

# **HUDSON BODY SERVICE MANUAL**

**1948 – 1954**



This manual courtesy of  
Hudson-Essex-Terraplane Club member

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# FOREWORD

This Body Service Manual covers repair procedures applicable to servicing the bodies of Hudson Cars from 1948 through 1954.

A detailed index is provided in which the parts and operations are listed in alphabetical order under the assemblies or units to which they belong. Illustrations and pages of this manual are numbered consecutively.

The times applying to body operations, as shown in the Flat Rate Manual 1, are based on the procedures and operations covered in this manual. Mechanics following these procedures and using the tools and equipment available should have no difficulty in performing the operations in the time specified.

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# DOORS

## DOOR TRIM PANEL

### (Front and Rear)

### (Models 1948 thru 1954)

#### REMOVAL

1. Remove inside door handles.
2. Remove lock release knob and garnish moulding, (on cars so equipped).
3. Remove two screws from underside of arm rest and remove arm rest.

**NOTE: On all 1953 and 1954 models the arm rest is part of the trim panel. Remove two screws from inside pocket of arm rest.**

4. Remove valance (on cars so equipped by extracting exposed screws and sliding valance up from between door and trim panel).
5. Remove door pocket trim board (clips). (On cars so equipped.)
6. Remove door panel held by (clips) using wide bladed putty knife.

#### INSTALLATION

1. Repair any damage to door inside liner with Mystik tape before replacing trim panel.
2. Install door trim panel by engaging the bottom retainer and aligning clips before driving panel into place.

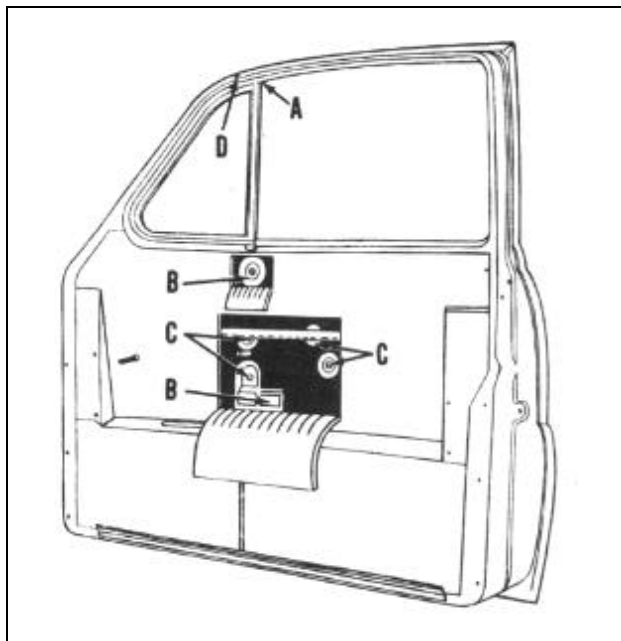


FIGURE 1

3. Install pocket trim board.
4. Install valance by inserting lower flange between door and pocket trim board; and, with slots in line with trim board clips, force valance down into position and install screws.
5. Install arm rest, (on cars so equipped), garnish moulding, lock release knob, and door handles.

## DOOR WINDOW REGULATOR - FRONT

### (All Models -1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

#### REMOVAL

1. Remove trim panel. See "Trim Panel Removal".
2. Remove garnish moulding spacer wood block.
3. Cut liner as shown in Figure 1 for sedans, Figure 2, for coupes and two door sedans.

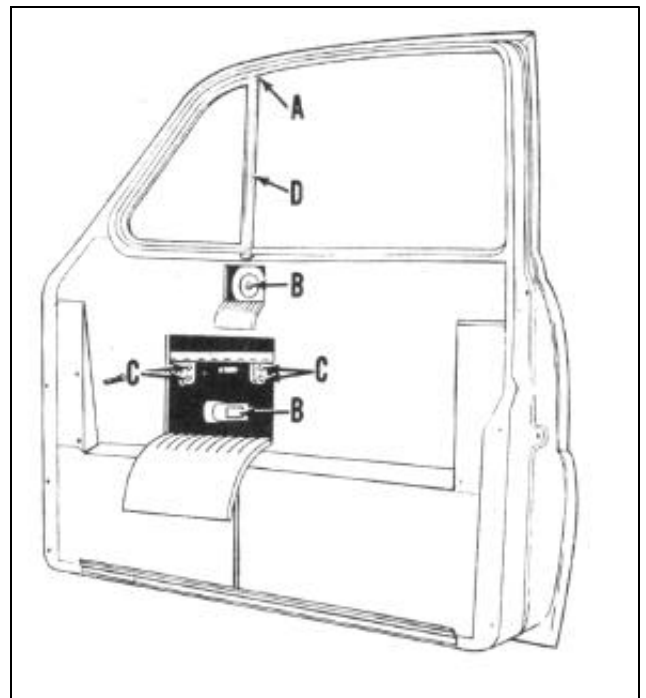


FIGURE 2

4. Remove screw (A) from inside upper end of center glass channel and screws (B) which attach center glass channel to door inner panel. (Do not remove center glass channel from door.)
5. Remove screws (C) attaching regulator to door inner panel.

6. Lower window to bottom of door and release regulator cross arms from glass channel on sedans. On coupes and two door sedans disconnect regulator from cross arm assembly. (A stud on the regulator arm is retained in the cross arm assembly by a spring clip.)
7. Remove regulator through opening in bottom of door.

### INSTALLATION

Reverse procedure of removal and repair damage to door inner liner with Mystik tape

## DOOR WINDOW REGULATOR - FRONT (Models 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Remove door trim panel. See "Trim Panel Removal", Page 1.
2. Cut inner liner as shown in Figure 3, to expose screws (C) and hole (E).

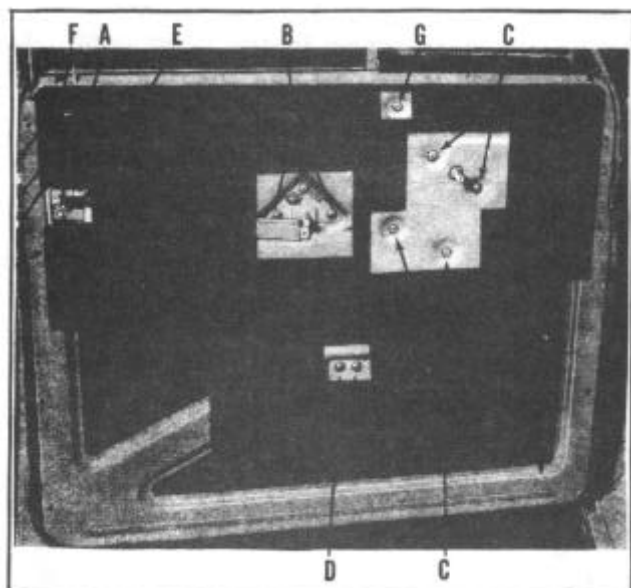


FIGURE 3

3. Remove retainer clip from the regulator arm to window glass channel.
4. Raise the door glass, insert a drift or punch, through opening in door at (E) Figure 3, the drift should be so placed below glass channel to hold glass in a raised position when regulator is removed.

5. Remove screws (C) attaching regulator to door inner panel and remove the regulator through opening at bottom of door.

### INSTALLATION

Reverse the procedure of removal and repair door inner liner.

## DOOR WINDOW REGULATOR - REAR (All Models-1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Remove trim panel. See "Trim Panel Removal", Page 1.
2. Remove garnish moulding spacer block. 3. Cut door inner liner as shown in Figure 4.

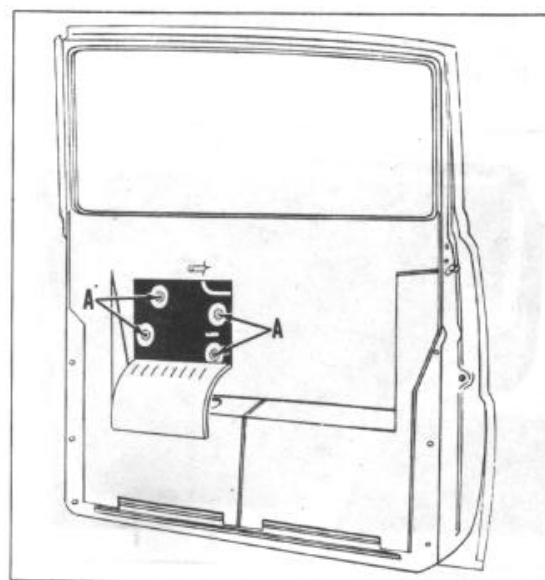


FIGURE 4

4. Remove four screws (A) holding regulator to door inner panel.
5. Lower window to bottom of door and release regulator from glass channel.
6. Remove regulator through opening at bottom of door.

### INSTALLATION

Reverse procedure of removal and repair damage to door inner liner with Mystik tape.



## DOOR WINDOW REGULATOR - REAR (Models 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Remove door trim panel. See "Trim Panel Removal".
2. Cut inner panel as shown in Figure 5, to expose screws (G) and (H).
3. Remove the one screw (G).
4. Remove retainer clip from the regulator arm to window glass control.
5. Raise the door glass, insert a drift or punch through the opening where screw (G) has been removed. The drift should be so placed below glass channel to hold glass in a raised position when regulator is removed.
6. Remove screws (H) attaching regulator to door inner panel and remove the regulator through open-

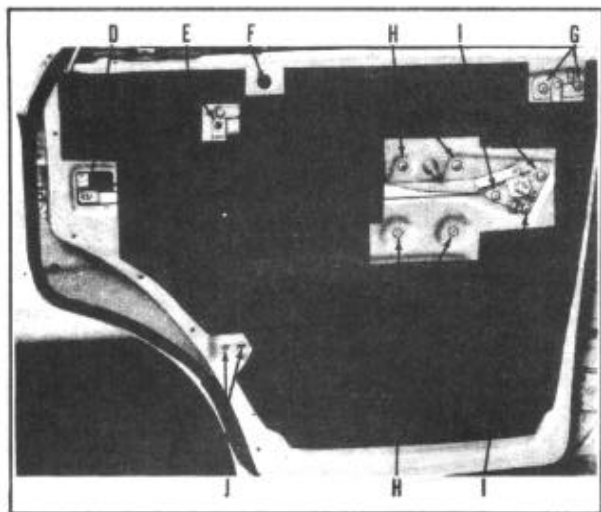


FIGURE 5

### INSTALLATION

Reverse procedure of removal and repair door inner liner.

## DOOR GLASS - FRONT (All Models 1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D))

### REMOVAL

1. Remove safety lock knob and garnish moulding.

2. Remove small wood block (on cars so equipped).
3. Remove trim panel, see "Trim Panel Removal".
4. Cut door inner liner as shown in Figures 1 and 2.
5. Remove screw (A) and two screws at (B). 6. Remove center glass channel (D) or lower it into the door.
7. Tilt glass inward and raise to upper limit of regulator.
8. Release regulator cross arms from glass channel and remove glass and glass channel.

### INSTALLATION

Reverse procedure of removal.

## DOOR GLASS - FRONT (Models 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Remove door trim panel. See "Trim Panel Removal", Page 1.
2. Cut inner liner as shown in Figure 3, to expose screws (D).
3. Remove the two screws (D) attaching center bar glass run to door inner panel.
4. With the door glass in the down position, remove the retainer clip from the regulator arm.

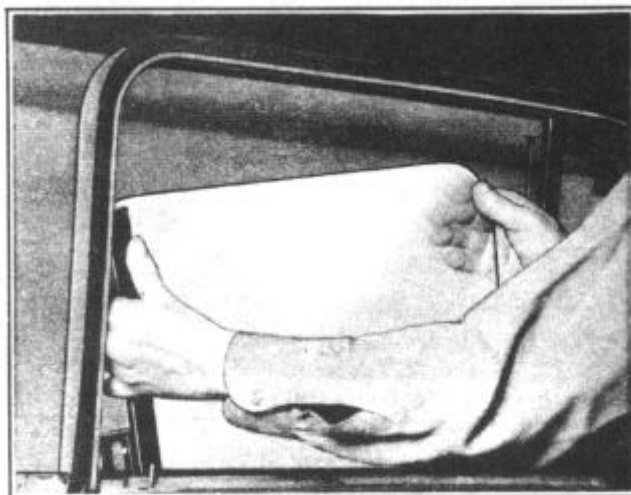


FIGURE 6

5. Remove regulator arm from glass channel, bring the door glass down and at the same time turn the glass 1/4 turn to bring the narrow side of glass to the top, as shown in Figure 6. Tilt glass inward and remove through the top opening in door.

**INSTALLATION**

To install, reverse procedure of removal.

**DOOR GLASS - REAR**  
**(All Models 1948 thru 1954**  
**Except 1C, 1D, 2C, 2D and 3D)**

**REMOVAL**

1. Remove safety lock knob and garnish moulding.
2. Remove small wood block.
3. Run glass to within 2" of the top, and pull inward on top of glass to release glass from glass runs.
4. Tip glass inward and raise window until glass channel can be released from regulator.
5. Remove glass and glass channel.

**INSTALLATION**

1. Insert channel and glass through opening and engage regulator.
2. Run regulator up and down to work glass into position.
3. Replace wood block.
4. Replace garnish moulding and safety lock knob.

**DOOR GLASS - REAR**  
**(Models 1C, 1D, 2C, 2D and 3D)**

**REMOVAL**

1. Remove door trim panel. See "Trim Panel Removal", Page 1.
2. Cut inner liner as shown in Figure 5, to expose screws (J).
3. Remove the two screws (J) attaching center bar glass run to door inner panel.
4. With the door glass in the down position, remove the retainer clips from the regulator arm.
5. Remove regulator arm from glass channel and bring the door glass down, at the same time, turn glass 1/4 turn to bring the narrow side of the glass to the top. Tilt glass inward and remove glass and glass channel through the top opening in door.

**INSTALLATION**

To install, reverse procedure of removal and repair any damage to door inner liner.

**DOOR VENTILATOR WING**  
**FRONT - CRANK TYPE**  
**(All Models 1948 thru 1954**  
**Except 1C, 1D, 2C, 2D and 3D)**

**REMOVAL**

1. Remove safety lock knob and garnish moulding.
2. Remove ventilator regulator handle and valance.
3. Remove garnish moulding spacer wood block.
4. Cut hole in door inner liner as shown at (B) in Figure 7, to expose clevis (G) connecting wing to regulator and remove screw from clevis.
5. Open ventilator wing and press down on top of frame to release it from upper pivot and lift out ventilator.

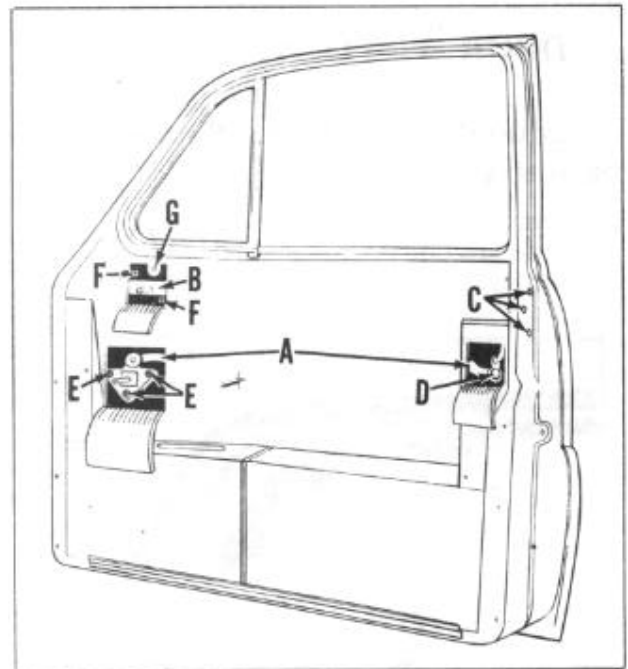


FIGURE 7

**INSTALLATION**

Reverse procedure of removal. Make sure ventilator weatherstrip lip is over garnish moulding. Repair inner liner.

## DOOR VENTILATOR WING - FRONT - FRICTION TYPE (All Models 1948 film 1954 Except 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Remove safety lock knob and garnish moulding.
2. Remove wood spacer block.
3. Remove screws (B), Figure 1, attaching wing frame.
4. Re move small Phillips head screw (D), from top of door.
5. Remove screw (A), from inside upper end of center glass channel.
6. Tilt ventilator assembly and lift out.
7. Remove nut and spring from friction pivot.
8. Remove screw from top of channel to release wing from channel.

### INSTALLATION

Reverse procedure of removal. Make sure lip of weather-strip is over garnish moulding.

## DOOR VENTILATOR WING - FRONT (Models 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Remove door window glass - follow operations (1), (3), (4) and (5) under "Door Glass Removal"

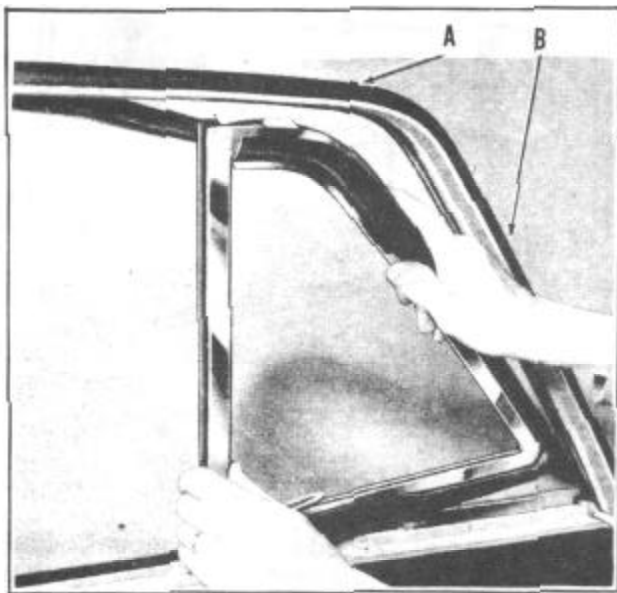


FIGURE 8

2. Cut inner liner as shown in Figure 3, to expose screws (D) and (G).
3. Remove screw (G), attaching wing frame to door inner panel.
4. Remove screws (A) and (B), Figure 8, attaching the wing frame to the upper door frame.
5. Grasp center bar and pull back to dislodge wing frame from upper door frame.
6. Pull inward and straight up, to remove door wing frame, glass and center bar glass run as an assembly.

### INSTALLATION

To install, reverse procedure of removal, repair damage to inner liner.

## DOOR VENTILATOR WING - REAR (Models 1C, 1D 2C, 2D and 3D)

### REMOVAL

1. Remove door window glass - follow operations (1), (3), (4) and (5) under "Door Glass Removal".

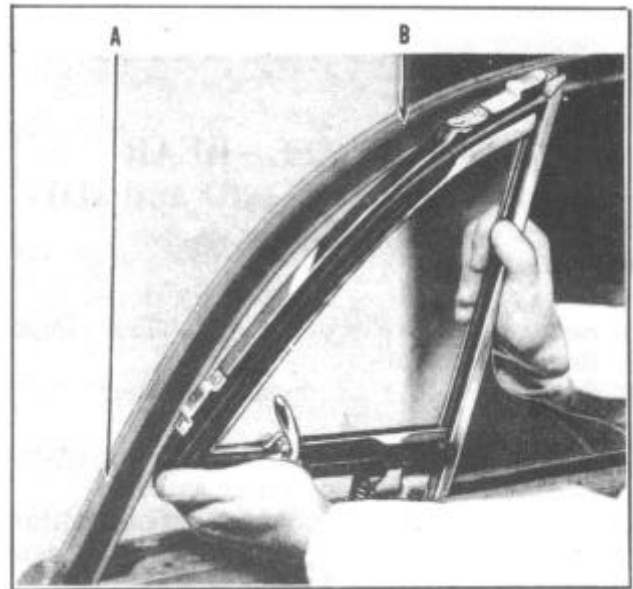


FIGURE 9

2. Cut inner liner as shown in Figure 5, to expose screws (F) and (J).
3. Remove screw (F) attaching wing frame to door inner panel.
4. Remove screws (A) and (B) attaching the wing frame to the upper door frame.
5. Grasp door glass center bar and pull back to dislodge wing frame from upper door frame, Figure 9.



Pull inward and straight up to remove door wing frame, glass and center bar glass run channel as an assembly.

## INSTALLATION

Reverse procedure of removal and repair door inner liner.

## DOOR VENTILATOR WING REGULATOR

(All Models 1948 thru 1954  
Except 1C, 1D, 2C, 2D and 3D)

## REMOVAL

1. Remove door trim panel.
2. Cut door inner liner at (B), Figure 7.
3. Remove screw from regulator clevis.
4. Remove two screws (F) attaching regulator to door inner panel and remove regulator down and out through opening in bottom of door inner panel.

## INSTALLATION

Reverse procedure of removal and repair door inner liner with Mystik tape.

## DOOR LOCK CYLINDER (All Models 1948 thru 1954)

## REMOVAL

1. Insert a screw driver between the flanged end of the lock retainer and door panel and pry retainer (B), Figure 10 and (A), Figure 11, outward.

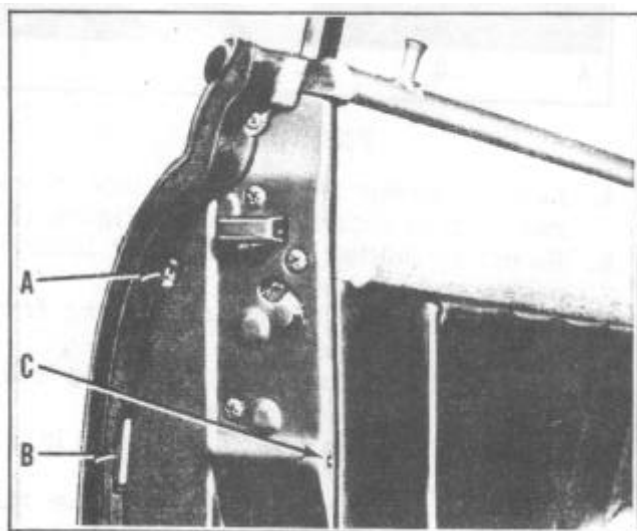


FIGURE 10

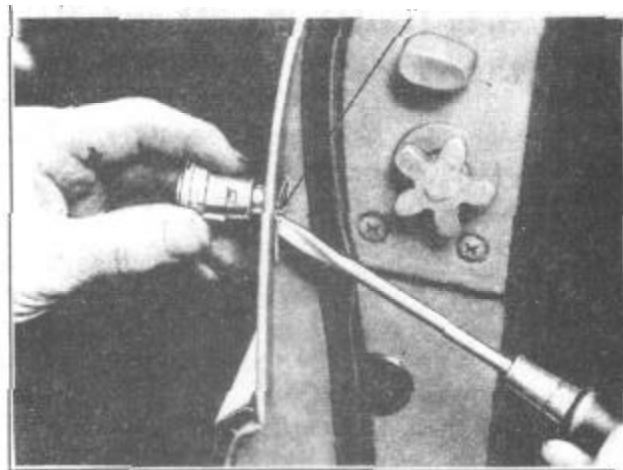


FIGURE 11

2. Pull out lock cylinder assembly.

## INSTALLATION

1. From inside of door, insert a piece of pointed spring steel wire through the hole (C), Figure 10, in the door to the outside panel.
2. Place recessed end of lock on the point of the wire, pilot the lock cylinder shaft, at the same time withdrawing the wire.
3. With lock cylinder in position, install the lock retainer.

## DOOR LOCK - FRONT OR REAR (All Models 1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

## REMOVAL

1. Remove outside door handle.
2. On front doors, remove door lock cylinder.
3. Remove door trim panels, see Page 1.
4. Cut door inner liner at (A), Figure 7, and disconnect remote control arm from lock at (D).
5. Remove door window channel from lock side of door.
6. Remove three large Phillips head screws (C) from edge of door and remove lock assembly down and out through lower opening in door inner panel.

## INSTALLATION

Reverse the procedure for removal. Repair any damage to inner liner with Mystik tape.

## DOOR LOCK - FRONT (Models 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Remove door trim panel, see "Trim Panel Removal", Page 1.
2. Cut inner liner as shown in Figure 3, to expose screws (D).
3. Remove window glass - follow operations (3), (4) and (5) under "Door Glass Removal" .
4. Remove retainer clip from door lock cylinder, see "Lock Cylinder Removal", Figure 11.
5. Remove retainer spring (A), attaching the remote control link to door lock, Figure 12.
6. Remove two screws (H), attaching the upper door frame to door assembly.

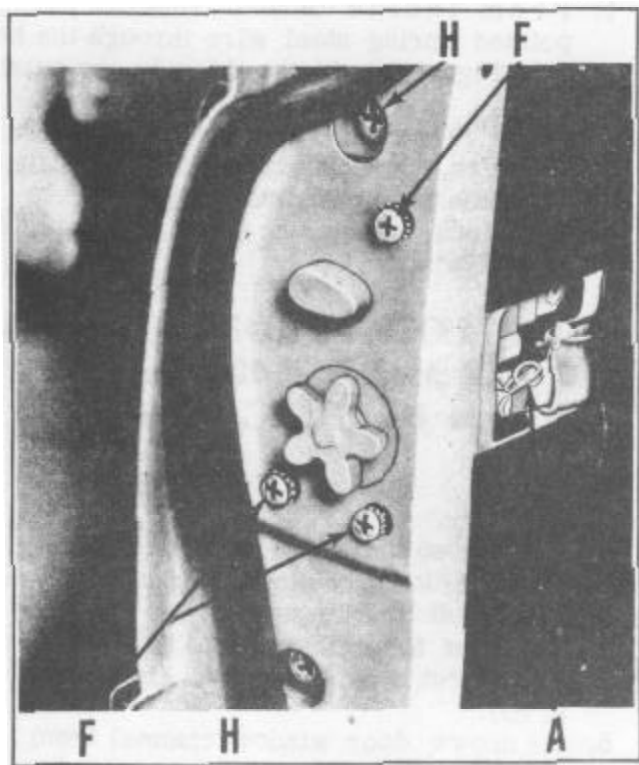


FIGURE 12

7. Remove three screws (F), attaching the door lock to door assembly.
8. From inside of door, pull back on upper door frame, push door lock inward and down.
9. Turn lock 1/4 turn to by-pass upper door frame anchor plate and remove lock through bottom opening in door.

### INSTALLATION

1. Reverse procedure of removal, repair door inner liner.
2. Install door trim panel. See "Trim Panel Installation".

## DOOR LOCK - REAR (Models 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Remove door trim panel. See "Trim Panel Removal".
2. Cut inner liner as shown in Figure 5, to expose screws (D), (E), (F) and (J).
3. Remove retainer spring (D), attaching remote control link to door lock.

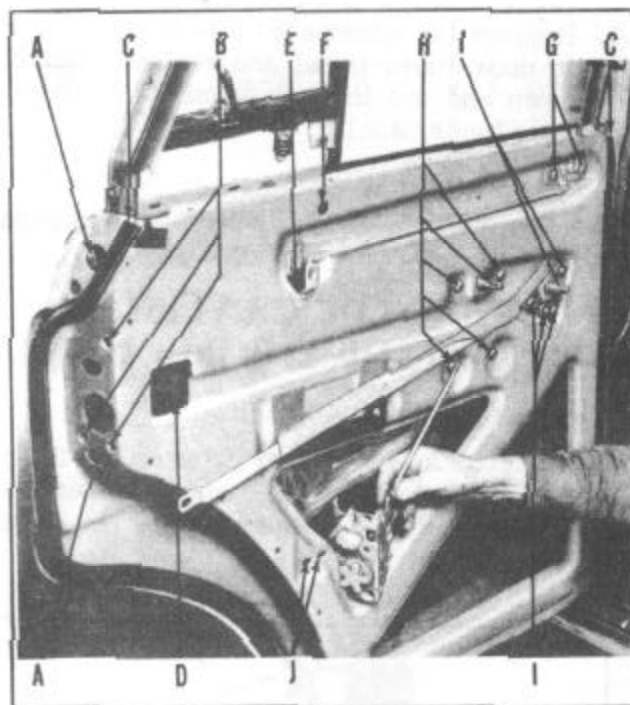


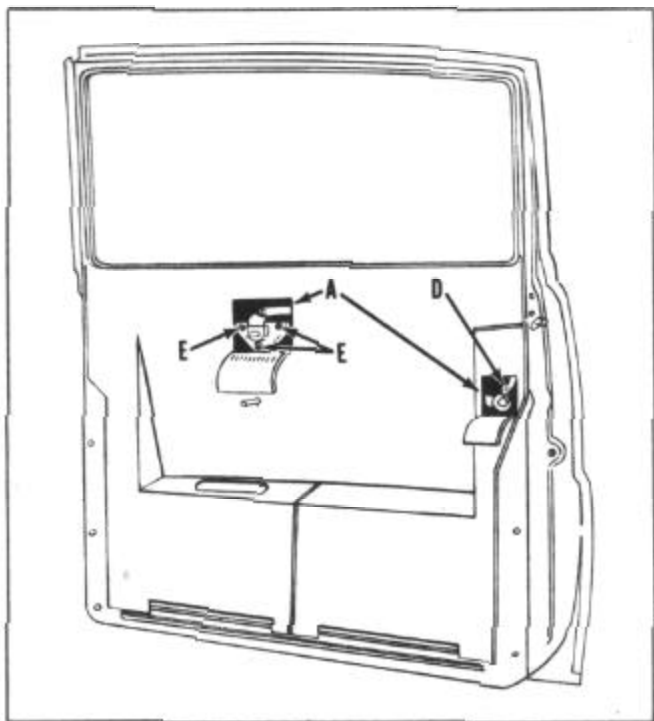
FIGURE 13

4. Remove screw (A) attaching lock release rod pivot to door inner panel, Figure 13.
5. Remove cotter pin attaching lock connector rod to pivot.
6. Remove screw (F) attaching wing frame to door inner panel.
7. Remove two screws (J) attaching center bar glass run to door inner panel.
8. Cut weatherstrip at (C) as shown in Figure 13.
9. Remove two screws at (A) and the three screws at the front section of the door attaching the upper door frame to the door assembly.

10. With door glass in the raised position, raise the upper door frame approximately four inches to allow clearance to remove the rear door lock assembly.
11. Remove three screws at (B) attaching door lock to door panel and remove lock through bottom opening in door.

### INSTALLATION

Reverse procedure of removal, use rubber cement to join weatherstrip at points where it was cut. Repair any damage to door inner liner.



## DOOR REMOTE CONTROL - FRONT OR REAR (All Models 1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Remove door trim panel, see Page 1.
2. Cut door inner liner at (A) in Figures 7 and 14.
3. Remove three Phillips head screws (E) from triangular bracket at handle end of remote control arm.
4. Remove anti-rattle spring and pin (D) from lock end of remote control and withdraw remote control toward

hinge side of the door.

### INSTALLATION

Reverse procedure of removal. Repair door inner liner with Mystik tape.

## DOOR REMOTE CONTROL - FRONT OR REAR (Models 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Remove door trim panel. See "Trim Panel Removal" .
2. Cut inner liner as shown in Figure 3, for the front door to expose screws (B) and retainer spring (A) for the front door, or Figure 5, to expose screws (K) and retainer spring (D) for the rear door.
3. Remove the three Phillips head screws attaching the triangular bracket of the remote control arm to door inner panel.
4. Remove retainer spring from lock end of remote control arm.
5. Withdraw remote control toward hinge side of door.

### INSTALLATION

Reverse procedure of removal. Repair door inner liner with Mystik tape.

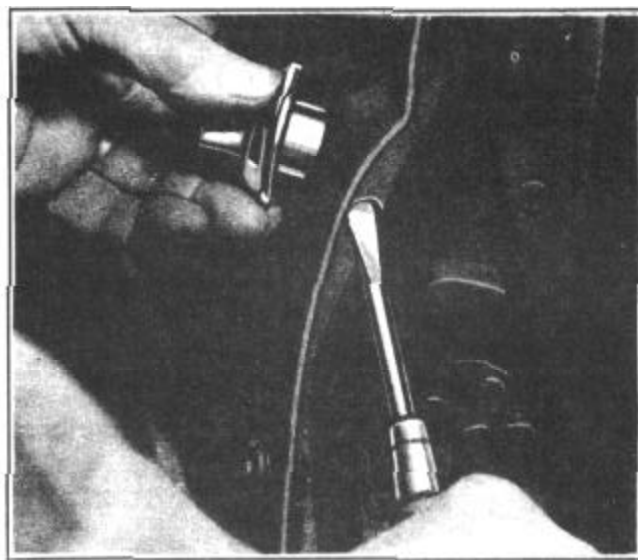


FIGURE 15



## DOOR LOCK RELEASE PUSH BUTTON (Models 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Through the access hole in the door behind the weather-strip, insert a screw driver as shown in Figure 15, and pry out door push button.

**NOTE:** The door push button retainer also can be removed at this time.

### INSTALLATION

1. With retainer in position, line up door push button and snap retainer into position.
2. Reglue weatherstrip as necessary

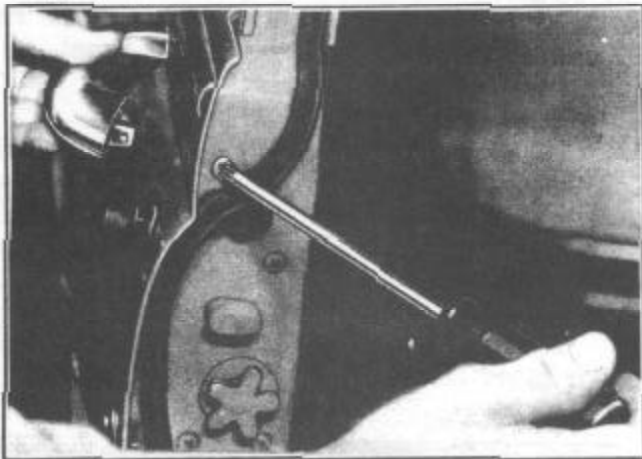


FIGURE 16

## DOOR OUTSIDE. HANDLE (Models 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Through the access hole (A) in the door, Figure 10 (for all models except 1C, 1D, 2C, 2D and 3D) and Figure 16 for (Models 1C, 1D, 2C, 2D and 3D), remove the door handle retaining screw attaching door handle to door outside panel.
2. Pull handle forward and out.

### INSTALLATION

To install, reverse procedure of removal.

## DOOR HANDLE ADJUSTMENT (All 480, 490 Series and 501, 502, 503, 504 Models)

The operation of a door lock is effected by the relation of the door handle shoulder screw to the surface of the trigger lever of the door lock. If there is too much clearance (lock handle outside push button in the rest position) between the trigger and the shoulder screw at (A), Figure 17, the door lock will not release properly when the outside handle push button (K), Figure 18, has been pushed in to its full travel.

If there is not enough clearance (shoulder screw (L), Figure 18, is too long, holding the lock trigger, Figure 17, inward from its free position), it will be impossible to unlock the door either with the key or the door lock release button (button cannot be raised) after the door has been locked by either method.

To check the door lock and door outside handle proceed as follows:

1. Open the door and raise the lock bolt to the full latched position, Figure 17.
2. Press the outside handle push button (K), Figure 18, until contact at the lock trigger is felt. Measure this travel as shown at (s).

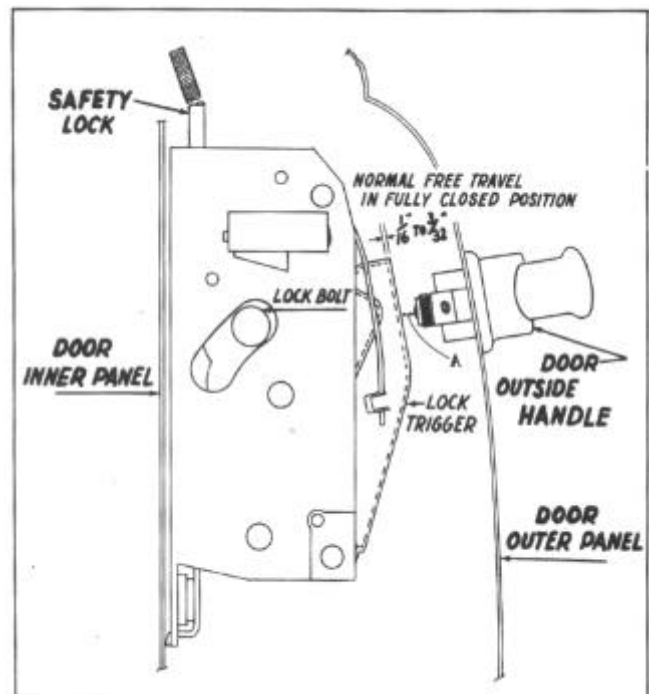


FIGURE 17

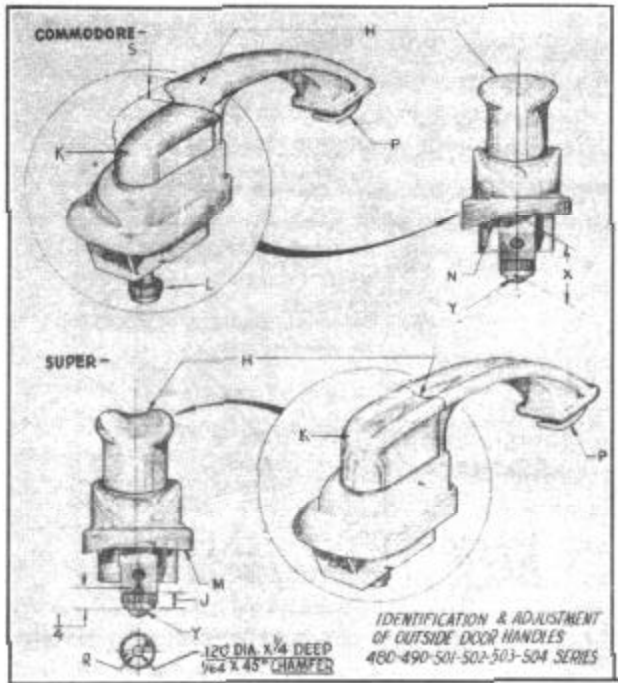


FIGURE 18

3. If the travel is less than  $1/16$ ", the handle shoulder screw should be shortened by grinding off the inner end. If the push button travel is more than  $1/4$ ", the shoulder screw should be lengthened by installing a drive screw in the inner end at (Y).

**NOTE: If the shoulder screw (L) is not drilled for a drive screw, it should be removed from the handle and drilled as shown at (R). Excess travel can be corrected by installing one of the three drive screws listed below as required.**

- If dimension (S) is more than  $5/16$ " but less than  $3/8$ ", use drive screw Part No. 171221.
- If more than  $3/8$ " but less than  $7/16$ ", use screw No. 171222.
- If more than  $7/16$ ", use screw No. 71249.
- Dimension (X) for sedan front doors should be  $51/64$ ".
- Dimension (X) for sedan rear doors should be  $1-11/32$ ".
- Dimension (X) for all broughams and coupes should be  $29/32$ ".

Super model outside door handles are of a grooved design as shown at (H), Figure 18, while the handles used on the Commodore models are smooth and oval.

If door lock operates normally by depressing the outside handle push button but

cannot be released by operating the inside remote control handle after the car has been standing outside in cold weather, it is probably due to water having soaked the cloth silencer surrounding the remote control operating link causing it to freeze to the door inner panel. This can be permanently corrected by thoroughly saturating the silencer sleeve with chassis grease.

## DOOR HANDLE ADJUSTMENT (500 Pacemaker Models and All Models 1951 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

The outside door handles for the 500 model Pacemaker and the door handles for the "1951 "A" Series all Models", are identical except for the distance the end of the adjustable plunger (Y), Figure 19, projects beyond the base of the handle.

To adjust, proceed as follows:

- All sedans (front doors) turn plunger in or out as required to obtain a dimension of  $23/32$ " at (X).
- A 11 broughams and coupes, this dimension should be  $51/64$ ".
- All sedans (rear doors), this dimension should be  $1-7/32$ " at (V).

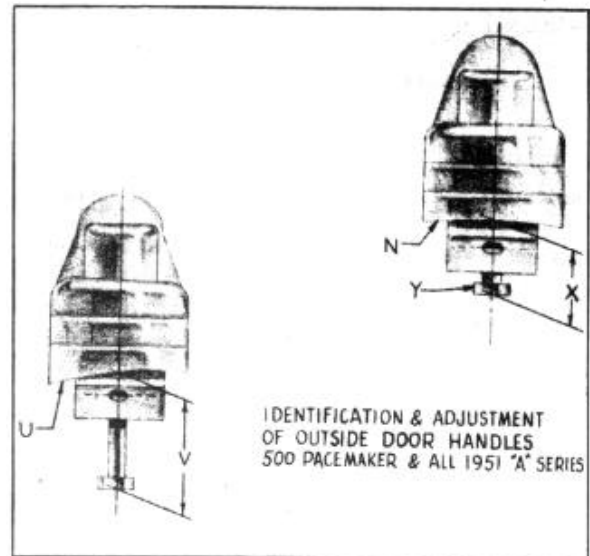


FIGURE 19

**NOTE: For 500 Pacemaker models and all 1951 "A" Series, the sedan front doors and brougham and coupe doors use the handle with the contour as shown at (N), Figure**

**19. The sedan rear door uses a handle with a contour as shown at (U).**

On the 480-490 Models and the 501, 502, 503, 504 models, sedan front doors and brougham and coupe doors use the handle with the contour as shown at (M), Figure 18. The sedan rear door handle contour is shown at (N), Figure 18.

Failure of the lock to hold the door closed may be due to the door rotor latch being held open because of lack of lubrication or to water having frozen on the lock. Re-lubrication of the door lock will correct the condition in either case.

**NOTE: Door locks should be lubricated at least twice a year or about every 5000 miles.**

This can be done by removing the door outside handle and cleaning the lock with air, inserting the hose nozzle through the handle opening in the door. The lock should then be lubricated with Hudson Lock-Ease Oil by inserting the oil can spout through the handle opening.

With the exception of the correction of frozen remote control links, the foregoing operations can be performed without removing the inside trim or door locks.

## DOOR LOCK RELEASE PUSH BUTTON ADJUSTMENT (Models 1C, 1D, 2C, 2D and 3D)

The proper operation of the front and rear door push buttons is obtained when the measurements are made as shown in Figure 20.

The measurement at upper left is obtained by adding washers  $1\frac{1}{32}$ " thick as required, at point "A". The measurement shown below is controlled by the threaded plunger and button. The object is to effect a door release before the button outer end passes into the retainer.

## DOOR STRIKER PLATE (All Models 1948 thru 1953 Except 1C, 1D, 2C, 2D and 3D)

The door striker plate (3), Figure 21, is mounted on the body pillar and is attached to a tapping plate on the inside of the pillar.

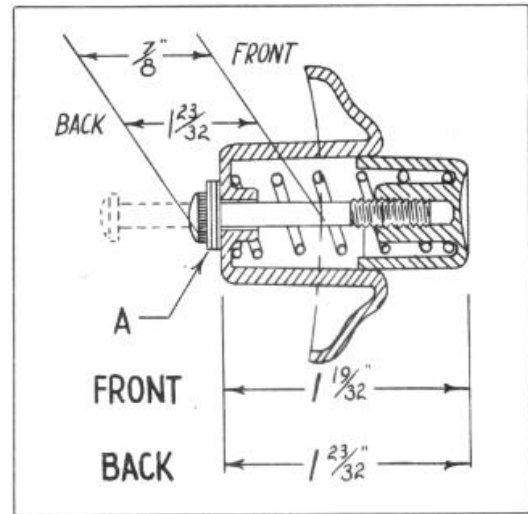


FIGURE 20

### REMOVAL

Remove three Phillips head screws (1) from striker plate and remove plate.

**NOTE: With the striker plate removed, to remove tapping plate (2), loosen trim (4) at pillar and lift plate out of retainer (5).**

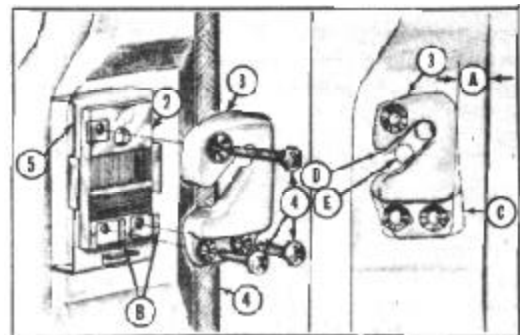


FIGURE 21

### ADJUSTMENT

1. Loosen the three, Phillips head screws (1) sufficiently to allow striker plate to be moved easily with the fingers.
2. Adjust height of striker plate to give correct alignment with the door latch bar.
3. Adjust inward position of striker plate to hold door firmly against weatherstrips.



**NOTE: When making inward adjustment, be sure that back of striker plate is parallel to the inside flange of the body pillar (A).**

4. Tighten screws (1) securely.
5. Close door to bring latch bar into safety catch position. Door should not open when a reasonable pull is exerted.
6. If door opens easily without pushing the handle button, loosen screws as in step one and rotate bottom of striker plate inward
- (C). Tighten screws and recheck.

## DOOR STRIKER PLATE (Models 1C, 1D, 2C, 2D, 3D, 4D, 5D and 7D)

The door striker, Figure 22, is mounted on the body pillar and is attached to a tapping plate on the inside of the pillar.

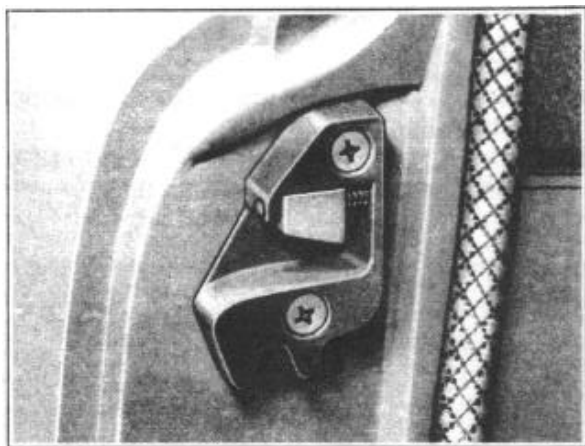


FIGURE 22

### REMOVAL

Remove two Phillips head screws from the door striker and remove the striker assembly.

### ADJUSTMENT

1. Up or down adjustment will determine the actual point of engagement between the door lock rotor and the striker.
2. If the door lifts as the dovetail (A), Figure 23, enters the door striker assembly, (B) the striker is too high and must be lowered.
3. The in and out adjustment controls the tightness of the door against the body.

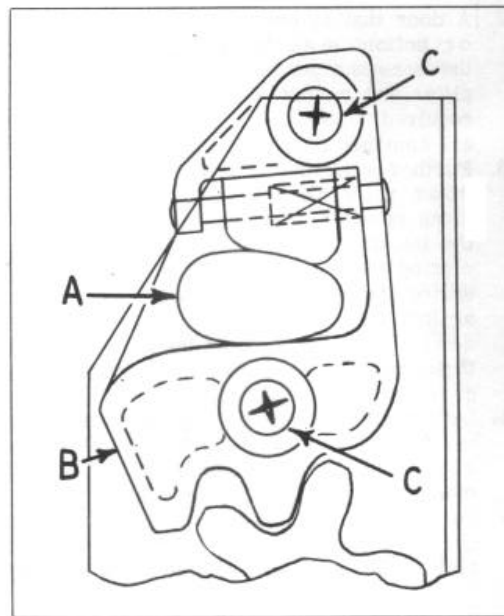


FIGURE 23

4. The above adjustments can be made by loosening the two Phillips head screws (C) attaching the striker assembly to the pillar.
5. After each adjustment, tighten the screws securely.

## DOOR TO BODY ALIGNMENT

Proper door alignment prolongs the life of the door locks, striker plates, check arms, and hinges and assures ease of door operation.

Check to see that the door properly contacts the weatherstrips at the door header weatherstrip, door opening weatherstrip and/ or the door bottom weatherstrip.

Examine all weatherstrips to make sure they are firmly and evenly attached to doors and door openings.

## (Models 1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

1. If door is away from the pillar at the lock side of door, move the striker plate inward according to instructions on Page 11.

2. A door that is out of alignment at the top
3. or bottom may be adjusted by loosening the screws attaching the hinge to the hinge pillar and moving the hinges in or out as required. (Replace any shakeproof washers damaged in the adjustment process.)
4. Further adjustment at the lock side of the door may be made by placing a small block of wood or a rubber mallet against the top or bottom of the door opening and closing the door on the block. This will spring the door out slightly where it bears against the block. It may be necessary to close the door against the block several times while pressing firmly on part of the door that must be sprung inward.
5. Door flanges may be adjusted inward by hammering with a rubber mallet. It is advisable to protect painted surfaces with masking tape before hammering.
6. In severe cases of door misalignment it may be necessary to bend or straighten the hinge, using a suitable hinge bending tool.

**NOTE: Be sure hinge attaching screws are tight before applying the hinge bending tool. To raise the door at the lock pillar, bend the top hinge outward; to lower the door, bend hinge inward.**

6. Re-adjust striker plate upon completion of door adjustment.

### (Models 1C, 1D, 2C, 2D and 3D)

1. To raise or lower the door, place a jack as near the hinge as possible (this will hold the weight of the door as the hinge screws are loosened).
2. Use an awl to scribe around the upper and lower hinges before loosening the hinge to front pillar screws, this will insure proper horizontal alignment after vertical adjustments have been made.
3. Loosen the upper and lower hinge screws.

**NOTE: The amount of vertical hinge movement is very limited. Do not damage the door with the jack when making this adjustment.**

4. Raise or lower the jack until the desired clearance is obtained, then tighten hinge screws securely. Check the scribe marks to make certain the rear section of the door did not move forward or rearward during the above operation.

To move the upper section of the door ahead or back, loosen the upper hinge screws, to move the lower section, loosen the lower hinge screws and push or pull the door in the desired direction. Retighten hinge screws securely after adjustments.

## FRONT DOOR - COMPLETE (All Models 1948 thru 1954)

### REMOVAL

1. Remove hinge pocket covers (D) and (E), Figure 24, on models so equipped.
2. Drill out check arm rivet (F) using a 1/4" drill.
3. Loosen the hinge screws at the door half of hinge and remove door.

**NOTE: Have a helper hold the door in alignment while removing screws to prevent screws from stripping.**

### INSTALLATION

1. Install all hinge attaching screws and tighten slightly.
2. Attach check arm to check arm bracket using check arm rivet. Peen rivet securely.

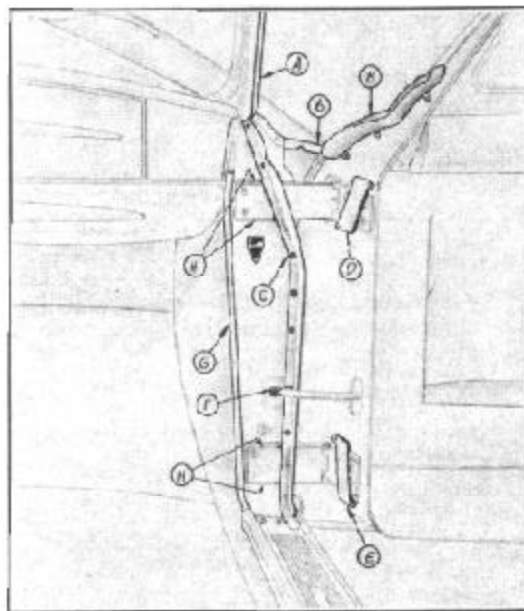


FIGURE 24

**NOTE: Support bracket and check arm to prevent distorting the bracket or arm.**

3. Tighten door hinge screws securely and check door adjustment as outlined in Manual, Pages 11 and 12.
4. Install hinge pocket covers (D) and (E) and fill hinge pockets above and below hinges with body caulking. Sealer must not project beyond edges of hinge pockets.

**NOTE: These hinge pockets can be installed on cars not so equipped except 1C, 1D, 2C, 2D and 3D. See Figures 24 and 25 for drilling instructions. (Insert (1) for the upper pocket and insert (2) for the lower pocket.)**

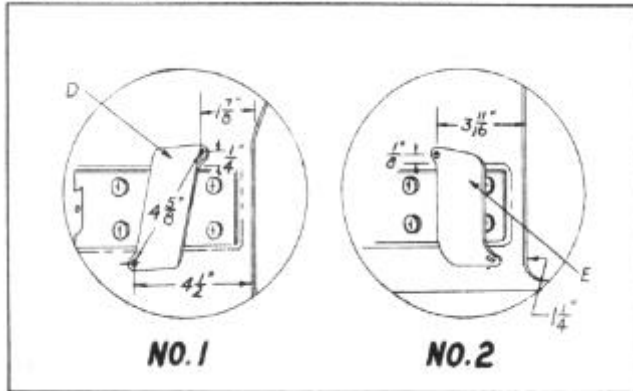


FIGURE 25

## DOOR CHECK ARM (All Models 1948 thru 1954)

### REMOVAL

1. Remove trim panel. See "Trim Panel Removal", Page 1.
2. Drill out door check arm rivet, using a 1/4" drill.
3. Push door check arm inward and remove through bottom opening in door inner panel.

### INSTALLATION

Reverse procedure of removal. Using a new rivet peen securely.

**NOTE: If rubber bumper is deteriorated or spring is damaged, replace with a new assembly.**

## DOOR FRONT PILLAR SEALS (All Models 1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

### REPLACEMENT

1. Remove two Phillips head screws at front of scuff plate, Figure 24.
2. Remove eight Phillips head screws attaching pillar seal to front pillar.
3. Remove all cement and permagum at hinge pockets (H).
4. Apply a coat of weatherstrip adhesive to the attaching surface of the front pillar weatherstrip and allow adhesive to set for a few minutes before installing the weatherstrip.
5. Apply a strip of permagum in each hinge pocket. The permagum sealer must not extend beyond area of pillar weatherstrip.
6. Install pillar weatherstrip entering bottom of weatherstrip under scuff plate and installing the weatherstrip lower screw first. Align weatherstrip with other holes.

**NOTE: If it is necessary to drill additional holes in the pillar on some of the early 480 series cars, use the weatherstrip as a template and drill holes as required using a No. 34 drill (.111").**

7. When the pillar seal (weatherstrip) is installed, apply a bead of Body Sealer in base of the "V" formed by the pillar face and weatherstrip lip beginning at top of the weatherstrip, and continuing down to the lower hinge and over the outer surface of lower hinge continuing to end of weatherstrip.

**NOTE: When replacing the pillar seals always check front of scuff plate to make sure seal has not been broken at that point.**

## DOOR OPENING WEATHER- STRIP - UPPER (All Models 1948 thru 1953 Except 1C, 2C)

### REMOVE AND REPLACE

1. Remove the upper door opening weatherstrip, Figure 26.

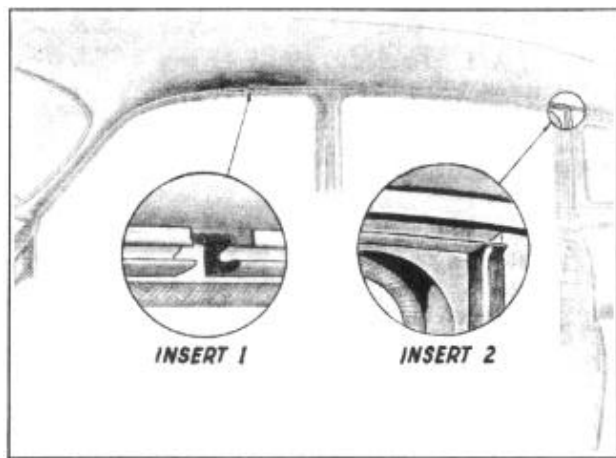


FIGURE 26

**NOTE:** On the earlier models, remove the "S" Rubber attached to the cowl panel and front fender rear face at (6), Figure 24, and roll portion of fender flange forward approximately  $1/4$ " and  $2-3/16$ " long as shown on Figure 27, Insert (1).

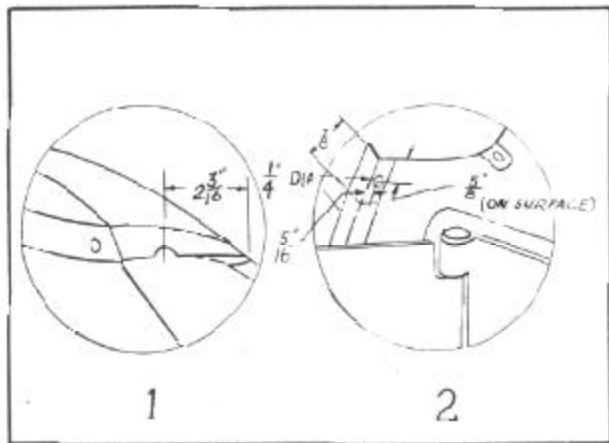


FIGURE 27

This is done to prevent sharp edges of cowl and fender flanges from cutting the front door front weatherstrip at belt line. See "Front Door Belt Seal Replacement". Clean surface formerly covered by the "S" Rubber and touch up with body color as required.

2. Remove all old rubber cement (use mineral spirits).
3. Loosen upper end of the rear door opening vertical weatherstrip to permit installation of the upper weather-

strip, Figure 26, Insert No. 2.

4. Check to be sure weatherstrip is of the proper length and for the right or left side as required before applying rubber cement. See Figure 26, Insert No. 1.
5. Apply an even coating of weatherstrip adhesive to the body and two sides of rubber weatherstrip. Allow rubber cement to become tacky before installing weatherstrip.
6. Press upper weatherstrip into rear corner above rear vertical weatherstrip (Insert No. 2) and proceed forward until complete weatherstrip has been firmly installed.

**NOTE:** Do not close door on rubber weatherstrip until rubber cement has sufficient time to set.

7. Trim upper end of rear door front vertical weatherstrip to follow contour of door opening upper weatherstrip lip.
8. Apply rubber cement to top end of the rear door vertical weatherstrip and seal end firmly to door opening upper weatherstrip.

**NOTE:** On complaints of dust and water leaks at door opening and scuff plates; check door opening weatherstrip, pillar and belt seals, also proper door closing and scuff plate sealing.

## FRONT DOOR FRONT WEATHERSTRIP BELT SEAL (All Models 1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

### REMOVE AND REPLACE

1. Turn down upper end of front rubber front weatherstrip lower and put door belt rubber weatherstrip end (2), Figure 28, in place engaging the lower clip of weatherstrip in hole near top of door channel.

**NOTE:** If the early 480 models do not have this hole, drill a  $1/4$ " hole  $5/16$ " centerline from outer edge of channel and  $5/8$ " centerline from top of channel.

2. Cut off upper end of door front rubber to match lower end of new belt rubber, Figure 27, Insert (2).
3. Apply rubber cement to back face and top face of belt seal from lower edge of seal (edge of trough in rubber) to back edge and to upper end of the front door weather-

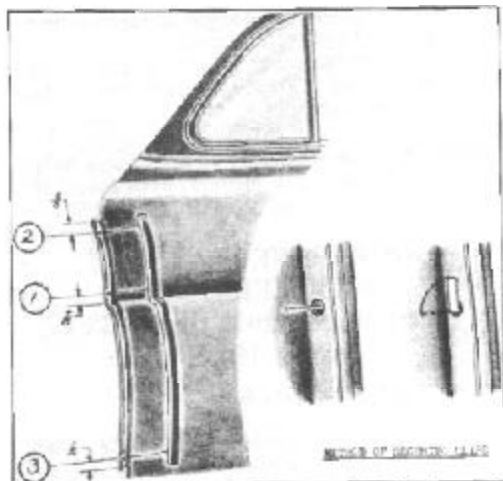


FIGURE 28

strip lower.

4. Install door belt seal, pressing seal into place and installing three No. 8 x 7/16" binding head sheet metal screws through tabs and bend clip in door front channel.

**NOTE: If the early models do not have these tab holes drilled in the door inner panel, hold the belt rubber weatherstrip in place firmly against the door front flange. Mark location for drilling tab screw holes and drill three holes .120" (No. 31 drill).**

### FRONT DOOR FRONT WEATHERSTRIP LOWER (All Models 1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

#### REMOVE AND REPLACE

1. Working from inside of car with front door open to its full width, straighten the lower tab located below lower hinge and one tab below upper hinge, Figure 28.
2. Straighten the tab retaining the lower end of the door belt moulding and pull weatherstrip free from door channel. Separate the door lower weatherstrip from the door belt weatherstrip at the point where they are glued together. (Make a good clean cut at that point.)

**NOTE: If the door belt rubber is to be replaced, install the door front lower weatherstrip first and follow with the installation of the front belt seal as outlined.**

1. Remove old rubber cement from door channel.
2. Apply rubber cement to the new weatherstrip and to the weatherstrip channel allowing cement to become tacky before installing weatherstrip.
5. Install weatherstrip to door channel; top end of lower weatherstrip should be glued to bottom end of belt seal weatherstrip. Turn the tabs down and recheck operation of doors and adjust as required. See "Door Adjustment", Pages 11 and 12.

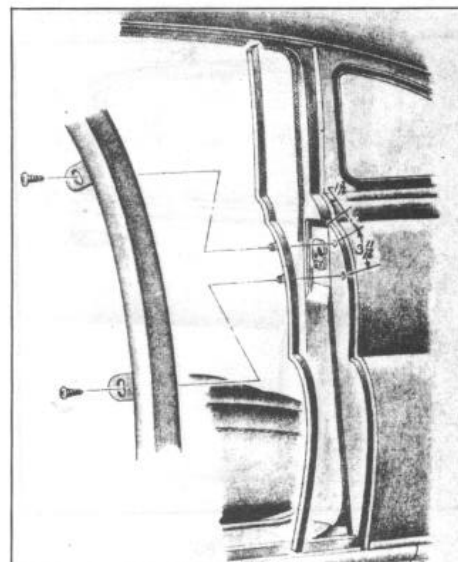


FIGURE 29

### REAR DOOR REAR OPENING WEATHERSTRIP (All Models 1948 thru 1953 Except 1C, 2C)

#### REMOVE AND REPLACE

1. Remove two Phillips head sheet metal screws, Figure 29, and remove the old weatherstrip.

**NOTE: On some of the early models it may be necessary to drill the two 7/64" holes when installing the latest type weatherstrip. See Figure 29 for location of the two holes.**

2. Apply rubber cement to door pillar and to weatherstrip. Allow cement to become tacky before attaching weatherstrip to body door pillar.
3. Attach clips in drilled holes using two No. 6 x 1/4" Phillips binding head sheet metal screws.
4. Press weatherstrip into position working from attaching clips towards both ends.
5. Trim the upper end of the weatherstrip to follow the contour of the door opening weatherstrip as shown in Figure 26, Insert 2.

