Aufbau
Body
Carrosserie
Carrozzeria

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BODY CHANGES - FROM 1972 MODEL

Beginning with 1972 models, the following body and trim changes were made.

Body

1. The shape of the rear seat sheetmetal and upper rear wall has been changed. They are the same shape for both Coupe and Targa models.
2. Rear crossmember moved forward; has modified shockabsorber cavities.
3. The rear seats were reshaped. The seat backs are positioned further to the rear.
4. Rocker panel and fender well provided with connecting points for oil tank and oil lines (911 S).
5. Rear torsion bar tubes provided with water drain holes.
6. Right rear fender with oil filler lid.
7. Muffling portion of heater pipe shortened 50 mm as of October, 1971.
   As a result, the forward heating duct has been extended.
8. Inside area of door still galvanized.

Changes in Type 911 S

Rocker panels provided with supports for externally located oil lines, right fender well does not have oil line openings.
Engine compartment lid and bumper center section made of steel sheetmetal.
Front spoiler for Type 911 S (optional for other models).

Trim

1. Lettering, type identification, air inlet grille, and seat recliners in dull black finish.
2. Same basic trim for 911 T and 911 E.
3. Leatherette used on the instrument panel and seats (new leather-grained material).
4. Self-sealing clips in the door panel.
5. Door locks with vertically-positioned key slots.
6. Improved inside mirror attachment.
7. Seat belt mounting points in door lock posts dropped 90 mm lower in Coupe models beginning with November 1971.
8. Targa moulding strip, depressed in the area of roof lock pawls.
9. Tubular crossmember under instrument panel discontinued (Targa).
10. New color numbering code in paint nomenclature plate; paints are tested according to VW standards.

BODY CHANGES EFFECTIVE WITH 1973 MODELS

Doors

Modified door lock and striker plate can be replaced.

New type door hinges which are attached to the hinge post with interference pins instead of previously used rivets. The hinges can be installed in doors of older version by filing the bolt holes slightly.

Seats

1973-models are equipped with sport seats that are provided with double rail locks as of Sep-72.

Body Shell

Oil tank under right rear fender repositioned rearward.

Fender without filler neck lid.

Exterior

Black front horn grill.

Front bumpers in Type 911 E and 911 S vehicles equipped with spoiler.

Reinforced front and rear bumpers.

Front and rear bumper horns of energy absorbing material effective with Sep-1-72 production.

BODY CHANGES EFFECTIVE WITH 1974 MODELS

The following body changes were effective with the 1974 models.

Body:

1. New transverse lock panel in front with lid lock cover, as well as brackets for car jack and roof top.
2. Tank support modified for 80-liter tank (standard).
3. Battery support on left side for 66 or 88 Ah battery.
4. Front wheelhouse panels without battery compartments. Strong support plates for deformation tubes or hydraulic dampers along the front and rear wheelhouse panels.
5. New seat rails (with forward inclination).
6. Instrument panel with changed switch receptacles, as well as side-vent outlets.
7. Shorter front lid with new lid lock.
8. New front fenders with changed headlamp compartments. Large windshield washer reservoir under the left front fender, with filler neck within the fuel filler compartment.
9. Rocker panel covers with protective strip.
10. Aluminum bumpers with side boots and separate skirts, with rubber bumper guards in rear.
11. New towing hooks in front and rear.
12. Seat belt anchorages along side members and center tunnel.

Appointments:

1. Foam-padded instrument panel with adjustable side vents and changed glove compartment door.
2. New door trim, door weatherstrip, and door handles.
3. Seats with integrated head restraints.
4. Targa with solid roof top (fiberglass). Folding roof (optional) with central anchorage in rear.
5. Rear panel with reflectors and PORSCHE lettering.
6. Seat belts with automatic action.
7. Rear side window not operable in Type 911.
8. Front directional signals mounted in the bumper.
9. Black ornamentation for Carrera (instead of chrome).
10. New paint finish colors.

FRONT SPOILER - TYPE 911 S

Beginning with 1972 models, Type 911 S vehicles are furnished with a front spoiler-type bumper as standard equipment. This modification results in increased stability at high speed.

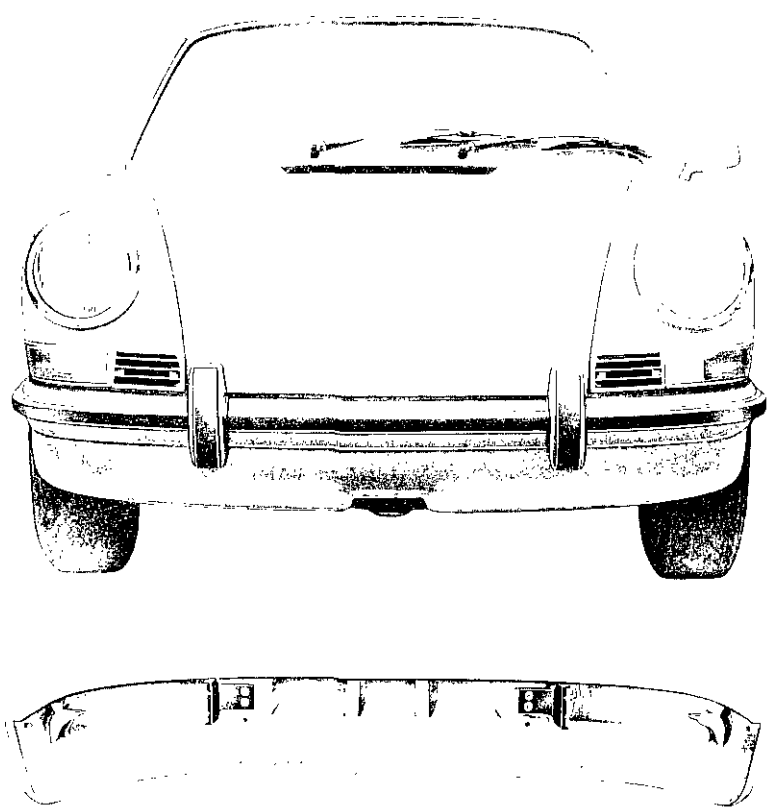
Initially made of fiberglass, these spoiler-type bumpers are made of steel sheetmetal from

chassis #	911 230 0385	-	Coupe
	911 231 0231	-	Targa

The steel spoiler-type bumper can be optionally equipped with overrider horns.

NOTE

The spoiler-type bumper can be installed in all vehicles from 1969 models on without further modifications.



Steel spoiler-type bumper with bumper supports

REMOVING AND INSTALLING USA - TYPE BUMPERS

General

Beginning with the 1973 models, all vehicles exported to the USA are equipped with bumpers with energy-absorbing rubber bumper horns in front and rear, and reinforced bumper brackets. The bumper horns deform under heavy impact. Additional rubber supports are mounted on the rear bumper horn brackets to further support the bumper center section and upper part of bumper horns against the rear transverse member.

Removing Front Bumper

1. Detach bumper from fender sides; detach electrical wires if additional lamps are installed.

2. Detach bumper brackets from body (ahead of the battery compartments). Remove bumper.

   NOTE:
   In vehicles equipped with air conditioning, it will be necessary to detach impact protection bars from the suspension control arm attaching points.

Disassembling Bumper

1. Unscrew bumper brackets (M 8 nuts nd Allen bolts).

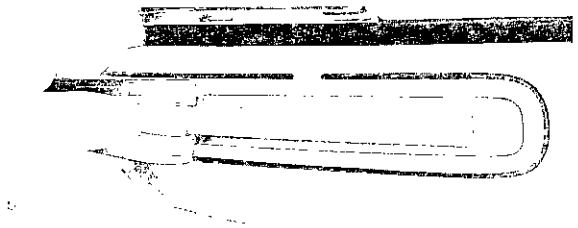
2. Detach bumper horns.

3. Remove bumper trim strip.

4. Pull weather seal off bottom edge of fender and the lock transverse panel.

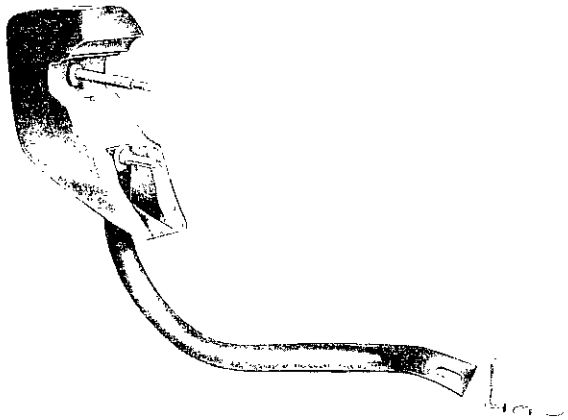
Reassembling Bumper

1. Insert weather seal into front lock transverse panel, glue it in at the fenders.



2. Install bumper trim strip (911 T).

NOTE:
Trim strip containing a rubber liner should be installed by first securing the supporting strip to the bumper, then pressing and attaching one end of the rubber strip, and finally bending the rubber strip sides over and sliding it onto the supporting strip.



3. Install bumper horns.

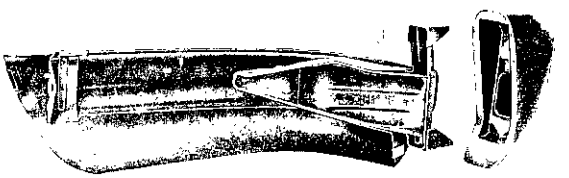
NOTE:
If impact protection bars for the air conditioning system are to be installed, it will be necessary to first make an opening in the horn bottom through which the bar will pass for attachment to the horn, as shown in the illustration. The other end of the bars is later secured to the outer control arm mounting points.

Removing Rear Bumper

1. Detach bumper outer sections from support pipe and bumper bracket sides.

2. Detach bumper brackets from the longitudinal members and remove complete bumper assembly.

3. Remove rubber spacers from the brackets.



Outer section of bumper with reinforced bracket, rubber spacer, and rubber bumper horn.

Disassembling Bumper

1. Pull weather seal off center panel and bottom edge of fender.

2. Remove cover plugs from the bumper horns, unscrew Allen bolts, and take bumper horns off.

3. Remove sheetmetal screws connecting outer and center sections.

4. Remove trim strip, reflectors, and end plates from bumper outer sections.

Reassembling Bumper

NOTE:
When installing bumpers which were disassembled for painting, it is best to reassemble the parts off the vehicle and then mounting the entire bumper assembly in its place. If the disassembly involved repairs, it will be necessary to first fit the bumper outer sections on the car, making sure that they fit flush with the fenders and tail lamp assemblies, as well as being parallel to the fender bottom edge.

1. Glue weather seals to the bottom of the fenders.

2. Install reflectors, trim strips, and end plates in outer sections.

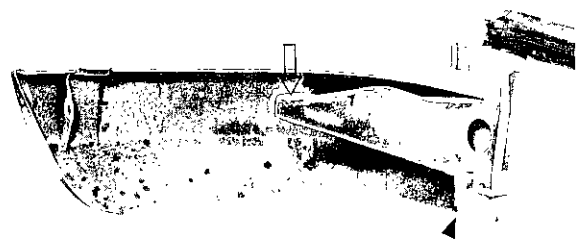
3. Slide sealing strip into center section and glue weather seal in place.

4. Place center piece onto the outer section brackets and lightly fasten at the bottom with sheetmetal screws and nuts.

5. Insert bumper horns and secure with Allen bolts.
   Place rubber spacers onto brackets.

6. Attach bumper to longitudinal members, securing it by the brackets.

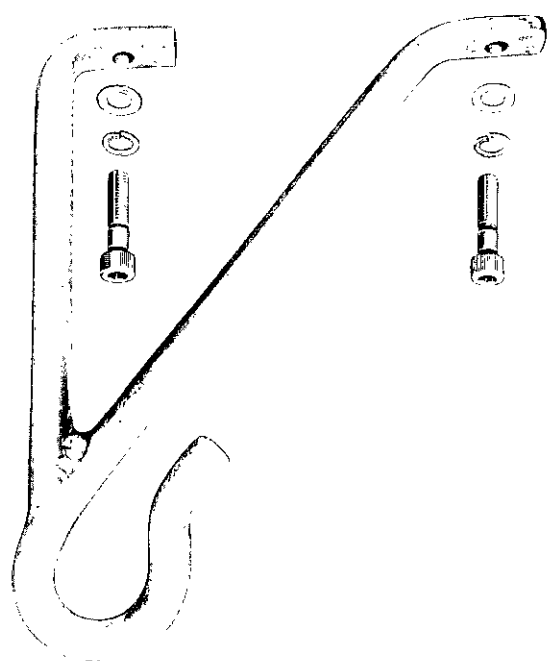
NOTE:
If the rear part of the bumper does not press against the weather seal in the fender, that distance must be reduced by inserting spacers between the bracket and longitudinal members, at the front bolt.



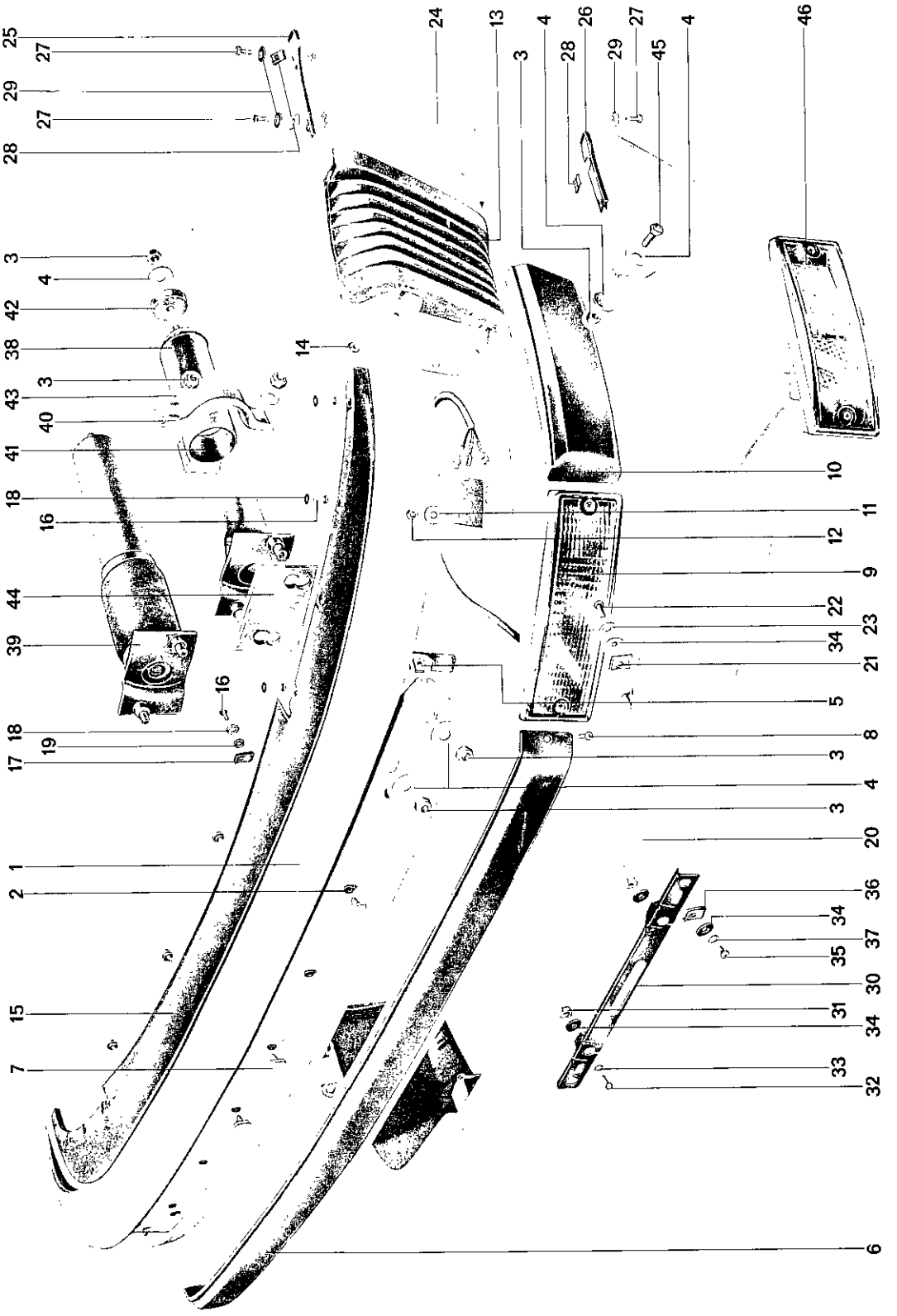
7. Attach bumper outer sections to support tubes and fender brackets.

8. Adjust distance between outer sections and center part by means of washers and tighten sheetmetal screws.

NOTE:
A tow hook can be installed on the right side only, in the direction of travel, by fastening it to the longitudinal member together with the bumper bracket. Allen bolts 8 x 35 mm, washers, and spring washers should be used for this purpose.



FRONT BUMPERS EFFECTIVE WITH 1974 MODELS

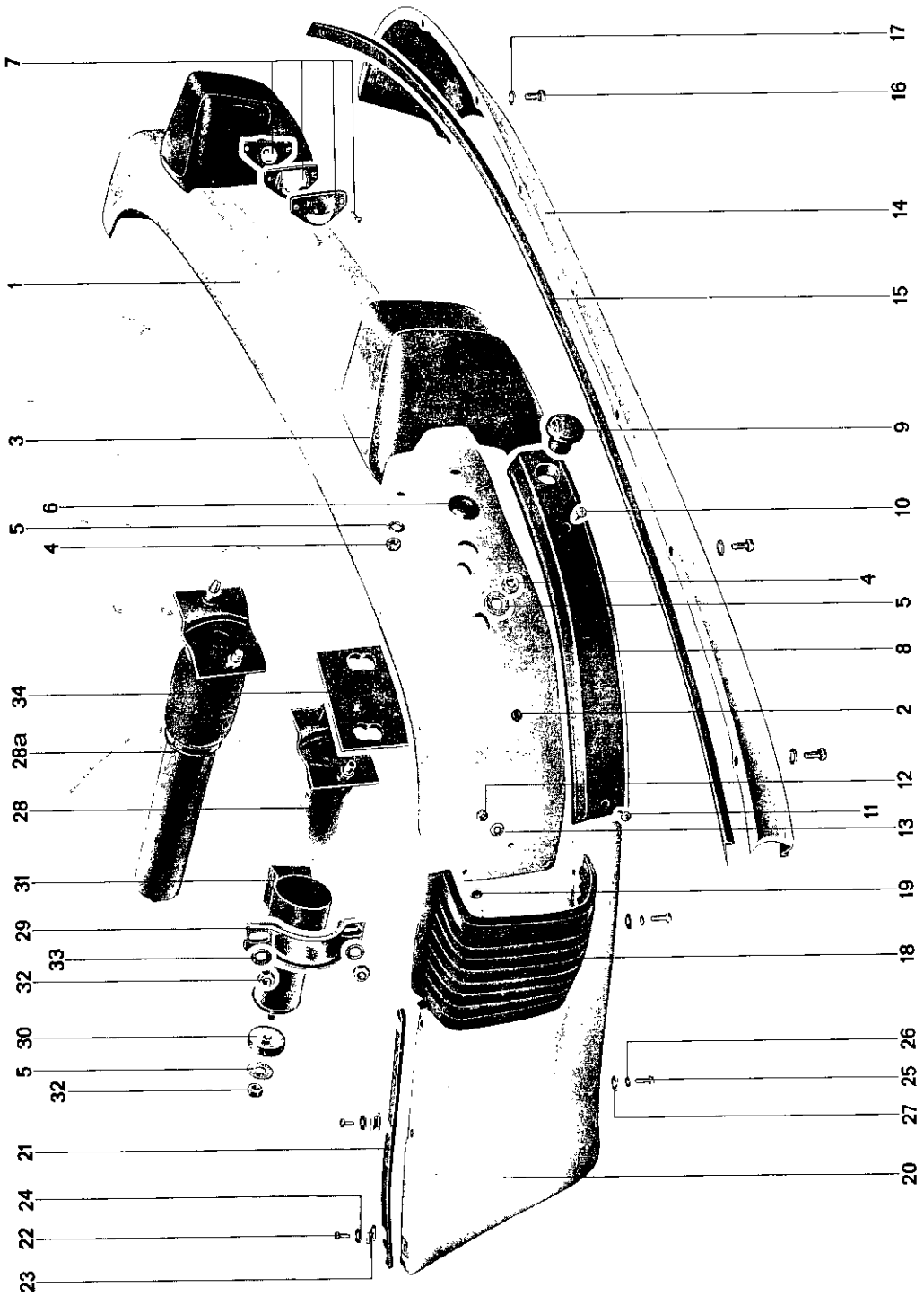


No.	Description	Qty	Note when: removing	installing	Remarks
1	Front bumper	1		Flanged studs of deformation tube must fit into cutouts. Sealing strip must fit alround.	
2	Grommet	7			
3	Nut, M 8	12		Use self-locking nuts.	
4	Washer	4			
5	Sheetmetal nuts, 4.2 mm	2			
6	Bumper strip	1	Detach side and pull off.	Press into grommets, bolt sides on.	
7	Bumper strip plugs	7		Replace if necessary	
8	Sheetmetal screws, 4.2	2		Replace if necessary	
9	Directional signal lamp	2	Remove bumper, take out through back	Check for equal spacing.	
10	Side cover	2		Check for equal spacing	
11	Washer	8			
12	Nut, M 5	8		Use self-locking nuts	
13	Boot	2	Remove self-tapping nuts from skirt	Attach to bumper	
14	Self-tapping nuts	8			
15	Sealing strip	1		Fit well along the fender	
16	Sheetmetal screw	12			
17	Sheetmetal nut, 4.8 mm	12	Replace if necessary		
18	Washer	12			
19	Rubber washer	4		Use in the area of the lock transverse panel	

No.	Description	Qty	Note when: removing	Note when: installing	Remarks
20	Front skirt	1		Preassemble side skirts.	
21	Sheetmetal nut, 6.3	2			
22	Sheetmetal screw, 6.3 x 19	2			
23	Gasket	2		Place against lock transverse panel	
24	Side skirt	2			
25	Insert, top	2		Install neatly	
26	Insert, bottom	2		Install neatly	
27	Sheetmetal screw 4.8 x 13	8			
28	Clip nut	8		Replace if necessary	
29	Washer	8			
30	License plate bracket	1			
31	Sheetmetal nut	2			
32	Sheetmetal screw, 5.5 x 16	2			
33	Washer	2			
34	Rubber washer	4		Place between skirt and bracket	
35	Bolt, 5 x 10	2			
36	Cage nut	2		Replace if necessary. Space according to holes in license plate	
37	Washer	2			
38	Deformation tube	2		Check, replace if necessary. Align bumper, then attach. Remove water reservoir	

No.	Description	Qty	Note when: removing	Note when: installing	Remarks
39	Hydraulic damper (optional)	2		Check, replace if necessary. Align bumper, then attach. Remove water reservoir	
40	Clamp	2			
41	Rubber buffer	2		Check, replace if necessary	
42	Insert with sleeve	2		Check, replace if necessary	
43	Washer	6			
44	Insert	2		Glue to deformation tube	
45	Bolt, M 8 x 16	2			
46	Side marker lamp	2			

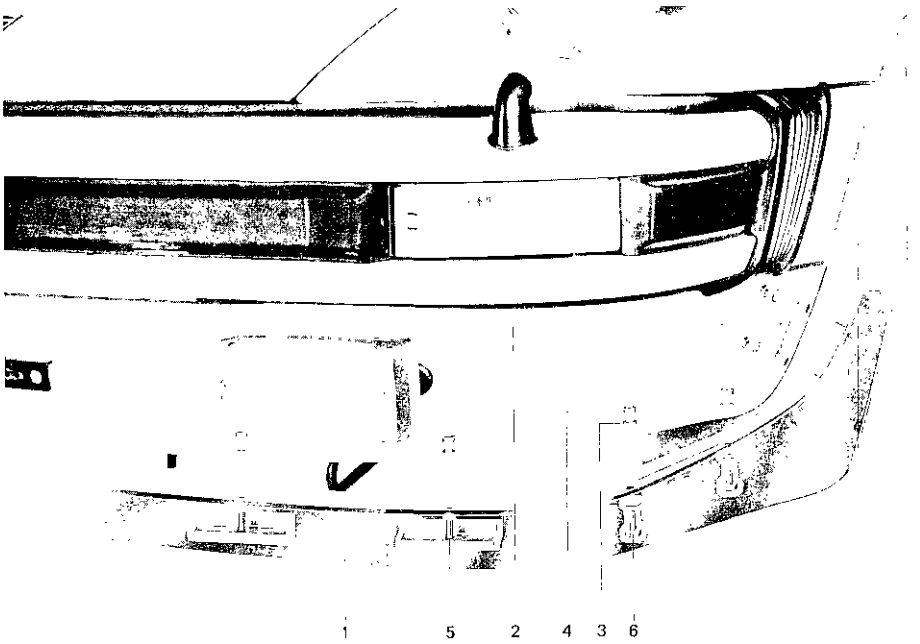
REAR BUMPER EFFECTIVE WITH 1974 MODELS



No.	Description	Qty	Note when: removing	installing	Remarks
1	Rear bumper	1	Remove bumper strips and license plate lamps, pull wires out	Align bumper. Flanged studs of deformation tubes must fit into oval holes	
2	Grommet	2			
3	Bumper guard	2			
4	Nut, M 8	4			
5	Washer	4			
6	Rubber grommet (wire passage)	2			
7	License plate lamp	2	Unscrew. Pull wire out	Lead wire through after installing guard	
8	Bumper strip	2	Remove fasteners. pull off	Install neatly	
9	Cap for towing attachment	1			
10	Bolt, 5 x 12	2			
11	Bolt, 5 x 18	2		Install in front, at bumper strip	
12	Nut, M 5	2			
13	Washer	2			
14	Rear skirt	1			
15	Insert	1		Position insert lip against skirt	
16	Fillister screw 6 x 12	8			
17	Washer	8			

No.	Description	Qty	Note when: removing	installing	Remarks
18	Boot	2	Detach from bumper on right, and from lower fender on left, press out	Attach boot to both lower fender parts	
19	Self-tapping nut	8			
20	Fender lower section	2		Fit against fender contour	
21	Insert	2		Replace damaged parts. Install neatly	
22	Sheetmetal screw 4.8 x 16	6			
23	Sheetmetal nut 4.8	6		Slip onto lower parts	
24	Washer	6			
25	Bolt, M 6 x 12	4		Attach fender lower parts to supporting tubes	
26	Lock washer	4			
27	Washer	4			
28	Deformation tube	2	Remove oil tank attachment at support tube, right side. Loosen 2 bolts in engine compartment	Check, replace if necessary. Align bumper and fasten accordingly	
28a	Hydraulic damper	2			
29	Clamp	2			
30	Rubbert insert	2		Replace if necessary. Install between deformation tube and console	
31	Rubber buffer	2		Replace if necessary	

No.	Description	Qty	Note when: removing	Note when: installing	Remarks
32	Nut, M 8	10		Use self-locking nuts	
33	Washer	10			
34	Insert for mounting plate	2		Glue to deformation tube	



No.	Description	Qty.	Notes Removal	Notes Installation	Remarks
1	Nose spoiler	1	Replace if necessary	Bolt flush on sides with apron	
2	Spacer	2		Match chamfer	
3	Washer	19			
4	Nut	15			
5	Insulator	7		Use at front	
6	Bolt 6 x 20	4	Replace if necessary	Use at outer holes	

REMOVING AND INSTALLING FRONT LID LOCK

Removal

1. Remove plastic cover from lock transverse panel (pull out metal clips from lower part).

2. Loosen screw in clamp piece, pull control wire out.

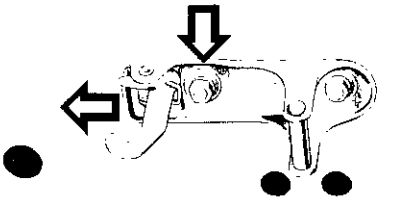
3. Remove lock attaching bolts and take lower part of lock off.

4. Remove upper part of lock.

Installation

1. Lightly tighten upper part of lock to lid.

2. Lightly tighten lower part of lock. Insert control wire.

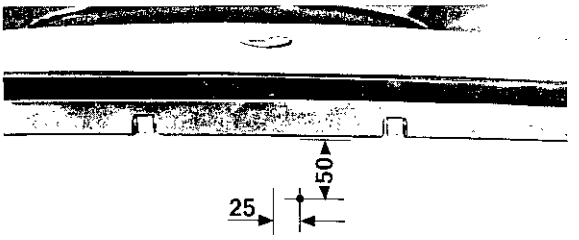


3. Adjust both lock parts to center position cross- and lengthwise, then tighten bolts. Tighten clamp piece securing screw and bend wire all the way back.

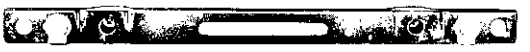
4. Close lid. Adjust height of lower part of lock. Adjust side stopper screws accordingly.

5. Install plastic cover.

Opening Lid Lock when Control Cable breaks

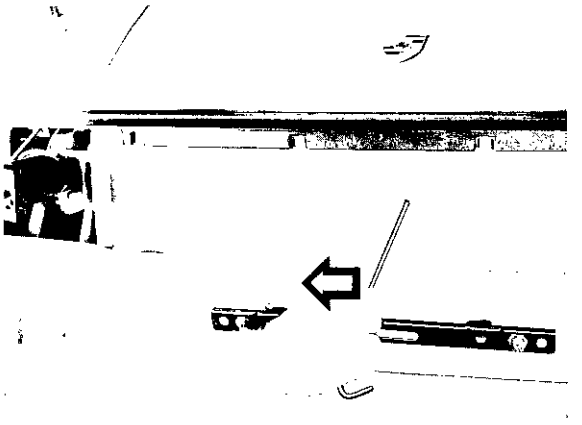


1. Remove front bumper (remove bumper strip, remove fasteners from rear part of boots and press the boots out; remove bumper fasteners from collision tubes).



2. Drill an 8 mm hole into the lock transverse panel (see illustration).

3. Make a tool from steel wire of 5 - 6 mm dia. and approx. 40 cm length.

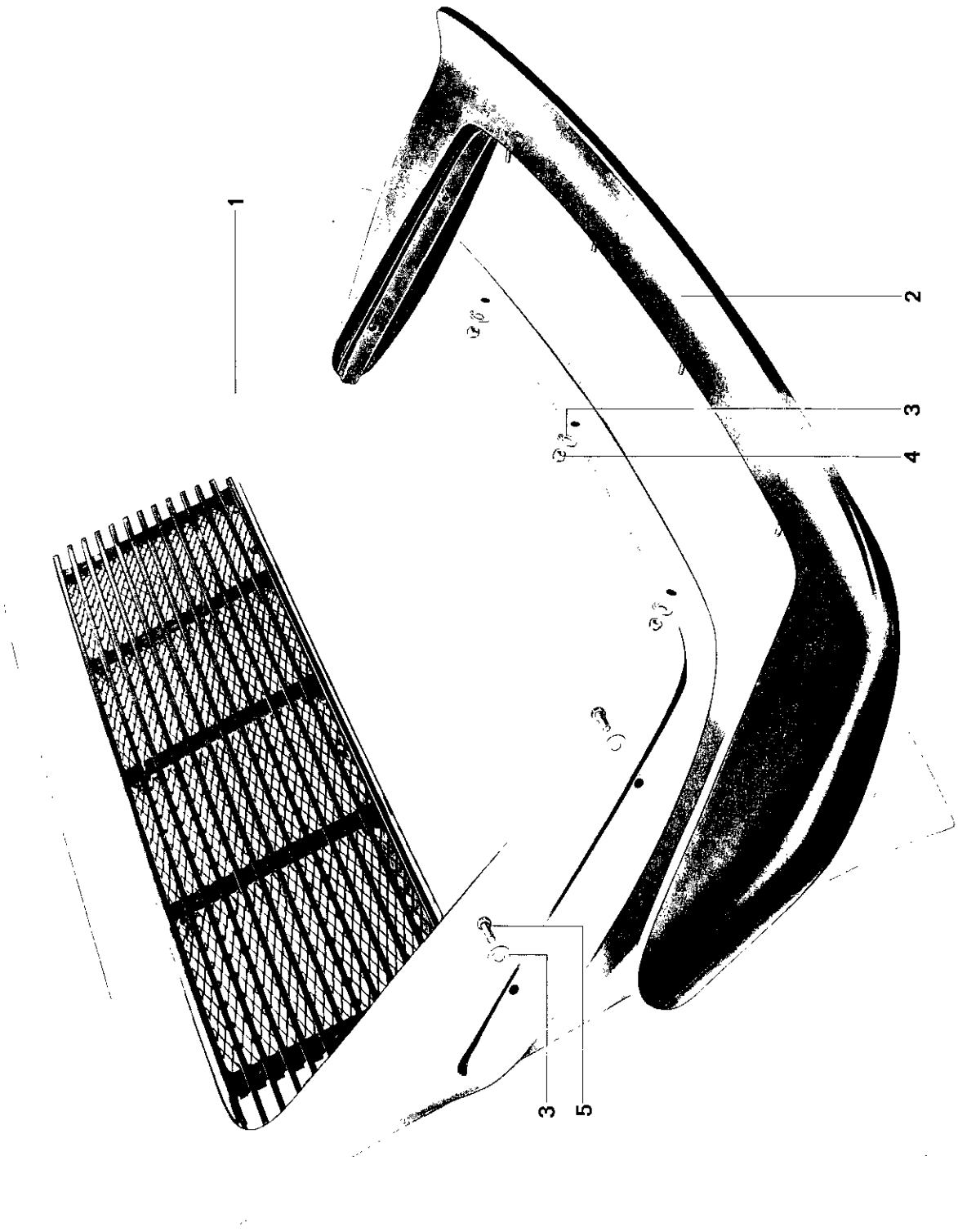


4. Insert the self-made tool upward through the hole and press the wire clamping piece to the right. Open the lid.

5. Install new control wire and check lock for proper operation.

6. Close hole with plug (999 703 044 50).

7. Install bumper.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2
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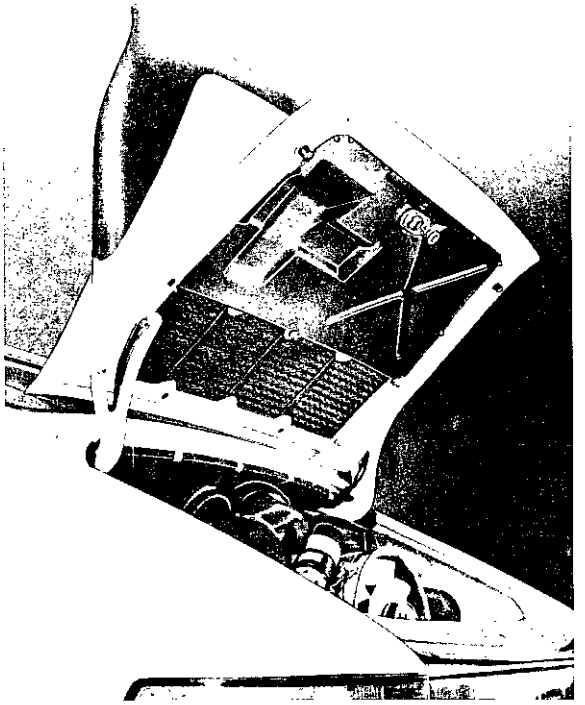
5

No.	Description	Qty.	Notes Removal	Installation	Remarks
1	Rear lid	1		Even gaps all around. Adjust height with washers at hinges	
2	Spoiler	1	Loosen guard	Align. Secure with studs and lock nuts	
3	Washer 5.3 mm diameter	8			
4	Lock nut	4		Install with washer	
5	Hex. head metal screw 4.8 x 16	4		Install with washer	
	Guard	1	Remove metal screws, loosen at air inlet grill		
	Oval head metal screw 2.9 x 9.5	9			
	Gas lift cylinder Lift-O-Mat Part No. 911 512 331 07	1		Gas lift cylinder must hold lid open, replace if necessary	



Removing

1. Detach lid at hinges.
2. Loosen lower air inlet grill screws.
3. Loosen all metal screws of guard. Bend open guard, or loosen upper lid lock section and remove guard.
4. Remove outer spoiler metal screws as well as the 4 lock nuts and remove spoiler

Installing

After assembling, bolt lid and ground wires to hinges. Align lid.

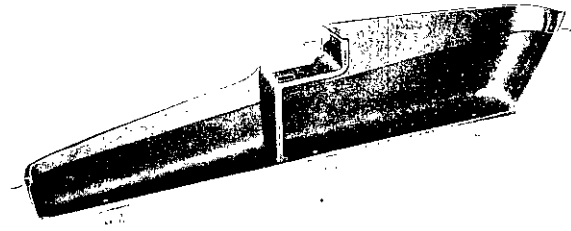
REMOVING AND INSTALLING DOOR PANEL EFFECTIVE WITH 1974 MODELS

General

Beginning with 1974 models, the doors have new type of door panel, door storage compartment, hand grip, and inside door release.

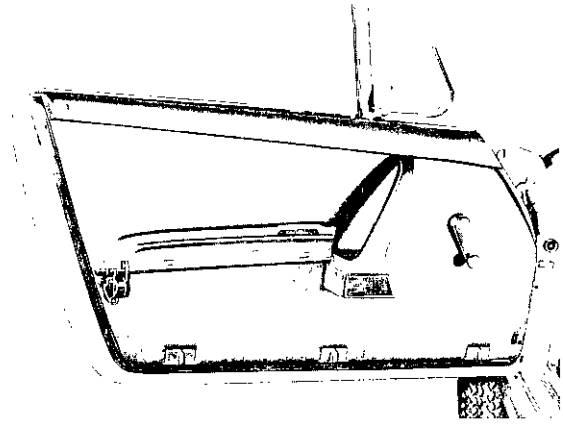
Removal

1. Remove sheetmetal screws from below the storage compartment, both end flanks, and in front below the cover. Remove the storage compartment.



2. Remove door ledge cover (unscrew door lock button and sheetmetal screws at both ends).

3. Detach rear of storage compartment cover and remove.



4. Detach connecting rod at the handle, unscrew fasteners from handgrip top and bottom.

5. Remove window crank.

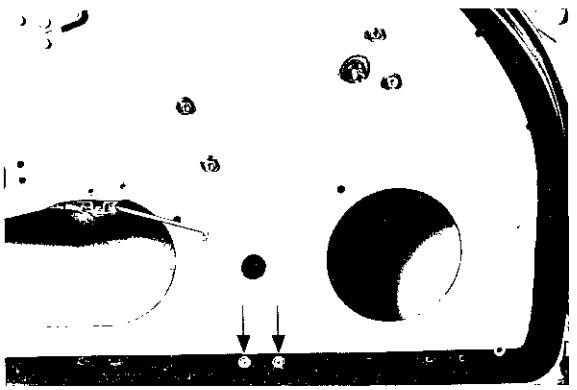
6. Remove supporting brackets.

7. Unhook door panel.

8. Remove control lever from door inner panel and disconnect spring.

NOTE

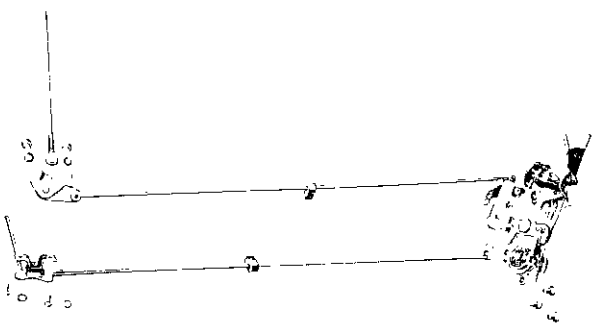
Removal and installation of the remaining door parts is described in volume II of the workshop manual.



Installation

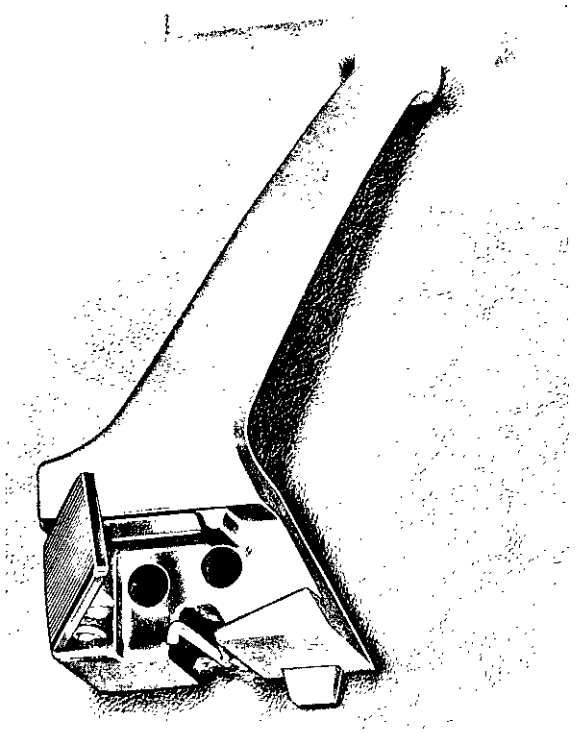
1. Attach threaded plate (see arrow) with countersunk screw.

2. Install control lever with connecting rod, hook spring to door inner panel.



3. Tightly glue weatherfoil to door inner panel.

4. Hang door panel on door.



5. Install supporting brackets according to the location of holes in the storage compartment.

6. Install hand grip and connect connecting rod.

7. Install folding cover and storage compartment.

8. Install window crank and door ledge cover.

REMOVING AND INSTALLING DOOR STOP

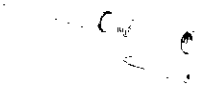
Beginning with 1974 models, all Type 911 vehicles are equipped with a modified door stop. The door stop link is attached to the door hinge post with a rollpin.

The new door stops can be installed in all vehicles, from 1970 model on, which have the hinge post attachment as shown in the illustration.

Special tools: P 290 and P 290a

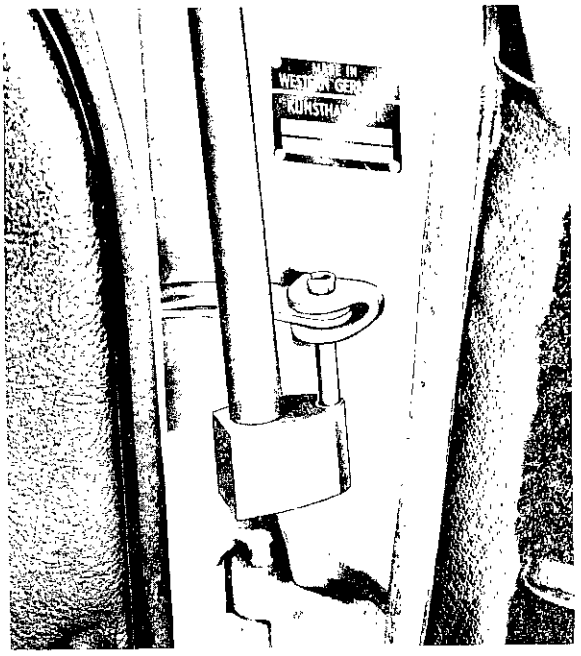
Removal

1. Detach window ledge rail, door pocket, door inner panel, and sealing foil as far as necessary.



2. Drive rollpin out with P 290 and P 290a.

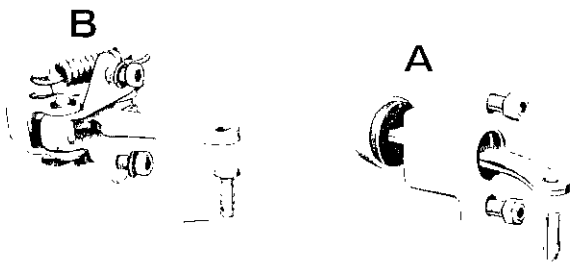
3. Unscrew door stop from door frame and take out.



