



## BODIES, CABS AND COWLS R-110 to R-184 TRUCKS

A new type centrally located hood latch assembly has been incorporated in the above R-line trucks. Turning the latch handle to its vertical position unlocks the hood permitting it to be raised. Turning both latch handles upward permits removal of the hood assembly.





## BODIES AND CABS

### Cab Door Glass

The replacement of cab door glass is a simple operation if the following instructions are carried out.

#### TO REMOVE:

1. Remove remote control handle and escutcheon by pressing inward on escutcheon and removing retaining pin from remote control handle and shaft (Figs. 1 and 2).
2. Lower door glass and remove regulator handle and escutcheon by pressing inward on escutcheon and removing retaining pin from regulator handle and shaft (Figs. 3 and 4).
3. Remove door trim panel as shown in Figs. 5 and 6.
4. Remove four retaining screws from door-glass bumper (Fig. 7).
5. Remove door-glass bumper through opening in inner panel.
6. Lower door glass and disconnect door glass from regulator roller.
7. Raise regulator arm to extreme upward position to provide working space for following steps.
8. Lower glass to bottom of door and leave resting in bottom of door.
9. Remove door-glass front channel lower retaining screws.
10. Remove door-glass front channel retaining screws at vent-glass window opening located under ends of vent-glass window weather strip (Fig. 8).
11. Lower and position door-glass front channel at front of door inside body.
12. Lift door-glass out of door inner panel opening.

#### TO INSTALL:

Door glass installation is accomplished by reversing the foregoing removal procedure.

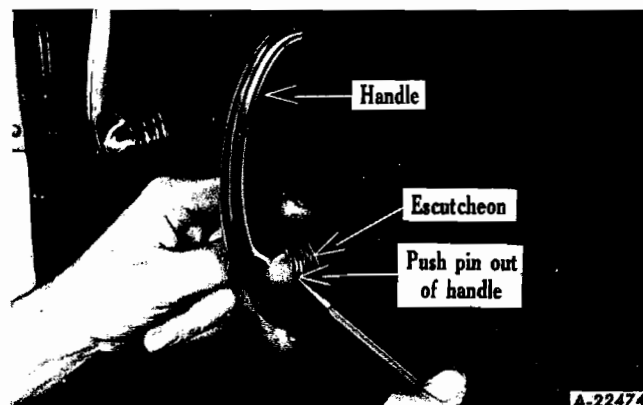
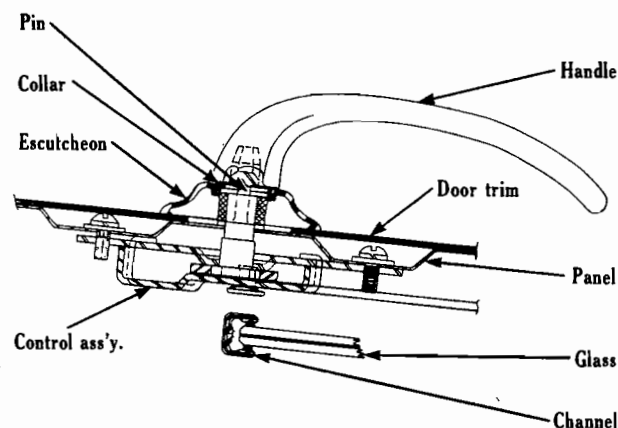


Fig. 1



Section thru door inner handle and remote control

A-22822

Fig. 2

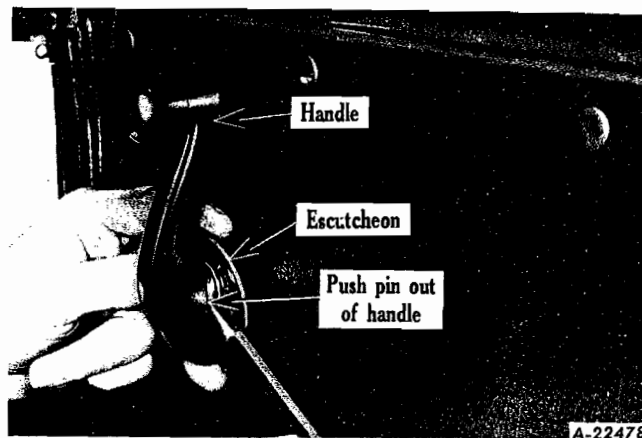


Fig. 3

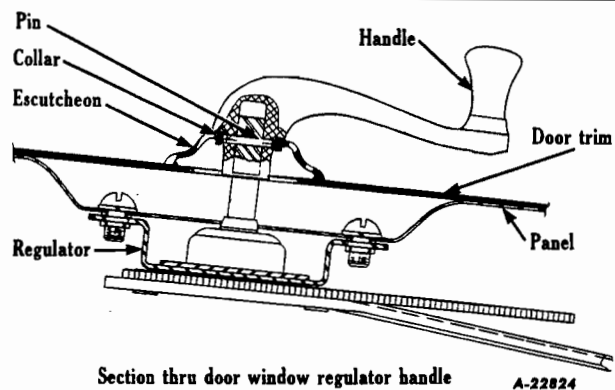


Fig. 4

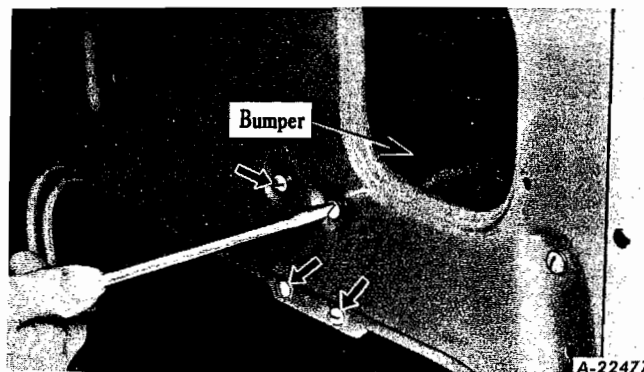


Fig. 7

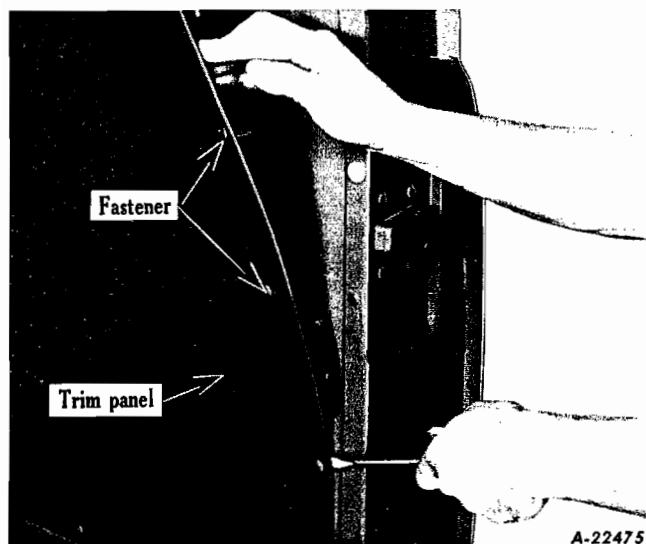


Fig. 5

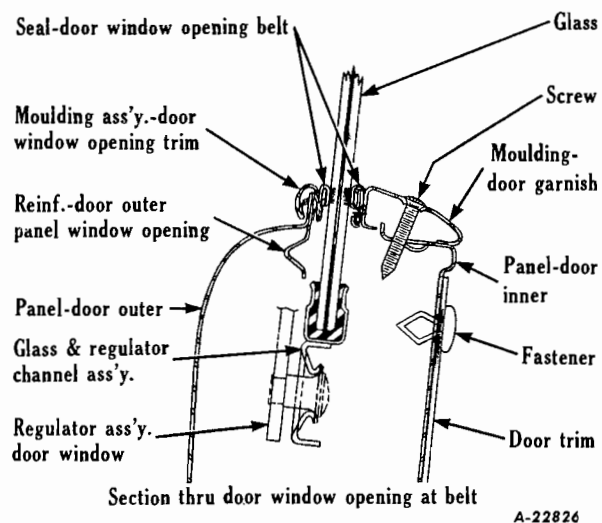


Fig. 6

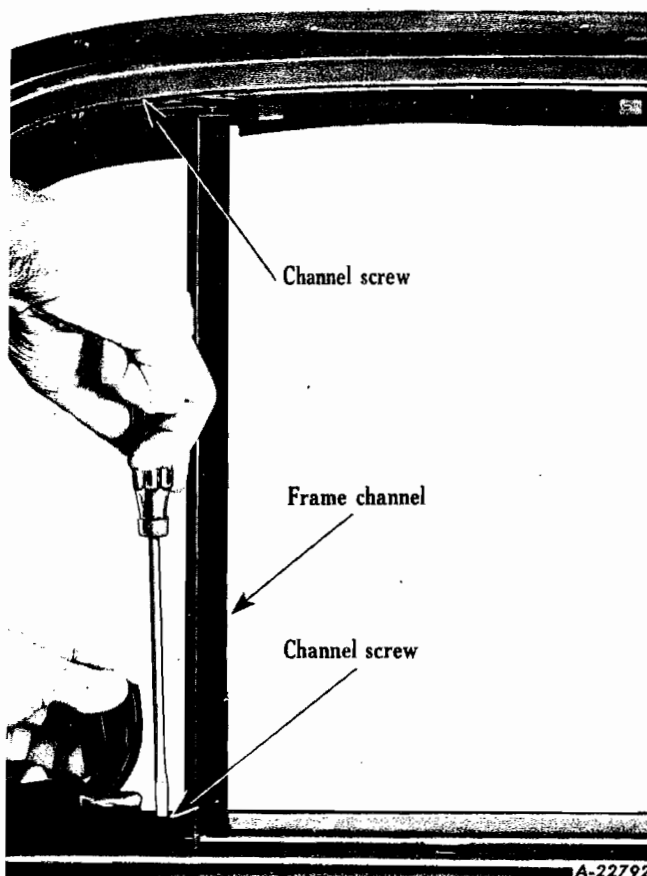


Fig. 8

### Cab-Door-Glass Window Regulator

The cab door-glass regulator should be serviced as a unit either with the door glass in place or with it removed. If it is not desired or necessary to replace the door glass window, the window must be lowered sufficiently to disconnect the regulator as outlined on the previous page. Then raise door glass by hand to its extreme upward position. Block door glass in this position to facilitate removal of regulator.



## TO REMOVE:

1. Remove remote control handle and escutcheon by pressing inward on escutcheon and removing retaining pin from remote control handle and shaft (Figs. 1 and 2).
2. Remove door-glass regulator handle and escutcheon by pressing inward on escutcheon and removing retaining pin from regulator handle and shaft (Figs. 3 and 4).
3. Remove door trim panel as shown in Figs. 5 and 6.
4. Remove four retaining screws from door-glass bumper (Fig. 7).
5. Remove door-glass bumper through opening in inner panel.
6. Lower door glass and disconnect door glass from regulator roller.
7. Raise door glass to extreme upward position. Block door glass in this position to facilitate removal of regulator.
8. Remove four retaining screws, two above and two below regulator handle shaft (Fig. 9).
9. Lower regulator assembly and remove through opening in door inner panel.

## TO INSTALL:

Door-glass window regulator installation is accomplished by reversing the foregoing removal procedure.



Fig. 9

## Cab Door Weather Strips

Rubber weather strips are cemented and riveted in cab door opening channel and form a weathertight seal when doors are closed.

## TO REMOVE:

1. Remove rivet and pull old weather strip from channel.

## TO INSTALL:

1. Paint weather strip channel with rubber cement.
2. Insert new weather strip in channel and install rivets.

## Cab Door-Glass Window Channel

The door-glass window channel is held in place by clips, which snap into holes in the upper door frame. The lower portion of the channel is clipped in a removable frame attached to door inner panel.

## TO REMOVE:

1. Remove door garnish moulding (Figs. 10 and 6).
2. Lower door glass with regulator.
3. Remove trim moulding from door glass opening (Figs. 11 and 6).

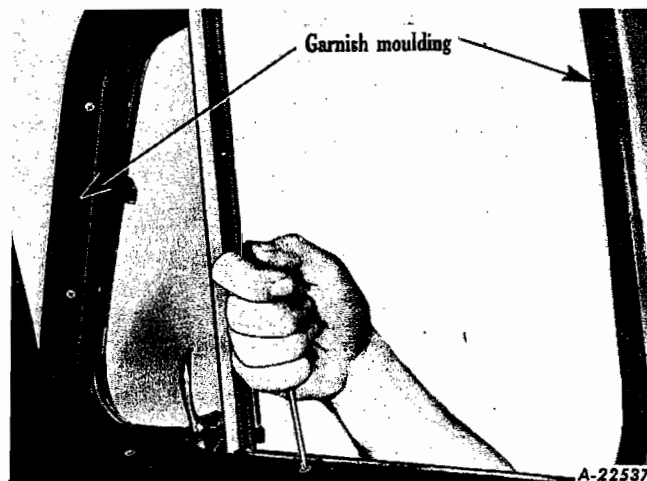


Fig. 10

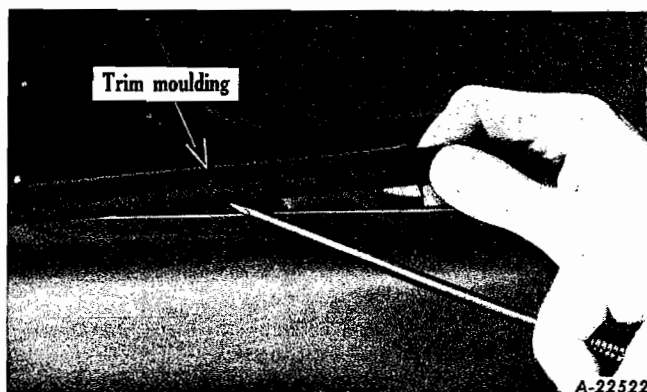


Fig. 11



## L-LINE MOTOR TRUCK SERVICE MANUAL



4. Remove remote control handle and escutcheon by pressing inward on escutcheon and removing retaining pin from remote control handle and shaft (Figs. 1 and 2).
5. Remove door-glass regulator handle and escutcheon by pressing inward on escutcheon and removing retaining pin from regulator handle and shaft (Figs. 3 and 4).
6. Remove door trim panel as shown in Figs. 5 and 6.
7. Remove four retaining screws from door-glass bumper (Fig. 7).
8. Remove door-glass bumper through opening in inner panel.
9. Lower door glass and disconnect door glass from regulator roller.
10. Raise regulator arm to extreme upward position to provide working space for following steps.
11. Lower glass to bottom of door and leave resting in bottom of door.
12. Remove door-glass front channel from frame (Fig. 12).
13. Remove two retaining screws at lower end of door-glass front channel frame bracket.
14. Remove door-glass front channel frame retaining screws at vent-glass window opening located under ends of vent-glass window weather strip (Fig. 8).
15. Lower and position door-glass front channel frame at front of door inside body.
16. Lift door glass out of door inner panel opening.
17. Place upper end of front door-glass channel frame at front uppermost corner inside of door, and lower end at lower opposite corner.
18. Remove door-glass front channel frame through door inner panel opening rearmost corner. Spring upper portion of inner panel opening slightly outward at point of contact with door-glass front channel frame to permit removal (Fig. 13).
19. Remove door-glass rear channel and clips (Fig. 14).
20. Remove door-glass rear channel through opening in door inner panel.
21. Remove two retaining screws (one at each end) from door-glass rear channel frame.

22. Remove door-glass rear channel frame through opening in door inner panel.

## TO INSTALL:

Cab door-glass window channel installation is accomplished by reversing the foregoing removal procedure.

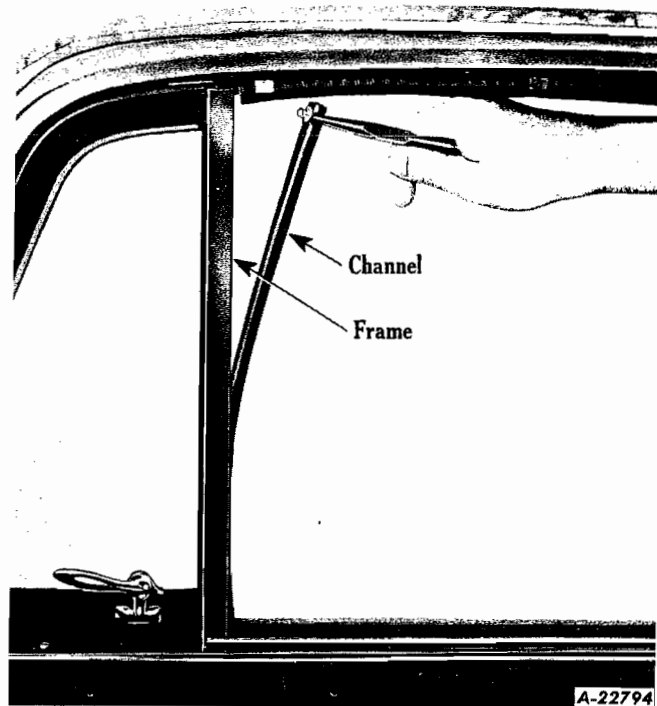


Fig. 12

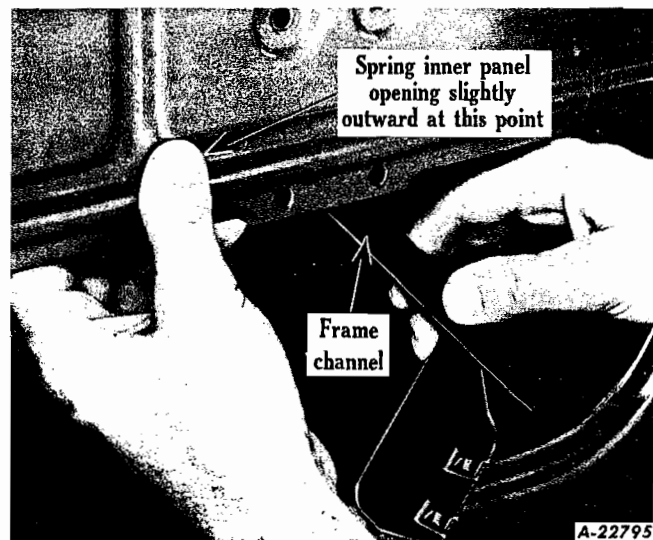


Fig. 13



# L-LINE MOTOR TRUCK SERVICE MANUAL

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Section A  
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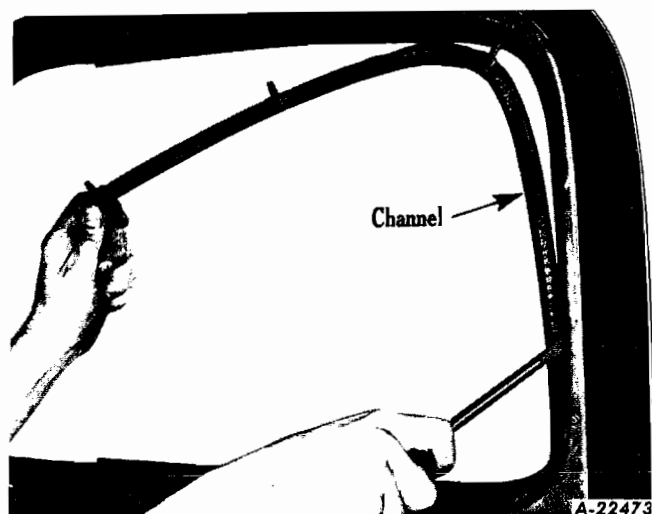


Fig. 14

## Cab Rear-Window Glass Installation

The cab rear-window glass is secured to the cab with a one-piece weather strip in the same manner as the windshield glass (Fig. 15).

