1950-1951 *Supplement to*



BODY SERVICE MANUAL HUDSON 480-490 SERIES

HUDSON MOTOR CAR COMPANY DETROIT 14, MICHIGAN

FOREWORD

This manual is a supplement to the 480-490 Body Service Manual. This supplement covers those items of the 480-490, 500 and 1951 "A" Series cars wherein design change and repair procedures required additional information and in some instances changes in old procedures.

An alphabetical index covering all new procedures is placed in the front of the manual for easy reference.

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HUDSON MOTOR CAR COMPANY

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MODEL DESIGNATIONS

Hudson cars are built in the Pacemaker Custom, Super. Six Custom, Commodore Six Custom, Commodore Eight Custom and Hornet Series and are designated as follows:

LICENSE INFORMATION

PACEMAKER CUSTOM -- MODEL 4A

Body Types	Wheel- base	Starting Serial No.	No. of <u>Cyls.</u>	Bore	<u>Stroke</u>	A.M.A. <u>H.P.</u>	Weight <u>Pounds</u>
Brougham	119"	1001	6	3-9/16	3-7/8"	30.4	3430
4 Door Sedan	119"	and	6	3-9/16"	3-7/8"	30.4	2460
Business Coupe	119"	up	6	3-9/16"	3-7/8"	30.4	3380
Club Coupe	119"		6	3-9/16"	3-7/8"	30.4	3410
Convertible Brougham	119"		6	3-9/16"	3-7/8"	30.4	3600
	SU	PER SIX CUS	STOM M	IODEL 5A			
Brougham	124"	1001	6	3-9/16"	4-3/8"	30.4	3535
4 Door Sedan	124"	and	6	3-9/16"	4-3/8"	30.4	3565
Club Coupe	124"	up	6	3-9/16"	4-3/8"	30.4	3525
Convertible Brougham	124"	-	6	3-9/16"	4-3/8"	30.4	3720
	COMM	10DORE SIX	CUSTOM	MODEI	6 A		
4 Door Sedan	124"	1001	6	3-9/16"	4-3/8"	30.4	3600
Club Coupe	124"	and	6	3-9/16"	4-3/8"	30.4	3585
Convertible Brougham	124"	up	6	3-9/16"	4-3/8"	30.4	3785
		HORNET	MODEI	7 A			
4 Door Sedan	124"	1001	6	3-9/16"	4-1/2"	34.9	3600
Club Coupe	124"	and	6	3-9/16"	4-1/2"	34.9	3580
Convertible Brougham	124"	up	6	3-9/16"	4-1/2"	34.9	3780
	COMMO	DORE EIGH	T CUSTO	M MODI	EL 8A		
4 Door Sedan	124"	1001	8	3"	4-1/2"	28.8	3630
Club Coupe	124"	and	8	3"	4-1/2"	28.8	3600
Convertible Brougham	124"	up	8	3"	4-1/2"	28.8	3800

The car model designation and the car serial number which is the same as the engine number, are stamped on a metal plate attached to the right front door hinge pillar post. Cars are numbered in consecutive order regardless of model.

The engine number is stamped on the top of the cylinder between numbers 1 and 2 exhaust manifold flanges on eight cylinder engines and on the right side of the cylinder at the upper front end, stamped vertically, on six cylinder engines.

A code letter or number indicating the paint color is stamped on the upper hinge of the right front door.

This manual provided by HET Club member Drew Meyer

FRONT FENDER (1951 "A" SERIES)

REMOVAL: - Right or Left Hand

- 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 follows:

A. Apply a bead of Dolphinite Sealer to the top or outside joint of fender and front end panel flange shown as (1), Figure 1. 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 1

- 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 1.

FRONT FENDER EXTENSION RIGHT OR LEFT HAND (1951 "A" SERIES)

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 carefully to avoid scratching.

INSTALLATION:

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

NOTE: The front fender extension is spot welded to the front fender on the 1950 models and it will be necessary to remove the front fender to make replacement. The fender extension can be purchased separate as a service item as required.

FENDER TIE PANEL (ALL 1950 SERIES)

Follow same procedure as outlined on Page 24 in the 480-490 Body Service Manual.

FENDER TIE PANEL (ALL 1951 "A" SERIES)

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.
- 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.

RADIATOR GRILLE MOULDING LOWER (ALL MODELS 1950 SERIES)

REMOVAL:

- 1. On the Super and Pacemaker Series remove two nuts and washers each side under fender extension, Figure 2. 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 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 m 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.







- 1. Remove the fender tie panel and hood lock lower support panel assembly (6), Figure 2.
- 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,

RADIATOR GRILLE MOULDING-UPPER AND INTERMEDIATE (ALL MODELS 1950 SERIES)

REMOVAL:

NOTE: The upper moulding (5), Figure 2, 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. This will allow the mechanic to reach all the attaching screws as illustrated in Figure 3.



FIGURE 4

- 1. Headlamp Mounting Rim
- 2. Parking Lamp Assembly
- 3. Grille Lower Louver
- 4. Grille Upper Louver R.H.
- 5. Hood C rest
- 6. Grille Center Louver
- 7. Grille Triangle Strut
- 8. Grille Front Ornament Assembly
- 9. Grille Upper Louver L.H.
- 10. Bumper Guard Assembly Inner
- 11. Front Bumper Impact Bar

RADIATOR FRONT SPLASH GUARD . (ALL MODELS 1950 SERIES) (ALL MODELS 1951 ''A'' SERIES)

REMOVAL:

- 1. Remove the complete front bumper and grille guards.
- 2. Remove two bolts, nuts and shakeproof washers attaching the front splash guard to the radiator grille baffle support and two bolts at the front fender extension.
- 3. Remove one bolt each side of grille strut support and the two nuts and washers attaching the center plate to the right and left hand splash guard.
- 4. Slide splash guard out.

INSTALLATION:

To install, reverse procedure of removal.

RADIATOR GRILLE DEFLECTOR AND BAFFLE SUPPORT (1951 "A" SERIES)

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.

RADIATOR GRILLE LOUVERS AND BAFFLES ASSEMBLY (1951 "A" SERIES)

REMOVAL:

The center and lower louvers can be removed from the complete grille after removing the grille triangle strut moulding; 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. In stall all bolts before tightening to ensure proper grille alignment.

GRILLE FRONT ORNAMENT ASSEMBLY (ALL MODELS 1951 "A" SERIES)

REMOVAL:

- 1. Remove two screws attaching the front ornament to the fender tie panel (3/8" socket).
- 2. Remove two screws, washers 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.

INSTALLATION:

To install, reverse procedure of removal. Install socket and bulb before tightening all screws.

GRILLE UPPER LOUVER (1951 "A" SERIES)

REMOVAL:

Follow same procedure as for the tie panel removal, Page 3, and remove the ornament assembly (held by three screws) and right or left hand louver held by four Hexagon head sheet metal screws (3/8" socket).

INSTALLATION:

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

PARKING LAMP RIGHT HAND AND LEFT HAND (ALL MODELS 1951 "A" SERIES)

REMOVAL:

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

HOOD LOCK UPPER SUPPORT (ALL MODELS 1951 "A" SERIES)

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 ad just the retainer locking spring by turning the slotted retainer to the right or left as required.

HOOD LOCK LOWER SUPPORT (ALL MODELS 1951 "A" SERIES)

REMOVAL:

- 1. Remove screw and clip (A), Figure 5.
- 2. Disconnect hood lock release wire at retainer (B).

