



Description of Body

Karmann Ghia Coupé

General

The two-door, all-steel, open bottomed body of streamlined pontoon shape is bolted to the widened platform frame and sealed with U-section rubber sealing strips. The strong side members under the doors combine with the platform frame and tunnel to form a bend and twist proof foundation. The fenders are welded to the outer body panels.

The body is divided into front luggage compartment, passenger compartment and rear engine compartment by partitions. The engine compartment is ventilated by means of a series of slots in the rear hood. The area of these cooling air slots must not be restricted by the installation of accessories.

The body is comprised of the following parts, which are welded together:

- a - Front section outer panel, inner wheel housings, reinforcement plate, instrument panel and hinge pillars.
- b - Rear luggage compartment floor plate
- c - Rear quarter panels with wheel housings
- d - Side members
- e - Roof
- f - Front and rear panels

Doors

The 1000 mm (39.3") wide half doors have no top frames and are attached to the front body pillars by concealed, adjustable hinges. When the vertically curved window panes are in the closed position they bear directly on the body weatherstrip.

The doors are lockable and have press button controls in the rigid outer handles and buttons on the inside. The door opening angle is controlled by a check strap with an intermediate stop. A strap on the driver's side and an arm rest with grip recess on the passenger's side are provided for pulling the doors from inside. The door is sealed in the door frame by means of an all-round, moulded foam rubber strip.

The hood of the front compartment, which contains the fuel tank, spare wheel and tools, and the engine compartment hood have locks which are controlled from the vehicle interior by Bowden cables. The control knob for the front hood is located underneath the instrument panel on the left hand side. After the front hood has been released the safety catch near the lock must be pushed to the rear before the hood can be opened. The rear hood is released by means of a knob situated on the left side of the emergency seat reinforcement panel. The number plate lamp is shaped to form a handle for lifting the hood which is held in the open position by springs at the hinges.

Windows

The windshield is curved and inclined at approx. 50°. The maximum clear width is 1200 mm (47.275") and the max. clear height 425 mm (16.73"). The rear window extends round the sides of the roof contour and is inclined at 60°. The maximum clear width is 1100 mm (43.33") and the height 430 mm (16.93").

The windows can be fully lowered by rotary handles and are sealed at the fixed side windows and the roof by a rubber weatherstrip.

All windows are of heat-treated safety glass. The windshield has a specially treated zone which remains clear even when the glass is damaged. For certain countries windshields of laminated glass are installed.

Front Seats

The wide, adjustable, individual seats are held in runners which rise slightly towards the front. The seat backs can be adjusted to three different angles. The seat frames are of tubular steel and the spring interiors are of interlocked coil springs. Seats and seat backs are padded with rubberised hair.

Rear Seats

The seat and back rest of the rear bench are upholstered and serve as an emergency seat. The backrest can be folded down and the space used as an additional luggage compartment.

Instrument Panel

In front of the driver, to the left of the steering column, is the speedometer which reads up to 140 k.p.h. (87MPH) with the warning lights let into the dial. In the center is the fuel gauge and on the right the electric clock. The center portion of the instrument panel is prepared for the installation of a radio set and loud speaker. On the right side is an ashtray and a glove box with lid. The combined ignition/starter switch and the choke control are on the left near the speedometer, the light switch and the windshield wiper switch are on the right by the clock. The top part of the instrument panel is covered with padded, non-reflecting material.

Interior Trim

The door and side trim panels are covered with leatherette. The seats are finished in leatherette or cloth according to choice. The floor, front partition, frame tunnel and side members are covered with rubber matting. The floor is also coated with an additional sound absorbing material. The luggage compartment and the luggage space inside the body is lined with haircord carpet. Both doors are fitted with pockets. The rear view mirror on a ball and socket mounting and two padded sun visors are attached in the center of the roof. A grab handle is provided on the instrument panel in front of the passenger.

Heating and Ventilation

Air warmed by the engine is taken via flexible metal pipes, sound dampers and frame side members to the outlets at foot level in the front compartment and at the windshield. Fresh air for ventilation enters at openings in the front panel and passes via ducts arranged on each side to the defroster vents. The fresh air flow is regulated by valves in the ducts. The valves are operated by regulator levers — one for each side — located under the instrument panel at the left side. The warm and cold air can be controlled separately or mixed in the desired quantities.

Luggage Space

Access to the rear luggage space with a capacity of 6.4 cu.ft., is obtained by folding the emergency seat back rest down. Under the front hood is another luggage compartment of 2.5 cu. ft. capacity. If the emergency seat back rest is left folded down the rear luggage space is increased by a further 7.1 cu.ft.

Exterior Trim

Chrome-plated, wrap-round bumpers with over-riders.

Chrome-plated trims on headlamps, direction indicator lamps, tail and number plate lamps and windows.

Trim strips on body and door lower edges, on the window slots and on the fresh air intake grilles in the front panel.

Chrome-plated door handles, exhaust tail pipes, wheel rims and ornamental hub caps.



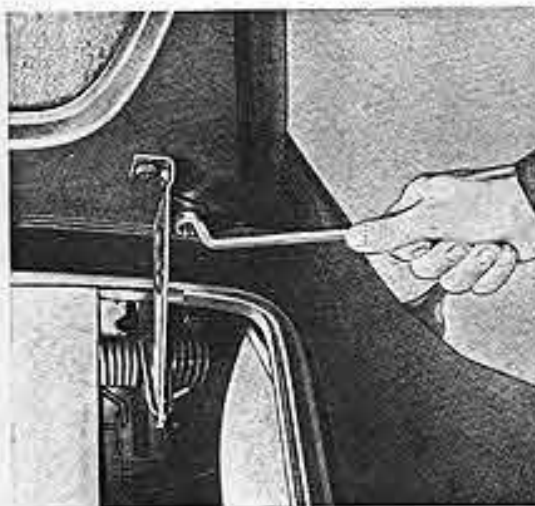
Front Hood Removal and Installation

Removal

The removal and installation of the front hood is simplified if the job is carried out by two mechanics. The hood can then be properly supported and damage to the front cowl panel avoided.

If this is not possible, a suitable piece of woollen or plastic material should be placed over the cowl before work commences.

- 1 - Open hood.
- 2 - Remove two bolts from the hinges on each side of the hood and take off the hood.



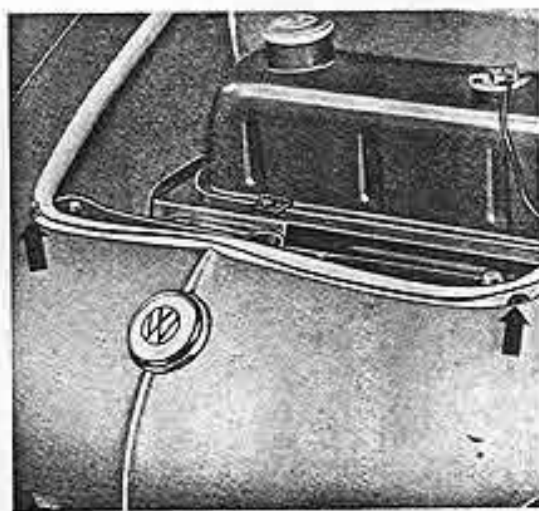
- 3 - If necessary, unhook the spring and after removing the fiberboard luggage compartment lining unscrew the hinge securing bolts and remove hinges.

- 4 - If necessary, remove the lock bolt and safety hook from the hood.

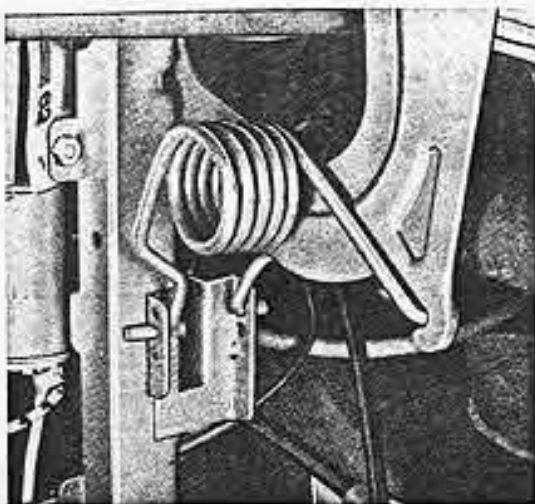
Installation

- 1 - Check condition of weatherstrip and replace if necessary.

When renewing the front hood weatherstrip remove all traces of old cement with benzine and secure the new weatherstrip in position with Genuine VW Universal Adhesive D 12. Take care that holes in the weatherstrip line up with the holes in the front panel.



- 2 - Bolt the hood loosely to the hinges so that it can be moved in the elongated holes to obtain proper seating and sealing all round. Then fully tighten the bolts.

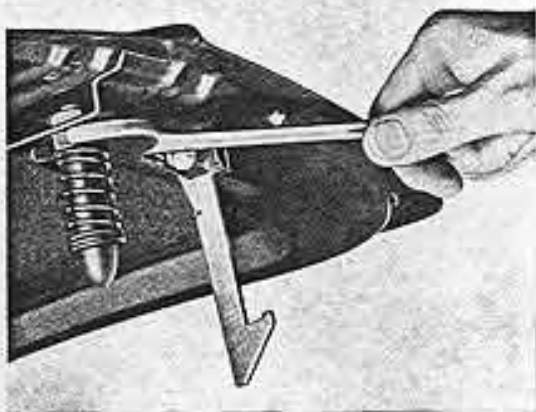


3 - Attach the springs to the hinges so that the hood remains in the open position.

4 - Open and close the hood several times to check lock operation. If necessary adjust the lock in the elongated holes.

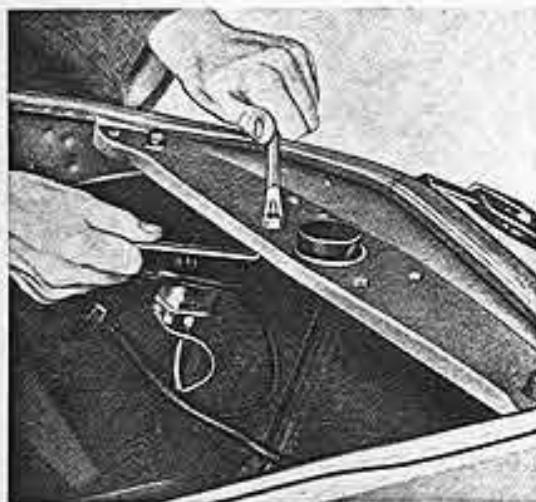
Front Hood Lock Removal and Installation

Removal



1 - Open front hood.

2 - Remove lock bolt and safety hook.



3 - Unscrew five retaining nuts and bolts.

4 - Loosen lock cable clamp screw and withdraw cable from catch. Remove lock.

- 5 - Pull lock cable out of guide tube.

Notes:

From 1st August 1960 and Chassis No. 3 192 507 the lock cable — Part No. 143 823 531 — on the Karmann Ghia Models for opening the front hood is being installed on the right of the steering column for vehicles with right-hand steering.

At the lock on the front panel — Part No. 142 823 509 — the cable is on the right-hand side.

Service installation in right-hand drive vehicles is possible.

From 2nd February 1960 and Chassis No. 2 859 216 the modified pins of the front and rear hood locks have a diameter of 8 mm (.31"), previously 15 mm (.59"). The new locks bear the Part Numbers:

front 141 823 509 A

rear 141 827 503 A

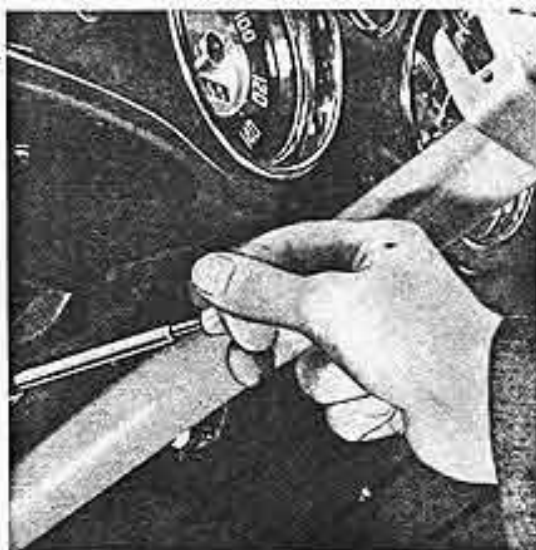
The lock pins are available separately as spares (Part No. 141 823 471 A) and are suitable for the front and rear hoods.

The new lock can be service installed in earlier vehicles. When installing it should be noted that instead of the two washers currently used which have an outside diameter of 17 mm (.67") two washers (Part Nos. 141 823 347 or N 11 670 1) with an outside diameter of at least 22 mm (.87") should be used.

The new lock pin is also suitable for previous type locks. (Part Nos. 141 823 509, front; and 141 827 503, rear). After stocks are used up these locks will no longer be supplied.

Installation

- 1 - Grease hood lock cable and insert into guide tube.
- 2 - The lock is so constructed that if the lock cable breaks the latch plate which retains the lock bolt when the hood is closed springs back



automatically. The bolt is then free and the hood can be opened after pushing back the safety hook.

When attaching the lock cable the arm under the lock which carries the cable clamp screw must be turned against the spring tension until the latch plate projects into the opening for the lock bolt. In this position the lock cable should be inserted into the lock and secured to the arm by tightening the clamp screw. Bend surplus back.

- 3 - Secure hood lock.

- 4 - Install lock bolt and safety hook.

- 5 - Open and close the hood several times to check length of lock bolt and position of lock.

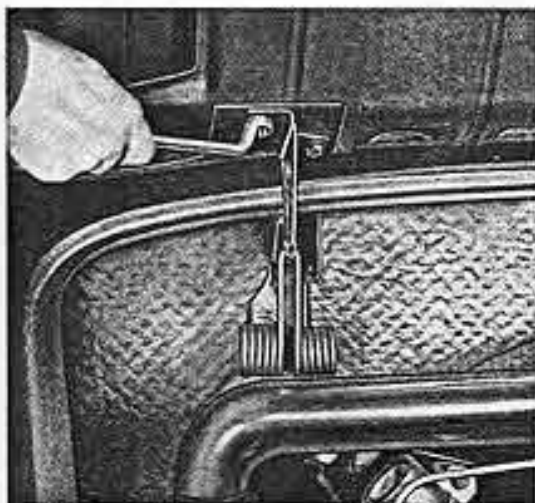
If necessary adjust the position of the lock by moving it in the elongated holes and the lock bolt length by loosening the lock nuts and turning the bolt in or out.

- 6 - Check the lock cable adjustment. If required adjust cable. Bend surplus cable back again.

- 7 - Grease lock bolt.

Rear Hood Removal and Installation

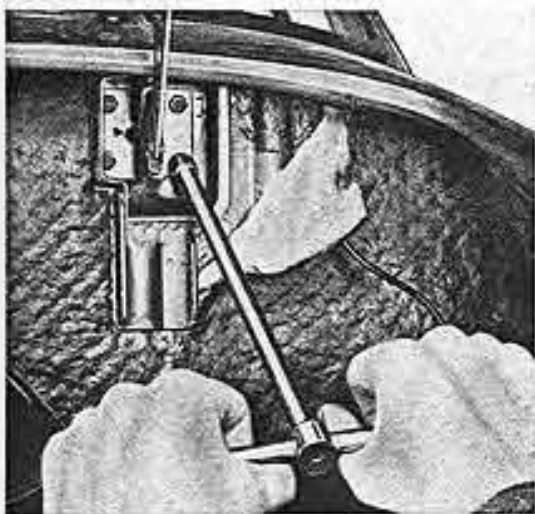
Removal



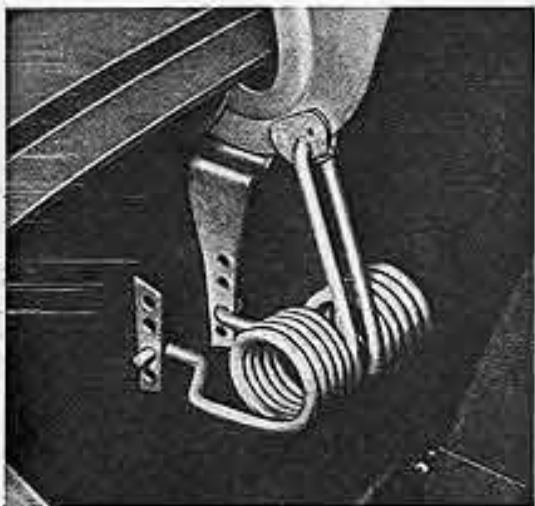
The removal and installation of the rear hood is simplified if the job is carried out by two mechanics. The hood can then be properly supported and damage to the rear upper panel avoided.

If this is not possible, a suitable piece of woollen or plastic material should be placed over the rear upper panel before work commences.

- 1 - Open rear hood.
- 2 - Unclip the license plate lamp cable and pull it out of the clamping plate on the hood.
- 3 - Remove two bolts from the hinges on each side of the hood.
- 4 - Remove the hood.
- 5 - If necessary, remove the hinges after lifting the sound damping material, or remove the hood lock.



Installation



- 1 - Check condition of weatherstrip and replace if necessary. When renewing the rear hood weatherstrip remove all traces of old cement with benzine and secure the new weatherstrip in position with Genuine VW Universal Adhesive D 12.
- 2 - Bolt the hood loosely to the hinges so that it can be moved in the elongated holes to obtain proper seating and sealing all round. Then fully tighten the bolts.
- 3 - Attach the springs to the hinges so that the hood remains in the open position.
- 4 - Open and close the hood several times to check lock operation. If necessary, adjust the lock in the elongated holes.

Rear Hood Lock Removal and Installation

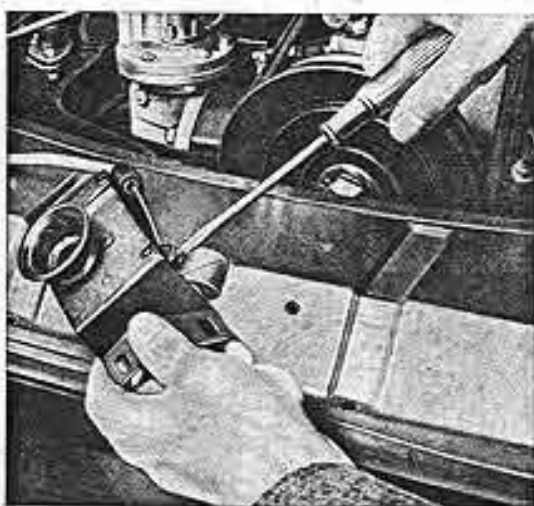
Removal

1 - Open rear hood.

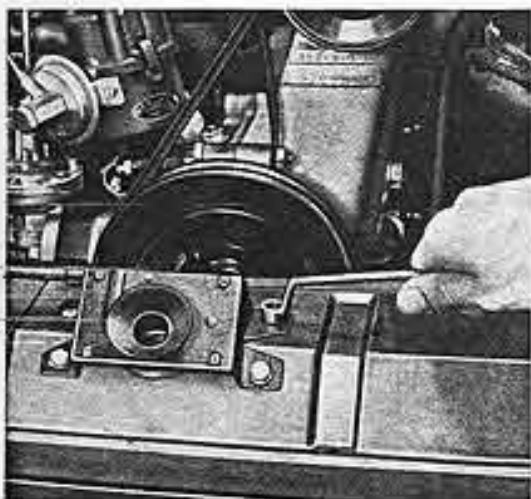
2 - Unscrew lock bolt.



4 - Loosen cable clamp screw and remove cable from catch. Remove lock.



3 - Remove four bolts.



5 - Pull lock cable out of guide tube.



Installation

- 1 - Grease lock cable and insert into guide tube.
- 2 - The lock is so constructed that if the lock cable breaks, the latch plate, which retains the lock bolt when the hood is closed, springs back automatically. The bolt is then free and the hood can be opened.

When attaching the lock cable the arm under the lock which carries the cable clamp screw must be turned against the spring tension until the latch plate projects into the opening for the lock bolt. In this position the lock cable should be inserted into the lock and secured to the arm by tightening the clamp screw. Bend surplus cable back.

- 3 - Secure hood lock.
- 4 - Install lock bolt.
- 5 - Open and close the hood several times to check length of lock bolt and position of lock.

If necessary, adjust the position of the lock by moving it in the elongated holes, and the lock

bolt length by loosening the lock nuts and turning the bolt in or out.

- 6 - Check the lock cable adjustment. If required, adjust cable. Bend surplus cable back.
- 7 - Grease lock bolt.

Notes:

From 2nd February 1960 and Chassis No. 2 859 216 the modified pins of the front and rear hood locks have a diameter of 8 mm (.31"), previously 15 mm (.59"). The new locks bear the Part Numbers:

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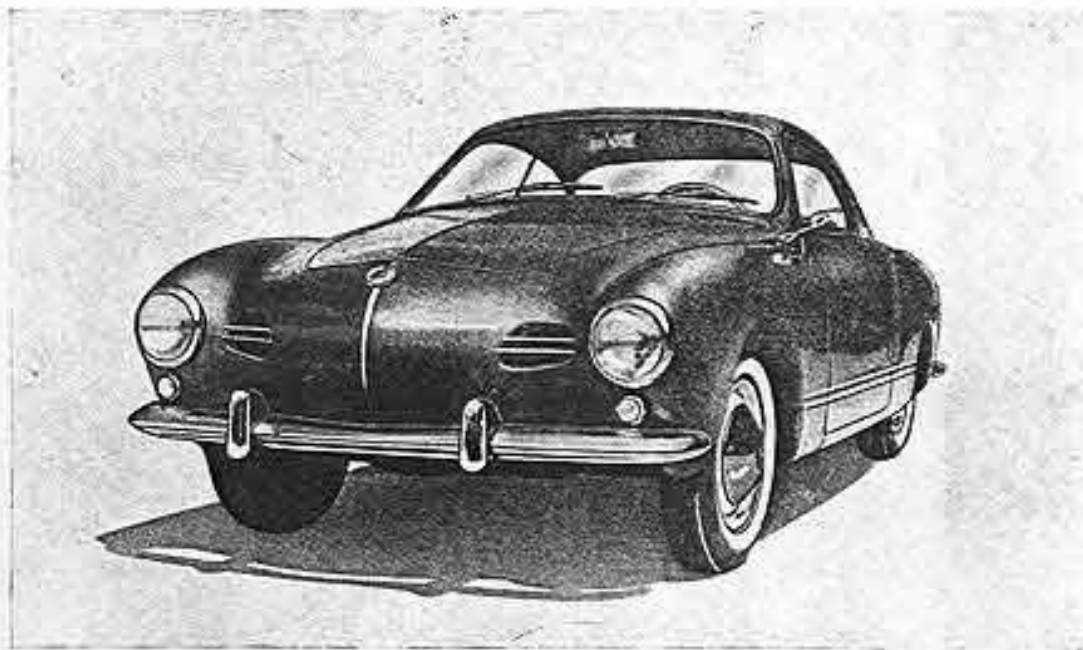
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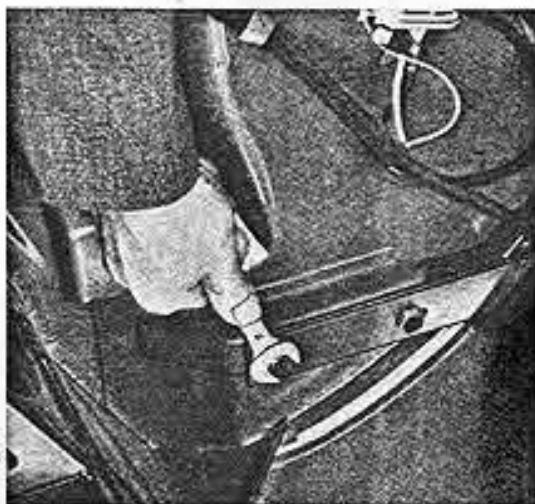
Front Bumper Removal and Installation

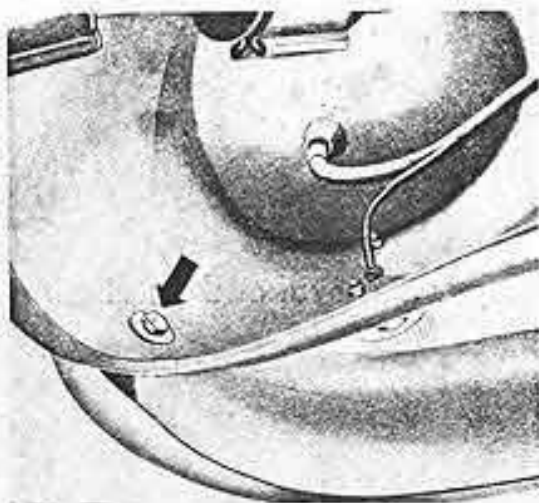


Removal

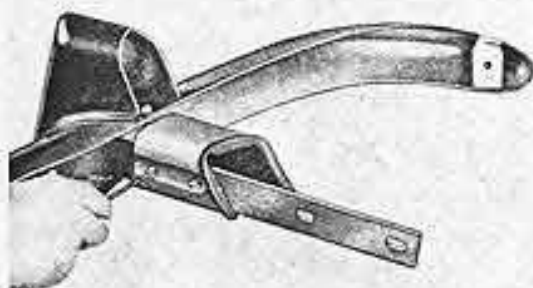
1 - Lift front hood and remove spare wheel.

2 - Remove bumper brackets bolts on each side.





3 - Remove retaining bolts from both outer parts.



4 - Pull bumper complete with overrides and brackets, out of the front panel.



5 - Remove bumper bracket covers.



6 - Unscrew the two bolts at each side and remove brackets, spacers and overrides.

7 - Unscrew two bolts at each side and detach outer parts from bumper center part.

8 - Remove bumper bracket grommets.

Installation

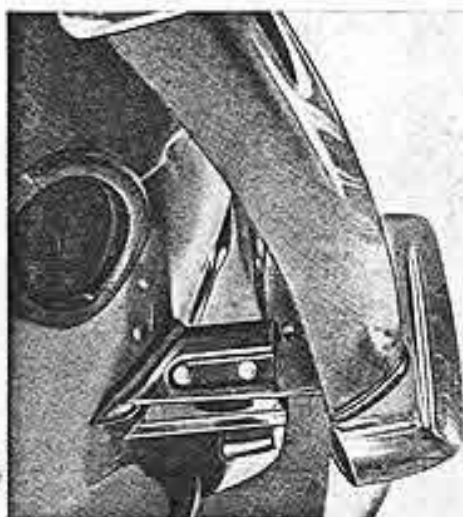
- 1 - Check condition of seals for overrides, bumper brackets and bumper bracket covers and renew if necessary.

- 2 - Bolt outer parts to bumper center part.

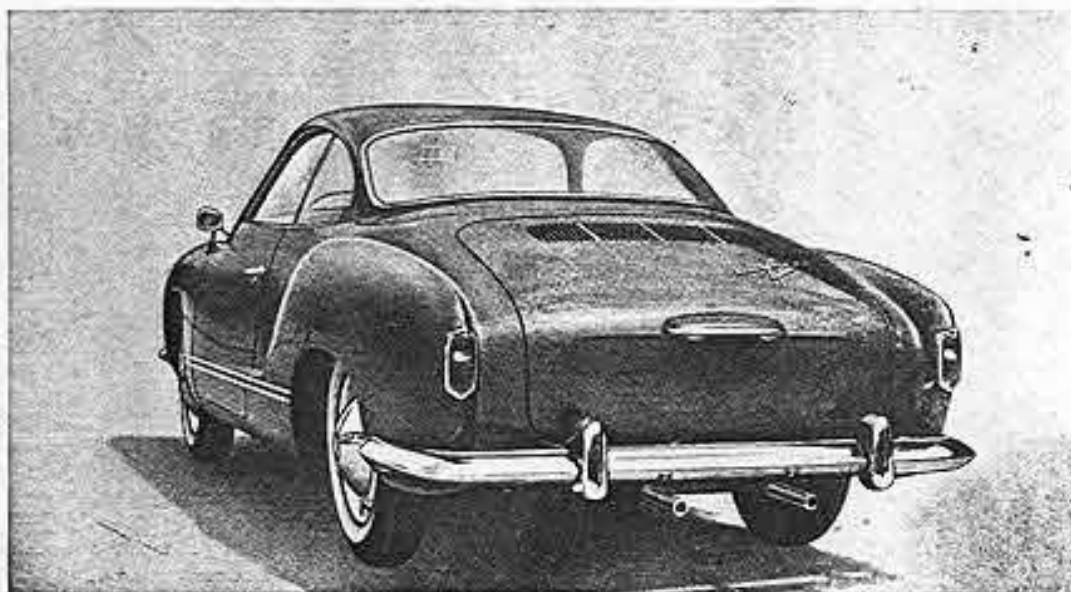
- 3 - Bolt brackets with bumper to body.

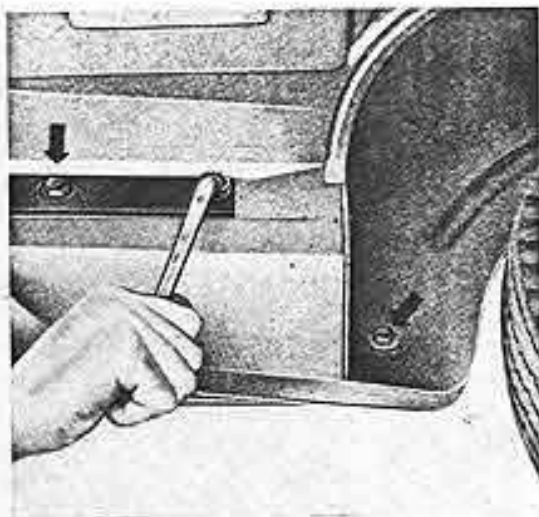
- 4 - Replace both outer part bolts and check that clearance between bumper and body is uniform.

- 5 - Replace bumper bracket covers so that the rubber seal contacts body all round.



Rear Bumper Removal and Installation

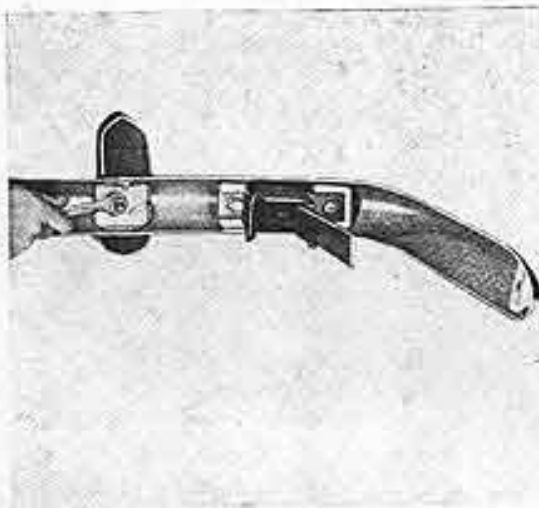




Removal

- 1 - Remove two bumper bracket bolts and one outer part securing bolt on each side.

- 2 - Pull bumper, complete with overrides and brackets out of the rear panel.



- 3 - Remove one override bolt on each side and detach overrides and spacers.

- 4 - Remove bumper bracket covers.

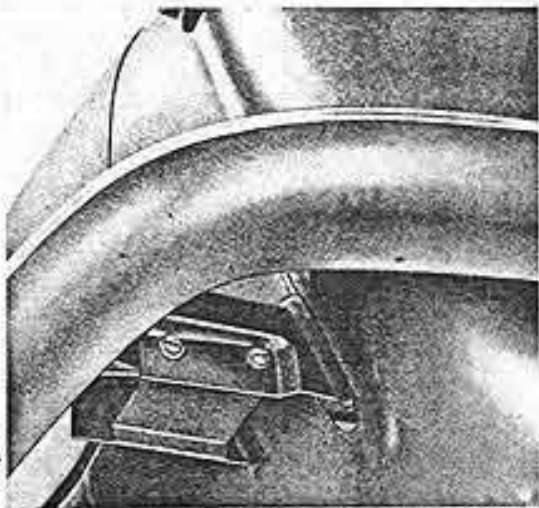


- 5 - Detach brackets from bumper.

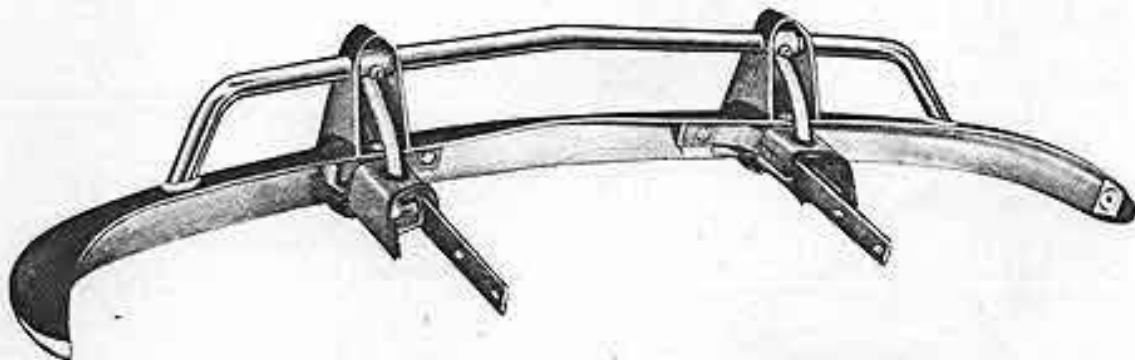
- 6 - Unscrew two bolts at each side and detach outer parts from bumper center part.

Installation

- 1 - Check condition of seals, renew if necessary and replace.
- 2 - Install bumper with brackets.
- 3 - Secure outer parts and check that clearance between bumper and body is uniform.
- 4 - Replace bumper bracket covers so that the rubber seal contacts body all round.

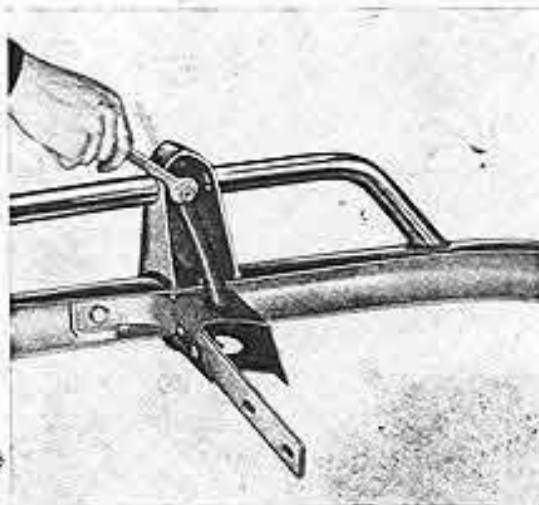


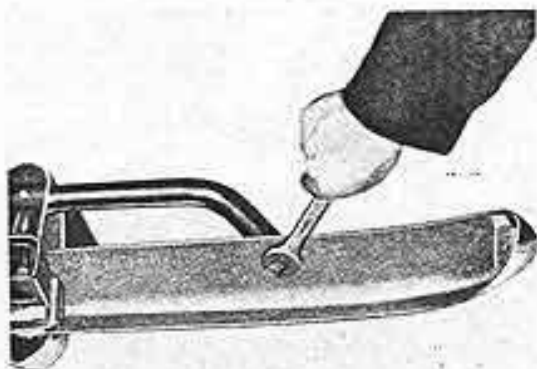
Front Bumper Removal and Installation (USA Version)



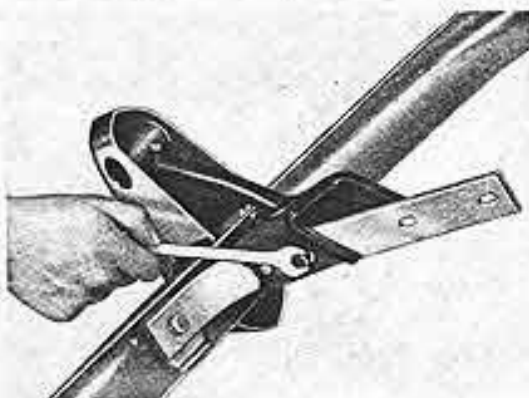
Removal

- 1 - Remove bolts from both brackets.
- 2 - Remove bolts from both outer parts.
- 3 - Pull bumper, complete with bows, overrides and brackets out of the front panel.
- 4 - Remove two override support nuts on each side.





5 - Detach bow after removing the bolts on both sides.



6 - Remove bumper bracket covers.

Unscrew two bolts at each side of bumper and remove brackets, spacers and overrides.

7 - Unscrew two bolts at each side and detach outer parts from bumper center part.

8 - Remove bracket grommets from front panel.



Installation

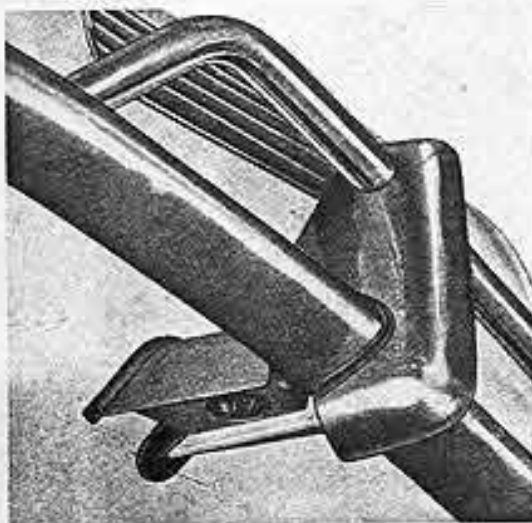
1 - Check condition of seals, renew if necessary and replace.

2 - Bolt outer parts to bumper center part.

3 - Bolt bumper, bows, overrides, spacers and brackets together.

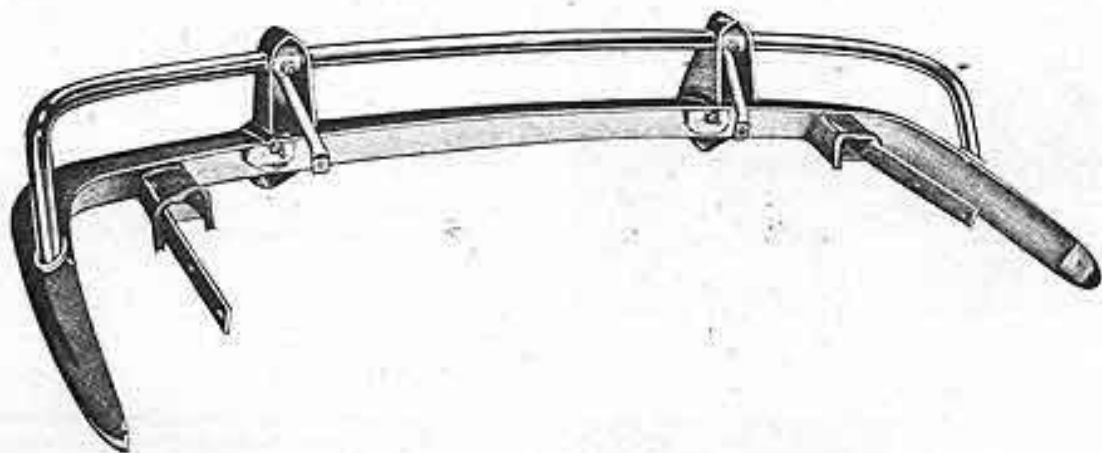
4 - Bolt bumper with brackets to body.

5 - Secure outer parts and check that clearance between bumper and body is uniform.



6 - Replace bumper bracket covers so that the rubber seal contacts body all round.

Rear Bumper Removal and Installation (USA Version)



Removal

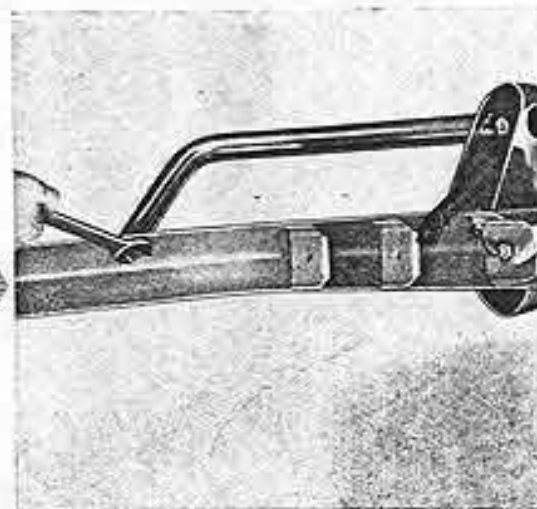
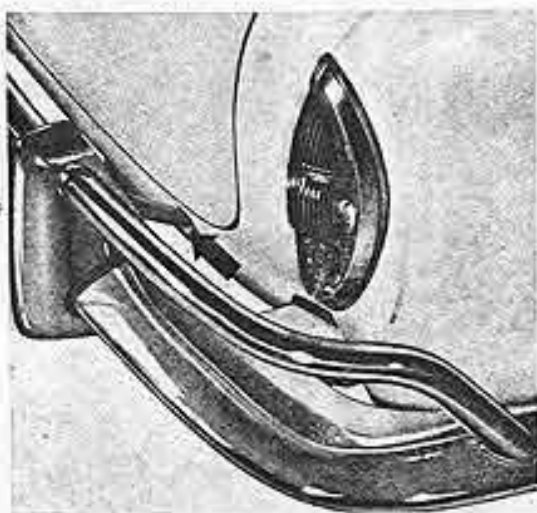
1 - Remove two override support bolts on each side.

2 - Remove two bracket bolts and one outer part securing bolt on each side.

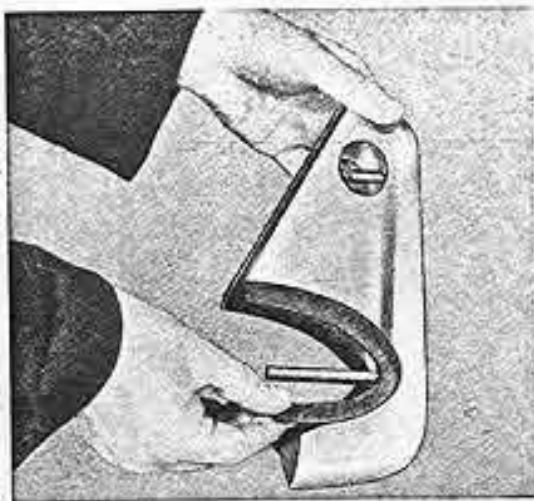
3 - Remove bumper, complete with bows, override riders and bumper brackets.

4 - Detach bow after removing the bolts on each side.

5 - Unscrew two bolts at each side and detach outer parts from bumper center part.

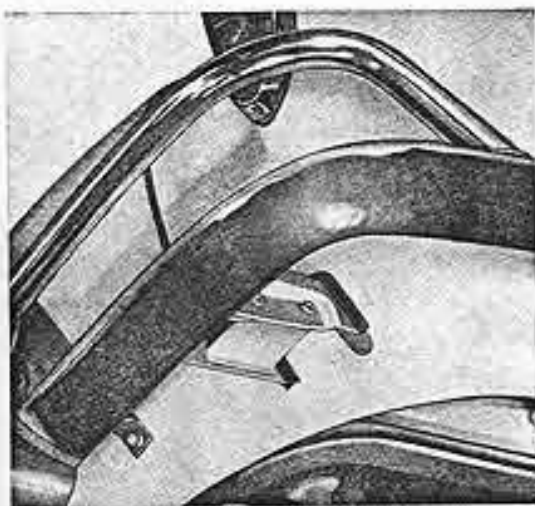


Installation



1 - Check condition of seals, renew if necessary and replace.

2 - Bolt bumper, bows, overrides, spacers and bumper brackets together.



3 - Pass brackets through holes provided and bolt them to the body. Secure both outer parts and check that the clearance between bumper and body is uniform.

4 - Bolt override supports to body.

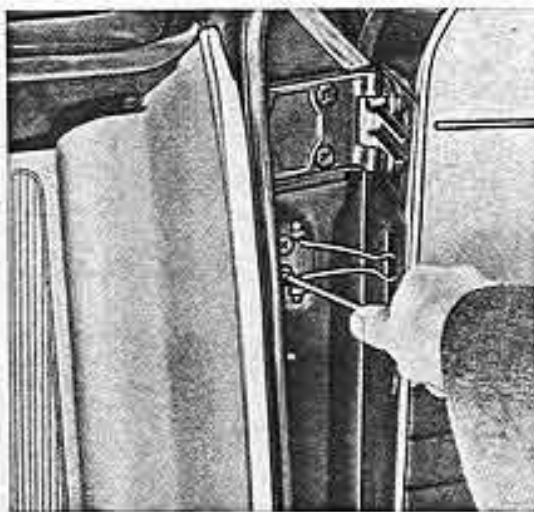
5 - Replace bumper bracket covers so that the rubber seal contacts the body all round.



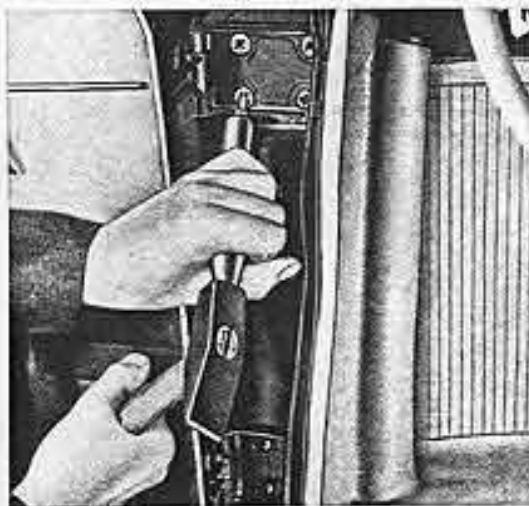
Door Removal and Installation

Removal

- 1 - Remove two screws holding door check spring mounting.



- 2 - Loosen the four Phillips screws of the door hinge with a punch screwdriver. Hold the door and remove the screws with a Phillips screwdriver.



- 3 - Remove the door.

Installation

- 1 - Install door and fit into the opening in the body, so that it aligns correctly with the body front side panel.

The hinges are screwed to movable threaded plates to facilitate correct door alignment.

- 2 - Check door weatherstrip and renew if necessary. Cement new strip into position with Genuine VW Universal Adhesive D 12.
- 3 - Adjust the striker plate so that door is flush with the quarter panel and opens and closes easily. (See Adjustment of Striker Plate.)
- 4 - Check rubber buffer for wear and replace if necessary.

Note:

With effect from 6th August 1959 and Chassis No. 2 533 139 a buffer (Part No. 141 837 277) was provided on the lower part of the door to ensure a proper fit in the door opening. The housing (Part No. 141 837 289) for the buffer is secured in a recess in the quarter panel lock pillar. The door buffer cannot be installed in vehicles of previous types.

- 5 - Oil the hinges, making sure that the oil slots are clean.

Note:

The hinges were modified on 28th April 1959 at Chassis No. 2 395 181 and are now made of light metal. The hinge pins (Part No. 141 831 421) now have plastic bushes which require no maintenance. When installing new type upper door hinges in vehicles of previous types the cast lugs for the rollers must be cut off or an opening of corresponding size made in the hinge pillar. In this case it is advisable to install the new type door check strap as well.

The door lock cylinder must be lubricated only with powdered graphite and never with oil or grease. The key should be dipped in the graphite powder, inserted in the lock and turned back and forth several times.

Door and Striker Plate Adjustment

When the striker plates have been removed the position of the doors in the door openings should be checked as follows:

- 1 - Tightness of hinge securing screws,
- 2 - Alignment of door and front side panel,
- 3 - No distortion in the door,
- 4 - Alignment of door and quarter panel,
- 5 - Uniform gap between door and hinge pillar,
- 6 - Uniform gap between door and lock pillar.

If these requirements are not met, the following adjustments should be carried out:

Re 2 - Loosen door hinges at the hinge pillar only. Move the door in or out as required and tighten hinge screws.

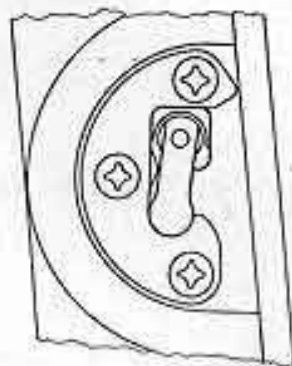
Re 3 - Eliminate distortion in the door and re-adjust door buffers.

Re 4 - Install and adjust the striker plate. The striker plate is correctly adjusted, if

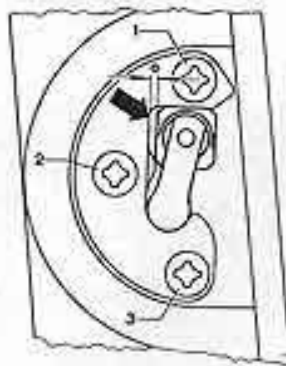
- a - the door aligns with the quarter panel,
- b - approximately 1 mm play can be felt between the lock and the striker plate when forcing the door in and out by the handle.

To align the door with the quarter panel move the striker plate in or out the required amount.

Play will exist between lock and striker plate if the top part of the door latch does not rest against the striker plate.



Incorrect



Correct a = 1 mm (.040")

If the play is excessive, loosen screws 1 and 2 slightly and move the striker plate out at the top a small amount. Tighten the screws again and check play.

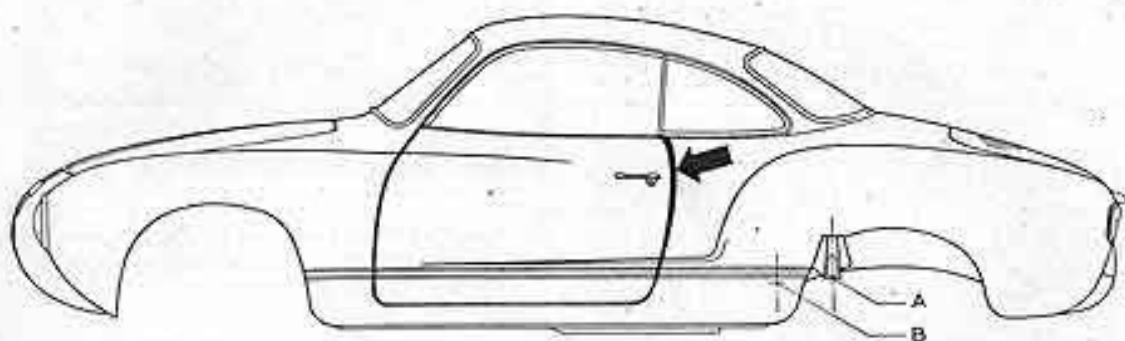
The top surface of the latch must be exactly parallel to, and in close contact with the contact surface of the striker plate. An accurate check can be made with marking compound.

