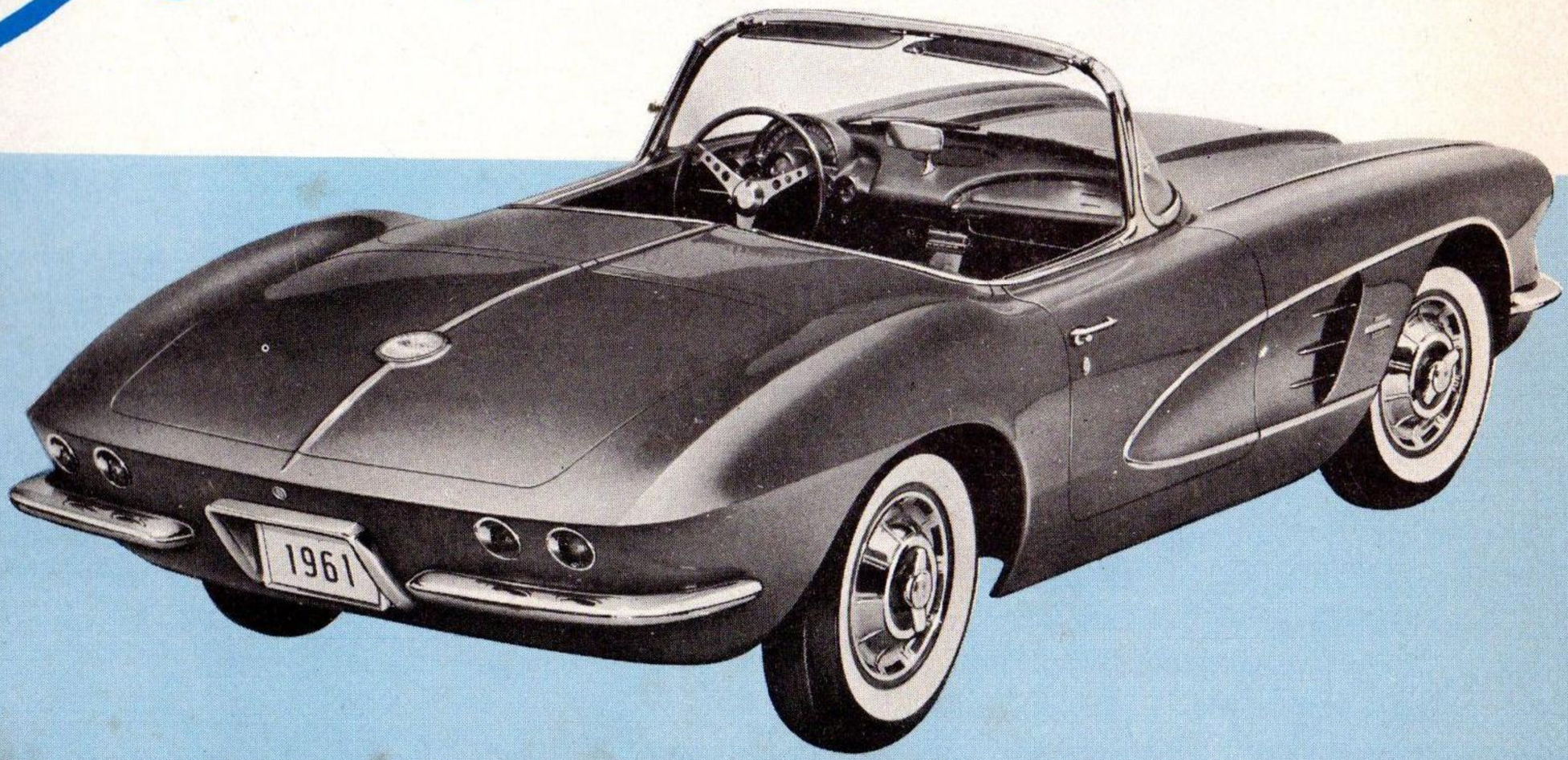
Corvette 1961



OWNERS GUIDE

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These accessories include a patch for jacket or cap, a lapel pin and a wallet card. The Corvette News is a quarterly publication prepared exclusively for Corvette owners. It contains general sports car news of interest, feature stories about Corvette owners and Corvette Clubs, and technical information about the Corvette.

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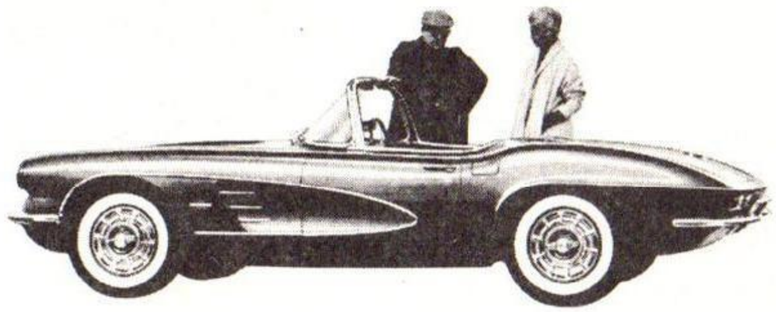
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GENERAL MOTORS BUILDING

DETROIT 2, MICHIGAN

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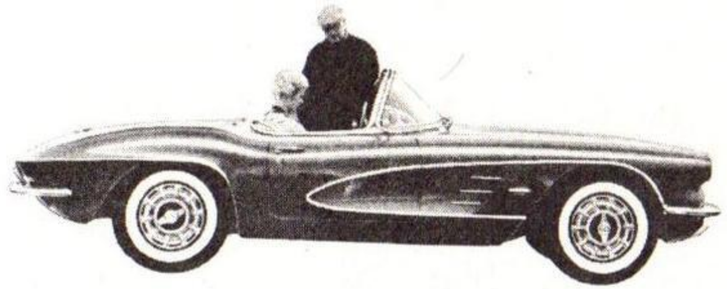


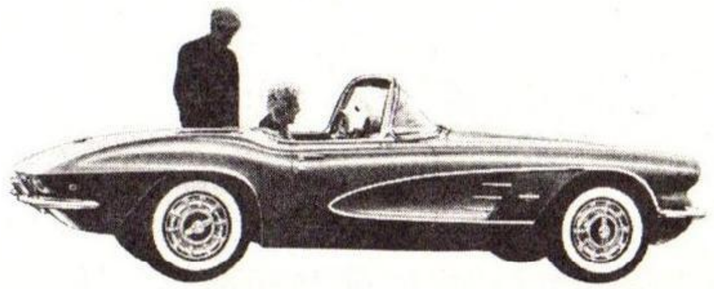




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Congratulations On Your Selection of the Corvette

A new concept in motoring pleasure is now yours as the owner of the new Corvette. Chevrolet has designed and engineered your Corvette to include many features and conveniences usually found only in the most expensive foreign sports cars. The power, performance and stamina built into your Corvette are unsurpassed by any other sports car. Never has an automobile accepted the challenge of the highway as will your Corvette.

To help you obtain the fullest enjoyment of your Corvette and familiarize you with its many features, we have prepared this owners manual as a guide to better understanding of its operation. Complete specifications and instructions for the performance of minor maintenance are contained herein. Your Chevrolet Dealer is fully equipped to perform any maintenance which your Corvette may require. Do not hesitate to consult him on any question you may have concerning operation or servicing of your car.

All information, illustrations and specifications contained in this literature are based on the latest product information available at the time of publication approval. The right is reserved to make changes at any time without notice.

CHEVROLET MOTOR DIVISION · GENERAL MOTORS CORPORATION · DETROIT 2, MICHIGAN

A WORD TO OWNERS

Read this manual carefully. It tells you the things you should know about maintaining and driving your new Corvette and it will furnish you with answers to the many questions which your admiring friends and neighbors are going to ask you about your new car.

INITIAL DRIVING INSTRUCTIONS

During your first 1000 miles of driving, you can, by observing a few simple precautions, contribute greatly to a longer life for your Corvette and add much to its future performance and economy of operation.

It is recommended that your speed for the first 1000 miles be confined to a maximum of 60 M.P.H., but do not drive for extended periods at any one constant speed, either slow or fast. During this period avoid full throttle "jack rabbit" starts and quick, abrupt stops.

After 1000 miles your Corvette may be called upon to deliver any speed you desire, within local regulations, for as long as you wish. It is best, however, to always drive at a reasonable speed until the engine has warmed up.

Be particularly careful to maintain the proper oil level in the crankcase. When delivered to you, your Corvette engine is filled with a light body, heavy duty oil containing an additive to prevent scuffing of the mating parts. USE THIS OIL DURING ONLY THE FIRST 1000 MILES OF DRIVING. Check the oil level frequently. If, during this period, it becomes necessary to add oil, use SAE 10W Service designation M.S. At the end of 1000 miles, drain the oil from the engine (when hot) and refill with an oil of the viscosity number and type suggested on page 23. Use of the proper engine oil is of great importance in assuring maximum performance and economy.

MAINTENANCE FOR TOP PERFORMANCE

Since it is realized that many Corvette owners have adequate automotive experience to perform their own minor maintenance, a section of this manual deals with minor chassis adjustments, engine specifications and procedure for motor tuneup. Before attempting any repair or adjustment, read the procedure carefully in order to thoroughly familiarize yourself with the parts and operations involved. Remember one rule which covers any situation of which you are not sure—no one knows your Corvette better than your Chevrolet Dealer. He has the experience and equipment necessary to keep your car looking and running its very best.

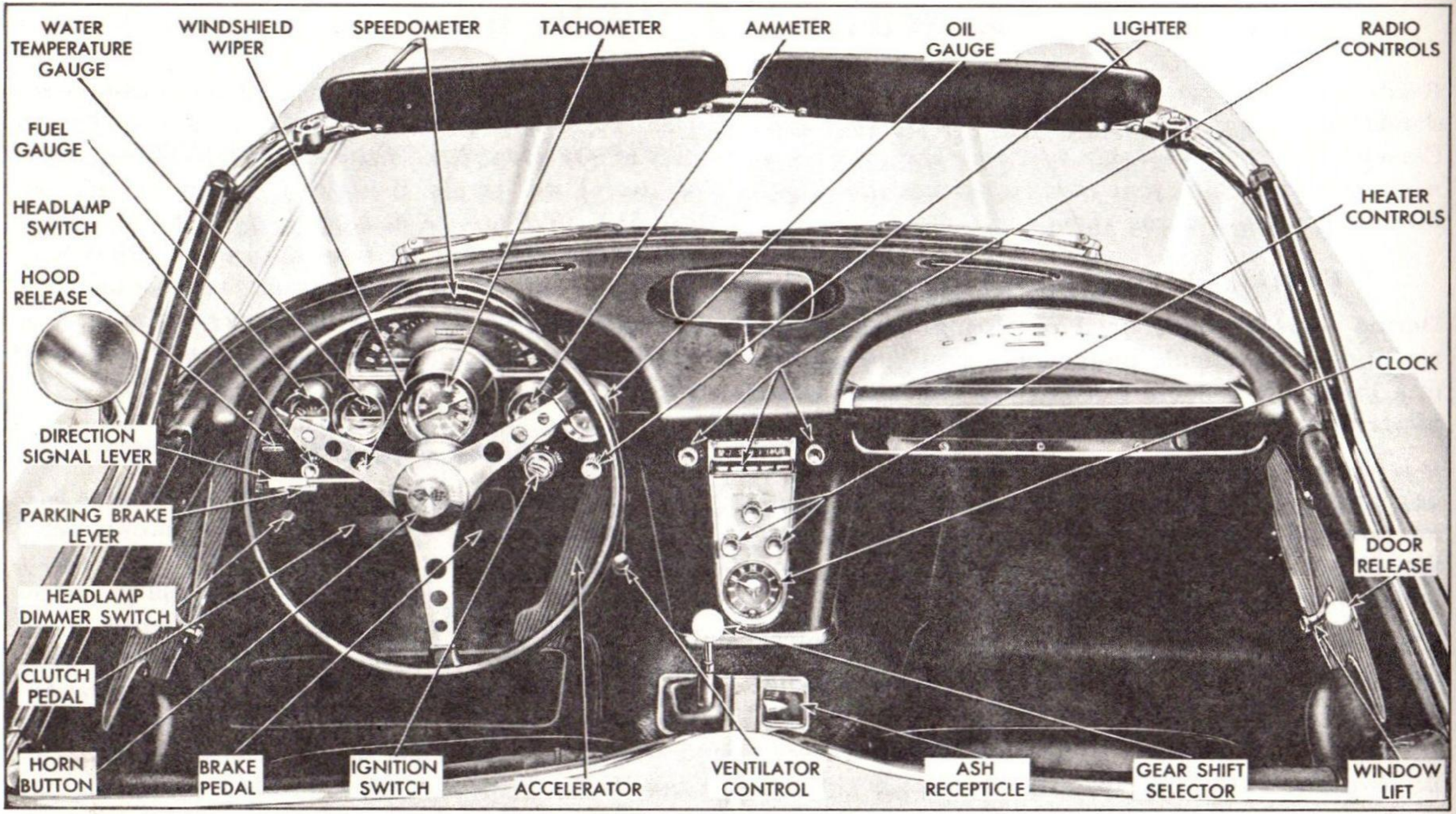


Fig. 1—Instruments and Controls

INSTRUMENTS AND CONTROLS

STANDARD EQUIPMENT INSTRUMENTS

SPEEDOMETER

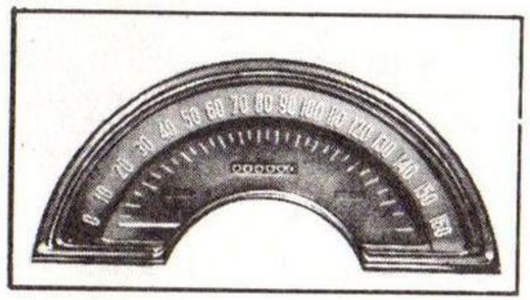


Fig. 2—Speedometer

Located on the instrument panel above the steering column. The speedometer (fig. 2) registers both speed and accumulated mileage. The hood over the upper portion of the speedometer reduces reflections for easier viewing during night driving.

FUEL GAUGE

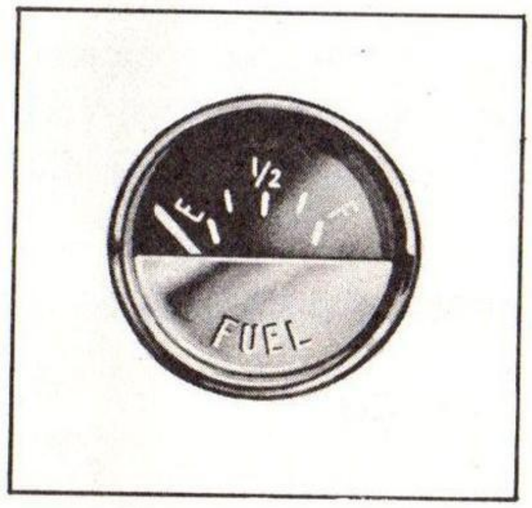


Fig. 3—Fuel Gauge

The electrically operated fuel gauge (fig. 3) accurately indicates the amount of fuel in the 16.4 gallon fuel tank when the ignition switch is turned on. With the ignition switch turned off the pointer will "float" anywhere on the gauge face.

TEMPERATURE GAUGE

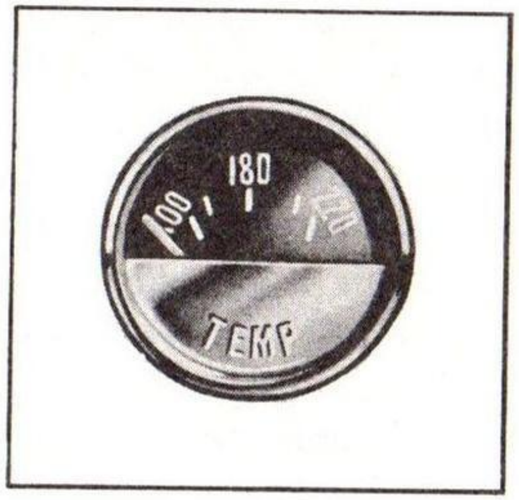


Fig. 4—Temperature Gauge

The temperature gauge (fig. 4) shows engine coolant temperature in the cylinder head. Temperature indications will vary with thermostat range, outside air temperature and operating conditions of the vehicle. Long hard drives or prolonged idling in very hot weather may produce above normal temperature indications. With the ignition switch turned off, the pointer will "float" anywhere on the gauge face.

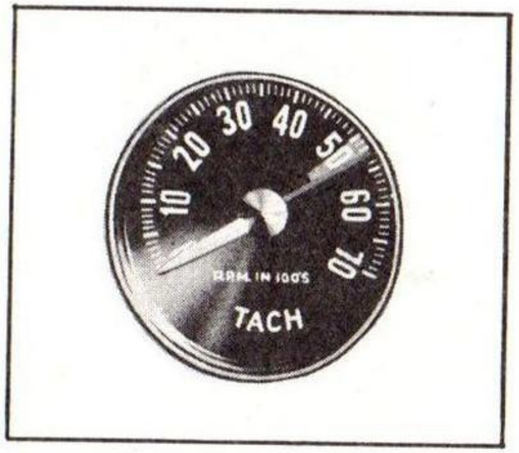


Fig. 5—Tachometer

TACHOMETER

Centrally located in the driver's compartment beneath the speedometer, the tachometer (fig. 5) indicates the speed of the engine in revolutions per minute.

AMMETER

The ammeter (fig. 6) shows the rate at which the battery is being charged or discharged. The generator is equipped with a regulator which controls the charge according to battery requirements. When the generator is supplying more than the current demand, the ammeter will show the charging rate, while a discharge will be shown if the demand of the equipment switched on is more than the generator output. When the battery is fully charged, the charging rate will be low, thus giving an indication of the condition of the battery.



Fig. 6—Ammeter

OIL PRESSURE GAUGE

The oil pressure gauge (fig. 7) is installed primarily as an indicator to show whether or not the oil pump is working and does not necessarily indicate the condition or quantity of oil in the crankcase. The oil pressure gauge should always indicate pressure when the engine is running. If no pressure is indicated, stop the engine immediately and have the cause corrected. When starting a cold engine it will be noted that the oil pressure gauge will register a high oil pressure. As the engine warms up, the pressure will drop until it reaches a point where changes to higher speeds will raise the pressure very little if at all. If oil pressure registers high after the engine is thoroughly warmed up, it may indicate the possibility of plugged oil lines and passages and should be inspected to determine the cause.

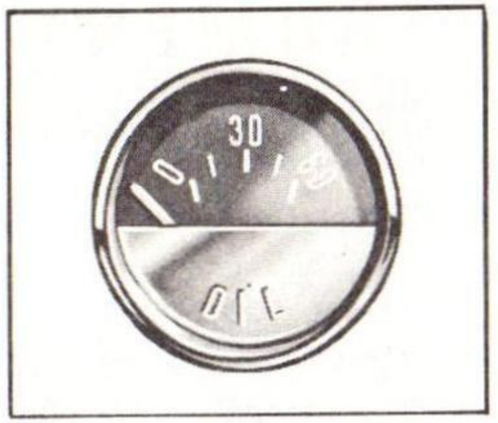


Fig. 7—Oil Pressure Gauge

CLOCK

Mounted in the lower section of the compartment divider is the electric clock (fig. 23). To set the clock, pull out and turn the knob at the bottom of the dial.

STANDARD EQUIPMENT CONTROLS

IGNITION SWITCH

The four positions of the ignition switch (fig. 8) as indicated by the wording on the bezel surrounding the



Fig. 8—Ignition Switch

switch are: LOCK, OFF, ON and START. To operate, turn the switch to START. As soon as the engine starts, release the switch, which will return to the ON position. The key is required only when turning to or from LOCK position.

LIGHT SWITCH

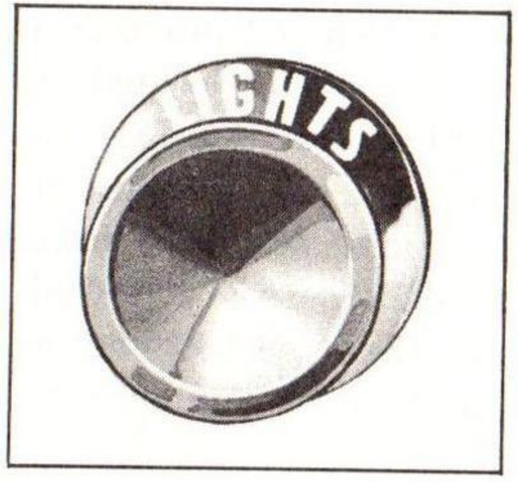


Fig. 9—Light Switch

The light switch, located at the extreme left of the lower instrument panel (fig. 9) controls a two position push-pull switch. Pull part way out (to first position) for parking, tail, license, and instrument panel lights. In the second position (all the way out) headlight beams replace the parking lights. Brightness of the instrument panel lights may be regulated by rotating the knob.

WINDSHIELD WIPER

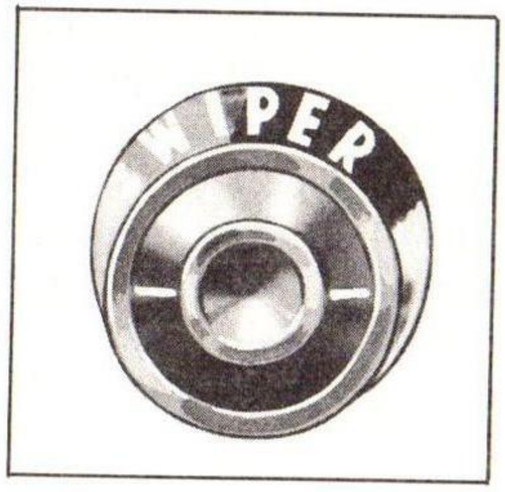


Fig. 10—Windshield Wiper

The windshield wiper control knob (fig. 10) is located on the instrument panel, to the left of the steering post. The electric motor may be operated any time the ignition switch is on. Turn knob clockwise half-way for slow-speed or all the way for high-speed wiper operation.

CIGARETTE LIGHTER

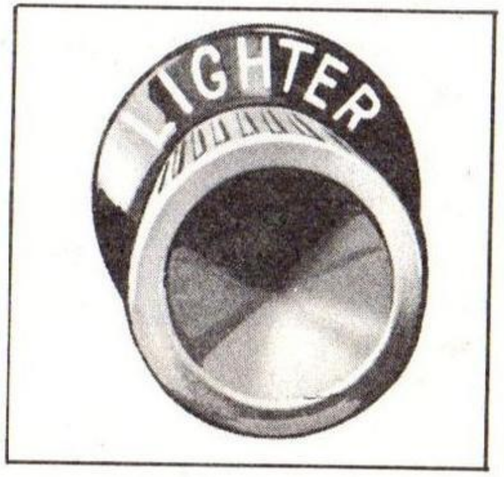


Fig. 11—Cigarette Lighter

The cigarette lighter (fig. 11) is located at the extreme right of the instrument panel below the oil pressure gauge, and is operated by pushing in on the knob. When heated, it will automatically "click" out, ready to use.

COWL VENTILATOR CONTROL

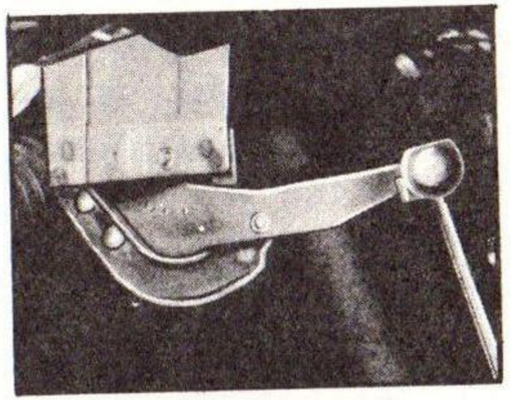


Fig. 12—Cowl Ventilator Control

Located beneath the instrument panel, to the right of the steering column, the cowl ventilator (fig. 12) control opens and closes the ventilator. A ratchet mechanism provides several positions for regulation of the air admitted.

ACCELERATOR

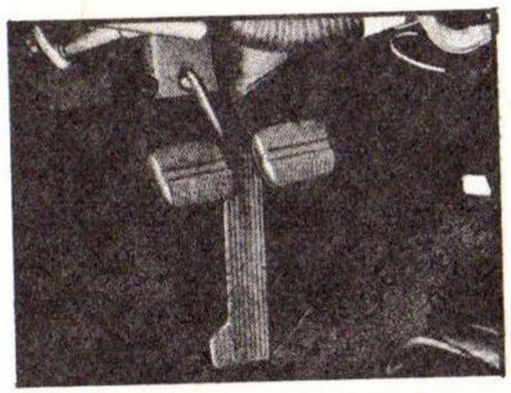


Fig. 13—Accelerator, Brake and Clutch Pedal

The accelerator pedal (fig. 13) controls engine speed and is designed to provide the proper "feel," neither too light nor too firm, for smooth control.

BRAKE PEDAL

Depressing the foot operated pendant type brake pedal (fig. 13) supported from the master cylinder attached to the dash panel, applies the hydraulic service brakes at all four wheels in proportion to the pressure applied to the pedal.

CLUTCH PEDAL

The pendant type clutch pedal, (fig. 13) on the three speed and four speed transmission only, is supported from beneath the dash and allows easy operation as well as providing maximum foot room on the floorboard beneath the pedal.

HEADLIGHT DIMMER SWITCH

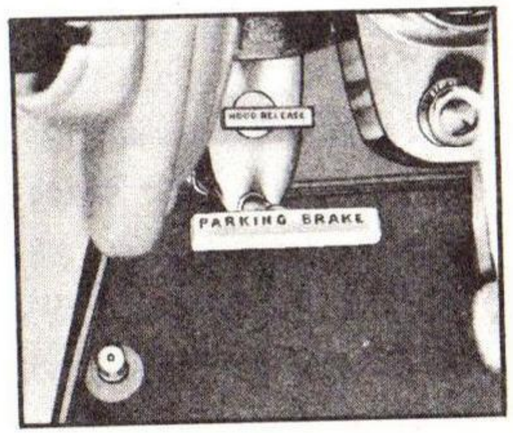


Fig. 14—Headlight Dimmer Switch, Parking Brake Control and Hood Release

Selection of either high or low headlight beams may be made by foot pressure on the dimmer switch, located at the left side of the floor toe board (fig. 14). A beam indicator light mounted in the speedometer face is illuminated when the high beams are on.

TRANSMISSION SELECTOR LEVER

The transmission selector lever (fig. 15) for the three speed transmission or the optional four-speed or Power-

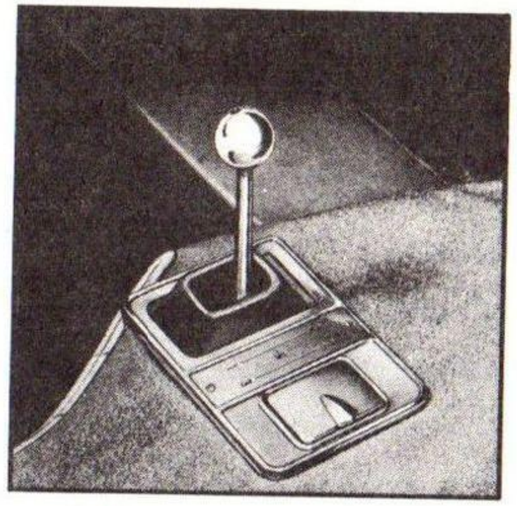


Fig. 15—Transmission Selector Lever

glide transmission is located on top of the floor tunnel, within convenient reach of the driver. Lever positions are indicated on the plate between the selector lever and the ash tray.

PARKING BRAKE CONTROL

The parking brake (fig. 14) operates by pulling straight back on the T-handle. To release, turn slightly and push in.

HOOD RELEASE

To release the hood lock, pull out the control knob (fig. 14) and raise hood manually until hood support engages. To lower, raise hood to disengage support, then lower fully to engage hood lock.

DIRECTION SIGNAL

The direction signal lever is located on the left side of the steering column forward of the steering wheel. Moving this lever downward for a left turn and upward for a right turn will impart a flashing signal through the parking, stop and tail lights to indicate the direction of turn. The signal arm will return to the off position when the steering wheel is returned to its "straight ahead" position. The signal direction is indicated to the driver by a flashing arrow on the speedometer face.

STEERING WHEEL

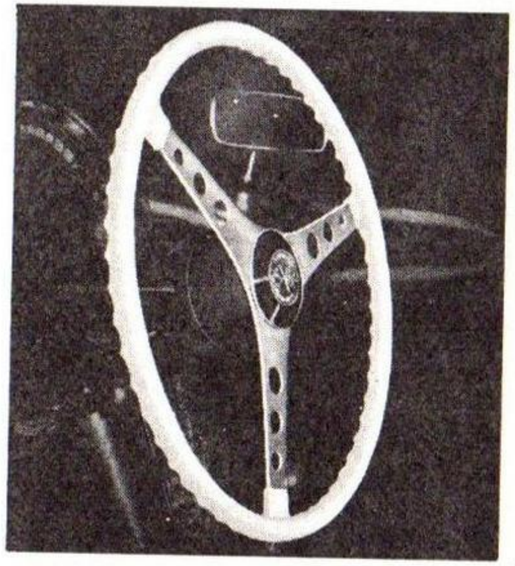


Fig. 16—Steering Wheel

The compact steering wheel (fig. 16) capped by the horn button, greatly enhances the "sports car" appearance of your Corvette.

HORN BUTTON

The horn button is located at the center of the steering wheel and has been styled to harmonize with the rugged appearance of the steering wheel. Finger tip pressure on this button is all that is needed to blow the horn.

SEAT ADJUSTER

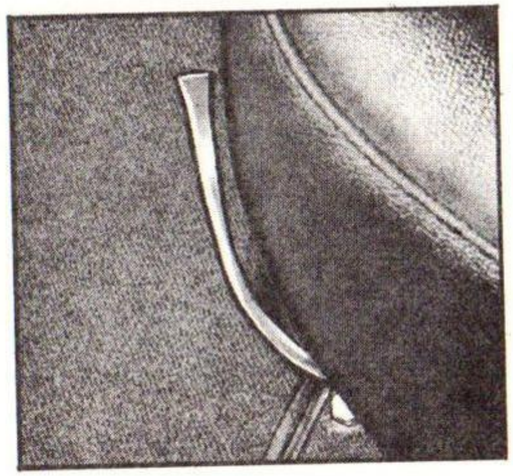


Fig. 17—Seat Adjuster

The seat adjuster control lever (fig. 17) is located on the left front corner of the driver's seat and on the right front corner of the passenger seat. When pulled upward this lever frees the seat, allowing it to be adjusted forward or backward. Additional adjustments to the seat may be performed by your Chevrolet dealer if desired.