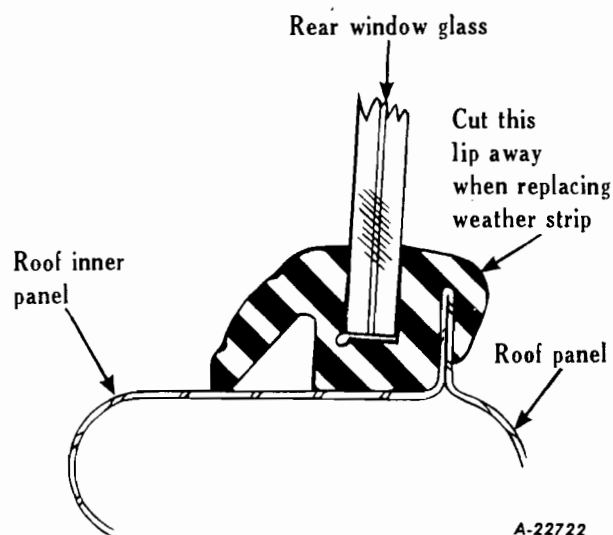


Fig. 15

Installation of the cab rear window glass necessitates using a length of chalk line cord or a light flexible soft wire.

When replacing the rear window glass, a new weather strip should be used. Old weather strips are apt to be stretched or deteriorated and should not be reused when installing new window glass.

The flange at the window glass opening in the cab must be cleaned free of all old sealing compound or dirt before installing a new glass.

Place chalk line cord in the weather strip flange channel, working the cord into the channel around the full length of the weather strip. Be careful to keep the cord straight and free of kinks (Fig. 16).

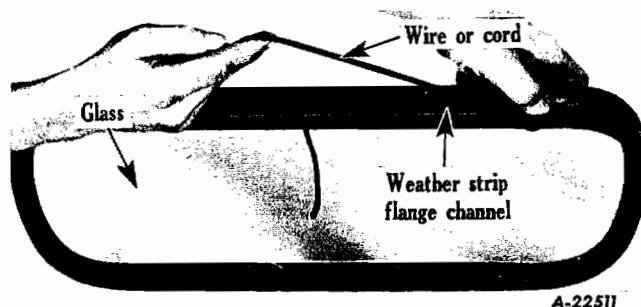


Fig. 16

Place the cab glass and weather strip assembly in position in the cab opening with the drawing cord protruding to the rear of the opening (Fig. 17).

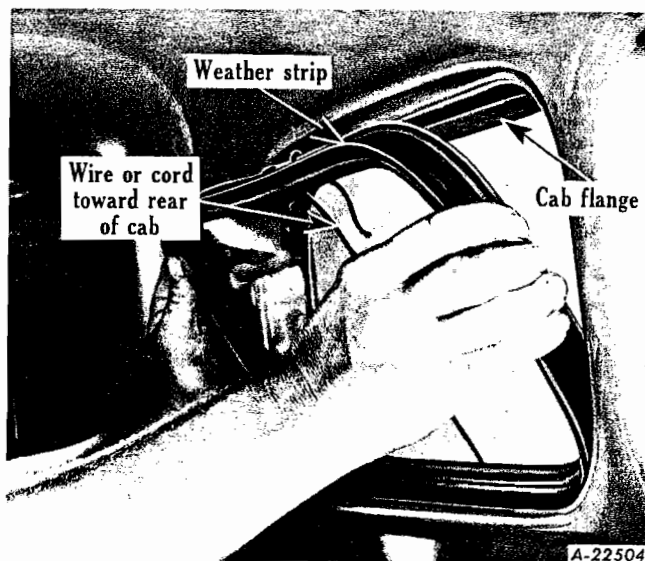


Fig. 17

While an assistant presses on the inside of the glass to hold it in position in the cab opening, grasp the end of the cord and carefully draw the cord from the flange channel in the weather strip bringing the lip of the channel over the cab flange. Complete this operation around the cab opening to the lower center of the opening (Fig. 18).

Leave the one-cord end at the bottom center of the glass, then grasp the opposite end of the cord to complete the drawing operation around the glass to within approximately 6" of completing the drawing operation. Hold the cord which was first pulled around the edge of the glass in one hand to prevent it being drawn out of position, then carefully pull the opposite end of the cord to complete the drawing operation (Fig. 19).



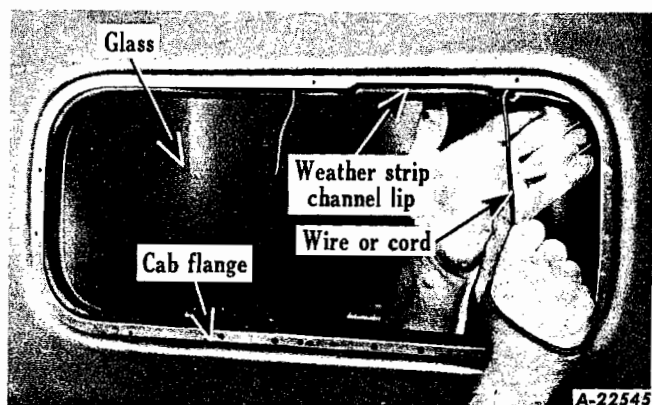


Fig. 18

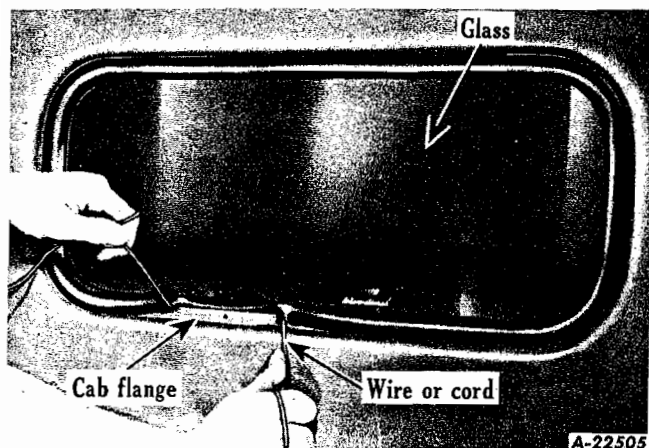


Fig. 19

Press the weather strip downward and outward around the cab opening.

In event that the weather strip does not fully engage the contour of the cab opening, a small amount of non-hardening sealing compound can be injected between the weather strip and the cab to further insure a seal.

### Panel Body Rear-Door Glass Installation

The panel body rear door window glass is secured to the door with a one-piece weather strip in the same manner as the cab rear window glass.

When making replacement of the rear door window glass, remove all old sealing compound from flange at the window glass opening in the door before installing a new glass.

#### TO INSTALL:

1. Carefully place the molded weather strip around the edge of the glass.
2. Insert chalk line cord into the weather strip flange channel working the cord into the channel around the full length of the weather strip. Be careful to keep the cord straight and free of kinks.

3. Place the rear door glass and weather strip assembly in position in the rear door opening with the drawing cord protruding to the rear of the opening.
4. With an assistant pressing on the inside of the glass to hold it in position in the rear door opening, grasp the end of the cord and carefully draw the cord from the flange channel in the weather strip bringing the lip of the channel over the rear door flange. Complete this operation around the rear door opening to the lower center of the opening.
5. Leave the one cord end at the bottom center of the glass, then grasp the opposite end of the cord to complete the drawing operation around the glass to within approximately 6" of completing the drawing operation. The cord which was first pulled around the edge of the glass should be held in one hand to prevent it being drawn out of position, then carefully pull the opposite end of the cord to complete the drawing operation.
6. Press the weather strip downward and outward around the door opening to insure the seal being fully seated.

In event that the weather strip does not fully engage the contour of the rear door opening, a small amount of rubber sealing compound can be injected between the weather strip and the rear door to further insure a tight seal.

### Windshields

The windshield used on the L-line cab is one-piece construction and is a curved glass bent to fit the contour of the windshield opening in the cab. A weather strip fits around the edge of the glass and is so moulded that it secures the glass to the cab windshield opening by fitting over a flange located in the windshield opening on the cab. NOTE: The windshield weather strip shown in the following illustrations is a one-piece weather strip. Production chassis will be equipped with either a two-piece or a one-piece weather strip. However, the one-piece weather strip will be provided for servicing either type.

The windshield is installed from the front of the cab. In replacing the windshield, it is recommended that a new weather strip be used at all times. A used weather strip is apt to be stretched or deteriorated and should not be re-used when installing new windshields.

In the event that a windshield is not damaged and it is desired to replace the weather strip only, it is advisable to first cut away the portion of the weather strip which is moulded around the flange in the cab (Fig. 20).



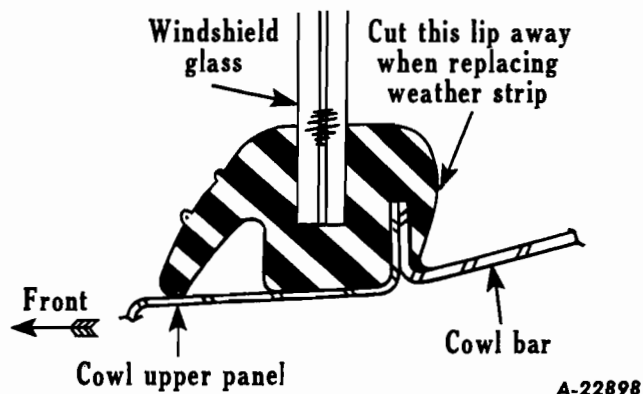


Fig. 20

The operation of cutting away the windshield weather strip will allow easier removal of the windshield and diminish the possibility of breaking or cracking the glass being removed.

### Windshield Installation

Procedure for windshield installation on the L-line cabs is as follows:

1. A rubber sealing compound may have been used when the windshield was installed. This sealing compound will have hardened on the flange of the windshield opening in the cab and should be scraped or cleaned to assure a tight seal upon installation of a new weather strip. Scrape or clean all old sealing compound as shown in Fig. 21.

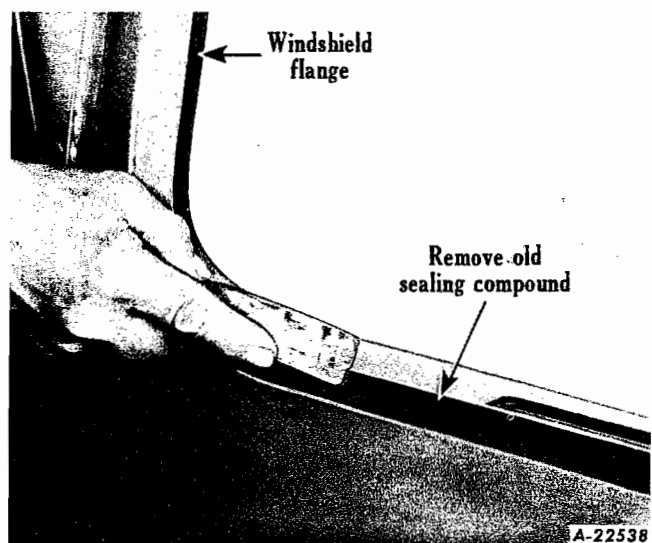


Fig. 21

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2. Carefully place the moulded weather strip on the glass as shown in Fig. 22.

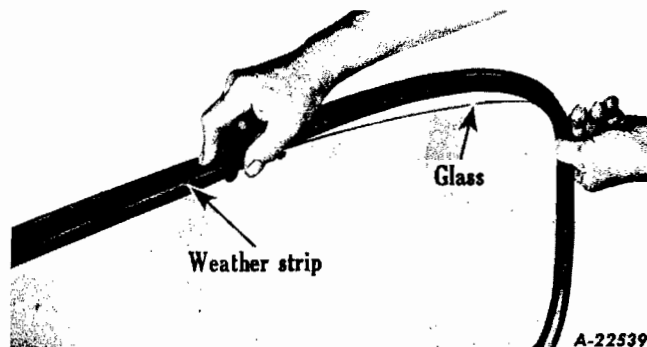


Fig. 22

3. Place a chalk line cord in the weather strip cab flange channel. Work the cord into the channel around the full length of the weather strip, being careful to keep the cord straight and free of kinks. (See Fig. 23.)

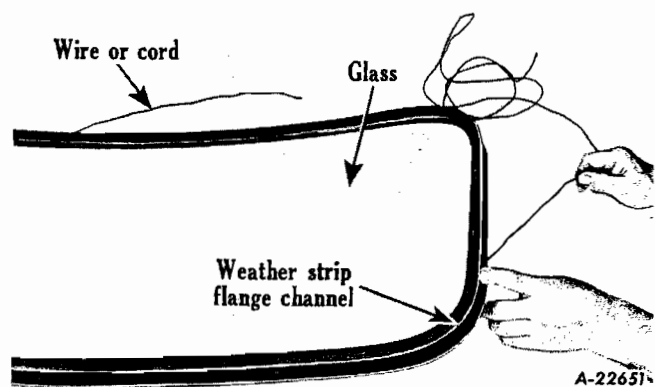


Fig. 23

4. By means of an assistant, carefully place the windshield with weather strip attached in position in the cab opening. The illustration shows the cord used for installing the glass terminating at the top of the windshield. The cord may be installed with the ends at the bottom of the glass. The manufacturer mark or name on the glass is at either of the lower corners of the glass and is generally installed in this position on all windshields of this type. See Fig. 24.
5. With one man working from inside the cab, and the other serving to press the glass inward and to steady the glass from the outside, grasp the end of the cord (either end of cord) as shown in Fig. 25.

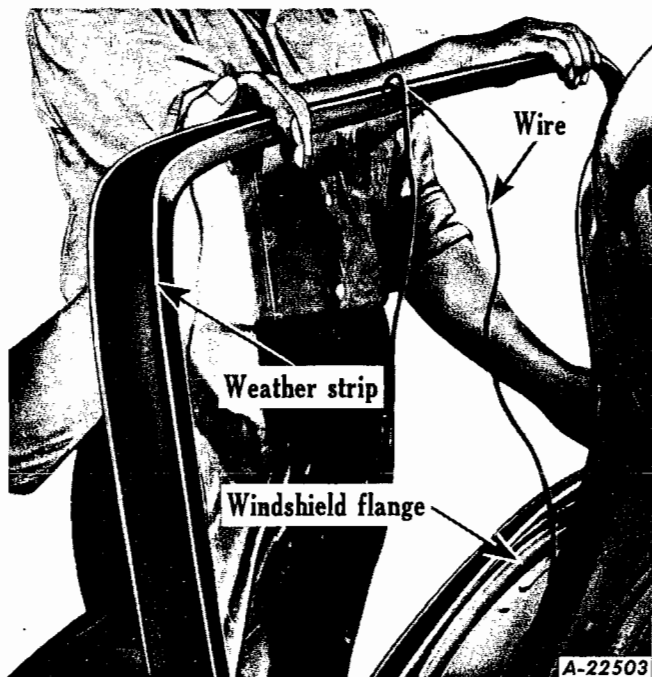


Fig. 24

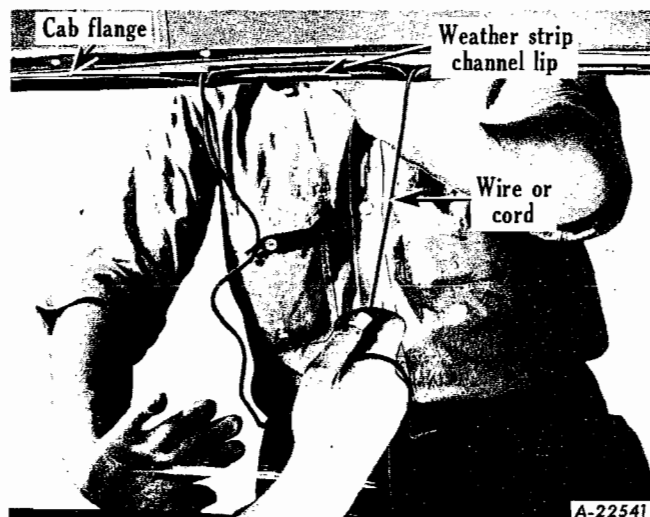


Fig. 26

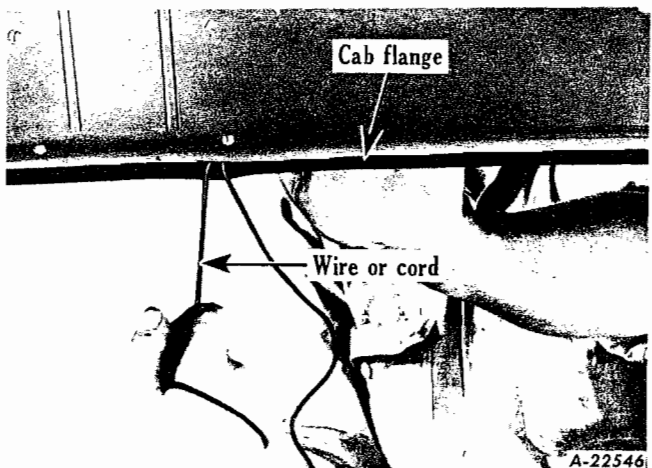


Fig. 25

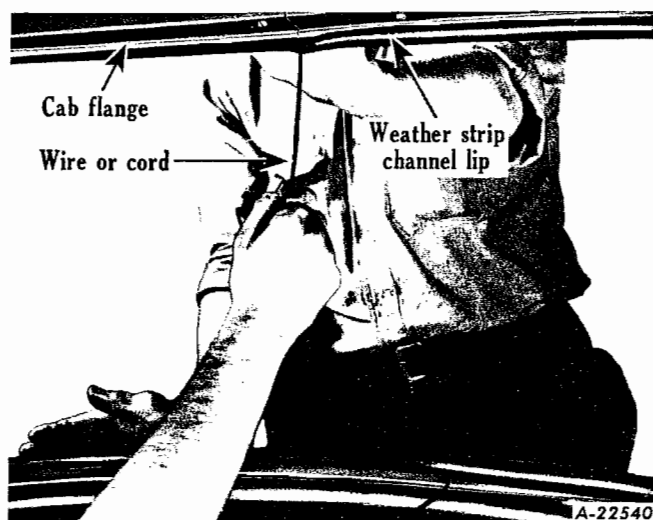


Fig. 27

6. Carefully draw the cord from the flange channel in the weather strip bringing the lip of the channel over the cab flange. Draw one side of the cord out of the weather strip until the cord has traveled completely around to the bottom center of the glass as shown in Fig. 26.
7. Leave the one end of the cord at the bottom center of the glass, then grasp the opposite end of the cord to complete the drawing operation around the opposite side of the glass to within approximately 12" of completing the drawing operation. It is not important which side of the weather strip is drawn over the cab flange first. See Fig. 27.
8. Before completing the drawing operation at the bottom of the windshield weather

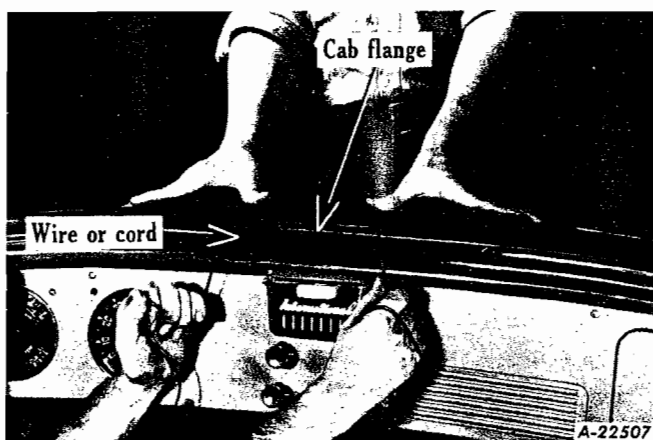


Fig. 28

seal, secure the cord which was first pulled around the edge of the glass in one hand to prevent its being drawn out of position; then carefully pull the opposite end of the cord to complete the drawing operation. See Fig. 28.



