

*Studebaker*

# SERVICE BULLETIN

JANUARY

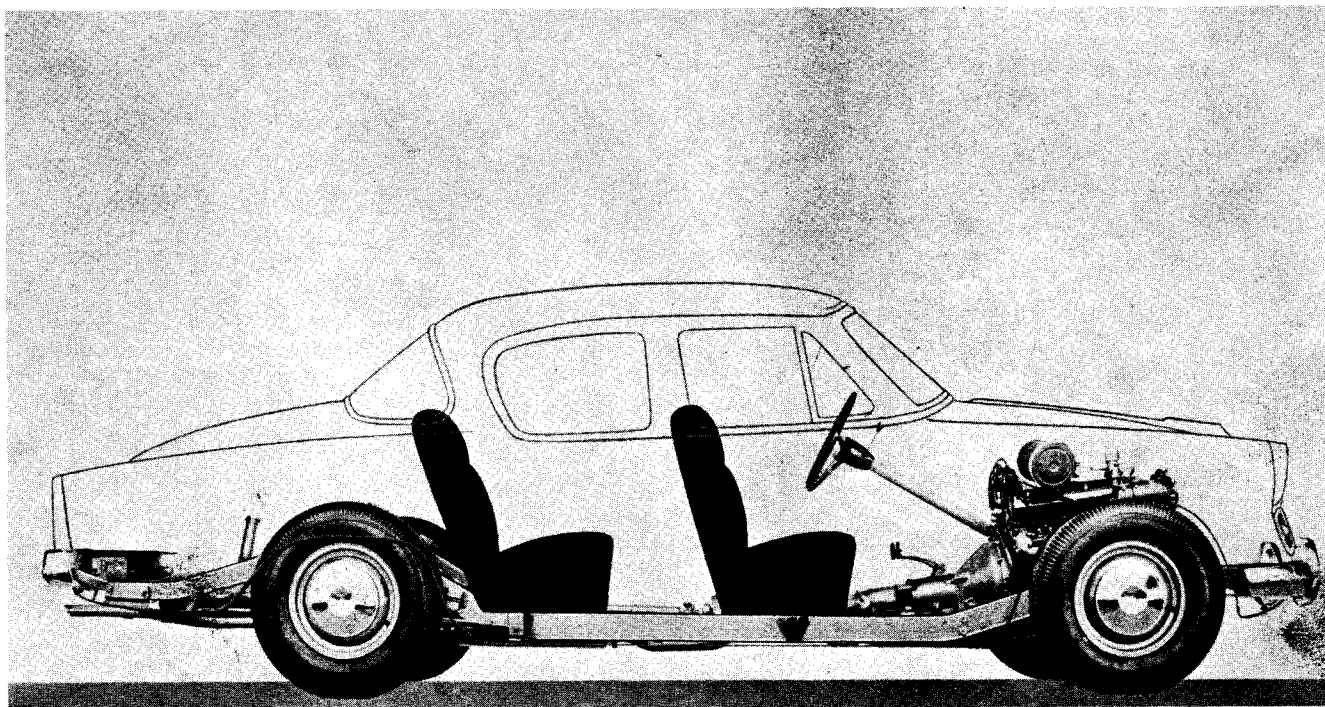
NO. 270

STUDEBAKER

1953

J. SCOTT PORTER MOTORS

## THE EXCITING NEW 1953 STUDEBAKER



*As the Serviceman Sees It*

J. SCOTT PORTER MOTORS

GOOD SERVICE CREATES CUSTOMER GOOD WILL

J. SCOTT PORTER MOTORS

## THE SERVICEMAN AND THE 1953 MODELS

The purpose of this Service Bulletin is to point out the many new features in the 1953 Studebaker passenger car models, particularly as they compare service-wise to the 1952 models.

These cars are exciting in appearance. A glance will tell you that service of rear fenders, for example, is quite different from anything you have seen before. This Service Bulletin gives you some of the new wrinkles to remember when removing or installing a rear fender.

A quick look underneath shows you that the frame is totally different. Clutch and brake pedals are mounted outside the frame, as are the front ends of the rear springs. Here again this Service Bulletin gives you some ideas of what you can expect service-wise.

And the new, direct mechanical power steering -- a logical approach to this desirable special equipment -- will raise a lot of questions in your mind. We hope this Service Bulletin answers them and shows you how our power steering works.

This Service Bulletin does not take the place of the complete 1953 Passenger Car Shop Manual. It is a "side dish" to it. When it comes to actual work on 1953 model cars, be sure to refer to your Shop Manual. We have already sent a copy of the Shop Manual to every Studebaker dealer.

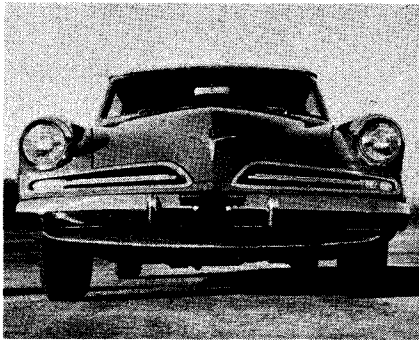
We are mighty proud of this 1953 Studebaker. Prevue showings to dealers and press convince us that, even more than with the '47 models, America will hug this car to its heart.

We count a lot on the interest and good work of Studebaker dealer service men to maintain this enthusiasm in our cars. We remind you of the slogan, "Good service creates customer good will."

For it is customer good will that brings Studebaker owners back for new cars year after year. And good will from good service gets around to bring first-timers to your showrooms.

So keep up the good service. What builds the product's reputation both in performance *and* service keeps your service department humming.

*William Allen*  
*Pocomoke City, Md.*



## GRILLE

The divided front grille is strikingly beautiful in its stark simplicity. Graceful lines of the center bar flare skillfully into the parking light at the outer end. Each part of the grille can be serviced individually, providing economy in case of replacement and easier servicing.

The plastic parking light lens is an innovation in itself. This tough, durable material will last indefinitely. It is held to the center bar with two Phillips head screws through the lower front and sealed against dirt and moisture with a rubber gasket.

### To Remove Center Bar

The center bar is mounted on three brackets. Two cap screws fasten the outer bracket, one cap screw in the center bracket, and a Phillips head screw in the inner bracket.

The center cap screw can be reached from the front and the two end cap screws from under the fender.

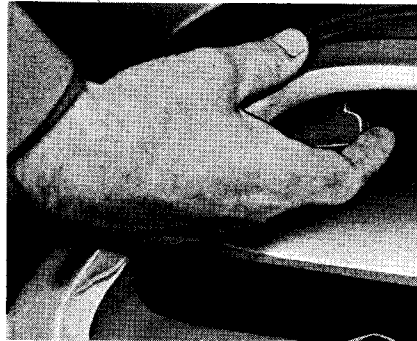
Remove wires from junction block on radiator air deflector and pull wires thru sheet metal. Center bar can then be removed from the grille.

### To Remove Outer Grille

The outer section of the grille is held in place with eleven 5/16" hexagon headed self-tapping screws and one large Phillips head screw.

Eight of the screws can be reached from the front through

the opening left after the center bar is removed. Two can be reached under the front fender, the other through an opening provided between the grille sections. The large Phillips head screw can be reached from the front.



## HOOD

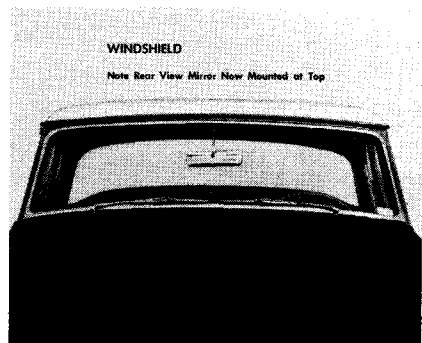
Hurrah! No more pulling and tugging to get a stubborn hood open because of a rusted, corroded, or bent remote control wire.

A new, simple, safe, and aggravation proof hood latch release, located between the center bar and upper section of the left grille, will open the hood when a firm pull is exerted on the lever.

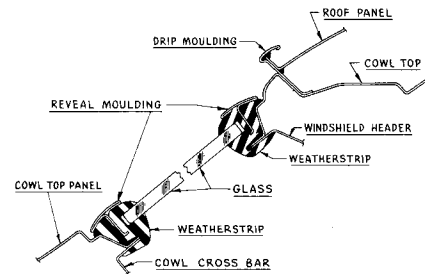
The usual safety catch is provided and the hood is held open with the safe, reliable hood prop.

## WINDSHIELD

The clean unbroken lines of the larger, one-piece curved windshield gives a panoramic outlook of unlimited vision. The scientifically designed glass and the angle at which it is mounted provides the maximum in driver vision. Solex, tinted



glass, is available in all models as optional equipment.



An ingenious, but simple, weatherseal of new design (see picture, top of page) not only seals the glass but holds the reveal moulding in place as well. Actually the inner lip of the reveal moulding is in back of the glass when windshield is installed. The top and bottom sections of the reveal moulding slide into the end pieces of the reveal moulding presenting an unbroken surface.

### To Remove Windshield

Remove windshield wiper arm and blade assembly.

Remove rear view mirror and windshield garnish moulding. Starting at the top (either corner) loosen the weatherseal lip from the body flange and continue across the top of the windshield. As the seal is loosened push out on the windshield.

Carefully work each end reveal moulding out of the weatherseal.

Remove top and bottom reveal moulding strips.

Remove weatherseal from windshield glass.

### To Install Windshield

Carefully examine body windshield flange for possible damage.

Thoroughly clean windshield glass channel in weatherseal.

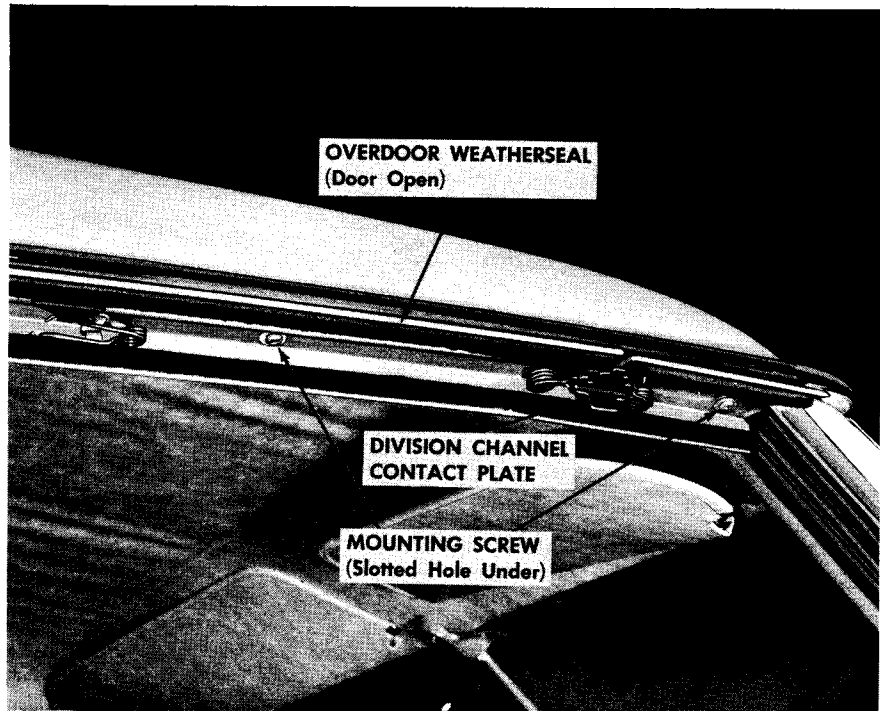
Coat channel with sealer and install weatherseal on glass.

Install top and bottom reveal moulding strips working them carefully into the proper position in the weatherseal.

Install end pieces of reveal moulding in weatherseal engaging top and bottom reveal mould strips at the same time. (Do not use liquid soap or other lubricant on weatherseal or reveal moulding pieces.)

Coat body windshield flange with sealer.

Insert heavy twine or mason's cord in the lip of the weatherseal to be installed over the body flange. The ends of the twine should cross at bottom center.



Place the windshield assembly in the body opening from the outside. From the inside of the car, work the weatherseal over the body flange, starting at the bottom and working either side until half way up windshield post. Start at the bottom again and follow around seal until windshield is in place.

NOTE.-- The rear glass is removed and installed in the same manner.

