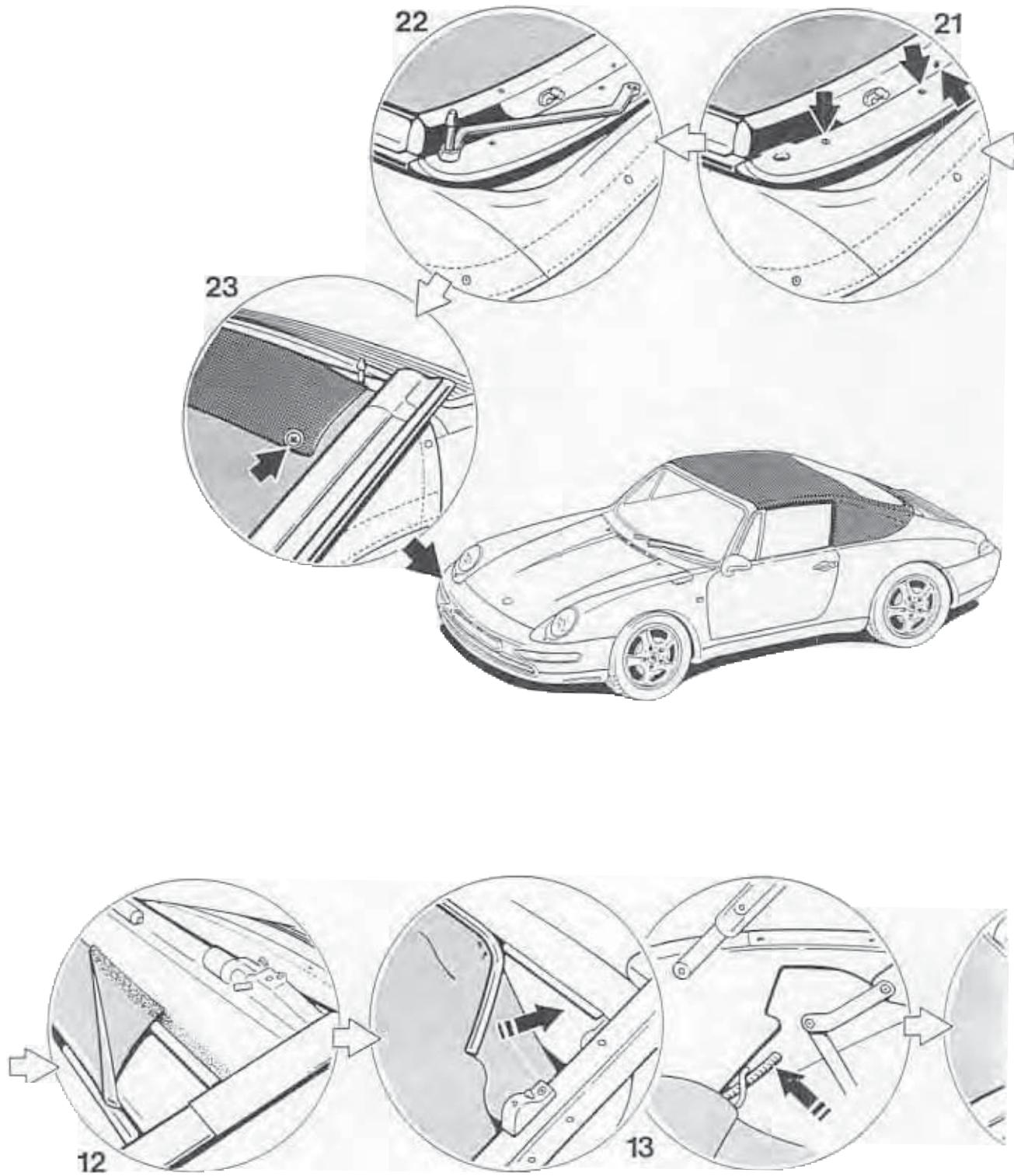
Installing convertible top fabric and roof liner

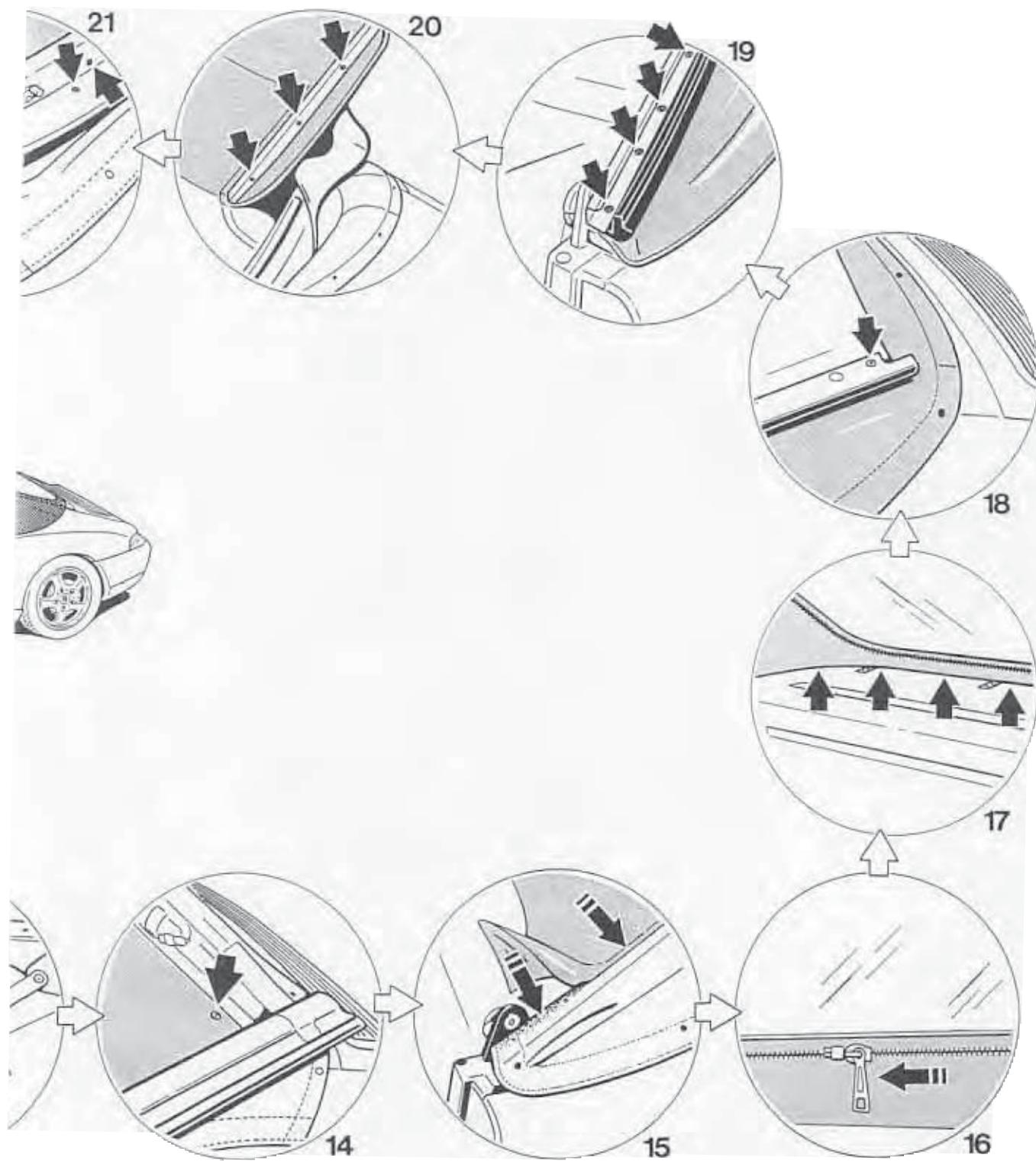




Installing convertible top fabric and roof liner

Installing convertible top fabric and roof liner





Installing convertible top fabric and roof liner

Before installing the convertible top fabric and the roof liner, the adhesive bonding points must be cleaned.

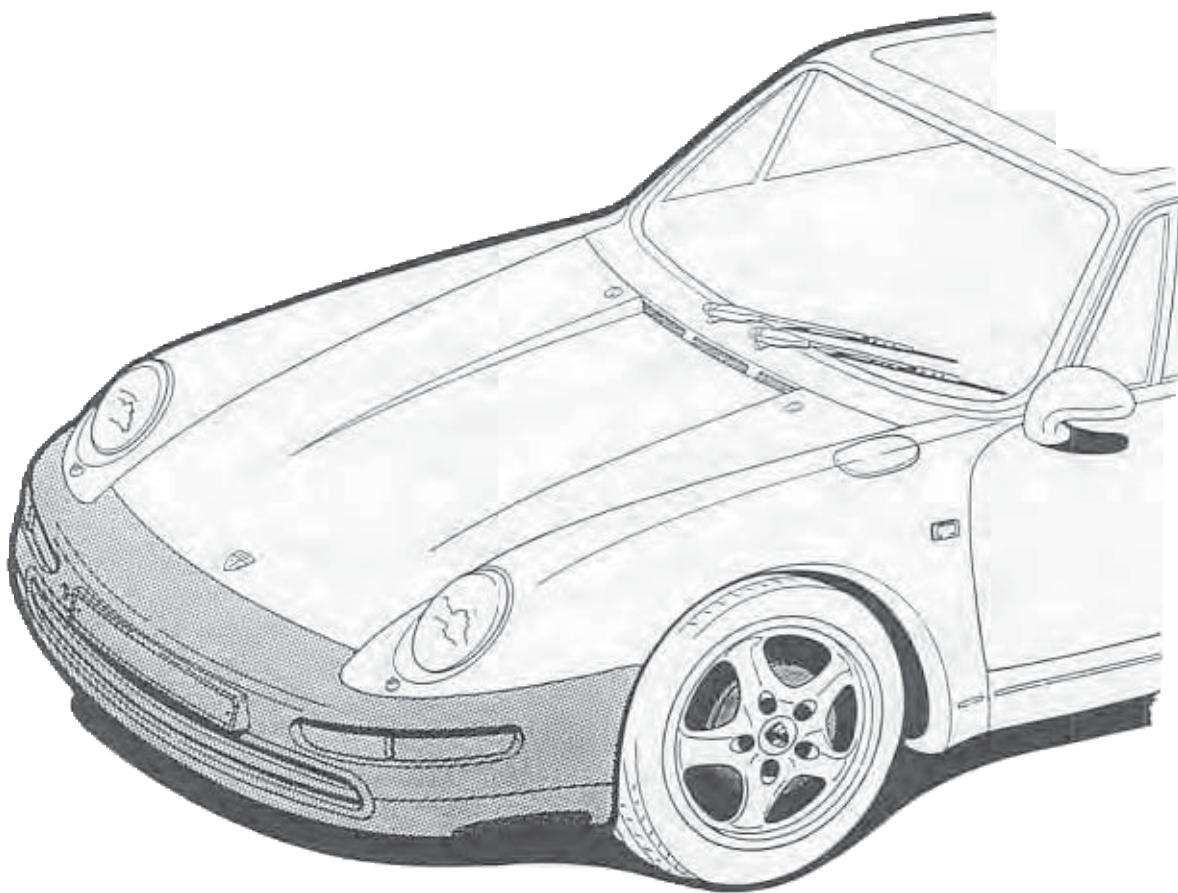
Check all screws for tightness. If necessary, tension the auxiliary bow.

No.	Operation	Instructions
1	Install holders on tack strip	Screw the three holders to the tack strip.
2	Install rear window	Zip the rear window into the convertible top fabric (use a provisional window, if one is available).
3	Prepare main bow	Cover the main bow with an adhesive tape, thickness about 1 cm, and apply adhesive up to the first reinforcement rib. Then remove adhesive tape.
4	Prepare convertible top fabric	Apply adhesive to the specified marking lines on the fabric, with the fabric not installed.
	Position fabric	Position fabric with tack strip on vehicle. (Only place it on the mounting points.)
5	Attach fabric to main bow	Open convertible top about 40% and position fabric with longitudinal seams at main bow, observing the markings.
6	Attach fabric to main bow at sides	Apply adhesive to fabric and main bow and bond fabric to main bow. Close the convertible top. If there is insufficient tension on the fabric, loosen adhesive bond and reposition fabric.
7	Attach fabric to main bow at top	Open convertible top about 10%. Apply adhesive to main bow at front and bond fabric to main bow.

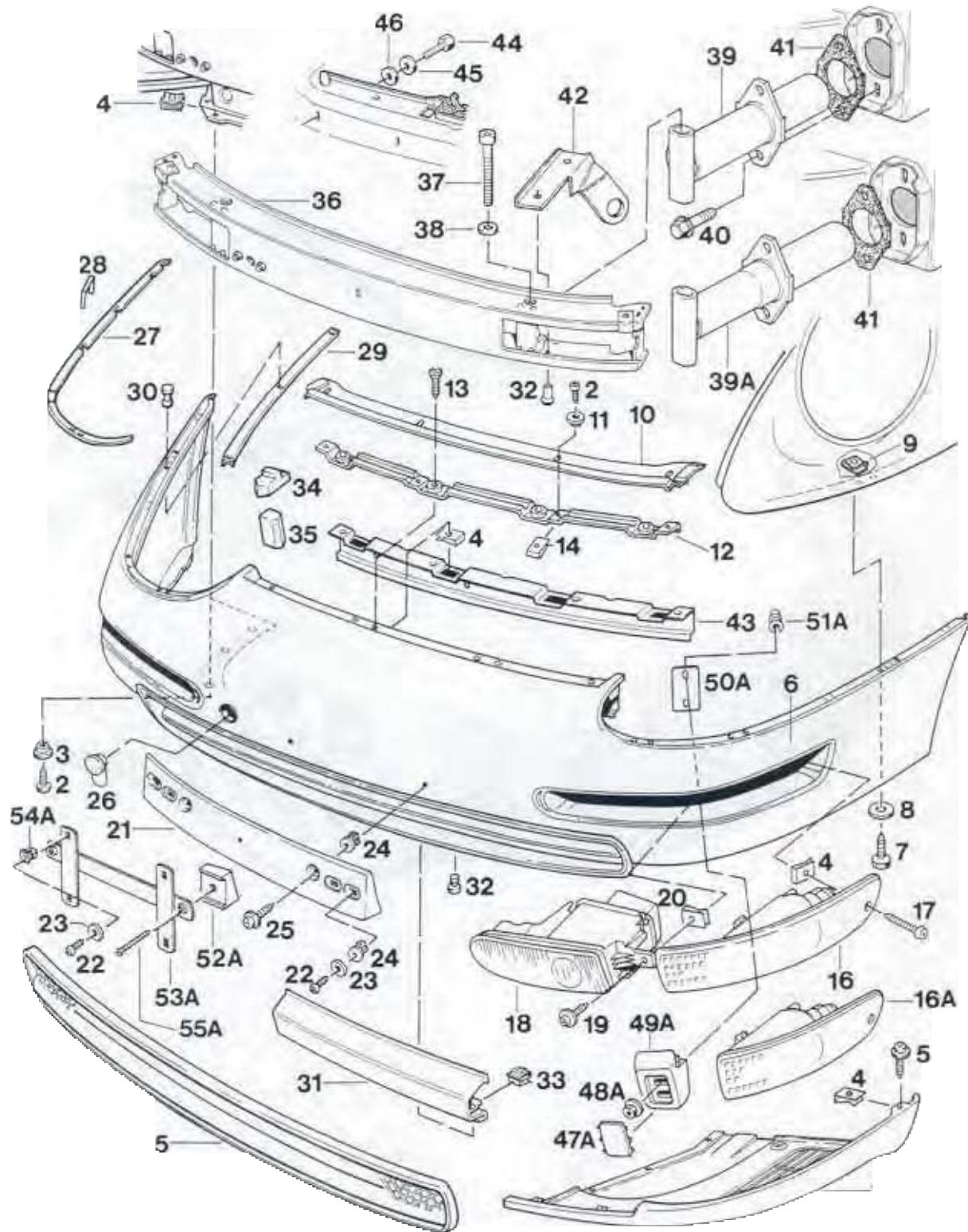


No.	Operation	Instructions
8	Insert and fasten tensioner ropes	Open top about 50%. Push tensioner ropes through fabric and attach the eyes with cover trims to the main bow using the cross-head screws.
9	Attach fabric to outer roof frame	Open top about 20%. Apply adhesive to roof frame and fabric. Bond fabric to roof frame at the marking (line).
10	Attach fabric to inner roof frame	Open top. Apply adhesive to roof frame and fabric. Bond fabric to roof frame.
11	Mount rubber strip, lower part of Tenax, seal and plate	Pull rubber strip around main bow and attach it to seal on main bow with plate. Fasten lower part of Tenax to main bow.
12	Mount tensioner cloth	Place tensioner cloth around auxiliary bow, apply adhesive to roof frame and bond tensioner cloth to roof frame, applying slight tension.
	Attach tack strip	Tighten tack strip mountings.
13	Fasten roof liner to main bow	Push push-on sections of roof liner onto edges of main bow.
14	Fasten roof liner to roof frame	Fasten roof liner to roof frame using new rivets.
15	Fasten roof liner to B-pillar	Apply adhesive to roof liner and main bow. Bond roof liner to main bow. Fasten roof liner to screw points of ropes with washers and nuts from the inside.
16	Close roof liner	Attach roof liner to rear window using zipper.

No.	Operation	Instructions
17	Fasten roof liner to tack strip.	Fasten roof liner to Velcro strip on inside of tack strip.
18	Install rain channels.	Rivet rain channels to roof frame at front and rear.
19	Install roof frame seals.	Attach roof frame seals and retaining rails to roof frame using mounting screws.
20	Install B-pillar seals.	Attach B-pillar seals and retaining rails to B-pillars using mounting screws.
21	Install cover trim.	Fasten cover trim to roof frame with mounting screws.
22	Install fixing pegs.	Insert fixing pegs in roof frame and tighten with ring wrench.
23	Install upholstered trim.	Fasten upholstered trim to roof frame with mounting screws.
	Weld rear window into place.	See description in 911 Carrera (993) Repair Manual, pages 64 - 25 to 64 - 30, "Removing and installing flexible rear window of Cabriolet."

63 15 19 Removing and installing front spoiler

63 5 Removing and installing front spoiler



63 15 19 Removing and installing front spoiler

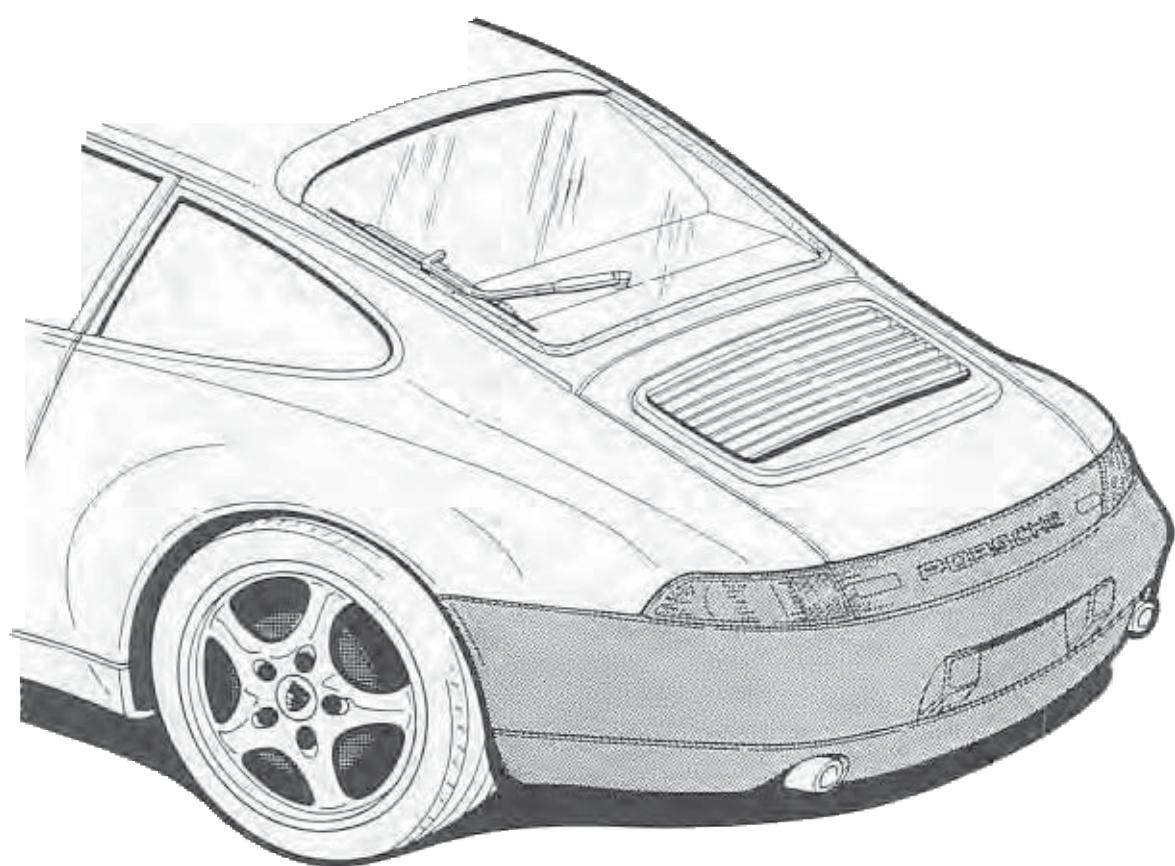
Undo the wheel housing liners partially before removing the front spoiler!

No.	Designation	Qty.	Note:	
			Removal	Installation
1	Spoiler, lower	2	Unclip from spoiler	Clip into spoiler
2	Self-tapping screw B 4.8 x 16	6		
3	Spacer	6		
4	Sheetmetal nut B 4.8	6		Check, replace if required
5	Screw with washer B 4.8 x 16	2		
6	Front spoiler	1	Unclip from fender and disconnect electrical connectors	Reconnect electrical connectors and clip into fender
7	Self-tapping screw B 4.8 x 22	6		
8	Washer A 5.3	6		
9	Sheetmetal nut B 4.8	6		Check, replace if required
10	Sealing strip	1		
11	Spacer sleeve 6.1 x 1	4		
12	Cover rail	1		
13	Self-tapping screw B 4.8 x 22	4		
14	Sheetmetal nut 4.8	4		Check, replace if required
15	Air inlet grille	1	Unclip from front spoiler	Clip into front spoiler

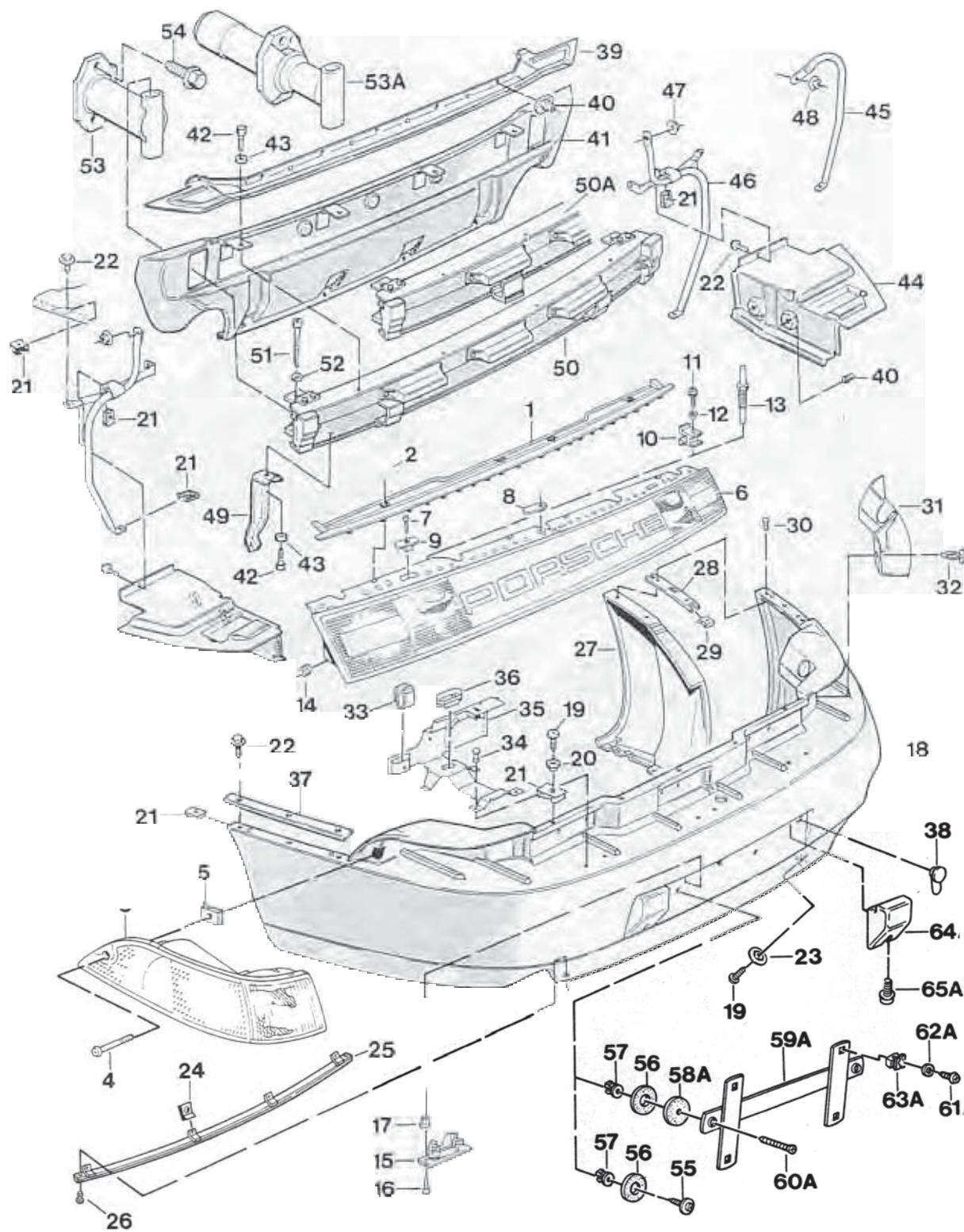
No.	Designation	Qty.	Note:	
			Removal	Installation
16	Flasher	2	Unclip from front spoiler	Clip into front spoiler
16A	U.S. version Flasher	2		
17	Self-tapping screw	2		
18	Foglamp	2	Unclip from front spoiler	Clip into front spoiler
19	Screw with washer	2		
20	Sheetmetal nut	2		Check, replace if required
21	Bracket	1		
22	Self-tapping screw B 4.2 x 9.5	4		
23	Washer A 4.3	4		
24	Expansion nut	4		Check, replace if required
25	Self-tapping screw with washer B 4.2 x 16	4		
26	Cap	1	Unclip from front spoiler	Clip into front spoiler
27	Piping	2		
28	Retaining clamp	40		
29	Retaining strip	2		Rivet into place with front spoiler
30	Pop rivet A 3.2 x 7.9	2	Drill out, drill dia. 3 mm	
31	Retaining strip	1		Rivet into place with front spoiler
32	Pop rivet A 3.2 x 9.7	3	Drill out, drill dia. 3 mm	

No.	Designation	Qty.	Note:	
			Removal	Installation
33	Wire tie-wrap	4		Replace
34	Sealing wedge	1		Replace
35	Sealing wedge	1		Replace
36	Bumper support	1		
37	Fillister head screw M 12 x 110	2		
38	Washer A 13	2		
39	Impact pipe	2		
39A	U.S. version impact absorber	2		
40	Screw with washer M 8 x 30	4		
41	Support	2		Replace
42	Bracket	1	Separate rivets between bracket and bumper sup- port (drill dia. 3 mm)	Rivet into place com- plete with bumper support
43	Retaining strip	1		
44	Hexagon head bolt M 6 x 16	4		
45	Washer 6.4 x 16 x 1.5	4		
46	Washer A 6.4	4		
47A	U.S. version Cap	1	Unclip from protective web	Clip into protective web
48A	U.S. version Hexagon head nut M 5	4		
49A	U.S. version Protective web	2		

No.	Designation	Qty.	Removal	Note:	Installation
50A	U.S. version Support	2			
51A	U.S. version Nut M 5	2			
52A	U.S. version Spacer	2		Check, replace if required	
	U.S. version Bracket	2			
54A	U.S. version Plug-in nut	4		Replace	
55A	U.S. version Self-tapping screw B 4.2 x 32	2			

63 55 19 Removing and installing tail panels

63 55 19 Removing and installing tail panels



63 55 19 Removing and installing tail panels

Undo the wheel housing liners partially before removing the tail panels!