During the drawing operation, the man outside the cab must carefully press inward on the glass near the weather strip to assist working the windshield into position while the drawing operation is in process.

9. Upon completion of the drawing operation, the weather strip must be pressed downward and outward on the sides and upward along the top to bring the weather strip to its seat in the cab opening. In event the weather strip does not fully engage the contour of the cab opening at the corners, a small amount of sealing compound can be injected between the weather strip and cab to further insure a seal at each of the corners. Be sure to wipe away excess sealing compound before it becomes set. See Fig. 29.



Fig. 29

### Cab Door Vent Glass Window

The cab door vent glass window is held in place by six retaining screws.

#### TO REMOVE:

1. Remove door garnish moulding (Figs. 10 and 6).
2. Remove remote control handle and escutcheon.
3. Remove door glass regulator handle and escutcheon.
4. Remove door trim panel (Figs. 5 and 6).

5. Loosen door vent glass window adjusting screw (Fig. 30).

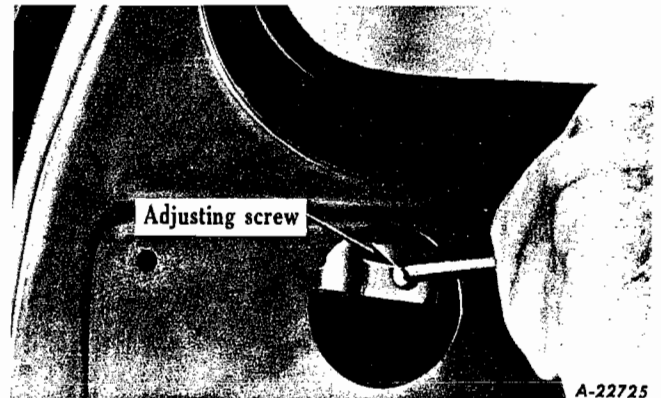


Fig. 30

6. Remove two door vent glass window hinge retaining screws (Fig. 31).

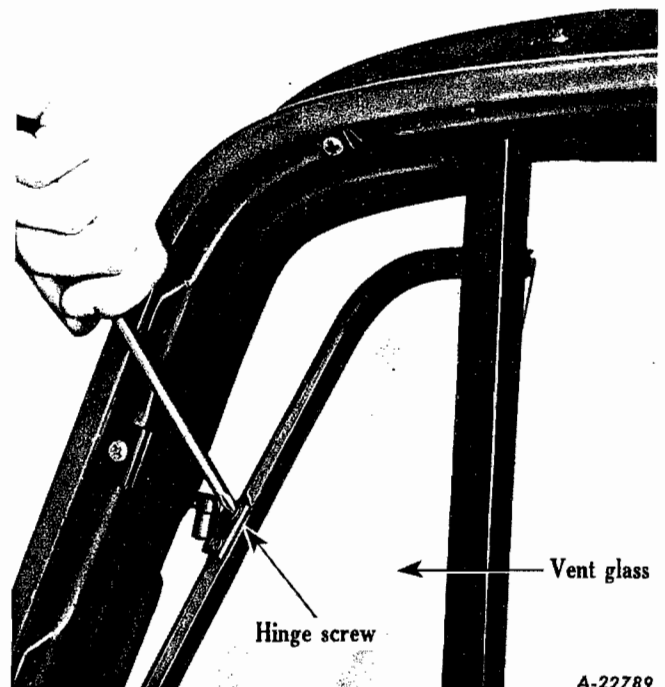


Fig. 31

7. Remove door vent glass window. Note: Do not lose thrust washer at vent glass window pivot pin.
8. Remove door vent glass window weather strip (Fig. 32).
9. Remove six door vent glass window cradle frame retaining screws (Fig. 33).
10. Remove door vent glass window cradle frame.



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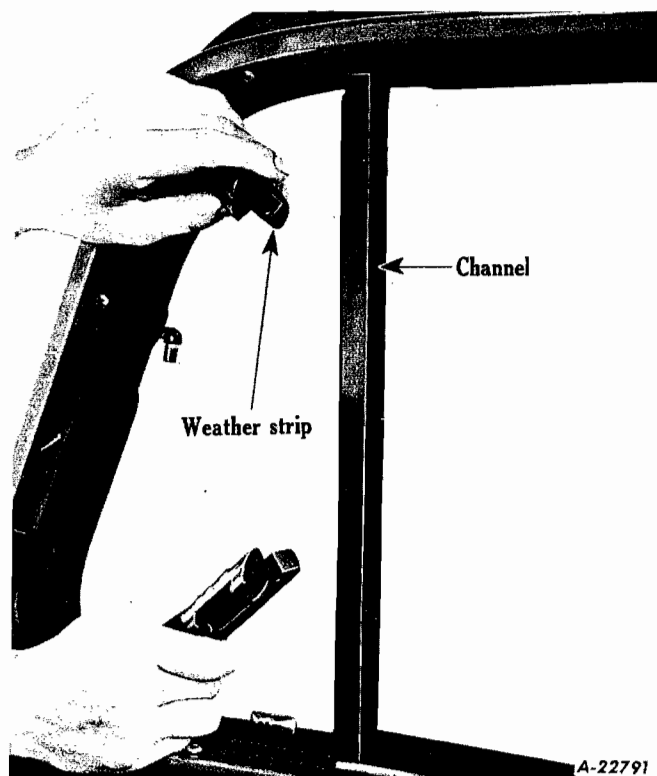


Fig. 32

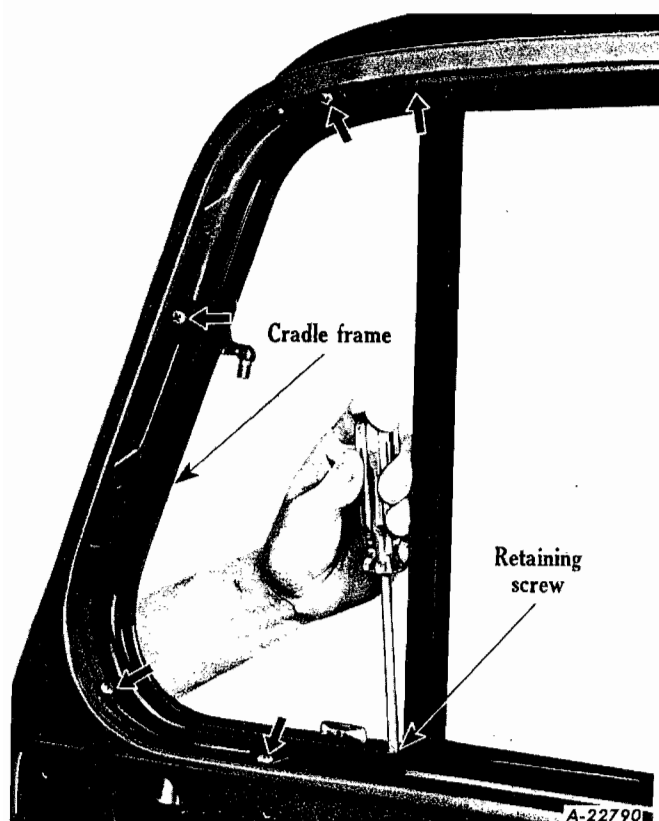


Fig. 33

### TO INSTALL:

1. Install door vent glass window cradle frame.
2. Install door garnish moulding.
3. Install door vent glass window weather strip. To facilitate assembling the weather strip the channels engaging the flange opening should be coated with soap solution and installation started at point indicated in Fig. 34. Press weather strip into vent glass window frame to conform to contour of opening.

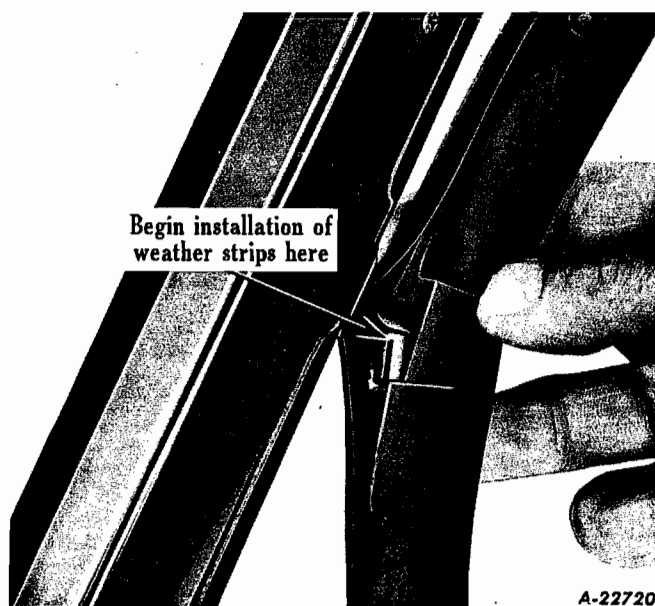


Fig. 34

4. Install door vent glass window. Note: Be sure washer is positioned over vent glass window pivot pin after vent glass window pivot pin has been installed in weather strip.
5. Install vent glass window hinge lower half on upper half.
6. Install vent glass window hinge retaining screws.
7. Tighten adjusting screw to provide proper pull tension on vent glass window pivot pin.
8. Install door trim panel.
9. Install escutcheon and door glass regulator handle.
10. Install escutcheon and remote control handle.





### Cab Door Latch and Remote Control

The replacement of a cab door latch and remote control assembly is a simple operation. The following suggestions will be helpful.

The cab door latch and remote control assembly must be removed and installed as a unit. The work can be done either with the door glass removed or in its extreme upward position as described in the instruction for door glass regulator replacement.

To remove door latch and remote control assembly after the glass is positioned as outlined above, proceed as follows:

1. Remove remote control handle and escutcheon by pressing inward on escutcheon and removing retaining pin from remote control handle and shaft (Figs. 1 and 2).
2. Remove door glass regulator handle and escutcheon by pressing inward on escutcheon and removing retaining pin from regulator handle and shaft (Figs. 3 and 4).
3. Remove door trim panel as shown in Figs. 5 and 6).
4. Remove door handle shaft retaining screw cover plug (Figs. 35 and 36).
5. Remove door lock case shaft cover plug (Figs. 35 and 37) at edge of door inner panel.
6. Remove door handle shaft retaining screw and washer (Figs. 38 and 36).
7. Remove door handle plate retaining screws and door handle (Figs. 39 and 36).
8. Remove door lock case spring retainer and door lock (Figs. 37 and 40).

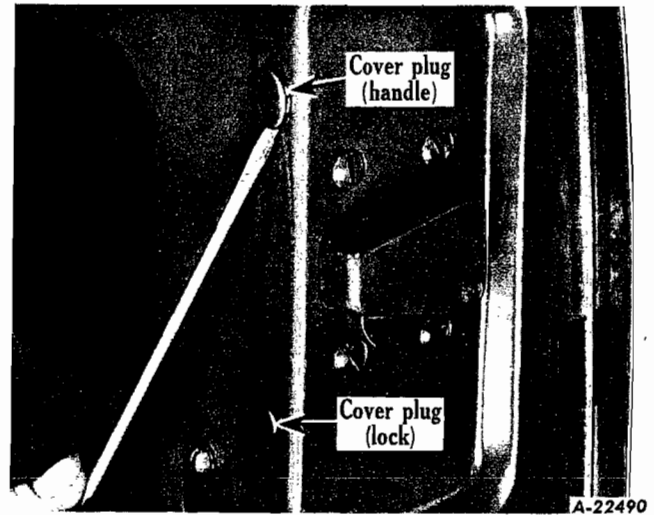
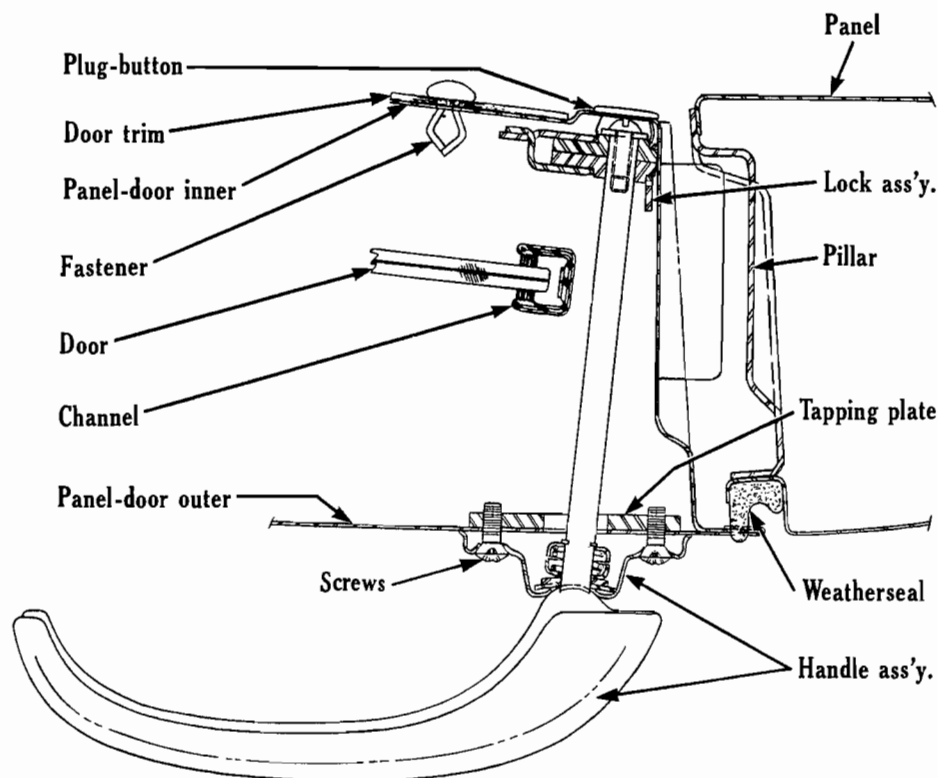
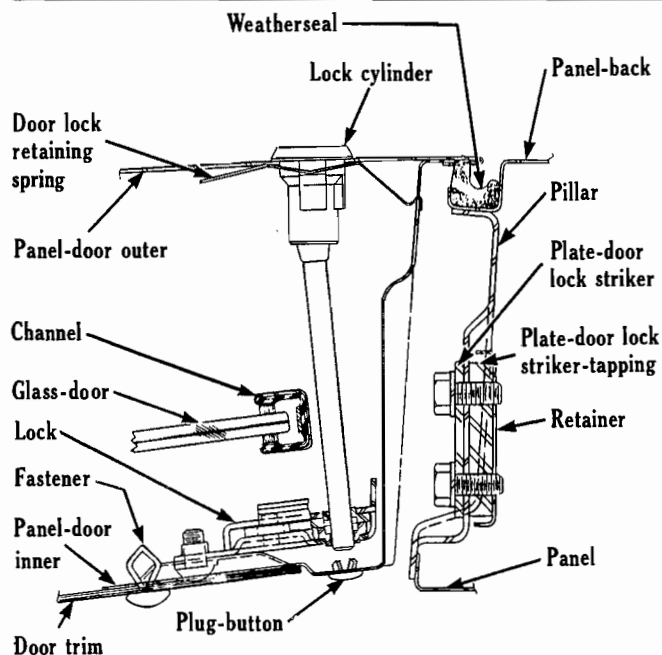


Fig. 35



Section thru door outside handle

Fig. 36



Section at lock cylinder (right side)

Fig. 37

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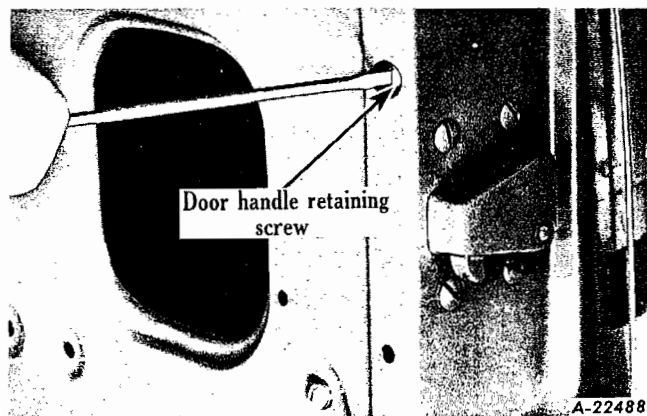


Fig. 38

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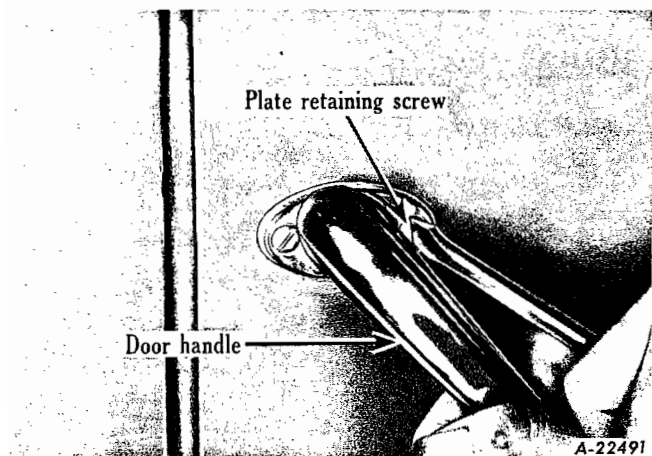


Fig. 39

A-22491



Fig. 40

A-22512

9. Remove five door lock retaining screws (Fig. 41).
10. Remove retaining screw at lower end of door glass rear channel frame.

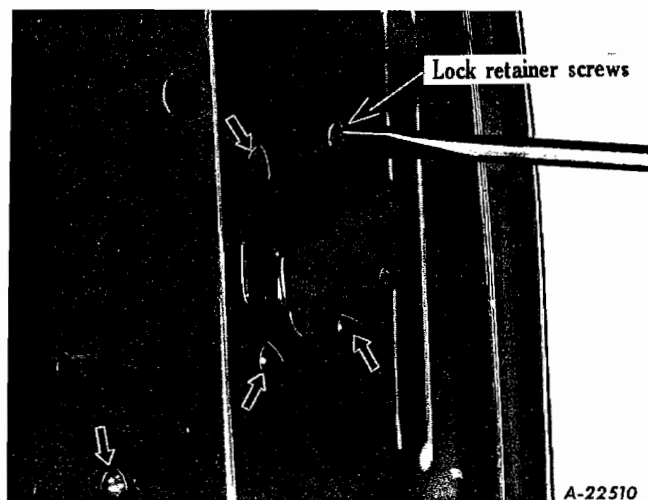


Fig. 41

A-22510

11. Lower door lock assembly to panel opening. Rotate lock assembly 1/4 turn counter-clockwise to allow removal of door lock from remote control link (Fig. 42).
12. Turn remote control shaft in locked position.
13. Remove three retaining screws from remote control assembly (Fig. 43).
14. Remove two retaining screws at lower end of door glass front channel frame bracket to allow sufficient movement of channel to permit removal of remote control assembly as shown in Fig. 44. CAUTION: Do not move channel to the extent distortion is encountered as this will cause interference with door glass operation after reassembly.
15. Remove remote control assembly through inner panel opening.