**WIPERS**

With adverse driving conditions of rain, sleet and snow a clear windshield is of the utmost importance to the driver. Windshield wipers on all 1953 models clear a larger area than ever before. This is made possible by moving the pivot shaft for the windshield wiper arm and blade assembly toward the outside of the windshield. Accordingly, a longer arm and blade assembly can be used. Thus, adequate space for driving vision under the most severe driving conditions is provided.

An electric windshield wiper is standard on all Commander models. Powered by a new two-speed electric motor, the windshield wiper can be regulated

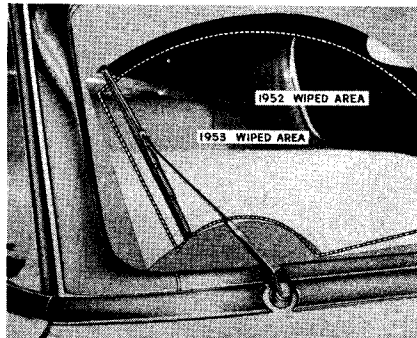
**WEATHERSEAL (HARD TOP)**

A clever new type weatherseal at the top of the door on hard top models makes a water tight seal at this point. The seal has a hinged section activated by a spring.

With door open the spring is released and the outer section of the seal is straight out. When the door closes it strikes a pad on the spring section which flips the outer part of



the seal down over the door.

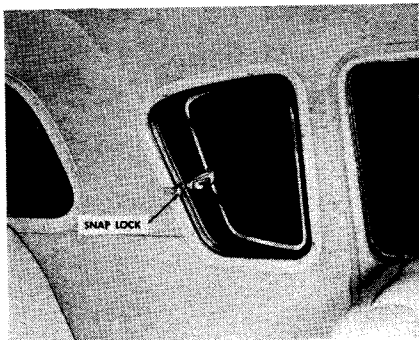


For adjustment purposes the holes for the fastening screws are slotted. By loosening the screws the seal can be moved in or out to the desired position.

NOTE.-- A few of the first hard-top cars produced will have the equally efficient "umbrella" type weatherseal used on 1952 models.

to the speed dictated by driving conditions. It has a wiping speed of 80 to 90 single sweeps per minute on low and 132 to 135 single sweeps on high.

The regular vacuum operated windshield wiper is standard on all Champion models. The two-speed electric windshield wiper is available at extra cost as optional equipment.



### REAR QUARTER WINDOWS COUPE & HARD-TOP

Changes affecting the comfort of rear seat occupants should be of interest to the servicemen.

The rear quarter window of the Hard-Top model now moves back several inches from the door window before going down into the body panel. This provides better ventilation control. It also allows more positive seal and alignment of the rear quarter window.

Service adjustments for the rear quarter window and window regulator are the same as in



previous Hard-Top models.

The rear seat occupant of the five passenger coupe can also enjoy individual ventilation. The rear quarter window is hinged to open like the

front ventilator wing. A "fold over" link and lever snap type latch assures protection against opening the rear quarter window too wide. In the closed position it is safely locked by the snap latch.

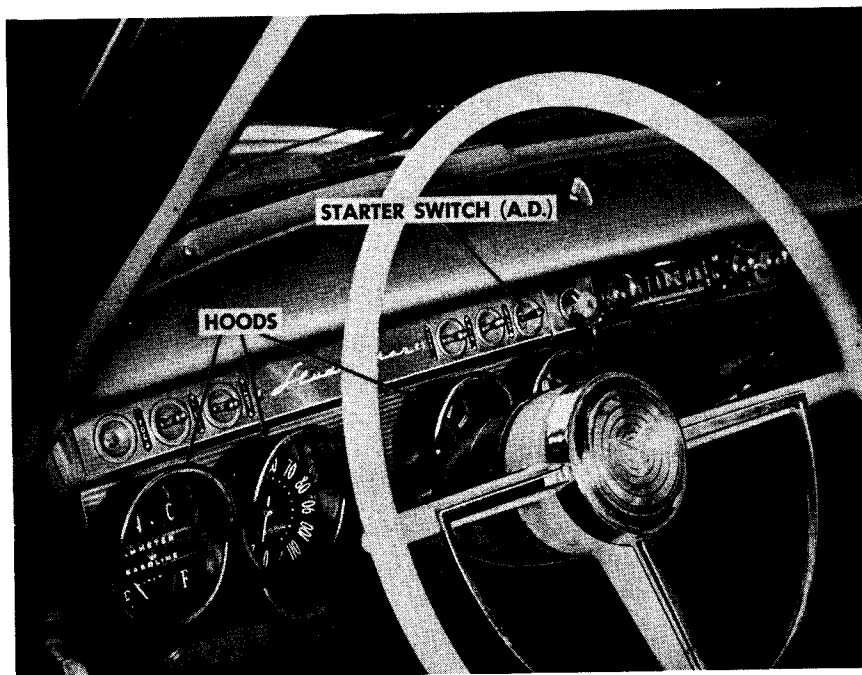
### INSTRUMENT PANEL

Every effort has been made to place each control and instrument on the beautiful new instrument panel within easy reach and vision of the driver. The rich chrome and trim blend together to give arresting eye appeal.

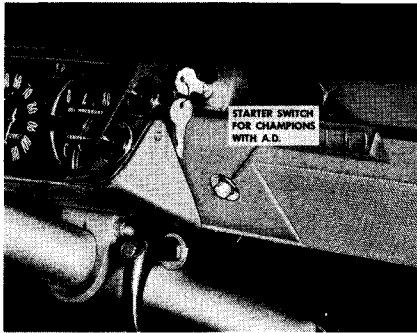
A new, glare-free "Perimeter" lighting on all models makes it easy for the driver to read the instruments at night. Bright or dim instrument lighting is provided for in the instrument light switch.

For safety's sake protruding knobs are held to a minimum. The rugged, simple toggle switch is used for the electrical controls mounted on the instrument panel.

On the Commander models the toggle switches are arranged at the top of the instruments.



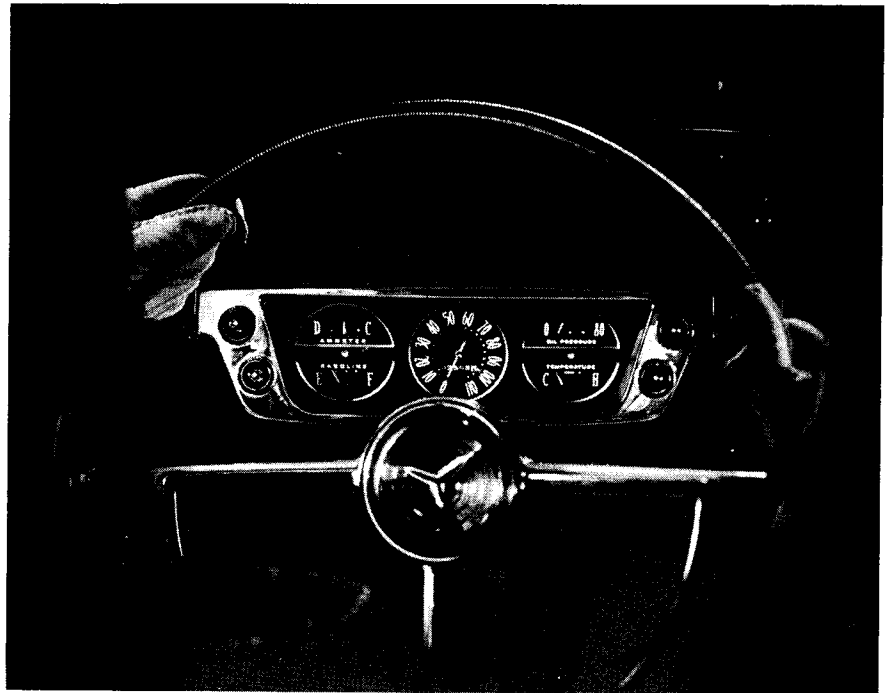
INSTRUMENT PANEL - COMMANDER MODELS



The instruments are divided into four separate units. For the utmost in readability, each unit has a hood protecting it from glare. The hood also helps to focus the driver's vision on the instruments during that fleeting glance given the instrument panel when the car is in motion.

The Champion models have the toggle switches located at each end of the instrument panel. The instruments are grouped as a unit. To reduce glare on the instrument panel the glass is inclined at a 21° angle while the instruments have an 18° angle.

The starter switch for the



INSTRUMENT PANEL - CHAMPION MODELS

Commander models equipped with Studebaker Automatic Drive is located at the far right of the toggle switch group, next to the ignition switch. On Champion models equipped with Studebaker Automatic Drive the starter switch is a push button located below the ignition

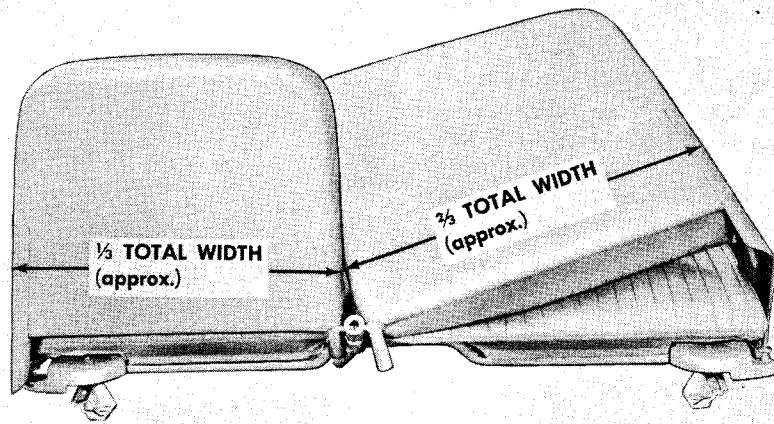
switch.

Starter switches for cars with Conventional 3-speed or Overdrive transmissions are on the floor board as in the past; the clutch pedal is used to operate the starter switch.

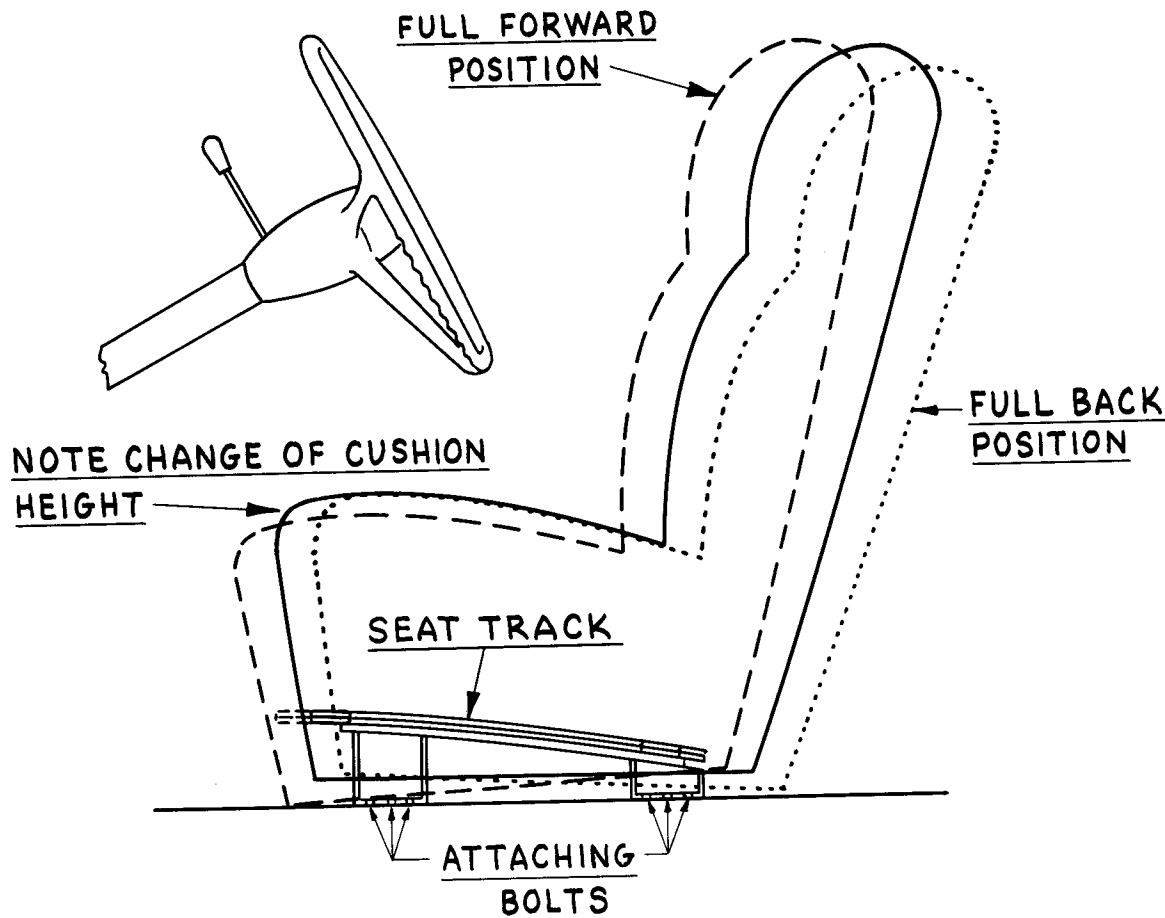
### OFF-SET SEAT DIVISION

The uneven division of the seat back of the coupe and hard-top models gives the best arrangement for driver and passenger comfort. The 1/3 (33%) section for the driver provides a "bucket" type seating arrangement which has long been acknowledged the most comfortable and less tiring of any type seat.

