SERVICE MANUAL

Datsun

MODEL 510 SERIES

CHASSIS and BODY

SECTION BF

BODY

BF

GENERAL DESCRIPTION

Body construction

The body used on the 510 series is an integral, all steel welded structure, commonly known as "unitized" body construction. The overall rigidity of the body is drawn from each of the individual components which, when welded together, comprise the body shell assembly. Panels forming the underbody area incorporate attachment provisions for the power train and the suspension systems. These panels, therefore, contribute greatly to the strength of the body assembly.

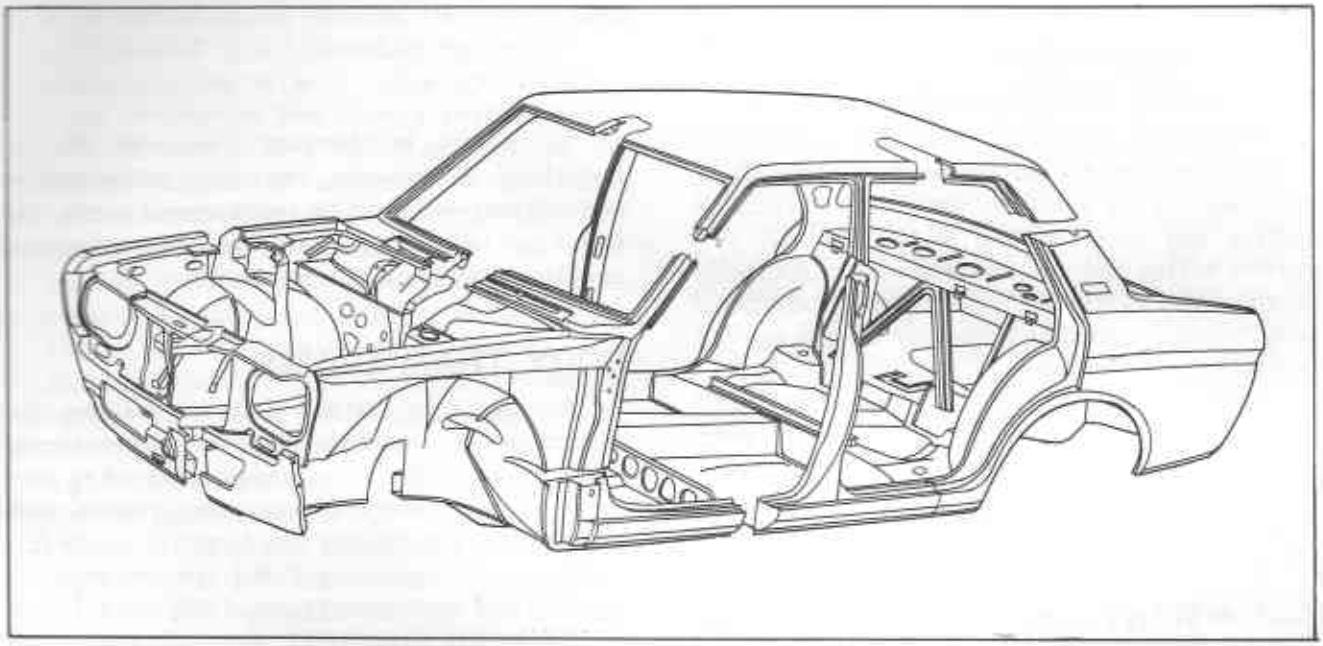


Fig. BF-1 510 Series body structure (sedan)

Fig. BF-2 510 Series body structure (wagon)

Body repairs

Replacement of damaged body parts by new ones proves to be more convenient in many cases than attempting repairs. Therefore, all body components crushed or distorted in accidents are provided with replacements for repair purposes. The list of these items appears in the body parts catalog. Small sections may be cut out from the new part when the nature of the damage does not call for the replacement of the whole part.

It should be kept in mind that the purpose of body repair is not only the reshaping of the car to its original appearance but, to restore the car to its original sturdiness. It is self-evident that if the repair has been made with only the aim of masking the body work, weak spots are apt to develop in time, which might adversely affect the car's sturdiness and riding safety.

UNDERBODY ALIGNMENT

CONTENTS

UNDERBODY GENERAL SERVICE INFORMATION

Since each individual underbody component contributes directly to the overall strength of the body, it is essential that proper welding, sealing and rust-proofing techniques be observed during service operations. Underbody components should be rust-proofed, whenever body repair operations destroy or damage the original rust-proofing.

When rust-proofing critical underbody components, it is essential that a good quality type air dry primer be used such as corrosion resistant zinc chromate. It is not advisable to use combination type primer surfacers.

ALIGNMENT CHECKING PROCEDURE

The underbody is comprised of the firewall panel, the floor panel and cross braces, floor side rails and inner and outer rocker panels. The underbody is an all welded construction.

Misalignment in the underbody can affect the alignment of the front fenders, doors, trunk lid and windows, and also the station wagon tail gate and rear body opening. Most important, however, underbody misalignment can influence the suspension system, thereby causing many of the problems that arise from suspension misalignment. It is essential that underbody alignment be within the specified dimensions given in Fig. BF-3.

In the event of collision damage, it is important that underbody alignment be thoroughly checked and if necessary, realigned to the specified dimensions.

There are many tools that may be employed to correct collision damage such as frame straightening machines, external pulling equipment and other standard body jacks and tools.

To assist in checking alignment of the underbody components, repairing minor underbody damage or locating replacement parts, the following underbody dimensions and alignment checking information is presented.

BODY TRAM GAUGE

An accurate method for determining the alignment of the underbody is a measuring tram gauge. The tram gauge required to perform all recommended measuring checks must be capable of extending to a length of 2, 320 mm (91 in.). At least one of the vertical pointers must have a maximum reach of 430 mm (17 in.).

Horizontal dimensions shown in the center portion of Figure BF-3 are calculated on a plane parallel to the underbody.

Precision measurements can be made only if the tram gauge is properly adjusted so as to remain parallel to the plane of the underbody during measuring operations.

A proper tramming tool is essential for analyzing and determining the extent of collision misalignment present in the underbody construction.