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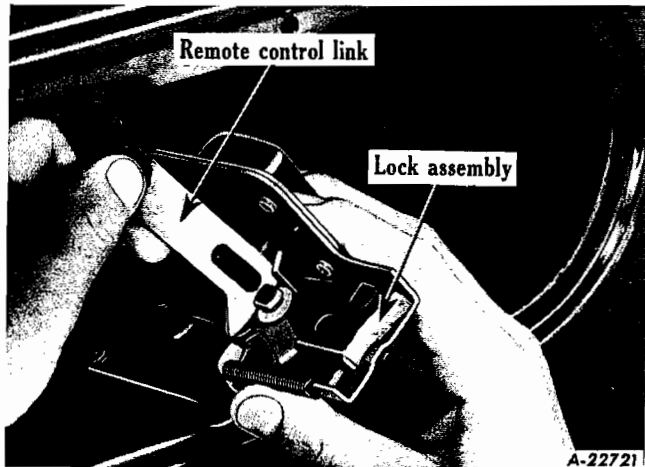


Fig. 42

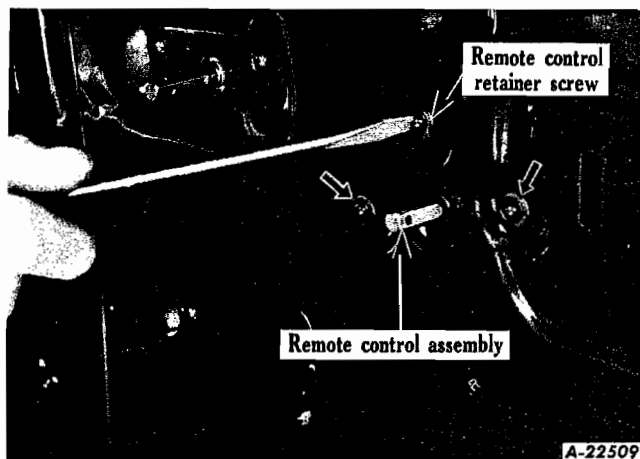


Fig. 43

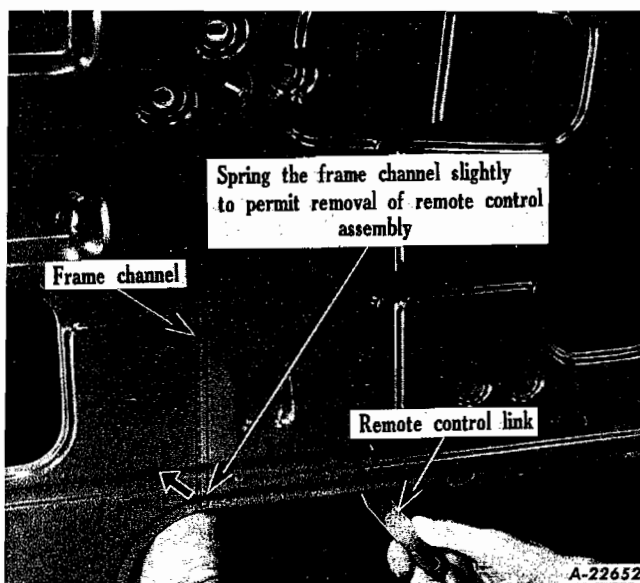


Fig. 44

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## Removal of Outside Door Handle

Removal of outside door handle can be easily accomplished as outlined below.

1. Remove door handle shaft retaining screw cover plug (Figs. 35 and 36).
2. Remove retaining screw and washer from door handle shaft (Figs. 38 and 36).
3. Remove door handle plate retaining screws and withdraw door handle (Figs. 39 and 36).

## Installation of Outside Door Handle

1. To simplify installation of outside door handle, a simple tool can be made by grinding a point on the end of a piece of welding rod approximately 1/16" diameter by 6" long, which can be used to pilot the door handle into the door latch mechanism.
2. Insert the tool in the door handle shaft retainer screw cover plug opening and align tool with door handle shaft installed from opposite side.
3. Install door handle plate retaining screws.
4. Install door handle shaft retaining screw and washer.
5. Install door handle shaft retaining screw cover plug.

## Lock Cylinders and Keys

Lock cylinders in ignition switch and door are coded so that the ignition key will operate both. The instrument panel compartment and spare tire lock cylinders requires separate keys.

Key numbers should be recorded to facilitate replacement in case they are lost.

A code number is stamped on the body of the ignition switch and compartment lock cylinders, just back of the cap. A code number is stamped on the face of the spare tire lock cylinder. The door handle lock cylinder does not have a code number stamped on the body inasmuch as the cylinder is coded to the ignition switch key.

To expose the code number on the ignition switch lock, remove the ignition switch cap nut with a small spanner wrench and the number will then be visible. If the compartment keys are lost and the key number is not known, it will be necessary to either drill out the lock cylinder and replace with a new cylinder and keys or replace the complete compartment knob and lock assembly. It is impossible to remove the compartment lock cylinder intact, without the regular key.



## L-LINE MOTOR TRUCK SERVICE MANUAL



If the spare tire lock keys are lost and the key number is not known, it will be necessary to replace with new lock assembly.

The ignition switch, door handle and compartment lock cylinders can be removed provided the regular key is used. If keys are lost the cylinders must be drilled out, using a 5/16" drill, 1/2" to 3/4" deep. This will permit the tumblers to drop out.

In case it becomes necessary to replace a lock cylinder and it is desired to use the original key, the tumblers on the new lock cylinder can be coded accordingly. (NOTE: This does not apply to spare tire locks.)

This is accomplished by inserting the original key in the new lock cylinder and filing off the tumblers that protrude from the lock cylinder body. When doing this, make sure that there are no burrs left on the tumblers and that all filings are blown out with air. Apply a small quantity of powdered graphite to the tumblers and insert lock cylinder in receptacle as directed.

Lock cylinders are removed, with keys as follows:

### Ignition Switch

Remove complete ignition switch from instrument panel. Place key in lock cylinder and insert a piece of wire in the small hole in switch body. Turn key to (right) "On" position and press cylinder retainer down with the wire. The lock cylinder can then be slipped out of the ignition switch body.

To install a new lock cylinder, simply push cylinder into ignition switch body and turn towards the (right) "On" position until cylinder retainer snaps into place. NOTE: The ignition switch turns to the left or right of the "Off" position. When the switch key is turned to the left, all accessories and gauges are "On" but the ignition is "Off". When the switch key is turned all the way to the right, the ignition also is "On".

### Door Lock

Place key in lock cylinder and insert a piece of wire through the hole in the face of the cylinder. Press spring retainer down with wire, turn cylinder slightly to left and pull out.

To replace lock cylinder, insert and turn until retainers snap into place.

#### TO REMOVE:

1. Remove door lock case shaft cover plug (Figs. 35 and 37) at edge of door inner panel.

2. Remove door lock case spring retainer and door lock case assembly (Figs. 40 and 37).

#### TO INSTALL:

1. Position door lock case spring retainer in door.
2. Insert door lock case assembly through opening in outer door panel.
3. Align square end of lock case shaft with opening in lock assembly and install lock case assembly.
4. Install door lock case spring retainer into grooves in lock case and snap into position.

### Cab Door Removal

#### TO REMOVE:

1. Remove door glass regulator handle, remote control handle and door trim panel.
2. Remove door check arm pivot pin (Fig. 45).
3. Remove nuts and washers at upper and lower hinge assemblies from inside of door (Figs. 46 and 47).

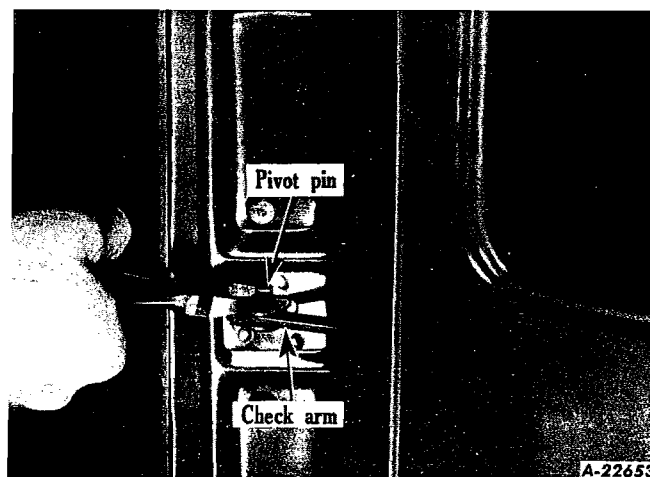


Fig. 45

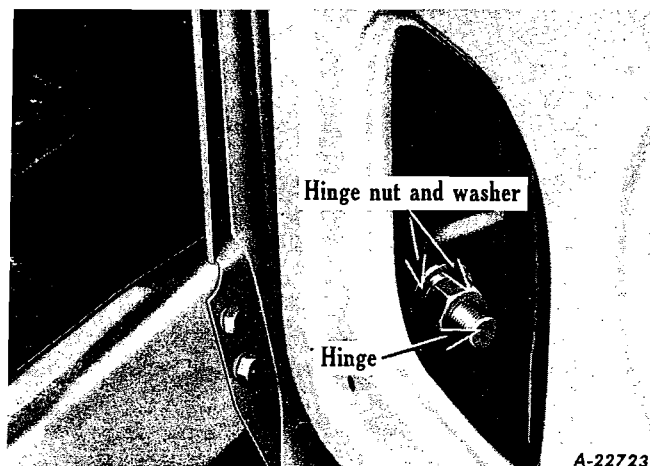
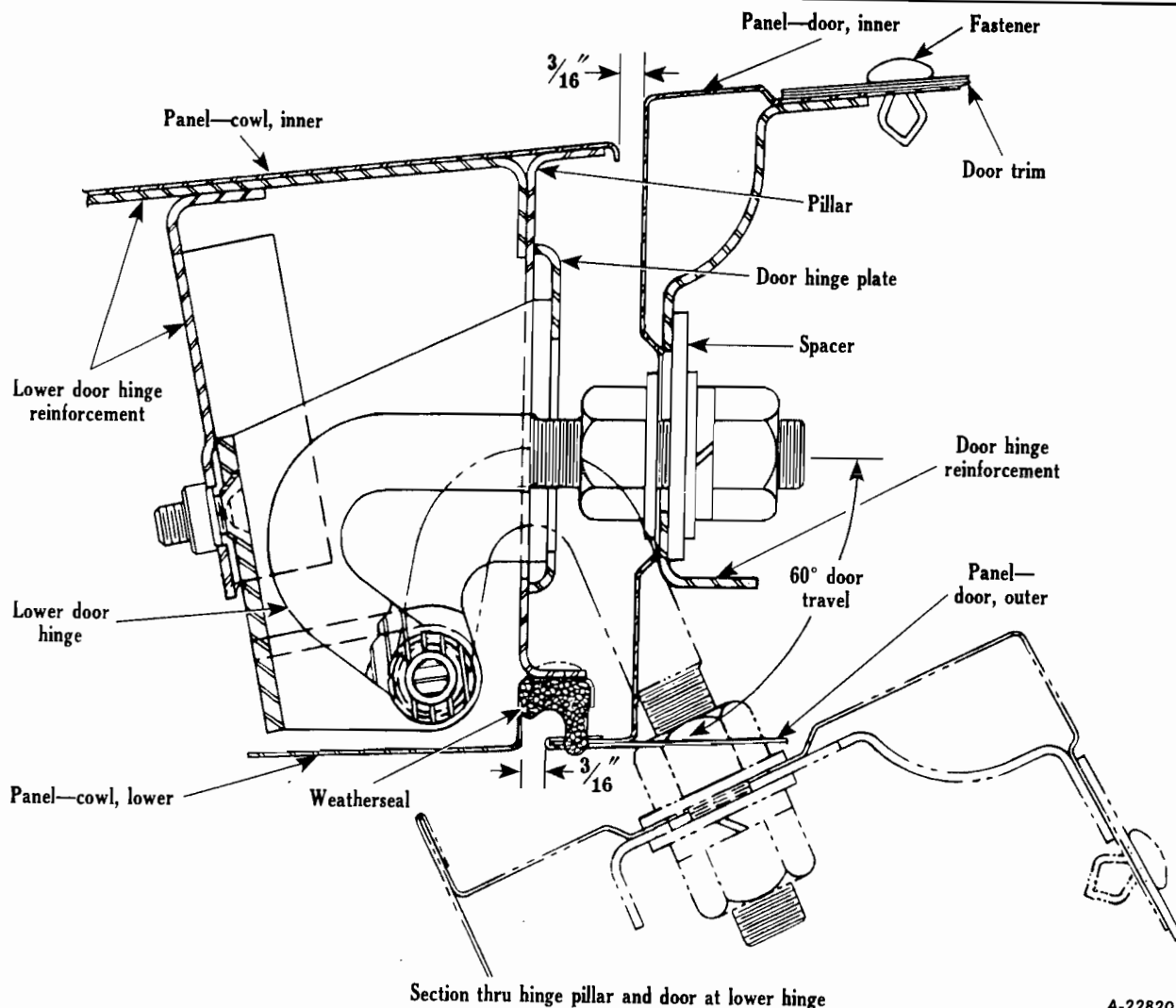


Fig. 46





Section thru hinge pillar and door at lower hinge

A-22820

Fig. 47

4. Remove door assembly.

## TO INSTALL:

1. Position door assembly on upper and lower hinges.
2. Reinstall nuts and washers on door hinges.
3. Position door check arm into bracket and install pivot pin.
4. Reinstall door glass regulator handle, remote control handle and door trim panel.

## ADJUSTMENT:

The upper and lower hinges are threaded sufficiently to permit adjusting the door towards the front or rear of the door opening. The hinge mounting holes in the door are oblong to permit aligning the door to the cab surface or outer contour and centering the door vertically.

## Cowl Ventilator

The cowl ventilator is controlled by a lever, which is held under tension by springs located at the lever pin and ventilator hinge pin. A rubber strip cemented in the ventilator trough assures a weather-tight seal.

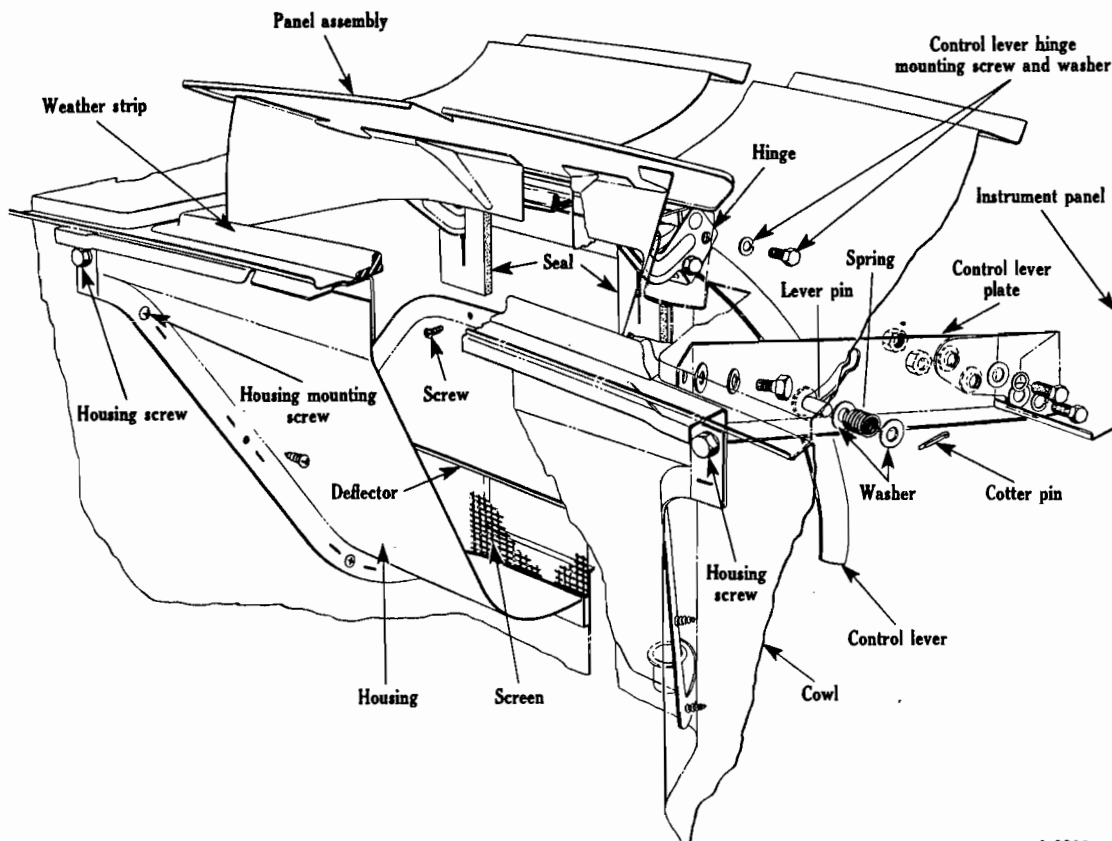
This type ventilator (see Figs. 48 and 49) requires no adjustment or attention other than occasional lubrication of the lever and hinge pins.

## TO REMOVE:

1. Remove two ventilator housing capscrews and sheet metal screws (Fig. 48).
2. Remove ventilator housing (Fig. 48).
3. Remove four deflector retaining screws. Remove deflector and screen (Fig. 48).



4. Remove four retaining screws (two on each side in ventilator hinge (Fig. 48).
5. Remove cotter pin, washers and spring from ventilator hinge pin. Remove hinge pin (Fig. 49).
6. Remove ventilator panel assembly (Fig. 48).



A-22821

Fig. 48

TO INSTALL:

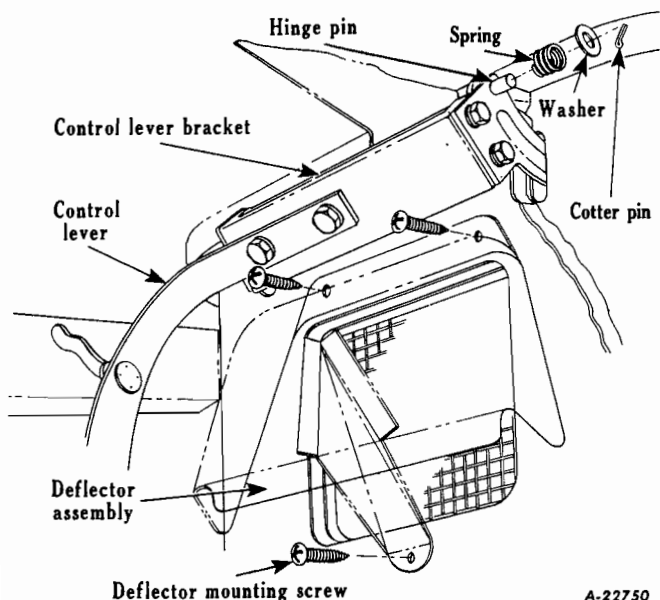
1. Place ventilator panel assembly in position through top of cowl.
2. Install ventilator hinge pin, washers, spring and cotter pin.
3. Install four retaining screws (two on each side) in ventilator hinge.
4. Install screen and deflector.
5. Install ventilator housing.

Seat Adjuster (L-110 to L-180)

The seat adjuster assembly is retained in position by eight studs. Four of the studs are installed into brackets mounted on the floor board and the remaining studs installed into the seat frame.