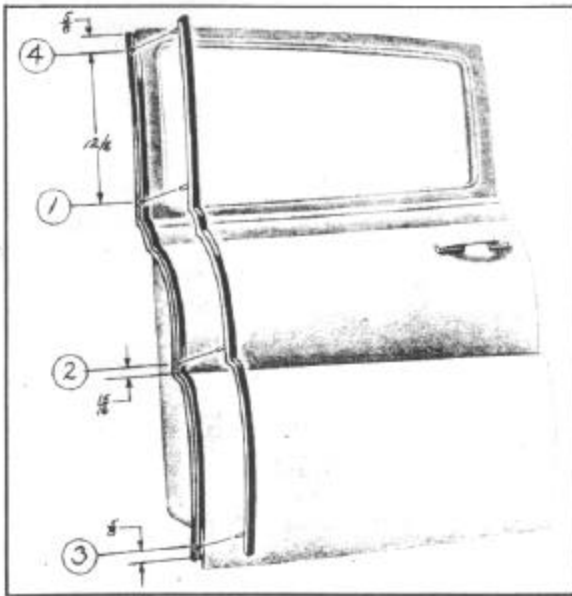


FIGURE 30

### REAR DOOR FRONT WEATHERSTRIP (All Models 1948 thru 1953 Except 1C, 2C)

#### REMOVE AND REPLACE

1. Remove old weatherstrip by straightening attaching clips.
2. Remove all old cement from metal.
3. Apply rubber cement to weatherstrip and

door channel but do not install weatherstrip until cement becomes tacky.

4. Install weatherstrip inserting clips in order shown, Figure 30, working rubber firmly into channel.

**NOTE: If it is necessary to drill these holes on some of the early models, drill four 1/4" holes spacing holes as shown in Figure 30.**

### DOOR PANEL BOTTOM WEATHERSTRIP (All Models 1948 thru 1953 Except 1C, 2C)

#### REMOVE AND REPLACE

After the door opening weatherstrips and pillar seals have been installed and doors checked for proper closing and alignment, check the sealing quality of the door bottom weatherstrip using a shipper's tag or calling card .010" thick, placing the card between the double lipped weatherstrip and rocker panel extension. If sealing is correct, card can be pulled out with little effort but cannot be inserted without reopening the door.

If the weatherstrip does not contact throughout the entire length, install a new double-lip type rubber as follows:

1. Remove the stainless steel (painted) moulding from bottom of door. Use a hardwood wedge to lightly pry off the moulding.
2. Use a small sharp chisel to remove the flared ends of the weatherstrip rivets at the moulding retainers and remove retainers.
3. Remove the weatherstrip.

**NOTE: The weatherstrip is cemented as well as riveted and it is necessary to pry the weatherstrip loose from inside of door. Care should be used when prying to eliminate any distortion of the door outer panel.**

4. Remove old cement, dirt and rust and apply rubber cement to the double-lip type weatherstrip and to the door. Cement should be applied to the top and outside of weatherstrip for its entire length and positioned as shown in insert, Figure 31.

**NOTE: Allow cement to become tacky before installing weatherstrip.**



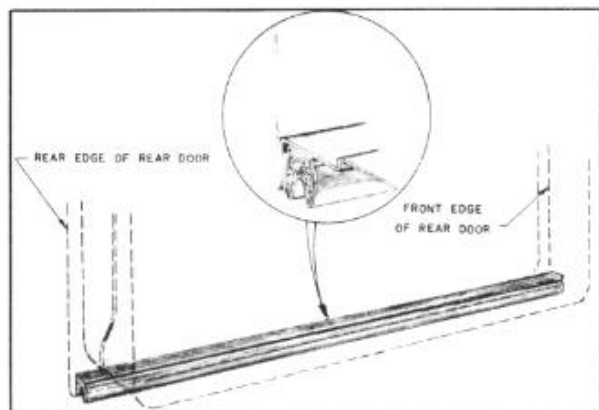


FIGURE 31

5. Install weatherstrip and place moulding. retainers over rivets. Install plain washers 1/32" thick over rivets at elongated holes only.
6. When flaring rivets, have a helper use a ball peen hammer against head area of rivet to avoid damage to the weatherstrip.
7. After installing weatherstrips, install the mouldings and check sealing of weatherstrip as outlined in the first paragraph of "Door Panel Bottom Weatherstrip Installation".

## FRONT DOOR WEATHERSTRIP (Models 1C, 1D, 2C, 2D, 3D, 4D, 5D and 7D)

The door upper and lower weatherstrip are two separate pieces vulcanized to form a one piece weatherstrip. The weatherstrips are mounted on the doors and are cemented to the door inner panel. The lower (bottom) weatherstrips are also held in position with retainers bent over to hold the weatherstrip to the door panel.

On Models 4D, 5D, 7D the belt weatherstrip ("S" rubber) is similar in design to the weatherstrip used on earlier models. The front door front weatherstrip lower is the same as used on earlier models. See Page 15 for removal and installation.

### REMOVAL

Bend down scalloped edges of retainer along the bottom of the door. Use a putty knife, break the seal between the

weatherstrip and the door inner panel and remove weatherstrip.

### INSTALLATION

1. Remove all dirt and dried adhesive from door inner panel.
2. Apply a thin coat of weatherstrip cement to the door inner panel and the weatherstrip; allow cement to become tacky before installing weatherstrip.
3. Press weatherstrip firmly in place and bend up the bottom retainer.

**NOTE: Make sure door drain slots are open and not covered by the weatherstrip or the bottom retainer. Do not close doors until cement has had sufficient time to dry.**

## REAR DOOR WEATHERSTRIP (Models 1C, 1D, 2C, 2D, 3D, 4D, 5D and 7D)

The rear door weatherstrips are in two pieces. The rear door lower weatherstrip is held in position by retainers that have scalloped edges that are bent over the weatherstrips after the weatherstrips have been cemented to the door inner panel. The upper weatherstrip is cemented to the inner door panel.

### REMOVAL

Bend down scalloped edges of retainer along the bottom of the door. Use a putty knife, break the seal between the weatherstrip and the door inner panel and remove weatherstrip.

### INSTALLATION

1. Remove all dirt and dried adhesive from door inner panel.
2. Apply a thin coat of weatherstrip cement to the door inner panel and the weatherstrip; allow cement to dry until tacky and install weatherstrip.
3. Press weatherstrip firmly in place and bend up the bottom retainer.

**NOTE: Make sure door drain slots are open and not covered by the weatherstrip or the bottom retainer. Do not close doors until cement has had sufficient time to dry.**

## DOOR INNER LINER (All Models 1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

### INSTALLATION

1. Apply trim cement to the surface of the door inside panel in the shaded area shown in Figure 32.

**NOTE: Cement must be applied in vertical strips as shown to prevent pocketing water.**

2. Fold the liner on the scored lines to form the liner for proper door fit.

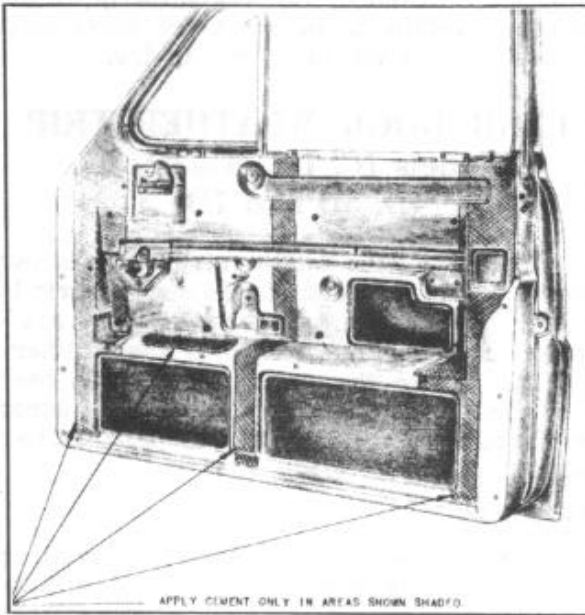


FIGURE 32

3. Place the liner over the door surface with the pocket area located first.
4. Insert the regulator and remote control shafts through the scored and cut holes in the liner at (A), Figure 33.
5. Tuck the bottom ends of liner inside the door panel openings at (B). (Do Not Seal.)
6. Rub firmly over panel at cemented areas to insure a tight seal.

**NOTE: Cement a piece of liner material over damaged areas and extra holes in liner.**

7. Install trim panels, garnish mouldings, handles and pocket trim panel in reverse order of removal.

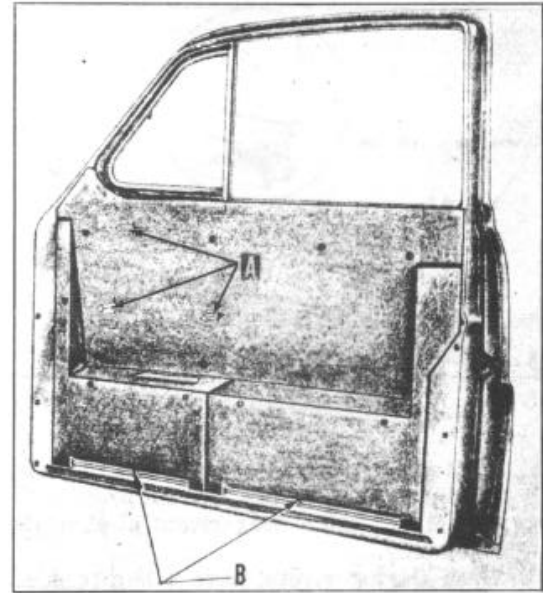


FIGURE 33

## SCUFF PLATE SEALING FRONT OR REAR (1948 thru 1953 Except 1C - 2C Models)

1. Remove scuff plates (A), Figure 34.

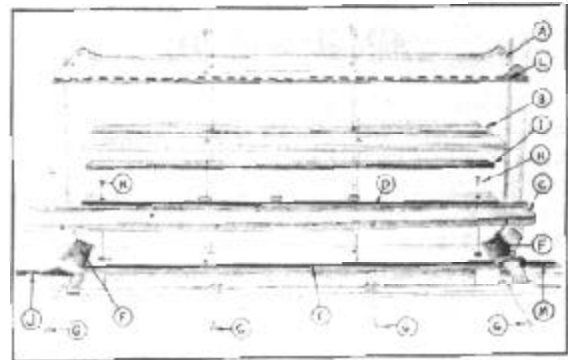


FIGURE 34

2. Remove scuff plate supports (B).
3. Remove the rocker panel extensions, (C).

**NOTE: On the 480 and 490 models equipped with rocker panel mouldings, remove and discard the mouldings as these mouldings are not required with the double-lip door panel bottom seals.**

4. Remove old sealer and dirt from frame side rail and pillar posts.
5. Apply rubber cement to the rocker panel extension rubber seals (F); allow cement to become tacky and install as shown at (F), Figure 34, for the front doors and Figure 35, for the rear doors.

**NOTE: Use the latest moulded type seals. Refer to your Parts Catalogue for part numbers.**

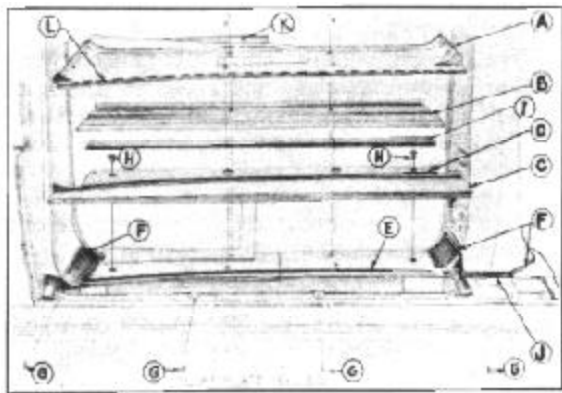


FIGURE 35

6. Lay a continuous bead of permagum on top of the frame side rail shown as (E) just outside of the scuff plate screw holes and joining the extension seals (F).

**NOTE: On Broughams and Coupes check to see that the fibrous sealer covers the drain hole between the rocker panel and frame side rail and that the hole is not closed with body sealer. Balance of rocker panel to frame must be sealed tight.**

7. Install rocker panel (C) and install screws (G) and (H).

**NOTE: The rocker panel extensions are not drilled for screws (H). Use an awl and punch these two holes through extension and into frame rail to accommodate two No. 8 x 7/16" sheet metal screws.**

8. Lay a continuous bead of permagum on top of the rocker panel extension as shown at (D).
9. Apply rubber cement to the scuff plate support seal (I) and install seal in outside channel of support (B).
10. Install scuff plate support and seal assembly (B) on rocker panel extension aligning screw holes with holes in rocker panel extension.

11. Apply a bead of permagum on underside of scuff plate about 1/2" from the outer rolled end as shown at (L) and install

scuff plate and scuff plate attaching screws.

12. Install the rocker panel rear pillar to frame seal between rocker panel pocket (J) (at center pillar and front on sedans and at front pillar and frame on all models as shown at (M)).

## WINDSHIELD GLASS

### (All Models 1948 thru 1953 Except 1C, 2C)

#### REMOVAL

**NOTE: On radio equipped cars it is necessary to remove the radio antenna lead wire assembly prior to the windshield installation.**

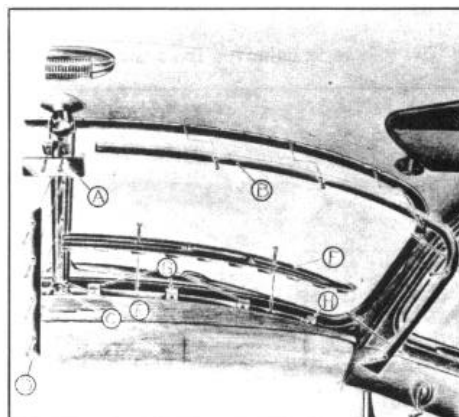


FIGURE 36

1. Remove the rear view mirror (A), Figure 36, and antenna control knob.
2. Remove antenna lead plug from radio. Loosen lock nut (C) at joint cover (E), and remove nut under dash attaching lead rod assembly at moulding joint cover (E). Lower the lead rod and detach from lead wire on control. Remove windshield inside center bar.
3. Remove antenna windshield inside center bar (ID), moulding joint cover (E), upper and lower windshield garnish mouldings (B and F), and four steel windshield retainers (G and H).



FIGURE 37

4. Using a dull putty knife, Figure 37, pry between the rubber weatherstrip and the chrome reveal moulding to loosen and remove the windshield glass and weatherstrip.

**NOTE: Glass is removed from the inside.**

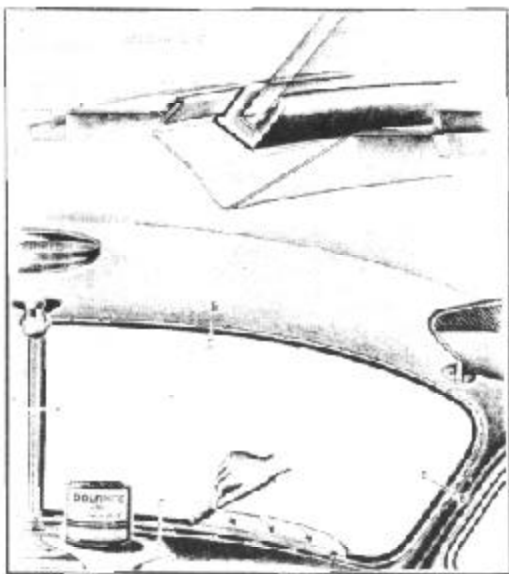


FIGURE 38

### INSTALLATION

1. Remove all old windshield sealer. With a putty knife apply enough new sealer around windshield opening to squeeze

out when glass is installed, Figure 38. Mask off the upholstery material around the windshield opening to prevent soiling during the installation.

**NOTE: Right and left hand rubber seals are used. When proper seal is on glass, ribbed surface will be forward and rubbers will fit properly at inner corners of glass.**

2. Place rubber weatherstrip on new glass and place glass in the windshield opening from the inside of the car.
3. Maneuver glass into position by carefully lifting inside lower corner with a tapered wood wedge. Shim as required along bottom of weatherstrip and glass assembly to bring inner edge parallel to center bar. Locate shims so that they will not interfere with installation of windshield retainers (G and H), Figure 36.
4. Install one center windshield retainer to secure windshield in proper position.

**NOTE: When installing the windshield retainers do not install the outside retainer, next to front hinge pillar, (not required).**

5. Install the remaining two retainers and apply soap stick to the curved portion of the retainer that contacts the windshield rubber weatherstrip. The retainers will then slide down into position when tightened.
6. Remove masking from upholstery and install all trim and radio parts removed prior to removing windshield.
7. Carefully remove all excess sealer with Hudson Fabric Cleaner.

## WINDSHIELD DRAIN TUBE INSTALLATION (Models 1948 and 1949)

Starting with 490 Series car number 491-38746 all cars were fitted in production with windshield opening drain tubes which provide means for carrying away water entering around the windshield.

A comparable set of windshield drain tubes can be installed on all 480, 490 Series cars built prior to the above serial number without the removal of any windshield trim parts. These trough like drains can be installed from under the instrument panel with the assistance of the drain tube jack shown in Figure 39. This tool can be quickly made from materials to be found in almost every shop.

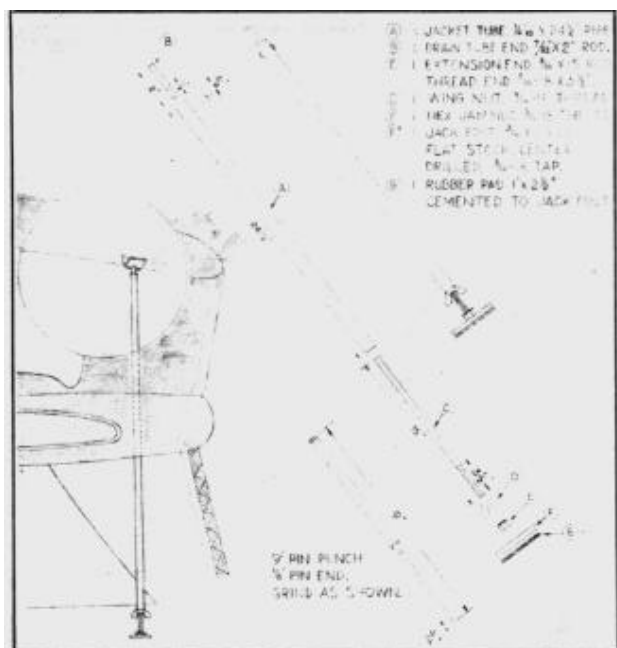


FIGURE 39

## INSTALLATION

1. Cement drain tube gasket securely to the inside "V" surface of the drain tube, Figure 40. Spread a thin layer of trim sealer

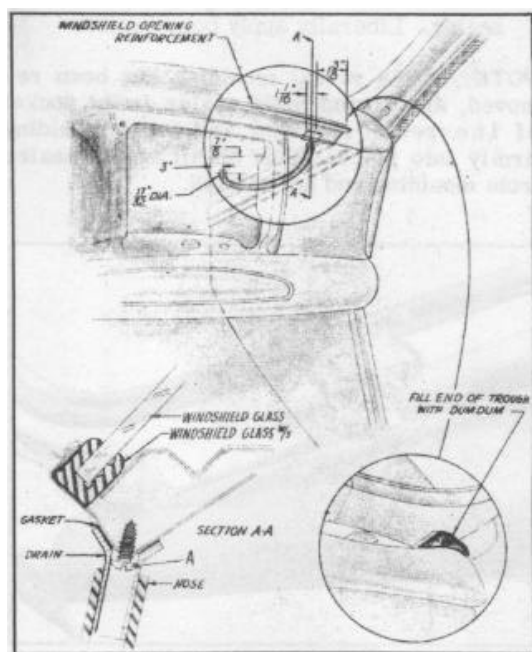


FIGURE 40

over the outer surface of the gasket to insure a seal against the windshield reinforcement.

2. Place drain tube on the top end of the jack against the bottom of windshield reinforcement with the outer screw hole 1-3/8" from the outer end of the reinforcement.
3. Adjust the lower or telescoping end of the jack downward with the wing nut until firm pressure is obtained against the floor. This will hold the drain tube securely in position and leave both hands free for the succeeding operations.
4. Carefully punch two holes through the windshield reinforcement for the attaching Phillips screws (A), (No. 10 x 5/8" Binding Head) using a punch guided by the screw holes in the drain tube. This punch should be 1/8" in diameter at the pin end, ground to a point as shown in Figure 40, and have a length of 9" in order to project under the instrument panel.
5. Secure drain tube in place with self-tapping screws (A), Figure 40, and remove jack.

**NOTE: As a protective measure, wear safety goggles for this operation.**

6. Drill a 1/4" drain hole through the windshield reinforcement using drain tube as a template. Use care when doing this to prevent damage to the windshield lower garnish moulding.
7. Punch 11/32" hole through cowl side panel at point shown in Figure 40, for lower end of drain hose. Enlarge hole and insert hose so that it extends outside of the cowl side panel.
8. Pack end of windshield reinforcement with only enough dum dum, to seal the opening between the end of the reinforcement and the garnish moulding.

**CAUTION: Do not use an excessive amount of dum dum because of the possibility of forcing the material over the drain tube hole.**

**NOTE: If there is evidence of water leaking at the edge of the windshield beyond the dum dum sealer, refer to the article "Windshield Sealing".**

## WINDSHIELD SEALING

### (All Models Except 1C, 1D, 2C, 3D, 4D, 5D and 7D)

Minor leaks between the windshield rubber and the outside reveal moulding or between the outside reveal moulding and cowl or lower end of the roof panel on the 480 Models and early 490 Models up to and including Serial No. 491-38746 (cars not equipped with windshield drains), will result in water collecting in the windshield bottom channel and dripping down along the cowl kick pads, or dripping off of the under flange of the instrument panel

NOTE: A leak at the drip moulding will also be evidenced by wetness at the same places and should not be confused with windshield leaks. To seal minor windshield leaks, lay a bead of Dolphinite Sealer between the rubber and outside reveal moulding and between the outside of the reveal moulding and body panel. These beads of sealer must be continuous around each rubber and/or reveal moulding. Work the sealer into the joints and wipe off excess sealer with cloth dampened with mineral spirits.

If it is necessary to remove the windshield glass to correct the leak at the windshield, remove the windshield glass as outlined on Page 20, and proceed as follows:

1. Clean windshield opening with a putty knife removing all old sealer.
2. Remove the reveal moulding joint clip and remove the reveal moulding.

**NOTE: The welded flange joint (A), Figure 41, forming the windshield opening must be straight throughout the entire windshield area. A wavy area as shown at (B) must be straightened to ensure positive sealing between the reveal moulding and the windshield flange joint and between the reveal moulding and windshield weatherstrip.**

3. Remove all old sealer from the windshield glass rubber weatherstrip. Install the rubber weatherstrip on the windshield glass.
4. Install windshield glass and weatherstrip and shims as required along bottom of windshield. Shim must be placed so that inner edge of weatherstrip and glass is parallel to the windshield center bar.

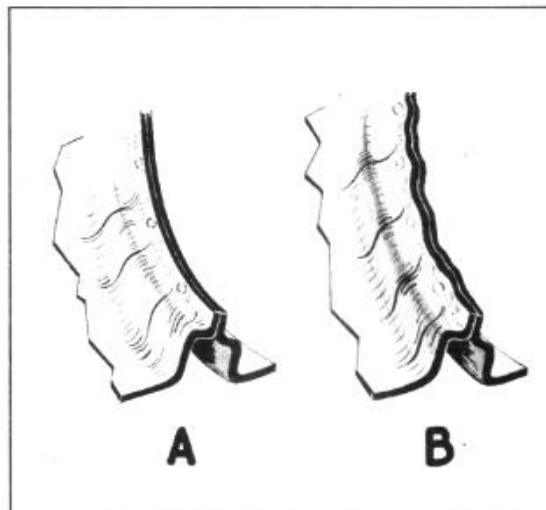


FIGURE 41

**NOTE: Locate the shims so that they will not interfere with the installation of the lower retainers (G) and (H), Figure 36, Page 20**

5. After marking the location of the shims, remove the windshield glass, weatherstrip and shims.
6. Caulk joint in lower outside face of windshield channel at (J), Figure 42, with body sealer. Liberally apply body sealer.

**NOTE: If the reveal moulding has been removed, apply windshield sealer in the pocket of the reveal moulding and press moulding firmly into place. Wipe off all excess sealer from moulding and body finish.**

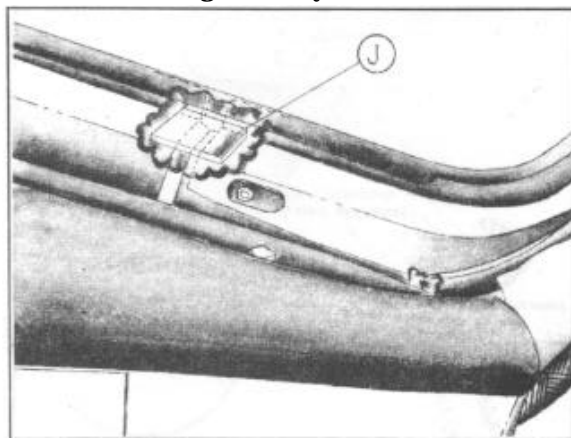


FIGURE 42



7. Apply a heavy bead of windshield sealer completely around windshield opening including the windshield center bar. Sufficient sealer should be used around the windshield weatherstrip when the windshield and weatherstrip is drawn into place. Figure 43, shows cross-section (C-C) of the windshield opening and the final sealer film after the windshield is installed. Sealer must be uniform.
8. Replace shims as selected in operation No. 4. Apply body sealer completely around shim but not on top of shim, Figure 42.

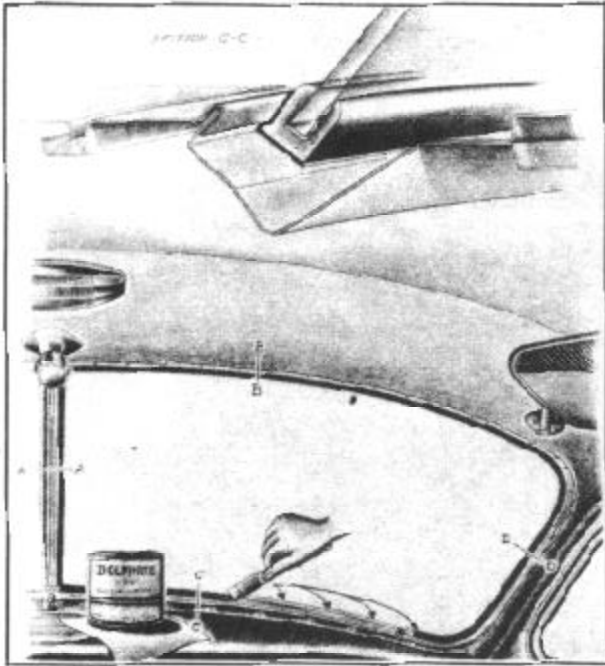


FIGURE 43

9. Install glass and weatherstrip in windshield opening, inserting outer end into windshield opening and swinging inner edge into center bar.
10. Install one center lower windshield retainer (G), Figure 44, to secure windshield in proper position.
11. Install the remaining retainers. Apply soap stick to the curved portion of the retainer that contacts the windshield rubber weatherstrip. The retainer will then slide down into position when tightened.

**NOTE: Check defroster air blocks to be sure they are cemented securely in place. If necessary to install defroster air blocks, see "Installation of Defroster Air Blocks", Page 24.**

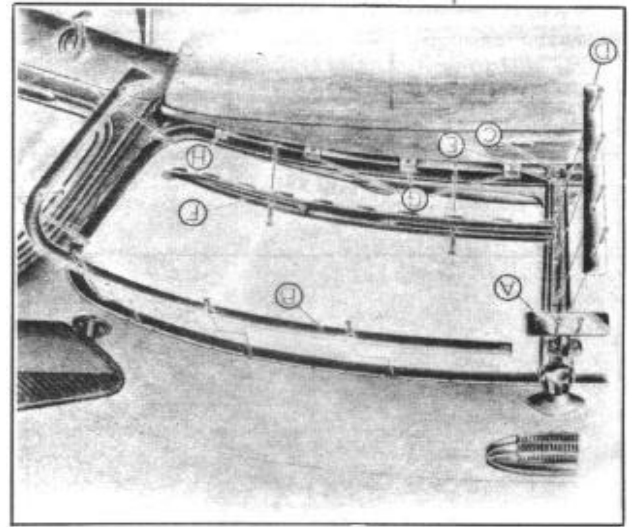


FIGURE 44

12. Install the lower windshield finish moulding (F) entering under the center retainer and aligning with attaching screw holes. Install two screws.
13. Install upper windshield finish moulding (B) using two long screws at top.
14. Install windshield center bar (D).
15. Tighten the lower finish moulding joint cover screw and tighten antenna lower nut (C).
16. Install mirror (A).
17. Wipe off excess sealer on outside with cloth dampened with mineral spirits or gasoline.
18. Water test by applying a stream of water at moderate pressure over the entire surface of the windshield and front section of roof top.

## DEFROSTER AIR STOP BLOCKS (Models 1948 and 1949)

### INSTALLATION

1. Remove rear view mirror and bracket.
2. Remove upper right and left windshield finish moulding.
3. Remove windshield finish moulding lower joint cover screw. (Note: On radio equipped cars, loosen nut under instrument panel, retaining antenna to allow finish moulding to be loose from joint cover.)
4. Remove right and left lower finish moulding.

5. Remove existing air stop blocks from finish mouldings. (Care must be taken in the removal of these blocks that they remain in good condition for reassembly.)
6. Join end blocks and rear block by cementing with rubber cement at points (K) as shown in Figure 45, with the top surface flush and the ends square.

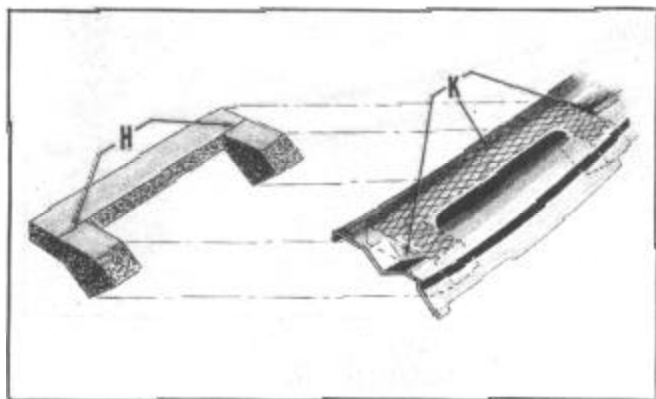


FIGURE 45

7. Apply coating of weatherstrip cement to under surface of finish moulding in shaded area marked (H). Assemble joined blocks to finish moulding, locating square and flush to ends of defroster slot and tight to the bottom of front flange.
8. Install right and left lower finish moulding.
9. Install joint cover and screw. (On radio equipped cars tighten antenna nut and joint cover screw.)
10. Install upper right and left windshield finish mouldings.
11. Install rear view mirror bracket and mirror.

## WINDSHIELD REVEAL MOULDING (Models 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Remove windshield wiper arms and blades.
2. Remove lower reveal moulding by pushing upward at either corner to release moulding lip from groove in weatherstrip, as shown in Figure 46.
3. Remove moulding joint cover by prying up with a screw driver.
4. Push downward to release both upper mouldings from the weatherstrip.

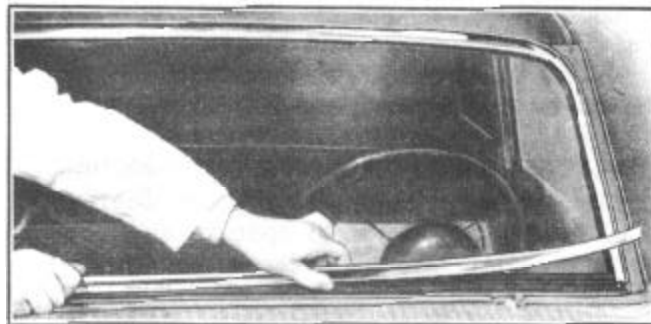


FIGURE 46

### INSTALLATION

**NOTE: Apply a very light solution of liquid soap and water to the weatherstrip to facilitate installation.**

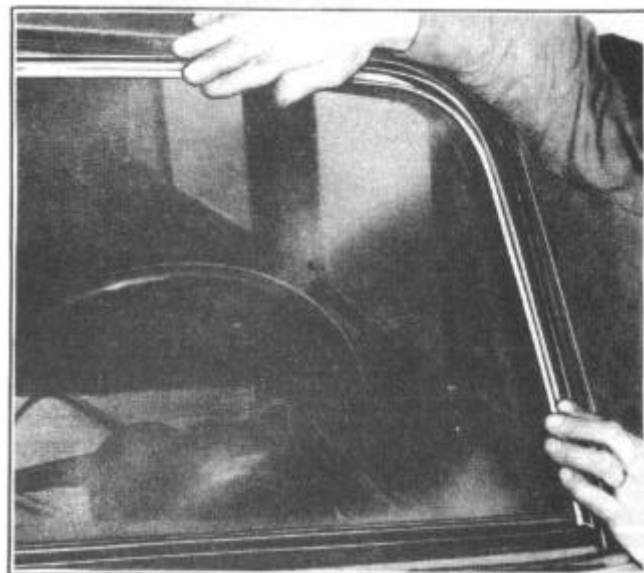


FIGURE 47

1. Install the upper right and left mouldings first by pressing the lip of the mouldings into the lip joint of the weatherstrip, as shown in Figure 47.
2. Install the lower reveal moulding and moulding joint cover.

**NOTE: It may be necessary to use a rubber mallet to facilitate the installation of the reveal mouldings around the corners of the windshield. Use mallet carefully to avoid glass breakage.**

3. Replace wiper arms and blades.

## WINDSHIELD REVEAL MOULDING (Models 4D, SD and 7D)

**NOTE:** For removal and installation, follow same procedure as outlined under "Windshield Reveal Moulding for Models 1C, 1D, 2C, 2D and 3D", Page 25.

## WINDSHIELD GLASS (Models 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Remove windshield reveal mouldings. "See Windshield Reveal Moulding Removal."

**NOTE:** Two types of weatherstrip are used interchangeably. One type uses a separate locking strip installed in the weatherstrip to exert pressure against the glass and against the windshield opening pinchweld to form a positive seal. The other type has a built in locking and sealing design which requires no expander. With either type the locking and sealing pressure has to be released before removing the glass.

2. Remove weatherstrip expander by prying out one end and then pull expander out of weatherstrip, as shown in Figure 48.

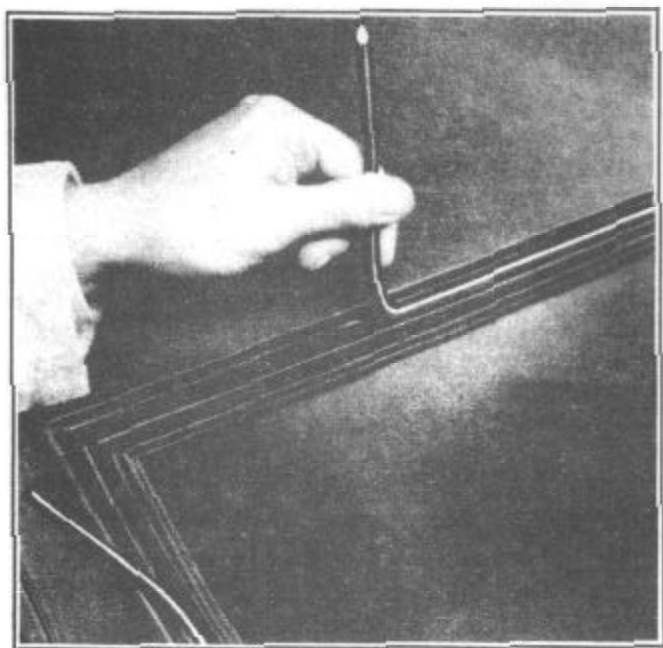


FIGURE 48

**NOTE:** To release the self locking type weatherstrip, insert a screw driver into the split joint and work the blade around the entire weatherstrip.



FIGURE 49

3. Remove the rear view mirror and the self tapping metal screws attaching the garnish mouldings to the windshield opening.

**NOTE:** To avoid breakage, a steady pressure should be maintained at the top center of the glass by a helper while the wedge is being worked to release the glass, Figure 49.

4. Using a tapered fibre or hardwood block, insert the end of the wedge between the weatherstrip and the windshield glass; starting at the top of either corner and sliding the wedge across the top releasing the glass from the weatherstrip as shown in Figure 49.
5. When glass is completely released from the top of the weatherstrip, lift glass out and away from body.

### INSTALLATION

**NOTE:** With the weatherstrip properly in place over the windshield opening pinchweld brush the weatherstrip thoroughly with a solution of liquid soap and water before installing the new glass, as shown in Figure 50.

1. With the aid of an assistant, insert the glass in the bottom opening of the weatherstrip and using a tapered piece of hardwood or fibre strip, start at the bottom of either side of windshield and while lifting up lip of the weatherstrip force the glass in place working the tapered block around

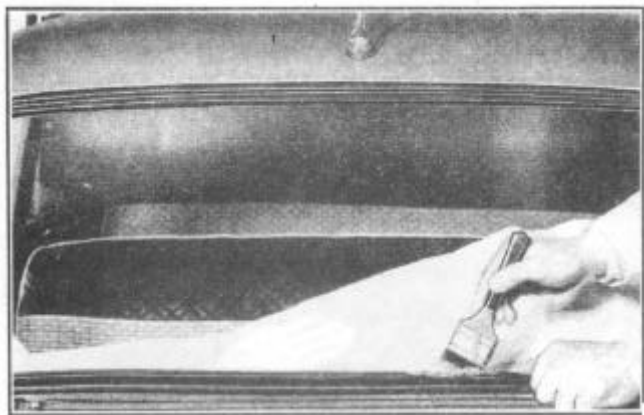


FIGURE 50

the glass until the glass is completely enclosed in the weatherstrip channel, Figure 51.

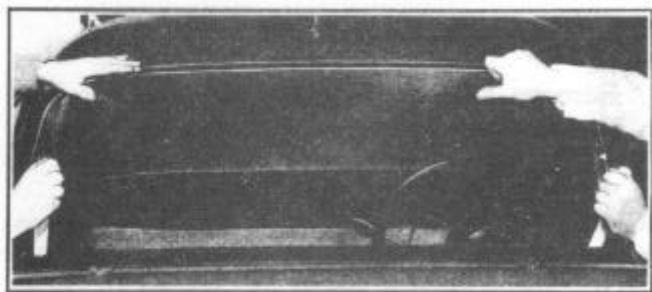


FIGURE 51

2. Insert the weatherstrip expander into the channel of the weatherstrip starting at either lower corner and threading the expander around the entire glass, using Tool J-2767, Figure 52.
3. Pull both ends of expander together and trim off any surplus to form a mitered joint.

**NOTE: To lock the self-locking type weatherstrip, insert the blade of a screw driver into the interlock opening in weatherstrip and by exerting pressure downward, work the screw driver around the weatherstrip.**

4. Install windshield reveal mouldings, follow same procedure as outlined under "Windshield Reveal Moulding Installation".
5. Position windshield garnish mouldings and rear view mirror, start all screws before tightening.

**NOTE: Care must be taken to install the proper length moulding screws in order to avoid damage to the windshield glass or roof panel.**

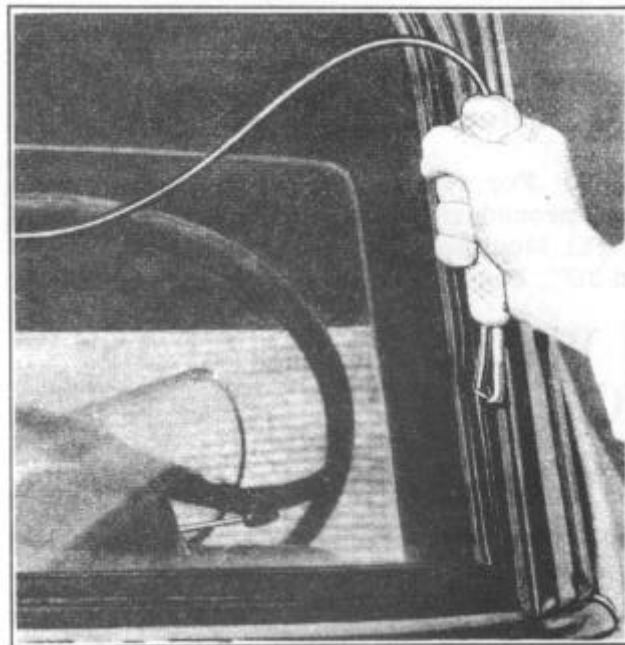


FIGURE 52

## WINDSHIELD GLASS

### (Models 4D, 5D and 7D)

**NOTE: For removal and installation, follow same procedure as outlined under "Windshield Glass" for Models 1C, 1D, 2C, 2D and 3D, Page 26.**

#### REMOVAL

1. Remove windshield glass, follow same procedure as outlined under "Windshield Glass" for Models 1C, 1D, 2C, 2D and 3D.
2. The weatherstrip is held in position over the pinchweld in windshield opening by the compression action of the groove in weatherstrip and can be removed by pulling the weatherstrip away from the windshield opening.

#### INSTALLATION

1. With a tapered tool, open up the groove of the weatherstrip and press weatherstrip over windshield opening pinchweld, Figure 53.
2. Reverse procedure of removal on balance of installation.

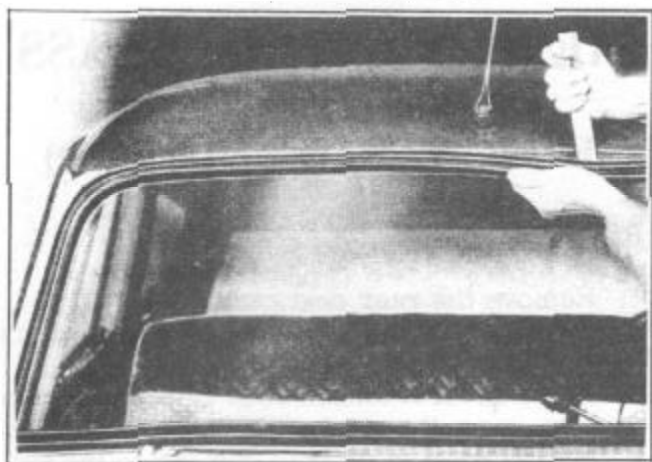


FIGURE 53

## WINDSHIELD WEATHERSTRIP (Models 4D, 5D and 7D)

**NOTE:** For removal and installation, follow same procedure as outlined under "Windshield Glass" for Models 1C, 1D, 2C, 2D and 3D, Page 27.

## REAR WINDOW REVEAL MOULDINGS (All Models 1948 film 1954 Except 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Remove reveal moulding joint covers, top and bottom.
2. Insert a blunt screw driver under edge of reveal moulding and pry moulding upward to release the moulding from the rubber weatherstrip.

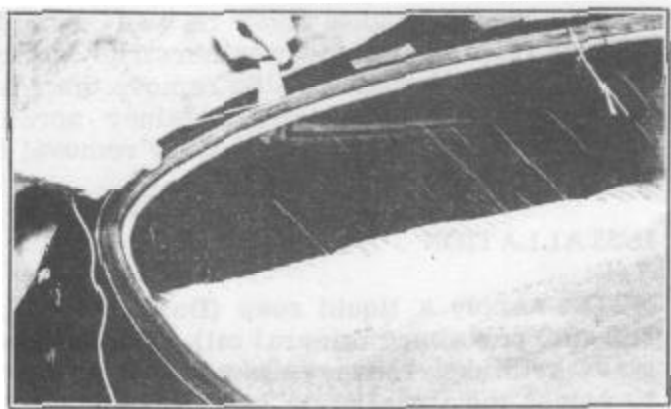


FIGURE 54

### INSTALLATION

1. Use a stout piece of cord (Mason's chalk line) about twelve inches longer than necessary to encircle one half of the window. Lubricate the cord with paraffin or beeswax.
2. Using a tapered fibre or hardwood wedge pry up the outer lip of the rubber weatherstrip, Figure 54, and place the cord under the weatherstrip lip starting at the top center of the rear window and continuing around one half of window to bottom center of rear window, leaving sufficient cord at each end to provide a good hold for pulling release cord, Figures 55 and 56.

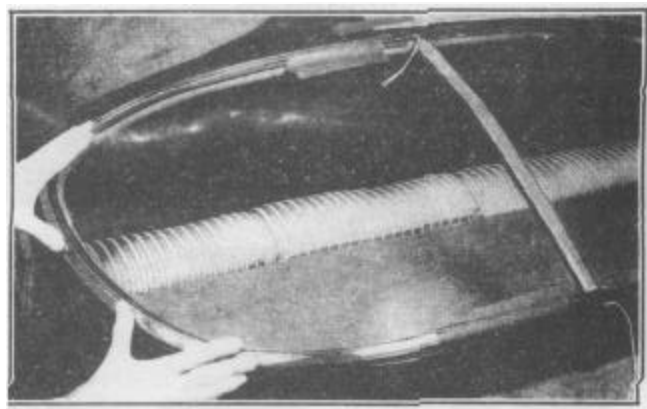


FIGURE 55

3. Place a joint cover on each end of the reveal moulding. Fit the reveal moulding as close as possible to the contour of the rear window weatherstrip and retain the moulding in its approximate installed position by placing a piece of masking tape on the moulding to glass, near both ends of the moulding, Figures 55 and 56.

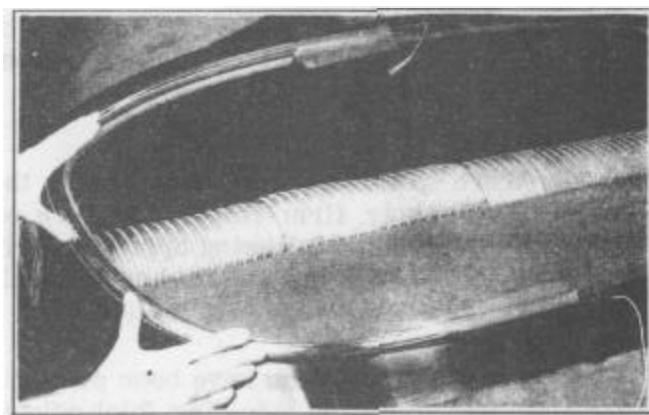


FIGURE 56

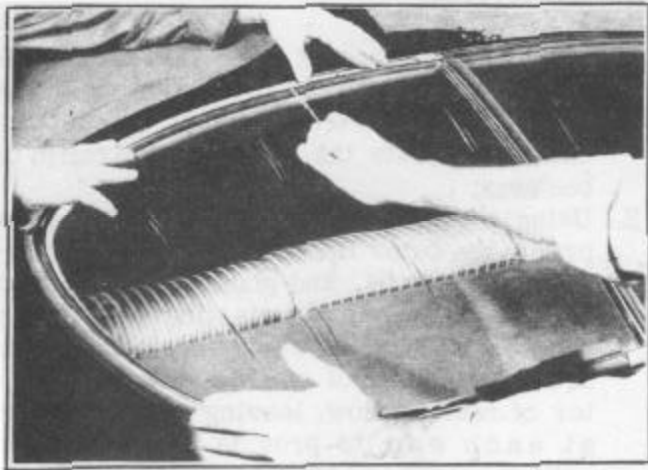


FIGURE 57

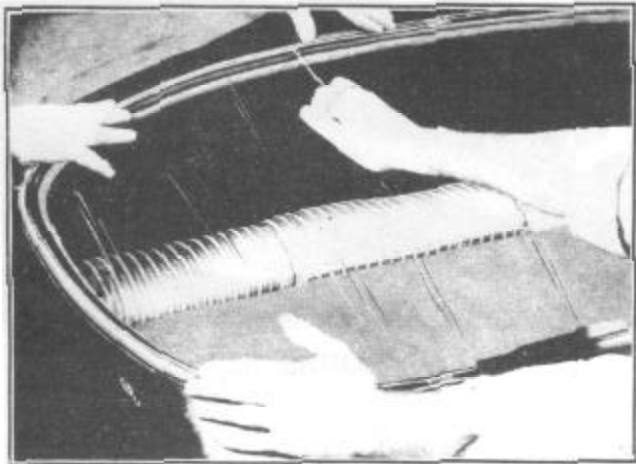


FIGURE 58

4. Have an assistant hold the moulding in place at the rear window, Figures 57 and 58 and press the moulding down and in toward glass while pulling the cord slowly at right angles to the reveal moulding, this will release and allow rubber lip of weather strip to enter into the reveal moulding recess.

**NOTE: When pulling the cord from the weatherstrip apply firm finger pressure on the reveal moulding, following approximately two inches behind the point where the pull cord is releasing the weatherstrip lip.**

5. After reveal mouldings have been properly positioned, drift the moulding joint covers over the junction of the two reveal mouldings.

## REAR WINDOW GLASS

(All Models 1948 thru 1954  
Except 1C, 1D, .2C, 2D and 3D)

### REMOVAL

1. Remove the rear seat cushion.
2. Cover the rear shelf and seat back with a protector cloth.
3. Place several thicknesses of masking tape to cover the roof panel area around the rear window to prevent damage to the body finish when removing the window.

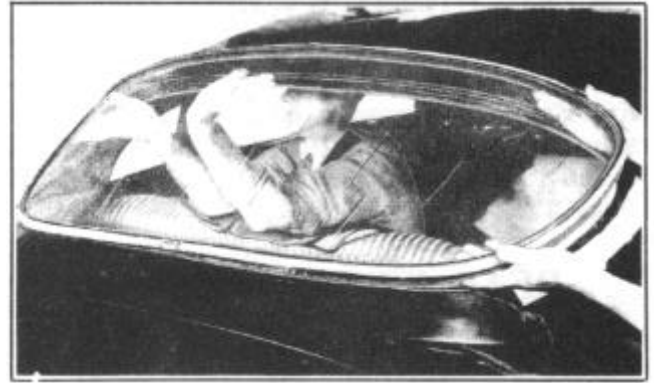


FIGURE 59

4. One man should be inside the car to force the rear window and weatherstrip outward, Figure 59.
5. Remove the complete window assembly from car to bench.
6. Remove any broken glass fragments from weatherstrip channel and remove all old sealer from the rear window recess in the car body and also from the window retainer weatherstrip recess.
7. Remove the window glass reveal mouldings from the window weatherstrip. On the 502 and 504 models, also remove the rear window center moulding retainer screws and retainers. This will allow removal of the old glass.

### INSTALLATION

**NOTE: Apply a liquid soap (Do Not use lubricants containing mineral oil) to the window glass retaining recesses of the weatherstrip to assist the installation of a new glass. No sealer required in glass channel between glass and channel.**



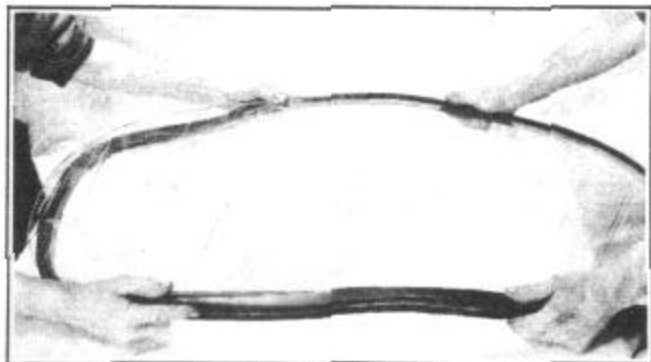


FIGURE 60

1. Insert the new glass, working lips of weatherstrip recess up over edge of glass until glass is completely encased, Figure 60.

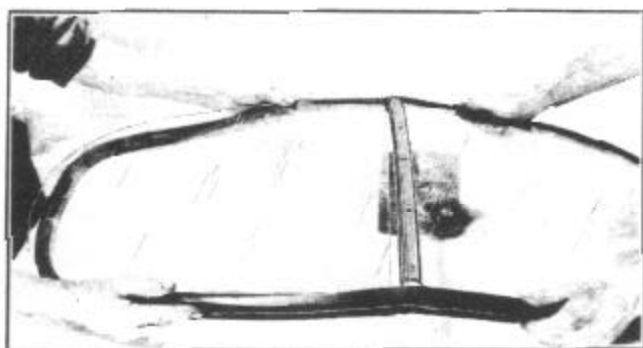


FIGURE 61

**NOTE: To facilitate assembly of the new glass on the 500 models, place a block of wood under the window center bar, Figure 61.**

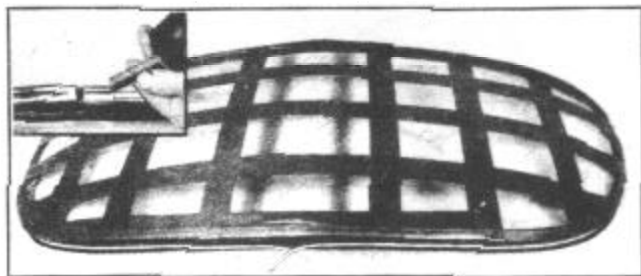


FIGURE 62

2. After the window is installed in the weatherstrip channel (500 series), tighten the center moulding retainer screws.
3. Carefully slide the reveal mouldings onto the weatherstrip.

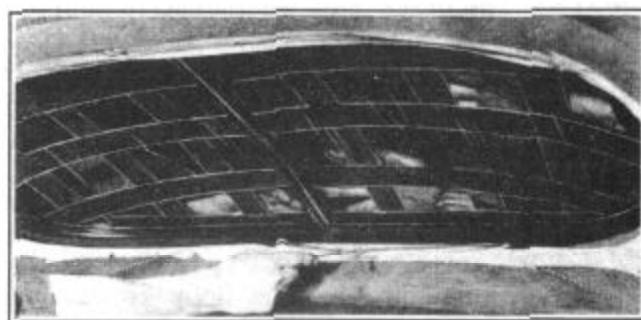


FIGURE 63

4. Install moulding joint covers, Figure 62.
5. Apply a thin coat of rubber cement to the reveal mouldings and 1-1/2" high on the glass completely around the glass.
6. After rubber cement becomes tacky, place pieces of 2" masking tape vertically and horizontally tying the reveal mouldings and glass as a unit. Place strips 8" apart, Figure 63. To further insure a good tight assembly, place a strip of masking tape completely encircling the window and reveal moulding.
7. Apply a ribbon of weatherstrip sealer to the body recess channel in the weatherstrip. Allow only enough sealer to fill the channel recess. (Use a thin piece of wood approximately 3/4" wide to remove excess sealer from the weatherstrip and also to force the sealer into the weatherstrip recess.)
8. Tie a stout cord (Mason line) around the rear window weatherstrip (between the inside body rubber lip and lip of recess). Tie cord tightly enough to draw the inner edges of the rubber channel within the limits of the body rear window opening. Tie cord at bottom of window. Leave sufficient cord to provide a good hand hold to pull the cord; tape loose ends to window glass to prevent interference when installing the window assembly.
9. Place masking tape around the window recess at inside of body to protect headlining, Figure 63.
10. Apply liquid soap on the inside of the large lip of the weatherstrip and around the body recess lip.
11. With one man inside the car and one man on each side of the car (outside), insert the window from the outside, positioning glass evenly around window opening with lower edge of weatherstrip over lip of bottom flange in window opening.



**NOTE:** The glass and weatherstrip assembly must be positioned correctly as in paragraph 11, above, before pulling the weatherstrip release strings; otherwise weatherstrip lip will not seal properly.

12. With the two helpers firmly pressing inward and downward on the glass and weatherstrip assembly and with glass positioned properly in body recess, pull the release cord slowly and carefully so that lip of weatherstrip is raised sufficiently to allow the window assembly to properly seat in the body recess.
13. Work the inner lip of the weatherstrip over the body flange, using your fingers and applying additional liquid soap as required.

**NOTE:** When performing the above operation the glass must be forced into position by blows with a soft rubber mallet or with the palm of the hand.

**CAUTION:** Do Not scratch the glass.

14. After the glass and weatherstrip installation is complete, remove all excess sealer from the window weatherstrip and fabric on the inside of car with Hudson Fabric Cleaner.
15. Remove all masking tape and protective coverings and install rear seat cushion.
16. Remove all sealer from weatherstrip, glass, and body finish with mineral spirits.

### REAR WINDOW REVEAL MOULDINGS (Models 1C, 1D, 2C, 2D and 3D)

#### REMOVAL

1. Remove upper and lower reveal moulding joint covers by prying up with a screw driver.
2. Remove the upper right and left reveal mouldings.
3. Remove the lower right and left reveal mouldings.

**NOTE:** When exerting pressure on the reveal mouldings to release the moulding lip from the groove in weatherstrip, use care not to scratch the glass with the moulding.

#### INSTALLATION

**NOTE:** Apply a very light solution of liquid soap and water to the weatherstrip to facilitate installation of the reveal mouldings.

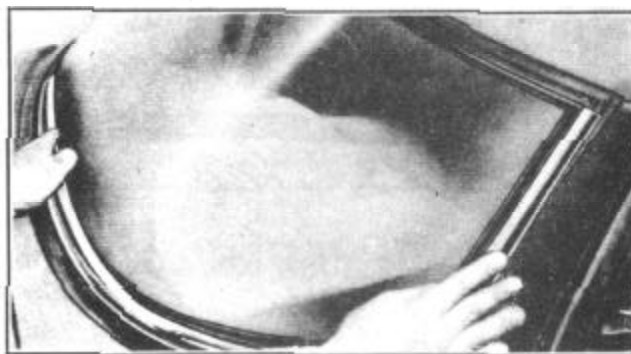


FIGURE 64

1. Install lower right and left reveal mouldings, by press in g lip of moulding into groove in weatherstrip as shown in Figure 64.

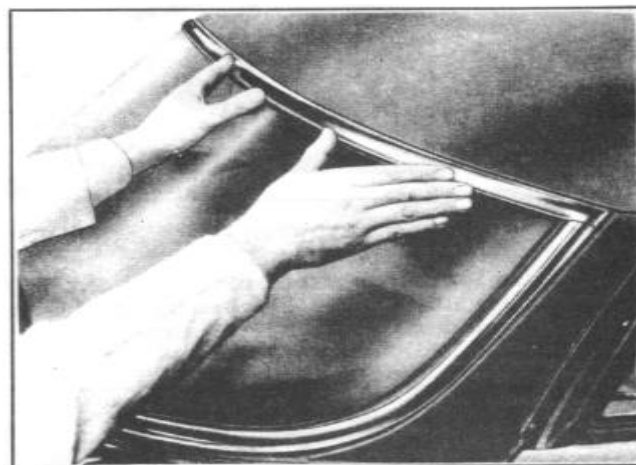


FIGURE 65

2. Install upper right and left reveal mouldings as shown in Figure 65.
3. Replace both reveal moulding joint covers.

**NOTE:** It may be necessary to use a rubber mallet to facilitate the installation of the reveal mouldings around the corners of the rear window. Use mallet carefully to avoid glass breakage.

## REAR WINDOW GLASS (Models 1C, 1D, 2C, 2D and 3D)

### REMOVAL

**NOTE:** Two types of rear window weatherstrips are used interchangeably. One type uses a separate locking strip which is inserted in the groove of the weatherstrip and exerts pressure against the glass and the windshield opening pinchweld. The other type has a built-in locking and sealing design which requires no expander. With either type the locking and sealing pressure has to be released before removing the glass.

1. Remove rear window reveal mouldings. See "Rear Window Reveal Moulding removal."
2. Remove the weatherstrip expander by prying out one end and then pull expander out of weatherstrip, Figure 66. To release the self locking type weatherstrip, insert a screw driver into the split joint and work the blade around the entire weatherstrip.

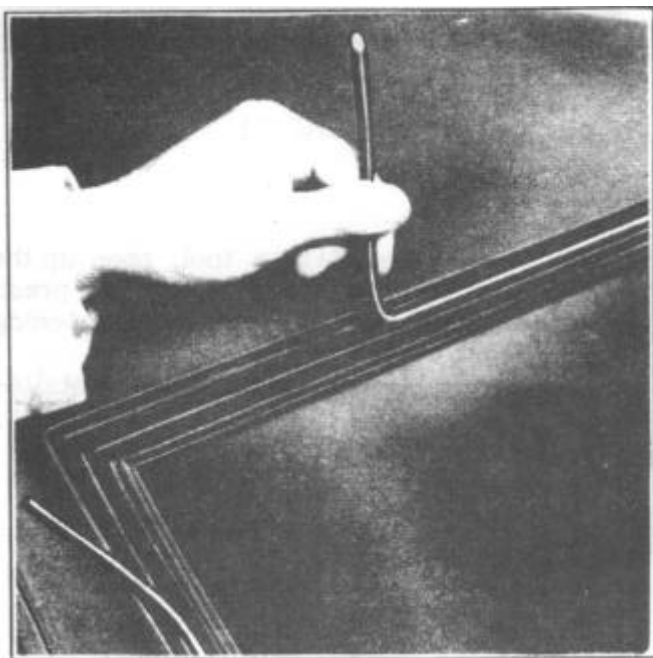


FIGURE 66

**NOTE:** Care must be taken when removing and installing tempered glass. Do not scratch the surface, scratching may cause the glass to disintegrate. The glass should not be hit with any tool if breakage is to be avoided.

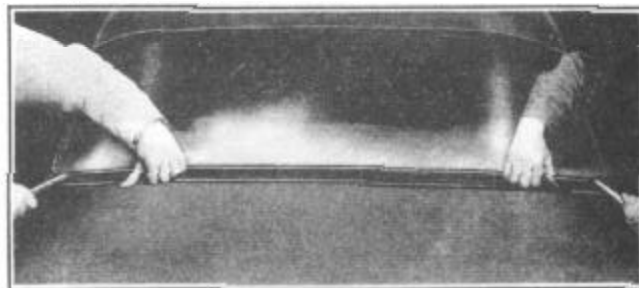


FIGURE 67

3. With the aid of an assistant, start at the lower curved section on each side of the glass and insert a tapered fibre block between weatherstrip and behind the glass, as shown in Figure 67. Work wedge across the bottom, releasing glass from the weatherstrip. Grasp glass at bottom and lift glass up and away from body.

