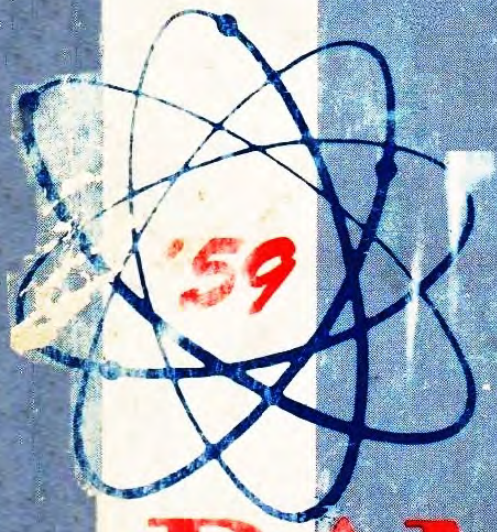

RAMBLER AMERICAN

Owner's Handbook



Read Your Owner's Handbook

1959 REFERENCE DATA RECORD

Serial No. _____

Body No. _____

Model No. _____

Trim No. _____

Paint No. _____

Engine Serial No. _____
(6 Cyl.: Upper left front corner of block)

Body Style _____

Taxable Horsepower: 6-Cyl. _____ 23.44

Key No. — Ignition and Door _____

Trunk, Glove Box _____

Cost of License Plates _____

License Plate No. _____

Purchase Date _____

IMPORTANT

Be sure to read Break-In instructions on Page 16 before operating your new car.

Introduction

Your new 1959 Rambler American represents a car concept that is different than that of any other automobile on the road.

It is the one car that is here by popular demand . . the car that parks easier, handles easier than any other automobile you have ever known.

More than 2500 American Motors dealers from coast-to-coast are equipped to help you maintain the outstanding performance, economy and comfort that were built into your car. We suggest that you bring your car back to your dealer for regular check-ups, lubrications and maintenance service.

The rare simplicity of Rambler American mechanical construction minimizes service needs and permits mechanically-minded owners to perform many service operations themselves, if they so desire. You will find instructions covering many service operations included in this manual.

Proper care will assure that you derive from your car all the pleasureful service that has been built into it.

AMERICAN MOTORS CORPORATION

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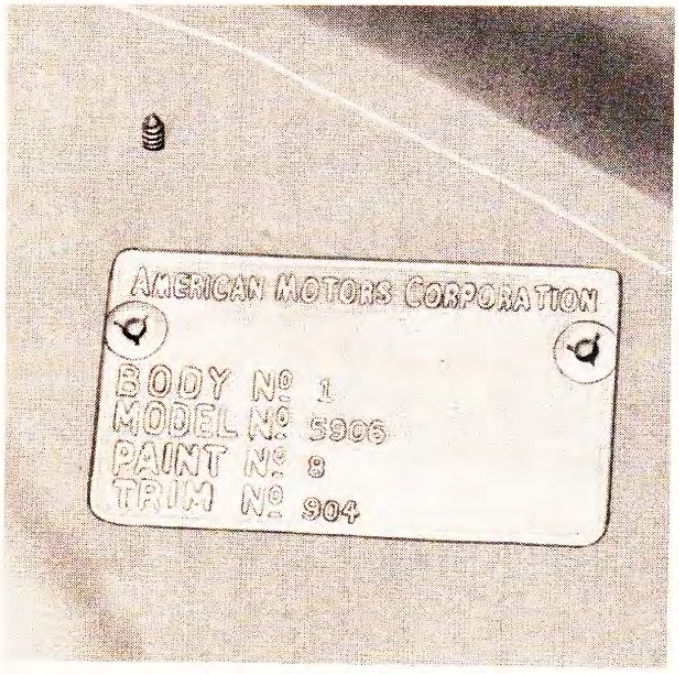
Identification

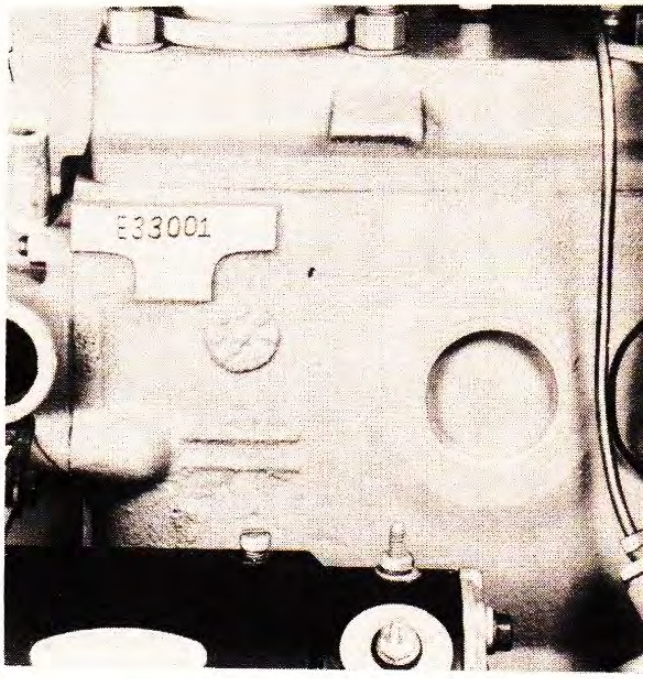
Serial and model numbers are provided for documentary and identification purposes.



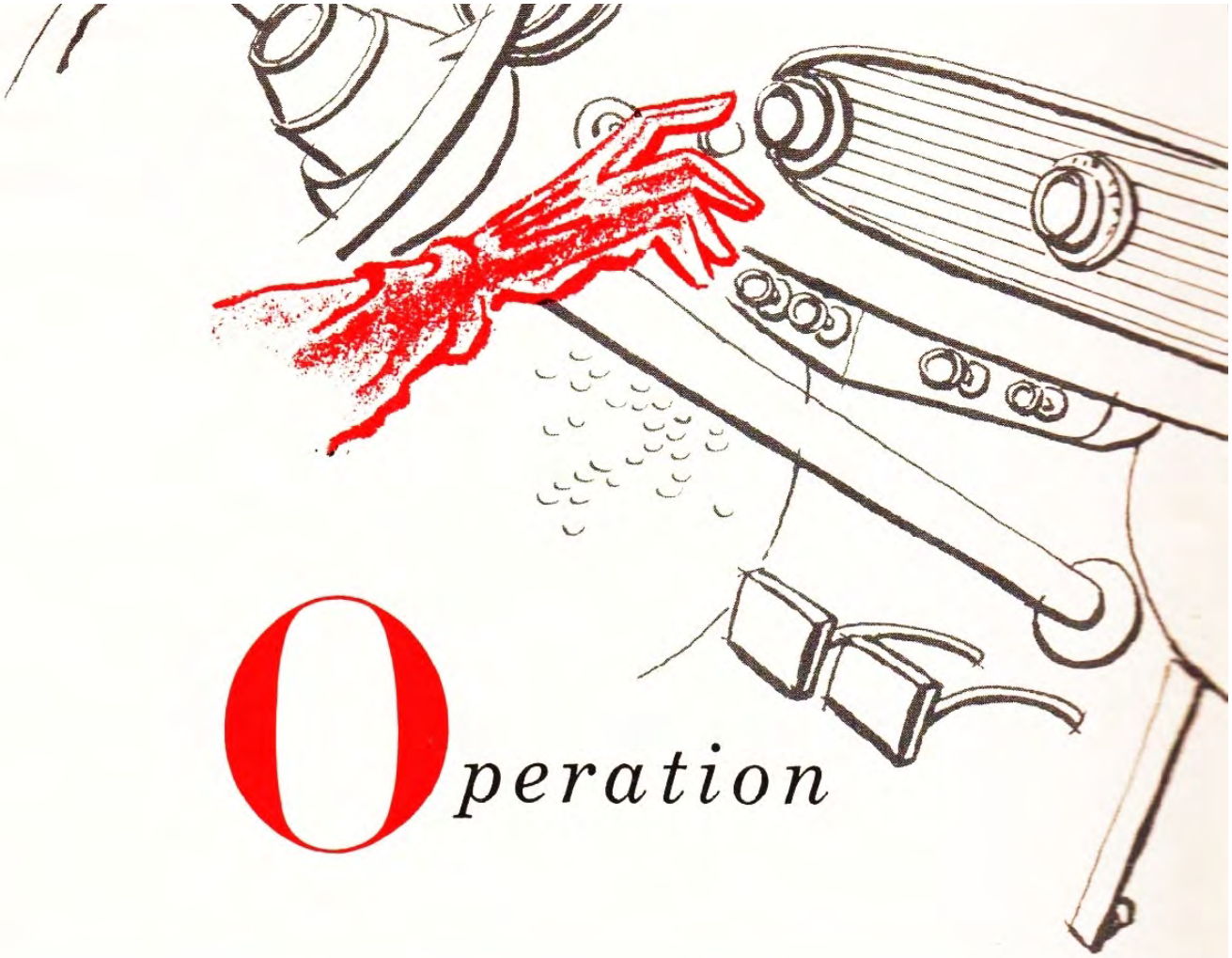
The car serial number plate is located under the hood on top of the right hand side of wheelhouse panel.



The body, model, paint, and trim code identification plate is located on the right hand side of the dash panel under the hood.



The engine serial number is stamped on a pad located on the upper left front of the engine block above the generator.



Operation

- keys and locks
- instruments
- driver's controls
- hood
- vent window
- weather eye
- transmissions
- seat
- continental tire carrier
- station wagon

YOUR RAMBLER AMERICAN

You will want to become familiar with the controls and operation of your Rambler American. So, sit behind the wheel of the car and with the aid of this handbook familiarize yourself with the location of the various instruments and controls.

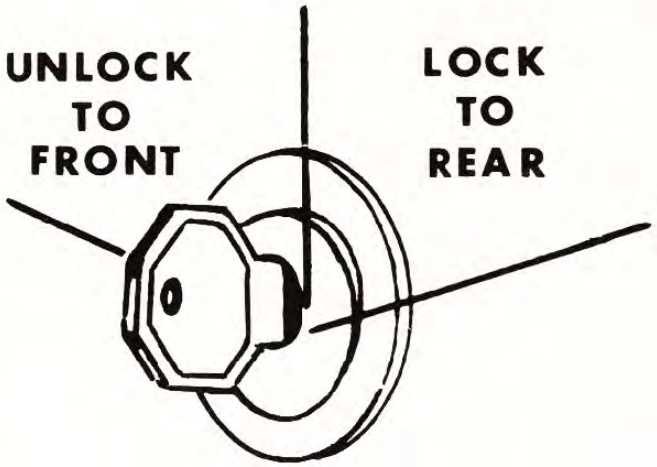
For safety's sake and your own convenience become well acquainted with the function and operation of these instruments and controls.

KEYS

You are provided with two sets of keys. Keep a record of your key code numbers with you at all times. If you should lose or break a key or, if you need an extra key, any American Motors Dealer and most locksmiths can quickly make another key for you by using the code number as a guide.



You cannot lock yourself out of your new Rambler American. The octagonal head key, also used for the ignition and starting, is used to lock the car doors. Depress the inside door handle opposite of the side that you are leaving the car to lock that door. The handle will return to the normal position. After leaving the car, lock the car door from the outside with the key.

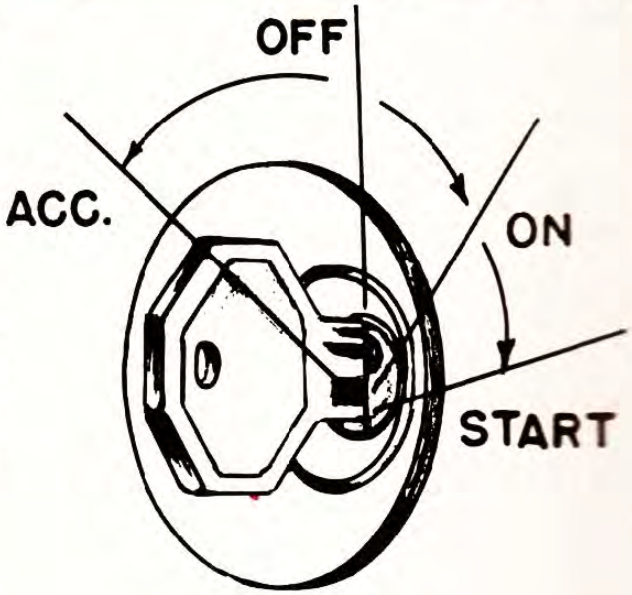


If a door lock freezes in cold weather, heat the end of the key for a few seconds with a lighted match or cigarette lighter before you place it in a lock. Do not force the key to turn in the lock as the key may break.

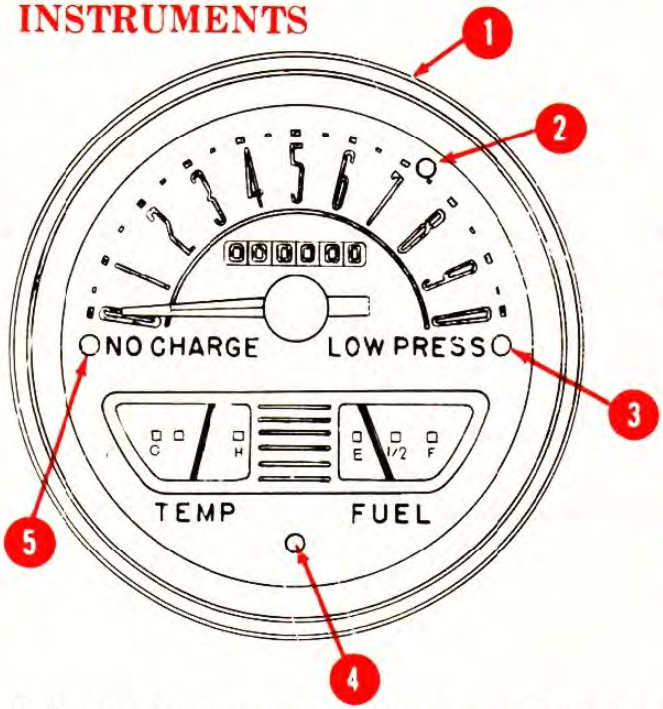
Glove and Luggage Compartment Locks—The round head key fits the glove and luggage compartment locks. To open the luggage compartment, insert and turn key to left — the deck lid will "pop" open; then you can easily raise the lid with one hand. To close the deck lid, push down at the center until the lock clicks, do not attempt to "slam" shut.



Ignition Switch — The octagonal head ignition switch key is used to start the engine. (NOTE): *Place the gear selector lever in neutral (Park or Neutral on automatic transmission equipped cars) before starting engine.* Turn key to extreme right to start engine. Spring tension will return key to normal position. Turn key to left to allow accessory operation without running engine.



INSTRUMENTS



1. Speedometer
2. Hi-Beam Indicator
3. Oil Pressure Warning Light
4. Directional Signal Flasher
5. Generator "Charge" Light

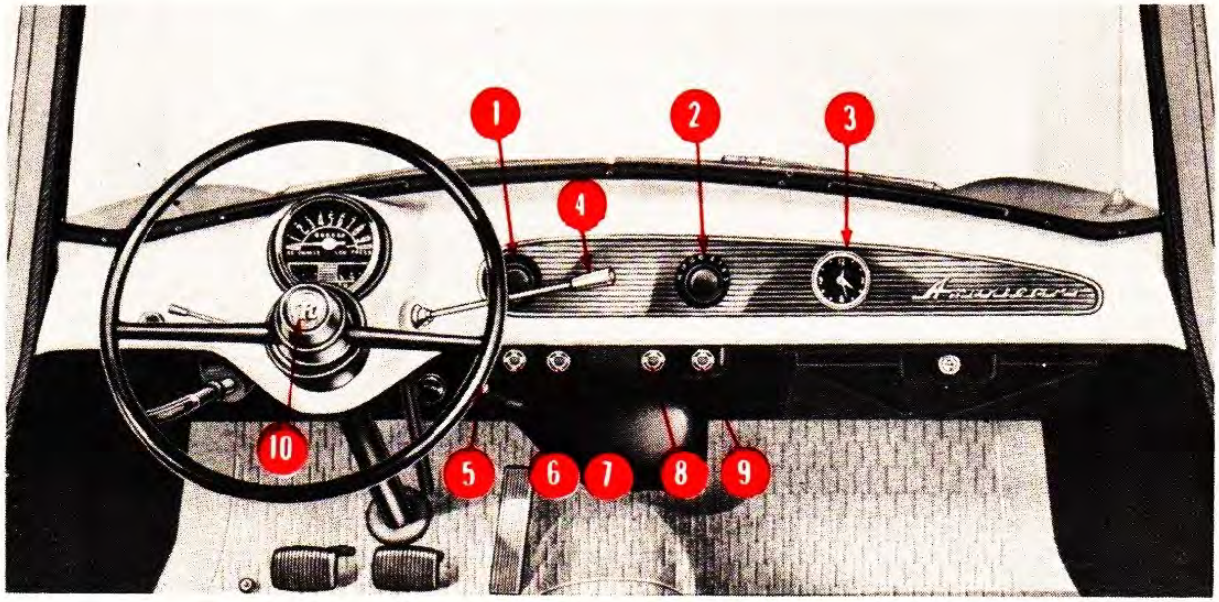
"Cluster" group contains speedometer, fuel and temperature gauges. The green indicator light 4 flashes when the directional signal is being used.

The red indicator light ❷ goes on when the highway beams are on.

Oil Pressure — The LOW PRESSURE light ❸ glows amber as a warning if the engine oil pressure is too low. Under normal conditions, the warning light will light when the ignition is turned on. After the engine is started, the light should go out. See page 34 for additional information.

No Charge — The NO CHARGE warning light ❺ glows amber when the ignition is switched on to indicate that the battery is discharging. The light will go out when the engine is started. See page 29 for additional information.

DRIVER'S CONTROLS



❶ Radio On-Off and Volume Control — Inner knob is on-off and volume control. Outer ring is tone control.

❷ Radio Tuning Control — Always tune carefully until exactly on station — poor tone quality will result if not exactly on station.

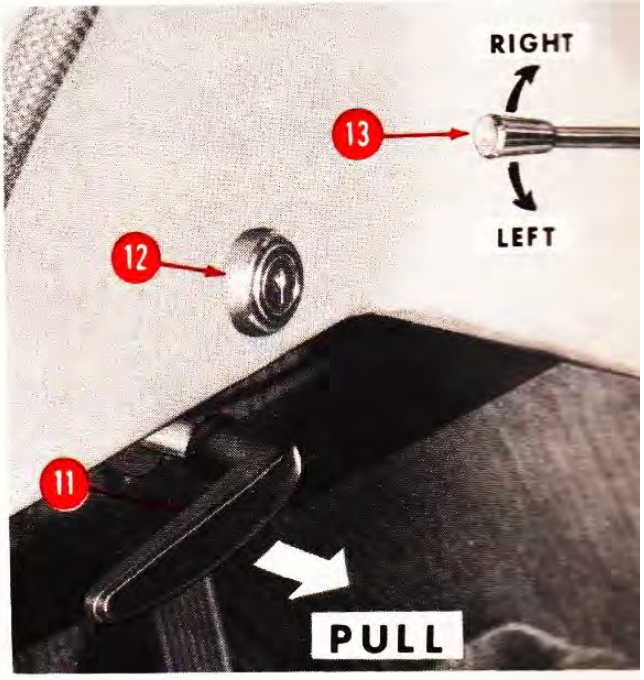
❸ Electric Wound Clock — To re-set hands, pull out knob and turn. After hands are set, push knob in. Should clock run fast or slow, re-set to correct time. The self-regulating mechanism will automatically change the clock speed proportionately (Read Tag).

❹ Gear Shift Selector Lever —

❺ Heat or Vent Control —

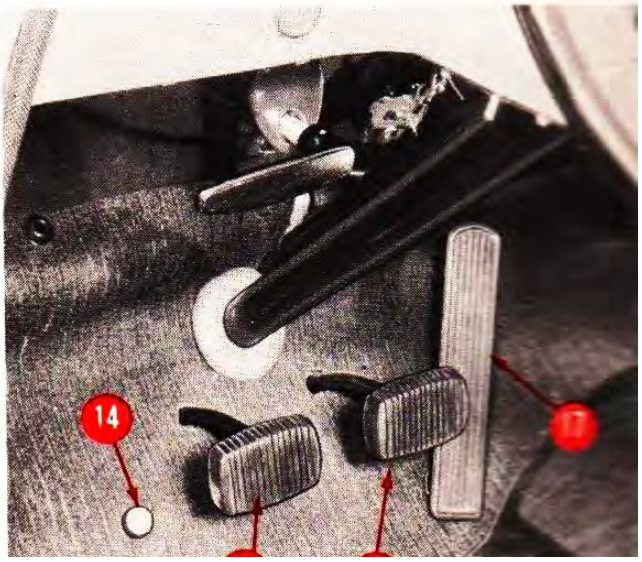
❻ Windshield Wiper Control — Turn Knob **W** clockwise for wiper operation — rotate gradually to reduce wiper blade speed. If equipped with windshield washers, a foot-operated pump control is located near the headlight dimmer.

7. Headlight Switch — Pull Knob **L** out to first position for parking lights; second position for headlights. Rotate the knob clockwise to vary instrument cluster light brilliance.
8. Heater and Fan Control — Knob **F**.
9. Cigarette Lighter — To operate, the ignition key must be in either the accessory or operating positions. Push in — automatically pops out when ready (Read Tag).
10. Horn —
11. Parking Brake—Pull handle out to set brake — at same time, depress foot brake until brakes hold. To release, turn handle down.
12. Ignition Switch —
13. Directional Signal Control Lever — "Up" signals right hand turn to other drivers, intermittently flashing the right hand front and rear directional lights. "Down" signals left hand turn, intermittently flashing the left hand front and rear directional lights. After making the turn, the signal lever cancels automatically. The control can be operated manually on short radius turns.



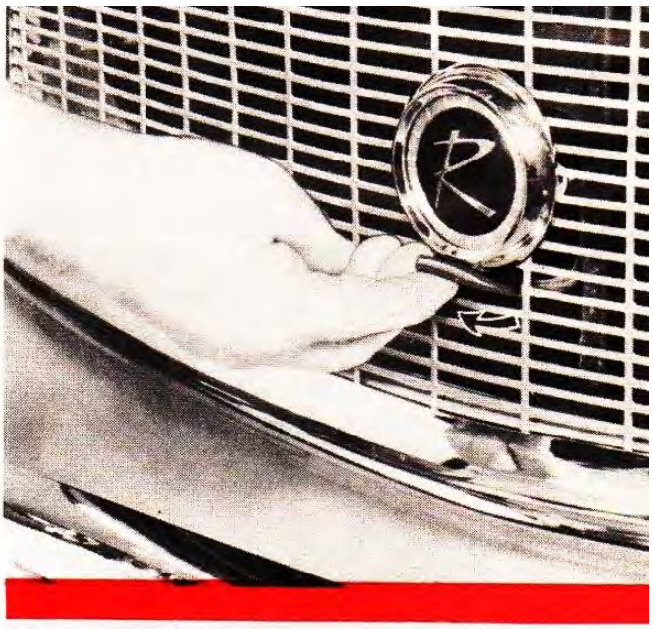
FOOT CONTROLS

14. Headlight Dimmer Switch — The foot-operated switch controls high and low-beam position. The red indicator light in the instrument cluster indicates when headlights are on "high-beam."
15. Clutch Pedal —
16. Brake Pedal —
17. Accelerator Pedal —

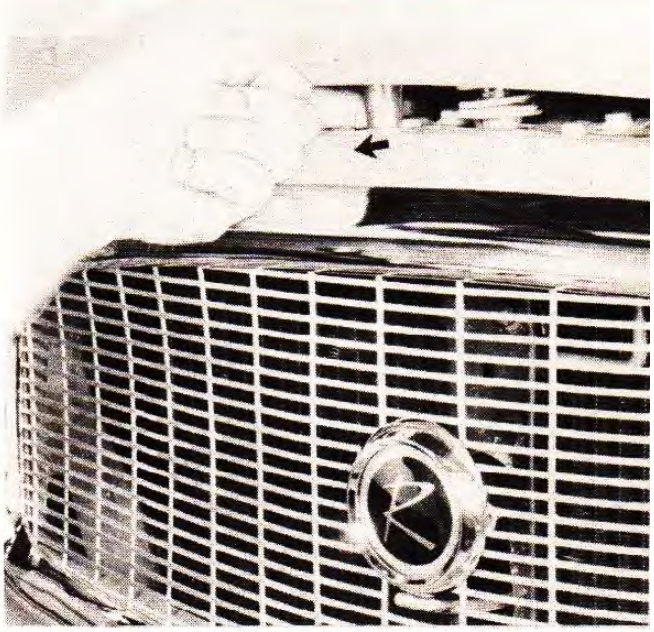


HOOD

The hood release lever is located directly below the emblem in the center of the grille. Pull out to release hood.



The hood will snap partly open due to the spring-loaded hood catch being released. The safety catch is located to the left of the hood catch. Reach in with hand or finger and pull safety catch forward to fully release hood.



VENT WINDOWS

To open the vent windows, turn the latch handle upward. Push the window to the desired open position. Lock the vent window when it is closed by turning the latch downward over the window division bar.

WEATHER EYE

Fresh Air Heater Operation — Push in "Heat or Vent" control 5 to allow full flow of fresh air across heater core during normal driving. Intermediate positions will vary amount of air flow.

Pull out Heater Control Knob **F** 8 to control the amount of heat desired. Once adjusted, setting need not be disturbed. When heater control is pulled all the way out, full flow of hot water through heater core takes place. When pushed in to full "Off" position, heat is shut off completely. For greater air circulation while driving

at slower speeds, rotate fan knob clockwise one position for "high" blower. This position provides maximum defrosting. Further clockwise movement to next position provides "low" blower.

Fresh Air Ventilation — The "Heat or Vent" control 5 is pushed in for normal air circulation. The Heater Control Knob **F** 8 is in the "Off" position, pushed in. The heater control may be rotated clockwise to operate fan to aid in defogging windshield in damp or rainy weather or to increase air circulation.

NOTE: Pull out "Heat or Vent" control 5 when washing car.

FLASH-O-MATIC TRANSMISSION

You may have chosen the Flash-O-Matic transmission offered as optional equipment for your Rambler American. The following information describes in detail the operation of this transmission. It is followed by the description of the Standard and Overdrive type transmission.



P — Park — Internal Transmission Lock for Parking

N — Neutral

2 — Driving Range, Intermediate Range Start

1 — Complete Driving Range, Low Range Start

L — Low Range Drive

R — Reverse

Starting the Engine — The engine can be started with the key start when the gear selector lever has been placed in "P" (Park) or "N" (Neutral). When you are ready to drive, move the selector lever from "P" or "N" to the desired drive position.

Operating in the Driving Ranges — Gear selector position "1" provides a complete driving range with a low range gear start for increased power and acceleration in congested traffic or mountainous terrain. The gear selector position "2" provides an intermediate range gear start thereby reducing engine speed and improving fuel economy during initial acceleration.

For either type of driving, select your gear position, then press down on the accelerator pedal as needed. The Flash-O-Matic automatically does all the shifting for you. The gear selector lever can be moved from "1" to "2" or "2" to "1" when traveling at any car speed. High range is the same in either position. Changing positions provides the desired gear start for the type of driving encountered.

Operating in "L" (Low) Range — The "L" (Low) range is provided for use in deep sand or snow, ascending or descending steep grades, or where traffic conditions require low range gear.

It is possible to change from either "2" or "1" selector positions to "L" position at any car speed. Release the accelerator pedal when moving gear selector lever to "L." The lever must be lifted up slightly to place in "L" (Low Range). This feature is provided to prevent inadvertently pulling the selector in "R" Reverse at higher speeds. When the gear selector lever is moved to "L" range above 20 MPH, an immediate downshift from high range to intermediate range will occur. A further downshift to low range will follow when speed is reduced below 20 MPH with closed throttle.

CAUTION: The changes from either "2" or "1" positions to "L" should only be made on dry roads when traction is good. It is not recommended to change to "L" on slippery roads since this change could induce a skid. On slippery roads, safety demands that the car speed be reduced by judicious use of the car brakes.

Forced Downshift — To obtain extra power for acceleration when driving in either "2" or "1" ranges, depress accelerator pedal completely.

The Flash-O-Matic will downshift to intermediate range when driving in "2" range at speeds less than 56 MPH. A downshift to low range will occur when driving in "1" range at less than 18 MPH.

Operating in Reverse — Alternately moving the gear selector lever from "L" (Low Range Gear) to "R" (Reverse) with light accelerator pedal pressure permits rocking the car when required to get out of deep snow, mud, or sand.

Parking — The "P" (Park) position provides an internal transmission lock for parking. The car should be brought to a complete stop before moving the gear selector lever to this position.

CAUTION: At no time should "P" (Park) be engaged when car is moving. Internal damage to transmission would result.

This position is also used for starting the car. Place the gear selector lever in "P" (Park) and start the car with key start. A safety switch is incorporated that is placed in circuit with the key start when the gear selector is placed in "P" or "N." This feature prevents accidentally starting the engine when the lever is in any of the driving ranges.

Holding Car on Hill — It is possible to hold the car stationary, for limited periods of time only, on slight up grades by depressing accelerator pedal slightly with "2," "1," or "L" ranges. For longer periods or on steep hills, this practice is not recommended.

Pushing to Start Engine — Push car with gear selector in Neutral (N) until 30 MPH or more is reached, turn on ignition, then move gear selector lever to "1" position. Under these conditions, the engine will be engaged in gear and ordinarily will start.