CAUTION: Straighten turned up portion of hood lockwire carefully to avoid breaking the wire. 3. Remove the four hood lock lower support attaching bolts and remove support plate as an assembly.



FIGURE 5

INSTALLATION:

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

REAR COMPARTMENT DOOR LOCK CYLINDER (ALL MODELS 1951 "A" SERIES)

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 a 1/16" drill and drill out drive screw, Figure 7. 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 b e 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 7, 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.

NOTE: Figure 6, shows the service lock cylinder which is interchangeable on all "A" Series Models. These Service locks have a long shank to cover all models and must be reworked as illustrated for the different models.



FIGURE 6

REAR COMPARTMENT DOOR LICENSE LAMP ASSEMBLY (ALL 4A SERIES)

REMOVAL:

- 1. Raise rear compartment door and snap out lamp socket and bulb assembly.
- 2. Remove re a r compartment door name plate held by two 1/4-20 x 1/2" bolts, flat washers and shakeproof washers. These bolts are reached through two openings in rear compartment door reinforcement using a 4" extension and a 7/16" socket.
- 3. Remove two bolts, lockwashers and space r s attaching lamp to compartment door using a 7/16" socket and extension and remove license lamp and lock cylinder for bench disassembly.

NOTE: See ''Rear Compartment Door Lock Cylinder Removal and Installation.''

INSTALLATION:

To install, reverse procedure of removal. Replace rubber gasket if damaged.

LICENSE LAMP ASSEMBLY (ALL MODELS EXCEPT 4A)

REMOVAL: Right Hand Or Left Hand

1. Remove two Phillips head screws attaching the license lamp to the bumper guard and disconnect wire at rear compartment.

NOTE: To re place the bulb, remove two screws attaching the bulb socket to the lamp rim. This will also allow removal of the lamp glass and gasket.

INSTALLATION:

To install, reverse procedure of removal.

REAR COMPARTMENT DOOR LOCK (ALL MODELS 1951 "A" SERIES)

The new rear compartment door lock for all "A" Series cars is of the center latching type, consisting of a rotating catch which is actuated by and engages a cylinder striker. When the rear compartment door is closed, the door lock catch is locked by the engagement of the, pawl in the catch (solid outline, Figure 7). To open the rear compartment door, the key is turned clockwise in the lock cylinder, rotating the cam and lifting the pawl out of the notch in the catch.





This will allow the catch (which is spring loaded) to rotate out of the locked position and the rear compartment door is raised slightly (dotted outline, Figure 7).

NOTE: If the compartment does not snap loose from the striker, slight pressure downward on the door lift handle will assist the key in opening the compartment door.

The rear compartment door lock cam return spring returns the cam and lock to the closed position so that when the rear compartment door is closed it is automatically locked.

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" x1/2" 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 STRIKER ADJUSTMENT (ALL 1951 ''A'' SERIES)

The adjustment of the striker is accomplished by loosening the two striker attaching screws and tapping the striker into the required position and then re-tightening the screws.

The striker has elongated slots, adjusting the striker upward causes the door to close with less pressure and at a point further out from the body. Adjusting the striker downward causes the door to close more tightly.

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 lower panel, Figure 7.

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 (1 o c k handle outside push button in the rest position) between the trigger and the shoulder screw at (A), Figure 8, the door lock will not release properly when the outside handle push button (K), Figure 9, has been pushed in to its full travel.

If there is not enough clearance (shoulder screw (L), Figure 9, is too long, holding the lock trigger, Figure 8, 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 8.
- 2. Press the outside handle push button (K), Figure 9, until contact at the lock trigger is felt. Measure this travel as shown at (s).



FIGURE 8



FIGURE 9

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.

- A. If dimension (S) is more than 5/16" but less than 3/8", use drive screw Part No. 171221.
- B. If more than 3/8" but less than 7/16", use screw No. 171222.
- C. If more than 7/16", use screw No. 71249.
- D. Dimension (X) for sedan front doors should be 51/64".
- E. Dimension (X) for sedan rear doors should be 1-11/32".
- F. 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 9, while the handles used on the Commodore models are smooth and oval.

If door lock operates normally by de- p r e s s in g 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 ("A" SERIES ALL MODELS)

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 10, projects beyond the base of the handle.

To adjust, proceed as follows:

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



FIGURE 10

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 10. 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 b r o u g h am and coupe doors use the handle with the contour as shown at (M), Figure 9. The sedan rear door handle contour is shown at (N), Figure 9.

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 lock 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.

WINDSHIELD DRAIN TUBE INSTALLATION

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 p art s . These trough like drains can be installed from under the instrument panel with the assistance of the drain tube jack shown in Figure 11. This tool can be quickly made from materials to be found in almost every shop.



FIGURE 11

INSTALLATION:

- 1. Cement drain tube gasket (Part No. 217329) securely to the inside "V" surface of the drain tube, Figure 12. Spread a thin layer of trim sealer over the outer surface of the gasket to insure a seal against the windshield reinforcement.
- 2. Place drain tube (Part No. 217328) 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.



FIGURE 12

- 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 11, and have a length of 9" in order to project under the instrument panel.
- 5. Secure drain tube in place with sell-tapping screws (A), Figure 12, 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 hole through cowl side panel at

point shown in Figure 12, for lower end of drain hose, Part No. 216949. 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, Figure 12, 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 hold.

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,'' below.

WINDSHIELD SEALING (ALL MODELS)

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 Seri al 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. The se 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 26,480-490 Body Service Manual, 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 13, 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.



FIGURE 13

- 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.

NOTE: Locate the shims so that they will not interfere with the installation of the lower retainers (G) and (H), Figure 21, Page 26,480-490 Body Service Manual.

- 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 14, 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 14

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 winds held and weatherstrip is drawn into place. Figure 15, shows cross-section (C-C) of the windshield opening, and the final sealer film after the windshield is installed. Sealer must be uniform.



FIGURE 15

- 8. Replace shims as selected in operation No . 4. Apply body sealer completely around shim but not on top of shim, Figure 14.
- 9. In stall glass and weatherstrip in winds h i e l d opening, inserting outer end into wind shield opening and swinging inner edge into center bar.
- 10. In stall one center lower windshield retainer (G), Figure 16, to secure windshield in proper position.
- 11. Install the remaining retainers. Apply so ap 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 15.

- 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 c over 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.

FIGURE 16

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.

FIGURE 17

INSTALLATION OF DEFROSTER AIR STOP BLOCKS

- 1. Remove rear view mirror and bracket (2 screws).
- 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 pane panel, retaining antenna to allow finish moulding to be loose under joint cover.)
- 4. Remove right and left lower finish mouldings.
- 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 cement in g with rubber cement at points (K) as shown in Figure 17, with the top surface flush and the ends square.
- Apply coating of weatherstrip cement to under surface of finish moulding in shaded area marked (H). Assemble joined blocks to f n i s h 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.

INSTRUMENT PANEL TOP COVERING (1951 "A" SERIES)

REMOVAL:

- 1. Remove the rear view mirror.
- 2. Loosen screw at lower garnish moulding joint cover.
- 3. Remove the upper and lower windshield garnish mouldings.
- 4. Remove the radio speaker grille.
- 5. Pull covering loose by working from winds h i e l d garnish moulding towards instrument finish panel.
- 6. Clean top of instrument panel thoroughly to ensure an even surface.

