

PASSENGER CARS

1951



CHEVROLET
ENGINEERING
FEATURES

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1951
ENGINEERING FEATURES
PASSENGER CARS

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FOREWORD

The advances in styling and mechanical design, that have been made in the Chevrolet passenger cars for 1951, are described in this book to give you a preview of the new models.

These cars soon will be introduced to the public, but, until then, the contents of this book should be kept confidential.



E. H. Kelley
Chief Engineer

THE CHEVROLET LINE FOR 1951	page 8
EXTERIOR STYLING	page 23
INTERIOR STYLING	page 30
BODIES AND SHEET METAL	page 40
ENGINE AND CHASSIS	page 42
EXTRA-COST EQUIPMENT	page 50
SPECIFICATIONS	page 53
INDEX	page 56

STYLELINE DE LUXE 4-DOOR SEDAN



THE CHEVROLET LINE FOR 1951

Chevrolet passenger cars for 1951 feature distinctly new appearance and numerous mechanical refinements. From a completely new radiator grille to longer lines for the integral fenders in the rear, many details have been restyled to create an impression of lower and longer appearance. With overall dimensions essentially unchanged, however, the Chevrolet remains a comfortably roomy car that is easy to maneuver in congested areas.

An instrument panel of new design highlights the interiors which incorporate changes in fabrics and colors as well. The instruments are grouped in two circular clusters in front of the driver, and an overhanging crown across the top of the new panel shields the windshield from the instrument lights. The control knobs occupy a safe, convenient location along the recessed base of the panel. In De Luxe models, a full circle horn blowing ring replaces the semicircular ring of 1950.

A complete change in the design of the brakes reduces, by as much as twenty-five per cent, the pressure that must be exerted on the brake pedal for a given rate of deceleration, because every brake shoe is now self-energized in both forward and reverse motion of the car. Braking is smoother with less tendency toward grabbing and greater freedom from brake surge. At the same time, the bonded linings have even longer life than before, and all are de-

signed to wear at more nearly the same rate. Other chassis refinements have resulted in a reduction in vibrations, and several minor engine improvements are adopted.

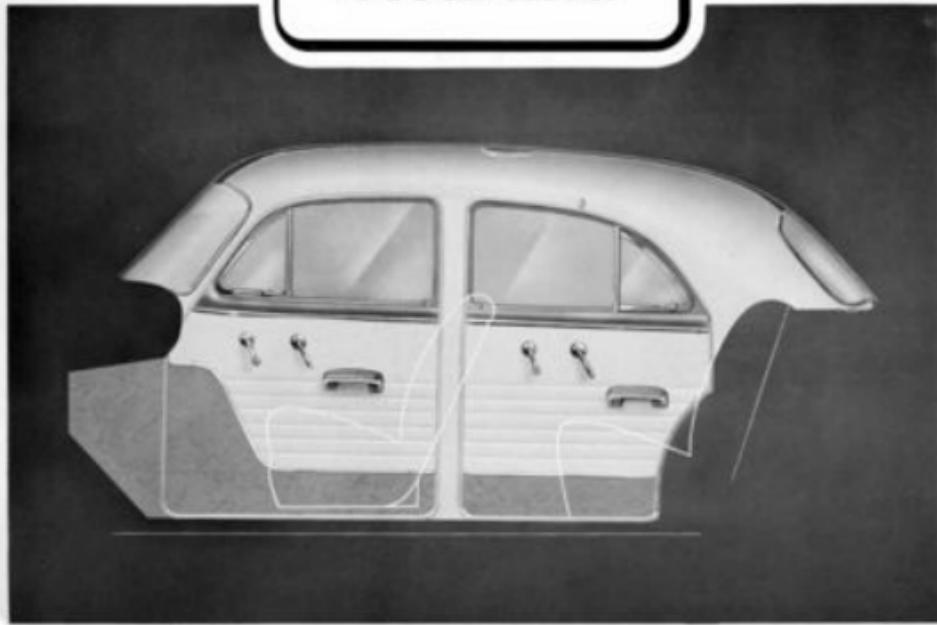
First in its field to produce an automatic transmission, Chevrolet continues to offer the torque converter transmission and 105 HP engine package at the customer's option on De Luxe models, as introduced in 1950. It is improved with some minor changes, but the basic design has not been altered.

As shown in the chart below and in the illustrations which follow, fourteen models comprise the 1951 line. As before, a wide choice of body styles with essential items of equipment is offered in the six models of the Special Series, while an even larger selection of more luxuriously appointed body styles is provided in the eight De Luxe models. As in the past two years, the sedans again are built in two styles, the Styleline and the Fleetline.

SERIES	BODY LINE	MODEL	BODY STYLE	PASSENGER RATING
2100 DE LUXE	STYLELINE	2103	4-DOOR SEDAN	SIX
		2102	2-DOOR SEDAN	SIX
		2124	SPORT COUPE	SIX
		2134	CONVERTIBLE COUPE	FIVE
		2154	BEL AIR COUPE	SIX
		2119	STATION WAGON	EIGHT
	FLEETLINE	2153	4-DOOR SEDAN	SIX
		2152	2-DOOR SEDAN	SIX
1500 SPECIAL	STYLELINE	1503	4-DOOR SEDAN	SIX
		1502	2-DOOR SEDAN	SIX
		1524	SPORT COUPE	SIX
		1504	BUSINESS COUPE	THREE
	FLEETLINE	1553	4-DOOR SEDAN	SIX
		1552	2-DOOR SEDAN	SIX