If the door springs back when slammed to screws 1 and 2 should be loosened and the striker plate moved inwards lightly at the top.

Re 5 - If the gap between the door and the hinge pillar is not uniform over the whole length, the door should be moved the required amounts by adjusting the hinges.

Re 6 - (The following method should only be used in isolated and very difficult cases).

When the gap between the door and lock pillar widens towards the top instead of being uniform over the whole length, loosen the body mounting screws at points A and B.

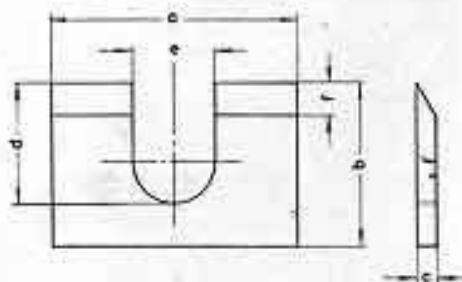


Lift the body at point "A" and insert a 3.5 mm thick packing piece (manufactured from a Sedan sliding roof guide plate Part No. 115 875 361 A as shown in sketch) at this point. Tighten the body mounting screws again to a torque of 3 mkg (22 ft. lbs.). If the gap width is still not correct, another packing piece must be inserted.

The gap between door and lock pillar should be 4 mm wide.

An essential condition for door window adjustment is the correct fit of the door in the door opening.

When these operations are completed, the adjustment of the door window can be carried out.



Note:

To eliminate noise in the door lock when the vehicle is moving, a new plastic striker plate in a die-cast housing was installed from Chassis No. 3 711 714 (16th March 1961) in place of the plastic striker plate used previously.

The striker plate with housing — Part No. 143 837 295/296 as before — can be installed in all vehicles without difficulty.

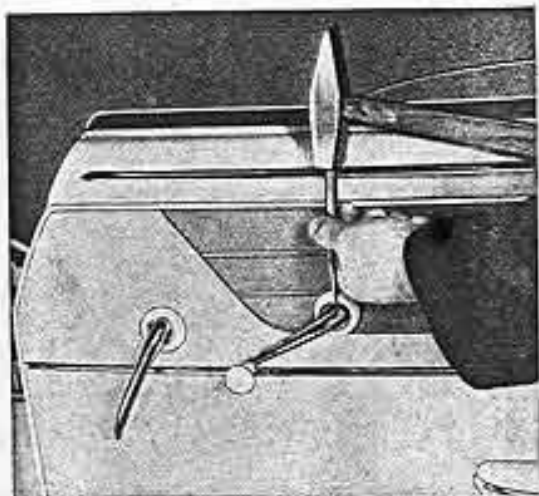
Stocks of the plastic striker plate can be used up. Only the new type is available as a spare part.

a =	40	mm / 1.6"
b =	26	mm / 1.02"
c =	3.5	mm / .14"
d =	18	mm / .70"
e =	12	mm / .472"
f =	5	mm / .20"

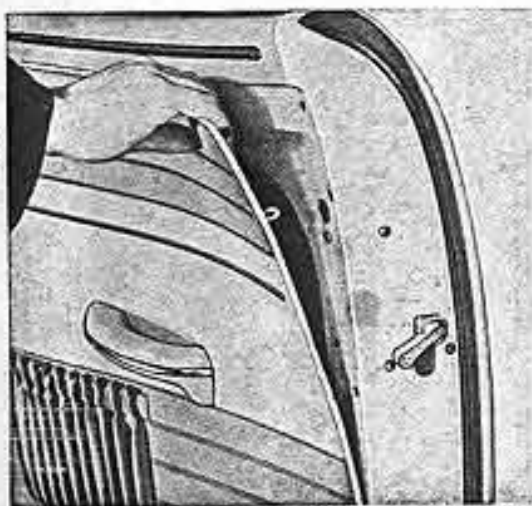
Door Window Removal and Installation

Removal

- 1 - Press window regulator handle and inside door handle escutcheons against the door trim panel until the dowel pins are visible. Knock out the pins with a punch and remove window regulator, door handle and escutcheons.

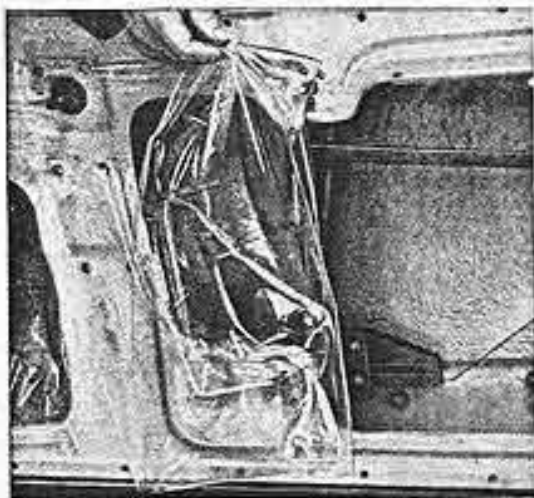


- 2 - Remove the door trim panel by pulling the clips out of the door. Care must be taken to avoid damaging the paintwork.



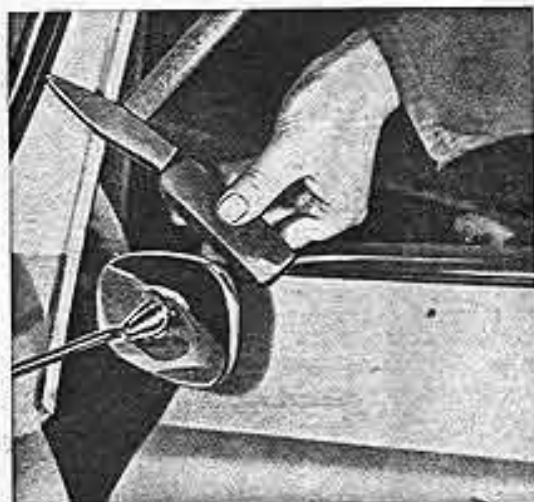
- 3 - Remove escutcheon springs and rubber inserts from the window regulator and door handle shafts.

- 4 - Remove plastic sheet.



- 5 - Unscrew the four window bottom channel screws and lower the glass downwards out of the door window aperture.

- 6 - Tap the outer trim moulding and window aperture rubber seal back slightly with a wooden block and remove.



Note:

The outer trim moulding for the window aperture and the method of securing it were altered on 23th March 1959 from Chassis No. 2 336 743.

Trim moulding clips (Part No. 141 853 335) are now used instead of the countersunk head screws over which the moulding was pushed.

The new type trim mouldings (Part No. 141 853 333 A/334 A) can be installed in former pattern vehicles if the screw holes are drilled out to 4.5 mm (.176") dia.

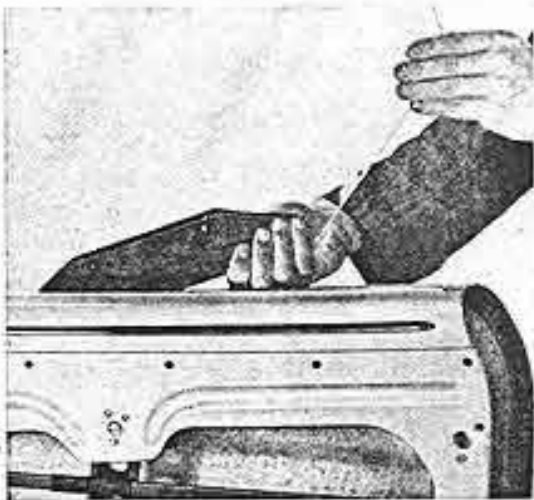
- 7 - Remove outer glass run channel with support bracket and weatherstrip and inner run channel after pressing out the clips.

Note:

With effect from 6th August 1959 and Chassis No. 2 533 139 four outer and three inner plastic plugs (Part No. 141 837 491) have been installed instead of the outer glass run channel, to improve the window operation.

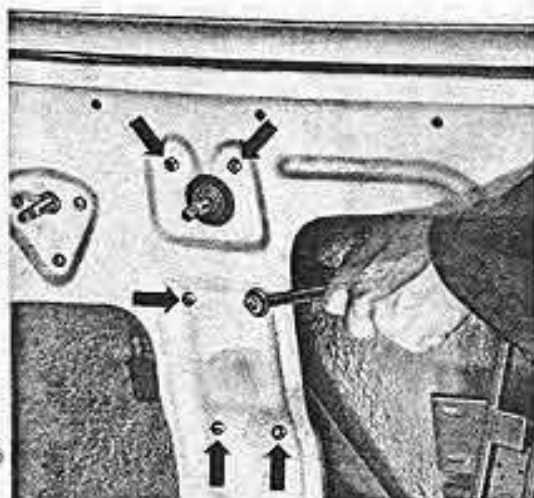
These plugs must be removed before the door window glass is taken out.

- 8 - Lift the glass upwards out of the door.

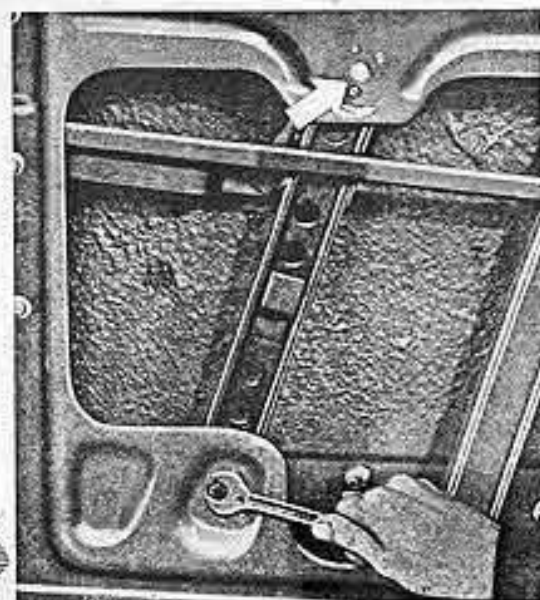


- 9 - If the window glass lift channel or the rubber seal is damaged it can be replaced.

The window lift channel should be tapped off with a rubber hammer and a suitable block of wood and replaced in a similar manner.

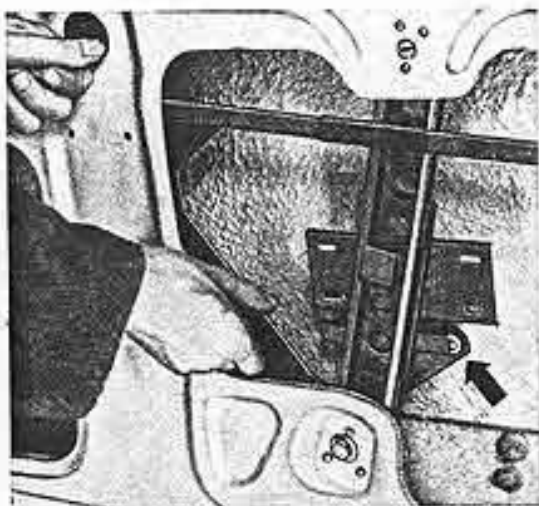


- 10 - Remove six screws from window regulator.



- 11 - Push the regulator inwards and pull downwards. Take the regulator linkage with the ball joint sideways out of the window lift channel guide rail and remove regulator from the door.

- 12 - Remove two screws from the guide rail and window lift channel and take the guide channel out.



Installation

- 1 - Check condition of door window weatherstrip and renew if necessary.

To eliminate friction noises between the window glass and the weatherstrip it is recommended that brake cylinder paste (Part No. B 1) is rubbed into the rubber lip and the weatherstrip finally wiped with a clean cloth.

To stop friction noises with the softer weatherstrip the lip should be roughened with coarse emery cloth where it contacts the glass, as this rubber is self lubricating and the use of the usual chemical substances will only increase the noise.

- 2 - Grease the guide rail runners and all moving parts of the regulator mechanism with Universal Grease.

- 3 - Check the roller in the window lifting channel for ease of operation.

- 4 - Insert door window into the window aperture from above and place it in the bottom of the door.

- 5 - Install outer and inner glass run channels or the plastic plugs.

- 6 - Install outer trim moulding with window aperture weatherstrip.

- 7 - Bolt window lift channel to window lifting slide.

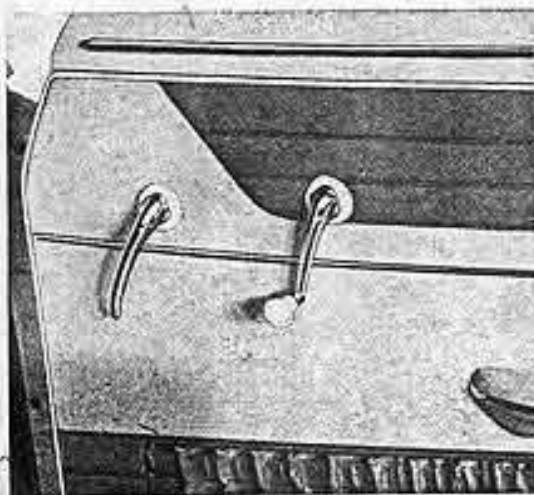
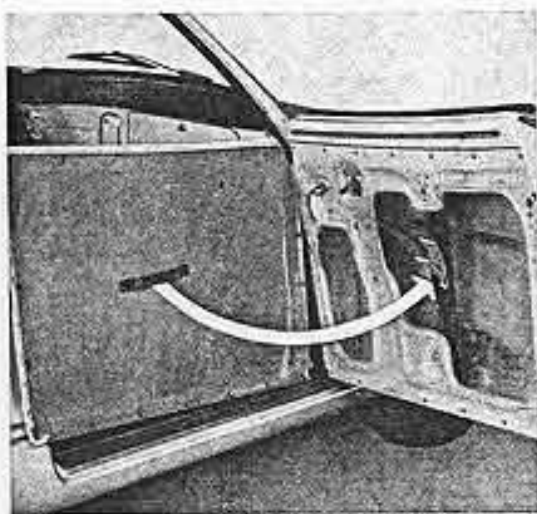
- 8 - Adjust door window glass as shown under Adjustment of Door Window Glass.

- 9 - Cement plastic sheet into position. The lower edge must be fixed so that the sheet hangs like a bag in the window aperture with the lowest corner below the metal edge of the door (Drip edge).

Hang door trim panel in position by hooking the arm rest retainer strip over the bracket of the arm rest support on the guide channel.

- 10 - Install rubber inserts, cone springs and door trim panel. The larger diameter of the cone springs must face the trim panel.

- 11 - Install door inner and window regulator handles.



- 12 - Check that all parts function properly by operating several times.

Note:

From 25th March 1960 and Chassis No. 2 960 114 various modifications have been made to the doors to give greater stability to the operation of the door window and improve window slot sealing.

- 1 - The holes for the screws securing the guide rail with window lift channel (Part No. 141 837 551 A) have been moved up 55 mm (2.16") at the top and down 47.5 mm (1.87") at the bottom. The Part No. of the new guide rail with window lift channel is 141 837 551 B. It cannot be installed in older type doors.
- 2 - A retainer channel has been spot welded in the window slot. The channel in the Convertible door

is 16 mm (.63") shorter than the one installed in the Coupé door. Only the Coupé door is supplied as a spare (Part No. 141 831 051 D/052 D) and when this door is fitted to the Convertible it is necessary to shorten the channel 16 mm on the lock side. The door (Part No. 141 831 051 C/052 C) is no longer available as a spare part.

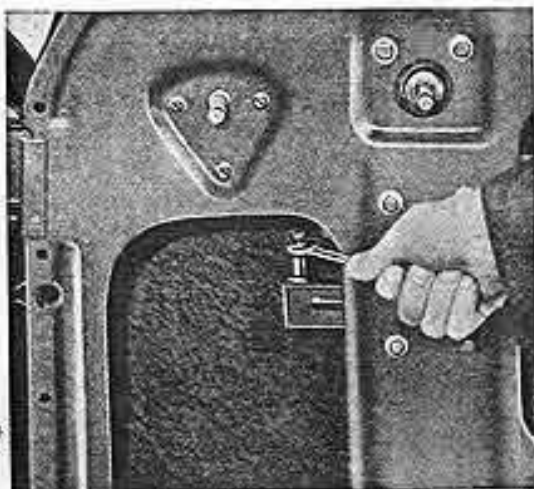
- 3 - The shape of the trim moulding on the window slot has been changed. The new trim moulding (Part No. 141 853 333 C) is used for both sides. It cannot be installed in vehicles from Chassis No. 2 528 668 to 2 960 113. The new trim moulding can, however, be installed in all vehicles up to Chassis No. 2 528 667 (July 1959). The trim moulding Part No. 141 853 333 A/334 A will be discontinued when present stocks are exhausted.
- 4 - The shape of the window slot weatherstrip has also been changed and the Part No. of the new weatherstrip is 141 837 475 C. It cannot be installed in vehicles of earlier pattern. The parts previously used will remain available.

Adjustment of Door Window Glass

One requirement for correct window adjustment is that the door fits properly in the door opening.

Vertical Adjustment

- 1 - After removing the window regulator and door handles, the door trim panel and the plastic sheet, slacken the adjusting screws lock nut.

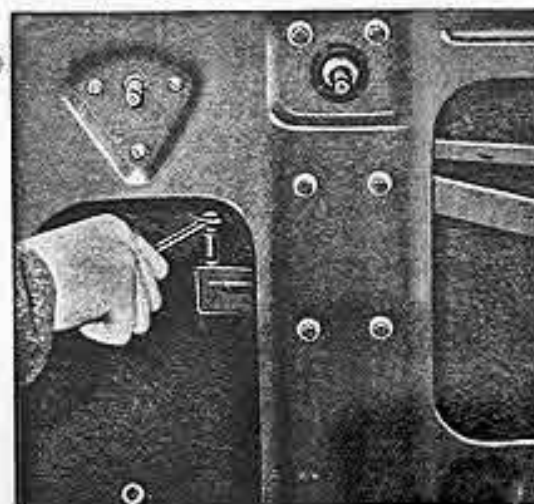


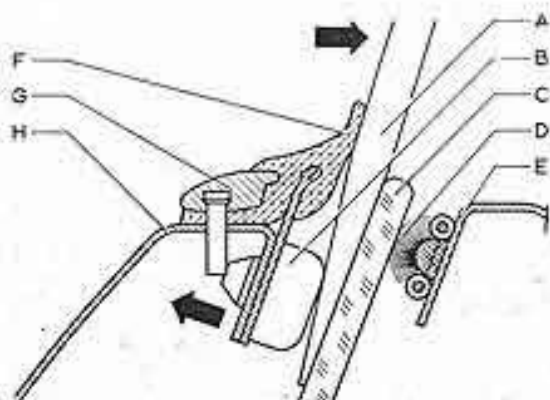
- 2 - Adjust the window position by turning the screws to the left or right.

Turning to left = lowers glass
Turning to right = raises glass

- 3 - Close the door and check that window height is correct.

- 4 - Secure adjusting screw by tightening lock nut.

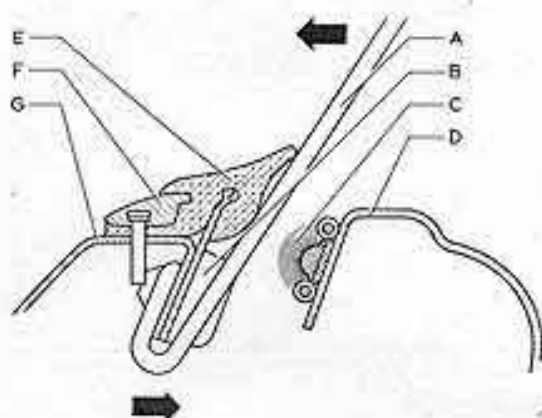




The movement of the glass in the door window slot is additionally controlled by four plastic buffers. If these buffers press unevenly or too heavily on the glass they will cause squeaking noises when the window is raised and lowered. Excessive pressure can also cause scratches if dirt lodges between buffer and glass.

To avoid such damage the buffers should be set uniformly. If the buffer pressure is too high, it can be reduced by inserting a thin wooden wedge between buffer and glass and pressing the buffer outwards.

- | | |
|--------------------|----------------------|
| A - Wooden wedge | E - Door inner panel |
| B - Plastic buffer | F - Weatherstrip |
| C - Window glass | G - Trim moulding |
| D - Seal | H - Door outer panel |



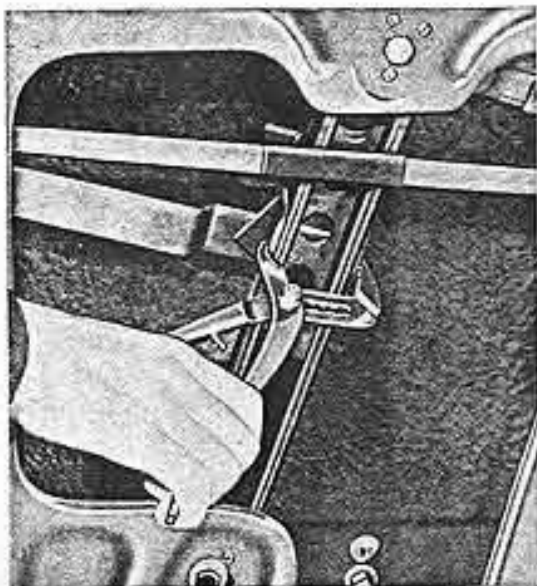
If a buffer is not contacting the glass, the support should be pulled in at the appropriate point. This can be done with a piece of 20×3 mm ($.8 \times .12$ ") strip steel bent to form a hook at one end.

If the center buffer has to be adjusted, the window glass must be removed.

- | | |
|----------------------|----------------------|
| A - Bending hook | E - Weatherstrip |
| B - Plastic buffer | F - Trim moulding |
| C - Seal | G - Door outer panel |
| D - Door inner panel | |

Longitudinal Adjustment

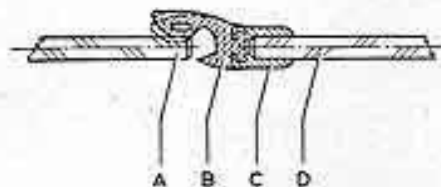
- 1 - Check that the moulding with weatherstrip between door and quarter windows is straight and secure. If necessary slide the weatherstrip out and tap the moulding evenly off the rear quarter window with a rubber hammer and a suitable block of wood. Coat the inside with adhesive, reinstall, and insert weatherstrip.



- 2 - Check the play between the runners of the window lift channel and the guide rail. If required reduce the play by squeezing the runners together with a pair of suitable pliers (Waterpump pliers).

- 3 - Make sure that the clearance between the door window glass and the outer lip of the door and quarter window weatherstrip is uniform.

- A - Door window glass
B - Weatherstrip
C - Moulding between door and quarter window
D - Quarter window glass



- 4 - Loosen four hexagon head screws on window lift channel.

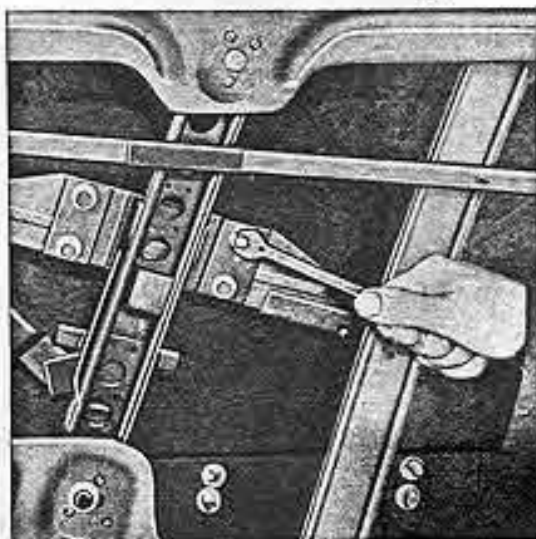
- 5 - Move door window glass with lift channel forward or backward as required.

- 6 - Tighten hexagon head screws.

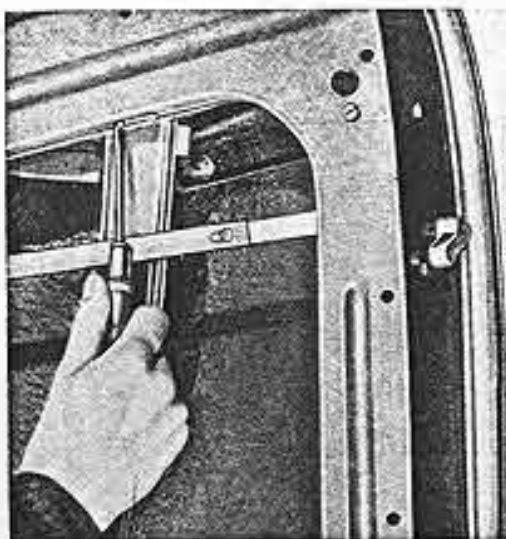
Note:

From Chassis No. 3 933 181 (30th June 1961), the door weatherstrip was modified. The outer lip is now larger and the securing hole for the upper end of the weatherstrip has been moved inwards 10 mm so that a more effective seal is provided at this point.

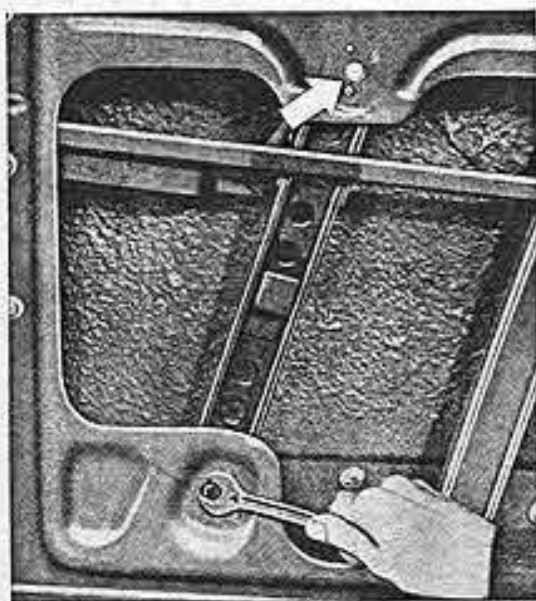
The modified weatherstrip — Part No. 141 831 731 A / 732 A — can be installed in previous vehicles if a new securing hole is drilled.



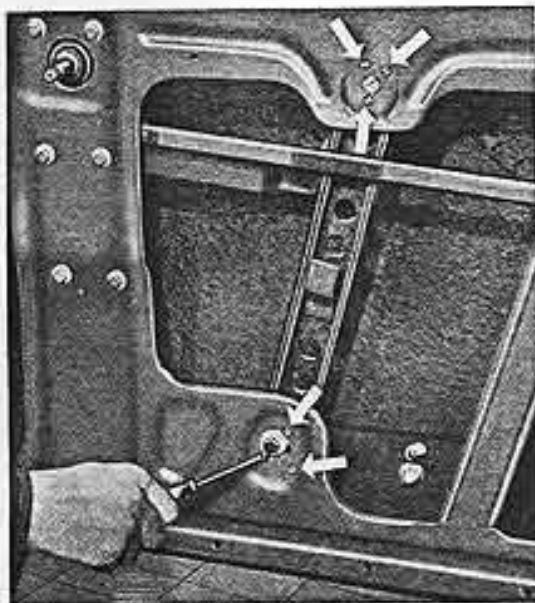
Side Adjustment



- 1 - Check door window for side rock. If required, loosen the top retaining screws of the window roller bracket and with the window in the fully raised position press the bracket hard against the window roller and retighten screws.



- 2 - Loosen hexagon head and countersunk screws of window guide rail.



- 3 - Correct window position by turning the three screwed pins at top and bottom of guide rail in or out.

The location for the adjustment of the door window glass is given by the weatherstrips on the roof and the quarter window.

- 4 - Tighten hexagon head and countersunk screws.

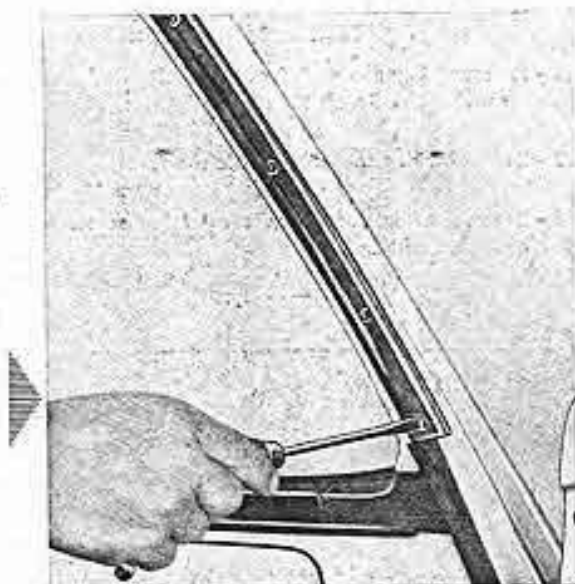
Trim Moulding for Door Window Weatherstrip Removal and Installation

Removal

1 - Pull weatherstrip for door window sealing out of the moulding.

2 - Remove tapping screws.

3 - Take off moulding.

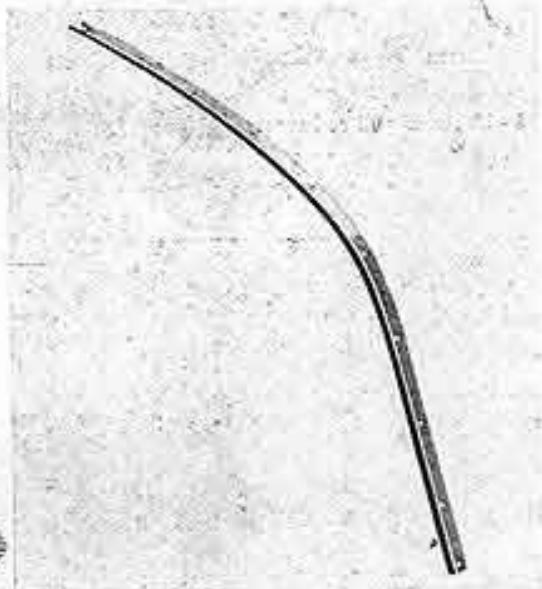


Installation

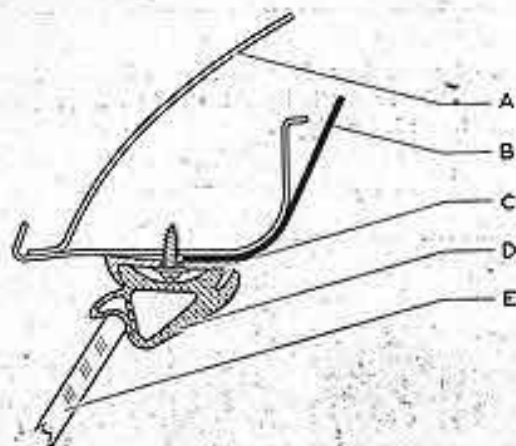
1 - Check condition of moulding and weatherstrip and renew if necessary.

2 - Cement a length of sealing strip (Part No. 151 871 435) to the moulding.

3 - Attach the moulding to the roof frame so that a good contact between weatherstrip and door window is obtained.



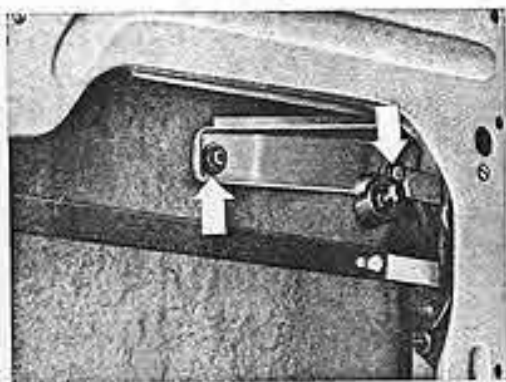
- A - Roof
- B - Headlining
- C - Moulding
- D - Weatherstrip
- E - Door window glass



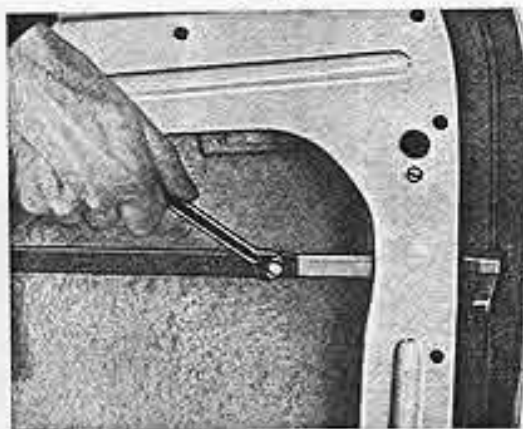
Door Lock Removal and Installation

Removal

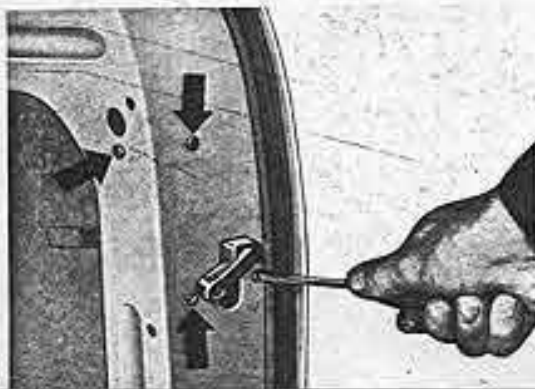
- 1 - Remove inner door handle and window regulator handle.
- 2 - Remove trim panel and plastic sheet.
- 3 - Remove outer door handle retaining screws and take off handle.



- 4 - Unscrew pull rod screws.



- 5 - Remove four door lock screws. Place door latch in a vertical position and withdraw lock towards the hinges.



Installation

- 1 - Check all parts for wear and replace where necessary. Grease all moving parts.

- 2 - Where necessary, the remote control assembly or the pull rod can be renewed separately after removing the rivets.

- 3 - Check the position of the anti-rattle rubber sleeves on the pull rod.

- 4 - The pull rod has an elongated hole to facilitate movement in either direction. When the lock is installed the pull rod should be pushed towards the hinge until light resistance is felt and then bolted to the lock.

- 5 - Operate the inner door handle and check that the lock opens properly before reassembling door. If this is not the case the pull rod must be readjusted. When the inner handle is in the "open" position the clearance between the latch and the latch stop in the lock must be 2 mm.

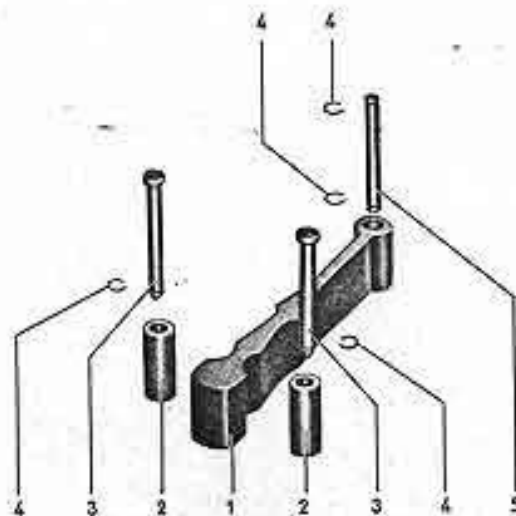
- 6 - Install outer door handle and tighten screws. Check that 2 mm play exists between the hexagon head bolt on the door handle press button and the lock when the door is closed.

- 7 - Reassemble door and ensure that the position of window regulator and door handles is correct.

Door Check Strap Removal and Installation

Removal

- 1 - Remove door upper hinge.
- 2 - Detach circlips from pins.
- 3 - Knock pins out with a drift.
- 4 - Take rollers and check strap out.



- 1 - Door check strap
- 2 - Rollers
- 3 - Pins for rollers
- 4 - Circlips
- 5 - Pin for check strap

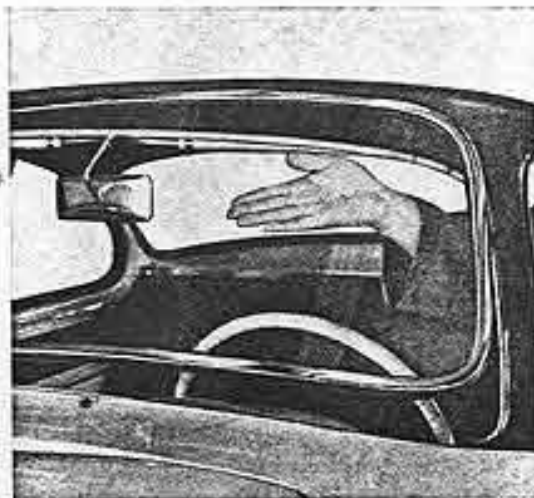
Installation

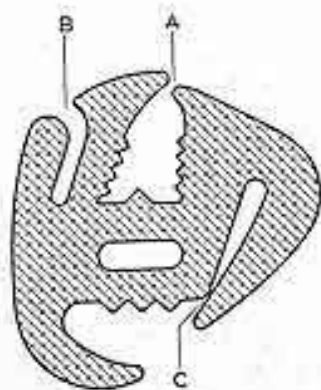
- 1 - Insert check strap and secure rollers in the hinge with the pins.
- 2 - Install door hinge.

Windshield Removal and Installation

Removal

- 1 - Remove windshield wiper arms.
- 2 - Starting in the top corner on the passenger's side, on account of the clear visibility area, push the windshield and weatherstrip outwards.
- 3 - Slide upper and lower trim mouldings sleeves to one side with a piece of wood until the moulding ends are free.
- 4 - Pull weatherstrip downwards off the windshield and out of the moulding at the same time to avoid distorting the moulding and making installation very difficult.





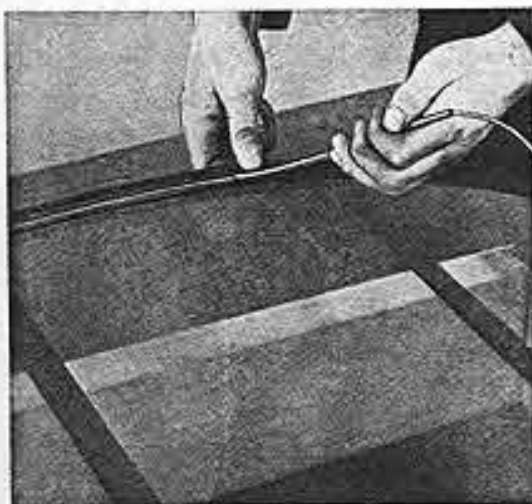
Cross section of weatherstrip

- A - Windshield channel
- B - Trim moulding groove
- C - Windshield frame groove

Installation

The mounting of the weatherstrip and trim moulding on windshield and rear windows is rendered much easier by the use of assembly jig VW 738/1 (Local manufacture) and mounting tools VW 739/1 (Local manufacture).

- 1 - Check condition of weatherstrip and renew if necessary.
- 2 - Place weatherstrip over window glass edge. The joint should be in the center at the top of the windshield.
- 3 - Press the weatherstrip into position with the rubber retaining bands.



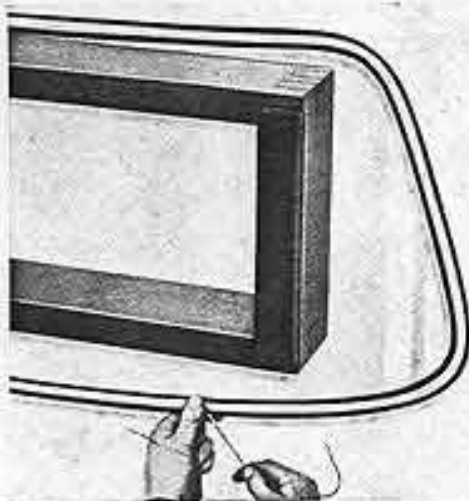
Trim Moulding Installation

- 4 - Insert a length of cord in the moulding groove.

This can be done by passing the cord through a short piece of tube, one end of which has been slightly flattened. Place the flat end of this tube in the groove and pass it right round the windshield, laying the cord in the groove. The ends should be in the center of the upper or lower edge of the windshield.

- 5 - To make the task of getting the trim moulding over the raised lip of the weatherstrip easier it is recommended that it be smeared lightly with brake cylinder paste.

Hook the corner of the moulding behind the weatherstrip lip and check carefully to see that the shape corresponds with that of the weatherstrip. Corrections can be made by bending the moulding by hand.



- 6 - Starting at the corners, clip the moulding halves, one after the other into the weatherstrip. Pull the cord out slowly and follow round pressing the moulding into the groove.
- 7 - Push the sleeves over the moulding ends.
- 8 - With a screw gun and suitable nozzle force VW Window Cement D10 between the window glass and the weatherstrip all round.

Windshield Installation

- 9 - Insert a cord in the outer groove so that the ends meet in the center of the lower windshield edge.
- 10 - The inside of the lip which contacts the outer body panel when the windshield is installed should be coated with VW Window Cement.
- 11 - Lay the windshield in the windshield frame from outside with the cord ends hanging down inside.
- 12 - The installation of the windshield requires two persons.

Starting at one end, one fitter pulls the edge of the lip over the frame edge, keeping the cord parallel to the windshield.

The second fitter strikes the outside of the windshield with the hand, following the pull of the cord and sealing the windshield firmly around the entire frame.

- 13 - Remove the excess sealing compound with benzine. Test for leakage and then clean the glass with spirit.



Important!

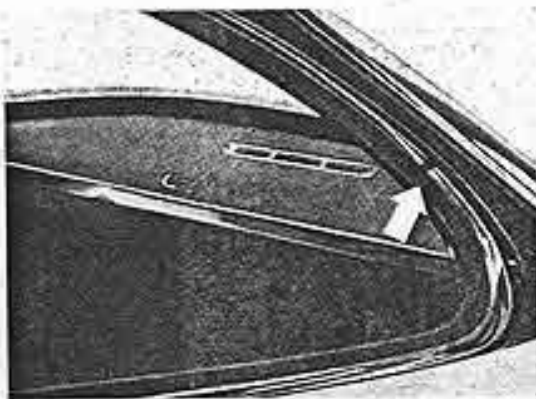
If a windshield of laminated glass is being installed instead of the toughened glass type, pressure must be applied evenly with both hands to seat the assembly while the second fitter inside the car lifts the lip of the weather-strip over the frame edge. Rubber mallets must not be used owing to the danger of shattering the glass.

Rear Window Removal and Installation

The operations described for the windshield can also be followed for removal and installation of the rear window.

Quarter Window Removal and Installation

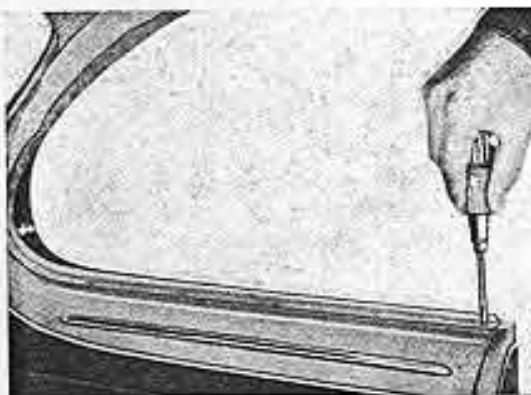
Removal



1 - Detach weatherstrip and trim moulding for door window at the top.

2 - Pull quarter window out forwards. Take weatherstrip and channel off the glass.

3 - Push moulding sleeve to one side with a piece of wood so that moulding ends are free.

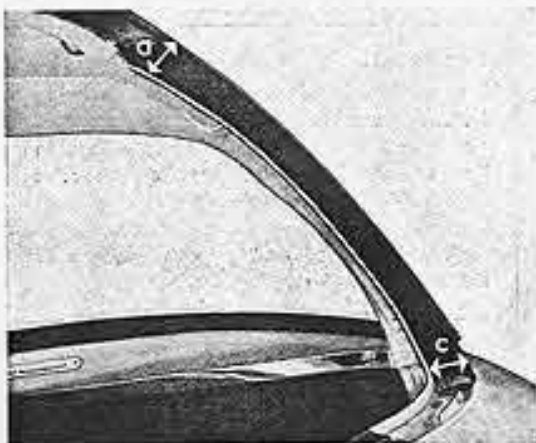


4 - Push trim moulding forwards and take off.

5 - Take off weatherstrip and unscrew retaining channel.

Installation

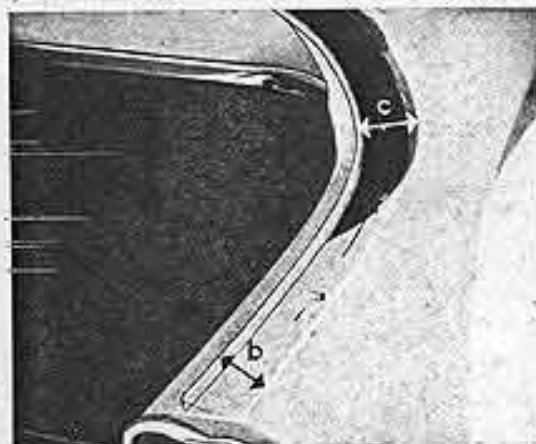
1 - Install retaining channel, observing the measurements given as far as possible.



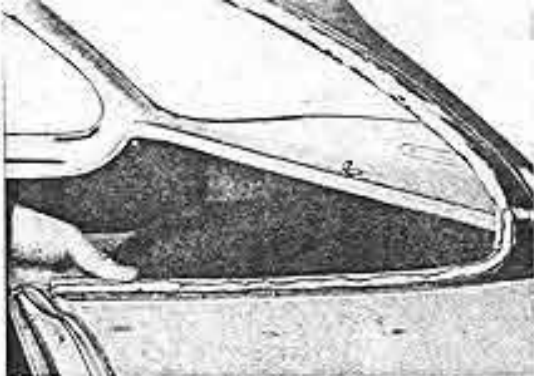
a = 30 mm (1.18")

b = 34 mm (1.34")

c = 38 mm (1.50")



- 2 - Coat retaining channel on the outside with plastic sealer D 15.



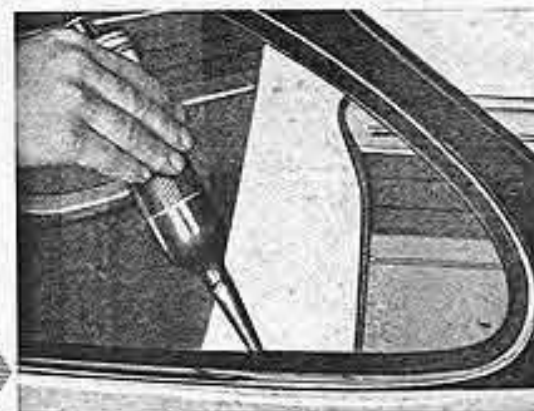
- 3 - Insert trim moulding and slide sleeve over the ends.



- 4 - Place weatherstrip in the quarter window opening.



- 5 - Insert quarter window glass in the weatherstrip and lift the lip over the edge of the glass with a wooden wedge.

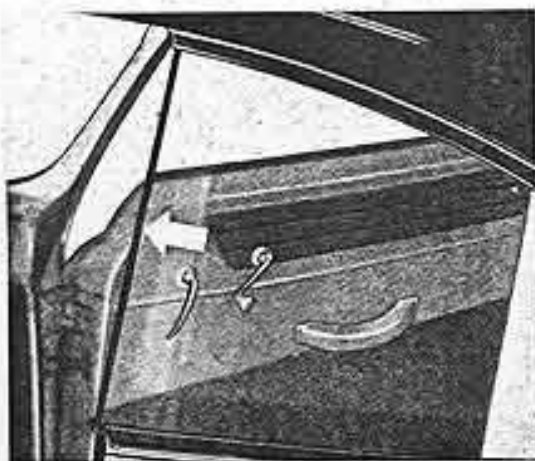


- 6 - With a screw gun and a suitable nozzle force VW Window Cement D 10 between the quarter window glass and the weatherstrip.



- 7 - Tap the glass fully into the quarter window opening with a rubber hammer.

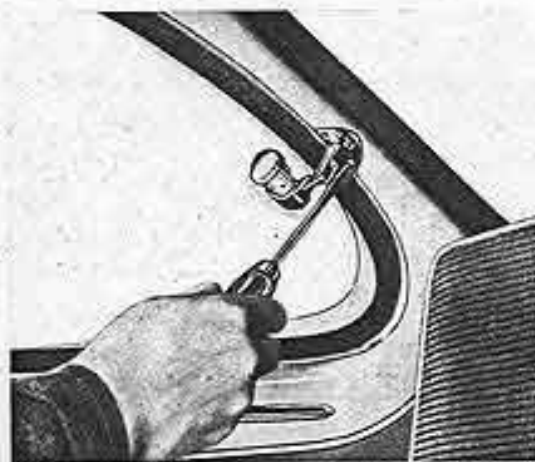
8 - Place a strip of insulating tape on the straight edge of the window.



9 - Install channel with weatherstrip. Screw door window trim moulding to the roof frame.



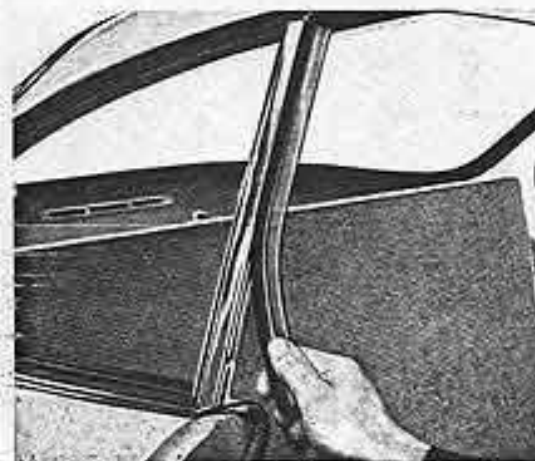
Quarter Window Removal and Installation (Hinged)



Removal

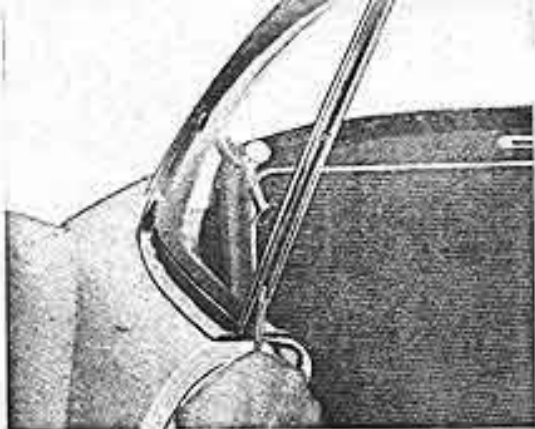
1 - Open window.