The 2/3 (67%) section allows the front seat passenger, or passengers, to change positions without the discomfort of having to rest against a divided seat back. In addition the large section of the seat back folding down increases the ease with which rear seat passengers can enter or leave the car. Then too, there is the safety factor that rear seat passengers will find it more convenient to exit at curb side.



# SEAT TRACK ASSEMBLY



The new seat track arrangement on the 1953 Studebaker is the answer to every dealer and serviceman's question, "How to adjust the driver's seat to so many different individual requirements."

The seat track assembly is ball bearing mounted and spring loaded. When the seat adjustment lever is operated the seat will instantly move to the most forward position. Moving the seat requires but a slight push.

As the seat moves forward on the track arc the seat cushion is raised and the seat back assumes a more straight up position. Movement to the back lowers the seat height and tilts the seat back to the rear.

There will be instances where the standard seat adjust-

ment may not provide a comfortable driving position for all individuals. However, the arc in the seat track assembly, plus the three mounting position holes in the seat track makes possible a wide range of seat positions (see sketch).

For the driver who likes a straight up driving position relocate the seat track assembly in the rear set of mounting holes and place the seat assembly in the forward position on the seat track. For the driver preferring to lean back slightly mount the track assembly in the front mounting holes and move seat to rear position on the seat track assembly. These are just a few possibilities of seat and track arrangements.

In addition the seat assem-

bly itself can be raised, tilted forward or backward by installing flat washers or wooden block between the seat frame assembly mounting brackets and the floor pan.

To further aid in securing driver comfort the steering wheel height, in relation to the seat cushion, can be raised or lowered. At the time of production the Champion models will have one 1/8" steel shim between the steering post bracket and the instrument panel. The Commander models will have two 1/8" shims.

By installing or removing shims the steering wheel height can be changed for an overall distance of approximately 1-1/2". Each 1/8" shim will change the steering wheel height 1/4" when measured at the steering wheel rim.



**DOOR HARDWARE AND LATCH ASSEMBLY**

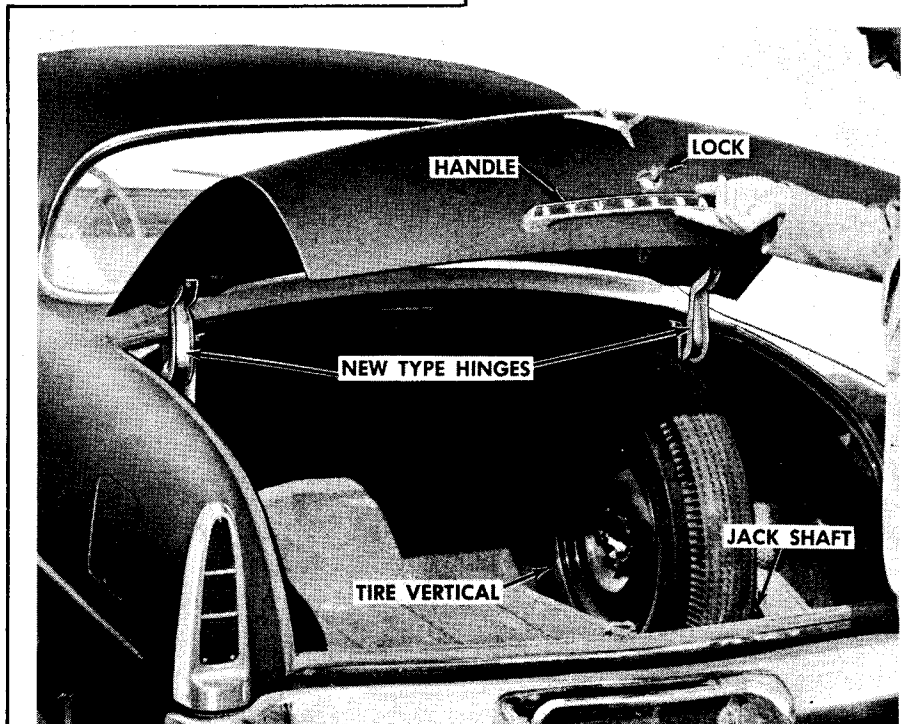
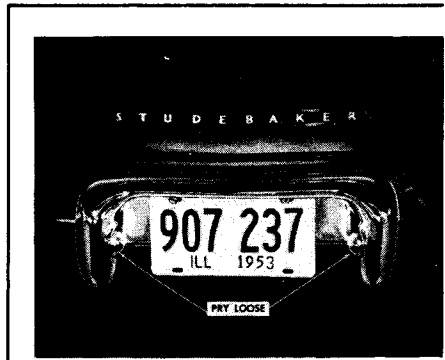
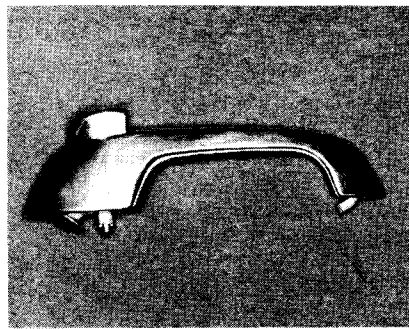
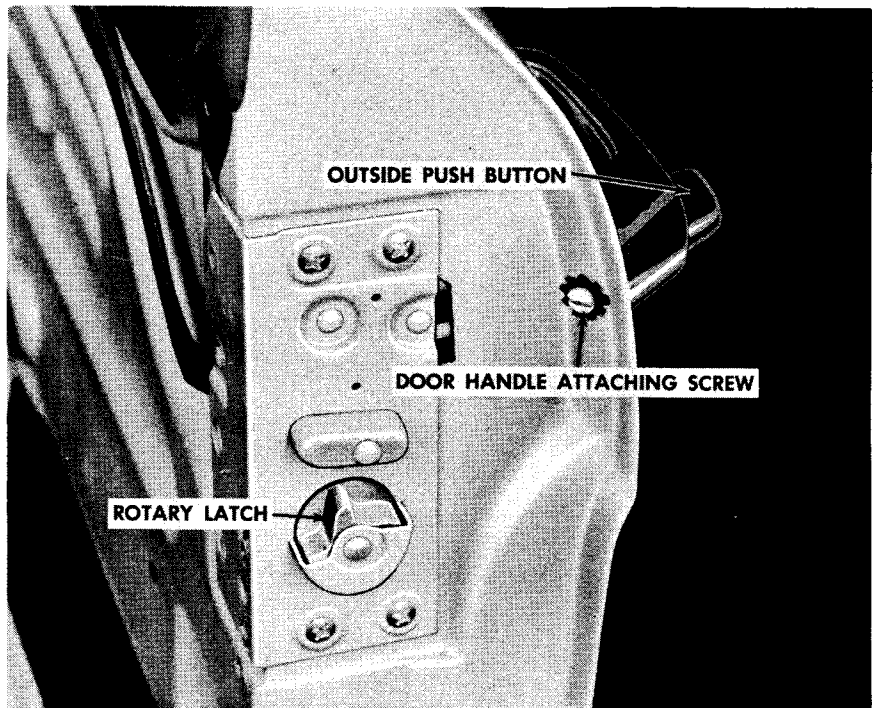
A new style door handle with thumb release latch is a feature of the all-new 1953 cars. The handle comfortably fits the hand with plenty of room between handle and door. Newly designed door latch remote control and window regulator handles are spaced far enough apart to afford easy operation. They are held securely in place with self-locking screws.

To remove door handle; remove the one cross slotted screw from the flanged end of door. Pull out slightly on door handle and slide toward center of door panel. This will disengage the hook on the door handle from the door panel. When adjusting the door latch striker plate be careful not to get it set back too far; otherwise it will require too great a thumb pressure to release the door latch.

Door and window regulator adjustments are the same as on previous models.

Push-button type control is used to lock doors from the inside. With the push button down, the rear doors on four door models will remain locked although the door is opened from the inside and closed from the outside. Front door locks on four door models and doors on the two door models will unlock whenever the door is opened. This is to prevent accidentally locking the keys in the car.

Rear doors on four door models are hinged at the center pillar post. This arrangement permits occupants of the front and rear seats to enter or exit at the same time. It also is a safety factor since doors mounted in this fashion cannot blow open when the car is in motion. The modified K design of the door provides considerable more head and shoulder room when entering or leaving the car. The new door opens wider giving a maximum of hip room.



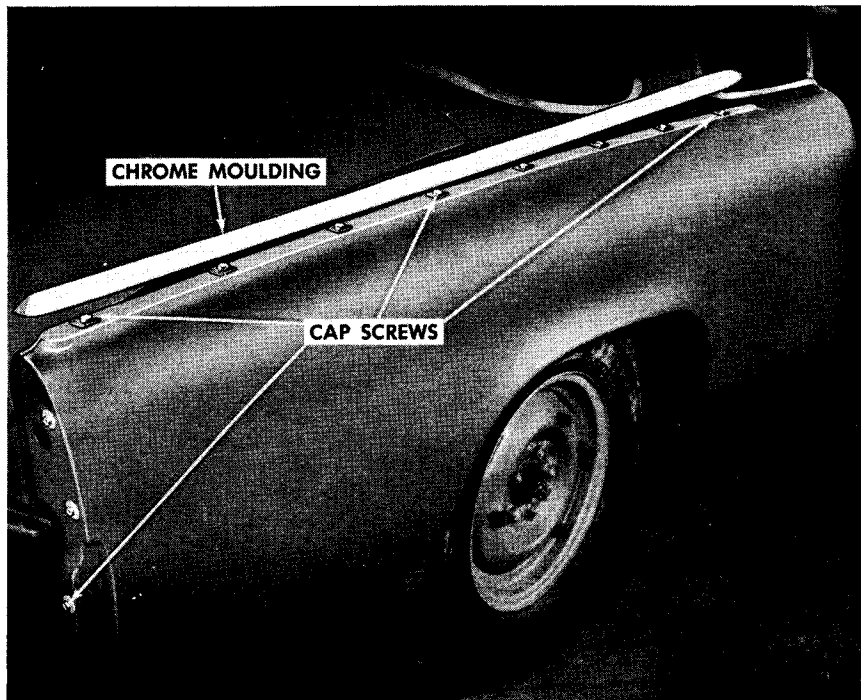


## REAR FENDERS COUPE MODELS

Have you wondered how the long unbroken sweep of the fender from door to tail light is obtained on the coupe and hard-top models?

Advanced technique in die design and sheet metal stamping makes it possible to form the rear fender in a single unbroken section. In addition to adding beauty to the car it has the advantage of being easier and more economical to repair. Naturally the method of mounting the fender section to the body is a little different from previous models.

**TO REMOVE:** Starting at either end carefully pry off



## TRUNK LID AND LATCH ASSEMBLY

The usable trunk space in the sedan models is greater than that in previous models. The trunk opening is enlarged so that luggage or parcels can be more easily loaded into the available space. Even the coupe and hard-top models have a surprisingly roomy trunk compartment when considering the limiting factor in the low silhouette design.

The latch and lock assembly are separate from the handle and the new arrangement gives an improved operation of the release latch. A winged, rotary type, lever of the lock assembly releases the latch with finger tip pressure. New design C-clamp type trunk lid hinge with its over center spring arrangement helps to balance the trunk lid so that it can be raised with a minimum of effort.