No.	Designation	Qty.	Note:	
			Removal	Installation
1	Cover	1	Open plug nut	Close plug nut
2	Plug nut	4		Check, replace if required
3	Lamp assembly	2	Unclip from end cover and undo electrical connection	Reconnect electrical connection and clip into end cover
4	Self-tapping screw	2		
5	Sheetmetal nut	2		
6	End cover	1	Undo threaded stud (13), screw out fillister head screws (7), take end cover off tail panel and disconnect electrical connection	Reconnect electrical connection, insert end cover and adjust with item 11 at bottom and item 7 at top to line up with body contours
7	Fillister head screw	3		
8	Bracket	1		
9	Bracket	2		
10	Adjuster element	3		
11	PT screw	3		
12	Spacer	3		
13	Threaded stud	3	Screw out of adjuster element up to upper edge of end cover	Screw into adjuster element
14	Rubber grommet	6		Check, replace if required

No.	Designation	Qty.	Note:	
			Removal	Installation
15	License plate lamp	2	Disconnect electrical connection	Reconnect electrical connection
16	Self-tapping screw	4		
17	Expansion nut	4		Replace
18	Tail panel	1		
19	Oval-head self-tapping screw B 4.8 x 16	11		
20	Spacer sleeve	11		
21	Sheetmetal nut B 4.8	11		Check, replace if required
22	Screw with washer B 4.8 x 25	6		
23	Washer 5 x 26 x 1	4		
24	Sheetmetal nut B 4.8	4		Adjust to center of hole
25	Retaining strip	1	Separate rivets between retaining strip and tail panel (drill dia. 3 mm)	Rivet to tail panel
26	Pop rivet A 3.2 x 7.9	4		
27	Heat shield, lateral	2	Separate rivets between strip, heat shield and tail panel (drill dia. 3 mm)	Rivet to tail panel, heat guard and strip
28	Strip	2		
29	Sheetmetal nut B 4.8	6		Adjust to center of hole
30	Pop rivet A 3.2 x 9.7	4		

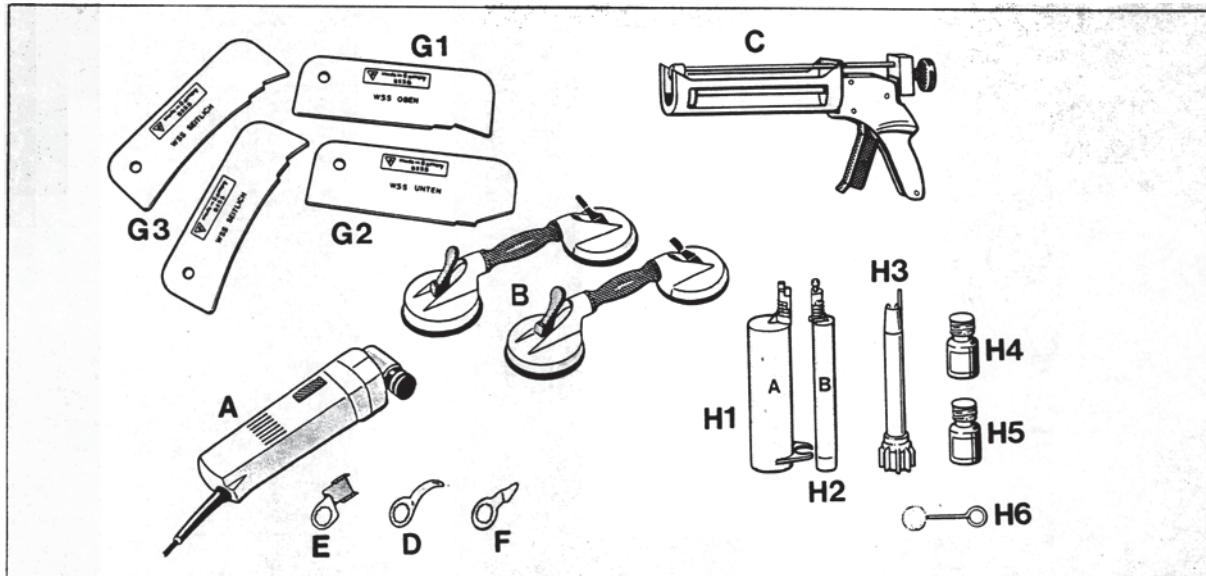
No.	Designation	Qty.	Note:	
			Removal	Installation
31	Heat shield for lamp frame	2	Separate rivets between heat shield and tail panel (drill dia. 3 mm)	Rivet to tail panel
32	Pop rivet A 4 x 18.8	4		
33	Wire clamp	5		
34	Rivet	12		
35	Retaining bracket	3	Separate rivets between retaining bracket and tail panel (drill dia. 3 mm)	Rivet to tail panel
36	Guide	3		Replace
37	Piping	2		Must be flush with fender and tail panel
38	Cap	1		
39	Heat shield for cap	1	Undo bolts from body	Screw to body with item 40
40	Hexagon head nut T 5	9		
41	Heat shield center	1	Undo bolt connection to bumper support	Fit to fender support with item 42 and item 43
42	Self-tapping screw B 4.8 x 16	4		
43	Washer 5 x 26 x 1	4		
44	Lateral heat shield, upper	2	Undo bolts from body	Fit to body with items 22 and 40
45	Support tube	2		

No.	Designation	Qty.	Note:	
			Removal	Installation
46	Support tube	2	Undo bolt connection to body and to heat shield (item 44)	Screw to body with item 47 and to tail panel with item 19 and item 21
47	Hexagon head nut M 6	4		
48	Hexagon head nut M 5	4		
49	Tail support	2	Undo bolt connection to bumper support	Fit to bumper support with item 42 and item 43
50	Bumper support	1		
50A	U.S. version Bumper support	1		
51	Fillister head screw M 12 x 110	2		
52	Washer A 13	2		
53	Impact pipe	2		
53A	U.S. version Impact absorber	2		
54	Screw with washer M 8 x 30	4		
55	Self-tapping screw with washer B 4.2 x 16	2		
56	Rubber washer	2		
57	Expansion nut	2		Check, replace if required
58A	Rubber washer	2		
59A	Bracket	1		
60A	Self-tapping screw B 4.2 x 22	2		

No.	Designation	Qty.	Removal	Note:	Installation
61A	Self-tapping screw	4			
62A	Washer	4			
63A	Plug-in nut	4		Check, replace if required	
64A	Bumper overrider	2	Undo bolt connections to tail panel and bumper support	Screw to tail panel and bumper support with item 65A	
65A	Screw with washer M 10 x 20	2			

64 12 19 Removing and installing the windshield

The following tools and materials are required for removal and installation of the windshield using two-pack adhesive:



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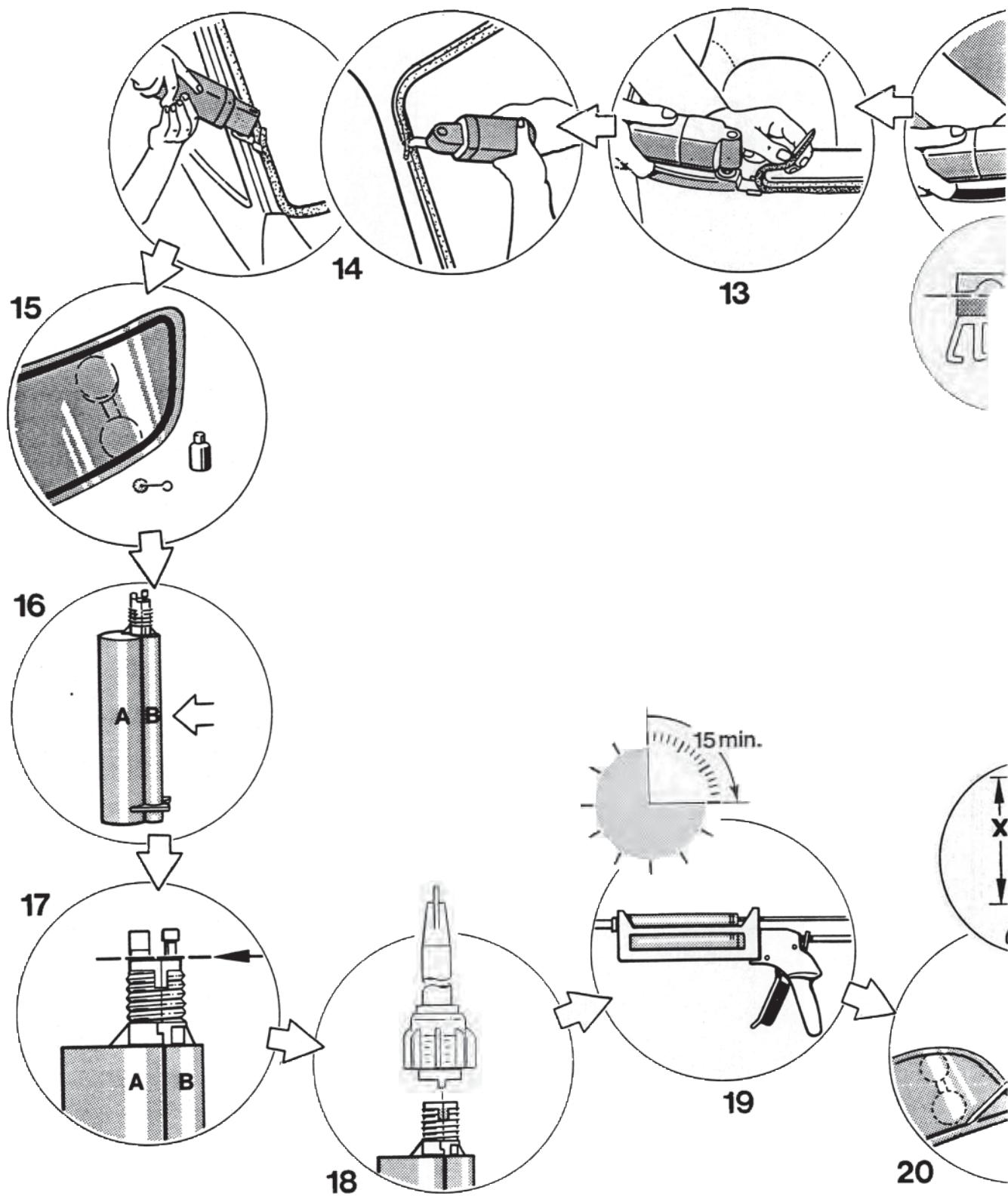
A	Cutter	VAG 1561	e.g. VW Werk AG
B	Twin-cup suction puller	VAG 1344	Service equipment supply
	Bonding gun 9586	000.721.958.60	Porsche Parts Department
	Cutting knife, curved	6.39.03.164.01.9	e.g. C & E FEIN GmbH & Co.
	Flashing knife	6.39.03.113.02.2	Postfach 172
	Cutting knife, cranked	6.39.03.122.01.1	70013 Stuttgart
	Assembly template 9555 – G1 Roof template – G2 Drip rail template – G3 A-post template	000.721.955.50	Porsche Parts Department
H	Adhesive set	000.043.203.42	

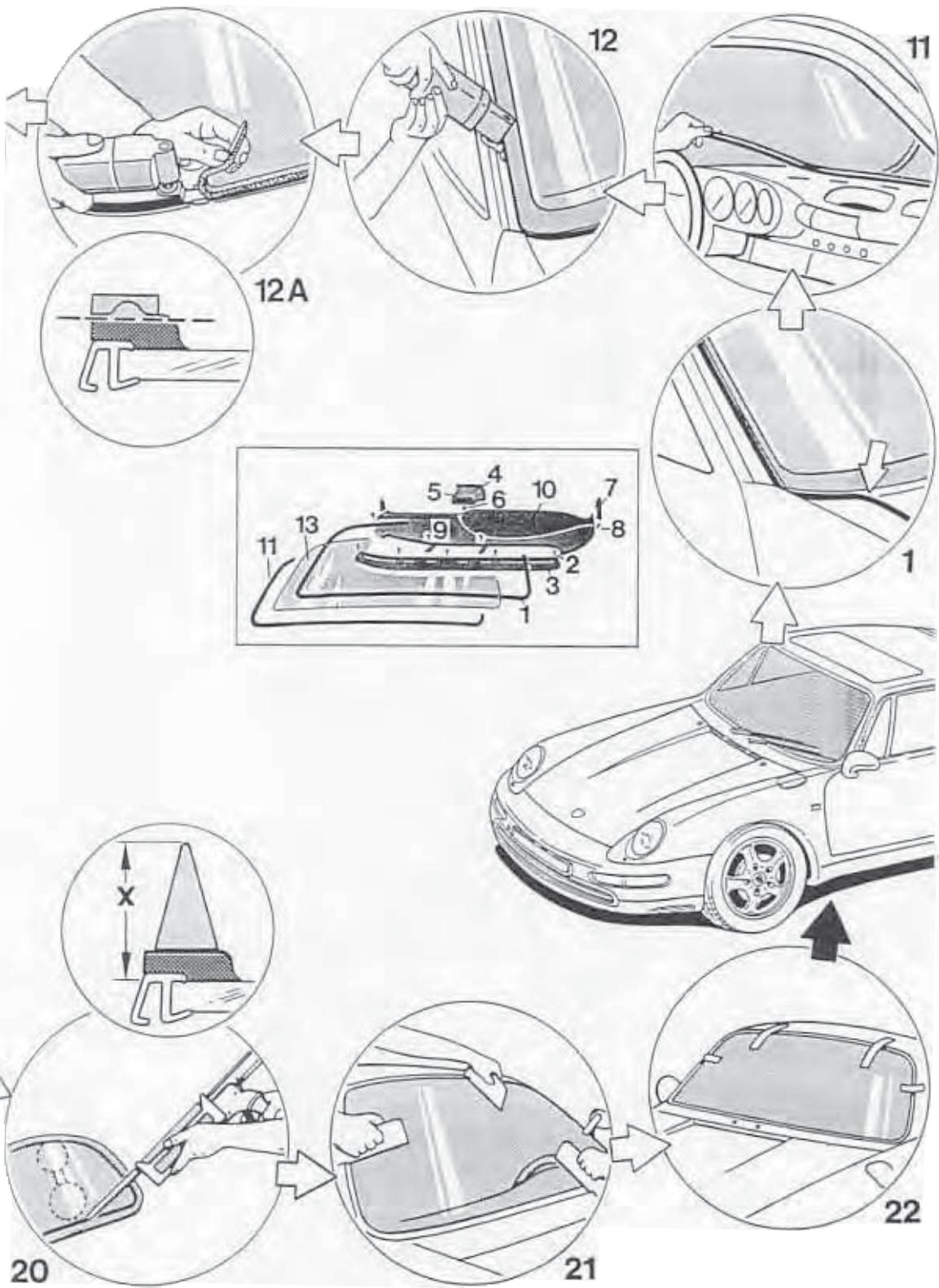
Contents of adhesive set:

- H 1 = Cartridge component A
- H 2 = Cartridge component B
- H 3 = Mixing cartridge

- H 4 = Primer
- H 5 = Activator (Solvent Cleaner)
- H 6 = Cleaning solution

Removing and installing windshield





64 12 19 Removing and installing windshield

Printed in Germany - 12. 1995

64 12 19 Removing and installing windshield

Note: The removed windshield may be re-used if:

- there are no signs of damage on the windshield,
- the windshield was removed without damage,
- the rim profile for the cover molding is undamaged

Removing windshield

No.	Operation	Procedure
	Remove windshield wipers	Unscrew hexagon head nuts. Lift off spring washers and wipers.
1	Pull off cover molding	Detach and pull off windshield cover molding.
	Open door windows	Caution: The door windows must not be closed until the adhesive has cured completely.
2	Remove demister molding – <i>Countersunk head self-tapping screws</i>	Screw out 5 countersunk head screws and take off demister molding.
3	– <i>Demister molding</i>	
4	Remove center jet – <i>Mounting lugs</i>	Press two mounting lugs down and pull out center nozzle.
5	– <i>Center nozzle</i>	
6	Remove upper part of instrument panel – <i>Hexagon head nut</i>	Unscrew hexagon-head nut from threaded stud of center instrument panel mount on the left of the center nozzle aperture. Pull off 2 cover panels. Screw out two self-tapping screws below the cover panels. Screw 2 self-tapping screws out of upper instrument panel mount. Lift off upper instrument panel section.
7	– <i>Cover panels</i>	
8	– <i>Self-tapping screws</i>	
9	– <i>Self-tapping screws</i>	
10	– <i>Instrument panel upper section</i>	

No.	Operation	Procedure
	Pull off window antenna connector	Pull connector of window antenna off the antenna amplifier.
11	Pull off cover section	Separate cover section of windshield from spotweld flange of body and pull off cover section.
12	Cut out windshield	<p>Insert curved knife (D) into cutter (A). Set vibration regulator to stage 5.</p> <p>Cut through bonding between windshield and body along the entire windshield.</p> <p>Take out windshield.</p>
12A	Remove adhesive from windshield	Fit scraper (E) to cutter (A) and use scraper to remove adhesive traces from precoated adhesive strip of windshield. Remove adhesive traces in such a way that adhesive strip remains as intact as possible.
13	Remove adhesive from body	Insert flashing knife (E) into cutter (A) and use cutter to remove adhesive from body only to the extent that the remaining adhesive covers the whole area in a uniform manner.
14	Remove excess adhesive	<p>Only if adhesive has squeezed out on the sides:</p> <p>Fit cranked knife (F) to cutter (A) and carefully cut off adhesive that has squeezed out along the sides so that the remaining adhesive covers the whole area in a uniform manner.</p> <p>Caution: Take care not to damage the paintwork!</p>
	Clean windshield aperture of body	<p>Clean windshield aperture in body carefully with cleaning solution (H5).</p> <p>Caution: Make sure no cleaning solution residue remains on the bodywork.</p>

	Apply primer to damaged areas of bodywork	Use primer (K4) to coat damaged paintwork areas in non-visible section of windshield aperture.
15	Activate bonding section of windshield	Apply activator (H5) to bonding section of pre-coated windshield. Caution: Allow a flash-off time of at least 10 minutes!
	Insert cover section	Fit cover section of windshield from inside (passenger compartment) to spotweld flange on body.
16	Clip cartridges with components A and B together	Clip the component B cartridge to the component A cartridge
17	Open assembled cartridge	Cut the closures of the two cartridges off level using a knife
18	Install mixing tube	Push mixing tube (H3) onto the groove on the assembled cartridge and screw it into place using the unit nut.
19	Place cartridge in bonding gun	Place the assembled cartridge with mixing tube in the bonding gun.

Caution: Open time is 15 minutes!

Open time is the time available for application of the adhesive and for installing the windshield into the aperture of the body.

Installing the windshield

No.	Operation	Procedure
20	Apply adhesive to the windshield	<p>Apply a trapezoidal bead of 2-pack adhesive to the bonding section of the windshield using the bonding gun. Dimension "x" = approx. 16 mm</p> <p>When applying the adhesive, be sure to apply the adhesive in an overlapping manner</p>
	Note:	2 persons are required to insert and to adjust the windshield!
	Insert windshield into bodywork	<p>Insert windshield into window aperture of body in such a manner that the gaps between the windshield and the A-posts are parallel and that the gap between the windshield and the cowl is 4 mm.</p> <p>Caution: Do not press windshield into position yet!</p>
21	Adjust windshield using templates	<p>Prepress windshield into windshield aperture of body using the roof (G1), cowl (G2) and B-post (G3) templates.</p> <p>Caution: Due to the consistency of the adhesive, a windshield pressed in too deeply cannot be repositioned anymore!</p>
22	Locate windshield	<p>Use two spacer blocks (e.g. wooden or plastic strip) – 4 mm thick – in the body cowl area to prevent the windshield from slipping down.</p> <p>Locate windshield in the roof and B-post areas with a strip of adhesive tape.</p> <p>Note: The locating and securing aids may be removed after approx. 1 hour.</p>

No.	Operation	Procedure
	Clean visible areas	Remove adhesive that has squeezed out immediately and clean the visible areas affected using cleaning solution (K5).
	Connect windshield antenna connector to antenna amplifier	
	Refit upper instrument panel section	Instrument panel mount: 2 upper self-tapping screws, one self-tapping screw on right and left-hand each, 1 hexagon head nut in center. Place right and left-hand cover panels into position.
	Fit demister molding	Fit demister molding with 5 countersunk-head self-tapping screws.

Caution

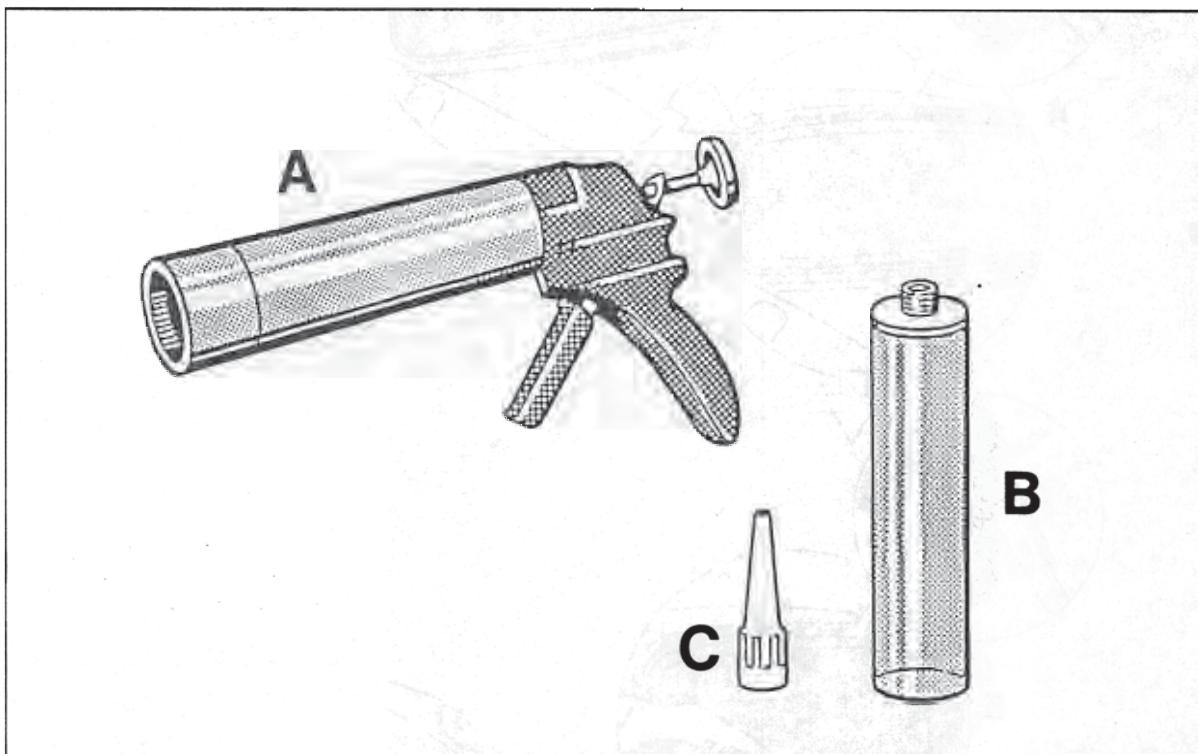
The bonding does not immediately reach its full strength. In order to ensure sufficient bonding strength, the following boundary conditions must be adhered to:

Curing time	3 hours
Temperature	min. 10° C
Fixing time	approx. 1 hour

Do not operate the vehicle before the curing time has elapsed!

64 12 51 Sealing the windshield**Insulating the gap between windshield and body**

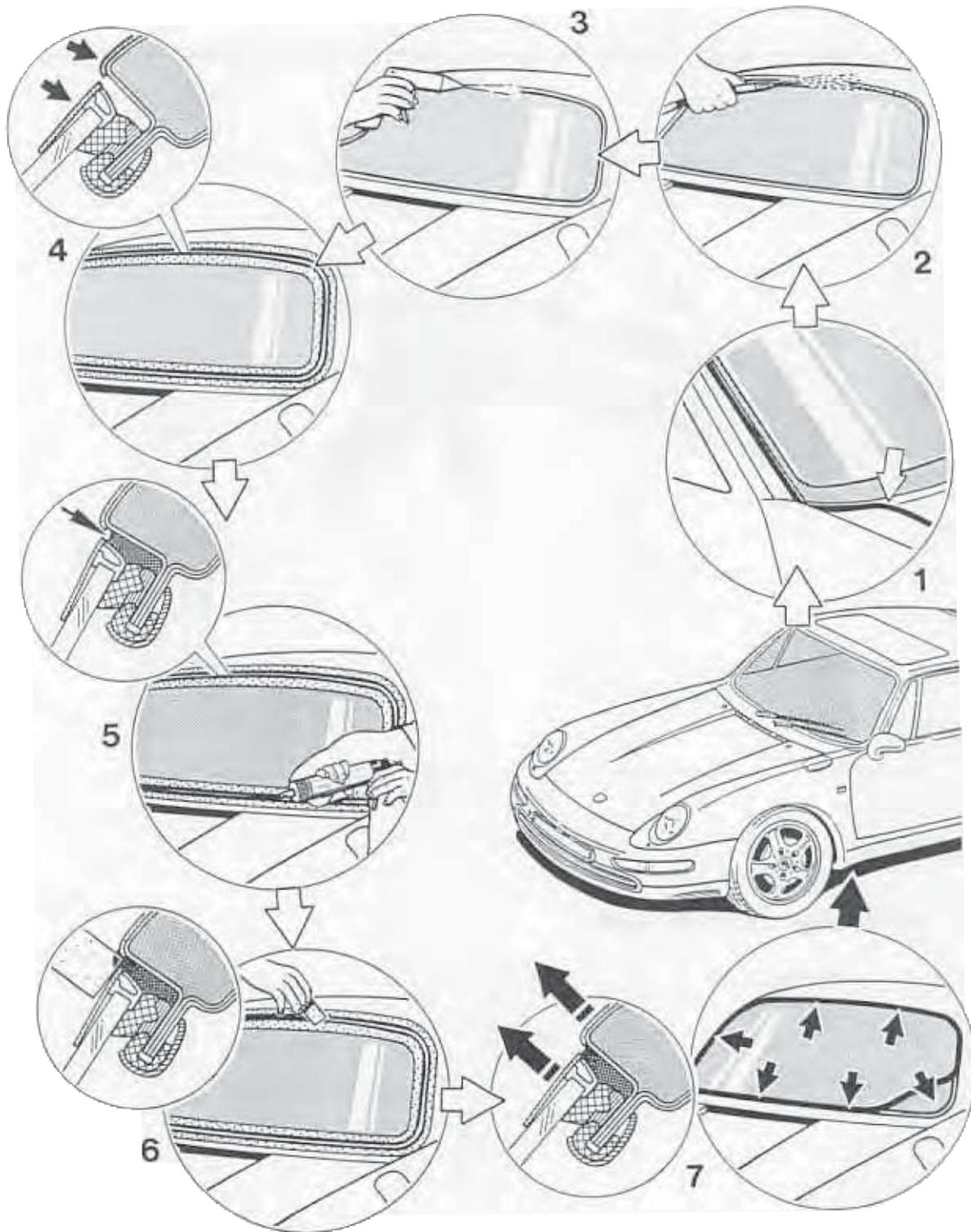
The following tools and materials are needed for insulating the gap between the windshield and the body.



A = bonding gun

B = cartridge of insulation material

C = application nozzle

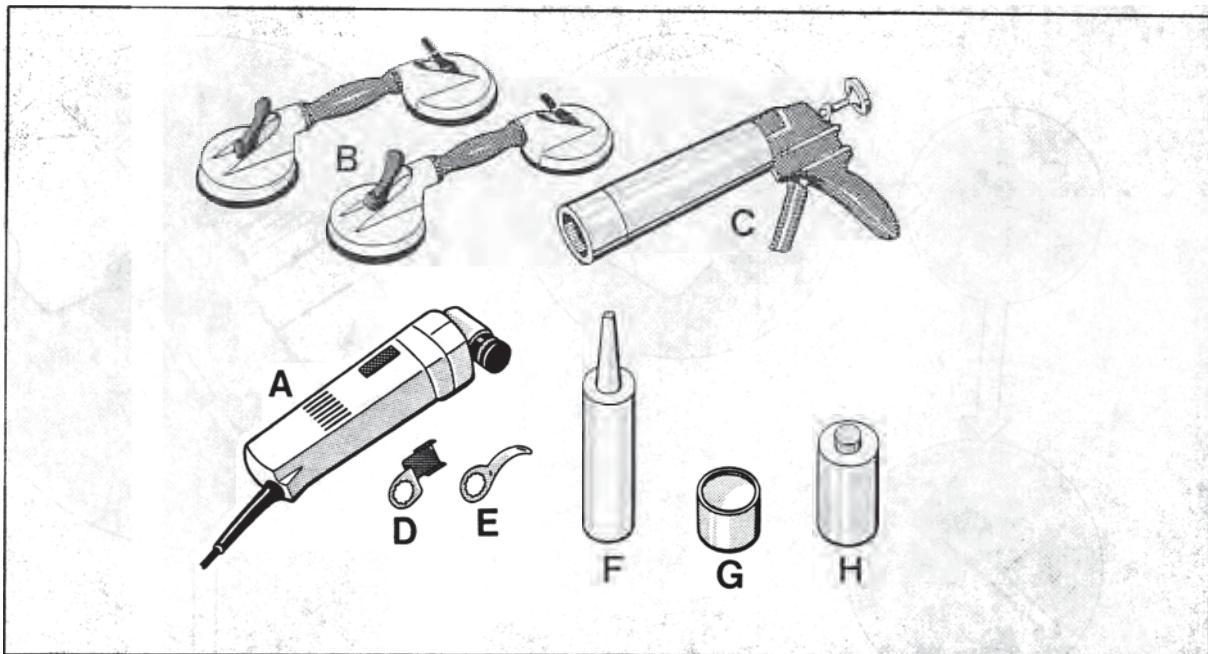
Insulating the gap between windshield and body

Insulating the gap between windshield and body

No.	Operation	Instructions
1	Remove cover strip.	Loosen and remove cover strip of windshield.
2	Clean gap between windshield and body.	Wash out the gap between windshield and body with water all round the windshield.
3	Dry gap between windshield and body.	Dry the gap between windshield and body using compressed air all around the windshield.
4	Mask off windshield and body.	Apply masking tape around the windshield, making sure that the mounting section for the cover strip is covered. Apply masking tape all round the body opening for the windshield up to the edge of the gap.
5	Apply insulating material.	Screw application nozzle (C) onto insulating material cartridge (B). Insert cartridge with nozzle into bonding gun (A). Fill the gap between the windshield (mounting section) and the body completely with insulating material.
6	Remove excess insulating material.	Strip excess insulating material above the gap between windshield and body off smoothly using a piece of cardboard.
7	Remove masking tape and instal cover strip.	Remove masking tape from windshield and body. Press windshield cover strip into mounting section.

64 75 19 Removing and installing side window

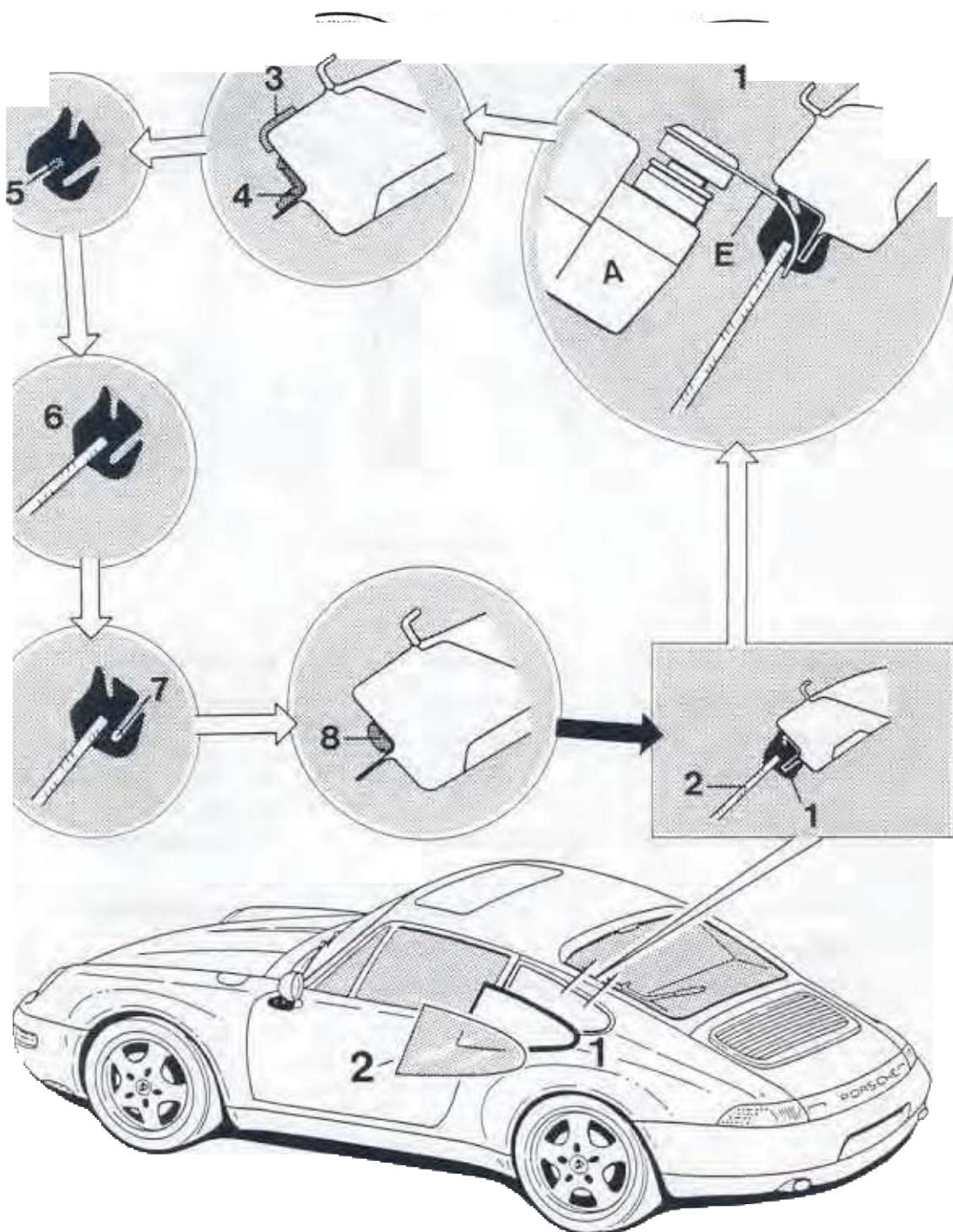
The following tools and materials are required for the removal and installation of the side window:



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A	Cutter	VAG 1561	z.B. VW Werk AG
B	Twin-cup suction puller	VAG 1344	KD-Gerätevertrieb
C	Bonding gun	VAG 1628	
D	Flashing knife	6.39.03.113.02.2	e.g. C & E FEIN GmbH & Co. Postfach 172
E	Cutting knife curved	6.39.03.103.01.7	D-70013 Stuttgart 1
F	Adhesive sealant	999.915.400.40	Porsche-Teiledienst
G	Body primer	999.915.487.40	
H	Cleaning solution	999.915.487.40	

Removing and installing side window



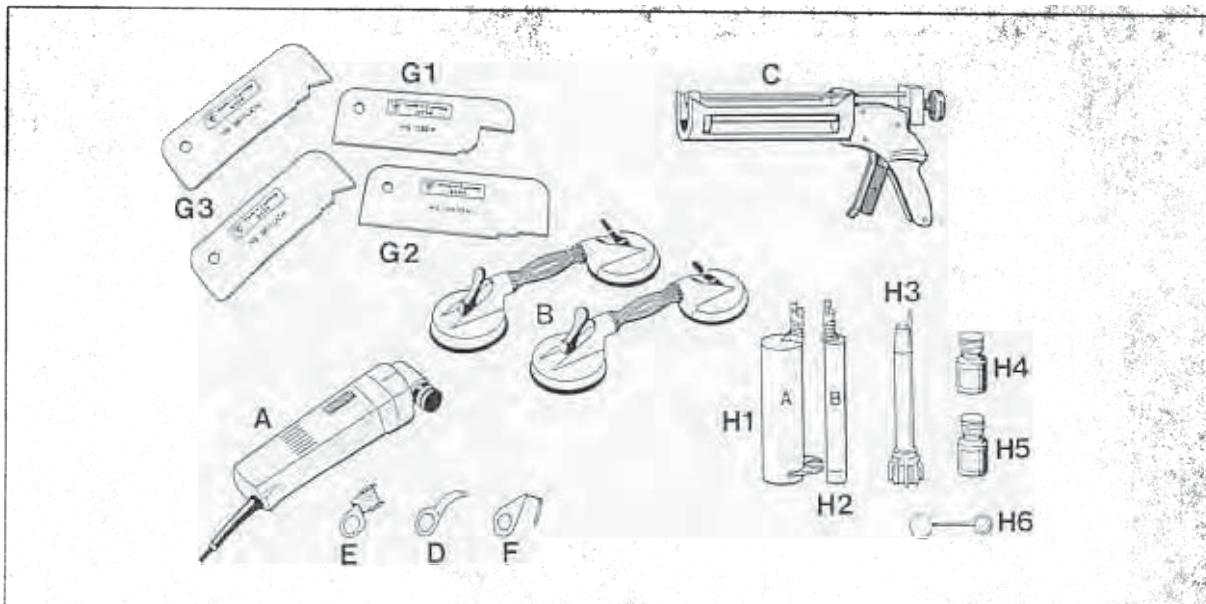
64 75 19 Removing and installing side window

No.	Operation	Procedure
1	Cut through rubber seal	Fit curved cutting knife (D) to cutter (A). Push cutting knife into sealing rubber, set vibration regulator to stage 6 and cut through rubber seal along its full circumference between side window and body.
	Lift out side window	
	Pull sealing rubber residues off the body panel	
2	Attach adhesive tape to bodywork	Mask off body in visible area of window aperture to protect the paintwork.
3	Remove adhesive sealant from bodywork	Fit flashing knife (E) to cutter (A) and cut adhesive sealant from the bodywork only to the extent that the remaining adhesive covers the entire area.
	Clean window aperture of bodywork	Thoroughly clean window aperture of body with cleaning solution (H). Caution: Make sure no cleaning solution residue remains on the body.
	Apply primer to damaged areas of bodywork	Apply body primer (G) to damaged topcoat in non-visible areas of window aperture.
	Remove adhesive sealant from side window	Remove adhesive sealant carefully from side window using a fixed knife. Adhesive residues covering the area in a uniform manner may remain on the window.