2 - Unscrew the three toggle retaining screws inside the body.

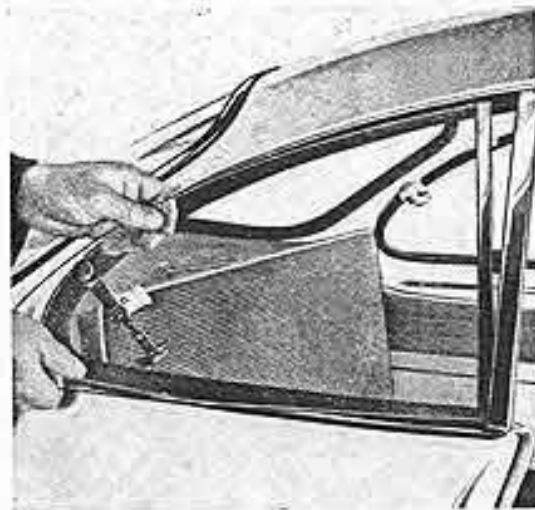


3 - Pull weatherstrip out of the channel at the door side.

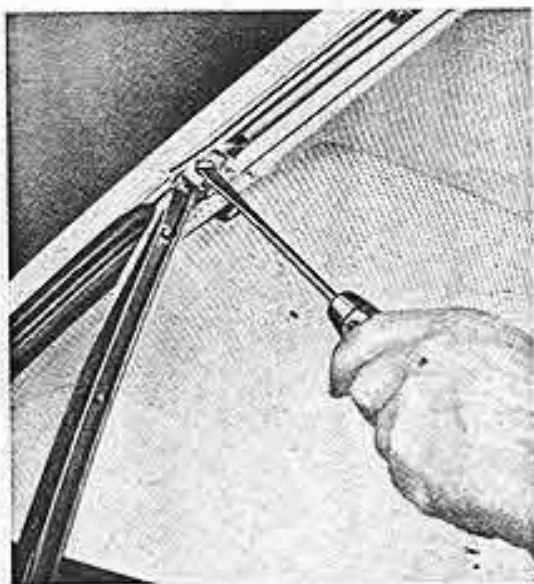
4 - Unscrew three countersunk screws.



5 - Pull window out to the rear. Remove toggle and channel.



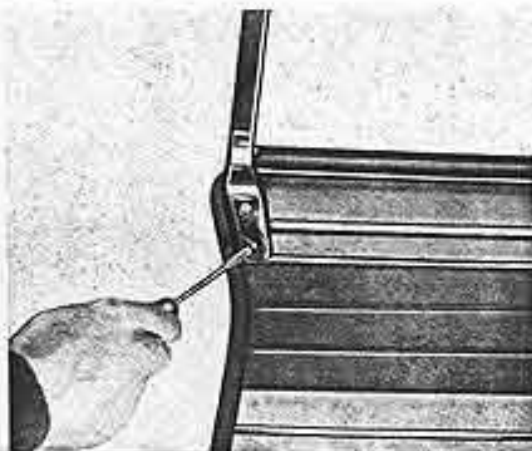
6 - Take door window weatherstrip out of the moulding and remove the screw then visible.



7 - Unscrew three countersunk screws on the inside of the quarter panel and remove channel.

8 - Take weatherstrip out of moulding. Unscrew the countersunk screws then visible and remove the quarter window moulding.

9 - Remove trim moulding from the quarter window shoulder.



Installation

1 - Remove all traces of the old, hard sealer from the body.

2 - Place a piece of sealing strip under the trim moulding and a length of sealing band under the trim frame.

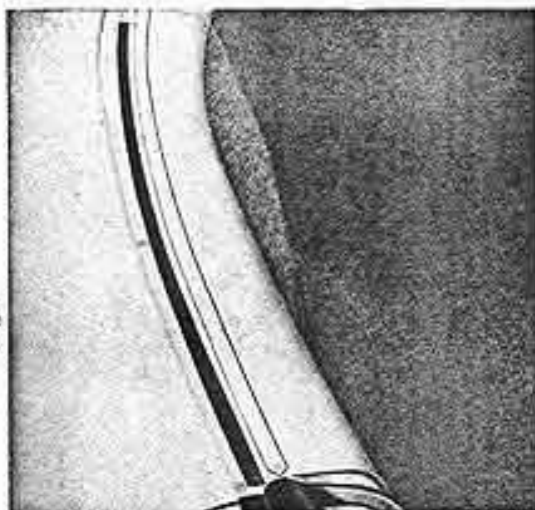
3 - Secure trim moulding on the quarter window shoulder.

4 - Secure trim frame in quarter window opening.

5 - Check condition of weatherstrip, renew if necessary. Insert weatherstrip in the trim frame.

6 - Secure channel between quarter and door windows with three countersunk screws at the bottom and to the roof frame with one hexagon head screw.

7 - Check condition of connection pieces and rubber hinge. Renew if necessary.



8 - Lay rubber hinge round the channel for the quarter window glass.

9 - Place quarter window in the frame and secure with three countersunk screws.

10 - Screw toggle to body and check the contact between glass and weatherstrip.

11 - Insert weatherstrip between quarter and door window into the channel.



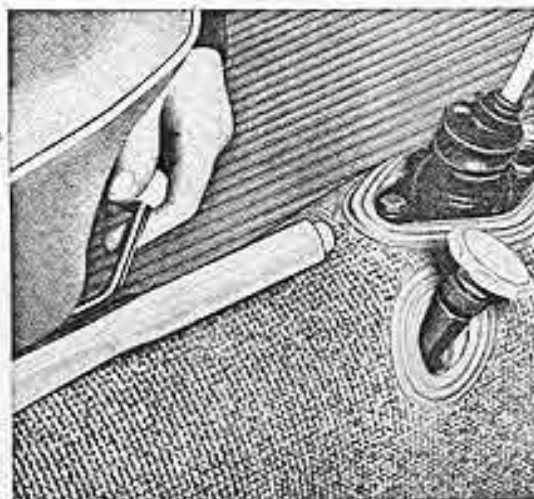
Front Seat Removal and Installation

Removal and Installation

- 1 - Lift up the locking mechanism on the right hand side of the seat and push the seat forward out of the guide rails on the floor.

- 2 - Take the seat out.

Grease the guide rails with VW Universal Grease before installing the seat.



Adjusting Cam Removal and Installation

- 1 - Remove seat.

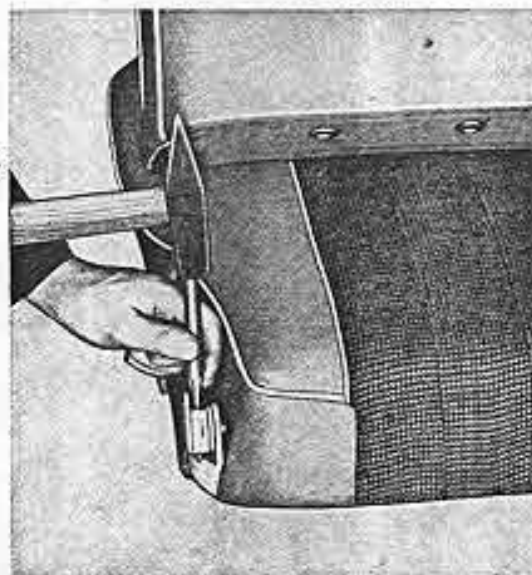
- 2 - Knock the pin out of the left or right hand adjusting cam with a punch.

- 3 - Take cam off.

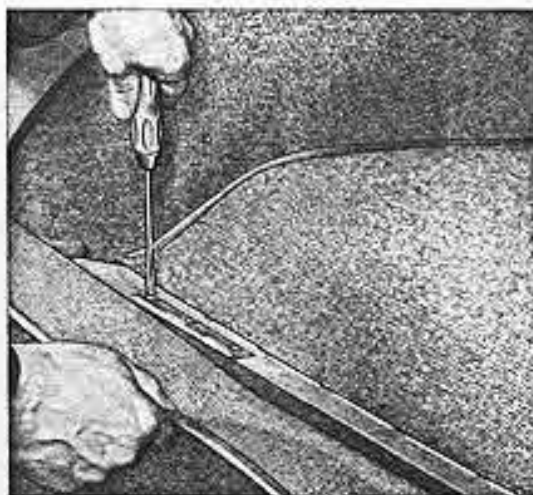
Note:

The adjusting cams must not be interchanged.

Before reassembly the cams should be lightly greased with VW Universal Grease at the face which contacts the guide tube.



Emergency Seat Removal and Installation



Removal

- 1 - Lift emergency seat and take it out of the support channels.
- 2 - Fold emergency seat back rest down. Lift luggage compartment lining on the reverse side of the back rest slightly and unscrew four hinge screws on each side.
- 3 - Take out back rest.

Installation

- 1 - Check back rest retaining strap for damage and renew if necessary.
- 2 - Screw back rest to hinges and cement lifted part of luggage compartment lining into position with VW Universal Cement D 12.

Note:

From Chassis No. 3192 507 (1st August 1960), the spring interiors and frames of the front seats and back rests were modified to improve the seating position.

1 - Front seats

The modified spring interiors (Part No. 141 881 305 B / 306 B) and frames (Part No. 141 881 107 B/108 B) cannot be installed in the previous pattern seats.

The upholstered padding has been altered to suit the shape of the spring interiors and frames. The new padding (Part No. 141 881 375 C/376 C) cannot be installed in the previous front seats.

The new seat complete (Part No. 141 881 031 B/032 B) can, however, be installed in all vehicles manufactured previously.

2 - Front seat backrests

The modified spring interiors (Part No. 141 881 705 B) back rest frames (Part No. 141 881 511 B/512 B) and padding (Part No. 141 881 775 B) cannot be installed in backrest of the previous pattern.

The new backrests complete (Part No. 141 881 041 B/042 B) will not fit front seats of the previous pattern.



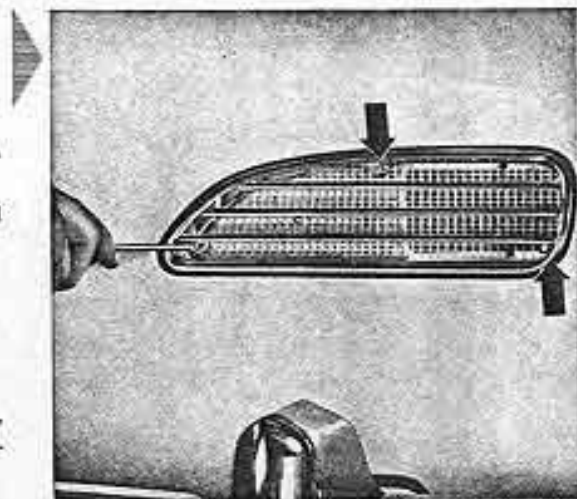
Fresh Air Inlet Trim Frame Removal and Installation

Removal

- 1 - Remove three retaining screws.
- 2 - Take trim frame out of front panel opening.
- 3 - Remove three screws and take grille and flyscreen off.

Installation

- 1 - Check condition of trim frame, rubber seal, grille and screen and renew parts as required.
- 2 - Place flyscreen and grille in the fresh air opening and secure with three screws.
- 3 - Place rubber seal round trim frame.



Insert trim frame in fresh air opening and secure with three chrome-plated screws.

Front Side Panel Trim Mouldings

Removal and Installation

- 1 - Push moulding clips out of the holes in the front side panel from inside and remove moulding.
- 2 - Renew bent or damaged moulding clips.
- 3 - Seal moulding clips inside the front side panel with plastic sealer D 15.

Door Trim Mouldings

Removal

- 1 - Remove window regulator handle and inner door handle.
- 2 - Remove door trim panel.
- 3 - Remove plastic sheet.
- 4 - Remove plastic sealer from the moulding clips.

- 5 - Push the moulding clips out of the holes from inside the door and take moulding off.

Installation

- 1 - Renew bent or damaged moulding clips.
- 2 - Seal moulding clips inside the door with plastic sealer D 15.

Quarter Panel Trim Mouldings

Removal

- 1 - Remove side trim panel.
- 2 - Remove plastic sealer from moulding clips.
- 3 - Push moulding clips out of the holes from inside the rear quarter panel and remove moulding.

Installation

- 1 - Renew bent or damaged moulding clips.
- 2 - Seal the clips with plastic sealer D 15.

Outside Rear View Mirror

Removal

- 1 - Unscrew two hexagon head screws from cover plate on hinge pillar.
- 2 - Remove cover plate and rubber seal.
- 3 - Unscrew two hexagon head screws on the inside of the front side panel and remove mirror and packing.

Installation

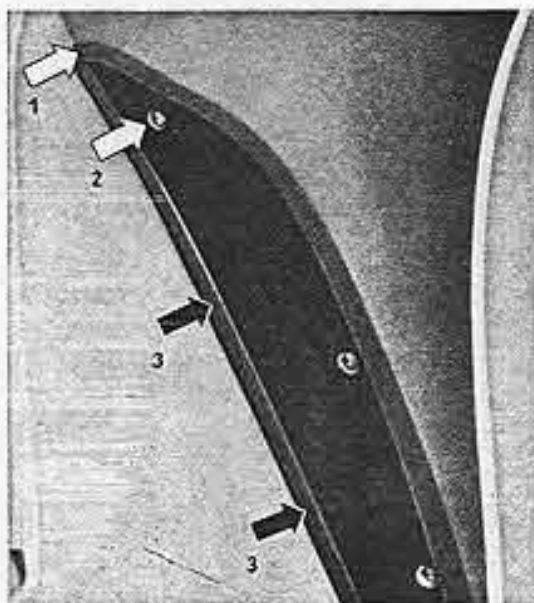
- 1 - Bolt mirror, with packing and reinforcement plate, to side panel.
- 2 - Check condition of cover plate rubber seal and renew if necessary.
- 3 - Secure cover plate to hinge pillar with two hexagon head screws.

VW and "Karmann Ghia" Sign Removal and Installation

Removal and Installation

- 1 - Pull speed nuts off and remove signs.

- 2 - Check speed nuts and signs and renew if necessary.



Note:

From chassis No. 3 412 252 (22nd November 1961), the upper corner (1) of the hinge pillar cover plate (Part No. 143 805 377/378) under the front side panel, is welded up. This seals the cover plate to the hinge pillar better.

Furthermore, an additional mounting has been provided on the hinge pillar so that the cover plate can be more rigidly fixed by a third securing screw (2). This will ensure uniform pressure on the rubber seal.

When installing an external mirror or a radio aerial, the hinge pillar cover plate must be taken out. Ensure that the openings at the upper edge and inner side of the plate (3) are filled with Plastic Sealing Compound D 14 and sealed with Genuine VW Sealing Compound D 17 when the plate is re-installed.

Note:

From Chassis No. 4 764 158, a "VOLKSWAGEN" sign (Part No. 361 853 687) is fitted to the rear hood.



Removal and Installation of Luggage Compartment Lining

Removal

- 1 - Fold emergency seat back rest down.
- 2 - Remove luggage compartment lining.
- 3 - Remove sound-absorbing felt from luggage compartment.

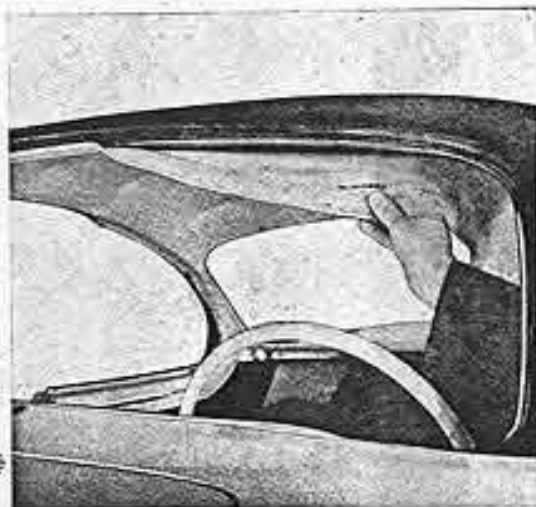
Installation

- 1 - Before cementing the sound-absorbing material into position, thoroughly remove all traces of old cement and felt. Benzine is suitable as a solvent.
- 2 - Coat the floor with VW Universal Adhesive D 12 and cement the sound-absorbing felt smoothly into position.
- 3 - Cement the carpet on to the felt.

Headlining Removal and Installation

Removal

- 1 - Remove windshield, quarter window and rear window.
- 2 - Remove door window weatherstrip trim moulding and quarter window trim frame.
- 3 - Remove interior rear view mirror and coat hooks.
- 4 - Dismantle interior lamp.
- 5 - Pull headlining off. The lining is cemented into position and must be pulled carefully to avoid damage.



6 - Unhook stretcher bars and take lining out.



Installation

- 1 - Check that the sound-absorbing felt on the roof is firmly in position, and refix with VW Universal Cement D 12 if necessary.
- 2 - Clean remains of cement from the roof side members, windshield and rear window frames. Benzine is suitable as a solvent.
- 3 - Hook stretcher bars in so that headlining is lightly tensioned and free from creases.
- 4 - Coat roof side members, windshield and rear window frames lightly with VW Universal Adhesive D 12 and cement headlining into position without creases.
- 5 - Reinstall all parts removed.

Front Roof Pillar Lining Removal and Installation

- 1 - Remove windshield.
- 2 - Remove door window weatherstrip trim moulding.
- 3 - Loosen headlining slightly and pull roof pillar lining off.
- 4 - Thoroughly clean remains of cement from the roof pillar before refixing lining. Benzine is suitable as a solvent.
- 5 - Cement roof pillar lining in position with VW Universal Adhesive D 12, without creases.
- 6 - Reinstall all parts removed.

Rear Roof Pillar Lining Removal and Installation

- 1 - Remove rear and quarter windows.
- 2 - Remove quarter window trim frame.
- 3 - Loosen headlining slightly and pull roof pillar lining off.
- 4 - Thoroughly remove remains of cement from roof pillar before refixing lining. Benzine is suitable as a solvent.

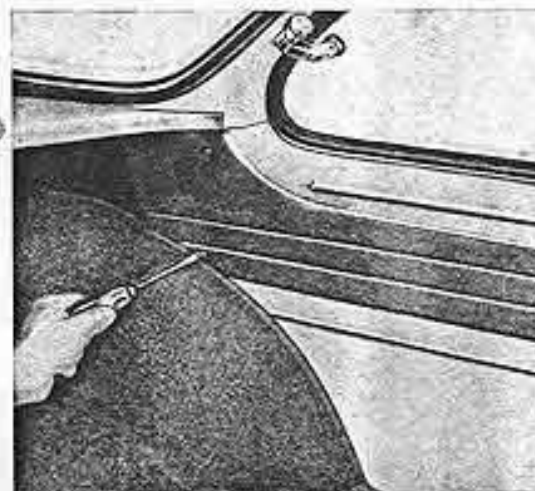
- 5 - Cement door pillar lining in position with VW Universal Adhesive D 12, without creases.

- 6 - Reinstall all parts removed.



Quarter Panel Lining Removal and Installation

- 1 - Fold emergency seat back rest down.
- 2 - Unscrew two countersunk tapping screws.
- 3 - Pull quarter panel lining and clips from the inner panel.
- 4 - The quarter panel lining trim moulding can be removed after bending up the retaining lugs.
- 5 - Renew broken clips.



Front Panel Lining Removal and Installation

The right and left front panel linings can be lifted after the retaining channel lip has been bent up. Pull the remainder of the lining off. Unscrew the retaining channel.

The following points must be observed during installation:

- 1 - Thoroughly remove the remains of cement from the inside of the body before refixing the lining. Benzine is suitable as a solvent.
- 2 - Install retaining channel.
- 3 - Cement front panel lining into place with VW Universal Adhesive D 12. Take care that the

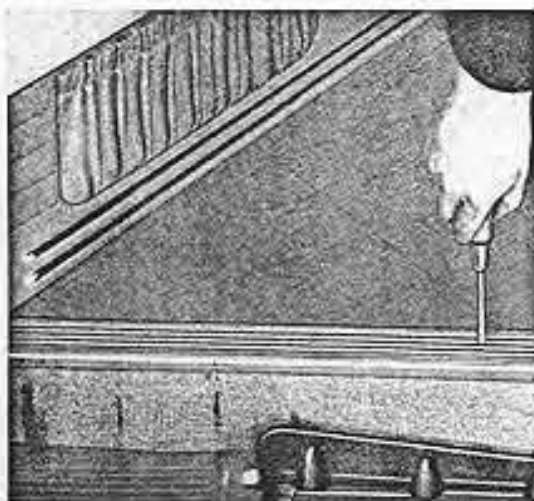
lining makes good contact with the body all round and is correctly located round the warm air outlets.

- 4 - Bend the lip of the retaining channel down again.

Body Side Member Carpet Removal and Installation

1 - Remove eight screws and take off scuff plate.

2 - Remove carpet nail and pull carpet off.



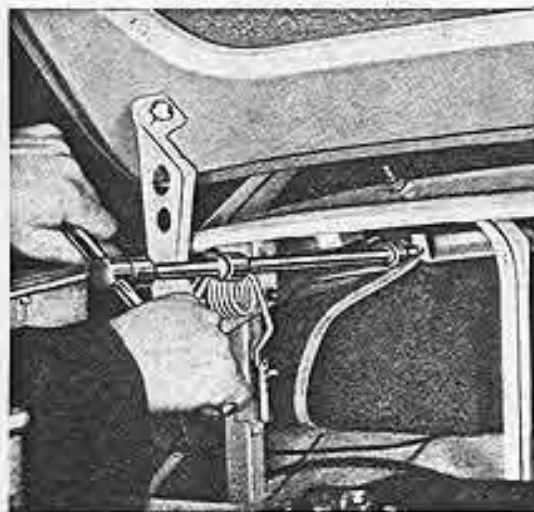
3 - Thoroughly clean the remains of cement and sealing compound from the body side members before refixing the new carpet. Benzine is suitable as a solvent.

4 - Cement carpet in position with VW Universal Adhesive D 12.

5 - Place a strip of sealing band D 16 under the scuff plate and reinstall plate.

6 - Secure the rear end of the carpet with a carpet nail.

Glove Compartment Removal and Installation



1 - Open front hood and remove luggage compartment fiber board lining.

2 - Unscrew retaining strap screw and take out glove compartment.

- 3 - Remove two hinge screws on glove compartment lid and take lid off.

- 4 - To detach the hinges it is necessary to remove the compartment lid spring and the two riveted pins.

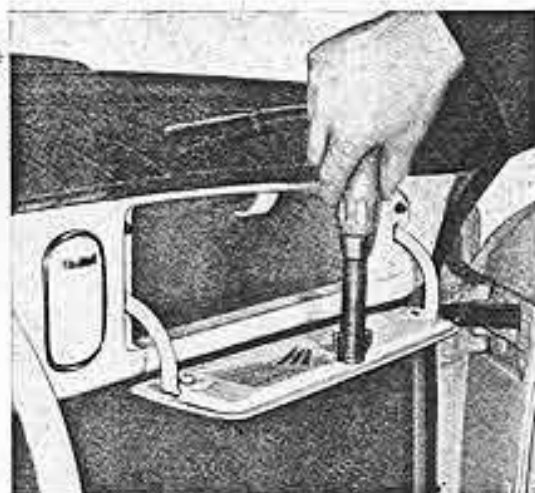
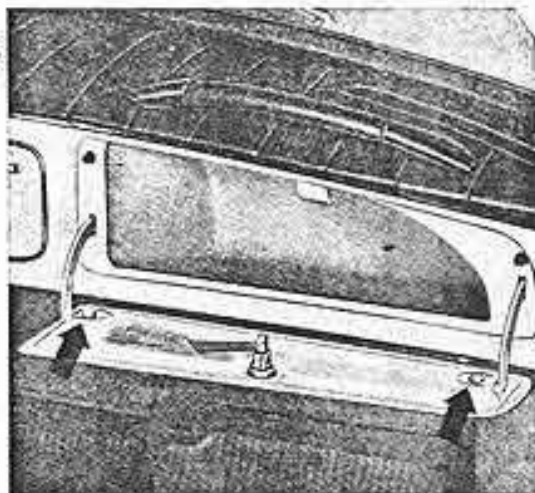
- 5 - The two rubber plugs for the lid can be pulled out.

- 6 - The lid lock can be removed with circlip pliers VW 122 b or a suitable tool of local manufacture.

- 7 - When installing the glove compartment and tightening the retaining strap, take care that the glove compartment is correctly seated against the instrument panel. If contact between glove compartment and instrument panel is poor, rectify with adhesive tape.

- 8 - Check condition of rubber plugs for lid and renew if necessary.

- 9 - Check lid alignment by opening and closing several times.



- 10 - Apply a few drops of oil to the lid lock.

- 11 - If the lid is difficult to open or close bend the sheet metal catch slightly.

Package Shelf Covering Removal and Installation

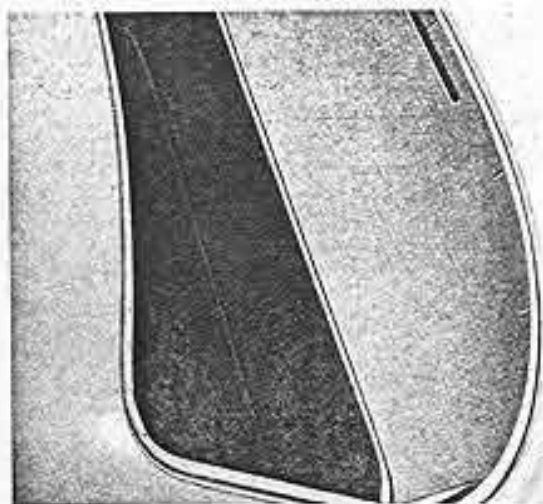
Removal

- 1 - Remove rear window.
- 2 - Remove emergency seat back rest hooks and retainer plate for warm air outlet.

- 3 - Remove package shelf trim moulding.

- 4 - Carefully pull off the package shelf covering.

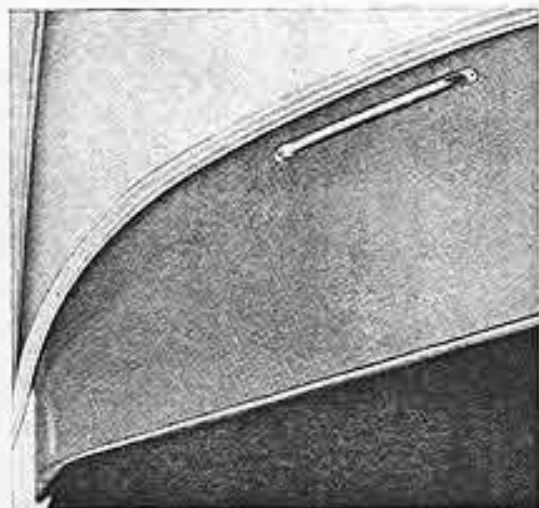
The cardboard is cemented on and can be damaged if insufficient care is taken when pulling off.



Installation

1 - Thoroughly remove all cardboard and cement remains from the package shelf before refixing the cardboard. Benzine is suitable as a solvent.

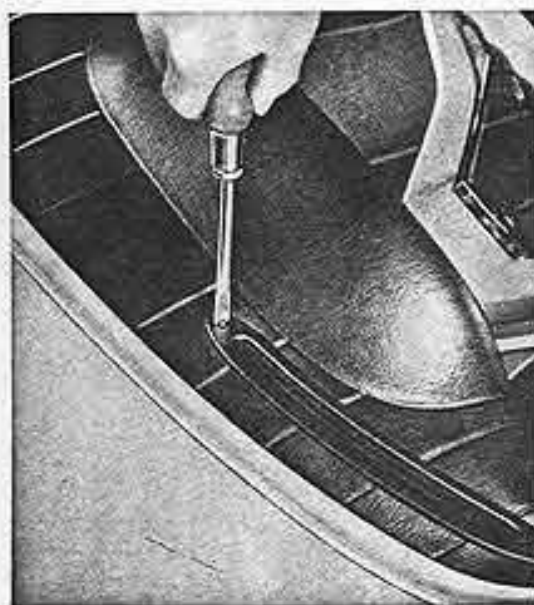
2 - Coat package shelf with VW Universal Adhesive D 12 and cement cardboard smoothly into position.



3 - Coat cardboard with adhesive and cement covering into position smoothly and without creases. Cut out opening for the warm air outlet.

4 - Reinstall all parts removed.

Instrument Panel Cover Removal and Installation



Removal

1 - Remove windshield.

2 - Remove fiberboard lining from luggage compartment.

3 - Remove glove compartment.

4 - Remove passenger's grab handle.

5 - Remove loud speaker opening insert.

6 - Remove two screws from each defroster vent retainer plate.

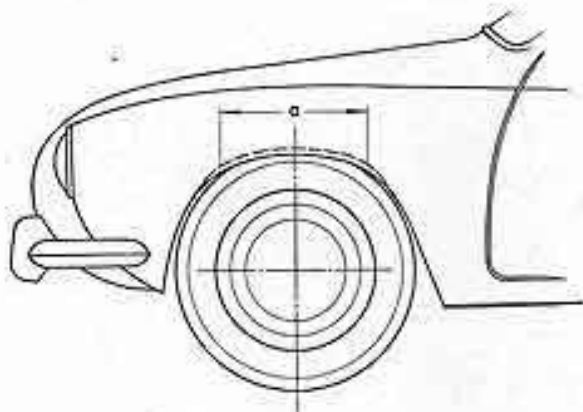


Special Instructions

Heavy springing action when the steering is locked hard over can cause the front wheels to rub at the sharp edge of the upper portion of the wheel arch. This can be rectified as follows:

Place a suitable dolly on the inner edge of the wheel arch. The edge should be turned up over a length of 400 mm (16") with a rubber hammer as shown on the sketch.

$a = 400 \text{ mm (16")}$



Note:

From 1st August 1960 and Chassis No. 3 192 507 the front wheel housings, the luggage compartment panel and the front reinforcement plate were modified to suit the shape of the new fuel tank.

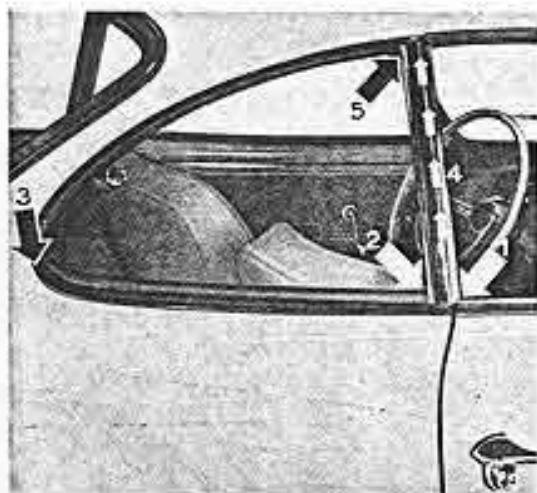
- 1 - The wheel housings — Part No. 141 805 071 B/072 B — now have recesses in the upper portions. They can be installed in older pattern vehicles and the former parts will be discontinued when present stocks are exhausted.
- 2 - The fuel tank support surfaces in the luggage compartment panel — Part No. 143 805 405 A — are angled. As the modified luggage compartment panel cannot be installed in older pattern vehicles, the former parts will remain available.
- 3 - The front reinforcement plate — Part No. 141 805 503 A — is now located deeper in the body and has a larger recess to accommodate the water and brake fluid containers. As the new parts cannot be installed in older pattern vehicles, the former parts will remain available.

Leaks at quarter window

Leaks at the quarter window can be located and eliminated as follows:

There are five places at which leakage can occur and they should each be sprayed in turn with a weak jet of water.

- 1 - Spray the bottom of the channel between quarter and door window for about 5 minutes. If no water appears on the inside of the window, there is no leakage at this point.



Take care that the water does not spread to the next point as it is then difficult to locate the leak exactly.

Remedy if leaking:

Seal the angle weatherstrip with Window Cement D 10.

- 2 - Spray the bottom end of the quarter window weatherstrip.

Remedy if leaking

Remove window, fill the joint between weatherstrip and channel with Plastic Sealer D 15 and coat with Sealing Compound D 17. Shorten or tuck-in the upper end of the beading on the lock pillar so that its ends about 5 mm/2" short of the inside of the channel and cannot absorb moisture at this point.

- 3 - Spray the lower window weatherstrip from the rear end of the trim moulding.

Remedy if leaking

Remove window, weatherstrip and retaining channel. Clean off old sealer and, if necessary, trim the headlining material so that it does not extend beyond the retaining channel screw holes and absorb moisture.

Apply a 5 mm layer of Plastic Sealer D 15 to the outside of the row of screw holes. Coat the underside of the retaining channel with adhesive, install it and tap it lightly into position with a block of wood.

- 4 - Spray the joint between the vertical weatherstrip and the channel between quarter and door window from bottom to top.

Remedy if leaking

Install the vertical weatherstrip with Window Cement D 10.

- 5 - Spray the joint between the door window weatherstrip on the roof frame and the vertical weatherstrip between quarter and door windows.

Remedy if leaking

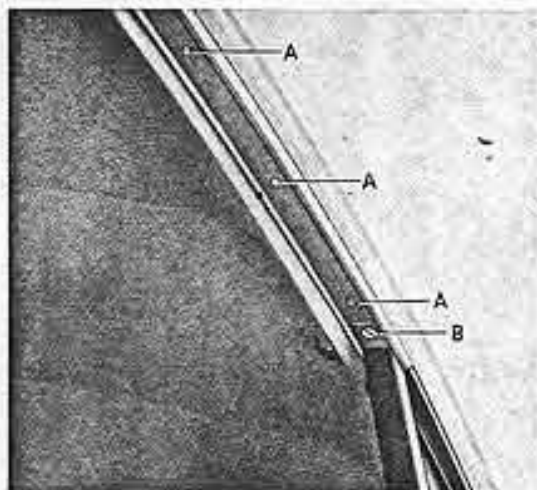
Check the diagonal joint between the door window weatherstrip and the vertical weatherstrip. Fill the joint between channel and door window weatherstrip with plastic filler. Join the upper end of the vertical weatherstrip to the door window weatherstrip with adhesive D 12.

Note:

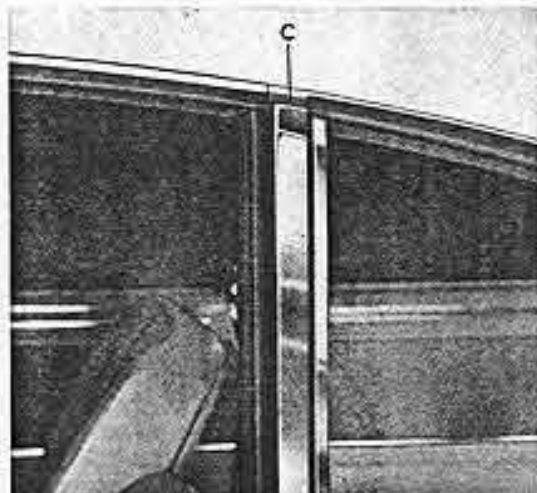
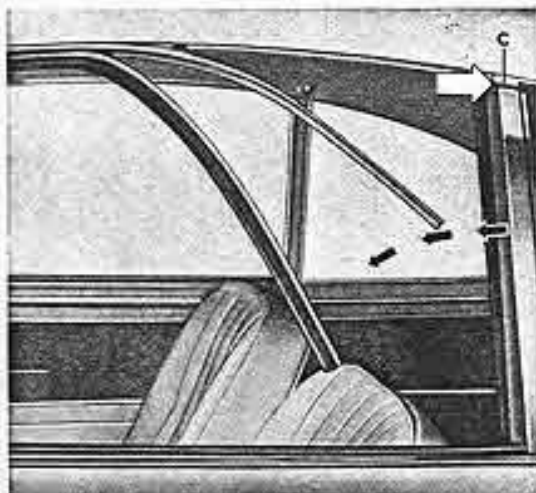
From Chassis No. 3 273 002 (27th September 1960), a rubber packing (Part No. 143 847 347) was installed at the upper end of the channel between the door and quarter window to eliminate noises in the roof frame.

To install the packing in older vehicles, proceed as follows:

- 1 - Pull the rear end of the upper door window weatherstrip out of the trim moulding for about 20 cm/8".
- 2 - Remove the countersunk screw (B) securing the channel between quarter and door window to the roof frame.



- 3 - Remove the three rear screws (A) for the upper door window weatherstrip and bend the trim moulding down.
- 4 - Bend the channel between quarter and door window forward as shown by the lower arrow and slide the rubber packing (C) into the trim moulding for the quarter window (see upper arrow).
- 5 - Coat the quarter window with D 12 Adhesive and bend the channel between quarter and door window back against the quarter window.
- 6 - Replace the countersunk screw securing the channel to the roof frame.
- 7 - Bend the trim moulding upwards against the roof frame, replace the screws and press weatherstrip into position.



Note:

1 - Heating modifications

From Chassis No. 5188470, the rear foot well heating was modified so that it can be controlled with regulating levers.

Branch pipes — Part No. 141 255 431/432 — with attached heater outlets — Part No. 141 255 515 — which end in the reinforcement panel, are installed in place of the connecting pipes. The branch pipes are insulated.

The foot well heating can be service installed in previous vehicles.

All bodies supplied as spares are fitted with branch pipes. When installing these bodies on previous chassis the foot well heating can be installed at the

same time. In this case, clearance holes should be made in the reinforcement panel. The connections on the branch pipes can, however, be welded up.

2 - Door modifications

From August 1963, Chassis No. 5718489, the inner lock controls were replaced by the same type as is used on the Type 3.

The following parts have been modified:

Designation	New Part Number
1 - Door	143 831 051 E/052 E
2 - Operating lever	311 837 018/020
3 - Pull rod	141 837 193 A/194 A
4 - Door lock	141 837 015 B/016 B
5 - Striker plate	141 837 295 A/296 A
6 - Door handle	141 837 205 A/206 A
7 - Lock pillar	141/143 837 395 B/396 B

Striker plate

Door lock



A - old



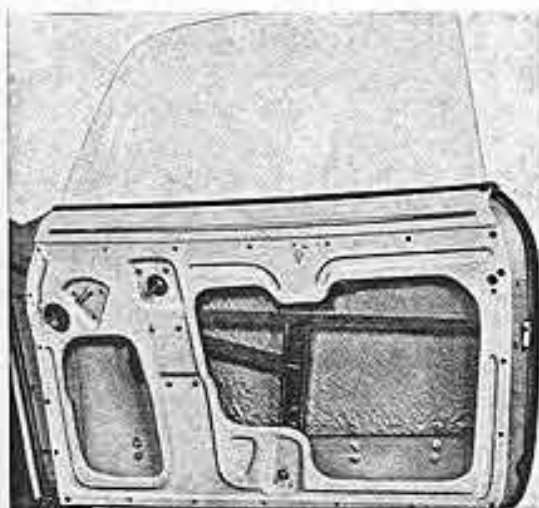
B - new



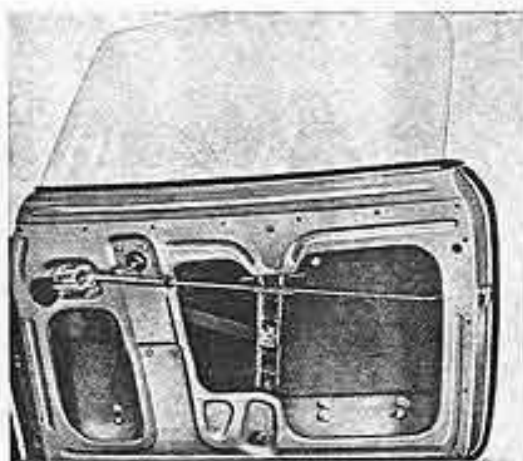
A - old



B - new



A - previous pull rod



B - new pull rod with modified operating lever

The modified parts cannot be installed in previous vehicles.
The former parts will still be supplied as spares.



A - previous door handle



B - new door handle



Replacement of Body Sections

General

The description of the replacement of individual body sections serves as a guide for the sequence of operations. A reasonable knowledge of body repair is essential and the work should wherever possible, be carried out by a skilled man, well versed in body repair.

As opposed to the Sedan or VW Convertible, the body sheet metal of both Karmann Ghia Models must often be butt welded. This work in particular calls for great care during repairs, as lack of skill and material knowledge can cause structural alteration, stress and distortion in the thinly walled panel which is impossible or very difficult to eliminate.

Where gas welding is not expressly stipulated it is mentioned in the individual sections in addition to the more generally used spot welding.

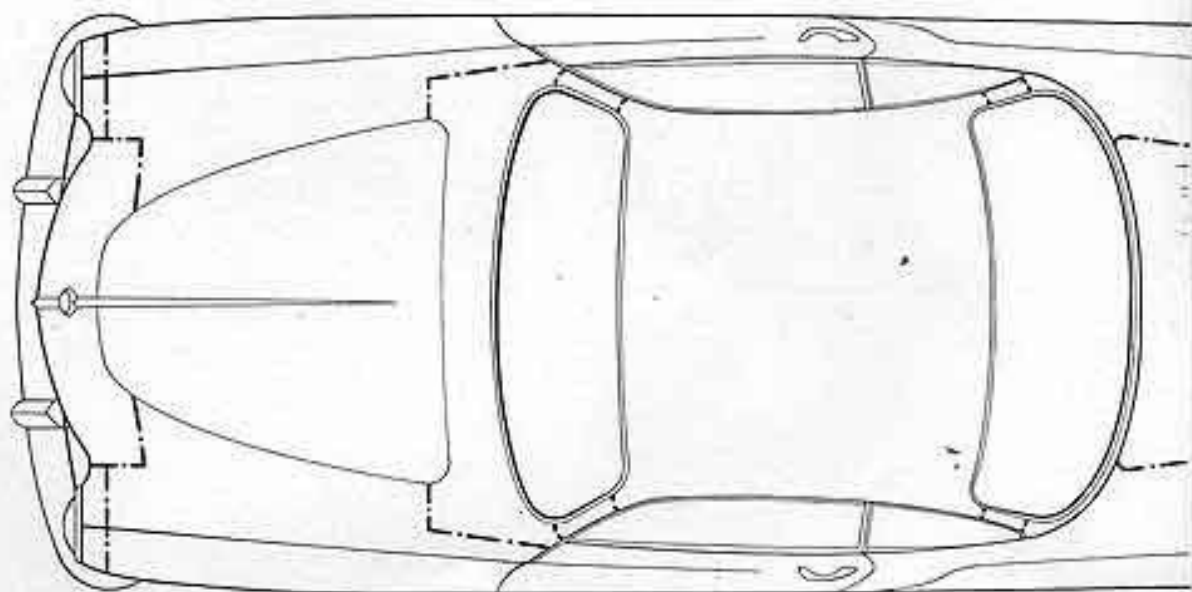
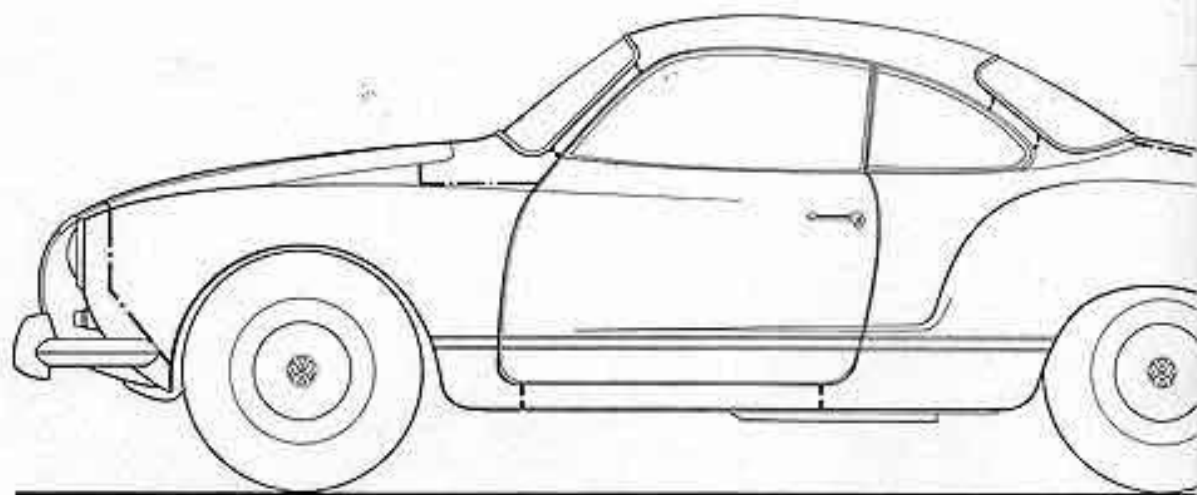
It must be emphasised however, that spot welding with spot welding tongs or a push type welding gun is preferable to gas welding.

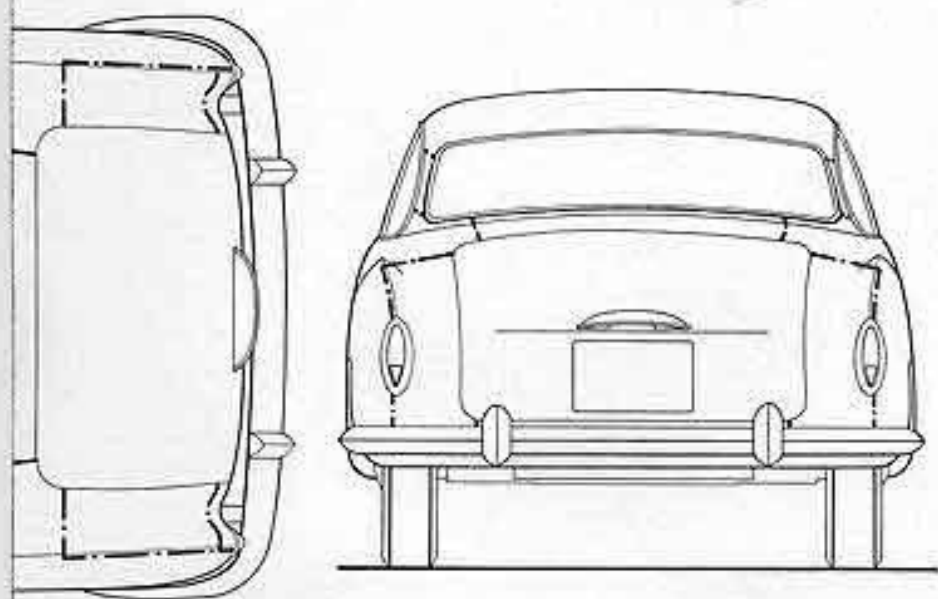
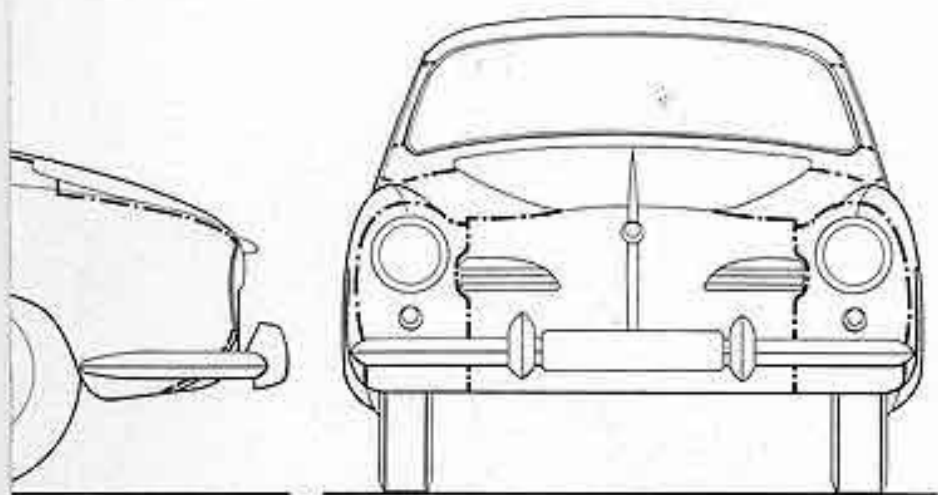
For various operations, especially the replacement of large body parts, the body must be taken off. The use of the specially designed repair frame is recommended as it guarantees the body measurements being kept accurate when replacing body parts and enables any distortion to be detected and eliminated. The frame can be used for all Passenger Car Models and is described in detail, with other gauges and jigs, under the heading "Workshop Equipment" in "Body General" section.