The trunk lid can be adjusted in any direction to fit the trunk opening. The section of the hinge fastened to the trunk lid is slotted. To move it forward or backward loosen the four cap screws and shift to the desired position. Securely tighten cap screws. To move to either side

loosen the cap screws that hold the anchor section of the hinge to the body. After the adjustment is made tighten the cap screws securely.

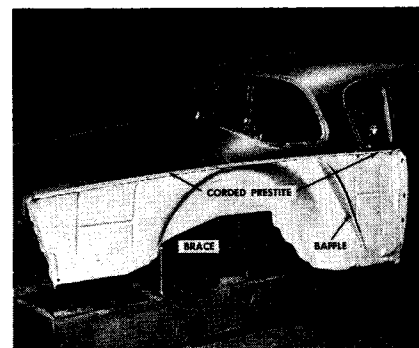
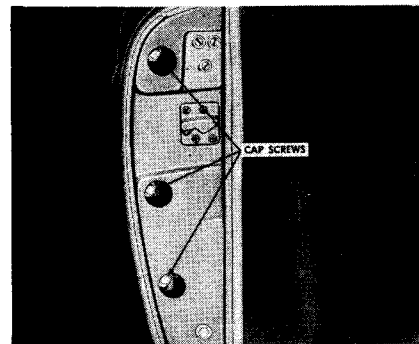
## LICENSE POSITION AND TAIL LIGHT ASSEMBLY

Want to know how to keep the rear license plate looking like new?

Studebaker has the answer in its deeply recessed mounting position, safely within the rugged rear bumper.

Smartly styled license lights are ingeniously placed in the bumper guard to provide maximum illumination. To service, pry the lamp assembly from bumper. To remove the light bulb push on the outer edge of the lens assembly and it will snap off of the receptacle. The light bulb can then be removed in the usual manner.

The beautiful tail and stop light assembly is just as practical as it is good looking. Rugged plastic lens gives better light and a single light bulb serves a three-fold purpose. A plastic reflector disc is mounted directly in back of the plastic lens. It picks up and magnifies the light from oncoming cars to provide warning should the tail light fail.

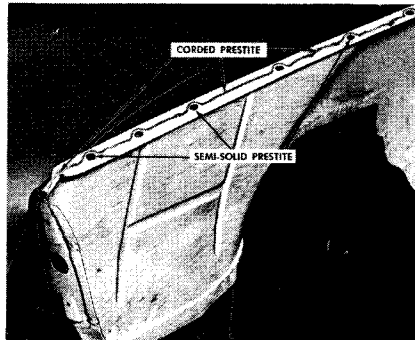


the fender moulding strip from the top of the fender section. Remove the tail light assembly, rear seat and cushion assembly, the quarter panel trim and panel assembly and the three sheet metal caps that snap into the door lock pillar.

Remove the three cap screws at the back of the fender, three at the lock pillar, and two cap screws at fender to frame braces. On the hard-top

model it is necessary to close the rear quarter panel window to reach the two cap screws directly in back of the window regulator channel. These two cap screws can be readily removed on the coupe models. Remove the eight cap screws at the top of the fender and remove fender section from the body.

When installing the rear fender section fill the depressions that accommodate the Tinnerman speed nuts with



semi-solid "Prestite" sealer. Place the fender section against the body panel and start all cap screws. Starting at the back of the fender section lay a 1/8" bead of "Prestite" with cord center carefully in between the body and fender section. Tighten cap screws progressively until all are secured. Wipe off any excess sealer.

"Prestite" sealer will be available from your Parts and Accessories Division.

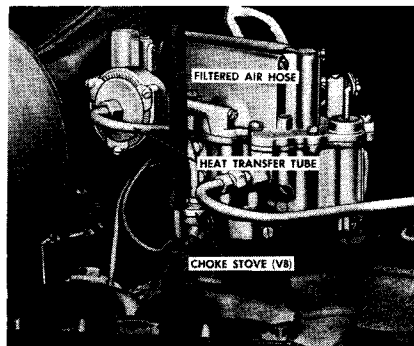
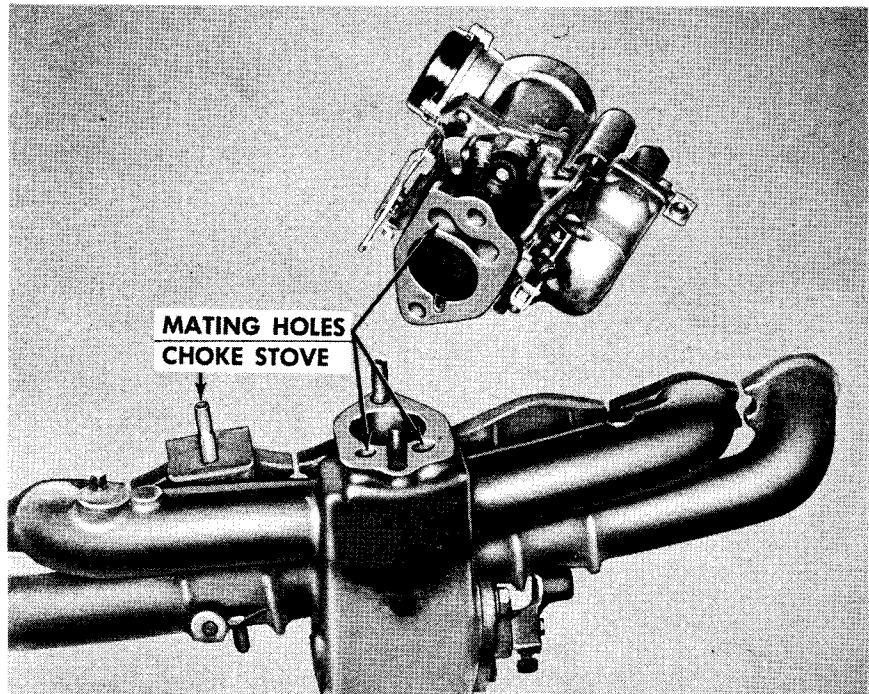
### CHAMPION CARBURETOR

Under certain atmospheric conditions, ice forms on the carburetor throttle plate causing the engine to stall repeatedly until it is thoroughly warmed up. A long step forward in overcoming the condition has been made possible with the new manifold and carburetor on the Champion engine. A heated throttle body is now provided.

When the heat riser valve in the manifold is closed, hot exhaust gases are directed through a drilled passage in the manifold to a recessed area in the throttle body, back through a second drilled passage in the manifold into the exhaust pipe. (Whenever the carburetor is removed, it is advisable to thoroughly clean these passages.)

As the engine reaches operating temperature the heat riser valve opens automatically and the hot exhaust gases no longer pass through the throttle body.

A change has also been made in the automatic choke heat stove. A passage is now drilled through the exhaust manifold and a steel tube inserted in the opening. The automatic choke heat transfer tube end is placed in this opening. The greater amount of heat from the installation will cause the thermostatic spring in the choke housing to respond more quickly improving idling performance and part throttle operation after cold starts.



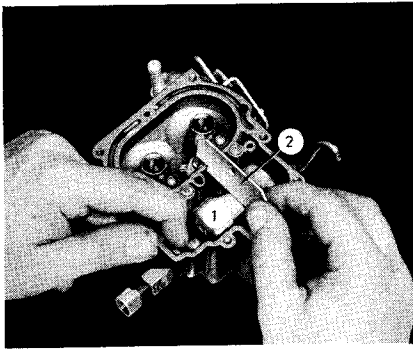
### COMMANDER CARBURETOR

A completely new carburetor Model WWUVL-26 is used on the V-eight engine. It incorporates all of the improvements made in previous V-eight carburetors

plus some distinct features of its own.

The carburetor has but one fuel bowl float which can be easily and accurately adjusted to the recommended 3/16" float setting.

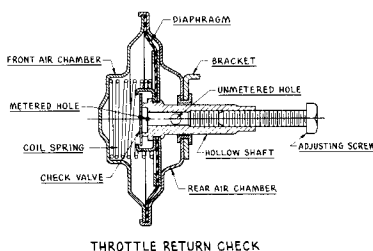
Changes in the automatic choke system improve cold weather starting and part throttle acceleration. The choke operating piston is mounted vertically to the carburetor body and has a "shut-off" type piston. When normal operating temperature is reached, this design allows the heated air to pass underneath instead of through the piston



1 - FLOAT 2 - LEVEL GAGE  
 as it did on previous model carburetors. In this manner any impurities that might be in the air would pass through instead of becoming imbedded in the choke operating piston.

The fuel bowl is extended out from the carburetor mounting flange so that cooling air from the fan blast will circulate under the fuel bowl. This will aid in preventing percolation (boiling) of the fuel in the fuel bowl at high air temperatures.

The automatic choke stove has been relocated to the right side of the intake manifold. The new location makes it possible to heat the air more quickly and to a higher degree, assuring better choke performance. Filtered air for the choke stove is now taken from the air horn of the carburetor instead of the air cleaner body.



### THROTTLE RETURN CHECK

In heavy traffic it is often necessary to rapidly accelerate and then quickly apply the brakes. When this occurs the throttle is "slammed" shut by the accelerator rod return spring. The sudden closing of

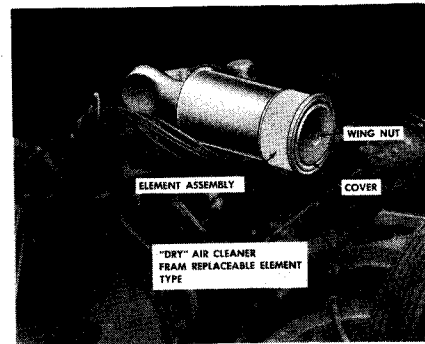
the throttle on cars equipped with automatic transmission may cause the engine to stall because of converter drag.

Commander models equipped with the automatic transmission will have a device called a throttle return check (often referred to as a dashpot). The purpose of the throttle return check is to slow down the last 3/16" of the throttle movement when returning to a closed position. This effectively prevents engine stalling brought about by sudden closing of the throttle.

How it works: The throttle return check is divided into two air chambers by the diaphragm assembly. The diaphragm assembly consists of diaphragm, operating shaft and check valve. The operating shaft is hollow. The outer end is threaded for an adjusting screw to set the desired travel of the operating shaft. At the inner end is a Neoprene check valve. Between the check valve seat and the diaphragm is a metered passage into the hollow center of the operating shaft. Toward the center of the operating shaft, and leading into the hollow center, is another passage which is not metered.

When the throttle is opened the spring in the front air chamber forces the diaphragm and operating shaft to the rear. Air is dispelled from the rear air chamber through the unmetered passage in the operating shaft past the check valve and into the front air chamber. As the throttle is closed the operating shaft and diaphragm assembly attempt to displace the air in the front air chamber, but the check valve closes and the air must then bleed back through the metered passage. The resistance to the free movement of the air slows down the return of the throttle to a closed position.

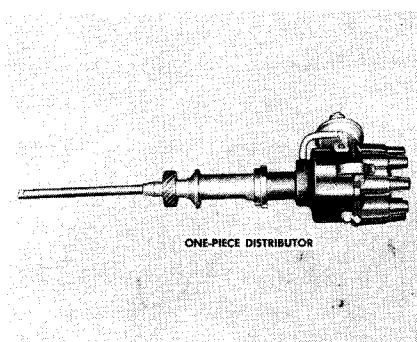
*For the driver who likes to rest his elbow on the window opening the window sill is 3-1/8" lower on all models.*



### AIR FILTER

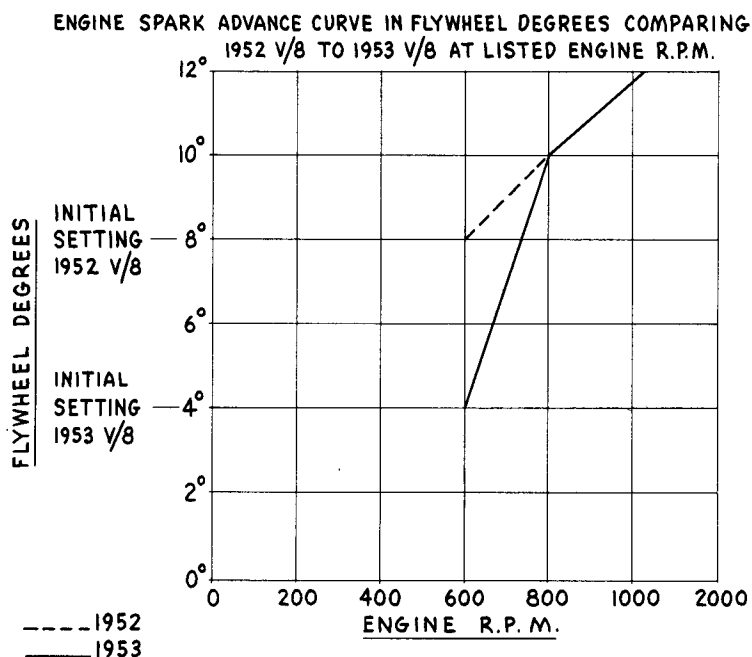
Engine wear caused by dust and abrasives entering the engine through the carburetor air stream has always been a problem. A highly efficient Fram, replaceable element type, air filter is used as standard equipment on all models. This filter will provide adequate protection against impurities entering the engine through the air stream when correctly serviced at the required intervals. Because of the more efficient filtering action it may require servicing more frequently than other types of dry air filters.