CAUTION: If it becomes necessary to tow or push the car for distances greater than necessary to start a normally operating engine, a speed of 15 to 20 MPH should not be exceeded. Towing or pushing under these conditions will be satisfactory assuming the automatic transmission has been operating satisfactorily AND assuming the car mileage is in excess of 1,000. If transmission has not been operating properly, the car should be towed ONLY with rear wheels lifted off the ground.

Care and Maintenance — Check transmission fluid level every 1,000 miles. Drain and refill the Flash-O-Matic transmission every 15,000 miles. See Maintenance and Lubrication Sections for additional information.

Idling and Creeping — As the engine breaks in and friction decreases, the idle speed tends to increase. At these higher idle speeds, the car will tend to "creep" because of the increased power transmitted by the fluid coupling. It may be necessary to have your dealer adjust the idle speed to overcome creeping tendencies until engine friction stabilizes.

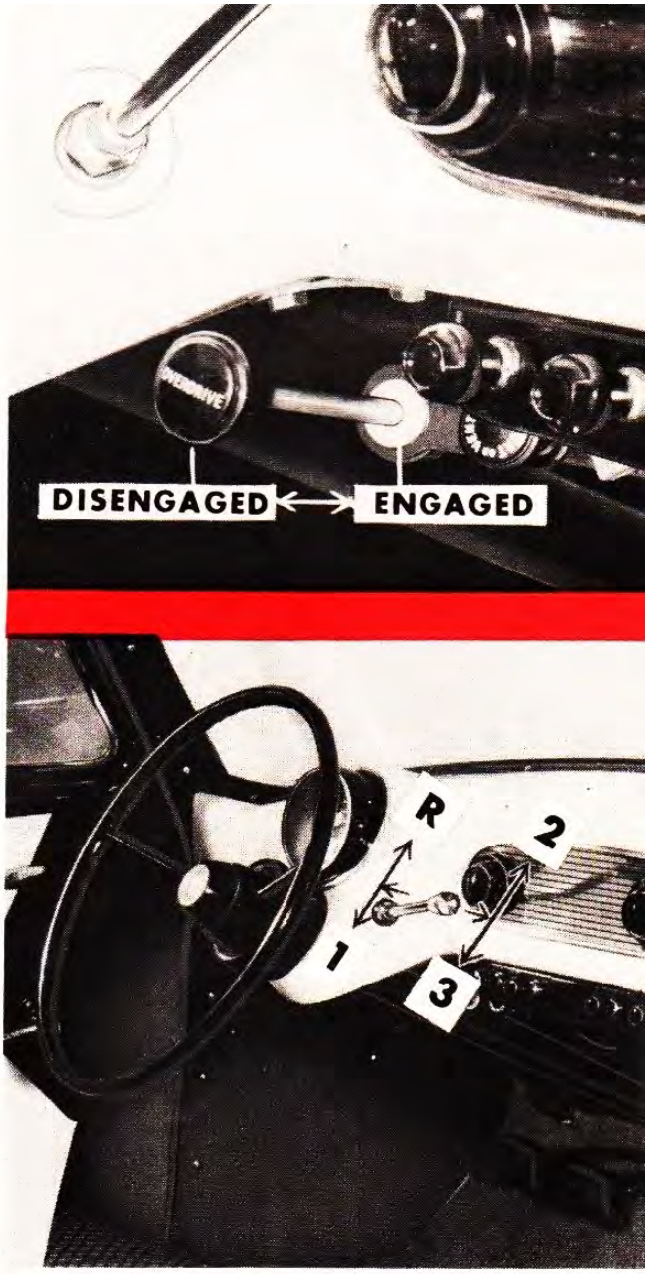
The correct idle speed to minimize creeping and stalling is 475 RPM.

Some drivers find it convenient to keep their foot on the brake pedal at stop lights to avoid creep associated with a higher idle speed.

Coasting — A Caution — Do not coast with the transmission in Neutral (N). Safer driving results from always having the engine "in gear." Damage to the transmission may result from coasting.

AUTOMATIC OVERDRIVE

To place the overdrive in operation, push the control (at right of steering column) to the "in" position. This can be done at any speed without releasing the clutch. To lock out the overdrive, however, the car should preferably be standing still. It is possible to make this change with the car in motion. Depress accelerator pedal fully (to shift into conventional third if above 28 MPH) and pull out the control knob. Below 28 MPH, the engine must be driving car — NOT coasting — when this shift is made.



With the overdrive control "in" and car moving at 28 MPH or more, the shift is made by momentarily releasing the accelerator. On slowing down, when the accelerator is released, at about 25 MPH, the drive changes automatically from overdrive to "third."

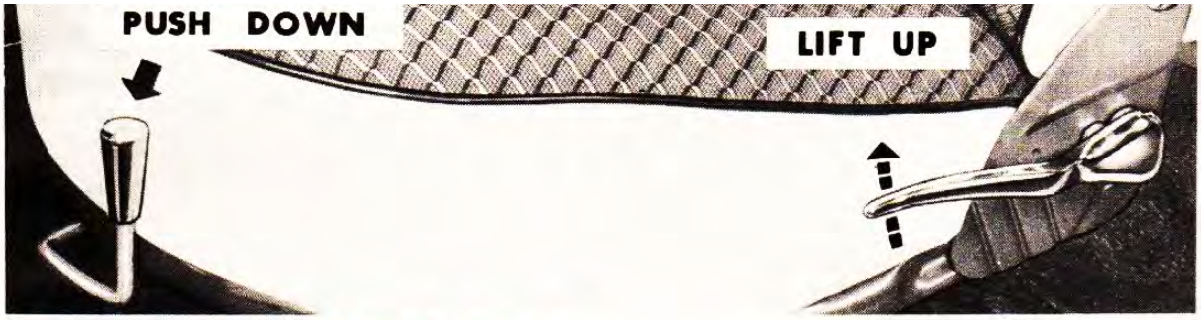
When descending steep hills, the overdrive should be locked out — pull the control "out" as described. Then in normal third gear, the resulting engine braking when accelerator pedal is released saves wear and overheating of brakes. Some prefer to drive in traffic with overdrive locked out to provide engine braking on normal decelerations.

If your car must be pushed or towed to start the engine, first pull overdrive control out.

Automatic Overtake — When operating in overdrive, one simple operation permits return to conventional third speed with added power. This is accomplished by depressing the accelerator to the full limit of its travel which operates electrical controls to effect the shift to third. When pedal is released, the shift to overdrive is made automatically if car speed is above 28 MPH.

FRONT SEAT ADJUSTMENT

The adjusting lever is located on the front left corner of the seat base. Push down knob to adjust seat as described. This adjusts the rack and forward or rearward position of the seat to allow for driver comfort.



AIRLINER RECLINING SEAT

Each side of the front seat-back is independently adjustable to four positions. The seat-back may be lowered to the next position by leaning forward slightly, raising the control lever, and then releasing the lever as the cushion falls into position. The mechanism is designed to make it impossible to move the lever to lower the seat-back when the weight of the occupant is against the back cushions. This safety feature prevents inadvertent lowering of the seat-back. The seat-back is easily returned forward without use of the lever. Slowly lift the seat-back to the next position desired, one "click" at a time — Do not pull the seat-back up rapidly. When seat-back is pushed forward beyond normal position, raise handle to return to normal position.

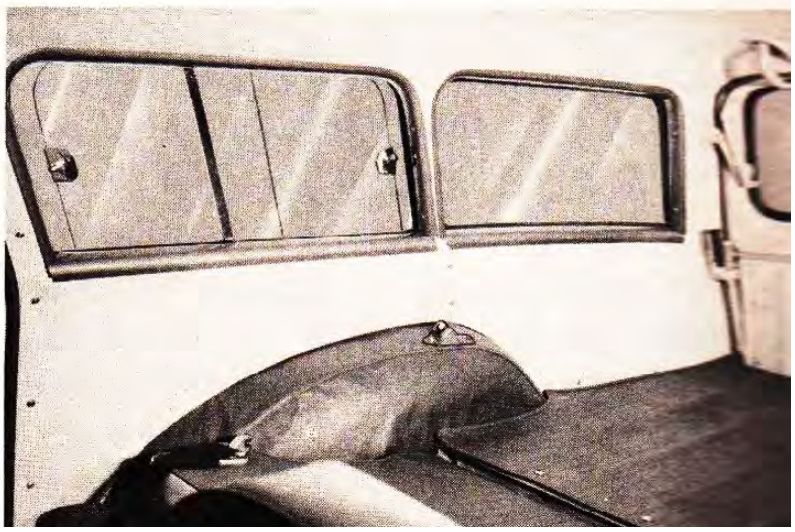
CONTINENTAL TIRE CARRIER

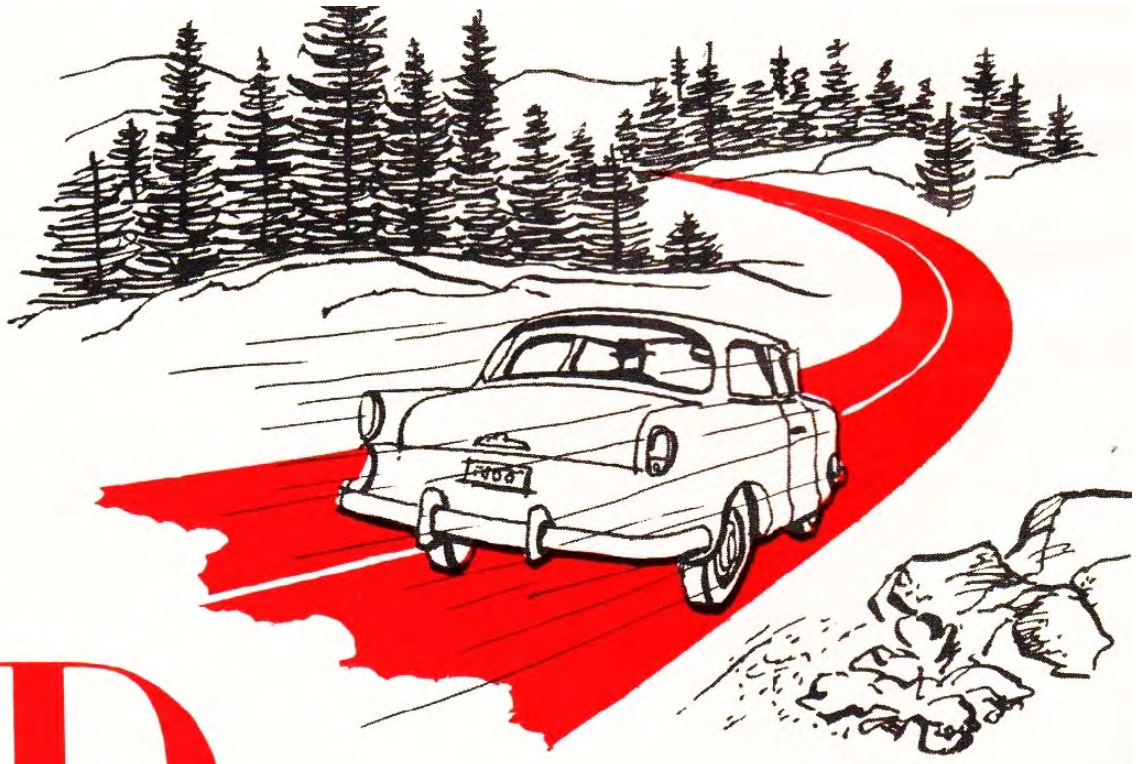
The lever located just behind the tire releases the mechanism, allowing tire to swivel for easy trunk access. To remove the wheel, remove the hub cap with jack handle (Cloth wrapped to prevent scratches) and take off the key lock and three bolts. The outer rim of the tire cover may be removed by springing outward.

STATION WAGON

To increase the cargo compartment space, the rear seat-back folds forward and lays flat on the rear seat cushion. It is held in place by two straps fastened to the seat-back anchor pins. The anchor strap is stored by snap fasteners to the front of the seat base. Remove strap from fasteners, lay seat-back on seat cushion. Press down on seat-back. Hook strap on anchor pins and then snap fastener on the seat base.

Props for the lift gate are provided with friction type hinges. Be sure the props on both sides are holding the lift gate securely. Spare tire and car jack are accessible through hinged floor of cargo compartment.





Driving dividends

- break-in period
- idling
- city driving
- country driving
- hot weather driving
- cold weather driving
- trailers

Economy of operation, originally designed into your Rambler American, is dependent to a large degree upon recognition of the factors that govern economy. Proper maintenance is important and means that the various systems of the vehicle — ignition, fuel, cooling, lubrication, and running gear must be kept in efficient operating condition. The malfunction of any of these systems will be reflected in increased cost of operation.

Moderation in driving is probably the greatest single factor affecting maximum economy. In addition to the mechanical strain and accelerated wear produced by intemperate driving, gasoline consumption is materially increased. Miles per gallon decrease rapidly as speeds increase above 30 miles per hour. At 60, for example, only two-thirds as many miles per gallon can be obtained as at 30. Unnecessary accelerations, needless braking, and long idling periods also waste gas.

THE BREAK-IN PERIOD — The manner in which you drive your new car for its initial mileage has a pronounced effect on its subsequent operation.

Two basic principles, if followed, will assure proper break-in:

1. The engine should be "worked" by intermittent running at reasonably high speeds. However, too much speed can be harmful and must be avoided.

2. The engine requires progressive break-in at various speeds or steps before it is safe to operate continuously at all speeds.

Based upon the foregoing principles, a simple break-in program is recommended as follows:

For the first 50 miles, avoid opening the throttle fully while accelerating or hill climbing. Keep under 50 miles per hour for the first 250 miles, but during the latter part of this mileage short periods of acceleration at full throttle, in high or overdrive, are desirable.

After 250 miles, short periods at increasingly higher speeds are permissible. Step up speeds gradually as mileage accumulates — operation of the car at low speeds contributes little, if anything, to effective break-in. Varying speeds, with some full throttle accelerations, are better than steady speeds.

Engine noise and oil consumption can be expected to reduce as break-in progresses and internal friction decreases. Light oil, preferably of the 10W viscosity grade, should be used. The original oil installed in the engine at the factory is suitable, but it should be changed not later than at 1,000 miles (300 to 500 miles is better), to drain out the metal particles and other foreign material that accumulate faster during this period. An extra chassis lubrication around 500 miles will insure lubrication to suspension parts

during the critical break-in period.

Your dealer has American Motors approved engine "additives" which are compatible with all engine parts and can be used if desired. Consult your dealer for correct usage of the approved additives. The factory cannot assume responsibility for damage if other brands are used.

STARTING — To start a cold engine, depress the accelerator at least half-way and release which moves the choke from warm operating position.

When starting a hot engine, or an engine which has been flooded, depress the accelerator fully and hold while starting.

IDLING — Avoid excessively long idling periods — this is not a good way to warm up an engine. Water condensation in the cylinders and engine wear both are accelerated under these conditions. Shut off the engine when waiting at a railroad crossing or in a traffic jam — restarting takes a negligible amount of gasoline. Do not run the engine with garage doors closed. During warm-up, the exhaust gases contain large quantities of deadly carbon monoxide.

Standard or overdrive engine idle speed is 550 RPM. (See Page 47 for automatic.)

CITY DRIVING — The frequent starting and stopping, prolonged idling periods and perhaps a tendency to demonstrate accelerating ability all combine to reduce operating economy.

Remember that your engine does considerable work in overcoming inertia in starting and in building up momentum. Use this developed momentum to drive your car — do not dissipate it in unnecessary braking. Style your driving to established traffic flow and drive at an even speed to coincide with the timing of traffic lights. Avoid street car tracks and chuck holes; turn corners slowly and do not scuff tires against the curb when parking.

COUNTRY DRIVING — High speed driving — 50 to 70 MPH when road and traffic conditions permit — is far less injurious to car and engine than is commonly assumed. Fuel consumption, however, will be greater than at lower speeds. After a hard run in extreme hot weather, let engine idle about ½ minute before shutting off to reduce water boiling tendency in block.

Severe application of brakes at high speed is hard on the linings. For example, a brake stop at 60 is four times as severe on the brakes as at 30 MPH.

HOT WEATHER DRIVING — Hot weather driving places a heavy load on the cooling and engine lubricating systems. Make sure there is sufficient coolant in the system — that there is no accumulation of insects or other debris at the radiator core. A good rust inhibitor added to the radiator in summer driving will forestall

accumulation of rust and scale. Use a good grade of engine oil. Modern premium oils, drained at regular intervals, keep your engine clean inside and prolong its life. Do not switch indiscriminately from one make or grade of oil to another.

Hot weather driving is frequently accompanied by dusty operating conditions. The replaceable dry type air cleaner element should be removed every 1,000 miles and tapped lightly to dislodge accumulated dirt. Do not wash in solvent or oil. Replace the element every 10,000 miles. The optional Oil-Bath air cleaner should be cleaned and serviced periodically as specified on the label. (See Lubrication Chart.)

In extreme dusty conditions, more frequent service and element replacement will be necessary to insure maximum engine performance.

Do not overlook the crankcase ventilating intake in dusty operation. Examine its condition, clean and re-oil if necessary when checking engine oil.

COLD WEATHER DRIVING — (See Page 26) — Cold weather driving probably imposes greater hardship on the engine and vehicle than any other natural operating condition. Frequent starting and short trips in cold weather are particularly conducive to the accumulation of condensation and sludge and to the dilution of engine oil. An occasional driving period of sufficient duration and speed to thoroughly heat the engine to summer operating temperature will "boil off" condensation and contaminants.

Drive slowly until the engine reaches normal operating temperature to avoid wear on engine parts slow to receive lubrication because of relatively high oil viscosity in cold weather. Use a low viscosity, free-flowing engine oil as specified to assure lubrication during the critical warmup period.

Keeping the gas tank full in cold weather will reduce the tendency toward condensation in the tank and possible resultant fuel line freezing. Fill tank at end of each day's driving rather than at the start. Drain fuel-filter chamber of fuel pump every 2,000 miles to avoid freeze-up in winter.

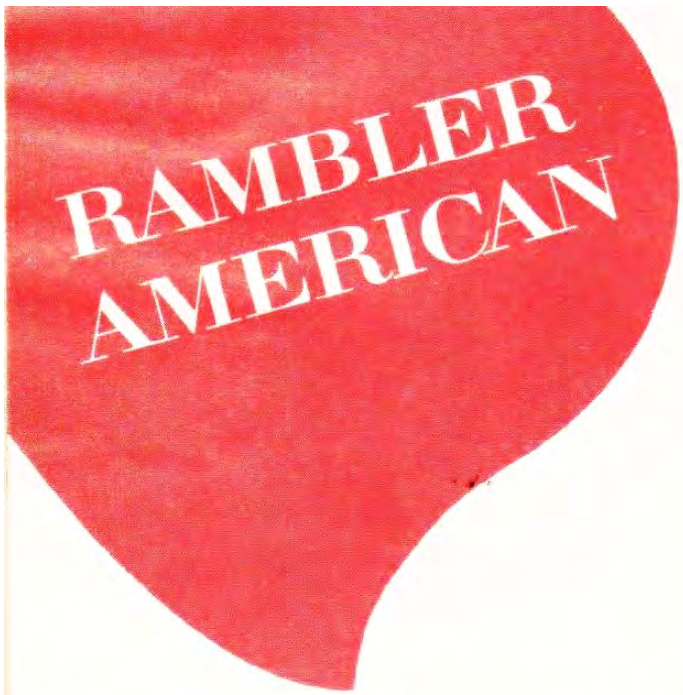
Wash car frequently to reduce accelerated corrosion underneath caused by ice-removal agents.

TRAILERS — Should you contemplate hauling a utility or house trailer, it is advisable that you follow our instructions covering rear axle tire load limits, springs, hitch specifications, etc. To obtain this information, write to American Motors Corporation, Service Department, 14250 Plymouth Road, Detroit 32, Michigan..



Maintenance

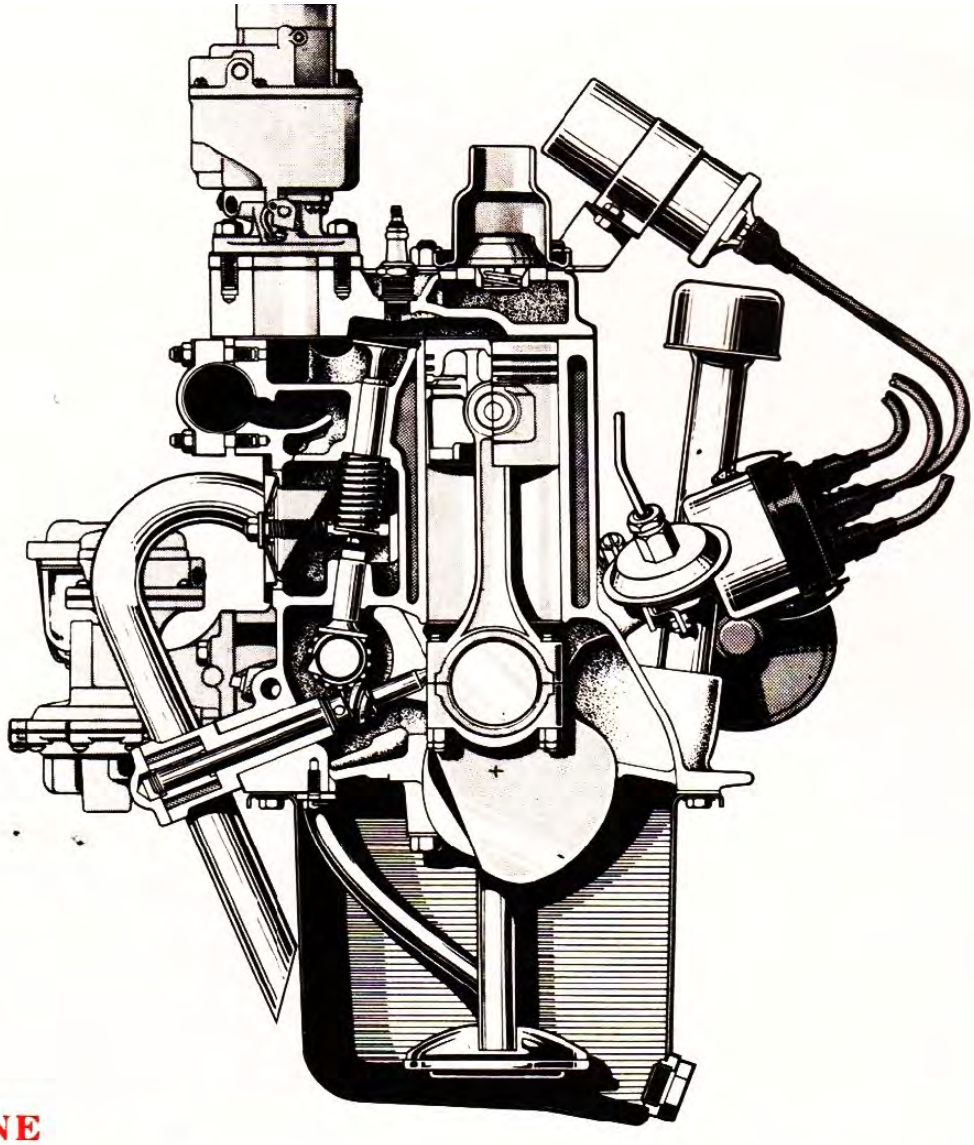
- engine
- cooling
- electrical
- tune-up
- carburetion
- clutch
- transmission
- shifting
- brakes, wheels, and tires
- rear axle and suspension
- front suspension
- weather eye
- body



Your new car is designed to be easily serviced and maintained in like-new condition. A few maintenance operations will forestall more extensive repairs later. Such operations involve routine lubrication, periodic adjustments and checks of the car's major components. Your car will give better service at lower cost and with greater satisfaction if these operations receive proper attention.

Do It Yourself — The present day trend of do-it-yourself, indicating pride of ownership and the natural desire to practice economy in every-day requirements, has led us to offer valuable maintenance assistance to you as a new Rambler American owner. The information contained in the maintenance section of this book will aid you in performing normal maintenance on your car to keep it in peak operating condition. This will reflect not only in operational economy, but the fact that you did it yourself.

Of course, you will find some maintenance and repair operations that require special tools and mechanical training that are over and beyond the scope of the do-it-yourself approach. Therefore, you will find your authorized American Motors dealers are staffed with experienced mechanics who know your car thoroughly. In addition, these dealers are equipped with the special tools and instruments which make repairs and service at this level efficient and sure at lowest over-all cost to the owner. We, therefore, suggest that you patronize your American Motors dealer regularly for the factory recommended preventive maintenance service so that you will be assured of the most efficient operation of your new car.



ENGINE

Description — The powerplant in your Rambler American is a 90 H.P., six cylinder, four stroke cycle, L-head, internal combustion engine.

A counter-balanced 120° crankshaft is supported by four main bearings. Replaceable type bearing inserts are used at the main and connecting rod locations.

Three-ring aluminum alloy pistons are used with a semi-floating locked piston pin.

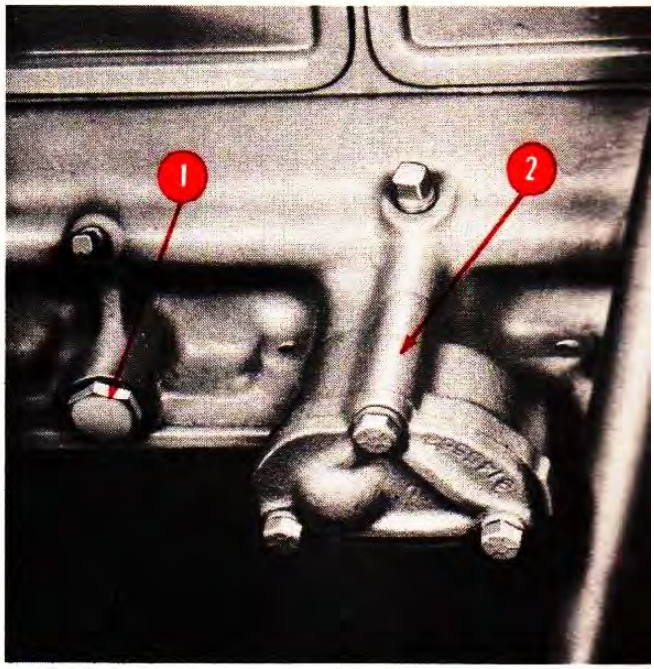
The positive type lubrication system with oil pressure and circulation is brought about through the use of a gear type engine-driven oil pump. Oil is drawn into the oil pump sump from the oil pan through an inlet screen assembly. The pump then charges a main oil pressure gallery in the right hand side of the cylinder block extending the full length of the engine and plugged at each end.

At each of the four crankshaft main bearing locations, the cylinder block has a web or partition to house the main bearings for the crankshaft and camshaft. Rifle-drilled holes through the main

oil pressure gallery into the main bearing webs to the main bearing locations provide lubrication for both crankshaft and camshaft. Oil under pressure enters the main bearings and through holes drilled in the crankshaft from main bearing journals to crankpins where the connecting rod bearings receive their lubrication. Squirt holes are drilled in the upper sections of the connecting rod bearing caps to provide low-speed lubrication to the cylinder walls. At higher speed, splash oil from the sides of the connecting rod bearings takes care of cylinder wall lubrication.

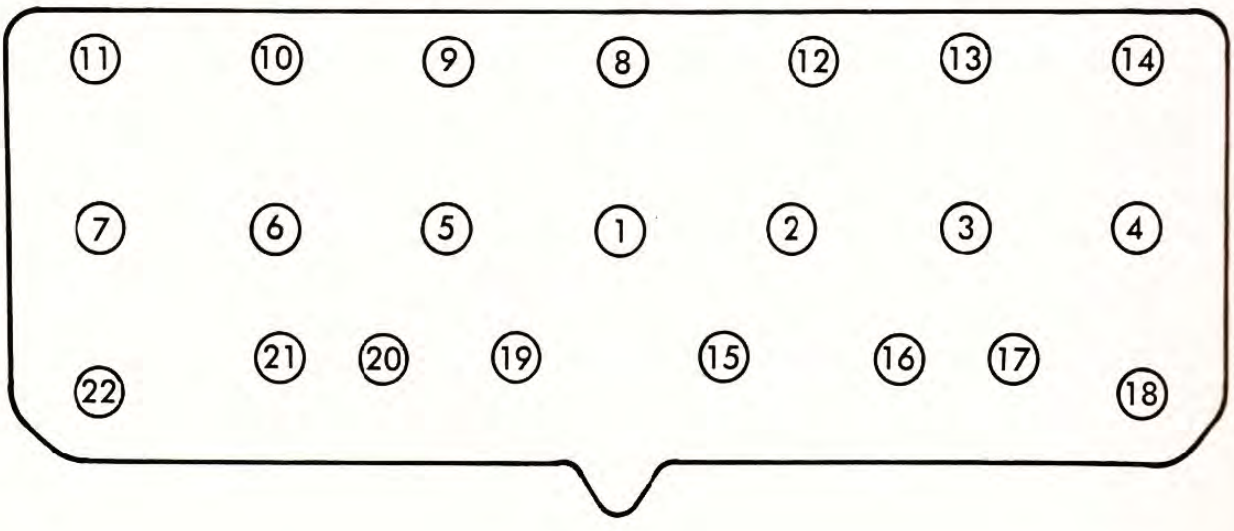
An oil pressure regulator valve is located on the right side of the engine in the main oil pressure gallery to the rear of the oil pump location.

The oil pressure regulator valve consists of a plunger, a calibrated spring, and a retaining cap. The end of the plunger protrudes into an opening into the main oil pressure gallery where oil pressure is exerted upon it from the oil pump. As the oil pressure forces the plunger to compress the spring, a port is uncovered to return or bleed oil back to the oil pan. This action takes place at an oil pressure of 50-58 P.S.I. to insure adequate system operating pressure.