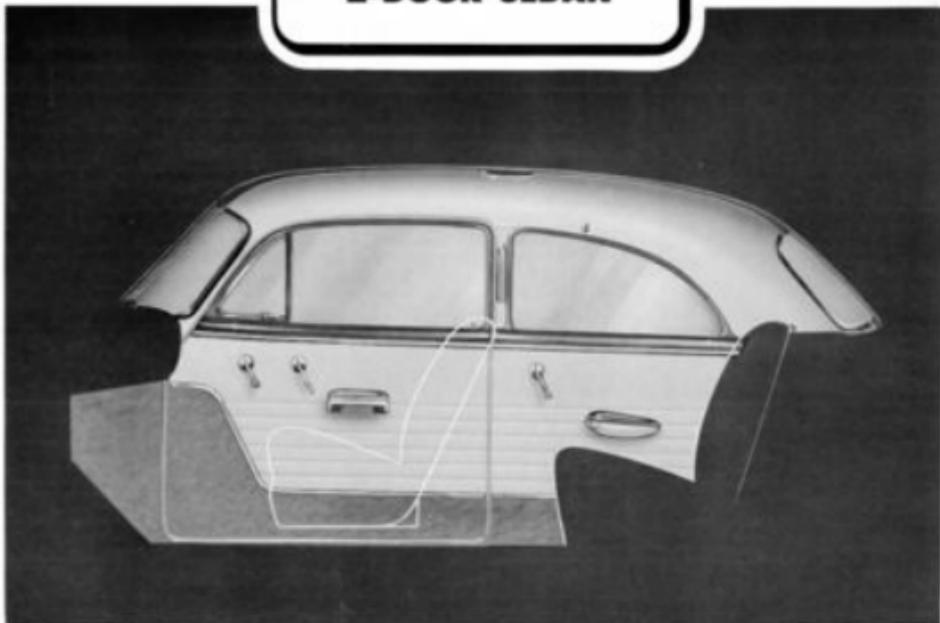


STYLELINE DE LUXE
4-DOOR SEDAN



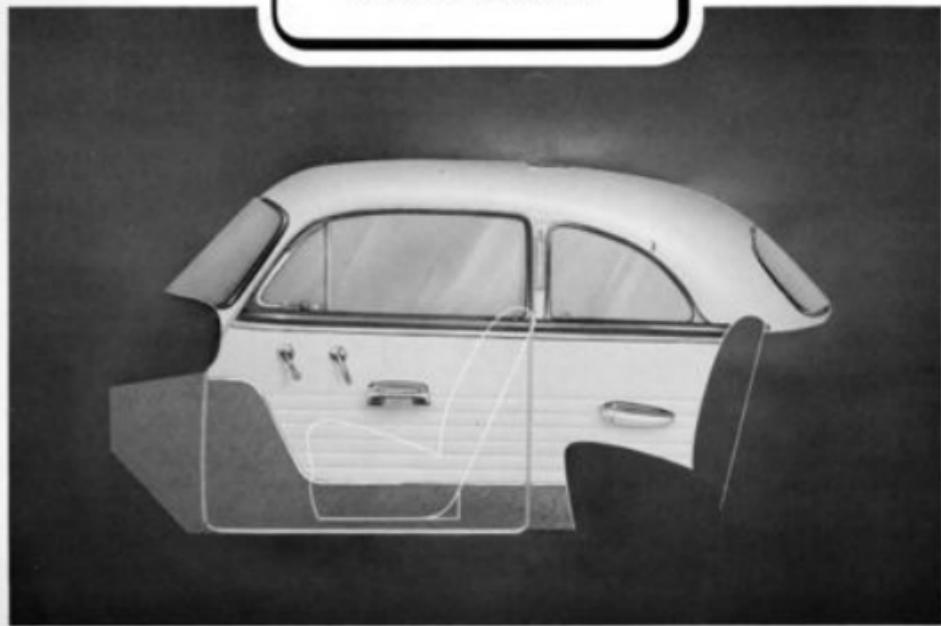


STYLELINE DE LUXE
2-DOOR SEDAN



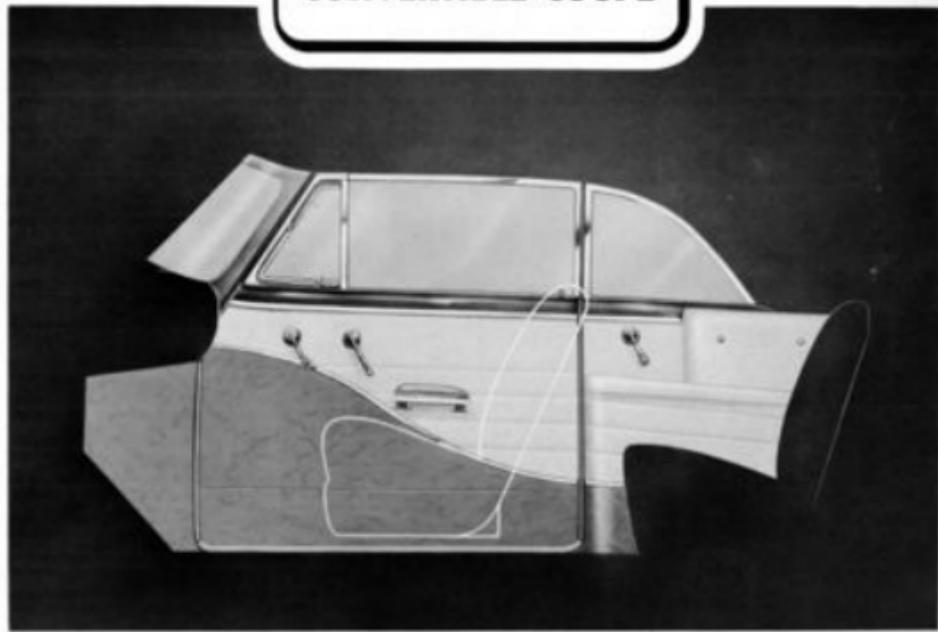


**STYLELINE DE LUXE
SPORT COUPE**



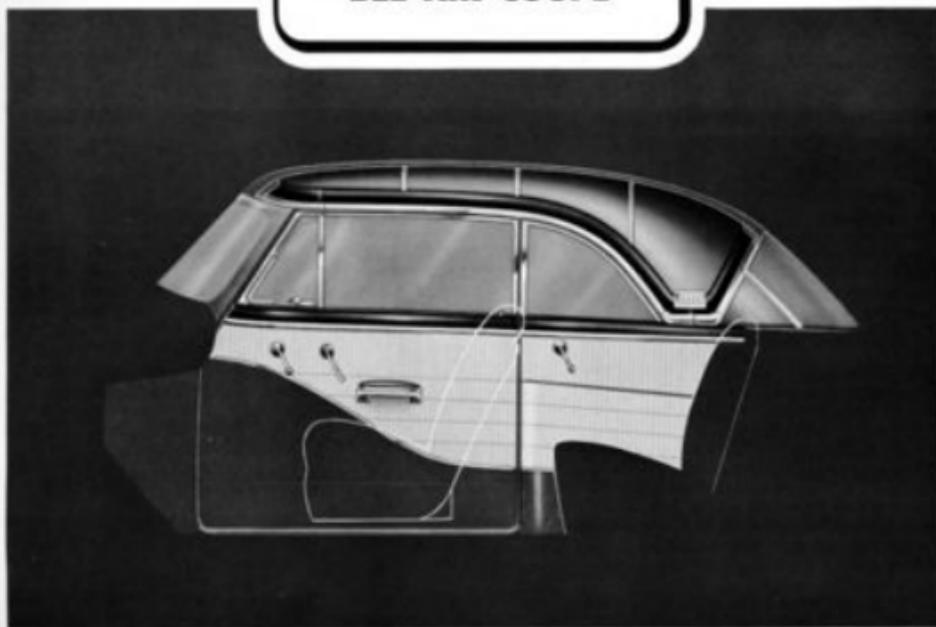


**STYLELINE DE LUXE
CONVERTIBLE COUPE**



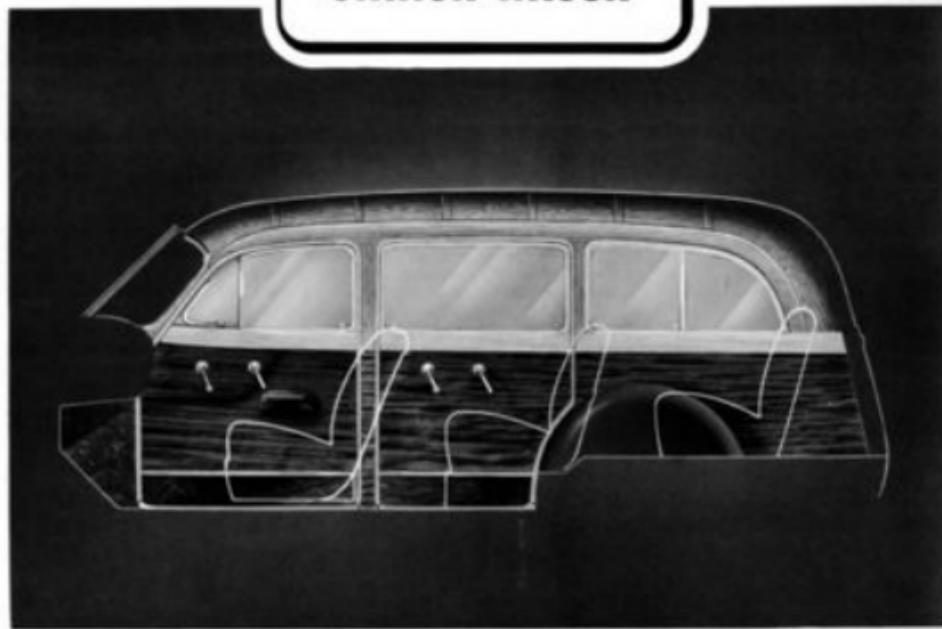


**STYLELINE DE LUXE
BEL AIR COUPE**



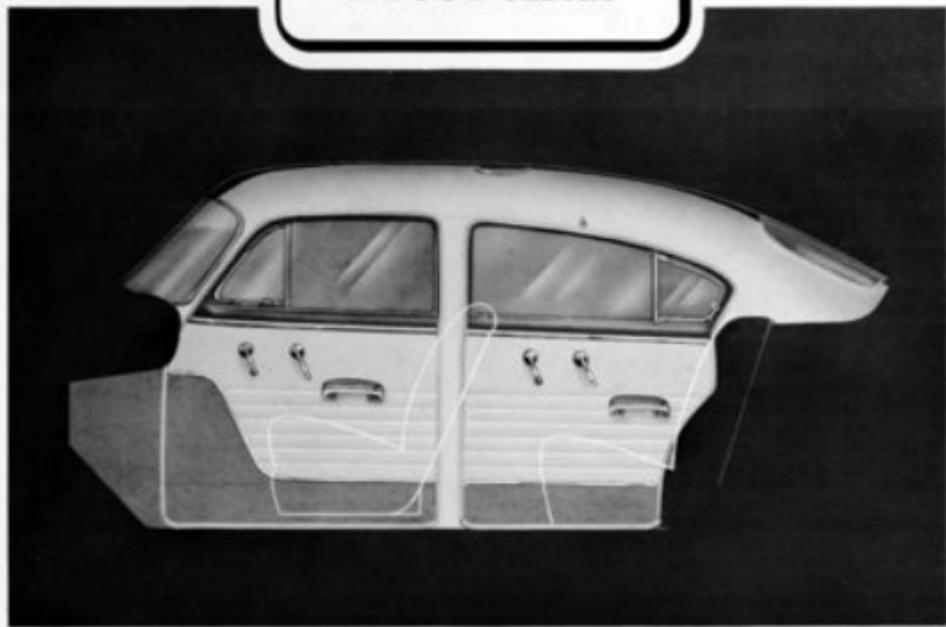


**STYLELINE DE LUXE
STATION WAGON**



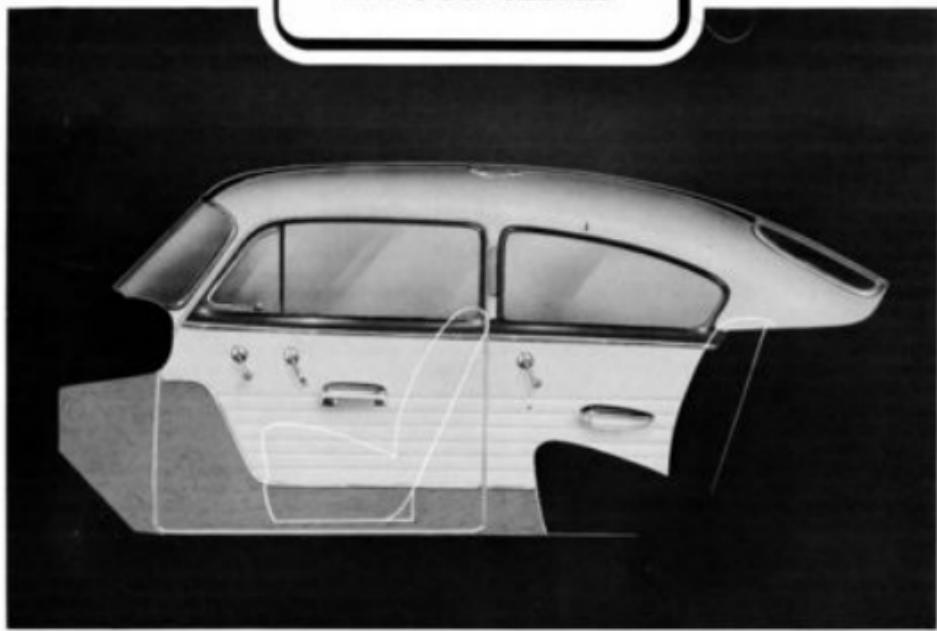


FLEETLINE DE LUXE
4-DOOR SEDAN



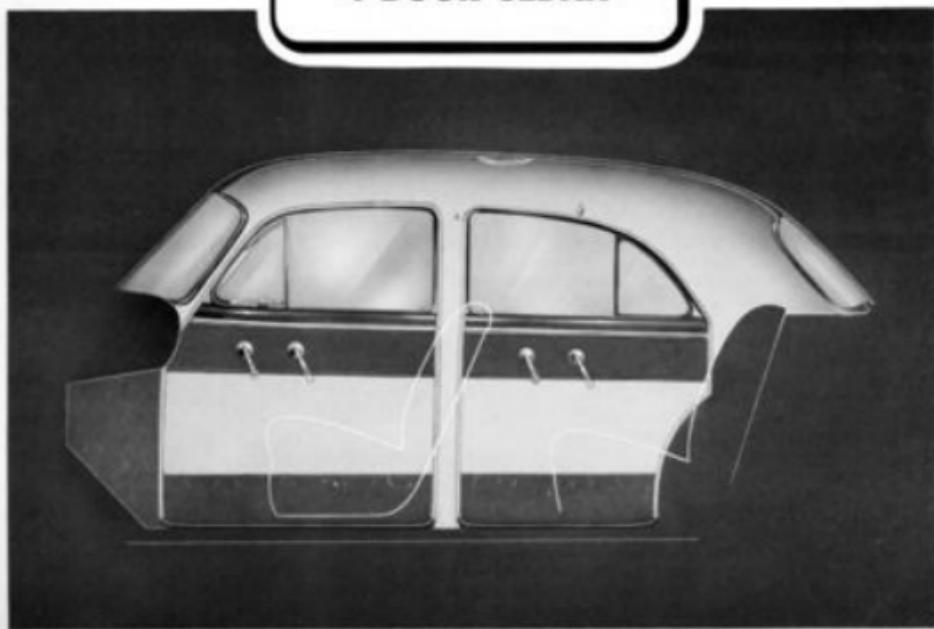


FLEETLINE DE LUXE
2-DOOR SEDAN



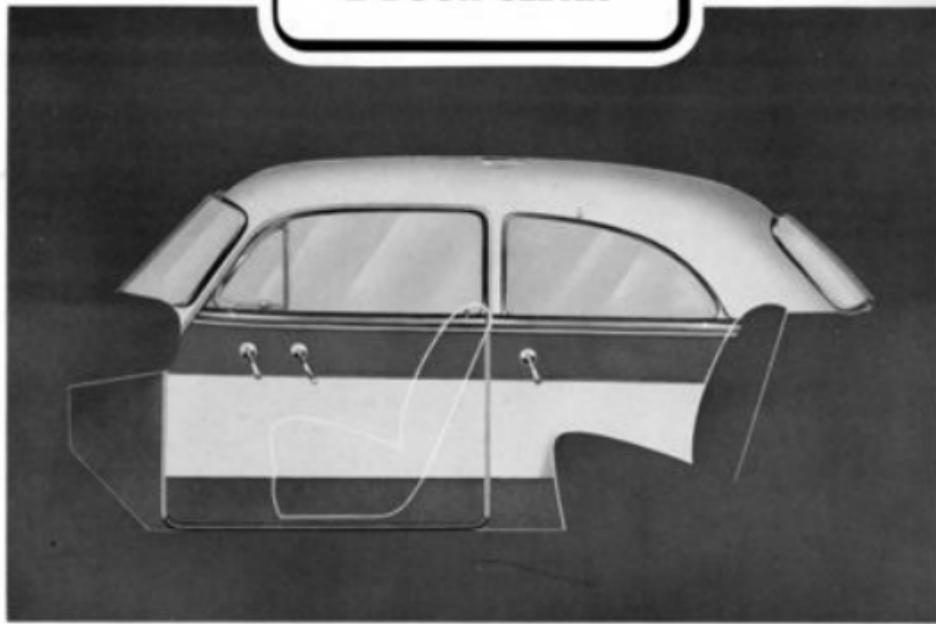


**STYLELINE SPECIAL
4-DOOR SEDAN**



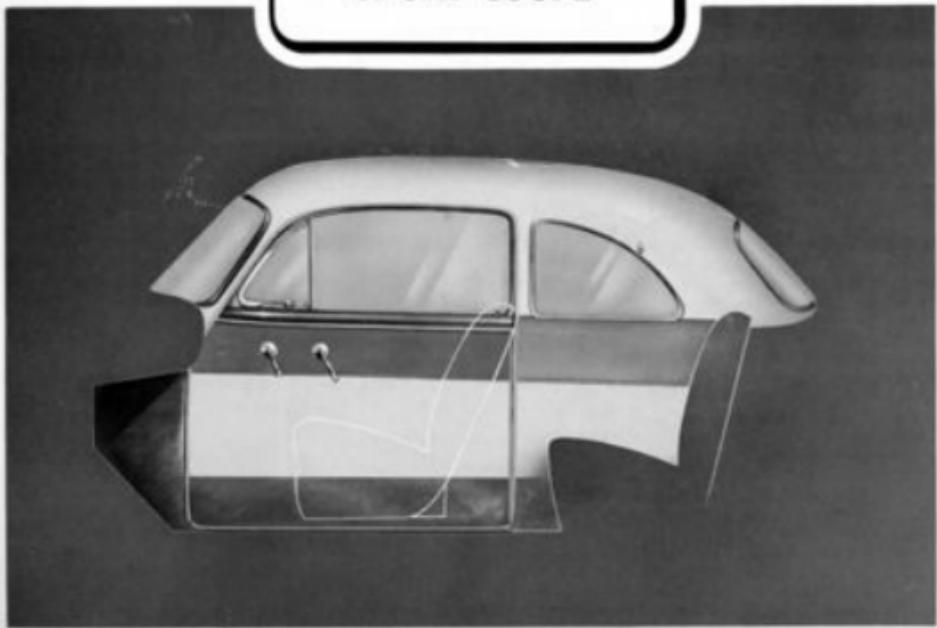


**STYLELINE SPECIAL
2-DOOR SEDAN**



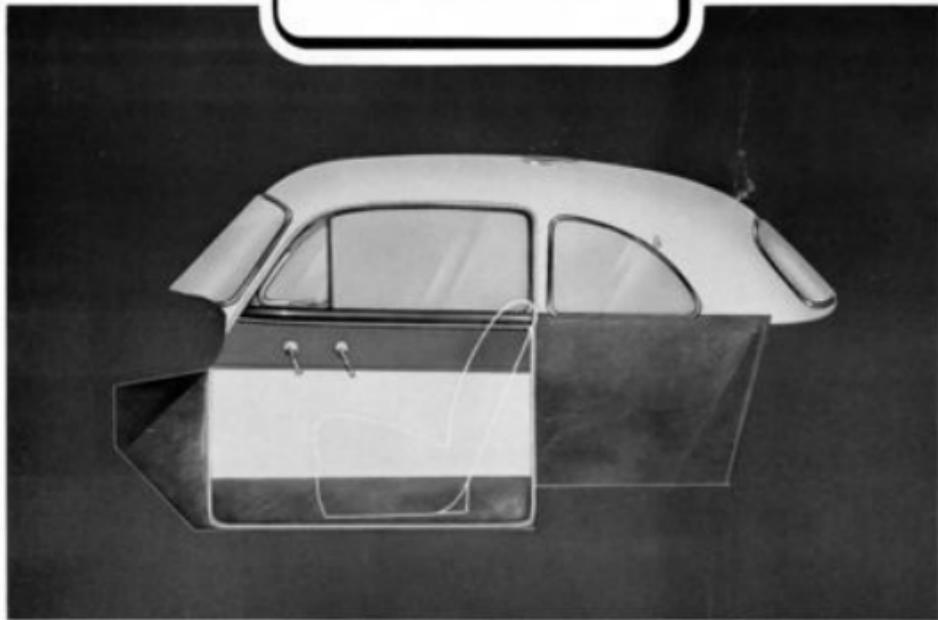


**STYLELINE SPECIAL
SPORT COUPE**



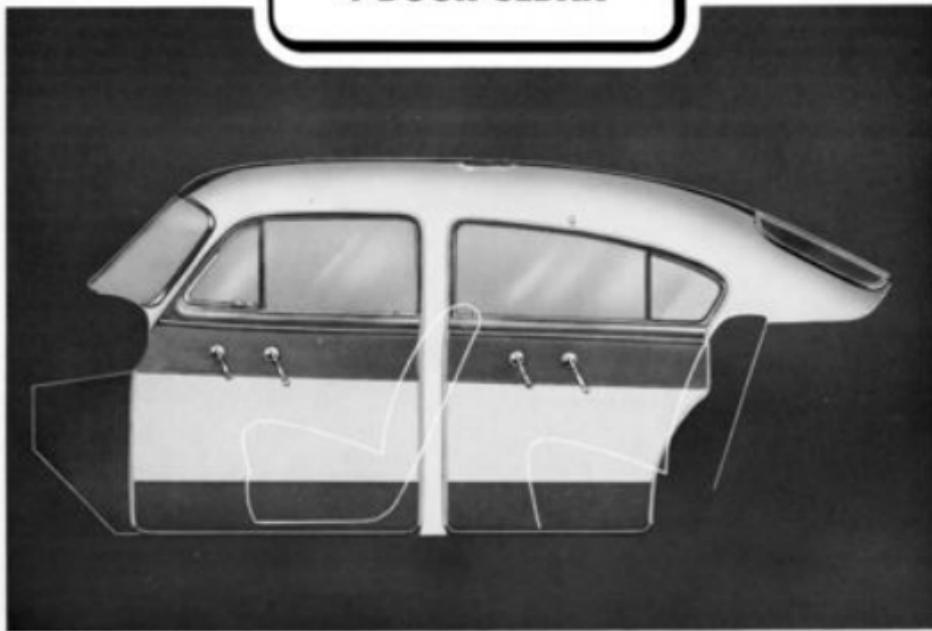


**STYLELINE SPECIAL
BUSINESS COUPE**



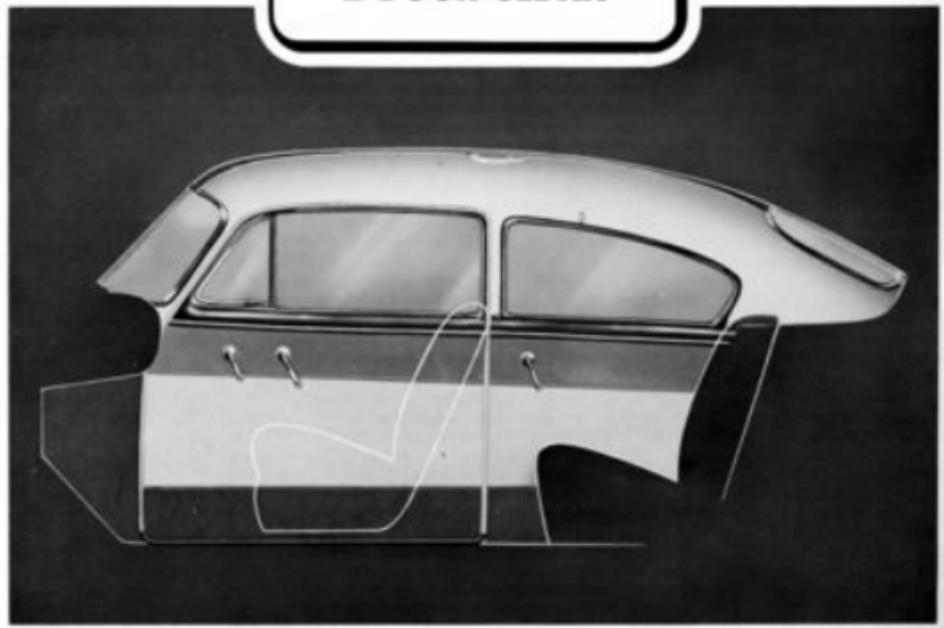


**FLEETLINE SPECIAL
4-DOOR SEDAN**





**FLEETLINE SPECIAL
2-DOOR SEDAN**





EXTERIOR STYLING

The Chevrolet for 1951 is styled to appear longer, lower, and wider than before, yet its fundamental lines and overall dimensions remain virtually unchanged. The improved appearance results from raised and extended fender lines in new body rear quarter panels and from many changes in decorative parts which accent the low, lengthening lines of the car more strongly than in the past.