TO SERVICE: Remove the winged nut and retainer plate. Withdraw the filtering element and tap lightly against a solid object to dislodge dust and dirt from element. Do not immerse the element in any type liquid, or use an air hose to blow the element clean.



### DISTRIBUTOR

A new type distributor having a one-piece oil pump and distributor drive shaft is used on the V-eight engine. There are several advantages in using this type of drive shaft con-



struction. The widely spaced bushings give more support to the shaft and minimize ignition point bouncing at high speed. There is no possibility of misalignment between the distributor and the distributor drive shaft, therefore, no distributor assembly wobble.

The distributor has a new spark advance curve which permits later initial timing without sacrificing performance at part or full throttle speeds. Initial setting of the ignition timing is now 4° before top dead center instead of the 8° previously used. This later initial timing gives a smoother idling engine.

By changing the contour of the cam, operated by the centrifugal spark advance weights, an advance of 6° within 200 engine r.p.m. is obtained (600 to 800). Prior to this model distributor the advance was 2° within the same speed range. At 800 r.p.m. the automatic spark advance reaches 10°. From there on the spark advance follows the same pattern of the previous model distributors.

When it is necessary to remove the distributor it is

recommended that the engine be cranked until the rotor is in line with the #1 spark plug terminal in the distributor cap. Then place the "IGN" mark on the vibration damper flywheel directly under the pointer.

To install the distributor make sure the crankshaft is in the same position it was when the distributor was removed. Position the distributor so the spark modifier is to the front and pointing slightly toward the right.

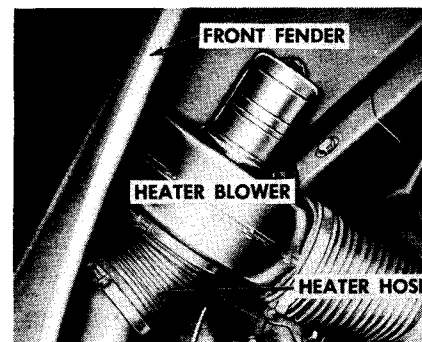
Turn the rotor approximately 30° clockwise and insert oil pump and distributor drive shaft into the cylinder block opening. When the teeth on the oil pump and distributor drive shaft gear engage the teeth on the camshaft gear, the rotor will turn counterclockwise. At the same time the tongue of the oil pump end of the oil pump and distributor drive shaft will enter the groove of the oil pump shaft. The distributor can then be seated on the cylinder block. The rotor will now point directly forward and be in line with No. 1 terminal of the distributor cap.

In the event the tongue of

the drive shaft does not readily enter the oil pump shaft hold down on the distributor and turn the engine until they do mesh. Since the rotor will turn with the camshaft the rotor position in regard to firing order will remain the same.

Point Setting .013" - .018"

Cam angle .018" - .024"



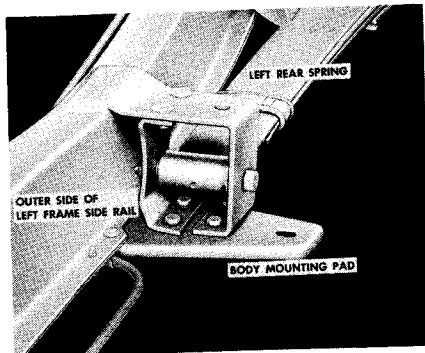
## CLIMATIZER

To provide more working space in the engine compartment the Climatizer blower assembly has been relocated. Since the assembly is completely sealed and requires very little servicing attention it has been placed out of the way under the right front fender on all models.

For easier installation the fresh air duct is constructed as part of the right front fender. A new type air hose, especially resistant to chemicals and abrasives, connects the blower motor to the heater core.

On Sedan models, the air hose passes through the fender apron, engine compartment and then to the heater core. On Coupe and Hard-Top models the air hose goes outside the fender apron and behind the wheel directly to the heater core.

When installing the Climatizer as an accessory it is important that the detailed instructions in the kit be carefully followed for the best results.



Land Cruiser 4". To the often the new models" the comparison repeated question of: "Just in the table will provide a how much more room is there in ready answer.

	Four-Door Sedan		Coupe and Hard-Top	
	1952	1953	1952	1953
Wheel base	115	116 1/2	115	120 1/2
Overall length	197 1/2	198 19/32	197 1/2	201 29/32
Overall height	61 1/4	60 1/2	61 1/4	56 5/16
Overall width	70 11/16	69 1/2	70 11/16	71
Overall at center pillar	67 3/8	69	67 3/8	71
Road Clearance	8	8	7 1/2	7 1/2

CHASSIS

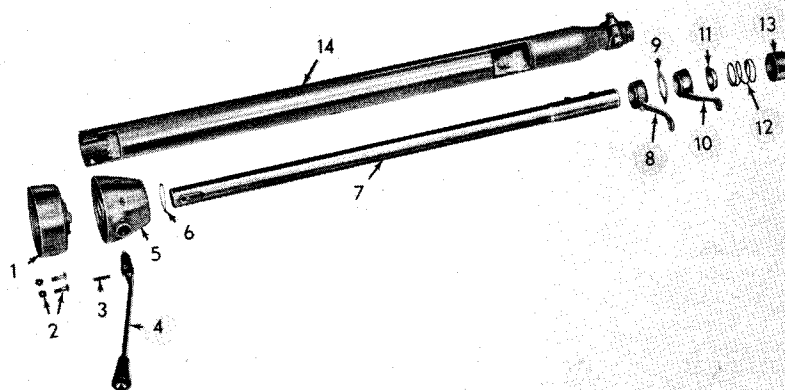
Stability? Superior riding comfort? Ease of handling? The 1953 Studebaker has them all.

Longer wheel base, lower center of gravity, softer rear spring action, wider rear axle tread, different weight distribution and improved shock absorber design, all contribute their part in making the new models outstanding performers.

Wheel bases have been increased 1-1/2" on sedans and Land Cruisers and 5-1/2" on coupes and hard top models. Rear spring deflection rate is lessened to provide a softer ride. Shock absorbers are designed to adjust control automatically to both boulevard and rough road operation. Rear spring hangers are mounted on the frame side rail instead of underneath thereby lowering the center of gravity. And the rear axle tread is 1-1/2" wider.

The dust covers on the front shock absorbers have been removed. Caution: When removing a front shock absorber do not grasp the shock absorber operating shaft with pliers. To do so will mar the surface and cause the seal to leak. Rear shock absorbers are the same on all models, except the Commander Coupe and Hard Top.

The low silhouette of the new models might give the impression that the inside of the car is smaller. Actually there is more head and leg room than ever before. All models have 2" or more leg room and the



CONVENTIONAL AND OVERDRIVE

- |                       |                           |
|-----------------------|---------------------------|
| 1. UPPER BRACKET      | 8. LOW AND REVERSE LEVER  |
| 2. UPPER BRACKET BOLT | 9. SPACER                 |
| 3. LEVER PIN          | 10. SECOND AND HIGH LEVER |
| 4. SHIFT SHAFT LEVER  | 11. SPRING RETAINER       |
| 5. LEVER SUPPORT      | 12. SPRING                |
| 6. SPRING WASHER      | 13. SPRING HOUSING        |
| 7. TUBE               | 14. JACKET                |

SHIFT LEVER & STEERING COLUMN

Transmission controls which give smoother operation, better appearance, and freedom from rattles are now a reality. The control shaft is a steel tube which slips over the steering shaft and is concealed by the steering post jacket. The gear shift control lever is inserted in the control shaft

and pinned to a housing mounted at the top of the jacket.

On cars equipped with conventional or overdrive transmissions, two shifting levers ride on the control shaft; the lower providing control for low and reverse gears and the upper lever, control for second and high gears. These levers are held firmly in an opening in the steering post jacket by

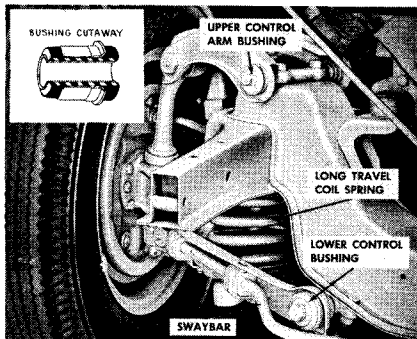
spacers and a spring. They are engaged by two keys placed on the control shaft so that either lever can be actuated.

An adapter collar mounted on the lever housing contains the upper steering post bearing and provisions for each mounting of directional signal controls.

Automatic Drive controls are adapted to this new design by replacing the upper steering post bearing collar with one containing the shift selector detents and the shift indicator. The gear shift control is replaced by one having a detent lug. The light for the shift indicator is mounted on the lever housing by removing a plate. Only one rod and lever are required to control the Automatic Drive. Therefore, the lower shifting lever on the operating shaft is replaced by a spacer. The upper shifting lever is replaced by one having a pin which operates the starter cut-out and back-up light switch attached to the steering post jacket.

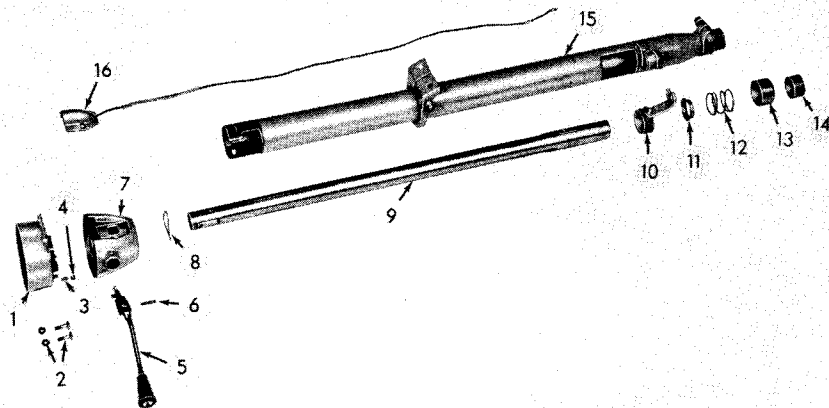
To prevent damage to the steering wheel when removing it from the post two threaded holes are now provided in the wheel hub for mounting a wheel puller.

A small bar-and-screw type puller with protector for horn wire contact is available. (Special Tool No. J-5473)



**INNER SHAFT, CONTROL ARMS**

Studebaker engineers are constantly striving to eliminate road operating noise and provide the smoothest, most



AUTOMATIC DRIVE

- |                          |                              |
|--------------------------|------------------------------|
| 1. UPPER BRACKET         | 9. TUBE                      |
| 2. UPPER BRACKET BOLTS   | 10. LEVER                    |
| 3. DETENT BALL           | 11. RETAINER                 |
| 4. DETENT SPRING         | 12. SPRING                   |
| 5. SHIFT SHAFT LEVER     | 13. SPRING HOUSING           |
| 6. SHIFT SHAFT LEVER PIN | 14. SPACER                   |
| 7. LEVER SUPPORT         | 15. JACKET                   |
| 8. SPRING WASHER         | 16. QUADRANT LIGHT AND CABLE |

quiet operation possible. With this thought in mind, the inner shaft of the upper and lower control arms are now mounted in rubber bushings having a steel center. In addition to absorbing road noise the rubber bushings will eliminate the possibility of premature failure of the parts due to the lack of lubrication. Eight lubrication fittings are eliminated.