DOOR WINDOW LIFTS

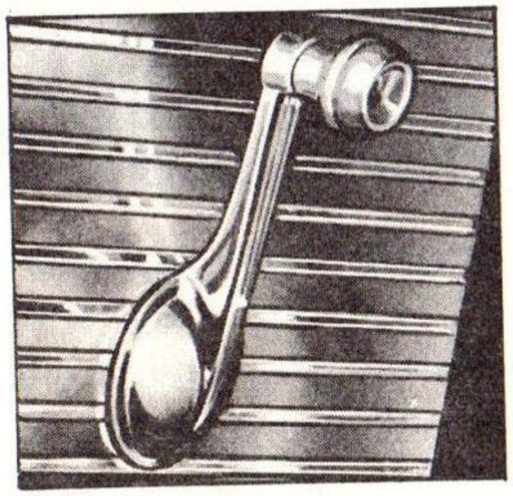


Fig. 18—Door Window Lifts

Manual window lifts (fig. 18) allow the safety glass door windows to be raised and lowered from within the vehicle. For added convenience, electrically operated window lifts are available as optional equipment.

INSIDE DOOR RELEASE

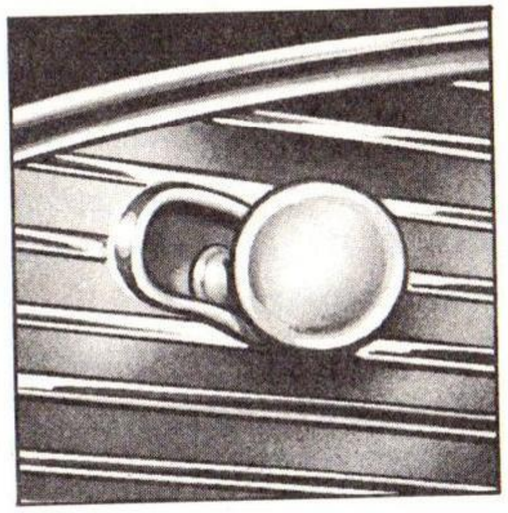


Fig. 19—Inside Door Release

To open the door from inside the car, grasp the ball type handle (fig. 19) located at the top of the inner panel, and pull rearward.

INSIDE DOOR LOCK

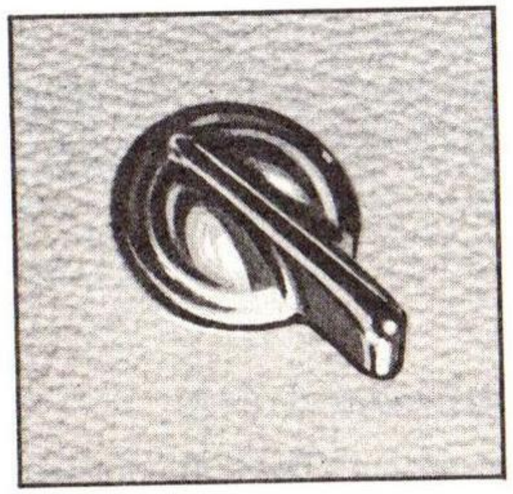


Fig. 20—Inside Door Lock

The door lock lever (fig. 20) is located to the rear of the inner door panel. To lock the door from the inside, rotate the lever so that the arm points down. When the arm is pointed to the front or to the rear, the door is unlocked.

OUTSIDE DOOR HANDLE AND CYLINDER LOCK

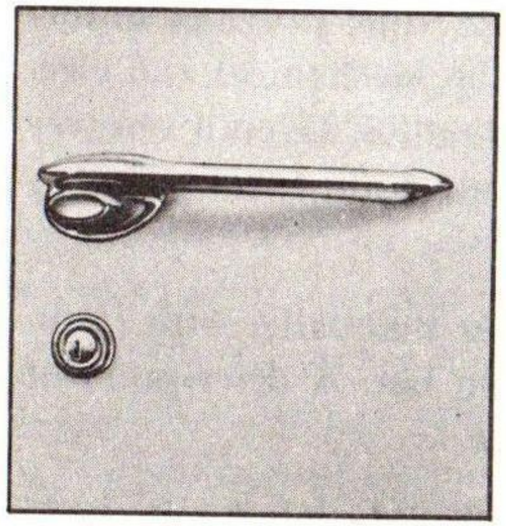


Fig. 21—Outside Door Handle and Cylinder Lock

Push button type door handles (fig. 21) allow added convenience when entering the Corvette and the key lock allows the vehicle to be fully secured whenever left unattended. The door is locked and unlocked with the ignition key.

DOOR REFLECTORS

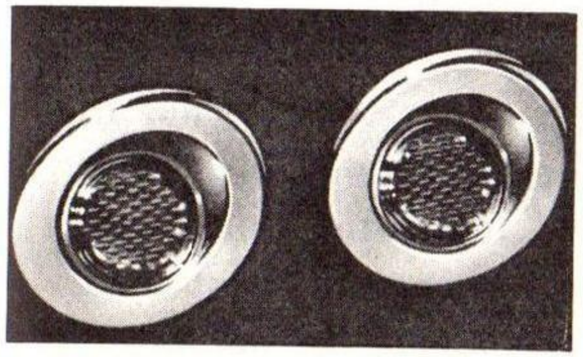


Fig. 22—Door Reflectors

Two reflectors are located on the door inside trim panel (fig. 22). When the door is opened, headlights from overtaking traffic will reflect back and act as a warning.

OPTIONAL EQUIPMENT

HEATER BLOWER AND DEFROSTER CONTROL

To control the heater blower motor, push the knob (fig. 23) fully "in" and rotate to the desired "LO" or "HI" position. Air from the heater will be directed down towards the floor. To turn off, rotate the index mark on the knob to the vertical position. To operate the defroster, pull the knob out and rotate to the desired blower velocity as described above. The air is divided between the heater and defroster in proportion to the distance the control knob is pulled out.

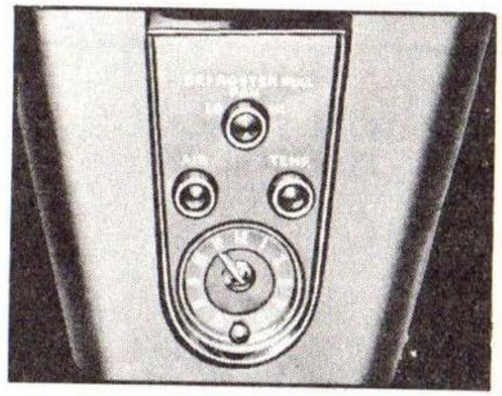


Fig. 23—Heater Blower and Defroster Control

HEATER TEMPERATURE CONTROL

Temperature of the air supplied by the heater or defroster may be raised or lowered by the heater temperature control. When the knob is in the "in" position, the hot water in the heater will be shut off. Hot water is fed to the heater in proportion to the distance the knob is pulled out, allowing accurate control of heater temperature.

RADIO CONTROLS

The Corvette signal-seeking radio is available as a factory installed, optional accessory. When installed, the radio controls are located in the lower center dash panel between the drivers and passengers compartment (fig. 24), and consist of left and right, inner and outer control knobs, push button controls, sensitivity selector, and an automatic tuning bar.

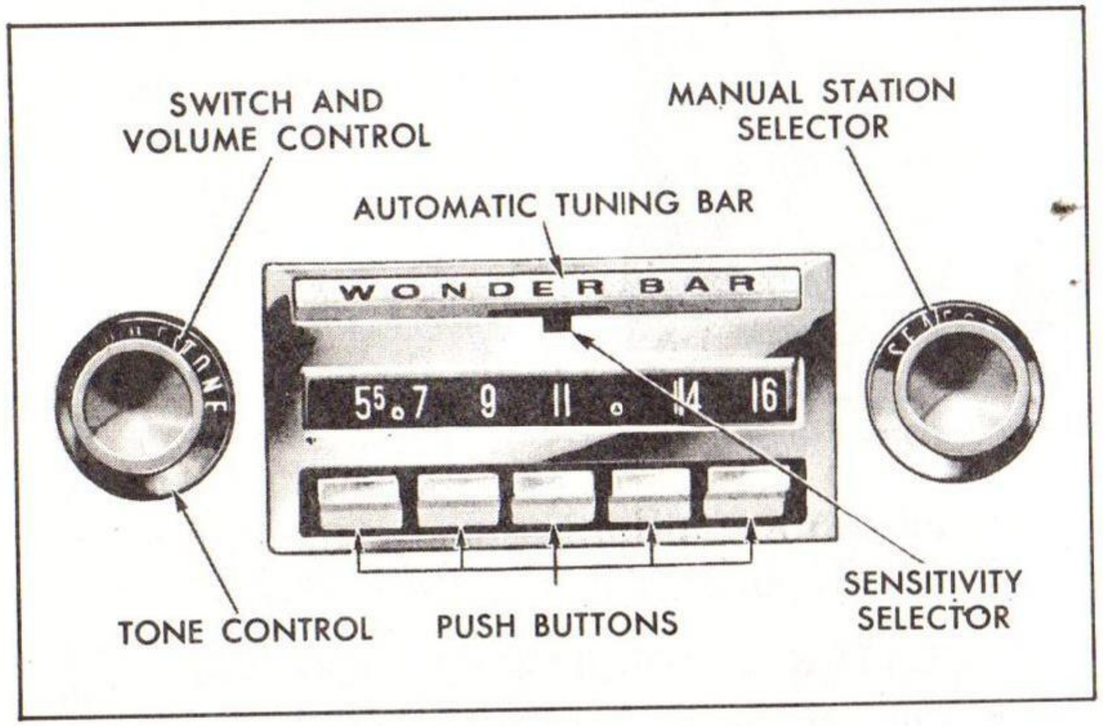


Fig. 24—Radio Controls

Transistors, the latest development of the electronics industry, have been incorporated into the radio receiver available as optional equipment with the Corvette. The use of transistors instead of tubes in the audio and power units and in place of the vibrator tube provides unsurpassed radio reception without the mechanical and electrical hum characteristic of auto radios. Overall receiver efficiency is increased while current drain is considerably lowered.

The radio can be operated either manually, with push-buttons, or by means of a tuning bar. A description of the controls is maintained below.

Switch and Volume Control – Rotate left knob clockwise to turn on radio and control volume.

Tone Control – Rotate left ring to provide desired tonal quality.

Manual Station Selector – Rotate right knob to select desired station.

Sensitivity Selector – Move tab under Wonder Bar to any one of three positions to determine range of stations available for selection with the automatic tuning bar. Moving this tab to the right increases number of stations for tuning bar operations, while moving the tab to the left decreases the number of stations available.

In the extreme left position this control will select only the strongest available stations to give the most interference-free reception, while in the extreme right position, the automatic tuning bar will automatically tune in any listenable station.

Automatic Tuning Bar – Push in automatic tuning or selector bar located above radio dial to reject station to which you are listening and advance toward right to nearest station in range that has been predetermined by the position of the more station selector ring. As this tuning bar is successively pushed in, the station position selected will advance toward the right until the end of the selected range is reached. Additional operation of the tuning bar will then automatically return to select again the first station in the predetermined range. If tuning bar is pressed in during push button operation, it will return the button in operation to the "off" position. Tuning bar operation will automatically accomplish fine tuning to select stations at positions of best reception on the band.

Push-Buttons—Push in desired button to the full extent of its travel to select station that has been preset.

ANTENNA

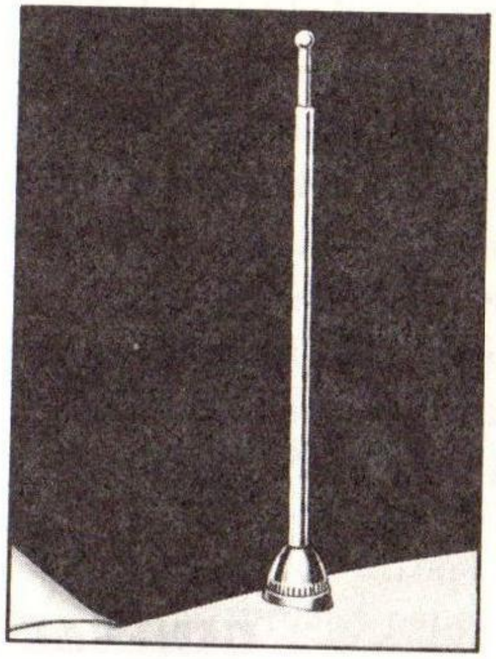


Fig. 25—Antenna

The whip-type antenna (fig. 25) is located just ahead of the tail light on the right rear fender.

WINDSHIELD WASHER CONTROL

A control button in the center of the wiper control, operates the optional windshield washer. Pressure on this button will cause a quantity of water (or other window cleaning agent) to be squirted onto each side of the windshield. At the same time the windshield wipers will automatically start and will continue to operate for sufficient time to wipe the windshield clean and dry. Add G.M. Windshield Washer Solvent to the water in the plastic windshield washer jar. This will prevent freezing of the water during cold weather and will aid in cutting road film and grease from the windshield during entire year without damage to the finish of the vehicle.

PARKING BRAKE ALARM

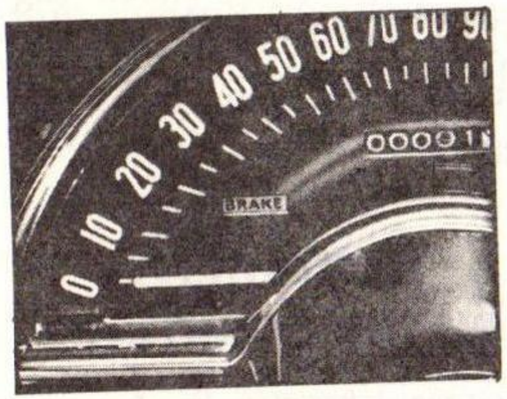


Fig. 26—Parking Brake Alarm

An optional alarm light (fig. 26) is located at the left center of the speedometer face just above the left turn arrow to inform the driver that the parking brake is engaged. This light will function only when the ignition is in the "ON" position.

COURTESY LAMP

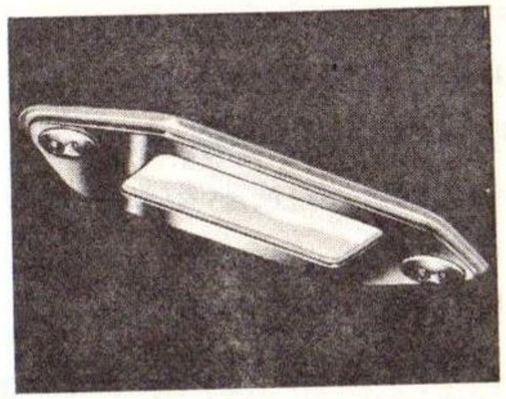


Fig. 27—Courtesy Lamp

Is located (fig. 27) under the bottom flange of the instrument panel in front of the compartment divider. This lamp illuminates the floor area and is automatically lighted by means of a switch on the body pillar when either door is opened. The courtesy lamp can also be operated at any time by an "on" and "off" switch on the lamp bezel.

KEYS AND LOCKS

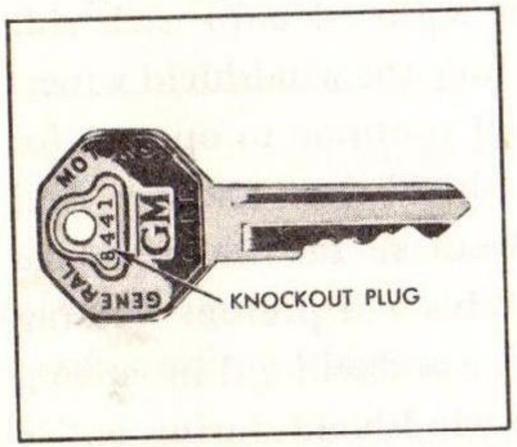


Fig. 28—Key

A single key operates all locks on the Corvette: ignition switch, package compartment, doors and luggage compartment lid. Record the number of the key upon delivery of the car. The knockout plug (fig. 28) upon which the number is stamped should be removed so that unauthorized persons cannot obtain the key number and have a duplicate made.

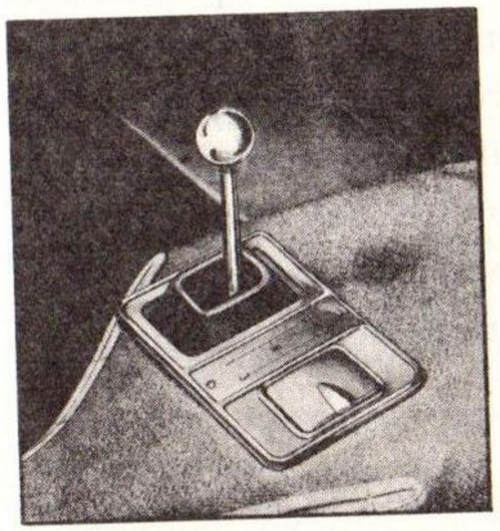


Fig. 29—Ash Tray

ASH TRAY

The single large ash tray (fig. 29) is located on the floor tunnel to the right of the transmission selector lever, convenient to both driver and passenger. The ash receptacle lifts out for cleaning.

PACKAGE COMPARTMENT

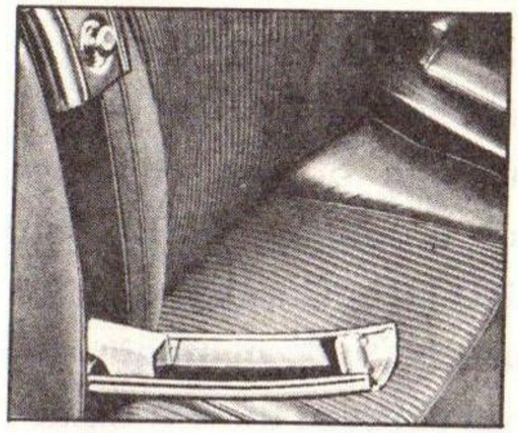


Fig. 30—Package Compartment

The large package compartment (fig. 30) is located in the panel between the seats. To open the compartment, press the release button down and allow the lid to swing forward and down. The compartment may be locked, using the ignition key, when desired.

LUGGAGE COMPARTMENT

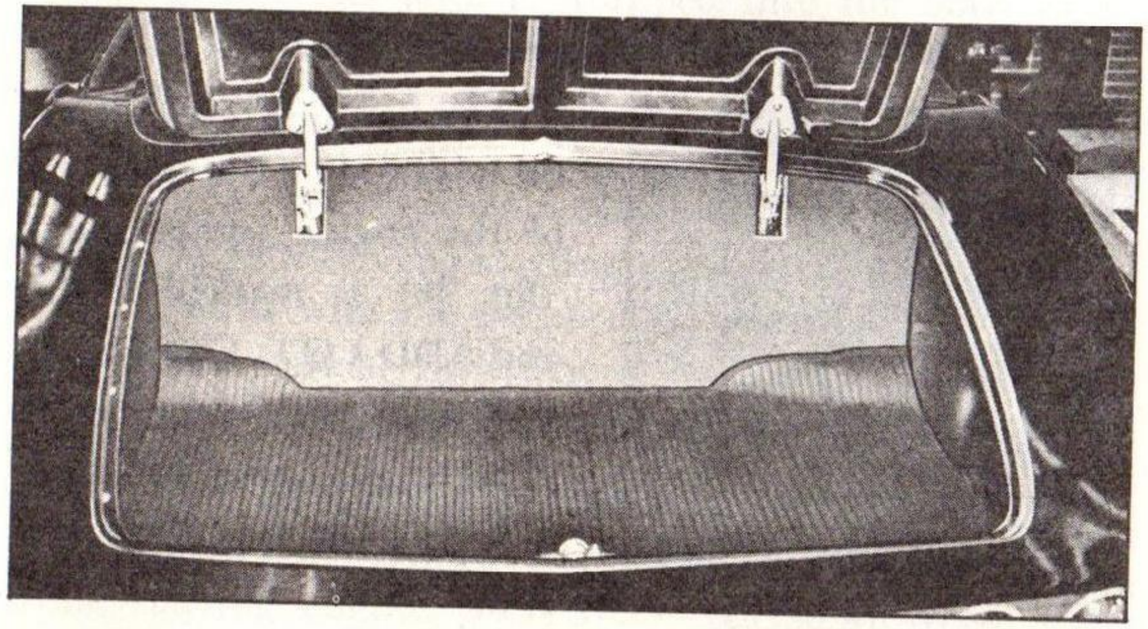


Fig. 31—Luggage Compartment

To open the lid to the luggage compartment, (fig. 31) insert the ignition key into the lock on the rear panel and turn it until the lid is released. Then raise the lid to the open position. The hinges are spring loaded for ease in opening and are counter-balanced to remain in the open position without support.

NOTE: The spare tire, wheel wrench, scissors jack and handle are stowed in a well in the floor covered by a plywood cover. To gain access to the well, lift up floor mat, remove cover retaining bolt and remove cover.

REAR VIEW MIRRORS

Two rear view mirrors, one mounted on the top center of the instrument panel and the other on the left door outer panel are adjustable to accommodate all driving positions.

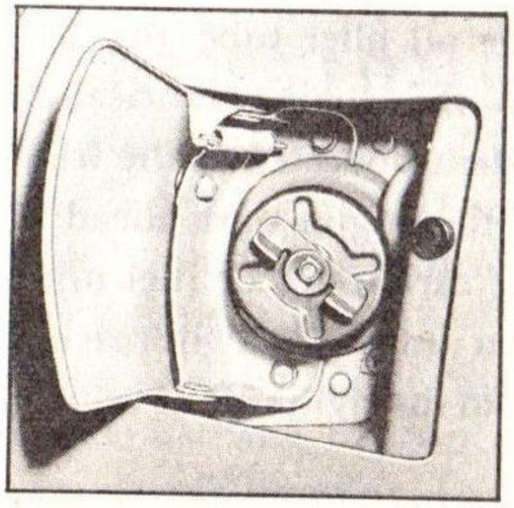


Fig. 32—Gasoline Filler Cap

GASOLINE FILLER CAP

The gasoline filler cap (fig. 32) is located under the lid to the rear of the left door opening. A vent line from the gasoline tank is located under this same lid over the top of the filler cap.

COOLING SYSTEM FILLER CAP

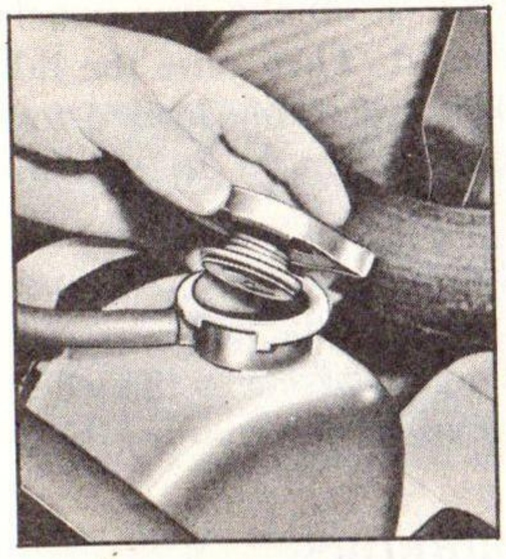


Fig. 33—Cooling System Filler Cap

The pressure type radiator filler cap (fig. 33) is located on the supply tank at the left side of the engine compartment. When removing the cap, turn left to the first stop to relieve pressure in the system, then turn again to remove.

ENGINE OIL FILLER TUBE

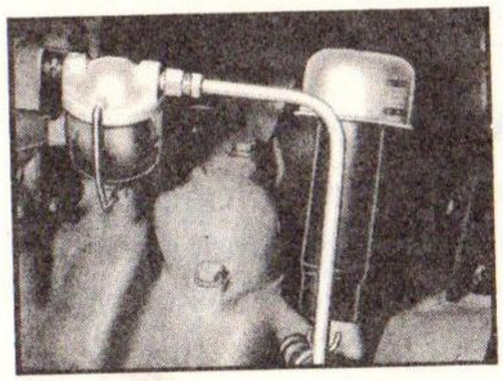


Fig. 34—Engine Oil Filler and Fuel Filter

The oil filler tube (fig. 34) for the engine lubrication system is located at the front of the engine just ahead of the carburetor or fuel injection unit and may be reached from the right side of vehicle.

ENGINE OIL LEVEL ROD

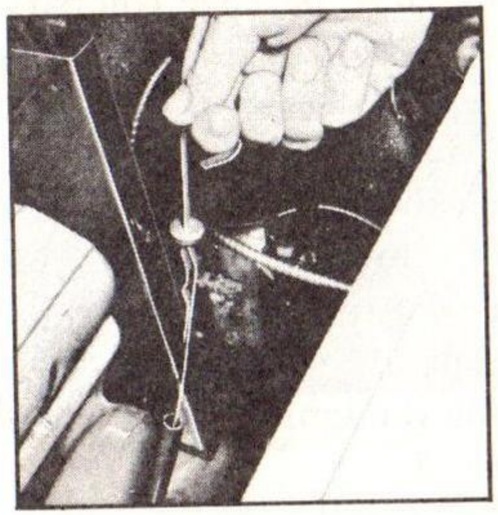


Fig. 35—Engine Oil Level Rod

The engine oil level rod (fig. 35) is located on the left side of the crankcase and is marked FULL and ADD OIL. Check the oil frequently and maintain the level between these two lines. Avoid overfilling.

POWERGLIDE OIL LEVEL ROD

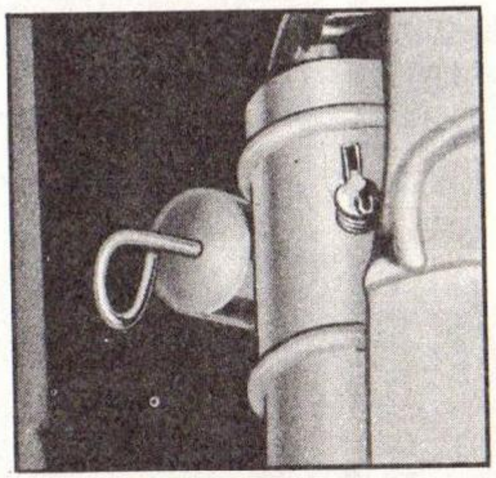


Fig. 36—Powerglide Oil Level Rod

The Powerglide transmission oil level rod on the right rear of the engine compartment (fig. 36) is marked FULL and ADD 1 QT. Check every 1000 miles with transmission in Neutral, engine warm and idling. Avoid overfilling. See page 29 for recommended fluid.

FUEL FILTER

All cars are equipped at the factory with fuel filters. The standard models have a pressed bronze ball filter which is integral with the fuel inlet fitting of the carburetor. Cars equipped with dual four barrel carburetors have the ceramic element type which is enclosed in a glass sediment bowl (fig. 34). Fuel injection equipped cars have a replaceable element filter which is enclosed in a metal canister.

All filters are easily serviced as outlined in the Lubrication and Maintenance section of this manual.

FUEL TANK

A 16.4 gallon fuel tank is strapped into the body in a bulkhead located behind the seats and under the top compartment. It is cushioned and completely sealed in this compartment with ventilation provided by large holes in the underbody. The filler neck is attached to the tank by rubber hose connection.

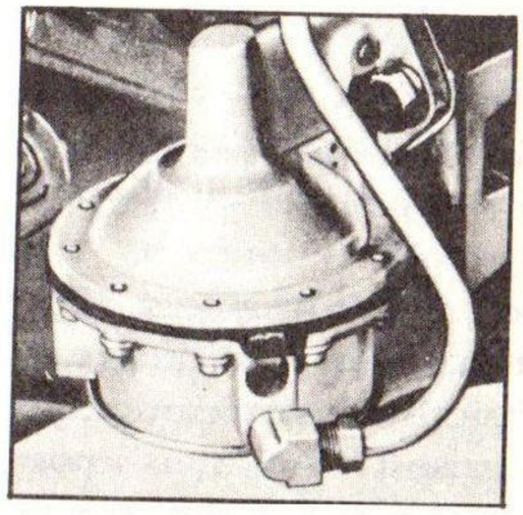


Fig. 37—Fuel Pump

FUEL PUMP

A fuel pump (fig. 37) is mounted on the right side of the engine and is operated by a push rod which is activated by an eccentric on the engine camshaft. It pumps fuel from the 16.4 gallon fuel tank and delivers it to the carburetors. The fuel pump to engine attaching bolts should be kept properly tightened.

OPERATING INSTRUCTIONS

NOTE: The following starting procedures are based on units with the carburetion system. See Page 19 for special instructions on starting procedure for fuel injection equipped models.

STARTING THE ENGINE

MANUAL TRANSMISSION—Push clutch pedal down while starting engine. This frees the engine from the extra burden of turning gears in the transmission, thereby reducing the load on the starting motor and battery. Place selector lever in neutral position. This will prevent movement of the car if clutch pedal is accidentally released after engine starts.

Depress accelerator to the floor and fully release. The proper fast idle step on carburetor for prevailing temperature will be selected automatically. Insert ignition key and turn ignition switch ¼ turn clockwise to "start"

position. Hold ignition key in the start position until engine fires, then release the key.

If engine should flood, depress accelerator to floor to open choke and crank engine with starter until ignition occurs.

POWERGLIDE TRANSMISSION–To start engine selector lever must be in "P" or "N" position as starter is inoperative in other positions. If car is on hill "P" position is preferred.

Depress accelerator to the floor and fully release. The proper fast idle step on carburetor for prevailing temperature will be selected automatically. Insert ignition key and turn switch ¼ turn clockwise to the "start" position. Hold ignition key in the start position until engine fires, then release the key. Should engine flood, depress accelerator to the floor to open choke while starting. Do not pump accelerator.

CAUTION: Carbon monoxide is a poisonous gas. Never start or run the engine in a closed garage.

DRIVING WITH THREE-SPEED CLOSE RATIO TRANSMISSION

First Speed – Depress clutch. Pull selector lever towards you and pull back. Engage clutch gradually.

Second Speed – Depress clutch. Push selector lever away from you and forward. Engage clutch.

Third Speed–Depress clutch. Pull selector lever back and away from you. Engage clutch.

Reverse – With car at a standstill, depress clutch. Pull selector lever towards you and push forward. Engage clutch gradually.

NOTE: Diagram of shift pattern is on bezel surrounding selector lever between ash tray and selector lever.

DRIVING WITH FOUR-SPEED CLOSE RATIO TRANSMISSION

First Speed – Depress clutch. Pull selector towards you and push forward. Gradually engage clutch.

Second Speed–Depress clutch. Pull selector lever towards you and pull back. Engage clutch.

Third Speed – Depress clutch. Push selector lever away from you and push forward. Engage clutch.

Fourth Speed – Depress clutch. Push selector lever away from you and pull back. Engage clutch.

This specially designed transmission has been engineered to allow the operator to shift back and forth (upshift and downshift) from any gear (except reverse) and into any gear (except reverse). First gear may be entered at speeds below 40 mph.

Reverse – To engage reverse, bring car to a standstill

and depress clutch. Lift up on the T-handle (concentric with the gear selector lever) while moving the selector lever to the left, then push the lever forward into Reverse position as indicated on the bezel to the right of the lever. The T-handle is a manually controlled, positive reverse inhibitor which eliminates any possibility of accidental reverse engagement during ratio selections. Lifting the T-handle permits the selector lever to enter reverse.

DRIVING WITH POWERGLIDE TRANSMISSION

Powerglide is a completely automatic transmission which replaces standard clutch and transmission. Selective control is obtained through the transmission selector lever which is located on the top of the floor tunnel. Fingertip control of the Powerglide transmission is provided by five different positions which are indicated on the bright metal plate to the right of the control lever.