PRINCIPLES OF TRAMMING

In the center portion of Figure BF-3 all reference locations shown are symmetrical about the center-line of the vehicle. For example, when performing a cross-check of the body floor panel dimensions (Fig. BF-3) the diagonal measurement should be the same in both directions. Cross checking operations are used to determine the relationship between two locations on the underbody.

To measure the distance accurately between any two reference points on the underbody, two specifications are required:

a. The horizontal dimension between the two points to be measured.

b. The vertical dimension from the datum line to the points to be measured. As an example, the diagonal measurement (calculated on a horizontal plane) between reference points of dimension line L shown in Figure BF-3 is 959.2 mm (38.94 in.). The specifications from the datum line have a vertical height difference of 53 mm (2.08 in.) between the forward location of dimension "L" {at vertical dimension 28 mm (1.1 in.)} and the rearward location of dimension "L" {at vertical dimension 25 mm (0.98 in.)}. The vertical pointer used at the forward location should be positioned so as to extend 53 mm (2.08 in.) further from the tram bar than the pointer used at the rearward location. With the proper settings the tram bar will be on a plane parallel to that of the body. The exception to this would be when one of the reference locations is included in the misaligned area, then the parallel plane between the body and the tram bar may not prevail. After completion of the repairs, the tram gauge should be set at the specified dimension to check the accuracy of the repair operation.

CAR PREPARATION

Preparing the car for the underbody alignment check involves the following.

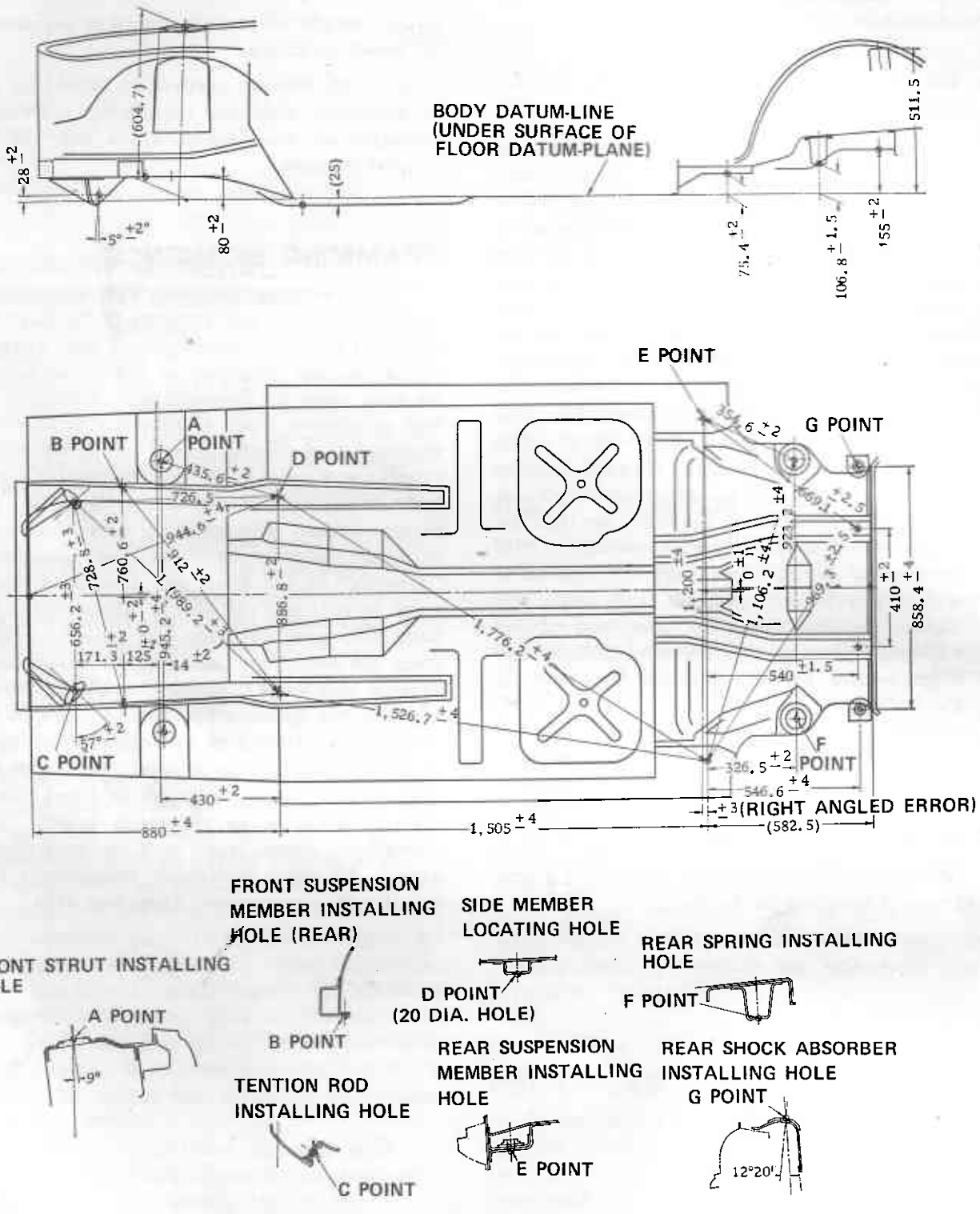
1. Place the car on a level surface.

2. The weight of the car should be supported at the wheel locations.

3. A visual damage inspection should be made to eliminate needless measuring. Obviously damaged or misaligned areas can often be located by sight.

TRAMMING SEQUENCE

The tramming sequence will vary depending upon the nature and location of the misaligned area. Prior to performing any tramming operation, the accuracy of reference points to be used must be determined. A measurement that originates from a reference point which is included in a damaged area will produce untrue results and confuse the evaluation of the underbody condition. Unlike the conventional type of frame design, the unitized type of body construction seldom develops the condition of "diamond" in the floor pan area as a result of front or rear end collisions. Therefore, underbody alignment checking can usually originate from the body floor pan area. If inspection indicates that these locations have been disturbed and are not suitable for measuring, one of the undamaged suspension locations should be used as a beginning reference point. If a rare situation should exist where all of these locations are not suitable as reference points, repair operations should begin with the body floor pan area. All other underbody components should be aligned progressively from this area.