### INSTALLATION

**NOTE:** Before installing the new glass, brush the weatherstrip thoroughly with a solution of liquid soap and water. Figure 68.

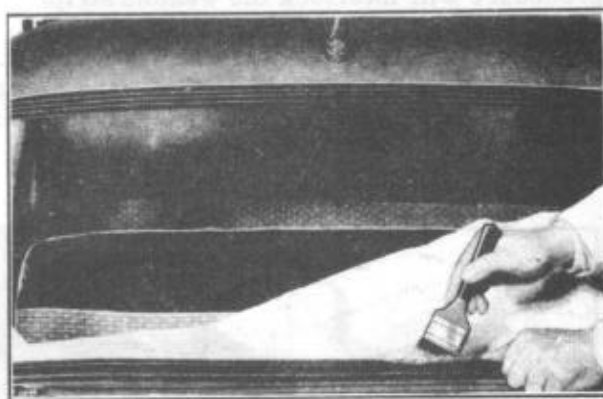


FIGURE 68

1. With the aid of an assistant, enter the glass into both side openings of the weatherstrip and while pushing glass upward, use a tapered fibre block to open the channel in the weatherstrip to enter the glass, Figure 69.
2. After the glass has been entered at the top and sides of weatherstrip, enter the tapered block between the weatherstrip and bottom of glass and carefully pull lip of weatherstrip channel over the glass until entire glass is seated in the weatherstrip channel.
3. Insert the weatherstrip expander into the channel of the

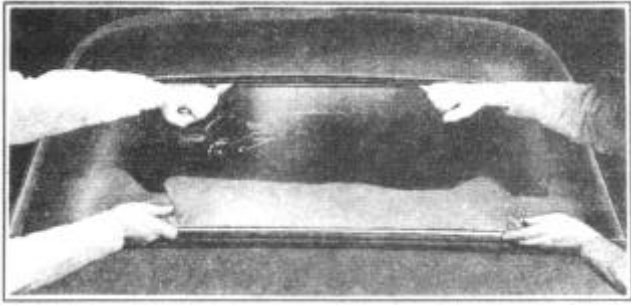


FIGURE 69

weatherstrip at either upper corner and thread the expander around the entire glass, using Tool J-2767, as shown in Figure 70. Pull both ends of expander together and trim off any surplus to form a mitered joint.

**NOTE:** To lock the self-locking type weatherstrip, insert the blade of a screw driver into the interlock opening in the weatherstrip and by exerting pressure downward, work the screw driver around the weatherstrip, this procedure will interlock the weatherstrip.

4. Install rear window reveal mouldings, follow procedure as outlined under "Rear Window Reveal Mouldings Installation."

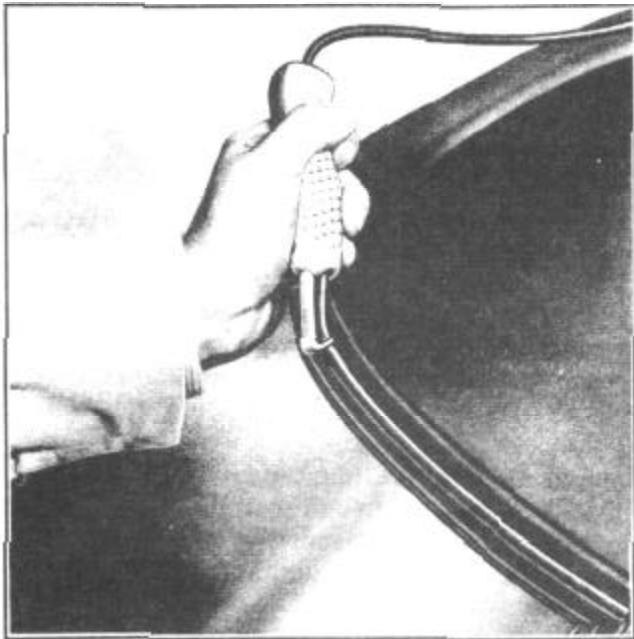


FIGURE 70

## REAR WINDOW WEATHERSTRIP (Models 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Remove rear window glass. See "Rear Window Glass Removal."
2. The weatherstrip is held in position over the pinchweld in the windshield opening by the compression action of the groove in the weatherstrip and can be removed by pulling the weatherstrip away from the windshield opening.

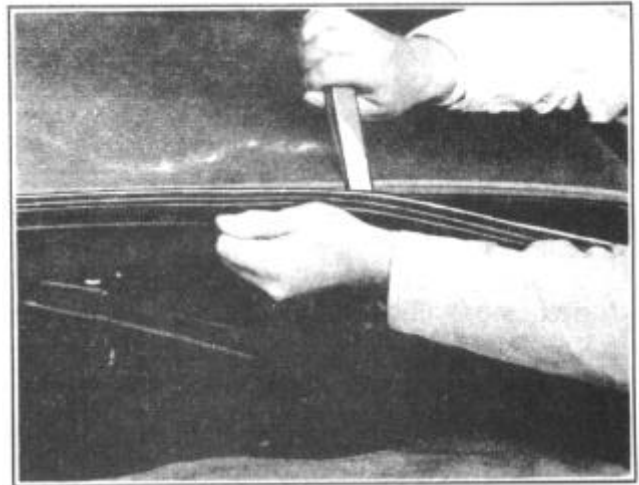


FIGURE 71

### INSTALLATION

1. With a tapered fibre tool, open up the groove of the weatherstrip and press weatherstrip over the rear window opening pinchweld, Figure 71.
2. Reverse procedure on balance of installation.

## QUARTER TRIM PANEL BROUGHAMS AND COUPES (All Models 1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Remove rear seat cushion and rear seat back.
2. Remove quarter window regulator handle.
3. Remove garnish moulding.

4. On Commodore models remove valance.
5. Remove two screws from under side of arm rest and remove arm rest.
6. Remove pocket trim panel and lower trim panel, attached by clips to inner panel.

## INSTALLATION

Reverse procedure of removal.

# QUARTER WINDOW WATER SHED AND DRAIN BAFFLE (Models 1948 and 1949)

## INSTALLATION

**NOTE: If there is evidence of a water leak at the area around the rear seat and it has been determined that the door seals and drain troughs have been properly sealed, check the sealer at the drain baffle located below the rear quarter window at the top of the body frame rail and seal along the base of the baffle applying body sealer in the areas shown in Figure 72.**

To install the water shed and drain baffle on the 480 models and the early 490 models broughams and coupes, proceed as follows:

1. Remove the rear seat cushion and back.
2. Remove the quarter window garnish moulding.
3. Remove the garnish moulding wood filler strip.
4. Remove the glass run (K), Figure 72. (With window down, pull top of channel inward and upward to remove.)
5. Remove the rear quarter glass (O). (Guide top of glass inward and turn up until regulator arms are above inner panel. Disengage regulator arm roller (L) from glass and channel as an assembly.)
6. Remove the regulator handle. (Concealed pin.)
7. Remove the arm rest - (two screws).
8. Remove the quarter pocket trim panel.
9. Remove the quarter lower trim panel.
10. Remove the quarter inner panel liner.
11. Remove the regulator screws (A), (B), (C), (D) and (E).
12. Remove the regulator guide channel screws (E) and (F).
13. Remove the glass run channels (M), (N), screws (G), (H), (I) and (I).

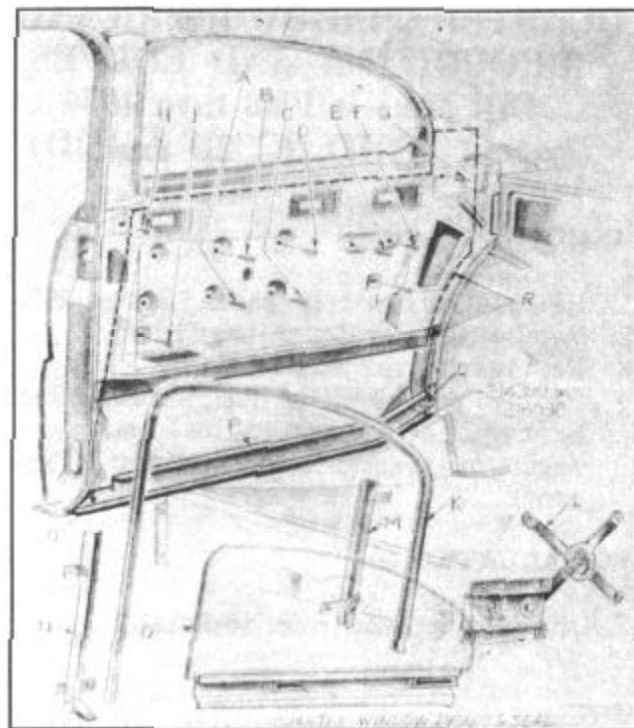


FIGURE 72

14. Bend straight edge of water shed outward along scored line.
15. Insert rear end of watershed below inner panel and work upward and backward into position shown. Be sure forward edge is turned outward and hold watershed in position to top of inner panel with a clamp.
16. Install regulator and regulator guide channel (L).
17. Install glass run channels (M), (N) and (K).
18. Install glass and glass run.
19. Put pillar to wheelhouse baffle (P) in place on top of frame and mark drilling location at each end. Drill two 7/32" holes in baffle at (Q).
20. Mark wheelhouse flange and pillar inner flange and drill a #29 (.136") in each.
21. Attach baffle with two No. 10 by 3/4" binding head sheet metal screws.
22. Seal baffle full length on both outside and inside with body sealer. Apply rubber cement to the inner side of the rocker panel to frame seal and insert the seal between frame and rocker panel pressing tight against front end of rear fender to frame seal, both right and left hand side.

## **QUARTER WINDOW REGULATOR BROUGHAMS AND COUPES (All Models 1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)**

### **REMOVAL**

1. Remove quarter trim panel. See page 33.
2. Remove quarter panel inner liner.
3. Remove quarter window glass.
4. Remove four Phillips head screws attaching regulator to inner panel and remove regulator through lower opening in inner panel.

### **INSTALLATION**

Reverse procedure of removal.

## **QUARTER WINDOW GLASS BROUGHAMS AND COUPES (All Models 1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)**

### **REMOVAL**

1. Remove garnish moulding and small wood block.
2. Lower window and release three clips attaching glass run channel to top of window opening by pulling in on channel.
3. Remove glass run channel.
4. Pull in on top of glass and raise glass to limit of regulator.
5. Release regulator from glass channel and remove glass and channel.

### **INSTALLATION**

1. Pull in on top of inner panel to enlarge opening between inner and outer panels.
2. Insert glass and glass channel through opening and engage regulator.
3. Lower the window and apply a coating of cement to window opening to seal glass run channel.
4. Insert glass run channel and engage clips in top of window opening.
5. Raise window and replace wood block and garnish moulding.

## **QUARTER WINDOW GLASS BUSINESS COUPES (All Models 1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)**

### **REMOVAL**

1. Remove garnish moulding.
2. Remove small wood block.
3. Remove two screws holding window support to inner panel. Hold window in position and remove support.
4. Lower glass to free it from glass run channel and lift out.

### **INSTALLATION**

Reverse procedure of removal.

## **QUARTER WINDOW GLASS SEDANS (PIVOT TYPE) (All Models 1948 thru 1954 Except 1C, 2C, 1D, 2D and 3D)**

### **REMOVAL**

1. Remove garnish moulding.
2. Remove four sheet metal screws attaching glass frame to window opening and remove glass and frame.
3. Remove nut and spring from friction pivot.
4. Remove screw from upper pivot and remove window and frame.

### **INSTALLATION**

Reverse procedure of removal.

## **QUARTER WINDOW GLASS SEDANS (PIVOT TYPE) (All Models 1948 thru 1954 Except 1C, 2C, 1D, 2D and 3D)**

### **REMOVAL**

1. Remove the three sheet metal screws attaching garnish moulding to window opening.
  2. Push glass inward and remove glass, weatherstrip and frame.
-

[illegible]

# HEADLINING

## (All Models 1948 thru 1954 Except Hollywood Models and 1C, 1D, 2C, 2D and 3D)

Preparatory to headlining removal, remove the following trim parts:

- A. Sun visors
- B. Rear view mirror
- C. Front dome lamp lens assembly
- D. Upper and lower windshield garnish moulding
- E. Windshield inside center trim bar (on cars so equipped)
- F. Rear seat cushion, seat back and center arm rest
- G. Rear window (see Rear Window Removal), Page 29.
- H. Rear package shelf
- I. Rear quarter window garnish mouldings
- J. Rear dome lamp lens assembly

### REMOVAL

1. Remove tacks from around rear window opening and rear quarter window openings and the cardboard tacking strips at the extreme rear edge of the headlining on the package shelf. Pull headlining loose from cement.
2. Remove headlining from glazier's points around upper windshield opening. Use a screw driver to pry open these glazier's points to facilitate installation of new headlining.
3. With a sharp knife slit the headlining on both sides, front to rear, along the side retainers; remove roof bows from rubber grommets and remove headlining from body.
4. Loosen screws in the headlining side retainers and remove old headlining and glue from glazier's points. Retighten screws securely.
5. Remove all old cement from around rear window and rear quarter window openings. Apply new cement to these areas and allow it to become tacky before beginning the installation.

### INSTALLATION

NOTE: Before removing roof bows from old headlining, properly mark or tag each bow to insure correct placement of the roof bows in the headlining as this is important.

1. After checking to make certain that the roof bows have been installed in their proper sequence in the new headlining, start the installation into the body with the rear bow. (Leave the first two hanging loosely in their grommets. Do not snap up into the support brackets. This prevents undo stretching of the material at this point) . Work progressively toward the front, installing each roof bow into its rubber grommet and support bracket leaving the front bow hanging loosely in the rubber grommets.
2. Move to the rear of the body and snap the two rear roof bows into the support brackets. Press headlining temporarily into the cement at the top center of the rear window opening. (This holds the headlining out of the way for installation of the cardboard tacking strips.) Pull headlining down evenly at cardboard tacking strips on both sides and tack the strips securely at the rear package shelf.
3. Pull headlining tight and press into cement around rear window opening. Trim the material at the corners of the opening to assure a smooth fit and prevent pleating. Replace upholsterer's tacks in rear window opening. Trim surplus material from around rear window opening. Cut a separate piece of headlining material wide enough and long enough, and install into cement at bottom edge of rear window opening. Tuck material under the edges of the headlining and secure with upholsterer's tacks. (This separate piece of material covers the panel between the lower edge of the rear window and the package shelf.) Material should be wide enough to extend to the package shelf and be held in place by the rear package shelf trim boards.
4. Cut the headlining material at the corners of the rear quarter windows and press firmly into the cement. Secure with upholsterer's tacks.
5. Re-install rear package shelf trim board. Cement and tack into place at the front edge.
6. Now move to the front of the body and snap the front roof bow into the support brackets . Stretch the headlining forward and, beginning at the center of the windshield opening, attach headlining to glazier's points in the upper windshield opening. After the headlining is securely hooked on the glazier's points, hammer the points flush with the windshield opening.



- (This assures perfect fit of windshield sealing strip and prevents leaks at this point.) Trim away surplus material.
7. Next, using Tool J-2772, carefully tuck the edges of the headlining up under the side retainers. (Before starting this operation check to be sure that the side retainers are fastened securely.) Use the tool carefully in this operation. Start at the front and work toward the rear, stretching the headlining as the work progresses.
  8. Carefully slit the headlining at the dome lights and install the dome light lens assemblies.

**NOTE: Trim away only enough material at the dome lights to clear the bulb recess in the lamp base. Headlining is held in place at this point by the dome lamp lens assembly; therefore do not trim away more material than is absolutely necessary.**

9. Re-install rear window and all trim parts removed prior to headlining removal operations.

## HEADLINING

(Models 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Remove the sun visors, the antenna knob and knob escutcheons, the rear view mirror, the right and left windshield garnish mouldings, the dome lamp glass and bezel assemblies (snap-in type).
2. Remove the rear seat cushion and rear seat back.
3. Remove the rear window glass and weatherstrip, as outlined in "Rear Window Removal and Installation", Page 32.
4. Remove the upholsterer's tacks from around the rear window opening as shown in Figures 73 and 75, pull headlining loose from cement.
5. Remove headlining from glazier's points at upper windshield opening and pull headlining from cement.
6. Use a screw driver to pry open these glazier's points to facilitate installation of a new headlining. Remove headlining from retainers at front pillar posts.
7. Use a narrow blade putty knife and working through the opening between the windlace panel and roof header

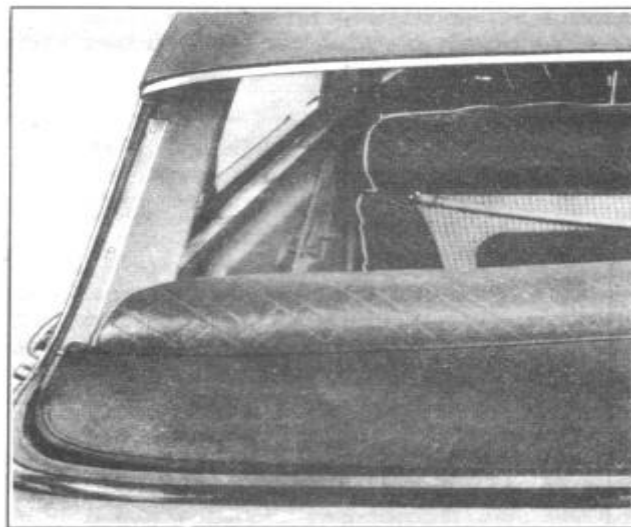


FIGURE 73

unhook the headlining cloth from the glazier's points until complete headlining is removed or as required.

**NOTE: If the complete headlining is to be removed and replaced with a new headlining, slit the headlining along the retainers on both sides of body, snap out roof bows and remove headlining. Loosen retainer screws and remove the scrap material from the glazier's points. Retighten retainer screws securely.**

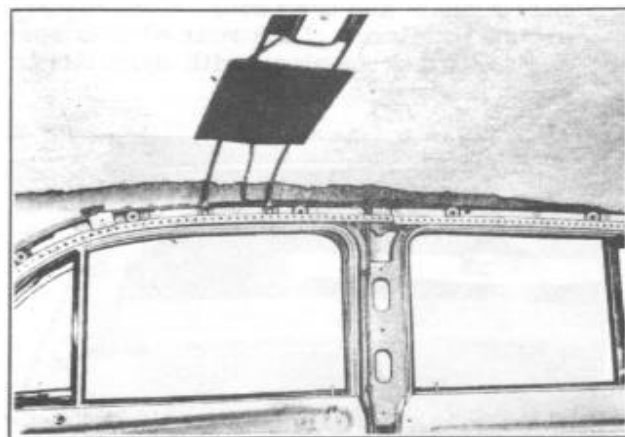


FIGURE 74

**NOTE: Before replacing headlining make sure roof panel insulation is securely glued and in the proper position and the retainer strips are aligned as shown in Figure 74.**

### INSTALLATION

1. Apply trim cement at flange of rear window opening and at windshield opening. Allow cement to become tacky before installing new headlining.

**NOTE: Remove roof bows from the old headlining and install them in the new headlining. The correct placement of the roof bows in the headlining is very important. The following roof bow color guide will assist you to place the bows in their proper sequence. One end of the bow is painted as follows:**

- No. 1 Roof Bow - White
- No. 2 Roof Bow - Light Green
- No. 3 Roof Bow - Yellow
- No. 4 Roof Bow - Light Red
- No. 5 Roof Bow - Dark Blue
- No. 6 Roof Bow - Dark Brown

2. Starting at the rear of body roof panel, hook in each end of the roof bow into the roof bow anchor bracket and snap into position.
3. Install the remaining bows in their proper sequence, spacing the headlining evenly between each bow.

**NOTE: Hook number one bow in the roof bow bracket, but do not snap into position at this time.**

4. Stretch headlining down and press into cement around rear window opening. To avoid wrinkles and pleats in the material at corners, cut several radial slits about 1-1/2" apart and 3/4" deep. Work material around the flange of the rear window opening and tack in place with upholsterer's tacks, Figure 75.

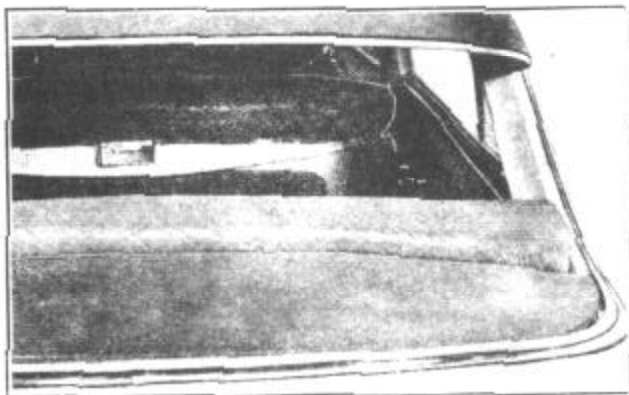


FIGURE 75

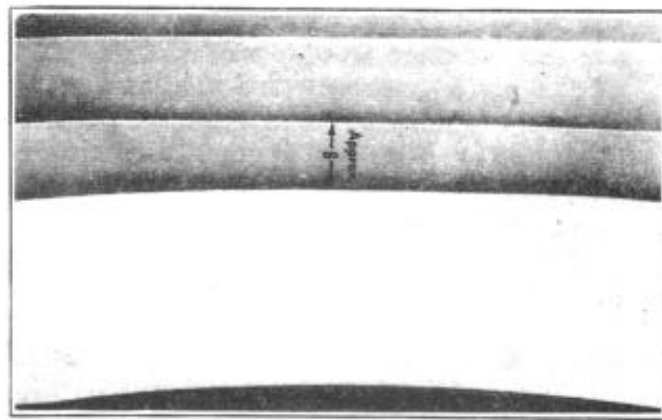


FIGURE 76

**NOTE: The first seam at rear of headlining should be approximately six inches from inside edge of roof panel to rear window flange as shown in Figure 76.**

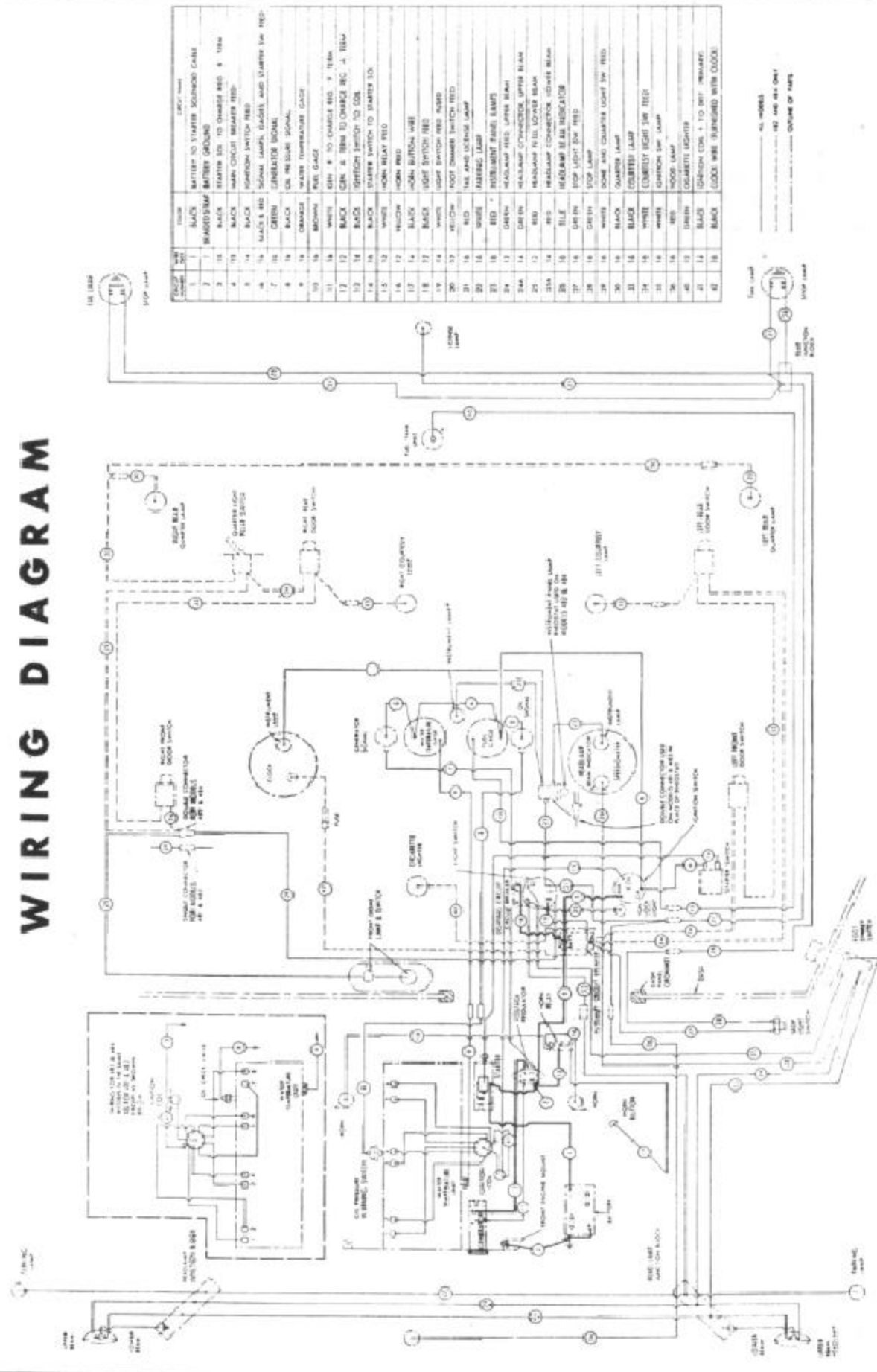
5. Stretch headlining and force it under the metal retaining strip, using Tool J-2772, starting at the rear on both sides and working to the front. Keep seams straight from side to side.
6. Snap front roof bow in position, stretching the headlining over the windshield header glazier's points and cement headlining to the inside flange of windshield, as shown in Figure 77.



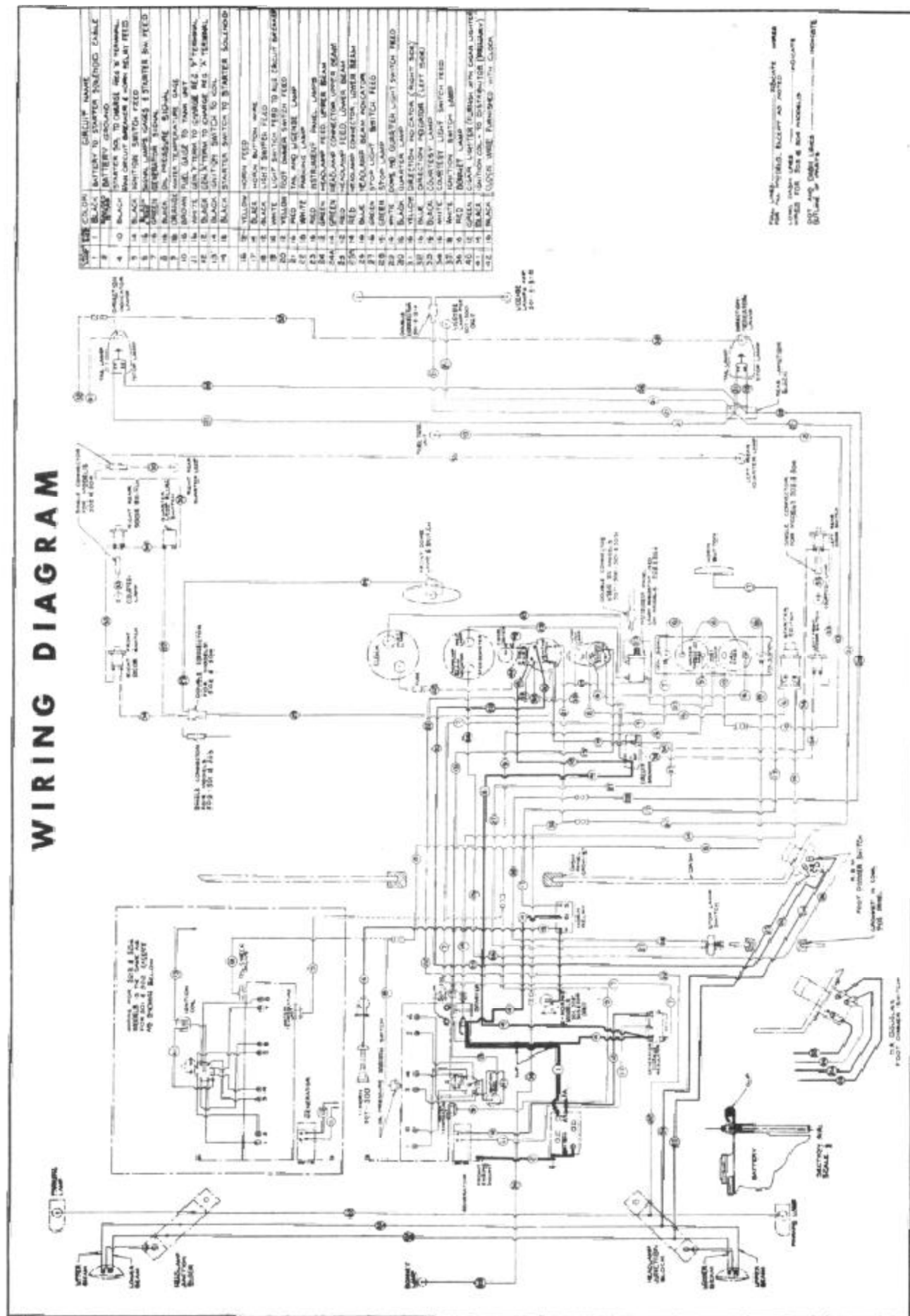
FIGURE 77

7. With windcord in position at front pillar posts, securely hook headlining to the glazier's points.
8. Install windshield garnish mouldings, see "Garnish Moulding Installations", rear view mirror, sun visors and antenna knob and escutcheon.
9. Carefully cut the headlining at the dome light and install the dome light lens and bezel assemblies.
10. Install the rear window weatherstrip and glass. See "Rear Window Installation", Page 32.

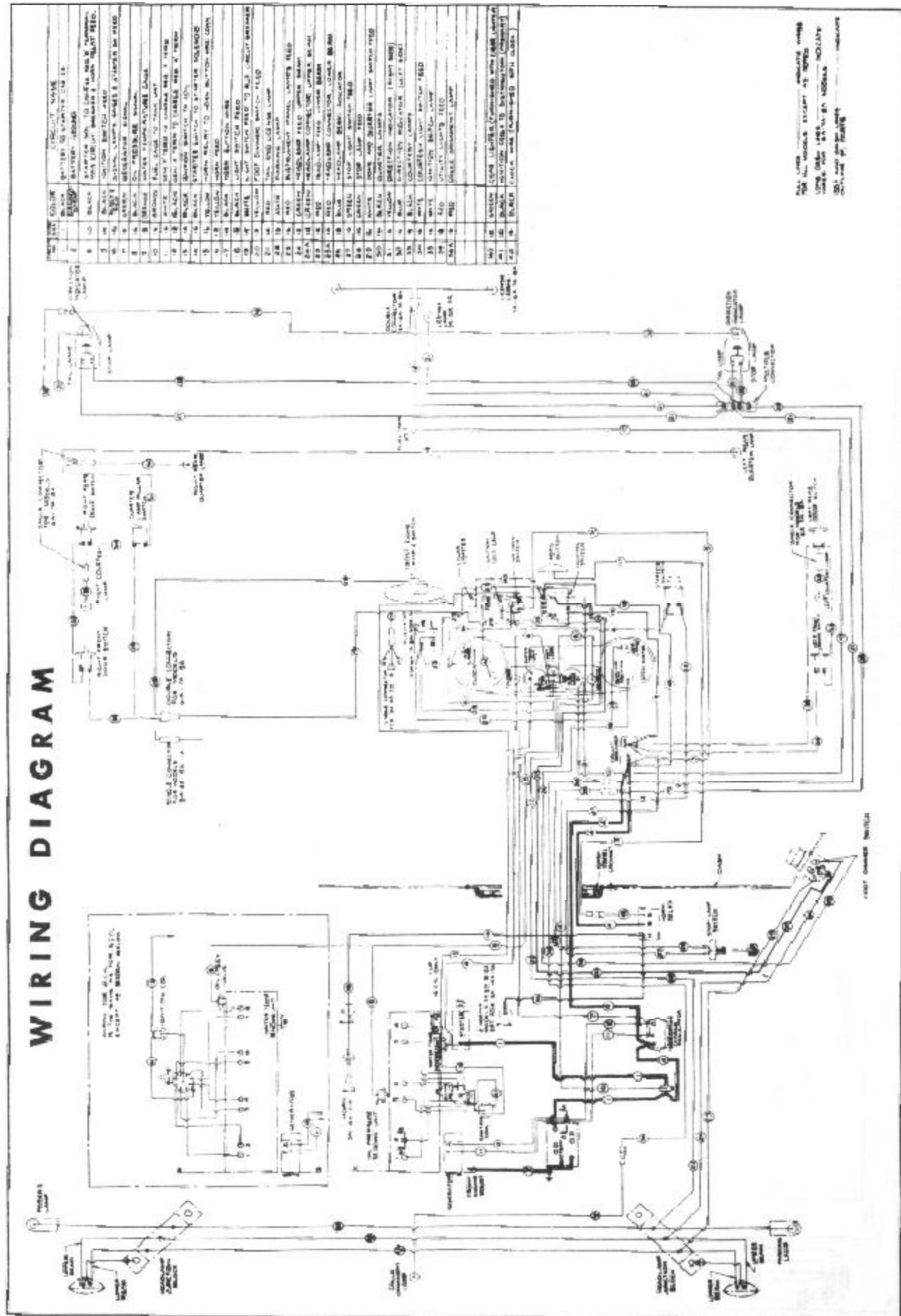
# WIRING DIAGRAM



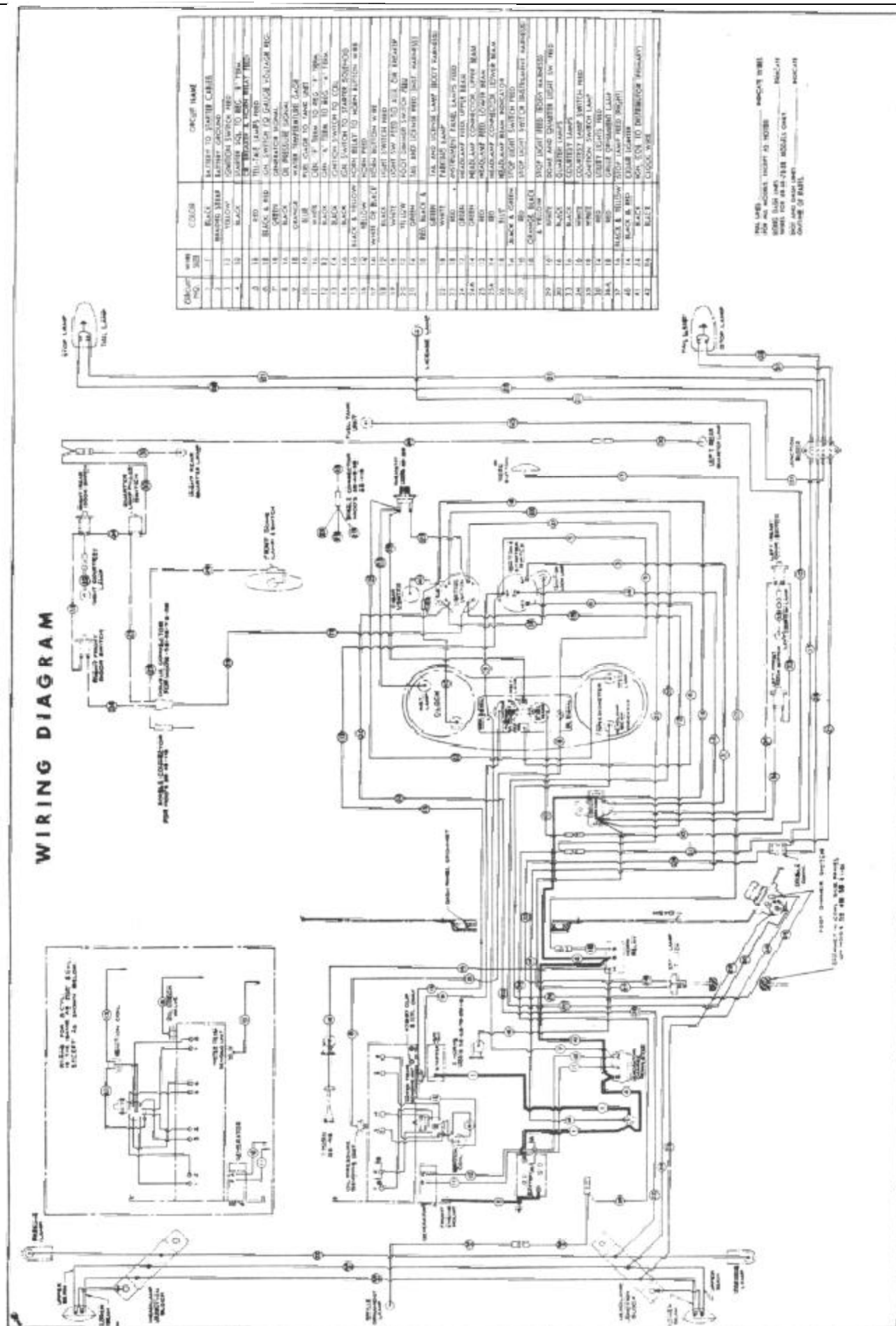
MODELS 1948-1949 FIGURE 78



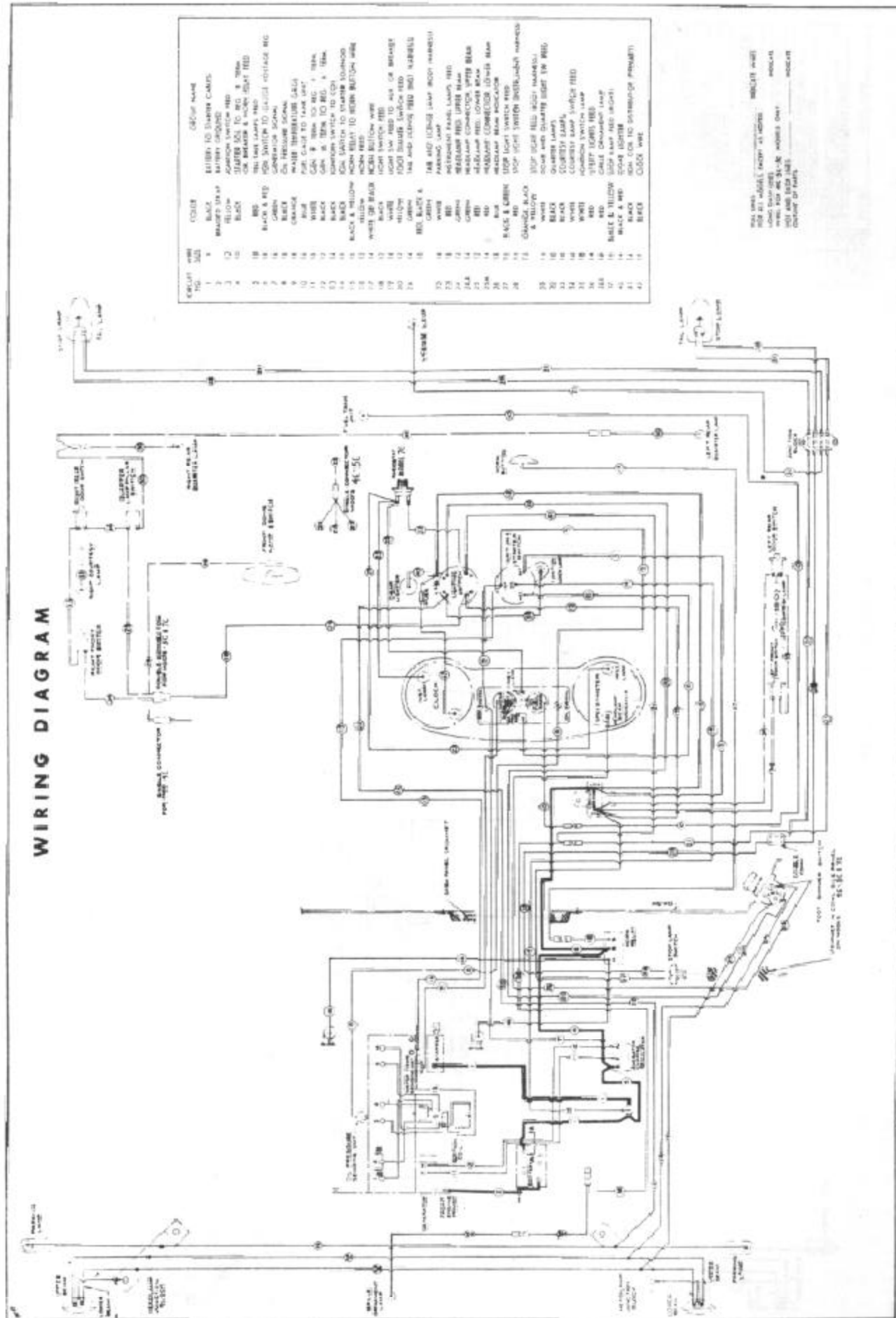
MODELS 1950      FIGURE 79



MODELS 1951      FIGURE 80



MODELS 1952      FIGURE 81

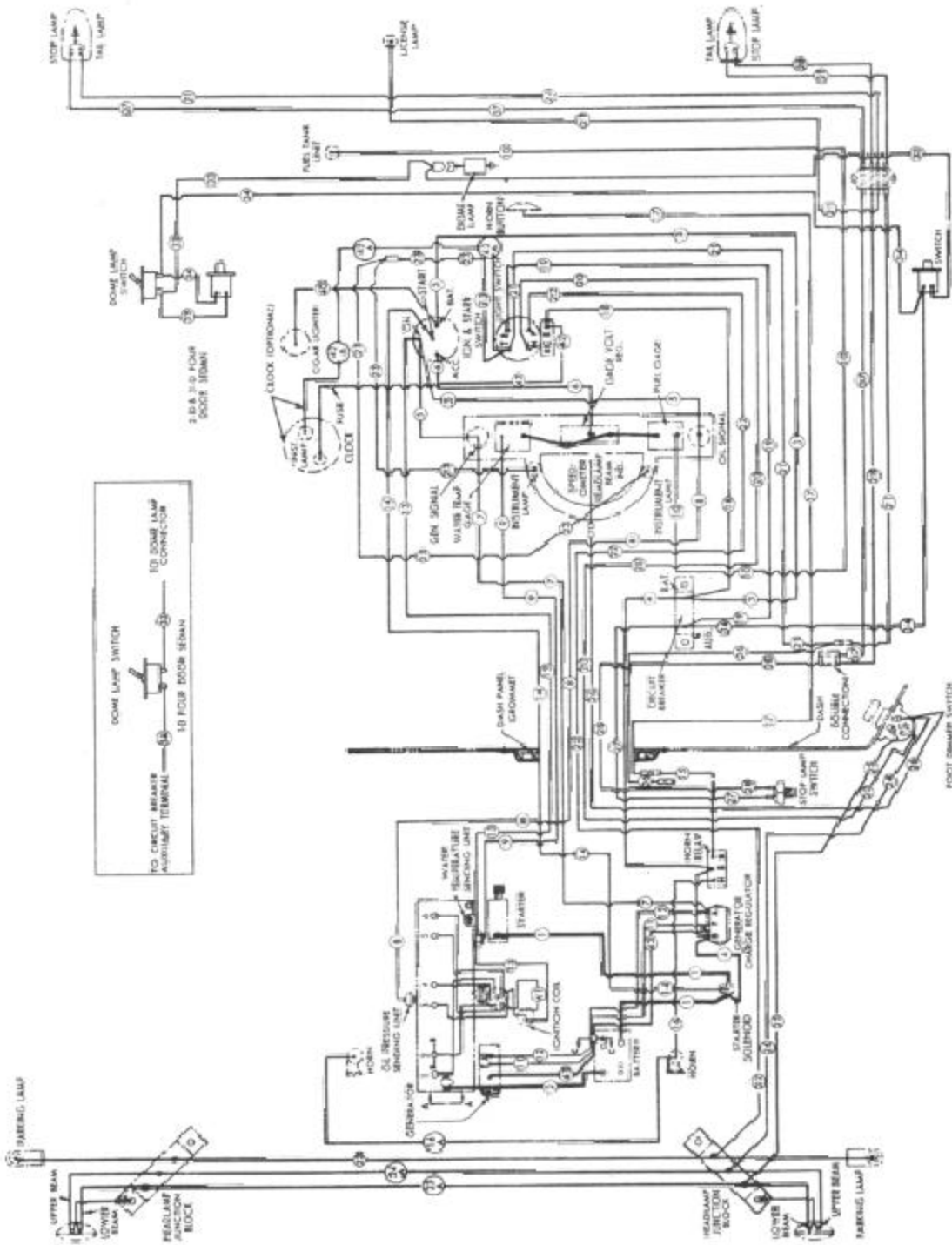


MODELS 1953 EXCEPT 1C AND 2C FIGURE 82



WIRING DIAGRAM

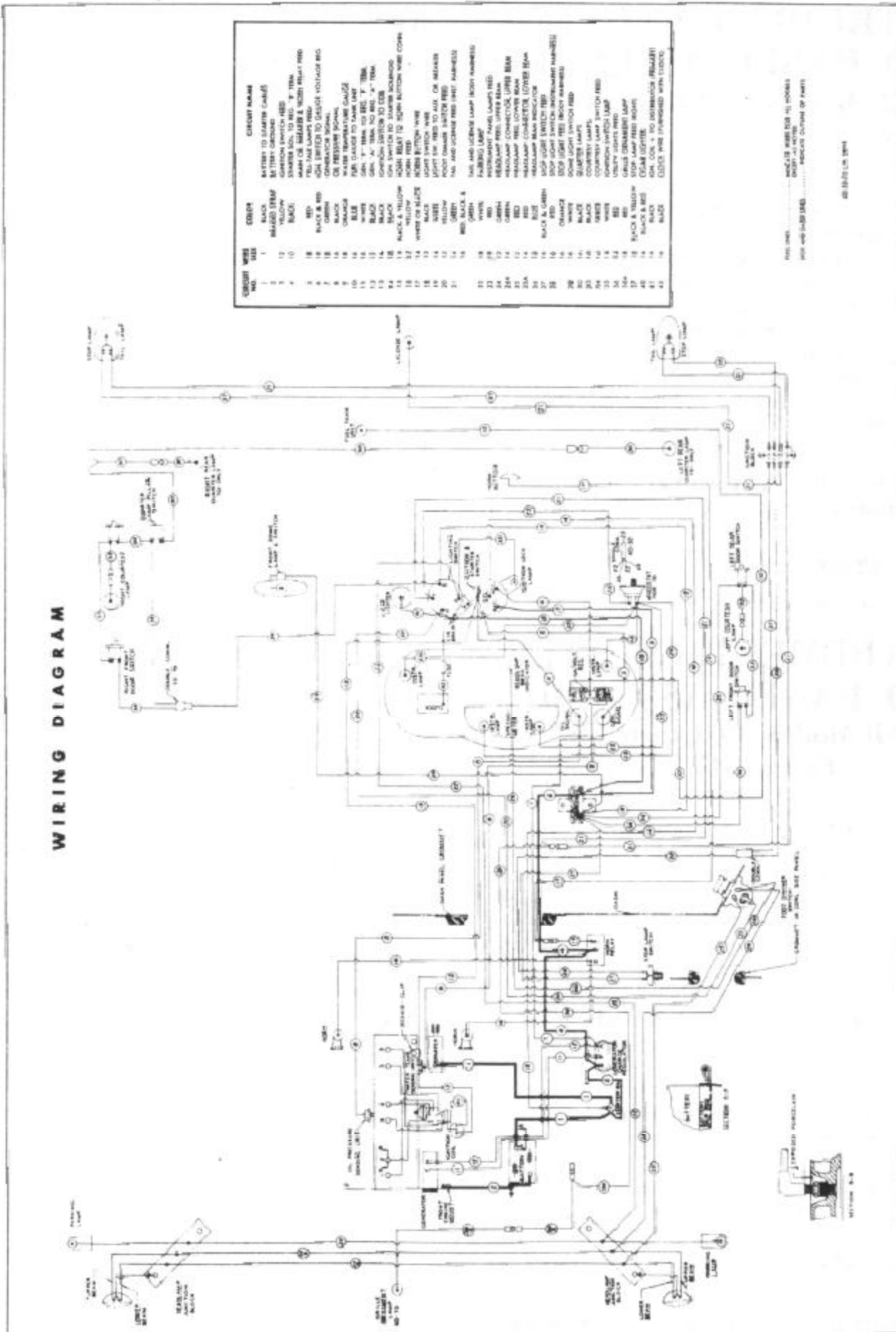
CIRCUIT NO.	WIRE NO.	COLOR	CIRCUIT NAME
1	1	BLACK	BATTERY TO STARTER CABLES
2	2	BLACK	BATTERY CIRCUIT
3	3	YELLOW	IGNITION SWITCH FEED
4	4	BLACK	STARTER COIL TO CHARGE REG. "F"
5	5	BLACK	WATER PUMP CIRCUIT BREAKER & HORN RELAY
6	6	RED	FEED TO FUEL PUMP
7	7	RED	FEED TO FUEL PUMP
8	8	RED	FEED TO FUEL PUMP
9	9	RED	FEED TO FUEL PUMP
10	10	RED	FEED TO FUEL PUMP
11	11	RED	FEED TO FUEL PUMP
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97	97	RED	FEED TO FUEL PUMP
98	98	RED	FEED TO FUEL PUMP
99	99	RED	FEED TO FUEL PUMP
100	100	RED	FEED TO FUEL PUMP



19-75-30 L. H. DRIVE

MODELS 1953-1954 1C, 1D, 2C, 2D AND 3D FIGURE 83





MODELS 1954 4D, 5D AND 7D

## **INSTRUMENT CLUSTER AND PANEL ASSEMBLY (All Models 1948 thru 1950)**

### **REMOVAL**

1. Remove ornamental trim.
2. Remove locker box and glove compartment door bumpers.
3. Remove two screws from each end of finish panel. Screws are exposed when glove compartment and locker box doors are open. On models not equipped with locker box (left side) remove screw from inside upper edge of left section of finish panel to release hinged panel and expose screws. On earlier models three screws hold this section of the panel in place.

**NOTE: On radio equipped cars it is necessary to remove control knobs and escutcheon nuts.**

### **INSTALLATION**

Reverse procedure of removal.

## **INSTRUMENT CLUSTER AND PANEL ASSEMBLY (All Models 1951 thru 1953 Except 1C, 2C)**

### **REMOVAL**

1. Remove two nuts and washers attaching top of cluster to instrument finish panel (3/8" socket).
2. Remove two nuts and washers one at each side attaching cluster to finish panel using a 3/8" socket with a ferret handle and 6" extension.
3. Remove one nut and washer located directly above steering column tube using a 3/8" socket with a ferret handle and 6" extension.
4. Push instrument panel from rear sufficiently to allow disconnecting of the speedometer cable from speedometer head and pull the panel forward and remove the speedometer head, clock, fuel gauge and temperature gauge, headlight switch and windshield wiper control assembly.

### **INSTALLATION**

To install, reverse procedure of removal.

## **INSTRUMENT CLUSTER AND PANEL ASSEMBLY (Models 1C, 1D, 2C, 2D and 3D)**

### **REMOVAL**

1. Disconnect the negative battery cable from the battery.
2. With cars equipped with Weather Control, remove both control knobs from the heater control assembly and remove the fuse from the lead wire.
3. Remove the two bolts attaching the hand brake support bracket to the instrument panel which also attaches the heater control assembly to the instrument panel and remove the one screw at the opposite side of control.
4. Remove the heater control assembly and carefully place to one side - (leave all control cables attached).
5. Remove the ignition switch assembly from the instrument panel, (leave all wires attached).
6. Disconnect speedometer cable at speedometer.
7. Using a six inch extension on a 1/4" ratchet set, remove the six 3/8" nuts from the studs attaching the instrument cluster assembly to the instrument panel.
8. Pull the instrument cluster assembly forward sufficiently to expose the back face of the cluster assembly to allow removal of speedometer head, fuel and temperature gauge and constant voltage regulator.

### **INSTALLATION**

To install, reverse procedure of removal.

## **INSTRUMENT CLUSTER AND PANEL ASSEMBLY (Models 4D, 5D and 7D)**

### **REMOVAL**

1. Disconnect the negative battery cable from the battery.
  2. Disconnect speedometer cable at speedometer.
  3. Using a six inch extension on a 1/4" ratchet set, remove the eight 3/8" nuts from the studs attaching the instrument cluster assembly to the instrument panel.
-

4. Pull the instrument cluster assembly forward sufficiently to expose the back face of the cluster assembly to allow removal of speedometer head, clock, fuel and temperature gauge and constant voltage regulator.

### INSTALLATION

To install, reverse procedure of removal.

## **SPEEDOMETER HEAD (All Models 1948 thru 1950)**

### REMOVAL

1. Remove instrument cluster and panel assembly. See "Instrument Cluster and panel Removal".
2. Remove four screws attaching speedometer to instrument panel and remove speedometer from panel.
3. Pull the beam indicator and instrument lamps and sockets from the speedometer and unscrew the cable.

### INSTALLATION

Reverse procedure of removal.

## **SPEEDOMETER HEAD (All Models 1951 thru 1953 Except 1C, 2C)**

### REMOVAL

1. Snap out bulb and socket assembly.
2. Disconnect speedometer cable at speedometer head.
3. Remove four Phillips head machine screws and remove speedometer head as an assembly.

**NOTE: If more than one instrument has to be removed at one time, it is more practical to remove the five screws attaching the instrument cluster and panel assembly and pull the panel forward sufficiently to expose the back face of the panel. See "Instrument Cluster and Panel Removal".**

### INSTALLATION

To install, reverse procedure of removal.

## **SPEEDOMETER HEAD (Models 4D, 5D and 7D)**

### REMOVAL

1. Remove instrument cluster and panel assembly. See "Instrument Cluster and Panel Assembly Removal".
2. Snap out speedometer bulb and socket assemblies.
3. Remove the four screws attaching speedometer to instrument cluster panel and remove speedometer.

### INSTALLATION

To install, reverse procedure of removal.

## **SPEEDOMETER HEAD (All Models 1C, 1D, -2C 2D and 3D)**

### REMOVAL

1. Remove the instrument cluster assembly, follow operations 1 through 8 under "Instrument Cluster and Panel Assembly Removal".
2. Snap out speedometer bulb and socket assemblies and disconnect wire for high beam signal light.
3. Remove four screws attaching speedometer to instrument cluster panel and one small Phillips head screw attaching speedometer head to speedometer bezel and remove the speedometer.

**NOTE: It is also necessary to perform the preceeding operations to replace the speedometer lens or the headlight high beam signal bulb.**

## **CLOCK (All Models 1948 thru 1950)**

### REMOVAL

1. Remove instrument cluster and panel assembly. See "Instrument Cluster and Panel Removal".
2. Remove four screws attaching clock to instrument panel and remove clock from panel.
3. Pull the instrument lamp and socket from the clock.

4. On electric clocks, disconnect feed wire at fuse connector.

### INSTALLATION

Reverse procedure of removal.

## CLOCK (All Models 1951 thru 1953)

### REMOVAL

1. Snap out bulb and socket assembly.
2. Remove four Phillips head machine screws attaching clock to instrument cluster and remove clock assembly.

**NOTE: On cars equipped with radio, the clock can be reached by removing the radio speaker and grille and work through grille opening.**

### INSTALLATION

To install, reverse procedure of removal.

## CLOCK (Models 4D, 5D and 7D)

### REMOVAL

1. Remove instrument and cluster and panel assembly. See "Instrument Cluster and Panel Assembly Removal".
2. Remove four screws attaching clock to instrument cluster panel.
3. On electric clocks, disconnect feed wire at fuse connector and remove clock.

### INSTALLATION

Reverse procedure of removal.

## FUEL GAUGE (All Models 1948 thru 1949)

### REMOVAL

1. Remove instrument finish panel.
2. Remove four screws attaching cluster to instrument panel.
3. Remove two screws from base of gauge and disconnect wires and remove gauge.

### INSTALLATION

Reverse procedure of removal.

## FUEL GAUGE (All Models 1950)

1. Remove the two screws attaching the gauge cluster to the instrument panel and remove the gauge cluster.
2. Remove fuel gauge unit.

### INSTALLATION

Reverse procedure of removal.

## FUEL GAUGE (All Models 1951 thru 1953 Except 1C, 2C)

### REMOVAL

1. Remove the two screws attaching the gauge cluster to the instrument panel.
2. Remove fuel gauge unit.

**NOTE: To facilitate checking and testing gauge and regulator operation, remove the five nuts and washers attaching the instrument cluster to finish panel and pull panel forward, exposing the back face of the cluster and panel assembly. (See "Instrument Cluster and Panel Assembly Removal".)**

### INSTALLATION

Reverse procedure of removal.

## FUEL GAUGE (All Models 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Follow same procedure as for the "Instrument Cluster and Panel Assembly Removal"
2. Remove the two screws attaching the fuel gauge to the instrument cluster assembly, disconnect wires and remove the fuel gauge.

### INSTALLATION

To install, reverse procedure of removal.

---

## **FUEL GAUGE (Models 4D, 5D and 7D)**

### **REMOVAL**

1. Remove instrument cluster and panel assembly. See "Instrument Cluster and Panel Removal".
2. Remove the four screws attaching gauge cluster to instrument cluster panel, disconnect wires and remove fuel gauge unit.

### **INSTALLATION**

Reverse procedure of removal.

## **TEMPERATURE GAUGE (All Models 1948 thru 1949)**

1. Follow same procedure as for "Fuel Gauge Removal" and "Installation", Page 49.

## **TEMPERATURE GAUGE (All Models 1950)**

1. Follow same procedure as for "Fuel Gauge Removal" and "Installation", Page 49.

## **TEMPERATURE GAUGE (All Models 1951 thru 1953 Except 1C, 2C)**

1. Follow same procedure as for "Fuel Gauge Removal" and "Installation", Page 49.

## **TEMPERATURE GAUGE (All Models 1C, 1D, 2C, 2D and 3D)**

1. Follow same procedure as for "Fuel Gauge Removal" and "Installation", Page 49.

## **TEMPERATURE GAUGE (Models 4D, 5D and 7D)**

1. Follow same procedure as outlined under "Fuel Gauge Removal" and "Installation", Page 50.

## **CONSTANT VOLTAGE REGULATOR (All Models 1951 thru 1953)**

1. Follow same procedure as outlined under "Fuel Gauge Removal" and "Installation", Page 49.

## **CONSTANT VOLTAGE REGULATOR (All Models 1C, 1D, 2C, 2D and 3D)**

1. Follow same procedure as for "Fuel Gauge Removal" and "Installation", Page 49.

## **CONSTANT VOLTAGE REGULATOR (Models 4D, 5D and 7D)**

1. Follow same procedure as for "Fuel Gauge Removal" and "Installation", Page 50.

## **FUEL GAUGE CHECK (All Models 1948 thru 1950)**

If the fuel level gauge becomes inoperative, it is recommended that an extra tank unit be used for testing. If there is any question about the tank test unit being correct, then hook it up in series with a receiver known to be correct and 6 volts of battery current. Operate the tank unit by hand and see if the receiver reads "Zero" with tank unit float in bottom position and "Full" with tank unit float in the top position. Use two ten-foot lengths of insulated wire equipped with clip terminals at each end. These lengths will permit checking by one person in front of the dash unit.

Do not remove either the dash or tank unit from the automobile until the elimination tests outlined below prove them in need of replacement.

1. Disconnect the lead of the tank unit on the car and connect this lead to the tank test unit and ground same to the car frame. Turn on ignition switch and operate tank test unit float by hand. With the float of the test unit at the bottom position the car dash unit should register at the bottom mark on the dial as in Figure 85. Move float rod up to top position and car dash unit should move to top mark on the dial, as shown in Figure 86. Allow one minute

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for dash unit pointer to come to rest.

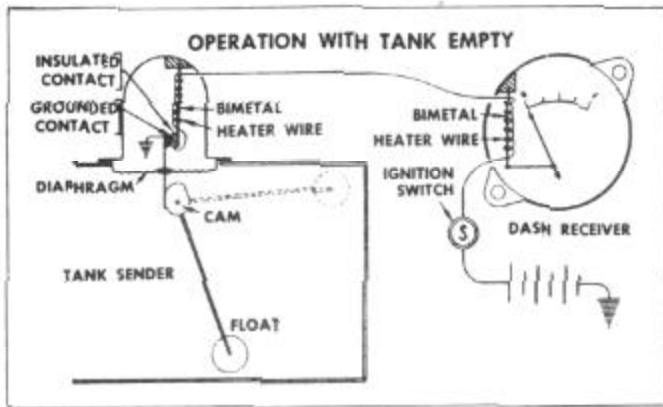


FIGURE 85

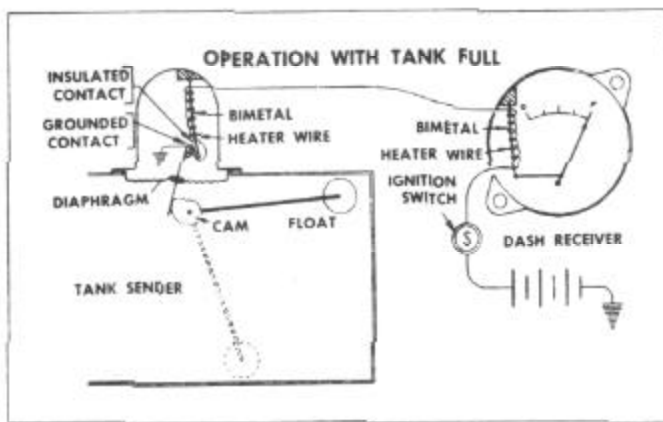


FIGURE 86

- a. The tank unit is grounded through the case. Check the ground connections. See that paint and grease are removed under the flange and that surfaces are making good contact.
- b. If the car is radio equipped, check the condenser on the tank unit. If the condenser is shorted, it will cause the dash unit to over-read. When replacing condenser it is preferable to use one of the .10 micro-farad capacity but up to .50 can be used to cut out radio interference.
- c. If the ground (see paragraph a) and condenser (see paragraph b) are correct then replace the tank unit.
2. If the dash unit does not operate, or fails to operate correctly, then check the wire lead to the dash unit and replace the wire if faulty.
3. If the wiring is satisfactory, then replace the car dash unit and check it with the tank unit on the car. If the dash unit now fails to operate when connected to car tank unit, install a new tank unit.