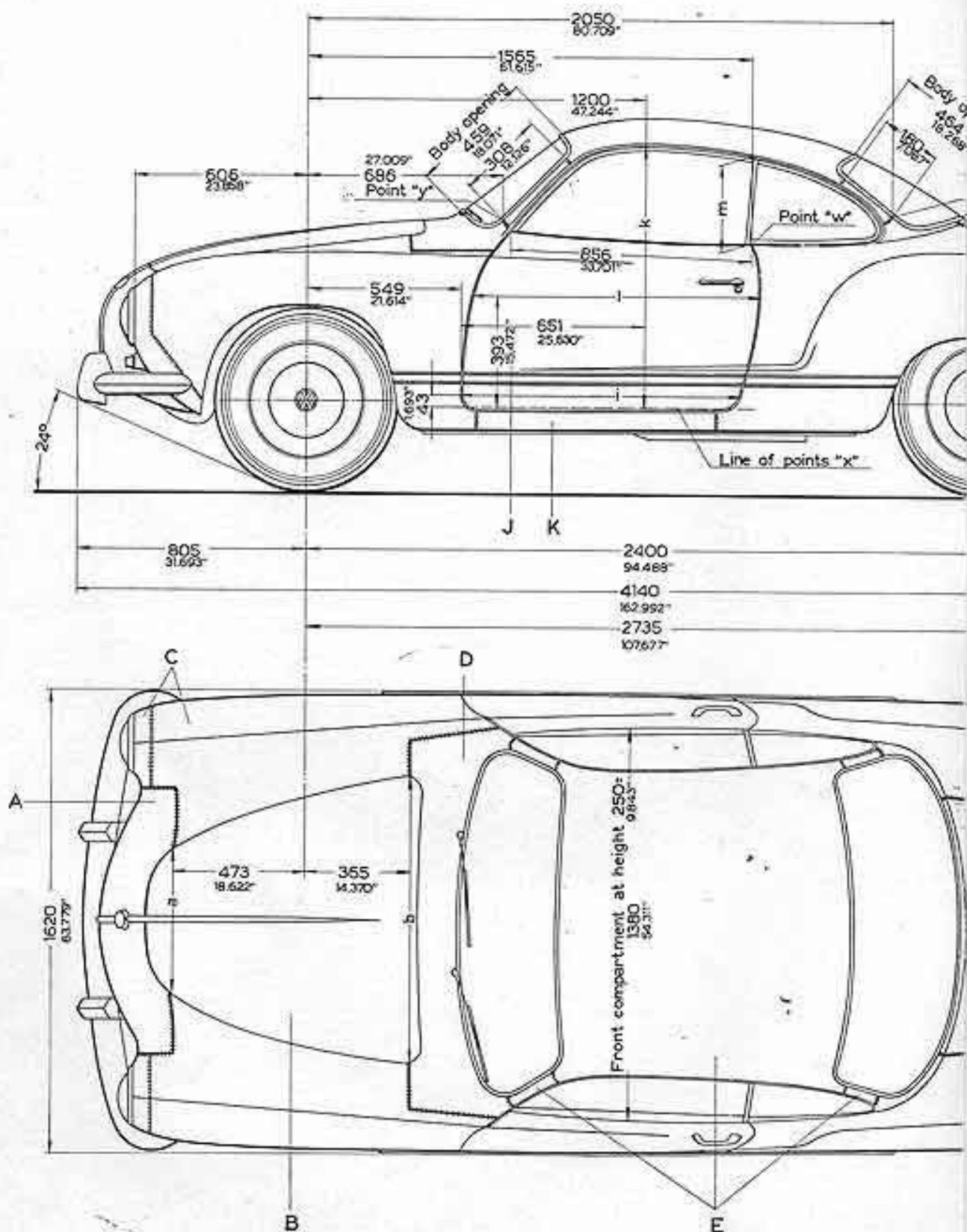
Before commencing to cut out any sheet metal parts it is essential to plan the individual cuts to be made.

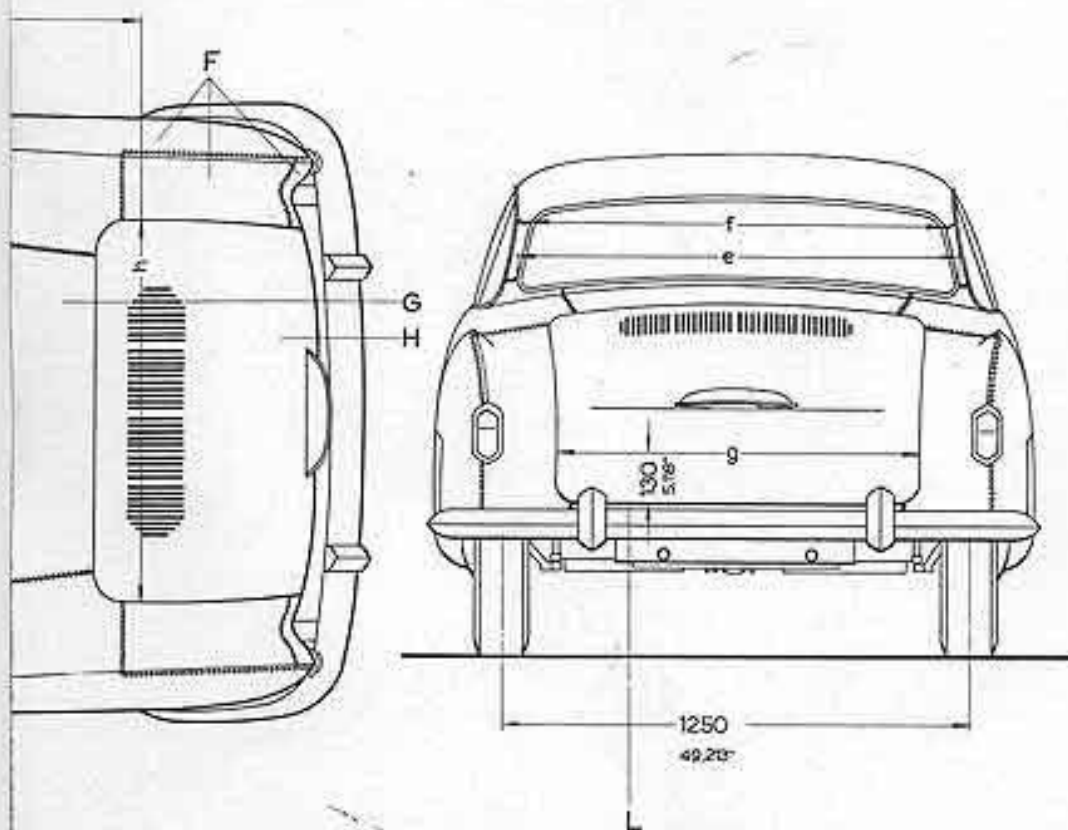
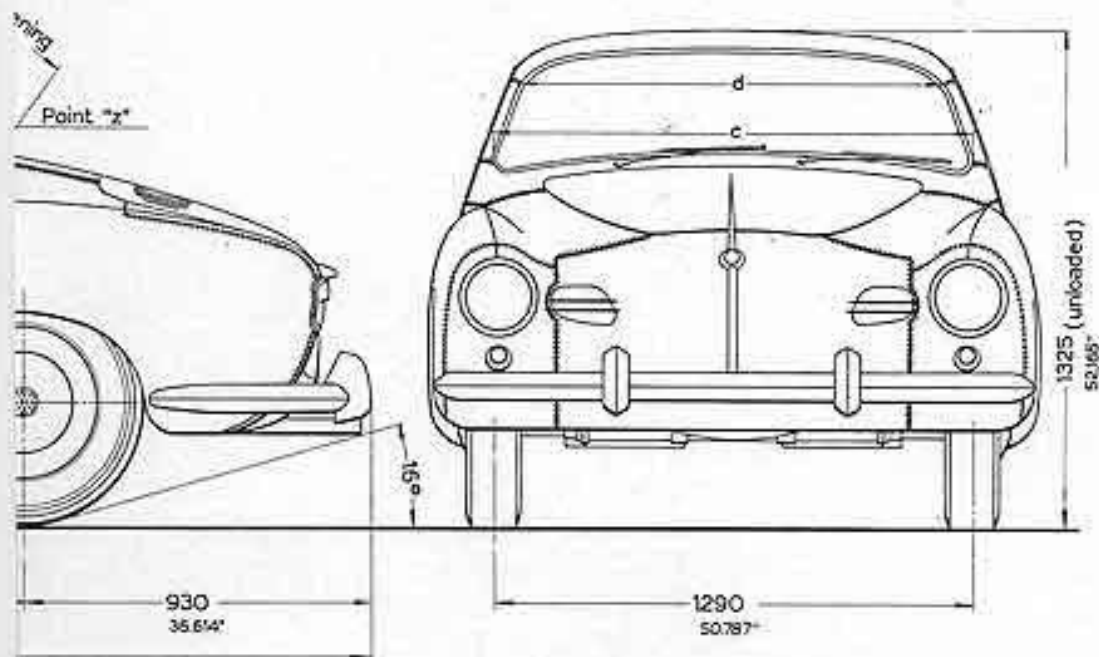
The interchangeability of the other body panels can be seen in the drawing.

When cutting damaged body panels out, make sure that the cutting line does not follow the weld seam but is roughly 10 mm above or below it. The remaining metal is removed when the new part has been matched up.







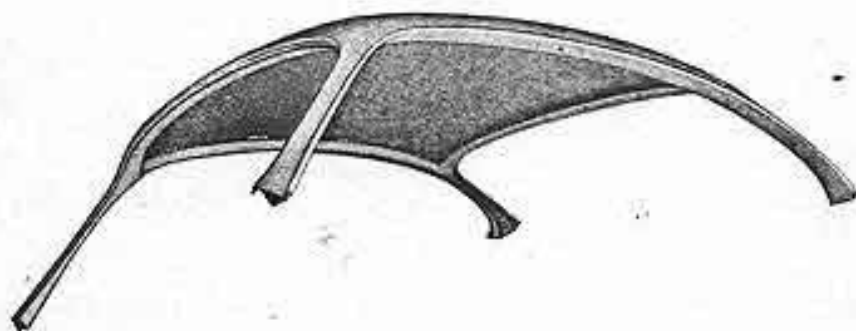


Identification

Description of Part

A	Front panel
B	Front hood
C	Front side panel, left Front side panel, right
D	Cowl panel
E	Roof
F	Quarter panel, left Quarter panel, right
G	Rear top panel
H	Rear hood
I	Door bare, left Door bare, right
K	Sill panel, left Sill panel, right
L	Rear panel

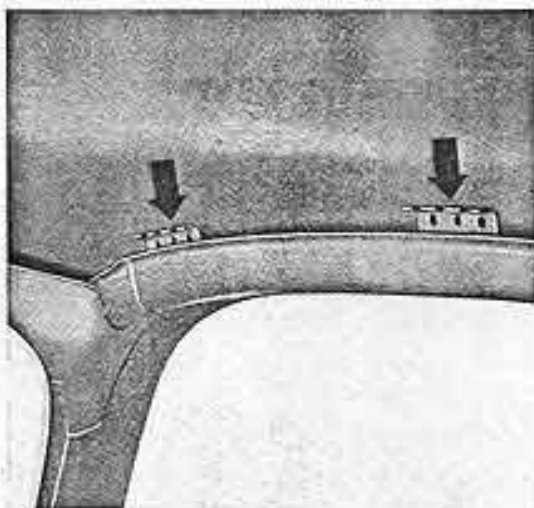
A



The roof panel is supplied complete with roof pillars. The roof pillars can be replaced separately if required and the operation is described at the end of the section.

Four perforated angle plates are welded to each side member inside the roof. The stretcher bars for the headlining are hooked into the holes in these plates.

When replacing the roof or a roof pillar the use of the specially designed gauges is essential in every case. Details of body gauges and jigs are given under the heading "Workshop Equipment" in the "Body General" section.

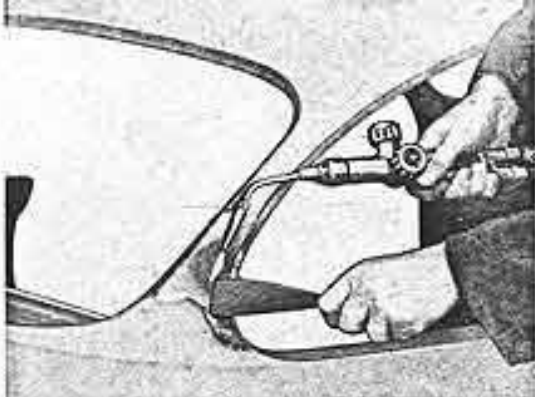


Roof Replacement

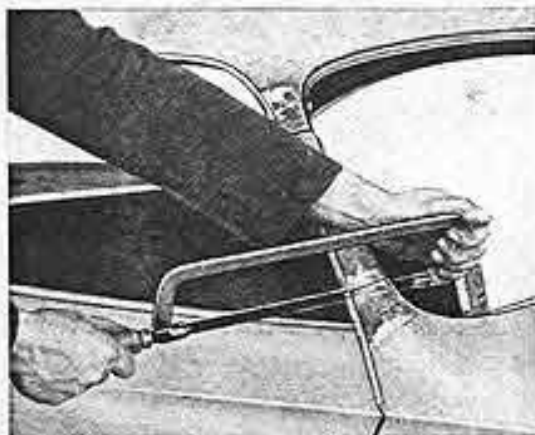
Preparation

- 1 - Disconnect the battery.
- 2 - Remove all seats and mats or cover adequately.
- 3 - Remove windshield, rear window and both quarter windows.
- 4 - Lower the door windows and cover the window slots.
- 5 - Remove all interior trim including rear view mirror and sun visors. Cover the rear luggage compartment.
- 6 - Remove steering wheel.
- 7 - Remove windshield wiper fittings. Cover or remove the instrument panel parts as necessary.
- 8 - If no other body repairs are to be carried out, adequately cover all body parts within the area of the operation.

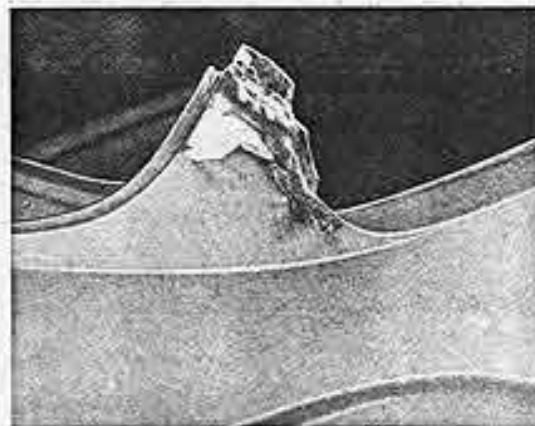
Body Repair Work



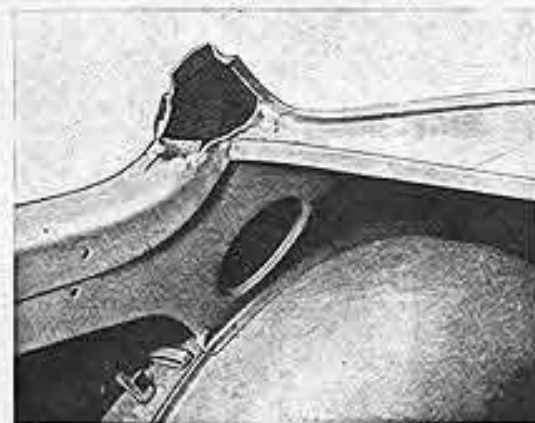
- 1 - Heat the solder in the area of the lower roof pillar welds with a welding torch and remove with a suitable spatula.



- 2 - Saw the roof pillars off about 50 mm above the weld seams.



- 3 - Remove the remaining metal down to the welds. Clean up the welds by grinding or filing. If necessary remove dents and straighten the sheet metal.

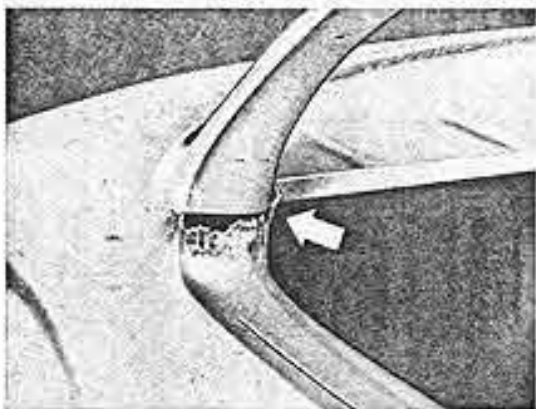


- 4 - Take care that the inner panels on the rear roof pillars, which serve as overlaps, are not distorted.



- 5 - Place roof in position.

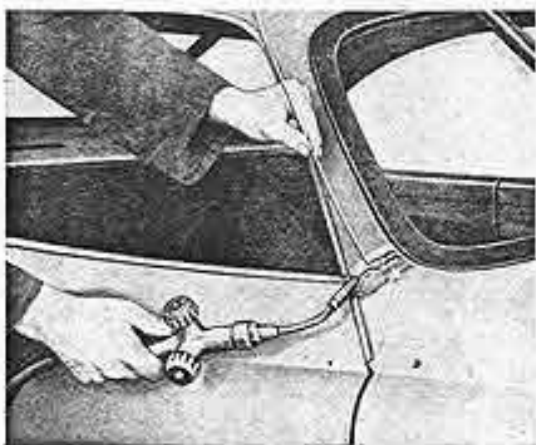
- 6 - Check that the inner panels on the rear roof pillars are overlapping.



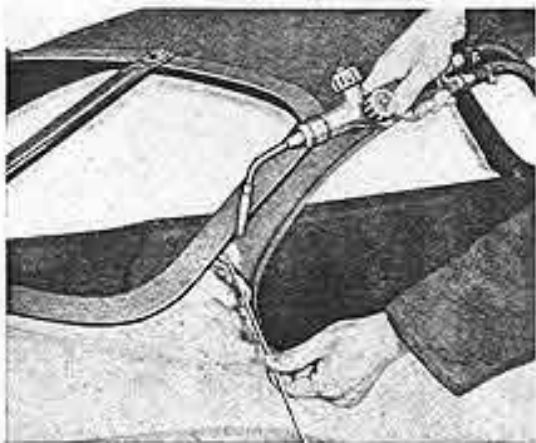
- 7 - Install window gauges and fit the roof.

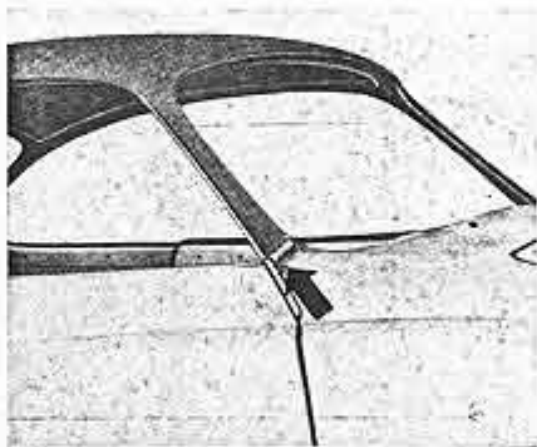


- 8 - Tack-weld the roof at the front first.

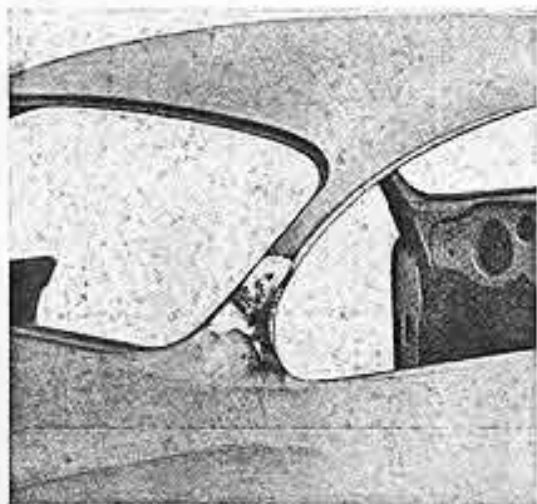


- 9 - Tack-weld the rear roof pillars with the welding torch with the window gauges in position.





Gas weld the roof pillars inside and out. Insert the window gauge occasionally to check that the position of the roof is correct.



10 - Grind the weld seams down as far as possible. Fill the welded and reworked areas with solder until a smooth contour is obtained.

11 - Grind the joints smooth and prepare vehicle for painting.

Roof Pillar Replacement



Front roof pillar



Rear roof pillar

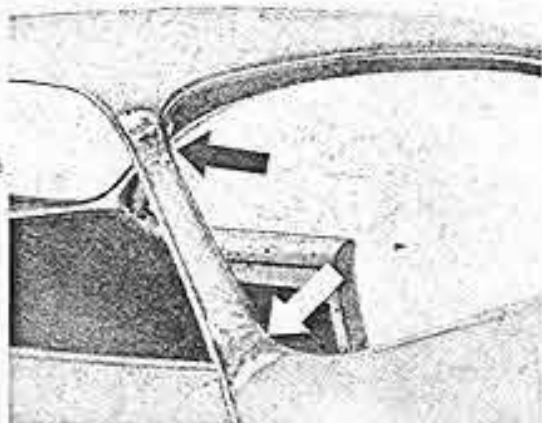
Front and rear roof pillars are supplied as spares.

When replacing one or more roof pillars, the use of the specially designed gauges is essential.

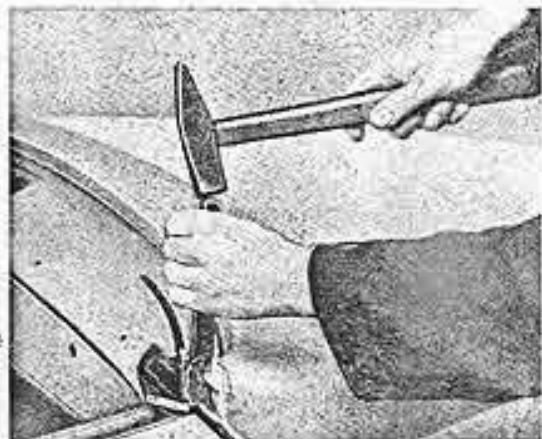
The preparatory work is roughly the same as that required when replacing the roof. All parts within the vicinity of the pillar being repaired must be removed or covered up as necessary.

Body Repair Work

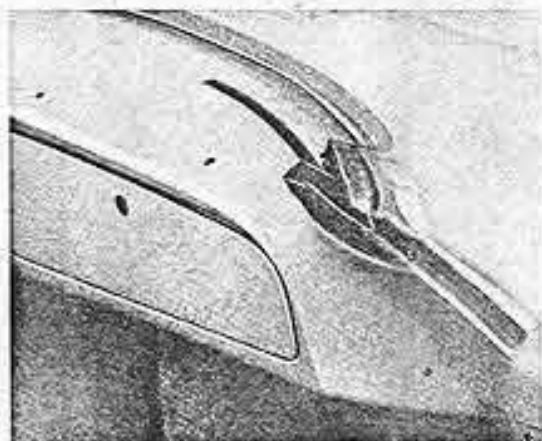
- 1 - Heat the solder on the appropriate pillar in the area of the upper and lower weld seams with a welding torch and remove with a suitable spatula.



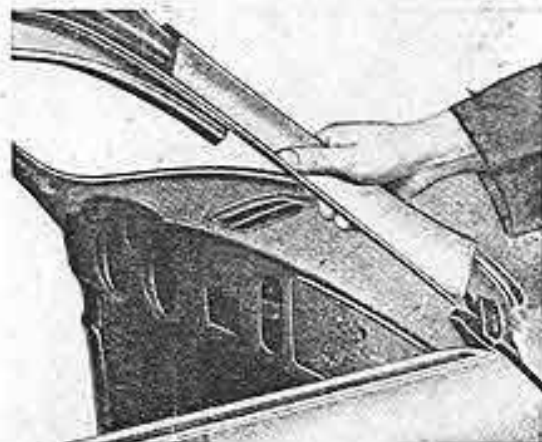
- 2 - Saw the roof pillar off 50 mm above the lower and below the upper weld seams.



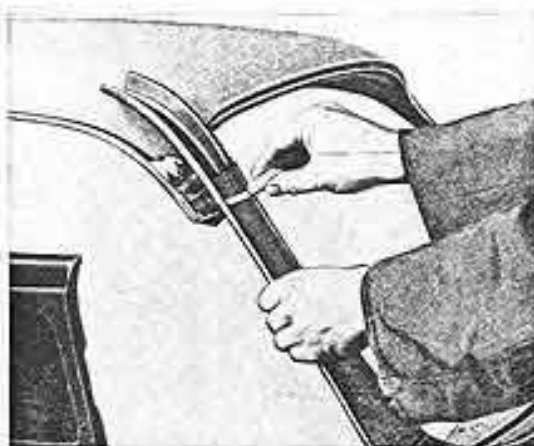
- 3 - If the upper part of the roof pillar concerned is not damaged it is recommended that the work be simplified by merely pushing the bottom of the pillar over the bottom joining flange and butt-welding the top joint. In this case it is only necessary to remove the remaining metal on the body.



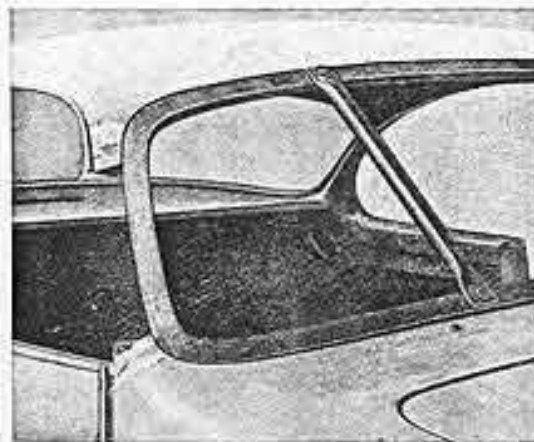
- 4 - Grind or file the top weld area and edges of the cut clean. If necessary remove dents and straighten sheet metal.



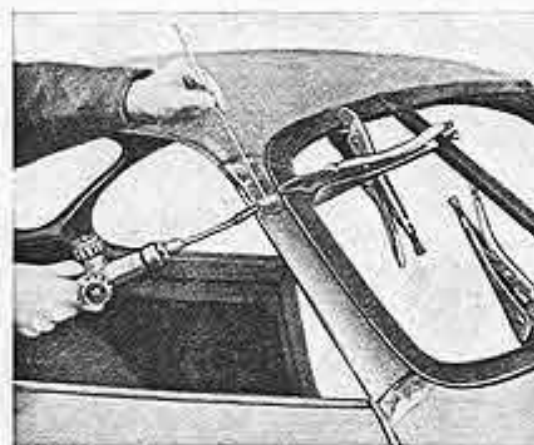
- 5 - Push roof pillar over the bottom joining flange.



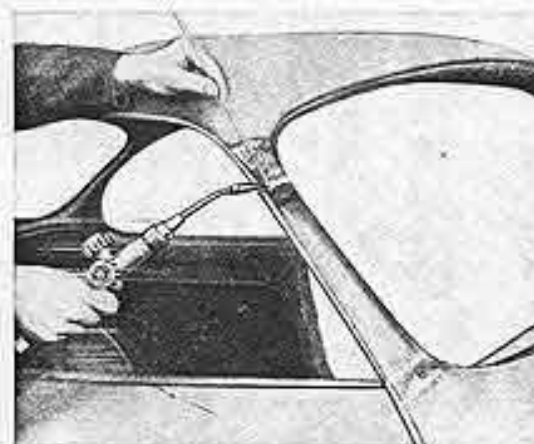
6 - Fit pillar to the roof and mark off for cutting.



7 - Cut roof pillar as marked.



8 - Insert window gauge.



9 - Push roof pillar over the joining flange on the body, clamp it to the window gauge with body clamps and tack with gas welding.

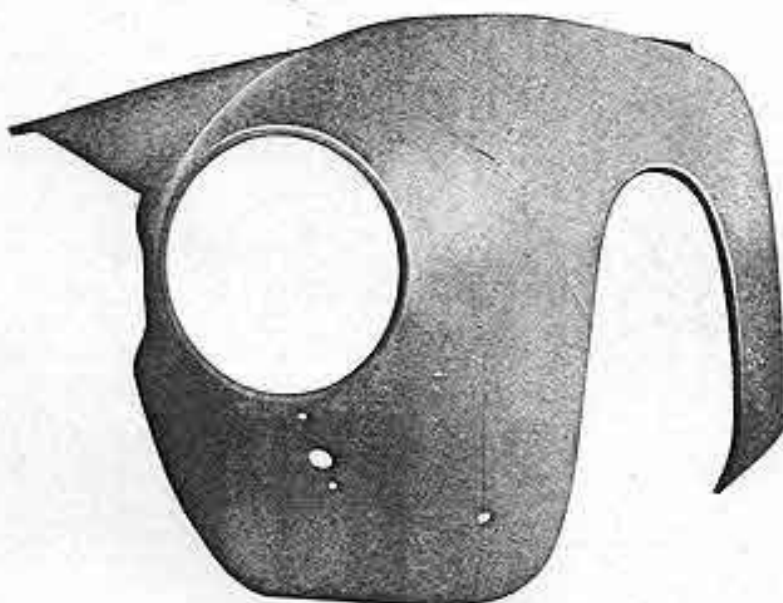
10 - Take window gauge out and gas weld roof pillar.

11 - Grind the weld seams down where necessary. Fill the welded and reworked areas with solder until a smooth contour is obtained.

12 - Grind the joints smooth and prepare vehicle for painting.



Front Side Panel



The front side panel is composed of two parts, the side panel proper and the so-called front panel. As a spare part the front side panel is supplied with the front panel welded to it.

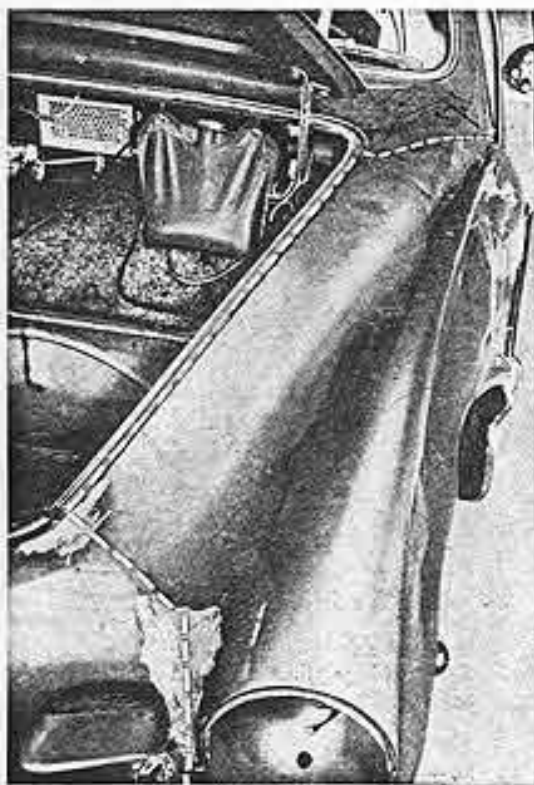
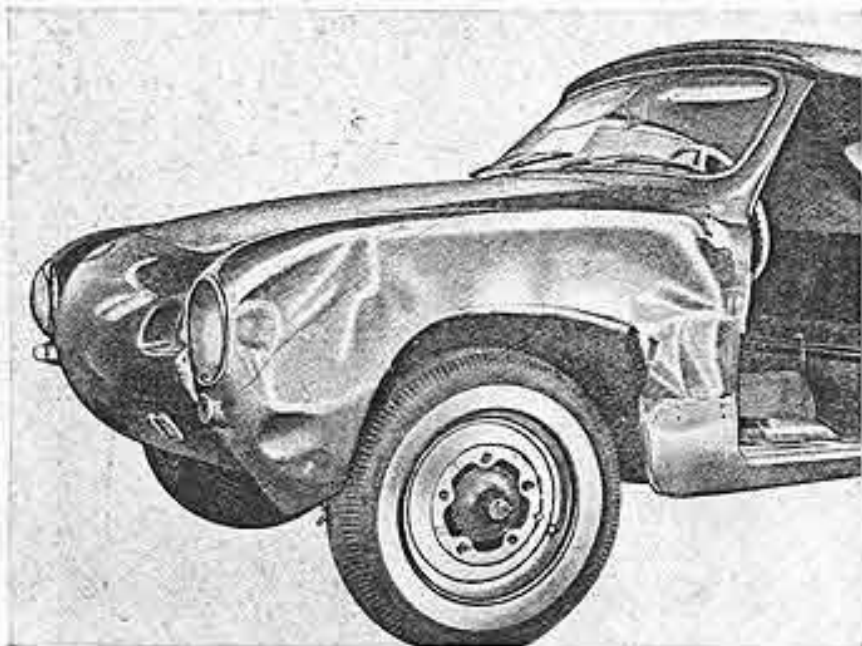
The replacement of the front panel can only be carried out with the specially designed gauge (see section "Body General", Workshop Equipment).

Preparation

- 1 - Disconnect the battery.
- 2 - Remove door and front hood.
- 3 - Remove front wheel.
- 4 - Remove bumper bar.
- 5 - Remove hinge pillar cover plate in front wheel housing.
- 6 - Remove front hood weatherstrip.

Body Repair Work

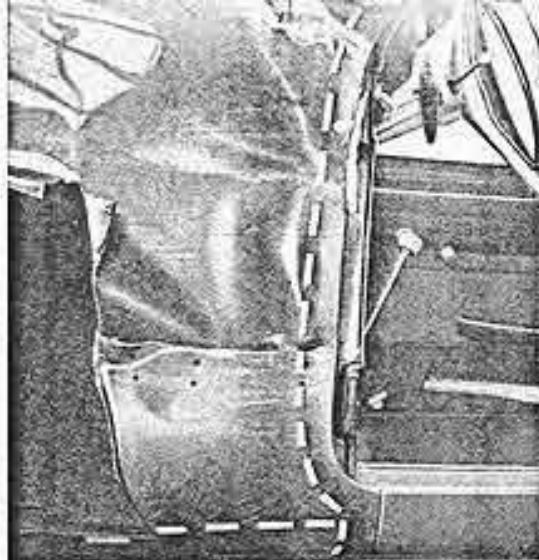
The following repair operation was carried out on a Karmann Ghia Convertible, the front side panel and hinge pillar of which was so badly damaged that part replacement or straightening was not possible.



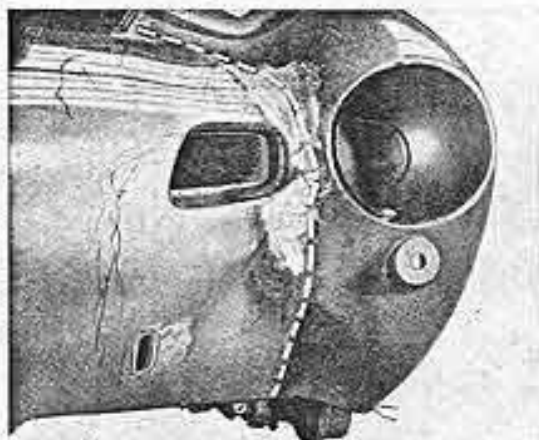
- 1 - With a sheet metal chisel (Local Manufacture Drawing VW 732) cut the side panel out at the places shown.

Top

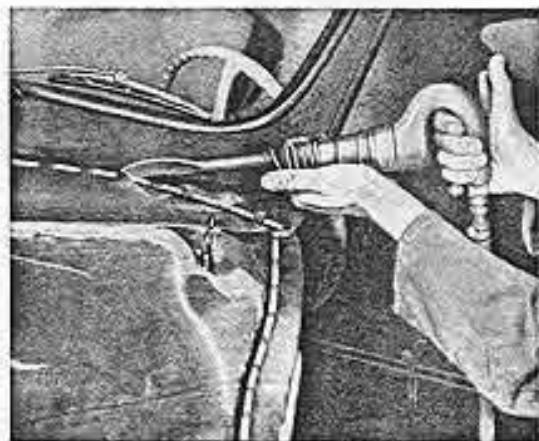
Side (Hinge pillar)



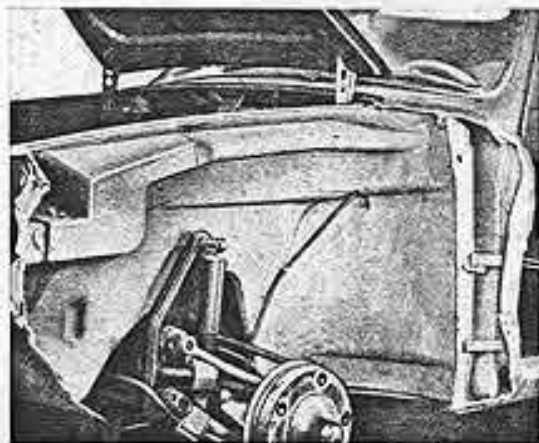
Front



- 2 - It is best to commence cutting at the hinge pillar.

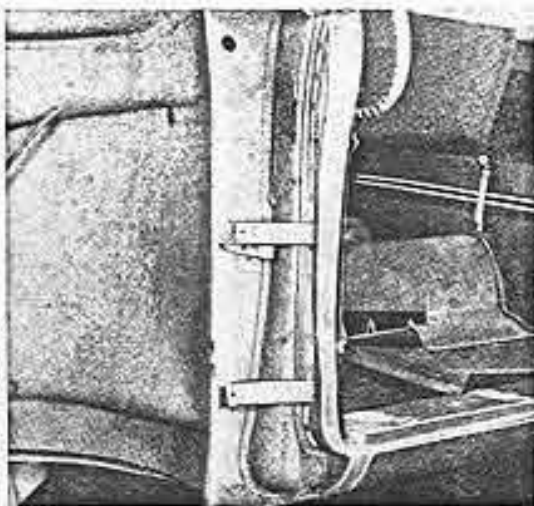


- 3 - Remove cut out side panel.

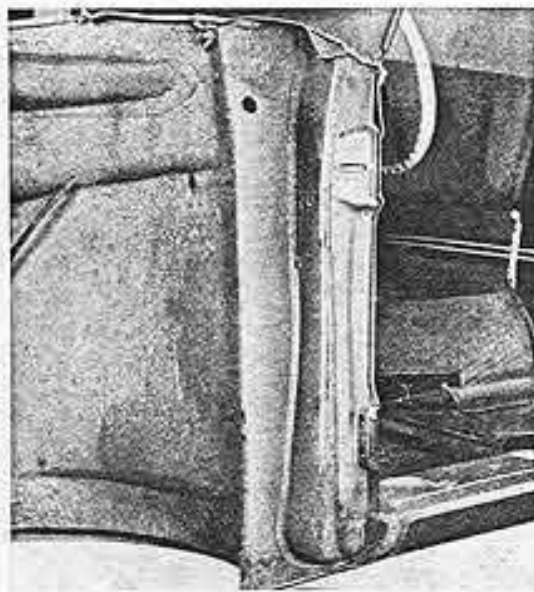


Attention

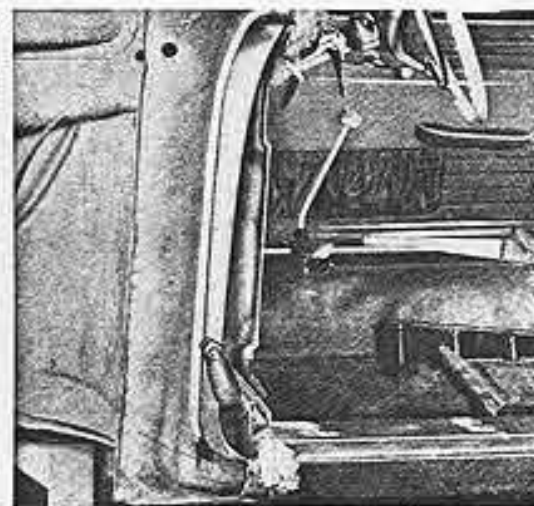
Protective gloves should be worn when removing or installing the side panel.



- 4 - Where damage to the side panel makes replacement necessary it is generally also necessary to replace the hinge pillar gusset plate. (The gusset plate is a separate part.) The parting cut to remove the gusset plate should be made as shown in the instructions (see picture).



- 5 - A complete hinge pillar replacement is not advisable for repair technical reasons if the roof is not being replaced. The top of the hinge pillar fits into the roof pillar and it is recommended therefore, that only parts of the hinge pillar are replaced. To do this, it is necessary to saw the hinge pillar off at the bottom of the roof pillar in such a manner that the new hinge pillar section, cut to fit, can be butt-welded into position.

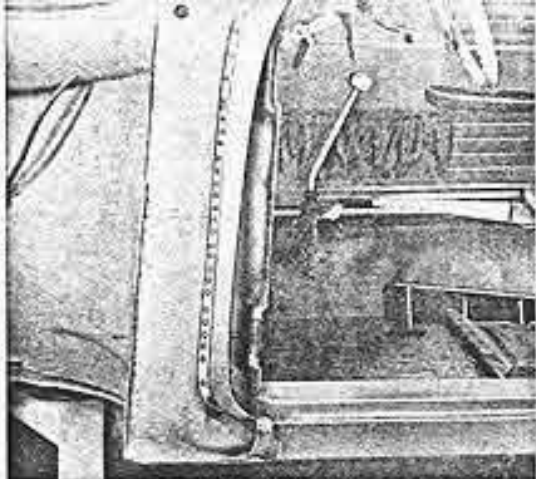


- 6 - Remove remaining pieces of the old gusset plate and grind spot welding marks flat.

- 7 - Coat all spot welding areas with spot welding paint or paste (see Special Hints, page A 76-1). Fit new gusset plate and clamp in position with body clamps.

Spot weld gusset plate with a push type spot welder.

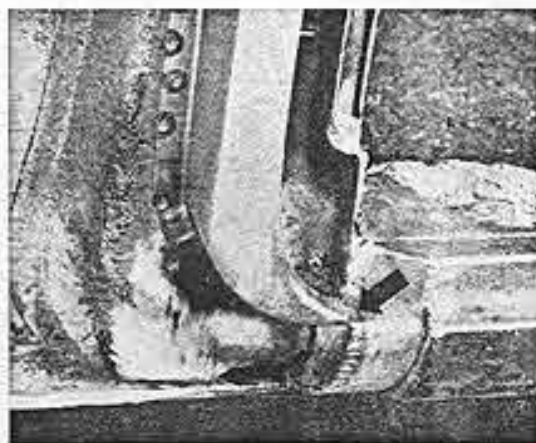
10-10



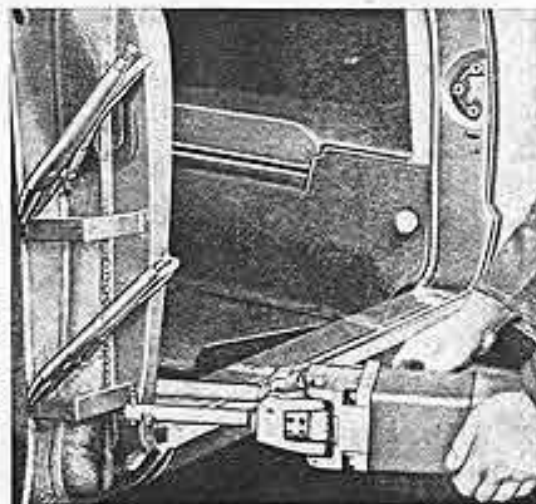
Gas weld top



and bottom joints

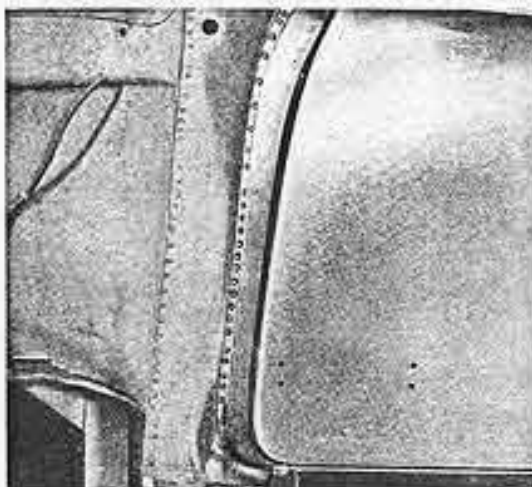


8 - Spot weld brackets for cover plate.



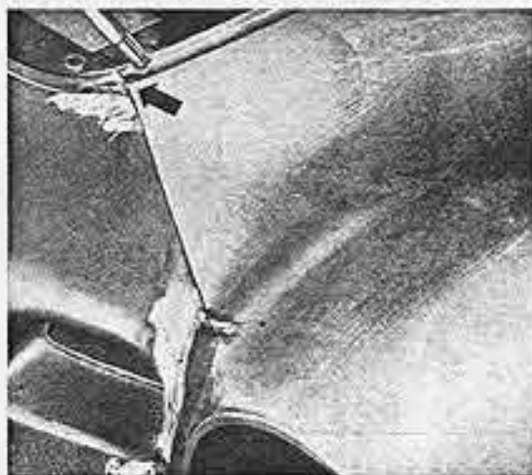


9 - Fold the gusset plate outer edge over.

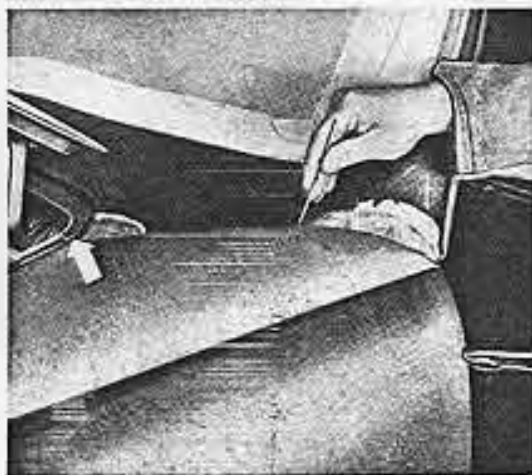


10 - Before proceeding any further it is essential to install the door and check that the clearance between door and gusset plate is uniform over the whole length. The clearance should be approximately 8—10 mm.

This comparatively large clearance is necessary in order to leave sufficient space for the folded edge of the side panel which is to be installed.



11 - Remove door again.

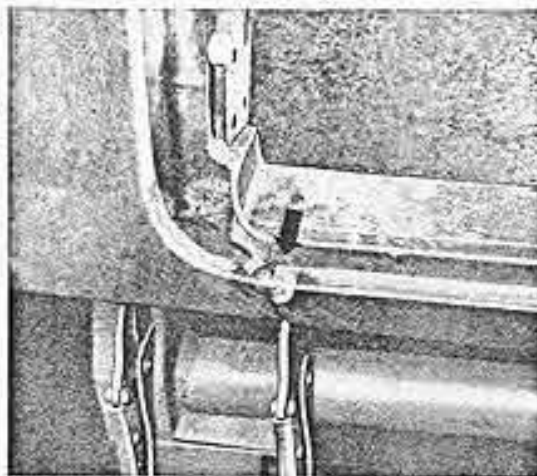


12 - Install new side panel and check fit. Location at front and rear is given by the weld seams (see arrow).

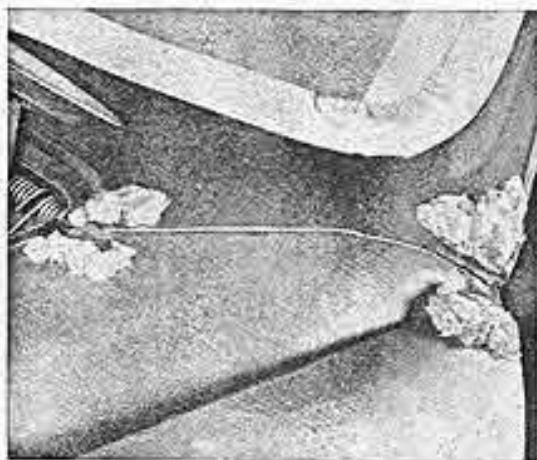
Mark off new side panel on the body.

Remove side panel and cut overhanging edges on body back to the marked line. Install side panel again, position and prepare for welding.

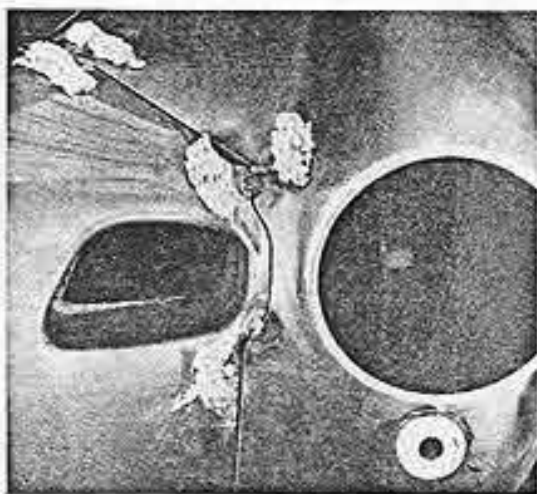
13 - Tack weld side panel to sill panel.



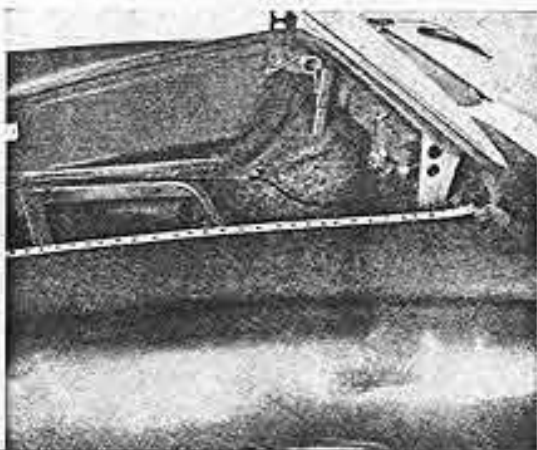
Tack weld inner and outer ends of joint at windshield frame.

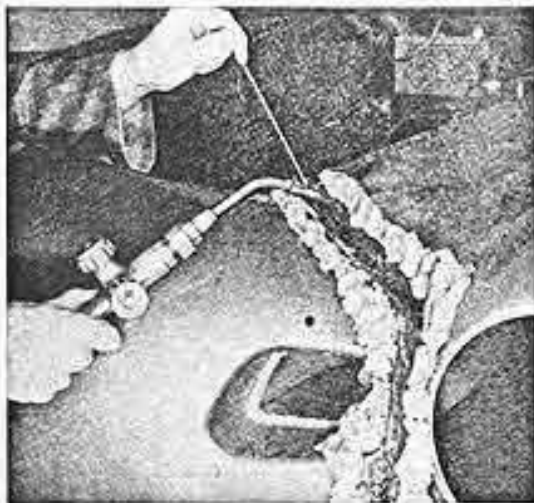


Tack weld at front panel.

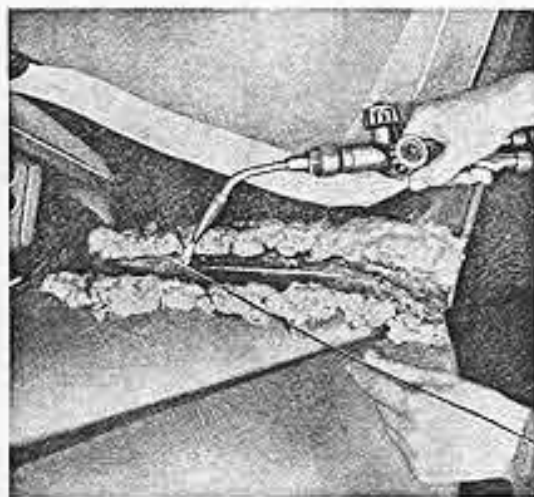


14 - Spot weld to body along the front hood opening.