1 Oil Pressure Regulator Valve
2 Oil Pump

Occasionally, very low oil pressure is due to the regulating valve plunger sticking in the open position. High oil pressure can sometimes be traced to plunger sticking in closed position. Access to the plunger and spring assembly is gained by the removal of cap.



Cylinder Head Torque — Proper tightening of the cylinder head is necessary to insure correct stress and to maintain a seal between combustion pressures and the cooling system. This operation is particularly important in seasonal tune-up preparations such as spring and fall.

The cylinder head stud nuts are tightened 57 to 60 foot pounds with a torque wrench in a specified sequence and with the engine at operating temperature.

COOLING SYSTEM

The cooling system capacity is 12 quarts (11 quarts without Weather Eye heater). To maintain efficient cooling system operation, the system should be drained and flushed at least every spring and fall. When refilling the radiator with water, a good rust inhibitor should always be added to the coolant. Most brands of anti-freeze, including American Motors Anti-Freezes, have anti-rust qualities and should be used when preparing your Rambler American for winter operation.

To insure proper cooling system operation, the following inspection and maintenance should be performed to the system's component parts.

The Water Pump — A non-adjustable factory packed seal type water pump is mounted on the upper front of the engine. It should be inspected visually for leaks at the gasket area and, since it is factory-lubricated and sealed, no further lubrication is necessary.

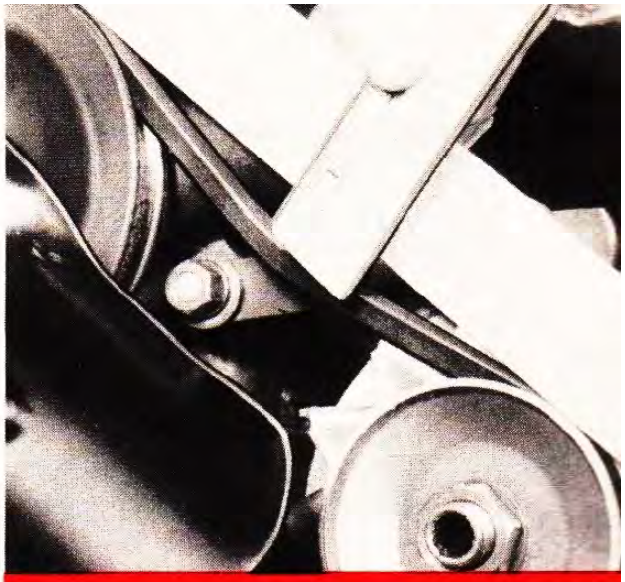
Fan Belt Adjustment — For the water pump to operate satisfactorily, proper fan belt tension must be maintained. Too much tension will cause excessive wear on the fan and generator bearings. Too little tension will allow the belt to slip and reduce the efficiency of the water pump and generator.

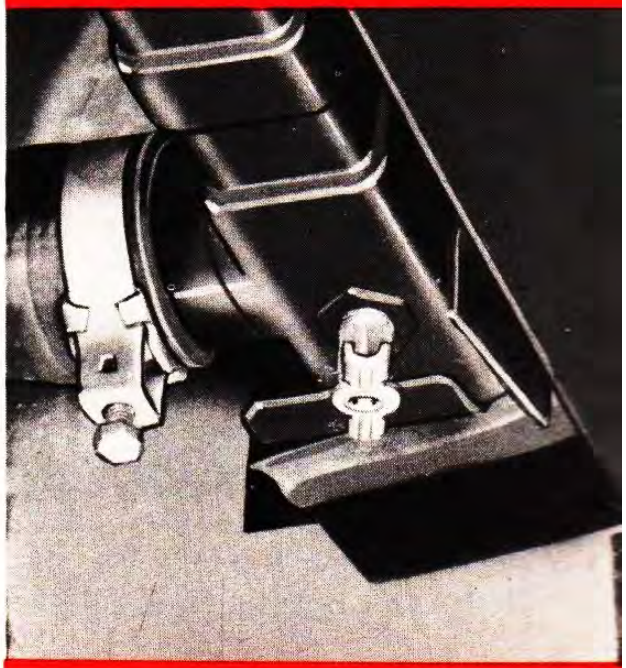


The fan belt is adjusted by moving the generator on its bracket to obtain a deflection of approximately ½" inward at a point midway between the water pump and generator pulleys.

Radiator — Keep the radiator clean and free of all obstructions, such as leaves and bugs at the frontal area. Any such obstructions will reduce the air flow through the radiator core and reduce its cooling efficiency. It should also be inspected frequently for leaks. Minor leaks can be eliminated by using American Motors Sealer-Lubricant following directions as outlined on the container. For major repairs to the cooling system, consult your authorized American Motors Service Station. The radiator drain cock is located at the lower left hand corner of the radiator. The engine drain is located on the lower left side of the block.

Thermostat — The thermostat is located on the front of the cylinder head. Its function is to restrict the coolant flow during engine warm-up and thereby shorten the warm-up period. Since the engine operates most efficiently when hot (normal operating temperature), it is only practical to bring it up to that temperature as quickly as possible. The thermostat also helps to maintain normal operating temperature by allowing the coolant to circulate and cool when engine temperature begins to rise above normal. It also restricts coolant flow when engine temperature drops below normal.





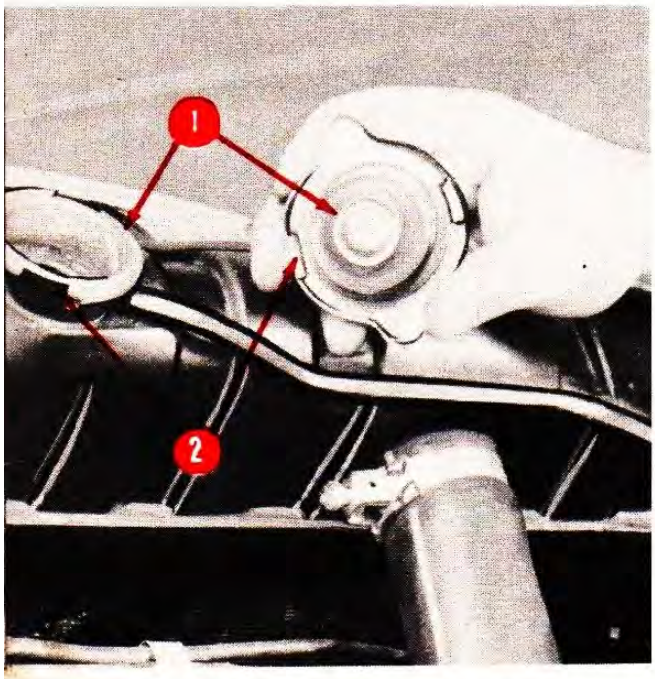


A 180° F. thermostat is installed in your Rambler American. During the cold months, permanent type anti-freeze is installed in all production units. The same type, American Motors All Winter Anti-freeze may be purchased at your selling dealer's parts department.

This higher rated thermostat will provide more heat for the Weather Eye unit as well as reduce sludge and corrosion in the engine. When using alcohol or methanol type anti-freeze, a lower rated 150° F. thermostat should be used to prevent this low boiling point solution from boiling out.

The thermostat should be checked at least twice a year at time of cooling system draining and flushing. To test a thermostat for proper operation, suspend it in a pan of water with a thermometer. Heat the water and note the temperature at which the thermostat begins to open. This should be within 10° F. of the thermostat rating, or the thermostat should be replaced.

Radiator and Heater Hoses — All hoses should be examined for cracks and leaks. Hoses will harden and crack allowing coolant to leak out of the system or air to leak in. Often the outer surfaces may appear to be satisfactory, yet the inside may be badly deteriorated. When in doubt about their condition, remove, inspect, and replace them. Before installing new radiator or heater hoses, thoroughly clean the metal tube connections. When servicing the cooling system, always check all hose clamps for tightness.



Radiator Cap — The radiator pressure cap provides 13 pound pressurizing of the cooling system which raises the normal atmospheric boiling temperature approximately 3° F. for every pound of pressure built up in the system. For this device to function properly, the cooling system must be air tight and free from coolant leaks. Inspect the pressure cap sealing surfaces and radiator filler neck 1 for nicks or breaks and make certain the locking mechanism 2 on the cap and radiator is not bent or worn.

CAUTION: *When removing the radiator cap while the engine is hot, first loosen cap to the first notch to reduce pressure before removing the cap.*

Seasonal Preparation of Cooling System — The cooling system seasonal tune-up is as important as is done on the engine, ignition, and carburetor. The spring and fall tune-up should include an inspection of the cooling system. The operations performed are necessary and beneficial to performance, efficiency, and economy.

Perform a visual inspection of the cooling system for leaks and general condition of the radiator, hoses, hose clamps, fan belt, and water pump.

The cooling system is drained at the lower left hand side of the radiator. Flush the system thoroughly. If necessary, use a cleaning solution such as American Motors Radiator Kleen, following the instructions outlined on the container. For best results, remove the thermostat prior to flushing. With the engine running at idle speed, drain cock open, fill the radiator with clean water until signs of discoloration disappear in the water draining at the bottom of the radiator.

With the cooling system drained, perform the necessary maintenance determined by the visual inspection.

For winter operation in colder regions, replace the thermostat with one suitable to the type of anti-freeze to be used (Refer to Thermostat Section).

Tighten radiator drain cock and fill cooling system with the required amount of anti-freeze to give the necessary protection. (See Protection Chart.) Top the radiator off with water to about 2″ below the radiator filler neck.

Start and run the engine until it reaches normal operation temperature. Keep the radiator cap off and the Weather Eye valve open to rid the system of any pockets of trapped air. After approximately 10 minutes of running, top off with water and replace the radiator cap.

The cylinder head stud nuts should now be properly tightened to the torque specifications as outlined in the Engine Section, Page 23.

CAUTION: *Never add large amounts of cold water or anti-freeze to a hot engine. Serious damage can result. Small amounts of water may be added to top off the radiator while the engine is running.*

The Tune-Up Section on Page 38 has additional information regarding seasonal maintenance.

The protection chart lists the protection for American Motors brand anti-freezes available at Authorized American Motors Service Stations.

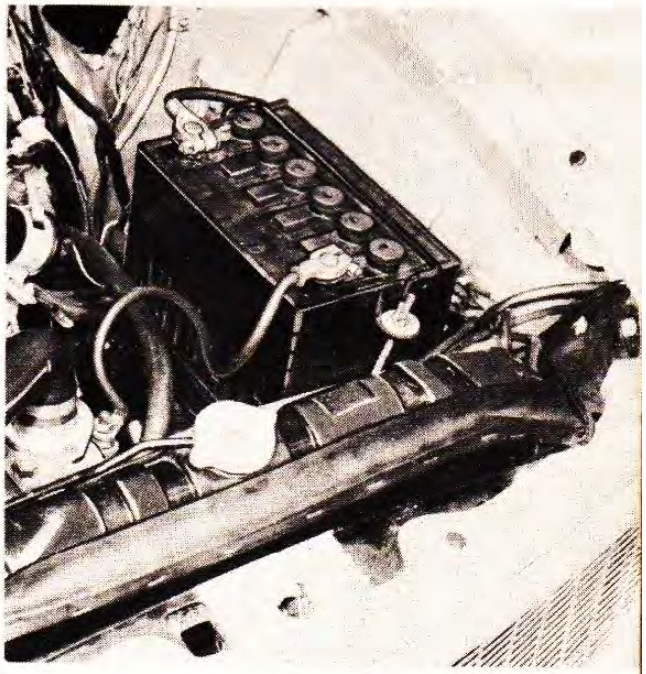
Type	Quarts of Anti-Freeze Required for Protection to Temperatures °F. Shown Below					
	2	3	4	5	6	7
All Winter (Permanent Type)	+19°	+10°	0°	−15°	−34°	−57°
Methanol	+16°	+ 4°	−11°	−30°	−48°	

ELECTRICAL

Your Authorized American Motors Dealer has factory trained personnel and the proper type technical equipment to properly service the major components of your Rambler American electrical system. Consult him on any information you desire and should any problem arise in relation to the electrical system.

The electrical system and its components should be checked at least twice yearly to assure peak performance.

Battery Maintenance—The battery is located in the front left hand portion of the engine compartment where it is readily accessible for servicing. Engine starting and the operation of the various electrical components is dependent upon the condition of the battery. Inspect the battery regularly as prescribed in the maintenance chart and more frequently under extreme heat conditions.



Hydrometer Test — Your Authorized American Motors Dealer has the necessary equipment to make a check on the condition of your car's battery. Consult him at every 1,000 miles or monthly.

The state of charge of the battery is checked by means of a battery hydrometer. The specific gravity of the battery liquid will increase with the charging of the battery. Testing with a battery type hydrometer, the specific gravity can be read on the scale of the float.

Battery serviceable — 1.215 to 1.270 at 80° F.

Battery discharged — below 1.215 at 80° F.

Measure the specific gravity of the electrolyte in each battery cell. Correct the specific gravity readings for temperature. (When the electrolyte temperature is above 80° F., add 4 points (.004) to the reading for each 10° above 80° F. When the electrolyte temperature is below 80° F., subtract 4 points for each 10° below 80°, F.) If the specific gravity is less than 1.215 at 80° F., recharge the battery. If the specific gravity is above 1.215 but the variation between cells is more than 25 points (.025), it is an indication of shorted cells, acid loss, or a worn-out battery, and the unit should be removed from the car for further checking to determine whether or not it should be replaced.

Voltage Test — In addition, a voltmeter test can be made to further check the condition of the individual battery cells to insure that the battery is in good operating condition and able to supply the necessary current. The voltage of each cell should read 2.0 volts under no-load conditions. A reading of 1.5 volts while taking a reading (10-15 seconds) would indicate that perhaps the cell is discharged or defective.

Servicing of Battery—Liquid level in the battery should be checked every month or 1,000 miles. In extremely hot weather, check more frequently. If the liquid level is found to be low, water should be added to each cell until the liquid level rises to the bottom of the vent well. DO NOT OVERFILL! Distilled water or water passed through a "demineralizer" should be used for this purpose in order to eliminate the possibility of harmful impurities being added to the electrolyte. Never add acid unless some has been spilled from the battery. Check the specific gravity afterward and compensate accordingly.

An addition of water, particularly in cold weather, should be made just before operating the car above charging speed. This insures mixture of water with the acid.

The external condition of the battery and the battery cables should be checked periodically. The top of the battery should be kept clean and the battery hold-down bolts should be kept properly tightened. Particular care should be taken to see that the top of the 12-volt battery is kept clean of acid film and dirt because of the high voltage between the battery terminals. For best results when cleaning batteries, wash first with a dilute ammonia or baking soda solution to neutralize any acid present and then flush off with clean water. Care must be taken to keep vent plugs tight so that the neutralizing solution does not enter the cell. The hold-down bolts should be kept tight enough to prevent the battery from shaking in its holder so as not to damage the battery case, but they should not be tightened to the point where the battery case will be placed under a severe strain.

To insure good contact, the battery cables should be tight on the battery posts and on the starter terminal and also the point where the ground cable attaches. If the battery posts or cable terminals are corroded, the cables should be disconnected and the terminals and clamps cleaned separately with a soda solution and a wire brush. After cleaning, apply a thin coating of petrolatum on the posts and the cable clamps to retard corrosion.

CHARGING CIRCUIT

The charging circuit consists of the generator, battery, no-charge indicator, and voltage-current regulator, plus the connecting wiring.

The purpose of this circuit is to maintain the battery in a serviceable state of charge. In addition, it supplements the battery in carrying the auxiliary electrical circuit loads.

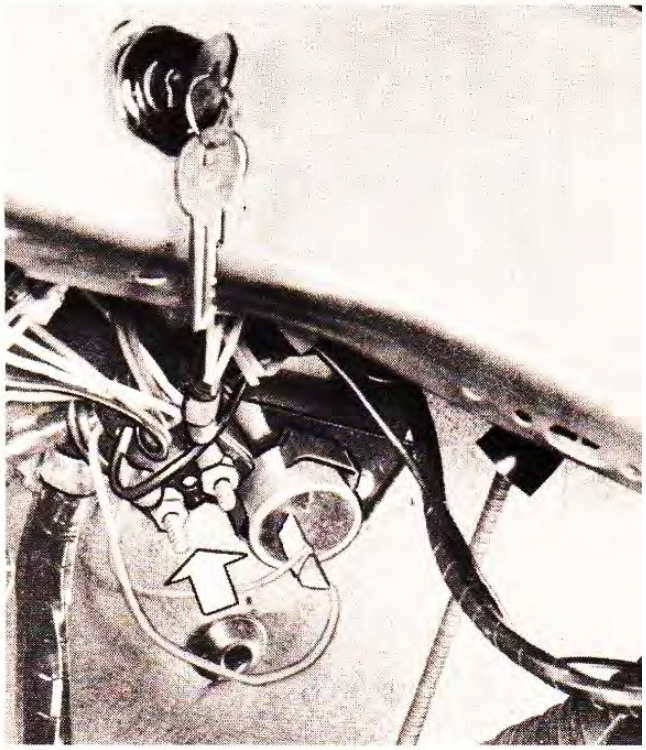
No-Charge Warning Light — The NO-CHARGE amber warning light in the instrument cluster is the "watch dog" of the charging circuit. The light will glow when the ignition switch is turned on. This indicates that current has begun to flow through the ignition system from the battery. The light will go out as the engine is started and the engine R.P.M. increased. This signifies that the charging circuit is in operation and that the battery is not discharging as when only the key was on.

The light may flicker on and off under certain idling conditions. Should the light remain on steadily after the engine R.P.M. is substantially increased, the car should be taken to an Authorized American Motors Dealer to determine the cause. Driving any distance with this condition would discharge the battery.

Have your dealer inspect this circuit at least twice yearly.

Fuse and Circuit Breaker Locations — The main lighting circuits are protected by two circuit breakers of a bi-metal type housed internally in the light switch assembly. A short circuit in the headlamps, tail lights, instrument lights, or parking lights will cause a circuit breaker to give intermittent operation of the circuit concerned. When this occurs, the car should be immediately checked and the faulty circuit corrected. Normally, the circuit breakers are long lasting. To replace them, a new light switch assembly is installed.

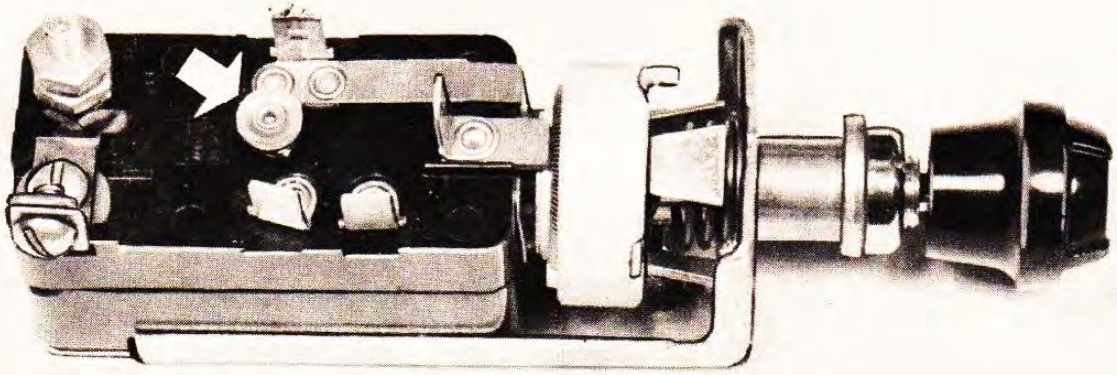
The ignition switch energized circuits, mainly the brake light and directional signal circuits are protected by a circuit breaker located on the dash panel cowl adjacent to the flasher for directional signals.



Headlight Switch Removal — To remove the light switch assembly, first disconnect the battery.

NOTE: *Always do this if working on electrical units.*

Depress switch button to release knob and shaft. Remove slotted nut and switch will be free to pull out from rear of dash panel. Identify wire location on switch before disconnecting as aid when new switch is being installed.

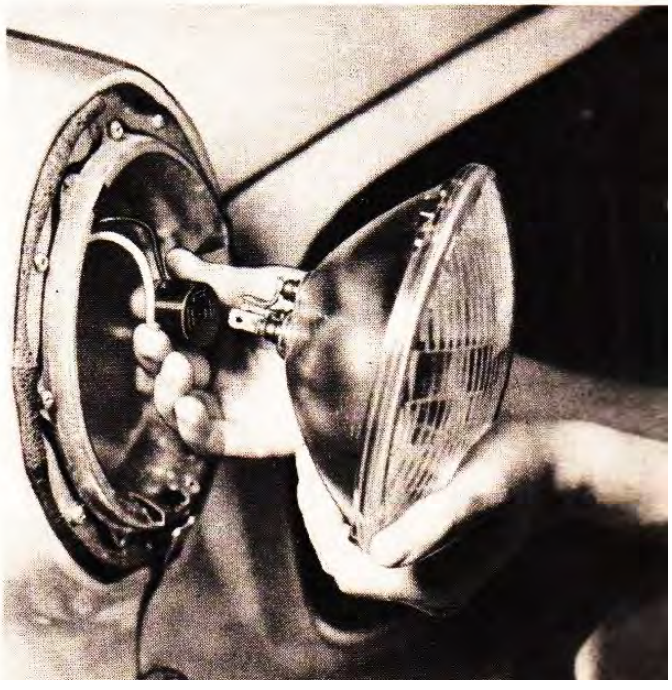


Headlight Lamp Unit — Sealed type elements are used for the headlight upper and lower lighting circuits. The units may be replaced without disturbing the aiming of the light units.

The door or trim ring is removed first. It is retained by one lower screw and hooked at the top section. The ring is tilted outward and upward after the screw is removed.

Three screws in key-hole type slots are loosened and the ring is turned till large openings permit screw heads to slip through. Remove the lamp unit retaining ring. This frees the lamp unit.

The lamp unit is plugged into a female plug to connect its upper and lower beam circuits. Merely unplug the old unit and plug in new units.



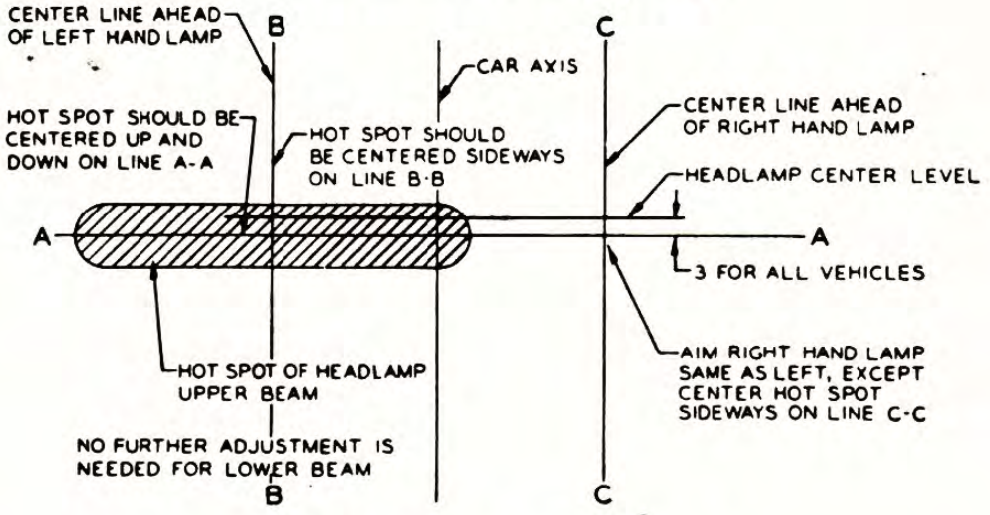
Headlight Aiming — To obtain maximum results in road illumination and the safety that has been built into the headlighting equipment, the headlamp beams must be properly aimed.

Adjustment of beam direction must be made to agree with existing state regulations. It would be wise to check into the regulations in your particular locality.

Remove the headlamp door for access to the two adjustment screws on each sealed beam, one at the top and the other on the side of the lamp.

Select a level floor to make this adjustment; no one should be in the car. Use the side of the house or the garage door, and if not light colored, use a vertical light colored screen 25 feet ahead of the car.

"SEALED BEAM" HEADLAMP
AIMING INSTRUCTIONS



AIM UPPER BEAM OF LEFT HEADLAMP

Draw a horizontal line on the wall or screen two inches (three inches if required by local state law) below the headlamp center level, and draw a vertical line directly ahead of each lamp. Add a vertical line, midway between the headlamps, this may be located by sighting through the center of the rear window and over the center of the hood.

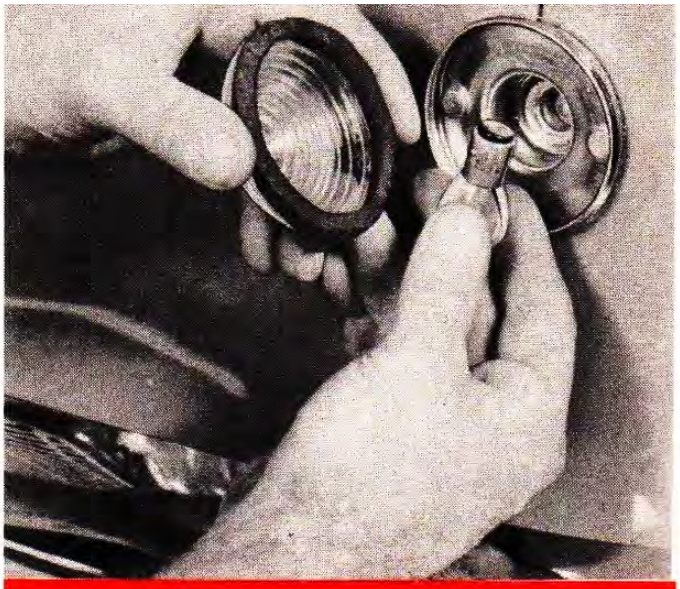
With headlights on high beam, cover one lamp, and adjust the other lamp by centering the hot spot of the high beam.

Repeat this operation for the second lamp. No further adjustment is needed for the lower beam.

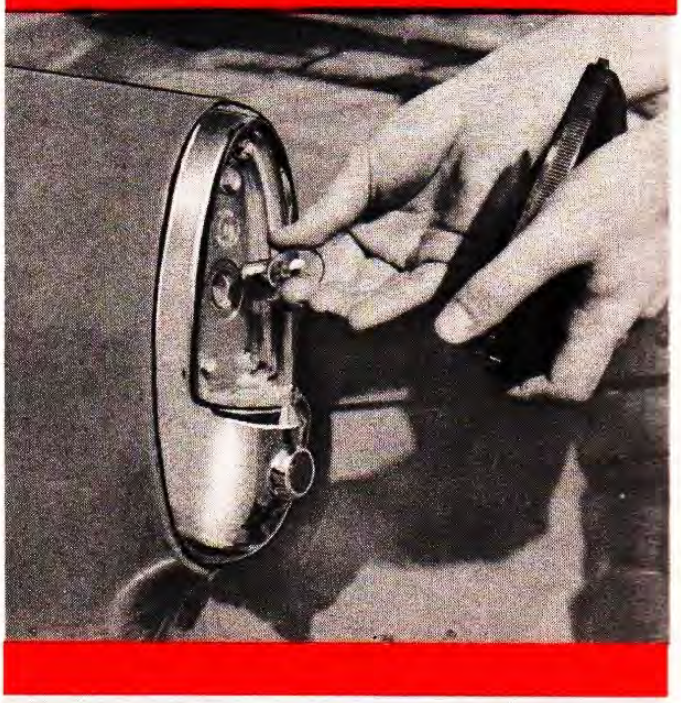
NOTE: *If your state requires a loading allowance, draw the horizontal line below the level line by the amount required in your particular state.*

Front Parking and Directional Light Bulb Replacement — The front parking and directional light bulbs are housed in the fender below the headlight units.

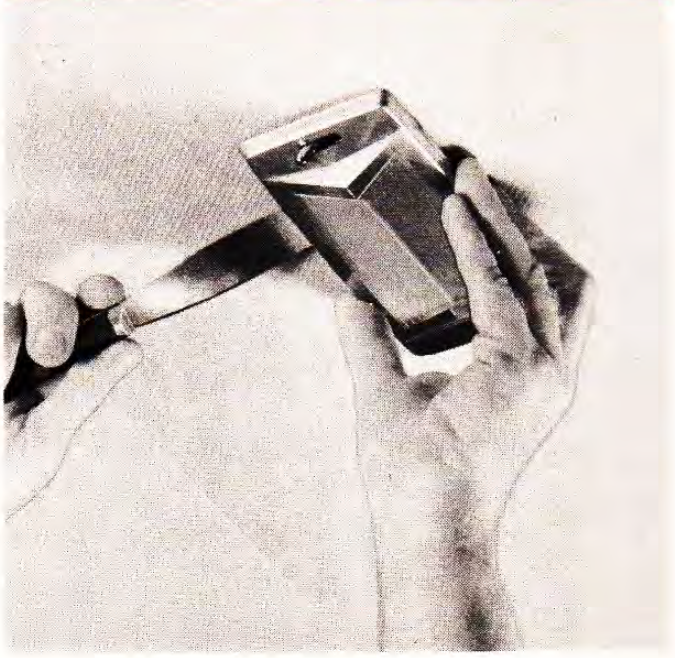
To replace a bulb, it is necessary to pry the retaining snap ring from its groove; then remove the lens and bulb.



Tail, Stop, and Directional Light Bulb Replacement — The rear tail, stop, and directional light bulbs can be replaced after removing the lens assembly which is retained by three attaching screws.