**CAUTION: Do not attempt the repair or calibration of any dash unit or tank unit.**

## TEMPERATURE GAUGE CHECK (All Models 1948 thru 1950)

1. It is impossible to adjust or repair either unit of the temperature gauge.
2. The method of elimination testing to determine which unit is faulty is basically the same as for the fuel gauge except that the test sending unit in this case be installed in the cylinder head when making the tests.

## CONSTANT VOLTAGE REGULATOR, FUEL AND TEMPERATURE GAUGE (All Models 1951 thru 1954)

### Method of Checking

#### VOLTAGE REGULATOR CHECK

The constant voltage regulator is common to both the fuel and temperature system, in that one regulator is used to operate both systems, Figure 87.

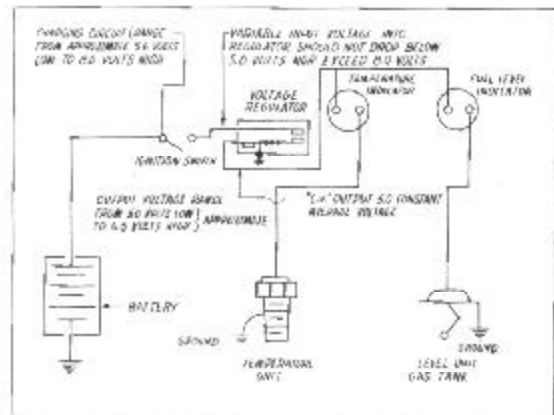


FIGURE 87

1. If both gauges read too high, for example, if the gas gauge reads up the scale with an empty gas tank and the temperature gauge reads up the scale with a cold engine, the constant voltage regulator is not working properly and should be replaced; (check ground connections of the voltage regulator, as grounding is

essential to the proper functioning of the regulator).

2. If both gauges read too low, either the input voltage to constant voltage regulator is below 5.0 volts or the voltage regulator is inoperative and should be replaced. Check battery voltage output before replacing regulator.

### FUEL GAUGE CHECK

1. Disconnect lead wire at gas tank unit.
2. Hook in a new tank unit of proper calibration. See Figure 87. Place float in empty position. Turn on ignition switch. Panel gauge should read at (E) on dial.
3. Move float to full position, panel gauge should read full (F).

**NOTE: If check 2 and 3 are O.K., both panel gauge and lead wire are O.K. If checks 2 and 3 are not O.K., hook up a new tank unit to proper terminal of panel gauge and eliminate the lead wire from the panel indicator to the unit from the regulator circuit. Repeat empty and full check. If now operating O.K., correct or replace defective wire between tank unit and panel gauge.**

### TANK UNIT CHECK

If there is any question about the tank level unit being O.K., hook the tank unit up in series with a panel indicator and a constant voltage regulator known to be O.K. and a six volt battery. Operate tank level unit by hand and see if panel indicator reads empty (E) with tank level unit float in bottom position and reads full with level unit float in top position. If the panel indicator and lead wire function properly with a new O.K. tank unit, but did not function properly with original unit, replace original unit.

**NOTE: Be sure tank unit is properly grounded to gas tank and also that the tank is grounded to the frame.**

### TEMPERATURE GAUGE CHECK

1. If the temperature gauge reads up scale with a cold engine, and the gas gauge reads up scale with an empty gas tank, the constant voltage regulator is not operating properly and should be replaced. (Check ground connections of the voltage regulator as grounding is essential to the proper functioning of the regulator.)

2. If both gauges read too low, either the input voltage to the constant voltage regulator is below 5.0 volts or the voltage regulator is inoperative and should be replaced. Check battery voltage output before replacing regulator.
3. To check cylinder block sender unit proceed as follows:
  - a. Submerge unit in water up to the hexagon shoulder.
  - b. Attach "Ohm" meter to terminal.
  - c. With water temperature at 160 F°, resistance must be 25.8-30.8 Ohms.

**NOTE: It is not advisable to attempt any repairs or adjustments to either unit of the gauge since they are factory calibrated and any attempt to repair is impractical.**

## WINDSHIELD WIPER CONTROL (All Models 1948 thru 1954)

### REMOVAL

1. Loosen screw attaching control wire to wiper motor and remove wire from motor.
2. Loosen set screw in control knob and remove knob.
3. Using a suitable spanner, remove escutcheon nut and escutcheon.
4. Remove wiper control from panel and pull control wire through dash.

### INSTALLATION

Reverse procedure of removal.

## LIGHT SWITCH AND CIRCUIT BREAKER ASSEMBLY (All Models 1948 thru 1954)

### REMOVAL

1. Disconnect negative battery cable at battery.
2. Loosen set screw in control knob and remove knob.
3. Using a suitable spanner, remove escutcheon nut and escutcheon.
4. Remove switch and remove wires from switch.

### INSTALLATION

Reverse procedure of removal. Keep battery disconnected until operation is completed.

## **STARTER SWITCH (All Models 1948 thru 1951)**

### **REMOVAL**

1. Turn ignition switch to "Off" position.
2. Remove Phillips head screw from the under side of instrument panel.
3. Remove switch and disconnect wires.

### **INSTALLATION**

Reverse procedure of removal.

## **IGNITION SWITCH (All Models 1948 thru 1951)**

### **REMOVAL**

1. Disconnect negative battery cable at the battery to prevent accidental short circuits.
2. Remove Phillips head screw from underside of instrument panel, and remove switch.
3. Remove wires from switch terminals.

### **INSTALLATION**

Reverse procedure of removal. Keep battery disconnected until operation is completed.

## **STARTER-IGNITION SWITCH (All Models 1952 thru 1954)**

### **REMOVAL**

1. Disconnect negative battery cable from battery.
2. Remove Phillips head screw from underside of instrument panel.

**NOTE: On Models 4D, 5D and 7D remove the chrome Phillips head screw on face of instrument panel.**

3. Remove switch and disconnect wires.

### **INSTALLATION**

Reverse procedure of removal.

## **WEATHER CONTROL BLOWER SWITCH (All Models 1951 thru 1954 Except 1C, 1D, 2C, 2D and 3D)**

### **REMOVAL**

1. Loosen Allen set screw in control knob and remove knob.
2. Remove escutcheon nut and pull switch through mounting panel.
3. Remove wire from switch.

### **INSTALLATION**

To install, reverse procedure of removal.

## **WEATHER CONTROL LEVER AND BRACKET ASSEMBLY (All Models 1951 thru 1954 Except 1C, 1D, 2C, 2D and 3D)**

### **REMOVAL**

1. Remove the screw attaching the weather control lever knob to the control lever.
2. Remove two screws attaching control bracket to instrument mounting bracket.
3. Remove the sheet metal screw and clamp, and disconnect the Bowden wire at the lever pin and remove the control bracket and lever as an assembly.

### **INSTALLATION**

To install, reverse procedure of removal.

## **WEATHER CONTROL ASSEMBLY (All Models 1C, 1D, 2C, 2D and 3D)**

1. Remove both heater control knobs from heater control assembly.
  2. Remove the fuse from the lead wire.
  3. Remove the two bolts attaching the hand brake bracket to the instrument panel which also attaches the heater control assembly and one screw at the opposite side of the control assembly.
  4. Remove the sheet metal screws and clamps and disconnect all Bowden wires and remove the assembly.
-



**NOTE: It is advisable to perform operations (1)-(2) and (3) when replacing Weather Control Blower Switch.**

## INSTALLATION

Reverse procedure of removal.

# INSTRUMENT PANEL TOP COVERING (All Models 1951 thru 1954)

## REMOVAL

1. Remove the rear view mirror.
2. Remove windshield garnish mouldings.
3. Remove radio speaker grille.
4. On Models IC, 1D, 2C, 2D and 3D remove radio and locker box.
5. From behind the instrument panel at the top loosen the five nuts sufficiently (do not remove) to allow instrument finish panel to be pulled forward to remove the panel top covering.
6. Remove the two side screws attaching the instrument finish panel to the instrument panel.
7. Pull covering loose by working from windshield towards instrument finish panel.

## INSTALLATION

1. Clean top of instrument panel thoroughly to insure an even surface.
2. Apply a light coat of trim cement direct to the covering.
3. Carefully install the covering to the instrument panel allowing 1/2" of fabric to overlap the instrument panel at finish panel. Where the five studs attached to the instrument finish panel enter into the instrument support panel, cut 1/4" slots in the covering to allow the material to go between the instrument finish panel and the instrument panel. With a blunt putty knife, start from center and work towards both ends of instrument panel. Trim a round end corners and tuck ends in at each end of instrument panel. Work from instrument finish panel towards grille and windshield working out all bumps and wrinkles in fabric.

**NOTE: Do not cover defroster outlets at windshield; cut and trim as required for radio speaker and defroster outlets.**

4. Install garnish mouldings, rear view mirror, radio speaker grille.
5. Replace the two side instrument finish panel screws and retighten the five nuts behind the instrument panel.

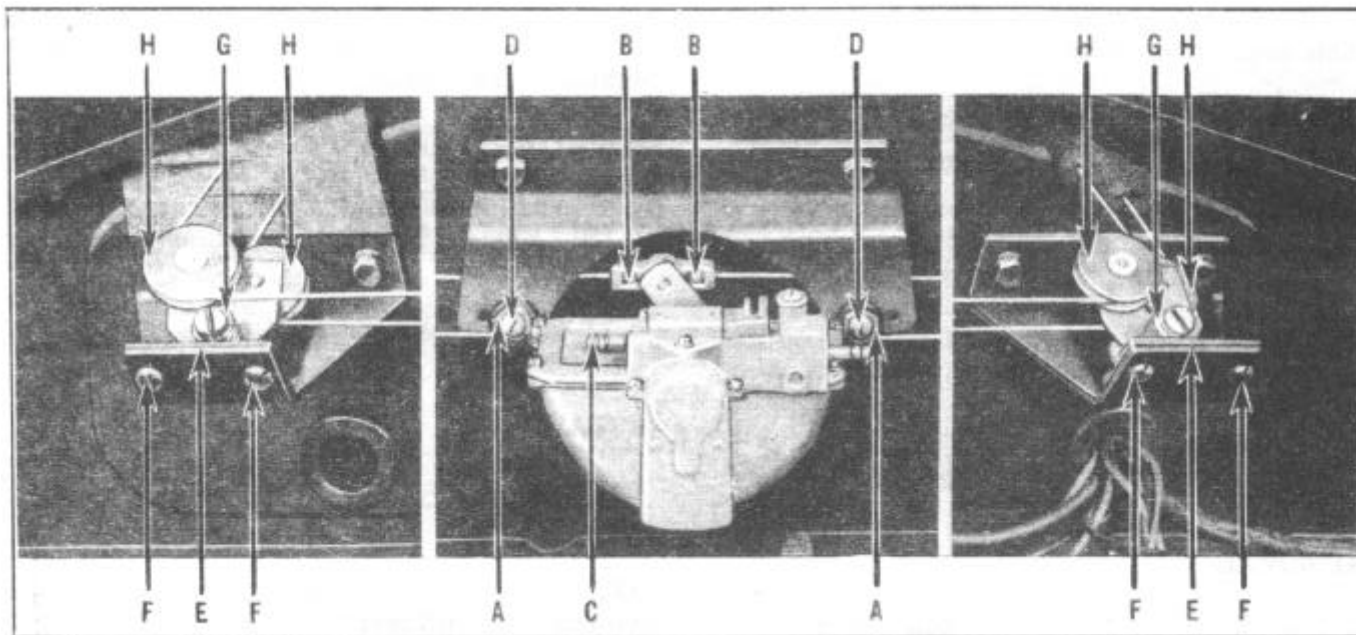


FIGURE 88

# WINDSHIELD WIPER

## (Models 1948 thru 1950)

The windshield wiper mechanism consists of a vacuum operated motor assembly, two spring loaded cable tension assemblies, two pulley housing and cable assemblies, wiper arms, blades, and cables.

## WINDSHIELD WIPER MOTOR ASSEMBLY

The windshield wiper motor assembly is mounted in the center of the dash under the hood. The motor is connected by cables to the wiper arms. A vacuum hose connects the wiper motor directly to the intake manifold or to a vacuum booster pump. The motor is controlled by a slide valve operated by a wire connected to the dash control.

### REMOVAL

1. Disconnect pulley cables from the wiper motor at (B), Figure 88.
2. Loosen retaining screw and remove control wire from slide.
3. Disconnect vacuum hose from motor at (C).
4. Remove two bolts (D) attaching wiper motor to mounting bracket and remove motor.

### INSTALLATION

Reverse procedure of removal. Adjust cable tension and wiper arm travel.

## PULLEY HOUSING AND CABLE ASSEMBLY

The windshield wiper pulley housing and cable assemblies, right and left, are inserted in the openings in the front cowl panel at the base of the windshield and are retained on the inside by a bolt and clamp. A burred bushing is provided for attachment and adjustment of the wiper arm. The small brass tube in each housing is for use with a windshield washer attachment.

### REMOVAL

1. Disconnect cables at the wiper motor and lift free of the tension assemblies.
2. Remove wiper arms and blades. The wiper arms are retained on

the burred bushings by a spring clip which is released by pulling the arm up and away from the windshield.

3. Remove the bolt and clamp from the underside of the cowl panel.

**NOTE: To remove right hand assembly, glove compartment must be removed to gain access to this bolt and clamp.**

4. Draw cables through dash to the inside of car.
5. From the outside, lift out pulley housing and cables.
6. Remove gasket.

### INSTALLATION

Reverse procedure of removal. Adjust tension and wiper arm travel.

**NOTE: Right and left pulley housing and cable assemblies differ slightly. See that small brass tube is on the inside of the assembly toward the center of the car.**

## CABLE TENSION PULLEY ASSEMBLY

Cable tension pulley assemblies (E), Figure 88, are mounted under the hood on the right and left side of the dash panel. These cable tension pulley assemblies are spring loaded to maintain approximately 14 pounds tension in the cables.

### REMOVAL

1. Disconnect cables from wiper motor at (B), Figure 88, and lift cables free from pulleys.
2. Remove two screws (F) attaching assembly to support bracket and remove assembly.

### INSTALLATION

Reverse procedure of removal and adjust cable tension.

**NOTE: Right and left cable tension pulley assemblies are different. An identification mark is stamped on the top of the plate on which the pulleys are mounted.**

## ADJUSTMENT

Windshield wiper cable tension is set at the factory but requires adjustment whenever an over-travel of the blade occurs at high speed or a reduction of travel occurs on dry or snow packed glass.

To adjust the tension, insert a 1/2" socket through the hole provided in the bracket support and loosen the nut at the bottom of the spring shaft sufficiently to free the lock-washer between the pulley base and the mounting bracket. The spring (G) will automatically move the pulleys (H) and take up any slack in the cables. Hold the pulleys in the new position and retighten the nut. If necessary after adjustment of cable tension, relocate the wiper arms on the burred bushings so that the wiper blades rest against the windshield moulding with wiper in "off" position.

## WINDSHIELD WIPER (All Models 1951 thru 1954)

**NOTE: The preceding operations under "Windshield Wiper Models 1948 thru 1950" are applicable for Models 1951 thru 1954 except for windshield wiper cable tensioner adjustment which is as follows:**

The pulley assemblies are spring loaded, Figure 89, and the cable instrument is automatic and should not require manual adjustment.

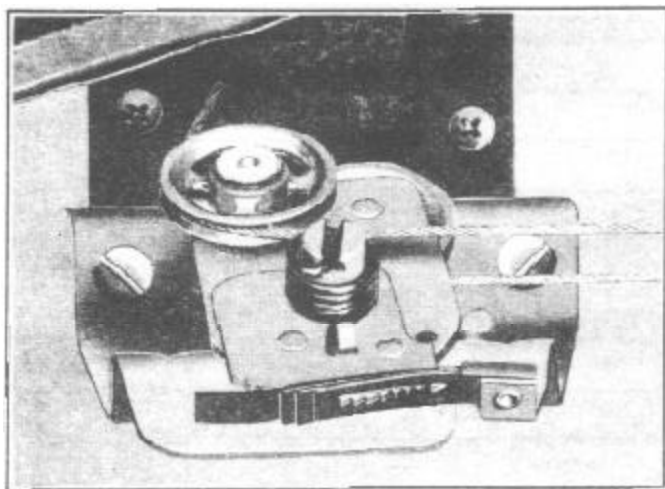


FIGURE 89

**NOTE: If the control knob is in the full "On" position and the blade speed is slow, check the tension of the cables or check for a broken or partially plugged vacuum hose. Cable tension can be increased by pushing the tensioners outward advancing the tensioner to the next notch. Lubricate the pulley bearings with light engine oil. Apply Lubri-plate to the cables. Also check to see that cables are riding free.**

## GENERAL INFORMATION ON INTERIOR APPEARANCE

### CLEANING UPHOLSTERY

There are a few items of general nature to keep in mind when cleaning upholstery fabrics.

When reference is made to cleaning fluids, use a good non-inflammable fluid in which carbon tetrachloride is the principal ingredient.

When cleaning seat cushions and seat backs use a clean cloth dampened only slightly. Do not saturate to the extent of soaking the seat pads.

In cleaning soiled areas of the headlining, do not clean against the nap. If this does happen, smooth the material while damp by rubbing with the nap with a damp cloth.

Do not push against the headlining while cleaning to the extent of bringing the material in contact with the roof silencer panels. The damp material may take further stain from the silencer panels.

### REMOVING STAINS

In using cleaning fluids, always follow the procedure that is commonly used in removing spots from clothing, that is, dampen a clean cloth with the fluid and start cleaning lightly around the outside of the spot, gradually working towards the center. This method keeps the spot from spreading and is less likely to leave a ring.

### CLEANING LEATHER

Stickiness and loss of luster on leather upholstery is due largely to the use of polishes or preparations which injure the surface finish.

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To clean the leather: Apply a damp (not wet) cloth with castile soap or a good grade of saddle soap and rub briskly. Next apply a moist cloth without soap and go over surface thoroughly. Finish by rubbing dry with a clean cloth. The gloss finish of the leather may disappear during the first application. However, it will be restored by the friction produced in polishing with a dry cloth.

Under no circumstances use furniture polishes, oils or varnishes on leather upholstery.

Use Ivory soap suds with a sponge, wipe off the suds with a second dampened sponge as the cleaning progresses. Do not use water excessively. When dry, brush with, a whisk broom.

**NOTE: RUG MATERIAL IS SET INTO A RUBBER BASE, AND THE USE OF ANY FABRIC CLEANER OR GASOLINE SERVES AS A SOLVENT WHICH WILL CAUSE THE NAP TO BE LOOSENEED AND COME OUT.**

## REFERENCE

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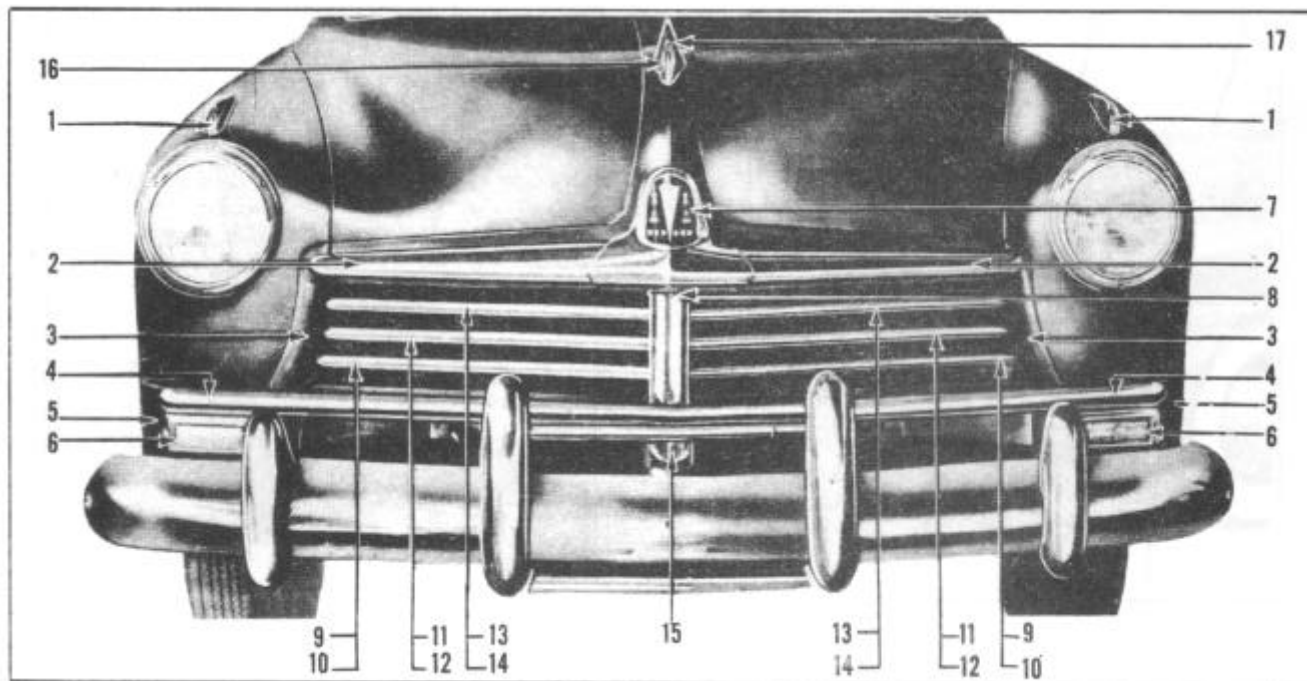


FIGURE 90

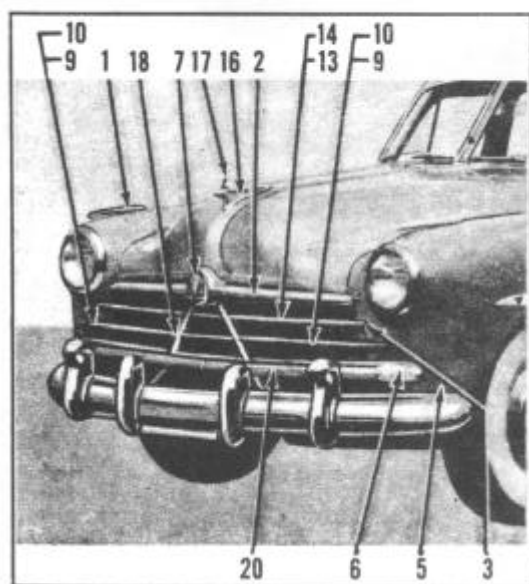


FIGURE 91

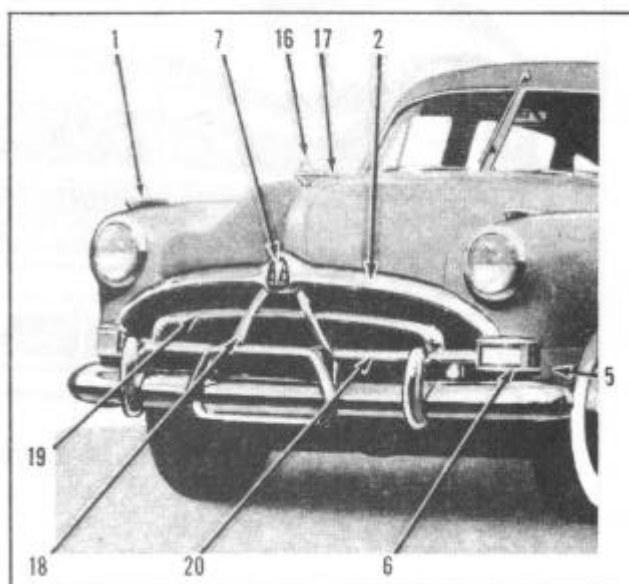


FIGURE 92

# LEGEND

1. Front fender ornament
2. Grille upper louver
3. Grille baffle side support
4. Front splash guard and moulding
5. Front fender extension assembly
6. Parking light assembly
7. Front ornament assembly
8. Grille center bar moulding
9. Grille lower moulding
10. Grille lower baffle

11. Grille center moulding
12. Grille center baffle
13. Grille upper moulding
14. Grille upper baffle
15. Grille center bar (lower)
16. Hood crest assembly
17. Hood crest ornament
18. Strut cap
19. Grille center louver
20. Grille lower louver

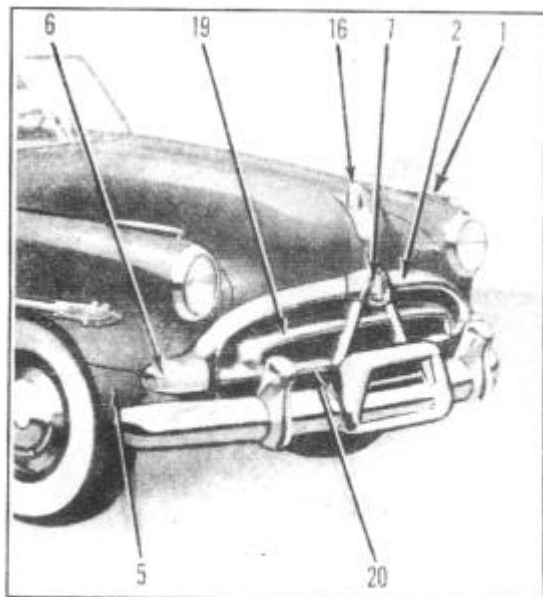


FIGURE 93

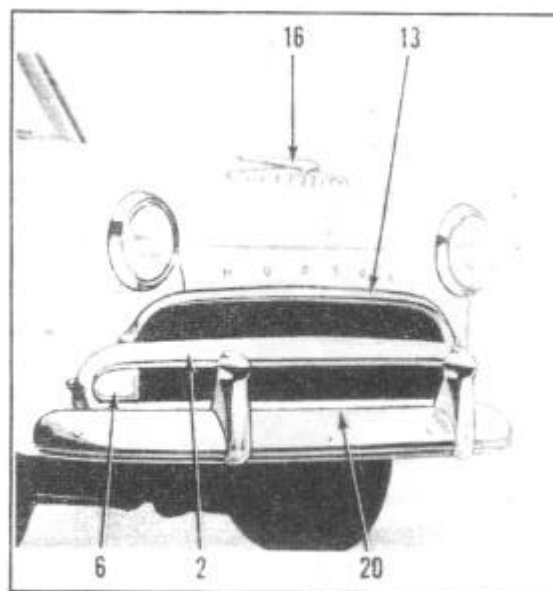


FIGURE 94

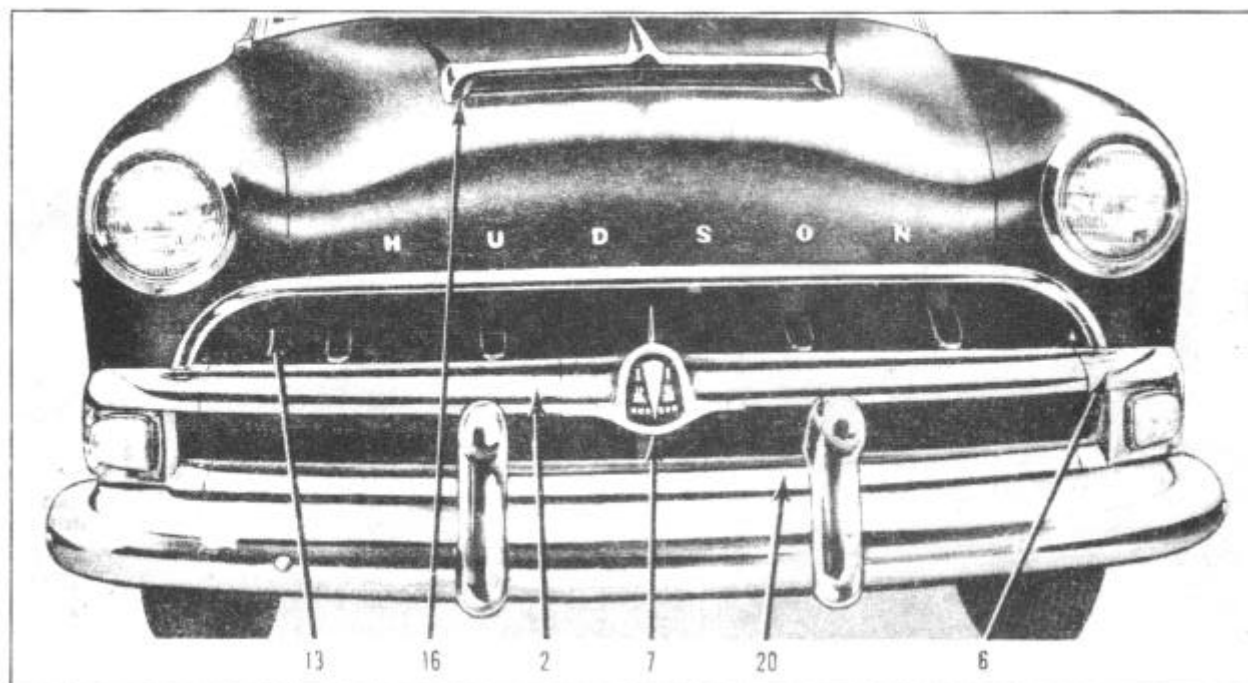


FIGURE 95

#### LEGEND

- |                                    |                               |
|------------------------------------|-------------------------------|
| 1. Front fender ornament           | 11. Grille center moulding    |
| 2. Grille upper louver             | 12. Grille center baffle      |
| 3. Grille baffle side support      | 13. Grille upper moulding     |
| 4. Front splash guard and moulding | 14. Grille upper baffle       |
| 5. Front fender extension assembly | 15. Grille center bar (lower) |
| 6. Parking light assembly          | 16. Hood crest assembly       |
| 7. Front ornament assembly         | 17. Hood crest ornament       |
| 8. Grille center bar moulding      | 18. Strut cap                 |
| 9. Grille lower moulding           | 19. Grille center louver      |
| 10. Grille lower baffle            | 20. Grille lower louver       |

## **RADIATOR GRILLE GRILLE UPPER BAFFLE (Upper Right or Left) (All Models 1948 thru 1949)**

### **REMOVAL**

1. Remove center support bar moulding (8), Figure 90.
2. Remove screw at front and rear of center bar.
3. Remove one screw from under fender and one screw at grille baffle side supports (3). Remove baffle (14) from car.

### **INSTALLATION**

Reverse procedure of removal.

## **FRONT SPLASH GUARD AND MOULDING (All Models 1948 thru 1950)**

### **REMOVAL**

1. Remove front bumper and center grille guard.
2. Remove one bolt (each side) attaching front splash guard (4), Figure 90, (center) to front fender and lower splash guard.
3. Remove two brass nuts and clips (each side) under fender attaching fender to splash guard moulding.
4. Remove bolt attaching splash guard to grille lower center bar and remove splash guard.

### **INSTALLATION**

Reverse procedure of removal.

## **GRILLE CENTER BAR (All Models 1948 thru 1949)**

1. Remove two screws and remove the center bar support moulding.
2. Remove bolts attaching grille baffles to center bar.
3. Remove two bolts attaching center bar (8), Figure 90, to fender tie panel and to front splash guard.
4. Remove center support and splash guard center plate. Remove bar from car.

### **INSTALLATION**

Reverse procedure of removal.

## **GRILLE BAFFLE SIDE SUPPORT (All Models 1948 thru 1949)**

### **REMOVAL**

1. Remove the screws attaching the radiator grille baffles to side and center support. Remove baffles.
2. Remove five bolts under fender attaching the side panel to fender.
3. Remove the three bolts, nuts, and shake-proof washers attaching the side support (3), Figure 90, to the radiator mounting channel.
4. Remove three bolts, nuts, and shake-proof washers attaching the side support to the lower front splash guard (4).
5. Remove the front splash guard and moulding and remove the side support from the car.

### **INSTALLATION**

Reverse procedure of removal.

## **GRILLE BAFFLE SIDE SUPPORT (All Models 1950)**

### **REMOVAL**

1. Remove the fender tie panel and hood lock lower support panel assembly (6), Figure 96.

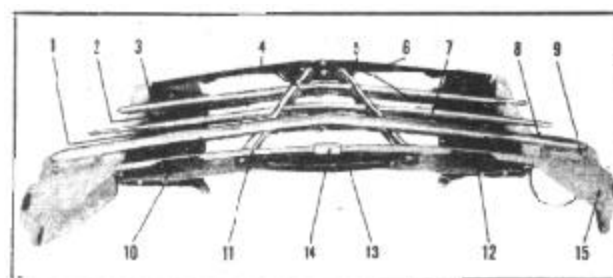


FIGURE 96

2. Remove the screws attaching the side support (3) to the front splash pan (10) and to the upper (5), center (1) and lower (8) baffles.

3. Remove screws attaching the side support (3) to fender side panel.
4. Remove the support by pulling the support up and forward.

### INSTALLATION

To install, reverse procedure of removal.

## GRILLE LOWER LOUVER (All Models 1950)

### REMOVAL

1. On the Super and Pacemaker series remove two nuts and washers each side under fender extension, Figure 96. These moulding retainer screws attach right and left side of moulding to fender front extension (15).
2. Remove one nut and washer from underside of b baffle at center of moulding and pull moulding loose from baffle.

**NOTE: On the Commodore Series, remove the nuts and washers attaching the lower louver from the lower baffle and at joint cover. Mouldings are right and left and can be removed separately.**

### INSTALLATION

To install, reverse procedure of removal, replace all broken spring retainer clips.

## GRILLE MOULDING UPPER AND INTERMEDIATE (All Models 1950)

### REMOVAL

**NOTE: The upper moulding (5), Figure 96, and the intermediate moulding (7) as well as the baffles (1), (2) and (8), can be easily removed after the fender tie panel has been removed. See "Fender Tie Panel Removal", Page 74.**

### INSTALLATION

Reverse procedure of removal.

## GRILLE DEFLECTOR AND BAFFLE SUPPORT (All Models 1951 thru 1953 Except 1C, 2C)

### REMOVAL

1. Remove the fender tie panel and hood lock lower support with upper louver and ornament as an assembly.
2. Remove screws and bolts attaching the baffle support to the front fender, fender extension, grille baffles and center and lower louvers.
3. Remove three bolts, nuts and washers attaching the baffle support to the radiator "U" channel.
4. Remove the complete grille assembly as a unit.
5. The grille deflector and baffle support can now be removed by pulling the support up and forward.

### INSTALLATION

To install, reverse procedure of removal.

## GRILLE LOUVERS AND BAFFLES ASSEMBLY (All Models 1951 thru 1953)

### REMOVAL

The center (19) and lower louvers (20), Figure 92, can be removed from the complete grille after removing the grille triangle strut moulding, on the 1953 Models the triangle strut moulding has been omitted; however, it is recommended that the fender tie panel and upper louver assembly be removed and the complete grille and louvers be removed as an assembly as follows:

1. Remove the bolts attaching the upper baffle to the deflector and baffle support right and left (3/8" socket).
  2. Remove the bolts attaching the center baffle to the deflector and baffle support right and left (3/8" socket).
  3. Remove front parking light each side.
  4. Remove two Hexagon head sheet metal screws attaching triangle strut to front splash apron brace and remove grille and baffles to bench for disassembly.
-



**INSTALLATION**

To install, reverse procedure of removal. Install all bolts before tightening to ensure proper grille alignment.

## **GRILLE UPPER LOUVER (All Models 1951 thru 1953 Except 1C, 2C)**

**REMOVAL**

Follow same procedure as for the "Fender Tie Panel Removal", Page 74, and remove the ornament assembly (held by three screws) and right or left hand louver held by four Hexagon head sheet metal screw (3/8" socket).

**INSTALLATION**

To install, reverse procedure of removal, installing all screws before tightening to ensure alignment.

## **GRILLE ORNAMENT ASSEMBLY (All Models 1948 thru 1950)**

**REMOVAL**

1. Raise hood and snap out socket and bulb.
2. Remove the two bolts attaching the ornament to hood assembly.
3. Remove the two bolts attaching ornament to the grille upper louver, and remove the ornament assembly.

**INSTALLATION**

To install, reverse procedure of removal.

## **GRILLE ORNAMENT ASSEMBLY (All Models 1951 thru 1953 Except 1C, 2C)**

**REMOVAL**

1. Remove two screws attaching the front ornament to the fender tie panel (3/8" socket)
2. Remove two screws, washer and retainers attaching the ornament to the grille upper louver (3/8" socket).
3. Remove one Phillips head screw attaching the ornament to the ornament support.
4. Pull ornament forward and snap out socket and bulb.

## **PARKING LIGHT ASSEMBLY (All Models 1951 thru 1953)**

**REMOVAL**

1. Remove three nuts, shakeproof and flat washers attaching the parking lamp to fender and fender extension.
2. Pull lamp forward and snap out bulb and socket connector.

**INSTALLATION**

Reverse procedure of removal.

## **RADIATOR MOUNTING "U" CHANNEL (All Models 1948 thru 1953 Except 1C, 2C)**

**REMOVAL**

1. Drain radiator and disconnect hoses.
2. Remove two sheet metal screws attaching deflector shield to fender tie panel.
3. Remove headlight junction blocks, leave wire attached.
4. Remove two attaching bolts (each side) from radiator mounting channel to fender.
5. Remove attaching bolts from mounting channel to fender tie panel.
6. Remove the bolt attaching the bottom of mounting channel to frame front crossmember. Remove channel and radiator core as on assembly.

**INSTALLATION**

Reverse procedure of removal.

## **GRILLE UPPER MOULDING (Models 1C, 1D, 2C, 2D and 3D)**

**REMOVAL**

1. The upper grille moulding (13), Figure 94, can be replaced without removing any other part of the grille.
2. From underneath the front fenders, remove two nuts (each side) attaching the upper grille moulding to the fenders.
3. Raise the hood and remove the six Hexagon sheet metal screws attaching grille moulding to grille structure and remove the upper grille moulding.

**INSTALLATION**

To install, reverse procedure of removal, attaching all screws before tightening to facilitate installation.

## **GRILLE UPPER LOUVER (Models 1C, 1D, 2C, 2D and 3D)**

**REMOVAL**

1. From underneath front fender (either right or left side) remove the two nuts attaching upper grille moulding to front fender.
2. Raise the hood and remove three of the hexagon head sheet metal screws attaching the upper grille moulding to grille structure.
3. Pull upper grille moulding out approximately 2" (Do not bend) and remove the one screw that is hidden behind the upper grille moulding, Figure 97. (This screw attaches the parking light ornament assembly to the front fender.)

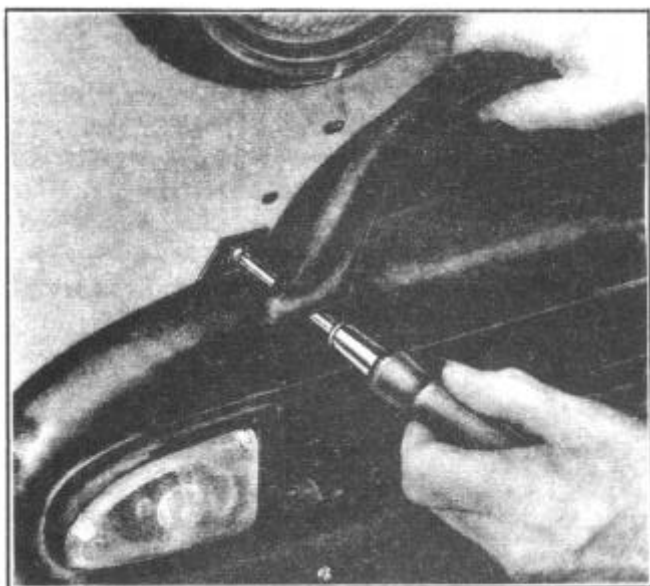


FIGURE 97

4. Remove the five small sheet metal screws attaching the parking light ornament assembly to the upper and lower grille louvers.
5. From underneath the front fender, remove the three nuts attaching the parking light ornament assembly to the front fender and the one nut attaching the ornament tab to the fender.

6. Snap out bulb and remove the parking light and ornament assembly.
7. From the opposite side remove the two small sheet metal screws attaching upper grille louver to the parking light ornament assembly.
8. Remove the four hexagon head sheet metal screws attaching upper grille louver to center of grille structure and remove the upper grille louver.

**INSTALLATION**

Reverse procedure of removal.

**NOTE: Install the four hexagon head sheet metal screws attaching upper grille louver to grille structure first, but do not tighten until all the other screws have been installed.**

## **GRILLE LOWER LOUVER (Models 1C, 1D, 2C, 2D and 3D)**

**REMOVAL**

1. Perform operations (1), (2), (3), (4), (5) and (6) under "Grille Upper Louver Removal" and from the opposite side, remove the three small sheet metal screws attaching the lower grille louver to the parking light ornament assembly.
2. Remove the nine sheet metal screws attaching the lower grille louver to the lower baffle of the grille structure and remove the lower grille louver.

**INSTALLATION**

Reverse procedure of removal, installing all screws before tightening.

## **GRILLE STRUCTURE ASSEMBLY (Models 1C 1D, 2C, 2D and 3D)**

**REMOVAL**

1. Remove the upper grille moulding.
2. Remove either parking light and ornament assembly.
3. Remove upper and lower grille louvers.
4. Remove the seven screws attaching the lower hood lock mounting plate to the upper section of grille structure and remove the lock plate.
5. Remove the three bolts and nuts on each side attaching the grille structure to the front fenders.

6. Remove the four sheet metal screws on each side attaching the grille structure to the radiator mounting channel.
7. From either side, slightly pry out the grille structure assembly from under the lip of the front fender and remove the grille structure assembly.

### INSTALLATION

To install, reverse procedure of removal. Install all bolts and screws before tightening to ensure proper grille structure alignment.

## PARKING LIGHT ORNAMENT OR LENS

(Models 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. From underneath front fender, remove the two nuts attaching upper grille moulding to front fender.
2. Raise the hood and remove three of the hexagon head sheet metal screws attaching upper grille moulding to grille structure.
3. Pull upper grille moulding out approximately 2" (Do Not Bend) and remove the one screw hidden behind the upper grille moulding attaching the parking light ornament to the front fender. See Figure 97.
4. Remove the five small sheet metal screws attaching the parking light ornament assembly to the upper and lower grille louvers.
5. From underneath the front fender, remove the three nuts attaching the parking light ornament to the front fender and the one nut attaching the ornament tab to fender.
6. Snap out bulb and remove the parking lamp and ornament assembly.

**NOTE: To remove the parking light lens, remove two nuts attaching parking light socket body and the three screws attaching parking light lens.**

### INSTALLATION

To install, reverse procedure of removal.

## RADIATOR MOUNTING "U" CHANNEL

(Models 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Drain cooling system and remove radiator hoses.
2. Remove the two screws attaching the wire connectors at each side of radiator mounting channel (leave wires attached).
3. Remove the hood lock support with lower hook lock attached.
4. Remove the two sheet metal screws attaching radiator mounting channel to upper section of grille structure and three sheet metal screws on each side between upper and lower grille louvers.
5. From under each front fender, remove two hexagon head sheet metal screws attaching fender dust shields to the radiator mounting channel.
6. Remove the bolt attaching the radiator mounting channel to the front frame bracket and remove radiator mounting channel and radiator core as an assembly.

### INSTALLATION

To install, reverse procedure of removal.

## PARKING LIGHT ORNAMENT OR LENS

(Models 4D, 5D and 7D)

### REMOVAL

1. From underneath front fender, remove two nuts attaching parking light ornament to front fender and snap out the bulb and socket assembly.
2. Remove the four metal screws attaching the parking light ornament assembly to the upper and lower grille louvers.
3. Remove two screws from underneath the parking light ornament extension attaching the parking light ornament assembly and remove the parking light assembly.

**NOTE: To remove the parking light lens, remove two nuts attaching parking light socket body and three screws attaching parking light lens.**

### INSTALLATION

To install, reverse procedure of removal.

## **GRILLE UPPER MOULDING** **(Models 4D, 5D and 7D)**

### **REMOVAL**

1. Remove right and left parking light ornament assemblies, perform operations (1), (2), (3) and (4) under "Parking Light Ornament Removal".
2. Raise the hood and remove the six hexagon sheet metal screws attaching upper grille moulding to grille structure and two metal screws at each end attaching the moulding to the front fender.
3. From underneath both front fenders remove the two nuts attaching upper grille moulding to the fenders and remove the moulding.

### **INSTALLATION**

Reverse procedure of removal.

## **GRILLE UPPER LOUVER** **RIGHT OR LEFT** **(Models 4D, 5D and 7D)**

### **REMOVAL**

1. Remove parking light ornament assembly, follow operations (1), (2), (3) and (4) under "Parking Light Ornament Removal".
2. From underneath front fender remove one sheet metal screw attaching upper louver to grille structure.
3. At the front, remove one sheet metal screw from upper louver support and one metal screw attaching right and left louvers together
4. Snap out bulb and socket from grille center ornament and remove the two bolts attaching the ornament to the right and left grille upper louvers and remove the grille louver.

### **INSTALLATION**

Reverse procedure of removal, installing all screws before tightening.

## **GRILLE LOWER LOUVER** **(Models 4D, 5D and 7D)**

### **REMOVAL**

1. Remove parking light ornament assembly, perform operations (1), (2), (3) and (4) under "Parking Light Ornament Removal".
2. From the opposite side remove the two sheet metal screws attaching the lower grille louver to the parking light ornament assembly.
3. Remove the seven sheet metal screws attaching the lower grille louver to the Lower baffle of the grille structure and remove the lower grille louver.

### **INSTALLATION**

Reverse procedure of removal, install all screws before tightening.

## **GRILLE STRUCTURE ASSEMBLY** **(Models 4D, 5D and 7D)**

### **REMOVAL**

1. Remove right and left parking light ornament assemblies, "See Parking Light Ornament Removal".
2. Remove upper grille moulding.
3. Remove upper and lower grille louvers.
4. Remove the seven sheet metal screws attaching the lower hood lock support to the upper section of the grille structure and remove the lock support.
5. Remove sheet metal screws (two each side) attaching the grille structure to the front fenders.
6. Remove three sheet metal screws each side attaching grille structure to radiator mounting channel.
7. Remove the bolt and nut (one each side), coming in from radiator channel to underside of front fender.
8. From either side, slightly pry out the grille structure assembly from under the lip of the front fender and remove the grille structure.

### **INSTALLATION**

Reverse procedure of removal. Install all bolts, nuts and screws before tightening to ensure proper grille structure alignment.

---

## RADIATOR MOUNTING CHANNEL (Models 4D, 5D and 7D)

1. Drain cooling system and remove radiator hoses.
2. Remove wire connectors at each side of radiator mounting channel (leave wires attached).
3. Remove the hood lock support with lower hood lock attached.
4. Remove the two sheet metal screws attaching radiator mounting channel to upper section of grille structure and three sheet metal screws on each side between upper and

lower grille louvers.

5. From under each front fender, remove two hexagon head sheet metal screws attaching fender dust shields to the radiator mounting channel.
6. Remove the bolt attaching the radiator mounting channel to the front frame bracket and remove radiator mounting channel and radiator core as an assembly.

## INSTALLATION

To install, reverse procedure of removal.

## REFERENCE

[illegible]

## ENGINE HOOD

### (All Models 1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

#### REMOVAL

1. Raise hood and place prop under front of hood.
2. Remove two hood prop bolts (2), Figure 98, (one on each side). Hood props (3) remain attached to fender side dust shields (11), on models so equipped.
3. Remove the two hood hinge bolts, (7 and 8), from each side at rear of hood.
4. With a helper, remove hood from car.

#### INSTALLATION

Reverse procedure of removal and adjust at hood hinge bolts.

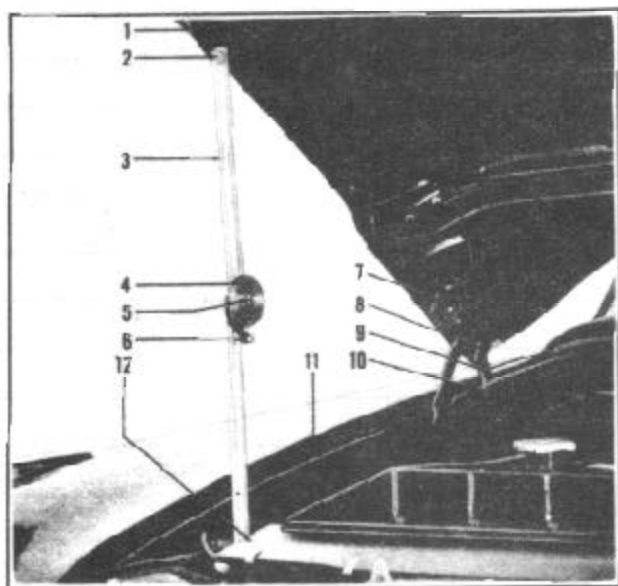


FIGURE 98

## HOOD ADJUSTMENT

### (All Models 1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

1. Loosen the two bolts, (9 and 10), Figure 98, which attach the hood hinge to the cowl just enough to allow for backward or forward movement.
2. Loosen screws (7 and 8) attaching hinge arm to hood, (each side).

**NOTE:** Forward and backward adjustments and up and down adjustments can now be made at the rear of the hood. Up or down adjustments at the front of the hood can be made by raising or lowering the three rubber bumpers mounted on the front fender tie panel and adjusting the spring retainer bolt mounted on the hood lock upper support.

3. After all adjustments have been made, tighten all bolts and locknuts securely.

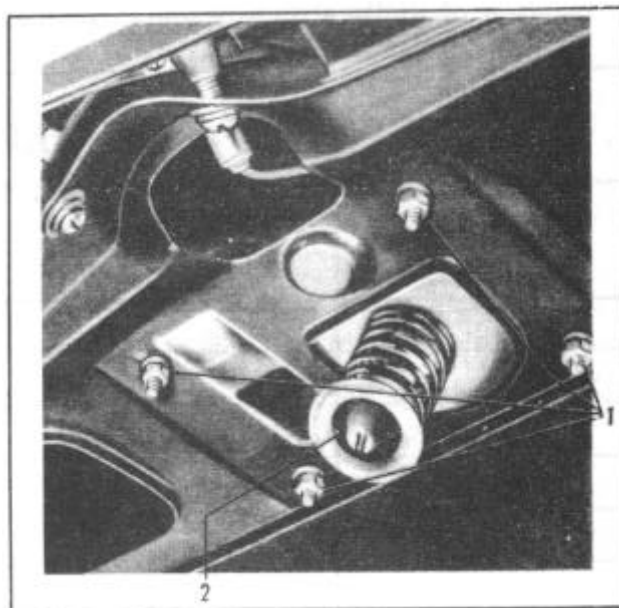


FIGURE 99

## HOOD LOCK UPPER SUPPORT (All Models 1948 thru 1950)

### REMOVAL

1. With a screwdriver remove the spring retainer bolt (2) from the attaching nut and remove retainer and spring, Figure 99.
2. Remove the four attaching nuts and washers (1) from lock support plate.
3. Remove the two sheet metal screws from bracket at rear of assembly and slide assembly to one side and remove.

#### INSTALLATION

Reverse procedure of removal. Adjust locking spring by turning slotted retainer assembly to left or right.

## HOOD LOCK LOWER SUPPORT (All Models 1948 thru 1950)

### REMOVAL

1. Disconnect hood lock control wire.
2. Remove 4 bolts attaching hood lock lower support to fender tie panel and remove lower support from car, Figure 100.

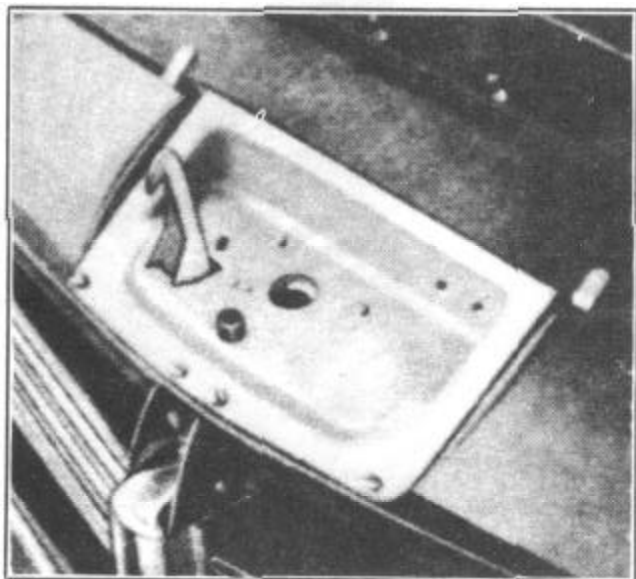


FIGURE 100

### INSTALLATION

Reverse procedure of removal. Lock hood control wire securely and apply water resistant grease to hood lock release catch.

## HOOD LOCK UPPER SUPPORT (All Models 1951 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Remove four bolts, nuts and washers attaching the support to the hood and remove the support plate with retainer and spring as an assembly.

### INSTALLATION

To install, reverse procedure of removal and adjust the retainer locking spring by turning the slotted retainer to the right or left as required.

## HOOD LOCK LOWER SUPPORT (All Models 1951 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Remove screw and clip (A), Figure 101.
2. Disconnect hood lock release wire at retainer (B).

**CAUTION:** Straighten turned up portion of hood lock wire carefully to avoid breaking the wire.

3. Remove the four hood lock lower support attaching bolts and remove support plate as an assembly.

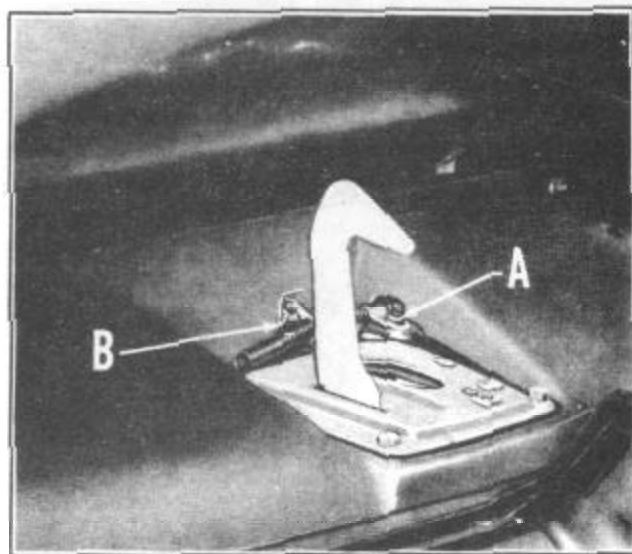


FIGURE 101

### INSTALLATION

To install, reverse procedure of removal and be sure hood lock handle is in the full released position before connecting hood release wire.

## ENGINE HOOD (All Models 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Raise the hood assembly.

**NOTE:** Mark the original position of the hood hinges before removing hood assembly to facilitate installation.

- Remove the bolts (A), Figure 102, (two each side) attaching the hood to the hood hinges and with the assistance of a helper, remove hood from car.

### INSTALLATION

Reverse procedure of removal and adjust as necessary.

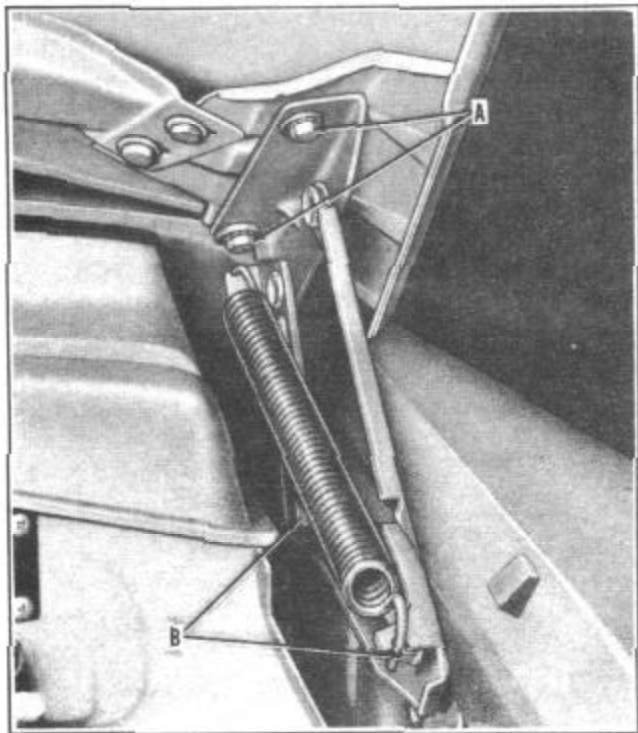


FIGURE 102

### HOOD ADJUSTMENT (All Models 1C, 1D, 2C, 2D and 3D)

- Loosen bolts (A), figure 102, (two each side) attaching the hood to the hood hinge; this will allow forward and backward adjustment.
- The up and down adjustment at the rear of the hood can be obtained by loosening the bolts (B) attaching hood hinge to the fender assembly. Loosen the bolts about 1/2 turn. Move hinge up or down a small amount each time until desired position is obtained. Tighten bolts securely each time before lowering hood.
- The up and down adjustment at the front of the hood can be made by loosening the hood lock plunger nut at (A), Figure 103, and with a screw driver turn lock plunger (B) clockwise to decrease and counter-clockwise to increase.

After adjustments are made, tighten plunger lock nut securely.

### HOOD LOCK - UPPER (All Models 1C, 1D, 2C, 2D and 3D)

#### REMOVAL

- Remove the three bolts (C), Figure 103, attaching hood lock to hood support and move hood lock.

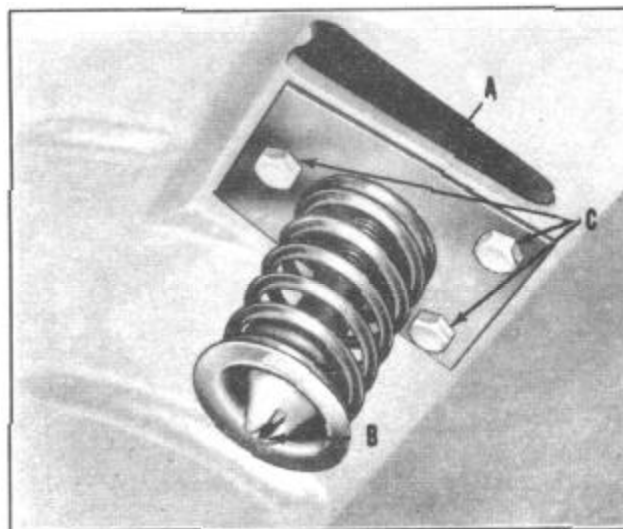


FIGURE 103

#### INSTALLATION

Reverse procedure of removal and adjust as necessary.

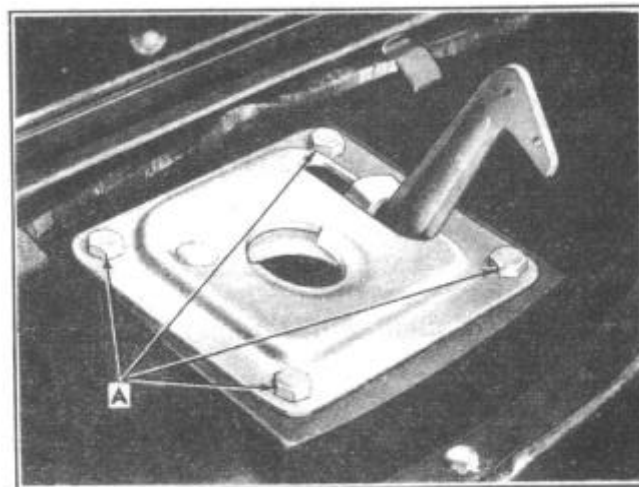


FIGURE 104



**HOOD LOCK - LOWER**  
(All Models 1C, 1D, 2C, 2D and 3D)

## REMOVAL

1. Remove the four bolts (A), Figure 104, attaching lower hood lock to lower hood lock support and remove the lock.

## INSTALLATION

Reverse procedure of removal.

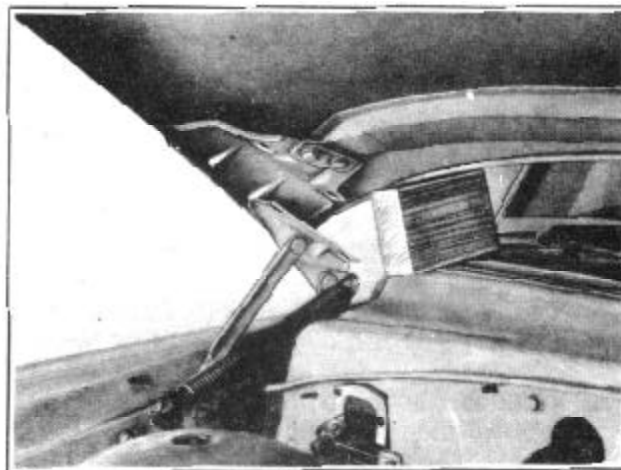


FIGURE 105

**HOOD HINGE**  
(All Models 1C, 1D, 2C, 2D and 3D)

## REMOVAL

1. Raise the hood, place a block of wood between hood and cowl panel to support the hood when the hood hinge bolts are removed, Figure 105. It is advisable to mark the original position of the hood hinge before removing to facilitate the installation of the new hinge.

2. Remove the two bolts attaching the hood hinge to the fender and the two bolts of the hood and remove the hood hinge assembly.

## INSTALLATION

Reverse procedure of removal and check hood adjustment.

## REFERENCE

[illegible]

## FRONT FENDER (All Models 1948 thru 1950)

### REMOVAL

1. Raise hood and disconnect headlight wires at junction block on radiator support.
2. Remove headlight rim (3 Phillips head screws) and remove the headlight housing (4 screws).
3. Remove the attaching bolts from the fender and side dust shield.
4. Remove two bolts attaching fender tie panel and hood lock lower support to fender.
5. Remove the upper hood prop bolt and allow hood prop to be removed with fender side dust shield. Support hood during this operation.
6. Raise car and remove front wheel.
7. Remove 3 bolts attaching fender to radiator baffle side shield.
8. Remove 3 bolts attaching fender to lower radiator splash guard.