Installation

1. Insert door stop and secure with self-locking nuts.

2. The rollpin must be so installed, that the slit faces outside when the door is open. Drive the pin fully in to the upper ridge.

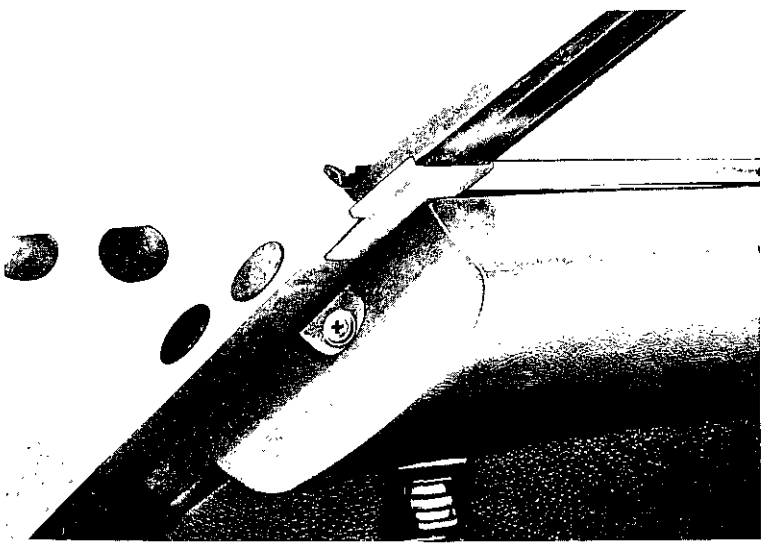


a = new version
b = old version

INSTALLING RIDGE FILLERS

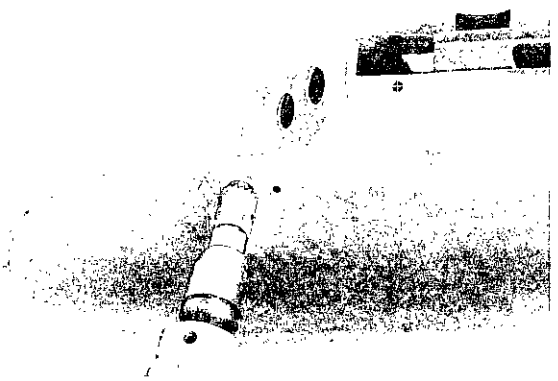
Beginning with 1974 models, all Coupe vehicles are furnished with rubber ridge fillers which are glued to the front and rear part of the window frame to reduce wind noise.

Make sure that the ridge fillers are glued into place with waterproof glue, such as the BOSTIK-CYANDIT 202.

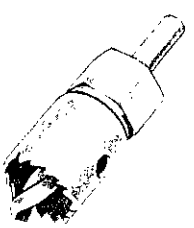


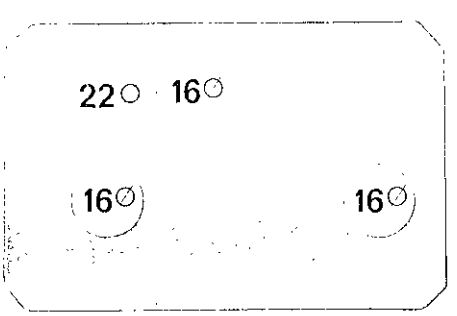
PREPARING DOOR SHELLS FOR REMOTE CONTROL OUTSIDE MIRROR

1. From the center of the hole for the first moulding clip, draw a vertical line 85 mm (3 1/2 in.) long down the door panel.



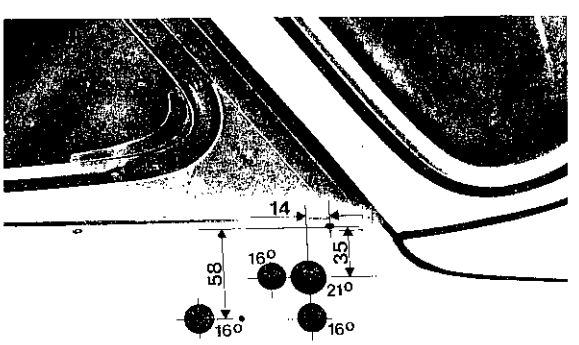
2. Hold reinforcement plate in position and mark holes as illustrated in picture. Then drill holes according to specifications.
CAUTION: The distance between the top edge of the large hole and the door mating edge must be at least 13 mm. The hole for the cables can be opened up with a standard hole saw, e.g. Black + Decker Type 21748 (see illustration).





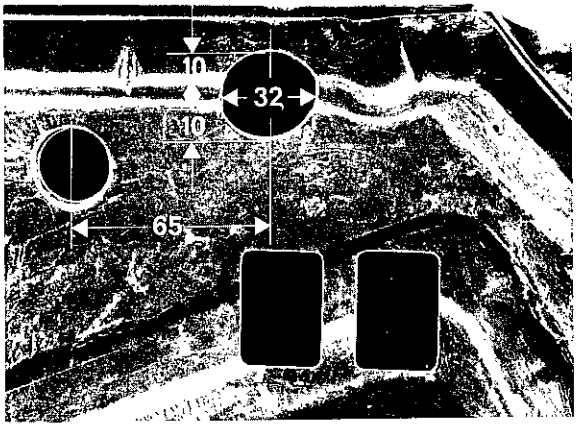
3. Drill another 5 mm dia. hole through the door panel and reinforcement plate (in front of the rear bottom hole). Secure the reinforcement plate with an appropriate pop rivet.

4. Install a cable clamp on the inside of the reinforcement plate (behind the top door hinge) so that the wires will not be damaged by the window regulator teeth.
Note: If the new mirror is installed on doors with old type mirrors, the front mounting hole must be plugged (welded).

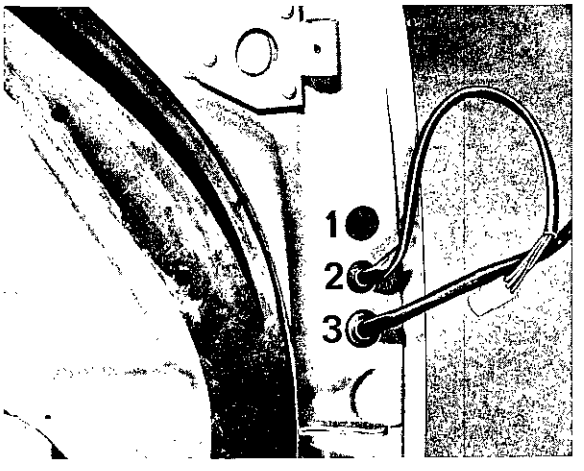


Hole pattern for passenger door mirror (installation instructions, see 10.3 - 1/4).

5. Cut opening (according to specifications) for operating switch in inner door panel, top.



6. If necessary for the harness opening, drill another 20 mm dia. hole below the present hole in the front inner door panel.



1 - For electric window winder.
2 - For outside mirror.
3 - For loudspeaker.

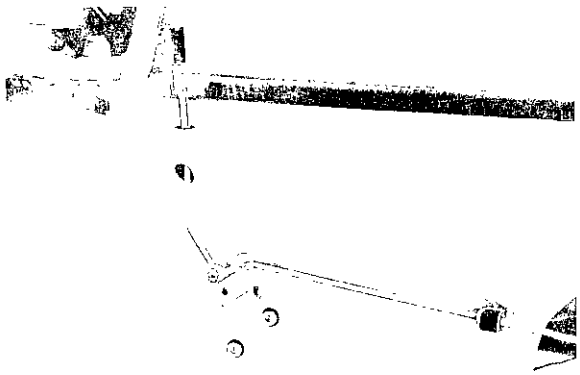
SERVICE INSTALLING NEW DOOR LOCK CONTROLS

All 1977 models will have doors with an improved, anti-theft lock control. The lock button lowers into the trim strip completely when the door is locked. Unlocking from the inside is by turning the new rotary knob.

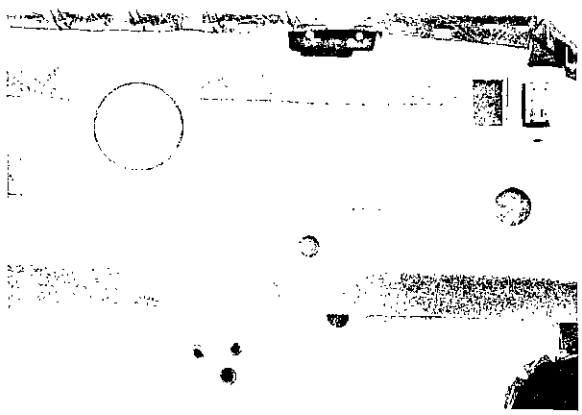
Installing

1. Remove trim strip and inside door panel.

2. Exchange lock button holder for new part with a square pin and insert the new lock button rod.



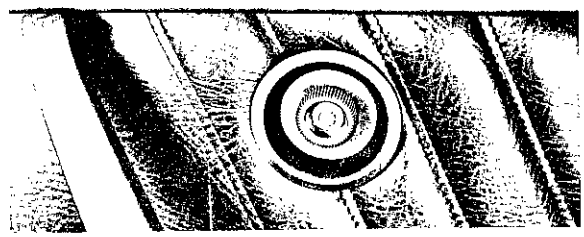
3. Transfer center point of square pin to door panel. Cut an opening of 65 mm diameter in pressboard panel with a sharp compass. Cut out door panel trim around the square pin.



4. Open up hole in trim strip to 14.5 mm diameter for lock button and insert new guide sleeve.

5. Install inside door panel, lock button and trim strip.

6. Insert cover, mount rotary knob with fillister head cap screw M 5 x 12 mm and spring washer, and press on cap.



7. Check operation of door lock controls.

INSTALLING DOOR WINDOW LIFT CHANNEL

Assembling

1. Place door window on soft material and remove grease from lower edge.

2. Use new rubber insert, Part No. 901 542 491 21, and fit it on window glass to match lift channel.

Note

Clean rubber insert with acetone before installing. If wax coating is not cleaned off, window glass could disengage from lift channel.

3. Press in window lift channel.

Note

The window lift channel of a coupe must be installed so that the channel begins 88 mm behind edge of glass.

Coupe - window glass

The window lift channel of a Targa must be installed so that the glass fits fully in the plastic guide.

Window lift channels must be pressed in all the way over their entire length. Light taps applied to the channels while pressing the glass in will facilitate installation.

4. Place window in door and coat sliding surfaces of window regulator with a multi-purpose grease.

Targa - window glass

REMOVING AND INSTALLING ELECTRIC WINDOW REGULATORS

General

Beginning with the April 26, 1972 production, new electric motors with an integral transmission, as well as modified toggle switches with mounting frames are used. Electrical connections are made according to a new wiring diagram. Electric window regulators can be installed in Coupe models only.

The new regulators were first installed in the following vehicles:

911 T	911 210 2072
911 E	911 220 0809
911 S	911 230 1391

Removing

1. Remove window ledge rail and lock button.

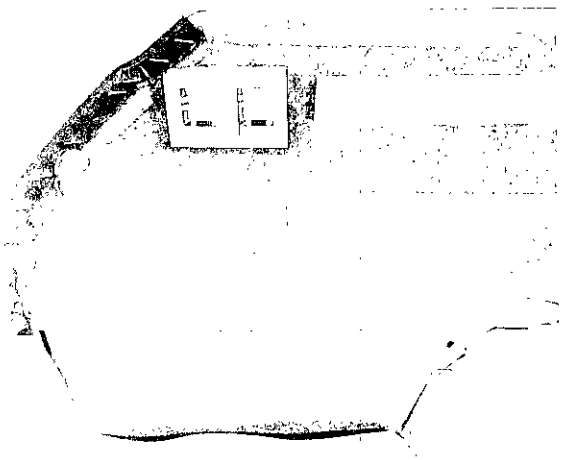
2. Remove toggle switches. If possible, first position window glass about 10 cm (4") above its lowest position.

3. Remove entire door panel and sealing foil.

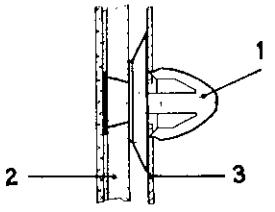
4. Remove outer chrome strip at window base.

5. Remove all window frame fasteners. Pull the frame out.

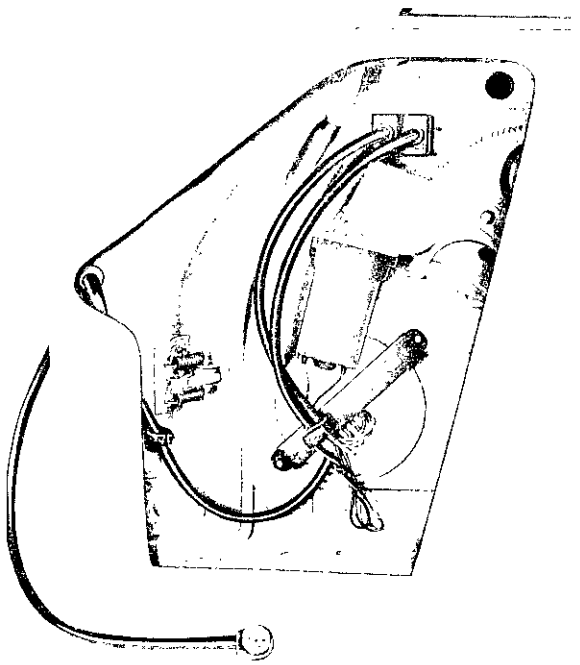
6. Push window glass forward and detach from the regulator. Remove upper door well weather seal and take the glass out.



Rear side of door panel with weather seals and self-sealing mounting clips.



1 Clip
2 Door panel
3 Door inner sheetmetal panel



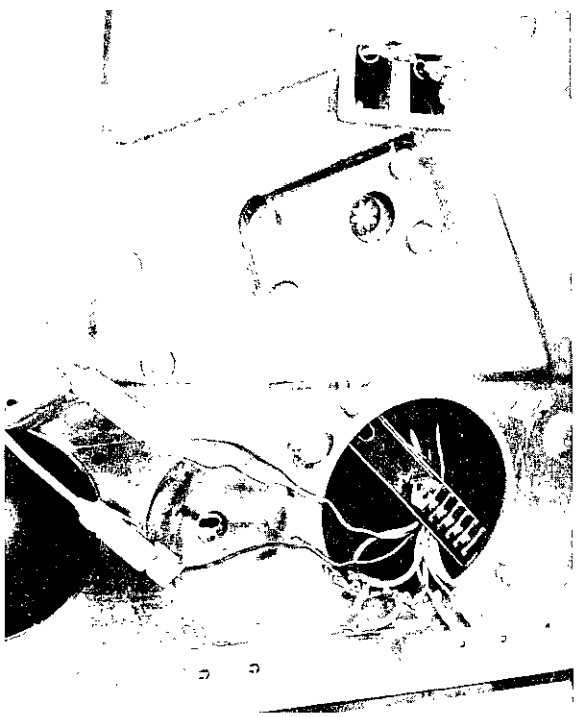
New motor and transmission with cable layout.

7. Take wires out of retainers, disconnect them from junction bar, and pull wire looms out together with caps. If the wire loom leading from the door into the car' s interior is to be removed, it will be necessary to take the door off.

8. Unscrew window regulator and remove.

9. Remove stop wedge from door base.

Installing



1. Insert wire grommet in forward part of inner sheetmetal panel of door. Lead the connecting wires into the car' s interior. Install door.

2. Insert window regulator and fasten. Install stop wedge.

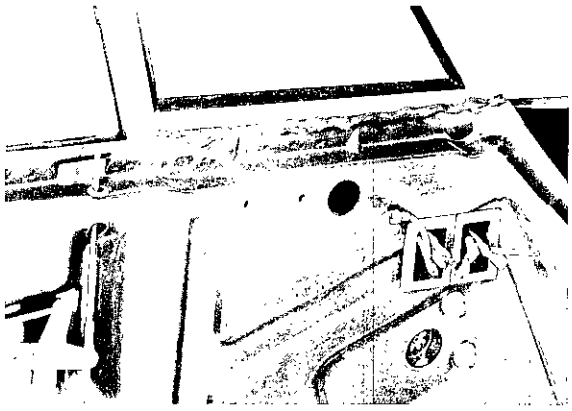
3. Run the regulator with a battery or battery charger to bring window to about 10 cm (4") above its lowest position by connecting the positive wire to green and negative wire to black wires in motor. If the regulator moves up, switch the wires to make if move down.

4. Install carrier plate with junction bar.

5. Insert toggle switches, cover caps, and wire looms. Connect all wires according to the new supplemental wiring diagram in Group 9, page 0.1 - 2/11. Fasten the wire looms to carrier plate and inner sheetmetal panel.

6. Install door well weather seal. Place window glass in door well and attach to the regulator.

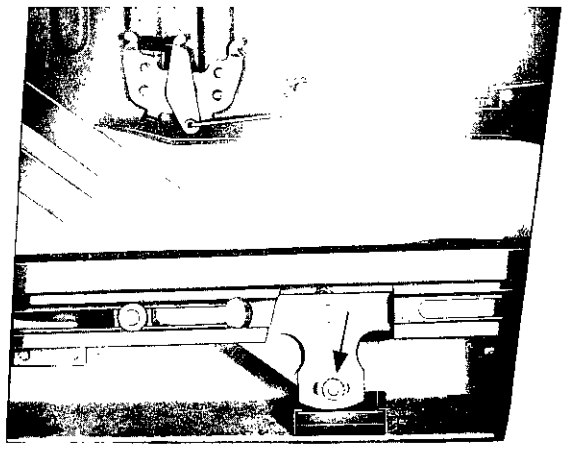
7. Insert door window frame in door and seal along the outside and inside flanks of top door edge with black, non-hardening putty. Fasten the frame in such position that sufficient pressure will be exerted against the door weatherstrip.

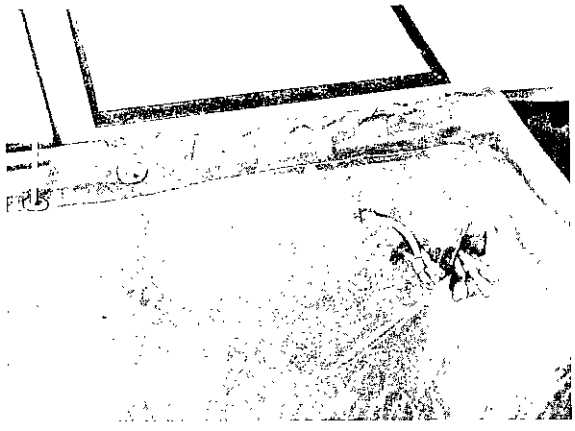


Note

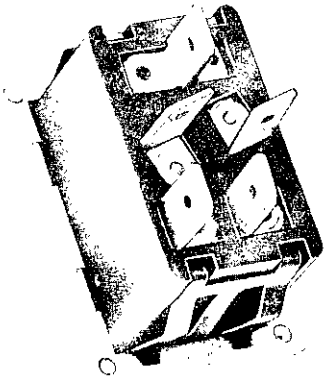
Do not bend the window frame to fit.

8. Check window regulator for proper operation and free movement. If necessary, readjust regulator with adjusting screws so that the top edge of the window is parallel with the top part of the window frame.

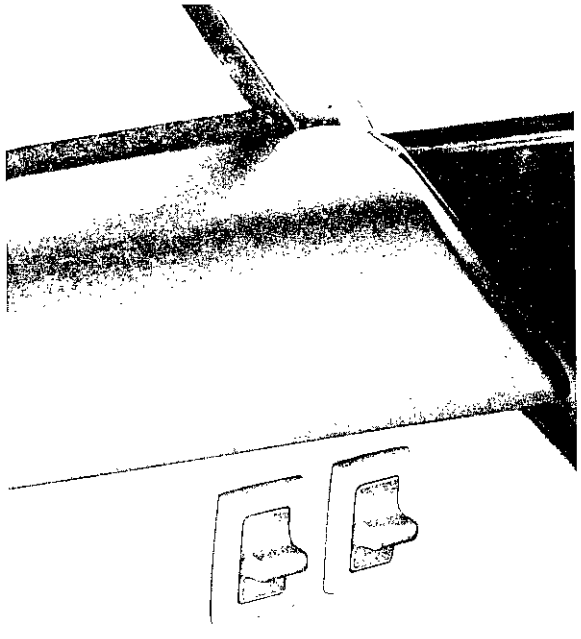




9. Glue the sealing foil in leak-free. Cut out a section in the toggle switch area.



10. Install door inner panel, armrest with inner door release, door pocket, folding compartment, door ledge rail, and outside window base chrome strip.



11. Connect toggle switches and install.

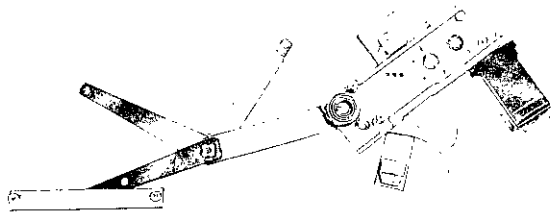
Note

When properly installed, all toggle switches are positioned with the single connector facing up.

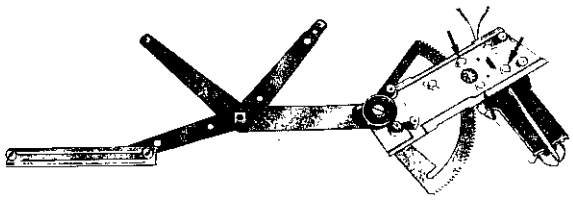
The rear toggle switch in driver' s door actuates the passenger side window.

ELECTRIC CROSS ARM WINDOW CONTROLS - from 1980 Model

Electric cross arm window controls are installed in all cars as of the 1980 model year. These new window controls have a different design for coupe and targa models. Targa window controls run slower and have tow adjustable height limit stop brackets at top. Coupe has one adjustable stop bracket.

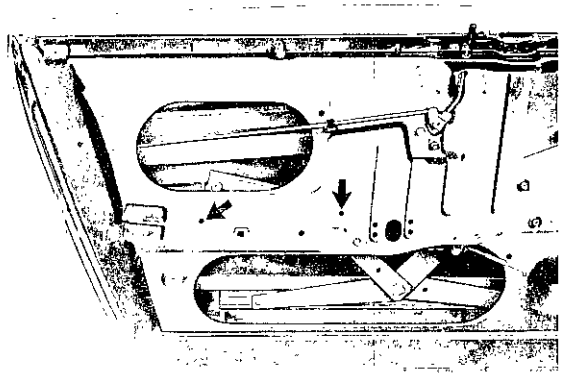


Targa Version



Coupe Version

These new window controls have an additional guide rail, which is bolted on the door inside panel (arrows).

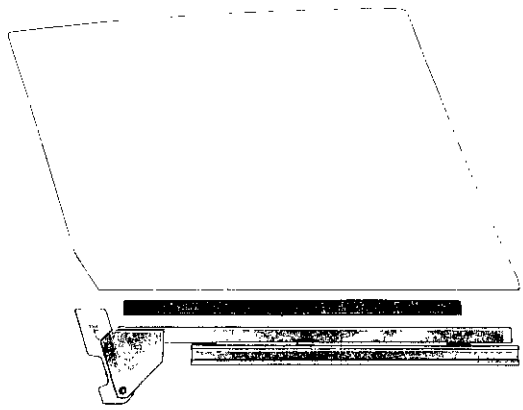


Coupe and Targa window controls use electric motors, of different power outputs and therefore cannot be interchanged. As of November 20, 1979 new light weight motors are used, whose power corresponds with the former versions.

Coupe motor, Part No. 911.624.014/015 01
formerly 00
Targa motor, Part No. 911.624.014/015 41
formerly 40

These motors are interchangeable with the former versions.

In conjunction with the new window controls, the door window glass has new one-piece window lift channels.



Targa window with new lift channel.

SERVICE INSTALLATION ELECTRIC CROSS ARM WINDOW CONTROLS

General Information

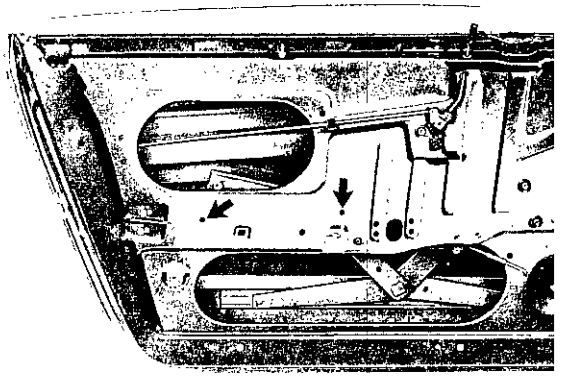
Electric cross arm window controls are installed in all cars as of the 1980 model year. These new window controls guarantee smoother door window operation and in future will replace all parallel arm window controls for Types 911 and 911 Turbo.

Later the Parts Catalog will be changed to include the mechanical cross arm window controls, which replace the mechanical parallel arm window controls after depletion of stocks and can be installed in all doors.

Service installation of these new cross arm window controls will require exchange of the lift channels on the door windows or use of new door windows.

Removing

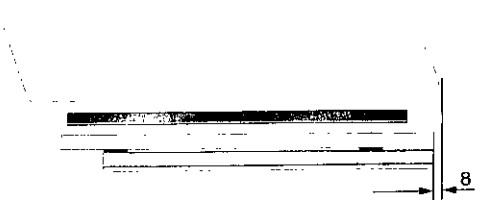
1. Remove inside door trim panel. Disconnect window control and mirror switch.
2. Pull off door window water shields.
3. Loosen and remove door window frame.
4. Disconnect parallel arm window control, detach door window at guide and remove.
5. Remove window control and electric motor.
6. Remove height adjusting screw on Targa doors.



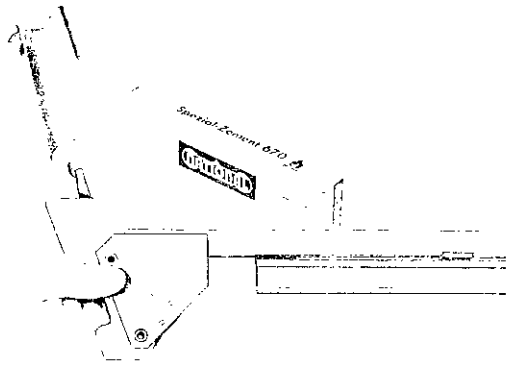
7. Loosen old lift channels from window by lightly tapping and then remove.

Installing

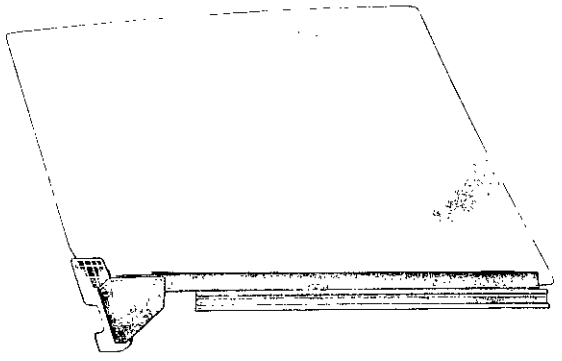
1. Position new lift channel with cleaned (wax-free) rubber insert on window glass and press on tight.
   The lift channel for Coupe door windows must be positioned 8 mm behind the front edge of the glass.



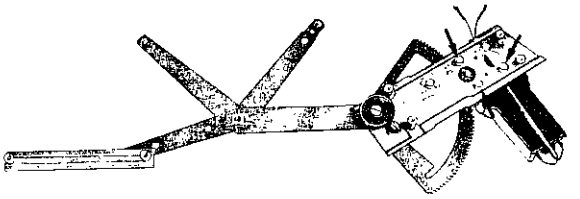
The plastic part of Targa window lift channels will have to be coated with rain molding cement, e.g. National Special Cement 670, at the groove.



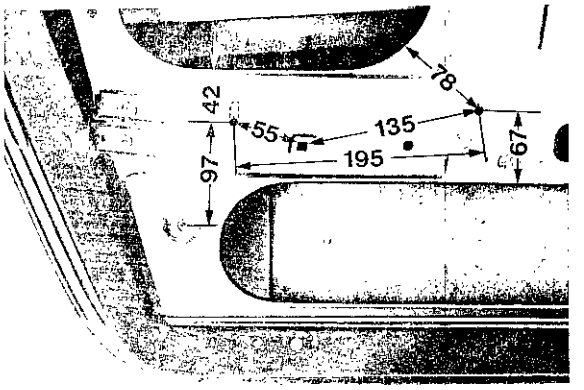
Then install window glass so that it rests firmly in guide groove and channel.



2. Mount electric motor on new cross arm window control (arrows). Guide wire harness between bolts so they will not interfere with moving parts.
   Set window control at center position for installation in door.



3. Find location for holes on inside door panel with a compass according to given dimensions and drill two 7.0 mm (9/32 in.) dia. holes.

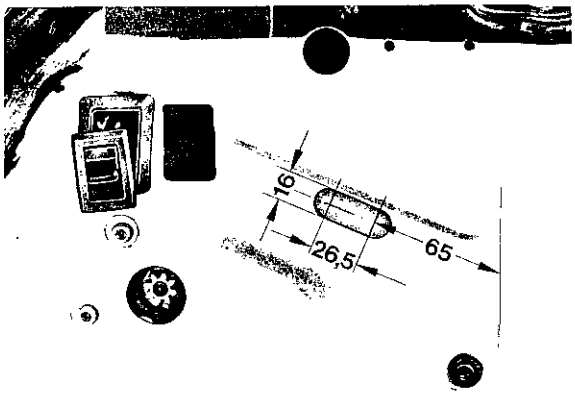


Note

If door window sags at rear when operated, the rear mounting hole (see broken line) must be extended upward.

Note

A slot must be made according to given dimensions in door inside panel of Targa models. The stop bracket for height control will be accessible through this opening.



4. Check window guides for wear and replace if velvet is partially worn. Glue at top when inserting in door window frame.

5. Insert window control and bolt base plate. Connect wire harness with switch.

6. Insert window glass and guide plastic rollers of window control into window lift channel. Mount short guide rail on inside door panel with M 6 x 10 bolts and washers. Lubricate moving parts with a multi-purpose grease.

7. Install and secure door window frame.

8. Check door window for easy movement. Close door and check entire periphery of glass and/or window frame for neat fit at door weatherstrip, correcting window frame adjustment if necessary.

9. Install door window water shields and inside door trim panel. Check operation of window control and mirror switch.

ADJUSTING DOOR WINDOW - TARGA

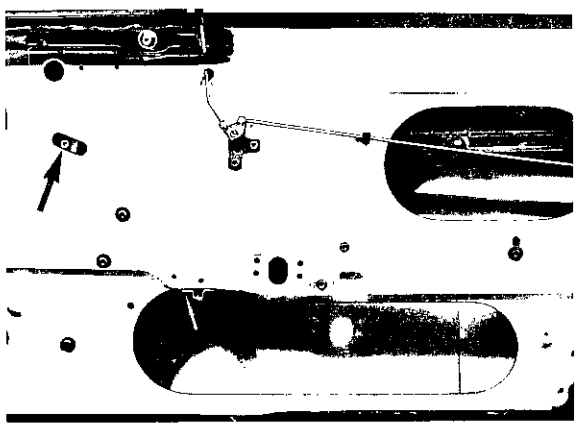
The methods of adjustment have been improved since introduction of electric cross-arm window regulators from 1980 models on. The Targa window regulators now have two adjustable stop brackets for height control. The adjusting screw has been omitted.

Before beginning with adjustments the door gap to the rear fender and installed position of the Targa top must be checked.

Adjusting procedures require that the hinge strip, door pocket with cover, grab handle, door inside trim panel and plastic sheet be removed.

Adjusting Door Window

- Height Adjustment (arrow)



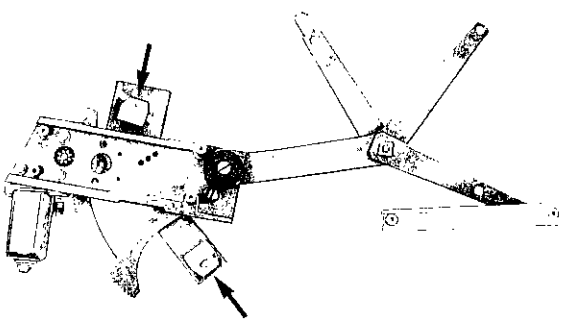
Note

Lower window until stop bracket is accessible through opening in door inside panel.

Adjust height so that window glass is aligned with roof seal and fits tight in profile seal along entire length.

- Inclination

Inclination of the door window glass can be regulated with the guide rail. If the door window glass sags excessively at the rear during movement, the rear bolt hole must be extended up.

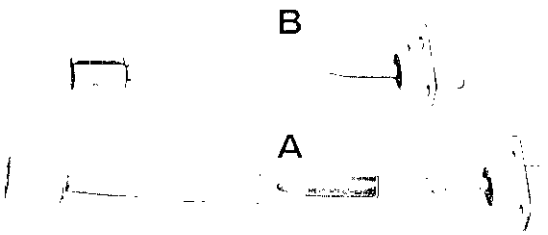


Targa version with stop bracket

MODIFICATIONS IN TARGA FOLDING ROOF 1974 MODELS

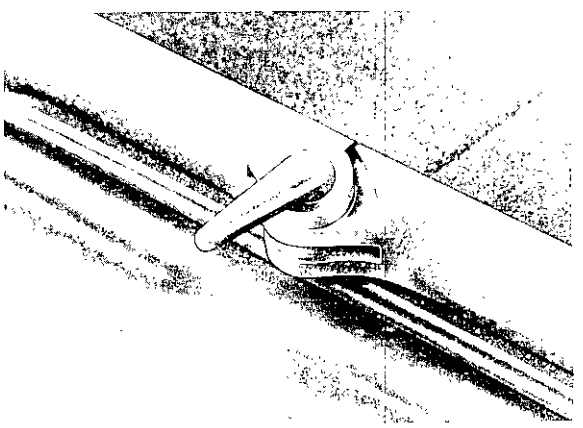
1. Beginning with 1974 models, new METALLASTIK supports are used in the rear part of the folding roof; the locating pins are covered with replaceable plastic sleeves.

A = new version
B = old version



2. Modified METALLASTIK mounts, with bigger and longer receptacles, are used in the rollbar to accomodate the larger locating pins.

3. An additional support pin is provided in the center joint of the rear roof frame. The pin rests in rubber and provides additional rigidity for the roof.



4. Modified weatherstripping is used along the windshield frame and the front part of the roll bar to improve sealing and tightness of the roof.

NOTE:

The new folding roof can be used only in vehicles which have the larger METALLASTIK sleeves in the roll bar.

SUBSEQUENT INSTALLATION OF LOCATING PIN FOR FOLDING ROOF

NOTE: Installation of the additional locating pin may be accomplished only in folding roofs which have the pressure-cast aluminum frame. The rear frame section is of the triangular configuration.

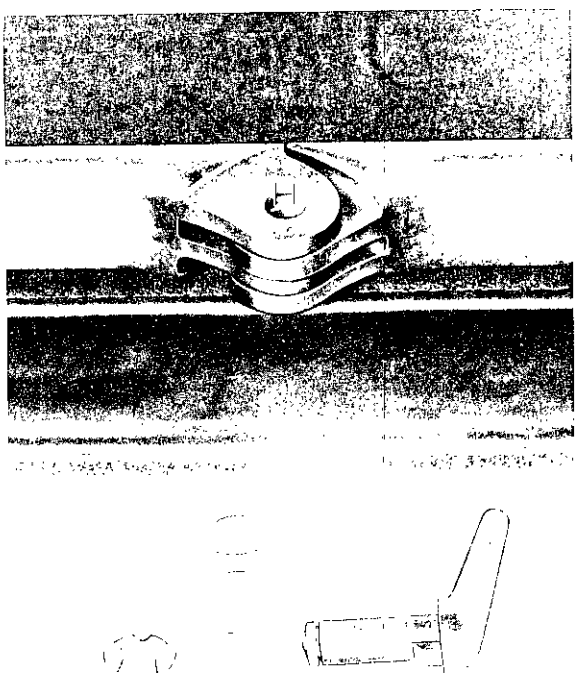
Removal

1. Remove and slacken roof.

2. Drive hinge pin out of the rear roof frame and take the frame out.

3. Remove window ledge rails from right and left side of rear compartment, detach and remove roll bar inner panel.

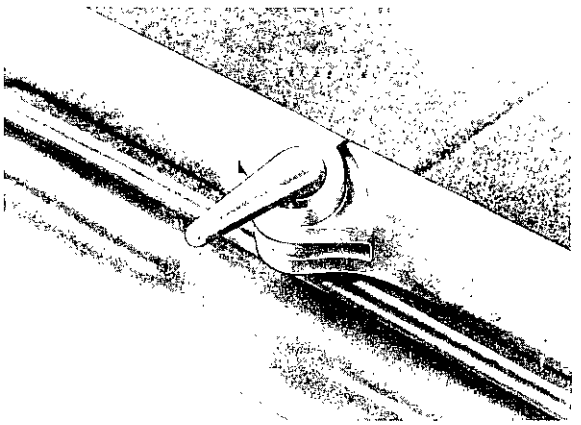
4. Pull off approx. 30 cm of weatherstrip from roll bar center. Loosen leatherette and upholstery padding.



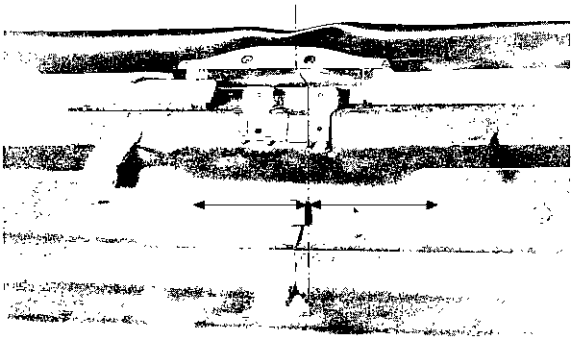
Installation

1. Replace right rear section of roof frame with one containing a slot (Part # 911 565 212 45).

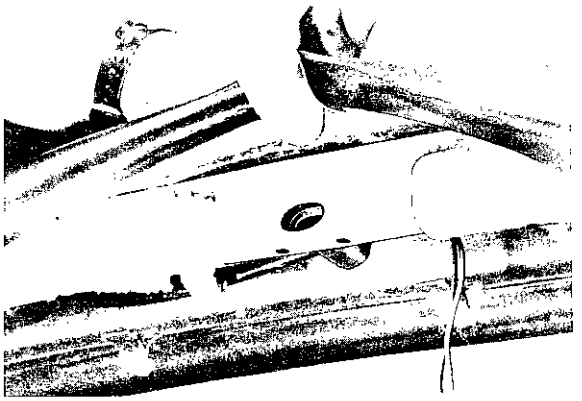
   NOTE:
   The right roof frame section need not be replaced providing that a slot is filed into the hinge pin hole so that the locating pin points exactly to the rear when the roof is locked tight.



2. Install locating pin, Part # 911 565 145 10.



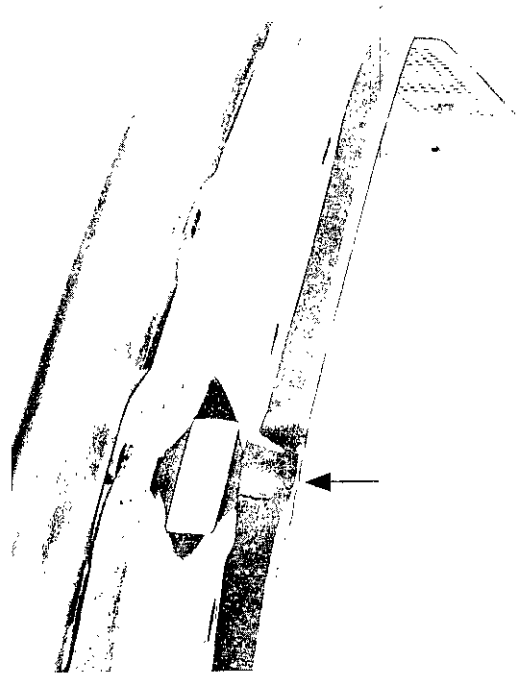
3. Measure and mark the center of the roll bar. Center the supporting plate and weld it in.



4. Align cover plate, Part # 911 565 133 40, with sheetmetal top edge and weld, or spot-weld. Shorten upholstery padding to fit the cover plate.

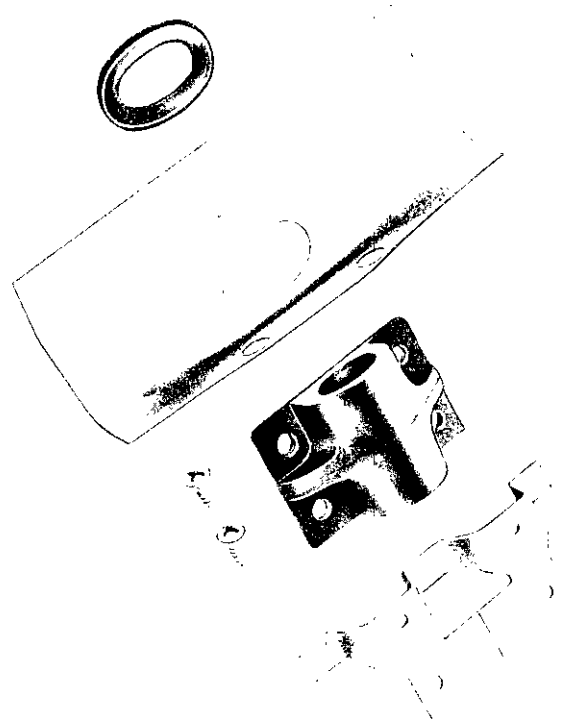
5. Prime sheetmetal parts with primer. Attach rubber mount, with large opening facing forward, to the supporting plate using sheet-metal screws.

6. Bend the inner panel front part to match the rubber mount.
   Glue the leatherette covering to the roll bar and cut the access hole out. Insert rubber grommet.