INSTALLATION:

1. Apply a light coat of Trim cement direct to the covering.

2. Carefully install the covering to the instrument panel allowing 3/8" of fabric to overlap the instrument panel at finish panel. (This 3/8" overlap will be tucked in the seam between the instrument panel and instrument finish panel.) Use a blunt putty knife and start from center and work towards both ends of instrument finish panel. Trim around end corners and tuck end s 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 around defroster outlets.

- 3. Install garnish mouldings, rear view mirror and moulding joint cover.
- 4. Remove all traces of trim cement from leather covering, garnish moulding and finish panel.

FRONT DOOR-COMPLETE DOOR (480-490-500 and '51 SERIES)

REMOVAL:

- 1. Remove hinge pocket covers (D) and (E), Figure 18.
- 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 210755. Peen rivet securely.

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

3. Tight en door hinge screws securely and check door adjustment as outlined in the 480-490 Body Service Manual, pages 59 and 60.

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. See Figures 18 and 19 for drilling instructions. Insert (1) for the upper pocket and insert (2) for the lower pocket.

FIGURE 19

DOOR FRONT PILLAR SEALS (RIGHT OR LEFT HAND) (ALL MODELS)

REPLACEMENT:

- 1. Remove two Phillips head screws at front of scuff plate, Figure 18.
- 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'').

FIGURE 18

7. When the pillar seal (Weatherstrip) is install ed, 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 WEATHERSTRIP UPPER (ALL MODELS)

REMOVE AND REPLACE:

1. Remove the upper door opening weatherstrip, Figure 20.

FIGURE 20

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 rear to permit installation of the upper

FIGURE 21

weatherstrip, Figure 20, Insert No. 2.

- 4. Check to be sure weatherstrip is of the proper length and for the right or left side a s required before applying rubber cement. See Figure 20. Insert No. 1.
- 5. Apply an even coating of Weatherstrip Adhesive to 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 and proceed forward (Insert No. 2) 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. See Procedures covering these installations in your Body Service Manual and in this supplement.

FRONT DOOR FRONT WEATHERSTRIP BELT SEAL (ALL MODELS)

REMOVE AND REPLACE:

NOTE: If the top door opening weatherstrip is to be replaced to accommodate the latest type belt seal, make the top weatherstrip replacement first. See "Door Opening Weatherstrip Upper Replacement" and proceed as follows:

1. Turn down upper end of front rubber front weatherstrip lower and put door belt rubber weatherstrip end (2), Figure 22, in place engaging the lower clip of Weatherstrip in hole near top of door channel.

FIGURE 22

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 21, 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 weatherstrip 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 480 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 f or drilling tab screw holes and drill three No. 31 holes (.120'').

FRONT DOOR FRONT WEATHERSTRIP LOWER (ALL MODELS)

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 22.
- 2. Straighten one 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 on page 18.

- 3. Remove old rubber cement from door channel.
- 4. 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 t o bottom end of belt seal weatherstrip. Turn the tabs down and recheck operation of doors and adjust as required. See "Door Adjustment", Pages 59 and 60, 480-490 Body Service Manual.

REAR DOOR REAR OPENING WEATHERSTRIP (ALL MODELS)

REMOVE AND REPLACE:

1. Remove two Phillips head sheet metal screws, Figure 23, 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 23 for location of the two holes.

FIGURE 23

- 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 20, Insert 2.

REAR DOOR FRONT WEATHERSTRIP (ALL MODELS)

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 show n, Figure 24, working rubber firmly into channel.

FIGURE 24

NOTE: If it is necessary to drill these holes on some of the early 480 models, drill four 1/4" holes spacing holes as shown in Figure 24.

DOOR PANEL BOTTOM WEATHERSTRIP (ALL MODELS)

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 re-opening 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 chisel off 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 new 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 25.

FIGURE 25

NOTE: Allow cement to become tacky before installing weatherstrip.

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 b all peen hammer against head area of rivet to avoid damage to the weatherstrip.

NOTE: Rivets should be flared tight but should not distort the weatherstrip; otherwise the weatherstrip will not seal properly.

7. After installing weatherstrips, install the mouldings and check sealing of weatherstrip as outlined in the first paragraph of "Door Panel Bottom Weatherstrip Installation."

DOOR INSIDE LINER (ALL MODELS)

INSTALLATION:

1. Apply trim cement to the surface of the door inside panel in the shaded areas shown in Figure 26. **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 26

- 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 27.

FIGURE 27

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 new 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 25.

NOTE: Allow cement to become tacky before installing weatherstrip.

- 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 b all peen hammer against head area of rivet to avoid damage to the weatherstrip.

NOTE: Rivets should be flared tight but should not distort the weatherstrip; otherwise the weatherstrip will not seal properly.

7. After installing weatherstrips, install the mouldings and check sealing of weatherstrip as outlined in the first paragraph of "Door Panel Bottom Weatherstrip Installation."

DOOR INSIDE LINER (ALL MODELS)

INSTALLATION:

1. Apply trim cement to the surface of the door inside panel in the shaded areas shown in Figure 26.

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 26

- 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 27.

FIGURE 27

- 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 or extra holes in liner.

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

SCUFF PLATE SEALING FRONT OR REAR (ALL MODELS)

- 1. Remove scuff plates (A), Figure 28.
- 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 28, for the front doors and Figure 29, for the rear doors.

NOTE: Use the latest moulded type seals. Refer to your 1951 Parts Catalogue for part numbers.

FIGURE 28

6. Lay a continuous bead of 175356 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.

FIGURE 29

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. $8 \times 7/16$ '' 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. In stall scuff plate support and seal assembly (B) on rocker panel extension aligning screw holes with holes in rocker panel extension.
- 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 filler to frame seal (No. 220279) between rocker panel pocket (J) (at center pillar and front pillar on sedans and at front pillar and frame on all models as shown at (M)).
- 13. If doors are not equipped with the double lip door bottom seal, it will be necessary to replace the door bottom seals as outlined on page 19.

REAR WINDOW REVEAL MOULDINGS RIGHT OR LEFT HAND (ALL MODELS)

REMOVAL:

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

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 30, and place the cord under t h e 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

FIGURE 32

each end to provide a good hold for pulling release cord, Figures 31 and 32.

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 33 and 34.

FIGURE 33

FIGURE 31

FIGURE 34

4. Have an assistant hold the moulding in place at the rear window, Figures 33 and 34 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 weatherstrip 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 EXCEPT HARD TOP)

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.
- 4. One man should be inside the car to force the rear window and weatherstrip outward as follows:
- A. With the rear cushion removed the mechanic can lie on his back with his head and shoulders braced against the back of the front seat and apply foot pressure against the inside of the glass at a point as close to the right or left hand corner as possible.

NOTE: Place a protecting pad on the glass or wear rubbers to avoid scratching the glass during the above operation.

B. After one corner of the glass has been pried loose, two men on the outside of the car can pull the rest of the weatherstrip loose from the body rear window opening, Figure 35.

NOTE: Do Not apply foot pressure at center of rear window.

- 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.

FIGURE 35

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.

NOTE: Should either half of the rear window on 500 Series models require replacement, it is necessary to remove the complete window (both halves) as an assembly.

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.

1. Insert the new glass, working lips of weatherstrip recess up over edge of glass until glass is completely encased, Figure 36.

NOTE: To facilitate assembly of the new glass do the 500 models, place a block of wood under the window center bar, Figure 37.

