

1962

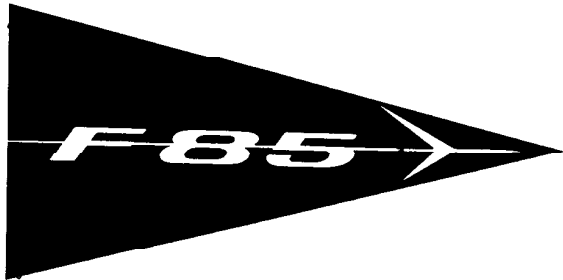


OLDSMOBILE

F-85

SERVICE MANUAL

1962



OLDSMOBILE SERVICE MANUAL

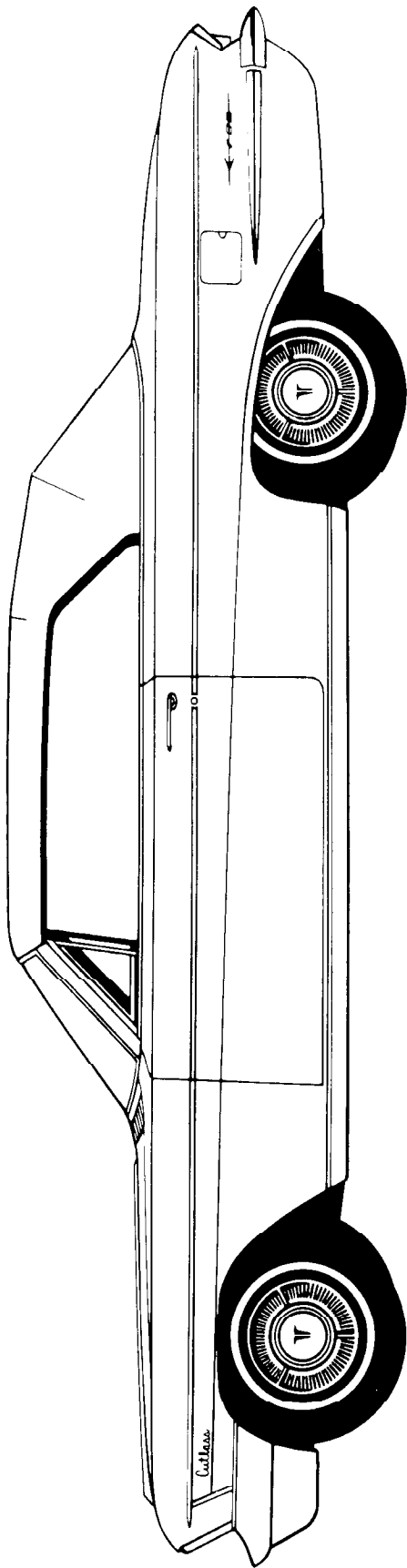
FOREWORD

This supplement to the 1961 is compiled to provide as many service procedures, specifications and adjustments available at the time of printing that are new for the 1962 Oldsmobile F-85. An understanding of the material contained herein, and in monthly issues of the Oldsmobile Service Guild and Dealer Technical Information Bulletins, issued when necessary, will assist Oldsmobile Dealer Service personnel in correctly maintaining and servicing Oldsmobile cars.

For procedures and specifications not contained herein, please refer to the 1961 F-85 Service Manual.

SERVICE DEPARTMENT
OLDSMOBILE DIVISION
GENERAL MOTORS CORPORATION
LANSING, MICHIGAN

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GENERAL INFORMATION

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VEHICLE IDENTIFICATION NUMBER PLATE

The 1962 vehicle identification number plate is located on the left front door pillar as illustrated in Fig. 1-1. Each identification number is prefixed by three numbers and a letter. The first two numbers (62) indicate the year (1962). The third number designates the series.

- 0 - Standard F-85
- 1 - Deluxe F-85

The letter in the identification number indicates the assembly plant at which the car was built. "M" indicates a Lansing-built car, "C" a South Gate-built car, and "K" a Kansas City built car.

The starting vehicle identification number at each plant is 01001.

NOTE: Always give complete vehicle identification number, engine number, body number,

and transmission number (except Synchromesh equipped cars) in all correspondence.

MODEL IDENTIFICATION

A four digit number, called the car series and body style designation number, will identify the car. Reading from left to right, the digits represent the following:

- First and second digits: Series designation.
- Third and fourth digits: Body style.

Example: The number 3019 identifies a car as a standard F-85, four door sedan. Note that "30" identifies the car as a standard and that "19" represents a four door sedan regardless of the series.

1962 MODEL DESIGNATION

Series	Body Style	Series & Style Designation
3000 Standard F-85	4 Door Sedan	3019
	2 Door Club Coupe	3027
	Sta. Wagon 2 seat	3035
	Sta. Wagon 3 seat	3045
	Sports Convertible	3067
3100 Deluxe F-85	2 Door Coupe (Cutlass)	3117
	4 Door Sedan	3119
	Sta. Wagon 2 seat	3135
	Convertible (Cutlass)	3167

BODY AND STYLE NUMBERS

The body and style numbers are stamped on a plate which is located under the hood and mounted on the cowl. (Fig. 1-2)

The plate contains: the year and style number of body, body number, trim number, and paint number (color specification number).

The Body Numbers are prefixed by letters indicating the plant at which the body was assembled.

LA - Lansing; BK - Kansas City; BC - South Gate

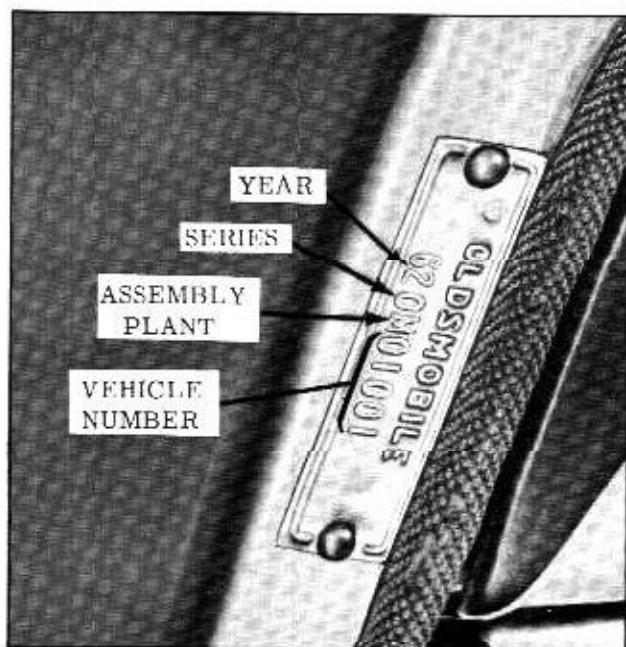


Fig. 1-1 Vehicle Identification Number Plate

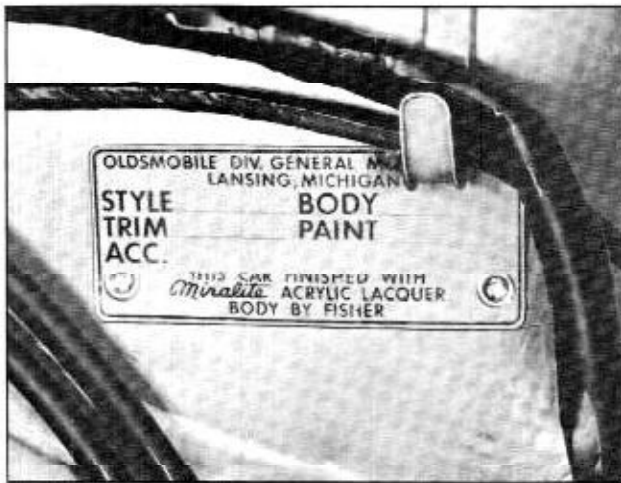


Fig. 1-2 Body and Style Number Location

NOTE: Always give complete vehicle identification number, engine number, body number, and transmission number (except Synchromesh equipped cars) in all correspondence.

ENGINE UNIT NUMBER

The engine unit number is stamped on the front of the right cylinder head. (Fig. 1-3) The starting unit number is S-100001. The number on the engine block is a production number only.

Suffix "E" is used for an Export Low Compression 2 bbl. engine option. Suffix "G" is used when engine is equipped with a 4 bbl. carburetor. Suffix "H" is used for an Export Low Compression 4 bbl. engine option.

TRANSMISSION SERIAL NUMBER

The Hydra-Matic serial number plate is at-

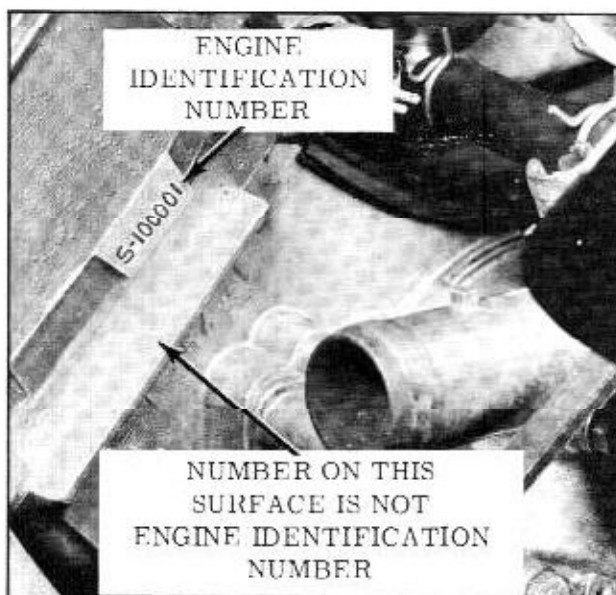


Fig. 1-3 Engine Unit Number Location

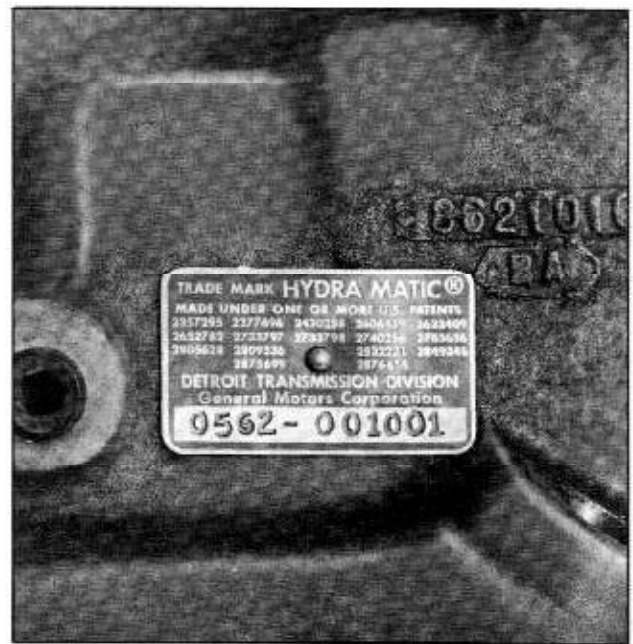


Fig. 1-4 Transmission Serial Number Location

tached to the right side of the transmission case, above the filler tube boss. (Fig. 1-4)

The serial number prefix for each type of transmission is as follows:

O-562	(Tan)	2 BBL
OD-562	(Yellow)	4 BBL
OE-562	(Light Blue)	4 BBL (with console)

NOTE: Always give complete vehicle identification number, engine number, body number, and transmission number (except Synchromesh equipped cars) in all correspondence.

Synchromesh transmissions do not have a serial number.

REAR AXLE RATIOS

Rear axle ratio code letters are stamped on the differential cover as shown in Fig. 1-5. They are A, B, and C followed by a number or numbers. The letters designate the ratio as follows A-3:08, B-3:23 and C-3:36.

PUSHING CAR TO START ENGINE

Hydra-Matic

As a result of the Hydra-Matic transmission design, the engine cannot be started by pushing the car.

Synchromesh

To start the engine by pushing the car, move the gearshift lever to high gear, depress the

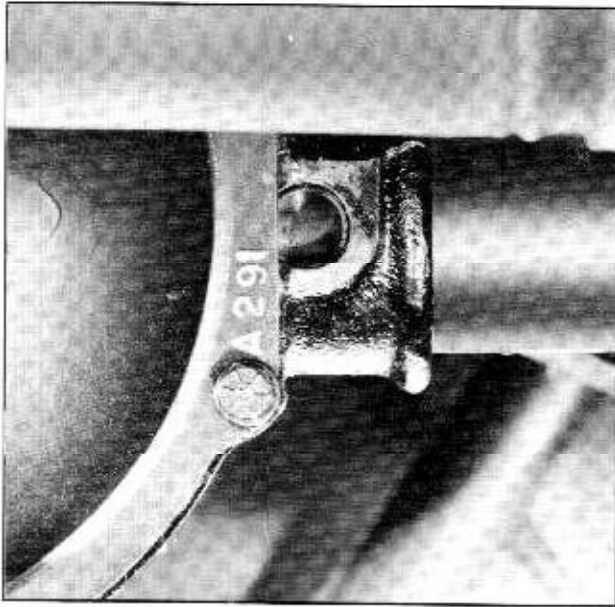


Fig. 1-5 Rear Axle Ratio Location

clutch pedal and turn on ignition switch. When the vehicle reaches a speed of 10 m.p.h., release the clutch pedal slowly.

TOWING PRECAUTIONS

Always place a rubber mat or other suitable protector between the bumper and the tow chains or cables. For FRONT end lift, place the chains or cables around the stabilizer mounting brackets against the frame rail at both sides. It is recommended that a 4" x 4" timber be located just behind the sheet metal panel that extends below the bumper to prevent damage from lift chains when

towing the car with the wheels off the ground. All models can be towed without disconnecting the propeller shaft providing the transmissions or propeller shaft is not damaged. If damaged, the propeller shaft must be disconnected from the differential and wired to the exhaust pipe or the car must be towed with the rear wheels off the ground.

If the propeller shaft is disconnected and the "U" joint bearing retaining strap is broken, wrap tape around the bearing caps to prevent loss. When towing with rear wheels off the ground, the steering wheel must be centered and held in position by a steering wheel holding clamp or by tying it to the window division channel.

Tire to ground clearance should not exceed six inches while towing the car AND SPEED SHOULD NOT EXCEED 30 M.P.H. Caution should be exercised if towing over rough roads.

FRAME CONTACT TYPE LIFTS

When using a frame contact type lift, position the contact pads to lift the frame rail at points as shown in Fig. 1-6.

OPERATION IN FOREIGN COUNTRIES

If an Oldsmobile is to be operated outside the continental limits of the United States or Canada, there is a possibility that the best fuels available are so low in octane quality that heavy detonation and serious engine damage may result from their use. To minimize this possibility, write

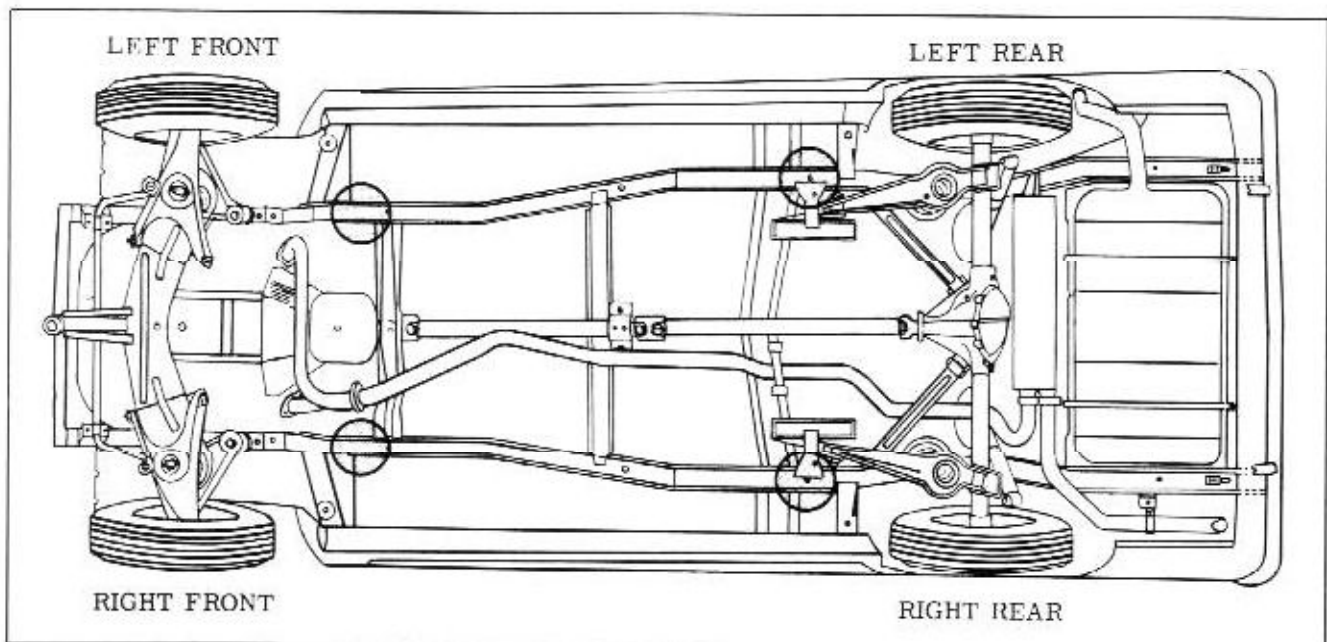


Fig. 1-6 Frame Contact Lift Points

LUBRICATION

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MAINTENANCE SERVICE	MILEAGE INTERVAL IN THOUSANDS																			
	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
Body and Chassis Lubrication	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Change Engine Oil and Clean Inlet Breather Cap	As Required - Refer to Page 2-4																			
Replace Oil Filter	As Required - Refer to Page 2-6																			
Clean and Oil non Disposable Type Air Cleaner (Service Oftener under Dusty Driving Conditions)				•				•				•				•				•
Change Element in Disposable Type Air Cleaner (Service Oftener under Dusty Driving Conditions)								•								•				
Change Hydra-Matic Fluid												•								
Hydra-Matic Band Adjustment												•								
Rotate Tires		•		•		•		•		•		•		•		•		•		•
Brake Adjustment	As Required																			
Repack Front Wheel Bearings	Refer to Page 2-7																			
Universal Joints - Slip Yoke	Refer to Page 2-7																			
Spark Plugs - Clean and Gap					•					•					•					•
Distributor - Adjust Points & Set Timing					•					•					•					•
Carburetor - Adjust Idle Speed & Mixture					•					•					•					•
Clean Battery Cables & Terminals	Every 10,000 Miles or Once Each Year																			
Service Air Conditioning	Refer to Page 14-1																			
Liquid Glaze	As Required																			
Clean Crankcase Ventilation Inlet Breather (Service Oftener under Dusty Driving Conditions)	At Every Oil Change																			
Clean Crankcase Ventilation Check Valve				•						•					•					•

Fig. 2-1 Oldsmobile F-85 Guardian Maintenance Schedule

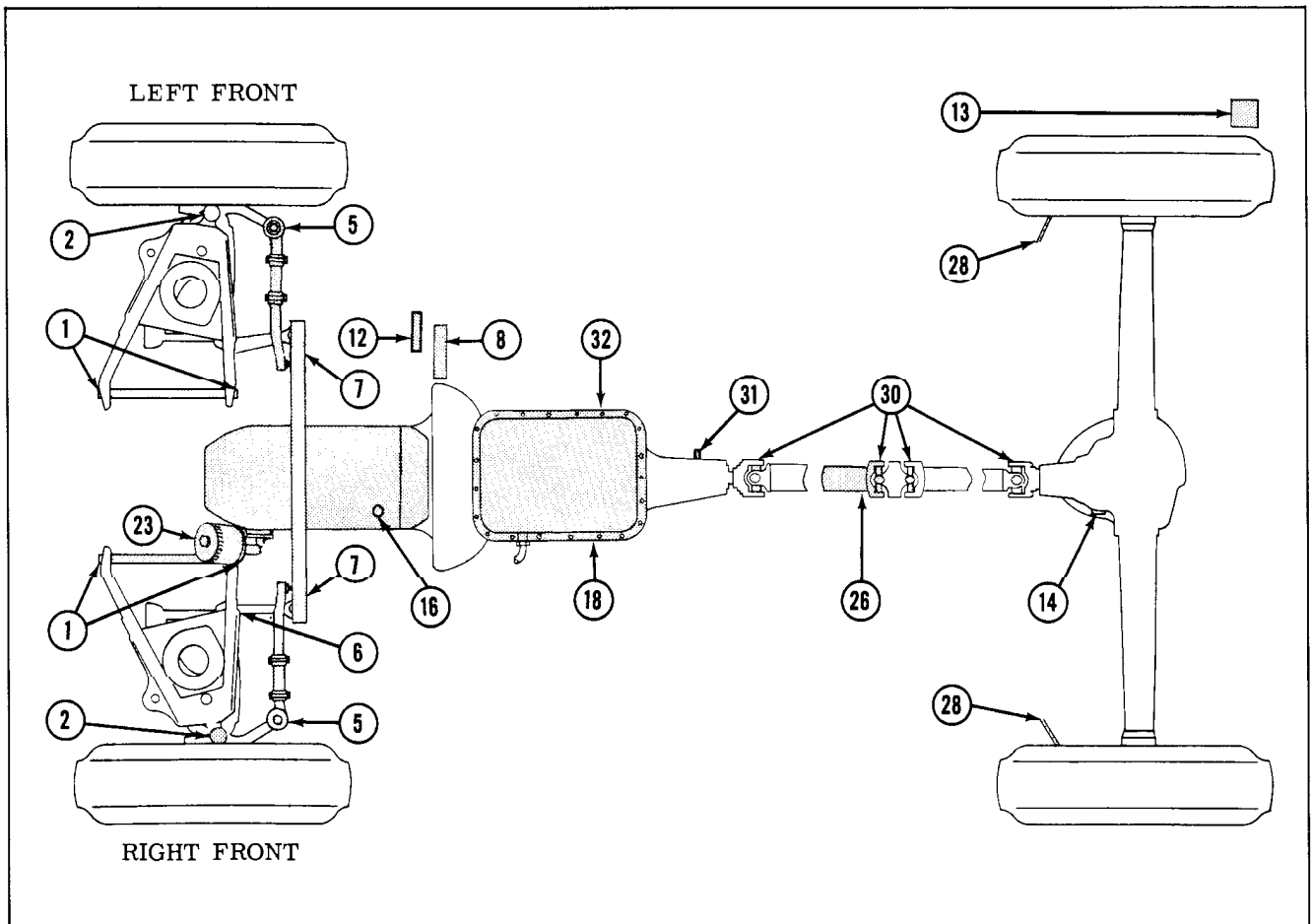


Fig. 2-2 Lubrication Points

EVERY 2,000 MILES

CHASSIS

- 1. Lower control arm pivot shafts . . . 4 points
- 2. Lower control arm ball joints . . . 2 points
- 3. Upper control arm pivot shafts . . . 4 points
- 4. Upper control arm ball points . . . 2 points
- 5. Tie rod ends 2 points
- 6. Steering idler arm bushing 1 point
- 7. Relay rod 2 points
- 8. Clutch equalizer 1 point
- 9. Generator oil cups SAE 20 engine oil
- 10. Throttle and transmission linkage pivot points SAE 20 engine oil
- 11. Parking brake linkage . . . SAE 20 engine oil
- 12. Synchromesh clutch linkage (including felt washers at end of the clutch equalizer) . . SAE 20 engine oil
- 13. Gas tank filler door hinge . SAE 20 engine oil

BODY LUBRICATION—CHECK—LUBRICATE AS REQUIRED

(Wipe Off Old Lubricant)

Door lock striker teeth-Light coat of stick type lubricant.

Rotary lock-Drop or two of SAE 20 oil on lock

pivot. Light coat of stick type lubricant on surface of lock housing.

Door hinge and hold open assembly-Thin film of lubriplate on friction surfaces. A drop of oil on all pivot points.

Door jamb switch-Thin film of lubriplate 630 AAW or equivalent to end of plunger.

Hood hinges-SAE 20 oil at pivot points.

Hood latch-Thin film of lubriplate on friction surface. A drop of oil on all pivot points.

Rear compartment lid-Apply lubriplate 630 AAW to bolt at striker contact area.

Rear compartment lid hinges and torque rods-Apply lubriplate 630 AAW to hinges and torque rods at friction points. Apply lithium soap grease to torque rod silencer.

Weatherstrips, door bottom drain hole sealing strip, and door and hood bumpers-Thin film of Dow Corning 4X weatherstrip grease.

Seat adjuster-Thin film of lubriplate 630 AAW on seat tracks.

Wiper transmission shafts and pivot points-SAE 20 oil.

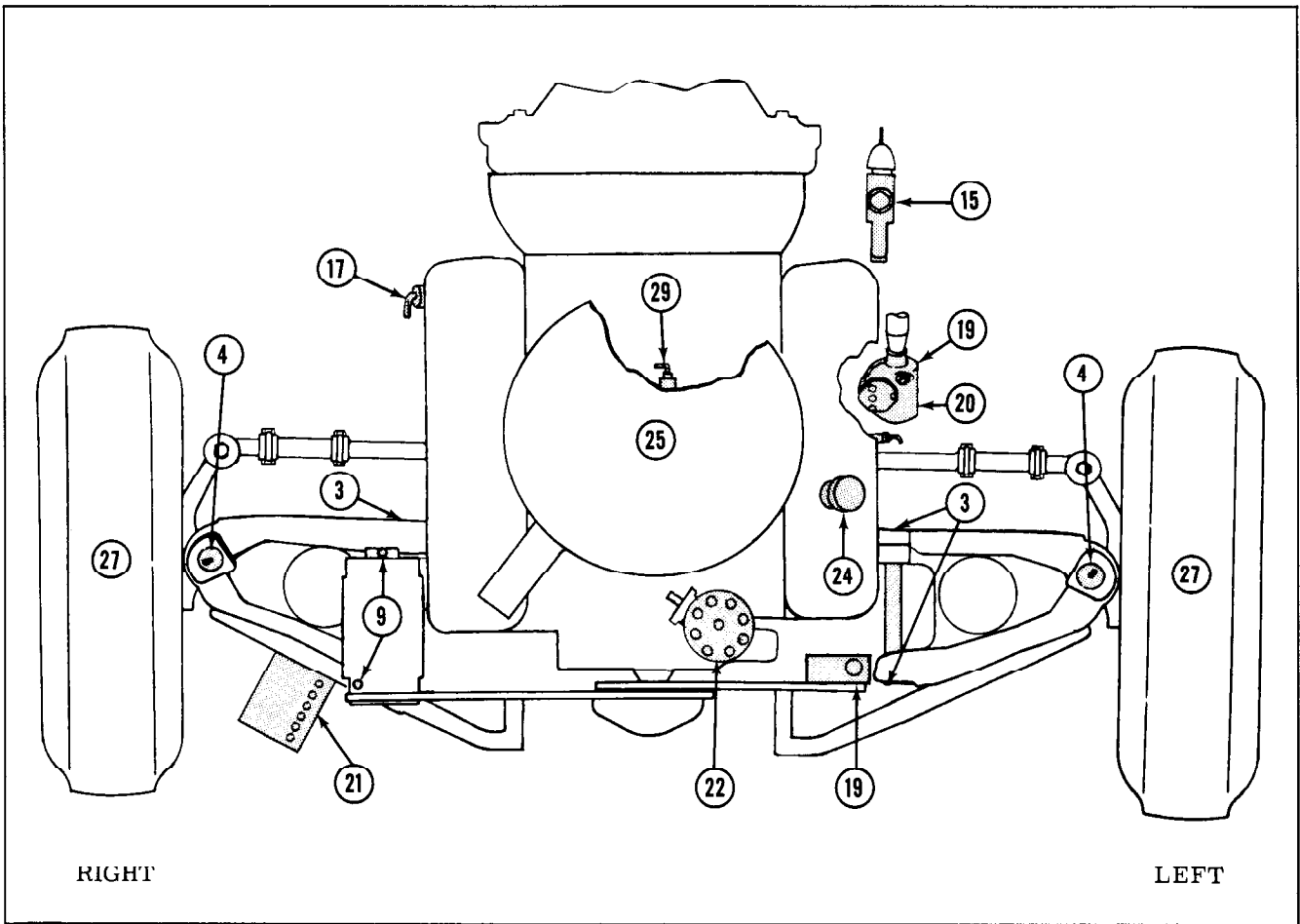


Fig. 2-3 Lubrication

CHECK FLUID LEVEL—
ADD IF NECESSARY

- 14. Differential Special lubricant Part No. 531536. (Small amounts of SAE 90 Multi-Purpose Gear Lubricant may be used to replenish differential.)
- 15. Brake master cylinder . . . GM Brake Fluid No. 11.
- 16. Engine oil Refer to page 2-4.
- 17. Hydra-Matic GM Hydra-Matic fluid.
- 18. Synchromesh Synchromesh Transmission Lubricant. Part No. 582840.
- 19. Steering gear and pump (Power) GM Hydra-Matic fluid.

- 20. Steering gear (Manual) . . . SAE 80 Multi-Purpose Gear Lubricant.
- 21. Battery Distilled water.

STEERING LINKAGE AND SUSPENSION

The front suspension and the steering linkage should be thoroughly lubricated with chassis lubricant at 2,000 mile intervals.

The rear suspension does not require lubrication.

DIFFERENTIAL

Periodic or seasonal changes are not recommended. The lubricant level should be checked at 2,000 mile intervals and if necessary, add lubricant to bring it up to the filler plug level. Small additions of SAE 90 Multi-Purpose Gear Lubricant may be used.

CAUTION: Always clean dirt or foreign materials from around plug opening before removing filler plug.

Capacity of the differential is approximately 2 pints.

BRAKES

The fluid level in the master cylinder should be checked every 2,000 miles. If necessary to add fluid, use GM Brake Fluid No. 11. Brake fluid level must be maintained at 1/4" minimum below the front edge of the master cylinder filler cap opening.

CAUTION: Extreme care must be exercised to prevent entry of dirt into the master cylinder

At time of brake overhaul, all rust should be cleaned from brake shoes, the inner surfaces of the brake backing plates, and all metal contact points at the brake shoe assembly. A film of four parts (volume) of Synthetic Oil Seal Lubricant (Part No. 567196) and one part (volume) of powdered graphite should be applied to the surfaces against which the shoes operate or adjacent brake parts contact. Care must be exercised to prevent any lubricant from getting on the braking surfaces of shoes or drums.

ENGINE CRANKCASE OIL

It is recommended that an oil be used, which according to the label on the can, is (1) intended for service MS, (2) passes car makers' tests or meets General Motors Standard GM-4745M.

The useful life of the oil is affected by many factors such as oil quality, length of trips, driving speed, atmospheric temperature, dusty roads, etc.

The following charts will serve as a guide in selecting the proper oil change interval and oil viscosity.

Anticipated Lowest Atmospheric Temperature	Recommended SAE Viscosity Number When Single Viscosity Oils Are Used	Recommended SAE Viscosity Range When Multi-Viscosity Oils Are Used
Above 32°F.	SAE 20 or SAE 20W	SAE 10W-30
Below 32°F. and Above 0°F.	SAE 10W	SAE 10W-30
Below 0°F.	SAE-5W	SAE 5W-20

Certain driving conditions such as dust storms or frequent driving on dusty roads, necessitate more frequent oil changes.

This chart applies to the initial oil change as well as subsequent oil changes. An MS oil which meets General Motors Standard GM-4745M was installed in your engine at the factory.

The proper oil viscosity to use depends on the prevailing atmospheric temperature.

Prevailing Daylight Temperature	Change Interval
Above 32°F.	Every 60 days or every 4,000 miles, whichever occurs first.
Below 32°F.	Every 30 days or every 4,000 miles, whichever occurs first.

SAE 30 oil may be used when the prevailing daylight temperature is above 90°F.

SAE 5W oil is not recommended for sustained high speed driving when the temperature is above 60° F.

The use of "break-in" oil, "tune-up" compounds, "friction reducing" compounds, etc., is specifically NOT recommended.

If higher detergency is required to reduce varnish and sludge formation, a thoroughly tested and approved concentrate - "High Detergency Concentrate" - is available.

Crankcase Capacity

Oil change only, 4 quarts.

Oil change and filter element change, 5 quarts.

Oil Level (Fig. 2-4)

The engine oil dipstick located on the left side of the engine, is marked "Full", "Add 1", and "Add 2". The oil level should be maintained in the safety margin, neither going above the "Full" line nor under the "Add 2" line. The oil level should be checked when refueling and oil added to maintain the proper level.

Refer to Lubrication point No. 16.

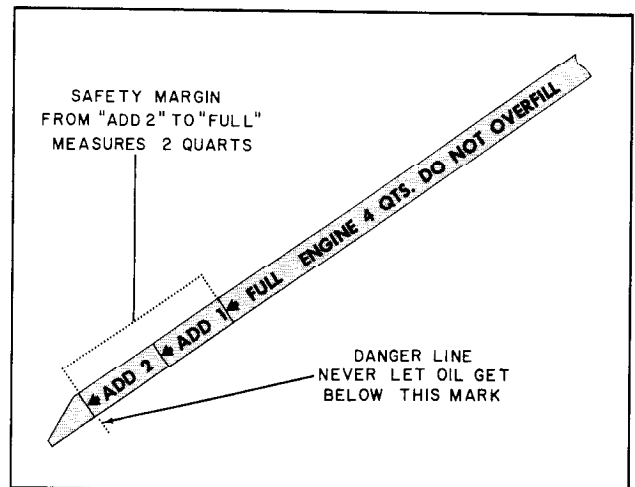


Fig. 2-4 Engine Oil Dipstick

HYDRA-MATIC TRANSMISSION

GM Hydra-Matic Fluid

This all-season fluid, designed for year-round operation, is available through authorized dealers.

Fluid for the Hydra-Matic unit is also available through most independent oil companies. Only fluid with the following identification on the container should be used: brand name, including the words “. Fluid Type ‘A’, plus, ‘AQ-ATF-number-A’.

Checking Hydra-Matic Fluid Level (Fig. 2-5)

Fluid level should be checked every 2,000 miles. Check must be made with the engine idling and the selector lever in the park position. FLUID LEVEL MUST BE MAINTAINED AT THE FULL MARK (transmission warm).

CAUTION: Do not fill above full mark as this will cause foaming and will result in improper operation.

Draining Hydra-Matic Transmission

The Hydra-Matic fluid should be changed every 24,000 miles. Refer to Lubrication point No. 17.

To drain the Hydra-Matic transmission oil:

1. Remove drain plug from transmission oil pan permitting fluid to drain, then replace the plug.
2. Raise hood and remove dipstick.
3. First add 3-1/2 quarts of HM fluid to the transmission.
4. With the selector lever in park position and the car on a level surface, start engine. With engine running, add fluid to bring level to “FULL” mark on the dipstick.

NOTE: Approximately 4 quarts of oil are required to fill the Hydra-Matic transmission after the transmission has been drained. Approximately 5 quarts will be required to fill the transmission if the oil pan has been removed and drained at the same time that the fluid is changed. AFTER FLUID HAS BEEN ADDED THE TRANSMISSION IS WARM, LEVEL SHOULD BE CHECKED TO MAKE SURE THAT IT IS AT THE “FULL” MARK ON THE OIL LEVEL DIPSTICK. Approximately 7 quarts are required after an overhaul.

BAND ADJUSTMENT

To adjust the band, remove the oil pan, loosen

band adjusting screw lock nut and tighten screw to 100 inch lbs. Back screw off 2-1/4 turns and tighten lock nut. Install pan and add necessary oil. Adjust band every 24,000 miles. Refer to Lubrication point No. 32.

SYNCHROMESH TRANSMISSION

Remove the filler plug from the transmission case and fill to the level of the opening with Synchronesh Transmission Lubricant, Part No. 582840. The lubricant level should be checked every 2,000 miles and if found low, the transmission should be checked for leaks, and the source of the leak corrected. Periodic or seasonal change of lubricant is not recommended:

CAUTION: Always clean dirt or foreign material from around plug before removing.

Capacity of the unit overhauled is 2 pints.

POWER STEERING GEAR AND PUMP

Check every 2,000 miles and maintain oil level at “FULL” mark. Oil must be warm when checking oil level. Use Hydra-Matic Transmission Fluid. Power steering gear lubrication is accomplished by the oil supplied to the gear by the power steering pump. Pump must be at maximum full mark.

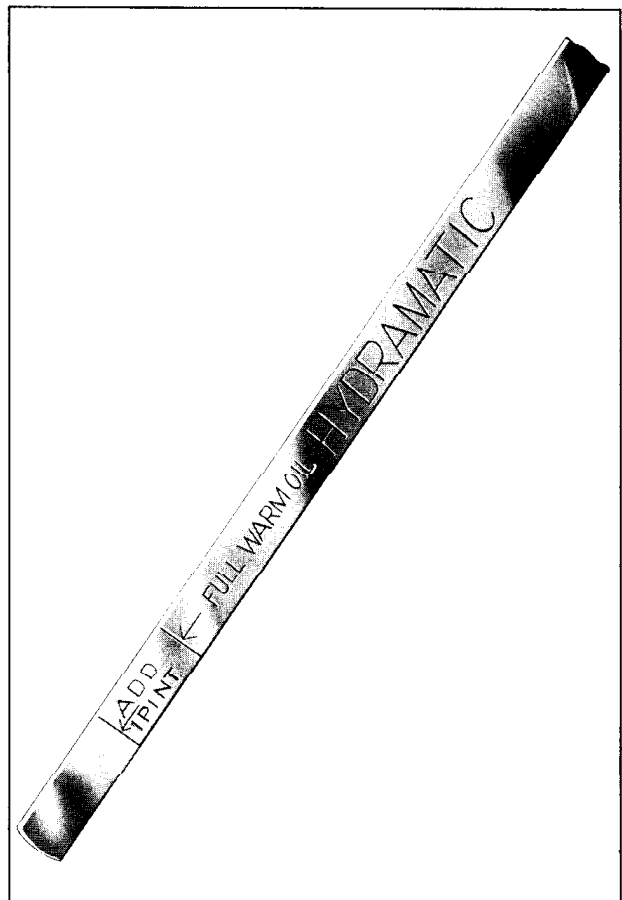


Fig. 2-5 Hydramatic Transmission Oil Level Dipstick

MANUAL STEERING GEAR

Check steering gear lubricant level every 2,000 miles. The necessity for frequent addition of lubricant indicates leakage and the source of leakage must be found and corrected. Use SAE 80 Multi-Purpose Gear Lubricant. Regular or seasonal changes are unnecessary.

NOTE: THE FRONT WHEELS SHOULD BE TURNED TO THE EXTREME RIGHT TO ALLOW GREASE TO ENTER THE GEAR FREELY.

BATTERY

Check battery liquid level every 2,000 miles or once a month (more often in hot weather). Level should reach the bottom of the vent well.

CAUTION: DO NOT OVERFILL.

Service battery and terminals every 10,000 miles or once a year. Refer to Lubrication point No. 21. Check tightness of battery hold-down bolts. To properly clean battery:

1. Make sure vent plugs are closed tight.
2. Brush battery with a diluted ammonia or soda and rinse with clear water. Apply a thin coating of petrolatum to terminals and clamps.

DISTRIBUTOR

The breaker cam should be lubricated with a thin film of Delco-Remy Cam and Ball Bearing Lubricant every 6,000 miles or whenever the contact assembly is replaced. No other lubrication is required. The movable breaker plate is lubricated by oil from the upper main shaft bushing. Refer to Lubrication point No. 22.

GENERATOR

Hinge cap oilers are provided at both the commutator and drive ends. Every 2,000 miles the oilers should be filled to the cap with SAE 20 oil.

If the oil reserve in the commutator end frame becomes completely exhausted through failure to lubricate at regular intervals, it will require more than a simple filling to restore the reserve. In such case, oil cup should be filled three times consecutively, allowing time between fillings for the oil to soak down.

THROTTLE AND TRANSMISSION LINKAGE

Every 2,000 miles, remove road film from lubrication points, then apply engine oil to all friction and bearing surfaces on transmission control linkage and throttle linkage.

PARKING BRAKE LINKAGE

All the moving parts of the parking brake linkage should be lubricated with engine oil every 2,000 miles.

PARKING BRAKE CABLES

The parking brake cables leading to the rear wheels operate inside metal conduits through a portion of their length. Normal use of this type of cable will assist in keeping them in operating condition without periodic maintenance. Lubricate at time of brake overhaul with Lithium soap grease. Refer to lubrication point No. 28.

CLUTCH LINKAGE

Every 2,000 miles apply engine oil to all friction and bearing surfaces on the clutch linkage. The clutch equalizer should be lubricated with chassis lube.

FUEL FILTER

The fuel filter is located in front of the right cylinder head. The bowl and element should be cleaned when necessary. If the element cannot be cleaned satisfactorily, it should be replaced.

OIL FILTER

A full flow oil filter, provided as optional equipment on all models, filters 100% of the oil delivered by the oil pump. For this reason the interval of change is very important. The oil filter should be changed every 4,000 miles of car operation or every 6 months whichever occurs first. Refer to Lubrication point No. 23.

The oil filter can be removed as follows:

1. Loosen filter with a wrench, then remove and discard filter.
2. Clean out filter body casting.
3. With new seal seated on face of new filter, install filter carefully, then torque 15-17 ft. lbs.

CRANKCASE BREATHER

At each engine oil change the crankcase inlet breather cap should be washed in solvent and reoiled with SAE 20 oil. Operating conditions may require more frequent service. Refer to Lubrication point No. 24.

POSITIVE CRANKCASE VENTILATOR (Fig. 2-6)

The positive crankcase ventilator check valve and line should be cleaned every 10,000 miles. Refer to Lubrication point No. 29.

AIR CLEANER

Non-Disposable Type

The air cleaner element should be serviced every 8,000 miles. Operating conditions may require more frequent service.

The air cleaner should be serviced as follows:

1. Remove the filter element.
2. Wash accumulated dirt from the filter element by plunging it up and down several times in clean kerosene and wring dry.
3. Oil filter element with SAE 20 oil, wring out excess oil and install.

Heavy Duty Disposable Element Type

The air cleaner incorporates a disposable air filter element. The outside surface of the element is covered with a coarse material for primary filtering of large particles. The inner surface is a less porous material for filtering fine particles. Soft plastic flanges are used as self contained gaskets which seal the air cleaner body and cover. Therefore, all air must pass through the filter element.

The air filter element should be replaced every 16,000 miles under normal driving conditions, or under dusty driving conditions more frequently as required. Do not attempt to service the element. Refer to Lubrication point No. 25.

The filter element should be replaced as follows:

1. Remove air cleaner assembly to prevent dirt from falling into carburetor.
2. Remove filter element from air cleaner.
3. Clean dust and dirt from metal surfaces of air cleaner body and install new filter element.
4. Install air cleaner assembly on car.

SLIP YOKE

During adverse climatic conditions, where slip yoke malfunction or sticking is detected, it is permissible to lubricate the slip yoke with seal Lubricant, Part No. 567196, until lubricant appears at the rear of the slip yoke. Refer to Lubrication point No. 26.

UNIVERSAL JOINTS

Universal joints, under both hot and cold weather conditions, no longer require a scheduled lubrication interval. Refer to Lubrication point No. 30.

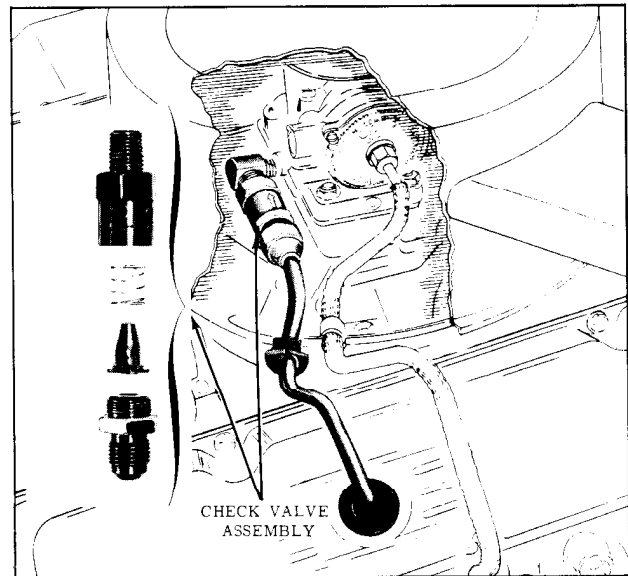


Fig. 2-6 Positive Crankcase Ventilator

FRONT WHEEL BEARINGS

Front wheel bearings should be lubricated when brake maintenance necessitates removal of the front drums, otherwise no periodic maintenance is required. Use a sodium soap, fine fiber grease such as Marfax Heavy Duty No. 2. Long fibrous greases should be avoided because they throw out of bearings.

Pack the bearing assemblies full, but do not put grease in hub as excessive grease increases the chance of leakage into the brakes and prevents proper heat dissipation of the hub and drum assembly. Refer to Lubrication point No. 27.

When it is found necessary to remove the front wheel bearings for cleaning, the bearings should be washed in clean gasoline (not light oil) and must be thoroughly dried before new grease is applied. If the bearings are washed in light oil, the grease will not adhere to the bearings and the bearings will run dry.

The adjustment of front wheel bearings should be made as follows:

1. Tighten adjusting nut 18-20 ft. lbs. while rotating wheel, to insure that all parts are properly seated and threads are free.
2. Back off nut 1/2 turn.
3. Retighten nut to 10-12 ft. lbs.
4. Back off nut 1/6 turn minimum to 1/4 maximum and install cotter pin.

SPEEDOMETER CABLE

The speedometer cable is lubricated at the time of assembly and should not require further lubrication, under normal conditions, for 24,000 miles. When a new speedometer cable is installed, it

should be lubricated. To lubricate, all old grease must first be removed from the cable casing and then a coating of AC Speedometer Cable Grease should be applied to the lower two-thirds of the cable only. This will properly lubricate the upper one-third of the casing, giving an even coating of lubricant the full length of the flexible cable, without danger of excess grease working up into the speedometer head. Refer to Lubrication point No. 31.

Special care should be exercised that foreign material, etc. is not permitted to get into cable housing.

TIRES

Correct inflation pressure is of the most importance in tire care and service.

TIRE PRESSURE	FRONT	REAR
All models without Air Conditioning (Except convertible)	22	22
All models with Air Conditioning	24*	24*
Convertible	24	24

NOTE: For Station Wagons only; when carrying heavy loads for an appreciable distance, it is recommended that the rear tire pressure be increased 4 lbs. to improve steering characteristics.

* 22 psi when other than 650 x 13 tires are used.

Tire rotation every 4,000 miles will aid in longer life and prevent excessive uneven wear that may result in shimmy, vibrations, noise, bumpy or rough riding.

BODY LUBRICATION

HOOD HINGES

SAE 20 oil should be used to lubricate the hood hinges, care being taken not to allow the oil to drop on fenders or other exposed painted surfaces.

HOOD LATCH

Lubricate the latch pilot bolts and latch locking plates with a thin film of lubriplate. Use a light oil for pivot points.

DOOR LOCK STRIKER

Wipe off dirt and apply a thin coat of stick type lubricant to top surface of lock bolt striker teeth (Fig. 2-7). After lubrication, close door several

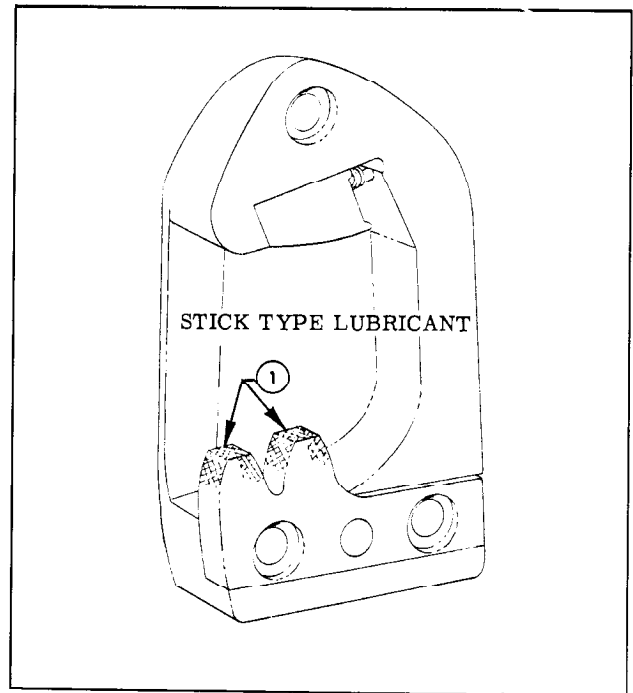


Fig. 2-7 Door Lock Striker

times and remove excess lubricant along the side edge of teeth.

DOOR LOCKS

Wipe off dirt and apply a thin coat of stick type lubricant on surface of lock housing. (Fig. 2-8)

Place a drop or two of SAE 20 oil on the rotary lock pivot.

DOOR HINGE AND HOLD OPEN ASSEMBLY

Wipe off dirt and apply a light coat of lubriplate 630 AAW or its equivalent at points indicated by number 1. (Fig. 2-9 & 2-10)

Place a drop of oil on hinge pins. Wipe off excess lubricant.

DOOR JAMB SWITCH

Apply a thin coat of No. 630 AAW Lubriplate or equivalent to end surface of switch plunger.

REAR COMPARTMENT LID AND BACK DOOR LOCKS

On rear compartment lid locks, apply a thin film of Lubriplate 630 AAW or its equivalent. (Fig. 2-11)

On back door locks, apply a thin film of Lubriplate 630 AAW or its equivalent to the bolt at the striker contact areas.

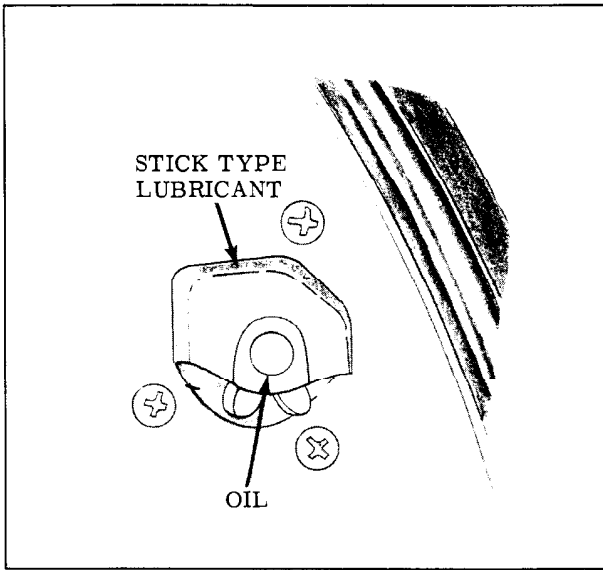


Fig. 2-8 Door Lock

DOOR AND REAR COMPARTMENT LOCK CYLINDERS

A small quantity of lock lubricant occasionally applied to the lock cylinders will prevent sticking.

REAR COMPARTMENT LID HINGES AND TORQUE RODS

Apply Lubriplate 630 AAW or equivalent to hinge and torque rods at friction points. Apply a thin coat of Lithium Soap Grease to torque rod silencer at area contacted by torque rod.

WEATHERSTRIP AND DOOR BUMPERS

A thin film of silicone lubricant should be used on all weatherstrips, door bumpers, hood and lacings to prevent squeaking.

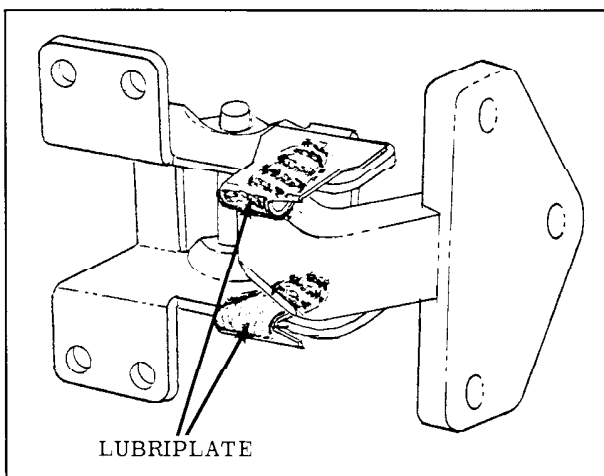


Fig. 2-9 Front Door Hinge and Hold Open Assembly

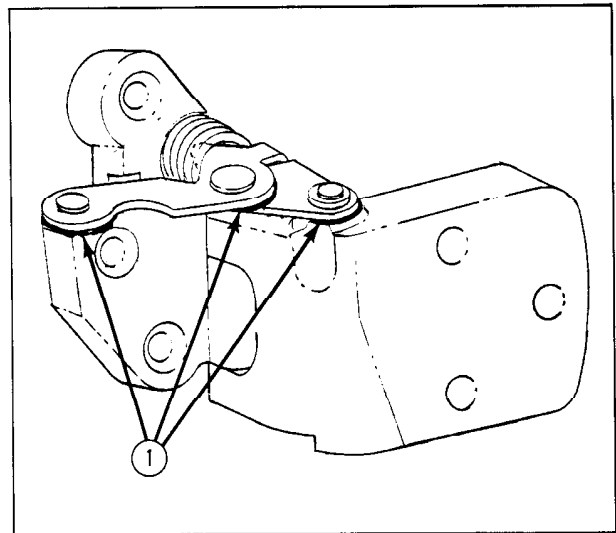


Fig. 2-10 Rear Door Hinge

FRONT SEAT ADJUSTER MECHANISM

A thin film of Lubriplate 630 AAW or its equivalent should be applied to the seat tracks as needed or during repairs.

GLOVE COMPARTMENT DOOR HINGE

Wipe off dirt and apply a sparing amount of dripless oil to the hinge frictional points. Operate door and wipe off excess lubricant.

GAS TANK FILLER DOOR HINGE

Remove accumulated dirt away from spring.

Apply a few drops of dripless oil to frictional points of door hinge. Work door several times and wipe off excess lubricant.

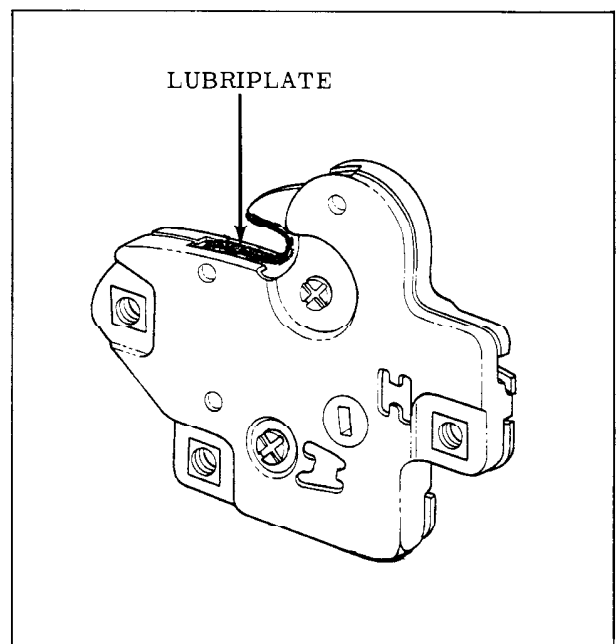


Fig. 2-11 Rear Compartment Lid Lock Bolt

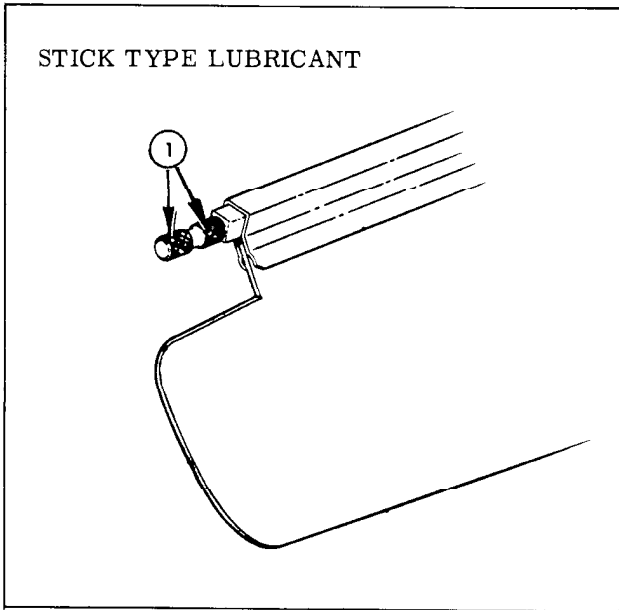


Fig. 2-12 Sunshade Rod

SPARE TIRE COVER HINGE ASSEMBLY (35 Styles)

Wipe off dirt and apply a few drops of dripless oil to frictional areas. Work cover several times and wipe off excess lubricant.

SUNSHADE ROD

Remove sunshade from support and apply a thin film of stick type lubricant to end of sunshade rod. (Fig. 2-12)

THE FOLLOWING PARTS SHOULD BE LUBRICATED WHEN ACCESS TO PARTS IS AVAILABLE:

DOOR LOCK OUTSIDE HANDLE

Apply a light coat of No. 630 AAW Lubriplate or

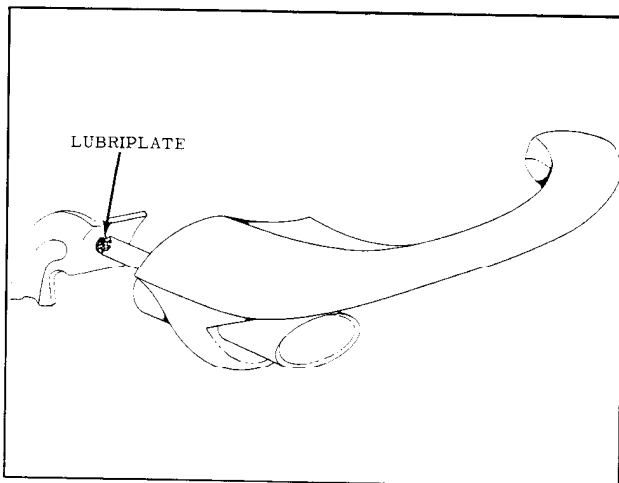


Fig. 2-13 Door Outside Handle

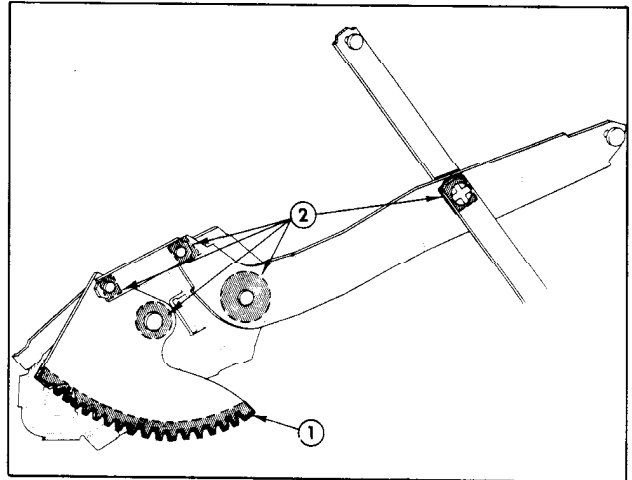


Fig. 2-14 Door Window Regulator

equivalent to surface of lock cylinder shaft contacting bell crank. (Fig. 2-13)

DOOR WINDOW REGULATOR

Apply a coat of No. 630 AAW Lubriplate or equivalent to areas indicated by the numbers 1 and 2. (Fig. 2-14) Lubrication of front door window regulator is typical of lubrication of rear door regulators.

DOOR WINDOW CAMS

Apply a coat of No. 630 AAW Lubriplate or equivalent to channel portions of cams. (Fig. 2-15 & 2-16).

DOOR LOCK PARTS

Lubricate moving parts of door lock with No. 630 AAW Lubriplate or equivalent.

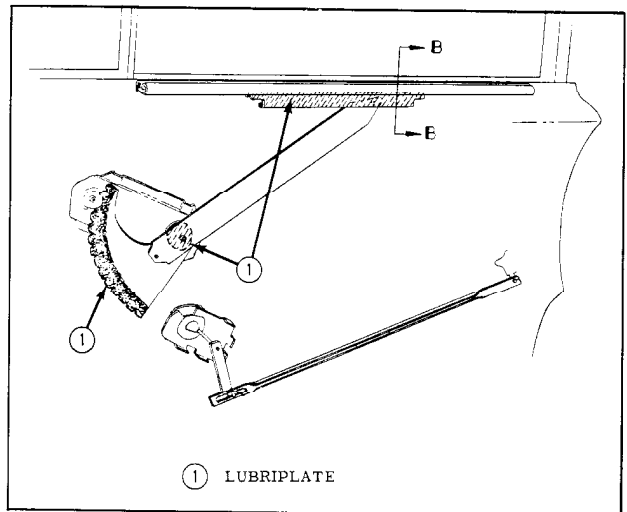


Fig. 2-15 Front Door Window Regulator Cams

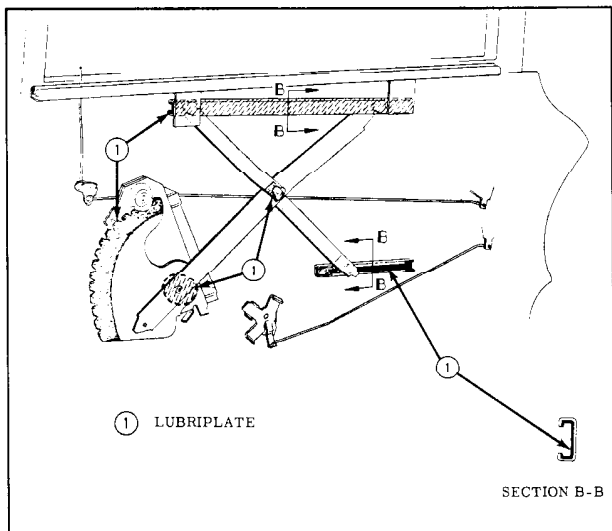


Fig. 2-16 Rear Door Window Regulator Cams

DOOR LOCKING MECHANISM

Apply No. 630 AAW Lubriplate or equivalent to pivot points at ends of all connecting rods.

REAR QUARTER WINDOW CAMS & REGULATOR

Apply a coat of No. 630 AAW Lubriplate or equivalent to channel portion of cam and guide assemblies as indicated in Fig. 2-17.

REAR QUARTER WINDOW

Apply a coat of No. 630 AAW Lubriplate or equivalent to area "1". (Fig. 2-18)

BACK DOOR WINDOW REGULATOR CAMS & GUIDES

Apply a coat of No. 630 AAW Lubriplate or

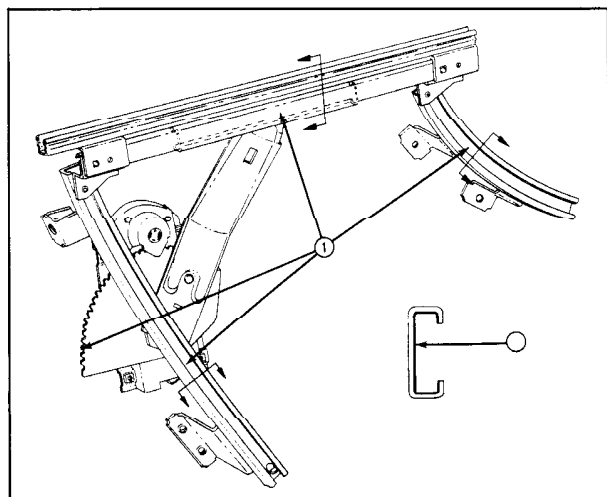


Fig. 2-17 Rear Quarter Window Regulator, Cams and Guides - All 2-Door Styles

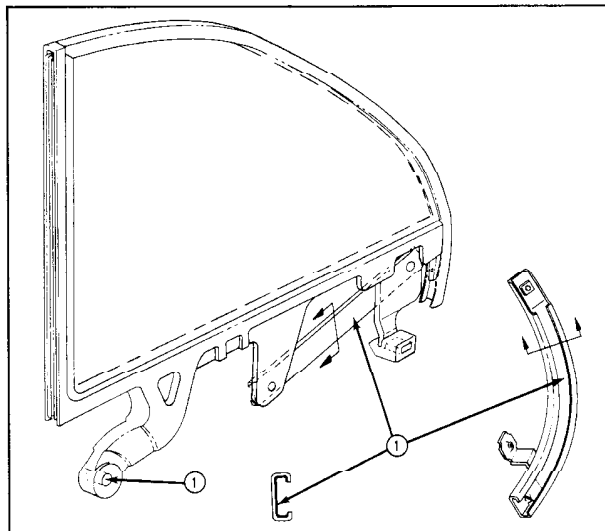


Fig. 2-18 Rear Quarter Window Cams and Guides "67" Styles

equivalent to areas "1" and "2". (Fig. 2-19)

BACK DOOR HINGES AND TORQUE RODS (35 & 45 Styles)

Wipe off dirt and apply dripless oil to frictional points; work door several times and wipe off excess lubricant.

FOLDING TOP LINKAGE—(CONVERTIBLE)

Apply a sparing amount of dripless oil to bearing points indicated in Fig. 2-20. Wipe off excess lubricant to prevent soiling trim.

FOLDING TOP LIFT CYLINDER PISTON RODS

Twice each year, with folding top in raised position, wipe exposed portion of each top lift cylinder piston rod with a cloth dampened with

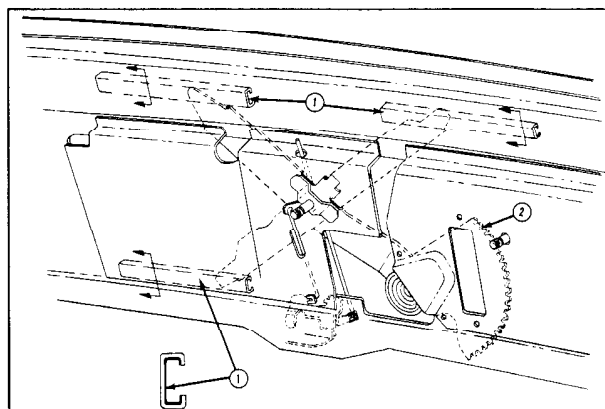


Fig. 2-19 Back Door Window Regulator, Cams & Guides "35" and "45" Styles

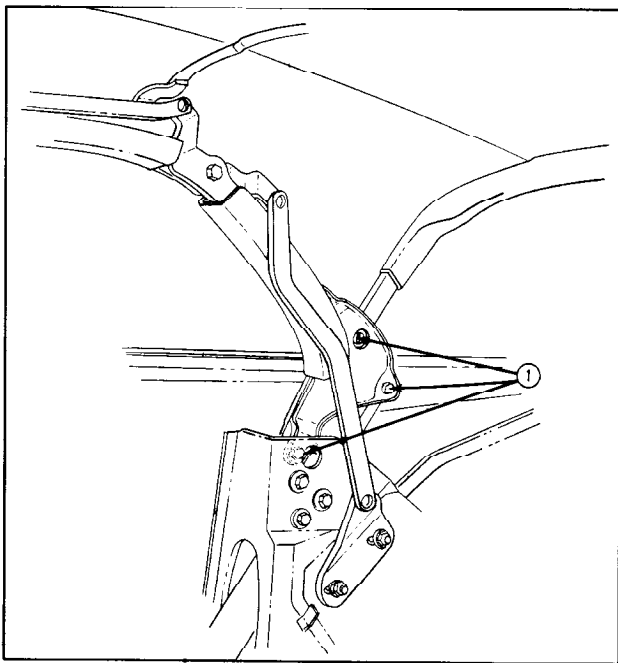


Fig. 2-20 Folding Top Linkage "67" Styles

brake fluid to remove any oxidation or accumulated grime. With another clean cloth, apply a light film of brake fluid to the piston rod to act as a lubricant.

NOTE: Use caution so that brake fluid does not come in contact with any painted or trimmed parts of the body.

HYDRO-LECTRIC SYSTEM—(CONVERTIBLES)

The Hydro-Lectric system is used for operation of convertible tops only. This is a non-vented (sealed) type system which does not require seasonal changing of fluid. It is only necessary to check fluid level if system fails to operate properly. Use Hydro-Lectric fluid (Part No. 557985) or GM No. 11 Brake Fluid to replenish system. The Hydro-Lectric unit is mounted in the truck compartment behind the rear seat back.

HYDRA-MATIC

(4-5)

FOR SERVICE PROCEDURES AND SPECIFICATIONS OF THE UNITS NORMALLY COVERED IN THIS SECTION AND NOT LISTED HEREIN, PLEASE REFER TO THE 1961 F-85 SERVICE MANUAL.

CONTENTS OF SECTION 3

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MAINTENANCE RECOMMENDATIONS

The fluid level in the transmission should be checked every 2,000 miles and the fluid should be changed every 24,000 miles.

Check with the selector lever in the "Park" position, the engine running and on a level surface.

IT IS VERY IMPORTANT THAT THE FLUID LEVEL BE AT MAXIMUM AT ALL TIMES.

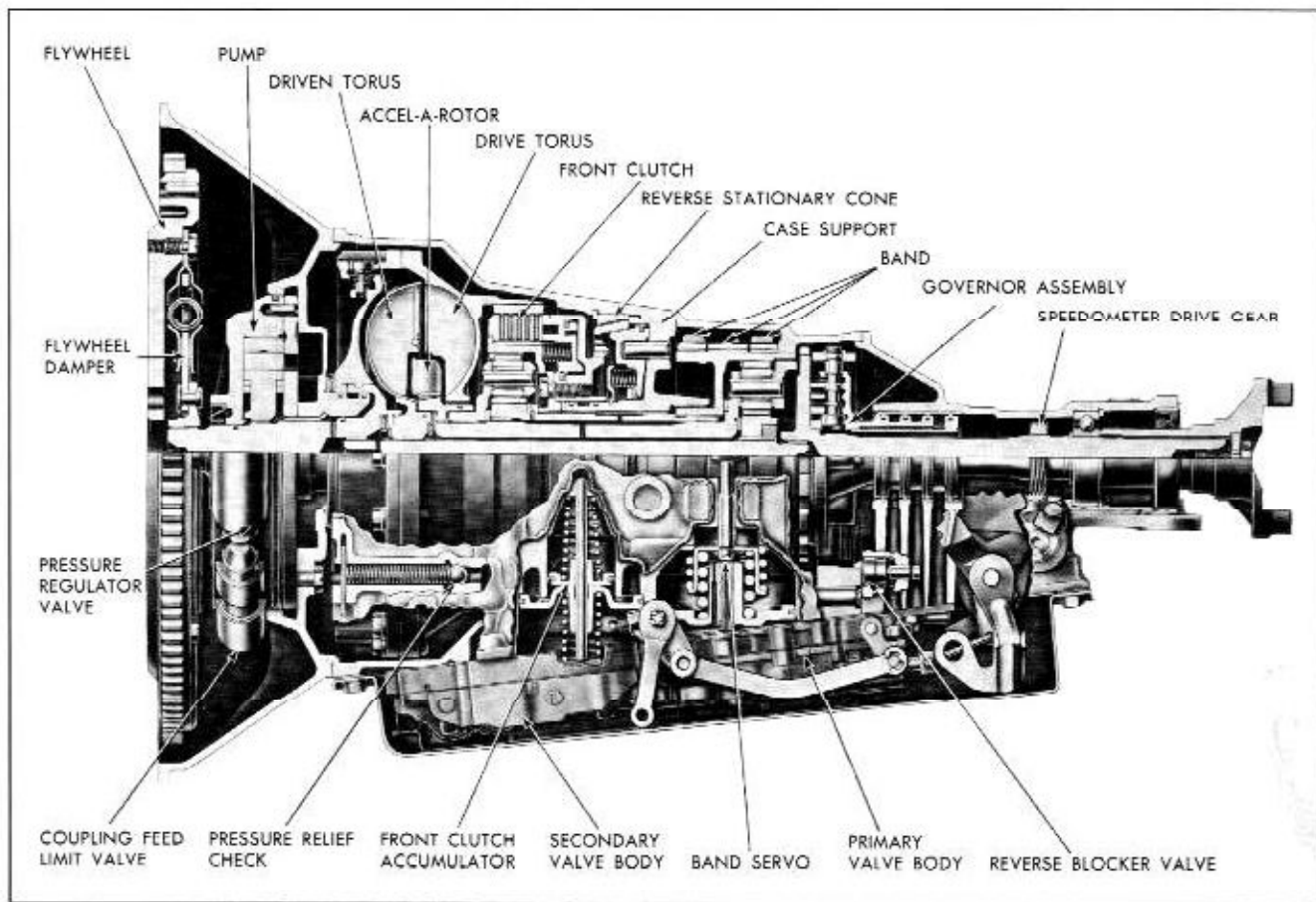


Fig. 3-1 Hydra-Matic Transmission

Approximately 4 quarts are required to fill the transmission after it has been drained, or 5 if the pan has been removed. Approximately 7 quarts are required after a complete overhaul.

When changing the oil, add 4 quarts, start the engine, and add oil to bring fluid level to the "Full" mark.

Only fluid with the following identification on the container should be used: brand name, including the words ". Fluid Type A, plus the mark "AQ-ATF", number and a letter "A" embossed on the top of the can as follows "AQ-ATF" -- number "A".

There is a band adjustment required every 24,000 miles. Refer to "Adjustments" for correct procedure. It may be necessary to adjust the shift linkage should erratic shifting occur.

TOWING PRECAUTIONS

Complete towing instructions are covered in the General Information Section.

PUSHING CAR TO START ENGINE

As a result of the Transmission design, the engine cannot be started by pushing the car.

TRANSMISSION OPERATION

The transmission offers three selective drive ranges, "D", "S" and "L". In "D" range the transmission starts in first and shifts automatically to second, third, and fourth.

With the selector lever in "S" range the transmission starts in first, shifts to second and third and remains in third until approximately 60-65 m.p.h., regardless of throttle opening. This provides additional acceleration for long hills or traffic driving as well as engine braking power when descending long grades. When car speed increases above approximately 60-65 M.P.H. the transmission automatically shifts to fourth. If car speed decreases to approximately 60-65 M.P.H. the transmission will downshift to third.

With the selector lever in "L" range, the transmission will remain in first regardless of throttle opening or car speed. "L" range is designed for engine braking when descending steep grades. It may also be used to hold the car in first for maximum pulling power.

PART THROTTLE DOWNSHIFT

Fourth to Third

A part throttle downshift can be made any time the transmission is in fourth and the car speed is below approximately 38 M.P.H. Since this downshift will occur at part throttle opening, the advantage of third power is obtained without a wide open throttle. This feature is desirable in traffic conditions where a wide open throttle would be unnecessary.

FORCED DOWNSHIFTS (Detent)

In "D" range the transmission can be downshifted fourth to third and third to second within set speed ranges.

In "S" range a third to second forced downshift can be made within a set speed range. A warning "feel" on the accelerator pedal makes it possible for the driver to obtain full throttle performance with or without downshift, as desired.

REVERSE

Reverse is accomplished through use of a friction clutch applied by oil pressure and designed for ease in "rocking" the car. A reverse blocker piston prevents movement of the selector lever to reverse position above 13 M.P.H.

PARKING

With the selector lever in the "Park" (P) position, a parking pawl engages with lugs on the reverse planet carrier and locks the output shaft to the transmission case. A detent in the steering column prevents accidental movement of the selector lever to the "Park" (P) position.

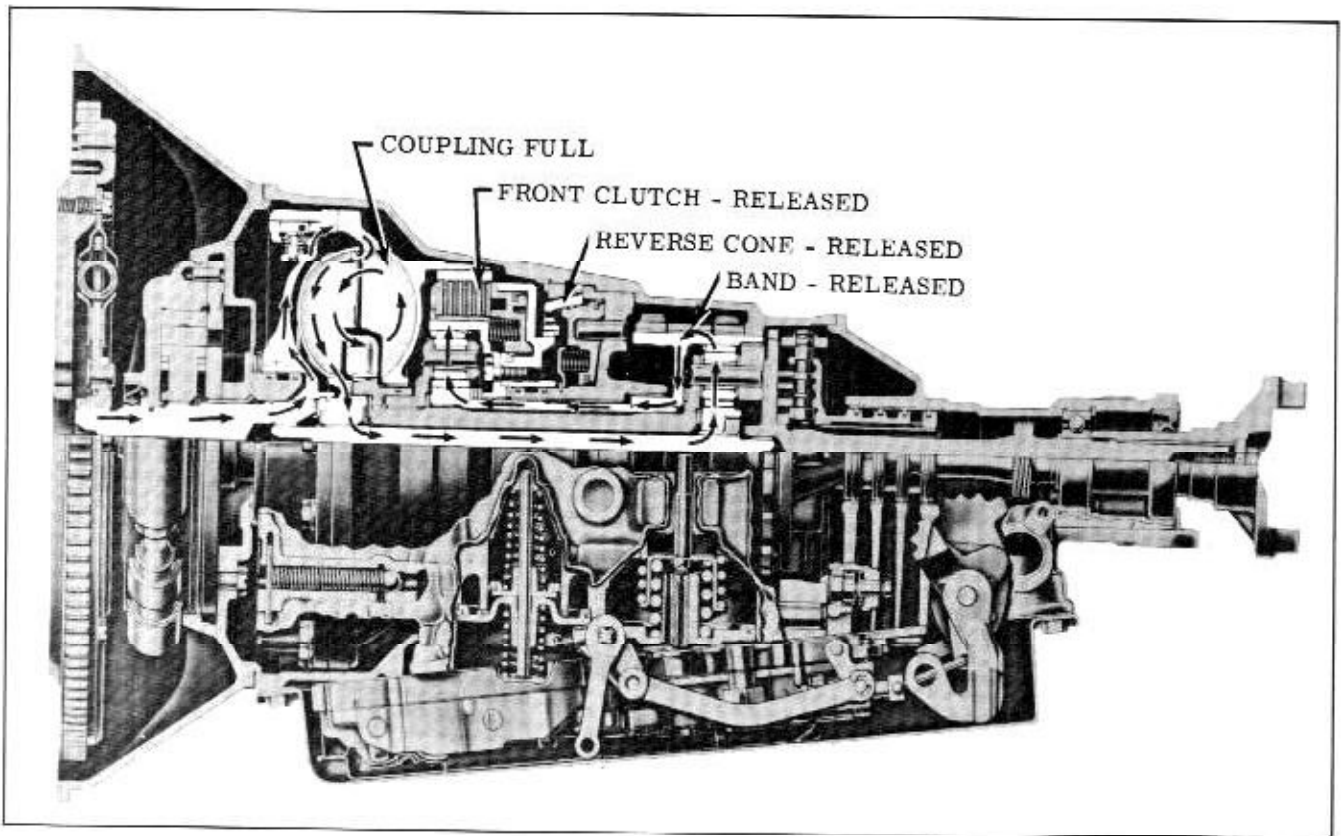


Fig. 3-2 Neutral - Engine Running

POWER FLOW (ACCEL-A-ROTOR DESIGN)**NEUTRAL—ENGINE RUNNING****FLUID COUPLING—FULL****BAND—RELEASED****FRONT CLUTCH—RELEASED****REVERSE CLUTCH—RELEASED****ACCEL-A-ROTOR—INEFFECTIVE**

Power from the engine (in a clockwise direction) is mechanically transmitted through the flywheel damper assembly and torus cover to the drive torus member. The drive member then directs the oil against the driven member causing it to turn the main shaft and rear unit sun gear clockwise.

In neutral the band is released and allows the rear unit internal gear to turn. Therefore, as the rear unit sun gear turns clockwise, the rear unit pinions turn counterclockwise driving the rear internal gear counterclockwise.

The front unit sun gear is mechanically connected to the rear internal gear and is also turning counterclockwise, this causes the front unit pinions to rotate clockwise on their pins. The clockwise motion of the front unit pinions then drives the front internal gear clockwise.

Because both the rear unit internal gear and the front unit internal gear are spinning freely, there is no transfer of torque from the front or rear units to the carriers or output shaft.

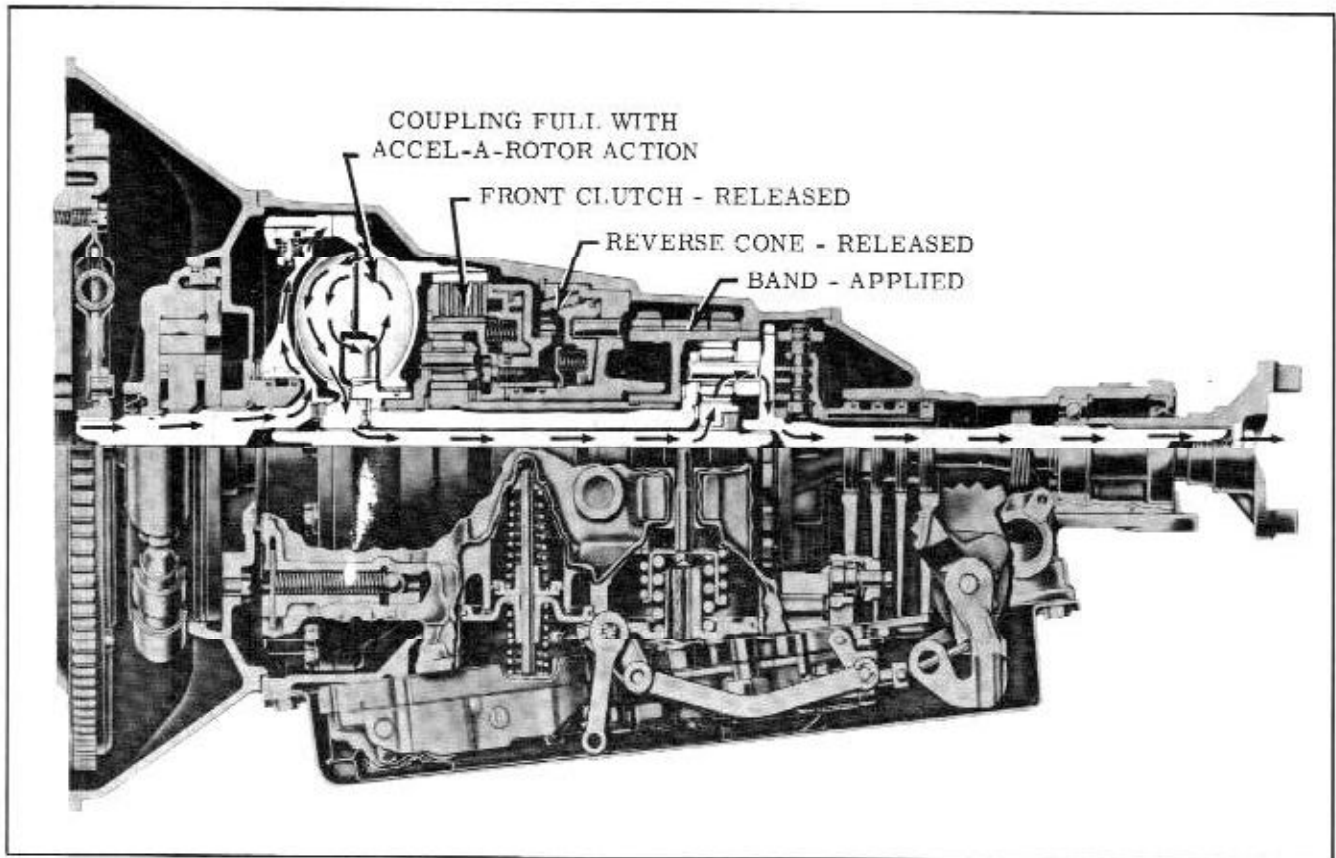


Fig. 3-3 First

FIRST**FLUID COUPLING—FULL****BAND—APPLIED****FRONT CLUTCH—RELEASED****REVERSE CLUTCH—RELEASED****ACCEL-A-ROTOR—EFFECTIVE****RATIO: 3.64:1**

Power from the engine is mechanically transmitted through the flywheel damper assembly and torus cover to the drive torus member. Engine torque is then hydraulically transmitted through oil to the driven torus member. Oil from the driven torus member is then directed against the accel-a-rotor which redirects the force of the oil back to the drive member in such a way as to assist in turning the drive member. Engine torque through the coupling is then multiplied and applied to the mainshaft and rear unit sun gear.

The band is applied locking the rear unit internal gear stationary. Coupling torque clockwise through the rear sun gear then attempts to drive the pinions and internal gear counterclockwise, however, because the band holds the internal gear stationary, the output shaft through the pinions is

compelled to rotate clockwise within the internal gear at a reduced speed and with increased torque.

As the rear carrier and output shaft rotate clockwise at reduced speed the front carrier, which is mechanically connected to the rear carrier, also rotates clockwise at a reduced speed. Because the band is holding the front unit sun gear stationary, the carrier and pinions rotate the front unit internal gear clockwise at approximately one-half engine speed.

Because the front clutch is released, the reduction in first is due to the rear unit gear reduction times the coupling torque multiplication, less the .3 engine torque acting on the output shaft through the accel-a-rotor.

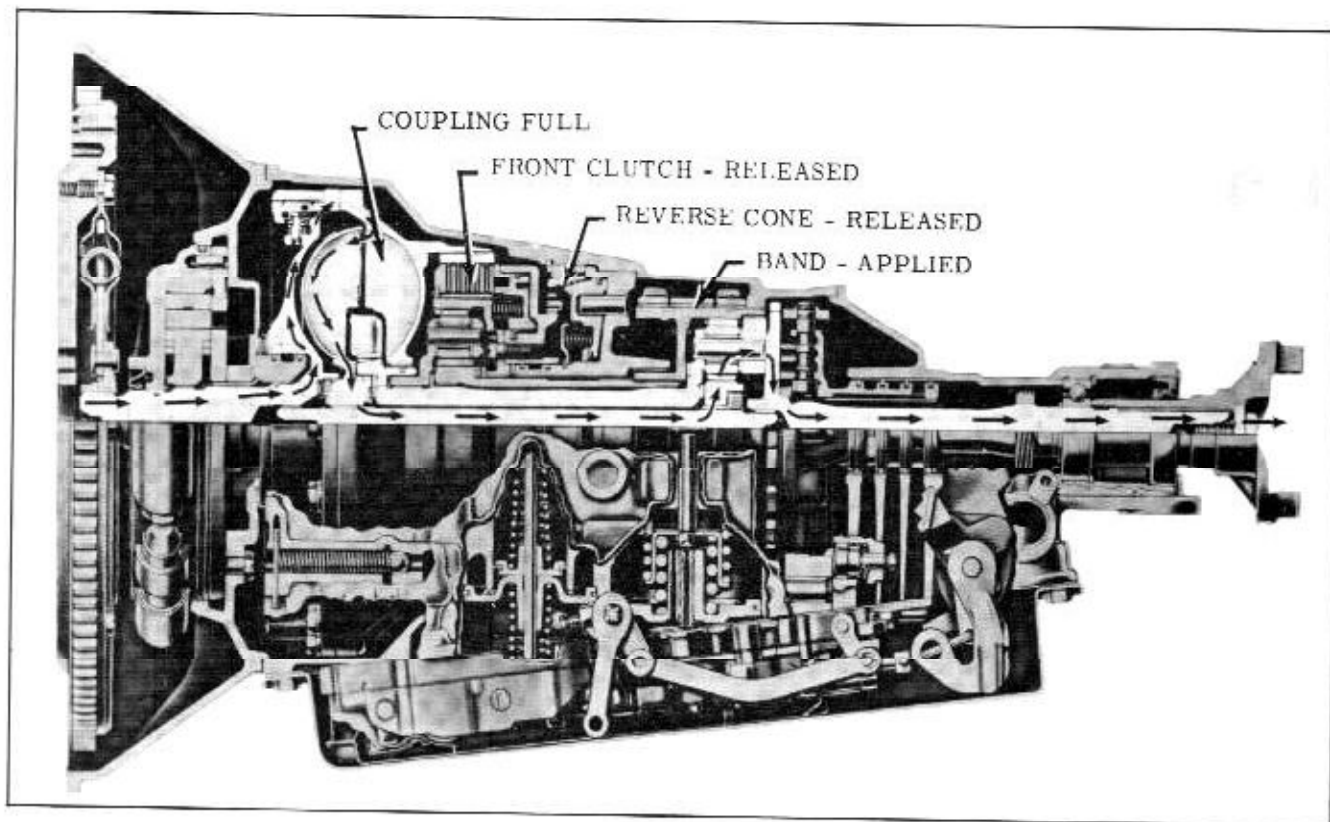


Fig. 3-4 Second

SECOND

FLUID COUPLING—FULL

BAND—APPLIED

FRONT CLUTCH—RELEASED

REVERSE CLUTCH—RELEASED

ACCEL-A-ROTOR—INEFFECTIVE

RATIO: 3.03:1

Power from the engine is mechanically transmitted through the flywheel damper assembly and torus cover to the drive torus member. Engine torque is then hydraulically transmitted through oil to the driven torus member. Engine torque through the coupling is then applied to the mainshaft and rear unit sun gear.

The band is applied locking the rear unit internal gear stationary. Coupling torque clockwise through the rear sun gear then attempts to drive the pinions and internal gear counterclockwise, however, because the band holds the internal gear stationary, the output shaft through the pinions is compelled

to rotate clockwise within the internal gear at a reduced speed and with increased torque.

As the rear carrier and output shaft rotate clockwise at reduced speed the front carrier, which is mechanically connected to the rear carrier, also rotates clockwise at a reduced speed. Because the band is holding the front unit sun gear stationary, the carrier and pinions rotate the front unit internal gear clockwise at approximately one-half engine speed.

Reduction in second is due to the rear unit gear ratio.

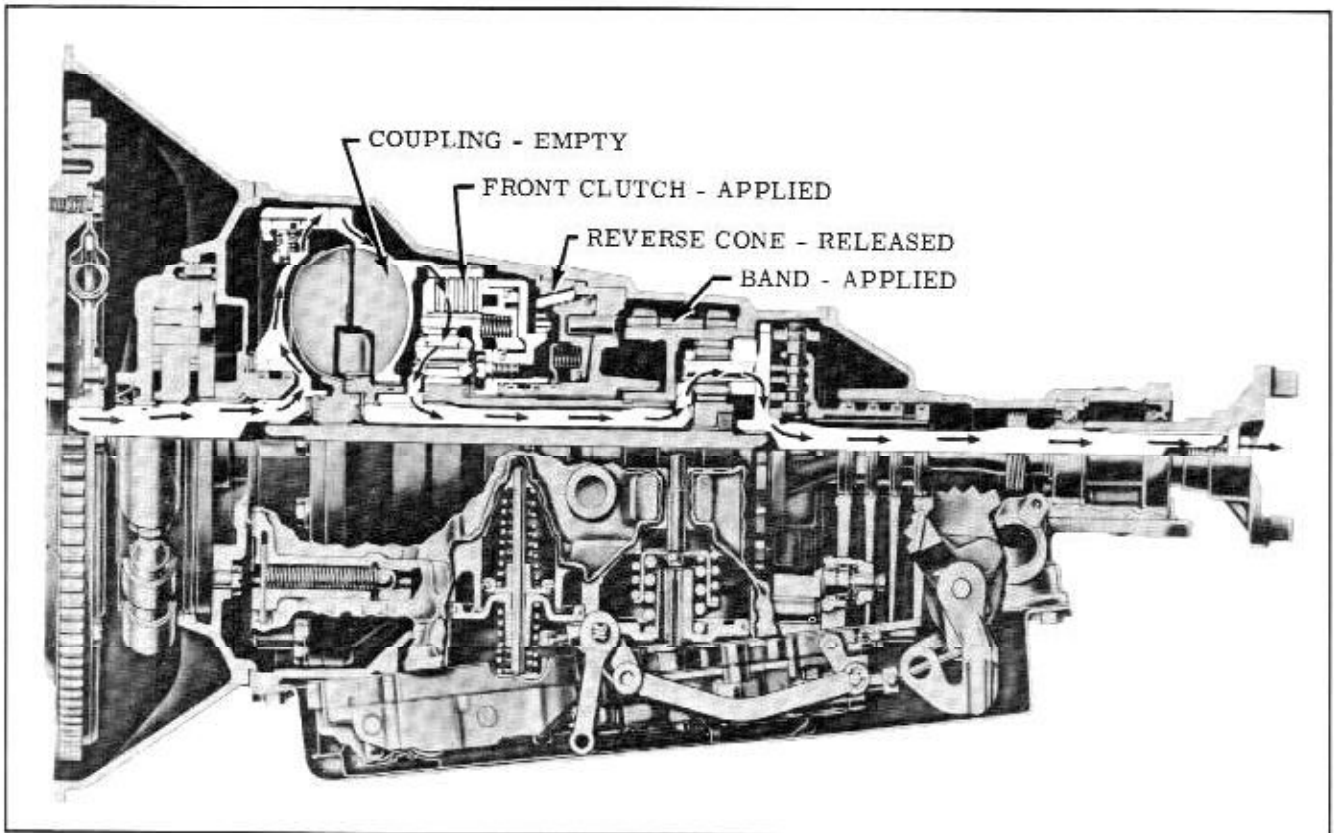


Fig. 3-5 Third

THIRD**FLUID COUPLING—EMPTY****BAND—APPLIED****FRONT CLUTCH—APPLIED****REVERSE CLUTCH—RELEASED****ACCEL-A-ROTOR—INEFFECTIVE****RATIO: 1.57:1**

Power from the engine is mechanically transmitted through the flywheel, damper assembly and torus cover to the drive torus member. The front clutch is applied and the coupling is empty so engine torque is mechanically applied to the front unit internal gear.