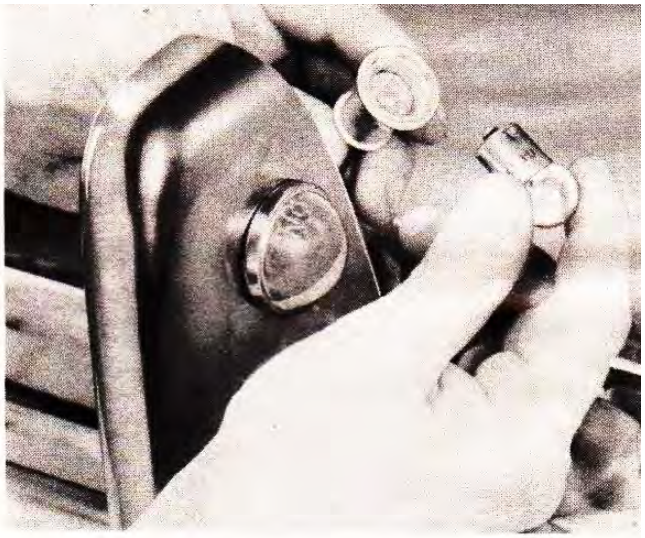


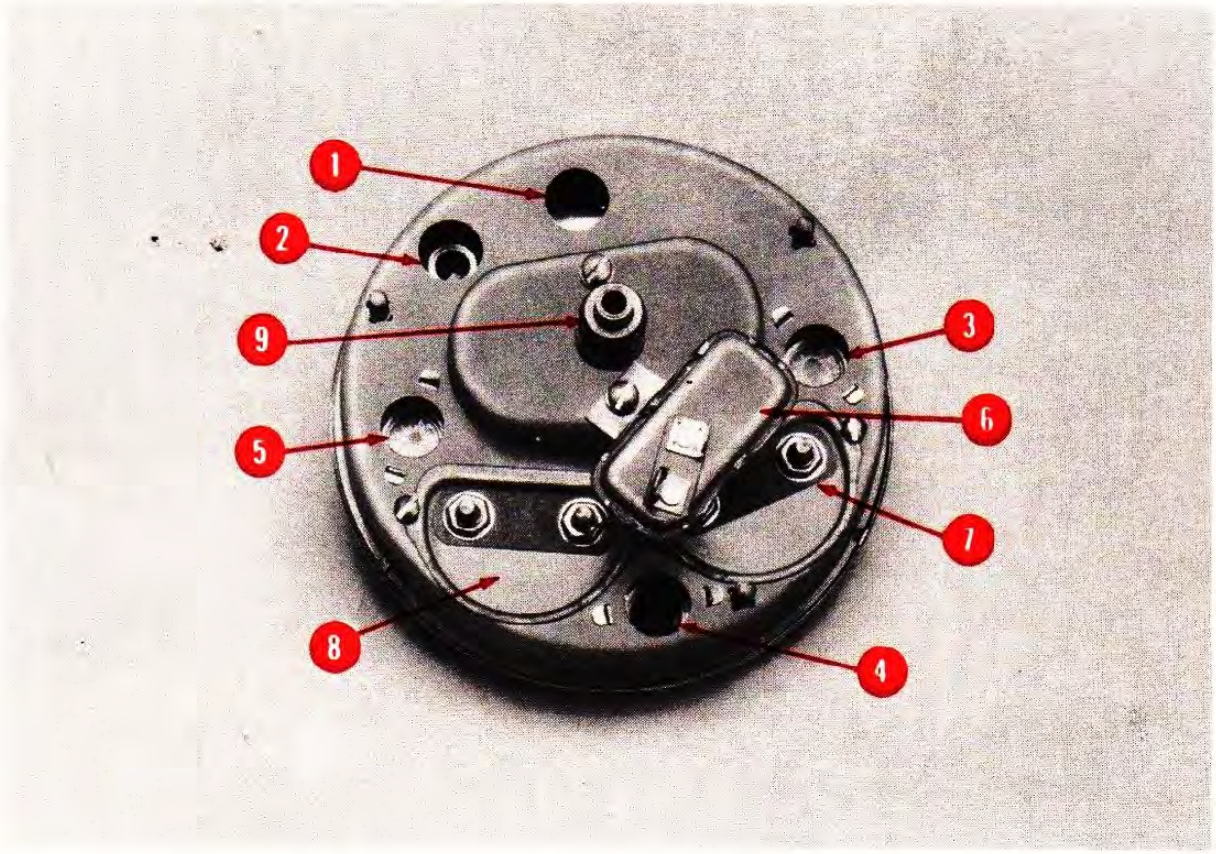
Dome Light Bulb Replacement— The dome light bulb can be replaced after the removal of lens assembly. A wide putty knife is recommended so that the right pry pressure be applied to the lens and retainer assembly.



License Light Bulb Replacement — The license bulbs are located in bulb socket housings which snap into holes provided in hollow areas formed in the rear bumper vertical bars.

To replace a bulb, pull the bulb socket out of its retainer. Then remove and replace bulb.



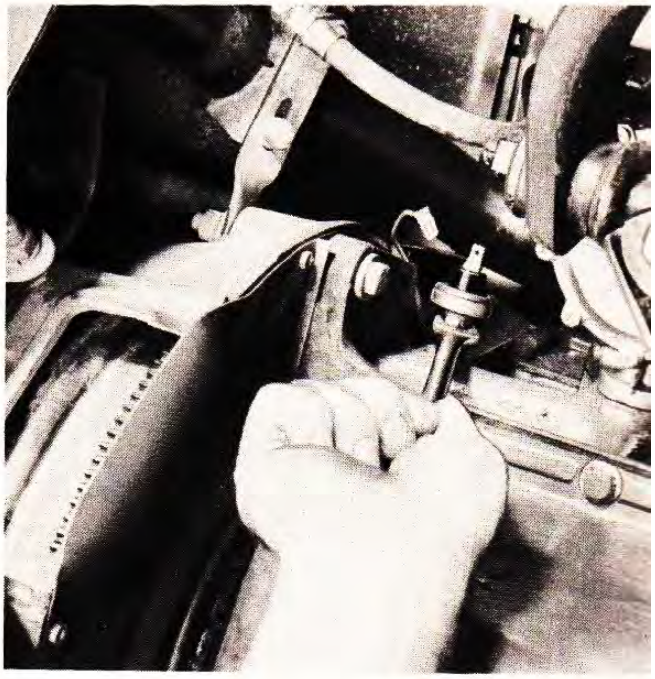


1. Instrument Illumination Light Bulb
2. Upper Beam Indicator Light Bulb
3. Generator No-Charge Indicator Light
4. Directional Signal Indicator Light Bulb
5. Low Oil Pressure Warning Light Bulb
6. Fuel and Temperature Indicator Voltage Regulator
7. Cylinder Temperature Indicator
8. Fuel Level Indicator
9. Speedometer Cable Attaching Adapter

Instrument Cluster Light Bulb Replacement — The bulbs to illuminate the various signal lights and indicators can be changed from the rear of the dash panel after unsnapping (by pulling rearward) their respective bulb sockets.

Oil Pressure Sending Switch — The oil pressure sending switch is located on the right side of the engine cylinder block to the rear of the fuel pump. A diaphragm oil pressure actuated type switch which contains a set of electrical contacts that are closed at low pressure (4-6 P.S.I.) and opened at higher pressures. When the contacts are closed, the circuit to the indicator light in the cluster is completed to ground and the light goes on.

The Low Press warning light on the instrument cluster glows amber if the engine oil pressure is too low. Normally the light goes on when the ignition switch is turned on. After the engine is started, the light should go out. Stop the engine and check the engine oil level if the light continues to glow after the engine starts. Add oil if required. Then if the light still remains on after again starting the engine, stop the engine immediately. Determine the cause before restarting the engine again. The light may flicker on and off after a sudden stop. There is no cause for concern should this occur unless the light remains on.



The switch is screwed into the main oil pressure gallery of the engine. Upon installation, the threads should be coated with a thread sealing material.

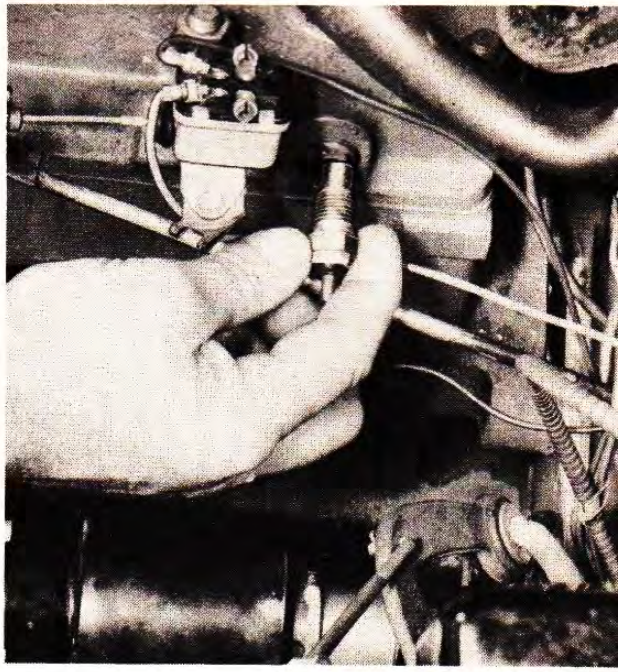
Cylinder Head Temperature Sending Unit — The cylinder head temperature sending unit varies the resistance in the temperature indicator in the instrument cluster giving a range of readings commensurate with cooling system operating temperatures.

Trouble in the cooling system temperature electrical circuit is caused by one or more of the following conditions:

1. Wiring (Open or Shorted to Ground)
2. Instrument Cluster Temperature Unit (Open or Grounded)
3. Sending Unit (Open or Grounded)

4. Instrument Cluster Voltage Regulator
(Open or Contacts Burned Closed or Grounded)

In correcting trouble in this circuit, removal, replacement, or substitution of any or all the units may be attempted.



The cylinder head temperature sending unit is screwed into an adapter at the left rear of the cylinder head.

When installing a new unit, use a thread sealer.

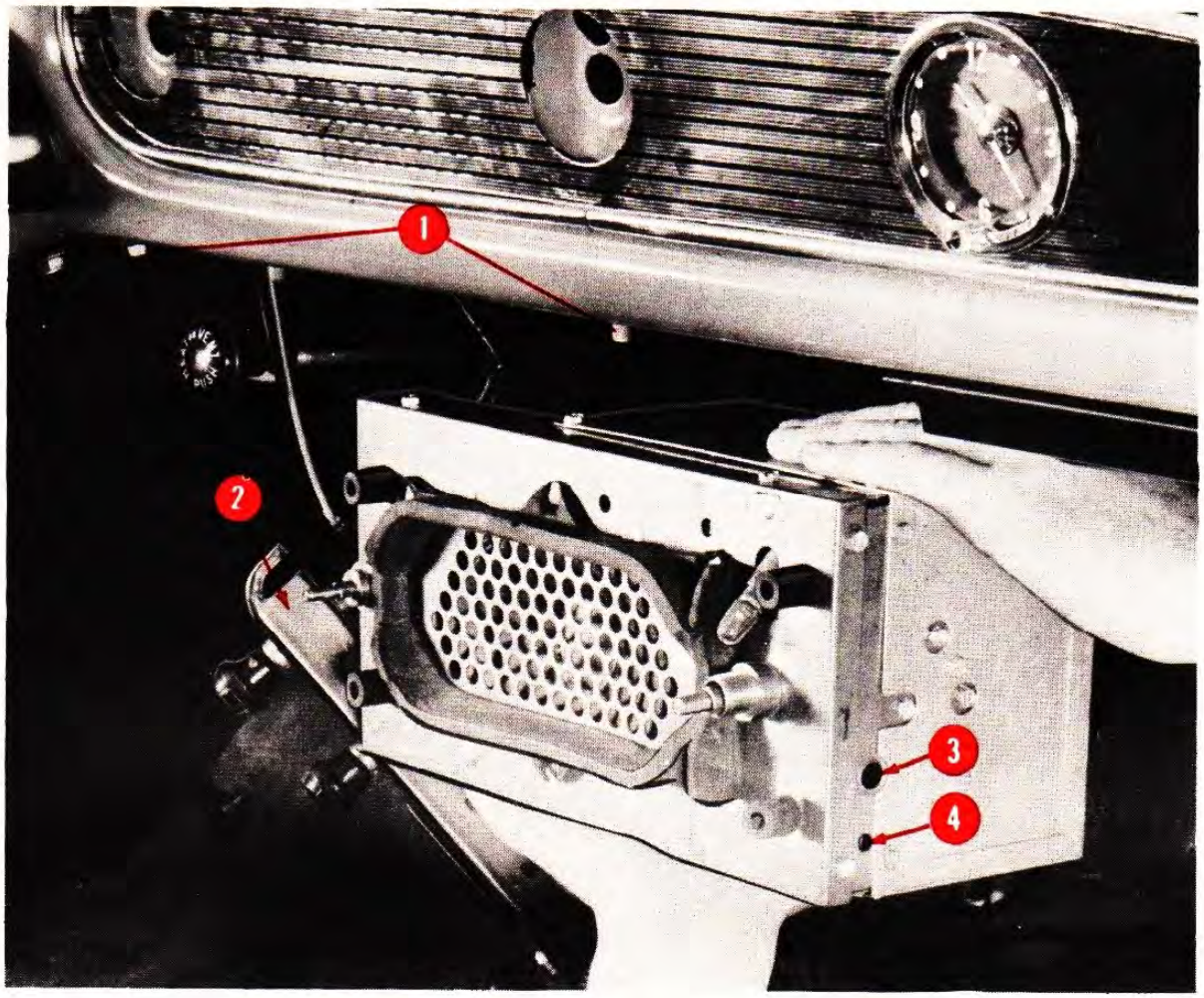
Brake Light Hydraulic Switch — When the brake light circuit is inoperative and hydraulic switch failure is suspected, the switch can be changed without permitting air to enter the system.



Use a thread sealer when the new switch is installed. Be sure no movement of the brake pedal occurs while the switch is removed. If air were to enter the system, bleeding of the brakes would be necessary.

Radio Removal — The radio receiver may be removed for repair at a radio repair shop.

Disconnect the battery. Pull straight outward on the radio knobs exposing the two retaining nuts. From below the dash, remove the two nuts, lockwashers, and flat washers that hold the dash control panel to the lower edge of the dash panel.



Remove the two retaining nuts on the radio exposed after removing the knobs.

Disconnect the fuse receptacle in the power lead. Unplug the antenna lead on the right side lower front. Draw radio rearward and tilt downward from dash panel.

1. Dash Controls Panel Retaining Studs
2. Dash Controls Panel
3. Antenna Receptacle
4. Antenna Trimmer Capacitor Adjustment

After radio has been reinstalled, extend the antenna full length and park the car in an open area away from buildings, power lines, street car tracks, and anything that might create interference.

Select a station near the high end of the frequencies between 1400 and 1600 kilocycles. Adjust antenna trimmer screw for maximum reception.

BULB CHART

Trade Number and Candle Power	American Motors Part Number	Location
57, 2 C.P.	G127934	Instrument Illumination Headlamp Beam Indicator Clock Directional Signal Indicator Generator Charge Indicator Oil Pressure Signal
53, 1 C.P.	131282	Gear Selector Indicator
67, 3 C.P.	G142450	License
1003, 15 C.P.	G455490	Dome Light
1034, 32 & 4 C.P.	G454645	Tail, Stop, Park, and Directional
5400S, 50 & 40 W	3200410	Headlight Sealed Unit
1073, 32 C.P.	G454646	Back-up Light (Optional)

CIRCUIT BREAKER AND FUSE CHART

Circuit	Protection	Location
Headlight Tail Light Instrument Lights Parking Lights Dome Light Clock (If so equipped)	Circuit Breaker (12 and 18 Amp.)	Light Switch
Directional Signal Switch Brake Light Switch Ignition Switch	Circuit Breaker (30 Amp.)	Dash Panel Adjacent to Flasher for Directional Signal
Overdrive Relay	Fuse (15 Amps.)	Relay Dash Panel Under Hood
Radio	Fuse (5 Amps.)	In Line Fuse

TUNE-UP

Seasonal maintenance involves proper preparation of the various systems of the car for the varied types of weather conditions to be encountered. Spring and fall are generally considered the basic time intervals or periods for seasonal maintenance.

This periodic seasonal maintenance can be classified as a "tune-up." The systems are to be placed in peak performing condition to assure the dividends of economy of operation, longevity of working parts, and the prevention of possible failures or breakdowns.

Generally, the engine and its allied components, the electrical system, ignition, carburetion, and cooling systems, are included when a tune-up is performed. Actually, a tune-up consists of adjustments due to normal wear of parts or the wear-in of these parts.

This handbook contains valuable tune-up tips on the Cooling System, Carburetion, and Electrical Sections which are helpful when performing seasonal tune-up maintenance.

The following contains operations on engine and ignition tune-up which will be of benefit to you in maintaining them in peak performing condition.

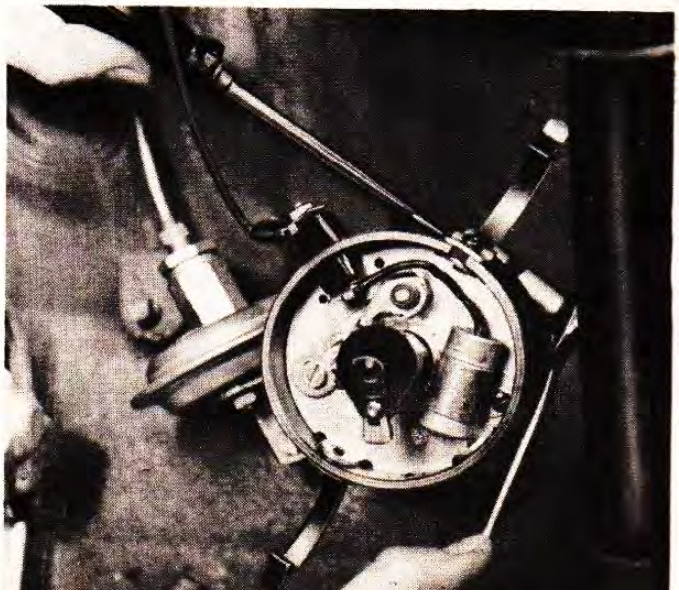
There are several major operations that require special equipment — these should be performed by your Authorized American Motors Dealer.

Normally, engine tune-up covers three phases concerned with engine operation:

Ignition Compression Carburetion

Ignition: When the distributor contacts have quite a large build-up through transfer of material from one contact to the other or if burned, rough, or pitted, they should be replaced. The distributor cap should be clean and dry to avoid short circuits. To replace the distributor contact set, the distributor should be removed from the engine and the contact set replaced with the distributor held in a vise on a bench. The condenser is usually replaced at the same time.

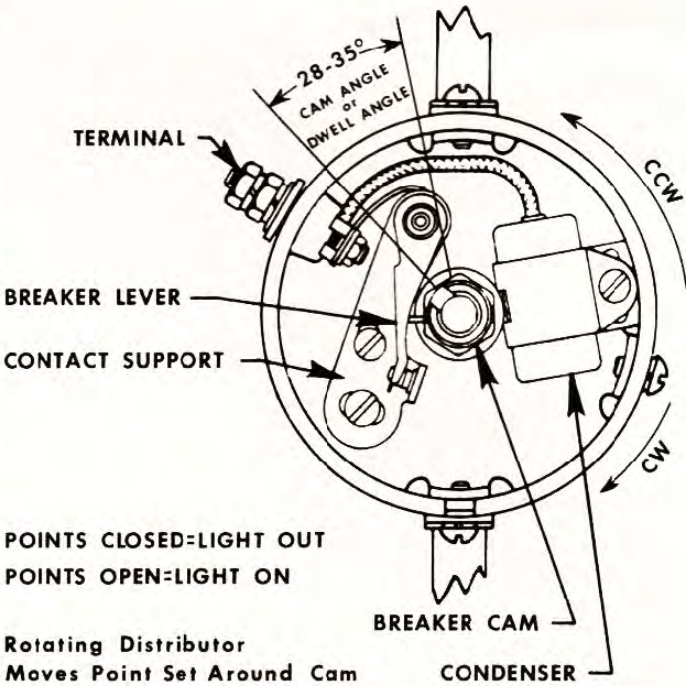
Distributor Service—Disconnect primary circuit wire from distributor primary terminal. Remove distributor cap from distributor and locate off to the side. Pull rotor from the upper end of distributor shaft. Use a screw driver and an open end wrench to loosen distributor vacuum advance bracket clamp.



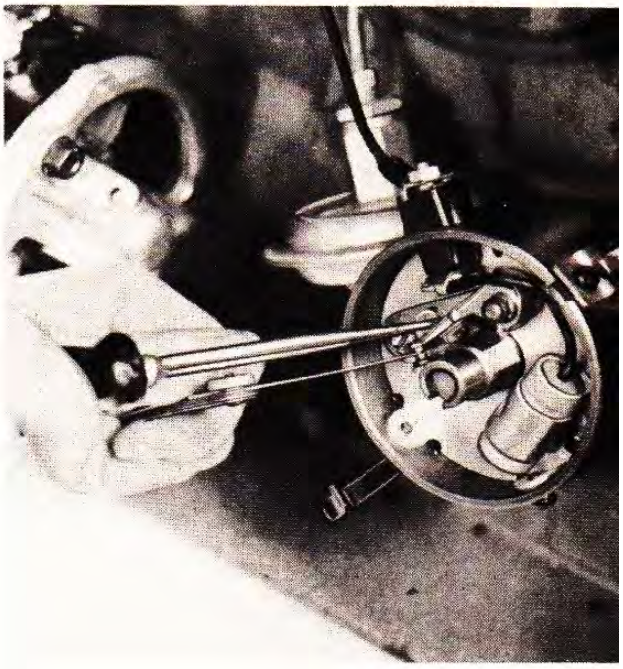
The distributor can now be pulled out of mesh with the oil pump drive tang and put in a vise for contact point and condenser replacement.

Loosen the small nut on the inside which holds condenser pigtail lead and spring for movable contact.

Remove the condenser pigtail lead and movable contact point spring. Slide this contact arm upward off of its pivot shaft. Remove the condenser clamp screw and the stationary contact retaining screw to free these units for replacement. Install the new contact assembly and condenser by reversing this procedure.



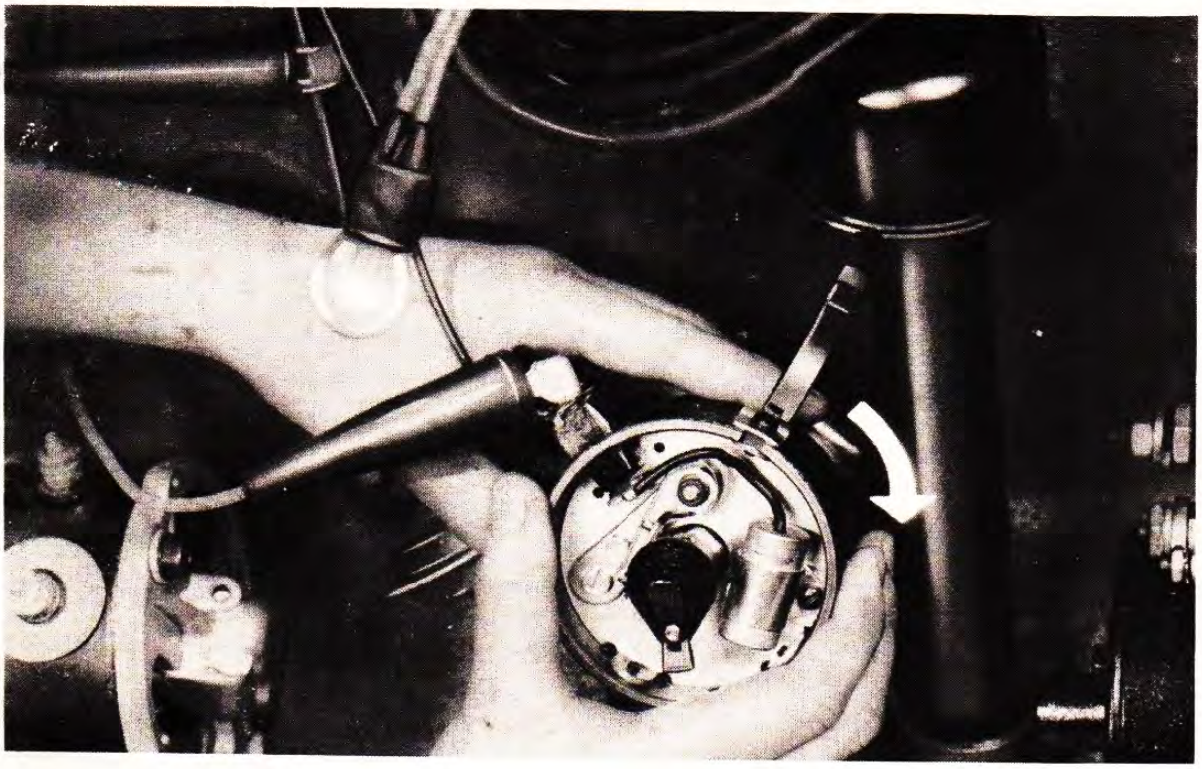
Before putting the distributor back onto the engine, adjust the point spacing to .016″. First bend the stationary point, as required, to align with movable point. Then rotate the distributor shaft till the movable point fibre follower is on one of the six high lobes of the rotating cam. In this position, loosen the stationary point retaining screw and with the eccentric screw adjacent to it, set the points for a slight drag on a .016″ feeler blade. This can also be done with distributor in the engine.



Ignition Timing — The distributor drive slot in the lower end of the shaft is offset from the center line and prevents the distributor from being put in the engine in all but one position. However, the distributor must be timed to the engine to insure proper ignition timing. The first step in timing the distributor to the engine is to position the number one cylinder piston in the firing position. This

can be done by removing number one spark plug and holding thumb on the hole; have someone crank the engine with the starter using small jab type applications till air pressure blast is felt on the thumb.

CAUTION: *Pull coil wire from coil tower.*



This indicates number one cylinder piston is moving upward on the compression stroke. With a wrench, crank the engine slowly to position the timing marks which are 3° B.T.D.C. in alignment as outlined in Valve Adjustment Section (Page 42). Then, with the 12-volt test light attached to the distributor primary terminal and ground, rotate the distributor in its mounting counterclockwise until the light is out. (If it isn't out already, ignition switch must be on.) Then clockwise until the light just goes on.

Lock the distributor in this position by tightening the clamp screw. Install the rotor. It should align with number one cylinder spark plug wire in the distributor cap with cap in place.

Spark Plugs — The spark plugs must be inspected and cleaned for easy starting and economical operation. Inspect the spark plug for cracked insulator and burned or pitted electrodes. The insulator should be clean and dry on the outside as well to avoid short circuits.

Symptoms of Spark Plug Condition —

Grey — *Good Carburetor Adjustment and Plug Performance*

Black — *Rich Carburetor Adjustment*

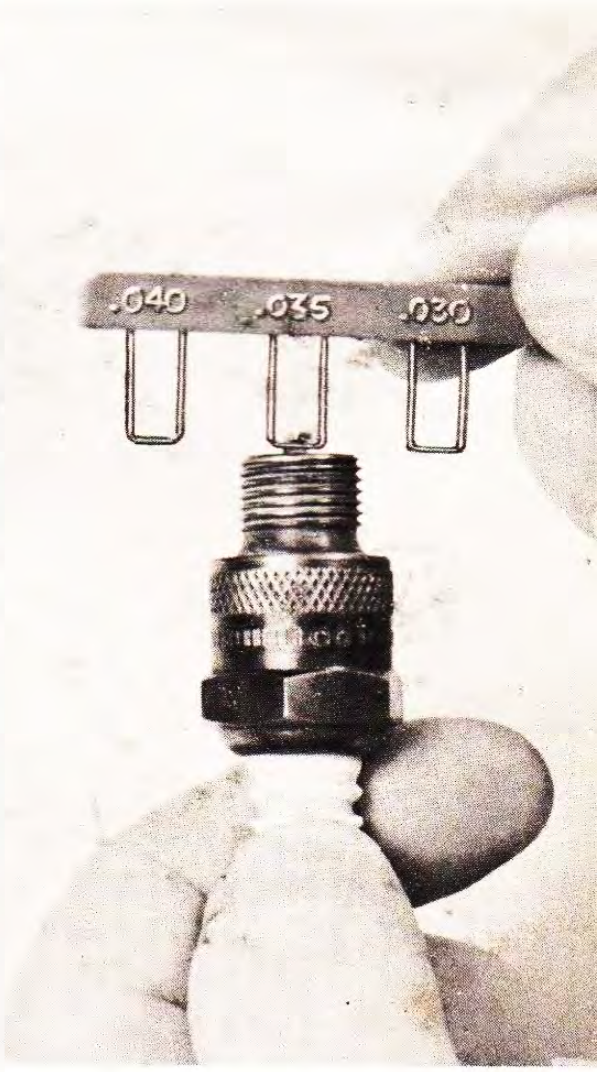
Light Grey or Chalky — *Lean Carburetor Adjustment*

Oily Black — *Plug Failure or Cylinder Wear*

The spark plugs can be cleaned and properly adjusted for gap. Sand blasting equipment or solvents are used to clean the carbon and oxide coatings from the spark plugs. After cleaning, file the spark gap electrodes square to each other. Adjust spark plug electrode gap from .033″ to .037″ with a wire type feeler gauge.