**NOTE: Front fender front extension is spot welded to the fender and will have to be removed with the fender.**

9. Remove moulding and 4 self-tapping screws attaching fender and moulding clips to front rocker panel.
10. Remove kick pad in the front seat compartment at the dash panel.
11. Remove the screw attaching the door opening belt weatherstrip to fender and front cowl panel.
12. Remove the 4 bolts from behind the kick pad which attach the fender to the dash panel and front hinge pillar.
13. Lift off front fender.
14. Remove all trim and useable parts from damaged fender and install on new fender.

### INSTALLATION

1. With help of an assistant, align fender at cowl panel and attach screws at kick panel opening and front door hinge pillar.
2. Attach fender to radiator baffle side shield, fender side dust shield, and radiator splash guard.
3. Reverse procedure of removal on balance of installation.

NOTE: Reseal fender at cowl panel and at belt moulding with dolphinite sealer No. 2465. If necessary to replace the weatherstrip, proceed as follows:

- A. Apply a coating of rubber cement to the surfaces of the front pillar face and the belt weatherstrip.
- B. Press weatherstrip into position then insert and tighten attaching screws.

## FRONT FENDER (All Models 1951 thru 1953 Except 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Raise the hood and disconnect the headlight wires at junction block located on radiator support channel.
2. Remove the headlight rim held by one Phillip's head screw on the Pacemaker and three screws on all other models.
3. Remove the "Sealed Beam" unit.
4. Remove the five bolts attaching the front fender to the side dust shield.
5. Remove two bolts at the fender tie panel.
6. Raise car and remove the front wheel.
7. Remove four screws, nuts and washers attaching fender to radiator grille deflector and baffle support.
8. Remove three bolts attaching front fender to radiator grille deflector and baffle support.
9. Remove two sheet metal screws from under fender. These screws hold upper louver to fender; also remove three nuts and washers that attach the parking light base to the front fender and pull light away slightly to clear the fender, also disconnect wire and socket from parking lamp by snapping socket out of holder.
10. Remove four screws, nuts and washers attaching front fender extension to the front fender.
11. Remove three bolts attaching radiator grille upper louver to the front fender.
12. Remove moulding and four self-tapping screws attaching fender and moulding clip to front rocker panel.
13. Carefully remove the kick pad at the dash panel, right or left hand side as required, and remove the three screws attaching the front fender to the front door hinge pillar.

14. Remove the one bolt attaching the front fender to the cowl panel at joint of cowl panel and fender (with front door open) and lift off fender carefully.
15. Salvage all parts that can be re-used and install these parts on the new fender.

## INSTALLATION

With the help of an assistant, align fender at cowl panel and attach screws at kick panel opening and front door hinge pillar.

Reverse procedure of removal on balance of installation.

### NOTE: Reseal fender at cowl panel as follow:

- A. Apply a bead of Dolphinite Sealer to the top or outside joint of fender and front end panel flange shown as (1), Figure 106. Apply sealer carefully and wipe away excess sealer with a clean cloth. If after wiping, the sealer leaves a poor paint appearance, touch up with body color after allowing sealer to set for fifteen minutes.

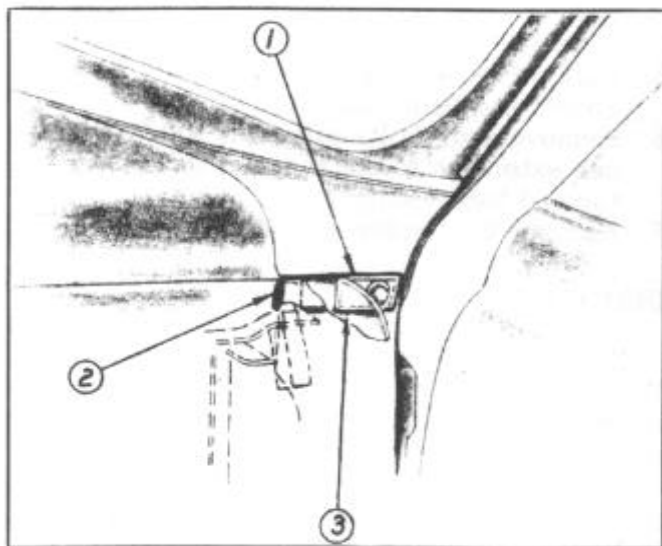


FIGURE 106

- B. With the front door open, press a strip of Body Caulking to the joint of fender flange and cowl side panel shown as (3) to form a seal tight between the front fender filler and door opening weatherseal.
- C. Open the hood and apply a bead of Permagum sealer to the exposed joint of fender and cowl panel shown as (2), Figure 106.

## FRONT FENDER (Models 4D, 5D and 7D)

### REMOVAL

1. Raise the hood and disconnect the head lamp wires at junction block (located on radiator support channel).
2. Remove headlamp ring (one Phillips head screw).
3. Remove the four screws attaching headlamp assembly and remove headlamp as a unit.
4. Remove parking light ornament assembly "See Parking Light Ornament Removal" Page 64.
5. From underneath fender remove the two nuts attaching upper grille moulding to front fender, remove the six sheet metal screws attaching upper grille moulding to the grille structure and one screw at lower end of the moulding.

### NOTE: It is not necessary to completely remove the upper grille moulding.

6. Slightly pull back upper grille moulding and remove two bolts and nuts attaching front fender to grille structure.
7. Remove the seven sheet metal screws attaching the fender to the fender side shield.
8. Remove the two self tapping screws at front, attaching the fender to the grille structure.
9. From inside of car, carefully snap out kick pad at the side of dash panel and remove the three bolts attaching the front fender to the front pillar assembly and the one bolt to cowl panel.
10. At the rear underside of the front fender, remove the two bolts attaching fender to body and remove fender.

### INSTALLATION

1. Transfer all useable parts to new fender.
2. With the aid of an assistant, align fender at cowl panel and attach bolts at front pillar.
3. Attach fender to side dust shield and to grille structure.
4. Reverse procedure of removal on balance of installation.

NOTE: Reseal fender at cowl panel and focus headlights.

## FRONT FENDER (Models 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Raise the hood and disconnect the headlamp wires at junction block (located on radiator support channel).
2. Remove headlamp ring (one Phillips head screw).
3. Remove the four screws attaching headlamp assembly and remove headlamp and "Sealed Beam" unit.
4. From underneath the fender remove two nuts and washers attaching grille upper moulding to fender and the three screws attaching the upper grille moulding to the grille structure.
5. Remove five screws (Phillips) attaching the parking lamp ornament to the upper and lower grille louvers.
6. From underneath the front fender remove the three bolts and nuts attaching the fender to grille structure and snap out parking lamp socket and bulb assembly.
7. Place a block of wood between rear of hood and cowl panel to support hood, see Figure 105, and remove the two screws attaching hood hinge support to hood.
8. Remove the five self tapping screws attaching the fender to the fender side shield.
9. From in side of car, carefully snap out kick pad at the side of dash panel and remove the three bolts attaching the front fender to the front pillar assembly and the one bolt to cowl panel.
10. At the rear underside of front fender, remove the two bolts attaching fender to body and remove fender.

### INSTALLATION

1. With the aid of an assistant, align fender at cowl panel and attach screws at door hinge pillar opening.
2. Attach fender to side dust shield and grille structure.
3. Reverse procedure of removal on balance of installation.

**NOTE: Reseal fender at cowl panel and focus headlights.**

## FRONT FENDER EXTENSION (Models 1948 thru 1950)

**NOTE: The front fender extension is spot welded to the front fender. It is recommended to remove the front fender to facilitate replacement. The fender extension can be purchased separate as a service item as required.**

## FRONT FENDER EXTENSION (Models 1951 thru 1953 Except 1C and 2C)

### REMOVAL

1. Raise car and remove the front wheel.
2. Remove two bolts, nuts and washers attaching front fender extension to the front fender.
3. Remove one bolt, nut and washer attaching extension to front splash apron.
4. Remove three nuts, lockwashers and flat washers attaching the parking lamp to the front fender and extension.
5. Pull parking light forward and snap out socket and bulb connector at rear of lamp.
6. Remove four bolts attaching the front fender extension to the radiator grille deflector and baffle support.
7. Remove the fender extension.

### INSTALLATION

To install, reverse procedure of removal. Clean the fender extension thoroughly; seal seam between fender and fender extension with body caulking.

## FRONT FENDER EXTENSION (Models 4D, 5D and 7D)

### REMOVAL

1. Remove parking light ornament assembly. See "Parking Light Ornament Removal", Page 64.
2. Remove the two bolts and nuts attaching parking light ornament extension to the fender extension.
3. Remove the three bolts and nuts attaching the fender extension to the fender and remove the fender extension.

**INSTALLATION**

Reverse procedure of removal. Seal the seam between fender and fender extension with body caulking.

## **FRONT FENDER STONE GUARD AND PANEL ASSEMBLY (All Models 1948 thru 1954)**

**REMOVAL**

1. Remove four bolts attaching stone guard and panel to front quarter dash panel under the fender, two bolts under rubber pad, and one located to the left of hood hinge.
2. Remove three Phillips head screws and speed nuts at dust shield extension rubber shield.
3. Remove the panel and stone guard.

**INSTALLATION**

Reverse procedure of removal.

## **FRONT FENDER TIE PANEL (Models 1948 thru 1950)**

**REMOVAL**

1. Raise hood and disconnect hood lock control wire.
2. Remove two bolts (each side) attaching fender tie panel and hood lock support to fender bracket.
3. Remove two bolts attaching the fender tie panel and hood lock support to radiator mounding channel.
4. Remove two bolts attaching fender tie panel to the front fender skirt.
5. Removing one bolt attaching hood lock support to radiator grille center support and remove the support assembly from the car.

**INSTALLATION**

Reverse procedure of removal.

## **FRONT FENDER TIE PANEL (Models 1951 thru 1953 Except 1C and 2C)**

**REMOVAL**

The fender tie panel should be removed with the upper louvers and ornament as an assembly as follows:

1. Raise the hood and remove four screws (two each side) attaching the fender tie panel to the front fender (1/2" socket).
2. Disconnect the hood lock control wire on models so equipped.
3. Remove two screws attaching the tie panel to the radiator "U" support channel.
4. Remove two screws attaching the tie panel to the grille deflector and baffle support (3/8" socket).
5. Remove four hexagon head sheet metal screws (two each side) from under the front fender attaching the upper louver to the fender, (3/8" socket).
6. Disconnect the ornament socket and bulb and the hood lock control wire and remove the fender tie panel with the upper louvers and ornament to the bench for disassembly.

**INSTALLATION**

To install, reverse procedure of removal and adjust the hood lock lower support for proper hood closing.

## **REAR FENDER (Model 1948 thru 1953 Except 1C and 2C)**

**REMOVAL**

1. Remove rear wheel cover and rod assembly.
2. Remove rear seat cushion and remove the end section of the rear seat back from same side from which fender is to be removed.
3. Remove rear quarter window garnish moulding and the valance reveal moulding.
4. Remove rear quarter inside trim panel.
5. Remove three Phillips head screws and two self tapping screws at door pillar post

**NOTE: On Broughams and Coupes it is necessary to remove the rear quarter window to allow removal of the three fender attaching screws located behind the glass. See "Quarter Window Glass Removal, Page 35.**

6. Remove 7 screws inside rear compartment which fasten fender to rear quarter panel.
7. Remove rear bumper extension at side.
8. Pry off fender panel lower moulding.
9. Remove the two self tapping screws attaching rear fender panel and moulding retainers to the rocker panel.
10. Remove the seven bolts and nuts attaching the fender panel and moulding retainers to the rocker panel.
11. Lift off rear fender. See Figure 107.

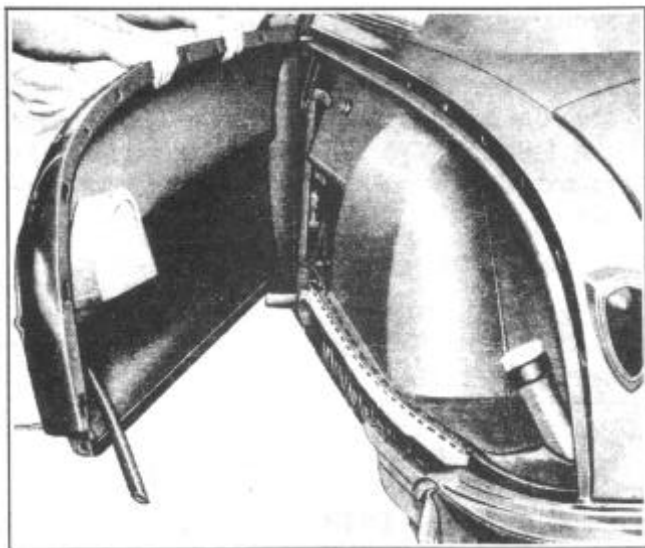


FIGURE 107

## INSTALLATION

**NOTE: Before installing rear fender apply a bead of Permagum No. 576 Sealer, starting from base of rear door hinge pillar and crossing quarter panel flange to frame at rear and to area at 2 as shown in Figure 108. Care must be taken to assure that the bead of sealer is unbroken and does not cross any fender attaching bolt holes.**

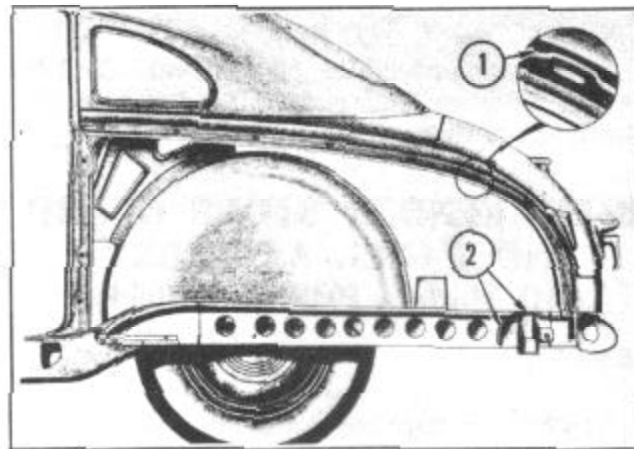


FIGURE 108

1. Align fender at door hinge pillar and install attaching screws. **DO NOT TIGHTEN.**
2. Attach all upper bolts at quarter panel flange before attaching fender to rocker panel. **DO NOT TIGHTEN.**

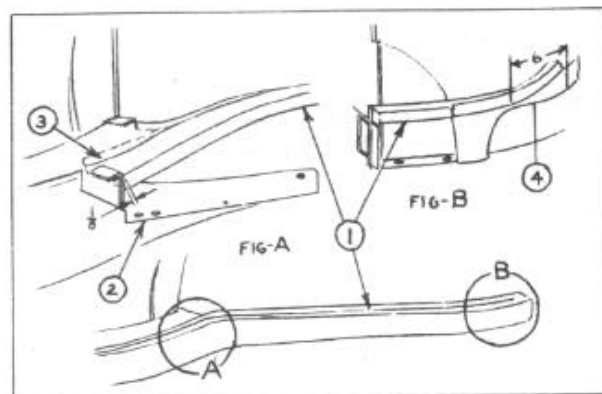


FIGURE 109

3. Install rear fender seal flush with frame flange, raising the front end 1/8" to interfere with rocker panel filler, Figure 109, No. 1 and No. 2. Cement seal tightly and allow approximately 6" from the end of the seal to remain loose until the fender is completely installed, No. 4, Figure 109. Then cement seal securely to frame flange, No. 3, and fender. **TIGHTEN ALL ATTACHING BOLTS AND SCREWS SECURELY.**

## REAR COMPARTMENT DOOR (All Models 1948 thru 1954)

### REMOVAL

1. Raise compartment door.
2. Remove the bolts on each side attaching the compartment door to the hinge upper bracket.
3. With the aid of a helper, remove compartment door.
4. If the original compartment door is to be installed, it is advisable to mark the position of the hinges on the compartment door to facilitate installation.

### INSTALLATION

Reverse procedure of removal.

## REAR COMPARTMENT DOOR HANDLE AND LOCK ASSEMBLY (All Models 1948 thru 1950)

### REMOVAL

1. Raise compartment door and remove lock-nut and lock-washer from lock handle and remove handle.
2. To remove the lock cylinder from the handle, insert the compartment door key into the lock cylinder, then turn key one-quarter turn clockwise. With key in this position, press the release pin down with a piece of wire to release the lock cylinder from the compartment door handle and remove the cylinder.

### INSTALLATION

To install, reverse procedure of removal.

## REAR COMPARTMENT DOOR LOCK (All Models 1948 thru 1950)

### ADJUSTMENT

A condition in which the rear compartment door may be opened even though the handle is locked or inability to unlock the door, may be attributed to the door latch operating lever and linkage assembly.

Should the door open in the locked position, this indicates that the right latch link is too short and is bent in a manner to shorten the link. Also the stop "A", Figure 110, may be cut back 1/8" to allow more rotation of the lever.

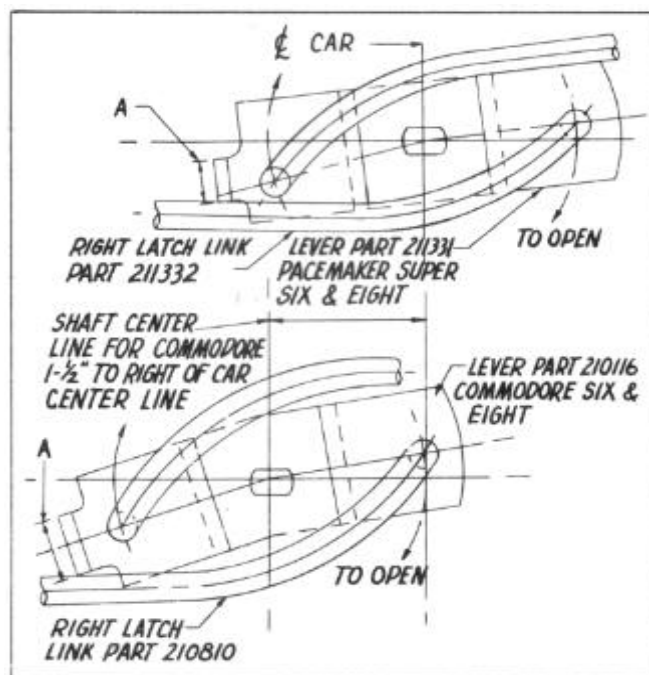


FIGURE 110

If the handle cannot be unlocked, this indicates that the right latch link is too long permitting excessive travel of the lever. This may be corrected by putting a reverse bend in the

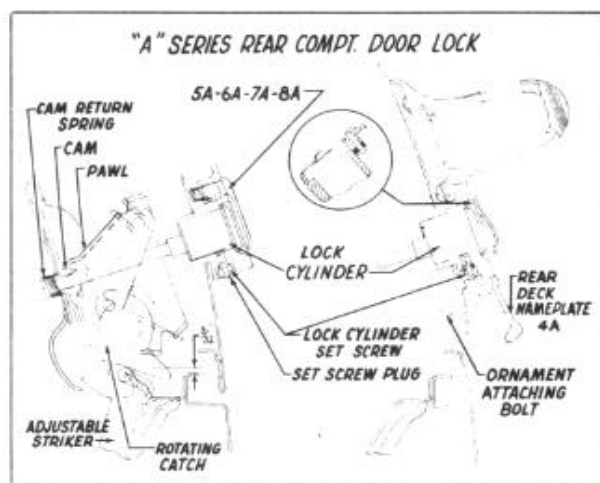


FIGURE 111

right hand link to bring the bend into closer engagement with the stop of the operating lever.

When in proper adjustment the rear deck handle should have approximately 1/4" spring back from the full closed position with the handle unlocked.

## REAR COMPARTMENT DOOR LOCK CYLINDER (All Models 1951)

### REMOVAL

1. Raise compartment door and remove the name plate for the 4A Series cars. On all other models the lock cylinder may be removed as outlined in paragraphs 2,3 and 4.
2. Use a small center punch to spot center position for 1/16" drill and drill out drive screw, Figure 111. The drive screw has an over-all length of 1/4".
3. When the drive screw has been removed the lock cylinder retaining set screw can be removed with a 3/32" Allen wrench.
4. Remove lock cylinder.

**NOTE: If it is necessary to replace the door lock cylinder cover, refer to the insert, Figure 111, covering the 4A Series installation and the arrow indicating the 5A, 6A, 7A and 8A Series installation.**

### INSTALLATION

To install, reverse procedure of removal. Always install a drive screw to close the opening in set screw.

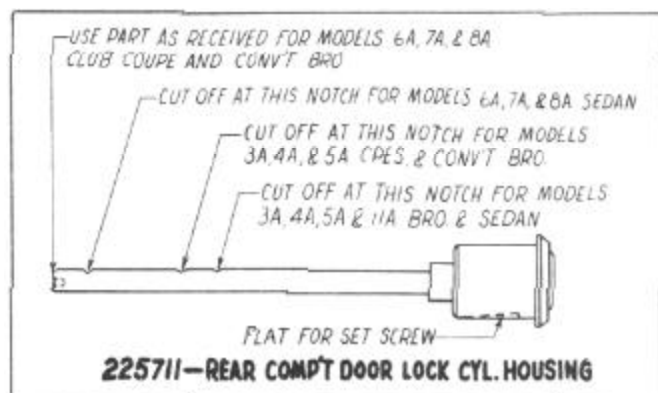


FIGURE 112

**NOTE: Figure 112, shows the service lock cylinder which is interchangeable on all "A" Series Models. These service**

have a long shank to cover all models and must be reworked as illustrated for the different models.

## REAR COMPARTMENT DOOR LOCK (All Models 1951)

### REMOVAL

1. Remove rear compartment door name plate (4A only).
2. Remove rear compartment door license lamp with lock cylinder as an assembly. (4A only.) On Models 5A, 6A, 7A and 8A, remove the ornament and door lock cylinder as an assembly.
3. Remove two Phillips head sheet metal screws and two 1/4-28" x 1/2" screws attaching the rear compartment door lock cover to compartment door (7/16" socket).
4. Remove one bolt, shakeproof and flat washer attaching lock to compartment door reinforcement and remove lock.

### INSTALLATION

To install, reverse procedure of removal, and check door lock striker adjustment.

## REAR COMPARTMENT DOOR LOCK CYLINDER (All Models 1952 thru 1954 Except 1C, 2C, 1D, 2D and 3D)

### REMOVAL

1. Raise compartment door and remove the bolts attaching the name plate and lock cylinder.
2. Remove the retaining clip attaching the lock cylinder to the name plate and remove lock cylinder.

### INSTALLATION

To install, reverse procedure of removal.

## REAR COMPARTMENT DOOR LOCK (All Models 1952 thru 1954)

### REMOVAL

1. Remove compartment door lock cylinder (See "Compartment Door Lock Cylinder Removal").



2. Remove two screws attaching compartment door lock cover to compartment door.
3. Remove one bolt attaching lock to compartment door reinforcement and remove lock.

### INSTALLATION

To install, reverse procedure of removal and check door lock striker adjustment.

## REAR COMPARTMENT DOOR LOCK CYLINDER (All Models 1C, 1D, 2C, 2D and 3D)

### REMOVAL

1. Raise compartment door.
2. Through opening between compartment door and compartment door reinforcement remove lock cylinder housing retainer (spring clip).
3. Remove lock cylinder assembly.

### INSTALLATION

To install, reverse procedure of removal.

## REAR COMPARTMENT DOOR (All Models 1948 thru 1954)

### ADJUSTMENT

1. Adjustment is accomplished by loosening the upper support hinge bolts, this will allow the compartment door to be shifted forward or toward the rear or side to side.
2. Loosening the body hinge support bolts will allow the compartment door to be raised or lowered.
3. Adjust compartment door lock striker if necessary.

## REAR COMPARTMENT DOOR STRIKER (All Models 1951 thru 1954)

### ADJUSTMENT

1. The rear compartment door should lock by slight hand pressure.
2. To adjust, loosen the two screws, then raise or lower the

striker in the elongated holes. Raising the striker upward causes the door to close with less pressure and lowering the striker causes the door to close more tightly.

3. Tighten both screws securely after making adjustment.

**NOTE: The striker is positioned properly when the top of the striker is 3/32" above the top of the channel on the rear compartment panel, Figure 111.**

## REAR COMPARTMENT DOOR HINGE (RIGHT OR LEFT) (All Models 1948 thru 1954)

### REMOVAL

1. Raise compartment door.
2. Mark original position at both attaching places before removing hinge to facilitate installation.
3. Place a block of wood between compartment door and rear roof panel to hold compartment door in position.
4. Remove the attaching bolts from upper hinge bracket to compartment door and the bolts attaching the lower hinge bracket to body reinforcement.
5. Remove the hinge assembly.

### INSTALLATION

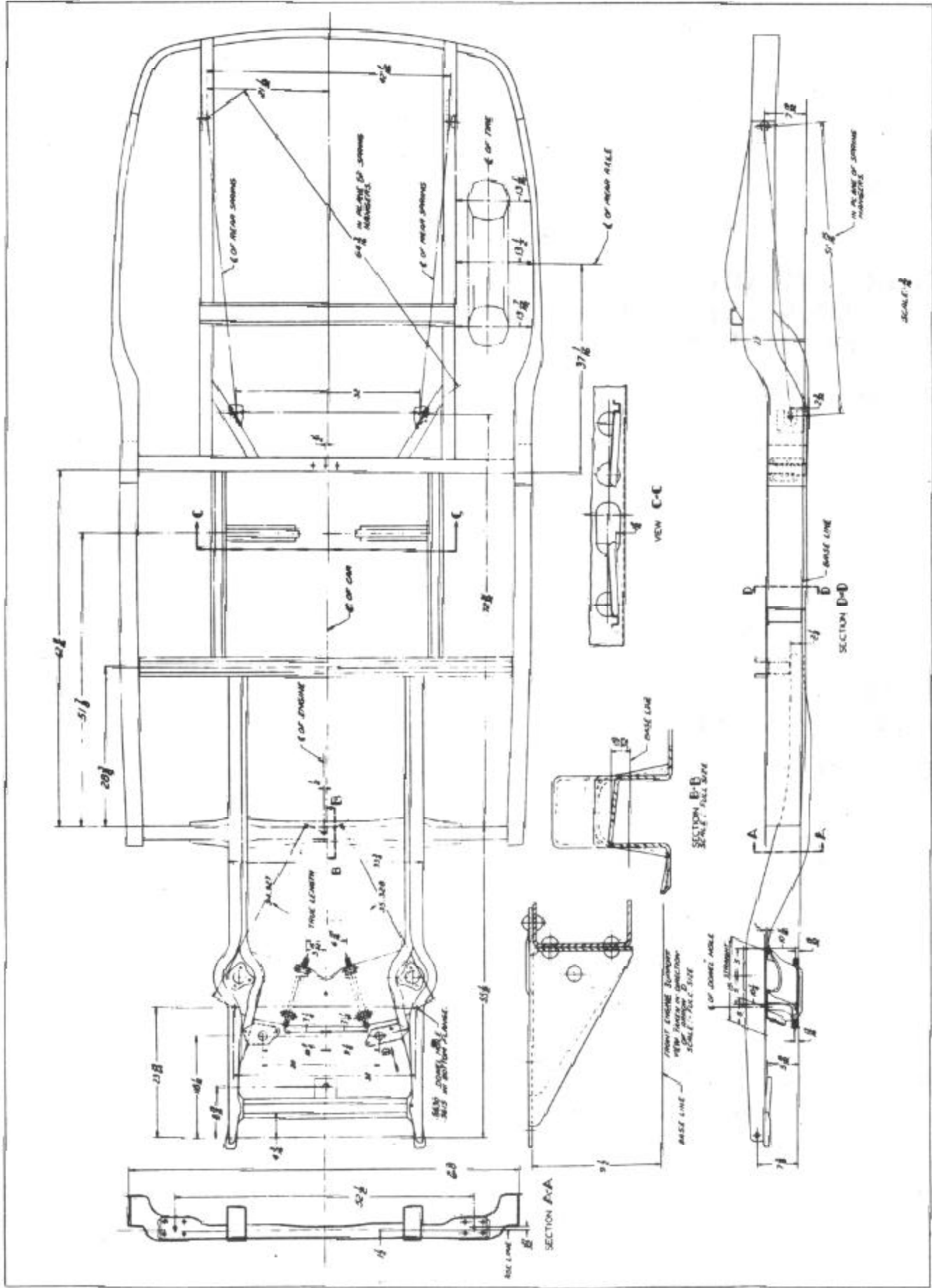
To install, reverse procedure of removal and check adjustment.

## REAR COMPARTMENT DOOR WEATHERSTRIP (All Models 1948 thru 1954)

### INSTALLATION

1. Prior to installation, make sure all surfaces to be cemented are clean.
2. With a brush, coat both the cementing surface of the rubber weatherstrip and the corresponding surface with a light coat of weatherstrip adhesive.
3. Position weatherstrip and working across the bottom and up each side, press the weatherstrip firmly into position.

**NOTE: Allow sufficient time for drying before closing compartment door.**



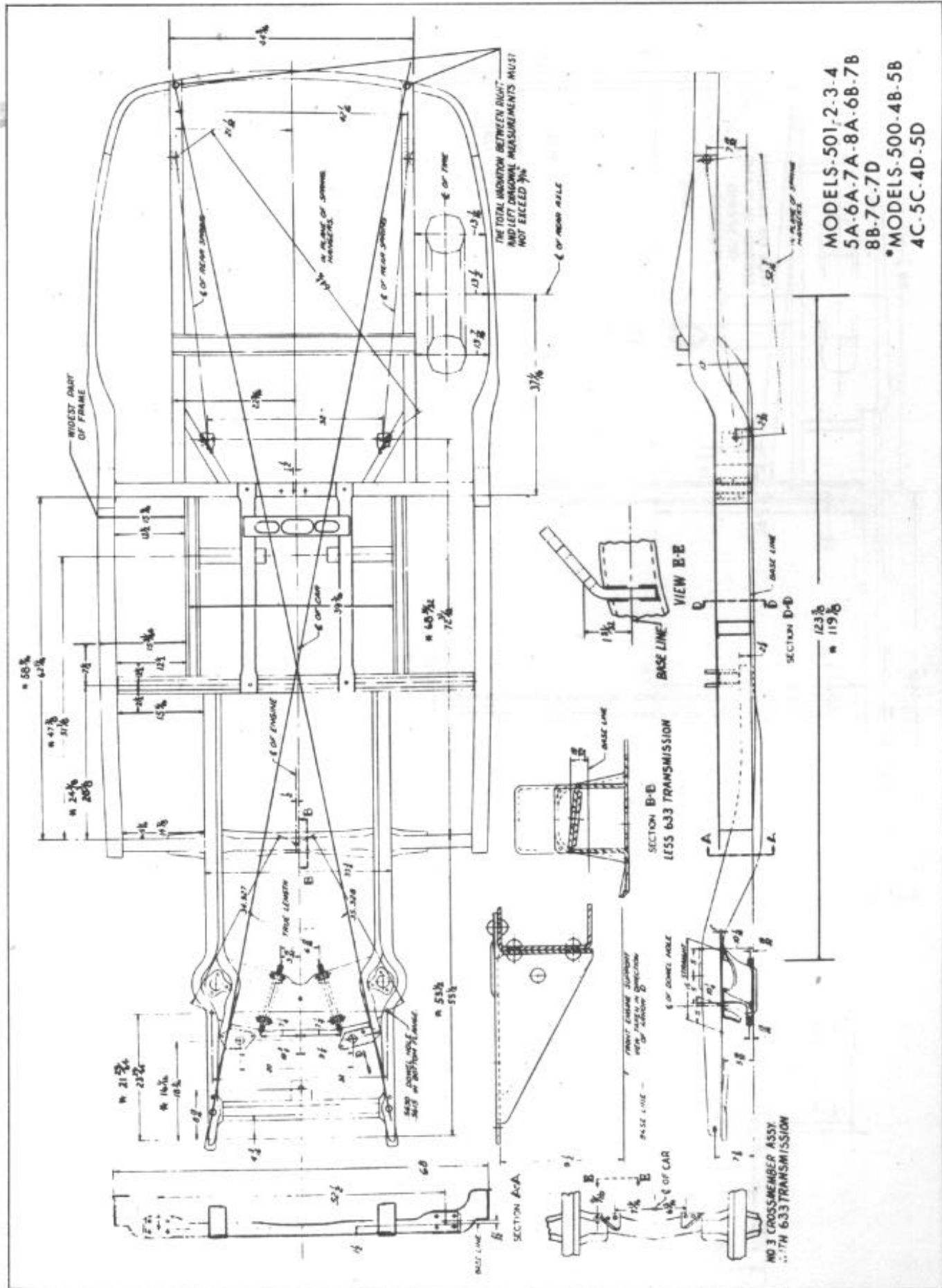


FIGURE 114

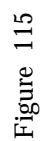


Figure 115

## FRAME AND BODY ALIGNMENT (All Models 1948 thru 1954)

### FRAME ALIGNMENT

The frames of all Models 1948 thru 1954 are similar in design although there are differences in dimensions due to wheelbases and changes in other details as covered in Figures 113, 114 and 115.

To check the frame for any misalignment, determine the model and refer to the correct frame dimensional illustration. The various dimensions shown may be used as a guide in checking alignment and covers only the more important diagonal measurements that should be checked; however, many more diagonal measurements may be made in the same manner.

Diagonal measurements should be taken when straightening the frame, and the measurements from similar points on the right and left side should be equal. These measurements make an excellent check for any out-of-square condition and misalignment and will quickly determine which section of the frame is bent and where pressure should be applied to restore correct alignment.

One method of checking is by the use of tram gauges.

When using tram gauges, keep the cross bar level to insure accuracy when making all measurements.

Another method is by using a "plumb bob": To insure accuracy, the car should be on a level floor and the points measured should be transferred accurately from the frame to the floor, then the distances between chalk marks on the floor may be easily measured.

After the frame has been straightened, the side rails and members should be closely inspected. If cracks appear these members should be reinforced or replaced.

If it is necessary to weld-in a new frame section, localize the heat in order to retain the original steel hardness. All welding should be done with arc welding equipment.

## DOOR STRAIGHTENING (All Models 1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

A door header rail that is found to be too low can be pulled up by gripping it with a clamp and raising with a jack harnessed to pull. The flange is raised and any collapsed box section of the inner panel is opened in one operation.

A twist in the door is corrected by blocking it open at the point where the door touches the body opening first in a closed position and forcing inward on that part of the door that is farthest from the body opening. When a door has too low a crown from top to bottom, the crown may be increased by using a door straightener.

## DOOR TO BODY ALIGNMENT (All Models 1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

Proper door alignment prolongs the life of the door locks, striker plates, check arms, and hinges and assures ease of door operation.

If the door does not properly contact the weatherstrips at the door header weatherstrip, door opening weatherstrip and/or the door bottom weatherstrip proceed to adjust the door as follows:

1. Examine all weatherstrips to make sure they are firmly and evenly attached to doors and door openings.
2. If door is away from the pillar at the lock side of door, move the striker plate inward according to instructions on Pages
3. A door that is out of alignment at the top or bottom may be adjusted by loosening the screws attaching the hinge to the hinge pillar and moving the hinges in or out as required. (Replace any shakeproof washers damaged in the adjustment process.)
4. Further adjustment at the lock side of the door may be made by placing a small block of wood or a rubber mallet against the top or bottom of the door opening and closing the door on the block. This will spring the door out slightly where it bears against the block. It may be necessary to close the door against the block several times while pressing firmly on part of the door that must be sprung inward.

5. Door flanges may be adjusted inward by hammering with a rubber mallet. It is advisable to protect paint surfaces with masking tape before hammering.

6. In severe cases of door misalignment it may be necessary to bend or straighten the hinge, using a suitable hinge bending tool.

**NOTE: Be sure hinge attaching screws are tight before applying the hinge bending tool.**

To raise the door at the lock pillar, bend the top hinge outward; to lower the door, bend hinge inward.

7. Re-adjust striker plate upon completion of door adjustment.

## CHECKING BODY DOOR OPENINGS (All Models 1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

Check the front door openings first, measure back 7" from the front hinge pillar (A), Figure 116, on the underbody panel and mark this point as indicated.

Place one end of the rule on this 7" mark and measure upward to 12", and 24" and 34" on the front hinge pillar. Use a chalk for marking and mark accurately. Mark these points B, C and D.

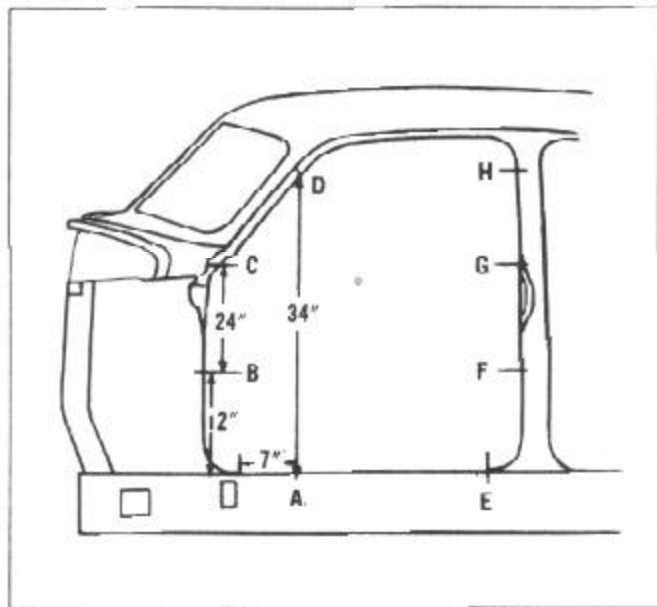


FIGURE 116

Measure 12", 24" and 34" upwards on the lock pillar starting from the bottom of the pillar where it is welded to the underbody sill (E), Figure 116.

Mark these points F, G and H.

Repeat the measurements on the opposite door.

An actual rectangle is thus laid out that will check the body opening of any door. The use of the body checking tram at these fixed points will give a true indication of door and body alignment.

Refer to paragraphs on vertical, horizontal and diagonal measurements for full details of checking body door openings and body squaring up.

## BODY ALIGNING AND TRAMMING (All Models 1948 thru 1954)

### MEASURING

The measurements required for squaring up operations are vertical, diagonal, and horizontal, Figure 117. The measurements taken on one side of the body should check with the measurements taken between identical points on the opposite side of the body.

When differences are found in each of the vertical, diagonal, and horizontal measurements in the relation of one side of the body to the other between identical points, the exact position of any misalignment is readily indicated. It can then be easily determined in what position the body jack or jacks should be placed to produce the proper results. All measurements may be taken and checked with a body checking tram. The tram is of telescopic construction that permits adjustment to the desired length. A convenient thumb screw is used to lock the tram exactly on the marks and in the position at which the first or opposite measurement was taken.

### VERTICAL MEASUREMENTS

Vertical measurements should be made first, Figure 118. They are taken from the top of the body floor at the sill upward the same distance on each of the front, center, and rear quarter panel body pillars -- on both sides of the body. Chalk should be used to mark the sill and the body pillars at the exact points where the measurements were taken. Depending on the type and

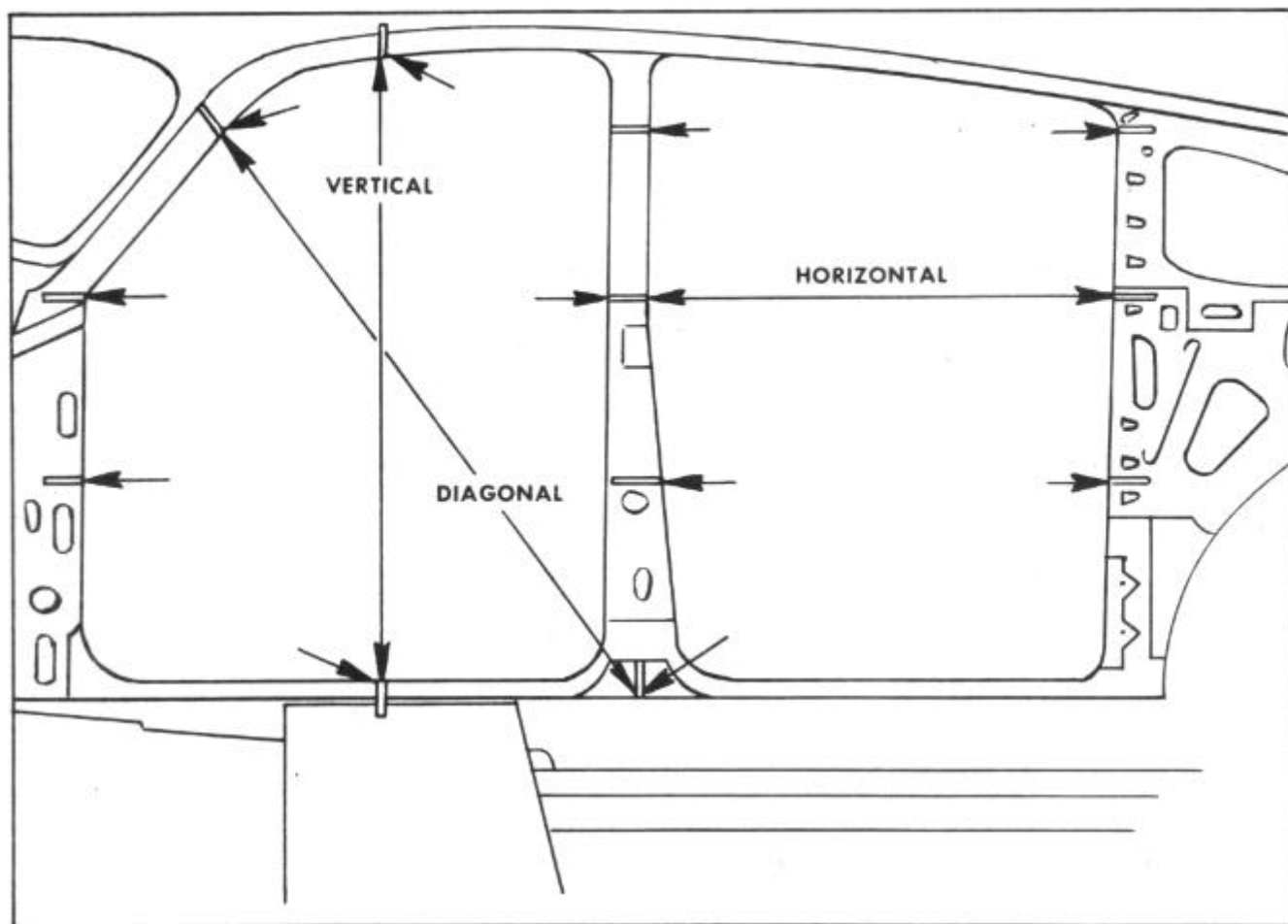


FIGURE 117

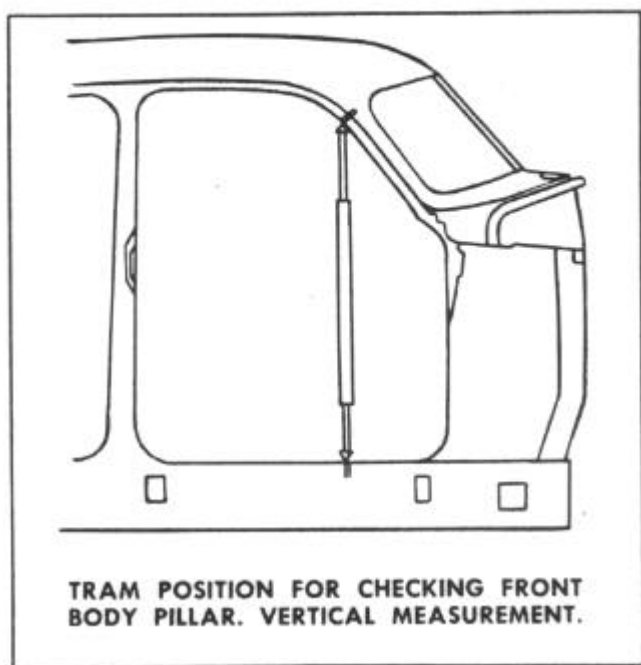


FIGURE 118

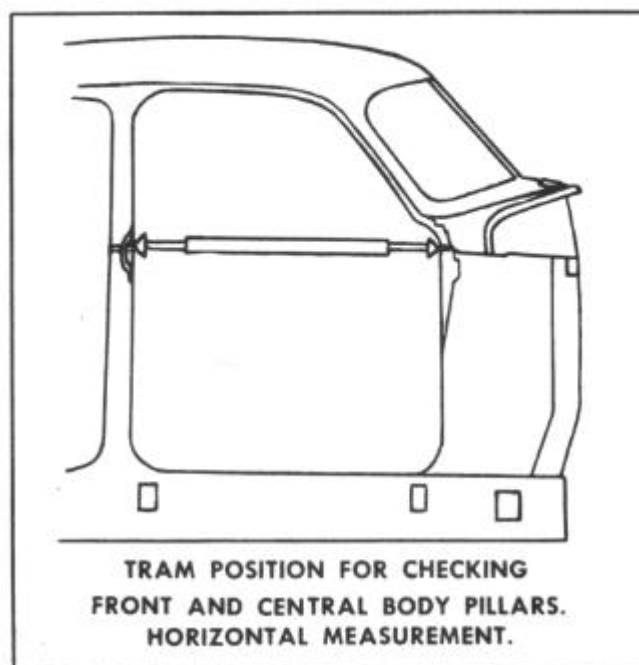


FIGURE 119

pending on the type and location of the damage, it may be found practical to make two or three measurements on each body pillar. These additional marks and measurements will greatly assist in checking the correct contour of the pillars and in taking horizontal and diagonal measurements.

### HORIZONTAL MEASUREMENTS

Horizontal measurements are taken on a level at the markings set by the vertical measurements, Figures 119 and 120. They are taken parallel to the floor or roof assemblies to check the width of the door, windshield, or rear window openings.

For example, the vertical measurements on both front body pillars and the center body pillars are marked at 12", 24" and 34" upward from the top of the side sill. The horizontal measurement then would be the distance between the two center body pillars at marks which are the same distance from the sill. These measurements are used in checking the correct distance or spacing between the body pillars for proper and true openings.

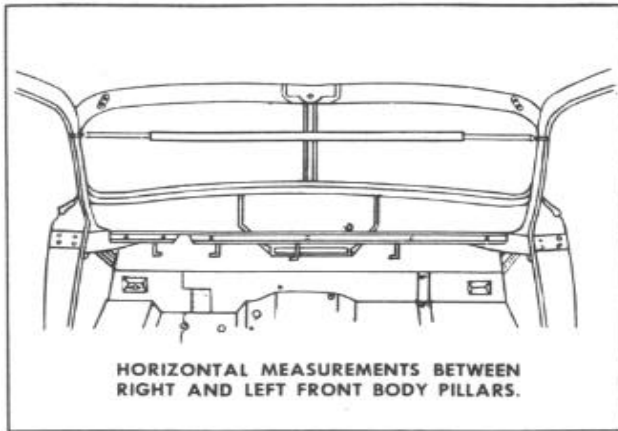


FIGURE 120

### DIAGONAL MEASUREMENTS

The diagonal measurements in the squaring-up operations are taken at the markings set by the vertical measurements. For Example:

1. Set one end of the tram on the fixed location at the bottom of the right front body pillar and adjust the other end of the tram to the top vertical marking on the top of the left front body pillar. Lock the tram at this measurement. Then

check between a similar fixed location at the bottom of the left front body and the top vertical marking on the right front body pillar. These two measurements should be the same. If it is found that there is a difference, it will indicate that this part of the body has been forced sideways. To square up this section of the body, apply the body jack or power tools to the shortest measurements and force the body in that direction a little more than one-half the distance between the two measurements. An approximate additional 3/16" should be allowed to compensate for the internal strains pulling the damaged area back after removal of the forcing tools.

2. Set one end of the tram on the top vertical marking of the right front body pillar and adjust the other end of the tram to contact a fixed location at the bottom of the left center body pillar. Lock the tram at this measurement. Then check between the top vertical marking on the left front body pillar and a similar fixed location at the bottom of the right center body pillar. The tram should touch all four fixed locations exactly. If it is found that there is a difference, it will indicate that the body has been forced sideways and back. Then the body jack should be placed in the same angle as measured to force the body out in the direction of the shortest measurement.
3. Set one end of the tram on the top vertical marking of the right front body pillar and adjust the other end of the tram to contact the bottom vertical marking on the right center body pillar. Check with the measurement on the left side of the body. This will indicate to what degree force should be applied to maintain the correct measurement in the event it is found necessary to apply force at another angle on the same body pillar.

### FINAL CHECK OF BODY REPAIR

Check the body carefully for minor misalignments. Check the alignment of the windshield opening by using an undamaged windshield glass. Use a feeler gauge between the glass and the glass channel to locate the irregularities and high spots. **BE SURE TO REMOVE ALL HIGH SPOTS IN THE GLASS CHANNEL TO PREVENT GLASS BREAKAGE.**



## RESEALING AFTER REPAIR

After the body repairs have been made and before the trim materials are installed, the car should be road-tested and the body thoroughly checked for leaks.

Refer to Pages 87 through 94 covering the sectional views which show the various locations where sealers are used.

The places to inspect and check for resealing are:

- a. Joint between body floor assembly and side panels from front of dash to rear of trunk.
- b. Joints between roof panel and side panel main roof rail drain troughs.
- c. Rear deck drain trough corners.
- d. All weather seal rubber strips.
- e. Hinges.
- f. Scuff plates and rocker panels.
- g. Door front pillar seals.
- h. Tail light mounting.
- i. Fender bolts at cowl and rear quarter.
- j. Windshield and rear window sealer rubbers.
- k. Rear fender gasoline filler well.
- l. Dash panel and miscellaneous holes in dash.
- m. Cowl side panel and frame joint.
- n. Cowl panel to frame and pillar.

## REPLACING INSULATING MATERIAL

On the underside of the roof panel and on the body floor panel and rear wheel house, heavy insulating pads are used as sound deadeners.

**NOTE: SURFACES TO WHICH SEALER IS TO BE APPLIED MUST BE FREE FROM WATER, DIRT, GREASE AND OIL TO OBTAIN SATISFACTORY ADHESION.**

Check the door openings by using the repaired doors and use a feeler gauge to locate high or low spots between the door and door opening. Cross-checking with a tram will determine the squareness of the body cross sections. Check the fit of the quarter windows by using an undamaged glass as a template. With the use of a feeler gauge, locate and mark all low spots. A wooden block or a caulking tool will raise the low spots. Check the body alignment to be certain that the repair work has not caused any distortion. Check the squareness of the top at the front section. Check the vertical cross section of the cowl assembly.

## FINAL CHECK REPAIR SUGGESTIONS

If, in final checking, a front body pillar is found to be too far forward with the roof and too high over the front pillar, proceed as follows: Place the body jack diagonally across the door opening. Tightening the jack will then pull the pillar back and lower the top all in one operation. All existing strains in the body that might tend to draw the body out of alignment must be normalized with alternate light applications of heat and hammering. It is particularly important that reinforcements be thoroughly and completely normalized to prevent their springing back and causing a buckle.

### NORMALIZING

Normalizing is a heating process to reduce the internal strains set up in the metal by the bending and re-aligning operations. It can be applied to any part of the body where internal strains must be relieved by heating at the bent or buckled areas. This is accomplished while the body jack or forcing tool is in place and after that part of the damaged area has been forced to its proper location. The torch should be applied to heat those parts that are buckled and wrinkled to a dark red color. The body jack or forcing tool should be left in place while the metal is allowed to cool slowly.

This process will remove the wrinkles and will relieve the internal strains.

**CAUTION: DO NOT USE A RUBBER HEAD ON THE BODY JACK WHEN APPLYING HEAT. THE HEAT WILL NATURALLY CAUSE RAPID DETERIORATION OF THE RUBBER.**

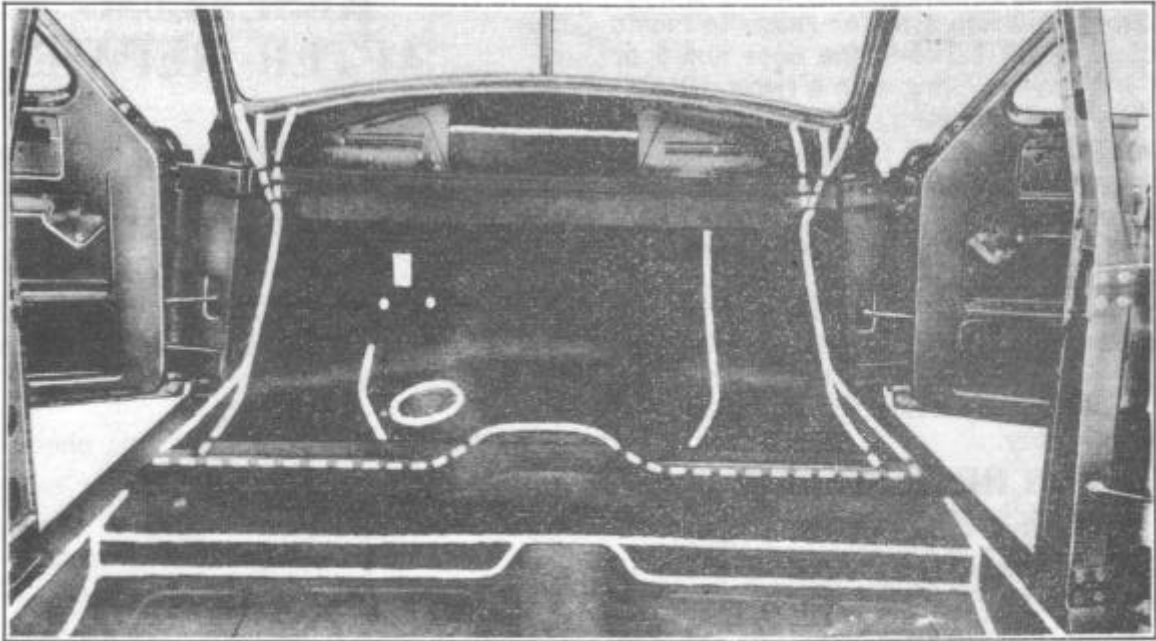


FIGURE 121

Inside forward view of skeleton body for all Models 1948 thru 1950 showing interior areas to be sealed

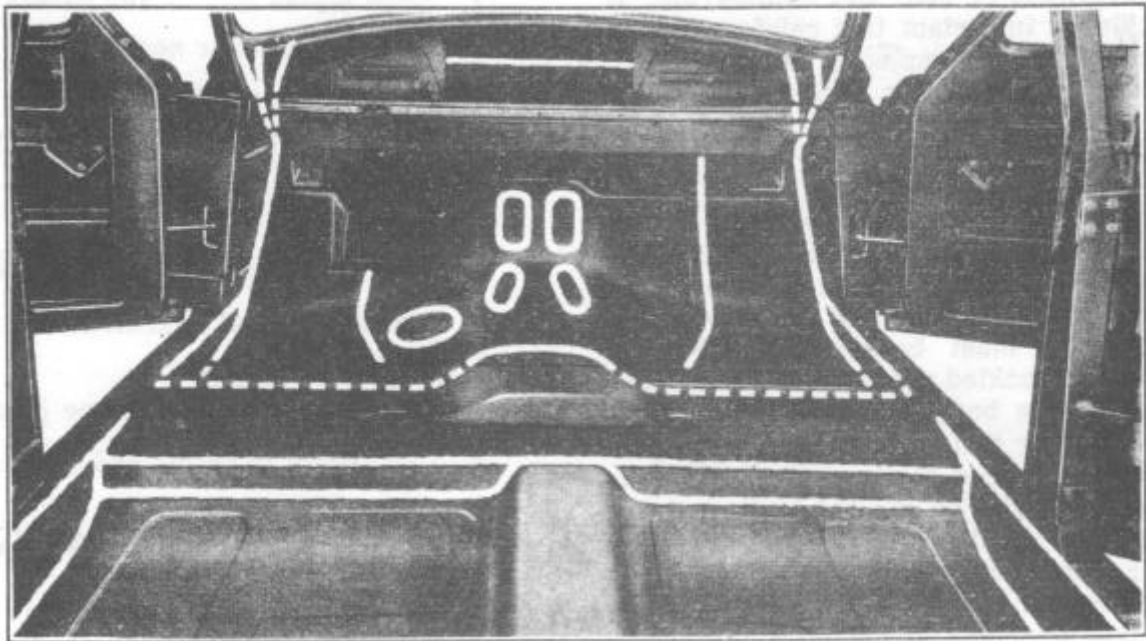


FIGURE 122

Inside forward view of skeleton body for all Models 1951 thru 1954 except 1C, 1D, 2C, 2D and 3D.

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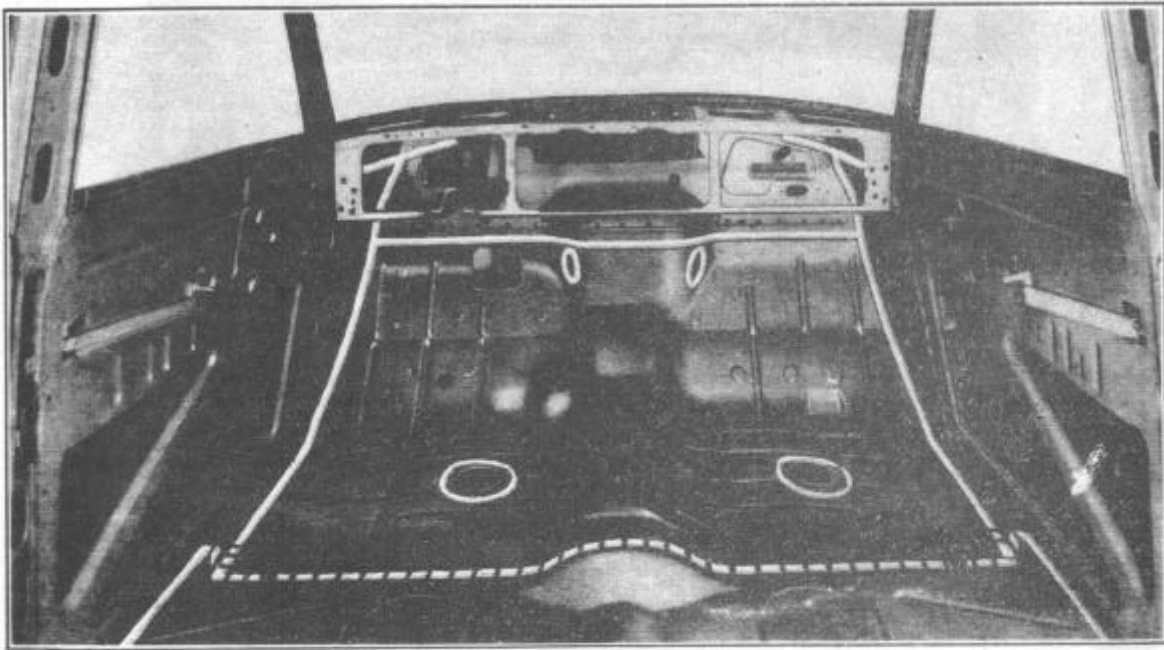


FIGURE 123

Inside forward view of skeleton body 1C, 1D, 2C, 2D and 3D showing areas to be sealed.

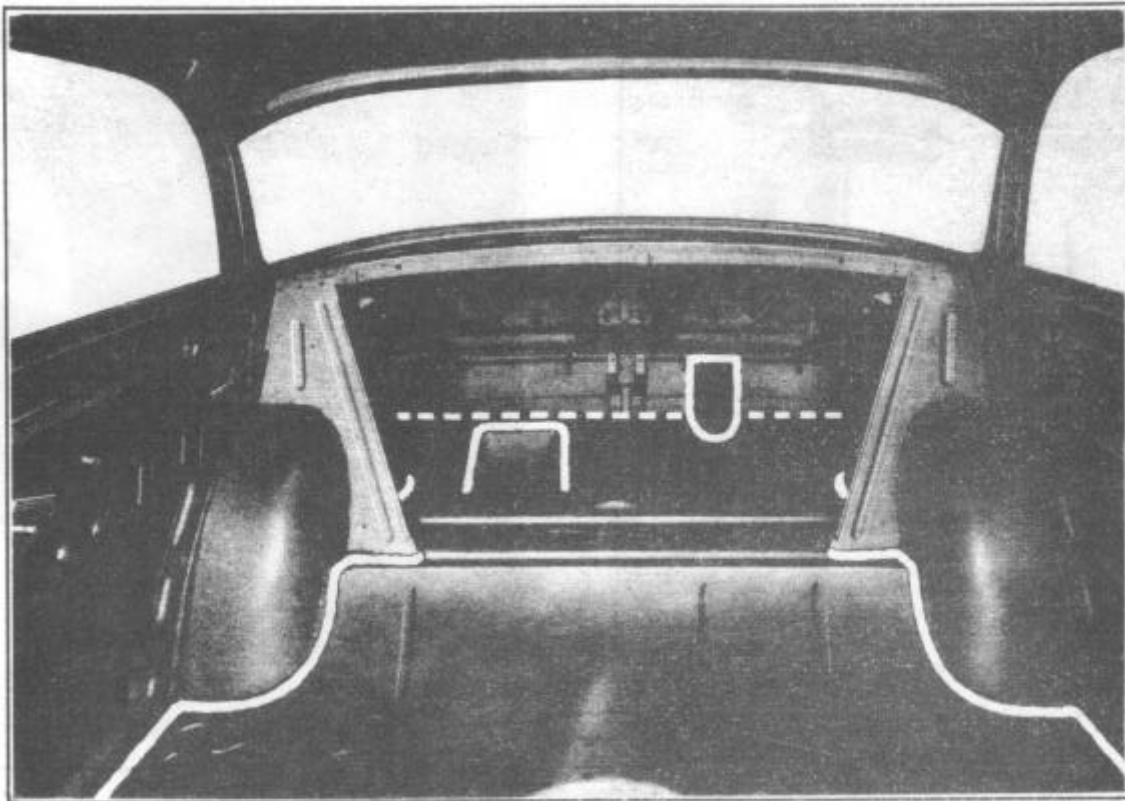


FIGURE 12

Inside rear view of skeleton body 1C, 1D, 2C, 2D and 3D showing areas to be sealed.