TO REMOVE:

1. Remove seat cushion and seat back cushion.



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Fig. 49



## L-LINE MOTOR TRUCK SERVICE MANUAL

2. Remove seat adjuster tension spring (Fig. 50).
3. Remove two retaining nuts, washers and spacers from front of seat frame (Fig. 50).
4. Remove two retaining nuts and washers from rear of seat frame (Fig. 50). Remove seat frame assembly.
5. Remove four retaining nuts and washers from brackets mounted on floor board.
6. Remove seat adjuster assembly. NOTE: Either left or right adjuster assembly can be removed individually after removal of the adjuster assembly retainer nuts and washers (bracket to adjuster). Move the adjuster assembly to its extreme rearward position to permit disengagement of the equalizer pinion teeth from the pinion rack.

## TO INSTALL:

Seat adjuster installation is accomplished by reversing the foregoing procedure.

The seat adjuster rack should be cleaned with a commercial solvent and lubricated with non-hardening lubricant periodically in order to obtain the maximum efficiency.

## Seat Adjuster (L-190 up)

The seat adjuster assembly used on the driver's seat on the above models is similar to the seat adjuster used on L-110 to L-180 models. Therefore the removal and installation instruction outlined for L-110 to L-180 models can be followed.

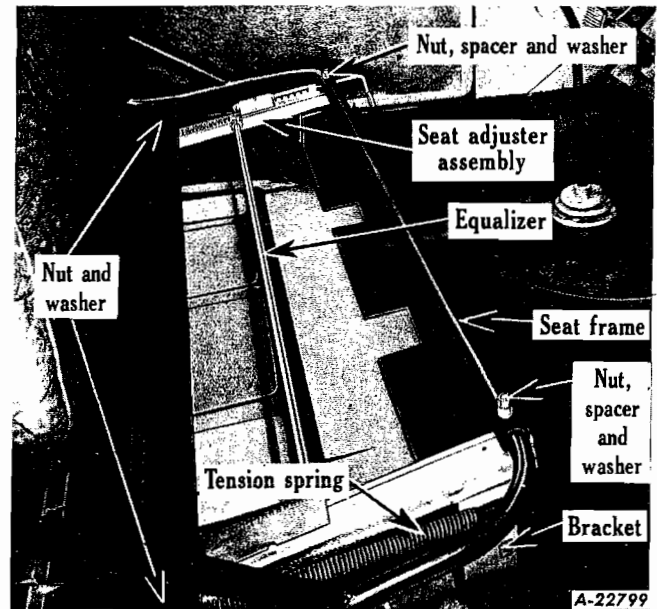
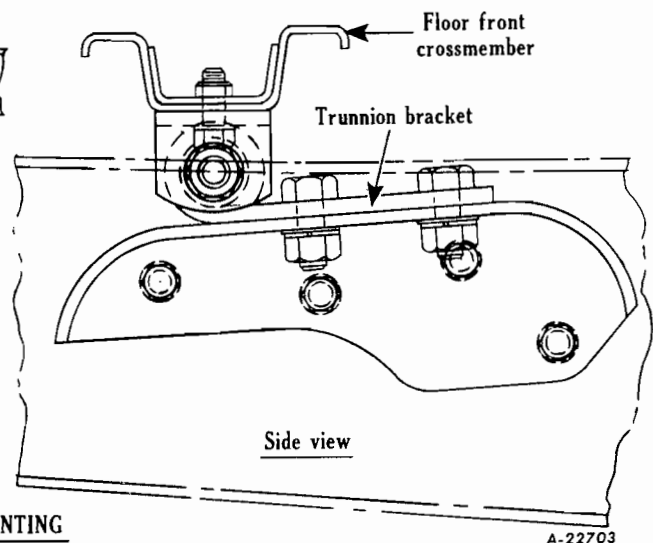
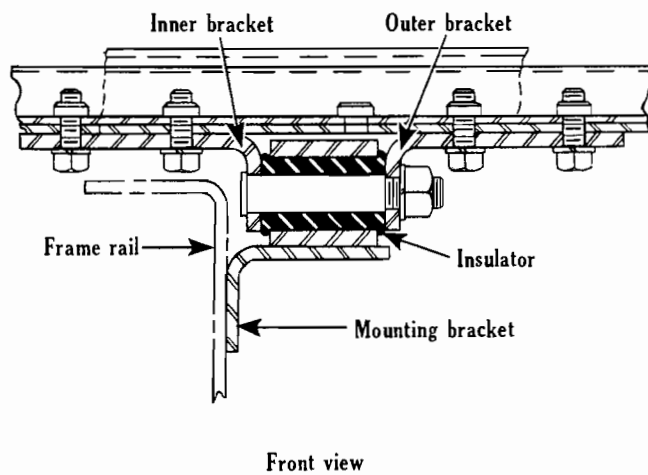


Fig. 50

## Cab Mountings

Reference to the various drawings of cab mountings will reveal their construction details.

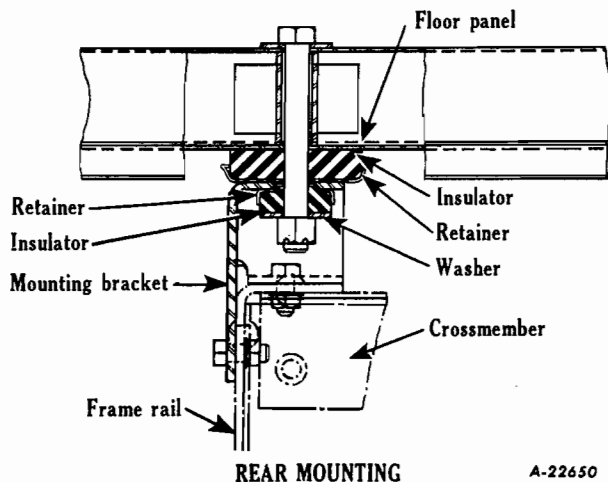
Mountings illustrated in Figs. 51, 52, 53, 54, 55, 56 and 57 should be assembled as shown and the mounting nuts tightened to slightly compress the insulators. Install cotter pins for mountings illustrated in Figs. 52 and 57.



## FRONT MOUNTING

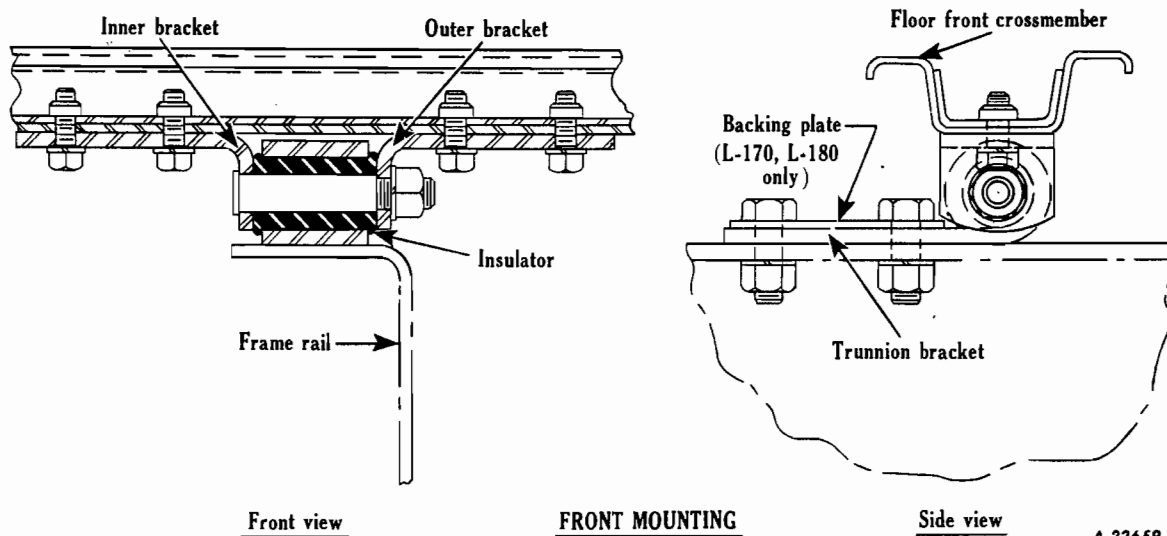
Fig. 51 - L-110, L-120, L-130 Series

# L-LINE MOTOR TRUCK SERVICE MANUAL



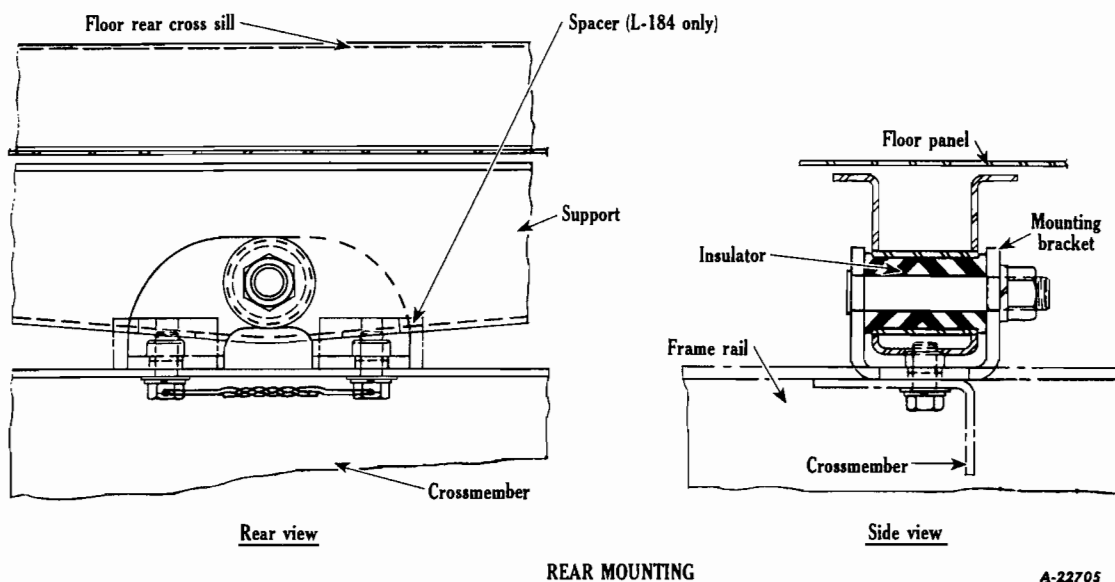
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Fig. 52 - L-110, L-120, L-130 Series



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Fig. 53 - L-150, L-160, L-170, L-180 Series



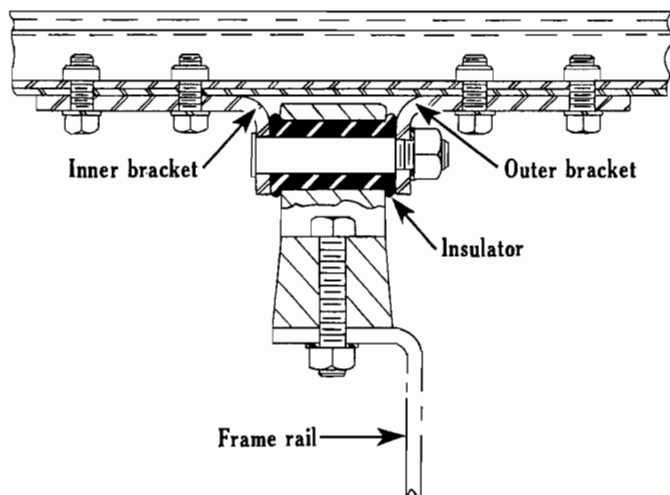
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Fig. 54 - L-150, L-160, L-170, L-180 Series



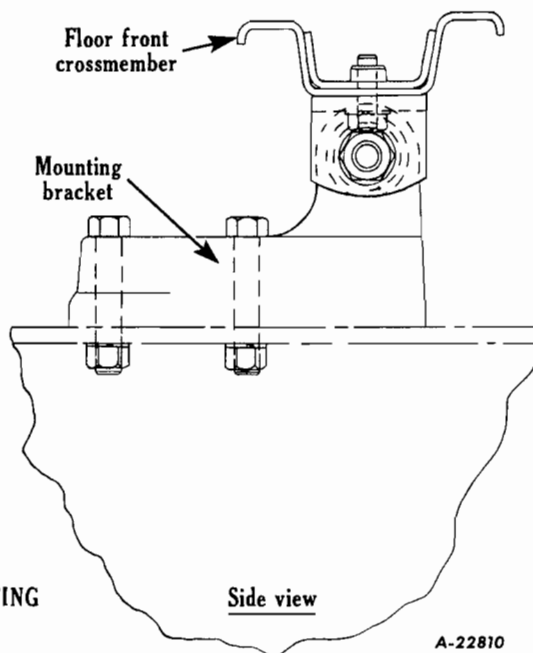


# L-LINE MOTOR TRUCK SERVICE MANUAL



Front view

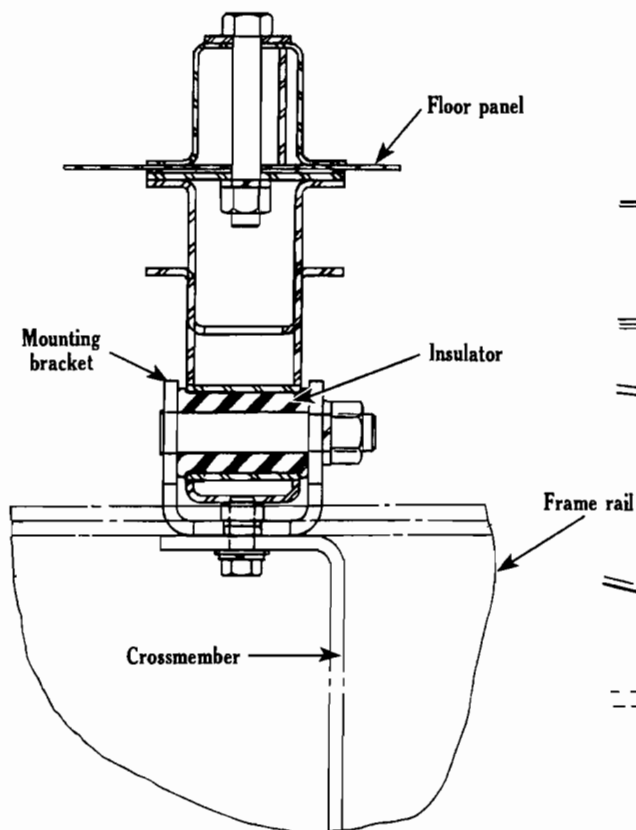
FRONT MOUNTING



Side view

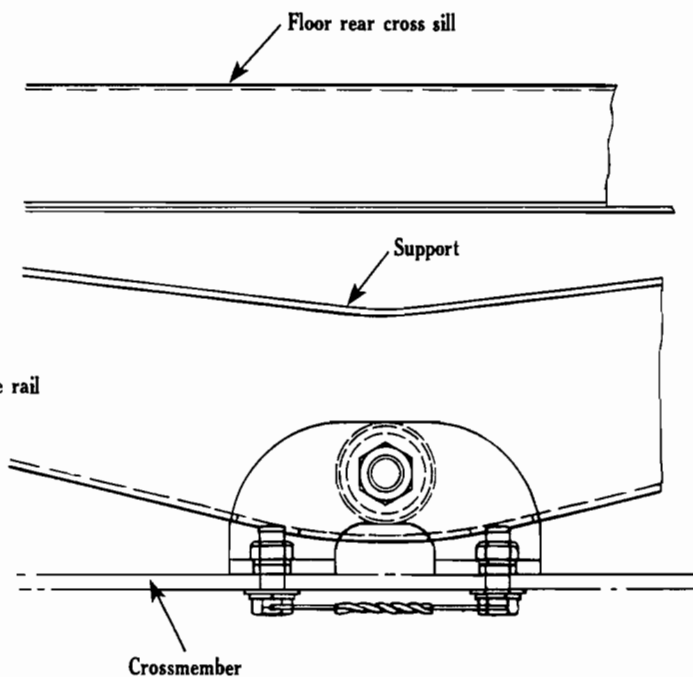
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Fig. 55 - L-190, L-200, L-210, L-220, L-230 Series



Side view

REAR MOUNTING



Rear view

A-22823

Fig. 56 - L-190, L-200, L-210, L-220, L-230 Series

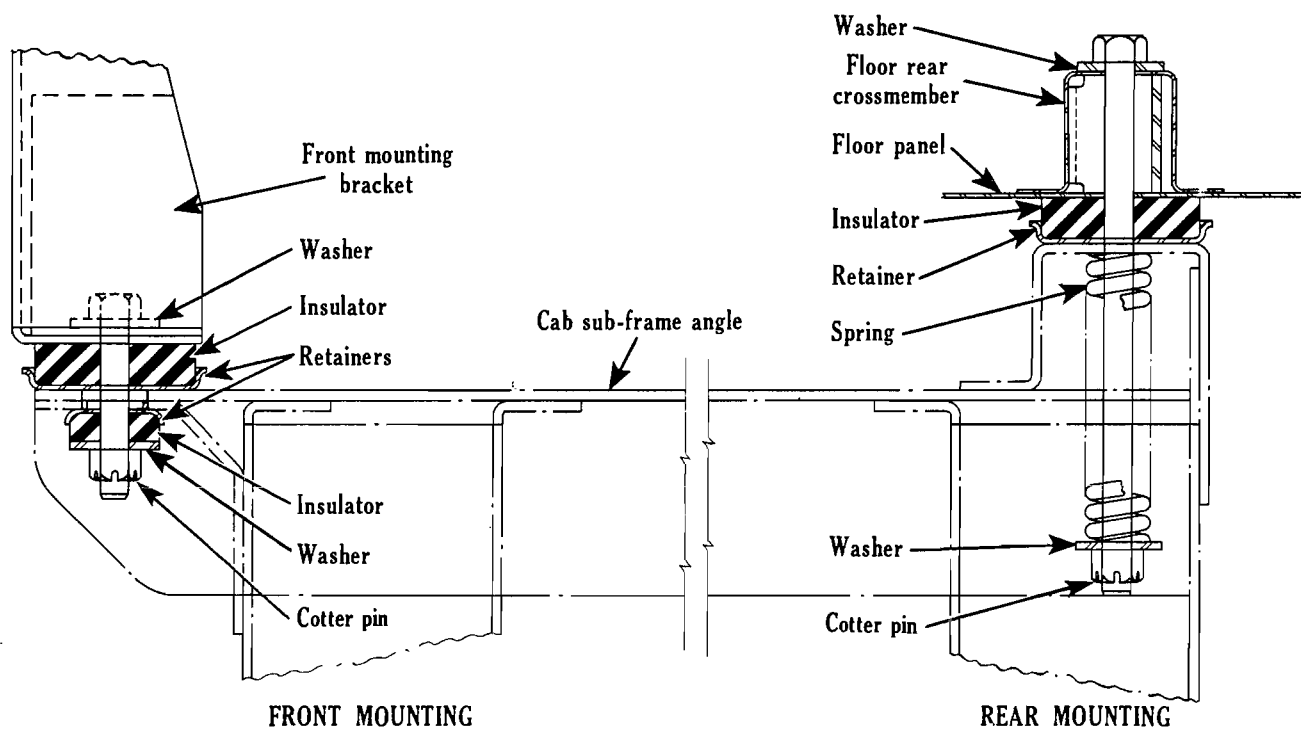


Fig. 57 - LC-160, LC-180 Series

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### Hood Assembly (L110 to L-180)

The hood assembly is hinged on both sides of the fender side shields. Turning the hood latch handles upward on either the left or right side of hood will permit raising the hood assembly.