Install spark plugs using new gaskets. Use a torque wrench and apply 30 foot pounds torque. If a torque wrench is not available, use new gasket and seat spark plug finger tight and tighten ¾ turn further. This should assure a good seal.

If a visual inspection reveals that the spark plug wires require replacement, they can be replaced one at a time by comparing old wire lengths with the new wires in replacement set. To provide access to the wires, the coil can be detached from one side.



Compression:

Compression deals with the pressure sealed in the combustion chambers of the cylinders before ignition takes place. The factors determining good compression are sealing components such as piston, piston rings, valve seats, proper valve adjustment, cylinder head gasket, and spark plug gasket.

Cylinder head torquing is covered on Page 23.

Engine Compression Check — The compression pressure of each cylinder should be checked before any engine tune-up operations are performed. An engine with uneven compression cannot be properly tuned.

The engine must be at operating temperature before a compression check is made. This is to assure that all clearances and tolerances are at the proper heat expansion.

Turn off the ignition, and block the carburetor throttle valve in the wide open position.

Pull the wires off the spark plugs and remove all the plugs.

Install the compression gauge in one of the spark plug holes, then

with the starter motor, crank the engine about four revolutions. Note the reading on the gauge. Repeat this check on all the cylinders and record all the readings.

The compression pressure should be 120 pounds. The pressures in all cylinders should be within 10 pounds of each other. A reading of more than 10 pounds above normal indicates carbon or lead deposits in the cylinder.

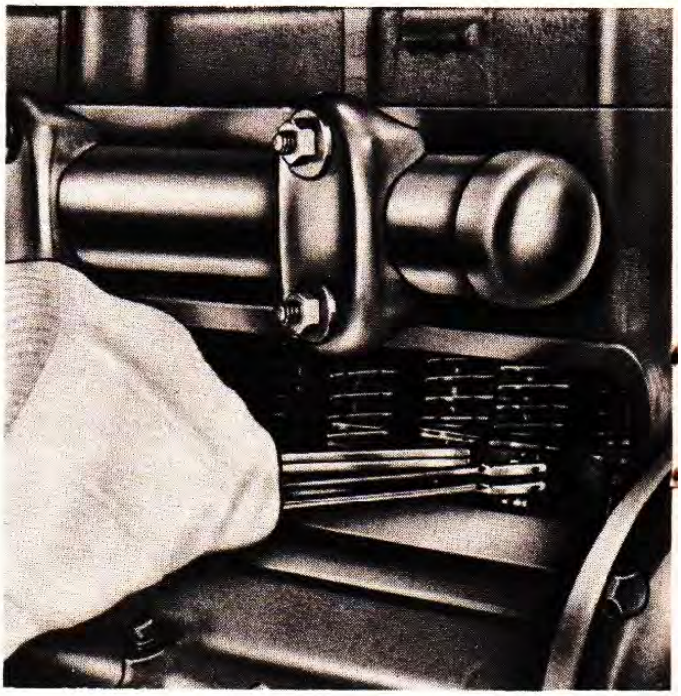
If the compression pressure is low and even in two adjacent cylinders, a leak may exist between the cylinders. The leak may be caused by a head gasket that isn't sealing properly. This should be checked before condemning the rings or valves.

To determine whether the rings or valves are at fault, pour heavy oil on top of the low reading cylinders, and repeat the compression tests. The oil will form a temporary seal for the rings. If the same reading is obtained, the rings are satisfactory; leaky valves are indicated. If the reading increases 10 pounds or more, the leakage is past the rings.

Before going any further with an engine tune-up, all causes of varying or low compression pressures should be eliminated.

Valve Adjustment — The proper adjustment of valve clearance is important to prevent burning of valves and poor engine performance. Adjust valves with engine cold.

The valves are adjusted with engine at room temperature (70° F. Approx.) to .016″ for intake valves and .018″ for exhaust valves. A .016″ and a .018″ feeler gauge blade and short open end wrenches are required for this operation.



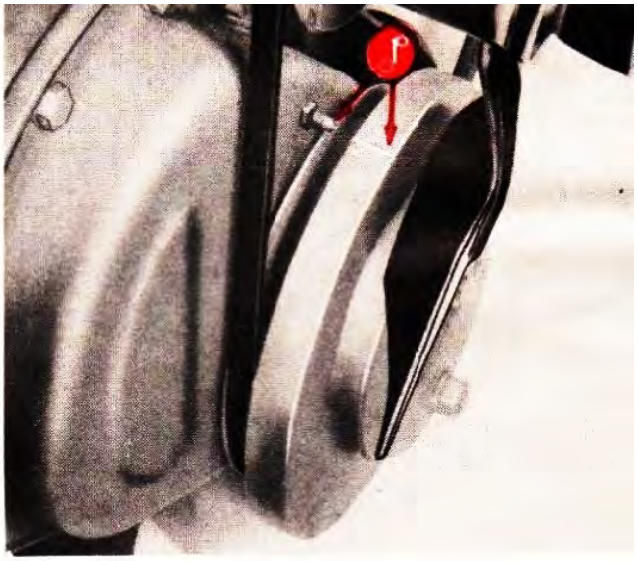
Access to the valve tappet adjustment screws is afforded through the removal of the compartment front and rear covers.

Remove the engine valve compartment covers, air cleaner, and all the spark plugs.

Adjust the valves when the piston of the corresponding cylinder is in the top dead center position of the compression stroke. Start with the first cylinder. Crank the engine over slowly with a socket wrench on the vibration damper retaining nut.

The ignition timing mark on the vibration damper should be in alignment with the pointer on the timing chain cover. This represents 3° B.T.D.C.

1 Timing Pointer and Ignition Timing Mark

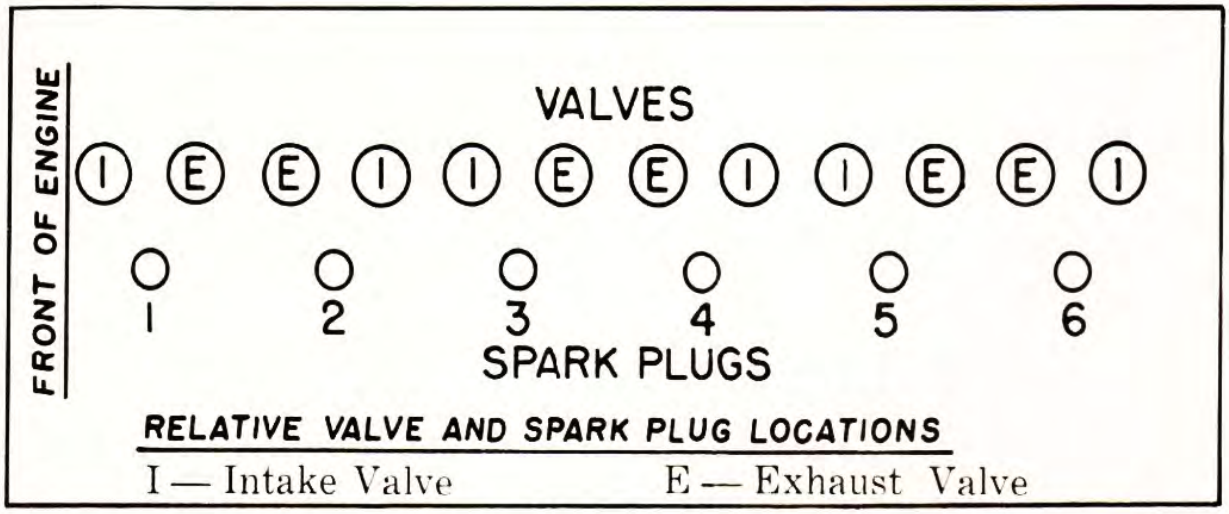


Also, with the crankshaft in this position, the two forward valve tappets will be free and the intake and exhaust valve closed. The rotor in the distributor will point to number one cylinder spark plug wire connection terminal in the distributor cap and the distributor breaker points should have just separated. Attach a 12-volt test light bulb with one lead to ground and the other lead to the distributor primary connection. With the ignition switch on, the light will light every time the breaker points open.

Adjust the valves of number one cylinder. Adjust the most forward valve (intake) to .016″ clearance. Clockwise on the adjusting screw increases valve clearance; counterclockwise reduces the clearance. Set for a definite drag on the feeler blade. Adjust the next valve exhaust) from the front end of engine to .018″.

By using the firing order (1,5,3,6,2,4) and 12-volt light, cranking by hand slowly each time the light goes on, after the number one cylinder is completed and by using the firing order, the next cylinder's valves can be adjusted.

Replace valve compartment covers (use new gaskets if originals are damaged).



RELATIVE VALVE AND SPARK PLUG LOCATIONS

I — Intake Valve E — Exhaust Valve

Carburetion:

Idle Adjustment — For the last phase of tune-up, carburetion, the only two adjustments on the car normally required are the engine idle speed and idle mixture. These adjustments are covered in the Carburetor Adjustment Section, Page 47.

The following is a Seasonal "Tune-Up" Guide for Spring and Fall:

Inspect:

- Electrical System
  - Battery
  - Lights
  - Spark Plugs
  - Wiring
  - Fuses
  - Contact Points
  - Condenser
- Engine
  - Cylinder Head Torque
  - Valve Adjustment
  - Oil Filter (If so equipped)
- Cooling System
  - Hoses
  - Clamps
  - Belts
  - Gaskets
  - Thermostat
  - Radiator
  - Cap
  - Anti-Freeze
- Carburetion
  - Fuel Filter
  - Air Cleaner
  - Carburetor Adjustment
  - Linkage Lubrication
  - Gaskets
- Lubrication
  - Complete Lubrication Chart
    See Page 73
  - Door Sealer Rubbers

Door Locks
Door, Hood, Luggage Compartment Hinges

- Brakes-Wheels-Tires

  Front End Alignment
  Wheel Balance
  Brake Adjustment and Fluid in Master Cylinder
  Wheel Bearings
  Rotate Tires
  Brake Lining — Inspection
  Grease Seals

CARBURETION

Fuels — The fuel tank capacity is 20 gallons. The engine will operate satisfactorily on "regular" grade gasoline of about 90 (Research) octane number. No advantage can be gained by using premium gasolines, if knock does not occur using regular gasolines and with correct spark advance.

Retarding ignition timing from the factory setting will reduce or eliminate fuel knock, but tends toward losses in economy and power.

Detonation or "fuel knock" normally absent is influenced by a number of factors such as amount of combustion chamber deposits, ignition timing, atmospheric humidity, engine temperatures, and other conditions.

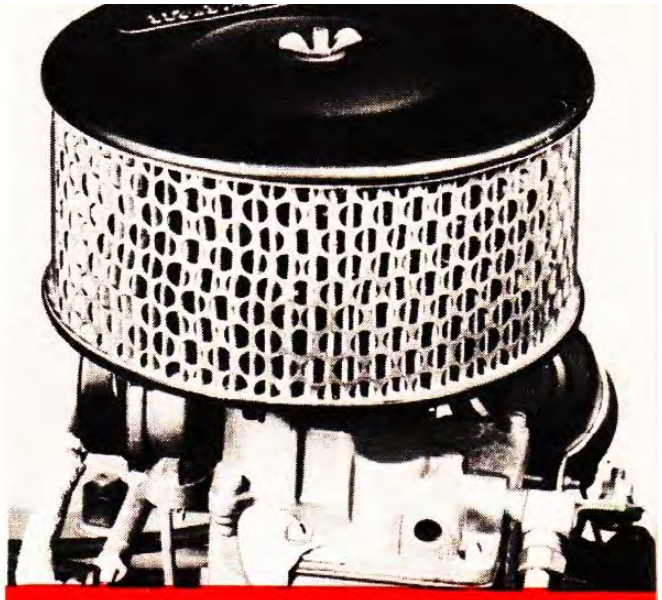
The most common cause is the relatively low octane rating of the gasoline used.

Carburetor Air Cleaner — The air cleaner is necessary to protect the fuel system as well as the working parts of the engine from abrasive clogging action of dust, dirt, and sediment normally present in the combustion air supply.

The air cleaner is also designed as a resonance silencer and flame arrestor to eliminate the noise of vibration periods emitted through the carburetor.

The air cleaner should be serviced in accordance with the instruction decalcomania attached. However, where no decalcomania is present, service the air cleaner as follows.

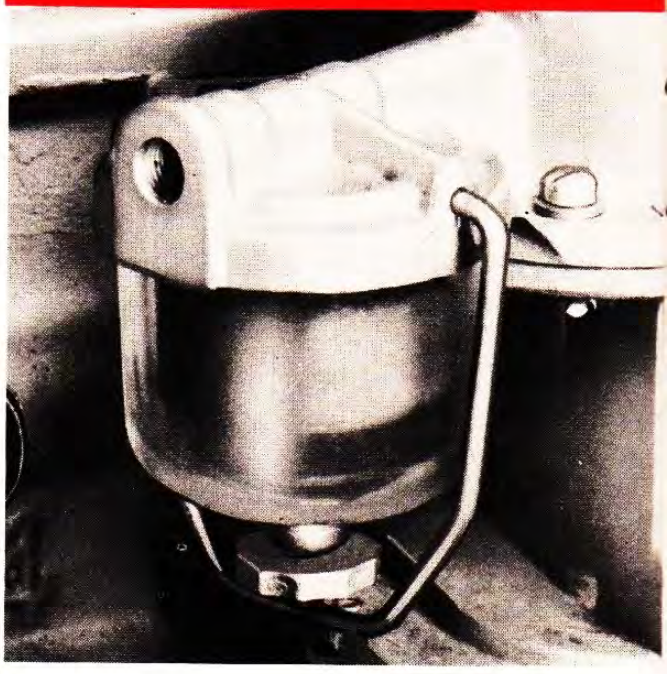
The replaceable element type air cleaner should be serviced every 1,000 miles. Remove complete air cleaner, remove filter element, and tap lightly to dislodge accumulated dirt. **Do Not Use Compressed Air Or Liquid Solvents to Clean Element.** Replace the element every 6 months or 10,000 miles whichever occurs first. In extreme dusty conditions, more frequent service and element replacement will be necessary to insure maximum engine performance.

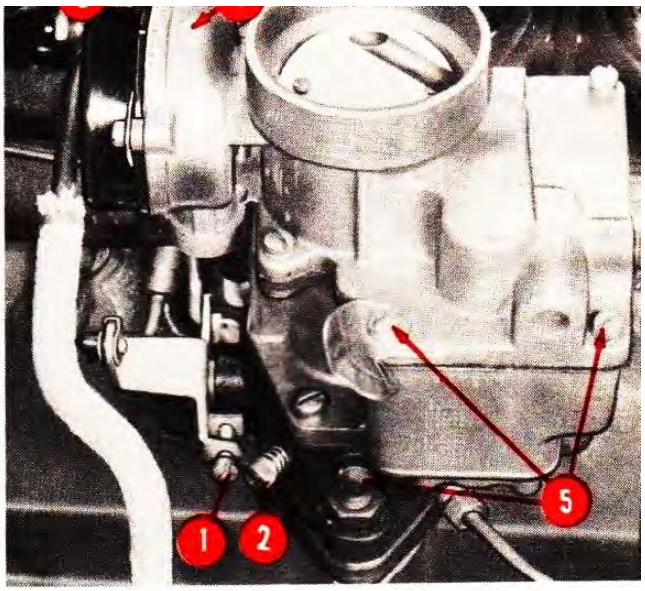


The optional oil bath type air cleaner should be serviced every 2,000 miles, more often under severe dust conditions. Clean and refill the sump to the oil level line with S.A.E. 40 or 50 oil above 32° F. and S.A.E. 20 oil below 32° F. The entire filter unit should be washed periodically in kerosene and drained.



Fuel Filter—The fuel filter sediment bowl located on the fuel pump at the lower right rear of the engine can be removed, drained, and cleaned periodically. After replacing filter bowl, inspect for possible gas leaks. Generally, a visual inspection will tell whether removal and cleaning is necessary.





Carburetor Adjustments—There are two on-the-car carburetor adjustments that can be performed subsequent to engine tune-up:

Idle adjustment may be required occasionally. Before atttempting to adjust the carburetor, make sure the engine is at normal operating temperature.

The idle speed can be adjusted by turning the adjusting screw 1 in or clockwise to increase idle speed, and turning the screw out or counterclockwise will decrease idle speed. Satisfactory idle speed is 550 R.P.M. with standard or overdrive transmission, 475 R.P.M. with automatic transmission in neutral.

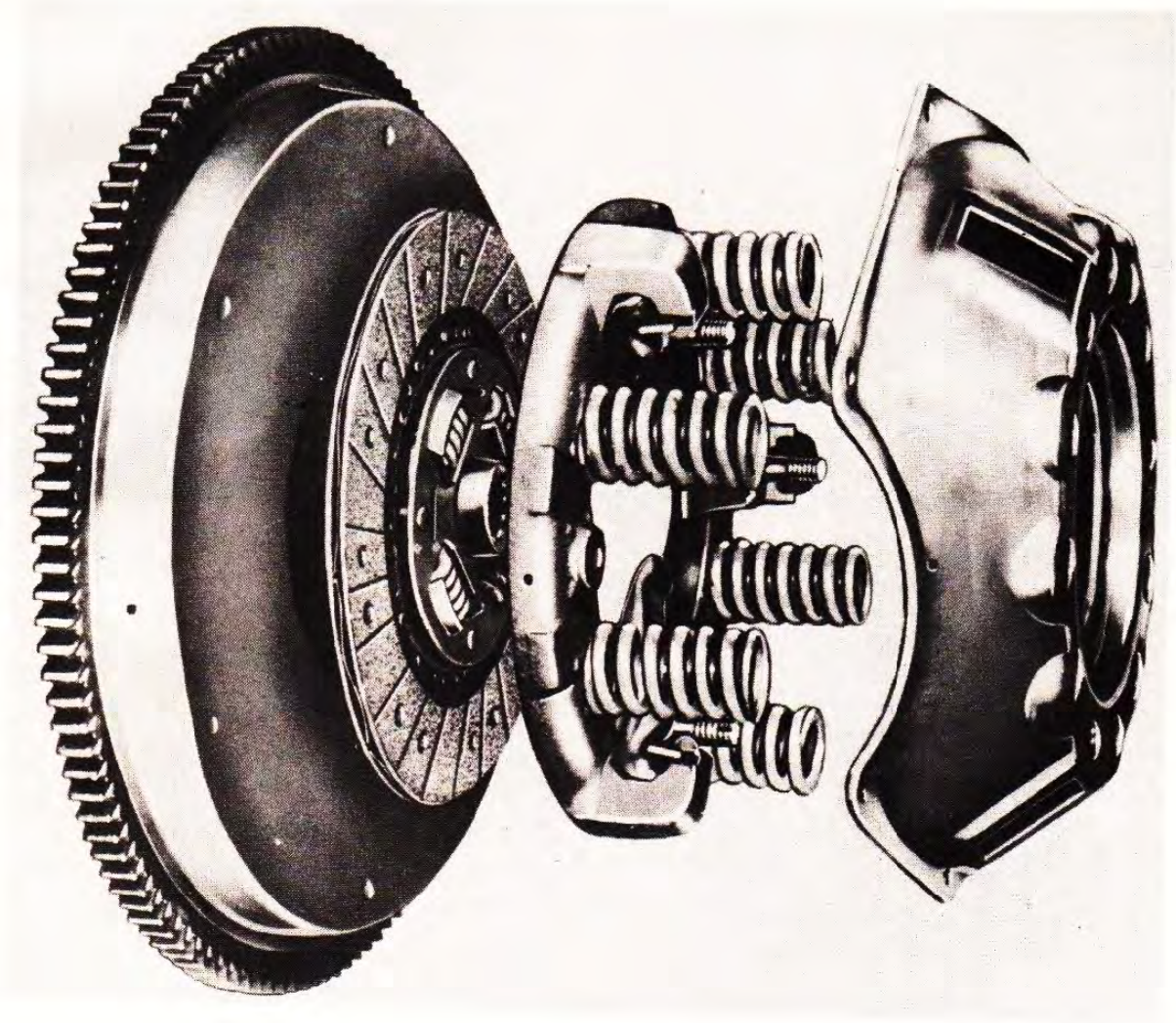
The idle mixture is adjusted by turning the idle mixture screw 2 in or clockwise until it seats lightly, then back it off approximately ¾ turn. Gradually turn in the screw until the position is found where the engine tends to run smoothest.

The idle mixture may also be adjusted by the use of a vacuum gauge. The gauge is used to check manifold vacuum at idle speed. Adjust the idle mixture for the highest, steady vacuum obtainable. The vacuum should read from 18 to 21 inches.

To obtain best choke operation, the mark on the choke cover 3 should be set at one notch to the right of the center index mark on the choke housing 4 or one notch lean. This adjustment is made by loosening the three choke cover attaching screws and rotating the cover.

Periodically, check the carburetor cover screws and carburetor hold down nuts 5 for tightness. Loose fitting parting surfaces often cause fuel as well as air leaks which affect performance and gasoline economy.

Exhaust System—The exhaust system should be checked periodically for the condition of the exhaust pipe, muffler, and tail pipe. Misalignment may cause vibration at certain speeds. Leaks can cause toxic carbon monoxide gases to enter the car under certain conditions (never idle car in garage with the doors closed). Should any of the system indicate cracks or leaks, replace the faulty items.



CLUTCH

The clutch is a single plate, dry disc type. A steel cover bolted to the flywheel contains the clutch drive plate, the pressure plate, clutch levers, and springs.

The drive plate is spring-cushioned with facings riveted to both sides. The coil springs around the hub absorb the power shocks and cushion the driving mechanism.

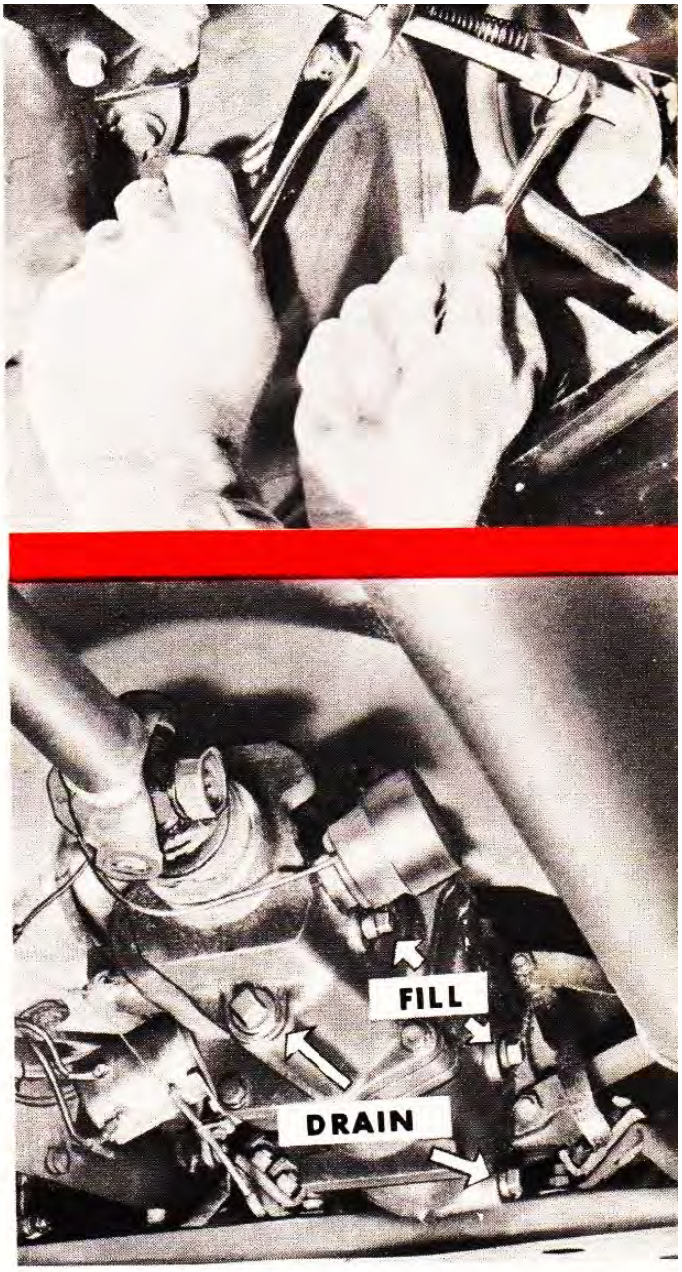
The clutch throwout bearing is of the ball bearing type, packed at time of manufacture and requires no further lubrication.

The clutch assembly is adjusted at time of assembly and no adjustment is provided for wear in the clutch itself.

Clutch Pedal Free Play — The only external adjustment necessary is to the clutch pedal to maintain the proper clearance between the throwout bearing and clutch pressure plate fingers. The clutch pedal should have a free play movement of ½" to ¾" to provide for this clearance.

This adjustment is obtained by loosening the lock nut and by adjusting the link pivot end. Shortening the rod increases the free pedal play.

All moving parts of the clutch linkage should be lubricated with chassis lubricant at 1,000 mile intervals at the fitting provided; all other pivot points with a few drops of lubricating oil.



TRANSMISSION — STANDARD AND OVERDRIVE

Proper care and maintenance of the standard and overdrive transmissions will insure smooth operation and long life to the units. The oil level should be checked at 1,000 mile intervals. The oil level plugs are located on the right side of the transmission and overdrive case.

When removing the plugs, use an open end wrench to fit the square head of the plug and to loosen, turn the plugs counterclockwise. The oil should only drip out of the oil level holes. If oil should run out in a steady stream, let the oil drain and when it stops dripping, replace the plug and tighten securely. Use only transmission oil as recommended in the lubrication chart. The oil should be completely drained and refilled every 10,000 miles or the beginning of Summer and Winter seasons. An S.A.E. 90 oil should be used for warm weather and S.A.E. 80 for cold weather. In extreme cold weather, kerosene can be added to the oil to thin the viscosity for ease of shifting. The standard transmission oil capacity is 1½ pints and, if equipped with overdrive, the oil capacity is 2¾ pints. Consult your American Motors Dealer if there are any signs of external oil leaks.

CAUTION: *Always use the recommended grade and type of oil and DO NOT MIX OILS.*

AUTOMATIC TRANSMISSION

Proper care and maintenance of Automatic Transmission should be handled with your American Motors Dealer who has skilled mechanics that have been factory-trained on automatic transmission maintenance.



The correct oil and oil level is of utmost importance for smooth operation, proper shifting, and longevity of the unit. Your dealer has American Motors approved fluid, designated AQ-ATF-401. In addition, several oil companies are marketing approved fluid. Avoid using non-authorized oils which may cause trouble. It is wise to check the sealed cans for the approved symbol "AQ-ATF." This symbol is embossed in the can itself, and means "Armour Qualification — Automatic Transmission Fluid, Type A."

The location of the oil level dip stick is at the right rear of the engine.

Care must be exercised when checking the oil level. Therefore, the following procedure is recommended:

Start the engine and run until operation temperature is obtained (indicated by temperature gauge in instrument cluster) approximately 180° F.

Apply parking brake.

Place transmission in "N" Neutral; carburetor must be off of fast idle. (Obtain by depressing foot accelerator slightly after warm-up period.)

Move gear shift selector lever through drive ranges and into reverse, return to "N" Neutral. This should be done with foot on brake to prevent car from moving.

Remove oil level dip stick and wipe clean.

Insert dip stick and again remove and check oil level on stick. Oil level should show even on full mark.

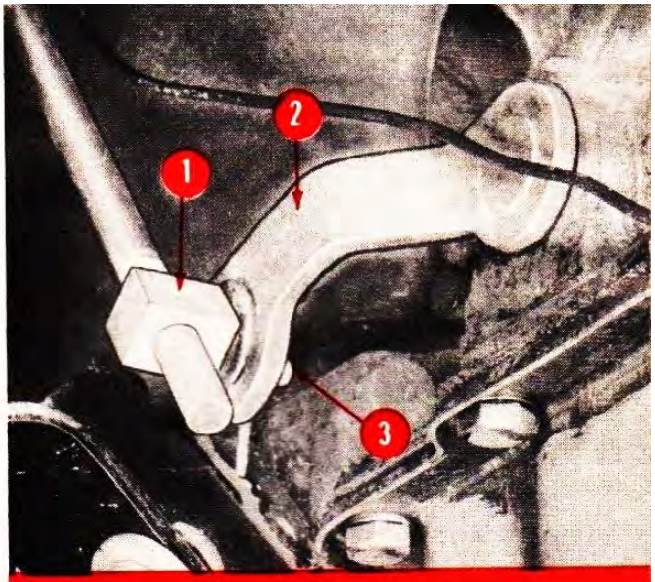
NOTE: *Do not overfill transmission.*

CAUTION: *If oil level is low, have your dealer check for external oil leaks.*

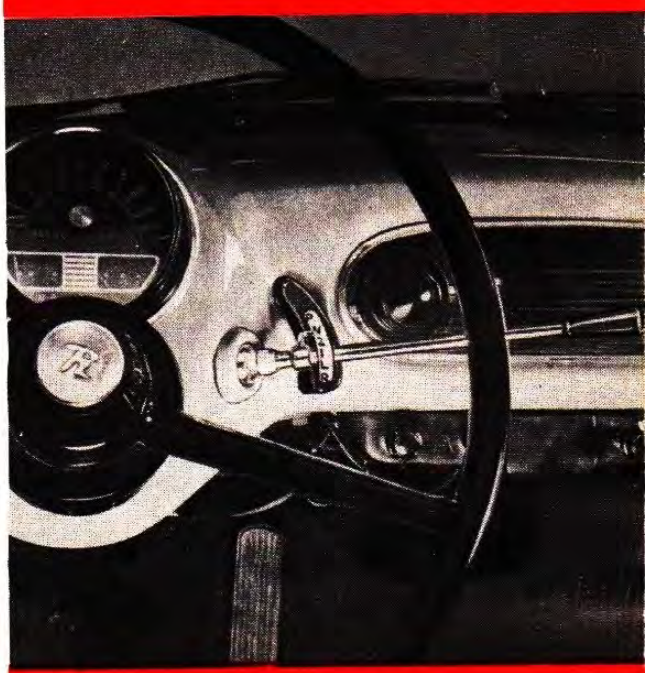
The oil capacity is approximately 10 quarts. Oil should be changed at 15,000 mile intervals.