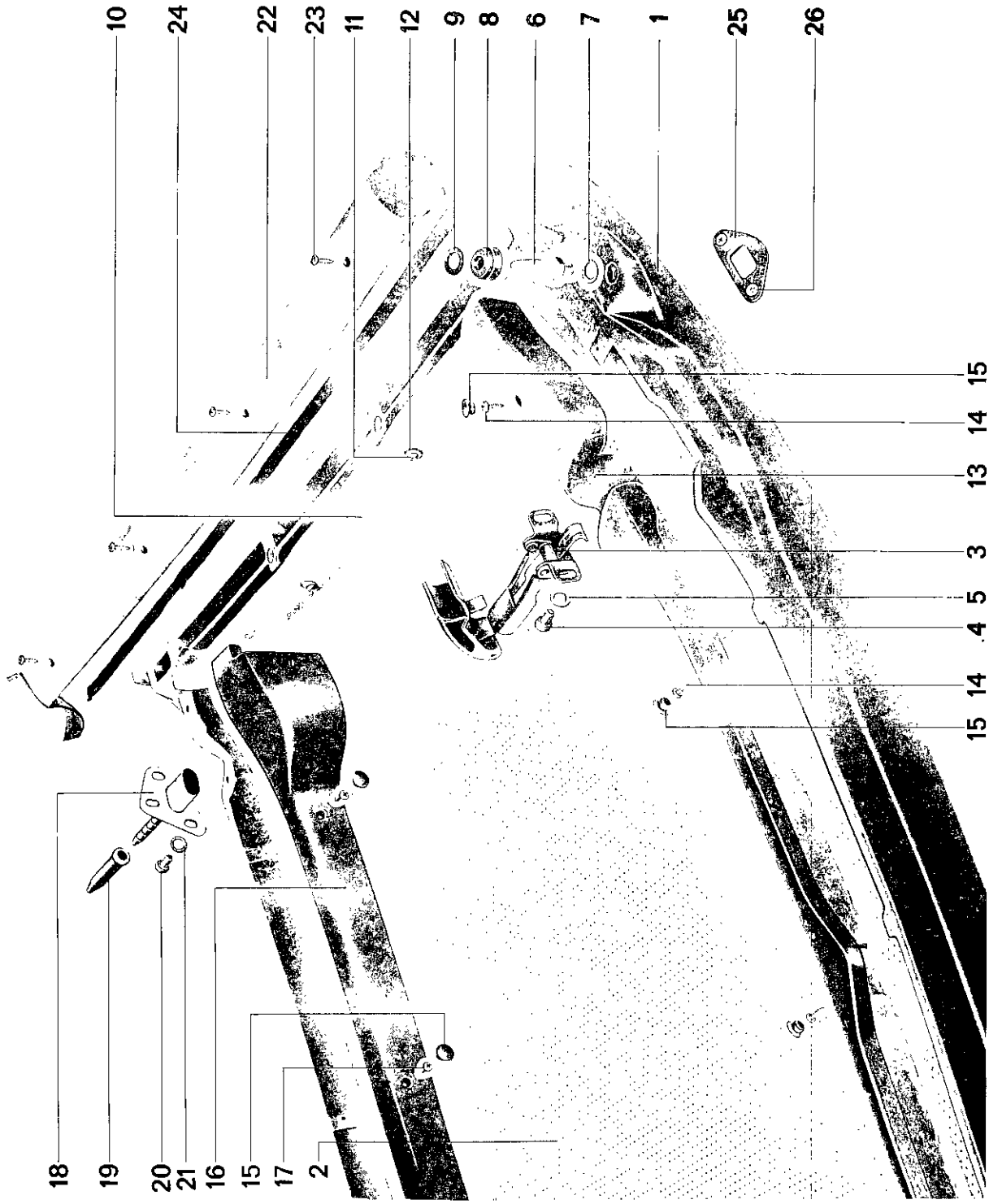
7. Install and fasten the roll bar inner panel.
   Glue the weatherstrip in.

8. Place roof in position and check alignment of locating pin.



Required parts:

1 Supporting plate	911 565 133 40
1 Cover plate	911 565 135 40
1 Rubber mount	911 565 009 40
1 Rubber grommet	911 565 189 40
1 Locating pin	911 565 145 10
1 Roof rail section	911 565 212 45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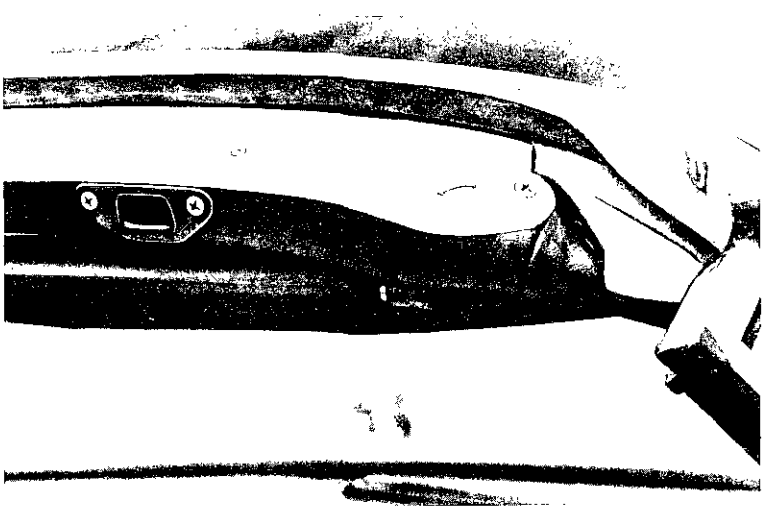
No.	Description	Qty.	Notes		Remarks
			Removal	Installation	
1	Removable hardtop	1			
2	Headliner	1		Install with heat-resistant adhesive	
3	Lock	2	Check, replace if necessary	Adjust to tension of windshield	
4	Fillister head screw M 6 x 10	4			
5	Washer	4			
6	Locating pin	2	Check, replace if necessary		
7	Washer	2			
8	Stop pad	2	Check, replace if necessary		
9	Spacer	X		If required, install on stop pad to adjust height	
10	Roof edge guard	1	Loosen glued edge, remove metal screws	Glue properly to roof frame	
11	Oval head metal screw 3.5 x 13	4			
12	Washer	4			
13	Roof edge guard front	1	Replace if damaged		
14	Oval head metal screw 3.5 x 9.5	5			
15	Cap plug	9		Replace if necessary, plug openings in rear and front roof edge guards	
16	Roof edge guard rear	1			
17	Oval head metal screw 3.5 x 9.5	4			
18	Metal/plastic bearing, left + right	1	Check, replace if necessary	Adjust so that roof and roll bar upper edges match	
19	Cover	2	Check, replace if necessary		
20	Fillister head screw M 6 x 10	6			

No.	Description	Qty.	Notes Removal	Installation	Remarks
21	Washer	6			
22	Roof frame seal side, left and right	1	Loosen glued front and rear ends, remove metal screws	Glue end pieces properly, using foam rubber underneath if required. Adjust door window seal, then tighten. Treat rubber seal with, for example, glycerine etc.	
23	Oval head metal screw 3.5 x 9.5	8			
24	Sealing tape	1	Pull off	Glue on roof frame along complete length of seal	
25	Escutcheon, lock	2		Installed for hardtop roof only	
26	Oval head metal screw 3.5 x 9.5	4			



Removable hardtop escutcheon on windshield frame

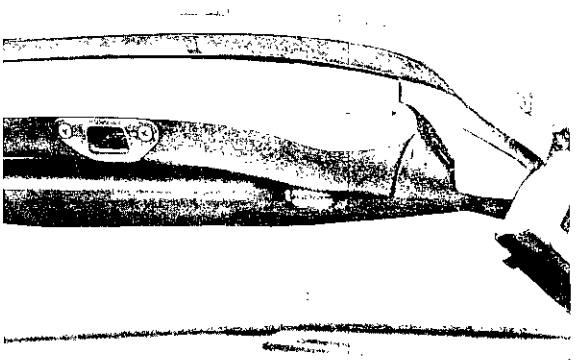
REPLACING FOLDING OR SOLID ROOF

Note

Targa models (from 1974) can be equipped with either a folding or solid roof. Two escutcheons have to be installed on the windshield frame for the roof locks on models delivered with folding roofs. Adjustments are the same for both folding and solid roofs.

Converting

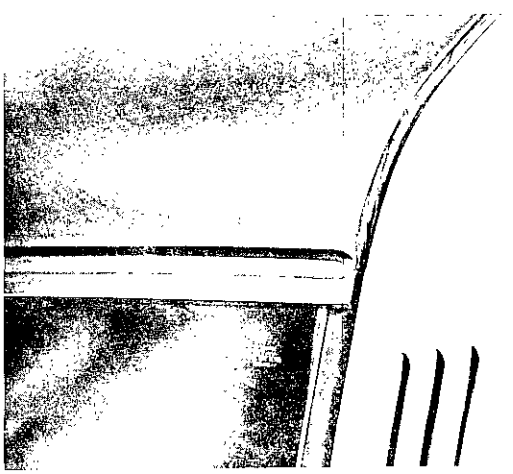
1. Remove folding or solid roof.



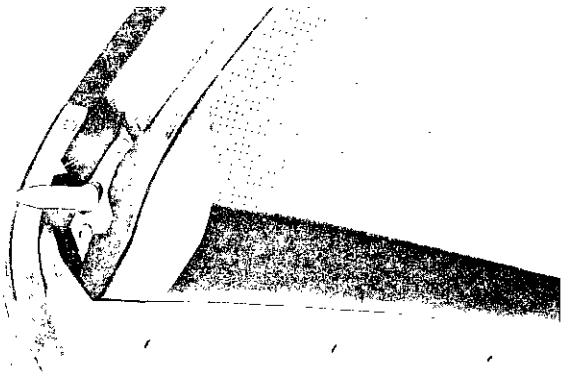
2. Cut out and paste leatherette on windshield frame for escutcheons.

3. Install escutcheons, Part No. 911 565 221 40, with rust-proof metal screws 3.5 x 13 mm.

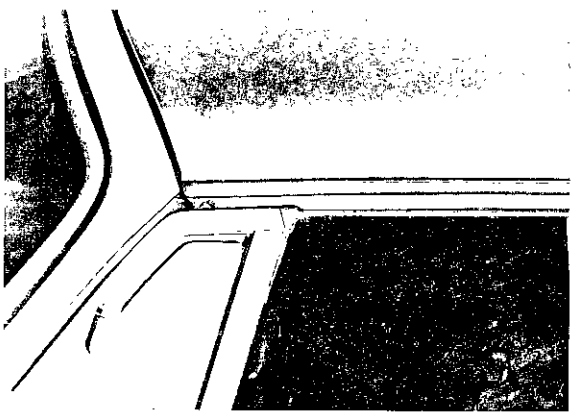
4. Install and lock roof. Place rubber washers on the locating pins to adjust height.



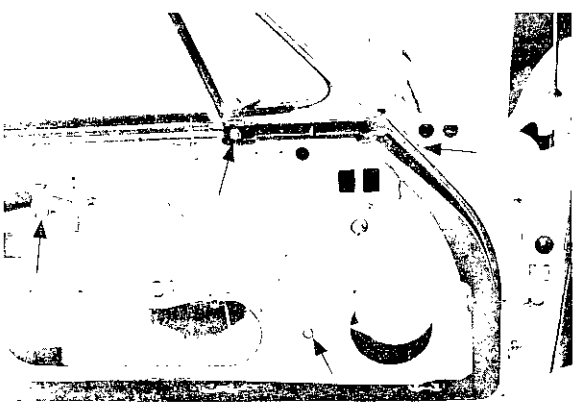
5. Check visually if all windshield and roll bar seals fit roof properly. If the seal lips are pressed together, the particular windshield or roll bar seal must be replaced.



Small leaks can be repaired by gluing pieces of rubber on the roof - especially at the curved sections.



6. Close doors and remove inner door trim if the window frames and door windows protrude or do not align with the side roof frames correctly. Loosen door window frame screws and adjust the door windows to align with roof.

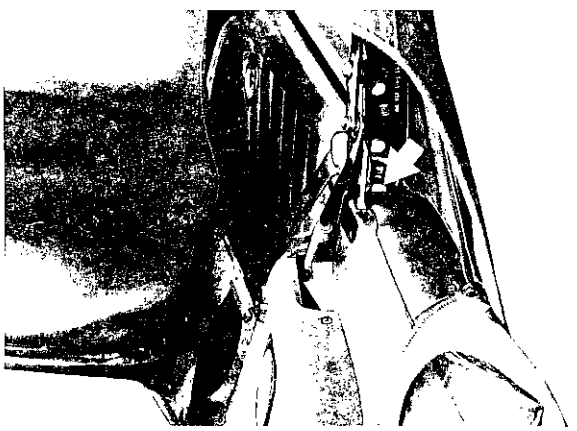


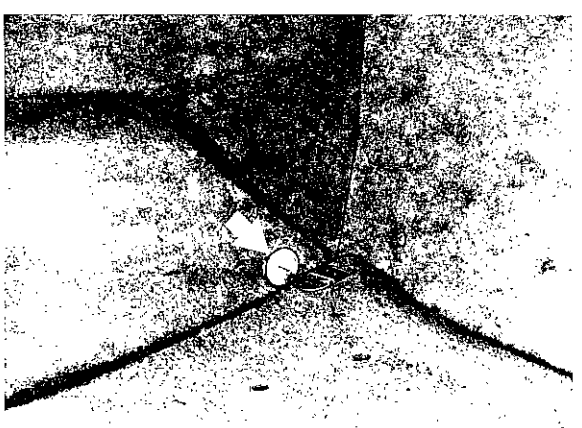
7. Check for leaks with a water test. If necessary, repair leaks with rubber or a non-hardening caulking compound.

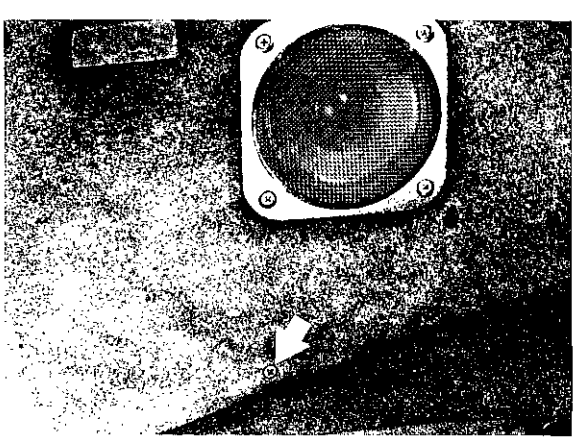
REMOVING AND INSTALLING CABRIOLET TOP (since 1983 models)

Removing

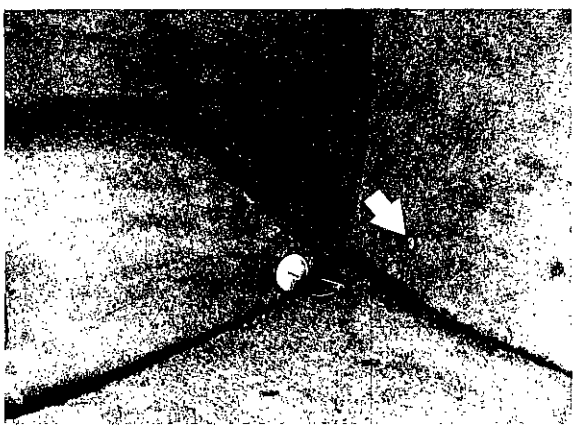
1. Remove mounting screws and push buttons on key boards and side trim panels.
   Pull off plugs on radio speakers and remove all parts.



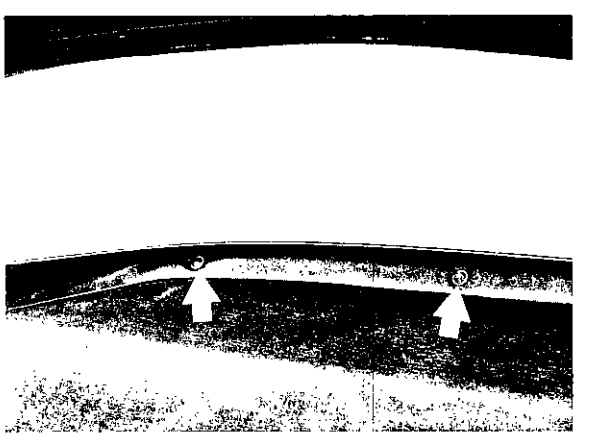




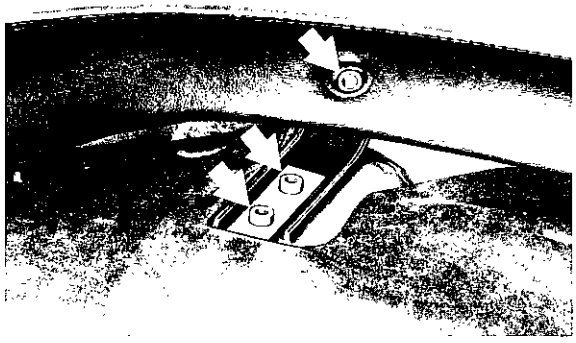
2. Remove screws on rear wall trim panel at bottom on left and right sides. Push up and pull out rear wall trim panel forward.



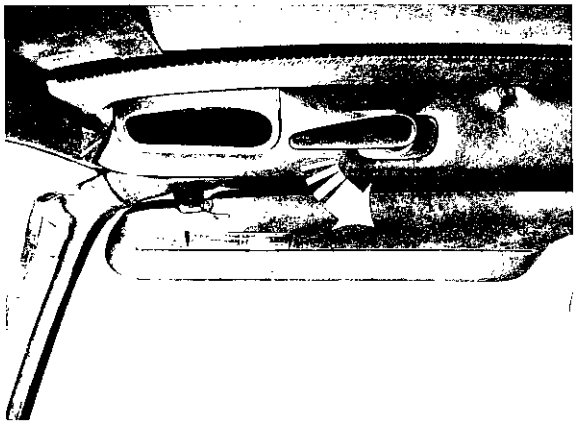
3. Remove caps on tensioning bar with a suitable tool.

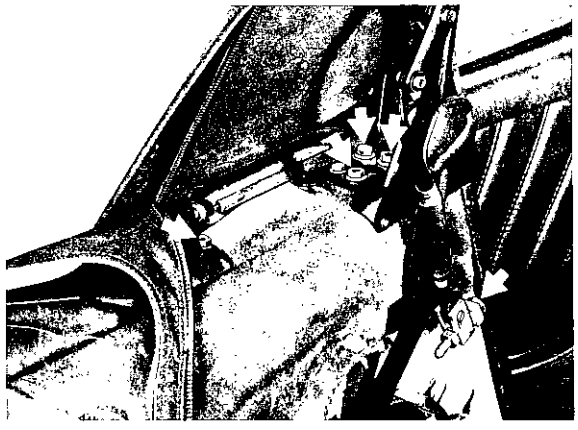


4. Remove mounting screws on tensioning bar and bracket.



5. Open top locks. Remove mounting nuts and screws on top mounts, guide arms tensioning bar. Lift top off of car.





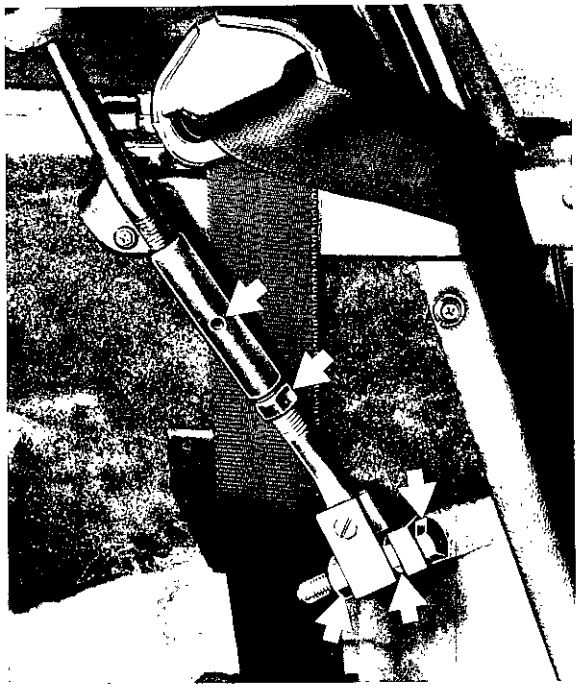
Installing

Installation is in reverse sequence.

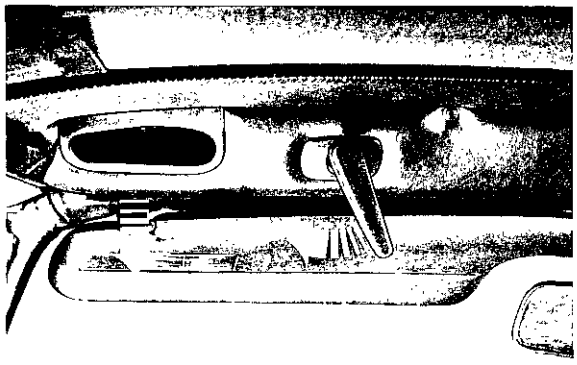
Adjusting

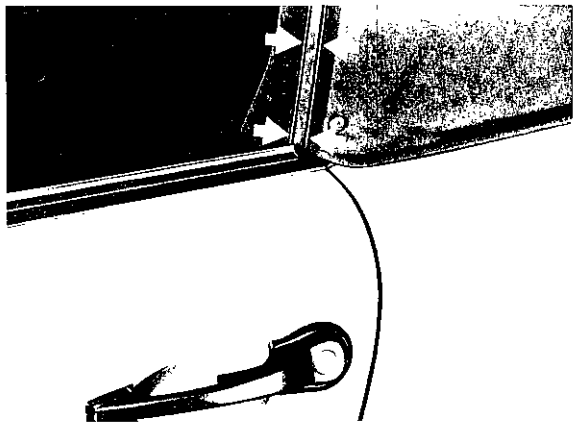
1. 1 and 2 mm thick shims (max. 4 mm) can be used underneath the top hinges for correction of height.

2. The forward motion can be corrected slightly on the supports of the operating levers, so that the guide pins and locking hooks on the windshield frame engage exactly.

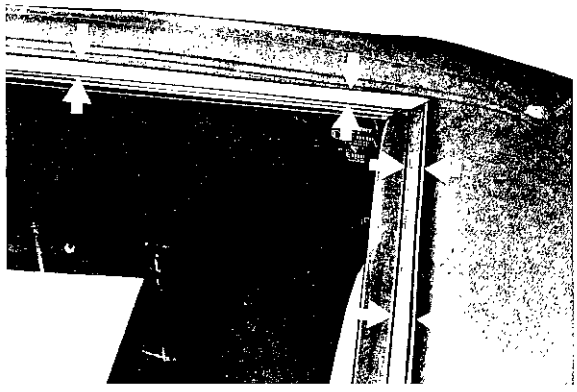


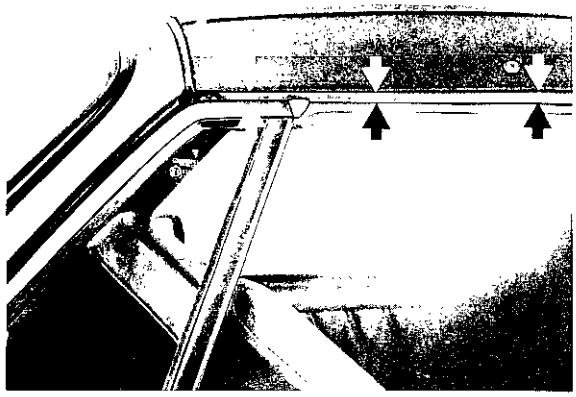
3. Close top, pull down on grip plate with one hand and lock lock simultaneously.
   Repeat this step on the other side.



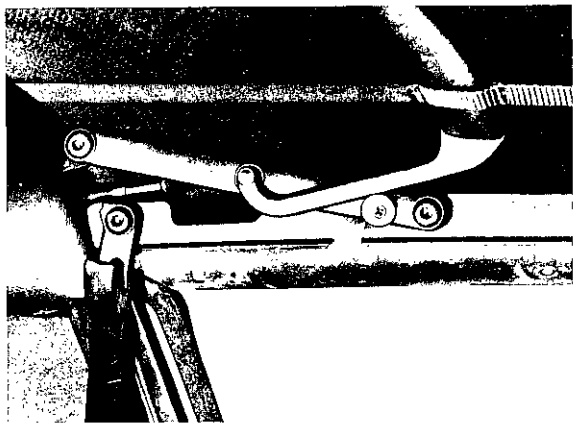


4. If the top is closed, make sure that there is equal distance from the top frame to the windows. If not, center door frames and windows to the top frame.

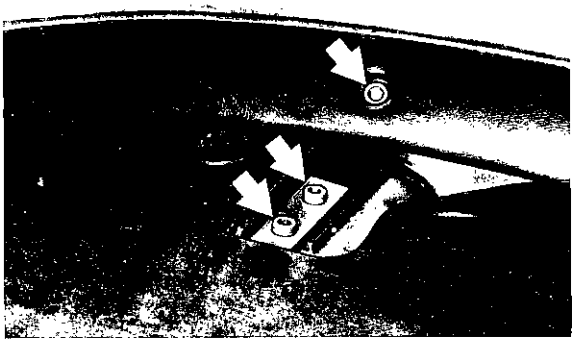


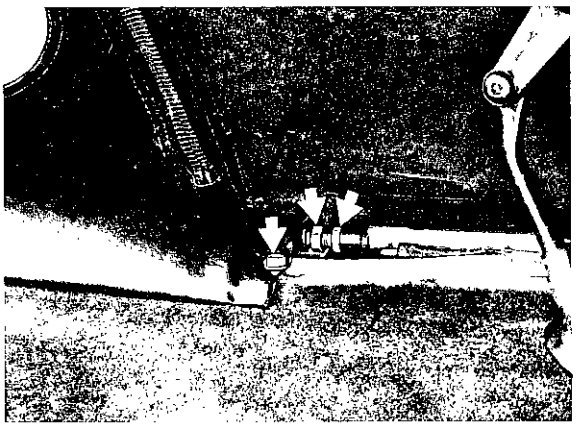


5. In order to have a smooth contour on the front top canvas cover between the front and rear hoops, the eccentric has to be adjusted accordingly.



6. To adjust the tension of the rear window, loosen the mounting screws and then adjust the rear window tension with the tensioning screws on left and right sides.

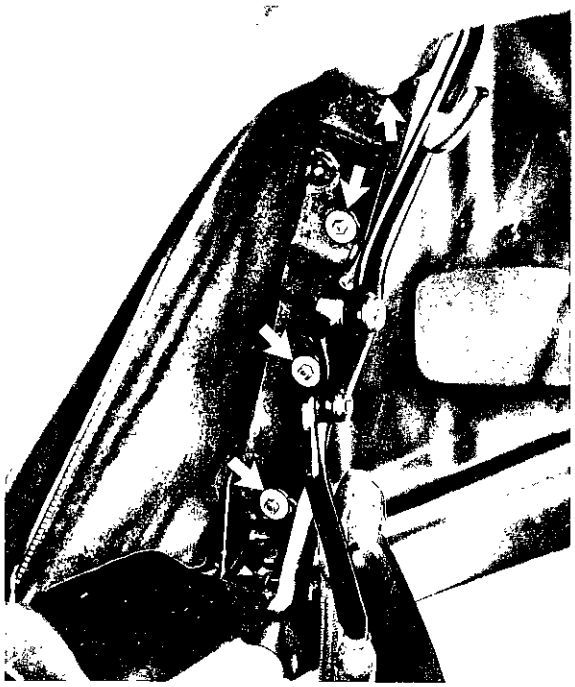


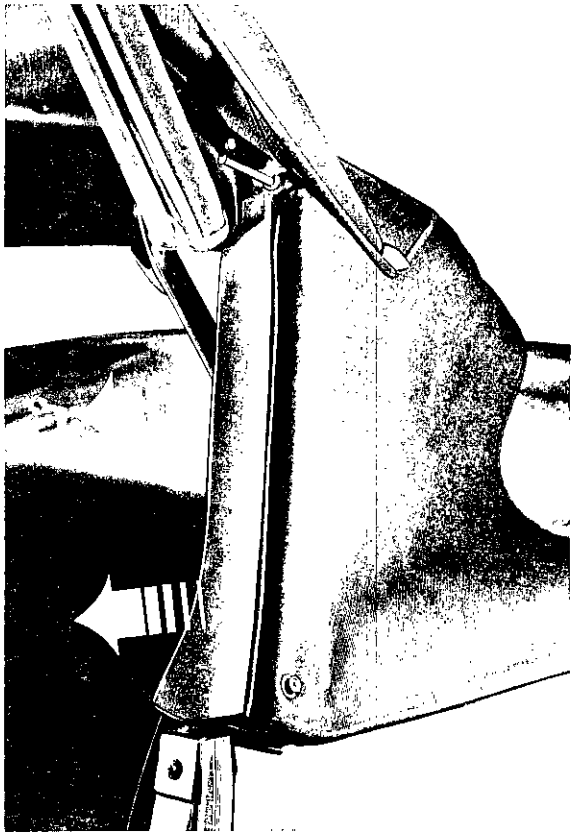


REMOVING AND INSTALLING TOP SEALS

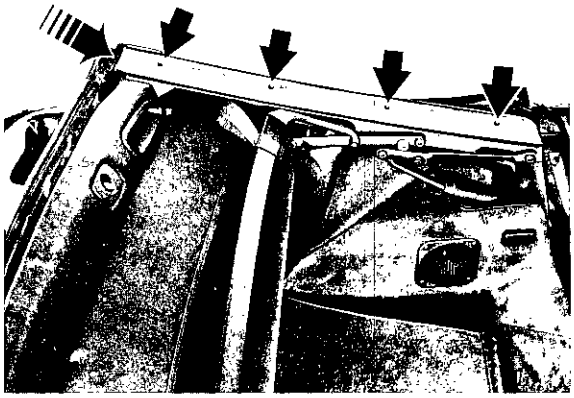
Removing

1. Open top locks and unzip the zipper. Remove nuts and washers on the B pillars and lift off seals with profile section rails and trim forward.

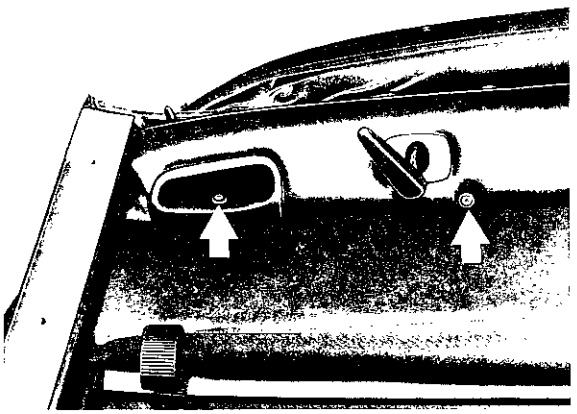




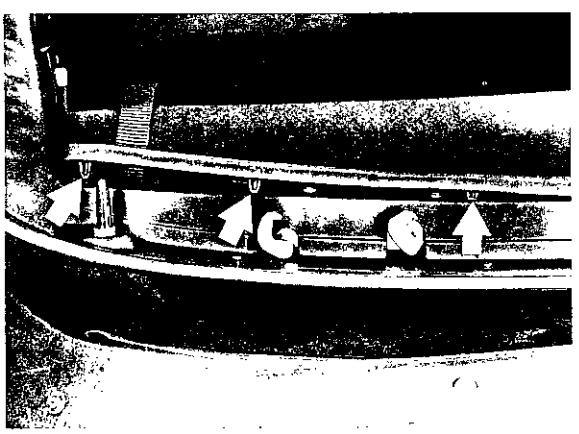
2. Lay back top, loosen screws of top frame seals, disconnect gluing on front hoop tips and take off seals.

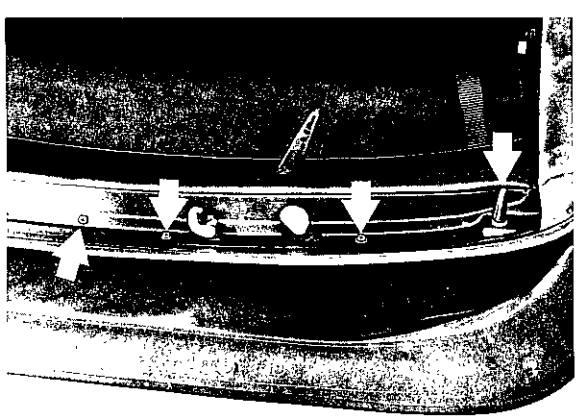


3. Remove rivets of grip plates and mounting screws of hoop trim.

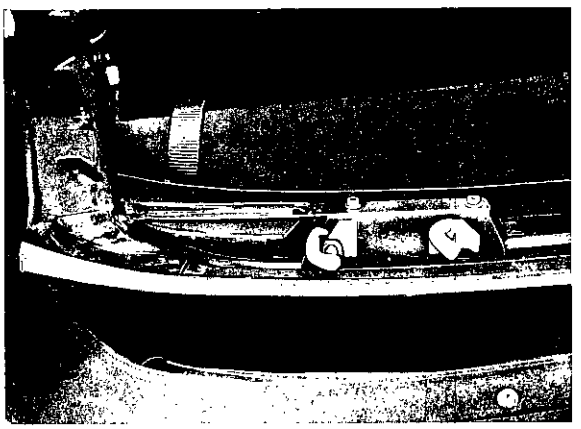


4. Remove grip plates, unclip hoop trim and unscrew locating pins and screws.



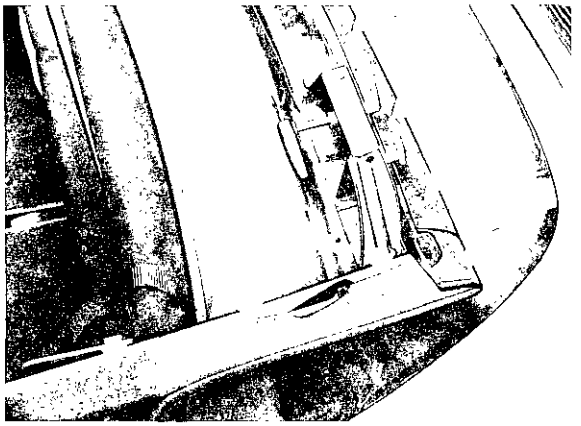


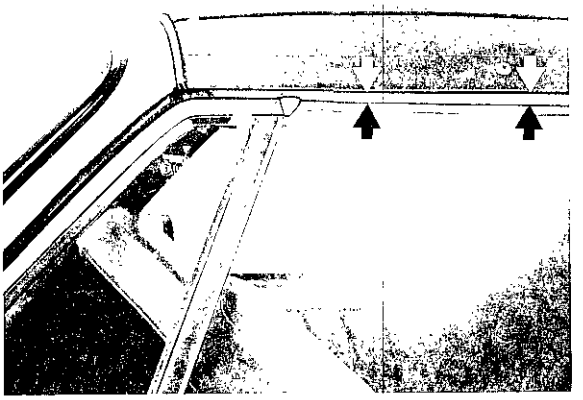
5. Loosen seal on hoop carefully.

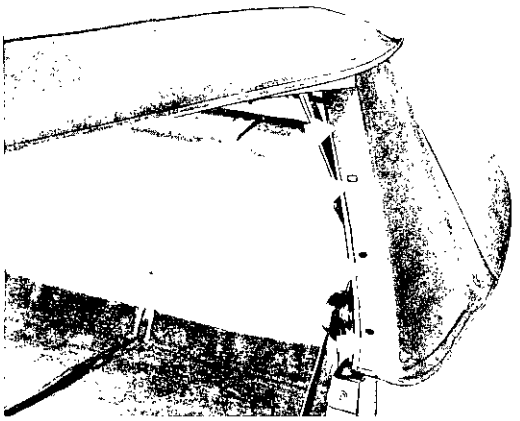


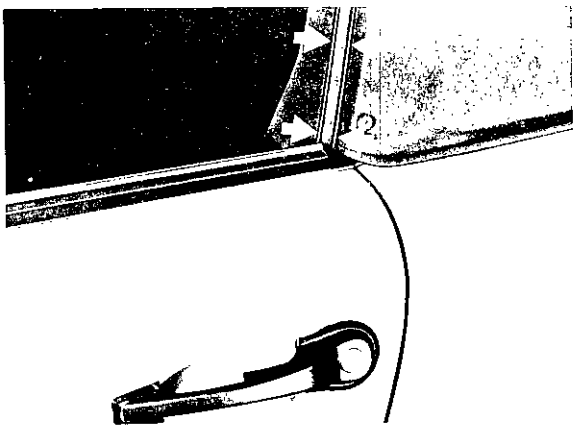
Installing

Installation is in reverse sequence.
All bearing surfaces for seals must be cleaned to remove sealing and adhesive compound.









Adjusting

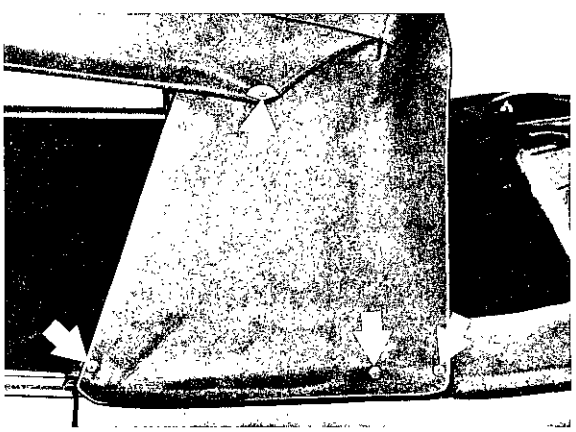
Seals have to be adjusted after closing the top.
Adjust top frame seals so that door windows run up into the provided sealing lips accurately.
Adjust B pillar seals so that door windows have tight contact.

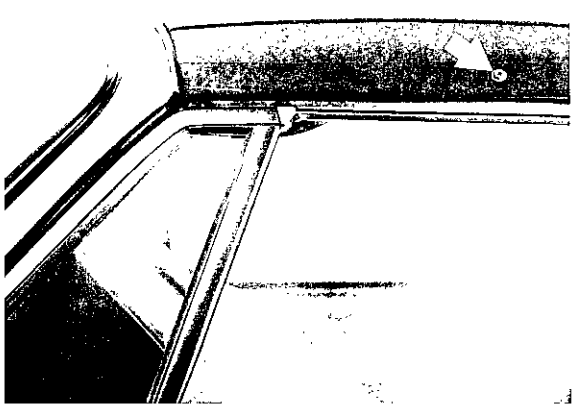
REMOVING AND INSTALLING FRONT TOP CANVAS COVER

Removing

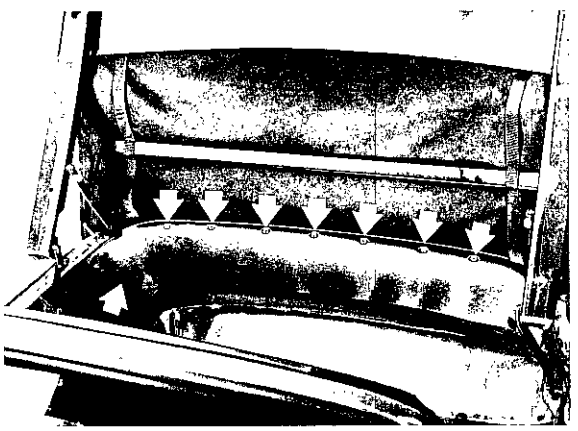
1. Remove key boards, B pillar seals, top frame seals and seal on hoop.
   See "Removing Top and Top Seals".

2. Remove snaps or Tenax bases, mounting screws, corners for tensioning cables and screws for tensioning cable guides.

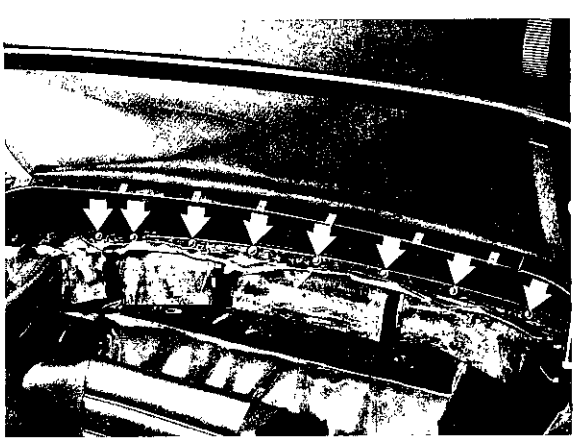




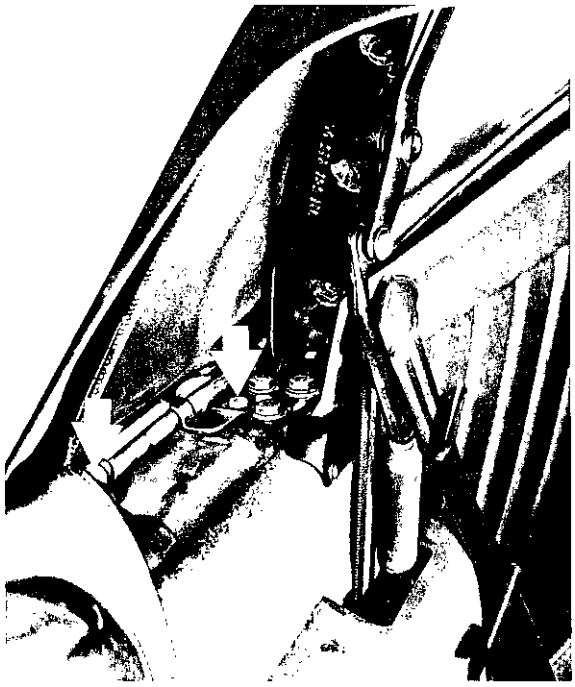
3. Unscrew mounting screws on rear top trim.



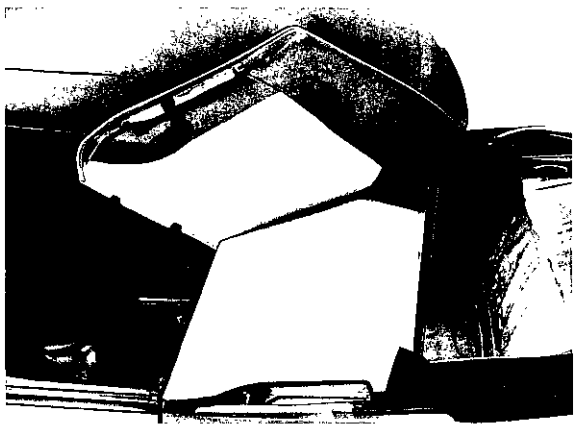
4. Disconnect front and rear cemented top canvas cover and remove screws of mounting rails.



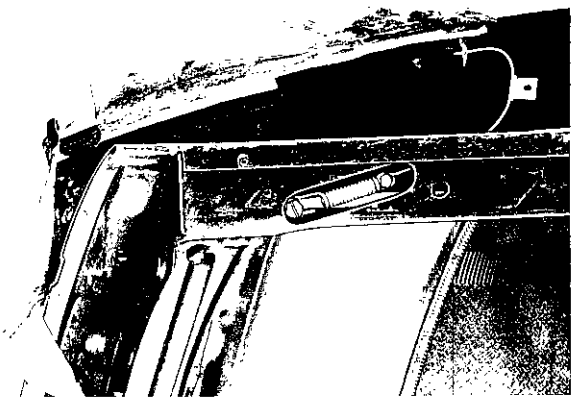
5. Loosen tensioning screws of tooth rails and remove screws.



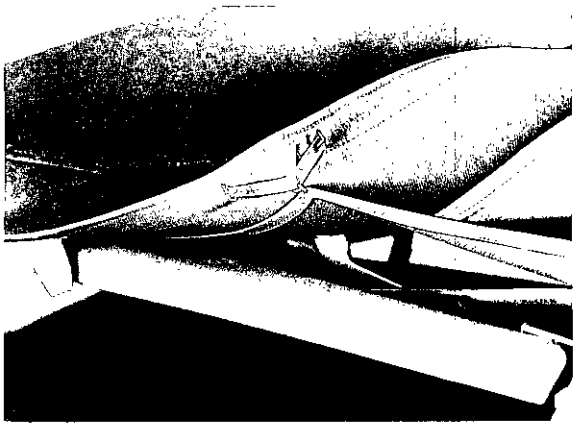
6. Disconnect cemented top canvas cover on B pillars and main hoop.



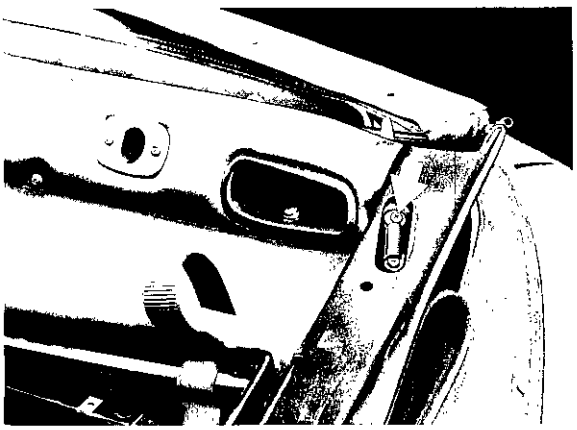
7. Disconnect cemented canvas cover on front hoop.