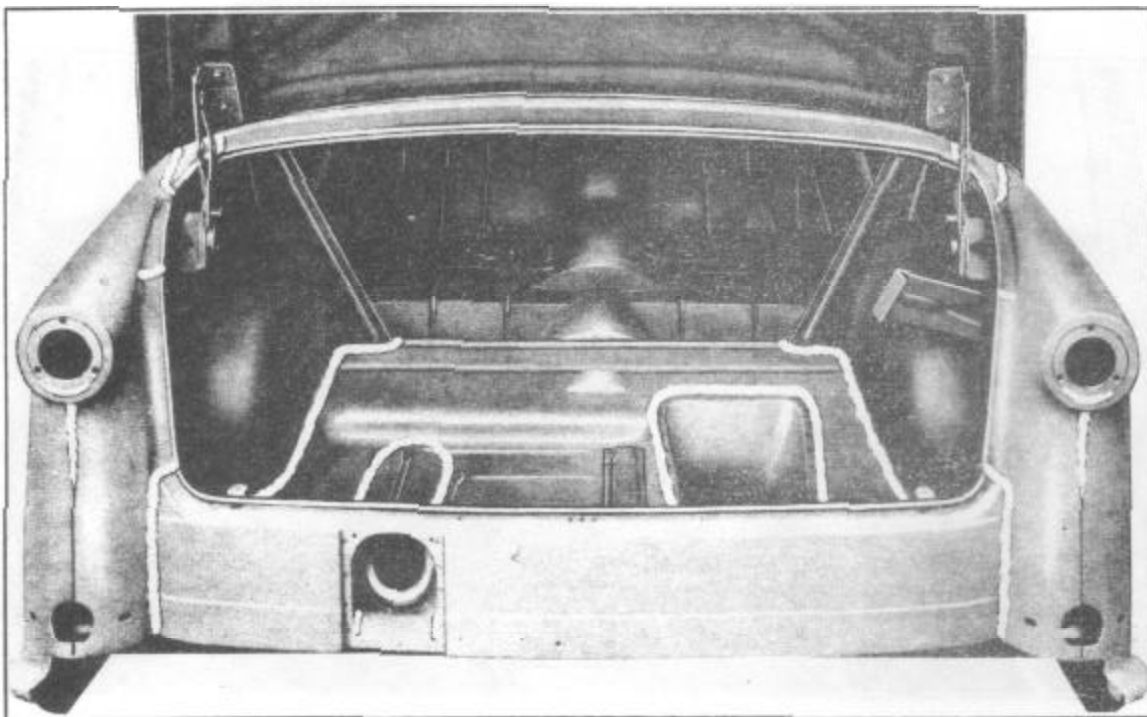


FIGURE 125

Rear view of body in white of 1C, 1D, 2C, 2D and 3D showing interior and exterior areas to be sealed.

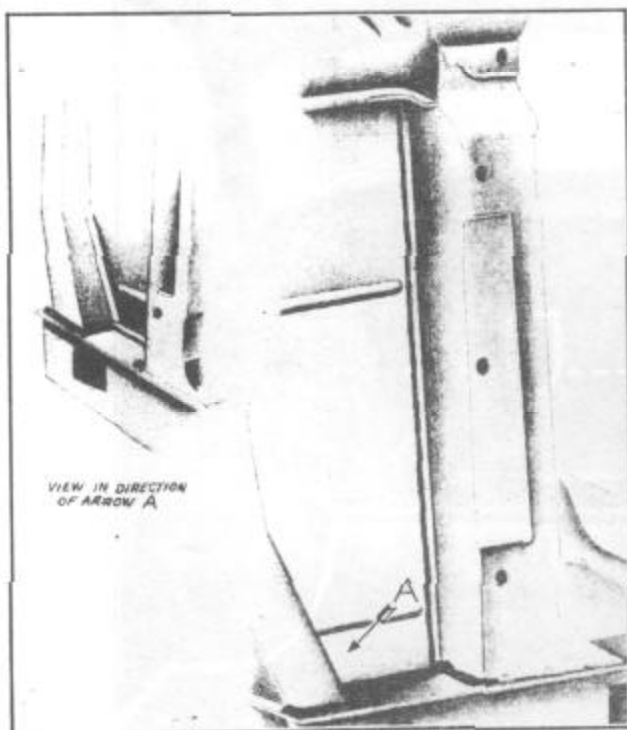


FIGURE 126

View of cowl panel to frame and pillar. All Models except 10, 1D, 2C, 2D and 3D showing areas to be sealed.

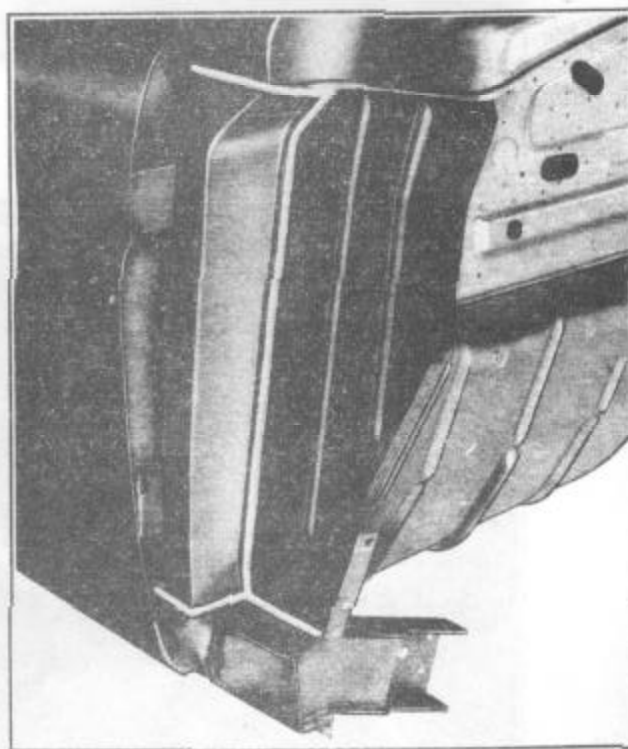


FIGURE 127

View of cowl panel to frame and pillar 1C, 1D, 2C, 2D and 3D showing areas to be sealed.

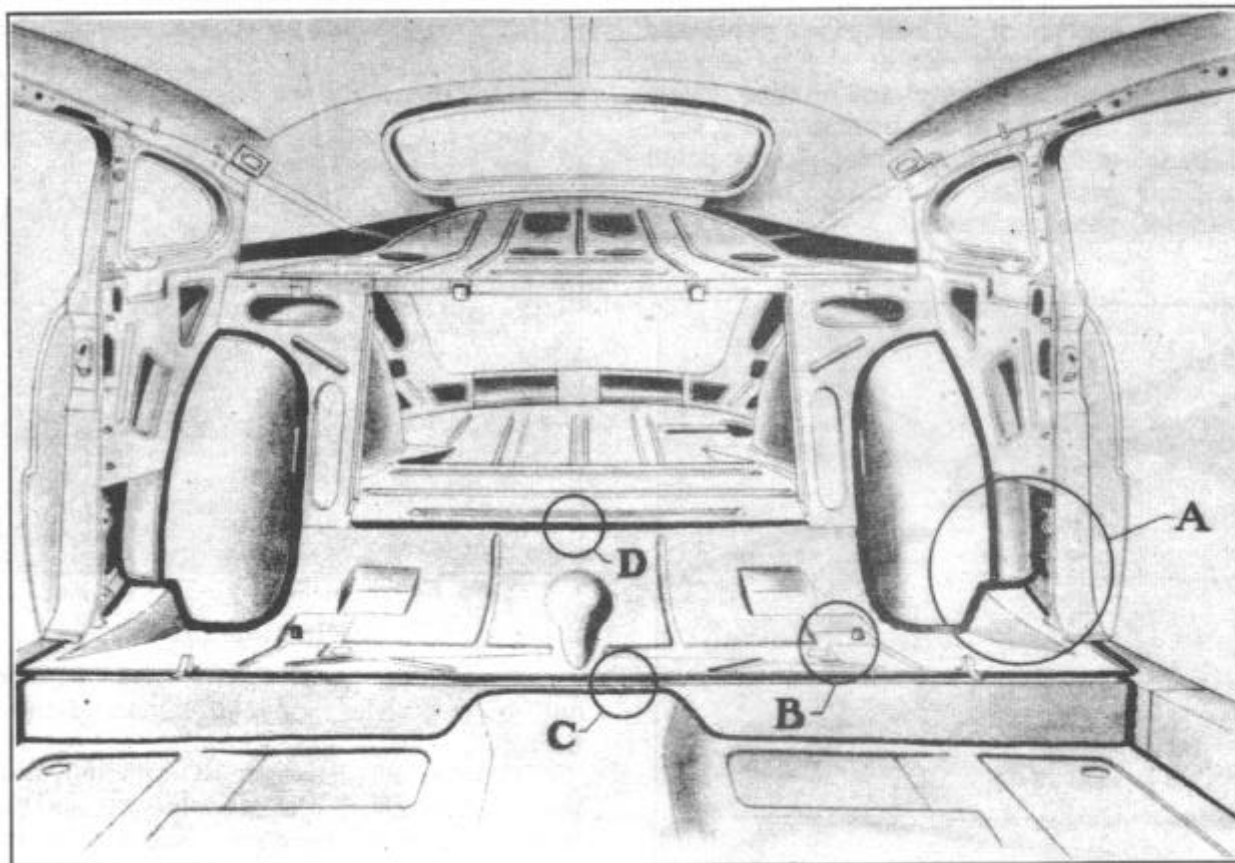


FIGURE 128

## REAR SEAT UNDER PANEL TO FRAME AND WHEELHOUSE SEALING

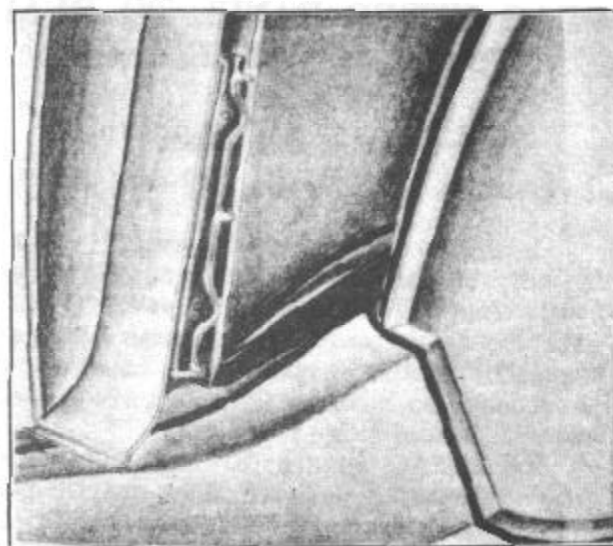
(All Models 1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

The heavy lines in Figure 128 indicate sealed joints at the rear seat under panel, frame cross member panels and wheelhouse panels. All of these points should be checked and sealed with body sealer.

Circle (A) in Figure 129 is shown in detail in Figure 128. In addition to sealing the seams at the fender and wheelhouse and at the frame; place a rubberized fibre pad into the front lower corner of the rear fender and frame, one each side to insure against dust leaks and to allow any water to drain out.

**NOTE: Cement this fibre block in place but do not completely cover this block with body sealer or undercoating as this would restrict water drainage.**

At circle (B), the two drain plug holes should be sealed with body sealer. Similar holes are on the right and left sides of the floor panel.



Circle (C) is shown in Figure 130. This is a cross section of the seat riser panel and floor tunnel. Use body sealer at joint of rear seat under panel (seat tray) and vertical riser panel and at the joint of the bottom of the vertical panel at lower floor (step-down) panel (rear floor panel) and to frame. Also along (step-down) panel to frame.

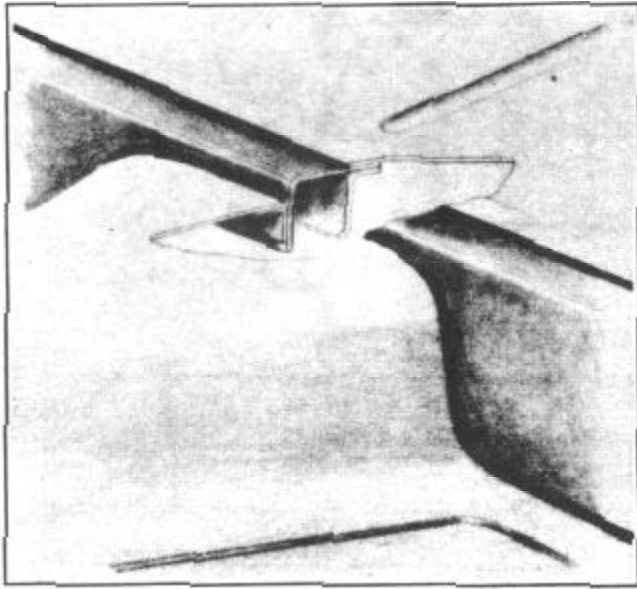


FIGURE 130

Circle (D) is the joint of the front end of the rear compartment panel extension and rear seat tray. This area should be sealed with body sealer as shown in Figure 128.

### REAR UNDER PANEL TO REAR PANEL AND WHEELHOUSE SEALING

(All Models 1948 thru 1954  
Except 1C, 1D, 2C, 2D and 3D)

In Figure 131, we show a general view of the body rear section looking through the rear compartment door opening towards front of car. Flying arrows indicate holes which are closed by rubber plugs. These holes should be checked to be sure the plugs are in place and well seated in the floor panel. Circle "A", Figures 131 and 134, show a coach joint at the juncture of the quarter panel and the rear frame. This vertical joint should be sealed with Dolphinite sealer worked into the joint from the outside of panel. The inside lower corner

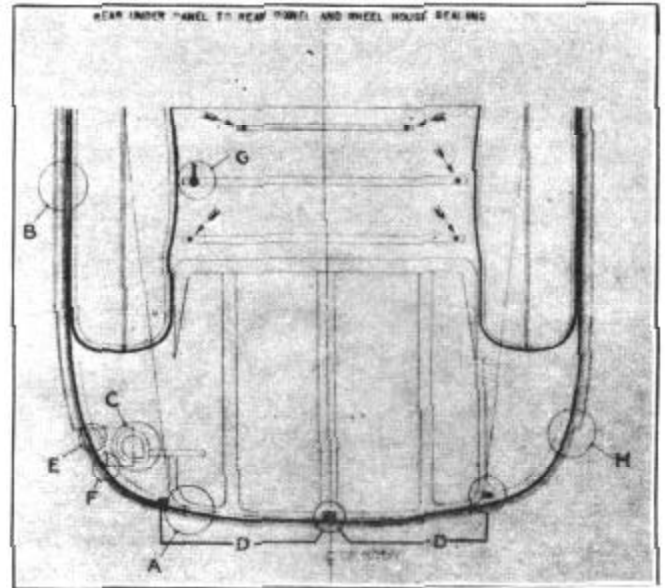


FIGURE 131

should be sealed with body sealer on both sides of the joint flange.

Circle "B", Figures 131 and 133, indicate the attachment of the wheelhouse and fender to frame side member. The sponge rubber between the fender and frame is cemented with rubber cement direct to the frame and must be level with the top of the frame flange throughout its entire length. Place a two inch piece of Mystik tape over entire length of the fender rubber seal, covering the seam between rubber seal and frame as shown in dotted lines, Figure 132. If the rubber is not level with the frame, it will expose the top of the lightening holes in the outside frame face and permit dust leaks through the holes and above the seals. The position of the rear end of the sponge rubber seal and the frame rear side member rear hole filler is shown at circle (H), Figure 134, and also in Figure 132.

If the rear fender seal has dropped below the lightening holes it will be necessary to remove the rear fender as outlined on Page 74.

**NOTE: The rear end of the rear fender seal is left loose and held up while the rear fender is installed. It is then coated on the under side with rubber cement and pushed down to seal onto the fender flange. If the rear end of the rubber seal is not down in place, it should be sealed with body sealer to prevent dust leakage at this point. The arrow in insert (B), Figure 133, shows the upper flange of**



the frame. This flange should be sealed for the entire length with body sealer. This can be done satisfactorily with an undercoating gun working through the rear compartment at the wheel-housing and flow the undercoating sealer to the front pillar.

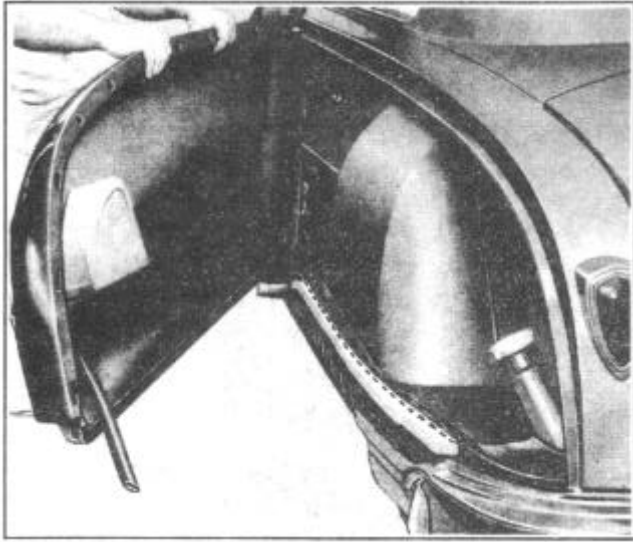


FIGURE 132

Circles (C) and (E), Figures 131, 133 and 134, cover the gas tank filler neck and gas tank filler door opening. The arrows indicate points which should be sealed with body sealer. These points are around the gasoline tank filler neck and rubber grommet seal and also between the rubber seal and under panel. Sealer should also be applied to the gas filler neck drain hose at the underbody panel at point indicated by an arrow.

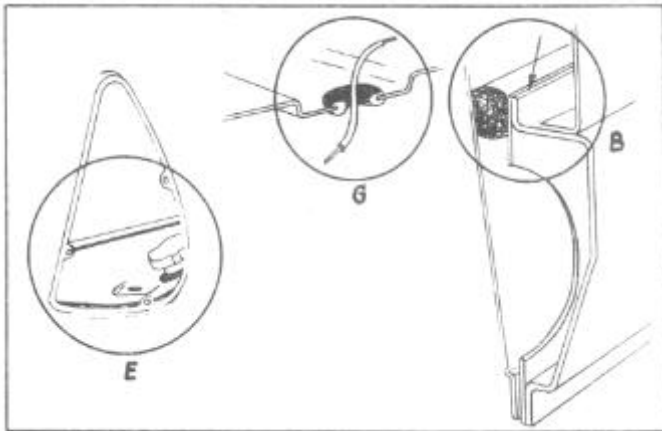


FIGURE 133

Circle (D), Figures 131 and 134, show the hole on the body centerline and one at each side at rear panel. These holes are

covered with chip board cemented in place and then covered with body sealer.

**NOTE:** On all cars equipped with license lamp in the center bumper guards, the hole on the body centerline is covered with a metal plate having a tab on each end. These tabs retain the plate in position on the under panel. This plate must also be sealed with body sealer.

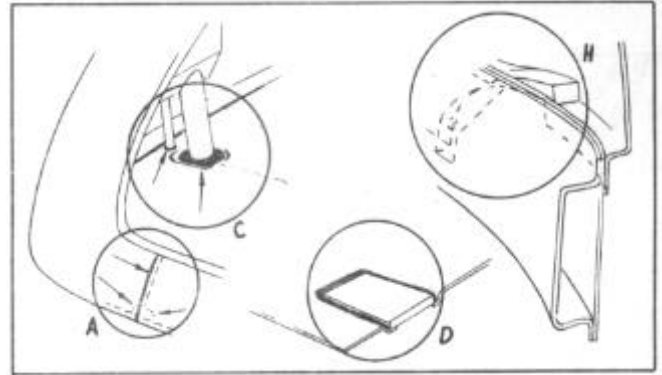


FIGURE 134

Circle (E), Figures 131 and 133, shows the filler compartment. All the weld joints in the filler compartment should be sealed. Particular attention should be paid to the end of the front and rear vertical joints where the compartment joins the fender. It is also necessary to seal completely around the joint of the filler floor panel and the rear fender. If filler neck grommet does not fit tightly around the filler neck, it should also be sealed with body sealer.

Sealer should be used to seal the gasoline gauge wire and grommet shown at (G), Figures 131 and 133.

Body sealer should be applied around wheelhouse panel and around the inner edge of the rear panel and at joint of underbody and frame as shown in heavy black lines.

### COWL SIDE PANEL TO TOE BOARD AND FRAME JOINT SEALING (All Models 1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

1. Remove the cowl side panel trim panel.
2. Fold back the upper corners of the floor mat.

3. Remove all foreign matter at joints to insure good adhesive quality.
4. Starting at the seam above the toeboard riser to top of cowl panel indicated by (A), Figure 135, lay a bead of Flexseal sealer or Auto Body Deadener down to the frame along joint of frame and floor panel to seat riser panel; also along top of frame at junction of cowl side panel to the front pillar post at (ID). Care must be taken that joints are completely covered at both right and left sides of body.

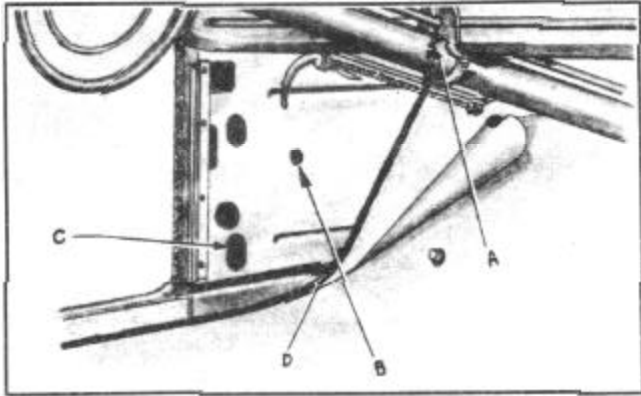


FIGURE 135

5. Using the same sealer as indicated in paragraph 4, seal the joint of front pillar to frame working through hole indicated at "C". Seal must be applied along the front, outer and rear welds.
6. Install the cowl side trim board.
7. Lay the floor mat back in position.

### COWL PANEL TO FRAME AND PILLAR SEALING (All Models 1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

The sealing of the cowl panel to frame and pillar sealing should be checked during front fender replacement or if there is evidence of a water leak at the front pillar and front kick pad.

**NOTE: First determine that the drip moulding is sealed and that the cowl panel to frame at kick panel are properly sealed before sealing the cowl panel to frame and front pillar.**

In Figure 136, the fender has been removed for ease of illustration; however, it is not necessary to remove the front

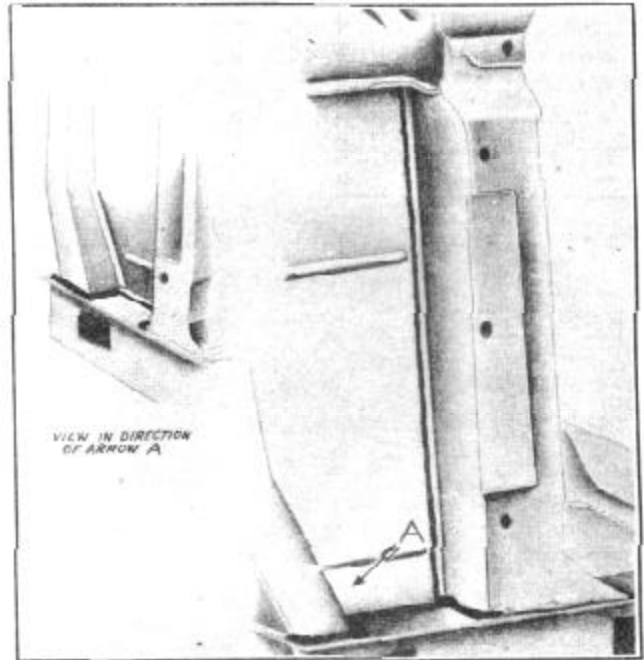


FIGURE 136

fender to perform the sealing operation.

Place the car on a free wheel hoist and proceed as follows:

1. Remove the front fender stone guard at front cowl at rear of front fender.
2. Thoroughly clean area to be sealed.
3. Apply a heavy bead of Auto Body Deadener to the vertical joint between the cowl panel and pillar flange and at the base of cowl panel to frame and pillar to frame as shown in Figure 136.
4. Replace front fender stone guard.

### DRAIN TROUGH AND QUARTER WINDOW REVEAL MOULDING SEALING

(All Models 1948 thru 1954  
Except 1C, 1D, 2C, 2D and 3D)

During the process of preparing the car for painting, the sealers are disturbed or entirely removed from the drain trough or below the drain trough above the rear quarter window, Figure 137.

If there is evidence of moisture at the top of the windcord above the doors, or at the door pillar and rear quarter panel trim; re-seal the drain trough and quarter window as follows:



[illegible]

## HUDSON CONVERTIBLE

(All Models 1948 thru 1954 Except 1C, 1D, 2C, 2D and 3D)

The following Convertible Models have as standard equipment, the Hydro-Lectric power system for raising and lowering the folding top and windows. 492, 494, 502, 504, 6A, 7A, 8A, 6B, 7B, 7C and 7D.

All other Convertible Models feature the hydraulically operated folding top with manually operated windows.

The operation of the Hydro-Lectric system' is accomplished through the combined use of electrical energy from the battery and hydraulic fluid pumped under pressure to the various operating units.

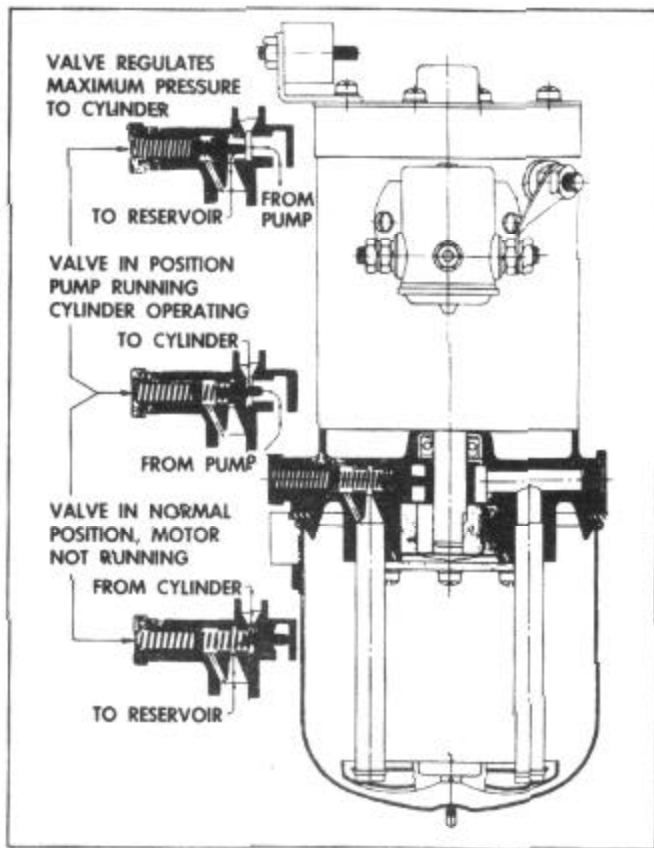


FIGURE 138

### HYDRO-LECTRIC MOTOR AND PUMP ASSEMBLY

This assembly is a single unit consisting of an electric motor, a hydraulic pump, and a fluid reservoir, Figure 138, shows the hydraulic pump and reservoir in cross-section.

The fluid reservoir is correctly positioned on the pump housing by dowels in the pump casting and is held in place by a "U" shaped spring wire bail. A detent in the bail fits into a circular depression in the bottom of the reservoir and firmly anchors the reservoir to the pump. A synthetic rubber gasket fitted into an undercut in the pump base seals the reservoir to the pump.

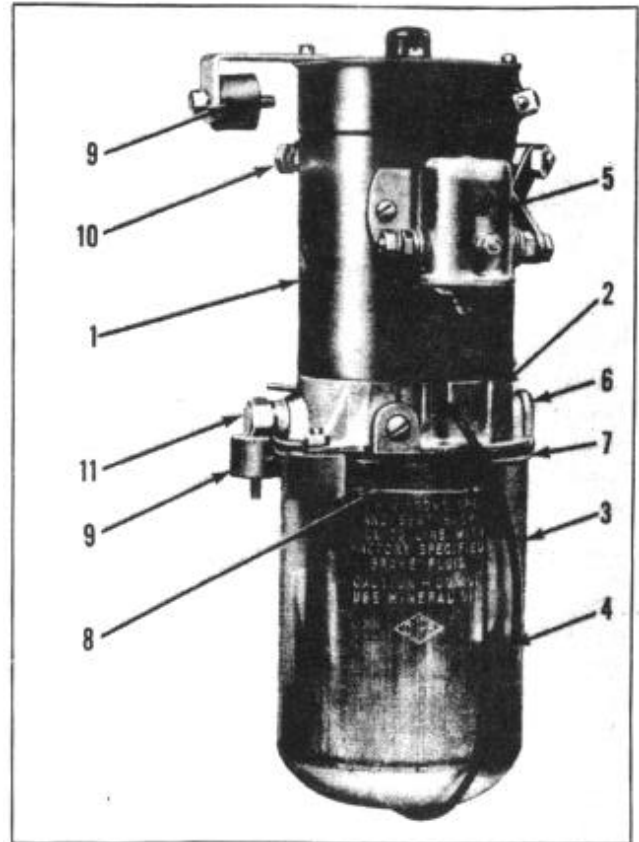


FIGURE 139  
LEGEND

1. Motor
2. Hydraulic pump
3. Pump reservoir
4. Spring wire bail
5. Solenoid
6. Fluid port
7. Reservoir gasket
8. Fluid level marker
9. Rubber cushioned mounting brackets
10. Ground strap terminal
11. Pressure relief valve

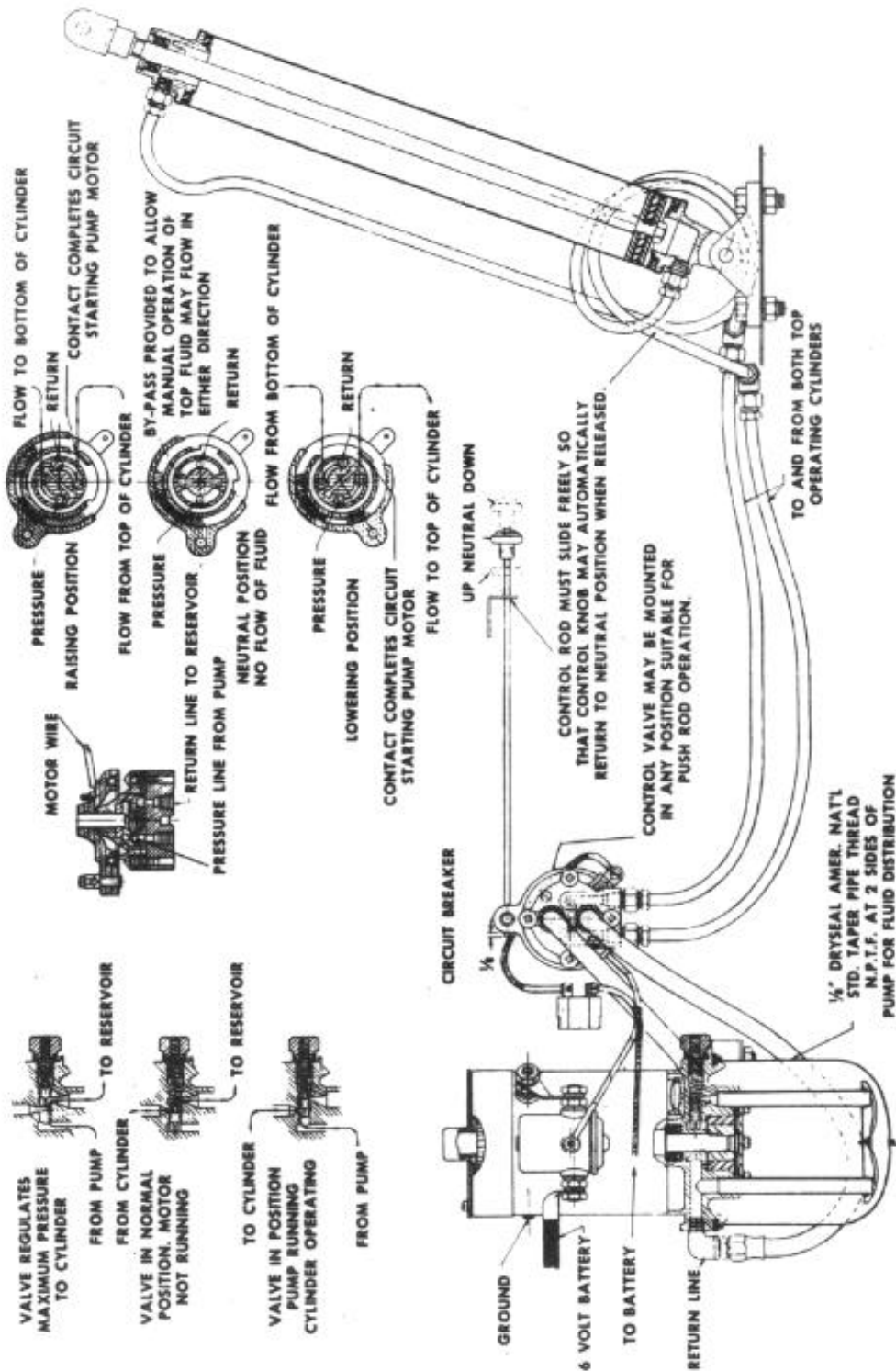


FIGURE 140

Figure 140 is a schematic diagram of the convertible top operating system; actual location of the units in the car may differ from the position shown in the illustration. Operation of the folding top is accomplished with a convenient, dash mounted operating knob which operates through an operating valve assembly to the master hydraulic pump and motor assembly. The top is raised or lowered by moving the top operating knob in or out.

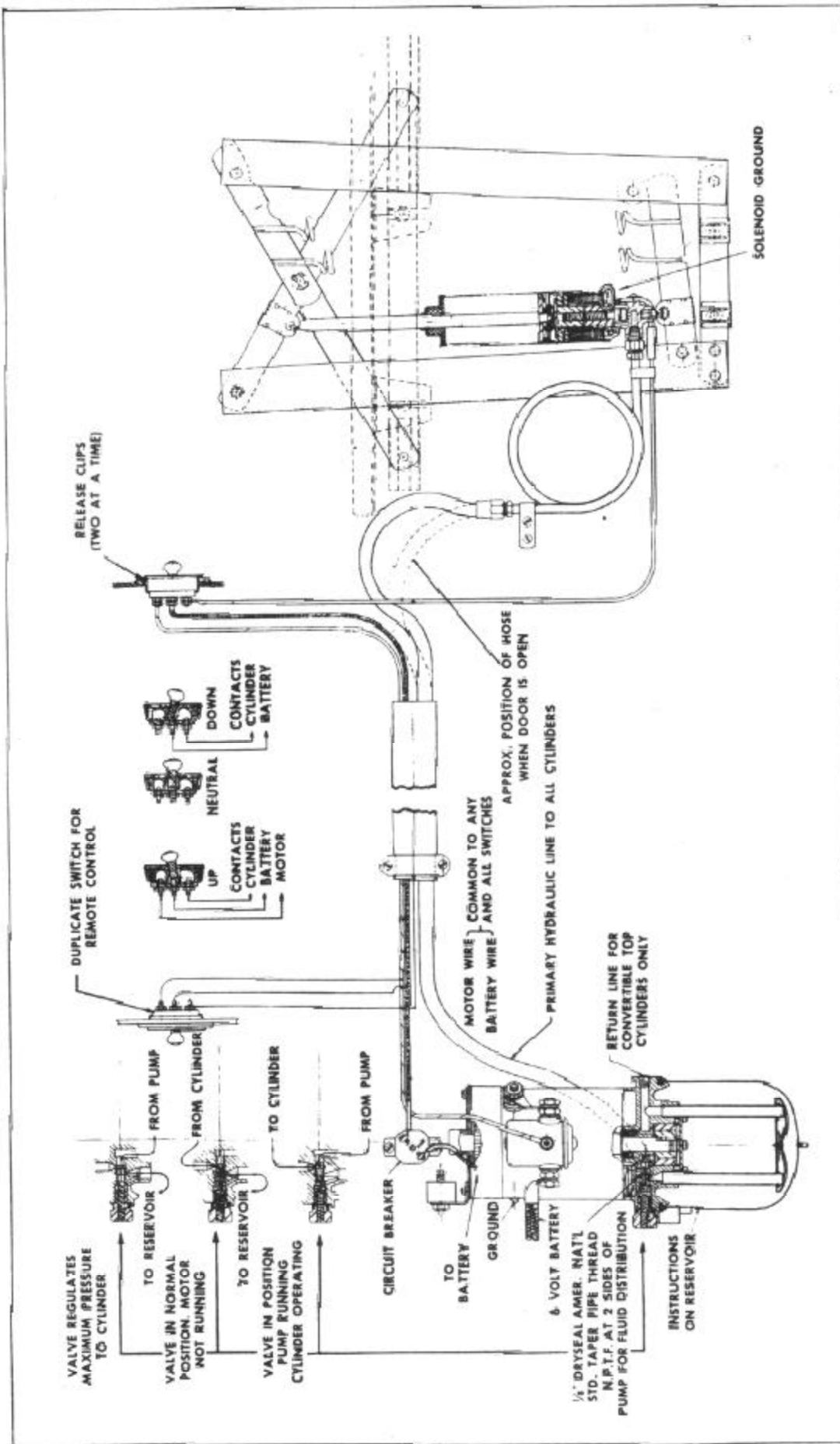


FIGURE 141

Figure 141 is a schematic diagram of the window regulator and cylinder system. The door windows and the rear quarter windows are operated by a single action hydraulic cylinder mechanism. The cylinder piston pushes the window upward to a closed position; spring tension lowers the window to an open position. Individual electrical window control switches are conveniently located at each window. A master control switch panel for all windows is located on the left door, handy for driver operation.

A hole in the pump casting near the relief valve plug vents the reservoir to the atmosphere.

The motor and pump assembly is cushioned on synthetic rubber and mounted in a well behind the rear seat. Flexible rubber tubing connects the pump to the metal hydraulic tubing to prevent any loosening of connections or breaking of tubing from vibration of the pump assembly.

A solenoid switch on the outside of the motor housing activates the unit. An electrical ground is provided through a ground strap to the car body.

The pump is provided with a combination spring loaded maximum pressure relief and piston type flow control valve. See 11 in Figure No. 139. This valve is adjusted to a minimum fluid pressure of 250 pounds and a maximum of 260 pounds.

**THIS PRESSURE SETTING MUST NOT BE CHANGED TO GIVE HIGHER PRESSURES.**

## SERVICE PROCEDURES

**NOTE: Before removing any hydraulic unit, two precautionary steps are to be taken.**

1. Disconnect negative battery cable at battery.
2. All hydraulic fluid must be removed from the system.

**CAUTION: This fluid is extremely injurious to painted or lacquered surfaces, and it is highly inflammable. Sparks from accidental grounding of electrical connections may ignite the fluid.**

To remove hydraulic fluid, raise the car on a hoist and remove cover plate (A) from the bottom of the well containing the Motor and Hydraulic Pump Assembly. See Figure 142. Remove the reservoir bail (C) and the reservoir (D), and empty the contents into a clean dust-free container.

With a helper in the car to operate the top, hold the empty reservoir in position on the bottom of the motor and pump assembly so that the fluid pick-up is two to three inches

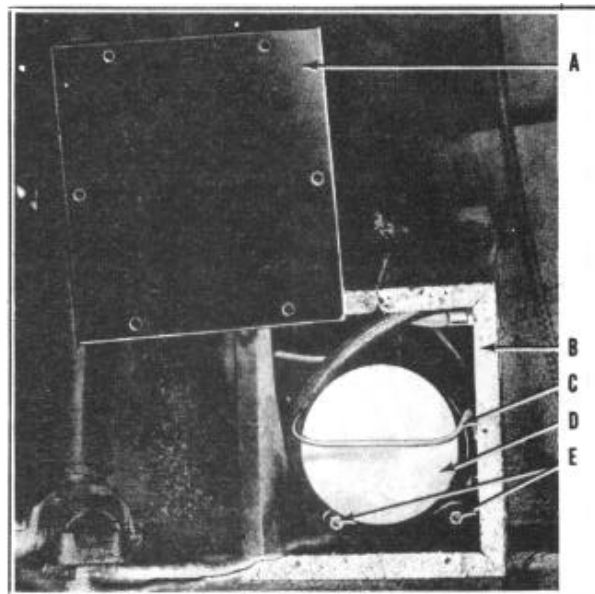


FIGURE 142

from the bottom of the reservoir. This prevents fluid being drawn back into the system during the bleeding operation.

Using the dash mounted top operating button, move the top up and down manually until all fluid is expelled from the system. Top must be moved slowly and steadily to prevent excess strain on top parts or top operating cylinders.

When all fluid is out of the system, empty the reservoir and replace it on the pump.

Before disconnecting any hydraulic lines, place clean rags under the connection to soak up any fluid that may drip from the line when the connection is broken.

## MOTOR AND PUMP ASSEMBLY

### REMOVAL

1. After all fluid has been completely removed from the hydraulic system and while the car is still raised on the hoist, remove the two nuts (E), Figure 142, and lockwashers from the lower motor and pump assembly support.
2. Lower the car and remove the rear seat cushion and seat back. (See Page 109 for seat back removal.) Remove motor and pump assembly cover.

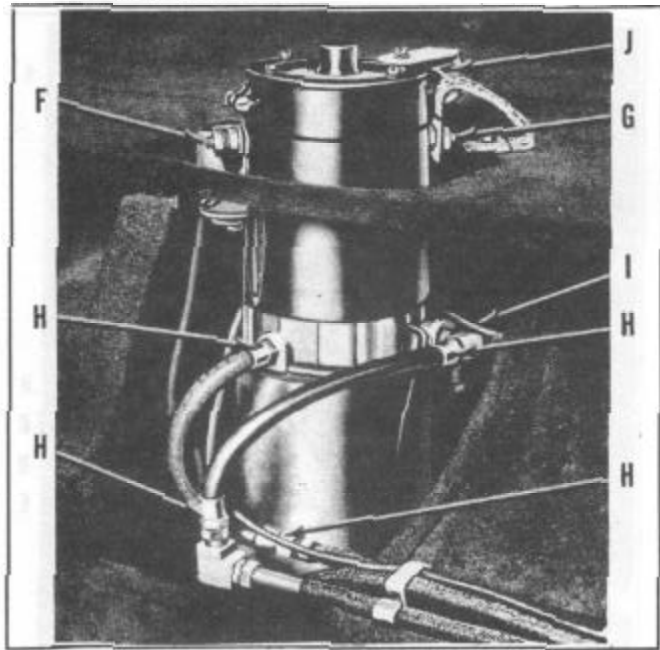


FIGURE 143

3. Disconnect battery cable and wires at motor solenoid (F), Figure 143.
4. Disconnect ground strap at (B) on motor.
5. Disconnect hydraulic inlet and outlet flexible hoses at (H) and remove vent tube (C) from rear of pump.
6. Remove nut and lockwasher from upper motor support (D) and lift complete unit up and out of well.

## INSTALLATION

To install, reverse procedure of removal.

## FOLDING TOP OPERATING VALVE AND SWITCH ASSEMBLY

The top operating valve and switch assembly, is mounted on a support under the left end of the instrument panel. The valve connects the motor and pump assembly to the top or bottom of the double action top operating cylinders, depending on the position of the control knob on the instrument panel. Operation of the valve is controlled by a push-pull knob at the left of the steering column. At the extreme end of the knob operation, in and out, the valve switch is closed to activate the motor and pump assembly.

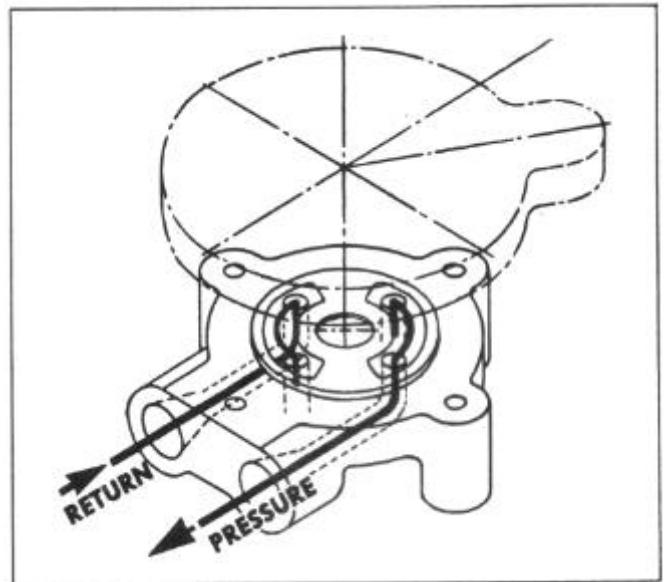


FIGURE 144

With the operating knob pulled out, fluid from the pump is directed to the top of the cylinders, and fluid from the bottom of the cylinders is returned to the fluid reservoir.

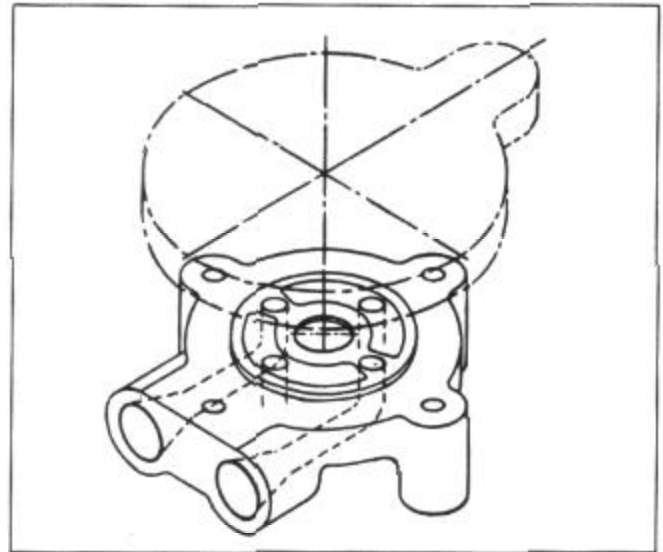


FIGURE 145

Figure 144. With the valve in this position, the top is lowered. When the knob is released, springs inside the valve return it to a neutral position, Figure 145. To raise the top, the knob is pushed in. In this position, Figure 146, fluid from the pump is directed to the bottom of the cylinders, and fluid from the top of the cylinders flows back to the fluid reservoir.

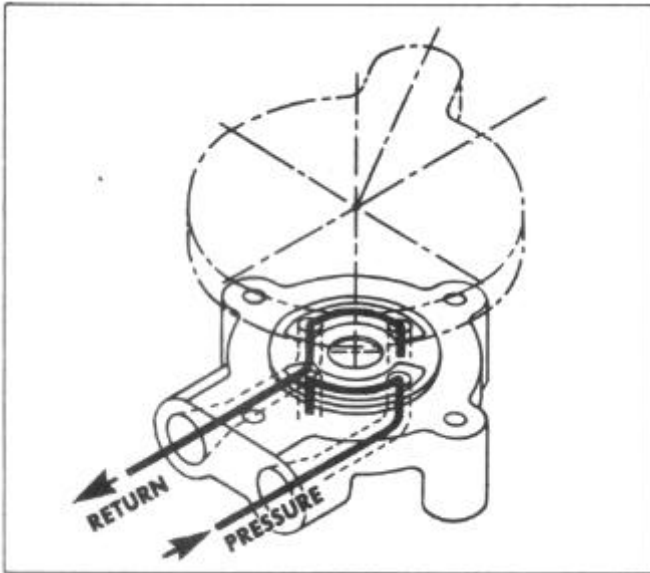


FIGURE 146

## VALVE AND SWITCH ASSEMBLY

### REMOVAL

1. Disconnect battery negative terminal.
2. Loosen the set screw attaching the control rod to the valve cover and remove the control rod.
3. Disconnect the wires from the valve cover and valve body.
4. Disconnect four hydraulic inlet and outlet tubes from the valve body.
5. Remove the screws attaching valve body to support bracket. The valve and switch assembly is now completely disconnected for removal from the car.

**NOTE:** The Phillips head screws attaching the valve and switch assembly to the support bracket are best removed with an offset Phillips head screw driver. The moulded plastic cover is held in place by four attaching screws and is sealed from leakage by a synthetic rubber gasket. A second rubber gasket installed between the plastic valve and inner cover, seals the valve operating shaft against leakage. The switch assembly is held to the operating valve shaft by a Phillips screw, Figure 147, shows the top control valve with cover removed. Operating the top control rod moves the cover until contact is made between 1 and either 2 or 3, completing the circuit to the pump motor.

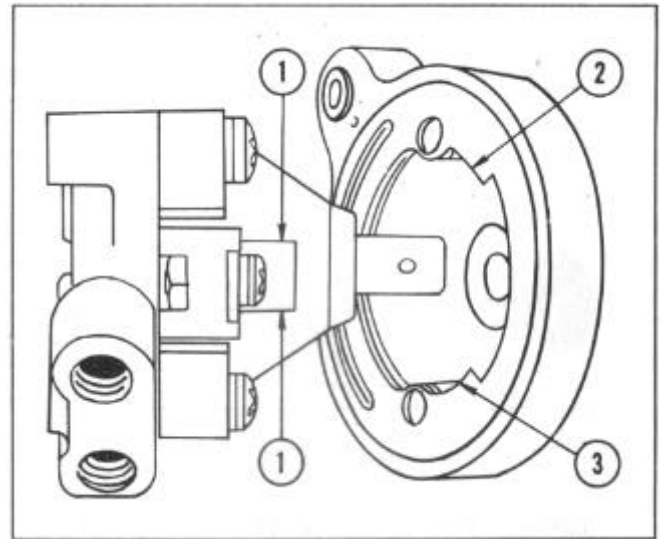


FIGURE 147

### INSTALLATION

To install, reverse procedure of removal.

## FOLDING TOP CONTROL ROD ADJUSTMENT

Proper adjustment of the folding top control rod is very important to insure full and complete operation of the folding top to either the up or down positions.

To properly adjust the top control rod, proceed as follows:

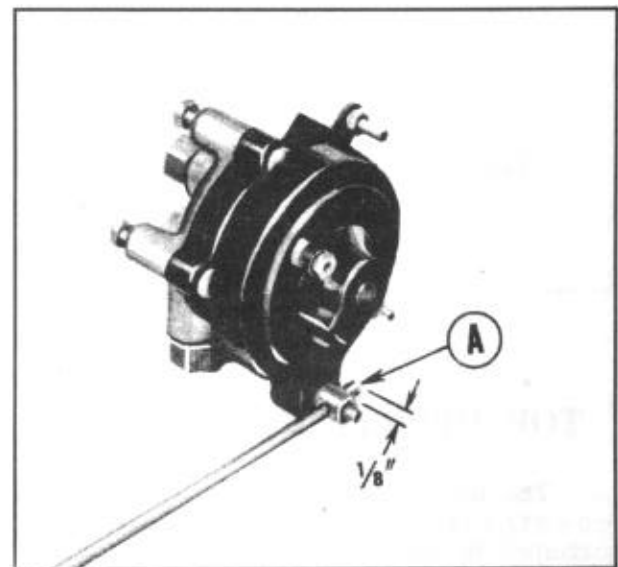


FIGURE 148

1. Loosen the retaining screw at (A), Figure 148, and adjust control rod so that 1/8" extends thru the retainer as illustrated. Tighten retaining screw (A) securely.

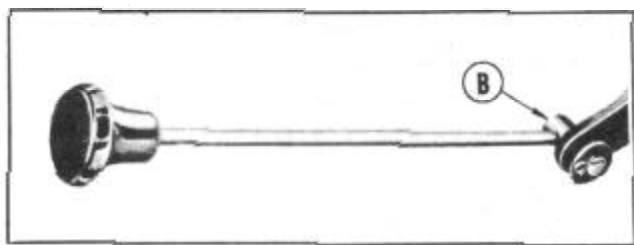


FIGURE 149

2. Loosen the retaining screw at (B), Figure 149, adjust the control knob to the clearance as shown at (C), Figure 150. This clearance is 1-3/8" for Models 1948 thru 1950 and 1-3/16" for Models 1951 thru 1954 except 1C, 1D, 2C, 2D and 3D. This adjustment is made with the control valve in the neutral position. Tighten retaining screw (B) securely after adjustment has been made.

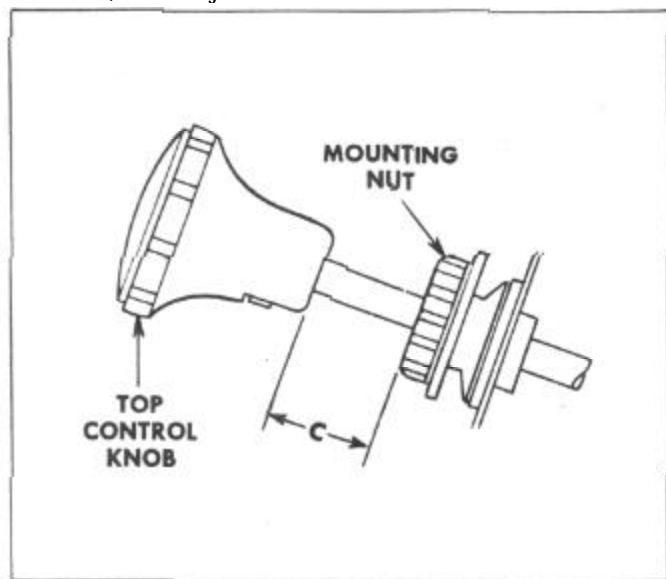


FIGURE 150

## TOP OPERATING CYLINDERS

The top operating cylinders of steel tube construction are fitted at each end with crimped-in die castings which, together with synthetic rubber seals, form a fluid tight assembly, Figure 151. The lower casting forms

a yoke which, together with a clevis pin, provides secure anchorage to the floor bracket.

The upper casting provides a bearing for the piston rod and a cavity for the replaceable synthetic rubber fluid seal and felt. The se parts are held in place by metal washers and a snap ring.

The piston rod is chrome plated and contains at its inner end an assembly of metal and synthetic rubber washers

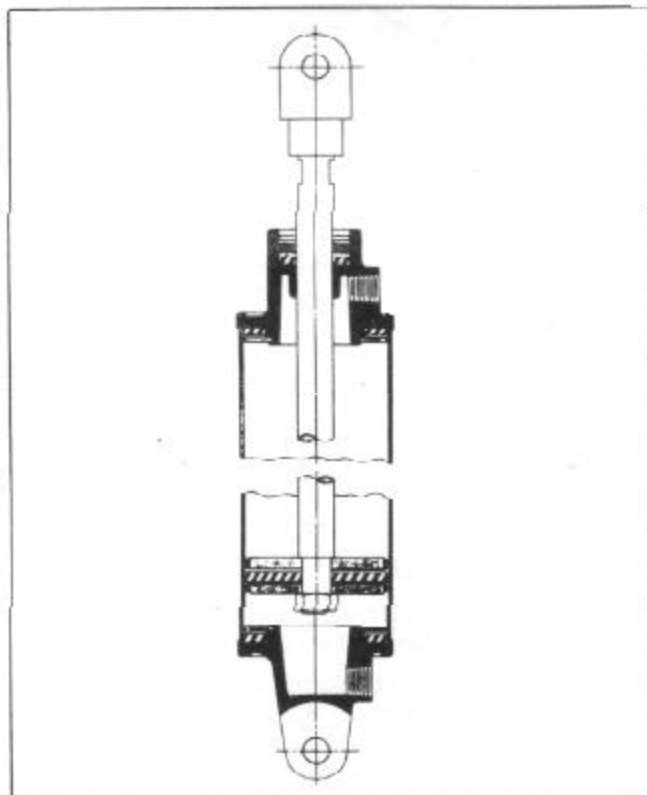


FIGURE 151

which seal the inner piston chamber against a by-pass of fluid during the raising or lowering operation.

Dryseal pipe threaded holes in the upper and lower castings are provided for the fluid line connections.

The piston rod, fluid, seal and felts are the only serviceable parts of the cylinder assembly. In the event that the replacement of these parts does not result in satisfactory operation, the cylinders must be replaced as a unit.



**CAUTION: MINERAL OIL MUST NOT BE USED ON THE PISTON ROD OR UPPER SEAL AS SWELLING AND PREMATURE DETERIORATION OF THE SYNTHETIC RUBBER WILL OCCUR. USE A FEW DROPS OF CASTOR OIL OR BRAKE FLUID WHEN LUBRICATION AT THESE POINTS IS NECESSARY.**

## TOP OPERATING CYLINDERS

### REMOVAL

1. Remove the rear seat cushion and rear seat back. See Page 109.
2. Remove all rear quarter panel trim on side on which work is to be performed. See Page 108.
3. Remove upper (A) and lower (B) hydraulic flexible hoses, Figure 152.
4. Remove upper (C) and lower (D) clevis anchor pins and remove cylinder from car.

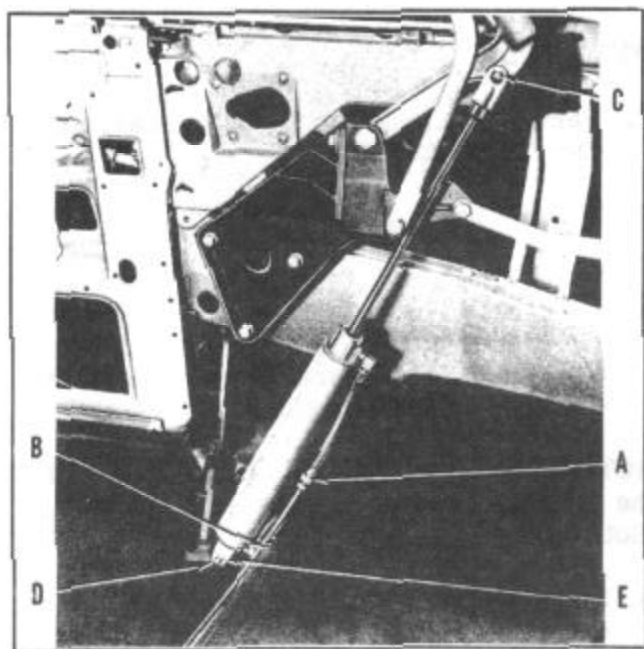


FIGURE 152

**NOTE: When replacing top operating cylinders, be sure to replace the two rubber bushings (E) in the lower clevis.**

### INSTALLATION

To install, reverse procedure of removal.

## DOOR WINDOW REGULATOR ASSEMBLY

The window regulator frame assembly, Figure 153, is designed as a unit to provide a mounting for the cylinder assembly (1) and retracting springs (2), and for the cross arms (3), which control the window and hold it in alignment. The cross arms are conventionally connected to the window by sliding studs.

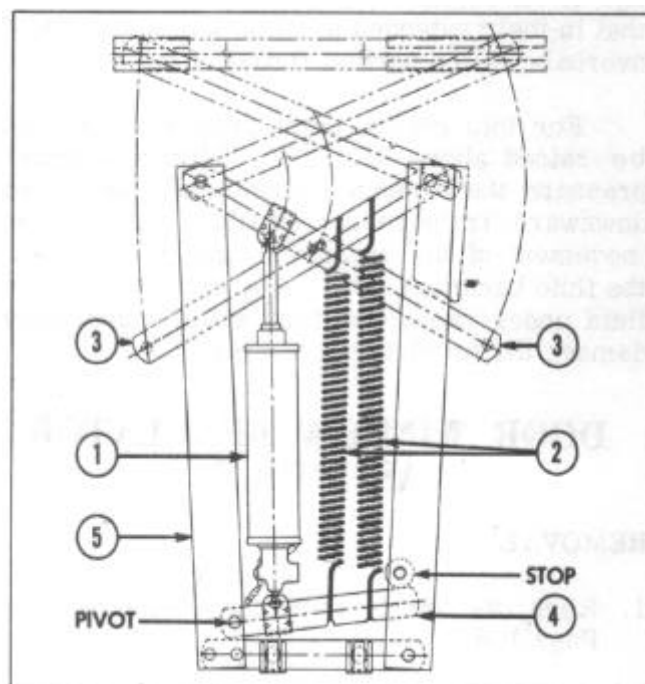


FIGURE 153

The cylinder is mounted at the lower end on a spherical seat formed in an expansion arm (4), which is pivoted to the fixed stanchion (5), and is held from upward movement by a hardened steel roller, which fits over a hardened bushing, riveted in place.

The retraction springs, at the lower ends are connected to this same expansion arm (4), Figure 153, between the cylinder and the stanchion side member. The upper ends of the retraction springs are connected to the moveable cross arm (3).

The purpose of this method of construction is as follows: When the window is raised to its upper limit, fluid is trapped in the cylinder by the action of the solenoid valve at the bottom of the cylinder. Expansion of the trapped fluid may occur if it becomes heated

through a rise in temperature. Since the piston rod is rigidly connected to the glass channel through the regulator assembly, no upward movement of the piston can occur. Provision for a downward movement of the cylinder body is made by connecting the lower end of the cylinder to the pivoted expansion arm. Any expansion of fluid forces this arm down against the tension of the retraction springs.

The tension of the springs and the leverage of the expansion arm have been chosen so that in their extended position the springs just overbalance the normal thrust of the cylinder.

For this reason pump pressure must not be raised above 260- P.S.I. With any higher pressure the expansion arm would be moved downward in normal operation, allowing no movement of the expansion arm in the event the fluid became heated. Any expansion of the fluid under such conditions would undoubtedly damage the regulator assembly.