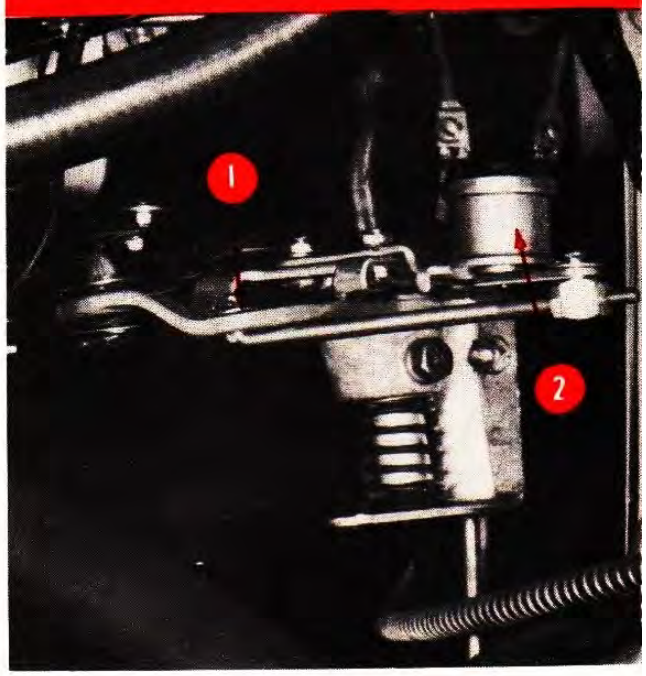
Gear Selector and Safety Starter Switch Adjustment—To adjust the gear selector lever, disconnect the trunnion at the transmission lever by removing the cotter pin.

1. Trunnion
2. Lever
3. Cotter Pin



Disconnect rod at transmission lever. Then set transmission lever in third detent from top or "Park" position. Set selector lever in "1" Drive Range. Lower shift lever *must* strike against shift lever gate which is located on steering jacket tube. Adjust trunnion on rod to enter hole in bushing of lever *freely*. Remove trunnion from hole and lengthen one turn. Then install trunnion in hole, replace washer, and secure with cotter key. Check selector lever pointer in all positions from "Park" to "R." If pointer does not line up correctly, **it can be adjusted by using a 5/64" Allen wrench to loosen the pointer. Adjust the pointer to correspond with the numeral "1" on the instrument panel.**





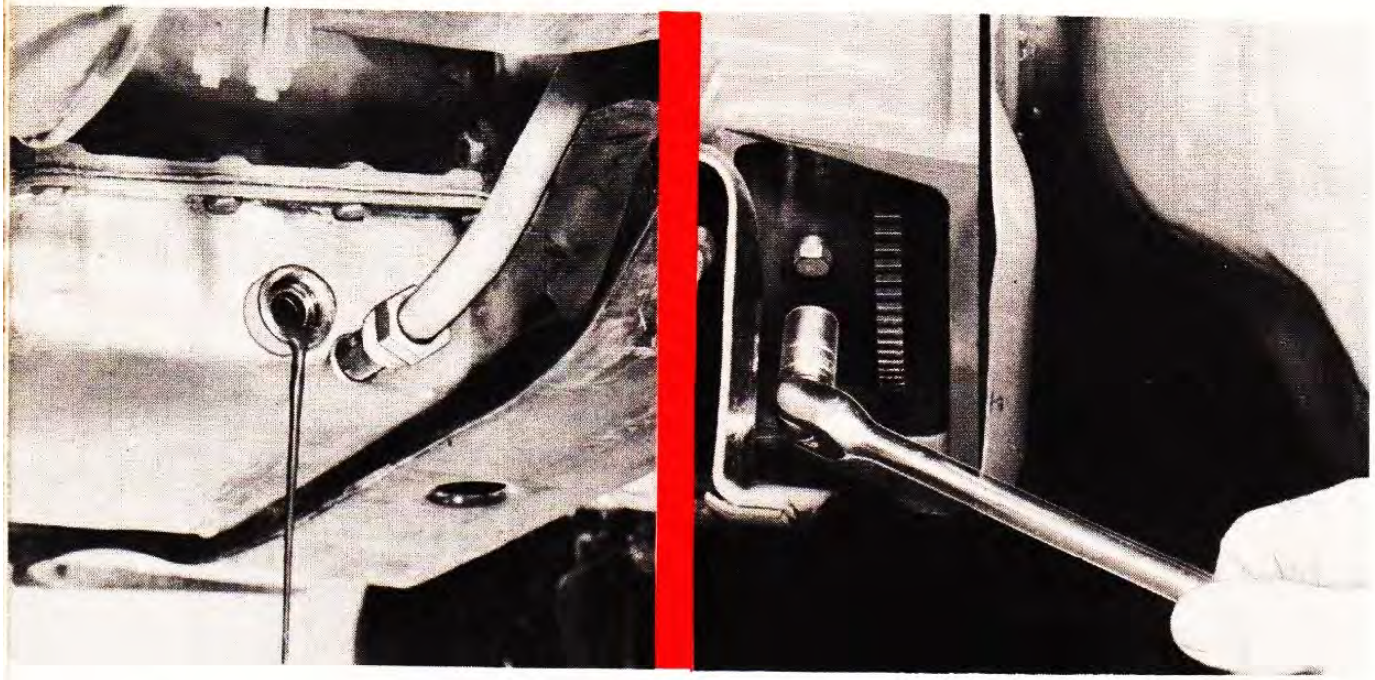
1. Shift Gate Bracket "1" Position
2. Safety Starter Switch

The safety starter switch should be adjusted for starting only in "N" Neutral or "P" Park positions. To adjust, set selector lever in "N" position, loosen hexagon nuts and adjust safety starter switch rod as follows:

NOTE: *When making this adjustment, be sure and set parking brake.*

With the hexagon nuts only finger tight starting from your left, adjust lever on switch to make contact when turning ignition key to start position in "N" Neutral position. Move selector lever to "2" Drive range position (ENGINE SHOULD NOT START). Recheck starting in "N" and "P" positions and tighten nuts.

The safety switch is incorporated to insure against starting the engine with the transmission in gear.



Draining and Refilling — To drain the automatic transmission, use an open end wrench and remove the oil filler tube at the right side of the transmission oil pan.

To drain the torque converter, locate one of the ⅛" pipe plugs at the right side opening of the bell housing and remove the plug.

Then turn the torque converter one-half turn (180°) and remove the second plug. After the torque converter is completely drained, replace and tighten both plugs securely.

Replace the filler tube and pour into transmission five quarts of American Motors Approved Fluid designated AQ-ATF-401 available at your dealer's parts department.

Start the engine and pour in three more quarts. Set the hand brake and move the selector lever in all ranges to insure filling the servos, clutches, etc. Place selector lever in "N" Neutral and while engine is idling, remove dip stick, wipe clean, insert dip stick and check level. Add necessary amount of oil to bring level of oil to full mark.

NOTE: *Do not overfill transmission.*

SHIFTING SYSTEM

The shifting system for both Standard and Overdrive Transmissions operates through mechanical linkage.

The selector lever located at the upper end of the steering gear jacket tube pivots on a ball socket. Lifting the lever up towards the steering wheel, then moving the lever downward, places the transmission in low gear; moving the lever upward, places the transmission in reverse gear. When the lever is in the neutral position, moving the lever upward places the transmission in second gear, and moving the lever downward, the transmission is then in third gear or direct drive.

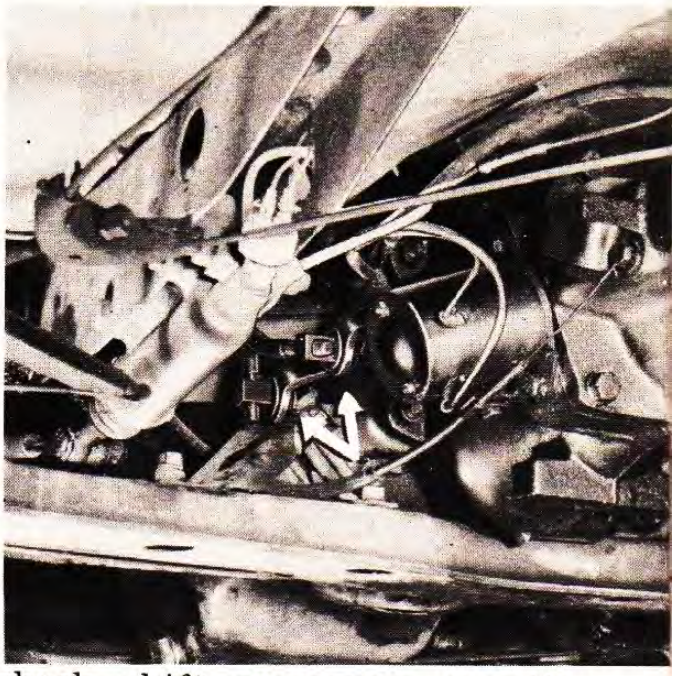


At the lower end of the shift shaft, there are two levers: one controls the first and reverse gear and the other controls the second and high gear. These levers are aligned for proper location to provide proper shift lever cross-over and complete gear engagement by the use of an aligning pin made out of a 3/16" rod.

To check and adjust alignment; place gear shift lever in "High" gear position, remove shift rods from transmission levers below car. Be certain not to move either lever out of the positions they are in at this time.

While under the car hold the top or "2nd-High" lever against the bottom of the bracket on the steering column by pulling down on rod. Adjust the trunnion on this rod to align with the hole of the front or "2nd-High"

transmission lever. Lengthen or back off the trunnion eight full turns and move rod to align with hole. Then secure in transmission lever with cotter key. Move this transmission lever to center or neutral position.



Install aligning pin in small holes in gear shift levers in bracket on steering column as shown in illustration.

Adjust the "Low-Reverse" rod trunnion to align with the hole in the rear or "Low-Reverse" transmission lever and secure with cotter key. Remove the aligning tool from levers and check shift crossover operation.

A grease fitting is provided for on the second and high gear shift operating shaft lever located near the lower end of the steering gear jacket tube. The pivot ball at the gear selector lever and upper steering gear jacket tube must be lightly lubricated. This is accomplished by placing petrolatum on the ball and by working the lever in all speed ranges. The lubricant will spread between the ball and socket portion. After lubricating, wipe off excessive lubricant from the pivot ball. The shift rods from the gear shift operating shaft levers to the transmission levers should be lubricated with hydraulic brake fluid or a rubber lubricant if the levers contain rubber grommets. Where there are no grommets between the levers and rods, a regular lubricating oil should be used.

BRAKES, WHEELS, AND TIRES

Tires — The tires on your new car require and deserve attention. The riding comfort and life of the tires depends greatly on proper maintenance and care.

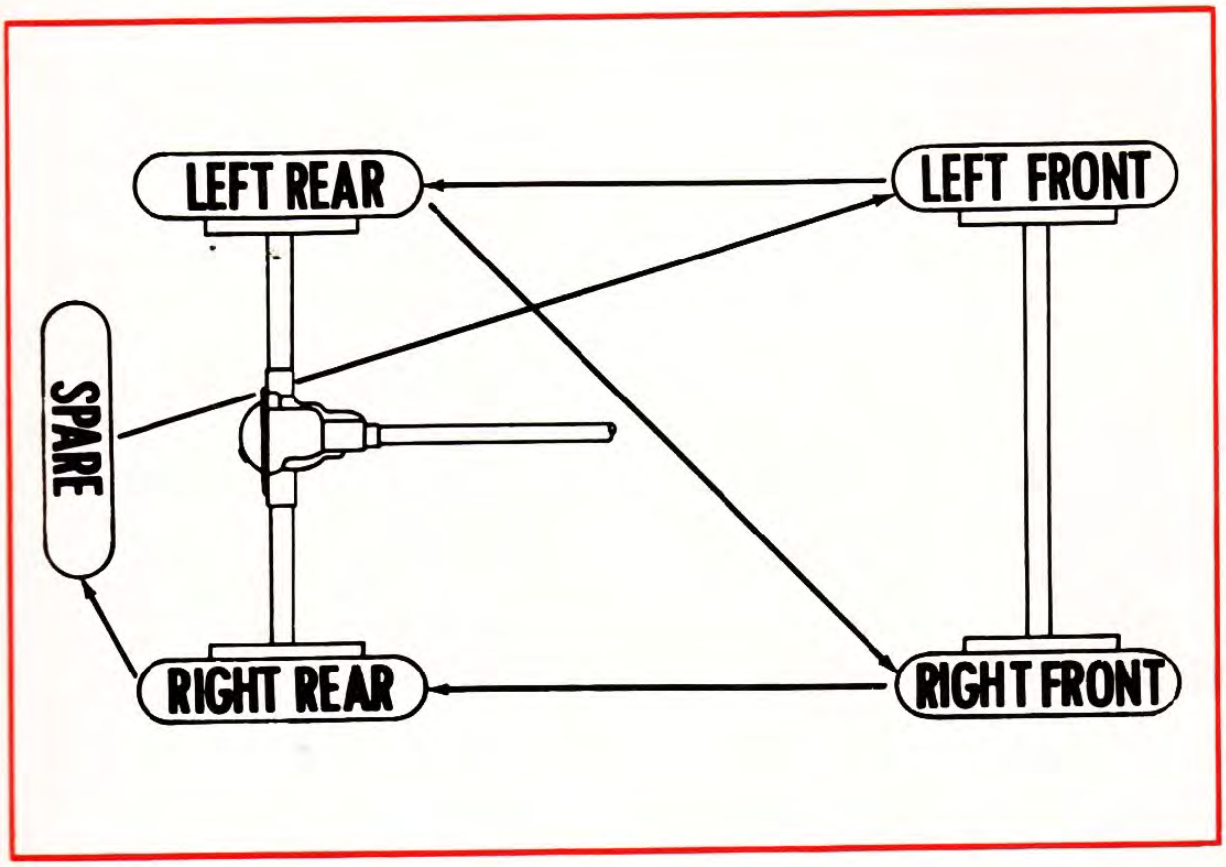
The tires are of the tubeless type with air pressure for normal driving at 24 pounds checked cold before running. Do not bleed tire pressure to 24 pounds if tires are warm.

For cars driven at sustained rates of speed or on trips where above average speeds or loads are maintained, tire pressures may be increased up to 30 pounds (cold before running). The higher pressure will increase stability with some sacrifice of riding quality. The higher tire pressure will also improve fuel economy under **all** driving conditions.

A visual check of the tires for under-inflation and signs of uneven wear, is a good practice to acquire. Under-inflation or over-inflation are among the most common causes of tire failures. High speed driving and cornering, skidding stops and striking curbs, holes and objects in the road also shortens the life of tires.

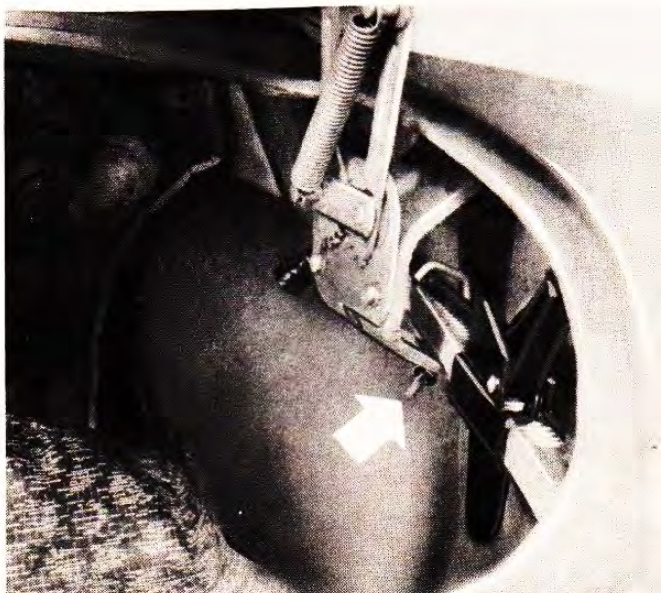
The tire life is affected also by incorrect wheel alignment or lack of tire and wheel balance.

In accordance with this diagram, rotate your tires within the first 2,500 miles, again at 5,000 miles, and every 5,000 miles thereafter. It is not necessary to remove tires from the wheels.



Changing Wheels—When jacking-up the car to change a wheel and tire or install tire chains, set parking brake or block wheels, or both, to keep car from rolling forward or backward.

The bumper jack and handle are located on the right side of the trunk compartment and secured by a clamp-rod and wing-nut.



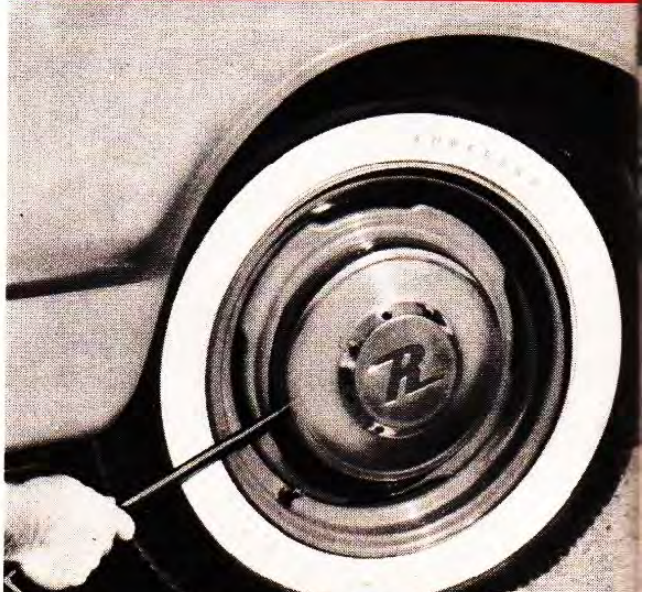
The spare wheel and tire and jack base are fastened to the luggage compartment floor with a wing-nut.





Install the jack into the jack base and place in the proper location, which is next to the bumper guard and inclined slightly toward the bumper, to prevent the jack from slipping out of place.

Place control lever on jack body in desired position, "up" or "down." Operate jack with combined handle and wheel-nut wrench.



Remove hub cap with wheel-nut wrench. Wheel nuts on the left side of the car are left hand threads and right hand on the right side of the car.

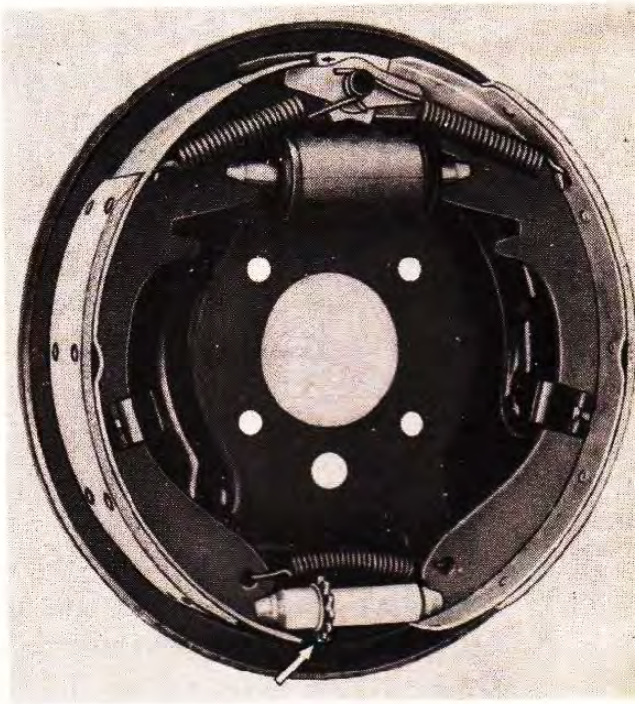
After the wheel has been changed, tighten the wheel nuts securely; replace hub cap. Be sure it is snapped into place all around.



Brakes — The brakes on your car have been designed to give you satisfaction of safety and complete control of your car under most circumstances. Therefore, the brakes should be used judiciously and as required. Engine compression will serve as a brake as soon as your foot is removed from the accelerator pedal, saving fuel and helping to prevent premature wear of brakes and tires.

When roads are wet or covered with ice or snow, operate your brakes very gently. Skidding will result from sudden braking of the car.

Brake Adjustment — Brake adjustment should be performed when brake pedal height (at time of application) has decreased and brake lining wear is suspected. If the brake pedal travel is within one inch of the floor board, the brakes should be adjusted.



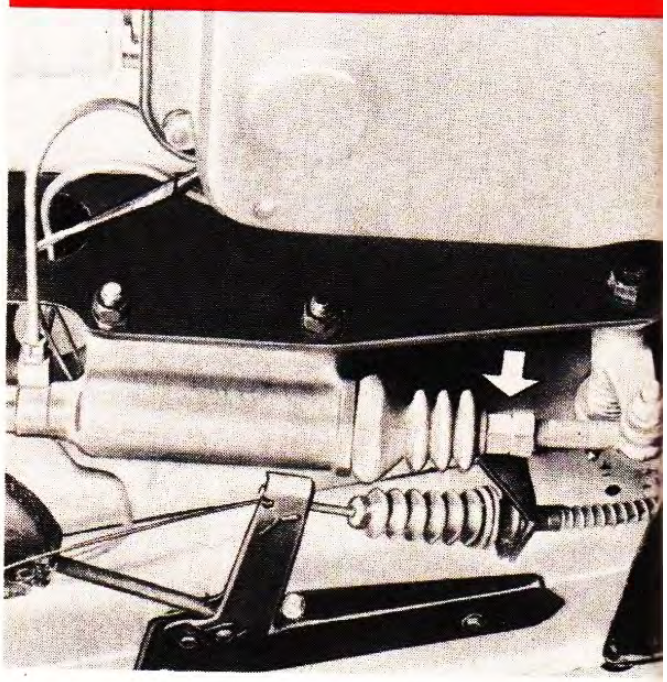
Jack up the wheel to be adjusted and remove adjusting screw dust cover from the brake support plate.

Spread the brake shoes by rotating the star wheel adjuster until the wheel and tire will not move in the forward direction.

Then back off star wheel approximately eight notches in the opposite direction, spinning the wheel until no brake shoe drag is evident. Do this on all four wheels and replace the dust covers on the brake support plates.

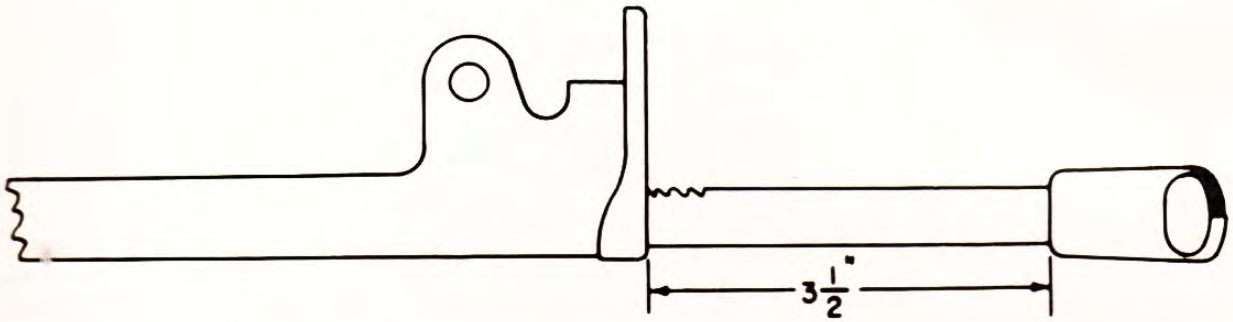


Moving the star wheel counterclockwise expands the brake shoes, while the star wheel being rotated in the clockwise direction contracts them.



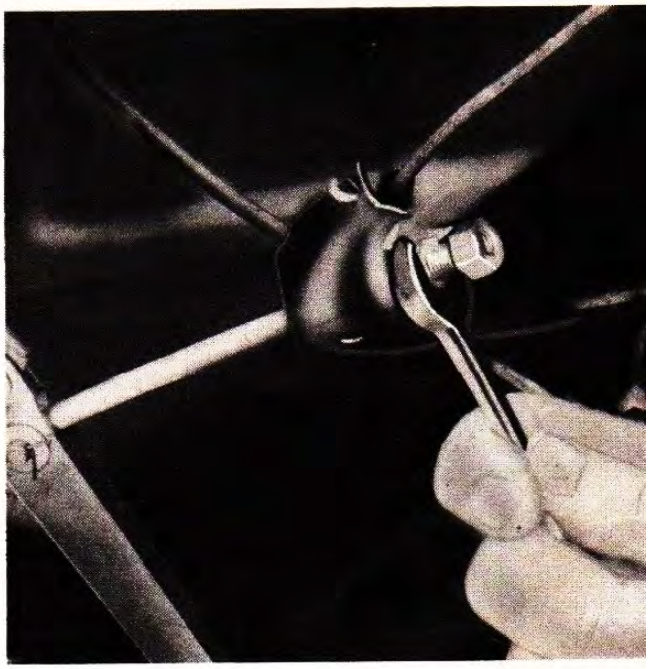
Brake Pedal Free Play—Adjustment of the brake pedal free play of ¼″ to ½″ is accomplished by loosening the outer nut on the master cylinder push rod and moving the inner nut in or out and retighten the outer lock nut.

Parking Brake — The parking brake is applied by depressing the foot brake pedal to its full travel and simultaneously applying the hand brake lever until the brakes take hold.



Parking Brake Adjustment — Jack up the two rear wheels and withdraw the hand brake lever to the rear to provide a 3½" clearance between the hand brake lever handle and bracket.

With the lever in the aforementioned position, loosen the outer nut on the bellcrank rod and tighten the inner nut until the rear wheels will not move.



In winter, the brakes on all automobiles are apt to freeze after the car has been driven through rain or slush and then parked with the parking brake applied; therefore, when parking your car, do not set the parking brake, but shift the car to the reverse position on all standard and overdrive equipped cars, and to the "P" (Park) position on automatic transmission equipped cars.

At the beginning of the cold season, the conduit tube of the parking brake cable should be lubricated with a paraffin base lubricant.

Bleeding Hydraulic Lines — Bleeding the entire brake system is necessary whenever a hydraulic line is disconnected from the master cylinder, or whenever the brake pedal is "spongy" on application. If a line is disconnected at one individual wheel, that wheel cylinder only must be bled.

Before bleeding, fill the master cylinder reservoir with recommended hydraulic brake fluid.

The brake master cylinder is accessible by lifting the floor mat on the driver's side and removing the inspection plate and gasket.

CAUTION: *While removing the reservoir filler cap, extreme care must be exercised to prevent dirt from entering the reservoir and master cylinder, as dirt will cause a failure in the system.*

Check master cylinder fluid level every 1,000 miles. Add or refill with S.A.E. 70-R-1, Heavy Duty Brake Fluid only. Inferior fluids may fail in emergencies.

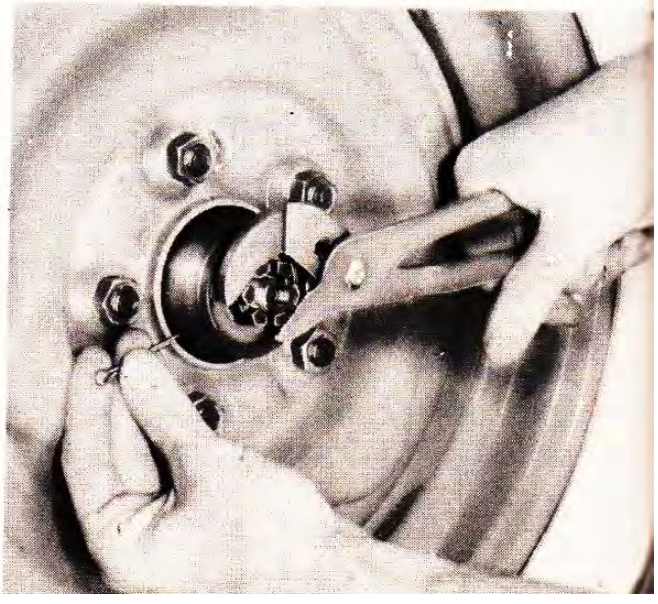


Attach a bleeder hose and allow it to hang in a clean container. Unscrew the bleeder connection ¾ turn and depress the foot pedal to floor, tighten bleeder connection, and allow the pedal to return slowly to "off" position. Repeat the pumping action until enough fluid has passed through to expel all the air from the line. Do this at each of the four wheels.

Watch the flow of fluid from the hose, the end of which should be kept below the surface of the fluid; when all air bubbles cease to appear close the bleeder connection.

Fluid withdrawn in the bleeding operation should not be used again. Fluid should be replenished in the reservoir after each wheel cylinder is bled. When the bleeding operation is completed, the reservoir must be refilled to within ½" from the top of fill boss.

To prevent brake drag, the compensating port must be open when the brake pedal is in the released position. See "Brake Pedal Free Play."



Front Wheel Bearing Adjustment — To adjust front wheel bearing, jack front wheel off the ground, remove hub cap, and with a screw driver, pry the outer bearing grease retainer off and remove cotter pin from spindle nut.