The front unit sun gear assembly is splined to the rear unit internal gear and is prevented from turning counterclockwise when the band is applied. Engine torque at the front internal gear is then applied to the pinions, and because the sun gear cannot rotate counterclockwise the planet

pinions and carrier are compelled to revolve clockwise around the sun gear in reduction. The front carrier is splined to the rear unit carrier and shaft assembly which in turn is bolted directly to the output shaft.

As the output shaft and rear unit carrier turns clockwise in reduction, the pinions will drive the rear unit sun gear and driven torus in a clockwise direction faster than engine speed. Because the coupling is empty no power is transmitted and all torque multiplication in third is due to the front unit gear ratio.

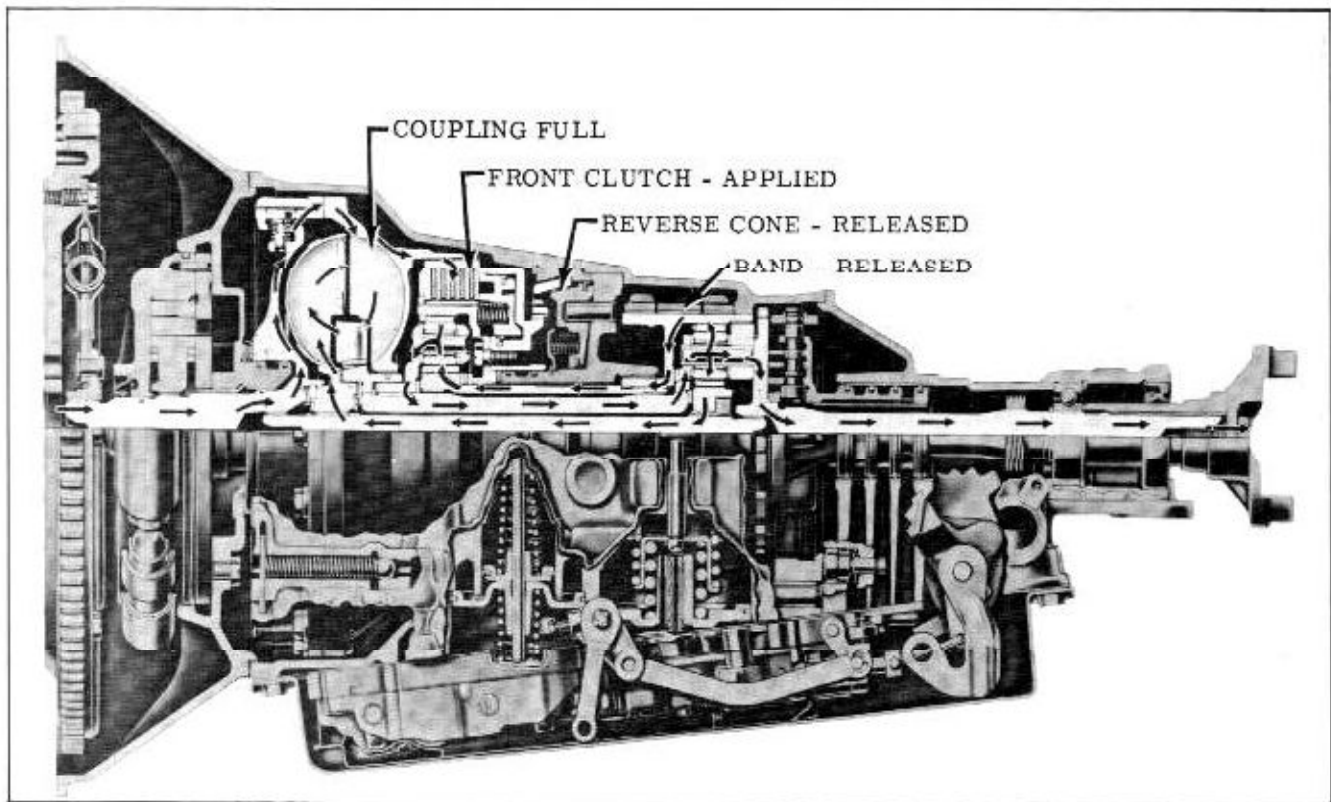


Fig. 3-6 Fourth

FOURTH**FLUID COUPLING—FULL****BAND—RELEASED****FRONT CLUTCH—APPLIED****REVERSE CLUTCH—RELEASED****ACCEL-A-ROTOR—INEFFECTIVE****RATIO: 1:1**

Power from the engine through the flywheel, damper assembly and torus cover is applied through the front clutch to the front unit internal gear. The front internal gear then, through the pinions, tends to turn the front sun gear counterclockwise. This would cause the front carrier to run clockwise in reduction. The rear carrier, then, must also attempt to revolve clockwise in reduction. With the rear carrier rotating clockwise in reduction, and the rear internal gear tending to turn counterclockwise, the rear unit pinions attempt to rotate counterclockwise on their pins, thus driving the rear unit sun gear and driven torus clockwise faster than engine speed.

However, because the coupling is filled, the coupling driven member and rear unit sun gear cannot revolve faster than the drive torus which turns at engine speed. Therefore, the rear sun

gear speed is slowed down to approximately engine speed. In so doing, the rear unit pinions are slowed down in their rotation on the pinion pins. The carrier and pinions then change the direction of load against the internal gear causing it to revolve clockwise with the carrier and sun gear at the same speed. Because the output shaft and carriers are connected to the accel-a-rotor in the coupling, the accel-a-rotor is also turning the same speed as the drive and driven member so that it has no effect in multiplying torque in the coupling.

Both carriers and the output shaft are common, the front sun gear and rear internal gear are common, and the front internal gear and rear unit sun gear are turning at approximately the same speed, thus the entire train must revolve as one common unit in direct drive.

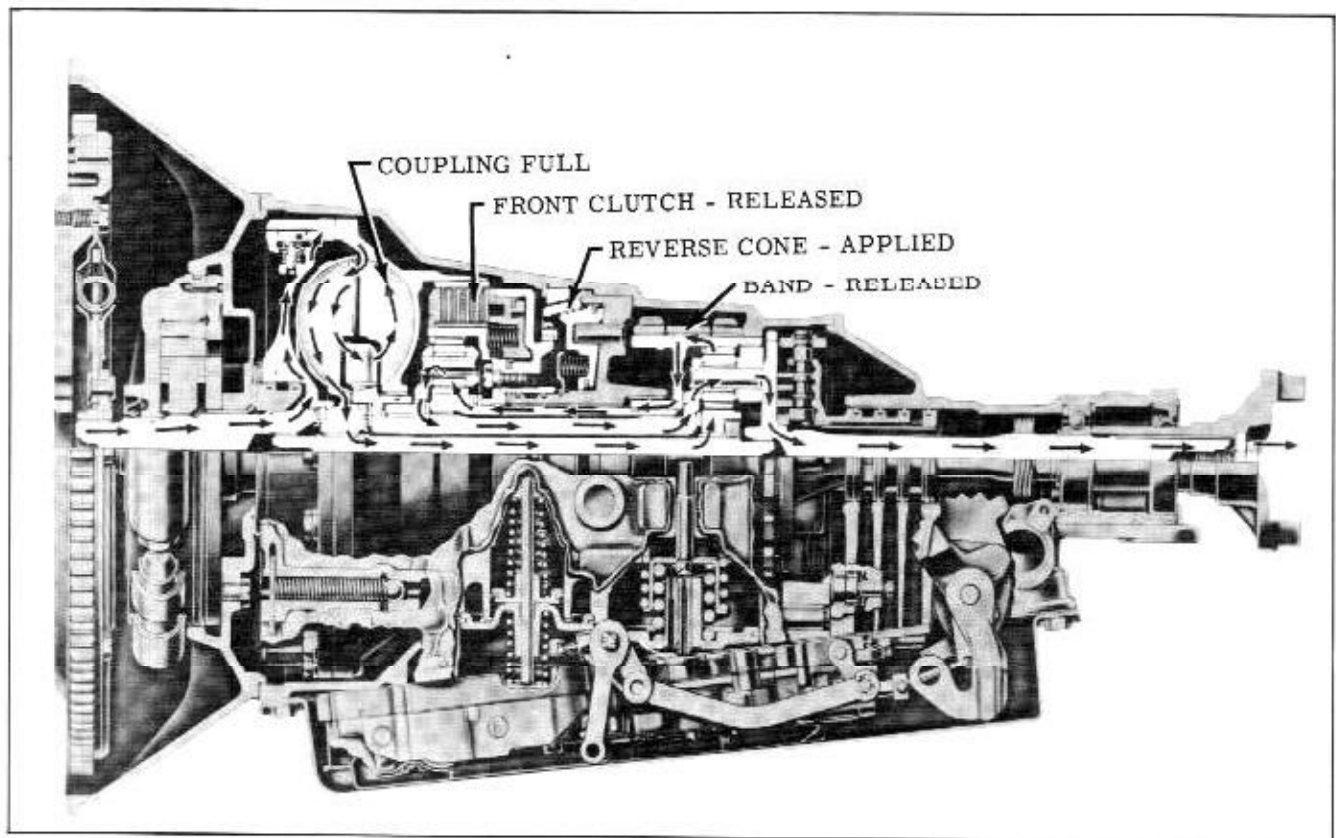


Fig. 3-7 Reverse

REVERSE**FLUID COUPLING—FULL****BAND—RELEASED****FRONT CLUTCH—RELEASED****REVERSE CLUTCH—APPLIED****ACCEL-A-ROTOR—EFFECTIVE****RATIO: 3.57:1**

Power from the engine is mechanically transmitted through the flywheel, damper assembly and torus cover to the drive torus member. Engine torque is then hydraulically transmitted through oil to the driven torus member. Oil from the driven torus member is then directed against the accel-a-rotor which re-directs the force of the oil back to the drive member in such a way as to assist in turning the drive member. Engine torque through the coupling is then multiplied and applied to the mainshaft and rear unit sun gear.

The rear unit sun gear then drives the rear unit pinions as idlers which in turn drive the rear unit internal gear in a counterclockwise direction.

Because the rear unit internal gear is turning counterclockwise, the front unit sun gear is

turning counterclockwise. The reverse cone is holding the front unit internal gear stationary so that the front unit pinions and carriers are compelled to walk around the front internal gear in counterclockwise direction in reduction. The output shaft is common with the front and rear carrier so the output shaft is turning counterclockwise or in reverse at a reduction.

The effect of the force of the oil in the coupling is such that the accel-a-rotor is imparting an additional .3 times engine torque to the carrier and output shaft in the reverse direction.

The total reduction in reverse is due to the 1.3 coupling torque ratio times the 2.51 gear ratio plus the .3 engine torque action on the accel-a-rotor and output shaft in the reverse direction.

VALVES AND THEIR FUNCTIONS

PRESSURE REGULATOR VALVE

Controls line pressure by regulating the output of the pump.

This valve is constructed with two areas where pressures can be applied to create forces which either add to or subtract from the pressure regulator spring force and thus either boost or drop the line pressure.

THROTTLE VALVE

A regulator valve which generates a pressure proportional to carburetor opening.

This valve senses carburetor opening through the throttle valve spring and T.V. plunger (band apply valve) which is operated mechanically by the throttle linkage.

The T.V. pressure increases 5 p.s.i. when the oil temperature reaches approximately 75°F. This is accomplished by a bimetal thermostatic element which contacts the throttle valve at temperatures less than 75°F. with a force that opposes the force of the regulator spring.

The T.V. plunger also functions as a band apply valve which provides an auxiliary band feed when the throttle is opened.

GOVERNOR

The governor contains two valves of different weight which rotate with the output shaft and thus generate two pressures proportional to the vehicle speed.

G-1 pressure senses the low speeds and G-2 pressure the higher speeds.

COMPENSATOR VALVES

The compensator valves generate a pressure that varies with T.V. pressure in a manner somewhat proportional to an engine torque curve.

MANUAL VALVE

The manual valve distributes pressures to place the transmission in either neutral, drive range, super range, lo range, or reverse. It is controlled mechanically through a linkage from the selector lever on the steering column.

2-3 SHIFT VALVE

The 2-3 shift valve initiates the 2-3 and 3-2 shifts by sensing a balance between T.V. and G-1 governor pressures.

3-4 SHIFT VALVE

The 3-4 shift valve initiates the 3-4 and 4-3 shifts by sensing a balance between T.V. and both G-1 and G-2 governor pressures.

COUPLING FEED LIMIT VALVE

This valve is located in the pump body and provides a direct feed to the coupling from the pump in first, reverse and third with light throttle. It is controlled by coupling signal pressure but opens only when coupling signal is greater than 90 p.s.i.

COUPLING EXHAUST VALVES

The coupling exhaust valves are located in the cover assembly and they seal the coupling exhaust ports whenever coupling signal pressure is directed to close them.

COUPLING TIMING VALVE

The coupling timing valve controls the dump and fill of the coupling.

It is controlled by front clutch pressure on 1-2 shift and delays the dump of the coupling until clutch capacity is sufficient to carry the drive load.

On a 3-4 shift it is controlled by 1st, 2nd and 4th pressure and shifts immediately after the 3-4 shift valve.

BAND RELEASE ACCUMULATOR VALVE

The band release accumulator is a safety device designed to release the band and prevent a locked transmission in the event the coupling timing valve should stick and not move during a 2-3 shift.

In the interval after the shift of the 2-3 valve and before the shift of the coupling timing valve, coupling pressure which is channeled through both the 2-3 shift and coupling timing valves starts to feed band release. If the coupling timing valve functions, it dumps the coupling and exhausts band release before the band release accumulator completes its stroke, and thus the band remains on. However, should the coupling timing valve stick, the band release accumulator valve would complete its stroke and allow coupling pressure to build up and release the band.

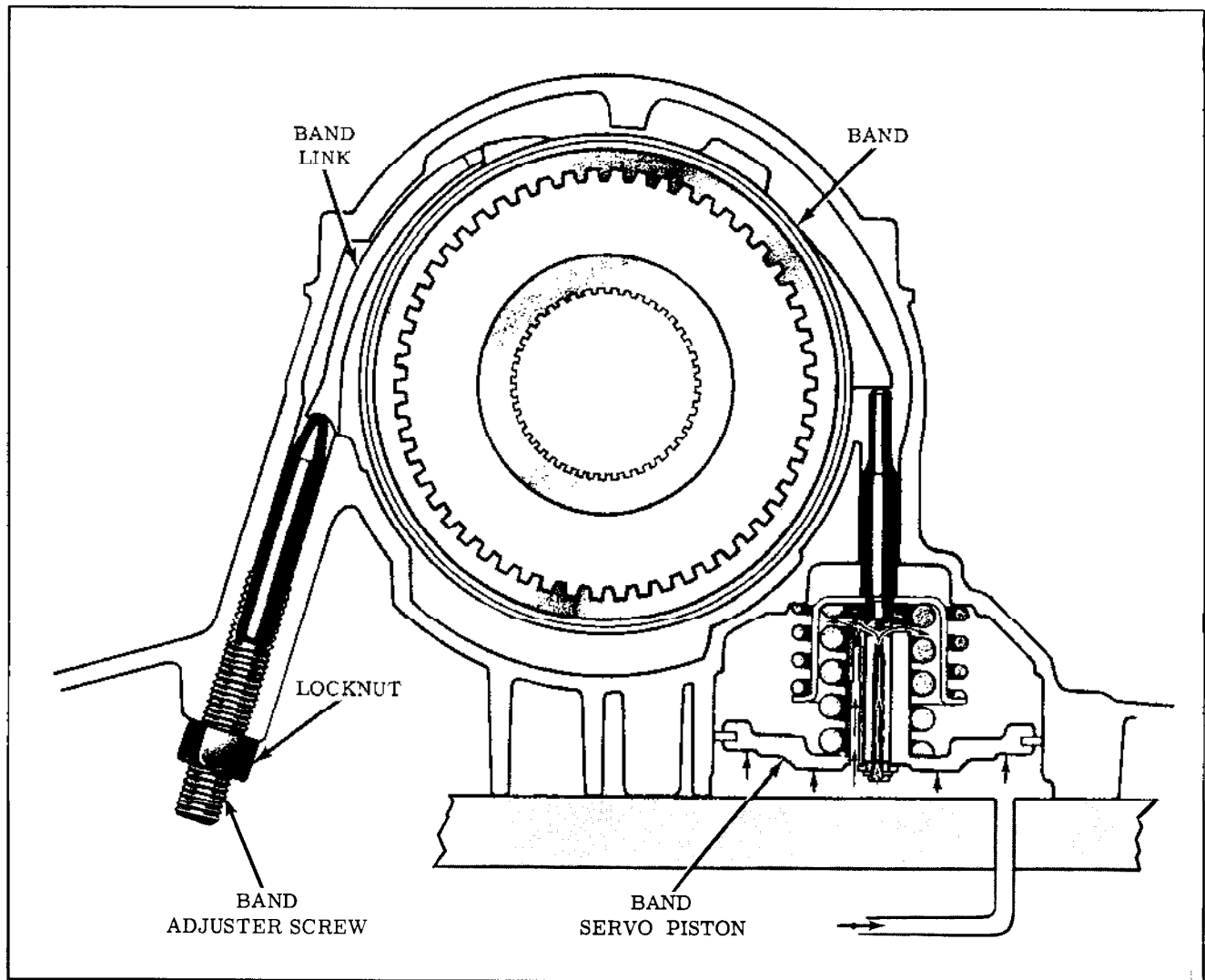


Fig. 3-8 Band Servo

PRESSURE BOOST VALVE

The pressure boost valve controls the flow to the line boost area of the pressure regulator valve and to the pressure drop valve. It is shifted by front clutch pressure and is timed to move after the clutch has assumed the drive.

PRESSURE DROP VALVE

The pressure drop valve controls the flow to the line drop area of the pressure regulator valve. It generates a varying pressure inversely proportional to T.V. pressure which results in a modulated line pressure.

LOW THROTTLE EXHAUST VALVE

The low throttle exhaust valve is a valve which senses drive conditions relative to overrun by shifting at 15 p.s.i. T.V. pressure. It provides an immediate band release on overrun 3-4 shifts and a rapid clutch exhaust on overrun 3-2 shifts.

3-2 DOWNSHIFT VALVE

The 3-2 downshift valve regulates the exhaust of the front clutch on throttle 3-2 downshifts. It is designed to allow the clutch to slip momentarily until the coupling is full enough to assume the drive without excessive engine flare.

FRONT CLUTCH EXHAUST VALVE

The front clutch exhaust valve controls the duration of front clutch slipping during a throttle 2-1 downshift. It provides a wide open clutch exhaust when coupling pressure is sufficient.

DETENT VALVE

The detent valve initiates the part throttle 4-3 and the detent 4-3 and 3-2 shifts. It is operated mechanically by the T.V. linkage.

REVERSE BLOCKER VALVE

The reverse blocker valve prevents a shift into reverse at speeds above 13 M.P.H. It is controlled

by G-1 pressure and provides a mechanical stop for the manual linkage.

BAND RELEASE VALVE

The band release valve senses a balance between spring pressure and coupling feed and compensator pressure to control the flow of band release pressure in conjunction with coupling pressure.

3-4 BOOST VALVE

The 3-4 boost valve provides a momentary increase in pump pressure to fill the coupling quickly on a light throttle 3-4 upshift.

T.V. PRESSURE

Under some conditions it is desirable to provide for greater acceleration and/or greater pulling power, such as climbing hills, etc. To accomplish this, higher shift speeds are required. This is accomplished by an oil pressure that will oppose the effect of governor pressure in opening the shift valves. This pressure, called T.V., is a regu-

lated pressure and is directly proportional to throttle opening, which is regulated by the driver. Therefore, at the driver's option, the shift speeds can be raised or lowered to insure suitable shift speeds for operation under all driving conditions.

When the accelerator pedal is depressed, linkage connected with the carburetor and the accelerator pedal acts against T.V. plunger, opens the throttle valve and allows main line pressure to become regulated T.V. pressure.

T.V. pressure is directed to the shift valves to assist spring pressure to hold the shift valve closed against governor pressure. Governor pressure increases with car speed until it can overcome spring and T.V. pressure causing the shift valve to open and the shift to occur.

FLUID COUPLING AND ACCEL-A-ROTOR

The fluid coupling and accel-a-rotor consists of three members located within an oil filled housing. The drive and driven members are shaped like halves of a split torus, having a series of radially arranged vanes within them. The accel-a-rotor consists of a series of curved blades mounted radially on a hub. The accel-a-rotor is located between the drive and driven coupling members.

The drive coupling member is connected to and driven by the engine, the driven coupling member is connected to the main shaft and rear unit sun gear, the accel-a-rotor is connected to the carrier shaft or output shaft.

OPERATION

- Step 1. The engine turns the coupling drive member thus causing the drive member to force the oil against the vanes of the driven member, forcing the driven member to turn.
- Step 2. After the oil has acted on the driven member the oil is routed to the accel-a-rotor.
- Step 3. The oil flow rushing out of the curved blades of the accel-a-rotor is then directed back to the drive member in such a way as to impart an additional driving force to the back side of the drive member vanes. This additional driving force, plus the energy added to the flowing oil from engine power, allows an even greater force of oil to be directed against the vanes of the driven member.

This causes the torque on the driven member to be multiplied.

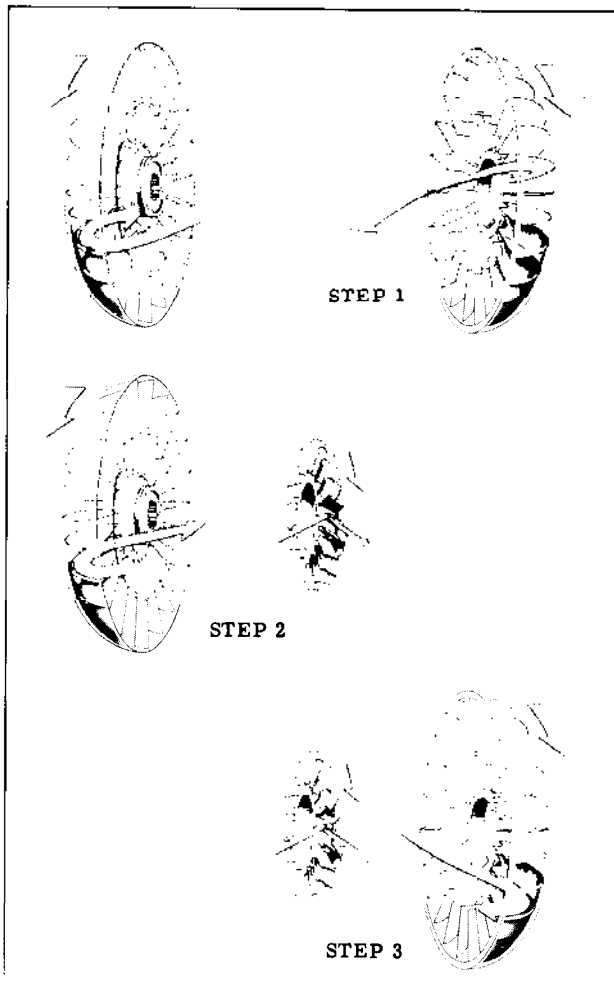


Fig. 3-9 Fluid Coupling and Accel-A-Rotor

In first, the fluid coupling and accel-a-rotor provide an increase of 1.3 times engine torque to the rear unit, thus increasing the over-all ratio. In second, the accel-a-rotor phases out allowing the coupling to transmit engine torque.

In third, the coupling is emptied and not used.

Drive, through the transmission, is complete mechanical drive.

In fourth, all three members of the fluid coupling are turning at approximately the same speed, therefore, the accel-a-rotor is no longer effective. Because of the over-all transmission design,

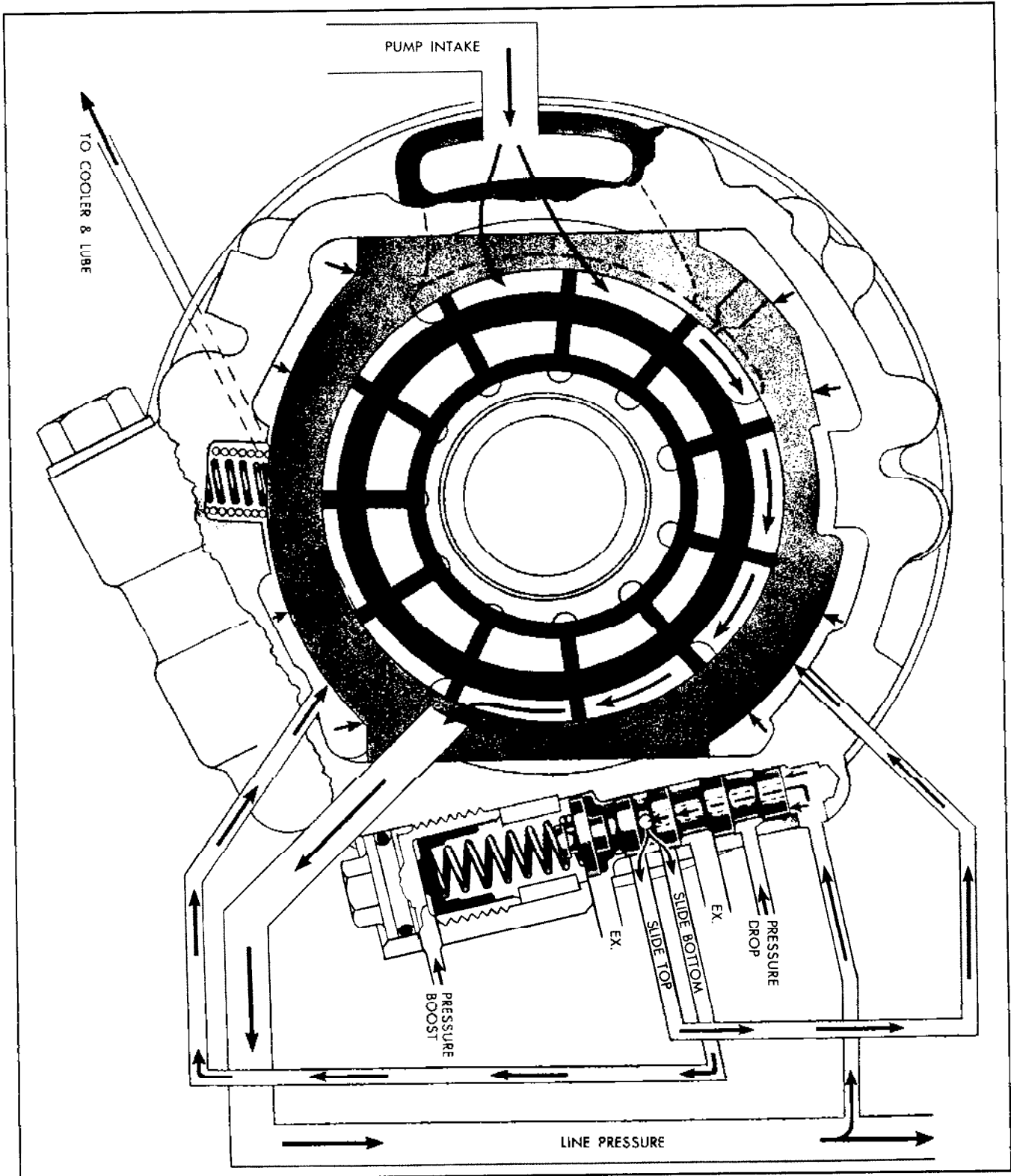


Fig. 3-10 Pump Operation

the coupling is required to carry only 40% of the engine torque.

During reverse operation the coupling and accel-
a-rotor are again capable of increasing torque
output from the engine by 1.3.

OPERATION OF THE PUMP—

The transmission pump is of the variable dis-
placement high capacity type and is engine driven.

A variable capacity type pump is one that will
vary its output according to the oil flow and pres-
sure requirements of the transmission. The effort
required to drive the pump is only great when the
demand for oil is great, consequently, large pump-
ing capacity can be obtained at low pump speeds
without having large pumping loads at high speeds.

The rotor of the pump is engine driven and
carries vanes. Oil trapped between vanes at the
suction or intake side is moved to the pressure
side in greater quantity than oil from the pressure
side is moved to the suction side.

Variable output of the pump is obtained in the
following manner.

When the slide is in the up position maximum
volume will be delivered. When the slide is in the
middle "neutral" position no volume will be de-
livered.

Two springs are located on the bottom of the
slide. The longer spring keeps the slide in the up
or prime position so that the moment the engine
is started the slide will be in the prime position
and full output will be obtained.

The small spring or inner spring acts as a
bumper keeping the slide from returning to a full
exhaust position if the demand for oil falls quickly.

MAIN LINE PRESSURE

Main line oil pressure from the pump is directed
to the end of the pressure regulator valve. The
valve will then move against the pressure regu-
lator spring. The pressure regulator spring,
having a predetermined value, will then produce a
constant pressure. The lands on the pressure
regulator valve direct pressure to either the top
or bottom of the pump slide. Pressure to the bot-
tom will force the slide into the up or pumping
position. Pressure to the top of slide will force
the slide downward to the neutral position.

When line pressure drops the pressure regula-
tor spring will move the pressure regulator valve
against reducing line pressure, thereby moving the
valve so that a feed hole in the valve indexes with

a passage to the underside of the slide causing the
slide to move upward to the prime position, thereby
causing pump output to increase.

Conversely, if there is little or no oil demand
from the transmission, pressure will increase and
move the pressure regulator valve so that main
line oil is directed to the top of the slide moving
the slide to the down position reducing output.

Therefore, the pressure regulator valve will
produce consistent pressure determined by the
pressure regulator spring.

BOOSTED LINE PRESSURE

A higher pressure may be obtained by directing
a pressure called line boost pressure behind the
pressure boost plug, compressing the pressure
regulator spring, which increases the spring load,
thus raising pressure.

LOWER VARIABLE LINE PRESSURE

A lower pressure for certain types of operation
may be obtained by directing line drop oil to the
main line oil side of the pressure regulator valve.
This will work against spring pressure sending
line pressure to the top of the slide moving it
toward the lower output position. This line drop
oil will reduce main line pressure as the line drop
pressure increases. Also, included in the pump is
the coupling limit valve which is used to fill the
coupling.

BAND SERVO OPERATION

A hydraulic servo assembly is used to apply and
hold the band to the rear unit internal gear.

The band servo functionally consists of piston,
piston pin, release spring, accumulator spring and
spring retainer.

The band servo is designed to function in three
stages to provide for a smooth application of the
band during a shift from neutral to drive or fourth
to third.

STAGE 1

During the first stage of operation, some of the
oil which is directed under the piston to apply the
servo is allowed to leak or exhaust through the two
orifices, (one orifice is located in the piston and
one is located in the piston pin). This allows the
pressure under the piston to build up slowly while
the entire servo piston assembly moves up against
the release spring positioning the band on the in-
ternal gear.

STAGE II

As the band continues to tighten about the rear internal gear, the piston pin encounters resistance and tends to stop its travel. The servo piston then continues to travel upward on the piston pin against the force of the large accumulator spring. The upward travel of the piston then seals off the orifice located in the piston, allowing pressure in the servo to build up at a faster rate.

STAGE III

As the piston continues to travel up on the piston pin, the piston compresses the accumulator spring further and applies a greater force to the piston pin. Finally, as the piston makes contact with the spring retainer, the second orifice becomes sealed off to permit an even faster build up of servo apply pressure. The piston is now in direct contact with the spring retainer and piston pin to apply the full final force of the applied pressure to the band.

FRONT CLUTCH ACCUMULATOR

The front clutch accumulator is a cushioning and timing device which enables the front clutch to apply smoothly under all throttle conditions. Regulation is necessary due to the varying torque loads that the front clutch is subjected to. For example, with light throttle conditions the front clutch will be applied slowly with a minimum of compensator pressure, conversely with full throttle operation the front clutch is applied quickly with greater compensator pressure required.

The accumulator body contains two opposed sets of springs and pistons. One is called the upper accumulator piston and spring and the other lower accumulator piston and spring, with each piston acting against spring pressure.

When the front clutch is engaging, front clutch apply oil is also directed to the front clutch accumulator. Front clutch oil compresses the pistons against spring pressure, causing the accumulator to absorb an amount of clutch apply oil. During the initial application of the front clutch piston, a comparatively small quantity of clutch apply oil is diverted to the accumulator. When the clutch piston is stroked to its apply position, the accumulator pistons move against spring pressure and the amount of oil absorbed by the accumulator will increase, thereby, slowing the flow to the front clutch. Since the pistons moving against their springs meet increasing resistance to their motion, the oil pressure applying the front clutch increases gradually to provide a smooth application.

When the pistons reach the end of their strokes, the front clutch pressure rises to main line pressure to insure positive and complete engagement following the shift.

COMPENSATOR

Further control of front clutch pressure as produced by the accumulator is obtained by the primary and secondary compensator valves and springs, also a compensator limit valve and spring. The purpose of these valves and springs is to provide pressure to the accumulator to help the lower accumulator piston spring to resist piston motion, and thus further increase the front clutch pressure during shifting. T.V. pressure, along with spring pressure, acts against the primary compensator valve allowing drive oil to enter the compensator line and fill the accumulator. The compensator limit valve limits the maximum amount of compensator pressure under full and part throttle conditions.

When T.V. pressure is low, the compensator pressure is low, and the secondary compensator valve is held against its stop by the secondary compensator valve spring. When T.V. pressure is high, the secondary compensator valve is pushed against the primary compensator valve by higher compensator pressure. It then moves with the primary compensator valve. When the front clutch oil is fed into the accumulator, compensator oil is forced over to the compensator valves where it pushes open the primary valve and discharges compensator oil to exhaust. The resistance of the compensator valves to permitting compensator oil

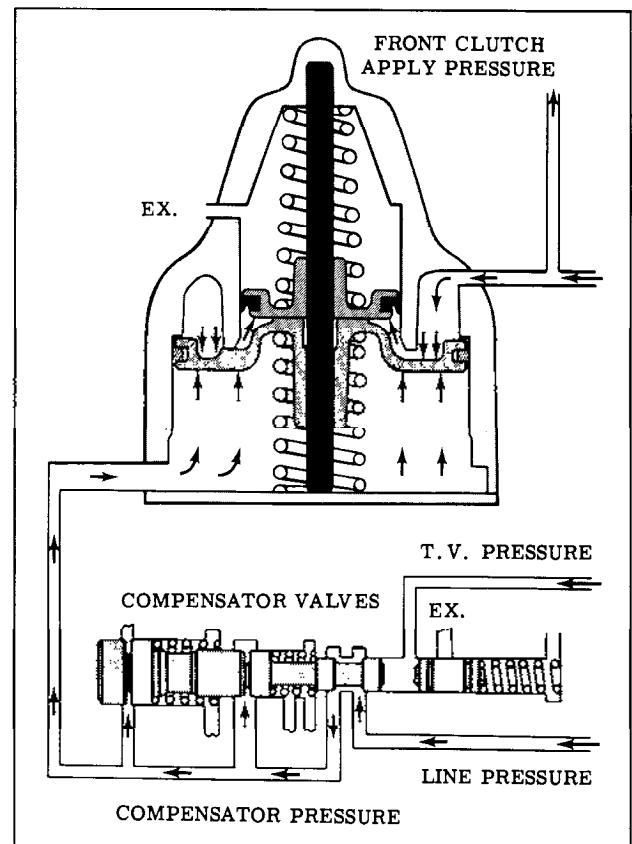


Fig. 3-11 Front Clutch Accumulator

to be exhausted controls the compensator pressure which helps to control the front clutch pressure during a shift.

GOVERNOR OPERATION

The governor is a centrifugal type, rotating with the transmission output shaft to generate two speed controlled oil pressures which are primary-

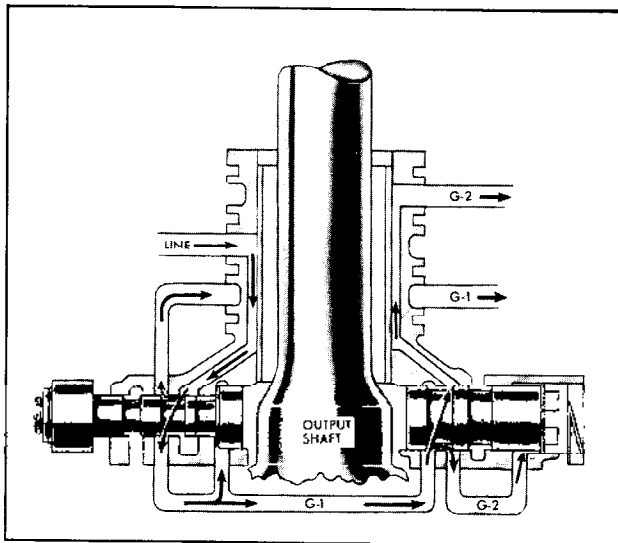


Fig. 3-12 Governor Operation

ly used in the control valve assembly to initiate the shifts.

G-1 PRESSURE

As the governor rotates with the output shaft, centrifugal force acting on the G-1 or primary governor valve tends to throw the valve outward. Main line pressure to the governor is then ported into the G-1 passage where it can act on the large land of the G-1 valve to provide a force in the opposite direction to the centrifugal force. The G-1 valve will then move to close off the incoming line pressure and allow G-1 pressure to exhaust until the force of G-1 pressure acting against the centrifugal force is equal to the centrifugal force. The G-1 valve continues to regulate against centrifugal force so that G-1 pressure is directly proportional to output shaft speed.

G-2 PRESSURE

The second governor valve is called the G-2 or secondary governor valve. As centrifugal force throws the G-2 valve outward, G-1 pressure is admitted to the G-2 passage. G-2 pressure then acts against the large land of the G-2 valve to oppose the centrifugal force. G-2 pressure then regulates to a valve directly proportional to output shaft speed.

G-2 pressure is designed to be more sensitive at the higher car speeds.

OIL CIRCULATION DESCRIPTION

NEUTRAL—ENGINE RUNNING

COUPLING—FULL

FRONT CLUTCH—OFF

Whenever the engine is running line pressure is always directed to the:

- Pressure Regulator
- Pressure Relief Valve
- Coupling Signal Valve
- Governor Assembly
- 3-4 Governor Valve (2 places)
- Pressure Boost Valve
- Throttle Valve
- Manual Valve

BASIC CONTROL

Line pressure through the coupling signal valve is directed into the coupling signal passage. Signal oil closes the coupling exhaust valves to seal the coupling. Signal pressure to the coupling feed limit valve opens the limit valve to allow line pressure to feed the coupling. Line pressure at the 3-4 shift valve flows through the orifice to the fourth coupling fill passage which in turn flows through the coupling timing valve to become an additional source for coupling feed. The servo release spring holds the band servo in the released position.

PRESSURE CONTROL

The pressure relief valve provides for the exhaust of abnormally high pressures (above approximately 230 p.s.i.) if the pressure regulator or pump slide should stick.

Line pressure to the throttle valve is regulated to a variable pressure called T.V. pressure. The throttle valve, which regulates T.V. pressure, is controlled by the T.V. spring and band apply valve through adjustable linkage from the carburetor throttle. As the throttle is opened, the linkage depresses the band apply valve to increase the force of the T.V. spring, thus causing the throttle

REVERSE CONE—OFF

BAND—OFF

valve to regulate T.V. pressure to a higher value. T.V. pressure is designed to vary in proportion to throttle opening and is used throughout the control system to activate or control different valves at various times in relation to throttle opening.

With the manual valve in the neutral position, line pressure is directed into the line drop feed passage to the pressure boost valve to become line drop signal oil in third. Line pressure to the pressure boost valve is directed into the line drop signal passage and line boost passage. Line drop signal oil is then routed to the pressure drop valve. Throttle pressure acting on the pressure drop valve regulates line drop signal to a variable decreasing line drop pressure which is applied against the pressure regulator valve. Line boost oil is directed against the boost plug in the pressure regulator to compress the spring for higher line pressures.

At light throttle, line drop pressure is maximum, thus causing the greatest drop in line pressure. At full throttle, line drop pressure is regulated to exhaust resulting in high line pressure. Line pressure then is controlled to vary according to throttle opening from 122-170 p.s.i.

Line pressure to the governor will be regulated to become two variable governor pressures; G-1 and G-2. These pressures vary in proportion to output shaft or vehicle speed, G-1 being more sensitive at the lower speeds and G-2 being more sensitive at high vehicle speeds. Governor pressure is used to initiate the 2-3 and 3-4 shifts.

SUMMARY

The coupling is filled and the band is spring released, thereby causing the transmission to be in Neutral.

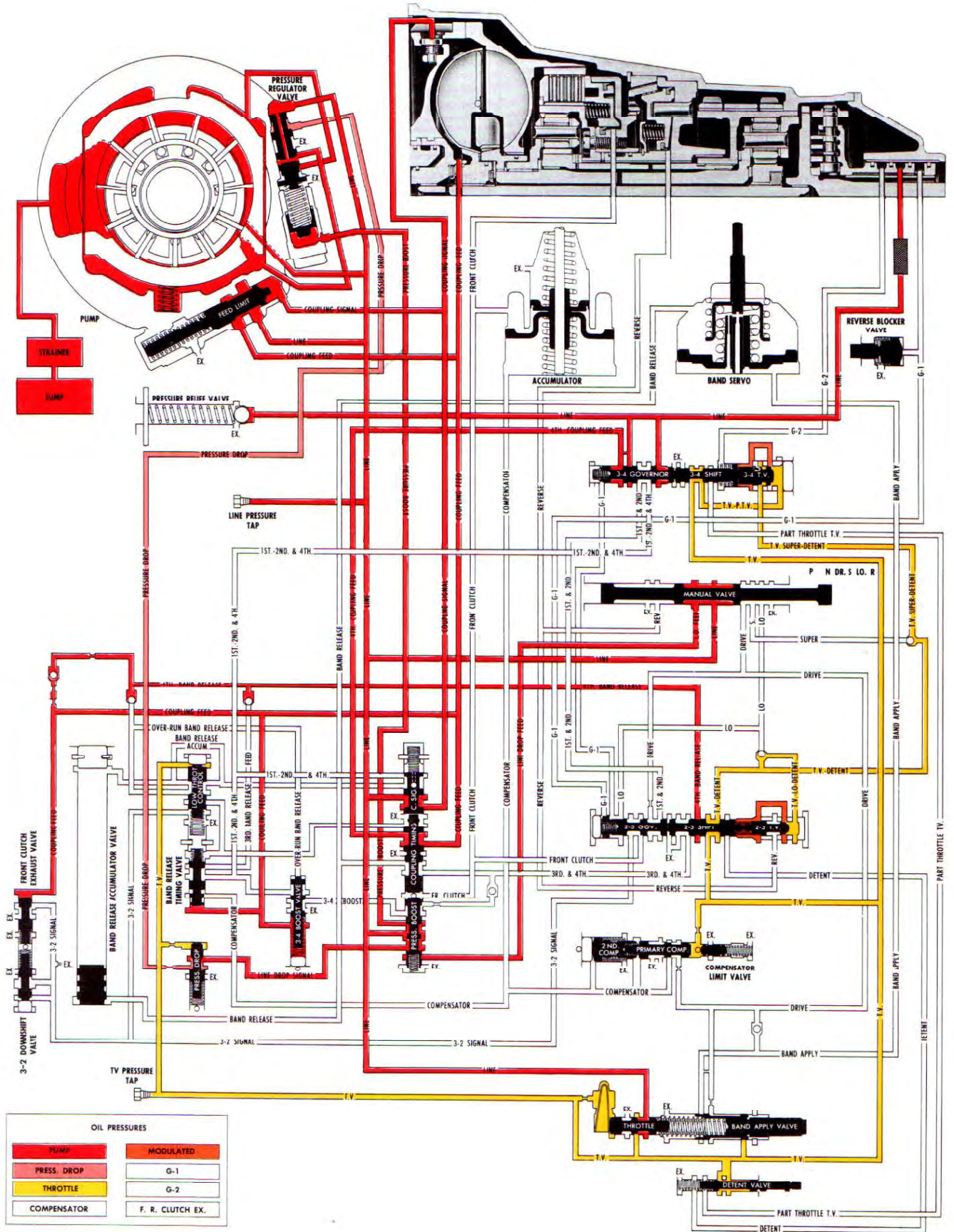


Fig. 3-13 Neutral - Engine Running

DRIVE RANGE—FIRST**COUPLING—FULL****FRONT CLUTCH—OFF****BAND—ON****REVERSE CONE—OFF****ACCEL-A-ROTOR—EFFECTIVE**

When the selector lever is moved to the Drive position, the manual valve is repositioned to allow line pressure to enter the drive oil circuit. Drive oil then flows to the following:

- Band Servo
- Band Apply Valve
- 2-3 Shift Valve
- Primary Compensator Valve

BASIC CONTROL

Drive oil flowing through the orifice at the band apply valve is routed to apply the band servo. As the throttle is opened, the band apply valve opens to allow drive oil to flow at a faster rate to the band servo for quicker band application.

Coupling signal oil, acting on the coupling feed limit valve, opens the valve to allow line pressure to flow directly into the coupling feed passage for coupling fill.

Drive oil to the 2-3 shift valve flows through the valve to become first oil which in turn flows through the 3-4 shift valve to become first, second and fourth oil. First, second and fourth oil is routed against the end of the coupling signal valve to assist the spring in holding the valve open.

PRESSURE CONTROL

Pressure control in first is identical to Neutral.

TIMING CONTROL

First, second and fourth oil is routed to the coupling signal valve to become band release accumulator oil. Band release accumulator oil charges the band release accumulator for use during a 2-3 shift.

First, second and fourth oil is also directed to the band release timing valve and 3-4 boost valve for use during the 3-4 shift.

Drive oil to the primary compensator valve is regulated by T.V. pressure acting on the primary compensator valve to become compensator pressure. Compensator pressure is designed to vary in proportion to engine torque and is routed to the clutch accumulator and the band release valve for use during a 1-2 and 2-3 shift.

SUMMARY

The coupling is filled directing oil to the accel-a-rotor, causing the transmission to be in first.

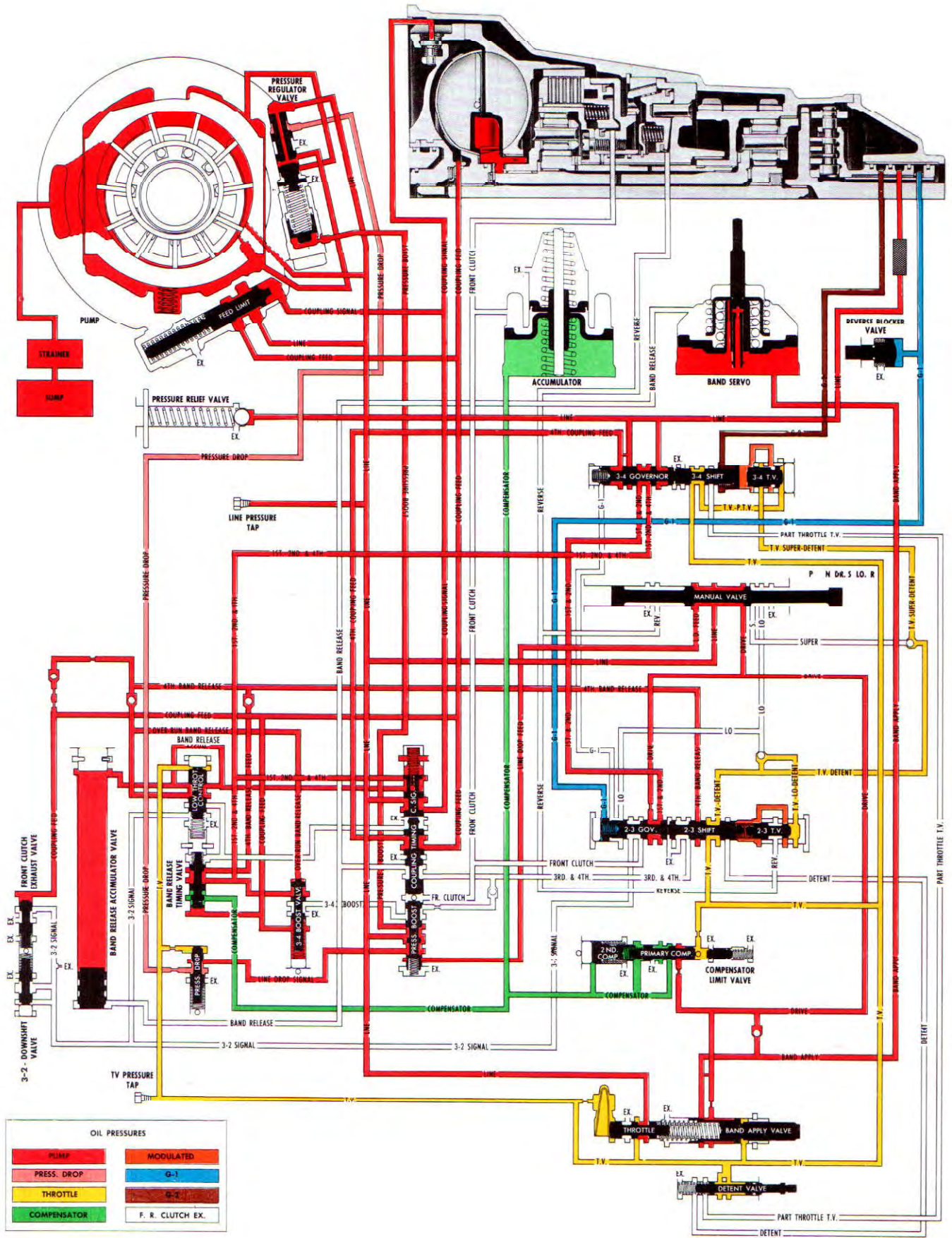


Fig. 3-14 Drive Range—First

DRIVE RANGE—SECOND**COUPLING—FULL****FRONT CLUTCH—OFF****BAND—ON****REVERSE CONE—OFF****ACCEL-A-ROTOR—INEFFECTIVE**

When the selector lever is moved to the Drive position, the manual valve is repositioned to allow line pressure to enter the drive oil circuit. Drive oil then flows to the following:

- Band Servo
- Band Apply Valve
- 2-3 Shift Valve
- Primary Compensator Valve

BASIC CONTROL

Drive oil flowing through the orifice at the band apply valve is routed to apply the band servo. As the throttle is opened, the band apply valve opens to allow drive oil to flow at a faster rate to the band servo for quicker band application.

Coupling signal oil, acting on the coupling feed limit valve, opens the valve to allow line pressure to flow directly into the coupling feed passage for coupling fill.

Drive oil to the 2-3 shift valve flows through the valve to become second oil which in turn flows through the 3-4 shift valve to become second and fourth oil. Second and fourth oil is routed against the end of the coupling signal valve to assist the spring in holding the valve open.

PRESSURE CONTROL

Pressure control in second is identical to Neutral.

TIMING CONTROL

First, second and fourth oil is routed to the coupling signal valve to become band release accumulator oil. Band release accumulator oil charges the band release accumulator for use during a 2-3 shift.

First, second and fourth oil is also directed to the band release timing valve and 3-4 boost valve for use during the 3-4 shift.

Drive oil to the primary compensator valve is regulated by T.V. pressure acting on the primary compensator valve to become compensator pressure. Compensator pressure is designed to vary in proportion to engine torque and is routed to the clutch accumulator and the band release valve for use during a 2-3 and 3-4 shift.

SUMMARY

The coupling is filled and the band is applied causing the transmission to be in second.

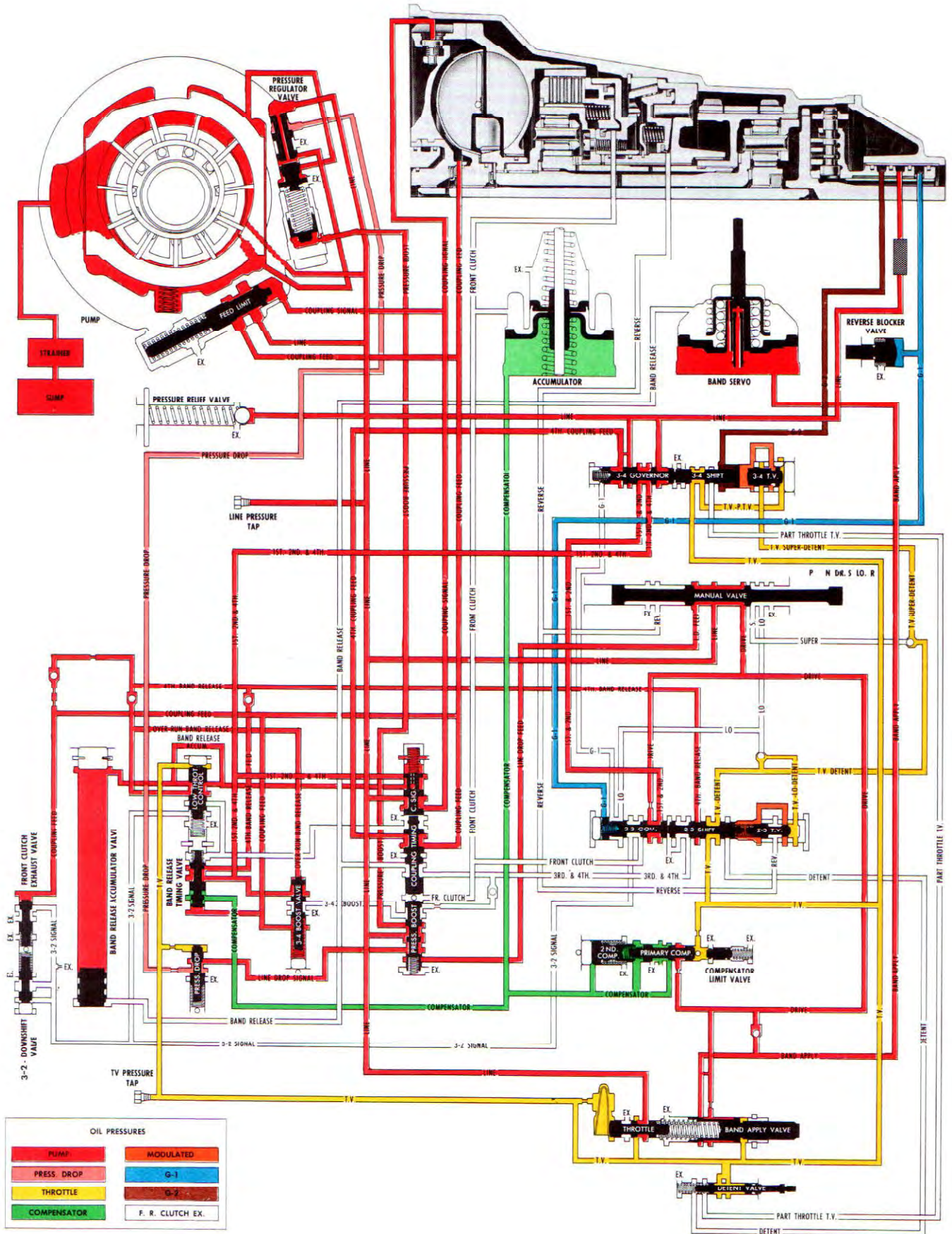


Fig. 3-15 Drive Range - Second

DRIVE RANGE—THIRD**COUPLING—EMPTY****REVERSE CONE—OFF****FRONT CLUTCH—ON****BAND—ON****ACCEL-A-ROTOR—INEFFECTIVE**

With increased vehicle speed and G-1 pressure, the force of G-1 acting on the 2-3 governor valve will overcome the force of the 2-3 modulated T.V. pressure. This causes the 2-3 shift valve to open, which allows drive oil to enter the front clutch apply passage. Simultaneously, shift T.V. to the 2-3 regulator valve is cut off at the 2-3 shift valve, and first gear oil, which charged the band release accumulator, is exhausted through the 2-3 shift valve.

BASIC CONTROL

Front clutch oil from the 2-3 shift valve applies the clutch and repositions the coupling timing valve against the spring to cut off coupling signal oil and coupling feed oil. The coupling exhaust valves then open allowing the coupling to empty.

PRESSURE CONTROL

Front clutch oil repositions the pressure boost valve against line pressure and the spring. This cuts off line pressure from entering the line boost and line drop signal passages. Line drop feed line oil again enters the line drop signal passage. The result is a dropped line pressure which varies with throttle (74-105 p.s.i.).

TIMING CONTROL

Front clutch oil to the front clutch accumulator is accumulated at varying rates and pressures depending on the amount of compensator pressure present in the accumulator. This in turn determines the time and pressure required to apply the front clutch smoothly for either a gentle application at light throttle or a firm application at heavy throttle.

Front clutch oil is used to reposition the pressure boost valve because it acts as a signal oil which notifies the pressure boost valve that sufficient clutch pressure is present to carry third torque before allowing line pressure to drop.

Also, it prevents line pressure from dropping in the band servo until the shift to third is completed, (torque on the band in second is greater than in third) thus preventing the band from slipping in second.

FAIL SAFE FEATURES

To provide a safety feature, coupling feed pressure in first is orificed and directed past a ball check into the fourth band release passage and brought against the 2-3 shift valve. With the 2-3 shift valve open, fourth band release oil enters the third and fourth passages. If for any reason, the coupling timing valve should remain in second position when clutch pressure is applied to it, third and fourth oil will flow through the coupling timing valve to the band release accumulator and will cause the accumulator to complete its stroke and allow pressure to build up on the release side of the band servo.

Band release accumulator oil which charged the band release accumulator is exhausted through the low throttle control valve into either the second and fourth oil passages.

This releases the band and shifts the transmission to fourth preventing the transmission from becoming locked up as it would be if the coupling were filled with the band and clutch on.

If the coupling timing valve moves as it should, the band release passage will exhaust at the coupling timing valve, and allow line fourth oil through the coupling timing valve to recharge the release accumulator through low throttle control valve.

SUMMARY

The coupling is exhausted with the clutch and band applied, thus placing the transmission in third.

DRIVE RANGE—FOURTH**COUPLING—FULL****REVERSE CONE—OFF****FRONT CLUTCH—ON****BAND—OFF****ACCEL-A-ROTOR—INEFFECTIVE**

As vehicle speed increases further, G-1, G-2 pressure and the 3-4 shift valve spring acting on the 3-4 shift valve train will overcome the force of the modulated T.V. pressure on the 3-4 shift valve. The shift valve will then open allowing line pressure to enter the first and third coupling fill passages. T.V. pressure is now cut off from entering the shift T.V. passage.

BASIC CONTROL

First, second and third oil will reposition the coupling timing valve against front clutch pressure to again allow coupling signal oil to close the coupling exhaust valves sealing the coupling. Fourth coupling fill oil enters the coupling feed passage to fill the coupling. Simultaneously, third and fourth oil flows through the coupling timing valve to become band release oil, which releases the band.

PRESSURE CONTROL

The normal operating pressure in fourth is the same as third except as discussed in the Timing Control Section.

TIMING CONTROL

During three to four throttle shifts the release of the band must be timed to the filling of the coupling.

**THROTTLE OPENINGS BELOW 15 P.S.I.
T.V. PRESSURE**

During light throttle 3-4 upshifts, below 15 p.s.i. T.V. pressure, the low throttle control valve is positioned to allow first and third oil to flow into the overrun band release passage immediately.

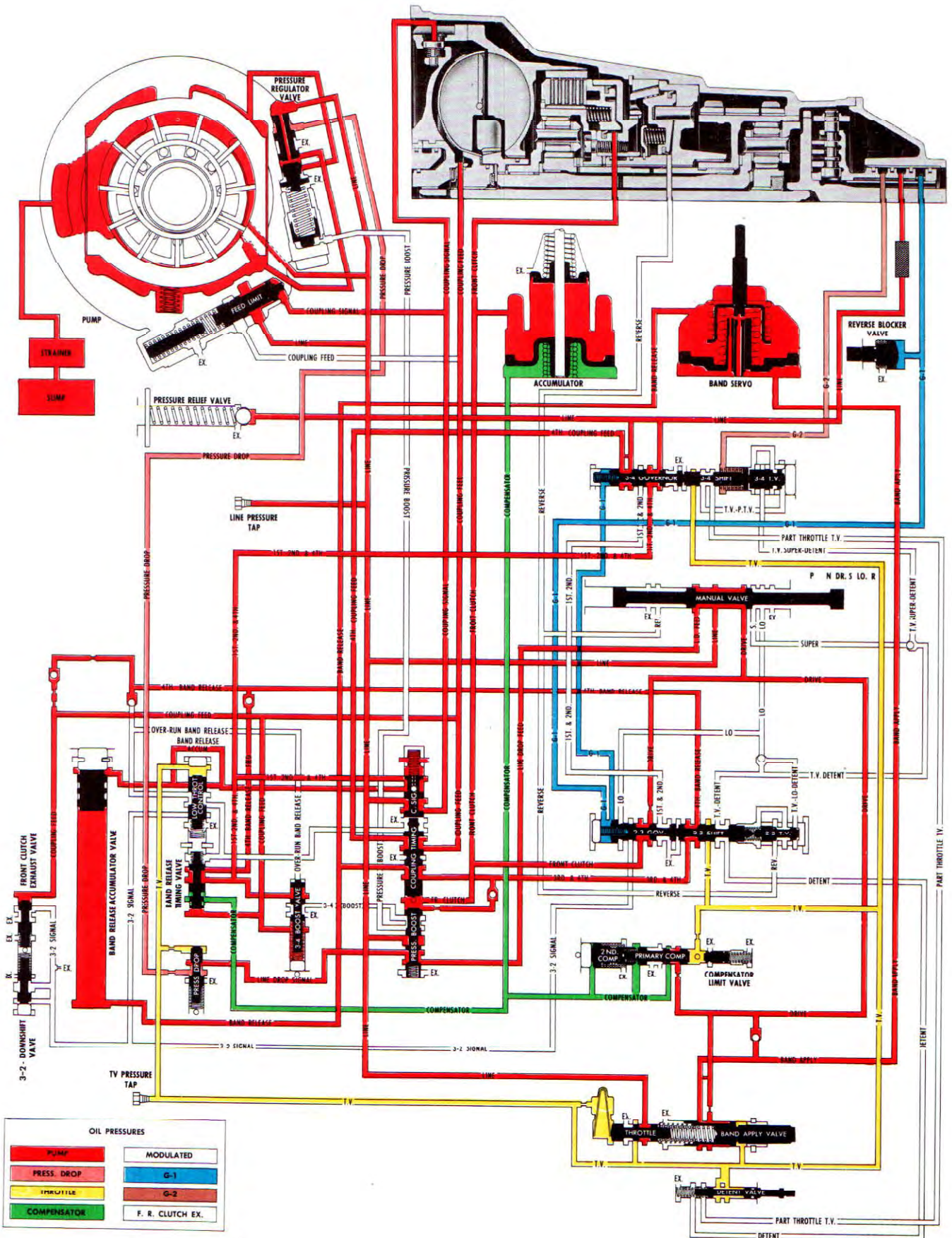
Overrun band release oil then performs two functions:

1. Overrun band release oil repositions the 3-4 boost valve against the spring and allows first and fourth oil to flow into the first, second and third reverse passages to the pressure boost valve. This causes a boost in line pressure for a rapid fill of the coupling.
2. Overrun band release oil also causes the ball check valve between the band release accumulator passage and fourth band release passage to open, thus giving a fast feed to third and fourth or band release oil. The band will then release quickly.

As coupling feed reaches the proper pressure it assists the spring in repositioning the 3-4 boost valve against band release accumulator oil. Line boost is then cut off allowing line pressure to return to its normal fourth valve of 74-105 p.s.i.

**THROTTLE OPENINGS ABOVE 15 P.S.I.
T.V. PRESSURE**

During heavy throttle 3-4 shifts the low throttle control valve is closed to first, second and third oil. First, second and fourth oil, however, is resting on the band release timing valve. In this condition the coupling fills under normal line pressures and when coupling pressure is sufficient it opens the band release timing valve allowing first, second and fourth oil to enter the fourth band release passage. This oil then opens a ball check and allows fourth band release to flow through the 2-3 shift valve to become third and fourth oil, which flows through the coupling timing valve to become band release oil to release the band.



OIL PRESSURES	
PUMP	MODULATED
PRESS. DROP	G-1
THROTTLE	G-2
COMPENSATOR	F. R. CLUTCH EX.

Fig. 3-17 Drive Range-Four

DRIVE—DETENT—4-3 DOWNSHIFT**COUPLING—EXHAUSTING****BAND—APPLYING**

While operating in fourth at speeds below approximately 57 M.P.H. a forced or detent 4-3 downshift is available. This is accomplished by depressing the accelerator fully.

As this is done, the detent valve is fully depressed exposing the detent passage to T.V. pressure. Detent pressure, which flows through the

2-3 shift valve, past the ball check is directed against the large land of the 3-4 shift valve.

The force due to this pressure is then sufficient to overcome the force of G-1 and G-2 pressure and two springs acting in the opposite direction, thereby, causing the 3-4 shift valve to close. The transmission will then shift into third.

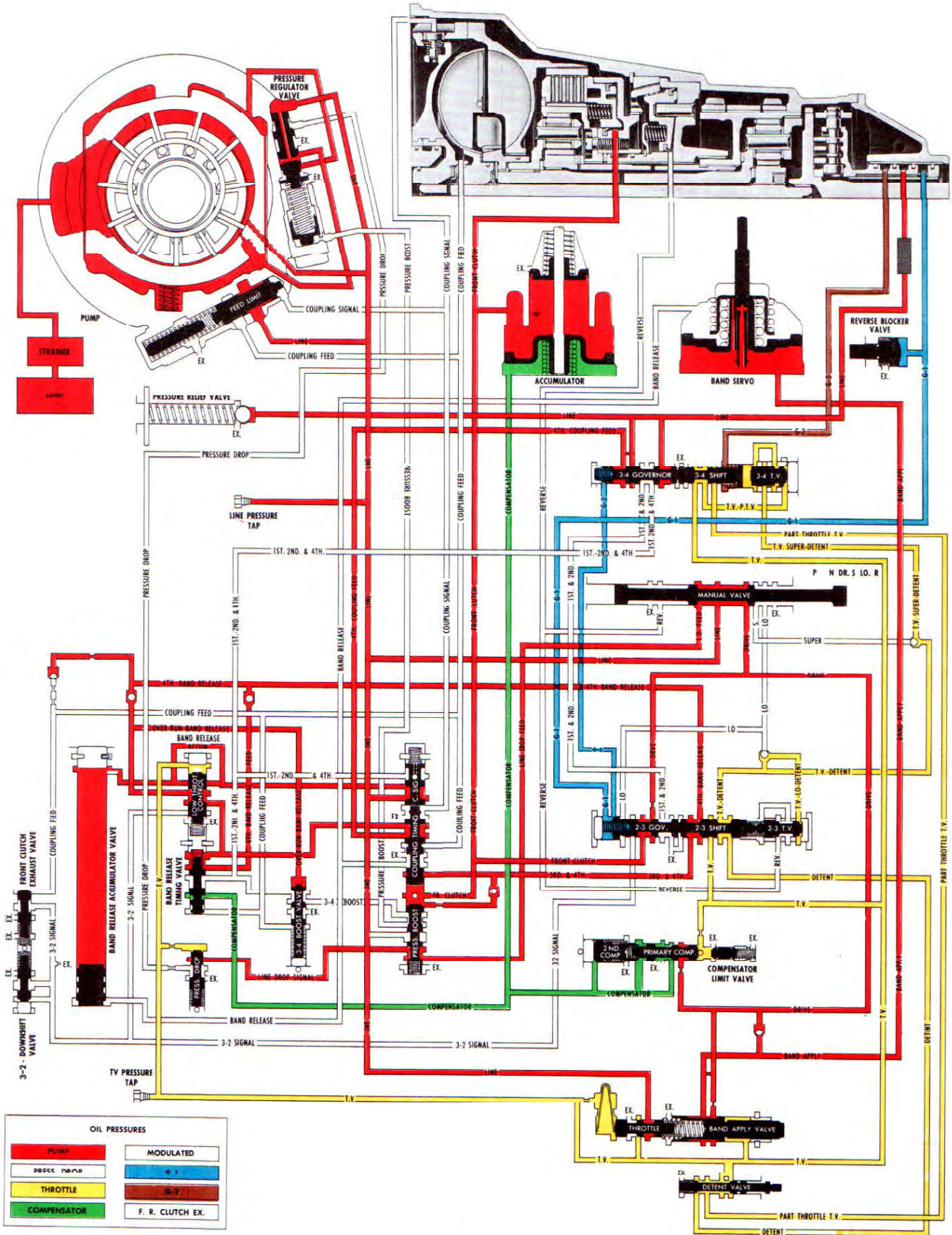


Fig. 3-18 Drive - Detent 4-3 Downshift

DRIVE—PART THROTTLE 4-3**COUPLING—EXHAUSTING****BAND—APPLYING**

At vehicle speeds below approximately 37 M.P.H. a 4-3 downshift can be obtained by depressing the accelerator a given amount. When the detent valve is moved sufficiently, T.V. pressure is allowed to enter the part throttle T.V. passage. Because the 3-4 shift valve is open, part throttle T.V. enters the shift T.V. passage and acts against the large end of the 3-4 T.V. regulator valve which causes the 3-4 shift valve to close.

BASIC CONTROL

As the 3-4 shift valve closed, first, second and

fourth oil and fourth coupling feed oil from the 3-4 shift valve are cut off, thereby, causing the coupling timing valve to move to third closed position which exhausts the coupling and band release oil. Drive oil applies the band, thus shifting the transmission into third.

PRESSURE CONTROL

The pressure system remains the same as in fourth.

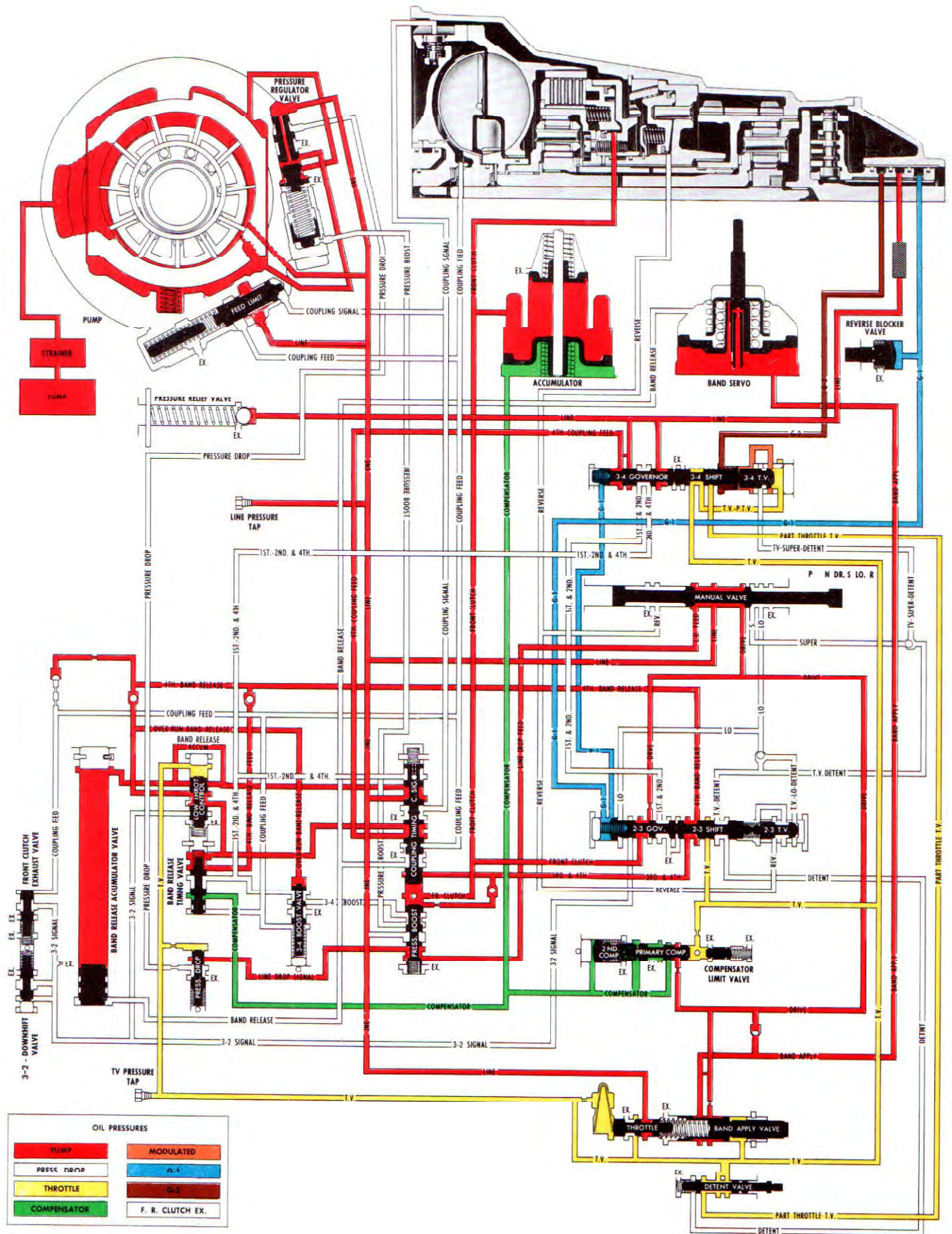


Fig. 3-19 Drive - Part Throttle 4-3

DRIVE DETENT 3-2 DOWNSHIFT

COUPLING—FILLING

FRONT CLUTCH—RELEASING

At vehicle speeds below approximately 19 M.P.H. in third a forced or detent downshift can be obtained by depressing the accelerator fully past the detent. This causes the detent valve to open the detent passage to T.V. pressure. Detent pressure then enters the 2-3 shift T.V. pressure passage to act against the 2-3 T.V. valve. This causes the 2-3 shift valve to close against the force of G-1 pressure.

BASIC CONTROL

As the 2-3 shift valve closes, drive oil to the front clutch is cut off and all front clutch pressure in the front clutch and accumulator is compelled to exhaust into the 3-2 signal passage. Simultaneously, drive oil feeds second oil, which flows through the closed 3-4 shift valve, into the first, second and fourth passage to rapidly reposition the coupling timing valve for coupling fill.

TIMING CONTROL

Exhausting front clutch oil (3-2 signal oil) regulates to exhaust through the 3-2 downshift valve to a valve that permits the front clutch to hold the front clutch torque in third but not in second.

This feature permits the front clutch to hold transmission torque in third until such time that second torque is obtained.

3-2 signal oil also rests against the front clutch exhaust valve until such time that coupling pressure attains a sufficient value to handle torque capacity in second. Coupling pressure then moves the front clutch valve to exhaust all remaining 3-2 signal or front clutch oil.

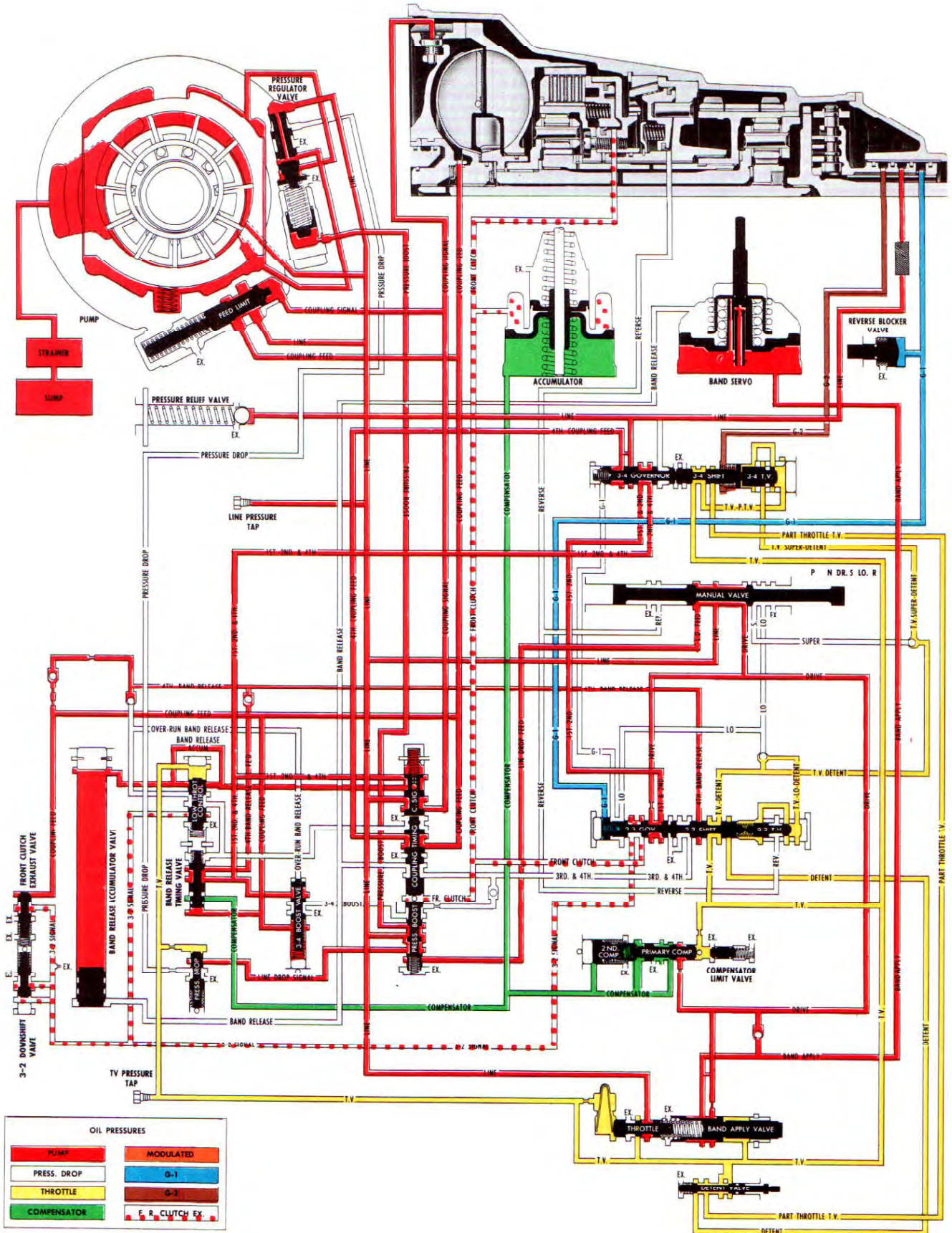


Fig. 3-20 Drive - Detent 3-2 Downshift

DRIVE RANGE—3-2 DOWNSHIFT—CLOSED THROTTLE

During a closed throttle 3-2 downshift, as the 2-3 shift valve closes, drive oil to the front clutch passage is cut off, however, all front clutch pressure in the system is exhausted into the 3-2 sig-

nal passage. Because T.V. pressure is slight with light throttle, the low throttle control valve is open to exhaust the 3-2 signal oil. This allows an immediate exhaust of front clutch oil.

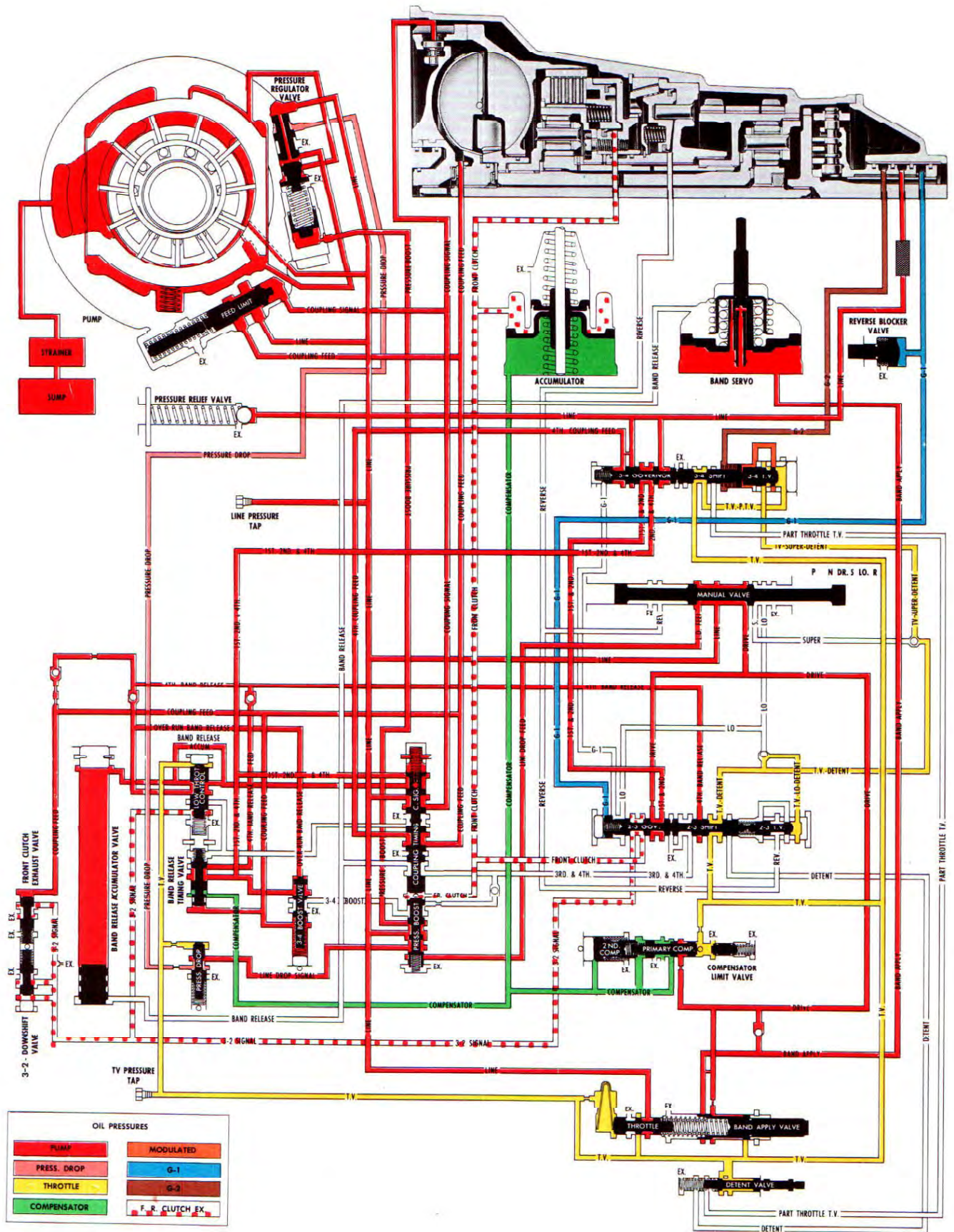


Fig. 3-21 Drive - 3-2 Downshift - Closed Throttle

SUPER RANGE—THIRD**COUPLING—EMPTY****REVERSE CONE—OFF****FRONT CLUTCH—ON****BAND—ON**

Oil flow in super range third is primarily identical to that in drive range third with the following exceptions.

range but only above the speed at which the normal drive range through detent 3-4 upshift occurs. (Approximately 60 m.p.h.).

BASIC CONTROL

Super range pressure from the manual valve is directed through the ball check against the large end of the 3-4 shift valve to prevent a 3-4 shift from normally occurring in the super range.*

*As a safety feature, it is possible to obtain a 3-4 upshift in the super

PRESSURE CONTROL

When the manual valve is in the super position the line drop feed passage is cut off. This stops the source of line drop pressure so that line pressure is constant at approximately 105 p.s.i. regardless of throttle opening.

LO RANGE—SECOND**COUPLING—FULL****REVERSE CONE—OFF****FRONT CLUTCH—OFF****BAND—ON**

When the selector lever is placed in the "Lo" position, the manual valve is moved to uncover an additional source of pressure, Lo Oil.

Lo Oil is directed to two locations:

1. Against the large end of the 2-3 governor valve to work against the force of G-1 pressure.

2. Through the ball check valve, past the 2-3 T.V. regulator valve to act against the 2-3 shift valve to further assist in keeping the 2-3 shift valve closed against G-1 pressure.

The transmission will never shift above second in the Lo Range.

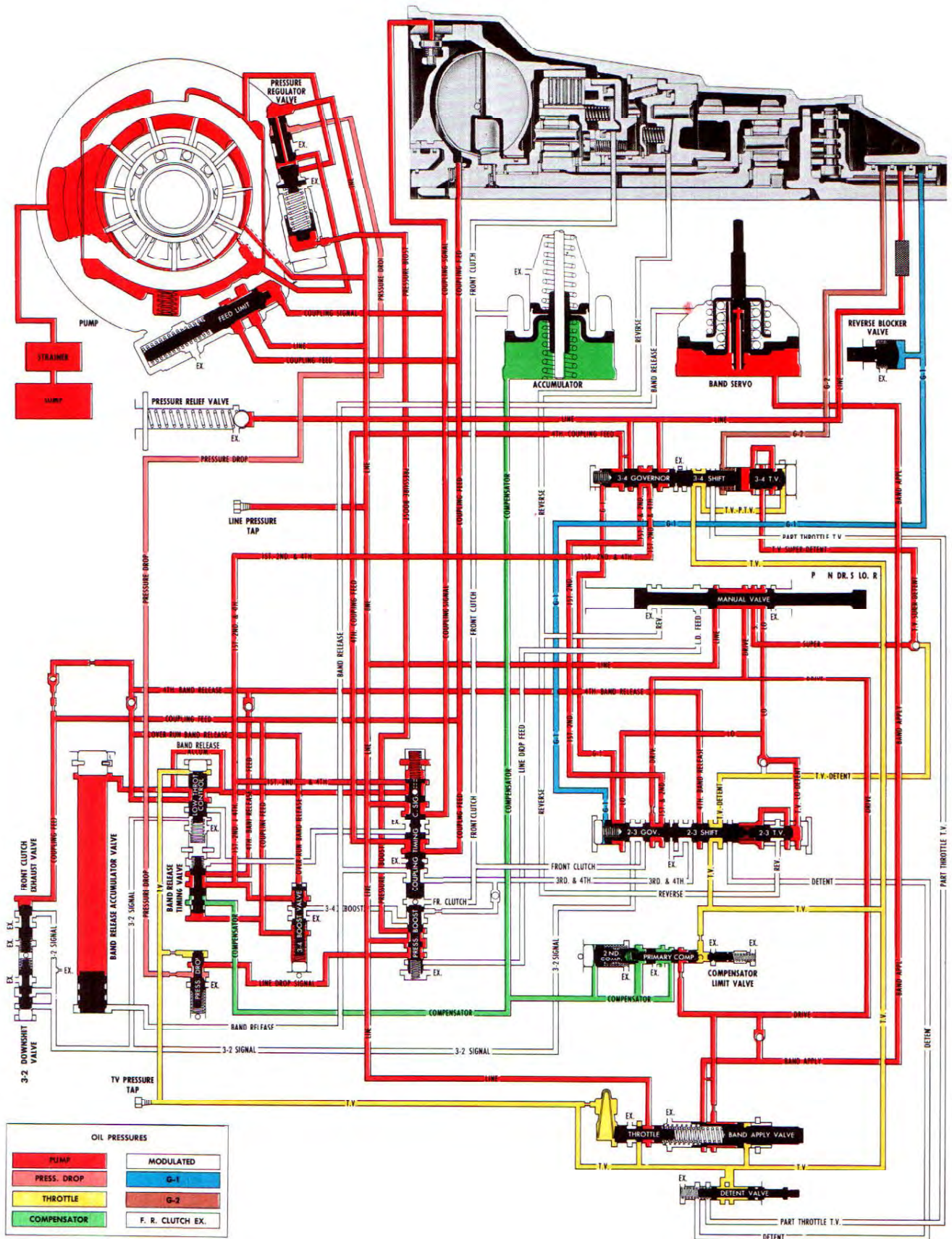


Fig. 3-23 Lo Range - Second

REVERSE**COUPLING—FULL****FRONT CLUTCH—OFF**

In reverse the coupling is filled, the front clutch is released, the reverse cone applied, and the band is released.

Line pressure is directed to the:

1. Throttle Valve
2. Governor
3. Line Boost Valve
4. Manual Valve
5. Coupling Timing Valve
6. Pressure Regulator
7. Coupling Feed Limit Valve
8. 3-4 Shift Valve

Drive, Super and Lo Range oil is exhausted at the manual valve.

REVERSE CONE—ON**BAND—OFF****BASIC CONTROL**

Line pressure, through the coupling timing valve, enters the signal passage to close the coupling exhaust valves and open the coupling feed limit valve for coupling fill.

Reverse pressure from the manual valve is directed to apply the reverse cone clutch, thus holding the front unit internal gear stationary.

PRESSURE CONTROL

Line pressure flows into the line boost and line drop signal passage to provide a variable line pressure similar to that obtained in first.

SUMMARY

The coupling is filled, the reverse cone is applied, thereby placing the transmission in reverse. Reverse pressure to the 2-3 T.V. valve directs reverse pressure behind the 2-3 shift valve to prevent the 2-3 shift valve from upshifting.

CONTROL VALVE

Disassembly of Complete Control Valve

1. Place control valve assembly on a CLEAN surface with the channel plate to case spacer down and the rear T.V. lever located in the lower left hand corner.
2. Remove the one retaining screw from each valve body.
3. Turn the control valve assembly over so rear T.V. lever is located in the upper left hand corner.
4. Remove three screws retaining the channel plate to case spacer plate, and remove spacer plate.
5. Remove 2 large and 2 small ball checks from channel plate, and three channel plate to valve body attaching screws.
6. Remove the manual valve, from the primary valve body.
7. Remove the channel plate and rear T.V. lever from valve bodies.
8. Remove the 3 medium ball checks, then the channel plate to valve body spacer.
9. Remove the sleeve, detent valve and spring from the primary valve body.
10. Place the secondary valve body aside temporarily.

Channel Plate

The rear T.V. lever may be removed from channel plate by removing "E" ring.

DISASSEMBLY OF PRIMARY VALVE BODY

1. Remove the band apply valve bushing retainer.
2. Remove the band apply valve and bushing from the throttle valve bore.
3. Remove the band apply valve spring, throttle valve spring and valve.
4. Remove the retaining pin from 2-3 valve bore while holding 2-3 T.V. bushing.
5. Remove the 2-3 T.V. bushing and 2-3 T.V. valve.
6. Remove the 2-3 T.V. valve spring, the 2-3 shift valve.

7. Remove the 3-4 bore plug retainer and bore plug.
8. Remove the 3-4 T.V. valve bushing and 3-4 T.V. valve.
9. Remove the 3-4 T.V. valve from the bushing.
10. Remove the 3-4 shift valve and spring.
11. Remove the bore plug retainer and bore plug from other end of the 3-4 shift valve bore.
12. Remove the 3-4 shift valve spring and governor valve.
13. Remove the bore plug retaining pin and bore plug from the 2-3 valve bore.
14. Remove the 2-3 shift valve spring.
15. Remove the 2-3 governor valve.
16. Remove the bore plug retaining pin from the compensator bore while holding the bore plug.
17. Remove the compensator bore plug and secondary compensator valve and spring.
18. Remove the primary compensator spring and valve.
19. Remove the compensator limit valve retainer pin by compressing limit valve spring with a brass rod.
20. Remove the compensator limit valve and spring.

NOTE: Do not disturb the thermostatic T.V. element adjusting screw.

21. Remove the T.V. element clip and element.

ASSEMBLY OF PRIMARY VALVE BODY

1. Install the compensator limit valve spring and valve.
2. Install the limit valve retaining pin by compressing the limit valve spring with a brass rod.
3. Install the primary compensator valve, land end first, and spring.
4. Install the secondary compensator spring and valve, small land first.
5. Install the compensator bore plug, and install the bore plug retaining pin.
6. Install the 2-3 governor valve, shift valve spring and bore plug.