L—Low Use only when pulling through deep snow or sand, climbing or descending very steep hills, and for additional engine braking below 40 mph on dry pavement.

D—Drive For all normal driving. Transmission automatically selects the range best suited for every driving situation.

N—Neutral Allows engine to be operated with car standing still.

R—Reverse For backing up. Bring car to a complete stop before selecting this position.

P—Park Holds the car immovable, engine can be started and idled in this position.

Normal Driving—Place selector lever in "D" position and depress the accelerator for smooth, effortless driving in city or country. Powerglide automatically selects the range best suited to your driving needs. Starting, the car moves forward in automatic low gear, changing to cruising range between 12 and 50 mph, depending on accelerator position. While cruising at speeds below 45 mph, Powerglide will change automatically to low range when accelerator is fully depressed, for maximum acceleration. At low speeds above 12 mph, this change may occur before accelerator is fully depressed. As the car slows to a stop, Powerglide changes to low range at 12 mph in readiness for the next start.

NOTE: The above road speeds are approximate and may vary with individual cars.

Low Range Driving—"L" position should be used when climbing very steep grades at reduced speed, or when pulling through deep sand and snow. At speeds below 40 mph this range may be used to provide additional engine braking for descending steep grades.

Reverse Driving—"R" position reverses Powerglide for backing. Bring car to complete stop, and with engine idling, move selector lever to "R" position.

Remember that Powerglide is completely automatic. Simply move the selector lever to the desired position and press accelerator to go. In wide open acceleration, Powerglide will change from low to cruising range at 50 mph. During moderate acceleration, this change may occur as low as 14½ mph. Because Powerglide automatically selects the range best suited to any driving condition, maximum performance and economy is assured.

POWERGLIDE DRIVING CAUTIONS

A few driving cautions should be observed:

- Do not accelerate engine for over ten seconds in D, L, or R when car is held with brakes.
- When stopped on an upgrade, do not hold car by accelerating engine except very briefly. Use service brake.
- Move selector lever to L for extremely hard pulls at low road speed.
- Do not move selector from D to L at speeds over 40 mph.
- Never move selector to R when car is moving forward, except when "rocking" in mud, snow, sand, etc. When "rocking," the throttle should be closed while moving lever.
- Engage parking P only when car is completely stopped.

DRIVING WITH POSITRACTION REAR AXLE

Power Flow in Forward Driving—Under normal conditions, the torque or power flow in the Positraction and conventional type differential is transmitted equally to each rear wheel. However, when sudden patches of ice, sand, loose gravel, or oil slicks are encountered, the Positraction will not permit the wheel with the lesser traction to spin, gain momentum and swerve the car when dry pavement is regained.

Power Flow in Turns—In turning, the Positraction differential gives normal differential action, at the same time applying the major driving force to the inside rear wheel, improving stability and cornering.

Power Flow with Poor Traction—When traction conditions under the rear wheels are dissimilar, the driving force with an ordinary differential is limited by the wheel with the poorer traction.

Typically, in this situation, the wheel with the poorer traction spins, and the vehicle remains immobile. The

Positraction differential enables the wheel with the better traction to apply the major driving force to the road. In this way the Positraction-equipped vehicle can operate in snow, ice, and mud which might stop a conventionally equipped unit.

In an emergency situation, when one rear wheel drops off the pavement, traction with the ordinary differential is limited to that of the wheel off the pavement. This wheel tends to spin, and when the pavement is regained, the car swerves as the momentum of the spinning wheel is absorbed. With Positraction the wheel on the pavement continues to drive the car, and the wheel on the shoulder does not spin. In this way complete vehicle control is maintained and there is no dangerous swerve.

DRIVING WITH FUEL INJECTION

The primary driving procedure with fuel injection is basically the same as the procedure used with single and dual carburetion systems. However, three points of interest should be brought out.

HOT STARTING—To restart a fuel-injection equipped Corvette while the engine is hot, depress the accelerator slightly and hold while cranking the starter until the engine starts.

CLEARING A FLOODED ENGINE—To clear a flooded engine, hold the throttle wide open and crank until engine starts.

COLD STARTING – Cold starting procedures for fuel injection equipped engines are identical to those of automatic choke carburetor equipped engines. Depress the accelerator pedal to the floor to index the fast idle cam, then fully release. Crank engine until it starts. Indexing the fast idle mechanism provides the higher engine idle speed necessary during warm-up.

FUEL SYSTEM REQUIREMENTS

The V-8 engine in your Corvette is designed to deliver maximum performance when using a "Premium" grade of gasoline. The best indication of a good grade of "premium" gasoline is the reputation of the manufacturer.

In areas where grades of gasolines are encountered which result in severe detonation, the owner should consult an authorized dealer so that adjustments to eliminate or reduce this detonation to a safe level may be made.

Detonation is not due to any manufacturing defect. Always use fuel which permits operation without heavy or continuous detonation.

GOOD DRIVING TIPS

STOPPING—When bringing the car to a stop, release the brakes completely in the split second after the car comes to a halt before the front end has a chance to nose up. The release of the brakes allows the wheels to move forward slightly instead of throwing them back, and the springs to settle in position with little noticeable recoil.

ROUGH ROADS—Avoid accelerating when crossing rough spots or chuck holes in the pavement, railroad tracks, etc. Decelerate slightly and allow the car to "float" over such hazards. Driving at high speeds over roads in poor condition is a dangerous practice.

CORNERING—Always "drive" around a corner. When approaching a curve, reduce your speed slightly. As you enter the turn, begin to accelerate and continue to keep the power on to the back wheels so that you come out of the turn at or near original speed. After cornering in this manner a few times, the advantages will become apparent. Powering the car wheels while rounding a turn effectively reduces the natural side sway tendency of any vehicle, resulting in more complete control and comfort.

STOPPING ON ICE—Apply the brakes gently and intermittently when stopping on a slippery pavement. The idea is to keep the wheels from sliding, since rolling wheels have better traction.

USE OF THE BRAKES—Apply the brakes as though you mean business. Strong, intermittent use of the brakes is usually better than a gentle application for long periods. Keeping the brakes in use lightly but constantly when descending a long hill creates excessive heat which will reduce both the efficiency and the life of the linings. A series of short applications in this case will be more effective in holding down your speed.

DOWNSHIFTING—If your car is equipped with a manual transmission, you will undoubtably wish at some time to downshift from one gear to the one immediately lower in ratio (i.e.—from 3rd to 2nd). It is possible to dangerously overspeed the engine while downshifting if certain precautions are not observed.

1. The all-important rule to remember when downshifting is this—watch the tachometer. The tachometer in your car is marked with a red engine speed warning zone. Cars with carburetor equipped engines have warning zones beginning at 5300 rpm. To downshift into the next lower gear without overspeeding engine, car must be slowed down until an engine speed of 4000 to 4100 rpm or less is indicated on the tachometer.

   Cars equipped with fuel injection engines have tachometers which are red zoned beginning at 6300 rpm. These cars may be downshifted to the

next lower gear after the engine speed has been reduced to 4700 to 4900 rpm or lower.

2. Do not skip gears when downshifting. This is a dangerous practice as it is possible to overspeed before you realize it. Always follow the reverse order of ratios which, in the case of the 4-speed transmission, would be fourth to third, third to second, second to first.
3. The four-speed transmission is equipped with Syncro-Mesh gears for all forward speeds; the three speed has Syncro-Mesh gears in second and third.

The practice of double clutching is usually not necessary in order to downshift into the Syncro-Mesh speeds, so it follows that the only occasion for double clutching would be a downshift from second to first on the three speed box when the car is in motion. This should be attempted only after thorough familiarization with the vehicle, for objectionable engine overspeeding may readily occur in this range.

The double clutching of a transmission is a relatively simple operation in itself and may be easily mastered with a little practice. It is preferred by many professional drivers even when shifting Syncro-Mesh boxes, because it reduces strain on engines and transmissions during the strenuous demands of competition. The accepted procedure for double clutching is as follows:

Let up on the throttle, disengage the clutch, shift into neutral, and engage the clutch. Almost simultaneously, speed up the engine, disengage the clutch, shift into the next lower gear and reengage the clutch while depressing the throttle. If done properly, the car should not lurch nor should the engine overspeed as the clutch is finally engaged, With practice, this procedure becomes almost second nature and you'll be able to double clutch as fast as many other drivers can shift in the normal manner.

KEEP YOUR CAR IN CONDITION—Your Corvette is engineered and built to give you sports car performance and appearance second to none. As with any fine machine, periodic preventive maintenance is essential if your car is to continue to deliver the new car performance you are now enjoying. Have your Corvette inspected and tuned at regular intervals.

SPORTSMANSHIP

True sportsmanship shows up in a driver's attitude toward legal rules of the road and official rulings at an event. The sportsman controls his emotions. He refrains from actions which could endanger others. He does nothing to discredit the sport and strives to maintain gentlemanly sports car participation at the highest level.

LUBRICATION-MAINTENANCE

ENGINE LUBRICATION	Every Month	Every 2 Months	First 1000 Miles	First 5000 Miles	Every 1000 Miles	Every 4000 Miles
Initial Drain Period			●			
Favorable Operations—(over 10 miles average per trip)						●
Summer (over 32° F. aver.) Less than 10 miles aver. per trip†		●				
Winter (Below 32° F. aver.) Less than 10 miles aver. per trip†	●*				●*	
Dusty Driving Conditions					●	
Change Oil Filter Element (if car is so equipped)				●		●

*Whichever comes first.
†And less than 1000 miles per month.

OIL REQUIREMENTS

NOTE: The following lubrication and maintenance recommendations are intended as a guide for vehicles operated under normal driving conditions. Sustained heavy duty or high speed operation, or operation under adverse driving conditions, may necessitate more frequent lubrication and maintenance.

Proper selection of the engine oil to be used will add much to the performance, reliability, economy and long life of the engine.

1. Engine Lubrication First 1000 Miles—The engine crankcase as delivered to you is filled with a high grade oil of the type designated "Service MS." It also contains a special "anti-wear" additive to assist in better "mating-in" of moving parts.

During the first 1000 miles, check the oil level frequently, and if it is necessary to add oil, use SAE 10W, Service Designation M.S.

2. Engine Lubrication After 1000 Miles—After the first 1000 miles of driving, the original oil should be drained from the engine and the crankcase refilled with oil as recommended on page 23.

3. Types of Oil—Oil types have been defined by the American Petroleum Institute as follows:

"Service ML" (Comparable to former Regular Type) Suitable for use in internal combustion engines operating under light and favorable service conditions.

"Service MM" (Comparable to former Premium Type)—Used under moderate service conditions which present problems of sludge, varnish or bearing corrosion control when crankcase oil temperatures are high.

"Service MS" and "Service DG" (Comparable to former Heavy-Duty Types)—Oils having the characteristics to make them generally suitable for use in internal combustion engines operating under unfavorable or severe types of service conditions.

For maximum engine protection under all driving conditions, oils designated "For Service MS" or "For Service DG" are recommended.

NOTE: These letter designations refer to service application only and do not indicate viscosity.

4. Oil Viscosity Numbers—Oil viscosity is designated by the Society of Automotive Engineers and is indicated by the number (i.e., SAE 10W, SAE 20W, SAE 30) . The higher the number the heavier bodied and slower flowing the oil.

For winter operation, the lighter bodied oils are used to ease starting and to offset the affect of cold weather on oil circulation, while the higher operating temperatures of summer require the use of heavier oils.

The following table will assist in the selection of the proper viscosity oil at various seasons of the year.

If the lowest anticipated temperature during the interval in which the oil will remain in the crankcase, is:	SAE Viscosity RECOMMENDED:	Multi-Viscosity oils RECOMMENDED:
32°F	SAE 20W or SAE 20	SAE 10W-30
0°F	SAE 10W	SAE 10W-30
Below 0°F	SAE 5W	SAE 5W-20

NOTE: For sustained high speed driving, when the prevailing daylight temperature is above 90°F., S.A.E. 30 may be used.

5. Temperature Considerations—During the colder months of the year, an oil which will permit easy starting at the lowest atmospheric temperature likely to be encountered should be used. When the crankcase is drained and refilled, the crankcase oil should be selected, not on the basis of the existing temperature at the time of the change, but on the lowest temperature anticipated for the period during which the oil is to be used. Unless the crankcase oil is selected on the basis of anticipated temperature, difficulty in starting will be experienced at each

sudden drop in temperature. See above chart for recommended lubricants to use in the crankcase of your Corvette engine for each anticipated temperature range.

6. When to Change Crankcase Oil – Oils have been greatly improved, driving conditions have changed, and improvements in engines, such as the crankcase ventilating system have greatly lengthened the life of good lubricating oils. However, to insure continuation of best performance, low maintenance cost and long engine life, it is necessary to change the crankcase oil whenever it becomes contaminated with harmful foreign materials. Under normal driving conditions draining the crankcase and refilling with fresh oil every 4000 miles is recommended.

Frequent long runs at high speed, with resultant high engine operating temperatures, may oxidize the oil and may result in the formation of sludge and varnish. While no definite drain periods can be recommended under these conditions, they should be more frequent than under normal driving conditions.

Driving over dusty roads or through dust storms introduces abrasive material into the engine. The frequency of draining depends on severity of dust conditions and no definite draining periods can be recommended but should be more frequent than under normal driving conditions.

Short runs in cold weather, such as city driving and excessive idling, do not permit thorough warming up of the engine and water may accumulate in the crankcase from condensation of moisture produced by the burning of the fuel. Water in the crankcase may freeze and interfere with proper oil circulation. It also promotes rusting and may cause clogging of oil screens and passages. Under normal driving conditions this water is removed in the form of vapor by the crankcase ventilator. However, if water accumulates, it should be removed by draining the crankcase as frequently as may be required. It is always advisable to drain the crankcase only after the engine has become thoroughly warmed up or reached normal operating temperature. The benefit of draining is, to a large extent, lost if the crankcase is drained when the engine is cold, as some of the suspended foreign material will cling to the sides of the oil pan and will not drain out readily with the cold, slower moving oil. Flushing the crankcase with oils or solutions other than a good grade of SAE 10W engine oil is not recommended.

Adverse driving conditions or short trip winter driving (less than 1000 miles per month) may make it necessary to change the oil every 2000 miles or 3 months, whichever occurs first. Where the Corvette is very seldom driven, seasonal changes may be satisfactory. Check oil level on dipstick regularly.

7. Maintaining Oil Level – The oil gauge rod is marked

"Full" and "Add Oil." These notations have broad arrows pointing to the level lines. The oil level should be maintained between the two lines, neither going above the "Full" line nor under the "Add Oil" line. Check the oil level frequently and add oil when necessary. Always be sure crankcase is full before starting out on a long drive.

8. Crankcase Dilution – Probably the most serious phase of engine oil deterioration is that of crankcase dilution, which is the thinning of the oil by fuel vapor leaking by pistons and rings and mixing with the oil. Leakage of fuel or fuel vapors into the oil pan mostly occurs during the "warming up" period when the fuel is not thoroughly vaporized and burned.

9. Automatic Control Devices to Minimize Crankcase Dilution – The Corvette engine is equipped with automatic devices which aid greatly in minimizing the danger of crankcase dilution.

Rapid warming up of the engine is aided by the thermostatic water temperature control which automatically prevents circulation of coolant through the radiator until it reaches a pre-determined temperature.

When operative, the thermostatic heat control on the exhaust manifold during the warming up period automatically directs the hot exhaust gases against the center of the intake manifold, on carburetor equipped engine, greatly aiding in proper vaporization of the fuel.

An efficient crankcase ventilating system drives off fuel vapors and aids in the evaporation of the raw fuel and water which may find its way into the oil reservoir.

10. Control by Car Owners Under Abnormal Conditions – Ordinarily the above automatic control devices will minimize or eliminate the danger of crankcase dilution. However, there are abnormal conditions of service when the car owner must aid in the control of crankcase dilution.

Short runs in cold weather, such as city driving and excessive idling, do not permit the thorough warming up of the engine nor the efficient operation of automatic control devices. It is recommended that the oil be changed more often when the car is subjected to this type of operation.

Poor mechanical condition of the engine such as scored cylinders, poor ring fit, sloppy or loose pistons, faulty valves, and poor ignition will increase crankcase dilution. Poor fuels which contain portions hard to ignite and slow to burn will also increase crankcase dilution.

11. Water in Crankcase – Serious lubrication troubles may result in cold weather by an accumulation of water in the oil pan. This condition is, as a rule, little understood by the owner. To demonstrate the chief cause of water in the oil pan, hold a piece of cold metal near the end of the exhaust pipe of the engine and note the rapid

condensation and collection of drops of water on it. The exhaust gases are charged with water vapor and the moment these gases strike a cold surface, they will condense forming drops of water. A slight amount of these gases passes the pistons and rings, even under most favorable conditions, and causes the formation of water in the oil pan until the engine becomes thoroughly warm, then the crankcase will no longer act as a condenser and all of these gases will pass out through the crankcase ventilating system. Short runs in cold weather, such as city driving, will aggravate this water forming condition.

12. Corrosion – Practically all present day engine fuels contain a small amount of sulphur which, in its natural form, is harmless. This sulphur, however, when it burns forms a gas, a small amount of which is likely to leak past pistons and rings and react with water when present in the oil pan to form a very corrosive acid. The more sulphur in the fuel, the greater the danger of this type of corrosion. This is a condition which cannot be wholly corrected, but it may be reduced to a minimum by proper care of the engine.

As long as the gases and internal walls of the crankcase are hot enough to keep water vapor from condensing, no harm will result. However, when the engine is run in low temperatures, moisture will collect and unite with the gases formed by combustion resulting in an acid formation. The acid thus formed is likely to cause serious etching or pitting which will manifest itself in excessively rapid wear on piston pins, camshaft bearings and other moving parts of the engine, oftentimes causing the owner to blame the car manufacturer or the lubricating oil, when in reality the trouble may be traced back to the character of fuel used, or a condition of the engine such as excessive blow-by or improper carburetor adjustment.

UNDER THE HOOD

Mechanism which can be most easily reached, and serviced, in the engine compartment are listed below, along with servicing recommendations.

1. **Steering Gear** – Check lubricant level in the gear box every 1000 miles and add special steering gear lubricant as marketed by the various oil companies, as required to maintain level at filler plug hole. The steering gear is filled at the factory with lubricant. Seasonal change of the lubricant is unnecessary and the housing should not be drained.

   The pipe plug is installed in its particular location in the steering gear housing to prevent overlubrication, generally occasioned by the use of a pressure gun. Overlubrication of this unit might result in forcing lubricant up the steering gear tube to the horn button and steering wheel. The amount of "play" which may develop in the steering gear will

vary with the conditions under which the car is operated. Usually, when play does develop, it occurs gradually and will be noted only when driving on a rough road or in a stiff cross-wind. When steering "looseness" is noticed, or when the wheel must be turned several inches before the front wheels turn, the steering mechanism and alignment of the front wheels should be checked. Maintaining proper adjustment of these parts will preserve steering and handling ease and promote longer tire mileage.

2. **Brake Master Cylinder** – Check the fluid level frequently and maintain the level at ½" to 1" below the filler opening, using G.M. Hydraulic Brake Fluid, Super No. 11. If addition of fluid is required more often than every 1000 miles, an inspection of the complete system should be made.

3. **Generator**—Every 1000 miles, fill the oiler at each end to the top with SAE 20 engine oil. Over-oiling at oiler may result in damage to the generator.

4. **Distributor**—Fill hinge cap oiler with engine oil every 1000 miles. Every 5000 miles, apply 1-2 drops of light engine oil to both breaker lever pivots and, on fuel injection and 2 x 4 carburetor equipped engines, apply a little Delco Ball Bearing and Cam Lubricant to the cam. On distributors used with 4 barrel carburetor, replace felt wick when contact point set is replaced or before 20,000-25,000 miles.

5. **Air Cleaner**—The Polyurethane element type air cleaner should be cleaned every 2000 miles, or more often if necessary. Wash element in non chlorinated cleaning solvent such as kerosene and reoil with engine oil. The solvent must be carefully squeezed out of the element. Do not wring or distort element or subject it to heat. Check paper element type after 15,000 miles. It may be reused if satisfactory but must be rechecked every 5000 miles. Do not wash, oil or clean paper element with air hose.

6. **Crankcase Breather Cap** – Wash in cleaning solvent every 2000 miles. More often if required. Reoil with engine oil.

7. **Battery** – Check fluid level frequently and add distilled water until the level rises to the bottom of the split ring in the vent well. DO NOT OVERFILL. If the fluid level drops below plates more often than 1000 miles, consult your Chevrolet Dealer. Saturate battery terminal washer with engine oil every 1000 miles.

8. **Accelerator Control Rod**—Every 1000 miles apply several drops of engine oil to the idler lever.

9. **Throttle Bell Crank**—Apply several drops of engine oil every 1000 miles.

10. **Fuel Filter**—The following information will help you identify the filter used on your Corvette and will supply you with servicing information.

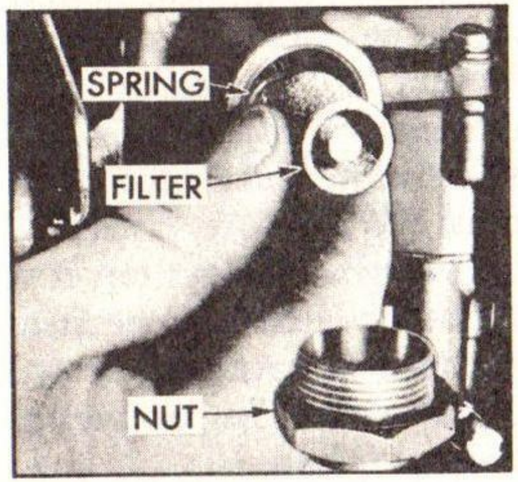


Fig. 38—Single Carburetor

Single Carburetor (fig. 38) —Remove fuel line and inlet fitting. Remove filter element and wash in alcohol or carburetor cleaning solvent. Blow out element with compressed air. Do not attempt to wipe off dirt with rag.

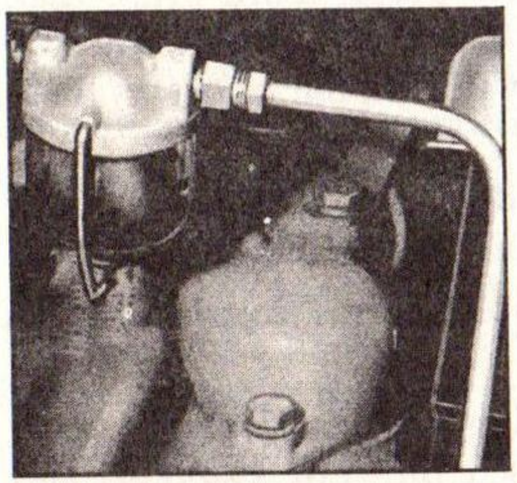


Fig. 39—Dual Carburetor

Dual Carburetors (fig. 39) —Loosen thumb screw at bottom of glass bowl and remove bowl and element. Wash out bowl and replace element if necessary. Always reassemble with a new gasket under bowl.

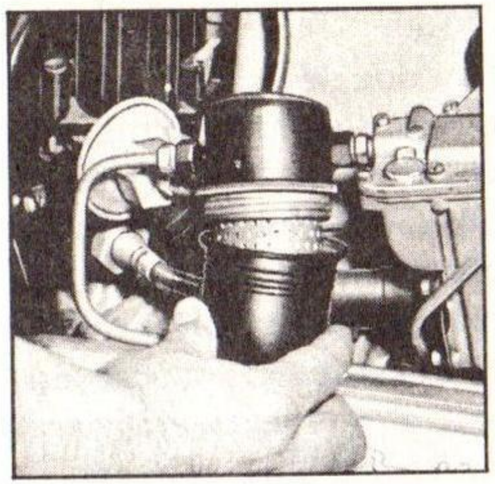


Fig. 40—Fuel Injection

Fuel Injection -- Replace fuel filter element semi-annually – in spring and in fall. To remove element, unscrew bottom of filter canister (fig. 40) .

UNDER THE CAR

With the vehicle on a hoist, the following mechanisms may be readily inspected and serviced as recommended.

1. **Front Suspension Steering Linkage and Universal Joint**—The application of chassis lubricant is recommended every 1000 miles at the fittings in the lubrication diagram on page 33.

2. **Front Wheel Bearings**—It is necessary to remove the wheel and hub assembly to lubricate the bearings. The bearing assembly should be cleaned before repacking with lubricant. Do not pack the hub between the inner and outer bearing assemblies or the hub

caps as this excessive lubrication results in the lubricant working out into the brake drums and linings. The front wheels are equipped with ball bearings and should be packed with a high melting point front wheel bearing lubricant. The front wheel bearings should be cleaned and repacked and adjusted every 10,000 miles. See also "Front Wheel Bearing Adjustment" on page 60.

Adjust wheel bearings by tightening spindle nut to 28 ft. lbs. with torque wrench. Back off adjusting nut until bearings are loose (0 ft. lbs torque) and then retorque to 12 ft. lbs. Check the location of a slot in the nut with reference to a hole in the spindle. If a slot in the nut lines up with either the vertical or horizontal hole in the spindle, insert cotter pin. If not, back off a necessary amount to next hole and slot and install cotter pin. Refer to page 60.

3. **Crankcase**—See "Oil Requirements" on page 22.

4. **Three-Speed Close Ratio Transmission** — At operating temperature, lubricant should be level with filler plug. Remove plug to check level every 1000 miles and add hypoid lubricant such as SAE 90 "Multi-Purpose Gear Lubricants," as necessary. Straight mineral oil gear lubricant may be used.

5. **Four-Speed Close Ratio Transmission**—Same recommendation as for the three speed close ratio transmission.

6. **Powerglide Transmission**—"Automatic Transmission-Fluid Type A" bearing an AQ-ATF-A mark should be used in the Powerglide Transmission. If the above fluid is not available, fluid bearing an AQ-ATF mark may be used.

   Check oil level every 1000 miles with engine idling, parking brake set, transmission warm and control lever in "N" position. Add fluid when level reaches "Add 1 qt." mark on oil level rod located on right side of engine. Do not allow dirt to enter filler tube.

7. **Oil Filter**—Change the oil filter at the first 5000-mile point and every 4000 miles thereafter (at same time as oil change) or more often if necessary. Adverse driving conditions such as dust storms, very dusty roads, cold or severe weather may necessitate more frequent changes.

8. **Spring Shackles**—The spring shackles used at the rear end of the rear chassis springs are the rubber bushed type. Rubber bushings are also used at the front of each rear spring. **These bushings must not be lubricated or sprayed with oil.**

9. **Rear Axle**—Since the rear axle operates under the most severe lubrication conditions at high speeds, a gear lubricant is required that will satisfactorily lubricate hypoid rear axles. Such lubricants have been developed and are commonly referred to as "Multi-Purpose" gear lubricants must be carefully compounded, of the latest non-corrosive type and of proven quality. The lubricant manufacturer must be responsible for the satisfactory performance of his product. His reputation is the best indication of quality.

The rear axle, when received from the factory, is filled with a special lubricant which should be drained at the end of the first 1000 miles.

It is recommended that S.A.E. 90 "Multi-Purpose" gear lubricant be used in the standard Corvette rear axle. For best results, on Positraction equipped units, a special hypoid gear lubricant should be used. This lubricant can be obtained at any Chevrolet dealer or G.M. automobile dealer and is sold under G.M. part number 3758791.

CAUTION: Do not use Straight Mineral Oil gear lubricants in the rear axle.

When checking lubricant level, the unit being checked should be at operating temperature. With unit at operating temperature the lubricant should be level with bottom of the filler plug hole. If the lubricant is checked with the unit cold, the lubricant level should be ½ inch below the filler plug hole.

The rear axle assembly should be drained and refilled every 10,000 miles or at least once per year. When refilling is necessary, refill with lubricants recommended above.

CAUTION: Do not use water, steam, kerosene, gasoline or alcohol to flush units.

10. **Tires**—Every 1000 miles check tires for any sharp object which could cause a puncture. Every 5000 miles the tires should be switched as shown in fig. 73.

11. **Transmission Selector Lever Shaft**—On Three-Speed, Four-Speed, and Powerglide apply a few drops of light engine oil regularly.

12. **Clutch Cross Shaft**—Lubricate with chassis grease at provided fitting.

IN THE DRIVER'S COMPARTMENT

The following items should be checked "behind the wheel."

1. **Clutch Pedal**—Three-speed and four-speed transmission only. Check the free travel, or "play," of the clutch pedal occasionally. The pressure of one finger should be enough to push the pedal in about an inch before the resistance of the clutch springs is encountered. If there is little or no play the clutch may be slipping, which will result in rapid wear. If there is too much play the clutch may not be disengaging completely, making gear shifting difficult. When free travel is less than ½" or more than ¾", an adjustment should be made. (See page 68.)

2. **Brake Pedal**—Check the action of the brake pedal frequently. Any unusual conditions such as squeaks, grabbing, spongy feel or pulling when brakes are applied should be investigated at once. If pedal travels to within 1" of the floorboard in making an ordinary stop, the need for a brake adjustment or relining is indicated. (See page 36.)

ON THE CAR BODY

Many of the annoying squeaks and noises that occur in closed bodies are due to neglect of maintenance service which all bodies should receive regularly. Some of the points which should be lubricated, and the lubricant required, are as follows:

1. **Door Lock Rotor and Striker Plate**—Use light oil or stainless stick lubricant.

2. **Hood Latch Mechanism and Hinges**—Apply light engine oil to pivot points.

   NOTE: Do not oil hood lock pin or catch plate.

3. **Rear Compartment Lid Lock Mechanism**—Lubricate moving parts with cup grease or chassis lubricant.

4. **Rear Compartment Lid Hinges**—Lubricate moving parts with chassis lubricant.

5. **Lock Cylinders**—Lubricate with powdered graphite.

6. **Window Regulators and Controls**—Apply a drop of light oil to operating mechanism. Trim panel should first be removed.

7. **Weatherstrips and Rubber Bumpers**—Coat lightly with a rubber lubricant such as Chevrolet Spray-a-Squeak—G.M. Part No. 987883.

8. **Folding Top Compartment Lid Hinges**—Apply light engine oil.

9. **Folding Top Compartment Lid Release**—Apply light engine oil.