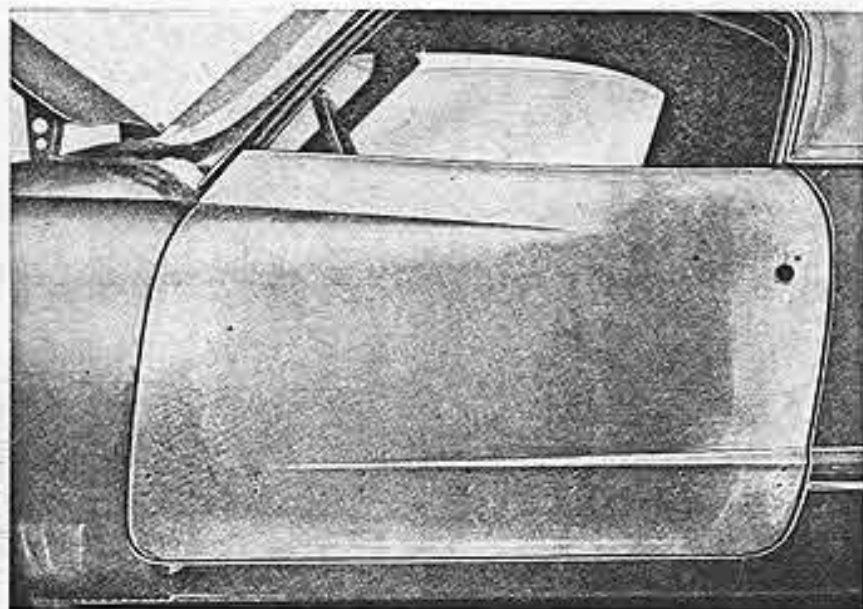
15 - Butt weld the new side panel to the body with gas welding.



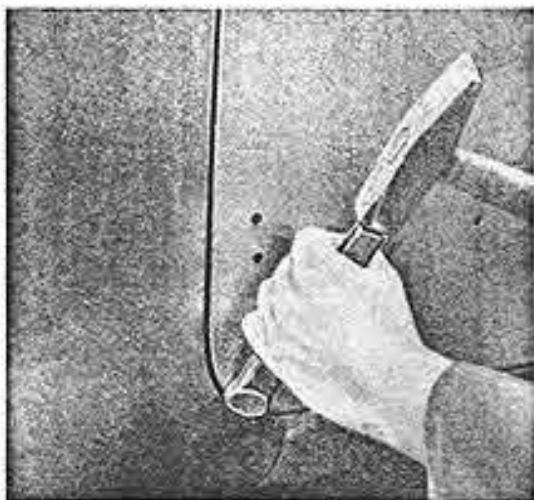
Notes:

Pack the windshield frame, front and side panels adequately with asbestos along the areas to be welded.

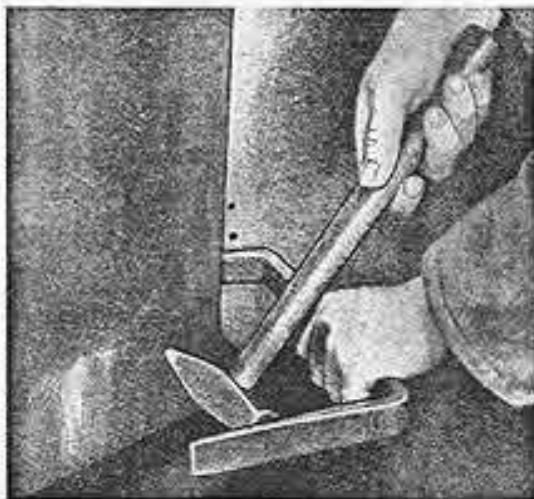
16 - Install door again and check fit.



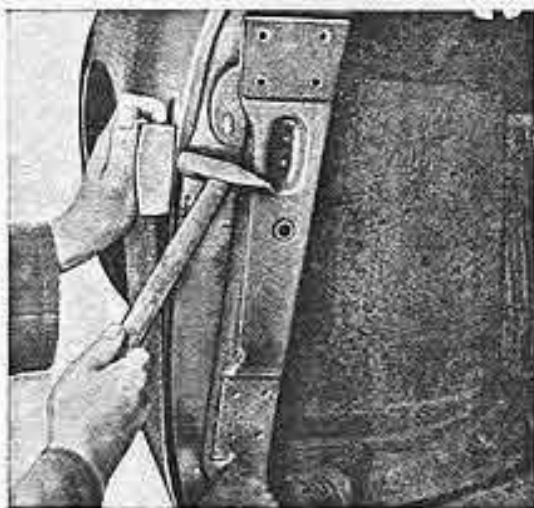
If necessary, the edge of the front side panel can be corrected with the Door Frame Tool VW 740 (Local Manufacture).



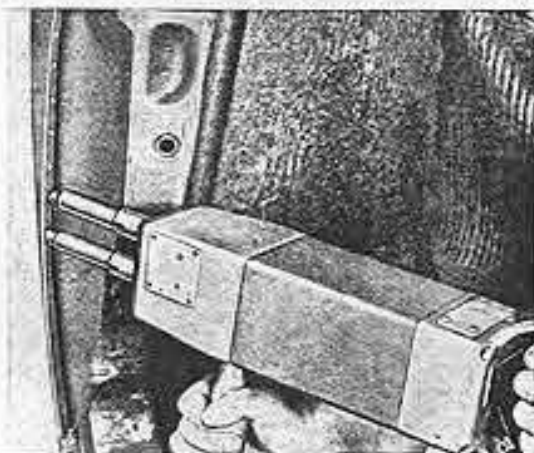
To pull the side panel outwards slightly in the door opening the bending bar VW 741 (Local Manufacture) can be used.

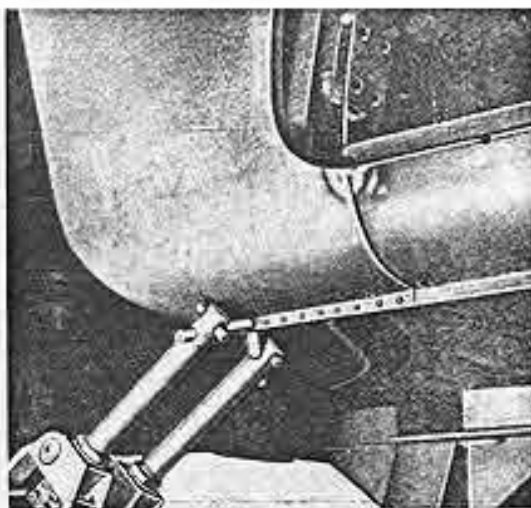


17 - Finally remove the door again, fold the outer edge of the side panel over and weld it

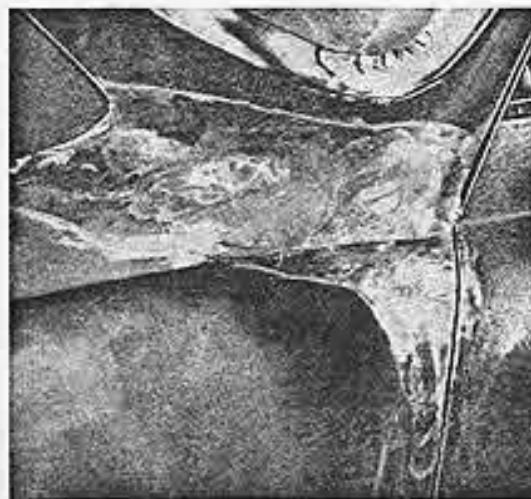


to the gusset plate with a push type spot welder.

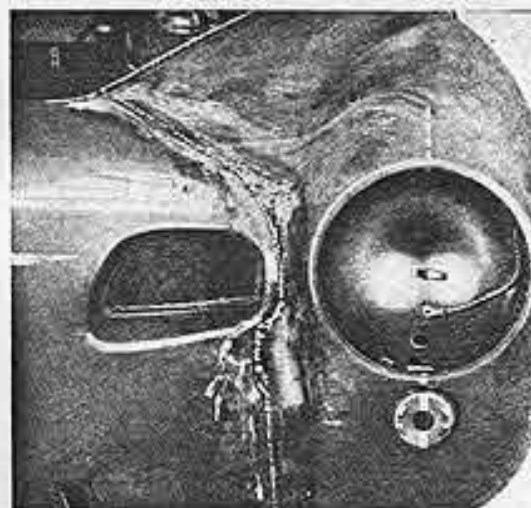




- 18 - Weld the lower edge of the side panel to the hinge pillar.



- 19 - Smooth all spot welds and gas welded joints as far as possible and coat with solder.



- 20 - When this work is completed the head lamp housing is inserted. It is essential to ensure that the housing is located exactly in the center before spot welding.

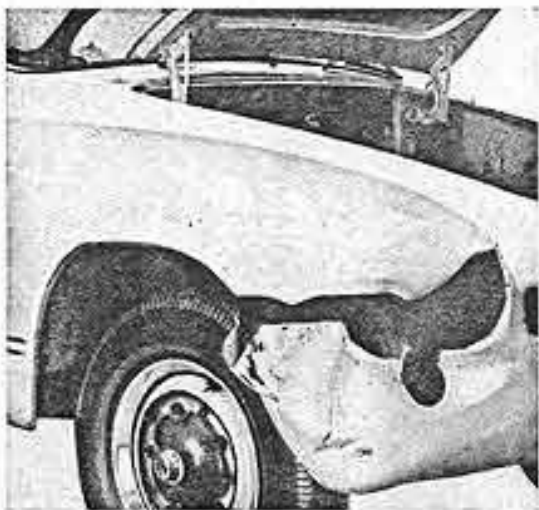


- 21 - Grind all reworked areas smooth and prepare vehicle for painting.

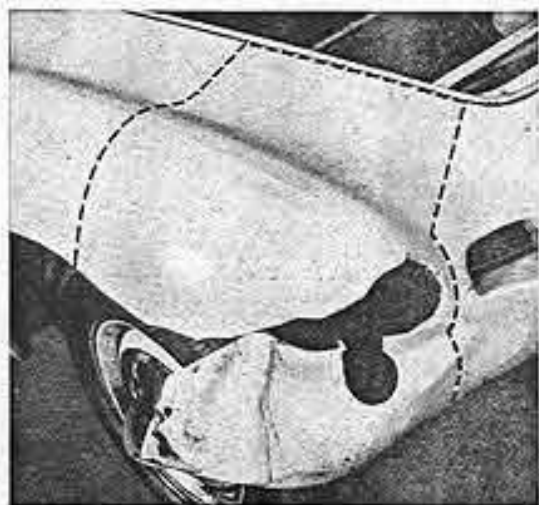
Partial Replacement of Front Side Panel

Body Repair Work

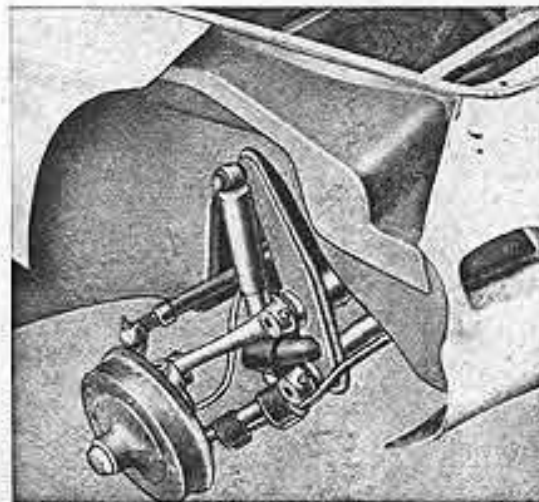
The following repair operation was carried out on a Karmann Ghia Coupé where the damage to the right front side panel was such that a partial replacement was possible.



- 1 - Cut out the damaged section with a sheet metal chisel (Local Manufacture Drawing VW 732) at the places shown.

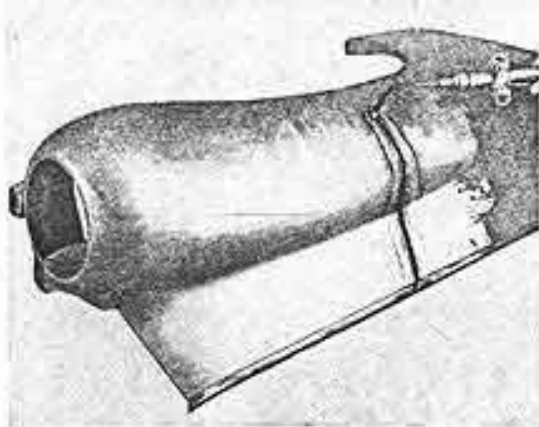


- 2 - Remove damaged section.



Attention

Protective gloves should be worn when removing and later when installing the section.



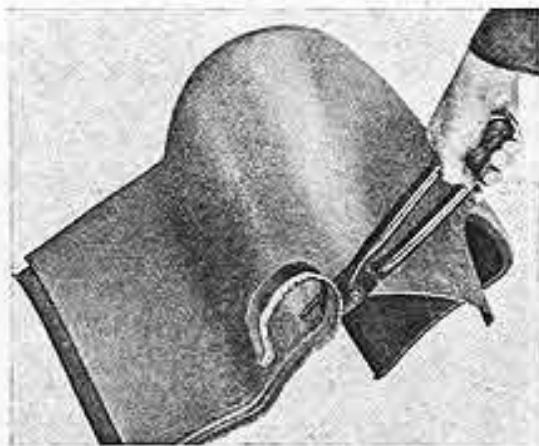
- 3 - Cut a section from a new side panel slightly larger than opening in the old panel.

Straighten the edges of the new section with tin snips.

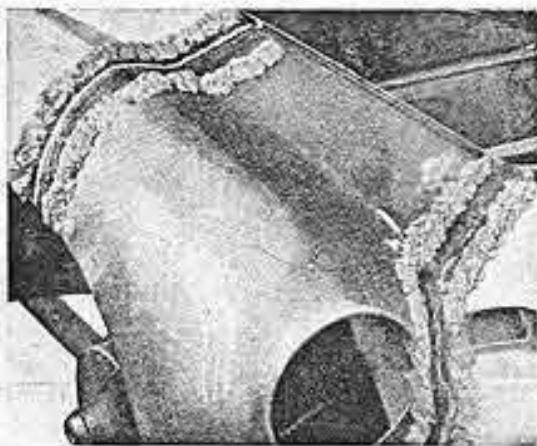


- 5 - Tack weld the section to the body (see arrows).

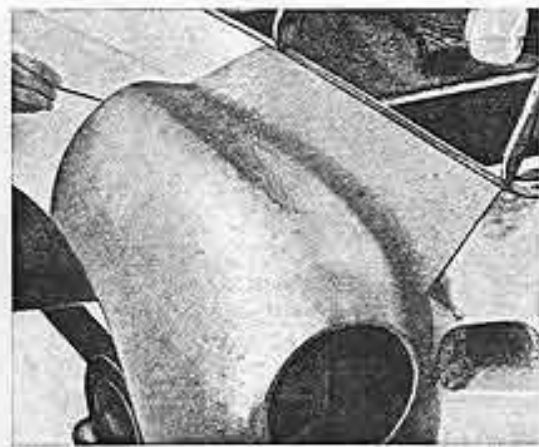
- 6 - Pack the side and front panels with asbestos along the joints to be welded.



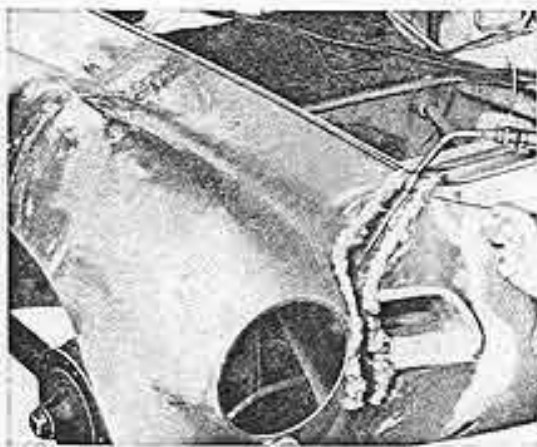
- 4 - Clamp the new section in position and mark off on the body.



- 7 - Butt-weld the new section to the body.



- Remove new section and cut the overhanging edge on the body back to the line marked. Install section again, position and prepare for welding.



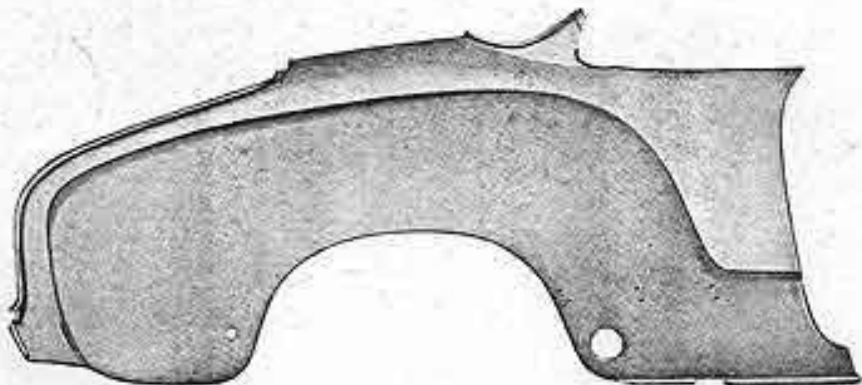
- 8 - Smooth all weld seams as far as possible and coat with solder. Spot weld the headlamp housing and grind smooth. Prepare vehicle for painting.



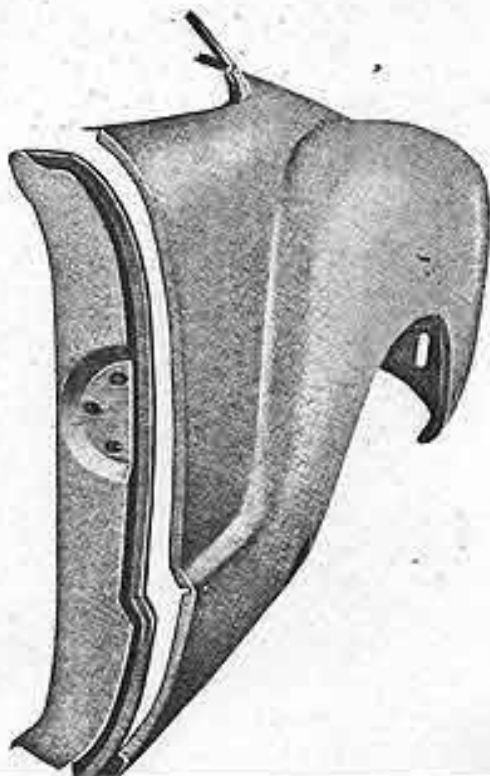
Quarter Panel



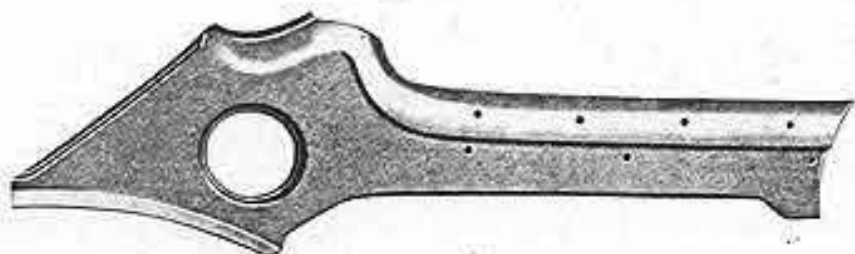
The quarter panel is pressed out of a single sheet and is supplied as a spare part in this form.



When installing the quarter panel in the Karmann Ghia Coupé it should be spot welded to the lock pillar which is available as a separate part.



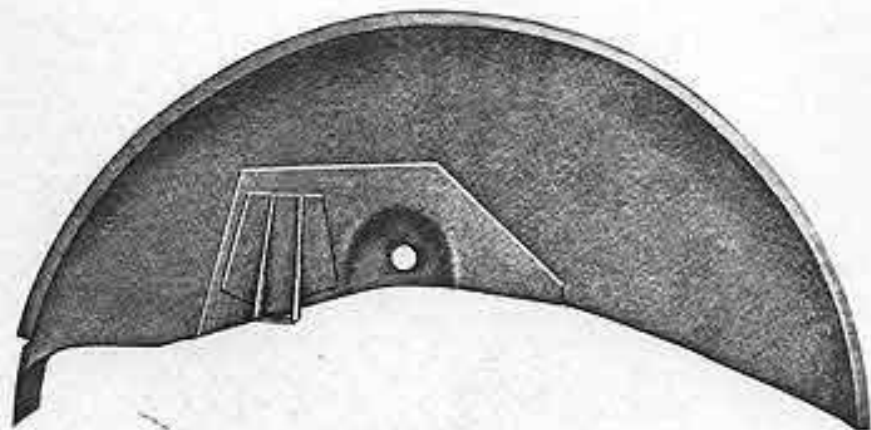
The inner quarter panel is also supplied separately and is attached in the quarter window area.



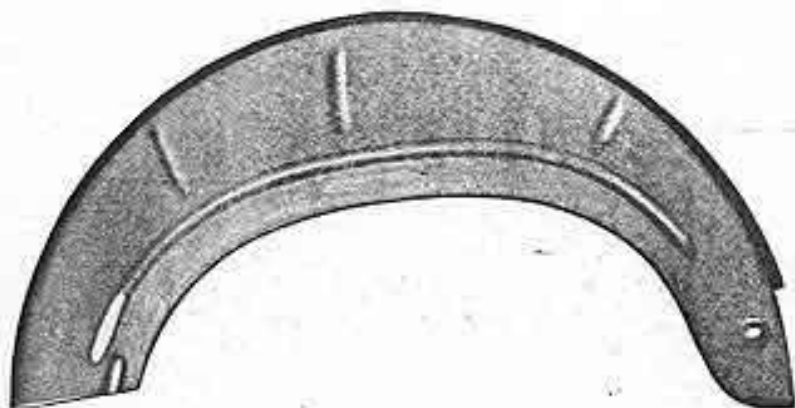
It is welded to the inner wheel housing, the quarter panel, the lock pillar and the roof pillar.



In the lower area the quarter panel is spot welded to the side member, the outer wheel housing and the rear panel. Outer and inner wheel housings are supplied separately and can be renewed when the quarter panel is being replaced.



Inner wheel housing

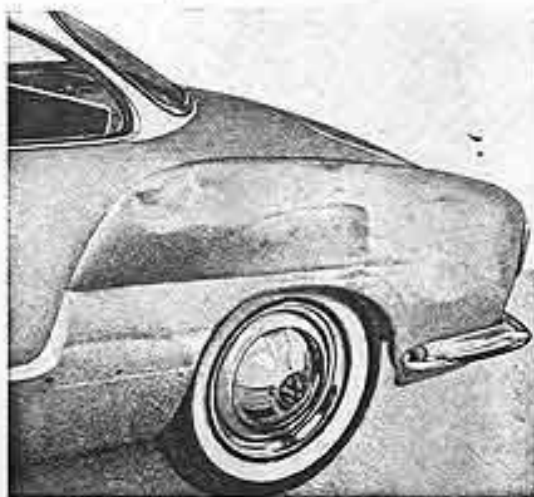


Outer wheel housing

The quarter panel is welded to the body and to the parts mentioned above by means of the so-called joining flanges. Butt welding is only necessary at the rear top panel.

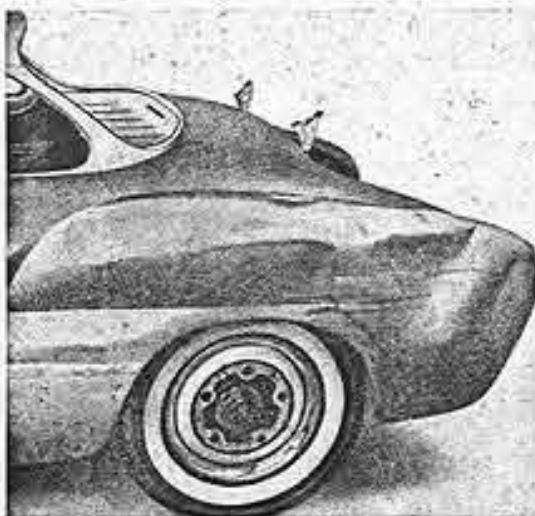
The quarter panel can also be partially replaced if its condition is considered suitable. The damaged section should be cut out and replaced by a section cut to correspond and butt welded in position.

The following repair operation was carried out on a Karmann Ghia Coupé where the left quarter panel and left hand door were so badly damaged that a partial replacement or straightening was not possible. The outer wheel housing was also badly dented and distorted. This operation, therefore, covers the replacement of the quarter panel, the outer wheel housing and the door.



Preparation

- 1 - Disconnect the battery.
- 2 - Remove door and rear hood.
- 3 - Remove striker plate.

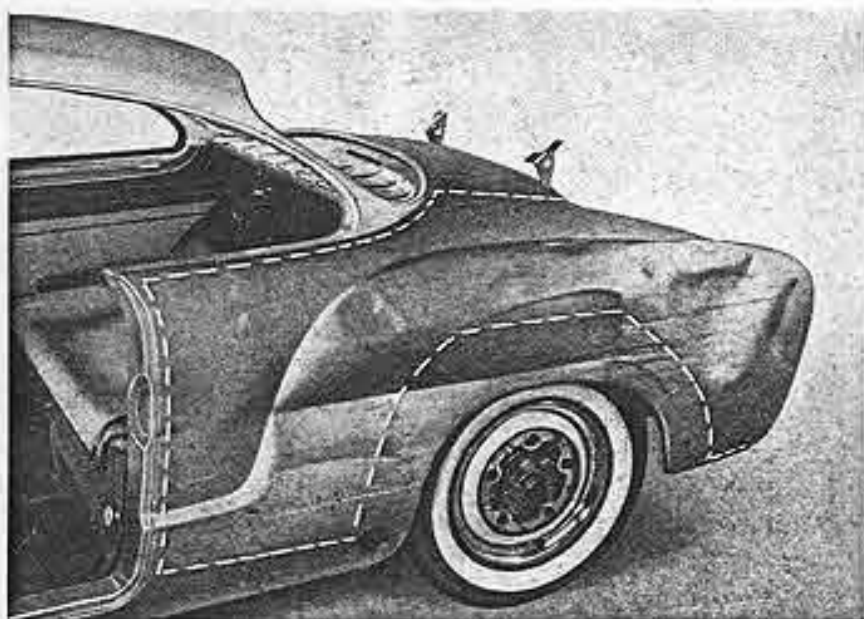


- 4 - Remove rear and quarter windows.

- 5 - Remove seats and floor mats.
- 6 - Remove interior trim where necessary or cover adequately.
- 7 - Remove rear hood weatherstrip or partly withdraw from channel.
- 8 - Remove rear lamp and place the cable in the engine compartment so that it will not be damaged.
- 9 - Remove quarter window weatherstrip channel.
- 10 - Remove rear bumper.
- 11 - Remove sealing compound from weld seams where necessary.
- 12 - Remove sound insulating lining and packing from the engine compartment on the appropriate side.

Body Repair Work

- 1 - Cut the quarter panel out with a sheet metal chisel (Local Manufacture drawing VW 732) at the places shown.

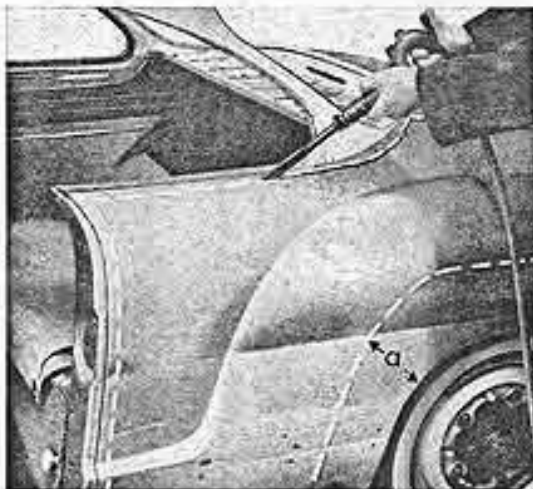


The use of a chisel for this operation is recommended in preference to a welding torch owing to the risk of the cut edges not being straight and the interior body parts being damaged.



- 2 - The cut line must run roughly 20 mm from the weld seam to avoid damage to the joining flanges or the inner body panels. At the top half of the wheel opening the spacing should be 250 mm to prevent the outer wheel housing being damaged.

To enable the cutting line between quarter panel and rear top panel to be marked the position of the weld seam must be located. The weld seam is visible on the rear window frame and in the channel for the rear hood weather-strip.

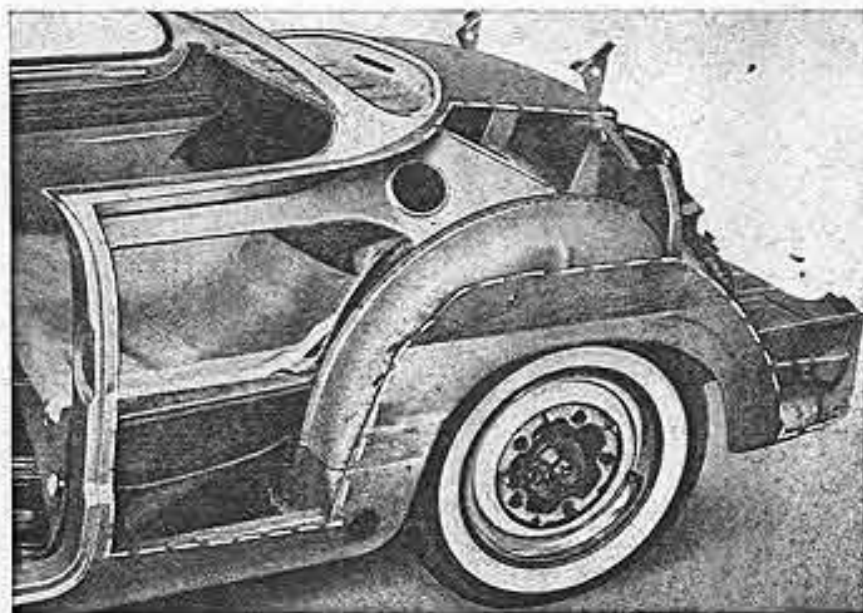


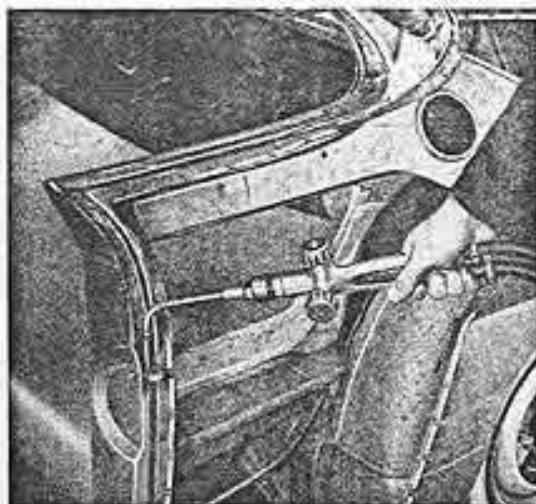
$a = 250 \text{ mm (9.8")}$

- 3 - Remove the section which has been cut out.

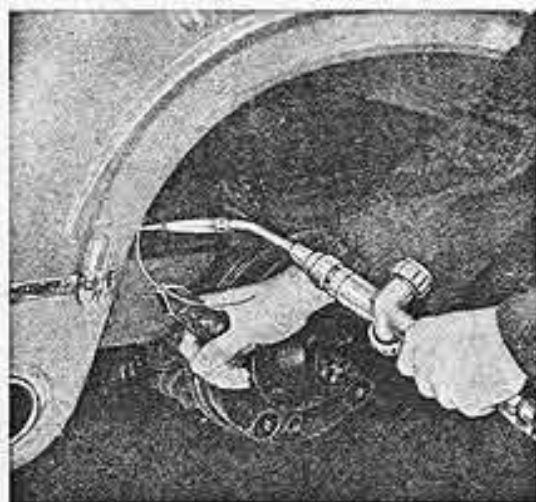
Attention

Protective gloves should be worn when removing and later when installing the quarter panel.

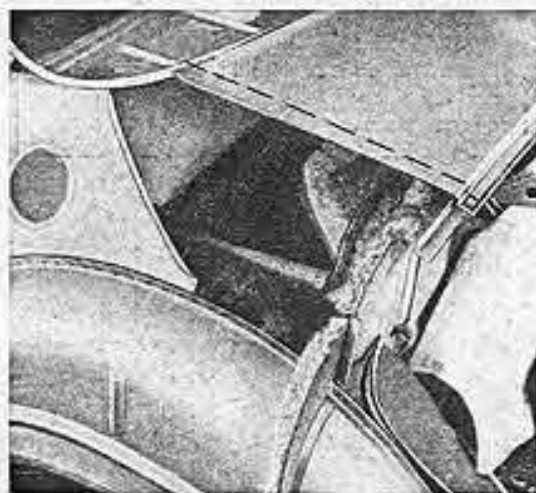




- 4 - The weld seams and joints between quarter panel and window frame (quarter window) are coated with solder to give a smooth finish. Before removing the sheet metal edges it is necessary to heat this solder with a welding torch and scrape it off with a suitable scraper or wire brush. The seams are then easier to see and the metal edges can be removed better.



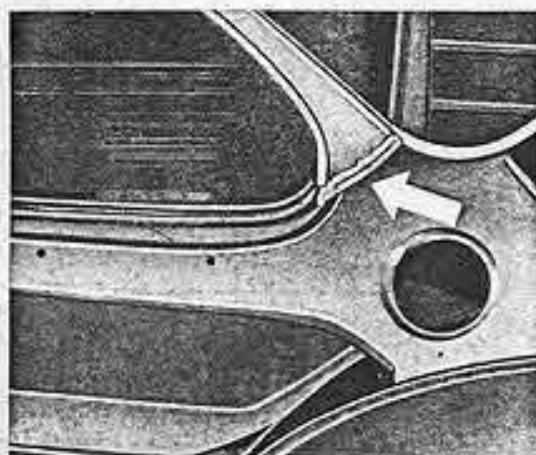
- 5 - The operation is facilitated if the vehicle is placed on blocks and the rear wheel taken off, after the large sections of the side panel have been removed.



- 6 - Remove the remaining edges of the quarter panel and grind spot welds clean. Straighten joining faces where required, grind smooth and prepare for installation.

Notes:

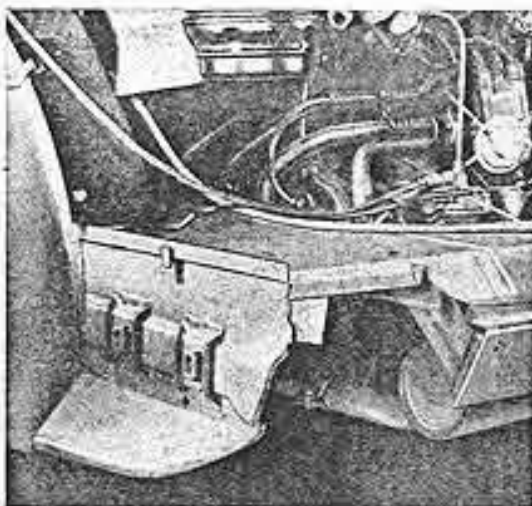
Remove the metal edges by twisting with a pair of pliers and not by pulling as otherwise the spot welds will be pulled out and leave holes. In some instances it may be advisable to heat the spot welds with the welding torch and then pull the metal strips off with the pliers.



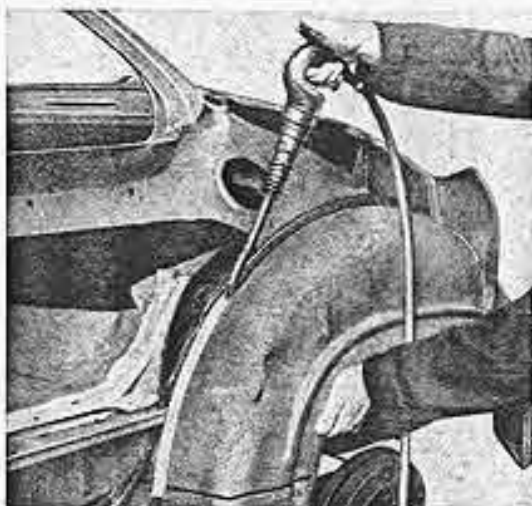
- 7 - At the top rear panel cut the metal off cleanly about 10 mm from the weld seam (see dotted line).

- 8 - The roof pillar should be cut off about 5 mm under the rain channel (see arrow) and not at the weld seam.

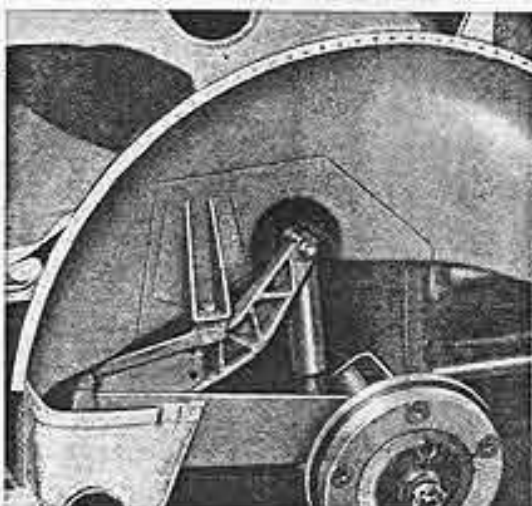
- 9 - Remove the metal edges from the joining flanges at the back in the same manner as above and straighten the flange if required.



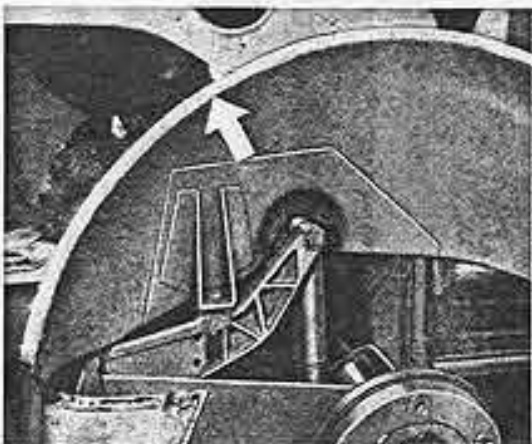
- 10 - Cut the outer wheel housing off near the joining flange with a sheet metal chisel.



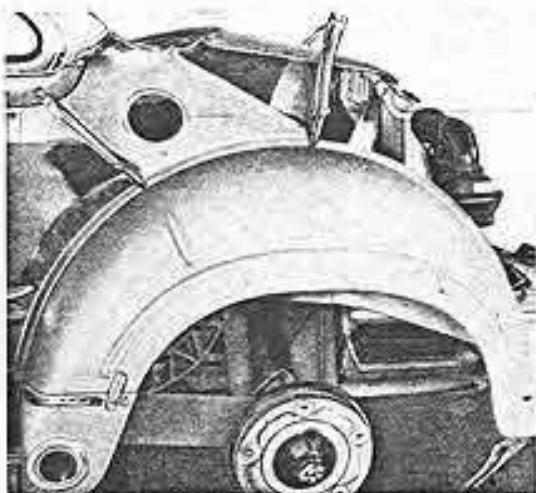
- 11 - Remove metal edges from the spot welded seam of the inner wheel housing. Grind spot welds smooth and prepare for assembly.



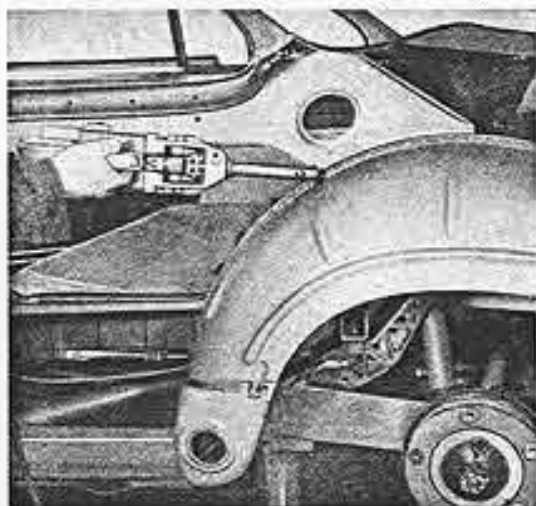
- 12 - Check new outer wheel housing for fit and rectify if necessary.



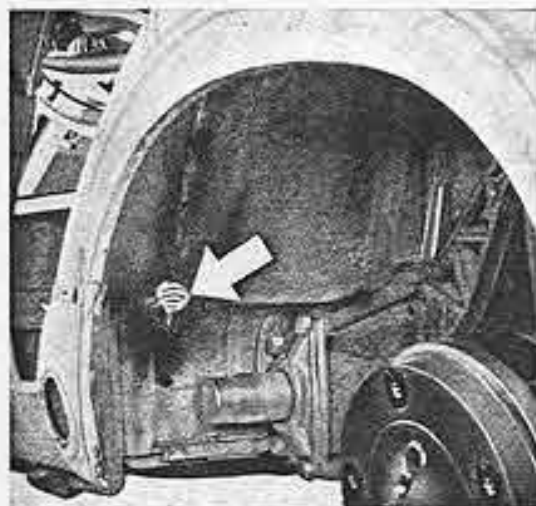
- 13 - Seal the area to be spot welded with a coating of spot welding paste. Details of the manufacturers and usage of spot welding paint and paste are given under "Special Instructions" on page A 76/1.



14 - Place outer wheel housing in position and clamp to body.



15 - Spot weld outer housing to inner housing.

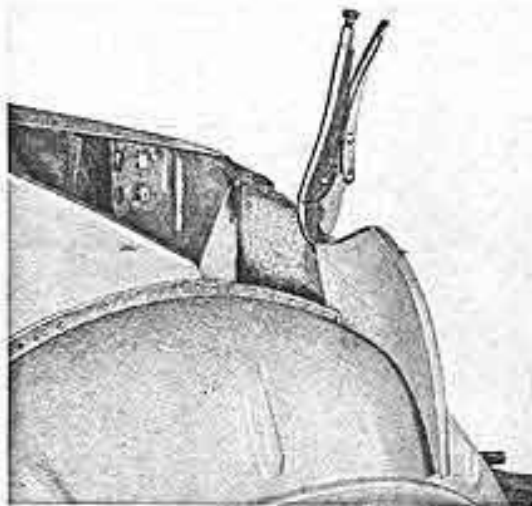


16 - The lower corners between outer and inner wheel housing should be gas welded at front

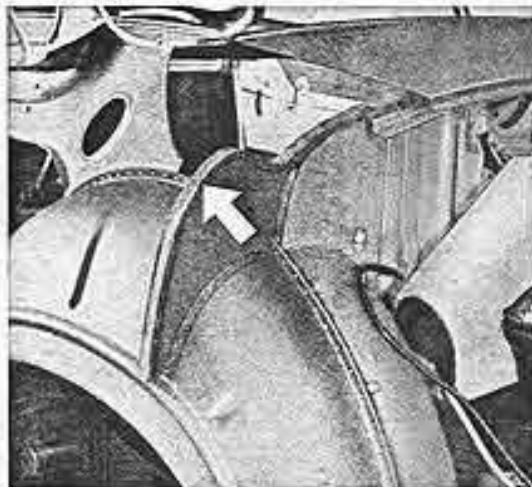


and rear

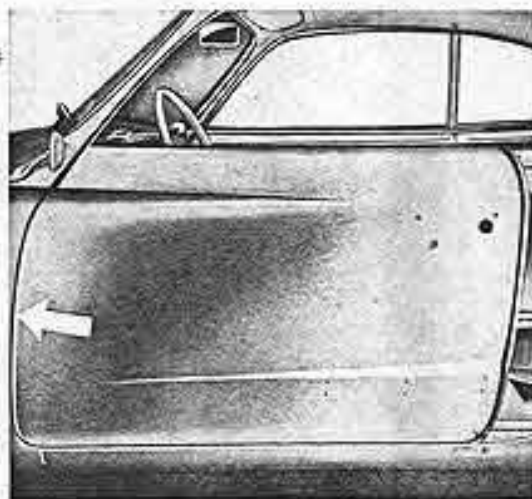
- 17 - Clamp the extension to the welded part of the luggage compartment rear panel onto the body.



Spot weld the extension to the wheel housing and cement a felt strip of suitable width to the top edge for sealing.



- 18 - Install door and check fit. Verify that the door gap at the hinge pillar is the same width over the whole length. At the same time the top edge of the door at the lock pillar must be correctly aligned with the quarter panel (Window frame top edge). The door gap at the lock pillar is aligned by the application of solder at a later stage when the quarter panel has been installed.



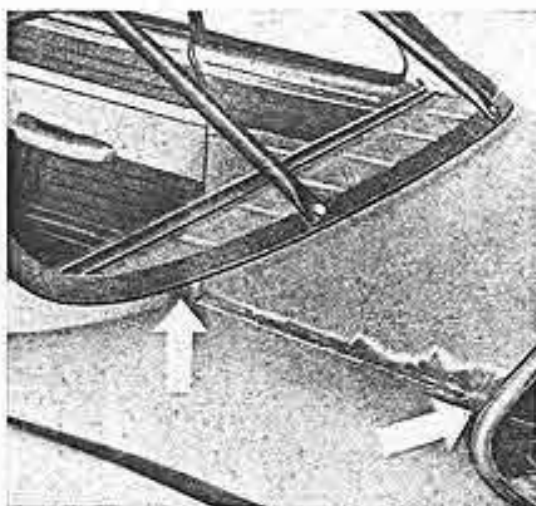
- 19 - Prepare quarter panel for installation. Grind spot welds smooth.

- 20 - Gas weld the quarter panel to the top rear panel.

The gas welding calls for sound knowledge and experience in butt welding. Unskilled welding can cause the formation of waves and distortion which will prove very difficult or even impossible to eliminate. It must be emphasized,

however, that good gas welding is equivalent to the original condition.

To ensure good welding the joining edges of the quarter panel and the top rear panel must be perfectly straight and parallel over the whole length when the panels are installed.

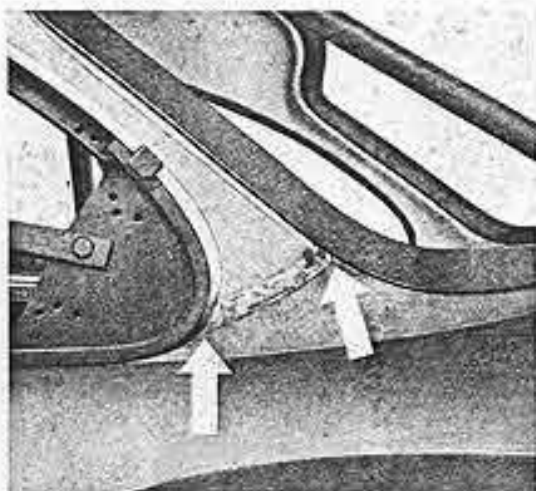


21 - All spot welds on the wheel housing which have been ground smooth should be coated with spot welding paste to prevent corrosion (see Special Instructions — page A 76/1).

22 - Install side panel, position correctly and clamp.

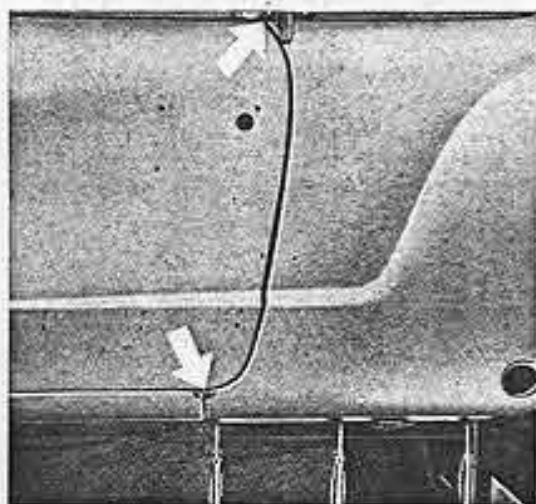
23 - Insert window gauge. Further details of the window gauge can be found in "Body General" section under the heading "Workshop Equipment".

24 - Tack the quarter panel to the top rear panel at front and rear with the welding torch.

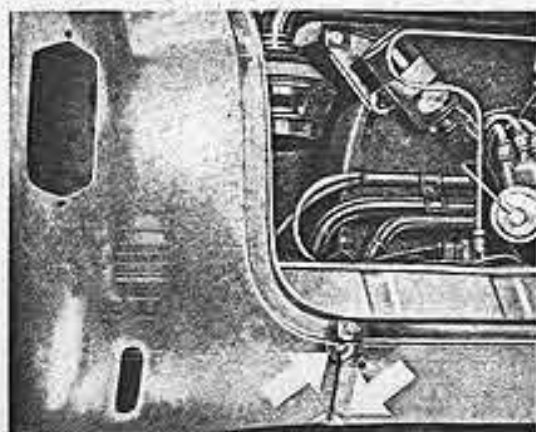


25 - Tack the quarter panel to the roof pillar at the left and right with the welding torch.

The space between the quarter window gauge and the quarter panel is filled with solder later on.

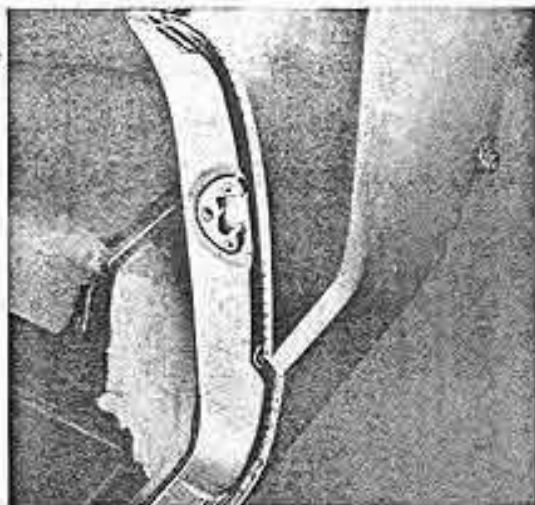


26 - Tack the quarter panel to the lock pillar at the top and to the lock pillar and sill* panel at the bottom with the welding torch.