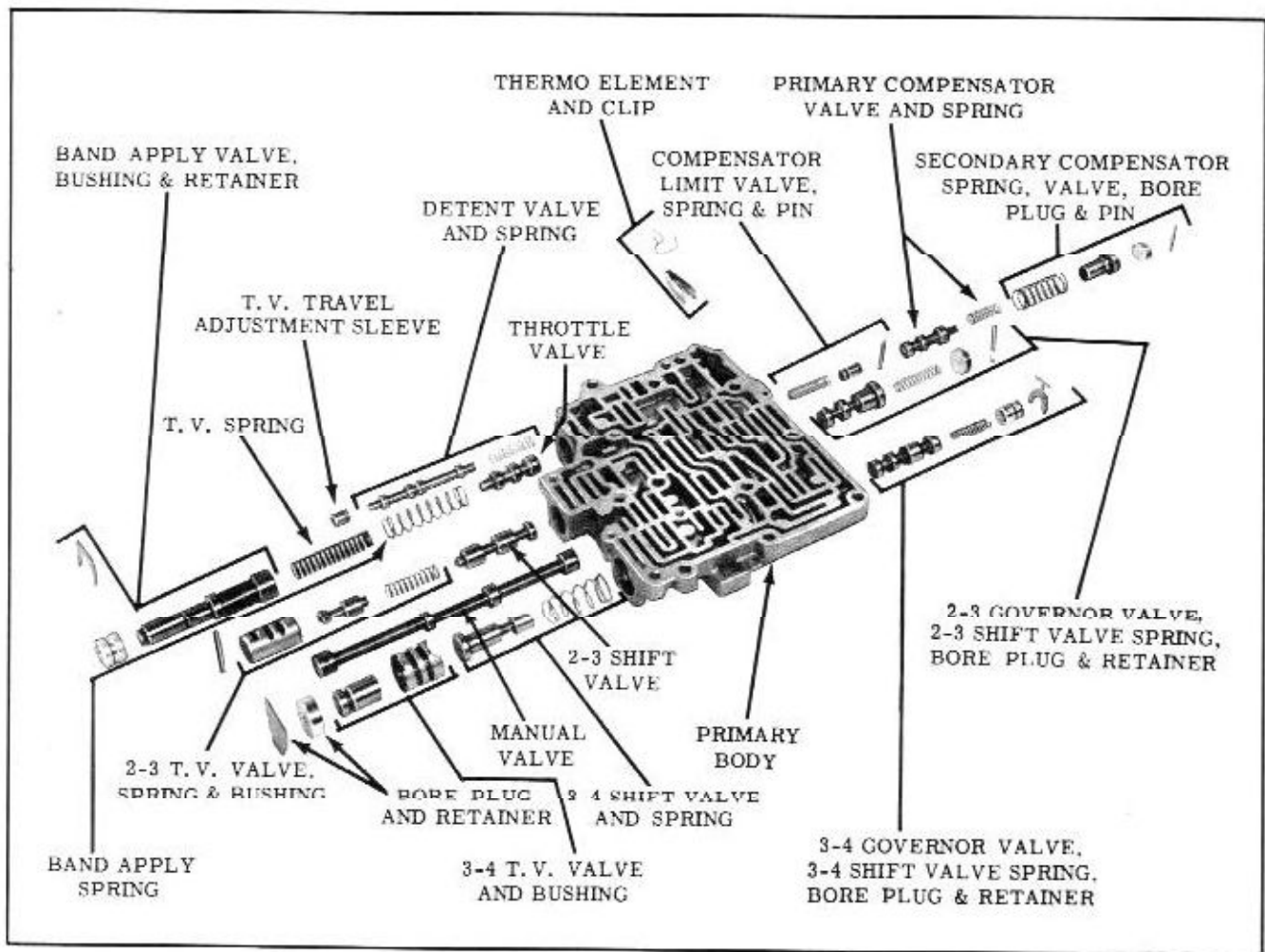


Fig. 2-25 Primary Valve Body Assembly

7. Install the bore plug retaining pin.
 8. Install the 3-4 governor valve, shift valve spring and bore plug.
 9. Install the bore plug retainer.
 10. Install the 3-4 rear shift valve spring and shift valve into the other end of the 3-4 shift valve bore.
 11. Install the 3-4 T.V. valve in the 3-4 T.V. bushing so that it completely enters the bushing.
 12. Install the valve and bushing.
 13. Install the bore plug and retainer.
 14. Install the 2-3 shift valve in the 2-3 bore, small land first.
 15. Install the 2-3 T.V. spring.
 16. Install the 2-3 T.V. valve into the 2-3 T.V. valve bushing, land end first.
 17. Install the 2-3 T.V. valve and bushing.
 18. Install the retaining pin while holding the springs compressed.
 19. Install the throttle valve in the T.V. bore, stem end out.
 20. Install the band apply valve spring and the throttle valve spring.
 21. Install the band apply valve, spring pocket first.
 22. Install the band apply valve bushing on the band apply valve.
 23. Install the band apply valve retainer while compressing the valve and bushing.
 24. Install the T.V. element and clip.
- NOTE: Do not install the manual valve and detent valve train at this time.

DISASSEMBLY OF SECONDARY VALVE BODY

1. Remove the band release accumulator bore plug retainer.

2. Remove the bore plug from the accumulator bore (large bore).
3. Remove the band release accumulator valve.
4. Remove the low throttle control valve bore plug retainer from the next bore.
5. Remove the bore plug, low throttle control valve and spring.
6. Remove the band release timing valve plug retaining pin.
7. Remove the band release timing valve plug and spring.
8. Remove the band release timing valve.
9. Remove the coupling signal valve bore plug retainer from the next bore.
10. Remove the bore plug and coupling signal valve spring.
11. Remove the coupling signal valve and the coupling timing valve.
12. Remove the pressure boost valve retaining pin from the cored face while compressing the valve with a brass rod.
13. Remove the pressure boost valve and spring.
14. Remove the 3-4 boost valve retaining pin while compressing bore plug. (Pin is located in screw hole).
15. Remove the bore plug, 3-4 boost valve spring and valve.
16. Remove the pressure drop valve retaining pin while holding the drop valve spring compressed.
17. Remove the pressure drop valve spring and valve.
18. Remove the 3-2 downshift valve bore plug retainer and bore plug.
19. Remove the 3-2 downshift valve and spring.
20. Remove the front clutch exhaust valve retaining pin while holding spring compressed.
21. Remove the front clutch exhaust valve spring and valve.

ASSEMBLY OF SECONDARY VALVE BODY

1. Install the front clutch exhaust valve, stem out.

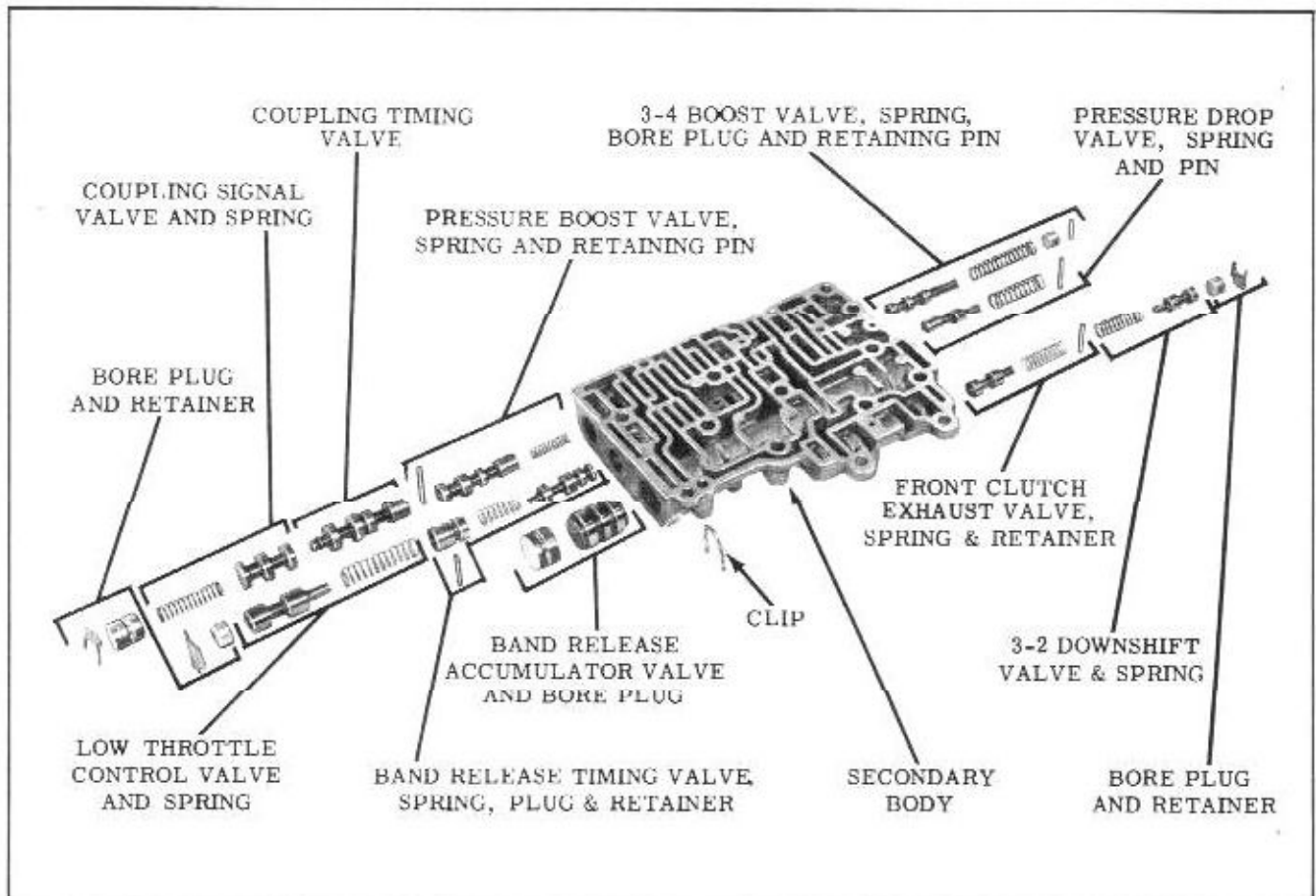


Fig. 3-26 Secondary Valve Body Assembly

2. Install the front clutch exhaust valve spring, compress spring and install retaining pin.
 3. Install the 3-2 downshift valve spring and valve, stem first.
 4. Install the bore plug and retainer. Flat side out.
 5. Install the pressure drop valve, stem last.
 6. Install the pressure drop valve spring, compress the spring and install retaining pin.
 7. Install the 3-4 boost valve, stem end last, then spring.
 8. Install the bore plug, compress plug and install the retaining pin, (short).
 9. Install the pressure boost valve spring.
 10. Install the pressure boost valve, hollow end first.
 11. Install the retaining pin by compressing the pressure boost valve with a brass rod.
 12. Install the coupling timing valve, stem end last.
 13. Install the coupling signal valve, end with hole last.
 14. Install the coupling signal valve spring, bore plug, compress and install retaining clip.
 15. Install the band release timing valve, stem end last, into the next bore.
 16. Install the band release timing valve spring and plug, short land first, compress and install retaining pin.
 17. Install the low throttle control valve spring.
 18. Install the low throttle control valve, stem end first, bore plug and retainer.
 19. Install the band release accumulator valve, bore plug, large land first, and retaining clip.
4. Install the T.V. valve sleeve on the detent valve.
 5. Install the primary valve assembly on the spacer plate, while compressing the T.V. sleeve and the band apply valve. Install one attaching screw, leave screw loose at this time.
 6. Install the secondary valve assembly on the spacer plate and install one attaching screw, leave screw loose at this time.
 7. Turn the assembly over and install two small and two large check balls into their pockets in the channel plate.
 8. Install the manual valve, land with the hole out.
 9. Install the channel plate to case spacer plate and install all attaching screws, leaving screws loose.
 10. Install a 1/4 inch drill in an attaching bolt hole to align the primary valve assembly to the channel plate.
 11. Tighten the countersunk flat head screw.
 12. Remove the attaching screws and the 1/4 inch drill.

ASSEMBLY OF COMPLETE CONTROL VALVE

1. Install 3 medium ball checks into the ball check seats in channel plate (cored face).
2. Install channel plate to valve body spacer over channel plate.
3. Install detent spring and valve, long stem first, into the primary valve assembly.

COUPLING COVER

One of the exhaust valves has a spring on the coupling signal pressure side of the valve. During a 4-3 downshift this valve will remain closed and the coupling will exhaust through the other detent exhaust valve for third stage when the engine r.p.m. is low. When a 4-3 downshift is made at high engine r.p.m. (above approximately 2000 r.p.m.) centrifugal force overcomes the spring force allowing this spring force allowing this spring loaded valve to open. This 2-stage action correlates coupling exhaust with engine r.p.m. for smoother 4 to 3 downshift. (Fig. 3-27)

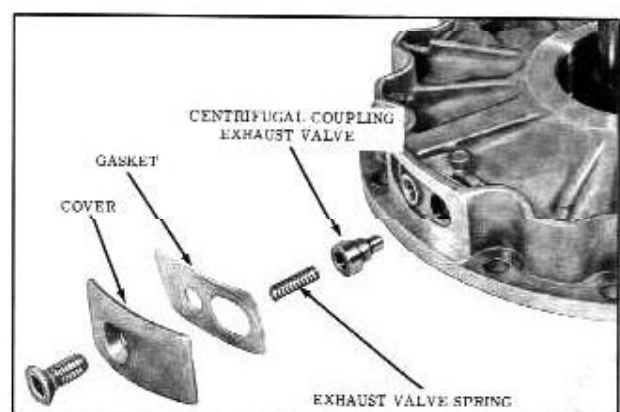


Fig. 3-27 Coupling Cover Exhaust Valve

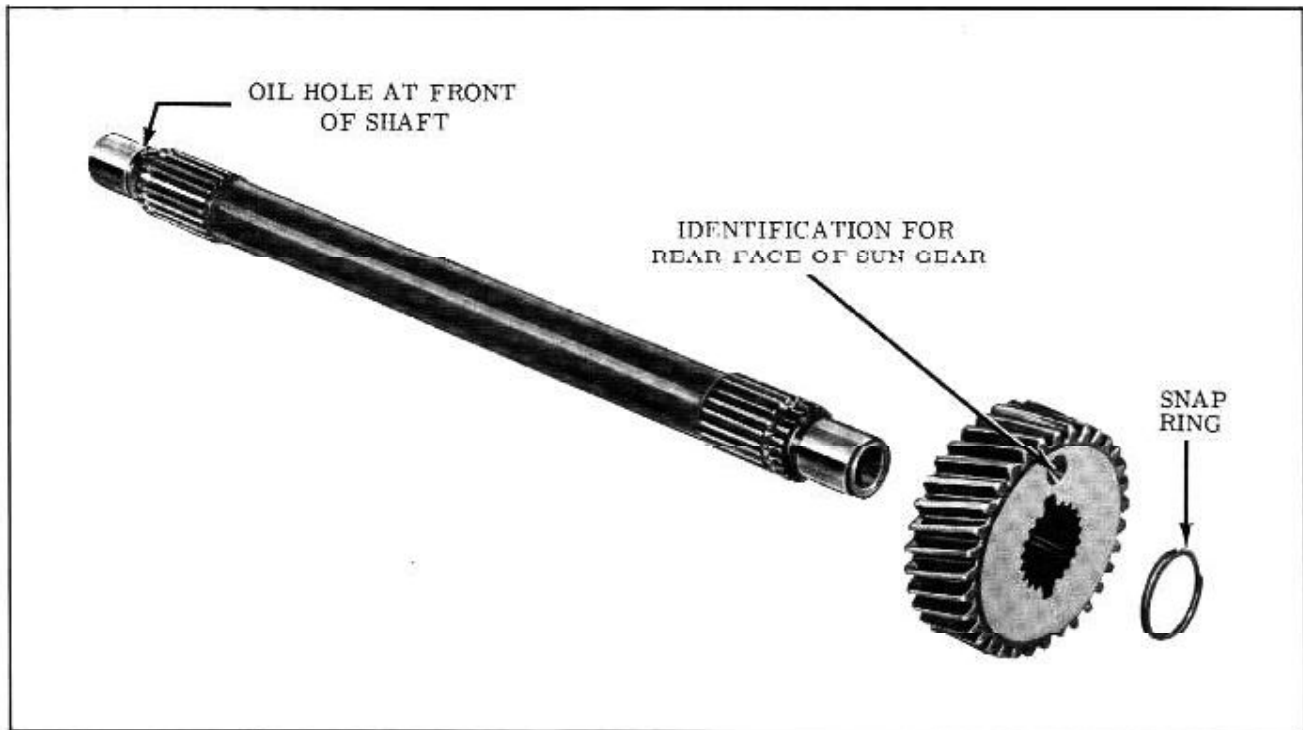


Fig. 3-28 Mainshaft Rear Sun Gear

FRONT CLUTCH PISTON

The front clutch piston includes a ball check that prevents a centrifugal apply of the front clutch at high engine r.p.m. with the selector lever in neutral.

REVERSE STATIONARY CONE

The reverse stationary cone key is an integral part of the cone.

MAINSHAFT REAR UNIT SUN GEAR

The rear unit sun gear will spline to the mainshaft and is held in position by a snap ring. The sun gear does not incorporate a damper. (Fig. 3-28)

SERVICE ADJUSTMENTS

THROTTLE LINKAGE ADJUSTMENT (2GC) (HYDRA-MATIC)

1. Raise car on hoist.
 2. Disconnect lower T.V. rod from T.V. lever. With gauge BT-33-2 check the position of the T.V. lever. The hole of the T.V. lever must be within the hole of the gauge when holding T.V. lever in rearward position. If the hole in the T.V. lever does not fall within the gauge hole, bend the lever with bending tool BT-33-7. Then connect the lower T.V. rod to the lever and lower car.
 3. Disconnect the upper and lower T.V. rod from the T.V. bellcrank.
 4. While holding lower T.V. rod downward and T.V. bellcrank down at the rear, the clevis pin must be a free pin. If necessary, adjust clevis, then connect lower T.V. rod to bellcrank.
 5. Remove air cleaner and move throttle return check out of the way.
 6. Block choke open.
 7. Back off idle adjusting screw until it is not touching the idle cam when accelerator return spring is holding the throttle valves in the closed bore position.
 8. With tool BT-6117 on the machine surface of the manifold, the top of the accelerator rod should just touch the tool. If necessary, bend auxiliary bellcrank link to adjust the bellcrank.
- IMPORTANT:** Before attaching the upper T.V. rod to the bellcrank, check the swivel to be sure it turns **FREELY** on the threads.
9. Adjust upper T.V. rod "slightly short" and snap it onto the ball stud.
 10. While holding the T.V. bellcrank against its stop, lengthen the rod until the swivel turns freely and feels "sloppy". Continue to lengthen the rod by turning the swivel until a very

slight resistance is felt. At this point the upper rod is properly adjusted. The resistance occurs when the loose feeling or end play has been taken up by the lengthening of the rod.

NOTE: The resistance that is felt, is very slight and is a matter of feel and it may be necessary to perform this step more than once to obtain the correct adjustment.

11. Tighten lock nut while holding swivel in adjusted position.
12. Loosen the throttle down shift stop screw lock nut and back-off stop screw approximately 6 turns. With the accelerator lever move the throttle to wide open and over travel the linkage to point of maximum transmission T.V. lever travel.

CAUTION: Do not bend or stretch linkage.

13. Back out throttle downshift stop screw a few turns, then while holding the accelerator lever in the wide open position, set the stop screw to just touch the downshift lever tang then screw the stop screw in an additional 1-1/2 turns and tighten lock nut.
14. Apply hand brake, start engine, and allow it to reach operating temperature. Adjust the idle speed with transmission in "Drive".
15. With the engine off, check and adjust the pedal height with Tool BT-33-2.
16. Reposition the throttle return check and adjust the throttle return check stop screw to obtain .020" clearance at the return check plunger with the idle screw on the high step of the cam.
17. Lubricate linkage.

4GC THROTTLE LINKAGE ADJUSTMENT (HYDRA-MATIC)

1. Raise car on hoist.
2. Disconnect lower T.V. rod from T.V. lever. With gauge BT-33-2 check the position of the T.V. lever. The hole in the T.V. lever must be within the hole of the gauge when holding T.V. lever in rearward position. If the hole of the T.V. lever does not fall within the gauge hole, bend the lever with bending tool BT-33-7.
3. Lower car and disconnect upper T.V. rod from T.V. bellcrank.
4. Disconnect the lower T.V. rod from the T.V. bellcrank.

5. While holding lower T.V. rod downward and T.V. bellcrank down at the rear, the clevis pin must be a free pin. If necessary, adjust clevis then connect lower T.V. rod to bellcrank.
6. Remove air cleaner and pivot throttle return check out of the way.
7. Block intermediate choke lever to release fast idle cam.
8. Back off idle adjusting screw until it is not touching the stop when accelerator return spring is holding the throttle valves in the closed bore position.
9. Bend auxiliary bellcrank link to obtain .020"-.040" between the auxiliary bellcrank and the gauge surface of the carburetor throttle body.

IMPORTANT: Before attaching the upper T.V. rod to the bellcrank, check the swivel to be sure it turns FREELY on the threads.

10. Adjust upper T.V. rod "slightly short" and snap it onto the ball stud.
11. While holding the T.V. bellcrank against its stop, lengthen the rod until the swivel turns freely and feels "sloppy". Continue to lengthen the rod by turning the swivel until a very slight resistance is felt. At this point the upper rod is properly adjusted. The resistance occurs when the loose feeling or end play has been taken up by the lengthening of the rod.

NOTE: The resistance that is felt, is very slight and is a matter of feel and it may be necessary to perform this step more than once to obtain the correct adjustment.

12. Tighten lock nut while holding swivel in adjusted position.
13. Loosen the throttle down shift stop screw lock nut and back off stop screw approximately 6 turns. With the accelerator lever, move the throttle to wide open and over travel the linkage to the point of maximum transmission throttle valve lever travel.

CAUTION: DO NOT BEND OR STRETCH LINKAGE.

14. Holding the accelerator lever in the wide open position, set the stop screw to just touch the down shift lever tang then turn the stop screw in an additional 1-1/2 to 2 turns.

-
15. Remove block from intermediate choke lever. Start engine and allow engine to reach operating temperature. Adjust slow idle to 500 r.p.m. and fast idle to 1600 r.p.m.
 16. With the engine off, check and adjust pedal height with tool BT-33-2.
 17. Reposition throttle return check and install attaching screw.
 18. Adjust throttle return check plunger length to obtain .020" gap between plunger and carburetor lever.
 19. Lubricate linkage.

STEERING

FOR SERVICE PROCEDURES AND SPECIFICATIONS OF THE UNITS NORMALLY COVERED IN THIS SECTION AND NOT LISTED HEREIN, PLEASE REFER TO THE 1961 F-85 SERVICE MANUAL.

CONTENTS OF SECTION 4

Subject	Page
POWER STEERING GEAR	4-1
SPECIFICATIONS	4-3

POWER STEERING GEAR

The 1962 Power Steering Gear has incorporated a new rack piston plug and lower shaft thrust bearing. Service procedures can be obtained by consulting the 88, S88, and 98 Steering Section in the front of this Manual. Specifications for the F-85 gear are given on page 4-3 in this section.

STEERING COLUMN

On Hydra-Matic equipped cars (except console equipped) the shift indicator light is located in the steering column. It is accessible through a cover plate on the bottom of the actuator cover as shown in Fig. 4-1.

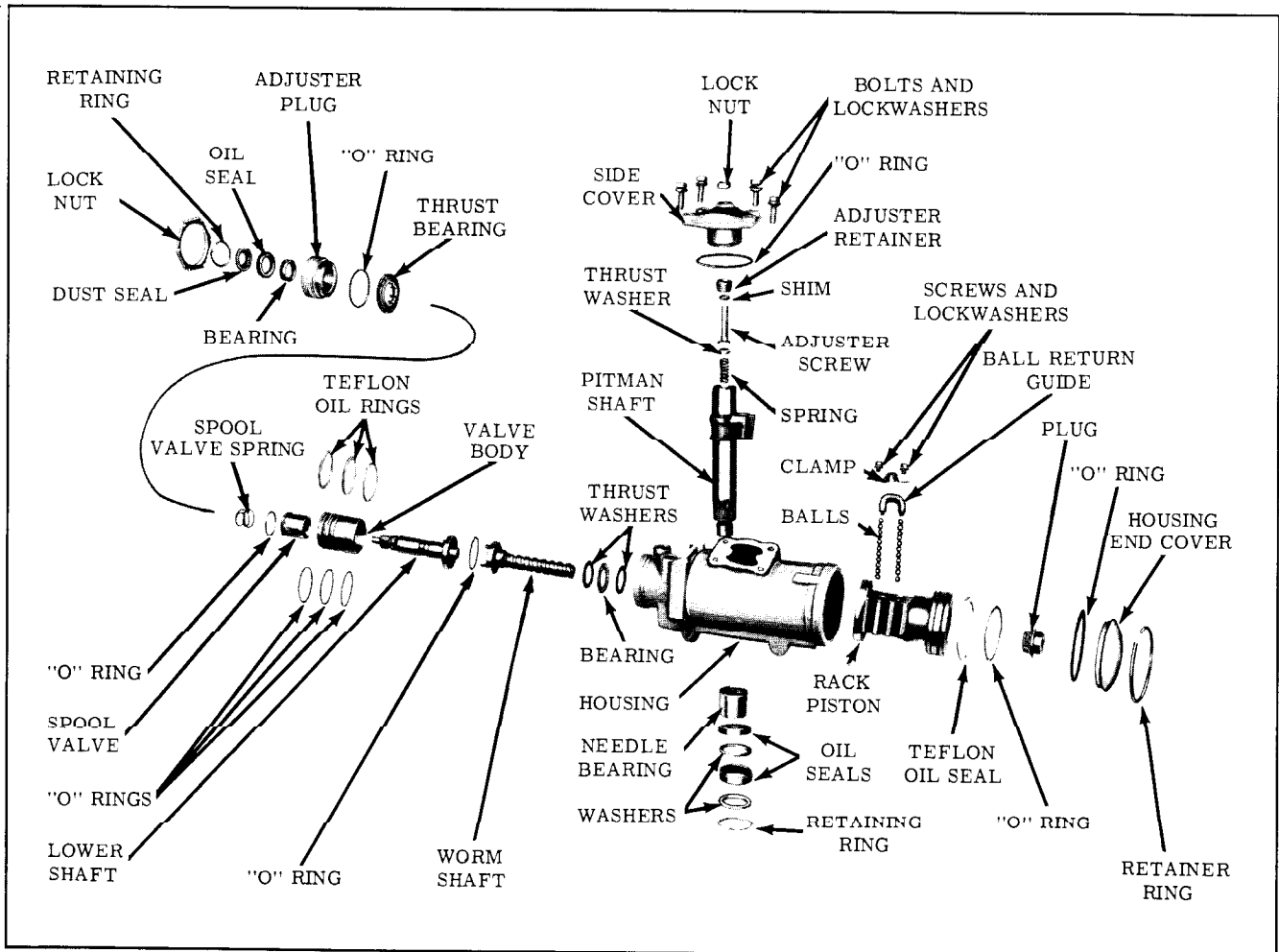


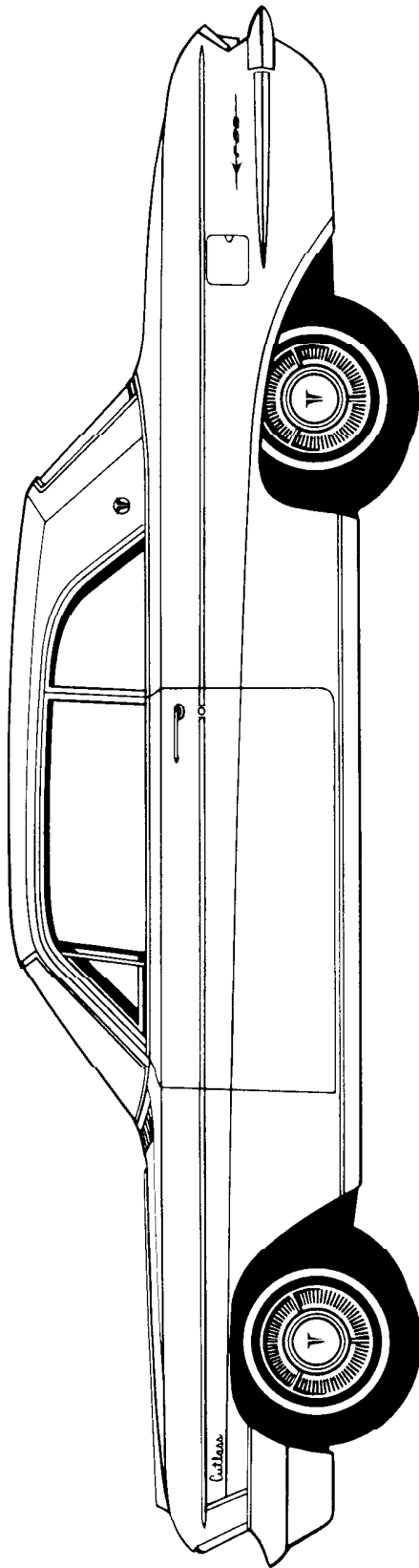
Fig. 4-1 Power Steering Gear

TORQUE SPECIFICATIONS

APPLICATION	FT. LBS.
STEERING LINKAGE	
Idler Arm Bushing	110 to 115
Idler Arm Support to Cross Bar	35 to 45
Relay Rod End Plug	Fully Tighten, Then Loosen 1/4-3/4 Turn
Tie Rod Clamp Bolts	20 to 25
Tie Rod to Plain Arm Nut	35 to 50
Steering Wheel Nut	20 to 30 and Stake
Plain Arm to Steering Knuckle	55 to 80
MANUAL STEERING GEAR	
Gear to Frame Bolts	45 to 60
Pitman Shaft Nut	150 to 180
Side Cover Bolts	25 to 40
Pitman Shaft Adjusting Screw Lock Nut	18 to 27
POWER STEERING PUMP	
Pulley Nut	40 to 45
Pump Bracket (Front) to Block	20 to 25
Pump Bracket (Front) to Front Cover	25 to 35
Pump Mounting Stud to Front Bracket	25 to 35
Pump Mounting Stud to Rear Bracket	25 to 35
Pump Bracket to Cylinder Head	25 to 35
Flow Control Valve Plug	4
Union	20
POWER STEERING GEAR	
Gear to Cross Bar	45 to 60
High Pressure Line Fitting (At Gear)	20 to 30
Oil Return Line Fitting (At Gear)	20 to 30
Pitman Shaft Adjusting Screw Lock Nut	25 to 35
Side Cover Bolts	30 to 35
Adjuster Plug Lock Nut	50 to 75
Coupling Flange Bolt	20 to 35
Return Guide Clamp Screws	8 to 12
Rack Piston Plug	35 to 65

SPECIFICATIONS

MANUAL STEERING	
RATIO	22 to 1
LUBRICANT	SAE 80 Multi-Purpose Gear Lubricant
ADJUSTMENTS	
Worm Bearing Preload	1/4 to 3/4 lbs.
Over-Center Adjustment	7/8 to 1-1/2 lbs.
Pitman Shaft Adjusting Screw End Clearance . . . . .	.002" Max.
POWER STEERING	
RATIO	17.5 to 1
LUBRICATION	
Lubricant	G.M. Hydra-Matic Fluid
Capacity - Complete System	1 Qt.
Capacity - Pump Only	3/4 Qt. Approx.
ADJUSTMENTS	
Ball Preload	1/2 to 3 in. lbs.
Thrust Bearing Preload	1/2 to 2 in. lbs. in excess of initial load
Over-Center Adjustment	3 to 6 in. lbs. in excess of combined ball and thrust bearing preload



SUSPENSION

FOR SERVICE PROCEDURES AND SPECIFICATIONS OF THE UNITS NORMALLY COVERED IN THIS SECTION AND NOT LISTED HEREIN, PLEASE REFER TO THE 1961 F-85 SERVICE MANUAL.

CONTENTS OF SECTION 5

Subject	Page
SPECIFICATIONS	5-2

CHECKING LOWER BALL JOINTS F-85, 88, 588 and 98

To check ball joints the wheel bearings must be properly adjusted and the suspension must be freely suspended. The 88, 588 and 98 should be supported on each side at the front torque box with floor stands. The F-85 should be supported at the frame rails on each side at the front end as indicated in Fig. 1-6. (DO NOT USE A JACK OR STANDS UNDER LOWER CONTROL ARMS.) Place a dial indicator at the lower vertical edge of the wheel as shown in Fig. 5-1. With one hand at the top and the other at the bottom of the tire, moderately rock the wheel at the top and bottom. If more than 1/16" movement appears at the dial indicator, the lower ball joint should be replaced.

CHECKING UPPER BALL JOINTS F-85

To check the upper ball joint, it must be disconnected from the steering knuckle. Install a nut on the ball joint stud, and using an inch pound torque wrench, rotate the stud in a clockwise direction. The torque wrench reading should be 2-30 inch lbs. If the reading is not within these limits, the joint should be replaced.

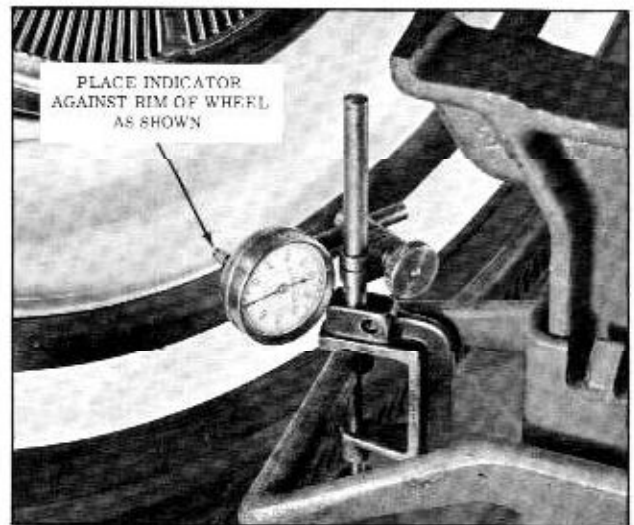


Fig. 5-1 Checking Lower Ball Joint

88, 588 and 98

The same procedure applies to these cars as to the F-85. The torque reading when rotating the ball joint stud should be 10 - 60 inch lbs.

SPECIFICATIONS— FRONT SUSPENSION

FRONT SUSPENSION	
CASTER ANGLE (DEGREES)	-3/4 ^o to -1-3/4 ^o
CAMBER (DEGREES)*	-3/8 ^o to +3/8 ^o
TOE-IN	0 to 1/8
TOE-OUT ON TURNS	23 ^o
BALL JOINT INCLINATION	7 ^o 30'
TREAD	56"
CARRYING HEIGHT	6" to 6-1/2"
*MAXIMUM CAMBER VARIATION BETWEEN EITHER SIDE OF CAR SHOULD NOT EXCEED 1/2 ^o	

TORQUE SPECIFICATIONS

APPLICATION	Ft. Lbs.
FRONT SUSPENSION	
Stabilizer	
Stabilizer Link Nut	13 to 17
Stabilizer Shaft Bracket to Frame Bolts & Nut	25 to 45
Shock Absorber	
Shock Absorber to Cross Bar	15 to 25
Shock Absorber to Lower Control Arm	15 to 25
Control Arms	
Upper Control Arm Pivot Shaft to Cross Bar Bolts & Nuts	60 to 85
Rubber Bumper to Lower Control Arm	25 to 40
Ball Joints	
Ball Joints to Steering Knuckle Nuts	35 to 60
Turning Torque of Upper Ball Joint Stud	2 to 30 in. lbs.
Steering Knuckle	
Steering Knuckle to Backing Plate Bolts	55 to 80
Plain Arm to Steering Knuckle to Backing Plate Bolts	80 to 130
Wheel Bearing Adjustment Nut	(Refer to Wheel Bearing Adj.)
Wheel Nuts	55 to 70
Isolation Mounts to Body Frame	60 to 80
Tie Rod Adjuster	20 to 25

WHEELS AND TIRES

WHEELS	
Rim Diameter (Std.)	13"
Rim Width (Std.)	4-1/2"
Radial Runout	Max. .035"
Lateral Runout	Max. .045"
TIRES & WHEEL ASSEMBLY	
Radial Runout	Max. .053"
Lateral Runout	Max. .081"

TIRE SIZES

All Series	Standard	Optional
Without Factory Installed Air Conditioning	6.50 x 13	7.00 x 13 6.00 x 15*
With Air Conditioning	6.50 x 13	7.00 x 13 6.00 x 15*

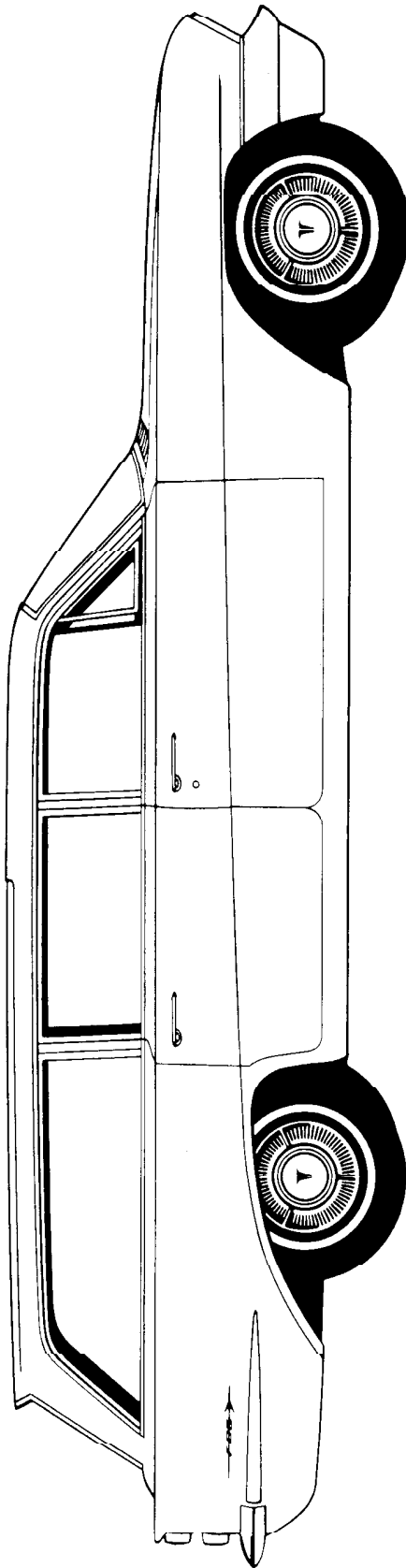
*NOTE: 6.00 x 15 tires are not available as an option on 3045 and 3067 styles.

SPECIFICATIONS—REAR SUSPENSION

REAR SUSPENSION	
Tread	56"
Allowable Out-of-True of Housing on the Vertical (at rear wheel)	1/4° neg. to 1/2° pos.
Allowable Out-of-True of Housing on the Horizontal (at rear wheel)	3/64" to 5/32" toe-out
Carrying Height	
All Except Station Wagons	(curb) 6-1/4" to 6-3/4"
Station Wagons	(curb) 5-7/8" to 6-3/8"

TORQUE SPECIFICATIONS

REAR SUSPENSION	FT. LBS.
Shock Absorber	
Upper Pivot Bolt & Nut	60 to 80
Lower Stud Nut	30 to 46
Rear Suspension Arm	
Upper Arm to Body Bracket	85 to 110
Upper Arm to Axle Housing	85 to 110
Lower Arm to Body Bracket	85 to 110
Lower Arm to Axle Housing	85 to 110
Backing Plate	
Backing Plate Attaching Bolts	45 to 60
Wheel Nuts	55 to 70



DIFFERENTIAL, AXLES and PROPELLER SHAFT

**FOR SERVICE PROCEDURES AND SPECIFICATIONS OF
THE UNITS NORMALLY COVERED IN THIS SECTION
AND NOT LISTED THEREIN, PLEASE REFER TO THE
1961 F-85 SERVICE MANUAL.**

MAINTENANCE RECOMMENDATIONS

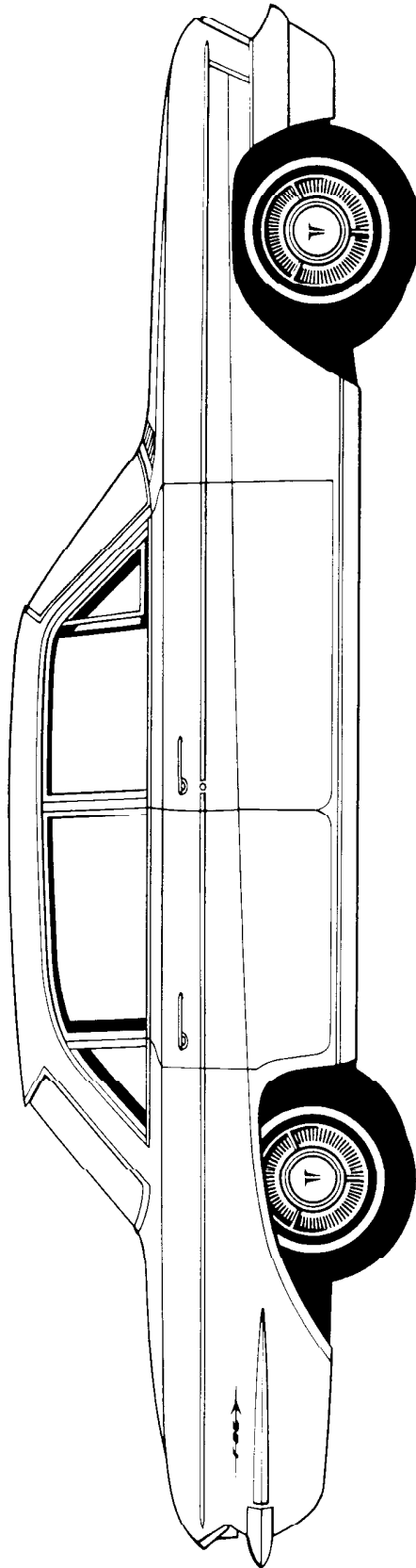
SLIP YOKE

The slip yoke should be lubricated when the propeller shaft is disassembled for other reasons, or at high mileage when "sticking" is detected. Use Special Lubricant Part Number 567196 until lubricant appears at the rear of the slip yoke. A grease fitting plug is provided for lubrication.

UNIVERSAL JOINTS

Universal joints, under both hot and cold weather conditions, no longer require a scheduled lubrication interval.

The needle bearings in the universal joints are prepacked with lubricant at the time of manufacture.



BRAKES

FOR SERVICE PROCEDURES AND SPECIFICATIONS OF THE UNITS NORMALLY COVERED IN THE SECTION AND NOT LISTED HEREIN, PLEASE REFER TO THE 1961 F-85 SERVICE MANUAL.

FRONT WHEEL BEARINGS

Front Wheel Bearings should be repacked when brake maintenance necessitates removal of the front drums. Use a sodium soap, fine fiber grease. Adjust Wheel Bearings as follows:

1. Tighten adjusting nut 18-20 ft. lbs. while rotating wheel, to insure that all parts are properly seated and threads free.
2. Back off 1/2 turn.
3. Retighten nut to 10-12 ft. lbs.
4. Back off nut 1/6 turn minimum to 1/4 maximum and install cotter pin.

TURNING DRUMS

If irregularities in the braking surface of the drum cannot be removed with fine cut emery cloth

or out of round exceeds .010" (total indicator reading), the drum should be turned to .060" greater than the original inside diameter; that is, after being turned, the diameter should be 9.560". OVERSIZE BRAKE LININGS MUST BE USED WITH TURNED DRUMS.

PARKING BRAKE

Adjustment

1. Release parking brake.
2. Adjust service brakes if the brake pedal travel from the released to the fully applied position exceeds 4".
3. Adjust rear cables by first tightening the equalizer adjusting nut until wheels cannot be turned, then loosen the equalizer adjusting nut nine full turns. Check operation.

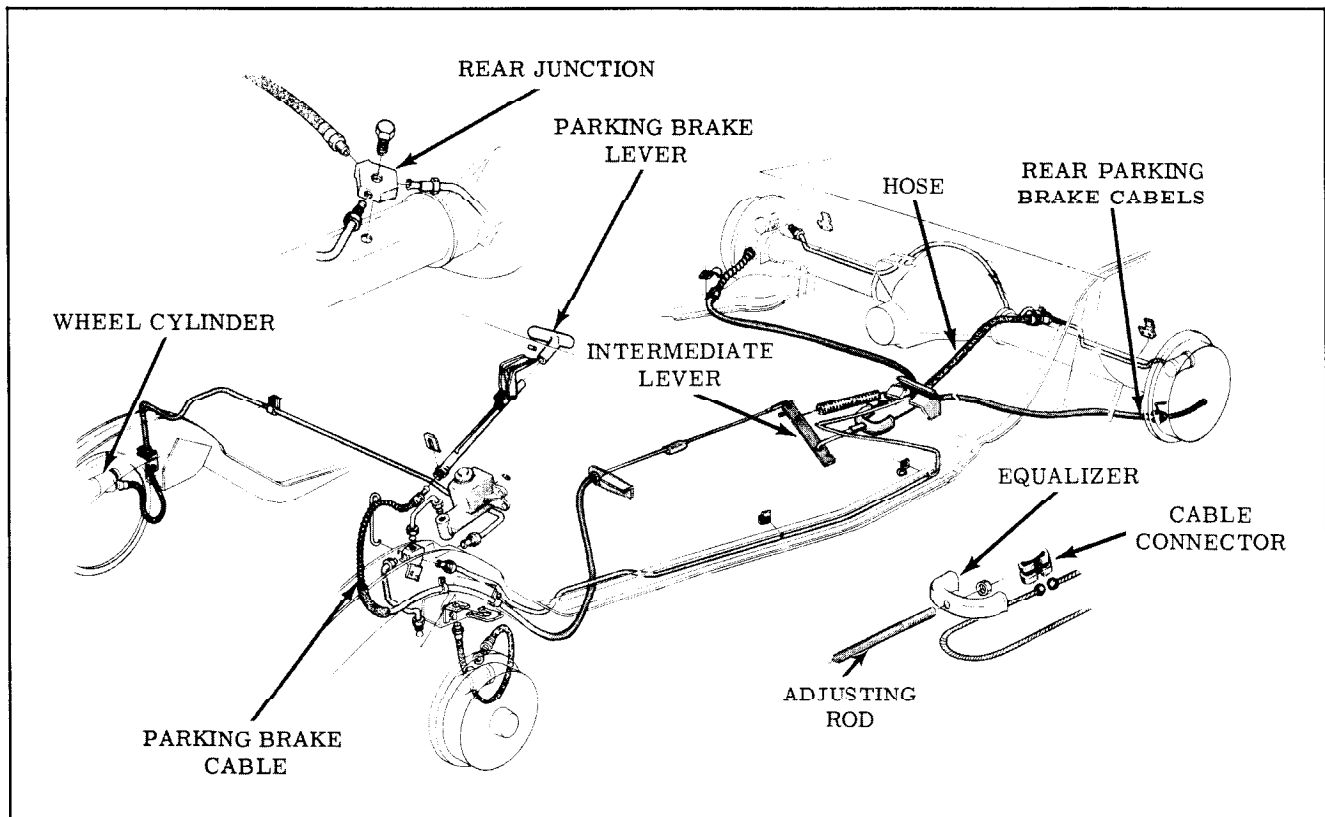
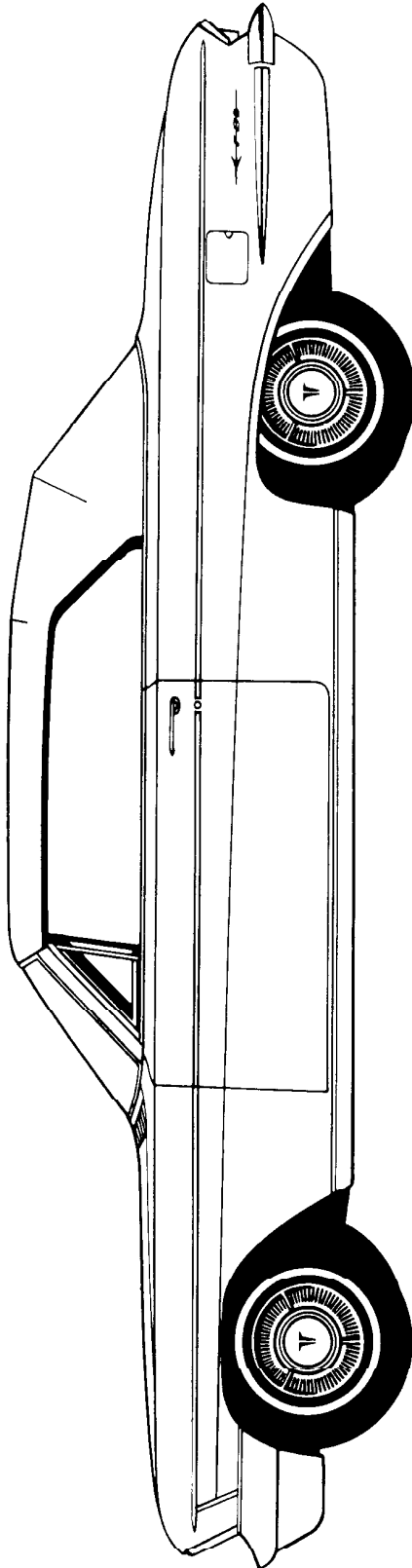


Fig. 7-1 Brake System



ENGINE & CARBURETION

FOR SERVICE PROCEDURES AND SPECIFICATIONS OF THE UNITS NORMALLY COVERED IN THIS SECTION AND NOT LISTED HEREIN, PLEASE REFER TO THE 1961 F-85 SERVICE MANUAL.

CONTENTS OF SECTION 8

Subject	Page	Subject	Page
FAN CLUTCH	8-1	CARBURETION	8-2
		SPECIFICATIONS	8-2

FAN CLUTCH

The fan clutch used on the F-85 Air Condition equipped cars is a sealed unit and is serviced only as an assembly.

The speed of the fan is controlled by a special fluid sealed in the clutch assembly. The fluid is of such consistency that fan r.p.m. is controlled near pulley r.p.m. until a predetermined slip speed is reached. Then due to air resistance, the fan

speed remains constant due to slippage within the clutch, regardless of the engine r.p.m. above this point.

CARBURETION

2GC-4GC

The 1962 2GC and 4GC carburetors have incorporated a filtered air outlet located at the top of the air horn to utilize clean air for the choke.

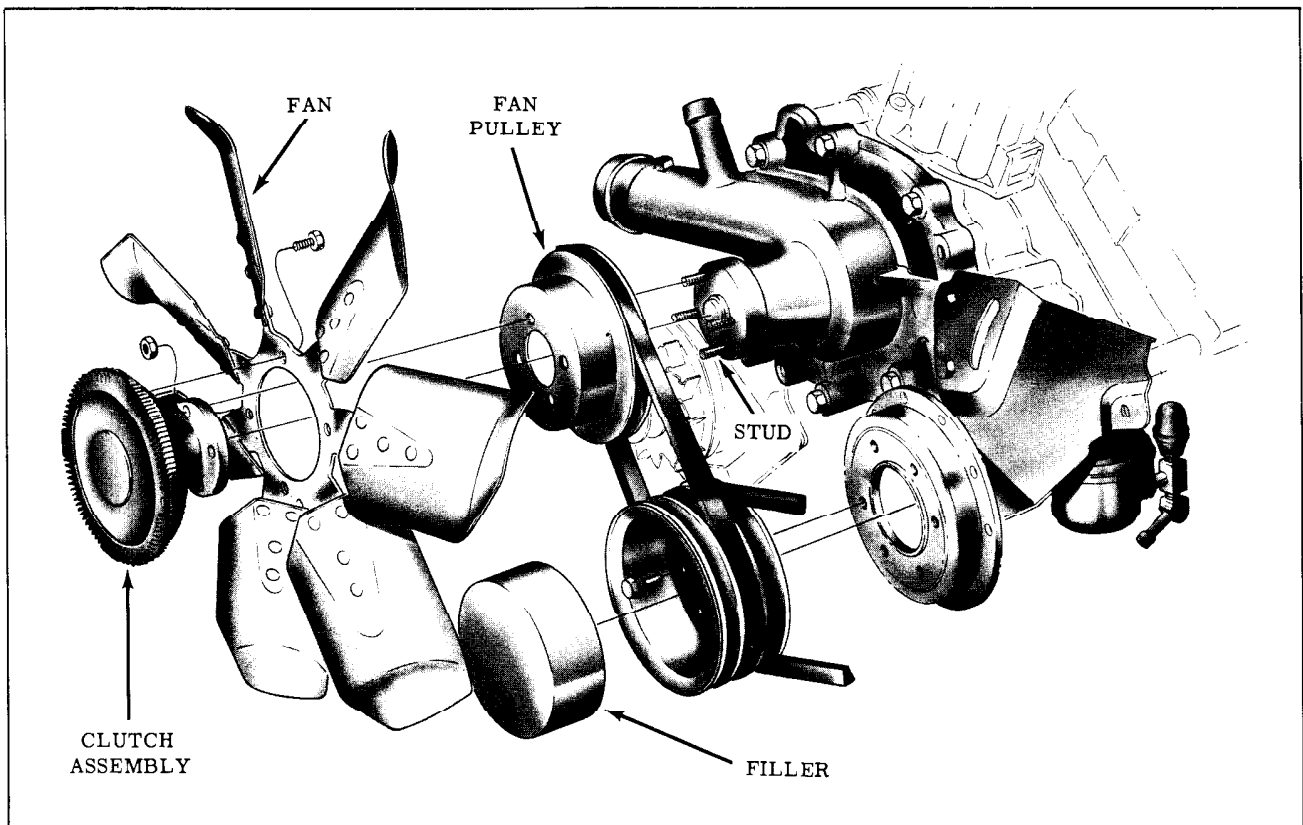


Fig. 8-1 Engine Fan Clutch

Three new specification changes are incorporated in the 4GC. They are the Vacuum Assist Spring adjustment which is now 29/32" and the

Secondary Float drop which is now 1-3/8". The Unloader adjustment is now 3/16". All choke settings are index.

ENGINE SPECIFICATIONS

CYLINDER BLOCK

Engine Type	90° V-Type
Number of Cylinders	8
Bore and Stroke	
All Series	3.500" x 2.8"
Piston Displacement	
All Series	215 cu. in.
Compression Ratio	4 Bbl Std. 10.25:1, 2 Bbl Std. 8.75 - 1
Firing Order	1-8-4-3-6-5-7-2
Main Bearing Bore (Inside Diameter)	3.188" - 3.189"

CRANKSHAFT

Diameter - Main Bearing Journal	
All	2.299" - 2.298"
Width - Main Bearing Journal, including Fillets	
No. 1	1.052"
No. 3	1.062" - 1.064"
Nos. 2 and 4	1.055" - 1.065"
No. 5	1.085" - 1.095"
Diameter - Connecting Rod Bearing Journal	1.999" - 2.000"
Width - Connecting Rod Bearing, including Fillets	1.698" - 1.702"
Length - Overall Crankshaft	23.510"
Diameter - Of Oil Holes in Crankshaft . . . . .	.2188"
Clearance - Crankshaft End Thrust . . . . .	.004" - .008"

MAIN BEARINGS

Oil Clearance - Crankshaft Vertical	
All . . . . .	.0008" - .0024"
Width - Bearing Shaft	
Nos. 1, 2, 4 and 5 . . . . .	.797" - .807"
No. 3	1.056" - 1.058"

CONNECTING RODS

Length - Center to Center	5.658" - 5.662"
Diameter - Connecting Rod Bore	2.1247" - 2.1252"
Diameter - Pin Bore . . . . .	.8742" - .8737"
Bearing Clearance - Crankshaft (Vertical) . . . . .	.0002" - .0022"
Clearance - End to Crankshaft . . . . .	.006" - .014"

PISTONS

Diameter - Nominal Outside	3.500"
Length Overall	3.060"
Length from Top of Piston to Pin Center	1.880"
Clearance (At Thrust Surface) Selective . . . . .	.0005" - .0011"
Weight - Less Pins and Rings	14.779 oz.
Taper from Top of Skirt to Bottom . . . . .	.0000" - .0005" Larger at Bottom
Ring Width (2 Compression) . . . . .	.081"
(1 Oil) . . . . .	.188"

ENGINE SPECIFICATIONS (Cont'd.)

PISTON PINS

Diameter . . . . .	.8747" - .8750"
Length Overall	2.860" - 2.880"
Pin to Piston Clearance . . . . .	.0003" - .0005" Loose
Pin to Rod Clearance . . . . .	.0009" - .0014" Tight

PISTON RINGS

Number of Compression Rings (Per Piston)	2
Width, Compression Ring Top and Bottom . . . . .	.0780" - .0785"
Gap Clearance Compression Rings . . . . .	.010" - .020"
Clearance in Groove, Compression Rings . . . . .	.002" - .004"
Number of Oil Rings (Per Piston)	1
Gap Clearance, Oil Ring . . . . .	.015" - .055"
Clearance - Oil Ring to Piston Groove . . . . .	.0005" - .0055"

CAMSHAFT

Bearing Journal Diameters

No. 1	1.785" - 1.786"
No. 2	1.755" - 1.756"
No. 3	1.725" - 1.726"
No. 4	1.695" - 1.696"
No. 5	1.665" - 1.666"
Width (Including Chamfers) . . . . .	.750"
Journal Clearance in Bushing	
No. 1 . . . . .	.0005" - .0025"
Nos. 2, 3, 4 and 5 . . . . .	.0005" - .0035"
End Thrust . . . . .	.011" - .059"

VALVES - INTAKE

Diameter - Head	1.517" - 1.527"
Diameter - Stem . . . . .	.3427" - .3432"
Angle - Valve Seat	45°
Width - Valve Seat . . . . .	.037" - .075"
Overall Length	(4 Bbl-4.943") (2 Bbl-4.863")
Clearance in Guide . . . . .	.0010" - .0025"
Lash	Hydraulic

VALVES - EXHAUST

Diameter - Head	1.348" - 1.358"
Diameter - Stem . . . . .	.3422" - .3427"
Overall Length	(4 Bbl-4.941") (2 Bbl-4.861")
Angle - Valve Seat	45°
Width - Valve Seat . . . . .	.037" - .075"
Clearance in Guide . . . . .	.0015" - .0030"
Lash	Hydraulic

VALVE GUIDES

Diameter - Inside Intake . . . . .	.344" - .345"
(Outside Intake) . . . . .	.657" - .658"
Diameter - Inside Exhaust . . . . .	.344" - .345"
(Outside Exhaust) . . . . .	.657" - .658"
Length-Overall	2.390"

ENGINE SPECIFICATIONS (Cont'd.)

VALVE SPRINGS

Length - Free	2.150"
Diameter - Wire . . . . .	.180" - .184"
Diameter - Inside Top . . . . .	.760"
Diameter - Outside Bottom	1.465" 1.479"
Load @ 1-3/4	70-80 Lbs.
Load @ 1.350	160-175 Lbs.

VALVE LIFTERS

Diameter - Body . . . . .	.8422" - .8427"
Length - Overall	1.997" - 2.007"
Clearance in Boss Selective . . . . .	.0008" - .0023"

CAMSHAFT SPROCKET

Width . . . . .	.521" - .529"
Pitch . . . . .	.375"
Number of Teeth	40

CRANKSHAFT SPROCKETS

Width of Sprockets . . . . .	.521" - .529"
Overall Width of Gear	1.774"
Pitch . . . . .	.375"
Number of Teeth	20

TIMING CHAIN

Width . . . . .	.875"
Number of Links	54
Pitch . . . . .	.375"

FLYWHEEL

No. of Teeth on Starter Gear	156
No. of Teeth on Starter Pinion	9

LUBRICATION SYSTEM

Crankcase Capacity, Drain and Refill	4 Qts.
Drain and Refill with Filter Change	5 Qts.
Oil Pump	
Clearance - Pressure Relief Valve in Bore . . . . .	.0025" - .005"
Clearance - End Gears . . . . .	.0015" - .0075"

COOLING SYSTEM

Capacity	10.5 Qts.
For Heater, Add	1.5 Qts.
For Air Conditioning, Add . . . . .	.5 Qt.
Pressure Cap	
With or Without Air Conditioning	15 Lbs.
Thermostat	170°

TORQUE SPECIFICATIONS

NOTE: Before threading bolts into aluminum, some must be coated with Part No. 980131 lubricant, some with engine oil and others with sealer. Consult the component part of the text for correct installation.

Application Ft. Lbs.

CRANKSHAFT AND CONNECTING RODS

Connecting Rod Bearing Cap Bolts	30 to 35
Crankshaft Bearing Cap Bolts (All)	65 to 70
Crankshaft Balancer	140 to 160
Fan Driving Pulley to Balancer	15 to 20
Fan and Driven Pulley to Hub	15 to 20

ENGINE MOUNTS

Front Mount to Block Bolts	50 to 55
Front Mount to Crossbar Nuts	35 to 50
Rear Mount to Transmission	30 to 40
Rear Mount to Cross Support	20 to 34

HEAD AND VALVE MECHANISM

Valve Cover Bolts	3 to 5
Cylinder Head to Block Bolts	45 to 55
Rocker Shaft Bracket to Head	45 to 55
Spark Plugs	12 to 17

FLYWHEEL AND DAMPER

Flywheel to Crankshaft Bolts	85 to 95
Clutch to Flywheel	14 to 17
Damper to Flywheel	17 to 22

CLUTCH HOUSING

Clutch Lower Housing to Upper Housing Bolts	4 to 7
Clutch Housing to Block Bolts	30 to 35
Flywheel Cover to Housing Bolts	20 to 25

FRONT COVER AND WATER PUMP

Cover to Block Bolts	15 to 20
Water Pump to Front Cover	6 to 8
Oil Pressure Switch to Filter Valve Cap	10 to 15

FUEL AND VACUUM PUMP

Fuel Pump to Front Cover Bolts	20 to 35
Fuel Pump Eccentric to Camshaft	40 to 45

TORQUE SPECIFICATIONS (Cont'd.)

MANIFOLD

Intake Manifold Gasket Clamp Bolts (2-5/16)	10 to 15
Intake Manifold to Head Bolts	25 to 30
Exhaust Manifold to Head Bolts and Nuts	18 to 24
Water Outlet to Intake Manifold	20 to 25
Carburetor to Intake Manifold	14 to 17

OIL PAN, PUMP AND FILTER

Oil Pan Bolts	6 to 15
Oil Pan Drain Plug	30 to 35
Pump Cover to Engine Front Cover	10 to 15
Pump Screen to Engine Block	10 to 15
Filter Assembly to Front Cover	30 to 35
Filter Assembly	10 to 15
Oil Pressure Valve Cap	30 to 35

ENGINE PERFORMANCE AND DIAGNOSIS

CONTENTS OF SECTION 9

Subject	Page	Subject	Page
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IGNITION POINTS	9-1	DIAGNOSIS	9-2
DWELL ANGLE	9-2	SPECIFICATIONS	9-3
IGNITION TIMING	9-2	TORQUE SPECIFICATIONS	9-4

To maintain the most satisfactory performance of the engine, it is recommended that every 10,000 miles, the following maintenance be performed; clean, check and gap spark plugs. Check and adjust if necessary, ignition points, timing, idle speed and fuel mixture. After work is performed, the car should be road tested.

Spark Plug Gap . . . . .	.030"
Ignition Timing 2 Bbl. S.M.T., 5 ^o BTDC at 850 r.p.m.	
2 Bbl. H.M.T. and all 4 Bbl.	
.	7-1/2 ^o BTDC at 850 r.p.m.
Dwell Angle	30 ^o
Idle Speed	H.M.T. 500
	S.M.T. 550
All cars with air-conditioning	550

Fast Idle Speed	
4 bbl	1600 r.p.m.

For diagnosis of abnormal engine operating conditions consult the condition and cause chart.

SPARK PLUGS

1. Remove foreign material from around spark

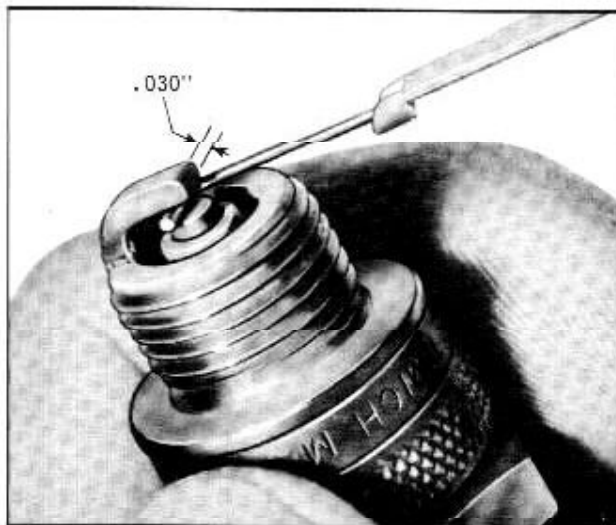


Fig. 9-1 Adjusting Spark Plug Gap

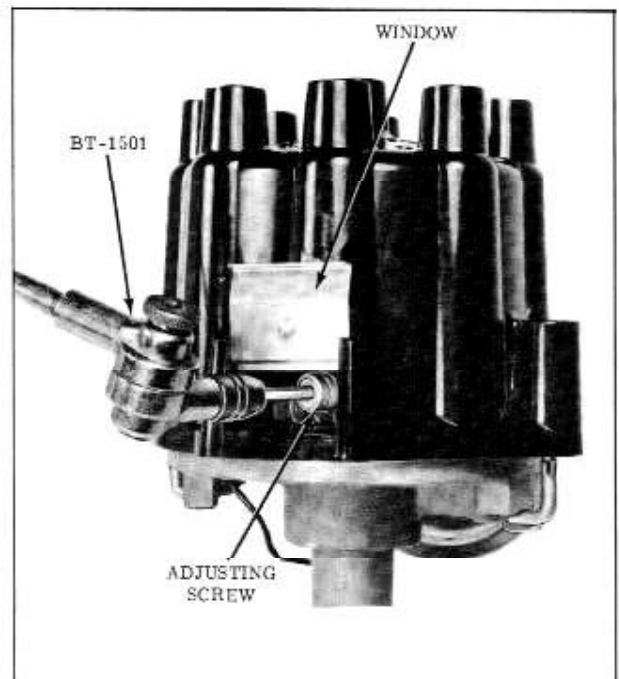


Fig. 9-2 Adjusting Dwell

plugs and remove plugs.

2. Clean exterior of plugs and inspect for cracks or excessively burned electrodes.
3. Clean serviceable plugs with an abrasive type cleaner, file center electrode flat and gap to .030" with a round wire feeler gauge. (Fig. 9-1)
4. Place a coating of 980131 lubricant on plug threads and install with a new gasket by turning in approximately 3 turns by hand, then torque 12-17 ft. lbs.

IGNITION POINTS

1. Inspect contact points for excessive burning and replace if necessary. Clean, etc.
2. Remove scale from contact points with a fine cut contact point file. Do not attempt to remove all roughness. File contacts flat.

3. Apply a thin film of Delco-Remy cam and ball bearing lubricant or equivalent to the breaker cam and the contact set rubbing block.

DWELL ANGLE

1. With the engine idling at 550 r.p.m. for S.M.T. and at 500 r.p.m. H.M.T., use Tool BT-1501 and adjust the dwell to 30°.

IGNITION TIMING

1. The timing marks are located on the engine front cover, 0°, 5° and 10°. (Fig. 9-3)

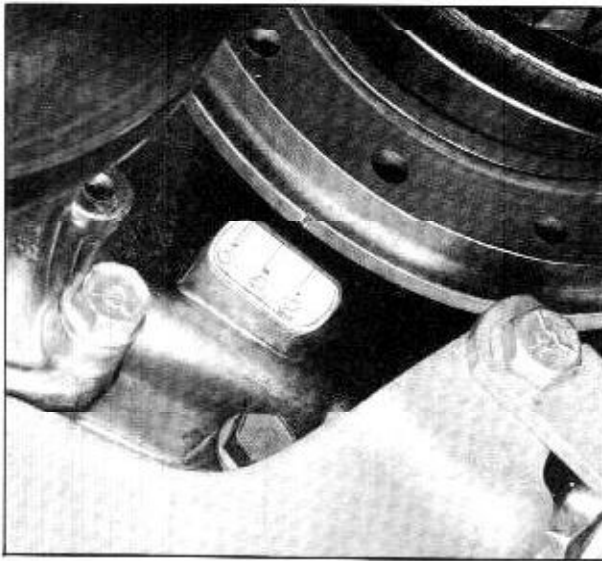


Fig. 9-3 Ignition-Timing

2. Disconnect the vacuum line from the distributor and cover the end.
3. Increase engine speed to 850 r.p.m. and adjust timing to specification by loosening the distributor clamp and rotating the distributor. Then tighten clamp bolt.

NOTE: If a tuned engine detonates with this setting, the cause is low octane fuel or carbon build-up in the combustion chamber. If these factors are not corrected, the timing should be reduced 2-1/2°. In areas that have an extra high octane, the timing may be advanced slightly providing spark knock is not encountered.

4. Remove cover from vacuum line and reconnect to distributor.
5. Adjust idle speed.

SYNCHROMESH			HYDRA-MATIC	
	Gear Position	RPM	Gear Position	RPM
With* Air Conditioning	N	550	"DR"	550
Without Air Conditioning	N	550	"DR"	500

*With A/C off and "Carb-Airator" Valve closed

ENGINE CONDITIONS	POSSIBLE CAUSES
Hard Starting	Fuel System, Timing, Distributor, Battery, Starter, Ignition Coil, Wiring
Rough Idle	Carburetion - Spark Plugs, Engine Valves - Leaking Intake Manifold
Stalls on Idle	Idle Speed, Fuel Mixture, Choke, Intake Manifold Leak
Poor Acceleration	Timing, Fuel System, Compression
Cuts Out On Acceleration	Carburetion, Ignition System
Miss On Acceleration	Spark Plugs, Points, Carburetor, Wiring Condenser
Steady Low Top Speed	Fuel Lines, Fuel Filter, Fuel Pump, Gas Tank Vent, Timing, Distributor, Air Filter, Low Compression, Exhaust System Clogged, Lifter
Surges On Steady Throttle	Fuel Line, Fuel Filter, Gas Tank Vent, Fuel Pump, Carburetion
High Speed Miss	Spark Plugs, Ignition Points, Fuel System, Valve Mechanism, Ignition Coil, Wiring
Valve Noise	Incorrect Oil Level In Crankcase, Lifters Dirty, Worn Rocker Arms, Worn Lifters, Oil To Rocker Arms Restricted

SPECIFICATIONS

CHOKE SETTING (Hydra-Matic) Index
 (Synchromesh) Index

DISTRIBUTOR (1110975) S.M.T. (1110992) H.M.T.

Cam Angle Range 28° to 32° (Adjust to 30°)
 Contact Point Opening016"
 Contact Arm Spring Tension 19 to 23 oz.
 Condenser Capacity18 to .23 Mfd.
 Vacuum Advance Per Inch of Vacuum
 5" to 7" Start
 15" to 17" (Max.) 12
 Mechanical Advance Per Distributor r.p.m.
 500 r.p.m. 0° to 2°
 1000 r.p.m. 5° to 7°
 2100 r.p.m. 11° to 13°
 Firing Order 1-8-4-3-6-5-7-2

IGNITION TIMING -- 850 R.P.M. - VACUUM DISCONNECTED

Normal Setting 2 Bbl. SMT 5°, 2 Bbl HMT and all 4 Bbl-7 1/2° BTDC

SPARK PLUGS

Make AC
 Type 4 Bbl-45FF, 2 Bbl-46FFX
 Body 13/16" Hex
 Spark Gap030"
 Thread 14MM

BATTERY SPECIFIC GRAVITY

Half Charge 1.215 @ 80°
 Full Charge 1.260-1.280 @ 80°

IGNITION RESISTOR (IN HARNESS)

1.75-1.85 Ohms.

COIL

Primary Resistance 1.28 to 1.42 Ohms.
 Secondary Resistance 7200 to 9500 Ohms.

GENERATOR

Charging Rate Cold - at 14.0 Volts, 2670 r.p.m. 35 Amps.
 Charging Rate Hot (Controlled by Current Regulator)
 Field Current Draw at 12 Volts, 80°F 1.69 to 1.79 Amps.
 Brush Spring Tension 28 Oz.

GENERATOR REGULATOR (MODEL 1119253)

Cut Out Relay
 Air Gap020"
 Point Opening020"
 Closing Voltage 11.8 to 13 Volts (Adjust to 12.8 Volts)
 Voltage Regulator
 Air Gap060"
 Voltage Setting Refer to Electrical Section
 Current Regulator
 Air Gap075"
 Current Setting 32 to 37 Amps. (Adjust to 35 Amps.)

NOTE: Operating temperature shall be assumed to exist after not less than 25 minutes of continuous operation with a charge rate of 1 to 10 amperes.

TORQUE SPECIFICATIONS

APPLICATION	TORQUE
Battery Hold-Down Nuts	1.5 to 2.5 ft. lbs.
Connecting Strap to Starting Motor Bolt	6 to 8 ft. lbs.
Distributor Clamp to Front Cover Bolt	11 to 14 ft. lbs.
Distributor Air Baffle Nut	6 to 8 ft. lbs.
Generator to Generator Bracket Nut	14 to 17 ft. lbs.
Generator Bracket Brace and Battery Ground Strap to Head Nut	25 to 30 ft. lbs.
Generator to R.H. Exhaust Manifold Bolts	14 to 17 ft. lbs.
Generator to Generator Brace Bolt	14 to 17 ft. lbs.
Generator Bracket and Brace to Timing Chain Cover Bolt	30 to 35 ft. lbs.
Generator Terminal Nuts	2 to 4 ft. lbs.
Ignition Coil to Intake Manifold Bolts	20 to 25 ft. lbs.
Spark Plugs	12 to 17 ft. lbs.
Starter Motor to Cylinder Block Bolts	30 to 35 ft. lbs.
Ignition Coil Terminal Nuts	15 to 20 oz. in.
Intake Manifold to Head Bolts	25 to 30 ft. lbs.
Exhaust Manifold to Head Bolts and Nuts	18 to 24 ft. lbs.

SYNCHROMESH CLUTCH

**FOR SERVICE PROCEDURES AND SPECIFICATIONS OF
THE UNITS NORMALLY COVERED IN THIS SECTION
AND NOT LISTED HEREIN, PLEASE REFER TO THE
1961 F-85 SERVICE MANUAL.**

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Subject	Page
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SPECIFICATIONS	10-4

AXLE RATIOS AND SPEEDOMETER DRIVEN GEARS

TRANSMISSION	AXLE RATIO	GEAR RATIO	TIRE SIZE	SPEEDOMETER DRIVEN GEAR NO. OF TEETH	DRIVE GEAR
SYNCHROMESH	3.08	40:13	6:00 x 15	19 Blue	8
	3.08	40:13	7:00 x 13	19 Blue	8
	3.08	40:13	6:50 x 13	20 Red	8
	3.23	42:13	6:00 x 15	20 Red	8
	3.36	37:11	6:00 x 15 (17 Styles)	21 Green	7
	3.36	37:11	6:00 x 15	21 Green	8
	3.36	37:11	6:50 x 13	19 Blue	7
	3.36	37:11	7:00 x 13	19 Blue	7
HYDRA-MATIC	3.08	40:13	6:50 x 13	22 Brown	9
	3.08	40:13	7:00 x 13	22 Brown	9
	3.23	42:13	6:00 x 15	22 Brown	9
	3.23	42:13	6:50 x 13	23 Red	9
	3.23	42:13	7:00 x 13	23 Red	9
	3.36	37:11	6:50 x 13	24 Blue	9
	3.36	37:11	7:00 x 13	24 Blue	9
	3.36	37:11	6:00 x 15	23 Red	9

6:00 x 15 TIRES ARE NOT AVAILABLE ON 45 OR 67 STYLES

REAR AXLE RATIOS

Rear axle ratio code letters are stamped on the differential cover as shown in Fig. 1-5. They are A, B, and C followed by a number or numbers. The letters designate the ratio as follows A-3:08, B-3:23 and C-3:36.

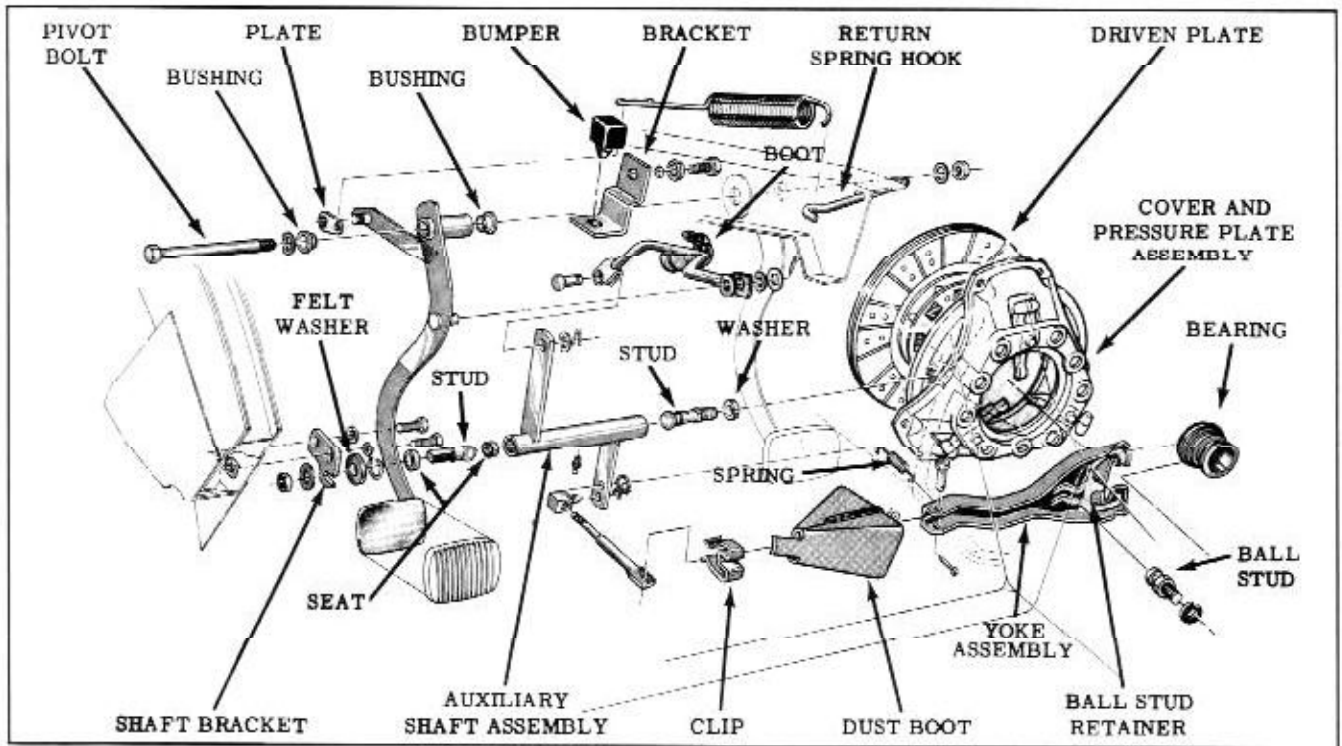


Fig. 10-1 Exploded View of Clutch Mechanism

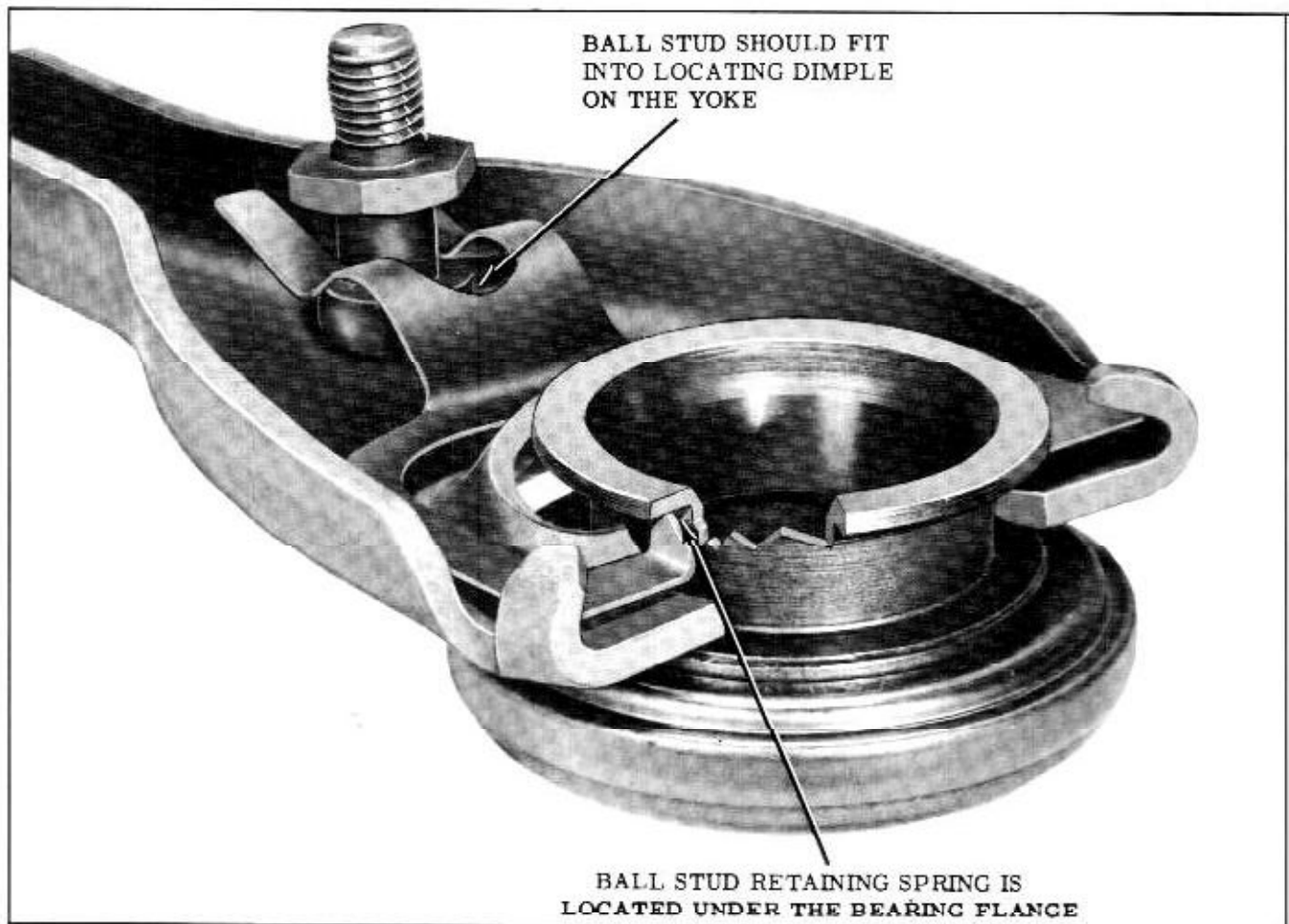


Fig. 10-2 Installing Clutch Release Bearing

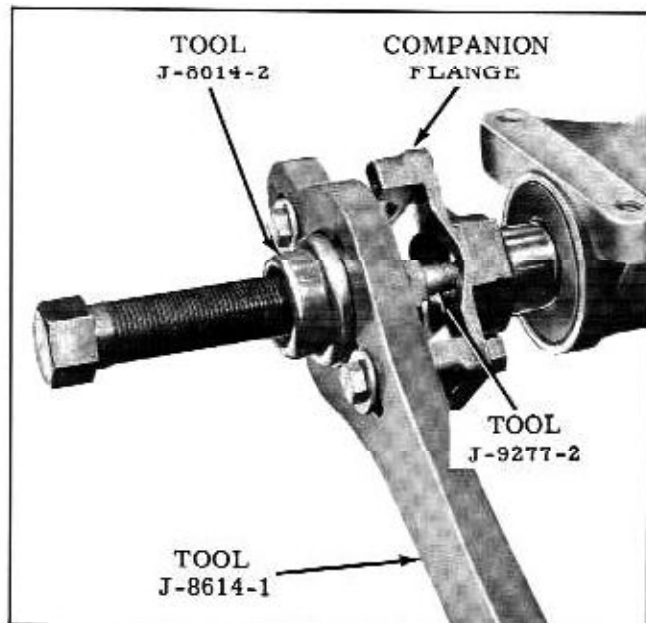


Fig. 10-3 Removing Companion Flange

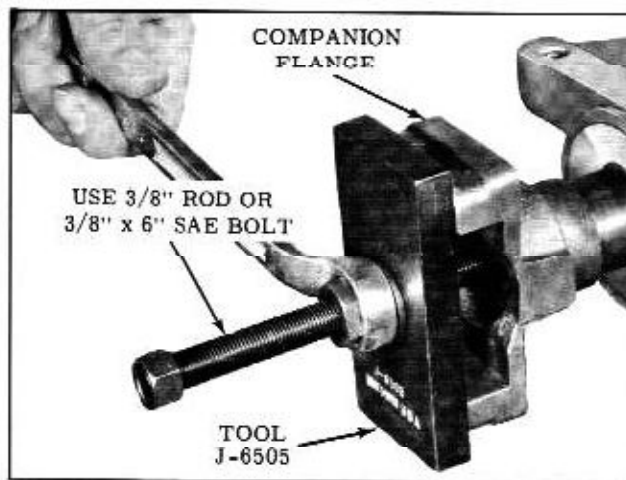


Fig. 10-4 Installing Companion Flange

panion flange and the transmission output shaft.

The companion flange must be removed with a puller as shown in Fig. 10-3.

When installing the companion flange it must be installed with the tools as shown in Fig. 10-4.

The companion flange MUST NOT be driven on the shaft.

COMPANION FLANGE

Removal and Installation

There is an interference fit between the com-

CLUTCH SPECIFICATIONS

CLEARANCE	
Hub and Splines on Clutch Shaft . . . . .	.00175" - .005"
DISC FACINGS	
Diameter - Inside	6"
Diameter - Outside	9-1/2"
Number Used	2
Thickness . . . . .	.125"
DRIVEN DISC ASSEMBLY	
Number Used	1
Overall Thickness (Clutch Engaged)	0.300"
Hub Dimensions	1-1/8 - 10 Spline
PEDAL FREE TRAVEL	7/8" - 1"
PEDAL HEIGHT	Approx. 6-1/2"
PRESSURE SPRINGS	
Number Used	6
RELEASE BEARING	
Type	Sealed Ball
CLUTCH PILOT BEARING	
Type	Oil Impregnated Bushing

TORQUE SPECIFICATIONS

Application	Ft. Lbs.
Propeller Shaft to Companion Flange "U" Bolts	14 to 18
Companion Flange to Output Shaft	25 to 35
Rear Mount to Rear Bearing Retainer	30 to 40
Rear Mount to Cross Bar	20 to 35
Cross Bar to Body Frame	20 to 35
Transmission to Clutch Housing	30 to 35
Speedometer Cable to Transmission	3 to 4
Lock Plate to Rear Bearing Retainer	10 to 15
Rear Bearing Retainer to Transmission Case	28 to 33
Top Cover to Transmission Case	10 to 12
Main Drive Gear Bearing Retainer to Case	17 to 20
Equalizer Stud to Block	30 to 35
Equalizer Bracket to Frame	14 to 17
Clutch to Flywheel Bolts	14 to 17
Clutch Release Ball Stud	35 to 40
Clutch Housing to Block Bolts	30 to 35
Rear Engine Mount to Transmission	30 to 40
Cross Bar to Body Frame	20 to 34
Rear Engine Mount to Cross Bar	20 to 34
Transmission to Housing	40 to 45
Speedometer Cable to Transmission	3 to 4
Propeller Shaft "U" Bolts to Companion Flange	14 to 18

CHASSIS SHEET METAL AND BUMPERS

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HOOD ASSEMBLY

Removal and Installation

Prior to removal of the hood, it is suggested that adjoining areas be covered to prevent damage.

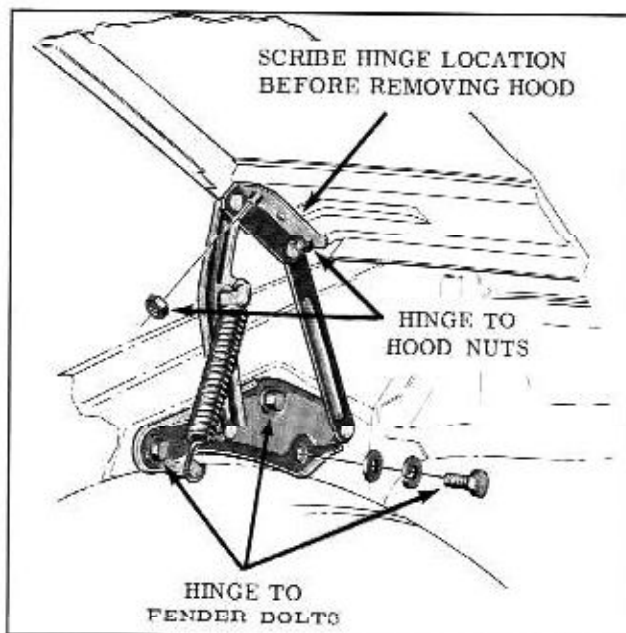


Fig. 11-1 Hood Hinge and Spring

With the hood supported, scribe the hinge position on the hood reinforcement and remove the two hinge hood nuts from each hinge. (Fig. 11-1)

When installing hood, position the hinges to the scribed lines. If further adjustment is necessary,

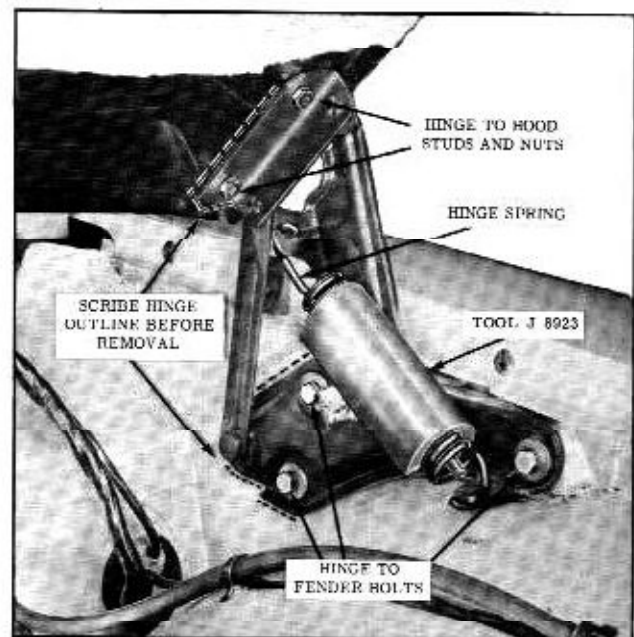


Fig. 11-2 Hood Hinge or Spring Removal

follow the hood and hinge alignment procedure.

HOOD HINGE SPRING

Removal and Installation

To remove the spring from the hood hinge, raise hood approximately 12" and place Tool J-8923-1 over the spring. (Fig. 11-2) Raise hood and the spring will unhook. Block hood in this position and remove spring.

When installing a new spring, stretch the spring and place Tool J-8923-1 over the spring. Position spring (with tool in place) on hinge. Lower hood slightly to expand spring, then remove tool.

HOOD HINGE

Removal and Installation (With Spring Removed)

Place protective covers on fender and grille at hinge area. Mark the hinge outline on wheelhouse and hood to facilitate alignment. (Fig. 11-2)

Support the hood at front and rear and remove the two hinge to hood nuts then remove the hinge to wheelhouse bolts.