LUBRICATION AND MAINTENANCE GUIDE

Lubrication Point	Item	Interval	Reference Page	Reference No.
1	Accelerator Control Rod at Idler Lever	1000 Miles	27	8
2	Air Cleaner (Polyurethane)	2000 Miles	27	5
2	Air Cleaner (Paper Element)	15000 Miles	27	5
	Anti-Freeze—Add	Fall	40	
	Anti-Freeze—Check	1 Week	40	
	Battery	2 Weeks	27	7
	Brake Master Cylinder	1000 Miles	27	2
	Brake Pedal Linkage	As Required	31	2
	Brake Shoe Adjustment	5000 Miles	36	
	Clutch Adjustment	As Required	68	
3	Clutch Cross Shaft—3 & 4 Speed Transmission	As Required	30	12
	Clutch Pedal Linkage	As Required	31	1
	Cooling System—Flush	Spring & Fall	39	
	Crankcase	First 1000	29	3
	Crankcase	4000 Miles	29	3
	Crankcase Breather Cap	2000 Miles	27	6
	Dealer Inspection	5000 Miles		
4	Distributor	1000 Miles	27	4
4	Distributor Cam	5000 Miles	27	4
4	Distributor Felt Wick	As Required	27	4
	Door Lock Rotor and Striker Plate	As Required	31	1
	Engine Tune-up	5000 Miles	48	
	Fan Belt	5000 Miles	39	
	Folding Top Compartment Lid Hinges	As Required	31	8
	Folding Top Compartment Lid Release	As Required	31	9
	Front Suspension and Steering Linkage	1000 Miles	28	1
5	Lower Control Arm—Front	1000 Miles	28	1
6	Lower Control Arm—Rear	1000 Miles	28	1
7	Upper Control Arm—Front	1000 Miles	28	1
8	Upper Control Arm—Rear	1000 Miles	28	1
9	Kingpin	1000 Miles	28	1
10	Tie Rod	1000 Miles	28	1
11	Steering Connecting Rod	1000 Miles	28	1
12	Universal Joints	1000 Miles	28	1
	Gasoline Filter (Standard and 2x4)	5000 Miles	27	
	Gasoline Filter—Fuel Injection	Spring & Fall	28	10
13	Generator	1000 Miles	27	3
	Hood Latch Mechanism and Hinges	As Required	31	2
	Lock Cylinders	As Required	31	5
	Oil Filter	First 5000	29	7
	Oil Filter	4000 Miles	29	7
	Radiator—Check Level	1000 Miles	42	
14	Rear Axle	1000 Miles	30	9
	Rear Compartment Lid Hinges	As Required	31	4
	Rear Compartment Lid Lock Mechanism	As Required	31	3
	Seat Adjuster and Seat Track	As Required	38	10
	Spark Plugs	5000 Miles	49	
	Spring Shackles	Do Not Lubricate	29	8
	Starter Motor	Do Not Lubricate	29	8
15	Steering Gear	1000 Miles	26	1
16	Throttle Bell Crank	1000 Miles	27	9
	Tires—Inspect	1000 Miles	30	10
	Tires—Rotate	5000 Miles	30	10
17	Transmission—Four Speed	1000 Miles	29	5
17	Transmission—Check Level	1000 Miles	29	6
17	Transmission—Three Speed	1000 Miles	29	4
18	Transmission Selector Lever Shaft	1000 Miles	30	11
	Weatherstrips and Rubber Bumpers	As Required	31	7
19	Wheel Bearings—Front	10,000 Miles	28	2
	Window Regulators and Controls	As Required	31	6

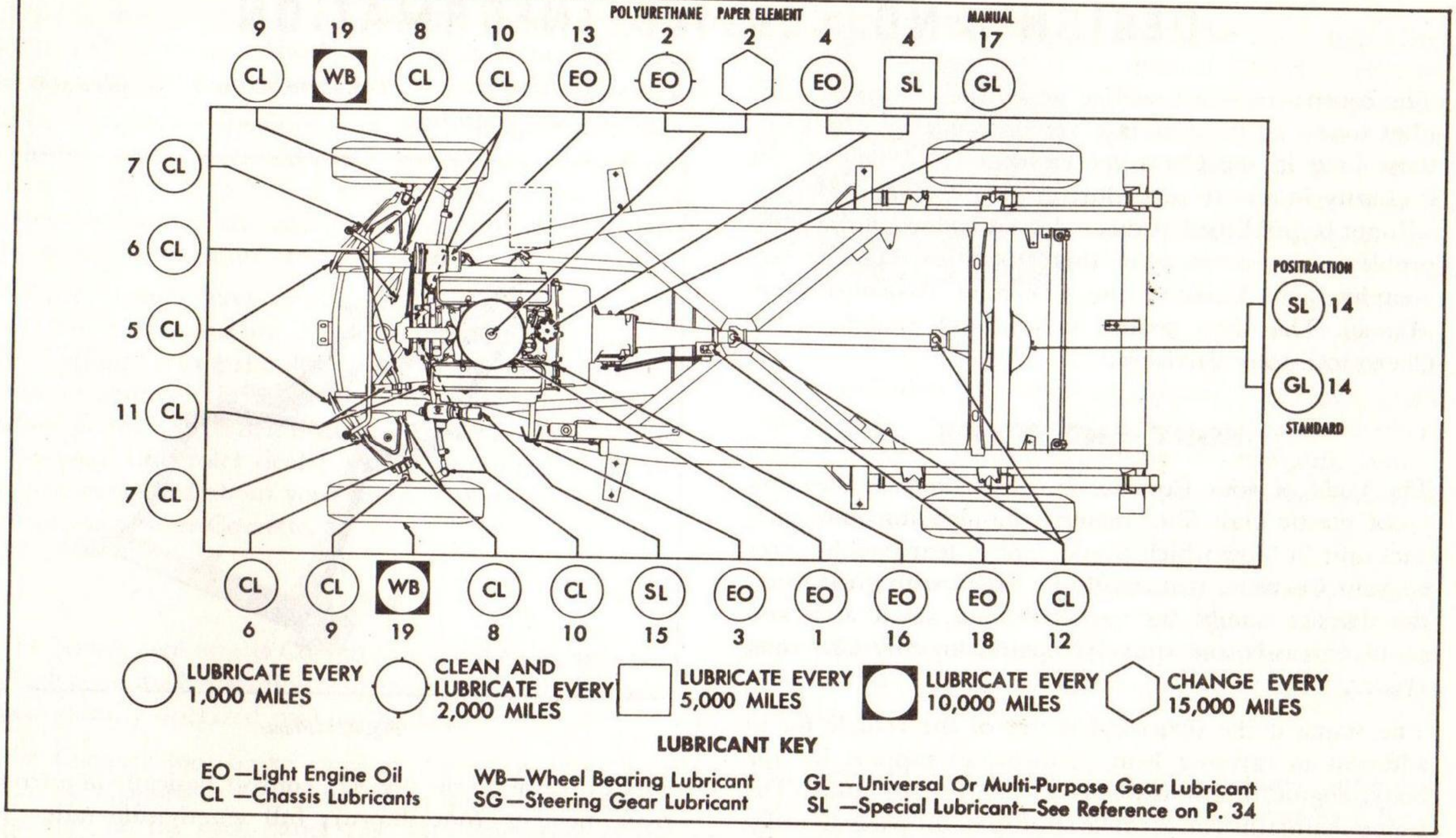


Fig. 41—Lubrication Chart

DESIGN AND SERVICE INFORMATION

The construction and service procedure of many assemblies found in the Corvette are the same or similar to those used in the Chevrolet Passenger Car. Due to the similarity in service procedure, a Corvette Shop Manual will not be published at this time. All major maintenance problems not covered in this Operators Manual, are completely outlined in the Chevrolet Passenger Shop Manual. This shop manual may be procured from the Chevrolet Motor Division.

BODY AND FRAME

The body of your Corvette is constructed of corrosion proof plastic glass fiber material molded into one compact unit. A blow which would dent or tear steel bounces off your Corvette. If it should be struck with great force, the damage would be restricted to a small area and could be easily and quickly repaired by any Chevrolet Dealer.

The frame is the structural center of the vehicle for in addition to carrying load, it furnishes support for the body, engine, transmission system and other units. The frame maintains correct relationship of all parts in order to secure their normal function and freedom from stress and strain and wear that may be caused by operation in a misaligned condition.

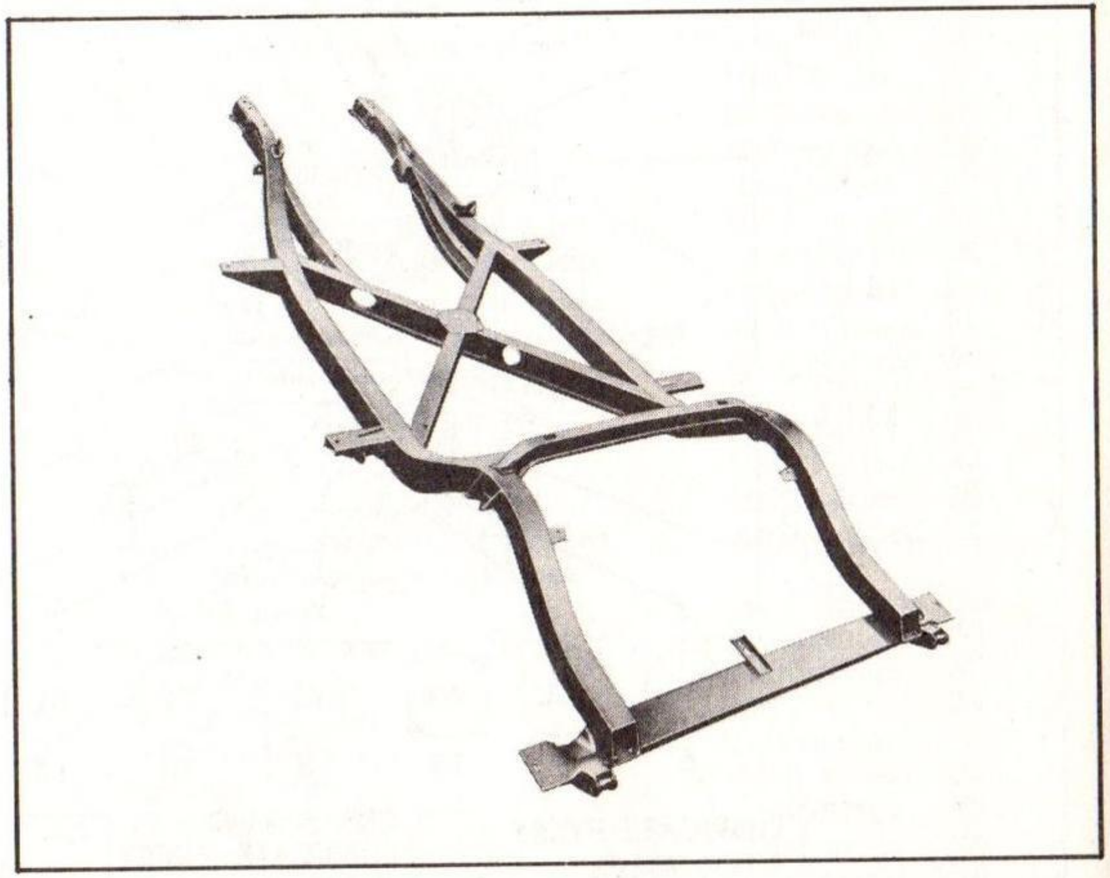


Fig. 42—Frame

The Corvette frame (fig. 42) consists basically of a front cross member (not shown), full length side rails, "I" beam type X member welded inside the frame side rails,

bracing from "X" member to front of frame side members, reinforced rear shock absorber cross member, rear cross member and various mounting brackets.

The front cross member is a large semi-tubular unit which is saddle mounted and bolted rigidly to the frame side members. The use of bolts in place of rivets facilitates overhaul as the complete front end assembly may be removed from the frame as a unit.

Vehicles which have been in a collision, upset or an accident of any nature which might result in "swayed" or "sprung" frame should always be checked for proper frame alignment in addition to steering geometry and wheel alignment. When it is necessary, it is recommended that your Chevrolet dealer who is equipped to do the job be contacted about your frame and wheel alignment problems of your Corvette.

BRAKES

The brakes used on the Corvette are a self-energizing type which combine hydraulically operated service brakes with mechanically operated parking brakes.

The Corvette foot brake employs a pendent-type pedal that is supported from the main cylinder which is mounted on the dash panel (fig. 43). Operation of the hydraulic system is dependent upon the proper functioning of the main and wheel cylinders. The main cylinder piston receives mechanical pressure from the brake pedal and push rod and exerts pressure on the fluid in the lines, building up the hydraulic pressure which is transmitted to the wheel cylinders. This fluid pressure forces the pistons in the wheel cylinders outward, expanding the brake shoes against the drums. As the pedal is depressed further, higher pressure is built up within the hydraulic system causing the brake shoes to exert greater pressure against the brake drums.

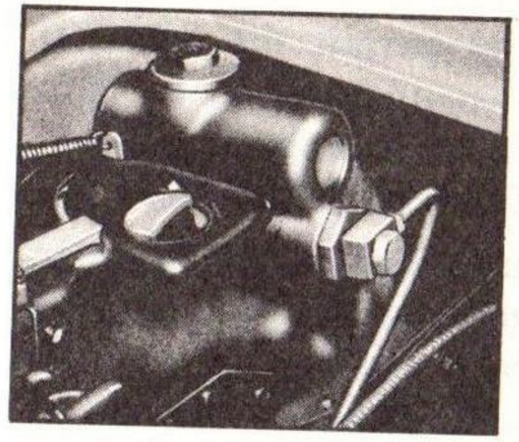


Fig. 43—Brake Master Cylinder

As the pedal is released, the hydraulic pressure is relieved and the brake shoe retracting springs draw the shoes away from the drums and force the fluid out of the wheel cylinders back into the lines toward the main cylinder.

The mechanical parking brake handle, located under the left side of the instrument panel is connected by a flexible cable to the equalizer lever just to the rear of the frame "X" member. The cables are supported at the

rear wheels by special clamps to permit the cables to pass under the springs.

HYDRAULIC BRAKE ADJUSTMENT

To compensate for lining wear, which is evidenced by excessive pedal travel, a minor adjustment can be made to reduce the clearance between the brake lining and brake drum. All hydraulic brakes can be adjusted without removal of the wheels as all brake flange plates have openings with removable spring snap covers. As brakes are self-energizing through energizing links, only one service adjustment at each wheel cylinder is needed.

Brake shoe replacement is completely covered in the Chevrolet Passenger Car Shop Manual.

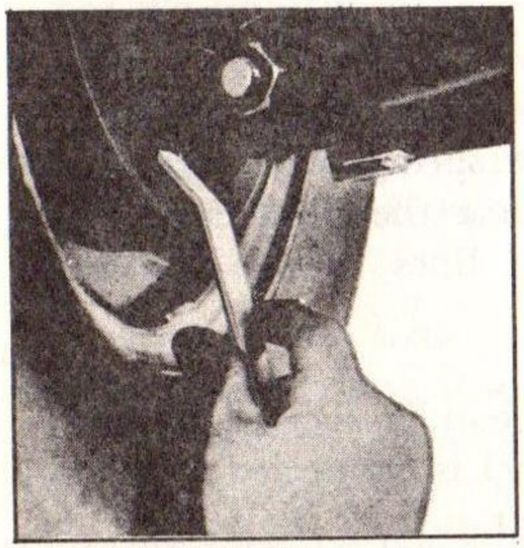


Fig. 44—Brake Adjustment

1. Jack up wheel and remove adjusting hole cover from flange plate.
2. Through hole in flange plate, insert screw driver or similar tool and engage it in teeth of adjusting wheel (fig. 44).
3. To expand shoes, move outer end of tool toward center of wheel until shoes drag slightly.
4. Turn adjusting wheel in opposite direction 7 notches (12 notches if equipped with metallic lining) to insure running clearance and check to see that wheel turns freely without drag. It may be necessary to tap backing plate to permit shoes to centralize before brake will be free.
5. Repeat this operation on each brake and replace hole covers.

PARKING BRAKE ADJUSTMENT

The parking brake adjustment should be checked each time the hydraulic brakes are adjusted. When making a parking brake adjustment, the service brakes must be properly adjusted first as a base for the parking brake adjustment.

1. Jack up both rear wheels.
2. Pull out hand brake handle for 7 clicks of pawls (not 7 notches).
3. Loosen check nuts at cable ends. Turn the forward check nuts against the clevis plates to draw up each brake cable until a moderate drag is felt when rotating drum.
4. Tighten check nuts securely.
5. Set parking brake lever back to 2 clicks from full release position, at which point no brake shoe drag should be felt.

HYDRAULIC BRAKE FLUID

Only G.M. Hydraulic Brake Fluid Super No. 11 should be used when bleeding brakes. This brake fluid is satisfactory for any atmospheric temperature, hot or cold and has all the qualities necessary for satisfactory operation, such as a high boiling point to prevent evaporation and tendency to vapor lock, and a fluid state at low temperatures.

BLEEDING HYDRAULIC SYSTEM

Air in the hydraulic system must be removed by a bleeding operation after the system has been opened at any point, or when air has entered the system in any manner. Air in the system is usually indicated by:

1. A "spongy" or "springy" feeling of the brake pedal when the brakes are applied.
2. Too much travel of the brake pedal (when the brake shoe adjustment is known to be correct).

Bleeding should be done on the longest line first to remove effectively all air from the system. The proper sequence to follow is left rear, right rear, right front and left front. In the bleeding operation it is extremely important that absolute cleanliness be observed. Any foreign matter in the system will tend to clog the lines, ruin the rubber cups of the main and wheel cylinders and cause inefficient operation or even failure of the braking system.

The manual method of bleeding the brake lines is described below. It is recommended that a helper be used to assist in performing this operation.

1. Raise hood, clean all dirt from top of main cylinder mounted on the dash panel, and remove filler plug.
2. Fill the reservoir with brake fluid. The reservoir must be kept full, or nearly full, of brake fluid while bleeding the brake system.

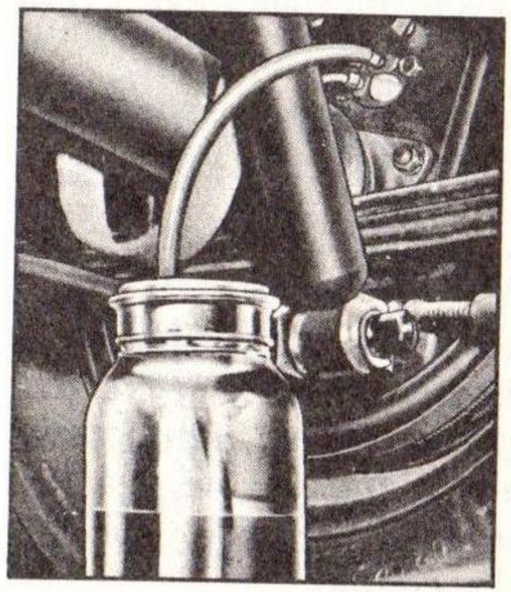


Fig. 45—Bleeding Brakes at Wheel Cylinders

3. Remove bleeder valve screw from end of bleeder valve near the brake fluid pipe or hose connection at wheel.
4. Attach a bleeder hose to the bleeder valve at this point (fig. 45) and place the free end of the bleeder hose in a clean container having sufficient fluid at all times during this operation.
5. With a wrench, open bleeder valve by turning ¾ turn in a counterclockwise direction.

6. Slowly depress the brake pedal by hand to approximately the halfway point, then let the pedal return slowly to the release position. Repeat this procedure several times, keeping the end of the hose submerged in brake fluid until the fluid expelled from the bleeder hose is free of air bubbles.
7. Close bleeder valve tightly by turning clockwise with wrench as soon as bubbles stop and fluid flows in a solid stream.
8. Remove bleeder hose and install bleeder valve screw in bleeder valve.
9. Add new fluid to the main cylinder, and repeat the operation on the other wheels in turn.

COOLING SYSTEM

The cooling system is designed with two purposes in mind; first, to carry off a certain amount of heat created in the engine so it will not operate at too high a temperature; and second, to maintain the engine heat at the temperature which will produce the most efficient and economical operation of the engine.

The system consists of a cross flow aluminum radiator and supply tank, fan, water pump, thermostat, water passages in the engine cylinder block and cylinder head, and the necessary hoses and fittings.

It is known as a pressure type cooling system, that is, it is designed to operate normally under a pressure of 13 pounds per square inch. Water boils at 212°F. at normal atmospheric pressure, so by raising the pressure under which the coolant mixture is operating, the boiling point is therefore raised to approximately 240°F., thereby assuring safe operation even under high temperature conditions. For this reason, pressurized air and vapor may escape when removing the supply tank cap, but this does not necessarily mean the system is overheated.

The standard equipment 17 1/8 inch fan is driven by a V-belt at .95 times the engine speed. This assures a constant flow of air through the radiator and around the engine to aid in cooling the water. An optional thermo-modulated fan reduces fan noise by limiting fan speed to approximately 3200 rpm.

In addition, the fan partially free-wheels until the radiator core temperature reaches 130°-150°F. The permanently lubricated centrifugal type water pump circulates the water, thereby constantly bringing cooler water to the areas around the combustion and exhaust chambers where most heat is generated. The thermostat restricts the flow of water to the radiator until the engine warms up to normal operating temperature.

CARE AND MAINTENANCE

The cooling system must be kept in good condition if it is to cool the engine properly under all operating conditions. The cooling system should be kept clean. Use only corrosion inhibiting anti-freeze solutions, following the

manufacturer's specifications. When plain water is used, the addition of a soluble oil inhibitor is recommended, especially in areas of the country where high alkaline content water is found. Since the action of the cooling system controls the operating temperature of the engine, it is essential that systematic inspection of the units in the system be made periodically to maintain the efficiency of the system. See the special instructions at the end of this section pertaining to the aluminum radiator.

The supply tank cap should be removed and the coolant level checked frequently. If the coolant level is low, water or anti-freeze should be added.

NOTE: Since the volume of the solution in the cooling system expands when heated, the system should be filled cool, with the engine running to free the system of air, and until the supply tank is ½ full.

The system should be thoroughly checked for leaks and all hose clamps tightened occasionally.

The radiator and cylinder block should be drained and flushed twice a year if no anti-freeze or alcohol type anti-freeze is used. If permanent anti-freeze is used, cooling system may be drained and flushed once yearly.

The front of the radiator core should be checked occasionally for insects, leaves, etc., which could restrict air circulation. These can be flushed out from the back side of the radiator with a water hose and city water pressure.

The fan belt tension should be checked occasionally and, if necessary, adjusted.

The cooling system should be checked during periods of sub-freezing temperatures to determine if the system contains adequate amounts of anti-freeze.

CLEANING THE COOLING SYSTEM

Unless the water in the cooling system is treated with a corrosion inhibitor, the water passages in the radiator and engine block may eventually become partially clogged. This corrosion and scale accumulation might result in inefficient operation of the cooling system, vitally affecting engine performance and economy of operation. Common causes of corrosion are:

1. Air in System—Air may be drawn into the system due to low liquid level in the supply tank, leaky water pump, or loose hose connections.
2. High alkaline content of water found in certain areas.

Scale and deposits in the cooling system which will not flush out can generally be removed by using an acid-base cleaning compound recommended for aluminum radiators. When using a cleaning compound, follow the instructions provided by the manufacturer.

If cooling system compound will not thoroughly clean the system, it is advisable to reverse-flush the system. See your Chevrolet Dealer regarding reverse-flushing of your Corvette cooling system.

FAN BELT ADJUSTMENT

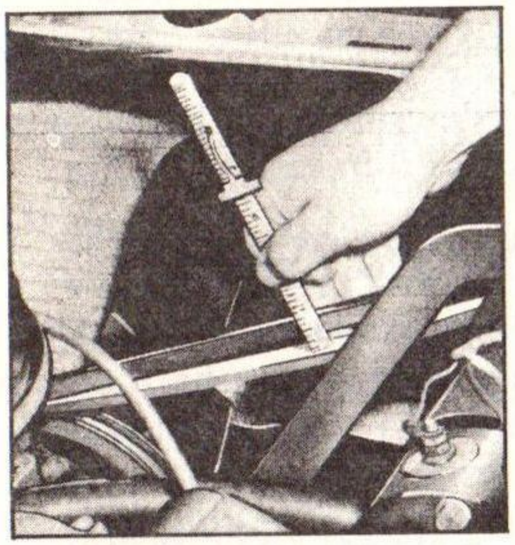


Fig. 46—Fan Belt Adjustment

1. Loosen bolt at generator slotted bracket.
2. Pull generator away from engine until desired belt tension is obtained. With correct adjustment a light pressure on the belt at a point midway between pulleys should cause a 7/16″ to 1/2″ deflection (fig. 46).
3. Tighten all generator bolts securely.

THERMOSTAT

The thermostat consists of a restriction valve actuated by a thermostatic element. This unit is mounted in a housing in the inlet manifold water outlet above the water pump.

Thermostats are designed to open and close at predetermined temperatures and if not operating properly may cause abnormally high or abnormally low engine temperatures. If the condition of the thermostat is questioned, it can be removed and tested as follows:

1. Open radiator drain cock and drain out about half the coolant to bring the coolant level below the thermostat, then close the drain cock.
2. Remove the two cap screws that attach the water outlet to the thermostat housing (fig. 47), and lift water outlet (with hose attached), gasket, and thermostat from housing.
3. Heat a container of water to a temperature 25° above the temperature stamped on the thermostat and place thermostat in the water and see if it opens fully. If it does not fully open, it should be replaced.

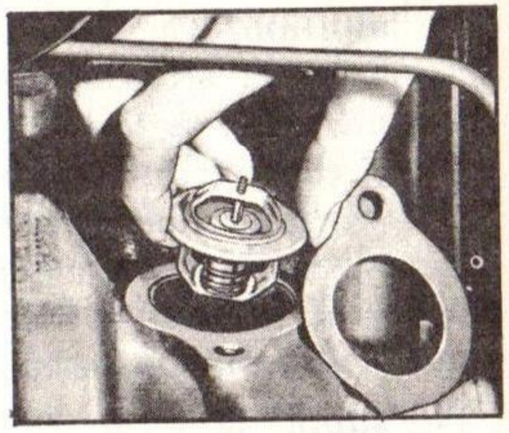


Fig. 47—Thermostat

4. Place thermostat in water 10° below the temperature stamped on the thermostat and see if thermostat fully closes. If it does not fully close, it should be replaced.
5. Place thermostat in housing, then using a new gasket, install water outlet and cap screws. Tighten screws evenly and securely.
6. Fill cooling system and check for leaks.

CHANGING TO ANTI-FREEZE

In determining the anti-freeze solution for winter operation, the local conditions and the type of service must be considered. To be certain that the solution will not leak out and be lost entirely, the following procedure should be followed in conditioning the system:

1. Drain the entire cooling system including the cylinder block. If considerable rust, scale, oil, or grease is present in the water drained out, it is advisable to flush and clean the system.

NOTE: For complete draining, the radiator drain cock at left side of radiator should be opened and the drain plug at each side of the V-8 block should be removed. Supply tank pressure cap should be removed to allow air to enter system.

2. Tighten all cylinder head bolts in sequence as describe on page 50.

   NOTE: Tightening cylinder head bolts may decrease valve clearance. Check and adjust valves if necessary (See Valve Adjustment, page 50).

3. Inspect the fan belt and adjust or replace if necessary (See Fan Belt Adjustment, page 40).
4. Inspect all hoses including heater hoses. If hoses are collapsed, cracked or in any way indicate a rotted condition on the inside, replacement should be made. Carefully check and tighten all hose clamps.
5. Check the thermostat. Make sure it does not stick open or closed. A 170° thermostat should be used when permanent anti-freeze is used, 160° thermostat with alcohol anti-freeze.
6. Fill the cooling system with the proper amount of GM anti-freeze and water, until the supply tank is ½ full, with engine running and system cool.
7. Warm up engine and check radiator, water pump, hoses and hose connections for leaks with engine hot.

TESTING ANTI-FREEZE SOLUTION

A hydrometer test is used to indicate whether anti-freeze, or water or both should be added to bring the solution to the proper level and to maintain the desired freezing point. Some devices used for testing anti-freeze solutions will indicate the correct freezing point only when the test is made at a specific temperature. Other testers provided with thermometers and tables, indicate the freezing points corresponding to readings made at various temperatures. Disregarding the temperature of the solution when tested may cause an error as large as 30°F. Some testing devices are made to test only one kind of anti-freezing solution. Others have several scales and may be used for the corresponding kinds of anti-freeze.

SPECIAL INSTRUCTIONS FOR ALUMINUM RADIATORS

Aluminum radiators have been designed to combine heavy-duty structure with high performance cooling. However, due to the physical properties of aluminum these radiators will require special maintenance and repair procedures. Recommended servicing for a standard brass and copper radiator may damage an aluminum radiator.

Additives—In general, aluminum is easily affected by caustic solutions. No cooling system compound should be added to this system unless it is specifically recommended for use with aluminum by a reliable manufacturer.

Anti-freezes—Permanent GM 1899m or alcohol type GM 1898m anti-freeze are recommended. AVOID the use of salt base inhibited anti-freeze and use an anti-

freeze with a soluble oil inhibitor.

Inhibitors—When no anti-freeze is in the system, a soluble oil inhibitor is recommended to prevent corrosion of the cooling system.

Cleaners—Use an acid-base cleaner recommended by its manufacturer for use in aluminum radiators. If such a cleaner is not available pressure flushing is the only cleaning procedure recommended. **Do not use the common caustic base cleaners generally available.**

Stop Leak Preparations—Stop leak preparations should not be required with aluminum radiators but may be used if desired to seal other points in the system.

Liquid Level—It is recommended that the level be checked with the system completely cool. In this case, the coolant solution should be added if the level in the supply tank is below ½. Start the engine and let it idle to allow the water to circulate and free the system of air, and recheck level. Add, if necessary, until the supply tank is ½ full.

When the coolant temperature reaches its normal operating level, it will expand and fill the supply tank. If the system is filled when hot, recheck liquid level when cool, and add as necessary.

If the system has been completely drained and is to be refilled, add coolant to fill radiator and supply tank. Due to the blocking action of the thermostat, the engine should then be started and coolant temperature allowed to reach normal operating range. This temperature rise will open the thermostat and allow coolant to flow through the system. Add coolant solution until the supply tank is ½ full, and recheck when cool, as explained above.

Filler Neck—It is necessary that the inside top of the pressure cap make an air tight seal to the top of the filler neck. Care must be used to avoid nicking or denting the sealing surface of the top of the filler neck.

Filler Cap—An aluminum filler cap with a special gasket is furnished with this radiator. A conventional steel filler cap may be used as a temporary substitute provided that a gasket is used to seal the inside top of the cap to the top of the filler neck.

Drain Cock—Either an all aluminum or an aluminum-plastic drain cock must be used with this radiator. In the event of loss or damage, a conventional brass drain cock must not be used. A cast iron ⅛ NFT plug may be used temporarily. If used for an extended period this plug may cause corrosion of the aluminum threads.

ELECTRICAL SYSTEM

The electrical system consists of the following units—generator, combined voltage and current regulator, starting motor, storage battery, distributor, ignition lock, ignition coil, ammeter, gasoline gauge, horn, accessories, lamps, switches, wiring and miscellaneous parts. The electrical system also utilizes (with optional radio installed) metal shields, and resistance type cables to prevent radiation of radio frequency interference from the plastic body.

BATTERY

A 12 volt, 9 plate, 53 ampere-hour at 20 hr. rate storage battery is located under the hood on the right side of the frame (fig. 48).. To assure long carefree battery service, the level of the solution in each cell should be checked at least once every two weeks. Remove filler caps from all six cells and add distilled water to bring solution to the bottom of the split ring in the vent well in each cell. In freezing weather the vehicle must be driven after adding water to mix it properly with the electrolyte and prevent freezing. It is also important to keep the battery in a fully charged condition in cold weather as a discharged battery will freeze at a little below the freezing point of water (32°F.). The state of charge in the battery should be checked regularly. Your Chevrolet dealer will gladly perform this service. However, if it is inconvenient to take your Corvette to a dealer, the state of charge in the battery can be checked by using a battery hydrometer. A fully charged battery should have a specific gravity of 1.260 to 1.280, while a fully discharged battery will have a specific gravity of approximately 1.070.