To remove or install rubber bushings use Special Tool No. J5472.

*Climatizer has separate control for air, water and defroster operation.*

**BRAKES**

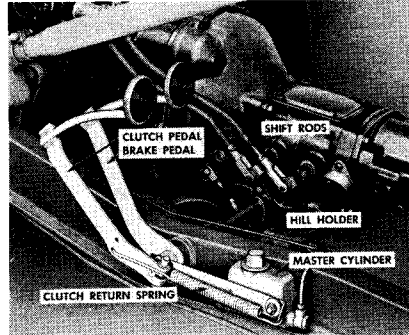
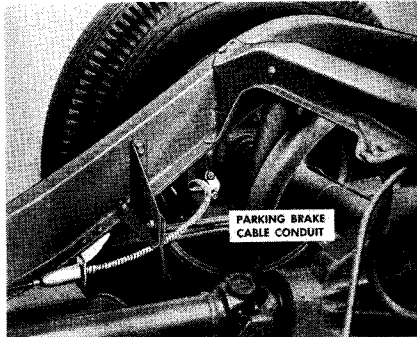
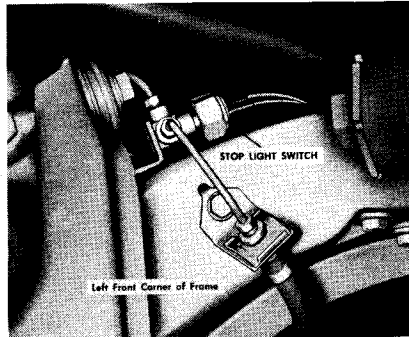
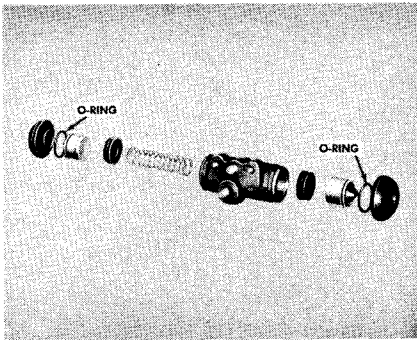
Significant changes have been made in the braking system of Commander and Champion models. New type brake lining on the Commander, a variable ratio for the brake pedal and retracting reverse shoes on

rear brakes, insulated wheel cylinder pistons, highlight the improvements made in the 1953 model brake systems.

It is generally known that repeated, severe brake application is the major cause for brake fading. The heat generated in this manner causes the friction coefficient of brake lining to change character rapidly.

On all Commander models a new type lining, Marshall Eclipse, is used. It is a more stable and fade resistant lining. It does not change its friction coefficient as rapidly and, as a result, better overall brake performance is obtained. Because of the excellent performance of the Champion model brake, the Comax 127 lining will continue in use.

The reverse shoe in the rear



brake assembly of all models is now retracted by a spring. The reverse shoe in the front brake assembly will not be retracted in this manner. It will continue to "float" and to provide the soft initial brake pedal application so desired by most drivers.

A change in the brake pedal design also give a mechanical advantage in this respect. The variable ratio of 9.8 to 1 at the beginning of the pedal movement gives sufficient leverage to initially apply the brakes with a minimum of effort. As the brake pedal moves toward the floor and pressure builds up the pedal ratio changes to a 7.4 to 1. This provides the firm pedal feel so necessary in properly gaging braking effort. Because of the smaller ratio toward the end of the pedal travel it also provides a better pedal reserve.

Rapidly moving parts, such as the wheel and brake drum, set up a resonance which sometimes is picked up by the brake backing plate and transmitted into a sound described as "brake squeal". To eliminate this noise the sound sequence is broken and dampened out by

insulated pistons in the wheel brake cylinder. All Commander models will be equipped with wheel brake cylinders having insulated pistons.

Parking brake cables are encased in metallic loom from the brake backing plate to a bracket inside the frame side rail just ahead of the rear spring front hanger location. The parking brake loom is sealed and prelubricated to keep out moisture and dirt.

Some drivers do not place their foot squarely on the brakes. Occasionally this will result in touching the accelerator at the same time the brakes are applied. By mounting the clutch and brake pedal outside of the frame side rail, additional space between the brake pedal and accelerator is made possible. The added space eliminates any chance of inadvertently hitting the accelerator.

In changing the method of mounting the brake pedal, it was also necessary to make some changes in the clutch operating shaft. The most important factor is a bracket fastened to the transmission supporting the inner end of the clutch operat-

ing shaft. Four different operating shafts are required to service the different models and body styles.

### AUTOMATIC DRIVE - COMMANDER

More flexible performance is made possible by a change in the automatic transmission unit for Commander models. The added feature permits part throttle downshift from drive direct to drive intermediate without depressing the accelerator all the way to the floor board.

With the transmission in direct drive and at 30 m.p.h. or under, the shift to drive intermediate can be made by simply depressing the accelerator in the same degree used in getting the car in motion.

This part throttle downshift allows a more rapid acceleration in traffic and provides automatic selection of a lower gear range in climbing steep grades.

When putting the car in motion, and by holding the throttle at wide open position, the transmission will upshift to direct drive at 39-41 m.p.h. as it did in the past. The full throttle kick-down feature has been retained to provide extra power in the driving range between 36-60 m.p.h.

### CYLINDER HEADS

Champion models equipped with Studebaker Automatic Drive will have a 7.5 to 1 compression ratio cylinder head as standard equipment. The 7.0 to 1 compression ratio cylinder head will be standard on Champions with regular and overdrive transmissions and on all Commanders.

*Throttle linkage has been redesigned to open the throttle more gradually in relation to foot accelerator travel. Smoother starts and less chance of spinning the wheels on ice is made possible by this change.*



## POWER STEERING

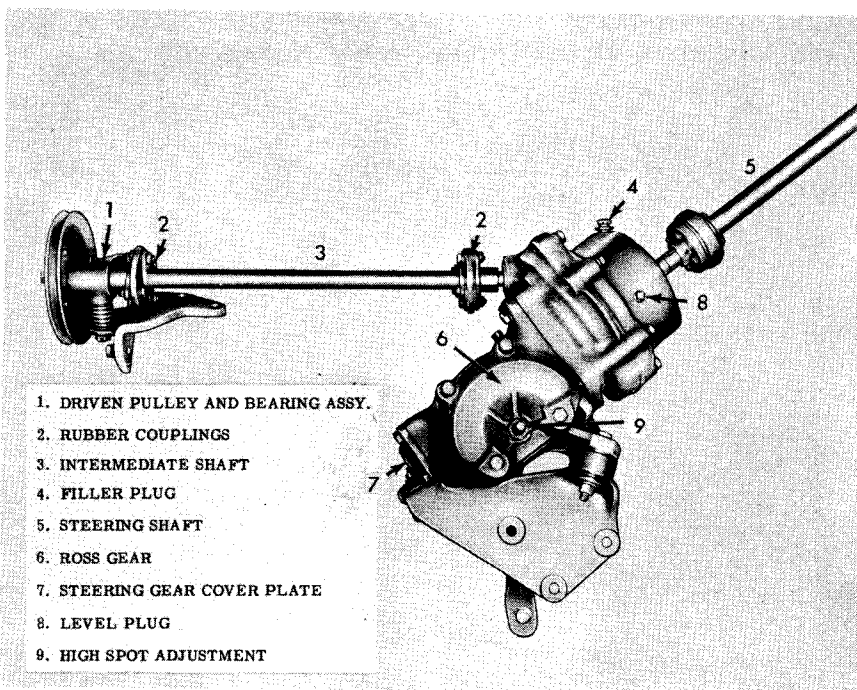
Studebaker Power Steering - something new and different in power steering. The first completely mechanical power steering in the automotive industry. It provides absolute steering control at a minimum of effort.

The performance of the Studebaker Power Steering is truly remarkable. Although only two pounds of effort on the steering wheel will place the power unit in operation the feeling of complete control is retained throughout the entire driving range.

The steering effort to park, to turn the stationary front wheels of a car equipped with the conventional type steering gear assembly is reduced by an approximate ratio of 4 to 1 by the Studebaker Power Steering. Thus, a maximum of 7-1/2 pounds pull and four complete turns of the steering wheel will swing the front wheels from far left to far right.

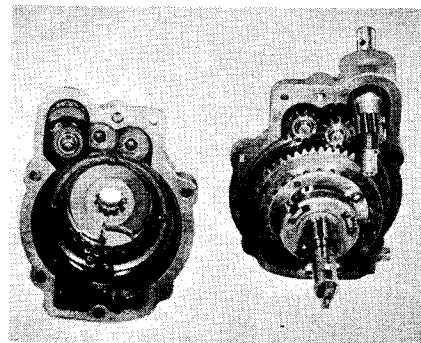
Studebaker Power Steering has a well defined road "sense" and acts with the driver under every driving condition. The feeling of stability is apparent to the driver because he is assured by a feel of turning effort at all times. It also has the highly desired ability of the conventional steering gear to automatically return to a straight away position after completing a turn.

The inherent stability of the Studebaker Power Steering makes it possible to drive over rough roads without touching the steering wheel. This is possible because the inertia of the steering wheel itself will energize the power unit to compensate for steering system deflection due to the bumps in the road. This same feature guards against possible loss of control in the event of a tire blowout, running off the road onto a soft shoulder, or hitting a depression in the road.



1. DRIVEN PULLEY AND BEARING ASSY.
2. RUBBER COUPLINGS
3. INTERMEDIATE SHAFT
4. FILLER PLUG
5. STEERING SHAFT
6. ROSS GEAR
7. STEERING GEAR COVER PLATE
8. LEVEL PLUG
9. HIGH SPOT ADJUSTMENT

How does Studebaker Power Steering achieve these amazing results? It is because Studebaker uses a cam and lever steering gear unit of an improved design having an overall ratio of 20 to 1. The cam followers are mounted in tapered roller bearings reducing turning effort to a minimum. Mounted on top of, and an integral part of, the steering unit is the power unit. Together they form the Studebaker Power Steering assembly.



The power unit is unusual in that it uses two multiple disc clutch assemblies to transmit power instantly and smoothly to the steering unit at the movement of the steering wheel. The principle of using multiple disc clutches for steering purposes is not new. They have been used in military and commercial tractors for many years with outstanding success. But its application to automotive steering is new. Other mechanical components of the power unit are well known to the engineering profession and have been used in various forms for many years.

What makes the power unit work? Energy to operate the

power steering unit is provided by the engine through a crankshaft pulley which is connected to a driven pulley and bearing assembly by means of a V belt. The driven pulley is connected to the power input shaft of the power steering unit by an intermediate shaft and two rubber disc couplings.

As a safety measure the driven pulley and bearing assembly is mounted in a spring loaded bracket. A torque load in excess of the predetermined amount will compress the spring, allow the drive belt to slip and prevent undue strain on the steering linkage and power steering mechanism.

Driving energy enters the power unit through the input shaft on which is mounted a

ratchet driven, spring loaded driving pinion. In mesh with, and driven by the driving pinion, are two other pinions located in the bottom half of the power unit. The first one rotates counterclockwise and drives the upper clutch drum and gear assembly which powers left turns. The second pinion gear is driven in clockwise rotation and drives the lower clutch drum and gear assembly providing power for right turns.

Each multiple disc clutch assembly has five driving plates with external teeth and five driven plates with internal teeth. They are mounted on a common clutch hub which is connected to the steering gear unit. At the time of assembly each clutch unit is preloaded, but since they turn in opposite directions, a static balance is obtained. Therefore, a steering effort of two pounds or more is required before the static balance is upset and power can be applied to either clutch assembly.

The clutch activating plate is mounted on the hub between the two multiple disc clutch assemblies. Three lugs on the clutch activating plate extend into the center of the clutch hub which is slotted for that purpose. The inside face of the three lugs have a spherical groove ground in their surface. Two balls in each lug of the clutch activating plate provide the connection with the clutch activating hub.

The clutch activating shaft is mounted inside the center of the multiple disc clutch hub and is supported by two ball bearing assemblies. Three spherical threads of 1-1/2" pitch form the hub and engage the balls located in the clutch activating plate. The shaft portion of the clutch activating hub is connected to the steering wheel extension shaft. A turn of the steering wheel will cause the clutch activating plate to raise, or lower on the spherical threads of the clutch activating hub, thereby engaging one or the other of the multiple disc clutches.