#### TO REMOVE:

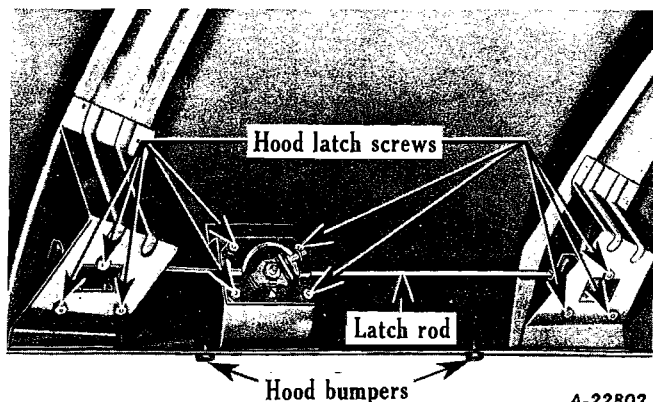
1. Release hood latch on both sides of hood by turning handles upward. Remove hood assembly.
2. Remove 10 hood latch retaining screws and lockwashers and remove hood latch assembly (Fig. 58).

#### TO INSTALL:

1. Install hood latch assembly to hood using 10 retaining screws and lockwashers.
2. With hood latch handles turned up, position hood assembly over hinges located on fender side shields and turn hood latch handles down to lock hood assembly.

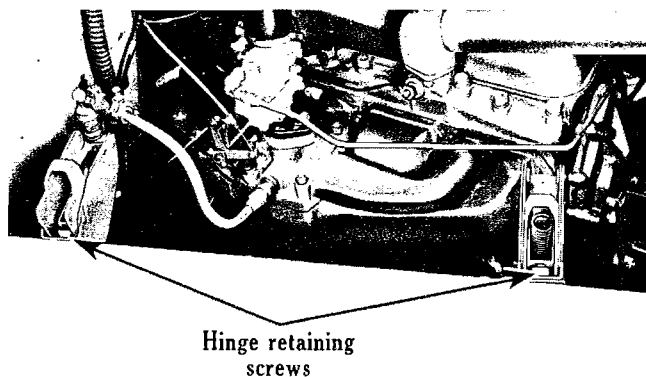
#### ADJUSTMENT:

1. Remove hood assembly.
2. Loosen hinge retaining screws at brackets and fender side shields (Fig. 59).



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Fig. 58



A-22726

Fig. 59



## L-LINE MOTOR TRUCK SERVICE MANUAL

3. The hood hinge mounting holes in the hinge mounting brackets and fender side shields are considerably larger than the mounting bolts to permit adjustment of the hinge brackets and alignment of the hood.
4. Loosening hood latch retaining screws (Fig. 58) will permit aligning hood latch to hood hinges.
4. Remove three wires from horn relay and pull horn wire towards the front of truck between the fender splash shield and radiator frame support. Mark wires for re-assembly.
5. Pull head lamp wiring harness towards the rear through fender splash panel and remove all harnesses from the three clips located on fender side shield (Fig. 61).
6. Remove two grille retaining screws, nuts and cotter keys from bracket located on front crossmember.

**Hood Assembly (L-190 up)**

The hood assembly is hinged in the center and attached to the cowl and radiator shell by retainers.

**TO REMOVE:**

1. Release hood latch on both sides of hood by turning handles upward.
2. Remove retaining screws and lockwashers from hood end of prop assembly.
3. Remove retaining nuts and lockwashers from hood hinge retainers.
4. Remove hood assembly.

**TO INSTALL:**

1. With hood latch handles turned up, position hood assembly over cowl and radiator shell.
2. Install hood hinge retainers to hood hinge, cowl and radiator shell.
3. Install hood prop assembly and retaining screws to hood.

**ADJUSTMENT:**

Hood adjustment is accomplished by loosening the hood hinge retainer nuts and radiator shell stay rod nuts at brackets mounted on cowl and shortening or lengthening stay rods by re-adjusting retaining nuts.

**Fender and Radiator Grille (L-110 to L-160)**

The fenders and radiator grille are readily removed as a complete unit by following the procedure as outlined:

1. Remove hood assembly.
2. Remove head lamp wiring harness terminals from junction block on grille brace (Fig. 60). Mark wires for reassembly.
3. Remove head lamp wiring harness from clip located on left side of grille brace (Fig. 60).
7. Remove fender brace retaining screw (both sides) from cab (Fig. 62).
8. Remove four fender stone deflector to cab retaining screws on both sides (Fig. 62).
9. Remove fender to cab retaining screw and two cab to fender retaining screws from inside of cab on both sides (Fig. 62).

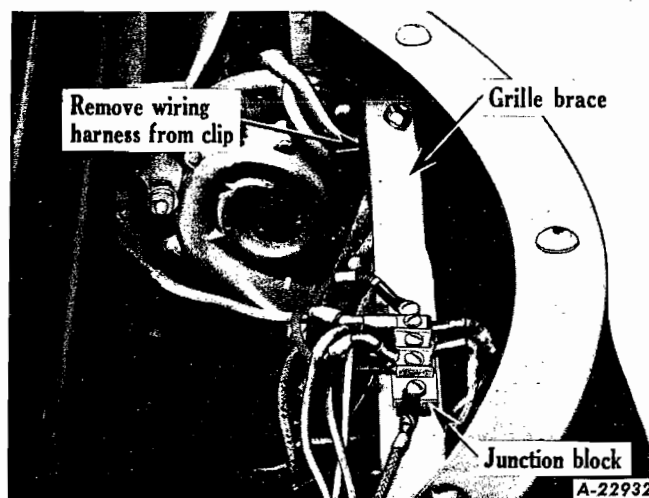


Fig. 60

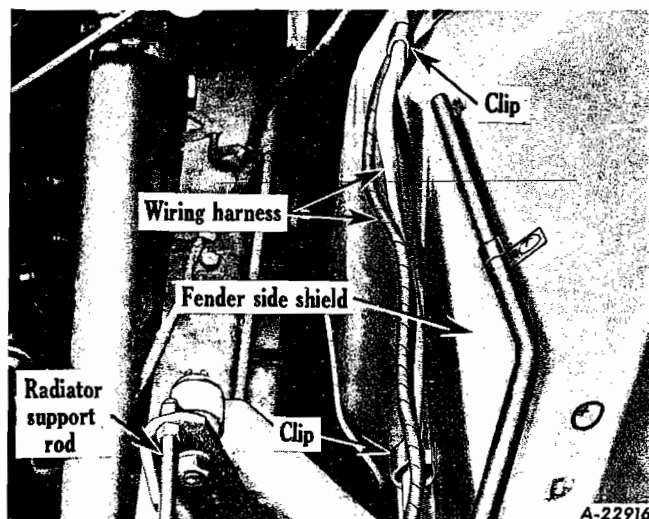


Fig. 61

# L-LINE MOTOR TRUCK SERVICE MANUAL

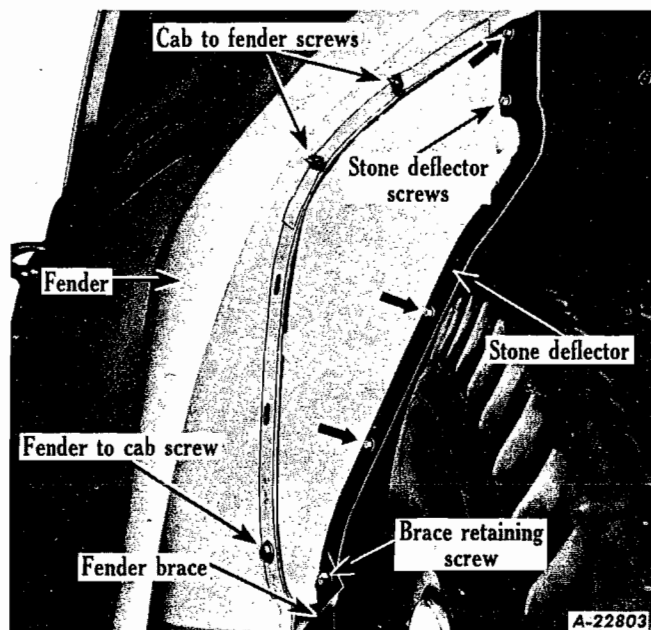


Fig. 62

10. Remove two fender side shield to cowl retaining screws on both sides (Fig. 63).
11. Remove front end section as a complete unit.

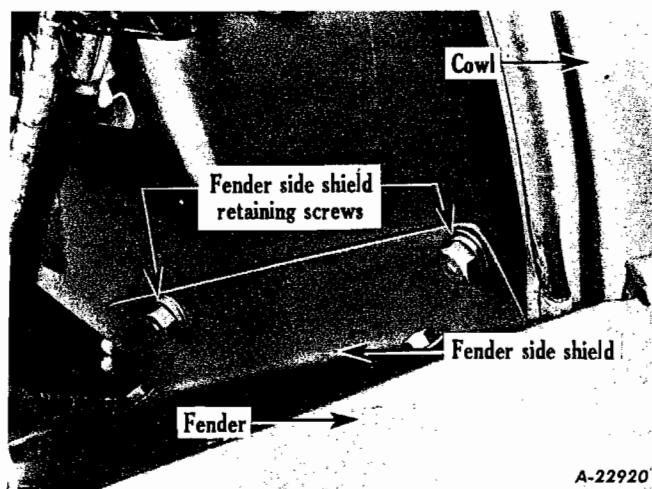


Fig. 63

## Fenders and Radiator Grille (L-170 and L-180)

The fenders and radiator grille are readily removed as a complete unit by following the procedure as outlined:

1. Remove hood assembly and drain radiator.
2. Disconnect the head lamp, parking lamp and ground wires at the junction block on grille brace. Note identification numbers on wire for reassembly (Fig. 64).

3. Remove head lamp wiring harness and junction block ground cable from clip located on left side of grille brace (Fig. 64).
4. Remove three wires from horn relay and pull horn wire towards the front through fender splash panel. Mark wires for reassembly.

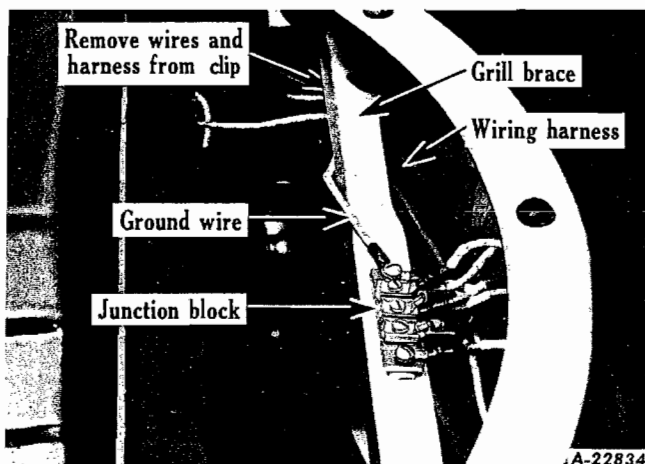


Fig. 64

5. Pull head lamp wiring harness towards the rear through fender splash panel and remove all harnesses from three clips located on fender side shield (Fig. 65).

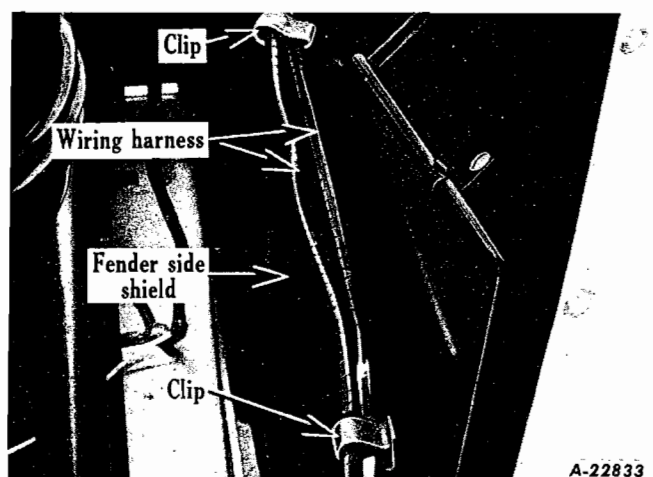


Fig. 65

6. Disconnect radiator hose clamp at radiator inlet. Pull radiator forward to facilitate removal of radiator support frame rubber pads (Fig. 66).
7. Remove the two front retaining nuts and washers (both sides) from radiator frame support pads (Fig. 66).



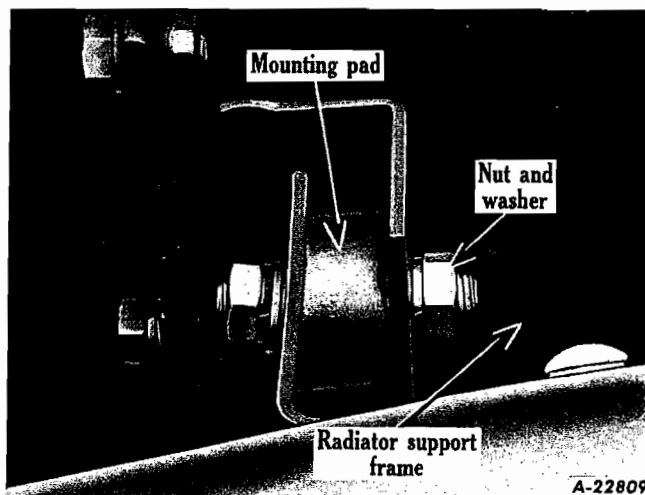


Fig. 66

8. Remove two grille crossmember retaining screws at frame rail (Fig. 67). (Illustration shows bumper removed to secure better view of operation.)

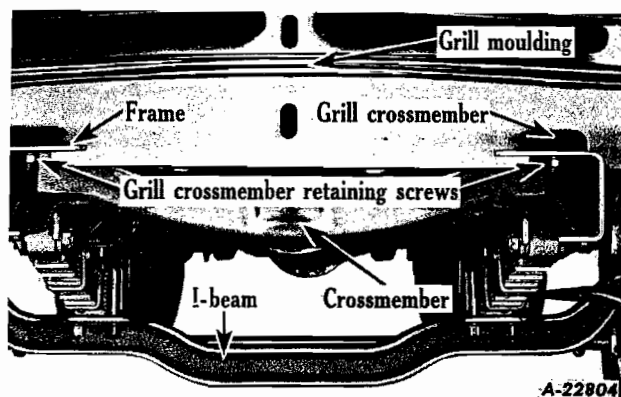


Fig. 67

9. Remove fender brace retaining screw (both sides) from cab (Fig. 68).
10. Remove four fender stone deflector to cab retaining screws on both sides (Fig. 68).
11. Remove fender to cab retaining screw and two cab to fender retaining screws from inside of cab on both sides (Fig. 68).
12. Remove two fender side shield to cowl retaining screws on both sides (Fig. 68).
13. Remove front end section as a complete unit.

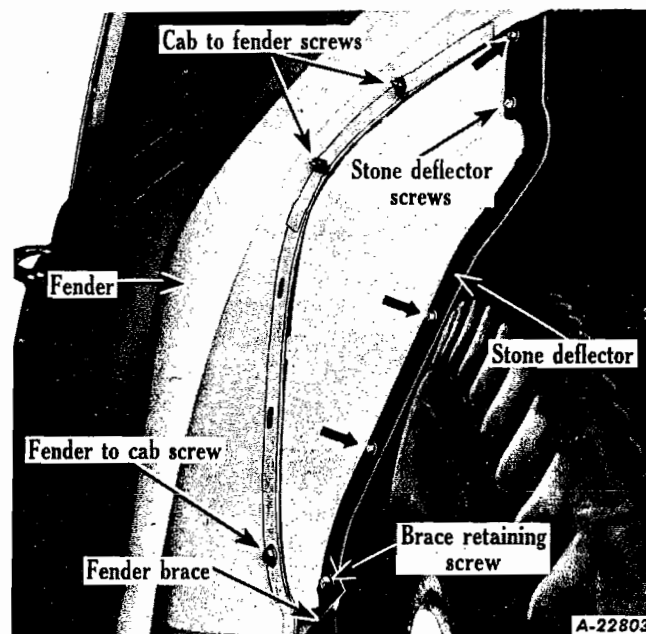


Fig. 68

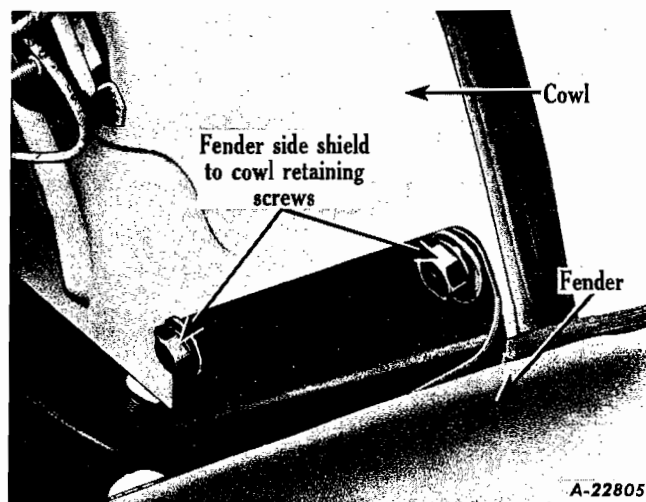


Fig. 69

## Fender and Radiator Grille (L-190 up)

The fenders and radiator grille are readily removed as a complete unit by following the procedure as outlined:

1. Remove hood assembly AND DRAIN RADIATOR.
2. Remove radiator shell stay rods.
3. Disconnect radiator hose at radiator inlet.
4. Remove radiator frame support pad rear retaining nuts and washers on both sides of radiator (Fig. 70).



5. Loosen radiator frame support bracket retaining nuts at radiator shell to facilitate removal of brackets from radiator frame support pads (Fig. 70).
6. Remove two grille to bracket at cross-member retaining screws and pads.

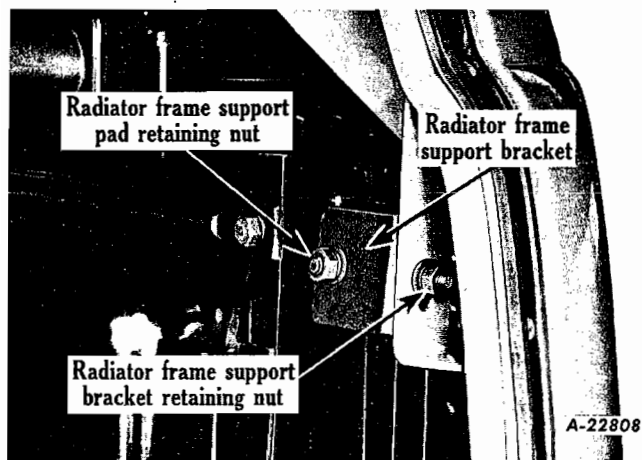


Fig. 70

7. Remove three bracket to fender retaining screws on both sides (Fig. 71).

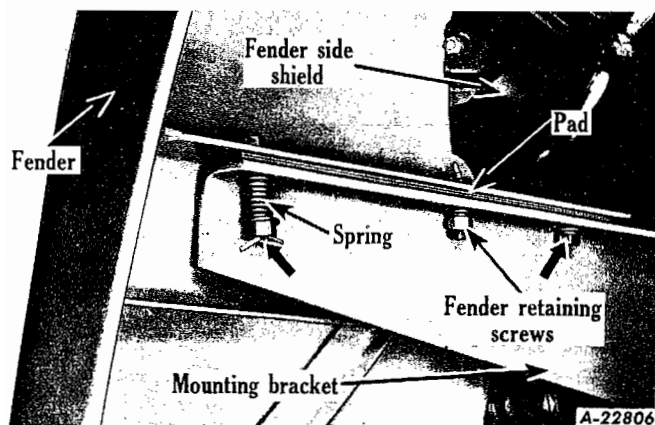


Fig. 71

8. Remove the three head lamp feed wires from junction blocks on both fender side shields (Fig. 72).
9. Remove front end section as a complete unit.