Fig. 11-3 Hood and Fender Clearances

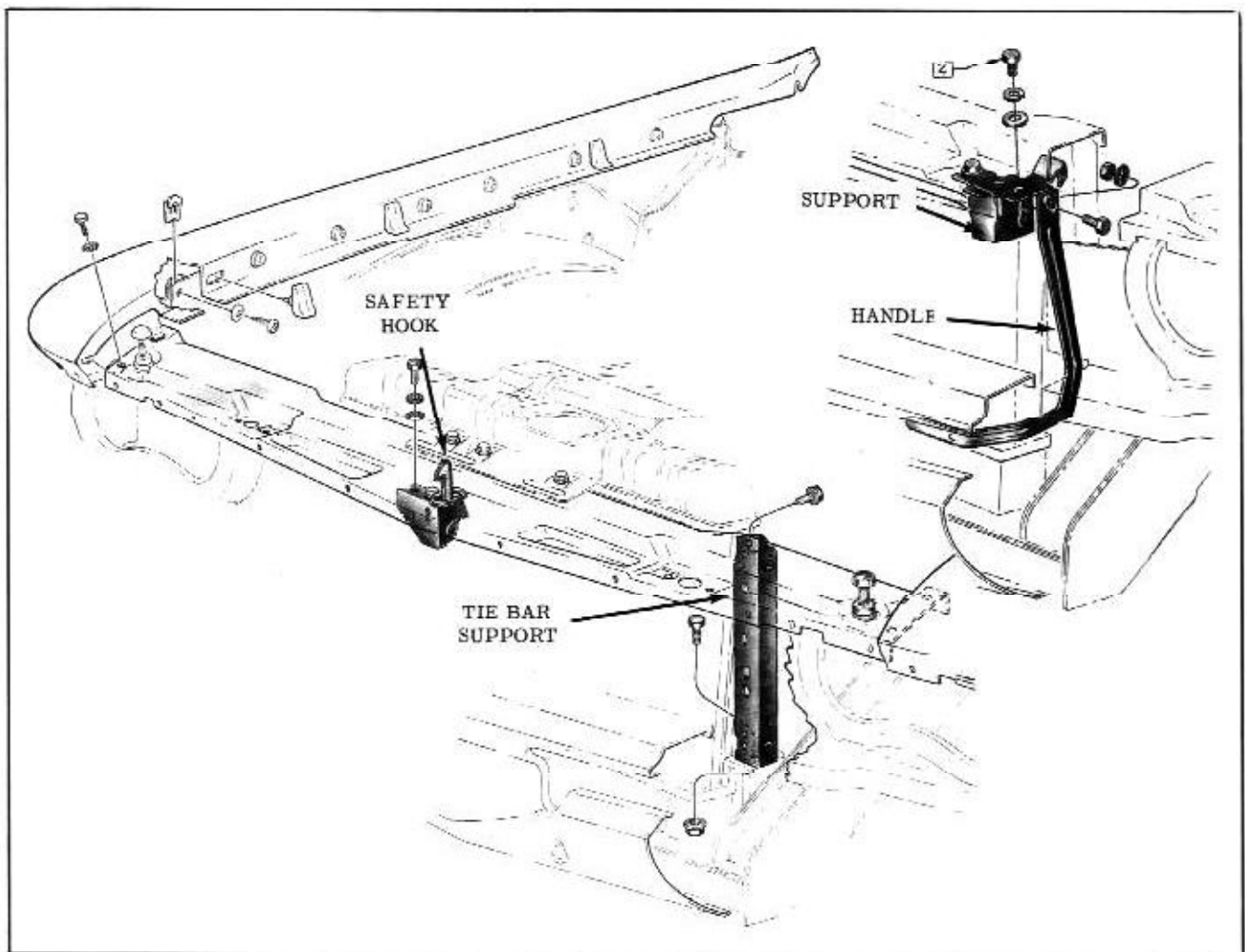


Fig. 11-4 Hood Latch Mechanism

Using the scribe marks as a guide, install the hinge to wheelhouse bolts and torque 15-20 ft. lbs. Torque hinge to hood nuts 12-16 ft. lbs. Check hood alignment after hinge installation. The hinge is provided with elongated holes for alignment and if necessary, shift hood to properly align. (Fig. 11-3)

HOOD LATCH ASSEMBLY (Fig. 11-4)

The latch assembly is bolted to the fender tie bar and is serviced and adjusted as an assembly. The latch assembly should be lubricated periodically with lubriplate. The latch assembly is actuated by a handle. (Fig. 11-4)

HOOD MOLDINGS, LETTERS, INSULATOR AND PILOT BOLT (Fig. 11-5)

The moldings are attached by nuts and the letters

by clips, both accessible on the underside of the hood. To gain access to the top hood moldings make small slits in the insulator. The hood pilot bolt is threaded into a caged nut and should be adjusted to fully engage the latch assembly after the rubber bumpers have been adjusted to give proper hood and fender alignment at the front. The pilots may be adjusted slightly right or left to give proper lateral clearance when the hood is closed.

FENDER ASSEMBLY

Removal

Before removing a fender, painted areas and moldings adjacent to the fender should be covered for protection against scratches.

1. Disconnect both headlamp connectors and remove the main wiring harness connector from

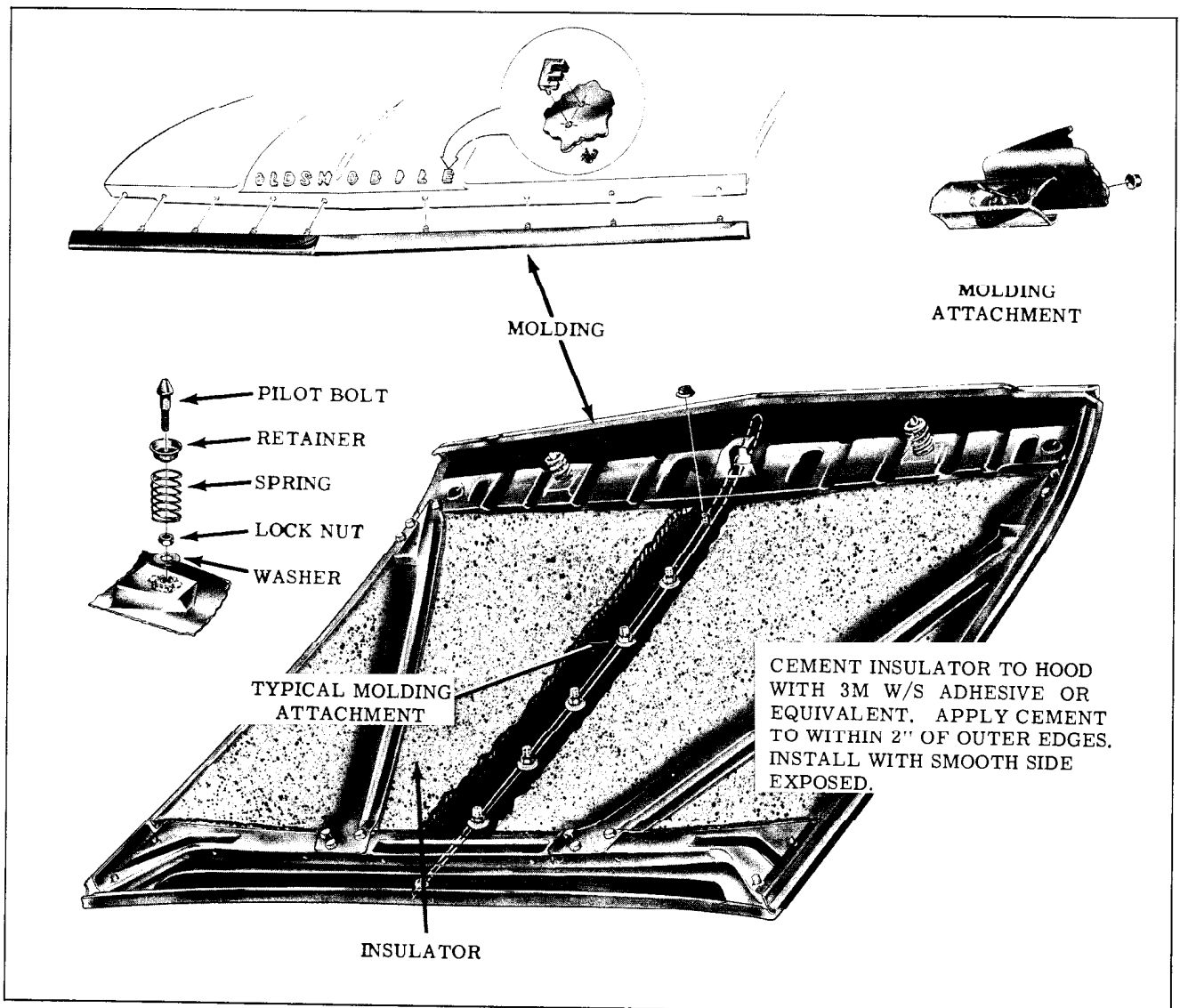


Fig. 11-5 Hood Assembly

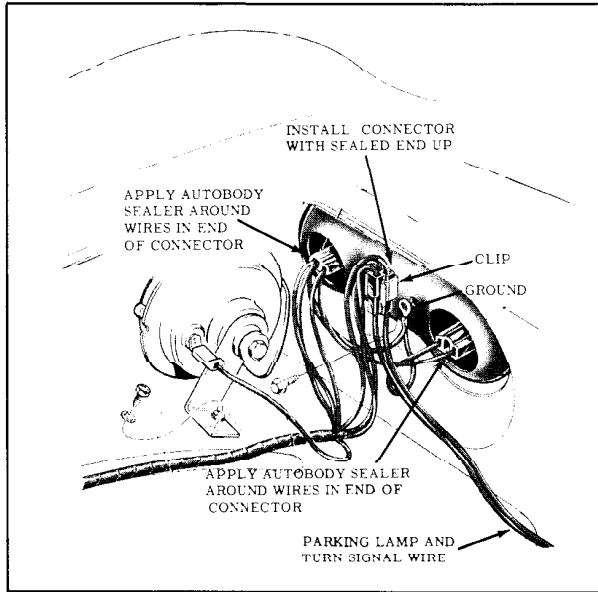


Fig. 11-6 Headlamp Wiring

the retaining clip, then remove ground screw. (Fig. 11-6)

2. Remove headlamp door attaching screws and remove headlamp door. (Fig. 11-7)

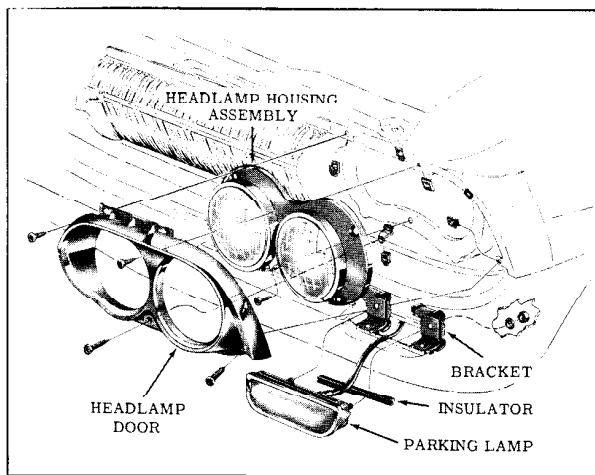


Fig. 11-7 Headlamp Assembly

3. Remove fender to stone shield attaching screws. (Fig. 11-8)
4. Remove fender to rocker panel extension bolt, and shims if used, and upper fender to cowl bolt and washer. (Fig. 11-9)
5. Remove fender to tie bar bolts. (Fig. 11-10)
6. If car is radio equipped, for right fender, remove the antenna mast, nut, spacer and gasket.
7. Remove the fender upper flange attaching screws. (Fig. 11-10)

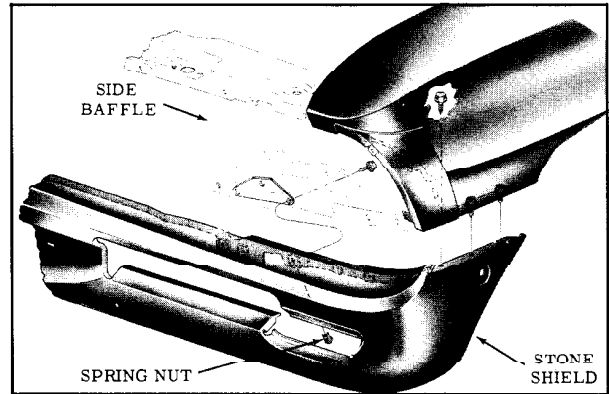


Fig. 11-8 Stone Shield Attachment

8. Pull fender forward to clear lower windshield corner cowl area.
9. With the rear lower corner pulled away from inner rocker panel, lift the rear of fender sufficient to (on right hand) clear the antenna base and move fender forward and up off from front end sheet metal.

Installation

When installing a fender, it is important that all anti-squeaks and seals be reinstalled. If damaged, they should be replaced. Anti-squeak location shown in Fig. 11-14. Use sealer at points

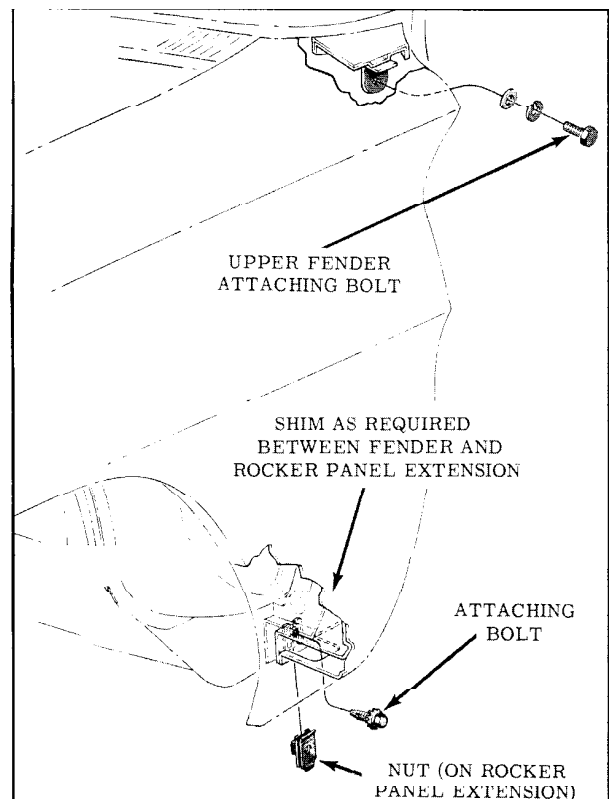


Fig. 11-9 Fender Rear Attachment

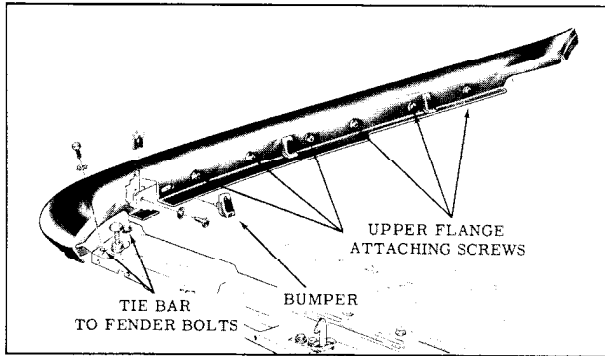


Fig. 11-10 Fender Upper Attachment

indicated in Fig. 11-13. Tighten attaching screws and bolts enough only to hold fender in place and yet allow movement by tapping, then check alignment. It may be necessary to use shims as shown in Fig. 11-9.

FENDER EXTENSION (Fig. 11-11)

Removal and Installation

Remove the headlamp door (Fig. 11-7), then remove fender to extension nuts and screw. Install nuts and screw and check clearances as they are tightened.

ENGINE TO FRAME FILLER PLATES (Fig. 11-12)

The front engine to frame filler plate is attached to the frame side rail by two screws. A rubber seal is clipped to the plate and frame as shown.

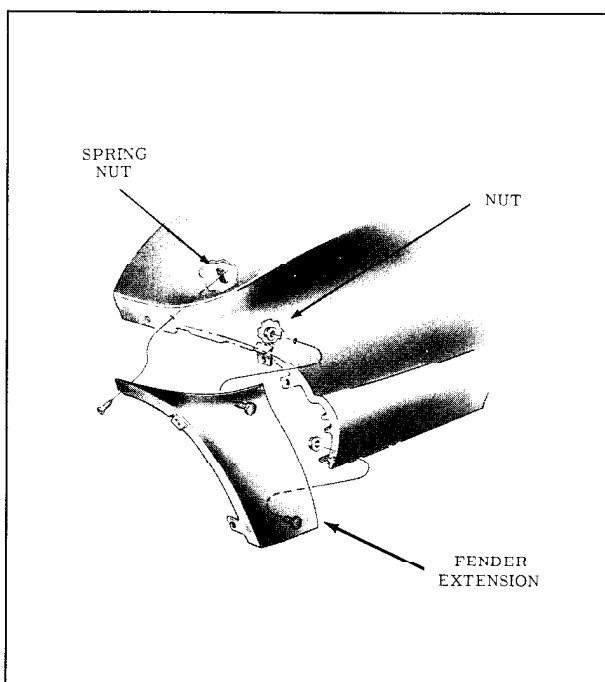


Fig. 11-11 Fender Extension

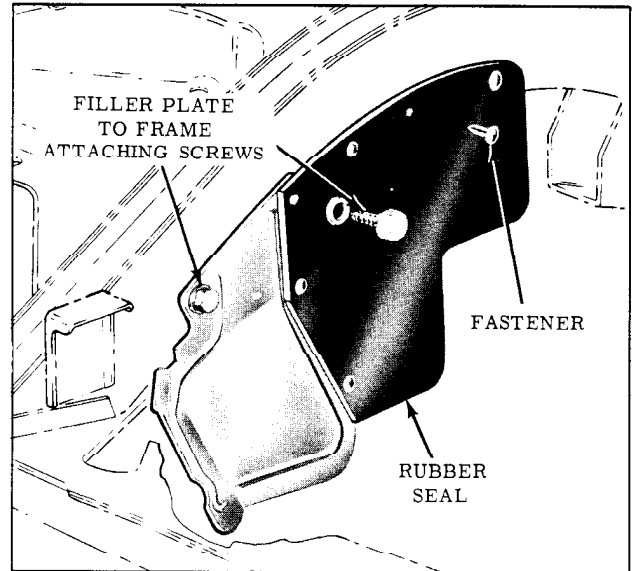


Fig. 11-12 Engine to Frame Filler Plate

RADIATOR SIDE BAFFLE & BRACKETS (Figs. 11-13 & 11-14)

The side baffle is a plate between the tie bar support and the fender. The side baffle is attached by sheet metal screws and is supported by an outer and lower bracket. The radiator side baffle can be removed without removing the fender. The anti-squeaks and rubber seal should be inspected and replaced if necessary before installation. Use sealer as indicated in Fig. 11 13.

PARKING LAMP BAFFLE

The parking lamp baffle is attached to the radiator side baffle lower bracket and the stone shield as shown in Fig. 11-15.

RADIATOR SUPPORTS (Fig. 11-16)

The radiator is supported in three places, one upper and two lower supports. Each support has a rubber insulator which should be inspected and if necessary, replaced anytime the radiator or a support is removed.

FRONT BUMPER STONE SHIELD

Removal and Installation

1. Remove two outer bumper to stone shield bolts, four bracket to body frame bolts and remove bumper. (Fig. 11-25)
2. Remove stone shield to side baffle and fender screws.
3. Disconnect parking lamp wiring.

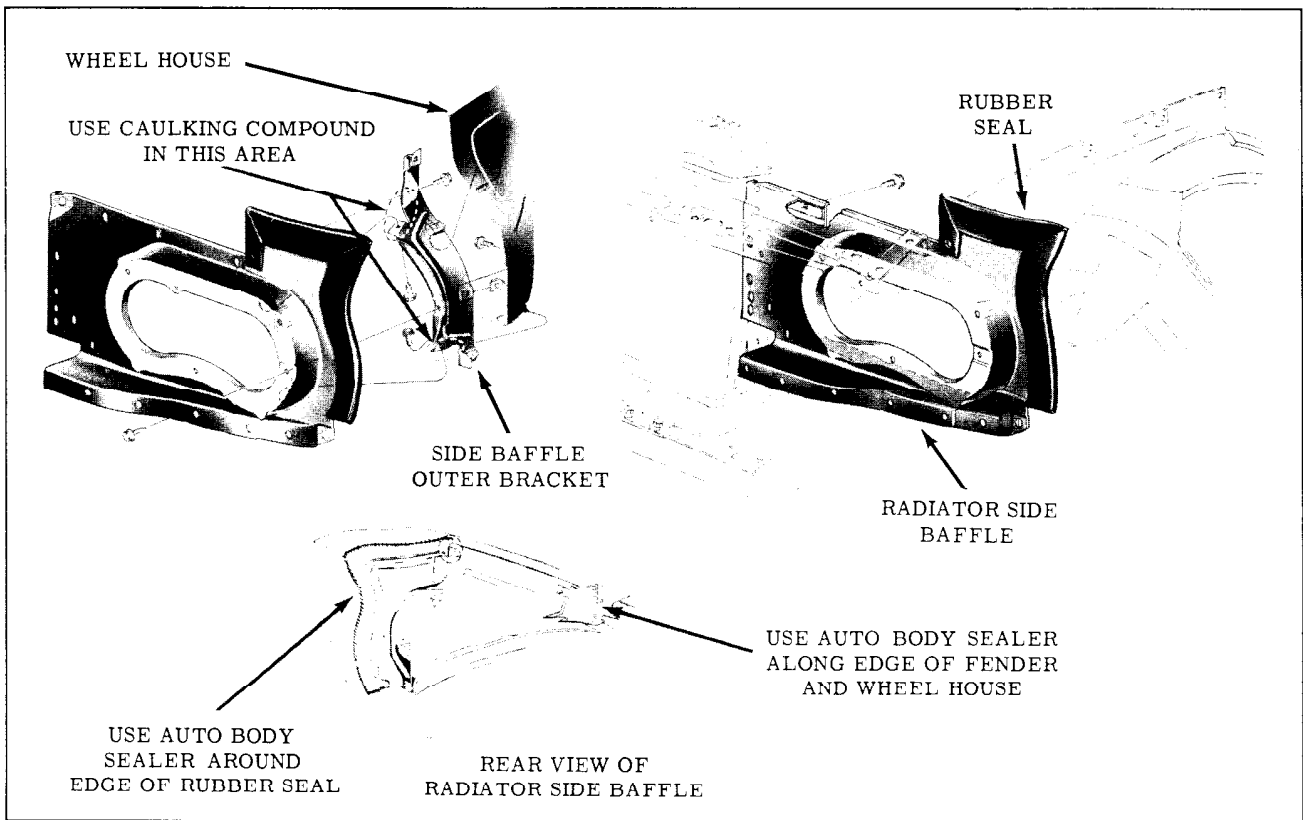


Fig. 11-13 Radiator Side Baffle

- Remove two lower grille to support attaching screws.

This will permit the stone shield to be removed with parking lamps intact. If new stone shield is being installed these items, if not damaged, may be easily transferred at this time.

After installation of stone shield, check

parking lights for operation and alignment of front bumper. Torque bumper bracket nuts 20-28 ft. lbs. Torque outer bumper bolts to 20-28 ft. lbs.

MOLDINGS & SCRIPT (Fig. 11-17)

The fender side molding is retained as illustrated. To remove the molding it is necessary to loosen the fender at the rear upper and lower

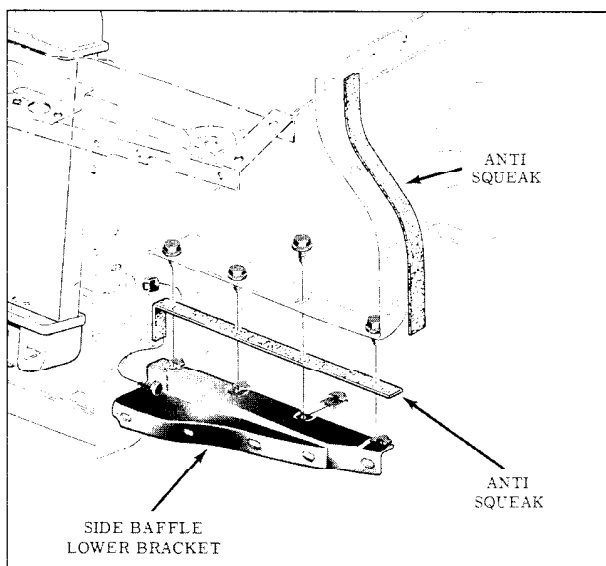


Fig. 11-14 Side Baffle Lower Bracket

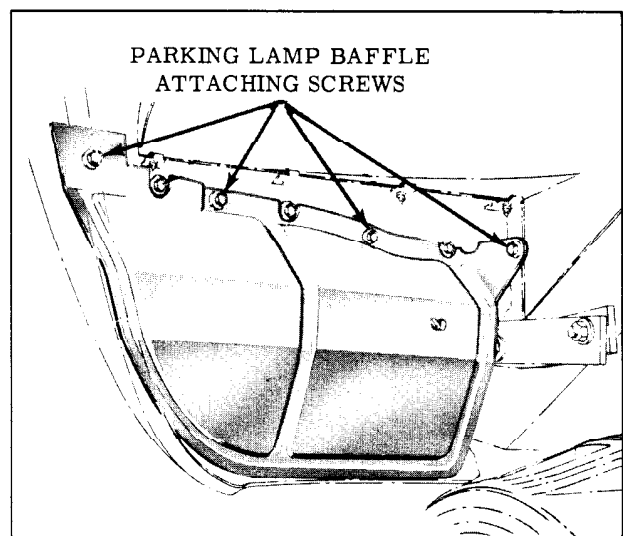


Fig. 11-15 Parking Lamp Baffle

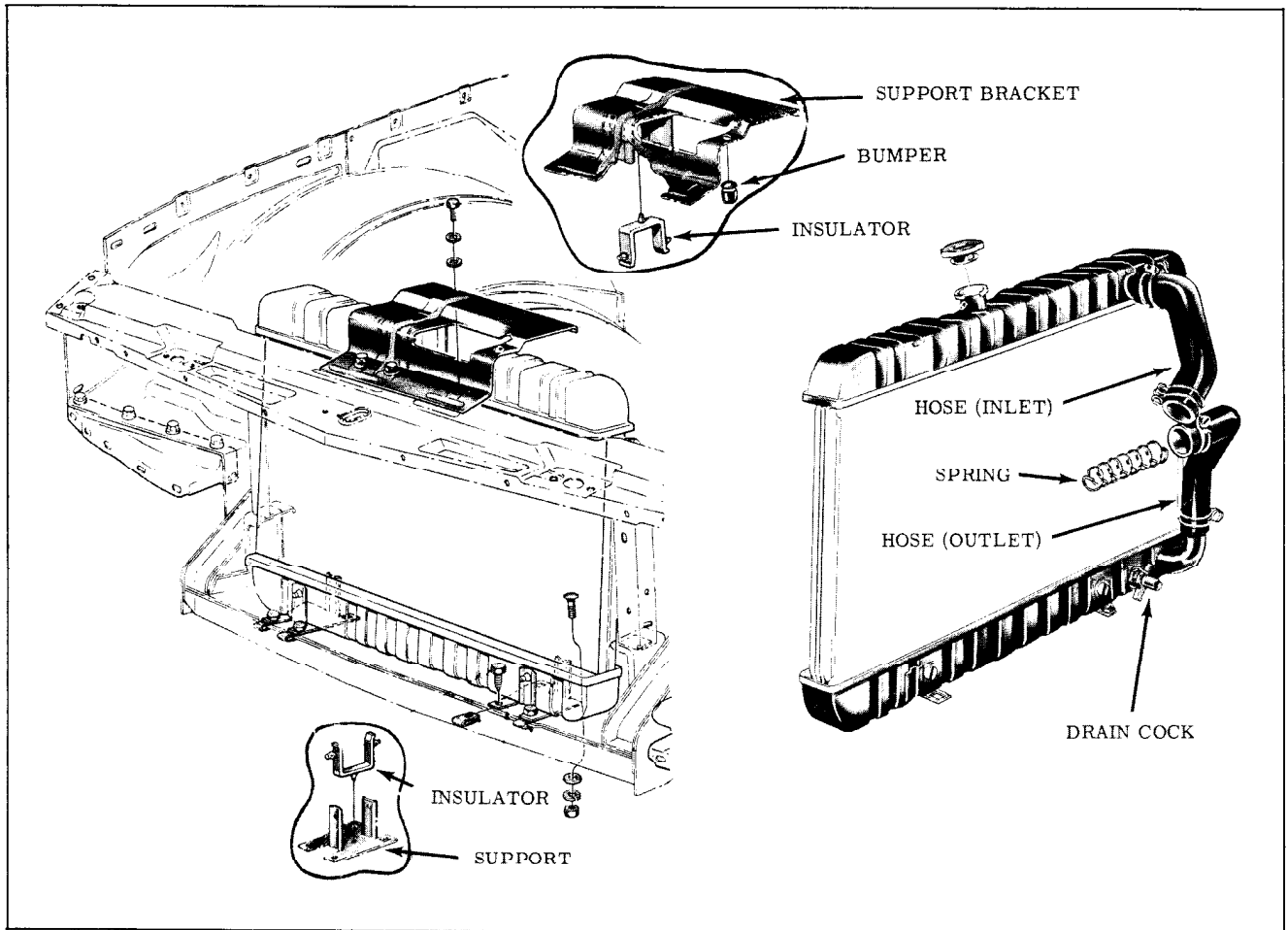


Fig. 11-16 Radiator Supports

attaching bolts. (Figs. 11-9 and 11-10) Use sealer at each retainer location.

The fender extension molding attaching nuts are accessible from beneath the fender. Use sealer at each retaining nut location.

The rocker panel molding is retained at the front and side by a retainer and nut which is accessible and in the center by snap on clips. The rear retainer is different for the left and right side. Use sealer over script attaching nuts as illustrated.

FENDER TIE BAR (Fig. 11-18)

The fender tie bar is held in position by two bolts to each fender, one bolt to each support, located on each side of the radiator, and two bolts to each hood latch support.

GRILLE (Fig. 11-19)

The grille can be removed by raising the hood and removing the grille to tie bar screws and the lower grille to support screws. The grille as-

sembly must be removed to remove or install the ornament.

HEADLAMP DOOR AND HOUSING (Fig. 11-20)

Removal and Installation

The headlamp housing is retained to the radiator side baffle by sheet metal screws. To remove the housing it is necessary to disconnect wiring, remove headlamp doors and remove the housing retaining screws. To install, reverse the removal procedure. After installation, check headlamp aim and adjust if necessary.

SEALED BEAM LAMPS

To replace a sealed beam lamp:

1. Remove headlamp door. (Fig. 11-20)
2. Disengage lamp retainer spring.
3. Disconnect electrical plug from back of lamp. (Fig. 11-6)

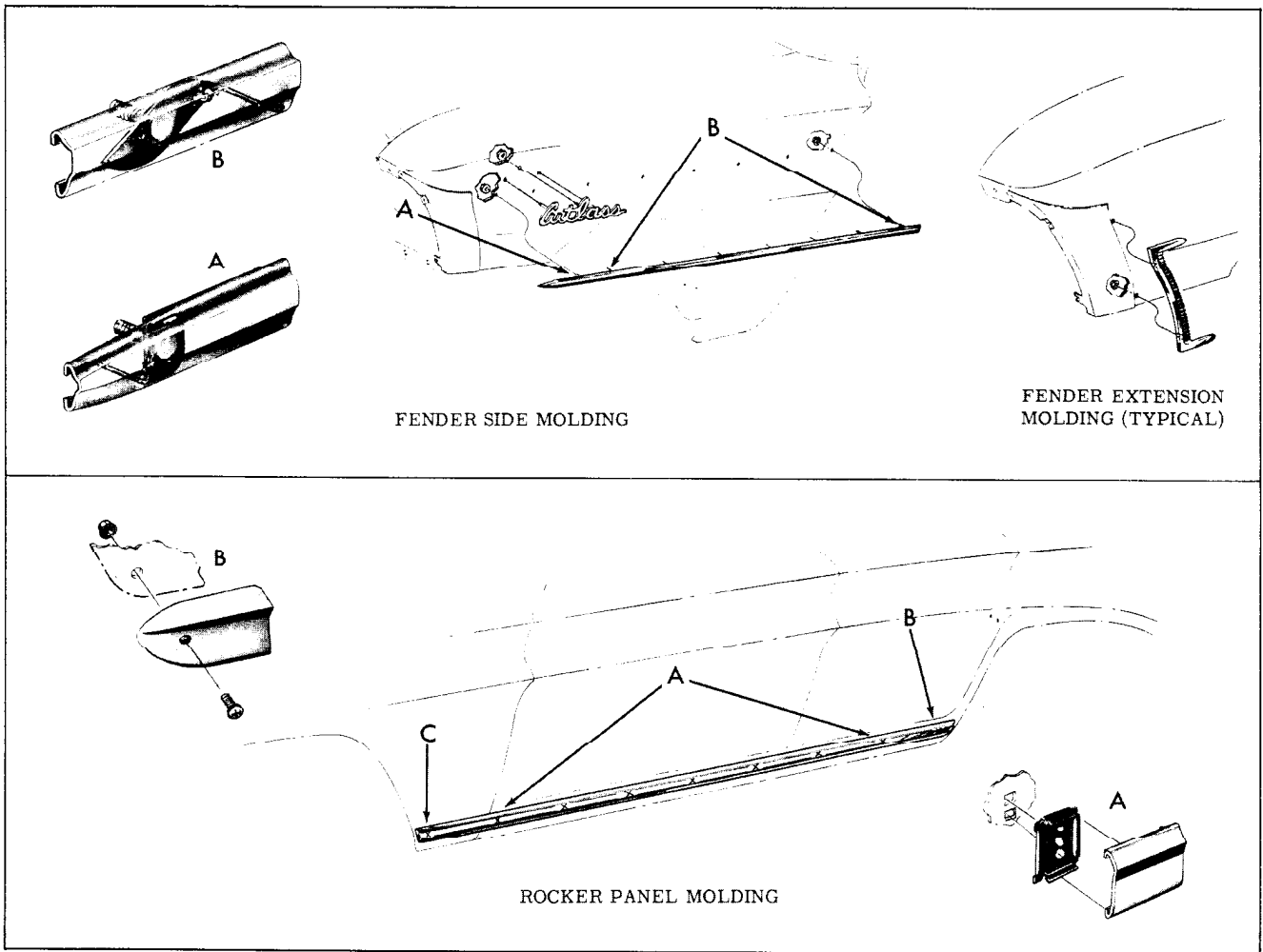


Fig. 11-17 Molding Attachment

4. Remove two lamp retainer screws and remove lamp.

When installing lamp only, it should not be necessary to aim headlamps.

2. Raise hood and remove cowl vent grille to cowl screws. (Fig. 11-21)

3. Remove cowl vent grille by lifting up forward edge and pulling away from windshield.

COWL VENT GRILLE

Removal

1. Remove windshield wiper arms.

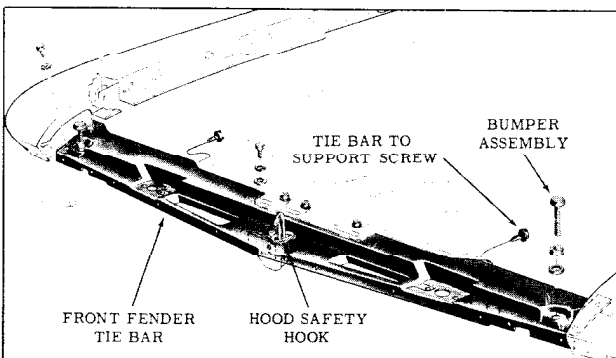


Fig. 11-18 Fender Tie Bar

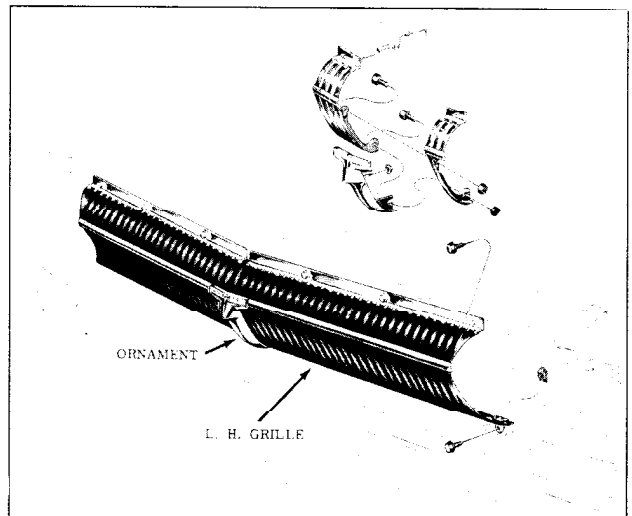


Fig. 11-19 Grille

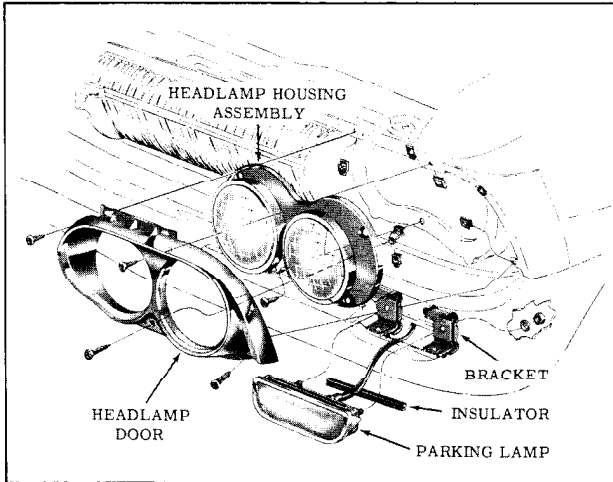


Fig. 11-20 Headlamp Door and Housing

Installation

Apply caulking around vent grille attaching screw holes and vent grille tab slots in cowl, then carefully slide grille rearward to engage rear edge of grille between windshield lower reveal moldings and moldings attaching clips and install grille to cowl screws.

REAR END BODY PANEL LETTERS

On all series, each letter is fastened to the rear end body panel with two self-threading nuts. When installing the letters, place a daub of auto body caulking compound around letter studs after installation.

TAIL LAMP ASSEMBLY

Removal and Installation

The tail lamp assembly is assembled to the rear quarter panel with nuts accessible from inside the trunk compartment on 19 styles, and by removing rear quarter trim on 35 styles. Bulbs may be replaced on 35 styles by removing lens from outside and by removing the socket from inside the trunk compartment on 19 styles.

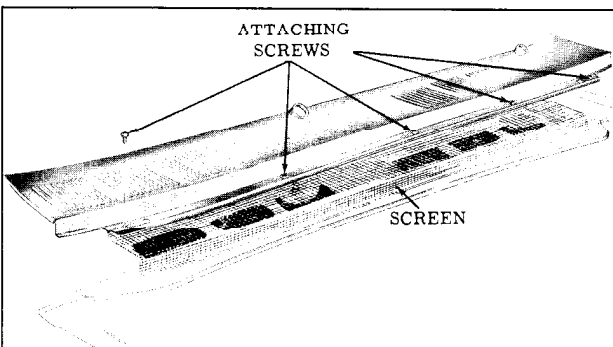


Fig. 11-21 Cowl Vent Grille

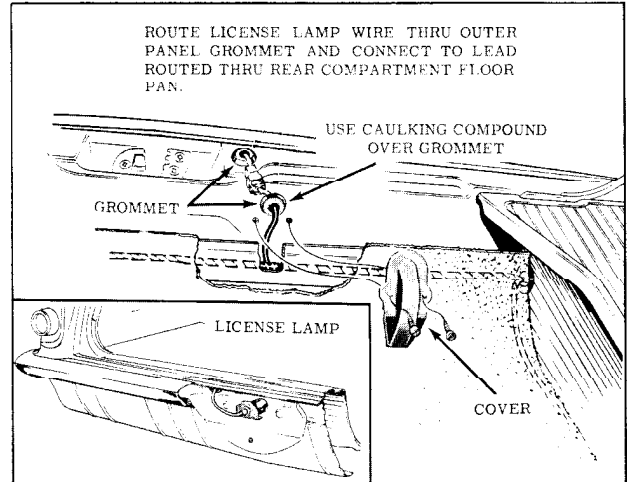


Fig. 11-22 Rear License Lamp - S.W. (3 Seat)

PARKING LAMPS

The parking lamp assemblies may be removed by disconnecting the wiring and removing the four stud nuts and two clamps, and removing the clamp from the rear of the stone shield. (Fig. 11-20)

REAR LICENSE LAMP

The rear license lamp is attached by screws accessible from lower side of the bumper primary bar as shown in Figs. 11-22, 11-23 and 11-24.

To replace, disconnect wire and remove the attaching screws.

BATTERY SUPPORT

The battery support is bolted to the bracket and reinforcement as shown in Fig. 11-25. Apply petrolatum to both battery terminals before attaching cables.

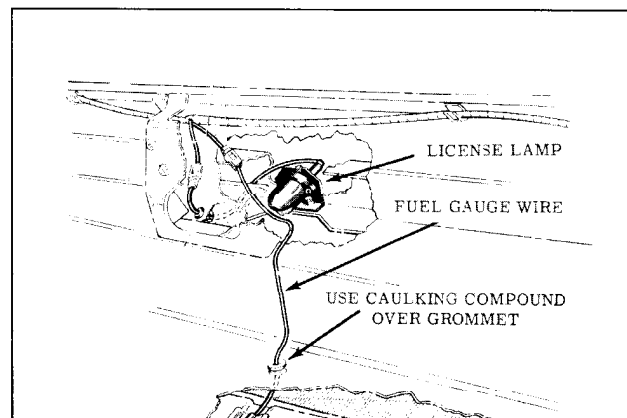


Fig. 11-23 Rear License Lamp - Sedan

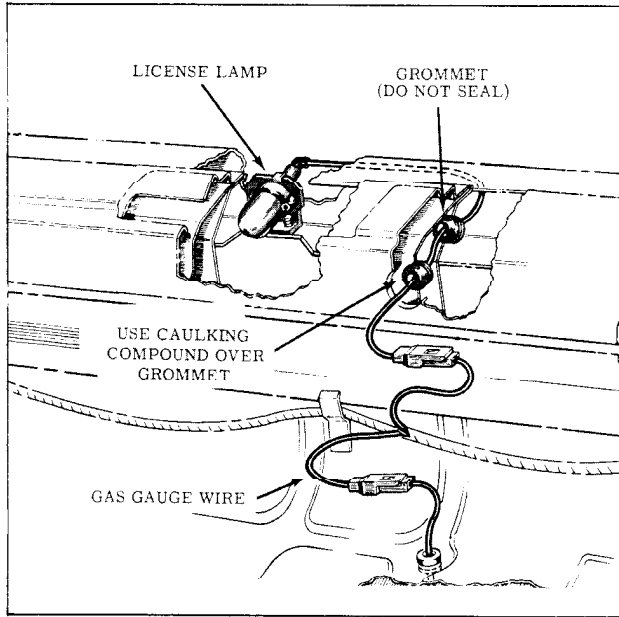


Fig. 11-24 Rear License Lamp S.W. (2 Seat)

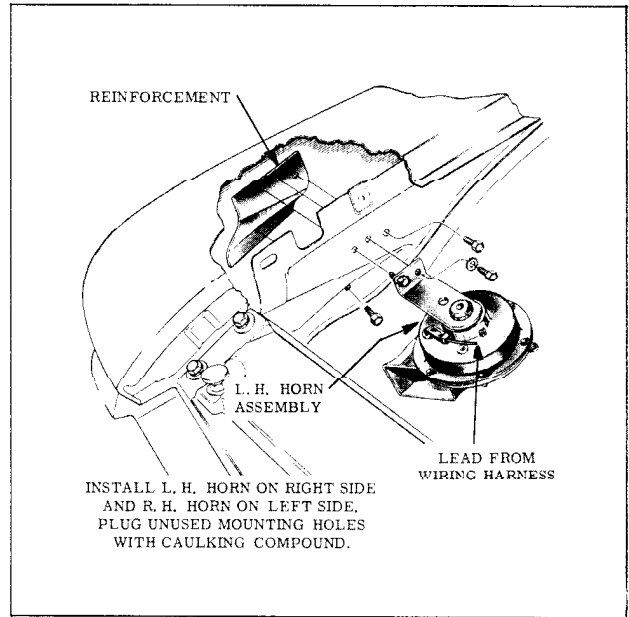


Fig. 11-26 Horn (Convertible) Mounting

HORN

To service the horn on body styles other than convertibles refer to the 1961 Service Manual. The convertible horns are mounted as shown in Fig. 11-26.

Quarter Panel Baffles (Fig. 11-29)

The quarter panel baffles are retained by sheet metal screws. After installation check for clearance between inner and outer wheelhouse panel.

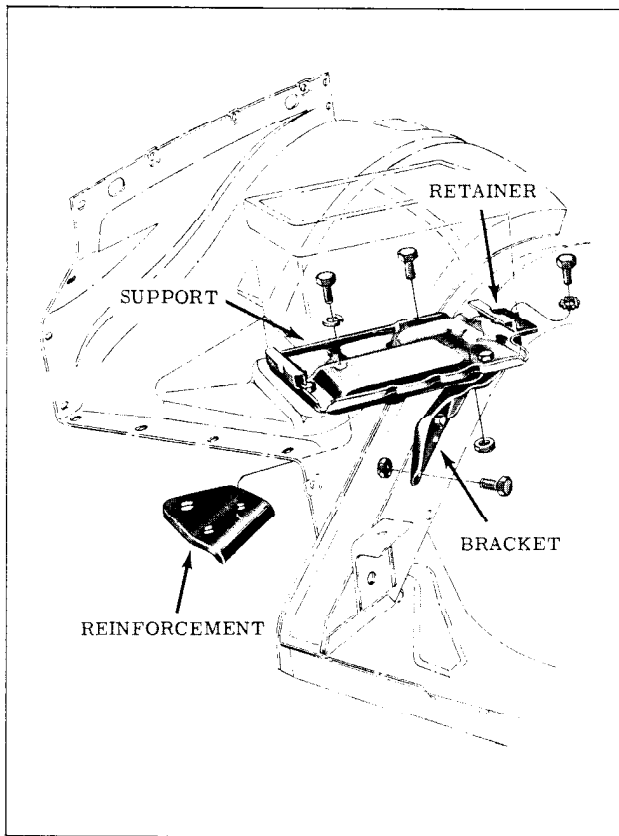


Fig. 11-25 Battery Supports

CONVERTIBLE BRACING

This bracing is installed to reduce road vibration and is secured as shown in Fig. 11-27.

Back-Up Lamp

The lamp mounting and wire routing for the various body styles are shown in Fig. 11-28.

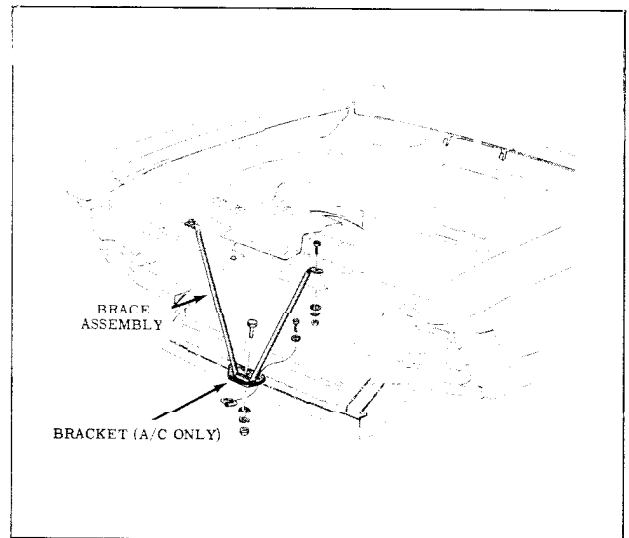


Fig. 11-27 Convertible Bracing

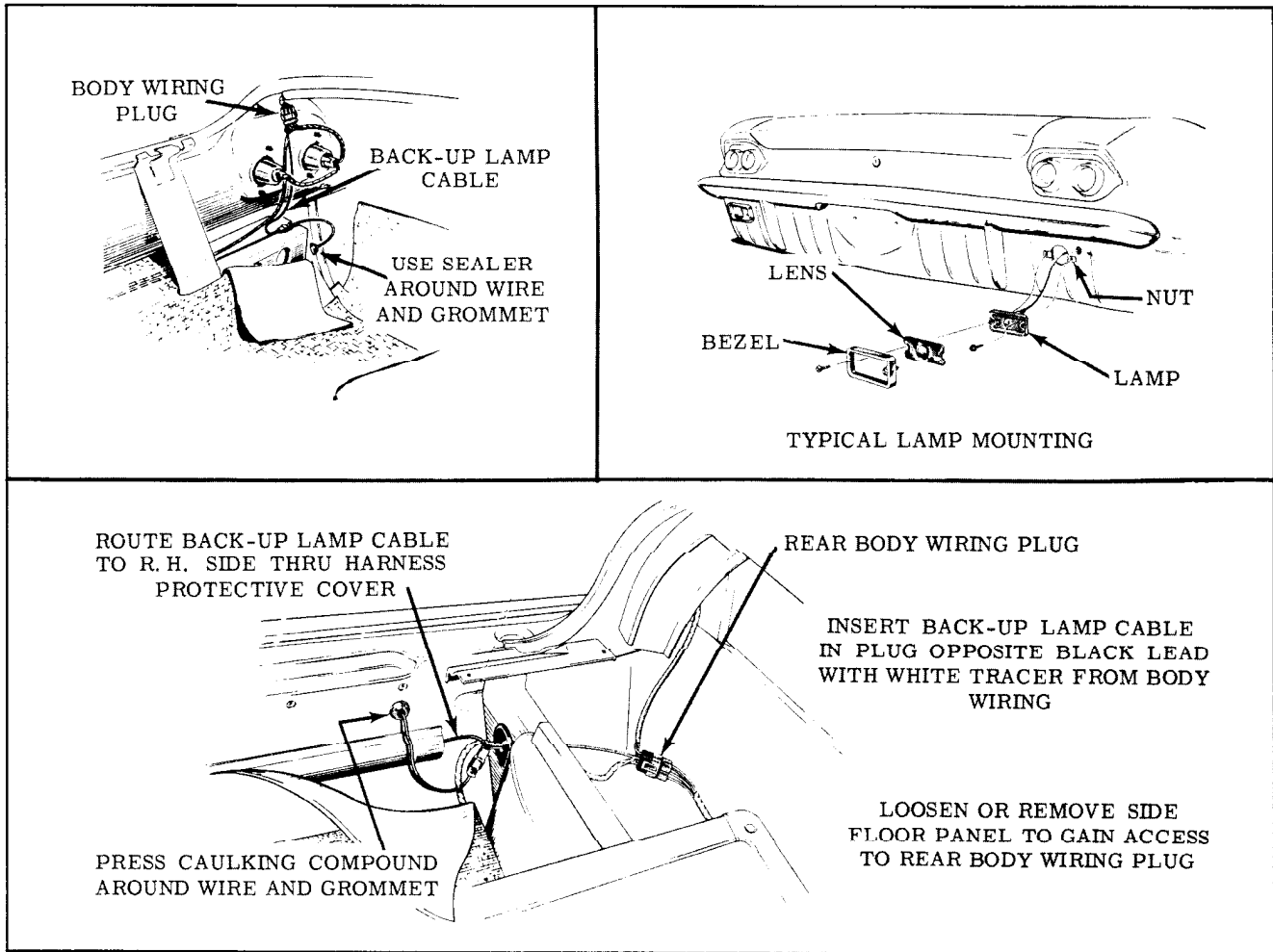


Fig. 11-28 Back-Up Lamp

BUMPERS

FRONT

Removal and Installation (Fig. 11-30)

Remove two lower guard nuts, four bumper bracket to frame bolts, and two outer end chrome headed bumper bolts as shown in Fig. 11-30.

On assembly it is necessary to maintain alignment which is adjustable through the use of elongated holes at both bumper bracket and support brackets. Bumper should be level with car and centered.

GUARDS

Guards can be removed without removing the bumper by removing the upper bolt at lower edge of bumper primary bar and the lower guard to bracket nut.

BRACKETS

Each bumper bar bracket is attached to the primary bar by two bolts as shown in Fig. 11-30.

REAR BUMPER (19 STYLES) (Disconnect License Lamp Wire)

The primary bar is attached by four mounting bolts accessible through the trunk compartment and two lower guard bolts attached through the lower rear stone shield accessible from front of stone shield accessible from front of stone shield as shown in Fig. 11-31.

When assembling, alignment can be made through slotted bolt holes in mounting brackets shown in Fig. 11-31.

"45" and "35" STYLES

The primary bar is attached to the brackets by four mounting bolts. The brackets are attached to the body and the bolts are accessible through the spare tire compartment. The bumper guard is attached to the lower edge of the primary bar and to the rear stone shield.

GUARDS

The bumper guard is attached to the primary bar with one bolt and to the lower stone shield with one bolt. Bumper guard to stone shield dimension is maintained with a tubular spacer held

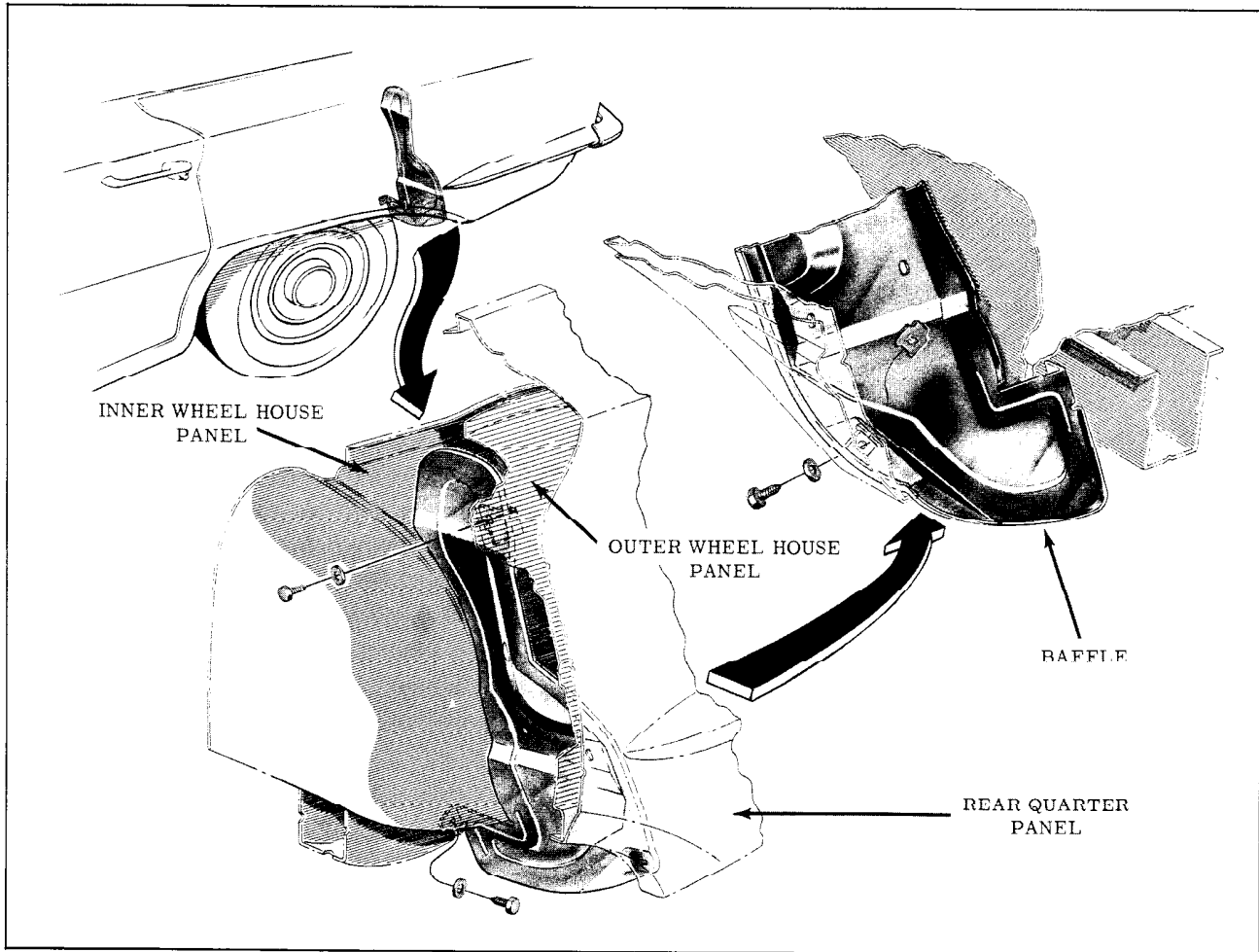


Fig. 11-29 Quarter Panel Baffle

in position by the lower guard bolt as shown in Fig. 11-31.

ALIGNMENT

Bumper alignment is obtained by elongated

holes in the brackets. It necessitates merely loosening attaching bolts and nuts, positioning bumper to desired position and tightening. Make sure that bumpers are horizontal and clearance between bumper and fenders is even on both sides.

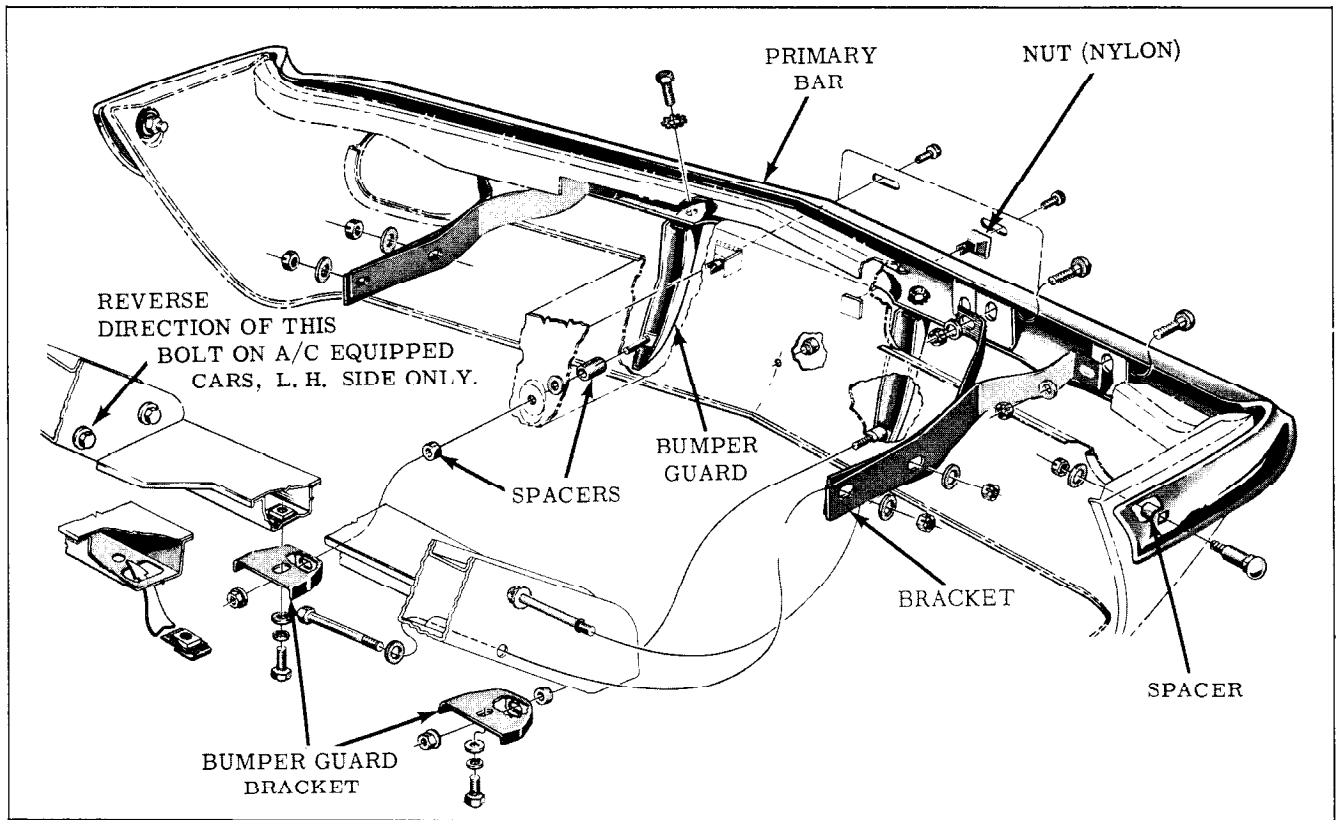


Fig. 11-30 Front Bumper

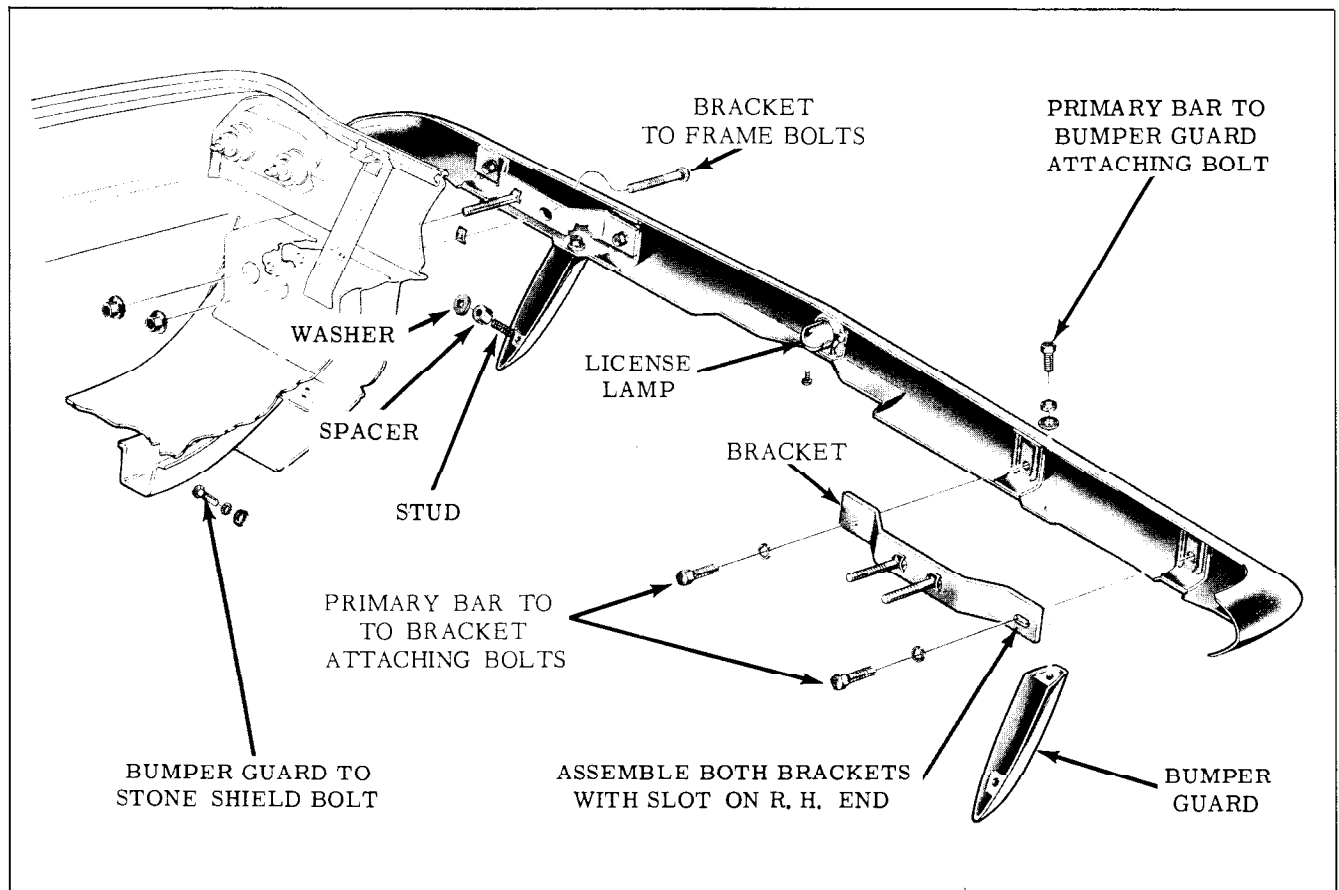


Fig. 11-31 Rear Bumper

BUMPER TORQUE SPECIFICATIONS

APPLICATION	FT. LBS.
FRONT BUMPER	
Guard to Primary Bar	15 to 20
Front Bumper Wing to Stone Shield Panel	20 to 28
Brackets to Frame	20 to 28
Brackets to Primary Bar	20 to 28
Bumper Bracket to Cross Bar	15 to 20
Guard to Frame Bracket	8 Max.
REAR BUMPER	
Guard to Primary Bar	15 to 20
Brackets to Primary Bar	20 to 28
Brackets to Body Bracket	20 to 28
Rear Guard to Body Bracket	15 to 20

INSTRUMENT PANEL AND RADIO

FOR SERVICE PROCEDURES AND SPECIFICATIONS OF THE UNITS NORMALLY COVERED IN THIS SECTION AND NOT LISTED HEREIN, PLEASE REFER TO THE 1961 F-85 SERVICE MANUAL.

CONTENTS OF SECTION 12

Subject	Page	Subject	Page
CONSOLE ASSEMBLY	12-1	TRIM PANEL	12-2
GENERAL DESCRIPTION	12-1	SHIFT INDICATOR COVER	12-2
CONSOLE REMOVAL	12-1	SAFETY SWITCH	12-3
GLOVE BOX DOOR AND LOCK	12-2	MANUAL LEVER ADJUSTMENT	12-4

CONSOLE ASSEMBLY

GENERAL DESCRIPTION

The console housing is constructed of high strength plastic painted to match the instrument panel and it is mounted on the floor panel between the bucket seats. The console contains the Hydra-Matic shift mechanism, two courtesy lamps and a glove compartment with a lock. (Fig. 12-1) The console used on air conditioning equipped cars

does not have a glove compartment. (Fig. 12-2) The synchromesh equipped cars have an ash tray mounted in place of the Hydra-Matic shift indicator cover.

CONSOLE REMOVAL (Fig. 12-3)

The console is retained to the floor panel by sheet metal screws and brackets on each side. To remove, pull back the carpet from under the carpet retainers on each side and remove the

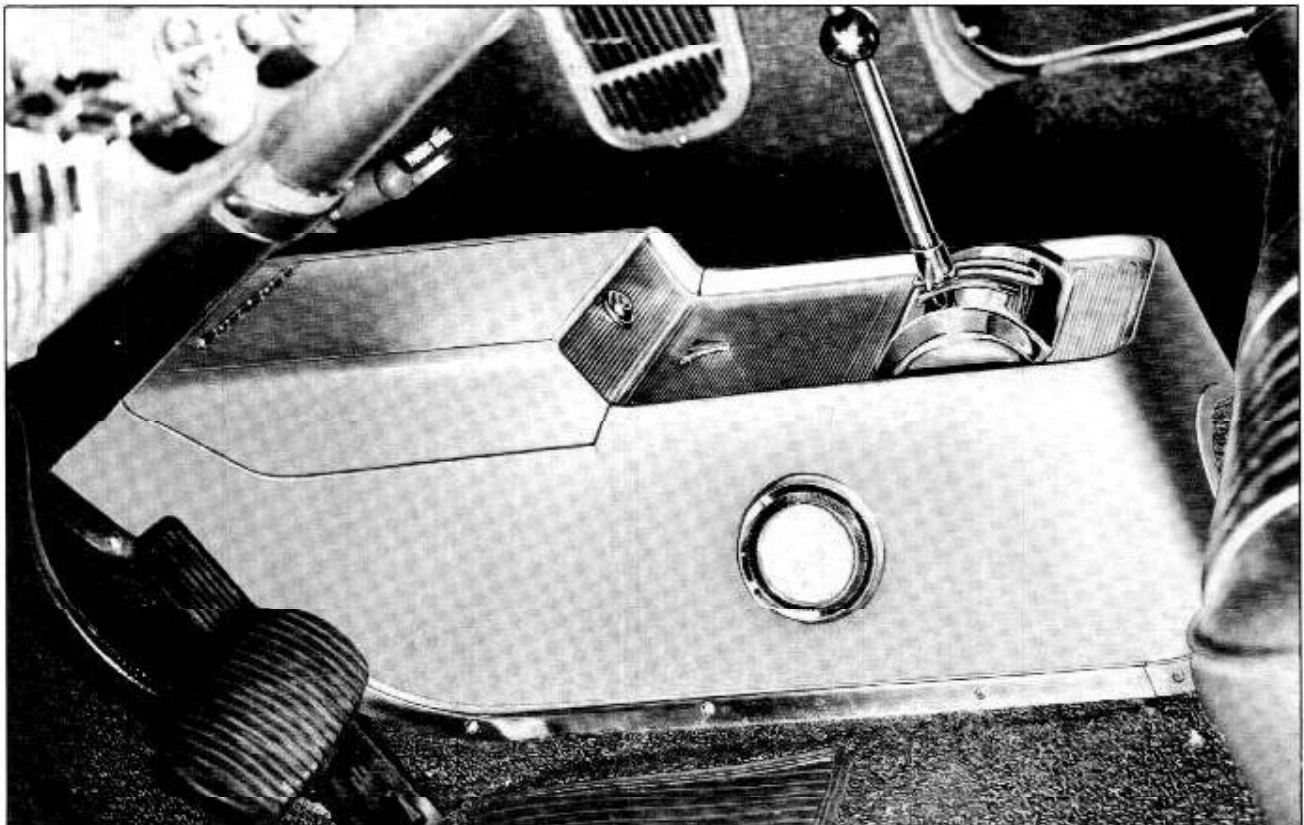


Fig. 12-1 Console Assembly

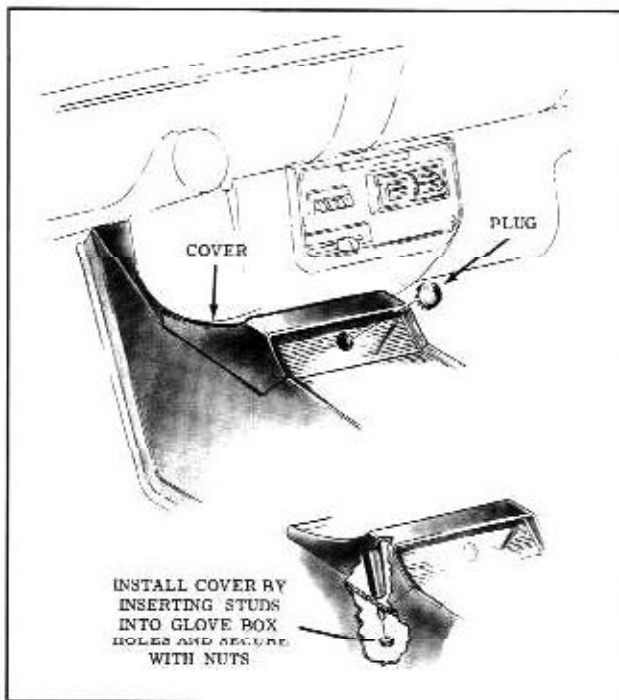


Fig. 12-2 Console with Air Conditioning

bracket to floor panel attaching screws, next remove the shift lever knob button and shift indicating pointer. Move the console rearward and disconnect the wiring harness plug. Lift the con-

sole up over the shift lever. To install console, reverse the removal procedure.

NOTE: If the mounting brackets are removed from the console it will be necessary upon installing the console to attain the shift lever to shift indicator cover height as indicated in Fig. 12-4.

GLOVE BOX DOOR AND LOCK

The glove box can be removed without removing the console from the floor panel by removing the four attaching screws accessible from inside the glove compartment. The glove box door can be removed at the hinge location by removing the attaching screws from inside the glove box. An adjustable striker is provided on the door for proper closing. To remove the lock assembly it is necessary to remove the console from the car.

TRIM PANEL

The panel is retained by six pal nuts accessible from the bottom side after removing the console assembly.

SHIFT INDICATOR COVER

To remove the cover it is necessary to remove the shift lever knob and button and the four cover attaching screws.

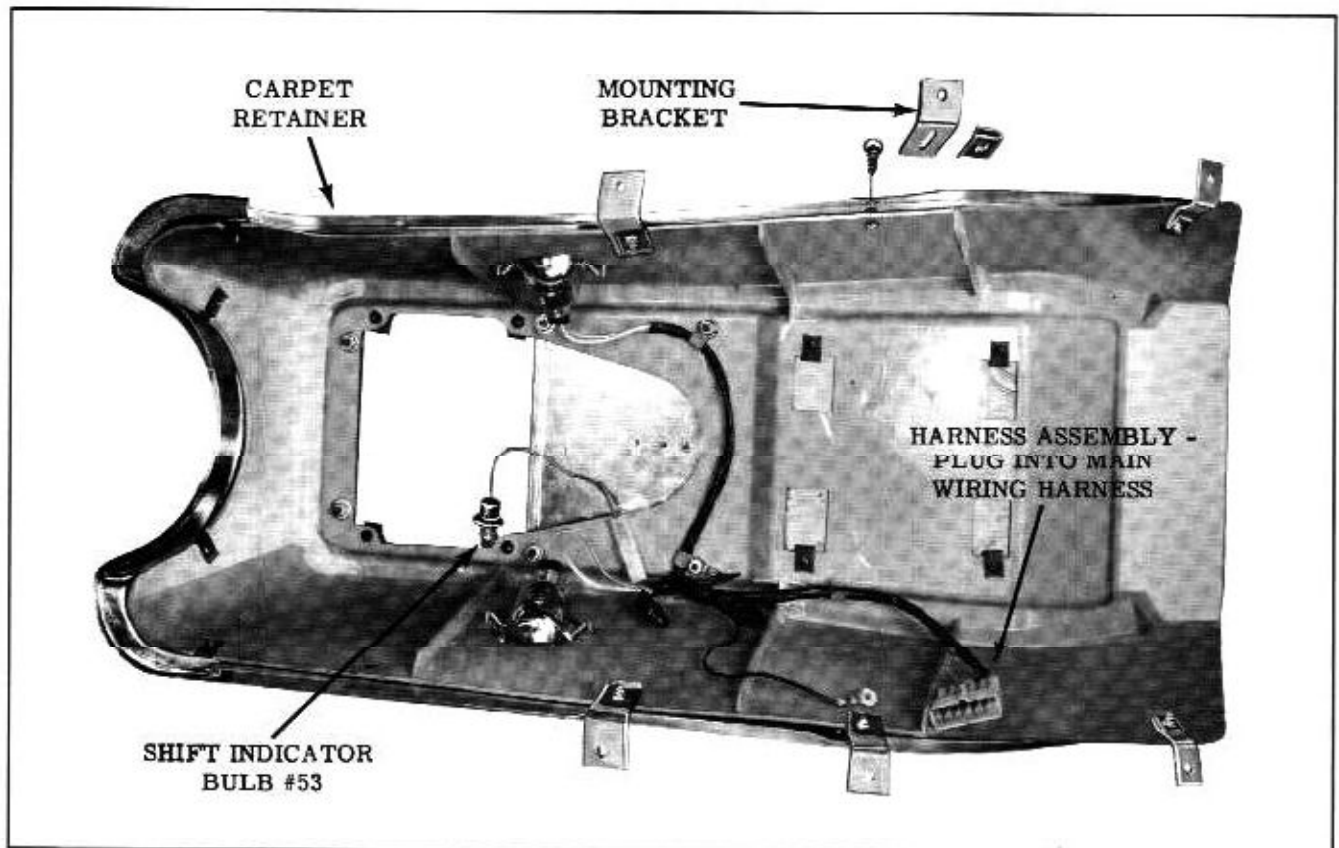


Fig. 12-3 Console Assembly

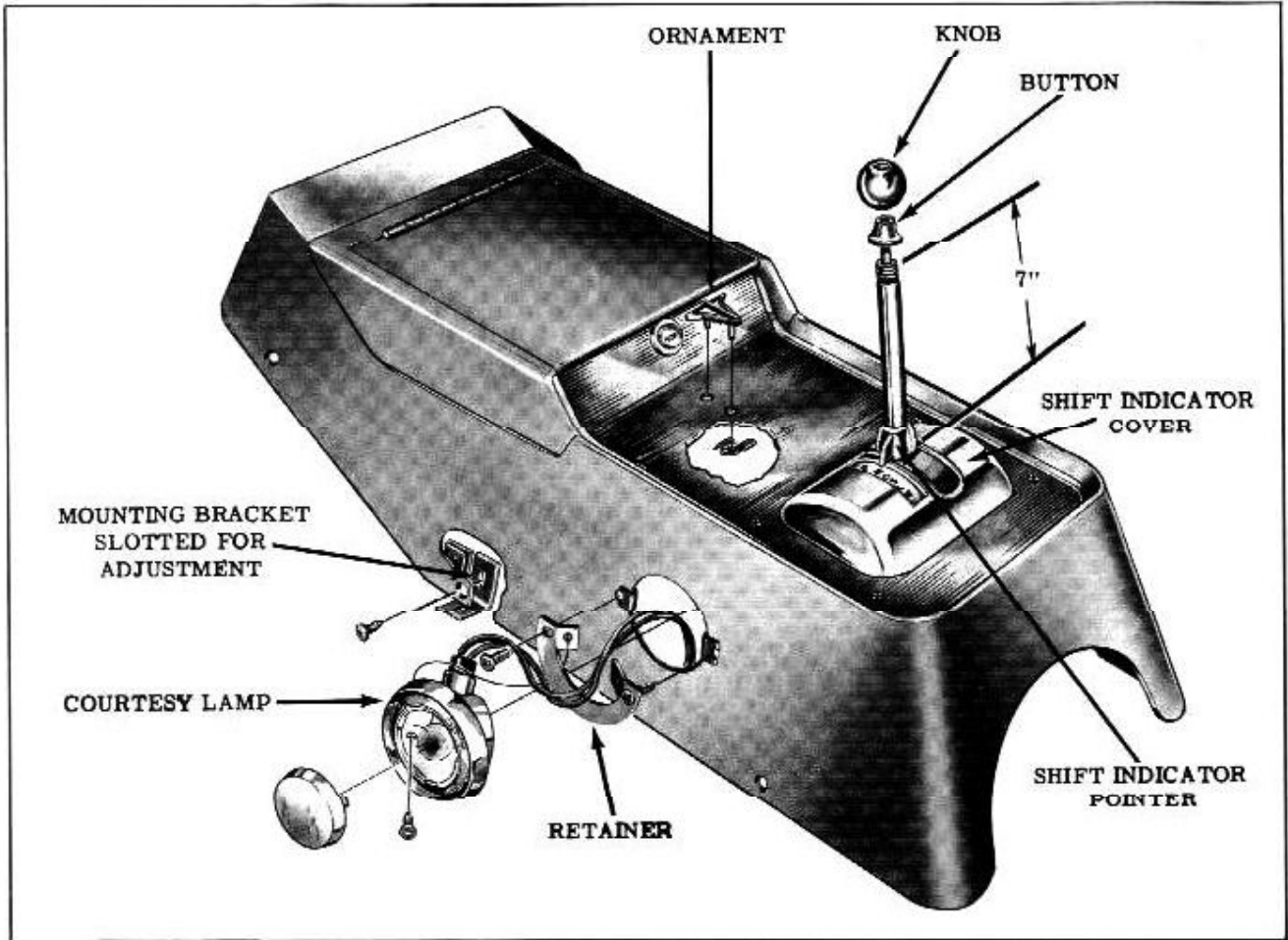


Fig. 12-4 Console Height Adjustment

COMBINATION NEUTRAL SAFETY AND BACK-UP LIGHT SWITCH

The neutral safety switch (Fig. 12-5) is mounted inside the console. The switch prevents starting of the engine with the transmission in gear. The

engine may be started with the selector lever in neutral or park position. The switch is connected as shown in Fig. 12-6.

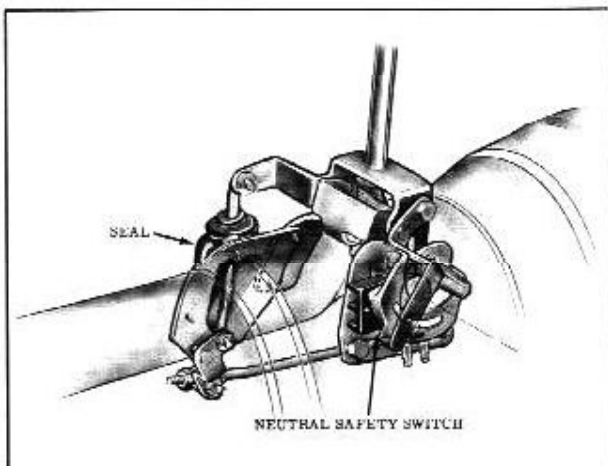


Fig. 12-5 Neutral Safety Switch Installed

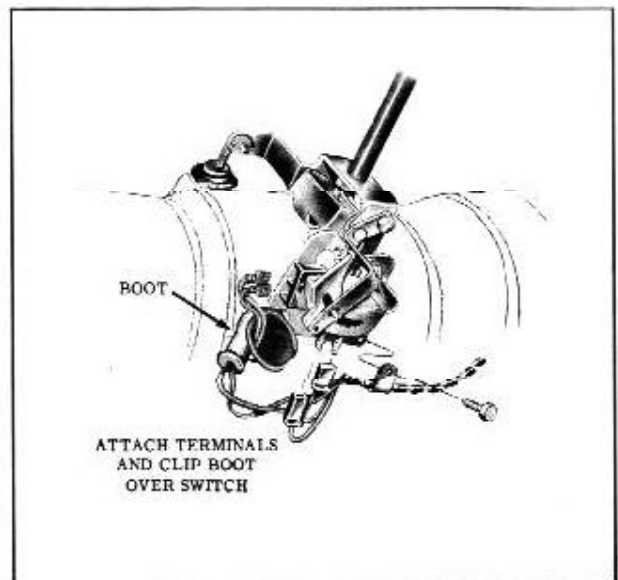


Fig. 12-6 Neutral Safety Switch Connections

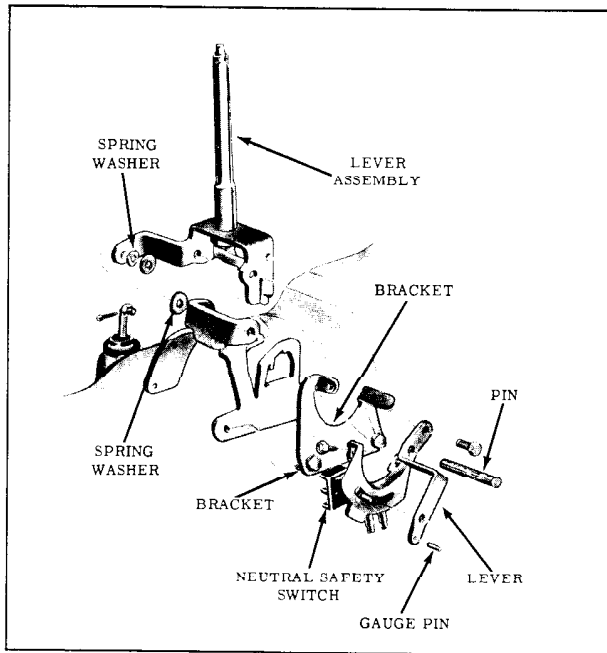


Fig. 12-7 Shift Mechanism and Neutral Safety Switch

Checking

1. Apply parking brake firmly.
2. Position selector lever into "D" range and turn ignition switch to "start".
3. While holding ignition switch on "start", slowly move selector lever toward "N" position until engine cranks and starts.
4. Without moving selector lever after engine starts, depress accelerator pedal slightly to determine whether or not transmission is in gear. If neutral safety switch is properly adjusted, transmission will not be in gear.

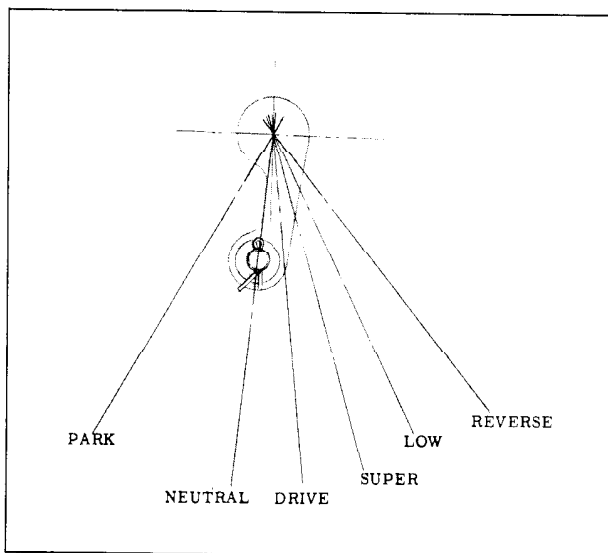


Fig. 12-8 Transmission Manual Lever Detent Positions

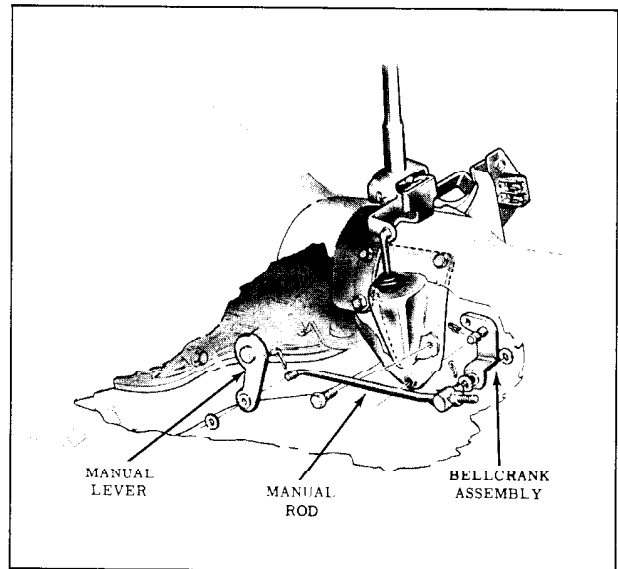


Fig. 12-9 Exploded View of Shift Linkage

NOTE: If equipped with back-up lights, the lights should operate with the ignition on and the selector lever in reverse.

Adjustment (Fig. 12-7)

1. Remove console.
2. Loosen the switch attaching screws.
3. With the selector lever in neutral, position the switch so that a .090" gauge pin can be inserted through the hole in the switch arm and into the hole in the face of the switch.
4. Tighten the switch attaching screws and remove the gauge pin. Recheck adjustment.

MANUAL LEVER ADJUSTMENT

The manual lever adjustment provides for proper clearance between the neutral detent in the transmission and the stop for the selector lever in the console.

1. Place the selector lever in the neutral position.
2. Loosen both lock nuts on the manual rod and place the transmission manual lever in the neutral position. (Fig. 12-8)
3. While holding the manual lever against its stop, tighten front lock nut finger tight against the swivel, then tighten two more turns.
4. Lock the adjustment by tightening the rear nut. (Fig. 12-9)

ELECTRICAL

FOR SERVICE PROCEDURES AND SPECIFICATIONS OF THE UNITS NORMALLY COVERED IN THIS SECTION AND NOT LISTED HEREIN, PLEASE REFER TO THE 1961 F-85 SERVICE MANUAL.

CONTENTS OF SECTION 13

Subject	Page	Subject	Page
WIRING DIAGRAM	13-2	SPECIFICATIONS	13-3

TAIL LIGHTS

Both tail lights have red lens. The outboard light is a tail light, stop and signal light. The inboard light is a tail light only.

HYDRA-MATIC INDICATOR LIGHT

The Hydra-Matic indicator light is accessible through a cover plate on the bottom of the actuator cover. Refer to Fig. 4-1 in this manual.

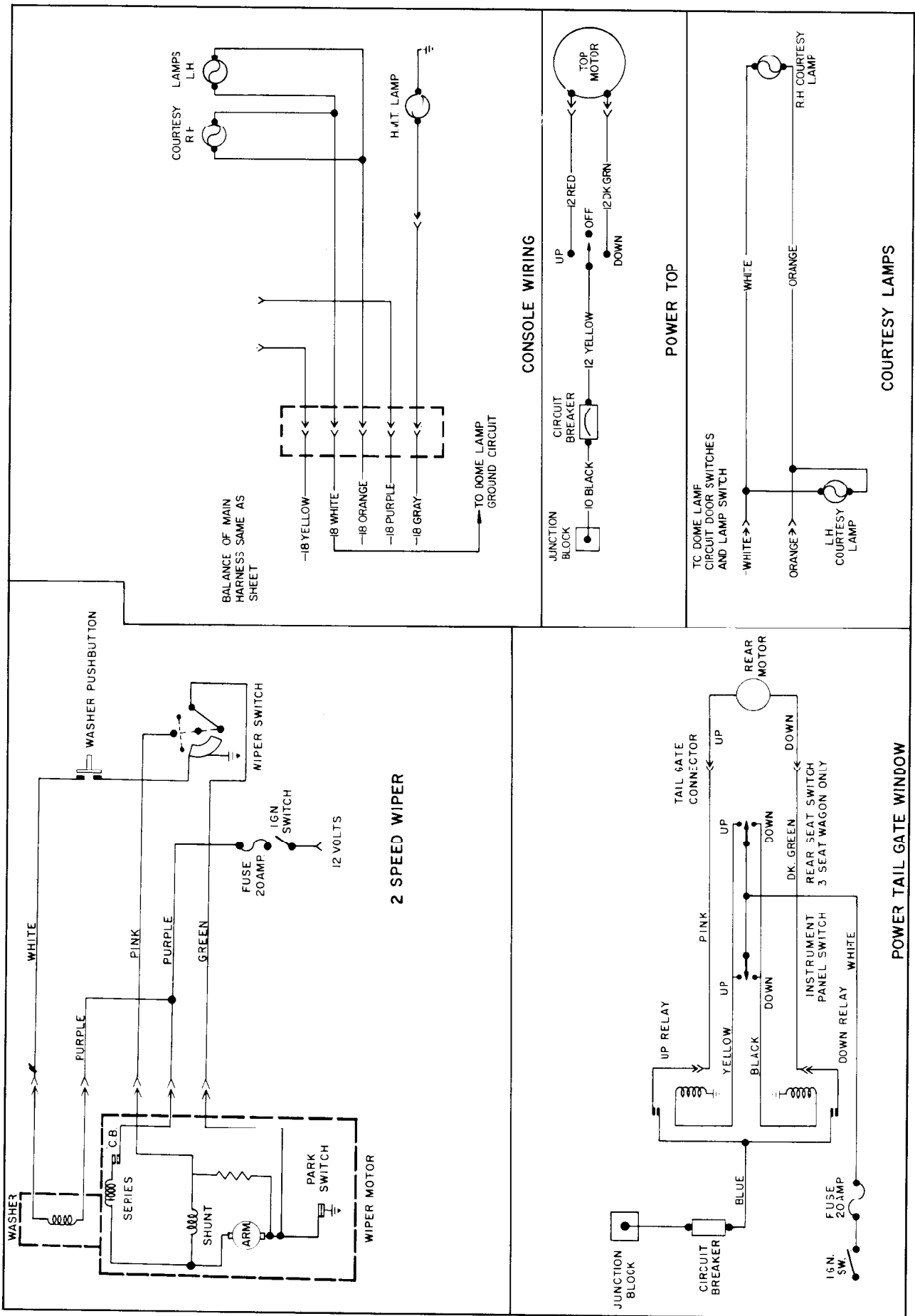


Fig. 13-1 Wiring Diagram

DISTRIBUTOR TEST SPECIFICATIONS

Distr. No.	Rotor Rotation Viewed From Top	Spring Tension	Vacuum Advance		Mechanical Advance			
					Dist. r.p.m.			
1110975 1110992	Clockwise	19-23 oz.	5"-7"	15.25"-17"	500	1000	2100	
1110975 1110992	Clockwise		Start	(Max) 12° (Max) 12.5°	Degrees	0-2°	5°-7°	11°-13°

ELECTRICAL SPECIFICATIONS

STARTING MOTOR

Make Delco Remy
 Brush Spring Tension 35 oz. min.
 Number of Brushes Used 4
 Number of Fields 4
 Free Speed 6750-8600 r.p.m. at 10.6 Volts, 58-80 Amps.
 Number of Teeth on Starter Pinion 9

SOLENOID SWITCH

Current Consumption, Both Windings @ 10 volts @ 80°F 42-49 amps.
 Current Consumption, Hold-In Windings @ 10 volts @ 80°F 10.5-12.5 amps.

GENERATOR

Charging Rate Cold @ 14 volts @ 2520 r.p.m. 35 amps.
 Charging Rate Hot is controlled by voltage regulator.
 Field Current Draw @ 12 volts @ 80°F 1.69-1.79 amps.
 Brush Spring Tension 28 oz.

GENERATOR REGULATOR

CUT OUT RELAY

Air Gap020"
 Point Opening020"
 Closing Voltage 11.8-13.5 volts (Adjust to 12.8 volts.)