THE RADIATOR GRILLE is composed of three, horizontal, chrome plated bars which are combined in an interesting, contemporary design. The top or header bar arches across the grille opening in the same curve as in 1950 but, at the sides, it breaks downward sharply to intersect the center bar. Below the headlights, the center and bottom bars extend

onto the fenders and are joined in semicircles. The name, Chevrolet, is embossed on the header bar in script letters which are filled with black paint.

The inner extensions of the center and bottom grille bars are painted Argent Silver as before, but a series of grooves is added in the surface of the center bar extension.



A NEW GRILLE SETS THE FRONTAL STYLING THEME

THE PARKING LIGHTS are an important feature of the styling, since they are housed within the semi-circular sides of the radiator grille. In this position, the lights are centered below the headlights and thus are lower and farther from the center of the car.

An innovation of the parking light design is the small grille in the inner section of the bright metal frame of each light. The grille contains five vertical slots which not only serve as decorative details but also admit a part of the intake air for the body ventilator ducts.

THE BUMPER GUARDS, both for the front and rear of the car, have a massive base which diminishes above the bumper to a more slender shape, conforming to the 1951 styling theme of prominent low lines. Mounted on the same bumpers as used previously, the new guards do not extend as far from the face of the bumpers but are the same height as in 1950.

The front bumper guards are joined by a horizontal tie bar which provides protection for the license plate. It is similar in appearance to the 1950 license guard. The license plate bracket, however, is attached to the bumper rather than to the underside of the tie bar. By this means, the license plate is carried in a lower position, and does not obstruct the flow of air to the radiator.

On the Station Wagon, the rear bumper guards remain unchanged to provide the clearance required when the tail gate is lowered.

THE DECORATION FOR THE HOOD is of new design, but consists of an ornament at the front of the hood and an emblem centered above the radiator grille as before. Both parts again are chrome plated die castings.

The hood ornament is a stylized jet aircraft shape with low, horizontal wings set well back from the front. The slender nose of the ornament extends the hood top line, creating an appearance of greater length than in the previous model.

The Chevrolet trademark on the hood emblem is set on a large shield at the center of tapering, horizontal wings. Seven, short, vertical grooves appear between the wings above the shield. The surface of the shield is scored with horizontal lines and painted red, whereas the trademark is painted blue inside its raised frame of chrome.

THE FRONT FENDER AND DOOR MOLDINGS which distinguish models of the De Luxe Series, are redesigned and located lower than before for a more effective, lengthening highlight along each side of the car. Beginning just above and ahead of the wheel opening in the fender, the molding extends rearward, blending with a lower line to form a wider area of



EMBLEM DISPLAYS A LARGER TRADEMARK



HOOD ORNAMENT MOTIF IS A JET PLANE



BUMPER GUARDS HAVE MASSIVE LOW LINES

NEW SIDE MOLDINGS IDENTIFY DE LUXE MODELS





FENDER AND BODY LINES MERGE SMOOTHLY

bright metal at the rear of the front fender. Here, the series designation, De Luxe, is embossed in block letters which are filled with black paint. The lower line of the fender molding then is continued along the side of the body where the molding ter-

minates at the back of the door on two-door models, and ends at the front of the rear fender contour in the rear door of the four-door body styles. Formerly, the body side molding did not extend back of the front door of the four-door models.

REAR FENDERS HOUSE THE TAIL LIGHTS



THE LICENSE IS LIGHTED FROM BELOW





FENDERS ARE LONGER AND HIGHER AT THE BACK

NEW FENDER LINES in the body rear quarter panels enhance the appearance of all sedans and coupes. The Station Wagon, however, retains the 1950 fender contours without change. Because the new fender shape extends farther beyond the back of the body and is higher at the rear than before, the profile of the car is changed. Also the high, gently rounded crown blends smoothly into the body contours, no longer interrupted by a full crown molding. The bumper is moved one inch to the rear because of the added fender length. However, the overall length of the car is increased only 5/16 of an inch since the bumper guards do not extend as far from the face of the bumpers as in the past.

The shape of the wheel opening in the rear fender is new to harmonize with the outline of the fender. Instead of tapering to a slightly lower height at the rear, the opening is symmetrical, and the rear fender panels for the De Luxe Series are changed to fit into the new opening.

The lower part of the leading surface of the fender shape is capped with a gravel shield which is lower and longer than the previous one. The material of the shield again is black rubber for the Special Series and stainless steel for the De Luxe Series, and three horizontal grooves break its otherwise

plain surface. Neater appearance results from the elimination of the full crown molding, because the shield now joins the body sill molding without need for an extension and its attaching parts.

THE TAIL LIGHTS are centered on the vertical, back surface of the massive new fenders, increasing the apparent width of the car and marking the actual width accurately at night. The shape of the tail lights is a modified rectangle with a separate reflector button mounted in the plain chrome frame of the light below the red plastic lens.

On De Luxe models, a short molding which overlaps the top of the tail light frame, is applied to the fender crown. The added accent of bright metal is an effective and distinguishing highlight for the new fender when viewed from either the rear or the side.

The single tall light which is mounted at the center of the Station Wagon tail gate on an automatic positioning linkage, is unchanged.

A SINGLE LICENSE LIGHT is located at the center of the rear gravel deflector of sedans and coupes. It replaces the former dual lights which were mounted on the body panel below the deck lid at the sides of the license plate. To make the new light even less



THE DECK LID LOCK IS BELOW THE HANDLE

noticeable, the frame around the crystal glass lens is painted to match the adjacent sheet metal.

Provisions for the license light are incorporated in the design of the new rear gravel deflector which includes attractive embossing on either side of the light and also fits the contours of the longer rear fenders. The gravel deflector for the Station Wagon is unchanged, since the shape of the rear fenders is the same as before.

THE REAR DECK LID HANDLE has the appearance of a horizontal, wing-shaped ornament in which the Chevrolet trademark is the central figure of the

design. The trademark is painted blue, and five grooves which decorate the top of the ornament at each side of the trademark are painted black. A hollow is cast in the underside of the handle to provide a hand grip for lifting the deck lid.

The lock for the rear deck is mounted flush in the lid below the handle, instead of being a part of the handle as before. Its cover is an inconspicuous, bright metal disk and its keyhole is protected by the same type of spring-loaded door as was introduced in the side door locks of 1950. Serving to deflect rain and snow, the projecting handle just above the lock provides added weather protection.

THE HUB CAP STYLING for 1951 features an enlarged trademark which is surrounded by embossed, concentric, stepped rings. Except for the blue paint on the trademark, the entire cap now has a chrome plated finish, but the outside diameter is unchanged.

NINE BASIC EXTERIOR COLORS again are offered in 1951, and seven of these are new, providing a wide choice of the latest shades. The use of deep-luster metallic lacquer is continued in Fathom Green and Shadow Gray. Aspen Green, Trophy Blue, and Burgundy Red are regular metallic lacquer, and the remaining new colors, Thistle Gray and Aztec Tan, are non-metallic lacquer. Mayland Black and Moonlight Cream, both non-metallic lacquer, are retained from 1950 without change.

Although the regular color for the Station Wagon is Fathom Green and that for all other models is Mayland Black, the other single colors shown in the accompanying chart are optional at no additional

CONCENTRIC RINGS DECORATE THE HUB CAPS



cost to the purchaser. When one of the two-tone combinations is ordered, however, a nominal extra charge is made.

To insure harmonious appearance, the color of the Convertible top fabric is specified by Chevrolet for each exterior color. Black top fabric is furnished on those cars which are painted Mayland Black.

Thistle Gray, or Moonlight Cream, while tan fabric is provided when the color of the car is either Fathom Green or Trophy Blue.

The interior leather and paint colors for both the Convertible and Bel Air also are keyed to the exterior colors. These will be found on page 37 of the Interior Styling Section which follows.

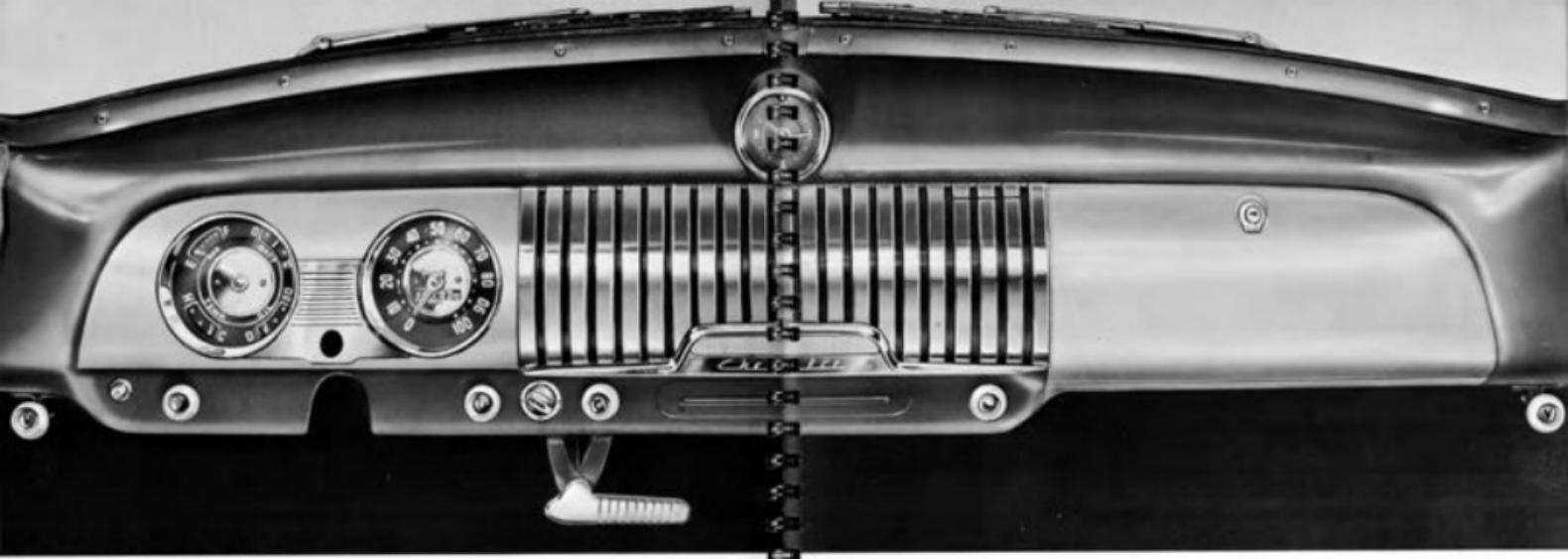
SINGLE COLORS

Body, Sheet Metal, and Wheels	Wheel Stripes	All Sedans	Sport Coupes	Business Coupe	Bel Air	Convertible	Station Wagon
Mayland Black	Argent Silver	✓	✓	✓	✓	✓	
Burgundy Red	Argent Silver	✓	✓	✓			
Trophy Blue	Argent Silver	✓	✓	✓		✓	
Aztec Tan	French White	✓	✓	✓			✓
Thistle Gray	Mayland Black	✓	✓	✓		✓	
Shadow Gray	Argent Silver	✓	✓	✓			
Aspen Green	Mayland Black	✓	✓	✓			
Fathom Green	Argent Silver	✓	✓	✓	✓	✓	✓
Moonlight Cream	Mayland Black				✓	✓	

TWO-TONE COMBINATIONS

Upper Body	Lower Body, Sheet Metal, and Wheels	Wheel Stripes	Style-line Sedans	Sport Coupes	Business Coupe	Bel Air
Shadow Gray	Thistle Gray	Mayland Black	✓	✓	✓	
Fathom Green	Aspen Green	Mayland Black	✓	✓	✓	
Thistle Gray	Shadow Gray	Argent Silver				✓
Aspen Green	Fathom Green	Argent Silver				✓
Thistle Gray	Trophy Blue	Argent Silver				✓
Mayland Black	Moonlight Cream	Mayland Black				✓





THE DE LUXE INSTRUMENT PANEL

INTERIOR STYLING

New beauty, and convenience and safety, are built into the interiors through the adoption of a completely redesigned instrument panel, more attractive fabrics and colors, and new styling of the seats and sidewalls of many models.

New details of the interiors for 1951 include an improved ignition switch, a parking brake handle which affords greater operating convenience, better looking decoration for the steering wheels, a full circle horn blowing ring in the De Luxe Series, and knobs of revised shape for the hand controls and side window regulators.

The differences in appointments between the various models of the line are the same as in 1950, and the luggage compartment sidewall trim and floor mats also are continued without change in either materials or colors.

INSTRUMENT PANEL. An overhanging crown spans the new instrument panel to prevent reflections in the windshield from the instrument lights, and, at the ends, blends smoothly into the panel face. Two instrument clusters are located in front of the driver, an enlarged radio grille is installed in the center, and a reproportioned glove compartment is provided at the right side. Below the instruments and radio grille, the panel is deeply recessed to provide a safe, convenient location for the control knobs.

THE INSTRUMENT CLUSTERS are placed symmetrically at the sides of the steering column and are four inches in diameter in contrast with the 6-1/4 inch diameter of the former, single cluster. The unit on the left encloses the temperature and fuel gauges, the ammeter, and the oil pressure gauge, reading clockwise from the lower left side. The speedometer and odometer occupy the right hand unit. The headlight beam indicator is located between the forty and fifty mile-per-hour figures of

the speedometer. In this position, it is visible at all times, whereas, in 1950, it was located below the fifty mile-per-hour mark and was obscured at times by the speedometer pointer.

Styled for improved appearance and designed to be more legible, the new instruments are basically the same in mechanical details as in the past. Pointers, graduations, and figures are a non-glaring, off-white color which has a slight green tint, and the background is sharply contrasting black. Bright metal trim for each cluster consists of an outer bezel and an acorn-shaped button on a two-inch diameter disk in the center.

The speedometer pointer has a full length groove along its center which is filled with black paint, and the counterbalancing tail of the pointer is reduced in length so, regardless of position, it no longer covers any part of the odometer. All dial graduations now are round dots, and the limits of the temperature gauge are marked with the letters C and H, to denote cold and hot, in place of Fahrenheit scale numbers.

An escutcheon around the gearshift upper control shaft is mounted between the instrument clusters. In De Luxe models, it is a bright metal plate, which follows the radius of the instrument cluster bezels

at the sides, and is embossed with eleven horizontal ribs above the control shaft. In the Special Series, a small, oblong plate, which is painted to match the instrument panel, is used instead.

ILLUMINATION of the instruments for night driving is more effective, since the driver is aware only of the pointers and markings against a subdued black background. Lighted indirectly, the pointers, graduations, and figures glow in a pleasing, soft green that is reflected from the bright green walls of the instrument cases. As before, the level of illumination may be adjusted by turning the light switch knob.

THE RADIO GRILLE is wider, covering the spaces that previously were provided at the sides for the radio controls, clock, and ash tray. Each of the twenty-one, chrome plated, vertical bars is more than a half inch wide, and the narrower grooves between them are coated with lusterless black enamel. A tapering, horizontal molding along the base of the grille is arched at the center, outlining the top and sides of an opening for the dial of the accessory radio. A removable plate covers this opening, and the name, Chevrolet, appears below it in script



FRONT COMPARTMENT OF THE STYLELINE DE LUXE 4-DOOR SEDAN

that is painted white. The cover plate is chrome plated, and its surface is scored with closely-spaced vertical lines.