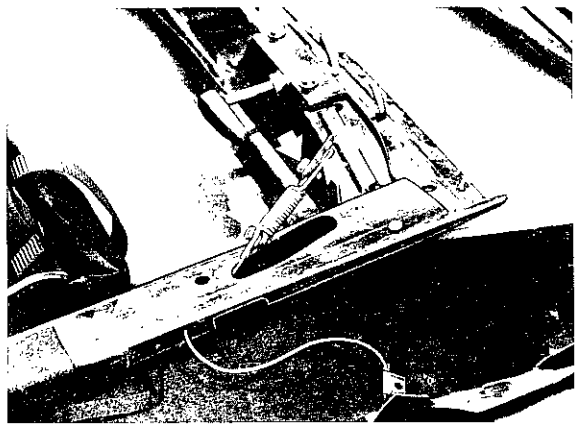
8. Disconnect rubber strap on roof liner.



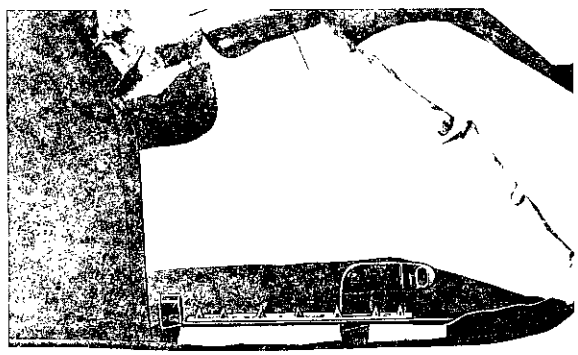
9. Unscrew screws of tensioning springs on top frame.



10. Unscrew tensioning springs on tensioning cables. Pull tensioning cables out of top frame and take off top canvas cover.

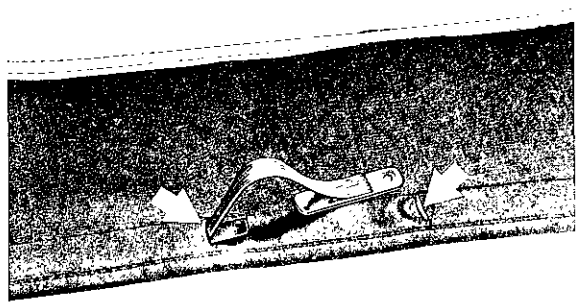


11. Disconnect tooth rails on top canvas cover and remove tooth rails.

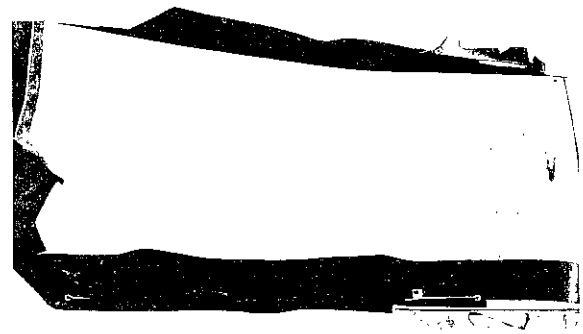


Installing

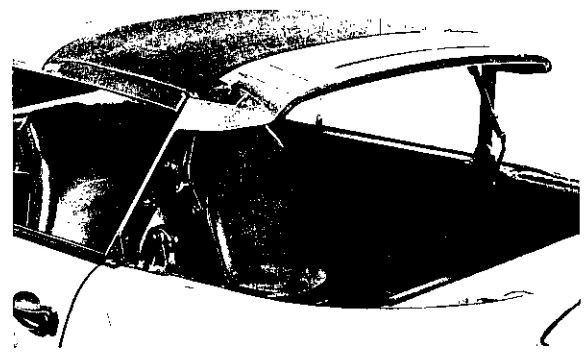
1. Guide rubber strap into top canvas cover.



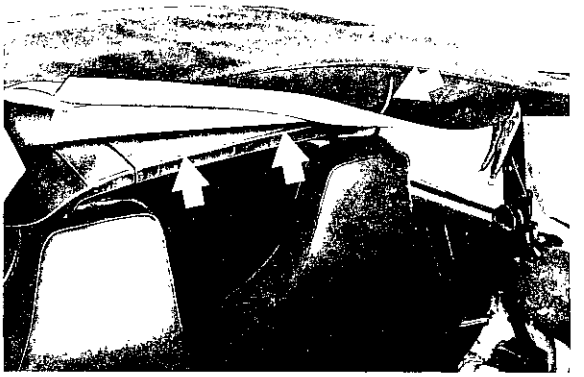
2. Guide tensioning cables into openings in top canvas cover from front end.

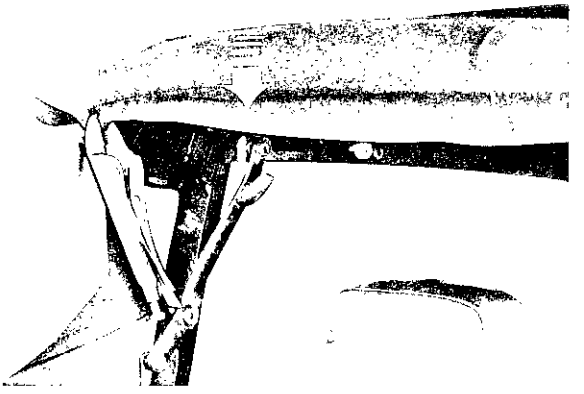


3. Mark center on rear hoop.



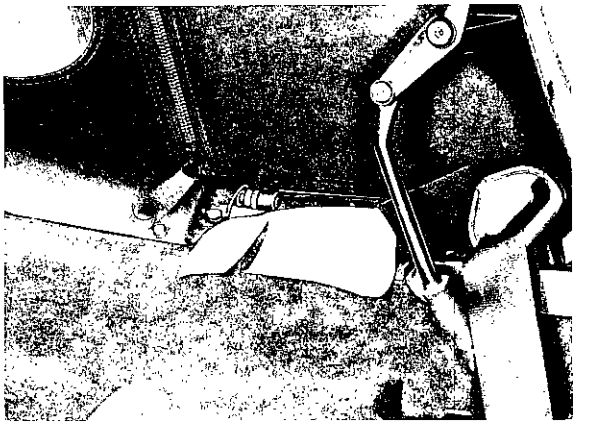
4. Mark center on rear end of top canvas cover. Install and align top canvas cover that marks are aligned. Canvas cover seam must run in groove of hoop edge. Only cement top canvas cover on threaded flange.

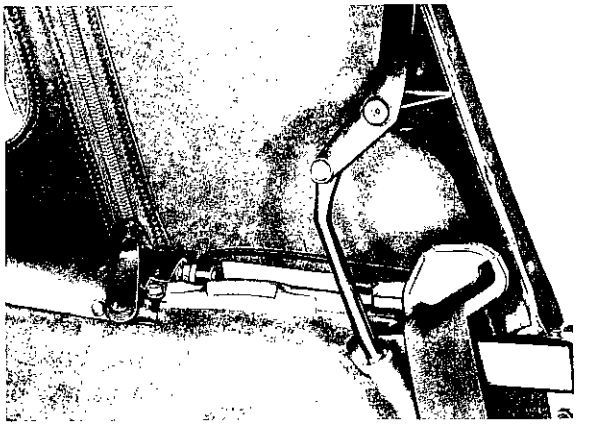




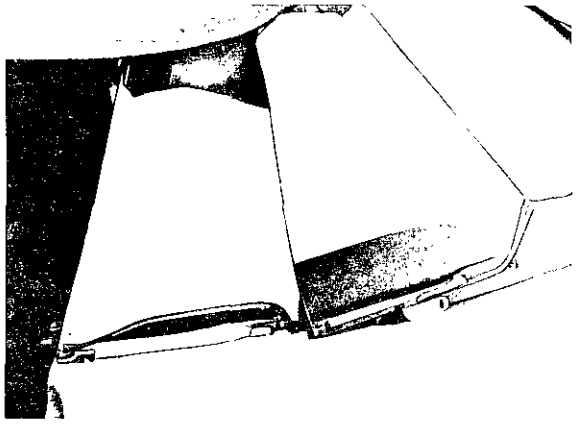
5. Cement top canvas cover on front hoop after stretching it.

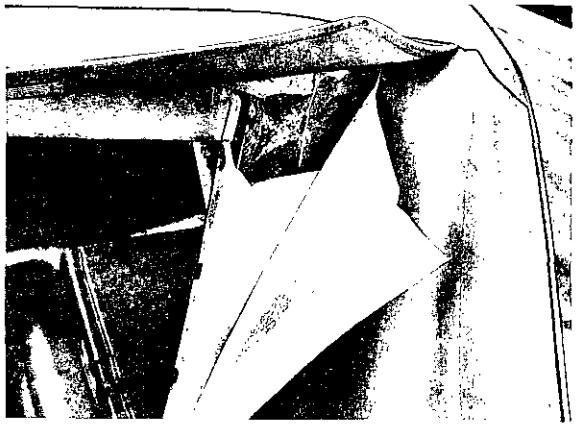
6. Mount tooth rails. Guide mounting strips of top canvas cover underneath tooth rails, cut to size, apply coat of cement, stretch, connect doubled in teeth and bend down teeth.



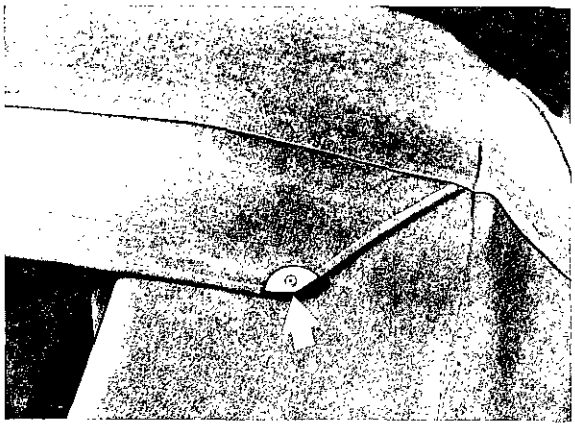


7. Loosen tooth rails and fold back top canvas cover. Insert seals and coat canvas cover with cement.
   Mount tooth rails and cement canvas cover on the B pillars.

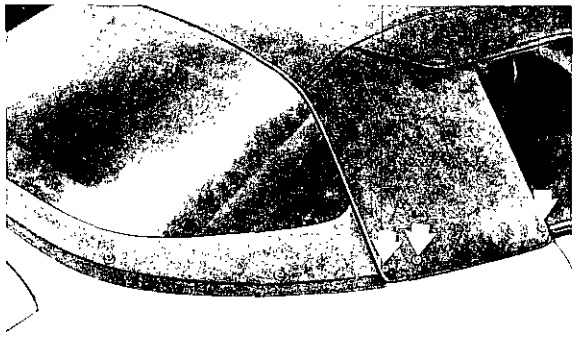


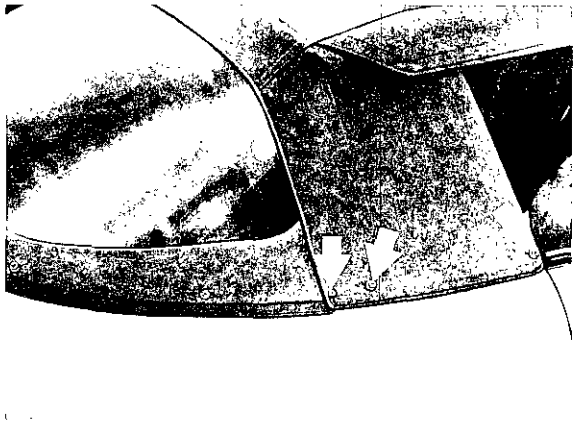


8. Stretch side canvas cover. Make a hole in the cover with a pointed punch and mount corners and tensioning cables with screws.



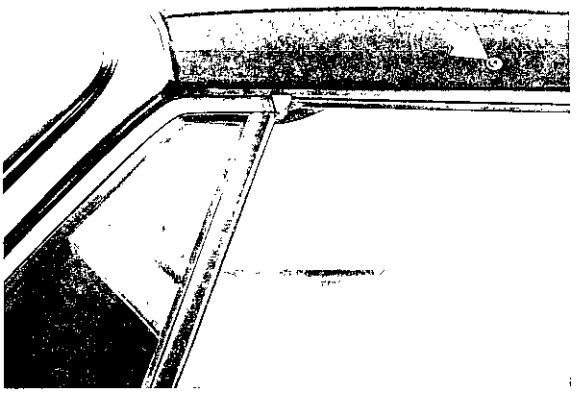
9. Install snaps or Tenax bases and screws with cloth protection washers.



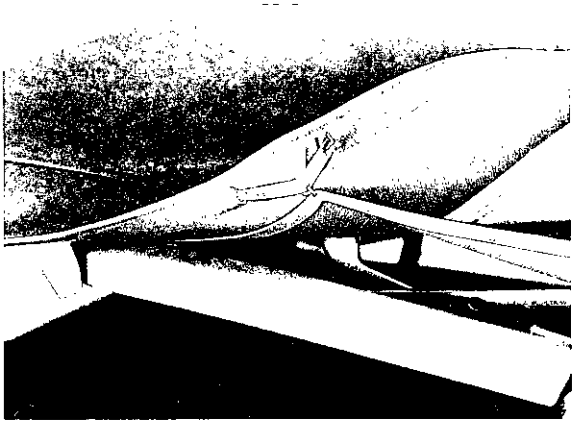


10. Cut front end of top canvas cover to size and cement on top frame.

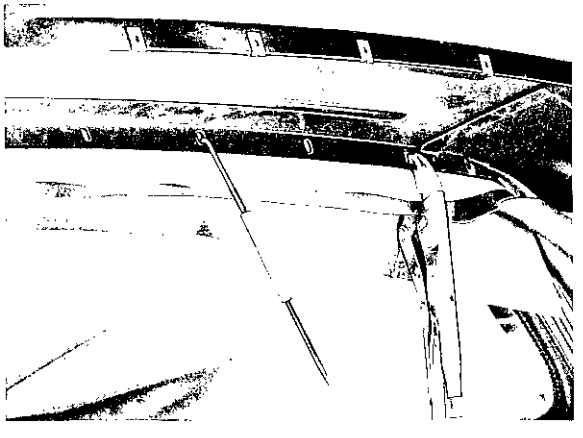
11. Guide tensioning cables into top frame. Mount tensioning cable guides and canvas cover with screws and cloth protection washers.



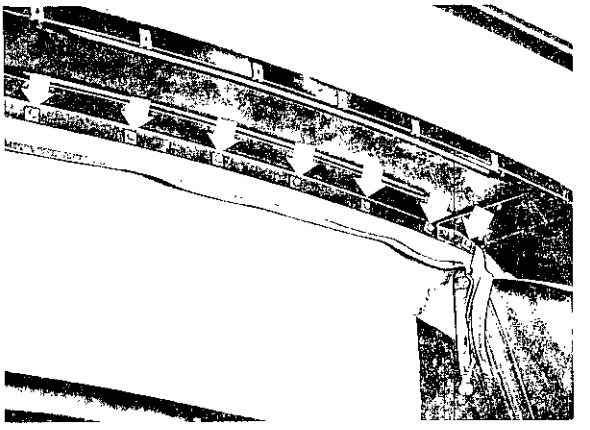
12. Sew rubber strap on roof liner.



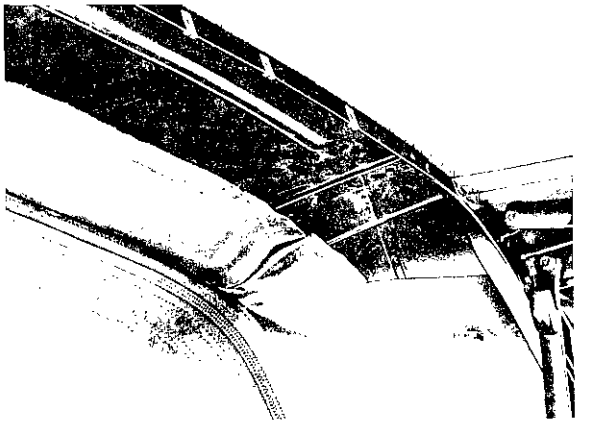
13. Clamp rear canvas cover on rear hoop with mounting rail and make hole in canvas cover with a suitable tool.



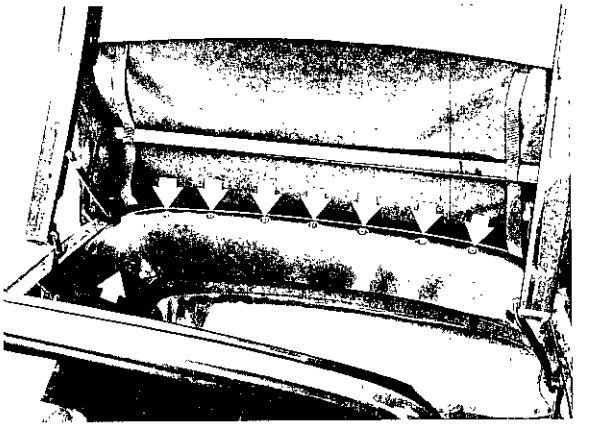
14. Mount shim wedges with screws.



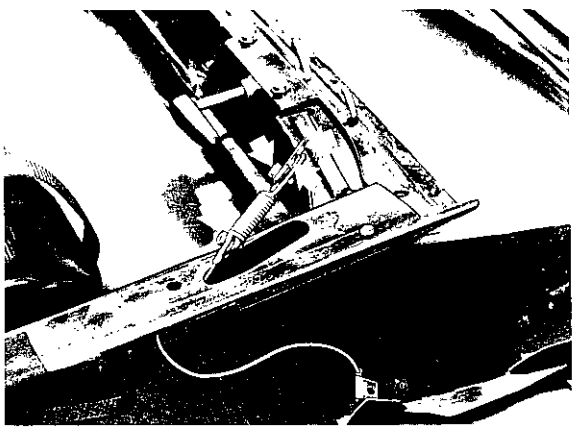
15. Cement rear and front canvas cover on rear hoop.



16. Install rear top trim.



17. Screw on tensioning springs with tensioning cables. The bracket has two raised bosses, with which the tensioning force of the tensioning cables can be adjusted. Mount tensioning springs with bracket on the top frame.

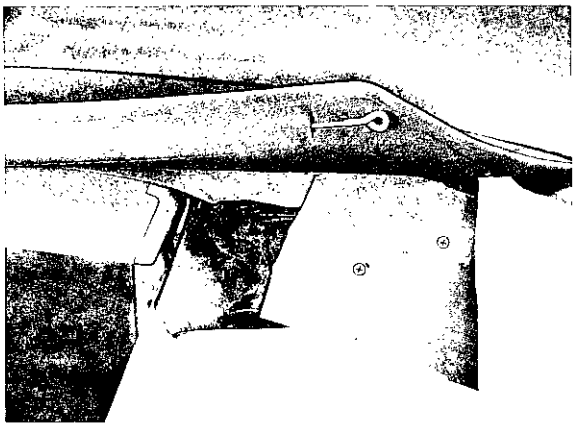


18. See "Installing Top and Top Seals" for rest of installing procedures.

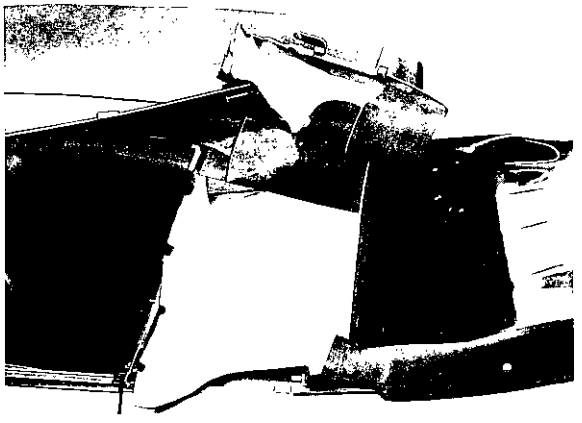
REMOVING AND INSTALLING REAR TOP CANVAS COVER WITH TENSIONING BAR AND MOUNTING RAIL

Removing

1. Remove the key boards, side wall trim panels, rear wall trim panel, B pillar seals and front top canvas cover on B pillars. See "Removing Top Canvas Cover Seals and Front Top Canvas Cover". Remove screws on main hoop and disconnect cemented points.



2. Disconnect canvas cover on B pillars and take off canvas cover.



Installing

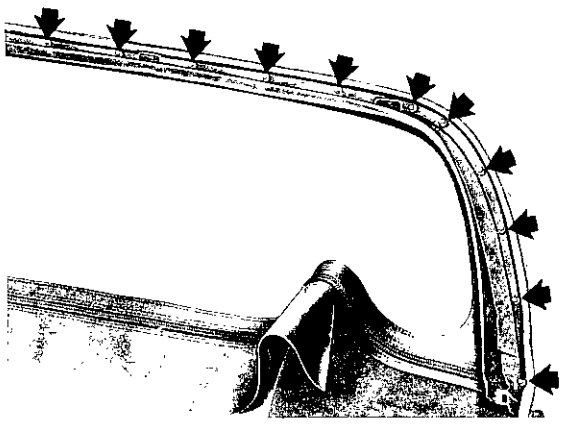
Installation is in reverse sequence.

REMOVING AND INSTALLING REAR TOP CANVAS COVER WITHOUT TENSIONING BAR AND MOUNTING RAIL

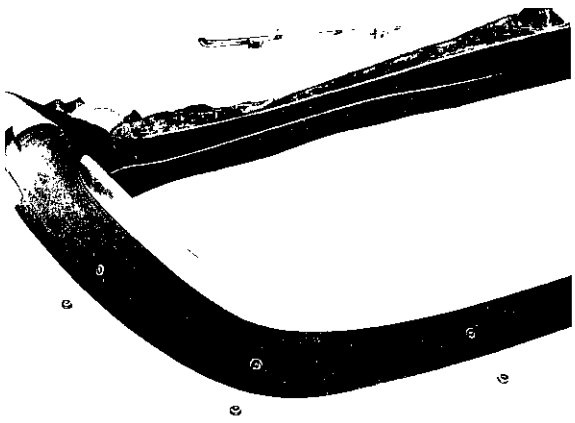
Removing

1. Remove key boards, side wall trim panels, rear wall trim panel, B pillar seals, front canvas cover and rear canvas cover on B pillars. See "Removing Top Canvas Cover Seals, Front and Rear Canvas Covers with Tensioning Bar and Mounting Rail".

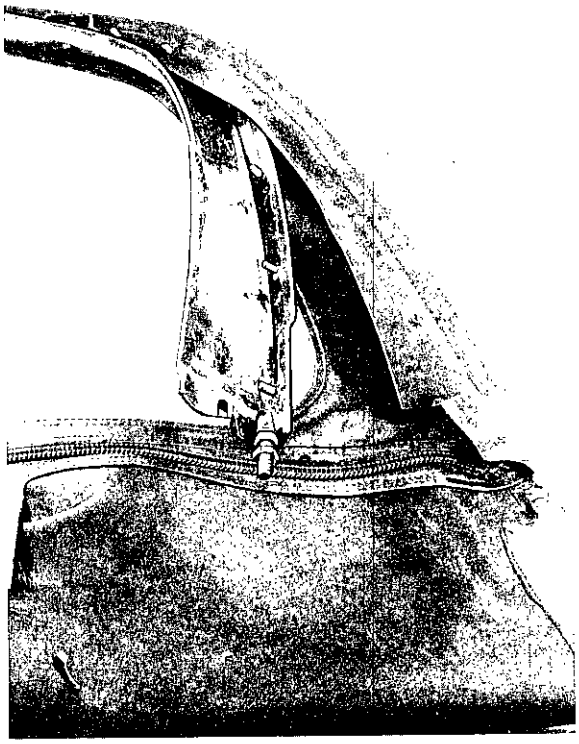
2. Remove nuts on tensioning bar. Lift off shims, clamping rails and seal.



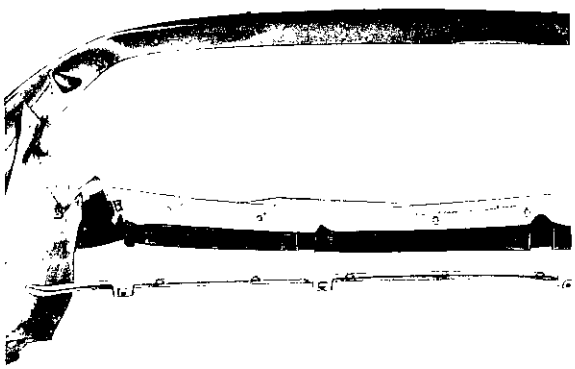
3. Unscrew snap heads and Tenax bases on tensioning bar.



4. Disconnect cemented canvas cover on tensioning bar.

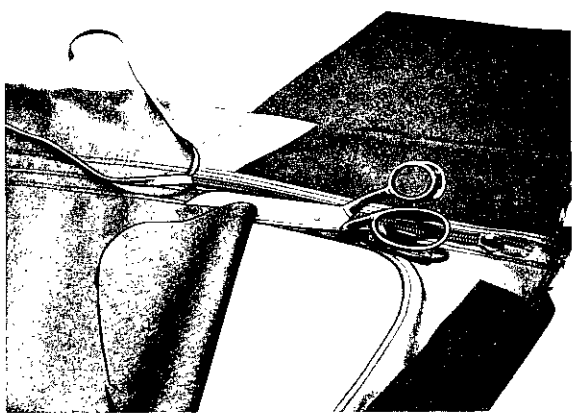


5. Disconnect and remove cemented mounting rail.

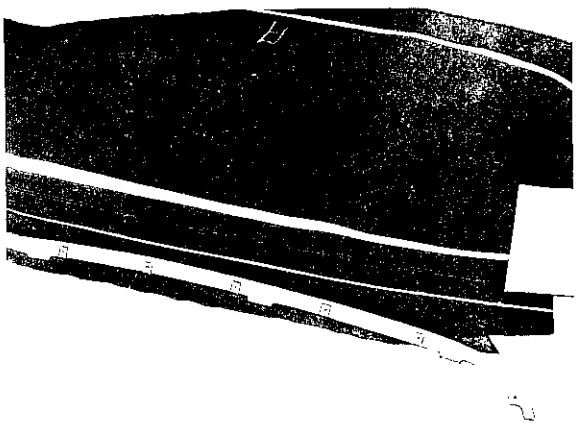


Installing

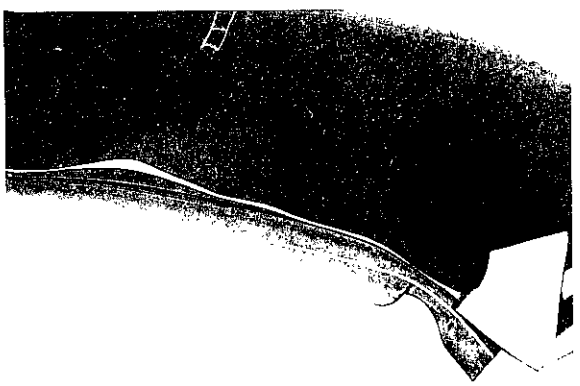
1. Cut out protective coat on inside of top canvas cover and zipper with a scissors.

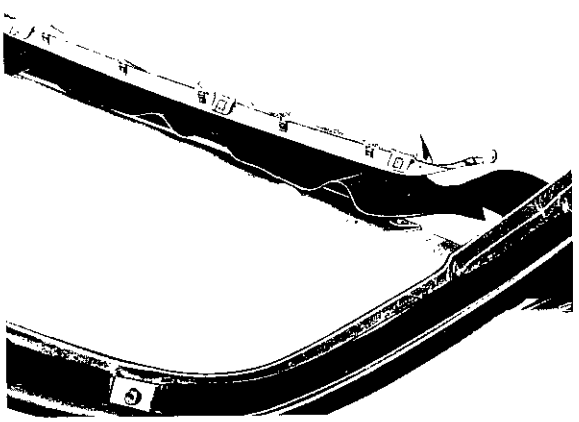


2. Mark distance from rear window to cementing edge of mounting rail on top canvas cover; approx. 80 mm.

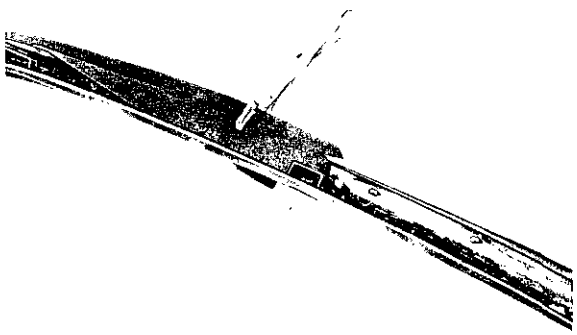


3. Cement mounting rail on top canvas cover according to marks.

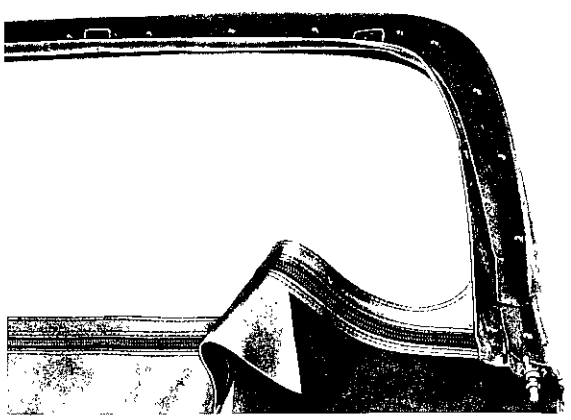




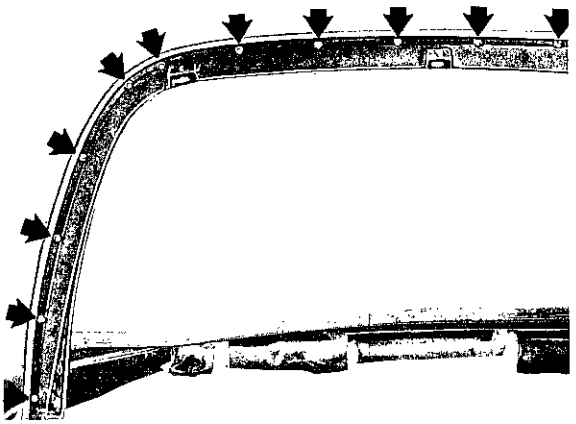
4. Fit canvas cover on tensioning bar and cut to size. Cement canvas cover on outside of tensioning bar from the center to left and right sides. Seam of canvas cover must run slightly higher than lower edge of the tensioning bar.



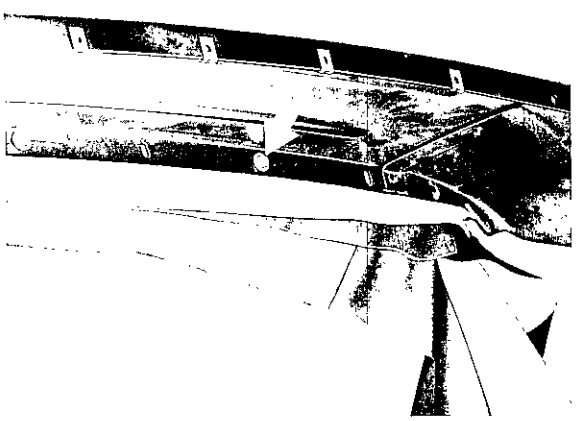
5. Cut holes in canvas cover for the staybolts and cement canvas cover on inside of tensioning bar.



6. Fit in seal and clamping rails, and mount with washers and nuts.



7. Place rear end of canvas cover on car. Place mounting rail with canvas cover on main hoop and install screws. Press down on rear of tensioning bar. If polyglass window does not have sufficient tension, disconnect canvas cover on the main hoop again. Disconnect cemented mounting rail and stretch the canvas cover.

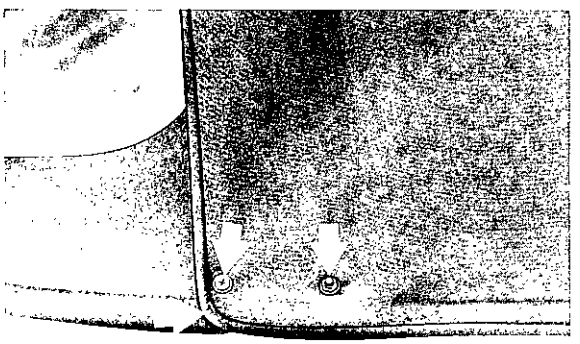


8. For remaining installation procedures refer to "Installing Rear Canvas Cover with Tensioning Bar and Mounting Rail".
Install top canvas cover seals.

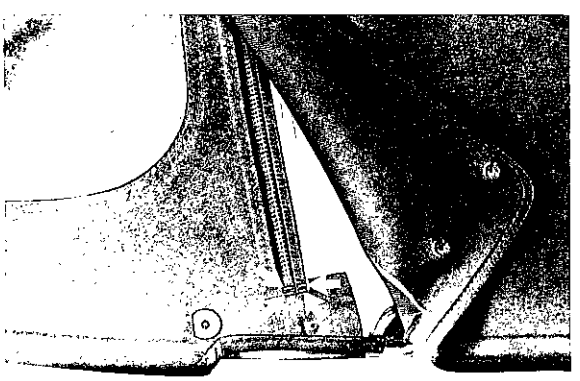
REPLACING ZIPPER SLIDE

Removing

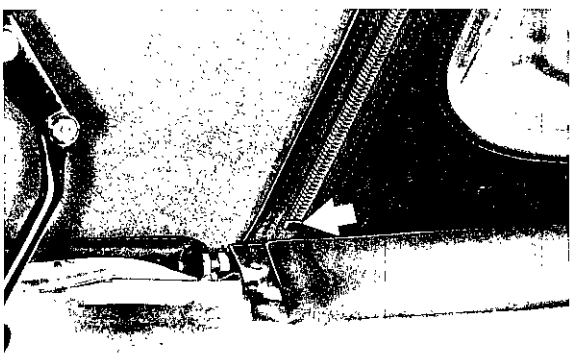
1. Remove Tenax base and self-tapping screw with cloth protection washer on the side, where the end hook is located (on rear end of front canvas cover) and open up sewn seam.



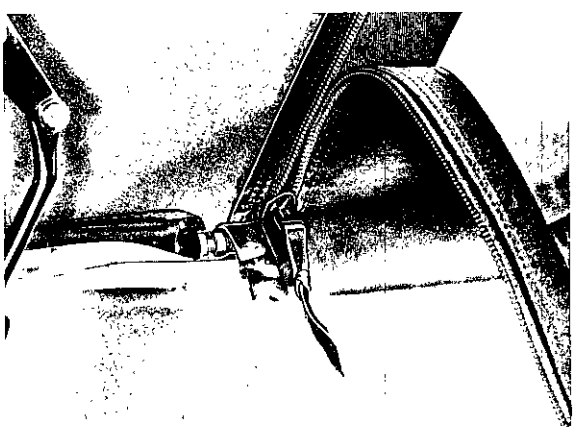
2. Fold open canvas cover and bend open claws of end hook.

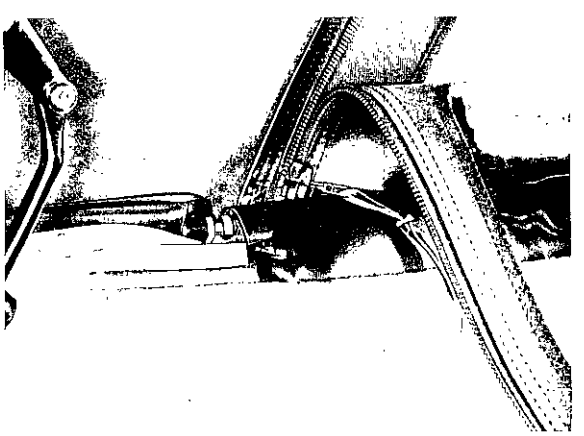


3. Lift off end hook towards inside.



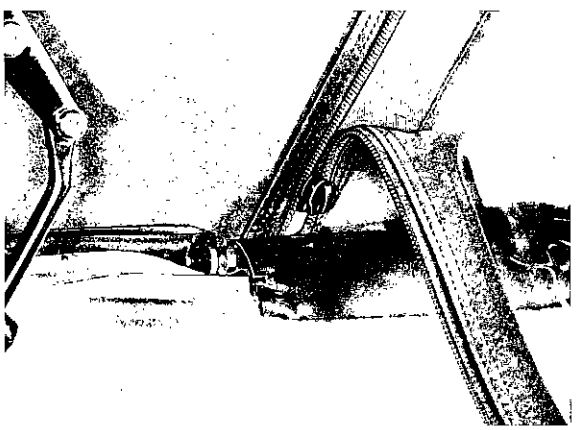
4. Remove key board. Slide zipper slide down and remove.



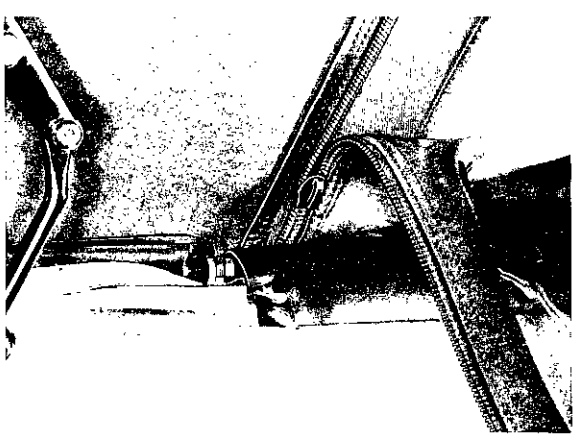


Installing

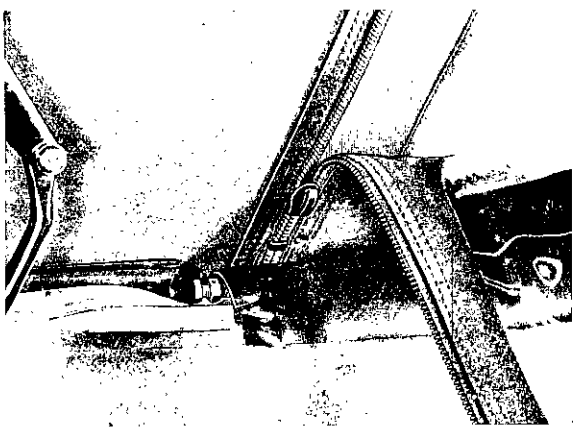
1. Press new zipper slide into rear zipper section.



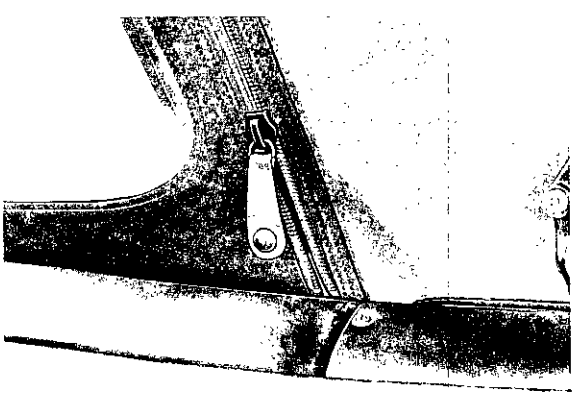
2. Insert zipper slide in front zipper section.



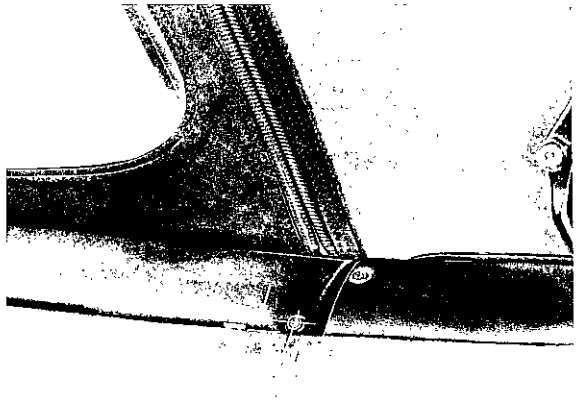
3. Insert end hook and bend down claws from the outside.



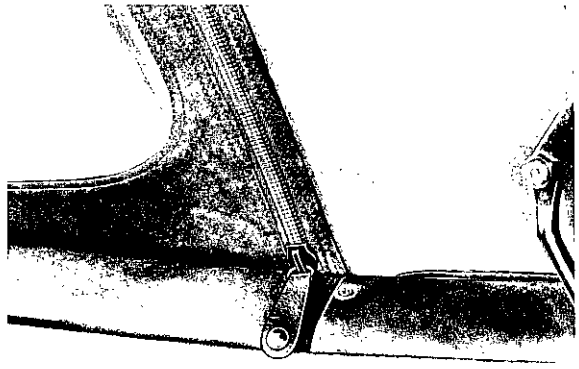
4. Mount pulling strap and snap head with eye on zipper slide.



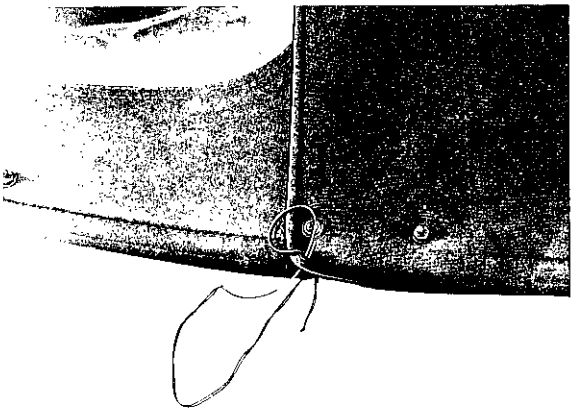
5. If applicable, drill a hole in the front of the key board, where the snap base is mounted with a self-tapping screw (see figure).



6. Press snap head into snap base.



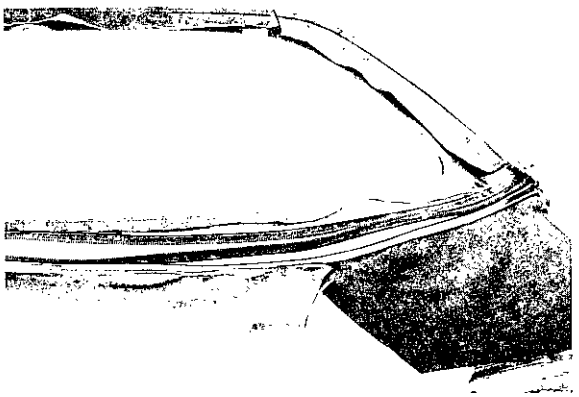
7. Install key board, Tenax base and self-tapping screw with cloth protection washer as well as front and rear canvas covers with two seam stitches.



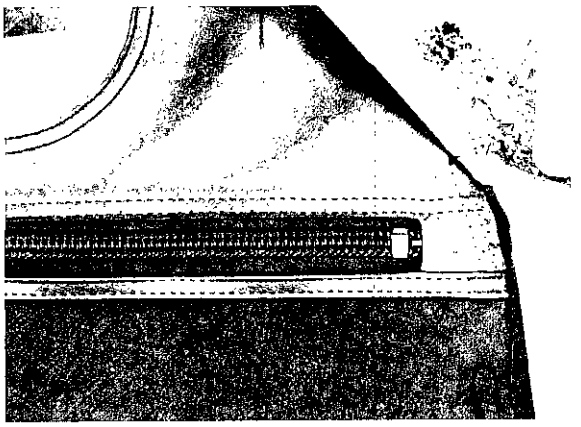
REMOVING AND INSTALLING ZIPPER

Removing

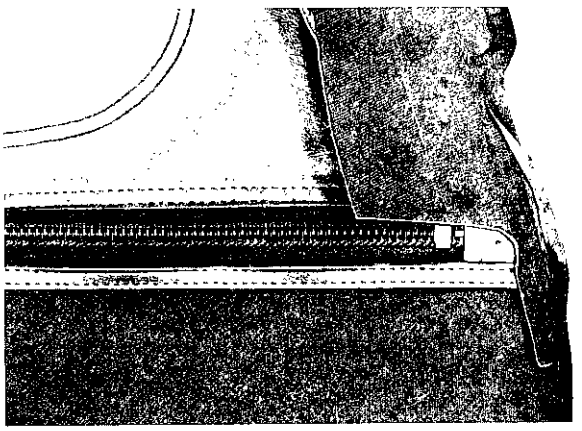
1. After removal of the rear top canvas cover without tensioning bar and without mounting rail, cut out zipper from rear canvas cover.