VOLTAGE REGULATOR

Air Gap 0.060"
 Voltage Setting Refer to Ambient temp. Chart Fig. 13-13

CURRENT REGULATOR

Air Gap 0.075"
 Current Setting Refer to Ambient temp. Chart Fig. 13-13

BATTERY

Make Delco-Remy
 Model Number 455
 Catalogue Number 454
 Number of Cells 6
 Number of Plates 9/cell or 54
 Voltage Rating 12 volts
 Capacity @ 20 hr. Rate 42 amp. hour
 Specific Gravity @ Full Charge 1.270 ± .010 @ 80°F
 Ground Negative

ELECTRICAL SPECIFICATIONS (Cont'd)

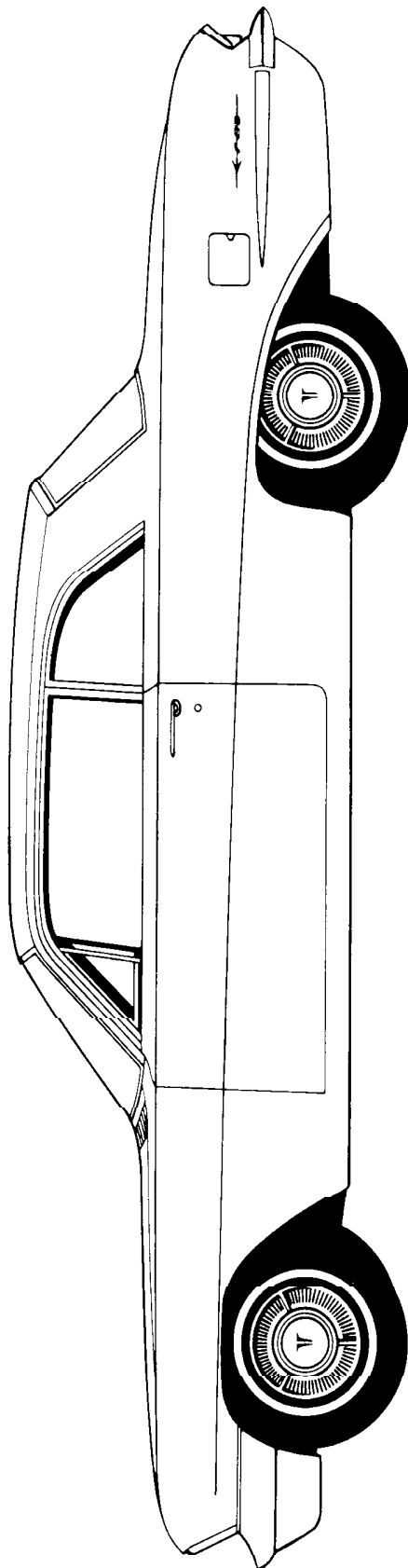
COIL (1115168)	
Primary Resistance @ 80°F	1.28-1.42 ohms
Secondary Resistance @ 80°F	7200-9500 ohms
IGNITION RESISTOR (IN HARNESS)	
Resistance @ 80°F	1.75-1.85 ohms
DISTRIBUTOR	
Cam Angle Range	28°-32° (Adjust to 30°)
Contact Point Opening . . . . .	.016"
Contact Arm Spring Tension	19-23 oz.
Condenser Capacity	0.18-0.23 mfd.
SPARK PLUGS	
Make	AC
Type	(4 Bbl-45FF) (2 Bbl-46FFX)
Thread	14MM (Metric)
Body	13/16" Hex
Electrode Gap . . . . .	.030"
HORNS	
Current Draw @ 12 volts	7-11 amperes
HORN RELAY	
Point Opening . . . . .	.020" Min.
Closing Voltage	1.5-9.5 volts (Adjust to 6.5 volts)
Air Gap-Points Closed . . . . .	.008"-.020"
TURN SIGNAL FLASHER	
Flasher per Minute (Non-Adjustable)	80-100

LIGHT BULB NUMBERS

Headlamps (Inner, #1, upper beam only)	4001
Headlamps (Outer, #2, lower and upper beam)	4002
Tail light (inboard)	67
Stop, Tail and Turn Signal (outboard)	1034
Parking and Turn Signal (Front)	1034
Dome Light (Tubular)	211
Console Courtesy Lamp	68
Electric Clock Lamp	57
Heater Control Lamp	53
Generator Warning Lamp	158
High Beam Indicator Lamp	53
Instrument Cluster Lamps	158
Oil Pressure Warning Lamp	158
Temperature Indicator Lamp	158
Turn Signal Indicator Lamps	158
Shift Indicator Lamp	53
License Lamp	67
Back-Up Lamps	1073
Radio Dial Lamp	1892
Courtesy Lamp (3067)	90

FUSE SPECIFICATIONS AND LOCATIONS

APPLICATION	FUSE TYPE AND AMPERES	FUSE LOCATION
Electric Clock	AGA 2	} Located in Fuse Block
Dome Lights	SFE 20	
Courtesy Lights		
Stop Lights		
Temperature Indicator Light	SFE 9	
Fuel Gauge		
Oil Pressure Warning Light		
Generator Warning Light		
Back-Up Light		
Turn Signal		
License Light		
Tail Lights	AGW 4	
Radio - Deluxe		
Heater and/or Air Conditioning		
Electric Windshield Wipers & Washer	SFE 20	
Instrument Cluster Light	AGA 3	
Clock Light		
Shift Indicator Light		
Heater Ventilator & Air Conditioning Lights		
Generator Armature and Wire	575532	On "Bat" Terminal Of Regulator
Headlights	Circuit Breaker	On Headlight Switch
Cigar Lighter (Instrument Panel)	SFE 20	On Back of Lighter
Flasher	Part No. 535078	Upper L.H. Corner of Fuse Block



VENTILATING, HEATING AND AIR CONDITIONING

FOR SERVICE PROCEDURES AND SPECIFICATIONS OF THE UNITS NORMALLY COVERED IN THIS SECTION AND NOT LISTED HEREIN, PLEASE REFER TO THE 1961 F-85 SERVICE MANUAL.

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VENTILATING—HEATING

The ventilating and heating systems used on the 1962 F-85 are the same units as those used in 1961.

HEATER TEMPERATURE CONTROL VALVE

CAUTION: When handling the heater control valve temperature sensing tube, valve must be in the "ON" position or calibration of valve may be affected. Note position of sensing tube coil before removing so that on reassembly the coil will be placed in the exact same position.

Removal and Installation

The heater temperature control valve is attached to the heater case with 2 sheet metal screws. To remove the valve, it is necessary to drain the radiator, disconnect the two hoses and control cable. The heater core and case assembly must first be removed from the cowl panel. The heater core must be removed from the case and the valve may then be removed. It is not necessary to remove the Air Inlet and Blower Assembly.

AIR CONDITIONING

MAINTENANCE RECOMMENDATIONS

The air conditioning system should be operated for 5 minutes during each month that the system is not in regular use. A thorough service inspection should be performed at the beginning of the cooling season:

Compressor belt tension should be checked at every engine oil change interval.

Periodically remove road accumulation (bugs, etc.) from the condenser.

AIR CONDITIONING (Fig. 14-1)

The Air Conditioning system used on the F-85 is functionally the same as that described in the 88, S88 and 98 section of this manual, with the exception of the suction throttle valve. The F-85 Suction Throttle Valve does not have an oil bleed line from the evaporator to the valve. The action of the Refrigerant in the system and the design of the evaporator prevents oil from remaining in the evaporator. It is also manual controlled rather than vacuum.

SUCTION THROTTLE VALVE

The description of the operation of the suction throttle valve will be found in the 88, S88 and 98 sections of this manual.

CABLE ADJUSTMENT

- Operate the control lever to be sure the cable is not kinked.
- Position temperature lever fully to the right and loosen cable clamp screw on the valve. (Fig. 14-2)
- Position cable in the clamp to force the valve lever against its stop.
- With temperature lever held fully to the right and with valve lever held against its stop, tighten cable clamp screw.

NOTE: When adjusting suction throttle valve after system has been discharged, the

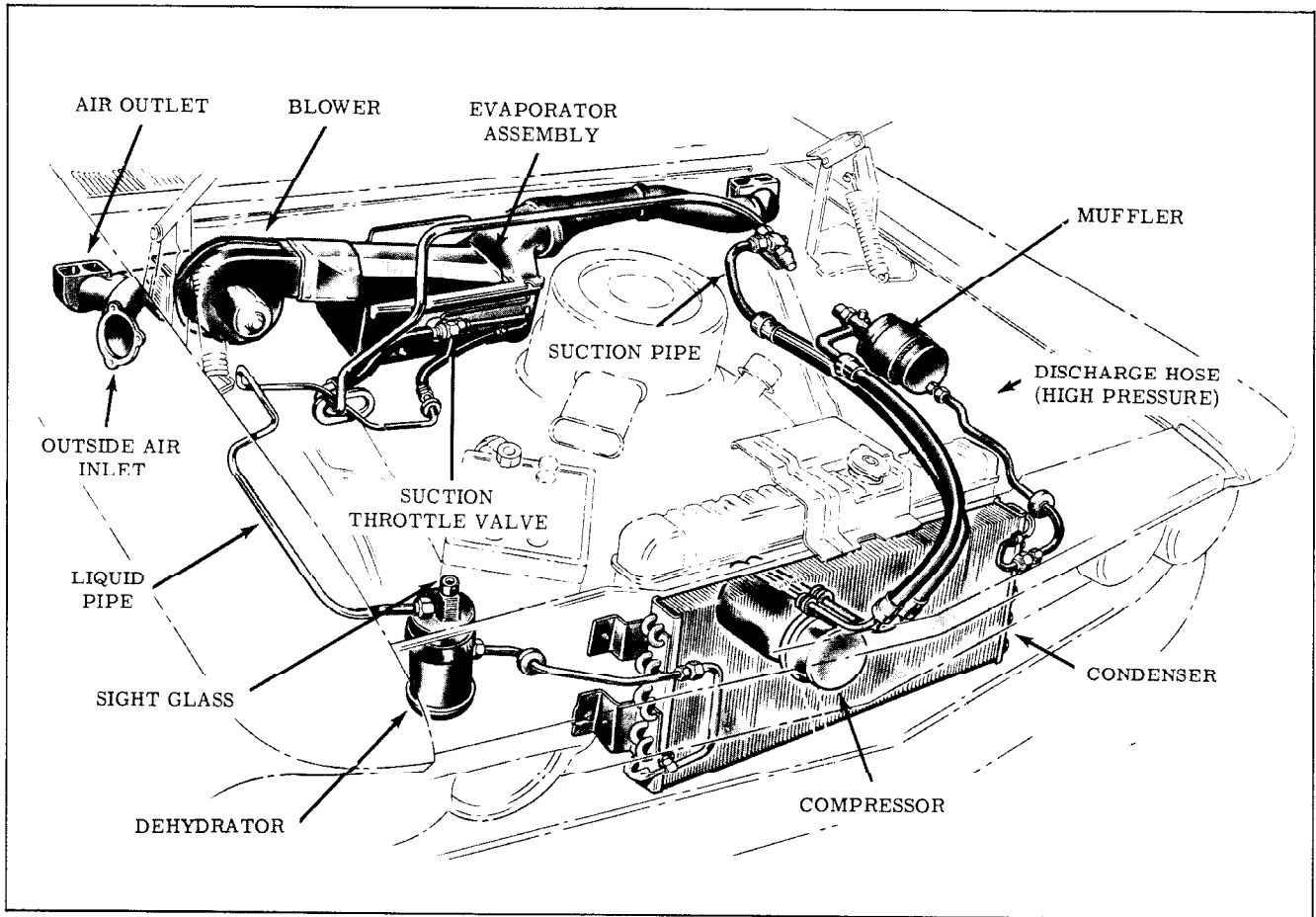


Fig. 14-1 Air Conditioning System

temperature control lever must be moved back and forth 10 to 15 times to normalize the diaphragm.

VALVE ADJUSTMENT

NOTE: Be sure cable is properly adjusted

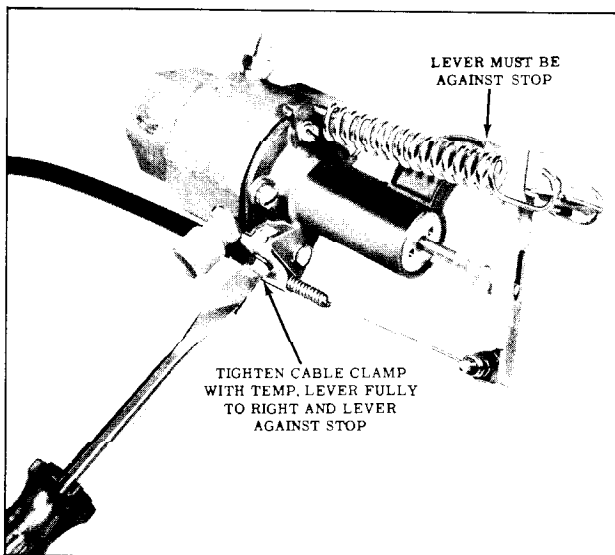


Fig. 14-2 Cable Adjustment

before adjusting valve.

Should it become necessary to adjust the valve, the following steps must be performed.

1. Remove the Schrader valve cap at the suction throttle valve.
2. Install adapter J-9459 on the low pressure gauge hose (gauge set closed) and connect to suction throttle valve.
3. Purge the gauge and hose by opening gauge valve momentarily.
4. Start engine, adjust engine rpm to 1600, temperature control at extreme right and depress "HI" blower speed button.
5. Allow system to operate a few minutes. Slowly increase engine rpm until evaporator pressure no longer decreases. Evaporator pressure must be 23-24 psi. If the minimum reading is not 23-24 psi, adjust valve to 23 psi as follows:
 - a. Engage the pins on tool J-9505 in holes in valve plug. (Fig. 14-3)
 - b. Turn plug to adjust. (Clockwise to increase)

NOTE: If ice is forming on the evaporator, the pressure may be increased a

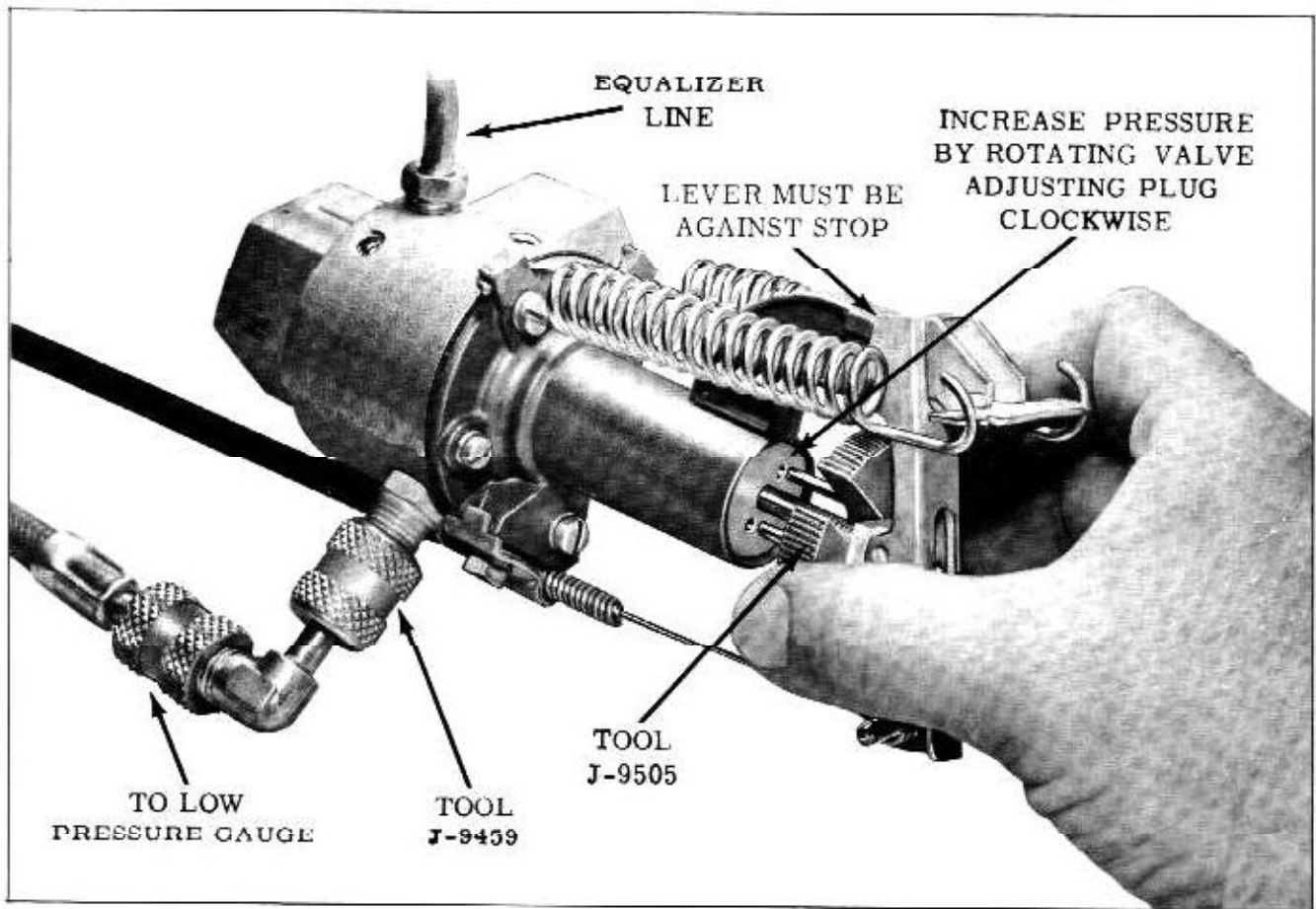


Fig. 14-3 Adjusting Suction Throttle Valve

half-pound at a time until the condition is eliminated.

6. Turn engine off, remove tools and install Schrader valve cap.

Removal

1. Disconnect the evaporator assembly from the dash by removing the screws from the front support bracket and the two brace to cowl attaching screws.
2. Swing the assembly to the side, disconnect the control cable, equalizer line and suction line. Remove the valve to case attaching screws.

Installation

1. Position the valve and attach it to the case.
2. Connect the suction line, and equalizer line.
3. Connect and adjust the control cable.
4. Position the evaporator assembly and install mounting screws.

Disassembly

1. Remove the two over center assist springs.

2. To aid during assembly, scribe a line on the suction throttle valve cover and body.

3. Carefully remove the cover assembly by removing the five cover attaching screws.

CAUTION: Cover is under heavy spring tension.

4. Remove the three springs and spring retainer.

5. Remove the diaphragm cup and spring seat.

6. Remove the diaphragm and valve assembly from the valve body.

7. Remove the diaphragm from the valve.

8. Remove the gauge fitting. The Schrader valve may be removed from the fitting.

CLEANING AND INSPECTION

After complete disassembly of the unit, thoroughly clean all metal parts in a clean solvent and blow out all passages with dry air. Clean the screen in the throttle valve of any foreign material.

Inspect the springs for distortion or collapsed coils. Do not stretch the springs. Inspect the valve and bore for nicks or scratches.

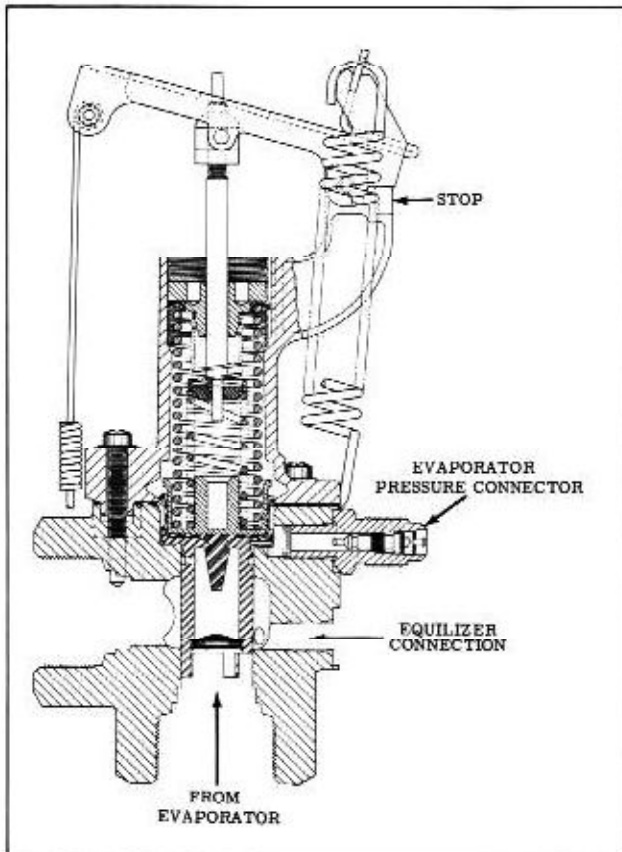


Fig. 14-4 Suction Throttle Valve

ASSEMBLY

1. Install the gauge fitting in the valve body, the Schrader valve in the fitting if removed, and the fitting cap.
2. Lubricate the tab of the diaphragm with 525 viscosity oil and install in the suction throttle valve, then install valve in the valve body and align the screw holes in diaphragm with holes in valve body.
3. Place the diaphragm cup in the pocket of the diaphragm, then install the spring seat into the diaphragm cup.
4. Stack up the three springs and spring retainer on the spring seat in the diaphragm cup as follows:
 - a. The heavy short spring.
 - b. Place spring retainer in this spring.
 - c. The light short spring in the seat of the spring retainer.
 - d. Then the long spring over these two springs.
5. With the actuating lever down, away from the stop, as far as possible, place the cover assembly on the springs so the scribe marks are in line.
6. Check to be sure the diaphragm screw holes are still aligned with the holes in the valve body, then compress spring by pushing on the

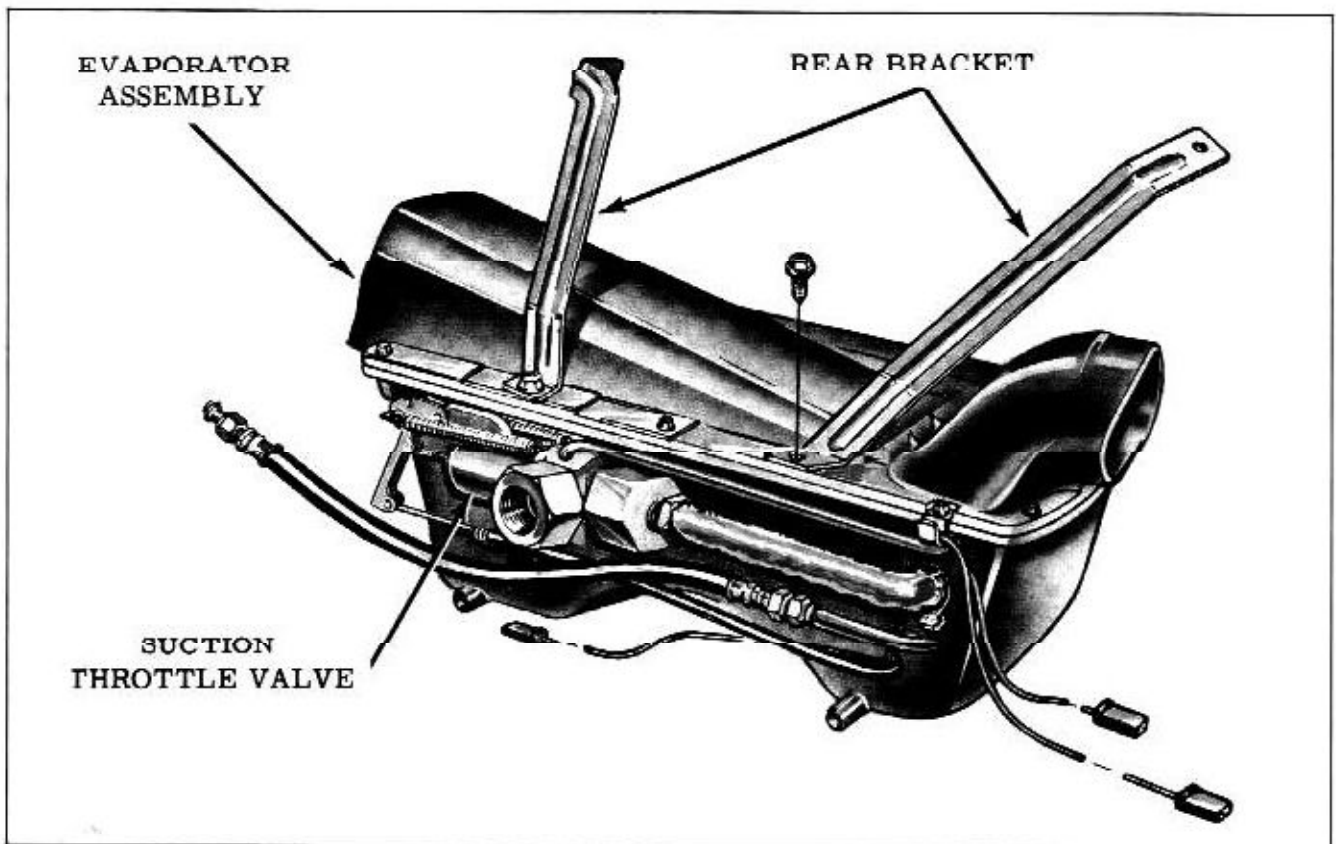


Fig. 14-5 Suction Throttle Valve Location

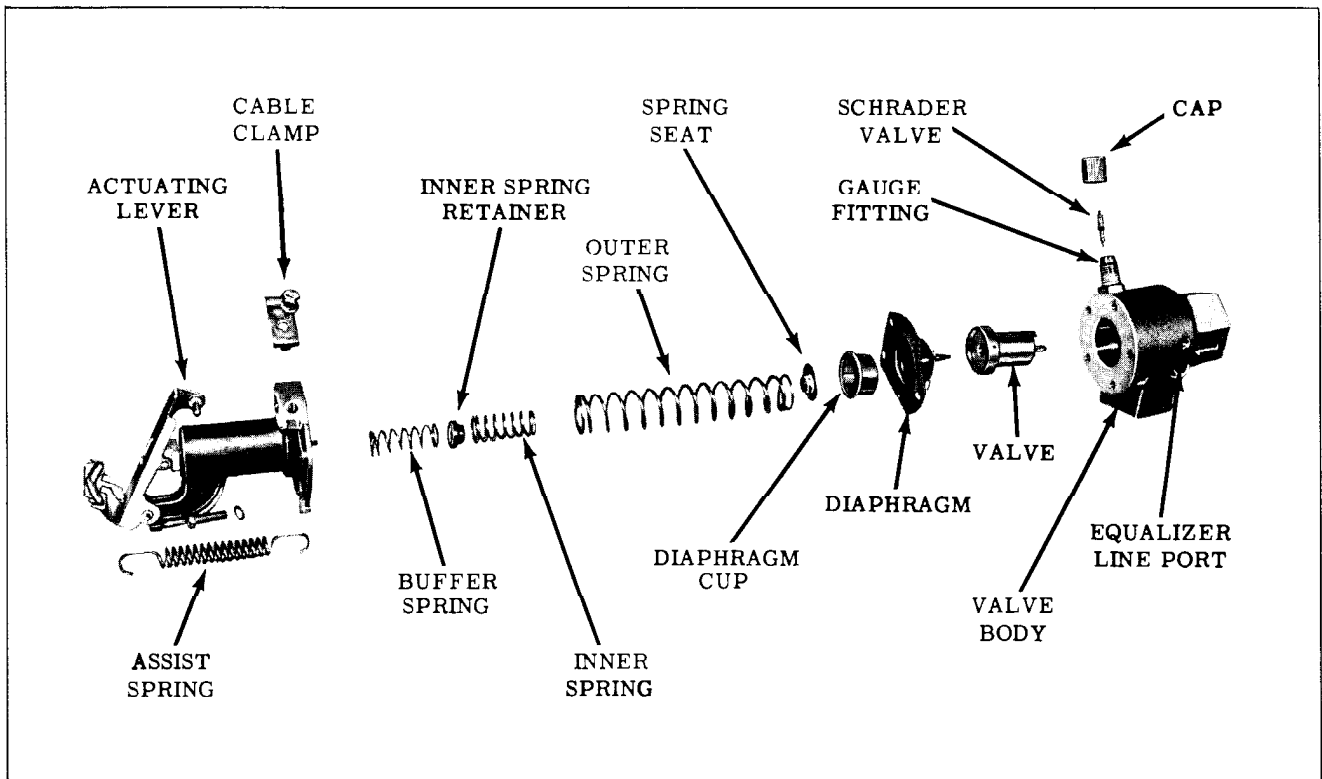


Fig. 14-6 Suction Throttle Valve

cover to engage the actuating pin in the hole of the spring retainer.

NOTE: It may be necessary to hold the actuating lever down to engage the pin in the spring retainer. After the pin is engaged in the spring retainer allow the actuating lever to move while compressing the springs.

7. Loosely install the five cover to valve body attaching lock washers and screws.
8. With a 3/8" diameter brass drift, push the valve into the cover to properly position diaphragm into the cavity of the cover to prevent pinching between cover and valve body when tightening screws. Then tighten screws evenly.
9. With the actuating lever in the full upward position, the actuating pin should travel downward 3/32" before contact is made with the inner spring retainer.

NOTE: This contact is determined by feel as the lever is moved downward from the full up position.

10. If the movement or travel of the actuating pin is not to this dimension make the following adjustment. The upper threaded end of the actuating pin which projects through the plastic nut has two milled flats to provide surface for wrench grip for changing the adjustment. Turning the actuating pin clockwise or downward will decrease the travel before contact.

Conversely, turning the actuating pin counterclockwise or upward will increase the travel before contact.

This adjustment is to assure that regulated spring pressure is relieved when lever is against the stops while operating at maximum cooling. This adjustment also controls evaporator pressure for minimum cooling temperature.

11. After the correct travel of the pin has been made, assemble the assist springs. Attach the one hook of the springs to the tabs on the cover flange. Stretch and hook the opposite ends of the springs into the outside notches of the lever arm.

EXPANSION VALVE

The description and operation of the expansion valve will be found in the 88, S88, and 98 section of this manual.

COMPRESSOR

For Service procedures of the compressor, please refer to 88, S88 and 98 Air Conditioning section of this manual.

The compressor used on the F-85 uses a single groove pulley and the pistons are slightly concaved which results in a lower capacity output. The output of the F-85 is 10.5 cu. in. and the 88, S88 and 98 is 12.6 cu. in.

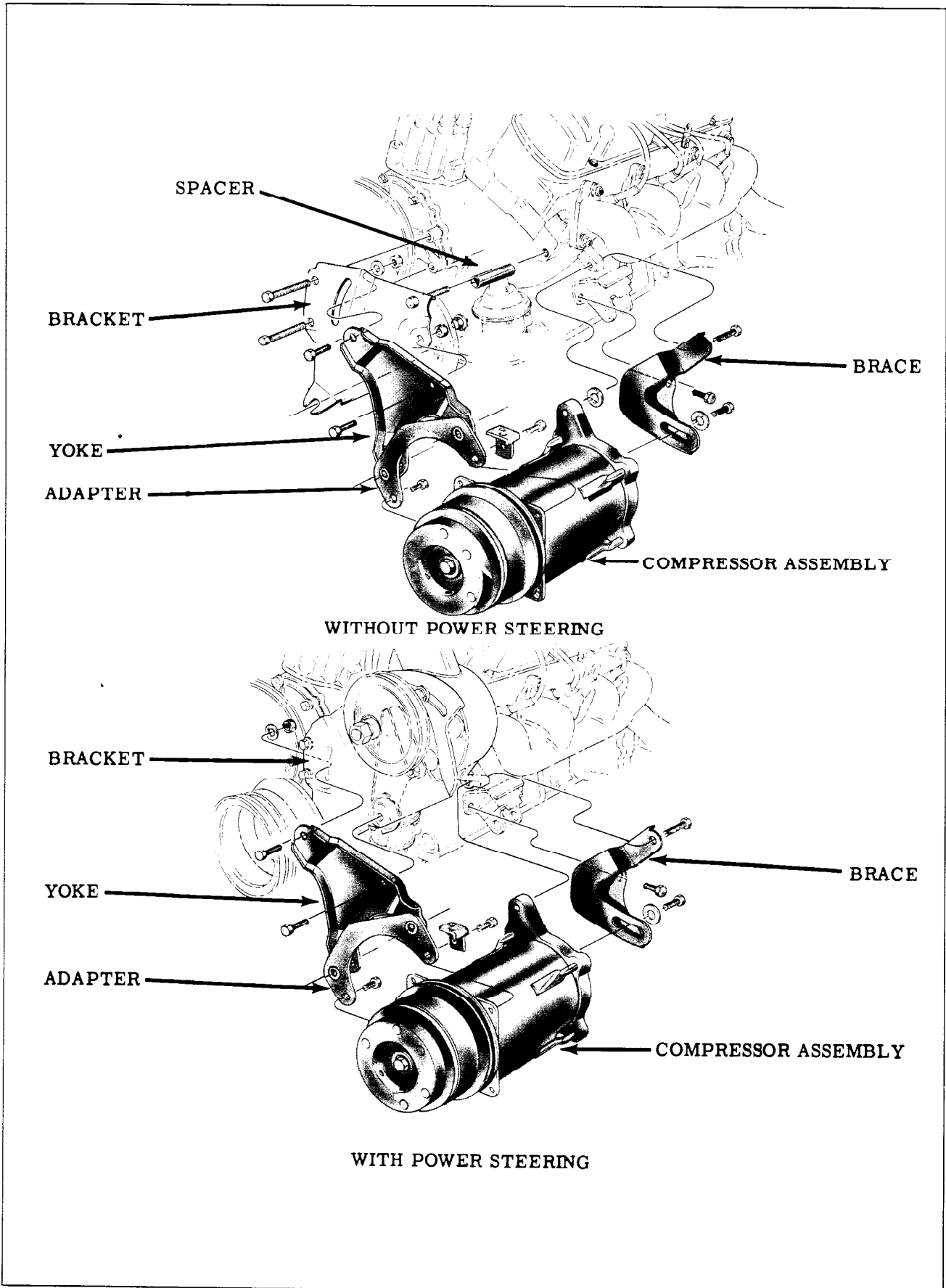


Fig. 14-7 Compressor Mountings

REMOVAL (WITH POWER STEERING)

1. Raise hood, drain radiator.
2. Remove Power Steering Pump Pulley and Belt.
3. Remove two pump front stud nuts and one rear. Disconnect hoses from valves and cap.
4. Raise car, remove Front and Rear compressor pivot bolts and compressor adjusting bolts. (Leave front compressor bracket attached to compressor.)
5. Loosen lower pump bracket to block bolt.
6. Lower car and remove two bracket to front cover bolts and remove pump bracket and move pump.
7. Remove two compressor bracket to head bolts.
8. Lift compressor and hoses by rotating pulley upward.

INSTALLATION

1. Lower compressor to approximate operating position.
2. Attach brackets to head with two bolts.
3. Position pump and pump front bracket, and loose assemble pump in position. Tighten bracket to front cover bolts.

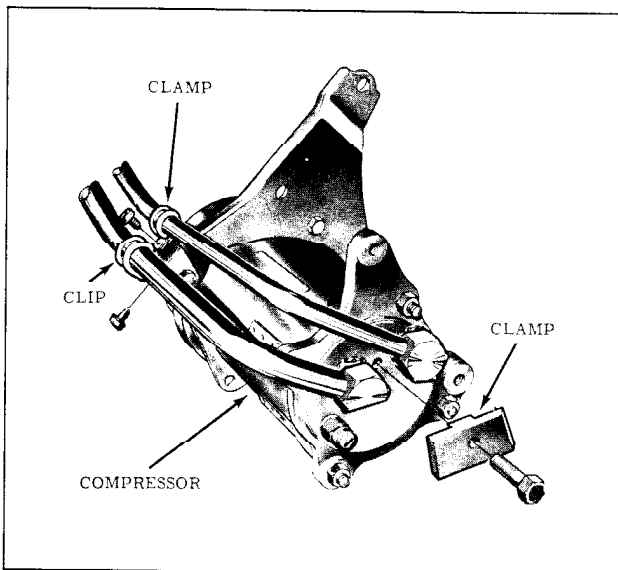


Fig. 14-8 Hose to Compressor Attachment

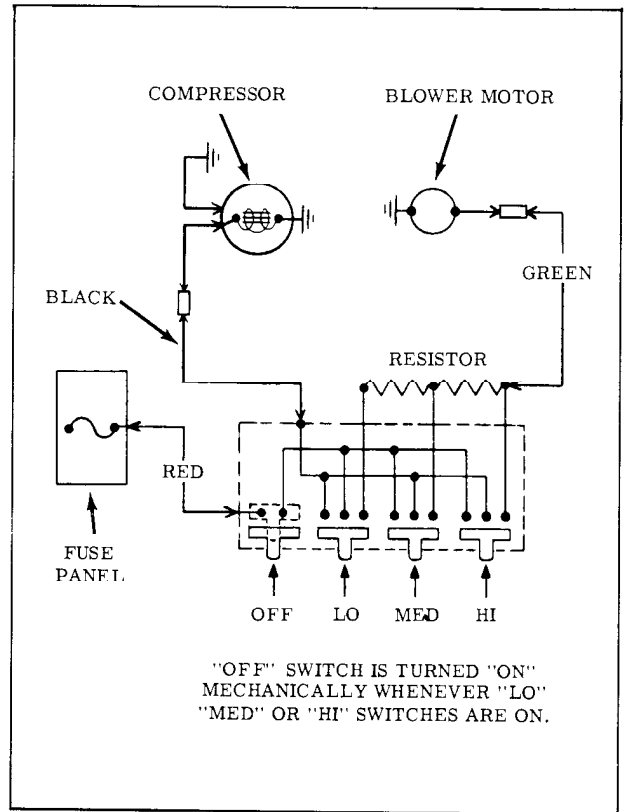


Fig. 14-9 Wiring Diagram

NOTE: Use sealer on two front cover bolts.

4. Hoist car and position compressor to brackets (two men) and install and adjust belts.
5. Lower car, tighten pump to bracket nuts, install and adjust power steering pump belt.
6. Connect hoses to valves and fill radiator.

REMOVAL (WITHOUT POWER STEERING)

1. Raise hood, drain radiator, and disconnect hoses from valves and cap.
2. Raise car remove front and rear compressor pivot bolts, and compressor adjusting bolts. (Leave front compressor bracket attached to compressor.)
3. Loosen compressor bracket to block, lower bolt.
4. Lower car and remove 2 brackets to front cover bolts, 1 bracket to head bolt and remove bracket.
5. Lift compressor and hoses by rotating pulley upward.

INSTALLATION

1. Lower compressor to approximate operating position.
2. Attach bracket to engine bolts. (Use sealer on 2 front cover bolts.)
3. Raise car, tighten lower bracket to cover bolt,

install compressor pivot and adjusting bolts.

4. Lower car, connect hoses to valves and fill radiator.

CHECKING OR ADDING OIL

The method of checking or adding oil is outlined in the 88, S88 and 98 Air Conditioning Section of this manual.

PERFORMANCE CHART

*Car Interior		Evaporator Pressure	Engine Speed	Discharge Air R.H. Nozzle	**Pressure
Humidity	Temp. °F	At Suction Throttling Valve	RPM	Temp. ± 1°F	High (Discharge) ± 10 lbs.
20	60	23	1600	30	113
	70	23		31	130
	80	23		32	160
	90	23		33	200
	100	24		36	235
30	60	23	1600	30-1/2	118
	70	23		32	135
	80	23		33-1/2	168
	90	24		37	212
	100	27		41	252
40	60	23	1600	31	122
	70	23		32-1/2	140
	80	23		35	175
	90	27		40	225
	100	32		46	267
50	60	23	1600	31	127
	70	23		33	146
	80	23		37-1/2	183
	90	30		44	236
	100	37		51-1/2	282
60	60	23	1600	31-1/2	132
	70	23		34	151
	80	23-1/2		39	192
	90	33		48	250
	100	42		57	297
70	60	23	1600	32	135
	70	23		34	157
	80	24		41	200
	90	36-1/2		52	262
	100	47		62	312
80	60	23	1600	32	140
	70	23		35	162
	80	27-1/2		43	207
	90	40		56	274
90	60	23	1600	32	145
	70	23		35	168
	80	28		45	215
	90	43-1/2		60	285

* Atmospheric Temperature and Relative Humidity to be taken near car.

** The Low Pressure (Suction) reading should be 1 to 2 lbs. lower than Evaporator Pressure.

PRESSURE-TEMPERATURE RELATIONSHIP OF REFRIGERANT

Temp. °F	Pressure	Temp. °F	Pressure	Temp. °F	Pressure	Temp. °F	Pressure	Temp. °F	Pressure
-8	5.4	22	22.4	52	49.0	82	87.0	112	140.1
-6	6.3	24	23.9	54	51.0	84	90.1	114	144.2
-4	7.2	26	25.4	56	53.0	86	93.2	116	148.4
-2	8.2	28	27.0	58	55.4	88	96.4	118	153.0
0	9.2	30	28.5	60	58.0	90	99.6	120	157.1
2	10.2	32	30.1	62	60.0	92	103.0	122	161.5
4	11.3	34	32.0	64	62.5	94	106.3	124	166.1
6	12.3	36	33.4	66	65.0	96	110.0	126	171.0
8	13.5	38	35.2	68	67.5	98	113.3	128	175.4
10	14.5	40	37.0	70	70.0	100	117.0	130	180.2
12	15.9	42	39.0	72	73.0	102	121.0	132	185.1
14	17.1	44	41.0	74	75.5	104	124.0	134	190.1
16	18.4	46	43.0	76	78.3	106	128.1	136	195.2
18	19.7	48	45.0	78	81.1	108	132.1	138	200.3
20	21.0	50	47.0	80	84.1	110	136.0	140	205.5

GENERAL SPECIFICATIONS

Engine Idle Speed (Refer to Engine Performance and/or Carburetion Section)

Cooling System Capacity
 With Air Conditioning 11 qts.
 Without Air Conditioning 10-1/2 qts.
 For Heater (Add) 1-1/2 qts.

Fuse (at Fuse Block) 20 Amps.

Amount of Refrigerant in System: 2 Lbs. 8 Oz.

Total Amount of Oil in Freon System 10 Fluid Oz.

Type of Oil Frigidaire 525 Viscosity

TORQUE SPECIFICATIONS

Ft. Lbs.

Compressor Front Bracket to Cylinder Block	20 to 25
Compressor Front Bracket and Brace to Timing Chain Cover	25 to 35
Compressor Front Adapter to Front Bracket	25 to 35
Compressor Front Adapter to Brace	25 to 35
Compressor to Front Adapter	20 to 25
Compressor Rear Brace to Block	25 to 35
Compressor Rear Brace to Compressor	20 to 25
Compressor Front Bracket and Spacer to Cylinder Head	25 to 35
High and Low Pressure Hose Assembly to Compressor	15
Driven Plate to Compressor Shaft Nut	14 to 16
Adapter to Yoke - Compressor Adjusting	25 to 35
	Steel Pipe Torque
	Metal Pipe O.D. Ft. Lbs.
	1/4 10 - 15
Pipe Connecting Nut Torque	3/8 30 - 35
("O" Rings)	1/2 30 - 35
	5/8 30 - 35
	3/4 30 - 35
	Alum. or Copper Pipe Torque Ft. Lbs.
	5 - 7
	11 - 13
	11 - 13
	18 - 21
	23 - 28

BODY

FOR SERVICE PROCEDURES AND SPECIFICATIONS OF THE UNITS NORMALLY COVERED IN THIS SECTION AND NOT LISTED HEREIN, PLEASE REFER TO THE 1961 F-85 SERVICE MANUAL.

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BODY CONSTRUCTION

ALIGNMENT REFERENCE POINTS

Fig. 15-1 shows the specific reference points used in making underbody measurements. Dimensions to gauge holes and other unthreaded holes are measured to dead center of the holes and flush to the adjacent surface metal.

Following is a description of the specific body reference points for the horizontal and vertical dimensions:

1. Center of hole in front cross rail for front crossmember front center attaching bolt (front suspension removed).
2. Rear edge of front cross rail at point of contact with inboard facing of motor compartment side rail. (View "A" in Fig. 15-1)
3. Center of 3/4" diameter gauge hole in lower horizontal surface of front suspension rear

support bracket (just rearward of front crossmember rear attaching point on each side of car).

4. Center of 5/16" diameter gauge hole in bottom surface of each motor compartment side rail (located in area of transmission rear crossmember attaching bolt holes).
5. Center of 5/16" diameter pierced hole in each floor pan side rail slightly rearward of drive shaft center bearing support crossbar.
6. Center of 5/16" diameter gauge hole in bottom surface of rear compartment side rail (located outboard of the forward attaching area of the rear axle lower control arm).
7. Lower rear edge of rear suspension mounting support, directly below center of rear axle lower control arm front support bracket attaching bolt hole. (View "B" in Fig. 15-1)
8. Center of rear axle upper control arm upper rear attaching bolt hole on outboard side of

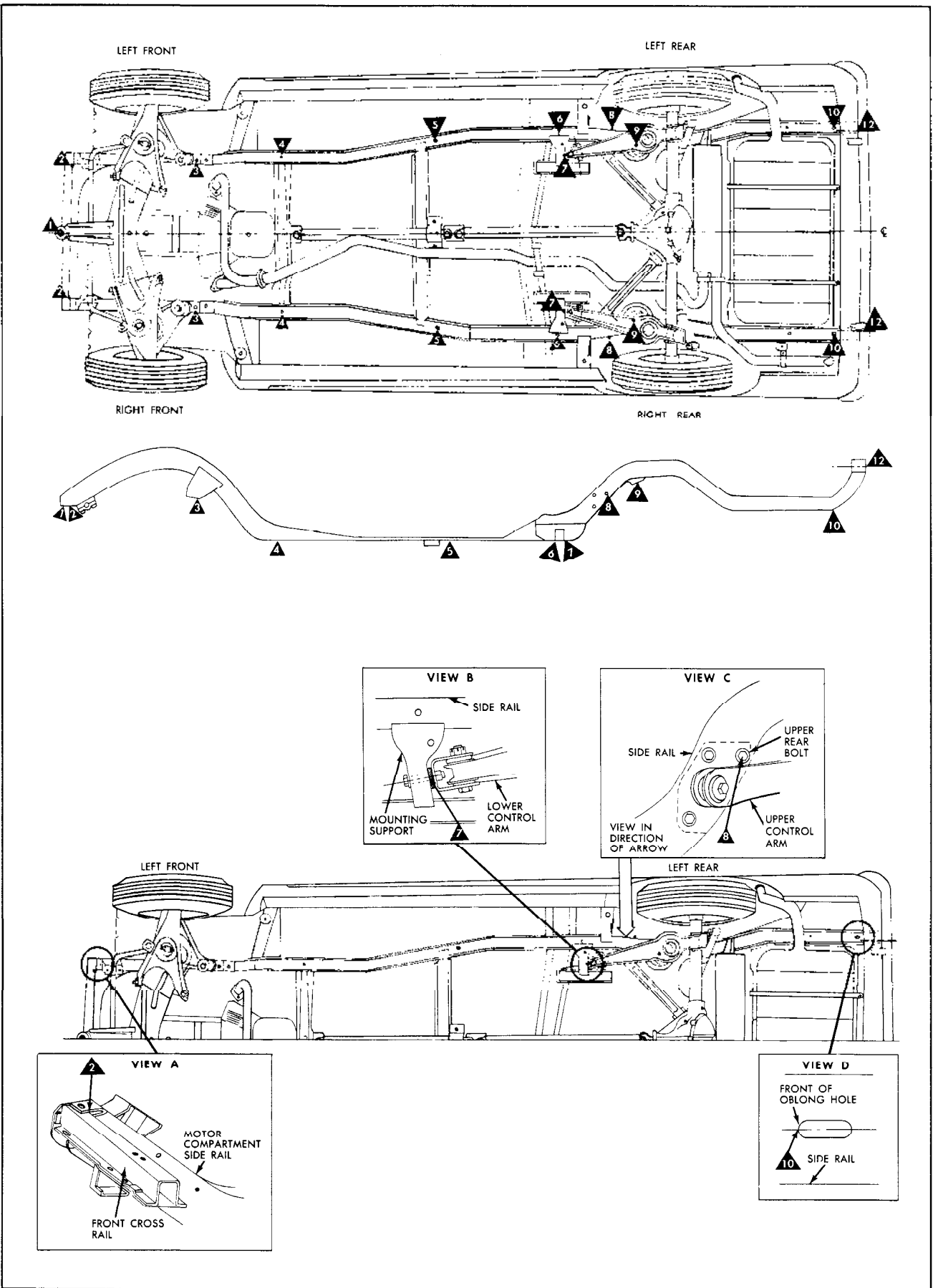


Fig. 15-1 Location of Underbody Alignment Reference Points

rear compartment side rail. (View "C" in Fig. 15-1)

9. Center of hole in rear spring upper mounting plate (on rear compartment side rail).
10. Center front edge of oblong hole in bottom surface of rear compartment side rail (located slightly forward of rear end lower panel). (View "D" in Fig. 15-1)

NOTE: Reference point "10" in left side rail (gas tank filler neck side) is 1-5/16 inches further from body centerline than reference point "10" in right side rail (tail pipe side).

11. Center of inboard attaching bolt hole for rear bumper support.

UNDERBODY DIMENSION CHART

HORIZONTAL:

Fig. Ref.	Dimension	Ref. Point	Ref. Point	
A	28-29/32	2	2	
B	14-15/32	1	2	(either side)
C	48	2	4	(same side)
D	56-5/8	2	4	(opp. side)
E	40-5/8	2	3	(opp. side)
F	27-23/32	2	3	(same side)
G	31-5/32	3	3	
H	20-9/32	3	4	(same side)
I	37-3/16	3	4	(opp. side)
J	31-5/32	4	4	
K	81-29/32	3	9	(same side)
L	69-1/2	4	8	(opp. side)
M	48-25/32	4	6	(opp. side)
N	59-7/8	4	8	(same side)
O	38-3/16	6	6	
P	46-11/16	6	8	(opp. side)
Q	87-23/32	3	9	(opp. side)
R	87-19/32	3	8	(opp. side)
S	40-1/8	8	8	
T	31-21/32	9	9	
U	17-23/32	8	11	(same side)
V	37-23/32	11	11	
W	69-23/32	8	12	(left side)
X	68-15/16	8	12	(right side)
Y	55-7/8	8	12	(same side)
Z	42	12	12	

VERTICAL:

Fig. Ref.	Dimension	Datum Line to Ref. Point
a	12-1/2	1
b	12-7/16	2
c	14-3/8	3
d	6-1/16	4
e	6-1/16	5
f	6	6
g	6-1/32	7
h	14-11/16	8
i	16-13/32	9
j	10	10
k	18-21/32	11

PRINCIPLES OF TRAMMING

As indicated in the underbody dimension chart, all diagonal dimensions (except "W" and "X") are of equal distance to the same matching reference points on the opposite side of the body. These are commonly referred to as crosscheck dimensions.

EXAMPLE: Dimension "L" is 69-1/2 inches measuring from reference point "4" on right side to reference point "6" on left side; the cross-check dimension between reference point "4" on left side to reference point "6" on right side. (Fig. 15-2)

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

1. The horizontal dimension between the two reference points to be trammed.
2. The vertical dimension from the datum line to the reference points to be trammed. As an example, diagonal measurement "R" (calculated on a horizontal plane) between reference point "3" and reference point "6" is 87-19/32 inches.

The specifications from the datum line to the reference points indicate a vertical height difference of 8-3/8 inches between forward reference point "3" and rearward reference point "6". The front vertical pointer used at reference point "3" should be adjusted so as to extend 8-3/8 inches further from the tram bar than the rear pointer used at reference point "6".

With the proper settings the tram bar will be on a plane parallel to that of the body plane. The

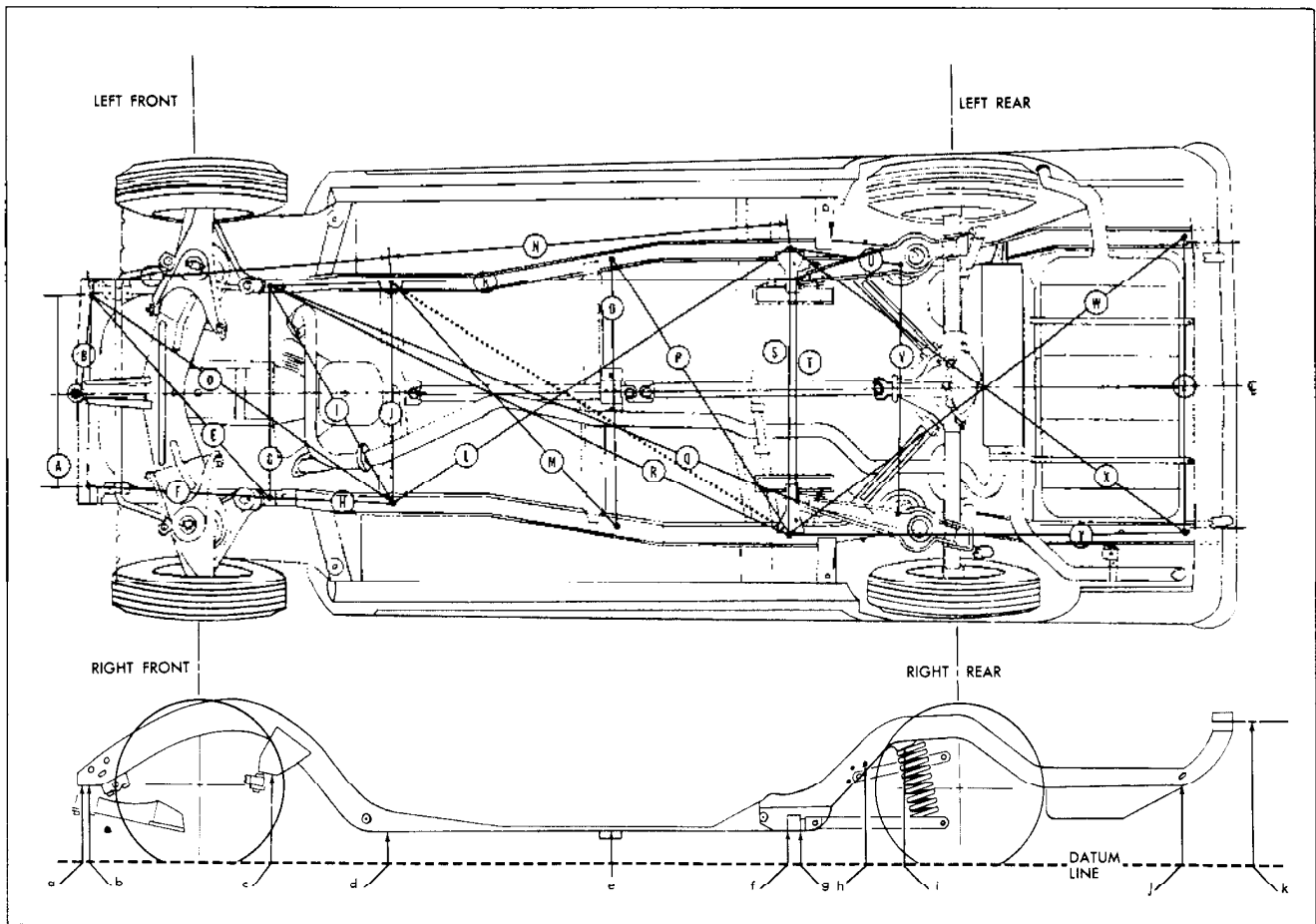


Fig. 15-2 Underbody Alignment Reference Dimensions

exception to this would be when one of the reference points is included in the misaligned area; then the parallel plane between the body and the tram bar may not prevail. After completion of the repairs, the tram gauge should be set at the specified dimensions to check the accuracy of the repair operation.

Car Preparation

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

1. Place the car on level surface.
2. The weight of the car should be supported at the wheel locations.
3. A visual damage inspection should be made to eliminate needless measuring. Obviously damaged or misaligned areas can often be located by sight.

Tramming Sequence

The tramming sequence will vary depending upon the nature and location of the misaligned area. Basically there are eleven key reference

points that should be utilized when making underbody alignment checks. These reference points are: (See Figs. 15-1 and 15-2)

- 1 - Center of front crossmember front attaching bolt hole.
- 3 - Center of gauge holes in front crossmember rear attaching bolt support brackets.
- 4 - Center of gauge holes in motor compartment side rail at transmission.
- 6 - Center of gauge holes in side rails at drive shaft center bearing support.
- 8 - Center of gauge holes in rear compartment side rail at lower control arm.
- 9 - Below center of lower control arm front support bracket attaching holes.

Prior to performance of any tramming operation, the accuracy of reference points to be used must be determined. A measurement that originates from a reference point which is included in a damaged area will produce untrue results and confuse the evaluation of the underbody condition.

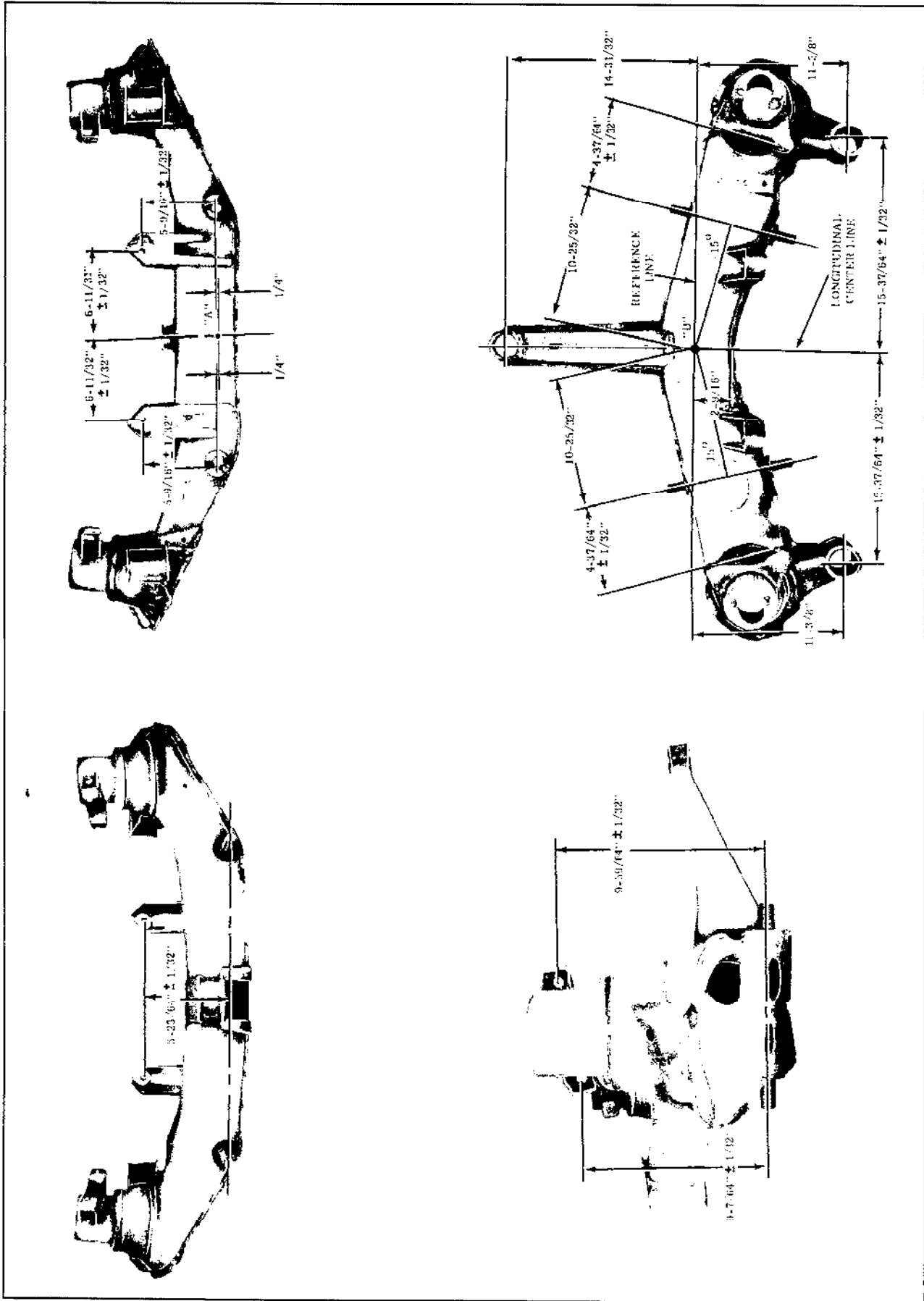


Fig. 15-3 Front Suspension Cross Bar Alignment Dimensions

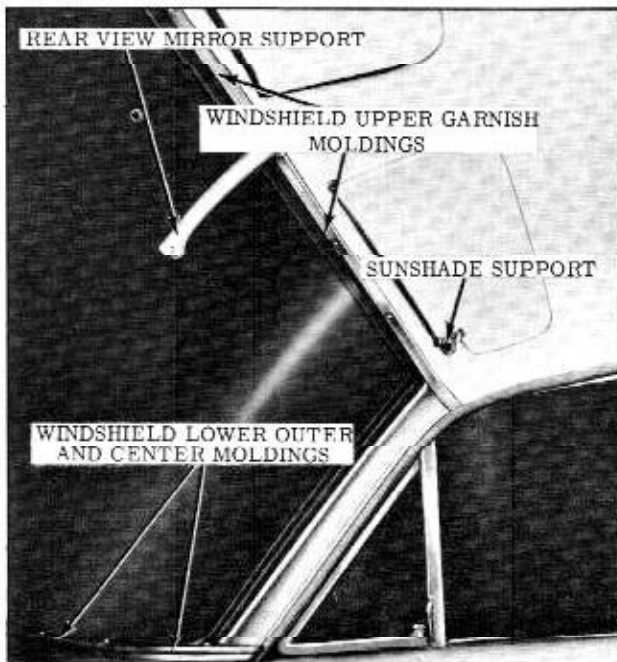


Fig. 15-4 Garnish Molding Attachment

Unlike the conventional type of frame design, the unitized type of body construction seldom develops the two conditions of "twist" and "diamond" in the floor pan area as a result of front or rear end collisions. Therefore, underbody alignment checking can usually originate from the 5/16" diameter gauge holes in the side rails (reference points "4", "5" and "6").

If inspection indicates that these locations have been disturbed and are not suitable for measuring, one of the undamaged suspension locations should be used as a beginning reference point. If a rare situation should exist where all of the key locations are not suitable as reference points, repair operations should begin with the body floor pan area. All other underbody components should be aligned progressively from this area.

WINDSHIELD ASSEMBLY

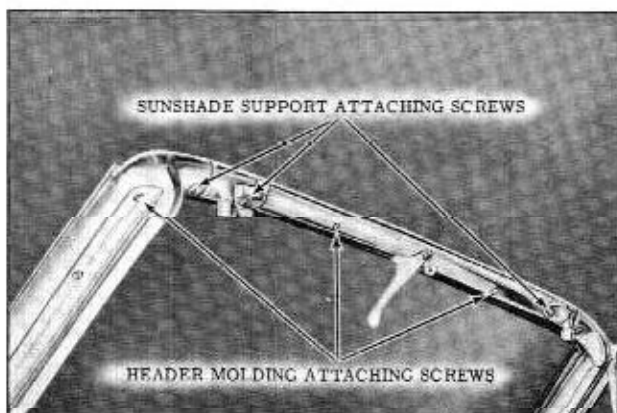


Fig. 15-5 Garnish Molding ("67" Styles)

GARNISH MOLDINGS (All Styles)

The windshield garnish moldings on all styles except "67" styles consist of upper right and left moldings, lower center molding and right and left lower outer moldings. On "67" styles the windshield header moldings consist of right and left end moldings and center moldings. All moldings are secured by screws. (Fig. 15-4)

Removal and Installation

1. Place protective coverings over front seat and instrument panel.
2. Remove rear view mirror support; then remove upper moldings. On "67" styles raise top, remove sunshade support; then remove end and center moldings. (Fig. 15-5)
3. Remove lower end moldings.
4. Remove lower center molding.
5. To install, on "67" styles, apply a 3/16" bead of medium-bodied sealer the entire length of the windshield header before installing the header moldings. Apply additional sealer to the underside of end moldings to insure watertight seal to the junction of the center molding. (Fig. 15-6)

Clean off excess sealer and reverse removal procedure.

MINOR WATERLEAKS AT WINDSHIELD

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

1. Leaks between rubber channel and glass.
 - a. Using a pressure applicator (plews over or equivalent) with a narrow tip, apply an approved weatherstrip adhesive (black) between glass and rubber channel on the outside of the glass completely around perimeter of glass.

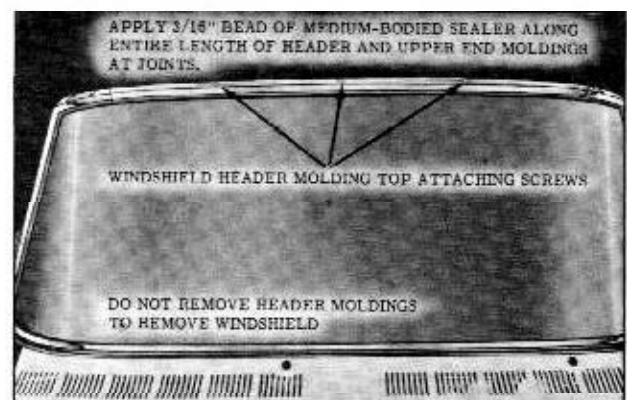


Fig. 15-6 Garnish Molding Sealing

- 2. Leaks between rubber channel and body.
 - a. Use a pressure applicator with a narrow tip. Working from outside of the body, apply medium-bodied sealer under outer lip of rubber channel around entire perimeter of body opening.

DOORS

INSIDE HANDLES (CONVERTIBLE)

Removal and Installation

1. Remove door arm rest as described under DOOR ARM RESTS.
2. Remove handle-to-remote attaching bolt and remove handle from door. (Fig. 15-7)
3. To install, reverse removal procedure.

NOTE: The inside handle is in a vertical position pointing downward when glass is in full up position.

DOOR ARM RESTS (All Styles)

All arm rests are the applied type and are secured to the door inner panel by screws which self-thread into plastic anchor nuts snapped into the door inner panel. The anchor nuts are sealed with body caulking compound and are replaceable as a service part. (Fig. 15-8)

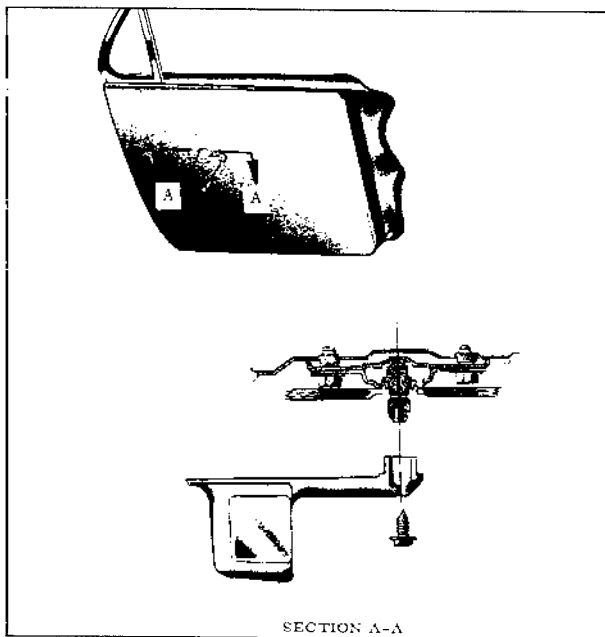


Fig. 15-7 Door Inside Remote Control "Paddle" Handles

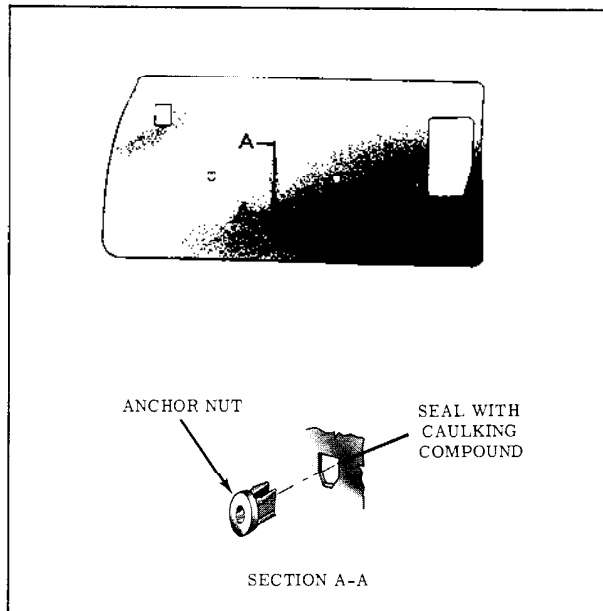


Fig. 15-8 Door Arm Rest Anchor Nut

DOOR WEATHERSTRIPS (All Except Convertibles)

The one-piece door weatherstrip is cemented into the door window frame assembly which forms a retainer type channel for retention of the weatherstrip assembly. The remainder of the door weatherstrip is retained by clips inserted into attaching hole sealing plugs. Service procedures for front and rear door weatherstrips are similar and both weatherstrips are covered as follows:

Removal

1. With a flat-bladed tool, carefully break cement bond along door window frame assembly and at belt line.
2. Insert tip of Tool J-5757 at clip location and carefully snap clips from retaining plugs and remove weatherstrip from door.

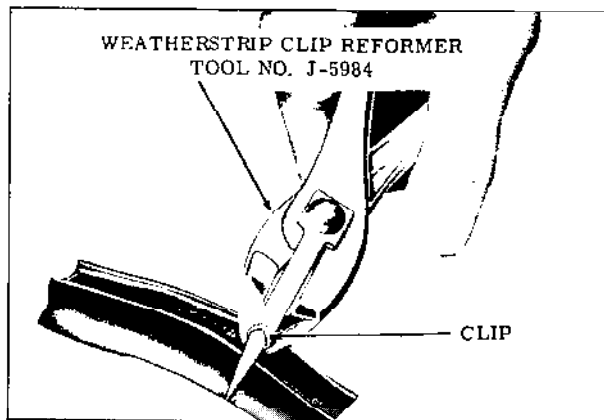


Fig. 15-9 Reforming Weatherstrip Clips with Tool J-5984

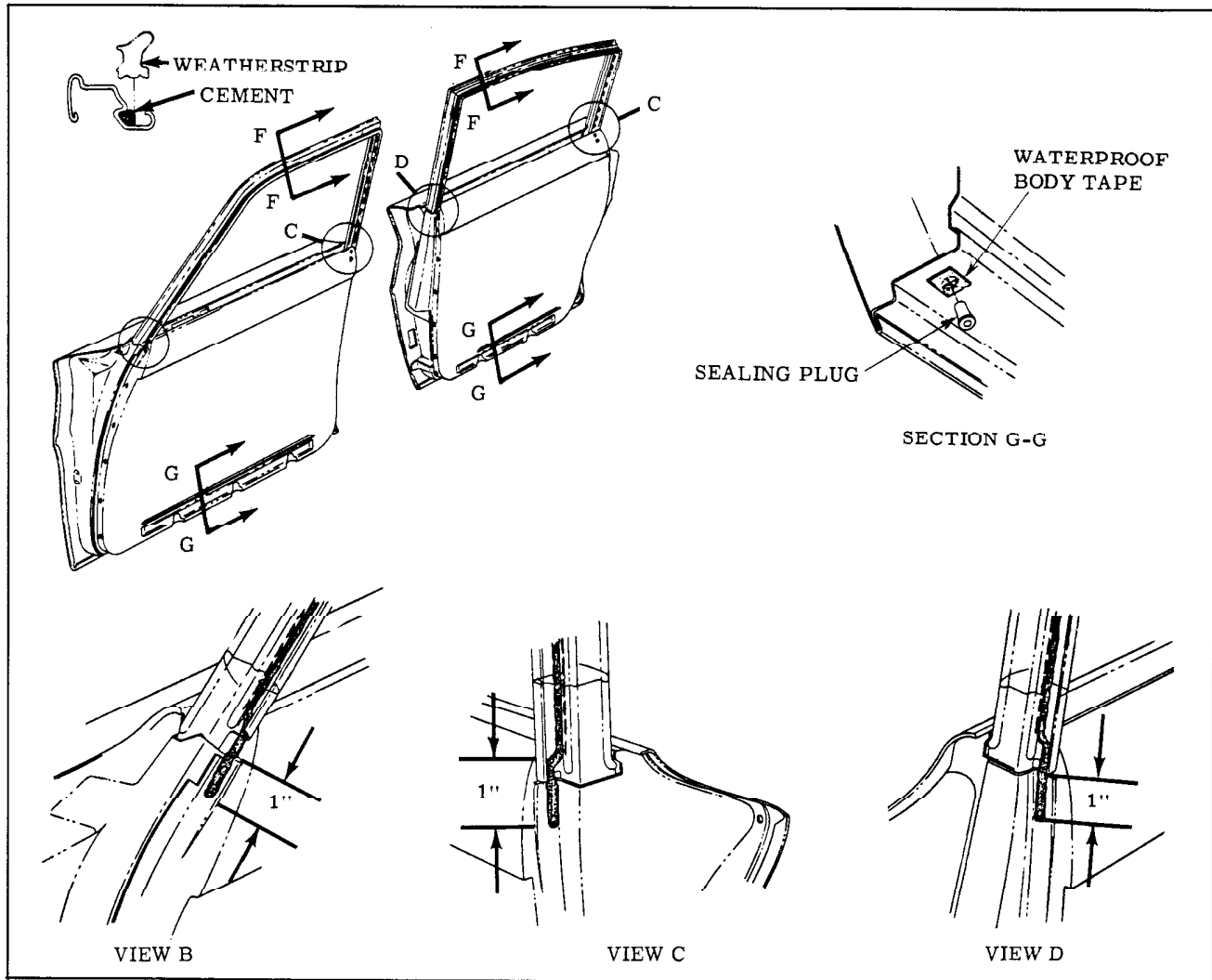


Fig. 15-10 Door Weatherstrips

Installation

1. Clean off old cement from window frame and door inner panel to insure a clean cementing surface.
2. Check weatherstrip clips for proper contour and reform if necessary using Tool J-5984. (Fig. 15-9)
3. Check all attaching hole sealing plugs. If sealing plugs are loose and will not remain engaged in door inner panel, install a 1/2" x 1" piece of clothbacked waterproof body tape over sealing plug retaining hole as shown in Section "G-G" of Fig. 15-10. Make two 5/16" slits in tape to form an "X". Install plug and check for a snug fit. If plug is still loose, repeat above operation by installing a second piece of tape over existing repair. This procedure may also be used to repair water-leaks which develop at sealing plug locations.
4. Prior to installation of weatherstrip on either door, apply a continuous bead of an approved

weatherstrip cement extending from approximately one (1) inch below window frame at hinge pillar section (See View "B" or "D") along entire outboard portion of door weatherstrip retaining channel (See Section "F-F") to approximately one (1) inch below lock pillar section of window frame assembly as shown in View "C". (See Fig. 15-10)

NOTE: When applying weatherstrip cement follow manufacturer's directions.

5. Starting at uppermost clip hole on either door pillar, install clips to door by placing notched end of Tool J-5757 in loop of clip and pushing clip into attaching hole sealing plug. Repeat operation along both sides and bottom of door.

NOTE: Do not distort clips or unsatisfactory weatherstrip retention will result.

6. Using a putty knife, or other suitable flat-bladed tool, install door weatherstrip into door window frame assembly.

7. Clean off all excessive weatherstrip adhesive.

DOOR WEATHERSTRIP (Convertible)

The door weatherstrip is a one-piece design, retained by clips inserted into attaching hole sealing plugs for the entire door and by cement along the top four (4) inches of hinge and lock pillar panels.

Removal

1. With a flat-bladed tool, carefully break cement bond at hinge and lock pillar panels.
2. Insert tip of Tool J-5757 at clip locations and carefully snap clips from retaining plugs and remove weatherstrip from door.

Installation

1. Clean off old cement to insure a cleancementing surface.
2. Check weatherstrip attaching clips for proper contour and, if necessary, reform using Tool J-5984. (Fig. 15-9)
3. Check all attaching hole sealing plugs. If sealing plugs are loose and will not remain

engaged in door inner panel, install a 1/2" x 1" piece of clothbacked waterproof body tape over sealing plug retaining hole as shown in Section "G-G" of Fig. 15-10. Make two (2) 5/16" slits in tape to form an "X" pattern. Install plug and check for a snug fit. If plug is still loose, repeat above operation by installing a second piece of tape over existing repair. This procedure may also be used to repair waterleaks that may develop at sealing plug locations.

4. Prior to installation of weatherstrip, apply a four (4) inch bead of an approved weatherstrip cement at top four (4) inches of hinge and lock pillar panels. (Fig. 15-11)

NOTE: When applying weatherstrip cement, follow manufacturer's directions.

5. Starting at uppermost clip hole on either door pillar, install clips to door by placing notched end of Tool J-5757 in loop of clip and pushing clip into attaching hole sealing plug. Repeat operation along both sides and bottom of door.

NOTE: DO NOT distort clips or unsatisfactory weatherstrip retention will result.

6. Clean off all excessive weatherstrip adhesive.

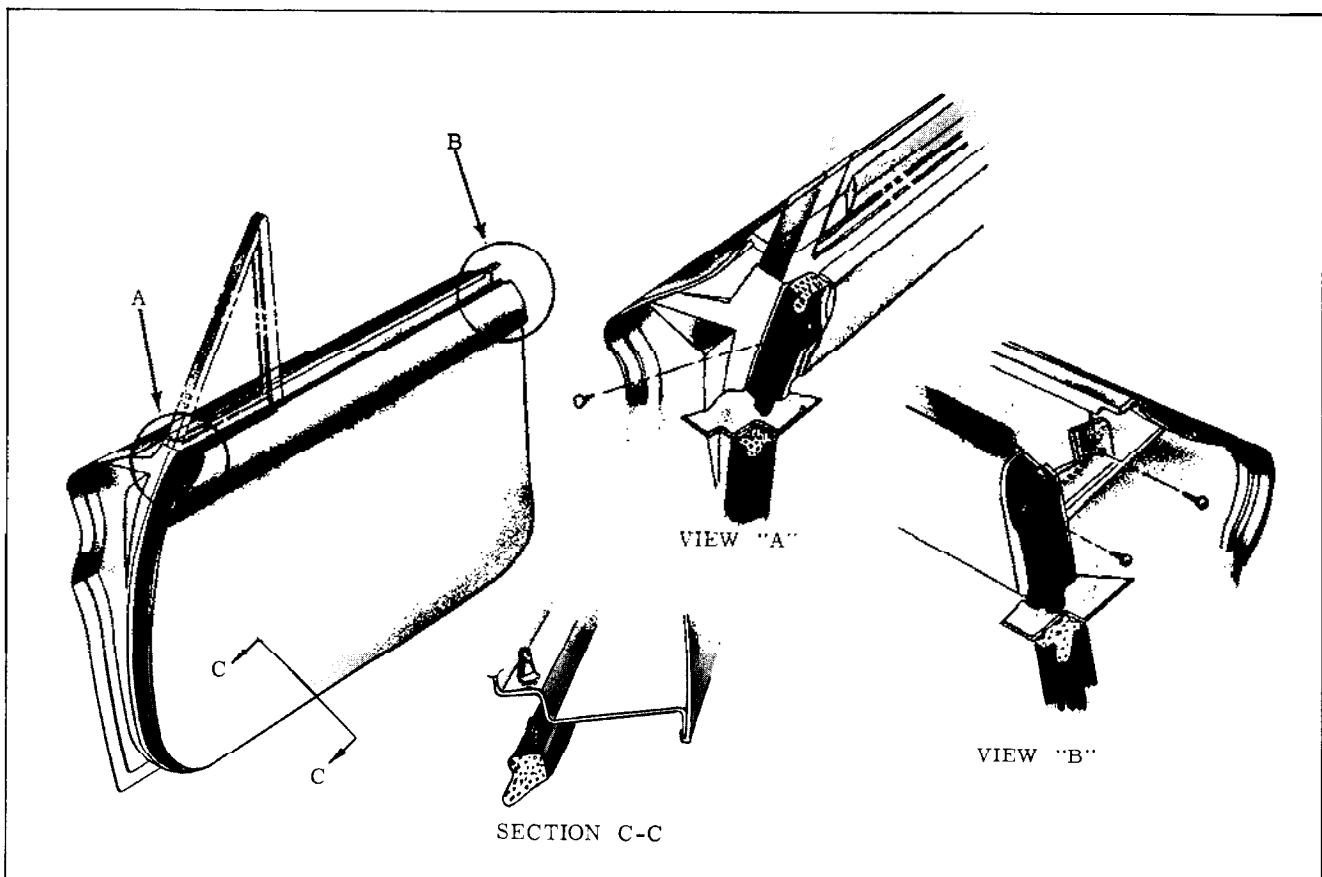


Fig. 15-11 Convertible Door Weatherstrips

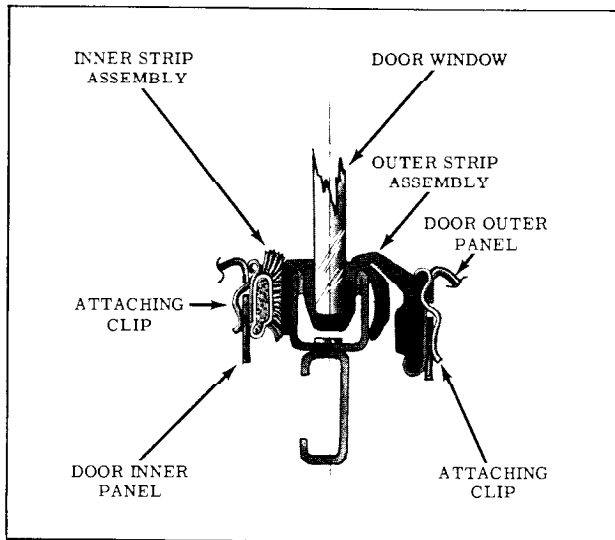


Fig. 15-12 Front and Rear Door Window Glass Run Channel Inner and Outer Strip Assemblies

DOOR GLASS RUN CHANNEL INNER AND OUTER STRIP ASSEMBLIES

Glass run channel strip assemblies are designed to prevent cold air and water from entering the body between the door window lower sash channel and door inner and outer panels. The inner strip is secured to the door inner panels by clips. The outer strip is constructed of molded rubber and is secured to a metal retainer by staples. On styles equipped with a door window belt reveal molding, the metal retainer is an integral part of this molding. In either case, the molding or retainer is secured to the door outer panel by clips and screws, one at each end. When the window is raised, the top section of the outer strip is lifted and held in position by the window lower sash channel. (Fig. 15-12)

Removal and Installation

1. Lower door window and apply masking tape over door panel adjacent to strip assembly to protect paint finish.
2. On styles equipped with a belt reveal molding, remove attaching screws.

NOTE: On rear doors, the molding attaching screws are accessible; however, on front doors, the ventilator assembly must be removed to gain access to the forward attaching screw.

3. With a hooked tool, carefully lift up strip assembly at clip locations and remove from door. (Fig. 15-13)

OUTSIDE HANDLES (All Styles)

Removal and Installation

1. Raise door window. Detach trim and upper rear corner of inner panel water deflector

to gain access to door outside handle attaching screws.

2. Remove screws, then remove door handle and gaskets from outside of body.
3. To install, reverse removal procedure.

FRONT AND REAR DOOR PINCHWELD FINISHING STRIPS

A one-piece strip assembly of a woven cotton and vinyl construction is used.

Removal and Installation

1. Remove center pillar-to-roof rail finishing plate and door sill plate.
2. On station wagon styles, remove rear body lock pillar-to-roof rail finishing plate.
3. Carefully pull strip assembly loose from pinchweld.
4. To install, begin at front edge of sill plate and press strip over pinchweld.

FRONT DOORS

FRONT DOOR VENTILATOR CASTING (Convertible) (Fig. 15-14)

Removal and Installation

The front door ventilator casting is secured to the front door assembly by an attaching bolt and adjusting stud and nut. The front facing of

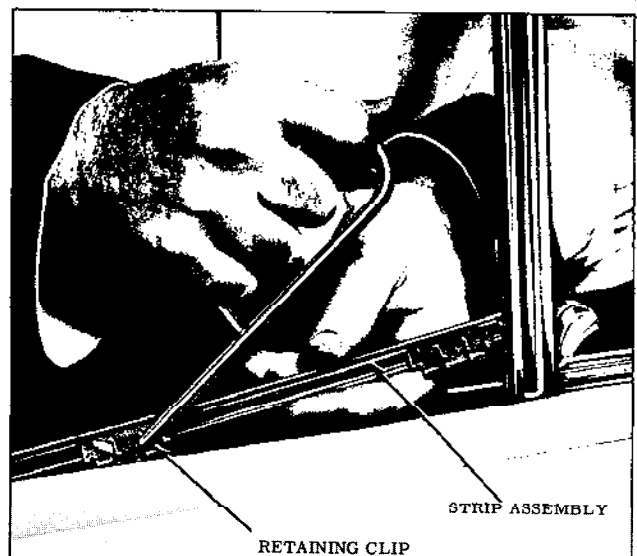


Fig. 15-13 Door Window Glass Run Channel Inner and Outer Strip Assemblies (Outer Strip Shown - Inner Typical)

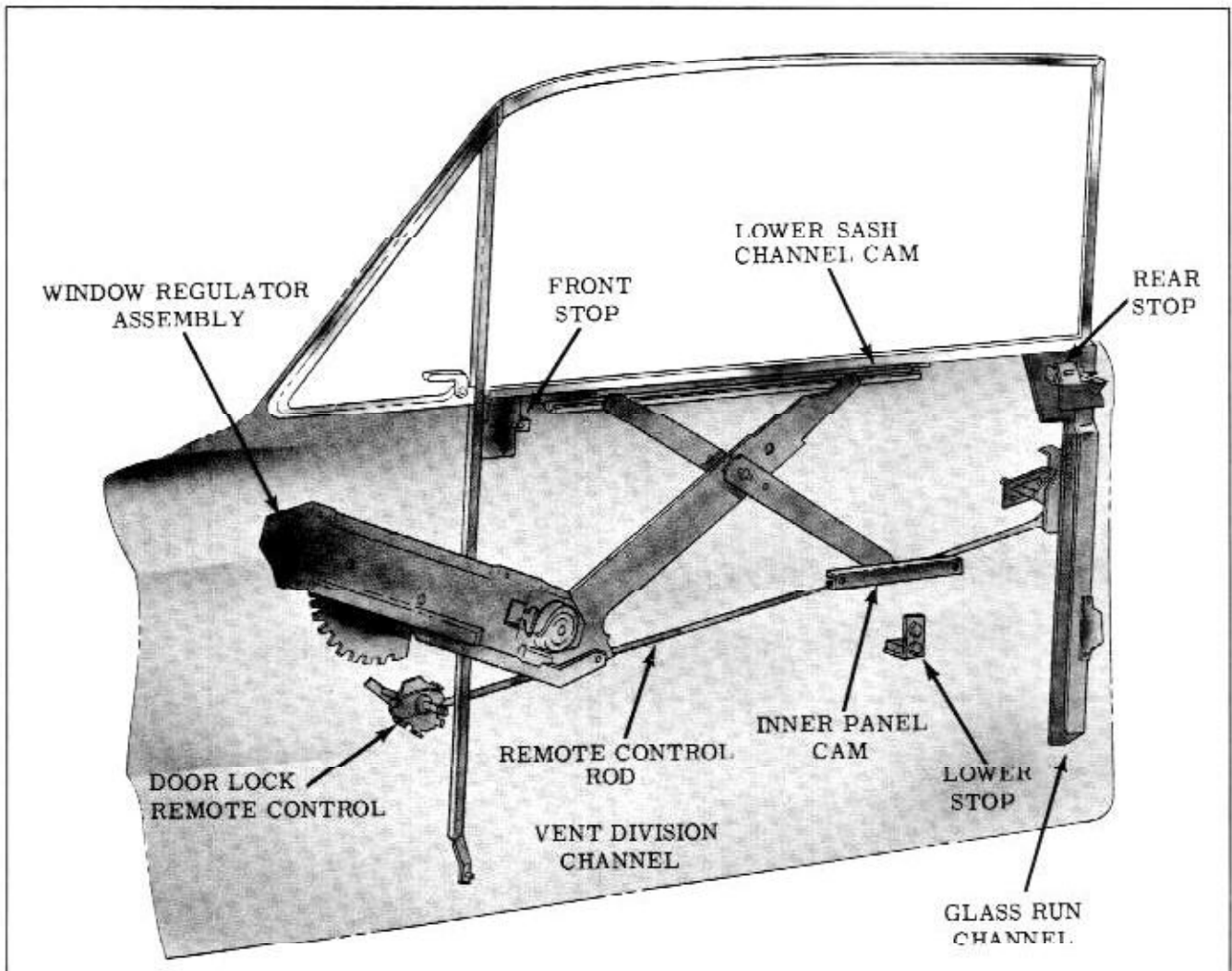


Fig. 15-14 Convertible Door Assembly

the ventilator frame is secured to the ventilator casting by three attaching screws.

1. Remove ventilator casting to door hinge pillar panel attaching bolt and lower adjusting stud nut.
2. Remove three ventilator casting to ventilator frame attaching screws and remove casting from door. (Fig. 15-15)
3. A slight fore and aft adjustment of the ventilator casting can be obtained at the lower adjusting stud and nut.

FRONT DOOR VENTILATOR ASSEMBLY (Convertible)

The front door ventilator assembly is a manually operated friction type unit on all styles.

Removal and Installation

1. Raise door window, remove door trim assembly and detach inner panel water deflector.

2. Remove ventilator division channel lower adjusting stud and nut. (Fig. 15-16)
3. Remove front door ventilator casting.
4. Remove ventilator frame to door inner panel attaching screw.
5. Tilt ventilator assembly until ventilator division channel is free from front edge of door window glass and remove ventilator assembly from door.

CAUTION: After ventilator has been removed, door glass should be held or otherwise suitably supported to prevent damage.

6. To install, reverse removal procedure. Check operation of ventilator and door window assembly and make necessary adjustments.

FRONT DOOR INNER PANEL CAM (All Except "19", "35" and "45" Styles)

Removal and Installation

1. Remove door trim assembly and detach inner

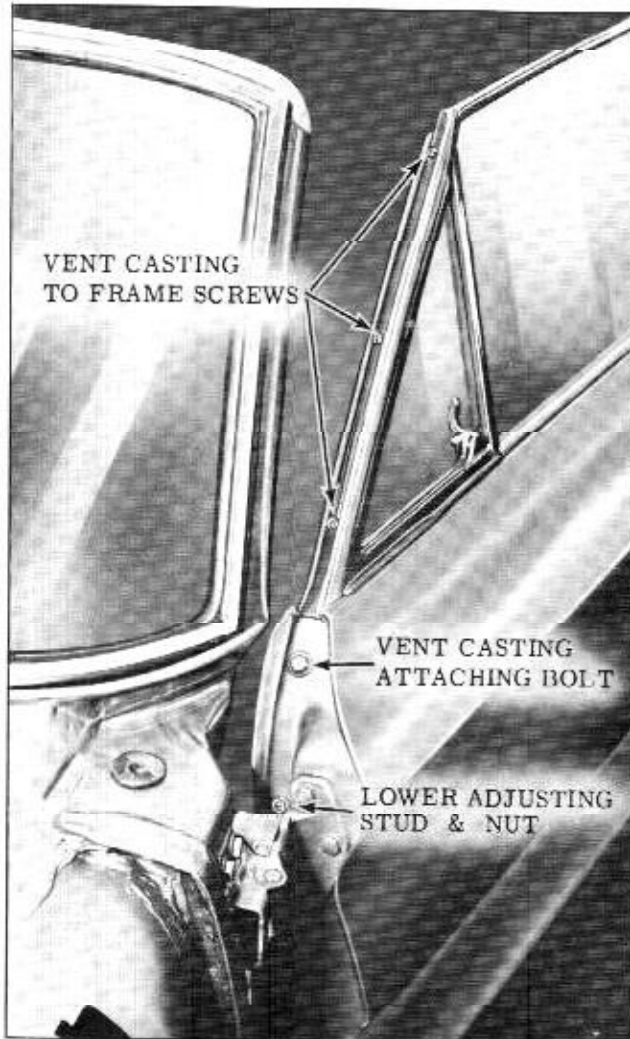


Fig. 15-15 Front Door Ventilator Casting

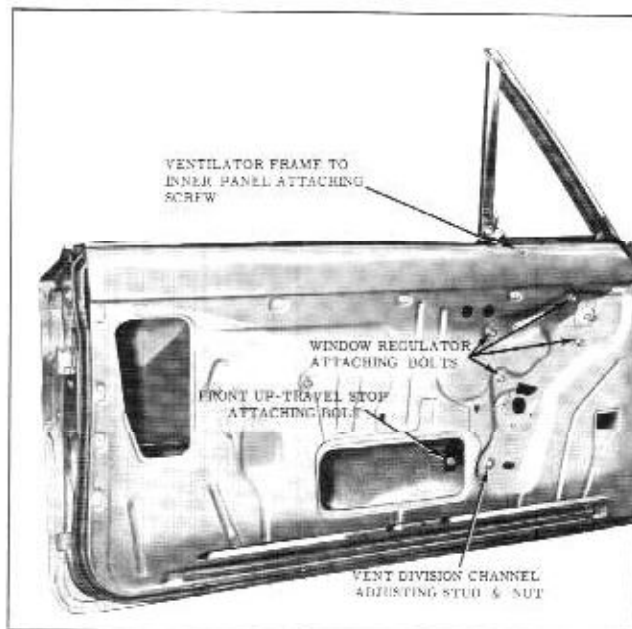


Fig. 15-16 Ventilator Attachment

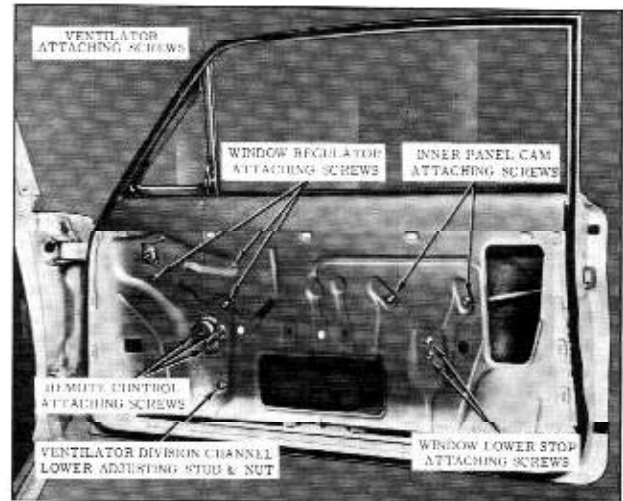


Fig. 15-17 Front Door Hardware Attachments

panel water deflector sufficiently to gain access to inner panel cam attaching bolts.