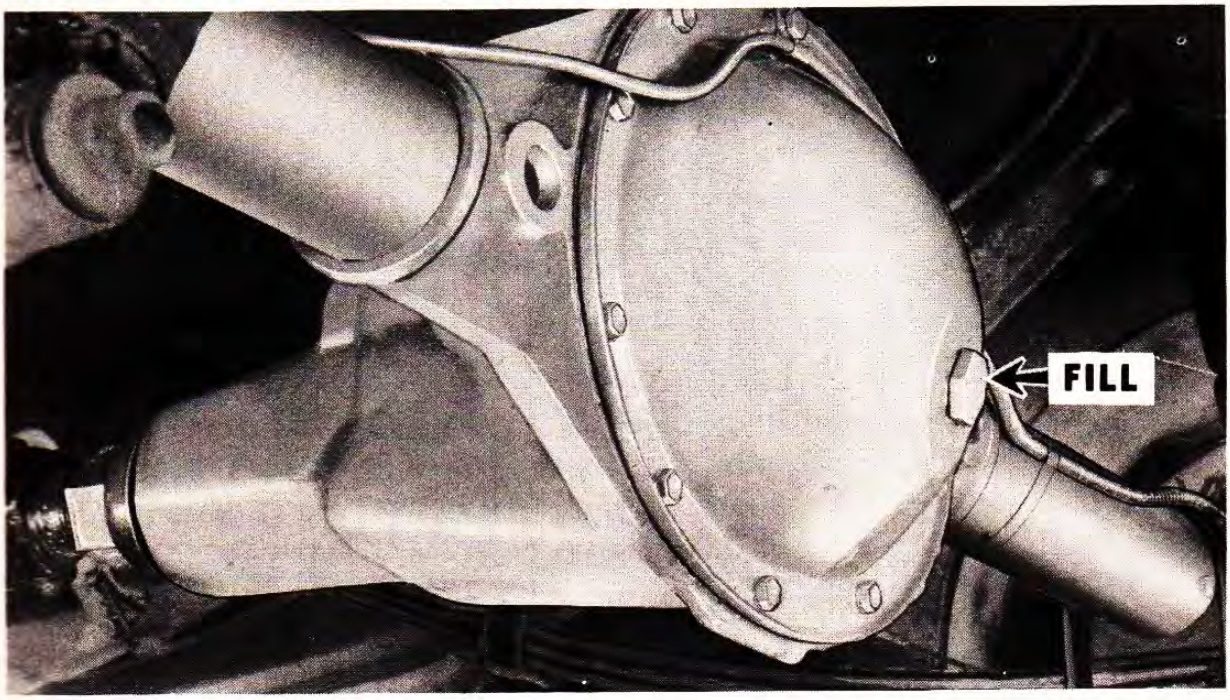
Tighten the nut until it is firmly seated and will cause a drag when wheel is rotated.

Back off nut until next castellation of nut lines up with a hole in the spindle. There are four holes drilled in the spindle equally spaced 90° apart.

Insert new cotter pin in hole and bend end tabs of pin apart. Replace grease cap and hub cap.

Your dealer's service station is equipped to properly repack your front wheel bearings with wheel bearing lubricant. Have this operation performed every 10,000 miles. The rear wheel bearings need only be repacked whenever other service is performed on the rear axle or brake assembly.

REAR AXLE AND SUSPENSION

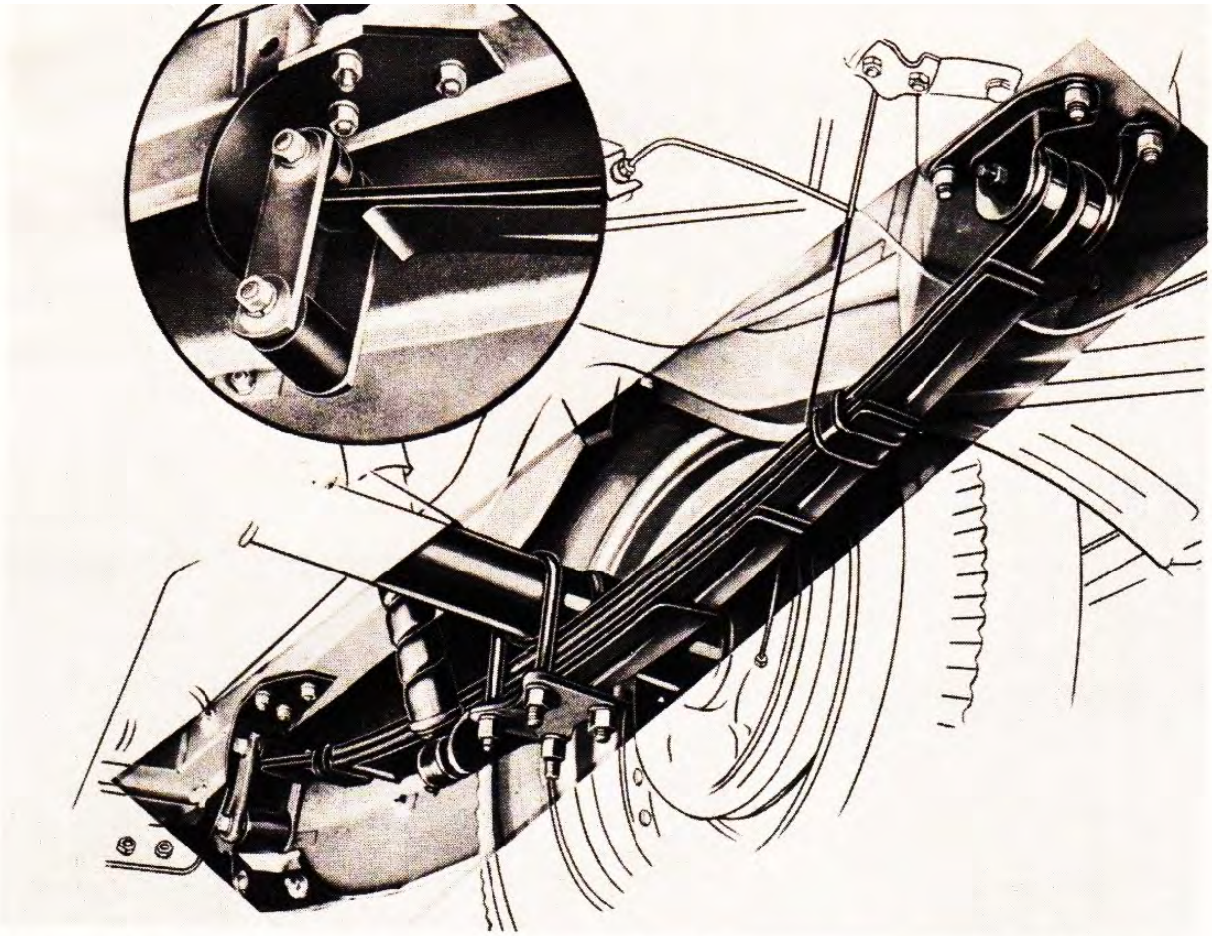


The rear axle is of the conventional hypoid type. The rear axle lubricant level should be checked periodically. Remove the fill plug and check the level of the lubricant. The lubricant should be level with the filler plug hole.

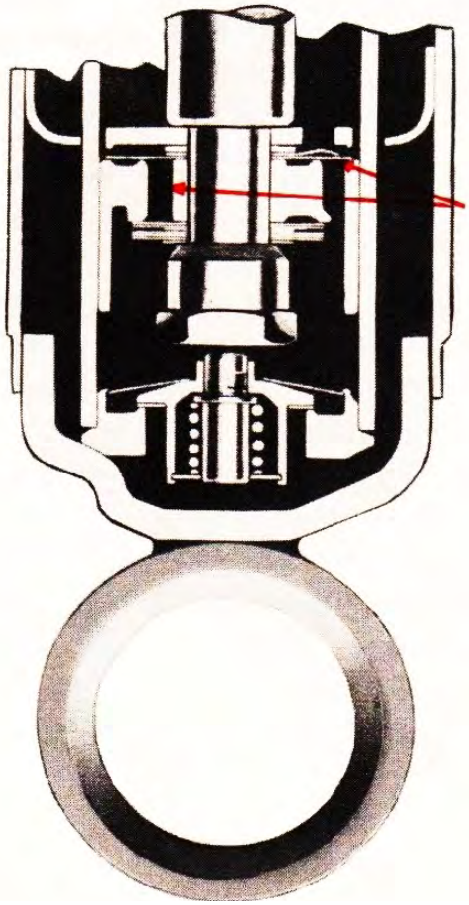
Drain and refill periods are not recommended for rear axle lubricant. Should the rear axle be serviced by your dealer, insist that if rebuilt or replaced, the factory approved lubricant be used. This lubricant is S.A.E. 90 Hypoid Gear Lubricant. The addition of Multi-Purpose rear axle lubricant is permissible should the level be low when checked. This, of course, only after a sufficient break-in period has taken place.

Your American Motors Dealer is equipped with special tools and equipment to properly maintain the rear axle assembly. Consult your selling dealer should any problems occur with the rear axle or suspension.

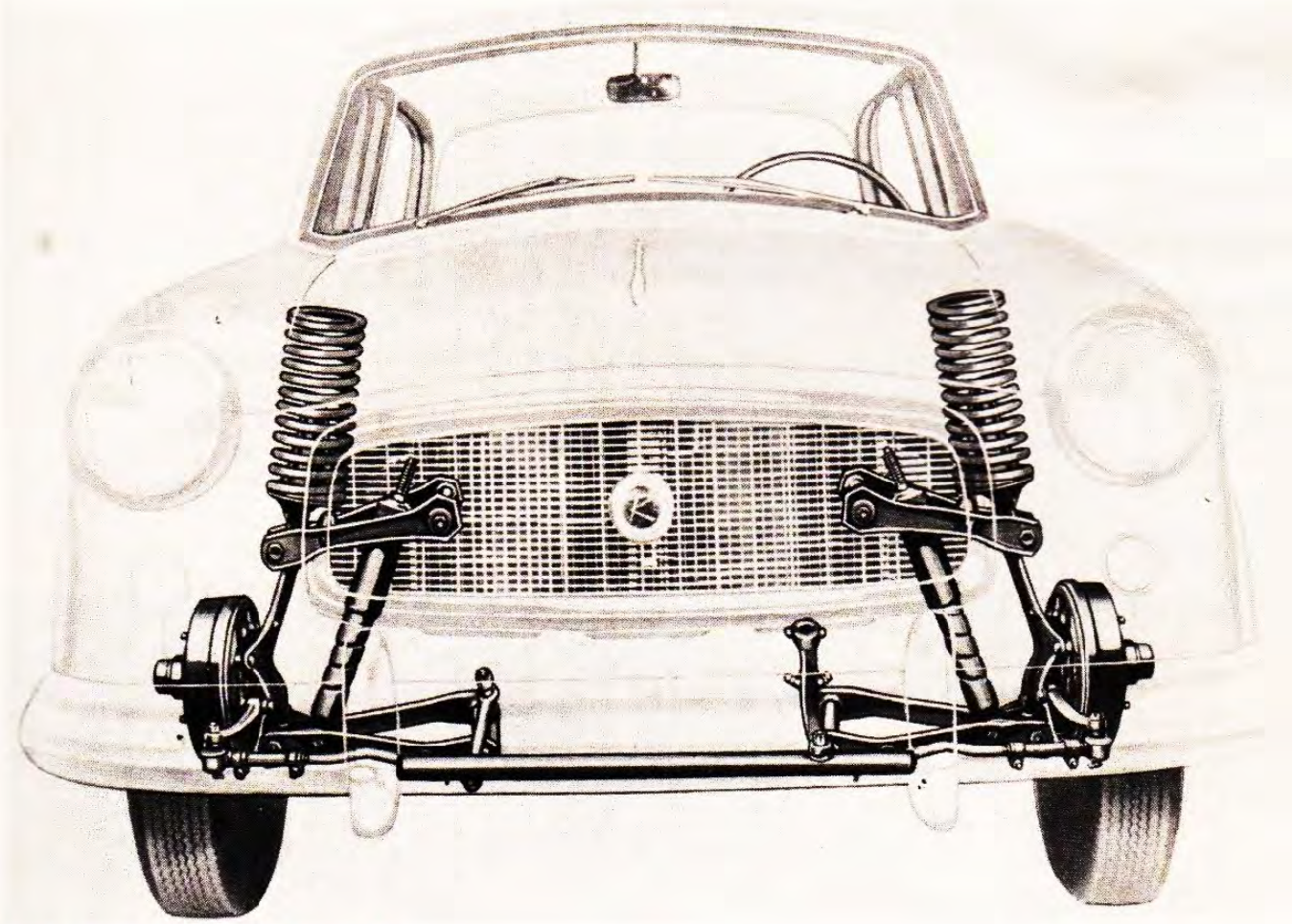
The drive line is the Hotchkiss type of open propeller shaft with two universal joints.



Suspension — The rear suspension utilizes semi-elliptic leaf springs with rubber bushed tension shackles. The rubber bushings eliminate the requirement of lubrication fitting at the bushings. The rear springs require no lubrication service as packed pads are located between the leaves.



Shock Absorbers — Shock absorbers are mounted in a "sea leg" position for greater lateral stability. The shock absorbers are of the hydraulic, two-way direct-acting type to control spring action accurately over all road irregularities. The non-orifice valve design utilizes a two-stage system of discs. The discs control shocks in compression and rebound.



FRONT SUSPENSION

The front suspension is an independent linked parallel arm type, with coil springs acting directly above the front wheel steering knuckle supports, permitting the use of softer, more flexible springs, and lighter control arms, which serve only for alignment purposes. This affords less unsprung weight and improved ride characteristics. Ride control is obtained through the use of direct-acting hydraulic shock absorbers in front and rear.

Hard steering and abnormal tire wear is usually the result of incorrect front wheel alignment, which may be caused by worn parts or accidental damage to the components.

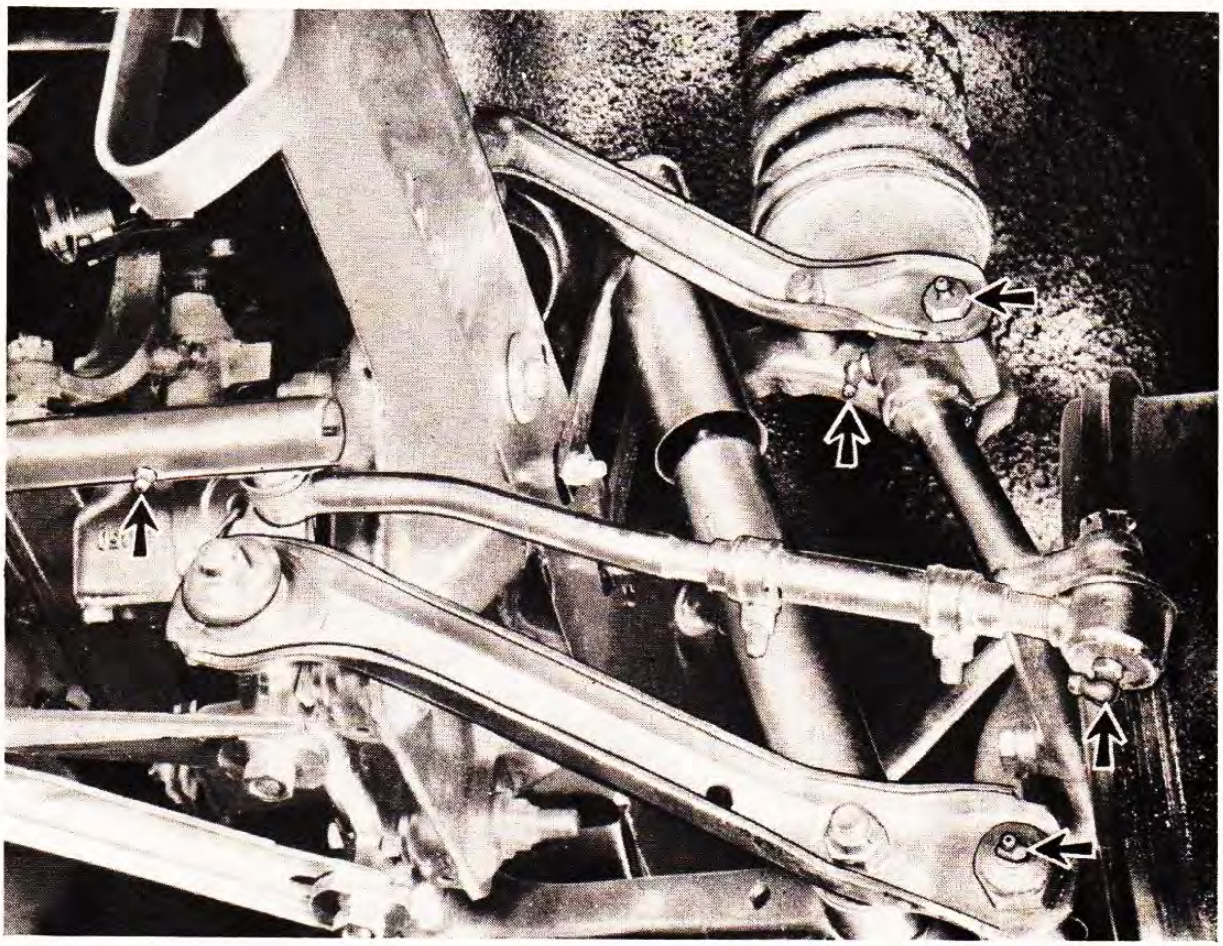
Ease of steering is obtained through correct steering geometry. The front wheels must have a definite angularity in relation to each other and in relation to the chassis. These angles are referred to as caster angle, camber angle, and front wheel toe-in. Caster angle is 0° to + ½°, ½° desired and camber angle of + ¼° to — ¼°, 0° desired, is gained by increasing or decreasing the thickness of "C" spacer shims at either the front or rear mounting studs of each side of the front suspension brackets.

The tie rod turn buckle clamps should be aligned properly so that they do not interfere at any point when the steering linkage is turned in its complete arc.

Toe-in is the difference in measurement between the front and rear of the front wheels at approximately eight inches from the road surface. The front of the wheels should be closer than the rear. Turning the tie rod adjusting tubes adjusts the toe-in within the specified limits of $\frac{1}{16}$" to $\frac{3}{16}$".

As special shop equipment is required to maintain proper front wheel alignment, your authorized American Motors Dealer is equipped to handle any adjustments that might be required to correct conditions that cause improper steering or abnormal tire wear.

Periodic lubrication of the steering gear linkage and control arm trunnions will serve to increase the longevity of the working parts and allow the parts to work quietly and freely.



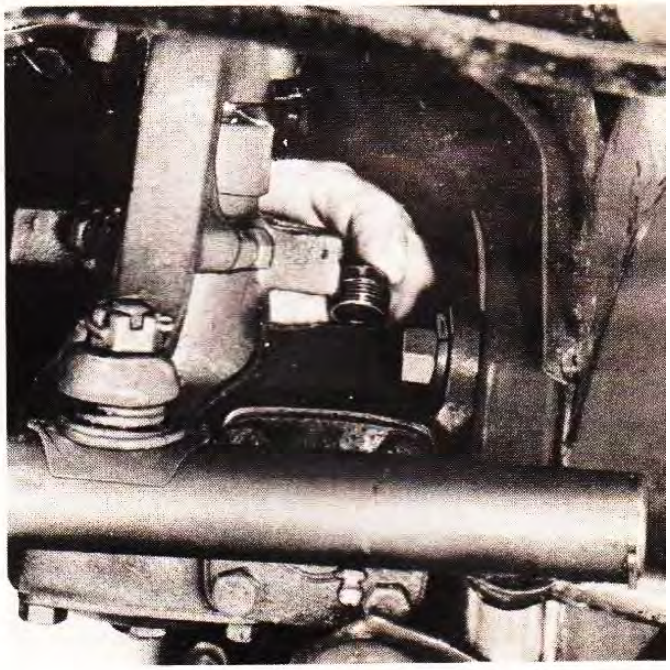
The linkage and control arm trunnions should be lubricated every 1,000 miles with a good grade of chassis lubricant.

Care should be exercised when lubricating at the various points. The fittings should be wiped clean to prevent abrasive types of matter entering the working parts, particularly if a high pressure lubricating gun is used.

The various points of lubrication are amply lubricated when the new lubricant begins to move the old out of the point being lubricated.

Steering Gear — The steering gear is of the worm and roller type with external adjustments provided to eliminate excessive play in the unit. Oil level in the steering gear housing should be maintained ½" to ¾" below the filler plug hole.

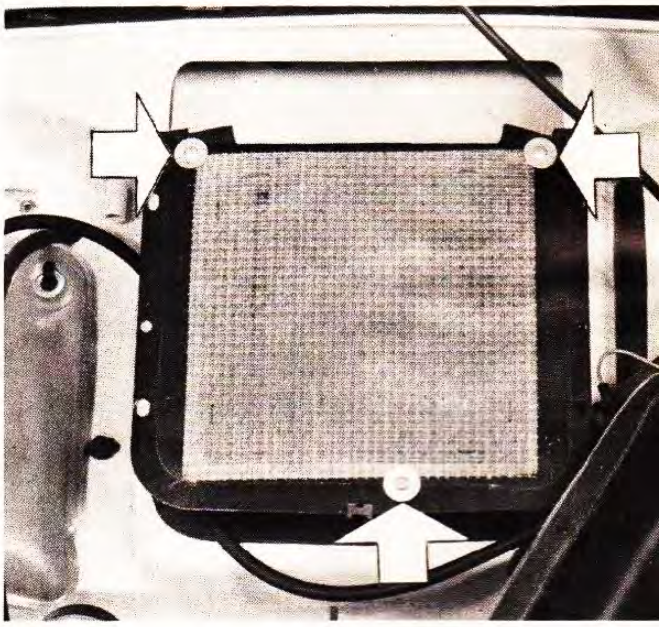
As servicing the steering gear requires specialized knowledge, any indication of excessive free play in the steering wheel should be checked and adjusted by your authorized American Motors Dealer.



WEATHER EYE

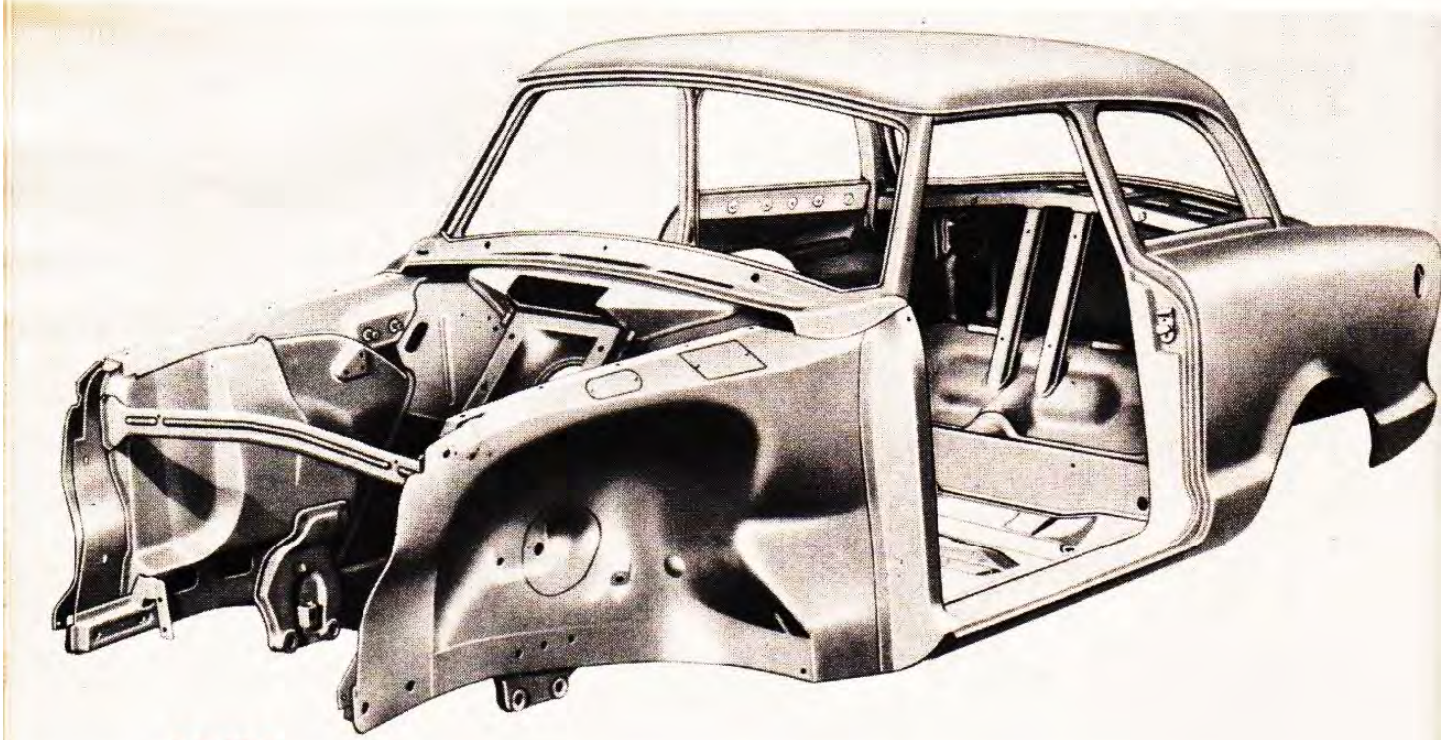
Change filter yearly — more often if necessary—especially with dusty driving conditions.

Remove four screws retaining heat core cover. The filter is then accessible for removal.



Dirt or foreign matter in the engine cooling system may become lodged under the water control valve seal. This condition is detected by heat present when the heater and fan control is shut off completely.

This condition may be corrected by opening the heater and fan control wide open and surging the engine coolant by racing the engine intermittently and then closing the valve tight. This serves to dislodge the dirt from under the seal.



BODY

The body serial plate, in addition to the body number, contains the following information, namely the body model, paint number, and trim number. These should be referred to when ordering body components, paint, or trim parts from your American Motors Dealer.

The periodic care that you give the body and its components of your Rambler American will reflect in longer service and neater appearance.

Engineering skill and production techniques have been embodied into the building of a stronger and longer lasting body shell.

In addition to the single unit body construction, a process has been incorporated to protect the body against the rigors of climatic conditions such as salt and sea air, extreme humid conditions, and against commonly used melting agents on roads in snow and ice regions.

All sheet metal, including the insides of doors, pillars, sills, and other areas which are inaccessible to spray coating are protected by complete rust proofing.

Initially, the body and allied sheet metal parts are chemically prepared to furnish a rust proof bond to the metal surface. The complete body is then immerse-dipped in Ferro-chrome primer and a red oxide alkyd fortified with zinc chromate. This serves to deter spread of rust and corrosion as all metal surfaces are coated in the dip process.

After the primer dip, each body is spray primed and baked and then painted with a double coat of baked enamel.

Your dealer has Americolor Touch Up paint in matching colors to

your car in pressurized spray cans to allow you to touch up scratches and nicks in the paint.

Washing — The baked enamel finish should be maintained by frequent washing with water. A small amount of mild detergent may be used, followed by a thorough rinsing. Dry to a high polish with a clean, damp chamois skin.

NEVER USE HOT WATER AND AVOID WASHING THE CAR UNDER A HOT SUN OR WHEN ENAMEL SURFACES ARE HOT.

Polishing — After a six month curing process for enamel, stains and road film may be removed with Polish and Cleaner or Haze Cream available at your authorized AMC dealer. Avoid the use of abrasive liquids, waxes, and power buffing. This tends to shorten the life of the factory finish by promoting premature film failure.

Care of Upholstery — Clean the inside often, using a whisk broom or vacuum cleaner. Use American Motors Fabric Cleaner or Kar-Kleen to remove spots from cloth.

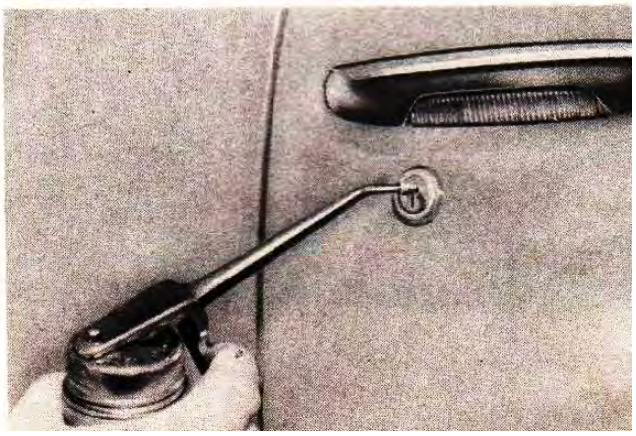
For cleaning vinyl upholstery, Kar-Kleen or mild soap and lukewarm water will do the best job and both are safe methods of cleaning.