2. Cement canvas cover on zipper from above.

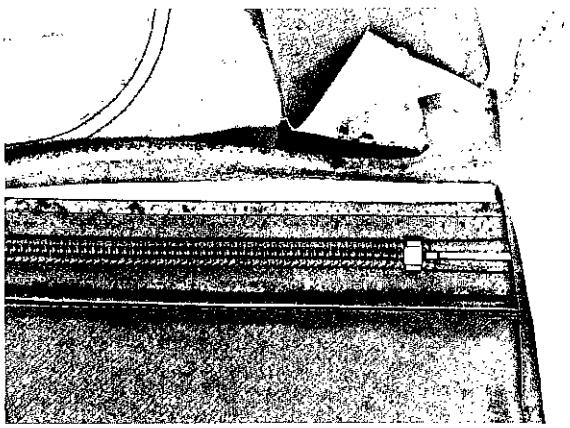


3. Cement tensioning section.



Installing

1. Canvas cover must be free of sewing yarn at cut surfaces. Apply coat of cement on zipper and canvas cover. Cement bottom of zipper on canvas cover on one side.



4. Wait until cement is dry and then sew zipper and border. Cement tensioning bar and mounting rail on canvas cover and install complete part in car.

RECOMMENDED CEMENTS OR ADHESIVES

Cements/Adhesives:

Terocal 2444 for cementing seals

Manufacturer: Teroson Werke GmbH
6900 Heidelberg 1

Dekalin 3649 for installation of canvas on metal or plastic

Manufacturer: Deutsche Klebestoffwerke GmbH
Rödiger & Sohn
6450 Hanau/Main

INSTALLING INSIDE MIRROR

1. Remove screw from mirror arm and take off mirror base.

2. Remove adhesive plate and clean burr, if any, from the mirror base collar.

3. Carefully clean and degrease windshield and mirror base (use alcohol, acetone, etc.)

4. Mark mounting surface for mirror base. Upper edge of mirror base must be in windshield center, 80 mm below windshield seal. Mark location on outside of windshield.

5. Heat mirror base on hot plate to approximately 200° F.

6. Remove backing (white or beige) from adhesive plate and place on mirror mounting base.

NOTE

Do not use adhesive plates on which the backing was already partially removed or plates from which the backing cannot be fully removed. These conditions will cause faulty bonding.

7. Seal all sides of adhesive plate with a bead of weatherstrip adhesive (3 M # 8011 or similar adhesive).

8. Place mounting base on windshield.

9. Attach extension US 8015 to the wheel tensioner (Bosch part # 2 688 190 000) and install mirror mounting base. Apply a pressure of 12 kp (26.5 lbs) for 15 minutes.

CAUTION

To prevent damage to windshield, compress the wheel tensioner against the floor tunnel. Do not compress against windshield.

NOTE

The adhesive area should be a shiny black and without dull black spots.

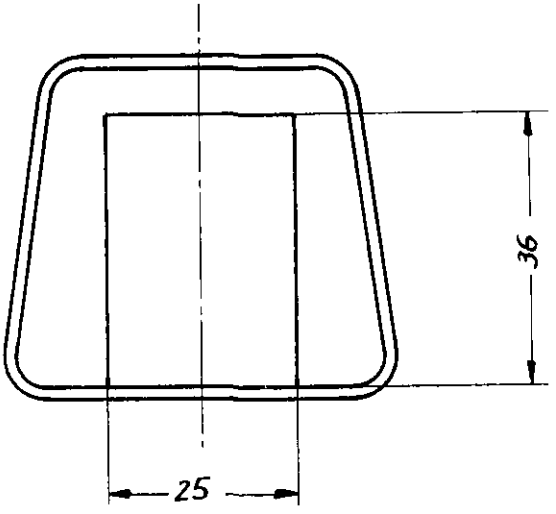
10. Remove tool and attach mirror to base.

INSTALLING INTERIOR REAR VIEW MIRROR

Note: Repair kit, Part No. 914 731 025 10, is required for the following operations.

1. Clean and degrease mirror base and windshield with acetone.

2. Cut strip of tape and paste on mirror base as illustrated.



3. Fill in open surface on mirror base with an adhesive to height of tape.

4. Pull paper backing off tape.

5. Position mirror and press firmly so that tape surface rests completely flat on winshield.

6. Remove excess adhesive with cloth soaked in aceton.

7. Adjust mirror carefully, because the adhesive requires 24 hours to dry completely.

8. If possible, the car should not be used for several hours to let the adhesive settle and dry.

TARGA ROOF ADJUSTMENTS - FROM 1970 MODELS

General

If wind noise or creaking should occur in a Targa roof due to changed position, the following adjustments may become necessary to rectify the condition:

Creaking Noises

1. Remove folding top. Check front and rear tensioning rails for proper alignment, adjust if necessary.
2. Check roof locks, tighten retaining screws.
3. Check hinges, removing pins if loose; worn pins should be replaced. Grease hinges lightly.
4. Check front locating pins for wear, replacing if necessary.
5. Check weatherstrip at windshield and roll bar ends, replacing if damaged or flattened.

   NOTE

   Lightly coat weatherstrip with glycerine during the winter season.

6. If moulding strips in windshield frame show pressure marks, meaning improper tolerances at the convertible top, straighten the strip with a piece of hardwood, or remove strip and rework top surface across windshield frame.

Wind Noises

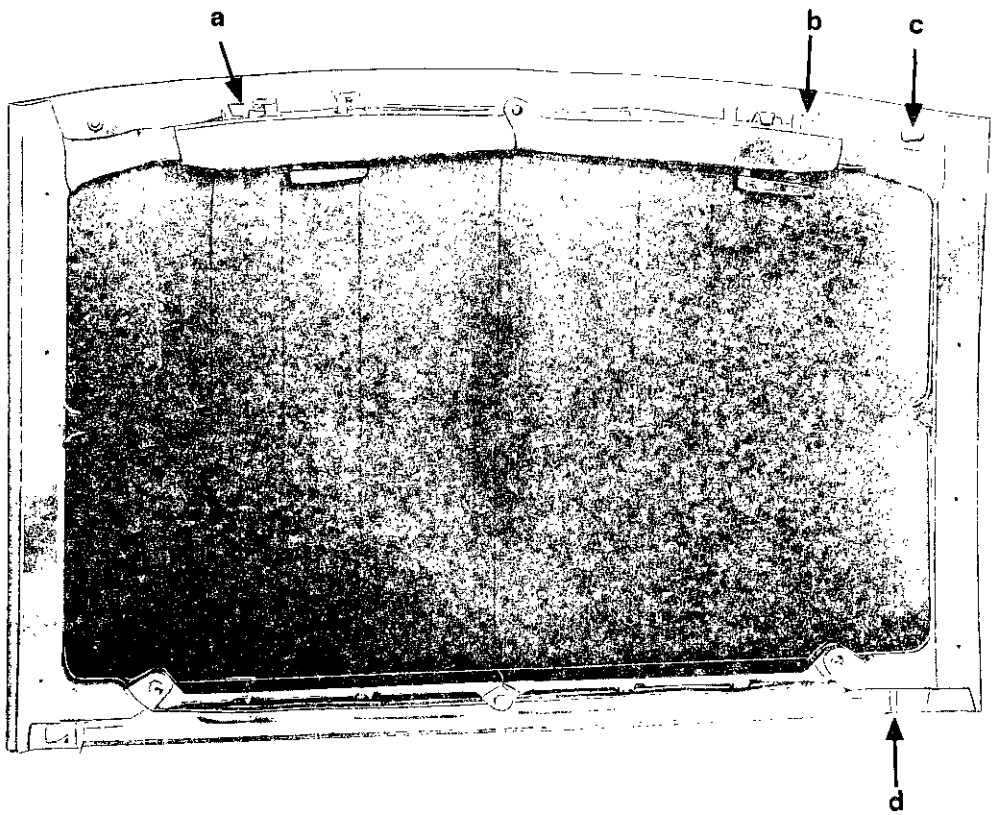
1. Check convertible top for proper seating. Readjust if it protrudes above the windshield frame or roll bar, or if it is uneven.
2. Check windows for proper sealing, readjust if necessary.
3. Readjust proof side seal if necessary.
4. Using wide-grip flat pliers, lightly bend rear seating surface of the folding top downward. (Do not bend the rounded sides).
5. Install convertible top and check positioning, readjusting door window frames if necessary.

Top Billows Out

The convertible top may billow out a high speeds with the fan on and windows closed (pressure in passenger compartment).

Remedy:

1. Move rear support pin upward on convertible top.
2. Check rear hinges, removing hinge pins if loose; worn hinge pins should be replaced. Grease hinges lightly.
3. If high pressure is exerted on the gasket at the LASTIK supports (roll bar), take gasket out of the supports and cut the base down as required. Glue it in place and secure with plastic rivets.

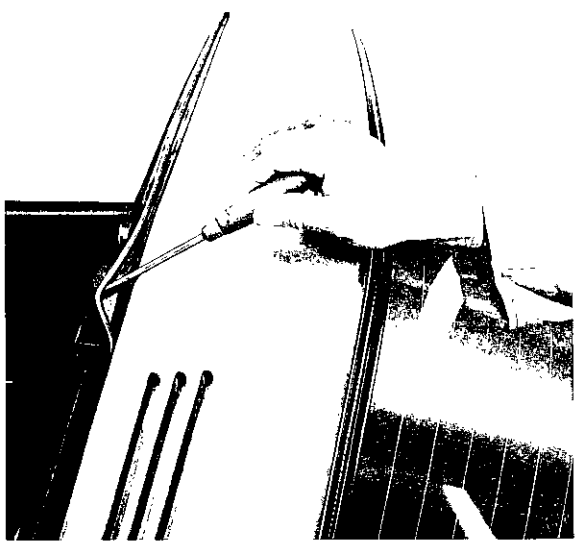


a Tensioning rail

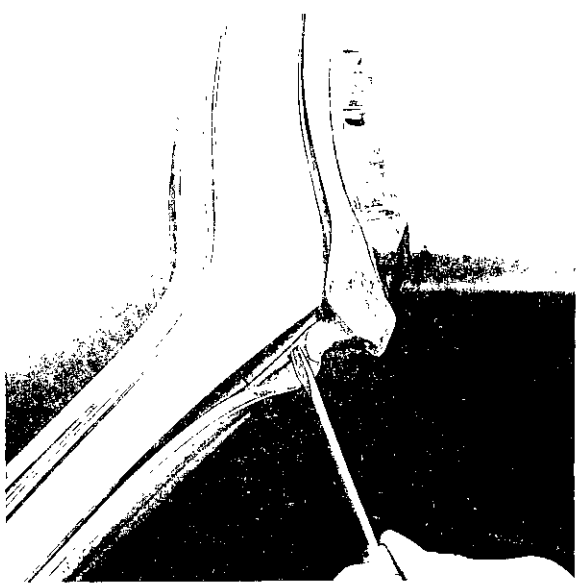
b = Roof lock pawl

c = Locating stud

d = Rear support pin



Rollbar weatherstrip, new version



Windshield frame weatherstrip, new version

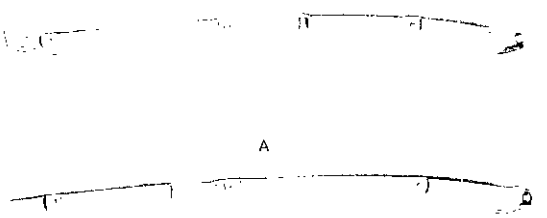
MOULDING CHANGES IN WINDSHIELD TOP

Beginning with chassis numbers	911 251 0143	911 T
	911 221 0091	911 E
	911 231 0059	911 S

moulding strips with a 2.3 mm depression in the area of the roof lock pawls are being installed on windshield frame top in all Targa vehicles. These strips can also be used on earlier vehicles, providing that the channel going across the windshield frame is reworked accordingly.

NOTE

If the moulding strips show pressure marks causing noise, do the following:

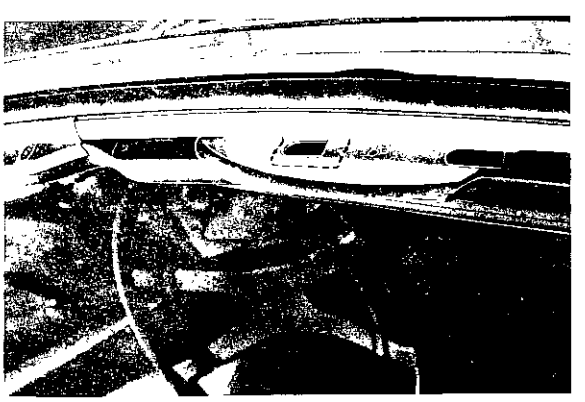


A = New version

1. Reshape moulding strip with a piece of hardwood, as necessary.

2. Replace windshield frame weatherstrip if damaged or flattened. (The convertible top should rest only against the weatherstrip).

3. Further possible retification:
   - a - Remove old moulding strips.
   - b - Partly loosen leatherette covering.
   - c - Reshape top surface of windshield frame to accomodate new-type moulding strips.

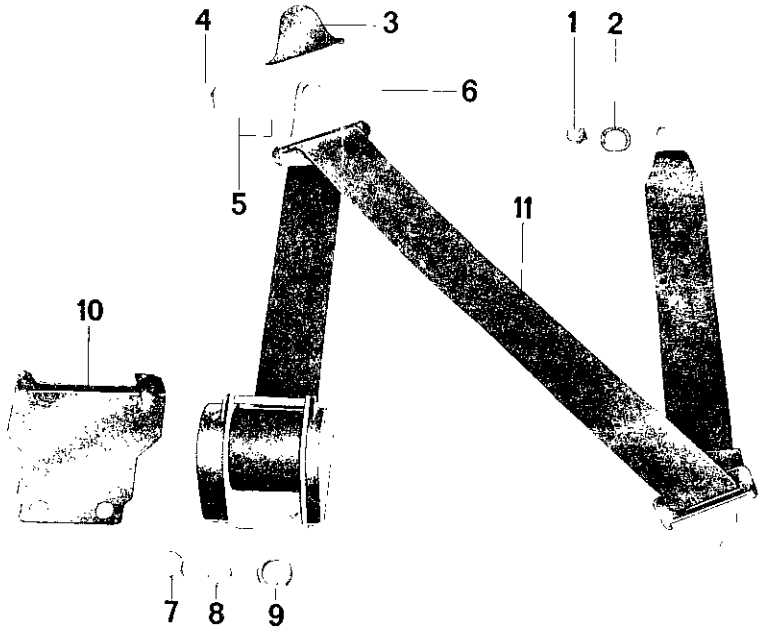


CAUTION

Support other side of windshield frame to prevent damaging windshield when reshaping surface.

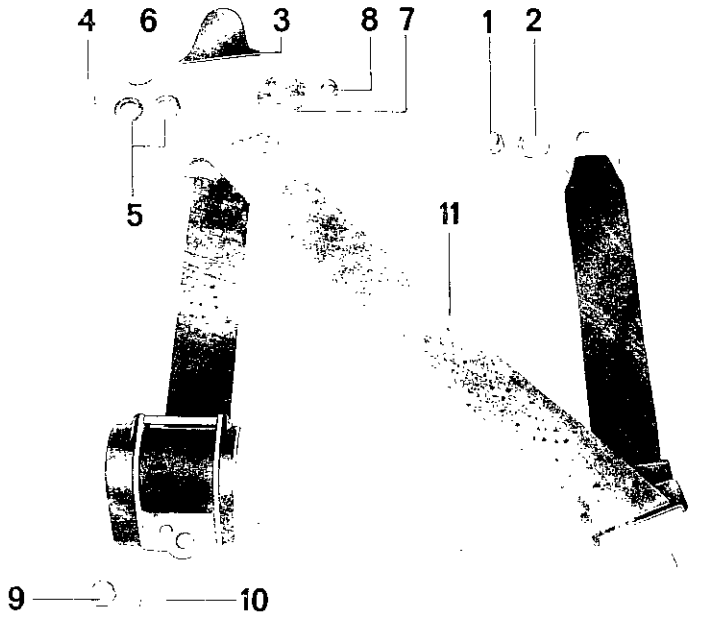
- d - Reglue leatherette covering and install new moulding strip.

INERTIA REEL SAFETY BELT WITH AUTOMATIC LOCKING RETRACTOR (COUPE)



Nr.	Description	Qty	Note when removing	Note when installing	Special instructions see
1	Retaining bolt	1		Use original self-locking bolt.	9.3 - 1/5
2	Spring washer	1		Replace if necessary.	
3	Loop cover	1			
4	Retaining bolt	1		Use original self-locking bolt.	9.3 - 1/5
5	Flanged washer	2		Position properly.	9.3 - 1/5
6	Washer	1			9.3 - 1/5
7	Retaining bolt	1			
8	Serrated washer	1		Replace if necessary.	
9	Spacer	1			
10	Support plate	1		Install together with belt retractor.	9.3 - 1/4
11	Inertia reel belt with automatic retractor	1		Check installation side. Belts are different for right and left side.	9.3 - 1/4

INERTIA REEL SAFETY BELT WITH AUTOMATIC LOCKING RETRACTOR (TARGA)



Nr.	Description	Qty	Note when removing	Note when installing	Special instructions see
1	Retaining bolt	1		Use original self-locking bolt.	
2	Spring washer	1		Replace if necessary.	
3	Loop cover	1			
4	Loop retaining bolt	1		Use original self-locking bolt.	9.3 - 1/7
5	Flanged washers	2		Position properly.	9.3 - 1/7
6	Washer	1			9.3 - 1/7
7	Protective washer	1			9.3 - 1/7
8	Spacer	1			9.3 - 1/7
9	Retaining bolt	1			
10	Serrated washer	1		Replace if necessary.	
11	Inertia reel belt with automatic retractor	1		Check installation side. Belts are different for right and left side.	9.3 - 1/7

REMOVING AND INSTALLING INERTIA REEL SAFETY BELT WITH AUTOMATIC LOCKING RETRACTOR AND ELECTRIC WARNING DEVISE

Removal (Coupe and Targa)

1. Detach belt from side of seat.

2. Remove loop cover from B-pillar or roll bar.

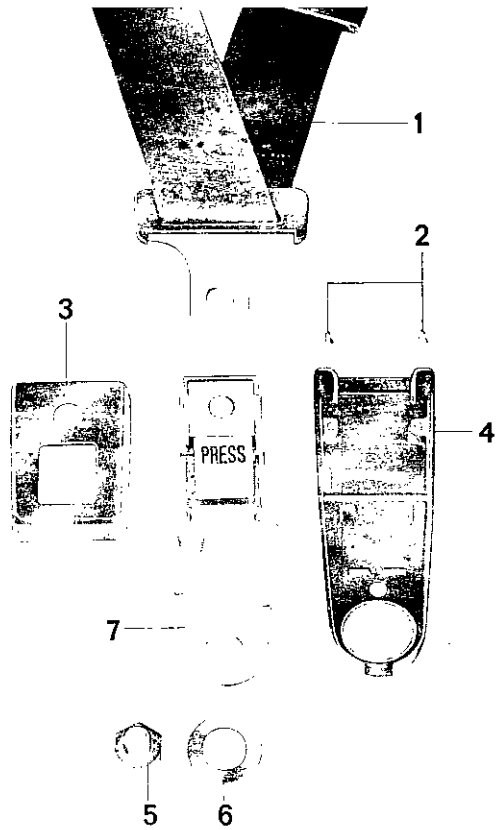
3. Remove loop retaining bolt. Remove flanged washers, in Targa additionally the spaser located under the perforated cover.

4. Remove cover from side section; this requires removal of sheetmetal screws from the rosette plate and rocker panel. In the Targa vehicle, remove covering strip from side cover as well as sheetmetal screws from the rosette plate in the side cover and take both parts off.

NOTE: The belt can be pulled out through the opening once the plastic cover is removed from the buckle assembly.

5. Remove belt retractor retaining screws.

6. Remove and reinstall buckle.

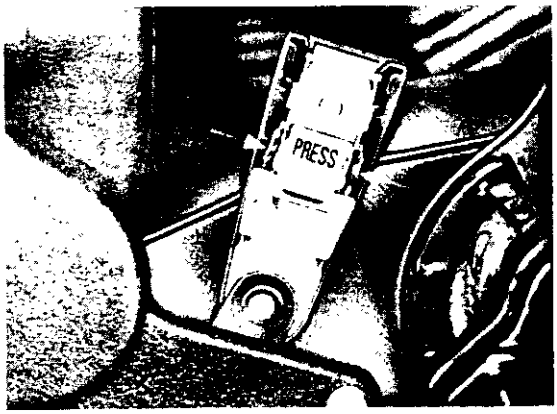


1 - Inertia reel belt with automatic retractor
2 - Countersunk screws
3 - Cover
4 - Cover
5 - Retaining bolt
6 - Spring washer
7 - Buckle assembly

NOTE: The buckle assembly should not be disassembled unless it does not function properly.

a) Remove both countersunk screws from the cover and separate both halves.

b) Carefully detach buckle contact wires from connecting tabs.



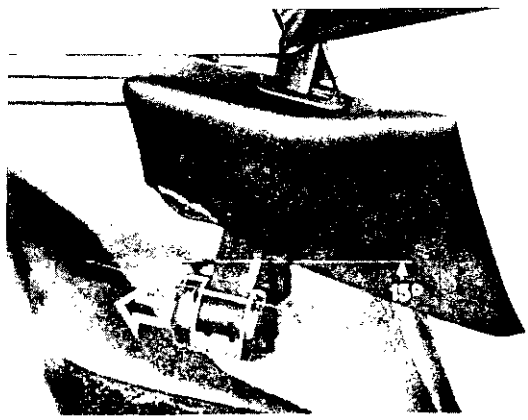
NOTE: To prevent damage to the contact plates, hold the tabs with needle nose pliers when disconnecting the wires.

c) Press plastic cover off. Remove buckle retaining bolt and take buckle out.

Installation (Coupe)

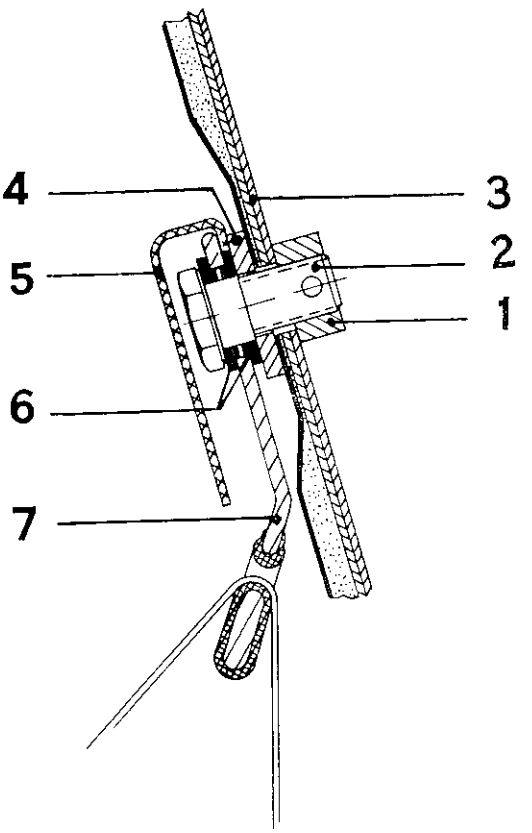
1. Mount belt retractor on side panel together with support plate, spacer, and serrated washer.

NOTE: The larger retractor plastic cover should face to the rear, and the cover holder upwards.
In addition, the retractor should be tilted forward about 15° in line with the direction of pull.



2. Pull the belt through the upholstery cover.

3. Install yoke on door lock post; see sketch for location of washer.

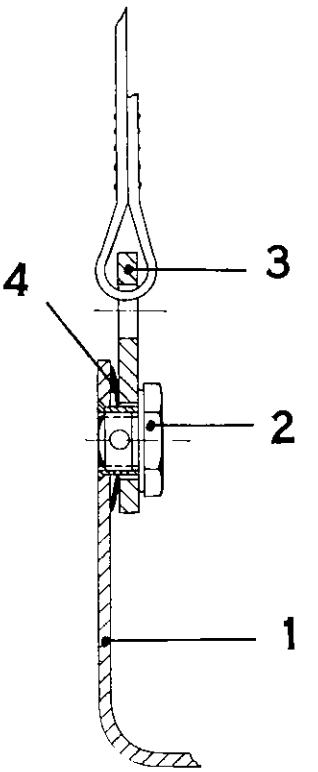


1 - Weld-nut
2 - Retaining bolt
3 - Door lock post with reinforcement
4 - Spacer
5 - Cover
6 - Flanged washers
7 - Yoke

4. Pull the belt out horizontally and check unreeling and retrieval of belt. The belt should be traveling in center of retractor reel. If necessary, correct the 15° installation position of the retractor.

5. Install upholstery cover and rosette plate.

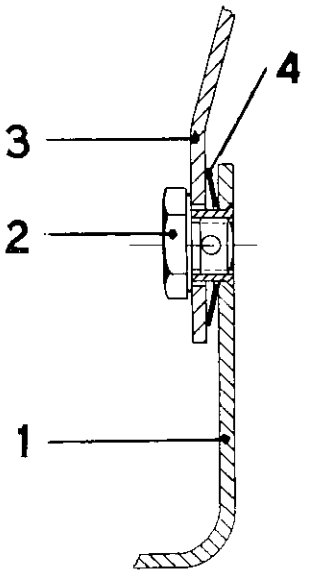
6. Fasten belt to mounting bracket in seat. See sketch for installed position of the spring washer.



1 - Mounting bracket on seat outside
2 - Retaining bolt
3 - Yoke
4 - Spring washer

NOTE: The belt should not be twisted. Sewn end should face the seat.

7. Install belt buckle assembly. See sketch for location of spring washer.



1 - Mounting bracket on seat inside
2 - Retaining bolt
3 - Latch
4 - Spring washer

8. Guide buckle contact cable through the plastic cover and connect to contact tabs.

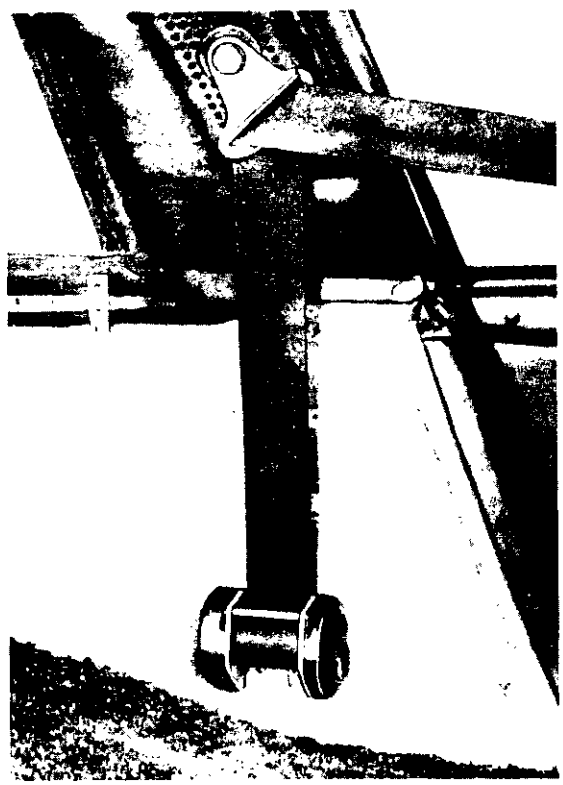
NOTE: To prevent damage to the contact plates, hold tabs with needle nose pliers when connecting the wires. Also see Group 9, page 6.2 - 1/1.

9. Join belt buckle covers and secure with countersunk screws.

10. Put the belt on, adjust, and check operation. When the belt is moved rapidly, the locking retractor must lock, and must unreel easily when moved slowly.

Installation Instructions for Targa Vehicles

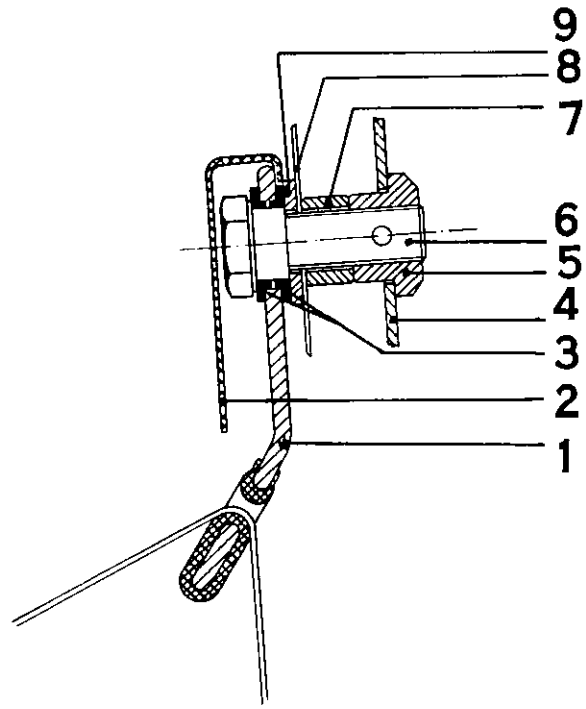
1. Install retractor with retaining bolt and serrated washer. For clarity, the illustration does not show side covering.



NOTE: The larger plastic cover on retractor should face back, and the retractor should tilt forward by 12° along the direction of pull.

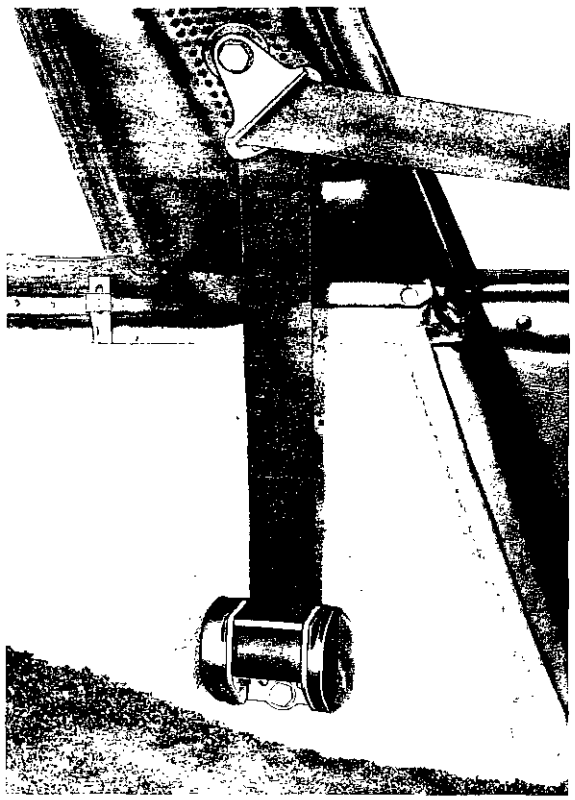
2. Pull belt end through the side covering and rosette plate.

3. Attach yoke to roll bar. See sketch for location of washers.



1 - Yoke
2 - Cover
3 - Flanged washers
4 - Roll bar reinforcement pan
5 - Weld-nut
6 - Retaining bolt
7 - Spacer
8 - Protective washer
9 - Spacer

4. Pull the belt out horizontally and check unreeling and retraction. The belt should reel in center of retractor- if not, correct the 12° alignment of the retractor. For clarity, the illustration does not show the side covering.



5. Install side covering, rosette plate, and cover moulding.

NOTE: The electrical operation and outline dealing with the automatic retractor is described in Group 9.

REMOVING AND INSTALLING ELECTRIC WINDOW REGULATORS

General

Beginning with the Apr-26-72 production, new electric motors with an integral transmission, as well as modified toggle switches with mounting frames are used. Electrical connections are made according to a new wiring diagram. Electric window regulators can be installed in Coupe models only.

The new regulators were first installed in the following vehicles:

911 T USA	911 210 2072
911 E	911 220 0809
911 S	911 230 1391

Removal

1. Remove window ledge rail and lock button.

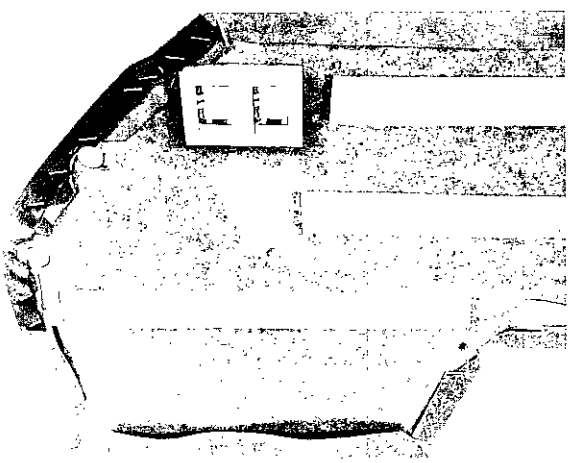
2. Remove toggle switches. If possible, first position window glass about 10 cm (4") above its lowest position.

3. Remove entire door panel and sealing foil.

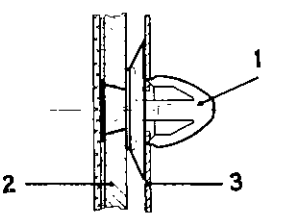
4. Remove outer chrome strip at window base.

5. Remove all window frame fasteners. Pull the frame out.

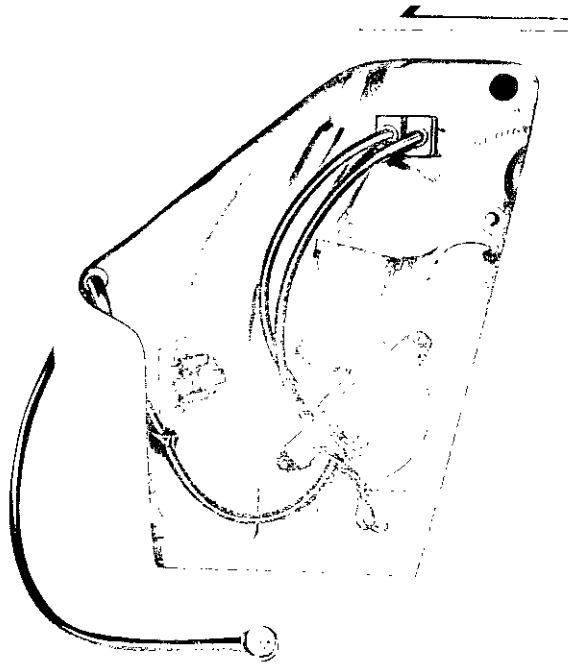
6. Push window glass forward and detach from the regulator. Remove upper door well weather seal and take the glass out.



Rear side of door panel with weather seals and self-sealing mounting clips.



1 Clip
2 Door panel
3 Door inner sheetmetal panel



New motor and transmission with cable layout

7. Take wires out of retainers, disconnect them from junction bar, and pull wire looms out together with caps. If the wire loom leading from the door into the car's interior is to be removed, it will be necessary to take the door off.

8. Unscrew window regulator and remove.

9. Remove stop wedge from door base.

Installation

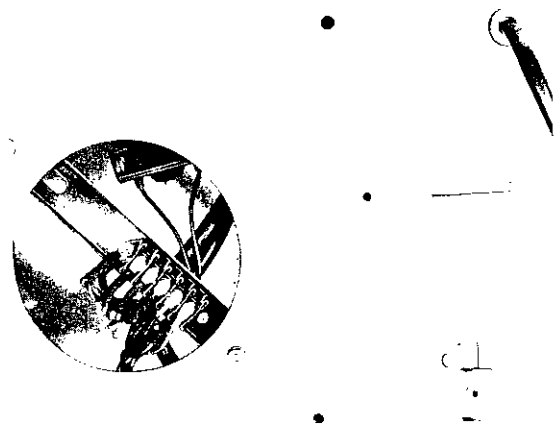
1. Insert wire grommet in forward part of inner sheetmetal panel of door. Lead the connecting wires into the car's interior. Install door.

2. Insert window regulator and fasten. Install stop wedge.

3. Run the regulator with a battery or battery charger to bring window to about 10 cm (4") above its lowest position by connecting the positive wire to green and negative wire to black wires in motor. If the regulator moves up, switch the wires to make it move down.

4. Install carrier plate with junction bar.

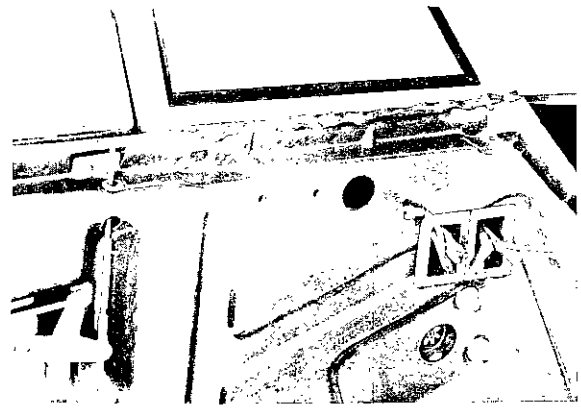
5. Insert toggle switches, cover caps, and wire looms. Connect all wires according to the new supplemental wiring diagram in Group 9. Fasten the wire looms to carrier plate and inner sheetmetal panel.



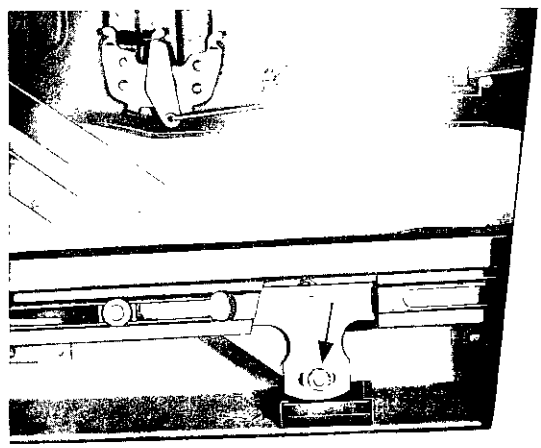
6. Install door well weather seal. Place window glass in door well and attach to the regulator.

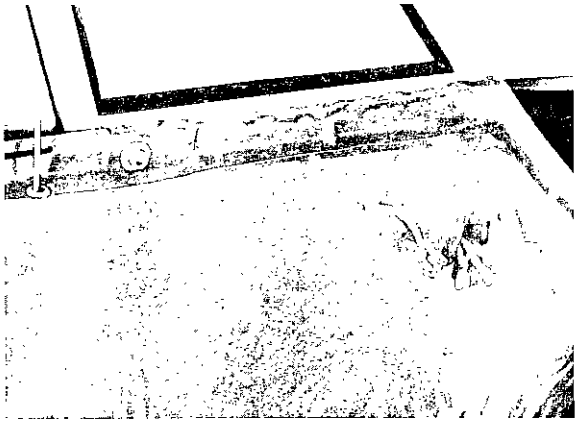
7. Insert door window frame in door and seal along the outside and inside flanks of top door edge with black, non-hardening putty. Fasten the frame in such position that sufficient pressure will be exerted against the door weatherstrip.

   NOTE:
   Do not bend the window frame to fit.

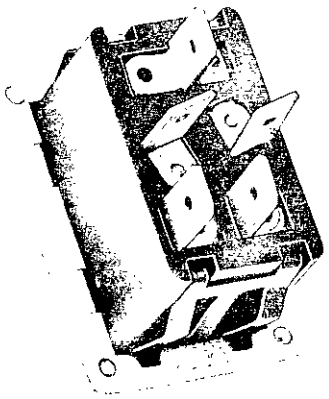


8. Check window regulator for proper operation and free movement. If necessary, readjust regulator with adjusting screws so that the top edge of the window is parallel with the top part of the window frame.

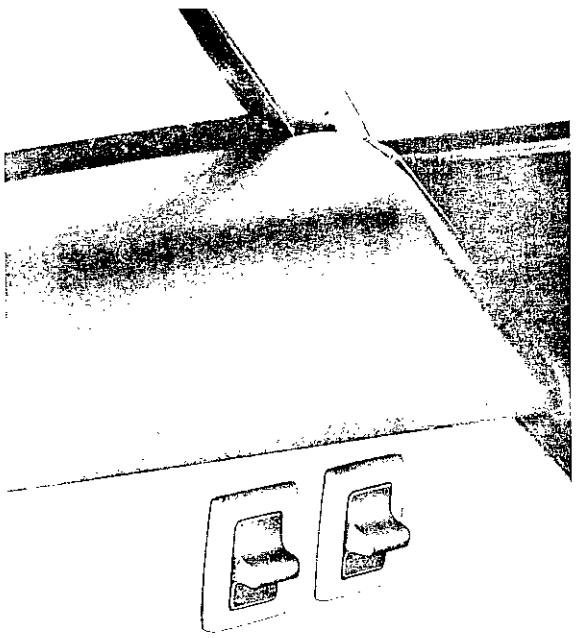




9. Glue the sealing foil in leak-free. Cut out a section in the toggle switch area.



10. Install door inner panel, armrest with inner door release, door pocket, folding compartment, door ledge rail, and outside window base chrome strip.



11. Connect toggle switches and install.

NOTE:
When properly installed, all toggle switches are positioned with the single connector facing up.
The rear toggle switch in driver's door actuates the passenger side window.

SEATS

General

Beginning with 1973 models, all standard and sport type seats have new longitudinal seat adjuster locks on both sides of the seat. The upholstery materials were also changed.

The seat adjuster controls remain unchanged. In the new standard seats, the seat pan has a control cable interconnecting lock pawls on both sides of the seat so that movement of the lock pawl on the center tunnel side of the seat is simultaneously transmitted to the lock pawl on the outer side of the seat.

This modification includes new seat rails with adjuster locking slots, Part # 911 521 051 01, for installation along the longitudinal side members.

In the new sport seats, the twin adjuster locks are locked by two pawls mounted on a bar so that the pawls engage the rail locking slots on both sides simultaneously.