A slot is cast in each of the first three grooves on the left side of the radio grille for installation of the air, defroster, and temperature controls of the accessory, outside-air-type heater. In the De Luxe Series, the instrument panel ash tray is built into the right side of the grille. It is a tilt-type tray which, when closed, appears to be part of the radio grille. A snuffer is provided, just as in the 1950 drawer-type ash tray, but no handle is required since the tray tilts open when the lower edge is pressed.

The glove compartment assumes the shape of the right end of the instrument panel, varying little from the size of the compartment in the previous model. The push-button lock is retained and, in De Luxe models, an automatic light again is furnished.

THE CONTROL PANEL is a deep recess across the base of the instrument panel below the instruments and the radio grille. Arranged in a horizontal line on this panel, the control knobs do not project be-

yond the main panel surface and also are more easily reached. Reading from left to right, the controls are: the starter button and light switch knob, at the left of the steering column, and, at the right, the windshield wiper knob, ignition switch, choke knob, holes for the accessory radio knobs, and the cigarette lighter. The hand throttle is eliminated since, with the fast-idle mechanism on the choke control, a separate throttle adjustment is not required.

The steering column fits into a rounded notch in the control panel and is retained by a U-bolt which is nearly concealed. Compared with the exposed bracket on the lower flange of the 1950 instrument panel, the new mounting is much neater.

The plate that covers the holes for the radio controls is embossed with a horizontal bead along its center and is painted the same as the control panel. Also matching this finish is that for the metal button which is inserted in place of the cigarette lighter in the Special Series.

The control knobs for the valves of the ventilators in the dash panel are relocated to provide for more direct cable connection with the valves, but they remain within easy reach of front seat occupants.

The two knobs are retained by simpler brackets below the instrument panel but, instead of being at the center, are located at the ends.

STYLING OF THE CONTROL KNOBS is new to harmonize with that of the instrument panel. The center of each knob is inset below its rim. On the choke and ventilator knobs, it is molded with a modern, block-style letter that identifies each control whereas on the light switch and cigarette lighter knobs, it is plain and, on the windshield wiper knob, it contains a cylindrical plastic insert. As introduced in 1950, this insert is replaced by a bright metal push-button control when the accessory windshield washer is installed.

The knobs for the Special Series are made entirely of plastic with black paint filling the identification letters. However, in De Luxe models, the use of bright metal center inserts is continued with the letters embossed in the inserts and painted black. The color of the plastic is ivory for all models.

THE THREE-POSITION IGNITION SWITCH, first used in Chevrolet passenger cars in 1948, is redesigned to provide a more rigid mounting, easier operation, improved appearance, and better lighting.

The new switch has a projecting oblong finger grip which is more attractive than the previous lever. Mounted directly in the instrument panel rather than being attached to a separate bracket behind the panel, the switch is retained by an ornamental nut. Outlining the switch like a bezel, the retaining nut has a bright metal finish with four radial grooves spaced equally around it.

Construction of the lock is revised to provide a better guide for the key at the entrance of the keyhole, and the illumination for the switch is modified to eliminate any light that might distract the driver. The keyhole is lighted indirectly in the locked off position to mark its location unmistakably, just as in the past. When the key is in place, however, light sufficient to facilitate locating the switch is admitted from a small opening above its face, in contrast to the former, full circle of light around the outside diameter of the switch. The mounting location for the light is moved from the ignition switch bracket to the lock housing itself, since the bracket has been eliminated.

THE L-SHAPED HANDLE for the parking brake is offset one half inch below the axis of the control shaft to make more room for the driver's hand be-

tween the bottom of the instrument panel and the brake hand grip. Application and release of the parking brake thus is made more convenient. The appearance of the handle is improved through the addition of nine vertical grooves in its chrome plated surface.

THE CLOCK FOR THE DE LUXE SERIES is installed in a streamlined, die cast housing on the top center of the instrument panel crown where it can be reached easily by anyone sitting in the front seat. It has a thirty-nine hour movement as before, but the face is round rather than rectangular. It is styled and lighted like the new instruments, and the knob for winding and setting the clock again is located at the bottom. The slow-fast adjustment screw is located above the clock face. A deep, chrome plated bezel frames the face, and the housing is painted the same color as the crown of the instrument panel. An ornamental, die cast cover plate is substituted for the clock in the Special Series.

HARDWARE. The plastic knobs for the side window regulators are changed to match the shape and ivory color of the new control knobs on the instrument panel. Except in the Station Wagon, the new knobs are combined with the low hub hardware that was introduced in 1949, and bright metal inserts again are added to the knobs for De Luxe models.

The Station Wagon hardware is restyled to more nearly duplicate the appearance of the low hub handles found in other body styles. Because of the rigid wood sidewalls, however, escutcheon rings are still required to permit installation and removal of the hardware. A further refinement is the use of bright

THE DE LUXE ASH TRAY AND GLOVE COMPARTMENT



REAR COMPARTMENT
STYLELINE DE LUXE 4-DOOR SEDAN



metal inserts in the window regulator knobs which formerly were plain plastic.

The rear quarter window regulator handles in the Bel Air and Convertible are continued as changed during the 1950 model year. Shorter by 5/8 of an inch, the handles provide more finger room above the arm rests to make operation of the windows easier.

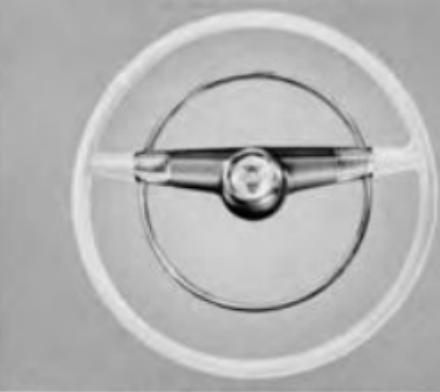
THE INTERIORS OF THE DE LUXE SEDANS AND SPORT COUPE have a lighter and more pleasing overall color effect, although the basic scheme again is two-tone gray. To achieve this improved appearance, in addition to the adoption of the new instrument panel, changes are made in the trim styling for the seats and sidewalls, the seat upholstery materials, the steering wheel decoration and horn ring, and the paint colors.

The seat cushions and back rests are upholstered with a new, light gray broadcloth which has narrow stripes that are spaced 3/4 of an inch apart. Matching the dark gray shade of the stripes, a broad band of broadcloth is applied across the upper part of the back rests, and plain light gray cloth, rather than dark gray as in 1950, covers the back and sides of the front seat.

From the level of the instrument panel base, dark gray leather fabric scuff pads sweep down across the forward area of the front doors in a smart curve, and then continue to the rear seat at the height of the former pads. A bright metal molding, edging the pads, separates them from the main sidewall panels of light gray cloth which are stitched with six horizontal lines. The new styling of the scuff pads thus provides the two-tone color treatment for the sidewalls, and at the same time increases the area of the front doors that is protected by leather fabric. So the center pillars do not interrupt the color continuity of the sidewalls, they are now trimmed in light gray cloth instead of dark gray.

The instrument panel is finished in two shades of metallic gray paint. The crown, ends, and control panel are painted the darker shade, whereas the lighter shade appears on the central areas adjoining the radio grille. The dark gray is repeated throughout the car on the garnish moldings, package shelf molding, the steering wheel hub and steering column, and the gearshift and parking brake parts.

Although the steering wheel is the same two-spoke design as in 1950, the paint colors and decorative parts are changed to harmonize with the new interior styling. The rim of the wheel and the outer ends of the spokes are Thistle Gray, the same light shade of gray that is available as an exterior color, and the center area is dark gray as mentioned before. The bright metal spoke ornaments have a new embossed design of closely spaced grooves, but their size and location are unchanged. A raised, chrome plated rim around the plastic emblem for the steering wheel hub is a new feature this year. As before, the design is molded into the back of the emblem and, for 1951, it consists of the Chevrolet trademark on a shield that is surmounted by five round dots.



DE LUXE MODELS HAVE A FULL HORN RING

The emblem is painted as follows: the trademark is blue with a bright silver border, the shield and dots are pale gold, and the background is Thistle Gray.

A full circle horn blowing ring replaces the semi-circular ring of 1950 for greater operating convenience, especially when the driver wishes to sound the horn while turning a corner. The use of the full circle ring is now practical, since it does not obscure the instruments in their new, two-cluster arrangement. The new ring is more slender, but deeper in cross section than before, and it no longer carries the Chevrolet name.

Because of its proximity to the rim of the steering wheel, the gearshift knob is molded of plastic that matches the Thistle Gray paint on the wheel rim.

THE DE LUXE FRONT DOOR TRIM



The painted areas on the rear compartment ash tray in the four-door sedans and the metal base of the rear seat arm rests in two-door models are changed from dark to light gray to blend with the color of the cloth adjacent to these parts. Other interior details, such as the arm rests, sunshades, headlining, and floor coverings, are retained with no changes, except a slight modification in the color of the simulated carpet inserts in the front floor mat.

IN THE STATION WAGON INTERIOR, a refreshingly new atmosphere is created with a minimum of change. Tan leather fabric with the rich appearance of pig skin is the seat upholstery for 1951, and the sunshades are now covered with the wood-grained leather fabric of the headlining. Previously, a plain tan leather fabric was used in both locations.

The instrument panel, steering wheel, windshield garnish moldings, and the controls are the same as in the De Luxe sedans, and new sedan-type hardware, as described earlier, is used. All other details of the interior, however, remain unchanged.

THE CONVERTIBLE AND BEL AIR again are produced with four different interiors in which light gray is combined with red, black, blue, or green depending on the exterior color of the car. The use of light gray striped pile-cord cloth and colored leather is continued in the Bel Air, with new styling for the seat and sidewall trim. In the Convertible, however, the leather and cloth combination is replaced by full leather seat upholstery and all leather fabric sidewall trim, both of which also feature new styling.

Except for the paint colors, the instrument panel and steering wheel in the Convertible and the Bel Air are the same as those for the De Luxe sedans. The crown and ends of the instrument panel are painted to match the color of the seat leather, and the remainder of the panel is finished in metallic light gray. The rim and outer spoke sections of the steering wheel are black as in 1950, and the center area of the wheel, the steering column and gearshift parts are metallic light gray like the lower section of the instrument panel. The black plastic gearshift knob is retained. The garnish moldings and the windshield pillars and header match the seat leather in color but, whereas the garnish moldings still are painted, the windshield pillars and header have been covered with leather fabric since the 1950 mid-season.

Providing a greater range of adjustment, swivel-type sunshade mountings replace the previous double hinge attachment both in the Convertible and the Bel Air. As in the sedans and regular coupes, the sunshades now may be swung around to shade the side door windows and, in the Bel Air, they slide on their supporting shafts as well. Since the free end of the sunshade shafts must be secured when driving the Convertible with the top lowered, a U-shaped clip for each sunshade is installed on the windshield header. The free end of the shaft is inserted in the clip and, through the wedging action between the clip

and a rubber ring on the shaft, the sunshades are held in place securely. Because of this special retainer, however, it is not possible to slide the Convertible sunshades along their shafts. The change to the swivel mountings is effective with the start of 1951 production of the Convertible, but it was incorporated late in 1950 on the Bel Air.

In the Convertible, the new, full, deep-buff leather upholstery for the seat cushions and back rests is divided into eight panel sections by stitch lines, with a bolster across the front of the cushions and a narrow, plain strip along the top of the back rests. The back and sides of the front seat are covered with leather fabric which matches the grain and color of the seat leather.

The leather fabric for the sidewalls of the Convertible is a warm light gray in the upper panel and seat leather color in the lower panel. The two areas are divided on the doors by a gently curved line that traces a smooth transition from the height of the instrument panel base at the front to a much lower height at the rear. Continued straight back onto the rear quarter panels, this line creates a lower panel of the usual scuff pad height. A bright metal molding accents the entire division line. Four, horizontal stitch lines decorate the upper panel whereas the lower panel is plain except for a single stitch line on the doors at the height of the quarter panel scuff pad.

Two changes in the Convertible carry out the customized color schemes more fully than before: the seat leather color replaces the fabric top color in the leather fabric on the sunshades, and the rubber of the front floor mat is changed from black to seat leather color to match the color of the carpet inserts as well as that of the rear floor carpet. In the interest of greater durability, the covering on the top of the front seat arm rests is genuine leather like the seats, whereas it formerly was leather fabric.

The interior styling in the Bel Air is much the same as that of the Convertible. However, the seat upholstery is gray-striped pile-cord fabric with bolsters of genuine deep-buff leather on both cushions and back rests, and the pile-cord cloth also covers the upper sidewall panels. Other variations from the Convertible include leather fabric trim of seat leather color on the top of the rear seat arm rests, and cloth-covered sunshades as in 1950.

The floor coverings for the Bel Air are continued as changed during 1950. Originally they were the same as those in the Convertible. However, a finer quality carpet was adopted to achieve a more luxurious appearance. At the same time, the front floor covering was changed from a rubber mat with carpet inserts to full carpeting with a black, simulated leather heel pad below the pedals. Carpet colors remain the same as in the Convertible, except the red carpet is a slightly deeper shade.

The interior color combination furnished with each of the exterior paint colors is selected by stylists to insure harmonious appearance. On the following page, the interior leather and exterior paint colors are listed for both Convertible and Bel Air.



GENUINE LEATHER COVERS THE SEATS IN THE CONVERTIBLE

CONVERTIBLE COUPE

Exterior Color	Interior Leather Color
Mayland Black	Red
Thistle Gray	Red
Fathom Green	Green
Trophy Blue	Blue
Moonlight Cream	Black

BEL AIR COUPE

Exterior Color	Interior Leather Color
Mayland Black	Red
Fathom Green	Green
Moonlight Cream	Black
Aspen Green over Fathom Green	Green
Thistle Gray over Shadow Gray	Red
Thistle Gray over Trophy Blue	Blue
Mayland Black over Moonlight Cream	Black



REAR COMPARTMENT OF THE STYLELINE SPECIAL 4-DOOR SEDAN

THE SPECIAL STEERING WHEEL





THE SPECIAL INSTRUMENT PANEL

SPECIAL SERIES INTERIORS. Interesting texture contrast between soft pile stripes on a lustrous cord background is introduced in the light gray pattern cloth on the seat cushions and back rests of the Special models. The pile stripes, which are 1/4 of an inch wide and spaced at intervals of one inch, are dark gray except for a narrow edge of light gray along one side. The cord background also is light gray. For durability, the underside of the cloth is reinforced with synthetic rubber sizing. The front seat back and side panels are covered with plain light gray cloth, replacing the former dark gray fabric.

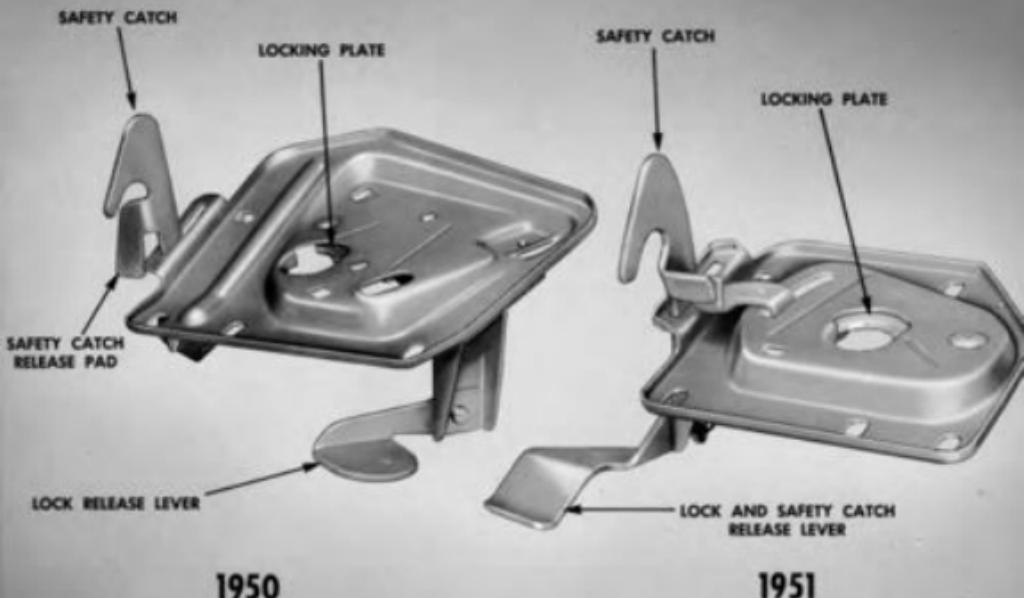
The two-tone gray sidewall trim is retained from 1950, but the cloth on the center pillars is light rather than dark gray. Another refinement found in the two-door sedans and Sport Coupe, is the addition

of scuff pads on the rear quarter panels like those previously used only on the doors.