27 - Tack the quarter panel to the rear panel at top and bottom with the welding torch.

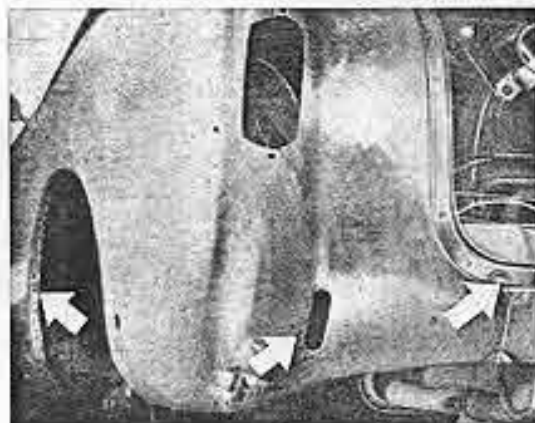
- 28 - Remove the window gauge and spot weld the quarter window to the lock pillar and to the quarter window frame.



- 29 - Spot weld quarter panel to the side member.

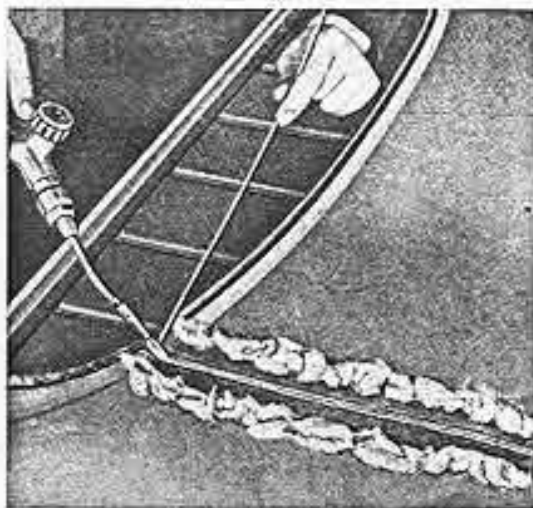


- 30 - Spot weld the quarter panel near and below the opening for the bumper bar bracket and also to the outer wheel housing. Gas weld the quarter panel to the rear panel in the channel for the rear hood weatherstrip.



- 31 - Pack roof pillar and quarter panel adequately with asbestos along the area to be welded and gas weld.



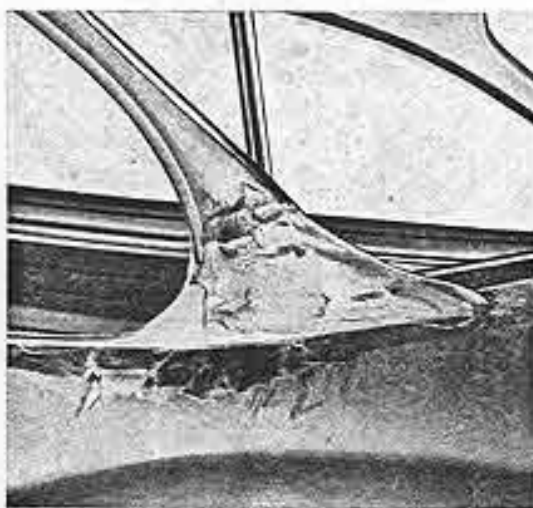


- 32 - Gas weld the quarter panel and top rear panel in the same manner with special attention to the following: Weld the panels first with short welds of 10 mm length spaced at intervals of 20 mm to avoid distortion of the sheet metal. When this operation is completed the joint can be finish welded over the entire length.

Note:

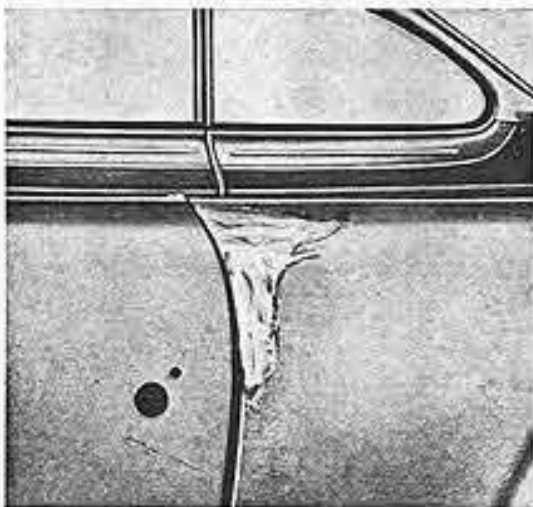
When tacking the panels together take constant care to ensure that no waviness or distortion appears. If this should happen it must be removed immediately, before the weld seams have cooled. This is the only way to ensure a perfect gas welded joint between the panels.

- 33 - Grind all spot and gas welded seams smooth.



- 34 - The unevenness caused by the welding on top rear panel, roof pillar, quarter window frame and the lock pillar is levelled out with solder. The sheet metal in the appropriate areas must be smooth and free from all traces of welding metal. The tinning compound, consisting of soldering powder and soldering solution is then applied. The compound must be warmed after application and the layer rubbed with a clean cloth. This wipes all the deposits off and leaves a thin layer of tin which forms a foundation for the soldering which follows.

- 35 - Apply the solder, and with a steady even heat spread it as required.



Take care that the door gap at the lock pillar is of uniform width over the full length. The picture shows the upper part of the door gap reduced by solder and below it, the original width.

- 36 - Grind all reworked places smooth and prepare the vehicle for painting.



Spot Welding Paste and Paint

A - Spot welding paste

In order to obtain water-tight joints, the parts of metal panels which are to be welded are given a coating of sealing paste which is not affected by welding.

This standard manufacturing procedure should also be adopted for bodywork repairs.

The paste can be obtained direct from the manufacturers:

Manufacturer	Designation
Bonaval-Werk, Bonn, Germany, Brühler Straße 2—20	Spot welding paste 59 852 or 60 506
Teroson-Werke G.m.b.H., Heidelberg, Hans-Bunte-Straße 4, Germany	Spot welding paste 2257

The paste is applied before welding commences. Before and after welding the paste should not run. At the joints it should form a film which adheres firmly, prevents corrosion and renders the joint water-tight. It must also remain unaffected by degreasing agents and subsequent painting.

Paste which burns during spot welding should cease to do so as soon as the heat is removed.

The paste should only be employed where water-tight seams are stipulated and where it is impossible or difficult to apply sealing compound after welding.

B - Spot welding paint

Spot welding paint is used to prevent corrosion in hollow parts which cannot be painted after welding due to inaccessibility.

Manufacturer	Designation
Teroson-Werke G.m.b.H., Heidelberg, Hans-Bunte-Straße 4, Germany	Spot welding paint 2273

Before welding, spray or paint all components with spot welding paint.

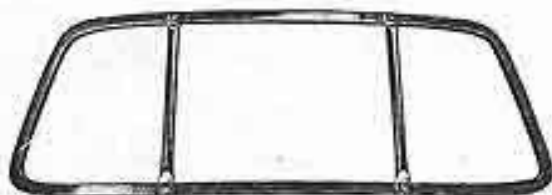
General

The use of the above products does not simplify the welding process. It may be necessary to step up the welding current, depending on the thickness of the coat applied.

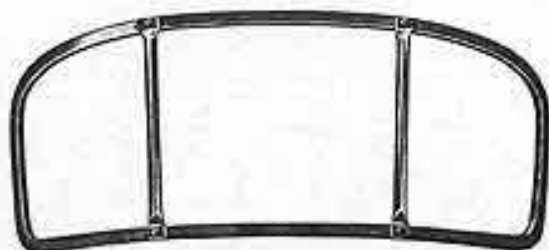
Superfluous material must, however, be removed before the part is given a coat of paint which must stand up to the conditions stipulated for the outside finish. Neither welding paste nor paint can be considered as a substitute for primer to which a top coat can be applied.

Templates for Karmann Ghia Coupé

The following body templates are available either in a set or individually for the Karmann Ghia Coupé. They are supplied by Messrs. Wilhelm Karmann GmbH., Osnabrück, Martinstraße 59.



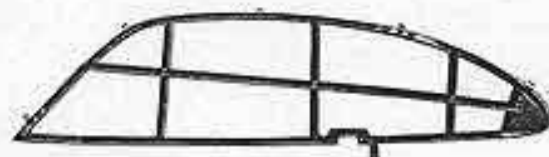
Template for windshield



Template for rear view window



Template for quarter window, right



Template for quarter window, left

These templates are essential when replacing the roof, individual roof side members, rear quarter panels, or front and rear portions, in so far as any of the windows are affected by these operations. Moreover, the window openings can be checked for proper measurement by means of these sturdy templates which are resistant to distortion.

All questions as regards supply and prices should be addressed to the above-mentioned firm.

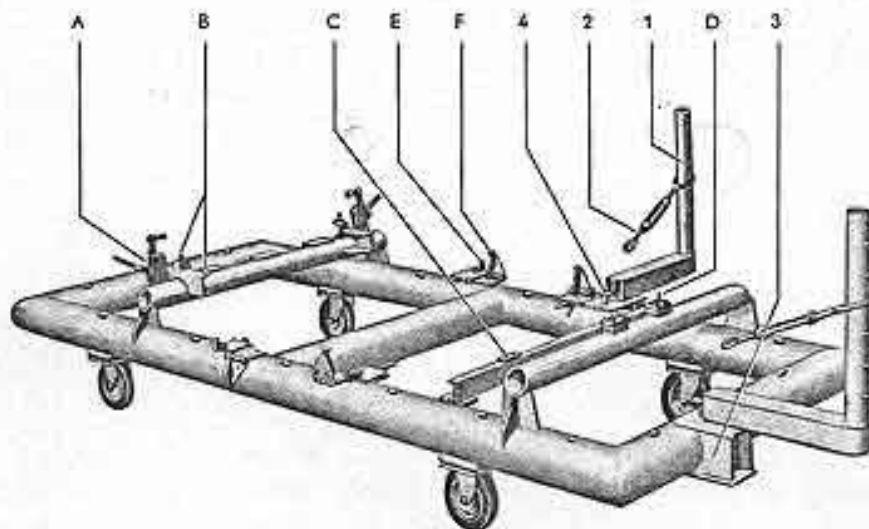
Body Repair Trolley for Passenger Car Bodies

Messrs. Wilhelm Karmann GmbH. produce a body repair trolley which can be used for the bodies of all VW 1200 and Ghia models.

The rigid tubular construction of the body repair trolley with additional reinforcement is distortion-resistant even when subjected to considerable stress. Its range of application is as follows:

1 - Measuring the body

Mounting and measuring points (A, B, C, and D), as well as welded on contact gauges (E and F) for the body sills make it possible to check the body accurately for proper alignment.



2 - Straightening of body

Stanchions (1) and turnbuckles (2) which can be attached to the trolley frame at various points by means of locking pins (4) inserted at the stanchion brackets (3) allow panel beating operations and straightening to be carried out on the body in transverse and longitudinal directions in conjunction with a number of adaptors. As the body is bolted to the trolley and also held by clamps it cannot move out of position.

For example, on Ghia models, damaged front and rear side panels can be pulled out to the proper body contour and repaired in this condition. Hinge pillars can be straightened by means of the turnbuckles (2) on the stanchions (1). Dented front and rear ends can be straightened with said tools where appropriate.

3 - Replacing larger body parts

The complete side, front or rear end of a body can be renewed without involving dimensional errors by using body sill templates that can be bolted to the trolley.

The body repair trolley has rubber wheels for easy transport.

The trolley is delivered with

2 stanchions

2 locking pins

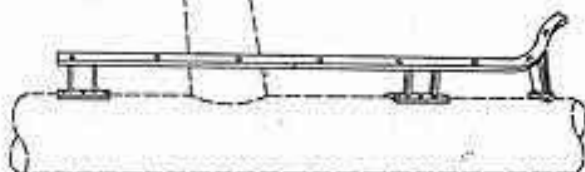
2 stanchion brackets

2 turnbuckles

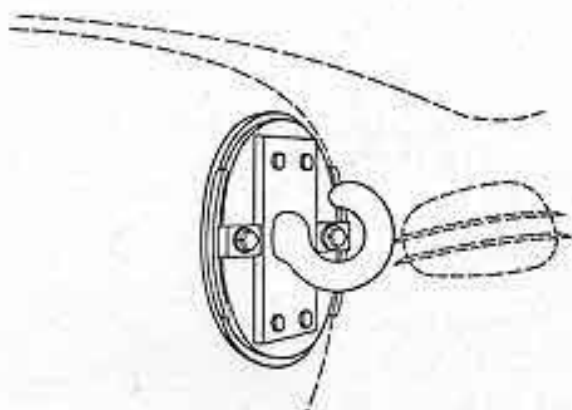
The additional parts listed below can also be ordered from the firm Karmann:



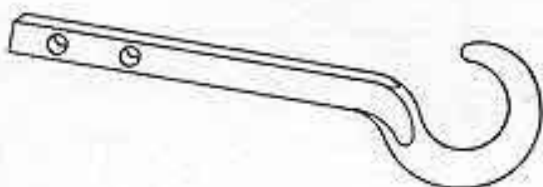
2 body sill templates
for VW Sedan and Convertible



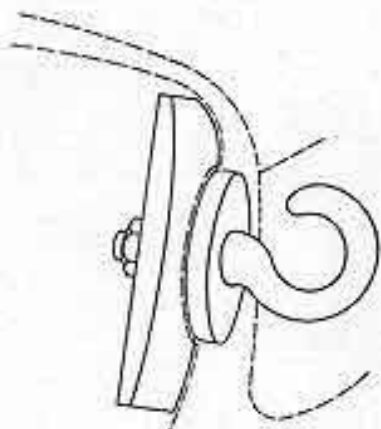
2 body sill templates
for Karmann Ghia models



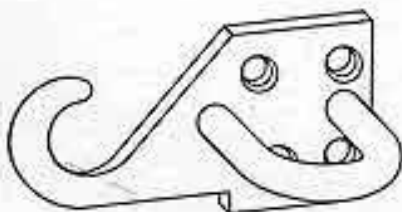
1 insert for headlight opening
(Karmann Ghia models)



1 attachment for front and rear
bumper brackets



1 insert for tail light
(Karmann Ghia models)



1 attachment for hinge pillar —
upper hinge



Body – Karmann Ghia Convertible

This section deals only with the assembly and body repair operations which differ from those on the Karmann Ghia Coupé.

Contents:

80 - Description of Body

Assembly Work

81 - Doors and Windows

83 - Convertible Top

85 - Special Hints

Replacement of Body Parts

88 - Windshield Frame

89 - Special Hints



Description of Body

Karmann Ghia Convertible

General

Apart from the top and minor points described here, the construction, shape and trim of the Karmann Ghia Convertible is identical to that of the Coupé.

To compensate for the slightly reduced stability when the top is open the body of the Karmann Ghia Convertible is reinforced at the following places:

- a - at the hinge pillar upper sections by means of stiffeners welded into the windscreen frame;
- b - at the side members by welded reinforcements;
- c - at the lock pillars by the main hinge brackets and their supports;
- d - at the quarter panels by welded-on reinforcement plates;
- e - at the upper part of top compartment and quarter panels by welded-in sheet metal stiffeners.

Variations from the Karmann Ghia Coupé

- 1 - The rear window is 730 x 320 mm and made of flexible plastic material.
- 2 - No quarter windows.
- 3 - The interior lamp is under the instrument panel.



Door and Striker Plate Adjustment

When the door and striker plate have been installed the position of the door in the door opening should be checked with the top open as follows:

- 1 - Alignment of door and side panel
- 2 - Alignment of door and quarter panel
- 3 - Uniform clearance between door and lock pillar

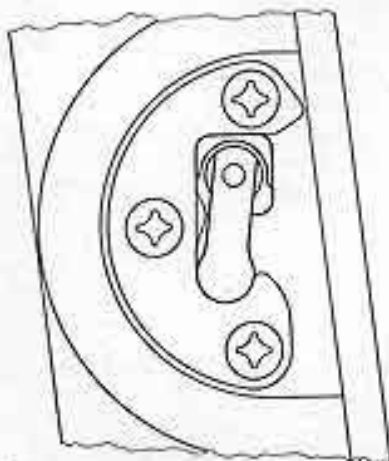
If these positions are not correct proceed as follows:

Re 1 - Remove striker plate and loosen door hinges at the hinge pillar only. Move the door in or out as required and re-tighten hinge screws.

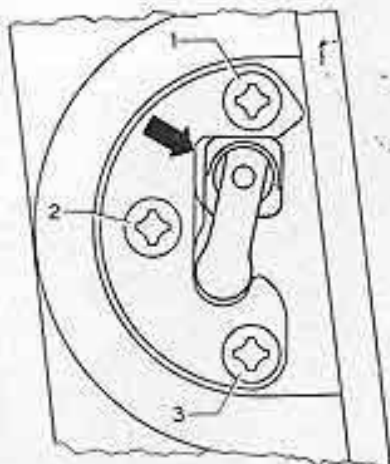
Re 2 - Install striker plate and adjust. The striker plate is properly adjusted if:

- a - The door is correctly aligned with the quarter panel;
- b - No play can be felt between lock and striker plate when forcing the door handle in and out. To align the door and quarter panel move the striker plate in or out.

Play will exist between lock and striker plate if the upper part of the latch does not rest against the striker plate.



correct

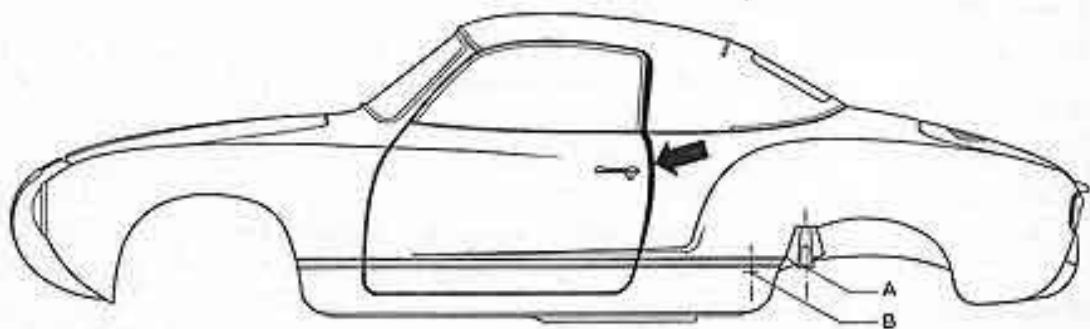


incorrect

In this case loosen screws 1 and 2 slightly and move the striker plate out at the top. Tighten screws and check play.

If the door springs back when slammed to, loosen screws 1 and 2 again and move the striker in slightly at the top.

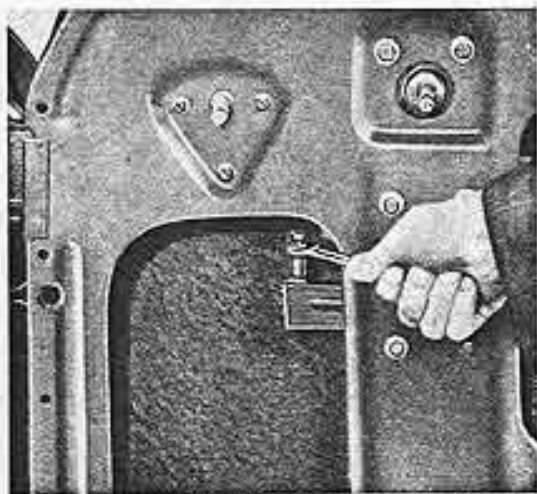
Re 3 - When the gap between door and lock pillar widens towards the top instead of being uniform over the full length, loosen the body securing screws and remove them at points A and B.



Insert 3 mm thick hard rubber packings left and right at the points indicated. Re-tighten the screws which were loosened to a torque of 3 mkg. If the door gap is still not correct, insert thicker packings.

Adjustment of Door Window Glass

One essential requirement for door glass adjustment is the correct fit of the door in the door opening.



Vertical Adjustment

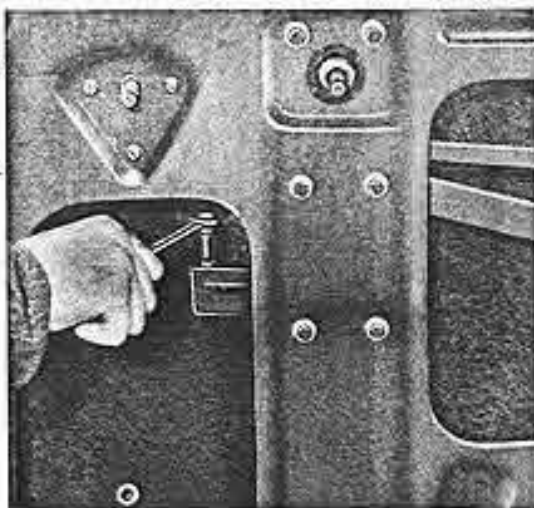
- 1 - After removing the window regulator handle, inner door handle, door trim panel and plastic sheet, loosen adjusting screw lock nut.

- 2 - Regulate the door glass by turning the adjusting screw to left or right.

Turning to left — lowers glass
Turning to right — raises glass

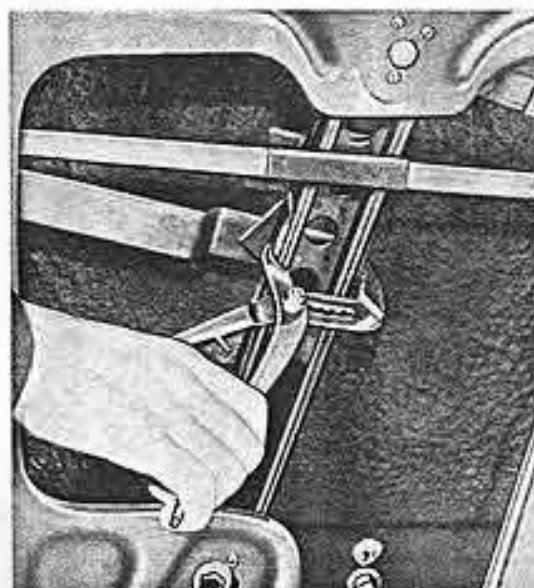
- 3 - With top and door closed, check correct vertical adjustment of door glass.

- 4 - Secure adjusting screw by tightening lock nut.



Longitudinal Adjustment

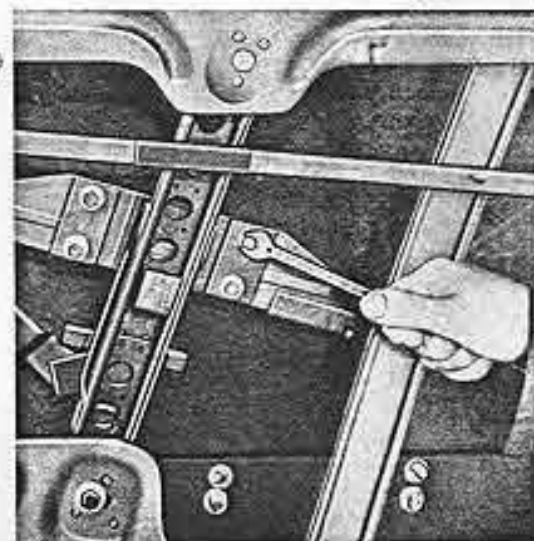
- 1 - Check play between window lift channel runner and the guide rail. If necessary reduce the clearance by squeezing the runner together with a suitable pair of pliers (Waterpump pliers).

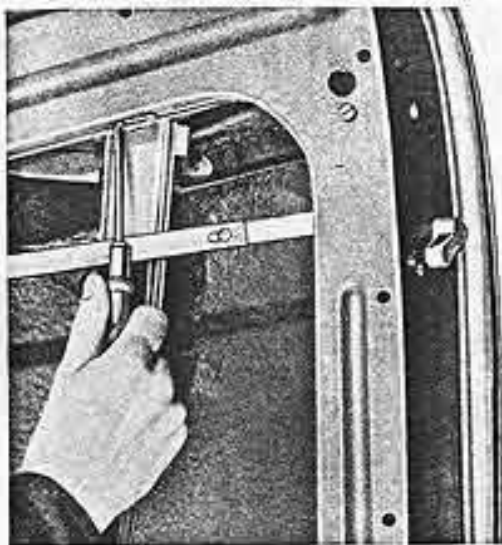


- 2 - Loosen four window lift channel screws.

- 3 - Move door glass with lift channel to the front or rear as required.

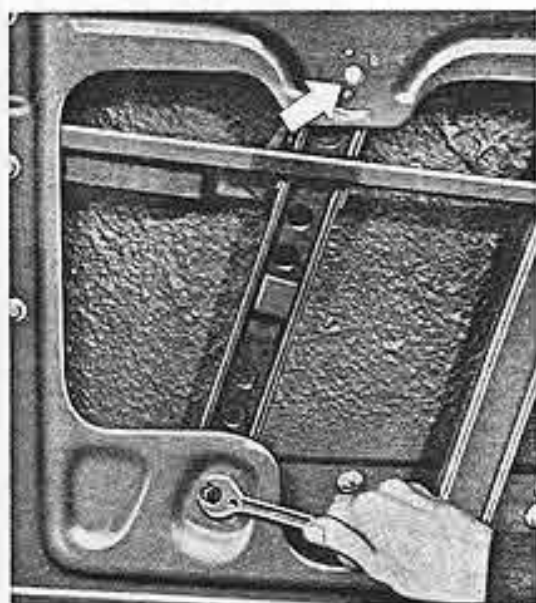
- 4 - Tighten screws.





Side Adjustment

- 1 - Check door glass for side rock. If necessary loosen the top screws of the window roller bracket and with the window in the fully raised position press the bracket hard against the roller and tighten screws.



- 2 - Loosen hexagon and countersunk head screws on guide rail.



- 3 - Correct the window glass position by screwing the 3 threaded pins at top and bottom of guide rail in or out.

The location for the adjustment of the door glass is given by the main roof frame weatherstrip at the top and the front and rear weatherstrips at the sides.

- 4 - Tighten hexagon and countersunk head screws.



Convertible Top

General

The top is supported by the top linkage which is composed of two side metal roof frames and two hinged linkages joined together by wooden and tubular bows which give cross support. The whole assembly is supported by two main hinges mounted in brackets bolted to special pillars in the body.

The outer cover is made of special waterproof top material which is rubberised underneath. A rubberised hair pad, sewn into a linen sheet and secured to the top linkage, pads out and shapes the top in addition to providing insulation against heat and cold. The contours of the top are, where necessary, evened out by additional wadding. The underside of the top linkage is covered by a headlining of loosely woven material.

In the folded position the top is retained by two spring catches.

Lubrication

A few drops of oil should be applied to the hinge joints of the top linkage when required. Wipe the dirt and dust off the joints before oiling.

Care of the Roof

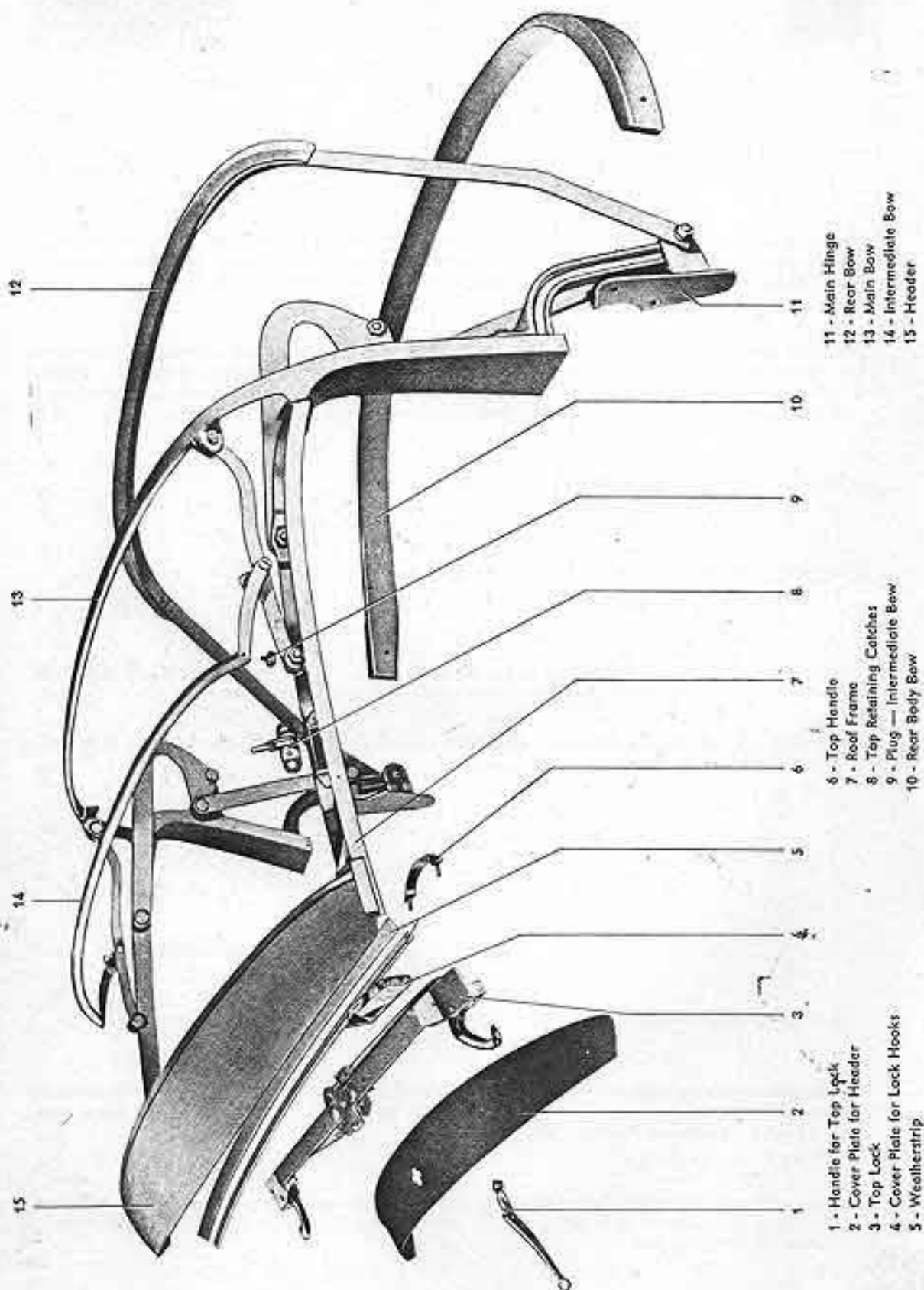
The proper treatment and care of the top has a large influence on its appearance and service life.

The top must always be perfectly dry before being lowered. When very dusty the top should be beaten out lightly and brushed thoroughly with a soft brush in line with the lay of the material, as the sharp dust particles can damage the material and cause friction marks.

Friction marks can also appear when the catches do not hold the opened top firmly in position. In this case the catches must be adjusted by loosening the lock nuts, screwing the catches further into their retainers and tightening the lock nuts again.

Never use fuel, spot removers or other solvents for removing spots as these fluids will destroy the rubber layer in the top cover, causing leaks and shortening the life of the top. Light surface marks can often be removed by rubbing gently with a crust of white bread or a soft white rubber (eraser).

Top Frame

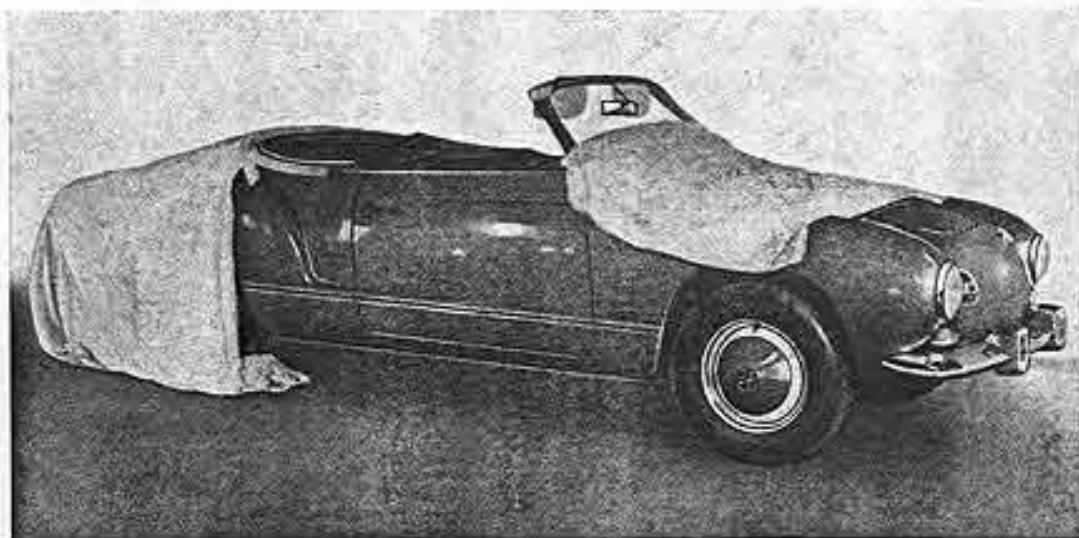


The top should be washed only when it is exceptionally dirty. Only clear water, without any chemical solutions or additives should be used. Beat the top out lightly and brush thoroughly before washing. Add soap flakes to lukewarm water and beat into suds. Moisten the top with clear water, apply the thick suds and scrub with a soft brush, rubbing in one direction only. Rinse the top with clear water and if necessary, repeat the scrubbing with the soap suds. The final rinse must be continued until all traces of soap are removed and the water runs off quite clear. Be sure the top is thoroughly dry before lowering.

Washing with soap flakes should not be carried out more than once every six months.

After washing the top, rinse all traces of soap suds from the vehicle finish and dry off.

Top Assembly



The description of the Convertible top assembly serves as a guide for the sequence of operations. The work should, where possible, be carried out by a skilled man who is familiar with top construction. If two men can be employed, the task of fitting the top cover will be made considerably easier.

The assembly of individual parts of the top described in some paragraphs can naturally be carried out separately.

The tools required are listed in the "Body General" section — under the heading "Workshop Equipment".

In order to avoid paint damage it is recommended that the front and rear parts of the body are covered with sheets.

The sheet at the front should be secured about halfway up the windshield with adhesive tape so that any nails which fall down will not get underneath the sheet.

The corners of the windshield frame should also be covered with adhesive tape to prevent paint damage occurring if the pliers should slip when tensioning the top cover.

Installation of Top Frame

Note:

- From 11th April 1964, Chassis No. 6 264 621, the lower part of the main bow and the main hinge are sheet metal pressings and not castings as they were formerly. This improves the elasticity and rigidity considerably.

At the same time other parts of the top frame have been changed. The part number is 141 871 025 as before.

The modified top frame, with and without cover, can be installed in earlier vehicles without difficulty. The following parts, however, are not interchangeable.

Designation

Main bow
Main bow, lower part, left/right
Stud on main bow for lower part
Guide bar, lower, left/right
Main hinge, left/right
Bolt for main hinge

old

141 871 801
141 871 815/816
—
141 871 831 A
141 871 851/852
141 871 855

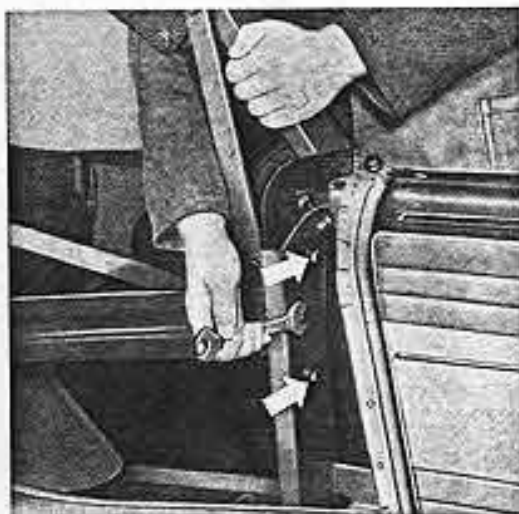
Part No.

new

141 871 801 A
141 871 815 A/816 A
141 871 817
141 871 831 A/832
141 871 851 A/852 A
141 871 855 A

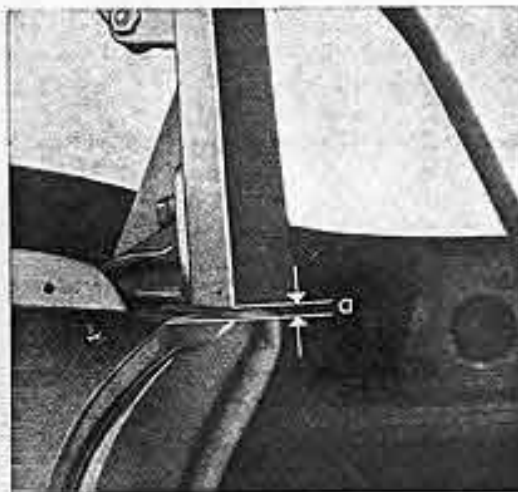
Note

When a complete top frame or a main bow is replaced, the clearance between the lower part of the main bow and the main hinge support bracket may be reduced due to a combination of tolerances. This can also occur on the previous version. In this case, the edge of the support bracket (141 809 417/418) which is angled to 90° normally, should be folded completely over.



- 1 - Before commencing work on the top assembly remove front seats and rear quarter trim panels. Wind the door windows down.

- 2 - Place top frame in position and bolt the main hinges to the screwed plates on the support pillars. Pull the main bow outwards as far as possible.



- 3 - Extend the linkage to the front and secure the header to the windshield frame with the top lock. In this — normally closed — condition the clearance between the lower edge of the main bow and the lock pillar should be 6 mm. If this is not so, loosen the frame and move up or down as required.

a — 6 mm (0.236")

- 4 - In the closed position the clearance between the uncovered header and the windshield frame should be:

a - in the center 7 mm (0.275")

b - in the area of the locking hooks 5 mm (0.196")

c - tapered to 2 mm (0.078") at the ends

This clearance is essential in order to leave sufficient space for the rubber weatherstrip and top cover.

Note:

If the clearance is too small the front moulded rubber seal of the header can lift or press out the windshield weatherstrip at the top and cause leaks to appear.

Insufficient clearance between header and windshield frame can also create excessive tension of the top locks and lead to distortion of the windshield frame.

In these cases it is possible to rasp the header off slightly.

- 5 - Tack a 1 mm thick cardboard strip, 200 mm (7.8") long and 15 mm (0.6") wide under the header in the area of the lock mechanism (Arrow).

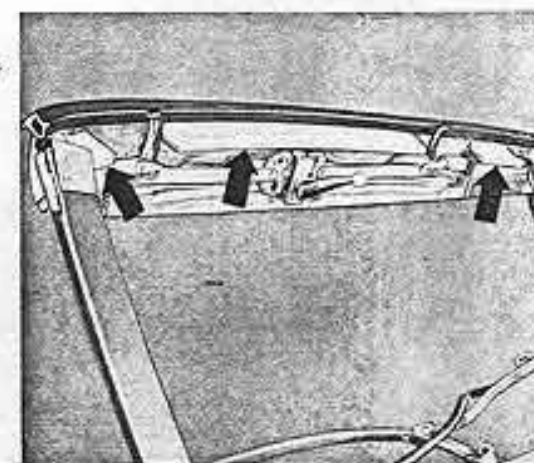
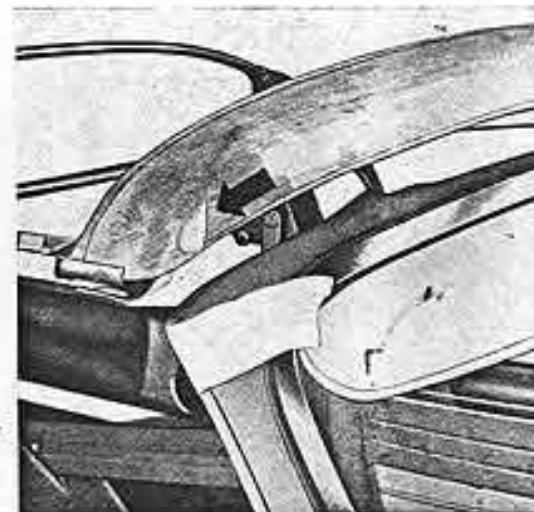
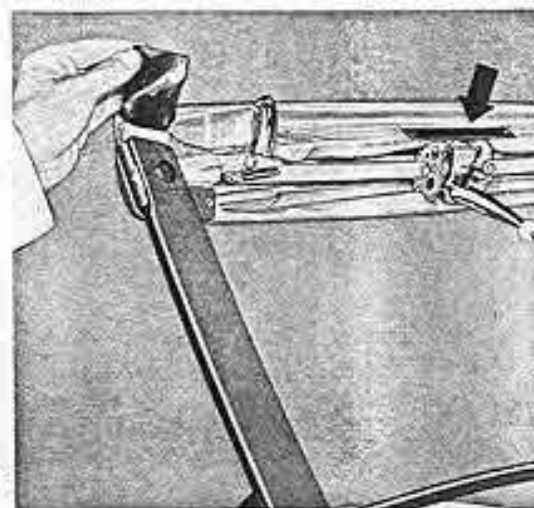
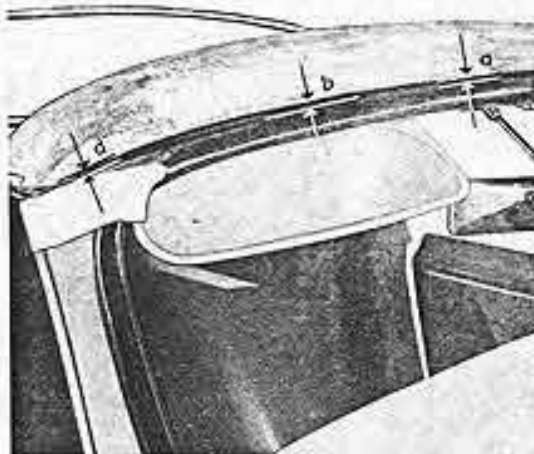
Cement two pieces of foam rubber underneath the header at the frame ends and finally cement two suitably shaped pieces of top cover material over roof frame, foam rubber pieces and header.

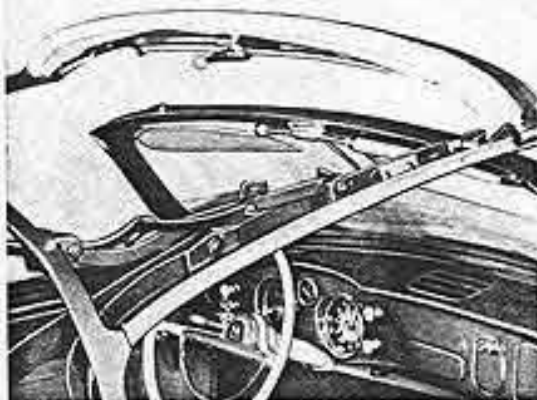
This preparatory work is necessary in order to achieve a uniform surface between roof frame and header and so avoid leaks at this point.

- 6 - Make a groove at each end of the header with a rasp. These grooves accommodate the top cover seams which are nailed on later.

- 7 - Coat the underside of the header with adhesive and cement suitably cut lengths of foam rubber strip (Part No. 141 871 605) in between and to the left and right of the locking hooks (Arrows).

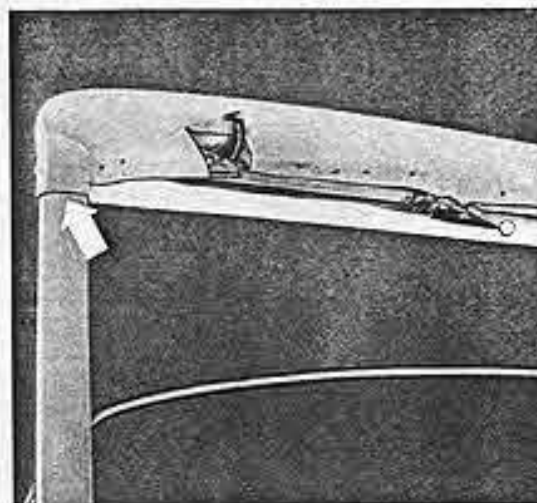
Cement the weatherstrip (Part No. 141 871 607) to the front edge of the header. The overhanging ends should be cut off exactly at the joint between roof frame and header.





- 8 - Cut a piece of headlining material roughly 100 mm x 1250 mm (3.9" x 49.2") and a piece of top material 180 mm x 1400 mm (7" x 55") of colors to match the top and headlining of the vehicle.

- 9 - Coat the header rear edge up to the recess on the top with adhesive and cement the headlining strip into position. Cut off the surplus material round the locking hooks and at the edge of the recess.



- 10 - Tack top material strip underneath the header and cut the strip out to fit round the locking hooks. Coat the roof frame ends with adhesive and cement the strip into position (Arrow).

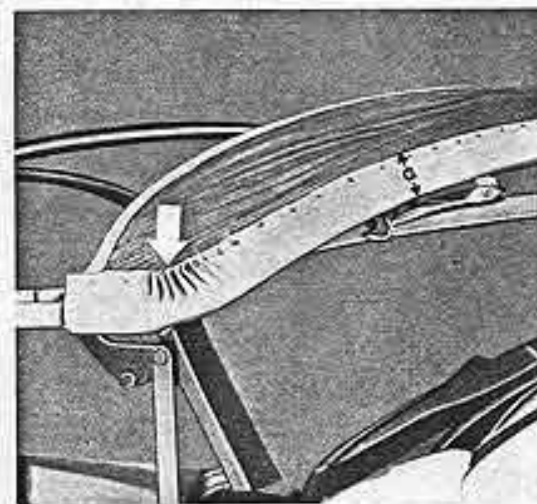
Important

To avoid rust formation use only brass pins and tacks to secure the top cover and the webbing strips.

Note:

12 mm Brass pins Part No. 151 871 471

14 mm Tacks Part No. 151 871 473

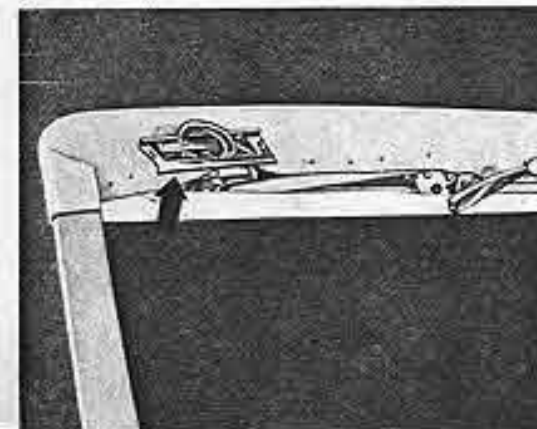


- 11 - Lightly tension the top cover strip and tack to the top of the header. Close the top and nail the strip at intervals of 40 mm whilst keeping a slight tension on the material. To ensure uniform tension it is advisable to nail evenly in both directions from the center outwards.

To ensure a better fit at the ends of the header lay the material in small folds round the curves and then tack. Do not cut the material or make the folds too large as this may cause leaks.

a = 40 mm (1.574")

Trim the surplus material off above the line of tacks.

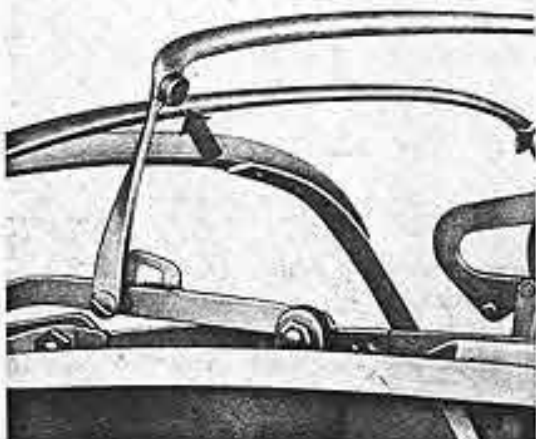


- 12 - Screw the lock hook cover plate into position, after checking that the hooks have sufficient working clearance. It is advisable therefore, to tighten the side screws first and finally the front ones.

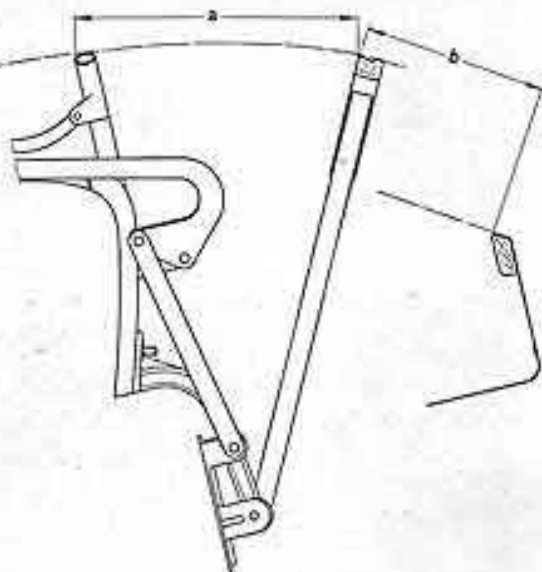
- 13 - Coat the intermediate bow rubber plugs with adhesive and insert them in the appropriate holes.

Note:

The plugs are intended to stop rattling noises. Check that they are securely seated.



- 14 - Lay the top frame forward and secure with the lock. Adjust rear bow to measurements.