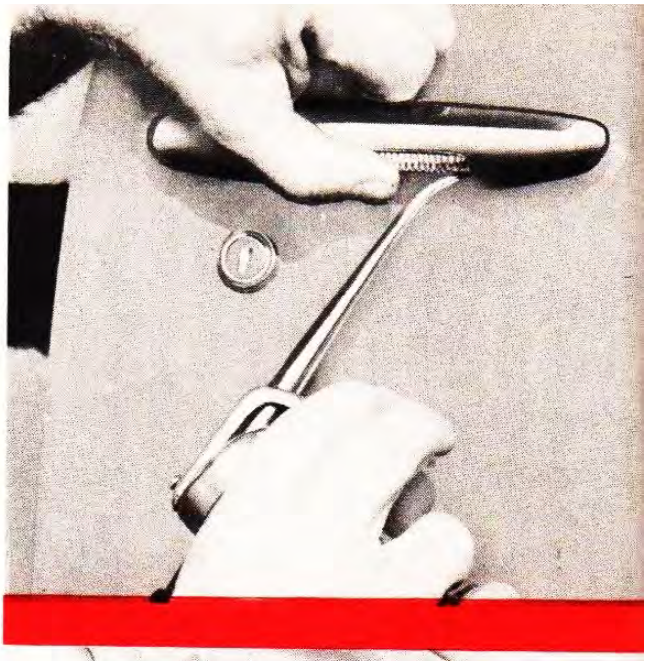
WARNING: *Never use gasoline, furniture polishes, oils, varnishes, or other prepared cleaners, as many of these are harmful to this type of upholstery.*

Care of Chrome Parts — Chrome parts and bright work should be cleaned by washing with a sponge or washing mitt and clear cold or lukewarm water. A mild soap or detergent may be used if necessary. Stiff brushes should not be used. Also available at all American Motors Dealers is a factory approved chrome cleaner.

Chrome Protection — Salt and calcium chloride used on roads during winter as melting agents are especially destructive to chrome, as is salt air and spray in seaboard localities. To maintain the appearance of chrome parts, cleanliness is most important. A paste wax should be used as a protective coating on all chrome and bright work finishes, which are subjected to severe exposure.

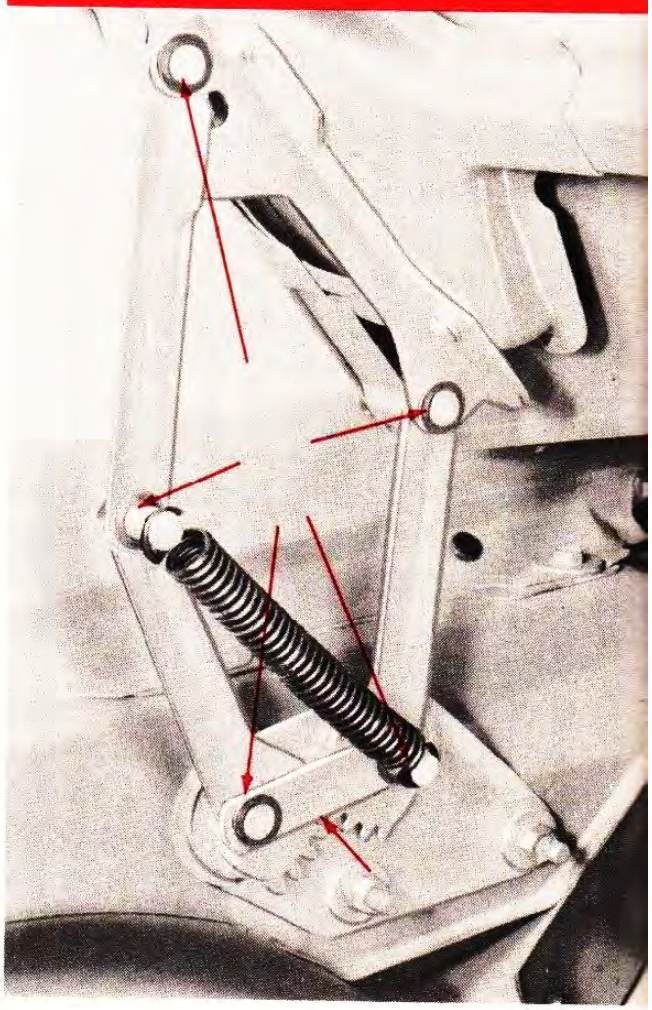
Key Lock Lubrication — Lubricate all key lock cylinders through key hole with finely powdered graphite or a paraffin base lubricant such as Shaler Riz, or similar type. A few drops is all that is necessary. Lubricate in spring and fall.

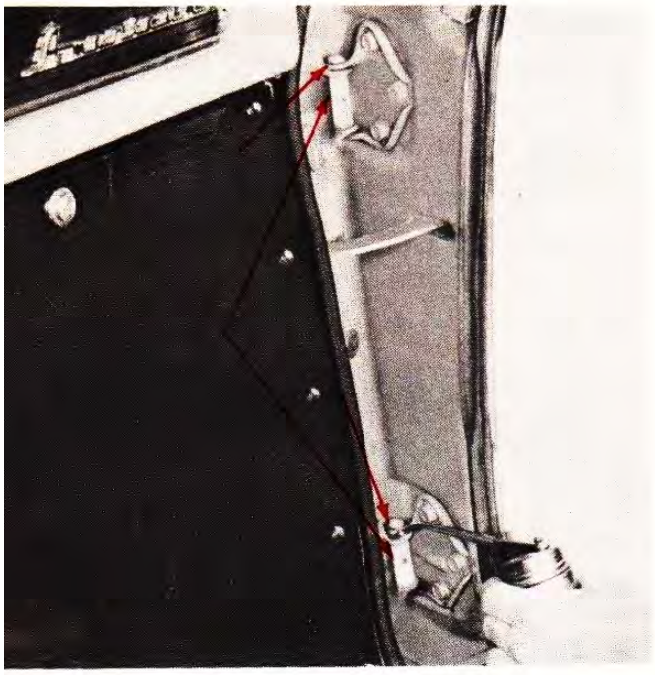




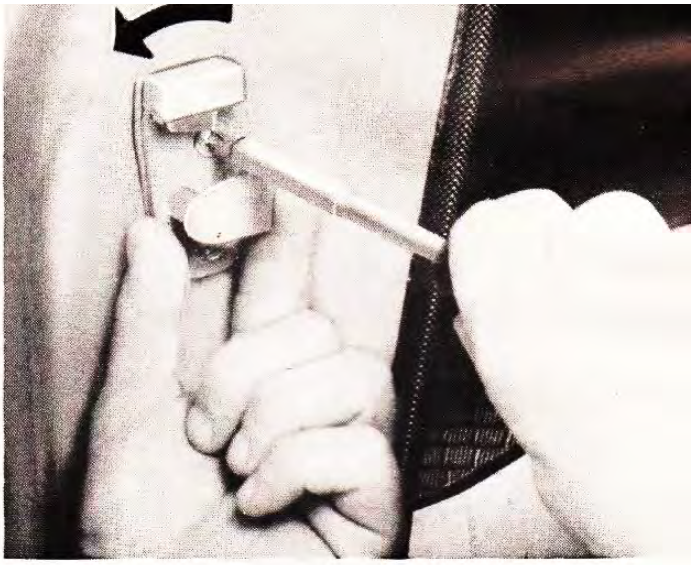
Door Handle Lubrication — Use a paraffin base lubricant on the pin and spring of the outside door handle. Lubricate when necessary.

Hood and Luggage Compartment Cover Hinges — Lubricate all hinge rivets and frictional contact areas when necessary with a high melting point lubricant, such as Lubriplate, or similar type.





Door Hinges — Lubricate door hinges with standard oils or a paraffin base lubricant at the holes provided and at the top of the hinge at the pin. Also lubricate the door check periodically with high melting point lubricant, similar to Lubriplate.



Door Lock Striker Adjustment — If the doors seem loose after the car has been in service for some time, it indicates the door sealer rubbers have taken a natural set.

The striker screws can be loosened and the striker moved toward the inside of the car, but at its original height, so that the upper prong of the forked toggle on the door lock just passes over the striker pin.

After the lock striker has been positioned, loosen the upper screw and tilt the top of the striker toward the outside of the car. This will insure a positive bearing surface for the top of the door latch and prevent the possibility of it becoming disengaged from the striker latch pin if door is not completely closed.

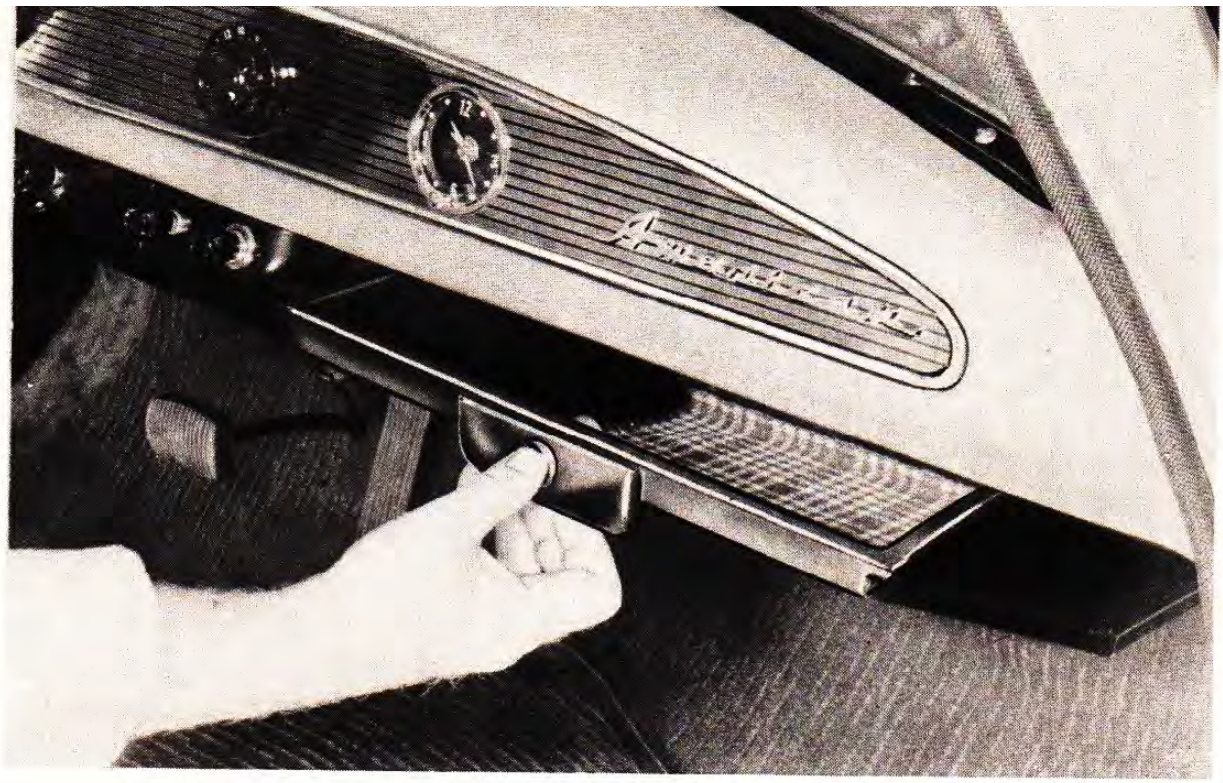


Lock Striker Lubrication — Lubricate the striker sliding wedge and pin with a lubricant such as Lubriplate or similar type.



Care of Sealer Rubbers—Periodically clean the dirt from the sealer rubbers and the areas where the rubbers contact the body with a cloth dampened in gasoline.

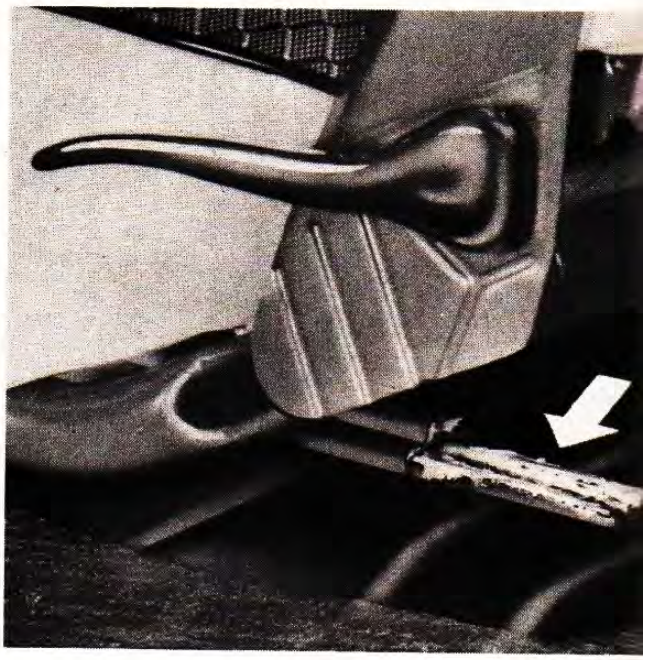
Apply a small amount of silicone rubber conditioner to all sealer rubbers. Work it well into the rubbers and wipe off surplus. This will keep the rubber pliable.



Glove Box — The sliding drawer type glove box can be locked with the round headed key. To unlock, turn the key to the right and push key lock cylinder plunger and slide the glove box open.

Lubricate the glove box slides with a lubricant similar to Shaler Riz.



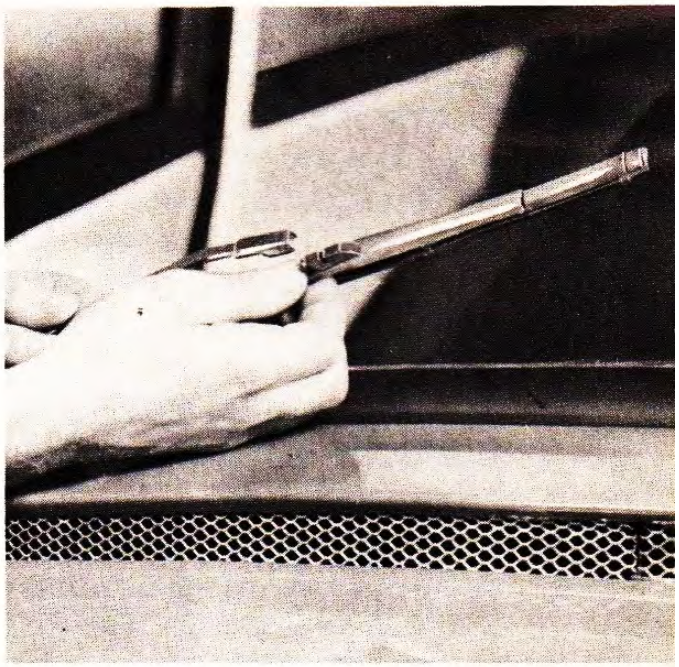


Ash Receiver — The slide type ash receiver is removed by depressing the snuffer downward and pulling the receiver from its retainer. Lubricate slides occasionally.

Front Seat Adjuster Slide — The seat adjuster slide should be wiped clean and lubricated to provide ease of adjustment at all times.

Move seat forward, clean, and lubricate. Then move seat to the rear and clean and lubricate front section of adjuster slide.

Wiper Blade Assembly Removal — To remove the wiper blade assembly, lift arm and blade assembly from windshield. Depress spring steel lever to disengage blade from arm pin.



LUBRICATION

Oil Changes — The initial change should be made between 300 and 500 miles. The periods for subsequent drains are affected by a variety of conditions; no single mileage figure can apply to all types of driving. (See Page 16.)

Under normally favorable conditions, draining at 2,000-mile intervals is good practice. In summer, with other operating conditions favorable to oil life, 3,000-mile drain periods are permissible. Oil changes in cold weather should be made more frequently — twice as often is suggested. In short run, start-and-stop winter service, when engine is not allowed to warm up properly, oil should be changed still more frequently — as often as every 700 to 1,000 miles.

For economy, drain crankcase when level is low. Discard exhausted oil, not fresh lubricant. Always drain when oil is hot, after running.

Engine Oil — Form the habit of having the oil level checked whenever fuel is purchased. If the oil level is down to the "ADD OIL" mark on the oil level gauge, oil should be added to bring it up to the "FULL" mark. DO NOT OVERFILL.

Premium (MM) oil is satisfactory for use under normal operating conditions. For more severe service, Heavy Duty (MS) oil may be used if desired.

The engine should be lubricated with SAE 20, 20W, 10W, or 5W oils, rather than the heavier SAE 30 or SAE 40. (The "W" indicates oils specially suited for winter use.)

The grade use should be determined by the lowest anticipated temperature before the next oil change period.

		Multi-Viscosity
Above +32° F.	SAE 20	
Above +10° F.	SAE 20W	10W-30
Above −10° F.	SAE 10W	
Below −10° F.	SAE 5W	5W-20

Do not switch brands indiscriminately — some oils tend to interact chemically when mixed. Oils designated as regular (ML) are not recommended since MM and MS oils offer more protection under a greater variation in driving conditions.

Lubrication of Running Gear — Most of the working parts of the running gear should be lubricated at 1,000-mile intervals as shown by the chart on page 73. Note that a few points require attention only at 2,000, 3,000, 5,000, 10,000 or 15,000-mile intervals.

If the car is operated in dusty, wet or slushy weather, and particularly in mud, it is good practice to lubricate the running gear more frequently. Under these conditions, the lubricant tends to be washed out of bearings exposed under the car. The best time to lubricate is immediately after operation under such adverse conditions, to flush out the water and foreign matter with fresh lubricant.

1959 RAMBLER AMERICAN LUBRICATION SERVICE CHART

LUBRICATE AT EACH ARROW POINT EVERY 1,000 MILES EXCEPT AS NOTED

ENGINE COMPARTMENT

Generator (2 oilers).....EO

Distributor
Shaft Oil Cup (Plug).....EO
Wick under Rotor, 5000 miles..EO
Cam — Coat surface lightly every 5,000 miles.....PJ
Upon replacement of Contact Set .....BBL
Breaker Pivot — every 5,000 miles .....EO

Gearshift Control Lever (fitting)..CL
Flash-O-Matic models, no lubrication

Oil Filter — Where so equipped, replace element every 4,000 miles

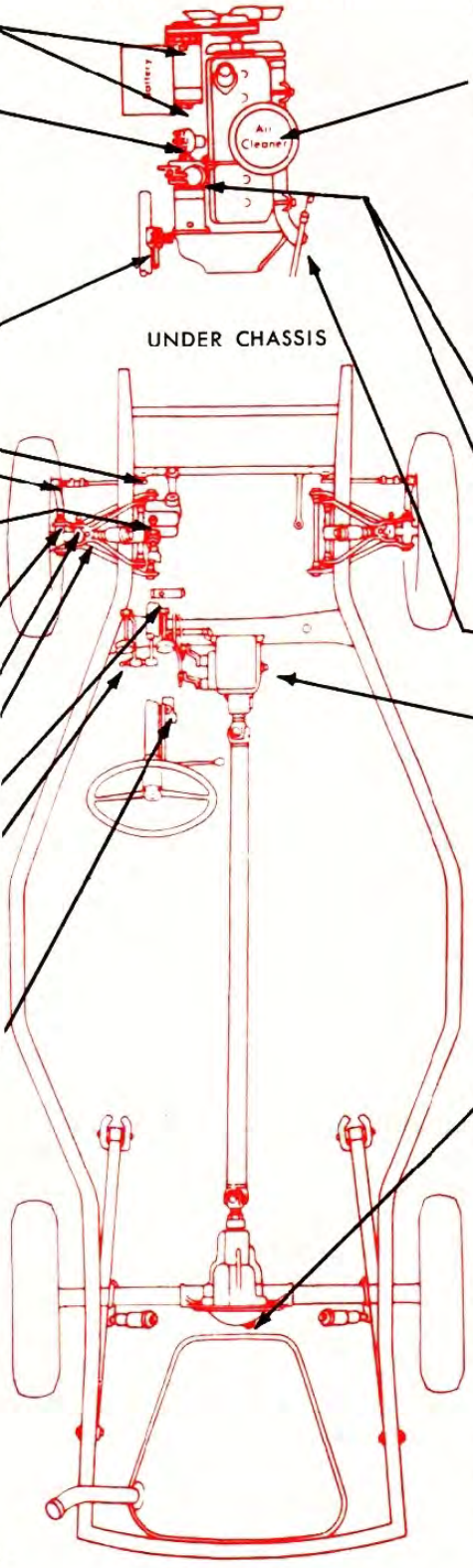
Air Cleaner — Oil Bath Type
(clean and re-oil at crankcase drain intervals).....EO
Capacity — 1 Pt.
More frequently under severe conditions.
Summer — SAE 50
Winter — SAE 20

Dry Type — Remove element and shake off dust every 1,000 miles. Replace every 10,000 miles or six months. Do not dip or wash in oil or solvent of any type.

Oil Cap Filter (clean and re-oil every 2,000 miles).....EO

Crankcase (check level).....EO

Above +32°F....SAE 20	}	Multi-Viscosity
Above +10°F..SAE 20W		
Above −10°F..SAE 10W		10W-30
Below −10°F...SAE 5W		5W-20



UNDER CHASSIS

Drag Link (fitting on each side)..CL
Tie Rod (fitting on each side)...CL

Steering Gear (plug)....SAE 90 EPL

Control Arm, Lower (fitting on each side) CL

Control Arm, Upper (fitting on each side) CL

Trunnion (fitting on each side)...CL

Clutch Beam Lever.....CL

Pedal Shaft CL

Hand Brake Bell Crank.....EO

Brake Master Cylinder
(check level) .....HBF
Accessible through hole in floor

TRANSMISSION (check level)
Flash-O-Matic .....ATF
Drain and refill every 15,000 miles.

Synchromesh and Overdrive..MGL
Above +32°F .....SAE 90
Below +32°F .....SAE 80
Drain and refill every 10,000 miles.
Overdrive drained and refilled through separate plugs.

Wheel Bearings (Repack).....WBL
Front, every 10,000 miles
Rear, when dismantled for other service.

DIFFERENTIAL (check level) .....SAE 90 MP
Drain and refill periods not recommended.

DO NOT LUBRICATE
Rear Springs, Rear Spring Bolts and Shackles, Shock Absorbers

TIRE PRESSURE (COLD)

Front and Rear.....24 lbs.

LUBRICANT SYMBOLS

ATF Automatic Tran. Fluid, Type A, AQ-ATF
CL Chassis Lubricant
BBL Ball Bearing Lubricant
EPL Extreme Pressure Gear Lubricant
MGL Mineral Gear Lubricant
HBF Hydraulic Brake Fluid (SAE 70-R-1)
MP Multi-Purpose Gear Lubricant
EO Engine Oil
WBL Wheel Bearing Lubricant
PJ Petroleum Jelly

CAPACITIES

MEASURE SYSTEM	CRANKCASE	TRANSMISSION		With Overdrive	DIFFERENTIAL	COOLING SYSTEM		GAS TANK
	Quarts	Flash-O-Matic Quarts	Synchromesh Pints	Pints	Pints	With Heater Quarts	Without Heater Quarts	Gallons
U.S.A.	4*	10	1.5	2.75	3	12	11	20
British Imperial	3.3	8.3	1.25	2.3	2.5	10	9.2	16.7

TECHNICAL DATA AND SPECIFICATIONS

ENGINE

Type	Six Cylinder L-Head
Bore	3 1/8"
Stroke	4 1/4"
Displacement	195.6 Cu. In.
Taxable License Horsepower	23.44
Horsepower	90 @ 3800 RPM
Torque	150 Lbs. Ft. @ 1600 RPM
Firing Order	1, 5, 3, 6, 2, 4
Tappets	Solid
Valve Clearance	.016" In. — .018" Ex. (Cold)
Compression Ratio	8.0:1
Main Bearings	4

IGNITION SYSTEM

Spark Plug	AL-7 (Auto-Lite) H-10 (Champion)
Spark Plug Gap	.033" — .037"
Distributor Point Gap	.016"
Breaker Arm Tension	19-23 Oz.
Cam Angle	28° to 35°
Ignition Timing	3° B.T.D.C.

BATTERY (12 VOLT)

Capacity (Ampere Hours @ 20-Hour Rate)	40
Number of Cells	6
Plates per Cell	7
Ground Terminal Polarity	Neg.
Specific Gravity (Fully Charged)	1.280

CARBURETOR

Carter YF Single Barrel	
Idle Speed	550 (Std. & O.D.) 475 (Flash-O-Matic)

EXTERIOR DIMENSIONS

Wheelbase		100"
Length		178 5/16"
Length with Continental Tire Carrier		185 7/16"
Width		73
Height (Loaded) Sedan		57 5/16"
Height (Loaded) Station Wagon		57 13/16"
Front Tread		54 5/8"
Rear Tread		55
Tire Size	Sedan	5.90 x 15 (6.40 opt.)
	Station Wagon	(6.40 x 15)
Curb Wt. (Sedan)		Deluxe 2571 Super 2583
Curb Wt. (Station Wagon)		Deluxe 2653 Super 2665

STEERING GEOMETRY

Caster	0° to ½° pos., ½° pos. desired
Camber	¼° pos. to ¼° neg., 0° desired
Toe-in	1/16" to 3/16"

PREVENTIVE MAINTENANCE REFERENCE CHART

	Each 1,000 Miles	Each 2,000 Miles	Each 4,000 Miles	Each 5,000 Miles	Each 10,000 Miles	Each 15,000 Miles
Lubricate Chassis (See Lubrication Chart)	X					
Check Battery Condition (Every Month)	X					
Check Brake Master Cylinder Fluid Level	X					
Change Engine Oil*		X				
Clean and Oil Crankcase Breather Cap Screen		X				
Clean Carburetor Air Cleaner		X				
Change Oil Filter Element* (When so Equipped)			X			
Clean Fuel Pump Filter Element				X		
Minor Engine Tune-Up				X		
Cross-Switch Tires and Check Tire Balance**				X		
Front Wheel Alignment, Check, Adjust if Required***				X		
Drain, Flush, Refill Standard and Overdrive Transmission					X	
Clean and Repack Front Wheel Bearings					X	
Brake Lining Inspection					X	
Replace Carburetor Air Cleaner Element Dry Type					X	
Adjust Automatic Transmission Bands***						X
Change Automatic Transmission Fluid						X

*More frequent changes are required under abnormal driving conditions.
**First 2,500, again at 5,000, each 5,000 thereafter.
***Recommended Dealer operation.

A.M.A. — UNIFORM WARRANTY

"The Manufacturer warrants each new Motor Vehicle manufactured by it, to be free from defects in material and workmanship under normal use and service, its obligation under the Warranty being limited to making good at its factory any part or parts thereof, including all equipment or trade accessories (except tires) supplied by the Motor Vehicle Manufacturer, which shall, within ninety (90) days after making delivery of such vehicle to the original purchaser or before such vehicle has been driven 4,000 miles, whichever event shall first occur, be returned to it with transportation charges prepaid, and which its examination shall disclose to its satisfaction to have been thus defective; this Warranty being expressly in lieu of all other warranties expressed or implied and of all other obligations or liabilities on its part, and it neither assumes nor authorizes any other person to assume for it any liability in connection with the sales of its vehicle.

"This Warranty shall not appy to any vehicle which shall have been repaired or altered outside of an American Motors Authorized Dealer Service Station in any way so as, in the judgment of the manufacturer, to affect its stability or reliability, nor which has been subject to misuse, negligence or accident."

RADIO

The radio set is guaranteed free of defects for a period of 90 days from the date of purchase of the car. In the event that the set is defective within warranty, or is not performing satisfactorily, the owner should return the car with the set to the Dealer for adjustment.

American Motors Corporation reserves the right to make changes in design or to make additions to or improvements in its product without imposing any obligation upon itself to install them on its products previously manufactured.

AMERICAN MOTORS
CAR CARE MATERIALS



All American Motors car care materials are formulated to exacting specifications to provide the best care and protection of the finish, interior trim, engine, transmission and other parts of your car. Ease of use or application has also been kept uppermost in mind in the preparation of these items. All materials have clear, concise instructions printed on the containers.





American Motors Anti-Freeze — Permanent and Alcohol Types

Ethylene glycol base (permanent) type formulated for best protection against seepage, rust, corrosion, and foaming. Provides positive all-winter protection. Methanol (alcohol) type gives protection against rust and corrosion. American Motors Anti-Freeze products are specially formulated for your car.

Americolor Spray Touch-Up Paint

Colors to match your car exactly. For simple spraying of damaged or rusty painted areas. Also ideal for touching up nicks and scratches by spraying small quantity into container cap and using touch-up brush. Also available in aluminum.

TRIP AND SERVICE LOG

Date	From	To	Mileage Start	Mileage Finish	Total Miles	Gas	M.P.G.	Oil	Lubrication

TRIP AND SERVICE LOG

Date	From	To	Mileage Start	Mileage Finish	Total Miles	Gas	M.P.G.	Oil	Lubrication

TRIP AND SERVICE LOG

Date	From	To	Mileage		Total Miles	Gas	M.P.G.	Oil	Lubricatio
			Start	Finish					

Service for your new car . . .

Factory authorized dealers have the shop facilities staffed by factory-trained personnel and equipped with the latest test equipment to keep your new car in top condition. Your local dealer has the know-how to service your car properly, and like other authorized dealers he offers and recommends maintenance — such as lubrication, inspections, and adjustments — which keep your car performance high. When traveling, you will find well-established dealers in our growing organization ready with prompt, courteous service in clean modern shops.

and remember . . .

Your Warranty is dependent on your new car inspection which is provided free at 2,000 miles, by American Motors dealers wherever you may be, through the tourist privilege.

Read and retain your Owner's Service Policy and this Owner's Handbook for your protection, since both contain pertinent information for future reference.

AMERICAN MOTORS CORPORATION
Detroit 32, Michigan
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Tips FOR TOP FUEL ECONOMY . . .

1. Have the engine properly tuned so that maximum efficiency may be obtained.
2. Drive at a steady pace and allow sufficient time for a trip so that excessive speeds will not be necessary.
3. Do not make quick starts and stops, and avoid jerky driving.
4. Watch stop lights. Plan ahead and adjust speed so that a stop for a red light will not be necessary.
5. Avoid long periods of engine idling—which is a real gas consumer.
6. Shift quickly into second and third gears to get the gasoline-savings of high-gear driving.
7. Do not use heavier lubricants than specified in the Owner's Handbook. Heavy motor oil materially increases engine friction.

Remember: *Top fuel economy can only be obtained with proper driving technique.*

drive safely