Metallic dark gray paint has been chosen for the single color treatment of the new instrument panel, and the same color appears on the steering wheel, garnish moldings, and other painted interior parts. As before, a light gray stripe crosses the base of the side window garnish moldings, and a light gray plastic knob is provided on the gearshift lever.

With new styling and an 1/8 of an inch larger diameter, the horn button improves the appearance of the three-spoke steering wheel that is changed only in color. On the new, chrome plated button, the trademark appears at the center and is encircled by a wide groove. The trademark is painted blue, and the groove is enameled black between narrow ribs that divide it into four equal segments.





1950

1951

THE HOOD LOCK IS MORE CONVENIENT

BODIES AND SHEET METAL

In addition to the revisions in body and sheet metal structural details which are incidental to the styling changes, the 1951 models have a simplified hood lock, new rear seat construction in the sedans and sport coupes, and a number of other modifications including improvements in the Convertible.

THE DESIGN OF THE BODY REAR QUARTERS is changed, except in the Station Wagon, to accommodate the raised and lengthened rear fender shape. It retains from 1950 such popular features as the concealed gasoline filler compartment in the left fender, the removable access panel in each semi-circular wheelhouse to facilitate repair work, and the depression in the fenders for the ends of the bumper that gives a neat, tailored appearance to the rear corners of the car. Although new in shape, the instrument panel again is welded in place to serve as a lateral brace across the body.

The front fenders are retained from the previous model with changes at the front to fit them to the new radiator grille and revised piercing on the sides for the relocated moldings of De Luxe models. The fender skirts which form the sidewalls of the engine

compartment are modified in conjunction with the grille change and, at the same time, they are redesigned to be fabricated more easily than before.

THE EXTERNAL HOOD RELEASE is redesigned to simplify its operation and to reduce the size, weight, and complexity of the lower lock plate. A single lever now controls both the lock and safety catch, so that opening of the hood is even more convenient than before. The lock also is more secure since the locking plate engages a larger area on the lock bolt than in the previous model.

The release lever again is concealed by the radiator grille header bar although, as seen from the front, it is located slightly to the left of the car centerline instead of on the right side as in 1950. When the lever is lifted a short distance, the hood

lock is released and, when it is raised farther, the safety catch is freed so that the hood may be opened. Formerly, the hood popped open to the safety catch, when the release lever was raised, and then it was necessary to reach in between the grille and hood to push the safety catch rearward before the hood could be opened fully.

REAR SEAT CONSTRUCTION in the sedans and sport coupes incorporates the same type of flat, continuous-S-shaped springs as used in the front seats for the past two years. Expanded manufacturing facilities make possible the wider application of this modern seat construction with its advantages of compactness, light weight, and simple fabrication. Conventional coil springs are retained in the rear seats of the Convertible and Bel Air, and in the intermediate and rear seats of the Station Wagon.

IN THE CONVERTIBLE, a greatly enlarged rear window improves visibility to the rear and permits use of an inside rear view mirror in place of an outside mirror. The top motor is relocated, providing a neater installation with a more easily operated control, and ventipane drip shields are an added convenience.

The area of the rear window is more than three times that in the 1950 Convertible, aiding the driver in visibility to the rear when the top and back curtain are raised. Made from clear, flexible vinyl plastic, the window is more than one foot tall and nearly three feet wide and, except for a narrow band of fabric just above the body belt line, it fills the entire back curtain opening in the top. The previous, laminated safety plate glass window was only slightly more than five inches tall and less than two feet wide. Being rigid, the glass window was limited in size according to the location of the folds that were formed in the fabric as the top was lowered.

As before, the rear curtain may be lowered into the top well while the top is raised, since the continuous slide fastener on the top and sides of the curtain is retained. The plastic window is softer and more easily scratched than one made of plate glass and, for this reason, special instructions for its proper care and cleaning are issued to the owner.

To utilize the improved visibility in the Convertible, an inside rear view mirror replaces the outside mirror as regular equipment. The metal back and support arm of the new mirror are chrome

plated, and the support arm is screwed into the tapped hole in the windshield center divider bar which formerly was provided for installation of an accessory mirror.

The top motor is relocated from the engine side of the dash panel to the right side of the luggage compartment. It is forward of the spare tire and below the top well, so that hydraulic lines to the cylinders of the top mechanism are less complex and much shorter than in the past. In this location, the motor no longer is exposed to dust and dirt which are constantly carried into the engine compartment by the cooling air for the engine. Access to the motor for servicing is through the rear passenger compartment by removal of the rear seat back.

Because its location now is remote from the top motor, the control knob for raising and lowering the top operates an electrical switch instead of a direct linkage to the motor. The result is a noticeable reduction in the effort required to move the knob. The location of the control knob on the lower flange of the instrument panel also is changed from the left to the right side of the steering column.

Stainless steel ventipane drip shields, like those on the Bel Air, are furnished on the new Convertible, to permit the use of the ventipanes under practically all weather conditions.

ANOTHER IMPROVEMENT is found in the mountings for the horns. New brackets are adopted which change the horn positions to maintain clearance with the new fender skirts and radiator grille. The horns face each other directly, instead of pointing down toward the inlets of the ventilator ducts, making the horns less audible from within the car.

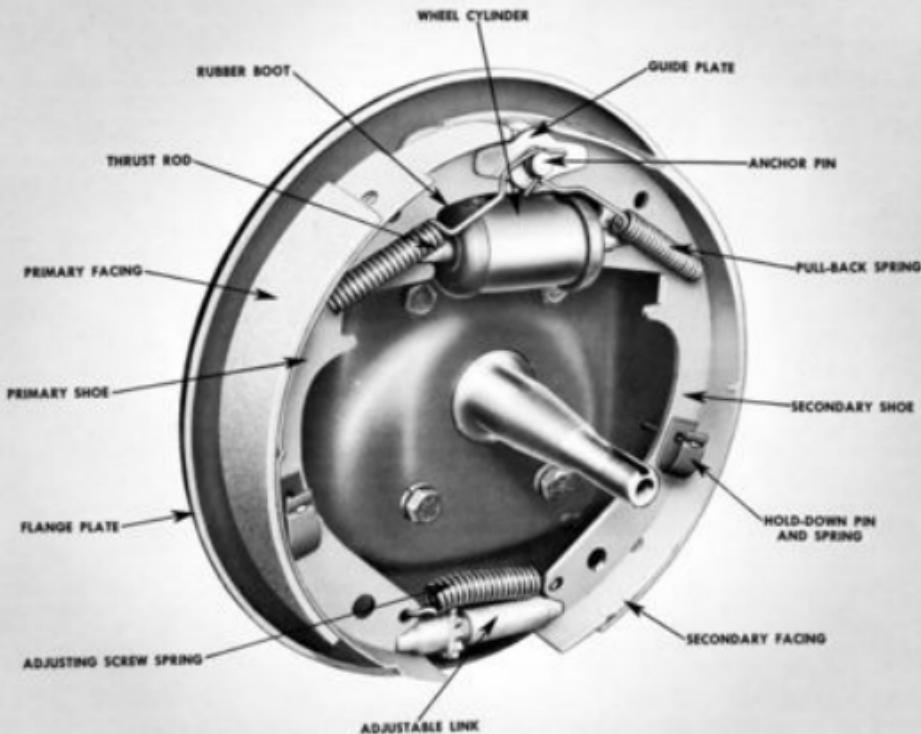
The instrument panel wiring junction block is eliminated because all switches now are located along the base of the panel and it is simpler, both on original installation and in service, to make connections directly to the switches, rather than through a junction block.

As changed during 1950, the position of the rear view mirror in the Bel Air is more than eight inches below the original location, but the mirror support arm is still attached to the windshield center divider bar. In this position just above the instrument panel, the mirror can be adjusted through a wider vertical range than before, increasing distance visibility behind the car without interference from the top of the rear window.



DETAILS OF THE NEW BRAKE

LEFT FRONT BRAKE SHOWN



ENGINE AND CHASSIS

The 1951 Chevrolet incorporates mechanical improvements which make it safer and easier to drive and provide smoother and quieter operation as well.

Foremost of the chassis improvements is a completely new design of the service brakes, with the advantages of smoother action and even longer life for the bonded linings than before. Also, the force of the moving car is utilized more fully in self-energizing action, thereby reducing the pressure that the driver must exert on the brake pedal.

Fatigue inducing vibrations are diminished through modifications in the propeller shaft and torque tube, while the chassis frame is insulated more effectively from a source of vibration by new exhaust system supports.

The 92 horsepower engine is retained with refinements in the generator, distributor, and throttle linkage, and a number of mechanical changes are continued as introduced during the 1950 model year.

THE NEW BRAKES. Increasingly greater demands are being imposed on automobile braking systems today by the growing traffic congestion in metropolitan areas and the more widespread use of high cruising speeds on the highways. Recognizing this situation, Chevrolet engineers have incorporated new brakes in the 1951 cars to provide still greater safety and driving ease than in former models. The hydraulic system of service brake actuation, which has been a Chevrolet feature for the past fifteen years, is retained with slight modifications. The present major design changes are confined to the mechanism at the wheels and, in comparison with those used previously, the new brakes provide:

EASIER APPLICATION... Pressure exerted on the brake pedal by the driver is reduced as much as twenty-five per cent for a given rate of deceleration.

GREATER SELF-ENERGIZATION... Momentum of the car is better utilized to aid in applying the brakes because every brake shoe on the car is self-energized in both forward and reverse travel of the car.

LONGER BRAKE LIFE... All linings on the car wear at more nearly the same rate, and the bonded linings have even longer life.

LARGER LINING AREA... Wider front brakes have nearly fifteen per cent greater lining area.

ELEVEN-INCH DIAMETER RETAINED

GREATER FREEDOM FROM BRAKE SURGE

LESS TENDENCY TOWARD GRABBING

BETTER SEALING... Brake mechanism is more effectively protected from the entrance of dirt and mud.

SIMPLE SERVICING... Ordinary brake adjustments are made more easily than before, only one operation per brake replacing two.

DESIGN OF THE BRAKES. Each brake consists, basically, of one hydraulic cylinder containing two pistons, and two shoes with bonded linings or facings. As shown in the accompanying illustration, the cylinder is mounted horizontally near the top of the flange plate, and a single, stationary anchor pin is located just above it. Springs retain the shoes, which rest on the anchor pin at the top when the brake is released, whereas an adjustable link separates them at the bottom.

The anchor pin has a threaded end, that extends through an elongated hole in both the flange plate and a reinforcing plate behind it, and is held securely with a nut and lock washer. The position of the anchor may be shifted vertically in the enlarged hole to center the shoes in the brake drum during original assembly or when overhauling the brakes in service.

The section of the anchor pin against which each shoe web bears is 13/16 of an inch in diameter and extends about one inch from the face of the flange plate. A further extension of the anchor is a narrow pin with a rounded head. The ends of two pull-back springs hook on this pin and each spring extends to the upper end of one of the two shoes to hold the shoes tightly against the anchor when the brakes are released. A guide plate is fitted onto the anchor pin to separate the pull-back springs from the shoe webs and assist in maintaining the alignment of the shoes.

The wheel cylinder contains two pistons and each transmits force to its brake shoe through a short thrust rod. One end of the rod pivots in the piston whereas the other end is slotted to engage the brake shoe web. To keep out dust and moisture and to prevent gumming of the brake fluid, each end of the wheel cylinder is sealed with a rubber boot. In the former brake, metal caps covered the ends of the wheel cylinders.

The lower ends of the shoes are held against the ends of a link by a helical spring. The link consists of a star-wheel adjusting screw which rides in a socket at the front and is threaded into a pivot nut at the back. The outer ends of the socket and pivot are notched to fit the webs of the brake shoes, providing freedom of motion between the link and the shoes.

The spring is stretched from one shoe web to the other, crossing over the notched head of the adjusting screw. It bears against one of the notches in the head and thus acts as a detent and lock for the adjusting screw. Rotation of the screw changes the length of the link which, in turn, moves the shoes in relation to the brake drum.

Bonded brake facings are continued. However, the area and composition of the facing material are changed to match the operating characteristics of the new brakes and to provide longer life.

The eleven-inch diameter is retained for both front and rear brakes, providing for rapid heat dissipation through large diameter drums. Front brakes, now two inches wide, have nearly fifteen per cent more lining area than before, because of a 1/4 of an inch increase in width. The width for the rear brakes remains 1-3/4 inches.

In each brake assembly, the facings for the front and rear shoes differ in length and are identified by the names primary and secondary, respectively. The secondary facing is 2-1/2 inches longer than the primary, but the total length of facing per brake is virtually the same as before.

The greater efficiency of the new brake mechanism makes possible the use of facings which have lower coefficients of friction than those of the previous brake. Since, in operation, the secondary shoe is applied with greater force than the primary, the wear and operating characteristics of the brake are balanced by using a secondary facing which not only is larger in area, as already noted, but also has a lower coefficient of friction than the primary facing. This judicious selection of facing sizes and materials contributes to the strong, but controllable, braking action and provides longer life for the facings.

The brake flange plate has six bearing surfaces, three for each shoe, against which the inner edges of the shoes bear to maintain alignment. Slightly below the center of each shoe web is a hole through which a hold-down pin is inserted. A U-shaped spring, fitted about the outer end of the pin, holds the shoe against the bearing surfaces. So that there is no interference with brake operation, the hole in the web is made larger than the pin, permitting relative movement between the two parts.

OPERATION OF THE BRAKES. When the brakes are applied, the pistons in the cylinder force the shoes against the drum. The friction of the drum on the shoes tends to rotate the shoe assembly forcing the front or primary shoe downward and the rear or secondary shoe upward so that its upper end butts against the anchor. With the upper end of the secondary shoe bearing against the anchor, the friction between the drum and the shoe tends to roll the shoe against the drum with increased pressure. This is the self-energizing effect. The link between the lower ends of the shoes acts as an anchor for the primary shoe and, therefore, the primary shoe also is self-energized, with the friction between the drum and the shoe tending to roll this shoe also against the drum with increased pressure.

There is an additional effect, however, which to a great extent accounts for the exceptional braking effectiveness of the mechanism. Since the shoes are freely connected at their lower ends, the friction force on the primary shoe is in turn applied to the secondary shoe through the link. The effectiveness of the secondary shoe is approximately doubled, because the total force applying this shoe becomes the sum of the force received from the primary shoe plus the self-energizing effect on the secondary shoe. This self-energizing effect itself becomes greater, due to the increased friction force of the shoe against the drum.

When backing the car, brake action is similar but exactly reversed, with the forward or primary shoe butting against the anchor during braking and being forced against the drum with the greater pressure.