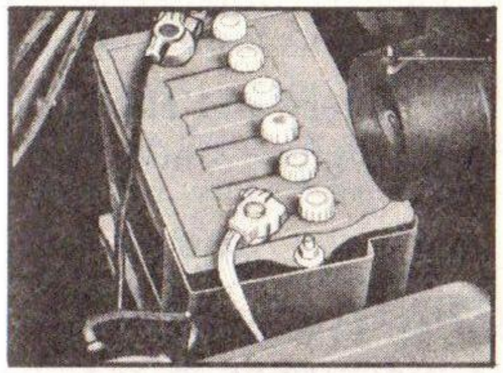


Fig. 48—Battery

CAUTION: Batteries give off highly combustible hydrogen gas when charging and for some time after. Never allow an electric spark or flame near the battery, particularly the vent caps. Before working around battery, ground the car to reduce the possibility of static spark. Avoid getting battery acid on car finish, clothing or other fabrics.

The battery cable terminals must be kept clean and tight. Loose or corroded terminals cause hard starting and discharged batteries. When corrosion appears on the terminals, they should be cleaned in a solution of baking soda and water or ammonia and water. After cleaning, the top of the battery should be flushed off with clear water. To reduce the tendency of the terminals to corrode, coat them with petrolatum.

IGNITION SYSTEM

The ignition system consists of the ignition switch to open and close the circuit, the coil to induce high voltage, the distributor to make and break the low tension circuit and distribute the high tension current to the correct spark plugs, the spark plugs, to provide the spark in the combustion chamber and the necessary wiring. The battery is the source of current for the ignition system when starting the engine or operating at idling speed. The generator furnishes the ignition current at higher speeds.

The distributor mounting provides a means of properly setting the initial ignition timing. The spark advance for various speeds and loads is controlled by governor weights in the distributor and by engine vacuum.

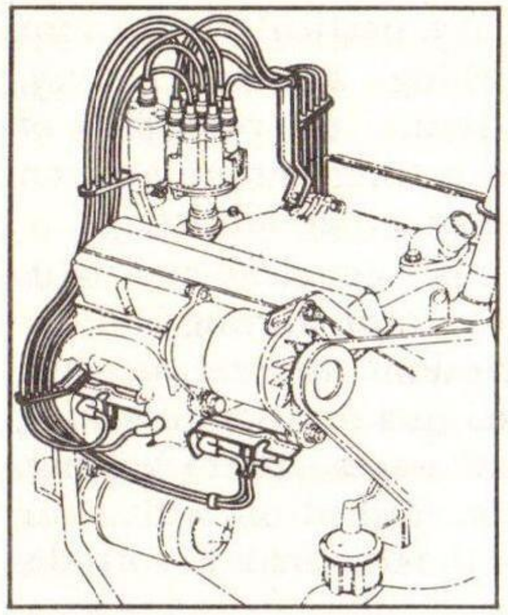


Fig. 49—High Tension Leads

The battery and generating system must be kept in good operating condition in order to obtain satisfactory operation of the ignition system. All wiring connections in the ignition circuit should be kept tight and free from dirt and corrosion. Keep the high tension wires free from grease and tight in the distributor cap and coil (fig. 49).

GENERATING SYSTEM

The generating system consists of the generator, voltage, and current regulator, ammeter and necessary wiring.

The ammeter indicates whether current is being supplied to or removed from the battery.

The generator has sufficient capacity to supply all regularly used accessories and keep the battery fully charged providing the system is in good condition.

The generator output is controlled by the combined current and voltage regulator and cutout relay. The cutout relay points close when the generator voltage is higher than the battery voltage so that current can flow to the battery and open when the generator voltage is lower than the battery voltage to prevent the battery from discharging through the generator.

The current regulator protects the generator by preventing the generator output from exceeding 27 to 33 amperes.

The voltage regulator protects the battery and electrical system by preventing the generator voltage from exceeding 13.8 to 14.8 volts.

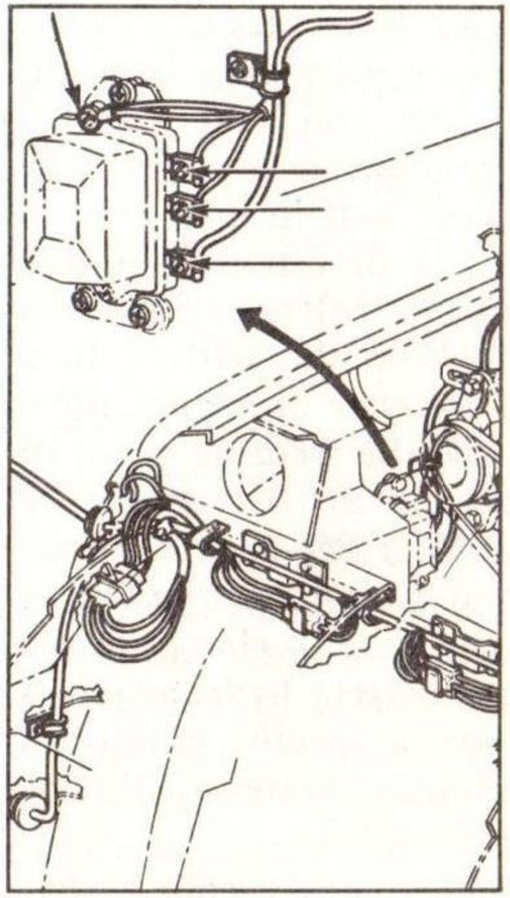


Fig. 50—Generator—Voltage Regulator Connections

The cutout relay points close at 11.8 to 13.5 volts. The connections in the entire generating circuit must be kept tight and free from corrosion or anything that will cause high resistance in the circuit. The generator should be lubricated as described on page 27.

The maintenance of the generating system, especially the voltage and current regulator, require the use of special equipment not generally available to the vehicle owner.

At periodic intervals of approximately 5000 miles, the terminals, external connections and wiring (fig. 50), mounting, belt and pulley should be checked. The commutator and brush inspection can be made through the openings in the commutator end frame. If the commutator is dirty or if the brushes are badly worn, it is best to have your Chevrolet dealer make the necessary tests and repairs.

STARTING SYSTEM

The starting system has only one function to perform—to crank the engine. In the starting system there are four basic units: the battery, the starting solenoid, the starting relay, and the starting motor. The battery supplies the energy, the solenoid completes the circuit, allowing this energy to flow to the starting motor and the relay is used with the solenoid to reduce the voltage drop during the starting operation. The motor which draws a large amount of current for a short period of time, then delivers mechanical energy and does the actual work of cranking the engine. The motor is designed to incorporate a solenoid drive mechanism which assures positive engagement of the starting motor pinion with the flywheel until the engine is started. The solenoid is controlled by the key starter switch in the battery circuit. A shielded neutral safety switch is provided to prevent starting of the engine with the transmission selector lever in other than "P" or "N" position on Powerglide equipped Corvettes.

HEADLAMPS

The Corvette is equipped with dual T-3 Safety Aim Headlamp units. This system features better visibility through a broader and brighter beam pattern on both the "low" and "high" beam.

These headlamps may be adjusted properly by your local Chevrolet Dealer who is equipped with the latest T-3 Aimer device. When the upper beams are in use, a red pilot light will be seen through a small opening in the speedometer dial. The floor mounted dimmer switch is used to switch from one beam to the other.

Replacement

1. Remove the four screws securing the headlight door (fig. 51).

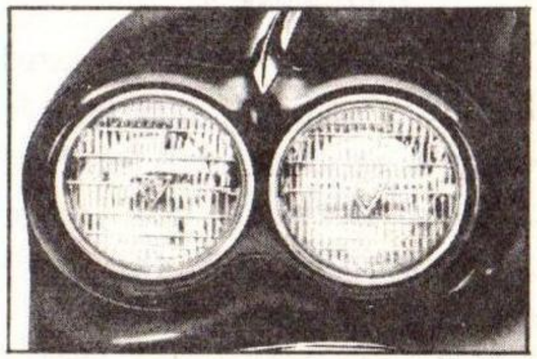


Fig. 51—Headlamps

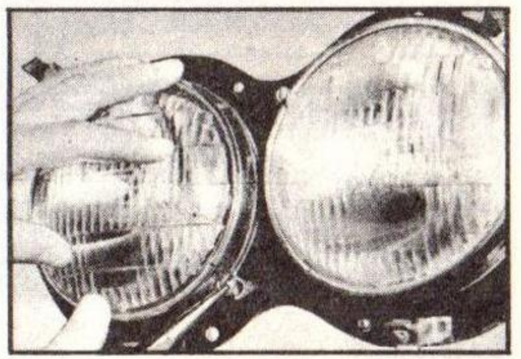


Fig. 52—Retaining Ring and Spring

2. Remove the spring holding the retaining ring (fig. 52). Do not touch the adjusting screws at the top and sides of the mounting ring (fig. 52).
3. Pull sealed beam unit forward and disconnect wiring plug from sealed beam unit.
4. Connect wiring plug to new sealed beam unit. Place retaining ring around unit and push into place. Install attaching spring.
5. Install the rim and secure in place with four attaching screws.

Adjustment

Adjustment of headlights should be performed by your Chevrolet Dealer or an authorized Guide Lamp aiming station equipped with the T-3 aiming device.

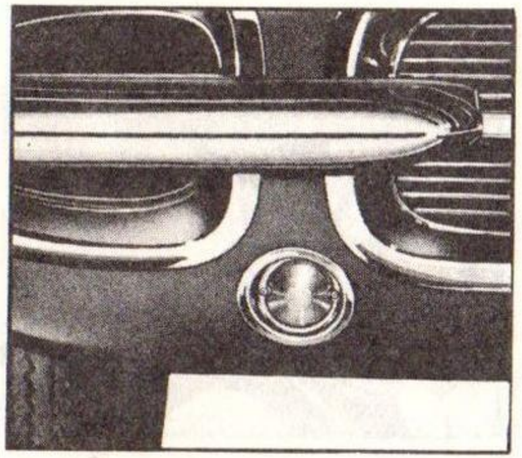


Fig. 53—Parking Lamps

PARKING AND TAIL LAMPS

Combination parking and direction signal lamps are located at the front end of the car between the lower front fender and the grill (fig. 53) while combination tail, stop and direction signal lamps are located in the tail

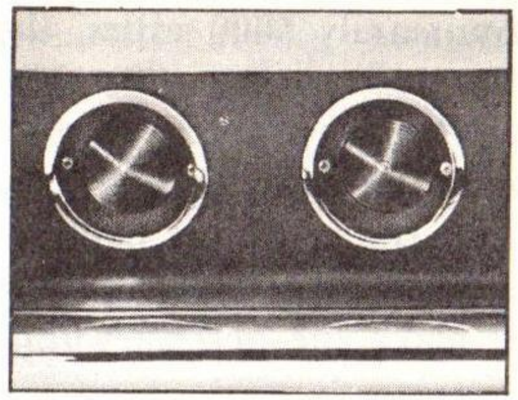


Fig. 54—Tail Lamps

light assemblies in filler panel (fig. 54). Each tail lamp bulb and socket is removed from outside by removing two screws retaining lens. Access to each parking lamp is gained by removing the cover screws and cover from the outside of the body.

LICENSE PLATE LAMPS

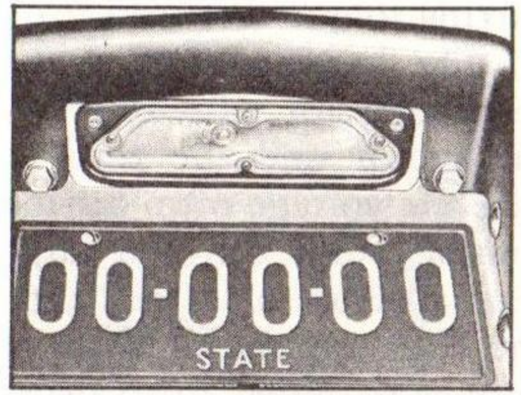


Fig. 55—License Plate Lamps

License plate lamps are located under plastic lens at top of license pocket. Remove lens to gain access (fig. 55).

CIRCUIT BREAKER

The lighting switch controlling instrument panel and exterior lights incorporates a 15 ampere thermal circuit breaker to protect the head and parking lamp circuit. Separate safety fuses are provided for radio, heater, instrument panel lights, tail and stop lamp lights and parking brake alarm if installed. If an

overload or short circuit occurs in the lighting system causing a current flow of more than 15 amperes, the points of the circuit breaker will open and close as they warm and cool until the short is located and corrected.

POWER TRAIN

The Corvette power trains, consisting of engine, transmission, propeller shaft and rear axle are matched to deliver optimum performance and economy per dollar of cost. The following chart lists all combinations available. Note that the standard base production Corvette is equipped with 283 cubic inch V8 engine with single four barrel carburetor, three speed transmission and 3.36 to 1 ratio standard rear axle.

All Corvette engines have full pressure lubrication to cylinder walls, valve lifters, and to main, connecting rod and camshaft bearings. Metered pressure is supplied to the timing gears. A full flow oil filter is included which incorporates a by-pass valve which allows for engine oiling if filter should become clogged.

Engine	Gross Horse-power	Gross Torque (lb-ft)	Identifying Equipment	Comp. Ratio	Trans-mission	Axle Ratio	Optional Positraction Axle Ratios
Base Prod 283 Cu In V-8	230 at 4800 rpm	300 at 3000 rpm	4-bbl carb	9.5-to-1	3-Speed	3.36	
					4-Speed	3.70	
					Powerglide	3.55	
Optional 283 Cu In V-8	245 at 5000 rpm	300 at 3800 rpm	2, 4-bbl carbs	9.5-to-1	3-Speed	3.36	3-spd trans available with 3.36, 4.11 and 4.56. 4-spd trans available with 3.70, 4.11 and 4.56. None available with Powerglide.
					4-Speed	3.70	
					Powerglide	3.55	
	270 at 6000 rpm	285 at 4200 rpm	2, 4-bbl carbs and spc cam	9.5-to-1	3-Speed	3.36	
					4-Speed	3.70	
	275 at 5200 rpm	305 at 4400 rpm	Fuel Injection	11.0-to-1	3-Speed	3.36	
					4-Speed	3.70	
	315 at 6200 rpm	295 at 47-5100 rpm	FI and spec cam	11.0-to-1	3-Speed	3.36	
					4-Speed	3.70	

Four speed manual transmissions are Syncro-Mesh in all forward speeds while the three speed type has Syncro-Mesh gears in all forward speeds but first. The 1961 four speed is equipped with an aluminum case which is 15 lbs. lighter in weight than the cast iron type.

The Power Glide transmission is of special design with higher speed shift points than regular passenger model.

Axle ratios are offered in combinations shown in chart. The 1961 Posi-Traction axle is supplied with a total of ten clutch plates, giving your Corvette an even more sure-footed grip on all road surfaces.

TUNE-UP CHECKS AND ADJUSTMENTS

The Corvette owner may be able to improve the performance and economy of his vehicle by making a few minor adjustments to the engine as follows in this manual. These minor tuneup adjustments are given for Corvette owners with mechanical experience who want to perform their own minor tuneups. It is necessary, of course, to have modern test equipment to do an extensive or complete engine tune-up. The procedures suggested here can be performed with a minimum of equipment, and it is not intended that these operations take the place of a complete major tune-up performed by an authorized Chevrolet dealership.

COMPRESSION CHECK

1. Be sure the battery is in good condition. Operate the engine until normal operating temperature is reached. Turn the ignition switch off and remove all spark plug shielding, then remove spark plugs.
2. Block the throttle in an open position and check to see that automatic choke is wide open.
3. Install a compression gauge in number 1 cylinder. Crank the engine until the gauge registers a maximum reading and record the reading. Note the number of compression strokes required to obtain this reading.
4. Repeat the test on each cylinder cranking the engine the same number of strokes as was required to obtain a maximum reading on number 1 cylinder.

- Compression on all cylinders should be 160 pounds or better. All cylinders should read alike or within 20 pounds for satisfactory engine performance.

  NOTE: On engines equipped with the solid valve lifter camshaft, minimum compression pressure should be 140 pounds.

- A reading of more than 20 pounds above normal indicates carbon or lead deposits in the cylinder.
- A reading of more than 20 pounds below normal indicates leakage at the head gasket, rings or valves.
- A low even compression in two adjacent cylinders indicates a head gasket leak. This should be checked before condemning the rings or valves.
- To determine whether the rings or the valves are at fault, put a tablespoon of heavy oil on top of the low reading cylinders, and repeat the compression test. The oil will form a temporary seal for the rings. If the same reading is obtained, the rings are satisfactory, but the valves are leaking. If the compression has increased 10 pounds or more over the original reading, it indicates there is leakage past the rings.
- If the pressure fails to rise after first two successive compression strokes, but climbs higher on the succeeding strokes, or fails to climb during the entire test, it indicates a sticking or stuck valve.
- The cause of low or uneven compression must be corrected before proceeding with the motor tune-up.

SPARK PLUG—CHECK AND REPLACEMENT

Remove spark plugs using socket deep enough to prevent possible damage to spark plug porcelains. While removing plugs place in order on bench or in rack to identify each plug with individual cylinder it was taken from. This is important to diagnosis of individual cylinder malfunctions.

Wipe off porcelains and inspect for porcelain cracks. If no cracks are visible, sand blast spark plugs, then file the electrode tips and regap the spark plug with a round wire type plug gauge. Adjust spark plug gap to .035″ (fig. 56).

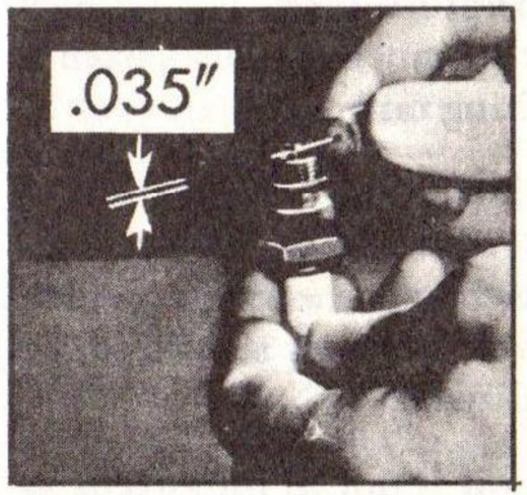


Fig. 56—Setting Spark Plug Gap

CAUTION: Never bend center electrode which extends thru porcelain to make spark plug adjustment. Always make adjustment by bending the side electrodes.

Tap out spark plug threads with a 14 mm x 1.25 tap coated with plenty of grease then install new gaskets on plugs and start threads of plugs with fingers. Tighten to 20-25 foot pounds of torque. If torque wrench is not available tighten finger tight and ½ turn more using new gaskets.

Gaskets should be felt to slightly compress, this will give ideal heat dissipation. All spark plugs should be the same heat range with approximately the same amount of service hours. This will provide a more balanced running engine.

VALVE ADJUSTMENT

Before adjusting valve stem to rocker arm clearance on models equipped with solid lifters it is important to have the engine thoroughly warmed up to normalize the expansion of all parts. Clearances will change as engine reaches normal operating temperature. Tests have shown that valve clearances will vary as much as .005" from a cold check through the normalizing range.

Covering the radiator will not materially hasten this normalizing process because even with the water temperature quickly raised, it does not change the rate at which the oil temperature increases and becomes stabilized, or the engine parts become normalized.

The actual temperature of the oil is not as important as stabilizing the oil temperature. The expansion or contraction of the valve mechanism, cylinder head and cylinder block are relative to this oil temperature. These parts stop expanding and valve clearance changes cease to take place only after the oil temperature is stabilized.

1. Normalize engine.
2. Remove rocker arm cover attaching screws and covers.
3. Remove automatic choke heat tube on models so equipped, and remove rocker arm covers. Keep cover screws and reinforcements together.
4. Check torque of all manifold bolts and torque cylinder head bolts.

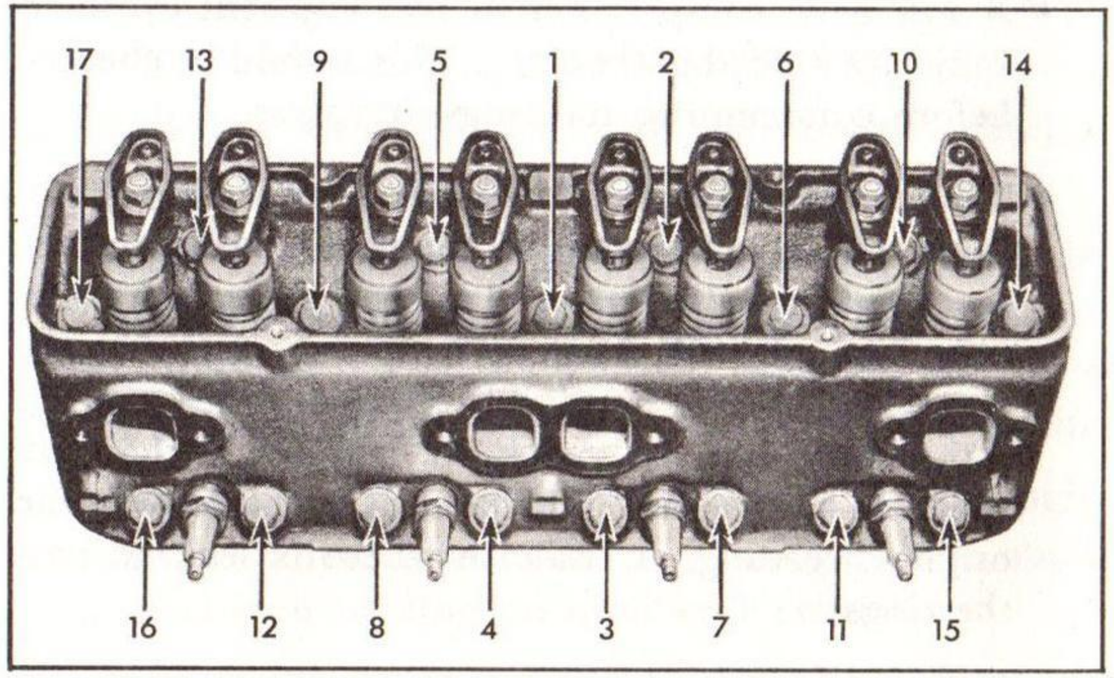


Fig. 57—Cylinder Head Bolt Tightening Diagram

NOTE: Cylinder head bolt torque is 60 to 70 lbs., exhaust manifold bolts, 25 to 35 ft. lbs., and intake manifold bolts, 25 to 35 ft. lbs.

5. Install automatic choke heat tube on models so equipped.

6. Lubricate valve stems to insure freedom of stem action.
7. Adjust valve rocker arm clearance with the engine normalized and idling by turning the self locking rocker arm stud nuts as required to obtain the clearances as shown in "Technical Data and Specifications".

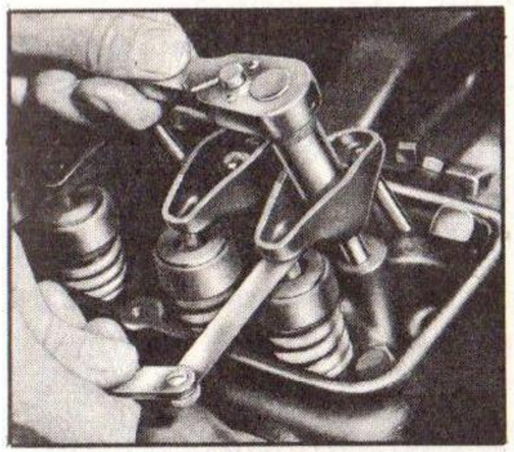


Fig. 58—Valve Tappet Adjustment

NOTE: The following steps do not apply on fuel injection equipped models.

8. Remove automatic choke tube and reinstall rocker arm covers.
9. Install automatic choke heat tube, start engine and check for oil leaks at rocker arm covers.

DISTRIBUTOR POINTS

Correct distributor point gap is of prime importance to a smooth running and high performing engine. If the condition of the distributor is in doubt, proceed as follows:

Inspection

1. Remove wires from distributor cap. Inspect for corrosion at terminals and cracks in wiring.
2. Release distributor cap clips, remove cap and rotor and check for cracks in both assemblies.
3. Inspect contact points. Pitted or oxidized points should be replaced and misaligned points should be properly aligned and set. If the points are worn evenly and show a uniform gray surface, they do not need attention, providing point dwell angle or point gap is within limits.
4. As a temporary measure points may be filed to eliminate certain metal build up that might interfere with proper point clearance. This will accelerate the burning and new contact points should be installed as soon as possible to bring the distributor back to the original performance.

Replacement (Single Point)

The contact point set is replaced as one complete assembly and only dwell angle requires adjustment after replacement. Breaker lever spring tension and point alignment are factory set.

1. Remove the distributor cap by placing a screwdriver in the slot head of the latch, press down and turn ¼ turn in either direction.
2. Remove the two attaching screws which hold the base of the contact set assembly in place.
3. Remove the primary and condenser lead from the nylon insulated connection by removing the attaching screw.

4. Reverse steps 2 and 3 to install new contact set. CAUTION: Be certain to install condenser lead clip and primary lead clip with open end of metal clips away from distributor rotor.
5. If vehicle has 20,000 to 25,000 elapsed miles (or sooner if desired) the cam lubricator wick should be changed. Using long nosed pliers, squeeze assembly together at base and lift out. Remove all lubricant from cam surface. Replace with new lubricator wick and align.

Replacement (Dual Point)

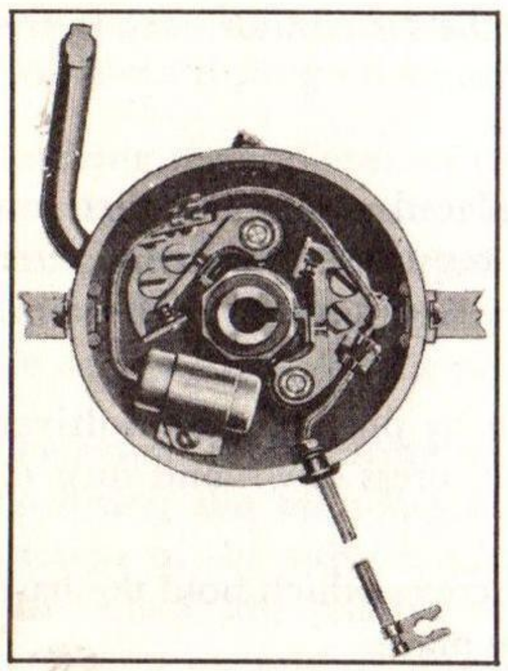


Fig. 59—Distributor

1. Loosen screw and nut attaching lead wire to stationary point. Remove lead wire and condenser lead (fig. 59). Remove the stationary point lock screw and remove point and arm. Repeat operation for other point.
2. Carefully wipe the protective film of oil from new points. Install lock screw, nut and lock clip on stationary point and install point on plate. Place movable point on its shaft and position spring behind lock clip. Reinstall lead wire and condenser lead and tighten securely. Repeat operation for other set of points, then adjust as follows:

Adjustment (feeler gauge method)

1. Crank engine until distributor point cam follower rests on the peak of the cam.
2. Check point opening using a feeler gauge. Correct adjustment is .014 to .018 for new points. If necessary to adjust the points, loosen the stationary point lock screw and turn the eccentric screw as necessary. Repeat operation for other set of points.
3. Tighten lock screws and recheck point opening.
4. Check breaker arm tension with cam follower located between lobes of cam. Tension is 19 to 23 ounces. Adjust if necessary by loosening nut on stationary point and moving spring to give desired tension.
5. Install rotor, place cap on distributor and turn until tang indexes with keyway in distributor. Clamp cap and replace all wiring.

Adjustment for Dual Point Distributors (Dwell angle meter, preferred for high speed operation).

1. Adjust one set of contact points to 29 $\pm$1 degree while the other set of contact points is blocked with an insulating material (such as an insulated feeler gauge) at least .025″ thick between the points.
2. Then block the adjusted set with the .025″ thick insulating material and adjust the second set of contact points to 29 $\pm$1 degree.

The individual breaker may be readjusted after checking total dwell angle in order to meet all of the above requirements. Total dwell should be 33° ±1°.

Adjustment for Single Point Set Distributors:

Follow the above procedures, but omit all reference to second set of points.

TIMING

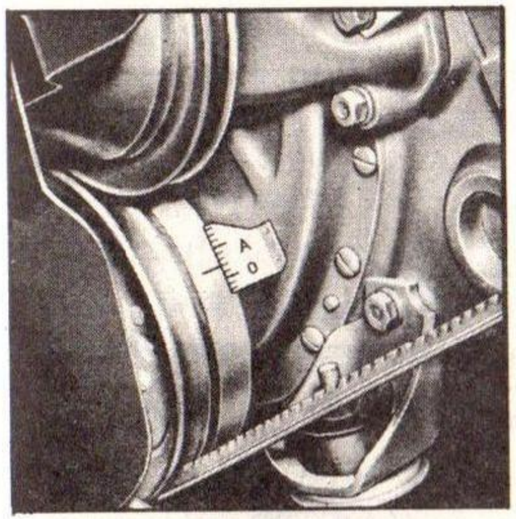


Fig. 60—Ignition Timing

Each time the distributor points are replaced or adjusted the timing should be checked and adjusted. A timing light is needed to perform this operation.

The mark on the harmonic balancer should be aligned with the proper marking on the tab extending from the front engine cover (fig. 60).

1. Remove spark plug shield.
2. Connect the timing light high tension lead to the No. 1 spark plug and the other two timing light leads to the battery terminals.
3. Clean the dirt from the timing marks.
4. **On single four barrel carburetor equipped engines:**
   A. Operate engine at idle.
   B. Direct timing light at the pointer on the left top of harmonic balancer.
   C. Loosen distributor clamp and rotate distributor until the mark on the crankshaft damper lines up with the 4° BUDC mark on the timing tab welded to the front end cover. This is 2 marks towards the center of the vehicle from the "O" mark (fig. 60).
   D. Tighten distributor clamp screw, remove timing light, and reset engine idle.
5. **On all dual four barrel carburetor equipped engines:**
   A. Operate engine at idle.
   B. Direct the timing light at the pointer on the left top of harmonic balancer. Loosen distributor clamp and rotate distributor until the mark on the crankshaft damper lines up with the 12° BUDC mark on the timing tab. This is six marks towards the center of the vehicle from the "O" mark.
   C. Tighten distributor clamp screw and remove timing light.
6. **On all fuel injection, hydraulic lifter camshaft equipped engines:**
   A. Operate engine at 550 (±50) rpm.
   B. Loosen distributor band clamp.
   C. Remove vacuum advance line and plug opening.
   D. Align timing mark on harmonic balancer with 8° BUDC mark on timing tab. This is 4 marks towards the center of the vehicle from the "O" mark.
   E. Tighten distributor band clamp in place.
   F. Reconnect vacuum advance line after first removing plug.