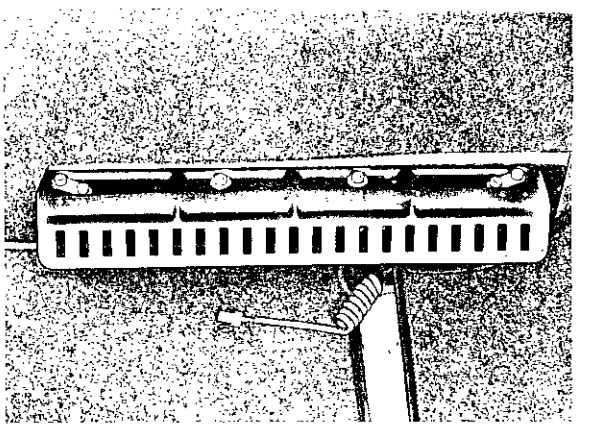
Installation date for the new standard seats:

July 24, 1972

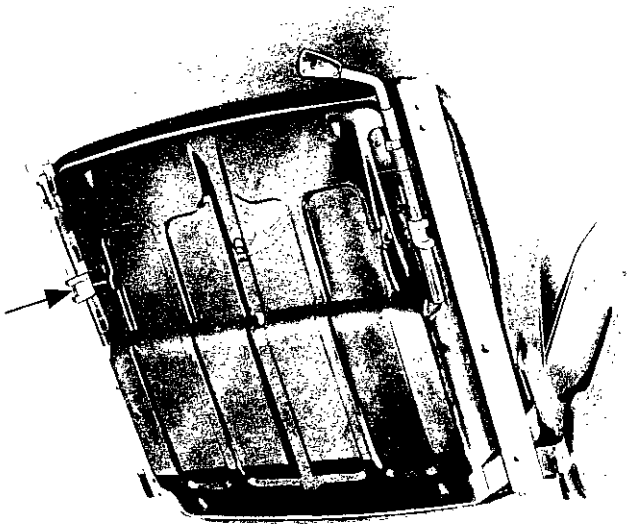
Installation date for the new sport seats:

October 16, 1972

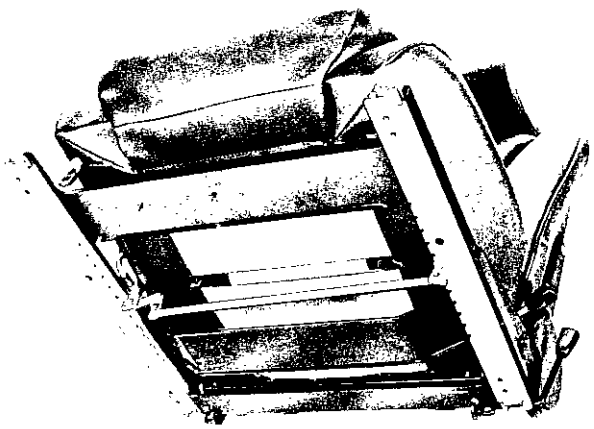
Seats with changed upholstery materials are installed from August 1972.



Seat rail support with seat contact cable



Standard seat - right side



Sport seat - right side

Installing Seats

1. At first, tighten seat rails only lightly. Check seat adjustment positions throughout the entire position range to ensure that the lock pawls engage and the seat moves easily on the rails. The seat adjusting lever must return into its normal position by itself. If this is not the case, reposition the seat rails.

2. Torque all seat retaining bolts in seat rails and seat rail supports to 1.2 - 1.4 mkp.

3. Recheck seat repositioning.

REMOVING AND INSTALLING OIL FILLER LID AND CONTROL

General

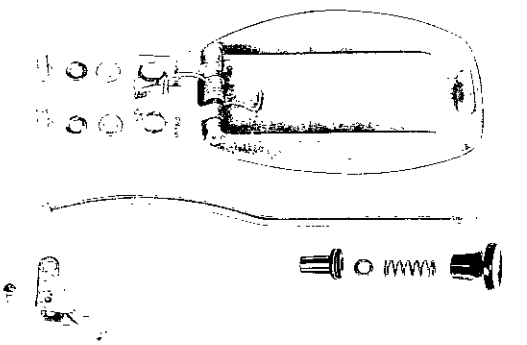
Beginning with 1972 models, oil tanks in all Type 911 vehicles are located under the right rear fender, adjacent to side member and wheel housing. The tank is fastened with retaining straps. The lid lock support was being welded to the oil filler pan until September 24, 1971.

Removing

1. Open lid, remove screws, and take lid off.
2. Detach remote control rod from connecting clip in lock lever and remove. Take grommet out.
3. Remove cotter key and clevis pin from the lock lever.
4. The bolt-on lock support can be detached only when the oil tank is removed (2 x M5 nuts).

Installing

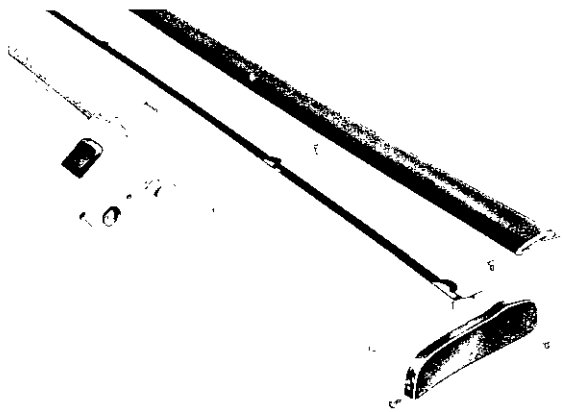
1. Position oil filler lid, together with M6 x 15 screws and spring washers, lightly tightening screws. Align lid and tighten retaining screws.
2. Insert rubber grommet in door lock post.
3. Replace connecting clip if damaged. Install lock lever.
4. Connect remote control rod. Install washer, spring and control knob from the door lock post side.
5. Close oil filler lid. Bend lock lever as required.



REMOVING AND INSTALLING ROCKER PANEL COVER

Removal

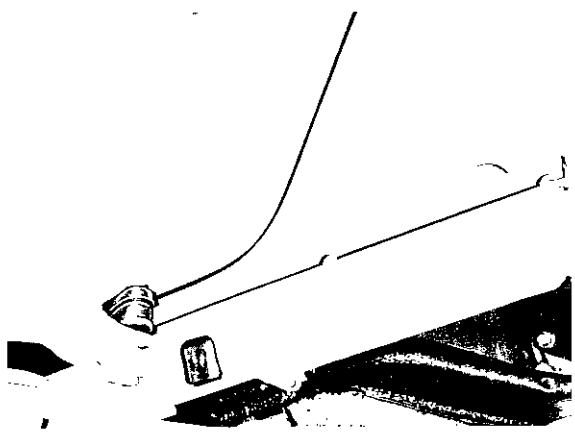
1. Remove end pieces from both ends.



2. Take rubber strip off. Remove cover from jacking point.

3. Remove sheetmetal screws from top and bottom parts, take rocker panel cover off.

Installation is accomplished in reversed order.



NOTE

Insert one end of rubber strip onto the supporting rail, bend the strip tightly back, and slide it onto the supporting rail. The upper lip must rest closely to the body. If necessary, straighten supporting rail.

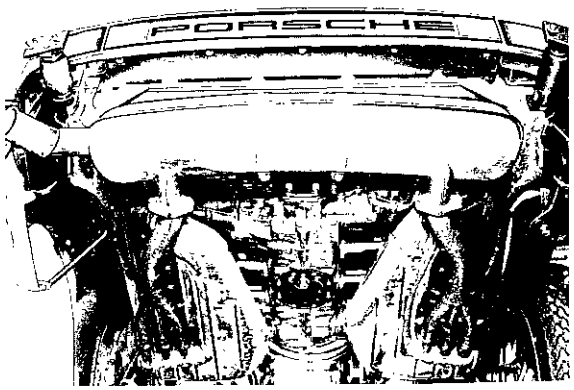
REMOVING AND INSTALLING END PANEL

General

Beginning with 1974 models, an end panel with reflectors and PORSCHE lettering is mounted at the rear cross panel. A sheetmetal shroud, serving as a heat shield, is located below the panel; it is inserted above the muffler and secured with bolts.

Removal

1. Remove rear bumper.



2. Unscrew heat shield and remove.

3. Remove self-locking nuts, washers, and rubber spacers.

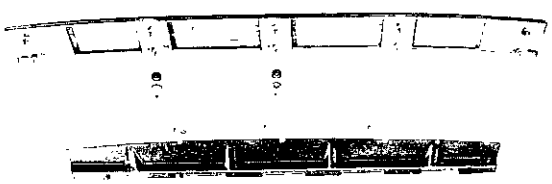
4. Remove end panel.

Installation

1. Lightly glue contoured rubber strip underneath.

2. Insert end panel, watching for equal side and height alignment with the tail lights.

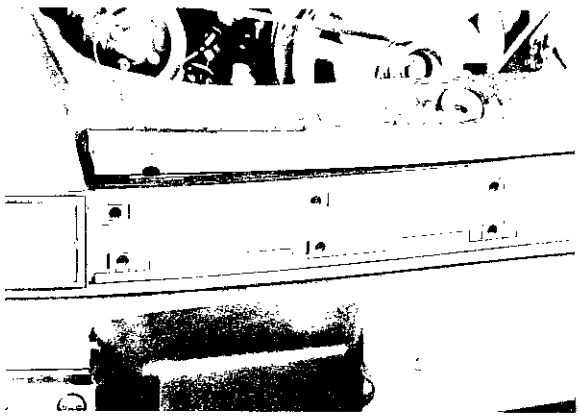
3. Insert plastic washers, rubber spacers, and washers on the mounting studs and secure with self-locking M 4 nuts. Check installed location and correct if necessary. Moderately tighten nuts cross-wise without creating stresses.



4. Insert heat shield and secure with bolts.

5. Install bumper.

REMOVING AND INSTALLING TAIL PLATE AS FROM 1978 MODELS



As from 1978 models the tail plate is attached to the tail panel with 10 clips, Part No. 999 591 447 02.

This facilitates installation, in that the bumper and heat guard do not have to be removed.

Square holes (previously slots) are punched in the tail panel to take the clips.

Removing

1. Cover tail panel above plate with adhesive tape to prevent damage on the paintwork.

2. Use pertinent tools (screwdriver, putty knife, etc.) to pry tail plate out of clips, first top and then bottom.

Note

Only apply pressure at reinforcements of plate to prevent damage on plate. Be careful not to injure coat on back of reflector area by scratching, since otherwise the reflecting effect will be impaired.

3. Take clips out of tail panel, replace damaged clips, straighten tail panel if necessary and eliminate paint damage.

Installing

1. Insert clips into tail panel.

2. Hold tail plate in position, align clips with reinforcement pins and press on tail plate up to stop.

LETTERING FOR CARRERA VEHICLES

Notes

The following points must be observed to ensure that the lettering adheres firmly to the paint:

1. Wash paint surface, removing wax, etc, with clean cleaning solvent. Dry the paint surface.
2. Do not affix the lettering in cold or damp weather. The temperature of the vehicle and surrounding air should be about +20°C.
3. Side lettering should be attached by two persons.

Affixing "Carrera" Side Lettering

1. Mark front and rear location of lettering above door lower edge.

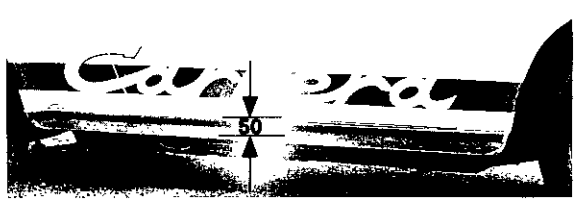
2. Peel off backing foil from the adhesive side.

3. Left door: Align starting letter "C" 1 cm behind the forward door edge and glue on. Stretch the foil forward and back, and press into place.

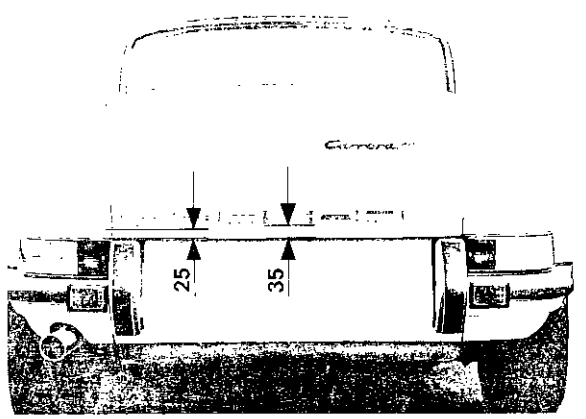
   Right door: Align point of letter "a" at the forward door edge and glue on. Stretch the foil and press into place.

4. Press lettering areas smooth in all directions, then remove top foil.

5. Trim the lettering with a sharp knife, along the fender contour in front, along the door edge in rear, and along the wheel cutouts. Press end sections into place.



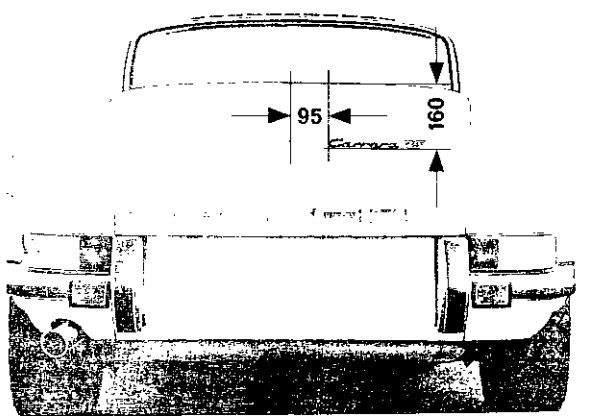
6. Puncture air bubbles in lettering with a needle and press smooth.



Affixing "Porsche" Lettering on Engine Compartment Lid

1. Mark location of the lettering 25 mm from bottom edge of lid on both sides, and 35 mm from bottom of lid in the center.

2. Peel off backing foil and affix the lettering as marked. Press it smooth and peel off top foil.



Affixing "Carrera RS" Lettering on Lid Spoiler

1. Mark location of the beginning of the lettering 160 mm below the spoiler inner edge, and 95 mm to the right of the lid center.

2. Peel off backing foil and glue the lettering optically horizontal to the right.

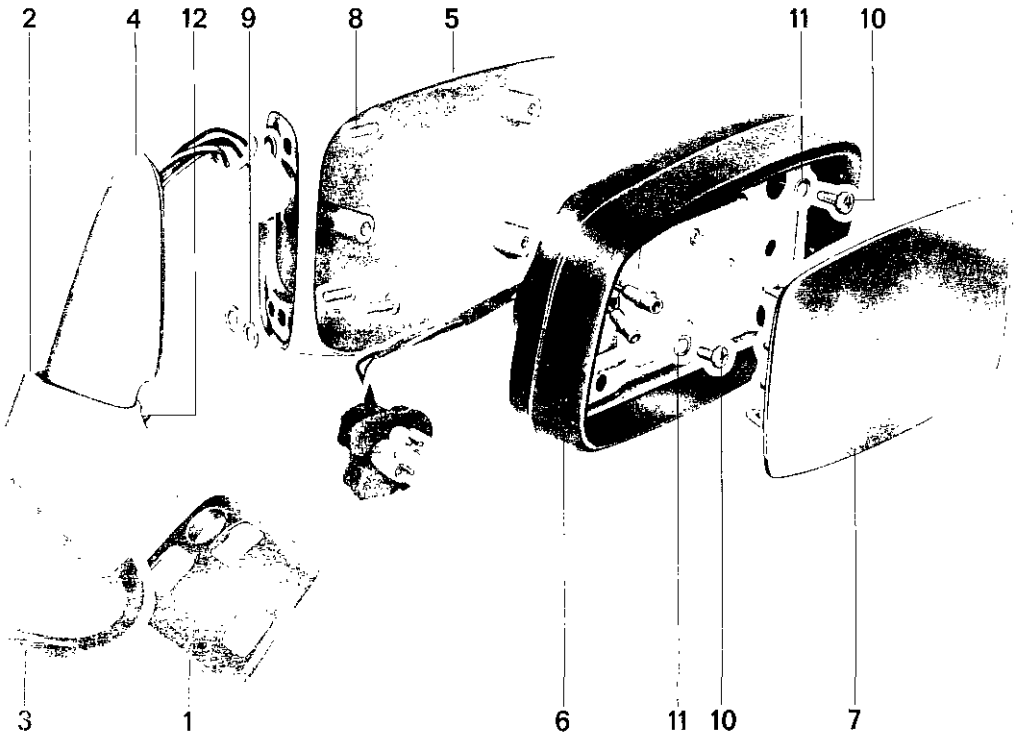
Colored Lettering

Carrera vehicles painted Grand Prix white are furnished with lettering in colors matching the respective wheel color (red - blue - green). All other vehicles are furnished with black lettering.

Removing Damaged Lettering

Heat the lettering with air heaters, infra-red lamps, etc, to the point where it can be peeled off without pulling the paint off in the process. Wash remnants of adhesive off the paint surface with cleaning solvent.

REMOVING AND INSTALLING OUTSIDE REAR VIEW MIRROR WITH DEFOGGER AND REMOTE CONTROL



No.	Description	Qty.	Note when Removing	Note when Installing	Special instructions see
1	Gasket	1		Replace, if necessary	
2	Mirror base	1		Guide in harness	
3	Harness	1	Pull wires out of socket. Bend open cable clamp inside door		
4	Mirror arm	1			
5	Mirror housing	1			
6	Carrier plate	1		Replace, if defective	
7	Mirror glass	1	Remove carefully	First check reflection	
8	Phillips head screw 5 x 14 mm	3			
9	Washer	3		Install between mirror housing and arm.	
10	Phillips head screw 5 x 16 mm	3			
11	Wave washer	3			
12	Allen head screw 5 x 35 mm	1		Tighten until mirror base is tight	

Removing

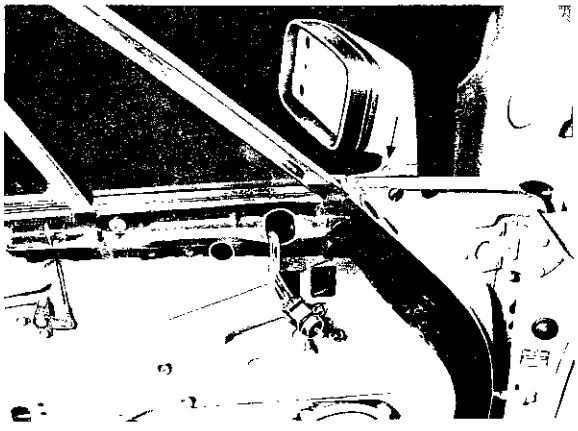
1. Use putty knife to mirror glass clips out of carrier plate. Carefully detach the wire terminals from the glass.

2. Remove the 3 Phillips head screws through the openings in carrier plate. Take out carrier plate and disconnect socket/plug.

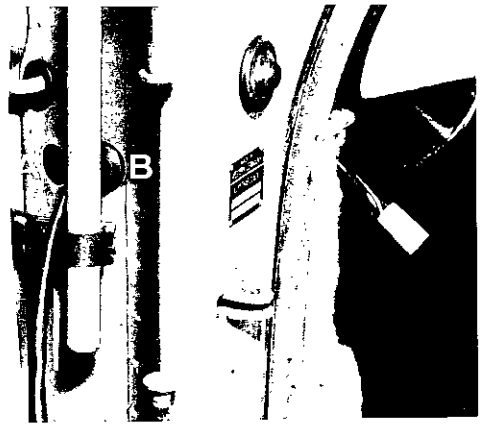
3. Unscrew mirror housing at mirror arm.

4. Note color of wires in socket. Use a pointed tool (scriber) to press in the tongues of each wire terminal and pull out the wires.

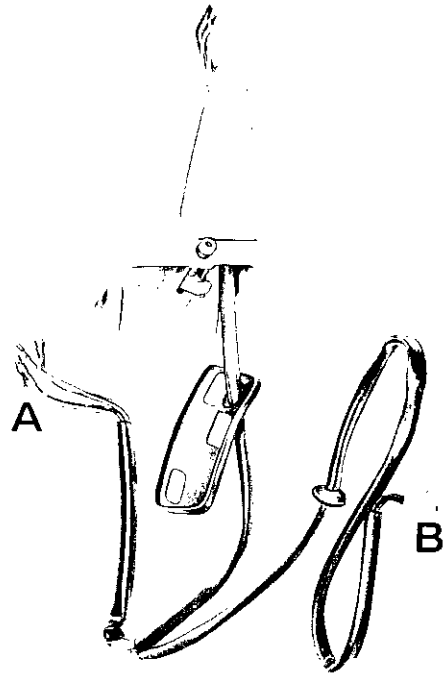
5. Unscrew Allen head screw on mirror base until the mirror base and gasket can be removed.



Note: If it is necessary to take the harness out of the door, remove the inner door trim and bend open the cable clamp behind the top door hinge.
The door must also be removed. First separate the connector in the side panel storage pocket.



A - Mirror cable B - Loudspeaker wire



A - To operating switch B - To inside of car

INSTALLING

The following points are important.

1. Use the cable clamp (inside door behind the top hinge) to hold the harness away from the teeth of the window regulator.

2. Tighten the clamping jaw with the Allen head screw until the mirror base is held tight.

3. Observe wire colors when assembling socket.

4. Wrap foam tape around socket/plug and insert it through oval opening in mirror housing so that the mirror movement is not restricted.

   Note: Check operation before attaching mirror because the clips and terminals on the mirror glass are easily damaged.

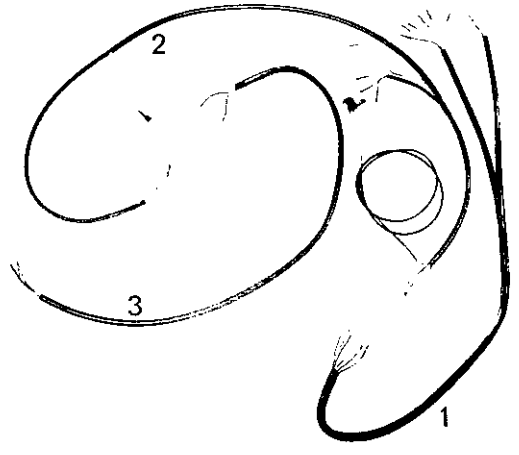
5. Install operating switch on trim strip so that the switch pin engages in bore of trim strip.

SERVICE INSTALLING EXTERIOR MIRROR ON PASSENGER'S DOOR

Note

These instructions apply to all models equipped with an exterior mirror, which is adjusted on the inside.

Three new harnesses are required.
1 - Driver's door harness
2 - Luggage compartment floor harness
3 - Passenger's door harness



Installing

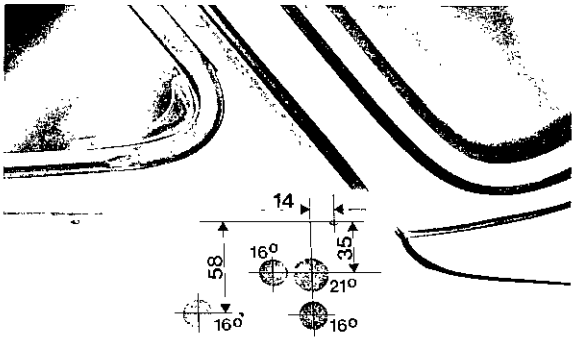
1. Paint mirror set to match car body color.

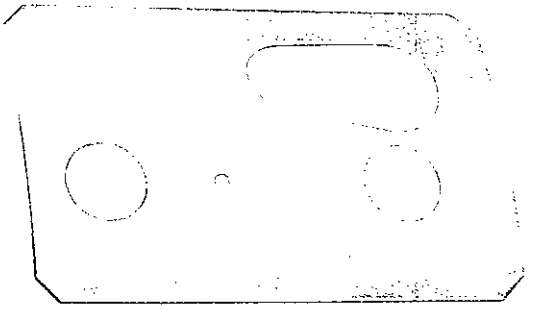
2. Install guide tube with spring and centering disc, and tighten to torque of 15 + 3 Nm (1.5 + 0.3 kpm). (Installed mirror can then still be turned via the cams.)

3. Pull harness into mirror.

4. Pull off door waistline strip. Remove inside trim on doors (also loudspeaker if applicable).

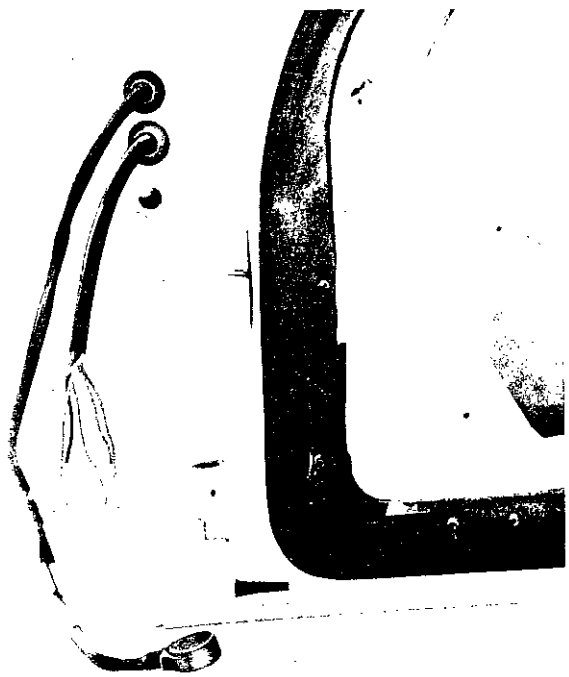
5. Drill holes in outside door panel according to dimensions and with reinforcement plate - for right door.



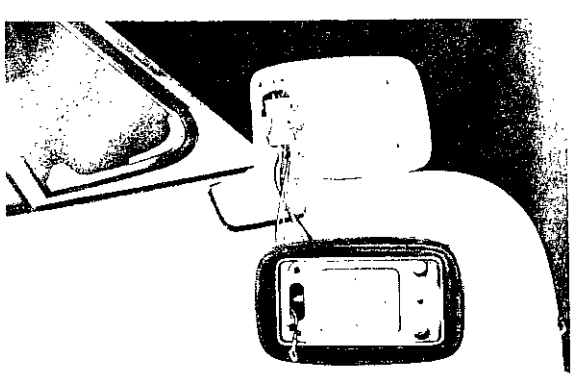


6. Install reinforcement plate and secure with pop rivets.

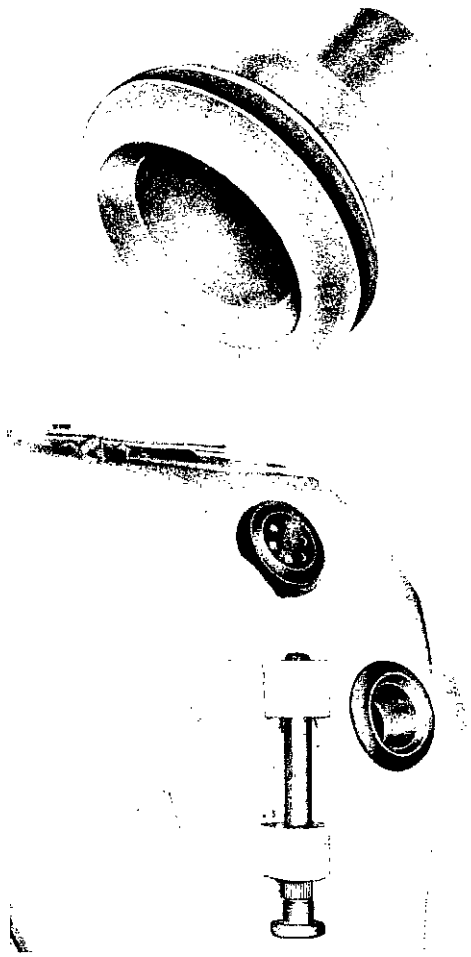
7. Lift out door and mount mirror base with gasket on door. Glue cap on mounting screw head. Guide set of wires through inside door panel and insert rubber grommet.



8. Press plug together and hold with self-adhesive foam tape. Note colors of wires and wiring diagram. Mount cover frame to mirror glass carrier. Connect and insert mirror glass.



9. Insert wire grommet into door recess.

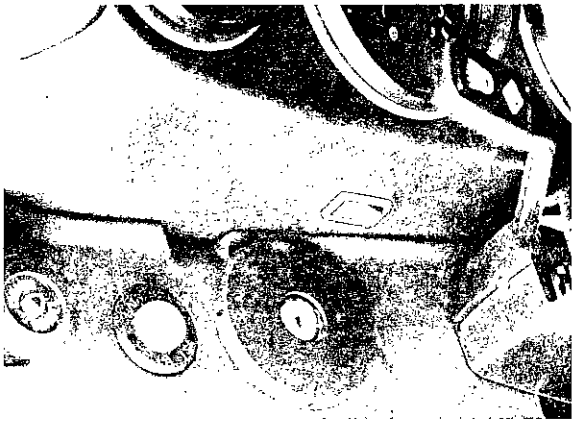


10. Install door and guide wires to luggage compartment floor plate. Install coupling plug according to wiring diagram.

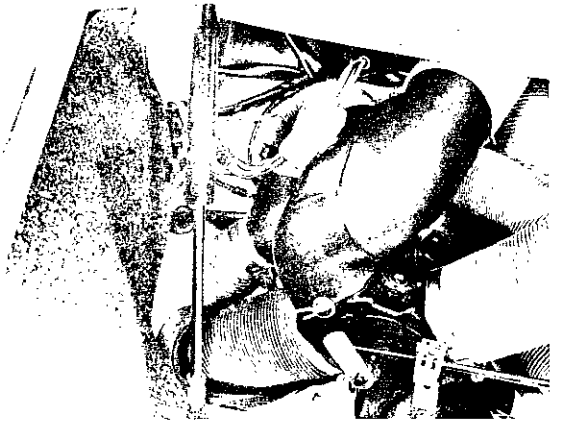
11. Disconnect wire harness on luggage compartment floor plate at rear window defogger switch and combination instrument, and pull out. Pull in and connect new wire harness; remove instruments for this purpose.

12. Remove driver's door, and insert and connect new exterior mirror wire harness.

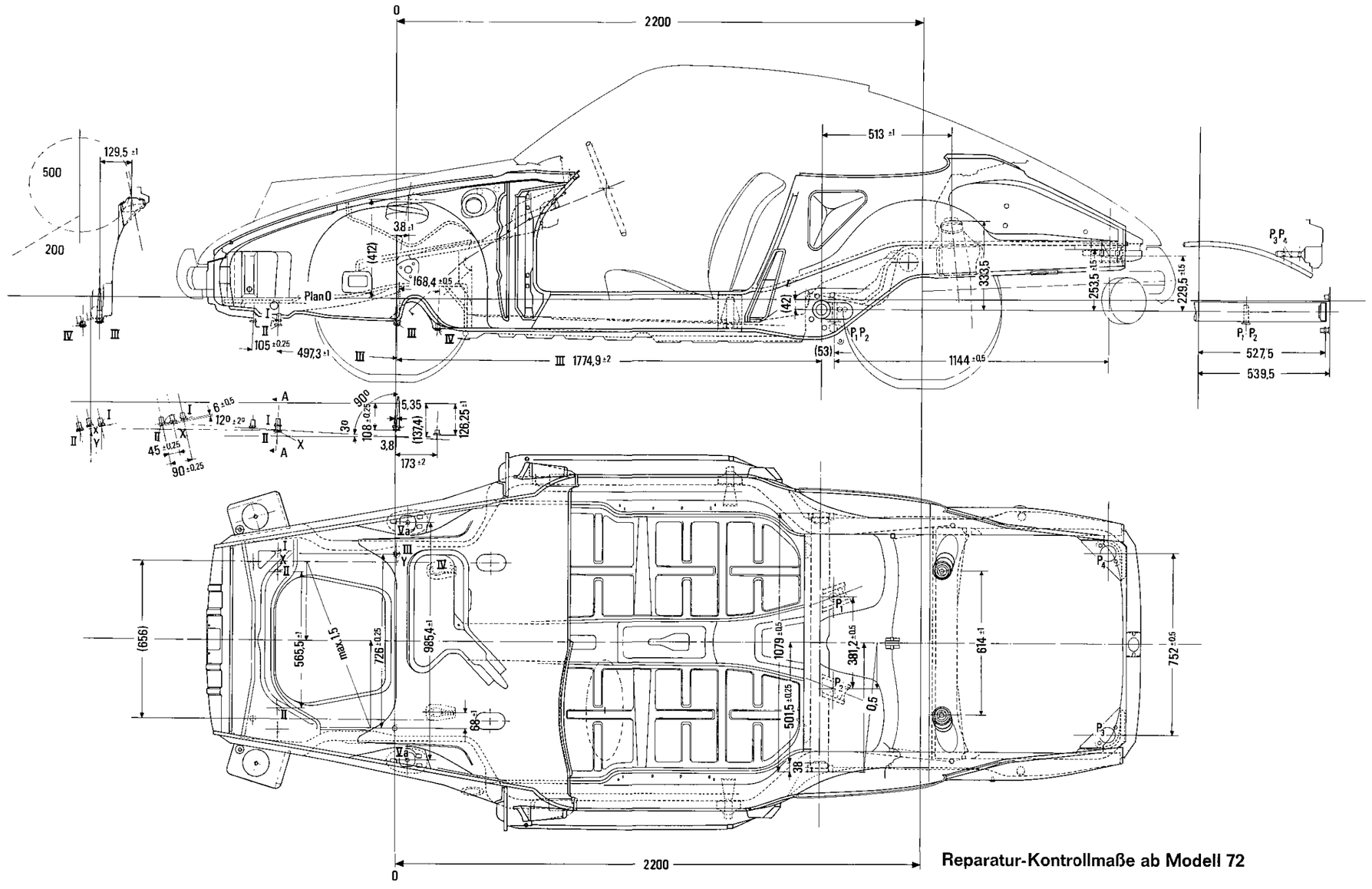
13. Cut a hole in trim of instrument panel, connect and install switch.



14. Connect couplings of wire harnesses in luggage compartment floor plate on left and right sides.



15. Attach door trim and check operation of mirror controls.



Reparatur-Kontrollmaße ab Modell 72

Check dimensions for bottom groups from model 72 on

Cotes de contrôle pour le groupe de fonde à partir du modèle 72

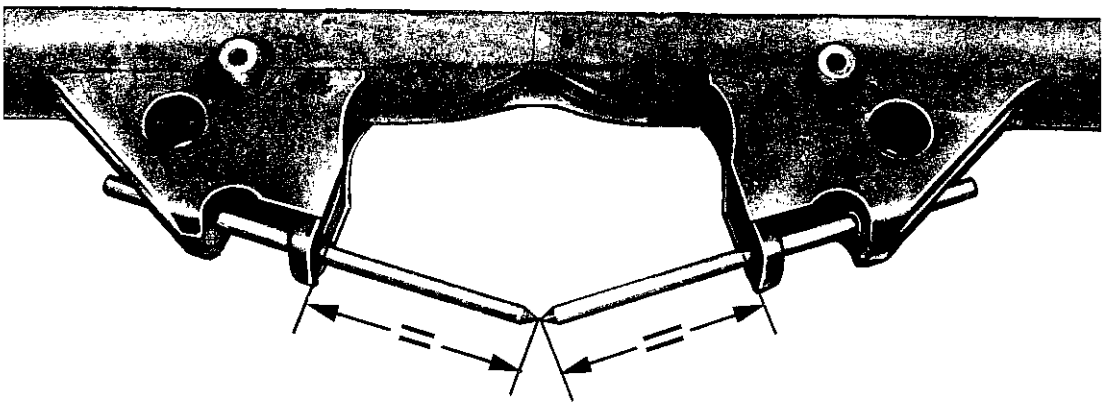
CHECKING REAR AXLE CROSS TUBE

The rear axle tube for Types 911 and 911 Turbo can be inspected for deformation with a locally made tool and a torsion bar.

Two pieces of round steel bar, 13 mm (1/2 in.) dia. x 300 mm (12 in.) long, are required for the locally made tool.

Machine one end of each bar to a point of about 60^{o}.

The rear axle cross tube can be inspected after removal of the engine and rear axle.



1. Insert both round bars through the trailing arm mounts. If both steel bar tips meet each other with the same distance from the mount to the tip, the mounts are okay. Deviations up to max. 3 mm (1/8 in.) are permissible.

2. Guide torsion bar into splines of cross tube on one side. Bar must be centered in tube with distance between bar and tube equal around entire circumference. Repeat procedure on other side. Slight deviations of about 3 mm (1/8 in.) are permissible.

INSTRUCTIONS FOR WELDING GALVANIZED SHEET METAL - 1976 MODEL

For the 1976 model the entire body is made of steel sheet galvanized on both sides. The zinc thickness varies between 7.5 and 20 micromillimeters depending on the corrosion possibility (except the Coupe's roof). Together with other protective measures, such as cavity spraying, undercoating and modern painting techniques, the body has adequate protection against corrosion.

This means seversal changes for repairs on sheet metal parts.

- The zinc coat should be ground down as little as possible or damaged in any other manner.
- Never use acids for cleaning.
- Use welding techniques which cause the least possible damage to the zinc coat. If at all possible replace welding with other welding techniques - resistance welding (spot) - gas-arc welding/brazing. Painting can be performed with the same materials as for steel sheet.
  Below are several explanations about recommended welding techniques.

RESISTANCE WELDING

Several points must be observed when employing resistance welding (spot welding).

- Due to the improved electrical conductivity of galvanized sheet in comparison to blank steel sheet, the current intensity will have to be increased to attain the required welding temperature of 1300° C/ 2372° F.
- The welding time should be as brief as possible to keep the melting zone around the welding spot small. This will also mean that less zinc will stick to the electrodes and thus longer operating times are assured before maintenance becomes necessary.
- Hard copper (copper-chrome-zirconium alloys) is the best material for electrodes. It has high heat physical properties (above 400° C/752° F); maximum service life up to 15,000 spots.
- The electrode welding surface shape can be Shape 1 or Shape 2 (see sketch).

Fig. 1

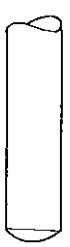


Fig. 2

- Depending on the thickness of the material, the max. welding spot diameter should be 4 to 5 mm (5/32 to 3/16 in.) depending on pressure applied to the electrode holder.
- Butt weld spots are not acceptable because these welding spots do not have sufficient strength.
- Cool-off periods must be scheduled if welding equipment without water cooling is employed, so that the electrodes are not deformed.

- Never make spot welds on edges of sheet metal (spatter formation).

- Clean and dress electrodes on their flanks and tip surface only if there is a heavy coat of deposits. The tip surface of the electrodes becomes harder from spot welding; the layer underneath however becomes softer.

- The distance between spots should be about 20 mm (3/4 in.). If the spots are too close together, the welding current will reduce the strength of the welding spots.

- Electrode arms should be as short as possible to increase the pressure at the weld point.

GAS-ARC WELDING

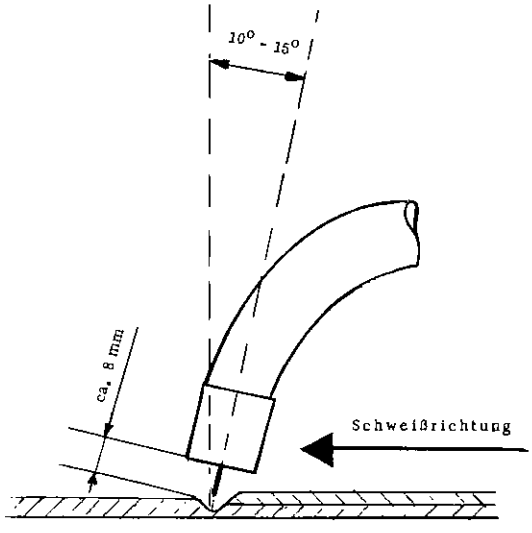
For body repairs the only type of gas-arc welding acceptable is the MIG method (Metal Inert Gas) with carbon dioxide (CO_2) or mixed gases, e.g. corgon (argon, CO_2, O_2). Good welding is possible with these types of gases. Mixed gases increase the welding speed and the seams remain ductile.

Additional information for MIG welding galvanized steel sheet.

- Clean as much of the area to be welded as possible.
  Optimum welding results require that the equipment be adjusted correctly.

- Check adjustment by listening if the arc has a steady crackling or hissing sound.

- Hold the torch at an angle of 75-80° and approximately 3/8 inch away from the metal (dependent on equipment being used).



If adjusted properly the gas shielding will surround the melting zone and blow away the zinc oxide vapors produced.
To keep welding distortion to a minimum, the work should be allowed to cool down after welding a long seam.

- The most suitable welding wire is of soft quality, 0.8 mm (0.031 in.) in diameter and has 0.8 % silicon and manganese additives.
- The gas shielding flow rate should be set at about 17 cu. ft. per hour.
- For large scale welding adequate ventilation must be provided.
- Welding seams, if accessible, must be protected with zinc paint, cavity or undercoating materials.

COLOR SELECTION - FROM 1972 MODEL

General

Beginning with 1972 models, a new numbering code is used in identifying paints on the paint nomenclature plate. The change was necessary to ensure right shipment of paint when ordered for given vehicle.

The new color code on the vehicle paint data plate is identical with the order numbers in the color catalogue.

Identification of the new 5-digit code numbers on the paint nomenclature plate:

Example: 131 9 2

1.	Three-digit paint number	131 9 2	light ivory
2.	Place of application	131 9 2	Porsche company
3.	Paint manufacturer	131 9 2	Glasurit company

Standard colors from 1972 model:

131	light ivory
117	light yellow
114	signal yellow
018	tangerine
022	bahia red
025	aubergine
225	viper green
325	albert blue
415	sepia brown

Optional colors from 1972 model:

	019	gulf orange
	024	fraise
	116	signal orange
	132	ivory
	213	irish green
	218	bush green
	226	lind green
	227	light green
	326	icing blue
	328	gulf blue
	329	sea blue
	341	lilac
	414	olive
	622	beige grey
	700	black

Metallic colors:

to Sep-1st	133	metallic gold
from Sep-2nd	140	VW-metallic gold
	224	metallic green
	324	metallic blue
	330	metallic gemini
to Sep-2nd	925	metallic silver
from Sep-3rd	936	VW-metallic silver
	999	optional colors to sample

COLOR SELECTION EFFECTIVE WITH 1974 MODELS

Standard colors beginning with 1974 models:

027	India red
042	Peru red
117	Light yellow
137	Yellow green
156	Orange
336	Mexico blue
408	Cockney brown
516	Sahara beige
908	Grand-Prix white

Optional colors beginning with 1974 models:

009	Carmine red
024	Fraise
025	Aubergine
116	Signal orange
139	Blossom yellow
213	Irish green
227	Light green
253	Space green
328	Gulf blue
341	Lilac
351	Dark blue
354	Acid blue
414	Olive
700	Black

Metallic colors:

036	Salmon dust
250	Silver-green diamond
335	Gemini metallic
406	Comet shower
432	Copper diamond
936	Silver metallic
249	viper green diamond
334	metallic blue

PAINTS - 1976 MODEL

Standard Colors:	027	indian red
	106	talbot yellow
	107	continental orange
	117	light yellow
	258	speedway green
	305	arrow blue
	408	cockney brown
	700	black
	908	grand prix white
Optional Colors:		
	009	carmine red
	042	peru red
	137	yellow green
	213	irish green
	260	daphne green
	360	cappa florio
	516	sahara beige
Metallic Colors:		
	264	viper green diamond
	265	oak green
	266	silver green diamond
	304	minerva blue
	436	diamond sarah
	443	brown copper diamond
	936	silver
	944	platinum diamond

Note: Some of the metallic colors have new color codes because of a finer bronze powder. E.g. silver green diamond before 250, now 266.

An extra "A" after the color code indicates an acrylic paint.

All of the listed colors are standard for the Turbo Carrera.

Caution: Most paints and their additives are combustible or explosive. Take every precaution when using them.

PAINTS - 1978 MODELS

Standard	027	india red
	106	talbot yellow
	107	continental orange
	260	sebring green
	273	fern green
	274	olive green
	305	royal blue
	408	chocolate brown
	451	mocca brown
	502	cashmere beige
	700	black
	908	grand prix white
Metallic	265	oak green
	275	light green
	304	caribe blue
	376	petrol blue
	443	copper brown
	936	silver

BODY PAINT COLORS FOR 1979 + 1980 MODELS

Standard Colors from 1979 Models:	027	india red
	106	talbot yellow
	273	olive green
	305	arrow blue
	408	cockney brown
	451	mocca brown
	502	cashmire beige
	601	lilac
	700	black
	908	grand prix white
Metallic Colors from 1979 Models:	265	oak green
	275	lind green
	30 T	light blue
	304	minerva blue
	376	petrol blue
	443	copper brown
	463	opal green
	464	tabacco
	708	black
	936	silver
Colors by Sample:	099	

RANGE OF BODY PAINT COLORS - 1981 MODELS

Standard Colors:		Special Colors:	
guards red	027	metallic moss green	20C
alpine white	182	metallic light blue	30T
mint green	20A	metallic minerva blue	304
royal blue	305	metallic pacific blue	31G
mocca black	451	metallic rosewood	474
bamboo beige	523	metallic platinum	655
black	700	metallic black	708
grand prix white	908	metallic wine red	895
caramel brown	524	metallic pewter	956

Metallic Paint

Wet-on-Wet Process

Until now, two different types of clear enamel with synthetic resin base were used in the course of repairs:

1.	80° C clear enamel	77 - 84 0503
2.	Two-component acryllic clear enamel with catalyst	51 - 09168 40 - 22004

To simplifi painting process, only the two-component acryllic clear enamel with catalyst will be offered in the future.