Note: Dimensions are given in (mm). To convert to inches divide by 25.4.

Fig. BF-3 Body alignment check points

FRONT FENDER

Removal and installation

1. Remove the radiator grill, head light and head light finisher.

2. Remove all bolts securing the fender and then remove the fender.

Installation of the fender is the reversal of the procedure given for removal.

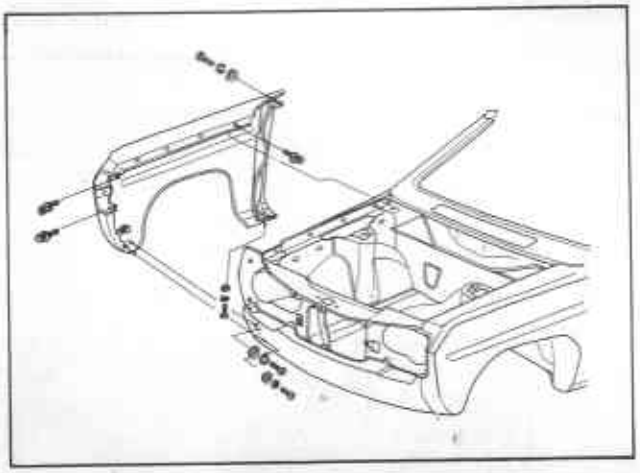


Fig. BF-4 Removing the fender

HOOD

Removal and installation

1. Open hood and place a protective cover over the front fenders to prevent damage to painted areas.

2. Scribe (pencil) the location of the hinge straps on under surface of hood.

3. Replace the bolts attaching the hinge to the hood. With the aid of a helper remove the hood.

Fig. BF-5 Removing the hood

4. Using screw driver as shown in Figure BF-6, remove the hood support rod from the support bracket.

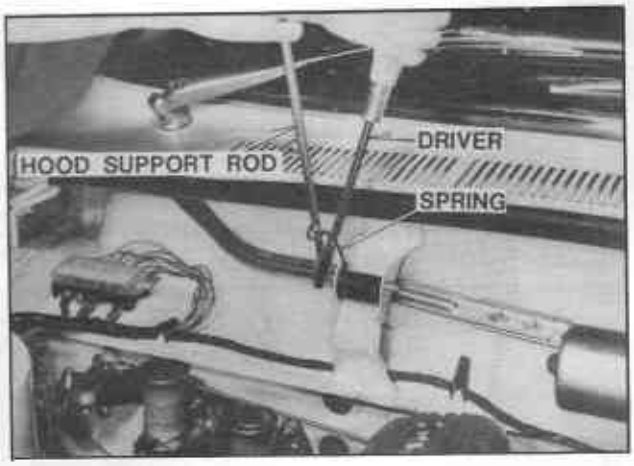


Fig. BF-6 Removing the hood support rod

Installation of the hood is the reversal of the procedure given for removal. However, align the hinges within the scribe marks.

Adjustment

To adjust the hood release the hinge attaching bolts and move the hood to the desired position. After the adjustment has been made tighten the hinge bolts.

Hood lock removal

1. Remove the radiator grill and release the female hood lock attaching bolt.

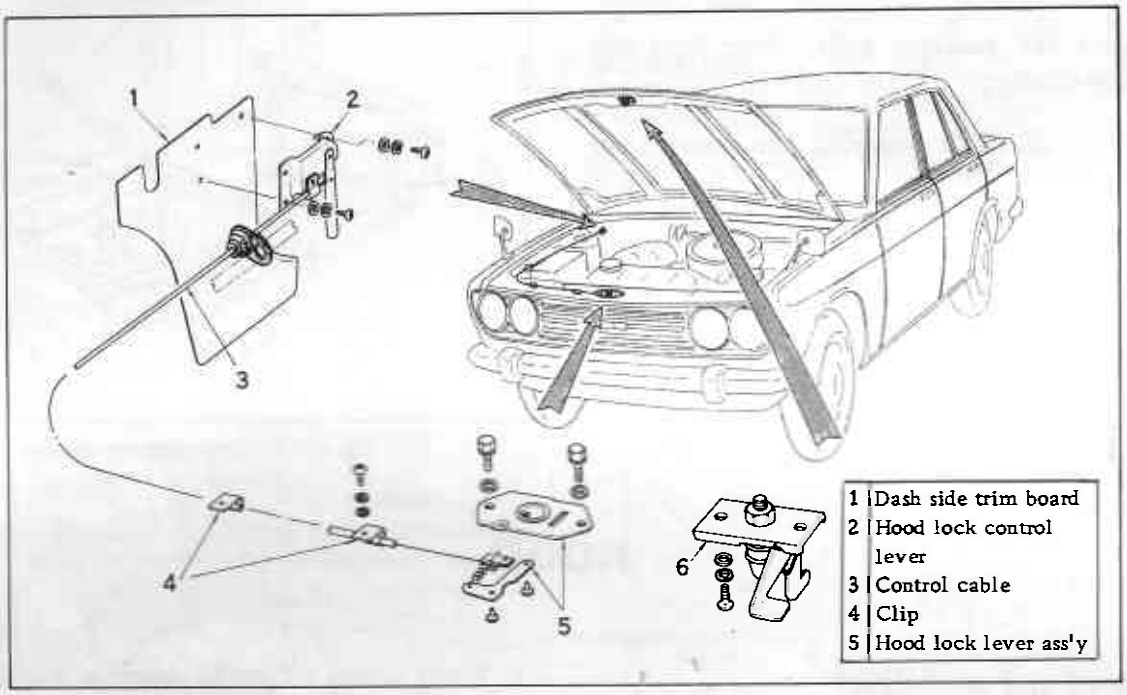


Fig. BF-7 Hood locking mechanism

2. Remove remote control cable from female hood lock.

3. Release the setscrews attaching the hood lock control to the dash side trim then pull out the cable toward the driver's seat (See Fig. BF-8).