Mounted at the top end of the clutch hub is a clutch damper. It is composed of a stamped spring retainer in which three coil springs are mounted. The spring ends engage the clutch hub while the damper hub is splined to the clutch activating shaft. The major purpose of the damper is to speed the return to a static balance of the multiple clutches when steering effort falls below two pounds. It also prevents the possibility of clutch plate chatter.

A brief review will show, then, that power flows from the crankshaft pulley, V belt, driven pulley and bearing assembly, intermediate shaft, to the input shaft and pinion assembly of the power steering unit. These in turn drive the right and left turning pinions, multiple disc clutch drum and gear assemblies, and the driving plates of the multiple disc clutches. These are the driving parts and are in motion whenever the engine is started. The driving plates of the multiple disc clutches simply "freewheel" at this time.

By turning the steering wheel, either right or left, the multiple disc activating hub will cause the multiple disc activating plate to engage the clutch driven plates with the clutch driving plates. The multiple disc driving plates can no longer freewheel and power is exerted on the clutch hub and steering gear unit causing the front wheels to turn in the desired direction.

In the event of a power failure (engine stoppage or drive belt breakage), the Studebaker Power Steering retains full and positive control. The car will handle and feel substantially the same as though there were only the conventional steering gear. However, turning the steering wheel under these conditions manually overrides the power unit and there will be a ratcheting noise. This sound is entirely normal.

The reason for the ratchet-

ing noise under these conditions is quite simple. When turning the steering wheel without the benefit of the power, the power unit will try to turn the engine, or with an inoperative drive belt, the power input shaft and driven pulley assembly.

Since the driving pinion is spring loaded, the resistance offered by the power input shaft and related parts is greater than the spring strength so the spring will compress and allow the pinion to be disengaged from the ratchet on the input shaft. After the high points of the ratchet and driving pinion teeth pass each other the spring will force the teeth back into engagement. This continues as long as the steering unit is being operated manually and results in the ratcheting noise.

To tighten the drive belt, loosen cap screw at adjusting arm and raise driven pulley and bearing assembly until the plain washer under the castle nut is just free. Tighten adjusting arm cap screw.

**LUBRICATION** For best results, use only Studebaker Steering Power Unit Fluid (AC-2407) in the case of the power steering unit. If an owner must add to or refill his power steering unit cast at a location where he cannot get the Studebaker Fluid, use a good quality of S.A.E. No. 10W engine oil. This oil will lubricate the power unit adequately and is not harmful in any way. There may be some noise, and if it is objectionable, drain and refill with AC-2407 Steering Power Unit Fluid at the first opportunity.

Drain and refill the power steering unit every 10,000 miles (16090 km.).

*Tail pipe outlets of all cars have been relocated so that exhaust gases are discharged in back of, and into the air stream from, the right rear wheel. This prevents exhaust fumes from entering the car.*



MR. SERVICEMAN -

GET

ACQUAINTED!

Now is the time to get acquainted! Start these beautiful new '53 Studebakers off right. Introduce the proud owner to his car and to yourself. Let this Dealer Service Policy for Studebaker Owners be your bond.

Be sure the owner understands what to expect from this dependable automobile; what to expect from you and what is expected of him. A mutual understanding of the initial service requirements of this fine vehicle between yourself and the owner, will establish a firm, harmonious relationship.

To place the car most advantageously in this car-owner-serviceman relationship it must be properly groomed for the introduction. Follow completely the service inspections listed on form H350 "Preparation of New Vehicle for Retail Delivery."

Your adherence to the instructions covering preparation for delivery and a thorough understanding of the provisions of the Dealer Service Policy will mean success for you and owner satisfaction with the new 1953 Studebaker.

The rear seat shelf has a knock-out plate to provide for easy installation of rear seat radio speaker.

Smoother acting window operation is made possible by full length guide channels for the window glass.

Larger rear view mirrors placed at the center of the windshield increases the range of rear view.

The dome light switch in the sedan models is conveniently located over the left shoulder of the driver.

The fan on the bottom of the converter housing has been improved to provide better cooling.

ENGINE OIL

TYPES OF OIL There are three terms now coming into use in designating types of oils for gasoline automobile engines. You can tell the type by the labeling on the container, such as "For Service MS" or "For Service MM" or "For Service ML."

We recommend for use in Studebaker engines, oils from containers bearing the label "For Service MS."

If you are sure your car's type of service falls in the "For Service MM" classification below, you may use this type of oil as an alternate to the "For Service MS" type. We specifically recommend against the use of oil labeled only "For Service ML" in Studebaker engines.

The above terms "For Service MS" and "For Service MM" are relatively new.

If you cannot get engine oil under these label designations, we recommend that you use only oil labeled "Heavy Duty" or "Premium-Heavy Duty."

Here are the meanings of the types for Service MS and MM:

"For Service MS." This designation normally represents severe service conditions of operation. The definition "severe service" includes (1) start and stop, short run type of operation so often encountered in urban areas and (2) high temperature, heavy load, or sustained high speed operation.

Engine crankcase oils bearing the "For Service MS" symbol will, in general, possess the corrosion resistance and viscosity characteristics to afford maximum protection against the above severe service conditions.

"For Service MM." This designation represents moderate operating conditions where the engine temperature differences, due to start and stop driving, are not as great as those prevailing in some parts of the country during cold weather or winter operation and where relatively high speeds are encountered only intermittently. It does not, however, include extensive start and stop type of operating or prolonged idling which some vehicles are, of necessity, subjected to.

Crankcase engine oils bearing the "For Service MM" symbol will, in general, possess the characteristics of the "For Service MS" engine oils but to a lesser degree in accordance with the less severe type of service for which they are intended.

GENERAL SPECIFICATIONS

GENERAL	CHAMPION	COMMANDER
Overall length (bumper to bumper).	198-9/16" (a) 201-15/16" (b)	198-9/16" (a) 201-15/16" (b) 202-9/16" (c)
Overall width (over fenders) . . .	69-1/2" (a)	71" (b) 69-1/2" (a,c) 71" (b)
Overall height (loaded). . . . .	60-1/2" (a) 56-5/16" (b)	60 1/2" (a,c) 56-5/16" (b)
Wheelbase. . . . .	116-1/2" (a) 120-1/2" (b)	116-1/2" (a) 120-1/2" (b,c)
Tread (front-rear) . . . . .	56-1/2" -- 55-1/2"	56-1/2" -- 55-1/2"
Turning radius (left). . . . .	19' 6" (a) 20' 3" (b)	19' 6" (a) 20' 3" (b,c)
Turning radius (right) . . . . .	19' 6" (a) 20' 3" (b)	19' 6" (a) 20' 3" (b,c)
Tire size (4 ply). . . . .	6.40x15	7.10x15
Rim width. . . . .	5"	5"
Minimum road clearances. . . . .	7-7/8" (a) 7-1/4" (b)	8-15/32" (a,c) 7-1/4" (b)
Frame. . . . .	Ladder type	Ladder type
Frame -- cross members . . . . .	5	5
Est. shipping wt. (4-dr. sedan). .	2800 lbs.	3150 lbs.--3195 lbs. L.Cruiser
Est. curb wt. (4-dr. sedan). . . .	2936 lbs.	3306 lbs.--3350 lbs. L.Cruiser

ENGINE

Type and No. of cylinders. . . . .	L -- 6	I -- V-8
Bore and stroke. . . . .	3" x 4"	3-3/8" x 3-1/4"
Piston displacement. . . . .	169.6 cu. in.	232.6 cu. in.
Horsepower (brake) . . . . .	85 at 4000 r.p.m.	120 at 4000 r.p.m.
Horsepower (taxable) . . . . .	21.6	36.4
Engine torque (lb. ft.). . . . .	138 at 2400 r.p.m.	190 at 2000 r.p.m.
Compression ratio (standard) . . .	7.0 to 1	7.0 to 1
Compression ratio Automatic Drive.	7.5 to 1	7.0 to 1
Compression ratio (opt. for high alt. . . . .)	7.5 to 1	7.5 to 1
Pistons -- "Heat Dam" type . . . .	Aluminum alloy tin plated	Aluminum alloy tin plated
Piston Rings . . . . .	3	3
Main and connecting rod bearings .	Replaceable, steel-backed, micro-babbitt	Replaceable, steel-backed, micro-babbitt
Crankshaft . . . . .	Drop-forged steel with integral counterweights	Drop-forged steel with integral counterweights
Camshaft drive . . . . .	Non-metallic gear	Non-metallic gear
Torsional vibration damper . . . .	Rubber mounted disc	Rubber mounted disc
Engine lubrication . . . . .	Full pressure to main, con- necting rod and camshaft bearings; and to valve tappets	Full pressure to main, con- necting rod and camshaft bearings; and valve tappets, rocker arms and fuel pump
Oil intake screen. . . . .	Floating	Floating
Oil filter . . . . .	Extra cost	Extra cost (standard on Land Cruiser)
Crankcase oil capacity . . . . .	5 qts.	6 qts.
Valve seats. . . . .	Integral	Integral
Water jackets. . . . .	Full length	Full length
Radiator (type). . . . .	Cellular -- tubular	Cellular -- tubular
Radiator cap . . . . .	Pressure type	Pressure type
Cooling system capacity. . . . .	10 qts.	17-1/4 qts.
Ignition control . . . . .	Automatic, with octane selector	Automatic, with octane selector
Carburetor . . . . .	Single barrel, down draft, with automatic fast idle and throttle body heater	Dual barrel, down draft, with automatic fast idle

(a) 2- and 4-door sedans  
(b) Coupe and Hard-top  
(c) Land Cruiser

GENERAL SPECIFICATIONS-Cont'd

ENGINE-Cont'd

	CHAMPION	COMMANDER
Choke . . . . .	Automatic	Automatic
Manifold heat control . . . . .	Automatic	Automatic
Fuel tank capacity . . . . .	18 gallons	18 gallons

ELECTRICAL

	CHAMPION	COMMANDER
Generator (type) . . . . .	Shunt wound	Shunt wound
Generator output (max.) . . . . .	45 amp.	45 amp.
Generator control . . . . .	Voltage, current and cut-out	Voltage, current and cut-out
Battery (safety-fill type) . . . . .	Under hood left fender	Under hood left fender
Battery -- plates and amp. hours . . . . .	15 - 100	15 - 100
Spark plug caps . . . . .	Moisture-proof	Moisture-proof
Tail and stop lights . . . . .	2	2
Horns . . . . .	2 (1 on custom)	2
Starter . . . . .	Safety type, operated by clutch pedal. (Push button with Automatic Drive.)	Safety type, operated by clutch pedal. (Toggle switch with Automatic Drive.)