- 2. After the window is installed in the weather strip channel (500 Series), tighten the
- center moulding retainer screws to further assist in retaining the glass in the weatherstrip channel and install the inner and outer center mouldings.
- 3. Carefully slide the reveal mouldings onto the weatherstrip.
- 4. When reveal mouldings are properly installed, slide the moulding joint covers into position over the junction of the two reveal mouldings, insert, Figure 38.

FIGURE 38

- 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 39. To further insure a good tight assembly, place a strip of masking tape completely encircling the window and reveal moulding.

FIGURE 39

- 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 39.
- 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, Figure 39.

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.

QUARTER WINDOW WATER SHED AND DRAIN BAFFLE (ALL MODELS BROUGHAMS AND COUPES)

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 r e a r 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 40.

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 40; (With window down, pull top of channel inward and upward to remove).
- 5. Remove the rear quarter glass (0). (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 - (2 screws).

8. Remove the quarter pocket trim panel. 9. Remove the quarter lower trim panel.

FIGURE 40

- 10. Remove the quarter inner panel liner.
- 11. Re move the regulator screws (A), (B), (C), (D), (E).
- 12. Remove the regulator guide channel screws (E), (F).
- 13. Remove the glass run channels (M), (N), screws (G), (H), (I), (J).
- 14. Bend straight edge of watershed 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. In stall 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 locations 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) hole 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.

CLOCK

(1951 "A" SERIES)

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.

SPEEDOMETER HEAD (1951 "A" SERIES)

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.

FUEL GAUGE, TEMPERATURE GAUGE CLUSTER WITH CONSTANT VOLTAGE REGULATOR (1951 ''A'' SERIES)

REMOVAL:

1. The gauge cluster can be removed by removing the two cluster mounting screws. NOTE: To facilitate checking and testing gauge and regulator operation, remove the five nuts and washers attaching the instrument cluster to the finish panel and pull panel forward, exposing the back face of the cluster and panel assembly.

ASH RECEPTACLE RETAINER

REMOVAL:

- 1. Remove ash receiver by compressing sides and remove.
- 2. Remove two screws attaching ash receiver retainer to instrument panel.

INSTALLATION:

To install, reverse procedure of removal.

INSTRUMENT CLUSTER AND PANEL ASSEMBLY

(1951 "A" SERIES)

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 and a 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.

SWITCH MOUNTING PANEL RIGHT HAND IGNITION SWITCH AND CIGAR LIGHTER (1951 "A" SERIES)

REMOVAL:

- 1. Disconnect battery ground cable.
- 2. Remove one large Phillips head screw attaching Ignition Switch to mounting panel and one screw attaching Cigar Lighter to mounting panel.
- 3. Re m o v e two screws attaching mounting panel to instrument finish panel. These screws can be easily removed by entering a 6" ferret extension with a 3/8" socket through openings at bottom of mounting panel.
- 4. Re move on e Hexagon head sheet metal s c r e w attaching top right hand end of mounting panel to instrument finish panel.
- 5. Remove mounting panel.

INSTALLATION:

To install, reverse procedure of removal.

WEATHER CONTROL BLOWER SWITCH (1951 "A" SERIES)

REMOVAL:

- 1. Loosen Allen Set Screw in control knob and remove knob.
- 2. Remove escutcheon nut and pull switch through back of mounting panel.
- 3. Remove wire from switch.

INSTALLATION:

To install switch, reverse procedure of removal.

WINDSHIELD WIPER CONTROL KNOB AND CONTROL (1951 ''A'' SERIES)

REMOVAL:

- 1. Remove control knob, held by a slotted head set screw.
- 2. Remove escutcheon nut, pull control body toward cowl panel and disconnect vacuum hoses.

INSTALLATION:

To install, reverse procedure of removal. NOTE: If the car is equipped with an automatic windshield washer, be sure to check the operation of the control knob. Also see "Automatic Windshield Washer Installation."

WINDSHIELD WIPER CABLE TENSIONER ASSEMBLY (1951 "A" SERIES)

Cable tension pulley assemblies are mounted under the hood on the right and left side of the dash panel.

The pulley assemblies are spring loaded, Figure 41, and the cable adjustment is automatic and should not require manual adjustment.

REMOVAL:

1. Disconnect cables from the wiper motor and lift cables free from pulleys.

2. Remove the two screws attaching the tension pulley assemblies to the cowl panel.

INSTALLATION:

To install, reverse procedure of removal. Be sure that the cables are riding the center of the pulleys and are not riding the edges.

FIGURE 41

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 Lubriplate to the cables. Also check to see that cables are riding free.

COWL VENTILATOR HANDLE AND ARM (1951 "A" SERIES ALL MODELS)

REMOVAL:

- 1. Remove one bolt, nut and washer attaching the arm bracket to the cowl brace at the rear of bracket and one Hexagon head sheet metal screw at the front towards engine.
- 2. Remove the spring attaching the cowl opening operating rod to the cowl ventilator handle and arm and remove the arm handle as an assembly.

INSTALLATION:

To install, reverse procedure of removal.

HAND BRAKE LEVER AND SUPPORT (ALL MODELS 1951 "A" SERIES)

REMOVAL:

1. Remove two Hexagon head sheet metal screws attaching support to cowl reinforcement, (1/2" socket).

2. Remove two screws at cowl panel.

3. Raise car and disconnect hand brake cable clevis at hand brake cable lever. DO NOT loosen the clevis lock nut as this will disturb the adjustment.

4. Pull assembly forward sufficiently to allow removal of the cable ball retainer. Inn e r lever and handle must be in the full released position in order to release the cable.

INSTALLATION:

To install, reverse procedure of removal.

HOOD UNLOCKING HANDLE

REMOVAL:

- 1. Remove one bolt, nut and washer attaching the handle arm bracket to the cowl brace at the rear of the arm bracket and one Hexagon head sheet metal screw at front of bracket.
- 2. Disconnect two clips retaining the hood lock control wire and cable assembly to the front fender tie panel and one clip at the fender side panel.
- 3. Disconnect hood lock control wire at hood lock lower support and remove the complete hood unlocking handle and bracket assembly.

NOTE: The wire and handle assembly can be removed by disconnecting the hood lock control wire at the hood lock lower support.

INSTALLATION:

To install, reverse procedure of removal.

SWITCH MOUNTING PANEL LEFT HAND (1951 "A" SERIES)

REMOVAL:

- 1. Disconnect battery negative ground cable at battery.
- 2. Remove one screw attaching the upper and lower weather control lever knob to the control lever.
- 3. Remove the weather control blower switch knob (held by one set screw).
- 4. Remove four Phillips screws, one attaching the starter switch to the mounting panel, two attaching the heater control lever and bracket assembly and one screw attaching the weather control blower switch.
- 5. Remove two screws attaching the switch mounting

mounting panel to the instrument finish p an e 1. (These screws can be reached through the two openings provided for at the bottom of the mounting panel,) (3/8" socket, ferret set).

- 6. Remove one Hexagon head sheet metal screw attaching top left hand side of mounting panel to instrument finish panel (3/8" wrench).
- 7. Remove mounting panel.

INSTALLATION:

To install, reverse procedure of removal.

WEATHER CONTROL HEAT CONTROL LEVER AND BRACKET ASSEMBLY (1951 "A" SERIES)

REMOVAL:

- 1. Remove the screw attaching the upper and lower weather control lever knob to the heat control lever and remove knob.
- 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.

COWL SIDE PANEL TO TOE BOARD AND FRAME JOINT SEALING

- 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.

FIGURE 42

- 4. Starting at the seam above the toeboard riser to, top of cowl panel indicated by (A), Figure 42, 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 (D). Care must be taken that joints are completely covered at both right and left sides of body.
- 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)

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.