2. Remove two inner panel cam attaching bolts. (Fig. 15-17)
3. Slide cam rearward to disengage nylon roller of window regulator balance arm and remove cam through large access hole in door inner panel.
4. To install, reverse removal procedure. Prior to installation, lubricate entire length of inner panel cam with 630 AAW Lubriplate or equivalent.

FRONT DOOR WINDOW (All Except Convertible)

The front door glass is a solid tempered safety plate glass. The glass fits into a lower sash channel assembly which incorporates a welded-on lower sash channel cam. With this type of design, the door glass, lower sash channel and sash channel cam are removed from the door as a unit.

CAUTION: Care should be exercised to make certain glass does not strike body metal during installation procedure as edge chips can cause solid tempered safety plate glass to shatter. DO NOT attempt to grind glass.

Removal and Installation

1. Remove door trim assembly and detach inner panel water deflector.
2. Remove front door ventilator assembly as previously described under FRONT DOOR VENTILATOR - Removal and Installation.

CAUTION: After ventilator has been removed, door glass should be held or otherwise suitably supported to prevent damage to door glass.

3. On "17" and "27" styles, remove inner panel cam
4. Carefully lift window assembly upward and forward to disengage regulator arm from door window lower sash channel cam and remove window assembly from between inner and outer panels.
5. To install, reverse removal procedure. After installation of window assembly, lubricate lower sash channel cam along entire length of cam with 630 AAW Lubriplate or its equivalent.

Adjustments

1. To adjust the lower portion of the ventilator division channel in or out or fore or aft, lower door window and loosen ventilator division channel adjusting stud nut. (Fig. 15-18) Turn adjusting stud in or out or position lower end of channel fore or aft as required; then tighten stud nut.
2. A slight up or down adjustment of the door window, in the lowered position, can be obtained by adjusting the door window lower stop assembly.

FRONT DOOR WINDOW (Convertible)

The front door glass is a solid tempered safety plate glass. The glass fits into a lower sash channel assembly which incorporates a welded on lower sash channel cam. With this type of design, the door glass, lower sash channel and sash channel cam are removed from the door as a unit.

CAUTION: Care should be exercised to make certain glass does not strike body metal during installation procedure as edge chips can cause solid tempered safety plate glass to shatter. DO NOT attempt to grind glass.

Removal and Installation

1. Remove door trim assembly and detach inner panel water deflector.
2. Lower window and remove front up-travel stop. (Fig. 15-16)
3. Remove ventilator casting and ventilator assembly
4. Remove inner panel cam.
5. Remove glass run channel outer strip assembly.
6. Roll window up to a point where the lower sash channel cam is visible above door inner and outer panel; slide window forward and remove from door.

7. To install, reverse removal procedure. After installation of window assembly, lubricate entire length of lower sash channel cam and inner panel cam with 630 AAW Lubriplate or equivalent.

FRONT DOOR WINDOW ADJUSTMENTS (Convertible)

1. To adjust the window in or out or fore or aft at front section, lower window and loosen vent division channel lower adjusting stud and nut. Turn adjusting stud in or out or position lower end of channel fore or aft as required and tighten stud nut.
2. To adjust the window in or out at rear section, loosen rear run channel lower attaching nut, adjust as required, and tighten nut. (Fig. 15-19)
3. Up or down adjustment is available at the front up-travel stops.
4. A condition of a rotated (cocked) door window can be corrected by adjusting the inner panel cam and up stops.

FRONT DOOR WINDOW REGULATOR ASSEMBLY (All Except Convertible)

Removal and Installation

1. Remove door trim assembly and detach inner panel water deflector.
2. On "17" and "27" styles, remove inner panel cam. (Fig. 15-17)
3. Raise window. Place a protective piece of paper over window frame assembly and door

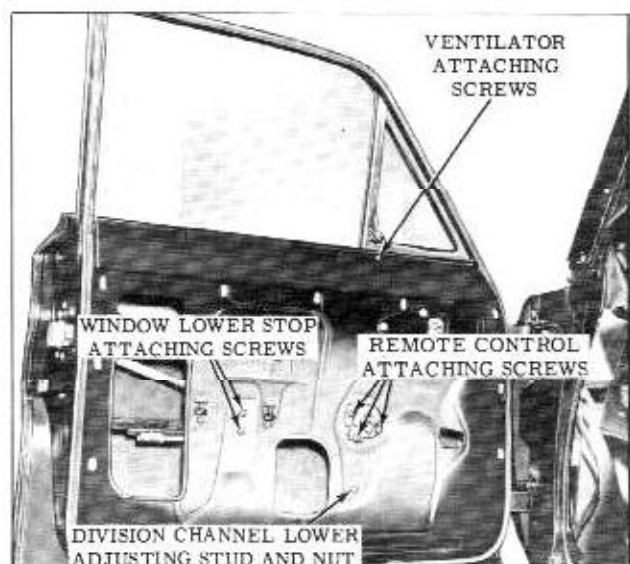


Fig. 15-18 Front Door Ventilator and Remote Control Attachment

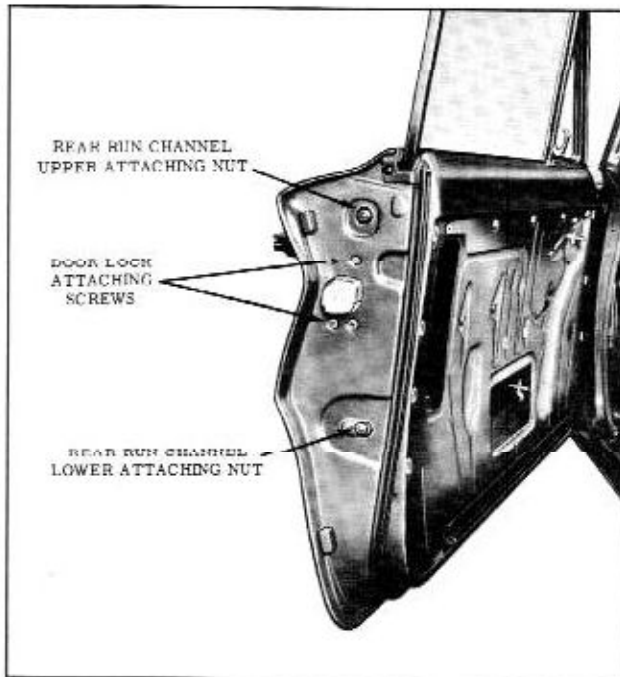


Fig. 15-19 Run Channel Attachment ('67' Style)

weatherstrip to protect paint and weatherstrip from damage; then secure window in full up position by installing a twelve to fifteen inch piece of body tape (2" or 2-1/2" in width) over window frame and firmly pressing tape to both sides of glass. This is necessary to positively hold glass in the up position during removal of the window regulator.

4. Remove remote control assembly and vent division channel lower adjusting stud and nut.
5. Remove regulator attaching screws and work regulator rearward to disengage arm from lower sash channel cam and remove regulator from door. (Fig. 15-17)
6. To install, reverse removal procedure. Cycle window several times to insure proper operation before installing water deflector.

FRONT DOOR WINDOW REGULATOR ASSEMBLY (Convertible)

Removal and Installation

1. Remove door trim assembly and detach inner panel water deflector.
2. Remove ventilator casting and ventilator assembly.
3. Remove inner panel cam and door window.
4. Remove regulator attaching screws and remove regulator from door. (Fig. 15-16)
5. To install, reverse removal procedure. Check

window operation before installing water deflector.

FRONT DOOR WINDOW REAR RUN CHANNEL ('67' Style)

Removal and Installation

1. Remove door trim assembly and detach inner panel water deflector.
2. Remove door ventilator casting and door ventilator assembly.
3. Remove inner panel cam and door window assembly.
4. Remove bolts securing run channel to lock pillar panel and remove run channel from door. (Fig. 15-19)
5. To install, reverse removal procedure.

FRONT & REAR DOOR LOCK CYLINDER ASSEMBLY (All Styles)

Removal and Installation

1. Raise window. Remove trim assembly and detach inner panel water deflector.
2. With a suitable tool, through access hole slide lock cylinder retaining clip forward sufficiently to allow removal of cylinder, then remove cylinder and gasket. (Fig. 15-20)
3. To install, reverse removal procedure. Using key, check operation of lock cylinder assembly.

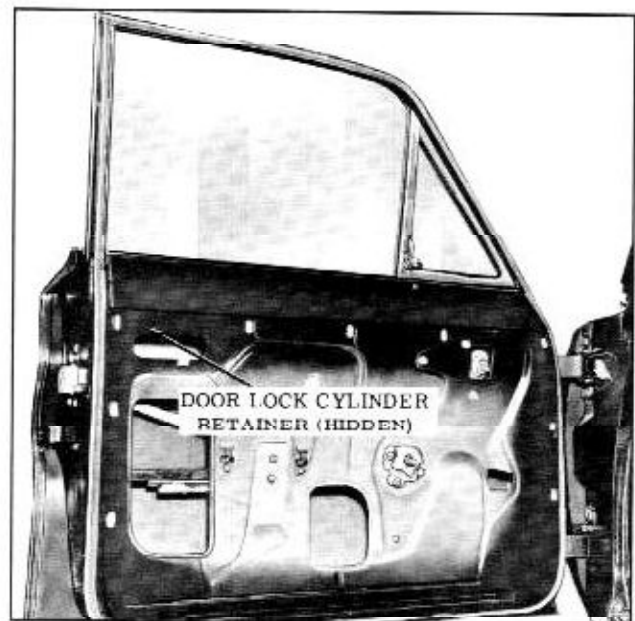


Fig. 15-20 Door Lock Cylinder Attachment

Disassembly and Assembly

1. Remove cylinder assembly from door as previously described.
2. With a suitable tool, remove retainer and pawl. (Fig. 15-21)
3. To assemble, reverse disassembly procedure.

NOTE: The lock cylinder housing scalp used in production is usually damaged when removed and must be replaced by a new scalp available as a service part. The service lock cylinder housing scalp is secured by tabs.

REAR QUARTER TRIM ASSEMBLY

("27" Styles)

Removal and Installation

1. Remove rear seat cushion and back assemblies. Remove window regulator handle.
2. Remove (2) most rearward screws from rear section of door sill plate. Disengage pinchweld finishing strip from beneath door sill plate and pinchweld flange to a point above belt line. (Fig. 15-22)
3. Using Trim Pad Removing Tool J-6335 disengage trim pad retaining nails from inner panel along upper edge of trim assembly.

NOTE: Protect paint on adjacent surfaces.

4. Pivot trim assembly forward using forward edge, which overlaps pinchweld flange and is cemented to pinchweld outboard face, as a hinge.

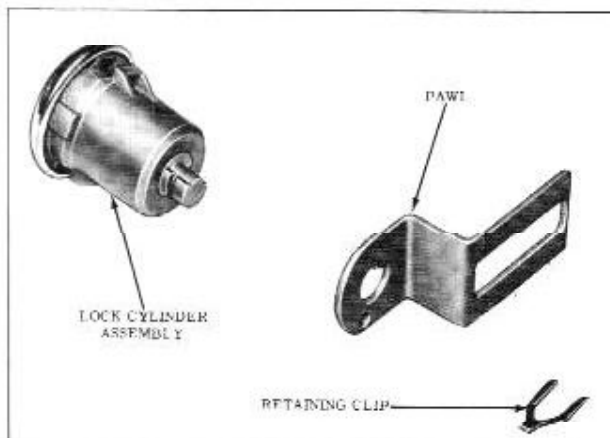


Fig. 15-21 Door Lock Cylinder Assembly

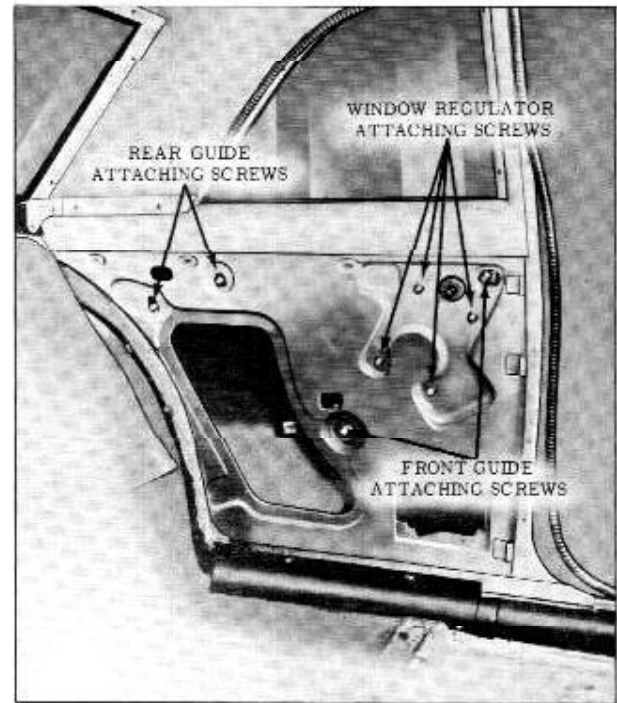


Fig. 15-22 Rear Quarter Hardware "17-27" Styles

5. By carefully pressing outboard, break cement bond between trim assembly forward edge and pinchweld flange. Remove trim assembly from body.
6. To install, reverse removal procedure. Prior to installation of pinchweld finishing strip, recement overlapping forward edge of trim assembly to pinchweld flange outboard surface.

("17" Styles)

Removal and Installation

1. Remove rear seat cushion and back assemblies. Remove window regulator handle.
2. Remove seat back filler panel and arm rest assembly attaching screws and remove assemblies from body.
3. Disengage pinchweld finishing strip from pinchweld flange immediately adjacent to trim assembly upper section.
4. Using Trim Pad Removing Tool J-6335, disengage trim assembly retaining nails from inner panel along upper edge of trim assembly.

NOTE: Protect paint on adjacent surfaces.

5. Pivot trim assembly forward using forward edge, which overlaps pinchweld flange and is cemented to pinchweld outboard surface, as a hinge.

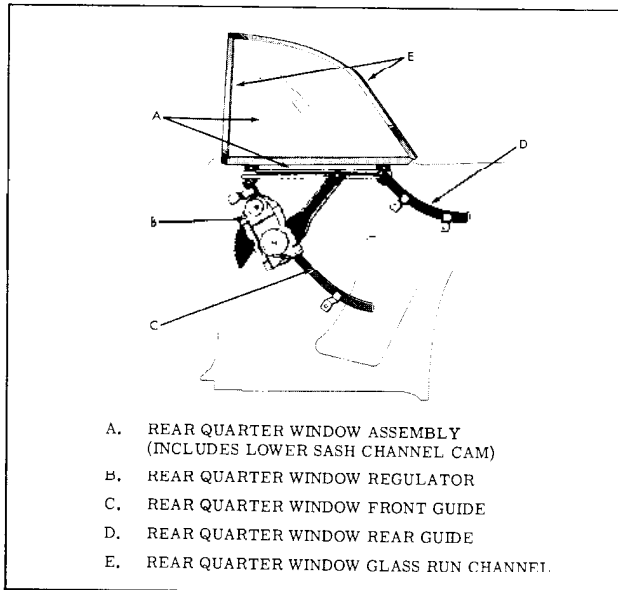


Fig. 15-23 Rear Quarter "17" & "27" Styles

6. By carefully pressing outboard, break cement bond between trim assembly forward edge and pinchweld flange. Remove trim assembly from body.
7. To install, reverse removal procedure. Prior to installation of pinchweld finishing strip, recement overlapping edge of trim assembly to pinchweld flange outboard surface.

REAR QUARTER WINDOW (Fig. 15-23)

("17" & "27" Styles)

Removal and Installation

1. Remove rear quarter trim assembly and inner panel access hole cover. Remove rear quarter window inner sealing strip.
2. With window in up position remove rear quarter window rear guide attaching screws (Fig. 15-22) and remove rear guide.
3. Lower rear quarter window sufficiently to tilt window rearward to disengage roller on window regulator lift arm from lower sash channel cam.
4. Lift rear quarter window upward and inboard to disengage roller on window lower sash channel from front guide. Remove rear quarter window from body.
5. To install, reverse removal procedure. Prior to installation, lubricate channel of lower sash channel cam with Lubriplate or its equivalent.

Adjust rear quarter window for proper alignment as described under REAR QUARTER WINDOW ADJUSTMENTS for "17" and "27" styles.

Seal large access hole and hardware attaching locations as specified under REAR QUARTER INNER PANEL SEALING for "17" and "27" styles.

REAR QUARTER WINDOW ADJUSTMENTS ("17" & "27" Styles)

Both the rear quarter window front and rear guides are adjustable to provide proper seating of the window in the glass run channel to provide proper operation of the window. When performing adjustments, make certain window and guides are as far forward and upward as possible to prevent front edge of window from coming out of run channel during "down" cycle.

Adjust rear quarter window as follows:

1. Remove rear quarter trim assembly and loosen both front and rear guide attaching screws. (Fig. 15-22)
2. Operate window to full "up" position, making sure window is all the way forward and up into the run channels.
3. Tighten front guide upper attaching screw while forcing screw and guide as far forward as possible. Repeat procedure on lower attaching screw.
4. Tighten forward attaching screw of rear guide while forcing screw and guide as far upward as possible. Lower window to full down position and tighten rear attaching screw.

NOTE: After performing window adjustments, seal all hardware attaching screw locations which have been disturbed, as specified under REAR QUARTER INNER PANEL SEALING for "17" and "27" styles.

REAR QUARTER WINDOW REGULATOR ("17" & "27" Styles)

Removal and Installation

1. Remove rear quarter window assembly.
2. Loosen rear quarter window front guide upper attaching bolt. Remove window regulator attaching bolts (Fig. 15-22) and remove regulator through access hole.
3. To install, reverse removal procedure.

Seal all hardware attaching locations, which have been disturbed, as specified under REAR

QUARTER INNER PANEL SEALING for "17" and "27" Styles.

REAR QUARTER WINDOW FRONT GUIDE ("17" & "27" Styles)

Removal and Installation

1. Raise window to full "up" position. Remove rear quarter trim assembly and inner panel access hole cover.
2. Remove rear quarter window front guide attaching bolts. (Fig. 15-22) Disengage guide from roller on window lower sash channel and remove guide through access hole.
3. To install, reverse removal procedure. Prior to installation, lubricate channel portion of guide with Lubriplate or its equivalent.

Seal all hardware attaching locations, which have been disturbed, as specified under REAR QUARTER INNER PANEL SEALING for "17" and "27" Styles.

REAR QUARTER WINDOW REAR GUIDE ("17" & "27" Styles)

Removal and Installation

1. Raise window to full "up" position. Remove rear quarter trim assembly and inner panel access hole cover.
2. Remove rear quarter window rear guide attaching bolts. (Fig. 15-22) Disengage guide from roller on window lower sash channel cam and remove guide through access hole.
3. To install, reverse removal procedure. Prior to installation, lubricate channel portion of guide with Lubriplate or its equivalent.

Seal all hardware attaching locations, which have been disturbed, as specified under REAR QUARTER INNER PANEL SEALING for "17" and "27" styles.

REAR QUARTER WINDOW GLASS RUN CHANNEL ("17" & "27" Styles)

Removal and Installation

1. Lower rear quarter window. Remove rear quarter window front and upper garnish moldings.
2. Carefully pry glass run channel to disengage plastic snap-in-type fasteners from upper body lock pillar and inner side roof rail.

Remove channel from window opening.

3. To install, reverse removal procedure. Prior to installation, apply a continuous bead of body caulking compound to rabbet of body lock pillar upper and side roof rail flanges to effect a weathertight seal.

REAR QUARTER WINDOW INNER AND OUTER SEALING STRIPS ("17" & "27" Styles)

The rear quarter window sealing strips are secured by integral clips inserted in slots in the rear quarter inner and outer panel return flanges.

To remove either the inner or outer strip, insert a thin hooked tool (Reveal Molding Tool J-7898-01) between the rear quarter panel return flange and the sealing strip. (Fig. 15-24) Engage point of tool with clip and lift upward to disengage clip from slot. Repeat procedure at each clip location and remove strip assembly.

REAR QUARTER TRIM ASSEMBLY ("67" Styles)

Removal and Installation

1. Remove rear seat cushion and back assemblies. Remove window regulator handle.
2. Remove screws securing folding top compartment side trim panel assembly. (Fig. 15-25) Disengage side trim panel assembly retainer from folding top compartment brace.

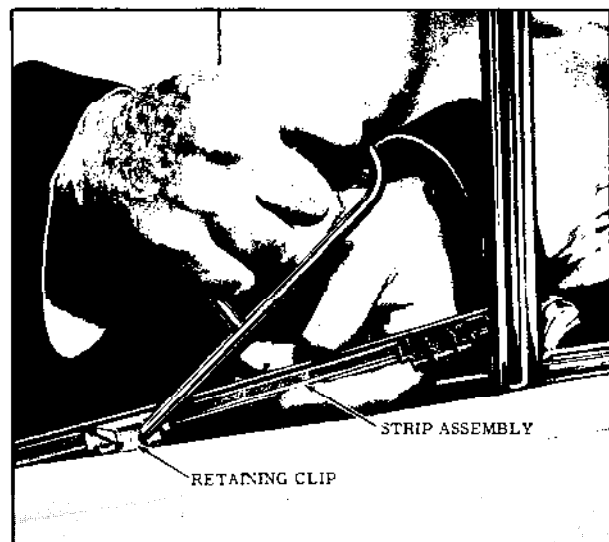


Fig. 15-24 Door Window Glass Run Channel Inner and Outer Strip Assemblies (Outer Strip Shown - Inner Typical)

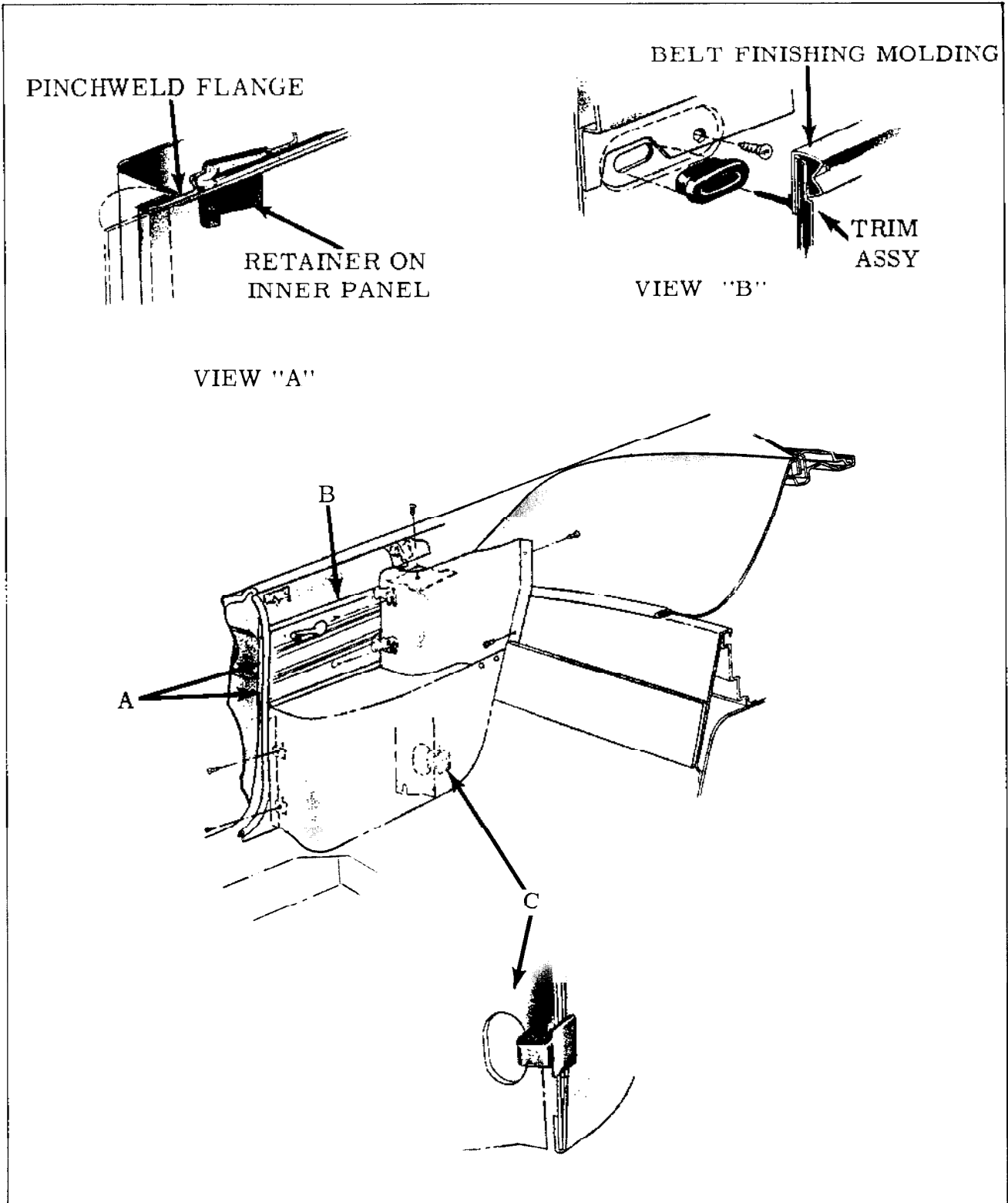


Fig. 15-25 Rear Quarter Trim Assembly ("67" Style)

("C", Fig. 15-25) Disconnect electrical leads, where present, and remove side trim panel assembly.

3. Disengage pinchweld finishing strip from pinchweld flange immediately adjacent to trim assembly upper section. Using Trim Pad

Removing Tool J-6335, disengage trim assembly retaining nails from inner panel along upper edge of trim assembly. (View "B", Fig. 15-25)

4. Disengage forward edge of trim foundation from retainers on inner panel. (View "A",

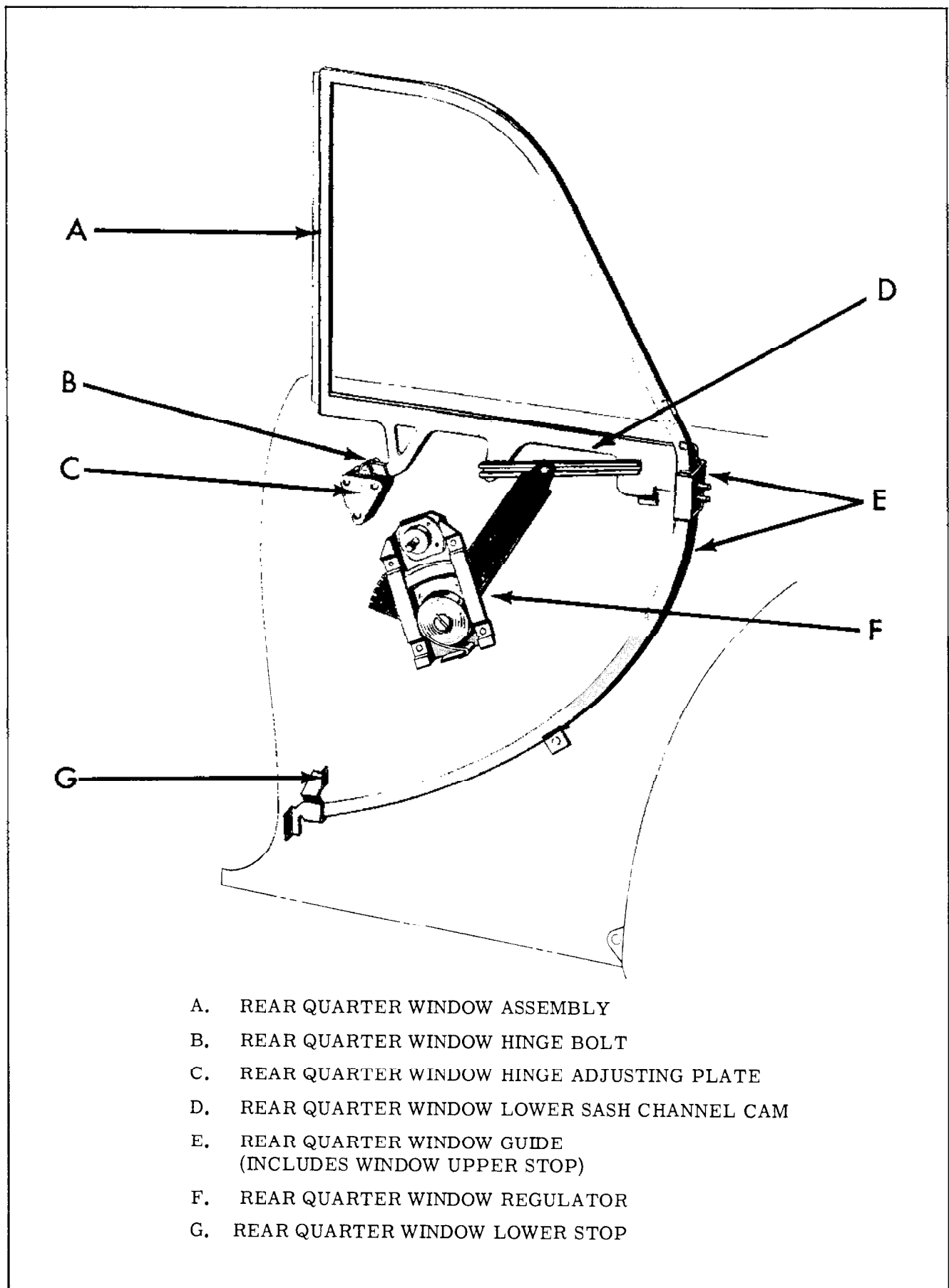


Fig. 15-26 Rear Quarter Window ("67" Style)

Fig. 15-25) Pivot rear edge of trim assembly forward, using forward edge, which overlaps pinchweld and is cemented to pinchweld flange outboard surface, as a hinge (View "A", Fig. 15-25)

- Carefully break cement bond between trim assembly forward edge and pinchweld flange by gently pressing trim assembly forward edge, outward. Remove trim assembly upper section from body.
- To install, reverse removal procedure. Prior to installation of pinchweld finishing strip, recement overlapping forward edge of trim assembly to pinchweld flange outboard surface.

REAR QUARTER WINDOW ASSEMBLY (Fig. 15-26) ("67" Styles)

Removal and Installation

- Lower folding top and operate rear quarter window to half-down position. Remove rear seat cushion and back assemblies. Remove folding top compartment side trim panel and rear quarter trim assemblies.

- Remove window pivot bolt (Fig. 15-27)

Disengage window male hinge from female hinge plate, then raise window to disengage lower sash channel cam from roller on window regulator lift arm and remove window.

- To install, reverse removal procedure. Prior to installation, lubricate pivot hinge and lower

sash channel cam, with Lubriplate or its equivalent.

REAR QUARTER WINDOW ADJUSTMENTS ("67" Styles)

To adjust the forward travel and up travel of the rear quarter window, loosen the window guide upper attaching stud nuts. (Fig. 15-27) Adjust upper stop to desired position and tighten guide attaching screws.

To adjust the rear quarter window "up or down", "fore or aft", or the top or the rear of the window "in or out", the rear quarter trim assemblies must be removed to gain access to the pivot bolt and adjusting studs.

- "Up or down" or "fore or aft" adjustment:

Loosen pivot bolt and both adjusting stud nuts (Fig. 15-27) Position window, as required, and tighten pivot bolt and stud nuts.

- Top of window "in or out" adjustment:

Loosen lower adjusting stud nut and slightly loosen rear stud nut. (Fig. 15-27) Adjust lower stud "in or out", as required, then tighten both stud nuts.

- Rear of window "in or out" adjustment:

Loosen pivot hinge rear adjusting stud nut and slightly loosen lower adjusting stud nut. (Fig. 15-27) Loosen window guide upper and center attaching screws. (Fig. 15-27) Adjust rear adjusting stud "in or out", as required, then tighten both stud nuts. Adjust window guide for proper alignment with window and tighten guide upper and center attaching screws.

NOTE: After performing window adjustments, seal all hardware attaching locations that have been disturbed, as specified under REAR QUARTER INNER PANEL SEALING for "67" styles

REAR QUARTER WINDOW REGULATOR ("67" Styles)

Removal and Installation

- Remove rear seat cushion and back assemblies and rear quarter trim assemblies.
- Remove rear quarter inner panel access hole cover. Operate window to "full up" and prop in that position.
- Remove window regulator attaching screws. (Fig. 15-27) Disengage roller on regulator

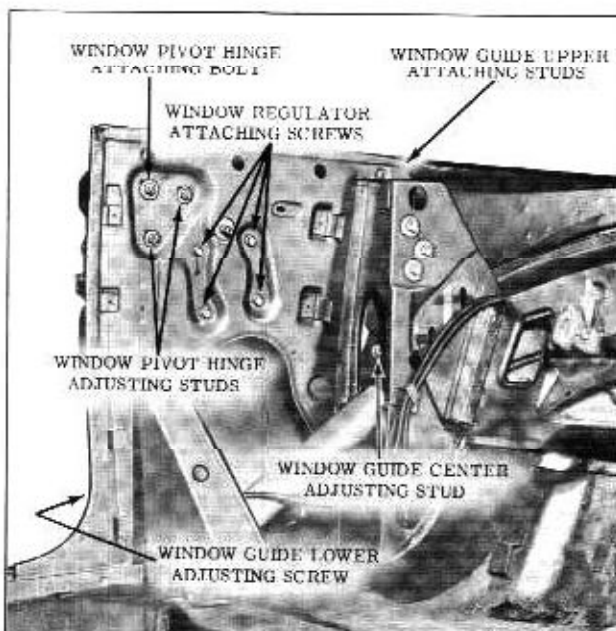


Fig. 15-27 Rear Quarter Hardware "67" Style

lift arm from window lower sash channel cam and remove regulator through access hole.

4. To install, reverse removal procedure.

Lubricate regulator sector, window cam, and pivot hinge as specified in LUBRICATION SECTION.

Seal all hardware attaching locations that have been disturbed, as specified under REAR QUARTER INNER PANEL SEALING for "67" styles.

REAR QUARTER WINDOW GUIDE ("67" Styles)

Removal and Installation

1. Remove rear quarter trim assemblies and inner panel access hole cover. Remove rear quarter window assembly.
2. Remove window guide upper, center, and lower attaching stud nuts and screws. (Fig. 15-27) Remove guide through large access hole.
3. To install, reverse removal procedure. Adjust window guide for proper window alignment as specified in REAR QUARTER WINDOW ADJUSTMENTS for "67" styles.

Seal all hardware attaching locations that have been disturbed, as specified under REAR QUARTER INNER PANEL SEALING for "67" styles.

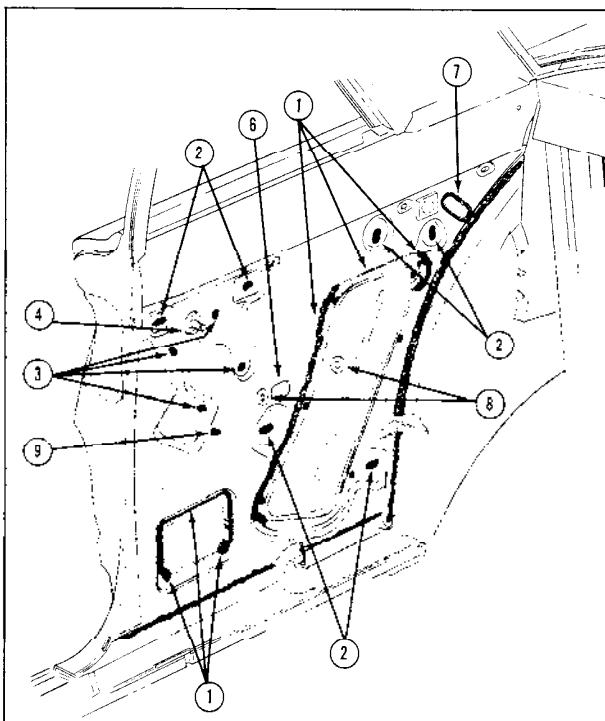


Fig. 15-28 Rear Quarter Inner Panel Sealing "17" and "27" Styles

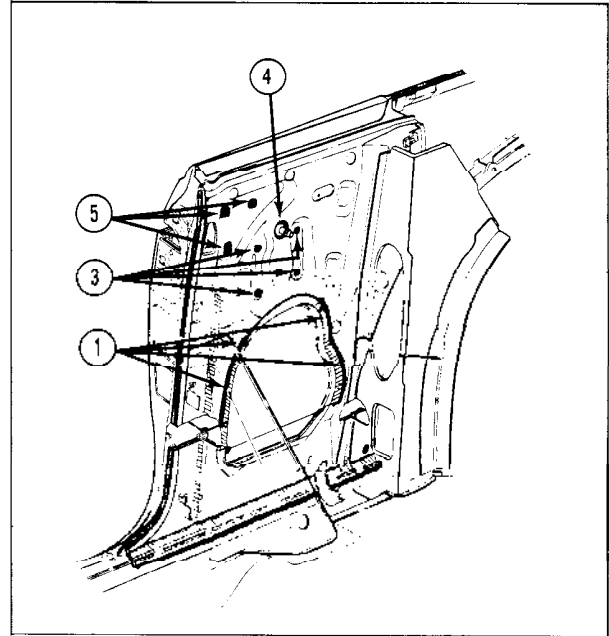


Fig. 15-29 Rear Quarter Inner Panel Sealing "67" Style

REAR QUARTER WINDOW OUTER SEALING STRIP ("67" Styles)

Removal and Installation

1. Remove rear quarter window assembly.
2. Remove screws securing outer sealing strip to quarter outer panel return flange and remove strip.
3. To install, reverse removal procedure.

REAR QUARTER INNER PANEL SEALING (All Styles)

Whenever the rear quarter inner panel seals have been disturbed, the area must be resealed before the rear quarter trim is reinstalled. Following are the rear quarter inner panel openings and hardware attaching locations that must be sealed to prevent water leakage and possible trim damage.

NOTE: When body caulking compound is used, work compound firmly to metal surfaces and feather-edge out to obtain good adhesion. (For "17" & "27" Styles - Fig. 15-28; for "67" styles - Fig. 15-29)

The number references in Fig. 15-28 and 15-29 correspond to the following item numbers:

1. Large and Small Access Hole Covers:

Prior to installation of access hole cover apply a bead of body caulking compound (approximately 1/8" diameter) across top and

down sides of quarter inner panel along flange contacted by cover. After installation of cover, apply another bead of body caulking compound down the sides sealing cover to inner panel. Make certain to seal cover attaching screw locations and where cover flange transition to inside of quarter panel occurs.

2. Window Guide Attaching Screws:

Apply body caulking compound over window guide attaching screws and holes. Firmly press compound to assure a good bond and watertight seal.

3. Window Regulator Attaching Screws:

Apply neoprene type weatherstrip adhesive (yellow) over attaching screws.

4. Window Regulator Spindle Hole Sealing Washer:

Apply neoprene type weatherstrip adhesive over exposed surface of washer to seal pores of sponge rubber and joint between washer and inner panel.

5. Window Hinge Attaching Screws ("67" Styles Only):

Apply body caulking compound over hinge attaching screws. Press compound firmly to assure a good bond and watertight seal.

6. Sash Channel Cam Attaching Screw Access Hole:

Apply 3" piece of waterproof body tape over hole. Pull or roll out tape to remove wrinkles and assure a good bond.

7. Welding Inspection Hole Sealing Plug:

Apply neoprene weatherstrip adhesive (yellow)

around edges of sealing plug to effect a watertight seal.

8. Arm Rest Anchor Nut:

Apply body caulking compound over anchor nut and hole to effect a seal around anchor nut, hole, and attaching screw when arm rest is installed.

9. Window Regulator Lift Arm Up Travel Stop Attaching Screw:

Apply waterproof body tape over lower half of up travel stop to channel any moisture into drain slot directly below stop.

BACK WINDOW ASSEMBLY

All back windows are retained in the body opening by conventional rubber channels. The rubber channel is designed with a cavity to hold the glass when the back window is installed and another cavity that overlaps the pinchweld flange of the body opening to retain the back window and rubber channel assembly in the opening. Some rubber channels incorporate a third cavity to retain the back window reveal moldings. On these styles, it is necessary to remove the back window and rubber channel assembly to remove the back window reveal moldings. Other styles use clip retained reveal moldings where it is necessary to remove the reveal moldings before the back window assembly can be removed.

Although the reveal moldings may vary, all back windows are solid tempered safety plate glass and are installed and sealed in basically the same manner.

Following are the procedures for servicing the reveal moldings and back window assembly:

BACK WINDOW REVEAL MOLDINGS (3019 & 3027)

The back window reveal moldings are equipped with an "L" shaped retaining flange that is secured in a similar shaped cavity in the back window rubber channel. To remove the reveal moldings it is necessary to first remove the back window and rubber channel assembly, then the moldings can be removed as a bench operation.

REVEAL MOLDING RETAINING CLIP (3117 & 3119)

The reveal molding retaining clip is the most common type of back window reveal molding retention. Reveal molding retaining clips are snapped over the back window pinchweld or retaining flange and secure the reveal molding by means of barbed prongs. To disengage the molding, insert end of Tool J-7898 between back window rubber channel

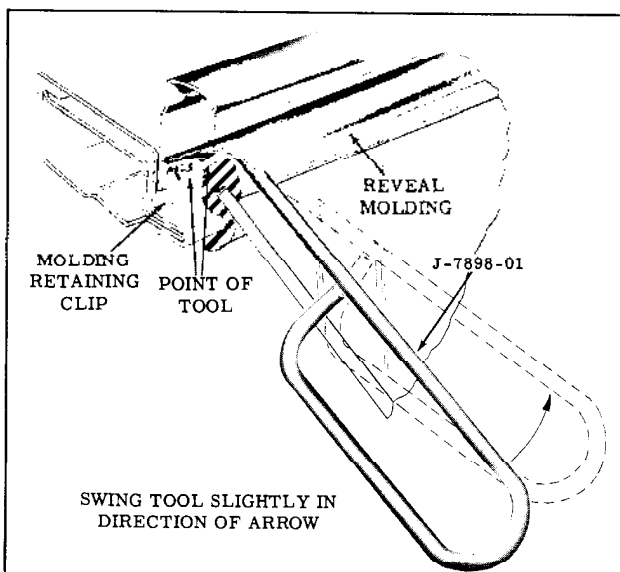


Fig. 15-30 Back Window Reveal Molding Removal Tool

and reveal molding, then swing tool slightly (Fig. 15-30) to disengage prongs of clip from molding and lift molding free of clip.

To install moldings, position molding so that flange of molding is between body metal and clip, then carefully push molding at retaining clip locations until molding is properly secured by retaining clips.

BACK WINDOW UPPER REVEAL MOLDING (Fig. 15-31) (3119)

From under the lip of the back window rubber channel remove nuts from bolt and clip assemblies at locations "B". From outside body, disengage molding from retaining clips "A" and remove molding from body. (Fig. 15-31)

To install, position molding to body and engage molding with retaining clips, then install bolt and clip assembly nut.

BACK WINDOW SIDE REVEAL MOLDING (Fig. 15-31) (3119)

From inside of body remove nut from upper reveal molding bolt and clip assembly at location

"B" on side from which molding is being removed. Disengage side reveal molding from retaining clips at locations "A" and remove molding from body.

To install, position molding to body and engage molding flange with retaining clips, then install upper reveal molding bolt and clip assembly nut.

BACK WINDOW LOWER REVEAL MOLDING (Fig. 15-31) (3119)

From outside of body, disengage lower reveal molding from retaining clips at locations "A" and remove molding from body.

To install, position molding to body and engage molding flange with retaining clips.

BACK WINDOW LOWER REVEAL MOLDING (Fig. 15-32) (3117)

The back window lower reveal molding is retained by integral studs and sealing nuts.

Removal

To remove the molding, remove the sealing

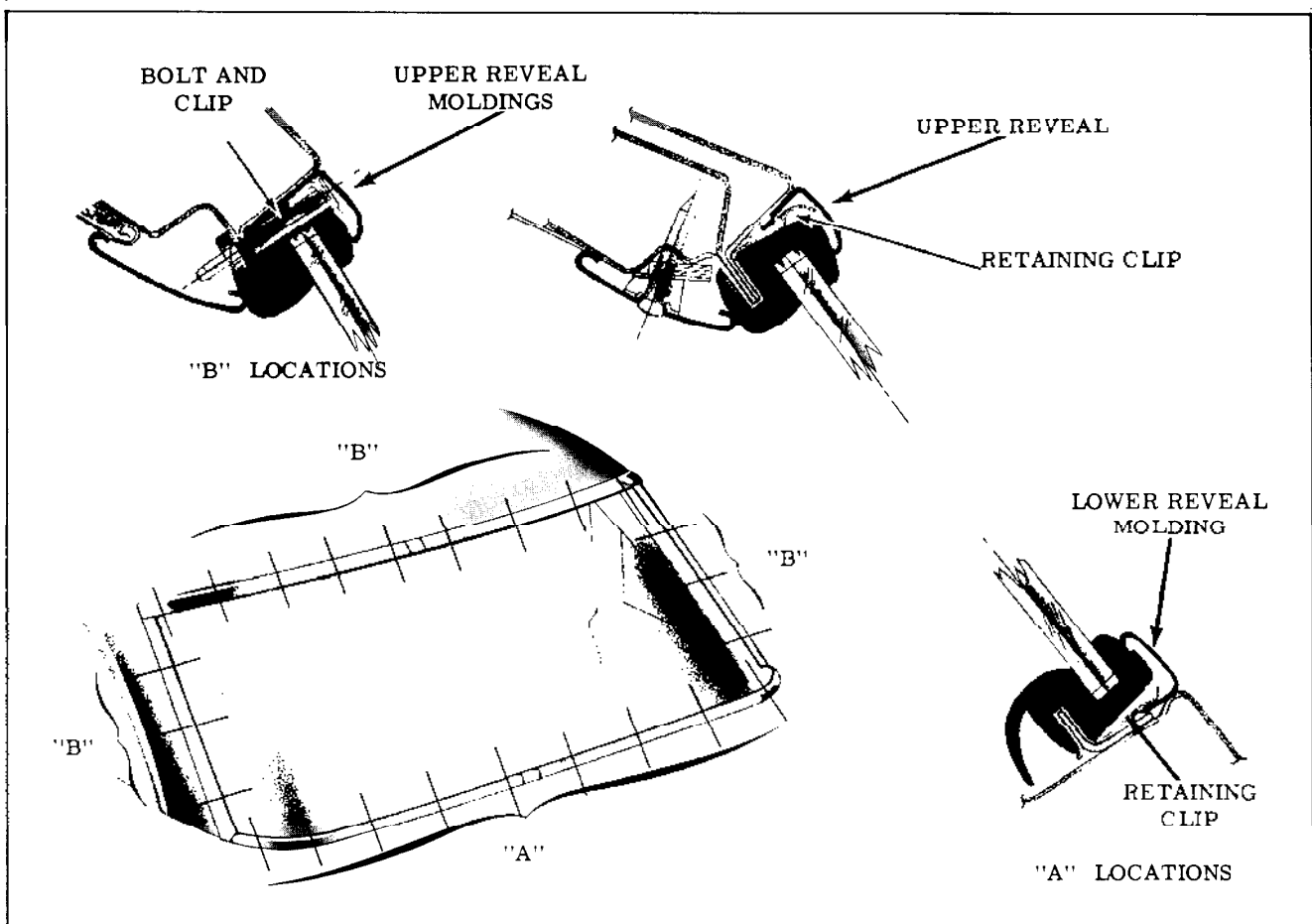


Fig. 15-31 Back Window Reveal Moldings (19 Styles)

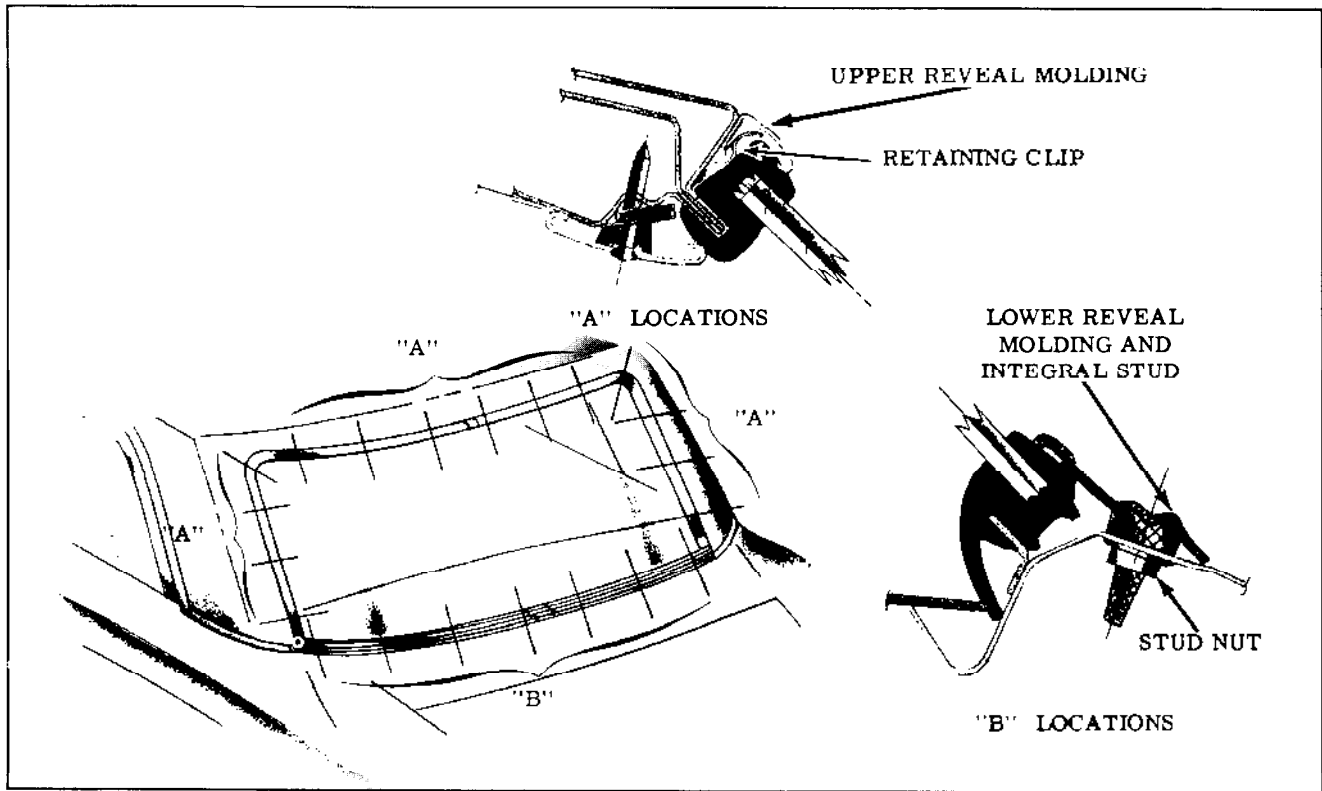


Fig. 15-32 Back Window Reveal Moldings ("17" Styles)

nuts from the molding studs under the rear compartment front and shelf panel. These are accessible through the rear compartment, then remove the molding.

Installation

To install, first replace any sealing nuts and washers which will not effect a good seal, then reverse removal procedure.

BACK WINDOW UPPER REVEAL MOLDING (Fig. 15-32) (3117)

When removing the right upper reveal molding disengage the molding from the retaining clips along the top. Remove the molding by sliding it upwards from under the lower reveal molding and off the remaining clips along the side of the molding.

Perform the same operation when removing the left molding except, disengage enough of the right upper reveal molding to allow removal of the left side molding.

To install, insert lower end of molding behind lower reveal molding. Then engage molding with retaining clips.

BACK WINDOW ASSEMBLY (All Except "35" & "45" Styles)

Removal

1. Place protective coverings over rear seat cushion and back assemblies, over parcel shelf trim, and over painted surfaces. On styles equipped with fabric roof cover place protective covering over roof cover adjacent to back window.
2. Remove back window garnish moldings and, where present, clip and stud retained back window reveal moldings.
3. From inside of body use a hooked or other suitable tool to carefully break seal between lip of rubber channel and pinchweld flange completely around perimeter of glass.
4. Carefully push back window and rubber channel assembly outward until lip of rubber channel is disengaged from pinchweld and retaining flange.
5. With the aid of a helper, lift complete assembly from body opening and place on a protected surface. On styles with reveal moldings secured in the rubber channel, remove moldings.

Installation

IMPORTANT: Use care to make certain glass does not strike body metal during installation as

edge chips can cause solid tempered safety plate glass to shatter. Do not attempt to grind glass.

1. Clean original sealer from back window body opening and rubber channel and install rubber channel to glass.
2. Check back window body opening and pinch-weld flange for any irregularities and correct where necessary. Mark center of back window and body opening.
3. On styles using clip retained reveal moldings, check retaining clips and replace damaged or defective clips. Prior to installing clips, apply a continuous ribbon of medium-bodied sealer (approximately 1/4 inch thick) along the pinchweld and retaining flange ("1" in Fig. 15-33) completely around the opening.
4. Apply a second continuous ribbon of medium-bodied sealer (approximately 1/4 inch thick) along outer wall of back window opening ("2" in Fig. 15-33) completely around opening.
5. Install rubber channel to glass and insert a strong cord into pinchweld cavity of rubber channel. Tie ends of cord together at bottom center and tape ends to inside surface of glass. On styles where the reveal moldings are retained in the rubber channel, install moldings and, where necessary, tie moldings to glass and rubber channel assembly. Make certain moldings are positioned properly as it is difficult to reposition them after installation of back window.

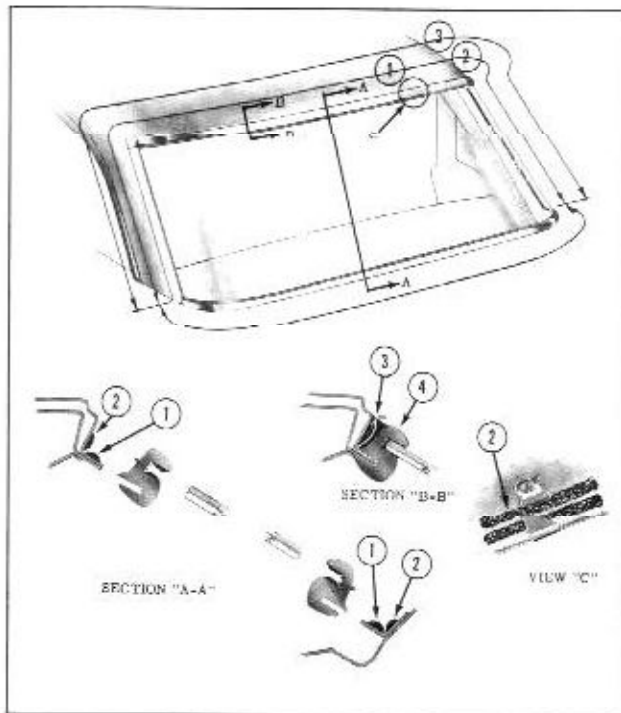


Fig. 15-33 Back Window Sealing

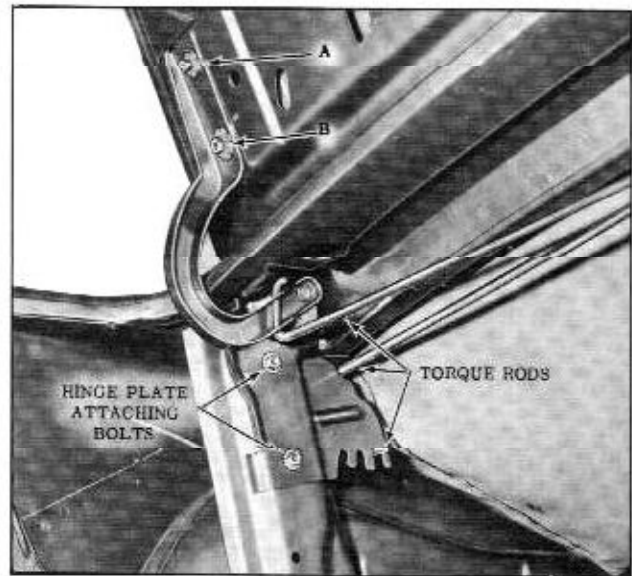


Fig. 15-34 Rear Compartment Lid Hinge and Torque Rods ("67" Styles)

6. With the aid of a helper, position back window and rubber channel assembly into body opening. While helper is applying hand pressure to outside surface of glass, carefully pull ends of cord across bottom, up sides and across top of window opening to seat lip of rubber channel over pinchweld and retaining flange, completely around back window.
7. On styles with clip retained reveal moldings, apply sufficient medium-bodied sealer to fill void between rubber channel and body opening up sides and across top of window ("3" in Fig. 15-33)
8. Using a pressure type applicator, apply an approved weatherstrip adhesive (black) between outer lip of rubber channel and glass ("4" in Fig. 15-33) completely around rubber channel.
9. Install previously removed parts and clean off excess sealer and cement. Remove protective coverings.

REAR COMPARTMENT LID ADJUSTMENTS ("67" Styles)

1. To adjust compartment lid forward or rearward, or from side to side in body opening, loosen hinge strap attaching bolts "A" and "B" (Fig. 15-34) on both sides of lid; adjust lid as desired, then tighten bolts.
2. To adjust front of compartment lid up or down loosen hinge plate attaching bolts, adjust lid up or down as desired and tighten bolts.
3. To check lid lock bolt engagement with lock striker, see REAR COMPARTMENT LID LOCK STRIKER ENGAGEMENT CHECK.

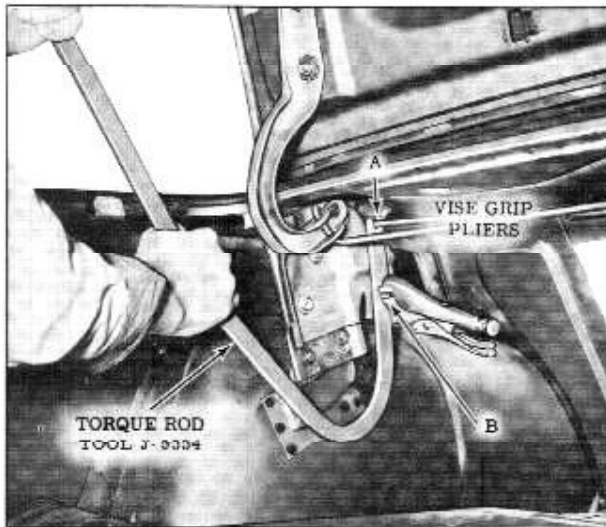


Fig. 15-35 Rear Compartment Lid Torque Rod Adjustment

TORQUE ROD ADJUSTMENTS ("67" Styles)

The amount of effort required to open and close the rear compartment lid is determined by the position of the torque rods in the notches on the hinge mounting plate. (Fig. 15-35) If the torque rod is located in the most forward notch, the effort required to open the lid is the greatest and the effort required to close the lid is the least. If the torque rod is located in the most rearward position, the effort required to open the lid is the least and the amount of effort required to close the lid is the greatest. Fig. 15-35 illustrates how to use Tool J-9554 to perform these adjustments.

1. Open lid and provide support to hold it in full open position.
2. Engage notch in end of Tool J-9554 with torque rod to be adjusted. ("A", Fig. 15-35) Engage hole in tool with "return crank end" of same torque rod, ("B" Fig. 15-35)
3. Firmly clamp vise grip pliers to end of torque rod at point "B" to prevent tool from sliding off torque rod.
4. Disengage torque rod from hinge plate by raising tool with one hand and holding it firmly against hinge plate with other hand. (Fig. 15-35) Adjust torque rod to desired position, or remove rod completely.

NOTE: Use extreme caution when disengaging torque rod from hinge plate. Torque rod is under great tension when it is engaged and careless handling of rod during disengagement can cause injury to operator.

REAR COMPARTMENT LID HINGE ("67" Styles)

Removal and Installation

1. Open rear compartment lid and place protective coverings along edges of lid opening to protect painted surfaces. Provide support for lid on side where hinge is to be removed.
2. Scribe location of hinge strap on lid inner panel and remove bolts "A" and "B" (Fig. 15-34) securing hinge strap to lid.
3. Disengage torque rods from hinge mounting plates using Torque Rod Removing Tool No. J-9554. Scribe location of hinge plate on hinge brace. Remove hinge plate attaching bolts and remove hinge from body.
4. To install, reverse removal procedure. Check for proper lid alignment and make any necessary adjustments.

NOTE: When installing torque rods, engage hinge strap end first, then engage other end in proper notch in hinge plate.

BACK DOOR (S.W.)

BACK DOOR INNER COVER PANEL ("35" & "45" Styles)

Removal and Installation

1. On "35" Styles, remove window regulator handle. Remove screws securing back door inner cover panel and remove panel from door.
2. On "45" Styles with manual window regulator, remove window regulator handle, remote control inside handle and inside locking rod knob. Remove inner cover panel attaching screws and remove panel from door.
3. On "45" Styles with electric window regulator, remove remote control inside handle and inside locking rod knob. Remove inner cover panel attaching screws and remove panel from door.
4. To install back door inner cover panel, reverse removal procedure.

BACK DOOR LOCK ASSEMBLY ("35" & "45" Styles)

Removal and Installation

1. Operate back door window to full up position. Remove back door inner cover panel.

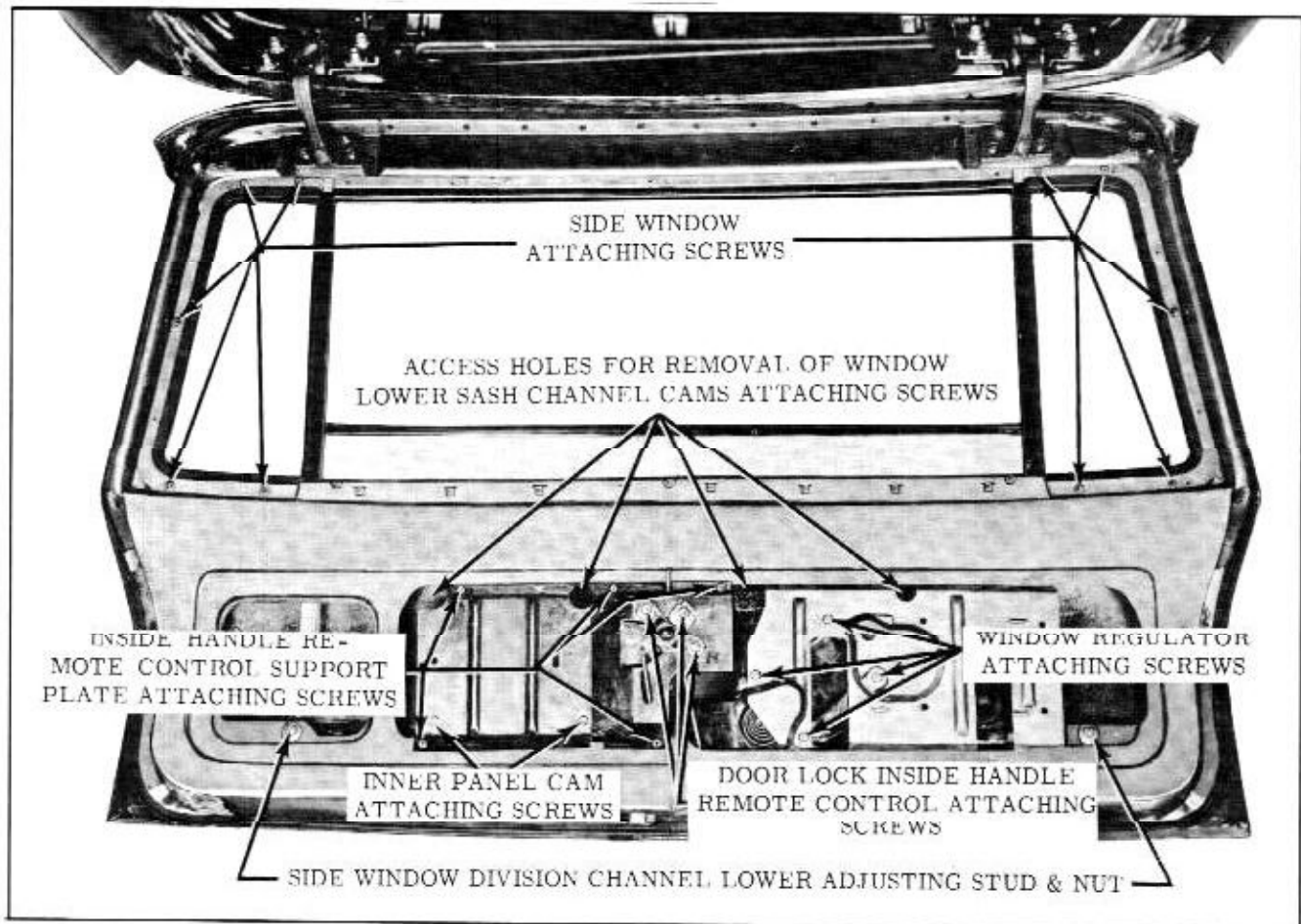


Fig. 15-36 Back Door Window Mechanism

2. Remove remote control attaching screws. (Fig. 15-36) Disengage locking rods from remote control and remove remote control from back door.
3. Remove remote control support plate attaching screws. (Fig. 15-36) Move support plate towards right side of door to disengage inner panel cam from regulator arm roller and remove support plate.
4. Remove three back door lock attaching screws from face of lock pillar (Fig. 15-37) and remove lock through hole in door inner panel.
5. To install, reverse removal procedure.

BACK DOOR LOCK STRIKER ADJUSTMENTS ("35" & "45" Styles)

1. To adjust the back door lock striker forward or rearward to obtain in or out adjustment of the lower portion of the door, or to adjust the striker sideways to obtain proper alignment with the back door lock rotary bolt, loosen striker attaching screws, shift striker to desired position and tighten screws.
2. Lock striker emergency spacer requirements.
 - a. The back door assembly should be properly

aligned in the body opening before checking spacer requirements.

- b. To determine if lock striker emergency spacers are required, apply modeling clay

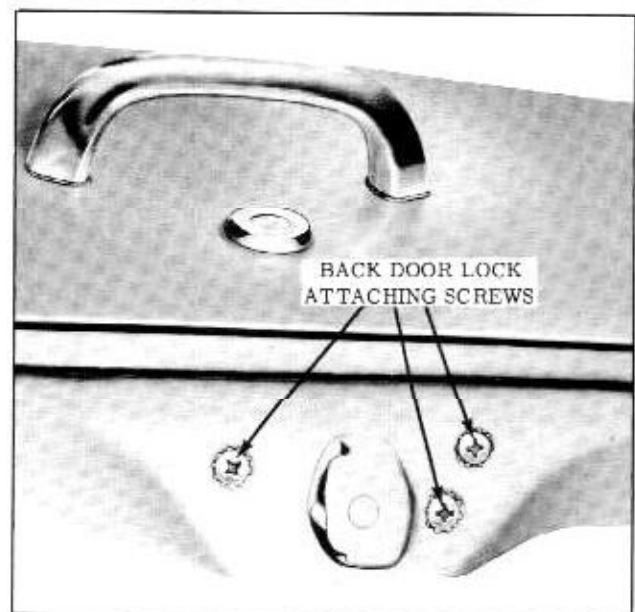


Fig. 15-37 Back Door Lock

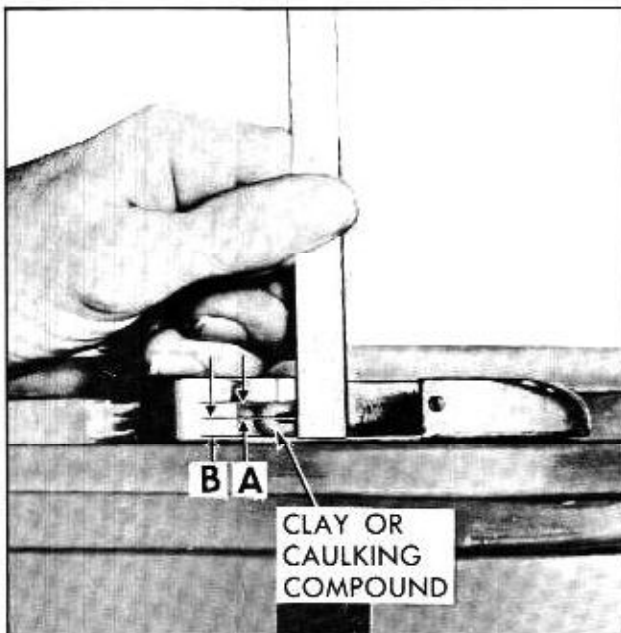


Fig. 15-38 Lock Striker Engagement Check

or body caulking compound in the lock striker notch where the lock extension engages; then, close the back door to form a measurable impression in the clay or caulking compound. (Fig. 15-38)

When dimension "A" from inside face of striker teeth is less than $\frac{3}{16}$ ", install one or more $\frac{1}{16}$ " emergency spacers (See Parts Book) to bring dimension "A" to the specified $\frac{3}{16}$ ". If two or three spacers are required, install $\frac{1}{8}$ " longer striker attaching screws. If three or four spacers are required, install $\frac{1}{4}$ " longer striker attaching screws.

NOTE: Dimension "B" from center of lock extension to inside face of striker should never be less than $\frac{1}{8}$ ".

BACK DOOR OUTSIDE HANDLE ("35" & "45" Styles)

Removal and Installation

1. Operate back door window to full up position. Remove back door inner cover panel.
2. Remove remote control attaching screws. (Fig. 15-36) Disconnect remote control from connecting rod and remove remote control.
3. Remove remote control support plate attaching screws. Move support plate towards right side of door to disengage inner panel cam from regulator arm roller and remove support plate.
4. Remove screws securing outside handle and remove handle and gaskets.

5. To install back door outside handle, first cement handle gaskets to handle with weatherstrip adhesive (black) and apply a coat of adhesive to surface of gaskets which contact door outer panel, then reverse removal procedure.

BACK DOOR REMOTE CONTROL ASSEMBLY ("35" & "45" Styles)

Removal and Installation

1. Remove back door inner cover panel.
2. Remove remote control attaching screws. (Fig. 15-36) Disconnect remote control assembly from locking rod and remove remote control from back door.
3. To install, reverse removal procedure.

BACK DOOR LOCK CYLINDER ASSEMBLY ("35" & "45" Styles)

Removal and Installation

1. Operate back door window to full up position. Remove back door inner cover panel.
2. Using a hooked tool or other suitable tool through access holes in door inner panel pry out lock cylinder retaining clip (Fig. 15-39) sufficiently to allow removal of lock cylinder and gasket from outer panel.
3. To install lock cylinder assembly, reverse removal procedure. Apply weatherstrip adhesive (black) on both contacting surfaces of lock cylinder gasket. Check operation of lock

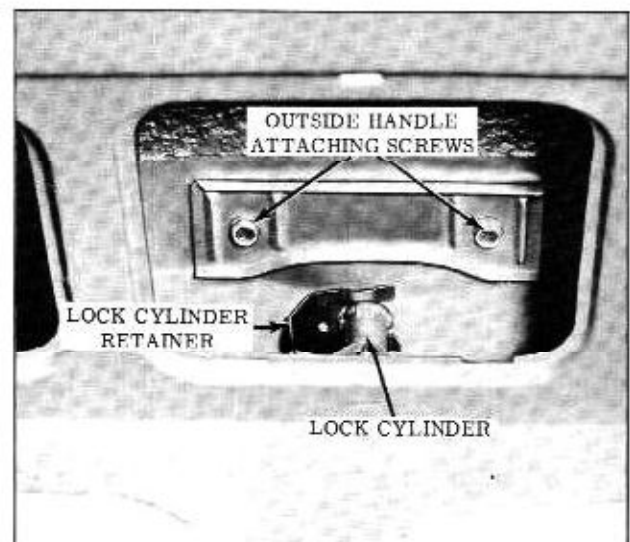


Fig. 15-39 Back Door Outside Handle & Lock Cylinder

cylinder and lock before installing inside trim.

BACK DOOR WEATHERSTRIP ("35" & "45" Styles)

Removal

1. With a flat-bladed tool, carefully break cement bond securing butt ends of weatherstrip at bottom center of door and cement bond securing weatherstrip to door for a distance of approximately 2 inches on both sides of butt joint.
2. Starting at bottom center of door, insert tip of Weatherstrip Clip Inserting Tool J-5757 or other suitable tool at the first clip and carefully snap clip from retaining hole. Then, using a flat-bladed tool, carefully break cement bond securing weatherstrip in corner of rabbet to the next clip. Perform the alternate operations of snapping clip out of retaining hole, and breaking cement bond to the next clip completely around door; then, remove weatherstrip.

Installation

1. Clean off old cement from back door to provide a clean cementing surface.
2. Check weatherstrip clips for proper contour and reform clips, where required, using Clip Reforming Tool J-5984. (Fig. 15-40)
3. For distance of 2 inches on both sides of the butt joint location (bottom center of door), apply weatherstrip adhesive (neoprene type)

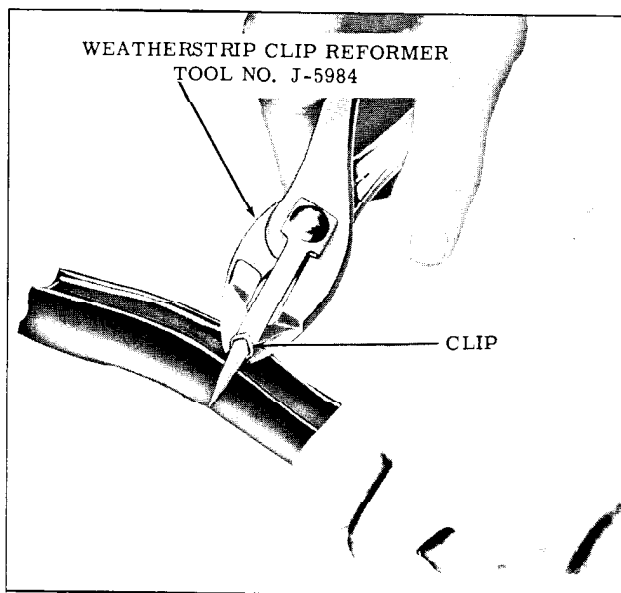


Fig. 15-40 Reforming Weatherstrip Clips with Tool J-5984

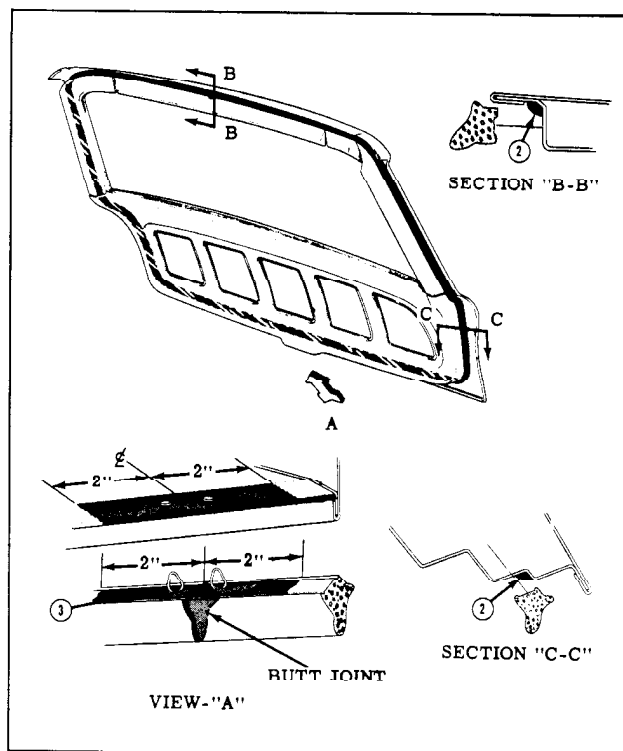


Fig. 15-41 Back Door Weatherstrip Installation

to the door panel surface contacted by weatherstrip. ("1" in View "A", Fig. 15-41)

4. Apply a bead of weatherstrip adhesive (black) in the corner of the rabbet ("2" in Sections "B-B" and "C-C" in Fig. 15-41) completely around door.
5. For a distance of 2 inches on both ends of weatherstrip, apply a coat of weatherstrip adhesive (neoprene type) to the weatherstrip surface which contacts the door panel. ("3" in View "A", Fig. 15-41)
6. Starting with end of weatherstrip at bottom center of door, install weatherstrip clips into retaining holes completely around door using Weatherstrip Clip Inserting Tool J-5757. Press or roll weatherstrip completely around door to assure a good cement bond.
7. Apply weatherstrip adhesive (neoprene type) to butt ends of weatherstrip and cement ends together to form an even butt joint. (View "A", Fig. 15-41)

BACK DOOR WINDOW REGULATOR ELECTRIC MOTOR ("35" & "45" Styles)

Removal and Installation

1. Remove window regulator as described under BACK DOOR DROPPING WINDOW REGULATOR (ELECTRIC) - Removal and Installation.

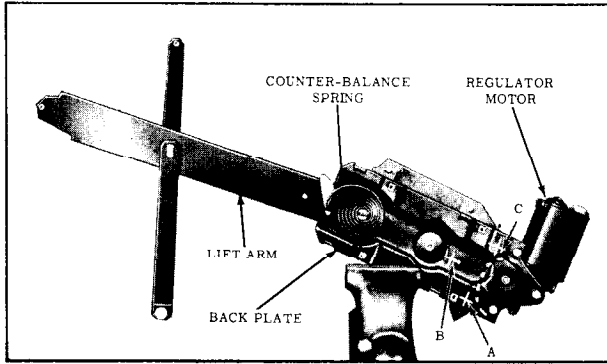


Fig. 15-42 Back Door Electric Window Regulator

IMPORTANT: Be sure to perform Steps 2 and 3 before attempting to remove motor from regulator. The regulator lift arm is under tension from the counter balance spring and can cause serious injury if the motor is removed without locking the sector in place with a nut and bolt.

- Place regulator and motor assembly in a vise. (Fig. 15-42) Drill a 1/4" hole through back plate and sector at location indicated at either A, B, or C (Fig. 15-42) depending on position of lift arm.

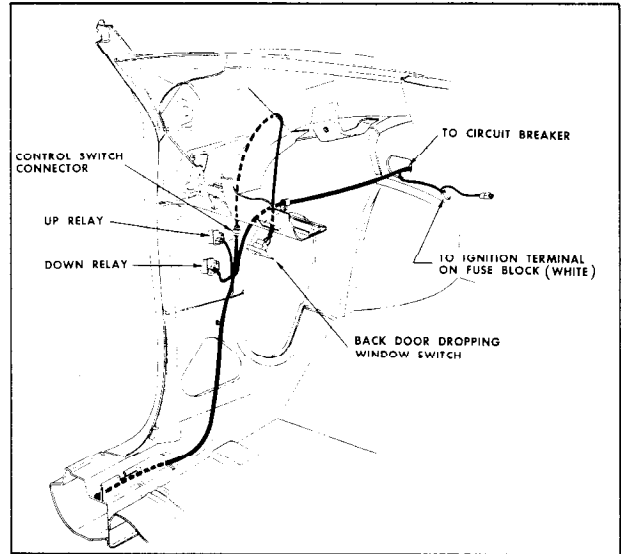


Fig. 15-43 Front End Wiring for Electric Back Door Dropping Window

NOTE: Do not drill into motor housing, part of which is indicated by dotted line. Also, do not locate hole less than 1/2" from edge of back plate or sector.

- Insert a 3/16" bolt through hole in back plate

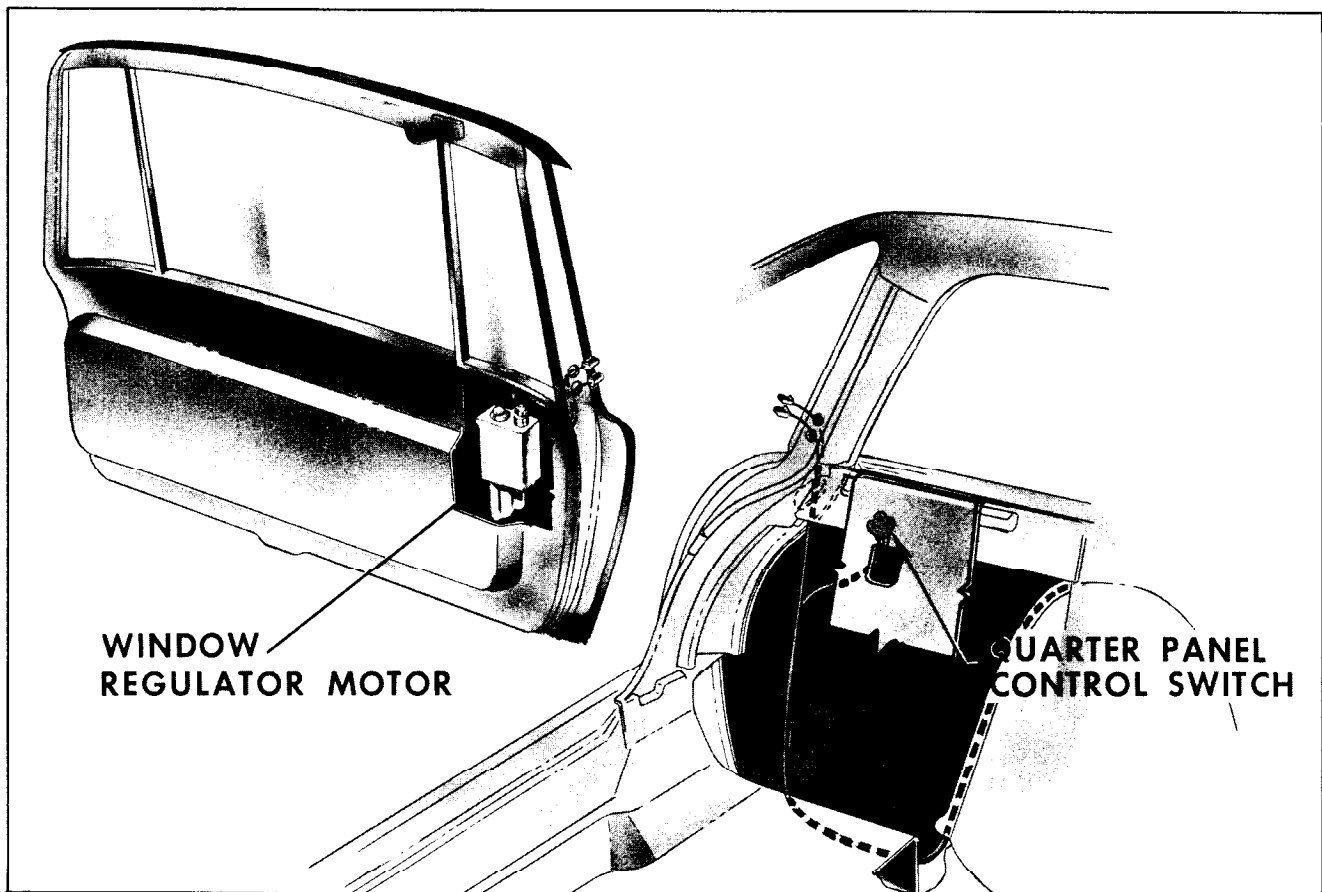


Fig. 15-44 Back Door Window Controls

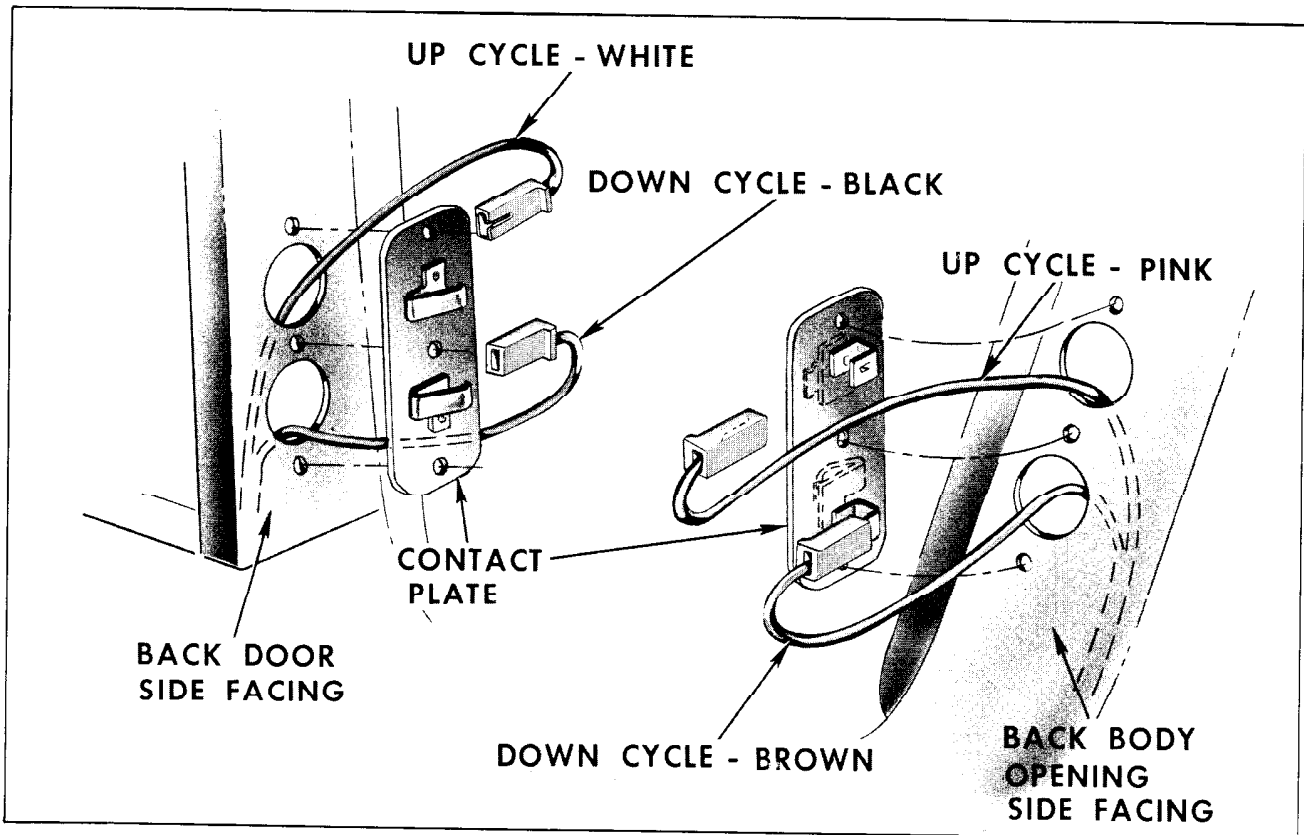


Fig. 15-45 Wiring Installation - Back Door Dropping Window

and sector and install nut to bolt. Do not tighten nut.

4. Remove motor attaching bolts (Fig. 15-42) and remove motor from regulator.

NOTE: Clean off steel chips from regulator sector and motor pinion gear.

5. To install regulator motor, reverse removal procedure. If difficulty is encountered when trying to line up motor attaching holes, the regulator lift arm may be moved up or down manually so that motor pinion gear will mesh with teeth on regulator sector and regulator attaching holes will line up.

Lubricate regulator sector teeth and all frictional points with Lubriplate or equivalent.

NOTE: Be sure to remove temporary nut and bolt from regulator before installing regulator in door.

ELECTRIC BACK DOOR DROPPING WINDOW

The power operated back door dropping window is controlled by a 12 volt D.C. series wound reversible motor. This motor contains an internal circuit breaker and a self-locking gear drive. The current for the motor is obtained through a 40 amp circuit breaker located at the right side of the engine compartment. (Fig. 15-43)

The window is lowered from control switches located at the left side of the instrument panel or from the left rear quarter panel. (Fig. 15-44)

The back door window harness is separate from the body wiring harness and runs along the left side of the body.

Electrical contact between body wire harness and back door is made through open double contact plates located at the left back body opening side panel and the mating surface on the back door side facing. (Fig. 15-45)

Checking Procedures

Before performing an intensive checking procedure to determine the failure in the circuit, check all connections to insure proper installation and contact.

A. Check Feed Circuit Current at Circuit Breaker

1. Connect one light tester lead to battery side of circuit breaker and ground other lead. Circuit breaker is located at the right side of the engine compartment. If tester does not light there is an open or short circuit in feed circuit from battery to circuit breaker.
2. To check the circuit breaker disconnect output side of circuit breaker. Connect one light tester lead to the output side of circuit breaker

and ground other lead. If tester does not light, the circuit breaker is inoperative.

B. Check Current of Feed Wire at the Instrument Panel Control Switch Connector

1. Connect one light tester lead to battery side of connector and ground other lead. If the tester does not light, there is an open circuit between the circuit breaker and switch connector.

C. Check Control Switch at Instrument Panel

1. Disengage harness connector from switch.
2. Using a #12 gauge jumper wire, insert one end into the feed terminal and the other end into one of the other terminals. Back door window should operate.
3. Repeat procedure for other terminal.

If the window operates with the jumper wire but does not operate with control switch, the switch is defective.

D. Check Current at Rear Body Opening Side Facing Contact Plate

1. At battery side of window control switch connector place #12 gauge jumper wire from the feed terminal to the up cycle terminal.
2. With back door open, place one lead of the light tester on up terminal of the rear body opening contact and ground other lead. If tester does not light, there is an open or short circuit between switch connector and rear body opening contact plate.
3. Repeat Steps 1 and 2 using down cycle terminal.

E. Check Current at Window Motor Harness Connector

NOTE: To perform the following check it will be necessary to remove sufficient parts to lower the regulator motor to gain access to motor connector.

1. Disengage window motor harness connector from motor.
2. Place #12 gauge jumper wire in the battery side of the window control switch connector from the feed terminal to the up cycle terminal.
3. From inside and with the back door closed, place one light tester lead on the up cycle terminal (white wire) and ground the other lead. If tester does not light there is an open

or short circuit between the back door contact and motor connector.

4. Repeat Steps 3 and 4 changing connections to the down cycle wires. If motor does not operate at this point, it is defective and should be removed.

BUCKET TYPE FRONT SEATS (F-85 & Starfire)

Description

All seat adjusters and stationary supports are bolted to the seat bottom frame; however, a combination of bolts and/or nuts are used to retain the adjusters or stationary supports to the floor pan assembly. (Fig. 15-46, 15-47, 15-48)

All manually operated adjusters are equipped with assist springs. On the 3117 style, the assist spring is attached to the inboard adjuster. On all other styles, the assist spring is attached to the outboard adjuster.

SEAT ASSEMBLY (MANUAL OR POWER OPERATED)

Removal and Installation

1. Turn back floor carpeting to expose seat adjuster-to-floor pan attaching nuts or bolts.
2. Operate seat assembly to rearward position.
3. On F-85 styles, loosen adjuster to floor pan attaching nuts or bolts. On Starfire styles, remove attaching nuts.
4. Operate seat assembly to full forward position.
5. At rear of seat, remove adjuster to floor pan attaching nuts or bolts.
6. On Starfire styles equipped with power operated seats, disconnect wiring harness from seat control switch and from actuator motor.
7. On F-85 styles, carefully slide seat assembly rearward until front adjusters are removed from under front attaching nuts or bolts.
8. With aid of helper, remove seat assembly with attached adjusters from body.
9. To install, reverse removal procedure. On F-85 styles, be sure adjusters are properly engaged under front attaching nuts or bolts prior to installing rear attaching bolts.