CHASSIS

	CHAMPION	COMMANDER
Front suspension . . . . .	Independent coil	Independent coil
Rear suspension . . . . .	Wide leaf springs, 4 leaves 50" x 2-1/2", plastic liners	Wide leaf springs, 4 leaves 50" x 2-1/2", plastic liners
Rear spring shackles . . . . .	Rubber bushed	Rubber bushed
Shock absorbers . . . . .	Direct acting, tubular	Direct acting, tubular
Shock absorber mountings . . . . .	Rubber bushed	Rubber bushed
Stabilizers . . . . .	Front	Front--(rear also on L. Cruiser)
Steering linkage . . . . .	Symmetrical, center-point	Symmetrical, center-point
Steering linkage joints . . . . .	Needle bearings and ball-and-socket	Needle bearings and ball-and-socket
Power steering (mechanical type) . . . . .	----	Optional at extra cost
Brakes (type) . . . . .	Hydraulic, foot regulated	Hydraulic, foot regulated
Brakes (operation) . . . . .	Self-adjusting, self-centering	Self-adjusting, self-centering
Brake drums -- dia. and surface . . . . .	9" cast iron front and rear	11" cast iron, front -- 9" cast iron rear
Brake lining area . . . . .	144"	160"
Braking distribution . . . . .	57%--front 43%--rear	62%--front 38%--rear
Parking brakes . . . . .	Direct to rear wheels	Direct to rear wheels
Drive shaft . . . . .	2 piece	2 piece
Universal joints . . . . .	3 with needle roller bearings	3 with needle roller bearings
Rear axle gear ratio . . . . .	4.10 to 1 std.	4.09 to 1 std.
(with standard transmission) . . . . .	----	4.55 to 1 optional
Rear axle gear ratio . . . . .	4.56 to 1 std.	4.55 to 1 std.
(with overdrive) . . . . .	4.10 to 1 opt.	4.09 to 1 opt.
Rear axle gear ratio . . . . .	4.10 to 1 std.	3.54 to 1 std.
(with automatic drive) . . . . .	3.54 to 1 opt.	----
Overall ratio -- engine to axle . . . . .	4.10 to 1 std.	4.09 to 1 std.
(with standard transmission) . . . . .	----	4.55 to 1 opt.
Overall ratio -- engine to axle . . . . .	3.19 to 1 std.	3.19 to 1 std.
(with overdrive) . . . . .	2.87 to 1 opt.	2.86 to 1 opt.
Overall ratio -- engine to axle . . . . .	4.10 to 1 std.	3.54 to 1 std.
(with automatic drive) . . . . .	3.54 to 1 opt.	----
Rear axle drive . . . . .	Hotchkiss	Hotchkiss
Rear axle gears . . . . .	Hypoid	Hypoid
Transmission gears . . . . .	Silent, helical	Silent, helical

GENERAL SPECIFICATIONS-Cont'd

GEAR RATIOS:	CHAMPION	COMMANDER
Low . . . . .	2.60 to 1	2.57 to 1
Second . . . . .	1.63 to 1	1.55 to 1
High . . . . .	1.00 to 1	1.00 to 1
Overdrive (*) . . . . .	.70 to 1	.70 to 1
Reverse . . . . .	3.53 to 1	3.48 to 1
(*) on overdrive transmissions only		
Clashless gear synchronizers . . .	Second and high	Second and high

Automatic Drive Gear Ratios:

Low . . . . .	2.31 to 1	2.31 to 1
Intermediate . . . . .	1.43 to 1	1.43 to 1
Direct . . . . .	1.0 to 1	1.0 to 1
Reverse . . . . .	2.0 to 1	2.0 to 1
Maximum torque converter torque ratio . . . . .	2.16 to 1	2.16 to 1
Ratios shown are for gears only. Overall ratio equals gear ratio plus torque converter - except in Direct drive.		

BODY

Front seat Adjustment (total) . . .	5-1/2"	5-1/2"
Door latches . . . . .	Rotary	Rotary
Door locks -- exterior . . . . .	Both front doors	Both front doors
Door locks -- interior . . . . .	Push button	Push button
Deck lid hinges . . . . .	Counterbalanced spring	Counterbalanced spring
Body construction . . . . .	All-steel welded	All-steel welded
Hood lock control . . . . .	External	External

SOME COMMON SPECIFICATIONS

BRAKE SYSTEM

	CHAMPION	COMMANDER
Brake lining material . . . . .	CoMaX 127	Marshall 2607
Drum size . . . . .	9" (228,6 mm.)	Front 11" (279,4 mm.) Rear 9" (228,6 mm.)
Total braking area . . . . .	144 sq. in. (929 sq. cm.)	160 sq. in. (1032 sq. cm.)
Brake power -- front wheels . . .	57%	62%
-- rear wheels . . . . .	43%	38%

CLUTCH

	CHAMPION	COMMANDER
Make . . . . .	Borg & Beck	Borg & Beck
Vibration damper . . . . .	Yes	Yes
Clutch driven discs . . . . .	1	1
Clutch facings . . . . .	Composition	Composition
Facing inside diameter . . . . .	5-3/8" (136,525 mm.)	6" (152,4 mm.)
Facing outside diameter . . . . .	8" (203,2 mm.)	9-1/4" (235,0 mm.)
Facing thickness . . . . .	.125" (3,175 mm.)	.125" (3,175 mm.)
Facings required . . . . .	2	2

**SPECIFICATIONS-Cont'd.**

**COOLING SYSTEM**

ITEM	CHAMPION	COMMANDER	
Capacity } U. S. Quarts. . . . .	10.0	17.50	
	Imperial Qts. . . . .	8.35	14.5
	Liters. . . . .	9.50	16.6
Radiator core -- make. . . . .	McCord	McCord	
-- frontal area. . . . .	366.89 sq. in.	366.89 sq. in.	

**ELECTRICAL SYSTEM**

IGNITION	CHAMPION	COMMANDER
Distributor -- make. . . . .	Auto-Lite	Delco-Remy
-- model. . . . .	IAT 4010	1110839
Centrifugal advance maximum - crankshaft degrees. . . . .	14°	32°
Vacuum advance maximum -- crank- shaft degrees. . . . .	20°	18°
Spark timing. . . . .	2° before U.D.C. (Ign. Mark) Vibration Damper Fly- wheel	4° before U.D.C. (Ign. Mark) Vibration Damper Fly- wheel
Distributor point gap. . . . .	.020" (0.51 mm.)	.013"- .018" (0.33 mm.-0.46 mm.)
Cam angle. . . . .	38° -- 40°	28° -- 34°
Spark plug gap. . . . .	.0225" to .0275"	.0325" to .0375"
Spark plug thread. . . . .	14 mm.	14 mm.
Spark plug make. . . . .	Champion	Champion
Spark plug model. . . . .	J-7	H-10
Firing Order. . . . .	1-5-3-6-2-4	1-8-4-3-6-5-7-2
Distributor breaker arm tension. . . . .	17 to 20 oz.	17 to 21 oz.

**GENERATOR**

Maximum controlled charging rate -- Temperature. . . . .	70° F. (21, 11°C.)	70° F. (21, 11°C.)
Amperes. . . . .	44 - 46	44 - 46
Voltage. . . . .	7.35	7.6
R.P.M. . . . .	2500	2400
Voltage regulator -- Volts. . . . .	7.0 - 7.7 @ 70°F.	7.15 - 8.05 @ 70°F.
Current regulator -- Amperes. . . . .	44-46 @ 70°F.	44-46 @ 70°F.



SPECIFICATION S-Cont'd.

FRONT SUSPENSION AND STEERING

	CHAMPION	COMMANDER
Front wheel toe-in . . . . .	1/16" to 1/8"	1/16" to 1/8"
Caster angle . . . . .	--1° to --2-1/2°*	--1° to --2-1/2°*
Front wheel camber angle . . . . .	0° to +1° **	0° to +1° **
King pin inclination . . . . .	5-1/4°	5-1/4°
Turning diameter . . . . .	C-K models 40' to 41'	C-K-Y models 40' to 41'
	W-F models 38-1/2' to 39-1/2'	W-F models 38-1/2' to 39-1/2'
Tread -- front . . . . .	56-1/2" (1435,1 mm.)	56-1/2" (1435,1 mm.)
-- rear . . . . .	55-1/2" (1409,7 mm.)	55-1/2" (1409,7 mm.)
Outside wheel angle with inside wheel at 20°	17° - 18°	17° - 18°
*Not more than 3/4° variation between wheels.		
**1/2° more camber favored on driver's side.		

GASOLINE SYSTEM

Gasoline tank capacity . . . . .	18 U.S. Gal. 15 Imp. Gal. 68,1 Liters	18 U.S. Gal. 15 Imp. Gal. 68,1 Liters
Carburetor -- make . . . . .	Carter	Stromberg
-- model . . . . .	WE-989-S	WWUVL-26
-- size . . . . .	1-1/4" (31,75 mm.)	Dual 1-1/8" (25,58 mm.)

REAR AXLE

Make . . . . .	Salisbury	Salisbury
Road Clearance . . . . .	8" (203,2 mm.)	8-3/16" (207,96 mm.)
Lubrication capacity . . . . .	2.50 U.S. Pts. 2.08 Imp. Pts. 1,175 Liters	3.00 U.S. Pts. 2.50 Imp. Pts. 1,43 Liters

# Variations in Equipment and Trim

**CHAMPION**

**COMMANDEER**

	Custom	Deluxe	Regal	Deluxe	Regal	Land Cruiser
Arm rests (side) front & rear	Accessory	Standard (a)	Standard	Standard (a)	Standard	Standard
Arm rest (center) rear	Accessory	Coupe only	Coupe & Hardtop	Coupe only	Coupe & Hardtop	Standard (folding)
Ash trays rear	Accessory	Accessory (except 1 std. in Cpe.)	2 (except 1 std. in Cpe. & Hardtop)	2 (except 1 std. in Cpe. & 2-dr.)	2 (except 1 std. in Cpe. & Hardtop)	1 back of front seat
Assist straps with integral coat hook, 2 & 4-dr. Sed. only	Accessory	Accessory—4-dr.; Std. 2-dr.	Accessory—4-dr.; Std. 2-dr.	Accessory—4-dr.; Std. 2-dr.	Accessory	Standard
Coat hooks 2 & 4-dr. Sed. only	Accessory	Std. 4-dr.; access. 2-dr.	Std. 4-dr.; access. 2-dr.	Std. 4-dr. access. 2-dr.	Std. 4-dr.	Accessory
Automatic dome light, plus manual switch, 2 & 4-dr. Sed. only	Manual only	Standard	Standard	Standard	Standard	Standard
Automatic courtesy light plus manual switch Cpe. & Hardtop	Accessory	Standard	Standard	Standard	Standard	Standard
Automatic trunk light	Accessory	Full length	Full length	Full length	Full length	Full length
Chrome instrument panel moldings	Left side only	Accessory	Accessory	Accessory	Accessory	Standard
Electric clock	Accessory	Leatherette	Leatherette	Leatherette	Leatherette	Standard
Door scuff panels	None	None	None	None	None	Leatherette
Deck lid name plate	None	Accessory	Accessory	Accessory	Accessory	Standard
Front fender ornament	Accessory	Rubber	Rubber (Hard-top carpet)	Rubber	Rubber	Accessory
Floor covering front	Rubber	Rubber	Carpet	Rubber	Carpet	Carpet
Floor covering rear	Rubber	Extra cost;	Standard	Standard	Standard	Carpet
Foam rubber seat cushions	Extra cost	Std. on Cpe.	Standard	Standard	Standard	Standard
Glove compartment lock	None	Standard	Standard	Standard	Standard	Standard
Head light & Tail light rims	Painted	Chrome	Chrome	Chrome	Chrome	Chrome
Hill-holder	Extra cost	Extra cost	Extra cost	Extra cost	Extra cost	Standard
Hood top ornament	None	Std. except access. on Cpe.	Std. except access. on Cpe. & Hardtop	Std. except access. on Cpe. & Hardtop	Std. except access. on Cpe. & Hardtop	Standard
Luggage compartment mat	None	Rubber except Mattex in Coupe	Rubber except Mattex in Coupe	Rubber except Mattex in Coupe	Rubber except Mattex in Coupe	Mattex
Oil filters	Accessory	Accessory	Accessory	Accessory	Accessory	Standard
Robe cord	None	None	None	None	None	Standard
Steering Wheel	2 spoke rubber—Metal horn button	2 spoke rubber—Plastic horn button	3 spoke rubber—Horn ring	3 spoke rubber—Horn ring	3 spoke plastic—Horn ring	3 spoke plastic—Horn ring
Sun visor	One	Two	Two	Two	Two	Two
Upholstery — seats	Bedford Cord (b)	Pile & Cord (b)	Woolen Broadcloth (b,c)	Woolen Broadcloth (d)	Nylon — Lurex (c,d)	Nylon cord & pile (taupe or blue) or 2-tone broadcloth (d)
Windshield and rear window reveal moldings	None	Stainless steel	Stainless steel (e)	Stainless steel	Stainless steel (e)	Stainless steel (e)
Window vent wings front	Standard	Standard	Standard	Standard	Standard	Standard
Window vent wings rear	None	Std. Coupe	Std. Coupe & Hardtop (f)	Std. Coupe	Std. Coupe & Hardtop (f)	Standard
Windshield wiper	Vacuum (g)	Vacuum (g)	Vacuum (g)	Electric 2-speed	Electric 2-speed	Electric 2-speed

NOTES:  
 (a) None in rear of deluxe coupe.  
 (b) Scarlet Red or Golden Tan opt. extra cost.  
 (c) On all Hardtops Airway Gray nylon or Cardinal Red nylon is standard. Scarlet Red or Golden Tan pleated vinyl leatherette opt. at no extra cost.

PRINTED IN U. S. A.  
 15313.6M