No.	Operation	Procedure
	Clean side window	Thoroughly wipe off side window with some cleaning solution (H). Caution: Make sure no cleaning solution residue remains on the side window.
	Clean rubber seal	Clean window channel of rubber seal with some cleaning solution (H) Caution: Make sure no cleaning solution residue remains in the window channel of the rubber seal.
4	Apply adhesive sealant to channel of rubber seal	Place cartridge containing adhesive sealant (F) into bonding gun (C) and bond window channel of rubber seal along its entire circumference. Caution: The side window must be refitted to the vehicle no later than 4 hours after applying the adhesive.
5	Place rubber seal to side window	
6	Place assembly cord into rubber seal	
7	Apply adhesive sealant to body	Using the bonding gun (C), apply adhesive sealant (F) in a continuous bead to the circumference of the window aperture in the body
	Place side window into body	Place prepared side window into body aperture, align and press into place. Working from the passenger compartment, pull rubber seal over the spotweld flange of the body by pulling out the assembly cord.
	Clean visible areas	Adhesive sealant that has squeezed out must be removed immediately and the visible areas affected must be cleaned with cleaning solution (H).

64 86 19 Removing and installing rear window

The following tools and materials are required for removal and installation of the rear window using 2-pack adhesive:



A	Cutter	VAG 1561	e.g. VW Werk AG
B	Twin-cup suction puller	VAG 1344	Service equipment supply
C	Bonding gun 9586	000.721.958.60	Porsche Parts Department
D	Cutting knife, curved	6.39.03.164.01.9	e.g. C & E FEIN GmbH & Co.
E	Flashing knife	6.39.03.113.02.2	Postfach 172
F	Cutting knife, U-shape	6.39.03.118.01.3	70013 Stuttgart 1
G	Installation template 9555 – G1 Roof template – G2 Center section templ. – G3 C-post template	000.721.955.60	Porsche Parts Department
H	Adhesive set	000.043.203.42	

Contents of adhesive set:

H 1 = Cartridge component A

H 4 = Primer

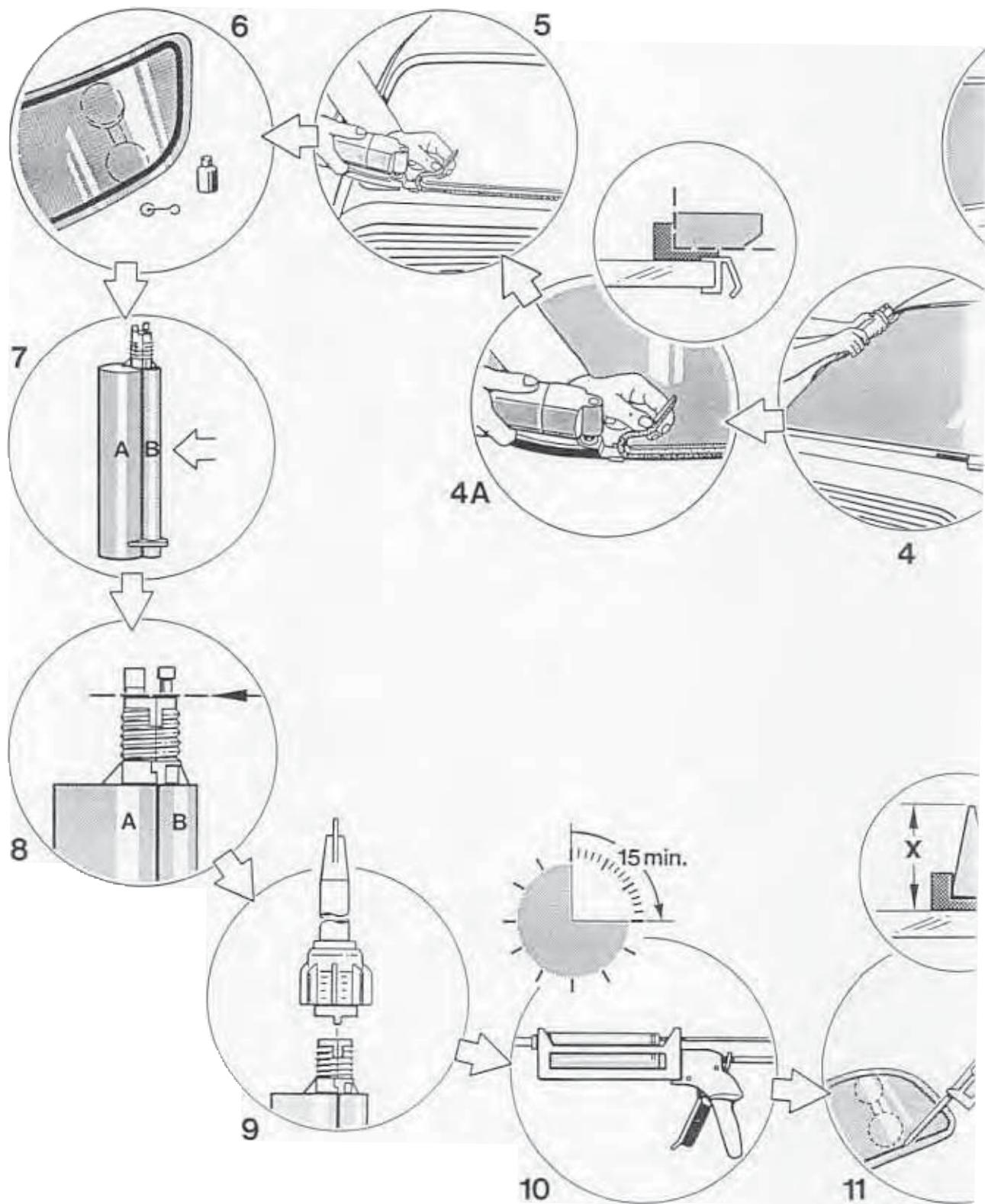
H 2 = Cartridge component B

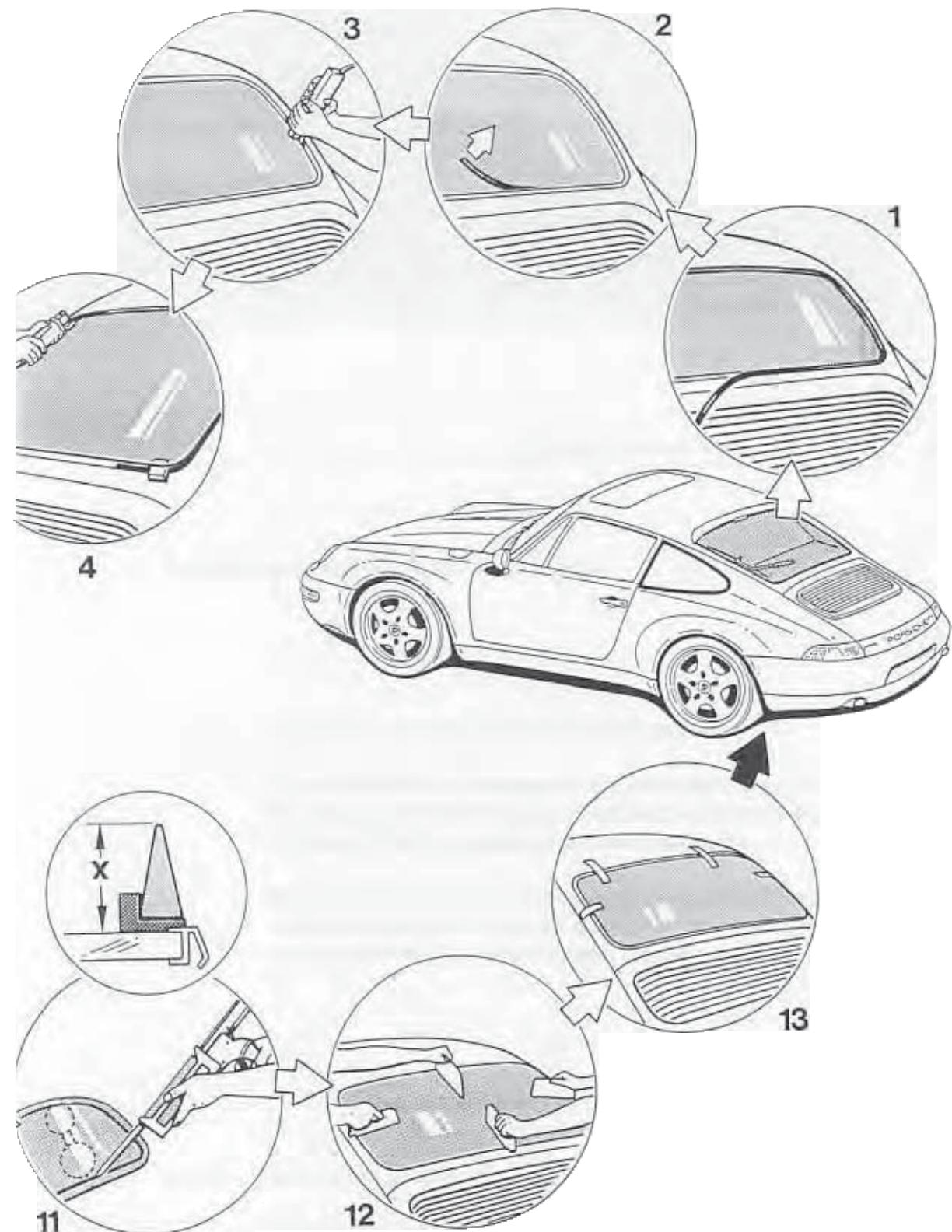
H 5 = Activator (Solvent Cleaner)

H 3 = Mixing cartridge

H 6 = Cleaning solution

Removing and installing rear window





Removing and installing rear window

Note: The removed rear window may be re-used if:

- there are no signs of damage on the rear window,
- the rear window was removed without damage,
- the rim profile for the cover molding is undamaged.

Removing rear window

No.	Operation	Procedure
	Remove rear window wiper	Flip up cover cap, unscrew hexagon head screw, lift off spring washer and upper wiper arm. Pull off cover grommet, unscrew hexagon head nut, lift off spring washer and lower wiper arm.
1	Pull off cover molding	Detach and pull off rear window cover molding.
	Attach adhesive tape to body	Mask off upper roof section of rear window aperture with masking tape to protect the paintwork.
	Open door windows	Caution: The door windows must not be closed until the adhesive has cured completely.
	Remove rear wall trim	Fold rear seat backs forward. Unscrew 4 self-tapping screws from rear wall trim and push rear wall trim upwards out of its support.
	Pull off rear window heater connector	Pull connector of rear window heater off the rear window.

No.	Operation	Procedure
2	Pull off cover section	Pull cover section of rear window off the body spotweld flange.
3	Cut rear window out of center section and C-post areas	Fit curved knife (D) to cutter (A). Set vibration regulator to stage 5. Cut through bonding between body and rear window in the center section and C-post areas.
	Lift up rear window in center section	Lift up rear window in center section / C-post areas by approx. 3 cm and support window, e.g. with wooden blocks.
4	Cut out rear window in roof area	Fit U-shaped knife (F) to cutter (A). Set vibration counter to stage 6. Cut through bond between body and rear window in roof section. Lift out rear window.
4A	Remove adhesive from rear window	Fit scraper (E) to cutter (A) and use scraper to remove adhesive traces from precoated adhesive strip of rear window. Remove adhesive traces in such a way that adhesive strip remains as intact as possible.
5	Remove adhesive from body	Fit flashing knife (E) to cutter (A) und remove adhesive only to the extent that the remaining adhesive covers the whole area in a uniform manner.
	Clean window aperture of body	Clean window aperture of body thoroughly using cleaning solution (H5) . Caution: Make sure no cleaning solution residue remains on the body.
	Apply primer to damaged areas of bodywork	Apply primer (H4) to to damaged of paintwork areas in non-visible section of window aperture.

No.	Operation	Procedure
6	Activate bonding section of rear window	Apply activator to bonding section of pre-coated rear window (H5). Caution: Allow a flash-off time of at least 10 minutes!
	Place cover section into position	Attach cover section of rear window from inside (passenger compartment) to the body spotweld flange.
7	Clip cartridges with components A and B together	Clip the component B cartridge to the component A cartridge
8	Open assembled cartridge	Cut the closures of the two cartridges off level using a knife
9	Install mixing tube	Push mixing tube (H3) onto the groove on the assembled cartridge and screw it into place using the unit nut.
10	Place cartridge in bonding gun	Place the assembled cartridge with mixing tube in the bonding gun.

Caution: Open time is 15 minutes!

Open time is the time available for application of the adhesive and for installing the windshield into the aperture of the body.

Installing the rear window

No.	Operation	Procedure
	Apply adhesive to the rear window	Apply a trapezoidal bead of 2-pack adhesive to the rear window using the bonding gun. Dimension "X" = approx. 18 mm When applying the adhesive, make sure it is applied in an overlapping manner.
	Note:	2 persons are required to insert and adjust the rear window!
	Insert rear window into body	Install rear window into window aperture of body in such a manner that the gap between the rear window and the C-post is parallel and that a gap of 6 mm remains between the rear window and the body center section. Caution: Do not press rear window into place yet!
22	Adjust rear window with templates	Press rear window into body window aperture according to contours of roof (G1), center section (G2) and C-post (G3) templates. Caution: Due to the consistency of the adhesive, the position of the rear window cannot be corrected if it has been pressed in too deeply!
23	Locate rear window	Use 2 spacer blocks (e.g. wooden or plastic strips) – 6 mm thick – in the center body area to prevent the rear window from shifting down. Apply adhesive tape to locate rear window in roof and C-post areas. Note: The locating and protecting aids may be removed after approx. 1 hour.

No.	Operation	Procedure
	Clean visible areas	Remove adhesive that has squeezed out immediately and clean the visible areas affected using cleaning solution (K5).
	Refit connector of rear window heater	Refit connector for rear window heater and route wire according to windshield contours.
	Fit rear wall trim	Push rear wall trim into support from above and screw into place with 4 self-tapping screws. The self-tapping screws must be fitted with washers to protect the cloth.

Caution

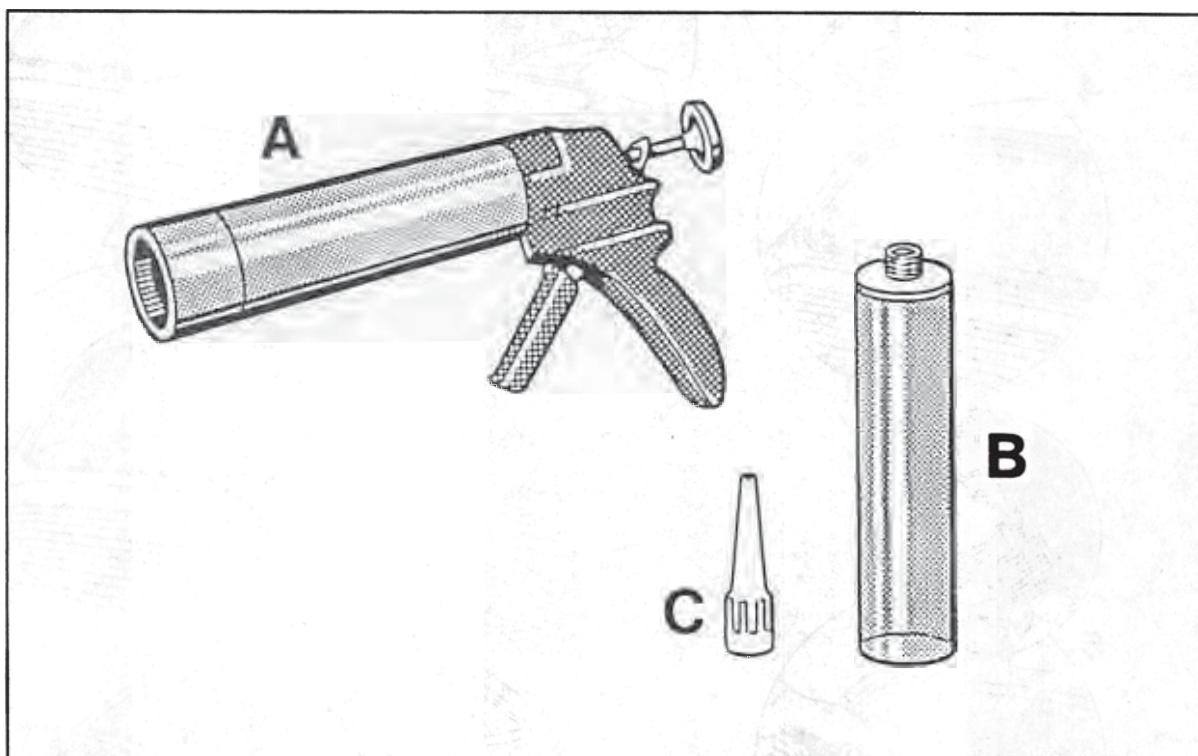
The bonding does not immediately reach its full strength. In order to ensure sufficient bonding strength, the following boundary conditions must be met:

Curing time	3 hours
Temperature	min. 10° C
Fixing time	approx. 1 hour

Do not operate the vehicle before the curing time has elapsed!

64 86 51 Sealing the rear window**Insulating the gap between rear window and body**

The following tools and materials are needed for insulating the gap between the rear window and the body.

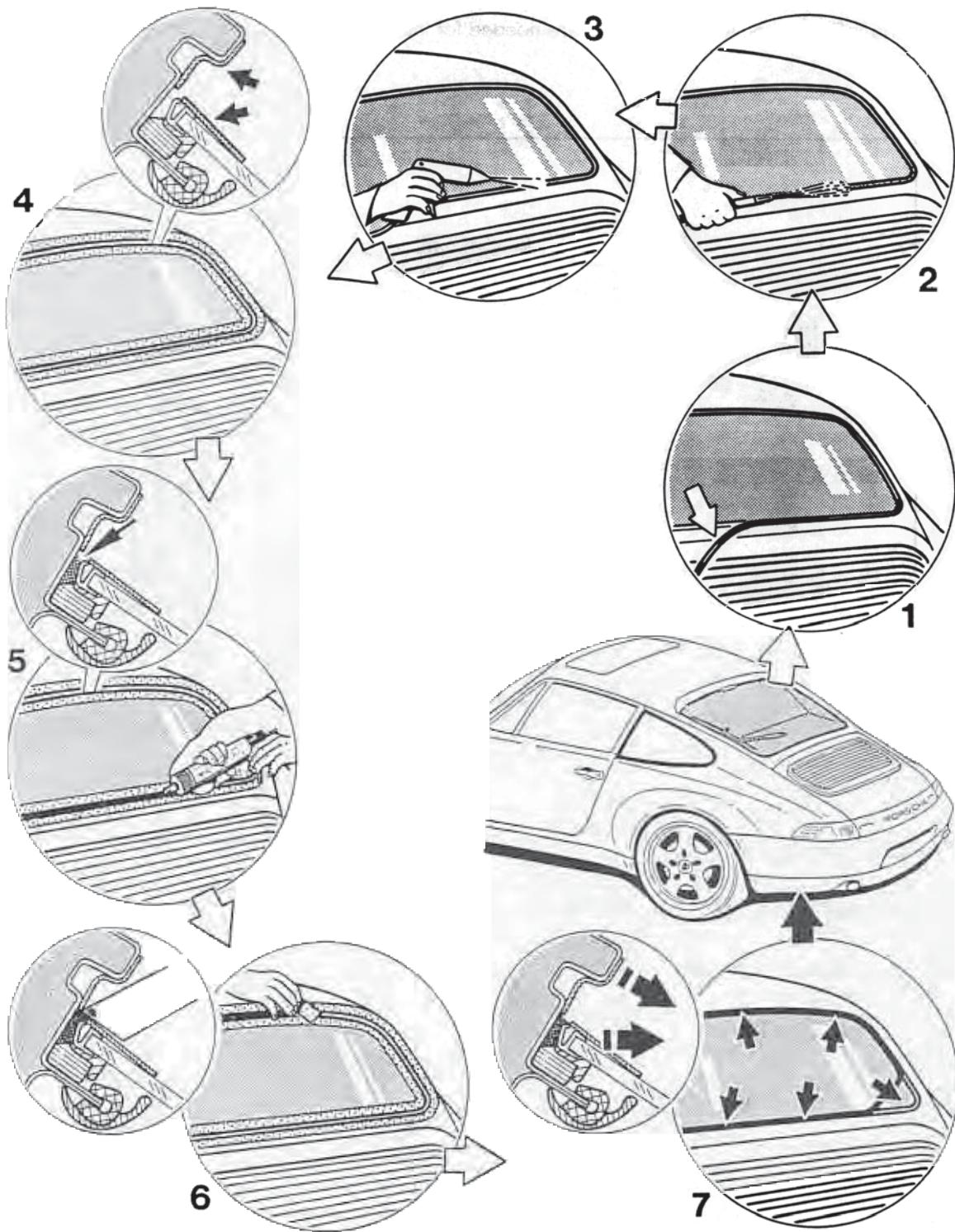


A = bonding gun

B = cartridge of insulation material

C = application nozzle

Insulating the gap between rear window and body

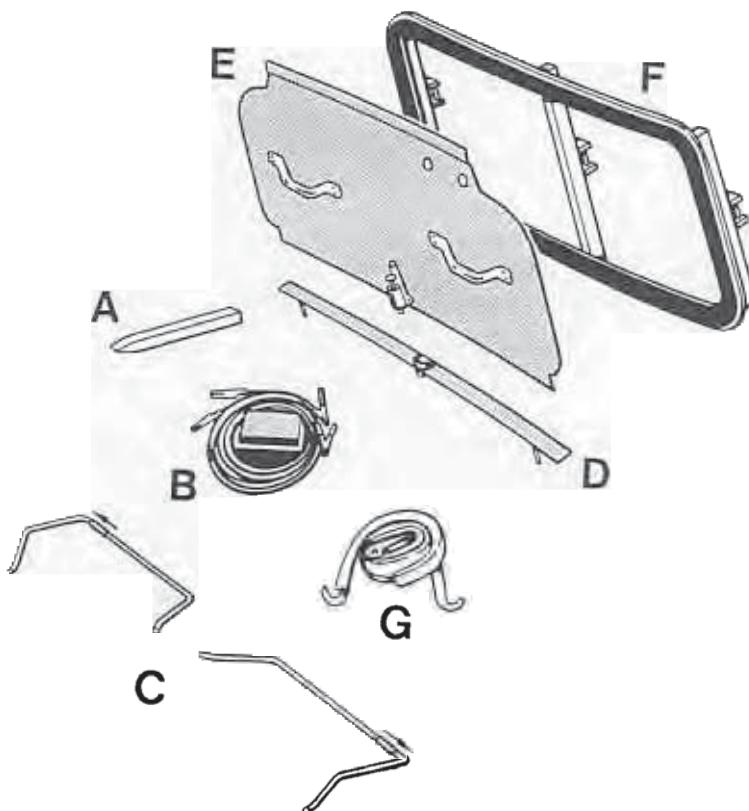


Insulating the gap between rear window and body

No.	Operation	Instructions
	Remove cover strip.	Loosen and remove cover strip of rear window.
2	Clean gap between rear window and body.	Wash out the gap between rear window and body with water all round the rear window.
3	Dry gap between rear window and body.	Dry the gap between rear window and body using compressed air all around the rear window.
4	Mask off rear window and body.	Apply masking tape around the rear window, making sure that the mounting section for the cover strip is covered. Apply masking tape all round the body opening for the rear window up to the edge of the gap.
5	Apply insulating material.	Screw application nozzle (C) onto insulating material cartridge (B). Insert cartridge with nozzle into bonding gun (A). Fill the gap between the rear window (mounting section) and the body completely with insulating material.
6	Remove excess insulating material.	Strip excess insulating material above the gap between rear window and body off smoothly using a piece of cardboard.
7	Remove masking tape and instal cover strip.	Remove masking tape from rear window and body. Press rear window cover strip into mounting section.

64 85 19 Removing and installing flexible rear window of Cabriolet

The following special tools are required for the installation and removal of the flexible rear window of the Cabriolet.



2097-64

Special tool kit, comprising:

A = Spacer wedge for convertible top opening

D = Support rail for inside plate

B = Cable with timer switch

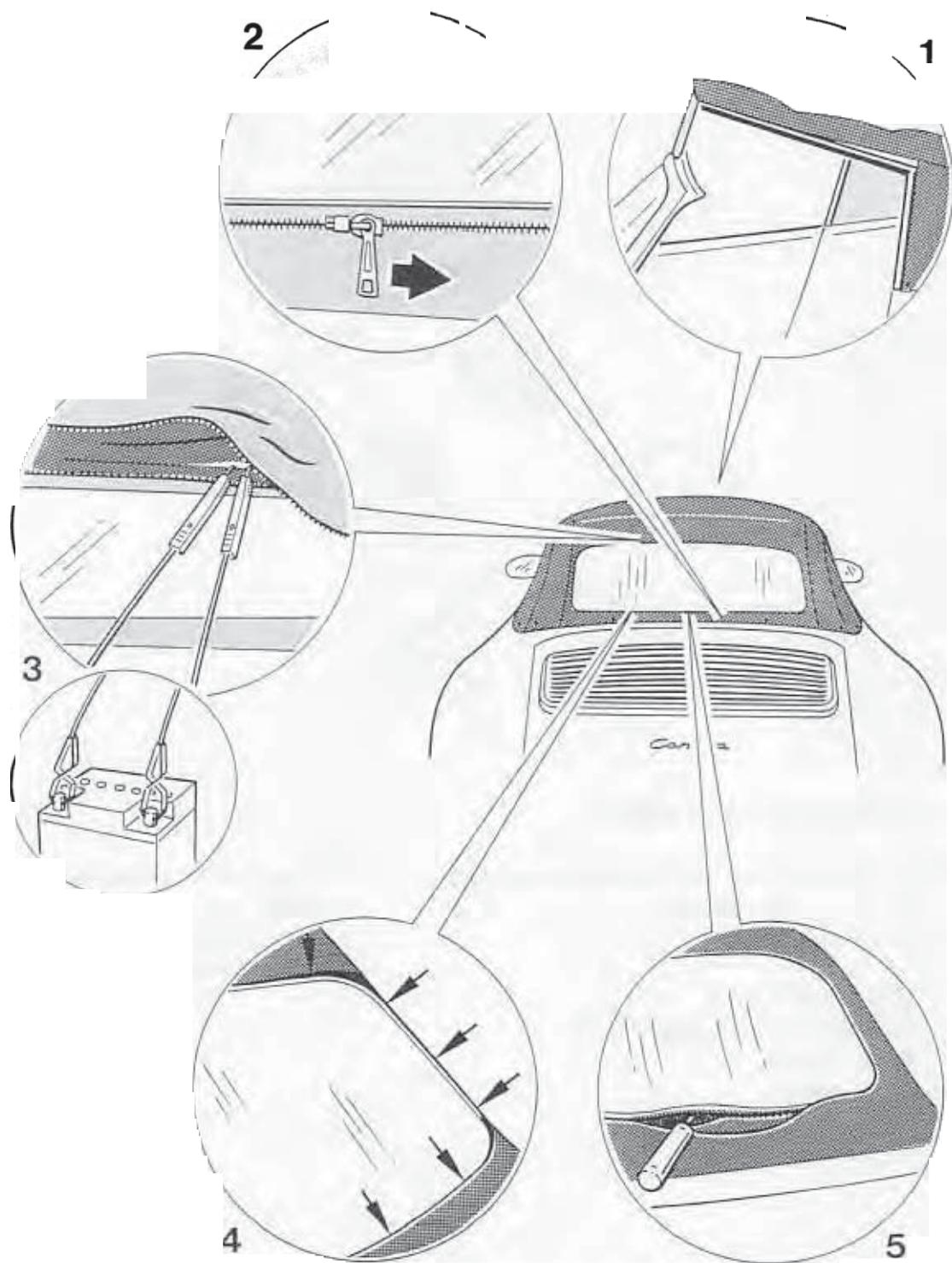
E = Inside plate

C = Bracket for belt

F = Pressure frame

G = Belt with tensioner

Obtainable from:**Fa. Mehler Vario System GmbH,****Bahnhofstraße 26****36103 Flieden****Phone: ++496655/972-26****Fax: ++496655/5601**

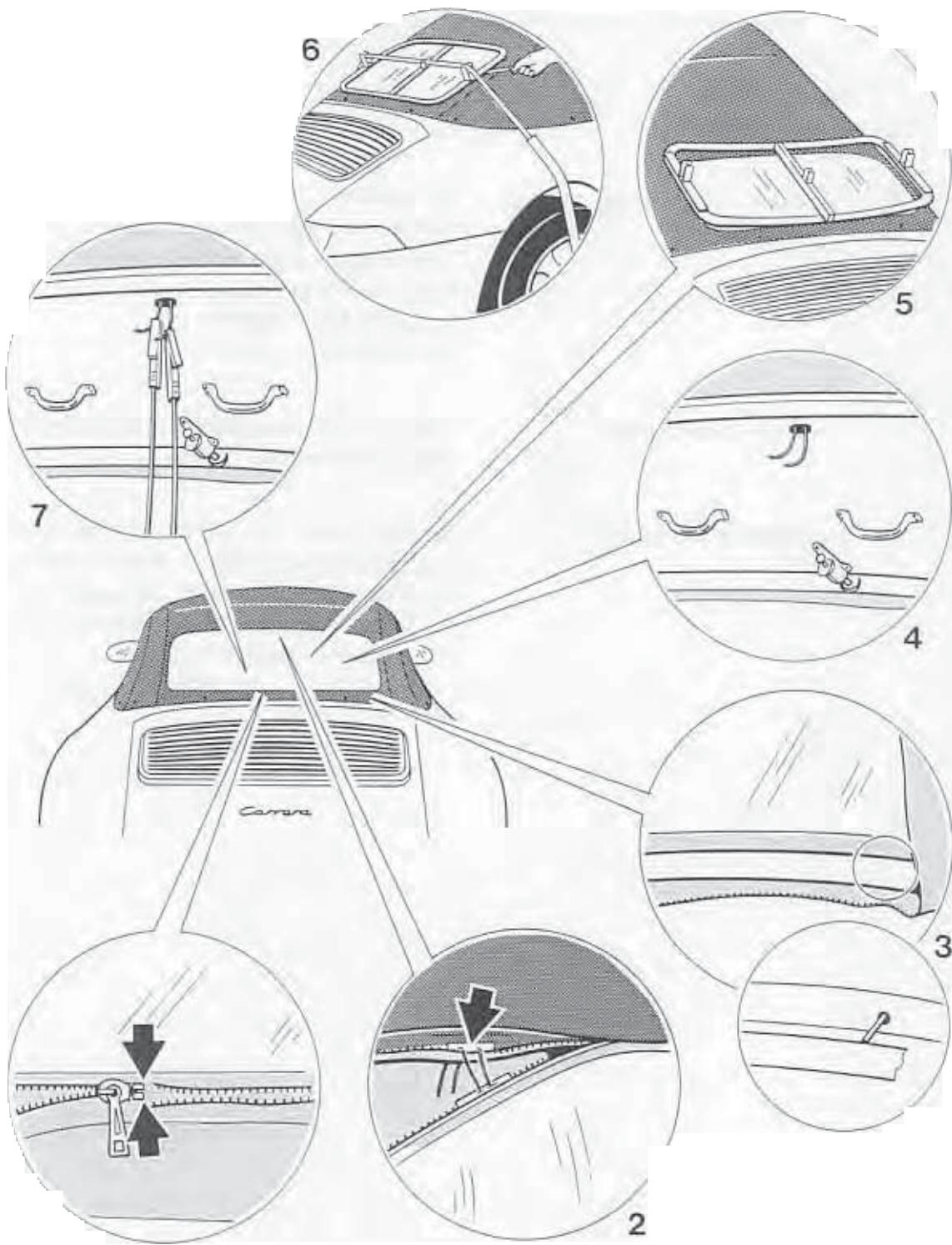
Removing and installing flexible rear window of Cabriolet**Removing flexible rear window of Cabriolet**

64 85 19 Removing and installing flexible rear window of Cabriolet**Removing flexible rear window of Cabriolet**

No.	Operation	Instructions
1	Release tension on convertible top	Open top slightly and insert spacer wedge, spacing approx. 300 mm.
2	Open roof liner	Undo zipper around roof liner.
3	Connect power cable and heat adhesive	Bend out the contact ends of the flexible copper wires. Warning: the wires must not be crossed! Connect power cable to copper wires and battery. Heat adhesive for about 2 minutes. Note: Use timer switch! Disconnect power cable.
4	Loosen rear window	Work top covering away from rear window on all sides using a suitable tool.
5	Remove rear window	Open zip fastener in lower central part of window using a suitable tool and press rear window out of zip fastener on all sides. Remove excess adhesive traces from fabric. Traces of adhesive on the covering need not be removed if they are evenly spread.