It is through the great self-energizing action inherent in this brake design, with both shoes being self-energized instead of only one, as in the past, and with one shoe actually increasing the self-energizing effect of the other, that the pedal pressure required for a given rate of deceleration is reduced as much as twenty-five per cent.

Overall brake performance is better, because, with the great stopping power inherent in the mechanism, other details may be designed, and materials selected, primarily to improve such features as controllability and durability. Grabbing and brake surge are minimized and wear is balanced with the result that both of the facings wear at more nearly the same rate.

Since the shoe assembly floats freely, each shoe tends to assume the optimum position for best contact with the drum when the brakes are applied. This, with the self-energization of both shoes, results in full utilization of the entire facing area in stopping the car, promoting long facing life.

THE NEW BRAKE DRUMS are of composite construction, as before, with a cast alloy iron rim around a pressed steel web. The drum design is new, however, incorporating a better seal for the brake mechanism and providing for more uniform expansion of the drum from the heat generated during braking.

Changes in the design of the ribs on the outer surface of the drum rim effect a better seal against the entrance of dirt and mud into the brake mechanism through the clearance between the edge of the flange plate and the drum rim. The outside edge of the flange plate fits over the edge of the rim in much the same manner as before, but the large diameter rib on the drum is now located 1/2 of an inch from the edge of the rim instead of being flush with it. An annular groove is machined in the drum rim adjacent to the large rib on the side nearest the flange plate. On the opposite side of the large rib, a single rib of smaller diameter is located. It replaces the three small diameter ribs on the rim of the 1950 drum.

The large rib blankets off the annular opening between the drum and flange plate, so that dirt or water cannot move across the drum rim and through

BRAKE OPERATION

 CAR IN FORWARD MOTION



1. Hydraulic pressure forces shoes against drum.



2. Rotating drum moves shoes until rear (Secondary) shoe strikes anchor.

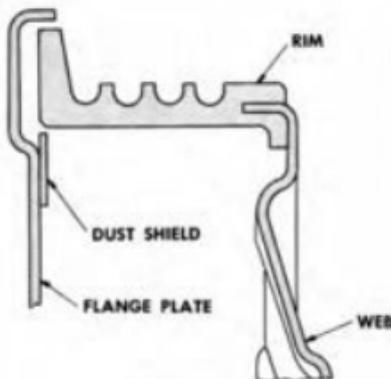


3. Friction between shoes and drum tends to roll both shoes into drum with increased pressure—thus both shoes are self-energized.

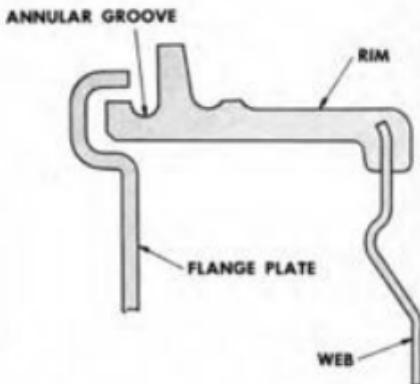


4. Force from front (Primary) shoe is transmitted through the lower link to secondary shoe applying secondary shoe with even greater force.

For REVERSE, the operation is similar except that the shoes reverse their action, the front shoe then being applied with the greater force.



1950



1951

A COMPARISON OF THE BRAKE DRUMS

the opening. The annular groove collects any dirt and water which may settle between the large rib and the flange plate, and throws it off by centrifugal force. This improved seal has made possible the elimination of the internal dust shield which previously was welded to the flange plate.

In conjunction with the change in design of the brake drum rim, the web also is changed, having an embossed ring instead of the six radial ribs that were embossed in the previous web. The new drum expands more uniformly as the shoes are forced against it during braking, so that the braking surfaces remain more nearly parallel and the facing surface is utilized more fully.

LESS HYDRAULIC APPLYING FORCE is necessary because of the greater self-energization of the new brakes. Therefore, the wheel cylinder diameters are smaller to reduce pedal travel, yet the desired braking effect is obtained with less pedal pressure than before. The wheel cylinder sizes are decreased proportionally, front and rear, so that the distribution of braking effort is nearly the same as in 1950. This allocation is retained since the distribution of vehicle weight is unchanged. Compared with those for the former brake, the new wheel cylinder diameters, in inches, are:

An incidental change in the brake hydraulic system is the reduction in the size of the brake pipes. All pipes, except that from the master cylinder to the junction point on the right side member of the frame, are now $3/16$ of an inch in outside diameter, $1/16$ of an inch smaller.

As changed late in 1950, to provide more room for the driver's foot between the brake and accelerator pedals, the brake pedal pad is $5/8$ of an inch to the left of its former location on the pedal stem.

MINOR BRAKE ADJUSTMENT is simplified since one operation instead of two is performed on each brake. The adjustment is made by inserting a flat blade, such as a screw driver, through a hole in the lower part of the flange plate to engage a notch in the adjusting screw star-wheel. To compensate for wear, the adjusting link between the brake shoes is lengthened by turning the star-wheel, thus spreading the brake shoes farther apart.

This procedure is similar to that for the previous brake, except that a separate adjustment formerly was required for each shoe. Two slots were located near the top of the flange plate through which a blade was inserted to engage the teeth of an adjusting wheel at each end of the wheel cylinder. Turning of the wheel moved the upper ends of the brake shoes outward to compensate for wear.

An additional operation is required, however, when adjusting the new brakes after such major service operations as relining the shoes or machining the drums. The shoes must be centered with respect to

1951

Front	1-1/8 inches
Rear	1 inch

1950

Front	1-5/16 inches
Rear	1-1/8 inches

the drum when the brake is reassembled and, as noted previously, this is accomplished through adjustment of the anchor pin position. A convenient means for checking this adjustment is provided by a small slot in the edge of the drum rim through which a feeler gauge may be inserted to measure the clearance between the facings and the drum.

PARKING BRAKE. The rear service brakes again are applied mechanically for parking but, due to the greater self-energizing action of the new brake mechanism, the parking brake is more effective than before. Whereas the parking brake linkage is retained with but few changes to adapt it to the new brake mechanism at the wheels, several improvements are incorporated in the control rod located beneath the instrument panel.

The housing for the control rod is revised to facilitate assembly and avert possible binding of the rod in the housing. Greater clearance is provided between the two parts by increasing the housing diameter between the points of attachment to the instrument panel and the dash panel. Instead of being held at the dash panel by jamb nuts at either side of the panel, the housing now is threaded into a small bracket which is attached to the passenger side of the panel. Use of the threaded bracket eliminates any twisting force on the housing that might cause binding of the rod.

The pawls that engage with the control rod notches, when the parking brake is applied, are modified to raise their pivot points. With this change, approximately 2-1/2 times more force than before is required to trip the handle and release the brake, making accidental release improbable.

THE CHASSIS CHANGES which are made to achieve even lower levels of sound and vibration than before are typical results of the continual research and development work carried on by Chevrolet. These changes include modifications in the torque tube and propeller shaft and an entirely different design of the exhaust system supports.

GREATER TORQUE TUBE RIGIDITY results from enlarging the outside diameter of the tube from 2-13/16 inches to 3-1/4 inches. At the same time, wall thickness is reduced approximately .028 of an inch, so that the total weight of the torque tube remains nearly the same.

The effect of the greater rigidity is to raise the fundamental frequency of torque tube vibration. With this change, vibrations from other sources no longer will combine with that of the torque tube, over a narrow speed range, to produce the pronounced peak vibration point which was encountered occasionally in the past.

THE ENDS OF THE PROPELLER SHAFT are redesigned to accommodate the attachment of balancing weights, thus providing for more nearly vibration-free operation. In manufacture, the entire assembly consisting of the propeller shaft, bearings, pinion

and pin, is balanced to within 1/4 inch-ounce of perfect balance by welding weights on the ends of the propeller shaft.

THE EXHAUST SYSTEM SUPPORTS are changed both in design and location to insulate the frame and body of the car more effectively from the vibration of the exhaust system.

The muffler and tail pipe supports are moved from their former positions to new locations which are points of minimum vibration on the tail pipe. Located in these positions, the supports have less motion to absorb and consequently transmit less vibration to the chassis frame. The muffler support is located approximately 17-1/2 inches to the rear of its former position, whereas the tail pipe support is moved eight inches forward of its previous location. An additional clamp is now required to secure the tail pipe to the muffler, since the new muffler support clamp is located too far to the rear for this purpose. Because of the special chassis frame on the Convertible, however, the muffler support remains in its former location just back of the muffler on this model.

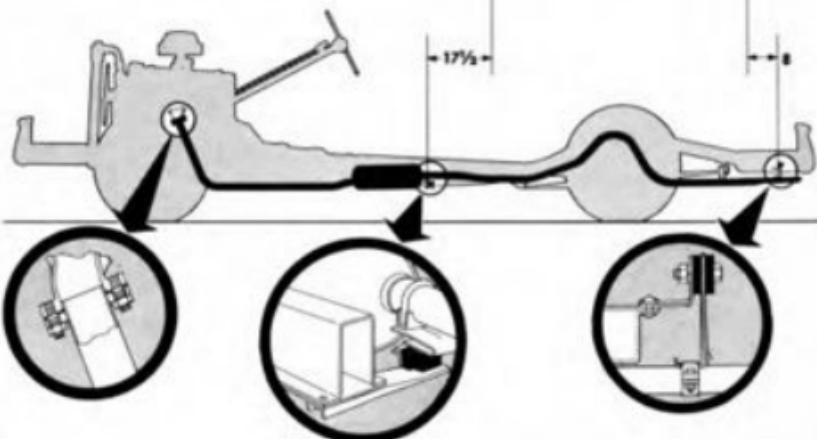
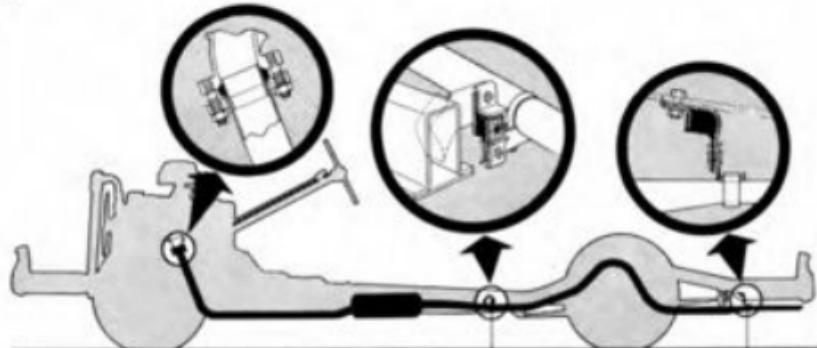
The new muffler support consists of a short, stiff bracket that is welded to the left side member of the frame, a special rubber mounting, and a tail pipe bracket. The support is located at the side rather than below the tail pipe as in 1950. The rubber mounting is made up of a rubber shear cushion to which two strips of tire fabric are bonded. One strip projects upward and is bolted to the arm on the frame whereas the other extends downward and is fastened to the tail pipe bracket. The tail pipe is clamped in the bracket by a special U-bolt which contains serrations to prevent turning of the pipe. A steel rebound clip is bolted to the arm above the rubber cushion to limit excessive vertical movement of the exhaust system.

The previous muffler support employed a shear-type rubber mounting on the end of a slender arm that projected nearly three inches farther from the frame than the new arm. The rubber mounting was connected to the tail pipe clamp through a U-shaped bracket and both this bracket and the arm tended to amplify vibrations.

In the new tail pipe support, the combination of a rubber cushion bonded to a strip of tire fabric is provided to achieve greater flexibility than before. A support which flexes easily is desirable since the exhaust pipe moves approximately 3/8 of an inch longitudinally as a result of heat expansion.

The strip of tire fabric has an L-shape and it is bonded to the top and back of the rubber cushion. An L-shaped, steel support is bonded to the front side of the rubber cushion and to the bottom of the tire fabric which projects beyond the front of the cushion. A bolt which extends through the flange of the frame left side member, the tire fabric, and the steel support, fastens the upper end of the tail pipe support to the frame. Extending down from the back of the rubber cushion, the tire fabric is riveted to a steel bracket that is clamped to the tail pipe.

1951



1950

THE EXHAUST SYSTEM SUPPORTS COMPARED

In 1950, the tail pipe support consisted of a steel arm which was clamped to the tail pipe at the bottom and bolted through a large rubber grommet to a bracket at the top. The bracket was riveted to the rear cross member of the frame. Because of tail pipe movement from heat expansion, however, wear and deterioration of the rubber resulted from movement of the arm in the grommet.

Because the new muffler and tail pipe supports are more flexible, a less rigid joint is required between the exhaust pipe and the exhaust manifold. The new joint has an inner sleeve around which asbestos

packing is placed. A sliding flange bolts to the exhaust manifold and pulls the exhaust pipe up tightly, compressing the packing. This more flexible type of joint thus balances the greater flexibility of the new muffler and tail pipe supports. The former joint consisted of a welded flange on the exhaust pipe that was bolted rigidly to the exhaust manifold and sealed with a steel and asbestos gasket.

The muffler and tail pipe are unchanged for 1951 except that the rear end of the tail pipe is flattened farther forward to provide for the new location of the tail pipe support clamp.

TWO MID-SEASON CHASSIS IMPROVEMENTS, continued for 1951, are a change in the steering gear ratio and a modification in the bushings for the front stabilizer.

The steering gear ratio was increased from 17.4:1 to 19.4:1, reducing steering effort to make low speed maneuvering and parking easier. The diameter of the worm is larger and the thread is extended so that the travel of the pitman arm is increased. This, with other minor changes, allows the wheels to be turned more sharply than before, with the result that the minimum turning radius is decreased slightly.

To facilitate manufacturing, the front stabilizer bushings now are made of extruded rubber instead of molded rubber.

THE ENGINE IS RETAINED from 1950 with only minor changes. The refinements include an improved accelerator rod and changes in the construction of the generator and distributor. Mid-season modifications in the carburetor and exhaust valves are retained for 1951 without change.

The accelerator rod is redesigned to eliminate any tendency for the throttle to stick in a partly opened position. The shape of the rod is changed so that the insulator, located near the middle of the rod, is more nearly in line with the force on the rod than before. The bending moment on the insulator thus is reduced, eliminating possible distortion which previously caused occasional binding at the bell-crank on the engine or at the hole in the toe panel.

Lubrication of the generator rear bearing is improved with the relocation of the oil cup to the top of the boss on the end frame. In this position, the cup is more accessible and the wick extending from the bottom of the cup acts as a plug to prevent the addition of an excessive amount of oil. The wick itself controls oiling of the generator bearing and prevents over lubrication or gumming of the commutator bars.

The distributor primary terminal is redesigned to incorporate a better type of attachment for the terminal which makes misalignment of the breaker contacts less possible. These improvements contribute to better distributor operation and longer

breaker contact life and also make servicing simpler. The new terminal design has inner and outer insulator bushings which are keyed to each other and to the distributor housing. The terminal stud that passes through both bushings has a square section near its outer end that fits into a recess in the outer bushing, preventing the stud from turning. Thus, tightening of the inner or outer nuts on the stud can not turn the terminal and force the breaker lever and contacts out of alignment.

The former design had only an inner insulator bushing and there was no provision to keep the insulator or stud from turning when the nuts were tightened on the terminal stud. Therefore, misalignment of the breaker contacts sometimes resulted.

Another change in the distributor is the relocation of the grease cup from the side to the rear of the distributor housing.

In the carburetor, the vapor vent valve in the accelerator pump, formerly a steel ball, has been replaced by a lighter ball of aluminum alloy. This change, introduced on the late 1950 models and continued for 1951, results in quicker response to the accelerator because the lighter ball will close the vapor vent more quickly as the accelerator pump is operated.