## DOOR WINDOW REGULATOR ASSEMBLY

### REMOVAL

1. Remove inside trim and hardware. See. Page 108.

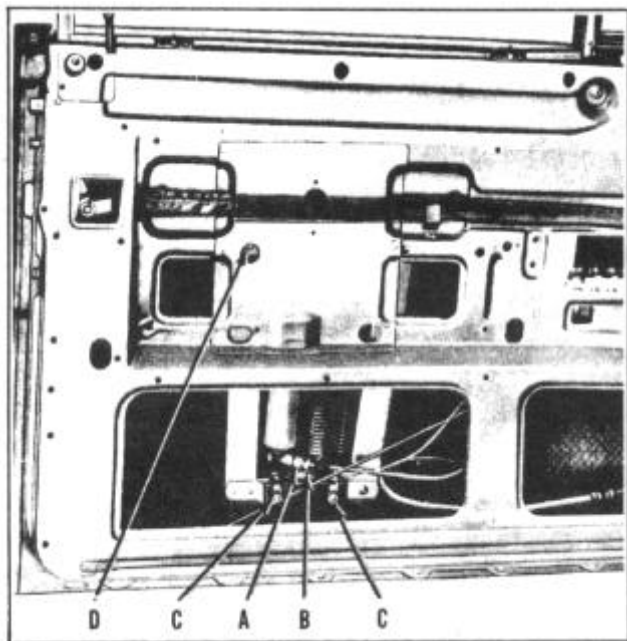


FIGURE 154

2. Remove window glass and frame assembly, see Page 103.
3. Disconnect hydraulic tube (A), Figure 154, and solenoid electrical connection (B).
4. Loosen two 1/2" hex nuts (C) and remove upper retaining screw (D).
5. Remove regulator assembly thru bottom opening in door inner panel.

### INSTALLATION

Replace in reverse procedure of removal. See Page 114, "Adjustment".

**NOTE: Manually operated regulator is removed as above except that it is fastened by screws to the inner panel near the regulator handle and behind the remote control.**

## DOOR WINDOW AND GLASS FRAME ASSEMBLY

### REMOVAL

1. Remove all inside trim and hardware from door. See Page 108.
2. With window in lowered position, loosen the 7/16" hex head bolts attaching window rest channel to regulator upper cross member. These bolts are located behind the side members of the regulator assembly and are accessible thru the bottom opening of the inner panel.

**NOTE: These bolts need only be loosened as the tabs on the lower glass rest channel are slotted.**

3. Slide window and frame assembly up and out of the top of the door.

### INSTALLATION

Reverse procedure of removal and adjust window as described under "Convertible Top and Window Adjustment", Page 112.

**NOTE: Removal and installation procedure is the same for both hydraulically and manually regulated windows.**

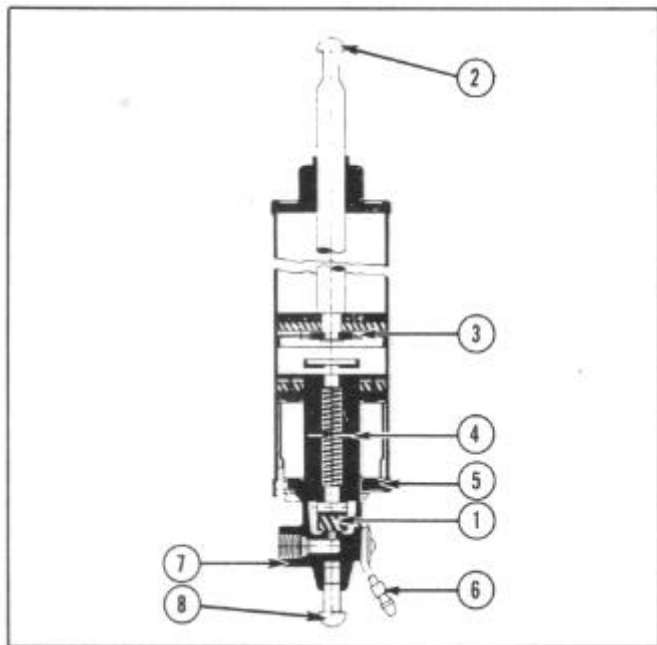


FIGURE 155

## DOOR WINDOW REGULATOR CYLINDER

The door window regulator cylinder unit, Figure 155, consists of a tubular cylinder which is closed at one end by a crimped-in formed cup which houses a saturated felt. This felt prevents the entry of dirt or water to the upper portion of the cylinder and lubricates the piston rod. The upper end of the piston rod (2) is mushroom shaped and fits into a formed seat on the cross arm. It is held in position by a spring steel retaining clip. At the lower end of the rod (3), an assembly of metal and synthetic rubber washers form the piston assembly. The lower end of the rod is riveted over to form a unit construction.

The lower end of the cylinder is closed by a spring seated, normally closed, solenoid operated valve (4), which, when electrically energized, opens to allow fluid to flow in or out of the cylinder. When closed, this valve traps the fluid in the cylinder, retaining the window in any desired position.

The piston in its extreme position is stopped on the solenoid sleeve to limit the movement of the window glass when fully lowered.

The solenoid assembly is provided with a synthetic rubber sealing ring at its upper end above the winding. This ring makes a leakproof seal for the lower end of the cylinder. The cylinder is crimped over to provide unitary construction.

A short wire lead extending from the lower end of the cylinder is provided with a bullet type terminal to which an electrical connection is made to operate the solenoid. The solenoid is grounded thru a wire soldered to the outside of the cylinder.

A boss (7) containing 1/8" internal dry-seal pipe threads for the hydraulic line connection is formed at the lower end of the sleeve. A mushroom-shaped, press-in stud (8) at the extreme lower end provides a ball joint mounting identical to that at the upper end of the piston rod.

The upper end of the cylinder barrel is lubricated permanently with a synthetic graphite compound, and since the cylinder assembly is sealed with a crimped-in end, no repairs to the internal parts are possible. When service is required the entire cylinder unit must be replaced.

## DOOR REGULATOR CYLINDER

### REMOVAL

1. Remove door regulator assembly, Page 103.
2. Clamp the regulator cross arm in a vise and remove upper and lower spring steel retaining clips, using Tool KM0-623, Figure 156, and remove cylinder.

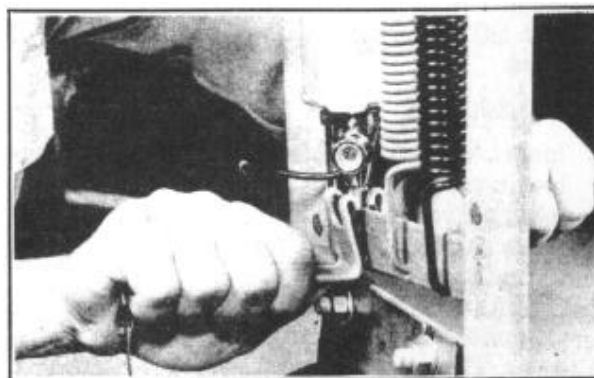


FIGURE 156

**INSTALLATION**

Reverse procedure of removal. See NOTE for Door Ventilator Wing Regulator Assembly Installation.

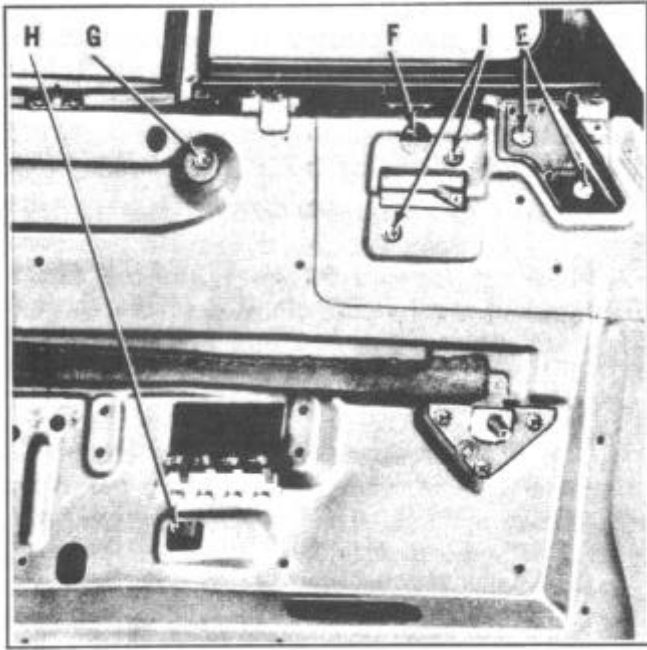


FIGURE 157

## DOOR VENTILATOR WING GLASS AND FRAME ASSEMBLY

**REMOVAL**

1. Remove inside door trim and hardware, Page 108.
2. Remove two hex head bolts (E), Figure 157, from wing mounting bracket.
3. Remove wing pivot to regulator screw (F).
4. Remove Phillips head screws (G and H) and lift door wing assembly up and out of door.

**INSTALLATION**

1. Insert wing assembly in the door so that lower pivot fits into regulator shaft.
2. Insert pivot to regulator screw (F).
3. Insert, but do not tighten screw (G) and bolts (E).
4. Carefully raise door window and check alignment at wing assembly with door window. Then tighten screw (G) and bolts (E).
5. Insert and tighten screw (H). (Use a screw driver to align bracket.)

## DOOR VENTILATOR WING REGULATOR ASSEMBLY

**REMOVAL**

1. Remove inside door trim and hardware, Page 108.
2. Remove pivot to regulator screw (F), Figure 157.
3. Remove two regulator mounting screws (I). Regulator may now be removed down thru forward end of door and out through bottom opening in inner panel.

**INSTALLATION**

Reverse procedure of removal.

**NOTE:** To assure a water tight seal around the window of the Convertible, it is essential that the windows and top be properly aligned. Whenever any regulator unit or glass is removed and replaced, it is necessary to check the alignment and make adjustments before replacing interior trim.

Instructions for making adjustments to top and windows may be found on Pages 112 thru 115.

Water test the windows after adjustment and correct if leaks are found.

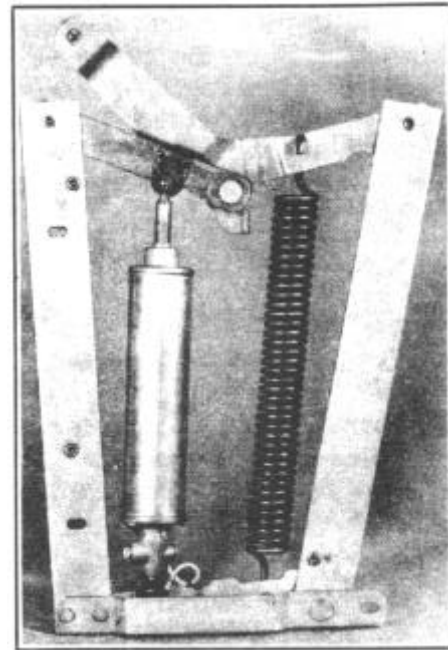


FIGURE 158

## REAR QUARTER WINDOW REGULATOR ASSEMBLY

### REMOVAL

1. Remove rear seat cushion and rear seat back. See Page 109.
2. Remove an rear quarter panel trim on side on which work is to be performed. See Page 108.
3. Remove the windlace and tacking strips as a unit. Tacking strip is retained by two clips (A), Figure 159.
4. Remove screws (B) and one Phillips head screw (C) and quarter inner panel (G).

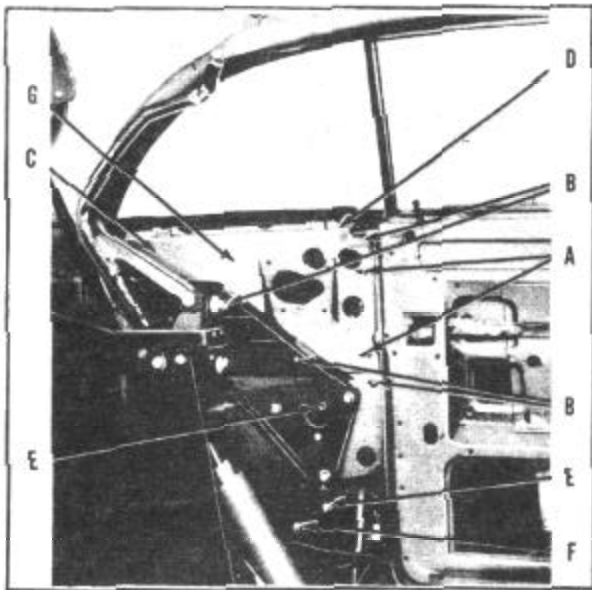


FIGURE 159

5. Remove quarter window pivot bolt (D) and three (3) hex head cap screws (E) from quarter window regulator. Disconnect hydraulic inlet-outlet tube (F) and solenoid lead wire and lift window and regulator assembly up and out of top of quarter inner panel.

**NOTE: Manually operated regulator may be removed without removing quarter inner panel. With window removed, remove cap screw (B) and spring panel out until regulator may be lifted out.**

## WINDOW OPERATING SWITCHES

The double acting electrical window operating switches are provided with three terminal posts, each marked to indicate the correct wire connections. The operating knob is self centering and must be mounted so that there is no interference with the free movement of the knob.

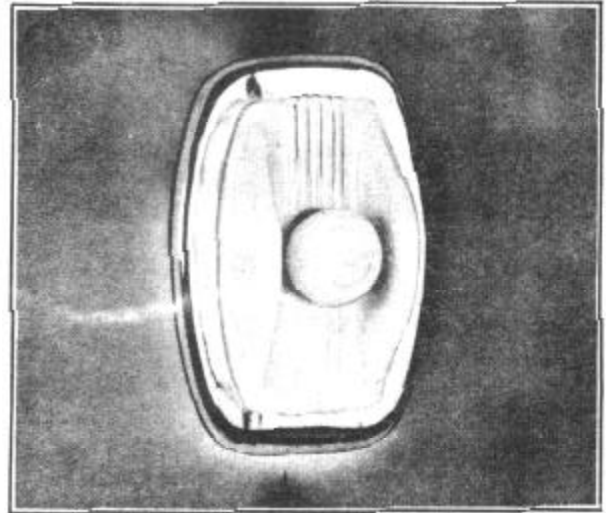


FIGURE 160

One single switch, Figure 160, is located at each rear quarter window and the right-hand door window for independent operation; and one multiple switch, Figure 161, is mounted on the left door for the control of all windows.

Spring clips at either end of the switch housing serve to hold the switch together, and to provide snap locks for

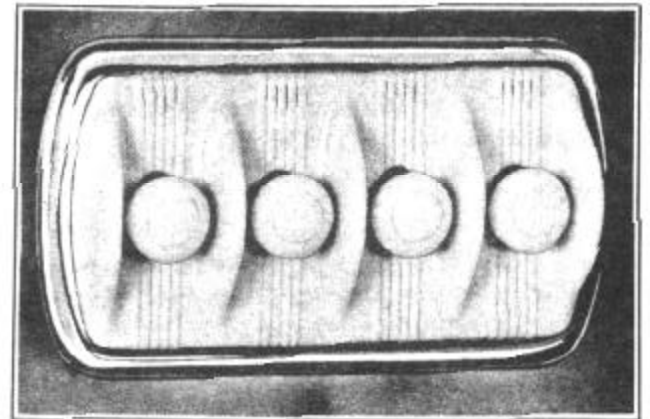


FIGURE 161

holding the switch in position when mounted.

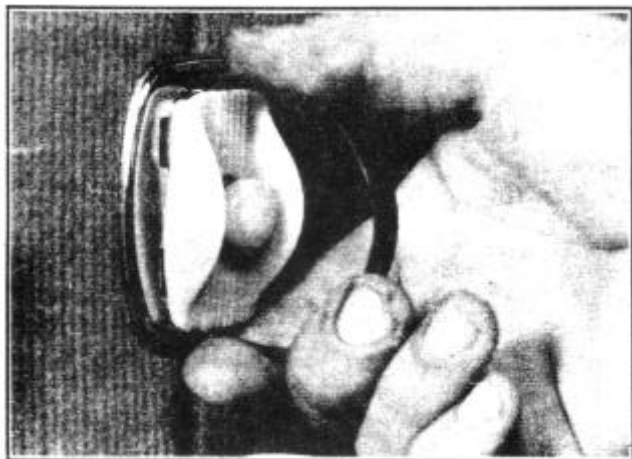


FIGURE 162

To remove a switch from its mounting, a special tool, KMO-685, is available. This tool fits in a notch at either end of the housing, Figure 162, to unlock the snap locks, releasing the switch assembly for removal straight out from its mounting in the door panel.

Removal of switches must be done carefully as the switch housings are molded of plastic, except 5D and 7D.

When defective single switches are encountered, it is advisable to replace them as a complete unit

## MULTIPLE SWITCH UNITS

Separate switch units are replaceable in the multiple switch, eliminating the necessity of replacing the whole quadruple unit.

If one of the center switches has to be replaced, first move the end unit next to the defective center unit. This is necessary since the control knob pivot pin can not be removed from either of the center switches without first removing the end switch.

### REMOVAL

1. Remove the two parallel buss bars attached to the motor and battery terminals of the switch units.
2. Depress the unit spring retaining clips with tool KMO-685 while pressing in on the control knob, Figure 163.
3. With a wire, push the brass pivot pin out

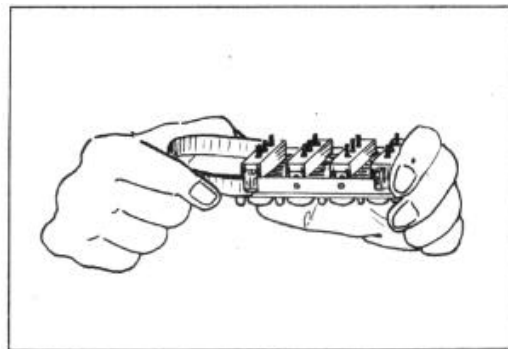


FIGURE 163

toward the end of the switch case and remove the pin, Figure 164.

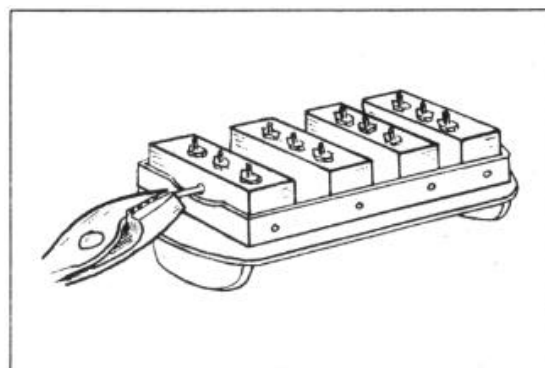


FIGURE 164

### INSTALLATION

Reverse procedure of removal, placing the insulator into the opening in the plastic case before starting the switch unit into the switch case.

The unit should be assembled in the case with terminal post marked "MOT" toward the top of the case.

## DOOR TRIM PANEL Convertible

(Models 482, 484, 492, 494, 502, 504,  
6A, 7A, 8A, 6B, 7B, 7C, 7D)

### REMOVAL

1. Disconnect battery cable at negative battery terminal.
2. Remove vent wing regulator handle and inside door handle.

3. Remove remote control knob (unscrew), garnish moulding, and valance.
4. Remove two screws from under side of arm rest and remove arm rest.
5. Remove window regulator switch (electric) using Tool KMO-685, Figure 162.

**NOTE: The door trim can be removed at the left door without disconnecting wires from the switch by tipping the switch sideways and pushing the switch through the panel opening. At the right side, the switch must be disconnected before the panel can be removed.**

6. Remove door pocket trim panel, (clips).
7. Remove door trim panel ash receptacle and pocket moulding (clips). Pocket moulding is retained by the same clips that hold the door trim board.
8. Remove door pocket corner trim and fillers front and rear (cemented). Care must be taken in the removal of the front and rear corner fillers and trim leather to allow reassembling with good appearance.

## DOOR TRIM PANEL

(Models 481, 483, 491, 493, 501, 503, 4A, 5A, 4B, 5B, 4C, 5C, 4D, 5D)

### REMOVAL

Follow the same procedure as outlined for the Commodore Series, except as follows:

1. The trim cloth or leather cemented to the pocket bottom and front and rear corners are also part of the door trimboards (held by staple clips) and care should be used in removal.
2. Window regulator and inside door handles are held in place by pin retainers. Depressing the escutcheon and spring will allow removal of the retainer pins.

## DOOR TRIM PANEL

### INSTALLATION

1. Cement pocket front and rear corner fillers to the door with trim cement.
2. Apply coating of trim cement over corner fillers and apply corner trim.
3. Lay pocket moulding in place.
4. On left-hand door draw the window regulator switch through the opening in pocket panel and install pocket panel.

5. Install the door trim board by engaging the bottom retainer and aligning the clips before driving in place.
6. Install valance panel by inserting lower flange between door and pocket trimboard with slots in line with the trimboard clips. Force down into position and install screws.
7. Install arm rest, garnish moulding, lock release knob, and window regulator switch.

## QUARTER TRIM PANEL

The quarter trim panel consists of two separate panels; the forward (triangular) panel is held in place by two screws (B), Figure 165, under the garnish moulding (A) and two screws (C) and countersunk washers at the door pillar. A clip at the rear of the panel enters behind the rear half of the quarter trim panel.

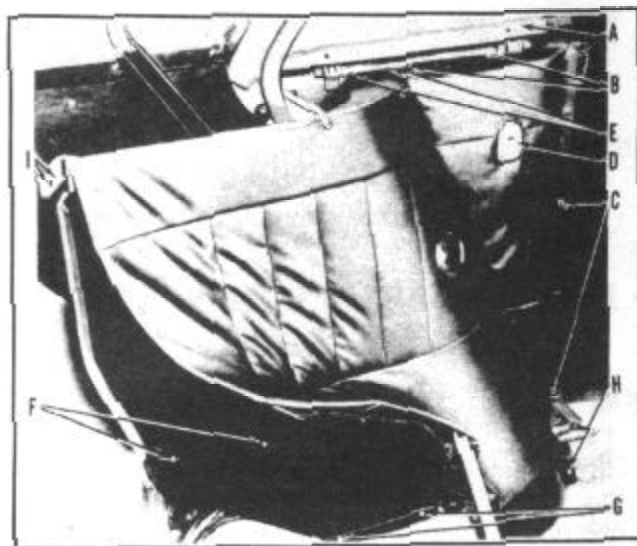


FIGURE 165

### REMOVAL

To remove the front half of the quarter trim panel, remove the garnish moulding (A), screws (B) and (C), and switch or regulator handle (D), Figure 165.

To remove the rear half of the quarter trim panel, proceed as follows:

1. Remove rear seat cushion.
2. Remove garnish moulding (A) and screws (E).
3. Remove rear seat back.
4. Remove two screws (I) from bracket in seat back.

5. Snap bottom trim strip from base of quarter panel and remove screw (H).
6. Raise rear corner of trim panel facing and remove screws (F) and (G).
7. Remove screw behind panel. This screw is located under the carpet that covers the pillar to wheelhouse brace.

#### **INSTALLATION**

To install, reverse procedure of removal.

### **FRONT SEAT CUSHION AND SEAT BACK**

#### **REMOVAL**

1. Remove front seat cushion by raising front of cushion slightly and pulling cushion up and out.
2. Remove the four bolts attaching the bottom of front seat frame to seat track.
3. Remove two screws attaching seat adjusting lever to seat frame and remove seat back from car.

#### **INSTALLATION**

To install, reverse procedure of removal.

### **REAR SEAT CUSHION AND SEAT BACK**

#### **REMOVAL**

1. Rear seat cushion is removed by lifting the forward edge and pulling the seat cushion forward.
2. Removal of seat exposes four hex head screws at bottom of seat back. Remove these screws.
3. Remove two Phillips head screws from each side of the top of the back at rear quarter trim panel support and remove seat back.

#### **INSTALLATION**

To install, reverse procedure of removal.

#### **DOOR OUTSIDE HANDLE**

To remove the door outside handle remove Phillips head

screw (A), Figure 166, from edge of door. Push handle forward and lift handle out of door.

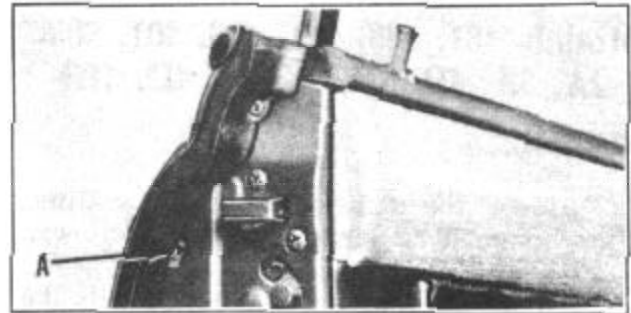
#### **INSTALLATION**

To install, reverse procedure of removal.

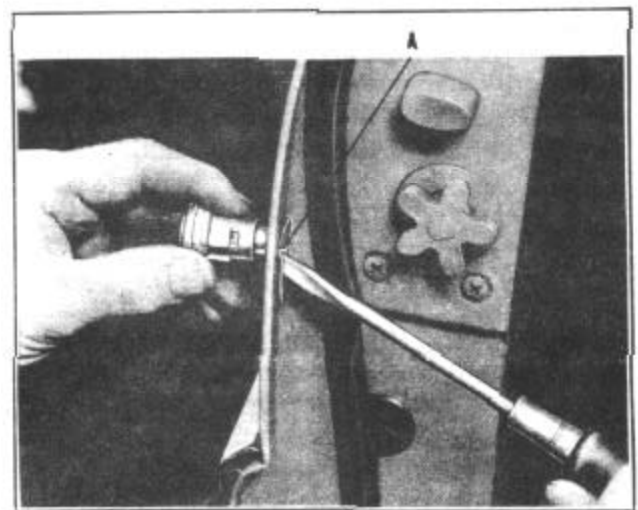
### **DOOR LOCK CYLINDER**

#### **REMOVAL**

Insert a screw driver under the flanged edge of the lock retainer and pry outward, (B), Figure 166 and (A), Figure 167. This will release the lock cylinder assembly for removal from the door. (Do not remove lock retainer.)



**FIGURE 166**



**FIGURE 167**



## INSTALLATION

1. Insert a stiff wire or an awl through the hole (C), Figure 166, on the inside of the door opposite the cylinder opening.
2. Place recessed end of lock shaft on the end of the wire and, keeping the two firmly together, press the lock assembly into the door using the wire as a guide.
3. Press the lock retainer into position by hand as far as possible, then, using a fibre hammer, drive the retainer in flush with the door.

## DOOR LOCK REMOTE CONTROL

### REMOVAL

1. Remove all door trim panels, Page 108.
2. Remove three screws (E), Figure 168, from triangular bracket (F) at the handle end of remote control arm.
3. Remove anti-rattle spring (D) and pin from lock end of remote control arm and remove remote control.

### INSTALLATION

To install, reverse procedure of removal.

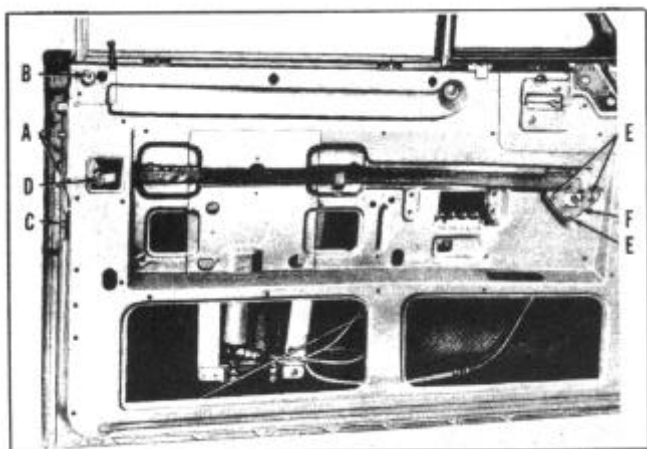


FIGURE 168

## DOOR LOCK

### REMOVAL

1. Remove door outside handle, Page 109.
2. Remove door lock cylinder assembly.
3. Remove all door trim panel. Page 108.

4. Raise window and remove window guide channel screws (B and C), Figure 168, and remove channel by pulling channel down.
5. Remove three large Phillips head screws (A) attaching lock to edge of door.
6. Remove remote control anti-rattle spring (C) and pin connecting remote control arm to lock.
7. Remove lock down through lower opening of door inner panel.

### INSTALLATION

To install, reverse procedure of removal.

## LOCK LUBRICATION

Whenever door locks, lock cylinders, or remote control arms are removed, they should be cleaned and lubricated before replacement. Special Hudson "Lock Ease" lubricant should be used to insure operation in cold weather. Ordinary oils and greases are not suitable for lock mechanisms. To prevent the remote control arm from freezing and sticking, lubricate the arm under the silencer sleeve and the outside of the sleeve that contacts the door inner panel.

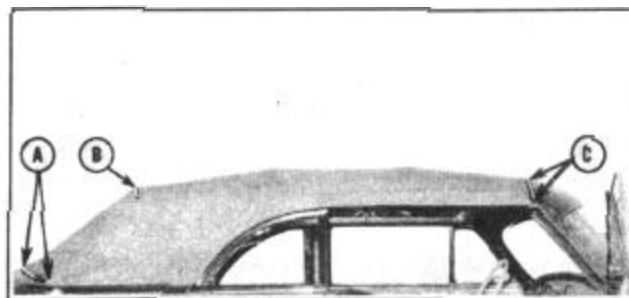


FIGURE 169

## CONVERTIBLE TOP AND REAR CURTAIN

### REMOVAL

Rear curtain removal includes items 1 thru 6. Top and rear curtain removal includes items 1 thru 8. Removal of top decking only includes items 1, 2, 3, 4, 7 and 8.

1. Remove snap fasteners and chrome moulding from rear belt line (A), Figure 169.

2. Remove six Phillips head screws and tacks from top and rear curtain at belt line (A).
3. Remove chrome moulding and retainer from top at rear bow (B).
4. Remove all tacks from top at rear bow (B). Fold top material forward over bows.
5. Remove tacks from top side pads at rear bow (B). Fold pads forward over bows.
6. Remove tacks from rear curtain at rear top bow (B) and remove rear curtain.
7. Remove top, front header rear chrome moulding (C) (narrow) and retainer.
8. Remove all tacks from top at front header (C). Remove top material and clean all sealing compound from area between two top front header chrome mouldings. Lightly hammer down all tack holes in all tacking strips.

## INSTALLATION

Rear curtain installation includes items 1, 2, 3, 4 and items 7, 8 and 9.

Top and rear curtain installation includes items 1 thru 11.

Top decking only includes items 3 thru 11.

1. Install two rear curtain alignment gauges with the slotted ends engaging the rear bow and the tapered end (with the metal retaining strap on) braced against the rear belt line of the body, one on each side, 19" from center line of body, Figure 170.

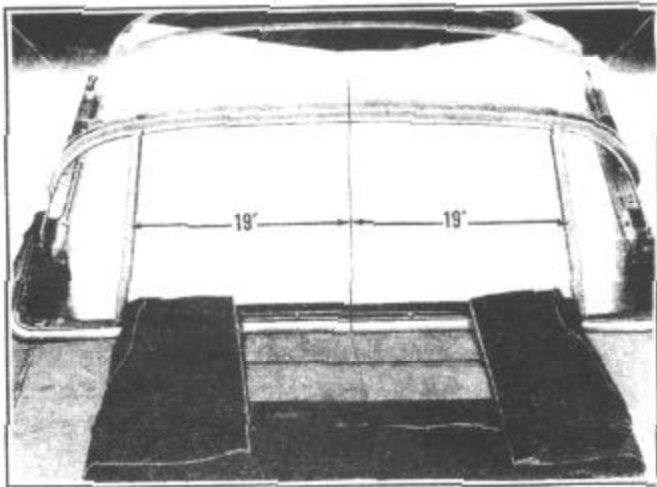


FIGURE 170

**NOTE: The rear curtain alignment gauges can be made up in your shop. See Figure 173 for details.**

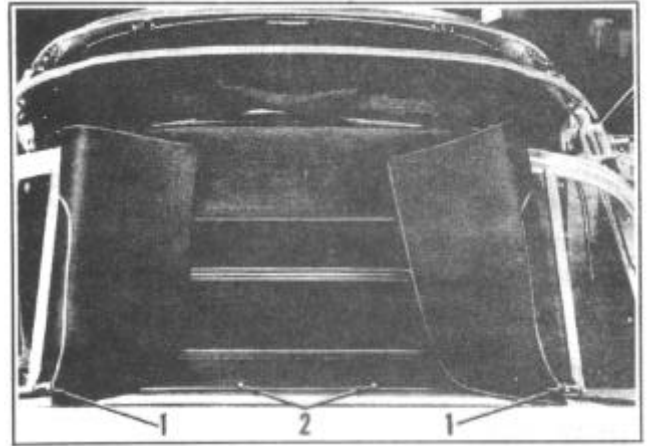


FIGURE 171

2. Insert two sharp-pointed tools thru the two outer screw holes at the bottom of the rear curtain and into corresponding two screw holes in the body at belt line, Figure 171. Remove the tools and install the two Phillips head screws at 1 and the two screws at 2. (This procedure will position and center the rear curtain for tacking at the top rear bow.) Pull the rear curtain straight and snug to top rear bow

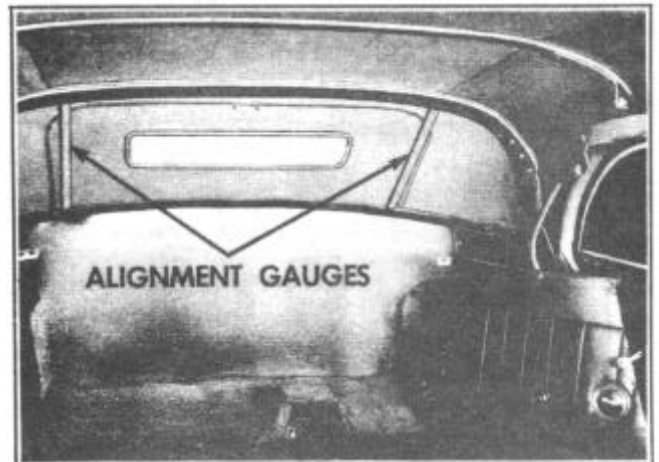


FIGURE 172

and securely tack in place. Trim excess material closely. Allow the alignment gauges to remain in place until top decking and curtain are installed, Figure 172.

3. Tack top pads in place on top rear bow, making certain that the lower outside edge joins the outer end of the rear

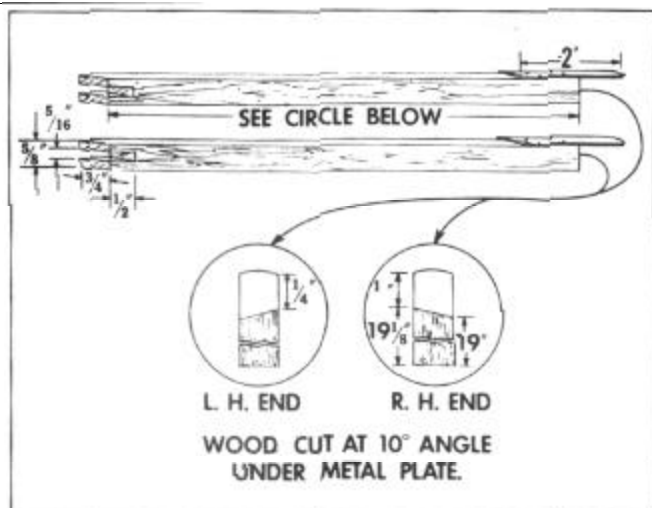


FIGURE 173

curtain at the top rear bow. Pull top pads securely to produce a clean, smooth contour and tack to front header. Tack pad to each bow with one tack through upper and one through the lower edge of pad.

4. Unfold top over rear top bow and rear curtain. Secure rear ends of top at the belt line with the two awls used for the rear curtain. Be certain that the top fits squarely in line with the body.
5. Insert stiff top retaining flaps into retainers at side belt line, and at rear quarter windows. At this point, move forward and pull top material into position at each front corner. Secure with an awl on each side inserted into the top front header rear chrome moulding (narrow) screw holes. Stretch and tack material to top front header, starting at the outside edge and continuing upwards along top front header for approximately 6" on both sides. Fit and tack rear edge of slotted opening in top material to rear bow first and trim excess material closely. Then overlap front edge of opening and tack securely to rear bow. Trim excess material to form smooth joint over rear bow and cover tacked area thoroughly with waterproof top sealer.

**NOTE: The tacking operation must be done carefully at the rear top bow to produce a smooth contour.**

6. Finish stretching and tacking top at front header and trim off all excess material. Apply waterproof top sealer liberally over

tacking area of the top material at front header.

7. Install top rear bow chrome moulding and retainer.
8. Install a Phillips head screw and necessary tacks to secure curtain and top at belt line.
9. Install chrome moulding at rear belt line.
10. Install top front header rear chrome moulding (narrow) and retainer. This moulding must be spaced 3/16" from top front header front chrome moulding (wide) to allow sufficient area between the moulding for proper application of sealing compound. Apply gray Dolphinite sealer between two top header chrome mouldings. Apply slowly and with enough pressure to force sealer into the bottom of the opening. After sealer is applied the full width of the top, wipe the sealer in thoroughly to remove air bubbles. Wipe carefully so as to remove only the excess sealer and produce a smooth well sealed joint.
11. Allow Dolphinite to set 1/2 hour before water test. Wet top thoroughly and allow to dry completely in a warm room. This will shrink out any minor wrinkles which may have occurred due to the top material being folded before installation.

## CONVERTIBLE TOP AND WINDOW ADJUSTMENTS

### TOP ADJUSTMENT

1. Raise top and clamp securely to the windshield header.
2. Raise rear quarter windows to full closed position.
3. Back out the side rail adjusting screw at (A), Figures 174 and 175. This screw must not be making contact inside of the rail hinge when starting a major top adjustment.
4. Loosen anchor bolt attaching top balance link to top pivot bracket at (B), Figure 174.
5. Loosen the hex head bolts attaching top pivot bracket support to rear pillar to wheelhouse brace at (C) and (D). Bolt holes at (C) are slotted. Bolt (D) is a pivot bolt for movement of bracket (E) forward or backward in an arc to lengthen or shorten the top assembly in relation to the windshield header. Make

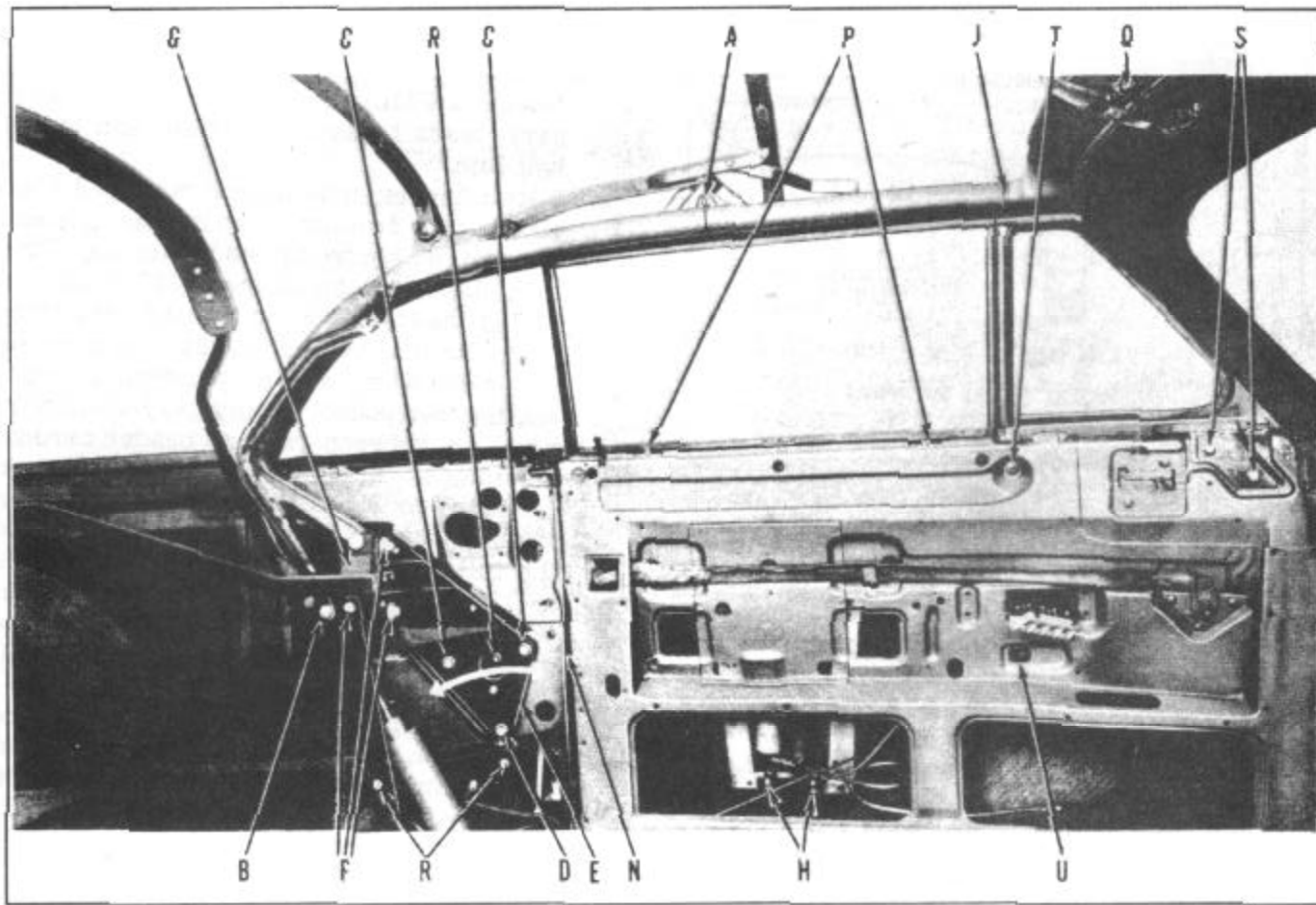


FIGURE 174

Make necessary lateral adjustment and tighten bolts (C and D) securely.

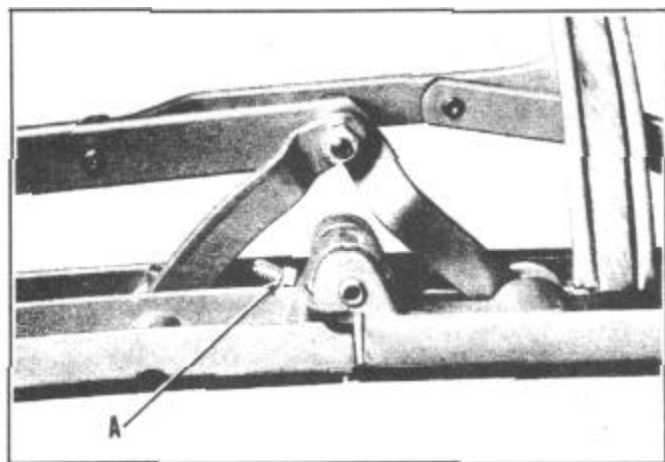


FIGURE 175

6. Loosen bolts (F) and move bracket (G) up or down, in or out, until  $\frac{5}{8}$ " clearance is obtained between the top front

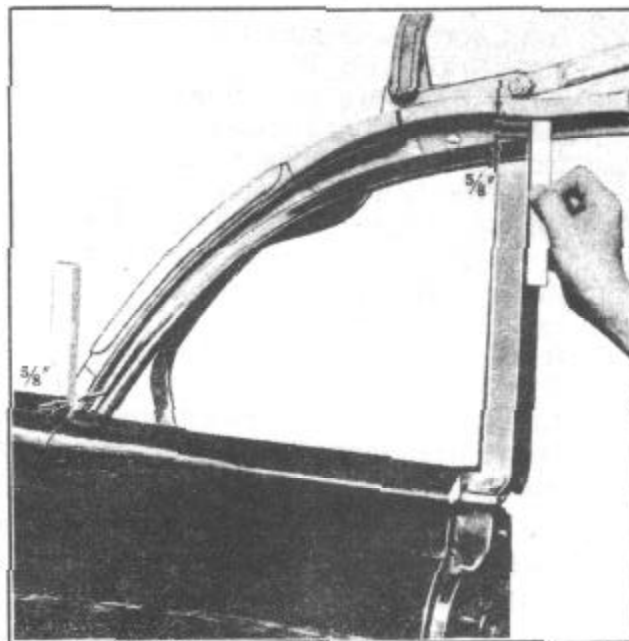


FIGURE 176

corner of the rear quarter window and the top side rails, and 5/8" between the lower rear corner of the rear quarter window and the side rails at the belt line, Figure 176. Use a 5/8" wood gauge as shown. This 5/8" measurement is important in producing correct operation of the top.

7. Unhook top from windshield header and raise top about 6" from header. Cut two wooden blocks to fit over top of the quarter window and hold side rail 4" off the quarter window (highest point with window raised). Locate blocks on quarter windows and allow side rails (weatherstrip removed) to rest on blocks. With the blocks in position, the balance link anchor bolt is correctly positioned in the slotted hole of the top pivot bracket. Tighten bolt (B) securely. Remove adjusting blocks and again clamp the top to the windshield header. Raise door windows to the closed position.

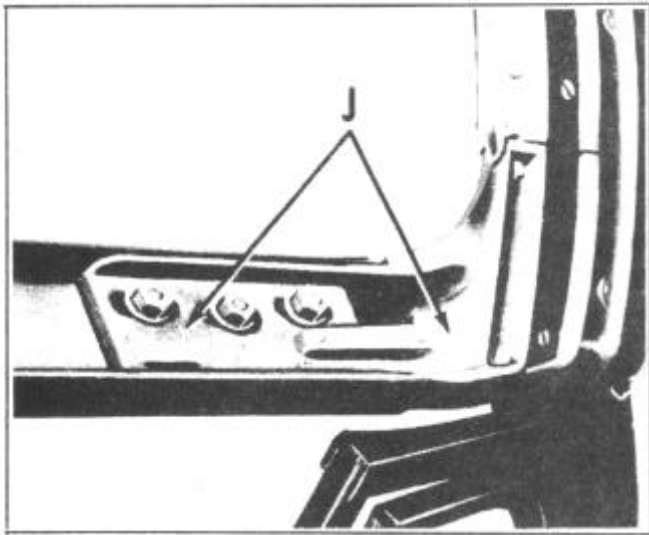


FIGURE 177

8. If, after these adjustments have been carefully made, the top side rails are not level with the top of the door window, adjust screw at (A), Figure 175. Turning the screw in lowers the side rails; turning the screw out raises the side rails. Retighten jam nut on adjusting screw.
9. The top side rail front corner bracket (J), Figures 174 and 177, is preadjusted at the factory with three bolts set midway in the adjustment slots.

NOTE: THIS SETTING IS NOT TO BE ALTERED UNLESS ALL OTHER POSSIBLE ADJUSTMENTS HAVE FAILED TO PRODUCE THE DESIRED RESULTS.

10. The top hold-down clamps (Q), Figures 174 and 178, are attached with a serrated mounting plate (D) to allow suitable spring tension adjustment and top front header sealing.

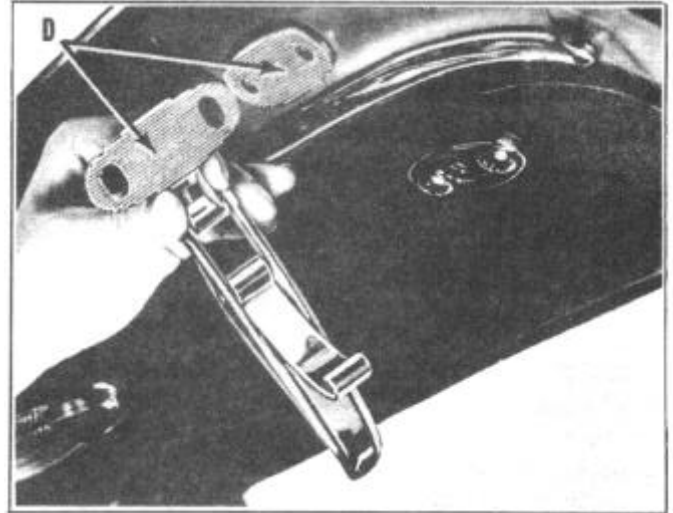


FIGURE 178

## WINDOW ADJUSTMENTS

### QUARTER WINDOW

Before attempting any door window adjustments, the quarter window must be properly positioned as follows:

1. Loosen screws (R), Figure 174, to obtain the proper forward adjustment.
2. Insert rubber shims under the front edge of the rear quarter window to align the rear quarter window with the door glass.

**NOTE: In the fully raised position, the front edge of the quarter window rests on the rubber weatherstrip on the door lock pillar.**

### DOOR WINDOW

The door glass has four adjustments to provide proper alignment with the top side rails and the rear quarter window as follows:

1. To bring the rear of the door glass into alignment with the rear quarter window, the glass run channel may be adjusted in

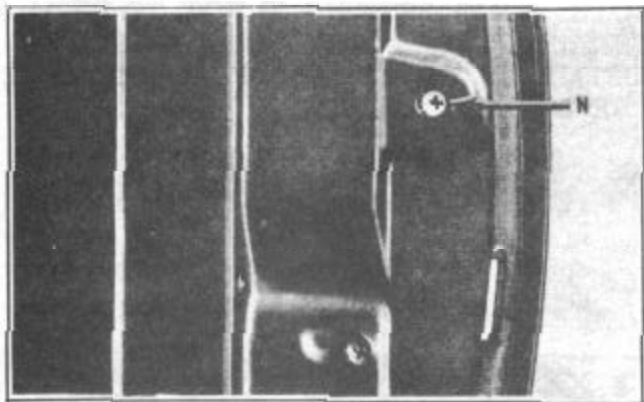


FIGURE 179

or out by moving screw (N), Figure 179, attaching the channel to the lock edge of door.

2. If satisfactory adjustment cannot be made at this point due to bottom of channel striking the door outer panel, it will be necessary to remove the channel and cut off part of the lower outer corner of the channel to allow outward adjustment of the channel to the limit of the adjusting screw slot. In extreme cases it may be necessary to extend the screw slot by filing the slot with a round file.

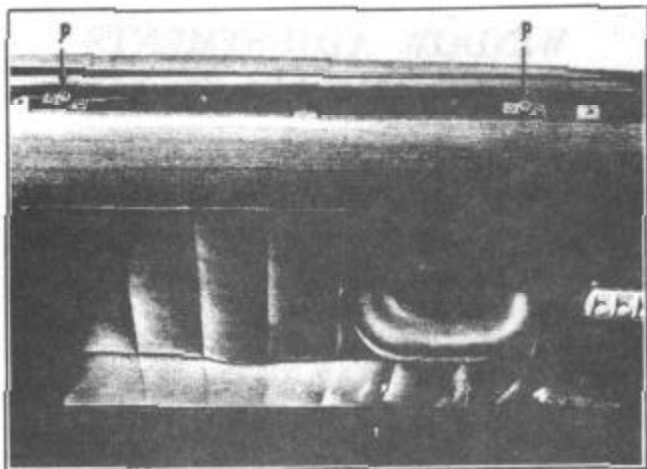


FIGURE 180

3. The adjustable window stops shown at (P), Figure 180, which are accessible when the door garnish moulding is removed, are for the purpose of making minor adjustments of the door window travel to assure full contact with the side rail weatherstrip.
4. The hydraulic window regulator mounting is slotted to allow raising, lowering, or tilting forward or rearward of the regulator as required see (H), Figure 181.

5. The door window glass rest channel is also slotted and may be adjusted in the same manner as the regulator assembly.

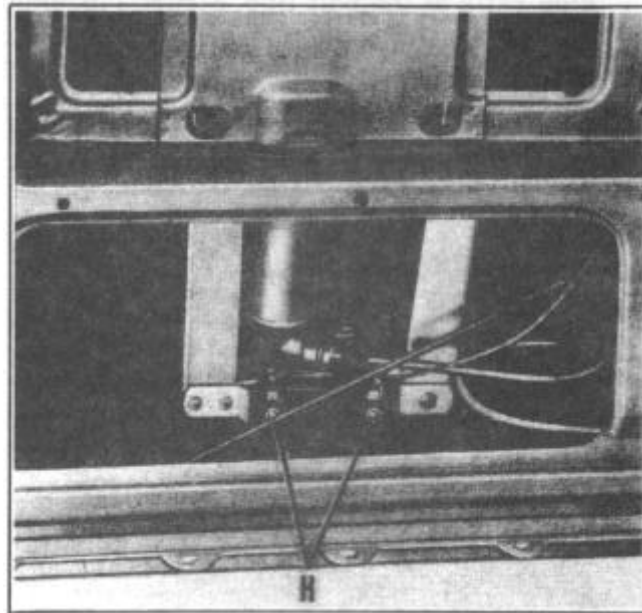


FIGURE 181

### VENT WING

1. Remove two screws (S), Figure 174, attaching the wing cradle to inner panel.
2. Loosen screw (T) attaching center glass channel to upper edge of inner panel and remove screw (U) attaching lower end of center channel to inner panel.
3. To tilt vent wing inward insert a washer or washers between wing cradle and inner panel at the upper wing cradle attachment screw (S). Install and tighten both screws, (To tilt outward, insert washers at lower attaching screws (S).)
4. Tilting the glass inward moves the bottom of the center glass channel away from the inner panel. Washers should be inserted between the lower end of the channel (U) and the inner panel to hold channel in position. Retighten screws (T) and (U).

## HYDRO-LECTRIC SERVICE INFORMATION

The operation of the hydraulic top and window units in the Hudson Convertible Brougham is accomplished through the use of an electrically operated hydraulic pump, single action hydraulic window cylinders, and double

double action hydraulic top operating cylinders.

The electric pump motor is operated through a solenoid switch incorporated in the cylinder.

To make a complete check, both the ELECTRICAL system and the HYDRAULIC system must be considered. The hydraulic system includes the hydraulic pump, pressure relief valve and fluid reservoir, the top operating valve, top and window operating cylinders, fluid lines, and the hydraulic fluid. The electrical system includes the battery, circuit breakers, top operating valve and switch assembly, window switches, motor solenoid, motor, window cylinder solenoid valves, and all connecting wires.

The first step in checking any Hydro-Lectric system that fails to operate, or which operates slowly, is to check the battery gravity reading, Figure 182. For efficient operation, the battery reading should not be lower than 1.225. A low battery may result in slow operation of the pump motor or faulty operation of the motor solenoid switch and the window cylinder solenoid valves.

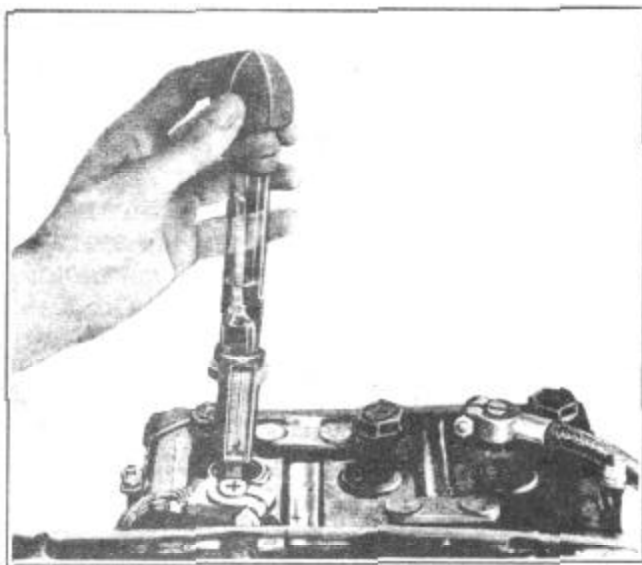


FIGURE 182

**CAUTION:** Before any check of fluid level, disconnect negative cable at negative battery terminal. Since the hydraulic fluid is inflammable, any accidental sparks may ignite spilled fluid.

If the pump motor operates and the battery gravity reading is at least 1.225 at 70°F, unsatisfactory operation may be due to low fluid level in the fluid reservoir. Low fluid level is

usually indicated when the pump operation is noisy or when it is impossible to raise all the windows; that is, one, two, or three windows may go up satisfactorily, but pump may become noisy and only partially close the fourth window while the other three are up.

To check the fluid level in the reservoir, lower all windows and raise the car.

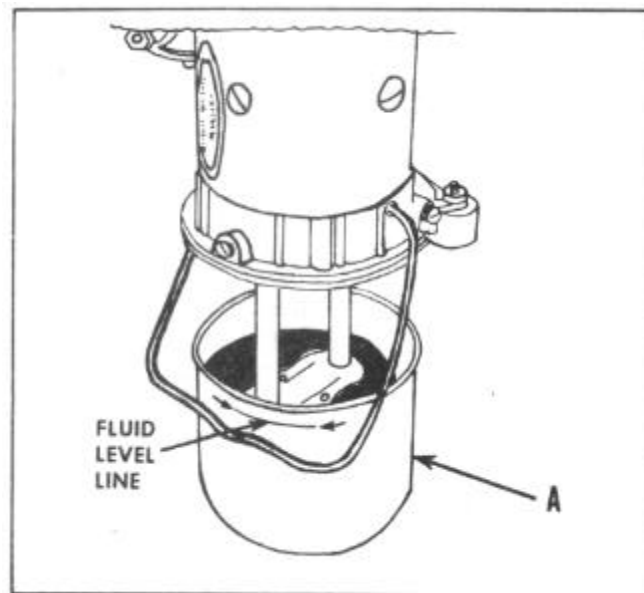


FIGURE 183

**NOTE:** It is not necessary to lower the top to check fluid level. Since the top operating cylinders are double action cylinders, the amount of fluid in the cylinders remains constant.

Remove the plate from bottom of pump well and remove fluid reservoir. If the fluid level is low, add enough fluid to bring the fluid level up to the line on the fluid reservoir. If the fluid is dirty, the system should be drained as explained on Page 98, and new fluid substituted.

## ELECTRICAL SYSTEM CHECKS

Inoperative solenoids or switches shorted, grounded, or open circuits will cause failure of the electrical system as will a low battery.

### CIRCUIT BREAKER

If the hydraulic pump motor fails to operate when the top operating knob is moved in

or out, or when window switches are moved to "up" position, electrical current may not be entering the system. Use a test lamp to check the current at the circuit breaker located under the instrument panel to the left of the steering column. On Convertibles equipped with hydraulic window regulators, a 30 ampere circuit breaker is provided in addition to the standard 20 ampere circuit breaker. Apply one lead of the test lamp to the battery (forward) terminal of the standard circuit breaker, which is located above the 30 ampere circuit breaker, and ground the other lead. If the lamp fails to light, no current is reaching the system and the power lead to this terminal from the "BAT" terminal of the voltage regulator should be checked for short or open circuit.

If the lamp lights, move the test lead to the auxiliary (rear) terminal. Failure of the lamp to light here indicates the circuit breaker is faulty and should be replaced. Move test prod to rear terminal of 30 ampere circuit breaker if car is equipped with hydraulic window regulators. No light at this point indicates faulty connection between "BAT" terminal of 20 ampere circuit breaker and "BAT" terminal of 30 ampere circuit breaker.

### WINDOW LIFT CONTROL SWITCH

With current reaching the "AUX" side of the 30 ampere circuit breaker, the pump motor should operate when window switches are moved to "up" position. If motor fails to operate, or if windows fail to open with switch in "down" position, each switch should be removed and checked.

**NOTE: If motor operates when quarter window switches are moved "up" but fails to operate from door switches, a loose connection or broken wire at the forward terminal on the top operating switch is indicated. The window control switches are held in place by spring clips and may be removed by using Switch Removing Tool No. KMO-685.**

With terminals on back of switch exposed, ground one lead of the test lamp and attach one lead to the center terminal, marked "BAT". This terminal is normally "hot", and the light should light with the switch control knob in any position. With the knob in "up" position, the upper or "MO" terminal should light the test lamp. Current should reach the lower or

"CYL" terminal with the control knob in both "up" and "down" positions.

### TOP OPERATING SWITCH TEST

If top is up, unhook top from windshield header before testing top operating switch.

Check adjustment of top control rod. The rod should extend 1/8" through the retainer on the switch at (A), Figure 148. There should be 1-3/8" clearance between the base of the top control knob and the face of the retaining nut on the instrument panel for Models 1948 thru 1950 and 1-3/16" for all Models 1951 thru 1954, shown at (C), Figure 150. Make adjustment at (B), Figure 156. The pump motor should operate when the top operating knob is pulled out or pushed in. If motor fails to operate, use the test lamp to check whether current is reaching the switch. Current is carried to a terminal on the face of the switch from the "AUX" terminal on the circuit breaker. If current is reaching the switch, failure of the test lamp to light from the side terminal when the top operating knob is pulled out indicates that the switch is inoperative and should be replaced.

### MOTOR SOLENOID SWITCH

If the foregoing tests indicate correct battery gravity, and if window and top operating switches operate satisfactorily, but motor fails to operate, it will be necessary to remove the rear seat cushion and rear seat back to gain access to the well containing the Hydro-Lectric unit.

Check the connections from the battery to the solenoid switch and from the solenoid to the motor.

Current should reach the switch (center) terminal of the motor solenoid when window switches are moved up or top control knob is moved in or out. A distinct "click" will be heard if solenoid is operating satisfactorily.

If current does not reach the switch terminal, wires from the window and top operating switches should be checked for open or short circuit. Operation of the solenoid may be checked by disconnecting the wires from the switch terminal



and connecting a jumper from the battery terminal to the switch terminal. If solenoid is satisfactory, the solenoid will "click", and the motor will operate. If no click is heard with the jumper in place, the solenoid switch should be replaced.

### WINDOW POWER VALVE SOLENOID CHECK

In normal operation the window power valve solenoid should make a distinct "click" when the window control switch knob is moved up or down. If this click is not heard, check the window control switch.

When the window control switch operates satisfactorily, remove the trim panel to expose the window operating cylinder. The solenoid valve can frequently be freed by several sharp taps on the base of the cylinder. If the solenoid continues inoperative, check the small copper ground wire on the base of the cylinder to see that it is not broken or unsoldered. Break the snap connection in the wire from the switch to the cylinder and connect a jumper from the cylinder wire to the hot "BAT" terminal of the window operating switch. If the click is still not heard, the solenoid is defective and cylinder must be replaced. If the click is heard with the jumper in place, the wire between the window operating switch and the cylinder should be replaced.