FIGURE 43

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 43, the fender has been removed for ease of illustration; however, it is not necessary to remove the front 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 of 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 43.
- 4. Replace front fender stone guard.

DRAIN TROUGH AND QUARTER WINDOW REVEAL MOULDING SEALING (ALL MODELS)

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 44.

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; reseal the drain trough and quarter window as follows:

- 1. Lay a bead of Dolphinite sealer to the inside of the drain trough for its entire length shown as (1), Insert A, Figure 44. To insure an even sealer, wad the corner of a cloth to a size that may be inserted in the drain trough and wipe trough for its entire length, taking care that only the excess sealer is removed.
- 2. Loosen the end of the door opening weatherstrip at the rear pillar, Insert B, Figure 44, and apply a bead of Dolphinite sealer to the underside of the drain trough from the rear pillar to the end of trough. Sealer must completely seal opening.
- 3. Re-cement loose end of door opening weatherseal and finish by wiping off any excess sealer.
- 4. If it is necessary to seal around the quarter window reveal moulding, apply a fine bead of Dolphinite sealer around the outer contact of the quarter window reveal

moulding shown as (2), Insert A, Figure 44. Force sealer into opening if necessary to effect a complete seal.

5. Re move all excess sealer with mineral spirits and teach up areas around sealer as required. Allow fifteen minutes for sealer to set before applying paint.

FRONT FLOOR AND SEAT RISER PANEL

Figure 45 is the inside forward view of a skeleton body four door sedan Areas to be sealed are shown in heavy lines which are to be sealed with body sealer. These areas are at the cowl side panel to toeboard, toeboard riser to top of cowl panel, toeboard to frame joint, transmission floor opening cover, master cylinder inspection cover, (on Hydra-Matic equipped cars seal the four opening covers in the transmission opening cover) also the front toeboard riser and underbody center floor panel to the front seat tray, and along the joint of the frame side members and the front and rear floors, also the seam at the front underside of the cowl opening panel.

FIGURE 45

REAR SEAT UNDER PANEL TO FRAME AND WHEELHOUSE SEALING (ALL MODELS)

The heavy lines in Figure 46, 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

FIGURE 47

Circle (A) in Figure 46 is shown in detail in Figure 47. 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 for 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.

Circle (B) is shown in Figure 48. The two drain plug holes should be sealed with body s e al e r. Similar holes are on the right and left sides of the floor panel.

Circle (C) is shown in Figure 49. 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 48

FIGURE 49

Circle (D) is a cross section of the joint of the front end of the rear compartment panel extension and rear seat tray, Figure 50. This area should be sealed with body sealer as shown in Figure 46.

FIGURE 50

REAR UNDER PANEL TO REAR PANEL AND WHEELHOUSE SEALING (ALL MODELS)

In Figure 51 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 51 and 54, show a coach joint at the juncture of the quarter panel, rear 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 should be sealed with body sealer on both sides of the joint flange.

Circle (B), Figures 51 and 53, 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 Mystic Tape over entire length of the fender rubber seal, covering the seam between rubber seal and frame as shown in dotted lines, Figure 52. 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 51, and also in Figure 55.

FIGURE 52

If the rear fender seal has dropped below the lightening holes it will be necessary to remove the rear fender as outlined on Pages 19 and 20 in the 480-490 Body Service Manual.

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 Autobody sealer to prevent dust leakage at this point. The arrow in insert (B), Figure 53, 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 wheelhousing and flow the undercoating sealer to the front pillar.

Circles (C) and (E), Figures 51,53 and 54, cover the gas tank filler neck and gas tank f ill e r 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 under body panel at point indicated by an arrow.

FIGURE 54

Circle (D), Figures 51 and 54, 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 lamps 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. T his plate must also be sealed with body sealer.

Circle (E), Figure 53, 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), Figure 53.

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.

FRAME ALIGNMENT

If the car has been in a collision, check the frame for misalignment. Figure 55 shows the various dimensions that may be used as a guide in checking frame alignment for the 500 Series and 1951 "A" Series cars, 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.

To ensure accuracy, the car should be on al level floor and the points measured should be transferred accurately from the frame to the floor. (A plumb-bob will greatly facilitate this operation.)

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.

CONVERTIBLE TOP SEALING (ALL MODELS)

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 b e 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 56. (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 Mystic Tape as shown at (H).
- 7. After the Mystic Tape has been installed securely, pierce a hole in the Mystic 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).

FIGURE 56

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.

- 11. Raise top and clamp top securely 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 r etaining channel back to the point or points in question to expose the upper retaining screws (I), Figure 57.
- 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 trip as outlined under "Top Front Header Upper Seal Replacement." 14. After retainer adjustment has been properly made tighten all moulding screws (I); apply rubber cement to back face of rubber seal and install upper seal (N).

NOTE: Be sure, when installing the upper seal, that the depressions for screw 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.

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NOTE: If leaks occur at door glass frame or quarter window frame, this may be corrected by adjusting the side rail adjusting screw ((A), Figure 139, page 86, 480-490 Body Service Manual) up or down to insure proper contact of the weatherstrip center lip to both the 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 88, 480-490 Body Service Manual.

TOP FRONT HEADER LOWER SEAL CONVERTIBLE TOP (ALL MODELS)

NOTE: If it is necessary to replace the complete header lower weatherstrip, proceed as follows:

REMOVAL:

- 1. Remove lower inside chrome weatherstrip (R), Figure 56.
- 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 Mystic Tape as shown at (H).
- 3. After the Mystic Tape has been installed securely, pierce a hole in the Mystic Tape at the drain hole and check with a wire to be sure drain hole in header is open.
- 4. Seal at head e r corner with Dolphinite sealer and install fibre blocks at (C).
- 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. In stall weatherstrip retainer (T) over rivets.
- 9. Install the thirteen 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 c ann ot close down on windshield body header.
- 2. Remove top front header rear chrome moulding (Q), Figure 57, 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 seventeen sheet metal screws (I) and remove the moulding (3).

INSTALLATION:

- 1. Remove old rubber cement at top header and check Mystic Tape (H), Figure 56, to be sure it completely covers header joint (B).
- 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. 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 of 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 (0), Figure 56. 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 56, 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), Figures 57 and 58, 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 in the 480-490 Body Service Manual, pages 86, 87 and 88. If these adjustments do not remedy the condition or the weatherstrips may be hard or weather- worn, replace the front and intermediate top side rail weatherstrips (U) and (V) and retainers as follows:

FIGURE 57

- 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 58, first, secure front screw first 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.

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 58.

- 3. If the rubber filler (M), Figure 56, is to be replaced, apply rubber cement to the top and inside surfaces of the new rubber fille r (M), Part No. 216471, 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 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 57.

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.

FIGURE 58

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 wing 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 57 and 59.

FIGURE 59

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 (K). DO NOT tighten screws t o o. tight as this will cause distortion in 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 58, as necessary to assure an even seal at top of window and at front header to front pillar. B e sure to tighten locknuts on adjusting screws after adjustments have been completed.

HARD TOP COUPE

The procedures outlined in this section of the supplement are special for the Hard Top Coupe; all other procedures can be found in your 480-490 Body Service Manual, pages as follows:

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HEADLINING

REMOVAL:

- 1. Remove the sun visors, the antenna knob and escutcheon, the body front header moulding joint cover, the body front head e r to side header moulding joint cover right and left hand, the body side header interior moulding and retainers, the 4 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 a r 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 screwdriver to pry open these 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.