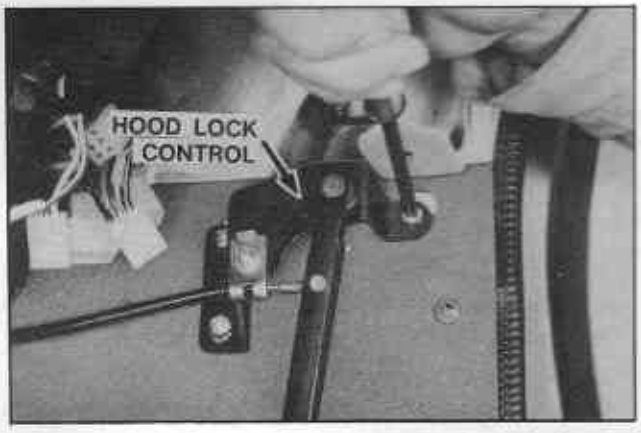


Fig. BF-8 Removing the hood lock control

4. The hood lock male can be removed by unscrewing the attaching bolts.

Hood lock installation and adjustment

Installation of the hood lock is the reversal of the procedure given for removal noting the following points.

1. Align the center of the male plunger to the center of the guide plate. Adjust the male plunger as shown in Figure BF-9.

Fig. BF-9 Adjusting male plunger

TRUNK LID

Removal and installation

1. Open trunk lid and place a cover over the rear fenders and rear panel to protect them against damage to painted area.

2. With the aid of a helper, remove the trunk lid attaching bolts and remove trunk lid (See Fig. BF-10).

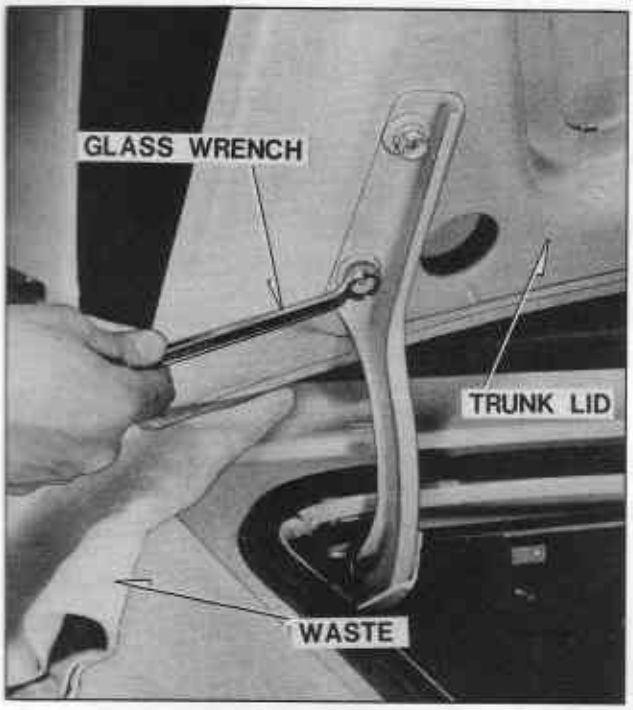


Fig. BF-10 Removing trunk lid

Torsion bar removal and adjustment

1. Remove torsion bar fixing wire then using a screw driver as shown Figure BF-10 remove the torsion bar.

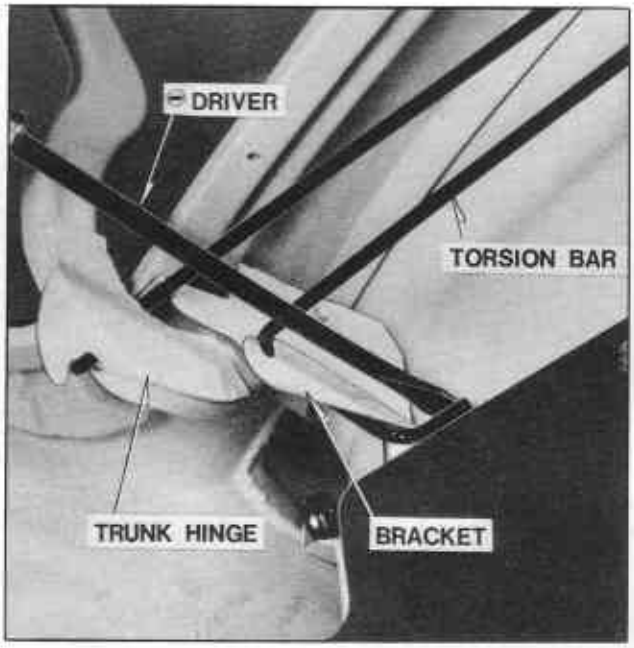
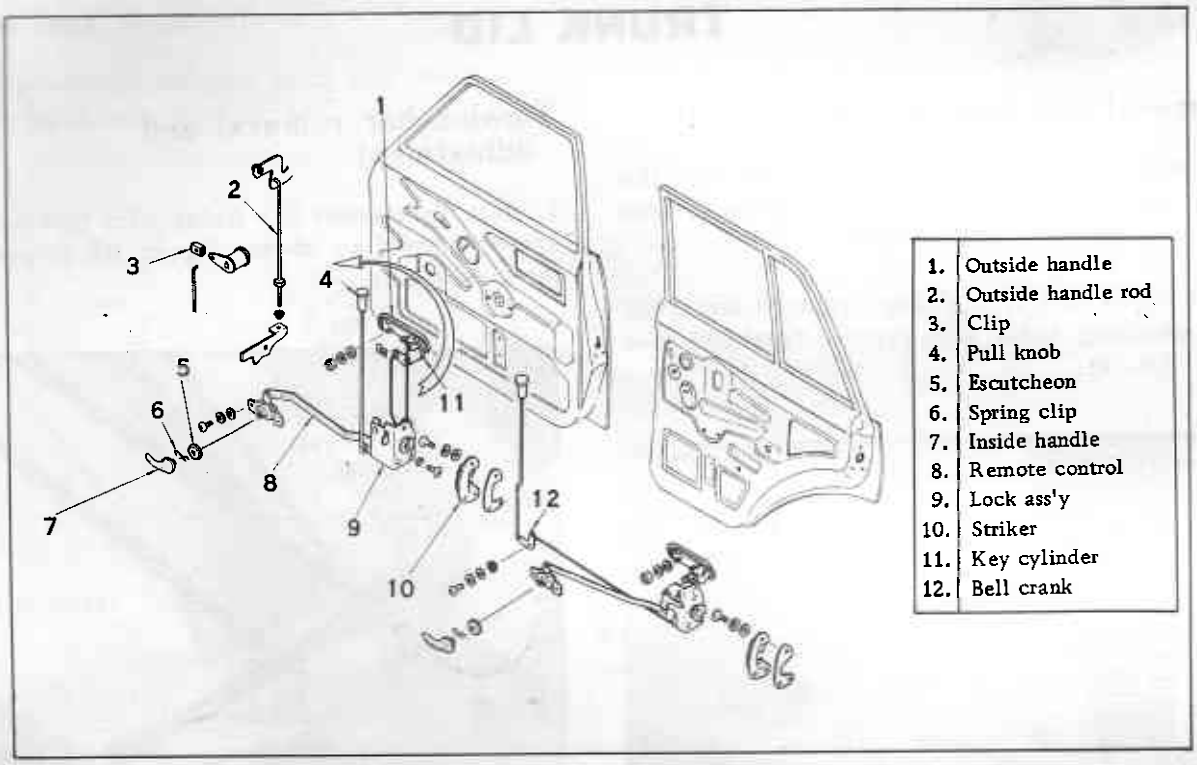