64 85 19 Removing and installing flexible rear window of Cabriolet

Installing flexible rear window of Cabriolet.



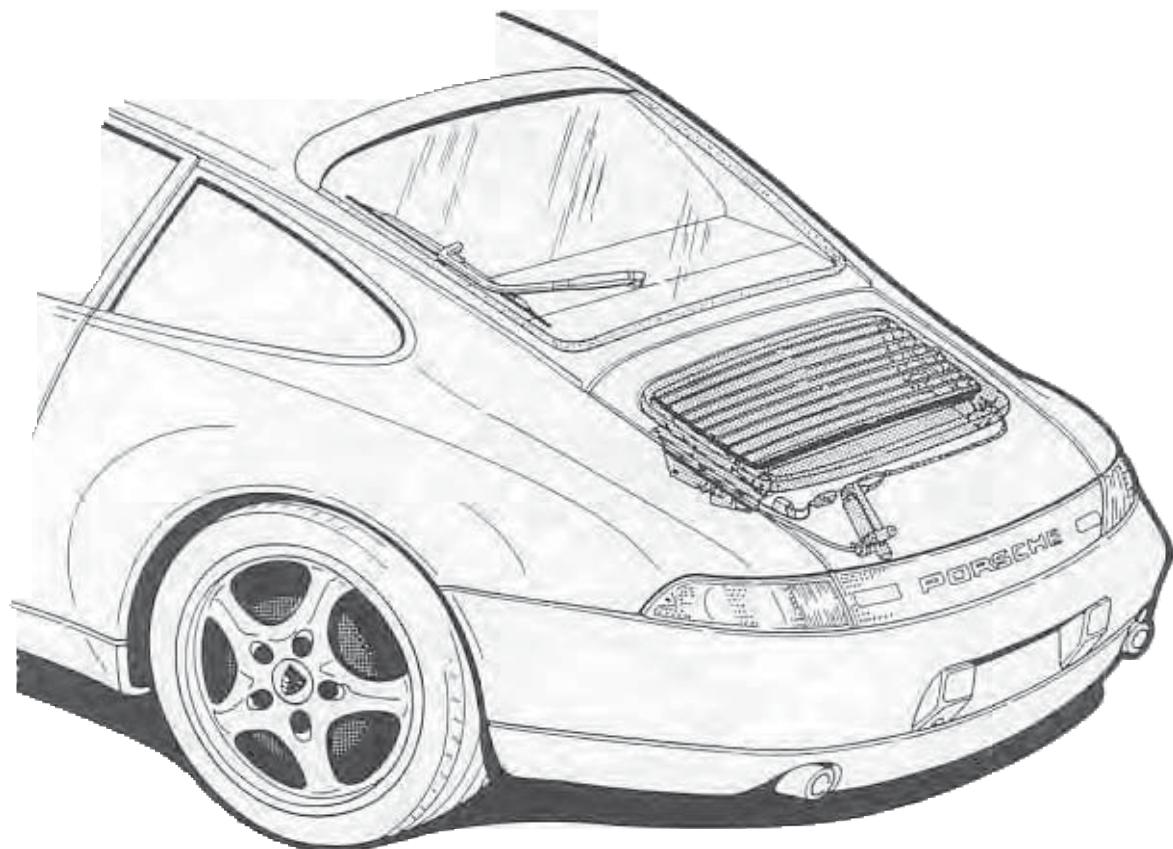
Removing and installing flexible rear window of Cabriolet

Installing flexible rear window of Cabriolet.

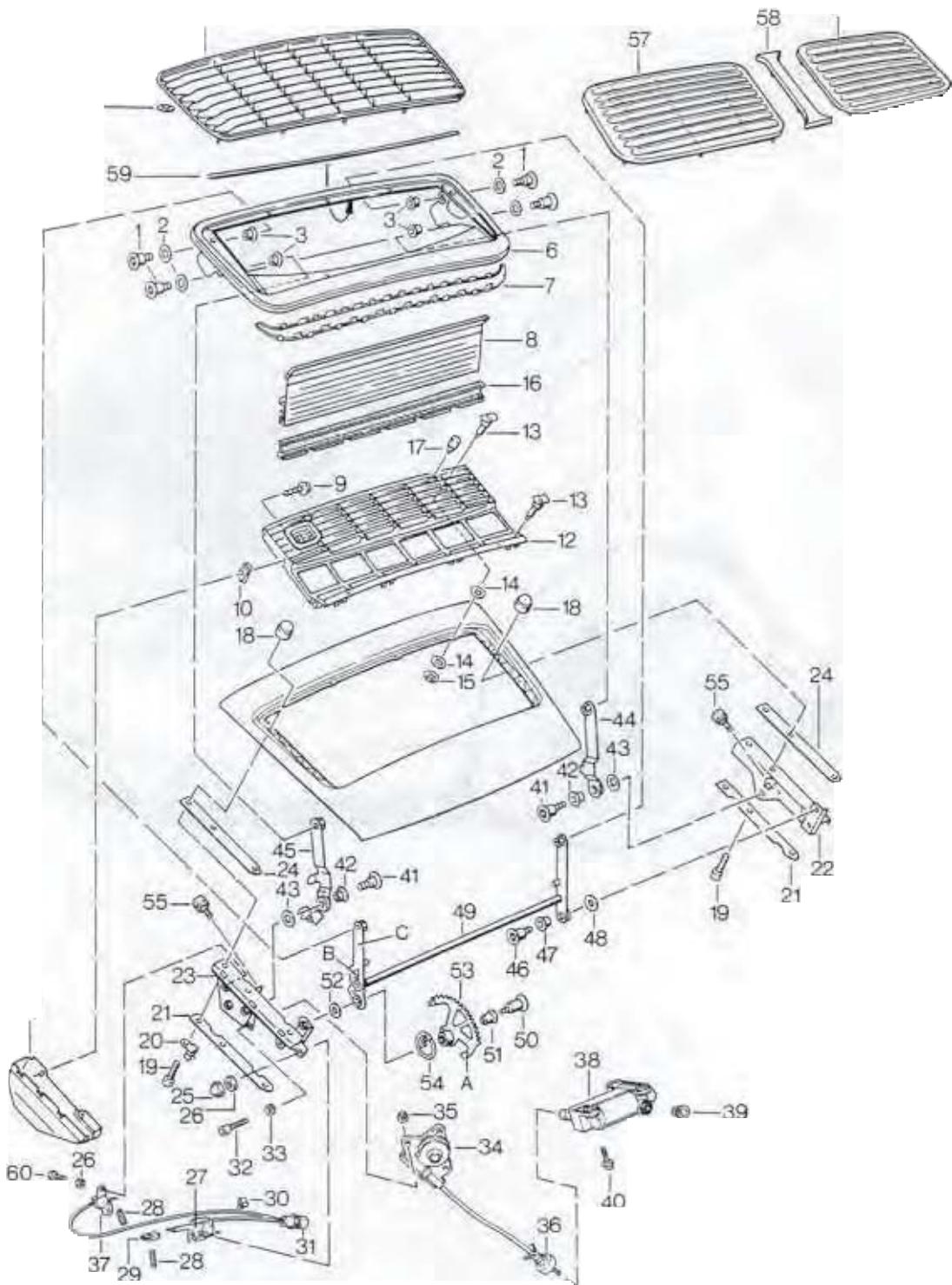
No.	Operation	Instructions
1	Insert rear window	Insert a slide in the end of the zip fastener on the window. Position rear window in covering. Position the ends of the two halves of the zip fastener precisely over each other and close the zip fastener up to the wire connections.
2	Push wire connections through	Push wire connections between the zip fastener strip and the fabric covering through the separate compartments in the teflon insert to the inside. Warning: Do not cross the wire connections. There is a risk of short circuits. Close the zip fastener and remove the slide.
3	Insert support rail	Position the support rail for the inside plate with its pins in the holes in the tack strip.
4	Insert inside plate	Push the inside plate in between the roof liner and the covering. Place the bottom edge of the inside plate on the support rail, centring it. Press the inside plate against the covering at the top and push it forwards behind the bow. Secure the inside plate against slipping using the stopper. Take the ends of the wires through the opening in the inside plate and pull them out gently.
5	Position outside pressure frame	Place the pressure frame on the outside of the covering, centring it on the rear window cutout.

No.	Operation	Instructions
6	Fasten outside pressure frame	<p>Install the belt across the pressure frame. Connect the hooks on the end of the belt to the left and right wheel rims ahead of the axle. Push the protective sleeve over the belt to protect the bodywork. Tighten the belt using the tensioner.</p> <p>The outside pressure frame must be positioned evenly on the fabric covering and press the covering evenly onto the rear window.</p> <p>Check the pressure all around the rear window using a 0.5 mm feeler gauge.</p> <p>Warning:</p> <p>If the pressure frame does not make contact all around the window, the window may melt and tear when the copper wire is heated.</p>
7	Connect power cable	<p>Connect the power cable to the flexible copper wires.</p> <p>Warning:</p> <p>Do not cross the ends of the copper wires. Otherwise, there may be a short circuit, causing burn marks on the covering.</p> <p>Set timer switch to 2 minutes. When this time has elapsed, disconnect the power cable and allow the adhesive to cool for 20 minutes. The special tools must stay in position while the adhesive cools.</p> <p>Loosen the belt and remove the special tools. Cut the ends of the copper wires back to a length of about 20 mm and push them in between the zip fastener strip and the fabric of the covering.</p> <p>Check that the joint between the rear window and the covering is tight. Otherwise, repeat steps 3 to 7.</p> <p>Close zip fastener of roof lining all round, remove spacer wedge and close top.</p> <p>Note:</p> <p>If the tension on the outside pressure frame becomes slacker, bend it by hand as required.</p>

66 58 19 Removing and installing rear spoiler



removing and installing rear spoile



Removing and installing rear spoiler

No.	Designation	Qty.	Note:	
			Removal	Installation
1	Shaft bolt, microencapsulated M 6 x 23	4		Replace
2	Washer 16 x 10.5 x 1 POM	4		
3	Bearing sleeve 16 x 10.1 x 11.6 POM	4	Press out inward	
4	Grille	1		
5	Clamping washer 5.0	10		
6	Outer part	1		
7	Cover	1		
8	Rear wall	1		Fit between rear spoiler and air inlet grille
9	Combination screw B 4.2 x 9.5	2		
10	Sheetmetal nut B 4.2	2		
11	Cover	1		
12	Air inlet grille	1		Align air inlet grille with contours of the rear cover when fitting
13	Hammer screw 5 x 17.7	8		
14	Washer 9 x 15 x 2	16		
15	Clamping washer 5.0	8	Pull off	Push on
16	Rubber seal	1	Pull off	Push on
17	Rubber stop	4		
18	Protective cap	6		
19	Pan-head screw M6 x 16	6		
20	Wire retainer	1		
21	Liner	2		

No.	Designation	Qty.	Note:	
			Removal	Installation
22	Right-hand mounting plate	1		
23	Left-hand mounting plate	1		
24	Liners	8		The distance between the rear spoiler and rear cover can be adjusted by fitting liners (up to 4 per side) between the mounting plates and the rear cover
25	Hexagon nut M 5	1		
26	Washer A 5.3	1		
27	Micro switch	1		Refer to adjustment instructions for rear spoiler
28	Set screw	2		
29	Plug-in nut	1		
30	Wire clamp	3		
31	Plug	1		Make plug connection with wiring harness
32	Pan-head screw M 6 x 12	3		
33	Washer A 6.4	3		
34	Gearbox	1		The teeth of the gearbox (34) must mesh with the toothed sector (47)
35	Hexagon nut M 6	3		

No.	Designation	Qty.	Removal	Note: Installation
36	Drive shaft	1		Insert drive shaft (36) with bushing for gear motor (39) into the gear motor (38)
37	Micro switch	1		See adjustment instructions for rear spoiler
38	Gear motor	1		
39	Bushing	1		
40	Combination screw M6 x 18	3		
41	Shaft bolt M6 x 19, microencapsulated	2		Replace
42	Bearing sleeve 17 x 7 x 10.1	2		
43	Washer 16 x 3.6 x 10.5 POM	2		
44	Right-hand lever	1		
45	Left-hand lever	1		
46	Shaft bolt, microencapsulated. M 6 x 17	1		Replace
47	Bearing sleeve 17 x 7 x 10.5 POM	1		
48	Washer 16 x 1.6 x 10.5 POM	1		
49	Linkage	1		
50	Shaft bolt M6 x 27, microencapsulated	1		Replace
51	Bearing sleeve 16 x 18.5 x 10.1 POM	1		
52	Washer 24 x 12.5 x 1.6 POM	1		

No.	Designation	Qty.	Removal	Note:	Installation
53	Toothed sector	1		Fit tab (A) of the toothed sector (53) into the opening (B) of the guide lever (C) on the linkage (49)	
54	Torsion spring	1			
55	Rubber stop	2			
56	Right-hand grille, only <i>Carrera S</i>	1			
57	Left-hand grille, only <i>Carrera S</i>	1			
58	Centre grille, only <i>Carrera S</i>	1			
59	Rail, only <i>Carrera S</i>	1			
60	Hexagon-head bolt M5	1			
A	Tab on toothed sector	1			
B	Opening in guide lever	1			
C	Guide lever on linkage	1			

Adjusting the rear spoiler

The raising and retracting travel of the rear spoiler may be limited and, hence, adjusted by setting the switching points of two microswitches.

Adjusting the microswitch for retracting the spoiler

Operate the service switch to retract the spoiler until the tab (A) of the toothed sector (53) is released in the opening (B) of the guide lever (C). Unscrew hex nut (25). Use the threaded pin (28) to adjust the switching point of the micro switch (27). Tighten hexagon head nut (25) again. Actuate the service switch to check the adjustment.

Adjusting the microswitch for raising the spoiler

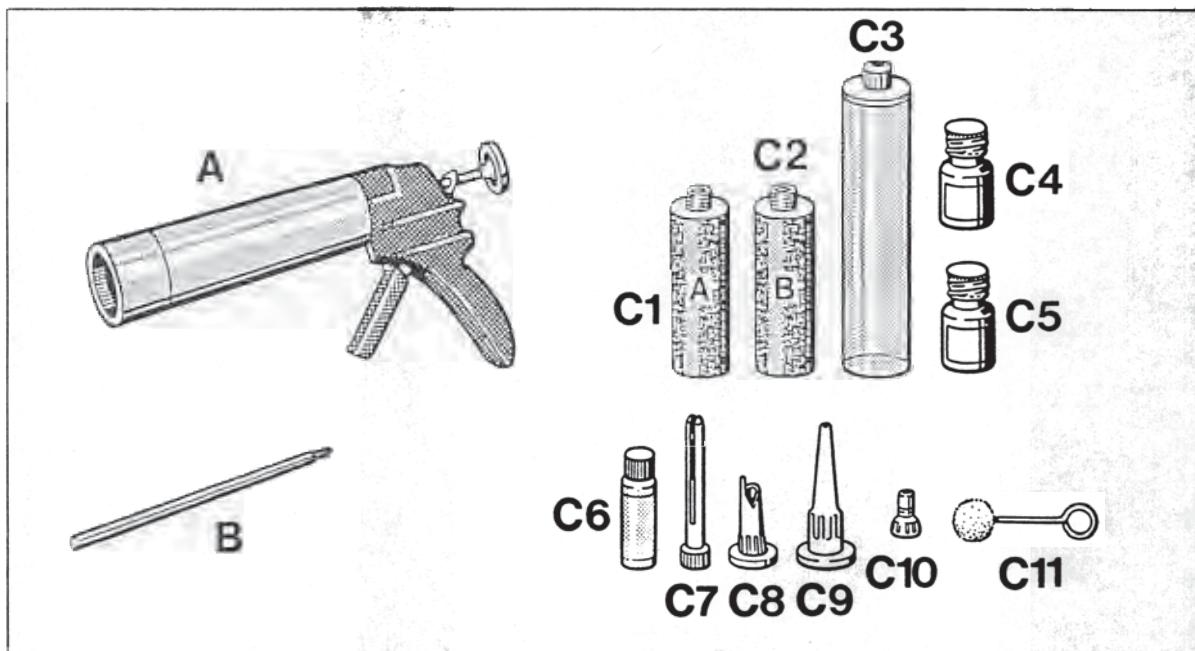
Operate the service switch to raise the spoiler until the lever (45) touches the buffer (55). Use the threaded pin (28) to adjust the micro switch (37). Actuate the service switch to check the adjustment.

66 58 55 Replacing rear spoiler

The rear spoiler (outer rear spoiler section) must be painted prior to fitting!

When replacing the rear spoiler, paint the rear spoiler outer section in body color and bond it to the spoiler grille.

The following materials and tools are required for bonding the rear spoiler outer section to the spoiler grille:



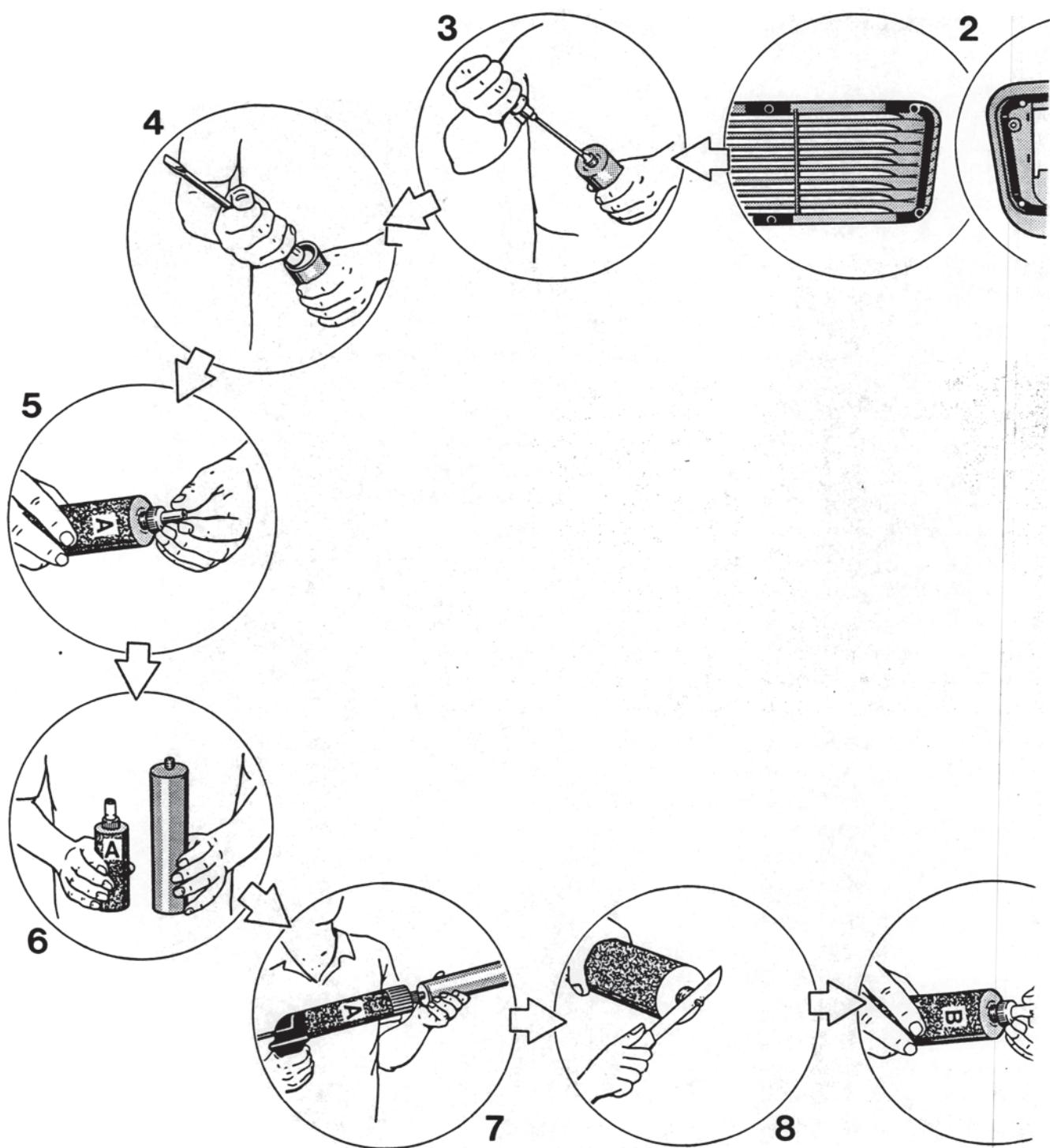
A	Bonding gun	VAG 1628	e.g. VW Werk AG KD-Gerätevertrieb
B	Mixing rod 9528	000.721.952.80	Porsche Part dept.
C	Bonding set	999.915.509.40	

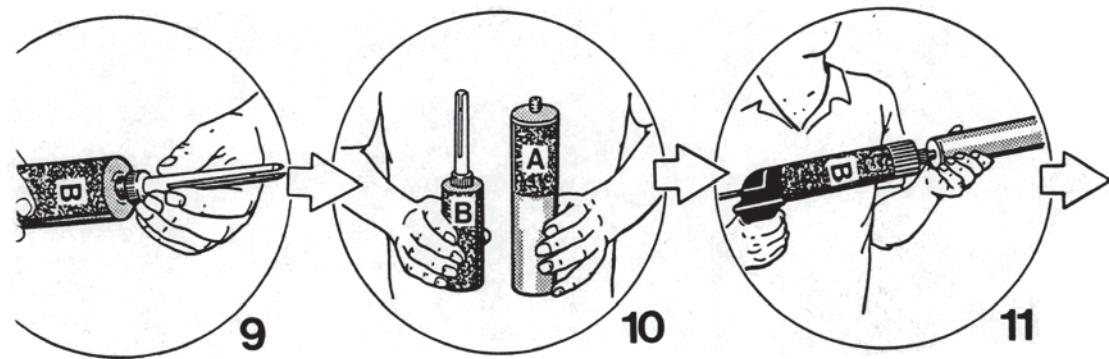
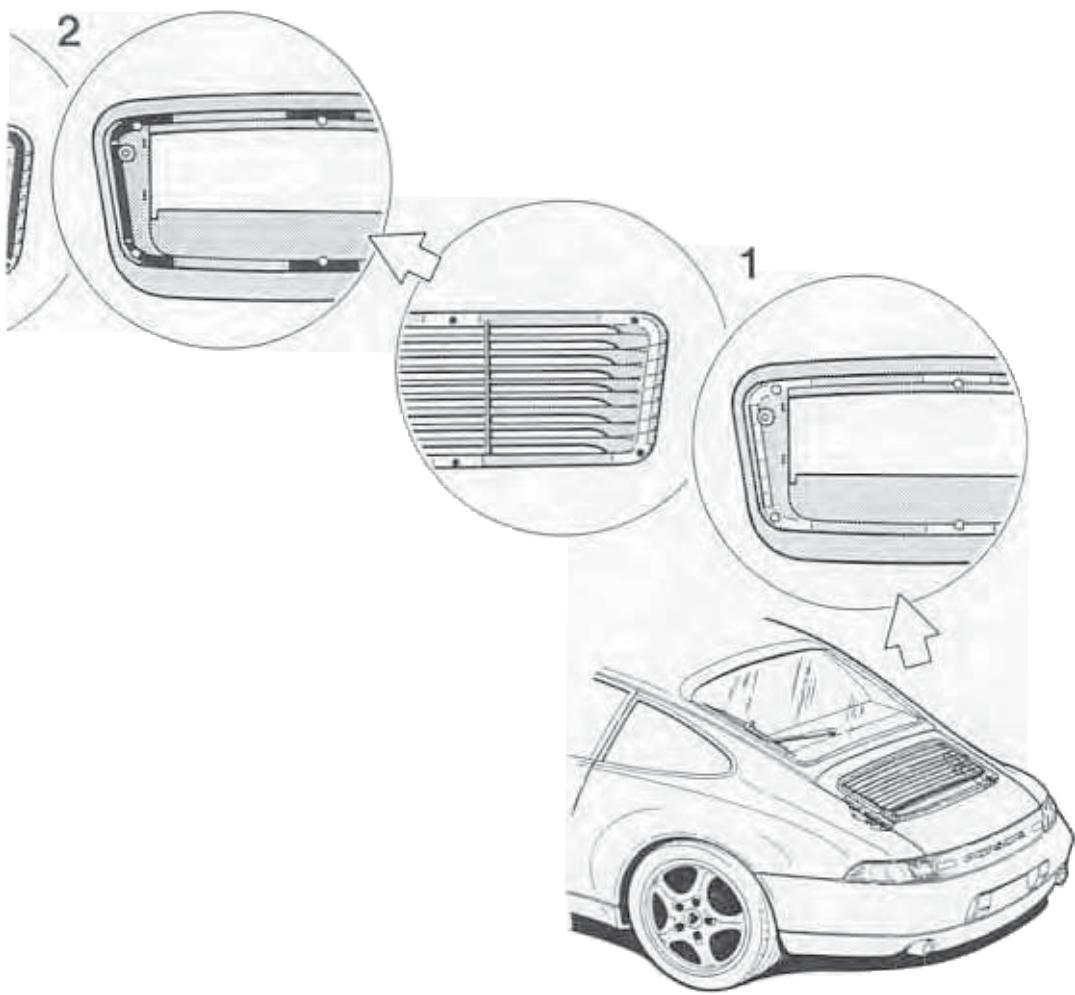
Bonding set contents:

- C 1 = Cartridge component A
- C 2 = Cartridge component B
- C 3 = Mixing cartridge
- C 4 = Primer
- C 5 = Activator
- C 6 = Cleaning solution

- C 7 = Injector nozzle
- C 8 = Application nozzle
- C 9 = Application nozzle
- C 10 = Filling nozzle
- C 11 = Touch-in tool

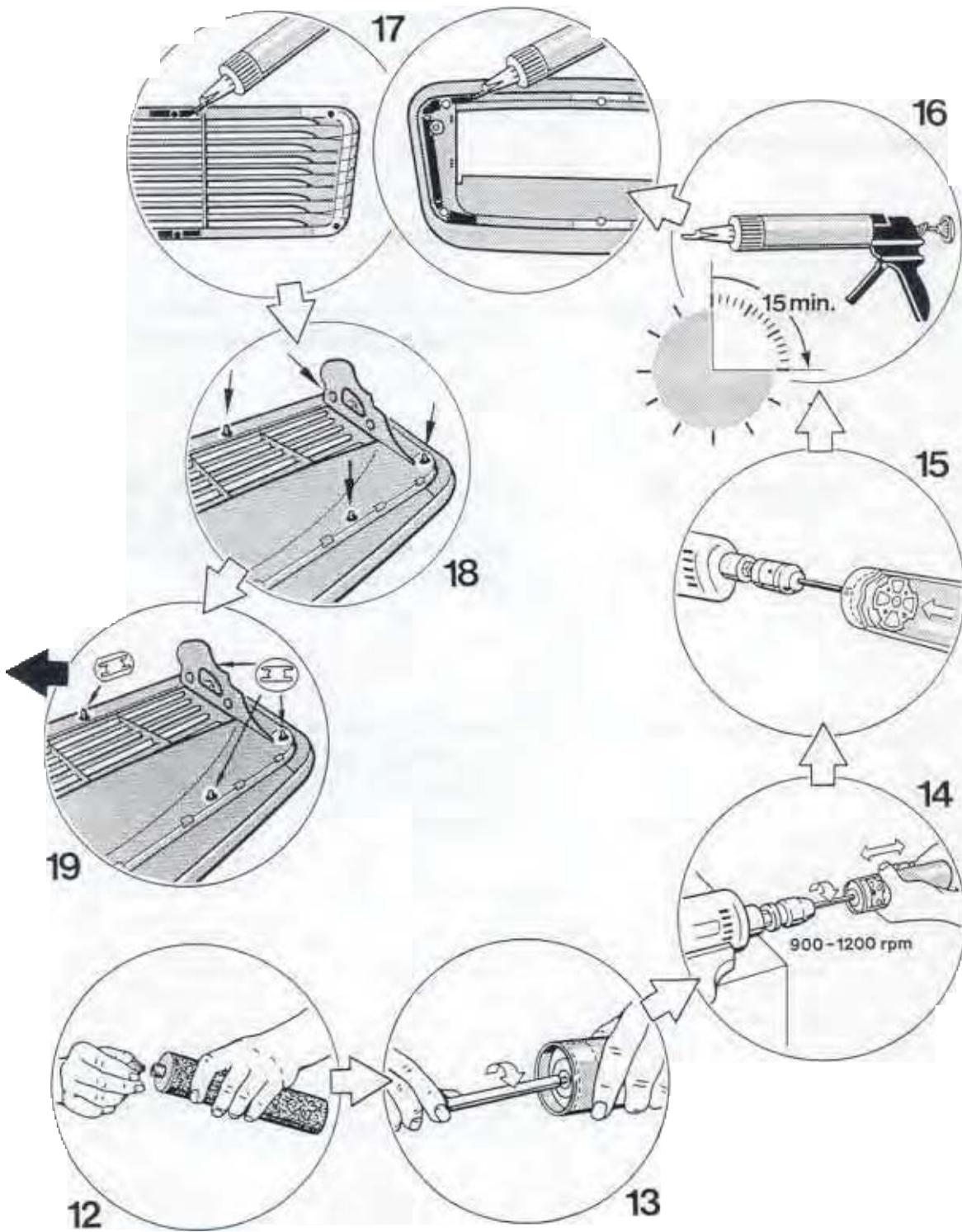
66 58 55 Replacing rear spoiler





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66 58 55 Replacing rear spoiler



66 58 55 Replacing rear spoiler

The rear spoiler (outer rear spoiler section) must be painted prior to fitting!

Bonding rear spoiler outer section and spoiler grille

Preparing bonding areas

No.	Operation	Instructions
1	Sand down bonding areas	Sand down bonding areas on rear spoiler outer section and spoiler grille with sanding paper, P 80 grit.
	Clean sanded areas	Clean sanded areas on rear spoiler outer section and spoiler grille thoroughly with cleaning solution (C6). Caution: Make sure no cleaning solution residues remain on the spoiler sections!
2	Prime bonding areas	Apply a thin, even coat of primer (C4) to bonding areas of rear spoiler outer section and spoiler grille. Caution: Allow a flash-off time of at least 10 minutes!

Preparing the bonding cartridge for application of adhesive

No.	Operation	Instructions
3	Open nozzle fitting on cartridge containing component A	Use a screwdriver to pierce the diaphragm of the nozzle connection of cartridge containing component A (C1).
4	Open flanged cover of cartridge containing component A	Use the screwdriver handle to pierce the flanged cover at the end of the cartridge containing component A (C1).
5	Screw filling nozzle onto cartridge containing component A	Screw filling nozzle (C10) onto cartridge containing component A (C1).
6	Place cartridge containing component A into the bonding gun	Place cartridge containing component A (C1) into bonding gun (A). Remove screw-on cap of mixing cartridge (C3).
7	Press component A into mixing cartridge	Place filling nozzle (C10) of cartridge containing component A (C1) into mixing cartridge (C3). Use bonding gun (A) to press component A into mixing cartridge (C3).
8	Open nozzle fitting of cartridge containing component B	Use a knife to cut off the tip of the nozzle fitting of the cartridge containing component B (C2).
9	Screw injector nozzle onto cartridge containing component B	Screw injector nozzle (C7) onto cartridge containing component B (C2).
10	Place cartridge containing component B into bonding gun	Place cartridge containing component B (C2) into bonding gun (A).