FIGURE 60

- 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 60. 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 t o a point approximately 2" above body belt line.
- 5. Cut the headlining material at the lower edge of the rear quarter window moulding, Figure 62, and cement securely, stretching headlining to a contour fit.
- 6. Trim surplus headlining around rear window opening and around rear quarter window.

7. Cement and tack the rear package shelf trim board and replace shelf trim panel filler if removed.

8. Using a dull putty knife or Tool J-2772, push surplus headlining through opening between headlining retainer and windcord. This action will force the headlining over the glazier's points in the retainer. Form and fit the headlining up to the rear pillar before proceeding further.

9. Snap the front roof bow into the roof bow retainers stretching the headlining forward. Pull the headlining over the windshield header, cement to the inside flange at windshield opening pulling headlining tight making sure that the first seam is straight from side to side. Then attach headlining to the glazier's points in the windshield upper opening.

10. After the headlining is securely hooked on the glazier's points, hammer the points down flush with windshield opening to insure a good fit of the windshield weatherstrip. Trim surplus head-lining around windshield opening and front pillar post.

11. Install the windcord retainer strips at the front pillar post before tightening headlining retainer strips. Place an extra piece of trim to cover the sharp edges of the trim retainers, at each side of front pillar at joint of windcord trim retainer arid at each side of the roof side header (2 places each side).

12. The front door front pillar trim is glued to the front pillar with 3M trim cement; form a good smooth fit at the front pillar posts and above doors before trimming at windshield opening.

13. Using a dull putty knife or Tool J-2772 carefully tuck the edges of the headlining up between windcord and side retainers. Start at the front pillar post and work toward the rear stretching the headlining carefully as the work progresses.

NOTE: Work both sides of car evenly to insure straightness of the headlining seams.

14. Carefully slit the headlining at the dome lights and install the dome light lens and bezel assemblies. Trim away only enough material at the dome lights to clear the bulb recess and switch knob in the dome lamp base.

15. Install rear windows, trim parts, seat, seat back and all mouldings removed prior to headlining removal operations.

DOOR TRIM PANEL

REMOVAL:

- 1. Remove the vent wind 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 retainer 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 61

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 61.
- 3. Remove screws (0) attaching the regulator to the door inner panel.
- 4. Disconnect the regulator from the cross arm assembly

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 Mystic 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 61, 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 61.
- 3. Remove screws (N), lower window to bott o m 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

REMOVAL:

- 1. Remove door inside hardware and trim.
- 2. Remove the vent wing mounting bracket screws (E), Figure 61.
- 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 61.
- 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 61.
- 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 62

- 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 62.
- 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 bumpers (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 rollers 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 62, 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) arid 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 62.
- 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 ad just 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.

- 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

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.

- 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.
- 13. Roof Panel Side Moulding Joint Cover
- 14. Windshield Center Moulding Outer
- 15. Windshield Lower Moulding Inner

DOOR BELT MOULDING

The door belt moulding (7), Figure 63, attaching screws are accessible after the door glass and frame assembly and the door vent wing glass and frame assembly have been removed.

QUARTER BELT MOULDING

The quarter belt moulding (5) can be removed after the quarter window and glass frame assembly have been removed.

REAR BELT MOULDING AT REAR WIN-DOW (RIGHT OR LEFT)

REMOVAL:

- 1. Using a wedge-shape fibre tool, pry up the front edge of the moulding (1) 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 (5).

REAR WINDOW UPPER MOULDING (RIGHT OR LEFT)

To remove the rear window upper moulding (3), 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 (4) is held in place by the rear belt moulding (1), the roof panel side moulding (6), 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 (13) 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 (11), it will be necessary to remove the windshield lower moulding outer (12) 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 (9), Figure 63.
- 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 (10), pry off joint cover (9) and rem o v e the cover by starting at belt line and working up.

WINDSHIELD LOWER MOULDINGS (RIGHT, CENTER OR LEFT)

These mouldings are held in place with spring clips and can be pried off with a wedge-shape fibre tool.

BODY SIDE HEADER INTERIOR MOULD-ING (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. **ROOF TRIM BOWS**

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.

INSTALLATION:

To install, reverse procedure of removal. Position bows before tightening bow bracket attaching screws.

FIGURE 64

REAR WINDOW

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 64, 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).
- 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 65

1. With the three glass sections installed in t h e 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 65.

FIGURE 66

- 2. Tie a stout cord around each section of the rear window weatherstrip (between the inside body rubber lip and lip of recess, Figure 66). Tie cords tightly enough to draw the inner edges of the rubber channel within the limits of the rear window opening. Tie cords at bottom of 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 section 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 all 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 of body recess completely around the window in a uniform thickness, Figure 67.
- 11 Install the upper and lower moulding retainers over the sealing tape and weatherstrip. Place a small wad of Permagum 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.

- 12. Install the roof panel quarter mouldings (4), Figure 64, 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 instal- 1 at i o n is complete, remove all excess s e al e r 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.

This section of your Body Service Manual Supplement is divided into three parts as follows: PART ONE - Paint film failures, their causes and methods of correction.

PART TWO - Preparation of the metal prior to refinishing.

PART THREE - Refinishing (painting).

PART ONE PAINT FILM FAILURES

1. ALLIGATORING:

A. Appearance -

1. A term describing lacquer or enamel films in which the finish has cracked into large segments resembling alligator hide. (Also termed as checking,

FIGURE 68

2. In checking, small irregular cracks usually go only partly through a paint film. Definite crevices or ruptures going completely through the paint film are called cracking.

B. Causes -

- 1. Uneven expansion and contraction of built-up films (one coat over another coat before bottom coat is dry).
- 2. Less elastic coating being applied over a more elastic coating.
- 3. Excessive air forced onto a painted surface . (Also known as fanning the film being dried.)
- 4. Too rapidly evaporating thinners.
- 5. Application of too many coats most common cause.
- C. Remedies -
 - 1. Most dependable remedy Remove film and clean to bare metal using a 24 grit and finish with 100 grit to feather edge area.
 - 2. Spray on primer-surfacer. Allow to dry; then feather the painted edges using 320 sandpaper.
 - 3. Apply finish coats and recheck work.
 - 4. Use compound and polish out area painted.

2. BLISTERING:

A. Appearance -

1. Formation of bubbles, pimples or small blisters which may pop up in a dry film, particularly when it is exposed to conditions of high humidity, Figure 69.

FIGURE 69

B. Causes -

- 1. Moisture trapped under painted surface may be from air line or on surface at time of spraying.
- 2. Particles of grease, oil, dirt or other f o re i g n matter on surface at time of spraying.
- 3. Temperature difference between surface being painted and materials being applied.
- 4. Excessive air pressure in spraying causing a type of foaming (air bubbles) upon impact with surface sprayed.
- C. Remedies -
 - 1. This condition can only be eliminated by removing surface down to source of blistering and correcting at that point. (Additional material over blisters will not eliminate the condition.)

NOTE: If blistering is to the bare metal, check for rust spots and pitted metal.

- 2. Clean surface just prior to painting. (Be sure air lines are free from moisture.)
- 3. If metal is rusty and pitted, remove all rust with a good metal cleaner and wipe clean. Follow with a primer surfacer, fill in with glazing putty between surfacer coats and sand down with 320 grit sandpaper, feathering edges. Follow with finish coats as required.