Fig. BF-11 Removing the torsion bar

2. The tension of the torsion bar can be adjusted by changing the location of the bar with the use of a screw driver.

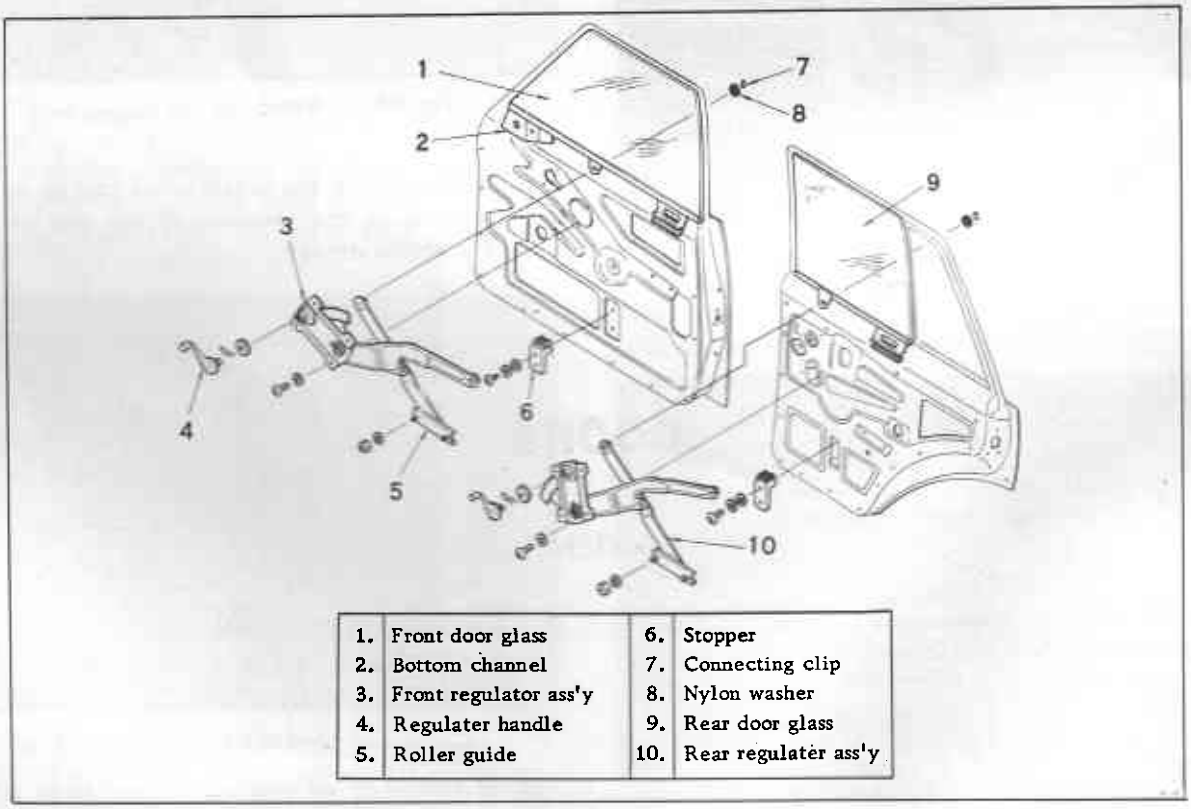
DOORS

CONTENTS



1.	Outside handle
2.	Outside handle rod
3.	Clip
4.	Pull knob
5.	Escutcheon
6.	Spring clip
7.	Inside handle
8.	Remote control
9.	Lock ass'y
10.	Striker
11.	Key cylinder
12.	Bell crank

Fig. BF-12-a Door lock mechanism



1.	Front door glass	6.	Stopper
2.	Bottom channel	7.	Connecting clip
3.	Front regulator ass'y	8.	Nylon washer
4.	Regulater handle	9.	Rear door glass
5.	Roller guide	10.	Rear regulater ass'y

Fig. BF-12-b Window regulator

DESCRIPTION

The door is locked by pushing the inside handle down.

The remote control link which connects the inside handle to the lock is a pushing type, therefore the door lock will not release in the event of a collision.

The remote control link, remote control and door knob link are so situated that they are easily accessible for repair and inspection purposes.

The window regulator is a double arm 'X' type connected to the glass bottom channel with a single pin.

The difference between the traces of the curved glass and the regulator is avoided by the deflection of the regulator arm.