The two-component clear enamel # 51 - 09168 will be available in 1 liter cans, and the catalyst # 40 - 22004 in 0.125 liter cans. This provides for an easy preparation of the two-component enamel in the right proportions.

This enamel can be air-dried or baked at 80° C.

Preparation: The spraying consistency is attained upon mixing.

Allow to age 15 - 20 minutes before applying.

Spraying pressure	5 atm
Nozzle size	1.2 mm
Application	1 1/2 - 2 cross-coats

Do not mix more enamel than can be used within a max. of 8 hours

The enamels should not be stored in excess of 1 year.

PAINTING TARGA ROLL BAR COVER

General Information

The Targa roll bar cover (rustproof steel) has a coat of flat black polyurethane textured paint. In addition to metal parts, polyurethane paint can be used on parts made of fiber glass (Targa removable roof) and rigid expanded polyurethane.
Polyurethane paint is extremely scratch and wear resistant, color fast and can be air dried.

Required for touch-up painting:

Polyurethane textured paint	Part No. 911 096 160 02
Polyurethane hardener	Part No. 911 096 220 04
Polyurethane thinner	Part No. 911 096 330 03

Procedure:

Clean and degrease new part.
Grind off all textured paint from damaged part, grind out and clean damage spot (s) as required.

Priming	Use Dupont 1005 (or equivalent) primer	
Initial coat	Mix polyurethane textured paint with hardener	
	Mixing ratio	5 : 1 or 7 : 2 parts by weight
	Spray viscosity	20 to 25 seconds
	Spray nozzle	1.5 mm dia (30 De Vilbiss or equivalent)
	Spray pressure	3 to 4 bar (45 - 60 psig)
	Application	1 cross pattern
	Flash off time	15 to 20 minutes in open air
Final coat	Spray viscosity	45 to 50 seconds (using pressure gun)
	Spray nozzle	1.5 mm dia. (30 De Vilbiss or equivalent)
	Spray pressure	0.8 to 1.0 bar (12 - 15 psig)
	Application	1 cross pattern

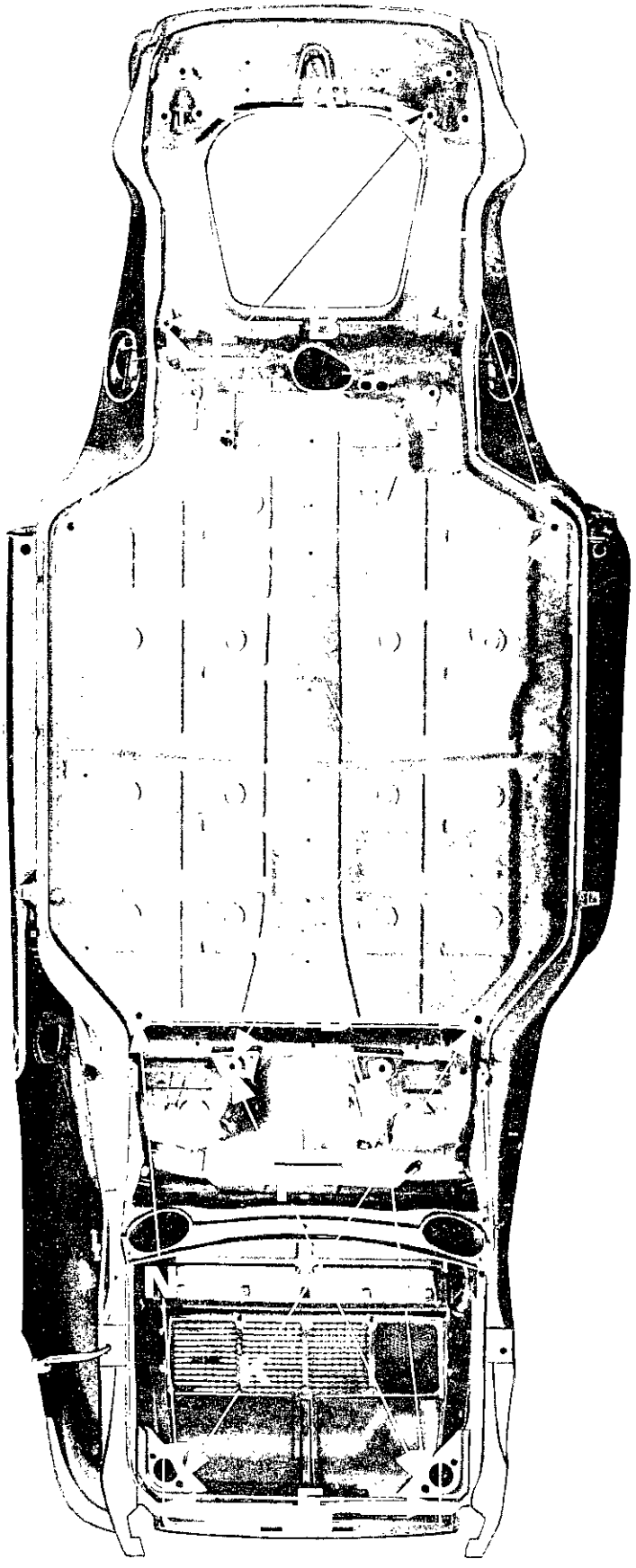
Note: Check texture pattern by spraying a test panel.

Drying	Air drying	approx. 12 hrs. at 20° C/68° F
	Force drying	30 to 40 min. at 80° C/176° F

Complete hardness is reached in 5 to 7 days.

SHOP MATERIALS FOR BODY REPAIRS

Hydraulic 10 ton straightener with accessories	
Celette straightening bench	
Set of attachments	ENS 77.360
Universal anchor	ENS 937.900
Front end gauge	P 863 + P 863 a
Inert gas welder	
Resistance spot welder	
Gas welder	
Hand grinder with inserts (grinding wheels and stones, steel brushes, cutters)	
Disc grinder	
Angle grinder with accessories (180 mm dia. cutting wheels and grinding paper)	
Pneumatic hammer with inserts	
Beam compass	
Bubble level	
Shoulder pliers	
Air gun	
Equipment and materials	for permanent undercoating
	for cavity sealing
	for sealing



Dimension	Location	mm	inch
A	Control arm mounts	565.5 ± 1	22 1/4 ± 1/32
B	Auxiliary support	726 ± 1	28 1/2 ± 1/32
C	Front floor plate	1200 ± 2	47 1/4 ± 1/16
D	Rear floor plate	850 ± 2	33 1/2 ± 1/16
E	Engine brackets	752 ± 1	29 19/32 ± 1/32
F	Front floor plate - control arm mount	1327 ± 3	52 1/4 ± 1/8
G	Rear floor plate - auxiliary support	1868 ± 3	73 1/2 ± 1/8
H	Axle tube/transmission mount - front floor plate	1550 ± 3	61 1/32 ± 1/8
I	Axle tube/transmission mount - engine bracket	1323 ± 5	52 3/32 ± 3/16
K	Rear floor plate - engine bracket	1557 ± 5	61 5/16 ± 3/16
L	Front floor plate - control arm mount	1041 ± 3	41 ± 1/8
M	Front floor plate - rear floor plate	1215 ± 2	47 27/32 ± 1/16
N	Rear floor plate - engine bracket	1355 ± 3	53 11/32 ± 1/8
O	Axle tube/transmission mount - engine bracket	1220 ± 3	48 1/32 ± 1/8

All dimensions are measured from center of holes.

Note

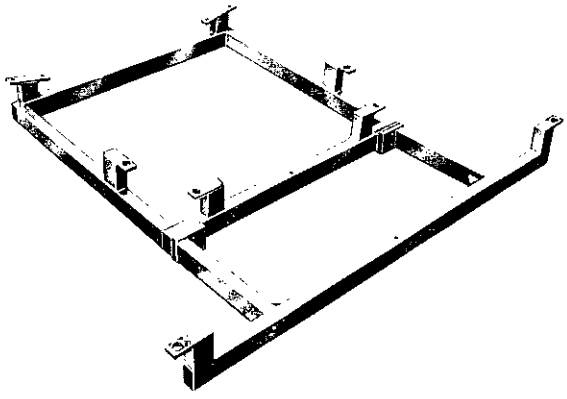
Dimensions to engine suspension points are measured diagonally.

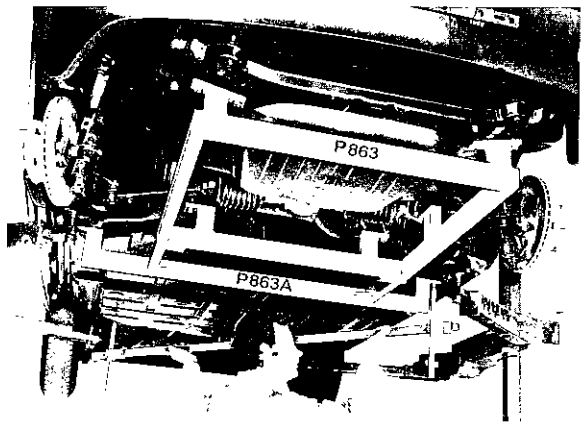
CAUTION

The difference between left and right longitudinal dimensions may not exceed the specified tolerances.

Floor Assembly Checkpoints and Front Body Gauges P 863 and 863a

As already announced in the 1975 Model Information, checkpoints are welded to the frame/floor assembly of 1975 models. These checkpoints and front body gauge P 863a (consisting of former gauge P 863 and an additional adaptor) make it possible to diagnose the damage quickly.





The gauge can also be applied to repair slight front end damage (Dents up to 10mm). It is no longer necessary to place a car with damage of this type on an alignment bench.

Installation of this gauge requires removal of the wheels, guards, carrier and control arms. As illustrated, the gauge is then bolted to the front axle holder points and front floor plate checkpoints.

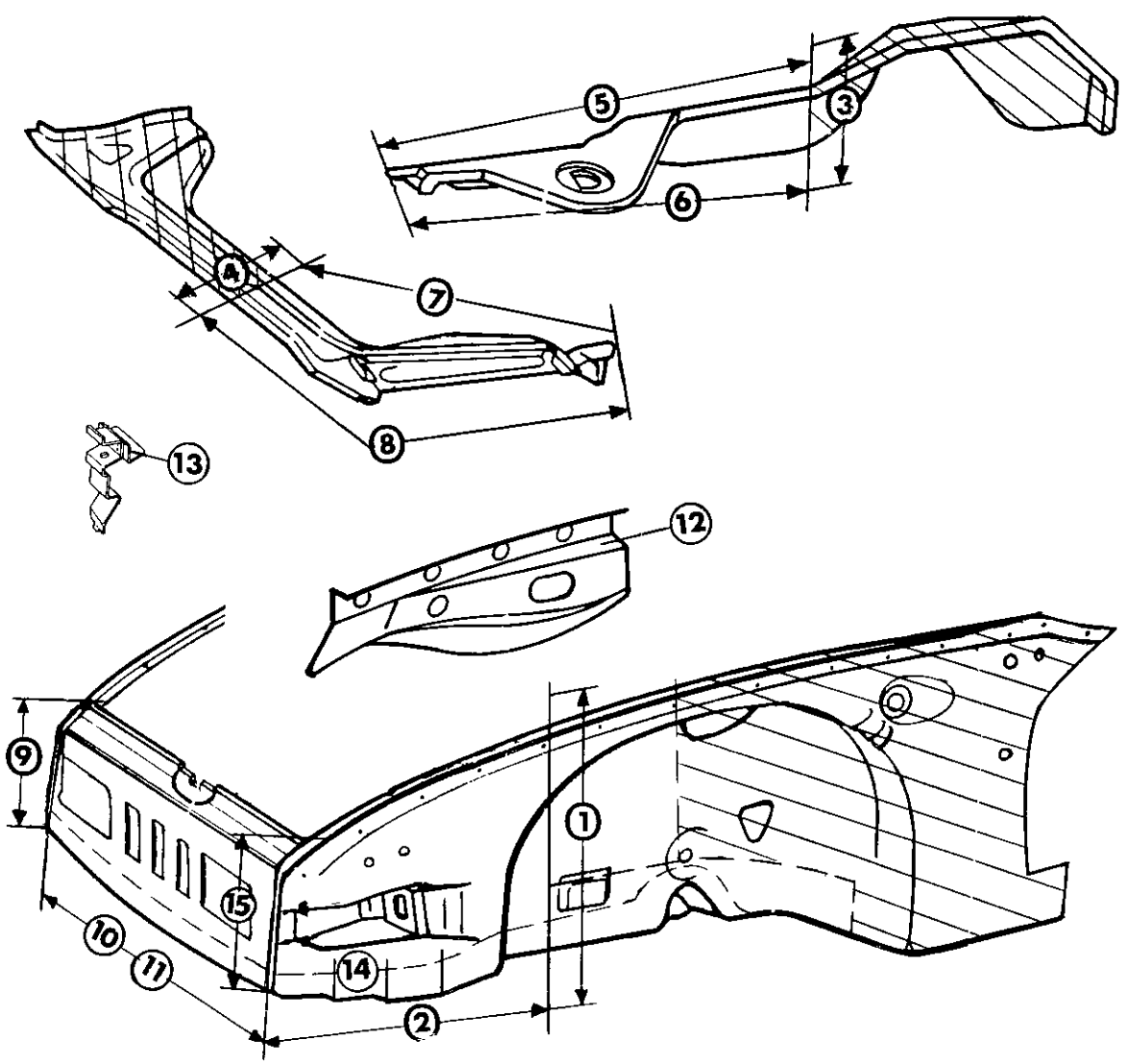
A surveyor's rod is used to measure the distances back to the floor plate checkpoints and rear axle tube holder points for the transmission, from the engine suspension.

Note! The gauge is for gauging only. It must be removed for aligning and welding operations to prevent distortion through body stresses.

The auxiliary carrier pin for Type 911 Turbo is installed 21 mm higher. When measuring with front end gauge P 863 the distance between upper edge of gauge and collar on auxiliary carrier pin must be 21 mm or, with adapter mounted on auxiliary carrier pin, 13 mm.

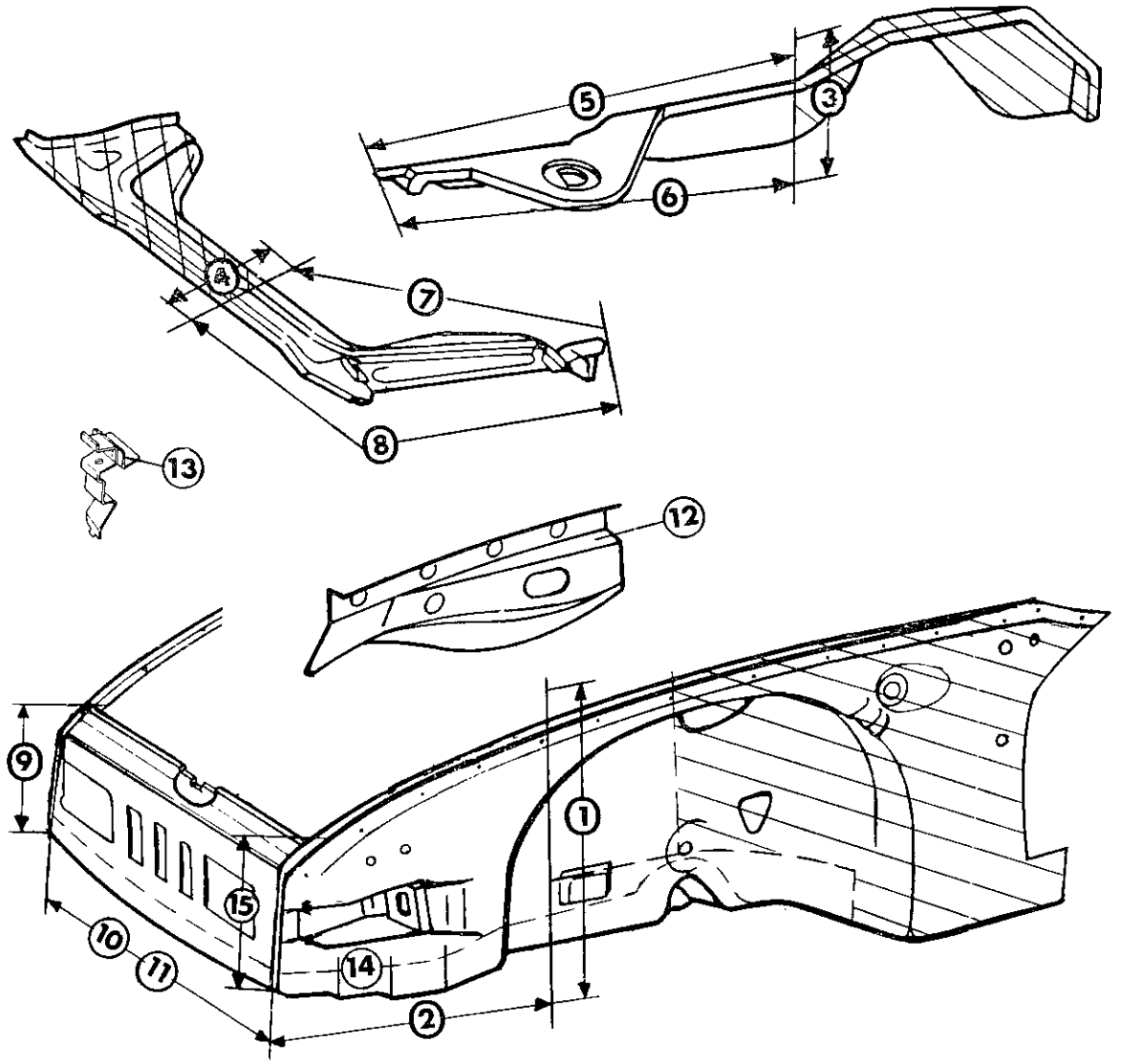
Replacing Part of Front Wheelhousing

Includes: Lock panel, front tank support and left or right tank support.



Replacing Part of Front Wheelhousing

Includes: Lock panel, front tank support and left or right tank support.



Replacing Part of Front Wheelhousing

Operation	Areas	Material
1. Separating	1, 3, 4, 9, 10, 12	Cutting disc
Chiseling	2, 5, 6, 7, 8, 10, 11	Pneumatic chisel or hand chisel
Remove metal scraps undercoating and paint	2, 5, 7, 8, 9, 10, 11, 12, 14	Welding torch, hand grinder and pliers
2. Preparing (new parts) Cutting and grinding	1, 3, 4	Cutting disc, hand grinder and metal cutters
Apply rust preventative	1-15	Paint
3. Welding		
Spot weld	2, 5, 7, 10, 12	Spot welder
Butt weld	3, 6, 8, 12	Spot welder
Weld	1, 3, 4, 9, 11, 13, 14, 15	MIG welder
Weld	hood and fender connection welded flush	Gas welder
4. Finishing Grinding	1, 4, 5, 7	Hand grinder
Welding seams	1-15 spots burnt through	Gas or MIG welder
Sealing	Inner and outer	Undercoating (asphalt - PVC basis)
Preserving	Cavities	Tectyl etc. (wax basis)

Replacing Part of Front Wheelhousing

1 - Damage Diagnosis
When the extent of damage cannot be defined exactly.
- Check floor plate assembly.
  Includes: Removing and installing front wheels, control arms, auxiliary support and protection plate.

2 - Alignment
Before the damaged parts are cut out, the dented portion is as close as possible aligned with hydraulic alignment equipment.

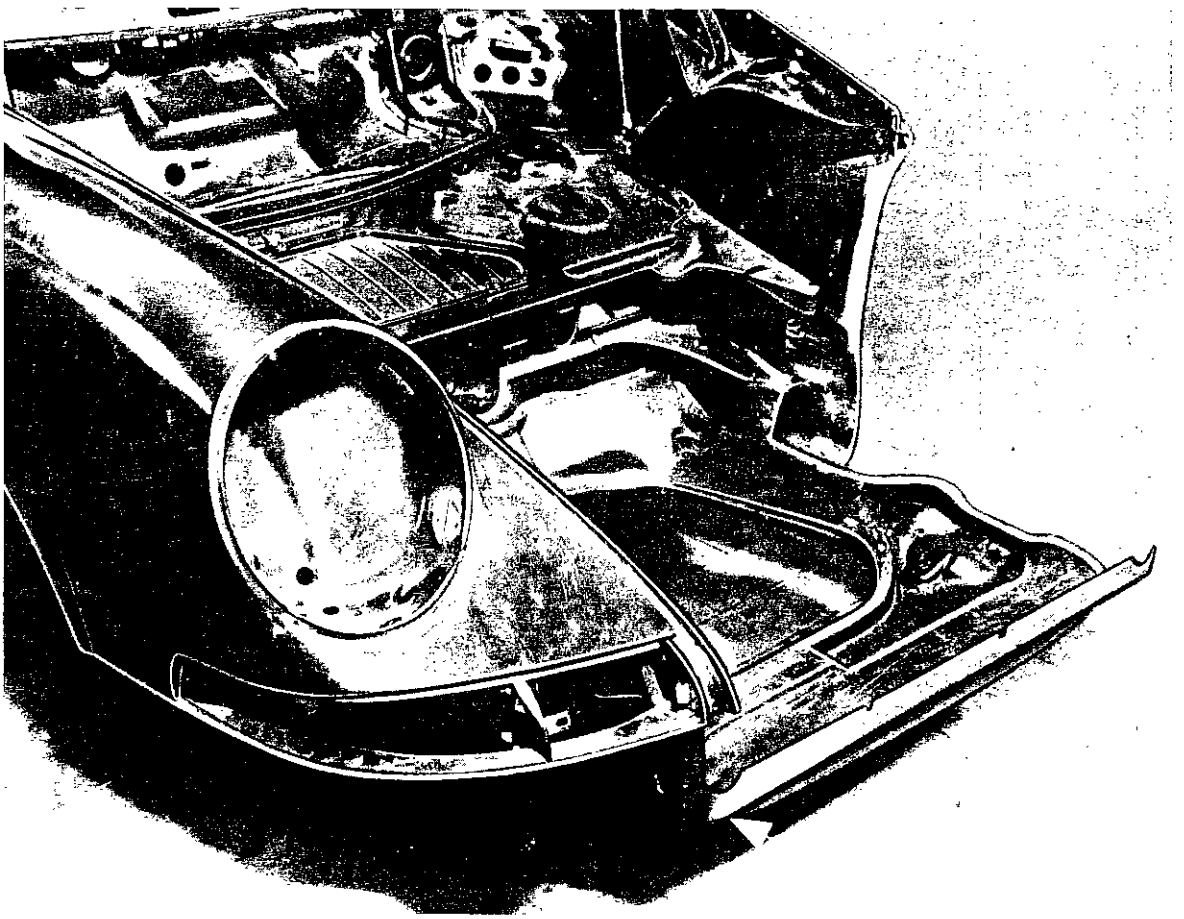
3 - Preparations
Dismantle front bumper
left front fender
right front fender (loosen partially)
front hood
lower hood lock and cable
front apron
electrical items as required

4 - Separation of damaged parts

Note: Cut out badly damaged parts instead of unbolting.

Replacing Part of Front Wheelhousing

4 a - Damaged parts can be separated in any sequence in accordance with the operations illustrated below.



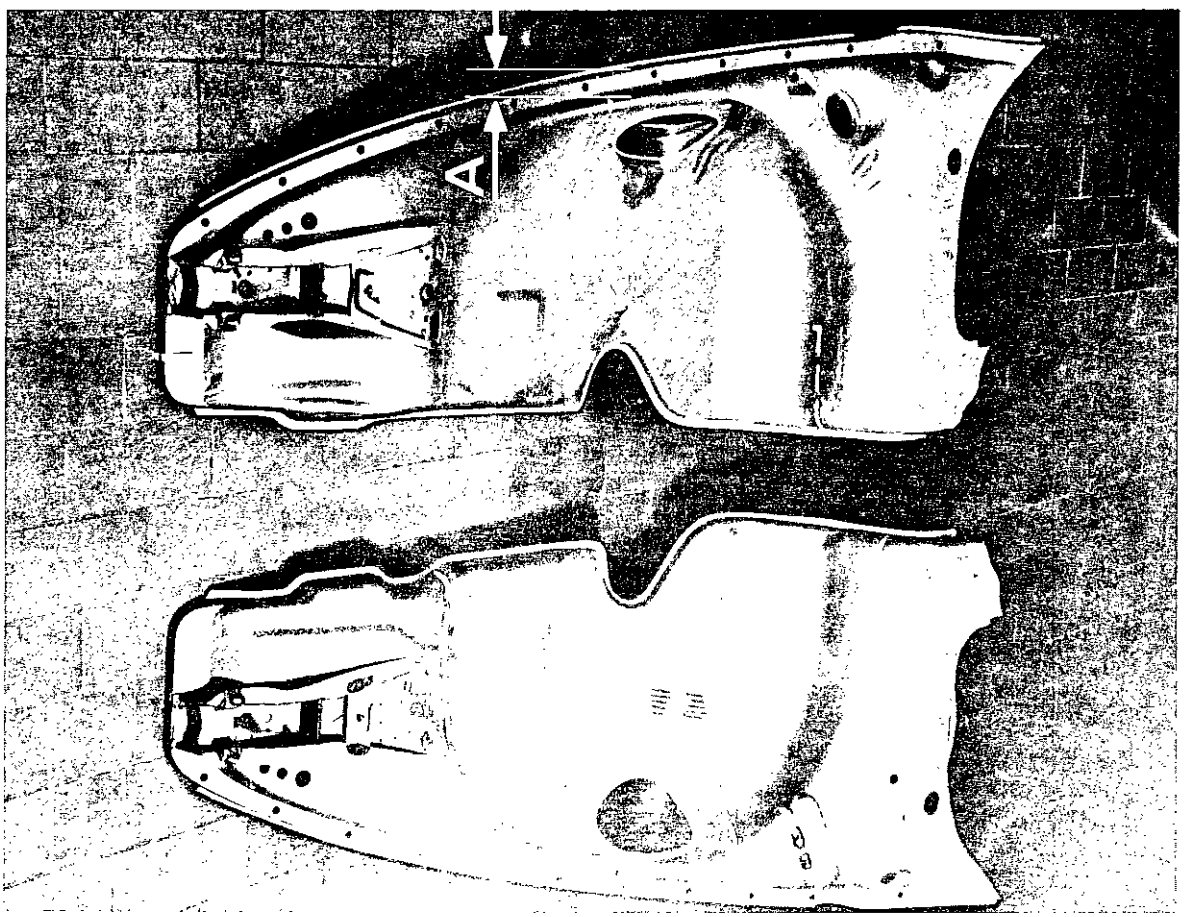
4 b - Remove remaining scraps of metal. Align and grind down mating surfaces and flange.

5 - Cut floor plate at remaining portion of wheelhousing far enough so that the lock panel can be stuck through (see arrow).

Replacing Part of Front Wheelhousing

6 - Check axle take-up points, aligning if necessary.

7 - Align and cut new parts.
(various cutting lines marked)

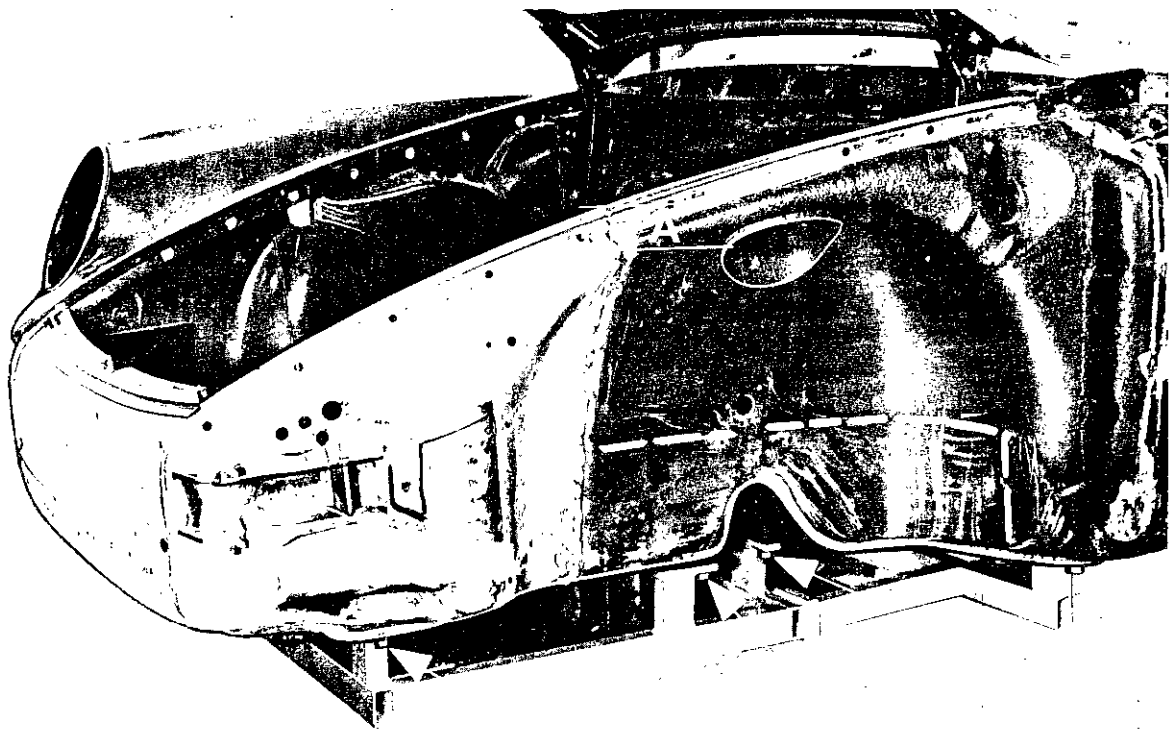


8 - Bolt front hood.

9 - Install lock panel cutting bottom left and right if necessary.

10 - Install wheelhousing panel so that it overlaps connector plate. Saw cuts in hood crease and fender mating surface and butt weld (Area A).

Replacing Part of Front Wheelhousing



10 a - If the wheelhousing was dented at the rear control arm bolting points and above, extend and weld the new part overlapping the dented section. See broken line.

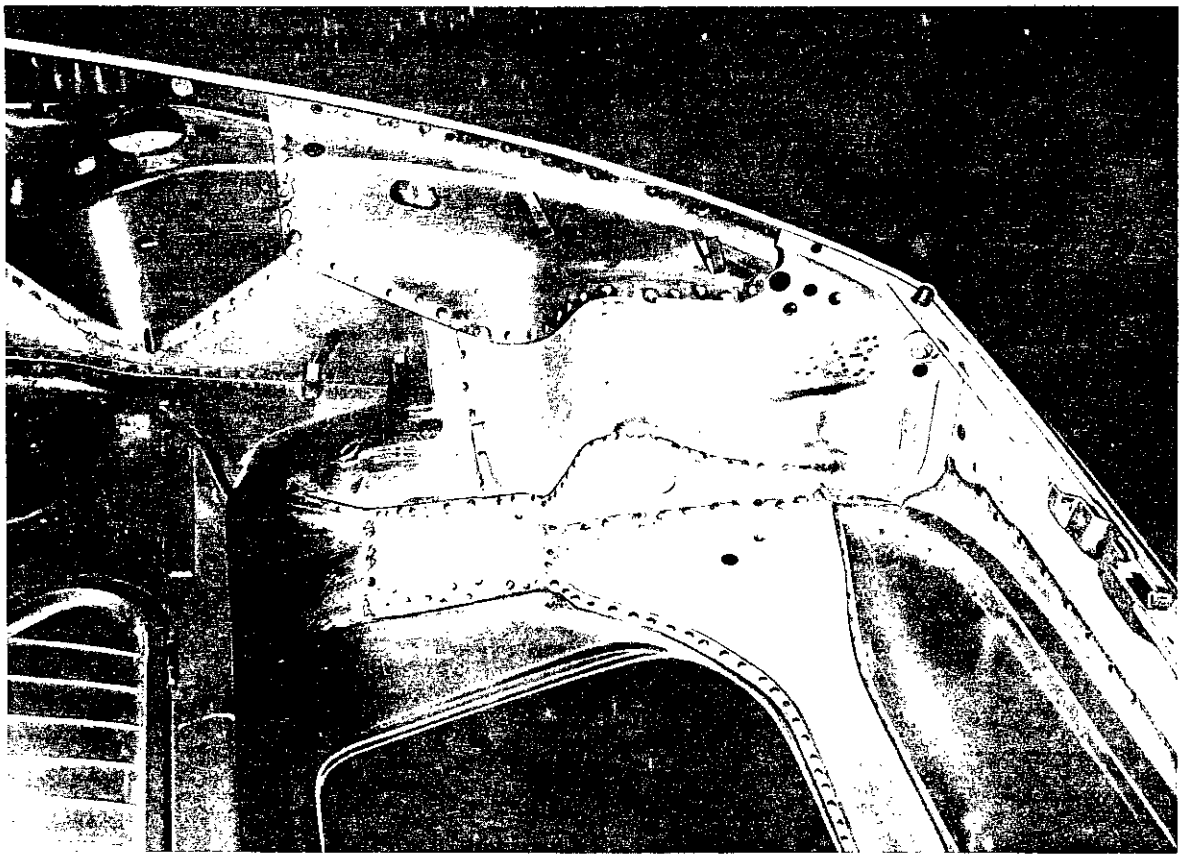
11 - Check take-up points.

Replacing Part of Front Wheelhousing

12 - Align and spot weld front tank support.

13 - Align and spot weld left tank support.

- Secure tube for hood release cable.
- Insert and spot weld reinforcement plate.
- Weld jack and hardtop roof brackets.



14 - Finishing

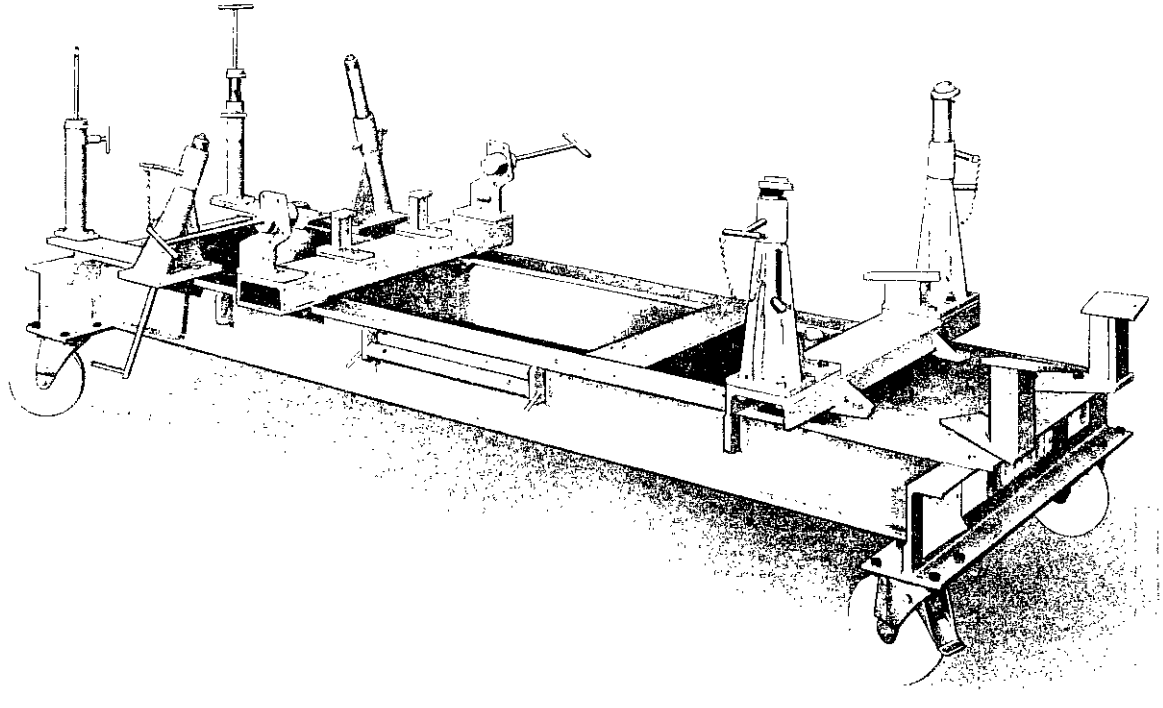
Grind down welding seams in Area A. Clean and prime coat all other welding seams. Weld burnt through welding spots. Apply undercoating. Seal seams and joints.

ECONOMICAL REPAIRS WITH CELETTE STRAIGHTENING BENCH FOR TYPE 911, 912 AND 930 TURBO

The attachment set ENS 77.360 was developed for body straightening work. The attachment set consists of basic equipment, with which all important take-up points can be checked. This attachment set also has attachments for simple repairs. With these parts it is no longer necessary to remove the engine and transmission for front end body damage or the front axle for rear end body damage.
All mounting points must fit flat on the Celette straightening bench and bolting must be possible without stress.

Take-up Points and Bolt Size

1. Control arm front	M 10 x 30
2. Auxiliary carrier front	M 12 x 1.5 x 70
3. Auxiliary carrier rear	M 10 x 30
4. Shock absorber top	
5. Rear axle cross tube outer	M 10 x 30
6. Transmission suspension	M 12 x 1.5 x 70
7. Cross member upper	
8. Engine mount	



Attachment set ENS 77.360 basic equipment

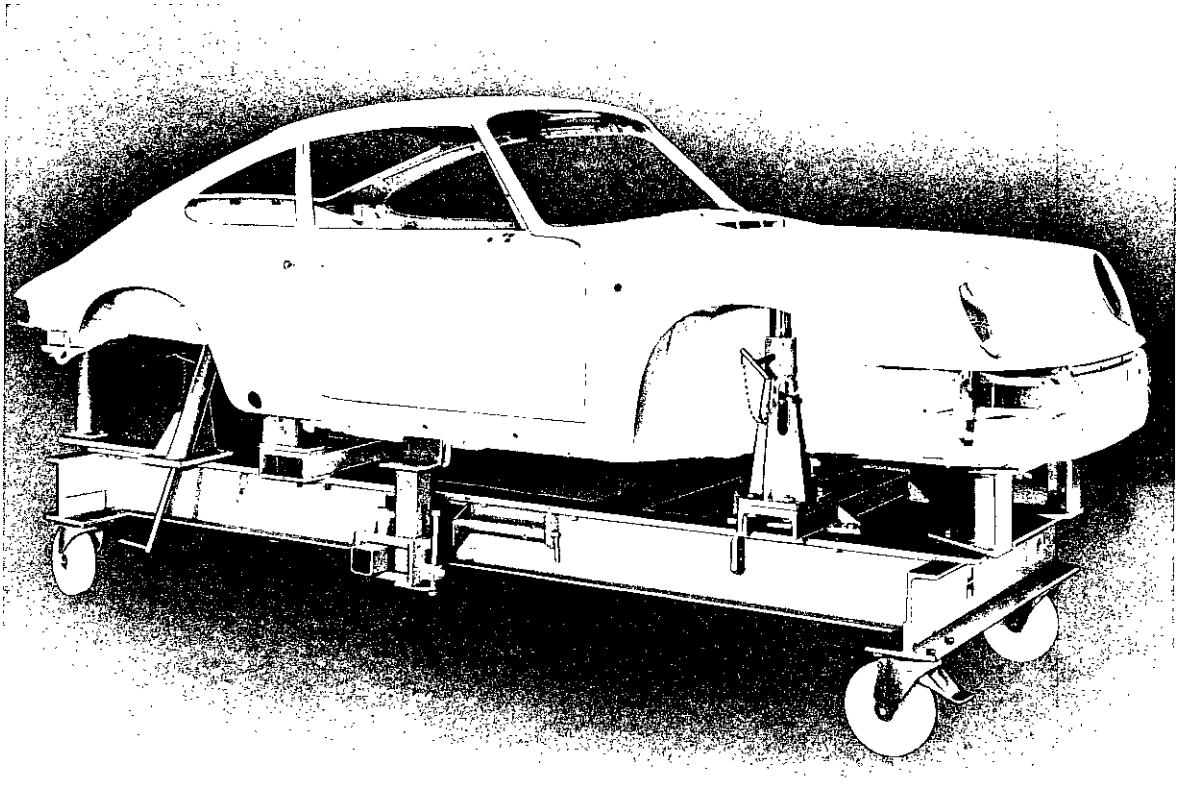
PREPARING BODY FOR USE OF ATTACHMENT SET
ENS 77.360

Remove:

- Bottom guard
- Wheels
- Front axle and steering gear assembly
- Fuel tank
- Rear axle arms and shock absorbers
- Torsion bars
- Engine
- Transmission
- Damaged body parts and equipment, as necessary for straightening.

Preparing Celette straightening bench:

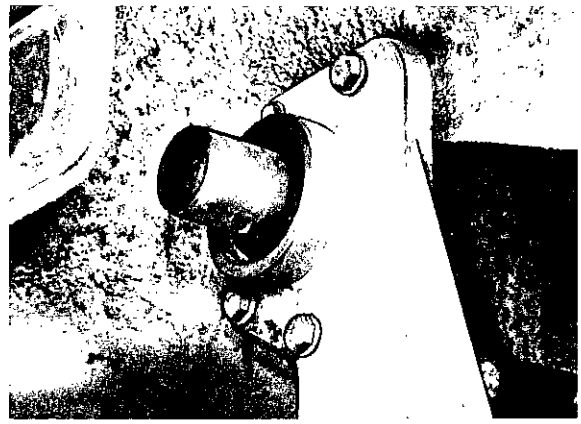
Bolting all attachments of set, except for spring strut dome. Setting scale on auxiliary carrier take-up to 0.



Note:

Horizontal position of a movable Celette straightening bench must be checked with a bubble level.

From 1977 models on (adjustable spring strut setting) the shoulder bolts of side member/rear axle cross tube are 4 mm longer on both sides.

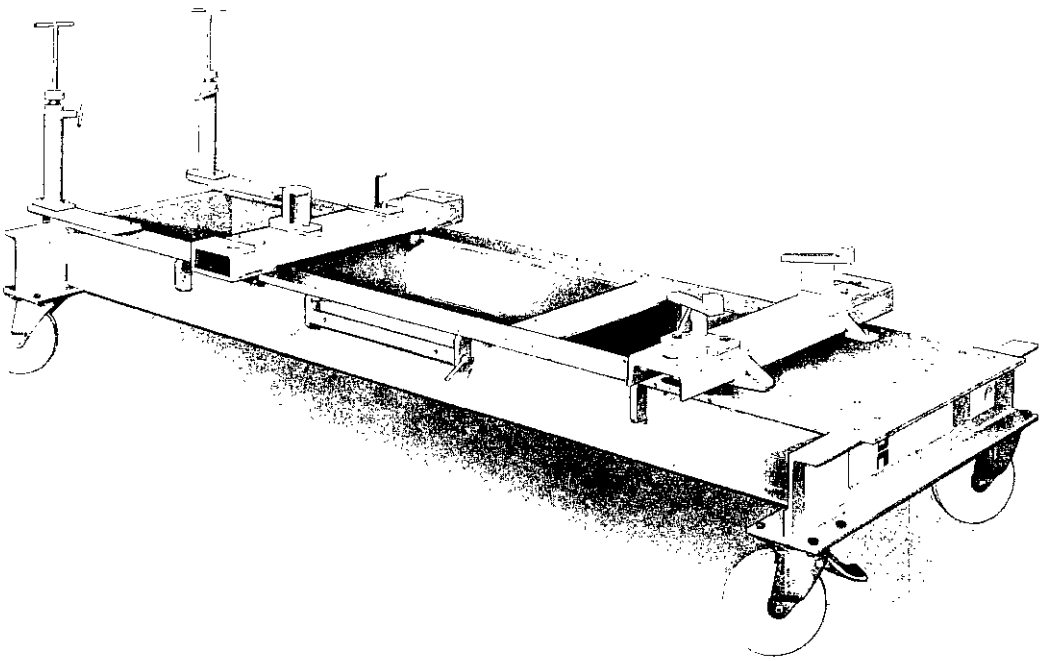


For these cars the bores in the take-ups of the attachment set must be enlarged by this amount. For the previous models these enlarged holes must be adapted by using suitable washers.