3. BLOOMING:

A. Appearance -

1. Bluish cast formed on surface of dried lacquer or enamel film, giving a hazy or cloudy appearance.

- B. Causes -
 - 1. Rubbing or polishing a paint film that has not become sufficiently hard or dry.
 - 2. Using too much pressure when polishing will burn the finish.
 - 3. Using a polish that leaves a greasy film on painted surface (residue which cannot be wiped clean).
 - 4. Ammonia fume s, illuminating gas, smokes and vapors may cause blooming.
 - 5. This condition takes place on dried film only.

C. Remedies -

- 1. Wash surface with lukewarm water and a mild neutral soap. Rinse with clean water and wipe dry with a clean chamois.
- 2. If the condition is extremely bad, use a very fine abrasive compound with very little pressure to bring out the lustre. DO NOT use a polish that will leave a greasy film.

NOTE: After polishing, wash, etc. as in remedy No. 1.

4. BLUSHING:

- A. Appearance -
 - 1. Film appears white or gray (or grayish casts) while it is drying.
- B. Causes -
 - 1. Oil o r water mixed with film, either from air lines or high relative humidities.
 - 2. Draughts, insufficient ventilation, or "fanning" the sprayed film.
- C. Remedies -
 - 1. Most films can be restored by application of a rubbing compound.
 - 2. Severe cases of "blushing" that cannot be polished out should be refinished.
 - 3. Raise room temperature (thus lowering relative humidity).
 - 4. Use a small quantity of high boiling solvents (slower evaporating solvents or retarders) in the lacquer before spraying. Always use Hudson approved thinner supplies for best refinishing results.

5. BRONZING:

A. Appearance -

1. Film takes on a slight but definite dull reddish cast. Characteristic of certain blacks, dark blues and greens.

- B. Causes -
 - 1. A partial break down of the film. The lacquer vehicle has disappeared due to prolonged weathering, thus leaving " dead pigment." Condition generally brought about by failure to protect surface from elements.

C. Remedies -

1. In earlier forms, thoroughly clean surface with Hudson Liquid Glaze Cleaner. Then, follow with an application of Hudson Liquid Glaze Sealer.

6. CHALKING:

A. Appearance -

- 1. Film becomes dull and lifeless.
- 2. The formation of soft white powder on a surface caused by exposure of a paint film to the weather.
- 3. A bleaching action caused by exposure which also changes the color, first noticed as a haze or dullness of the surface. (Characteristic of lighter colors.)
- 4. Normal aging of paint.

B. Causes -

- 1. Degree of weathering may be dependent upon the color, number of coats originally applied or improperly formulated material.
- 2. Very similar to "bronzing" in darker colors. See "Bronzing".
- C. Remedies -
 - 1. Use Hudson Liquid Glaze cleaner to remove "dead pigment" .
 - 2. After cleaning, protect surface with Hudson Liquid Glaze Sealer.

7. CHECKING, CRACKING AND HAIR LINING:

A. Appearance -

- 1. Similar to alligatoring except that the b r ok en segments are much smaller, sometimes microscopic. See Figure 68.
- 2. Fine cracking is checking. In checking, small irregular cracks usually go only partly through a paint film.
- 3. Definite crevices or ruptures going completely through a film are called cracking.

B. Causes -

- 1. See "Alligatoring Causes".
- 2. Also a characteristic of old maroon finishes that have finally failed. Using solvents while refinishing the old finish, that had not been sealed properly, causing the minute checks to open or spread.
- C. Remedies See "Alligatoring."

8. CRAWLING:

- A. Appearance -
 - 1. Material does not remain in uniform coating after application, contracts to central point.
 - B. Causes -
 - 1. Excessive viscosity.
 - 2. Temperature too low.
 - 3. Moisture, grease or other foreign film on surface before spraying.
 - 4. Spraying over high gloss finish.
 - C. Remedies -
 - 1. Use a good grade of reducer.
 - 2. Clean surface carefully prior to spraying.
 - 3. Sand surface being sprayed to allow for better adhesion. (Wipe clean.)

FIGURE 70

9. LIFTING:

A. Appearance -

- 1. Film "pops up" into irregular and loose wrinkles, Figure 70.
- B. Causes -
- 1. Disruption of a paint film by the application of a succeeding coat.
- 2. Solvents of top coat soften or dissolve undercoat causing it to rise or lift.
- 3. Poor adhesion, due to improper cleaning of sheet metal before painting, before prime coat or on prime coat, before finish coat.
- 4. Generally resultant of applying lacquer over air-dry enamel.
- C. Remedies -
- 1. Remove all loose paint and feather-edge into old finish (good old finish).
- 2. Clean metal with a good solvent or gasoline (not

lacquer thinner).

3. Seal old finish.

4. Build up lacquer coat slowly with thin or mist coats. (Assuming the film has not sealed.) After sealing, wet coat can be applied.

10. ORANGE PEELING (PEBBLING, POCK-MARKING):

A. Appearance -

Film appears to have many small crate r s in surface resembling the skin of an orange, Figure

FIGURE 71

- B. Causes -
 - 1. Improper flow of finish coat brought about by using too much air pressure.
 - 2. Use of fast evaporating solvents which do not allow for proper flow out.
 - 3. Insufficient reduction of painting materials.
 - 4. Excessive distance from spray gun to work.
 - C. Remedies -
 - 1. Use proper solvents.
 - Eliminate any factor that will not permit the material to flow out evenly and smoothly. See "Orange Peel" Refinishing Instructions, Page 56.
 - 3. Temperature of object being sprayed must b e about equal to that of room temperature and temperature of the material being sprayed.
 - 4. Lacquer film (orange peel) can be. rubbed out when dry. (Enamel Films must be allowed to age several weeks or even months before rubbing out.)

poorly balanced thinner that evaporates too rapidly.

11. PEELING: A. Appearance -

- 1. Film can be removed in large or small pieces from surface, Figure 72.
- B. Causes -
- 1. Loss of bond or adhesion of an elastic paint film from the surface to which applied due to foreign material on surface, such as grease, wax, etc.

FIGURE 72

- 2. Extremely heavy undercoat due to many repainting operations.
- 3. Painting over a soldered surface which had not been properly tinned or neutralized.
- 4. Painting over a high gloss surface.
- C. Remedies -
 - 1. Thorough cleaning of surface to be painted.
 - 2. Clean surface of accumulated paint films if in excess.
 - 3. Properly tin all solder spots before spraying.
 - 4. Sand glazed surface before cleaning to allow for better adhesion also as an aid in removing former polishes or waxes.

12. PIN HOLING (PITTING):

A. Appearance -

- 1. Paint film contains small holes or hollows which often extend through one or more paint coats, Figure 73.
- B. Causes -
- 1. Generally by grease, moisture or caustic (Alkali) on surface.
- 2. In the majority of cases this is due to not enough thinning of the paint or thinning with a

FIGURE 73

- 3. Foreign matter may enter system through air lines or compressor.
- C. Remedies -
 - 1. If caused by moisture, surface can be repainted again upon drying. (Material should be heated slightly to drive off trapped moisture.) If caused by grease or oil, the pitted surface should be removed before refinishing. This type of pitting is evidenced by soft rings and imperfect drying around pits.
 - 2. If you have this condition use the paint manufacturer recommendations for proper use of thinners. (A little more thinner is advisable rather than less.)

NOTE: If pits appear in lacquer coat remove finish coat sufficiently to remove all traces of pits. Clean surface and refinish as required. If pits appear in undercoat clean to base metal using a 24 grit and finish with a 100 grit sandpaper to featheredge area. Spray on primer surfacer. Allow to dry; then feather the painted edges using 320 sandpaper; apply finish coats and recheck work.