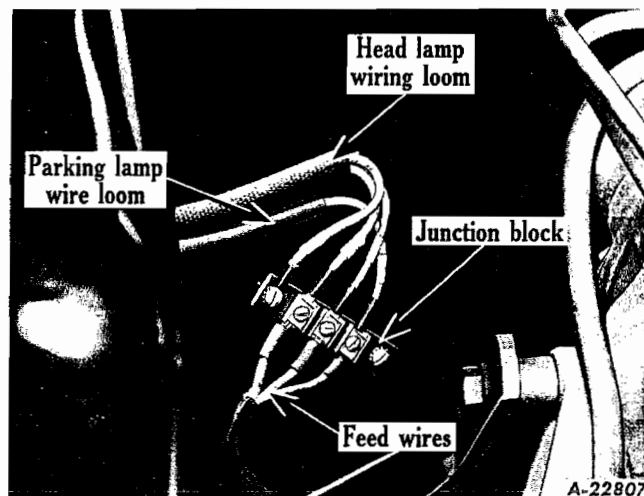


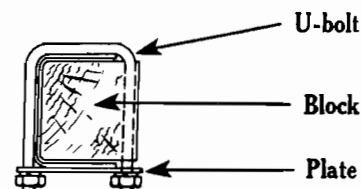
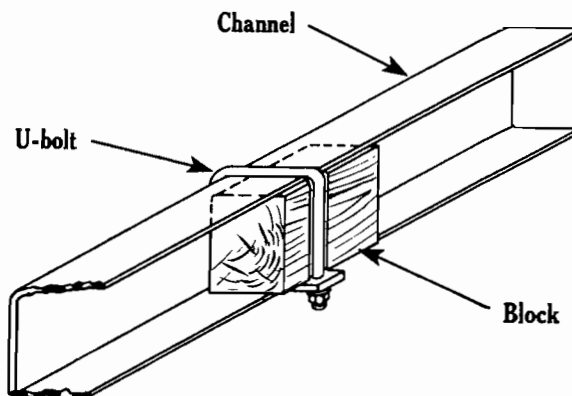
Fig. 72

### Body Mountings

When mounting bodies on frames always place tight-fitting spacer blocks inside the frame channels at points where the U-bolts are to be installed. These filler blocks will support the frame flanges and prevent bending by the U-bolts.

The filler blocks should be so constructed that they will be form fitting in the channel and so constructed that the body U-bolt will rest in a recess in the block to prevent its loss should the bolt become loose. Fig. 73 illustrates the construction of such a block.

Well-seasoned wood should be used for filler block construction.



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Fig. 73



## L-LINE MOTOR TRUCK SERVICE MANUAL

FIFTH WHEEL MOUNTING  
FOR TRACTOR AND TRAILER  
COMBINATIONS

Correct fifth-wheel mounting requires attention to two major factors--first, proper attachment of fifth-wheel unit to frame, and second, correct fifth-wheel king-pin location with respect to the centerline of the rear axle. Determination of the proper position involves consideration of several distinct factors and for full details, reference should be made to Sales Engineering Bulletin No. 9 (CT-209), dated October 1946.

Subsequent paragraphs describe general details of satisfactory fifth-wheel installations.

Fifth wheel sub-sills may be either of wood or angle iron construction and should always extend to within 1" from the back of the cab. Wood sub-sills (Fig. 74) should be of either kiln-dried oak or white ash and the same width as the frame rail. Notches should be cut into the sub-sill to provide clearance for frame cross-member rivets or other obstructions.

Wood sills of less than 4" in height should not be used.

Angle iron sills (Fig. 75), where desired, should be constructed in accordance with the following chart:

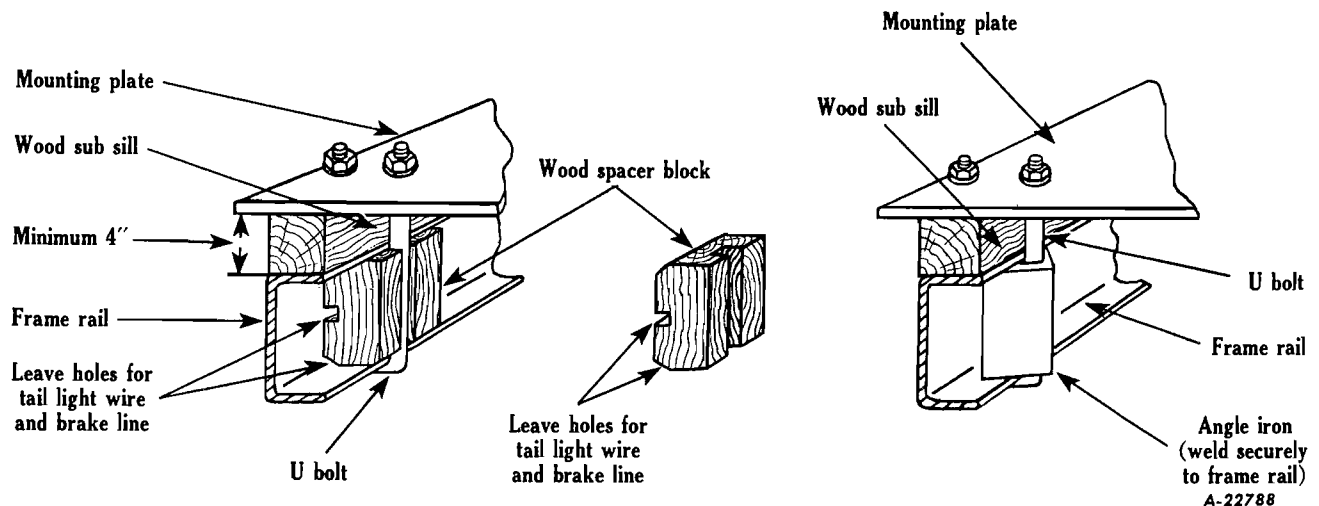


Fig. 74

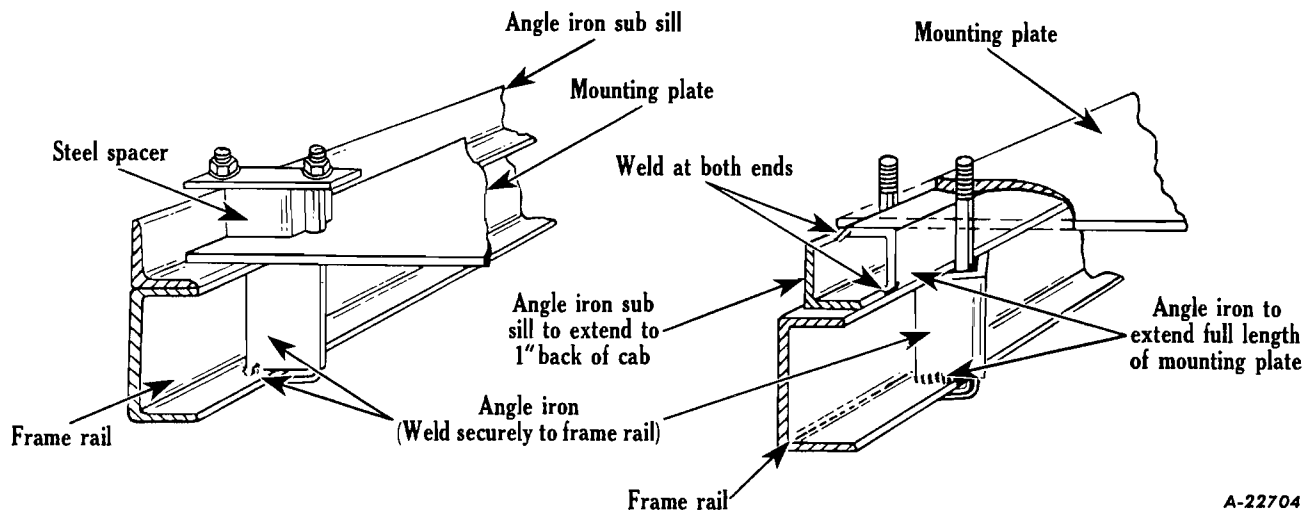


Fig. 75



## L-LINE MOTOR TRUCK SERVICE MANUAL

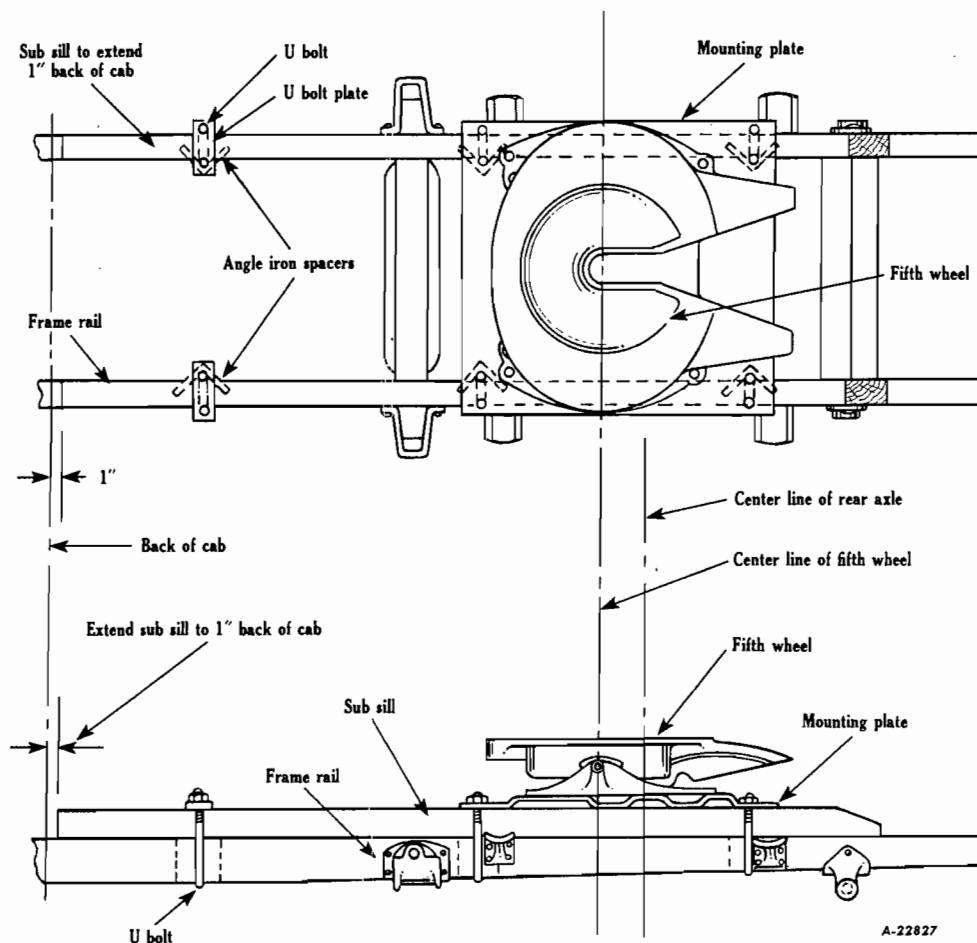


Fig. 76

For 1-1/2 to 2 ton tractors--Use angle iron 3/8" x 3" x 3"

For 2-1/2 to 3 ton tractors--Use angle iron 1/2" x 3-1/2" x 3-1/2"

For 5 to 7 ton tractors--Use angle iron 5/8" x 3-1/2" x 3-1/2"

Fifth wheel mountings are generally referred to as being either "high-type" or "low-type". "Intermediate" or "medium" mountings are obtained by using variations of the "low-type" mountings.

Fig. 76 illustrates top and side view of a fifth wheel mounting to show relative position of the fifth wheel king-pin to the center line of the rear-axle.

The "high-type" mounting is shown in Fig. 76. Fig. 74 illustrates installation details and instructions for "high-type" mountings.

Fig. 77 illustrates an adaptation of the "low-type" mounting to provide a medium height.

Optional use of angle-iron and wood frame channel spacer blocks is illustrated in Figs. 74 and 75 and may be used in any type mounting. The angle-iron spacers where used should be tack-welded (electrical preferably) to the frame

flange as shown. Construction detail of wood spacer blocks is also shown in Fig. 74 and it must be noted that the direction of the wood grain is vertical.

**CAUTION:** Do not drill holes in frame rail or remove rivets.

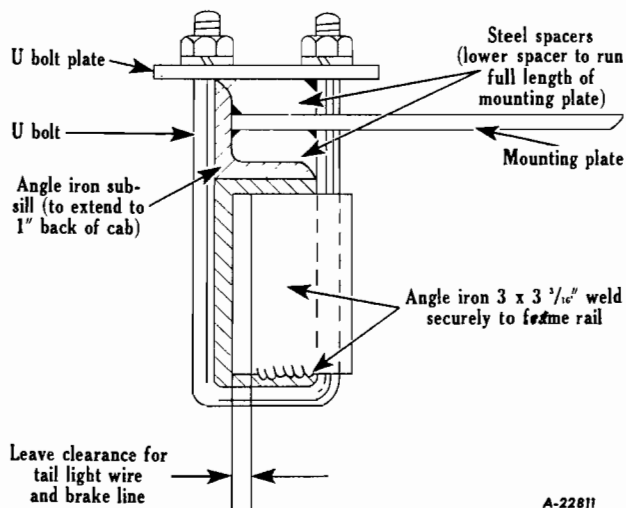


Fig. 77



## L-LINE MOTOR TRUCK SERVICE MANUAL

## Panel and Pick-Up Body Mountings

The panel and pick-up bodies are secured

to frame rail by mounting pads, screws, nuts and lockwashers. Figs. 78 and 79 illustrate the construction of such mountings.

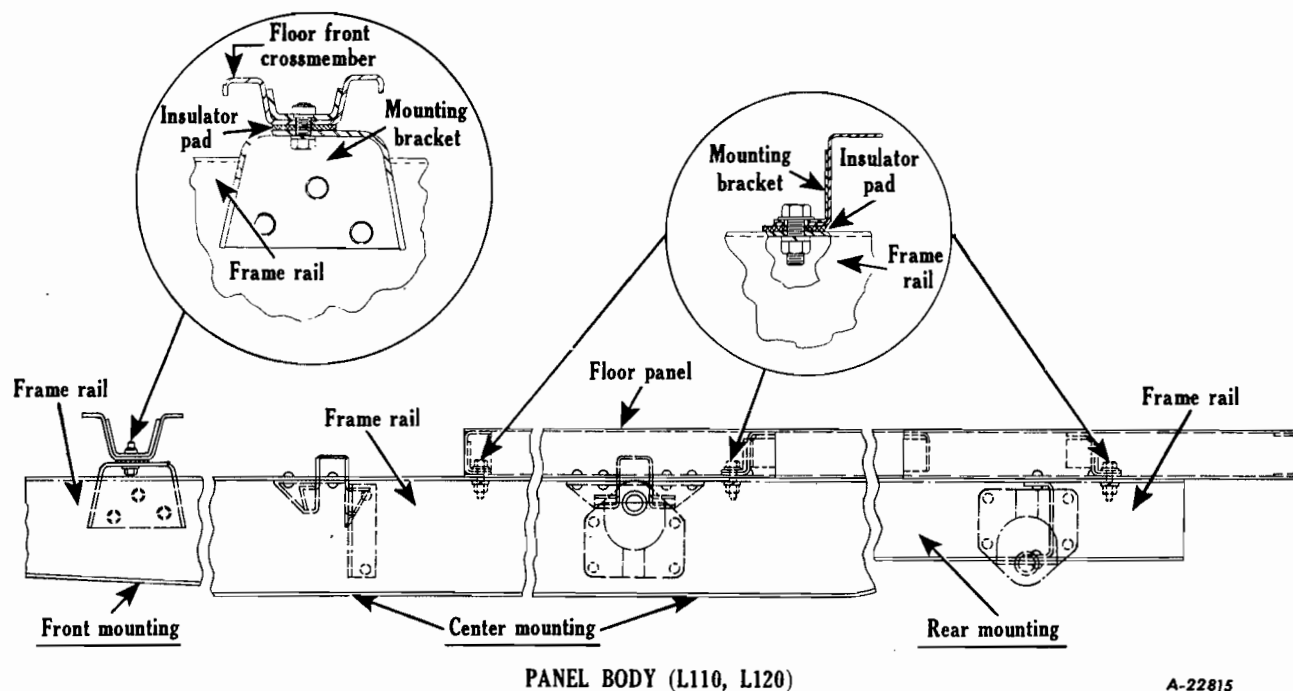


Fig. 78

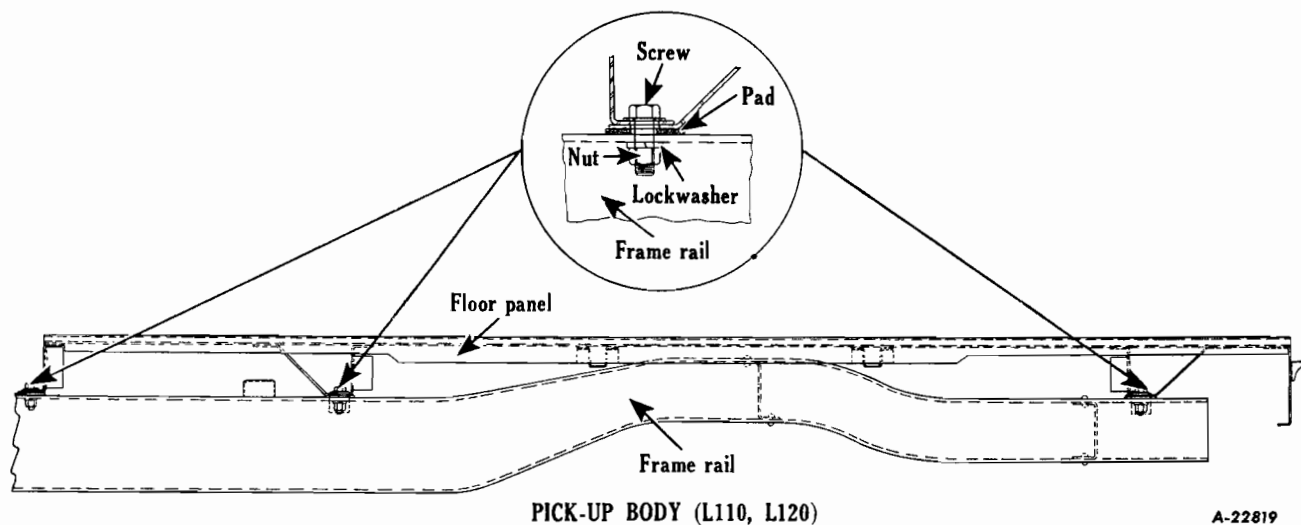


Fig. 79

## L-LINE MOTOR TRUCK SERVICE MANUAL



### WINDSHIELD WIPER "TRICO"

(L-110 to L-160)

The windshield wiper motor, shafts and links assembly is readily removed providing the procedure outlined is followed:

1. Remove wiper link retaining clips at wiper motor shaft lever (Fig. 80).
2. Disconnect links from wiper motor shaft lever (Fig. 80).
3. Remove two windshield wiper motor retaining screws (Fig. 80). Lower wiper to facilitate next steps.
4. Loosen switch control cable retaining screw (Fig. 81). Remove control cable.
5. Remove vacuum hose from windshield wiper motor.
6. Remove windshield wiper motor.
7. Remove windshield wiper arms and blades.
8. Remove two windshield wiper arm shaft retaining nuts (Fig. 81).
9. Remove two windshield wiper arm shaft caps and gaskets (Fig. 81).
10. Remove windshield wiper arm shafts and links as an assembly.