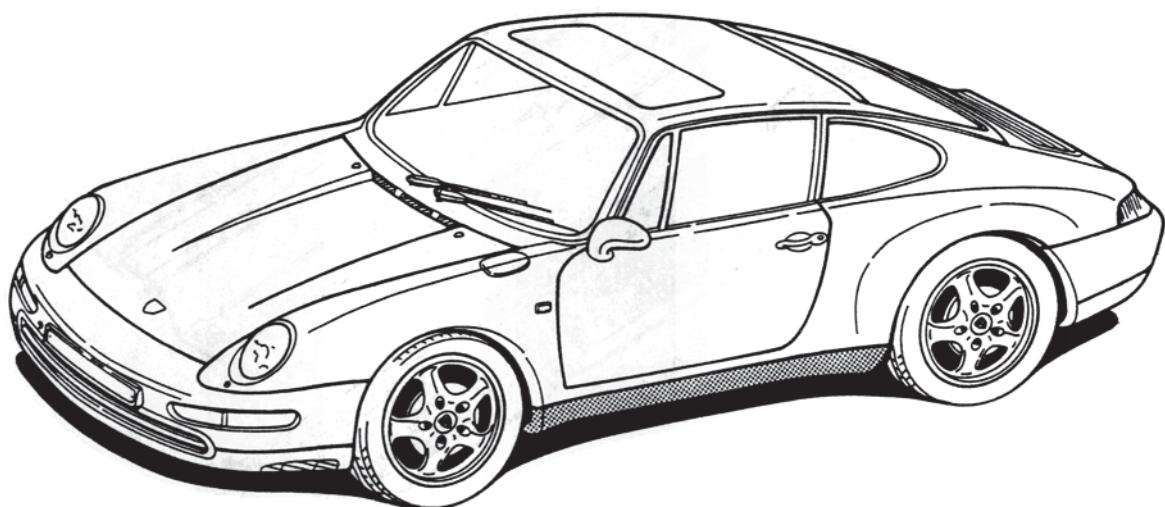
No.	Operation	Instructions
11	Press component B into mixing cartridge with component A	Insert injector nozzle (C7) of cartridge containing component B (C2) into mixing cartridge (C3). Use bonding gun (A) to press component B (C2) into mixing cartridge (C3) with component A.
12	Close mixing cartridge	Pull injector nozzle (C7) out of mixing cartridge (C3) and close mixing cartridge with screw-on cap.
13	Screw mixing rod into mixing cartridge	Screw mixing rod (B) manually into internal thread of mixing disc of mixing cartridge (C3). Clamp other end of mixing rod in a drill chuck. Fit the power drill in a suitable clamping device.
14	Mix component A und component B	Switch on drill (speed 900 to 1200 rpm) and rotate mixing cartridge 25 times from stop to stop. Perform all 25 double strokes fairly rapidly!
15	Engage mixing disc into piston	Pull back mixing cartridge until a rattling sensation is felt. Switch off drill and screw mixing rod out of mixing cartridge. This will cause the mixing disc to engage into the piston of the mixing cartridge.
16	Place mixing cartridge into bonding gun	Insert mixing cartridge with mixed 2-pack adhesive into bonding gun. Screw application nozzle (C8) onto mixing cartridge.

Caution: Observe open time of 15 minutes!

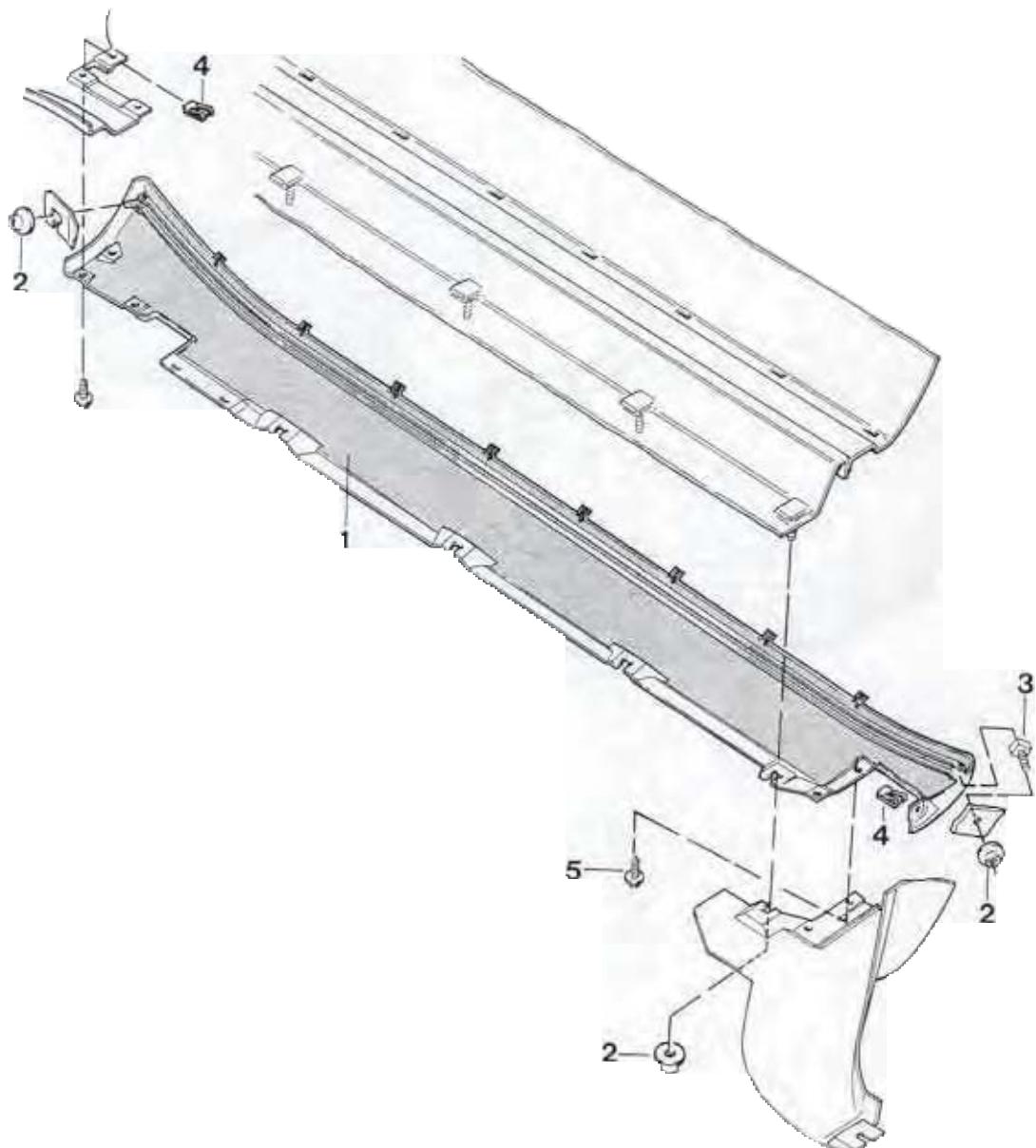
Open time is the time available for application of the adhesive and for assembling the spoiler components.

Assembling the spoiler parts

No.	Operation	Instructions
17	Apply adhesive	<p>Apply 2-pack adhesive with the bonding gun to the rear spoiler outer section – in the right and left-hand areas – to a minimum thickness of 3 mm.</p> <p>Apply 2-pack adhesive with the bonding gun to the spoiler grille – in the areas on the right and left of the locating pins (length approx. 40 mm) – to a minimum thickness of 3 mm.</p>
18	Assemble spoiler parts	<p>Place spoiler grille into rear spoiler outer section and adjust with locating pins.</p> <p>Gap adjustment and height offset on the outside between the rear spoiler outer section and spoiler grille must be identical along the entire circumference.</p>
19	Locate spoiler grille	Locate spoiler grille to the rear spoiler outer section at the locating pins by pressing the spring nuts into place.
	Clean areas of vision	Any adhesive that has squeezed out must be removed immediately and the affected areas of vision must be cleaned with cleaning solution (C5).
	Shorten lower locating pins	Shorten lower locating pins (5 ea.) after the curing time (1 hour) has elapsed so that they are flush with the spring nuts.

66 31 19 Removing and installing the sill cover

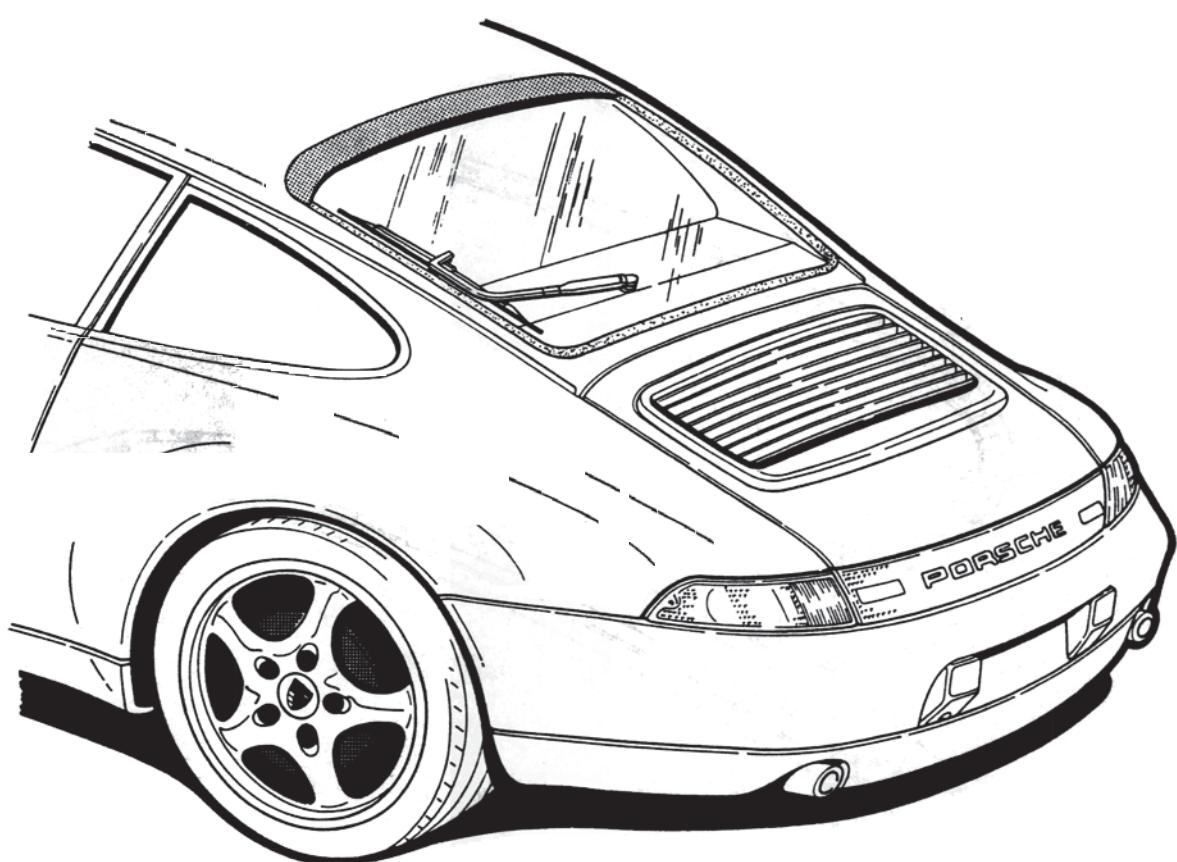
66 3 9 Removing and installing the side cover



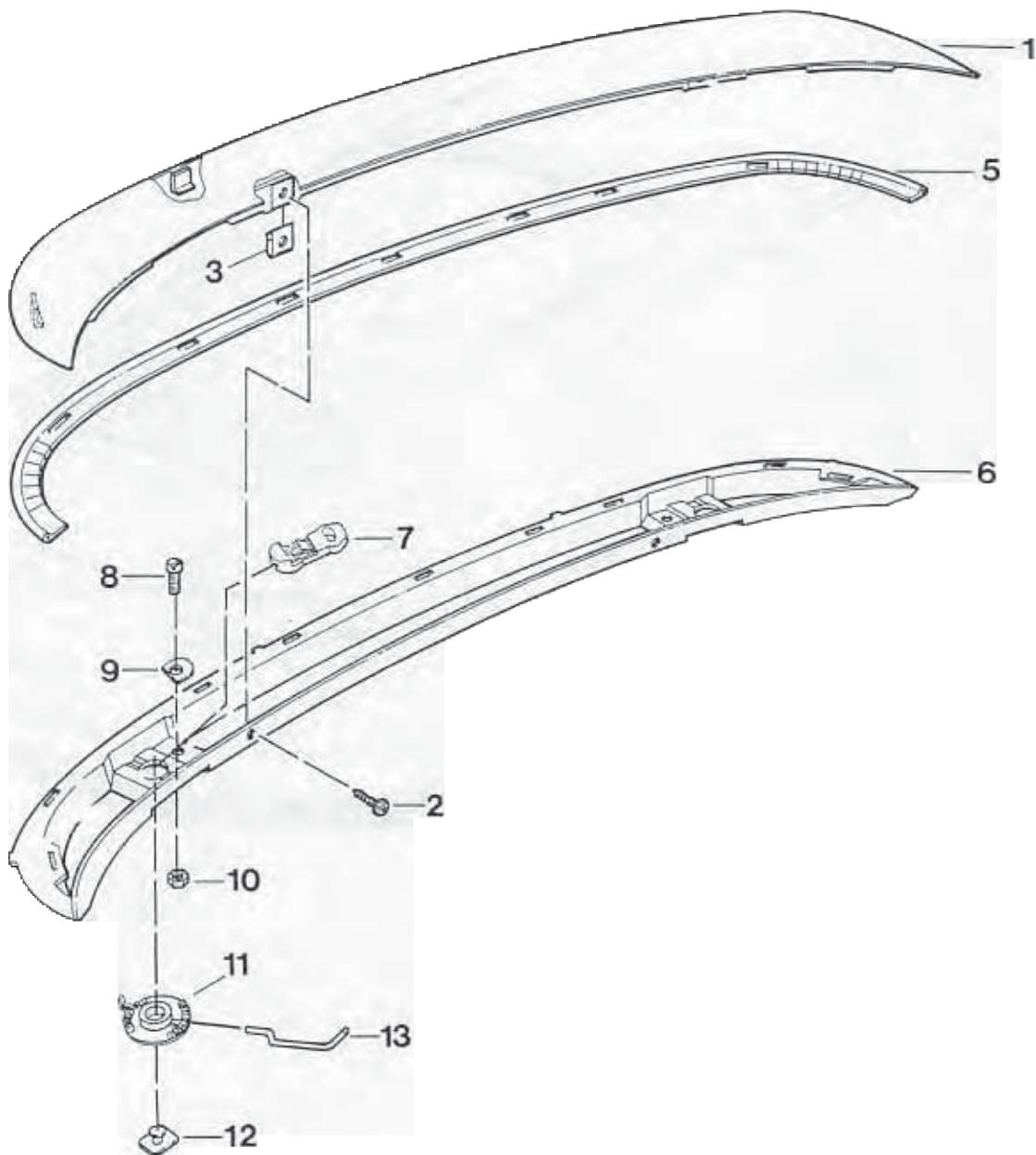
66 31 19 Removing and installing the sill cover

Before removing the sill cover, the front wheel housing liners, rear wheel housing liners and the underbody paneling must be undone partially!

No.	Designation	Qty.	Note:	
			Removal	Installation
1	Sill cover	2	Fold lower sill cover outward and pull out of locating slots in door sill	Engage sill cover into locating slots, fold inwards and lock with item No. 2
2	Plastic nut T 5	12		Check, replace if required
3	Bracket T 5 - 4.8	4	Push out of locating holes in body	Push into locating holes in body
4	Self-tapping nut B 4.8	10		Adjust to hole center
5	Combination self-tapping screw	12		

66 38 19 Removing and installing roof cover

66 38 19 Removing and installing roof cover

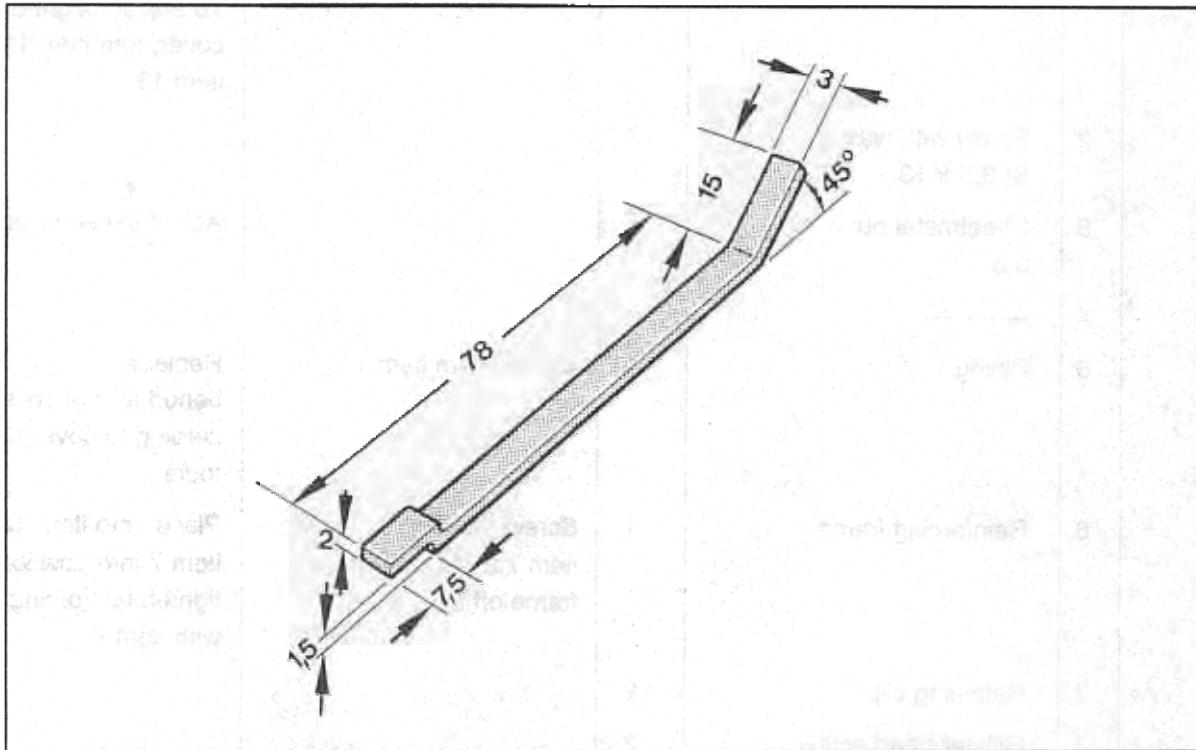


66 38 19 Removing and installing roof cover

No.	Designation	Qty.	Note:	
			Removal	Installation
1	Roof cover	1	Screw out item 2 and unclip roof cover from item 6	Clip roof cover into item 6 and tighten with item 2. To adjust height of roof cover, turn item 11 with item 13
2	Screw with washer St 3.5 x 13	2		
3	Sheetmetal nut 3.5	2		Adjust to center of hole
4				
5	Piping	1	Detach from item 1	Replace, bonded to roof cover according to cover contours
6	Reinforcing frame	1	Screw out item 8, unclip item 7 and lift reinforcing frame off item 12	Place onto item 12, clip item 7 into position and tighten reinforcing frame with item 8
7	Retaining clip	2		
8	Fillister head screw A M 5 x 14	2		
9	Tab washer	2		Replace
10	Nut M 5	2		
11	Adjusting element	2		Insert actuating pin (item 13)
12	Lock pin	2		
13	Actuating pin (shop-made tool)	2		Used for height adjustment of roof cover

Shop-made tool: "Actuating pin"

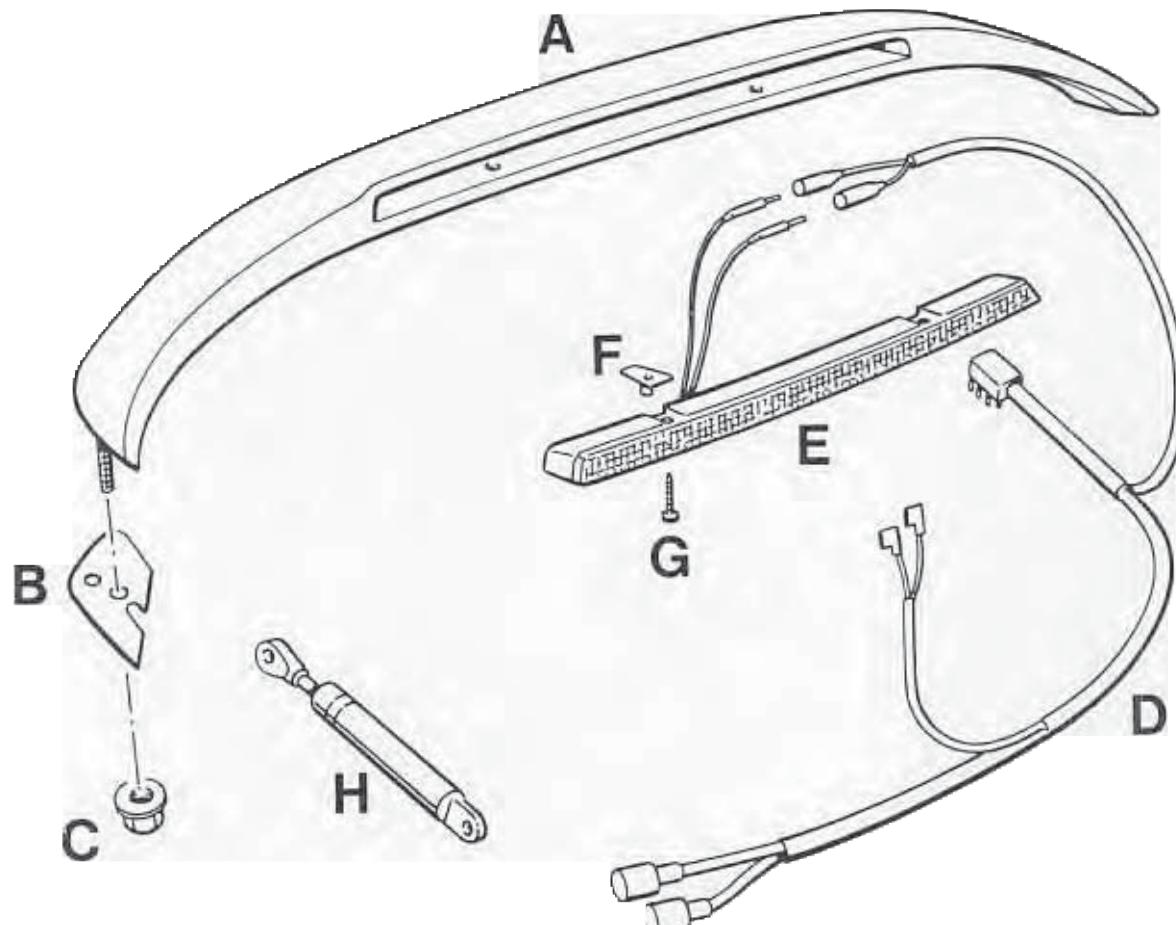
The actuating pin is required to adjust the height of the roof cover at the adjuster.
This actuating pin should be fabricated in the shop from 2 mm sheet steel.



Recommended material: BL 2.0 CK 67 DIN 17222

66 40 23 Installing support for auxiliary stop light

The following spare parts are required for fitting the auxiliary stop light:



A = Lamp holder

B = Spacer

C = Flange nut

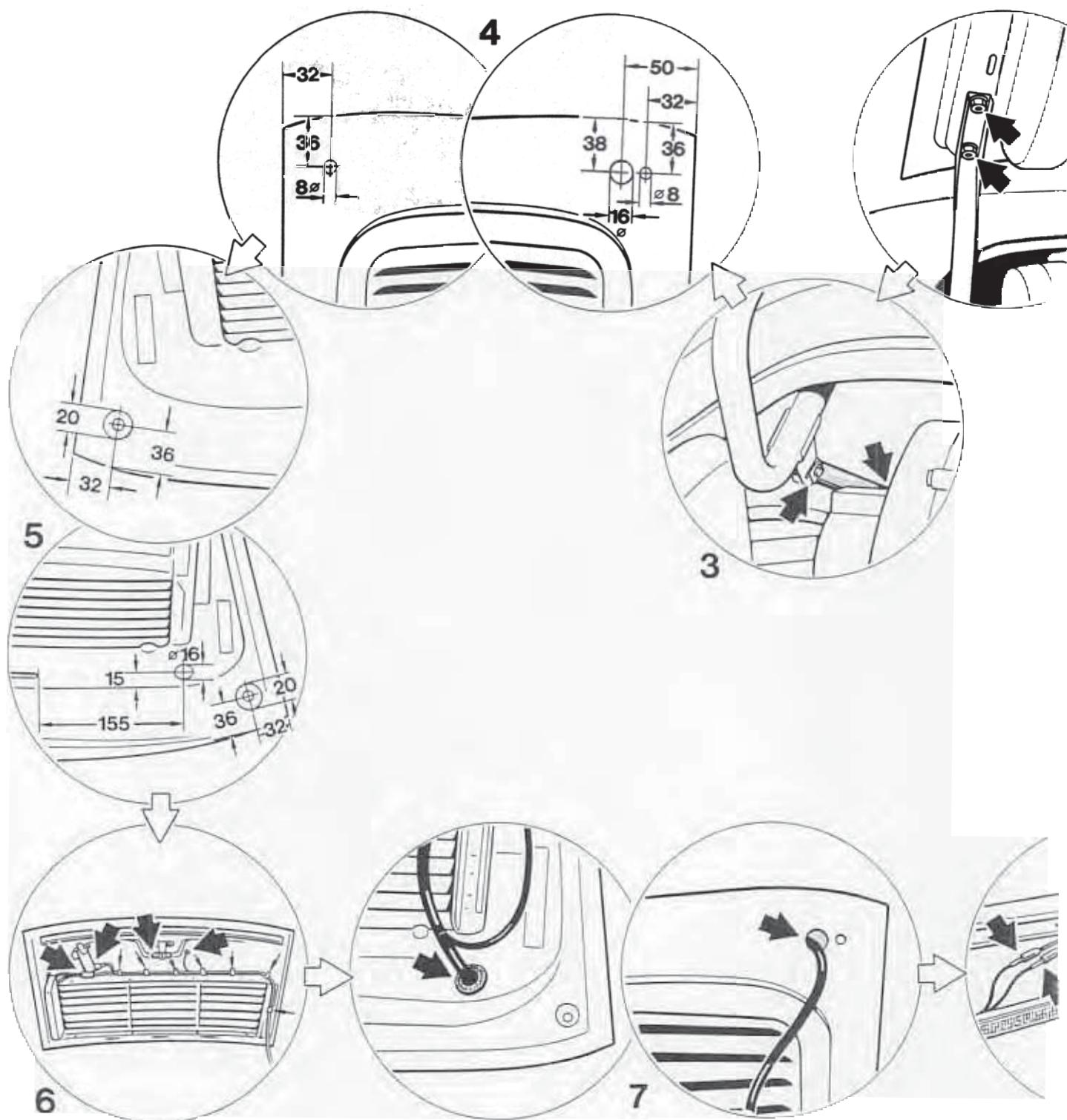
D = Wiring harness

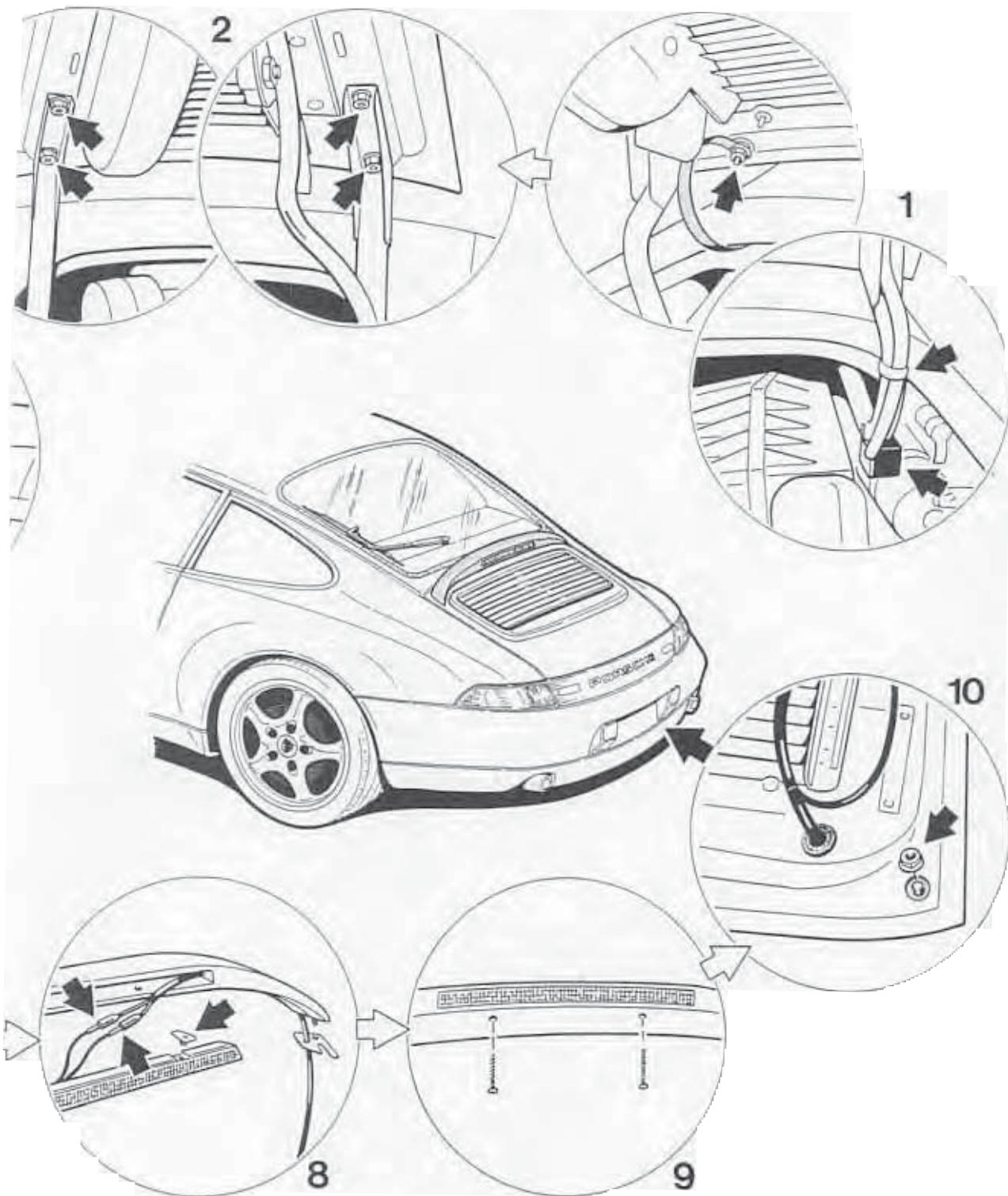
E = Stop light

F = Fastener

G = Oval-head sheetmetal screw

H = Gas spring





Installing support for auxiliary stop light

To fit the auxiliary stop light, remove the rear cover, the gas springs and the wiring harness of the rear cover.