Another late mid-season carburetor change was the relocation of the two spark vacuum ports in the throttle body that supply vacuum to the automatic advance mechanism for the distributor. These holes were raised slightly to prevent strong vacuum from causing an excessive spark advance when the car is coasting in gear at moderate speed with the accelerator released. A high spark advance under these conditions causes rough engine operation.

An exhaust valve change was introduced during the past model year to facilitate manufacturing. Used both in the regular production and 105 HP engines, the valve head formerly was flat, but now has a cavity which does not affect engine characteristics. A valve of identical dimensions, but with a flat head, is used interchangeably with this new valve in the regular engine.



EXTRA-COST EQUIPMENT

A complete line of extra-cost equipment again is offered to meet the special requirements of the individual owner for added features of convenience, safety, performance, and appearance. As in the past, a limited selection of extra-cost equipment, known as regular production options, is installed at the assembly plants, but all other items are classified as accessories and are installed either by the dealers or owners.

ALL OF THE REGULAR PRODUCTION OPTIONS are continued from 1950, with the automatic transmission again highlighting the list. As before, it is furnished in De Luxe models only and, with the exception of the Station Wagon, cars thus equipped carry a special rear deck lid handle. Styled the same as the regular production part, the special handle displays the name, Powerglide, across its top in modern block letters.

The control indicator (pointer) and dial for the automatic transmission are changed in design to improve both appearance and utility.

Increased 1/4 of an inch in length, the indicator is seen more easily than before because it now extends above the dial. The top of the indicator is bullet-shaped and a circular depression in its front face is filled with white paint. This white dot appears directly above the letters on the dial, so that the position of the selector lever can be determined at a glance. The indicator is a chrome plated die casting with a painted hub which matches the color of the selector control shaft. Formerly, it was molded of a colored plastic with red paint on the pointer.

For improved appearance, the quadrant shape of the clear plastic dial is modified and the bead around the edge of the dial face is eliminated. The use of molded-in, block-type letters, filled with white paint, is continued. The word, Park, however, is printed in upper and lower case letters instead of all upper case letters.

The recommended interval between transmission oil changes is extended in 1951 from 15000 to 25000 miles. The new recommendation is based on the results of continued engineering test work, as well as on the field experience of the past year when many thousands of Powerglide-equipped cars were in the hands of customers.

THE POWERGLIDE EMBLEM IS NEW



An improvement in the U-shaped clip, which connects the starter safety switch to the lower end of the selector control shaft on the steering column, prevents misalignment of the two parts. Flanges are added to the sides of the clip to provide contact with all four, instead of just two, sides of the rectangular end on the control shaft.

While no fundamental changes were made in the torque converter transmission during 1950, a number of refinements were adopted, and are continued in 1951, to facilitate servicing and to increase durability.

Originally, the torque converter housing contained two drain plugs, both of which had to be removed when draining the oil from the converter. The lower opening served as the oil drain passage and the upper hole provided the necessary air vent. To simplify servicing, one plug was deleted and venting of the converter during draining was provided through the lubrication oil passage into the case. This method of venting was made possible by the elimination of the lubrication check valve, which was found to be unnecessary.

The design of the planetary gear set was modified during 1950, changing the assembly technique so that the unit can be disassembled for servicing. A slot is now provided near the front end of each planet pinion pin and a notched retaining plate is rotated into the slots and secured to the face of the parking gear which forms the front of the planet carrier. In earlier transmissions, the pins were pressed into the planet carrier and both ends of the pins were flared. With this construction, the gear set could be serviced only by replacement of the entire assembly.

Substitution of rolled bronze for sintered bronze in the low sun gear thrust washer contributes to the exceptional durability of the torque converter transmission. Other mid-season changes include:

THE INDICATOR IS MORE LEGIBLE



1. Addition of a spring steel thrust washer between the hub and flange of the drive range clutch to prevent possible scuffing between these parts.
2. Redesign of the control shaft lever to increase its rigidity.
3. Change from a hex-head to a T-head bolt to clamp the control shaft lever onto the control shaft in order to provide more clearance and facilitate assembly.

The 105 HP engine, used with the automatic transmission, also received several modifications during the past model year which are continued in 1951.

A throttle return check, or dash pot, was added to the carburetor to retard the closing of the throttle. Its purpose is to prevent stalling of the engine when the driver releases the accelerator suddenly during low speed maneuvering.

Under normal operation, if the throttle is closed with the car moving slowly, the hydraulic torque converter acts as a disengaged clutch, allowing the engine to idle freely so that it does not stall. If the accelerator were released quickly, however, causing the throttle to snap shut instead of closing gradually, the transmission would momentarily impose a load on the engine which might cause it to stall. Through the cushioning action of the return check, the last fractional movement of the throttle is retarded to maintain engine power long enough to overcome any temporary load from the transmission.

The throttle return check is a small, circular, sheet metal housing which encloses a spring-loaded, rubber diaphragm and a check valve. A hollow rod with a self-locking screw threaded into its end, projects from one wall. A tab, added to the throttle lever, bears against this screw as the throttle closes, thus operating the check. The unit is mounted on the carburetor body through a bracket that is retained by one of the carburetor hold-down studs, and it is adjusted by varying the position of the set screw in the hollow rod.

A number of revisions in the carburetor were adopted to improve operation during hot idling and hot starting. Because of the low idling speed of the 105 HP engine, good operation under these conditions is especially important.

Two vent passages were cast in the air horn, one on each side of the throat, to vent the float bowl to the atmosphere. They facilitate separation of fuel vapor from the fuel and thus prevent blocking of the fuel passages by vapor. A fine-mesh screen covers each vent.

For the same purpose, the fuel diffuser also was changed. Originally, it consisted of a separator bar placed flat in the crossbar so that it divided the crossbar into upper and lower passages. In later carburetors, the separator was turned on edge to divide the crossbar into two side-by-side passages. A small brass tube also was inserted in the main fuel riser passage which passes up through the main well support and connects the main and power jets with a crossbar. The small tube is adjacent to one wall of the riser passage so that it intersects only one of the two parallel passages in the crossbar.

Extending down into the main fuel passage, the tube contacts fuel vapor which tends to move up through the tube, passing out along one side of the separator bar while fuel flows along the other side.

Another mid-season carburetor change reduced the diameter of the opening in the lower end of the balance tube from 1/4 to 1/16 of an inch. On cars with the RPO oil bath air cleaner, the smaller opening prevents the discharge of fuel into the air horn during rapid acceleration, thus preventing a temporarily over-rich mixture. Relocation of the distributor vacuum advance holes in the carburetor body and use of an aluminum alloy ball in the accelerator pump vapor vent valve parallel similar changes in the carburetor for the regular production engine.

The 105 HP engine also incorporates the changes in the exhaust valves, distributor, and generator which were described for the regular engine.

MANY OF THE ACCESSORIES are retained from 1950 with only those changes which are required to tailor them to the 1951 models. Other units incorporate improvements in design which are described here together with the accessories that are added to the line.

Two radios are available, as before, to provide a choice of either manual or push-button tuning. Both sets are of single, rather than two unit, design because of the change in the instrument panel styling. With either radio, the tuning dial is horizontal, instead of vertical as in 1950, and harmonizes with the appearance of the instrument clusters. The dial fits in back of an opening in the bottom of the radio grille at the center of the instrument panel, and the controls are arranged in a horizontal line below the dial in an opening in the depressed control panel. The knobs and push-buttons are made of the same ivory color plastic that is used for the other knobs.

The heaters are retained from 1950 without change in basic design, but embody certain improvements.

Through relocation of the controls, the outside-air-type heater is made more convenient to operate than in the past. The three controls (air, defroster, and temperature) now are mounted in the first three grooves on the left side of the radio grille, instead of being attached to a special bracket below the left end of the instrument panel. The controls are fitted with new, larger knobs of dark gray plastic with depressed, identifying letters which are filled with light gray paint. All of the controls are in the "off" position, when raised to the top of the grille, and they are in the "on" position, when pushed downward. Since the air valve must be open for defrosting, just as for heating, a tab, added to the defroster control, pushes the air control down as the defroster is turned on. This new feature insures that the necessary air supply is provided, even if the driver should fail to turn on the air separately.

The recirculating-type heater is improved with the addition of provisions for admitting a limited amount of outside air to the car interior through the heater. Thus, it now may be operated either as an outside-air-type heater or as a recirculating heater.

A sheet metal shroud is added to the heater housing that extends over the right hand ventilator in the dash panel. When the ventilator is open, outside air is deflected to the back of the heater where it is picked up by the blower, heated, and then circulated in the car. To prevent an excessive supply of outside air in cold weather, a stop is provided to limit the ventilator valve travel at the half-open position. When the ventilator is shut, the heater functions as a simple, recirculating type.

A guard is added to the line of accessories for those owners who wish to provide extra protection for the rear deck lid. The guard is a chrome plated tie bar which is clamped to the tops of the regular rear bumper guards. The styling of the guard is like that of the tie bar of the 1949 rear guard unit.

A new outside rear view mirror, that attaches to the top of the left front door just back of the venti-pane drip shield, replaces the peep mirror which was clamped directly to the drip shield. The attractive streamlined support arm is fastened to the door in either of two ways. On the De Luxe sedans and Sport Coupe, the arm is fitted with a special base which matches the reveal molding contour. A retaining screw is inserted from the inside, through a 1/4-inch hole drilled in the door and molding, and is tightened in a threaded hole in the base. For the Special Series, the support arm carries a clamp which fits over the top edge of the door. Both the base and the clamp are included in the package.

The hood ornament is new in both motif and finish. It is a stylized, leaping gazelle set on a base which conforms to the curvature of the hood. The gazelle is plated with gold and the base is finished with polished chrome plating. To protect the plating, the ornament is coated with clear, baked enamel.

The front fender shields are changed to harmonize with the long, low lines of the new model, but are similar to the 1950 shields in general styling characteristics. The main area of the shields is 1-1/2 inches lower and more than 1-1/4 inches longer than before, and the rear of the shields is extended along the body sill to a point three inches in back of the front edge of the doors, thus concealing the body sill-to-fender joint above the sill molding.

The tissue dispenser is redesigned to be more compact and is more conveniently placed than before. It now is mounted on the lower flange of the instrument panel below the glove compartment, in-

stead of being mounted on the top of the cowl kick pad. The front of the dispenser is a plastic, curved, snap-on cap which permits easy filling and convenient dispensing of single tissues. The dispenser is painted dark gray to match the color of other interior parts.

A large, drawer-type ash tray is available for the front compartment of Special Series models, since the radio grille of this series does not contain provisions for installation of the regular production, De Luxe Series ash tray. The unit is approximately five inches wide, four inches long, and one inch deep. It is attached to the lower flange of the instrument panel, just to the right of the panel center, and is equipped with a plastic pull-knob which matches the other knobs in the car.

A portable spot light is a new accessory which provides a sealed lamp unit on a fourteen-foot cord that plugs into the cigarette lighter socket on the instrument panel. Below the lamp unit, the chrome plated, die cast housing is shaped to form a handle. An on-off switch is located just above the handle, and a U-shaped hanger is pivoted on the back of the housing. A retractable hook on the top of the light is another convenient feature.

Three new accessories, introduced late in the 1950 model year and continued for 1951, are: a larger prismatic mirror, extra-capacity coat hooks, and a traffic light viewer.

To provide better visibility to the rear, the width of the prismatic mirror is increased three inches. The total width now is ten inches. However, other details of the mirror remain unchanged.

The extra-capacity coat hooks are designed to replace the regular production coat hooks when the owner wishes to hang several items in the car. These polished, stainless steel units consist of a hinged, spring-loaded arm which is attached to a curved base plate. The arm is more than an inch long, and extends horizontally when in use. When not in use, the arm snaps up into the base.

The traffic light viewer is designed to permit the driver to see overhead traffic signals easily when the car is equipped with an outside sun visor. It consists of a plastic, prismatic head which is attached to a supporting arm through a ball joint. The supporting arm is held in place by one of the retaining screws along the bottom of the windshield garnish molding.



SPECIFICATIONS

POWER PLANT

ENGINE: Six-cylinder, valve-in-head, 216.5 cubic inch displacement. Bore, 3-1/2 inches; stroke, 3-3/4 inches. Compression ratio, 6.6:1. Horsepower, 92 at 3400 rpm. Maximum torque, 176 foot pounds at 1000 to 2000 rpm.

PISTONS: Lightweight, cast alloy iron, with slipper skirt. Surfaces treated to resist wear. Three rings, all above pin: Two taper-face compression rings, and one wide-slot oil control ring.

CRANKSHAFT: Drop forged steel, heat-treated. Counterbalanced. Weight, 70 pounds. Four main bearings. Rubber-floated harmonic balancer.

MAIN BEARINGS: Thin-wall babbitt, precision-interchangeable.

LUBRICATION SYSTEM: Pressure streams of oil to connecting rod bearings; full pressure to crank-shaft bearings, camshaft bearings, and timing gears; metered pressure to valve rocker arms; splash-lubricated cylinder walls. Gear-type pump, with screened inlet. Crankcase ventilator. Crankcase refill capacity, 5 quarts.

FUEL SYSTEM: Single throat, down-draft carburetor, with concentric float bowl and vacuum fuel enrichment valve. Fully enclosed accelerator pump, with fuel-lubricated piston. Manual choke with fast-idle mechanism. Air cleaner and silencer, with flame arrester. Thermostatic manifold heat control. Octane Selector. Sixteen-gallon gasoline tank, with overflow alarm and concealed filler (except Station Wagon).

COOLING SYSTEM: Centrifugal water pump, with self-adjusting seal, and permanently-lubricated, sealed ball bearings. Thermostatic water temperature control. Nozzle-jet valve seat cooling. Capacity of system, 15 quarts.

ELECTRICAL SYSTEM: Centrifugal and vacuum spark-advance control. Oil-filled, hermetically sealed ignition coil. High-output, ventilated generator, with current and voltage regulators. Solenoid operated, push-button starter, with positive shift. Thermal circuit-breaker-protected lighting system. **CLUTCH:** Ventilated, diaphragm spring-type, with permanently lubricated ball throwout bearing.

TRANSMISSION: Three-speed, Synchro-Mesh, with helical gears. Manual, steering column gearshift control. Gear ratios: Low and reverse, 2.94:1; intermediate, 1.68:1; high, 1:1.

POWER PLANT MOUNTING: Rubber-cushioned, three-point support, with torque reaction dampers.

CHASSIS

FRAME: Full-length, box-girder construction, comprising deep, flanged channels, reinforced with flange-width bottom plates. Extra reinforcements added to side members of Bel Air frame. Special "VK" structure of I-beam members replaces regular second cross-member in frame of Convertible.

FRONT SUSPENSION: Unitized Knee Action, with fully sealed bearings and life-sealed, direct, double-acting shock absorbers. Ride stabilizer.

REAR SUSPENSION: Semi-elliptic springs, with tapered leaf ends (flat on Station Wagon). Metal

covers with fabric liners. Rubber-cushioned attachment and rubber bushings. Tension-type shackle mounting. Life-sealed, direct, double-acting shock absorbers, mounted diagonally to resist sway.

REAR AXLE: Hypoid, semi-floating, with six ball and roller bearings. Ratio, 4.11:1.

DRIVE: Torque tube, with fully enclosed universal joint and tubular propeller shaft.

BRAKES: Hydraulic, four-wheel, self-energizing, with bonded linings. Composite, 11-inch drums, with cast alloy iron braking surfaces. Mechanical parking brakes on rear wheels.