#### TO INSTALL:

The windshield wiper motor, shafts and links assembly installation is accomplished by reversing the above procedure.

#### Lubrication

The windshield wiper arm links should be disconnected at the wiper motor and link sockets lubricated periodically with a light grade of machine oil (SAE-10).

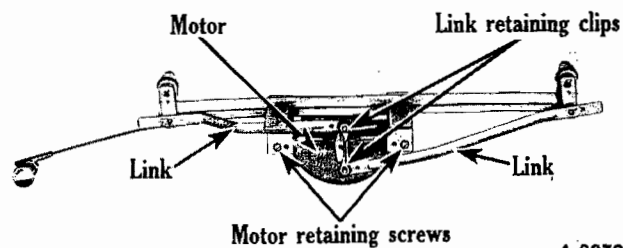
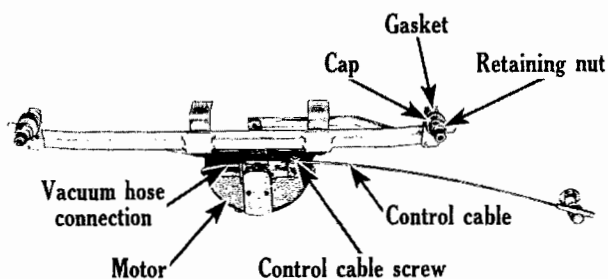


Fig. 80

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A-22707

Fig. 81

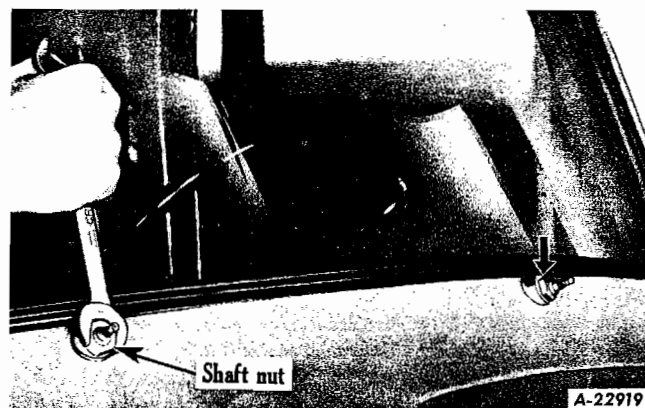
### WINDSHIELD WIPER (L-170 up)

#### "AMERICAN BOSCH - WWB6A"

The windshield wiper motor is readily removed as a complete unit by following the procedure as outlined.

#### TO REMOVE:

1. Remove windshield wiper arms and blades.
2. Remove retaining nuts from windshield wiper arm shafts (Fig. 82).
3. Remove windshield wiper arm shaft caps and gaskets.



A-22919

Fig. 82

4. Remove two windshield wiper retaining screws, nuts and washers (Fig. 83).
5. Remove four link arm spring retaining clips and washers from windshield wiper motor and windshield wiper arm shafts and remove link arms.
6. Remove windshield wiper motor (Fig. 84).
7. Remove windshield wiper electrical cables (Fig. 84). The terminal posts on the windshield wiper motor are marked "F", "A",





and "P" to facilitate reassembling the harness wires. The wires in the harness are coded according to colors. The wire colored "Red" is to be installed in terminal post "F"; the wire colored "Black" is to be installed in terminal post "A"; and wire colored "Green" is to be installed in terminal post "P".

#### TO INSTALL:

Windshield wiper installation is accomplished by reversing the above procedure.

#### Lubrication

The windshield wiper arm links should be removed periodically and link sockets dipped in machine oil (SAE-10).

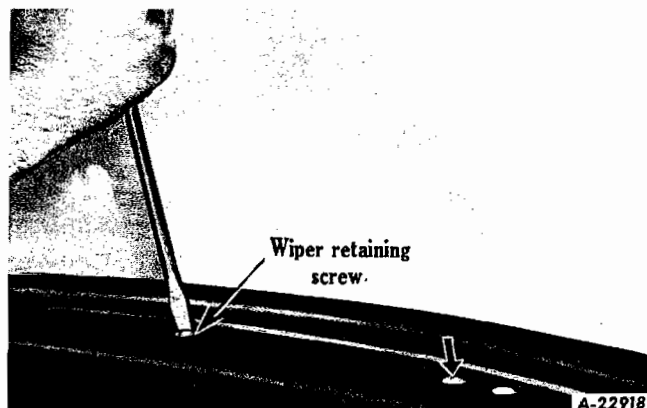


Fig. 83

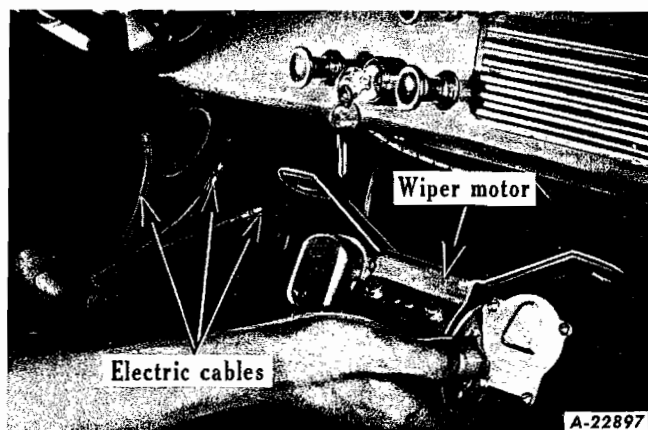


Fig. 84

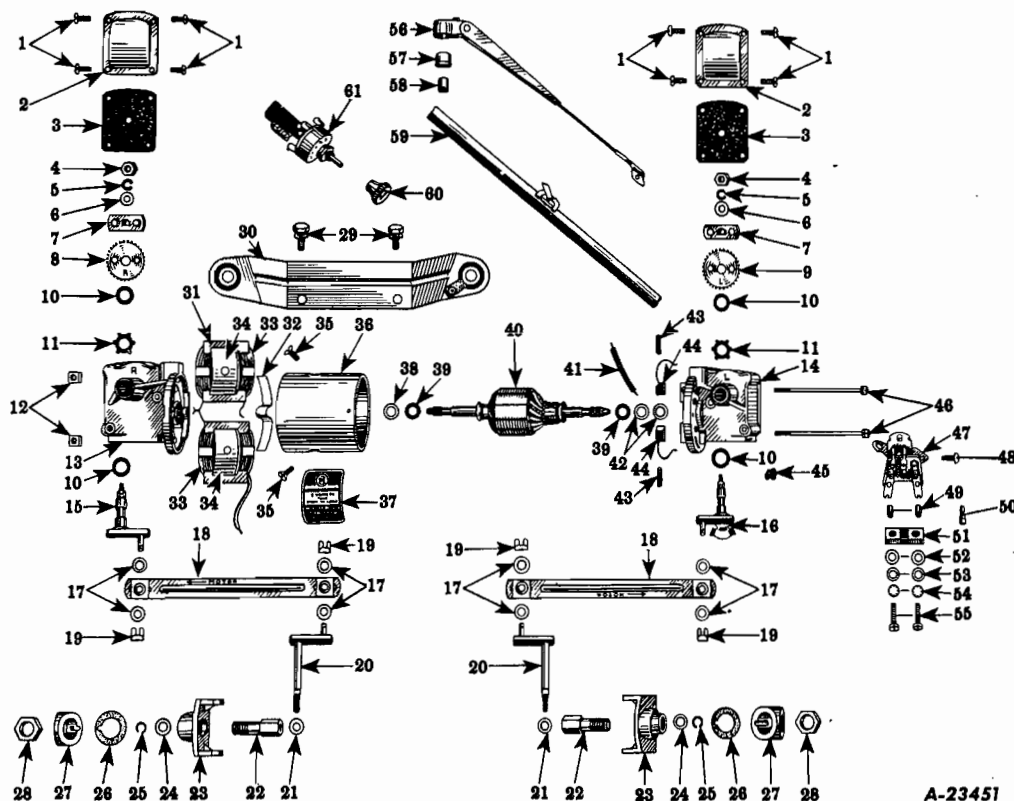
#### CAUTION! (INSTRUCT CUSTOMER)

Do not attempt manual movement of the blades or arms of a wiper that is not equipped with clutches. To do so will cause damage to the wiper arm shaft serrations and possibly other related parts.

When cleaning the windshield, always employ the standby feature of the wiper arm which lifts the blade clear of the windshield.



## DUAL ELECTRIC WINDSHIELD WIPERS—TYPE WWB (AMERICAN BOSCH)



A-23451

Fig. 85

Item No.	Description	Item No.	Description	Item No.	Description
1.	Screw, gear housing cover.	19.	Clip, spring.	39.	Washer, insulation.
2.	Cover, gear housing.	20.	Shaft and crank-arm, wiper arm.	40.	Armature.
3.	Gasket, cover.	21.	Washer, spacing.	41.	Cable, brush holder.
4.	Nut, gear shaft and crank-arm assembly.	22.	Stud assembly, wiper arm.	42.	Washer, spacing.
5.	Washer, lock.	23.	Spacer, inner.	43.	Spring.
6.	Washer, plain.	24.	Washer, spacing.	44.	Brush, carbon.
7.	Plate, drive gear.	25.	Ring, spring.	45.	Grommet.
8.	Gear, right.	26.	Washer, sealing.	46.	Bolt, thru -.
9.	Gear, left.	27.	Spacer, outer.	47.	Switch, parking.
10.	Washer, spacing, fibre.	28.	Nut, fastening.	48.	Screw, parking switch.
11.	Washer, spring.	29.	Screw and lockwasher.	49.	Sleeve, insulation.
12.	Nut, thru-bolt.	30.	Bracket assembly.	50.	Terminal, cable.
13.	Housing, gear, right.	31.	Strip, insulation.	51.	Resistor.
14.	Housing, gear, left.	32.	Strip, insulation.	52.	Washer, insulation.
15.	Shaft and crank-arm gear, right.	33.	Coil, field.	53.	Washer, plain.
16.	Shaft and crank-arm gear, left.	34.	Shoe, pole.	54.	Washer, star.
17.	Washer, link assembly.	35.	Screw, pole shoe.	55.	Screw, fastening.
18.	Link assembly, connecting.	36.	Housing assembly, motor.	56.	Arm, wiper.
		37.	Name plate.	57.	Adapter, wiper arm.
		38.	Washer, spacing.	58.	Nut, wiper arm.
				59.	Blade, wiper.
				60.	Knob, switch.
				61.	Switch, manual.



## DUAL ELECTRIC WINDSHIELD WIPERS (AMERICAN-BOSCH TYPE WWB)

### General Description

The American Bosch WWB dual electric windshield wiper is a two-speed, unit designed to simultaneously operate two arms and blades in either a parallel or opposed wiping motion.

The electric windshield wiper consists of the following components:

- Motor assembly.
- Two connecting link assemblies.
- Two wiper-arm shaft and crank-arm assemblies.
- Mounting bracket.
- Manually operated switch.

This new dual wiper is available for 6 and 12 volt installations (See Fig. 85) and incorporates the following features:

1. Dual speed shunt wound motor.
2. Double extension type armature shaft with a single thread worm at each end.
3. Self-aligning bronze bearings.
4. Two-speed control located in manually operated three-position switch (61).
5. Thermostatic overload circuit breaker located on manually operated switch.
6. Low current draw:
  - (a) Approximately 4.0 amperes at 6-volts and 2.0 amperes at 12-volts (depending on load) in low-speed position.
  - (b) Approximately 3.0 amperes at 6-volts and 1.5 amperes at 12-volts (depending on load) in high-speed position.
7. Wiping angles from 85° up to 118°.
8. Automatic parking switch (47). This switch is connected in parallel with the manual switch when the latter is in the "OFF" position. The wiper motor will continue to operate until the cam located on the gear shaft (16) engages the parking switch button. Also refer to Fig. 86
9. Four parking positions for the wiper blades:
  - (a) Right or left hand (parallel wiping motion).
  - (b). Inboard or outboard (opposed wiping motion).

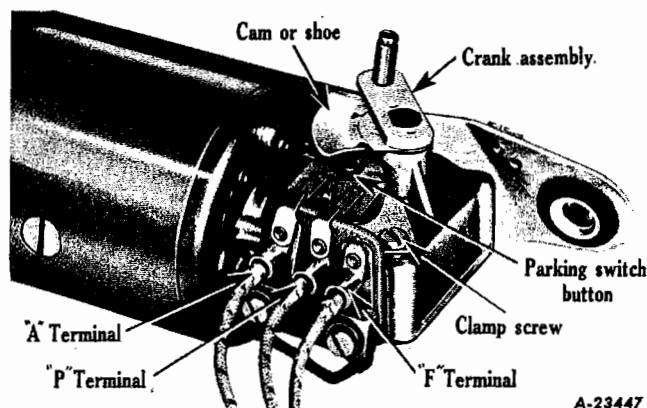


Fig. 86

### Disassembly

1. Before removing the motor assembly from the vehicle and with the wiper blades parked, carefully note the relative positions of the crank-arms which are part of the gear shafts (15 and 16). This is necessary in order that the correct wiping motion and parking of the blades is retained following reassembly.
2. Remove the connecting link assemblies (18) from the gear shafts and crank-arms and remove the motor assembly from the vehicle.
3. Remove the gear housing covers (2) and gaskets (3).
4. Remove the gear shaft and crank-arm fastening nuts and tap out both assemblies from the gear housings.
5. Remove both thru-bolts (46).
6. Remove the right (R) gear housing (13) from the motor housing (36) being careful not to remove the armature (40). This can be accomplished as follows:
  - (a) Set the motor assembly in an upright position on the left (L) gear housing (14).
  - (b) Grasp the motor housing in the left hand.
  - (c) Carefully remove the right gear housing (13) with the right hand and at the same time maintain a downward pressure on the armature with the index finger.
7. Unsolder the field lead from the "F" terminal of the parking switch (47).
8. Remove the left (L) gear housing (14) and armature, as a unit, from the motor housing (36).



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9. Hold both brushes (44) clear of the commutator so that they do not rub on the armature shaft and worm, and remove the armature from the gear housing. The brushes must be kept free of grease at all times.

### Cleaning

All parts except the field coils (33), armature (40) and parking switch (47) should be washed in a good commercial cleaning solvent. Bearing equipped parts should be washed with a brush dipped in a good commercial cleaning solvent taking care that as little as possible of the cleaning fluid comes in contact with the bearings.

DO NOT IMMERSE BEARING EQUIPPED PARTS IN A CLEANING FLUID. Thoroughly dry all parts that have been washed in the cleaning fluid.

The field coils, armature and parking switch may be wiped with a clean dry cloth or compressed air may be used if available.

### Inspection

#### ARMATURE (40)

Check the armature insulation by applying a 110-volt (60 cycle) test lamp between the commutator and armature shaft.

#### HOUSING AND FIELD COIL ASSEMBLY

Check the resistance of the field coils with an accurate ohmmeter. The total field coil resistance of a 6-volt wiper is approximately 2.8 ohms; of a 12-volt wiper, approximately 11.2 ohms.

#### GEAR HOUSING AND BRUSH HOLDER ASSEMBLY (14)

Check the insulated brush holder by applying a 110-volt (60 cycle) test lamp between the brush holder and the gear housing.

#### BRUSH SPRINGS (43)

Brush springs with a free length of less than 1" should be replaced.

#### BRUSHES

Damaged brushes or brushes worn down beyond 2/3 of their overall length must be replaced.

Examine all other parts for damage and wear; replace as necessary.

### Lubrication

GEARS (8 and 9) AND GEAR HOUSINGS (13 and 14): 1/3 full of US 515 grease - spread over gear teeth and worm.

ARMATURE SHAFT BEARINGS: 2 or 3 drops of SAE-10 oil in surrounding felt.

GEAR SHAFT AND CRANK-ARMS (15 and 16): Fill recessed section of shafts with US 515 grease.

CONNECTING LINK ASSEMBLY BEARINGS (18): Several drops of SAE-10 oil.

STUD ASSEMBLIES (22): Fill space between bushings with US 515 grease.

### Reassembly

Reassembly is accomplished in the reverse order of disassembly up to and including the reassembly of both thru bolts to the motor housing. The gear shafts and crank-arms (15 and 16) are reassembled to their respective gear housings as follows:

1. Reassemble the gear drive plate (7) to the gear (8 or 9).
2. Replace either the right (R) or left (L) gear shaft and crank-arm in the correct position.
3. Carefully reassemble the spring washer (11) and spacing washer (10) to the large diameter of the gear shaft.)
4. Line up the flat on the shaft with the flat on the gear drive plate, then drop the gear drive plate (7) and gear (8 or 9) in place on the shaft.
5. Secure the assembly with the plain washer (6), lockwasher (5) and the fastening nut (4).
6. If the position of the crank-arm shifted during the above procedure, reposition by turning the armature shaft as required.
7. Reassemble the remaining gear and crank-arm into its gear housing in accordance with instructions in items 1 to 5.
8. Before securing the assembly, make certain both crank-arms are in correct relation to each other. If a correction is necessary, proceed as follows:
  - (a) Remove the gear drive plate (7) and gear (8 or 9).
  - (b) Reposition the crank-arm until it is in correct relation to the other.



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- (c) Reassemble the gear and gear drive plate to the shaft and secure the assembly as in item

### Testing

Before installing the motor assembly in the vehicle, check the operation of the assembly as follows:

1. Temporarily connect either the plus (+) or minus (-) terminal of a battery to the motor housing. The battery should be fully charged and of appropriate voltage.
2. Temporarily connect a "jumper" between the "A" and "F" terminals on the motor terminal plate (See Fig. 86).
3. Connect the remaining battery terminal to "A" on the motor terminal plate; this will result in the low speed operation of the motor. At this speed the crank-arms should revolve at approximately 45 cycles per minute.
4. To check high speed operation, remove the battery connection from terminal "A" on the motor terminal plate.
5. Remove the temporary "jumper" from terminals "A" and "F" on the motor terminal plate.
6. Reconnect the battery to terminal "A" on the motor terminal plate. This should result in the high speed operation of the motor. At this speed the crank-arms should revolve at approximately 65 cycles per minute.

The parking feature of the wiper should be checked after the motor assembly has been re-mounted on the vehicle and the connecting link assemblies (18) replaced on the gear shafts. The wiper should be operated thru the manual switch (61).

There have been instances where the electric windshield wiper has continued to operate after the switch has been turned to the "OFF" position. This is caused by the parking switch button shoe or cam located on the left hand shaft and crank assembly to break the circuit. To overcome this complaint, the shoe (Fig. 2) should be carefully bent towards the switch only enough to bear harder against the switch button but not contact or rub against the switch body. The shoe must be parallel to the face of the switch body.

In event the windshield wiper will not start from the parking position after the switch is turned "ON", the switch button should be checked to see if it is stuck in the depressed position.

If such is the case, pull the wire from the "B" terminal at the control switch and "snap" or "flip" the switch button to break it loose.

The parking switch is provided with an adjustment feature to permit close adjustment of the parking position of the wiper blades. This adjustment has been made at the factory and should not require change. A clamp screw (Figure 2) holds the parking switch assembly in position after adjustment.

The overload circuit breaker, located in a 6 volt manually operated switch (61), should carry approximately 10 to 12 amperes before opening; and in a 12 volt switch, approximately 5 to 6 amperes before opening.

CAUTION: (Instruct Customer)

Do not attempt manual movement of the blades or arms of a wiper that is not equipped with clutches. To do so will cause damage to the wiper arm shaft serrations and possibly other related parts.