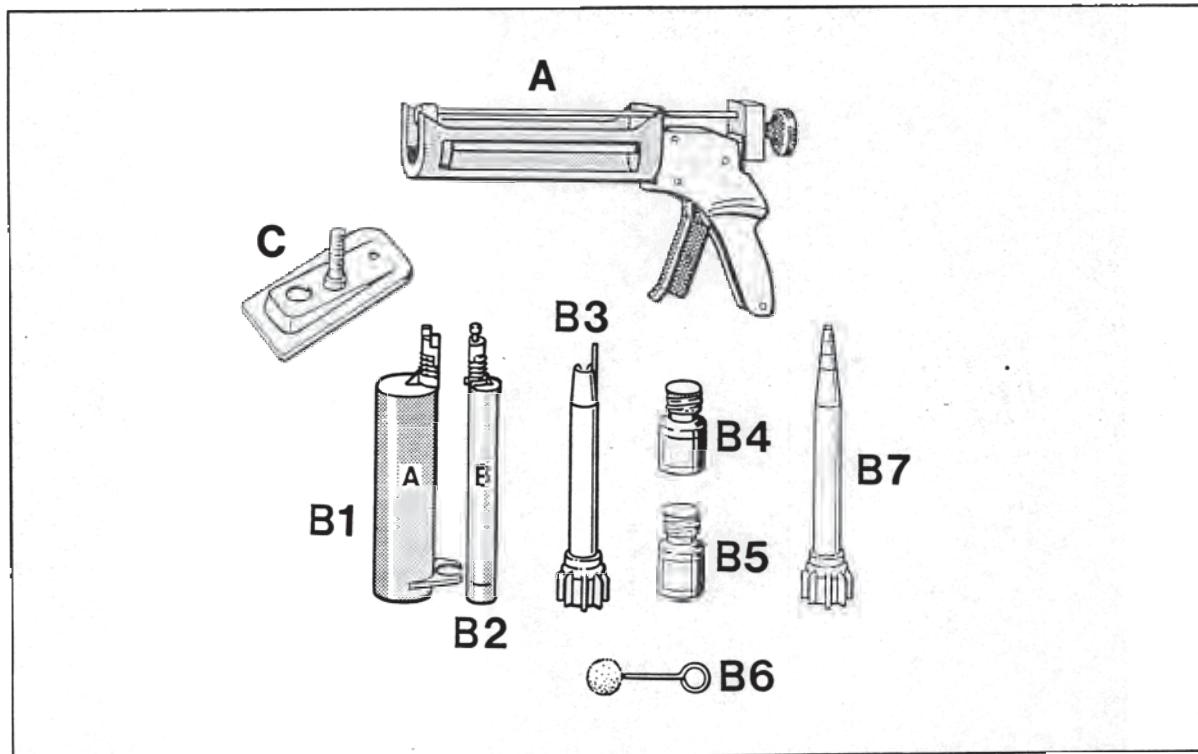
The auxiliary stop light can be fitted both to the Coupe and to the Cabriolet.

No.	Operation	Instructions
1	Disconnect electrical connectors	Unclip cap from wiring harness connector, disconnect connector and pull wiring holder from hinge. Screw out ground strap mounting nut.
2	Remove cover	Screw out mounting bolts and lift cover off the vehicle. Place cover on a soft, clean support.
3	Replace gas springs	Remove retaining clips and pins. Remove left and right gas springs, fit shorter gas springs and refit them with pins and retaining clips.
4	Drill mounting holes for support and wiring harness passage (outside)	Mark outside hole positions on left and right side of cover, centerpunch, drill, deburr and touch-up bare metal spots with paint.
5	Drill mounting holes for support and wiring harness passage (inside)	Mark inside hole positions on left and right side of cover, drill, deburr and touch up bare metal spots with paint.
6	Replace wiring harness	Unclip engine compartment lamp from cover and disconnect connector. Unclip limit switch connector and disconnect limit switch and drive motor connector. Unclip wire bracket. Refit wiring harness with auxiliary stop light connection.
7	Route wiring harness section to auxiliary stop light inside cover	Route wiring harness through hole on inside of cover. Place grommet into position and route harness towards outside across hole in cover.
8	Route wiring harness section to auxiliary stop light across holder	Route wiring harness across spacer and lamp support. Clip fasteners into auxiliary stop light and reconnect wires at auxiliary stop light.

No.	Operation	Instructions
9	Install auxiliary stop light	Place auxiliary stop light into lamp holder and fit into place with 3.5 x 20 oval-head sheetmetal screws.
10	Install lamp holder	Fit spacers onto mounting studs of lamp holder. Engage mounting studs of lamp holder across mounting holes in outer cover panel and tighten from inside with VM6 mounting flange nuts. Refit cover and reconnect wiring.

66 38 13 Fastening roof cover**Bonding locking bolts to rear window**

The following tools, materials and spare parts are required for bonding the locking bolts to the rear window.



A = bonding gun

B = adhesive set

Contents of adhesive set:

B1 = cartridge with component A

B2 = cartridge with component B

B3 = mixing tube (for window)

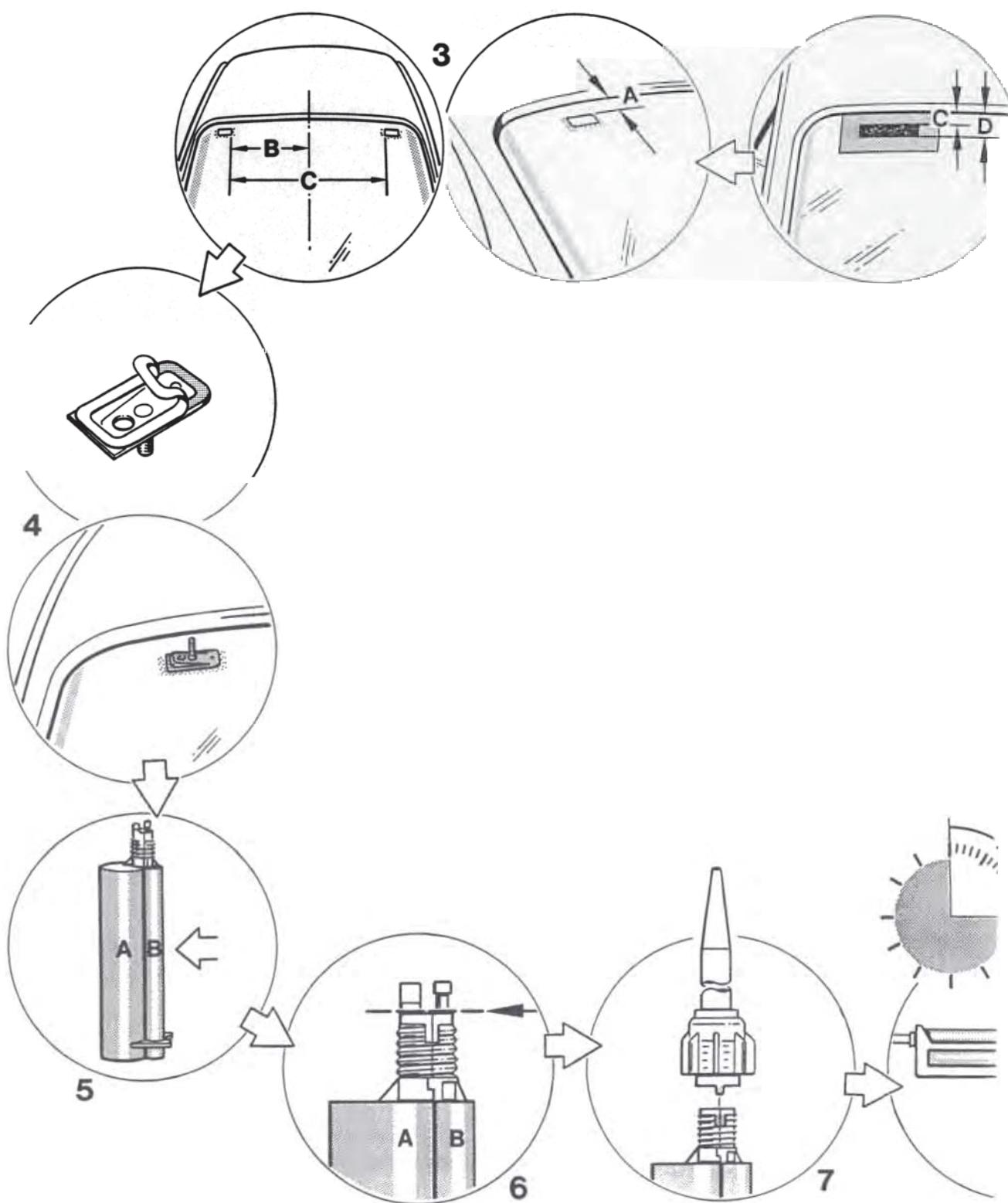
B4 = primer

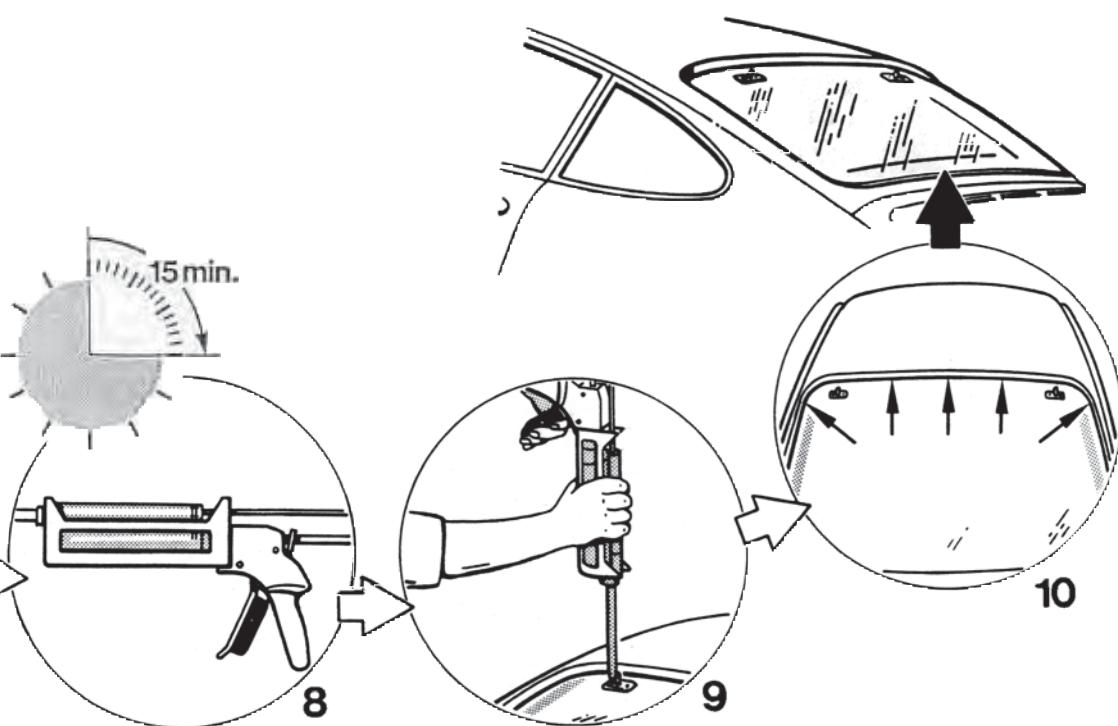
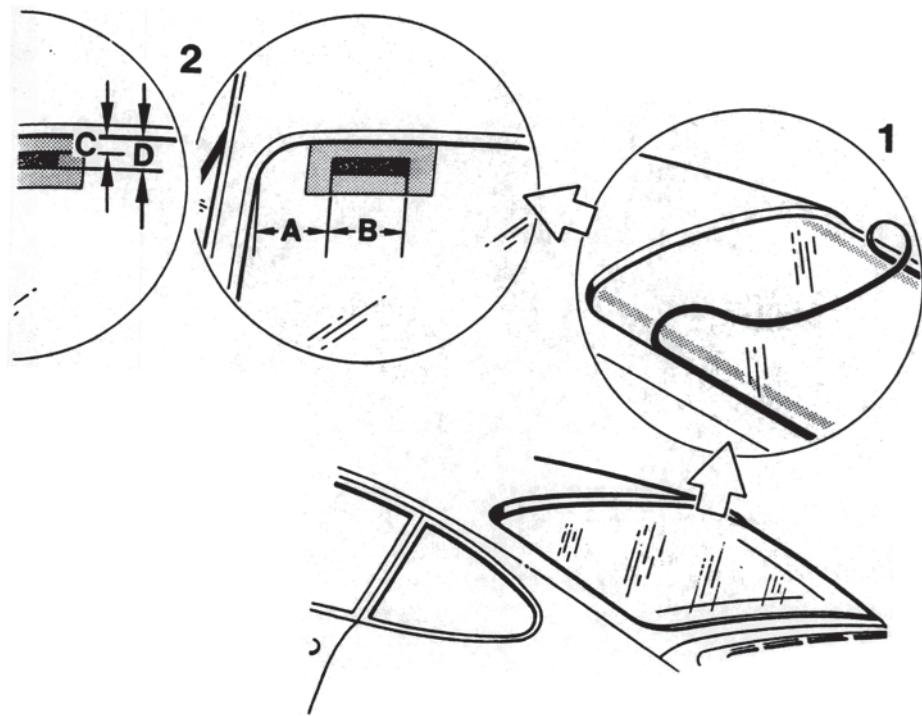
B5 = activator

B6 = swab

B7 = mixing tube (for locking bolts)

C = locking bolts

Bonding locking bolts to rear window



Bonding locking bolts to rear window

The locking bolts can only be bonded in place with the rear window installed.

No.	Operation	Instructions
1	Pull out cover strip; clean rear window and locking bolts.	Pull out cover strip at top of rear window. Clean the top of the rear window and the bonding areas of the locking bolts.
2	Mask off rear window and apply primer.	Mask off rear window for primer application in accordance with dimensions A to D using masking tape and apply a thin even coat of primer to these areas using the swab. Dimension A = 120 Dimension B = 100 Dimension C = 25 Dimension D = 65 Allow the primer to evaporate for at least 5 minutes. Then remove the masking tape from the rear window.
3	Position locking bolts on rear window.	Mark the centre of the vehicle on the rear window. Position the locking bolts on the rear window in accordance with dimensions A to C and mark the positions. Dimension A = 31 Dimension B = 306 Dimension C = 612
4	Fix locking bolts on rear window.	Remove the backing tape of the two-sided adhesive tape at the bottom of the locking bolts and press the locking bolts onto the rear window in the marked positions applying a force of 50 N . To monitor application, place the reinforcement frame over the locking bolts.
5	Clip cartridges with components A and B together.	Clip the component B cartridge to the component A cartridge.

No.	Operation	Instructions
6	Open assembled cartridge.	Cut the closures of the two cartridges off level using a knife.
7	Install mixing tube.	Push mixing tube B7 into the groove on the assembled cartridge and screw it into place using the union nut.
8	Place cartridges in bonding gun	Place the assembled cartridge with mixing tube in the bonding gun.
	Prepare mixing tube.	Cut the end of the mixing tube so that there is an opening with a diameter of 8 mm for the adhesive.
9	Bond locking bolts to rear window.	Place the opening of the mixing tube on the large hole in the locking bolt. Fill adhesive into the space between rear window and locking bolt until adhesive emerges from the small hole in the locking bolt.
10	Install cover strip.	Press the cover strip into the mounting section on the top of the rear window. Cut excess adhesive off locking bolt. Cut adhesive which has emerged from the small opening in the locking bolt off using a sharp knife before installing the reinforcement frame.

Caution

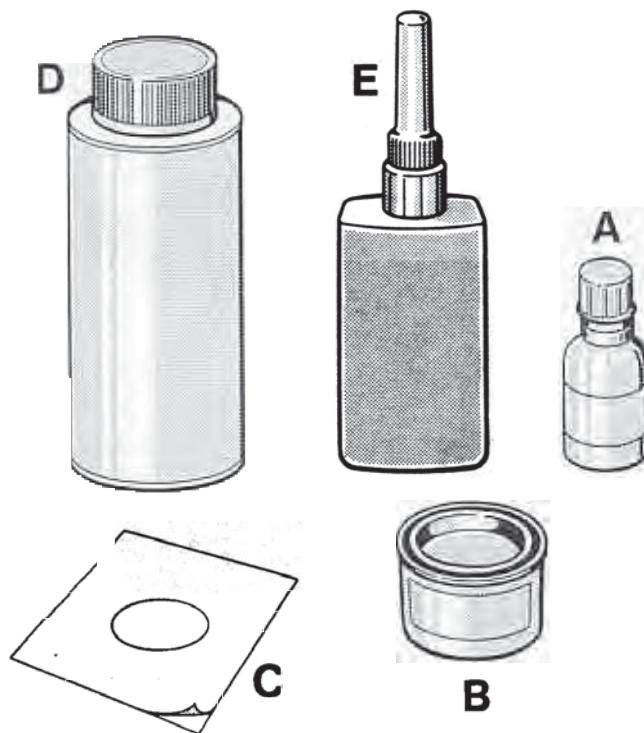
The adhesive bond will not become firm immediately. To ensure a sufficiently strong bond, the following conditions are important.

Hardening time 3 hours
Temperature at least 10° C
Bonding time about 1 hour

The vehicle must not be used before the end of the bonding time!

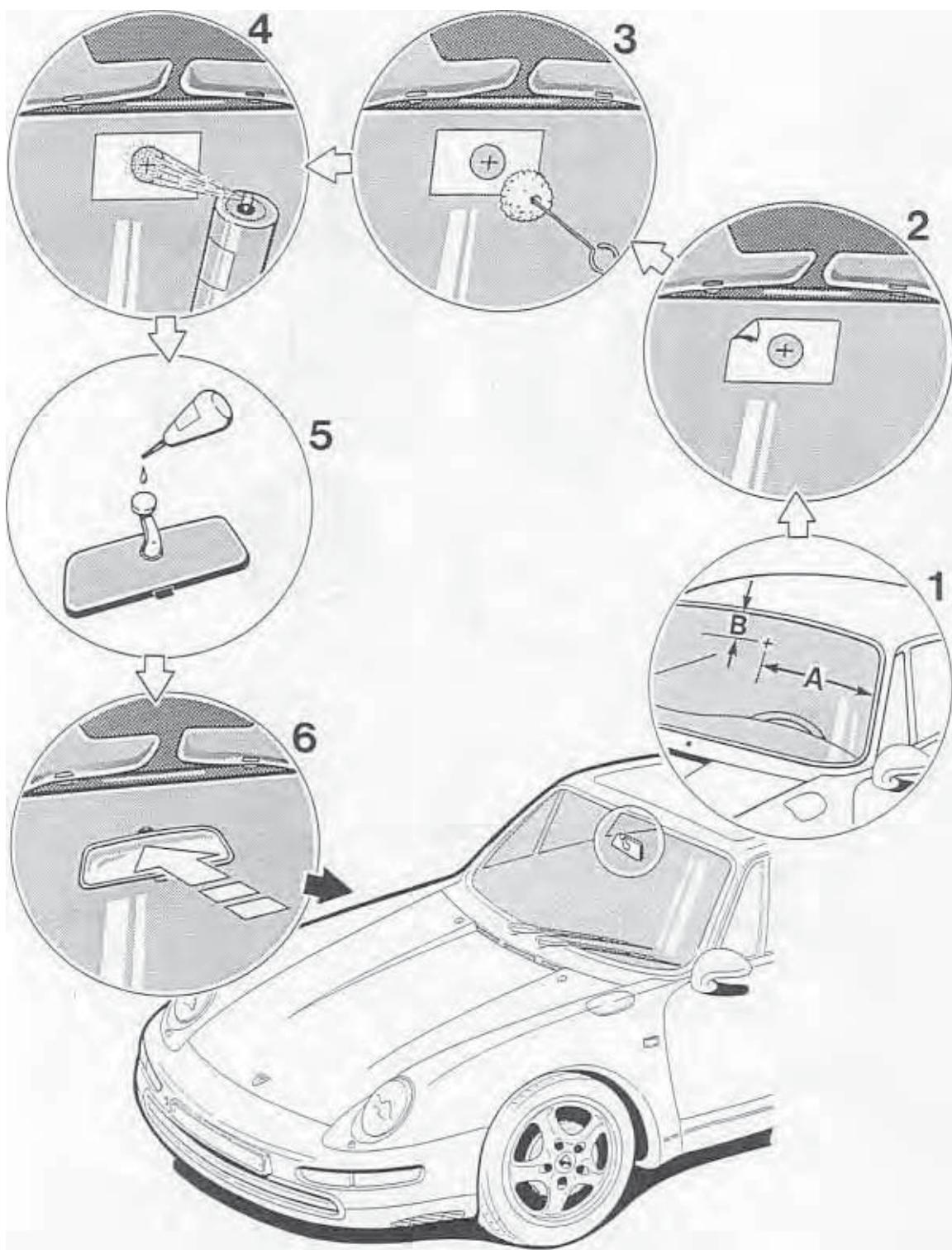
68 27 13 Bonding interior rearview mirror into place

The following materials are required for bonding the complete interior rearview mirror into place:



- A** = Cleaning solution (000.043.157.00)*
- B** = Primer (000.043.158.00)*
- C** = Cover sheet (000.043.177.00)*
- D** = Activator (000.043.052.00)*
- E** = Adhesive (000.043.051.00)*

* Porsche Part No.

68 27 13 Bonding interior rearview mirror into place**Bonding assembled interior rearview mirror to the windshield**

68 27 13 Bonding interior rearview mirror into place**Bonding assembled interior rearview mirror to the windshield**

No.	Operation	Instructions
1	Mark position of interior rearview mirror	Mark position of adhesive plate on outside of windshield. Dimension A = 586 mm Dimension B = 120 mm
	Remove adhesive residues	Remove adhesive residues mechanically from windshield using a scraper. Remove adhesive residues mechanically from adhesive plate of interior mirror using a scraper.
	Roughen adhesive plate of interior rearview mirror	Roughen adhesive plate of interior mirror mechanically using sanding paper.
	Clean adhesive plate of interior rearview mirror	Clean adhesive plate of interior rearview mirror with cleaning solution (A) .
	Clean bonding area on windshield	Clean bonding area on windshield with cleaning solution (A).
2	Mask off bonding area on windshield	Mask off bonding area on windshield with primer template (cover sheet C) . The mark for positioning the interior rearview mirror must remain visible in the center of the primer template.
3	Prime bonding area of windshield	Prime masked bonding area of windshield with a thin, even coat of primer (B) . Caution: Allow a flashoff time of 15 to 20 minutes!

No.	Operation	Instructions
4	Activate bonding area on windshield	Spray bonding area on windshield with activator (D) .
Caution: Allow a flashoff time of 2 minutes!		
	Remove primer template	
5	Apply adhesive to adhesive plate	Apply a drop of adhesive (E) to adhesive plate of interior rearview mirror.
6	Bond interior mirror into place	Press interior rearview mirror with adhesive plate onto primed, activated area of windshield.

Note: Press into place for approx. 40 – 50 seconds!

Note:

Bonding strength
60 % after 1 hour
100 % after 24 hours

68 75 02 Checking the seat belts

Operational check

When the seat belt is pulled evenly, the belt strap must roll smoothly off the automatic retractor across the guide fitting, and the plug-in latch of the seat belt must engage audibly into the belt lock. The automatic retractor must lock when the seat belt strap is pulled with a jerk.

Checking condition

A visual inspection must not reveal any damage or wear of the belt strap. The seat belt must be replaced if the belt strap shows any damage in the form of cuts, fraying, torn seams, scuff marks etc.

68**Safety precautions for working on cars with airbag**

Airbag units are pyrotechnical items of Danger Class T 1. Handling, transport and storage are subject to the legislation for explosives.

The below legal requirements refer to the Federal Republic of Germany. Be sure to observe the relevant legislation in your country at all times.

The start of work on pyrotechnical items must be reported to the Trade Supervisory Office (legal authorities) 14 days in advance.

Shipping

The shipment of airbag units may only take place in the packaging officially approved for transportation. Airbag units must not be shipped together with other dangerous items.

Within a company, transportation is only permitted in the trunk or cargo room of a vehicle using the above transport packaging. Transportation in the passenger compartment is not permitted.

Storage

Storage of airbag units must conform to the second ordinance of the German legislation for explosives. According to this ordinance, small amounts of substances and items may be stored at certain locations without a special storage permit. For pyrotechnical items of Danger Class T1, the maximum quantities are 20 kgs (gross) in workrooms and 200 kgs (gross) in storage rooms. Airbag units must be stored locked.

When storing airbag units, make sure that the padded side faces up (danger of injury if an airbag unit is ejected in case of accidental ignition).

Airbag units may not be stored together with other products classified as dangerous items (paints etc.).

Disposal of airbag units

Airbag units that have not been ignited constitute a safety and environmental hazard. Scrap airbag units that have not been ignited must not be scrapped but must first be ignited electrically to render them harmless.

If the airbag units cannot be ignited, return them to Porsche or to the respective importer in their original spare part transport container and by the same method of transport.

68 68 Disposal of airbag units

Airbag units are pyrotechnical components and may constitute an environmental hazard due to their explosive nature as well as due to the materials they contain.

Airbag units that have not been ignited or complete vehicles with such airbags must therefore never be disposed of via the "standard" scrapping or other disposal procedures. The airbag units must first be rendered harmless by igniting them electrically observing all safety measures, to ensure that they cannot be used for non-authorized purposes.

If the airbag units cannot be ignited or if no sufficient facilities exist for igniting them in a safe manner, return them to Porsche or to the respective importer in their original spare part transport container and by the same method of transport.

Note

National legislation that extends beyond the scope of the above instructions must be observed and must be given priority over those instructions.

Safety measures

Ignition and preparation for ignition must be performed by qualified personnel and must be supervised by a second person responsible for the ignition process.

Observe all other accident-prevention regulations.

Ignite airbag units only in installed, original condition.

Ignite airbags only in suitable, open locations.

Use only the ignition tools intended for this purpose.

Remove all other loose items from the expansion area of the airbag.

Advise all affected personnel in advance of the noise generation.

- Keep safety distance by using the full wire length of the igniting tool.

Connect power source only in the final preparatory step.

Remain in front of the vehicle. This also applies to persons not concerned with this work.

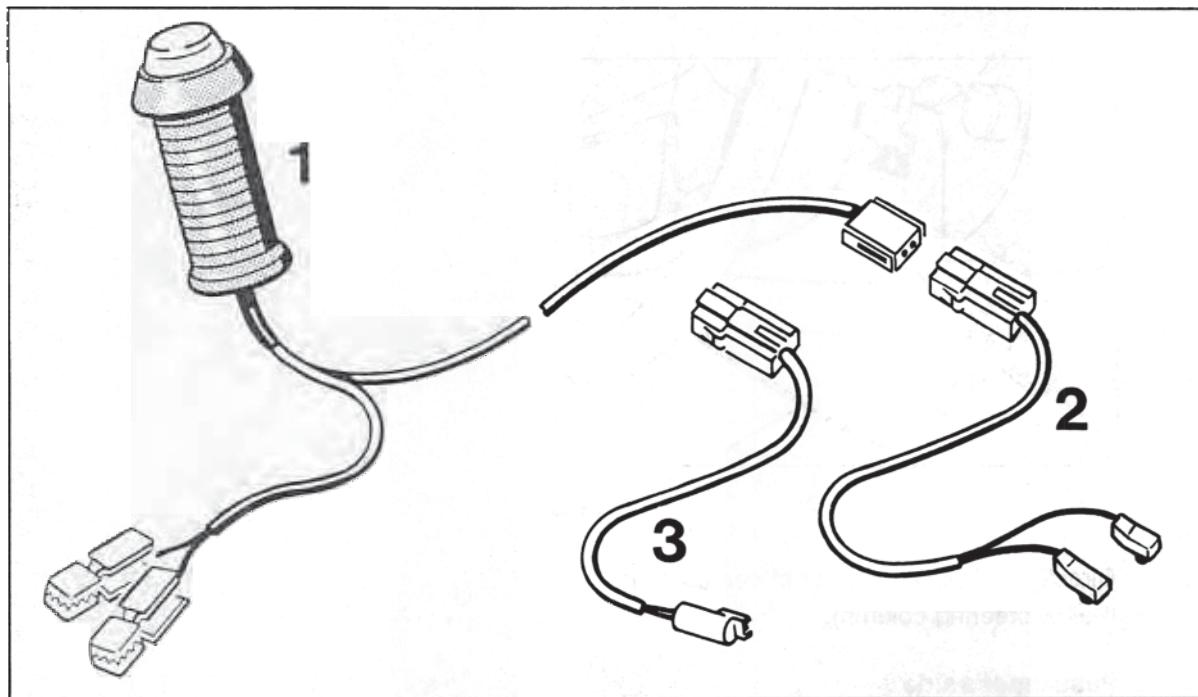
Ignite airbag with doors closed and rear cover or side windows open.

- If the ignition fails, do not approach the vehicle until a certain waiting time (approx. 3 minutes) has elapsed.

Keep an eye on the airbags while they cool off after they have been ignited.

- Avoid skin contact with ignited airbag units.

Tools



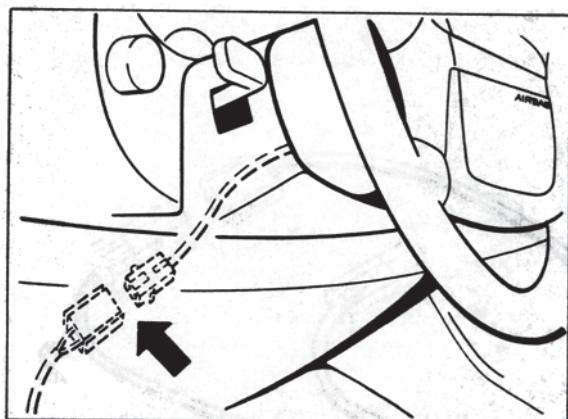
579-68

No.	Operation	Special tools	Order No.	Explanation
1	Ignition device	9257*	000.721.925.70	
2	Ignition lead	9257/1*	000.721.925.71	Consumable part
3	Ignition lead	9567	000.721.956.70	

* Order as required

Connecting ignition tools

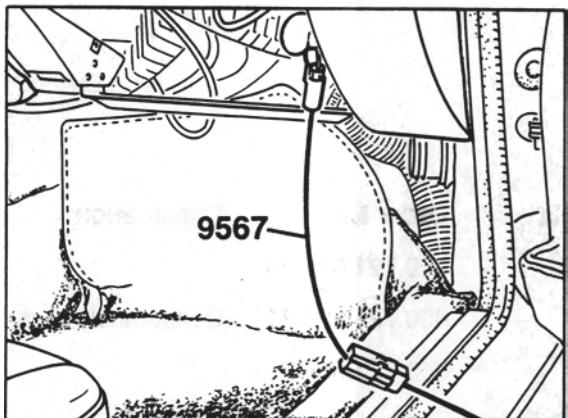
Driver's side



580-68

Directly to 2-pin connector of contact unit
(below steering column).

Passenger's side



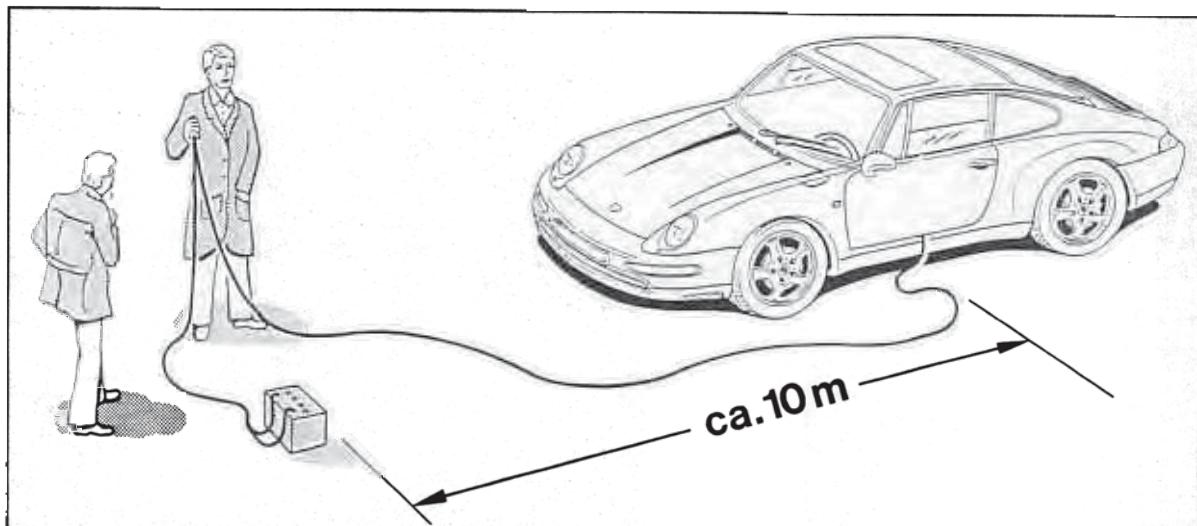
581-68

With ignition cable 9567 to gas generator.

Using the ignition lead, connect to both gas generators.

Route ignition device across door gap and place in front of vehicle.

Ignition



1603 - 68

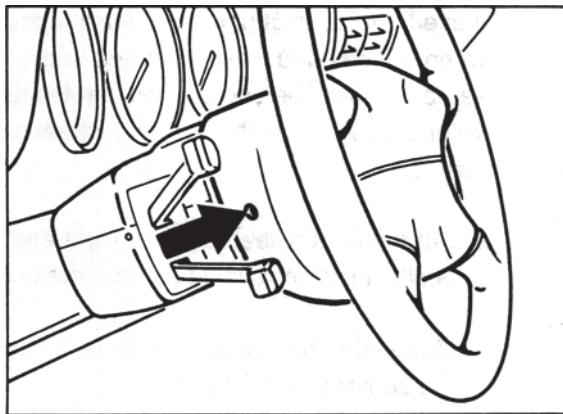
Connect ignition device to a car battery and actuate button.