DOOR GLASS AND REGULATOR REMOVAL AND INSTALLATION

1. Remove door trim assembly and detach the inner panel water sealing screen.

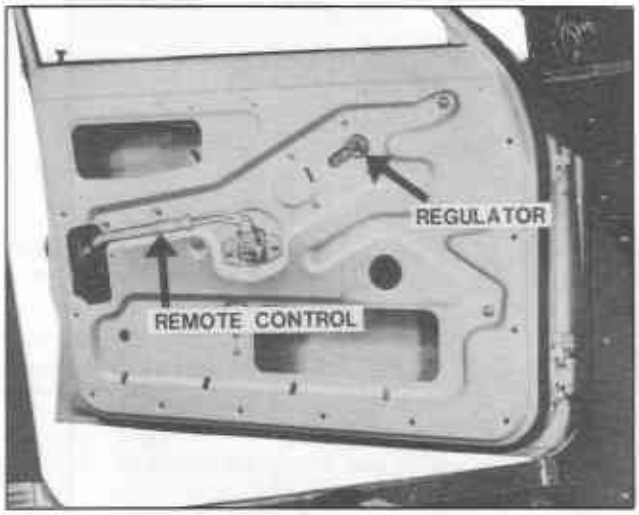


Fig. BF-13 Front door showing remote control link

2. Lower window glass. Remove the pin attaching the sub arm to window glass bottom channel.

3. Remove the guide channel attaching nuts. Slide off guide channel from regulator sub arm roller.

4. Remove fixing bolts securing the regulator and allow the regulator to drop. The regulator main arm roller will still be attached to the window glass bottom guide channel.

5. Raise the window glass and slide the regulator main arm roller off the glass bottom channel. Remove the regulator as shown in Figure BF-14.

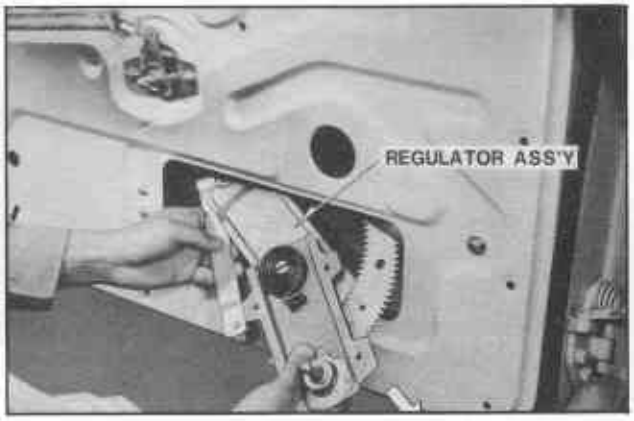


Fig. BF-14 Removing the regulator

6. Take the glass out of the glass run channel and pull the glass out at an angle (See Fig. BF-15).

Fig. BF-15 Removing window glass

To install glass and regulator reverse the procedure given for removal.

DOOR LOCK REMOVAL AND INSTALLATION

1. Remove glass run channel as shown in Figure BF-16.

Fig. BF-16 Removing glass run channel

2. Remove inside lock knob.

3. Unscrew the three door lock retaining screws and the two remote control retaining screws. Then remove the remote control assembly.

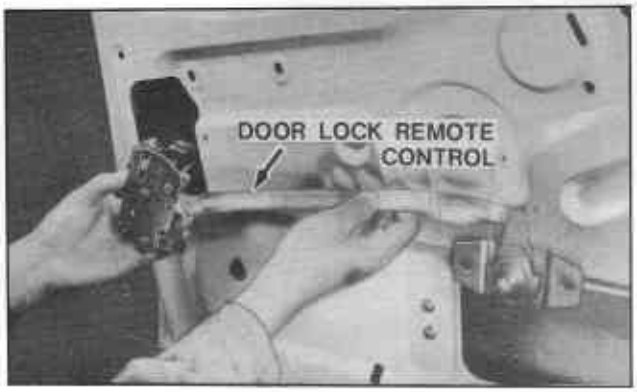
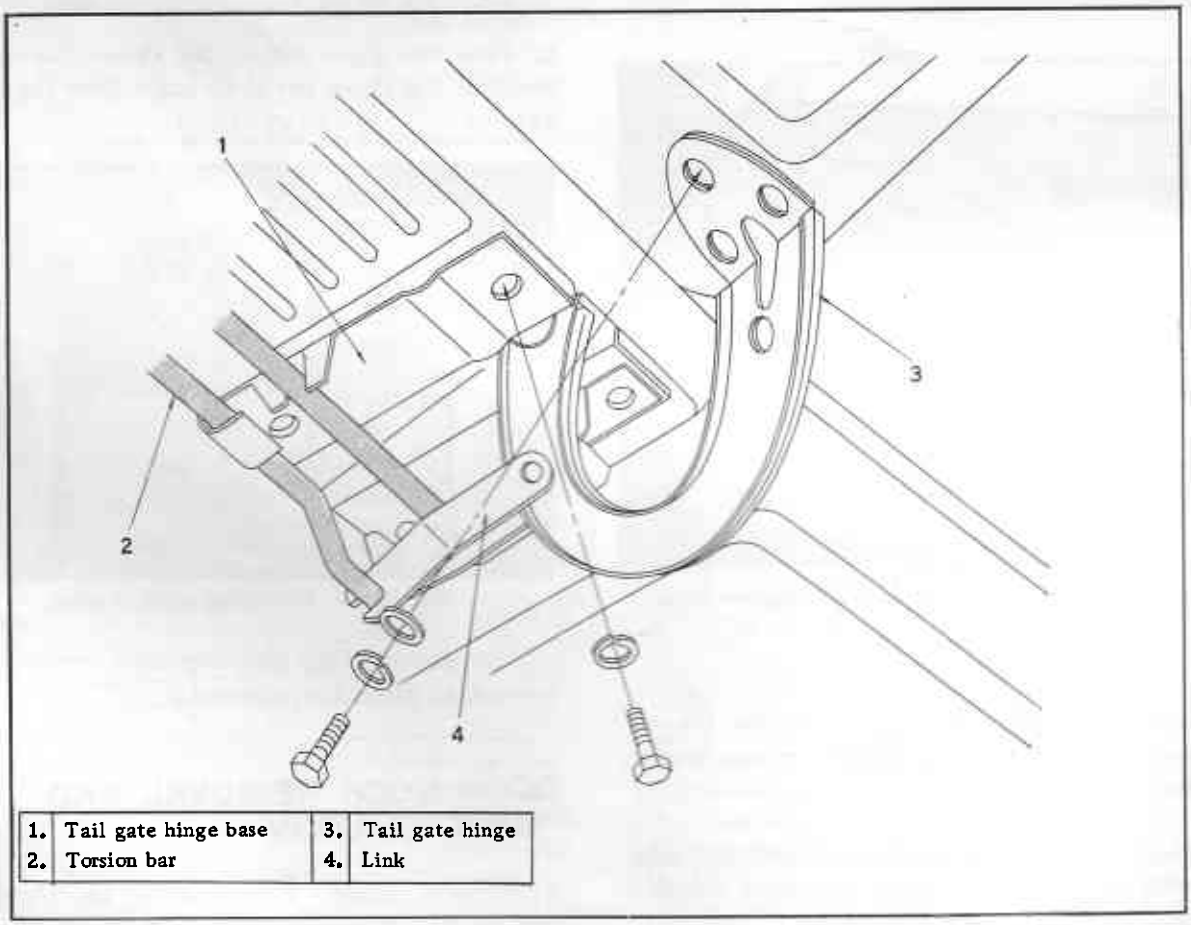