7. **On the fuel injection, solid lifter camshaft equipped engine:**
   A. Operate engine at 650 (±50) rpm.
   B. Loosen distributor band clamp.
   C. Align timing mark on harmonic balancer with the 18° mark on the timing tab. This is 9 marks towards the center of the vehicle from the "O" mark.
   D. Tighten distributor band clamp in place.

CARBURETOR OR FUEL INJECTION ADJUSTMENTS

On all idle or air-fuel mixture adjustments, the engine must be running at its normal operating temperature. On all linkage adjustments, the engine must be shut off, but should be at its normal operating temperature.

Accelerator Linkage Adjustment

1. Remove carpet adjacent to area around accelerator pedal.
2. Remove air cleaner (s) and throttle pull back spring (s) on carburetor (s).
3. With carburetor (rear carburetor if dual carburetors) on wide open throttle, accelerator pedal should be ⅜" from toe board. Lengthen or shorten accelerator rod (rear rod if dual carburetor) by removing spring clip and turning trunnion nut.

(Additional Steps for Dual Carburetors Only)

4. With rear carburetor on wide open throttle, adjust nut on front carburetor control shaft till throttle on front carburetor is wide open and against throttle stop.
5. When linkage is properly adjusted front carburetor will begin to open when rear carburetor is at approximately half throttle.

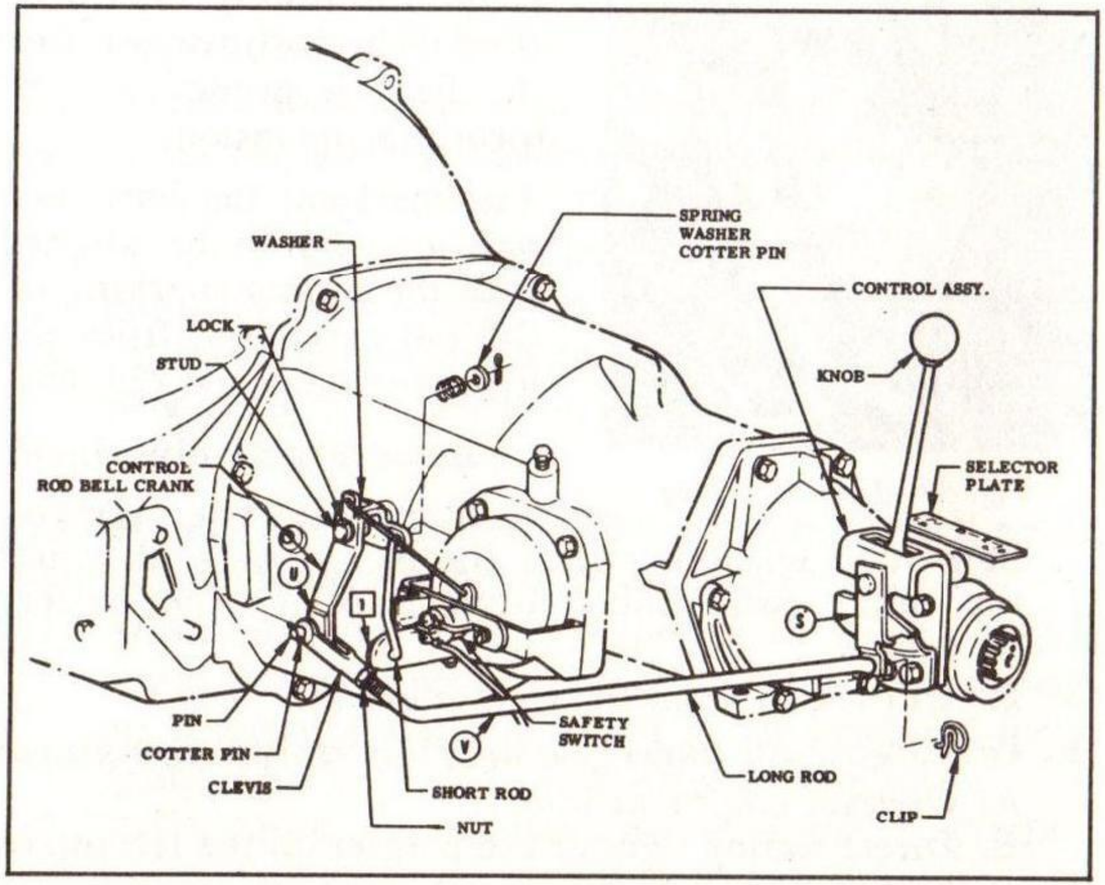


Fig. 61—Powerglide Control Linkage Adjustment

Accelerator Linkage Adjustment for Fuel Injection

1. With floor carpet in place, depress accelerator pedal to the floor.
2. Adjust control rod to give wide open throttle.

Powerglide Control Linkage Adjustment

1. Set control rod bell crank (U) in parked position.
2. Set control shaft lever (S) in parked position.
3. With both bell crank and lever held in park position, assemble control rod (V) to lever (S), then adjust clevis on rod (V) for easy entry into lever (U).

Idle Adjustment (Fig. 62)

Open and close throttle valves several times to make sure valves seat properly. Connect tachometer and vacuum gauge. (On models equipped with Powerglide, selector lever must be in Drive (DR) and BRAKE SET.)

Single Carburetor

1. Adjust throttle lever screw "A" to achieve 475* rpm.
2. Adjust each idle mixture screw "B" separately to give peak vacuum indication and RPM reading.
3. If necessary readjust engine idle to 475* rpm.

Dual Carburetors

1. Set both idle mixture screws on each carburetor one turn open.
2. Start engine and set throttle valve set screw for 600 rpm (hydraulic lifter camshaft) in drive range on Powerglide or in neutral on 3-speed or 4-speed transmission. Throttle valves of front carburetor are to be fully closed at idle. When using solid lifter camshaft, set idle speed at 800-850 rpm.
3. Adjust all idle mixture screws individually until best

*Powerglide.....450 rpm.

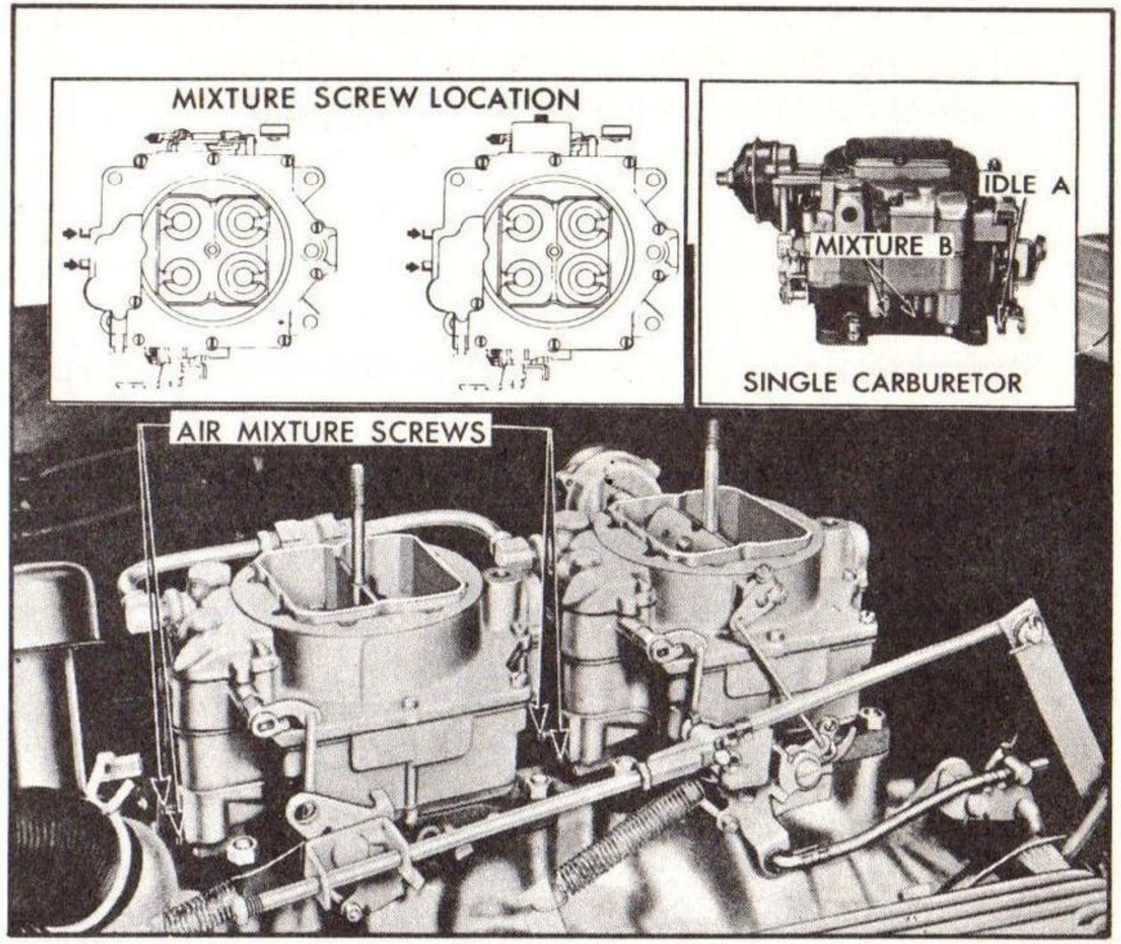


Fig. 62—Carburetor Adjustments

engine idle "Feel" is obtained. Adjust rear carburetor screws first, then adjust front carburetor screws.

4. Reset throttle valve set screw to original rpm setting (600 or 800-850 rpm).
5. Again adjust all idle mixture screws until best engine idle "Feel" is obtained. Adjust as outlined in (4) above.
6. Reset throttle valve set screw to 600 or 800-850 rpm.

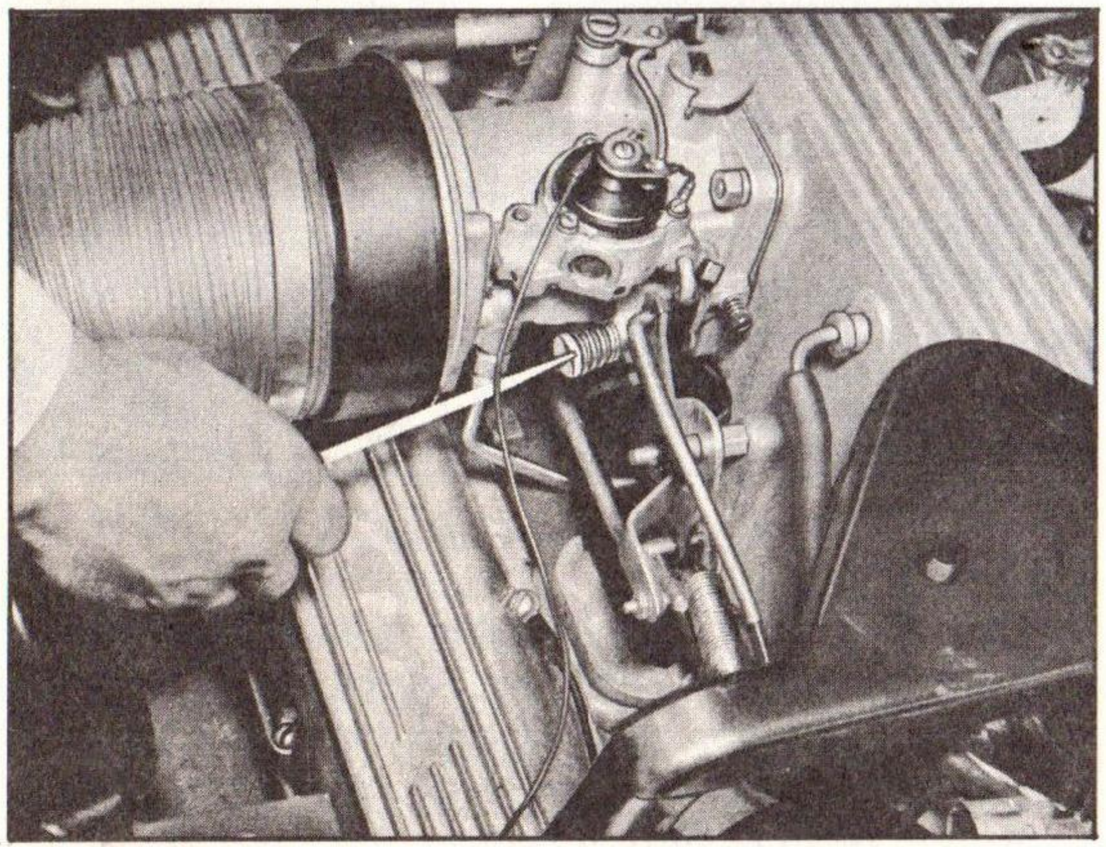


Fig. 63—Idle Air Adjustment

Fuel Injection

1. Turn idle air adjustment screw (engine speed) and idle fuel adjustment screw to approx. two turns open. Start engine and warm up, then adjust air adjustment screw (fig. 63) to obtain best possible idle speed.
2. Adjust idle fuel adjustment screw (fig. 64) to smooth out idle speed.
3. Readjust idle air adjustment screw and fuel adjust-

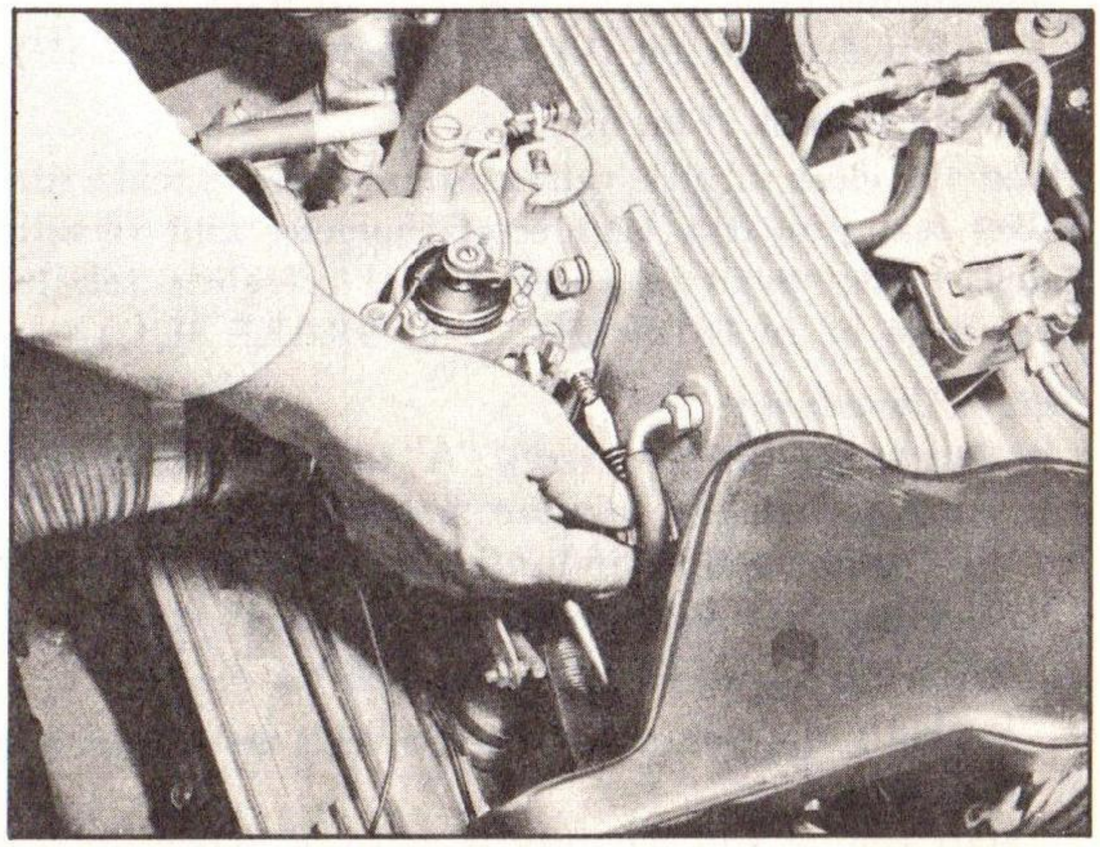


Fig. 64—Idle Fuel Adjustment

ment screw until best idle is obtained at approximately 500 rpm (700 rpm with solid lifter camshaft).

Powerglide Linkage Adjustment with Carburetion System. (Fig. 65)

1. Loosely assemble lever (B) to clamp (A) (fig. 65).
2. Insert gauge between transmission left hand side cover lower front bolt and hole in lever (B) (3.60" dimension between bolt and hole center-lines) with gauge in place, and holding clamp (A) counter-clockwise in full detent position, tighten lever (B) to clamp (A) remove, gauge.

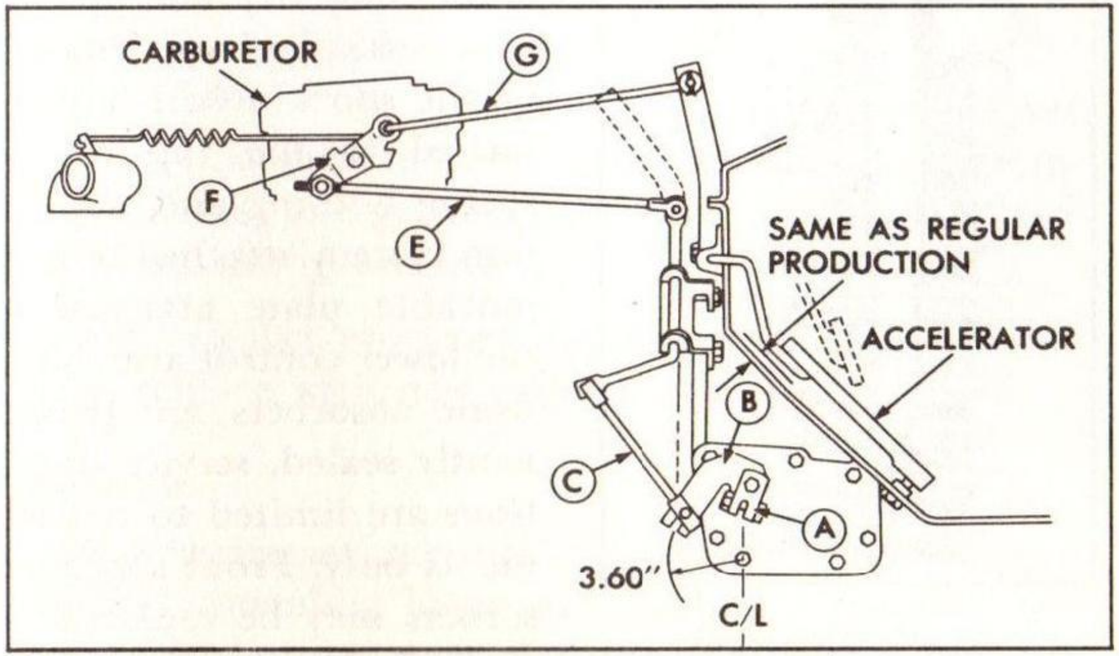


Fig. 65—Powerglide Linkage Adjustment

3. Install rod (C).
4. Install rod (E) in cross shaft assembly (D). Place lever (F) in wide open position and pull rod (E) forward until it is stopped by transmission internal stop. Adjust swivel in rod (E) for easy entrance in lever (F) and then readjust the swivel three turns, lengthening the rod by that quantity. Fix swivel in lever (H).
5. Check adjustment by placing linkage in idle position, then returning to wide open position by rotating lever (F) push downward on lever (B) and note if rod (E) deflects, meaning transmission is not on internal stop. If rod deflects or lever (F) will not reach wide open position, repeat adjustment 4.
6. With accelerator pedal depressed, placing lowest point on accelerator rod (A) .85" above toe panel, and lever (F) rotated to wide open position, adjust swivel in rod (G) for free entry of rod (G) into lever (F) before fixing rod (G) to lever (F) in carburetor.
7. Check adjustment by releasing, then depressing accelerator pedal. Check lever (F) for wide open position. If lever (F) will not reach wide open position, repeat step 6.

NOTE: Fuel Injection similar to above.

FRONT SUSPENSION

The front wheels on the Corvette are independently sprung by the S.L.A. (short and long arms) method. This design allows the wheel to move up or down independently in following irregularities of the road, resulting in a minimum of tire wear due to scrubbing of tires against road surface.

Whether these irregularities be raised obstructions or chuck holes, the shock will not be transmitted to the car or occupants.

In this construction, the entire assembly (fig. 66) is attached to an unusually rugged frame cross member which is semi-tubular in design and is saddle mounted and bolted rigidly to the frame side members. This construction facilitates complete overhaul or replacement in that the complete assembly may be removed from the frame as a unit.

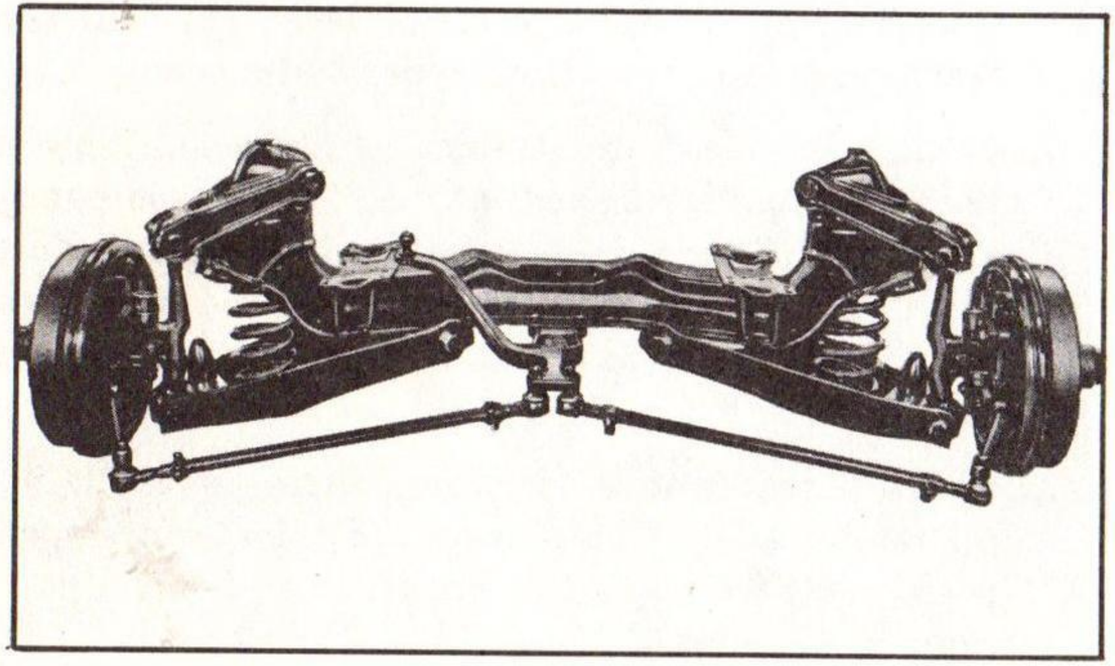


Fig. 66—Front Suspension

FRONT SHOCK ABSORBERS

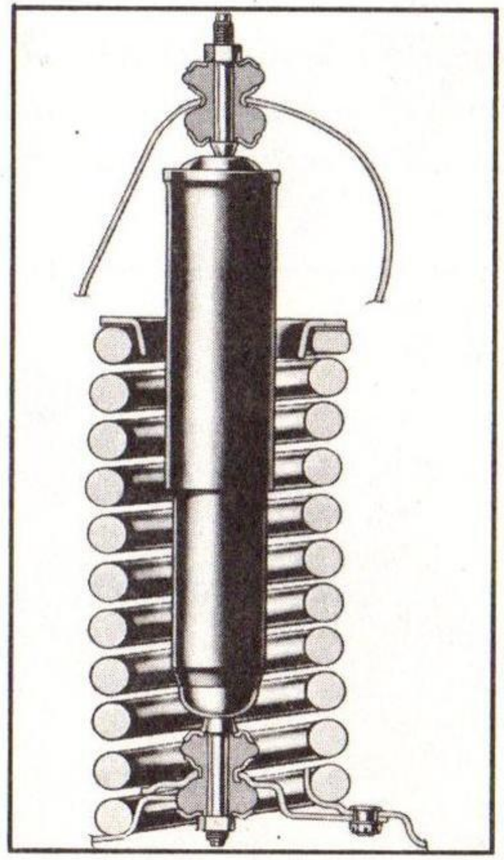


Fig. 67—Front Shock Absorber Mounting

Direct acting, permanently sealed bayonet type front shock absorbers are located in the center of each front spring (fig. 67) and operate in a vertical plane. The top of the shock absorber is attached to the top of the spring housing and the bottom is stem attached to a removable plate attached to the lower control arm. Since front absorbers are permanently sealed, service operations are limited to replacements only. Front shock absorbers may be replaced on the vehicle as follows:

Removal

1. With a ¼" open end wrench, hold upper stem from turning and remove upper stem retaining nut, grommet retainer and grommet.

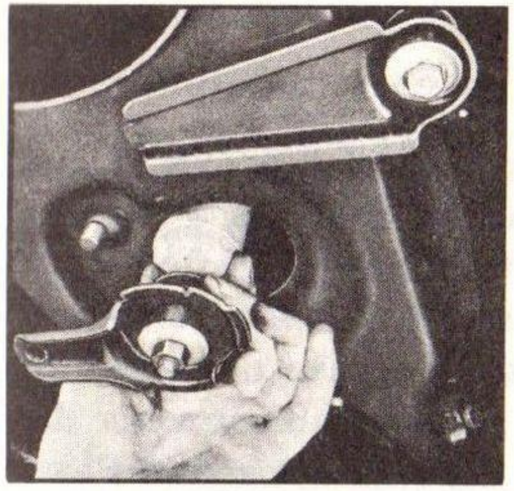


Fig. 68—Removing Front Shock Absorber

2. Remove nut and lockwasher from special bolt retaining shock absorber lower mounting bracket to lower control arm and pull shock absorber assembly and mounting bracket out bottom of spring housing (fig. 68).

3. Place mounting bracket in vise and remove lower stem retaining nut, grommet retainer and grommet and remove shock absorber from mounting bracket.

4. Inspect rubber grommets for condition and, if necessary, replace with new grommets.

Installation

1. Install grommet retainer, upper grommet, retainer bracket assembly, lower grommet and grommet retainer on bottom stem of shock absorber and install grommet retainer nut and tighten until it bottoms on shoulder of stem. Then tighten to 15-20 ft. lbs. torque.

2. Install grommet retainer and grommet on upper stem of shock absorber and install shock absorber up through lower control arm and spring housing.

3. Index upper stud through mounting hole in top of spring housing and index mounting hole in shock absorber retainer bracket over special bolt in lower control arm.

4. Install lockwasher and nut on special bolt and tighten nut securely.

5. Install grommet and grommet retainer over upper stem of shock absorber.

6. Install retainer nut to upper shock absorber stem and holding stem with ¼" wrench, tighten nut until it bottoms on shoulder of stem. Then tighten to 15-20 ft. lbs. torque.

FRONT WHEEL BEARINGS

Removal

1. Remove hub cap.

2. Remove hub dust cap.

3. Remove cotter key, spindle nut and washer type spacer.
4. Remove tire and wheel assembly being careful not to drop outer bearing. Remove outer bearing from hub.
5. Lay tire, wheel and hub assembly on a flat surface and using a suitable tool, remove the inner bearing and seal.

Installation

1. Thoroughly clean the outer and inner bearing in cleaning solvent.
2. Hand pack both bearings, by forcing the lubricant between the roller bearings, using a high melting point wheel bearing lubricant.
3. Place the inner bearing in the hub, then install a new inner bearing belt seal assembly. Side of seal with bent lugs should be up as installed or toward center of the vehicle.
4. Using a piece of fine sandpaper, lightly sand the inside braking surface of brake drum to insure a clean surface and proper brake operation.
5. Carefully position hub on spindle.
6. Install outer bearing, pressing it firmly into the hub by hand.
7. Install spindle washer and spindle nut. Draw spindle nut up snug and adjust bearings as outlined below.

Adjustment

The proper adjustment of front wheel bearings is one of the important service operations that has a definite bearing on safety. A car with improperly adjusted front wheel bearings lacks steering stability, has a tendency to wander or shimmy and causes excessive tire wear. In an effort to provide for more accurate adjustments the spindles are drilled both vertically and horizontally and adjusting nuts are slotted on all sides.

1. Jack up front end of vehicle. Remove hub cap and dust cap. Remove cotter pin from end of spindle.
2. Tighten spindle nut to 28 ft. lbs. torque while rotating wheel.
3. Back off adjusting nut until bearings are loose (0 ft. lbs. torque) and then retorque to 12 ft. lbs.
4. Check the location of a slot in the nut with reference to a hole in the spindle. If a slot in the nut lines up with either the vertical or horizontal holes in the spindle, insert cotter pin.

5. If, when the spindle nut is tightened to 12 foot pounds, the slot in the nut has passed beyond the vertical or horizontal holes in the spindle, back off the nut a sufficient amount to line up the next slot in nut and the other hole in the spindle.
6. Spin the wheel to make sure that it rolls freely. Properly lock the cotter pin by spreading the end and bending it around. Install the dust cap and hub cap or wheel disc.
7. Remove jack.

FRONT STABILIZER

A front end stabilizer bar is used in connection with this suspension to provide steering stability and control of body roll. The stabilizer bar is attached to brackets at the outer ends of the front frame horns. These brackets are rubber bushed and are held in place by bolts which extend through the brackets and into the frame horn.

Delco type connector links are used to connect the stabilizer bar to a bracket welded to the lower control arms (fig. 68). The linkage provides complete rubber insulation between the metal parts.

Removal

1. Disconnect the stabilizer links by removing the nut from the top of the link bolt and pulling the bolt out from the lower bracket attached to the lower control arm (fig. 69).
2. Remove the bolts and nuts that attach the stabilizer brackets to the front frame horns.

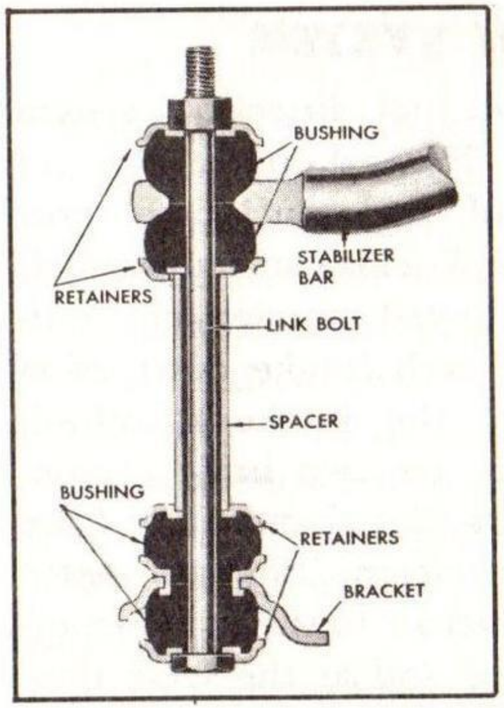


Fig. 69—Front Stabilizer Link Attachment

Installation

1. Place rubber bushings on stabilizer bar and install support brackets over bushings, then bolt brackets loosely to the frame horn.
2. The stabilizer link bolt, bushings and retainers may be assembled by placing one steel retainer and one rubber bushing on the link bolt and threading the bolt up through the bracket on the lower control arm.
3. Assemble rubber bushing, retainer, steel spacer, retainer and rubber bushing over bolt and thread bolt through eye on stabilizer bar.
4. Install rubber bushing and retainer over bolt and install nut tightening it to the **LIMIT** of bolt threads.