Note

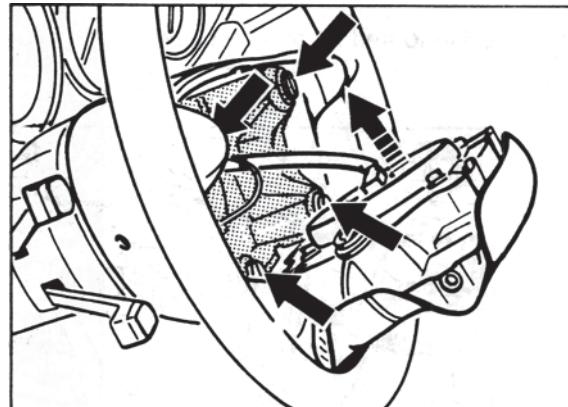
Ignite driver's and passenger's airbags separately.

68 64 19 Removing and installing driver airbag unit

1. Disconnect battery and cover battery or battery terminal, respectively.
2. Undo fastening screws (2 ea.) with a Torx T 30 socket screwdriver.
3. Pull off connector.



1714-68



1715-68

Note

When stowing away the airbag unit, make sure the padded side faces up.

The airbag unit must be stored in a safe place when it remains removed for longer periods. Observe safety precautions.

Tightening torque for fastening screws (two M 6x16 screws): **10 Nm** (7 ftlb.)

Tightening torque for retaining plate (four M 5x20 screws): **5 Nm** (3.5 ftlb.)

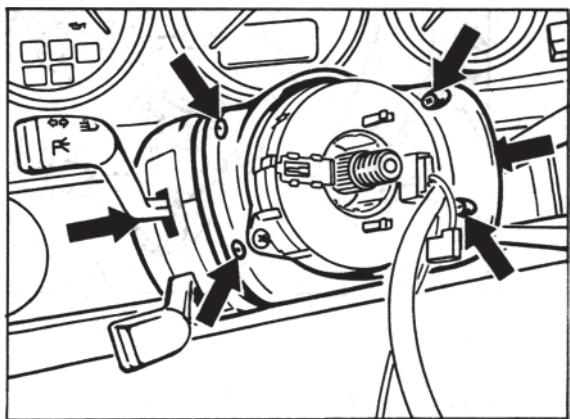
Note

Replace the self-locking nuts whenever they have been released, undoing the retaining plate of the airbag unit (4 screws) in the steering wheel.

68 66 19 Removing and installing contact unit

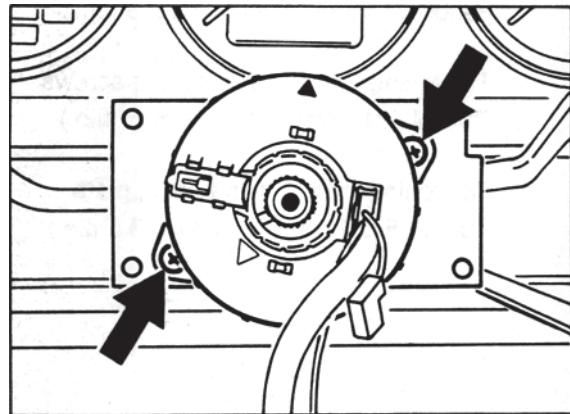
1. Remove airbag steering wheel (refer to page 48 - 5).

2. Undo and lift off trim cover.



1717-68

3. Release contact unit fastening screws.



1721-68

4. Take out heating and air conditioning control with Special Tool V160 and release tie-wraps of connectors.

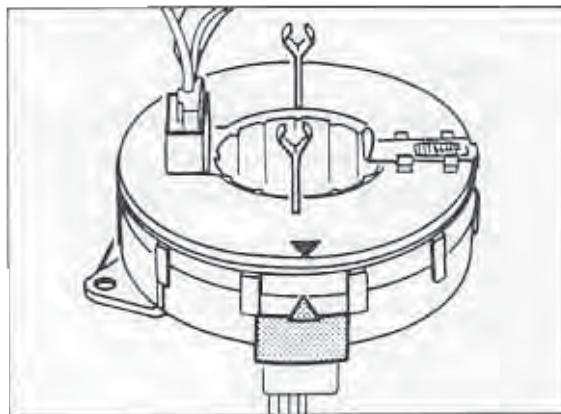
5. Pull out and disconnect connectors. Take off contact unit.

Note

To avoid inadvertent rotation of the contact unit after the steering wheel has been removed, the contact unit locks automatically when the steering wheel is pulled back. In the same manner, the contact unit is released automatically when the steering wheel is installed.

6. Set the front wheel to the straight-ahead position before refitting the contact unit.

7. Make sure the contact unit is kept exactly in the center position (arrows).



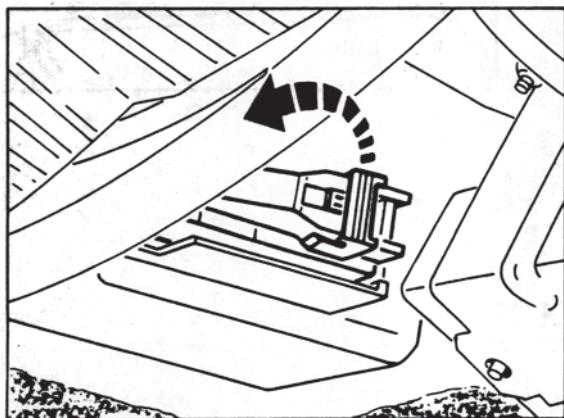
1718-68

68 63 19 Removing and installing airbag triggering unit

Note

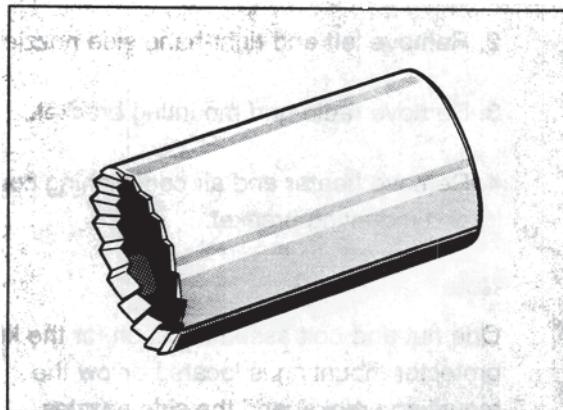
The airbag triggering unit **must not be removed with the connector remaining connected.** When working on the airbag system, allow a **waiting time** of at least **one minute** after switching off the ignition (disconnecting the battery) and removing the connector. The triggering unit is located on the transverse wall above the center console.

1. Disconnect battery and cover terminal or battery.
2. Working from the passenger side, flip clamp open. Pull connector off the triggering unit.



1716-68

3. Undo shear nut with Special Tool 9259.



281-68

4. Working from the driver's side, undo both shear nuts with Special Tool 9259 and take out triggering unit.

Note

The mounting locations on the body panel must be cleaned down to bare metal.

Use 1/4 in. hex socket wrench to tighten the shear nuts.

68 68 19 Removing and installing passenger airbag unit

1. Disconnect battery and cover terminal or battery.
2. Remove left and right-hand side nozzles.
3. Remove radio and mounting bracket.
4. Remove heater and air conditioning control and mounting bracket.

Note

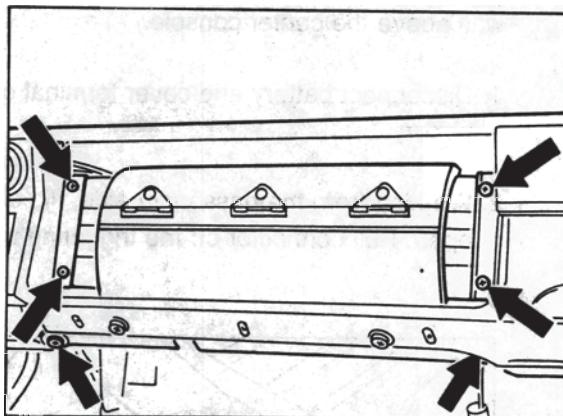
One nut and bolt assembly each for the knee protector mounting is located below the mounting bracket and the side nozzles.

5. Remove ashtray.
6. Remove knee protector. Disconnect plug-in connector of airbag unit.
7. Release lower airbag flap (3 screws).
Release upper airbag cap (4 screws). After releasing the 4 screws, press flap forward and pull out from below (the flap engages into a stay).

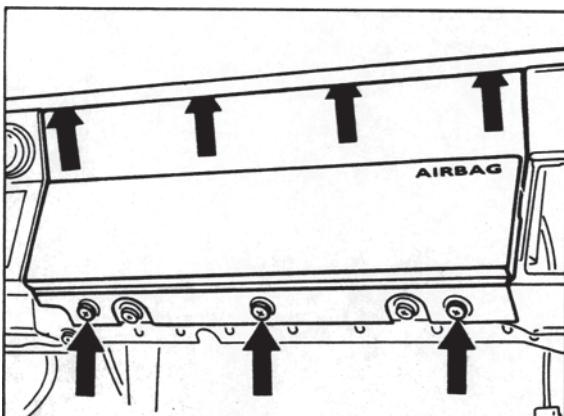
Note

The hex socket head bolts are micro-sealed.
Use new screws when refitting the assembly.
Tightening torque: 6 Nm (4 ftlb.)

8. Release airbag unit and pull out from below.

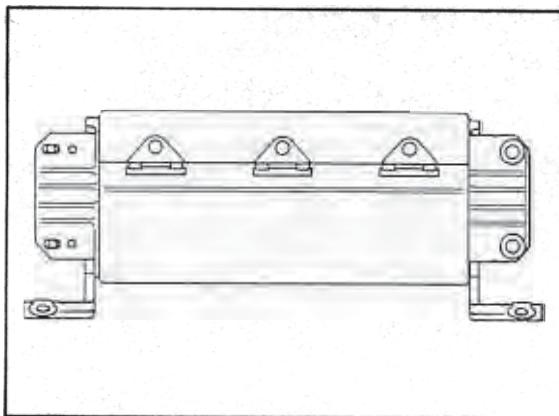


1720-68



1719-68

When stowing away the airbag unit, make sure the airbag opening faces up.



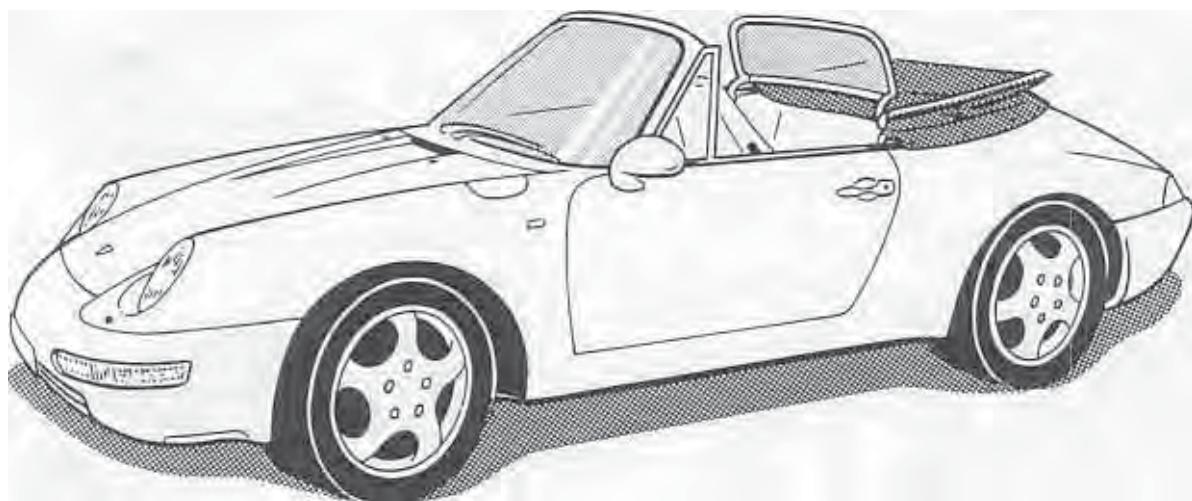
1722-68

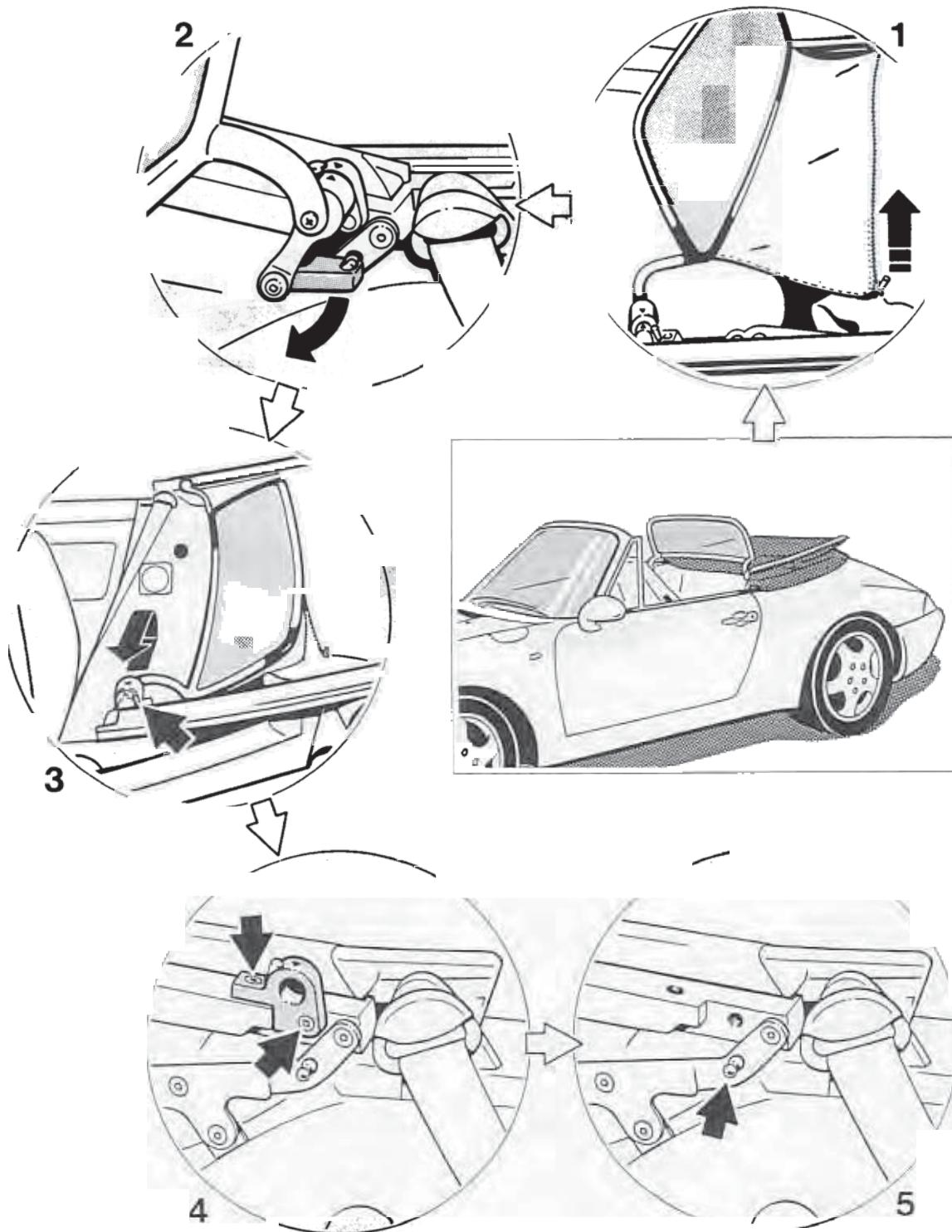
The airbag unit must be stored in a safe place when it remains removed for longer periods. Observe safety precautions.

68**Checking operational readiness of airbag system****1. Functional check of airbag warning**

lamp. Switch on ignition. The airbag script must come on for approx. 3 seconds. If the warning lamp does not come on, check bulb and/or voltage supply.

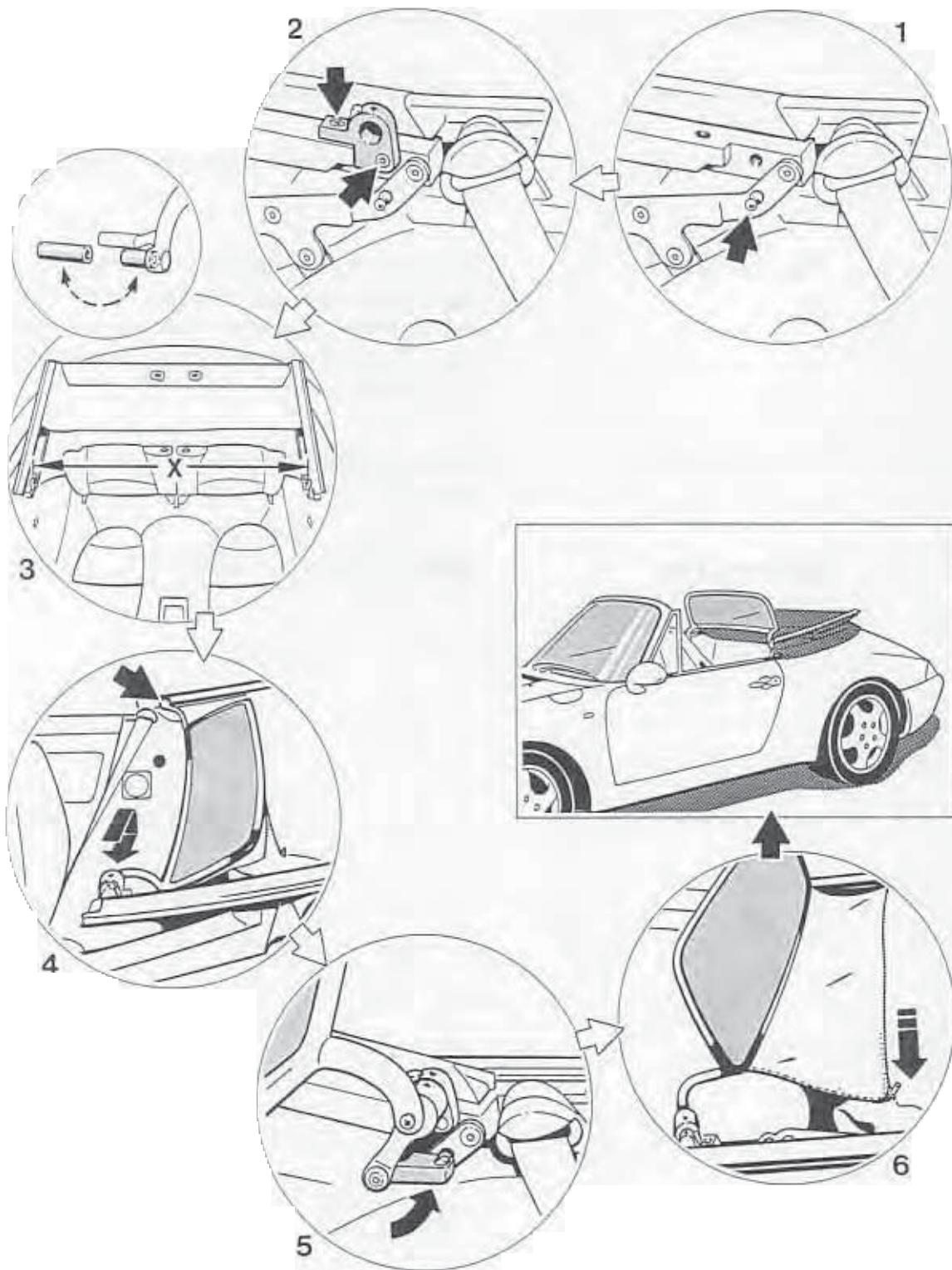
2. Functional check of fault memory. Pull off fuse for voltage supply to clock (fuse No. 18) for approx. 30 seconds with the ignition switched on. The airbag warning lamp must now display a fault. Read out fault and check if fault code 19 (Airbag warning light: Open circuit, fault not present) is displayed.**3. Erase fault memory.****4. Check if no trim parts, decals or other items are attached on the steering wheel and in the area of the passenger airbag.****5. Check components visually for damage and any changes.****6. All checks of the system must be recorded in the stamp areas provided for this purpose in the Warranty and Maintenance brochure.**

68 47 19 Removing and installing Cabriolet draft stop

68 47 19 Removing and installing Cabriolet draft stop**Removing Cabriolet draft stop**

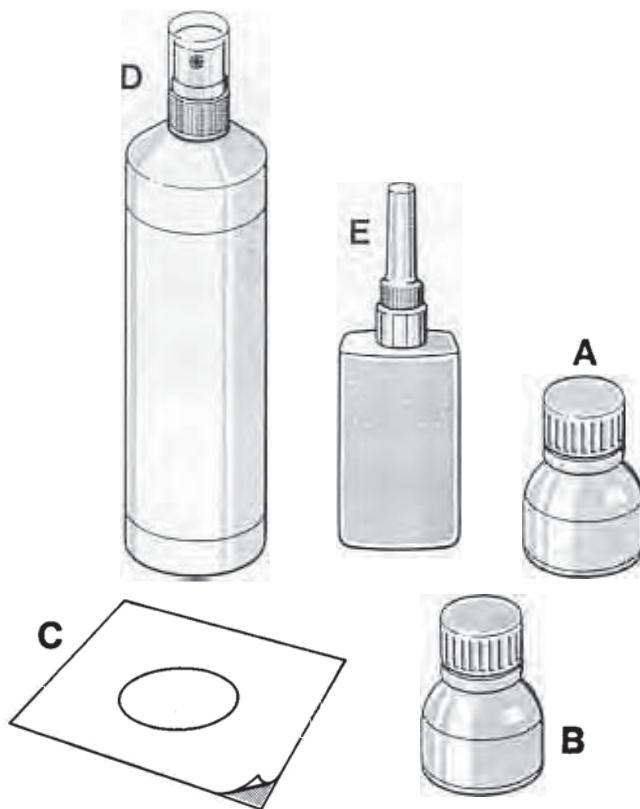
68 47 19 Removing and installing Cabriolet draft stop**Removing Cabriolet draft stop****Open convertible top.**

No.	Operation	Instructions
1	Open zip fastener	Open and disconnect zip fastener of draft stop.
2	Unlatch drag lever	Unlatch the drag lever from the ball joint mounted on the link.
3	Remove draft stop	Swing the draft stop until the red marks on the draft stop and the left mount are opposite each other. Press the red button and press the draft stop out of the left mount. Lift the draft stop slightly at the left and pull it out of the right mount.
4	Remove mounts	Remove the fastening screws of the mounts from the roof frame.
5	Remove ball joint	Unscrew the ball from the link.

68 47 19 Removing and installing Cabriolet draft stop**Installing Cabriolet draft stop**

68 47 19 Removing and installing Cabriolet draft stop**Installing Cabriolet draft stop**

No.	Operation	Instructions
1	Install ball joint	Screw the ball to the link. Tightening torque: 5.6 Nm (4 ftlb.).
2	Install mounts	Position the mounts on the roof frame and screw them to the roof frame using the M 6 x 16 bolts. Tightening torque: 9.7 Nm (7 ftlb.).
3	Replace bushing	If the dimension X between the installation points of the mounts is up to 1002 mm, the short bushing must be screwed to the right side of the draft stop with a Torx screw. If dimension X is above 1002 mm, the long bushing must be installed. Tightening torque: 15 Nm (11 ftlb.).
4	Position draft stop	Insert draft stop first into the right mount then into the left mount. Swing the draft stop until the red marks on the draft stop and the left mount are opposite each other. Snap the draft stop into the left mount; a click must be heard.
5	Latch in drag lever	Swing the draft stop forwards and latch the drag lever into the ball joint mounted on the link.
6	Close zip fastener	Insert the part of the zip fastener installed on the draft stop into the half of a zip fastener on the roof liner and close the zip fastener.

68 27 13 Bonding interior rearview mirror in place**For vehicles with new mirror generation****The following materials are required to bond the complete interior rearview mirror into place:**

1981-68

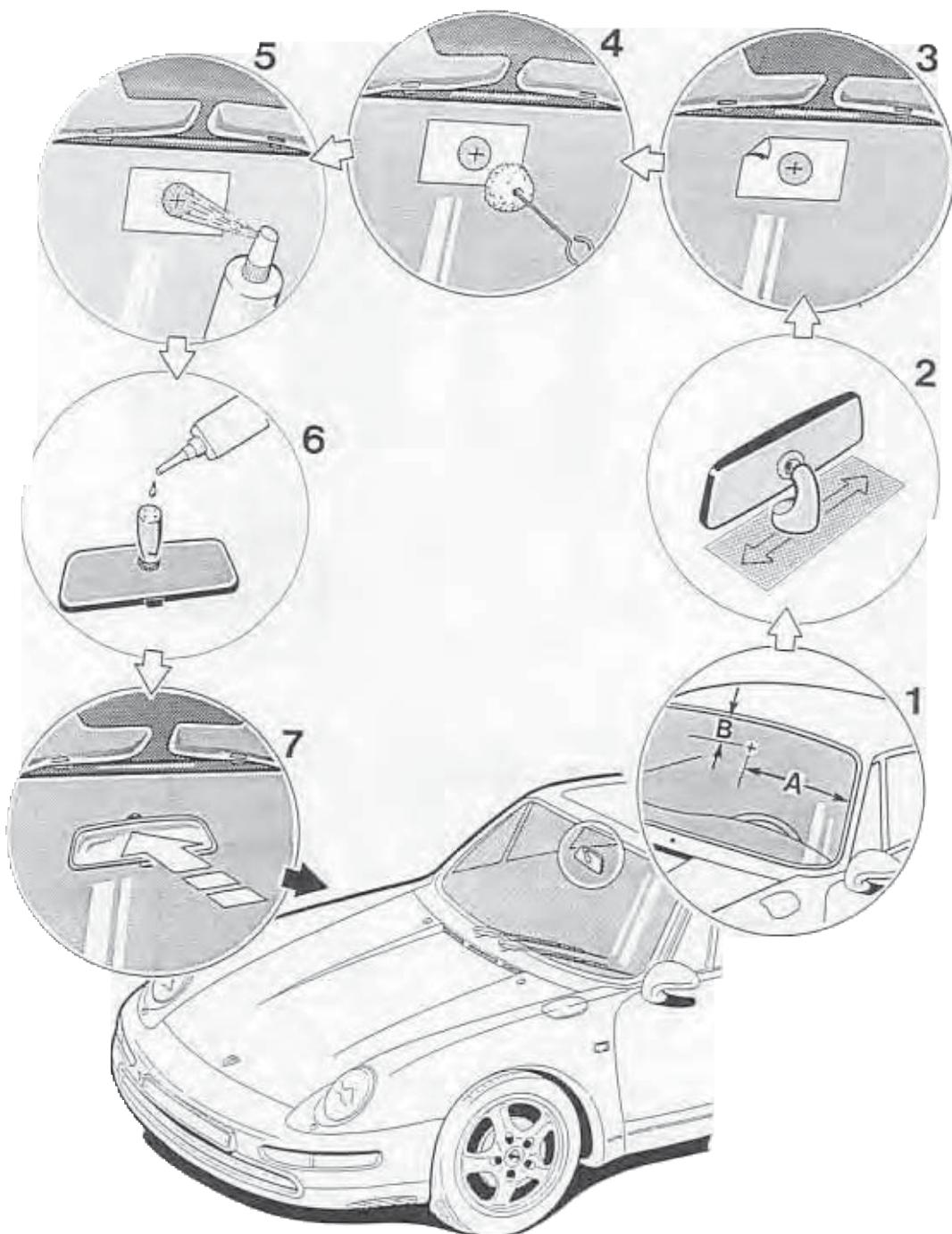
- A** = Cleaning solution (000.043.157.00)*
- B** = Primer (000.043.158.00)*
- C** = Cover sheet (000.043.177.01)*
- D** = Activator (000.043.052.00)*
- E** = Adhesive (000.043.051.00)*

* Porsche Part No.

68 27 13 Bonding interior rearview mirror in place

For vehicles with new mirror generation

Bonding the assembled interior rearview mirror to the windshield



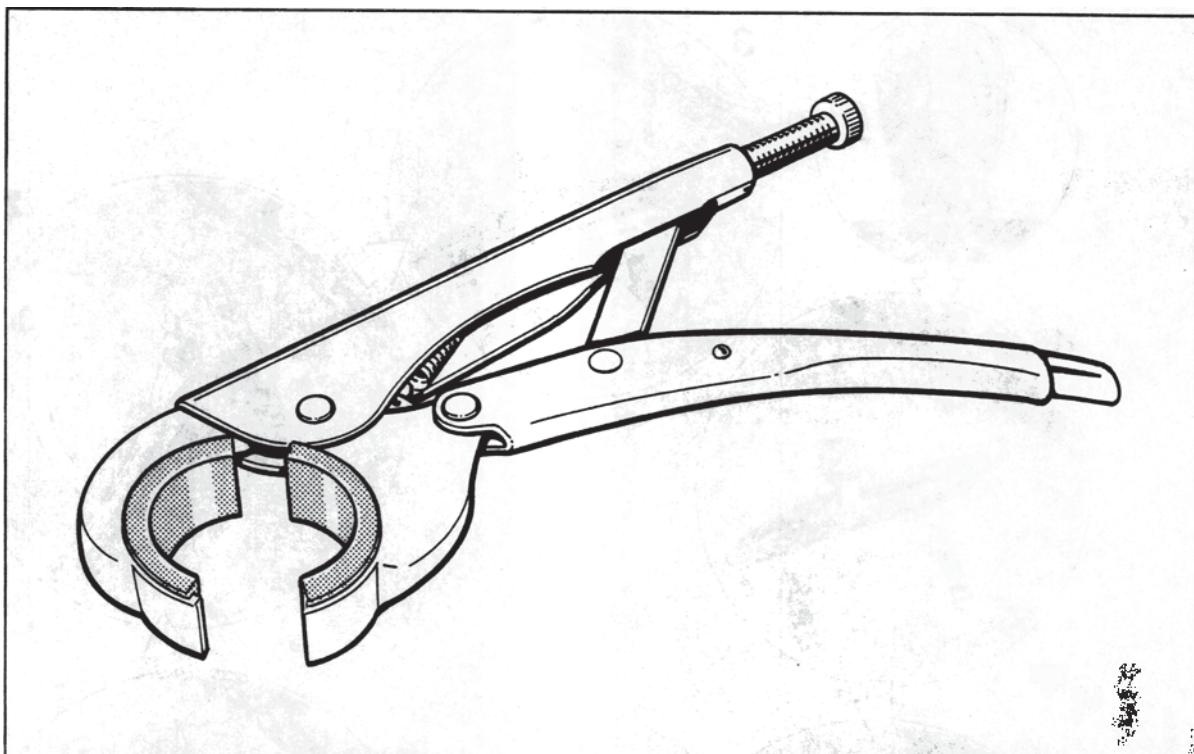
68 27 13 Bonding interior rearview mirror in place**For vehicles with new mirror generation****Bonding the assembled interior rearview mirror to the windshield**

No.	Operation	Instructions
1	Mark position of interior rearview mirror.	Mark position of bonding plate on outside of windshield. Dimension A = 597 mm Dimension B = 145 mm
	Remove adhesive residue.	Using a scraper, mechanically remove adhesive residue from windshield. Using a scraper, mechanically remove adhesive residue from bonding plate of rearview mirror.
2	Sand bonding plate of interior rearview mirror to produce a smooth surface.	Using 100 grit sanding paper, mechanically sand bonding plate of interior rearview mirror.
	Clean bonding plate of interior rearview mirror.	Clean bonding plate of interior rearview mirror using cleaning solution (A) .
	Clean bonding area of windshield.	Clean bonding area on windshield with cleaning solution (A) .
3	Mask off bonding area of windshield.	Mask off bonding area of windshield with primer template (masking sheet C) . The mark indicating the position of the interior rearview mirror must be visible in the center of the primer template.
4	Apply primer to bonding area of windshield.	Apply a thin, even coat of primer (B) to masked bonding area of windshield.
	Caution: Allow to flash off for 15 to 20 minutes!	