Fig. BF-17 Removing remote control

TAIL GATE



1.	Tail gate hinge base	3.	Tail gate hinge
2.	Torsion bar	4.	Link

Fig. BF-18 Tail gate hinge

Removal

1. **Remove the tail** gate trim cover.

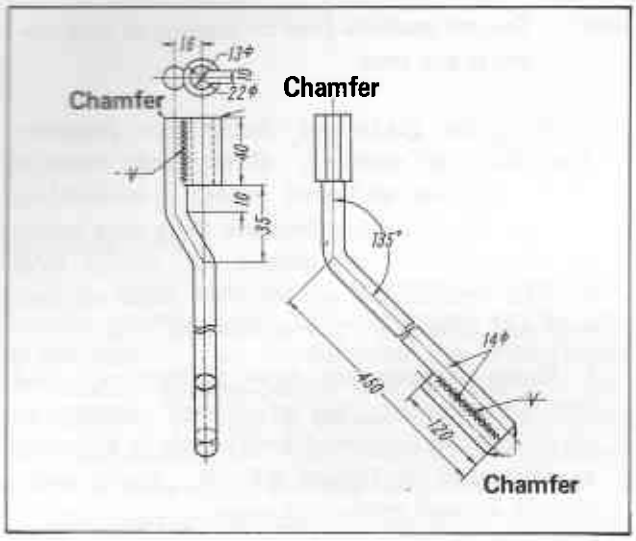


Fig. BF-19 Torsion bar removal lever

2. Remove tail gate torsion springs by using a lever as shown in Figure BF-19 and 20.

Fig. BF-20 Removing torsion bar

3. Place protective cover on the roof to prevent damage to the painted area.

4. Remove tail gate fixing screws then detach tail gate from body.

Installation of the tail gate is the reversal of the procedure given for removal.

WINDSHIELD AND REAR WINDOW

CONTENTS

REMOVAL

1. Place a protective cover over the hood, front fenders, instrument panel and front seat.

2. Remove rear view mirror support.

3. Remove windshield wiper arm assembly.

4. On inside of body, loosen the lip of the rubber channel from spot welded flange along the top and sides of windshield opening. With the palm of the hand, apply pressure to glass near edge. At the same time use a blunt putty knife or other suitable tool and carefully assist rubber channel over spot welded flange.

5. After windshield rubber channel is free from spot welded flange, with aid of helper, carefully lift windshield assembly from body opening and place it on a protected bench.

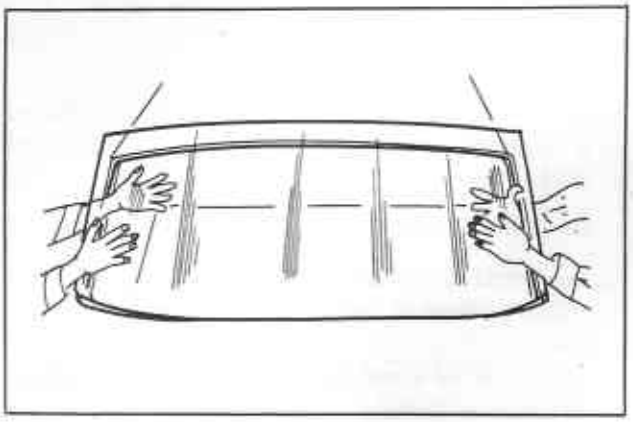


Fig. BF-21 Removing the windshield

Note: The windshield chrome moldings are installed in the rubber channel and should be removed prior to removing rubber channel from the glass.

INSTALLATION

It is important that the body windshield opening be checked thoroughly before installation of the replacement windshield glass. The procedure below outlines the method which may be used to check the windshield opening.

1. Check windshield rubber channel for any irregularities.

2. Clean off old sealer around windshield opening and check entire body opening flange for any irregularities.

3. With the aid of an helper carefully position replacement glass on windshield opening.

Note: Care should be exercised to make certain glass does not strike body metal during installation. Edge chips can lead to future breaks.

4. With windshield glass supported and centered in body opening check relationship of glass to body opening around entire perimeter of glass.

a. The inside surface of the glass should compeltely contact the spot welded flange.

b. The curvature of the glass should be uniform to that of the body opening.

5. Mark any sections of body to be reformed. Remove glass and reform opening as required.

6. Install windshield.

a. Clean out old sealer in glass cavity of windshield rubber channel and around base of rubber channel.

b. Install rubber channel to glass.

c. Insert a strong cord in the groove of the rubber channel where the spot welded flange fits.
Tie ends of cord and tape to inside surface of glass at bottom center of glass.

d. With the aid of an helper, carefully position and center windshield assembly in body opening.