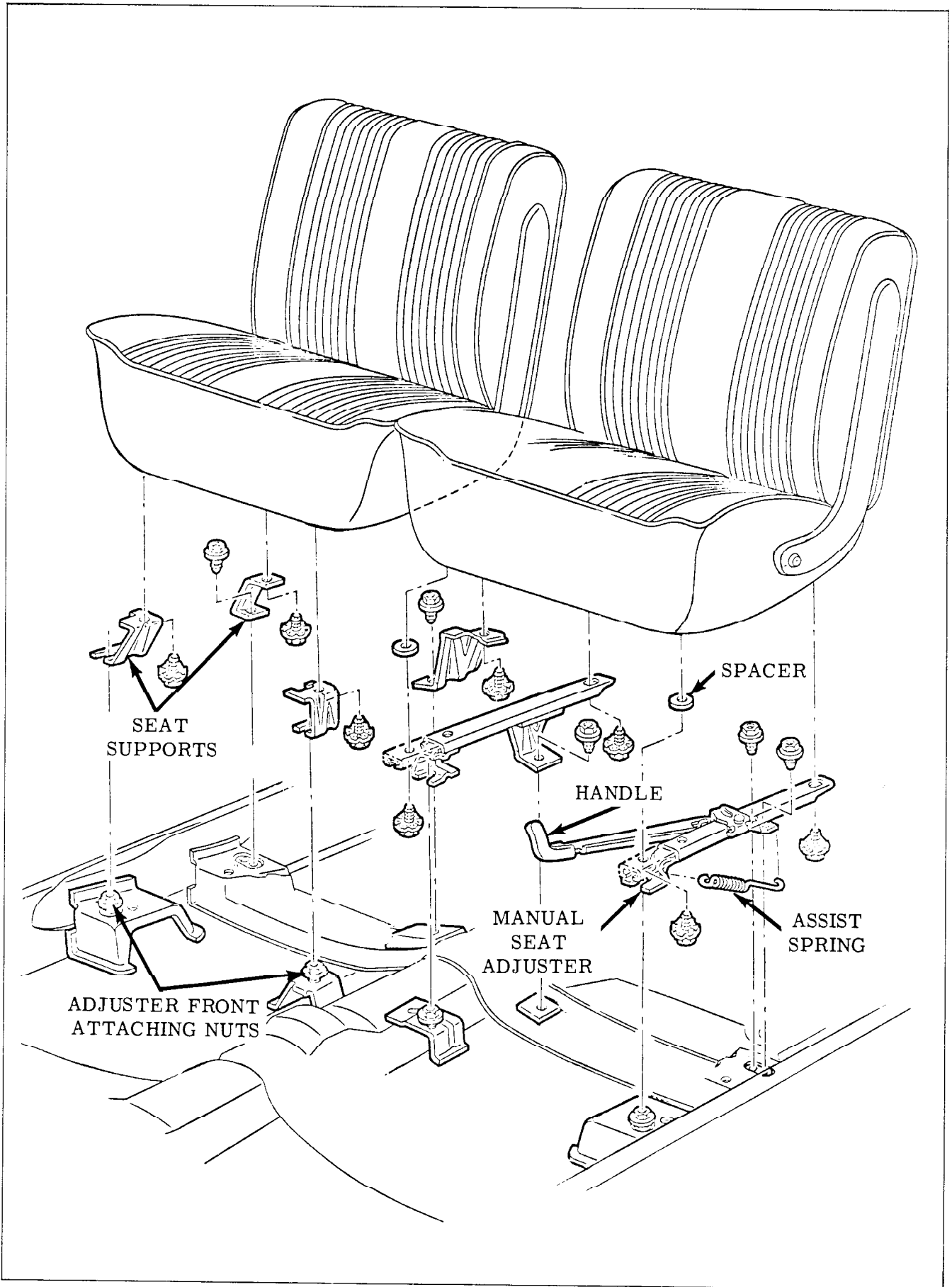


Fig. 15-46 Bucket Seat Assemblies

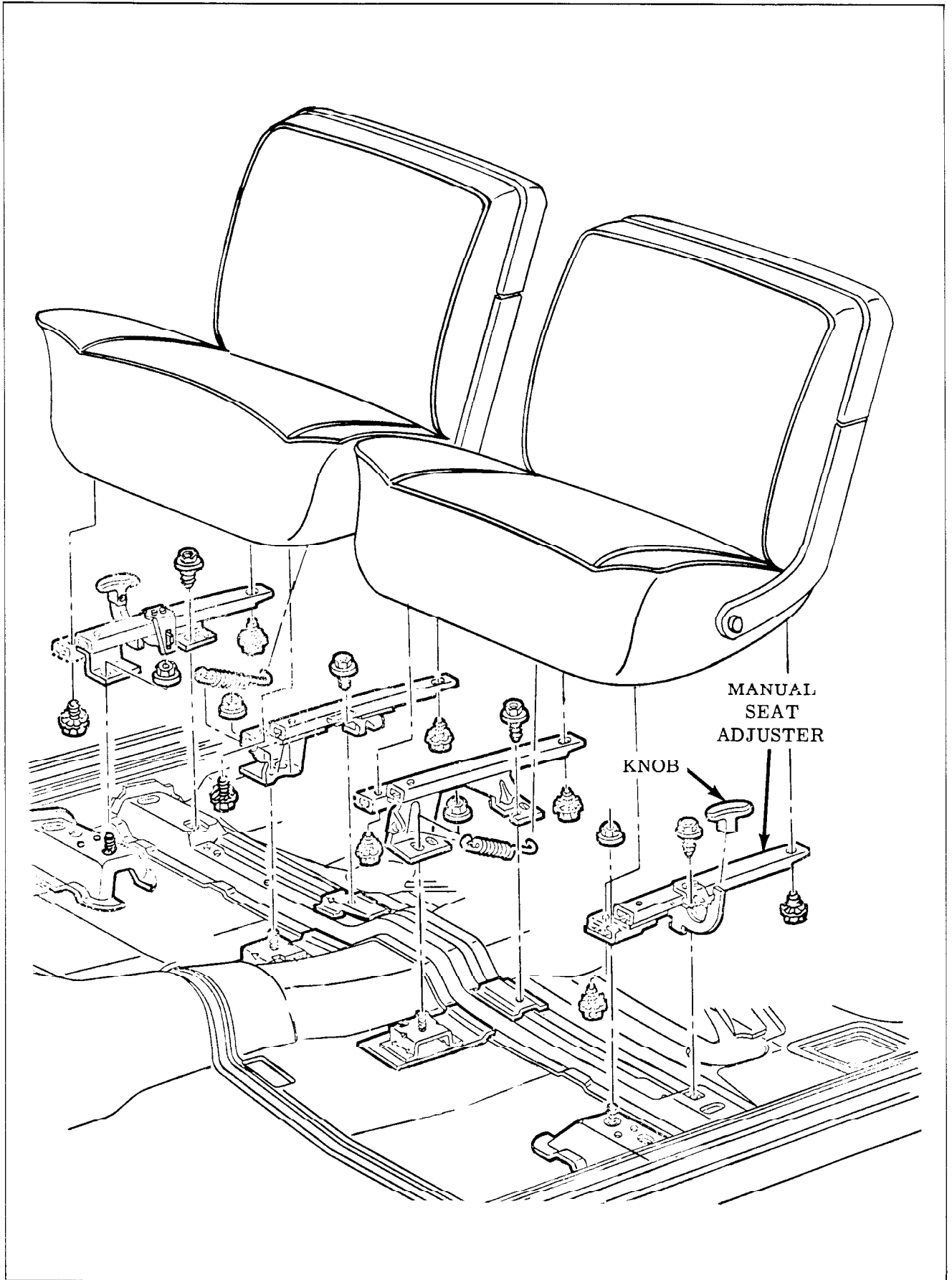


Fig. 15-47 Bucket Seat Assemblies

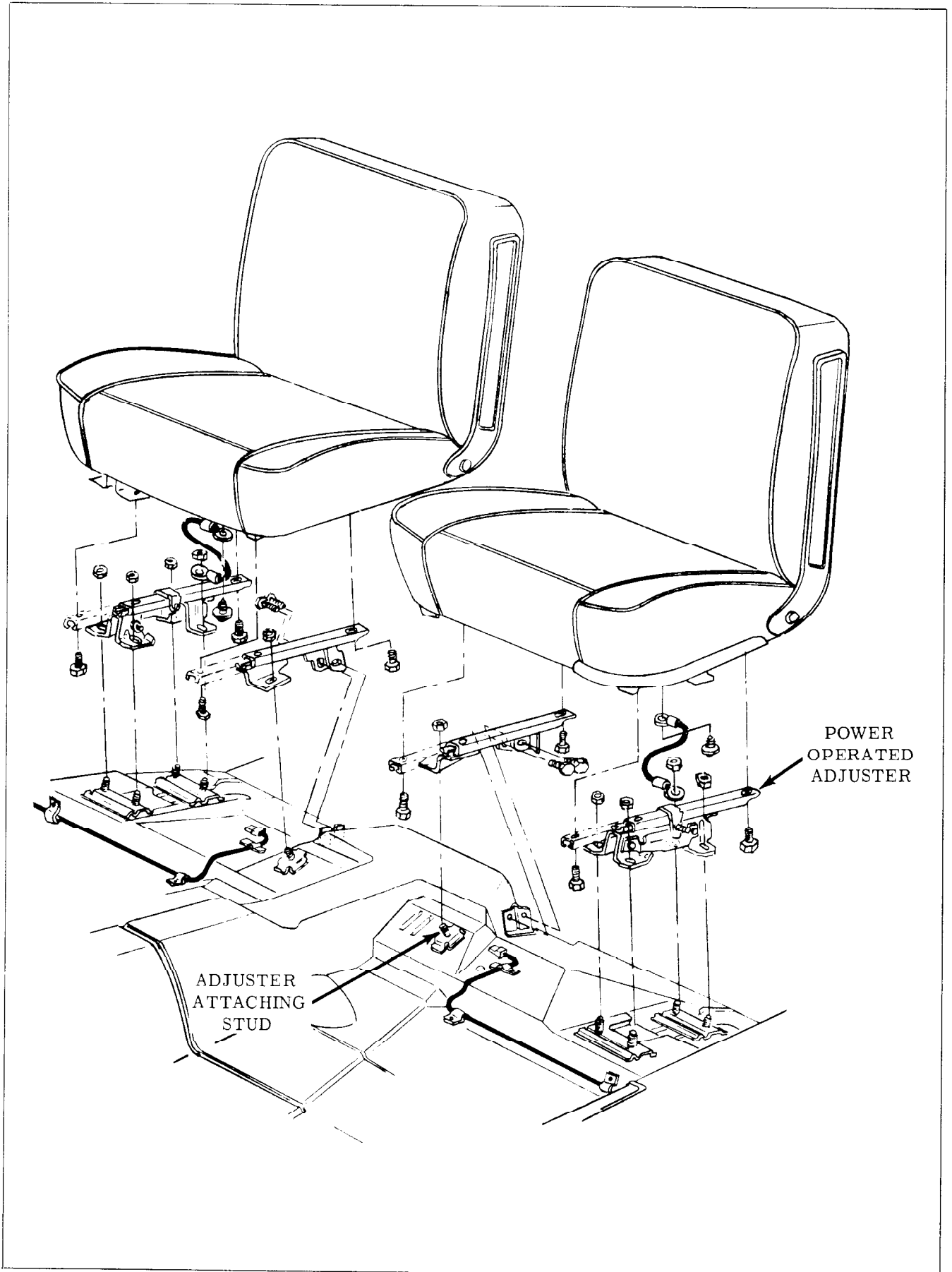


Fig. 15-48 Bucket Seat Assemblies

FRONT SEAT (PASSENGER-STATIONARY) (3067 Only)

Removal and Installation

1. Turn back floor carpeting sufficiently to expose stationary support-to-floor pan attaching nuts or bolts.
2. Scribe location of seat supports on floor pan assembly.
3. At front of seat, loosen seat support-to-floor pan attaching nuts or bolts.
4. At rear of seat, remove seat support-to-floor pan attaching nuts or bolts.
5. Carefully slide seat assembly rearward until front supports are removed from under front attaching nuts or bolts.
6. With aid of helper, remove seat assembly with attached supports from body.
7. To install, reverse removal procedure. Be sure supports are properly engaged under front attaching nuts or bolts and aligned within scribe marks prior to installing rear attaching bolts.

SEAT ADJUSTERS (MANUAL OR POWER OPERATED)

Removal and Installation

1. Remove front seat assembly as previously described and place upside down on a clean, protected surface.

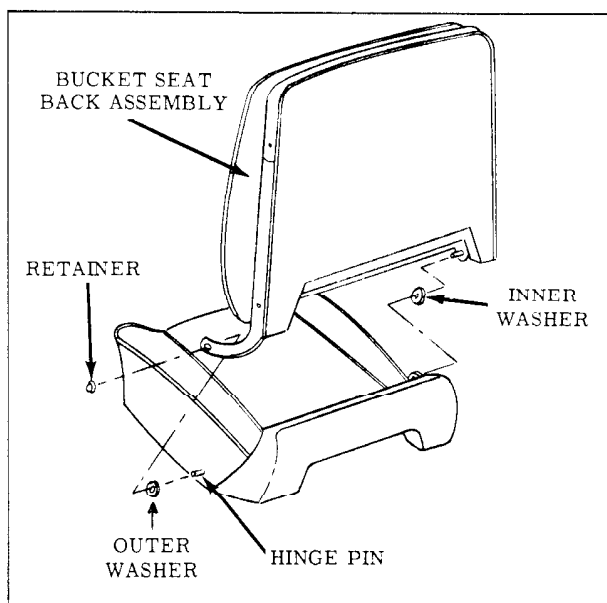


Fig. 15-49 Bucket Seat Back Removal

2. If adjuster to be replaced is equipped with an assist spring, remove spring from adjuster.
3. Operate adjuster so that both front and rear attaching bolts are accessible.
4. If power operated outboard adjuster is being replaced, disconnect power drive cable from adjuster gear nut.
5. Remove adjuster-to-seat bottom frame front and rear attaching bolts and remove adjuster from seat assembly.
6. To install, reverse removal procedure.

STATIONARY SUPPORTS (3067)

Removal and Installation

1. Remove front seat assembly as previously described and place upside down on a clean protected surface.
2. Scribe location of support to be removed on seat bottom frame.
3. Remove bolt securing affected support to seat bottom frame (Fig. 15-16) and remove support from seat assembly.
4. To install, reverse removal procedure.

SEAT BACK ASSEMBLY

Removal and Installation

1. Using a flat bladed tool, carefully remove retainer from outer hinge pin.
2. Carefully disengage front seat back outer hinge arm from pin.
3. Move entire seat back assembly inboard until inner hinge pin is disengaged from retainer on seat assembly; then remove seat back from body.
4. To install, reverse removal procedure. Prior to installation of back assembly, be sure inner and outer washers are installed over the hinge pin. (Fig. 15-49)

REPOSITIONING SEAT ASSEMBLY (3067)

The driver's seat assembly may be repositioned one inch forward as follows:

1. Remove seat assembly from body as previously described and turn upside down on a clean protected surface.

2. As a safety precaution, disengage assist spring from outboard adjuster.
3. Operate outboard adjuster lower track forward sufficiently to remove stop screw from rear of adjuster upper track.
4. Operate outboard adjuster lower track rearward sufficiently to install stop screw at front of adjuster upper track. (Fig. 15-50)
5. Install assist spring and install seat assembly into body.
6. Operate seat assembly several times to full forward position. The cycling of the seat assembly will allow inboard adjuster upper track to skid over rollers between upper and lower track thus allowing both adjusters to become "in phase".

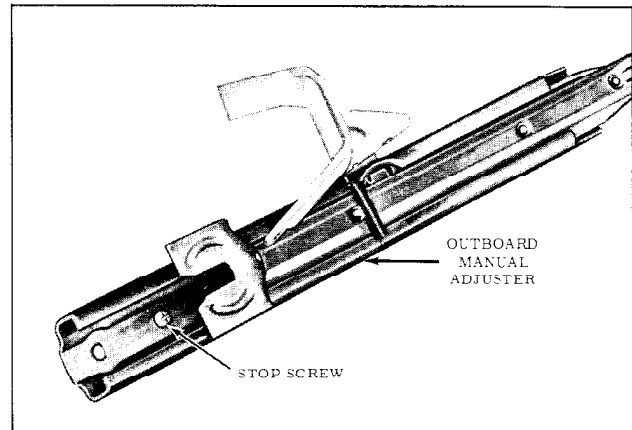


Fig. 15-50 Repositioning Front Seat

downward until protrusions are properly engaged behind floor pan stops.

REPOSITIONING SEAT ASSEMBLY (3117)

The driver's and passenger's seat assembly may be repositioned one inch forward as follows:

1. Remove adjuster-to-floor pan front and rear attaching nuts and bolts.
2. Reposition front seat assembly one inch forward. Align existing adjuster holes with floor pan attaching points; then, install attaching nuts and bolts.
3. Check seat for proper operation.

3RD SEAT CUSHION ASSEMBLY (45 Styles)

Removal and Installation

1. Push lower forward edge of cushion rearward and pull cushion upward until protrusions on seat bottom frame disengage from floor pan stops.
2. Pull cushion forward and carefully remove from body.
3. Carefully lift cushion into body to avoid damaging adjacent trim.
4. Position rear edge of cushion under rear seat back assembly.
5. Center protrusions on seat bottom frame with stops on floor pan assembly.

NOTE: If seat bottom frame protrusions are not properly centered in relation to floor pan stops, proper engagement and placement of cushion will be extremely difficult.

6. Push forward edge of cushion rearward and

FOLDING 3RD SEAT BACK PANEL ASSEMBLY (45 Styles)

Removal and Installation

1. Remove compartment floor panel.
2. With folding 3rd seat back in down position, remove screws securing 3rd seat back hinge to hinge support.
3. Raise folding 3rd seat back and remove screws securing right and left link assembly from body.
4. To install, reverse removal procedure.

EXTERIOR MOLDINGS

Removal and Installation

The exterior moldings are secured to the body by any one of the following: attaching screws, attaching nuts, snap retention on body parts, "bath-tub" type snap-on clips of steel or plastic construction, friction type snap-in clips, bolt and clip assemblies, and molding integral attaching studs. Fig. 15-51 depicts cross-section drawings which illustrate some of the typical methods used in attaching moldings to the body.

When removing and installing body exterior moldings, certain precautions should be exercised. Adjacent paint finishes should be protected to avoid refinishing. Proper tools and methods should be employed to guard against molding damage, particularly if the part is to be reused. Whenever a sealing operation is disturbed, appropriate sealing materials and methods should be used to provide the required watertight seal.

TYPICAL METHODS OF MOLDING ATTACHMENT

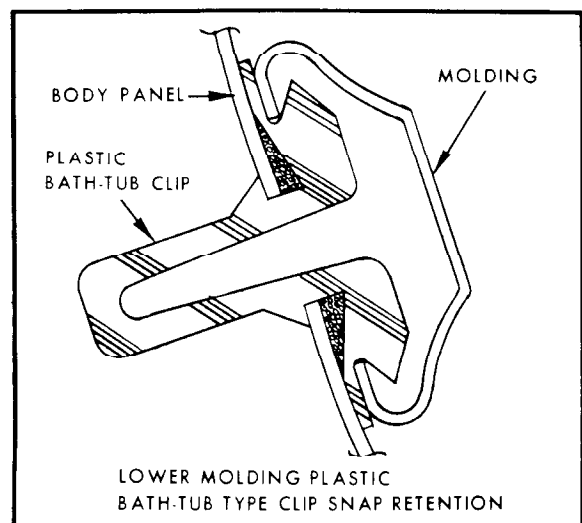
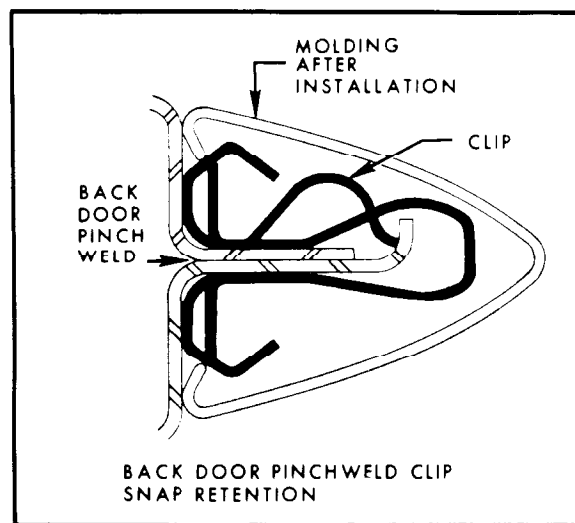
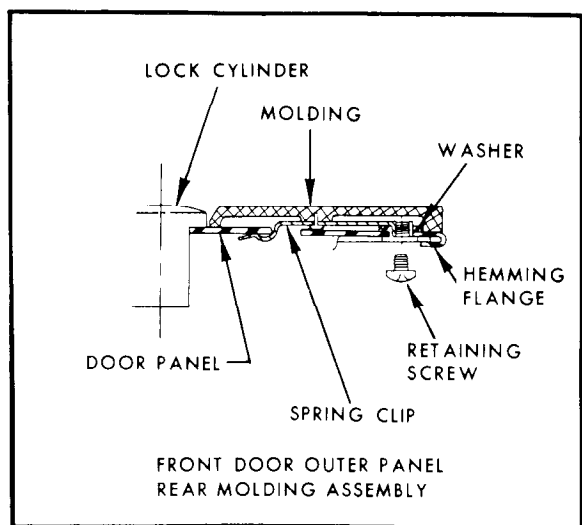
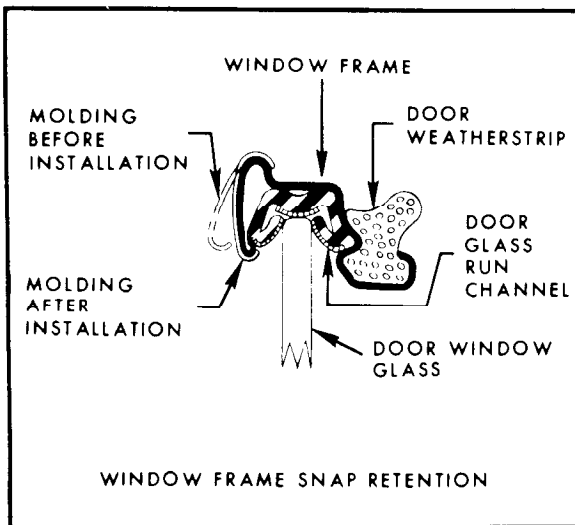
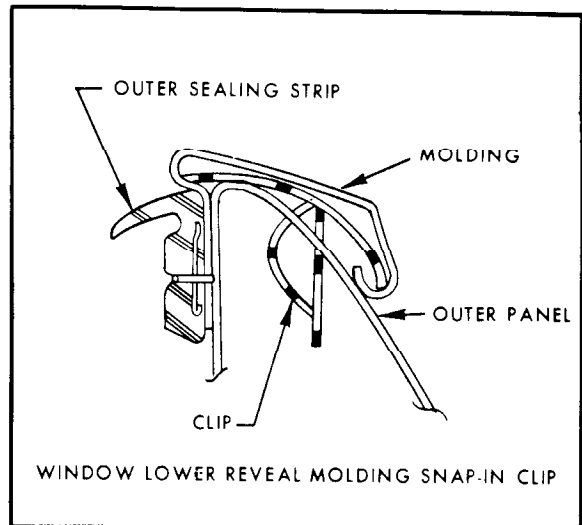
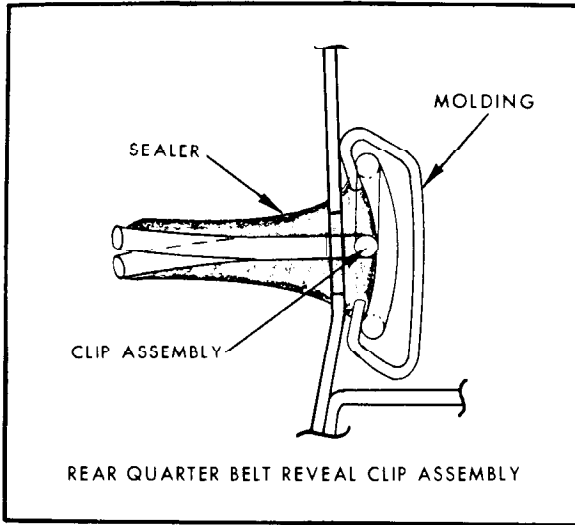


Fig. 15-51 Molding Attachment

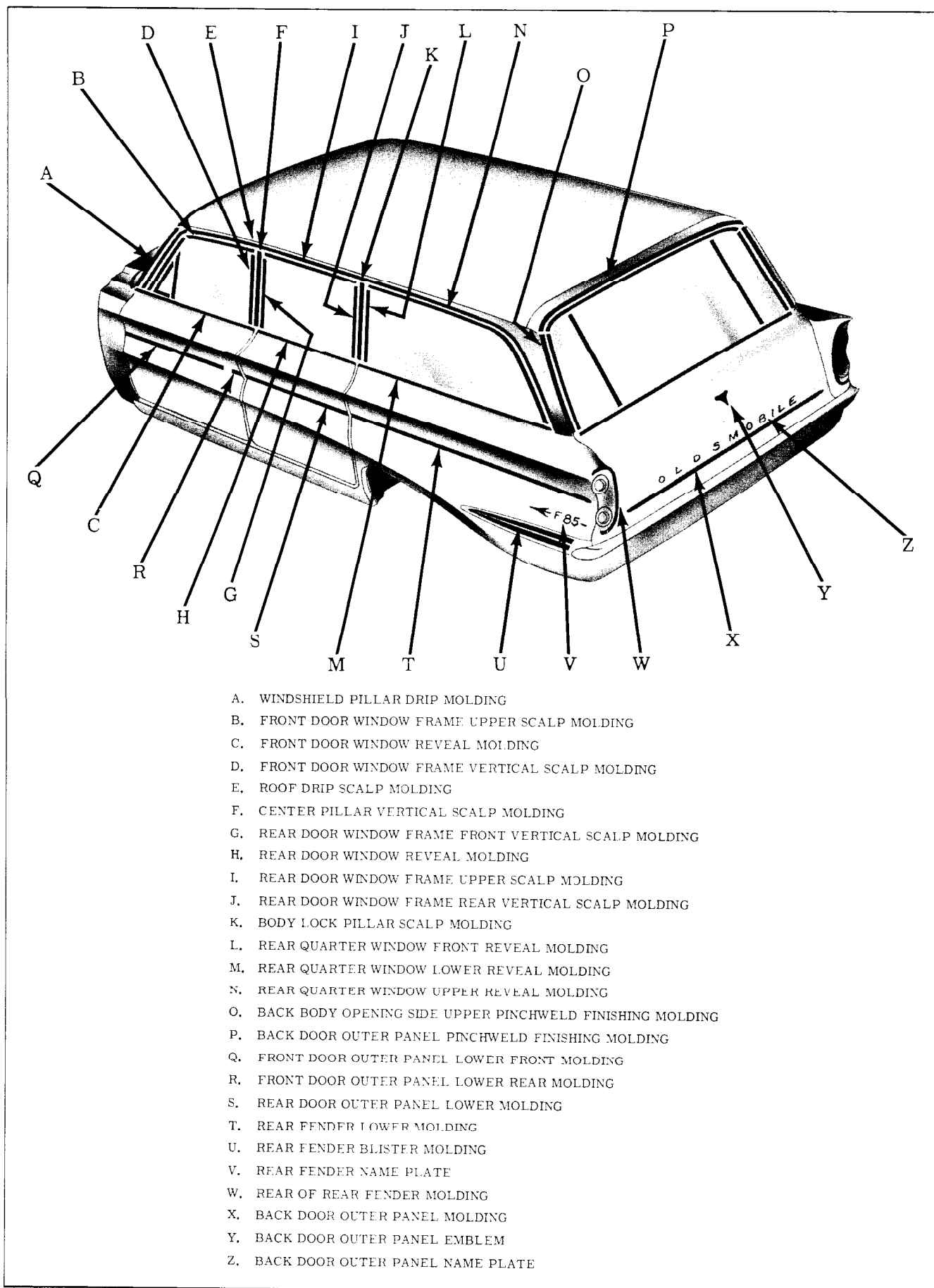


Fig. 15-52 Exterior Moldings - 3135 Style

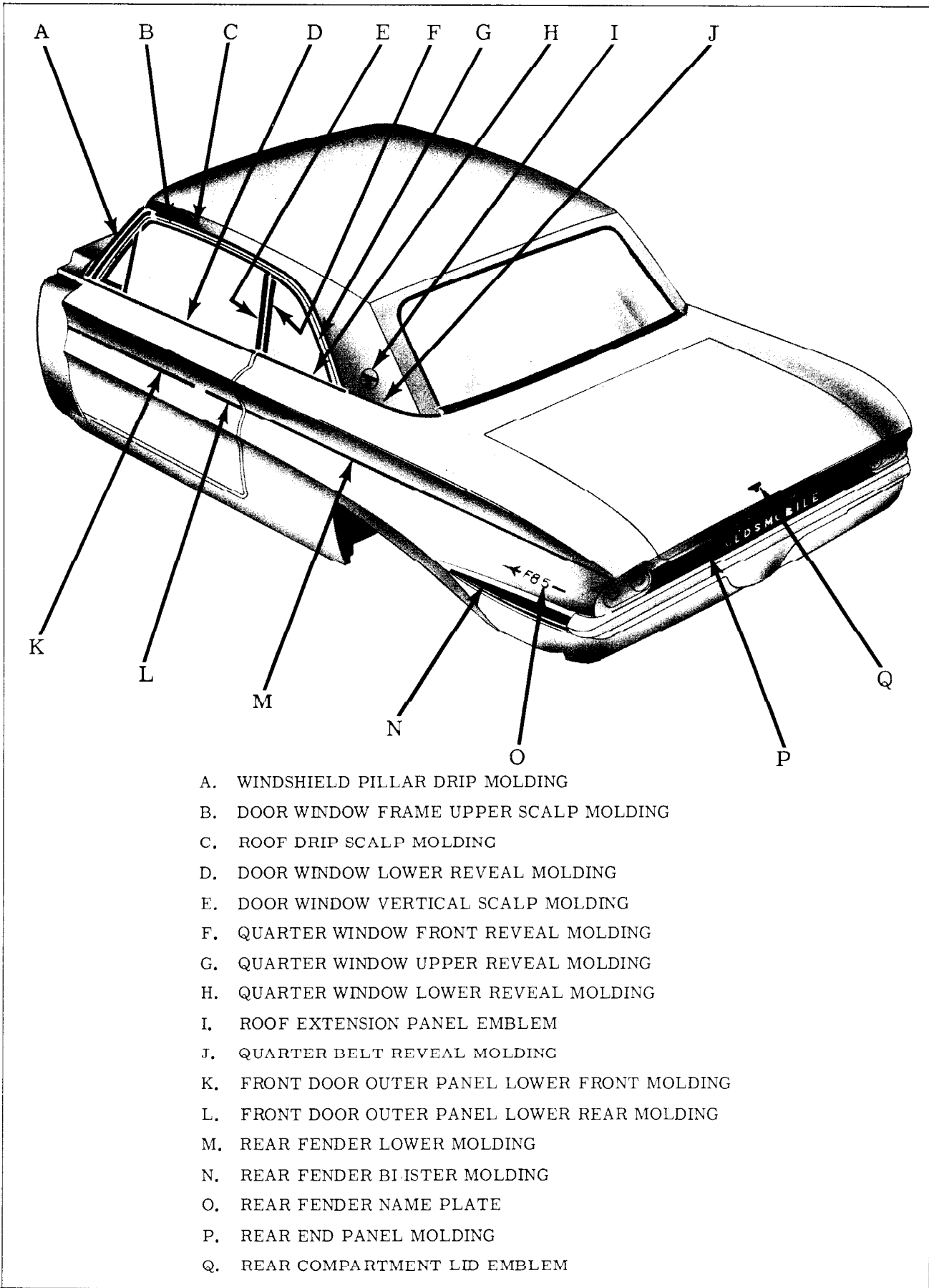
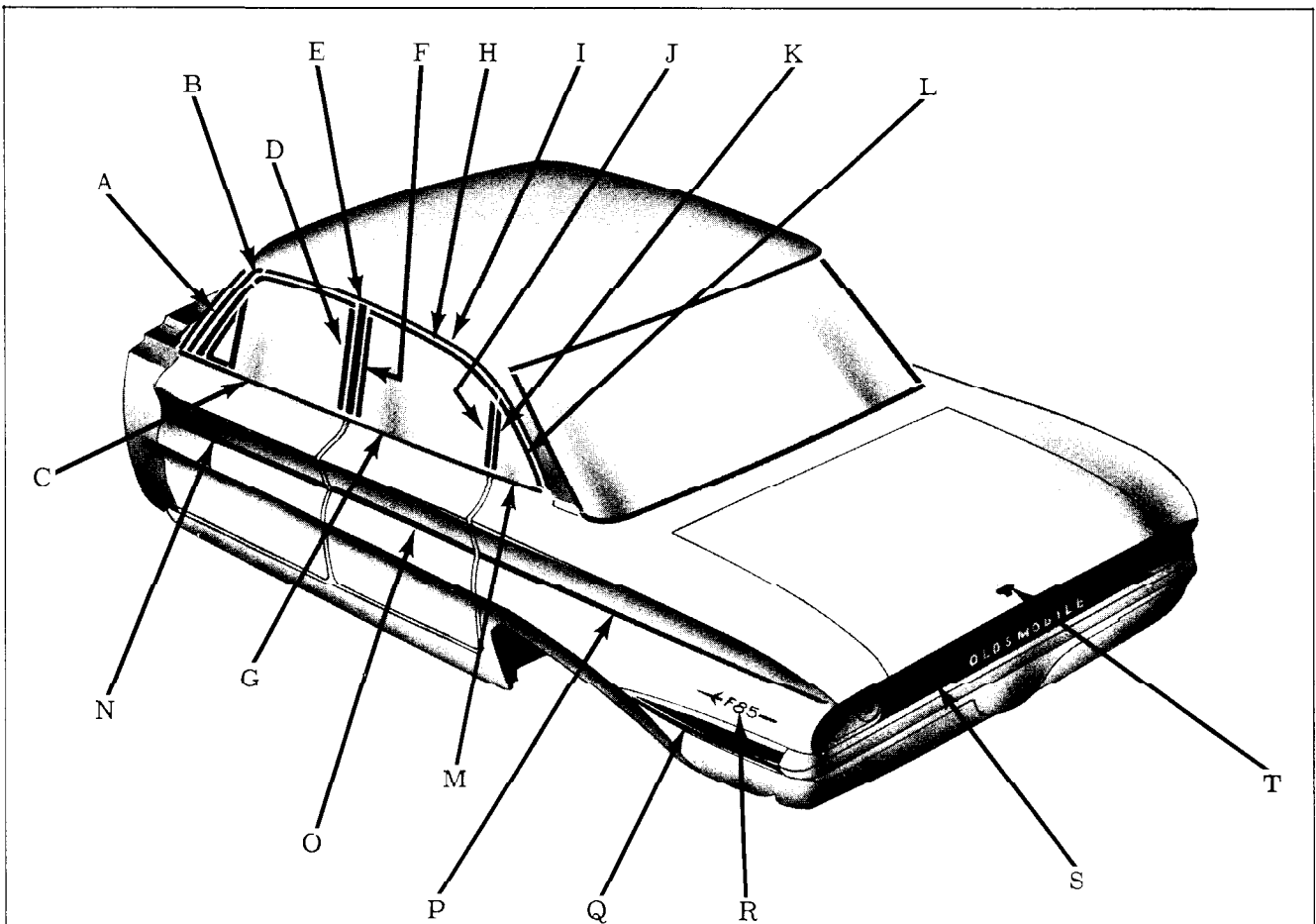


Fig. 15-53 Exterior Moldings - 3117 Style



- A. WINDSHIELD PILLAR DRIP MOLDING
- B. FRONT DOOR WINDOW FRAME UPPER SCALP MOLDING
- C. FRONT DOOR WINDOW REVEAL MOLDING
- D. FRONT DOOR WINDOW FRAME VERTICAL SCALP MOLDING
- E. CENTER PILLAR SCALP MOLDING
- F. REAR DOOR WINDOW FRAME FRONT VERTICAL SCALP MOLDING
- G. REAR DOOR WINDOW REVEAL MOLDING
- H. REAR DOOR WINDOW FRAME UPPER SCALP MOLDING
- I. ROOF DRIP SCALP MOLDING
- J. REAR DOOR WINDOW FRAME REAR VERTICAL SCALP MOLDING
- K. REAR QUARTER WINDOW FRONT REVEAL MOLDING
- L. REAR QUARTER WINDOW UPPER REVEAL MOLDING
- M. REAR QUARTER WINDOW LOWER REVEAL MOLDING
- N. FRONT DOOR OUTER PANEL LOWER MOLDING
- O. REAR DOOR OUTER PANEL LOWER MOLDING
- P. REAR FENDER LOWER MOLDING
- Q. REAR FENDER BLISTER MOLDING
- R. REAR FENDER NAME PLATE
- S. REAR END PANEL MOLDING
- T. REAR COMPARTMENT LID OUTER PANEL EMBLEM

Fig. 15-54 Exterior Moldings - 3119 Style

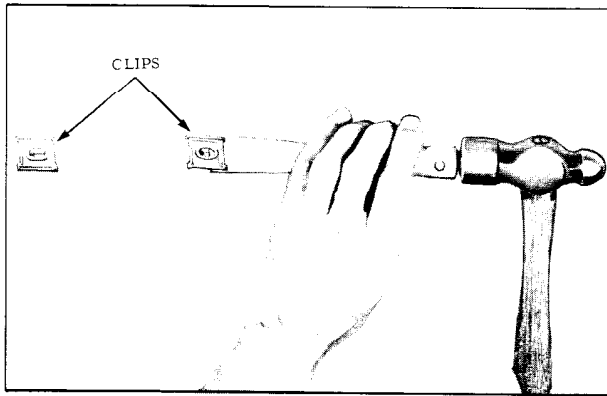


Fig. 15-55 Removing A "Bath Tub" Type Clip

Every screw, nut or clip that secures a molding to a body outer panel, including the attaching hole, requires a specialized type of sealing operation. An approved grade of medium-bodied sealer and body caulking compound are the sealers used most generally in the effective sealing of these moldings. The exterior moldings are identified in Figs. 15-52, 15-53 and 15-54.

If it is necessary to replace a "bath-tub" type clip as shown in Fig. 15-55, it may be removed with a sharp flat-bladed tool. Hammer the chisel until the base of the clip is cut approximately halfway through; then disengage the clip from the hole in the outer panel. In some cases it may be necessary to cut the clip at the opposite side. To install a new steel clip, insert it in the hole in the outer panel and secure it to the panel using Tool J-7160 as shown in Fig. 15-56.

ROOF DRIP MOLDING SCALP (3027,3119,"35" & "45" Styles)

The scalp, of one-piece construction, is secured to the drip molding by snap retention. On "35" and "45" Styles, the scalp is of two-piece construction, with the front section overlapping the rear section.

Removal

With a suitable, pointed hook tool, unsnap the scalp from the drip molding. Start removal on the underside of the scalp at the front end.

Installation

Locate the scalp over the upper lip of the drip molding and snap the lower rolled edge under the drip molding. The rear section should be installed prior to the front section on the "35" and "45" Styles.

WINDSHIELD PILLAR FINISH MOLDING ("67" Styles)

The molding is secured to the windshield pillar by the windshield pillar weatherstrip, weather-

strip retainer, the side lip of the windshield rubber channel and a screw under the weatherstrip retainer.

Removal

Remove the windshield pillar weatherstrip retainer and the attaching screw. Remove the windshield header and cap. Pry the molding straight out from the pillar.

Installation

Position the molding to the pillar and install under the windshield channel lip. Install the attaching screw. Apply medium-bodied sealer the length of the molding and install previously removed parts.

WINDSHIELD PILLAR DRIP MOLDING (All Except "67" Styles)

The molding extends from the front of the roof drip molding to the belt line. The molding is secured to the pillar with screws, and requires sealing.

Removal

Remove the attaching screws, disengage the molding from the pillar and unhook it from the roof drip molding.

Installation

Clean the mating surfaces of the parts and apply a continuous ribbon of medium-bodied sealer

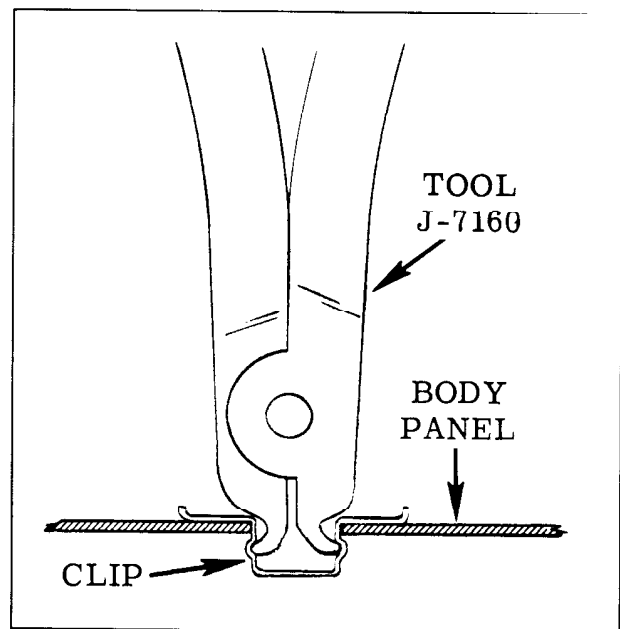


Fig. 15-56 Installing A "Bath Tub" Type Clip

along the center of the entire length of the molding attaching surface. Position the molding to the pillar and hook the upper edge over the front edge of the roof drip molding. Align and seal the screw holes and install the attaching screws.

**FRONT DOOR WINDOW FRAME
UPPER SCALP MOLDING
("17", "19", "27", "35" & "45" Styles)**

The molding is secured to the window frame by snap retention. The front of the molding is overlapped by the reveal molding.

Removal

Remove the door ventilator frame attaching screws, lower the door window and move the ventilator rearward slightly for access purposes. Then, with a suitable flat-bladed hook tool, un-snap the upper scalp molding from the window frame by working outwardly from the window opening. Start removal at the rear of the molding. Before un-snapping the front of the molding, slide it upward to clear the reveal molding. Use care not to damage any door parts during this operation.

Installation

Apply body caulking compound (1/8" x 1/4" x 1/4") at six-inch intervals on the inner side of the molding. Engage the front end of the molding on the window frame and slide it behind the reveal molding. Position the molding to the rear corner of the window frame above the vertical molding and to the outside edge of the window frame and snap it into place. Install the door ventilator attaching screws.

**FRONT DOOR WINDOW FRAME
VERTICAL SCALP MOLDING
("17", "19", "35" & "45" Styles)**

The vertical scalp molding is overlapped by the upper scalp molding and by the window reveal molding. The vertical scalp molding is secured to the door window frame by snap retention.

Removal

Loosen the upper scalp molding from the door edge to the ventilator division channel. With a flat-bladed hook tool, un-snap the vertical molding from the window frame by working outwardly from the window opening. Start the removal at the top. Before un-snapping the lower end, slide the molding upward to clear the reveal molding. Use care not to damage any door parts during the operation.

Installation

Apply body caulking compound (1/8" x 1/4" x 1/4") at six-inch intervals on the inner side of

the molding. Position the molding to the outside edge of the window frame and slide it behind the reveal molding. Snap the upper portion of the molding into place. Complete the installation of the upper scalp molding.

**FRONT DOOR WINDOW REVEAL
MOLDING (3100 Series)**

The reveal molding is secured to the door by an attaching screw at each end and by integral snap-in clips.

Removal

Remove the door ventilator. Lower the door window below the reveal molding attaching screws. Remove attaching screws at the front and rear of the molding. With a flat-bladed tool, carefully pry the molding, with integral clips, from the door by rotating it outwardly from the window opening.

Installation

Align the molding clips to the attaching holes in the door, position the molding, and secure each clip with a moderate pressure. Install the molding front and rear attaching screws and the previously removed parts.

**FRONT DOOR OUTER PANEL LOWER
FRONT MOLDING (3100 Series)**

The molding is secured to the door outer panel by a screw at the hinge pillar hemming flange and by "bath-tub" type snap-on clips which are previously installed on the door.

Removal

Remove the front attaching screw, and with a flat-bladed tool, carefully un-snap the molding from the door at each clip location.

Installation

Replace damaged clips as required. Place the molding upper return flange over the clip, and snap the opposite flange over the clips. Seal and install the molding attaching screw.

**FRONT DOOR OUTER PANEL LOWER
REAR MOLDING (3100 Series)**

The molding is secured to the door outer panel by a screw at the lock pillar hemming flange and by spring tension from a clip which is an integral part of the molding.

Removal

Remove the attaching screw at the lock pillar hemming flange. Slide the molding rearward to disengage it from the door.

Installation

Slide molding into position, engaging the spring clip in the outer panel. Seal and install the attaching screw.

CENTER PILLAR VERTICAL SCALP MOLDING (3119, "35" & "45" Styles)

The molding is secured to the center pillar with screws. To remove the molding, remove the attaching screws. To install the molding, position the molding to the center pillar. Seal and install the attaching screws.

REAR DOOR WINDOW FRAME UPPER SCALP MOLDING (3119, "35" & "45" Styles)

The upper scalp molding is secured to the window frame by snap retention.

Removal

Use a suitable flat-bladed hook tool to unsnap the upper scalp molding from the window frame by working outwardly from the window opening. Use care not to damage any door parts.

Installation

Apply body caulking compound (1/8" x 1/4" x 1/4") at six-inch intervals on the inner side of the molding. Position the molding to each corner of the window frame above the vertical moldings and to the outside edge of the window frame. Snap the molding inwardly over the window frame to secure it.

REAR DOOR WINDOW FRAME FRONT AND REAR VERTICAL SCALP MOLDING (3119, "35" & "45" Styles)

The vertical scalp moldings are overlapped by the upper scalp molding and by the reveal molding. They are secured to the door window frame by snap-retention.

Removal

First remove the upper scalp molding. With a suitable flat-bladed hook tool, unsnap the vertical scalp molding from the window frame by starting at the top and by working outwardly from the window opening. Before unsnapping the lower end, slide the molding up to clear the reveal molding. Use care not to damage any parts.

Installation

Apply body caulking compound (1/8" x 1/4" x 1/4") at six-inch intervals on the inner side of the molding. Position the molding to the outside edge of the window frame, snap the lower end of the molding on the window frame, and slide it behind the reveal molding. Snap the upper portion of the molding into place. Install the upper scalp molding.

REAR DOOR WINDOW REVEAL MOLDING (3119, "35" & "45" Styles)

The reveal molding is secured to the door by an attaching screw at the front and by integral snap-in type clips.

Removal

Remove the front attaching screw. With a flat-bladed tool, carefully pry the molding with integral clips from the door by rotating it outwardly from the window opening.

Installation

Align the molding clips to the attaching holes in the door and secure each clip with moderate hand pressure. Install the front attaching screw.

REAR BODY LOCK PILLAR SCALP MOLDING (3135 & "45" Styles)

The front of the molding is secured to the lock pillar with screws. The rear of the molding is secured by the rear quarter window front reveal molding.

Removal

Remove the attaching screws. Swing the front of the molding outboard and disengage the rear edge from the quarter window front reveal molding.

Installation

Apply heavy-bodied sealer at the upper and lower inner face of molding (1/8" x 1/4" x 1/4"). Engage the rear edge of the molding under the quarter window front reveal molding and swing the molding into position. Install the attaching screws.

REAR DOOR OUTER PANEL LOWER MOLDING (3119, "35" & "45" Styles)

The molding is secured to the door outer panel by an attaching nut at the front hemming flange, a screw at the rear hemming flange and "bathtub" type snap-on clips which are previously installed on the door panel.

Removal

Remove the molding front attaching nut and rear attaching screw. With a flat-bladed tool, carefully pry the molding from the door at each clip location.

Installation

Replace damaged clips as required. Position the molding to the door, place the molding upper return flange over the clips and snap the opposite flange over the clips. Install the molding front attaching nut and the rear attaching screw.

REAR QUARTER WINDOW FRONT REVEAL MOLDING (All Except "67" Styles)

The molding of bright or painted finish is secured by snap retention to special previously installed clips on the quarter window pinchweld. The molding is overlapped by the upper reveal molding.

Removal

Remove the rear quarter window (All Styles). Remove the upper reveal molding (except "35" and "45" Styles). On "35" and "45" Styles, loosen the front half of the upper reveal molding. Using a suitable flat-bladed hook tool, unsnap the outer edge of the molding from the retaining clips located at the top and bottom of the molding.

Installation

Replace damaged clips as required. Position the molding to the lower reveal molding. Engage the inner edge of the molding over the retaining clips, and snap the molding into place. Install the upper reveal molding. Seal and complete the installation of the rear quarter window on "19" and "35" and "45" Styles.

REAR QUARTER WINDOW UPPER REVEAL MOLDING (All Except "67" Styles)

The molding, of bright or painted finish, is secured by snap retention to special previously installed clips on the quarter window pinchweld.

Removal

Remove the rear quarter window on "19" Styles. On "35" and "45" Styles loosen the rear quarter window across the top of the opening. Protect the front reveal molding from damage as required. With a flat-bladed hook tool, unsnap the outer edge of the molding from each retaining clip.

Installation

Replace damaged clips as required. Align the molding with the front reveal molding and engage the inner edge of the molding with the retaining clips. Protect the front reveal molding from damage as required. With a pair of pliers, properly insulated, snap the molding into position at each clip location. Seal and complete the installation of the rear quarter window on "19" and "35" and "45" Styles.

REAR QUARTER WINDOW LOWER REVEAL MOLDING ("17" & "27" Styles)

The reveal molding is secured to the quarter panel by integral snap-in type clips.

Removal

Lower the window and with a narrow flat-bladed tool carefully pry the molding from the quarter panel by rotating the tool up and outboard. Start removal from the front edge.

Installation

Position the molding to the quarter window front reveal molding and align the clips to the slots in the quarter panel. Apply pressure to the molding to engage the clips to the quarter panel.

REAR QUARTER WINDOW LOWER REVEAL MOLDING (3119, "35" & "45" Styles)

The molding is secured to the body by attaching screws. The front and upper reveal moldings fit flush to the surface of the lower reveal molding.

Removal

Remove the rear quarter window, the upper and front reveal molding. Remove the attaching screws and lift the molding at the front end upward and outward to remove.

Installation

Position the molding to the body by placing the rear end under the pinchweld flange first and rotating the front end until the flange fits over quarter panel. Seal and install the attaching screws. Install the front, then the upper reveal molding. Seal and complete the installation of the rear quarter window.

REAR QUARTER BELT REVEAL MOLDING (3117 Style)

The molding is retained to the roof extension panel by snap-on type clips.

Removal

Insert a flat bladed tool at the top of the molding and with a twisting motion unsnap the clips from the roof extension panel.

Installation

Replace damaged clips as required. Position the molding and the clips to the panel and snap in place.

REAR QUARTER PINCHWELD FINISHING MOLDING ("67" Style)

The moldings are secured to the quarter pinchweld with snap-on clips which are previously installed on the pinchweld around the rear end side sections and with a screw at each forward end. The right molding overlaps the left molding.

Removal

1. Remove the front attaching screws at the rear quarter windows.
2. Detach the front end of the folding top compartment bag from the rear seat back.
3. Remove the attaching screws from the three back curtain retainers and pull them away from the body pinchweld.
4. With a wood block and hammer or with a flat-bladed tool, carefully disengage the moldings from the clips.
5. To remove the left molding, detach only a short section of the overlapping right molding.

Installation

1. Clean and seal the pinchweld flange.
2. Apply waterproof tape over the pinchweld flange to seal it completely.
3. Replace the damaged clips as required.
4. Position and locate the left molding to the body and snap it into place.
5. Install the right molding.
6. Install the previously removed parts.

ROOF EXTENSION PANEL EMBLEM (3117 Style)

The emblem is secured to the roof extension panel by integral studs and attaching nuts.

Removal

Remove the rear quarter courtesy lamp. Remove the attaching nuts through the rear quarter courtesy lamp opening.

Installation

Apply body caulking compound to integral studs on emblem and to the attaching nuts. Position emblem and install attaching nuts to effect a water-tight seal.

REAR FENDER NAME PLATE (All Series)

The name plate is sealed and secured to the rear fender with attaching nuts.

Removal

On "35" and "45" Styles remove the rear quarter rear trim assembly. On all styles, remove the attaching nuts.

Installation

Apply body caulking compound to the name plate studs and to the attaching nuts, position the name plate to the rear fender and install the attaching nuts. On "35" and "45" Styles, install the rear quarter rear trim assembly.

REAR FENDER BLISTER MOLDING (3100 Series)

The molding is sealed and is secured to the rear fender by bolt and clip assemblies and attaching nuts.

Removal

On "35" and "45" Styles, remove the rear quarter rear trim assembly. On all styles remove the attaching nuts.

Installation

Apply body caulking compound to the clip bolts and to the attaching nuts, position the molding to the fender and install the attaching nuts. On "35" and "45" Styles, install the rear quarter rear trim assembly.

REAR FENDER LOWER MOLDING (3100 Series)

The molding is secured to the rear fender by snap retention over previously installed "bathtub" type clips and by a bolt and clip assembly with attaching nut at the rear.

Removal

Remove rear quarter trim on "35" and "45" Styles. Remove the attaching nut. With a flat-bladed tool, carefully unsnap the molding from each retaining clip.

Installation

Replace and seal damaged clips as required. Position the molding to the lock pillar, aligning the bolt and clip assembly to the locating hole. Place the molding return flange over the clips, and snap the opposite flange over the clips. Install the molding end attaching nut.

REAR OR REAR FENDER MOLDING ("35" & "45" Styles)

The molding is sealed and is secured to the rear fender with attaching nuts.

Removal

Remove the rear quarter rear trim assembly and remove the molding attaching nuts.

Installation

Apply body caulking compound to the molding studs and to the attaching nuts, position the molding to the fender and install the attaching nuts. Install the previously removed trim.

REAR COMPARTMENT LID OUTER PANEL EMBLEM (All Except "35" & "45" Styles)

The emblem is sealed and is secured to the lid outer panel with attaching nuts.

Removal

Remove the attaching nuts through the access holes provided in the lid inner panel.

Installation

Apply body caulking compound to the integral studs on the emblem and to the attaching nuts. Position the emblem and install the attaching nuts to effect a watertight seal.

BACK DOOR OUTER PANEL EMBLEM ("35" & "45" Styles)

The emblem is secured to the back door by integral studs with attaching nuts.

Removal

Remove the back door inner panel cover. Remove the attaching nuts.

Installation

Apply body caulking compound around the emblem studs. Position the emblem to the outer panel and install the sealed attaching nuts. Install the previously removed parts.

BACK DOOR NAME PLATE AND REAR END PANEL NAME PLATE (3019, "27", "67", "35" & "45" Styles)

The name plate is comprised of individual letters. Each letter is sealed and secured to the rear end panel or to the back door by attaching nuts.

Removal

On "35" and "45" Styles, remove back door inner panel cover. Remove the attaching nuts on all styles.

Installation

Apply body caulking compound to each letter attaching stud. Position each letter to the panel and install the attaching nuts to effect a watertight seal. Replace trim on "35" and "45" Styles.

REAR END PANEL MOLDING (3119 and "17" Styles)

The molding is secured to the rear end panel by attaching nuts.

Removal and Installation

Remove the attaching nuts.

Install the rubber washers on the studs of the molding. Position the molding to the rear end panel. Install the sealed attaching nuts to effect a watertight seal.

BACK BODY OPENING SIDE UPPER PINCHWELD FINISHING MOLDING ("35" & "45" Styles)

The molding is secured by snap retention over special pinchweld clips.

Removal

Use a suitable flat-bladed tool and loosen the molding at each clip location.

Installation

Replace damaged clips as required. Before clip replacement, apply medium-bodied sealer to the pinchweld surfaces contacted by the clips. Hook one edge of the molding over the clips and snap the opposite side over the clips to secure it.

BACK DOOR OUTER PANEL PINCHWELD FINISHING MOLDING ("35" & "45" Styles)

The molding is secured by a screw at each outer end and by snap retention over special pinchweld clips.

Removal

Remove the end attaching screws and, with a suitable flat-bladed tool, unsnap the molding at each clip location.

Installation

Replace damaged clips as required. Before clip replacement, apply medium-bodied sealer to the pinchweld surfaces contacted by the clip. Hook one edge of the molding over the clips and snap the opposite side over the clips to secure it. Install and seal the end attaching screws.

VINYL SPORT-TOP COVERING

Removal

1. The following parts must be removed prior

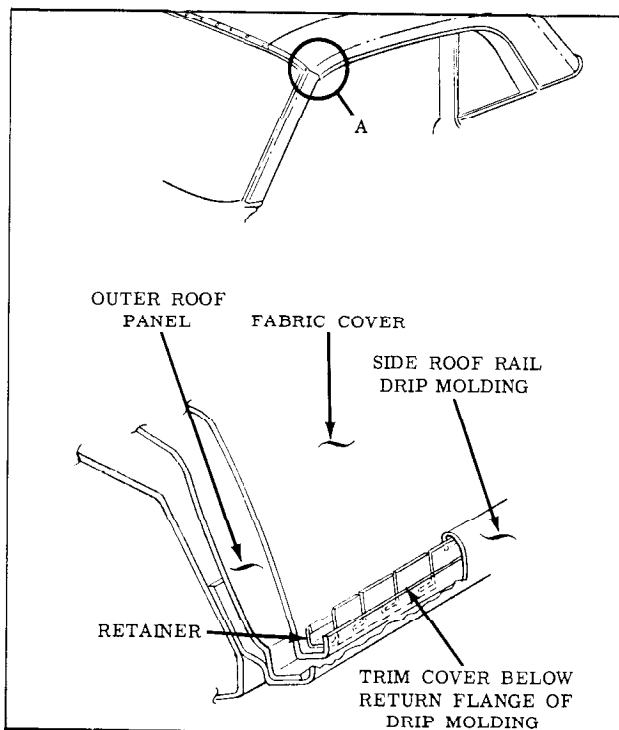


Fig. 15-57 Retainer at Side Rail

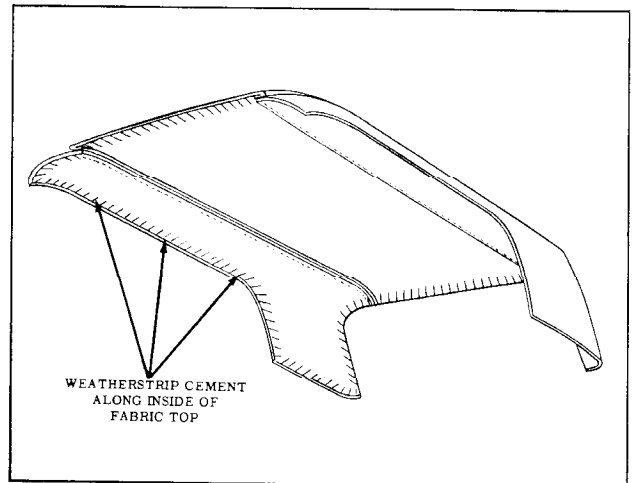


Fig. 15-58 Sealing Sport - Top Covering

to removing the fabric roof cover:

- a. Windshield assembly
 - b. Back window assembly
 - c. Windshield Pillar finishing molding
 - d. Roof drip scalp moldings
 - e. Rear quarter reveal moldings (at belt)
 - f. Roof extension panel emblems.
2. Using chalk or similar material, mark location of seams at windshield and back window opening to insure proper location of new fabric cover during installation procedure.
 3. Remove drive nails from edge of fabric cover at windshield opening, back window opening and at edge of roof panel extension in rear quarter area.
 4. With a suitable tool, carefully remove flexible retainer securing fabric cover inside right and left drip moldings (View "A", Fig. 15-57).
 5. Loosen cemented edges of fabric top at windshield, side roof rails, back window and rear quarter areas; then carefully lift fabric cover from body.

Installation

1. Check all cementing surfaces on body to insure a smooth surface.
2. Lay out new fabric cover on a clean protected surface with inner layer of material exposed.
3. Apply neoprene type non-staining weatherstrip cement to entire perimeter of fabric-cover and to corresponding areas on body. (Fig. 15-58)
4. Position fabric cover over roof panel and align seams with locating marks made during removal operation; then at back window opening

install a drive nail at each seam location. View "A", Fig. 15-59 is typical of both seam locations at windshield and back window openings.

5. At front of body, carefully stretch fabric cover forward and install a drive nail in windshield opening at each seam location. (View "A", Fig. 15-59)
6. Carefully smooth out cover to each side roof rail and check fit of cover.
7. At right rear quarter area, pull fabric cover down and rearward and fasten cover into rear window opening; then stretch and fasten cover at rear quarter window. When operation is completed, fabric cover should be free of all wrinkles and draws.
8. Repeat Step 7 at left rear quarter area.
9. At upper end of right and left windshield pillars, turn 1/2 inch of fabric material under cover assembly to form a finished seam across pillars. Seam should be even and parallel with upper edge of windshield opening. (View "A", Fig. 15-60)
10. Check fabric cover center to side section seams. Seams must be straight. Where necessary, adjust cover as required.

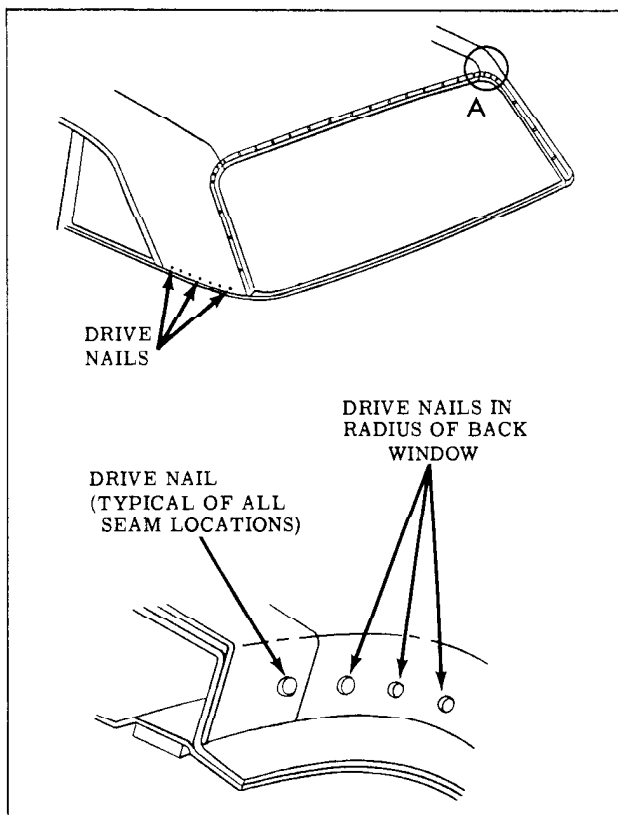


Fig. 15-59 Drive Nail Installation

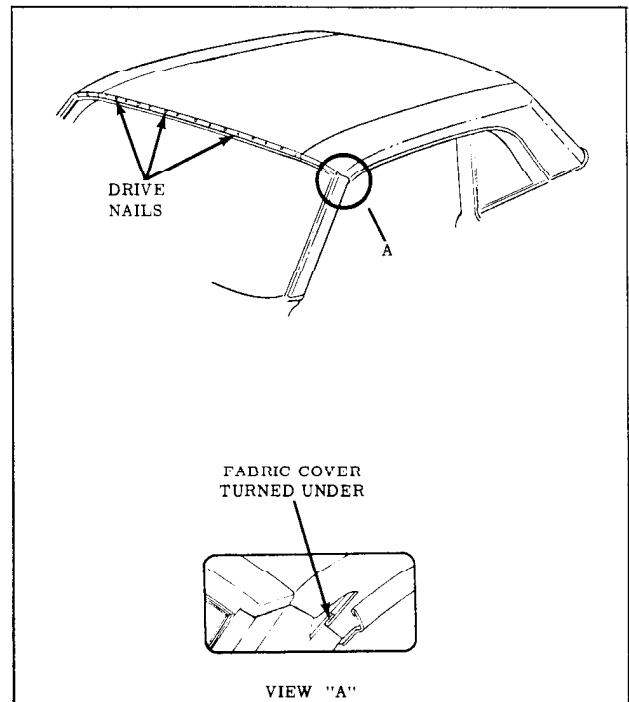


Fig. 15-60 Folding Material at Windshield Pillar

11. After all wrinkles have been removed from cover and both seams straightened, install drive nails across windshield opening.
 12. Install drive nails in back window upper corners. (Fig. 15-59)
 13. Where required, adjust trim in quarter area; then install drive nails along lower end of fabric cover. (Fig. 15-59)
 14. Install cover into both side roof rails. Be sure center to side section seams are straight after cover has been installed.
- NOTE: When installing fabric cover to inside of drip molding, a small thin-edge piece of plastic or similar material may be used to properly fasten cover in place inside the drip rails. Exercise care so damage will not occur to cover when performing this operation.
15. Trim off excess material at windshield, back window, rear quarters and along side roof rails.
 16. Install flexible retainer inside each drip molding. Make certain that outer edge of retainer is located under flange of drip molding. (View "A", Fig. 15-57)
 17. Install all previously removed moldings and assemblies.

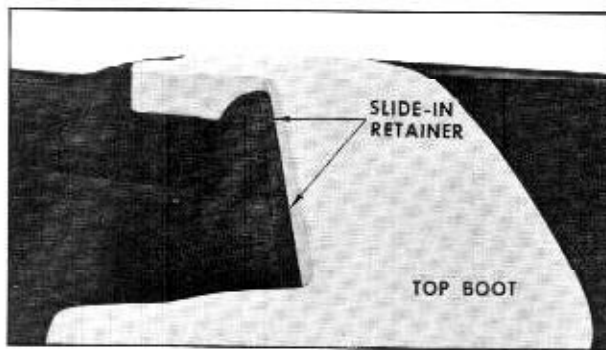


Fig. 15-61 Top Boot Assembly

FOLDING TOP

OPERATION OF "COUNTER-BALANCED" FOLDING TOP

The convertible coupe incorporates a "Counter-Balanced" folding top. Two spring loaded lift assemblies help compensate for the weight of the folding top mechanism when the top is near the full "up" or full "down" positions. The top assembly is retained in the folded or "stacked" position by two catch clip assemblies which are attached to the folding top compartment side braces. The clips snap over the center side roof rails when the top is fully depressed. Clips must be disengaged prior to raising top assembly.

CAUTION: When operating top, hands must be kept away from the folding portions of the top mechanism. Grasp top only in the areas illustrated and described in the following operational procedures. Do not touch or attempt to service spring loaded lift assemblies except as outlined in procedure for "COUNTER-BALANCED" FOLDING TOP HARDWARE.

TOP BOOT INSTALLATION

The top boot is attached to the body with concealed "floating-type" snap fasteners along the

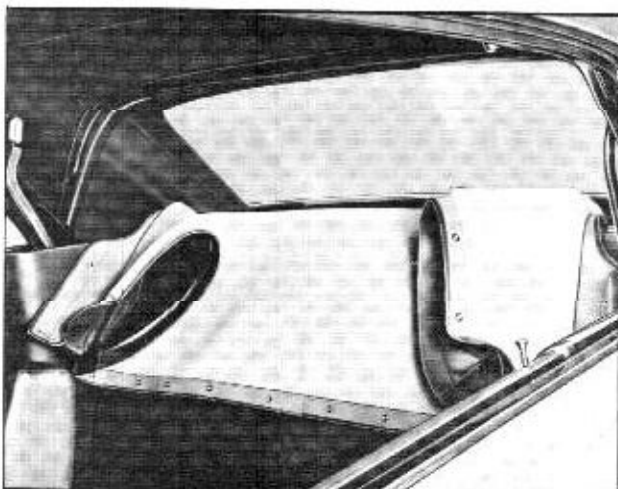


Fig. 15-62 Top Boot Assembly

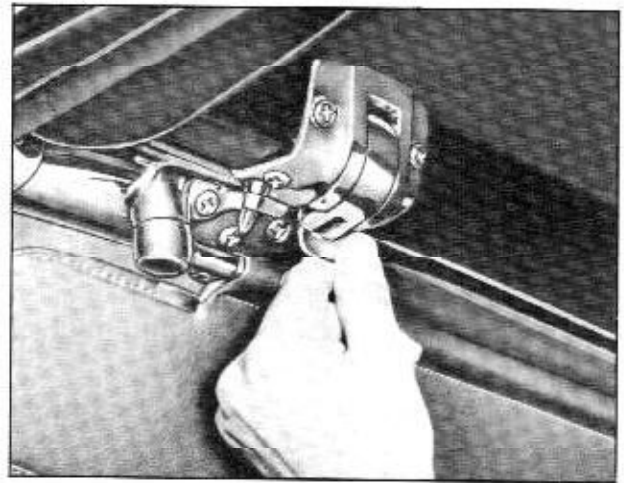


Fig. 15-63 Unlocking Top From Header

side and rear edges and a "slide-in" retainer along the front edge as indicated in Fig. 15-61. When the folding top is raised, the boot may either be stored in its protective case in rear compartment or be left attached to the slide retainer and folded behind rear seat back.

The top compartment behind the rear seat back must be used only for storage of the top boot when it is attached to the slide retainer on the seat back. The storage of such items as golf clubs or luggage in the compartment can interfere with the proper operation of the top or damage the top or the plastic rear window.

TO LOWER THE TOP

1. Stop the car. If top boot has been stored in its retainer behind rear seat, turn boot over seat back and fold ends. (Fig. 15-62) It is not necessary to lower rear window or rear quarter windows before lowering top.

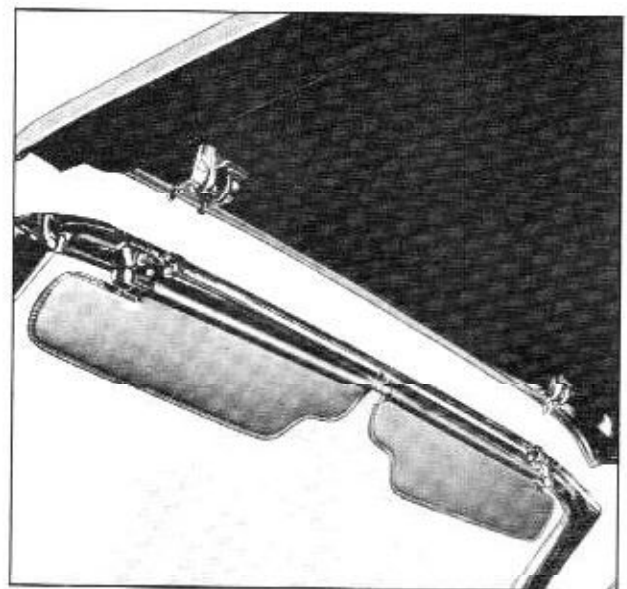


Fig. 15-64 Disengaging Top From Header

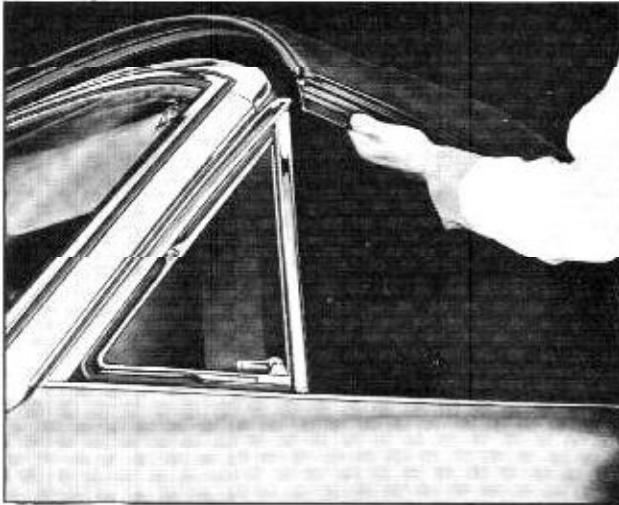


Fig. 15-65 Lowering Top

2. Turn down both sun visors; rotate each locking handle rearward then upward until it is disengaged from striker on windshield header. (Fig. 15-63)
3. Raise front of top (Fig. 15-64) to disengage front roof rail from windshield header.
4. Standing along side of car, place palm of hand against middle of side roof rail front section. Lift up forward portion of top assembly and rotate top rearward. (Fig. 15-65)

CAUTION: Keep hands away from hinged portion of side rails. Do not grasp upper portion of side rails or any of the top linkage.

5. As the top approaches mid-point of travel, tension is relieved from the assist springs. Exert downward pressure on the exposed surface of the side rail front section until top is approximately 12 inches from full down position. (Fig. 15-66)

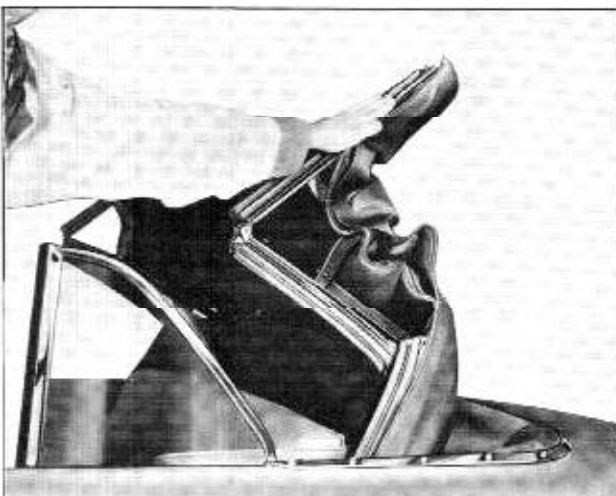


Fig. 15-66 Top Partially Lowered

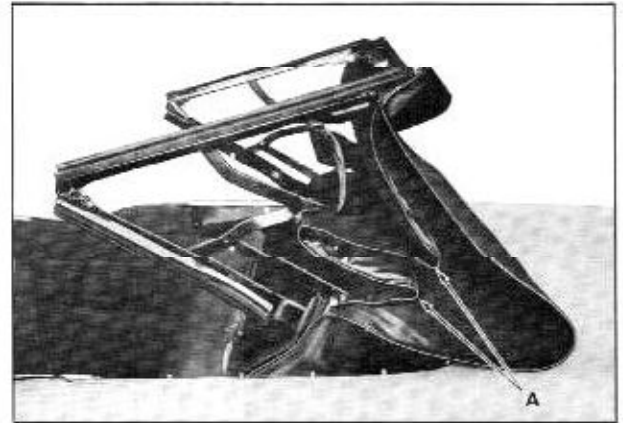


Fig. 15-67 Padding Pulled From Between Arms

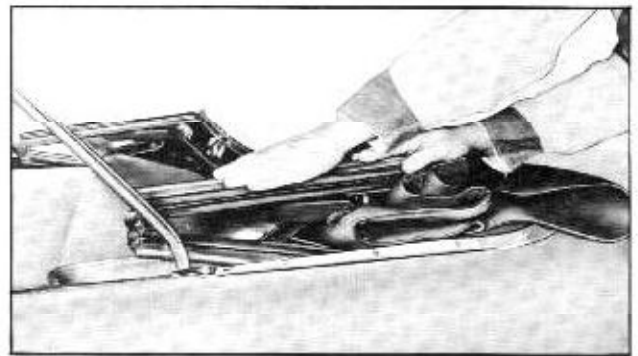


Fig. 15-68 Engaging Catch Clip

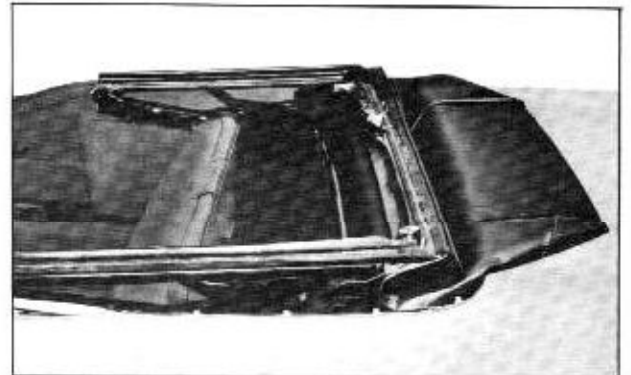


Fig. 15-69 Corners Folded

6. Pull top material and padding "A" from between operating arms of top as shown in the illustration. (Fig. 15-67)
7. Press down on side rail front section until catch clip snaps onto side rail center section. Repeat operation on opposite side of car. (Fig. 15-68)
8. Fold over corners of top material. (Fig. 15-69)
9. Fold top material forward over front roof rail.

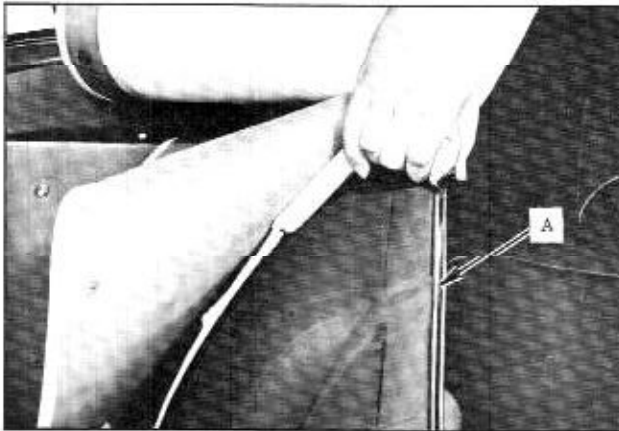


Fig. 15-70 Sliding Boot into Retainer

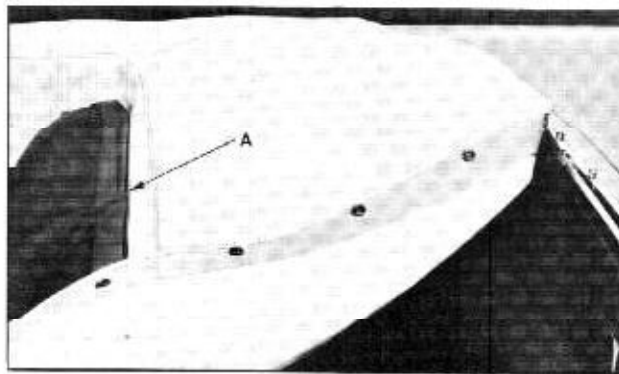


Fig. 15-71 Boot Partially Installed

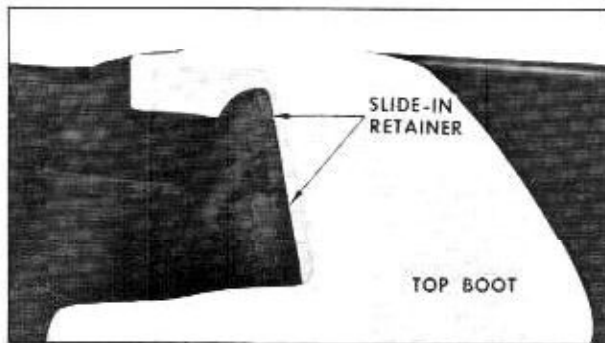


Fig. 15-72 Top Boot Assembly

TOP BOOT INSTALLATION

1. Slide front edge of boot into retainer "A" along seat back. (Fig. 15-70) Center boot for proper engagement of snap fasteners.
2. Place top boot in position over folded top and engage several boot fasteners to studs along rear molding. Then adjust boot to remove wrinkles by sliding forward edge of boot to right or left in retainer. (Fig. 15-71)
3. Engage remaining boot fasteners to studs on molding and rear quarter trim. (Fig. 15-72)

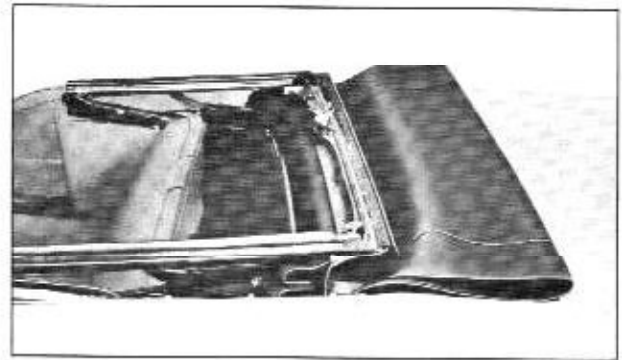


Fig. 15-73 Top Folded

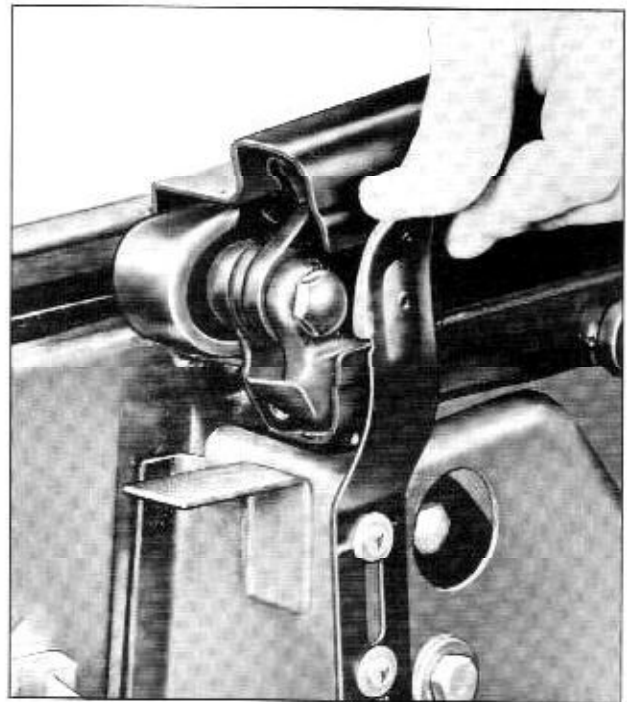


Fig. 15-74 Disengaging Catch Clip

TO RAISE THE TOP

1. Stop the car. Disengage all top boot snap fasteners from studs, turn boot over seat back and fold ends of boot toward center. If thoroughly dry, top boot may be removed from retainer, folded and placed in protective case. (Fig. 15-62)
2. Smooth out top material on body panel. (Fig. 15-73)
3. At each side of car, move upper end of catch clip inboard to disengage top assembly. (Fig. 15-74)
4. Standing along side of car grasp front corner of folding top as shown in Fig. 15-75, lift and rotate top forward.



Fig. 15-75 Raising Top

5. When top is approximately 12 inches away from windshield header, place hands on top assembly as shown in Fig. 15-76 and press down on top until guide studs on lock assembly engage striker holes.
6. Holding top down with one hand, reach into car and engage each folding top locking handle with striker on windshield header. (Fig. 15-77)
7. Rotate each handle downward THEN forward until fully engaged with striker on windshield header; then turn up sun visors.

NOTE: BE SURE TOP IS SECURELY LOCKED TO WINDSHIELD HEADER.

TO LOWER REAR WINDOW

Slide zipper fastener (Fig. 15-78) upward, across top to opposite side. Then carefully lower window into top compartment. To avoid damage, do not place miscellaneous objects on window.

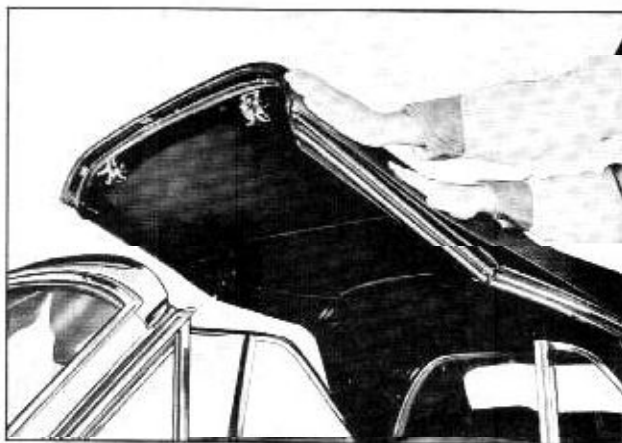


Fig. 15-76 Top Partially Raised

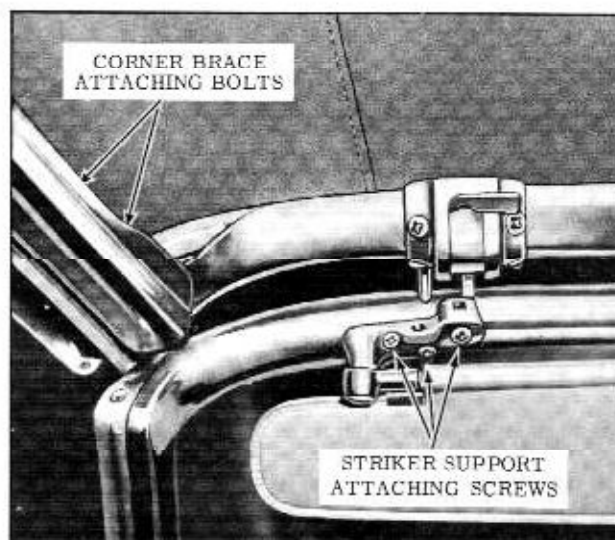


Fig. 15-77 Engaging Roof Header with Striker

TO RAISE REAR WINDOW

1. Hold window in its approximate closed position; then slide zipper along top of window and down side to its closed position. (Fig. 15-79)

NOTE: If the top has been released at the windshield header to relieve the tension on the zipper, be sure top is locked securely to header before moving car.

GENERAL INFORMATION

1. GRASP TOP ONLY AT THE SPECIFIED AREAS WHEN RAISING OR LOWERING TOP. Do not place fingers into the open "U"-shaped upper portion of the side rails between the operating linkage arms of the folding top or on any portion of the side roof rail hinges.
2. DO NOT TOUCH SPRING-LOADED lift assemblies. Refer to "COUNTER-BALANCED"

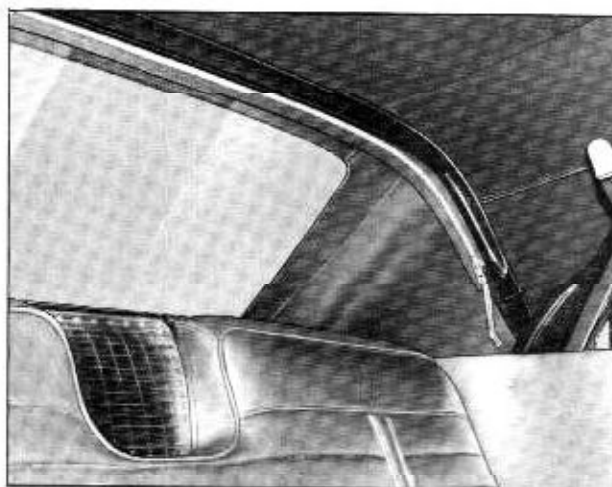


Fig. 15-78 Lowering Window

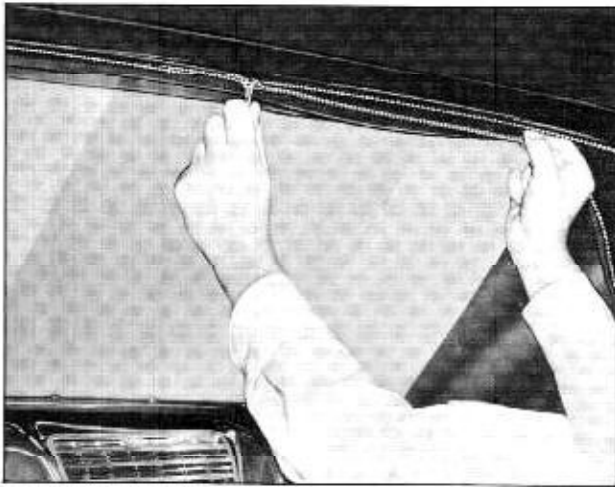


Fig. 15-79 Closing Rear Window

FOLDING TOP ASSEMBLY procedure before attempting any service operations.

3. DO NOT OPERATE TOP UP OR DOWN WHILE CAR IS IN MOTION. After raising top, make sure it is securely locked to the windshield header before starting car.
4. Do not obstruct the mechanical operation of top.
5. Do not place miscellaneous objects such as golf clubs, luggage, etc., in the folding top compartment.
6. To prevent water stains, mildew or possible shrinkage of top material, do not keep top folded for a long period of time, if it is damp or water-soaked.
7. Do not paste advertising stickers, gummed labels or masking tape on the plastic rear window. The adhesive used on such items is difficult to remove and may be injurious to the plastic composition of the window.
8. Allow plastic rear window and top material to become warm and pliable before attempting to operate top in temperatures below 50°F.
9. In some cases, the rear window can be lowered and raised much easier if the top is raised slightly above the windshield header to relieve the tension of the back curtain zipper.
10. Twice a year, the channel portions of the spring loaded manual lift assemblies should be lubricated.
11. Twice a year, lubricate the zipper with silicone, beeswax or a non-staining type grease stick. The zipper should be cycled several times; then the excess lubricant wiped from the zipper assembly.

CARE OF REAR WINDOW

The back curtain in the convertible coupe is provided with a large pliable plastic window. Due to the texture of the plastic window, it is susceptible to scratches and abrasions; therefore, when cleaning the window, follow the steps outlined below:

1. To remove superficial dust, do not use a dry cloth. Use a **SOFT COTTON CLOTH MOISTENED WITH WATER** and wipe crosswise of the window.
2. To wash the rear window, use cold or tepid (not hot) water and a mild neutral soap suds. After the washing, rinse with clear water and wipe with a slightly moistened clean soft cloth.

CAUTION: Never use solvents such as alcohol or volatile cleaning agents on the plastic window. These liquids may have a deteriorating effect on the plastic and, if spilled, may spot the painted finish on the body panels.

3. When removing frost, snow or ice from the plastic window, **DO NOT USE A SCRAPER.** In an emergency, warm water may be used. Use care that the warm water does not contact the glass windows or windshield.

CLEANING THE TOP

The top should be washed frequently with neutral soap suds, lukewarm water and a brush with soft bristles. Rinse top with sufficient quantities of clear water to remove all traces of soap.

If the top requires additional cleaning after using soap and water, a mild foaming cleanser can be used. Rinse the whole top with water, then apply a mild foaming type cleanser on an area of approximately two square feet. Scrub area with a small soft bristle hand brush, adding water as necessary until the cleanser foams to a soapy consistency. Remove the first accumulated soilage with a cloth or sponge before it can be ground into the top material. Apply additional cleanser to the area and scrub until the top is clean. Care must be exercised to keep the cleanser from running onto body finish as it may cause streaks if allowed to run down and dry. After the entire top has been cleaned, rinse the top generously with clean water to remove all traces of cleanser. If desired, the top can be supported from the underside during the scrubbing operations.

After cleaning always be sure the top is thoroughly dry before it is lowered. Lowering the top while it is still wet or damp may cause mildew and unsightly wrinkles.

Do not use volatile cleaners or household bleaching agents on the top material.

"COUNTER-BALANCED TOP" ASSEMBLY

Description

The "Counter-Balanced Top" assembly incorporates a dual-action heavy duty spring which helps compensate for the weight of the folding top mechanism when the top is at or near the full up or full folded positions. When the top is in the up position the spring is under compression; when it is in the folded or stacked position the spring is under tension.

CAUTION: Do not attempt to detach lift assembly when spring is under tension or compression.

Removal and Installation

1. Remove rear seat cushion and back and folding top compartment side trim panel assembly.
2. Move top to midway position to relieve the lift springs. If both lift assemblies are to be serviced, have helper support folding top or place supporting props under front roof rail.
3. Remove upper and lower attaching bolts. Raise upper end of lift assembly, then move lower end of lift assembly up and forward until lift assembly is clear of oblong hole in top compartment brace. (Fig. 15-80)
4. To install lift assembly, reverse removal procedure making sure that upper end of lift is attached to the rearmost hole in the side roof rear rail assembly. (Fig. 15-80)

FOLDING TOP CATCH CLIPS

Description

The folding top catch clips snap over the folding top side roof center rails when the top is being lowered to the folding or stacked position. The catch clips prevent the spring-loaded lift arms from raising the top from this position. In order to raise the top, both catch clips must be disengaged from the side roof center rails. Each catch clip is attached to the top compartment brace by two screws. Any adjustments made to change stack height of the folding top (See "Folding Top Adjustments") require corresponding adjustments to the catch clips.

FOLDING TOP

OPERATION OF HYDRO-LECTRIC FOLDING TOP

Refer to the 1961 88, S88 & 98 Service Manual.

HYDRO-LECTRIC SYSTEM ("67" Styles)

The high pressure hydro-lectric unit used in the convertible bodies, consists of a 12 volt reversible type motor, a rotor type pump, two hydraulic lift cylinders, and an upper and lower hydraulic hose assembly. Pump pressure test specifications are 340 to 380 p.s.i. For service procedures, refer to the 1961 88, S88 & 98 Service Manual.

FOLDING TOP ADJUSTMENTS

The folding top linkage consists of three sections of right and left side roof rails and a front roof rail connected by bolts, hinges, and a series of connecting links and bows. The top linkage is attached to the body at the rear quarter area by a male hinge attached directly to the quarter panel brace. The front roof rail is locked at the windshield header by two hook type locks which are an integral part of the two locking handles.