## HYDRAULIC SYSTEM

### PRESSURE RELIEF AND FLOW CONTROL VALVE

A piston type, spring loaded pressure relief and flow control valve controls the fluid pressure of the hydraulic pump, Figure 184. The valve (A) is adjusted to a minimum of 250 pounds and a maximum of 260 pounds per square inch, and under no circumstances should it be changed to provide a higher pressure. In conjunction with the tension spring on the valve, washers are also added under the head of the plug to allow for necessary adjustment or variation in pressure. The addition of washers reduces the pressure while the removal of washers increases the pressure. When cleaning and servicing this valve, USE THE SAME WASHERS THAT WERE REMOVED, AND ALWAYS BE SURE

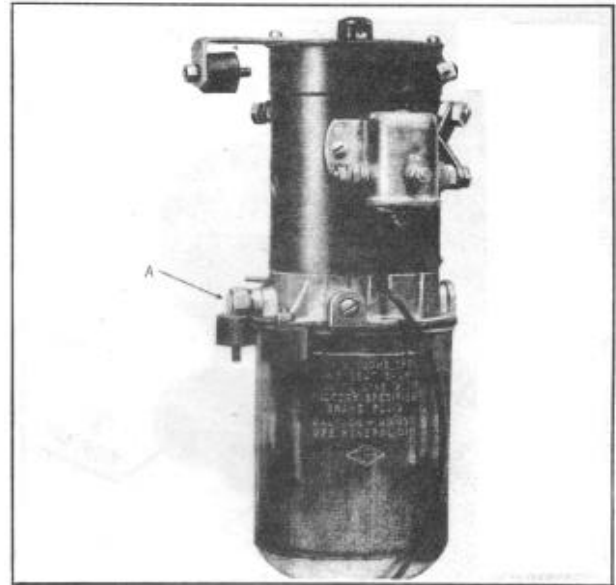


FIGURE 184

THAT THE SAME NUMBER OF WASHERS ARE REPLACED WHEN REINSTALLING THE PLUG.

### TOP OPERATING CONTROL VALVE

Unsatisfactory operation of the hydraulic system may result from scored or worn faces in the top operating valve, allowing internal leakage from one port to another. A check of this condition may be made at the top operating valve. First make sure the top control rod has proper clearance and that the self centering springs in the valve return it properly to a neutral position. Then, holding a cloth below the connection to catch any spilled fluid, disconnect the fluid return line at the top operating valve. (The fluid return line is the lower of two lines entering the left side of the top operating valve.) DO NOT MOVE TOP OPERATING KNOB WHILE THIS LINE IS OPEN.

With the fluid return line open, raise one or two windows. Any internal leakage or pressure loss in the valve will be indicated by a discharge of fluid from the valve port. Such discharge indicates a defective valve and replacement should be made.

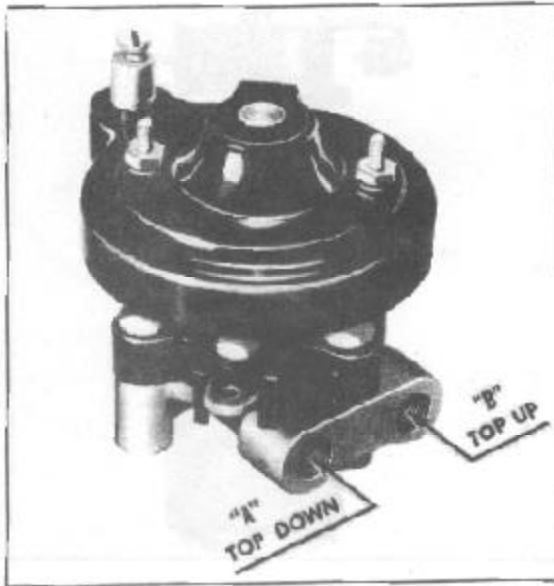


FIGURE 185

### FLUID LEVEL

Procedure for checking the fluid level in the fluid reservoir is to be found on Page 116.

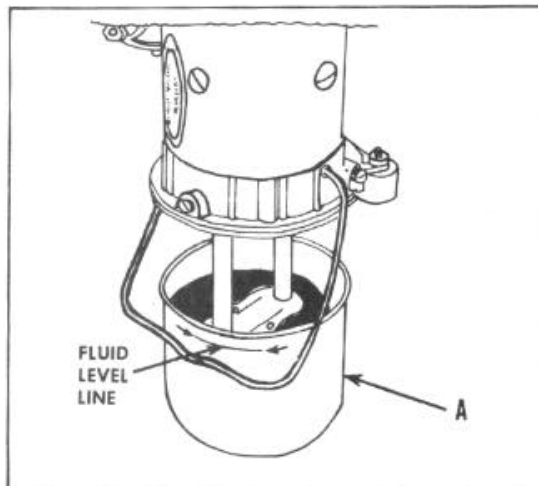


FIGURE 186

## REFILLING THE HYDRAULIC SYSTEM

1. With the car raised on a hoist, remove the reservoir (A), Figure 186, and fill to the fluid level line with hydraulic fluid.

**NOTE:** Inasmuch as the two top operating cylinders have a fluid capacity nearly double that of the reservoir, more than one filling is necessary before the folding top can be raised or lowered with the exclusive use of the hydraulic system.

2. Raise and lower the top several times to admit fluid and expel air from the system. It will be necessary to assist the movement of the top manually until sufficient fluid has entered the system to afford independent hydraulic operation.
3. Remove reservoir and refill as necessary to fluid level line. Operate all windows several times to expel air from that part of the system.
4. With all hydraulic units operating satisfactorily, lower all windows and the folding top and again check the hydraulic fluid level in the reservoir. The fluid in the reservoir should now be up to the fluid level line.
5. Check all hydraulic connections for leaks.

### BLEEDING HYDRAULIC SYSTEM

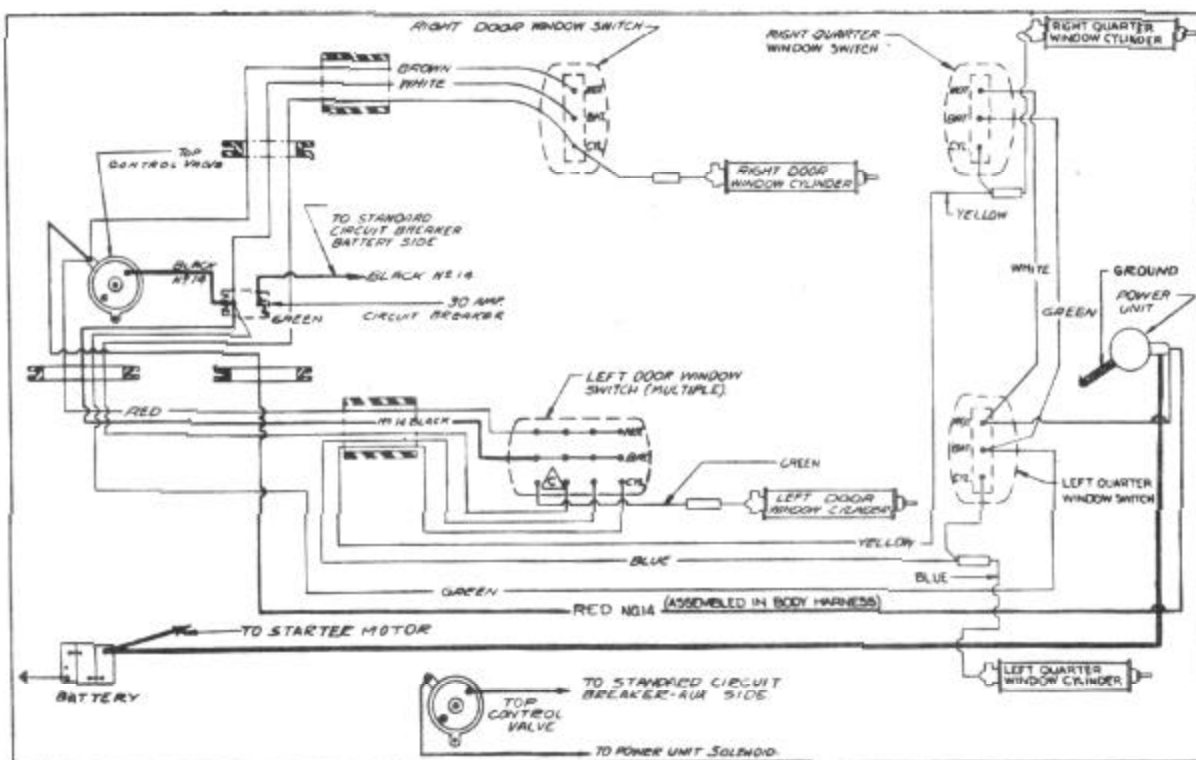
Bleeding, as ordinarily meant by the term, is unnecessary with the Hydro-Lectric system. An air vent is provided in the pump body to allow air to enter and escape from the system. Operating the units several times while refilling the system frees the lines and cylinders of air.

### HYDRAULIC PUMP PRIME

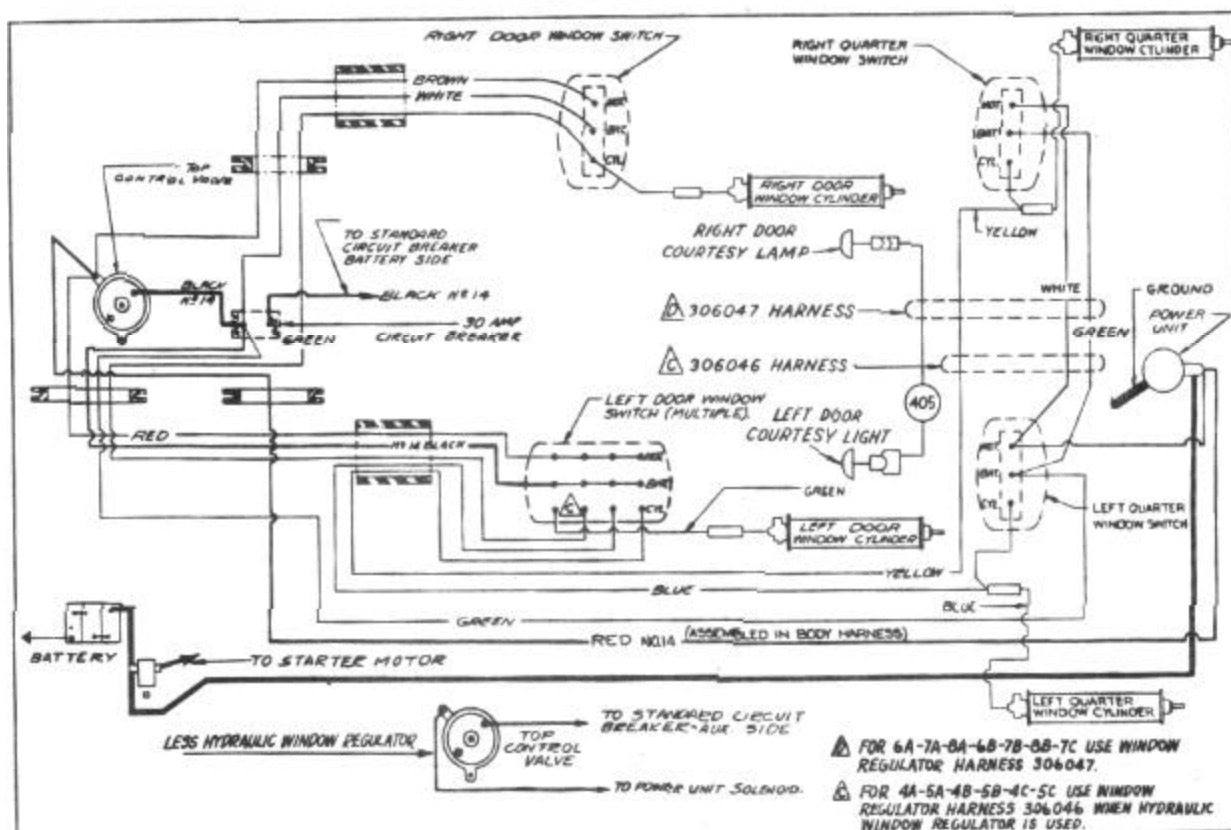
When the motor and pump operate, but top and windows fail, lack of "prime" in the pump is indicated. Make sure the fluid level is up to the line on the fluid reservoir. To check for priming, remove seat cushion and disconnect flexible line from TEE in front of pump. This flexible line is the pressure line from the side of the pump. Insert this flexible line into a container to avoid spilling fluid and operate pump briefly two or three times. NO fluid flow from this line indicates the pump lacks prime.

To prime the pump, disconnect the fluid re turn line at the front of the pump. Hold thumb tightly over return port in pump and run pump a few seconds until fluid is expelled from the pressure line. Reconnect lines and check the fluid level in the reservoir, Figure 186.

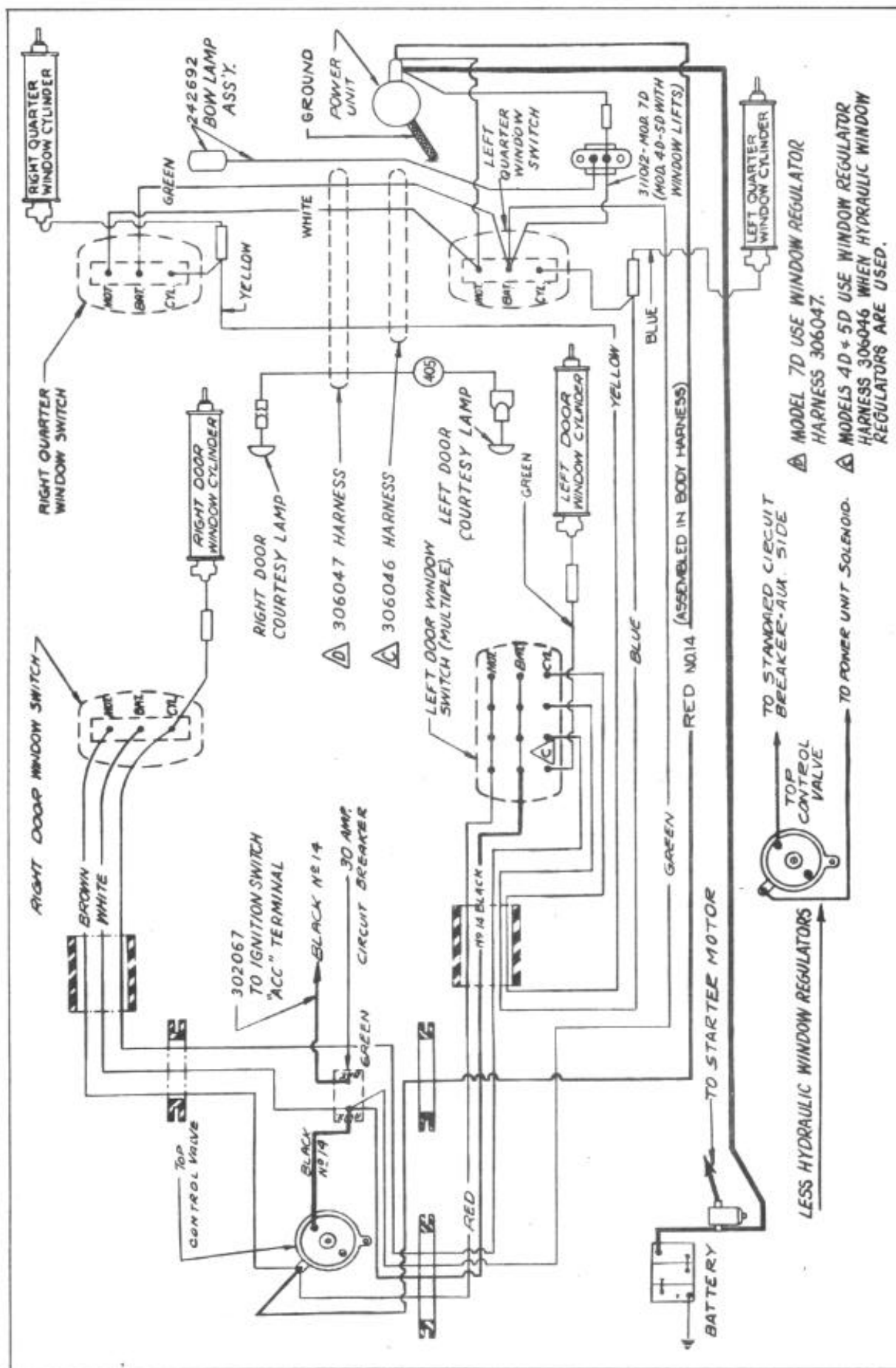
If pump frequently loses prime, a leak is indicated at some point in the return line.



ALL CONVERTIBLE MODELS - 1948 thru 1950  
FIGURE 187



ALL CONVERTIBLE MODELS - 1951 thru 1953  
FIGURE 188



ALL CONVERTIBLE MODELS - 1954  
FIGURE 189

# CONVERTIBLE TOP SEALING

## (All Models 1948 thru 1954)

The first step in weather sealing the top is to determine where the water is making entry. With all windows fully closed and the top secured to the windshield header, direct a medium heavy spray of water over the entire windshield header area and the forward edge of the top, moving the spray from side to side and covering the door ventilator wings. Spray is to be directed against these areas from the front of the car so as to assimilate rain beating against the car while the car is in motion. An observer seated in the car will determine the points of water entry.

If during the water test, water appears to be dripping off either end of the top header lower inside chrome moulding, the following operations should be performed:

1. Lower top about twelve inches and brace top open to facilitate repairs.
2. Remove front header lower inside chrome moulding (R), Figure 190. (Snap-on type.)
3. Remove the first two Tinnerman nuts (L) at moulding retainer at the side where leak occurred.
4. Remove the inside corner screw (A) from the bottom of the header (to release end of lower weatherstrip).
5. Turn the lower weatherstrip back to expose the lap joint (B) between the header casting and sheet metal panel.
6. Apply a strip of Body Caulking along header joint (B) and at hole (G) to obtain a complete seal; then cover with Mystik Tape as shown at (H).
7. After the Mystik Tape has been installed securely, pierce a hole in the Mystik Tape at the drain hole and check with a wire to be sure drain hole in header is open.
8. Seal at header corner with Dolphinite sealer and install fibre blocks at (C).

9. Apply rubber cement in the channel and on the lower and back face of the header lower rubber. Reassemble lower rubber seal in channel and secure the weatherstrip end by installing screw (A).

10. Install the two Tinnerman Nuts (L) and the inside chrome moulding (R).

11. Raise top and clamp top s e c u r e l y with the top hold down clamps.

12. If the top lip of the front header upper seal does not press firmly against the body front header at any point along the body header, remove the seal from the retaining channel back to the point or points in question to expose the upper retaining screws (I), Figure 190.

**CAUTION: Recheck drain holes in header after lower rubber has been installed to determine that the drain hole is open and in line with recess (E) in the lower rubber.**

13. Loosen the screws slightly and press the retainer up or down as required.

**NOTE: If the upper seal lip does not follow the body header contour and extend outward to the drip moulding, replace the upper weathers t r i p as outlined under "Top Front Header Upper Seal Replacement", Page 124.**

14. After retainer adjustment has been properly made tighten all moulding screws (I); apply rubber cement to back face or rubber seal and install upper seal (N).

**NOTE: Be sure, when installing the upper seal, that the depressions for screws head clearance (17 in number) shown at (E) in the back face of the rubber seal are in their proper position and line up with the retainer screw heads. Notch (D) in nearest end of the upper weatherstrip must be in line with notch (E) in the lower weatherstrip.**

15. Pull top header down against body front header and lock both top hold down clamps.

16. Repeat water test to be sure all points are tight.

**NOTE: If leaks occur at door glass frame or quarter window frame, this may be corrected by adjusting the side rail adjusting**

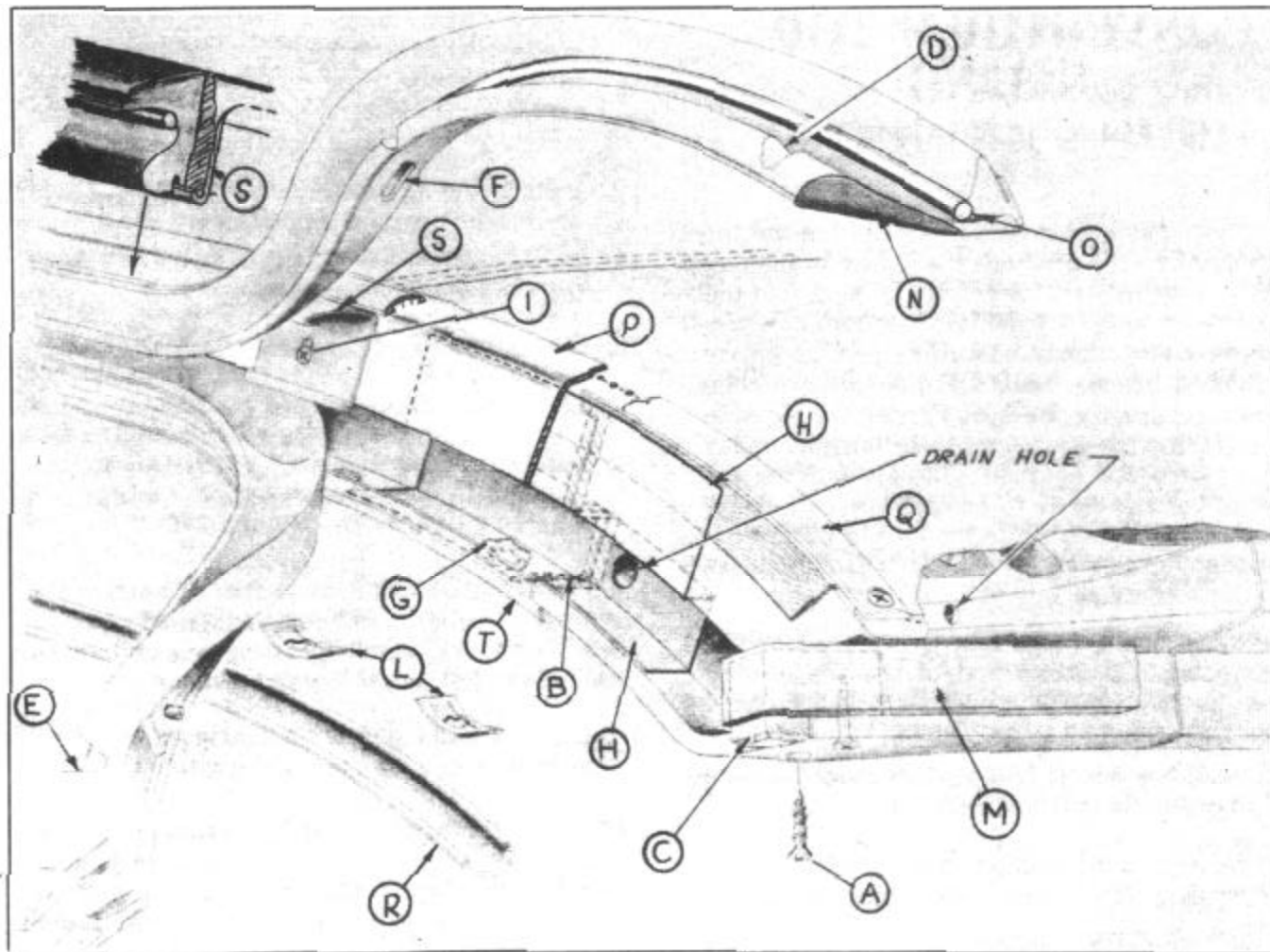


FIGURE 190

screw (A) Figure 175, up or down to insure proper contact of the weatherstrip center lip to both door window frame and the quarter window frame. It may be necessary to adjust the windows for proper sealing. See "Door Window and Quarter Window Adjustments", Page 114.

## TOP FRONT HEADER LOWER SEAL CONVERTIBLE TOP (All Models)

**NOTE: If it is necessary to replace the complete header lower weatherstrip, proceed as follows:**

1. Remove lower inside chrome weatherstrip (R), Figure 190.
2. Remove the thirteen Tinnerman Nuts (L) retaining the weatherstrip retainer to header and weatherstrip.
3. Remove screws (A) one each side of header.
4. Pull corner seal (M) loose from lower seal.
5. Lower weatherstrip can now be removed by pulling out weatherstrip at each end of the header and release weatherstrip rivets working towards center of header.

## INSTALLATION

1. Clean header channel thoroughly.
2. Apply a strip of Body Caulking along header joint (B) and at hole (G) to obtain a complete seal; then cover with Mystik Tape as shown at (H).
3. After the Mystik Tape has been installed securely, pierce a hole in the Mystik Tape at the drain hole and check with a wire to be sure drain hole in header is open.

4. Seal at header corner with Dolphinite sealer and install fibre blocks at (C).
5. Apply rubber cement in the channel and on the lower and back face of the header lower rubber. Reassemble lower rubber seal in channel and secure the weatherstrip end by installing screw (A).
6. Install header lower weatherstrip entering the thirteen rivets into holes provided in the header and press seal firmly into header channel.
7. Install two screws (A), one each side of header.
8. Install weatherstrip, retainer (T) over rivets.
9. Install the Tinnerman Nuts working from the middle towards both ends.
10. After all the Tinnerman Nuts have been secured tight against moulding retainer use a pair of end cutters and cut off ends of tubular Rivets sufficiently so that rivet ends will not interfere when installing the finish moulding (R).
11. Install inside finish moulding to retainer, working moulding onto retainer from the middle to both ends.
12. Check sealing of lower seal and trim as required.

## **CONVERTIBLE TOP FRONT HEADER UPPER SEAL AND TOP FRONT HEADER OUTSIDE MOULDING (WIDE) (All Models)**

### REMOVAL

1. Lower top and brace securely so that top cannot close down on windshield body header.
2. Remove top front header rear chrome moulding (Q), Figure 190, and moulding retainer, (narrow moulding).
3. Remove all tacks from top covering at front header and remove top material from header and clean all Dolphinite sealing compound from the area between the two top front header chrome mouldings.
4. Lightly hammer down all tack holes in all tacking strips.

**NOTE: Replace any cracked tacking strips.**

5. Remove the upper rubber seal by prying the right or left corner of the seal out of

the header moulding. (Use a narrow dull edge putty knife.) Pull weatherstrip from retainer.

6. Remove the sheet metal screws (I) and remove the moulding (S).

### INSTALLATION

1. Remove old rubber cement at top header and check Mystik Tape (H), Figure 190, to be sure it completely covers header joint (B).
2. Install weatherstrip seal (P) (Alumiseal Tape No. 217342) over tacking strips allowing approximately 1" to overlap header (as shown) for the complete length of the header.
3. Install top finish moulding (S) and screws (I), installing center screw first and working to both ends adjusting moulding up or down as required.

**NOTE: If a new moulding is to be installed, note position of holes in the old moulding and, with moulding in position on the top header, push holes through moulding and into header using an awl.**

**CAUTION: Use care when punching these holes. The awl should be equipped with a stop to control depth and size for a No. 8 binding head sheet metal screw. If moulding clips are raised due to punching the holes through the moulding, flatten clips to avoid piercing the "Alumi-Seal" sealer.**

4. Apply rubber cement to weatherstrip and channel of finish moulding, and install top weatherstrip seal engaging the lower lip onto the lower flange of the moulding retainer, and then working the upper lip weatherstrip onto the upper lip of the retainer using a dull putty knife and rolling the weatherstrip over the retainer.

**NOTE: Trim each end of weatherstrip as shown at (N) and (O), Figure 190. Trim area (N) so that the upper weatherstrip will not interfere with the end screw retaining moulding (S) and form a good seal at the corner with the top lower seal.**

5. Trim both ends of the top upper seal (N), Figure 190, so that it is flush along the top of the side header triple lip seal and the top of the front header lower seal.
6. Pull top header down against body front header and lock both holding clamps.
7. Water test to determine that all points are water tight.

## CONVERTIBLE TOP SIDE RAIL WEATHERSTRIPS (All Models)

Water leaks between weatherstrip lip (U) or (V), Figure 191 and 192, and top of door window frame or at front end of weatherstrip (U) at front pillar post can usually be corrected by performing top adjustments and window adjustments, as outlined on Pages 110 and 111. If these adjustments do not remedy the condition or the weatherstrips may be hard or weatherworn, replace the front and intermediate top side rail weatherstrips (U) and (V) and retainers as follows:

1. Remove the screws attaching the front and intermediate side rail weatherstrips and remove the weatherstrips with the retainers.
2. Install the intermediate weatherstrip (V), Figure 192, first, secure front screw and check clearance between rear end of intermediate rubber with rear quarter window rubber. Trim rubbers so as to have smooth butt joints and install the two remaining screws.

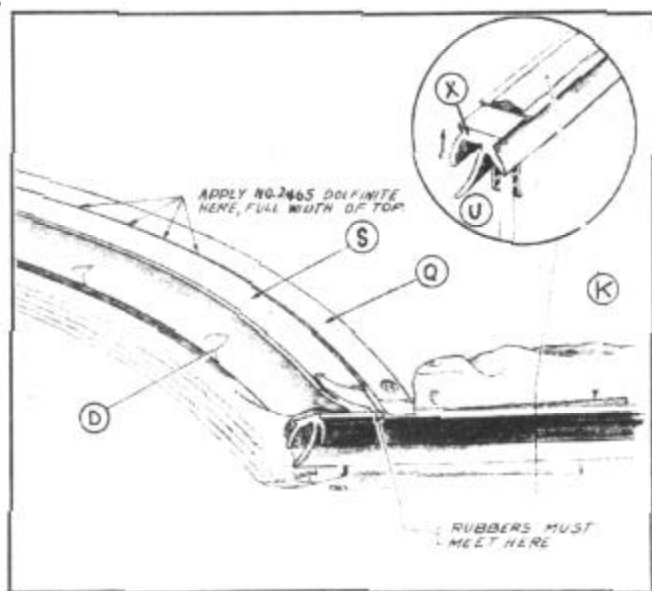


FIGURE 191

**NOTE:** On the early 480 Models equipped with the cloth covered front and intermediate weatherstrips, it will be necessary to drill one 3/32" hole into the top side rail as shown in Figure 192.

3. If the rubber filler (M), Figure 190, is to be replaced, apply rubber cement to the top and inside surfaces of the new rubber filler (M), and install the filler to the outside forward end of the header with front flap of filler cemented across the front of the fibre block (C).
4. Lay 6" of the Body Caulking or Permagum on top front end of the front side rail weatherstrip retainer leaving approximately 1" of caulking extending over the front end of the retainer, Figure 191.

**NOTE:** This caulking seals the opening at the front telescoping side rail bracket and if any adjustment is attempted at this point after sealing has been made, it will be necessary to remove the top side rail front weatherstrip and reseal the opening.

5. Install the front side rail weatherstrip and retainer (X). Be sure that rear end of weatherstrip butts up squarely with front of intermediate weatherstrip; then install rear screw first but do not tighten.
6. Trim front end of the front rubber so that center lip will follow the contour of the front pillar and form a seal between the door vent wind moulding and door pillar seal inner lip to form a perfect seal at front pillar and vent wing; outside lip to be cut at an angle so that water drainage will be continuous along outer lip to front pillar seal, Figures 191 and 193.

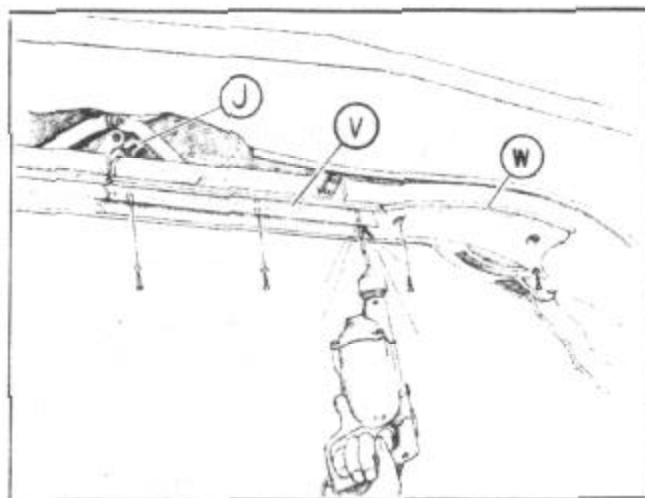


FIGURE 192.



7. After properly fitting the side rail front rubber, press front of weatherstrip and retainer assembly against the sponge rubber and fibre block and install front screw. Install the balance of the screws and tighten all screws evenly using a rubber hammer to tap the front end of the weatherstrip to seat the retainer into the Body Caulking. DO NOT tighten screws too tight as this will cause distortion in

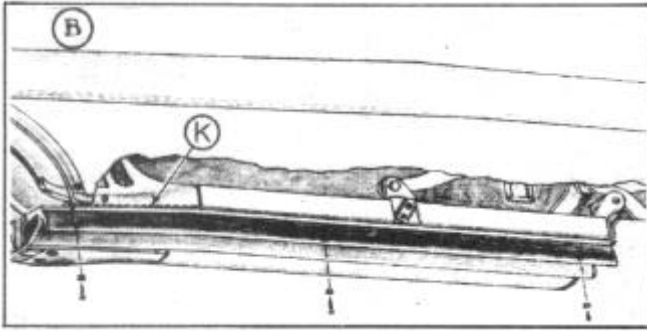


FIGURE 193

- the sealing of the weatherstrip. Bend the extending 1" of caulking around fibre corner block and tuck the caulking under front header weatherstrip.
8. Carefully trim front end of top side rail front rubber and header rubber so that a smooth closed joint is obtained. This is important in correcting water leaks at this point.
  9. Raise door windows fully and close door. Inspect weatherstrips to make certain that center sealing lip is in contact with the full length of the top window frame, and the inner sealing lip is turned inward and in full contact with the inner face of the top window frame. Adjust top upward or downward at adjusting screw (J), Figure 192, as necessary to assure an even seal at top of window at front header to front pillar. Be sure to tighten locknuts on adjusting screws after adjustments have been completed.

## REFERENCE

[illegible]

REFERENCE			
CONDITION	HYDRAULIC	ELECTRICAL	MECHANICAL
1. Top will operate in one direction only	(A) Top control valve shaft and rotor not assembled properly.	(A) Top control valve switch contacts at one point only.	(A) Top valve control rod improperly adjusted.
2. Top will not operate.	(A) Foreign material in fluid lines. (B) Broken port plate in control valve. (C) Broken or disconnected fluid line. (D) Defective top operating cylinder. (E) Pump has lost "prime".	(A) Battery low. (B) Motor solenoid not operating. (C) Pump motor in operative. (D) Short or ground in switch circuit. (E) Switch connection loose or broken. (F) Defective ground connection to motor. (G) Defective circuit breaker. (H) Connection from battery to solenoid defective.	
3. All units operate slowly.	(A) Pump pressure relief valve stuck. (B) Crimped fluid lines. (C) Internal leakage in top operating valve. (D) Improper hydraulic fluid in system.	(A) Low battery. (B) Oilite bearing in top of motor binding.	(A) Units possibly misaligned.
4. Window raises when top control valve is operated.	(A) Defective window cylinder solenoid valve.	(A) Window switch shorted. (B) Battery wire in contact with cylinder wire.	
5. One window will not fully close.	(A) Insufficient hydraulic fluid.		(A) Glass run channel misaligned. (B) Stops improperly adjusted. (C) Glass misaligned.
6. Window lifts operate downward slowly.	(A) Pump pressure relief valve stuck. (B) Hydraulic fluid containing sludge. (C) Improper hydraulic fluid in system.		(A) Units possibly binding. (B) Window run channels excessively wet. (C) Window lift spring broken.

REFERENCE			
CONDITION	HYDRAULIC	ELECTRICAL	MECHANICAL
7. Window lifts operate upward slowly.	(A) Pump pressure relief valve stuck. (B) Internal leakage in top operating valve. (C) Top operating valve not returning to neutral.	(A) Low battery. (B) Oilite bearing on top of motor binding.	(A) Top control rod improperly adjusted. (B) Units possibly binding. (C) Window run channels excessively wet.
8. Two windows operate from one window control switch.	(A) Defective window cylinder solenoid valve.	(A) Short circuit in window operating switch. (B) Battery wire in contact with cylinder wire.	
9. Window lift inoperative.	(A) Insufficient fluid. (B) Defective cylinder. (C) Broken port plate in top operating valve. (D) Pressure relief valve stuck. (E) Fluid line crimped or plugged. (F) Pump has lost "prime".	(A) Low battery. (B) Defective motor ground or battery connection. (C) Motor solenoid inoperative. (D) Pump motor inoperative. (E) Defective circuit breaker. (F) Improperly grounded circuit. (G) Window lift cylinder inoperative. (H) Solenoid ground connection to base of cylinder broken or unsoldered.	(A) Glass run channel misligned. (B) Glass guide misaligned. (C) Window lift not connected to lower sash channel.
10. Windows will not stay up.	(A) Defective window cylinder solenoid valve.		
11. Top operating cylinders operate when window is raised.	(A) Internal leakage in top operating Valve. (B) Top operating valve not properly returning to neutral position.		(A) Top operating control rod improperly adjusted.
12. Motor noisy.	(A) Insufficient hydraulic fluid.		

# HOLLYWOOD HARD TOP COUPE (1951 thru 1954)

This part of the manual covers only such operations that are special for the Hard Top Coupe - Hollywood Models. All other service procedures can be found in the previous pages of this manual as follows:

	Page
Door Lock Cylinder -	
Removal and Installation	109 - 110
Door Outside Handle	
Removal and Installation	109
Door Lock Assembly -	
Removal and Installation	110
Door Lock Remote Control -	
Removal and Installation	8 - 10
Door Window and Glass Frame Assy.	
Removal and Installation	103
Door Striker Plate - Adjustments	11
Quarter Trim Panel -	
Removal and Installation	33 - 34
Front Seat Cushion and Seat Back	
Removal and Installation	109
Rear Seat Cushion and Seat Back	
Removal and Installation	109
Windshield Replacement -	26

## DOOR TRIM PANEL

### REMOVAL

1. Remove the vent wing regulator handle and door window regulator handle.
2. Remove the remote control knob, garnish moulding and valance.
3. Remove the two screws from the under side of the arm rest and remove the arm rest.
4. Remove the door pocket trim panel (held by clips) and the pocket moulding (retained by the same clips that hold the door trim board).
5. Remove the door trim panel. (The pocket corner trim and fillers front and rear are cemented to the door.) Use care when removing this panel.

### INSTALLATION

To install, reverse procedure of removal.

**NOTE:** Install the door trim panel by engaging the panel retainers at bottom of door and aligning trim clips with holes in door before driving panel into place. Re-cement the pocket corner fillers with trim cement.

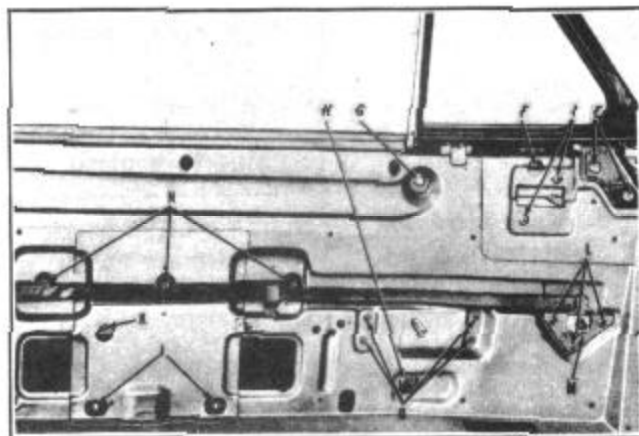


FIGURE 194

## DOOR WINDOW REGULATOR

### REMOVAL

1. Remove garnish moulding, valance, regulator handles, pocket trim panel and lower door trim panel.
2. Cut the inner liner to expose the regulator attaching screws (0), Figure 194.
3. Remove screws (0) attaching the regulator to the door inner panel.
4. Disconnect the regulator from the cross arm assembly and remove the regulator through the opening in bottom of door.

**NOTE:** A stud on the regulator arm is retained in the cross arm assembly by a spring clip.

### INSTALLATION

To install, reverse procedure of removal. Repair damage to the inner liner with Mystik Tape and recheck door window adjustment.

### DOOR WINDOW ADJUSTMENT

1. Lower the door glass to its lowest position. The top edge of the door glass frame should be even with the top edge of the door belt moulding, and top of glass frame must solidly contact the door opening upper weatherstrip (on body header).

2. If it is necessary to adjust the door window, loosen the two screws (J), Figure 201, and slide window up or down as required.

**NOTE: These 7/16" Hexagon head bolts are accessible through the holes provided in the inner panel at (J). These bolts need only be loosened as the tabs on the lower glass rest channel are slotted.**

## DOOR WINDOW REGULATOR CROSS ARM ASSEMBLY

### REMOVAL

1. Remove door inside hardware and trim.
2. Cut inner panel along remote control arm to expose screws (N), Figure 194.
3. Remove screws (N), lower window to bottom of door and release regulator cross arms from door glass channel.
4. Disconnect regulator arm from cross arm assembly by removing the spring clip retainer.
5. Remove regulator cross arm assembly through opening in bottom of door.

### INSTALLATION

To install, reverse procedure of removal.

## DOOR VENT WING

1. Remove door inside hardware and trim.
2. Remove the vent wing mounting bracket screws (E), Figure 194.
3. Remove the wing pivot to vent wing regulator screw (F).
4. Remove screws (G) and (H) attaching door wing frame and door window front guide channel to inner panel.
5. Lift door wing assembly up and out of door.

### INSTALLATION

1. Insert door vent wing and frame assembly so that the lower pivot fits into the regulator shaft.
2. Insert pivot to regulator screw (F). 3. Insert, but do not tighten, screws (E) and (G).

4. Raise door window and check alignment with the door window. Then tighten screws (E) and (G).
5. Insert and tighten screw (H). See "Vent Wing Adjustment", before installing trim and hardware.

## DOOR VENT WING REGULATOR

### REMOVAL

1. Remove the inside hardware and trim.
2. Remove the pivot to regulator arm screw (F), Figure 194.
3. Remove the two regulator to inner panel mounting screws (I) and remove the regulator down through forward end of the door and out through bottom opening in inner panel.

### INSTALLATION

To install, reverse procedure of removal.

## DOOR VENT WING

### ADJUSTMENT

1. Remove the two vent wing mounting bracket screws (E), Figure 194.
2. Loosen screw (G) and remove screw (H).
3. To tilt the vent wing frame assembly inward, insert a washer or washers between the wing support and the inner panel at the upper attaching screw (E). (To tilt frame outward, insert washers at lower screw (E).

**NOTE: Tilting the glass inward moves the bottom of the center glass channel away from the inner panel. Washers should be inserted between the lower end of the channel (H) and the inner panel to hold channel in position.**

4. Retighten screws (G) and (H).

**NOTE: Top of door vent wing must solidly contact door opening upper weatherstrip. To adjust, reposition screws (E) and bend bracket (H) upward as required.**

If complete frame does not contact rubber weatherstrip, loosen door hinge screws and raise complete door. Recheck door adjustment and door window adjustment.

## QUARTER WINDOW

### REMOVAL

1. Remove the rear seat cushion and the rear seat back.
2. Remove the garnish moulding, valance and moulding spacer wood block.
3. Remove the regulator handle and arm rest.

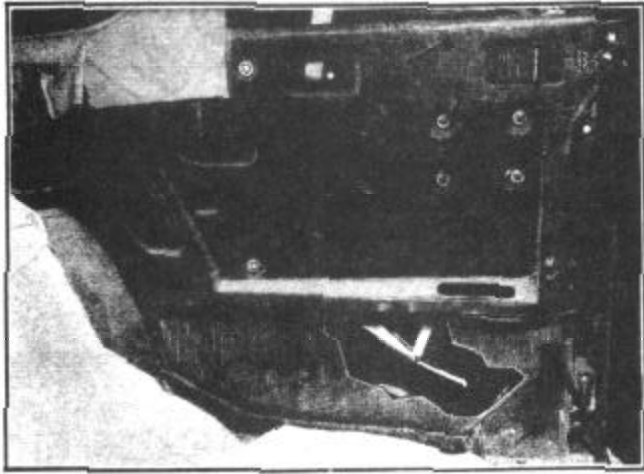


FIGURE 195

4. Remove the pocket trim panel, ash receptacle and pocket moulding.
5. Remove the lower trim panel.
6. Raise the quarter window to approximately full closed position and remove the regulator arm from the glass channel.
7. Remove the two screws (E), attaching the pivot support bracket to the quarter pillar post adjustable pivot mounting bracket, Figure 195.
8. Spring inner panel (A) out towards inside of car and lift out the quarter window, pivot, pivot hinge bracket as an assembly (towards inside of car).

### INSTALLATION

**NOTE: Check window stop bumper (located on pillar) and replace if damaged or missing. Also check to see that water drain holes are not plugged up restricting water drainage.**

1. Enter the rear quarter window through opening between the inner and outer quarter panels, entering the channel roller in the quarter window guide channel.

2. With the window 3/4 of the way down, engage the regulator arm in the glass channel.
3. Install the pivot support attaching screws (E), Figure 195, but do not tighten.
4. Adjust the window upward by the two screws located at (E). The two screws (E) and the two screws located on the inside between the inner and outer panel also control the up and down and the front and rearward adjustment.

**NOTE: Determine that the drain trough located at the quarter pillar post does not interfere with the quarter window operation, the outer liner panel wraps around the drain trough at (C) and is held in place by body sealer. Check to see that there is no water seepage between outer liner and inner panel.**

5. Tighten screws (E) after adjustment.
6. Using a regulator handle, run window up and down several times to check for window frame to channel interference. If adjustments are necessary, see "Quarter Window Adjustment".
7. After adjustments and water test, install trim, hardware and seats in the reverse order of removal.

## QUARTER WINDOW REGULATOR

### REMOVAL

1. Remove the rear quarter garnish mouldings, valance, hardware and trim panels.
2. Remove the four Phillips head screws (B) attaching the window regulator to the inner panel, Figure 195.
3. With the quarter window in the full raised position, disconnect the regulator arm from the glass rest channel, slide the regulator rearward to clear the guide channel and remove the regulator through the lower opening in the inner panel.

### INSTALLATION

To install, reverse procedure of removal and adjust as necessary. Repair damaged areas of the inner panel inner liner using Mystik Tape.

## QUARTER WINDOW

### ADJUSTMENT

1. Insert rubber shims under the front edge of the rear quarter window (D) to align the rear quarter window with the top of the door glass frame.
2. Adjust the window and frame up or down, front or back by loosening the pivot support bracket attaching screws (E) and move the glass frame as required. Re-tighten adjusting screws (E).

**NOTE: Quarter window must not rub in upper guide channel or bind in lower guide channel.**

3. To adjust the quarter window inward or outward, lower the quarter window and loosen the pivot support bracket screws located at the top of the rear quarter panel front pillar (between the inner and outer panels).

**NOTE: Water test around the area of the quarter window. Check the drain trough at the pivot hinge bracket to insure that water is being directed towards the outer panel and away from the inner liner panel. Also check water drains to determine that they are open (drain holes located at frame rail and at junction between quarter pillar post and frame rail). After water test, install trim panels, garnish moulding, valance and regulator handle.**

## REAR WINDOW GLASS (All Models 1951 thru 1953)

### REMOVAL

1. Remove the rear seat cushion.
2. Cover the rear shelf and seat back with a protector cloth.
3. Using a wedge-shaped fibre tool, snap off the rear window exterior lower belt mouldings (1), Figure 196, right and left hand and remove the moulding retainers.
4. Snap off the right and left hand roof panel quarter mouldings (4) (held by two clips).
5. Remove the rear window exterior upper moulding and retainers (3).

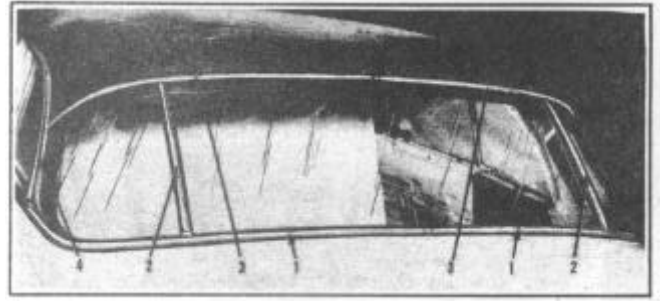


FIGURE 196

6. Remove the rear window vertical mouldings inner and outer (2).
7. With one man working from inside of car and two helpers on the outside of car, carefully push out one of the rear outer windows right or left side while lifting up and releasing the lip of the rear window weatherstrip from the inside of the car. The three section rear window is removed as a unit.

### INSTALLATION

**NOTE: If it is necessary to replace one or more sections of the rear window always install the center glass in the weatherstrip first.**

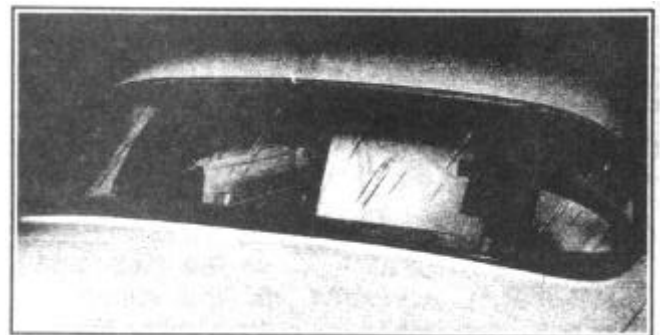


FIGURE 197

1. With the three glass section installed in the weatherstrip, pull the weatherstrip tight around the glass and place pieces of 2" masking tape completely around the glass and also vertically tying the weatherstrip and glass sections tightly together as a unit, Figure 197.
2. Tie a stout cord around each section of the rear window weatherstrip (between the inside body rubber lip and lip

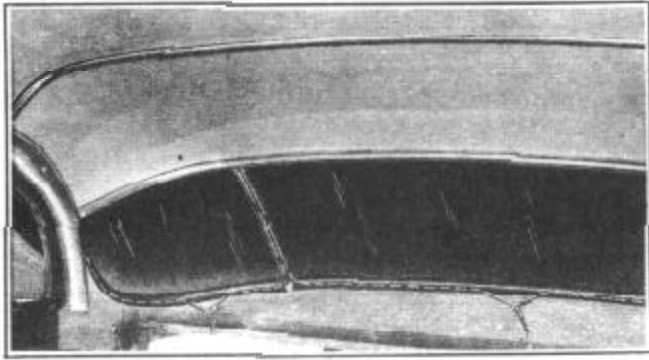


FIGURE 198

side body rubber lip and lip of recess, Figure 198). Tie cords tightly enough to draw the inner edges of the rubber channel within the limits of the rear window sections. Leave sufficient cord to provide a good hand hold to pull the cords, tape loose ends to window glass (to inside).

3. Place a protective cloth over the rear seat back and package shelf.
4. Apply liquid soap on the inside of the large lip (inner lip) of the rubber weatherstrip.
5. With one man inside the car and one man on each side of the car (outside of car), position the glass and weatherstrip so that inside lip of weatherstrip is over the lip of the bottom flange in rear window opening, and that the window is evenly spaced over the rear window opening.

**NOTE: If the glass and weatherstrip is not properly positioned before the release cords are pulled, it will be necessary to remove the assembly and perform operations 2, 4 and 5 again.**

6. With the two helpers firmly pressing inward and downward on the glass and weatherstrip assembly and the assembly properly positioned in rear window opening, pull the center release cord slowly and carefully so that the lip of the weatherstrip is raised sufficiently to allow the weatherstrip to seat properly in the body recess.
7. After seating the center section, release the cord on the left hand section, working the inner lip of the weatherstrip over the body flange, using your fingers to pull and position the rubber while the helpers steadily push and strike the window with the palm of the hand immediately over

the area being worked. Apply additional liquid soap as required to facilitate the installation.

8. After the center and left sections have been properly positioned, proceed to the right hand side, proceeding as in paragraph 7 above.

**NOTE: When performing the above operation the glass must be forced into position by blows with a soft rubber mallet or with the palm of the hand. Recheck to see that the outside lip of rubber is spaced evenly around rear window opening (reposition as necessary).**

**CAUTION: Do Not Scratch the Glass.**

9. Remove the masking tape from window and weatherstrip and install the rear window inner and outer vertical mouldings.
10. Install Part No. 228715 Sealing Tape 1/8" thick, 1/2" wide over groove, between weatherstrip and outside body recess completely around the window in a uniform thickness, Figure 199.
11. Install the upper and lower moulding retainers over the sealing tape and weatherstrip. Place a small wad of Permagem under the moulding retainers at the area of the screw holes. Draw the screws down carefully and evenly to spread the sealer uniformly and to avoid distorting the moulding retainers.

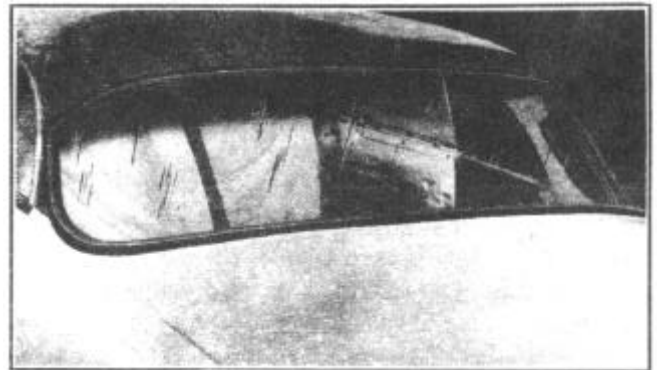


FIGURE 199

12. Install the roof panel quarter mouldings, (4), Figure 196, the upper mouldings outer (3) and lower rear belt mouldings (1).

**NOTE: When installing the finish mouldings work from the ends to the center to avoid damaging the mouldings.**



13. Install the rear window vertical mouldings (2) inner and outer.
14. After the glass and weatherstrip installation is complete, remove all excess sealer around outside mouldings and clean fabric on the inside of car if necessary. Use "Hudson Fabric Cleaner".
15. Remove all masking tape and protective coverings and install the rear seat cushion.
16. Remove all sealer from glass and body finish with mineral spirits.

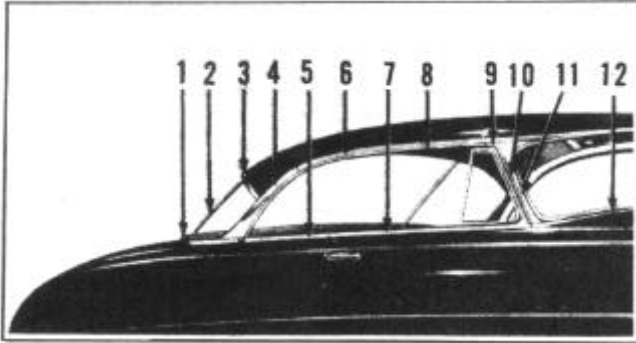


FIGURE 200

**LEGEND**

1. Rear Belt Moulding R.H.
2. Rear Window Vertical Moulding Outer R.H.
3. Rear Window Upper Moulding Outer R.H.
4. Roof Panel Quarter Moulding R.H.
5. Rear Quarter Belt Moulding R.H.
6. Roof Panel Side Moulding R.H.
7. Door Belt Moulding R.H.
8. Roof Panel Drip Moulding Cover Rear R.H.
9. Roof Panel Drip Moulding Cover Joint Cover R.H.
10. Roof Panel Drip Moulding Cover Front R.H.
11. Windshield Side Moulding R.H.
12. Windshield Lower Moulding Outer R.H.

**REAR WINDOW GLASS  
(1954 Models 5D and 7D)**

The Rear Window on the 5D-7D Hollywood Hard Top Models is a one piece window.

The removal procedure is the same as the three piece window used on previous Models. See Page 132 for removal procedures.

**DOOR BELT MOULDING**

The door belt moulding attaching screws are accessible after the door glass and frame assembly and the door vent wing glass and frame assembly have been removed.

These mouldings are held in place with spring clips and can be pried off with a wedge-shape fibre tool.

**BODY SIDE HEADER INTERIOR  
MOULDING (RIGHT OR LEFT)**

The body side header, interior moulding can be replaced by removing the screws attaching the moulding to the moulding retainers and loosening the sun visor hinge bracket attaching screws.

**BODY FRONT HEADER TO SIDE  
HEADER MOULDING JOINT  
COVER (RIGHT OR LEFT)**

The body front header to side header moulding can be replaced by removing the sun visor hinge attaching screws and one screw attaching the front header moulding joint cover to the front header moulding.

**QUARTER BELT MOULDING**

The quarter belt moulding can be removed after the quarter window and glass frame assembly have been removed.

**REAR BELT MOULDING AT REAR  
WINDOW (RIGHT OR LEFT)**

**REMOVAL**

1. Using a wedge-shape fibre tool, pry up the front edge of the moulding at the rear of the quarter belt moulding and carefully remove the moulding.
2. Remove the moulding retainer attaching screws and flat washers and remove the retainer.

**INSTALLATION**

1. Place the retainer into position and install the retainer attaching screws; use a small amount of Permagum sealer under the moulding at each attaching screw hole.

**NOTE:** Do not distort the retainer when installing screws. Moulding retainer must be snug with the body panel.

2. Remove surplus sealer and install the moulding, starting at the rear window and finishing at the quarter belt moulding.

**REAR WINDOW UPPER  
MOULDING (RIGHT OR LEFT)**

To remove the rear window upper moulding follow same procedure as outlined for removal and installation of the rear belt moulding.

**ROOF PANEL QUARTER  
MOULDING (RIGHT OR LEFT)**

The roof panel quarter moulding is held in place by the rear belt moulding, the roof panel side moulding as well as two moulding retainers. It is necessary to remove the rear belt moulding before the roof panel quarter moulding can be pried loose from the moulding retainers.

**ROOF PANEL SIDE  
MOULDING  
(RIGHT OR LEFT)  
REMOVAL**

1. Remove the moulding joint cover at the front of the roof panel, and with a wedge-shape fibre tool, pry up the front edge of the moulding to release the moulding from the moulding retainer and carefully remove the moulding.

**NOTE:** When replacing the moulding retainer, apply Permagum sealer at the area of the attaching screw holes to form a good seal.

**INSTALLATION**

To install, reverse procedure of removal, starting at roof panel quarter moulding and working towards the front.

**WINDSHIELD SIDE MOULDING  
(RIGHT OR LEFT)**

To remove the windshield side moulding it will be necessary to remove the windshield lower moulding outer and pry the windshield side Moulding loose from its retainers.

**ROOF PANEL DRIP MOULDING  
COVER REAR (RIGHT OR LEFT)****REMOVAL**

1. Remove the roof panel drip moulding cover joint cover, Figure 200.
2. Pry the roof panel drip moulding cover loose starting at the rear quarter belt line and carefully working forward.

**INSTALLATION**

To install, start at the rear quarter belt line and snap the moulding into place and install the joint cover.

**ROOF PANEL DRIP MOULDING  
COVER FRONT (RIGHT OR LEFT)**

To remove the roof panel drip moulding cover front, pry off joint cover and remove the cover by starting at belt line and working up.

**WINDSHIELD LOWER  
MOULDINGS  
(RIGHT, CENTER OR LEFT)  
(1951 thru 1953)****REMOVAL**

1. Remove the right and left hand body side header interior mouldings.
2. Remove the screws attaching the trim bows to the trim bow bracket retainers and remove the trim bow.

**NOTE:** The No. 4 trim bow has two special retainers to hold the trim bow in position above the rear window. Carefully pry the bow loose from these retainers.

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## INSTALLATION

To install, reverse procedure of removal. Position bows before tightening bow bracket attaching screws.

## HEADLINING

### REMOVAL

1. Remove the sun visors, the antenna knob and escutcheon, the body front header moulding joint cover, the body front header to side header moulding joint cover right and left hand, the body side header interior moulding and retainers, the four roof trim bows and retainers, the dome lamp glass and bezel assemblies (Snap-in), rear view mirror, and upper windshield garnish mouldings.
2. Remove the rear seat cushion and rear seat back.
3. Remove the quarter window finish mouldings and valances.
4. Remove the rear window vertical mouldings inner and outer right and left hand and force out rear window as outlined in "Rear Window Removal and Installation".
5. Remove the upholsterer's tacks from around the rear window opening and at package shelf.
6. Pull headlining loose from cement around rear window, package shelf and at area around rear quarter window.
7. Remove headlining from retainer glazier's points above windshield opening. Use a screw driver to pry open the glazier's points to facilitate installation of a new headlining.
8. Slit the headlining along the headlining retainers, snap out roof bows and remove the headlining.
9. Loosen side retainer screws and remove the scrap material from the glazier's points. Retighten retainer screws securely.
10. Remove old cement at rear window and windshield openings.

### INSTALLATION

1. Apply trim cement at top flange of the rear window opening, area between quarter window and rear window and at windshield opening. Allow cement to become tacky before installing new headlining.

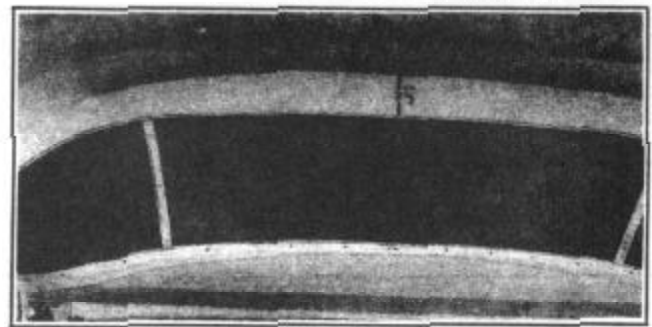
**NOTE: Remove old roof bows from the old headlining and install them in the new headlining. The correct placement of the roof bows in the headlining is very important.**

The following roof bow color guide will assist you to place the bows in their proper sequence. One end of the bow tip is painted as follows:

- No. 1 Roof Bow Black
- No. 2 Roof Bow Light Green
- No. 3 Roof Bow Yellow
- No. 4 Roof Bow Dark Red
- No. 5 Roof Bow Light Gray
- No. 6 Roof Bow Tan
- No. 7 Roof Bow Light Blue

2. Starting at rear of body roof panel, hook in each end of the rear roof bow into the roof bow anchor bracket and snap bow into position.
3. Install the remaining bows in their proper sequence spacing the headlining evenly between the bows as they are installed.

**NOTE: Hook the number one bow in the roof bow bracket but do not snap the bow into position at this time.**



4. Pull headlining tight and press headlining into cement around rear window opening. First seam at rear of headlining should be six and one half inches from inside edge of roof panel to rear window flange, Figure 201. To avoid wrinkles and pleats in the material at the corners, cut several radial slits about 1-1/2" apart and 3/4" deep. Work the material around the flange of the rear window opening and replace the 12 oz. upholsterer's tacks (approximately 4" apart) at upper rear window opening flange to a point approximately 2" above body belt line.

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## REFERENCE

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## REFERENCE

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## REFERENCE

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