Note

Attachment set ENS 77.360 corresponds with version from 1977 models on. For cars up to 1976 models the supplied washers must be used.

ATTACHMENT SET FOR TYPE 930 TURBO ENS 77.303



The illustrated take-up points differ from Type 911 attachment set and are used for Turbo models.

The auxiliary carrier pin is installed 21 mm higher.

The brackets on the rear axle cross tube are inclined upward.

The take-up point for transmission suspension is located further forward by 25 mm.

The engine mount for Type 3.0 Turbo up to 1977 models corresponds with Type 911.

The engine mount for Type 3.3 Turbo from 1978 models on is located further toward rear by 30 mm.

EXTRA ATTACHMENT FOR ECONOMICAL REPAIR OF FRONT END DAMAGE

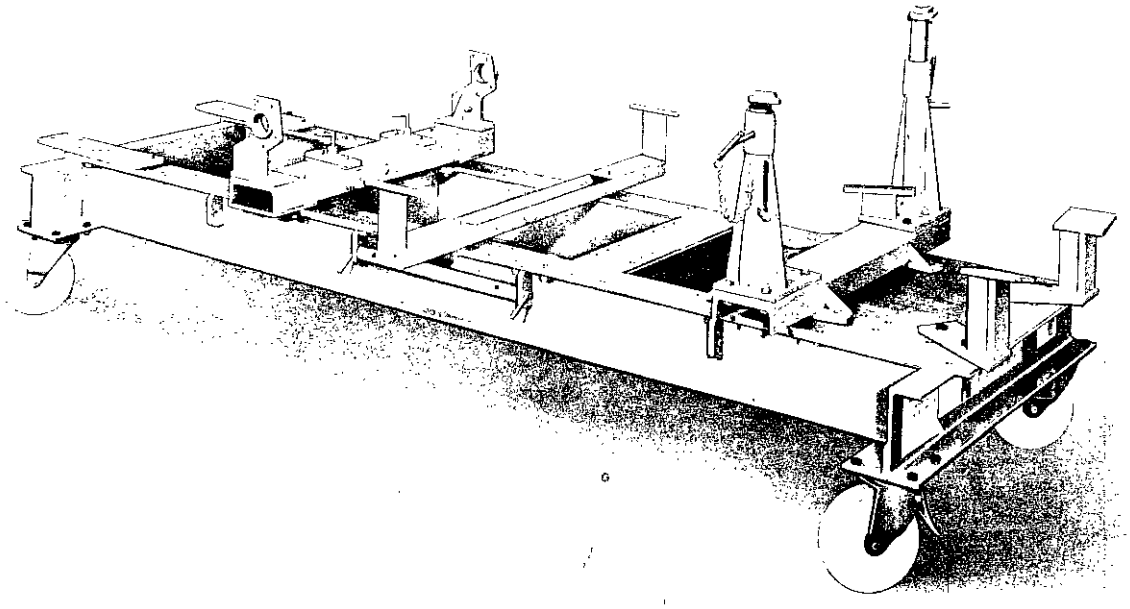
With this set of straightening bench attachments it is not necessary to remove the engine, transmission and rear running gear parts.
Its application requires that the rear end of the body is not damaged.

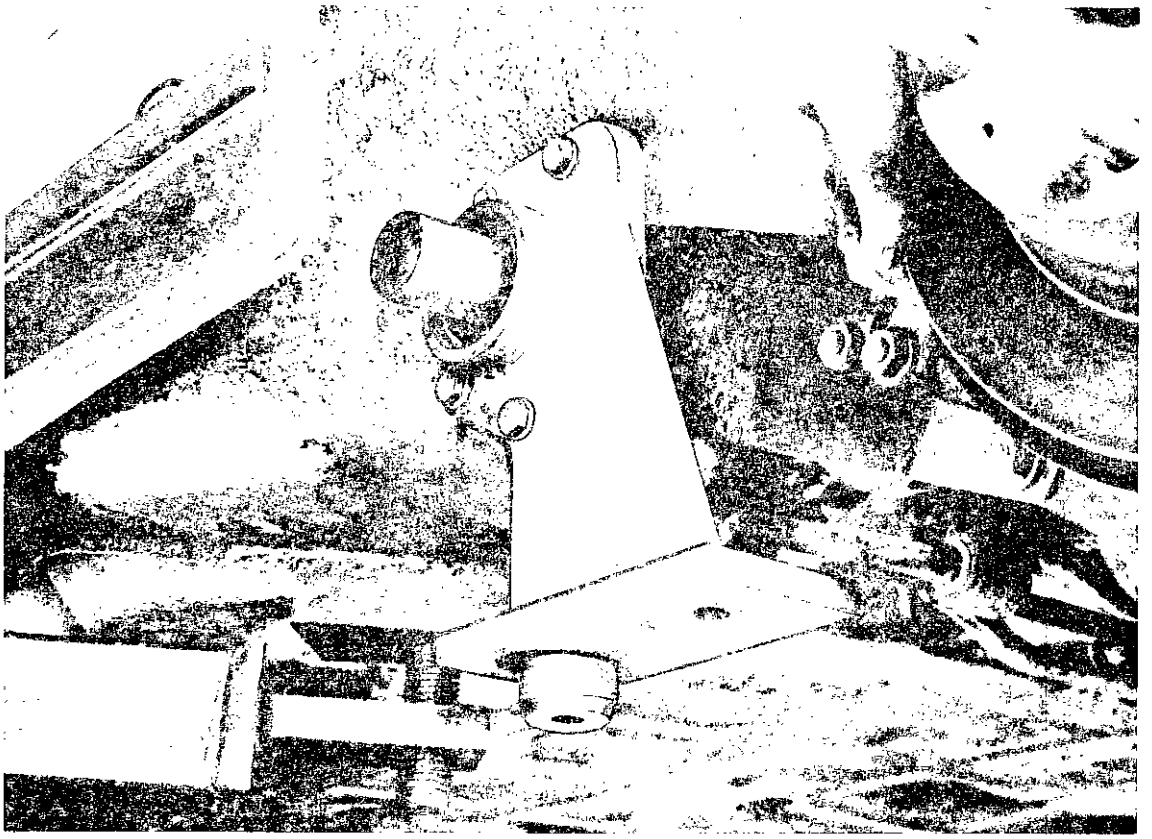
Remove:

Bottom guard
Wheels
Front axle with steering gear
Fuel tank
Bearing (torsion bar) covers
Damaged body parts and equipment for required for straightening

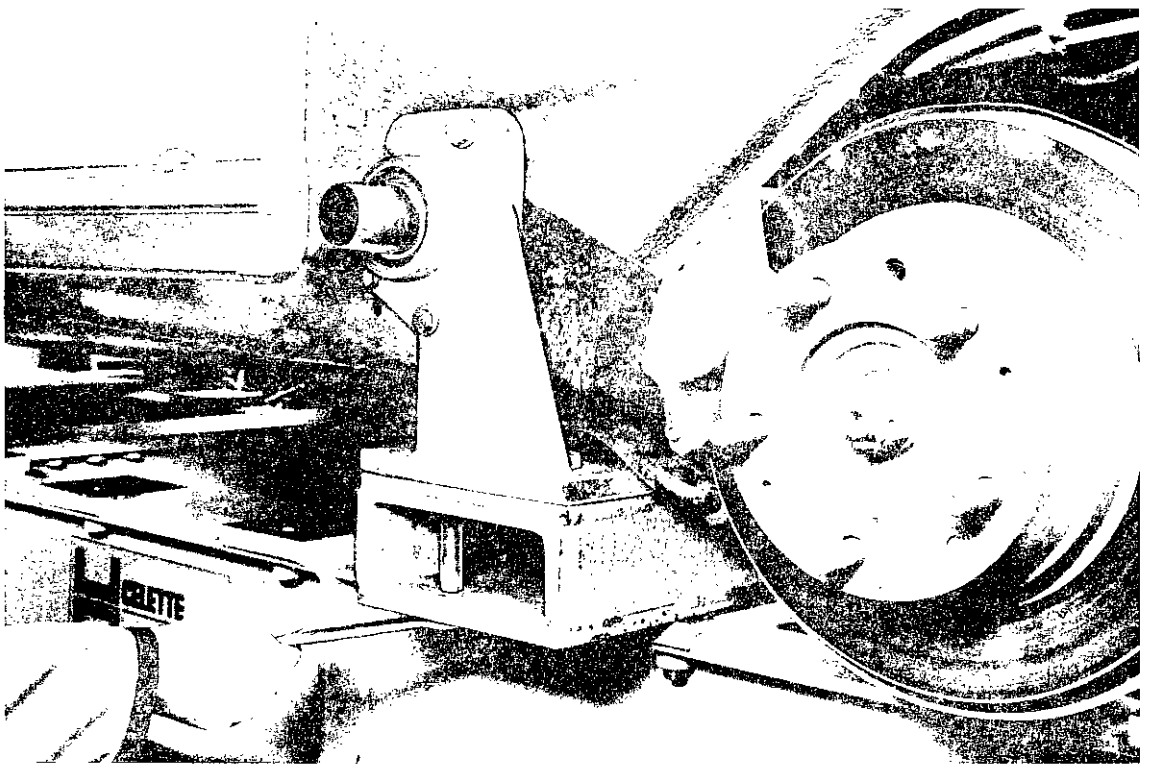
Preparation of Celette straightening bench:

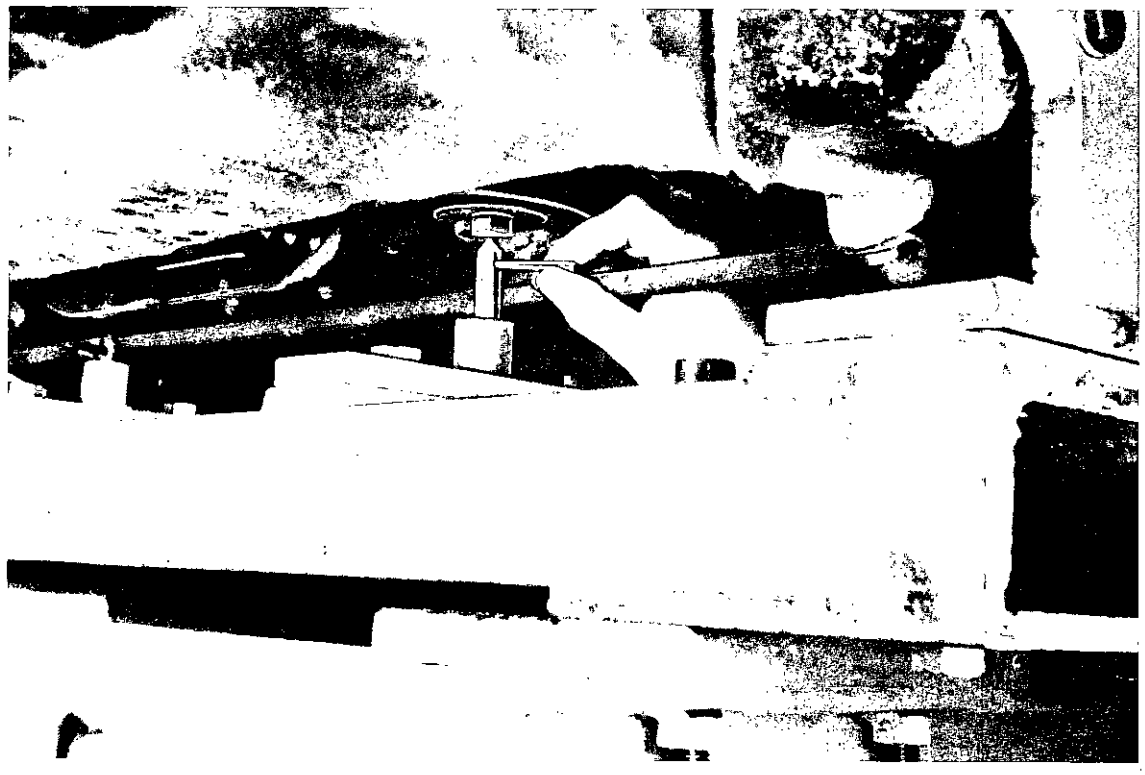
Bolt attachments for front control arms and auxiliary carrier. Install and bolt cross member with control pins.





Note: Before lowering the body on the straightening bench the attachments must be secured on the shoulder bolts.





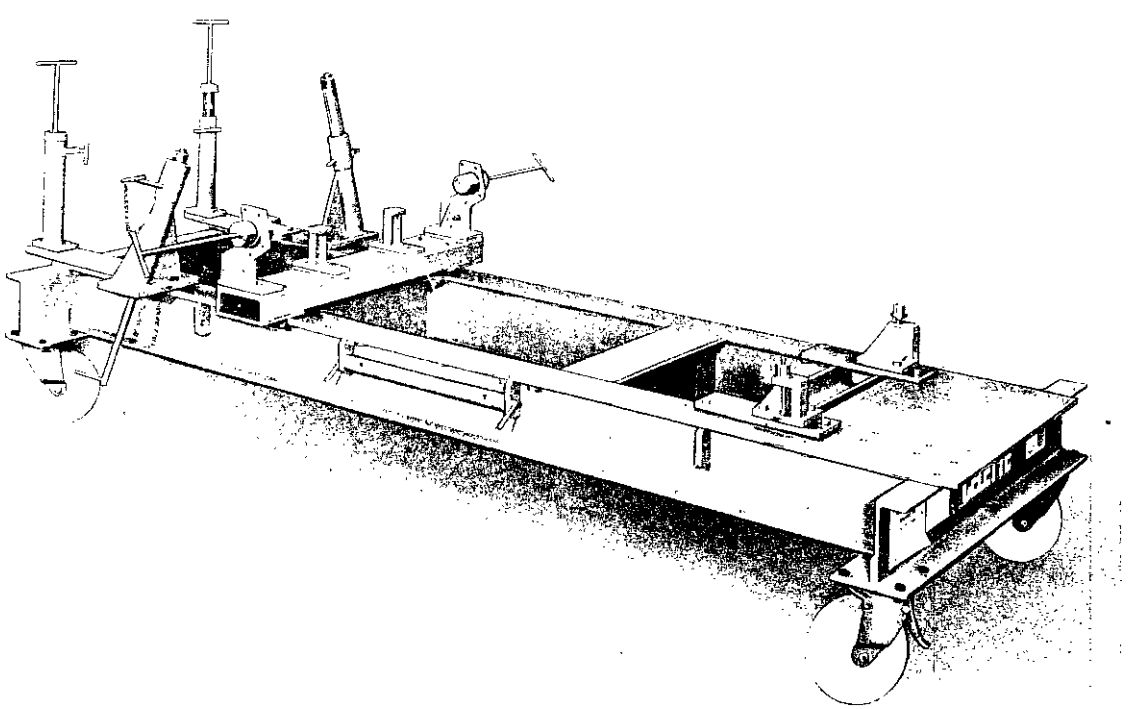
After bolting down the set of attachments, check the central position of the transmission bolts with the control pins.

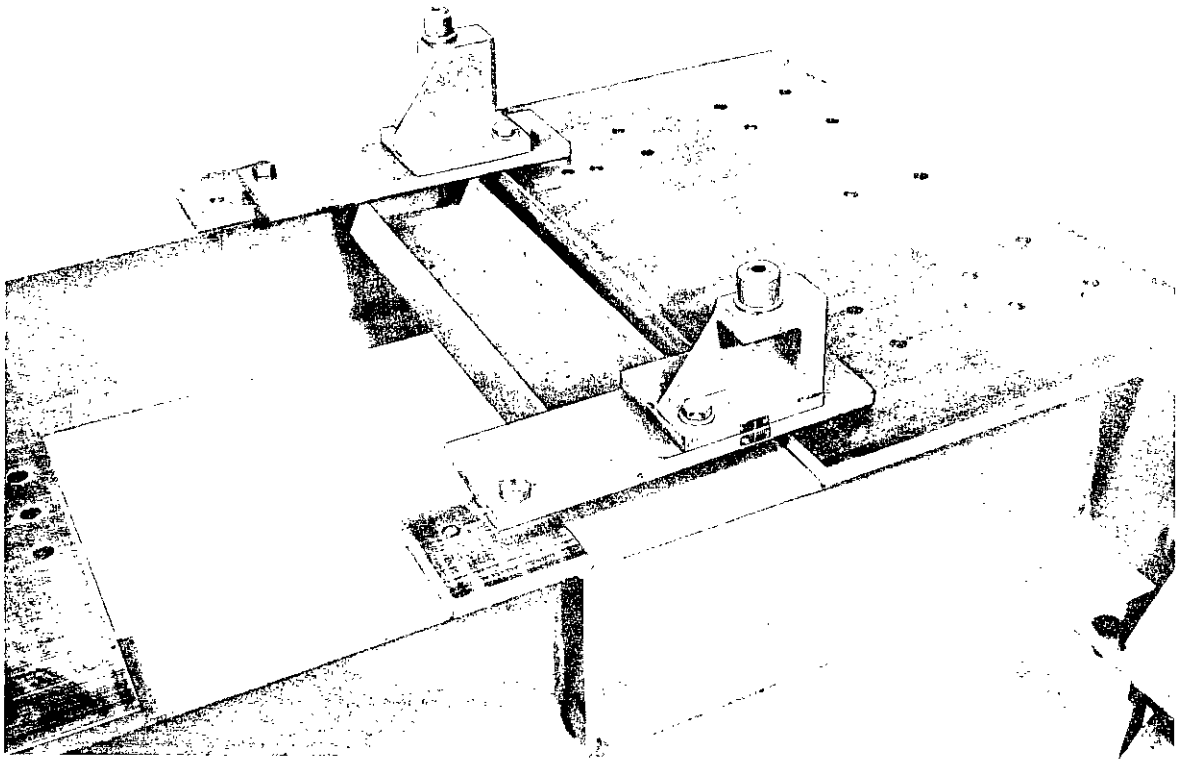
Note: The horizontal position of a moving Celette straightening bench must be checked with a (bubble) level.

EXTRA ATTACHMENT FOR ECONOMICAL REPAIRS OF BODY REAR SECTION DAMAGE

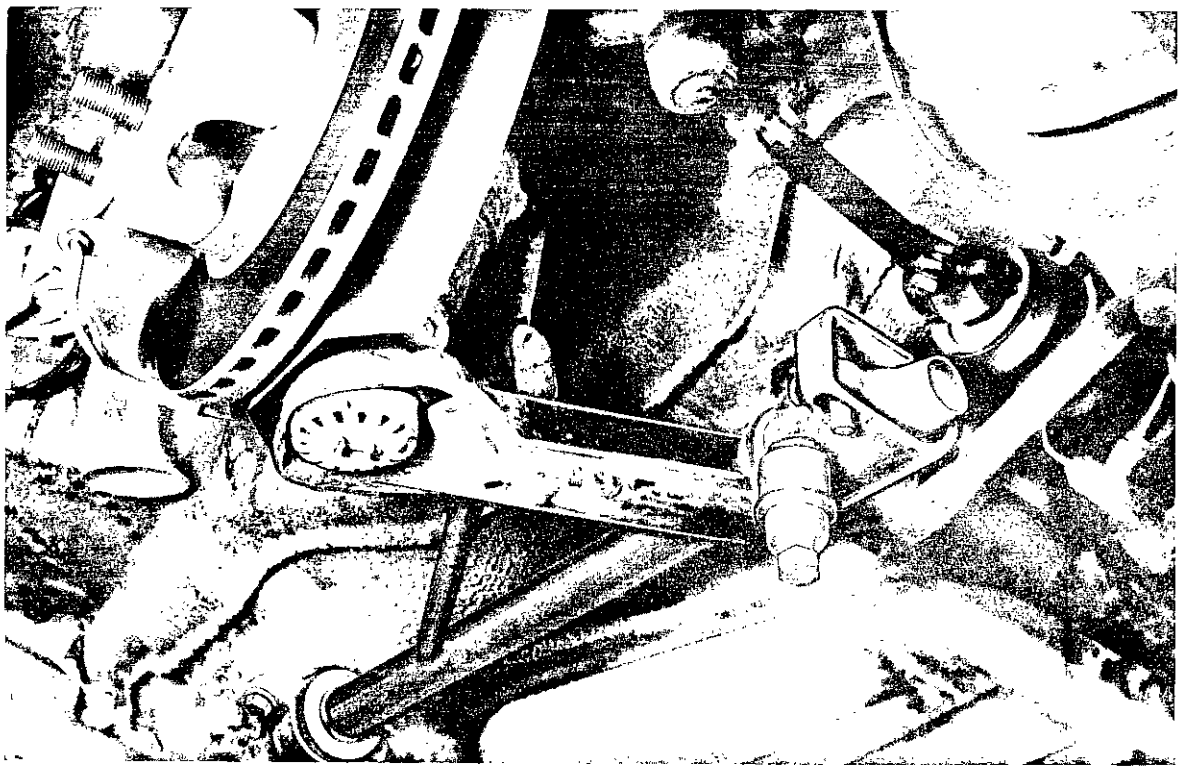
With this attachment set it is not necessary to remove the bottom guard and front axle. Its application requires that the body front section is not damaged.
For serious body rear section damage, e.g. when the rear axle cross tube has to be replaced, it is not recommended to use the economical extra attachment without removal of the front axle.

Remove:	Engine Transmission Rear axle arms and shock absorbers Bearing caps and torsion bars Damaged body and equipment parts, insofar as required for straightening.
Preparing Celette straightening bench:	Bolting economical extra attachment. Removing all other attachments in front area. Bolting cross member, shock absorber attachments and engine mount attachment at rear.

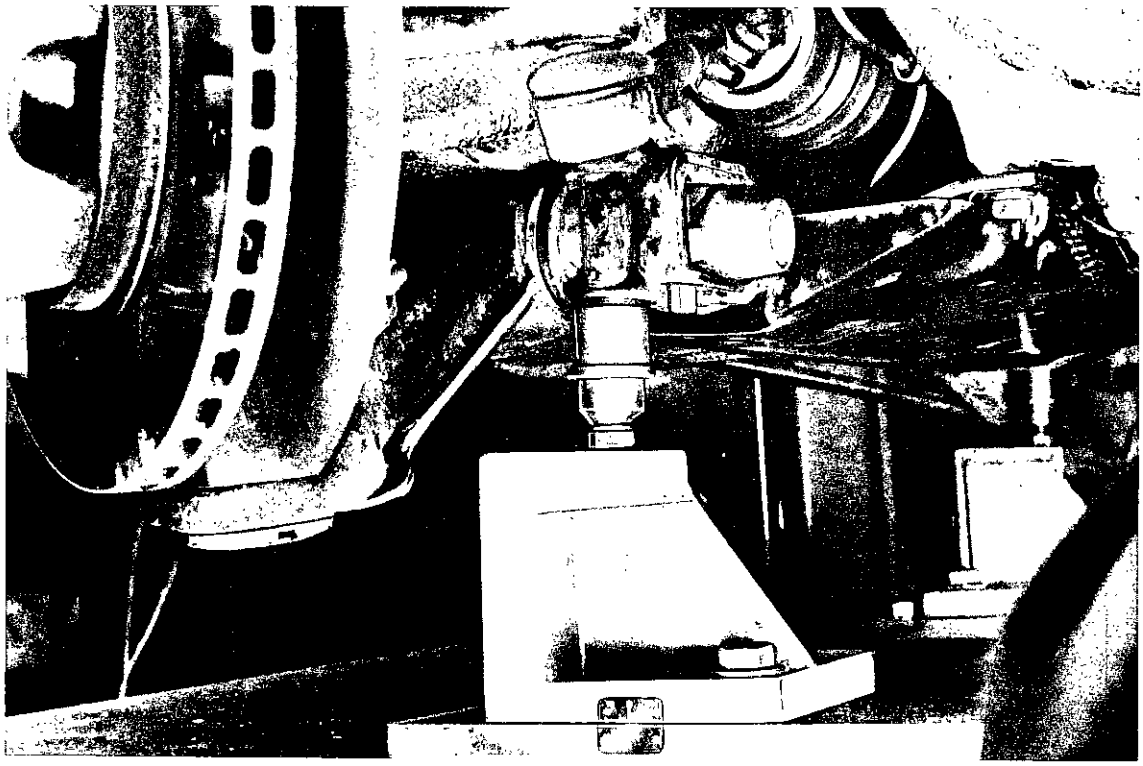




Economical extra attachment is bolted on auxiliary carrier pin.



Remove auxiliary carrier bolts and mount adapter with longer bolts supplied.

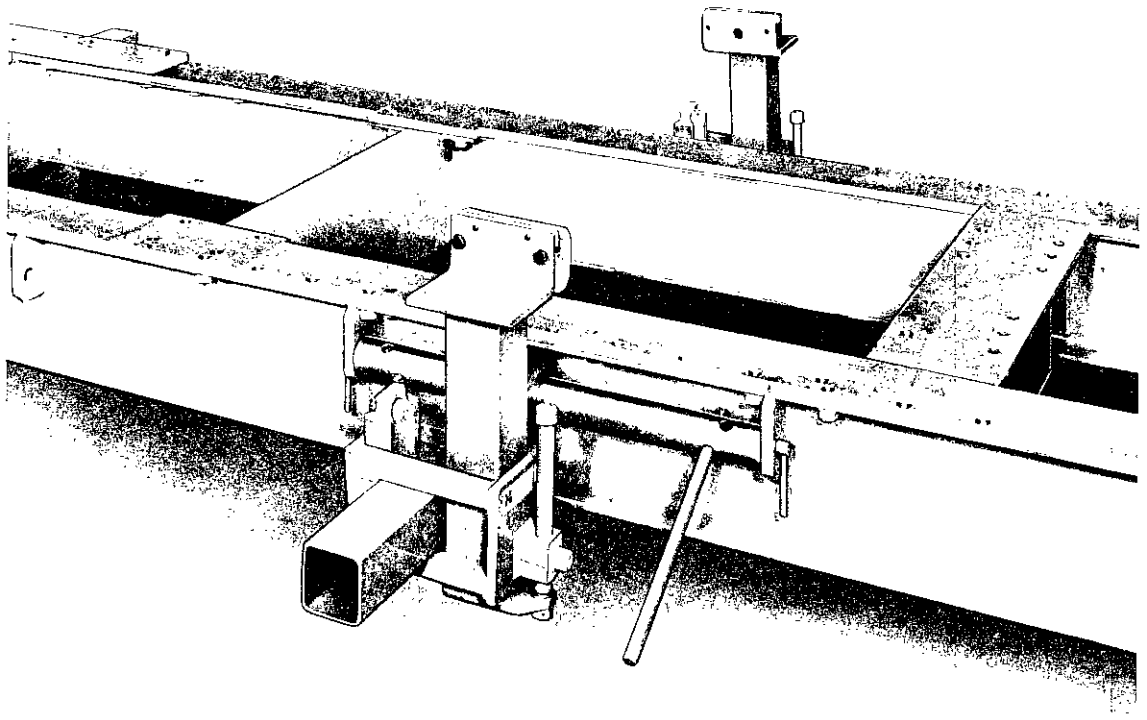


Lower body in horizontal position. Set attachment set to 0 on scale and tighten.

Note

The auxiliary carrier pin is installed 21 mm higher on Turbo cars. This deviation must be compensated for when installing the adapter.

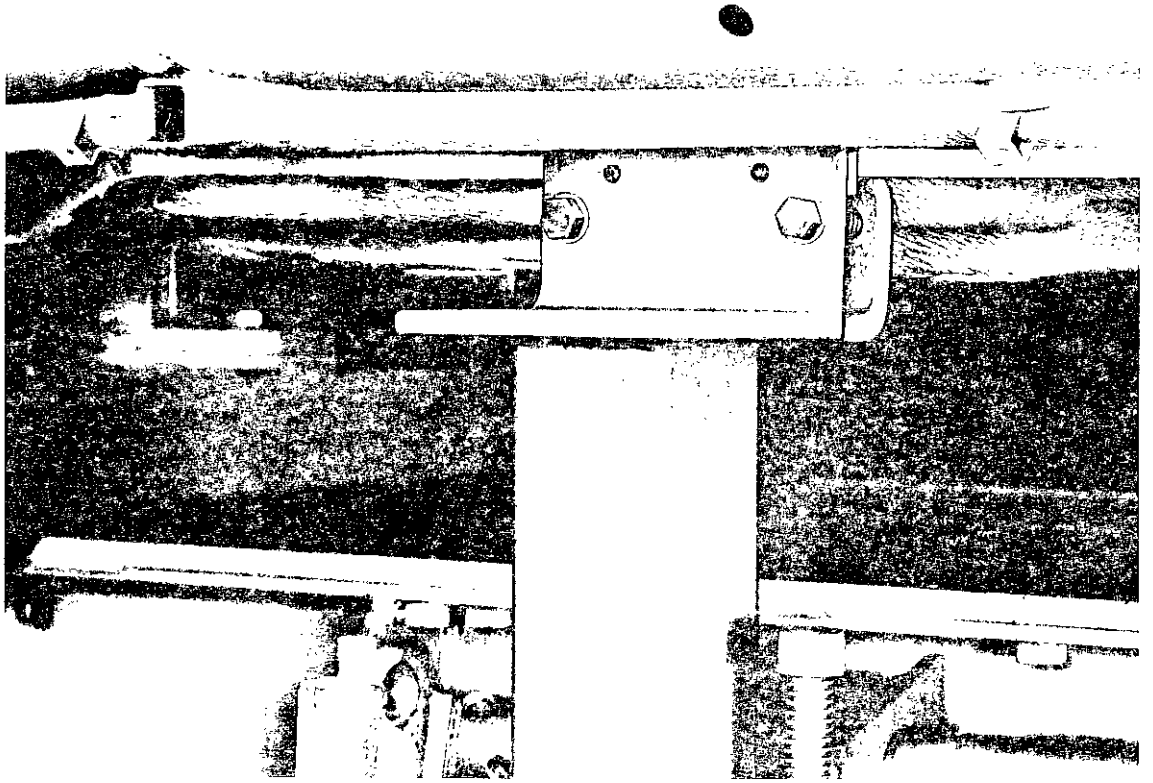
UNIVERSAL ANCHOR ENS 937.900



The universal anchor ENS 937.900 illustrated above can be used for additional anchorage of a body on the Celette straightening bench.

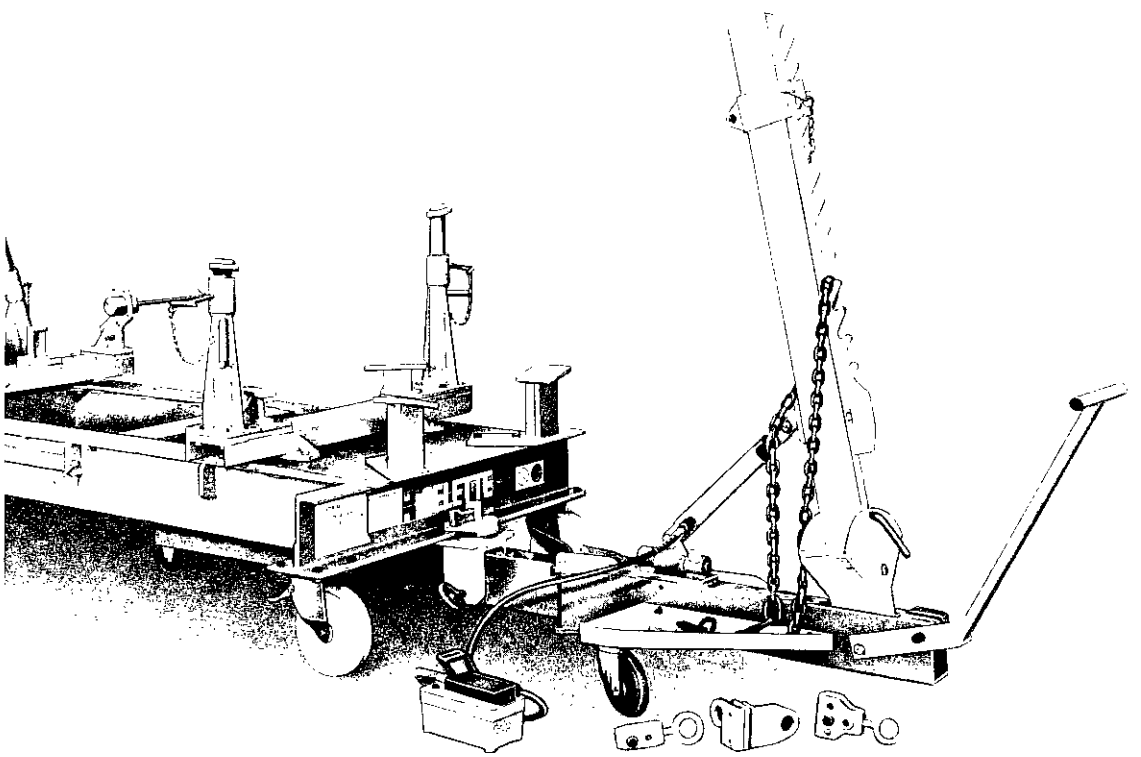
Application of the universal anchor is recommended in conjunction with the extra attachments for economical repair of front and rear end damage.

The universal anchor can be mounted on the straightening bench at three different points. It can be adjusted in axial direction as well as in height and width. Even older straightening benches can be fitted with universal anchors.



Universal anchor mounted on floor flange. Undercoating should be removed in this area to provide greater holding forces.

COBRA 3 STRAIGHTENER WITH ACCESSORIES

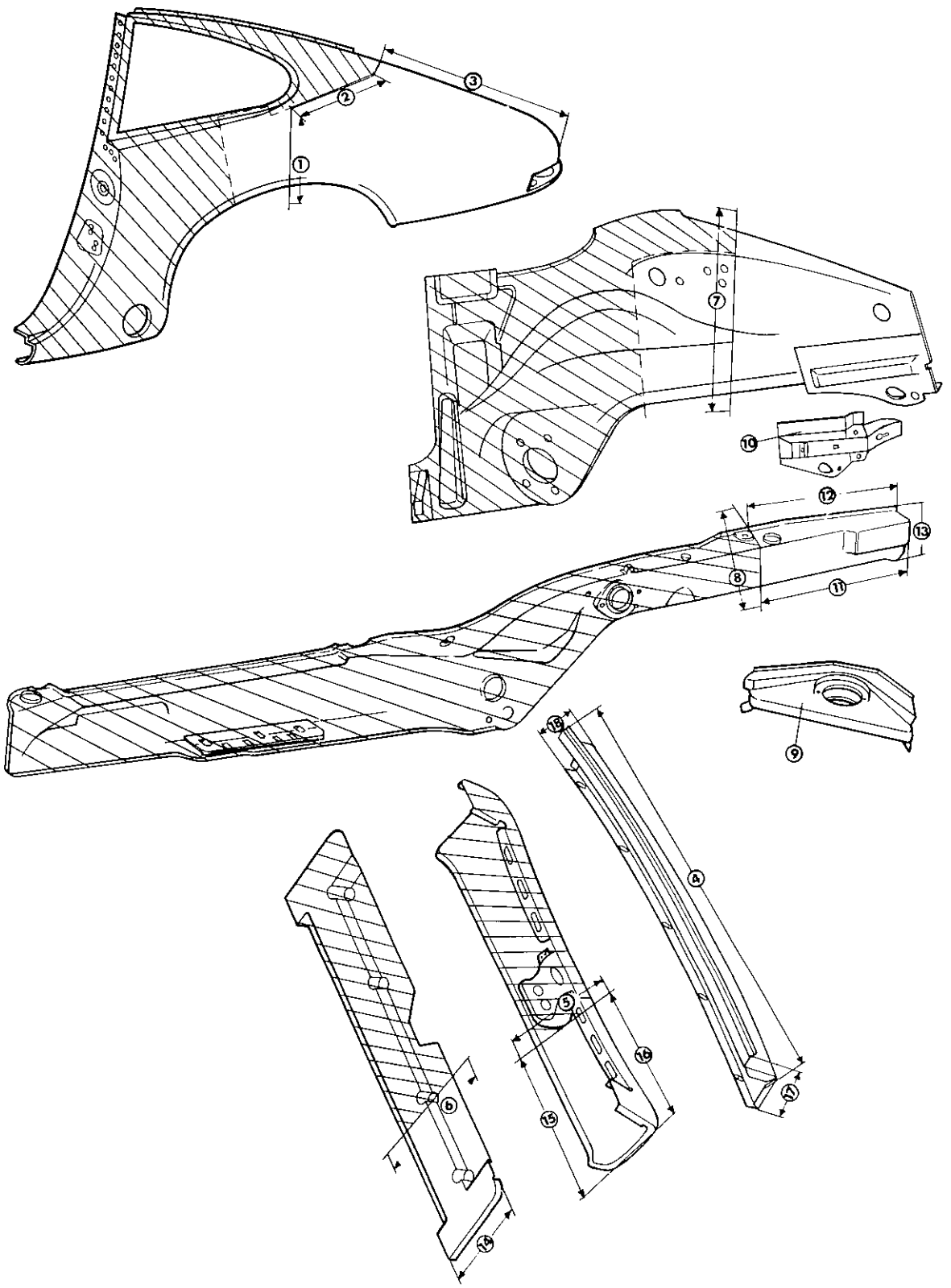


This straightener can be permanently anchored on the bench. The pulling direction can be adjusted by swinging the beam even when anchored.

BODY REPAIRS - REAR

Replacing Part of Inner Side Member

Includes: Wheelhousing inner and outer rear cross members, left or right engine brackets end plate and rear fender.



Replacing Part of Inner Side Member

Operation	Areas	Material
1. Separating	1-8	Cutting disc
Re move metal scraps	2, 4, 7, 8	Welding torch, hand grinder and öliers
Undercoating and paint	Clean and grind down mating surfaces	
2. Preparing (new parts)		
Aligning, cutting and grinding	1, 2, 5, 6, 7, 8	Cutting disc, metal cutters and hand grinder
Apply rust preventative	1-10	Paint
3. Welding		
Spot weld	3, 11, 12, 15, 16	Spot welder
Butt weld	4, 9, 10	Spot welder
Weld	1, 2, 5, 6, 7, 8, 13, 14, 17	MIG welder
Weld	Area 3, top of lid and wheel-housing joint welded flush	Gas welder
4. Finishing		
Grinding	1, 2, 3, 4, 5, 6, 7, 8	Hand grinder
Welding seams	1-18 welding spots burnt through	Gas or MIG welder
Sealing	All surfaces inner and outer	Undercoating (asphalt - PVC basis)
Preserving	Cavities	Tectyl etc. (wax basis)

Replacing Part of Inner Side Member

1 - Damage Diagnosis

2 - Alignment

Before the damaged parts can be removed by cutting, align the ented section with hydraulic alignment equipment as well as possible.

3 - Preparation

Dismantle

Engine with transmission
Rear bumper
Left and right bottom fender sections
Left and right vent windows
Lower lid lock
Electrical items as required

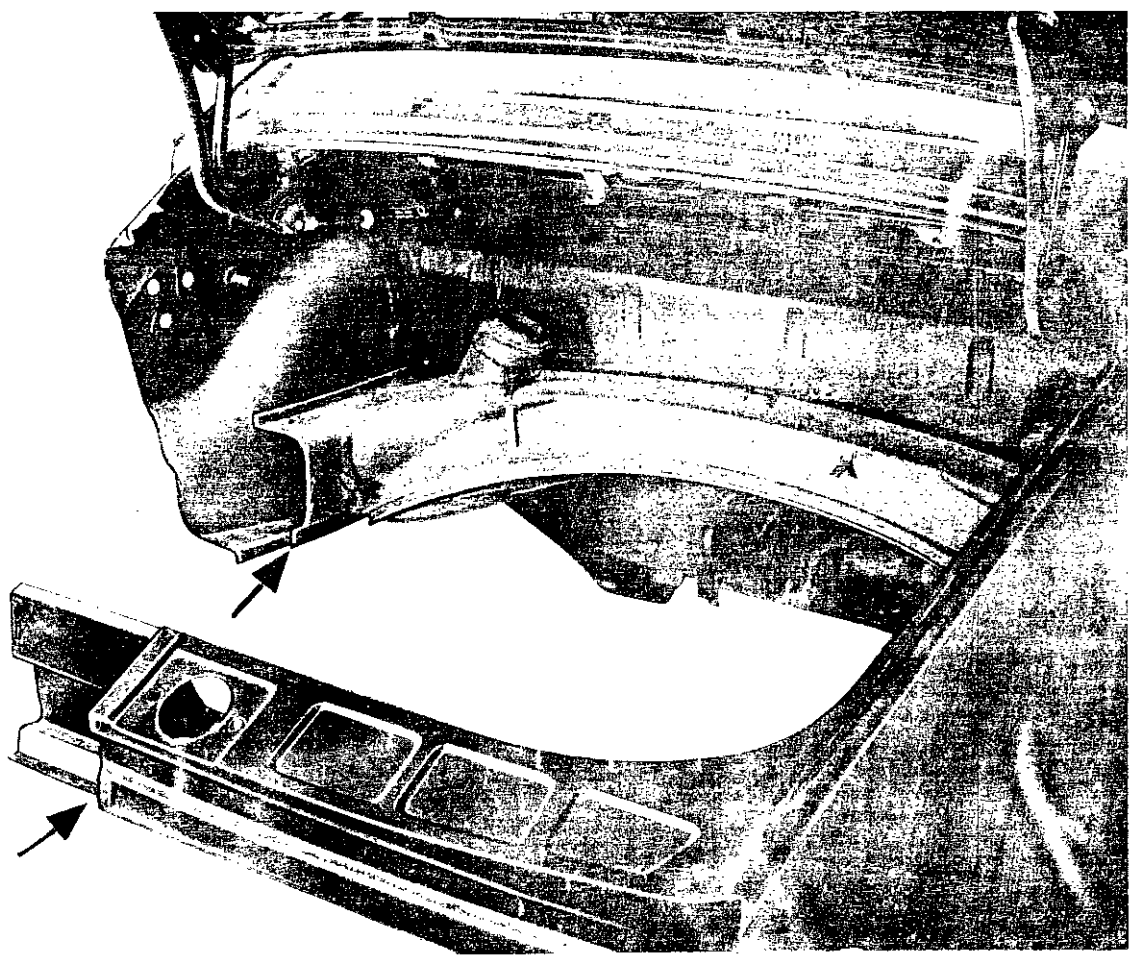
4 - Separation of damaged parts

Note Cut out badly damaged parts instead of unbolting.

Replacing Part of Inner Side Member

4 a - Damaged parts can be separated in any sequence in accordance with the operations illustrated.

Note Mating surfaces of supporting parts are offset to each other see arrows.



5 - Remove remaining scraps of metal. Align and grind down mating surfaces and flange.

6 - Align car in both directions with side members.