5. With wheels of Corvette on floor and supporting the car weight, bounce front end up, and down several times to allow parts to seek proper relationship.
6. Tighten bracket mounting bolts securely.

FUEL INJECTION SYSTEM

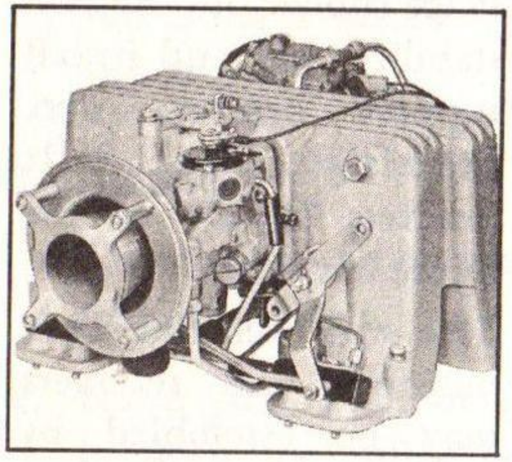


Fig. 70—Fuel Injection System

The fuel injection system (fig. 70) used on the Corvette is of the continuous flow type. Fuel is sprayed through calibrated nozzles just outside each intake port. Aside from the intake manifold, there are two basic components—the air meter and the fuel meter. The air meter admits air to the intake manifold when the throttle is opened and at the same time signals the fuel meter so that fuel can be supplied to combine with the air in the proper ratio. The fuel meter contains a fuel reservoir, high pressure pump, fuel control system, plus diaphragms which control the fuel rate according to speed and load. Also in the fuel meter are auxiliary controls for starting. Fuel from the fuel meter goes to two sets of four nozzles, one set for each bank of cylinders.

REAR SUSPENSION

The rear suspension incorporates a hypoid, semi-floating rear axle. A Hotchkiss type drive is employed in which the driving force and torque is taken by the radius rods. With the springs virtually free of all axle housing torque, rear axle steering movements are also free of torque influence, thus providing even more consistent and precise handling characteristics. The greater resistance to axle torque also assures smoother power flow and braking action so that adhesion of the tires with the road is better maintained for greater performance and stability.

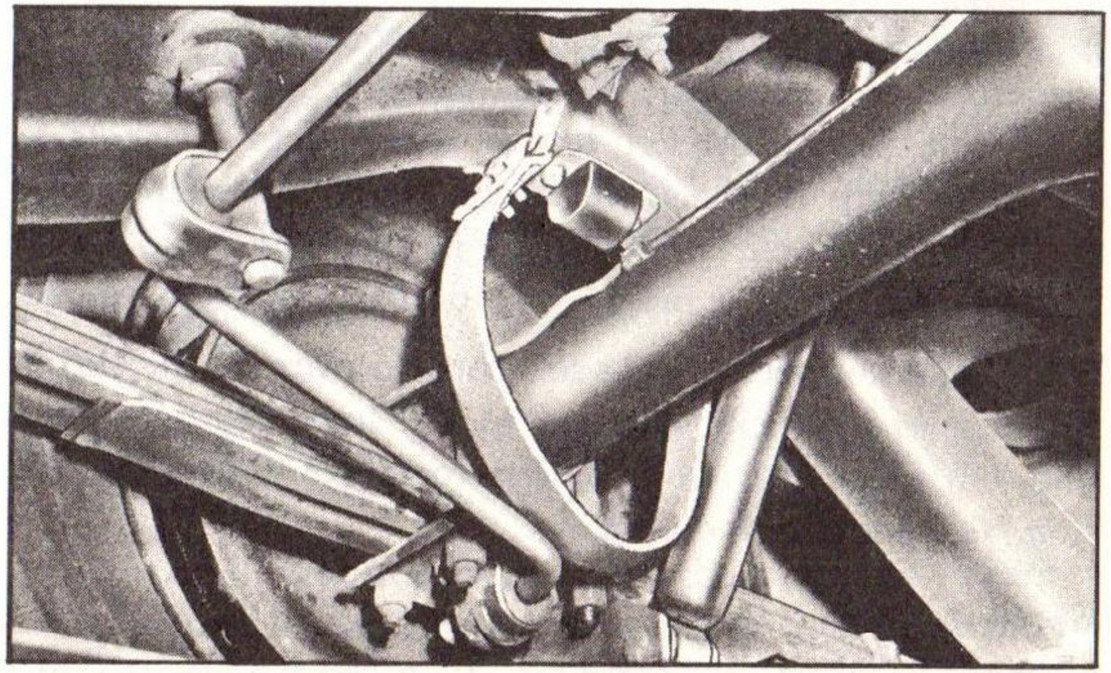


Fig. 71—Rear Suspension

The rubber-cushioned semi-elliptic rear springs are mounted outboard of the frame. The spring eyes are mounted on each side at the front to a bracket riveted to the rear outrigger bracket and at the rear in a shackle bolted to a bracket welded to the frame rear cross member outside the frame side rail. The shackles are of the center pressure type with spool-shaped rubber inserts having spherical ends at the spring rear eyes. Cornering sway is controlled by a rubber bushed stabilizer bar attached at each end to the rear springs and at the center, to the frame.

Rebound straps of belting type material (fig. 71) are fastened to brackets welded to the bottom of the frame and looped around the axle to provide a limited rebound. These straps are necessary with the standard type shock absorbers used to provide a controlled ride as the spring might otherwise travel farther than the extended length of the shock absorbers.

REAR SHOCK ABSORBERS

Rear shock absorbers on the Corvette are the non-adjustable direct-acting bayonet type, which are stem attached at the top to slotted holes in a flanged U-shaped channel cross member at the kick-up and eye attached at the bottom to an anchor bolt in the rear spring "U" bolt and shock absorber anchor bolt plate. These shock absorbers are permanently sealed and require no maintenance other than replacement, which may be performed as follows:

Removal

1. Raise folding top and stop compartment lid in open position.
2. Remove top compartment bottom carpet.
3. Holding upper stem from turning, remove upper shock absorber retaining nut through hole in frame cross member, then remove upper grommet retainer, grommet, and lower grommet retainer from shock absorber upper stem.
4. Remove nut, lockwasher and flat washer from shock absorber anchor bolt on rear spring "U" bolt and shock absorber anchor bolt plate.
5. Pull or drive lower shock absorber eye from anchor bolt and drop down to disengage upper stem from shock absorber frame cross member.
6. Inspect rubber grommets for condition and if necessary replace with new grommets.

Installation

1. Install rubber bushings in shock absorber eye and install grommet retainer to shock absorber upper stem.
2. Install steel flat washer on shock absorber anchor bolt and then install shock absorber, indexing upper stem through hole in shock absorber frame cross member and installing lower shock absorber eye to anchor bolt.
3. Install steel flat washer, lockwasher and nut to anchor bolt and tighten securely.

4. Install grommet retainer, grommet and grommet retainer to upper stem through folding top compartment.
5. Install retainer nut to upper stem and holding stem from turning, tighten nut until it bottoms on shoulder of stem. Then tighten to 4-6 ft. lbs. of torque and stake in place.
6. Install top compartment bottom carpet.

TIRES

CARE OF THE TIRES

The tubeless tires used on the Corvette are the 6.70-15 size with a 4-ply rating. A snap-in type air valve is assembled to the rim. This type of tire will not normally leak air from a puncture as long as the puncturing object remains in the tire. Service operations are basically similar to established practices in tube tire types.

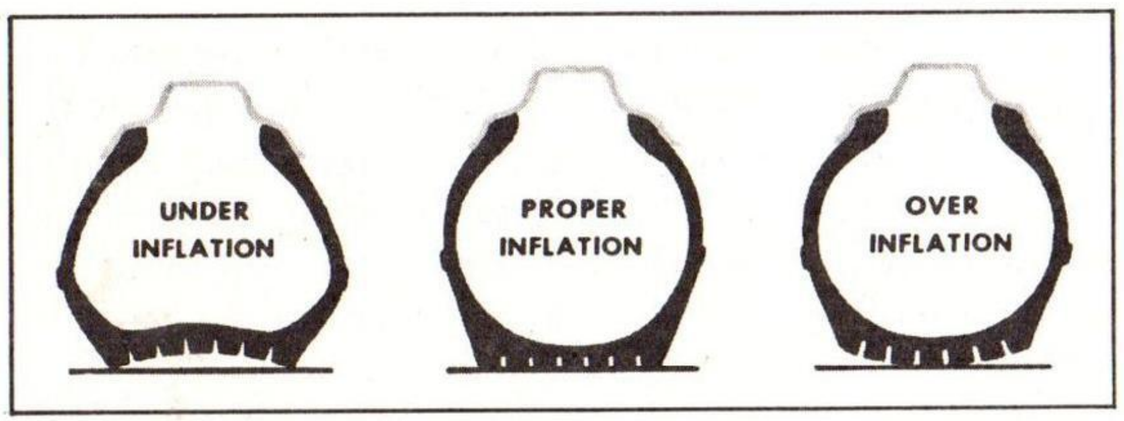


Fig. 72— Tire Inflation

Under Inflation	Proper Inflation	Over Inflation
Runs hot	Good ride	Hard ride
Loosens cords	Good traction	Poor traction
Uneven wear	Even wear	Bruises
Blowouts	More mileage	Fabric breaks

To enjoy maximum service from your tires maintain these recommended pressures during normal operation:

Starting Pressure —24 lbs. when car has been standing three hours or driven less than a mile.

City Pressure —26 lbs. after driving the car three miles or more below 40 miles per hour.

Highway Pressure—28 lbs. after driving car three miles or more above 40 miles per hour.

For sustained high speed operation of your Corvette, maintain front and rear starting pressure of 36 lbs.

Hard driving normally increases tire pressures. Do not bleed tires to reduce this high pressure. Valve caps should always be installed and tightened firmly to prevent dust and water from entering and damaging valve seats. The caps also act as an air seal. To help prevent uneven wear of front tires and to distribute wear evenly over all five tires, they should be changed as shown in fig.

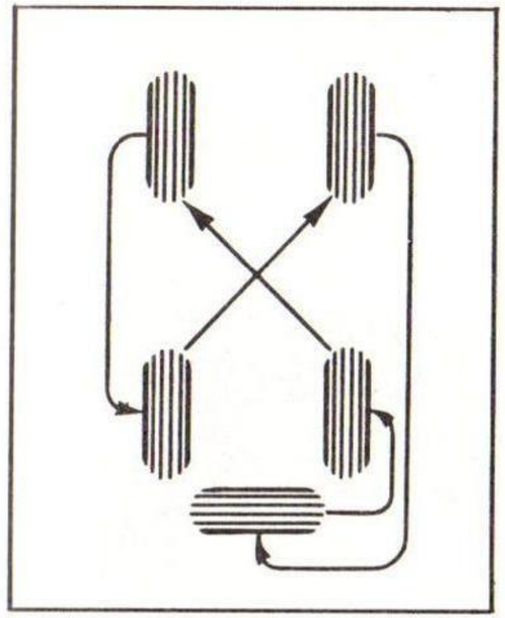


Fig. 73—Tire Rotation Diagram

73 every 5000 miles. Your Corvette tubeless type 6.70 x 15-4 ply rating tires should be maintained at the above recommended pressures for maximum service. For reasons of safety, it is recommended that these tires not be used for extreme vehicle operation. Special purpose tires are available from major tire manufacturers.

TOP MECHANISMS

FOLDING TOP

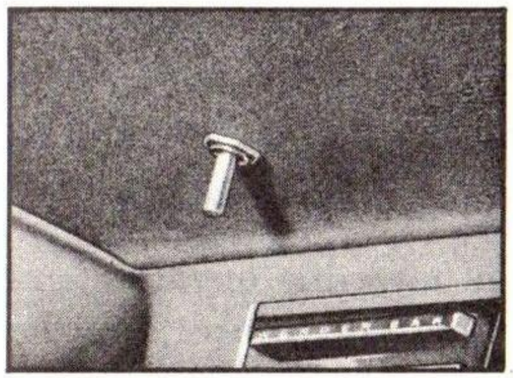


Fig. 74—Folding Top Control

Manually Operated – Procedures for raising and lowering the manually operated top are the same as described in the following power operated top instructions except that the top compartment cover and the top itself are operated manually instead of automatically.

Power Operated—The folding top control (fig. 74) raises and lowers the optional power operated folding top. Before operating this control, read carefully the following instructions.

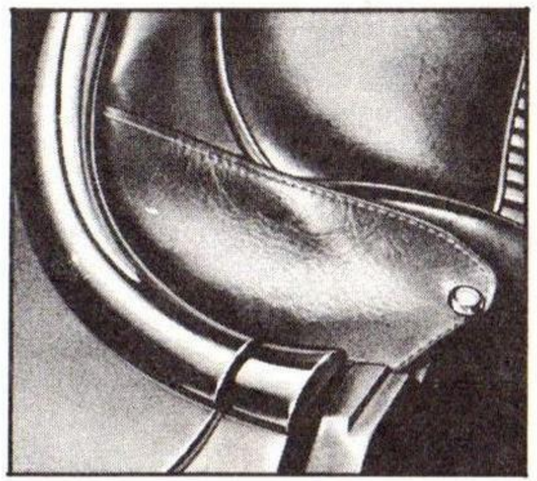


Fig. 75—Top Compartment End Strap

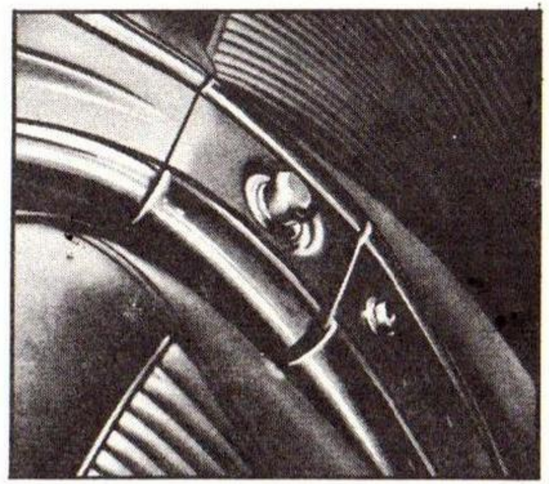


Fig. 76—Top Compartment Opening Button

Raising the Top

1. Unsnap top compartment end straps (fig. 75).
2. Push larger button located between seat backs to unlock top compartment cover (fig. 76). DO NOT ATTEMPT TO OPERATE TOP WITH TOP COMPARTMENT CLOSED.
3. Push top control switch forward to "on" and hold until the top compartment cover opens, top lifts out, and cover closes.

4. Push the top compartment cover down until it latches.
5. Unhook the snap fasteners ("A," fig. 77) allowing the rear bow to drop.

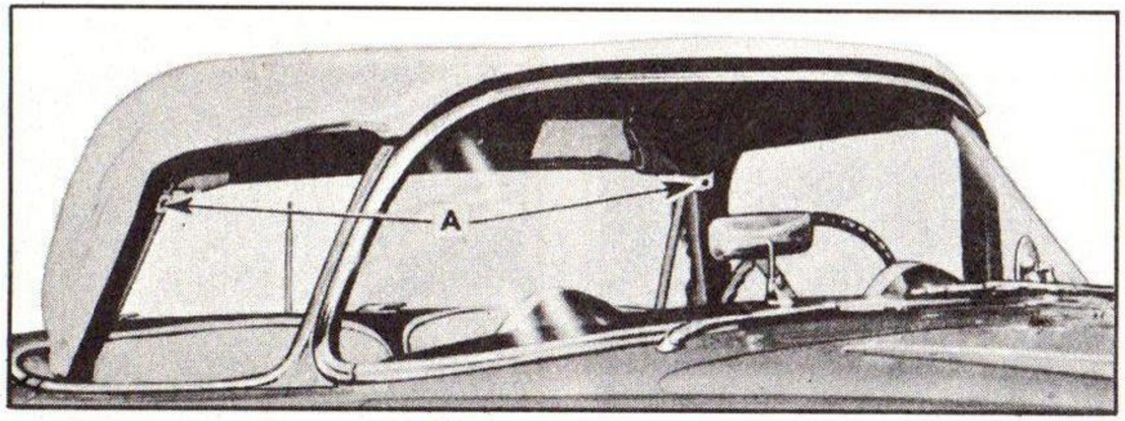


Fig. 77—Folding Top Raised and Rear Bow Strap

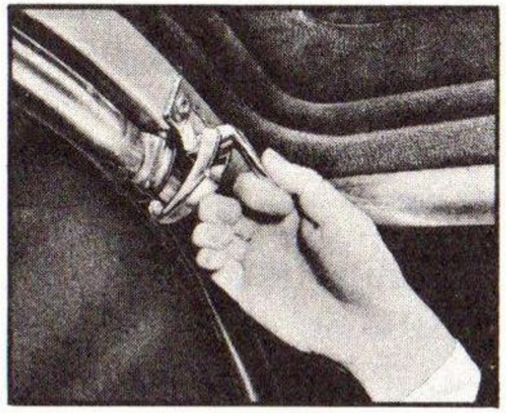


Fig. 78—Header Latch

6. Hook the latches to the windshield header, but leave loose.
7. Latch the rear bow to the body.
8. Lock the windshield header latches.

Lowering the Top

1. Unlatch the header and rear bow 'fig. 79). Double check to see that all latches are completely free and not caught in any way.
2. Hook the rear bow with the straps provided.
3. Push the button (fig. 76) to unlatch the top compartment cover.

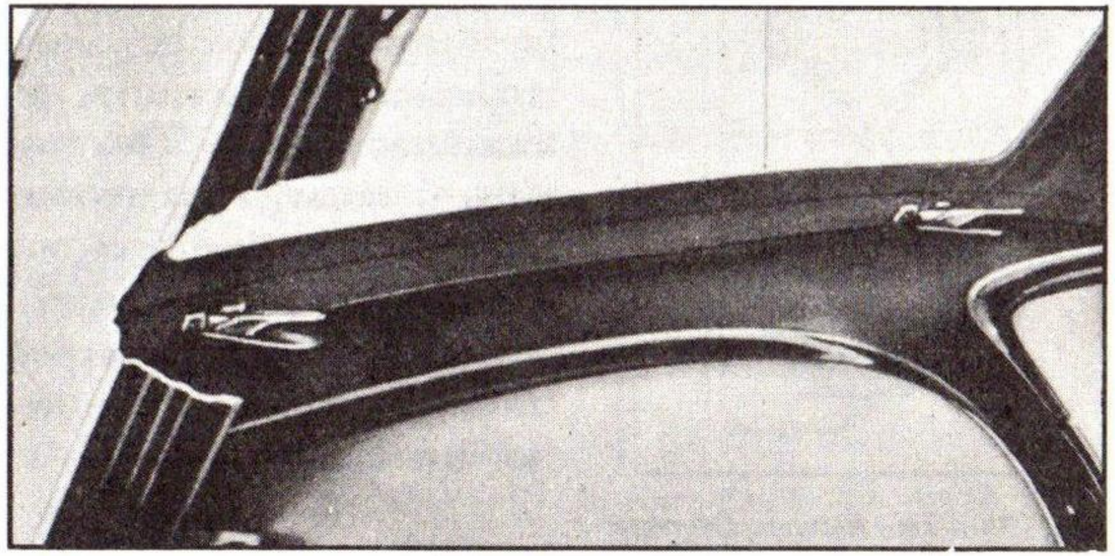


Fig. 79 —Rear Latch

4. Pull the folding top control (fig. 74) and hold until the top compartment cover opens, the top folds into the compartment, and the cover closes.
5. Push the cover to close on latch.
6. Snap the top compartment end straps (fig. 75).

NOTE: Both the raising and lowering operations require about 20 seconds. The control must be held in place during these operations. A safety switch in the rear compartment breaks the folding top circuit and prevents the top

mechanism from operating while the rear compartment lid is open. This will prevent damage to the finish of either the top compartment lid or the rear compartment lid.

A second safety switch, in the top compartment, prevents the operation of the top compartment cover or folding top operating mechanism unless the cover is unlatched. The hydraulic motor will run but a by-pass prevents pressure build-up in the system. **However, never operate the top control without first unlatching the top compartment cover.**

HARD TOP

The optional plastic hard top may be quickly and easily installed on your Corvette. Lower the folding top and carefully, so as not to scratch the paint, place the plastic top in position on the body. Tighten down rear bolts and fasten latches at header. When not in use, store the plastic top in a clean, dry place.

Side Window Adjustment (All Tops)

If it is necessary to adjust the door window, to effect a close fit with the top at the upper rear corner of the windows, proceed as follows:

1. Loosen screws "A" and "B," (fig. 80).
2. With screw "A" as the fulcrum move the top rear of the window the required amount.

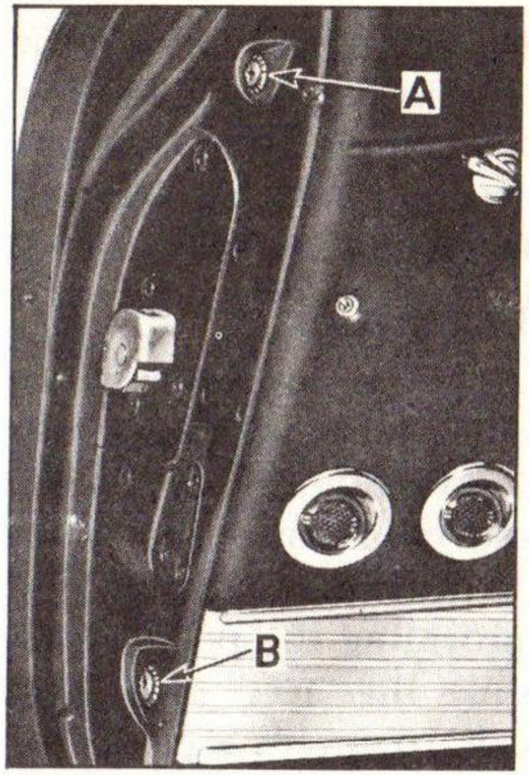


Fig. 80—Window Adjustment

3. Tighten screws "A" and "B," and check for fit.
4. Repeat this procedure if necessary.

TRANSMISSIONS

THREE-SPEED CLOSE RATIO

The three-speed close ratio transmission in your Corvette provides low, closely stepped ratios permitting high performance under ordinary driving conditions as well as when operated in high speed ranges. The transmission ratios have been selected to keep the engine operating in its high output range as consistently as possible.

First speed functions as a starting gear as well as handling the lower range of road speeds while delivering high engine power. Second speed multiplies torque without forcing the engine to exceed top output speed. Because of these closely matched gear ratios, up-shifting and down-shifting between second and third speed can be quickly accomplished at high speeds. The transmission is similar

in construction to the Chevrolet Passenger Car with modifications to gear ratios and transmission case mounting. Service procedures are carefully outlined in the Passenger Car Shop Manual. However, there are a few recognizable differences between the two three-speed transmissions.

FOUR-SPEED CLOSE RATIO

The optional four-speed close ratio transmission provides four, closely spaced, forward speeds all of which are fully synchronized and can be engaged while the Corvette is in motion. These closely spaced ratios make it possible to accelerate the vehicle with a minimum loss of engine rpm at the shift points thus providing the performance that is enjoyed by those who like the "feel" of a direct connected engine. Since all forward speeds are synchronized, the transmission can be used to assist in the deceleration of the vehicle by downshifting in the third-second-first sequence without double clutching or gear clashing.

CLUTCH

The clutch used on all Corvette three and four-speed transmission equipped cars, is a semi-centrifugal coil spring single plate dry disc type. Adjustment of the clutch plate is made during assembly and no further adjustment to the clutch plate is necessary. The clutch requires very little care or attention; however, proper use of the clutch will contribute materially to the care-free service it will render.

Free Play Adjustment

The clutch pedal travel should be checked at regular intervals by pushing the clutch pedal down with the fingers to determine the distance it moves before the throwout bearing engages the clutch plate levers. This free play should be ½" to ¾". If adjustment is necessary, remove cotter key, washer and spring "1", withdraw swivel "2" and rod from bracket (fig. 81) and turn swivel "2" to remove all the pedal lash at fork, then back off two turns.

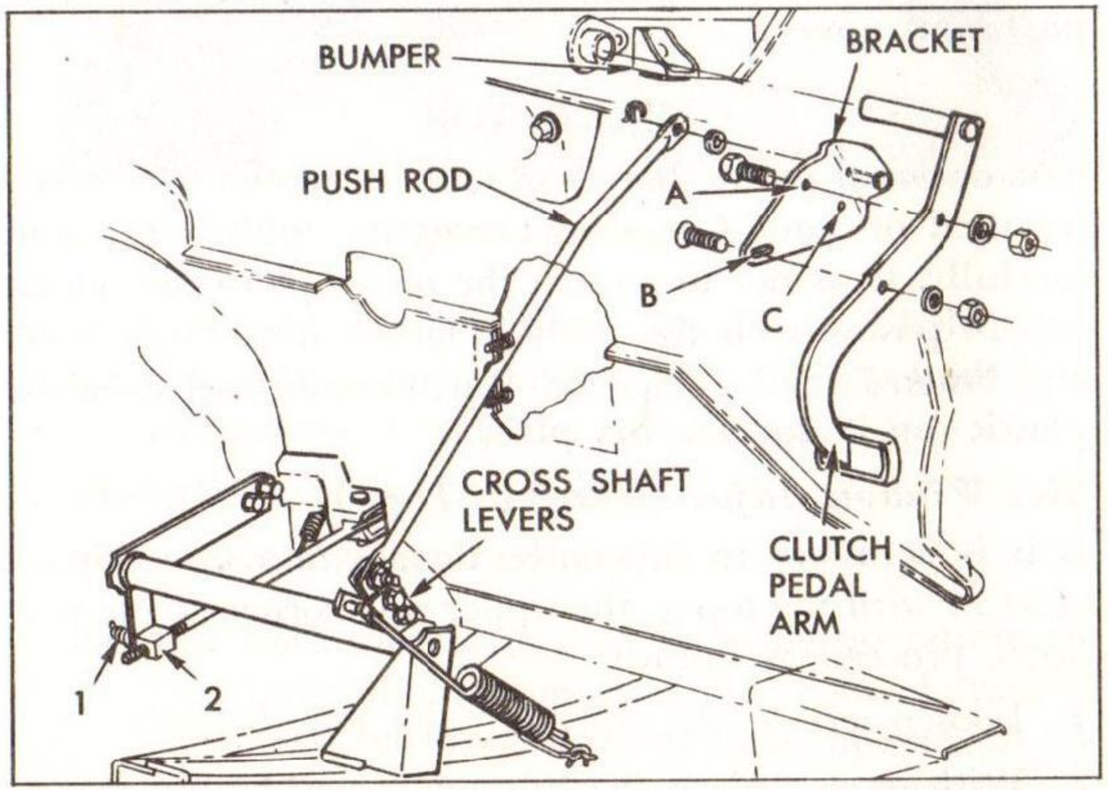


Fig. 81—Clutch Linkage Adjustment (4½" Pedal Travel Adjustment Shown)

Install rod and swivel into bracket and check free travel. Then install spring, washer and cotter key.

Pedal Repositioning

Normal setting of the clutch pedal linkage results in a total pedal travel of approximately 6½ inches. A second setting is provided in the linkage to reduce this pedal travel to approximately 4½ inches which provides the precision feel of fast release and permits more rapid gear shifting.

To adjust for shorter clutch pedal travel: Wedge a block between cross shaft levers and toe pan to prevent rotation of shaft levers during linkage disassembly. Detach clutch pedal push rod at both ends and rotate rod 180° about its axis, thus reversing the bend in the rod. Within the car, *loosen* the bracket to pedal arm lower attaching bolt (in slotted hole "B"). *Remove* the upper bolt from hole "C". Rotate the bracket until hole "A" is aligned with hole in pedal arm, install nut, lockwasher and bolt, and tighten both upper and lower bolts. Reinstall clutch pedal push rod. Loosen bumper attaching bolt and rotate bumper clockwise until the pedal bracket makes proper contact. Tighten bolt. Adjust pedal free play as outlined above. Remove wood block and check clutch for proper operation and "feel".

POWERGLIDE

As an option the Powerglide automatic transmission is available. This automatic transmission is an automatic hydraulic three element torque converter with planetary gears for reverse and low. It is essentially the same as the Chevrolet passenger car Powerglide with automatic shift features. No oil cooler is required with the transmission as the high engine torque available, coupled with the lesser demands made for torque converter multiplication with this light weight car, makes the use of an oil cooler unnecessary.

FOR APPEARANCE SAKE

Your Corvette is finished with General Motors "Magic-Mirror" acrylic lacquer. This is a finish of maximum beauty which, in depth of color, gloss retention and durability is superior to conventional lacquer finishes.

WASHING

The best way to preserve the finish is to keep it clean. Normally only frequent washings are required to maintain its original beauty. Wash the car in either warm or cold (never hot) water, not in the direct rays of the sun, and not while the painted surfaces are hot. Never wipe dirt from dry painted surfaces because this may scratch the finish. The use of strong soaps and chemical deter-

gents should be avoided and, in any event, cleaning agents should be promptly flushed from the surface and not allowed to dry or they may streak the finish.

POLISHING AND WAXING

Even though the acrylic paint on your car is more durable than conventional finishes, under certain conditions you may wish to wax or polish your car to provide maximum protection. Calcium chloride and other salts, road oil and tar, tree sap, chemicals from factory chimneys and other foreign matter may damage any known automobile finish if allowed to remain in contact with the paint film. Prompt washing may not thoroughly remove these deposits and, particularly in geographical areas where these exposure conditions are severe, properly applied polishes and waxes of known quality will provide the best protection. Many Chevrolet Dealers offer various types of polishes or waxes which have proven of real value in maintaining a good paint finish.

NOTE: Some chemical cleaners used for removing road oil and tars from painted surfaces have been found to be detrimental to acrylic finishes. When purchasing a cleaner, make sure that the instructions specifically state that the contents can be safely used on an acrylic finish.

Protection of Exterior Bright Metal Parts—The same substances harmful to painted surfaces may also damage bright metal parts of the car if they are not cleaned regularly and protected against exposure. Wash all bright metal parts in the same manner as you would the painted surfaces. **However, wash only with water. Never scour or polish bright metal parts.** It is recommended that all bright metal parts of your Corvette, after being thoroughly cleaned with warm water, be given a coating of wax and rubbed to a high polish. This will serve to keep corrosive agents away from these surfaces, and should be repeated as often as required.

Touching Up—Touch up nicks and scratches with Chevrolet Color Tipon, a retractable flow brush dispenser no larger than a fountain pen. Available in original factory colors at your Chevrolet Dealer.