The following information outlines and illustrates procedures which may be used to correct misaligned folding top linkage. To correct some top variations, only a single adjustment is required; other top variations require a combination of adjustments. In conjunction with adjustment of the folding top, it may be necessary to adjust the door, door glass, rear quarter glass, trim sticks or side roof rail weatherstrips.

CAUTION: When operating a "counter-balanced" folding top, hands must be kept clear of side roof rail hinges and connecting linkages.

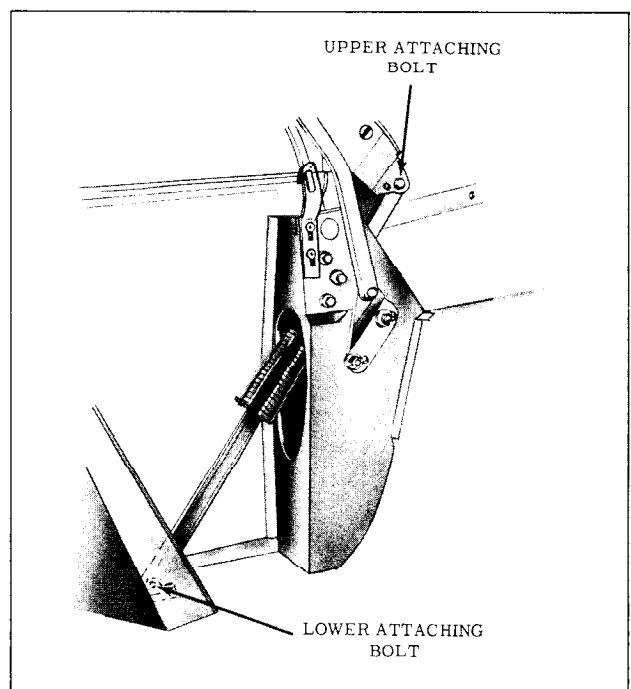


Fig. 15-80 "Counter-Balanced" Lift Assembly

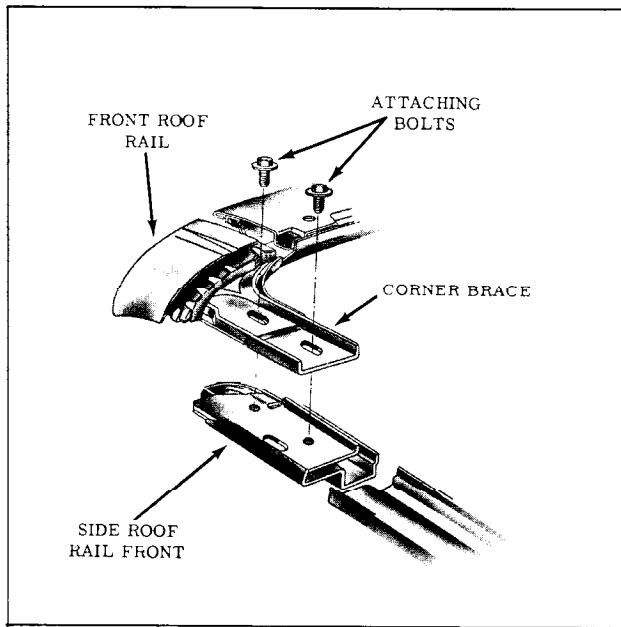


Fig. 15-81 Front Roof Rail Adjustment

ADJUSTMENT OF TOP AT FRONT ROOF RAIL CORNER BRACE

If the top, when in a raised position, is too far forward or does not move forward enough to allow the guide studs on the front roof rail to enter holes in the striker assemblies, proceed as follows:

1. Unlatch top and raise it above windshield header. Remove side roof rail weatherstrip front attaching screws.
2. Loosen corner brace attaching bolts and adjust front roof rail fore or aft as required. Repeat on opposite side if necessary. (Fig. 15-81)

NOTE: This adjustment is limited. If additional adjustment is required, it can be made at the folding top male hinge.

3. When front roof rail corner brace is properly adjusted, tighten attaching bolts and reinstall side roof rail front weatherstrip attaching screws. Check forward section of weatherstrip and reseal if necessary.

ADJUSTMENT OF TOP AT SUNSHADE AND STRIKER SUPPORT ASSEMBLY

If a difficult locking action, caused by misalignment of the sunshade and striker support assembly is encountered at the front roof rail or if a closer fit of the front roof rail to windshield header is desired, proceed as follows:

1. Unlatch top and raise it above windshield header.

2. Loosen striker support attaching screws and adjust striker as required; then tighten attaching screws (Fig. 15-77)

If, after adjusting the striker support, the locking action of top is still unsatisfactory, the hook lever on the front roof rail lock assembly may be adjusted as follows:

1. To tighten locking action of top, turn hook lever clockwise.
2. To reduce locking action of top, turn hook lever counterclockwise.

NOTE: Hook lever may be adjusted with finger pressure, no tools are required.

ADJUSTMENT OF TOP CONTROL LINK ADJUSTING PLATE (Fig. 15-82)

1. With top in up position, if joint between front and center side roof rail is too high or too low, proceed as follows:
 - a. Remove folding top compartment side trim panel.
 - b. Scribe location of control link adjusting plate on folding top compartment brace.
 - c. Loosen two bolts securing control link adjusting plate sufficiently to permit adjustment of plate.
 - d. Without changing fore and aft location of adjusting plate, adjust side roof rail up or

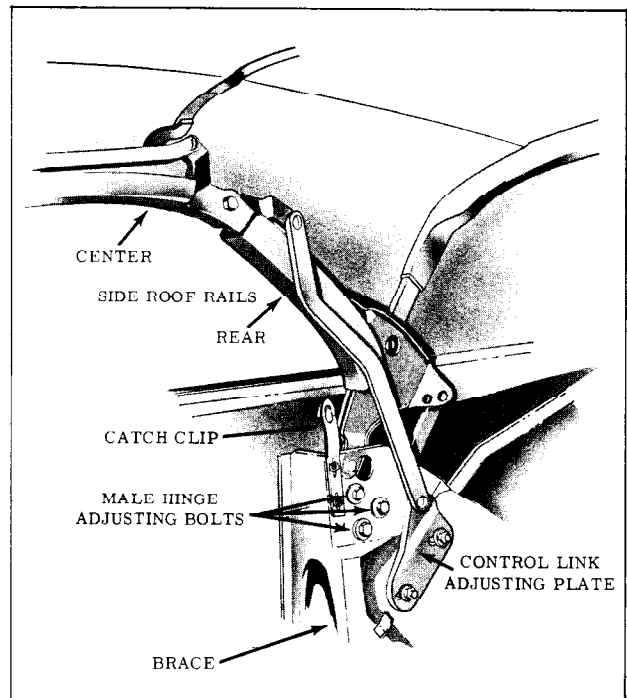


Fig. 15-82 Adjusting Plate

down allowing adjusting plate to move up or down over serrations on support as required; then tighten bolts. On "counter-balanced" folding tops, adjust both folding top catch clips as required. See "COUNTER-BALANCED" FOLDING TOP HARDWARE.

2. If top assembly does not stack properly when top is in down position, proceed as follows:
 - a. Scribe location of control link adjusting plate on folding top compartment brace.
 - b. Loosen bolts securing control link adjusting plate sufficiently to permit adjustment of plate.
 - c. Without changing the up or down location of adjusting plate, move adjusting plate forward or rearward (horizontally) over serrations as required to obtain desired height; then tighten bolts.
 - d. If equipped with "counter-balanced" folding top, adjust both folding top catch clips as required.

ADJUSTMENT OF TOP AT MALE HINGE SUPPORT

Prior to making any adjustment of top linkage at male hinge, loosen two bolts securing folding top rear quarter trim stick to rear quarter panel. This will prevent any possible damage to top when it is raised after adjustment. After making an adjustment at male hinge, check folding top at rear quarter area for proper fit and, if necessary, adjust trim stick assembly.

1. If there is an excessive opening between side roof rail rear weatherstrip and rear of rear quarter window, or if front roof rail is too far forward or rearward, proceed as follows:
 - a. Scribe location of male hinge attaching bolt washers on folding top compartment brace.
2. If side roof rail is too high or too low at rear quarter window area, proceed as follows:
 - a. Scribe location of male hinge attaching bolt washers on folding top compartment brace to maintain proper fore and aft relation of the two parts.
 - b. Loosen male hinge assembly attaching bolts. (Fig. 15-82)
 - c. Without changing fore and aft location of male hinge, adjust male hinge up or down as required to obtain proper alignment between side roof rails and rear quarter windows.
 - d. Tighten attaching bolts, while maintaining proper alignment of scribe marks.
 - e. Check fit of top material at rear quarter trim stick area and, if necessary, adjust trim stick. If adjustment is not necessary, tighten trim stick attaching bolts.
 - f. If equipped with "counter-balanced" folding top, adjust both folding top catch clips as required.

ALIGNMENT CONDITIONS

CONDITION	APPARENT CAUSE	CORRECTION
Difficult locking action at front roof rail.	Sunshade support misaligned. Lock hook lever improperly adjusted. Misaligned front roof rail front weatherstrip. Front roof rail misaligned.	Adjust sunshade support laterally. Adjust lock hook lever counterclockwise. Loosen, realign and retack front roof rail front weatherstrip. Adjust front roof rail.
Top does not lock tight enough to windshield header.	Sunshade support misaligned. Lock hook lever improperly adjusted. Misaligned front roof rail front weatherstrip. Front roof rail misaligned.	Adjust sunshade support laterally. Adjust lock hook lever clockwise. Loosen, realign and retack front roof rail front weatherstrip. Adjust front roof rail.
Top travels too far forward	Front roof rail misaligned. Male hinge assembly misaligned.	Adjust front roof rail rearward. (Fig. 15-81) Adjust male hinge assembly rearward. (Fig. 15-82)
Top does not travel forward far enough.	Front roof rail misaligned. Male hinge assembly misaligned. Improper spacing between rear trim stick and body metal.	Adjust front roof rail forward. (Fig. 15-81) Adjust male hinge assembly forward. (Fig. 15-82) Install an additional spacer between rear trim stick and body metal at each attaching bolt location.
Side roof rail rear weatherstrip too tight against rear of rear quarter window.	Male hinge assembly misaligned.	Adjust male hinge assembly rearward. (Fig. 15-82)
Gap between side roof rail rear weatherstrip and rear of rear quarter window.	Male hinge assembly misaligned.	Adjust male hinge assembly forward and/or shim side roof rail rear weatherstrip forward as required.

ALIGNMENT CONDITIONS (Cont'd)

CONDITIONS	APPARENT CAUSE	CORRECTION
Side roof rail rear weatherstrip too tight against top of rear quarter window.	Male hinge misaligned.	Adjust male hinge upward. (Fig. 15-82)
Gap between side roof rail rear weatherstrip and top of rear quarter window.	Male hinge misaligned.	Adjust male hinge downward.
Sag at front to center side roof rail joint.	Control link adjusting plate misaligned.	Adjust control link adjusting plate downward. (Fig. 15-82)
Front and center side roof rails bow upward at hinge joint.	Control link adjusting plate misaligned.	Adjust control link adjusting plate upward. (Fig. 15-82)
Folding top dust boot is difficult to install.	<p>Improper stack height due to misaligned control link adjusting plate.</p> <p>Misaligned folding top dust boot female fastener.</p> <p>Rear seat back assembly is too far forward.</p> <p>Excessive build-up of padding in side roof rail stay pads.</p> <p>On manual tops, due to improperly adjusted catch clips.</p>	<p>Adjust control link plate rearward or forward as required. (Fig. 15-82)</p> <p>Where possible, align female with male fastener.</p> <p>Relocate rear seat back panel rearward until dimension between upper rear edge of rear seat back to forward edge of pinchweld finishing molding is 17-1/8 inches $\pm 1/16"$. The dimension is measured at approximate center line of body.</p> <p>Repair side stay pads as required.</p> <p>Adjust catch clips downward as required. (Fig. 15-82)</p>
Folding top dust boot fits too loosely.	<p>Improper stack height due to misaligned control link adjusting plate.</p> <p>Rear seat back assembly is too far rearward.</p> <p>On manual tops, due to improperly adjusted catch clips.</p>	<p>Adjust control link plate forward.</p> <p>Relocate rear seat back panel forward until dimension between upper rear edge of rear seat back to forward edge of pinchweld finishing molding is 17-1/8 inches $\pm 1/16"$. The dimension is measured at approximate center line of body.</p> <p>Adjust catch clips upward as required. (Fig. 15-82)</p>

ALIGNMENT CONDITIONS (Cont'd)

CONDITION	APPARENT CAUSE	CORRECTION
Top material is too low over windows or side roof rails.	Excessive width in top material.	If top is too large, detach binding along affected area, trim off excessive material along side binding as required; then hand sew binding to top material.
Top material has wrinkles or draws.	Rear quarter trim stick improperly adjusted. Top material improperly installed to center or rear quarter trim stick.	Adjust rear quarter trim stick on side affected. Retack top material as required.
Wind whistle or water leak along front roof rail.	Top does not lock tight enough to windshield header. Misaligned front roof rail front weatherstrip. Front roof rail contour does not conform to windshield header.	Adjust sunshade support laterally and/or adjust lock hook lever clockwise. Retack front weatherstrip to front roof rail. Contour of front roof rail may be changed slightly by reforming rail.

FOLDING TOP TRIM

COMPLETE ASSEMBLY

The materials required for performing convertible top sealing operations are a neoprene-type weatherstrip adhesive for cementing vinyl surfaces and convertible top sealer (nitrile type), Part No. 1098737, for sealing the cloth inner lining to the top material and back curtain assembly.

Removal

- Place protective covers on all exposed panels which may be contacted during procedure.
- Remove following trim and hardware items:
 - Rear seat cushion and back.
 - Top compartment side trim panel assemblies.
 - Side roof rail rear weatherstrip; then loosen folding top quarter flaps from rails.

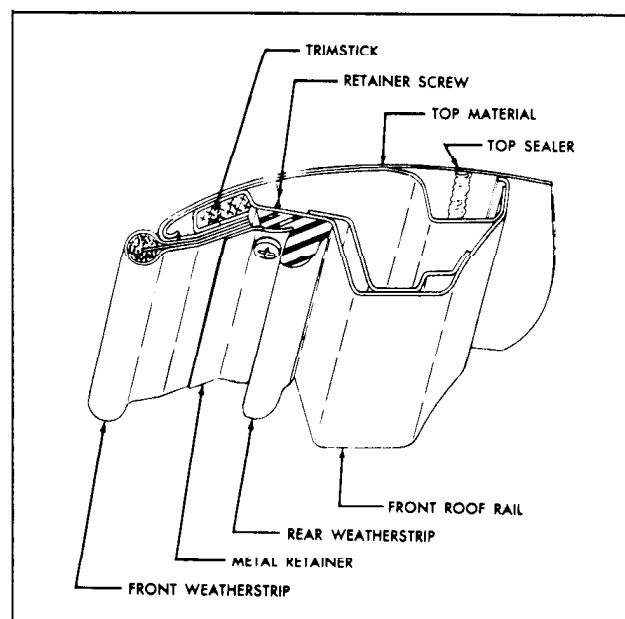


Fig. 15-83 Front Roof Rail Sealing

- At the front of body, raise front roof rail, remove retainers and front weatherstrips, detach top material from front roof rail. (Fig. 15-83)

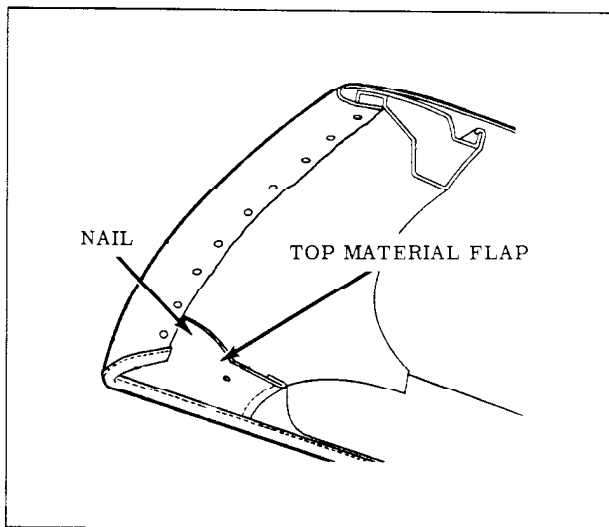


Fig. 15-84 Top Material Attachment to Roof Rail

4. Loosen front end of each side roof rail front weatherstrip sufficiently to detach top material flaps which are nailed and cemented to rails. (Fig. 15-84)
5. Detach folding top compartment bag from rear seat back panel, thus exposing rear quarter and rear trim stick attaching bolts. Forward end of top compartment bag may be tied or wired to center roof bow to provide ready access to attaching bolts. (Fig. 15-85)
6. At each rear quarter area remove attaching bolts and washer securing rear quarter trim stick assembly to rear quarter inner panel. (Fig. 15-86)
7. Remove rear trim stick attaching bolts; then lift trim assembly with attached quarter and rear trim sticks on top of rear compartment front panel.

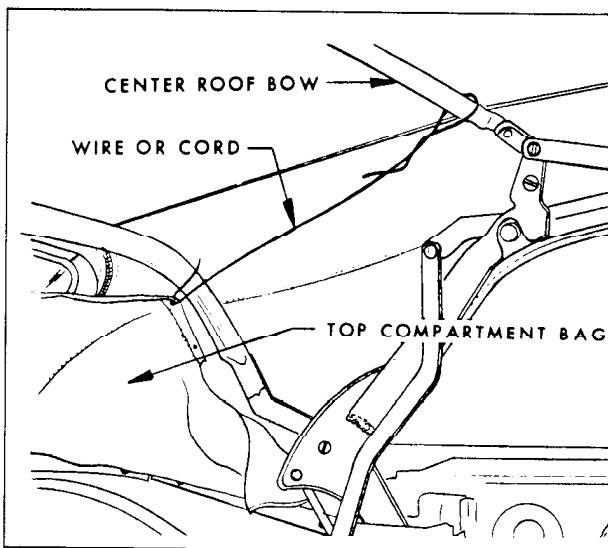


Fig. 15-85 Top Compartment Bag Held in Position

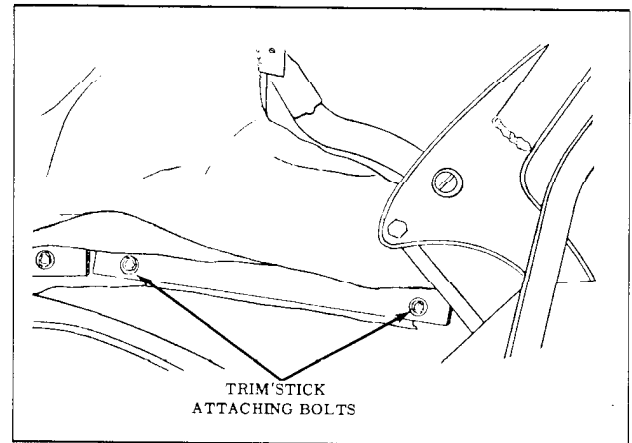


Fig. 15-86 Rear Quarter Trim Stick

8. To establish the relationship of right and left inner vertical edge of old top material to back curtain assembly at rear trim stick location, mark back curtain vinyl at both locations with a grease pencil. (Fig. 15-87) Reference marks should be transferred to new back curtain when Step 8 of installation procedure is performed.

NOTE: Reference marks must be made below upper edge of rear trim stick.

9. To establish the relationship of old top material to its position on rear trim sticks, cut selvage end of top material off flush with low edge of trim sticks.

CAUTION: When cutting top material, be careful not to cut lower selvage edge of back curtain assembly.

10. Using a pencil, mark both ends of rear and rear quarter trim sticks on vinyl surface of top material. (Fig. 15-88) Reference marks for trim sticks should be transferred to new top material when Step 31 of installation procedure is performed.

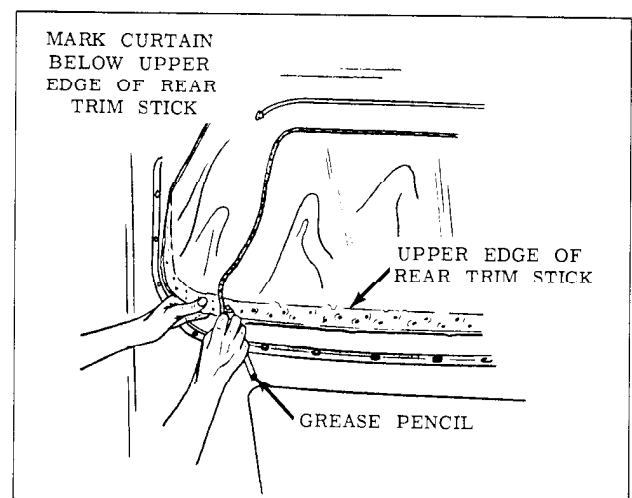


Fig. 15-87 Locating Edge of Top Material

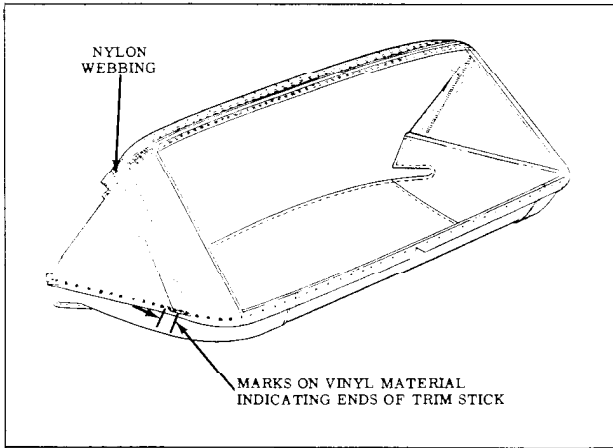


Fig. 15-88 Marking Back Curtain

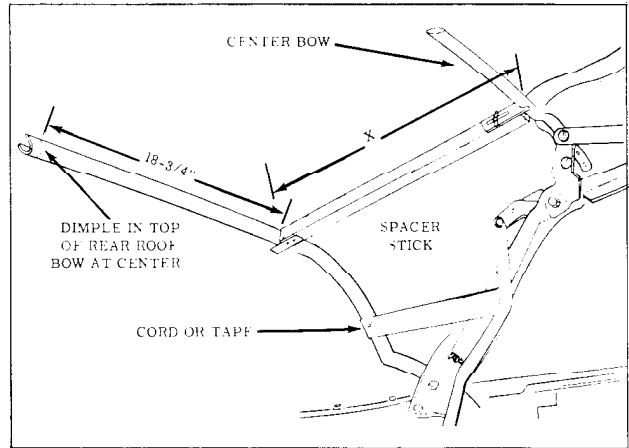


Fig. 15-89 Installation of Spacer Sticks

11. Remove screw securing escutcheon clip at each end of wire-on binding on rear bow. Remove wire-on binding from rear bow. Detach top material from rear roof bow and from trim sticks, then remove top cover assembly.
12. Lock top to windshield header. Install radius end of each adjustable spacer stick to fit against center roof bow. Install opposite end of spacer stick so that metal plate fits under

rear roof bow. (Fig. 15-89) Spacer sticks should be installed along inboard edge of side stay pad or approximately 18-3/4" outboard from centerline dimple. While exerting rearward pressure on rear bow to draw side stay pads taut, extend spacer sticks until they fit snug between center bow and rear roof bow, then tighten wing nuts.

NOTE: Spacer stick may be made as shown in Fig. 15-90.

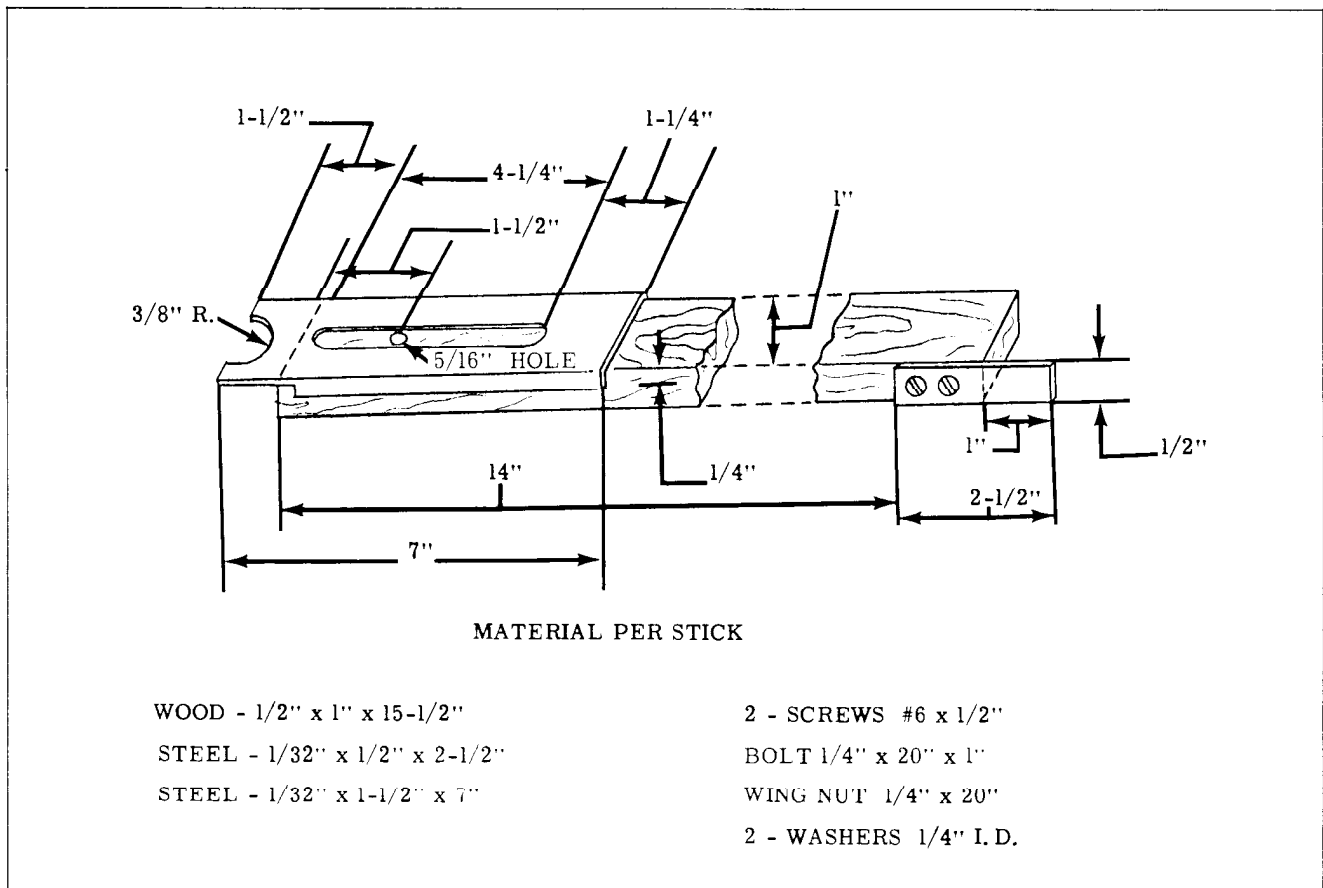


Fig. 15-90 Spacer Stick Dimensions

13. Temporarily tie or tape rear bow to rear side roof rails. (Fig. 15-89) Detach nylon webbing, side stay pads and back curtain assembly from rear bow.
14. Remove rear trim stick with attached back curtain assembly and top compartment bag from body and place on a clean, protected surface.
15. Using chalk, or other suitable material, mark ends of rear and rear quarter trim sticks on vinyl surface of back curtain material. (Fig. 15-88) Reference marks for trim sticks should be transferred to new back curtain material when Step 8 of installation procedure is performed.
16. Remove right and left nylon webbing from rear trim stick. (Fig. 15-88)
17. Remove back curtain assembly from rear and rear quarter trim sticks.
18. Remove side stay pads. Stay pads are attached to front roof rail and front and rear bows with tacks; to center bow, and side roof front rail with screws.

Installation

1. If new top is being installed but it was impossible to perform Step 12 of removal procedure, preset spacer sticks to shortest length and install between center and rear roof bow. (Fig. 15-89) Adjust sticks so that dimension "X" in Fig. 15-89 (measured along spacer stick from front upper rolled edge of rear roof bow to center of center bow) is 17-3/4"

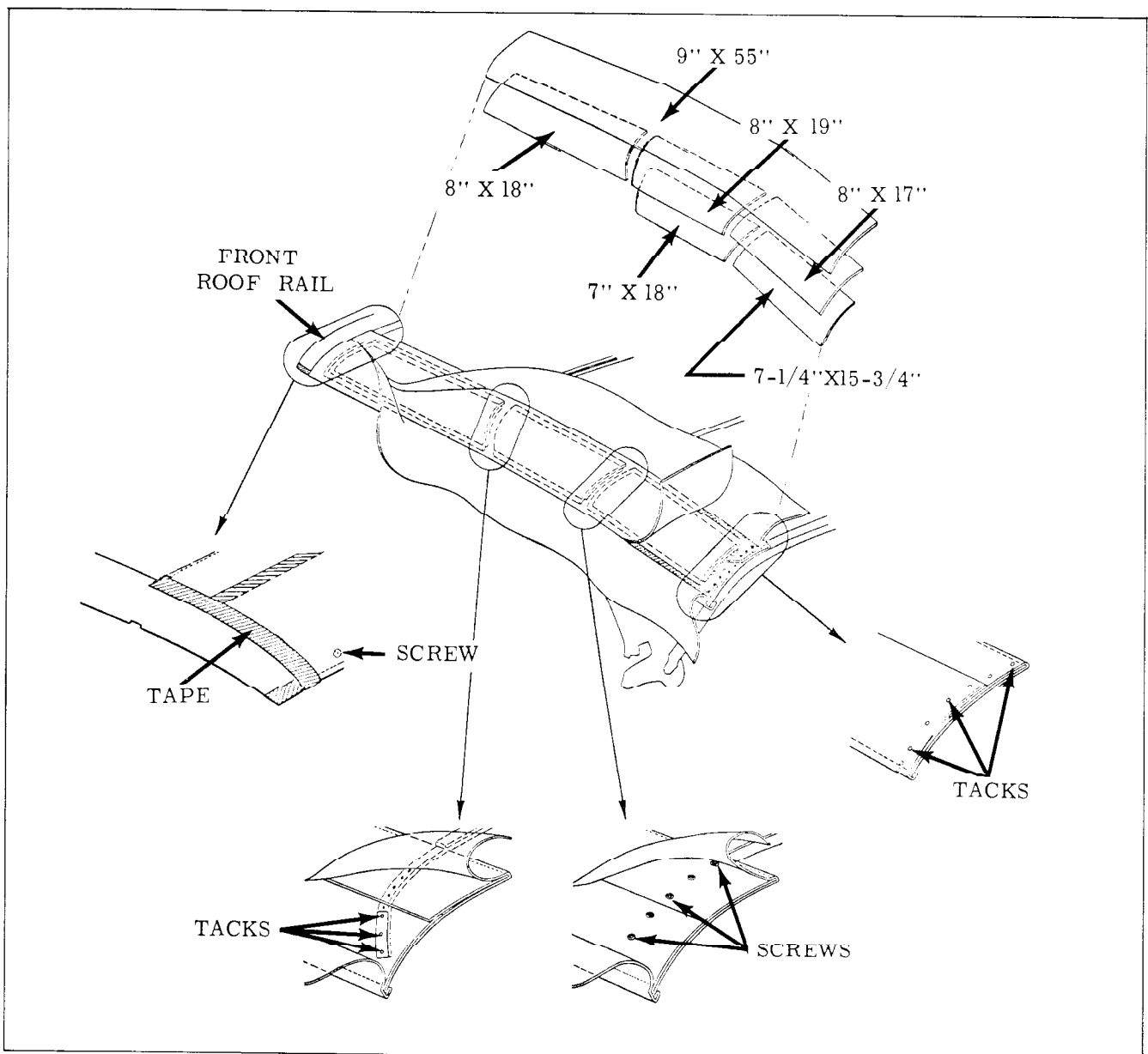


Fig. 15-91 Installation of Side Stay Pads

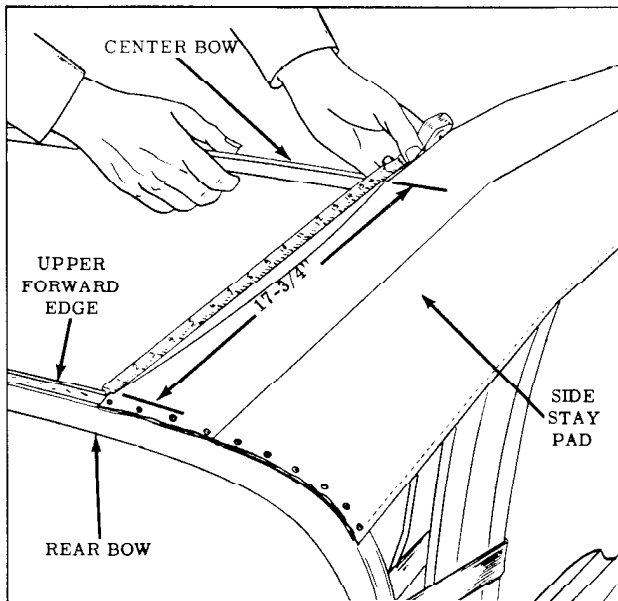


Fig. 15-92 Position of Rear Bars

$\pm 1/4$ ". Tie or tape rear bow to rear side roof rails.

2. In all cases, dimension "X", previously described, must be between 17-1/2" and 18" and equal on both sides. This dimension may be changed slightly within tolerances to correspond with new top after tryout.
3. Tack side stay pads in conventional manner to rear roof bow and front roof rail. Make sure inboard edge of pad is properly aligned within depressions in bow and rail. Tack stay pad to front bow. Inboard edge of pad should be located within 1/4 inch of outboard edge of front bow felt silencer. Install pad to center bow with screws. Make sure inboard edge of pad is properly aligned within depression in bow. Install stay pad wadding in conventional manner using an approved trim cement. (Fig. 15-91)
4. Trim selvage end of side stay pads just forward of rear rolled edge of rear roof bow.
5. Distance from center of center bow to rolled forward upper edge of rear roof bow is 17-3/4" $\pm 1/4$ ". Readjust spacer sticks and side roof rail pads as required if rear bow does not come within this position range. (Fig. 15-92)
6. Place back curtain window assembly on clean covered work bench with exterior (vinyl) surface of back window valance facing down. (Large pliable back window must be handled carefully to avoid possible damage due to scratches, abrasions, etc.) Apply bead of convertible top sealer (nitrile) along lower edge of back curtain material in area which will be tacked to rear and rear quarter trim stick. (View "A-A" in Fig. 15-93)

7. Apply bead of convertible top sealer (nitrile) along lower selvage edge of back curtain material. (Fig. 15-93)
8. After sealer has dried, carefully lay removed back curtain assembly over new back curtain assembly. Using a grease pencil, mark vinyl surface of new back curtain using marked edge of old curtain as guide. (See Steps 8 and 15 of removal procedure.) In addition, mark trim stick bolt hole locations on new back curtain assembly.

IMPORTANT: Where a grease pencil or similar material is used for marking back curtain vinyl, marks must be below trim stick so that they will not show after curtain is installed in body.

9. Center and position back curtain assembly to rear trim stick over attached compartment bag.

NOTE: Notch in back curtain vinyl at lower edge indicates centerline of back curtain assembly. (Fig. 15-94) In addition, back curtain lower edge should extend 1/2" below lower edge of trim sticks as shown in View "A-A", Fig. 15-93.

10. Tack curtain to rear and rear quarter trim sticks. On right side, tack zipper tape to

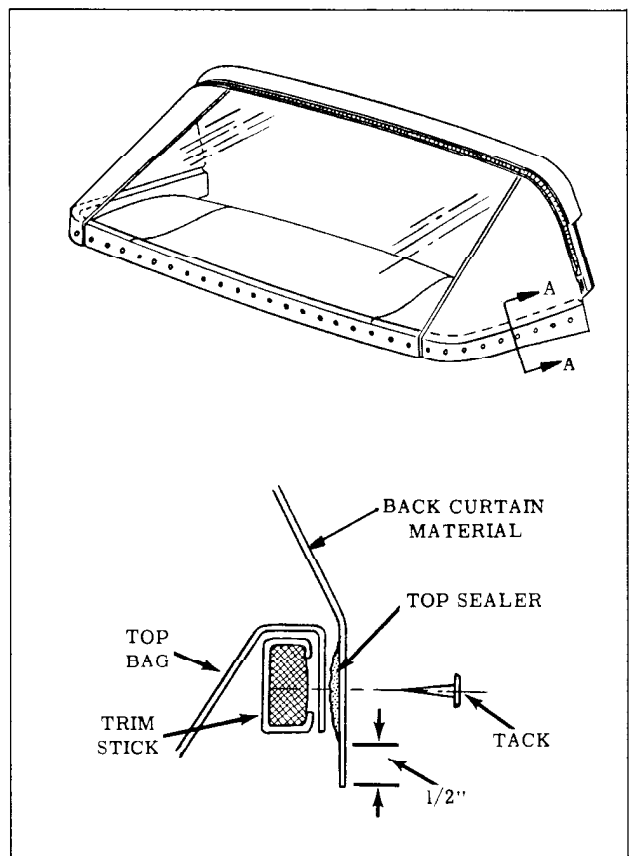


Fig. 15-93 Back Curtain Sealing

forward edge of rear quarter trim stick. (See "A" in direction of arrow in Fig. 15-94)

NOTE: Zipper stop should be above upper edge of rear quarter trim stick. Zipper tape should not be pulled taut after back curtain has been installed to rear roof bow as zipper assembly may show through top material after top has been properly installed.

11. Tack remainder of back curtain material to rear quarter trim stick, turning forward edge of material rearward to form a water barrier. (Fig. 15-94)
12. Tacks securing back curtain assembly to trim sticks should be placed close to each side of every bolt hole in trim sticks. Then pierce or punch back curtain assembly for each trim stick bolt.
13. Tack nylon webbing to rear trim stick. Forward edge of webbing should be even with edge of rear trim stick. New webbing may be cut from a piece of non-staining type webbing 2" x 19". Excess webbing should be trimmed off at rear trim stick, 1/2" above back curtain lower edge. (Fig. 15-94)

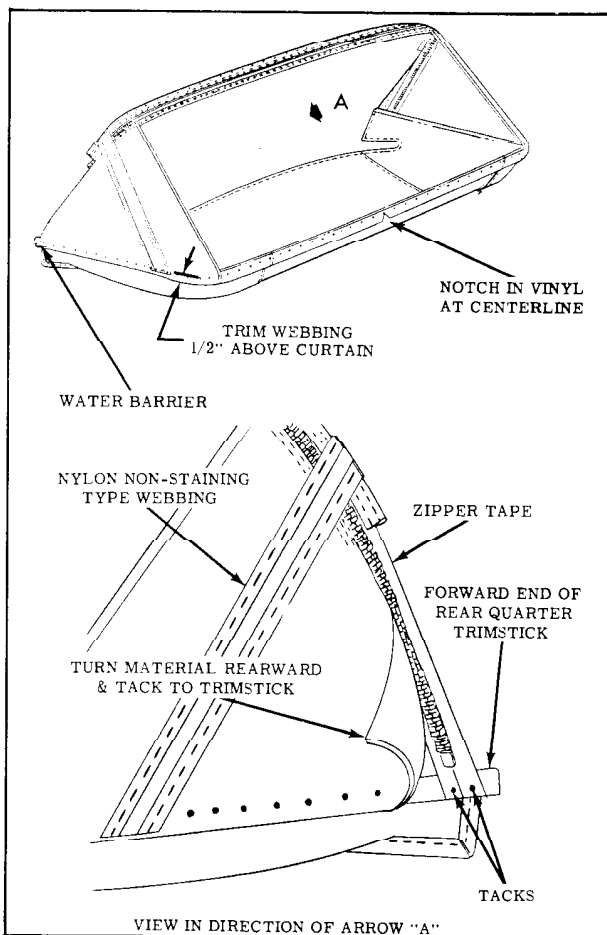


Fig. 15-94 Back Curtain Installation

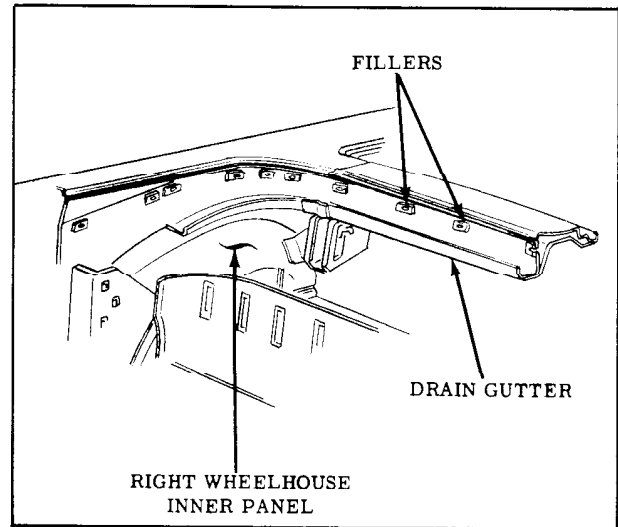


Fig. 15-95 Checking Trim Stick Fillers

NOTE: Webbing used in build-up of side roof rail stay pads is recommended for the above operation.

14. Inspect rubber trim stick fillers cemented to body below pinchweld. Recement if necessary. (Fig. 15-95)
15. Install rear trim stick with attached back curtain assembly into body.

NOTE: Make sure that all trim stick bolts are driven completely in to represent finished condition.
16. Secure back curtain assembly with one tack to rear bow to prevent damage to plastic sheet. (Fig. 15-96)
17. Working from body center progressively outboard to right and left sides, tack back curtain upper valance to rear bow. Make sure all fullness has been drawn from curtain before trimming off excess at rear bow. (Fig. 15-97)

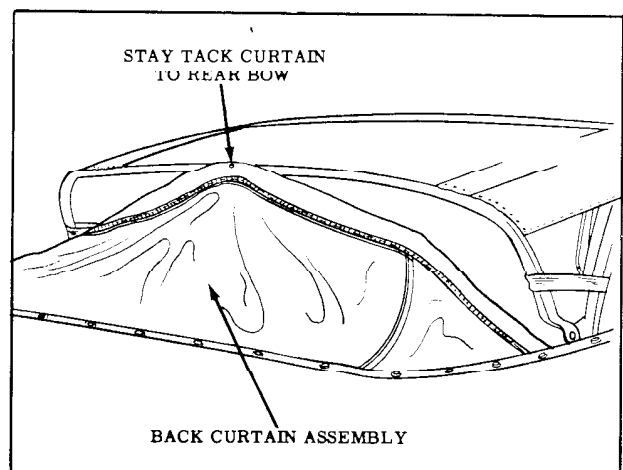


Fig. 15-96 Tacking Curtain at Rear Bow

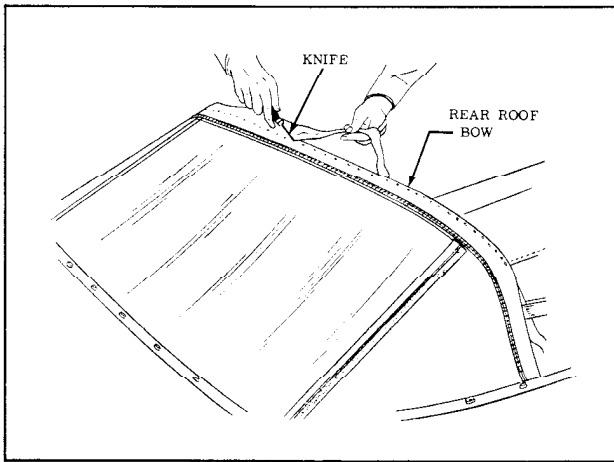


Fig. 15-97 Trimming Material at Rear Bow

CAUTION: Trim forward edges of back curtain just rearward of front rolled edge of rear roof bow. Do not cut side stay pads.

18. Check contour of back curtain assembly at rear roof bow and at pinchweld molding.
19. Where required, place reference chalk mark on outer surface of back curtain along pinchweld finishing molding. Readjust back curtain assembly as required. (Fig. 15-98)
20. Where required, adjust side stay pads; then tack side stay pads to front roof rail and front bow. Attach side stay pads to center bow and side roof front rail with screws. Trim selvage end of side stay pads at front roof rail. Install stay pad covering material in conventional manner using an approved trim cement.
21. Tack nylon webbing to rear roof bow. Out-

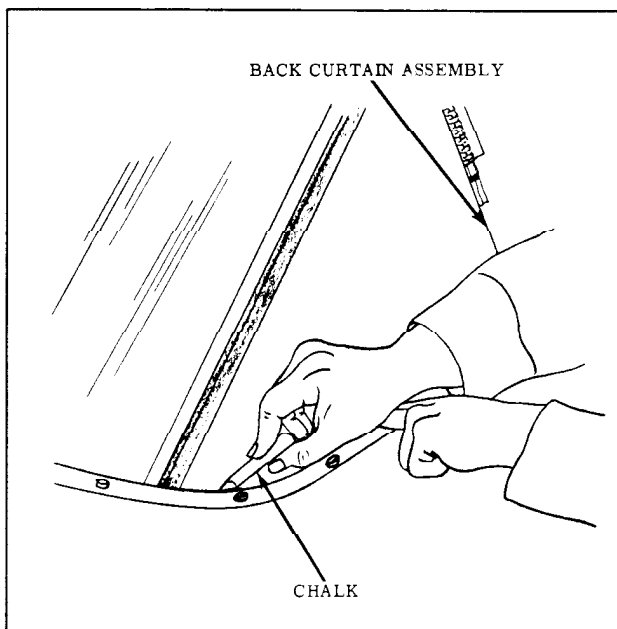


Fig. 15-98 Marking Back Curtain

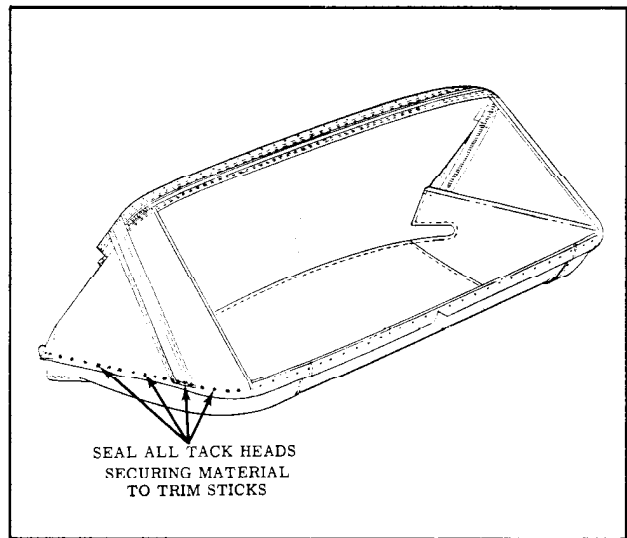


Fig. 15-99 Back Curtain Sealing

board edge of webbing should be installed even with outboard edge of side roof rail pad. Remove excess by trimming webbing just rearward of front rolled edge of rear roof bow.

CAUTION: Do not cut back curtain or side stay pad material.

22. Detach rear trim stick with attached back curtain assembly from body.
23. Apply convertible top sealer (nitrile) around each tack head used to secure back curtain material and webbing to rear and/or rear quarter trim sticks. (Fig. 15-99)
- IMPORTANT:** It is not necessary to seal tacks which secure back curtain vinyl to rear trim stick.
24. Lay out new top material on clean protected surface with outer layer of material exposed.
25. Using a pencil, mark top material (mark should be approximately 1/2" in length) at deck seam 4-1/4" from edge of top material upper valance binding. (Fig. 15-100)

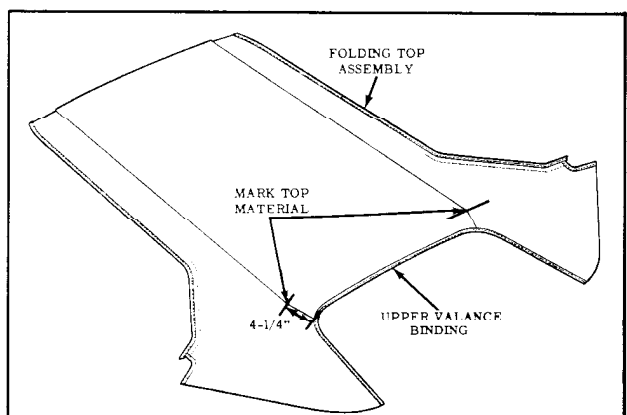


Fig. 15-100 Marking Top Material

26. Fold new top material in half so that inner lining of top material is exposed. (Fig. 15-101) Install a 6" piece of tape on inner surface at centerline fold of new top material. (Fig. 15-101) Using a pencil, mark the approximate centerline of new top material along entire length of tape.

IMPORTANT: Be sure mark will be visible inside of body after new top is installed on convertible top framework.

27. Along forward surface of rear roof bow install a 1" piece of tape at centerline dimple of rear roof bow. Using a pencil, mark centerline of rear bow on tape. (Fig. 15-102)
28. Remove rear bow spacer sticks and positioning tape or cord.
29. Check position of rear roof bow in relation to new folding top trim assembly by placing new top trim over folding top framework. With quarter flaps properly folded over rear side roof rails (edge of rails should match stitch lines of quarter flap seams), marks on deck seam should be in center of rear roof bow.

NOTE: The deck seam mark will vary slightly ($\pm 1/4''$) depending upon position of rear roof bow. Also check centerline mark on inner lining of top material. Mark should correspond to centerline mark on rear roof bow.

30. Remove top trim material.
31. Carefully lay removed top, which was marked at lower edge of trim stick prior to removal, over new top. Align old top with new top. Using a pencil, mark vinyl surface of new top using marked edge of old top as guide. Also mark edges of trim sticks on vinyl surface of

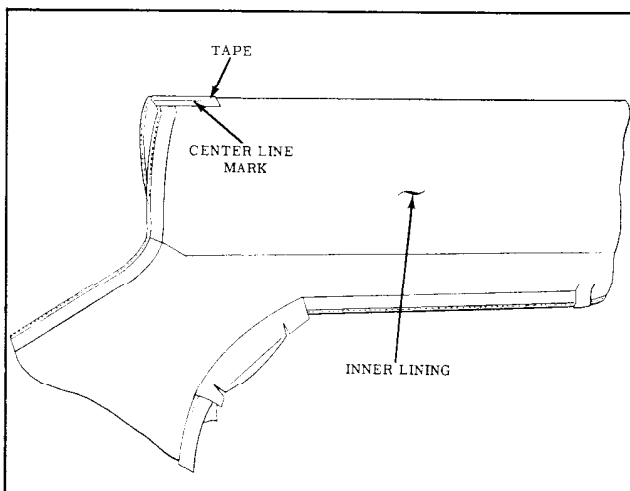


Fig. 15-101 Marking Folding Top

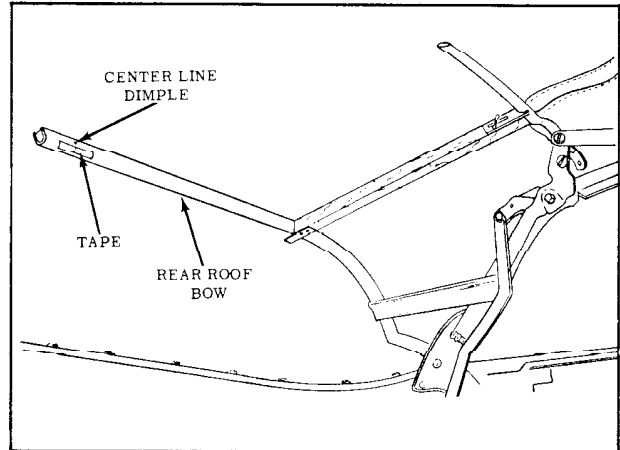


Fig. 15-102 Marking Rear Roof Bars

new top material. (See Steps 9 and 10 of removal procedure.)

32. Apply bead of convertible top sealer (nitrile) to inner lining of top material along front roof rail. Sealer bead should be roughly parallel with forward edge of top material and located so that sealer will be completely concealed by front roof rail when top is installed. (Fig. 15-83)
33. After sealer has dried, position top trim on framework and center assembly both fore and aft and side to side.
34. Check position of top trim at rear roof bow and at side roof rear rails. With quarter flaps properly folded over rear side roof rails (edge of rails should match stitch lines of quarter flap seams), marks on deck seam should be in center of rear roof bow.

NOTE: The deck seam mark will vary slightly ($\pm 1/4''$) depending upon position of rear roof bow. Also check centerline mark on inner lining of top material. Mark should correspond to centerline mark on rear roof bow. (Fig. 15-102)

35. Using neoprene-type weatherstrip adhesive, fasten rear quarter flaps to side roof rear rails. Make sure that quarter flap seam breaks at forward edge of side roof rear rail.

NOTE: Material may have to be stretched from side to side to insure proper fit of top material flaps to side roof rear rails and to remove wrinkles from top material along rear roof bow.

36. Cut or pierce flaps for side roof rail rear weatherstrip attaching bolts. Install side roof rail rear weatherstrip to help maintain position of quarter flaps while adhesive is drying.

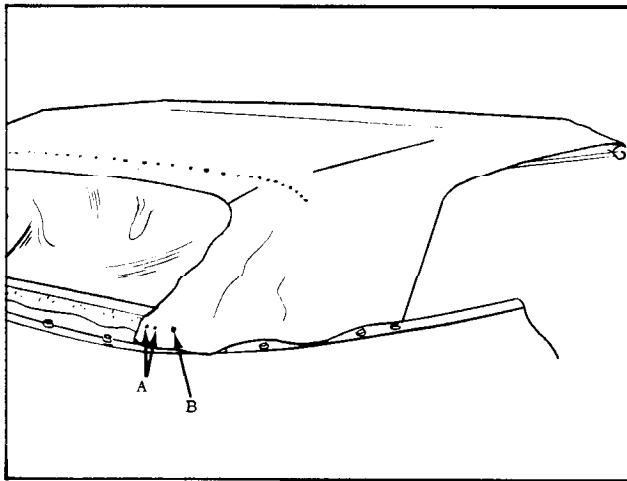


Fig. 15-103 Tacking Top Material

- 37. Using previously marked lines (ends of trim stick) as locating reference, tack top material to rear and rear quarter trim sticks. "A" in Fig. 15-103 shows top material installed to rear trim stick at inboard edge.
- 38. Cut or punch hole in top material for each trim stick attaching bolt.
- 39. Install top material into body. Make sure rear and rear quarter trim stick attaching bolts are completely driven in to represent finished condition.

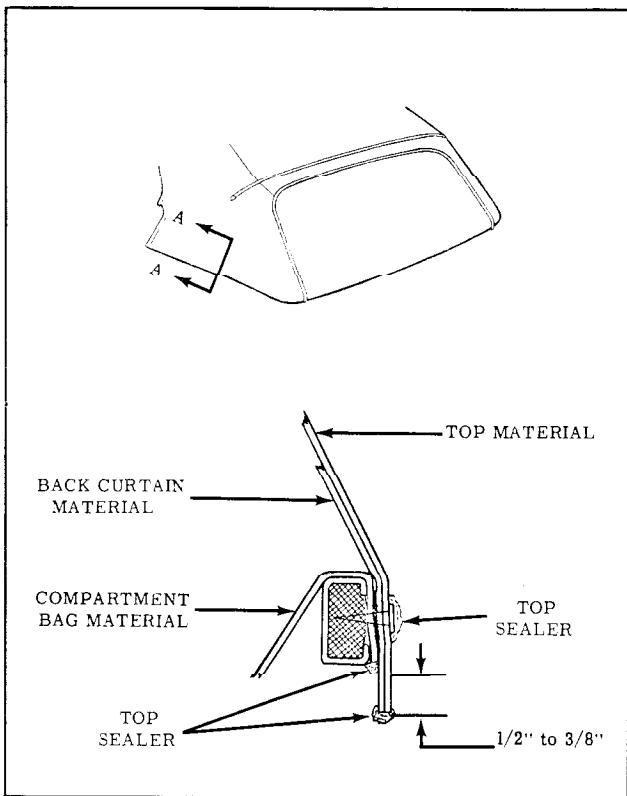


Fig. 15-104 Sealing at Trim Sticks

- 40. Check fit of top material. Rear quarter trim sticks may be adjusted downward to remove minor wrinkles in top material in rear quarter area.
- 41. Where required, remark top material; then make necessary adjustments to top material by repositioning rear quarter trim sticks and/or by retacking top material to rear and/or rear quarter trim sticks.

NOTE: In extreme cases, adjustment of top material at rear or rear quarter trim sticks may have to be performed several times before desired fit of top material is obtained.

- 42. Remove trim sticks with attached top material from top compartment well. Back curtain should extend 1/2" below trim sticks. (See Step 9 of installation procedure.) In addition, top material must extend 1/2" to 5/8" below trim sticks, to minimize water wicking on inner lining of back curtain material. (View "A-A" in Fig. 15-104) Trim top material as required.

- 43. Apply convertible top sealer (nitrile) onto all trimmed edges, around each tack head and around each trim stick attaching bolt hole. (View "A-A" in Fig. 15-104)

CAUTION: All painted surfaces adjacent to belt finishing molding should be adequately covered to prevent possible sealer damage.

- 44. Install trim sticks with attached top material into top compartment well and tighten side and rear trim stick attaching bolts.
- 45. Recheck side roof rail flaps. Make sure mark at deck seams is in center of rear bow. Also recheck centerline mark on inner surface of top material at rear bow.
- 46. Where required, remove side roof rail rear weatherstrips. Readjust top material at side roof rails and reinstall weatherstrips.

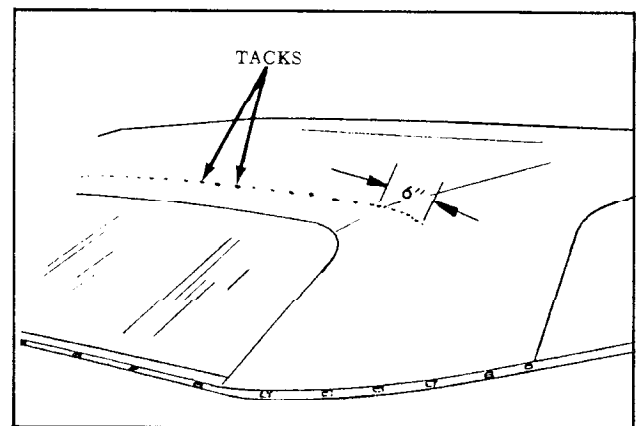


Fig. 15-105 Tacks Outboard of Seams

47. While pulling top material slightly rearward, stay tack top material along rear roof bow.

IMPORTANT: Tacks must be installed along a straight line in center of rear bow. (Fig. 15-105) Tacks outboard of deck seams should be restricted to distance not to exceed six inches, which is length wire-on binding extends past seam. (Fig. 15-105)

48. Unlock top from windshield header, apply neoprene-type weatherstrip adhesive to front flaps and to corresponding areas on side roof front rails. Fasten flaps to side roof front rails. (Fig. 15-84) Lock top to windshield header.
49. At front roof rail, pull top trim material forward to desired tension. While maintaining tension on top trim, place a pencil mark on outer surface of trim material along forward edge of front roof rail. (Fig. 15-106)
50. Unlock top from windshield header and apply neoprene-type weatherstrip adhesive to tacking area of front roof rail. Pull top trim material slightly forward so that pencil marks are forward on front edge of front roof rail. Fasten top trim to cemented area and stay tack trim to rail. (Fig. 15-107)
51. Lock top to windshield header. Check appearance of top trim as well as operation and locking action of top. (If additional tension is desired in top trim, unlock top from header and reposition top trim so that pencil marks are further forward. Stay tack and recheck top appearance.)
52. Complete tacking of top trim to front roof rail and trim off excess material.

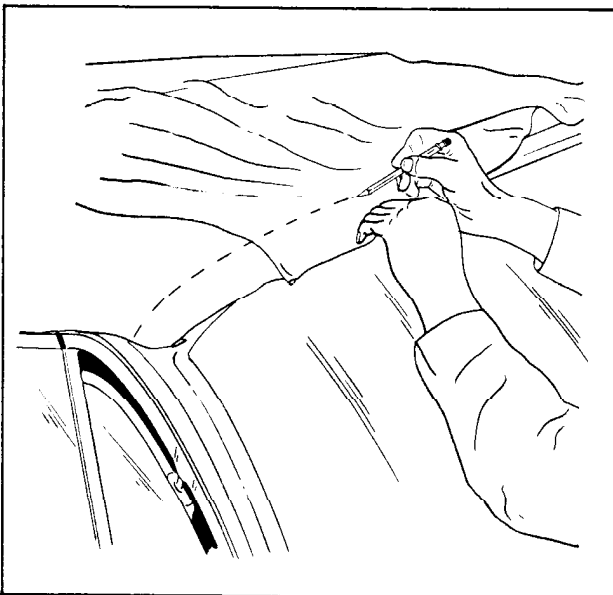


Fig. 15-106 Marking Top at Front Roof Rail

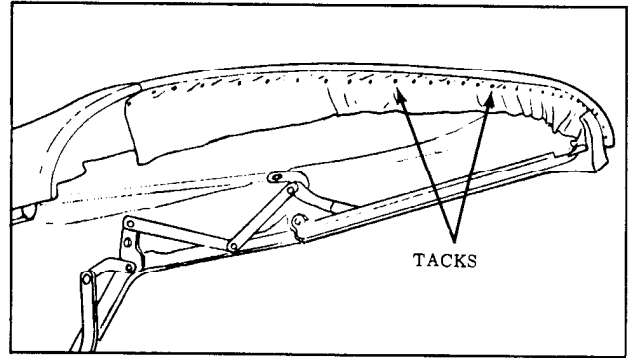


Fig. 15-107 Tacking Trim to Rail

53. Permanently tack top material to rear roof bow. Apply bead of neoprene-type weatherstrip adhesive around each tack head, and into two holes pierced into top material for wire-on binding clip escutcheons.
54. When completed, folding top should be free from wrinkles and draws. Install all previously removed trim and hardware and clean any soil from top material, back curtain or pads.

FOLDING TOP ASSEMBLY

Removal

1. Remove folding top trim as described in Steps 1 through 11 of FOLDING TOP TRIM, COMPLETE ASSEMBLY, Removal.

Installation

1. Prior to installation of new top trim material, check contour of back curtain and side stay pad assemblies. Where required, adjust back curtain and/or side stay pads as required.
2. Install new folding top trim as described in Steps 24 through 27 and 29 through 54 of FOLDING TOP TRIM, COMPLETE ASSEMBLY, Installation.

BACK CURTAIN ASSEMBLY

Removal

1. Perform Steps 1, 2, 5, 6, 7, 8 and 10 as described in FOLDING TOP TRIM, COMPLETE ASSEMBLY, Removal.
2. Remove wire-on binding and escutcheons from rear roof bow.
3. Detach folding top trim from rear roof bow and from rear and rear quarter trim sticks.

4. Carefully slide top trim forward exposing tacked edge of back curtain at rear roof bow.
5. Detach nylon webbing and back curtain from rear roof bow; then remove back curtain assembly with attached trim sticks and top compartment bag from body and place on a clean, protected surface.
6. Perform Steps 15, 16 and 17 as described in FOLDING TOP TRIM, COMPLETE ASSEMBLY, Removal.
2. Remove rear seat cushion and back.
3. Remove folding top compartment side trim panel assemblies and side roof rail rear weatherstrips; then detach folding top quarter flaps from side roof rear rails.
4. Detach top compartment bag from seat back panel and remove all trim stick attaching bolts.

Installation

1. Install spacer sticks as described in Steps 1 and 2 of FOLDING TOP TRIM, COMPLETE ASSEMBLY, Installation.
2. Seal and install back curtain assembly as described in Steps 7 through 23 of FOLDING TOP TRIM, COMPLETE ASSEMBLY, Installation.

NOTE: Extra care in positioning new curtain at same location on trim stick as old curtain and aligning of trim stick attaching bolt holes in top material with holes in trim stick will allow reinstallation of top material to its original position with a minimum of refitting.

5. To establish the relationship of right and left inner vertical edge of old top material to back curtain assembly at rear trim stick location, mark back curtain vinyl at both locations with a grease pencil. (Fig. 15-87) Reference marks should be transferred to new back curtain when Step 5 of installation procedure is performed.
6. Using a pencil, mark both ends of rear and rear quarter trim sticks on vinyl surface of top material. Reference marks should be used as a guide when installing top material to trim sticks after new back curtain has been installed.

BACK CURTAIN VINYL REPLACEMENT

Removal

1. Place protective covers on exposed panels which may be contacted during procedure.

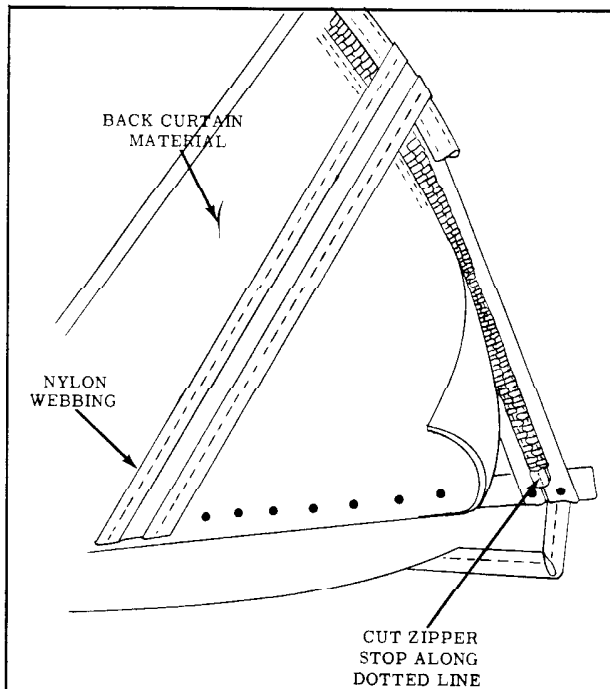


Fig. 15-108 Back Curtain Vinyl Replacement

7. Remove folding top material from rear and rear quarter trim sticks; then carefully slide top trim forward sufficiently to expose back curtain zipper.
8. Detach zipper tape from rear quarter trim stick.
9. Using a pair of wire cutting shears or other suitable tool, cut zipper stop along dotted line and remove both halves of stop from zipper. (Fig. 15-108)
10. Operate slide fastener off of zipper assembly.
11. Detach nylon webbing from rear trim stick.
12. Remove rear and rear quarter trim sticks with attaching back curtain and compartment bag material from body and place on a clean, protected surface.
13. Using chalk, or other suitable material, mark ends of rear and rear quarter trim sticks on vinyl surface of back curtain material. (Fig. 15-88) Reference marks for trim sticks should be transferred to new back curtain material when Step 5 of installation procedure is performed.
14. Using chalk or similar material, mark zipper tape at upper edge of vinyl. (Fig. 15-109)

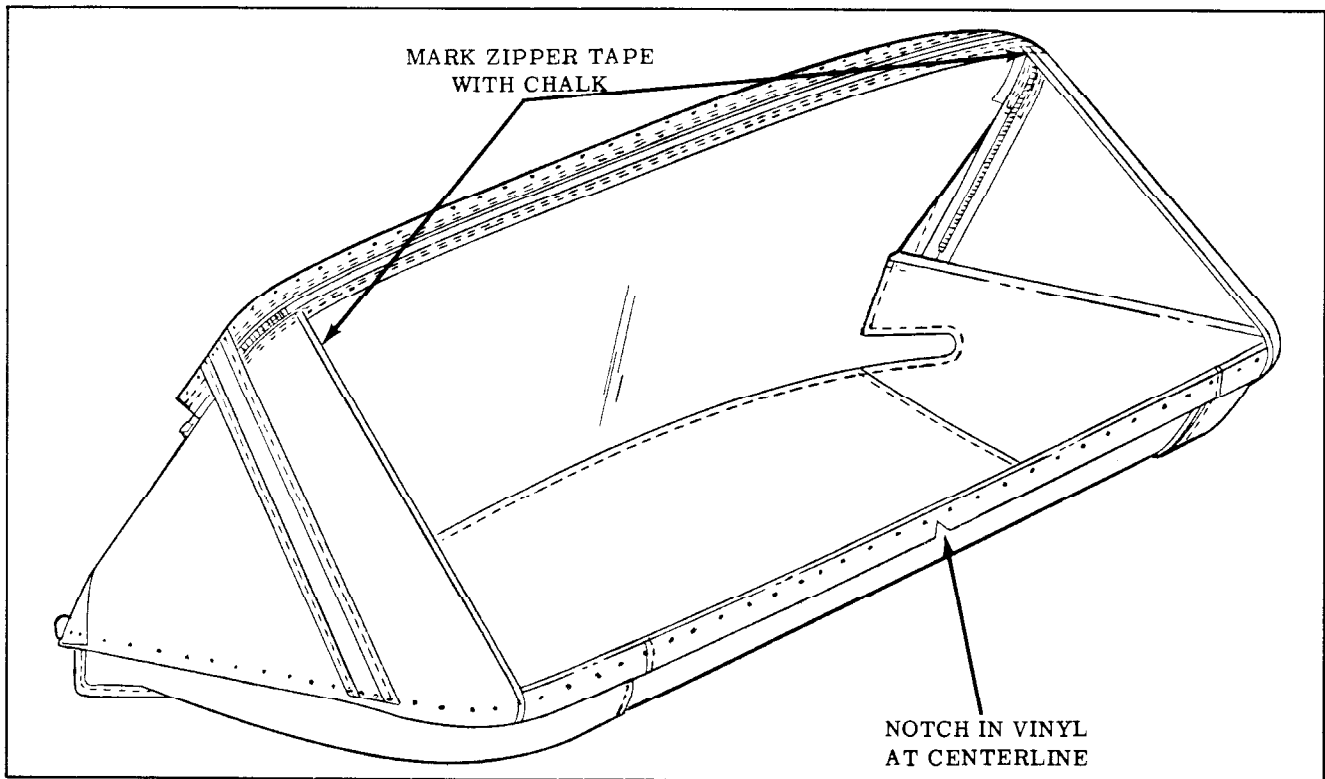


Fig. 15-109 Marking Zipper Tape

15. Remove back curtain assembly from rear and rear quarter trim sticks.
16. As a bench operation, cut stitches securing half of zipper assembly to back curtain vinyl.

Installation

1. Using chalk mark as guide, locate rear half of zipper to new back curtain vinyl. Zipper tape may be stapled to new back curtain to aid in holding zipper in proper position during sewing operation.
2. Sew zipper to new back curtain assembly.
3. Place back curtain window assembly on clean covered work bench with exterior (vinyl) surface of back window valance facing down. (Large pliable back window must be handled carefully to avoid possible damage due to scratches, abrasions, etc.). Apply bead of convertible top sealer (nitrile) along lower edge of back curtain material in area which will be tacked to rear and rear quarter trim stick. (View "A-A" in Fig. 15-110)
4. Apply bead of convertible top sealer (nitrile) along lower selvage edge of back curtain material.
5. After sealer has dried, transfer marks on old back curtain to new back curtain assembly. See Steps 5 and 13 of removal procedure.

6. Center and position back curtain assembly to rear trim stick over attached compartment bag.

NOTE: Notch in back curtain vinyl at lower edge indicates centerline of back curtain assembly. (Fig. 15-110) In addition, back curtain lower edge should extend 1/2" below lower edge of trim sticks.

7. Tack curtain to rear and rear quarter trim

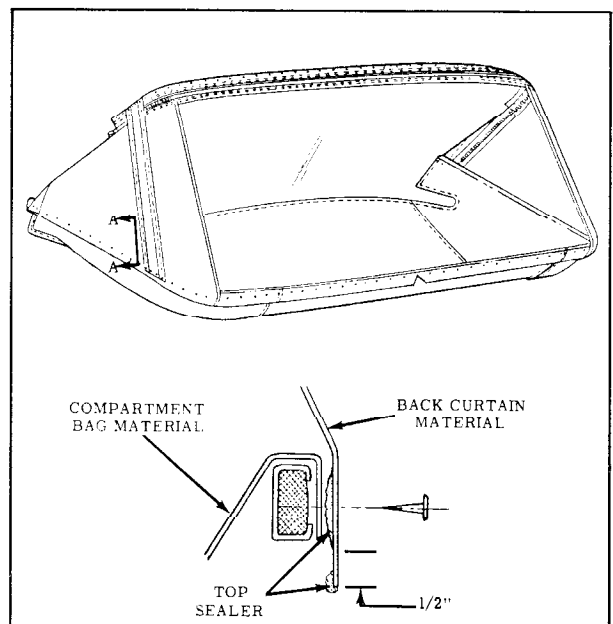


Fig. 15-110 Back Curtain Sealing

sticks. Turn forward edge of material rearward to form a water barrier. (Fig. 15-110)

8. Tacks securing back curtain assembly to trim sticks should be placed close to each side of every bolt hole in trim sticks. Then pierce or punch curtain assembly for each trim stick bolt.
9. Tack nylon webbing to rear trim stick as previously described.
10. Inspect rubber trim stick fillers cemented to body below pinchweld. Recement if necessary.
11. Install slide fastener onto zipper assembly.
12. Staple both sections of zipper tape together. Staples will aid in preventing zipper scoops from disengaging and also serve as a stop for the slide fastener. (Fig. 15-111)
13. Operate slide fastener to closed position.
14. Tack zipper tape to rear quarter trim stick. (Fig. 15-111) Zipper tape should not be pulled taut as zipper teeth may show through top material after top has been properly installed.
15. Install trim sticks with attached back curtain assembly into body.

NOTE: Make sure that all trim stick bolts are driven completely in to represent finished condition.

16. Check contour of back curtain assembly at pinchweld molding. Where required, place reference chalk mark on outer surface of

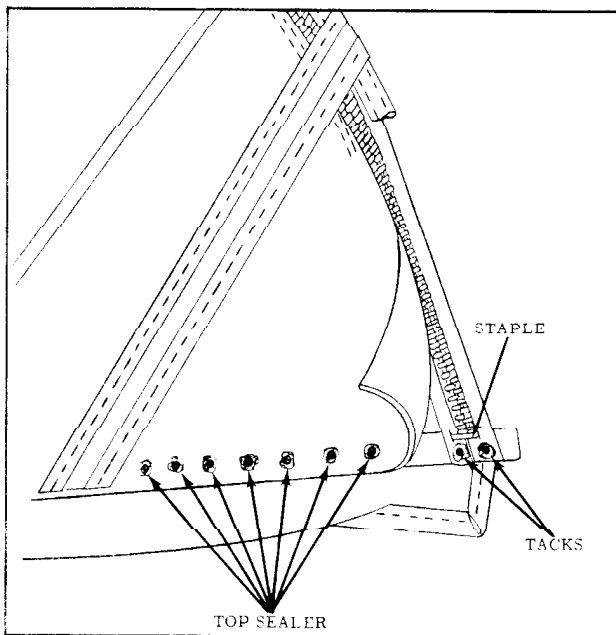


Fig. 15-111 Sealing at Rear Quarter Trim Stick

back curtain along pinchweld finishing molding. Readjust back curtain assembly by retacking curtain to rear or rear quarter trim sticks as required.

17. Detach rear trim stick with attached back curtain assembly from body.
 18. Apply convertible top sealer (nitrile) around each tack head used to secure back curtain material and webbing to rear and rear quarter trim sticks. (Fig. 15-111)
- IMPORTANT: It is not necessary to seal tacks which secure back curtain vinyl to rear trim stick.
19. After sealer has dried, carefully replace top in position in rear quarter area.
 20. Using neoprene-type weatherstrip adhesive, fasten rear quarter flaps to side roof rear rails. Make sure that rear quarter flap seam is even with forward edge of side roof rear rail. Install side roof rail rear weatherstrip to help maintain position of quarter flaps while adhesive is drying.
 21. Using previously marked lines (end of trim sticks) and bolt hole locations in top material as a locating reference, tack top material to rear and rear quarter trim sticks.
 22. Install top material into body. Make sure rear and rear quarter trim stick attaching bolts are completely driven in to represent finished condition.

23. Check fit of top material. Rear quarter trim sticks may be adjusted downward to remove minor wrinkles in top material in rear quarter area.
24. Where required, remark top material; then make necessary adjustments to top material by repositioning rear quarter trim sticks or by retacking top material to rear or rear quarter trim sticks.
25. After desired fit of top material has been obtained, remove trim sticks with attached top material from top compartment well. Back curtain should extend 1/2" below trim sticks.
26. Apply convertible top sealer (nitrile) onto all trimmed edges, around each tack head and around each trim stick attaching bolt hole. (View "A-A" in Fig. 15-104)

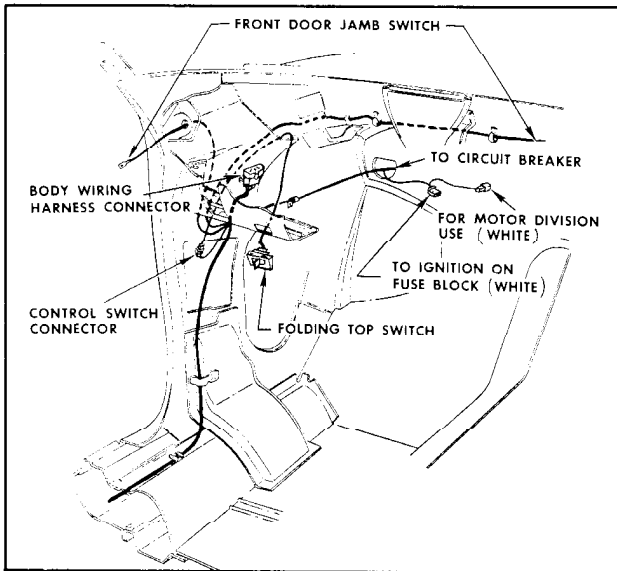


Fig. 15-112 Front End Wiring Installation "67" Style

CAUTION: All painted surfaces adjacent to belt finishing molding should be adequately covered to prevent possible sealer damage.

27. Install trim sticks with attached top material into top compartment well and tighten side and rear trim stick attaching bolts.
28. Where required, remove side roof rail rear weatherstrips. Readjust top material at side roof rails and reinstall weatherstrips.
29. When completed, folding top and back curtain assembly should be free from all wrinkles and draws. Install all previously removed trim and hardware and clean any soil from top material or back curtain assembly.

ELECTRICAL

BODY WIRING

For service procedures, refer to the 1961 F-85 Service Manual. Convertible and Station Wagon wiring is illustrated in Fig. 15-112, 15-113 and 15-114.

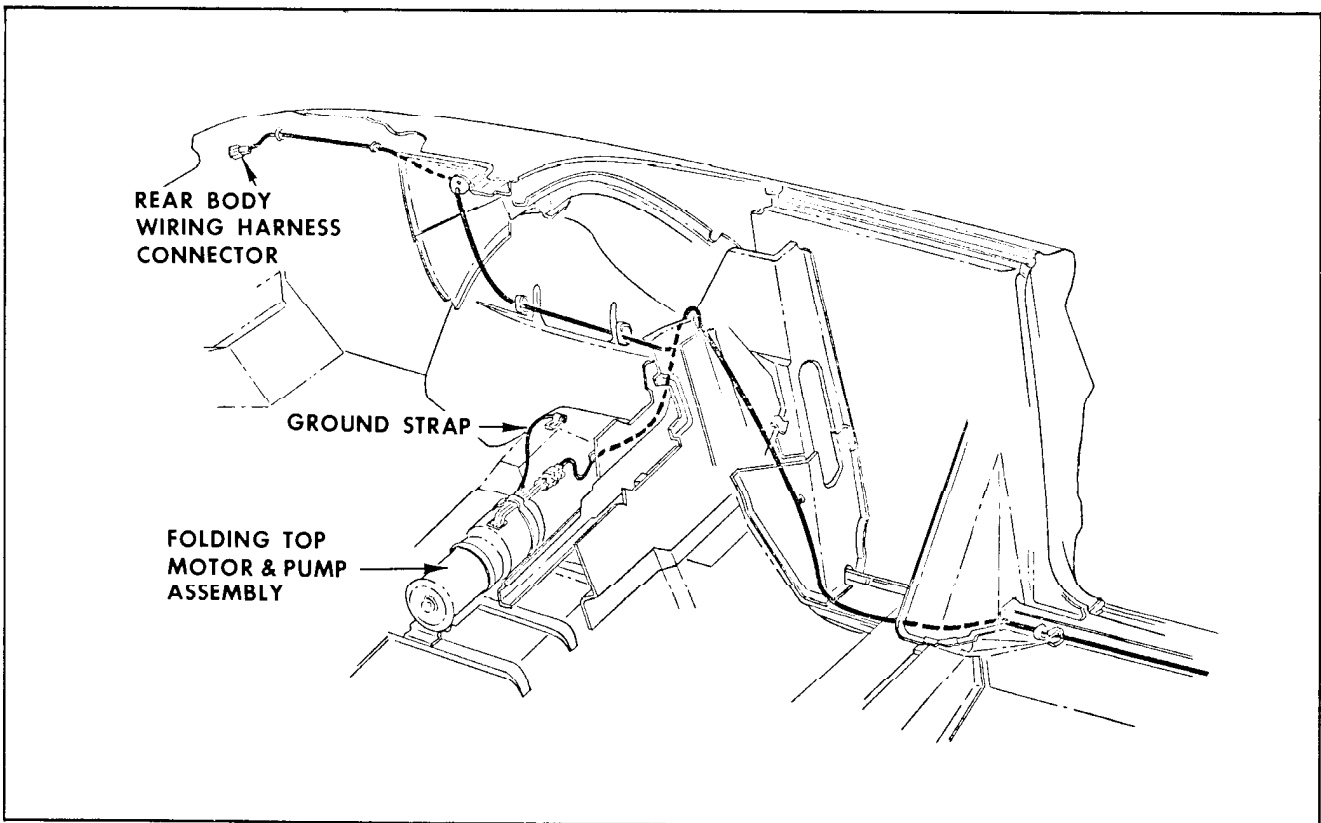


Fig. 15-113 Left Side Body Wiring Installation "67" Style

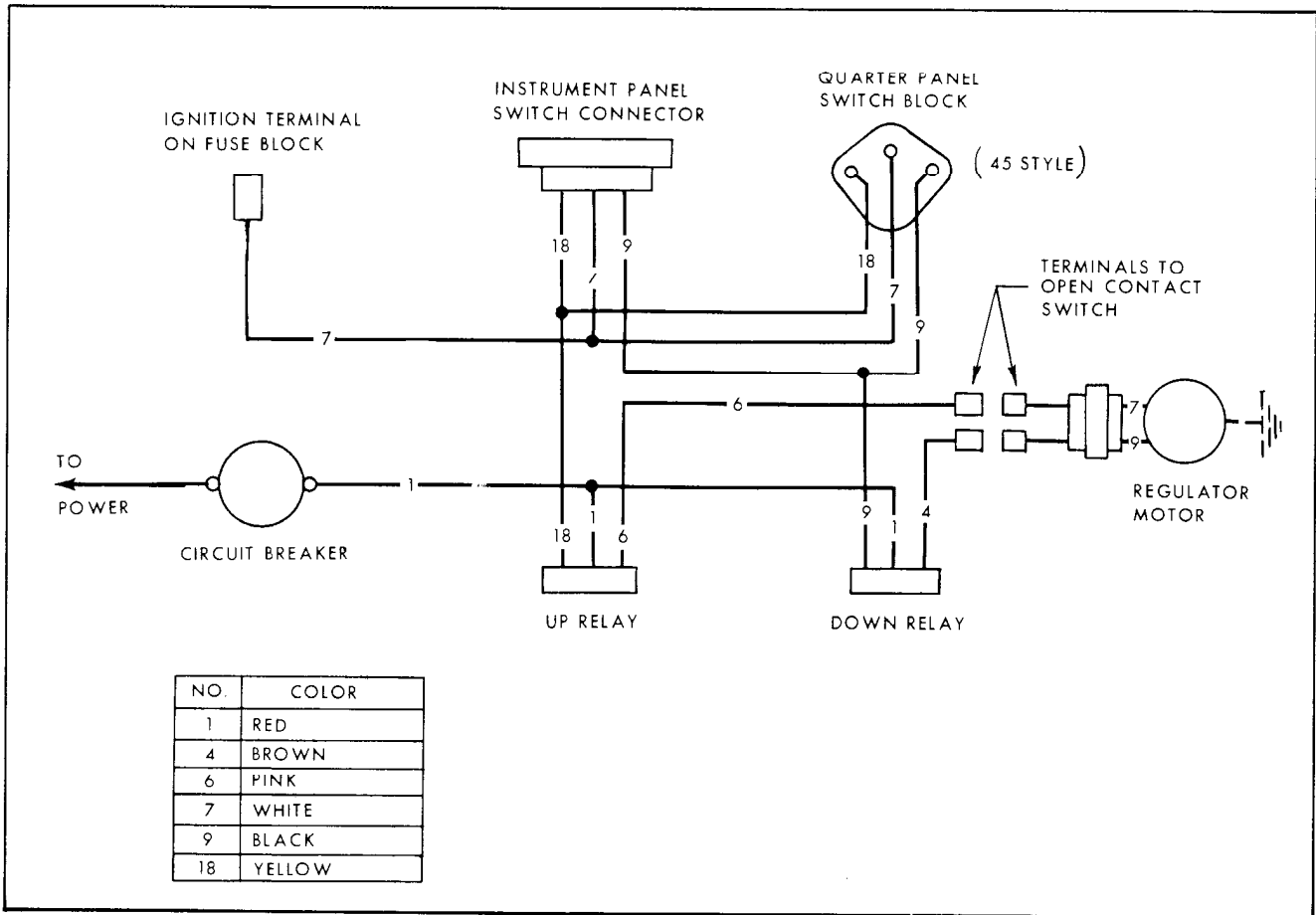


Fig. 15-114 Wiring Diagram - Electric Back Door Dropping Window

1962 PAINT SERVICE NUMBERS EXTERIOR COLORS

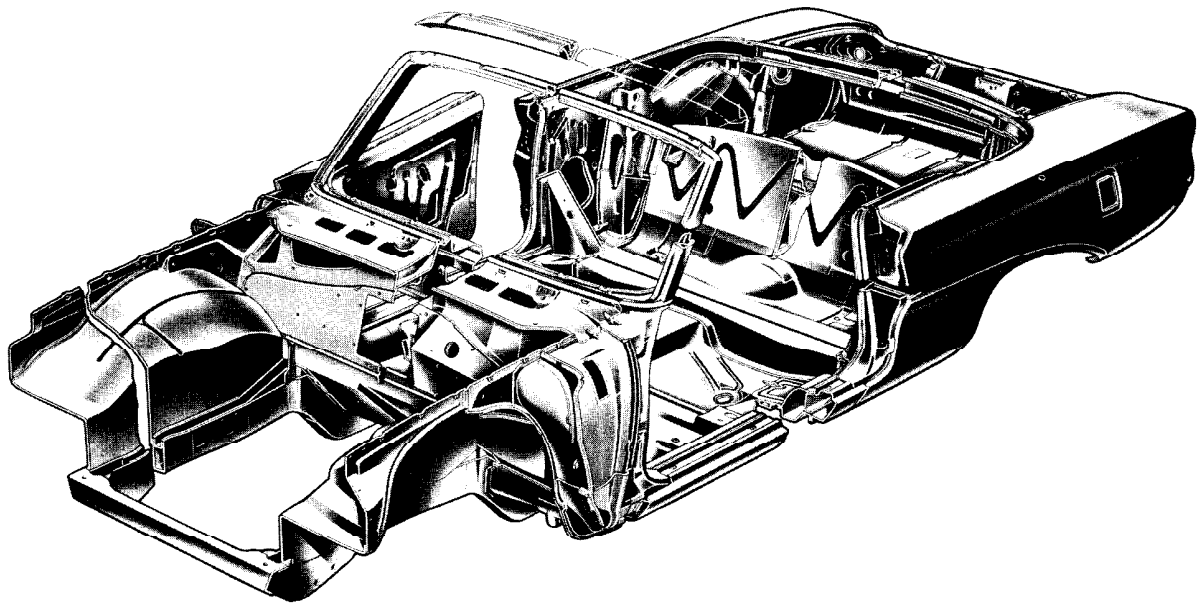
Comb. Code	Color Name	R.M. Stock No.	DuPont Stock No.
A	Ebony Black	A-946	88-L
B	Heather Mist	A-1479	4248-L
C	Provincial White	A-1199	4024-L
D	Sheffield Mist	A-1477	4247-L
F	Wedgewood Mist	A-1481	4250-L
H	Cirrus Blue	A-1480	4249-L
J	Willow Mist	A-1485	4255-L
K	Surf Green	A-1484	4254-L
L	Garnet Mist	A-1221R	4034-LH
M	Camco Cream	A-1390	4151-L
N	Royal Mist	A-1489G	4260-LH
P	Pacific Mist	A-1476	4253-L
R	Sand Beige	A-1486	4256-L
T	Sahara Mist	A-1478	4257-L
X	Sunset Mist	A-1488R	4259-LH

INSTRUMENT PANEL AND INTERIOR LACQUER COLORS

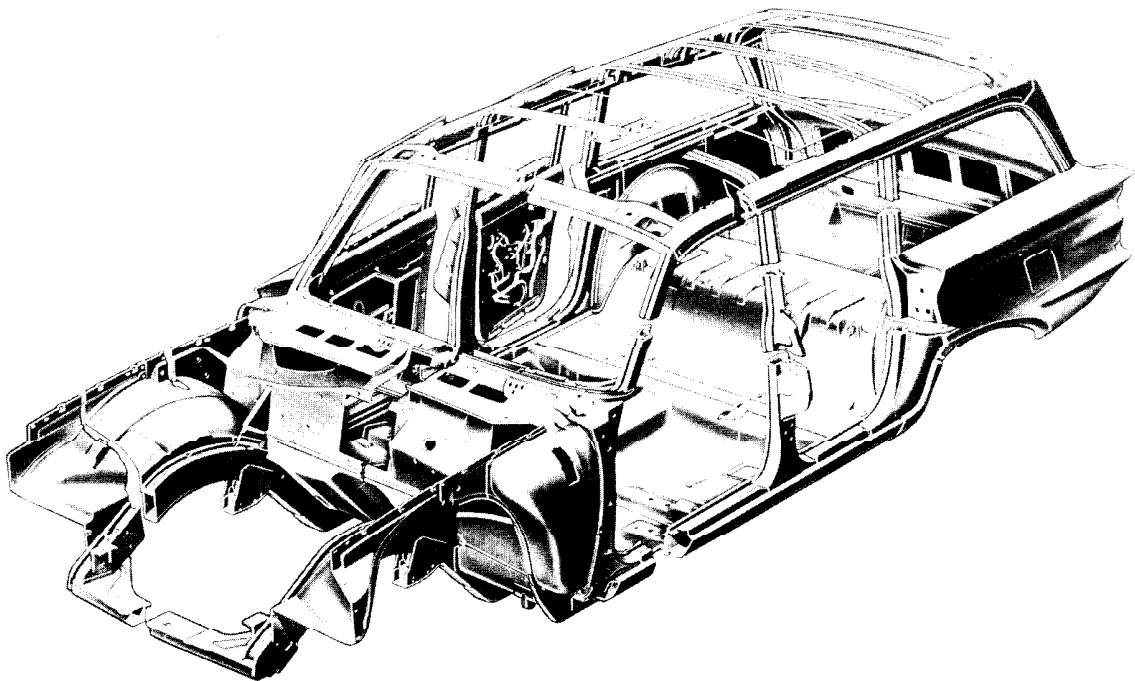
Color	DuPont Stock No.	Rinshed-Mason Stock No.
Silver	95552	62011
Medium Green	95481	62034
Medium Blue	95480-H	62024
Medium Fawn	95478	62082
Medium Aqua (88, S88 & 98)	95479-H	62036
Medium Red	4066-H	62053
Medium Gray (S.W. Floor)	95554	62012
Dark Gray	95553	62013
Dark Green	95556	62032
Dark Blue	95555-H	62025
Dark Fawn	95561	62083
Dark Aqua (88, S88 & 98)	95559-H	62031
Dark Red	94969-H	62051

GLOSS AND FLAT*

Color	DuPont Stock No.	Rinshed-Mason Stock No.	
Dark Red	4063-H		*To derive flat paint from gloss paint add R-M Universal Flattening Concentrate Code No. 850 or DuPont No. 4258 Flattening Concentrate to gloss paint.
Dark Blue	4328-H		
Dark Gray	4329-H		
Dark Aqua	4330-H		
Dark Green	4333-H	62035	
Dark Fawn	4334-H	62084	
Medium Red	4066-H		



Body Shell Construction—Convertible



Body Shell Construction—Station Wagon