3. See Items "1 and 2" above.

13. RUST:

A. Appearance -

1. Film raises up in blisters or sections which later break through exposing the metal, Figure 74.

FIGURE 74

- B. Causes -
 - 1. Water trapped under finish or undercoat. Water entering system through air lines or compressor.
- C. Remedies -

1. Entire area should be stripped off, the metal surface thoroughly sanded and cleaned with metal conditioner before being refinished.

14. SHRINKING AND SPLITTING:

A. Appearance -

1. Film may show a definite loss of gloss even after several months, finish coat may show cracking or bridging, Figure 75. Not to be confused with " alligatoring."

FIGURE 75

- B. Causes -
 - 1. Common problem with primer surfacer due to unclean surfaces and improper application resulting in poor adhesion and shrinkage.
 - 2. Too short drying time between coats and not enough cut-back of the featheredge.
- C. Remedies -
 - 1. Remove paint to smooth surface using a 24 grit and finish with 100 grit to featheredge area and clean thoroughly. If down to bare metal spray on primer surfacer, sand with 320 grit being careful to feather the edges. Apply first and second finish coat and recheck work.
 - 2. A thin wet coat of fully reduced surfacer, allowing sufficient time to flash out will eliminate this.

15. SPOTTING:

- A. Appearance -
 - 1. Film develops off-color patches or spots.
- B. Causes (Most Frequent)
 - 1. Water spots driving auto in rain before finish has set completely.
 - 2. Small tree sap spots from parking under elm trees in particular.
 - 3. Oil spots from road or on fenders from motor oil.
 - 4. Tree spray from direct cause or by washing down on finish during rain storms.
- C. Remedies -

1-2. Water and sap spots can be removed with Hudson Cleaner and Polish.

- 3. Oil spots can be removed with Hudson Tar and Road Oil Remover.
- 4. Tree spray can usually be removed with Hudson Hand Rubbing Compound. If too severe it may require complete refinishing.

METAL FINISHING

1. Clean damaged area by removing 211 road tar, grease, wax and oil using Hudson Road Tar and Oil Remover. This cleaning operation will eliminate the filling of abrasive paper and disc surfaces used in the subsequent operations. NOTE: If pillar posts or the complete car is to be painted, it is advisable to remove the rubber weatherstrips and remove old rubber cement.

2. Remove all rust and loose paint with a 16 Grit type disc.

NOTE: When using the open coat disc (16 Grit), sand until sparks are apparent. Then stop and use a 24 Grit disc to remove the remaining paint as required.

Carefully inspect the damaged area for breaks and tears in the metal and repair either by arc or acetylene welding.

- 3. Carefully pound out all dents and irregularities with good bumping equipment. Pits and dents that cannot be removed by the regular bumping method should be filled in with body solder, or metal filler where the use of heat would be impractical.
- 4. Remove excess solder or metal filler using a 16 Grit disc on your regular disc grinder.
- 5. Cut down welds and surface metals using a 24 Grit disc. Where it is impossible and impractical to use the regular disc grinder for cutting down welds on hard-to-get at areas, use a cone type sander using 50 Grit.
- 6. Further condition the metal surface with a 50 Grit to remove all irregularities and scratch marks, leaving a relatively smooth surface for further work.
- 7. After the surface of the panel has been thoroughly sanded it is necessary to sand the edges of the paint to blend in the damaged area with the surrounding finish. Sand back (featheredge) far enough so that no bulge can be felt between the last layer of paint and the bare metal.

NOTE: In disc featheredging a 100 grit disc is usually recommended; 80 is used in the oscillating sander and also for hand sanding; 220 grit is used for finished featheredging.

When disc sanding it is important to hold the disc grinding machine at an angle of approximately 20 degrees to the work. Sufficient pressure is applied so that about 1 inch of the disc is bent and in contact with the surface being sanded. Be sure sanding disc is well supported with a back-up pad. The machine should never be operated so that the entire area of the disc is flat against the surface of the work, nor at an extreme angle. The disc grinder should not be swung in an arc, but should always be moved so that it is perpendicular to the scratch lines at all times. Sparks should leave the machine at the same point and travel in the same direction. The parallel scratches resulting from this method are much less noticeable than the swirl marks that ordinarily result from disc grinding and considerably less conditioning is required to prepare the metal for priming.

Similarly, an oscillating sander should be operated so that the scratch lines will be approximately parallel. Hand sanding should produce the same effect.

There are many different types and grits of sanding discs available and the manufacture r s' instructions should be followed as to their use. However, open grain discs are designed for paint removal where other discs would tend to load up. Closed grain discs are for use on base metal.

8. For final overall sanding to produce a smooth foundation for the surfacer coat, w et sand the area to be refinished using Grit 220A Wetordry Paper on a straight line oscillating water sander. Apply water freely and operate sander so that resulting finish w ill consist of uniform straight lines all running in one direction. An alternate method, though slower, is to water s and by hand using Grit 320A Wetordry Paper.

REFINISHING

1. MASKING:

- A. Surfaces to be masked should be clean and dry. Masking should be done after all metal finishing has been completed.
- B. After the area is completely masked off, be sure the surface is thoroughly dry before applying undercoats. If water remains after wet sanding, dry off with compressed air.

2. APPLYING PRIMER:

- A. Spray on the necessary number of undercoats with proper wet sanding bet w e en each coat to produce a smooth surface.
- B. To remove paint nibs or other irregularities in the surfacer coats, quickly and efficiently, wet sand with Grit 220A Wet or dry Paper on a straight line

sanding machine, or 320A Wetordry Paper with water when hand sanding.

NOTE: Care must be taken to avoid cutting through the undercoat on curved areas and moulds.

3. SPRAYING TECHNIQUE:

Every sprayman knows that the spray gun must be moved parallel to the surface, Diagram B, Figure 76, rather than in an arc Diagram A, Figure 76. It will be readily seen that, when the gun is moved in an arc, the distance from the spray nozzle to the surface increases greatly as the gun moves away from the center. This is a poor technique as discussed in Section 5, "Distance of Spray", Page 56.

FIGURE 76

It will also be seen in Diagram A that the area of surface covered by any portion of the stroke during a given period of time increases great 1 y with the distance from the center. Thus, in the above diagram the areas of surface covered by the No. 4 sections are almost three times as large as those of the No. 1 sections. This means that the lacquer film will be very much thinner near, the ends of the stroke. This is objectionable because of lack of uniformity and because the thinner portions of the film have less chance to flow out properly.

Similarly, the arc motion also increases the size of the overspray area since in the end-area covered by the No. 5 sections of the stroke the lacquer will be applied as isolated scattered droplets, which will not be sufficiently close to one another to allow them to blend into a fluid film.

The "Stroke," i.e., the motion of the hand holding the spray gun, should be started while pointing the gun beyond the part of the surface which is to be coated. This gives the spray fan a smooth, even arm motion when it has reached the surface to be coated. The flow of lacquer through the nozzle begins just before the surface to be coated has been reached. At this point the gun should be "triggered," i.e., the trigger should be pulled back gradually to "feather" the spray at the overlapping edge. Proper lapping is an important point in good spraying. Insufficient lapping leads to semidry "skippers," the condition where the lacquer droplets are not sufficiently close to flow together properly, Figure 77.

FIGURE 77

FIGURE 78