Cleaning White Sidewall Tires—Use soap, warm water and stiff brush to remove road grime and curb dirt from white sidewall tires. Use a fine grade of steel wool for severe cases. Do not use gasoline, kerosene, or any oil product that will discolor or deteriorate the rubber.

INTERIOR

Dust and Dirt—Use a broom or a vacuum cleaner to remove dust and dirt from upholstery, trim and floor. Wipe dust from hard surfaces with a damp cloth.

Spots and Stains—For best results, stains should be removed as soon as possible after they have been made. If

allowed to stand for a time they may become set, and hard or impossible to remove. Before attempting to remove spots and stains determine as accurately as possible the type of material and the nature and age of the stain.

Cleaning Agents—Select a cleaning solution which is least likely to damage the material to be cleaned. In general, volatile cleaners are recommended since they have great solvent powers for grease, oil and road grime. The use of alkaline cleaners is not recommended as they may damage the color or finish of fabrics.

Other types of solutions, such as Ammonia Water, Hot or Cold Water, Iron Rust Soap, Ink Eradicator, etc., will probably cause some discoloration and disturbance of the material. In addition, the use of the wrong cleaning agent for a specific stain may set the stain and make its removal practically impossible. For these reasons it is advisable to consult a reliable upholstery reconditioning expert before attempting removal of stains caused by such things as blood, paint, rust, or ink.

CARE OF THE FOLDING TOP

To avoid water stains, mildew, or possible shrinkage of the top material, do not keep the top folded for extended periods of time if it is damp or water soaked. Permit top to dry out in a raised position before stowing. Also avoid pasting advertising stickers, gummed labels or masking tape on the plastic back window. In addition to being difficult to remove, the adhesive on these stickers may also be injurious to the plastic composition of the window.

The top should be washed frequently with neutral soap suds, lukewarm water and a brush with soft bristles. Rinse top with sufficient quantities of clear water to remove all traces of soap.

If the top requires additional cleaning after using soap and water, a mild foaming cleanser can be used. Rinse the whole top with water, then apply a mild foaming type cleanser on an area of approximately two square feet. Scrub area with a small soft bristle handbrush, adding water as necessary until the cleanser foams to a soapy consistency. Remove the first accumulated soilage with a cloth or sponge before it can be ground into the top material. Apply additional cleanser to the area and scrub until the top is clean. Care must be exercised to keep the cleanser from running onto body finish as it may cause streaks if allowed to run down and dry. After the entire top has been cleaned, rinse the top generously with clear water to remove all traces of cleanser. If desired, the top can be supported from the underside during the scrubbing operations. After cleaning always be sure the top is thoroughly dry before it is lowered. Lowering the top while it is still wet or damp may cause mildew and unsightly wrinkles.

Do not use volatile cleaners or household bleaching agents on the top material.

CARE OF THE HARD TOP

The outside painted finish of the hard top should be cleaned the same way as the rest of the car. The inside headlining should be cleaned as outlined under Interior Care of this section.

When not using hard top, store it indoors where it can be kept clean and dry. If top is to be stored for any period of time, keep covered to avoid dirt settling on top and on headlining.

CARE OF REAR WINDOW

The large plastic rear window in the top will remain in good condition for the life of the top if given proper care. Due to the texture of the plastic window, it is susceptible to scratches and abrasions; therefore, when cleaning the window, follow the steps outlined below.

1. To remove superficial dust, do not use a dry cloth. Use a **soft cotton cloth moistened with water** and wipe cross-wise of the window.
2. To wash the rear window, use cold or tepid (not hot) water and a mild neutral soap suds. After washing, rinse with clear water and wipe with a slightly moistened clean soft cloth.

   CAUTION: Never use solvents such as alcohol or volatile cleaning agents on the plastic window. These liquids may have a deteriorating effect on the plastic and if spilled, may spot the painted finish on the rear body panels directly below the rear window.
3. When removing frost, snow or ice from the plastic window, DO NOT USE A SCRAPER. In an emergency, warm water may be used. Use care that the warm water does not contact the actual glass windows or windshield.

ROAD EMERGENCIES

If your car should become disabled on the road, the Minor Trouble Shooting Guide which follows may be used to isolate mechanical trouble. This will enable you to tell whomever you call for assistance what you believe the difficulty to be; thus allowing him to save you time and money by being prepared with the proper equipment. In some cases, the Guide makes it possible for you to make the repairs yourself and be on your way.

Also included here are instructions for changing a tire, pushing the car to start it and towing the car when it is not drivable.

MINOR TROUBLE SHOOTING GUIDE

If your car is performing in the following manner:

Check here in sequence shown for possible causes.

See Page Number	3	16 or 19	74	55 or 56	74	4 and 14	27	6	75	43 and 74	44	44	74	14	38	39	40	
	Check Fuel Gauge	Flooded Engine	Poor Fuel Supply	Idle Adjustment	Automatic Choke*	Oil Level and Pressure	Condition of Air Cleaner	Automatic Transmission Selector Lever	Check Spark	Battery and Connections	Generator and Voltage Regulator Connections	Coil and Distributor Leads	Starter Connections	Radiator Water Level	Air Flow Through Radiator Restricted	Fan Belt Condition and Tension Adjustment	Cooling System Thermostat	Thorough Check and Tune-up Suggested*
CAR WILL NOT START:																		
Engine Will Turn Over	1	4	3						5			2						6
Engine Will Not Turn Over								1		2			3					4
CAR WILL START—BUT:																		
Only After Repeated Tries																		1
Stalls in a Few Seconds	1		2	3			4					5						
Stalls When HOT				1	2		3											4
Idles Roughly				1	3		2											4
Engine Overheats														1	2	3	4	
No Oil Pressure Indicated						1												
Ammeter Points to "Zero" or Negative Side										3	2					1		

*See Your Authorized Chevrolet Dealer

TROUBLE SHOOTING NOTES

The following is information supplemental to items covered in other sections of this book. It is designed to give the average driver enough information to correct minor mechanical difficulties on the road or to at least analyze and isolate the problem in order to make repairs by a professional less costly and time consuming.

POOR FUEL SUPPLY—If fuel supply is suspected of being the cause of an inoperative engine, you may perform the following steps in order named after making sure there is gas in the fuel tank. *If continual flooding is evidenced by a carburetor wet with fuel or black exhaust smoke, perform operation 3 only.*

1. Disconnect from fuel pump the line which points toward front of car (fig. 37, page 15). Crank engine briefly with starter and observe fitting on pump. If fuel spurts from fitting you may stop cranking immediately and assume that fuel line from tank to fuel pump is not plugged and that fuel pump is operating.

2. Re-connect line to fuel pump and check condition of fuel filter as outlined on page 28. If filter is clear, reassemble. Remove air cleaner from top of carburetor.

3. Tap side of carburetor sharply several times with a light tool, such as pliers or screwdriver handle. If engine is hot and choke valve is found to be closed, open choke with fingers. Note that closed choke is normal with a cold engine. Replace air cleaner and attempt to start engine in usual manner.

If preceding steps do not correct difficulty, summon professional assistance.

STARTER AND BATTERY CHECK—If starter will not turn engine over and if, at the same time, no electrical unit on the car (such as the horn or lights) is working, you have good reason to suspect poor battery connections; especially if the car has operated properly a short time before.

Check both ends of both battery cables. If connections are corroded, a car may sometimes be restored to operation by removing all cable ends from connected parts and

scraping all contacting surfaces clean with a pen knife and reassembling.

If this does not restore the power supply (check by trying lights or horn), battery is probably dead. If, however, lights or horn work, but starter will not, you may find that the difficulty lies in the starter connections. Check them all using Figure 82 as a guide; clean and tighten as you did the battery connections. If, after performing the preceding operations, car still does not start; obtain professional assistance.

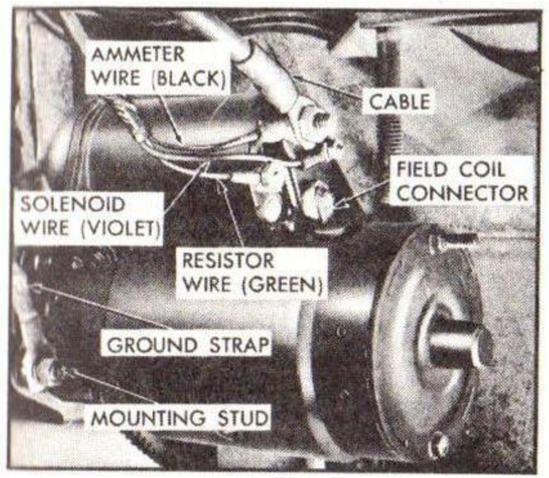


Fig. 82—Starter Connections

IGNITION CHECK—Check for supply of ignition current to spark plugs as follows:

1. Remove two wing nuts holding sheet metal spark plug shield to left side of engine and remove shield.

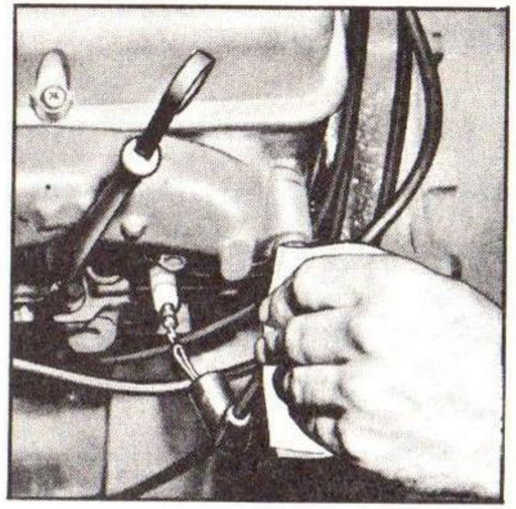


Fig. 83—Ignition Check

2. Pull one of the park plug wires off its spark plug.

3. Insert a short piece of bare wire (a bobby pin works fine) between rubber cup at end of spark plug wire and the tubular metal connector inside it.

4. If spark plug wire is wet or oily, wipe it dry; then wrap a dry handkerchief or facial tissue, folded several thicknesses, around it at least three inches back from cup.

5. Hold the bare wire about ¼ inch away from any metal surface of engine or the bare tip of the spark plug from which you removed the wire (fig. 83).

   If there is ample current supply, a spark will jump through the ¼ inch space when engine is cranked over. If no spark jumps and wire connections have been checked (page 44) the difficulty is probably caused by defective ignition part.

INSTALLING SPARE TIRE

The spare and tools necessary for its installation are located in the luggage compartment as outlined on page 13. Perform installation as follows:

1. Remove hub cap by prying off with pointed end of wheel wrench.

2. Loosen wheel nuts with supplied wrench, ½ turn.

3. Set parking brake. With powerglide transmission, set selector lever on PARK and with three or four speed transmission, put selector lever in reverse. Block the wheel diagonal from wheel being changed (i.e.—if changing left rear, block right front, using brick, etc.).

4. To remove wheel, position jack under the car at the following locations.

   a. At front wheel, place jack under the front suspension, under lower control arm near the outer end (fig. 84).

   b. At rear wheel, place jack under rear axle housing near rebound strap (fig. 85).

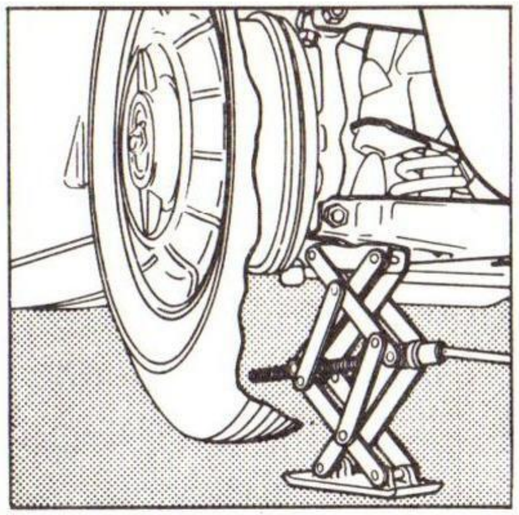


Fig. 84—Placing Jack for Front Tire Change

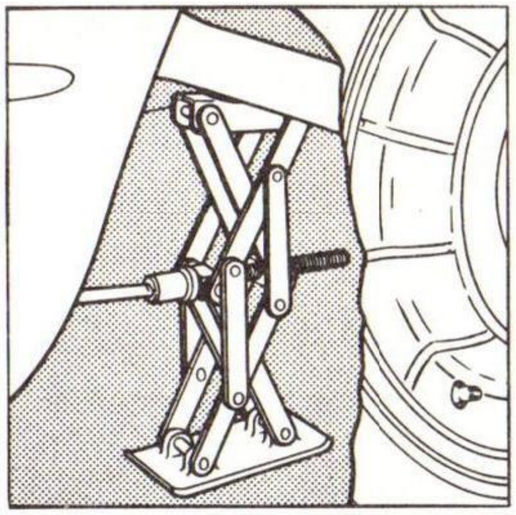


Fig. 85—Placing Jack for Rear Tire Change

5. Rotating jack handle clockwise, raise the car until tire clears the ground.

6. Remove wheel nuts and pull wheel toward you and off studs.

7. Place spare on studs and install all nuts, tighten moderately with wrench.

8. Lower jack partially until wheel just rests on ground and tighten nuts fully.

9. Lower jack completely and replace hub cap.

PUSHING CAR TO START

Should it ever become necessary to start the engine by pushing the car (towing to start is not recommended as car being towed may accelerate into tow car), proceed as follows:

MANUAL TRANSMISSIONS—Turn ignition switch to "on." Place shift lever in high (3rd on 3-speed transmissions, 4th on four-speed) and depress clutch. When car reaches 15 miles per hour, slowly release clutch to start engine.

POWERGLIDE TRANSMISSIONS—Turn ignition switch to "on" and place selector lever in "N." When car reaches a speed of 15 mph or more, place the selector lever in "L." When engine starts, place selector lever in "D."

TOWING A DISABLED CAR

If your Corvette must be towed, the following precautions must be observed:

MANUAL TRANSMISSION – Release parking brake and place shift lever in neutral.

POWERGLIDE TRANSMISSIONS—Release parking brake and place selector lever in "N." DO NOT TOW IN EXCESS OF 30 MPH. If the transmission is inoperative, or not operating properly, the propeller shaft must be disconnected or car must be towed with rear wheels off the ground.

WITH VEHICLE ON FRONT WHEELS—When a vehicle is being towed on its front wheels, the steering wheel should be secured to maintain a straight forward position.

USE OF TIRE CHAINS

Do not use tire chains on the rear wheels of your Corvette. Clearance between tires and wheelhouse is insufficient to permit operation with chains installed.

TECHNICAL DATA AND SPECIFICATIONS

CAR SERIAL NUMBER – Stamped on plate attached to left front body hinge pillar.

ENGINE IDENTIFICATION–Stamped on right front engine boss next to water pump.

CONDENSED SPECIFICATIONS FOR CORVETTE ENGINES

Engine Name	Cyls.	Bore x Stroke	Comp. Ratio	Displ.	Carb. Barrels	Exhaust	DESIGN LIFT CAMSHAFT In.	Exh.	Horsepower	Lifters	Trans. *	Octane Req'ment
Corvette	V-8	3 7/8" x 3"	9.5	283	Four	Dual	.3987	.3987	230 @ 4800 RPM	Hyd.	1-2-3	94-96
Corvette	V-8	3 7/8" x 3"	9.5	283	Two 4	Dual	.3987	.3987	245 @ 5000 RPM	Hyd.	1-2-3	94-96
Corvette	V-8	3 7/8" x 3"	9.5	283	Two 4	Dual	.393	.399	270 @ 6000 RPM	Mech.	1-2	94-96
Corvette	V-8	3 7/8" x 3"	11.0	283	Fuel Inj.	Dual	.3987	.3987	275 @ 5200 RPM	Hyd.	1-2	100-102
Corvette	V-8	3 7/8" x 3"	11.0	283	Fuel Inj.	Dual	.393	.399	315 @ 6200 RPM	Mech.	1-2	100-102

***Transmission Availability**

1. 3–speed close ratio
2. 4–speed close ratio
3. Powerglide

ENGINES

NOTE: Light weight valves are used only in engines with the mechanical valve tappets.

Firing Order 1-8-4-3-6-5-7-2

AMA Horsepower–48.0

Engine Timing:

Standard Engine ..... 4° BUDC @ 475* rpm

Dual 4 Bbl Engine (Hydraulic Lifter Camshaft Engine) ..... 12° BUDC @ 475* rpm

Dual 4 Bbl Engine (Solid Lifter Camshaft Engine) ... 12° BUDC @ 800-850 rpm

Fuel Injection (Hydraulic Lifter Camshaft Engine) ..... 8° BUDC @ 550 rpm

Fuel Injection (Solid Lifter Camshaft Engine) ..... 18° BUDC @ 650 rpm

***450 rpm for Powerglide**

Distributor:

Dwell–Single Point ..... 28°–32°

Dual Point .....–29° ea.–33° ±1° total

Point Gap–Single Point ... .016" used–.019" new

Dual Point .... .014" used–.018" new

Breaker Arm Tension ..... 19 - 23 oz.

Fan Belt:

Adjusted to 7/16 to 1/2" deflection with light pressure on belt at a point midway between pulleys.

Spark Plugs:

Cast Iron Cylinder Head	Type of Operation
AC 46	City driving only
AC 44	Town and country driving
AC C43 COM	Heavy duty and high output
AC C42-1 COM	Extended and extreme high output

Plug Gap ..... .035"

Fuel System:

Single Carburetor:

Carter 4-Barrel Downdraft with Integral Automatic Choke.

3-speed close ratio transmission—
Model WCFB 3059S

4-speed close ratio transmission—
Model WCFB 3059S

Powerglide transmission—
Model WCFB 3059S

Dual Carburetors:

2 Carter 4-Barrel Downdraft with Integral Automatic Choke on rear Carburetor.

Model— (Hydraulic Lifter Camshaft):
Front—WCFB 3181S
Rear—WCFB 2627S

Fuel Injection:

Rochester Continuous Flow
7014900, 7017300R, 7017200, 7017310 (Hydraulic Lifter Camshaft)
7014900R, 7017300, 7017250, 7017320 (Solid Lifter Camshaft)

Valve Specifications:

Valve Adjustment
Solid Lifters:

	Cast Iron Cylinder Head
Intake	.008" Clearance
Exhaust	.018" Clearance

Hydraulic Lifters:

With engine idling, back off adjusting screw until tappet begins to click lightly; then turn screw down one full turn at both intake and exhaust.

Theoretical Valve Timing:

Hydraulic Lifter Camshaft:

Intake Opens	12° 30′ BUDC
Intake Closes	57° 30′ ABDC
Exhaust Opens	54° 30′ BBDC
Exhaust Closes	15° 30′ AUDC

Solid Lifter Camshaft:

Intake Opens	35°	BUDC
Intake Closes	72°	ABDC
Exhaust Opens	76°	BBDC
Exhaust Closes	31°	AUDC

TRANSMISSIONS

Three Speed

Ratios:

First Speed Forward	2.4:7
Second Speed Forward	1.53:1
Third Speed Forward	1:1
Reverse	2.8:1

Four Speed

Ratios:

First Speed Forward	2.2:1
Second Speed Forward	1.68:1
Third Speed Forward	1.30:1
Fourth Speed Forward	1:1
Reverse	2.25:1

Powerglide

Ratios:

Maximum Torque Converter	2.1:1
Drive Low and Reverse Planetary Gears	1.82:1
Drive Range	3.82:1 to 1:1
Low Range	3.82:1 to 1:1
Reverse	3.82:1 to 1:1

DRIVE (Type) ..... Hotchkiss

REAR AXLE

Ratios:

Three speed (standard)	3.36:1
Four speed (standard)	3.70:1
Powerglide (standard)	3.55:1
Positraction (optional with three speed	3.36:1
	4.11:1
	4.56:1

Positraction (optional with four speed)	3.70:1
	4.11:1
	4.56:1

Positraction not available with Powerglide.

STEERING

Steering Gear Ratio	**16.0:1**
Overall Ratio	**21.1:1**
(Fast Steering Adaptor)	**16.3:1**
Turning Diameter	37′
Wheel Alignment	
Caster	2° ± ½°
Camber	0° ± ½°
Toe in (Both Sides)	0″ to ⅛″

TIRES

Size	**6.70 x 15—4 ply rating—tubeless**
Pressures (Cold)	
Normal Operation	24 pounds front and rear
Sustained High Speed Operation	36 pounds front and rear

CAPACITIES

Fuel Tank	16.4 gallons
Crankcase refill	
Without filter	**5 quarts**
With filter	**6 quarts**
Cooling System	
Without heater	16 quarts
With heater	17 quarts
Transmissions	
Three speed	2 pints
Four speed	2½ pints
Powerglide	11 quarts
Rear Axle	4 pints

DIMENSIONS

Wheel base	102″
Length (Overall)	177.7″
Width (Overall)	70.4″
Height	
Loaded—Folding Top Up	51.6″
Loaded—Hard Top	51.5″
Tread	
Front	57.00″
Rear	59.00″

LAMP BULB DATA

Location	Candle Power	Number
Headlamp—Outer—high	37½ (Watts)	5¾"
Outer—low	50 (Watts)	5¾"
Inner—high	37½ (Watts)	Sealed Beam
Headlamp Beam Indicator	1	53
Parking and Direction Signal	4-32	1034
Tail and Stop-Direction Signal	4-32	1034
Ignition Switch	1	53
Tachometer	2	57
License Plate Lamp	3	67
Instrument Panel	2	57
Electric Clock	2	57
Courtesy Lamp (Optional Eqpt.)	6	90
Radio Dial (Optional Eqpt.)	2	GE 1891
Cigarette Lighter (Optional Eqpt.)	1	53
Parking Brake Alarm Lamp (Optional Eqpt.)	6	90

FUSE AND CIRCUIT BREAKER DATA

Circuit	Ampere Rating	Circuit Breaker or Fuse
Headlamp, Headlamp Beam Indicator, and Parking Light.	15 amp.	Circuit Breaker
Tail, Stop, License, and Courtesy Lamp	3AG/AGC 15 Amp.	Fuse
Instrument and Clock Lights	3AG/AGC 3 Amp.	Fuse
Radio (Optional Eqpt.)	3AG/AGC 7½ Amp.	Fuse
Parking Brake Alarm (Optional Eqpt.)	3AG/AGC 10 Amp.	Fuse
Heater (Optional Eqpt.)	3AG/AGC 10 Amp.	Fuse

Junction Block—Fuses for the Radio, Parking Brake Alarm and Heater (All Optional equipment) are on the junction block located on the fire wall just above the dimmer switch.

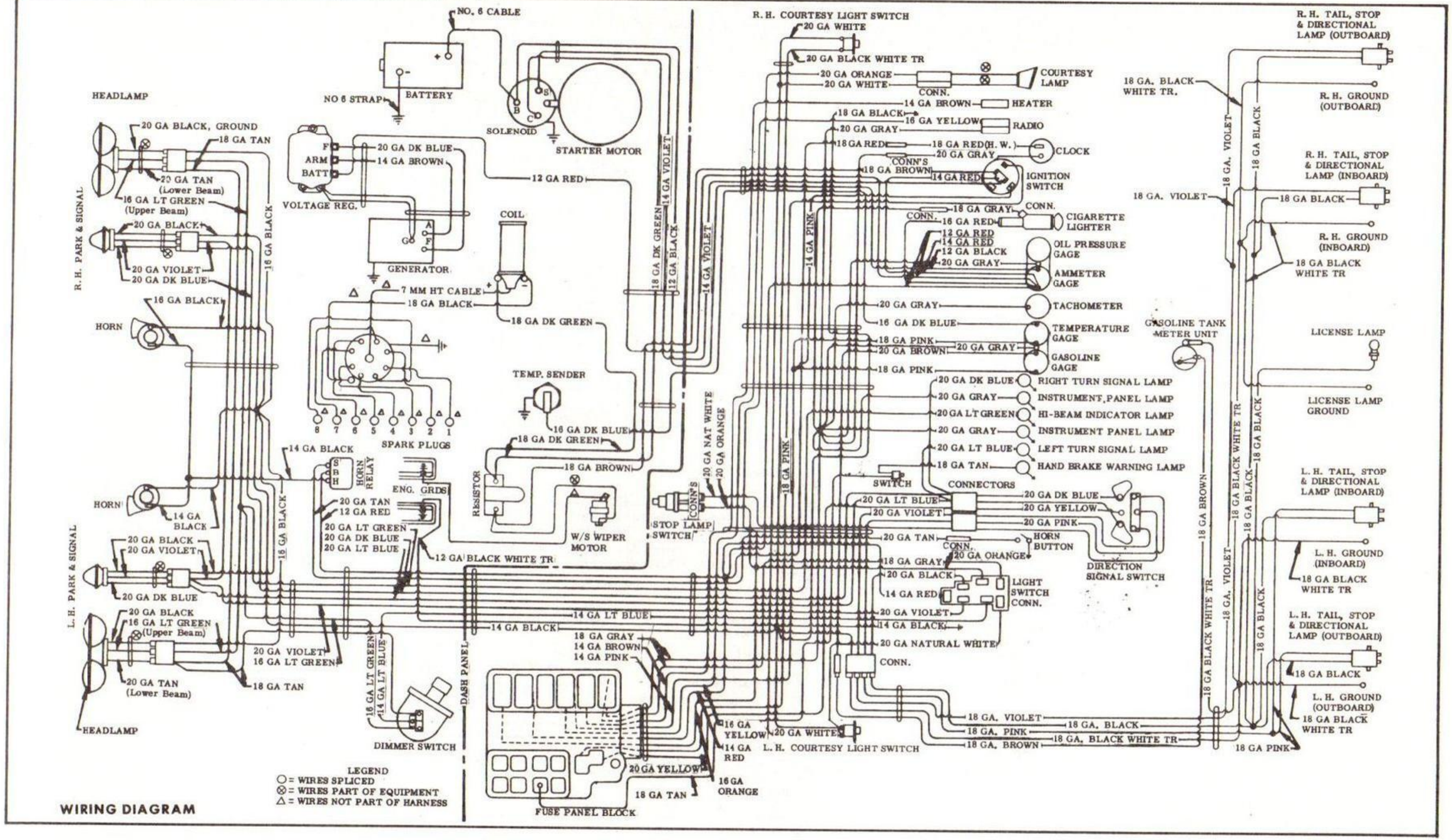


Fig. 86—Wiring Diagram

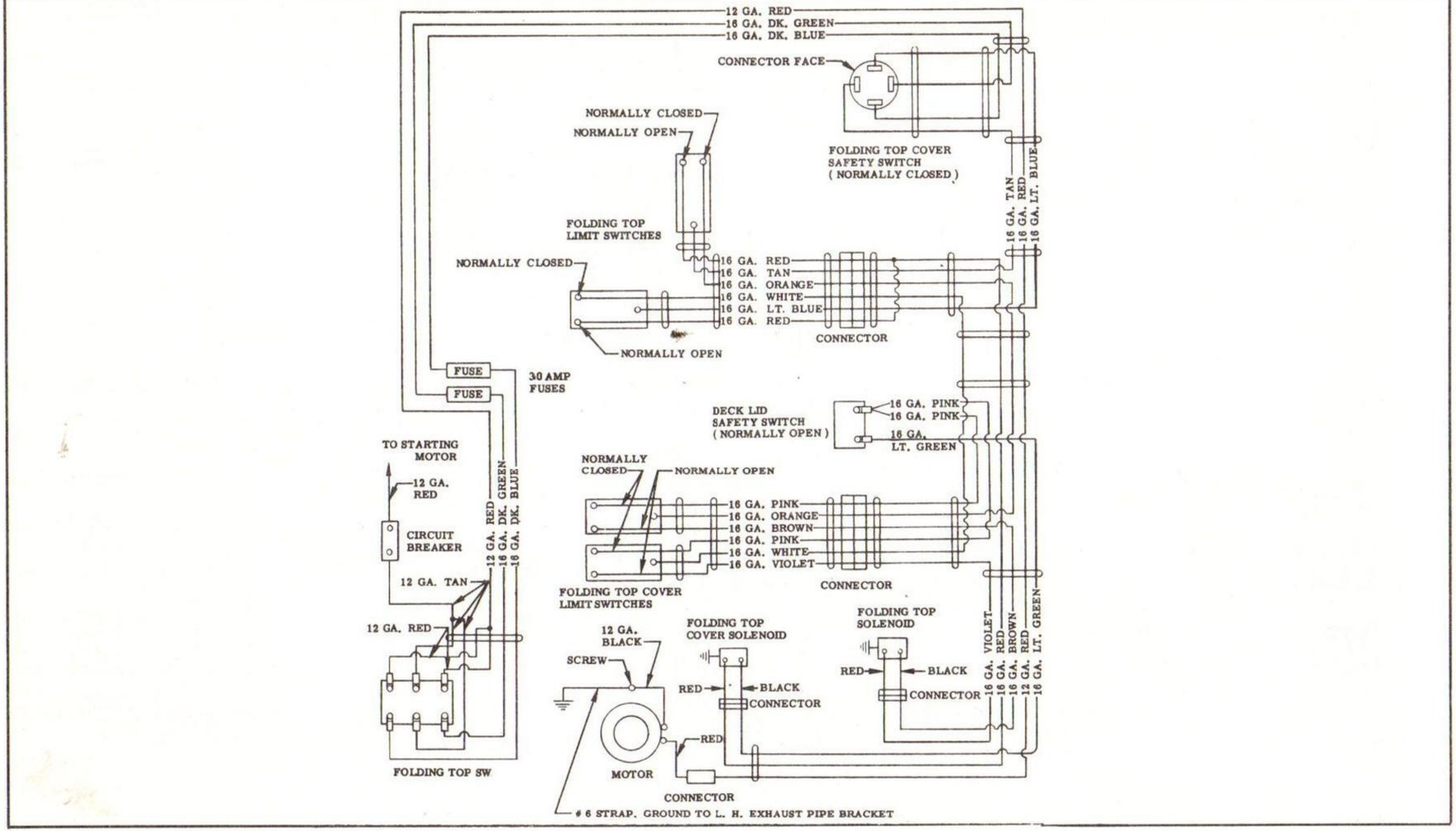


Fig. 87—Folding Top Wiring Diagram

CHEVROLET OWNER PROTECTION POLICY

The Chevrolet Motor Division considers it a most important obligation to offer each owner a suggested maintenance service which will relieve him of any anxiety and insure that his vehicle is regularly inspected and maintained.

Your Chevrolet dealer has presented you with a Chevrolet Owner Protection Policy Booklet. The Approved Maintenance and Lubrication Service items in this Policy Booklet have been worked out by Chevrolet service personnel and cover items which are the owners responsibility to have checked, inspected, adjusted and lubricated at mileage intervals up to 12,000 miles. All maintenance operations which are necessary at the varying mileages on a vehicle operating under normal conditions are included.

If the services are carried out at the prescribed mileage, wear and owner expense will be kept to a minimum. Further services may become necessary as mileage accrues, however, the regular visit that you make to your Chevrolet dealer in following this Policy will point out desirable services as they become necessary.

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