Important

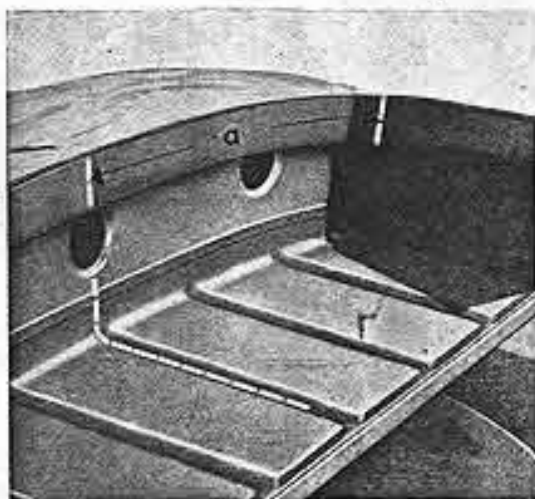
These measurements should be strictly adhered to as they govern the satisfactory padding and folding of the top.

$$a = 350 \text{ mm} \pm 5 \text{ mm} (13.78 \pm 0.2")$$

$$b = 469 \text{ mm} \pm 5 \text{ mm} (18.5 \pm 0.2")$$

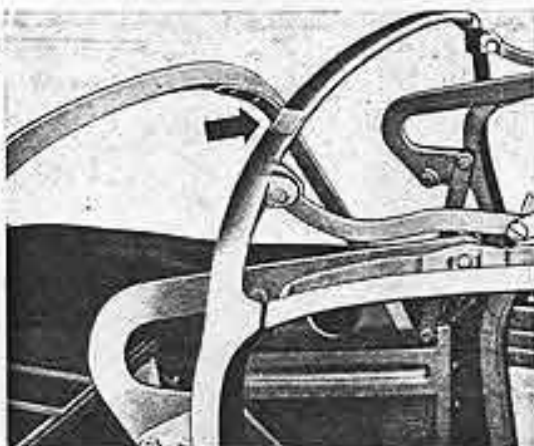
- 15 - Cut the webbing strips to size and tack them to the rear body bow 420 mm to left and right of the center line.

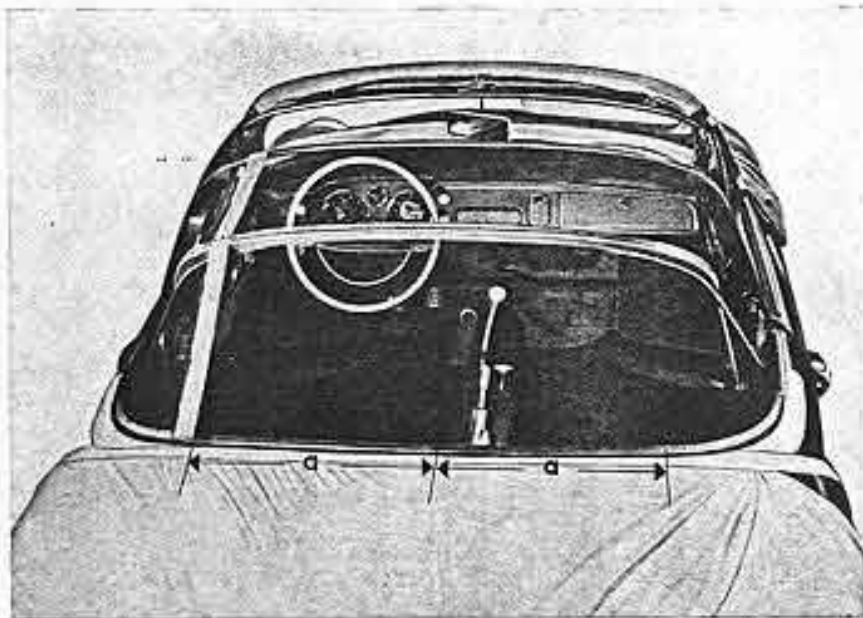
$$a = 420 \text{ mm} (16.53")$$



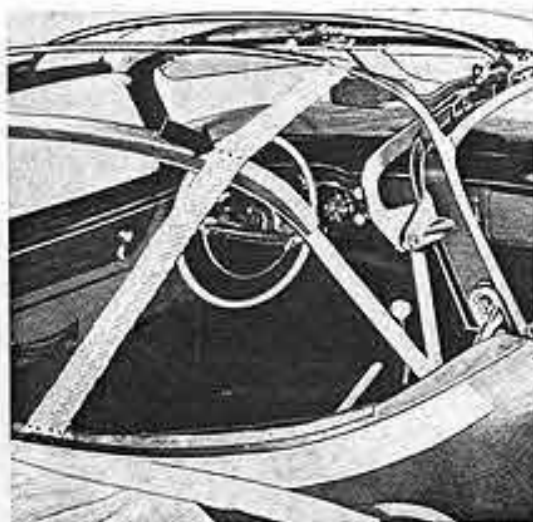
- 16 - The main bow has two grooves on the top to take the webbing strips. The grooves should be coated at top and bottom with adhesive.

- 17 - Pull the webbing strips hard to the front, cement them into the grooves and sew securely.





$a = 420 \text{ mm (16.53")}$



18 - Mark the width of the webbing strips on the rear bow. Lay the bow back slightly and chisel or rasp out the places marked to a depth equal to the thickness of the webbing strips so that the strips do not stand proud.

19 - Position rear bow to the correct measurement and tack on the webbing strips.

Headlining Installation

The headlining — without rear portion — is supplied as a spare part completely finished with the support strips which are used to secure it to the roof bows. The rear portion with the rear window is sewn to the main headlining after the top cover has been installed.

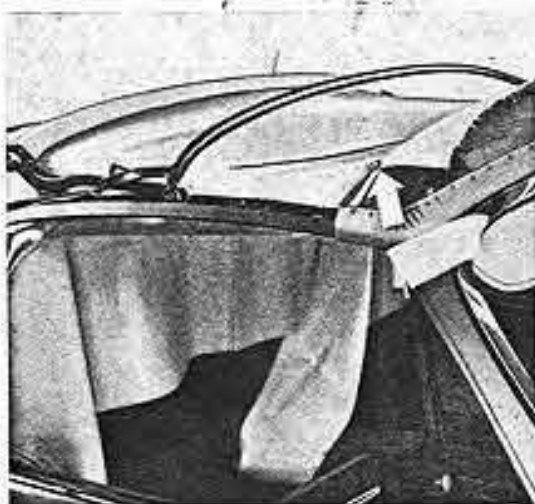
To ensure that the headlining fits properly it should be secured to the individual bows in the following order with the roof closed:

- a - Main bow
- b - Rear bow
- c - Header
- d - Intermediate bow

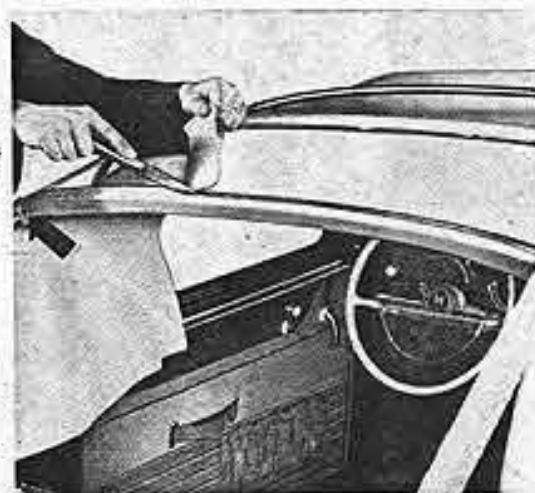
It is secured to the rear body bow at a later stage.

The operation is carried out as follows:

- 1 - Coat the top and front edges of the main bow with adhesive.
- 2 - Pull the headlining up by the appropriate support strip until the seam in the lining contacts the underside of the main bow. Cement the lining in position, cut out the openings for the webbing strips and cut off the surplus headlining material.
- 3 - Pull headlining to the front, tension slightly and secure to the header with one tack each side. To avoid the possibility of tearing the material it is advisable to insert the tacks in the longitudinal seams (Arrow).



- 4 - Coat rear and top edges of rear bow up to the recess with adhesive. Pull supporting strip up to seam and cement to rear bow under tension. Insert a tack each side for additional security. Cut off surplus headlining material.

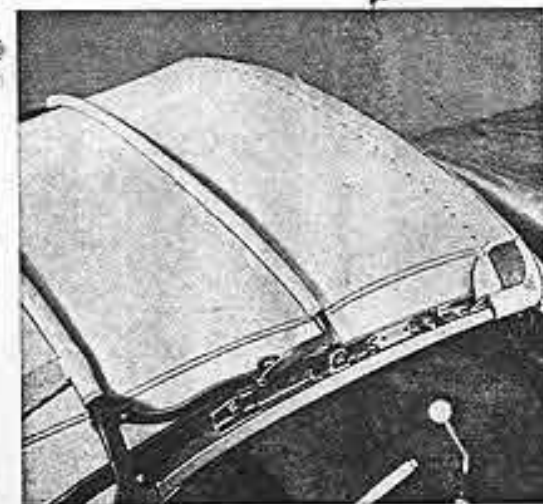


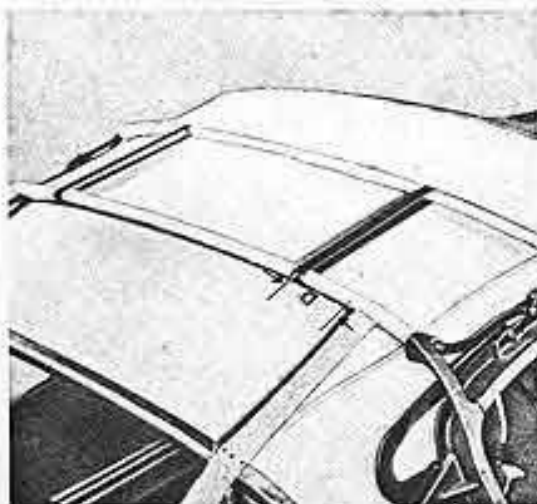
- 5 - Tension the headlining uniformly and tack to the recessed surface on the top of the header.

- 6 - Coat the top of the intermediate bow with adhesive. Pull the support strip up to the seam and cement round the bow. Cut off surplus material.

- 7 - After completion of these operations check from inside that the headlining is taut, free from folds and that the seams of the supporting strips are straight. If necessary, correct on the appropriate bows.

The surplus headlining material at the header can now be cut off and the ends of the supporting strips on the tubular bows sewn.



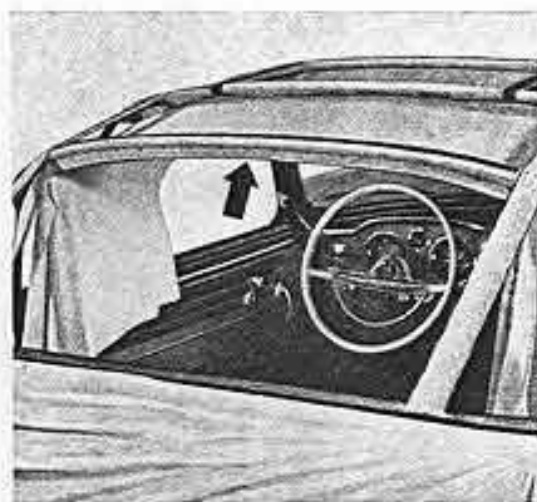


$a = 90 \text{ mm (3.54")}$

8 - Cut 20 mm (0.78") wide openings in the supporting strips 90 mm (3.54") to the left and right of the webbing strips.

Insert two 550 mm (21.6") long rubber bands through these holes and sew them together.

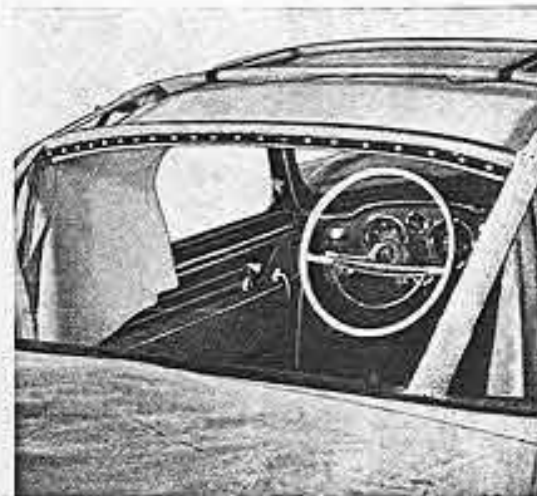
These rubber bands pull the intermediate bow back when the roof is opened and thus ensure proper folding.



9 - A 2.10 m (82.6") length of beading, in the same color as the headlining, is supplied with the spare headlining.

This beading is tacked to the lower rear edge of the rear bow between the webbing strips so that the bead protrudes slightly below the rear bow.

The ends, which should be of equal length, remain hanging down for the time being.



10 - A cardboard strip 1 mm thick, 15 mm (0.6") wide and of suitable length is tacked over the beading and holds it straight and firm against the rear bow.

Linen Sheet and Rubberised Hair Padding Installation

General

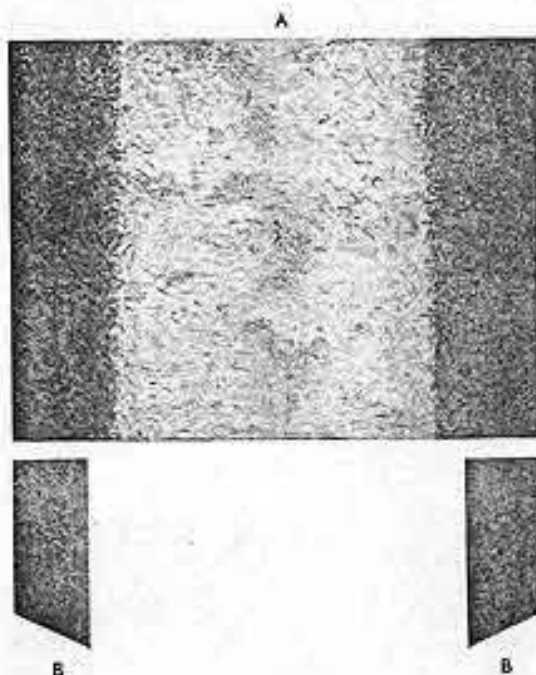
The rubberised hair pad upholsters and shapes the Convertible top and also provides good insulation. It consists of three parts, the roof portion (a) and the two rear portions (b).

The rubberised hair padding is sewn in and onto the appropriately shaped pieces of linen sheet. The linen sheets are then secured to the roof frame.

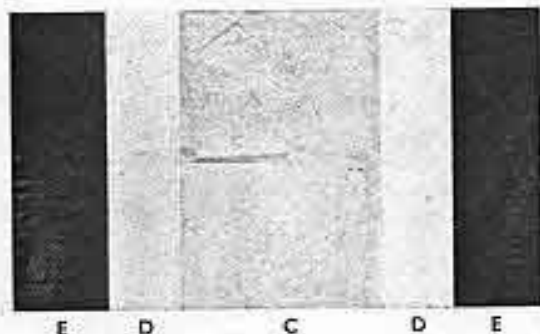
Two different types of material are used:

a - a thick, light-colored linen material

b - a thinner, black lining material, known to the trade as "Nessel or Mellon Cloth".



The linen material serves as the foundation to which the rubberised hair pads are sewn and the lining material is used to enclose the pads.

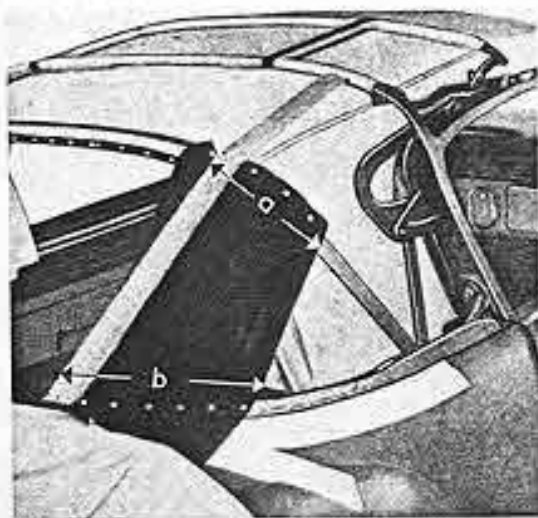


The linen and lining material is supplied in three separate parts in the same manner as the rubberised hair padding, namely the large roof portion and the two rear portions which each consist of one piece of linen and one of lining material. The roof portion comprises one linen sheet (C), two top material pieces (D) and two lining material pieces (E).

The two pieces of top material sewn to left and right of the linen sheet are for appearances sake only and merely prevent the linen material from showing at the sides when the roof is laid back.

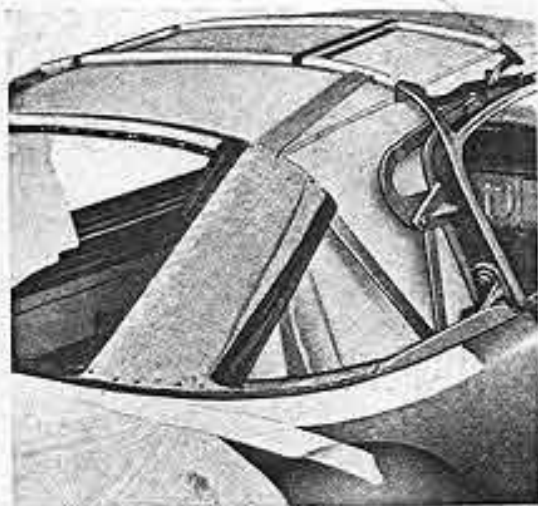
All the rubberised hair parts and linen material pieces are combined in an installation set and supplied as a spare part under the designation "Top Padding" (Part No 141 871 057).

Upholstering

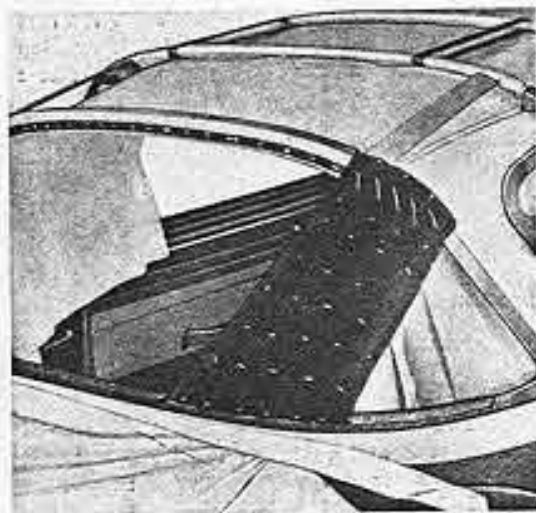


- 1 - Tack the two black lining material pieces to the rear bow and rear body bow to the correct measurements. Cut the material out at the webbing strips. Do not cut off the surplus lining material on the inside.

a - 180 mm (7")
b - 200 mm (7.8")



- 2 - Tack the linen material pieces to the rear bow and rear body bow in the same manner. Fold the edges of the linen and lining material back at the outside. Sew the linen sheet securely to the webbing strips.



- 3 - Lay the rubberised hair rear portions in position and sew to the linen sheet at top and sides with small firm stitches. The pads must not cover the rear bow or be sewn on at the bottom near the body bow.

- 4 - Fold the surplus lining material over the rubberised hair padding, tack to the rear and body bows and sew the outer edges. Finally sew padding and lining material together with large stitches. Trim off surplus material at top and bottom.

- 5 - Lay the roof portion of the linen material in position, taking care that the black, rubberised side of the top cover material faces upwards.

- 6 - Tack the linen sheet to the rear bow first, pull firmly to the front and tack to the header.

When tacking, take care that the outer sides of the top cover strip are roughly 10 mm above the roof frame (measured in the center).

a = 10 mm (0.4")

Correct if necessary.

- 7 - Tack the linen sheet in the recess on the rear bow and to the header. To ensure uniform tension in the cross direction as well it is advisable to tack from both sides towards the center.

As the linen material is always cut fuller it is necessary to cut wedge shaped pieces out of the material at the header and rear bow as the formation of folds will cause ridges to appear.

Cut off surplus linen material (see dotted line).

Near the individual bows cut off the surplus material of the longitudinal seams as far as possible without damaging the stitch threads. This will stop the formation of ridges which will later be visible on the top cover.

- 8 - Securely sew the cuts in the linen material and loop stitch the top cover strips in the area between rear intermediate bows.

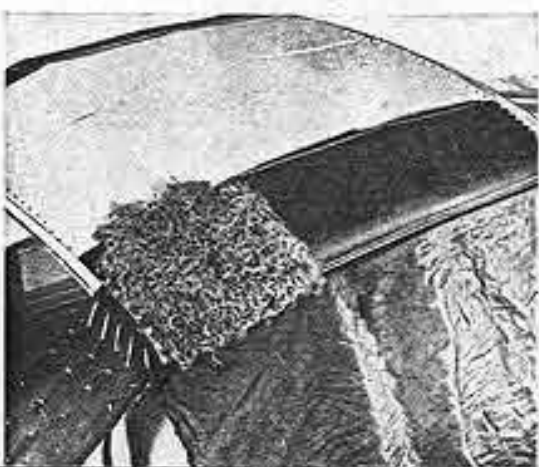
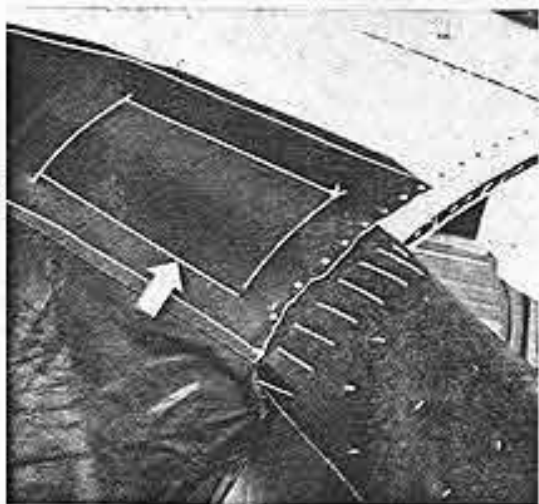
Note:

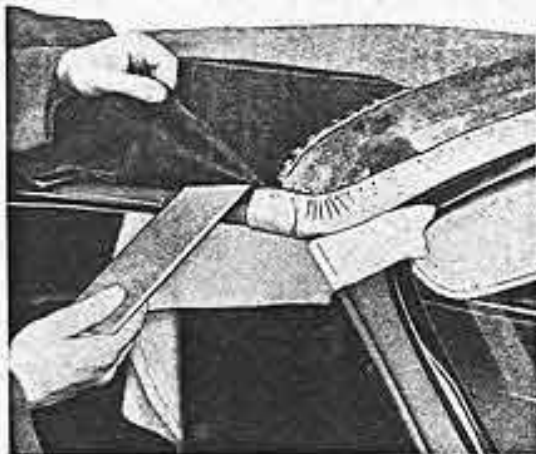
Loop stitches are large, loose stitches made with a thick thread under which the padding material is pushed. They are intended to hold the loose padding material in position.

- 9 - Push the padding material — horse hair if possible — under the loop stitches in uniform thickness to level out the depression between the bows.

Important!

The padding controls the contour of the top at the rear. If the padding is too thick or too thin the top will be uneven.





- 10 - Before sewing the rubberised hair into position insert a piece of cardboard 100 mm wide and of suitable length between the top cover and the headlining of the header.

This cardboard, which is removed when the operation is completed, prevents the headlining being caught when the rubberised hair is sewn to the linen sheet.



- 11 - Place the roof portion of the rubberised hair padding in position. The thickened edges should be on the left and right outer sides.

Sew the rubberised hair padding firmly to the linen sheet close to the rear bow.



Pull the padding almost up to the rear edge of the header and sew to the linen sheet. Finally sew the padding to the linen sheet longitudinally with rows of large stitches 100 mm apart.

Sew the side outer edges firmly to the top cover strips.

- 12 - To level out the space between the header and the rubberised hair padding, tack a 200 mm (7.8") wide layer of upholstery wadding which has been thinned out at the edges, to the header.



Cut the corners of the wadding to suit the roof shape and tack high enough to avoid the appearance of leaks. The top cover material tacked to the header must butt up against the wadding.

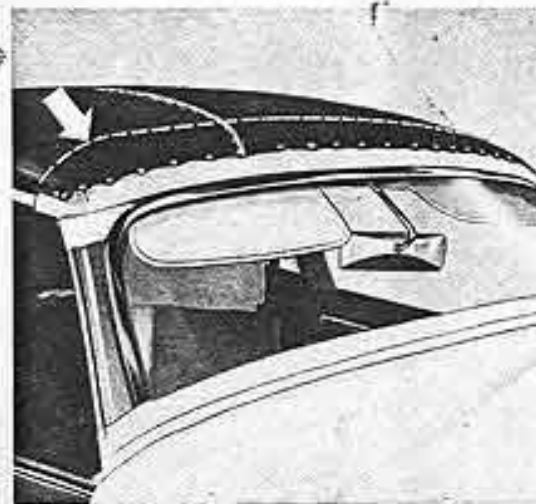
- 13 - Lay one flap of the black lining material over the rubberised hair padding and tack in the recess in the rear bow. At the header end tack the lining over the top material strip. Treat the other flap in the same manner.



- 14 - Cut off surplus lining material and sew the flap joint together with small firm stitches.



- 15 - To give the padding additional support at the front it is advisable to sew the lining and padding together about 100 mm (4") from the header.



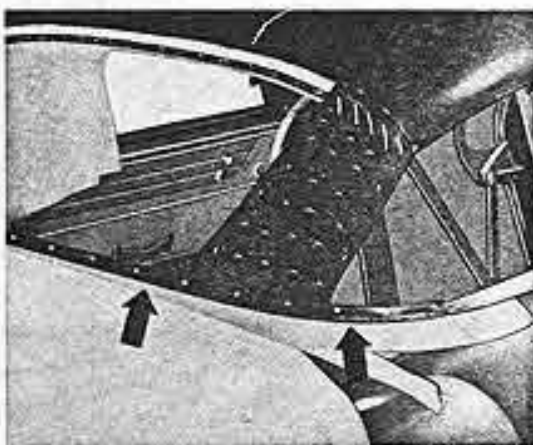
- 16 - Remove the cardboard strip which was inserted before fitting the padding.

Installing the Top Cover

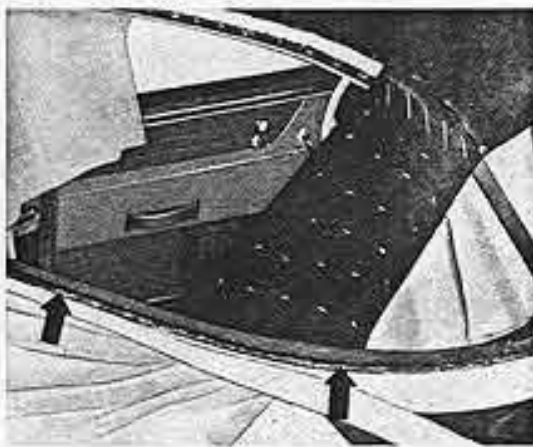
The top cover is supplied in various colors and the choice must be stated when placing the order. The beading for the body bow is supplied with the top cover in the matching color.

The rear window (Part No. 141 845 501) is complete with top cover material and the rear portion of the headlining. The rear portion of the headlining is sewn to the main headlining after the top cover has been completely fitted.

Apart from a few operations the fitting of the top cover is carried out with the top closed.



- 1 - Tack a filler strip to the body bow to reduce the comparatively large clearance between the bow and the body panel. A suitably shaped piece of top cover material can be used for this purpose.



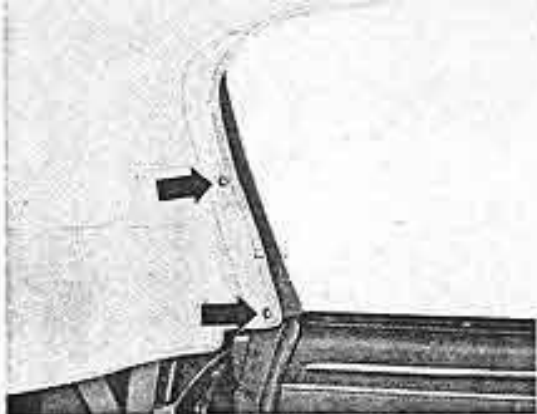
- 2 - Coat the filler strip with sealing compound.



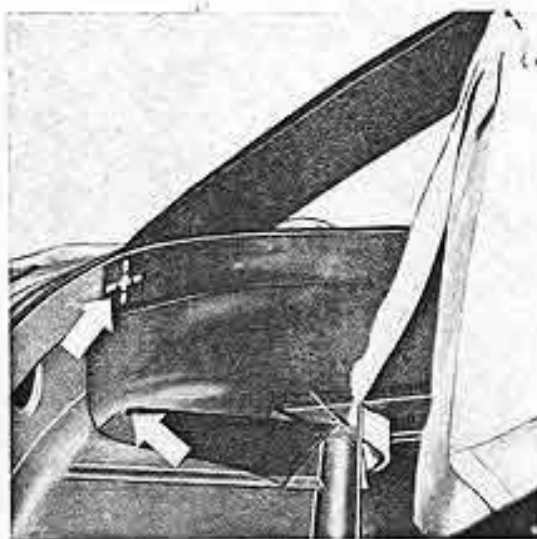
- 3 - Tack the beading to the body bow under side tension so that the bead rests in the body groove against the bow.

For the time being do not tack the beading at the sides, roughly from the ends of the rubberised padding.

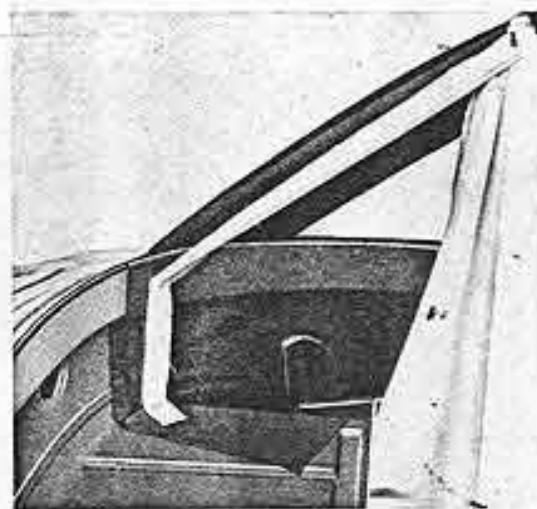
- 4 - Attach the headlining to the main bow on each side with two chrome-plated screws and protective washers.



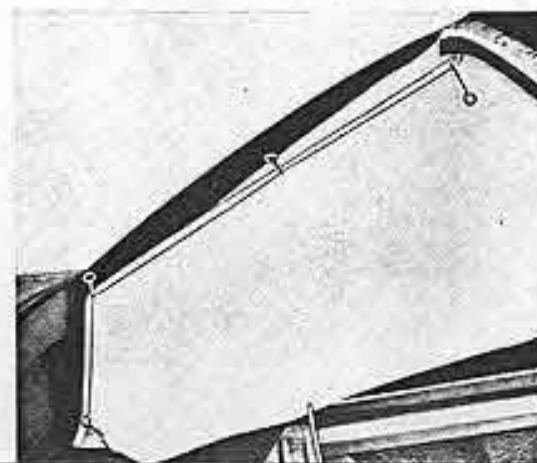
- 5 - Attach the ends of the headlining beading directly under the webbing bands at the center of the bow width with two tacks each and to the bottom panel of the top compartment with a hollow rivet.

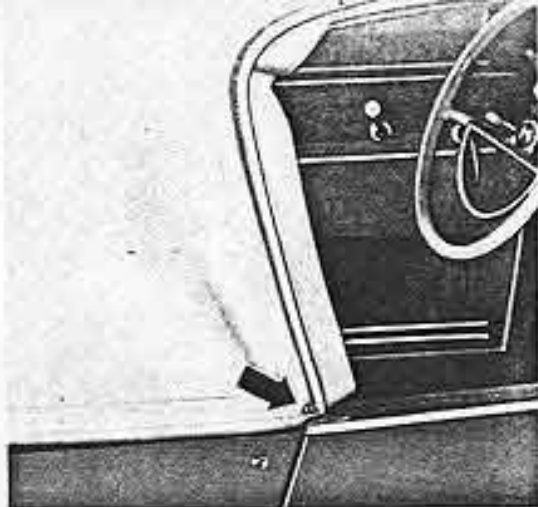


The bead must face towards the center of the vehicle and not be damaged in any way.

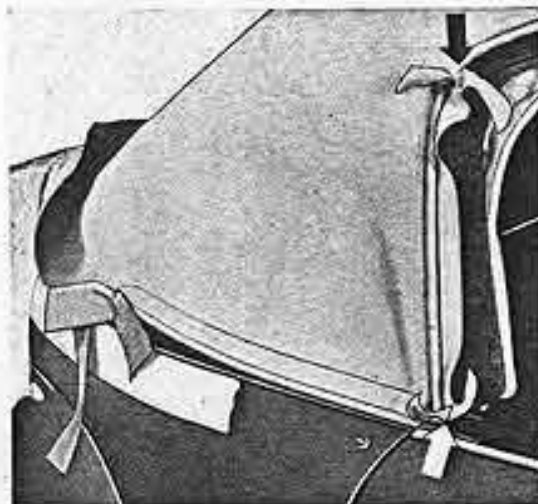


- 6 - Tack the headlining to the beading at the rear. The sewing takes place when the top cover fitting is completed.





- 7 - Place top cover in position and secure to the lower ends of the main bow with a chrome-plated screw and protective washer on each side.

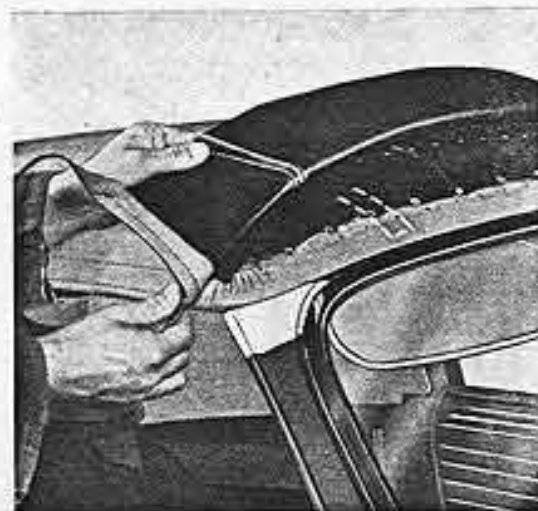


- 8 - Part the surplus top cover material at the sides of the main bow for about 50 mm at top and bottom.

Note:

Parting in this instance means separating the rubber layer from the material layer of the top cover to reduce the thickness of the material, thus avoiding the creation of noticeable ridges.

To facilitate this operation and avoid damaging the material it is advisable to slightly dampen the area to be parted with turpentine. Otherwise a sharp saddler's or parting knife must be used.



- 9 - Cut the rubber layer of the parted material off up to the main bow edge at top and bottom.

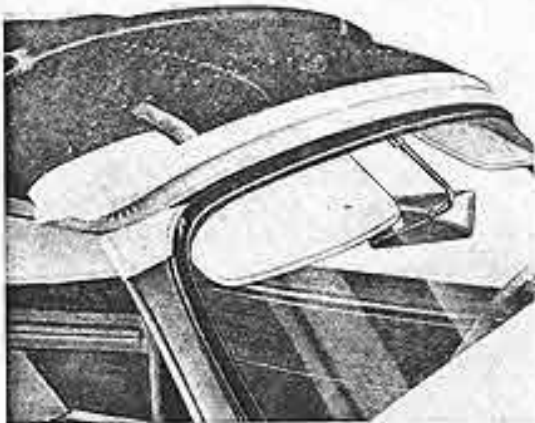
- 10 - To prevent the longitudinal seams in the top cover standing proud of the surface it is necessary to cut the lining and wadding out at the appropriate places and chisel out the header slightly.

To locate the exact position for the cuts, lay the top cover beads on the lower edge of the top frame and mark off the seams.

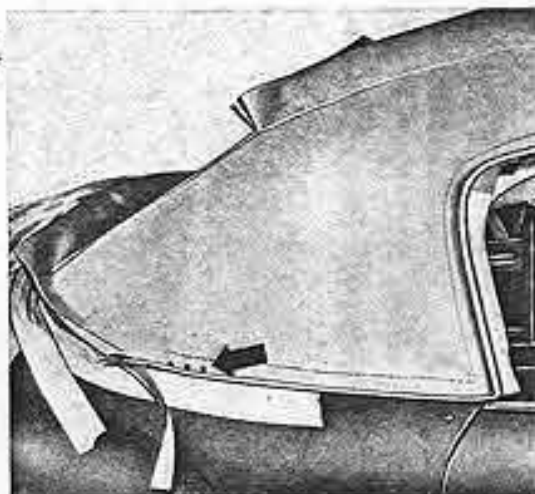


- 11 - Chisel a groove in the header about 2 mm deep and extending down to the front weatherstrip.

- 12 - Apply sealing tape to the joint between the tacked-on top cover strip and the lining material, particularly at the corners. This serves as an additional seal against the possible ingress of water.

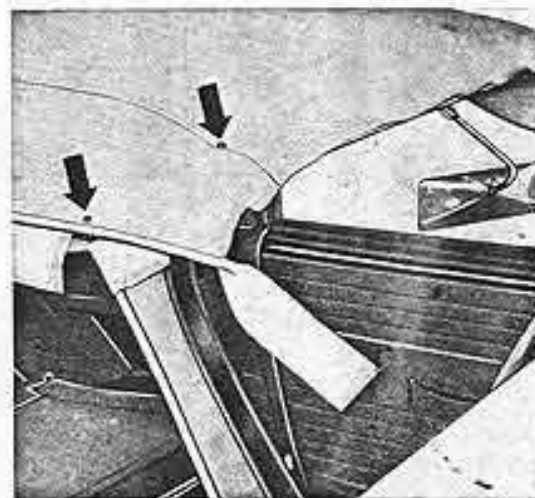


- 13 - Attach the top cover to the body bow under tension, with three tacks each side.

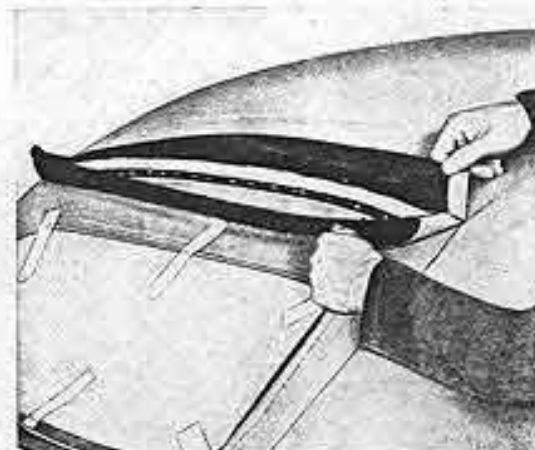


- 14 - Pull the top cover tightly to the rear and attach to the body bow with two tacks.

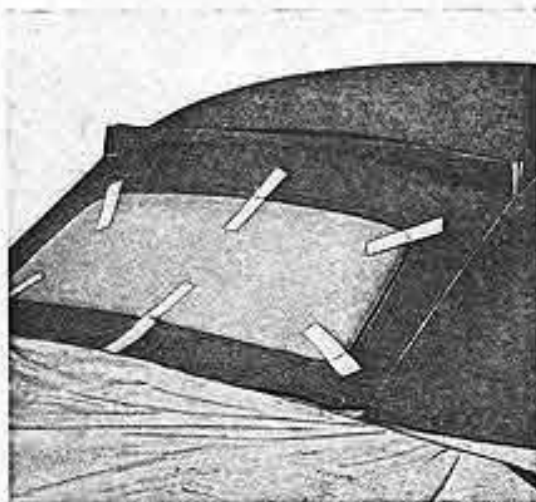
Drive the tacks through the seams to avoid tearing the material.



- 15 - Pull the top cover forward and tack to header at top and sides under tension and free of folds. The top tacks should also be driven through the seams.



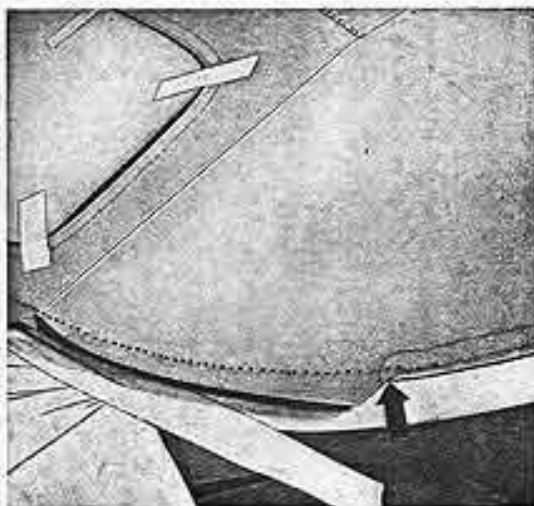
When tensioning the top cover take care that the cut in material over the rear window rests exactly in the recess in the rear bow. Correct if necessary.



- 16 - Pull the top cover taut and tack to rear bow and to body bow.

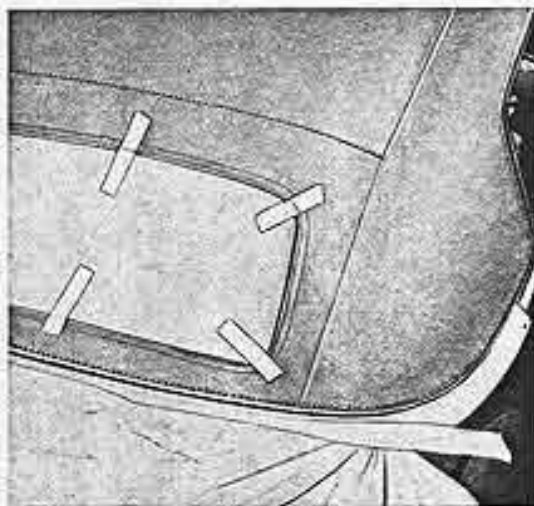
Check that the rear window is horizontally central and correct if necessary by loosening, pulling in the desired direction and retacking.

- 17 - Under even tension and free of folds tack the top cover in the recess of the rear bow. Tack the lower portion first and then the upper portion over it so that the water running off the roof will not enter the cut. Cut off surplus material.



- 18 - Coat both ends of the row of tacks with rubber solution — particularly at the seams — taking care that the coated surface is not wider than the trim moulding which is nailed on later.

- 19 - Cut off the ends of the body beading at the point where the top cover beading ends (see arrow). Part the surplus ends of the top cover beading up to the seam, cut off rubber layer and fold the material part round the body beading to form a smooth joint.



Finally tack top cover and body beading evenly round the top cover seams.

- 20 - Under tension and free from folds tack the top cover between the longitudinal seams — i. e. under the rear window — to the body bow. Cut off the surplus material taking care not to damage the body beading.

- 21 - Loosen the top cover larks from the header on one side and at the same time pull the cover forward. Secure the top cover by inserting a chrome-plated screw with washer into the hole provided in the roof frame, taking care that the top cover beading covers the lower edge of the roof frame.

This operation can be carried out best with the assistance of a second saddler.

Treat the other side of the top cover in the same manner.

Important

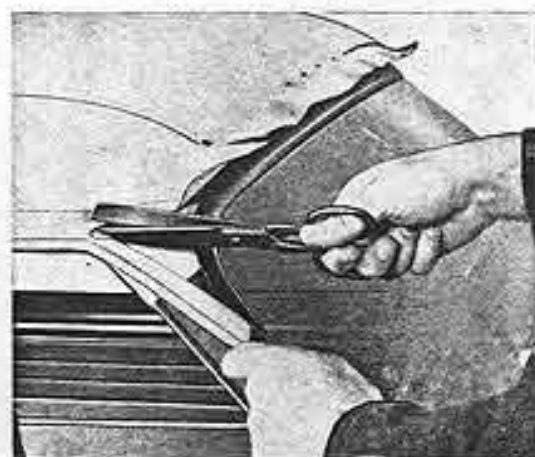
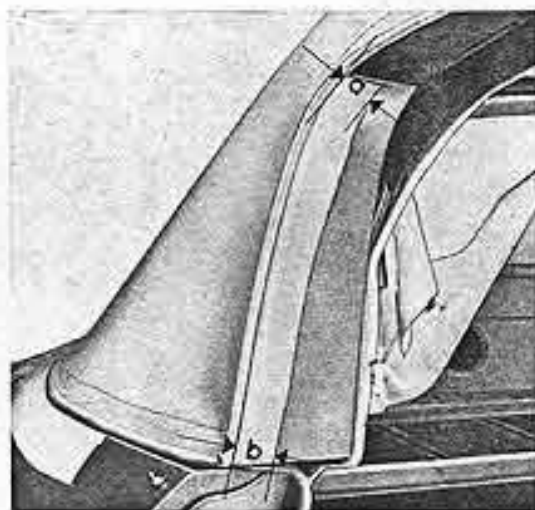
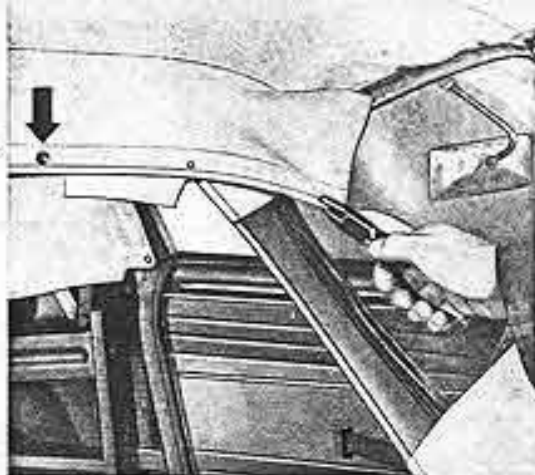
The top must not be opened while tensioning.

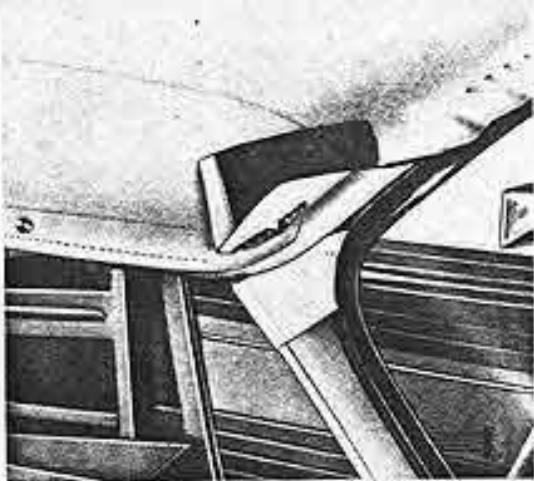
- 22 - Cement the surplus top cover strips to the front roof frame over half its width on both sides.

- 23 - Cement the surplus top cover strips to the main bow on both sides. The strips must not be more than 30 mm wide at the top and 25 mm at the bottom. Cut off any remaining material.

a - 30 mm (1.18")
b - 25 mm (0.98")

- 24 - Cut into the top cover beading far enough to allow a proper fit at the ends of the header.





- 25 - Lay the beading round the curved ends of the header and tack so that it tapers off into groove in the header. Coat the row of tacks with rubber solution to improve sealing.



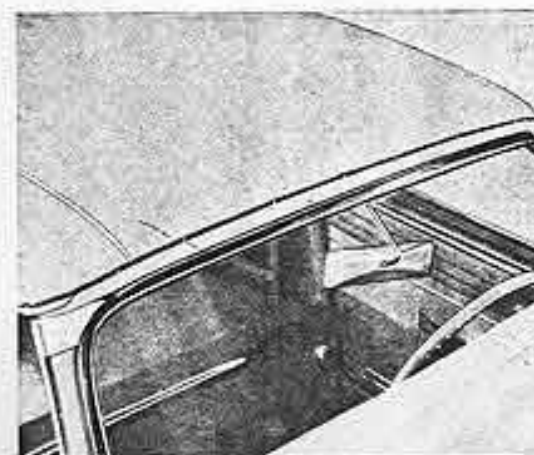
- 26 - If necessary, even out the corners of the header with small amounts of wadding and tack the top cover, without folds, approximately 30 mm above the covered lower edge of the header.



- 27 - Cut the surplus material off straight and cleanly below the row of tacks.

a - 30 mm (1.18")

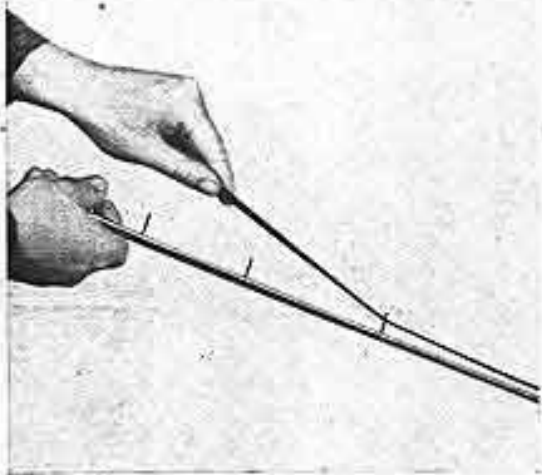
- 28 - Coat the tack row with rubber solution, particularly at the corners, taking care that the coated surface is not wider than the trim moulding which is nailed on later.



- 29 - Tack the trim moulding sealing band over the tack rows on the header and the body bow.

This sealing band is a natural rubber strip of the same width as the trim moulding which is obtainable under Part No. 151 871 435. The band has a light-colored protective strip on one side which must be removed before the band is fitted.

- 30 - To facilitate the correct placing of the band and the trim moulding for the rear bow it is recommended that the band is placed on the moulding first.

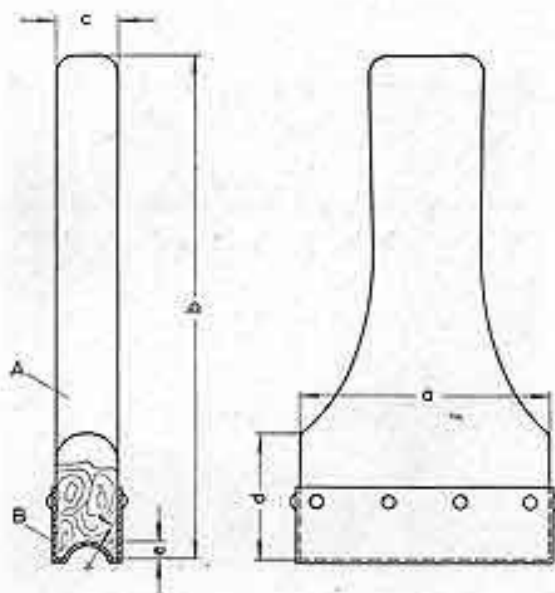


Important

The trim moulding must be installed with the special wooden block to ensure proper fitting and avoid damage to the moulding.