STEERING: Centerpoint, with semi-reversible worm and sector gear. Sector mounted on double-row ball bearing; worm mounted on tapered roller bearings. Ratio, 19.4:1.

WHEELS: Five, short-spoke, steel disk, with 15 x 5K, wide base rims.

TIRES: Five, 6.70-15-4 ply rating (6.70-15-6 pr on Station Wagon) extra-low pressure.

EXTERIOR DIMENSIONS: Wheelbase, 115 inches. Overall length (over bumper guards), 197-13/16 inches; Station Wagon, 197-7/8 inches. Overall width, 73-15/16 inches.

CHASSIS EQUIPMENT: Bumper with two guards, both front and rear. Front license plate guard. Gravel deflectors, front and rear. Bumper jack and combination jack handle and wheel wrench.

LIGHTS - HORN - BATTERY

LIGHTS: Sealed Beam headlights, with bright metal rims; beam indicator on speedometer. Two parking lights in radiator grille. Dual tail and stop lights with separate reflector buttons. Rear license plate light. Single combination tail, stop, and license light on Station Wagon, automatically positioned with tail gate. Dome light; automatic switch at each front door on De Luxe Series.

HORNS: Dual matched horns.

BATTERY: Fifteen-plate, 100 ampere-hour.

INSTRUMENT PANEL - CONTROLS - VISION

INSTRUMENTS: Speedometer, oil pressure and gasoline gauges, battery charge and engine heat indicators arranged in two circular clusters. Adjustable indirect lighting.

CONTROLS: Two-spoke steering wheel, with full-circle horn-blowing ring (three-spoke wheel, with horn button on Special Series). Rubber-padded clutch, brake, and treadle-type accelerator pedals; foot-controlled headlight dimmer switch. Illuminated three-position ignition lock switch. Light, choke, windshield wiper, starter, and ventilator duct controls. Ivory plastic control knobs, with bright metal inserts (no inserts on Special Series). Finger-tip gearshift lever, with light gray plastic knob. L-handle for parking brake.

OTHER INSTRUMENT PANEL EQUIPMENT: Radio grille, with removable panels for radio dial and control knobs. Glove compartment, with key lock. Bright metal gearshift control shaft escutcheon (painted in Special Series). Ash tray, cigarette lighter, illuminated 39-hour clock, and automatic glove compartment light in De Luxe Series.

VISION: Two windshield wipers. Two full-width windshield defroster openings. Two adjustable, sliding-type sunshades (one sunshade for driver in Special Series). Adjustable inside rear view mirror.

ROOFLINE

GENERAL FEATURES: Fisher Unisteel construction, with Turret Top (except Convertible), integral rear fenders, welded-in instrument panel, and solid steel underbody. Thorough insulation. Polished pyroxylin lacquer exterior finish. Safety plate glass throughout, except vinyl plastic rear window in Convertible. Large, sloping, curved windshield, with center division molding. Friction-type ventipanes, with drip shields in front doors. Lowering windows in side doors. Lowering rear quarter windows in two-door sedans. Dual ventilators in dash panel, individually controlled. Push-button exterior side door handles, with key locks in both front doors. Concealed side door hinges.

EXTERIOR DECORATION AND EQUIPMENT: Bright metal moldings on body sill, body belt line, and windshield center divider. Hood emblem and ornament; ornamental rear deck lift-handle. Bright metal ventipane frames. Bright metal rear fender shields (black rubber on Special Series). In addition on De Luxe Series: bright metal moldings on front fenders, side doors, rear fenders, windshield reveal, side window reveals (sedans and Sport Coupe only), and rear window reveal (except Station Wagon and Convertible); rear wheel cover panels.

INTERIOR APPOINTMENTS: Chrome plated, low-hub hardware. Push-button front seat adjuster release. Rear seat foot rest formed in floor panel. Two coat hooks in sedans and coupes. Package shelf in sedans, coupes, and Bel Air. Etched aluminum step plates in door openings (painted steel in Special Series). Scuff pads on doors and rear quarter panels. In addition on De Luxe Series: foam rubber seat cushion pads (front seat only on Station Wagon); two arm rests, front and rear (front only on Station Wagon); rear compartment ash tray in front seat back of four-door sedans, one in each arm rest of other models; bright metal moldings across tops of scuff pads; bright metal moldings across lower edge of side window garnish moldings (none on Station Wagon); extra sound insulation on roof panel (except Station Wagon and Convertible).

LUGGAGE COMPARTMENT FEATURES (except Station Wagon): Counterbalanced, automatic-locking deck lid, with concealed hinges. Tan leather-grained fiber board sidewall trim and rubber floor mat (black in Special Series). Illumination from window in each tail light housing. Spare tire and wheel carried vertically in well at right side. Hold-down spring to retain tools.

INTERIOR TRIM AND APPOINTMENTS - SPECIAL SERIES SEDANS AND COUPES: Two-tone gray interior color combination. Light gray, striped pattern cloth covering on seats. Sidewall covering of two shades of plain gray flat cloth. Light gray plain flat cloth covering on front seat back and sides, and center pillars. Light gray headlining and sunshade covering. Dark gray leather fabric scuff pads. Metallic

dark gray paint on instrument panel and garnish moldings. Dark gray steering wheel finish. Black rubber front floor mat. Gray carpet rear floor covering. Business Coupe rear compartment: dark gray leather fabric covering on front seat back; dark gray fiber board with simulated leather finish on sidewalls; black rubber floor mat.

INTERIOR TRIM AND APPOINTMENTS - DE LUXE SERIES SEDANS AND SPORT COUPE: Two-tone gray interior color combination. Robe cord in four-door sedans; two in two-door sedans. Assist straps in two-door sedans and Sport Coupe. Package shelf molding. Friction-type ventipanes in rear doors of four-door sedans. Sliding rear quarter windows in Sport Coupe. Gray striped broadcloth covering on seats, with band of plain dark gray broadcloth across top of seat back rests. Plain light gray flat cloth covering on sidewalls, front seat back and sides, and center pillars. Light gray headlining and sunshade covering. Dark gray leather fabric covering on scuff pads, and arm rest tops. Two-tone metallic gray paint on instrument panel; dark gray upper section and lower control panel, light gray central section. Two-tone gray steering wheel. Dark metallic gray paint on garnish moldings and package shelf molding. Dark gray rubber front floor mat, with simulated moresque carpet inserts. Gray moresque carpet in rear compartment.

INTERIOR TRIM AND APPOINTMENTS - BEL AIR: Bright metal side window frames, drip molding, and ventipane drip shields. Extra-large curved rear window with two bright metal division moldings. Pivoting rear quarter windows. Four two-tone interior color combinations of light gray with black, blue, red, or green, to harmonize with exterior paint colors. Gray striped pile-cord covering on seats, with cushion and back rest bolsters of genuine deep-buff leather. Gray striped pile-cord sidewall covering. Leather fabric covering, matching seat bolster leather color, on front seat back and sides, scuff pads, windshield pillars and header, package shelf, and tops of rear seat arm rests. Genuine leather top covering on front seat arm rests. Plain light gray headlining and sunshade covering. Exposed, bright metal roof bows. Instrument panel painted in two-tone color combination of seat leather color in upper section and light gray in the lower section. Garnish moldings painted in color of seat leather and outlined with extra, bright metal moldings. Two interior lights set in garnish moldings. Black and light gray two-tone steering wheel finish. Black gearshift knob. Front and rear floor coverings of carpet in color to match seat leather.

INTERIOR TRIM AND APPOINTMENTS - CONVERTIBLE: Hydraulically operated folding fabric top. Lowering rear curtain retained by slide fastener. Fabric top boot. Black or tan top fabric color to harmonize with exterior paint colors. Bright metal side window frames and ventipane drip shields. Pivoting rear quarter windows. Four two-tone interior color combinations of light gray with black, blue, red, or green, to harmonize with exterior paint colors. Genuine deep-buff leather covering on front

and rear seats, and tops of front seat arm rests. Light gray leather fabric covering on sidewalls and rear seat arm rests. Leather fabric covering, matching seat leather color, on front seat back and sides, scuff pads, windshield pillars and header, sunshades, and inside of top well. Instrument panel painted in two-tone color combination of seat leather color upper section and light gray lower section. Garnish moldings painted in color of seat leather. Black and light gray two-tone steering wheel finish. Black gearshift knob. Rubber front floor mat with carpet inserts and rear floor carpet matching color of seat leather.

INTERIOR TRIM AND APPOINTMENTS - STATION WAGON: Simulated wood finish on body exterior upper side panels; lift and tail gates of mahogany grain transfers framed by light ash grain transfers. Bright metal body belt molding only around base of windshield and front corners. Sliding rear quarter windows. Tan leather fabric covering with pigskin finish on seats. Wood panels on sidewalls. Tan leather fabric covering on front arm rest tops and on scuff pads. Wood-grained side and rear window garnish molding finish. Leather fabric headlining and sunshade covering with simulated wood grain finish. Exposed roof bows with wood-grained finish. Tan rubber front floor mat with simulated moresque carpet inserts. Tan rubber floor mat between front and center seats. Tan linoleum floor covering below and behind center seat. Bright metal skid strips on tail gate. Covered compartment in rear floor for spare wheel and tire, and tools. Instrument panel, steering wheel, and windshield garnish molding same as in De Luxe Series sedans.

VARIATIONS IN SPECIFICATIONS FOR MODELS EQUIPPED WITH THE OPTIONAL TRANSMISSION

ENGINE: Six-cylinder, valve-in-head, 235.5 cubic inch displacement. Bore, 3-9/16 inches; stroke 3-15/16 inches. Compression ratio, 6.7:1. Horsepower, 105 at 3600 rpm. Maximum torque, 193 foot pounds at 1100 to 2200 rpm.

PESTONS: Lightweight, cast alloy iron, with slipper skirt. Surfaces treated to resist wear. Three rings, all above pin: One twist-type and one taper-face compression ring, and one wide-slot oil control ring.

CRANKSHAFT: Drop forged-steel, heat-treated. Counterbalanced. Weight, 71 pounds. Four main bearings. Rubber-floated harmonic balancer.

VALVE MECHANISM: Self-adjusting, hydraulic valve lifters.

COOLING SYSTEM: Pressure cooling system, with four-pound cap. Centrifugal water pump, with self-adjusting seal, and permanently lubricated, sealed ball bearings. Thermostatic water temperature control. Transmission oil cooler. Capacity 15 quarts.

TRANSMISSION: Automatic, hydraulic torque converter, with planetary gears for reverse and emergency low. Manual selector for hydraulic control of transmission, and mechanical control of parking lock. Safety switch in starter circuit. Maximum torque converter ratio, 2.2:1. Planetary gear ratio, 1.82:1. Overall ratios (including rear axle): Drive, 2.2:1; Low and Reverse, 4:1. Refill capacity, 9 qts.

REAR AXLE: Hypoid, semi-floating, with six ball and roller bearings. Ratio, 3.55:1.

WHEELS AND TIRES: 7.10-15-4 pr tires on Convertible only (extra cost).



INDEX

A

Accelerator rod	49
Accessories	51-52
Ammeter	30
Arm rests	36
Ash trays	32, 33, 36, 52
Automatic transmission option	8, 50-51

B

BODIES AND SHEET METAL	40-42
Brakes, parking	30, 47
Brakes, service	8, 42-47
Bumper guards	24
Bumpers	24, 27
Bushings, front stabilizer	49

C

Carburetor	49, 51
Chassis	43-49
Cigarette lighter	32, 33
Clock	33
Coat hooks	52
Colors, exterior	28-29
Colors, interior	35-37, 39
Compartment, glove	30
Compartment, luggage	30
Control indicator, transmission	50
Control knobs	33
Convertible top	29, 41

D

Distributor	49
Door moldings, exterior	24, 26
Door trim, interior	35, 39

E

Emblem, hood	24
ENGINE AND CHASSIS	43-49
Exhaust system	47, 48
Exterior colors	28-29
EXTERIOR STYLING	23-29
EXTRA-COST EQUIPMENT	50-52

F

Fenders, front	27, 40
Fenders, rear	23, 27

F

Fender moldings	24, 27
Fender panels, rear	27
Fender shield	27, 52
Floor mats	30, 36
Fuel filler	40
Fuel gauge	30

G

Garnish moldings	35, 39
Gasoline filler	40
Gauges	30
Gearshift	35, 36
Gear set, planetary	50, 51
Generator	49
Glove compartment	30, 32
Gravel deflector, rear	28
Gravel deflector, rear fender	27
Grille, radiator	23, 24
Grille, radio	30, 31
Guard, bumper	24
Guard, license	24
Guard, rear deck	52

H

Handle, parking brake	30, 33
Handle, deck lid	28
Hand throttle	32
Hardware, interior	33
Heater controls	32, 51
Heaters	51, 52
Hood emblem	24
Hood ornament	24, 52
Hood release	40
Hooks, coat	52
Horn blowing ring	8, 30, 35
Horn button	39
Horn mounting	41
Hub caps	28

I

Ignition switch	30, 32, 33
Ignition system	49
Instrument lights	8, 31
Instrument panel	8, 30-33, 35, 36, 39, 40
Instruments	8, 30-31
Interior colors	35-37, 39
INTERIOR STYLING	30-39

Junction block	41	S	5																																
K		Seat construction	41																																
Knobs, control	33	Spark advance	49																																
L		SPECIFICATIONS	53-55																																
Length, overall	27	Speedometer	30-31																																
License guard	24	Spot light, portable	52																																
License light	27-28	Stabilizer bushings	49																																
Light, glove compartment	32	Starter button	32																																
Light, ignition switch	33	Starter safety switch	50																																
Light, license	27-28	Steering column	32, 36																																
Light, portable spot	52	Steering gear	49																																
Light switch	32-33	Steering wheel	30, 35-39																																
Lights, instrument	8, 31	Styling, exterior	23-29																																
Lights, parking	24	Styling, interior	30-39																																
Lights, tail	27	Sunshades	36																																
Lock, deck lid	28	Supports, exhaust system	47-48																																
Lock, glove compartment	32	T	27																																
Lock, ignition switch	33	Tail lights	47-48																																
Luggage compartment	30	Tail pipe support	47-48																																
M		Temperature gauge	30, 31																																
Mirror, rear view	41, 52	THE CHEVROLET LINE FOR 1951	8-22																																
Model chart	8	Throttle, hand	32																																
Muffler support	47-48	Throttle linkage	49																																
N		Throttle return check	51																																
Odometer	30	Tissue dispenser	52																																
Oil pressure gauge	30	Top motor	41																																
Ornament, hood	24, 52	Torque converter	50																																
P		Torque tube	47																																
Parking brakes	47	Transmission, optional automatic	8, 50-51																																
Parking brake handle	30, 33	Trunk guard	52																																
Parking lights	24	U	35, 36, 39																																
Pipes, brake	46	Planetary gear set	50-51	Upholstery		Powerglide transmission	8, 50-51	Propeller shaft	47	R		V		Radios	30-32, 51	Valves, exhaust	49	Rear quarter panels	23, 27, 40	Ventilator controls	32-33	W		Ventipane drip shields	41	Window regulators	30, 33, 35	Window, rear	41	Windshield washer	33	Windshield wiper knob	32-33	Wiring junction block	41
Planetary gear set	50-51	Upholstery																																	
Powerglide transmission	8, 50-51																																		
Propeller shaft	47																																		
R		V																																	
Radios	30-32, 51	Valves, exhaust	49																																
Rear quarter panels	23, 27, 40	Ventilator controls	32-33																																
W		Ventipane drip shields	41																																
Window regulators	30, 33, 35																																		
Window, rear	41																																		
Windshield washer	33																																		
Windshield wiper knob	32-33																																		
Wiring junction block	41																																		

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