Note: Do not position glass by tapping or hammering at any time.

e. When the glass and channel are properly positioned in opening, slowly pull ends of cord, starting at lower center of windshield to seat lip of rubber channel over spot welded flange. Cord should be pulled first across bottom of windshield, then up each side and finally across windshield top.

f. Using a pressure type applicator, seal inner and outer lips of rubber channel to glass with an approved weatherstrip adhesive as indicated in Figure BF-22. Seals completely around rubber channel.

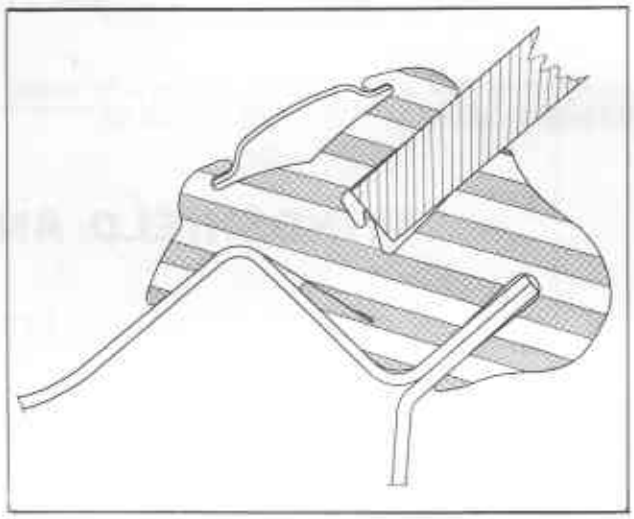


Fig. BF-22 Sectional view of rubber channel

g. Clean excess sealer from windshield glass with methylated spirits.

h. Reinstall all previously removed parts and remove protective coverings.

WATERLEAK CORRECTION

In many instances minor waterleaks around the windshield may be corrected by performing the following operations.

1. Leaks between rubber channel and glass.

Using a pressure applicator (corking gun) with a narrow tip, apply an approved weather-

strip adhesive (black) between glass and rubber channel on the outside of the glass completely around perimeter of glass.

2. Leaks between rubber channel and body.

Use a pressure applicator with a narrow tip. Working from outside of body, apply a sealer under outer lip of rubber channel around entire perimeter of body opening.

VENTILATOR

Description

The body ventilation system incorporates the use of air intake grill mounted on the top of the cowl. The air entering the intake grill is directed through ducts and emitted into the car interior through a center duct underneath the instrument panel and two louvres mounted on either side of the instrument panel.

The door in the louvre assembly regulates the flow of air and is adjusted by the use of a cable and dial control.

Water entering the cowl air intake flows down the cowl side duct panel and is discharged through openings in the rocker panels.

The "stale" air in the car interior is exhausted through flow-away valves on the rear corner panels.

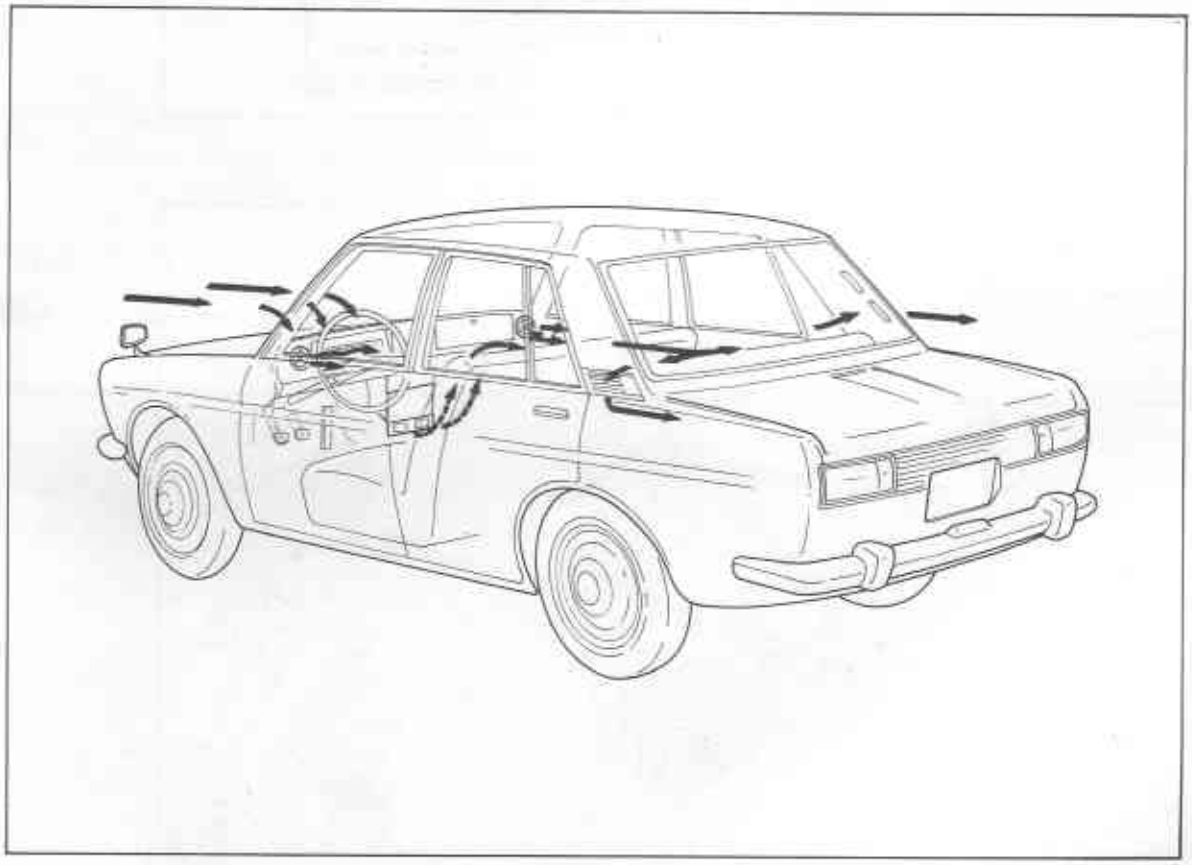


Fig. BF-23 Ventilation system