- A - Special block
B - Leather cover (approximately 1 mm thick)

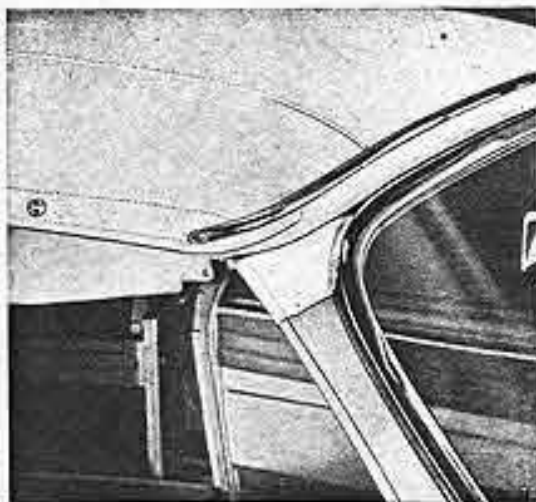
- a - 70 mm (2.75")
b - 140 mm (5.5")
c - 17 mm (0.66")
d - 35 mm (1.37")
e - 5 mm (0.2")
f - 7 mm (0.27")



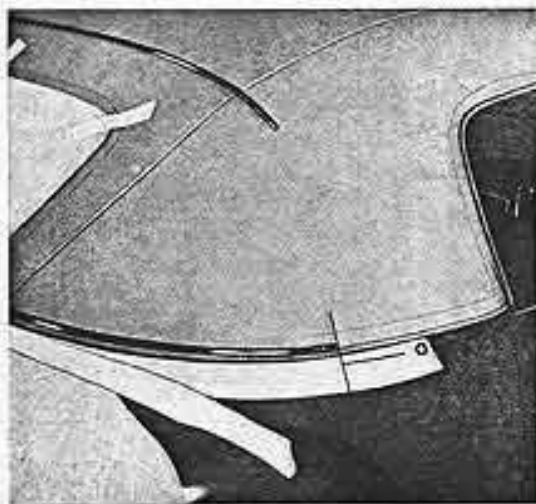
- 31 - Nail trim moulding in position.



To avoid difficulties — such as overhanging at the ends and similar faults — it is advisable to first determine the exact location of the trim moulding by fitting, measuring or marking with chalk. Then start by nailing at one side and work across to the other.



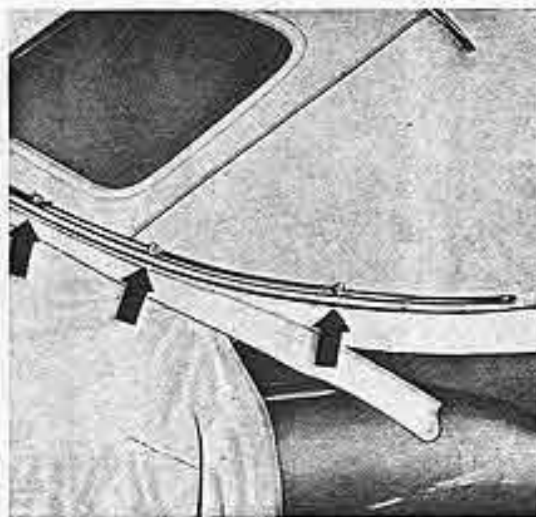
When installing the trim moulding take care that the corners are properly located. Secure the ends of the trim moulding with the special screws (Part No. N 13 864 1).



Before nailing the trim moulding for the body bow on, check that the distance between the ends of the moulding and the lock pillar is 360 mm.

a - 360 mm (14.2")

Secure the ends of the trim moulding for the rear body bow to the body with the counter-sunk tapping screws (Part No. 11 456 1).



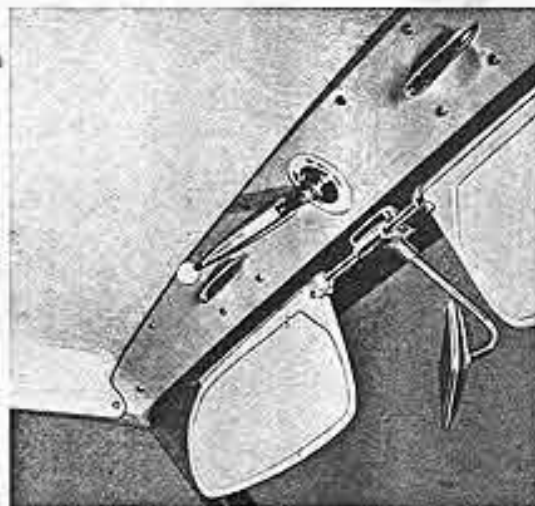
32 - Screw the bottom parts of the press buttons for the top boot and the necessary bases for the buttons into the holes provided in the trim moulding.

- 33 - Attach the leatherette covered plate for the header to the inside of the header with the special screws (Part No. N 12 611 1) and the protective washers (Part No. 141 871 619).



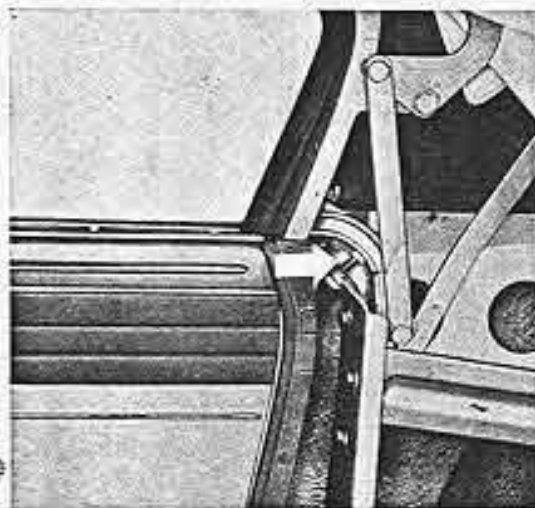
- 34 - Push the top lock handle onto the shaft and secure with the cap nut (Part No. N 11 143 1). Take care that the handle points to the left when the top is closed. Finally attach the headlining to the plate by inserting a counter-sunk screw and special washer in the holes provided at left and right.

The screw points must not touch the roof frame as this will result in noises in the header, if necessary bend the ends of the header plate up away from the roof frame.



- 35 - Open and close the top several times to check the lock.

- 36 - When all the top installation work is finished the roof frame can be adjusted.



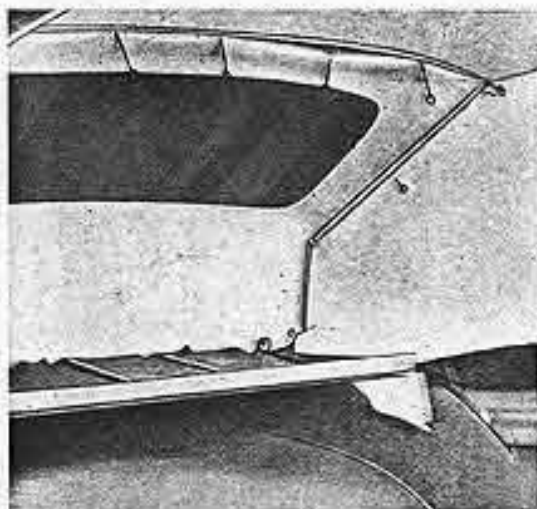
An adjuster screw and lock nut is fitted to each of the main hinge pillars for this purpose.

As already pointed out during the roof frame fitting operation there should be a clearance of 6 mm (0.236") between the lower edge of the main bow and the quarter panel.

Bearing this measurement in mind, loosen the lock nut and turn the screw in until it contacts the main bow without exerting any pressure.

Tighten the lock nut.

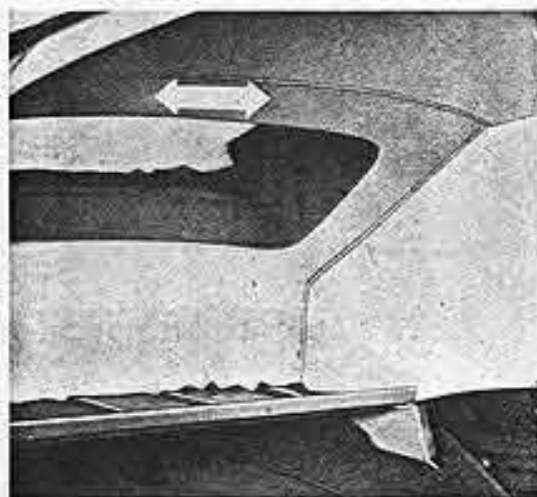
Securing Headlining



As already stated the rear portions of the headlining and the top cover are sewn to the rear window.

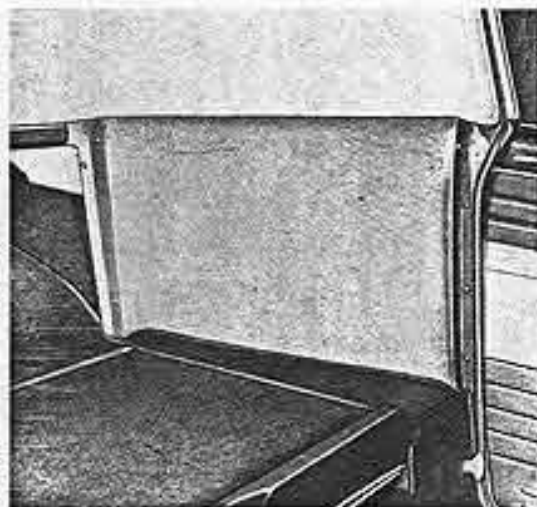
The headlining rear portion is not sewn to the main part until the top cover is completely fitted.

- 1 - Tension the rear portion slightly and pin it to the headlining and the top beading.



- 2 - Sew the rear portion, top beading and headlining together with small invisible stitches.

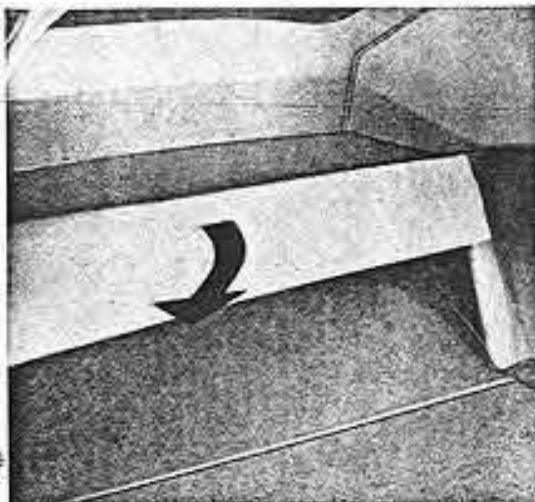
It is advisable to start in the center and work outwards to avoid creases.



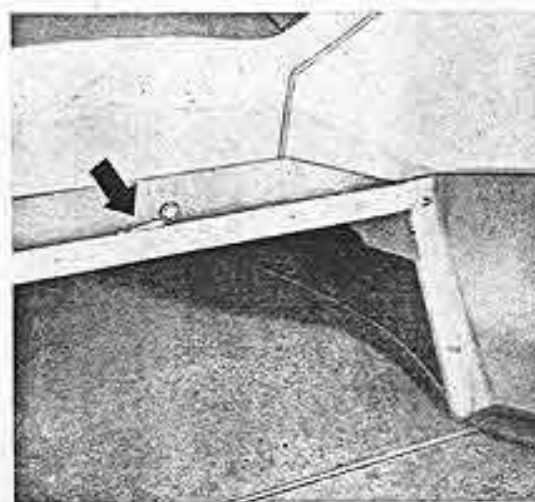
- 3 - Cement the surplus rear portion of the headlining to the top compartment panel.

- 4 - Secure the rear quarter trim panels.

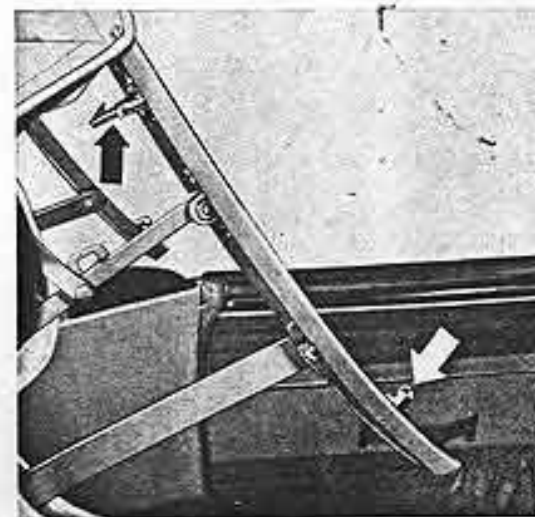
- 5 - Coat the bottom panel of the top compartment with adhesive on the top, front and halfway underneath.



- 6 - Cement the leatherette covered cardboard sheet onto the top compartment bottom panel.



- 7 - Secure the retaining strap for the emergency seat.

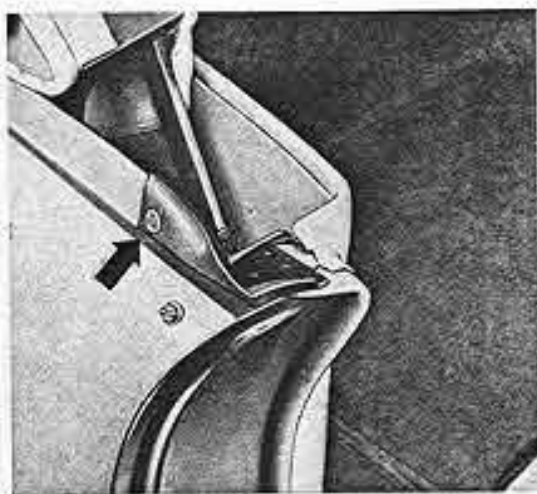


- 8 - Open the top and screw the top catches and coat hooks into the holes provided in the top frame.

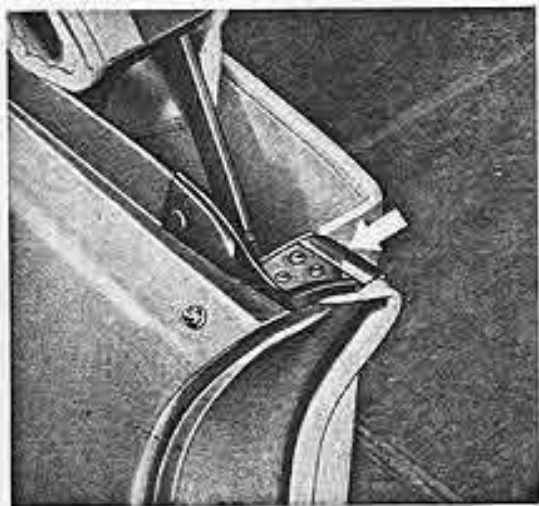
Installing Lock Pillar Trim Plate



Before installing the door window weatherstrips, the seals (Part Nos. 141 853 367/368) and the trim plates (Part Nos. 141 853 365 A/366 A) must be fixed to the lock pillars.



- 1 - Secure the sealing rubbers to the lock pillars with one hollow rivet each (Part No. 141 853 369).



- 2 - Attach the trim plates with three chrome-plated screws each (Part No. N 11 322 1).

Installing Door Window Weatherstrips

The door window weatherstrips, under Part Nos. 141 871 925 A/926 A and 141 871 923, are attached to the roof frame, the main bow and the windshield frame.

The weatherstrips are supplied longer than finally required to permit proper fitting and cutting to size. They are attached to the roof frame by metal strips which fit inside the rubber moulding and are secured to the roof frame with tapping screws.

From Chassis No. 2105320 softer weatherstrips were installed. These weatherstrips conform to the window shape better, make window adjustment easier and stop friction noises between the window glass and the rubber lips.

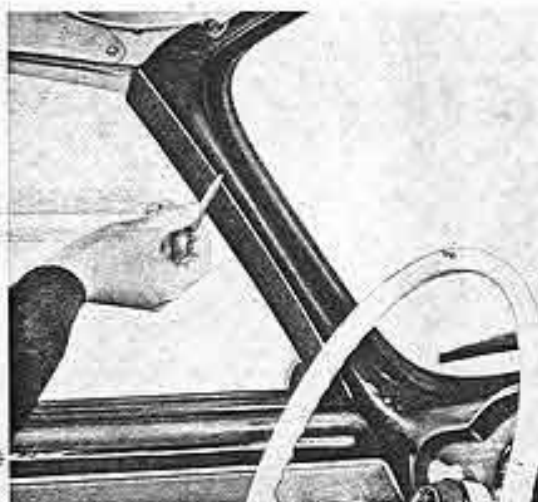
The new weatherstrips, which are supplied under the previous part number, can be subsequently installed without any alterations.

To stop friction noises between weatherstrip and window glass, apply ATE brake cylinder paste to the rubber lips. Wipe the weatherstrips afterwards with a clean cloth.

To stop noises with the softer weatherstrips, roughen the lips with rough emery cloth only as this rubber is self-lubricating and the normal chemical solutions will increase the noise.

- 1 - Before screwing the weatherstrips into position it is necessary to locate them exactly.

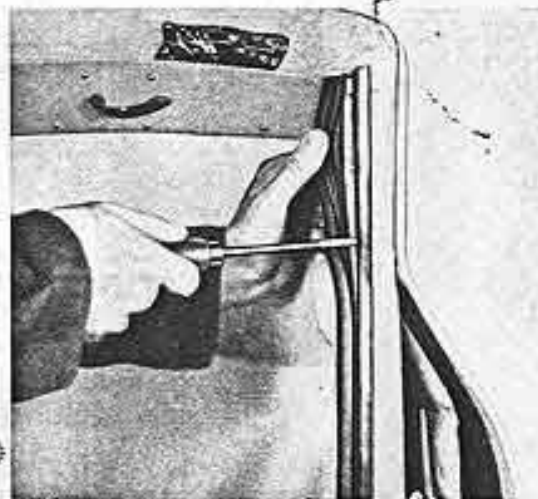
To do this, wind up the window glass and place the weatherstrip in position where it has to be screwed on. Take care that the weatherstrip makes good contact on the door window.



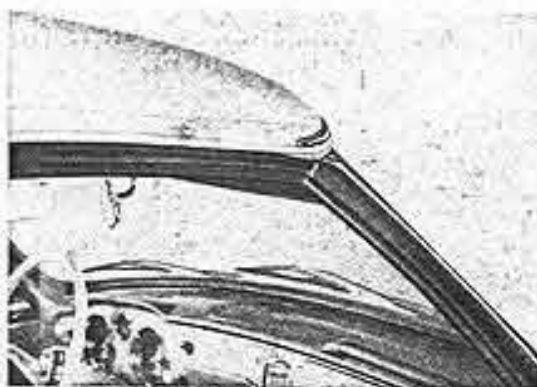
- 2 - Mark the position of the weatherstrip on the inside of the vehicle with a pencil. Do not use a scribe or similar tool.

- 3 - Cut the weatherstrip to size. It is advisable to be on the safe side and leave the weatherstrip slightly too long.

- 4 - To ensure good sealing it is recommended that a strip of sealing band (Part No. 151 871 435) be cemented under the weatherstrip.



- 5 - Drill holes to correspond with the holes in the metal strips and secure the weatherstrip in position.



- 6 - Cut the weatherstrip to the necessary length. Pay particular attention to the corners, the weatherstrips must fit closely together at this point.

Note:

Since production began in August 1957, from Chassis No. 1 605 254 to 2 257 979 (25th January 1959) the top cover — Part No. 141 871 035 — has been installed. It consists of the finished top cover and a piece of material for covering the bottom of the header.

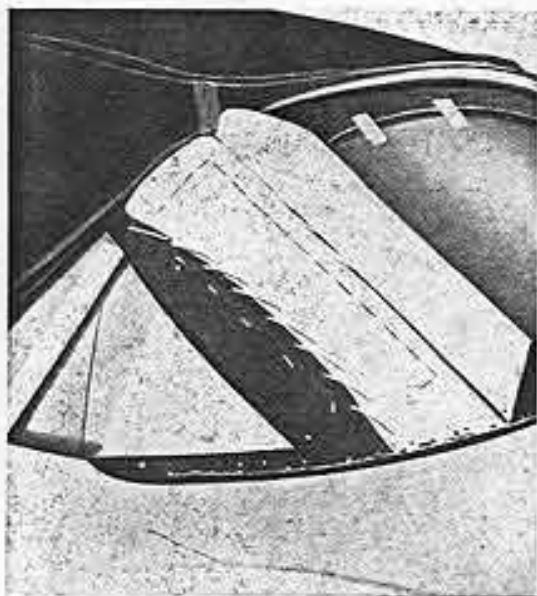
The chrome-plated moulding on the header was discontinued from Chassis No. 2 257 980 (25th January 1959) and a modified top cover, also under Part No. 141 871 035, was installed. On this top cover the piece for the bottom of the header is sewn to the top cover and forms a "pocket". The top cover is slipped over the header at the front and

tensioned by pulling to the rear. Detailed instructions for service installation are contained in Technical Bulletin A-17.

From Chassis No. 2 528 668 (6th August 1959) the top cover has been provided with a replaceable rear part with the rear window sewn into it. This top cover is supplied in two parts and can be installed in older models as described in Technical Bulletin A-17. The color of the top cover must be selected according to the customer's wishes and the vehicle's color.

The spare top covers are supplied under Part Nos. 141 871 035 and 141 871 035 A. The rear portion, with rear window attached, is obtainable separately under Part No. 141 871 039.

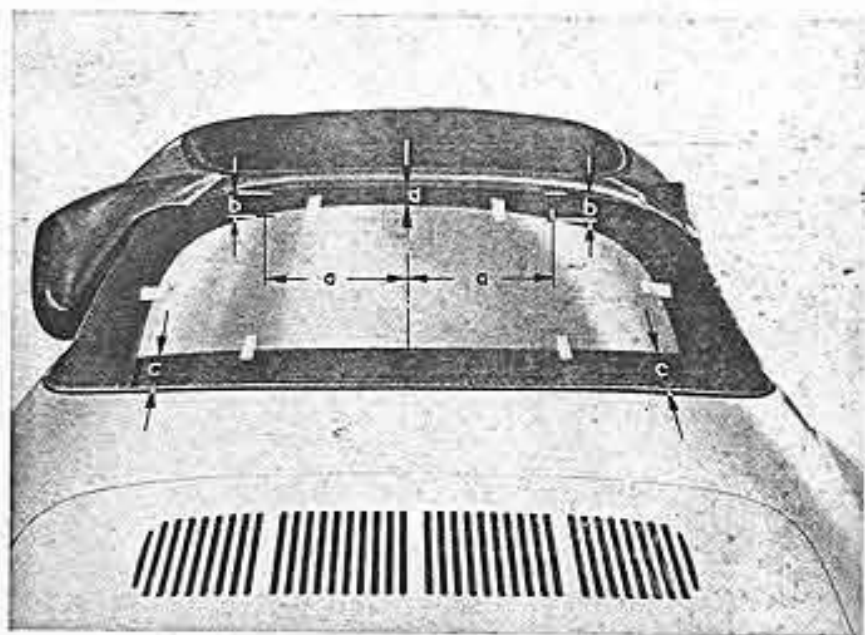
Service Installation of the Rear Portion



- 1 - Remove the trim moulding above and below the rear window.

- 2 - Loosen the top cover at the rear as far as the chrome-plated screw on the main bow. Fold forward and remove damaged rear portion.

- 3 - Fit new rear portion and tack under tension to the rear bow and the body bow.



a = 250 mm (9.842")
 b = 57 mm (2.244")
 c = 65 mm (2.559")
 d = 45 mm (1.771")

Measure the rear part to check that it is exactly in the center. Correct if necessary by loosening the material at the appropriate place and pulling in the desired direction.

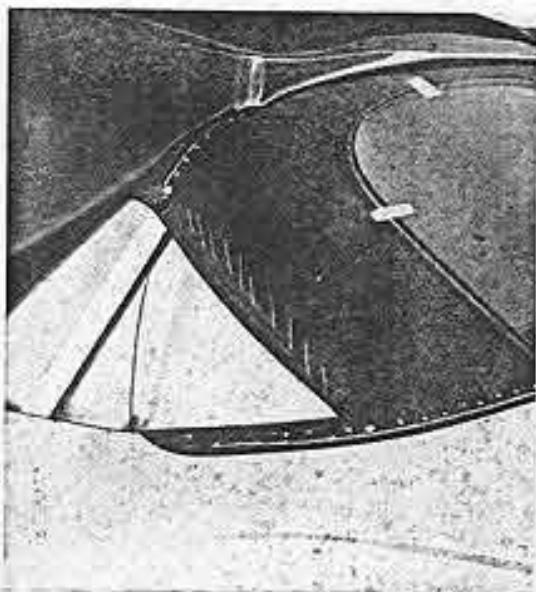
- 4 - Nail the rear portion to the recess in the rear bow under uniform tension and free of folds.

- 5 - Sew the rear portion at two seams on each side and with small stitches to the lining material and rubberised hair padding. Cut off the surplus material.

- 6 - Fold top cover down again and nail under tension to the rear bow and body bow.

The top must be closed when tensioning.

- 7 - Nail the rear and body bow trim mouldings on. Install press buttons.





Leaky Top Cover Seams

When the seams of the Convertible top show signs of leakage, carry out a test by spraying the top evenly and lightly with water until the location of the leak is discovered.

The top seams, including those round the rear window, can only be effectively sealed if the thread itself is in good condition. If the thread is damaged or rotted to such an extent that it is no longer tight the only remedy is to replace the cover. Re-sewing is not recommended as experience has proved that the stitches cannot be spaced to conform to the original holes when sewing with a machine. Apart from this the seam holes would be enlarged too much by the tension of the new thread.

The leaks can be eliminated by the use of the seam protecting solution "Happich 7303" which is obtainable from Gebr. Happich GmbH, Wuppertal-Elberfeld, Neunteich 72. The solution is applied underneath all the top seams, including the edges, and rubbed in vigorously until small drops can be seen in the stitch holes from outside. The solution must not come into contact with the outer surface of the top cover as it cannot be removed.

The following operations are necessary to enable the solution to be rubbed into the front seams.

- 1 - Lift the header trim moulding at each side about a third of its length.
- 2 - Remove the screws securing the top cover to the roof frame at the sides.
- 3 - Loosen the top cover at both corners of the header until access is gained to the seams.
- 4 - Open the top until it is free of tension.
- 5 - Rub the solution well into the seams.
- 6 - Secure the top cover to the header and roof frame again.

To treat the rear seams it is merely necessary to open the top about half-way. The seams can then be reached from the side, between the roof frame and the top cover.

The water stains in the headlining caused by the leakage can be removed by rubbing them evenly with a cloth well soaked in a solution of 1 part ammonia and 3 parts water. The headlining must be perfectly dry before the solution is applied.

If the headlining is dirty, the places which have been treated will be lighter in colour. It is advisable, therefore, to wipe the entire headlining with a well soaked cloth after the water stains have been removed.

Leakage at Rear Window

If leaks are found at the rear window of the Convertible, first check the condition of the thread securing the rear window in the top cover. Should the thread be damaged or rotted to such an extent that it is no longer tight, the only remedy is to replace the top cover. Re-sewing is not recommended as experience has proved that the stitches cannot be spaced to conform to the original holes when sewing with a machine. Apart from this the seam holes would be enlarged too much by the tension of the new thread.

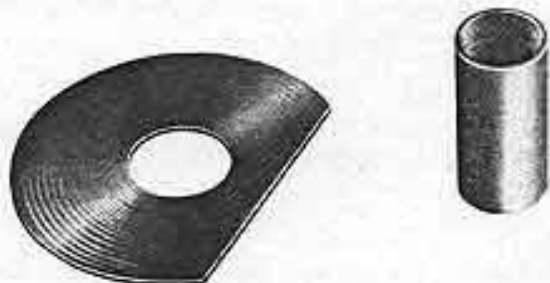
Carry out a test by spraying the area lightly with water. If water penetrates round the window even though the seams appear sound, seal the part between window and top cover with the sealing compound "Epple 55". This compound can be obtained direct from Chemischen Fabrik Epple and Co., Stuttgart-W., Seldenstr. 57.

Waterstains on the headlining under the rear window do not always indicate that the window is leaking. In most cases these stains are caused by condensed water running off the window and soaking into the headlining. A remedy in these cases is possible only if the window is wiped dry when condensation forms. The water stains in the headlining can be removed by rubbing them evenly with a cloth well soaked in a solution of 1 part ammonia and 3 parts water. The material must be perfectly dry before the solution is applied.

If the headlining is dirty, the places which have been treated will be lighter in colour. It is advisable, therefore, to wipe the entire headlining with a well soaked cloth after the stains have been removed.

Noises at the Header

From Chassis No. 2125345 onwards anti-squeak washers (Part No. 141871503) and anti-squeak sleeves (Part No. 141871509) were installed in the corner fittings of the Convertible to eliminate noises between the header fittings and the roof frame caused by the stressing of the top frame.

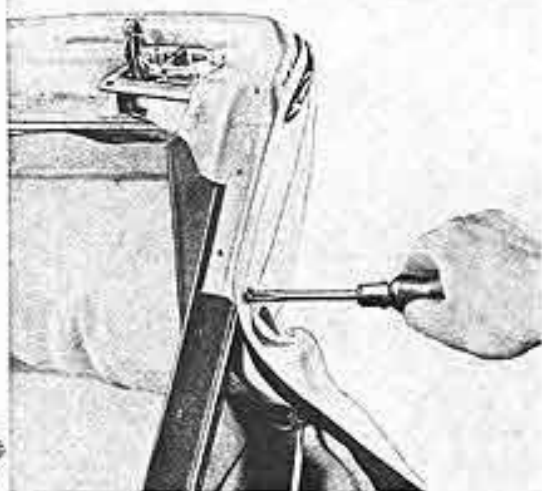


If these noises occur on older Convertible models the plastic parts can be service installed. The following operations are necessary:

1 - Open top and fold it back. Remove top lock handle and header cover plate.

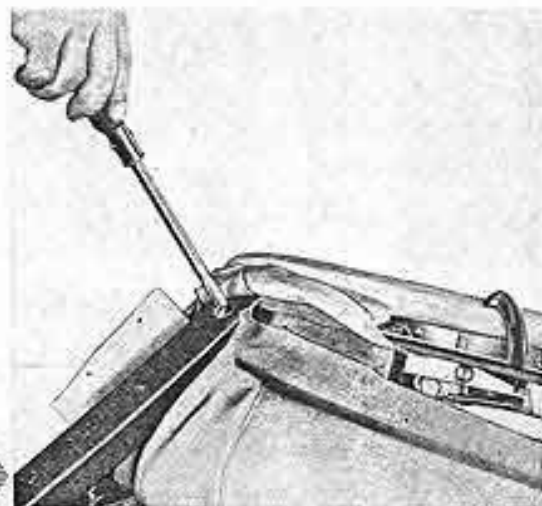
2 - Loosen both door window weatherstrips on the top frame for about half their length.

3 - Remove the screws securing the top cover to the frame at the sides.



4 - Loosen the top cover at both corners where it is nailed to the header.

5 - Lift the top cover at both sides where it is cemented to the frame until the screws securing the header are exposed.



6 - Remove the header securing screws taking care that the brass washers under the screws are also withdrawn from the holes.

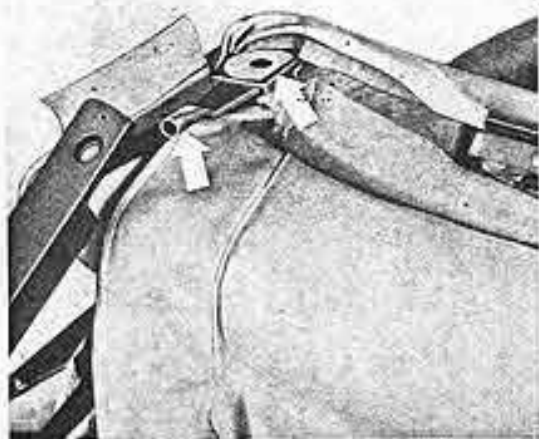
7 - Push header out of the top frame.

8 - Remove scraps of old material and cement remains from the header corner fittings.

9 - Place the sleeves over the rear ends of the corner fittings.

Coat the ends of the corner fittings lightly with adhesive to stop the sleeves slipping off when the header is installed. (Allow adhesive to dry well as the synthetic material does not stick easily.)





10 - Cement the anti-squeak washers over the holes for the header securing screws so that the straight edge faces the vehicle interior. Place a shake-proof washer in the hole in the header fitting.

11 - Locate the header in the roof frame again and insert screws. Take care that the brass washers are correctly in position. While the screws are being tightened move the appropriate side of the roof frame back and forth so that the screws seat properly. The screws should be tightened to a torque of 4 mkg (29 ft. lbs.).

12 - Place the top cover in position again and secure with cement, nails and screws. Install the header cover plate and the lock handle.

Padded Sun Visors

From Chassis No. 2252455 the Convertible has been fitted with padded sun visors instead of the dark-colored plastic material type.

The new type visors can be installed in place of the previous type without any further alteration and are obtainable separately under the Part Nos. 141857551 B/552 B.

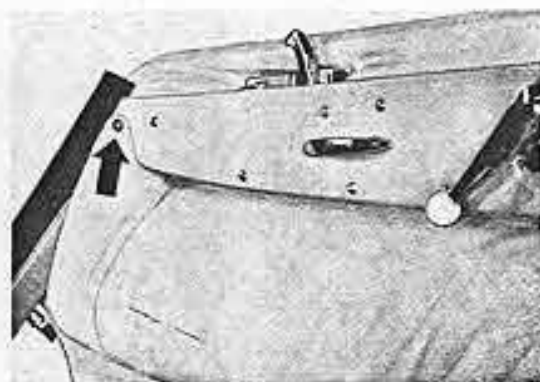
The new rear view mirror with spindles (less visors) is supplied under Part No. 141857523 B.

When service installing the new type sun visors on the previous rear view mirror with holder observe the following:

- 1 - Remove securing screws and remove previous sun visors with the two end supports (Part No. 141857559).
- 2 - Push the padded sun visors onto the spindles as far as possible and tighten the clamp screws.

The end supports are no longer necessary.

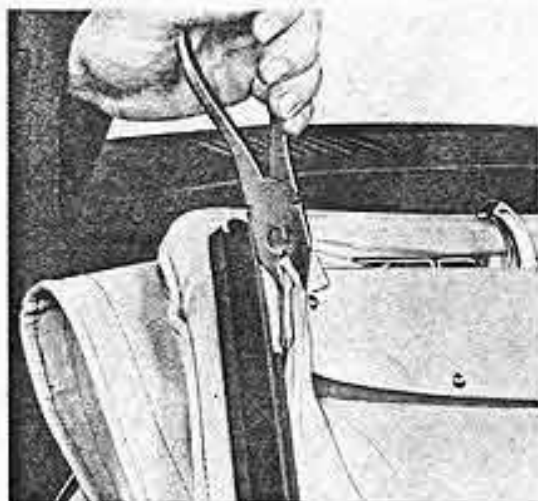
Noises at the Header Cover Plate



Noises occasionally occur at the corners of the header on the Convertible which can be traced to the following source.

The two headlining securing screws at the ends of the header cover plate contact the metal roof frame when the vehicle vibrates.

A remedy can be effected by shortening the screws and slightly bending the ends of the header cover plate so that the screws cannot touch the metal frame of the roof. To avoid soiling or damaging the cover plate when bending it, wrap a piece of cloth round the jaws of the pliers.



Leakage at the Top Header

When leakage occurs at the header of the Convertible, the cause can be as follows:

- a - Insufficient or uneven contact between the header and the windshield frame, particularly at the corners.
- b - Incorrect nailing of the top cover to the header under the front trim moulding.

The leaks can be located and eliminated as follows:

Re a - Light spots on the header contact surface usually indicate the entry of water at this point.

Check that the contact is even by inserting strips of paper between the header and the windshield frame. At the points where the paper strips are not firmly pressed, the header must be sealed by installing additional foam rubber strips of appropriate thickness. First of all check whether the original weatherstrip is deformed or misplaced. Should this be the case, install a new weatherstrip. The most suitable foam rubber strip for sealing is the type used under the roof corners (Part No. 141 871 605).

To replace the weatherstrip, the handle for the top lock and the header cover plate must be removed. If the nails on the inside of the header are removed the front top cover strip can be lifted enough to allow the weatherstrip to be renewed or additional pieces inserted. Nail the top cover in position and carry out a water test. If the leaks have been eliminated, install header cover plate and handle.

Re b - The main top cover is nailed under the front trim moulding together with the strip of material for the header. At the corners of the header the strip of material is nailed in small pleats to follow the curve. If the pleats are too large they act as canals through which the water is forced under the main top cover when the vehicle is moving at high speeds, thus wetting the padding and header. If wadding is used to even out the pleats it must not be visible on the row of nails between main top cover and the header cover as the wadding will soak up moisture.

This type of leakage shows as damp spots in the front part of the headlining and can be eliminated as follows:

Remove:

- 1 - Handle for top lock
- 2 - Header cover plate
- 3 - Header trim moulding
- 4 - Sealing band under the trim moulding.

Loosen the top cover at the roof bow corners as far as necessary and fold up. Renew damp wadding and rubberised hair and dry header. If the header is cracked or the glue is faulty the header must be renewed.

When nailing the header strip in position make the corner pleats smaller before nailing. Coat the upper ends of the pleats well with rubber solution and cover with the widest possible strip of linen. Finally, nail the main top cover to the header again, under tension and free of creases with brass tacks only (Part No. 151871471). The top beading must seat firmly and evenly particularly at the corners of the header. Coat the row of nails on the header with rubber solution. Tack a strip of sealing band (Part No. 151871435) over the nails and install the trim moulding.

Protective Cloth for Rear Window

From Chassis No. 2120400 a soft protective cloth (1050 mm x 650 mm) was supplied with the Convertible. This cloth should be placed over the rear window when the roof is open to avoid the window being scratched.

A folding card was also included with the cloth, giving more detailed instructions as follows:

"Please note the following when opening the top:

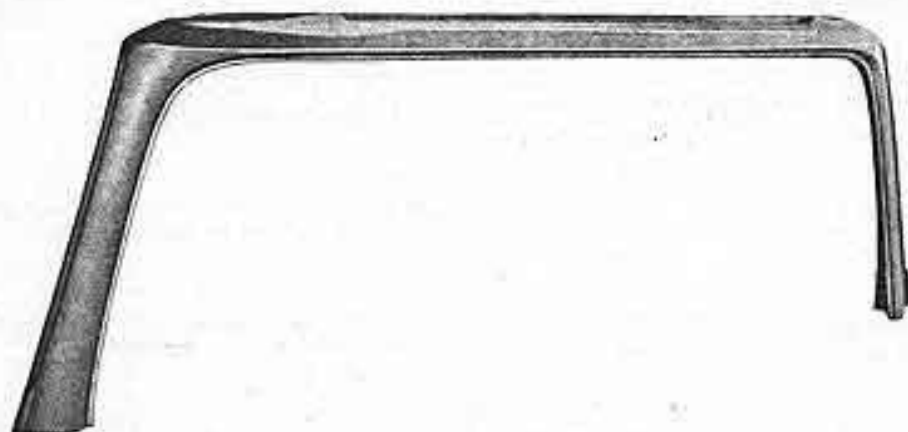
When you have unlocked the top and lifted it slightly, place the protective cloth over the rear window. The top can then be folded back, smoothing out the folds between the bows with the back of the hand.

Press the top down until the catches engage. Secure the top boot on the inside first and then outside."

This text was included in the Instruction Manual at the same time.

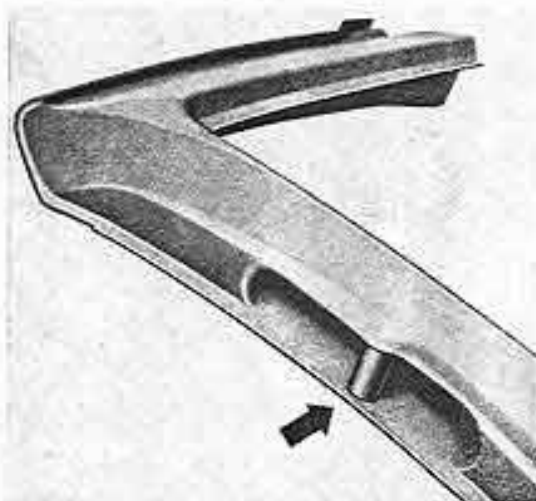


Windshield Frame



The windshield frame is supplied as a complete item and consists of:

- a - Inner panel
- b - Outer panel
- c - The recesses and rollers for the locking hooks



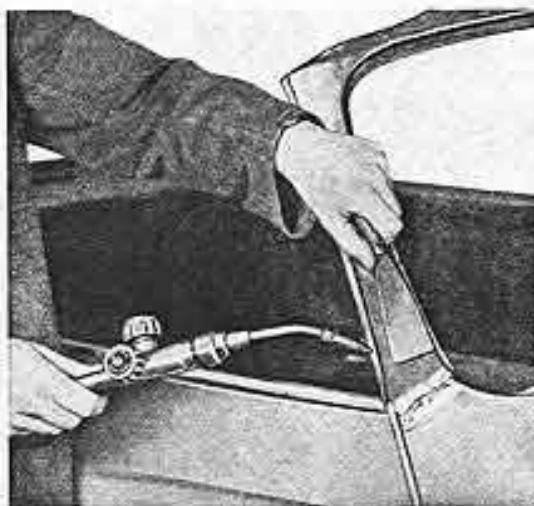
All the parts are welded together. The outer edges of the windshield frame are folded together.

If necessary, replace the complete frame and weld into position with the assistance of the special jig. The use of the jig is strongly recommended as otherwise difficulty can appear when installing the windshield or when closing the top. Further details of other jigs and appliances can be found in "Body General" section under "Workshop Equipment".

Replacing the Windshield Frame

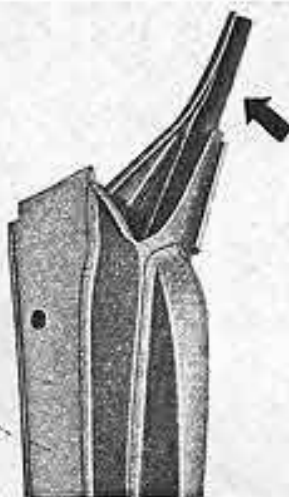
Preparation

- 1 - Disconnect battery.
- 2 - Remove or cover the instrument panel as far as necessary.
- 3 - Remove windshield wiper mechanism.
- 4 - Remove front seats and floor mats.
- 5 - Remove windshield glass.
- 6 - Unscrew the door window weatherstrip at the windshield frame.
- 7 - Remove steering wheel.
- 8 - If no other body repair work is being carried out, remove or adequately cover both doors.
- 9 - Fold top back and cover up to avoid soiling.



Body Repair Work

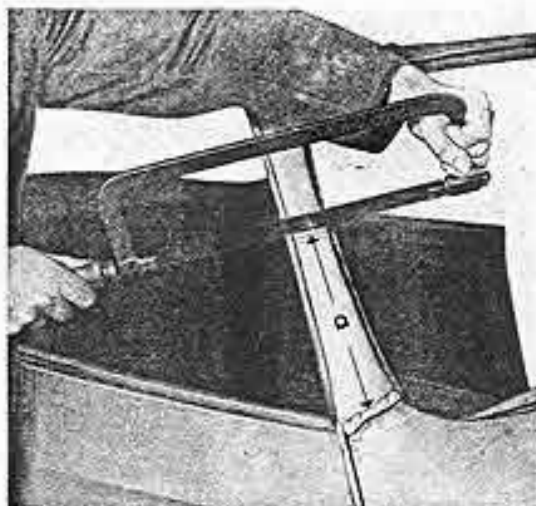
- 1 - Heat the layer of solder on the weld seam with a gas torch and scrape off with a suitable spatula.



- 2 - As already known the hinge pillars of the Convertible have welded-in reinforcement channels at the top which are also welded into the windshield frame.

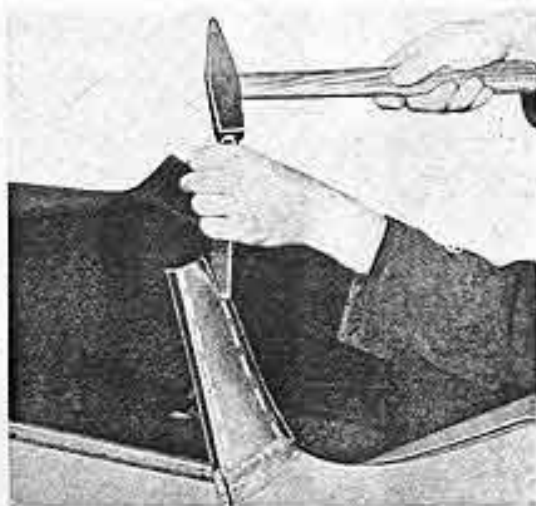
These reinforcement channels must be used again as it is impossible or extremely difficult to weld them into the hinge pillar in situ. For this reason the channels are not supplied separately as spare parts.

- 3 - Saw the pillar off about 200 mm above the weld seam.

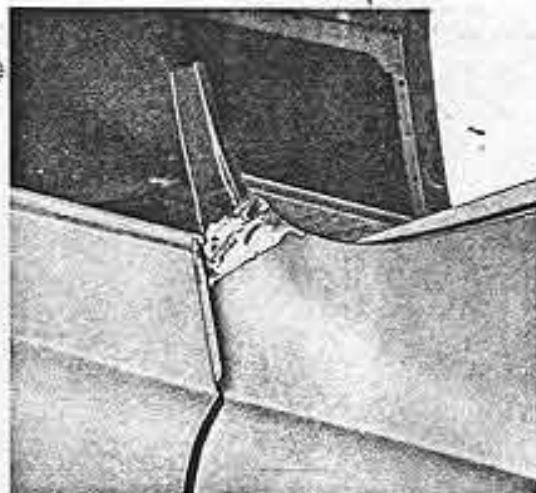


a - 200 mm (7.8")

- 4 - Bend up the folded edges of the windshield frame and chisel down the sides of the remaining windshield pillar parts. The reinforcement channels must not be damaged during this operation.



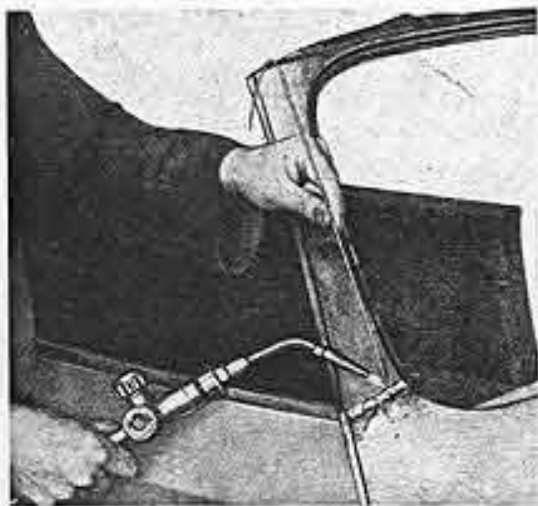
- 5 - Remove metal scraps down to the weld seam and grind or file the weld seams clean. If necessary straighten the reinforcement channel and beat out any dents.



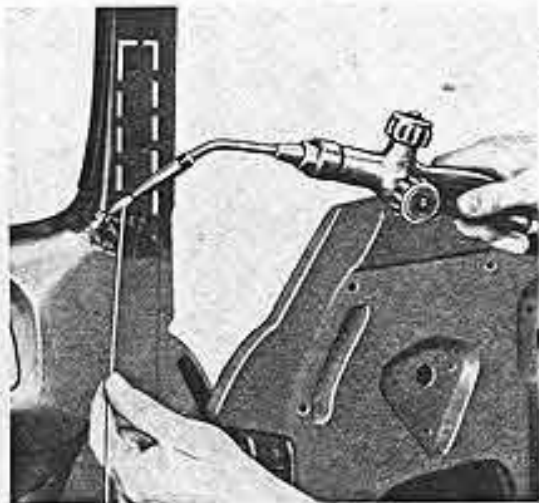
- 6 - Position the new windshield frame, insert the special jig for the windshield glass and secure with clamps.



7 - Tack weld the windshield frame to the body.



8 - Remove the windshield jig and gas weld the frame.



9 - At the bottom of each windshield pillar are three holes which enable the windshield frame to be gas welded to the reinforcement channels.

The dotted line indicates the position of the channel.

10 - Insert the windshield jig again and check the position of the frame. Correct if necessary.

11 - Grind the weld seams off as far as possible and coat all welded and repaired places with solder to ensure a uniform contour.

12 - Grind all reworked places smooth and prepare the vehicle for painting.



Spot Welding Pastes and Paint

A - Spot welding paste

In order to obtain water-tight joints, the parts of metal sheets which are to be welded are given a coating of sealing paste which is not affected by welding.

This standard manufacturing procedure should also be adopted for bodywork repairs.

The paste can be obtained direct from the manufacturers:

Manufacturer	Designation
Bonaval-Werk, Bonn, Germany, Brühler Straße 2—20	Spot welding paste 59 852 or 60 506
Teroson-Werke G.m.b.H., Heidelberg, Hans-Bunte-Straße 4, Germany	Spot welding paste 2257

The paste is applied before welding commences. Before and after welding the paste should not run. At the joints it should form a film which adheres firmly, prevents corrosion and renders the joint water-tight. It must also remain unaffected by degreasing agents and subsequent painting.

Paste which burns during spot welding should cease to do so as soon as the heat is removed.

The paste should only be employed where water-tight seams are stipulated and where it is impossible or difficult to apply sealing compound after welding.

B - Spot welding paint

Spot welding paint is used to prevent corrosion in hollow parts, which cannot be painted after welding due to inaccessibility.

Manufacturer	Designation
Teroson-Werke G.m.b.H., Heidelberg, Hans-Bunte-Straße 4	Spot welding paint 2273

Before welding, spray or paint all components with spot welding paint.

General

The use of the above products does not simplify the welding process. It may be necessary to step up the welding current, depending on the thickness of the coat applied.

Superfluous material must, however, be removed before the part is given a coat of paint which must stand up to the conditions stipulated for the outside finish. Neither welding paste nor paint can be considered as a substitute for primer to which a top coat can be applied.