No.	Operation	Instructions
5	Activate bonding area on windshield.	Spray bonding area of windshield with activator (D) .
Caution: Allow to flash off for 2 minutes!		
Remove primer template.		
6	Apply adhesive to bonding plate of mirror.	Apply a drop of adhesive (E) to bonding plate of interior rearview mirror.
7	Bond interior rearview mirror in place.	Press interior rearview mirror with bonding plate onto primed and activated area on windshield.
Note: Press in place for approx. 40 – 50 seconds!		
Note:		
Bonding strength		
60 % after 1 hour		
100 % after 24 hours		

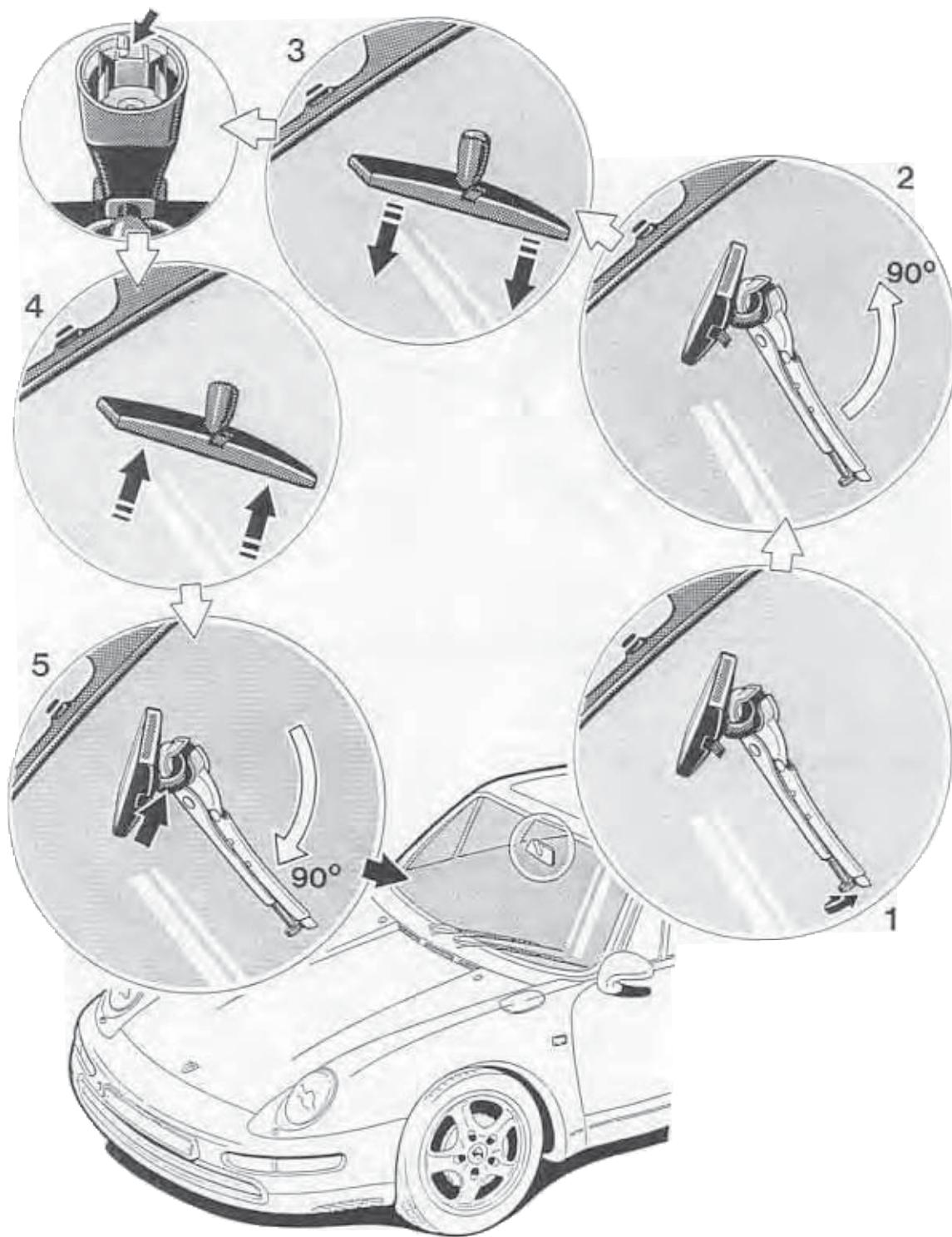
68 27 19 Removing and installing inside rear view mirror

The following special tool is required for removing and installing the inside rear view mirror:



2056 - 68

A = pliers (special tool 9578)

Removing and installing inside rear view mirror

Removing and installing inside rear view mirror

Removing inside rear view mirror

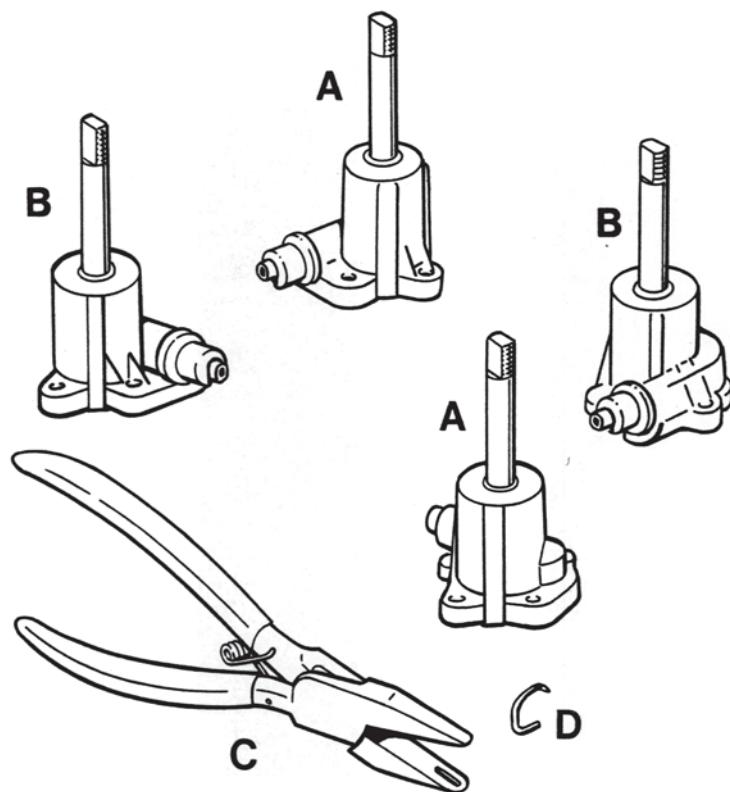
No.	Operation	Instructions
1	Fix pliers in position	Set pliers to diameter of mirror foot and attach pliers to foot of mirror with projecting plastic parts facing windshield.
2	Loosen mirror	Turn foot of inside rear view mirror 90° using pliers (special tool 9578). Remove pliers from foot of mirror.
3	Remove mirror	Unclip foot of inside rear view mirror from retaining plate on windshield. After removal of the inside rear view mirror from its foot, the small aluminium chip in the locking area must be removed as otherwise it might not be possible to seat the mirror securely when it is fitted. If fitting for the second or third time, check the locking area of the mirror foot for wear and replace the mirror if necessary.

Installing inside rear view mirror

No.	Operation	Instructions
4	Insert mirror	Clip foot of inside rear view mirror, turned 90°, into retaining plate on windshield.
5	Fix mirror in position	Attach pliers (special tool 9578) to foot of mirror with projecting plastic parts facing windshield. Turn the foot of the mirror 90° using the pliers. The mirror must not be turned beyond the locking point. Remove pliers from foot of mirror.

72 81 19 Removing and installing seat lift units

The following spare parts and special tools are required for removing and installing the seat lift units.



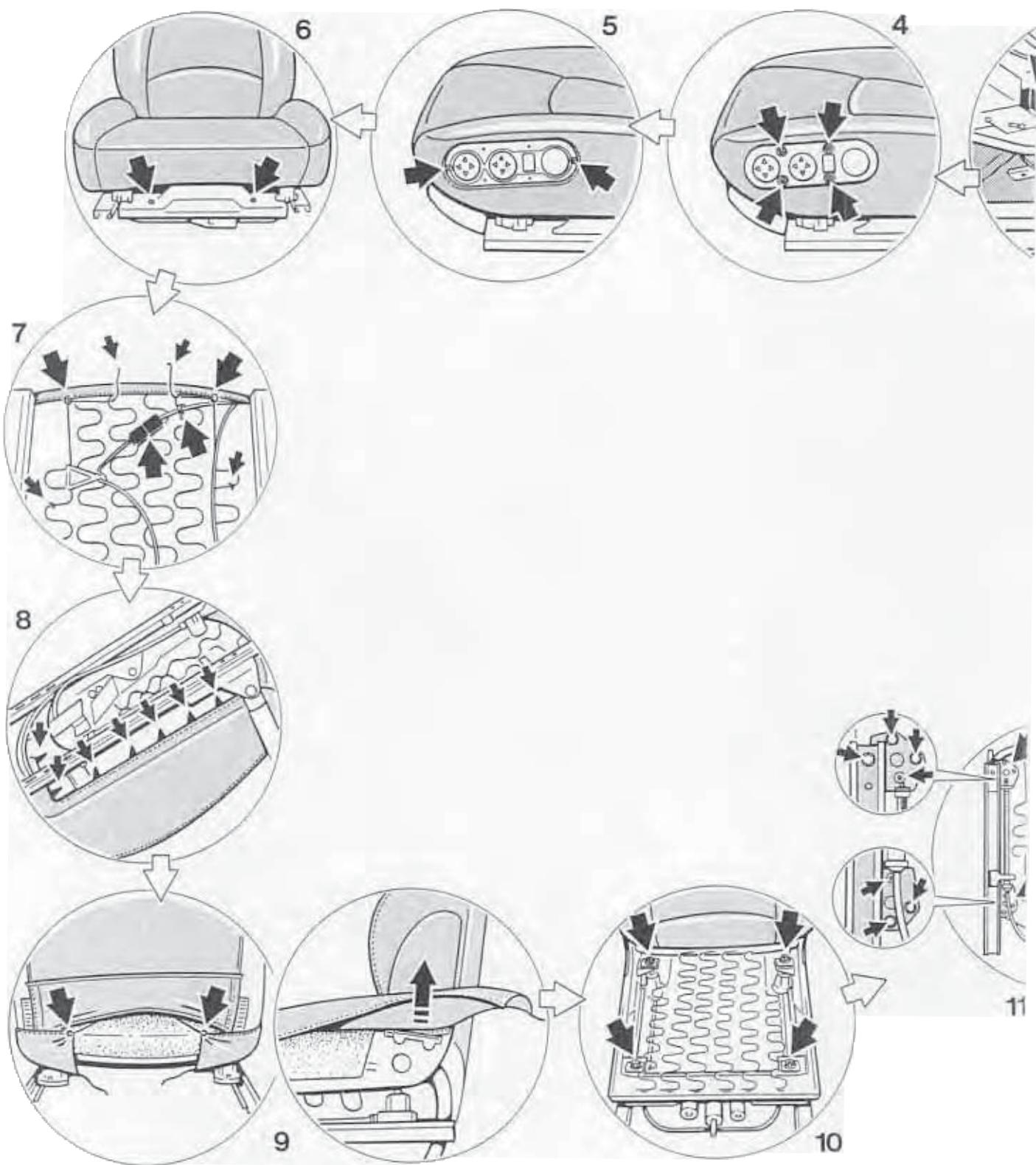
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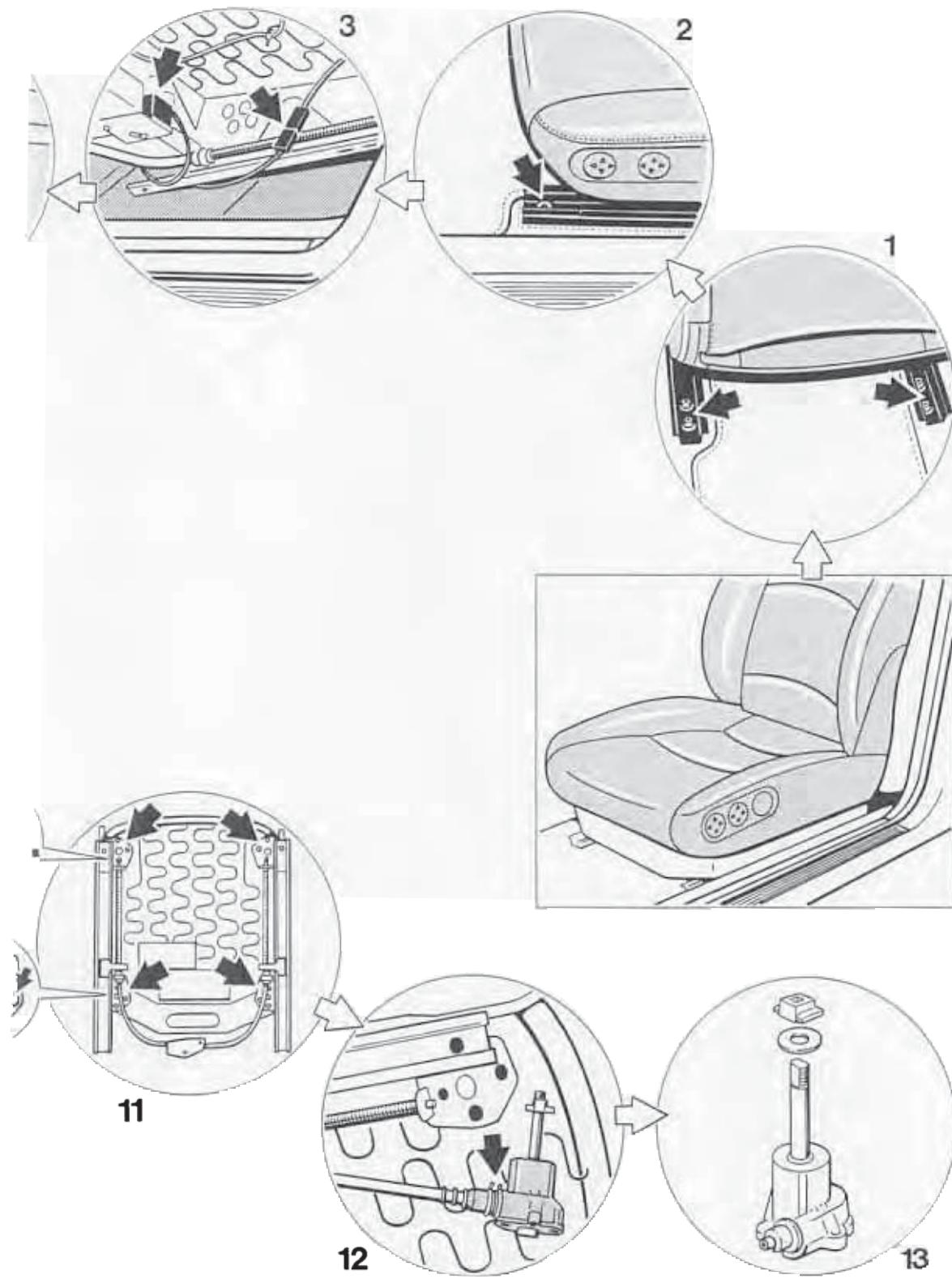
A = front left and rear right lift unit

B = front right and rear left lift unit

C = upholstery clip pliers

D = upholstery clip

Removing seat and lift units

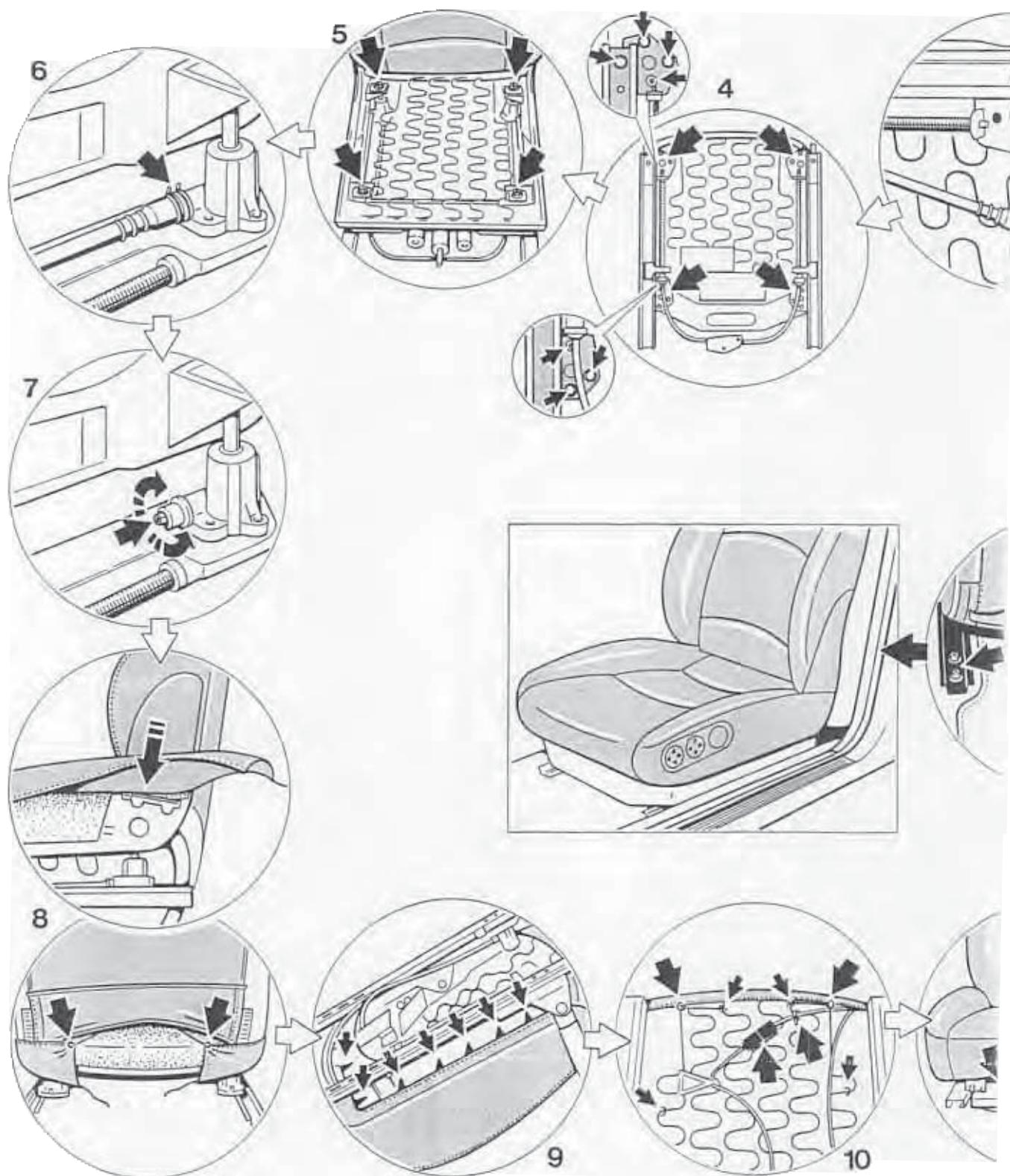


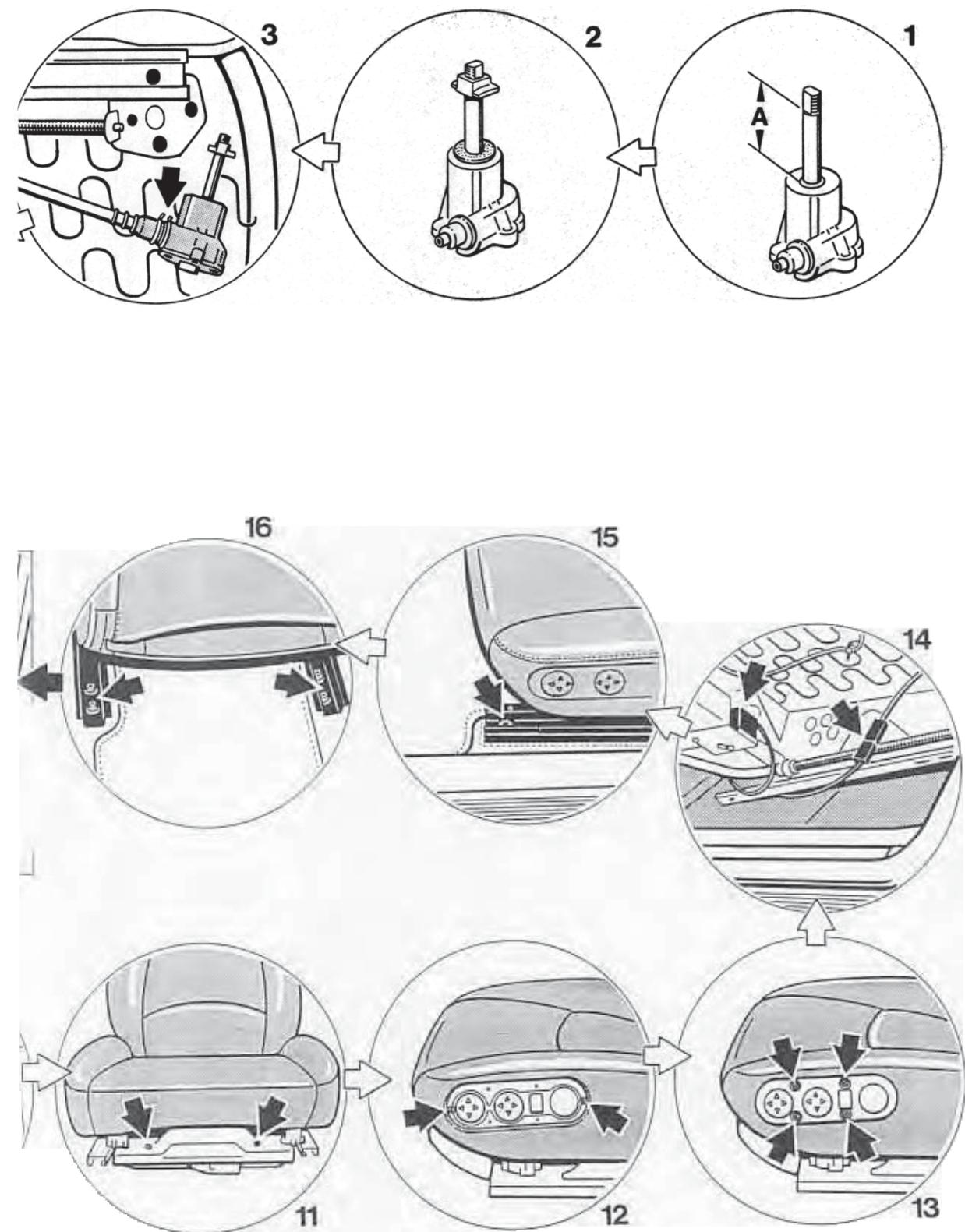
Removing seat and lift units

No.	Operation	Instructions
	Remove rear mounting screws.	Move the seat forward up to the stop and unscrew the rear mounting screws.
2	Remove front mounting screws.	Move the seat back up to the stop and unscrew the front mounting screws.
3	Disconnect wiring.	Lift the seat slightly and unplug the connectors. Remove the seat from the vehicle.
4	Remove switch cover.	Unscrew the mounting screws of the switch cover.
5	Remove switch console.	Unscrew the mounting screws of the switch console.
6	Remove motor cover.	Using a cross-head screwdriver, unscrew the mounting screws of the cover for the motors.
7	Disconnect upholstery clips, tensioner wire, tie wraps and electrical connections.	Cut the upholstery clips and tie wraps open on the underside of the seat using secateurs. Unplug the seat heating connector. Disconnect the tensioner wire from the seat frame.
8	Bend metal lugs open.	Bend open the metal lugs on the seat frame and unhook the seat cover.
9	Disconnect upholstery clips and seat cover.	Cut the upholstery clips between the foam upholstery and the cover open using secateurs. Unclip the card-board guide on the seat cover from the seat frame and remove the seat cover with the foam part from the seat frame.

No.	Operation	Instructions
10	Disconnect lift units at top.	Unscrew the top mounting nuts of the lift units and take off the guide spring.
11	Disconnect lift units at bottom.	Unscrew the bottom mounting screws of the lift units from the seat rails and remove the lift units between the seat rail and the seat frame.
12	Remove lift unit from drive shafts.	Unclip special spring (retaining spring) between lift unit and drive shaft. Pull lift unit off drive shaft.
13	Remove slides and washers.	Remove the slides and washers from the spindles of the lift units.

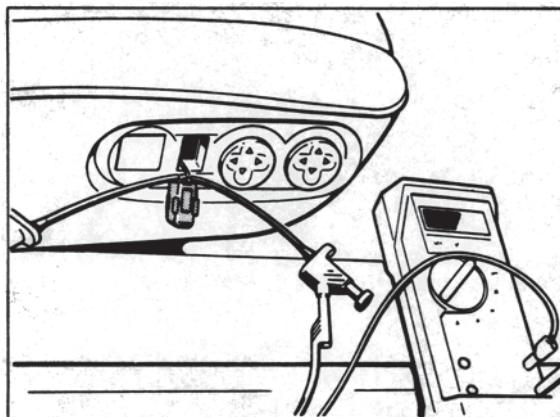
Removing seat and lift units





74 28 01 Checking seat heater

1. Remove switch cover (4 screws).
2. Disengage seat heater switch and pull out switch (take care not to damage the wire).
3. Switch on ignition.
4. Connect voltmeter to term. 1 (positive) and term. 2 (negative).



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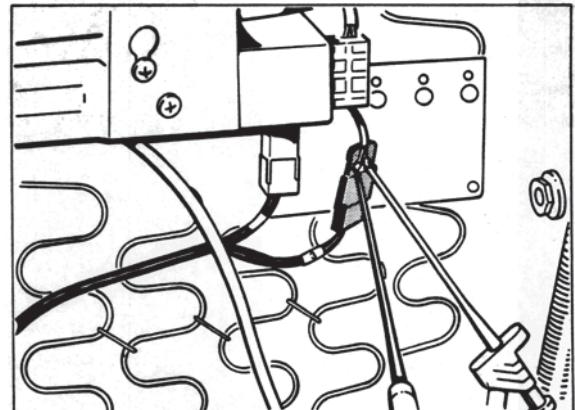
Display: approx. 5 V

Note

If no voltage is displayed, check power supply according to wiring diagram.

5. Connect voltmeter to term. 2 (negative) and term. 3 (positive).
Display (depending on potentiometer setting): approx. 2 - 3 V
6. Push button into "on" position and keep it in this position.
Display: approx. 5 V

7. Push button into "off" position and keep it in this position.
Display: approx. 0 V
8. Turn knurled wheel of potentiometer all the way up.
Display: approx. 3 V
9. Turn knurled wheel of potentiometer all the way down. The voltage must then drop to approx. 2 V.
10. Remove seat and connect to Special Tool 9269.
11. Switch on seat heater and set to maximum heating output.
12. Measure voltage at 2-pin connector marked with digit 3.



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When the seat heater is switched on, the voltage oscillates between 0 V and approx. 12 V (clocked voltage).

Checking resistance of heater elements**Note**

Use a digital ohmmeter for the measurements.

1. Disconnect connector marked with digit 3.

2. Zero out ohmmeter.

3. Connect ohmmeter on pin side.

Display at 20° C ambient temperature:

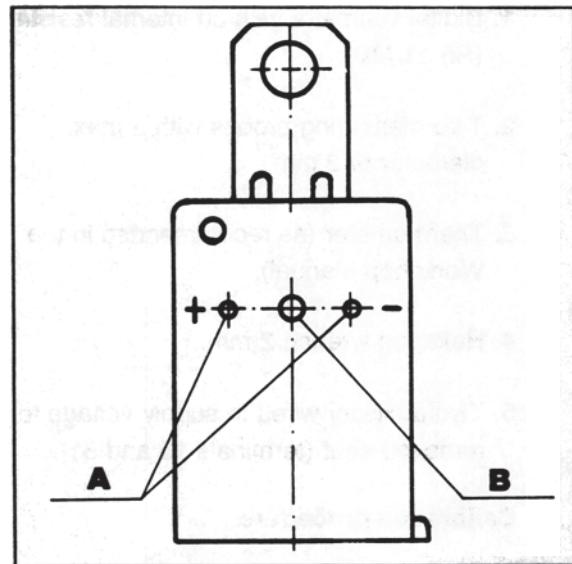
1.5 - 1.8 Ω

74 27 15 Calibrating controllable seat heater**Control unit****Note**

The seat heater must be calibrated after the control unit or the heating elements have been replaced.

Installation position

At the bottom of the seat

*Control unit for seat heater*

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A - Measuring points (V)

B - Calibration potentiometer

Tools

1. Digital voltmeter with an internal resistance (R_i) $\geq 1 \text{ M}\Omega$.
2. Two measuring probes with a max. diameter of 2 mm.
3. Thermometer (as recommended in the Workshop Manual).
4. Hexagon wrench 2 mm.
5. Two auxiliary wires to supply voltage to the removed seat (terminals 15 and 31).

Table

	Ambient temperature in °C	Voltage in V
0	1.50	
2	1.55	
4	1.60	
6	1.65	
8	1.70	
10	1.75	
12	1.80	
14	1.85	
16	1.90	
18	1.95	

Calibration procedure

1. Store the seat to be calibrated in the working area until it has assumed the ambient temperature.

20	2.00
22	2.05
24	2.10
26	2.15
28	2.20

2. Provide power supply.

30	2.25
32	2.30
34	2.35
36	2.40
38	2.45

Note

Do not switch on the seat heater. If switched on unintentionally, the seat must cool down until the heating elements have again adopted the ambient temperature.

40	2.50
42	2.55
44	2.60
46	2.65
48	2.70

3. Measure ambient temperature and refer to the table for the relevant voltage value.

32	2.30
34	2.35
36	2.40
38	2.45

4. Connect voltmeter to control unit (A).

40	2.50
42	2.55
44	2.60
46	2.65
48	2.70

5. Set the voltage value on the calibration potentiometer (B) so that it corresponds to the value appropriate for the ambient temperature.

Functional check

Switch on seat heater for approx. 10 sec. with maximum heating power. After switching off, measure the voltage at the control unit. The measurement must now be considerably higher.

Installing lift units and seat

No.	Operation	Instructions
1	Adjusting lift units	The spindles of the lift units must be adjusted so that dimension A measured from the head of the unit to the grooves in the spindles is 40 mm .
2	Position washers and slides.	Push the washers and slides onto the spindles of the lift units.
3	Attach lift units to drive shafts.	Push the lift units onto the drive shafts and clip the special springs (retaining springs) into position between the lift units and drive shafts.
4	Attach lift units to bottom mounts.	Push the lift units in between the seat rails and the seat frame. Attach the lift units to the seat rails using the M 6 x 16 hexagonal head self-locking bolts. Tightening torque: 12 Nm (9 ftlb) . Attach the lift units to the seat rails using the M 6 x 16 pan head screws – and bond them using Loctite 270 –. Tightening torque: 8 Nm (6 ftlb) . Caution: At the front, the motor mount must be screwed into place with the same screws.
5	Attach lift units to top mounts.	Place the guide springs on the slides of the spindles. Bond the mounting nuts with Loctite 270 and screw them onto the spindles of the lift units. Tightening torque: 11 Nm (8 ftlb) .
6	Test functions of lifting units.	To test the functions of the lift units, install the seat in the vehicle without upholstery or cover. If the lift units stop at different levels at bottom right and left, unclip the special spring (retaining spring) and remove the drive shaft.

No.	Operation	Instructions
7	Adjust lift units.	Set the lift unit which lags behind to stop at the same position as the other unit using a rectangular wrench or screwdriver. Push the drive shaft back into position and clip the retaining spring on. Remove the seat from the vehicle again.
8	Install foam upholstery with cover.	Place the cover with foam section in the seat frame. Hook the cardboard guide back into the seat frame. Fasten the cover to the foam section at the back using upholstery clips.
9	Hook in seat cover.	Hook the seat cover to the metal lugs at the bottom of the seat frame and bend the lugs inwards.
10	Attach cover, upholstery and wiring.	Attach the seat cover and the foam section to the seat frame using upholstery clips. Tension the tension wire and attach it to the seat frame. Plug in the electrical connector and attach the cable to the seat frame using tie wraps.
11	Install motor cover.	Attach the motor cover to the seat frame using sheet metal screws and washers.
12	Install switch console.	Push the seat cover under the switch console and attach the switch console to the seat frame using countersunk sheet metal screws.
13	Install switch cover.	Fit switch cover to switch console and fix it in place with sheet metal screws and washers.
14	Plug in connectors.	Place the seat in the vehicle, lift it slightly and plug in the electrical connector.
15	Position seat on seat rail mount at the front.	Place the seat on the seat rail mount at the front and align the bolt holes at the front correctly. Position the bolts and washers at the front.

No.	Operation	Instructions
16	Position seat on seat rail mount at the rear. Screw seat into place at front and rear.	Move the seat up to the stop at the front and align the bolt holes correctly at the rear. Position the rear bolts with washers and tighten them. Move the seat to the back and tighten the mounting screws at the front. Tightening torque at front and rear: 23 Nm (17 ftlb)